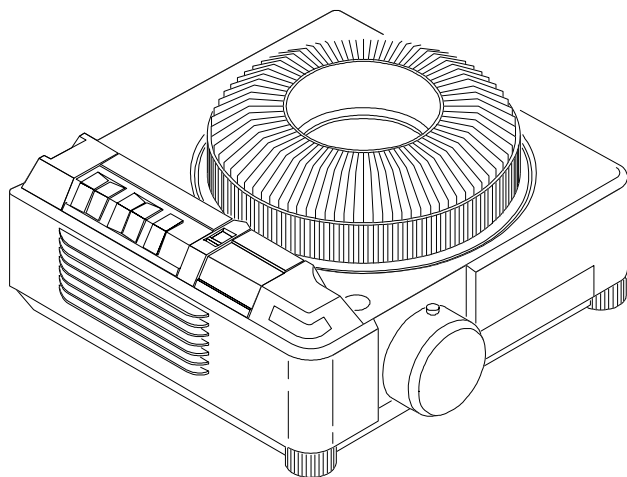


VIDEOMATE 2250/2250P

Video Slide Projector

Instruction Manual



NAVITAR®
The World Leader in Image Quality

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Introduction to the VideoMate

VideoMate Slide-to-Video Systems

Today's sophisticated audiences expect high quality visual aids in the presentations they attend. Since a picture is "worth a thousand words," as they say, there is no better way to increase the effectiveness of a presentation than to pack it full of interesting visual images.

A Navitar VideoMate is an ideal presentation tool. It enables you to easily integrate 35mm slides into presentations by converting them into video images which can be projected through a video projector or viewed on a TV monitor. VideoMates produce high-resolution images with outstanding contrast and vivid color rendition, so slides can be shown as large projected video images without losing clarity or legibility. VideoMates are ideal for use in boardrooms, auditoriums and training rooms, or for AV rental and video production.

Description of the VideoMate 2250/2250P

The VideoMate 2250 (NTSC) and 2250P (PAL) are advanced slide-to-video transfer systems that make the digital connection with built-in microprocessor control.

With the VideoMate 2250, RS-232 control enables the projector, lens and camera functions of the slide-to-video transfer unit to be electronically controlled from a PC computer or boardroom control system. A software package for a PC computer is available from Navitar. This model is equipped with genlock

The VideoMate 2250 is based on a state-of-the-art Kodak Ektapro electronic slide projector. Integrated inside is a high-resolution CCD camera featuring Navitar's acclaimed precision zoom optics. To increase on-screen resolution even further, the VideoMate 2250 can be used with a scan doubler.

The "random access" feature of the 2250 allows the user to choose between pre-programming the exact slide sequence or randomly jumping to various slide tray positions. Random access is controlled by simply punching the slide numbers into the control system and pressing enter.

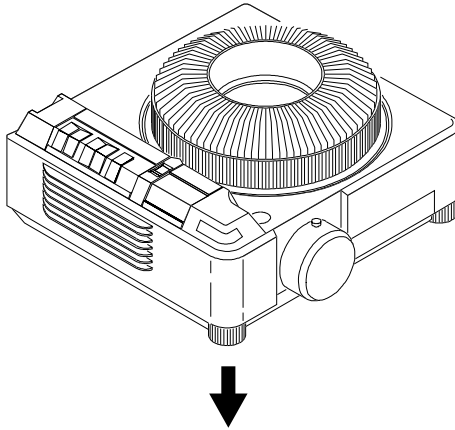
Introduction to the VideoMate

The built-in motorized zoom lens allows the 2250 to zoom in on slides for increased magnification or zoom out to view entire vertical slides.

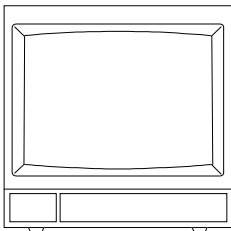
A unique "stand-by" mode, allows the projector to be powered off and back on again without the normal return of the slide tray to the first slide position.

VideoMate

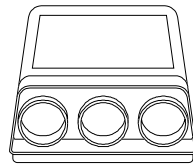
Slide-to-Video



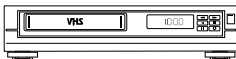
Output to Video Equipment



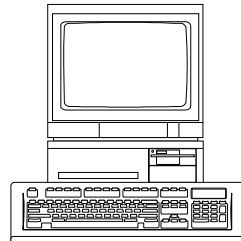
TV Monitor



Video Projector

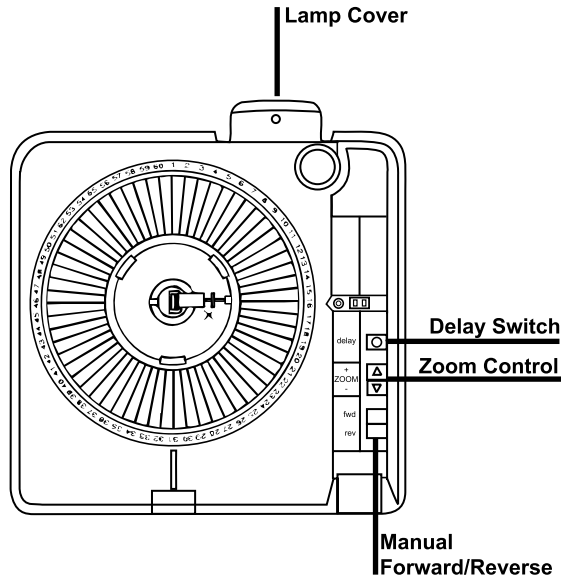


VCR

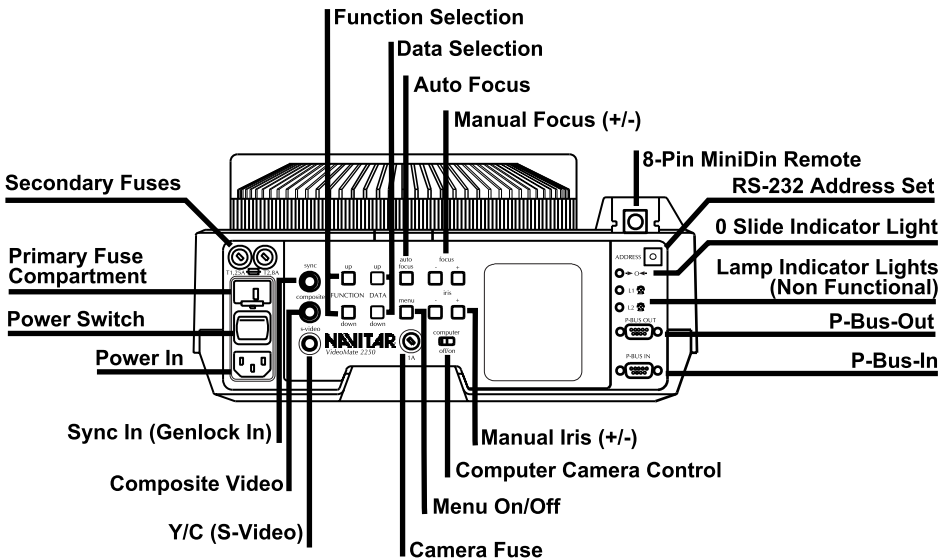


Computer

Top View



Rear View



Safety Precautions

To prevent damage to the equipment and operating personnel, please observe the following precautions:

Set the projector voltage switch to the proper wall outlet voltage for your country (USA = 120v and UK = 240v).

Make sure that the voltage source contains a satisfactory path to ground.

Do not operate the unit where fluids can come into contact with the electrical components.

Maintain a six-inch air space around all sides of the equipment to allow for proper ventilation.

When changing the bulb:

1. Disconnect the electrical supply.
2. Allow the unit to cool.
3. Use only a General Electric 787 (6 volt, 10 watt) lamp or the equivalent (Navitar part #9-12126). Higher wattage lamps will cause severe internal Damage to the camera and electronics.

There are no user serviceable components (other than changing the lamp). Opening the unit will expose dangerous voltage levels and sensitive electronic components. A qualified technician should perform all repairs.

To prevent the unit from damaging condensation and thermal shock, certain procedures must be followed:

1. In cold weather, always put the unit in a moisture proof container or enclosure before transporting.
2. Either keep the unit warm during transportation, or allow sufficient time for it to warm up at the destination. Keep the unit in the original moisture proof package while it warms up. (The goal is to prevent warm, moist air from striking the cold electronic and optical components, which will cause damaging condensation).

Warning



Never operate a cold projector to warm it up.

Check Voltage Setting

The VideoMate 2250 is exported throughout the world to countries with different mains voltages. The projectors are set to a fixed mains voltage at the factory.

120v Mains

Shipments to countries with 120v mains will be equipped with a 4A fuse.

220, 230 or 240 Mains

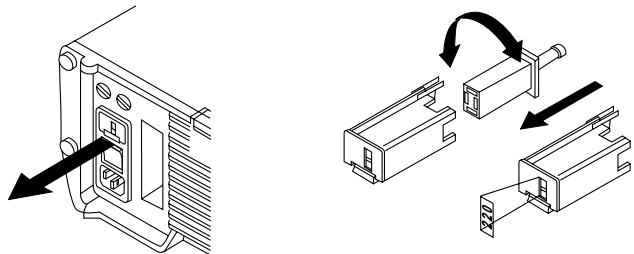
Shipments to countries with 220, 230 or 240v mains will be equipped with a 2A fuse.

Before you switch on your projector, make sure that the voltage is correctly adjusted!

An incorrectly adjusted mains voltage can damage the projector. The voltage Indicator must show your country's actual mains voltage.

Setting a Different Operation Voltage

1. Pull out the fuse link compartment by gripping the small catch.
2. Push the fuse link into the compartment so that the applied voltage can be seen in the window of the compartment.
3. Push the loaded compartment (with mounting underneath) firmly into the projector opening provided.



Warning



For safety, the mains lead must be unplugged.

Important



Make sure that the 120v setting uses a different fuse than the 220/240v setting.

Quick Start

If you are familiar with both the operation of a 35mm slide projector and your video display, you may follow an abbreviated start-up procedure.

Before starting, review the precautions on page 5.

To “Quick Start” the VideoMate 2250, proceed as follows:

1. Check the voltage setting before powering on. Make sure that the setting above the power cord is correct for your voltage. In addition, the fuse behind the voltage settings needs to be checked.
2. Plug the power cable into a suitable power supply.
3. Connect your TV monitor to the composite video and/or Y/C (S-Video) output connector on the back panel of the VideoMate.
4. Set the computer input On/Off switch to OFF. Set the Auto Focus switch to OFF.
5. Load the slide tray onto the projector
6. Turn on the TV monitor and the VideoMate power switch.
7. Advance to the first slide.
8. Adjust the iris and focus controls on the rear of the projector and the TV monitor controls to produce a suitable image.

Note: A very dark slide may require readjustment of the iris, but a setting can usually be reached that produces an acceptable display throughout a range of slides.

Before starting, review the precautions on page 5.

To install the VideoMate 2250, proceed as follows:

1. Check the voltage setting before powering on. Make sure that the setting above the power cord is correct for your voltage. Also, check the fuse behind the voltage setting to make sure it is correct for your country.
2. Plug in the power cable.
3. Connect the cable to your peripheral equipment (TV monitor, video projector, etc.). The connection for Composite Video and genlock is BNC and a 4-Pin MiniDin for Y/C S-Video.
4. Load the slide tray and “power-up” all equipment.
5. Press the forward button to advance to the first slide.
6. When the projector is powered-up focus and iris are in automatic modes. For manual focus adjustment, set the auto focus switch to OFF. For manual iris adjustment, press either of the iris buttons.
7. Set the computer input switch to either:
 - ON: For RS232 control of camera functions
Through the P-Bus in 9-pin connector.
 - OFF: For manual operation of camera functions
(i.e. iris).
8. Press the zoom button to select the correct picture size for your presentation.
9. Adjust the iris and focus to produce a satisfactory image. These are push button controls that change +/- with every push of the button. To return to auto iris mode, press the + and – buttons simultaneously.
10. Press standby to stop your presentation and remain in the current spot. Press standby again to regain power.

Loading and Installing the Slide Tray

The VideoMate 2250 will accept all 80 and 140 Carousel, Ektagraphic and SAV slide trays. We recommend the 80 slide tray for maximum reliability.

1. Check that the base plate of the slide tray is locked into the zero position and cannot be rotated.
2. Load the slides upside down for normal front projection. Replace and lock the cover to prevent damage in case the tray is dropped or turned over.
3. Place the loaded tray into its zero position on the projector's transport ring. The cleft on the slide tray (zero position) fits into the notch of the transport ring.

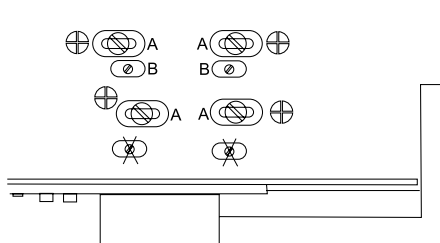
Before you switch on the projector, please make sure that the tray setting switch is in the correct position.

Tray Positioning Index Mark

Projectors are often installed on racks where tray installation may be difficult and only possible from the rear of the projector. In this case, the tray positioning mark on the back of the projector is very helpful: The tray is properly set when the index mark aligns with the mark placed on the tray (at slide #20 of the 80-slide tray and at slide #35 on the 140-slide tray).

Camera Alignment

The following illustration shows the image orientation adjusting screws on the bottom of your VideoMate projector.



The four screws marked "A" are used to shift the image on the monitor left or right. Loosen (do not remove) the four screws and apply pressure to one of the screw

heads to move the internal unit in a sideways motion. Retighten the four screws.

The two screws marked “B” provide both vertical and rotational image movements. Turning one screw will tip, or rotate, the image, while turning both screws will move the image in a vertical direction.

Caution

Do not turn screws marked “X” or the reference position will be lost. It should never be necessary to move any screw far from its “as received” condition. Excessive unthreading of a screw could result in loss of engagement and major disassembly.

Changing Slides

Slides are changed by using the arrow buttons on top of the projector. The ► key moves the tray forward and the ◀ key moves it backward.

To transport the tray quickly in either direction, press and hold down the correct slide change button until the position desired is reached. The tray will, however, automatically stop at #0 and will remain in this position. If you want to repeat the search run; press the slide change buttons again.

The VideoMate 2250 can sense when there is a slide in the gate. Only then will the shutter open and the lamp achieve its optimum brightness. It is no longer necessary to use dark slides when the slide gate is empty.

Changing the Slide Tray

Always lift the slide tray off when it is in the zero position. The zero positioning lights up when the slide tray transport ring is in the zero position.

Moving the Tray Into the Zero Position

Using the slide change buttons on your projector or remote control unit

Keep the slide change button pushed down (forward or backward) until the tray automatically stops at the zero position.

Using the Kodak Ektapro IR Remote System RA/LP

Press the "0" on the control page and confirm with the enter key.

Using the power switch

Turn the projector off by the power switch. When the projector is turned on again, it will complete a system check and bring the slide tray back to the zero position.

Removing the Slide Tray

In an emergency (such as a transport failure), the tray can be removed from the projector in any position:

1. First, switch off your projector!
2. Push aside the slide tray lock and hold it while lifting off the tray.
3. Turn the slide tray over and rotate the base plate until it clicks into the zero position. Otherwise, the slide tray cannot be replaced on the projector in the zero position.
4. Turn the projector on again. The slide remaining in the slide gate will be ejected by the slide lift and can be replaced in the slide tray.

Understanding Which Video Output is Best For You

Composite Video

Standard video image quality which is fine for showing pictures of objects on a TV monitor.

Y/C (also known as S-Video and S-VHS)

Improved resolution that is less grainy due to the elimination of dot crawl. Better for presentation of text and graphic slides, since words are more defined.

Note: You can output both Y/C and composite video simultaneously if you desire.

SYNC For Genlock

Additional equipment required

To use the genlock feature, a second video source, a video switcher and the proper input/output cables are required. We also strongly recommend the use of a vector scope for the best possible results.

When an external sync signal is input, the display mode changes from the factory set INT (internal sync) to AUTO (external sync) automatically.

On-Screen Menu

MODE	●AUTO	INT
→ H PHASE	0	
SC PHASE	●0	180
SC FINE	0	

Please note that there is no factory setting for the genlock data. Your external data may appear different from what is shown here, however, adjusting the data is done in exactly the same way.

Changing EXT Settings

To select the item you want to adjust, move the arrow "→" on the left side of the screen up and down by pushing the FUNCTION UP, FUNCTION DOWN buttons. Once you choose an item, you can change the setting by pushing the DATA UP, DATA DOWN buttons.

Adjusting the Horizontal Phase

1. Set the arrow "→" to H PHASE by pushing the FUNCTION UP, FUNCTION DOWN buttons.
2. Adjust the horizontal phase by pushing the DATA UP, DATA DOWN buttons. The values range from -99 to 99, DATA UP will increase the setting towards 99 and DATA DOWN will decrease it towards -99.

Coarse Adjustment of the Sub Carrier Phase

1. Set the arrow "→" to SC 0/180 by pushing the FUNCTIONUP, FUNCTION DOWN buttons.
2. Select either 0 or 180 by pushing the DATA UP, DATA DOWN buttons.

Fine Adjustment of the Sub Carrier Phase

1. Set the arrow "→" to SC PHASE by pushing the FUNCTION UP, FUNCTION DOWN buttons.
2. Adjust the sub carrier phase by pushing the DATA UP, DATA DOWN buttons. The values range from -99 to 99, DATA UP will increase the setting towards 99 and DATA DOWN will decrease it towards -99.

Adjusting the Zoom Lens

Using the buttons on the top of the projector

Press the zoom buttons until the desired slide magnification is selected.

Using RS232 control

The zoom lens can also be controlled by RS232. You can set it to one magnification for the entire presentation or you can program the show and select different magnifications for each slide.

Adjusting the Iris and Focus

Using the buttons on the rear of the projector

Press the iris and focus buttons to achieve the correct settings for brightness and focus. Each push of the button adjusts the iris or focus up or down one step.

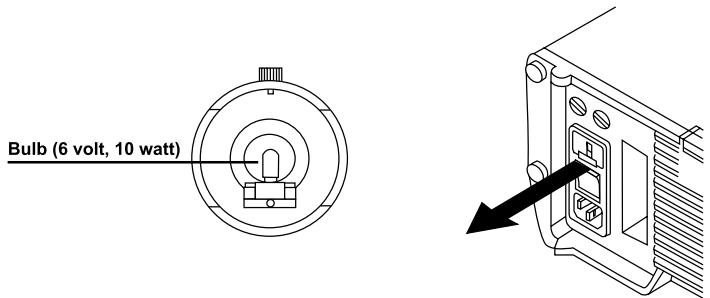
Using RS232 control

The iris and focus settings can be set for the entire presentation or you can program the show and select different settings for each slide.

Replacing the Lamp

Use a General Electric 787 (6 volt, 10 watt) lamp or its equivalent (Navitar Part #9-12126).

1. Turn the power switch of OFF and allow the lamp to cool before handling.
2. Loosen the cover lock screw two turns. Rotate the cover counterclockwise and remove.
3. Remove the old lamp by pulling it straight up. Do not twist the lamp or the glass envelope may shatter.
4. Insert the new lamp carefully.
5. Remove any fingerprints from the lamp envelope.
6. Replace the cover and tighten the lock screw.



Replacing Fuses

Always switch off the projector and unplug the mains lead before replacing a fuse!

To avoid the risk of fire, replace only with a fuse of the same type and rating.

The electric circuit fuses, proceed as follows:

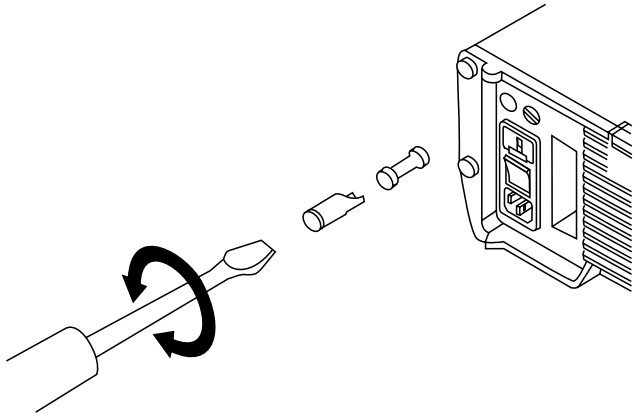
1. Pull out the fuse link compartment by gripping the small catch.
2. Replace the defective fuse.
3. Push the fuse link compartment back into the projector. Do not change the position of the fuse holder when reinserting it into the projector.

Replacing Secondary Circuit Fuses

Please note that these fuses are different!

Two secondary fuses protect the projector against damage caused by overloading the projector's remote socket.

1. Turn the fuse carrier counterclockwise with a screwdriver or coin.
2. Replace the defective fuse.
3. Screw the carrier clockwise, back into position.



Dissolve Operation

The VideoMate 2250 is fully equipped for dissolve operation and is fully equipped for dissolve operation and is fully compatible with external dissolve. Control systems already in existence.

Remote Control

In the past, most projectors were controlled by simple contact closure. Today's advanced boardroom control systems, however, are using RS232 for control of the AV components and room functions.

With the VideoMate 2250, you can electronically control the projector, lens and camera functions of your slide-to-video transfer unit by RS232 control from your PC computer or boardroom control system via the P-Bus-In (9-pin sub D socket). For connection, use a monitor cable (1:1, shielded).

A software control package for a PC computer is available. With the help of the communications language P-COM Protocol, commands are given directly to the projector's microprocessor. Commands are transferred in binary code. For more information, call Navitar directly or e-mail us at info@navitar.com.

Motorized Zoom

The motorized zoom function allows you to zoom in on a slide for increased magnification or zoom out to view a vertical slide.

Random Slide Access

You can pre-program the exact slide sequence you require or randomly jump to any slide tray position at any time. For example, you can randomly program your slide sequence to go from slide #1 to slide #10 and have different zoom positions (magnifications) and brightness presets for each slide. Just punch the number of the desired slide into your control system and press enter. It's that simple.

Electrical System

Power voltage

AC only! Different power voltages are adjustable via the removable fuse link (120, 220, 230, 240v).

Frequency

50/60Hz

Performance

Approximately 100VA

Fuses

Primary circuit: 1x2A slow blow for 220, 230 and 240v or 1x4A slow blow for 120v.

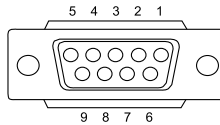
Secondary circuit: 1x2A/26v slow blow. 1X1, 25A, 10v slow blow.

Supply Voltage for External Units

Provision of 12v/50mA (DC) direct voltage on the 8-pin remote control socket.

RS-232 Connectors and Interfaces

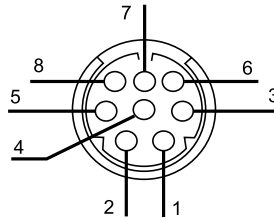
P-Bus-In and P Bus-Out



The following pin connections are used for data transmission:

- Pin 2: Receive data RxD
- Pin 3: Transmit data TxD
- Pin 5: Signal ground

8-pin Standard Projector Socket



- Pin 1: 12 VDC
- Pin 2: Gnd
- Pin 3: Signal 1 (LSB)
- Pin 4: Signal 2
- Pin 5: Signal 3
- Pin 6: Signal 4
- Pin 7: Signal 5 (MSB)
- Pin 8: Interrupt

Control System

P-Bus-In

9-pin Sub-D female connector (V.24/V.28 standard interface).

P-Bus-Out

9-Pin Sub-D male connector (V.24/V.28 standard interface).

8-pin remote socket (MiniDin).

Slide Change Time

0.8 seconds (independent of mains voltage and frequency).

Slide Access Time

Less than 3 seconds for the longest search run.

SYMPTOM	CAUSE/REMEDY
The projector is not operable after switching the power on.	Is a fuse (primary or secondary) blown? Check the fuses and replace them if necessary. Users in the U.K. should check 13A plug.
The slide tray does not fit on the transporting ring.	Is the slide tray transporting ring, in the zero position? Either press the slide change buttons until the tray stops in the zero position or switch the projector off and on again so that it indexes to the zero position.
The slide tray cannot be moved.	Is the slide tray placed correctly on the transporting ring? Lift the tray off, switch the projector on and off again then replace the tray.
The red LED is flashing and all functions are blocked (after switching on or during operation).	Is a slide jammed in the gate? Switch the projector off and lift off the slide tray. Remove the slide from the gate. Rotate the base plate until it locks into position, replace the tray and switch the projector back on. Is the slide tray base plate in the zero position? Switch the projector off, lift off the slide tray, rotate the base plate until it locks into position, replace the tray and switch the projector back on. Is the slide tray base bent? Try using a new slide tray. Is the tray setting switch set correctly? Switch the projector off, lift off the slide tray and rotate the base plate until it locks into position. Set the tray setting to the correct position, then replace the tray and switch the projector back on.
There is no image on-screen.	Is all of the equipment "powered-up?" Check all of the electrical outlets and equipment power switches. Are the cables or connectors bad? Is the lamp blown? Is the auto focus lamp flashing? Try resetting the power.
The image is too dark or too light.	Is the illumination level adequate? Set the iris (I) as required. Is the monitor adjusted correctly?
The image is not sharp.	Is the focus adjusted properly? Is the illumination level too high? Set the iris (I) as required. Is the motor adjusted correctly? Are you using the correct grade of cables? They should be "grounded shield video" grade, 75 OHM.
The image does not stabilize.	Is the "sync" signal correct? The VideoMate 2250 is NTSC format (525/30 Hz). The VideoMate 2250P is PAL format (625/25 Hz).

Camera

Pick-Up Device	1/3" interline transfer
Pixel Count	768(H) x 494(V); 754(H) x 582(V) (PAL)
Color Filter	Complimentary Color Mosaic
Signal System	NTSC Standard (PAL available)
Horizontal Resolution	460 TV lines (450 PAL)
Sensitivity	F1.2 (4.5 Lux), 3200K° color temperature
Genlock	Yes, fine and coarse chroma and H-phase adjustment
S/N Ratio	More than 46dB

Projector

Model Number	VM2250 (2250P PAL mode)
Power Consumption	Approximately 100 watts
Power	120-240 volts, 60 Hz/50 Hz PAL
Projection Lamp	6 volt, 10 watt Halogen GE 787 or equal
Slide Projector	Modified Kodak Ektapro
Lens	12x motorized
Iris/Focus Controls	Motorized
Slide Tray Capacity	Kodak 80 or 140 slide tray
Controls/Manual	On/off, forward/reverse, standby, zoom in/out, focus (auto/manual), & iris (auto/manual)
Remote Operation	RS232 (P-BUS-IN) control for all projector, camera and lens functions including: power, standby, random access, forward/reverse, zoom in/out, auto focus on/off, manual focus, white balance, iris gain.
Camera Connectors	BNC - Composite Video and genlock 4-pin MiniDin for Y/C (S-Video)
Dimensions	Length 12.2 in./310 mm Width 14.0 in./355 mm Height 5.7 in./145 mm Weight 22 lbs./10 kg
Video Cables (optional)	Model 8-11113, 12 foot S-video cable Model 1-11787, 12 foot, composite video cable

Design and specifications are subject to change without notice.

5 Year Parts /5 Year Labor

This product is warranted to be free from defects in material and workmanship for a period of five years from the date of invoice to the original purchaser.

If during the warranty period the product is found to be defective, it will be repaired or replaced at the facilities of Navitar. However, Navitar reserves the right to refund the purchase price if the replacement or repair is not commercially practical or timely. Parts not manufactured by Navitar carry only the warranty of their manufacturer. Lamps and fuses carry no warranty.

This warranty does not cover damage caused in transit; damage caused by misuse, neglect or carelessness; or damage resulting from either improper servicing or modification by someone other than Navitar. Further, this warranty does not cover any routine maintenance work that is reasonably expected to be performed by the purchaser.

No responsibility is assumed for unsatisfactory operating performance due to environmental conditions such as humidity, dust, corrosive chemicals, deposition of oil or other foreign matter, spillage or other conditions beyond the control of Navitar.

For service, repair or return procedures under this warranty, contact your distributor, your local Navitar field officer or Navitar direct at (716) 359-4000 or (800) 828-6778 in the United States.

Except as stated herein, Navitar makes no other warranties, expressed or implied by law, whether of merchantability, fitness for a particular purpose or otherwise.

Further, Navitar shall not, under any circumstances, be liable for incidental, consequential or other damages.

This warranty applies only to those original purchasers (non-dealers) returning the product warranty card within 30 days of purchase date. For purchasers who do not return the warranty card within 30 days, or for items sold to dealers for their own use or rental use, our standard 90 day parts and 1 year labor warranty will apply.

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