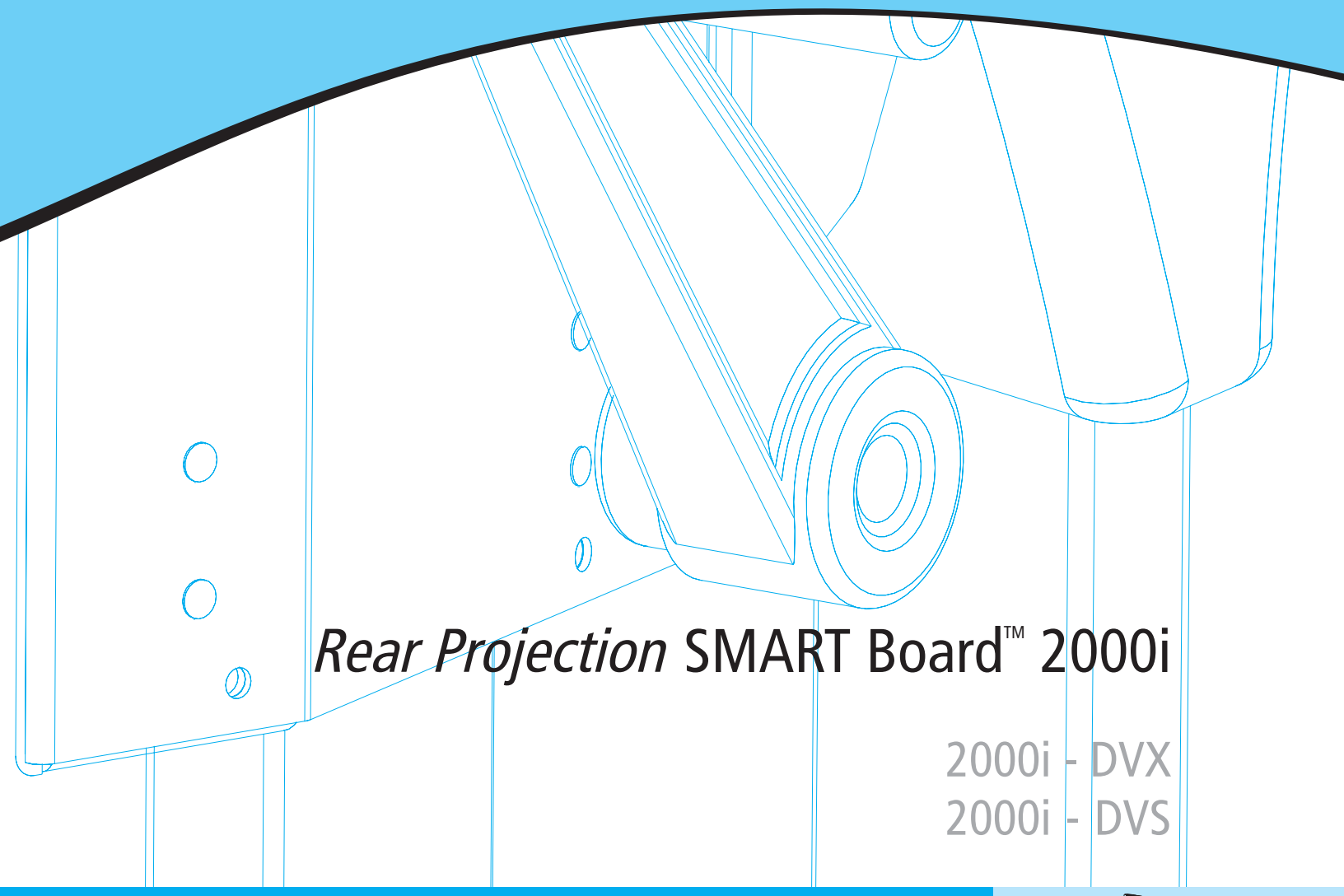
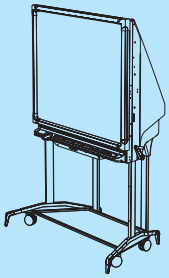
Installation Guide



Rear Projection SMART Board™ 2000i

2000i - DVX
2000i - DVS

Interactive Whiteboard



SMART Technologies

Registration Benefits

In the past, we've made new features such as handwriting recognition, USB support and SMART Recorder available as free software upgrades. Register your SMART product to be notified of free upgrades like these.

Keep the following information available in case you need to contact Technical Support:

Serial Number _____

Date of Purchase _____

Register online at: www.smarttech.com/registration

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the 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.

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U.S. Patent Nos. 5,448,263; 6,141,000; 6,326,954; 6,337,681; 6,741,267; 6,747,636 and 6,803,906. Canadian Patent No. 2,058,219. Other U.S., Canadian and foreign patents pending.

NEC VT470, NEC VT670

Printed in Canada 04/2005

Important Information

Please read this manual carefully before setting up and using the *Rear Projection* SMART Board™ 2000i interactive whiteboard. With proper care, your 2000i will provide years of trouble-free service.

WARNING

The projector inside the unit is a high brightness light source. Do not look directly into the beam of light. Prevent children from staring directly into the beam of light.

Le projecteur qui se trouve à l'intérieur de l'armoire est une source de lumière à luminosité élevée. Ne fixez pas et ne regardez pas dans la direction du faisceau lumineux. Empêchez les enfants de regarder dans la direction du faisceau lumineux.

El proyector que se encuentra en el interior de la cabina es una fuente de luz de alta luminosidad. No mire fija ni directamente al haz de luz. Evite que los niños fijen la vista en el haz de luz.

Der Projektor im Schrank stellt eine Lichtquelle mit hoher Intensität dar. Blicken Sie nicht direkt in den Lichtstrahl. Verhindern Sie, dass Kinder direkt in den Lichtstrahl blicken.

キャビネット内のプロジェクターは、高輝度光源です。ビーム光線を覗き込んだり、直接見たりしないでください。お子様がビーム光源を覗き込まないように注意してください。

WARNING

Lock the casters and extend the anti-tip feet before you use the unit. Otherwise, the 2000i could tip over.

Bloquez les roulettes et étendez les pieds avant d'utiliser l'appareil. Autrement, le 2000i risque de basculer et de tomber.

Bloquee las ruedas y extienda los pies ajustables antes de utilizar la unidad. De no hacerlo, la pantalla 2000i podría volcarse.

Sichern Sie die Rollenbremsen und fahren Sie die Sicherheitsstützen aus, bevor Sie das Gerät verwenden. Andernfalls könnte das 2000i umkippen.

ユニットをご使用になる前に、キャスターをロックして、脚を伸ばしてください。それ以外の場合は、2000i がひっくり返る可能性があります。

WARNING

Make sure an AC socket outlet is near the 2000i and remains easily accessible during use.

Assurez-vous qu'une prise secteur se trouve à proximité du 2000i et demeure facilement accessible durant l'utilisation.

Asegúrese de que hay una toma de corriente alterna cerca del 2000i y que es fácilmente accesible para su uso.

Stellen Sie sicher, dass sich in der Nähe des 2000i eine Steckdose befindet und sie während der Verwendung auch leicht zugänglich bleibt.

2000i
の近くに電源用のコンセントがあり、使用中に手が簡単に届くことを確認してください。

WARNING

To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

Pour réduire le risque d'incendie ou de choc électrique, évitez d'exposer ce produit à la pluie ou à l'humidité.

Para reducir el riesgo de incendio o de descarga, no exponga este producto a la lluvia o la humedad.

Um das Risiko eines Feuers oder eines Stromschlags zu reduzieren, darf das Produkt weder Regen noch Nässe ausgesetzt werden.

火事や感電の恐れがありますので、この製品は雨にさらしたり湿気のあるところに置かないでください。

WARNING FOR EUROPEAN CUSTOMERS

The 2000i should be used only with European TN and TT power distribution systems.

The 2000i is not suitable for older, IT-type power distribution systems found in some European countries. "This system (IT-type) is widely used isolated from earth, in some installations in France, with impedance to earth, at 230/400V, and in Norway, with voltage limiter, neutral not distributed, at 230V line-to-line." (IEC 60950:1999)

Contact qualified personnel if you're uncertain of the type of power system available where you're installing your 2000i.

AVERTISSEMENT POUR LES CLIENTS EUROPÉENS

Le 2000i doit être utilisé uniquement avec les systèmes de distribution d'alimentation européens TN et TT.

Le 2000i ne convient pas aux systèmes de distribution d'alimentation plus anciens de type IP utilisés dans certains pays européens. "Ce système (type IT) est largement utilisé isolé de la terre, dans certaines installations en France, avec une impédance à la terre, à 230/400V, et en Norvège, avec limiteur de tension, neutre non distribué, à 230V ligne à ligne."(IEC 60950:1999)

Si vous avez des doutes sur le type de système d'alimentation disponible lors de l'installation de votre 2000i, contactez un personnel qualifié.

ADVERTENCIAS PARA LOS CLIENTES EUROPEOS

La 2000i sólo se podrá utilizar con los sistemas eléctricos TN y TT europeos.

Este modelo no está disponible para antiguos sistemas eléctricos de tipo IT que aún se utilizan en algunos países europeos. “Este sistema (IT) tiene una utilización muy extendida como núcleo aislado de tierra; en algunas instalaciones en Francia, con impedancia de tierra, a 230/400 V; y en Noruega, con limitador de tensión, a 230 V entre conductores.” (CEI 60950:1999)

Si no está seguro del tipo de sistema eléctrico que posee, póngase en contacto con personal cualificado a la hora de instalar su modelo 2000i.

WARNUNG FÜR EUROPÄISCHE KUNDEN

Das 2000i darf nur mit europäischen TN- und TT-Netzverteilern verwendet werden.

Das 2000i eignet sich nicht für ältere Netzverteiler vom Typ IT, die in manchen europäischen Ländern zu finden sind. “Dieses System (IT-Typ) wird, von der Erdung isoliert, in einigen Installationen in Frankreich mit Impedanz zu Erde bei 230/400 V und in Norwegen mit Spannungsbegrenzer, neutral, nicht verteilt, bei 230 V Leitung zu Leitung verwendet.” (IEC 60950:1999)

Wenden Sie sich an qualifiziertes Personal, wenn Sie sich nicht sicher sind, welches Stromsystem dort zur Verfügung steht, wo Sie Ihr 2000i installieren.

ヨーロッパのお客様への警告

2000i はヨーロッパの TN および TT
配電システムでのみ、使用する必要があります。

2000i はヨーロッパの一部の国で使用されている旧式の IT
タイプの配電システムには適していません。「このシステム (IT タイプ)
は、地面から離した状態で広く使用されていますが、一部フランスでは
230/400V
でインピーダンスを通して接地され、ノルウェイでは、電圧制限器により中性
非分散型で 230V のライン間電圧で使用されています」(IEC 60950:1999)

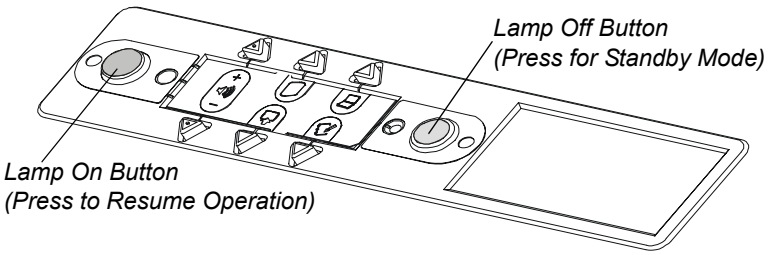
2000i
をインストールする際に使用可能な電源システムのタイプに関して不明な点
がある場合は、担当者までお問い合わせください。

CAUTION

The projector inside the 2000i has been designed for use under normal operating conditions only. Normal operating conditions are defined as product use that does not exceed 8 hours per day and 260 days per year. Exceeding these operating conditions could cause projector damage. Damage caused by such extended use will not be covered by the product warranty.

To maintain normal operating conditions, make sure the projector is in standby mode outside of normal, daily (8 hour) operation. In standby mode, the lamp is powered down, while the projector remains on. Be sure to press the **Lamp Off** button in the Control Panel at the end of the day, and your projector will remain in standby mode until you press the **Lamp On** button the next day.

NOTE: You can also configure the computer's power management settings so that it stops sending out a video signal after a period of idle time (page 27). This also turns off the projector.



Other Precautions

For operating safety and to avoid damage to the cabinet and its parts, please read the following information carefully.

- Move the unit with care. Quick stops, excessive force and uneven surfaces can overturn the unit.
- When you transport the 2000i, only ship it in an upright position and never lay the interactive whiteboard face down. In addition, ensure that the projector is secure, or remove and repackage it in the original projector's packaging.
- If you transport the 2000i over a distance, we strongly urge you to completely repackage it using the original packaging. This packaging was designed with optimal shock and vibration protection. If the original packaging is no longer available, pack all components with as much padding as reasonably possible to ensure that they are not exposed to excessive vibration or shock.
- Clean the interactive whiteboard surface regularly so dust doesn't build up on the surface and adversely affect the operation of the 2000i.
- *Do not* touch the rear surface of the screen or apply isopropyl alcohol, water or acetone. If any of these fluids come into contact with this surface, the diffusion coating will be damaged, resulting in a permanent deterioration in display quality.
- If you inadvertently smudge the rear surface of the screen, dab it carefully with a soft cloth and alcohol-free glass cleaner. Do not spray glass cleaner directly on the back of the screen; spray it lightly on the cloth, and then gently dab the rear surface until the marks are removed.
- The 2000i uses digital cameras located inside the screen frame. Do not allow excess glass cleaner to flow into the crack between the frame and the writing surface, because the cleaner could damage these cameras.

- Avoid setting up and using the 2000i in an area with excessive levels of dust, humidity or smoke.
- Lock the casters after you set up the cabinet so it remains stationary while in use.
- Avoid exposing the 2000i to extreme heat or cold. The operating temperature range is from 41°F to 84°F (5°C to 29°C) with up to 80% humidity (non-condensing). The shipping and storage range is from 14°F to 95°F (-10°C to 35°C) with up to 80% humidity (non-condensing).
- If possible, unplug the unit before thunderstorms. However, do not touch the unit or the unit's power plug during a thunderstorm as there is a risk of electrical shock.
- Unplug the unit if you won't use it for an extended period.
- Use safe practices when you're plugging in the power cable. For example, make sure your hands are dry and don't insert the plug into a dusty outlet. Unplug the cabinet before you install or service any components.
- This product has a three-wire grounding-type plug, which will only fit into an AC grounding-type power outlet. Make sure an AC socket outlet is near the 2000i and remains easily accessible during use. If you are unable to insert the plug into the outlet, have your electrician replace the obsolete outlet. Do not circumvent the safety features of the grounding-type plug. Do not modify the power cord.
- Handle the power cord carefully and avoid excessive bending. Route the power cord so it's unlikely to be walked on or pinched by items placed upon or against it. If you must run a cable over the floor, lay it in a flat, straight line and secure it to the floor with tape or a cable management strip of contrasting color.
- If you require replacement parts, ensure the service technician uses replacement parts that are specified by SMART Technologies Inc., or parts with the same characteristics as the original.

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About the 2000i

The *Rear Projection* SMART Board 2000i interactive whiteboard is a height adjustable, rear projection system with an integrated LCD projector and a 66" (167.6 cm) diagonal interactive screen.

To enable rear projection capability, a mirror system reflects the projected image from your computer, VCR, DVD player or guest laptop onto the back of the interactive whiteboard screen, eliminating the distracting shadows that sometimes occur with a front projection system. You can then perform any normal computer operation, such as opening or closing an application, scrolling through a file, or opening your browser, just by touching the screen. If you've purchased the X-Port™ 20 option, you can switch between different projector input sources (host computer, VCR, DVD player and guest laptop) with the press of a control panel button.

SMART's DViT™ (Digital Vision Touch) technology uses digital cameras to track objects on the interactive whiteboard. Each camera is calibrated to recognize the position of a pen tray tool or your finger and to send this information to the computer, which translates it to mouse clicks or digital ink.

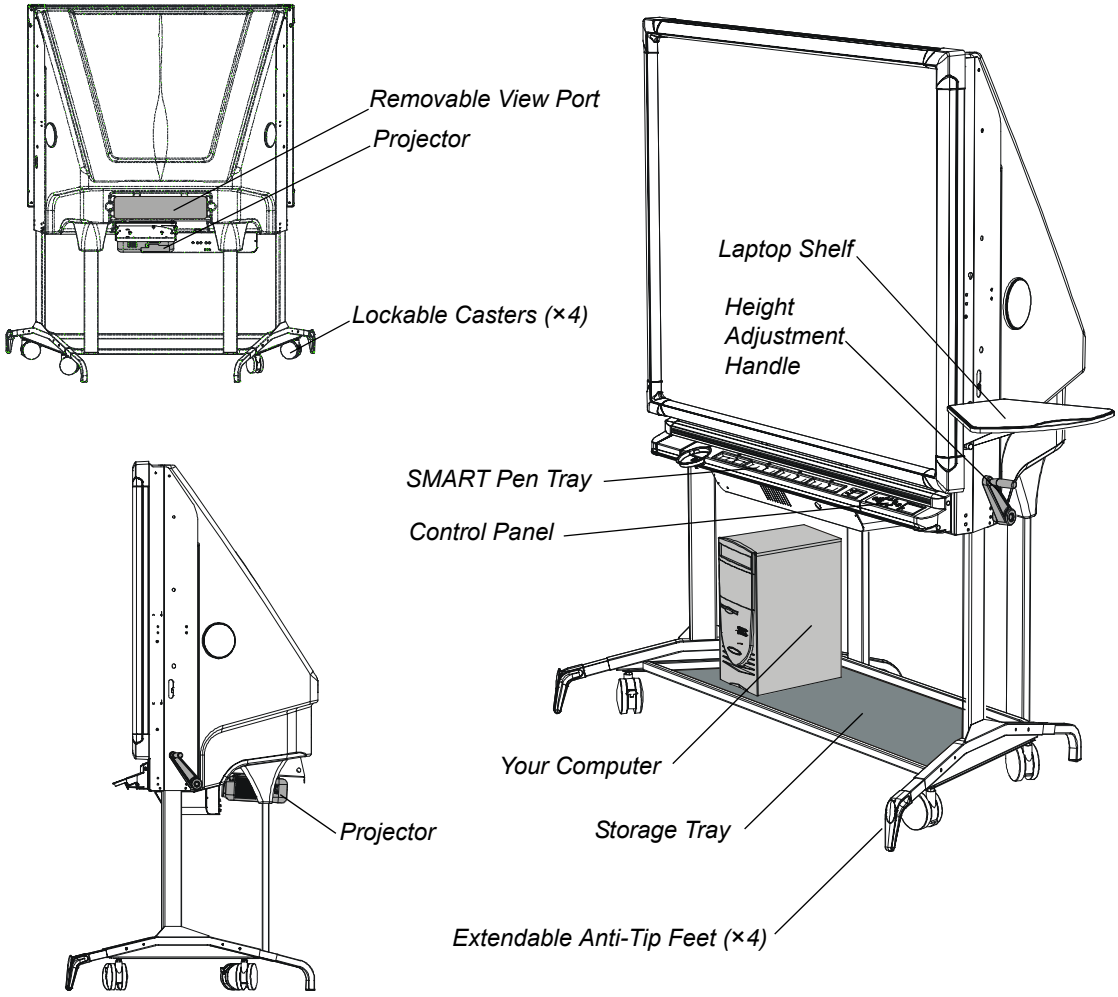
Features

- A touch sensitive, rear projection interactive whiteboard that enables you to do everything you can do at a computer workstation—open files, conference with others, work on documents, visit websites, play video clips, and more—simply by touching the screen. You can also write over any application in digital ink using a pen tray pen or your finger, and then save these notes to a Notebook™ file for future reference and distribution.
- An integrated 2,000 ANSI lumens, SVGA (800 × 600) NEC VT470 projector with short-throw lens (2000i-DVS)

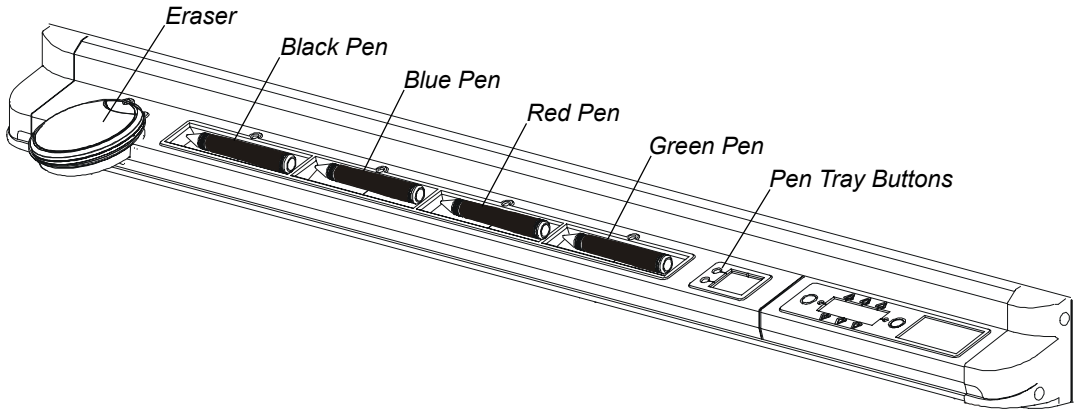
  OR

  An integrated 2,100 ANSI lumens, XGA (1024 × 768) NEC VT670 projector with short-throw lens (2000i-DVX)
- An audio system
- A pen tray (including four pens and an eraser)
- A control panel with easily accessible projector, volume and source switching controls. The control panel also provides button-press access to Notebook software and the Floating Tools.
- A videoconferencing/laptop shelf
- A height adjustment handle that raises and lowers the screen from 69" (175.3 cm) to 83" (210.8 cm)
- Audio jacks at the rear of the unit let you connect the audio output from a laptop, VCR, DVD player or room audio system
- Minimal floor space requirements. The 2000i fits easily through any standard doorway for room-to-room mobility.

Getting to Know Your 2000i



Pen Tray Features



Using a Pen Tray Pen

To write over the computer image with digital ink, just pick up a pen from the pen tray and write on the screen.

You can use SMART Board software to change any of these pens to highlighters, assign a new color, or alter their width. You can also change the size of the area erased by the pen tray eraser.

To reconfigure the pens or eraser, press the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), select **Control Panel**, and select **Pen Tray Settings**.

NOTE: The provided pens have black tips because the digital cameras can more readily detect dark objects. If you need to use a different pen, choose one with a dark tip.

Using the Pen Tray Buttons

Press the top pen tray button to make the SMART Keyboard appear for on-screen typing and handwriting recognition. Press the bottom button to make the next contact with the interactive whiteboard a right-click.

You can reconfigure these buttons to perform any of the following functions:

- print the current page
- move to the previous or next Notebook page
- clear all notes from the current Notebook page
- produce a floating mouse

To reconfigure the pen tray buttons, press the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), select **Control Panel**, and select **Pen Tray Settings**.

The NEC VT470 and VT670 Projectors

CAUTION

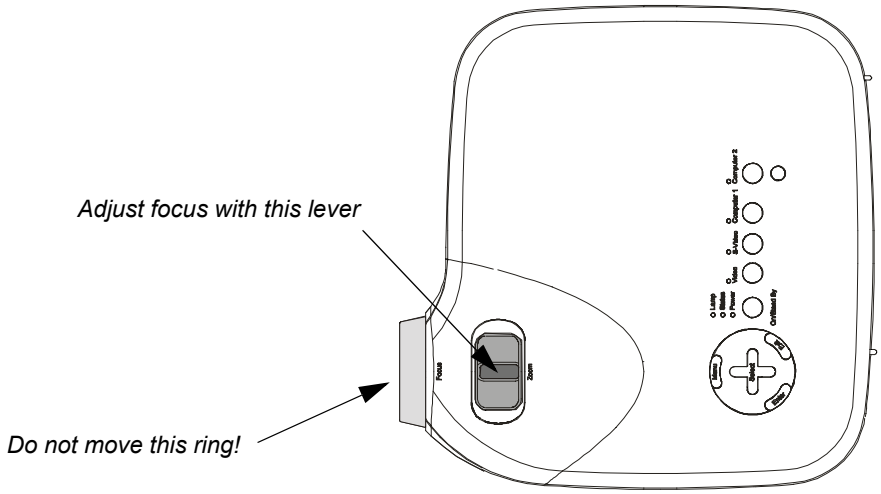
Do not move the ring that surrounds the short-throw, customized projector lenses, even though the *NEC VT470/570/670 User's Manual* states that you should use this ring to obtain the best focus. You must disregard this information. If you move the ring, you may cause the lenses to separate.

Instead, use the Zoom lever on the projector, which has been modified to adjust the image focus. Again, contrary to the *NEC VT470/570/670 User's Manual*, the Zoom lever will not adjust the image size on the screen.

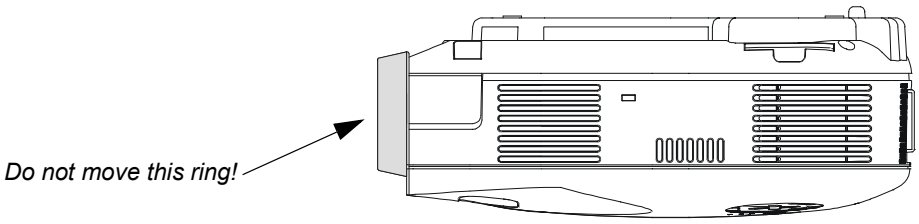
Two NEC projectors are featured in the 2000i line of rear projection cabinets: an NEC VT470 projector in the 2000i-DVS, and an NEC VT670 projector in the 2000i-DVX. The two projectors have different lenses and differ in brightness and native resolution: the VT470 projector has SVGA resolution (800 × 600) and a 2,000 lumens lamp, and the VT670 projector features XGA resolution (1024 × 768) and a 2,100 lumens lamp. In every other respect, the two projectors are identical.

The NEC VT470/VT670 projector is secured upside-down on the projector platform. The projector is adapted for use in the 2000i, and its behavior differs in two significant ways from the description in the *NEC VT470/570/670 User's Manual*:

- The Zoom lever does not change the size of the projected image. Instead, it adjusts image focus.
- The ring no longer adjusts focus, and you should not move it under any circumstances. Moving this ring may cause the lenses to separate.



Bottom View (Upside-Down)



Side View

NOTE: See page 21 for information on adjusting the projected image.

Projector Settings

We've configured your projector settings for optimal performance with the 2000i. However, if these settings are accidentally altered, follow the procedure below to restore them.

To set or restore the optimal settings for the NEC VT470/670 projector

1. Press the **Menu** button on the projector remote control or on the projector.

   NOTE: The **Menu** button is on what is effectively the underside of the projector, which is suspended upside down from the projector mount).

2. Select **Setup > Orientation > Ceiling Rear Projection** to orient the projected image for rear projection.
3. Select **Image > Auto Keystone > Off** to ensure optimal image quality.
4. Select **Advanced > Fan Mode > Auto**.

   NOTE: Although this is a default setting, it's important enough to warrant special mention.

5. Select **Advanced > Page2 > Auto Adjust > Normal** to automatically determine the best resolution for the current RGB input signal, compensating for resolution differences among various input devices (such as guest laptops).
6. Click **OK**.

   NOTE: All other settings are the NEC factory default settings. See pages 40–50 of the *NEC VT470/570/670 User's Manual* for a full description of all default settings.

   For information on projector maintenance and instructions on replacing the projector lamp and filter, turn to page 44.

Adjusting Projector Focus

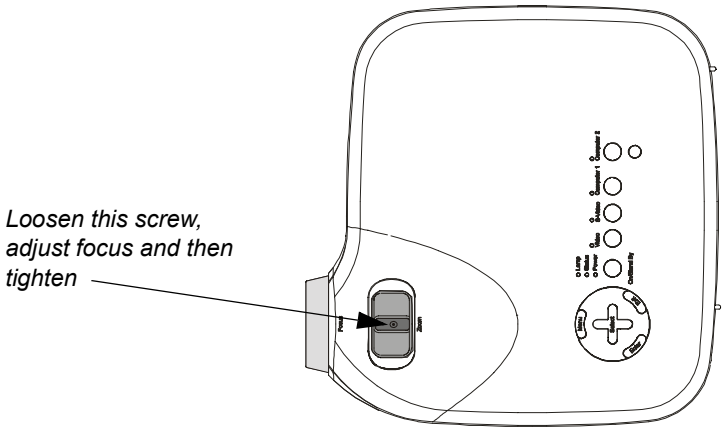
CAUTION

Do not move the ring that surrounds the short-throw, customized projector lens. If you move the ring, you may cause the lenses to separate.

1. Locate the focus lever, at the bottom of the upside-down projector.

   NOTE: Use this lever rather than the focus ring to adjust focus.

2. Using a 5/32" or 3/16" flat screwdriver, loosen the slot-head screw in the center of the focus lever.



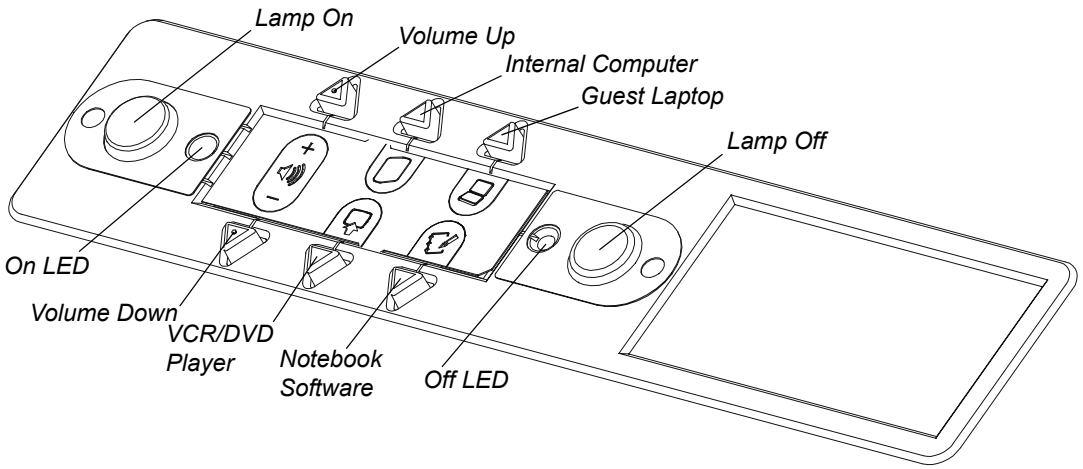
3. Adjust the focus by moving the lever, and then tighten the slot-head screw you loosened in the previous step.

CAUTION

Do not over-tighten the screw.

Control Panel

Use the control panel to turn the projector lamp on and off, change the display source for the projector, open Notebook software, and adjust the volume of the internal sound system.



The Lamp On and Lamp Off Buttons

During normal operation, you should keep the projector turned on all the time. However, to conserve the lamp, put the projector into standby mode at the end of your session (or at the end of the day). In standby mode, the projector lamp is turned off, but the projector itself remains on.

To put the projector into standby mode, press the **Lamp Off** button on the control panel. For the next three minutes, the lamp is in a reversible standby mode. The screen appears black, even though the projector lamp remains on, allowing you to quickly restore the display by pressing any button on the control panel.

After three minutes, the lamp cools down for 60 seconds and is then turned off.

You can skip this three-minute reversible standby period by pressing and holding the **Lamp Off** button for three seconds. To turn on the projector lamp, press the **Lamp On** button.

CAUTION

The projector inside the 2000i has been designed for use under normal operating conditions only. Normal operating conditions are defined as product use that does not exceed 8 hours per day and 260 days per year. Exceeding these operating conditions could cause projector damage. Damage caused by such extended use will not be covered by the product warranty.

To maintain normal operating conditions, make sure the projector is in standby mode outside of normal, daily (8 hour) operation. In standby mode, the lamp is turned on, while the projector remains on. Be sure to press the **Lamp Off** button in the control panel at the end of the day, and your projector will remain in standby mode until you press the **Lamp On** button the next day.

NOTE: You can also configure the computer's power management settings so that it stops sending out a video signal after a period of idle time (page 27). This also turns off the projector.

For the current status of the lamp, check the LEDs beside the Lamp On and Lamp Off buttons, and then check the table below.

Lamp On LED	Lamp Off LED	Lamp Status
Flashing moderately quickly	Off	Lamp is turning on. During this 60-second period, the Lamp On and Off buttons are disabled.
Solid	Off	Lamp is turned on.
Flashing occasionally (short flashes followed by long pauses)	On	Lamp is off.
Off	Flashing very quickly	Lamp is in three-minute reversible standby mode. In this mode, the screen appears black but the projector lamp remains on, allowing you to quickly restore the display by pressing any button on the control panel. After three minutes, the lamp cools down for 60 seconds before powering off.
Off	Flashing slowly	Lamp is cooling down. This 60-second cool-down follows the three-minute reversible standby period. During this time, all control panel buttons are disabled.

Volume Control Buttons

Press the Volume Up (+) button to increase the volume and the Volume Down (-) button to decrease the volume.

The default volume is 0. To restore this default, press the Volume Up (+) and Volume Down (-) buttons simultaneously.

Source Buttons

Use the source buttons to switch the video and audio sources for the projector and cabinet audio amplifier. Please note that switching sources takes a few seconds, and all buttons on the control panel are disabled during that time.

Button	Source
	VCR/DVD player If both a VCR (composite RCA connection) and a DVD player (S-video connection) are connected to the projector, press this button to switch between the two display sources. Note there is a three-second delay before the alternate display source appears. If you switch to another source (such as the internal computer) and then press this button, the last active video source is displayed.
	Internal computer
	Notebook software. The internal computer source must be active. For information on using Notebook software, see page 40. Press this button and hold it down for three seconds to open the Floating Tools. For information on using the Floating Tools, see page 40.
	Guest laptop **NOTE:** You can switch to a connected guest laptop only if your system includes the optional X-Port 20 switch option.

Setting Up Your 2000i

This section of the manual describes how to:

- position the 2000i (this page)
- install and connect the host computer (page 10)
- install the videoconferencing/laptop shelf (page 13)
- connect a guest laptop (page 14)
- connect a VCR or DVD player (page 14)
- connect an external sound system (page 19)
- connect an external projector or monitor (page 19)

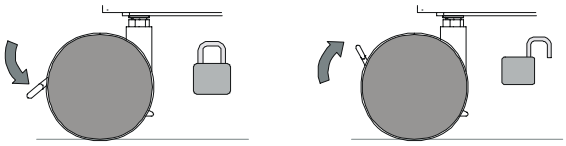
No matter what peripherals you install, you must finalize your installation before you can use the 2000i. Read the next section of this guide (page 21) for information on finalizing your installation.

Positioning the 2000i

1. Remove the unit from its shipping carton. (To do this, follow the *Unpacking Instructions*.)
2. Unpack the remaining contents of the shipping carton and wheel the unit to a location that's within reach of a power source.

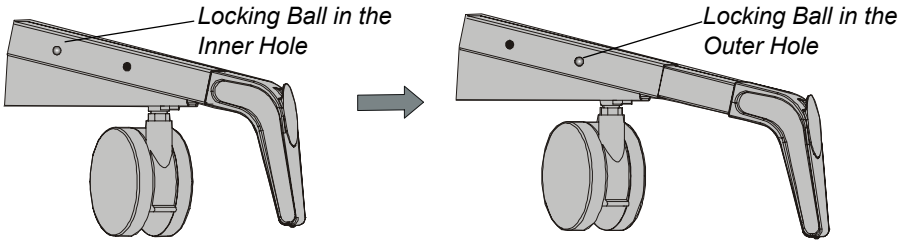
   NOTE: Leave enough space around the unit to comfortably perform the following assembly and connection procedures.
3. Lock the casters by pressing down on the caster-lock tab, as shown in the figure below.

   NOTE: You can unlock the casters by pressing up on this tab.



A Locked and Unlocked Caster

4. Extend all four of the anti-tip feet. You'll see two holes on the outer side of each leg. To extend the feet, depress the locking ball in the inner hole, and then pull the leg out until the locking ball engages in the outer hole.



Extending an Anti-Tip Foot

WARNING

Lock the casters and extend the anti-tip feet before you use the unit. Otherwise, the 2000i could tip over.

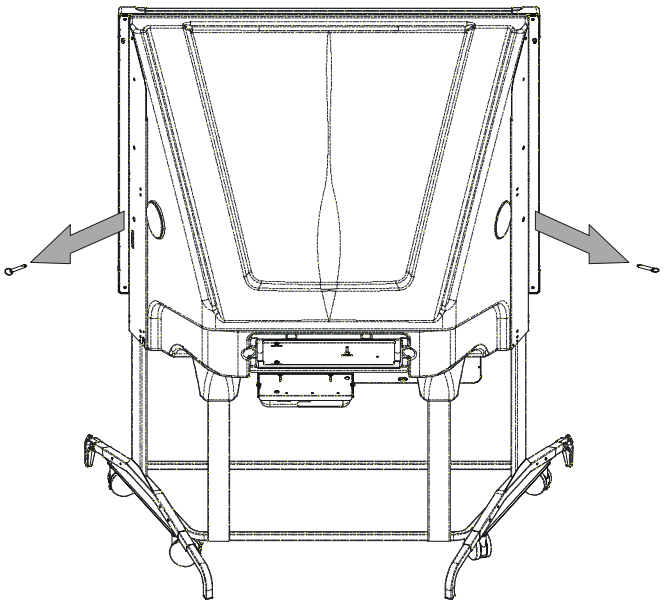
Bloquez les roulettes et étendez les pieds avant d'utiliser l'appareil. Autrement, le 2000i risque de basculer et de tomber.

Bloquee las ruedas y extienda los pies ajustables antes de utilizar la unidad. De no hacerlo, la pantalla 2000i podría volcarse.

Sichern Sie die Rollenbremsen und fahren Sie die Sicherheitsstützen aus, bevor Sie das Gerät verwenden. Andernfalls könnte das 2000i umkippen.

プロジェクターの電源を切った後、最低でも 1 分間はプロジェクターのプラグを抜かないでください。プロジェクターのランプは非常に熱くなりますので、最低でも 1 時間は触ったり交換したりしないでください。

5. Remove the bag that surrounds the projector.
6. Remove the locking pins from either side of the 2000i.



Installing a Computer

When you install the internal computer, use the cable extensions that are bundled in the cabinet along with the computer's AC power cable.

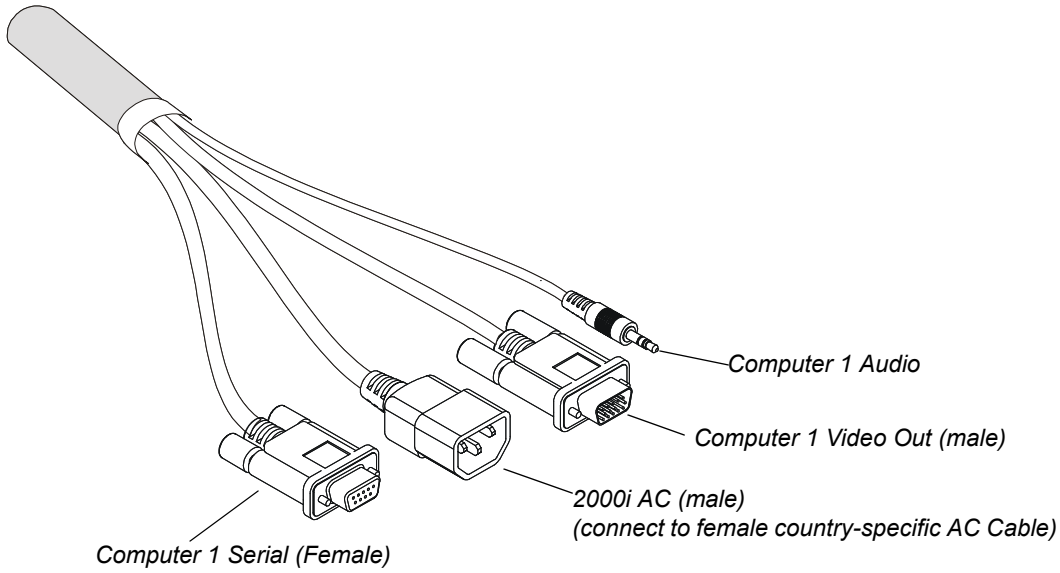
Set your computer on the storage tray, where you'll see straps that you can use to hold the computer in place during normal operation or when you're moving the 2000i from room to room.

NOTE: These straps won't secure the computer during cabinet shipment, so if you need to transport the 2000i, remove the computer before you ship it.

The data connection for the internal computer is an RS-232 serial cable. If your computer has USB ports, use the SMART USB adapter in the accessory box. Connect the DB9 end of this adapter to the **Computer 1 Serial** cable and the USB end to your computer.

To connect a computer

1. Slide the computer into place on the bottom storage shelf, above the computer straps, and then secure the straps around the computer.
2. Locate the bundle of labeled cables (to the right of the projector) hanging down towards the storage tray.



3. Connect the **Computer 1 Video Out** cable to the computer's Monitor Video connector.
4. Connect the **Computer 1 Audio** cable to the computer's Audio Line OUT connector.
5. Connect the **Computer 1 Serial** cable to an available serial port on the computer.

   NOTE: If your computer has no available serial port, connect the SMART USB adapter between the **Computer 1 Serial** cable and the computer's USB port.
6. Connect the Mouse and Keyboard cables (not supplied) to the PS/2 mouse port and the PS/2 keyboard port on the computer.

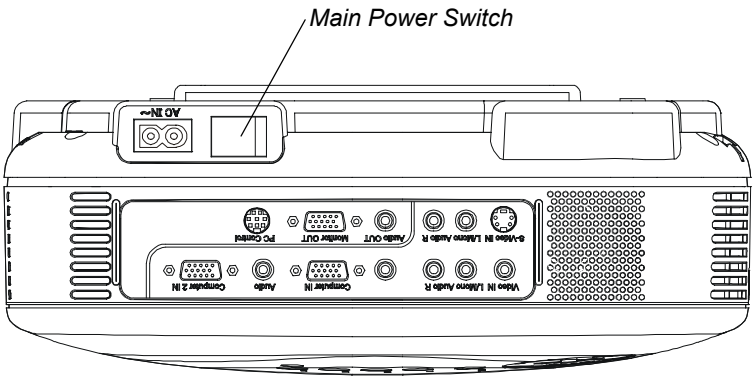
To connect the power cables

1. Connect the **Computer AC** power cable to an available power outlet or power bar (not supplied).
2. Connect the **2000i AC** power cord to the country-specific AC cord in the accessory box. Then connect this AC cord to an available power outlet or power bar (not supplied).

Turning on the 2000i

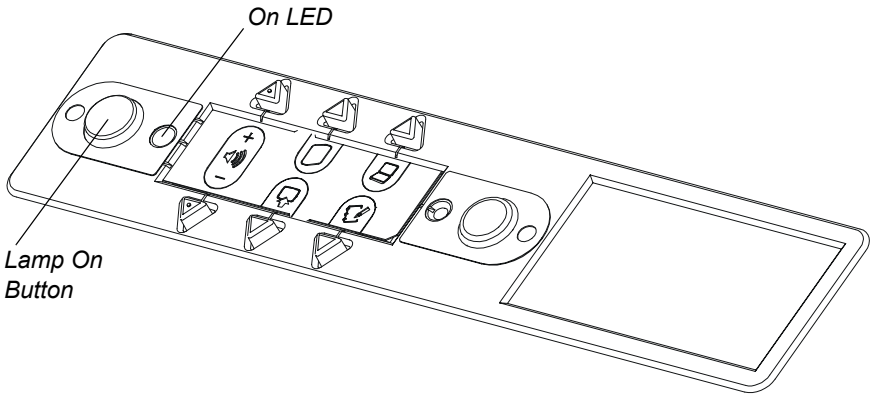
1. If the projector is not on, press the main power switch on the projector.

   NOTE: The projector in the figure below is shown upside down, just as it's installed in the 2000i.



2. Turn on the computer.
3. Turn on the projector lamp by pressing the **Lamp On** button on the control panel (to the right of the pen tray).

   The LED indicator beside this button flashes quickly for 60 seconds, and then remains steadily illuminated when the projector lamp has powered up.

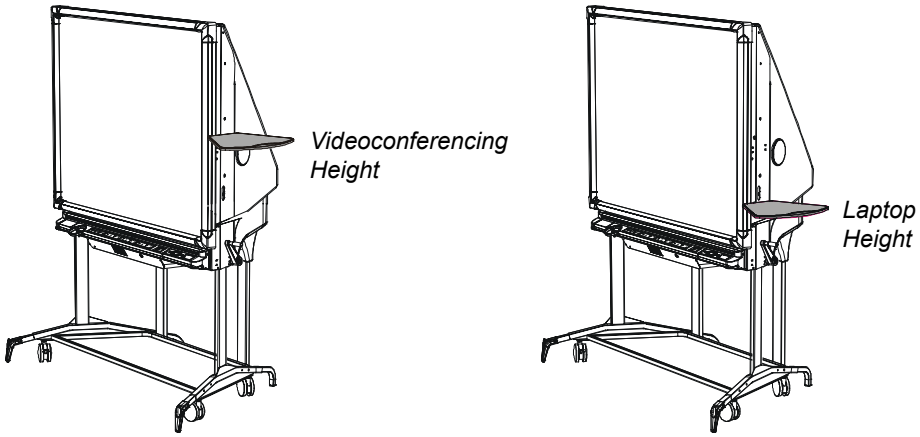


   When an image displays, adjust the computer power settings and the image alignment on the interactive screen. Then install SMART Board software, configure the COM port, and perform a brief orientation procedure. All these procedures are described in *Finalizing the Installation* on page 21.

   NOTE: You should leave the computer and the projector on at all times (so the projector is either in use, with the lamp illuminated, or in standby mode). However, you can set the computer to save power during periods of inactivity (see page 27 for details).

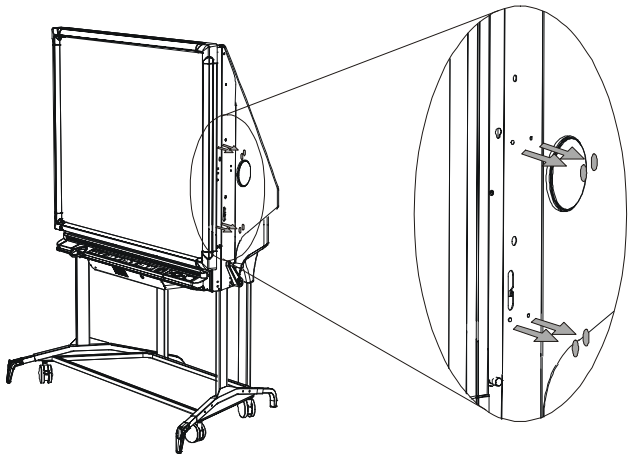
Installing the Videoconferencing/Laptop Shelf

You can position the videoconferencing/laptop shelf just above the height-adjustment handle (for laptop use), or higher up on the frame (for use with a videoconferencing camera). You can install the shelf on either side of the unit.

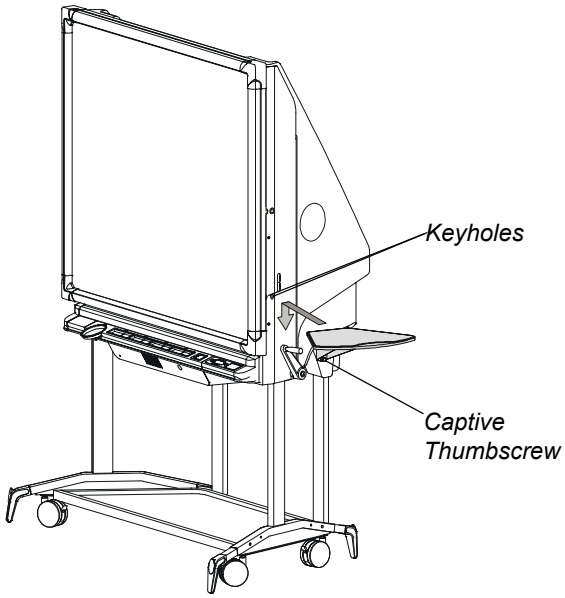


To install the videoconferencing/laptop shelf

1. Remove the plastic hole covers at the location where you want to mount the shelf.



2. Hook the shelf to the keyholes, and then push the shelf firmly down.



3. Push the captive thumbscrew at the bottom of the shelf into the thumbscrew hole and tighten.

Connecting a Guest Laptop

You can connect and control a laptop presentation by touching the interactive screen *only* if you:

- purchase and install the X-Port 20 switch option for the 2000i

  OR

- install and run LinQ™ software

The X-Port 20 unit is an RS-232 serial switch for establishing a serial connection with the laptop, enabling the laptop user to both write over the displayed laptop image with a pen tray pen and control the laptop by touching the screen. In addition, it allows you to switch between the laptop, the resident computer and a VCR/DVD player using the control panel at the front of the 2000i. If a guest laptop requires a USB connection to the 2000i, purchase the optional USB-ADP cable from SMART Technologies to convert USB to serial. Complete instructions for installing the X-Port 20 switch and connecting a guest laptop are in the *X-Port 20 Switch Installation Guide* that comes with the X-Port 20 option kit.

LinQ software enables you to link your 2000i to a laptop on the same network. For more information on LinQ software, see www.smarttech.com/support/product/sb/guides.asp.

Connecting a VCR and/or a DVD Player

You can connect both a VCR and DVD player to the projector, provided you use a composite video connection for the VCR and an S-video connection for the DVD player. With each press of the **VCR/DVD Player** button, the projector alternates between the two players.

Although there is only a single external audio connection, you can “daisy chain” the audio connections: Connect the DVD player’s RCA audio cables to the VCR, and then the VCR’s RCA audio cables to the external audio jacks at the back of the 2000i. This linked audio connection makes the audio source switch automatically when you switch the video sources.

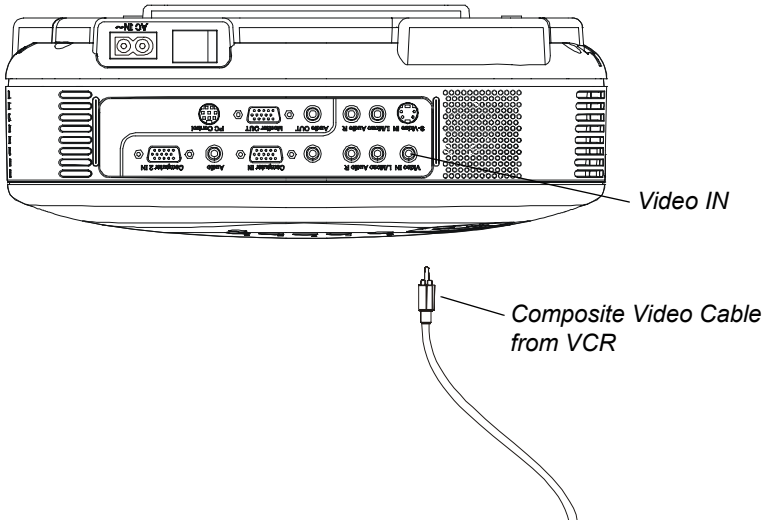
NOTE: There is a three-second delay before the alternate display source appears. Also, when you switch to another source (such as the internal computer), and then press the **VCR/DVD Player** button, the last active video source will always appear.

You'll need the following cables to connect a VCR or DVD player to the 2000i:

- an RCA composite video cable or an S-video cable
- standard red and white RCA stereo audio cables

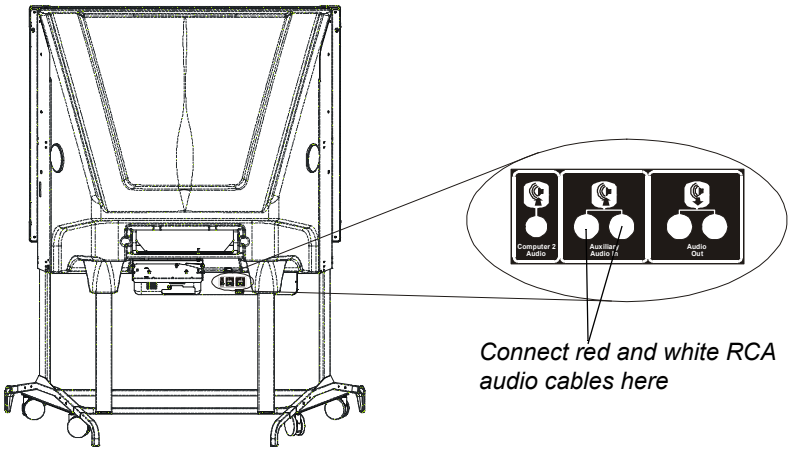
To connect a VCR to the 2000i (composite video connection)

1. Turn off the projector.
2. Connect the yellow RCA video connector on an RCA composite video cable (not provided) to the **Video Output jack** on the VCR/DVD player. This jack may be labeled "To Monitor".
3. Plug the other end of the cable into the **Video IN** connector on the projector.



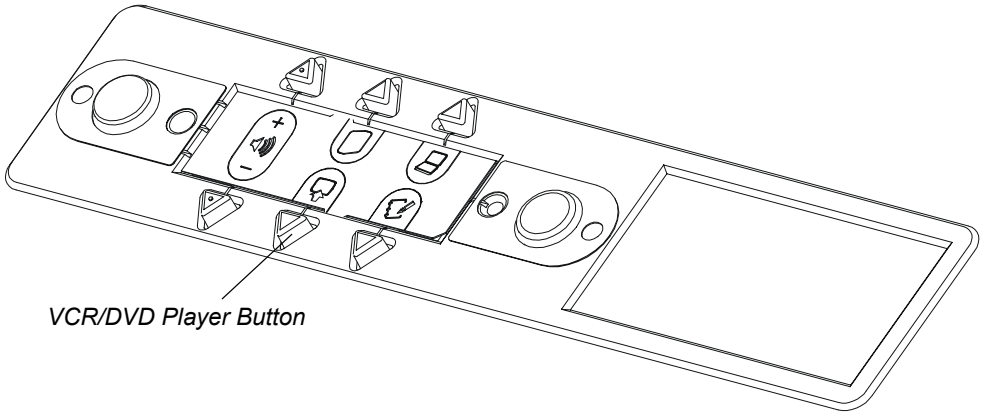
NOTE: If you're using an S-video cable, connect it to the **S-video OUT** connector on the VCR/DVD player, and then plug the other end directly into the **S-video IN** connector on the projector. Of course, if you connect the VCR to the projector's **S-video IN** connector, you won't be able to use an S-video cable to connect a DVD player.

4. Connect standard red and white RCA stereo audio cables (not provided) from the **RCA Audio** (or **Audio OUT**) outputs on the VCR to the two **Auxiliary Audio IN** jacks on the rear of the 2000i. Keep your right and left channel connections correct for stereo sound.



NOTE: You can't connect the audio cables from both a VCR and a DVD player to the Connection Panel. The panel can accommodate only one external audio source at a time. However, you can link the DVD player and VCR audio connections as described on page 18.

5. Connect the power cable to an available outlet or power bar (not supplied).
6. Turn on the projector.
7. Press the **VCR/DVD Player** button on the control panel.

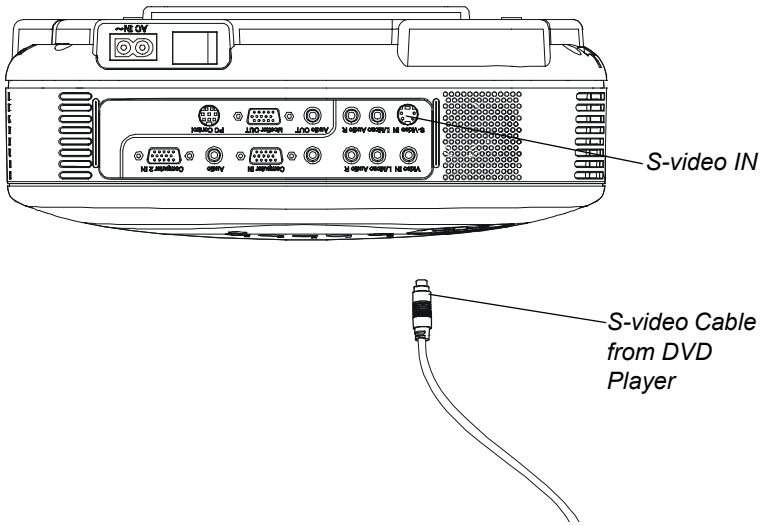


8. Turn on the VCR and press the **Play** button.

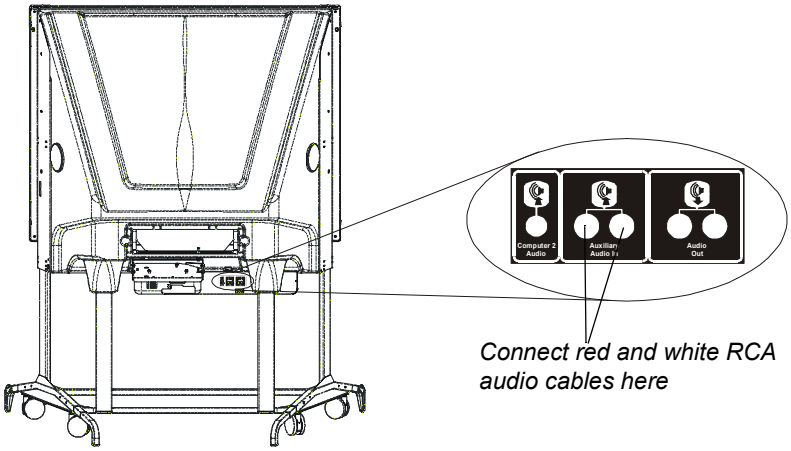
To connect a DVD player to the 2000i (S-video connection)

1. Turn off the projector.
2. Connect an S-video cable (not provided) to the **S-video OUT** port on the DVD player.

3. Plug the other end of the cable into the **S-video IN** connector on the projector.

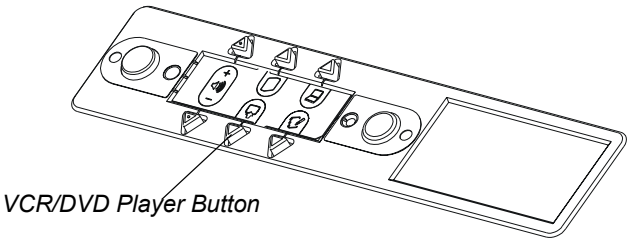


4. Connect standard red and white RCA stereo audio cables (not provided) from the **RCA Audio** (or **Audio OUT**) outputs on the DVD player to the two **Auxiliary Audio IN** jacks on the rear of the 2000i. Keep your right and left channel connections correct for stereo sound.



NOTE: You can't connect the audio cables from both the VCR and a DVD player to the Connection Panel. The panel can accommodate only one external audio source at a time. However, you can link the audio connections of the DVD player and VCR as described on page 18.

5. Connect the power cable to an available outlet or power bar (not supplied).
6. Turn on the projector.
7. Press the **VCR/DVD Player** button on the control panel.

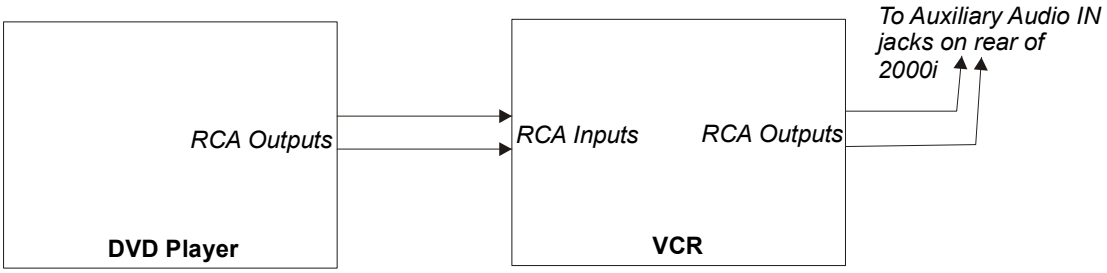


8. Turn on the DVD player, insert a DVD and press the **Play** button.

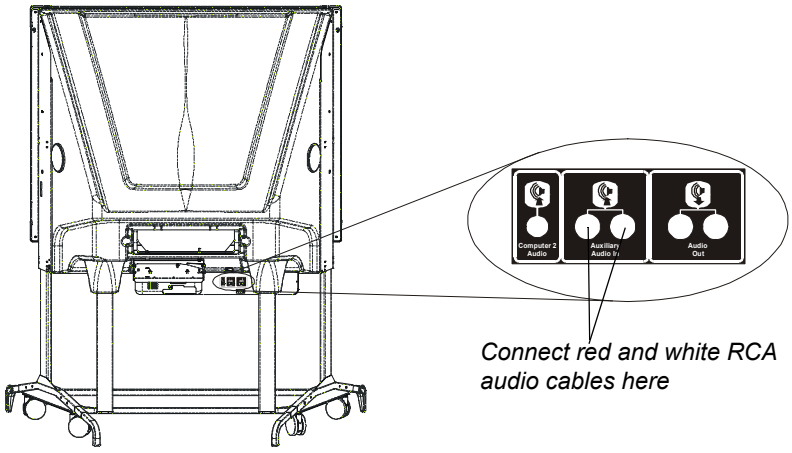
To link VCR and DVD player audio connections

NOTE: Make sure there is no tape in the VCR before you proceed.

1. Connect standard red and white RCA stereo audio cables (not provided) from the **RCA Audio** (or **Audio OUT**) outputs on the DVD player to the **RCA Audio** (or **Audio IN**) inputs on the VCR. Keep your right and left channel connections correct for stereo sound.



2. Connect standard red and white RCA stereo audio cables (not provided) from the **RCA Audio** (or **Audio OUT**) outputs on the VCR to the two **Auxiliary Audio IN** jacks on the rear of the 2000i. Keep your right and left channel connections correct for stereo sound.

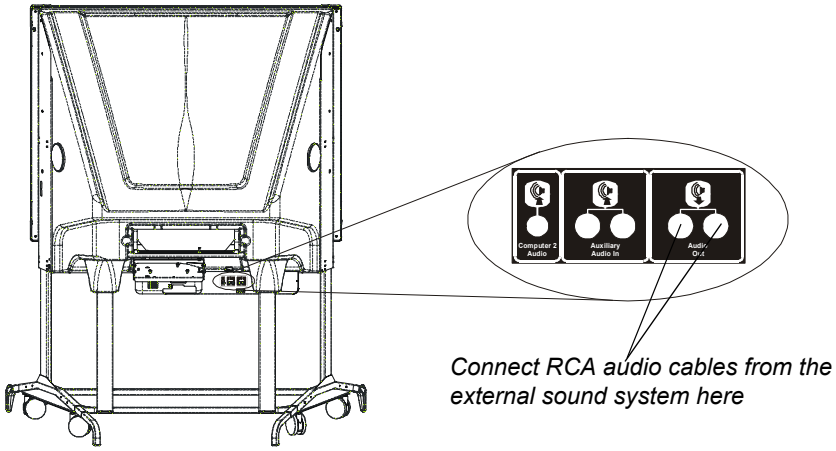


When you switch video sources, the audio source for the cabinet speakers will also switch.

Connecting an External Sound System

To deliver preamplified (or line level) sound to an external room sound system

Connect standard red and white RCA audio cables (not provided) from the **RCA Audio** inputs on the external sound system to the two **Audio OUT** jacks on the rear of the 2000i. Keep your right and left channel connections correct for stereo sound.



Connecting an External Monitor or Projector

To direct the RGB output from the host computer or guest laptop to an external projector or monitor

Connect an HD DB15 video cable (not provided) from the external projector or monitor to the **Monitor OUT** port on the back of the projector. This connection is for RGB output only.

Finalizing the Installation

With your computer and projector on, finish setting up your 2000i by:

- adjusting the projected image (this page)
- configuring the computer settings (page 27)
- installing SMART Board software on any connected computer (page 29)
- configuring the computer port (page 29)
- orienting the interactive whiteboard (page 30)

After you've made these adjustments and configurations, your 2000i is ready to use.

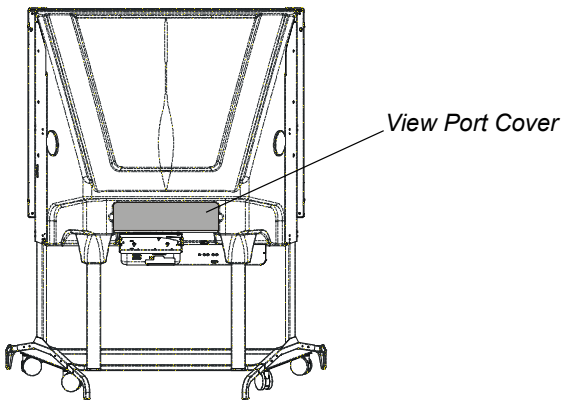
Adjusting the Projected Image

CAUTION

Do *not* adjust the ring that surrounds the short-throw, customized projector lenses, even though the *NEC VT470/570/670 User's Manual* states that you should use this ring to obtain the best focus. You must disregard this information. If you move the ring, you may cause the lenses to separate.

Rather, use the Zoom lever on the projector, which has been modified to adjust the image focus. Again, contrary to the *NEC VT470/570/670 User's Manual*, the Zoom lever will not adjust the image size on the screen.

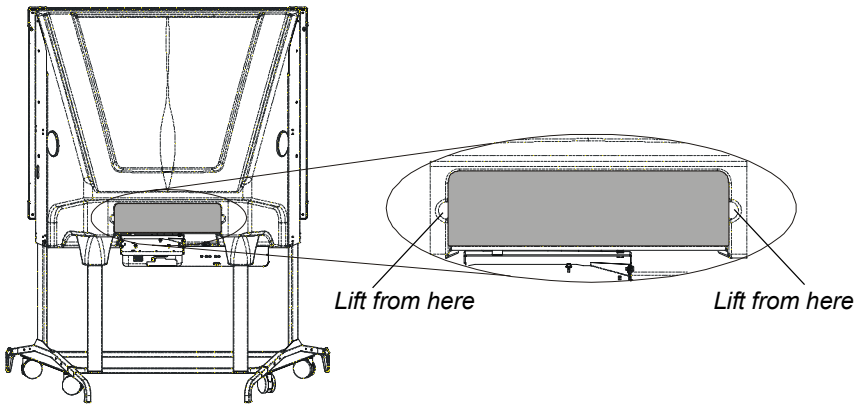
You may need to adjust the projector to obtain a focused image that fits on the screen. Complete the four adjustment procedures that follow only as required. For the first three, (adjusting image roll, adjusting the image laterally, and adjusting the image size), you must watch the image on the back of the screen while making adjustments. You'll also need to remove the view port cover (attached with hook-and-loop fastener strips) to access the adjustment hardware at the rear of the unit.



For the final procedure (adjusting the image vertically), adjust the image while watching it from the front of the unit.

To remove the view port cover

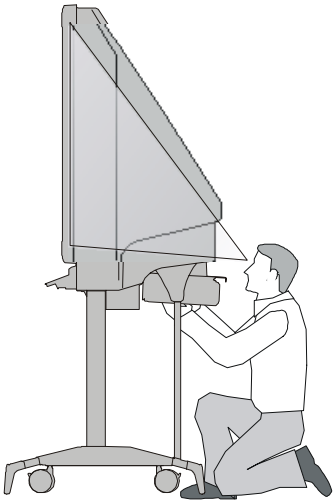
Grasp the view port cover in the middle of each short edge, and then pull it away from the unit.

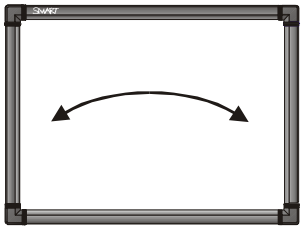


You can now access the projector to perform the following image-adjustment procedures.

To adjust the image roll

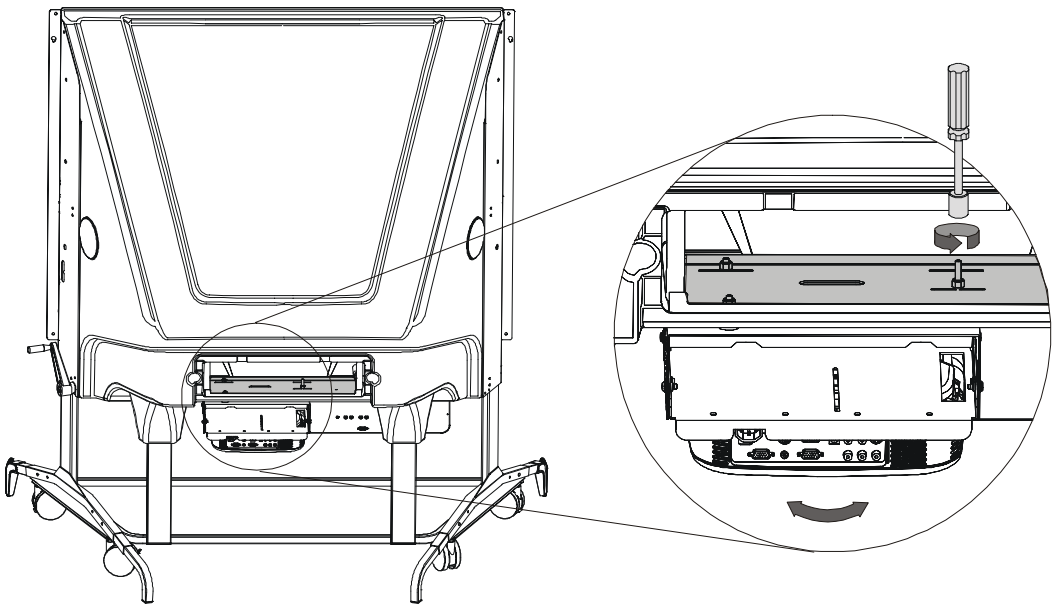
1. Crouch behind the projector and look at the projected image through the view port.





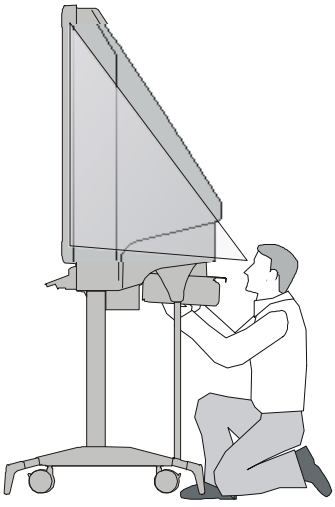
Roll Adjustment

2. While carefully observing the bottom edge of the image at the right side, use the supplied 7/16" nut driver to loosen or tighten the nut that's located on the right side of the projector plate, as required (see the following figure).



To adjust the image laterally

1. Crouch behind the projector and look at the projected image through the view port.



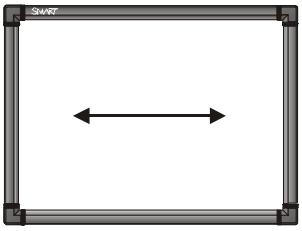
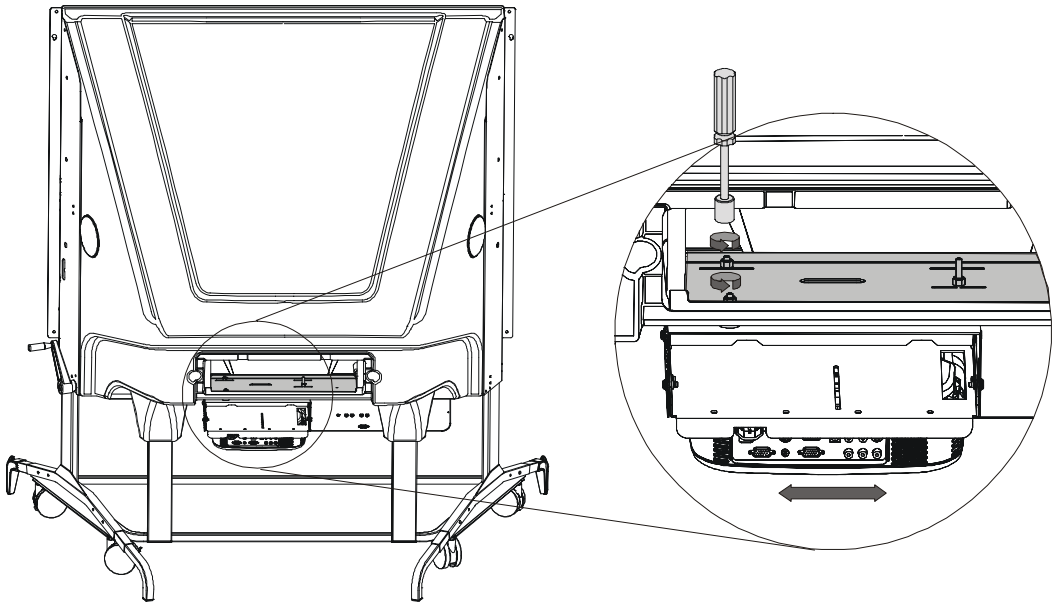


Image Side-to-Side Adjustment

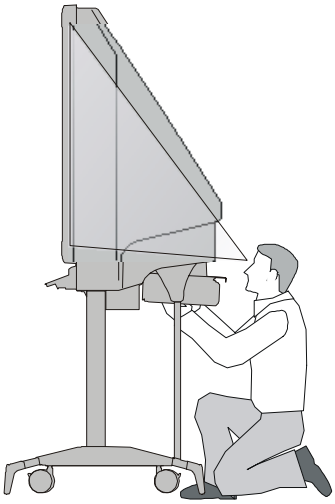
2. Using the supplied 7/16" nut driver, loosen the two nuts located on the left side of the projector plate.



3. Slide the projector plate to the right or left, and then tighten the two nuts.

To change the image size

1. Crouch behind the projector and look at the projected image through the view port.



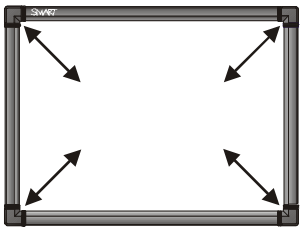
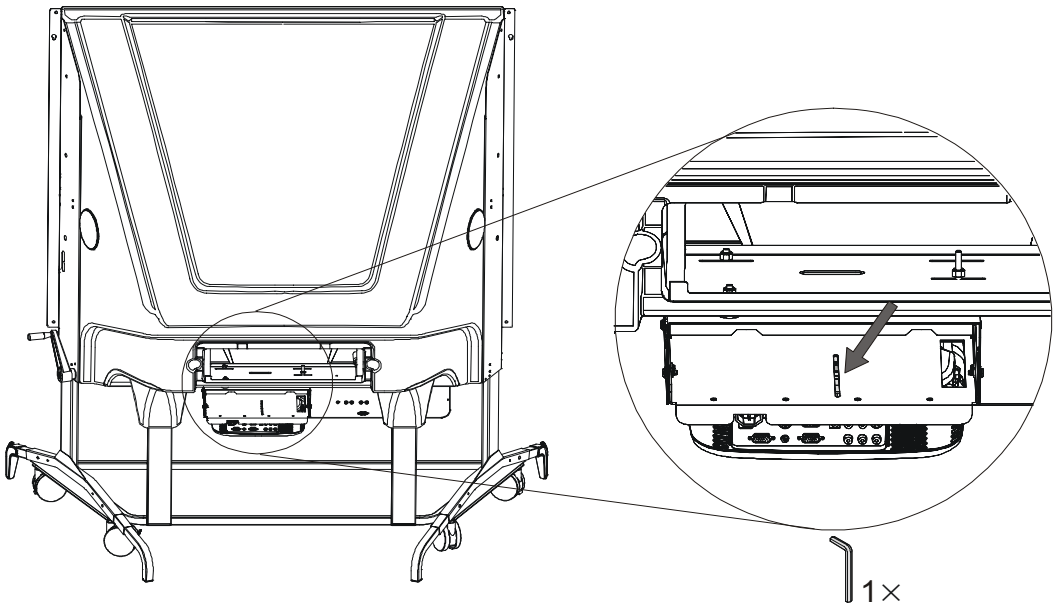


Image Size Adjustment

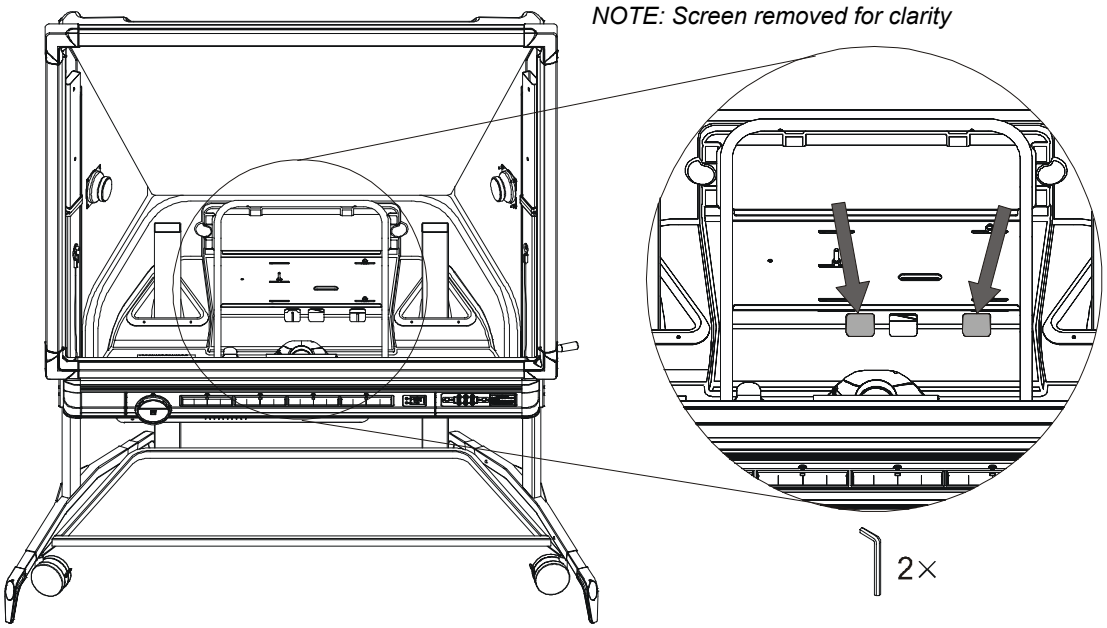
2. Using the security key (TR20 TORX® tamper-recess key) from the accessory kit, loosen the three TORX M4 security screws that secure the projector to the projector plate.

IMPORTANT

You'll find these screws on top of the projector plate: one at the back of the projector and two at the front. You'll access the screws through one slot at the back of the plate and two holes at the front, as shown in the two figures below.



NOTE: To access the two screws at the front of the projector, you must reach through the view port to the front of the projector, and maneuver the security key through the two access holes in the projector cover (see the following figure).

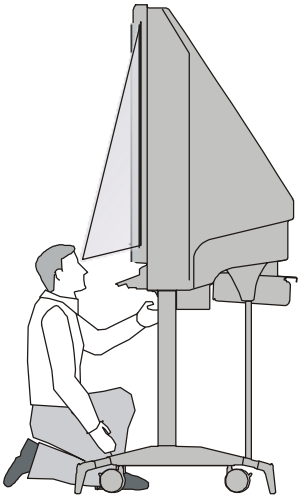


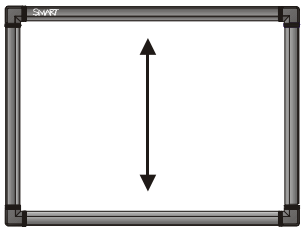
NOTE: As you maneuver the security key through these two access holes, watch it from the back to see when it engages with the screws.

3. Slide the projector backward or forward to alter the image size.
4. When the image is the correct size, tighten the three screws.

To move the image vertically

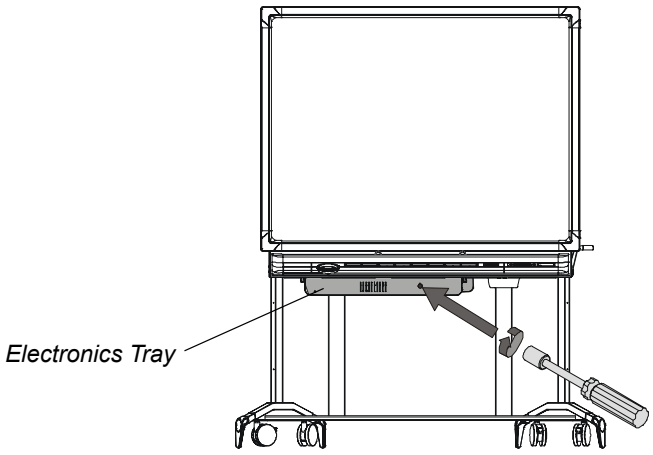
1. Move to the front of the unit and crouch down, facing the screen.





Move Image Up or Down

2. Look underneath the pen tray and locate the electronics tray. You'll see a large access hole covered with a plastic cap on the right side of the electronics tray.



3. Remove the plastic cap that covers the access hole. If the cap seems tight, insert the screwdriver into the small opening at the top of the cap and carefully pry the cap off.
4. Loosen and tighten the nut inside the access hole with the supplied 7/16" nut driver to adjust the image vertically.

CAUTION

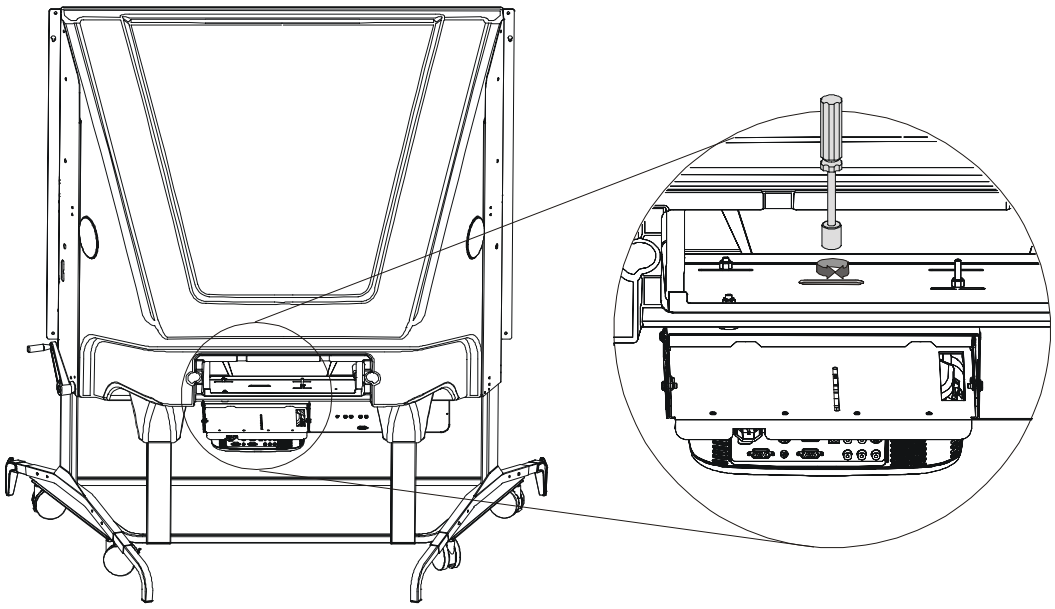
Do *not* turn the nut more than two full turns in a clockwise direction. Turning the nut too far clockwise may crush the spring that is an essential part of the adjustment mechanism.

5. Replace the plastic cap you removed in step 3.
6. If the image requires further fine adjustment (1/4" or less), perform the procedure immediately below.

To further adjust the image up or down

NOTE: Perform this procedure only if the preceding procedure failed to raise or lower the image sufficiently. This procedure will only raise or lower the image by about a 1/4" (0.6 cm).

1. Crouch behind the projector and look at the projected image through the view port.
2. Access the fine-adjustment bolt through the slot in the middle of the projector platform (shown in the figure below).



3. Using the supplied 7/16" nut driver, turn the fine-adjustment nut to the right to raise the image, and to the left to lower it.

   NOTE: Turning this nut will only raise or lower the image by 1/4" (0.6 cm).

CAUTION

Do *not* remove the fine-adjustment nut. If this nut is removed, the projector may swing down from the platform and sustain damage.

Configuring the Computer Settings

For optimal configuration, use these recommended settings for the computer inside the 2000i. With these settings, you can balance ease of use while conserving energy and preserving the projector's lamp life.

For example, you can configure the power management and energy saving settings of your computer so that it stops sending out a video signal and turns off the hard drive(s) after a period of inactivity. Your projector then goes into standby mode if it doesn't receive a video signal for 30 minutes. Even though the projector and the 2000i are in standby mode, you can press the **Lamp On** button to quickly return both units to their normal operating states.

Recommended Settings

You should keep the internal computer on all the time, but set it to turn off the monitor **after 1 hour** of inactivity, and to put the hard disk(s) into standby mode **after 2 hours**. This extended period avoids an unexpected computer shutdown during presentations, video-conferences or lengthy meetings with gaps in computer activity.

When the computer is the 2000i's active display source, the computer stops sending an RGB video signal to the projector after the period of inactivity. This triggers the projector to wait for 30 minutes and then go into standby mode.

NOTE: If the input source for the projector is the video source (either composite or S-video), the projector will not go into standby mode.

To change the settings on a Windows computer, access the **Properties** dialog box for your display and adjust the energy saving features and the power management properties. For Macintosh computers, adjust the settings in your **System Preferences** application. For precise instructions on changing these settings, read the documentation that came with your operating system.

TIP

If you decide to keep your computer on all the time, you should occasionally restart it to reload the operating system.

NOTE: You can't adjust the power settings on Windows NT 4.0 systems, so you must leave the computer on with full power, or shut it down at the end of the day and start it up again.

Matching the Computer Resolution to the Projector Resolution

It's very important that the computer and projector resolutions match so the projected image properly fills the screen. The projector resolution is either 800 × 600 (SVGA) or 1024 × 768 (XGA) and you must ensure the computer's resolution matches this.

NOTE: If the computer resolution is set to anything other than this optimal resolution, you may not see the entire image, or the image may be too small to fill the screen, even with further adjustments.

Use the information here as a guideline when you adjust your computer. For precise instructions, read the documentation for your operating system. Also, if the image on the interactive whiteboard is too distorted to see, use a computer monitor to adjust this setting.

To adjust the resolution setting for your Windows computer

1. Open the *Windows Control Panel* and press **Display**.
2. In the *Display Properties* dialog box, press the **Settings** tab.
3. Move the slider to a screen resolution of **800 × 600** (for a 2000i-DVS) or **1024 × 768** (for a 2000i-DVX) and then press **OK**.

To adjust the resolution setting for your Macintosh computer (Mac OS X operating system)

1. Press the **System Preferences** icon in the Dock.
2. Double-press **Displays**.
3. Select **800 × 600** (for a 2000i-DVS) or **1024 × 768** (for a 2000i-DVX) and close the dialog box.

Installing SMART Board Software

The 2000i comes with a SMART Board software CD so you can install SMART Board software on any computer.

IMPORTANT

During the installation process, you should select the option to start the SMART Board tools automatically when you start your computer. This ensures that the interactive whiteboard is fully functional whenever you start your computer.

The SMART Board tools are open if you can see the SMART Board icon in the system tray (Windows computers) or in the Dock (Macintosh computers).

To install SMART Board software

1. If you haven't already done so, turn on the computer and the projector. To turn on the projector, press the **Lamp On** button on the control panel.

   NOTE: If the projector is off, press the projector's **Power** button.

   IMPORTANT

   If you're using a USB adapter and your computer can't find the appropriate driver for it, unplug the USB adapter from your computer, install SMART Board software and then reconnect your USB adapter.

   If the *Found New Hardware* wizard appears, point the wizard to the SMART Board software CD for it to locate the correct driver.

2. Close all open applications on the computer.
3. Insert the **SMART Board software** CD into your CD drive.

   The installation starts automatically. Follow the on-screen instructions.

   If the CD doesn't start automatically on a Windows computer, select **Start > Run** and enter **x:\autorun.exe** (where x: is your CD drive). For Macintosh computers, click the **SMART Installer** icon to open your CD drive and double-click the software application file.

Configuring the Interactive Whiteboard

Normally, the internal computer's serial or USB port is automatically detected by SMART Board software, but you may need to manually configure the COM port if:

- the Windows operating system you're running does not perform plug and play (for example, the Windows NT 4.0 or Me operating system)
- the Windows operating system fails to detect the new hardware

To select a COM port for the interactive whiteboard

1. Click the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), and select **Control Panel**.
2. Select **SMART Board Settings**.

   The *SMART Board Settings* dialog box appears.
3. Click the **Add SMART Board** arrow and select **Manually choose COM port**.

   The *Select COM Port* dialog box appears.
4. If you know which port you connected the interactive whiteboard to, select it from the list, and click **Select**.

   OR

   If you're unsure of the correct port, click the **Detect SMART Hardware** button. SMART Board software locates the correct port for the attached interactive whiteboard.

   The Ready Light in the pen tray will change to green to indicate that the interactive whiteboard is now touch sensitive.

Orienting the Interactive Whiteboard

Before it can accurately respond to a finger or pen tray tool touch, the computer needs to know the exact location of the projected image on the screen. You give the computer this information when you orient the interactive whiteboard. Orienting is a very simple process of precisely touching a grid of red crosses. With the correct orientation, the pointer appears directly beneath your finger when you touch the interactive whiteboard.

You can also increase the orientation level for even greater touch precision.

To orient your interactive whiteboard (default 9-point orientation)

1. Press the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), and select **Orient**.

   The orientation screen appears.

   NOTE: You can also start the orientation by pressing and holding both pen tray buttons simultaneously.
2. Follow the on-screen instructions, pressing your finger squarely on each cross.

   If required, you can redo a particular orientation point by pressing the **Right-Click** button or the **Left Arrow** key on the keyboard. You won't lose any previously established orientation points. Alternatively, you can redo the entire procedure by pressing the **ESC** key on the keyboard.

   NOTE: If you press on the crosses out of sequence or inaccurately, a *Bad Orientation Point* dialog box appears. *Use the mouse* to click **OK**, because touch awareness isn't available.
3. When the orientation screen disappears, test the orientation by moving your finger across the interactive whiteboard. The pointer should track your finger very closely, and appear directly beneath the center of your fingertip.

   NOTE: If the pointer doesn't accurately track your finger, you may need to calibrate the digital cameras (page 49).

To orient using the Fine (20-point) or Quick (4-point) orientation levels

1. Press the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), and select **Control Panel**.
2. Select **SMART Board Settings**.
3. Select **Alignment/Orientation Precision** from the list.
4. Press **Quick (4 points)** or **Fine (20 points)**.
5. Press **OK**.
6. Perform the 4-point or 20-point orientation.

   NOTE: This setting will remain in effect for all subsequent orientations until you restore the default, 9-point orientation or otherwise change the orientation level.

Basic Operations

This section shows you how to:

- Start up the 2000i (this page)
- Put the 2000i into standby (page 35)
- Adjust the height of the interactive whiteboard (page 36)
- Adjust the volume (page 37)
- Change the projector display source (page 38)
- Use the interactive whiteboard (page 39)

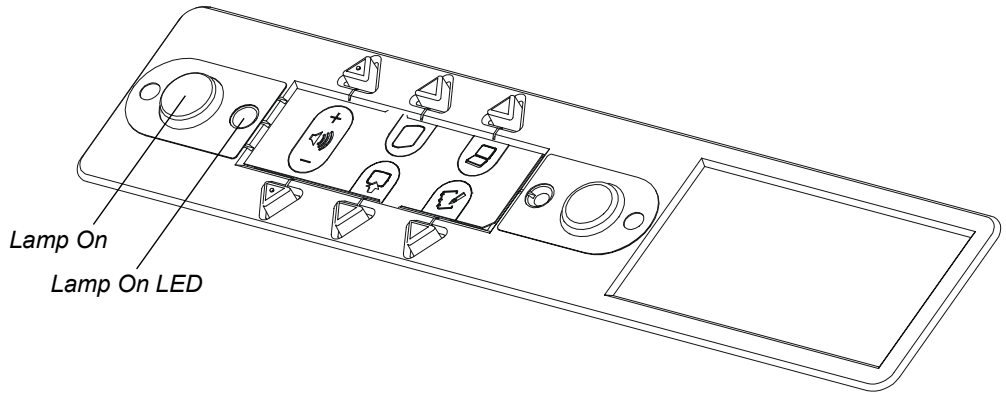
Starting Up the 2000i

You should keep the projector on at all times. However, to conserve the projector lamp, press the **Lamp Off** button on the control panel at the end of your session (or at the end of the day). For ease of operation, you should also keep the computer on all the time. By doing this, you can start up the 2000i by restoring power to the projector lamp (by pressing the **Lamp On** button on the control panel) and then entering your user name and password at the logon screen.

NOTE: To preserve the computer's hard drive(s) and the projector lamp, you may want to put the computer hard drive and the monitor (interactive screen) into standby mode. Refer to page 27 for instructions.

To start up the 2000i

1. If the screen is black, press the **Lamp On** button on the control panel to turn on the projector lamp. The Lamp On LED indicator should blink quickly for approximately 60 seconds and then remain illuminated after the lamp has turned on.



2. If you see a logon screen, use the connected keyboard to enter your logon ID and password, and then press the **OK** button.

   OR

   If the screen turns from black to blue—and no logon screen appears—you may need to turn on the computer or restore it from a standby setting. Turn the computer on or press the reset button (if required).

See the next page for possible startup scenarios.

Startup Scenarios

If more than one person uses the 2000i, you may occasionally find that another user has turned the unit off completely rather than placed it in standby mode. The following table describes what you may need to do to restore the 2000i to a fully operational state.

What You See	What You Should Do
• Screen is black • On LED is blinking intermittently (short flashes between long pauses)	The projector is in standby mode (with the lamp off). Press the **Lamp On** button on the control panel. The Lamp On LED indicator blinks quickly as the lamp warms up, and, after approximately 60 seconds, either a blue “No Input” screen appears (see below) or the screen is restored to its last active state.
• Blue “No Input” screen • On LED is steadily illuminated	The projector lamp is on, but the computer is either off or in standby mode, or you’ve selected an inactive display source. Press a key on the connected keyboard to activate the computer. The logon screen appears. OR Press a source button on the control panel to change to an active source. If the blue “No Input” screen remains, turn the computer on (or press the computer’s reset button) and log on as usual (using the connected keyboard).
• Screen is black • On LED is blinking slowly	No action is necessary. The projector lamp is turning on, and the logon screen will appear after approximately 60 seconds.
• Screen is black • Off LED is blinking rapidly	The projector lamp is in reversible standby mode. If you don’t press a button to restore the image, after three minutes the On LED indicator will blink slowly for 60 seconds as the lamp turns off and cools down. At this point, follow the first set of instructions in this table to restore the 2000i to an operational state.
• Logon Screen	The projector lamp is still on, so you can log on as usual (using the connected keyboard).
• Lamp On LED continues to blink intermittently, even though it’s been pressed to start the system	Projector problems are preventing a normal projector lamp warm-up. Examine the projector status LED indicator, and then consult the troubleshooting section of the *NEC VT470/570/670 User’s Manual*.
• The Lamp Off and On LEDs are both flashing constantly	The system can’t detect a projector. Check the *NEC VT470/570/670 User’s Manual* to make sure the projector is connected properly.

Putting the 2000i into Standby Mode

For normal operation, you don't need to turn off the computer or the projector at the end of a session or at the end of the day. Just log off the computer (for security) and then turn off the projector lamp (to conserve its life) by pressing the **Lamp Off** button on the control panel.

CAUTION

The projector inside the 2000i has been designed for use under normal operating conditions only. Normal operating conditions are defined as product use that does not exceed 8 hours per day and 260 days per year. Exceeding these operating conditions could cause projector damage. Damage caused by such extended use will not be covered by the product warranty.

To maintain normal operating conditions, make sure the projector is in standby mode outside of normal, daily (8 hour) operation. In standby mode, the lamp is turned off, while the projector remains on. Be sure to press the **Lamp Off** button in the control panel at the end of the day, and your projector will remain in standby mode until you press the **Lamp On** button the next day.

NOTE: You can also configure the computer's power management settings so that the computer stops sending a video signal after a period of idle time, turning off the projector lamp (see page 27 for more information).

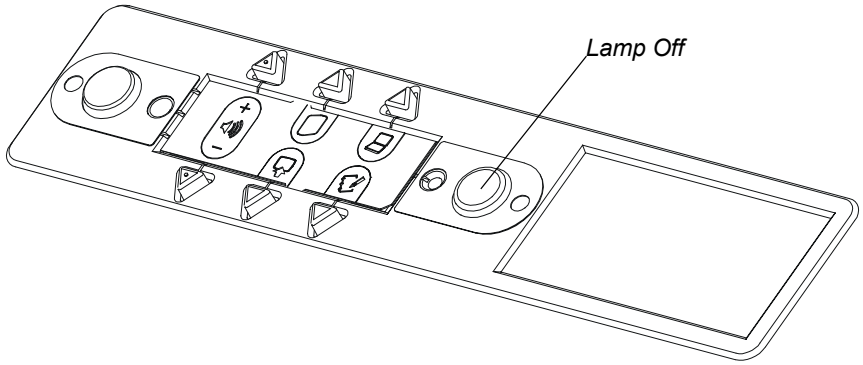
NOTE: If you won't use the 2000i for an extended period, you should turn off the computer and the projector.

To put the 2000i into standby mode

1. Log off by selecting **Start > Shut Down**.

   NOTE: Logging off enhances system security. It also gives users a consistent initial interface—the system logon screen—when they turn on the projector lamp.

2. Press the **Lamp Off** button to put the projector into reversible standby mode for three minutes.



   Although the screen appears black, the projector lamp remains on for three minutes so you can immediately restore the image (if necessary) by pressing any button on the control panel. After three minutes have elapsed, the lamp cools down for 60 seconds and then turns off.

   To skip the three-minute reversible standby period, press and hold the **Lamp Off** button for three seconds. Release the button. The lamp cools down for 60-seconds and then turns off.

Perform this procedure at the end of a meeting or presentation and at the end of the day. If you prefer, you can also shut down the computer. However, for greater ease of use, we recommend simply logging off rather than turning off the computer.

To power down the projector (if unused for an extended period)

1. Log off (as described above) and turn off the computer.
2. Press the **Lamp Off** button on the control panel.

   The Lamp Off LED indicator blinks rapidly for three minutes (reversible standby), and then slowly for approximately 60 seconds while the lamp cools down. When the lamp is off, the Lamp On LED indicator blinks very slowly.

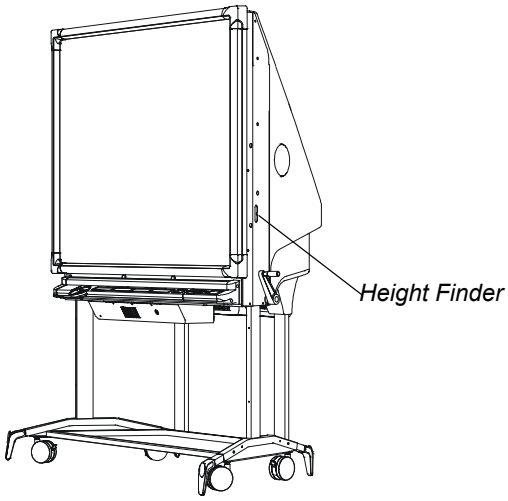
   OR

   Press and hold the **Lamp Off** button for three seconds. The lamp immediately turns off and enters a 60-second cool-down period.
3. When the cooling fan stops, flip the power switch on the back of the projector.
4. Disconnect the 2000i power cable from the wall power outlet.

Adjusting the Height of the Interactive Whiteboard

It's easy to raise or lower the interactive whiteboard to accommodate users of different heights—even while the system is in operation. The 2000i has a height adjustment range of 14" (35.6 cm) so that anyone can comfortably touch or write on the screen.

To gauge the height of the unit as you turn the height adjustment handle, or to adjust it to a particular height, watch the height finder located on the side of the unit, just above the handle.

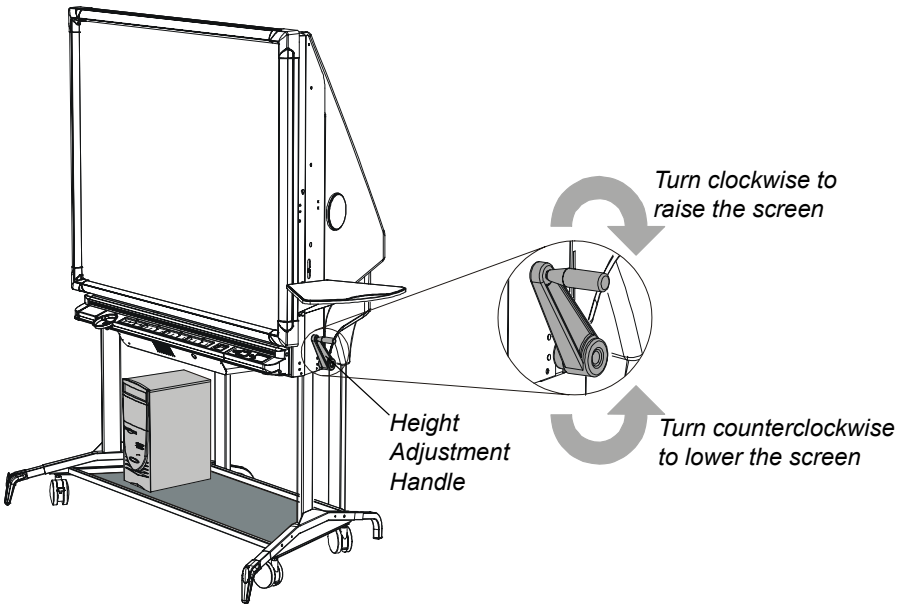


NOTE: If the computer on the storage tray is unusually tall, be careful not to lower the interactive whiteboard on top of it.

To adjust the height of the interactive whiteboard

Turn the height adjustment handle clockwise to raise the screen. The maximum height is 83" (210.8 cm).

Turn the height adjustment handle counterclockwise to lower the screen. The minimum height is 69" (175.3 cm) from the floor. Be careful not to lower the unit on top of your computer.



Adjusting the Volume

Volume adjustments are made for the active display source and are made independently of other sources. When you switch to another input source, the 2000i retains settings you made for the first input source (for when you switch back).

To adjust the volume

1. Press and hold the Volume Up (🔊 +) button on the control panel to increase the volume for the current source.
2. Press and hold the Volume Down (🔊 –) button on the control panel to decrease the volume for the current source.

To restore default volume level (no sound)

Press and hold both **Volume** buttons simultaneously.

Fine-Tuning the Projected Image

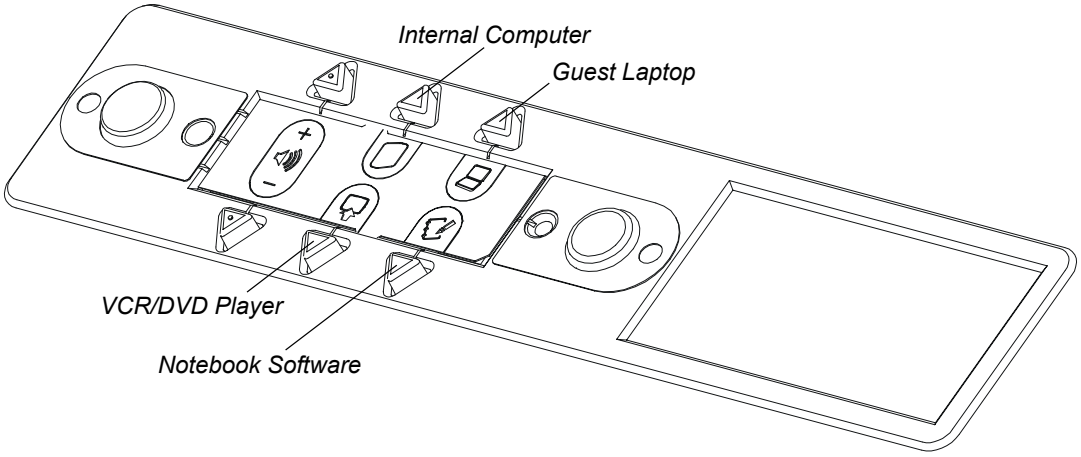
When you first connect the projector, you may need to fine-tune the image.

To fine-tune the projected image

To automatically optimize the image in RGB mode, press the **Auto Adjust** button on the projector remote control. This will eliminate vertical banding, flickering, video noise, dot interference and cross talk.

Changing the Display Source for the Internal Projector

You can change the video and audio input source for the internal projector and cabinet audio amplifier using the three source buttons on the control panel. Choose from the host computer, a connected guest laptop or external computer (X-Port 20 option only) and a VCR or DVD player. When the internal computer source is active, you can also make Notebook software or the Floating tools appear by pressing the Notebook software button on the control panel.



NOTE: Switching sources takes a few seconds, and all the buttons on the control panel are disabled during that time.

To switch to the connected VCR or DVD player

Press the **VCR/DVD Player** button on the control panel.

If both a VCR (composite RCA connection) and a DVD player (S-video connection) are connected to the projector, pressing this button switches the display between the two. Press once for the VCR; press again for the DVD player. There is a three-second delay before the alternate display source appears.

When you switch to another source (such as the internal computer) and then press the **VCR/DVD Player** button, the video source that was last active appears. For example, if you were viewing a DVD, and then switched to the computer, the DVD player will be the display source the next time you press the **VCR/DVD Player** button.

To switch to the internal computer

Press the **Internal Computer** button on the control panel.

To switch to a guest computer (X-Port 20 switch option only)

Press the **Guest Laptop** button on the control panel.

NOTE: You can switch to a connected guest laptop or external computer by pressing the Guest Laptop button only if you have the X-Port 20 switch installed. For complete details regarding guest laptop connections and switching, see the *X-Port 20 Installation Guide*, which is included in the kit. Alternatively, you can link to your laptop using LinQ software (page 41).

You must have the X-Port 20 switch installed to switch to a connected guest laptop or external computer. For complete details regarding guest laptop connections and switching, see the *X-Port 20 Installation Guide*, which is included in the kit.

To launch Notebook software

Press the **Notebook** button on the control panel.

NOTE: This button works only when SMART Board software is installed and running on the internal computer (see page 29). The internal computer source must also be the active source. For information on using Notebook software, see *Using Notebook Software* on page 40.

To open Floating Tools

Press the **Notebook** button and hold for three seconds.

OR

Press the **SMART Board** icon and select **Floating Tools**.

NOTE: You can launch Floating Tools in this way only when SMART Board software is installed and running on the internal computer (see page 29) The internal computer source must also be the current active source. For more information on using the Floating Tools, see *Using the Floating Tools* on page 40.

Using the SMART Board Interactive Whiteboard

Touch control is enabled when you've connected your computer to the 2000i and installed SMART Board software. However, to get the most from your 2000i, open the SMART Board tools. You'll know that the tools are active if you can see the SMART Board icon in the system tray (Windows computers) or the Dock (Macintosh computers). With SMART Board software, you can also customize the pen tray tools. This includes changing the eraser size and the color and transparency of the pen tools. For more information on customizing the pen tray tools, read the applicable Help topic, which you can access in the *SMART Board Control Panel* by pressing the **Help** button.

SMART Board Tools

The SMART Board tools provide all the SMART Board functionality beyond basic touch control and pen tray button use. Specifically, the SMART Board tools provide you with pen and tool-configuration capabilities, as well as SMART Video Player, SMART Recorder, and the on-screen keyboard.

Note that the SMART Board tools must be running to use the pen tray pens and eraser. In other words, if you want to write on your interactive whiteboard with a pen tray pen, make sure the SMART Board icon appears in the system tray (Windows computers) or Dock (Macintosh computers).

To summarize, the SMART Board tools include:

- Notebook software, an application for organizing and sharing your notes
- SMART Recorder, an application for recording a video file of everything you do on a computer
- SMART Video Player, a Windows-only application for making notes over video and graphics
- Keyboard, a virtual keyboard for entering text in an application
- the Floating Tools, a virtual palette of pen and presentation tools
- the SMART Board Control Panel, a utility that lets you configure the interactive whiteboard, including the pen tray tools

SMART Notebook Software

Notebook software lets you create a variety of notes and import graphics, text, clip art and entire files from any other application into your Notebook file. But Notebook software is much more than just an electronic flip chart for displaying presentations or capturing notes in a brainstorming session. It can also store anything you write on the interactive whiteboard *over any application*.

Before you begin writing notes over another application, select **Screen Capture Toolbar** from Notebook software's **View** menu and then minimize the Notebook software window. A three-button Screen Capture toolbar will float on top of all your applications. Now, after writing over the top of the other application, you can capture your notes with a press of a button: The captured image is automatically placed on a new page of the current Notebook file. Macintosh computer users can access the same note-capture capability from the **SMART Board Tools** menu.

To write into Notebook software, leave the Notebook window open and maximized. If you want an even larger area for writing or brainstorming, select **Full Screen** from the **View** menu.

Using the Floating Tools

The Floating Tools are a virtual version of the pen tray tools. Press the **Pen** button, for example, and the next time you touch and drag on the screen, you'll produce a line of digital ink. The Floating Tools also include a number of tools that you won't find in your pen tray, such as tools for producing a spotlight, capturing your notes and restoring cleared notes. You can edit the default palette of tools and save this customized palette in a user profile that you can activate each time you use the interactive whiteboard.

The Undo/Redo and Screen Capture Buttons

The **Undo/Redo** button is a great reason to keep the Floating Tools open. When you write something on the interactive whiteboard, the button is in its **Undo** state; as soon as you delete your notes, the button changes to **Redo**.

Let's say you've written an important note, but your elbow grazes the interactive whiteboard as you turn towards your audience: the note disappears. Just press the **Redo** button and your note reappears. If you haven't activated the Floating Tools, don't worry. Press the **SMART Board** icon, select **Floating Tools**, and then press the **Redo** button. The last cleared group of notes—in this case, the note you accidentally lost—reappears.

LinQ Software

Using LinQ software, you can breeze into your next meeting and link your laptop to a SMART interactive product without connecting cables or configuring hardware. After you establish the connection, use LinQ software to show your laptop's video output on the interactive screen.

After this minimal setup, you can begin your presentation from your seat or the interactive product. Because you navigate through your own computer, you can find files and run a presentation without having to familiarize yourself with a different computer. And because you can take advantage of the 2000i's interactive tools, you can deliver a dynamic, interactive presentation.

To establish a communication link between the 2000i and the laptop, you must:

- install and run LinQ software on your laptop computer
- be connected to the same network as the 2000i's resident computer
- run the mobile device manager software on the 2000i's resident computer

For more information on LinQ software and the mobile device manager, see www.smarttech.com/support/product/sb/guides.asp.

Enabling/Disabling Multiple Touch Mode

When Multiple Touch mode is enabled, two people can write on the interactive screen simultaneously. After the first person picks up a pen tray pen, the other person can use their finger to write in the same color.

To enable/disable Multiple Touch Mode

1. Press the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), and select **Control Panel**.
2. Select **SMART Board Settings**.

   The *SMART Board Control Panel* opens.
3. Select **Mouse Settings** from the list.
4. Select the **Multiple Touch Mode** check box.

Maintenance and Troubleshooting

Cleaning the Interactive Whiteboard and other Components

Clean the interactive whiteboard surface regularly. Otherwise, dust may build up, diminishing the performance of the 2000i.

Do not spray glass cleaner directly onto the screen surface. Instead, spray the cleaner lightly on a cloth and then gently wipe the screen surface. The 2000i uses digital cameras located inside the frame. If you allow excess glass cleaner to flow into the crack between the frame and the writing surface, the fluid could damage the cameras.

Before you clean the interactive whiteboard, log off the computer. If you touch the screen when the computer is in any other state (e.g., with a program open or at the desktop), you may activate program components or scramble desktop icons. After you log off, put the projector into standby mode so you can easily see dirt and streaks.

Remove marks made with a permanent marker by completely covering them with the ink from a dry-erase marker (*not* a low-odor marker). Then wipe with a soft cloth. Dry-erase ink contains solvents that work to remove permanent ink. If any trace of the original permanent ink remains, spray standard glass or whiteboard cleaner lightly on a cloth and then gently wipe the screen.

The back of the interactive whiteboard screen is well protected from handling by its location on the inside of the unit. However, if it must be dusted, or if a mark has been made on its surface, dab it gently with a soft cloth that's sprayed with standard, alcohol-free glass cleaner. Do not apply the cleaner directly to the surface.

Periodically dust the mirrors and unit components using a soft cloth. To clean the mirrors, use a standard, alcohol-free glass cleaner.

CAUTION

Do not, under any circumstances, apply isopropyl alcohol, water or acetone to the rear surface of the interactive screen. Any of these fluids could damage the diffusion coating, resulting in a permanent deterioration in display quality.

Cleaning the Projector

Unplug the projector before you clean it.

Periodically clean the projector casing with a damp cloth. If it is heavily soiled, you can use a mild detergent. Don't use strong detergent or a solvent, such as alcohol or thinner. Use a blower or lens paper to clean the lens, being careful not to scratch or mar the lens.

Cleaning the Filter and Clearing the Filter-Cleaning Message

Clean the air-filter sponge with a vacuum after every 100 hours of operation (more often in dusty conditions), as described on page 51 of the *NEC VT470/570/670 User's Manual*.

A "Please Clean Filter" message from the projector will appear on the bottom of the screen after every 100 hours of operation. However, this message doesn't disappear automatically after you've cleaned the filter. You must use the projector remote control to clear the filter usage meter, as follows:

1. Press the **Menu** button on the projector remote control.
2. Select **Default > Clear Filter Usage**.

The meter returns to zero. You won't receive a "Please Clean Filter" message for 100 hours.

Replacing the Projector Lamp and Filter

Even though the lamp may still be working, you should replace your projector lamp after 2,000 hours of normal mode operation or 3,000 hours of eco-mode operation to maintain optimal performance. At the same time, replace the air filter with the new one that comes with the replacement lamp.

Order the NEC VT75LP standard lamp from NEC. Alternatively, you can order the same lamp from your SMART dealer. Ask for SMART P/N 01-00161. Do *not* use any other lamps.

NOTES:

- The projector will turn off and go into standby mode after 2,100 hours (3,100 hours in eco mode). If this happens, you should replace the lamp immediately.
- Always replace the lamp when you see this message: "The lamp has reached the end of its usable life. Please replace the lamp."

To find out how many hours of lamp use remain, press the **Menu** button on the remote control or projector and select **Information > Page 1 > Remaining Lamp Time**.

To replace the lamp and filters, follow the instructions below. When you finish, you should reset the lamp hour meter as described on page 50 of the *NEC VT470/570/670 User's Manual*.

WARNING

To avoid an electric shock, do not remove any screws except the two lamp-case screws.

Pour éviter tout risque de choc électrique, ne retirez aucune vis, à l'exception des deux vis d'accès aux lampes.

Para evitar descargas eléctricas, no quite ningún tornillo excepto los de las dos lámparas.

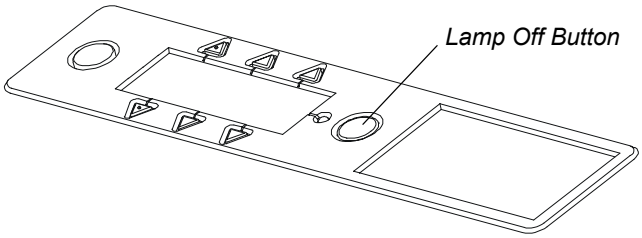
Um einen elektrischen Schlag zu vermeiden, dürfen Sie mit Ausnahme der beiden Lampengehäuseschrauben keine Schrauben entfernen.

感電の恐れがありますので、ランプケースの 2
つのねじ以外に、ねじは取り外さないようにしてください。

To replace the projector lamp

1. If you need better access to the rear of the cabinet, retract the anti-tip feet and unlock the wheels by raising the caster tab locks on each wheel. Then roll the unit away from the wall, press the caster tab locks down to lock the wheels, and extend the anti-tip feet.
2. Using the height-adjustment handle, raise the unit to allow easier access to the projector.

3. Shut down the computer. Press and hold the **Lamp Off** button on the control panel for approximately three seconds. The screen will turn black. Release the button and the projector lamp powers off in 60 seconds.



WARNING

After you turn off the projector, allow at least one minute to elapse before you unplug it. *Do not* touch or replace the projector lamp (which will be very hot) for at least an hour.

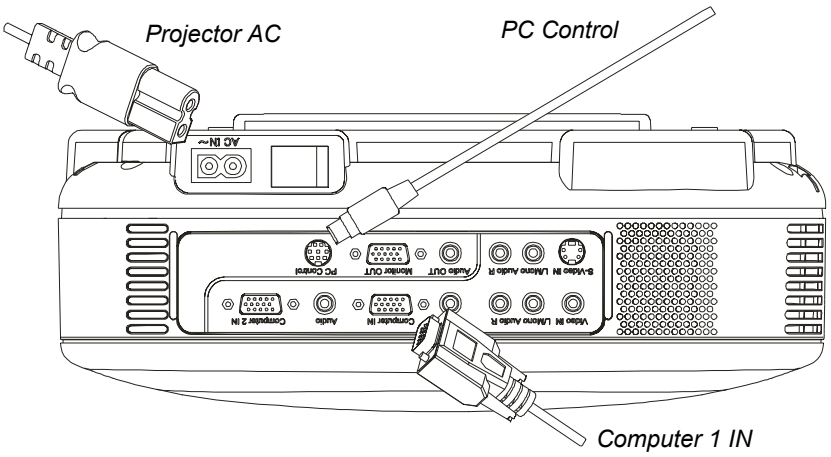
Après avoir éteint le projecteur, attendez au moins une minute avant de le débrancher. Attendez *au moins une heure* avant de toucher ou de remplacer la lampe du projecteur (qui sera très chaude).

Stecken Sie den Projektor für mindestens eine Minute nach dem Abschalten nicht aus. Berühren oder ersetzen Sie die Projektorlampe (die sehr heiß sein wird) *nicht* vor Ablauf einer Stunde.

プロジェクターの電源を切った後、最低でも 1
分間はプロジェクターのプラグを抜かないでください。プロジェクターのランプは非
に熱くなりますので、最低でも 1 時間は触ったり交換したりしないでください。

4. Unplug the 2000i from the power outlet.
5. Detach the power cable labeled *Projector AC* from the **AC IN** socket, the 8-pin Mini DIN cable labeled *PC Control* from the **PC Control** port and the HD DB15 video cable labeled *Computer 1 IN* from the **Computer IN** port of the projector's connection panel.

NOTE: The projector is shown upside down, as installed.



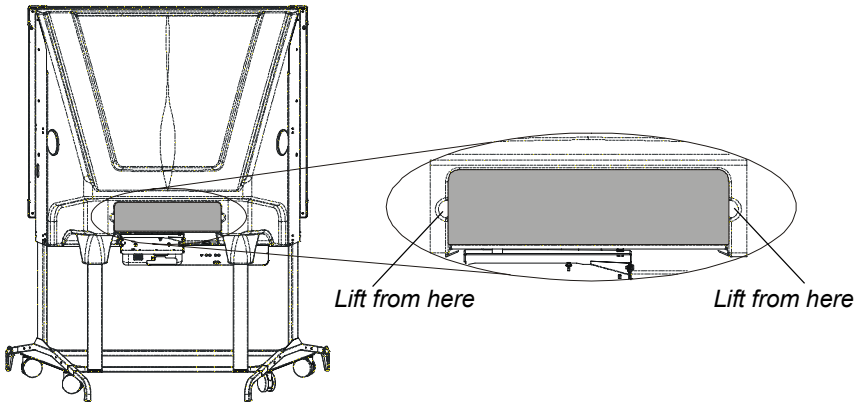
The diagram above shows the connectors as installed at the factory. When you reconnect the cables, you can return each cable to its correct port as indicated by its label. However, your configuration will be different if you have installed other equipment.

Use the following table to keep track of each cable's port.

- The first column lists the port's label as it appears on the projector and the port type
- The second column shows the label of the cable that was originally connected to that port at the factory
- The third column is for you to note which cable you have connected to each port. To do this, write the name of each cable on a piece of masking tape and attach each piece of tape to the corresponding cable. Then, using column three, note which port each cable connects to.

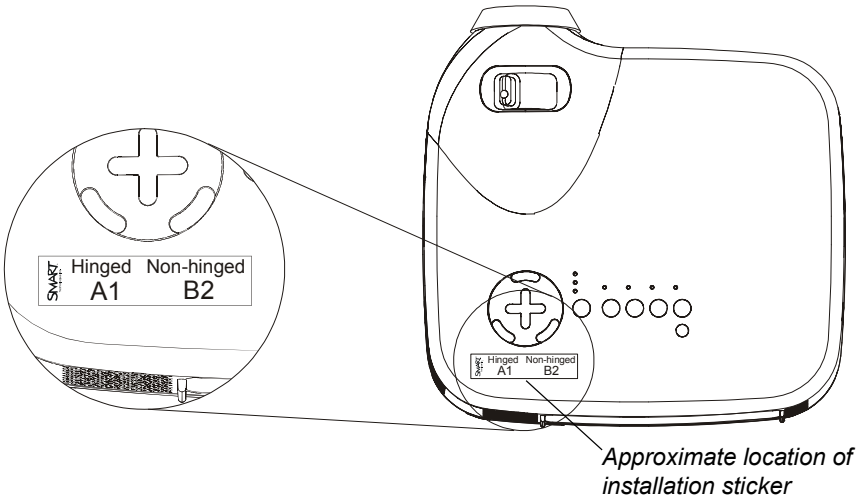
Port Label (Type)	**Cable Label (Factory Setting)**	**Your Current Configuration**
Power (custom)	AC IN	
Video IN (RCA - F)		
Audio L/Mono (RCA - F)		
Audio R (RCA - F)		
Unlabeled (RCA - F)		
Computer 1 IN (DB 15 - F)	Computer 1 IN	
Audio (RCA - F)		
Computer 2 IN (DB 15 - F)		
S-video IN (S-video - F)		
Audio L/Mono (RCA - F)		
Audio R (RCA - F)		
Audio OUT (RCA - F)		
Monitor OUT (DB 15 - F)		
PC Control (8 pin mini DIN - F)	PC Control	

6. Grasp the view port cover in the middle of each short edge and pull it away from the unit.

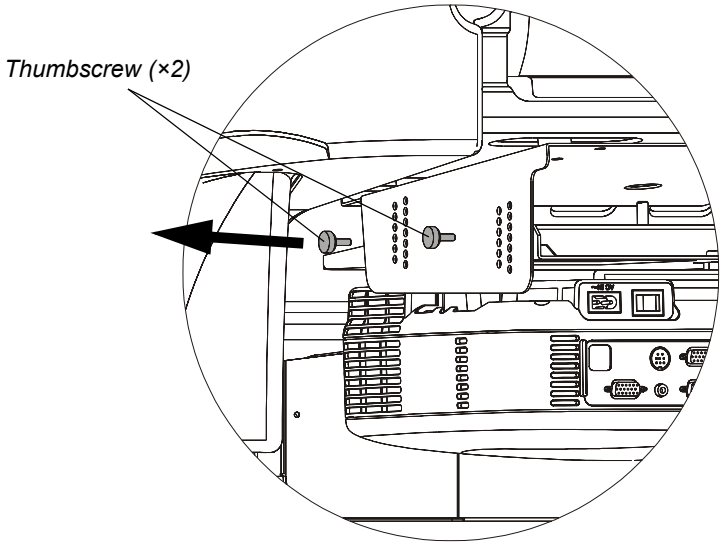


7. Using a pencil, mark the projector plate with the current position of the three screws that attach the projector to the plate.
8. Loosen *but do not remove* these three screws using the TORX key in the accessory kit. Carefully pull the projector towards you and then tighten the three screws.
9. Note the lettered and numbered positions of the two thumbscrews on the left side.

NOTE: This letter and number combination, as determined at the factory, may already be noted as the “Hinged” value on a sticker near the projector’s control panel.



10. While a second person supports the projector, remove the two thumbscrews and carefully allow the projector to swing down. Keep the two thumbscrews nearby, as you’ll need them later.



11. Replace the filter as described on page 51 of the *NEC VT470/570/670 User’s Manual*.
12. Replace the projector lamp as described on page 53 of the *NEC VT470/570/670 User’s Manual*.
13. Replace the projector by reversing steps 1 through 10.

Troubleshooting

Many problems result from incorrect cabling, an incorrect computer setting or improperly installed or configured software. Of course, the 2000i works properly only when its major components are functioning correctly. These components include the computer, projector and the interactive screen. To determine if they’re functioning properly, refer to the LEDs on the 2000i and the tables in this section.

For information about the normal behavior of the LEDs on the control panel and what they tell you about the status of the projector lamp, see the table on page 7.

As you begin troubleshooting, record the problems that you observe and what you did to resolve them. These notes will help if you need to contact SMART Technical Support (see page 51). Also try these general tips:

- Substitute hardware that you know is functioning with any hardware that you suspect may be malfunctioning. For example, substitute your computer with another that you know is working properly.
- Check all cable connections and system settings. Check the LEDs for the presence of power or for the indication of a display problem.
- Completely shut down the system and then restart it. First, shut down the computer. Then press the **Lamp Off** button on the control panel to turn off the projector lamp. Allow it to cool for three minutes, and then disconnect the main AC power cable from the room outlet. To restore power to the 2000i, wait another 15 seconds and then plug the AC power back in. Then turn on the computer and projector.

The following table may help you resolve some of the more common 2000i problems.

Problem	Cause	Possible Resolution
There's no touch control on the interactive screen	Software problem	Make sure SMART Board software is running. Is there a SMART Board icon in the system tray (Windows computers) or in the Dock (Macintosh computers)? If not, you'll need to start the software. If SMART Board software is running, click the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), and select **Control Panel**. Now check the status of the interactive whiteboard. You may have to reestablish communications.
Touch control isn't accurate	Orientation problem	Orient the screen (see page 30).
The pen tray tools and buttons aren't responding properly	Pen tray problem	Check that nothing is obscuring the sensors on the pen tray. Clean the sensor or remove any blockage.
There's no touch control or digital ink	Power problem	Check that the main power cable is connected to a functioning room outlet. Call Technical Support (see page 49).
No digital ink appears on the interactive screen	Software problem	Make sure SMART Board software is running. Also, make sure SMART Board software is in Projected Mode. Click the **SMART Board** icon, **Control Panel**, **SMART Board Settings** and then make sure **Projected** is selected under **Mode**.
You see gaps in the digital ink or specific areas of the screen are unresponsive to touch	Camera calibration problem	Recalibrate the cameras, as described on the next page.

Calibrating the Cameras

Digital cameras in the corners of the interactive screen are calibrated to recognize the position of a pen tray tool or your finger on the screen's surface and to send this information to the SMART Board driver. The driver then interprets the information as mouse clicks or digital ink in the appropriate location.

Here's how the system works: The cameras constantly scan the screen surface. When a camera detects a target, its processor identifies the affected pixel and calculates the angle at which it occurs. The cameras are all carefully calibrated before they leave the factory so that these angles will intersect. If the cameras lose their alignment for any reason, those angles no longer intersect at all points, targets aren't detected, and you may experience "broken ink" (gaps in your writing) or an area of the screen that's unresponsive to touch.

Fortunately, this problem is easily fixed by performing a simple calibration procedure, as described below.

To calibrate the cameras

1. Press the **SMART Board** icon in the system tray (Windows computers) or in the Dock (Macintosh computers), and select **Control Panel**.
2. Press **SMART Board Settings**.
3. Select **Advanced Settings** from the drop-down arrow list.
4. In **DViT Settings**, press the **Calibrate** button.

   The 4-point calibration screen appears.
5. Press the center of each target and hold until the target moves.

   After you press the final target, the orientation screen appears.
6. Complete the 4-point orientation.
7. Press **OK**.

Customer Support

Contacting SMART Technical Support

SMART's Technical Support team welcomes your call. However, you may first want to contact your local reseller if you experience any difficulty with your 2000i, as they may be able to solve the problem without delay.

All SMART products include free telephone, fax and e-mail support.

Telephone: 1.866.518.6791 (toll-free in Canada/U.S) or +1.403.228.5940 (all other countries)

(Available 7 a.m. – 6 p.m. Mountain time from Monday to Friday)

Fax: +1.403.802.1256

E-mail: support@smarttech.com

Web Site: www.smarttech.com/support

When you phone Technical Support, it will be helpful if you have access to your 2000i during the call. The support representative may ask you for the following information:

- the serial number of the unit
- the version of the software that's causing the problem and the version of your computer's operating system (if applicable)

General Inquiries

Main Switchboard: 1.888.42.SMART (toll-free in Canada/U.S.) or +1.403.245.0333 (all other countries)

Fax: +1.403.228.2500

E-mail: info@smarttech.com

Address: SMART Technologies Inc.
1207 – 11 Avenue SW, Suite 300
Calgary, AB T3C 0M5
CANADA

Returning Defective Merchandise

Your *Rear Projection* SMART Board 2000i interactive whiteboard (including the integrated projector) is covered by a two-year limited equipment warranty. To return defective merchandise, call SMART Technical Support. You will receive the appropriate Return of Merchandise authorization and instructions for transporting your 2000i to an authorized service center.

Warranty Shipping Charges

Transportation charges that are incurred from warranty service are paid as follows: You are responsible for transporting the system to the service center, and SMART pays return shipping via ground service on any product that's returned for service within the warranty period. If you request a rush order, any associated charges are billed to you. Read the warranty that was included with your 2000i for details.

NOTE: After the warranty period, you are responsible for transporting the product to and from the service center.

Registration

A User Registration card was included with your 2000i. To help us serve you, fill in and mail this card to SMART Technologies Inc. or register online at www.smarttech.com/registration.

Sending Feedback

You can help us improve our technical documentation by e-mailing your comments to TechnicalDocumentation@smarttech.com.

Obtaining More Information on SMART Products

Visit www.smarttech.com/support to:

- download PDF versions of our user guides, installation instructions and more
- read technical bulletins, FAQs and tips
- troubleshoot a problem
- explore our resource centers to learn about conferencing and room control systems

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