

Allen-Bradley 6189V-CPUPFM1
2 GHz Single Board Computer



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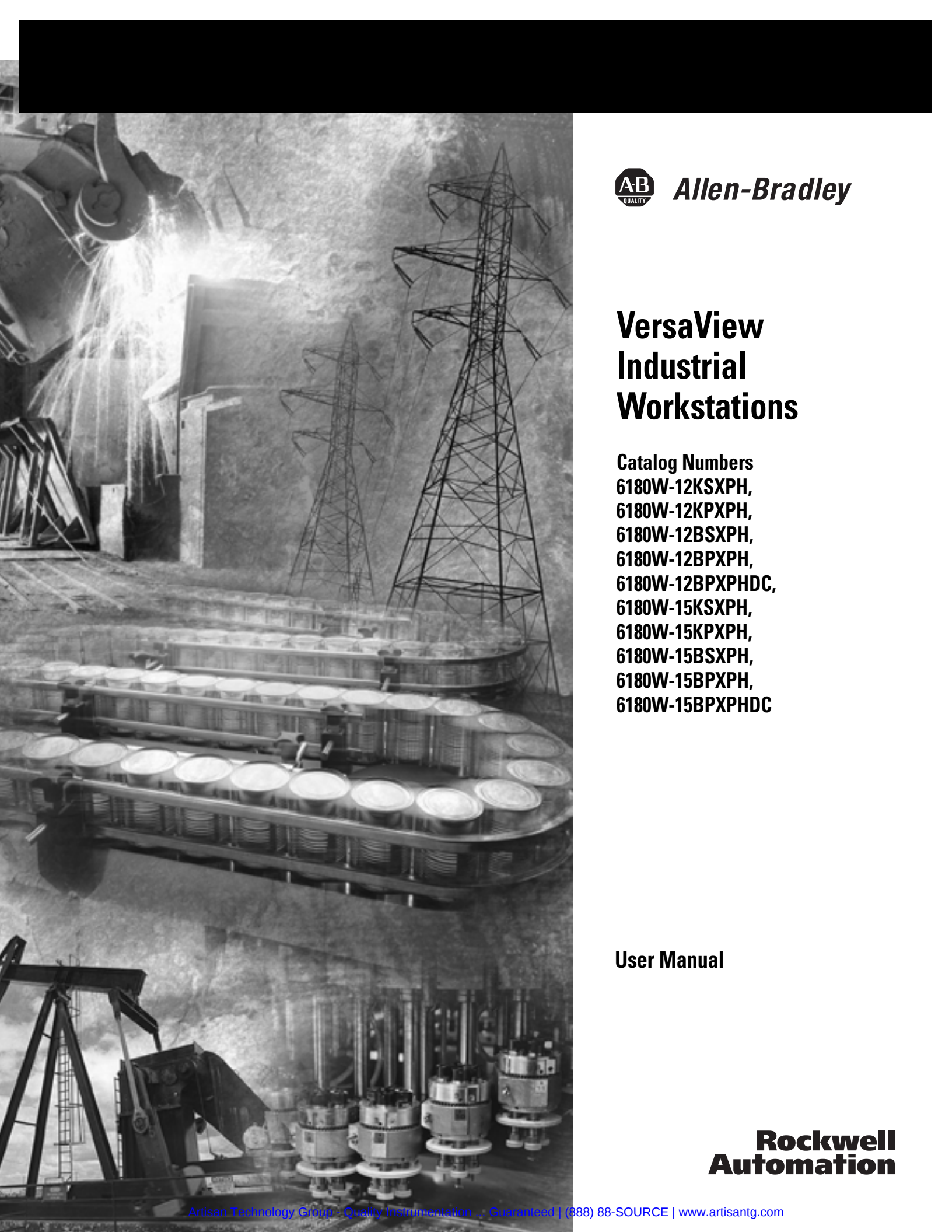
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Allen-Bradley

VersaView Industrial Workstations

Catalog Numbers

**6180W-12KSXPH,
6180W-12KPXPH,
6180W-12BSXPH,
6180W-12BPXPH,
6180W-12BPXPHDC,
6180W-15KSXPH,
6180W-15KPXPH,
6180W-15BSXPH,
6180W-15BPXPH,
6180W-15BPXPHDC**

User Manual

**Rockwell
Automation**

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls, publication SGI-1.1, available from your local Rockwell Automation sales office or online at <http://literature.rockwellautomation.com> describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING 	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence
SHOCK HAZARD 	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

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The information below summarizes the changes made to this manual since the last revision.

Revision bars, as shown in the margin, identify updated information. These are the changes for this version of the document.

Topic	Page
Operating system information updated.	11
Information on the Multilingual User Interface CD Pack updated.	11
Added information on backlight assembly disposal.	57

Preface	About This Publication	7
	Who Should Use This Manual	7
	Purpose of This Manual.	7
	Additional Resources.	7
	Chapter 1	
System Features	Chapter Objectives	9
	Overview	9
	Product Options	10
	Accessories and Replacement Parts	10
	Operating Systems	11
	Multilingual User Interface CD Pack.	11
	Features	12
	Before You Begin	15
	Chapter 2	
Installation	Chapter Objective	17
	European Union Compliance.	17
	Environment and Enclosure Information	18
	Installation Considerations.	19
	Tools Required	19
	Mount the Workstation in a Panel	19
	Mount the Non-display Workstation in a Panel.	23
	Product Dimensions	24
	Connect a Keyboard and Mouse	26
	Connect the Video	26
	Connect AC Power	27
	Connect DC Power	28
	Connect to the Network	29
	Chapter 3	
Operation	Chapter Objective	31
	Operating Guidelines	31
	Operator Access	31
	DIP Switch Settings for Front-panel Keypad.	32
	Video Loopback Cable	32
	Start the System	33
	Reset the System.	33
	Install Drivers	33
	Universal Serial Bus (USB) Ports	33

Replace System Components	Chapter 4	
	Chapter Objectives	35
	Accessories and Replacement Parts	35
	Safety Precautions	35
	Electrostatic Discharge (ESD).	35
	Remove the Covers	36
	Install or Remove Add-in Cards	37
	Replace the Hard Disk Drive	40
	Replace the Floppy Drive	43
	Replace the CD-ROM/DVD-ROM Drive	46
	Replace the Memory Modules	48
System Troubleshooting	Chapter 5	
	Chapter Objectives	51
	Troubleshooting Procedure	51
	Diagnostic Utility	52
	Troubleshooting Checklists	53
Maintenance	Chapter 6	
	Chapter Objectives	55
	Clean the Display	55
	Replace the Battery	56
	Replace the Fan Filter	57
	Backlight Assembly Disposal	57
	Ship or Transport the Product	57
	Appendix A - Specifications	
	Appendix B - Use a Touchscreen	
	Appendix C - Upgrade to a New BIOS	
Index		

About This Publication

Read this preface to familiarize yourself with the rest of the manual. The preface covers these topics:

- Who should use this manual
- Purpose of the manual
- Additional resources

Who Should Use This Manual

Use this manual if you are responsible for installing, using, or troubleshooting the VersaView Workstations.

Purpose of This Manual

This manual is a user guide for the VersaView Workstations. It gives an overview of the system and describes procedures to:

- install the computer in a panel or enclosure.
- make computer connections.
- configure the computer.
- troubleshoot the computer.

Additional Resources

For additional information about the VersaView industrial workstations, refer to these publications.

Resource	Description
VersaView Industrial Workstations Installation Instructions, 6180W-IN001 .	Provides procedures on how to install the computer and make connections to the workstation.
Cloning Utility Technical Data, publication 6000-TD001 .	Provides information on how to create and restore a backup image of your computer's hard disk drive.

These publications are on the VersaView Accessories/Cloning CD, that is shipped with your computer. You can also download electronic versions of these publications from the Rockwell Automation website <http://literature.rockwellautomation.com>.

System Features

Chapter Objectives

This chapter provides an overview of the following topics:

- Product options
- Operating systems
- Features
- Accessories
- Parts list

Overview

The workstations feature an integrated 12.1 or 15-inch display and keypad. These panel mount devices feature 32 or 36 programmable function keys, a full alphanumeric keypad, and a resistive touch screen option. With the workstation, you can run visual interface, maintenance, control, and basic information applications from one machine.

With its integrated display, function keys, alphanumeric keypad, and resistive touch screen option, the workstation can function as an industrial computer or an operator input station. The absence of external monitor cables and separate component mounting requirements allows for simple integration.

The workstations provide serial and Ethernet communication ports.

Product Options

Catalog Number ⁽¹⁾	Display Size	Touchscreen	Performance	Operating System
6180W-12BSXPH	12 in.	Key/Touch	Standard	Windows XP
6180W-12BPXPH		Key/Touch	Performance	
6180W-12KSXPH		Keypad only	Standard	
6180W-12KPXPH		Keypad only	Performance	
6180W-12KPXPHDC ⁽²⁾		Keypad only		
6180W-12BPXPHDC ⁽²⁾		Key/Touch		
6180W-15BSXPH	15 in.	Key/Touch	Standard	Windows XP
6180W-15BPXPH		Key/Touch	Performance	
6180W-15KSXPH		Keypad only	Standard	
6180W-15KPXPH	15 in.	Keypad only	Performance	
6180W-15KPXPHDC ⁽²⁾		Keypad only		
6180W-15BPXPHDC ⁽²⁾		Key/Touch		
6180W-7PXPH	N/A	N/A		Windows XP
6180W-7PXPHDC ⁽²⁾				

⁽¹⁾ The workstations are available with the Windows XP or Windows 2000 operating system. Replace XP with 2K in the catalog number, to order a workstation with the Windows 2000 operating system.

⁽²⁾ These catalog numbers operate on 24V dc power.

Accessories and Replacement Parts

You can view a current list of accessories at the Rockwell Automation/Allen-Bradley website <http://www.ab.com/versaview>.

Operating Systems

The computers are shipped with one of these operating systems:

- Windows 2000 Professional, Service Pack 4 with Update Rollup 1
- Windows XP Professional, Service Pack 2b

No operating system updates have been applied to the factory image beyond the service packs.

For your convenience, the I386 source directory for Microsoft Windows is on the system drive of your computer off the root directory, C:\I386. This allows for easy removal and addition of Windows components.

Computers with rotating-media hard drives include a recovery partition on the system drive containing the original factory image. You can use the supplied System Accessories/Cloning CD to restore the operating system from the recovery partition, create a new recovery image, and create bootable external recovery media.

Refer to the Cloning Utility documentation, publication 6000-TD001, for instructions. You can view or download publications at <http://literature.rockwellautomation.com>.

Computers with solid state drives have been customized to accommodate the unique properties of the solid state drive. Some of the pre-installed customizations include:

- no paging file.
- system restore set to zero and disabled.
- DLLCACHE directory emptied.

Computers with solid state hard drives do not contain a recovery partition. If additional drive space is required, copy the I386 directory to external media; then delete the I386 directory from C:\I386, which is approximately 400 MB.

To obtain the original factory image on bootable external recovery media, which also includes the I386 source directory, contact your local technical support center.

Multilingual User Interface CD Pack

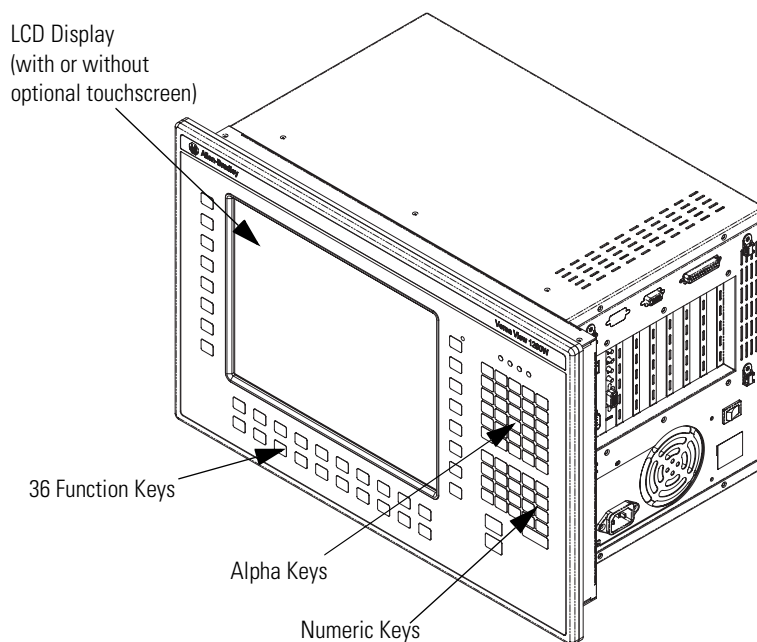
The Microsoft Multilingual User Interface (MUI) CD Pack contains a collection of different language sets that can be installed into the operating system. MUI packs are available for all Windows XP operating systems and provide a localized start menu and system icons support.

The instructions for installing MUI languages on your computer are supplied with the MUI CD Pack.

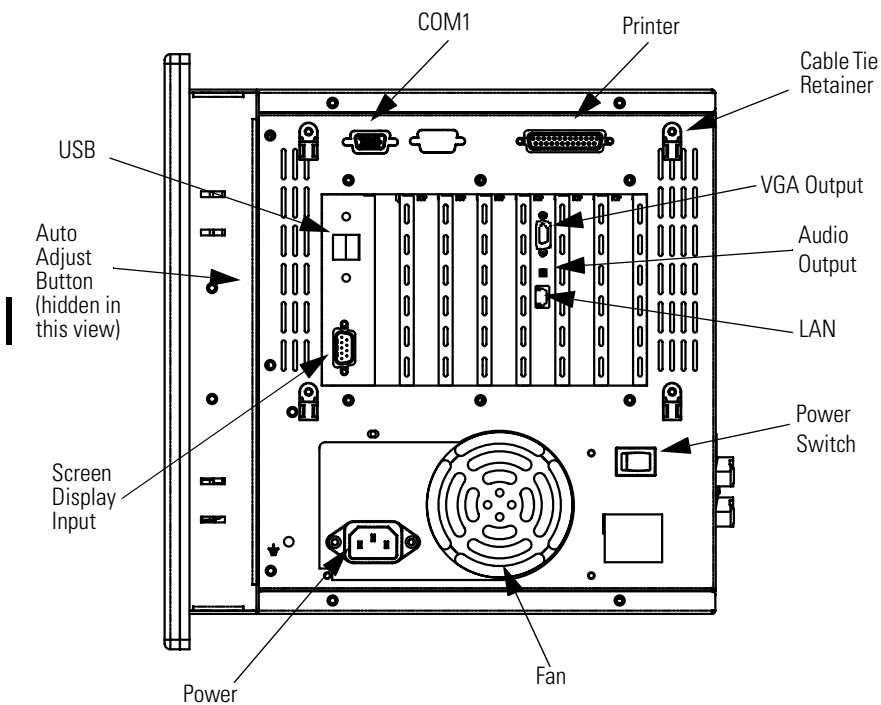
Features

The illustrations show the major features and controls of each computer.

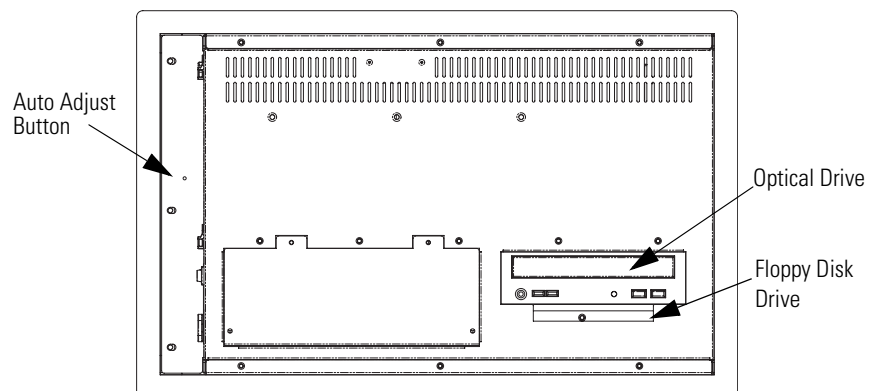
1200W Workstation - Top and Side View



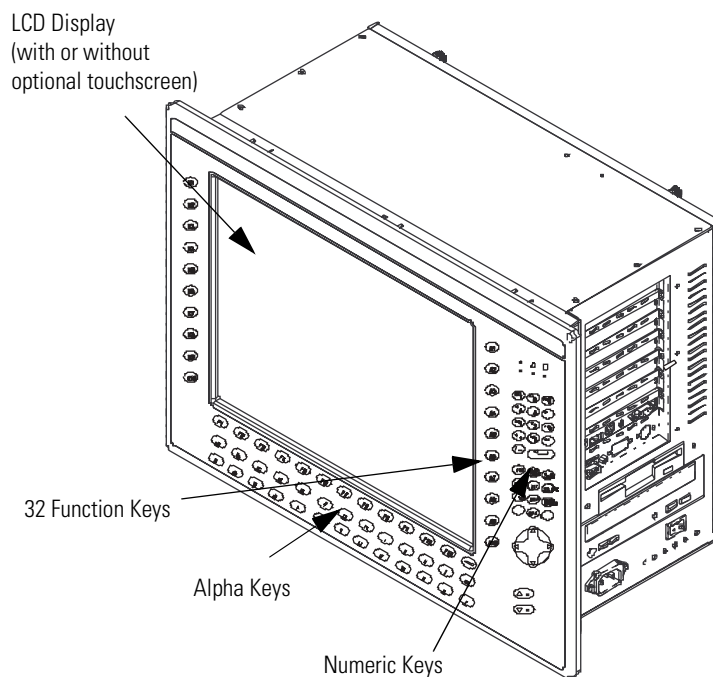
1200W Workstation - Side View



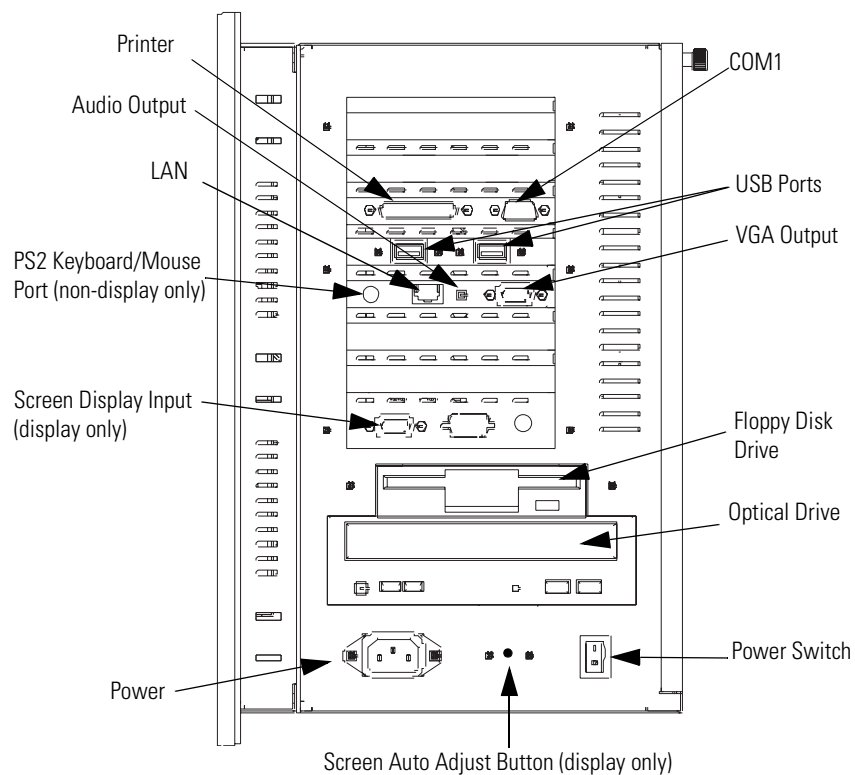
1200W Workstation - Back View



1500W and Non-display Workstations - Top and Side



1500W and Non-display Workstations - Side View



Before You Begin

Before unpacking the product, inspect the shipping carton for damage. If damage is visible, immediately contact the shipper and request assistance. Otherwise, proceed with unpacking.

Keep the original packing material in case you need to return the product for repair or transport it to another location. Use both the inner and outer packing cartons to provide adequate protection for a unit returned for service.

Parts List

Your workstation is shipped with these items:

- VersaView System Accessories/Cloning CD
- VersaView Support CD
- Microsoft Multilingual User Interface (MUI) CD Pack
This CD pack is not included with VersaView computers containing solid-state hard drive or VersaView computers with the Windows 2000 operating system.
- Mounting clips
- Power cord, ac (when appropriate)
- Video Loopback cable (when appropriate)
- PS/2 Y adapter cable for non-display workstation
- Card hold downs for PCI and ISA cards
- Installation guide and cutout template

Installation

Chapter Objective

This chapter describes how to install your workstation in a panel and how to make connections to the workstation. It covers these topics:

- European Union Compliance
- Environment and enclosure information
- Installation guidelines
- Required tools
- Mount the workstation in a panel
- Product dimensions
- Connect a keyboard and mouse
- Connect the video
- Connect ac or dc power
- Connect to the network

European Union Compliance

This product meets the European Union Directive requirements when installed within the European Union or EEA regions and has the CE mark. A copy of the Declaration of Conformity is available at the Rockwell Automation/Allen-Bradley website <http://www.ab.com/certification>.

ATTENTION



The product is intended to operate in an industrial or control room environment, which utilizes some form of power isolation from the public low voltage mains. Some computer configurations may not comply with the EN 61000-3-2 Harmonic Emissions standard as specified by the EMC Directive of the European Union. Obtain permission from the local power authority before connecting any computer configuration that draws more than 75 watts of ac power directly from the public mains.

ATTENTION



To comply with EN 55024, the Ethernet port LAN cable must be less than 30 m (98.42 ft) long, and it must be used only indoors (that is, not exit the building at any point). All other I/O cables must be less than 3 m (9.84 ft) long, and must be used only indoors.

Environment and Enclosure Information

Review the information on enclosures and environments before installing your computer.

ATTENTION



This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters (6562 feet) without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

Operating the capacitive touchscreen version in a high noise environment may cause the touchscreen to respond slowly to touch inputs, or may cause the position of the screen cursor to drift.

This equipment is supplied as 'open type' equipment. UL recognized equipment must be mounted in an enclosure that is suitably designed and rated for those specific environmental conditions that will be present, and designed to prevent personal injury resulting from accessibility to live parts. UL listed equipment need not be mounted inside another enclosure if NEMA Type and IEC ratings are not required, but the mounting method must limit the tilt of the product to $\pm 30^\circ$ from vertical. Examples include articulated arm, table-top stand, wall mount, or other means having sufficient mechanical stability. The mounting means must be firmly attached to the supporting surface using screws bolts, or clamps so the computer cannot tip. All units meet specified NEMA and IEC ratings only when mounted in a panel or enclosure with an equivalent rating. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see:

- Industrial Automation Wiring and Grounding Guidelines, for additional installation requirements, Allen-Bradley publication 1770-4.1.
- NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.

Installation Considerations

Follow these guidelines to make sure your product provides safe and reliable service:

- The installation site must have sufficient power.
- The enclosure must have sufficient space around air inlets and outlets to provide the circulation necessary for cooling. Never allow air passages to become obstructed.
- The ambient air temperature must not exceed the maximum operating temperature. Consider heat produced by other devices in the enclosure. You may need to supply a fan, heat exchanger, or air conditioner to meet this condition.

TIP

Hot air rises. The temperature at the top of the enclosure is often higher than the temperature in other parts of the enclosure, especially if air is not circulating.

IMPORTANT

The product can operate at a range of extremes. However, the life span of any electronic device is shortened if you continuously operate the product at its highest rated temperature.

- The humidity of the ambient air must not exceed specified limits. In very dry environments, static charges build up readily. Proper grounding of the equipment through the ac power cord helps to reduce static discharges, which may cause shocks and damage electronic components.
- The enclosure or cover must remain in place at all times during operation. The cover provides protection against high voltages inside the product and inhibits radio-frequency emissions that might interfere with other equipment.

Tools Required

These tools are required for product installation.

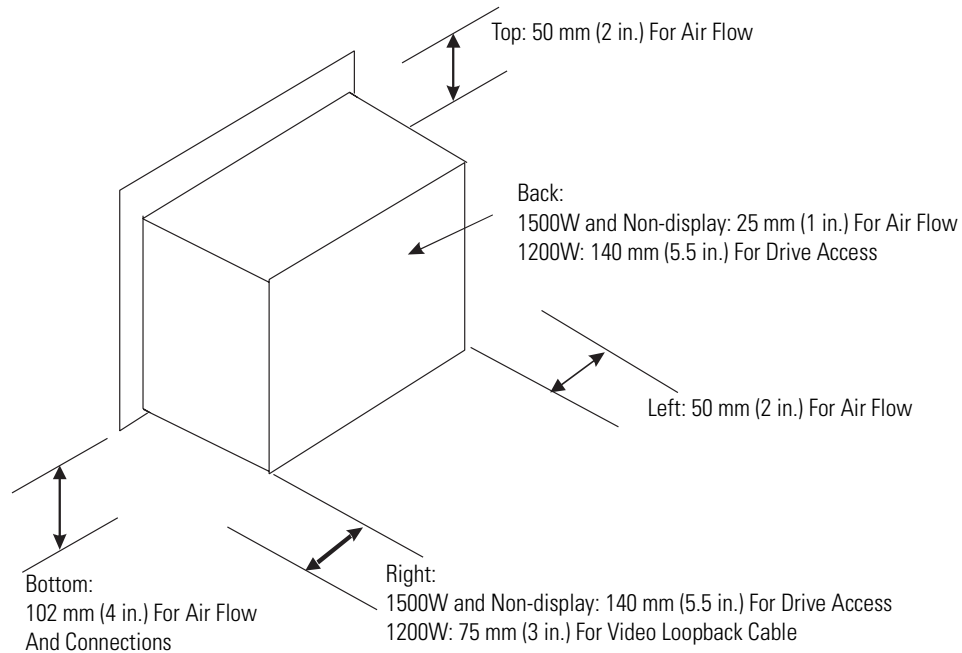
- Panel cutout tools
- #2 Phillips screwdriver

Mount the Workstation in a Panel

You can install the 1200W and 1500W models of the workstation in a panel by using mounting clips. The non-display version can be installed in a panel by using the four screw holes on the front plate.

Mounting Clearances

Allow adequate space around the computer for mounting, air flow, connections, and maintenance. Do not operate the computer in an enclosure using the minimum clearances unless adequate ventilation or other cooling methods are used to maintain the temperature at its specified rating.



Panel Mounting Guidelines

Observe these guidelines when installing the unit in a panel:

- Confirm that there is adequate space within the panel enclosure.
- Cut supporting panels to specifications before installation. Take precautions so metal cuttings do not enter components already installed in panel.
- Supporting panels must be at least 14 gauge to be sure of proper sealing against water and dust and to provide proper support. The mounting hardware supplied accommodates panels up to 6.25 mm (0.25 in.) thick.

ATTENTION



Failure to follow these guidelines may result in personal injury or damage to the panel components.

Panel Cutout Dimensions

Workstation Model	Cutout Dimensions (HxW), approx.
1200W	279.0 x 450.0 mm (10.98 x 17.72 in.)
1500W, Non-display	326.4 x 429.3 mm (12.85 x 16.90 in.)

Mount the Display Workstation in a Panel

Mounting clips secure the workstation to the panel. The 1200W requires 10 clips; the 1500W requires 12 clips.

1. Remove electrical power from the panel.

ATTENTION

Remove all electrical power from the panel before making cutout.

Make sure the area around the panel cutout is clear.

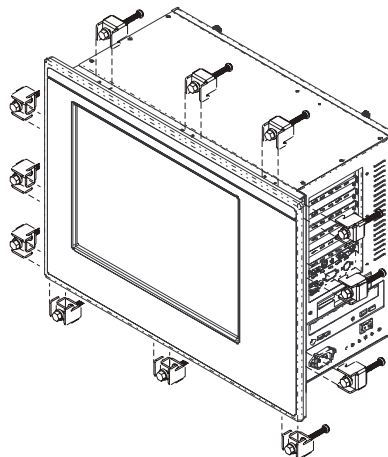
Take precautions so metal cuttings do not enter components already installed in panel.

Failure to follow these warnings may result in personal injury or damage to the panel components.

2. Cut an opening in the panel using the appropriate panel cutout dimensions.
3. Make sure the sealing gasket is properly positioned on the computer.

This gasket forms a compression-type seal. Do not use sealing compounds.

4. Place the computer in the panel cutout.
5. Slide the mounting clips into the slots on the top, bottom, and sides of the computer.



6. Gradually tighten the clips, one at a time, around the bezel by following the specified sequence.

The sequence begins with the center clips and continues to the corner clips. Repeat this process at least three times until the clips are hand-tight and the gasket is compressed uniformly against the panel.

7	1	8	9	1	10
3			9	5	11
Torque Sequence for 1200W					
10			4	4	3
6	2	5		12	6
				8	2
					7

7. Tighten the mounting clips to a torque of 1.4 Nm (12 lb-in) using the sequence in step 6, being sure not to overtighten.

ATTENTION



Tighten the mounting clips to the specified torque to provide a proper seal and prevent damage to the product. Rockwell Automation assumes no responsibility for water or chemical damage to the product or other equipment within the enclosure because of improper installation.

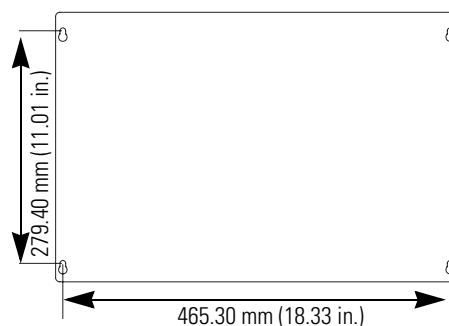
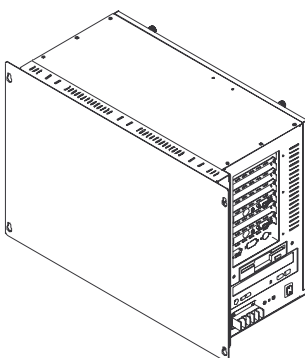
Mount the Non-display Workstation in a Panel

The non-display workstation mounts on a wall, panel, or 19-inch rack. The workstation attaches to the panel using the four screw slots in the front plate. Use M5 or #10 screws (or larger). Screws are not included.

ATTENTION



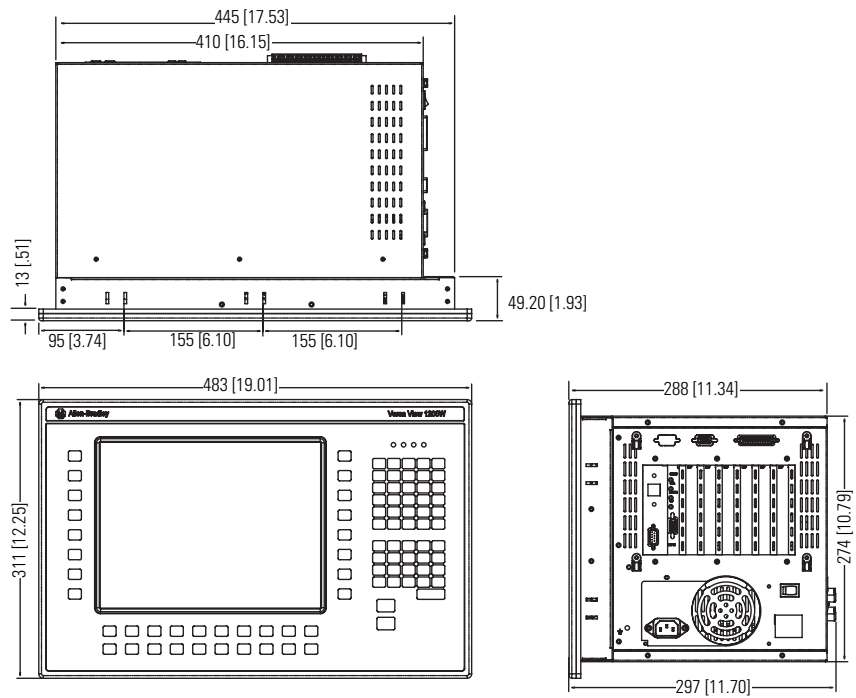
Remove all electrical power from the panel before making the cutout. Make sure the area around the panel cutout is clear. Do not allow metal cuttings to enter components that are already installed in the panel. Failure to follow these warnings may result in personal injury or damage to the panel components.



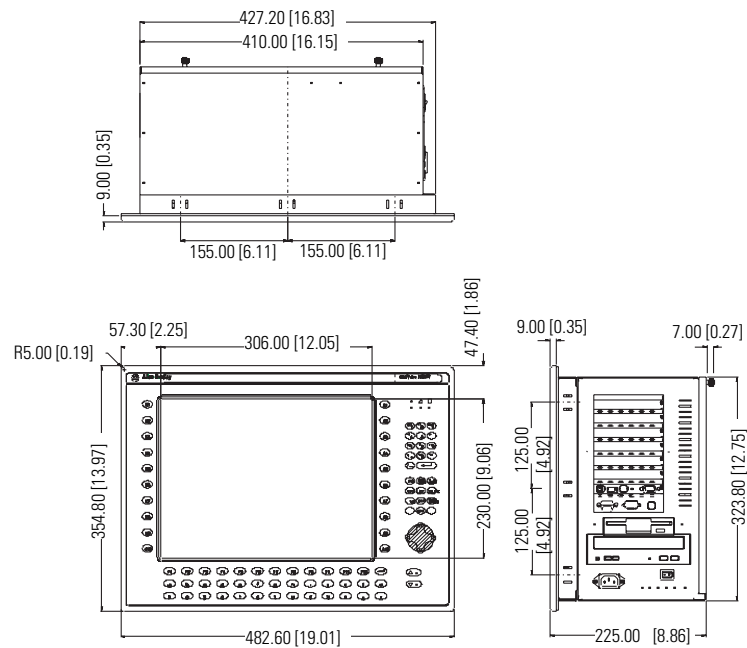
Product Dimensions

Product dimensions for each workstation are given in mm (in.).

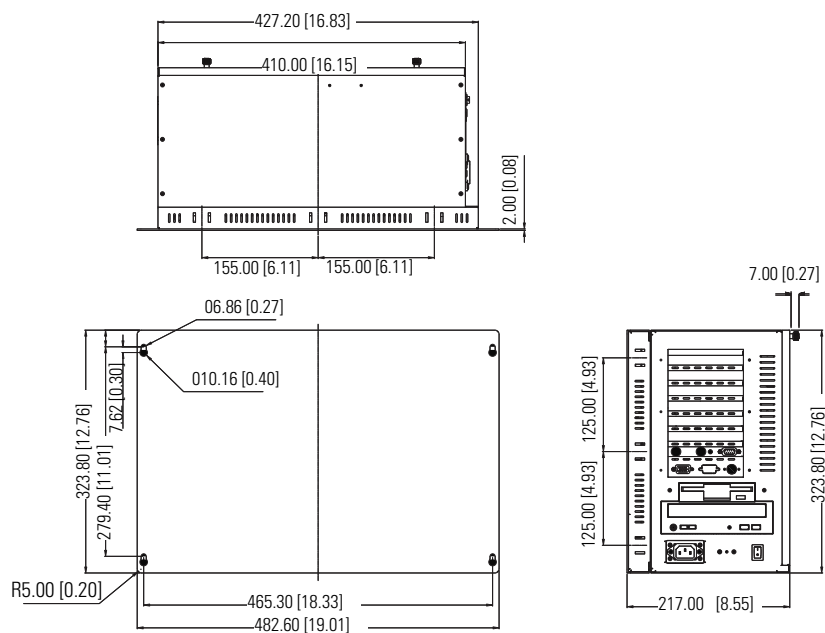
1200W Workstation with Display, 6180W-12xxxxxx



1500W Workstation with Display, 6180W-15xxxxx

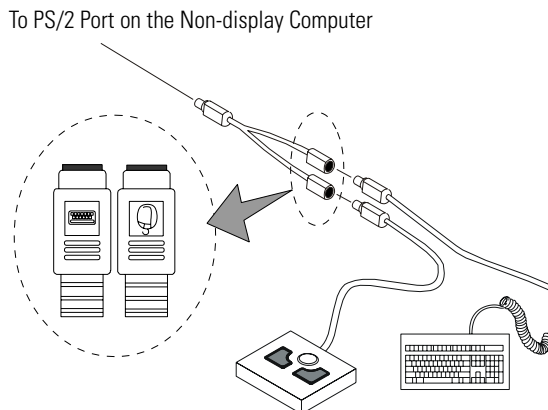


6180W Non-display Workstation, 6180W-7xxxxx



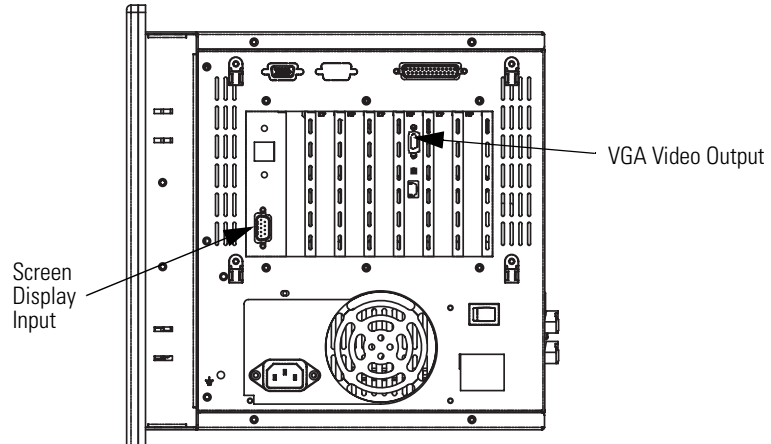
Connect a Keyboard and Mouse

You can connect a USB keyboard and/or mouse to the USB ports on the computer. On the non-display computers, you can also connect a keyboard or mouse to the PS/2 port.



Connect the Video

A video loopback cable is shipped with the display computers. The loopback cable connects between the VGA Video Output connector and the Screen Display Input connector on the computer. You must connect this cable to view images on the front panel display of the computer.



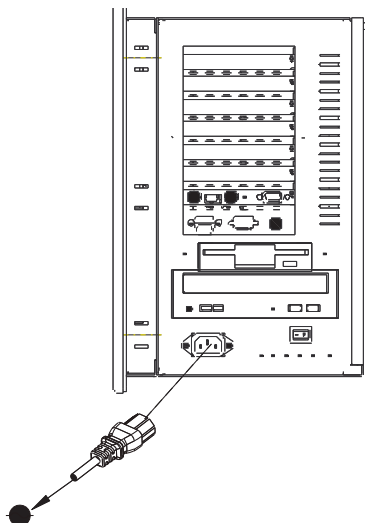
IMPORTANT

Images will not appear on the front panel display if the video loopback cable is not connected.

Connect AC Power

A standard IEC 320 power cord provides power to the computer. The power supply input accepts 120/240V ac. The power supply is autoswitching.

Operate the computer in an industrial or control room environment, which uses some form of power isolation from the public low voltage mains.



ATTENTION



The power cord must be connected to a terminal block and Earth ground. Failure to follow this warning could result in severe electrical shock.

Installing the computers in a panel, enclosure, or rack that is already connected to Earth ground will satisfy this requirement. Otherwise, connect your computer to Earth ground using a 1.3 mm² (16 AWG) or larger external wire.

The ground wire should have green insulation with a yellow stripe for easy identification.

The power source must have its own disconnect. Do not connect the computer to a supply that is connected to the main electrical disconnect.

To prevent problems resulting from power surges or unexpected power failure, you should protect the outlet with its own fuses or circuit breakers, as well as an Uninterruptible Power Supply (UPS) system.

Always shut down the operating system prior to removing power to minimize performance degradation and operating system failures.

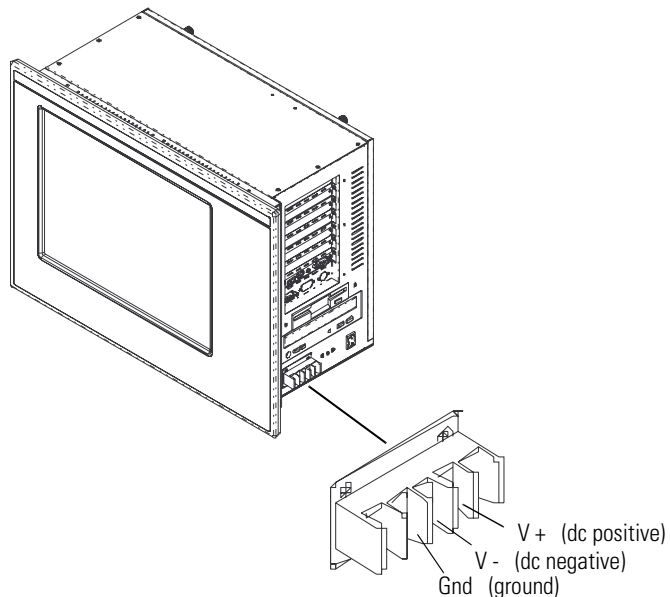
Connect DC Power

The computers are also available with a 24V dc power option. The power supply is internally protected against reverse polarity.

ATTENTION

Use a Class 2/SELV (safety extralow voltage) isolated and ungrounded power supply as input power to the computer. This power source provides protection so that under normal and single fault conditions, the voltage between the conductors and Functional Earth/Protective Earth does not exceed a safe value.

1. Secure the dc power wires to the terminal block screws.
2. Secure the ground wire to the GND terminal block screw.
3. Apply 24V dc power to the computer.



Connect to the Network

The computers connect to the Ethernet network using CAT5 or CAT5E twisted-pair Ethernet cabling with RJ45 connectors.

The computers support 10/100 Mbps network communication.

IMPORTANT

To prevent performance degradation of Ethernet communication, do not subject the computer or cables to extreme radiated or conducted high-frequency noise.

Proper cable routing and power conditioning is required to be sure of reliable Ethernet communication in industrial environments. Rockwell Automation recommends that you route all Ethernet cabling through dedicated metal conduits. Installing ferrite bead filters at the cable ends may also improve reliability.

Operation

Chapter Objective

This chapter covers these topics:

- General operating guidelines
- Operator access to computer
- DIP switch settings
- Video loopback cable
- Starting the system
- Resetting the system
- Installing drivers
- Universal Serial Bus (USB) ports

Operating Guidelines

Follow these operating guidelines for your computer:

- Avoid turning the system on and off frequently.
- Always use the proper power down procedures as required by your operating system, such as the Shut Down command in the Microsoft Windows operating system.
- Do not operate the computer with the covers removed. An electrical shock hazard exists. Removing the covers will disrupt air flow and may result in overheating. All covers are required to maintain EMI shield.

ATTENTION

After shutting the system off, do not move the computer, or turn it back on again, until the hard drive comes to a complete stop, which takes about 30 seconds.

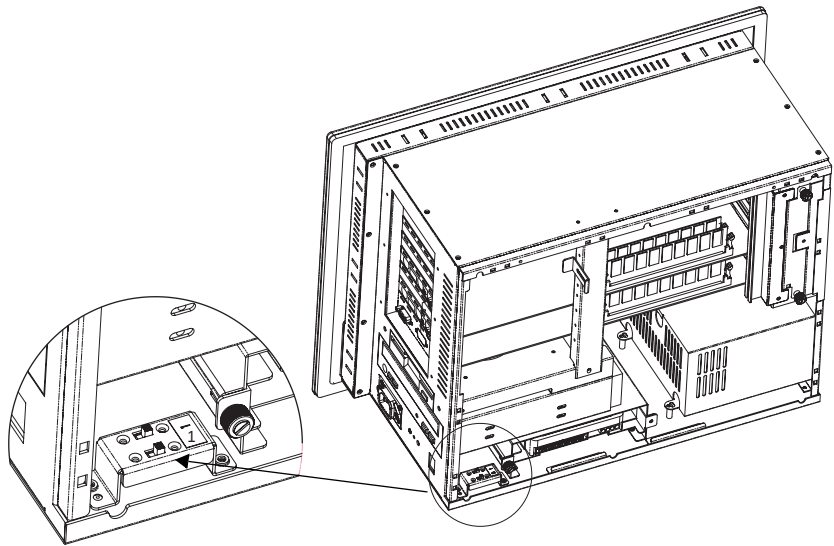
Operator Access

Operator access is limited to the front panel of the workstation. This includes the display, keypad, and touchscreen. Access to components behind the panel in which the workstation is installed is restricted to authorized and properly trained personnel.

DIP Switch Settings for Front-panel Keypad

The workstation includes a pair of DIP switches that control the operation of the front panel keypad. The switches are inside the rear panel of the 1500W, and inside the top cover of the 1200W. The switches are both set to the 1 position at the factory. The factory setting is appropriate for all Windows applications. Under normal circumstances there is no need to alter the switch settings. Keypad operation is controlled by the switches as shown in the table.

SW1	SW2	Keypad Encoding
0	0	DOS application for legacy 6180W applications
0	1	Reserved, consult factory
1	0	Reserved, consult factory
1	1	Default setting for Windows applications



Video Loopback Cable

All 1200W workstations and 1500W series A workstations require that you install the video loopback cable for proper operation. Make sure the cable is connected between the VGA video output connector and the screen display input connector.

Start the System

Apply power to the system. The computer performs a Power On Self Test (POST). The processor board, memory, keyboard, and certain peripheral devices are tested.

The system displays the progress of the POST and initialization of accessory devices. The computer displays the startup dialogs for the operating system that is installed.

If your system does not start up, or you notice other problems, refer to System Troubleshooting.

Reset the System

To reset the computer, press Ctrl+Alt+Delete and follow the operating system instructions.

After resetting, the computer begins the Power On Self Test (POST). During a reset, the computer:

- clears RAM.
- starts the POST.
- initializes peripheral devices, such as drives and printers.
- loads the operating system.

Install Drivers

The operating system usually selects the best device driver settings. However, to be sure of fully optimized performance by manually installing the device drivers included with your system. Refer to the Readme files on the supplied accessory CD for details on the latest device drivers and installation procedures.

Universal Serial Bus (USB) Ports

The Universal Serial Bus (USB) is an external bus standard that supports data transfer rates up to 12 Mbps (12 million bits per second). You can connect multiple peripheral devices to the USB ports, such as a mouse, modem, and keyboard. USB also supports plug-and-play installation and hot plugging.

For information on installing or using USB, refer to the documentation for your USB peripheral device.

TIP

Many USB devices only work with Windows XP or Windows 2000 operating systems because they have native USB drivers. Make sure the selected USB peripheral has software drivers available for your target operating system.

Replace System Components

Chapter Objectives

This chapter provides safety precautions and the following procedures:

- Remove the covers
- Install or remove add-in cards
- Replace the hard disk drive
- Replace the floppy disk drive
- Replace the CD-ROM/DVD-ROM drive
- Replace the memory modules

Accessories and Replacement Parts

You can view a current list of accessories at the Rockwell Automation Allen-Bradley website <http://www.ab.com/versaview>.

Safety Precautions

The computers contain line voltages. Disconnect all power to the computer before you install or remove system components.

ATTENTION

Disconnect all power from the computer before removing components. Failure to disconnect power could result in severe electrical shock or damage to the computer.

Electrostatic Discharge (ESD)

ATTENTION

Electrostatic discharge (ESD) can damage the computer and components. Make sure you work in a static-safe environment and wear a grounding strap whenever handling circuit boards, power supply, memory modules, or other internal components.

Remove the Covers

To maintain, install, or upgrade computer components, you must first remove the cover.

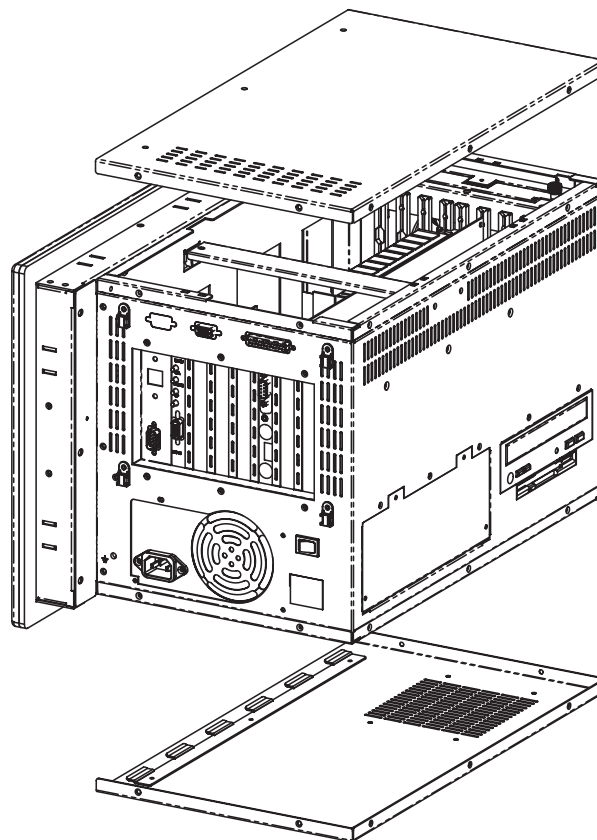
ATTENTION

Failure to follow proper safety precautions could result in severe electrical shock and/or damage to the computer.

Remove the Top and Bottom Covers on the 1200W

Follow these steps to remove the top and bottom covers.

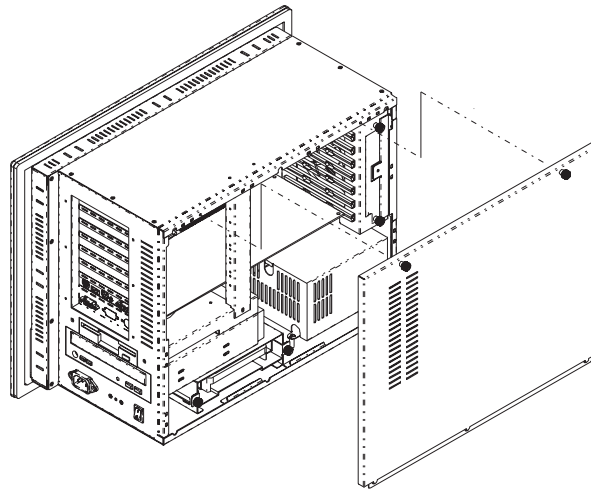
1. Disconnect power from the computer.
2. Remove the 7 screws from the top cover or the 11 screws from the bottom cover.
3. Lift the cover from the chassis.



Remove the Back Cover on the 1500W

Follow these steps to remove the back cover of the 1500W workstation.

1. Disconnect power from the computer.
2. Loosen the two thumb screws securing the back cover.
3. Lift the cover up to disengage from the base.



4. To reinstall the back cover, position the back cover over the chassis, sliding the cover down to engage the brackets at the base and tighten the thumb screws.

Install or Remove Add-in Cards

You can install ISA and PCI compatible cards.

ATTENTION



Failure to follow proper safety precautions could result in severe electrical shock and/or damage to the computer.

ATTENTION

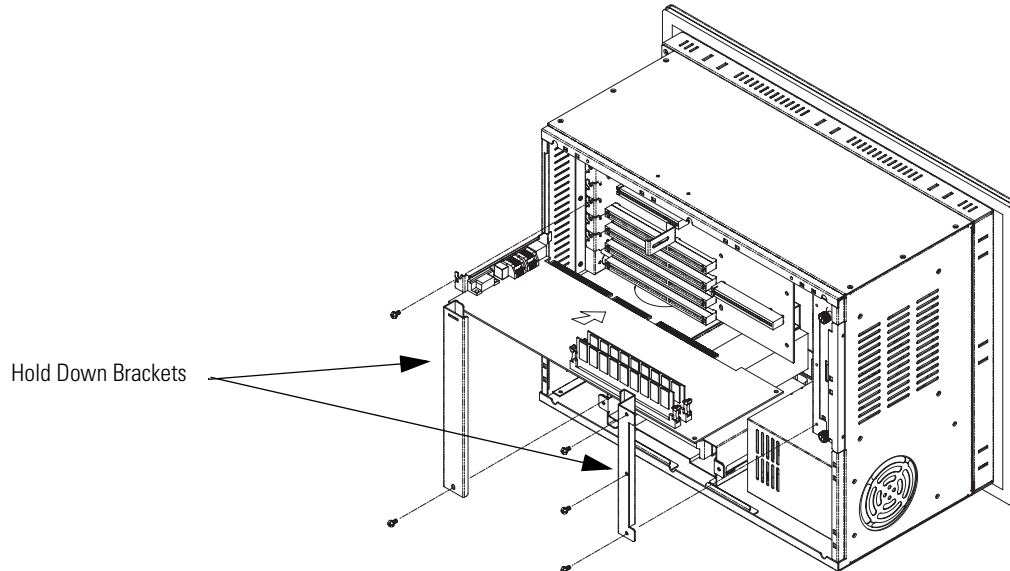


Add-in cards are sensitive to ESD and require careful handling. Hold cards only by the edges. Do not touch connectors, components, or circuits. After removing a card, place it on a flat, static-free surface, component side up. Do not slide the card over any surface.

Install an Add-in Card

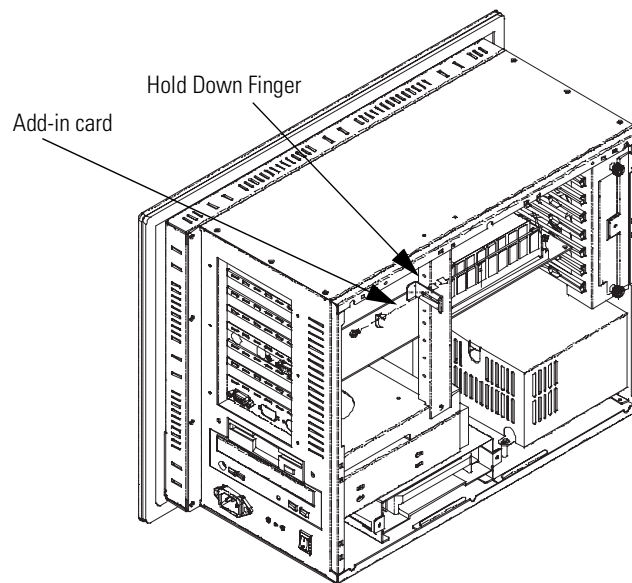
Follow these steps to install an add-in card.

1. Disconnect power from the computer.
2. Remove the back cover of the 1500W or the non-display computer; remove the top cover of the 1200W computer.
3. Remove the hold-down brackets by removing the screws securing them to the chassis and then lifting them out of the bracket latch at the other end.
4. Remove the screw securing the slot cover to the chassis at the selected slot location and remove the slot cover.
5. Remove the add-in card from its anti-static packaging.
6. Hold the card by the edges and firmly press the board into the slot on the backplane.
7. Confirm that the card is fully seated in the backplane connector.



8. Attach the card orb with the slot cover screw removed earlier.

9. For lower profile cards, loosely attach a padded hold down finger to the hold down bracket.



10. Reattach the hold down brackets to the chassis with the screws removed earlier.
11. Position and tighten the hold down finger, if appropriate.
12. Reinstall the cover.

Remove an Add-in Card

Follow these steps to remove an add-in card.

1. Disconnect power from the computer.
2. Remove the cover.
3. Remove the hold down bracket by removing the screw securing it to the chassis.
4. Lift the hold down bracket out of the bracket latch at the other end.
5. Remove the screw securing the add-in card's orb to the chassis.
6. Pull the add-in card free of the slot.

Store the card in an anti-static wrapper.

7. Install a slot cover over the open slot and secure with the screw you removed earlier.

8. Remove the unused hold down finger from the hold down bracket if appropriate.
9. Replace the hold down bracket to the chassis using the screw removed earlier.
10. Reinstall the cover.

Replace the Hard Disk Drive

Follow these precautions when working with the hard disk drive.

- Do not touch internal components unnecessarily.
- Always handle the hard disk drive by its metal frame.
- Store the hard disk drive in an anti-static bag when it is not installed.
- Never remove or install a hard disk drive with the power on.

ATTENTION

Failure to follow proper safety precautions could result in severe electrical shock and/or damage to the computer.

ATTENTION

Mechanical shock can damage a hard drive. Do not drop or bump the drive.

Remove the Hard Disk Drive

This procedure describes how to remove the hard disk drive from the 1500W and the non-display workstations.

TIP

The 1200W drive assembly includes the hard disk drive, the floppy drive, and the CD/DVD drive. You access the drive assembly through the bottom cover. Four screws fasten the drive assembly to the chassis as shown in the 1200W Drive Assembly illustration. After removing the 1200W drive assembly, remove the hard disk drive similar to the 1500W and non-display workstations.

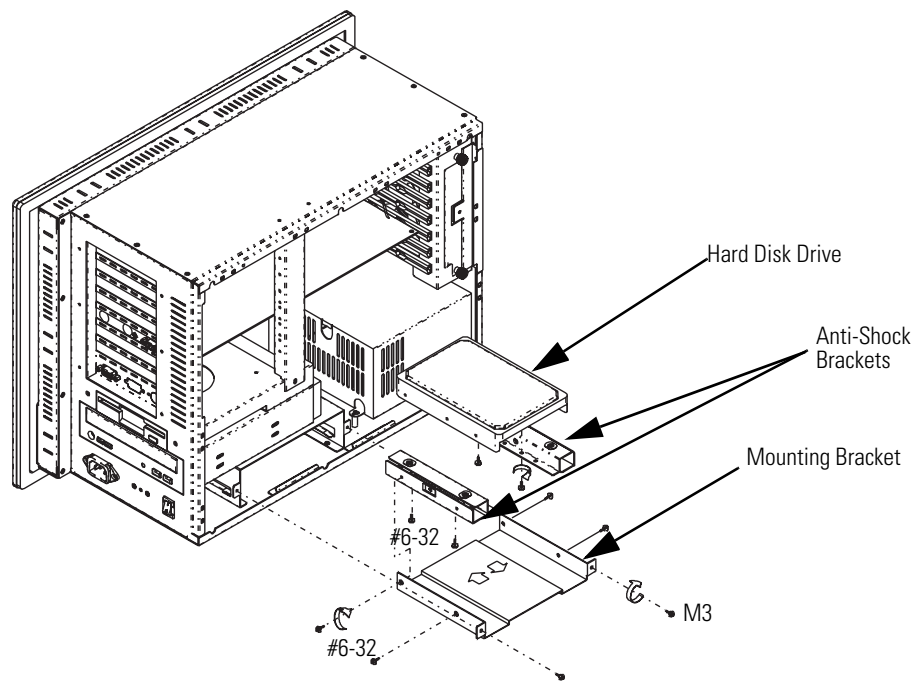
1. Disconnect power from the computer.
2. Remove the back cover.
3. Disconnect the ribbon cable and the four-pin power cable from the hard disk drive.

IMPORTANT

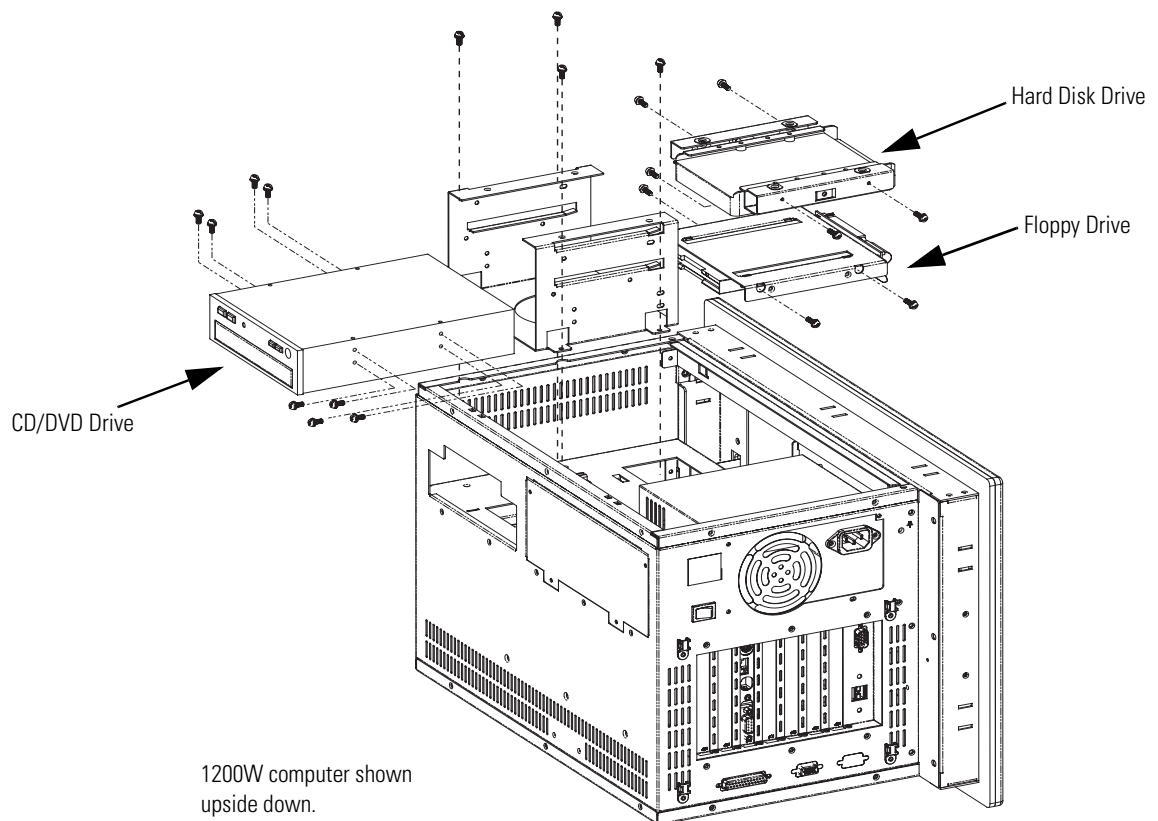
Note the location and orientation of all cables before you remove the existing power supply and cabling, so that you can reattach them correctly.

4. Remove the two screws that fasten the hard disk drive assembly to the chassis.
5. Lift the hard disk drive assembly out of the chassis.
6. Remove the four screws that secure the mounting bracket to the drive.
7. Remove the four screws that attach the anti-shock brackets to the disk drive.

1500W and Non-display Hard Disk Drive



1200W Drive Assembly



Install the Hard Disk Drive

Follow these steps to install the hard disk drive.

1. Attach the anti-shock brackets to the drive using the screws removed during disassembly.
2. Reattach the disk assembly to the mounting bracket using the screws removed during disassembly.
3. Slide the hard disk drive assembly back into the chassis.
4. Connect the ribbon cable and four-pin power cable to the hard disk drive.

Make sure that the cable assembly is properly secured so that the connection will not be strained by shock or vibration.

IMPORTANT

Make sure the ribbon cable is properly oriented and fully seated.

5. Fasten the hard disk drive assembly to the chassis with two (M3) screws.
6. Reinstall the back cover.

Replace the Floppy Drive

Follow these precautions when working with the floppy drive.

- Do not touch internal components.
- Always handle the floppy drive by its metal frame.
- Store the floppy drive in an anti-static bag when it is not installed.
- Never disconnect or install a floppy drive with the power on.

ATTENTION

Failure to follow proper safety precautions could result in severe electrical shock and/or damage to the computer.



ATTENTION

Mechanical shock will damage a floppy drive. Do not drop or bump the drive.



Remove the Floppy Drive

This procedure shows how to remove the floppy drive from the 1500W and non-display workstations.

TIP

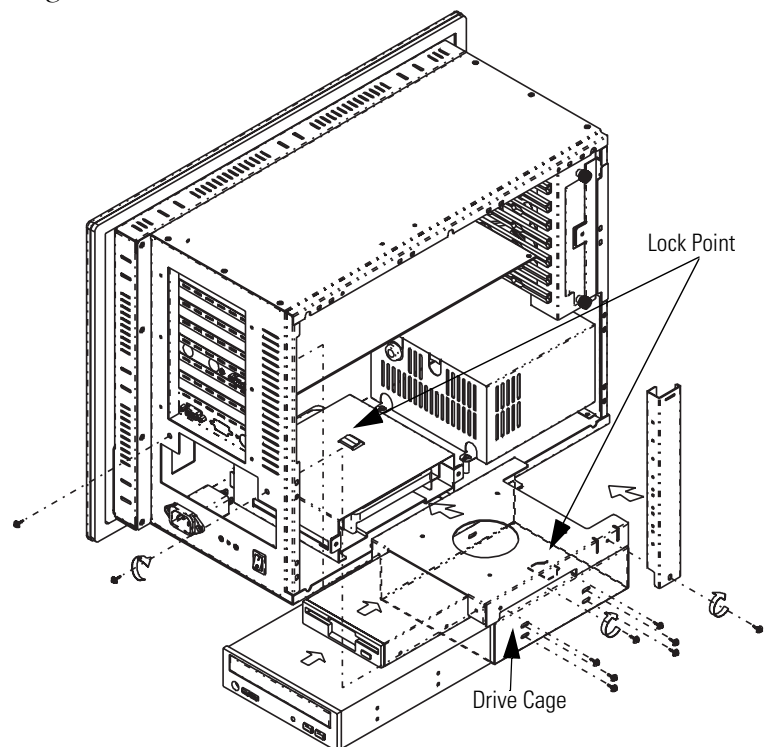
For the 1200W, remove the drive assembly as described under Replace the Hard Disk Drive. You can then remove the floppy drive similar to the 1500W and non-display workstations.

1. Disconnect power from the computer.
2. Remove the back cover.
3. Disconnect the flat cable and the four-pin power cable at the floppy drive.

IMPORTANT

Note the location and orientation of all cables before you remove the existing power supply and cabling, so that you can reattach them correctly.

4. Remove the two M3 screws from each side of the floppy drive on the outside of the chassis.
5. Slide the drive cage toward the power supply to access both sides of the floppy drive to disengage lock points.
6. Remove the six screws that secure the floppy drive to the drive cage.



7. Slide the floppy drive out the front of the cage.

Install the Floppy Drive

- 1.** Slide the floppy drive into the drive cage from the front, aligning screw holes.
- 2.** Fasten the floppy drive to the floppy drive bracket with six screws.
- 3.** Reinsert the drive cage into the chassis making sure to engage lock points.
- 4.** Fasten the drive cage with the two screws on the outside of the chassis, next to the new floppy drive.
- 5.** Connect the flat cable and power cable to the floppy drive.
- 6.** Reinstall the back cover.

Replace the CD-ROM/DVD-ROM Drive

Follow these precautions when working with the CD-ROM/DVD-ROM drive.

- Do not touch internal components.
- Always handle the drive by its metal frame.
- Store the drive in an anti-static bag when it is not installed.
- Never disconnect or install a drive with the power on.

ATTENTION

Failure to follow proper safety precautions could result in severe electrical shock and/or damage to the computer.

ATTENTION

Mechanical shock can damage a CD-ROM or DVD-ROM drive. Do not drop or bump the drive.

Remove the Drive

The procedure shows how to remove the CD/DVD drive from the 1500W and non-display workstations.

TIP

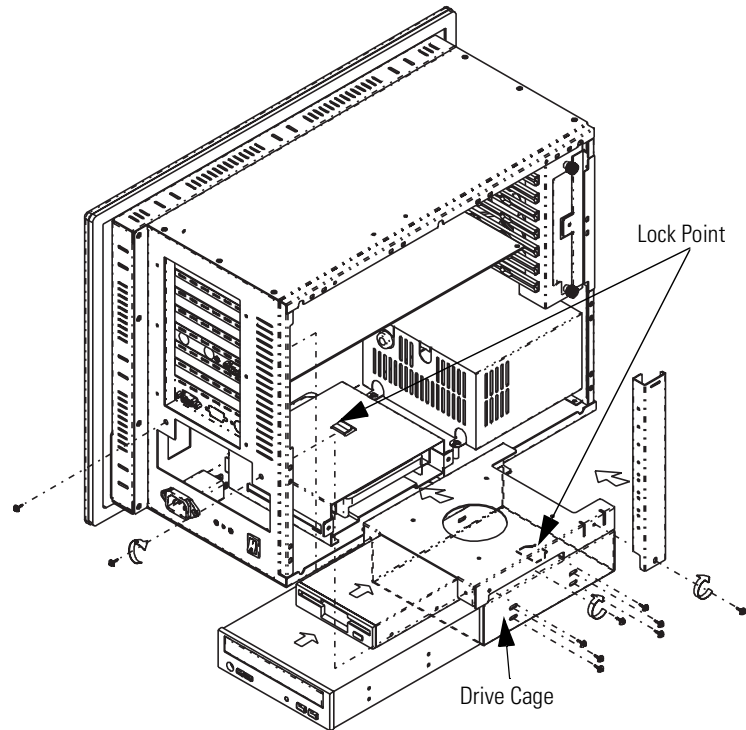
For the 1200W, remove the drive assembly as described under Replace the Hard Disk Drive. You can then remove the CD/DVD drive similar to the 1500W and non-display workstations.

1. Disconnect power from the computer.
2. Remove the back cover.
3. Disconnect the power supply, audio cable, and ribbon cable from the drive.

IMPORTANT

Note the location and orientation of all cables before you remove the existing power supply and cabling, so that you can reattach them correctly.

4. Remove the two screws that fasten the drive cage to the chassis (on either side of the floppy drive on the outside of the chassis).
5. Lift the drive assembly out of the chassis.
6. Slide the drive cage toward the power supply disengage lock points to access both sides of the drive.



7. Remove the eight screws that fasten the drive to the drive cage.
8. Slide the drive out the front of the cage.

Install the Drive

1. Slide the drive into the drive cage from the front, aligning the screw holes.
2. Fasten the drive to the floppy drive bracket with four screws.
3. Reinsert the driver cage into the chassis making sure to engage lock points.
4. Fasten drive cage with two screws on outside of chassis, next to the new drive.
5. Connect the flat cable, audio cable and power cable to the drive.
6. Reinstall the back cover.

Replace the Memory Modules

The CPU board has two 168-pin sockets. Each socket supports a single or double-sided 3.3V Dual In-Line Memory Module (DIMM). For memory replacement or expansion, use the Allen-Bradley 512 MB DIMM memory module, catalog number 6189V-DIMM512.

TIP

We recommend that you use only qualified Allen-Bradley parts.

Guidelines for Replacing Memory

ATTENTION

ESD can damage the computer and components. Make sure you work in a static-safe environment and wear a grounding strap whenever handling circuit boards, power supply, memory modules, or other internal components.

- Always handle the memory cards by the ends, not by the memory module contacts.
- Store memory in a sealed anti-static bag when it is not installed.
- Never install or remove memory with the power turned on.

Add or Remove Memory

1. Disconnect power from the computer.
2. Remove the back cover on the 1500W or non-display computer, or the top cover on the 1200W.
3. Remove any retaining brackets blocking access to the memory module.

The DIMM sockets are near the top of the CPU board.

4. Remove the existing memory modules from the CPU card by clipping the cable tie and pressing outward on the retaining latches.
5. To install a new DIMM, hold the module by the edges as you remove it from its anti-static package.
6. Position the DIMM so that the small notches in the bottom edge of the DIMM align with the notches in the DIMM socket on the CPU card.

The retaining latches must be fully disengaged, or open, when you install a DIMM.

7. Press down firmly and uniformly on the DIMM to seat it in the socket.

The latches must engage in the DIMM slot to secure the DIMM.

8. Replace the tie wrap around the DIMM and latches to fully secure the DIMM.
9. Replace the cover.

System Troubleshooting

Chapter Objectives

This chapter provides information on the following topics:

- Troubleshooting procedure
- Diagnostic utility
- Troubleshooting checklists

Troubleshooting Procedure

Follow these steps to identify and isolate a problem.

1. Shut down the computer's operating system by using the appropriate method for your operating system.
2. Disconnect power to the computer.
3. Disconnect all peripheral devices from the computer.
4. Connect the keyboard and mouse, if used.
5. Check the video connection, if using an external monitor.
6. Connect power to the computer.

When power is applied, check the Power On Self Test (POST). If a nonfatal failure occurs, POST emits beep codes that indicate errors in hardware, software, and firmware. If a display monitor is attached, POST can show a related error message. However, if a fatal error is detected, the startup process is terminated.

7. If the system restarts, isolate the problem by connecting peripheral devices one at a time until the problem occurs.

If the problem is with a specific software package, or driver, reinstall the software.

8. Refer to the diagnostic utility and the troubleshooting checklists if the problem is not related specifically to a software installation or peripheral device.

Diagnostic Utility

If you followed the troubleshooting procedure and are still having problems, use the VersaView diagnostic utility to isolate the problem. This utility determines the cause of the malfunction by testing computer components.

You can perform an initial diagnosis without disconnecting or moving your computer. The process takes as little as five minutes or as long as eight hours, depending on the problem. After the diagnostic utility has run, you can generate a report for analysis by a technical support representative, expediting any necessary repair process.

The diagnostic utility and documentation are on the VersaView Support CD that is shipped with your computer. To run the diagnostic utility, insert the Support CD into the computer's CD-ROM drive and restart the computer. No software is installed, nor does the utility affect any software already installed.

Troubleshooting Checklists

Use the following checklists to test or verify items.

Problems During Start-up

- Is the video loopback cable installed and secure?
- Are all connections secure?
- Are the device drivers installed?
- Are the jumpers on any add-in boards correctly positioned?
- Is the hard drive formatted and recognized correctly in the BIOS?
- Is the RAM memory properly installed? You may want to reinstall it to be sure of a good connection.
- Is the IDE cable from the hard drive properly connected? You may want to see if the system will start from a floppy disk.
- Is BIOS properly configured? Select Load Optimal Default in the CMOS setup procedure. This will restore the BIOS settings to the original factory settings.

Problem After Start-up

- If you are running a software package, reinstall the software.
- If the problem is intermittent, you may have a loose connection. Check all connections including any ISA/PCI cards. Check that the memory module is fully installed.
- Does your system have a computer virus? Run anti-virus software.
- Select Load Optimal Default in the CMOS setup procedure. This will restore the BIOS settings to the original factory settings.
- Although the computers have a regulated and protected power supply, a transient voltage in the power line or peripheral cable may cause a flickering display, unexpected restarts, or a locked up system. If so, exit the application and start over.
- Is the IDE cable from the hard drive properly connected? You may want to see if the system will start from a floppy drive.
- Is the system overheating? Verify that the chassis fan is working and the fan filter is clean.

Problems Running the New Software

- Does the software have a hardware requirement that is not present?
- Are you using an authorized copy of the software? Some copies of software will not work without proper activation.
- Did the software install correctly? Reinstall the software.
- Are you following the software's instructions? Refer to the software vendor's user manual.

Problems with the Add-in Card

- Is the card installed and configured correctly? Check the jumper and other configuration settings.
- Are cables incorrectly installed?
- If the card uses a dedicated interrupt, you may need to reserve that interrupt in the CMOS setup PCI/PnP menu.

Problems with the Display

- Are the display contrast and brightness controls properly adjusted? Refer to the operating system containing the video driver for setup functions.
- Is the monitor compatible with the selected video mode?
- If you are using the integrated display, try to correct the problem by pressing the Auto Adjust button.
- Is the monitor functioning properly? Verify the monitor function by operating it with another computer.
- Is the video cable properly installed?
- Check that the selected character color is not the same as the background color.
- Is the video driver properly installed?
- Restart the computer with the external monitor connected and powered up.

Maintenance

Chapter Objectives

This chapter provides information on these procedures:

- Clean the display
- Replace the battery
- Replace the fan filter
- Backlight assembly disposal
- Ship or transport the computer

Clean the Display

ATTENTION

Use of abrasive cleansers or solvents may damage the display window. Do not scrub or use brushes.

Follow these steps to clean the display.

1. Disconnect power from the computer at the power source.
2. Clean the display with a mild soap or detergent by using a clean sponge or a soft cloth.
3. Dry the display with a chamois or moist cellulose sponge to avoid water spots.

ATTENTION

If the computer has a touchscreen, be aware that it is possible for screen objects to activate during equipment wash-downs if the computer is turned on.

Remove Paint and Grease

Remove fresh paint splashes and grease before drying by rubbing lightly with isopropyl alcohol. Then, provide a final wash using mild soap or detergent solution. Rinse with clean water.

ATTENTION

Make sure the isopropyl alcohol does not come in contact with the equipment labels. Alcohol may cause the label printing to smear.

Replace the Battery

The computer contains a lithium battery to maintain CMOS settings and the real-time clock. The battery is in a battery holder on the computer's CPU board. Replace this battery as needed with a Panasonic battery, part number CR2032, or equivalent.

WARNING

To avoid the danger of explosion, only replace the battery with part number CR2032 or a recommended equivalent. Dispose of used batteries according to the manufacturer's instructions.

The battery life depends on the amount of on-time (time computer is powered on) per week.

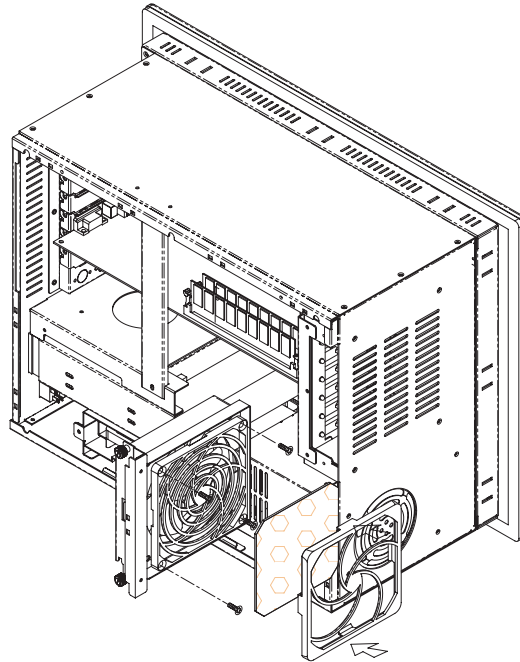
Estimated Battery Life

On-time	Expected Battery Life
0 hours/week	4 years
40 hours/week	5.5 years
80 hours/week	7 years

Replace the Fan Filter

Replace the fan filter every 6 to 12 months. The replacement schedule depends on the environment. The more severe the environment, the more often you need to replace the filter.

On the 1500W or non-display workstation, remove the fan filter from the back. On the 1200W, remove the fan filter from the top.



Backlight Assembly Disposal

ATTENTION



The backlight assembly in this unit contains mercury. At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

Ship or Transport the Product

If you need to ship the product via common carrier or otherwise transport it to another location, you must first uninstall the product and place it in its original packing material.

ATTENTION



Do not ship or transport the product when it is installed in a machine, panel or rack. Doing so may cause damage to the product. You must uninstall the product and place in its original packing material before shipping. Rockwell Automation is not responsible for damage incurred to a product that is shipped or transported while installed in a machine, panel, or rack.

Specifications

VersaView Industrial Workstations Specifications

Attribute	Value
Display	
Display type	Color Active Matrix Thin Film Transistor (TFT)
Touchscreen (optional)	Resistive analog
Display size (diagonal) 1200W 1500W	308 mm (12.1 in.) 381 mm (15 in.)
Display area (WxH), approx. 1200W 1500W	246 x 185 mm (9.7 x 7.3 in.) 305 x 229 mm (12 x 9 in.)
Native resolution 1200W 1500W	800 x 600 1024 x 768
Viewing angle Horizontal Vertical	60° 40°
Response time	16 ms
Electrical	
Input voltage, ac	90...264V ac, autoswitching
Line frequency, ac	47...63 Hz
Power consumption, ac	160 VA (1.6 A at 100V rms, 0.67 A at 240V rms)
Power dissipation, ac	160 W
Input voltage, dc	19...32V dc
Power consumption, dc	180 W (7.5 A at 24V dc)
Inrush current at 24V	20 A peak, 5 ms
Mechanical	
Weight 1200W 1500W Non-display workstations	17 kg (37.4 lb) 18.5 kg (40.8 lb) 16.5 kg (36.4 lb)
Dimensions, overall (HxWxD), approx. 1200W 1500W Non-display workstations	311 x 483 x 297 mm (12.25 x 19.01 x 11.70 in.) 355 x 483 x 225 mm (13.97 x 19.01 x 8.86 in.) 324 x 483 x 217 mm (12.75 x 19.01 x 8.55 in.)
Cutout dimensions (HxW), approx. 1200W 1500W, Non-display workstations	279.0 x 450.0 mm (10.98 x 17.72 in.) 326.4 x 429.3 mm (12.85 x 16.9 in.)

Environmental Specifications

Attribute	Value
Temperature, operating	0...50 °C (32...122 °F)
Temperature, storage	-20...60 °C (-4...140 °F)
Relative humidity, operating ⁽¹⁾	20...85% without condensation
Relative humidity, nonoperating ⁽²⁾	5...90% without condensation
Vibration, operating	0.006 in. p-p, (10...57 Hz); 1 g peak (57...500 Hz)
Vibration, nonoperating	0.012 in. p-p, (10...57 Hz); 2 g peak, (57...500 Hz)
Shock, operating	15 g (1/2 sine, 11 ms)
Shock, nonoperating	30 g (1/2 sine, 11 ms)
Enclosure ratings, panel mounted	NEMA Type 4, 12, IEC IP66

⁽¹⁾ Derate above 40 °C to 45% at 50 °C.

⁽²⁾ Derate above 40 °C to 39% at 60 °C.

Certifications⁽¹⁾

Attribute	Value
c-UL-us	UL 60950 recognized component, c-UL 950 recognized component, or UL/c-UL listed when marked
CE	Marked for all applicative directives LVD (72/23/EEC) EMC (89/336/EEC)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
RoHS compliant	

⁽¹⁾ See <http://ab.com> for declarations of conformity, certificates, and other certification details.

Use a Touchscreen

Computers with the touchscreen option are shipped with the touchscreen and touchscreen controller installed and connected.

Touchscreen Serial Port Usage

The optional touchscreen controller connects internally to the COM2 serial port. The touchscreen is factory configured with the proper COM2 and touchscreen driver settings, so no user configuration is required.

Driver Software

The touchscreen driver is already loaded on the computer. The driver software is also on the accessory cd.

TIP

If it becomes necessary to reinstall the touchscreen driver, the touchscreen utility will automatically detect the serial port used by the touchscreen controller.

For Additional Information

For more information on setting up or operating a touchscreen or for future driver upgrades, refer to <http://www.ab.com>.

Resistive Touchscreen Technology

Resistive touchscreens are activated when you apply pressure to the touchscreen with your finger. You can operate a resistive touchscreen while wearing gloves.

ATTENTION

Do not use sharp instruments to activate the touchscreen. Scratching the surface of the touchscreen could damage the unit.

Calibrate the Touchscreen

The touchscreen supplied with the computer is factory installed and calibrated.

Follow these steps to recalibrate the touchscreen.

1. Run the touchscreen configuration utility through the PROGRAMS menu of the operating system.
2. Start the calibration routine offered within the utility.
3. Follow the calibration instructions given on the computer screen.

Upgrade to a New BIOS

Introduction

If a new BIOS is released to enhance the performance of your computer, or to correct a defect, you can download the BIOS and update your computer. Download the BIOS from the Rockwell Automation website <http://www.ab.com>.

BIOS Update Procedure

Sometimes a new BIOS is released to enhance the performance of your computer (to make it compatible with new hardware/software releases), or to correct a defect. In such cases, you can download the new BIOS and update your computer. Download the BIOS update from the Rockwell Automation website <http://www.ab.com/versaview>.

Follow these steps to update the system BIOS.

1. Attach a display monitor, keyboard, and external USB floppy drive to the VersaView computer.
2. On any computer connected to the Internet and containing a floppy disk, go to the website <http://www.ab.com/versaview>.
3. Click Support Resources > Drivers.
4. Click the link matching your computer's description and navigate to your specific product.
5. On your computer's VersaView Downloads page, click the link for the System BIOS download and save it to the hard drive.
6. Unzip the download.
7. Run the extracted executable and choose to write on the floppy drive.
This creates a BIOS update floppy disk that will start on the VersaView computer.
8. Restart the VersaView computer after inserting the floppy disk containing the BIOS update utility.
9. Follow the directions that display on the computer screen to properly update the BIOS.

A

accessories 10
add-in cards, installing and removing
36, 37

B

back cover, removal 36
battery replacement 56
BIOS

update procedures 63
upgrade 63

C

calibrating touchscreen 62
CD-ROM/DVD-ROM drive, installing and removing 46
cover removal 36
cutout dimensions 21

D

diagnostic utility
location 52
usage 52
display, cleaning 55
driver installation 33

E

electrostatic discharge (ESD) 35

F

fan filter replacement 57
features
1200W 12
1500W 14
filter replacement 57
floppy drive, installing and removing 43

H

hard disk drive, installing or removing
40

I

installation 17
CD-ROM/DVD-ROM drive 46
clearances 20

connect keyboard 23
connect power 27
considerations 19
environment and enclosure 18
floppy drive 43
hard disk drive 40
memory modules 48
mounting procedure 21
mouse or keyboard 26
panel mounting 19
panel mounting guidelines 21
product dimensions 24
required tools 19

K

keyboard or mouse connection 26

M

maintenance
battery 56
clean display 55
fan filter 57
memory modules
replace 48
mouse or keyboard connection 26
multilingual user interface 11

N

network connection 29

O

operating guidelines 31
operator access 31

P

panel mounting 19, 23
POST
troubleshooting function 51
power
connect AC 27
connect DC 28
product dimensions 24
product options 10

R

replacement parts 10
reset 33

S

safety precautions 35

ship product 57

specifications 59

start the system 33

system

overview 9

reset 33

T

touchscreen 61

calibrating 62

driver software 61

serial port 61

type 61

troubleshooting

check lists 53

diagnostic utility 52

distorted or incorrect characters 54

problem after start-up 53

problem during start-up 53

problem running software 54

problem with add-in card 54

procedure 51

U

USB, installing or using 33

V

video loopback cable 32

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your product up and running.

United States	1.440.646.3434 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

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Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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