

Oracle® MICROS Workstation 6 Series Setup Guide for the 610, 620, and 650



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1

Preface

Audience

This document is intended for those who will be setting up, installing, and operating the Oracle MICROS Workstation 6 Series, which includes the 610, 620, and 650 workstation configurations. It is not specific to a particular software application.

Admonitions

Unless specified, the information in this document applies to each configuration of the Workstation 6 Series.

The following symbols may appear in this document:

Caution: There is a risk of personal injury and equipment damage. Follow the instructions.



Caution: Hot surface. Avoid contact. Surfaces are hot and may cause personal injury if touched.



Caution: Hazardous voltages are present. To reduce the risk of electric shock and danger to personal health, follow the instructions.



Depending on the type of power switch your device has, one of the following symbols may be used:

On: Applies AC power to the system.



Off: Removes AC power from the system.



On: The On/Standby switch is in the standby position.



Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:
<https://support.oracle.com>.

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received
- Screen shots of each step you take

Documentation

Oracle Hospitality product documentation is available on the Oracle Help Center at
<http://docs.oracle.com/en/industries/hospitality/>.

Revision History

Date	Description of Change
April 2016	<ul style="list-style-type: none">• Initial publication.
July 2016	<ul style="list-style-type: none">• Added instructions for installing the Biometric Fingerprint Module.• Added instructions for installing the Power USB Module.• Added details for the support of the Microsoft Windows 10 IoT Enterprise operating system on the Workstation 610.
August 2016	<ul style="list-style-type: none">• Added information for installing the High-Mount Customer Display on the Adjustable Stand.
November 2016	<ul style="list-style-type: none">• Added information for the Workstation 610 configuration with Microsoft Windows 8.1 and a 64 GB SSD.
March 2017	<ul style="list-style-type: none">• Added information for the Workstation 620 and Workstation 650 configurations without MSR.
February 2018	<ul style="list-style-type: none">• Updated the Powered RJ45 section.

Date	Description of Change
August 2018	<ul style="list-style-type: none">• Added note to the Technical Specifications section regarding the front-facing opening on the Workstation 6 Series touchscreen border.• Updated the statement regarding the TPM Support setting being disabled by default in the BIOS Security Settings.
October 2018	<ul style="list-style-type: none">• Updated selected part numbers.
January 2019	<ul style="list-style-type: none">• Added a video link to the Installing the Wireless Networking Module section.
April 2019	<ul style="list-style-type: none">• Miscellaneous improvements.
June 2019	<ul style="list-style-type: none">• Enhanced images.• Added wall mount information.
August 2019	<ul style="list-style-type: none">• Added procedure for mounting the Epson PS-180 power supply on the Workstation 6 Series Adjustable Stand.
September 2019	<ul style="list-style-type: none">• Various improvements to images and flow of information.
February 2020	<ul style="list-style-type: none">• Added instructions for installing RAM modules.
March 2020	<ul style="list-style-type: none">• Added Oracle Linux for MICROS information.

2

The Workstation 6 Series

The Oracle MICROS Workstation 6 Series consists of three configurations: the 610, 620, and 650.

- The Oracle MICROS Workstation 610 features an Intel Atom processor and runs the Microsoft Windows Embedded 8.1 Industry Pro operating system or the Microsoft Windows 10 IoT Enterprise operating system. The 610 configuration with the Microsoft Windows Embedded 8.1 Industry Pro operating system is available with a 32 GB or 64 GB SSD.
- The Oracle MICROS Workstation 620 features an Intel Celeron processor and runs the Microsoft Windows 10 IoT Enterprise operating system.
- The Oracle MICROS Workstation 650 features an Intel Core i5 processor and runs the Microsoft Windows 10 IoT Enterprise operating system.

Each workstation is a Point of Sale (POS) terminal featuring a 15.6 inch widescreen high-definition display with a projected capacitive touch screen.

[Technical Specifications](#) contains more details for each configuration of the Workstation 6 Series.

Identifying Your Workstation

To identify your configuration of the MICROS Workstation 6 Series, use the following indicators:

- The Operator LED
 - For the 610, the light is blue.
 - For the 620 and 650, the light is green.
- The label on the back of the workstation display
 - For the 610, the Model reads MICROS Workstation 6 or MICROS Workstation 6 (610).
 - For the 620, the Model reads MICROS Workstation 6 (620).
 - For the 650, the Model reads MICROS Workstation 6 (650).

Primary I/O Ports

The Primary I/O Panel contains the following ports:

- 12V Power Output
- 12V Power USB Header
- IDN Port RS422/RS232
- Series 2 Cash Drawer x2

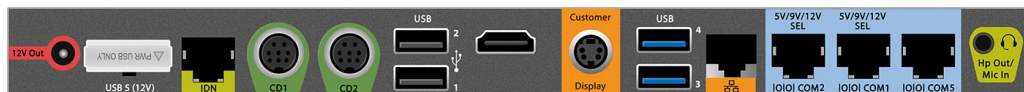
The Series 2 ports are more compact than the previous generation and feature an expanded number of pins to accommodate more options on the cash drawer interface. You can use an adapter cable for backwards compatibility to existing cash drawers.

- USB 2.0 x2
- High Definition 2nd Display Output Connector
- Customer Display

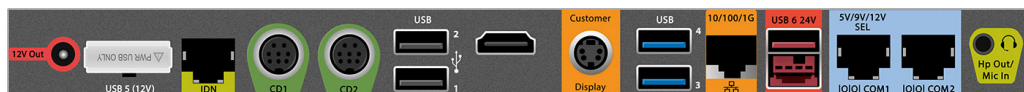
The Customer Display port supports existing pole displays and the Workstation 6 integrated customer display.

- High Speed USB x2
- 10/100/1G Ethernet
- 24V Power USB (620 and 650 only)
- RJ-45 Powered Serial (0/5/9/12V)
 - 2 available on the 610
 - 1 available on the 620 and the 650
- RJ-45 Serial
- Microphone In/Headphone Out

Primary I/O Panel of the MICROS Workstation 610



Primary I/O Panel of the MICROS Workstation 620 and 650



Internal I/O Ports

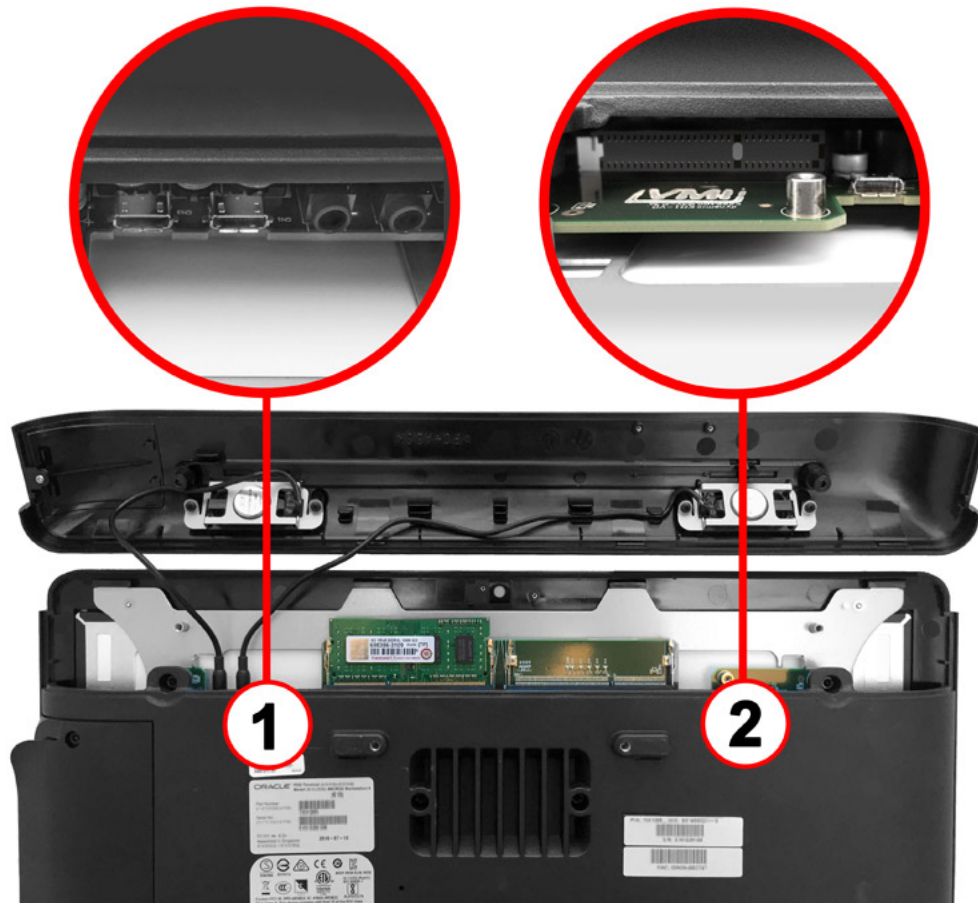
Each configuration of the Workstation 6 Series has the following ports under the rear top cover:

- MICROS Expansion Port

The MICROS expansion port provides connectivity to the system through a number of industry standards, including Serial (UART), SDIO, USB, and PCIe. A standard connector and dedicated footprint provide future-proofing of devices such as wireless modules and storage devices.

- Micro USB 2.0 x3
- Left and Right Speaker Output

Location of MICROS Expansion Port, Micro USB Ports, and Speaker Outputs



- **Location 1:** Includes two micro USB ports and the left and right speaker outputs.
- **Location 2:** Includes the Micros expansion port and a micro USB port.

Adjustable Stand

The Workstation 6 Series Adjustable Stand provides a solid base for mounting the Workstation 6, a wide range of positioning for optimal viewing angle, enhanced cable management, integrated customer display mounting locations, and expansion options.



The Workstation 6 Series Adjustable Stand includes the following features:

- High Speed USB Port
- Printer Power Supply Storage/Expansion Module Location
- DC Power Cable
- Accepts optional High- and Low-Mount Customer Displays
- 3 Security Screws (Hex Socket Cap M3x6 MC Steel - Black)
 - 2 for the cable management cover
 - 1 for the workstation
- Hex Key (2.5mm)

For expansion, the Adjustable Stand includes the following:

- Printer Power Supply Storage

The adjustable stand includes a bracket that allows mounting of the Epson PS-180 Power Supply. An internal "Y" cable provides AC power to the Epson PS-180 Power Supply and Workstation 6 power supply.

- Expansion Module Location

The printer power supply storage location can alternatively be used for optional expansion modules, including a powered USB expansion module. You cannot use an expansion module and the printer power supply at the same time.

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Technical Specifications

The following table contains the technical specifications for each configuration of the Workstation 6 Series.

Table 3-1 Technical Specifications for the MICROS Workstation 610, 620, and 650*

Feature	610	620	650
Processor	Intel Atom E3827 Dual-Core Processor with 1.75GHz Clock Speed	Intel Celeron 3765U Dual-Core Processor with 1.9GHz Clock Speed	Intel i5-5350U Dual-Core Processor with 1.8GHz Base and 2.9GHz Turbo Maximum Clock Speed
Display	15.6 inch Widescreen High Definition (1920x1080 FHD) Display Multi-Touch Projected Capacitive Touchscreen High Definition 2nd Display Output Connector		
Memory	2 SODIMM Sockets; DDR3L 1333MHz up to 8GB	2 SODIMM Sockets; DDR3L 1600MHz up to 16G	2 SODIMM Sockets; DDR3L 1600MHz up to 16G
Storage	32 GB or 64 GB MO-297 Slim SATA 2.0 Solid State Drive Standard SD Card Socket	128 GB M.2 SATA 3.0 Solid State Drive Standard MO-297 Slim SATA Solid State Drive (Optional) MO-300 mSATA Solid State Drive Socket (Optional)	256 GB, M.2 SATA 3.0 Solid State Drive Standard MO-297 Slim SATA Solid State Drive (Optional) MO-300 mSATA Solid State Drive Socket (Optional)
Operating System	Microsoft Windows Embedded 8.1 Industry Pro (32-bit only) Microsoft Windows 10 IoT Enterprise (64-bit only)	Microsoft Windows 10 IoT Enterprise (64-bit only)	
Magnetic Card Reader	Modular Integrated 3-Track Magnetic Card Reader; Capable of Hardware Encryption at the Swipe	2 Configurations Available: <ul style="list-style-type: none">With Modular Integrated 3-Track Magnetic Card Reader; Capable of Hardware Encryption at the SwipeWithout Modular Integrated 3-Track Magnetic Card Reader	
Audio	Intel HD Audio 2 Integrated Stereo Speakers Standard Headphone Output/MIC Input on I/O panel		
Network	10/100/1G RJ45 Ethernet 802.11 a/b/g/n Dual Band Radio w/Bluetooth 4.0 (Optional)		

Table 3-1 (Cont.) Technical Specifications for the MICROS Workstation 610, 620, and 650*

Feature	610	620	650
USB	9 Total: <ul style="list-style-type: none">• 2 High Speed USB on I/O Panel• 1 High Speed USB in Stand• 2 USB 2.0 on I/O Panel• 1 USB 2.0 12V Powered Header on I/O Panel• 3 USB 2.0 Internal	10 Total: <ul style="list-style-type: none">• 2 High Speed USB on I/O Panel• 1 High Speed USB in Stand• 2 USB 2.0 on I/O Panel• 1 USB 2.0 12V/1A Powered Header on I/O Panel• 3 USB 2.0 Internal• 1 Industry Standard 24V/2A Powered USB on I/O Panel	
Serial Ports	4 Total Standard: <ul style="list-style-type: none">• 2 - RJ45 RS232 Powered (0/5/9/12V Selectable)• 1 - RJ45 RS232• 1 - RJ45 RS422/RS232 IDN	3 Total Standard: <ul style="list-style-type: none">• 1 - RJ45 RS232 Powered (0/5/9/12V Powered)• 1 - RJ45 RS232• 1 - RJ45 RS422/RS232 IDN	
Adjustable Stand Expansion Modules (Optional)	Powered USB Expansion Module: <ul style="list-style-type: none">• 1 - 24V Powered USB• 3 - 12V Powered USB• 2 USB		
Cash Drawer Ports	2 - MICROS Series 2 Cash Drawer Ports 12/24V Selectable		
Customer Display Port	1 - Customer Display Port		
Power Output	1 - 12V Power Out (2.5A)		
Expansion Ports	1 - MICROS Expansion Port 1 - Mini PCI Express Port	1 - MICROS Expansion Port	
Power Supply	Universal Input Auto Switching Power Supply in Adjustable Stand External Universal Input Auto Switching Power Supply for Wall or VESA Mount		
Weight	Head Unit: 7 lbs Adjustable Stand: 5 lbs		
Dimensions	Workstation only: 399mm x 250mm x 38.2mm See Equipment Dimensions for more details.		
Operating Temperature and Humidity	0 °C (32 °F) to 50 °C (122 °F) 90% Max Relative Humidity (Non-Condensing)		
Enclosure	Combination of Cast Aluminum, Rugged PC-ABS Plastic Blend, and PC +10% Glass Fiber Spill Resistant Enclosure Passive Cooling (No Fans)		
Certifications	FCC Class A, UL, CE, TUV, RoHS, China RoHS		

*The Workstation 6 Series does not contain a camera. The front-facing opening on the Workstation 6 Series touchscreen border was designed for a front-facing camera; however, this camera was never implemented.

4

Power Management States

The following power management states are available for the Workstation 6 Series:

- Unplugged

The Advanced Configuration and Power Interface (ACPI) specification refers to the unplugged state as mechanical off. You can safely disassemble the workstation in this power management state.

In this state:

- The AC power cord is not connected to a wall outlet.
- The Operator LED is off.
- The Operator LCD is blank.

- NOPOWER

The ACPI specification refers to the NOPOWER state as S5, or a soft-off state in which the power supply remains active but delivers minimal power to key circuits to detect a power button or wake-on-LAN event.

Do not disassemble the workstation in this power management state. You must disconnect the AC power cord from the system.

In this state:

- The AC power cord is connected to a wall outlet.
- The operating system and applications are not running.
- The RAM contents are undefined.
- The Operator LED is off.
- The Operator LCD is blank.

- ON

In this state:

- The operating system and POS application are in operation.
- The RAM contents are maintained.
- The Operator LED is green (610) or blue (620 and 650).

Power Management State Changes

The following table describes the scenarios in which the power management state changes for the Workstation 6 Series.

Table 4-1 Power Management State Changes

Starting State	Event	Resulting State
Unplugged	AC power is connected to a wall outlet and the last recorded power state was not the ON state.	NOPOWER
NOPOWER	The operator presses the power button for less than 1 second.	ON
NOPOWER	The operator presses the power button for more than 4 seconds.	ON
NOPOWER	A server application sends a Wake On LAN command.	ON
NOPOWER	AC power fails and then is restored.	NOPOWER*
ON	The operator presses the power button for more than 4 seconds.	NOPOWER
ON	The application shuts down the workstation.	NOPOWER
ON	The Client Application Loader sends a Restart command.	NOPOWER and then ON
ON	AC power fails and then is restored.	ON

*Based on the default BIOS power settings.

Power Considerations for Peripheral Devices

The following table specifies the I/O port or connectors, their related power bus, and the power consumed by the port, depending on BIOS or Diagnostics Utility configurations. Use the table when considering peripherals.

Table 4-2 Port Power Specifications

Port or Connector	Available Power Capability
12V Power Output	+12V @ 2.5A (30W)
12V Power USB Header	+12V @ 1.5A (18W)
Series 2 Cash Drawer	Can be configured as +24V or +12V, with a shared 1A rating
USB 2.0	+5V @ 0.5A (2.5W)
Customer Display	+5V @ 1.5A (7.5W)
High Speed USB	+5V @ 0.9A (4.5W)
24V Power USB	+24V @ 3.5A (84W)
RJ-45 Powered Serial	Can be configured as: <ul style="list-style-type: none"> +5V @ 1.0A (5W) +9V @ 1.0A (9W) +12V @ 1.0A (12W)
Micro USB	+5V @ 0.5A (2.5W)

5

Software Components

This section describes the software components available for each configuration of the Workstation 6.

The 610 configuration is pre-installed with the Microsoft Windows Embedded 8.1 Industry Pro Retail operating system or the Microsoft Windows 10 IoT Enterprise operating system.

The 620 and 650 configurations are pre-installed with the Microsoft Windows 10 IoT Enterprise operating system.

Microsoft Windows Embedded 8.1 Industry Pro Retail Operating System

The 610 configuration of the Workstation 6 is pre-installed with the Microsoft Windows Embedded 8.1 Industry Pro Retail operating system. This operating system offers the latest Windows 8.1 innovations in security, management, and user experience, as well as the flexibility and enhanced lockdown capabilities needed to power and secure POS-industry devices. Features include:

- Enhanced security technologies protect your device, data, and network.
- Lockdown features help control the device configuration for a consistent and secure user experience.
- BitLocker and Trusted Boot technologies ensure data protection, hard drive encryption, and protect against malware.
- Improved multi-touch capabilities and responsive controls create a more natural user experience.
- New power management and wireless technologies improve mobility and access.
- Built-in plug-and-play capabilities help to easily implement retail peripherals.

Microsoft Windows 10 IoT Enterprise Operating System

The 610, 620, and 650 configurations of the Workstation 6 are pre-installed with the Microsoft Windows 10 IoT Enterprise operating system. This operating system offers the latest Windows 10 Enterprise innovations to the POS industry as well as enterprise-grade security and reliability to ensure your devices and data are protected against modern security threats. Features include:

- Comprehensive infrastructure and management features provide flexibility, consistency, and advanced security.
- Built-in defenses, such as Secure Boot, BitLocker, Device Guard, and Credential Guard, protect your information from leaks or theft.
- Advanced lockdown capabilities, such as AppLocker, help create a dedicated device experience for business applications.

- Support for Universal Windows apps and Classic Windows applications create a flexible and all-inclusive workspace.
- Native-device interoperability provides manageability and a connected organization.

Oracle Linux for MICROS Operating System

The Workstation 610, 620, and 650 can be converted to the Oracle Linux for MICROS operating system via an optional upgrade. Oracle Linux for MICROS provides reliability, scalability, security, and performance for demanding enterprise workloads. Features include:

- Free to use, free to distribute, free to update.
- Zero-downtime kernel and user space updates with Ksplice.
- Comprehensive kernel and application tracing with DTrace.
- Linux management and high availability included at no additional charge for Oracle Linux Support customers.
- Optimized for Oracle, including Oracle Database and Oracle Applications.
- Increase security by applying patches sooner and minimizing time spent troubleshooting and updating.
- Improve performance of Oracle software and hardware .
- Proven performance and reliability in Oracle Engineered Systems and Oracle Cloud.

Oracle Linux for MICROS Commands



Note:

Most deployments of Oracle Linux for MICROS do not require extensive Linux command line operations. Oracle Linux for MICROS commands are case sensitive.

Open another terminal

- Press **Ctrl+Alt+Fx** (where x = 4, 5, or 6) to open another terminal window.
- Press **Ctrl+Alt+F4**: Log in as **possupport**.

Find Linux image version information

- `cat /etc/micros-release`

Find network address of device

- `ifconfig`

Find network address of device

- `ip addr`

Check network status

- nmcli device status

Configure network

- nmtui

Verify contact to a remote host

- ping 10.209.76.197

Monitor the running processes, memory, and CPU usage

- top
- Press **q** to exit top command.

End a running process

- kill 4465

Edit a text file

- nano webconfig.txt

Restart the device

- reboot

Turn off the device

- shutdown now
- *Note for workstations with Oracle Linux for MICROS:* You can press and release the workstation power button to perform a graceful shutdown. Shutdown can take up to 10 seconds to complete.

Workstation 6 Platform

The Workstation 6 Series platform software includes the following components:

- **Hardware Device Drivers** specific to each configuration of the Workstation 6.
- The **Workstation 6 API Driver** that allows applications to access the unique POS capabilities of the Workstation 6.
- The **OPOS Driver** that allows third-party applications to use integrated peripherals and custom ports, such as the magnetic card reader, customer display, and cash drawer ports through industry-standard OPOS commands.
- A **Diagnostic Utility** that provides the resources for testing functionality and validating software versions. The utility allows users to test peripheral components.
- The **Oracle MICROS Client Application Loader** for remotely managing the software on each configuration of the Workstation 6.

6

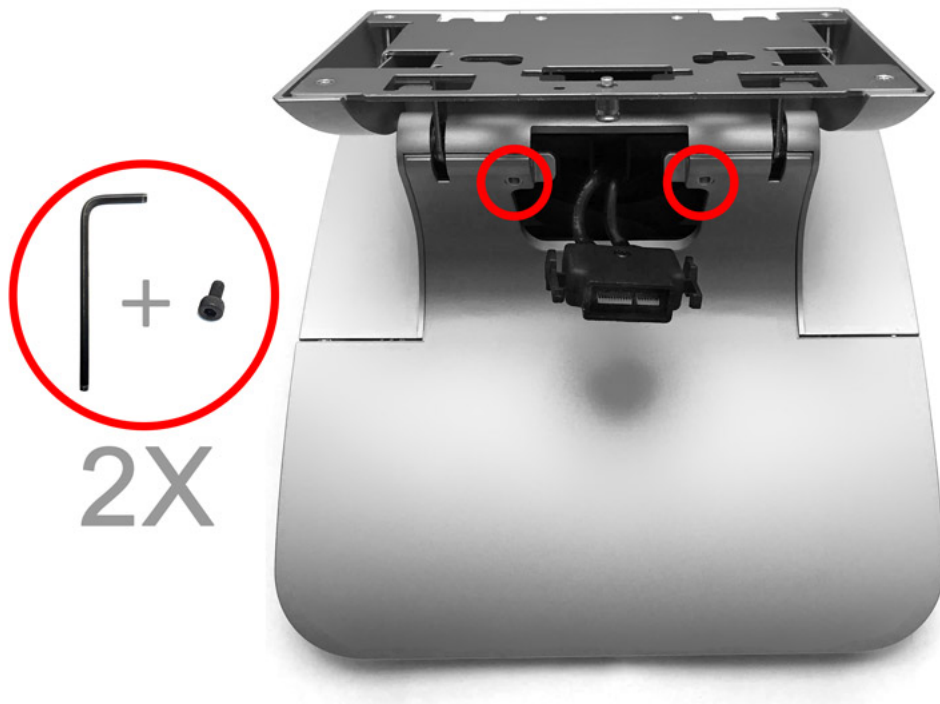
Workstation Setup

This section contains instructions for assembling, setting up, securing each configuration of the Workstation 6 Series.

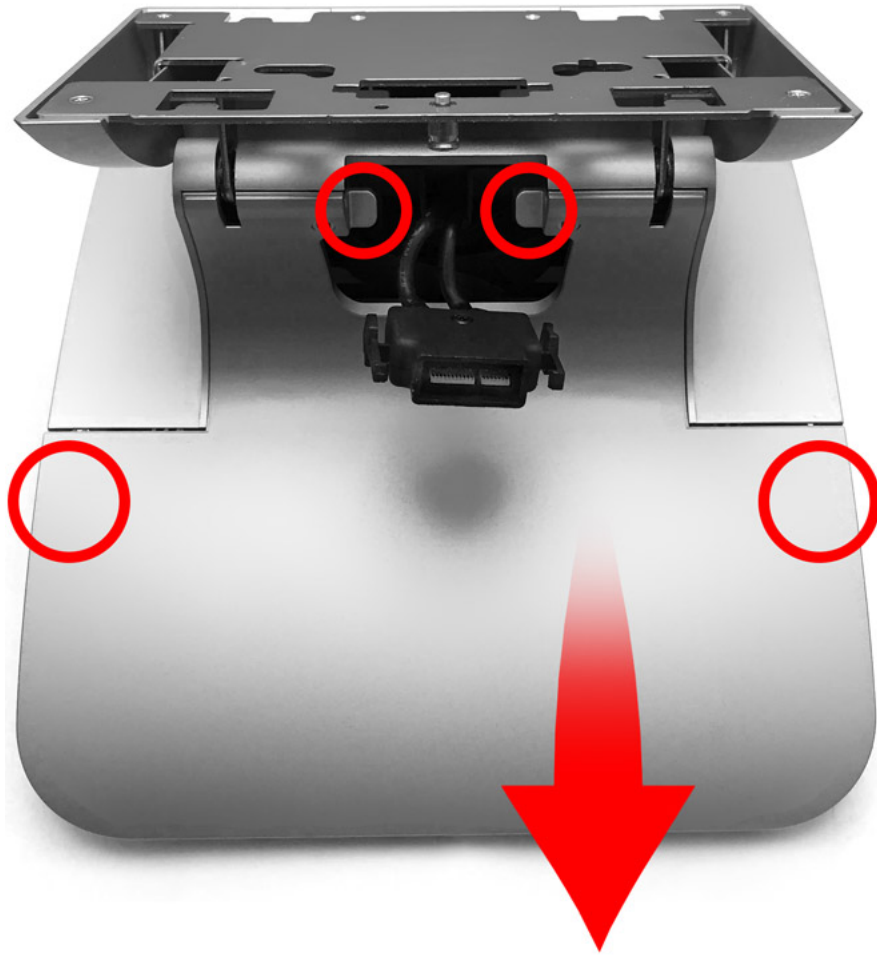
Removing the Adjustable Stand Cover

Removing the Adjustable Stand cover is a common procedure used when setting up any configuration of the Workstation 6 Series.

1. Place the Adjustable Stand on a flat surface.
2. If you attached the security screws to the cover, remove them using the hex key.



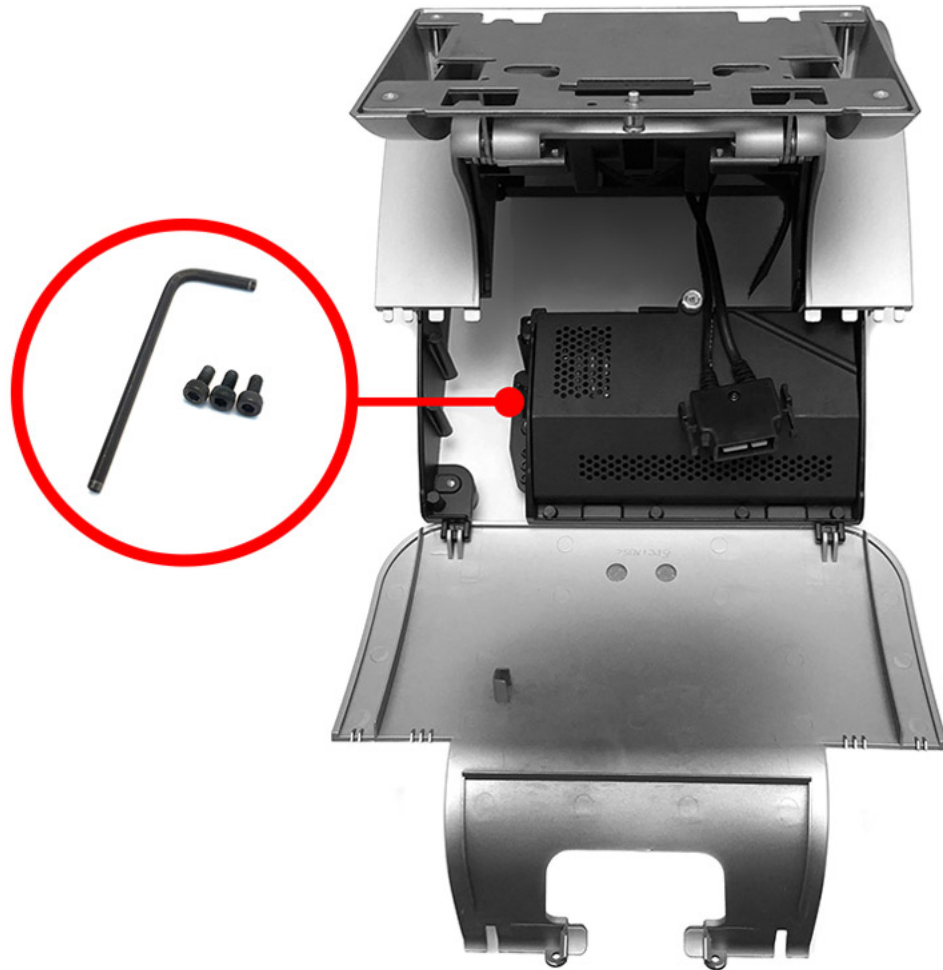
3. Use the front tabs and the edges to pop the cover off the Adjustable Stand. You can detach the cover by rotating it toward you and sliding it forward.



Locating the Hex Key and Security Screws

The hex key and security screws are necessary for several procedures when setting up any configuration of the Workstation 6 Series.

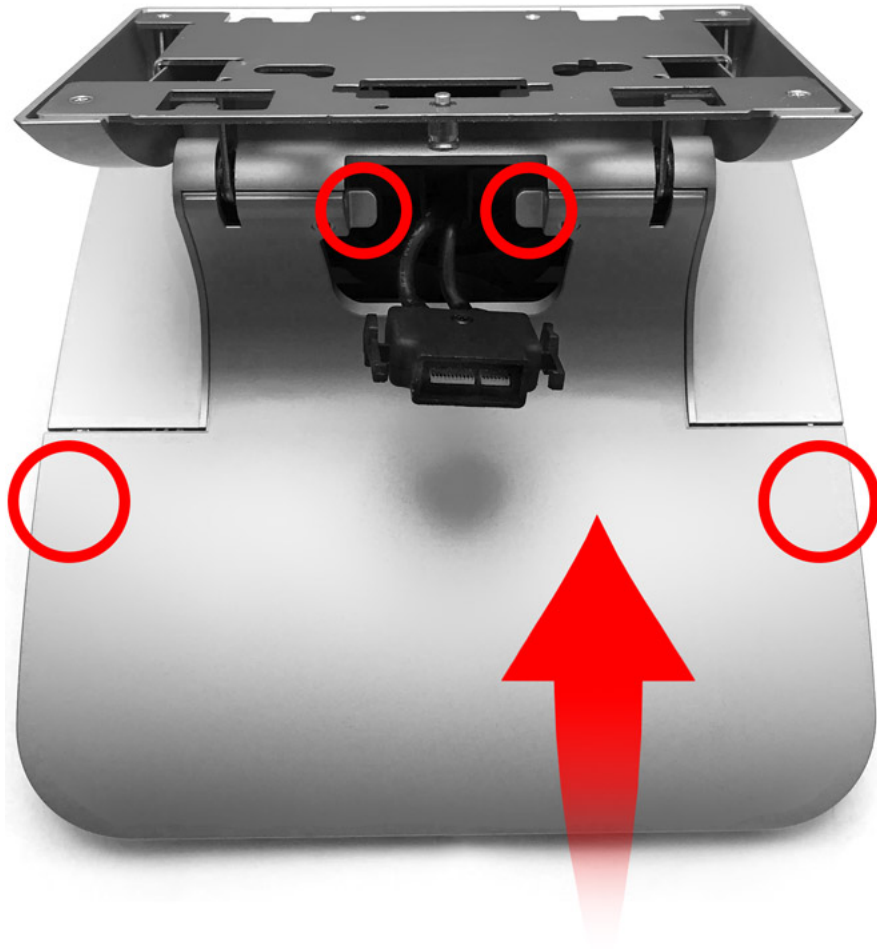
1. Place the adjustable stand on a flat surface.
2. Remove the adjustable stand cover.
3. Retrieve the spare 2.5mm hex key and the three M3x6 security hex screws. Their locations are noted below.



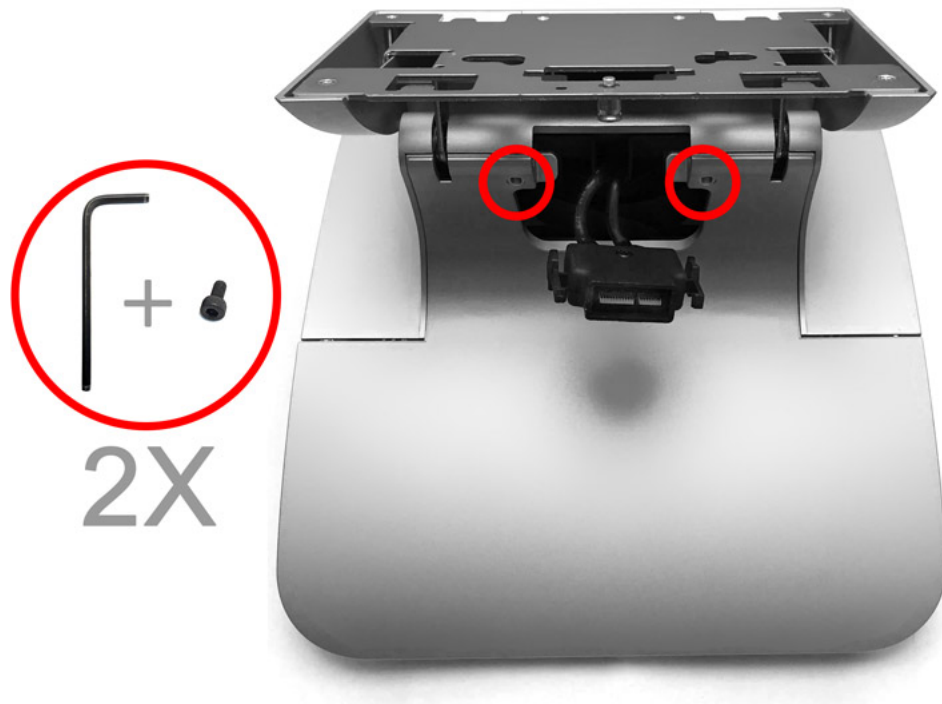
Securing the Adjustable Stand Cover

Securing the Adjustable Stand cover is a common procedure used when setting up any configuration of the Workstation 6 Series.

1. Place the Adjustable Stand on a flat surface.
2. Locate and retrieve the hex key and security screws.
3. Use the front tabs and the edges to ensure the cover is properly aligned and firmly closed.



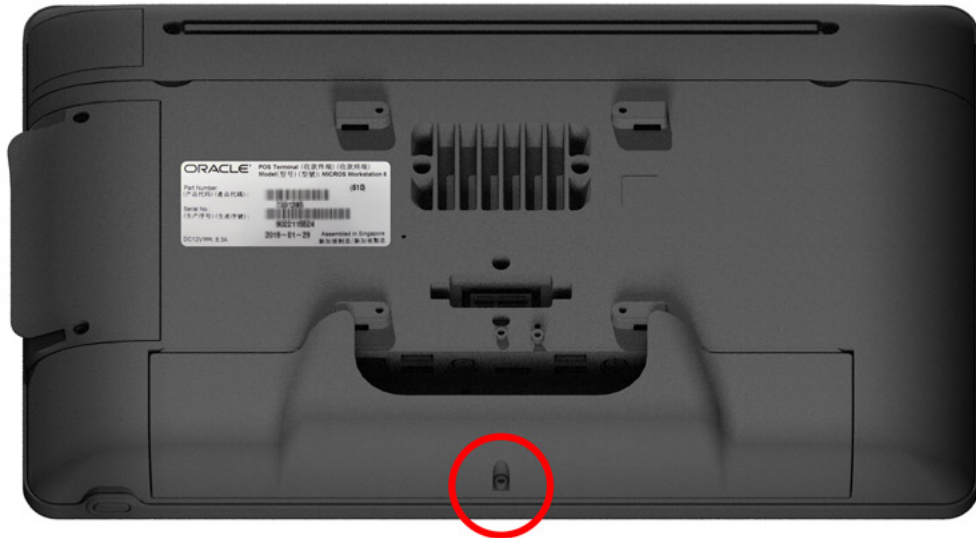
4. Use the hex key to tighten the two security screws and secure the cover.



Securing the I/O Panel Cover

Securing the I/O panel cover is a common procedure used when setting up any configuration of the Workstation 6 Series

1. Place the workstation in a position that gives you direct access to the I/O panel. If on the adjustable stand, tilt the workstation back to angle the I/O ports up.
2. Ensure that all applicable cables are securely connected to the I/O panel.
3. Slide the I/O panel cover firmly into place. Make sure the wires are not clamped by the cover.
4. Locate and retrieve the hex key and security screw.
5. Use the hex key to tighten the security screw and secure the cover.



Securing the Workstation to the Adjustable Stand

The adjustable stand is a mounting option for each configurations of the Workstation 6 Series. When using this option, ensure that the workstation is properly secured to the adjustable stand.

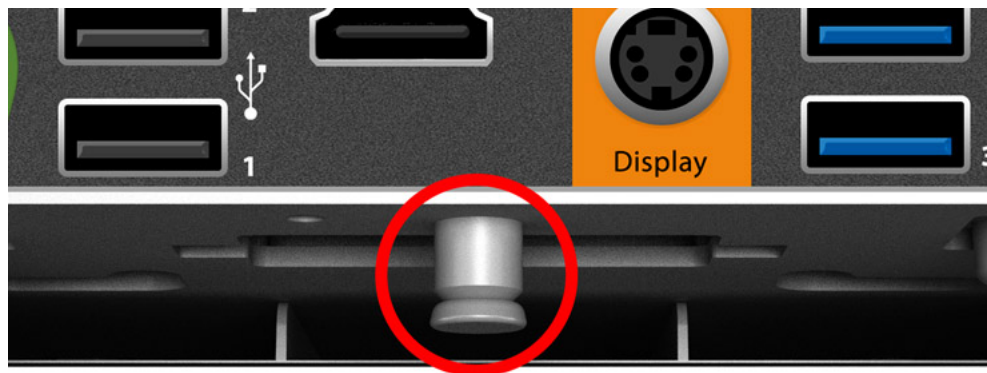
1. Place the workstation adjustable stand on its back and connect the AC power cable from the wall outlet.



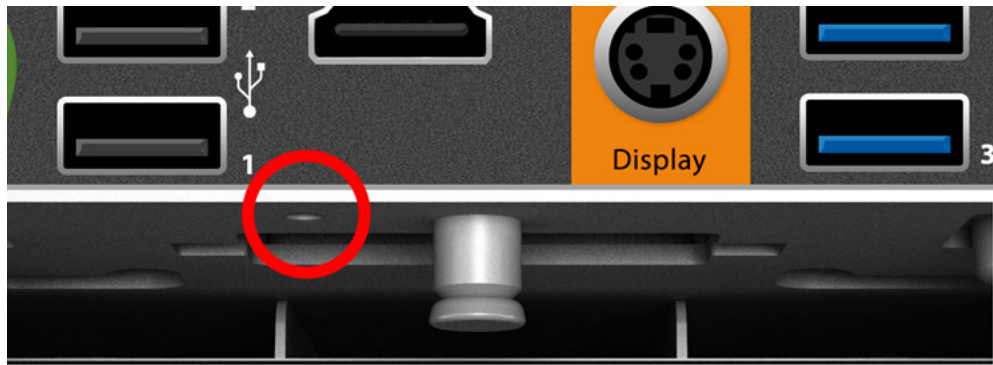
2. Place the Adjustable Stand upright.
3. Tilt back the Adjustable Stand mount.
4. Place the workstation on the mount so that the nubs rest on the mount.



5. Lay the workstation on the mount and pull it toward you until you hear a click.
6. Make sure the quick release pin is depressed. If it is not depressed, you must pull the workstation toward you until it clicks in place.



7. If you want to secure the workstation to the Adjustable Stand, install the security screw.



8. Connect the DC power cable to the workstation head unit.



9. Use the Velcro under the stand cover to organize cables.

Attaching the Epson PS-180 Power Supply to the Adjustable Stand

1. Place the Workstation 6 Series Adjustable Stand upside down on a flat surface. Note the location of the Epson PS-180 power supply mounting bracket.



2. Lift the two raised-edge corners of the bracket and slide it out of the mounting slots.



3. Place the bracket on a flat surface.



4. Insert the Epson PS-180 power supply into the bracket until the retaining clips snap into place and it is flush with the bracket face. Note the orientation of the power supply on the bracket.



5. Locate the C13 power cord in the Adjustable Stand interior.



6. Connect the C13 power cord to the power supply.



7. Place the assembled power supply and bracket in its original position in the Adjustable Stand by sliding the bracket feet into the two mounting slots until it snaps into place. Route cables as needed.



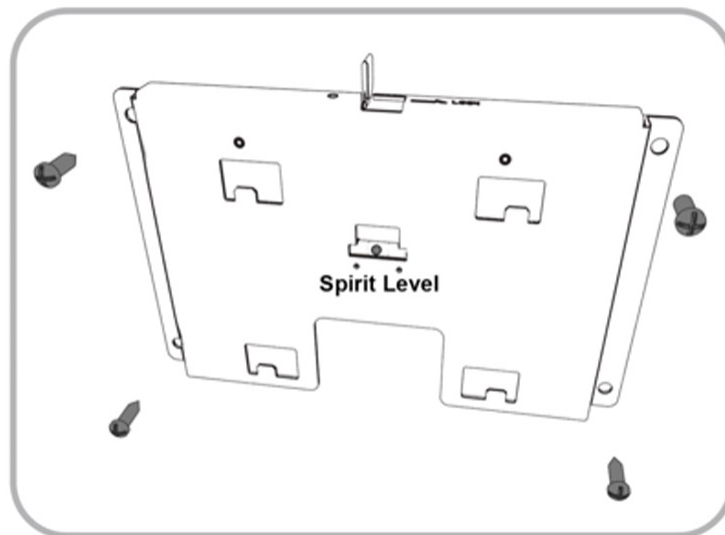
8. When properly installed, the power supply is securely attached to the Adjustable Stand.



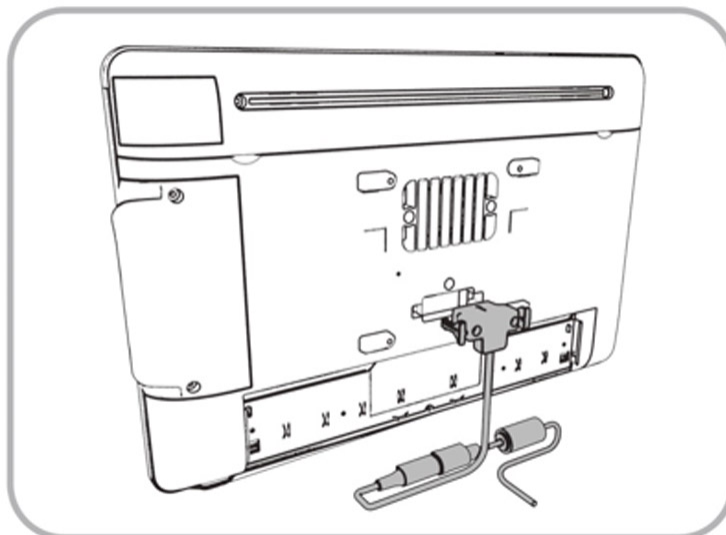
Securing the Workstation Display to the Wall Mount

The Workstation 6 Series can be mounted on a wall using an optional wall mounting bracket.**

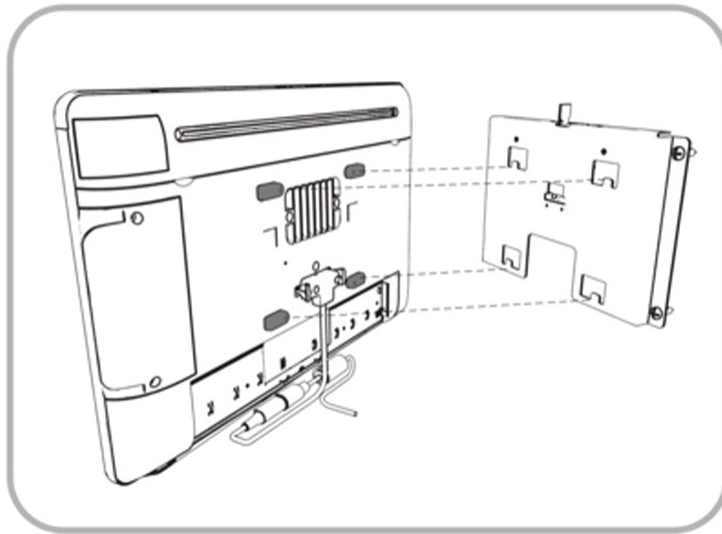
1. Install the wall mount:
 - a. Ensure that the metal bracket is levelled with the integrated spirit level.
 - b. Mark the positions of the holes at the four corners.
 - c. Create the holes by drilling into the wall.
 - d. Secure the metal bracket to the wall with four screws. The mounting screws are not provided. Ensure you are using the correct screws that meet the needs of the installation, such as wood screws, dry wall screws, concrete screws, or masonry screws.



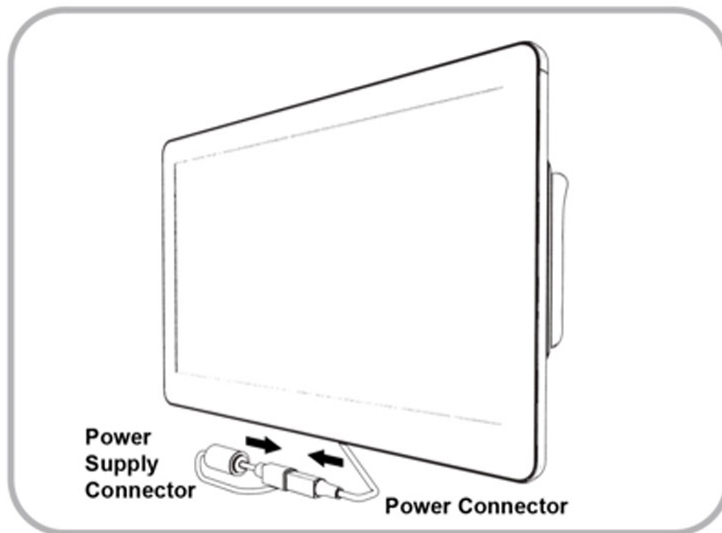
2. Insert the power connector in the back of the workstation.



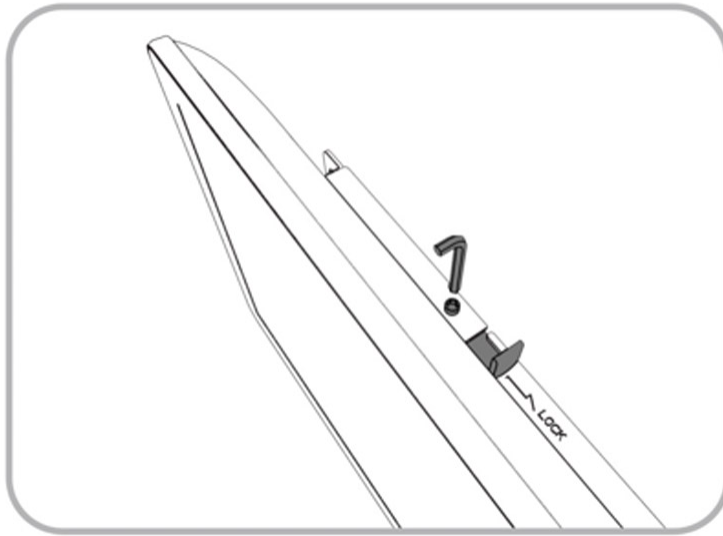
3. Align the back of the workstation to the metal bracket, and then slide it down until it stops.



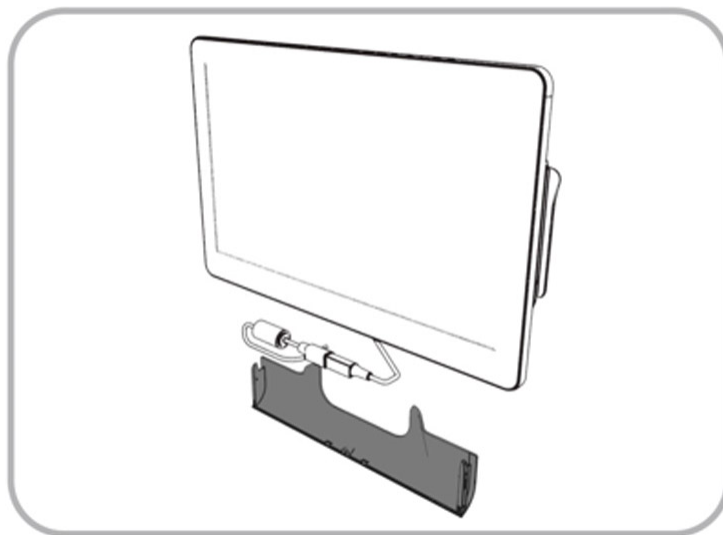
4. Connect the power supply connector to the power connector.



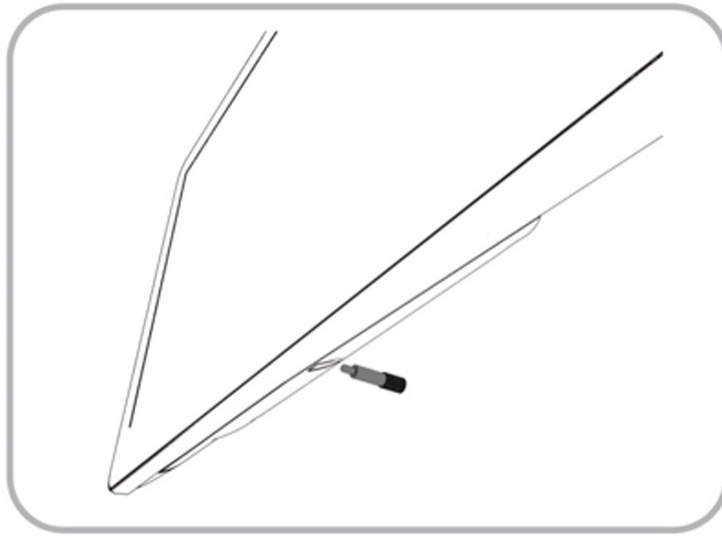
5. Slide the locking level to the right, and then tighten the screw with the hex key.



6. Conceal the cables with the cable casing.



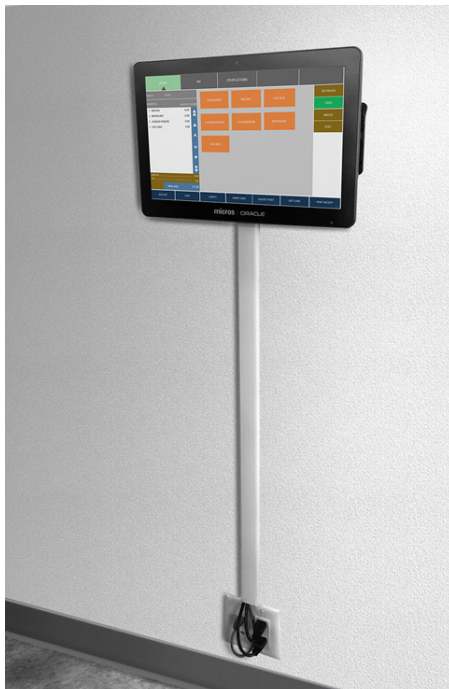
7. Secure the cable cover with the provided thumbscrew.



**Wall mount installation methods include:

- **Basic Wall Mounting** (shown in steps 1–7): The wall mount bracket is attached to the surface of the wall. Cables and power supplies are exposed and can be organized using cable ties and cable casing.
- **Recessed/In-Wall Cage with Cable Management and Concealed Power Supply Storage**: A portion of the wall is cut away and a recessed support cage provides a hidden area for cable organization and power supply storage. The wall mount bracket is then attached to the wall over the recessed area. Exposed cables can be organized using cable casing.

Example Wall-Mounted Workstation (Recessed/In-Wall Cage)



Securing the Workstation Display to a VESA Mount

The Workstation 6 Series supports mounting the workstation display to a VESA mount. The workstation display is engineered in accordance with the Flat Display Mounting Interface (FDMI) Standard, otherwise known as the Mounting Interface Standard (MIS), defined by VESA. The VESA standard defines the dimensions of a display's four-hole attachment panel and dictates the placement of the hole pattern on the back of the workstation display.

When choosing a mounting bracket, look for VESA-compliant brackets.

During installation, follow the directions provided with the mounting bracket. When mounting the workstation display to the bracket, the Workstation 6 Series External Power Supply (400351-038-PT) is required and includes the following:

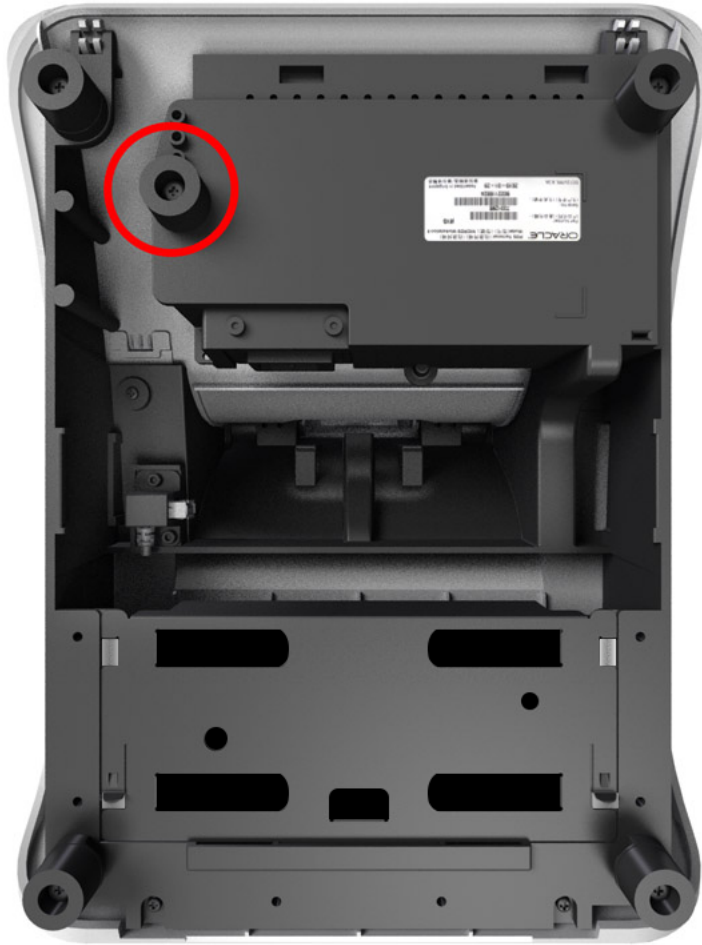
- Workstation 6 Series External Power Supply
- 4 Stainless Steel Spacers (8.15mm)
- 4 Stainless Steel Washers

The stainless steel spacers allow for clearance of the external power supply. When mounting the workstation display to the bracket, insert the washers and spacers between the bracket and the workstation display, and then secure using the bracket's mounting screws.

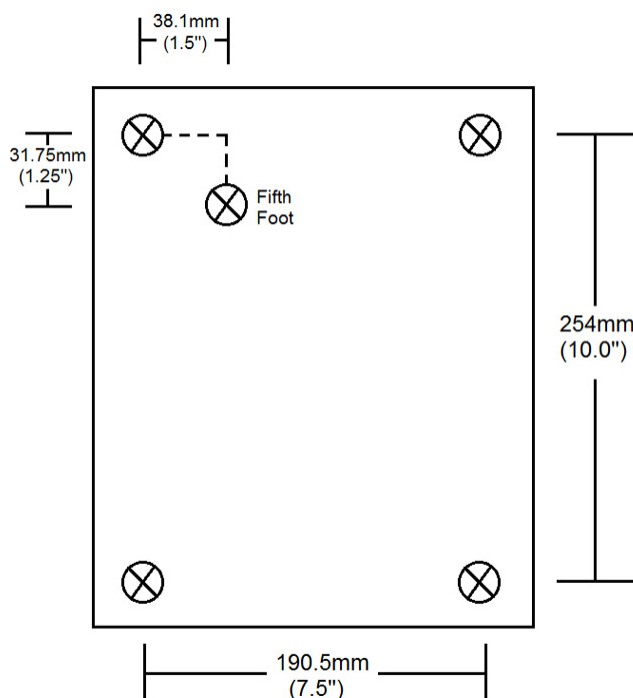
Securing the Adjustable Stand to a Counter

The Adjustable Stand is a mounting option for each configuration of the Workstation 6 Series. When using this option, ensure that the Adjustable Stand is properly secured to a counter

1. Place the Adjustable Stand flat on the counter surface, and then turn the unit upside down.
2. Unscrew and remove the fifth rubber foot located in the upper middle of the stand. This hole will be used to secure the Adjustable Stand to the counter. The location is indicated below.



3. Use the following dimensions to map out the location on the counter where the stand and fifth foot will sit.



4. Mark the position of the hole for the fifth foot on the counter, and then use a drill to create the hole.
5. Place the Adjustable Stand on the counter and align the hole for the fifth foot to its matching hole on the counter.
6. Secure the Adjustable Stand to the counter using a mounting screw. The mounting screw is not provided. Ensure that you are using the correct screw that meets the needs of the installation. The screw thread is M4 and the length is a minimum of one inch plus the thickness of the counter.

Installing the High-Mount Customer Display on the Adjustable Stand

The High-Mount Customer Display is only available for the revised MICROS Workstation 6 Series Adjustable Stand (see Prerequisites). The display and bracket are provided as a complete assembly and ready for installation.

Prerequisites:

- Workstation 6 Series Adjustable Stand with High- and Low- Mount Customer Display Options (Part Number: 7114626)
- High-Mount Customer Display and Bracket Assembly (Part Number: 7114627)
- No. 2 (1/4 in.) Phillips screwdriver

To install the High-Mount Customer Display on the Workstation 6 Series Adjustable Stand:

1. Place the Adjustable Stand upright on a flat surface, and then tilt the mounting plate upwards to a vertical position.
2. Remove the High-Mount slot cover.

3. Slide the Customer Display power cord through the High-Mount slot and down through the mounting plate.
4. Insert the display and bracket assembly into the High-Mount slot. The bracket should be firmly locked into place.
5. To adjust or remove, press the release button on the bottom of the bracket to unlock.
6. Secure the display and bracket assembly to the Adjustable Stand using the provided security screws (2) and a No. 2 (1/4") Phillips screwdriver.
7. Insert the Customer Display power cord into the Customer Display slot on the I/O Panel.

Workstation 6 with High-Mount Customer Display on the Adjustable Stand



Installing the 10-Inch Customer Display with High Mount on the Workstation 6 Series Adjustable Stand

To install the 10-Inch Customer Display with High Mount on the Workstation 6 Series Adjustable Stand:

1. Place the Adjustable Stand upright on a flat surface, and then tilt the mounting plate upwards to a vertical position.
2. Remove the High-Mount slot cover.
3. Slide the 10-Inch Customer Display power cord through the High-Mount slot and down through the mounting plate.
4. Insert the display and bracket assembly into the High-Mount slot. The bracket should be firmly locked into place.
5. To adjust or remove, press the release button on the bottom of the bracket to unlock.
6. Secure the display and bracket assembly to the Adjustable Stand using the provided security screws (2) and a No. 2 (1/4") Phillips screwdriver.
7. Connect the 10-Inch Customer Display with High Mount power cord and High Definition 2nd Display Output Connector cable to the Workstation 6 Series I/O panel.

Installing the 10-Inch Customer Display with Pole Mount

1. To attach the 10-Inch Customer Display with Pole Mount to a cash drawer or other surface without a cable routing hole:
 - a. Tighten the pole base plate captive screws, if required.
 - b. Use pliers or similar tool to break off a cable routing tab located along the rear edge of the pole base plate.
 - c. Guide the cables through the tab opening in the base plate.
 - d. Attach the 10-Inch Customer Display with Pole Mount to the cash drawer or other surface using the four #8-32 base plate screws.
2. To attach the 10-Inch Customer Display with Pole Mount to surfaces with a cable routing hole:
 - a. Tighten the pole base plate captive screws, if required.
 - b. Guide the cables through cable routing hole.
 - c. Attach the 10-Inch Customer Display with Pole Mount to the surface using the four #8-32 base plate screws.
3. Connect the 10-Inch Customer Display with Pole Mount power cord and high definition display cable to the Workstation 6 Series I/O panel.
4. To power on the 10-Inch Customer Display with Pole Mount, press the power button on the rear of the unit.

Calibrating the Workstation and 10-Inch Customer Display

Follow the steps below to calibrate the workstation and 10-Inch Customer Display:

WS610 with Microsoft Windows 10 or Microsoft Windows 8.1

1. Connect the 10-Inch Customer Display to a Workstation 6 Series workstation.
2. Connect a mouse to the workstation.
3. For Windows 10, right-click the desktop, and then select **Display settings** from the popup menu. For Windows 8.1, right-click the desktop, and then select **Graphics Options** from the popup menu.
4. For Windows 10, click **Extend These Displays**, and then click **Keep These Changes**. For Windows 8.1, click **Output to**, click **Extend Desktop**, and then click **Built-in Display + Digital television**.
5. Open the **Control Panel**, and then click **Tablet PC Settings**.
6. In the **Display Options** box, verify that “**1. Mobile PC Display**” appears in the drop-down list.
7. In the **Configure** box, click **Setup**, and then touch the workstation screen when “Touch this screen to identify it as the touchscreen” appears.
8. Click **OK** to exit Tablet PC Settings.
9. Double-click **Intel HD Graphics Control Panel**, and then select **Display**.
10. Verify **Select Display** is set to **Built-in Display**.

11. From the **Resolution** drop-down list, select **1920 x 1080**, click **Apply**, and then click **Yes** to continue.
12. Right-click the taskbar, and then click **Properties**. In the **Multiple Displays** area, click to turn off **Show taskbar on all displays** to disable the taskbar on the 10-Inch Customer Display.

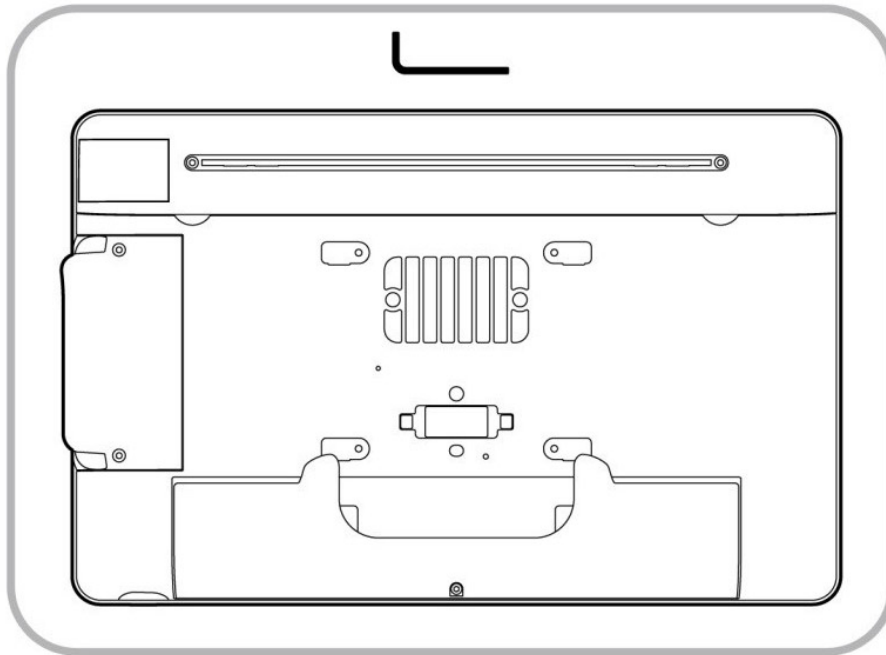
Installing the Wireless Networking Module

The Workstation 6 Series supports an optional wireless networking module.

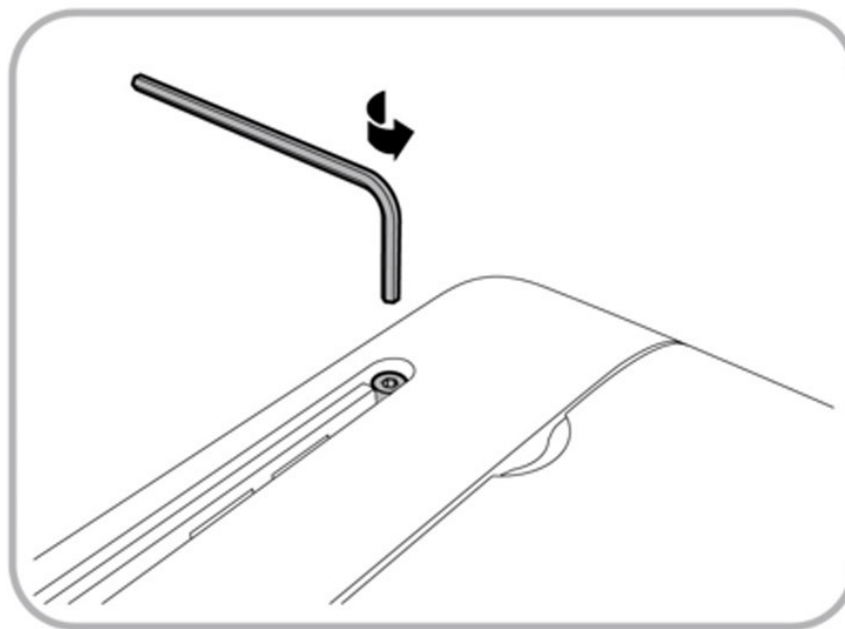


[Watch the video](#)

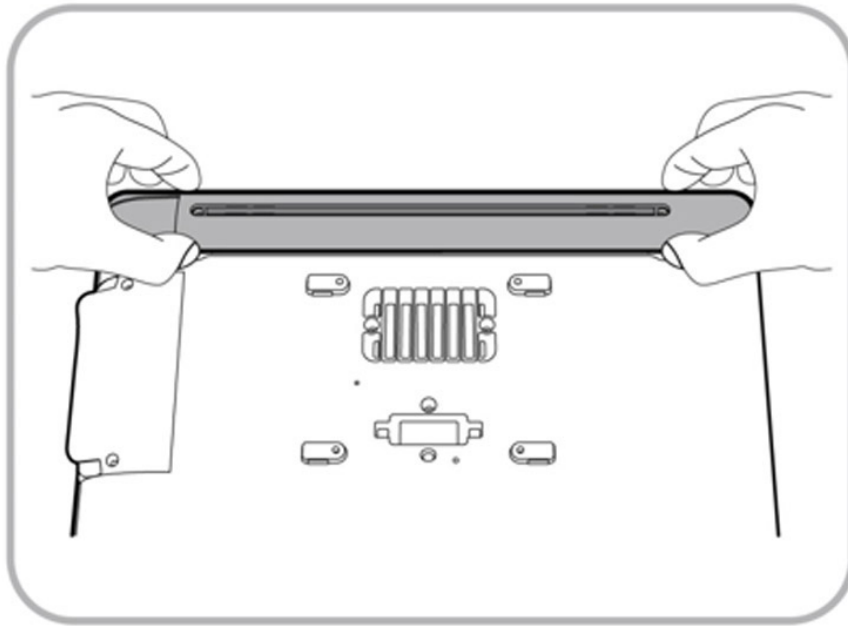
1. Rear view of the workstation and hex key. Your workstation may differ in appearance, but the module installation process is the same.



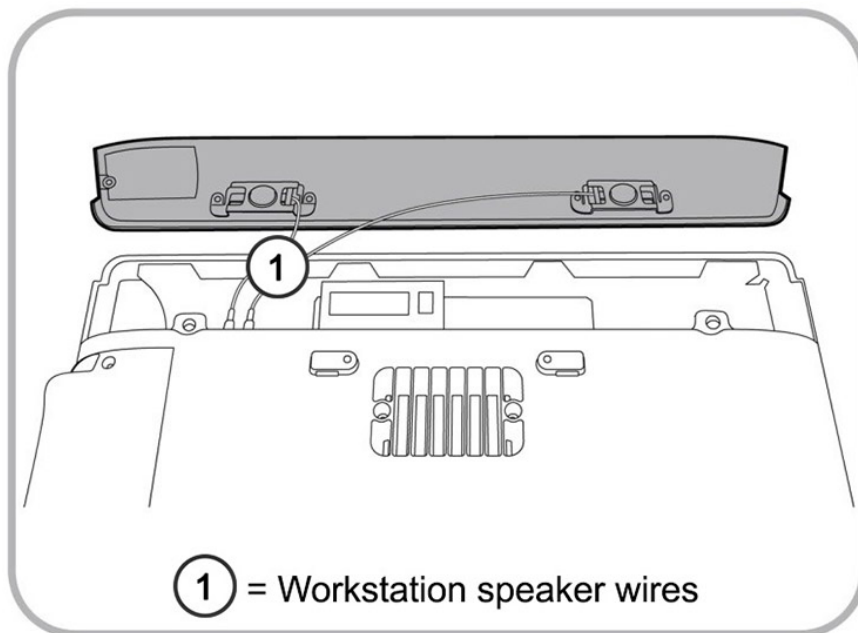
2. Use the hex key to loosen the top cover screws.



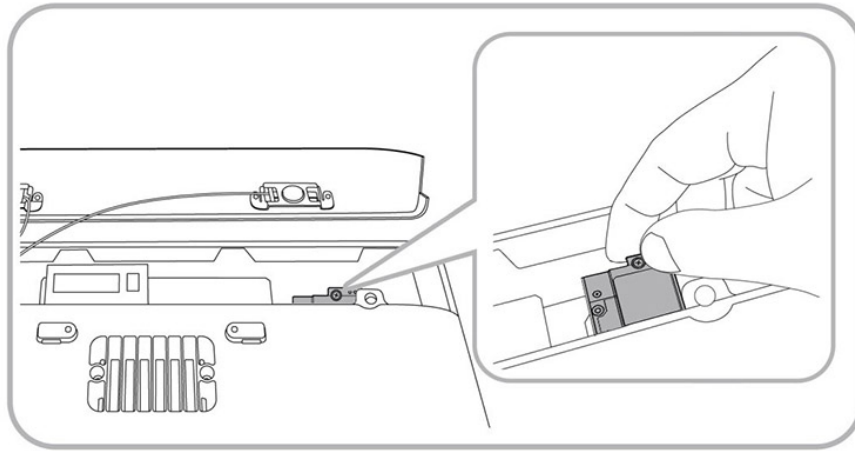
3. Carefully remove the top cover from the workstation.



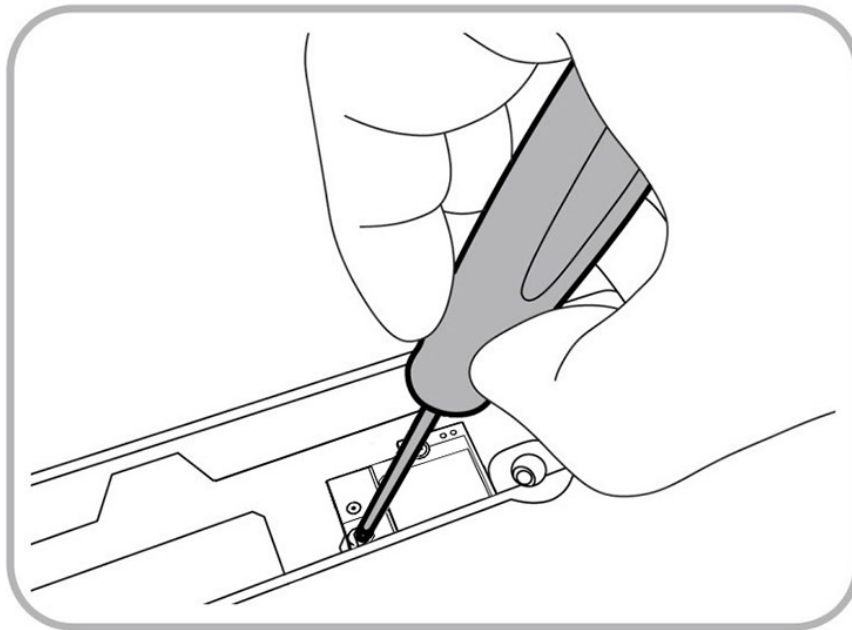
4. Place the top cover in the position shown in the following image. Do not pull the cover away from the workstation with force. Doing so could damage the speaker wires.



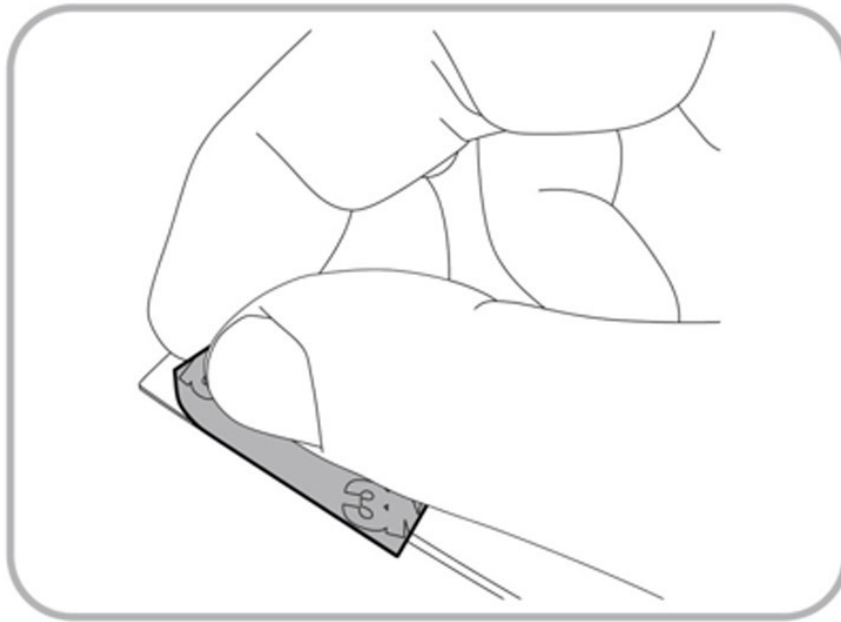
5. Slide the wireless module into the slot until secure.



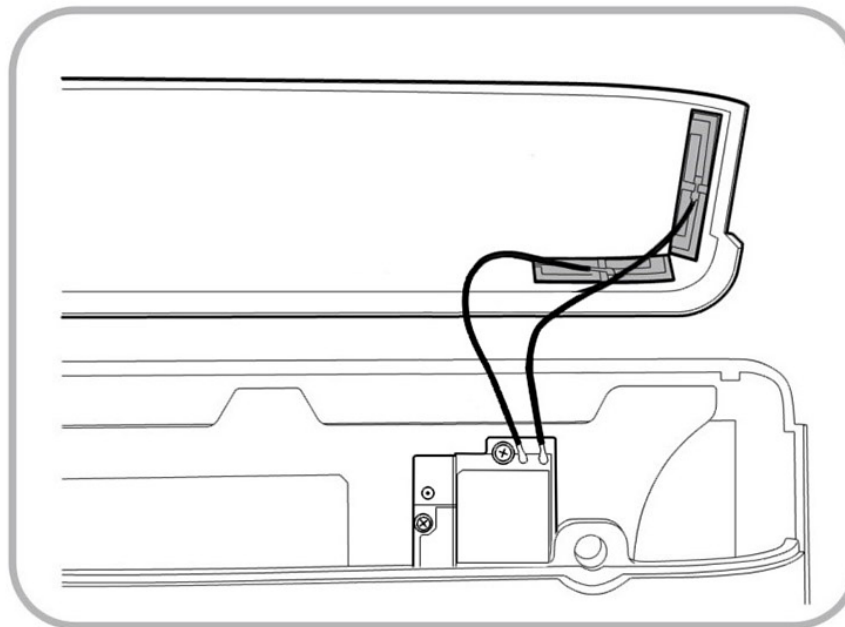
6. Secure the wireless module with the provided screw.



7. Remove the adhesive strip from the bottom of each antenna.



8. Stick the wireless antennas to the top cover positions shown in the following image, and then connect the wires to the wireless module. The antenna wires can be oriented as needed.

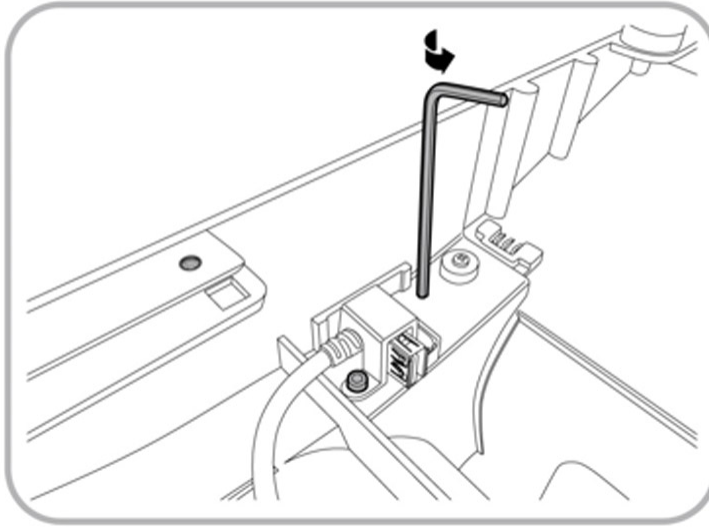


9. Replace the top cover and use the hex wrench to secure it. Ensure the cover does not pinch the antenna wires or speaker wires.

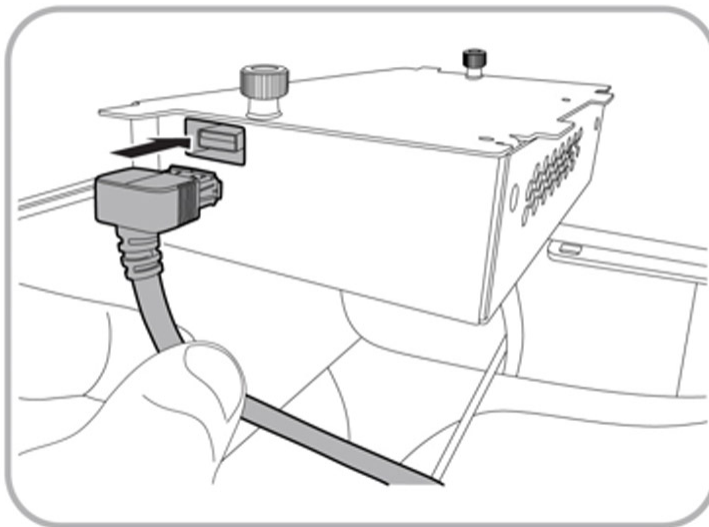
Installing the Power USB Module

The Workstation 6 Series supports an optional power USB module. The hex key is required for installation.

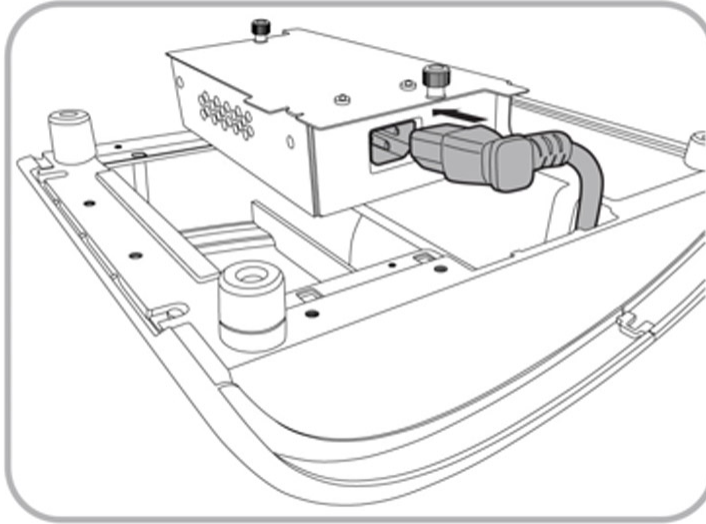
1. Place the Workstation 6 adjustable stand on its back.
2. Unscrew the two hex screws by turning the hex key counter clockwise to release the USB cover.



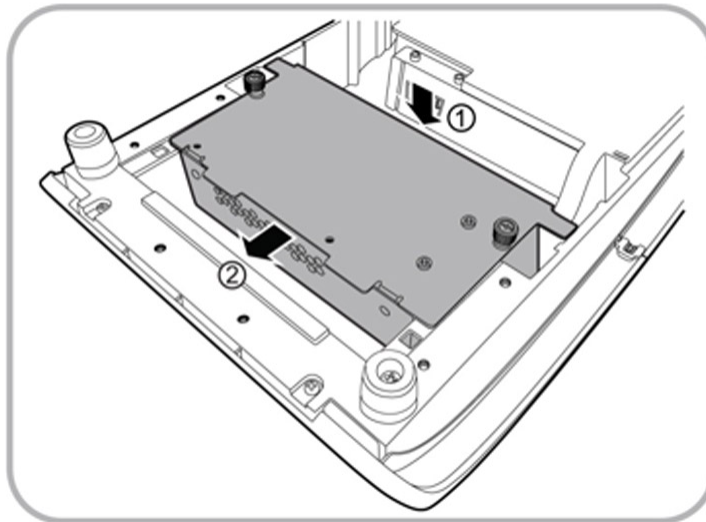
3. Insert the USB cable into the USB connector on the left side of the power USB module.



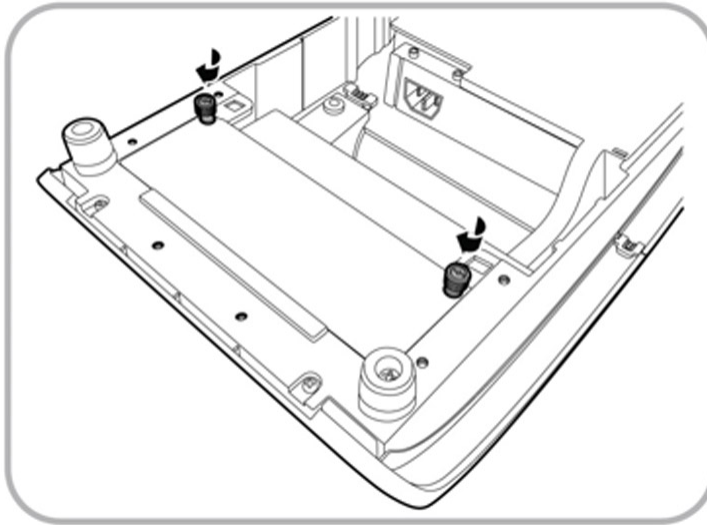
4. Insert the power cable connector into the power supply inlet on the right side of the power USB module.



5. Place the power USB module vertically down into the base unit compartment, and then slide it forward all the way to the edge.



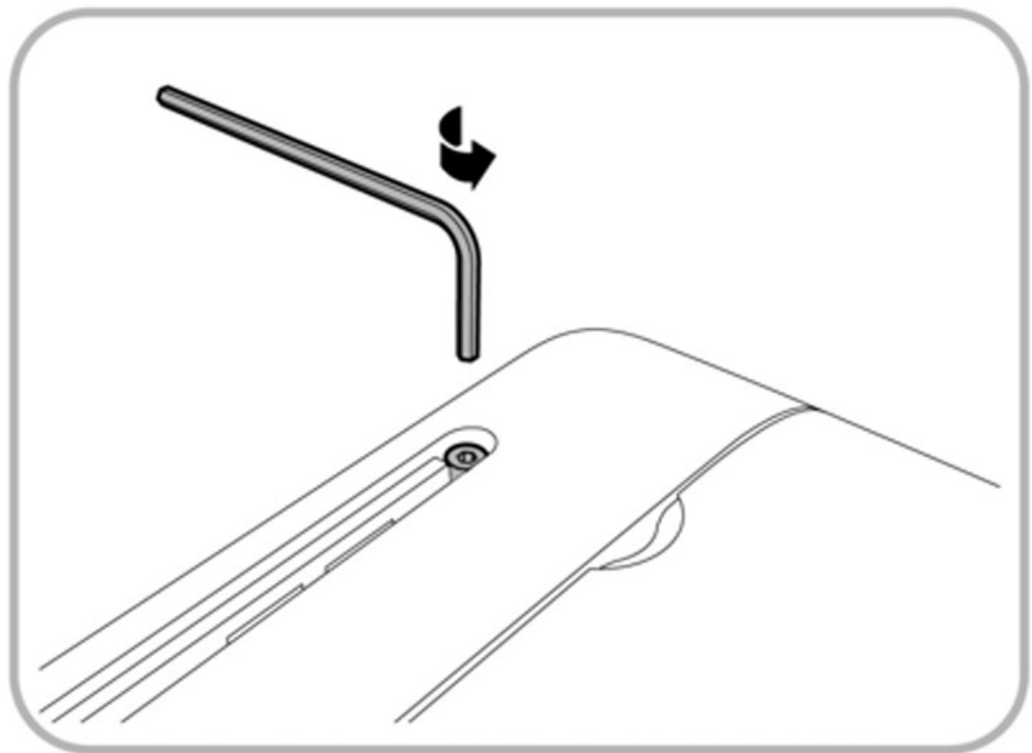
6. Tighten both thumbscrews by turning them clockwise to secure the power USB module to the Workstation 6 Adjustable Stand.



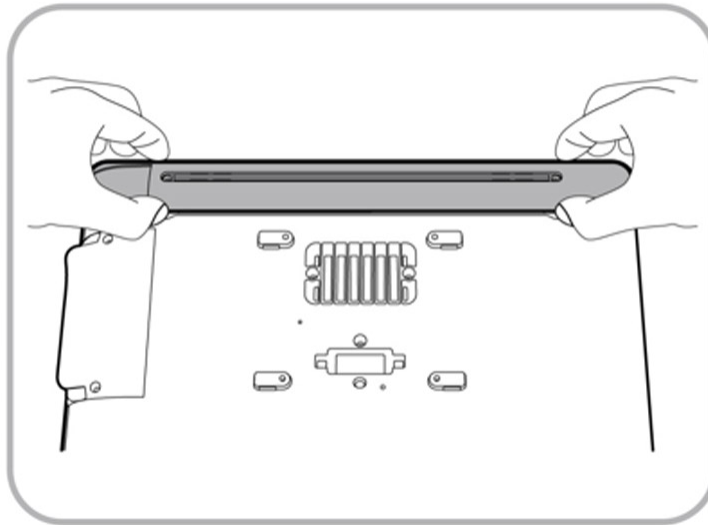
Installing the Biometric Fingerprint Module

The Workstation 6 Series supports an optional biometric fingerprint module. The hex key is required for installation.

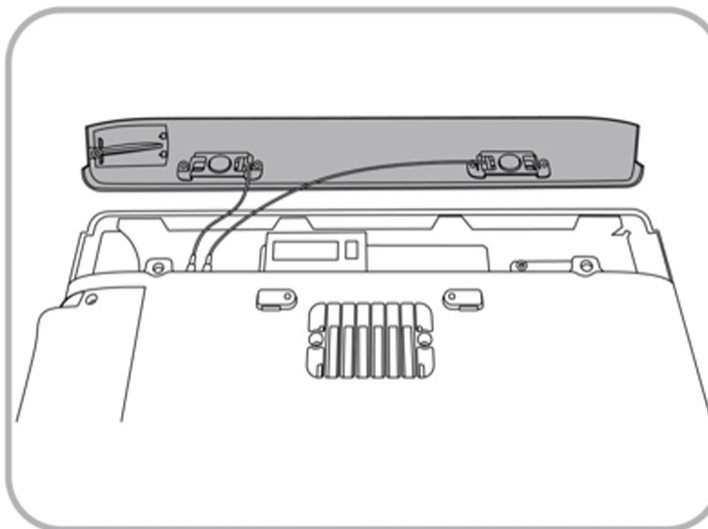
1. Use the hex key to remove the screws from the top cover.



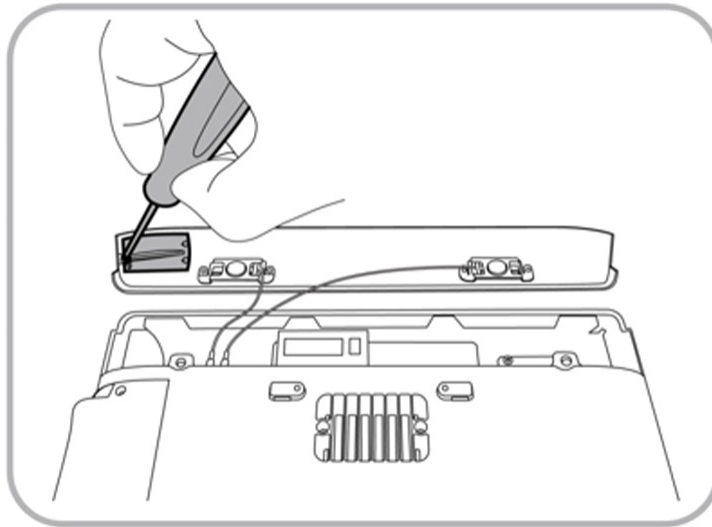
2. Remove the top cover.



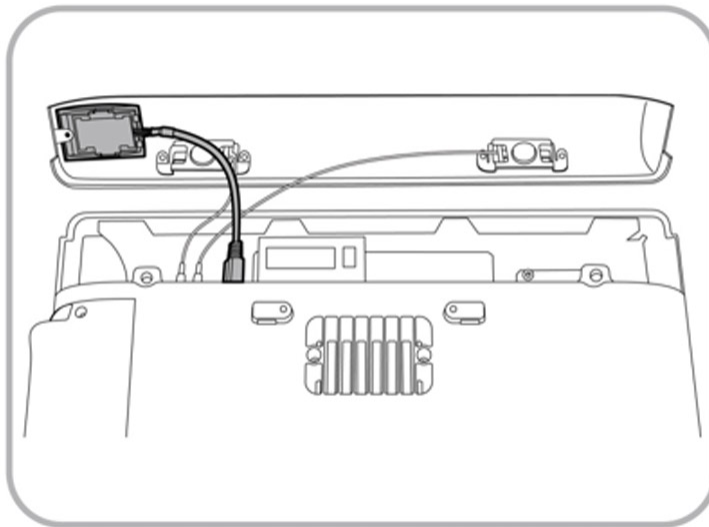
3. Place the top cover in the position shown below.



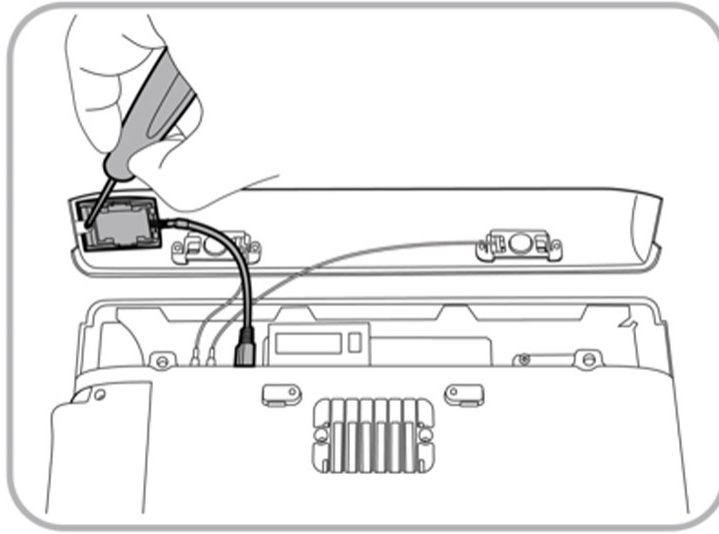
4. Loosen the screw to remove the dummy biometric cover.



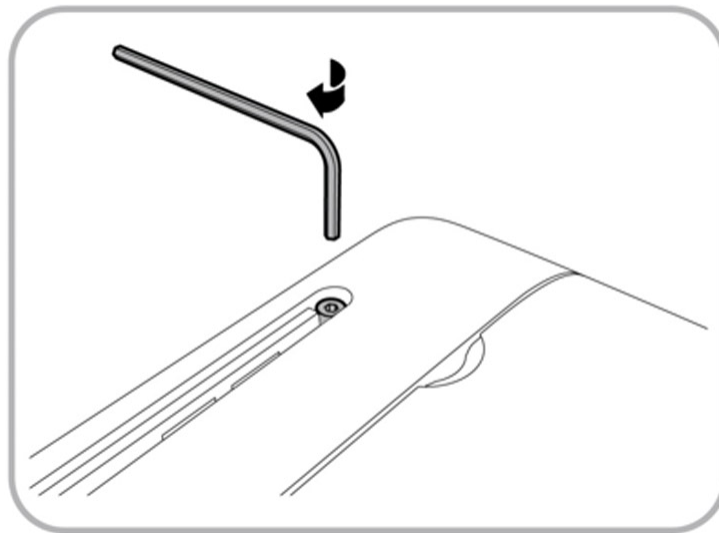
5. Insert the biometric module into the opening and connect the micro USB connector to the main PCB.



6. Insert and tighten the screw to secure the biometric module.



7. Close the top cover. Make sure the wires are not clamped by the cover.
8. Use the hex key to reinsert the screws and to secure the top cover.



Installing Memory Modules

To add additional memory (SO-DIMM RAM) to the Workstation 6 Series, perform the following steps.

- Before installing memory modules, turn off the workstation and unplug it.
- Observe precautions for handling electrostatic-sensitive devices. Use an anti-static wrist strap and a grounding mat.
- When handling memory, hold each module by the edges. Do not bend or drop the memory.

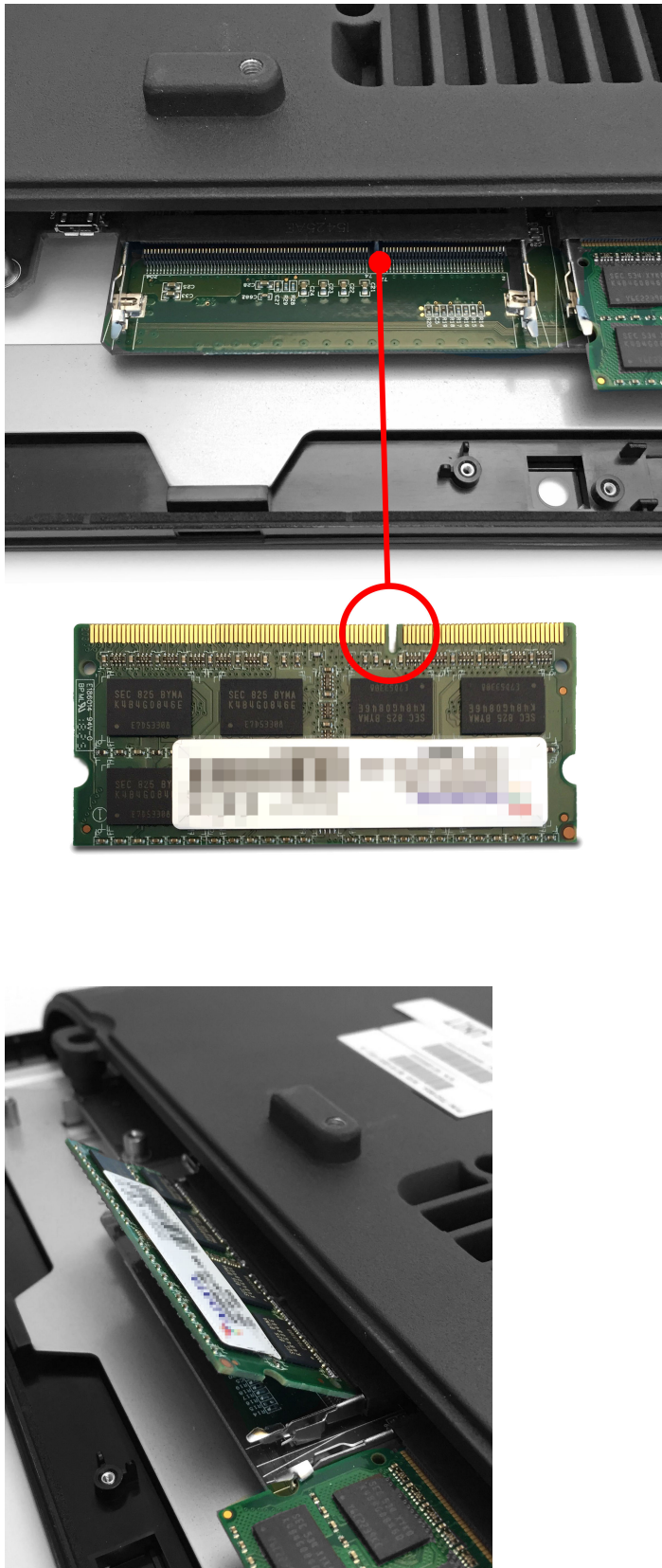
1. Use the hex key included with your workstation to loosen the screws that secure the top cover of the workstation.



2. Remove the top cover. Pull the cover away carefully to avoid damaging the internal speaker wires. Locate an available memory expansion slot.



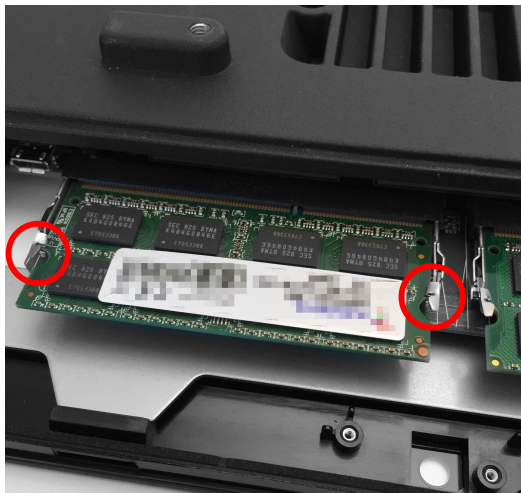
3. Align the notch in the memory module with the groove in the memory expansion slot, and then push the module into the slot until secure.



4. Push the memory module down until the retaining clips snap into position.



5. To remove a memory module, simultaneously pull both retaining clips away from the module to release it, and then pull the module from the expansion slot. The following image shows the location of the retaining clips.



6. Reinstall the top cover.

Workstation Accessibility Features

The following table contains the workstation accessibility features for the Workstation 6 Series configurations with the Microsoft Windows 10 IoT Enterprise operating system.

Table 7-1 Accessibility Features for the Workstation 610, 620, and 650 with the Microsoft Windows 10 IoT Enterprise Operating System

Feature	Behavior	Setup
Magnifier	In Full-Screen Mode , your entire screen is magnified. Depending on the size of your screen and the zoom level you choose, you might not be able to see all of the screen at the same time.	Select Control Panel > Ease of Access Center > Start Magnifier > Views > Full screen .
	In Lens Mode , the area around the mouse pointer is magnified. When you move the mouse pointer, the area of the screen that's magnified moves along with it.	Select Control Panel > Ease of Access Center > Start Magnifier > Views > Lens .
	In Docked Mode , only a portion of the screen is magnified, leaving the rest of your desktop unchanged. You can then control which area of the screen is magnified.	Select Control Panel > Ease of Access Center > Start Magnifier > Views > Dock .
Text or Visual Alternative to Sounds	The Turn on visual notifications for sounds option replaces system sounds with visual cues, such as a flash on the screen, so you can see notifications even when they're not heard. You can also choose how you want sound notifications to warn you.	Select Control Panel > Ease of Access Center > Use text or visual alternatives for sounds > Turn on visual notifications for sounds . Then, select a visual warning: <ul style="list-style-type: none"> • 1-None • 2-Flash active caption bar • 3-Flash active window • 4-Flash desktop
	The Turn on text captions for spoken dialog option displays text captions in place of sounds to indicate that activity is happening on your PC (for example, when a document starts or finishes printing).	Select Control Panel > Ease of Access Center > Use text or visual alternatives for sounds > Turn on text captions for spoken dialog .

Table 7-1 (Cont.) Accessibility Features for the Workstation 610, 620, and 650 with the Microsoft Windows 10 IoT Enterprise Operating System

Feature	Behavior	Setup
On-Screen Keyboard	The Use click sound option lets you hear a sound when you press a key.	Select Control Panel > Ease of Access Center > Start On-Screen Keyboard (OSK) > Options Key on keyboard > Use click sound.
	The Show keys to make it easier to move around the screen option allows the keys to light up as you type.	Select Control Panel > Ease of Access Center > Start On-Screen Keyboard (OSK) > Options Key on keyboard > Show keys to make it easier to move around the screen.
	The Turn on numeric keypad option expands the On-Screen Keyboard (OSK) to show a numeric keypad.	Select Control Panel > Ease of Access Center > Start On-Screen Keyboard (OSK) > Options Key on keyboard > Turn on numeric keypad.
	The Click on keys option lets you click or tap the on-screen keys to enter text.	Select Control Panel > Ease of Access Center > Start On-Screen Keyboard (OSK) > Options Key on keyboard > Click on Keys.
	The Hover over keys option lets you use a mouse or joystick to point to a key. The characters you point to are entered automatically when you point to them for a specified time.	Select Control Panel > Ease of Access Center > Start On-Screen Keyboard (OSK) > Options Key on keyboard > Hover over keys.
	The Scan through keys option allows the OSK to continually scan the keyboard. Scan mode highlights areas where you can type keyboard characters by pressing a keyboard shortcut, using a switch input device, or using a device that simulates a mouse click.	Select Control Panel > Ease of Access Center > Start On-Screen Keyboard (OSK) > Options Key on keyboard > Scan through keys.
	The Use Text Prediction option allows the OSK to suggest words as you type so you don't need to type each complete word.	Select Control Panel > Ease of Access Center > Start On-Screen Keyboard (OSK) > Options Key on keyboard > Use text prediction.
Narrator	Narrators read text on your PC screen aloud and describes events, such as notifications or calendar appointments, so you can use your PC without a display.	Select Control Panel > Ease of Access Center > Start Narrator.

Table 7-1 (Cont.) Accessibility Features for the Workstation 610, 620, and 650 with the Microsoft Windows 10 IoT Enterprise Operating System

Feature	Behavior	Setup
Speech Recognition	Windows Speech Recognition lets you control your PC with your voice alone, without needing a keyboard or mouse.	Select Control Panel > Speech Recognition .

8

Diagnostics Utility

This utility lets you view information about the workstation, test features to confirm their functional state, and configure peripheral and option devices.

If logged in as a non-Administrator account, the Administrator password is required to access the Diagnostics Utility.

Starting the Workstation 6 Diagnostics Utility

1. Press **Start**.
2. Press **File Explorer**.
3. Navigate to the `C:\Bin\` folder.
4. Double-tap **Diagnostic_WS6_Win.exe**.

For ease of access, you can create a shortcut and place the shortcut on the Desktop.

Viewing System Information

On the System Information tab, you can view and confirm system diagnostic information as described in the following table:

Table 8-1 Diagnostics: System Information

Field	Description
Diagnostic Version	The Diagnostics Utility version.
RAM Size (bytes)	Shows the total RAM capacity.
Physical Address (ENET)	Shows the network MAC address assigned to the Ethernet port.
Physical Address (Wi-Fi)	Shows the network MAC address assigned to the wireless adapter.
IP Address	Shows the DHCP IP address assigned to the workstation.
C Total Size (bytes)	Shows the total capacity of the C drive.
C Free Size (bytes)	Shows the available capacity of the C drive.
D Total Size (bytes)	Shows the total capacity of the D drive.
D Free Size (bytes)	Shows the available capacity of the D drive.
Microsoft Window Ver	Shows the Microsoft Windows operating system version number.
Driver Version	Shows the PCWSAPI driver version number.
Workstation Model	Shows the workstation model.
BIOS Version	Shows the BIOS version number.
Hardware Revision	Shows the System Board revision letter.

Table 8-1 (Cont.) Diagnostics: System Information

Field	Description
Motherboard SN	Shows the motherboard serial number.
UED CTRL Version	Shows the USB port driver version number. The Workstation 6 uses this driver to enable or disable USB ports.
E2PROM Driver Version	Shows the E2PROM driver version number.
CAL Version	Shows the Client Application Loader version number.
UUID	Shows the Universally Unique Identifier, which enables distributed systems to uniquely identify information without significant central coordination.

Testing the LCD Display

On the LCD Display tab, you can test the following LCD display features:

- Brightness
 - Backlight
 - Colors
 - Backlight Controls
1. To test brightness, press the **Dim**, **Normal**, and **Bright** buttons in the LCD Intensity Control group.
 2. To test the backlight, press **Backlight Off** to ensure the backlight turns on and off.
 3. To test the colors, press the **Red**, **Green**, **Blue**, **Black**, and **White** buttons in the Display Color group.
 4. To manage the backlight controls and set a timer to switch off the backlight after a period of inactivity:
 - a. Enter a time in seconds in the **Backlight Reprime** field.
 - b. Press **Reprime Backlight** to set the timer. Set the value to 0 to disable the timer and allow the backlight to stay on indefinitely.
 - c. Press **Backlight On** to enable the timer.
 - d. To disable the timer after testing, press **Backlight Off**.

Testing the Integrated Magnetic Stripe Reader

On the MSR tab, you can test that the integrated magnetic stripe reader functions correctly and retrieves the expected results.

You can test the card reader in:

- **Special Mode:** This mode converts scanned data into a buffer and sends the information to an application for processing. Special Mode accepts inputs in 2 or 3 tracks.
- **Magtek Mode:** This mode emulates keyboard input with diagnostic and employee cards. Magtek Mode accepts inputs in 1, 2, or 3 tracks.

1. To reset the mag reader settings, press **Reset Mag Reader**.
2. To clear the previously input card data, press **Clear All Data**.

Testing the Encrypted Magnetic Stripe Reader

On the Encrypted MSR tab, you can test the magnetic card reader with encryption enabled. By default, this is disabled.

Testing the Customer Display

On the Customer Display tab, you can test the connectivity and functionality of an integrated or pole 240 x 64 Customer Display.

On the Customer Display Ex tab, you can test the graphics capabilities of an integrated or pole 240 x 64 Customer Display and retrieve the integrated firmware version.

On the Customer Display 2x20 tab, you can test the connectivity and functionality of an integrated or pole 2 x 20 text-based Customer Display.

Testing the Cash Drawers

On the Cash Drawer tab, you can make sure the connected cash drawers correctly open and that the system recognizes the open and close state of the cash drawers.

By default, you can determine the password by applying the following formula to the key:

Digit 1 * Digit 2 + Digit 4 + Digit 6 = Password

For example, if the utility shows the key 532586, the password is 26 (5*3+5+6).

1. Click **Open Cash Drawer [Number]** to open the connected cash drawer.
2. Click **Read Cash Drawer [Number] Status** to check the open and close status of the connected cash drawer.

Performing an RS232 Loopback Test

On the RS232 LoopBack tab, you can perform a loopback test on a single port using an RS232 Self LoopBack Unit.

1. Connect a serial loopback connector to the workstation COM port 1, 2, or 5 (COM 5 is only available on the 610). You can also connect a serial cable between two COM ports.
2. Select the output and input ports.
3. Press **Test Ports**.
4. Verify that the **Tx Bytes** field and the **Rx Bytes** field increments.
5. Press **Quit Test**.

Testing an RS232 Printer

On the RS232 Print tab, you can test connectivity and print line-by-line at a serial printer.

1. Connect the RS232 cable from the printer to the workstation COM port 1, 2, or 5 (COM 5 is only available on the 610).
2. Select the COM port from the **Output Port** drop-down list.
3. Press **Test Ports**.
4. Verify that the **Tx Bytes** field and the **Rx Bytes** field increments and that the printer continues printing.
5. Press **Quit Test**.

Performing an IDN Loopback Test

On the IDN LoopBack tab, you can perform a loopback test using an IDN loopback device.

1. Connect the loopback device to the workstation COM port 4.
2. Select COM4 from the **Output Port** and the **Input Port** drop-down lists.
3. Press **Test Ports**.
4. Verify that the **Tx Bytes** field and the **Rx Bytes** field increments.
5. Press **Quit Test**.

Testing an IDN Printer

On the IDN Print tab, you can test connectivity and print line-by-line at an IDN Roll Printer with an ID of 1. You must have an RS422 (6 pin to 8 pin) cable.

1. Connect the 8-pin end to the workstation COM port 4.
2. Connect the 6-pin end to the printer IDN port 1.
3. Select **COM4** from the **Output Port** drop-down list.
4. Press **Test Ports**.
5. Verify that the **Tx Bytes** field and the **Rx Bytes** field increments and that the printer continues printing line-by-line.
6. Press **Quit Test**.

Viewing Diagnostics Reports for Devices on COM Ports

On the Devices tab, you can monitor and retrieve diagnostics reports or data from selected peripheral devices.

Viewing Hardware Controls

On the Hardware Control tab, you can:

- Enable and disable USB ports. This is used for testing and enabling/disabling the USB ports.
- Set the voltage level for the COM1 and COM2 ports. COM2 is only available on the 610.
- Set the voltage level for the cash drawer ports.

- View accelerometer information.
- View system temperature.

By default, you can determine the password by applying the following formula to the key:

`Digit 1 * Digit 2 + Digit 4 + Digit 6 = Password`

For example, if the utility shows the key 532586, the password is 26 (5*3+5+6).

Viewing Diagnostics Reports for I2C Devices

On the I2C Devices tab, you can:

- Retrieve information from an RFID tag.
- Retrieve data from EEPROM memory.

9

BIOS Configuration

This section describes how to enter the BIOS System Configuration Utility and how to configure the system BIOS.

Starting the BIOS System Configuration Utility

To configure the BIOS, start the BIOS System Configuration Utility using the following steps:

1. Connect a USB keyboard to the Workstation 6.
2. Power on or restart the workstation.
3. Press **F2** immediately after pressing the power button and before the BIOS splash screen. You can press **F2** repeatedly until the Configuration Utility starts.

If the workstation boots into the operating system without starting the utility, restart the workstation and try again.

Viewing System Information

On the Main tab, use the arrow keys to select **System Information**, and press Enter.

The following is an example set of information presented by the BIOS system information screen. The actual data shown by your system may vary:

- BIOS Version: W1300h IA32
- Build Time: 12/02/2014
- Processor Type: Intel(R) Atom(TM) CPU E3827 @ 1.74GHz
- Processor Speed: 1.757 GHz
- System Memory Speed: 1333 MHz
- L2 Cache RAM: 1024 KB
- Total Memory: 4096 MB
- [1]: 4096 MB (DDR3- 1333) @ DIMM0
- [2]: 0 MB

Configuring System Security Settings

On the Security tab, configure the settings as described in the following table:

Table 9-1 BIOS Security Settings

Setting	Description of Option
Secure Boot Configuration	Disabled by default. To enable, set the Supervisor Password .

Table 9-1 (Cont.) BIOS Security Settings

Setting	Description of Option
Secure Boot Option	Enable or Disable the UEFI secure boot firmware validation process.
Reset to Default	Reset secure boot variables to the factory default.
Change to Customization	Delete the protection key, change the platform to setup mode, and disable secure boot.
Set Supervisor Password	Set or clear the supervisor password.
Supervisor Hint String	Enter a hint for the password.
Min. Password Length	Set a minimum length to enforce for user passwords.
HDD Password Select	Select the password structure to apply to hard disk drives: <ul style="list-style-type: none">• User Only: Supports user account passwords.• User + Master: Supports user account passwords and a master password.
Set HDDNumber User Password	Set a password for the user account for this HDD.
Set HDDNumber Master Password	Set a master password for this HDD.
TPM Support	Enable or Disable Trusted Platform Module support. By default, TPM Support is disabled.

Table 9-1 (Cont.) BIOS Security Settings

Setting	Description of Option
TPM Action	<p>Select one of the options.</p> <p>For the 610, the following options are available:</p> <ul style="list-style-type: none"> • No change • Enable • Disable • Activate • Deactivate • Clear • Enable and Activate • Disable and Deactivate • Set Owner Install, with state=True • Set Owner Install, with state=False • Enable, Activate, and Set Owner Install with state=True • Disable, Deactivate, and Set Owner Install with state=False • Clear, Enable, and Activate • Require PP for provisioning • Do not require PP for provisioning • Require PP for clear • Do not require PP for clear • Enable, Activate, and Clear • Enable, Activate, Clear, Enable, and Activate <p>For the 620 and 650, the following options are available:</p> <ul style="list-style-type: none"> • No change • Require PP for clear • Do not require PP for clear • Change EPS
Omit Boot Measurements	Enable or Disable recording boot device attempts in PCR.

Configuring the Boot Priority for Devices

On the Boot tab, use the arrow keys to reorder the priority list for boot devices. The BIOS reads the devices from top to bottom in determining the method for booting into the operating system.

For example, if you want the workstation to boot from a DVD whenever a user inserts a disc and the HDD installation when there is no operating system disc, make sure to place the DVD device, such as USB DVD, higher on the list than the HDD with the operating system installation, such as ATA HDD0.

Exiting the BIOS Configuration Utility

On the Exit tab, select one of the following options:

- **Exit Saving Changes:** Save the current configuration settings, exit the configuration utility, and boot into the operating system.
- **Exit Discarding Changes:** Discard the current configuration settings, exit the configuration utility, and boot into the operating system.
- **Load Setup Defaults:** Load the default UEFI settings. Only available on the 620 and 650.
- **Load UEFI Defaults:** Load the default UEFI settings. Only available on the 610.
- **Discard Changes:** Discard the current configuration settings without exiting the configuration utility. This resets the configurations to the last saved state.
- **Save Changes:** Save the current configuration settings.

Other Advanced BIOS Configurations



Caution: Do not change advanced configuration settings without guidance because incorrect or incompatible settings may cause the system to fail.

On the Advanced tab, select **Special Configuration** and configure the settings as described in the following table:

Table 9-2 Advanced BIOS Security Settings

Setting	Description of Option
Factory Recovery	Select factory recovery settings: <ul style="list-style-type: none"> • Disabled: You cannot perform factory recovery. • Enabled: You can perform factory recovery. For the 610, these settings are also available: <ul style="list-style-type: none"> • Phase 1: Initiates the factory recovery process. • Phase 2: Loads the recover image.
Cash Drawer Voltage	Set the voltage for the Cash Drawer port.
COM Port 1 Voltage	Set the voltage for the COM1 port.
12V Powered USB	Enable or Disable the 12V powered USB port.
24V Powered USB (620 and 650 only)	Enable or Disable the 24V powered USB port.
USB Port 1	Enable or Disable USB port 1.
USB Port 2	Enable or Disable USB port 2.
USB Port 3	Enable or Disable USB port 3.
USB Port 4	Enable or Disable USB port 4.
USB Port 5 (620 and 650 only)	Enable or Disable USB port 5.
USB Port 6 (620 and 650 only)	Enable or Disable USB port 6.

Table 9-2 (Cont.) Advanced BIOS Security Settings

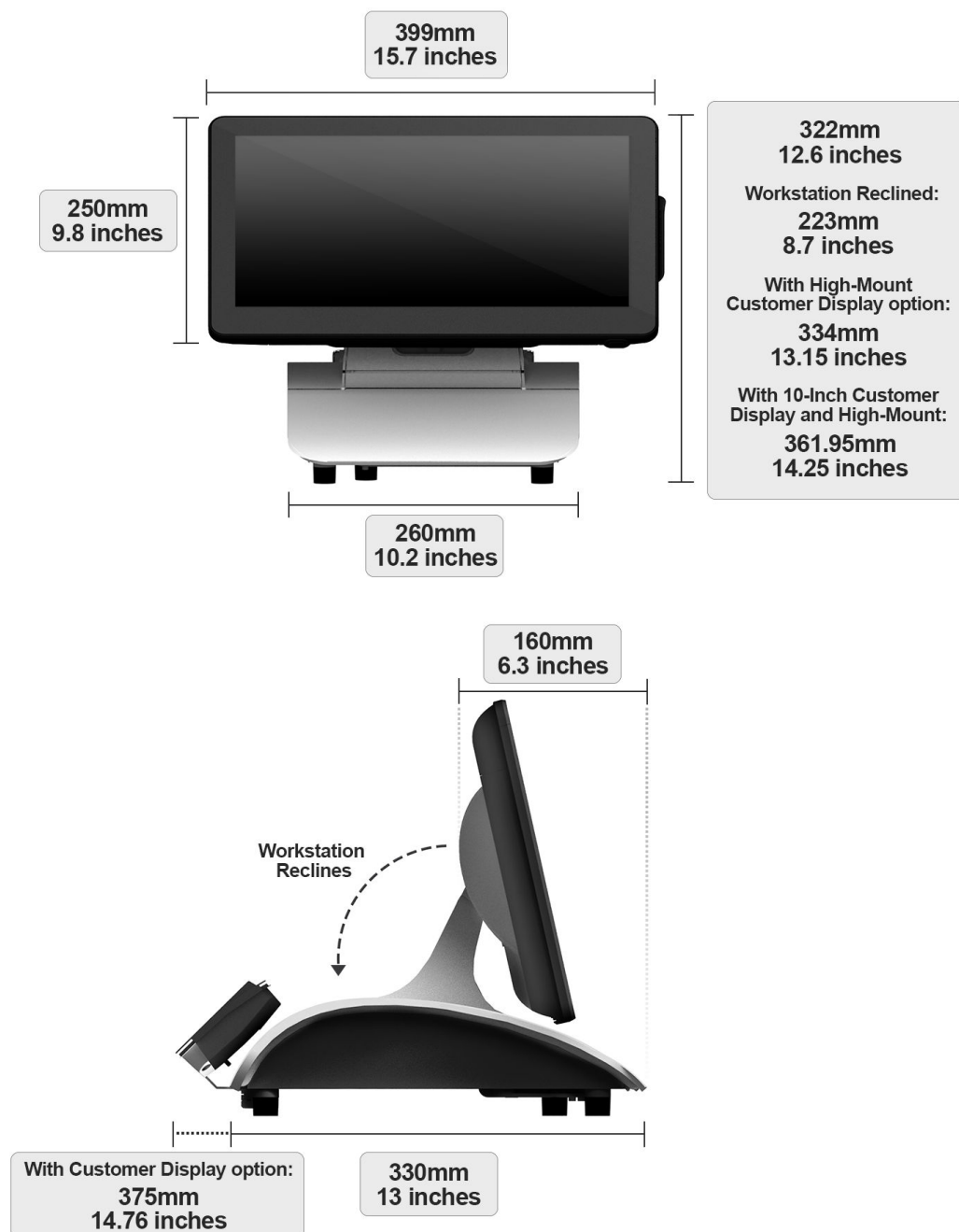
Setting	Description of Option
422 Mode Selection	Enable or Disable selection between RS-422 and RS-232 for the IDN port.
Power Failure Restoration	Select the action taken by the system in the event of a power failure: <ul style="list-style-type: none">• Remain Off: The system remains powered off even if it was originally powered on.• Last state: If the system was on when power failed, the system powers on. If the system was off, the system remains off.• Power On: The system powers on even if it was originally powered off.

10

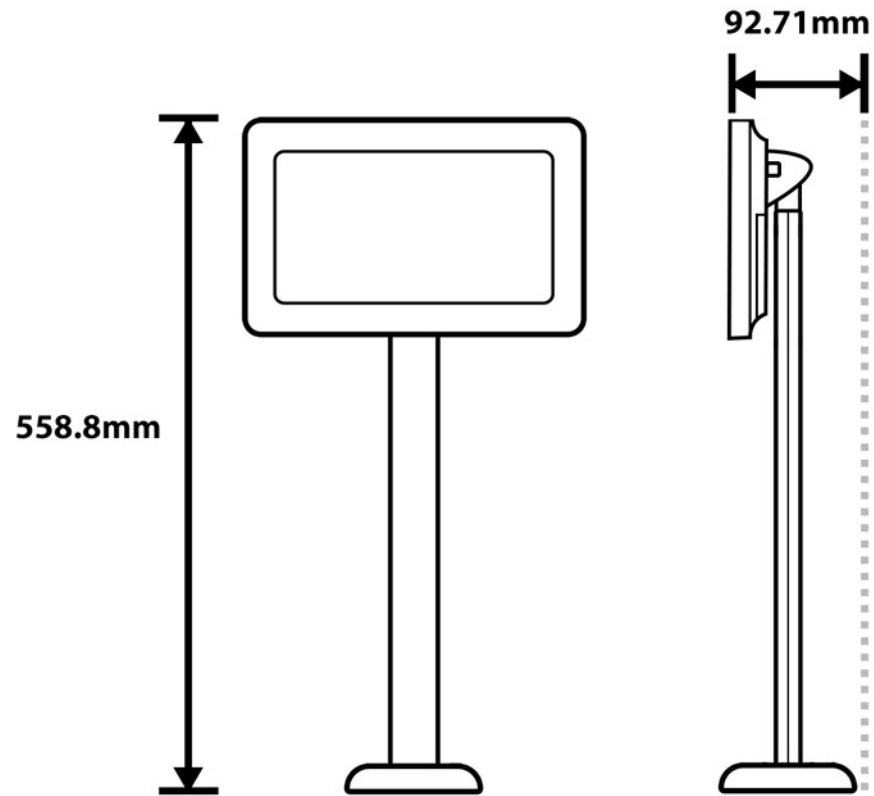
Equipment Dimensions

This section contains the equipment dimensions for the Workstation 6 Series.

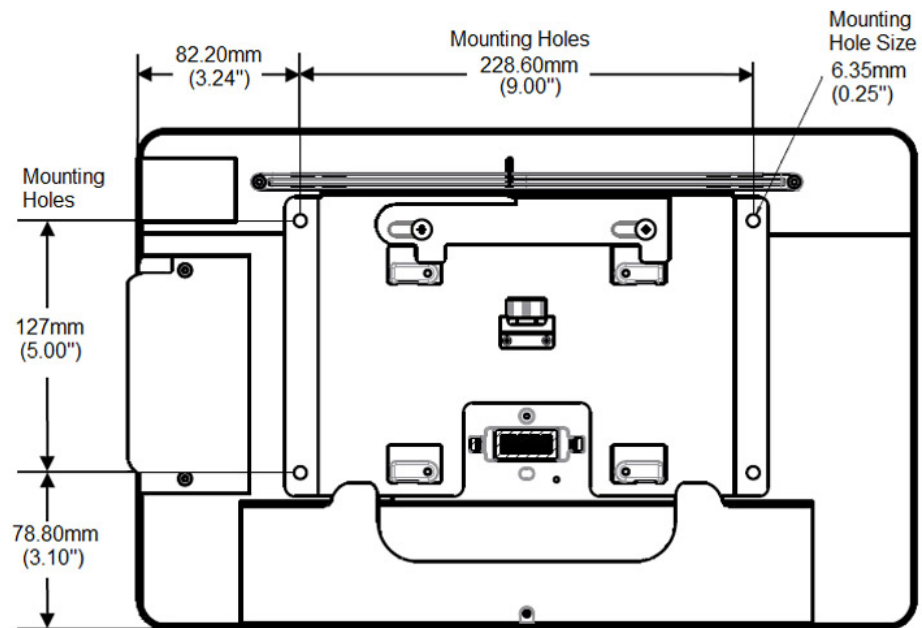
Dimensions for the Workstation 6 with Adjustable Stand

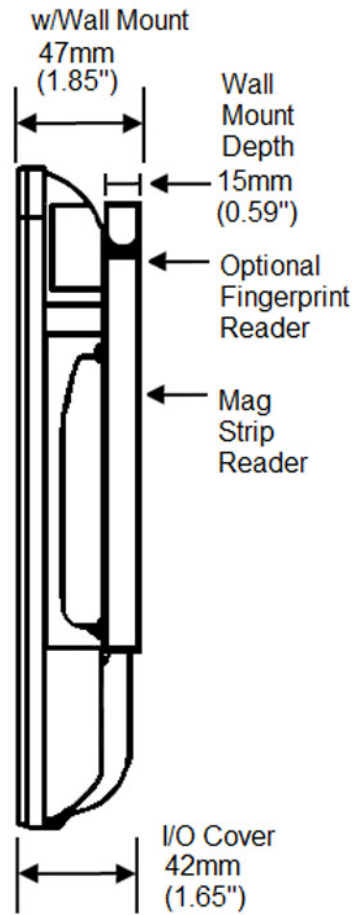


10-Inch Customer Display with Pole Mount Dimensions



Wall Mount Dimensions





I/O Panel Connectors and System Diagrams

This section describes the input/output panel connectors and the system block diagrams for each configuration of the Workstation 6 Series.

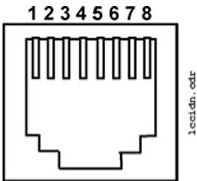
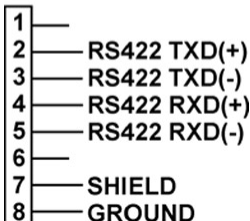
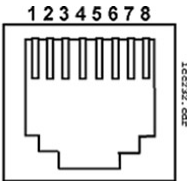

I/O Panel Connectors

This section depicts the input/output panel connectors.

IDN RS422/232

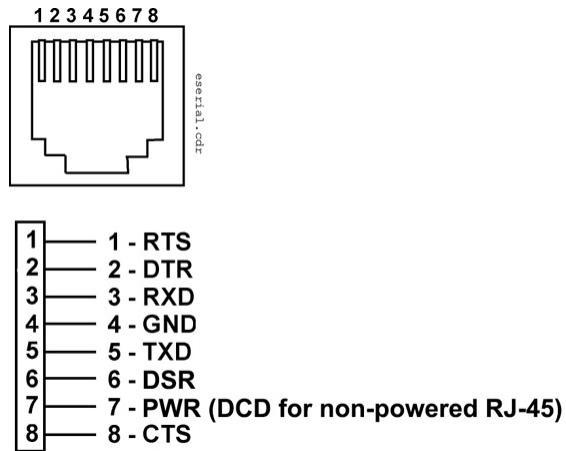
You can configure the IDN connector to run in RS422 mode or RS232 mode as shown in the following table.

Table 11-1 IDN Pin Reference

RS422	RS232
 	 

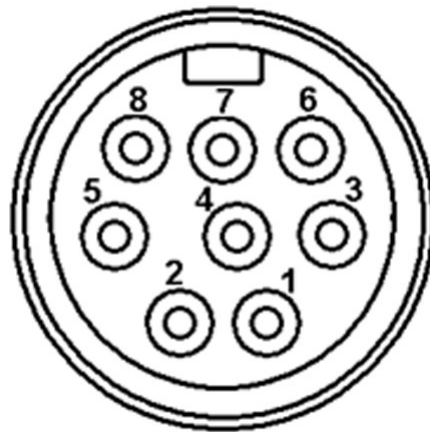
Powered RJ45

The powered RJ45 connector contains the following pins:



Series 2 Cash Drawer

The Series 2 Cash Drawer connector is an 8-pin Mini-DIN. You can convert this connector into a traditional 4-pin DIN connector by using a P/N 300290-020-PT cable.



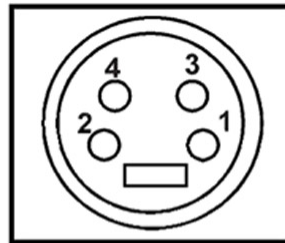
The following table describes the signal name and function of each pin.

Table 11-2 Series 2 Cash Drawer Pin and Signal Reference

Pin #	Signal Name	Description
1	VCC12 or VCC24	Cash drawer power
2	CD_OPEN	Open drawer
3, 7, 8	Ground	Signal grounds
4	CD_ST	Input status from cash drawer
5	MCU_TX_5V	Tx data to cash drawer
6	MCURX	Rx data from cash drawer

Customer Display

The customer display port contains the following pins:



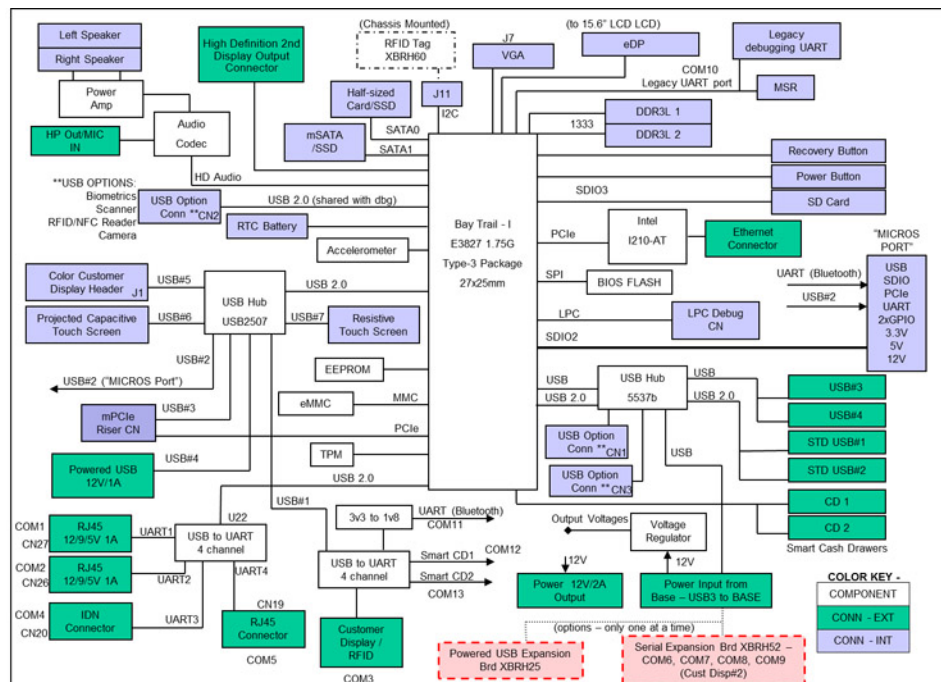
1	+5V
2	POLE_TX
3	POLE_RX
4	GND

System Block Diagrams

The diagrams in this section depict the system block diagrams for the 610, 620, and 650 configurations.

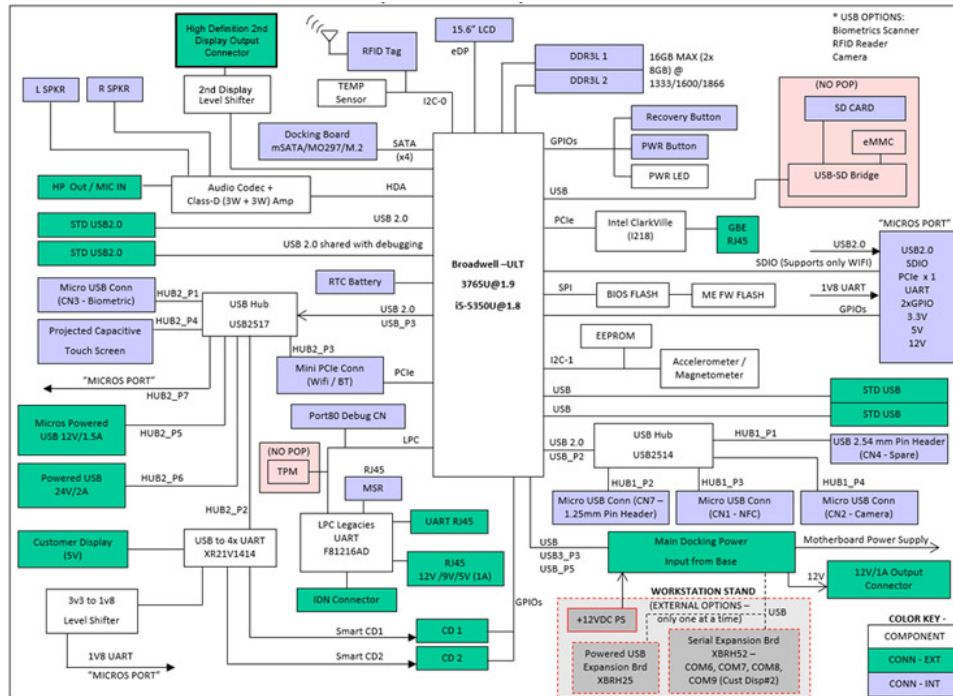
610 Configuration

The following diagram depicts the Broadwell ULT Main Board for the 610 configuration of the Workstation 6.



620 and 650 Configurations

The following diagram depicts the Broadwell ULT Main Board for the 620 and 650 configuration of the Workstation 6.



12

Troubleshooting

This section provides instructions for general troubleshooting tasks.

Basic Troubleshooting

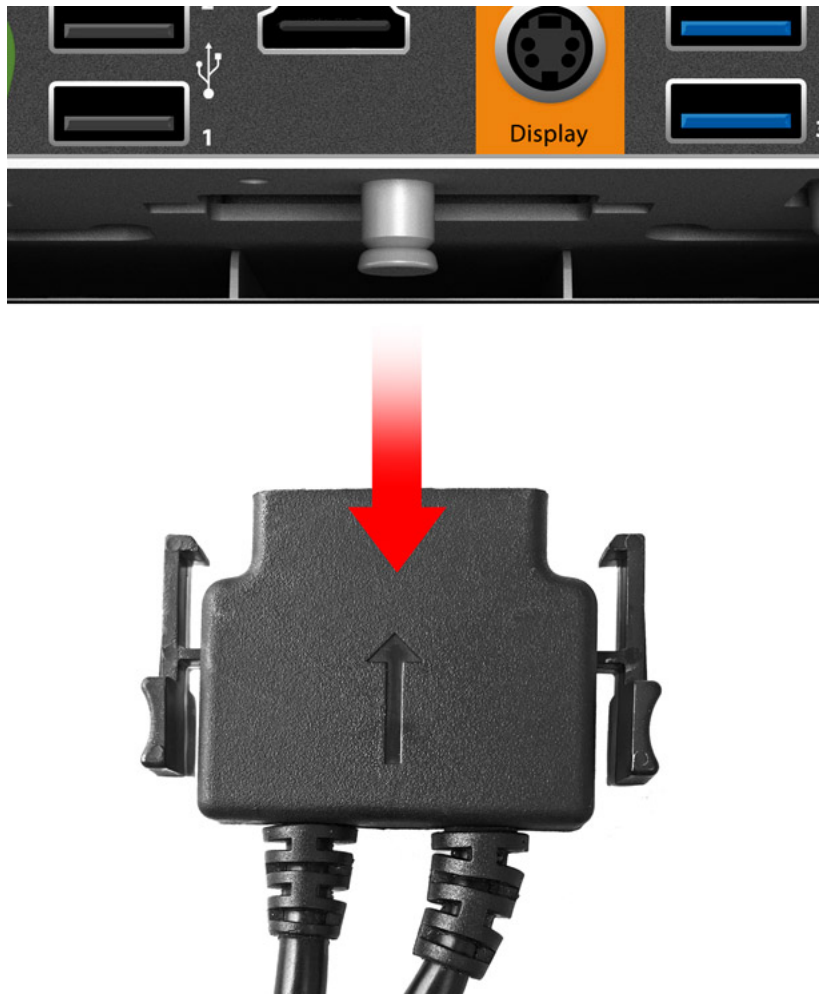
The following table contains descriptions and solutions for common problems encountered when installing or operating any configuration of the Workstation 6 Series.

Table 12-1 Basic Troubleshooting

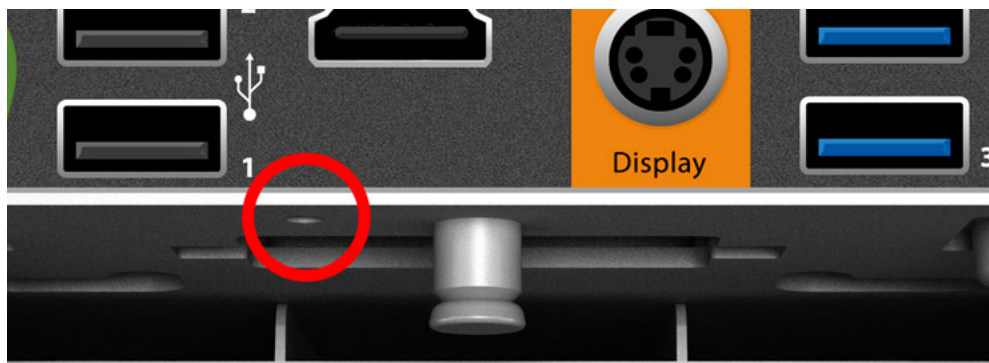
Problem	Possible Causes	Solution
The workstation does not start and does not show the splash screen.	No power to the workstation.	Make sure you connected the AC power cable to the workstation and to a surge-protected outlet, UPS, power conditioner, or wall outlet. If you placed the workstation on the stand, make sure you connected the power cable to the stand.
The workstation does not start and the screen remains blank after 30 seconds.	Missing or defective SO-DIMM.	Re-seat SO-DIMM 0.
The workstation does not start. The operator LED stays off or stays on. The operator LCD remains blank after 30 seconds.	The system board may be defective.	Contact your Oracle MICROS representative.
The workstation does not connect to the Local Area Network.	The Network Patch cable is not connected.	Install the appropriate patch cable between the workstation and the wall jack.
The workstation does not read mag cards.	The mag card reader head is dirty or contaminated. The mag card reader is defective.	Use the mag card cleaning kit on the reader. Replace the magnetic stripe reader.

Unmounting the Workstation 6

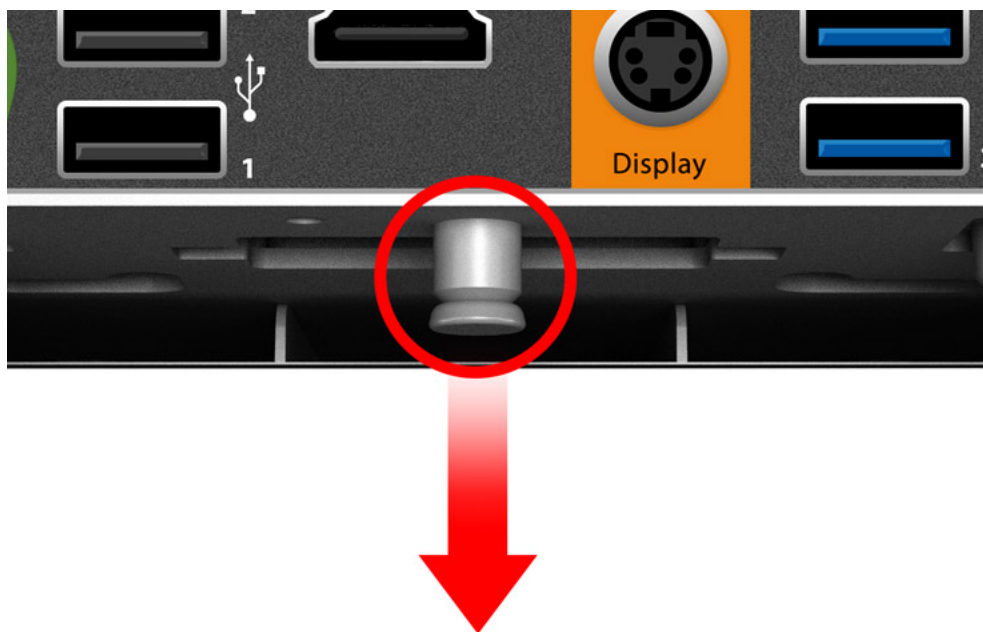
1. Disconnect all cables from the I/O ports.
2. Tilt the workstation head unit back to angle the I/O ports up.
3. Disconnect the DC power cable.



4. If you secured the workstation to the adjustable stand using a security screw, remove the security screw.



5. Pull down the quick release pin, and then gently push the workstation head unit.



6. Slide the workstation head unit all the way back, and then lift to unmount.

Disassembling the Workstation



Caution: The workstation's Power Supply Unit (PSU) contains a permanently-connected fuse in the neutral line. After a fuse operation, parts of the PSU remain energized and present a shock hazard as long as the AC power cord is connected. Always disconnect the AC power cord before opening the unit for service or configuration.

To disassemble the unit to access the system board and peripheral components:

1. Remove all cables from the I/O Panel, including the DC power cable.
2. Place a towel or soft cloth over your work surface to protect the touchscreen, and then place the workstation face-down on the surface.
3. Loosen the security screws using a hex key. You do not need to fully remove the screws because they are captive.



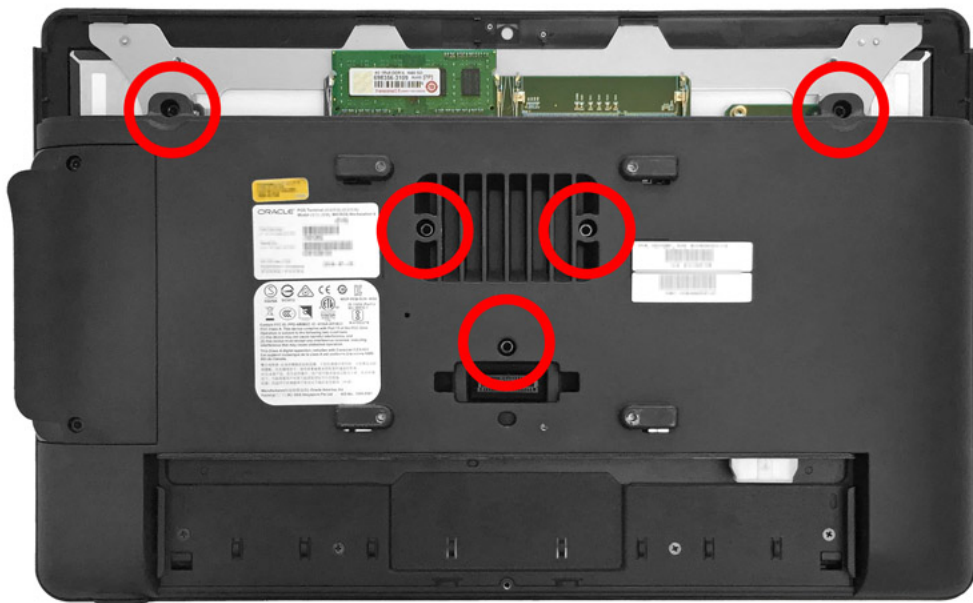
4. Gently lift the rear cover to avoid damaging the audio cables. You can disconnect the cables to detach the top cover.
5. Loosen the two captive screws from the magnetic stripe reader.



6. Gently lift the magnetic stripe reader to avoid damaging the 8-pin modular cable.
7. Disconnect the 8-pin modular cable and the RFID tag interface cable. The RFID tag is factory-programmed with information specific to the workstation in which it is installed. The RFID tag is bonded to the Workstation 6 casework; do not attempt to remove it.



8. Loosen the five captive screws from the back of the unit.

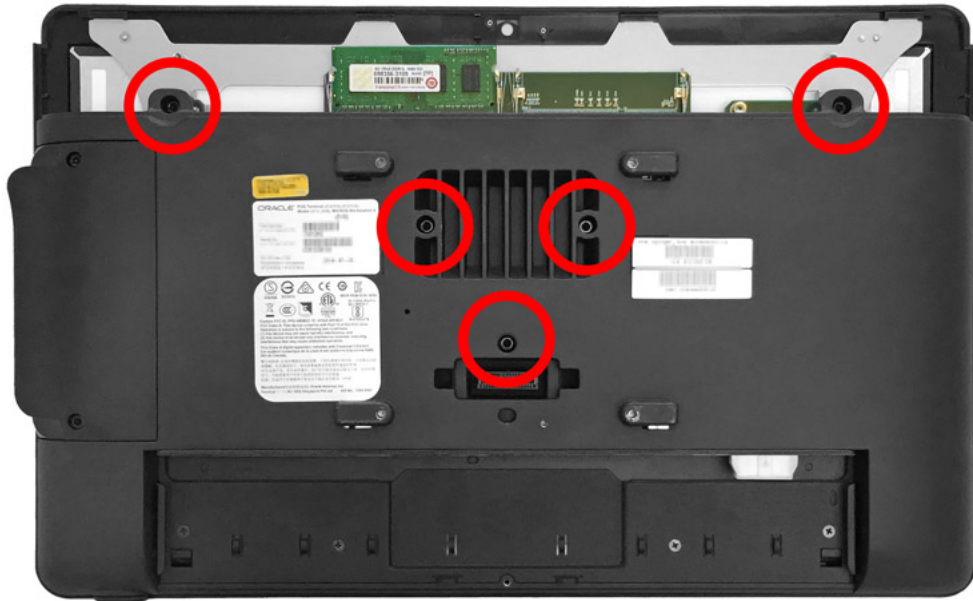


9. Gently push the rear cover away from the power button.
10. Gently lift the rear cover.

Reassembling the Workstation

1. Place the rear cover over the system board and slide it toward the power button.

2. Tighten the screws to secure the rear cover.



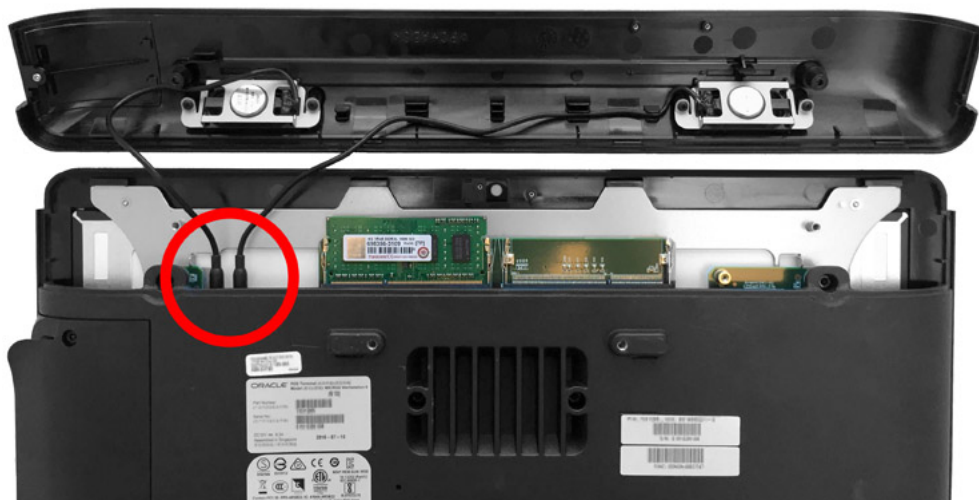
3. Connect the RFID tag interface cable and the 8-pin modular cable for the magnetic stripe reader.



4. Slide in the magnetic stripe reader and tighten the two captive screws.



5. Connect the left and right speaker cables. Connect the speakers based on their orientation as shown.



6. Place the top cover and tighten the screws to secure the top cover.



System Recovery

A system recovery is used to:

- Wipe the hard drive.
- Restore all PC settings to factory settings.
- Remove all user accounts and settings.

To perform a system recovery, you can use the BIOS, the workstation's recovery button, or the Microsoft Windows operating system recovery function.

Figure 12-1 System Recovery Workflow for the 610

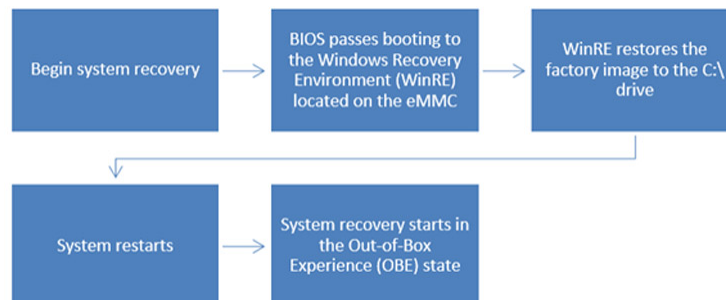
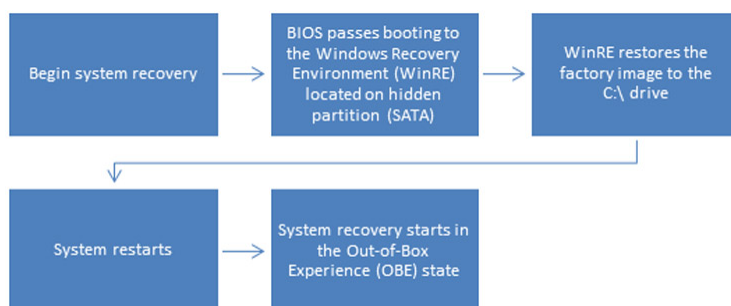


Figure 12-2 System Recovery Workflow for the 620 and the 650

Performing a System Recovery for Microsoft Windows 8

For the 610, you can use the Microsoft Windows 8 operating system recovery function to restore system settings.

1. Swipe left on the touchscreen or move your mouse to the top-right corner of the start screen.
2. Click **Settings**.
3. On the Settings screen, click **Change PC settings**.
4. On the PC settings screen, select **Update and recovery**.
5. On the Update and Recovery screen, click the **Get started** button under **Remove everything and reinstall Windows**.
6. On the Reset your PC dialog box, click **Next**, click **Fully clean the drive**, and then click **Reset** to finish restoring factory settings.

Do not select **Just remove my files**; this causes the system recovery process to fail.

7. When the restoration is complete and the workstation reboots, you can begin the operating system setup.

Performing a System Recovery for Microsoft Windows 10

For the 610, 620, and 650, you can use the Microsoft Windows 10 operating system recovery function to restore system settings.

1. Swipe left on the touchscreen or move your mouse to the top-right corner of the start screen.
2. Click **All Settings**.
3. On the PC Settings screen, select **Update and recovery**.
4. On the Update and Recovery screen, click the **Get started** button under **Reset this PC**.
5. On the Reset your PC dialog box, click **Next**, click **Fully clean the drive** or **Just remove my files**, and then click **Reset** to finish restoring factory settings.
6. When the restoration is complete and the workstation reboots, you can begin the operating system setup.

Performing a Factory Reset from BIOS (Oracle Linux for MICROS)

To perform system recovery from the BIOS:

1. Enter the BIOS.
 - a. Connect a USB keyboard to the Workstation 6.
 - b. Power on or restart the workstation.
 - c. Press **F2** immediately after pressing the power button and before the BIOS splash screen. You can press **F2** repeatedly until the Configuration Utility starts. If the workstation boots into the operating system without starting the utility, restart the workstation and try again.
2. On the Advanced tab, use the arrow keys to select **Special Configuration**, and then press **Enter**.
3. Select **Factory Recovery**, and then press **Enter**.
4. Select **Enabled**, and then press **Enter**.
5. Press **F10**, select **Yes**, and then press **Enter** to save the configuration changes and exit the configuration utility. The Workstation 6 automatically restarts.
6. The workstation reboots and the “Entering Recovery Mode” message appears.
7. When the message “The system will reset Oracle Linux to Factory Default.....Are you sure to continue? (Y/N)” appears, type **y**, and then press **Enter**.
8. After the recovery process completes, the workstation reboots to the Oracle Linux for MICROS mini-setup.

Performing a Factory Reset using the Recovery Button

You can use the system recovery button to restore system settings without using a keyboard.

1. Power off the workstation. Do not disconnect the power cable.
2. Press the recovery button using any object less than 2mm in diameter. You can access the button on the Workstation 6 using an opening on the adjustable stand mount near the DC power cable. Make sure you are not using the opening for the security screw.
3. Power on the workstation. It briefly powers on, restarts, and then shows the Please Wait message below the splash screen.
4. On the Choose an Option screen, click **Troubleshoot**.
5. For the 610:
 - a. On the Troubleshoot screen, click **Reset your PC**, and then click **Next**.
 - b. Click **Fully clean the drive**, and then click **Reset** to finish restoring factory settings.
6. For the 620 and 650:
 - a. On the Troubleshoot screen, click **Factory Reset**.
 - b. Select **Y** to reset the Windows partition to factory default.

7. When the restoration is complete and the workstation restarts, you can begin the operating system setup.

13

Safety and Handling

This section contains important information regarding the safety, care, and handling of the Workstation 6.

Safety Agency Compliance Statements

Safety Precautions

For your protection, observe the following safety precautions when setting up your equipment:

- Follow all cautions and instructions marked on the equipment.
- Ensure that the voltage and frequency of your power source match the voltage and frequency inscribed on the equipment's electrical rating label.
- Never push objects of any kind through openings in the equipment. Dangerous voltages may be present. Conductive foreign objects could produce a short circuit that could cause fire, electric shock, or damage to your equipment.
- This product is intended for restricted access whereby access is controlled through the use of a means of security (for example, key, lock, tool, badge access) and personnel authorized for access have been instructed on the reasons for the restrictions and any precautions that need to be taken.
- Do not directly connect this product to outdoor metallic communications cables. Always connect the product to outdoor metallic communications cables using a protection device that is designed for direct connection to outdoor metallic communications cables (such as a switch or router), or use optical non-metallic communications cables upon leaving the building.
- Do not directly connect this product to outdoor power cables.
 - For AC Power, connect the product only to an indoor power distribution system that uses current-limiting circuit breakers for AC power.
 - For DC Power, connect the product only to earthed power systems that are completely contained within one building.

Modifications to Equipment

Do not make mechanical or electrical modifications to the equipment. Oracle is not responsible for regulatory compliance of a modified Oracle product.

Placement of an Oracle Product



Caution: Do not block or cover the openings of your Oracle product. Never place an Oracle product near a radiator or heat register. Failure to follow these guidelines can cause overheating and affect the reliability of your Oracle product.

SELV Compliance

Safety status of I/O connections comply with SELV requirements.

Power Cord Connection



Caution: Oracle products are designed to work with power systems having a grounded neutral (grounded return for DC-powered products). To reduce the risk of electric shock, do not plug Oracle products into any other type of power system. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.



Caution: Not all power cords have the same current ratings. Do not use the power cord provided with your equipment for any other products or use. Household extension cords do not have overload protection and are not meant for use with computer systems. Do not use household extension cords with your Oracle product.

The following caution applies only to devices with a Standby power switch:

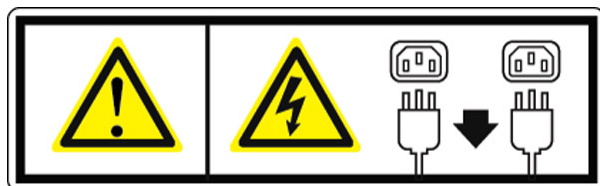


Caution: The power switch of this product functions as a standby type device only. The power cord serves as the primary disconnect device for the system. Be sure to plug the power cord into a grounded power outlet that is nearby the system and is readily accessible. Do not connect the power cord when the power supply has been removed from the system chassis.

The following caution applies only to devices with multiple power cords:



Caution: For products with multiple power cords, all power cords must be disconnected to completely remove power from the system.

Figure 13-1 Disconnect Multiple Power Cords

Battery Warning



Caution: There is danger of explosion if batteries are mishandled or incorrectly replaced. On systems with replaceable batteries, replace only with the same manufacturer and type or equivalent type recommended by the manufacturer per the instructions provided in the product service manual. Do not disassemble batteries or attempt to recharge them outside the system. Do not dispose of batteries in fire. Dispose of batteries properly in accordance with the manufacturer's instructions and local regulations. Note that on the main board, there is a lithium coin cell battery installed in a battery holder. If you need to replace the lithium coin cell battery, use a Maxell CR2032 or equivalent battery type.

System Unit Cover

You must remove the cover of your Oracle computer system unit to add cards, memory, or internal storage devices. Be sure to replace the cover before powering on your computer system.

Caution: Do not operate Oracle products without the cover in place. Failure to take this precaution may result in personal injury and system damage.



Care and Handling

Equipment Placement

- Keep the Workstation 6 Series within an operating temperature between 0C (32F) and 50C (122F).
- If you are placing your equipment in an area adjacent to carpeting, use an anti-static grade of carpeting. If you do not have anti-static carpeting, use static discharge mats.
- Do not place equipment near food preparation areas, glass racks, or water stations. Although the Workstation 6 Series is highly spill resistant, take care to avoid using electrical equipment near water.
- Take precautions to prevent the accidental dropping of metallic objects such as paper clips and staples into the equipment.

Electromagnetic Interference

- Do not run exposed cables in the vicinity of AC power lines because the noise radiating from the AC power lines can be absorbed by Workstation 6 AC power and communication lines.
- Keep devices that emit RF energy, such as cordless phones, at least eight inches from the equipment or cable during operation.

Cleaning

LCD/Touchscreen

You can use any ammonia-free household cleaner or a 50/50 mix of isopropyl alcohol and distilled water applied with a clean, cotton cloth. Spray the cloth with the cleaner and then use the cloth to wipe the screen.

Cabinet

Use a chamois or a clean, lint-free cloth to clean the cabinet and screen surface. Do not use chemical, alcohol, or petroleum-based cleaners that are not recommended for plastics.

Magnetic Stripe Reader

Contact your Oracle representative for information and recommendations on magnetic stripe reader cleaning kits.