



Welch Allyn Q-Stress Cardiac Stress Testing System



Installation Manual

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901144 CARDIAC STRESS TESTING SYSTEM



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CAUTION: Federal law restricts this device to sale by or on the order of a physician.

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Scope

This document describes the assembly of a Stress system. It is designed to be used as a whole for the installation process or in part as a troubleshooting tool for ensuring correct connection, configuration, and functioning of the Stress system.

Because the Stress system can be purchased in different configurations and with different options, your system's feature set may be different from the feature set shown in this document.

Read all instructions before you begin the installation process. Follow the instructions in the order given.

If you have any questions regarding execution of these instructions, contact technical support at:

baxter.com/contact-us

Hardware Connections



CAUTION. The following cautions apply:

The computer, display, and printer must be plugged into the isolation transformer. The optional **Tango BP** monitor may also be plugged into the isolation transformer.

The isolation transformer must be plugged into a dedicated circuit.

The treadmill must be plugged into a dedicated circuit.

Use of an Uninterruptable Power Supply (Optional)

If you use an uninterruptable power supply (UPS), insert it between the isolation transformer and the computer and monitor.



WARNING! Electronic interference.

The **AM12Q** and Trigger modules can be installed in the stress cart, mounted on the treadmill handrail utilizing a custom treadmill rail clamp kit, or in another convenient location. The **AM12Q** front end should be installed in a location that prevents the patient cable to be in close proximity to power cords, transformers, or other powered devices to minimize the possibility to introduce noise into the ECG signal.

System Configuration

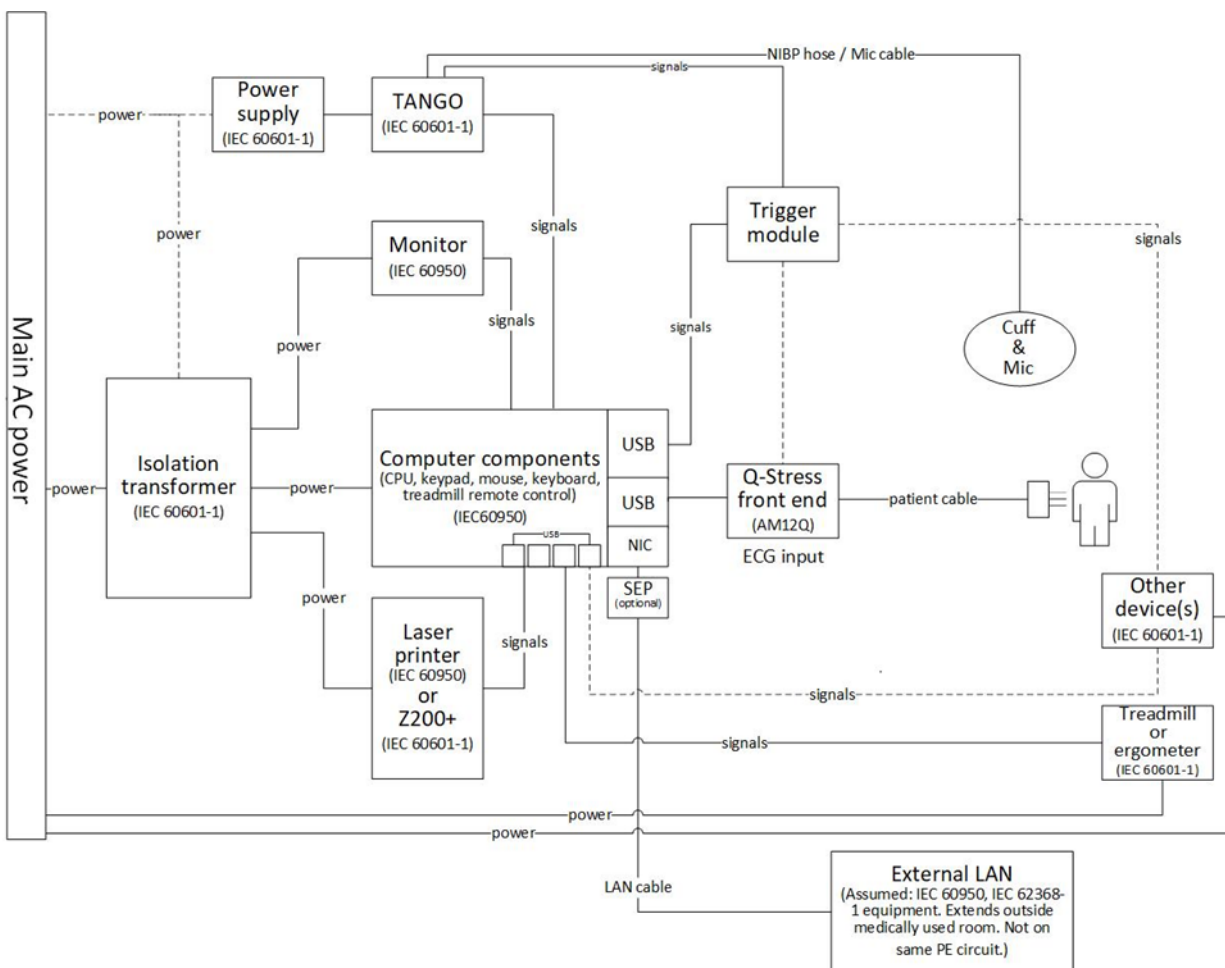
The block diagram (Figure 1) shows a typical configuration and suggested locations for connection of the various system hardware components. Your system will be similar but may not be identical to the configuration shown. Contact technical support with any questions.



WARNING! Electronic interference.

Grounding reliability can be achieved only when equipment is connected to a properly-grounded receptacle. Ensure that the isolation transformer is connected to this type of electrical outlet.

Figure 1 Stress System Components



NOTE: There is a power switch on the front of the computer that must be pressed to boot up the computer. Turn off the computer by shutting down **Windows**.

NOTE: The Certified Separating Device (Isolation Transformer) will power up to four devices. When more than four devices require power, the **Tango** BP Monitor must be powered by another available AC power outlet. The **SunTech Tango** unit does not require connection to the isolation transformer, as it is a medical device that includes its own isolated power supply. The **Tango** may be powered by the isolation transformer as a convenience.

Make a note of which ports are used to connect the treadmill, ergometer, and blood pressure monitor. You will need this information to configure the Stress software.



CAUTION. Treadmill/Ergometer communication.

Power Management should be disabled for USB ports to prevent USB ports from being powered down. This is beneficial for maintaining communication with the treadmill or ergometer exercise equipment.

Equipment Symbols and Markings

Device Symbol Delineation



WARNING The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death. In addition, when used on a patient applied part, this symbol indicates defibrillation protection is in the cables. Warning symbols will appear with a grey background in a black and white document



CAUTION The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data



Follow instructions/directions for use (DFU) -- mandatory action. A copy of the DFU is available on this website. A printed copy of the DFU can be ordered from Baxter for delivery within 7 calendar days.



Indicates compliance to applicable European Union directives



Medical Device



Model Identifier



Reorder Number

Stress Cart Assembly

The steps below show how to place Stress system components on a Stress cart. If you are not placing your system on a cart, you can use these steps for instructions on connecting the different components.

Figure 2 Example of a Stress Cart with the **Z200+** Thermal Writer, **Tango M2**, and Touch Monitor



Figure 3 Example of a Stress Cart with a Windows LaserJet Printer, **Tango M2**, and Touch Monitor



CAUTION. Unstable workstation.

For best results, place the system equipment on the cart as described in these instructions.

All carts require the following three component kits:

- Base
- Work surface
- Display mount and blood pressure monitor mount

Stress carts may include accessories such as:

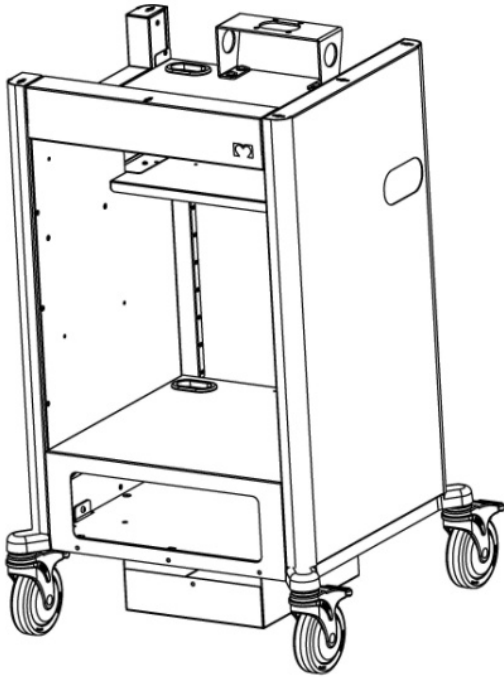
- **SunTech Tango** BP monitor mount
- Storage solutions
- Workflow solutions

Each cart assembly kit includes tools and hardware necessary for assembly.

Cart Parts and Options

Cart Base (9911-023-11)

Content and appearance may vary based on options ordered.



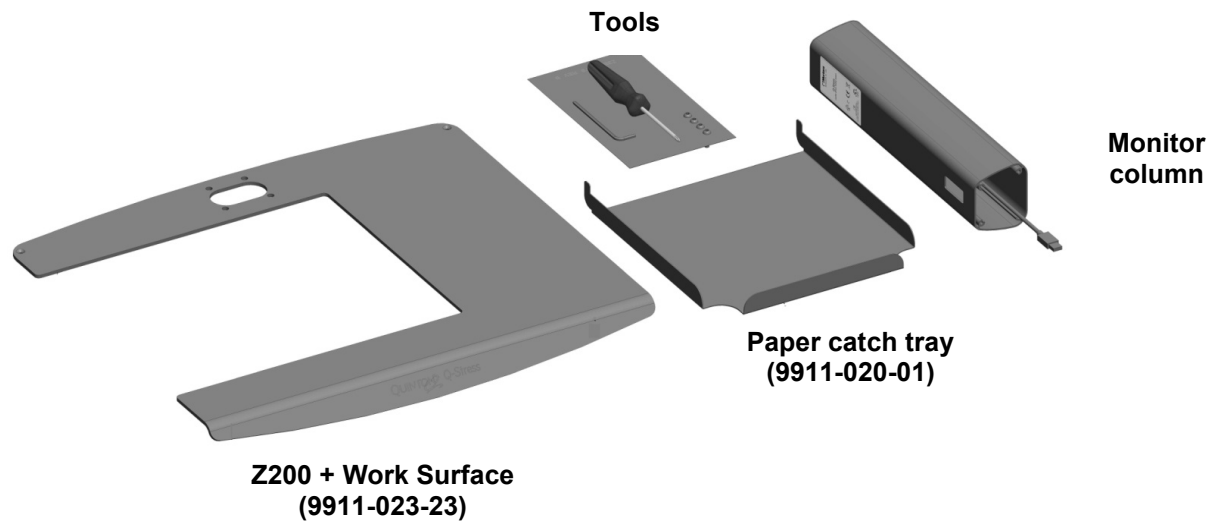
Front



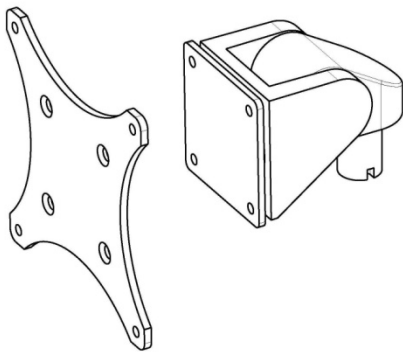
Back Panel shown, no longer included.



Z200+ Work Surface and Accessories



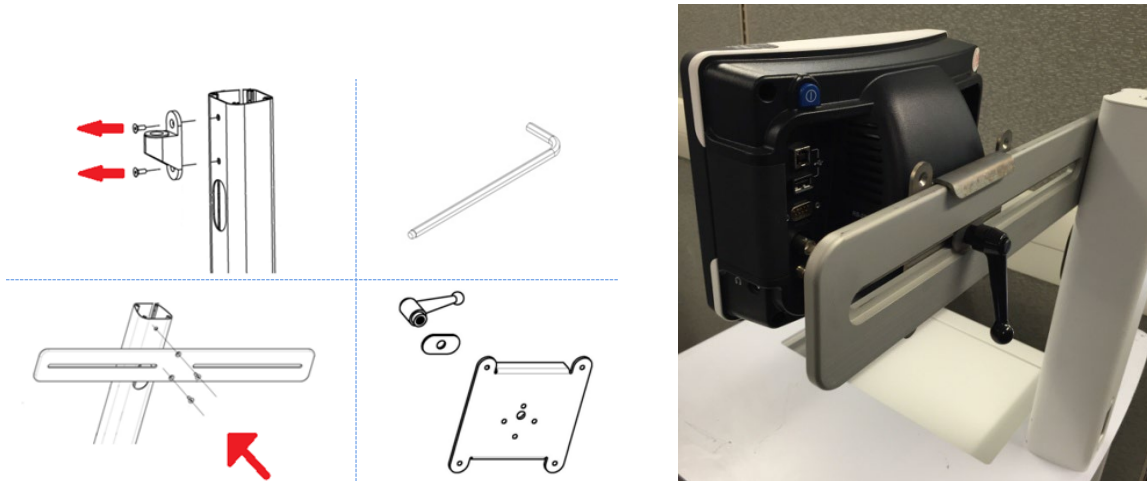
Standard Display Mount supports LCD or Touch Monitor (9911-023-31)



SunTech **Tango** Mount Kit for Standard 24" LCD display (9911-023-32)



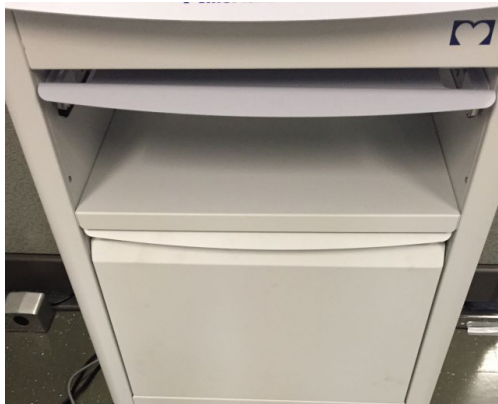
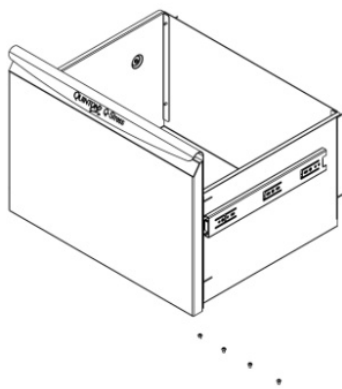
SunTech **Tango** Mount Kit for 24" Touch Monitor Display (9911-023-33)



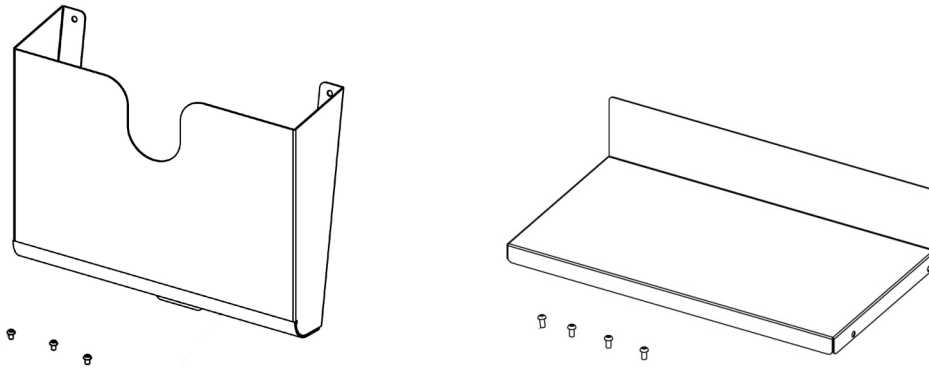
Slide Out Keyboard Tray (9911-023-44)



Storage Drawer (9911-023-41)



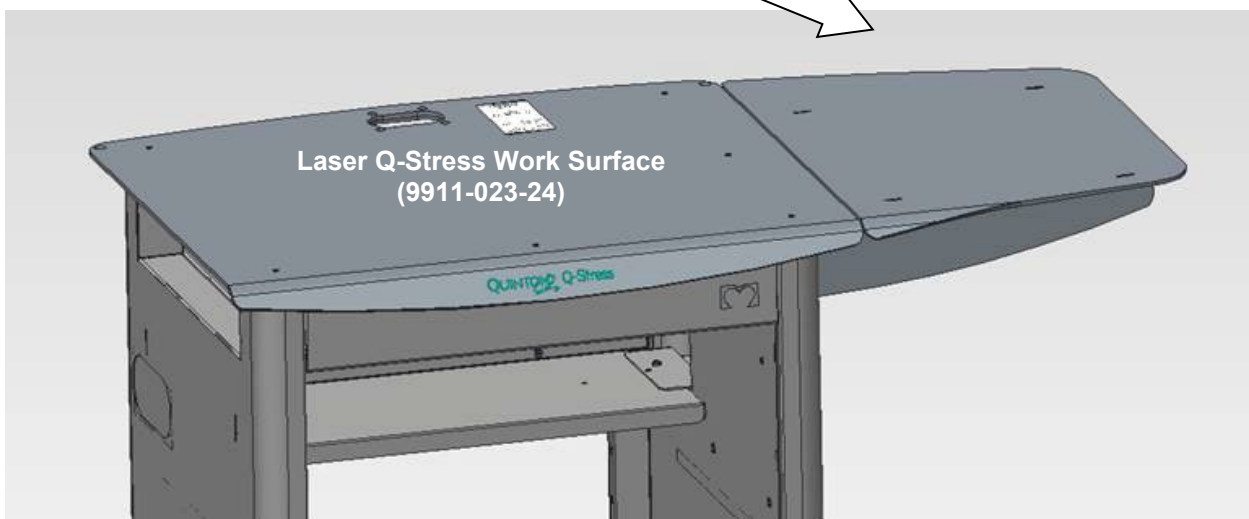
Storage Accessories (9911-023-42)



WAM Holder (9911-023-43)



Surface Extension side shelf (9911-023-45)



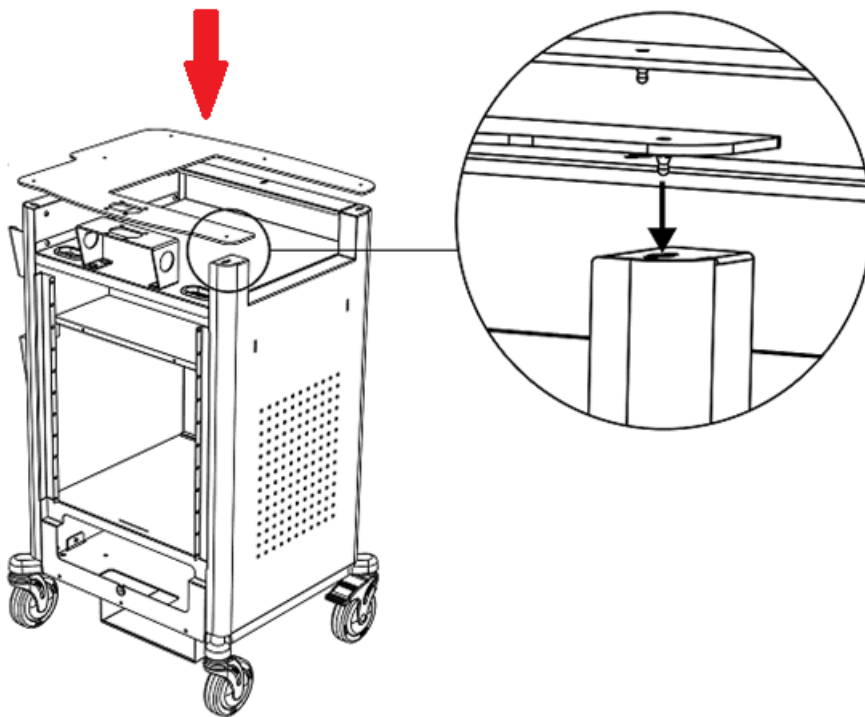
Cart Assembly Steps

Step 1 - Uncrate the base



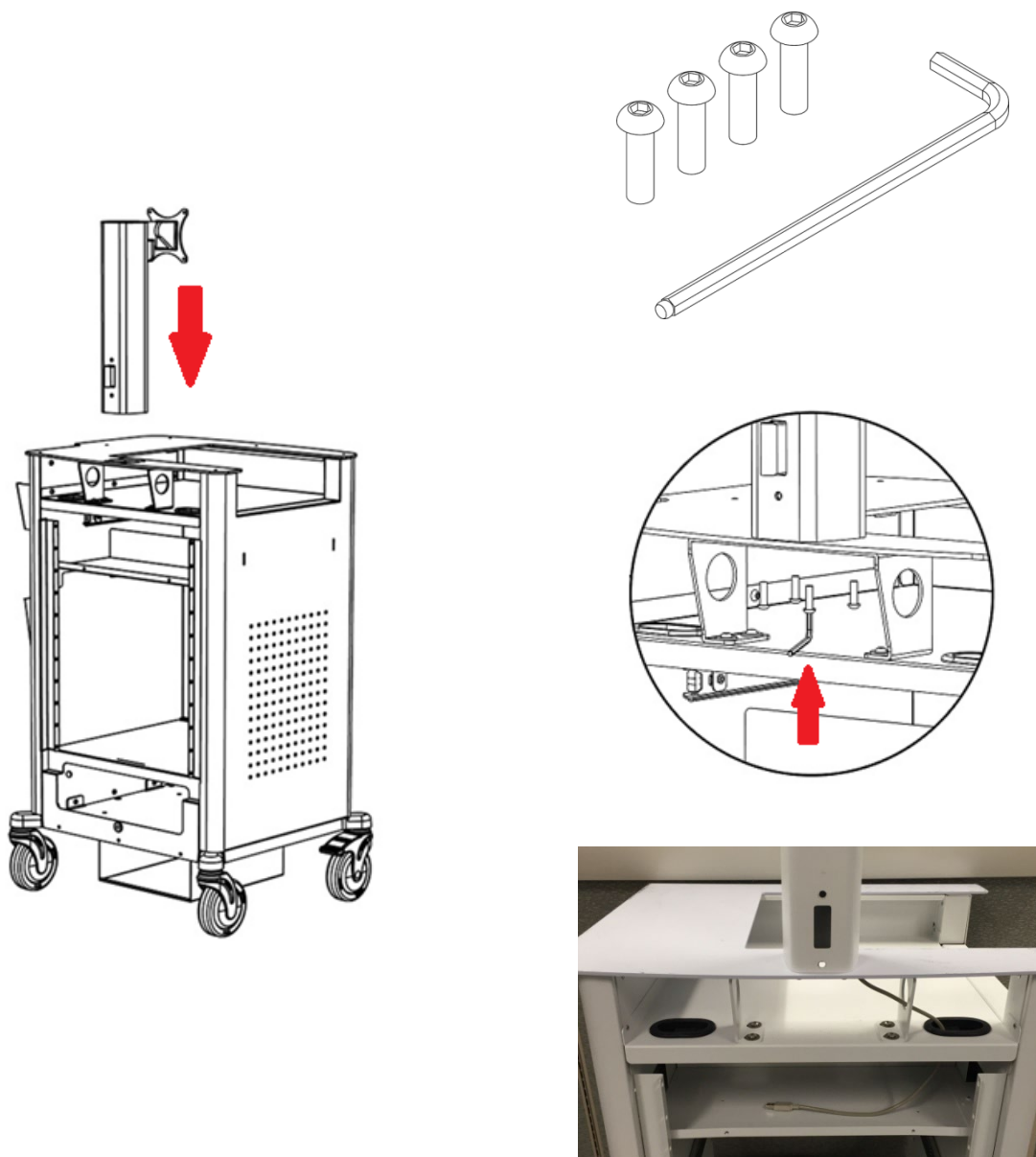
- Lift the shipping carton off cart base.
- Unpack ramp.
- Roll cart base off shipping pallet.

STEP 2 - Assemble work surface onto base



- Lift the cutout desktop onto the cart assembly aligning the fasteners with the precut holes.
- Apply moderate pressure to snap the lock fasteners in place.
- Ensure that all 6 lock fasteners are securely fastened.

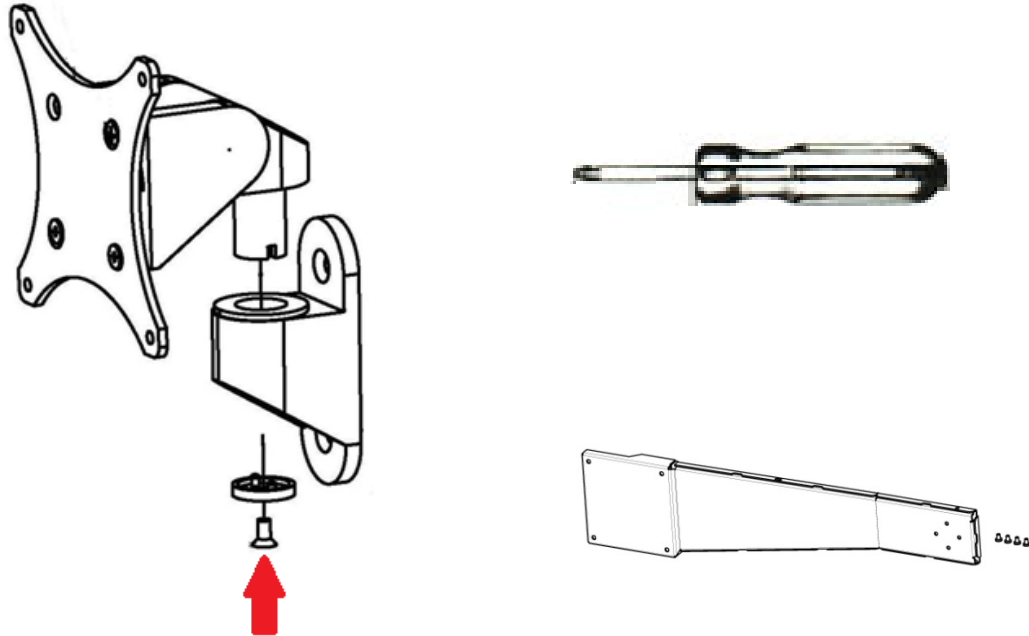
STEP 3 - Fasten display mount to work surface



- Align the monitor mount with the four screw holes in the desk top.
- Fasten the monitor mount assembly to the cart with four M6 X 20 mm screws using the supplied **Allen** wrench.
- Route ECG B USB cable (typically beige in color) as shown in photo above. This cable will later connect to the Trigger Module ECG B port.

STEP 4 - Display mount assembly

For units with 24" LCD display

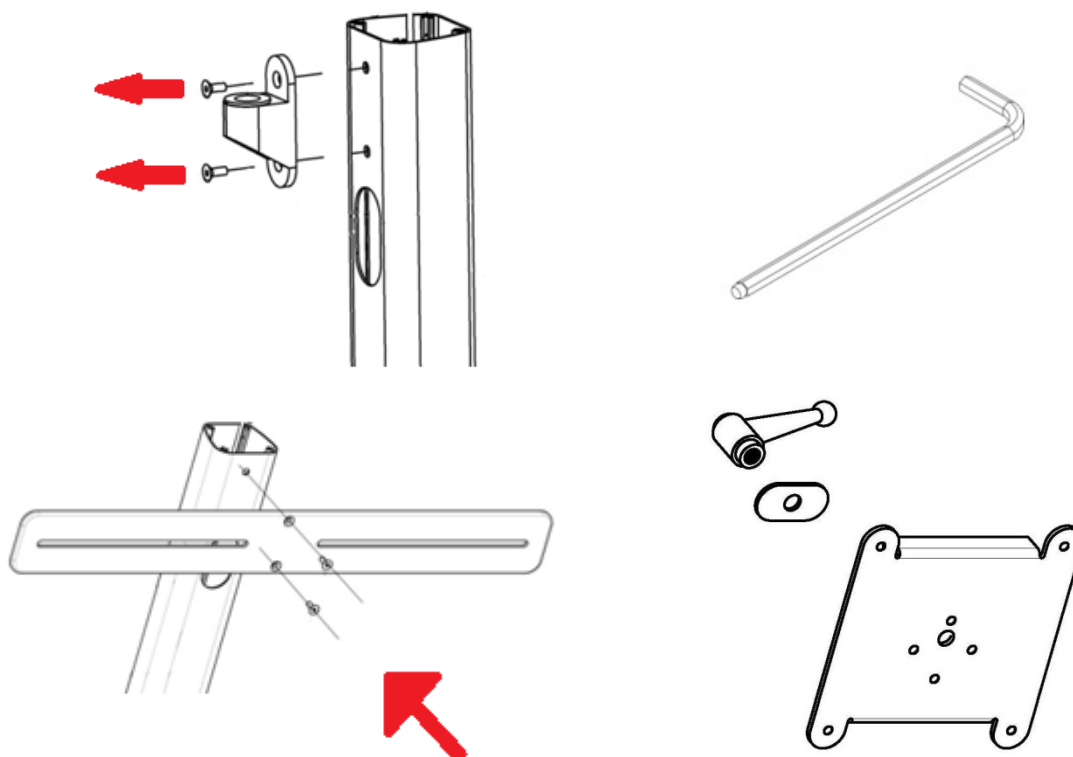


- Use #2 **Philips** screwdriver to remove the LCD mounting bracket off of the swivel mount, then install the LCD mounting bracket onto the mounting post of the stress cart.
- Remove the 4 screws from the mounting holes on the back of the monitor and set aside (as they are not needed).
- Attach the swivel mount to the back of the monitor using the screws that came with the mounting bracket.
- If a **Tango BP Mounting Arm** not included with the installation, add 2 washers to each mounting screw to avoid damaging the monitor.
- If a **Tango BP** mounting arm is included, move the **Tango BP** monitor mounting arm off to side until LCD is ready to be fastened to bracket. Take care to avoid misplacing fasteners.



STEP 4 - Display mount assembly (continued)

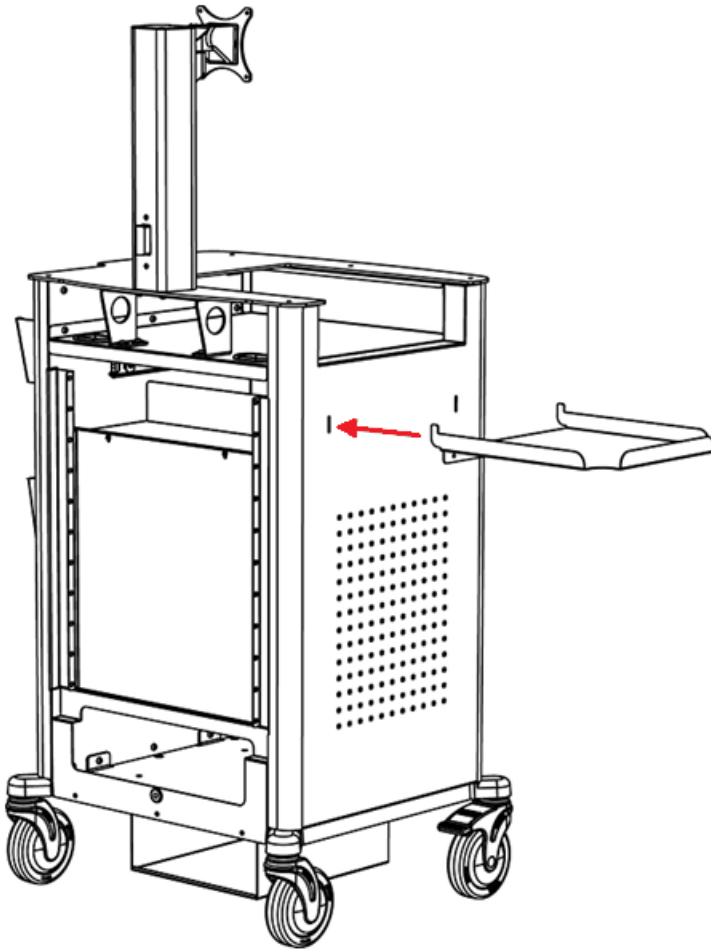
For units with 24" ELO Touch Monitor display



- Use 4mm **Allen** wrench to remove socket from display mount.
- Use 4mm **Allen** wrench to fasten the LCD/blood pressure crossbar to the mounting post. (**only if a Tango unit is included and additional moveable side mount tango arm not used**)
- Attach the LCD bracket to the back of the monitor, then mount the monitor onto the crossbar.
- Attach the **Tango** unit to the right-hand side of the crossbar as shown.

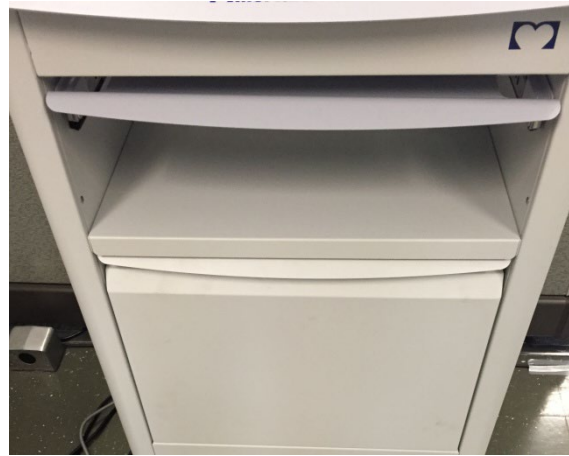


STEP 5 - Accessories, thermal printer paper catch tray



- Align the paper catch tray with the two slots on the side of the cart.
- Position the tray hooks with the tray in a 45-degree angle in the slots and bring the tray to a horizontal position so it is locked in place.

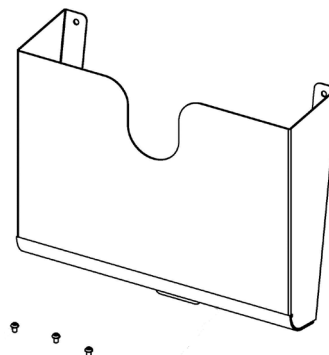
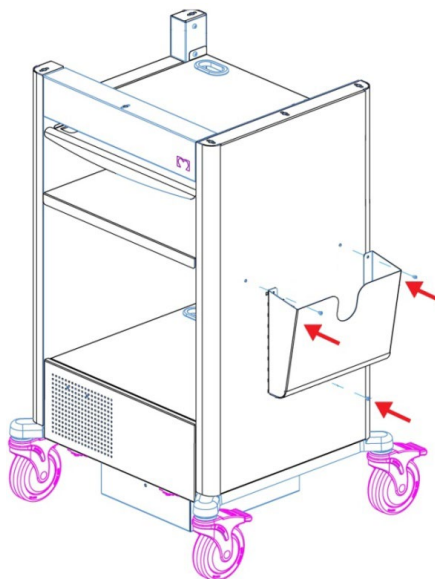
STEP 6 - Keyboard Tray and Storage Drawer



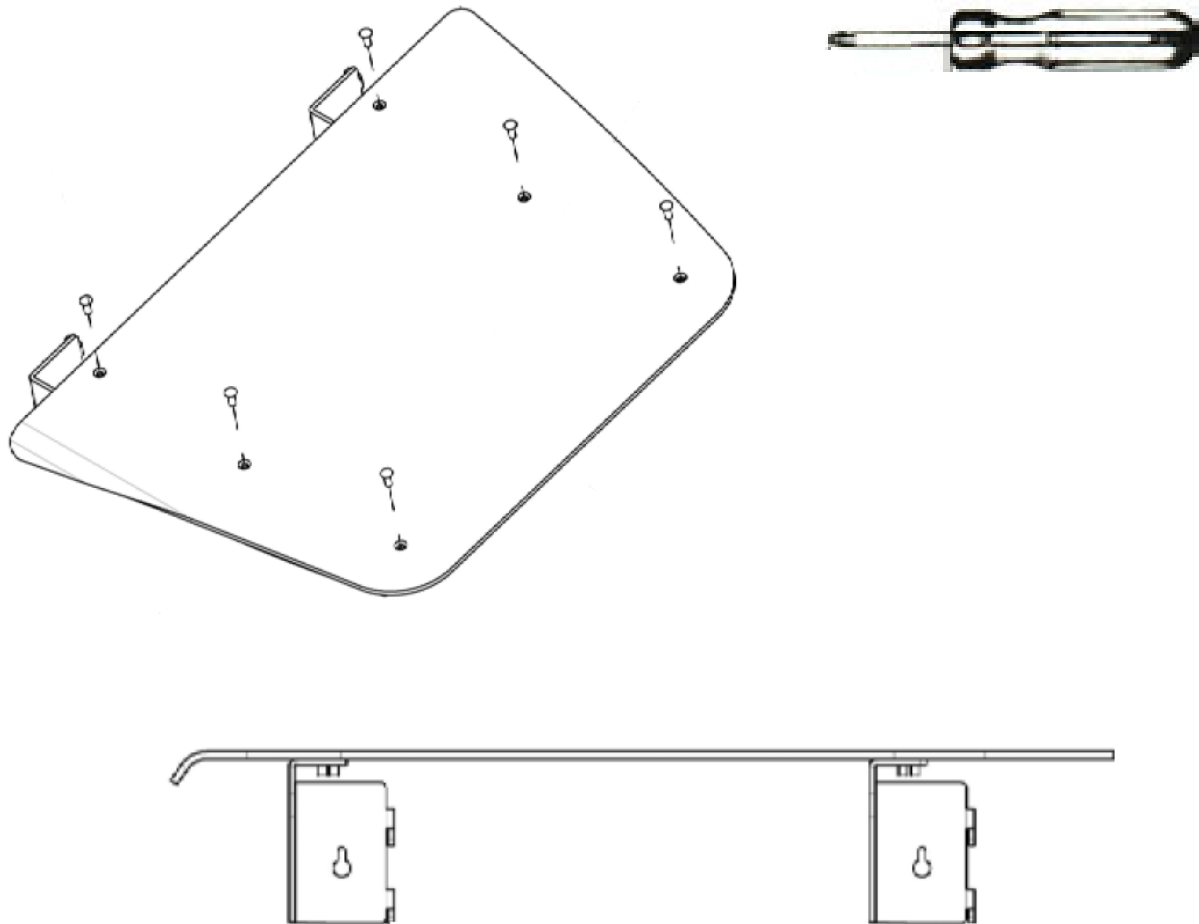
The keyboard tray and storage drawer should come pre-installed by the supplier.
Verify the tray and door slide in and out smoothly.

STEP 7 - Storage Bin

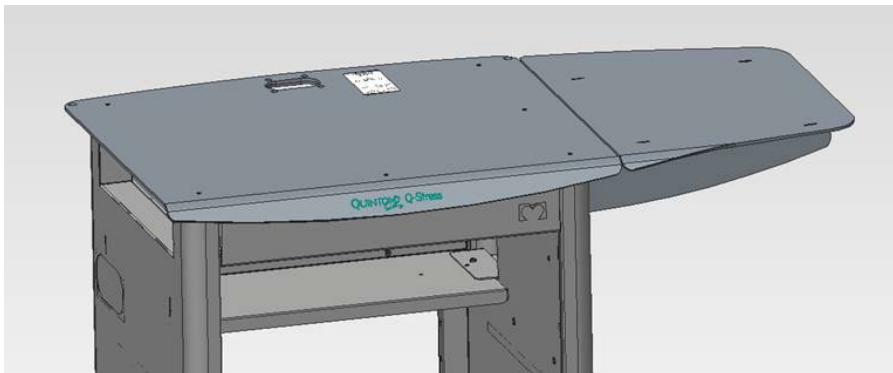
Verify the storage bin is securely fastened from the supplier.



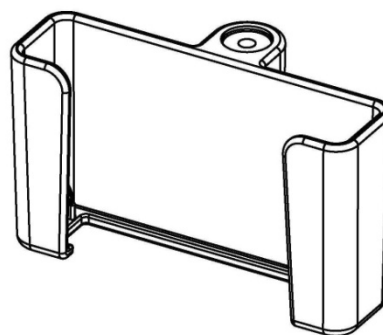
STEP 8 - Accessories, work surface extension



- Use #2 **Philips** screwdriver to attach the side shelf to the brackets and right side of the cart.



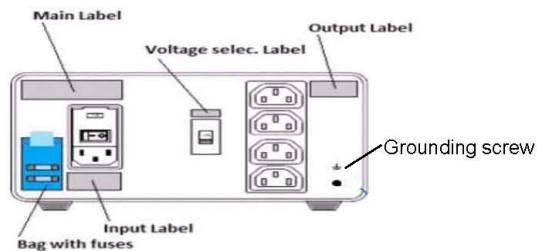
STEP 9 - Accessories, **WAM** holder



- The **WAM** holder is interchangeable side-to-side to allow customization based on options ordered and cardiac stress lab layout.
- Use #2 **Philips** screwdriver and 8mm socket or nut driver to attach holder back corner of the cart work surface using screws provided in drawer kit.

Installation of System Components

STEP 1 - Installing the isolation transformer



Ensure that the input and output voltage settings on the Isolation Transformer are set appropriately for the local power at 115V or 230V.

NOTE: Voltage is set at 115V when shipped from Baxter.

Do not move the power switch to the on (I) position until system completely assembled and ready to test.



Insert the Isolation Transformer with the power entry module facing the back. Carefully slide the Isolation Transformer into the bottom opening on the back of the cart being careful not to scratch the cart.

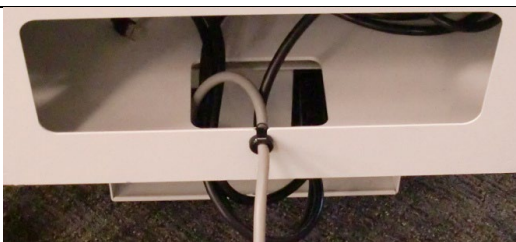
Connect the ground wire from the stress cart to the Earth Ground Lug of the isolation transformer.



Connect the main AC Power Cord to the Isolation Transformer AC inlet as shown.



Place the plastic cord protector onto the main AC Power Cord as shown.



Insert the cord protector into the power cord cutout on the stress cart.

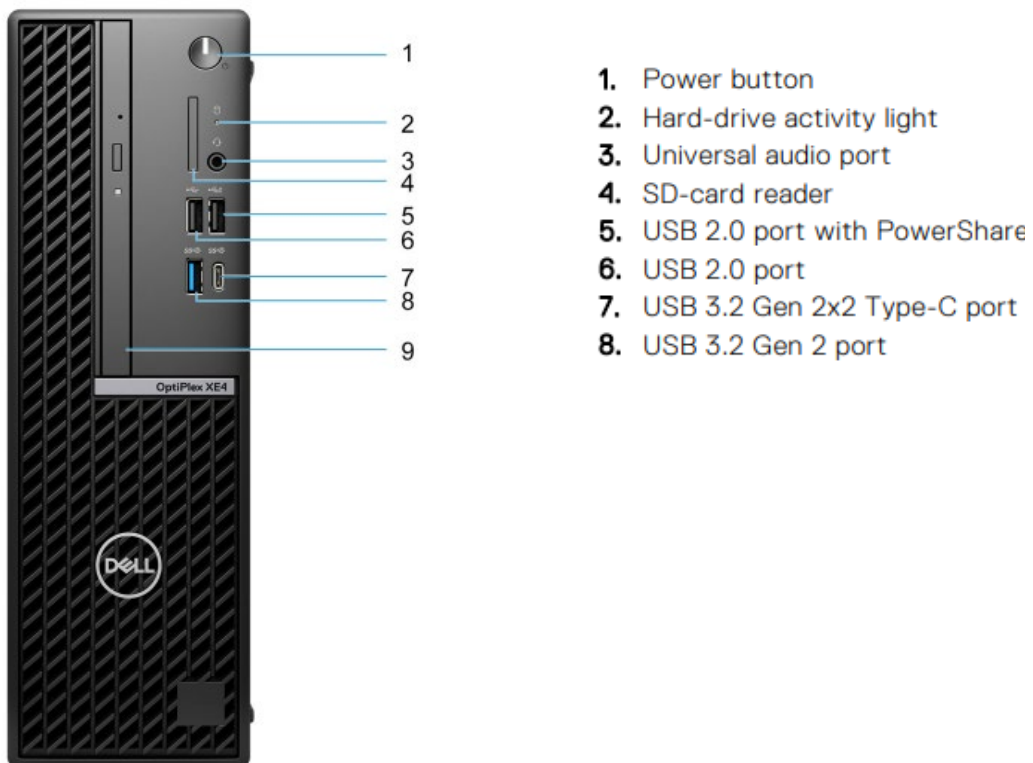
NOTE: Only Baxter. equipment and equipment authorized by Baxter should be connected to the Isolation Transformer.

STEP 2 - Installing the computer

Slide the PC into the front of the stress cart as shown below.

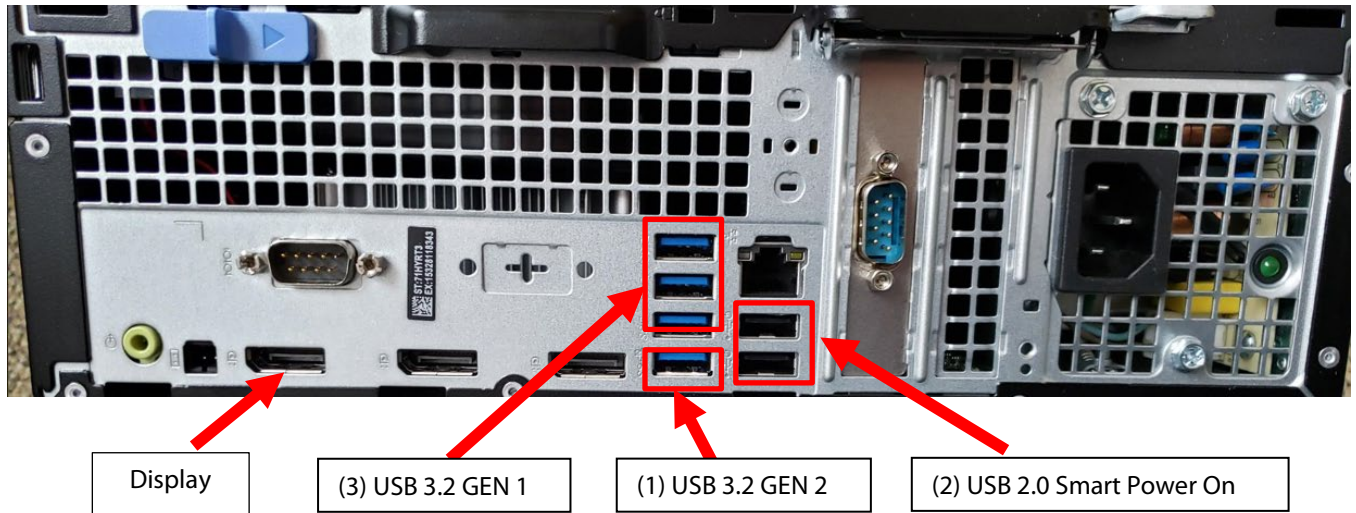


The USB Port Types are shown below front and rear.





CAUTION: The **DELL XE4** PC requires the use of a special power cord with a ferrite for EMC compliance. Be sure this power cord with ferrite is present and connected to the AC inlet of the PC before use. Refer to the product service manual for power cord part numbers.



There are no USB port requirements for the connected devices listed below, therefore these devices can be connected to any USB port type provided. It is recommended to use the rear USB ports to connect the devices. If additional ports are needed, the 3 front ports can be used.

- Keyboard
- Mouse
- Touch Screen Monitor
- **Z200+** v2 Printer
- Trigger Module/Acquisition Module
- Remote Keypad
- **Tango**
- Exercise Equipment (Treadmill/Ergometer)

For units with slide out keyboard tray



Place the keyboard on the tray. Route the cable through the back of the drawer and attach the connector to the computer back.

Place mouse on work surface. Route cable through monitor mount, and attach the connector to the computer back.



Route the data cables on the right-hand side as shown and the AC power cables through the hole on the left-hand side of the stress cart.

For units without keyboard tray



Place keyboard and mouse on work surface. Route cables through monitor mount and attach the connector to the computer back.

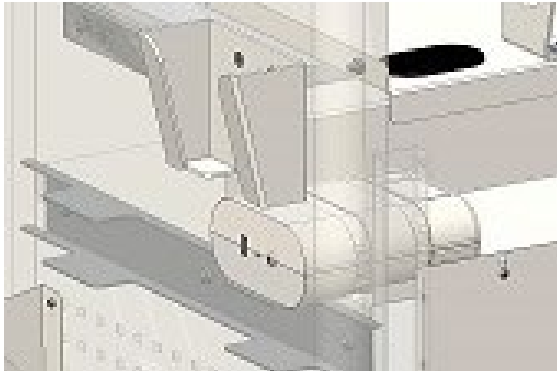
Use suggested cable routing from above.



Baggie contains power cables and printer cables (depending on printer version), installation instructions, software CD, Product ID card with serial number, and other needed accessories.

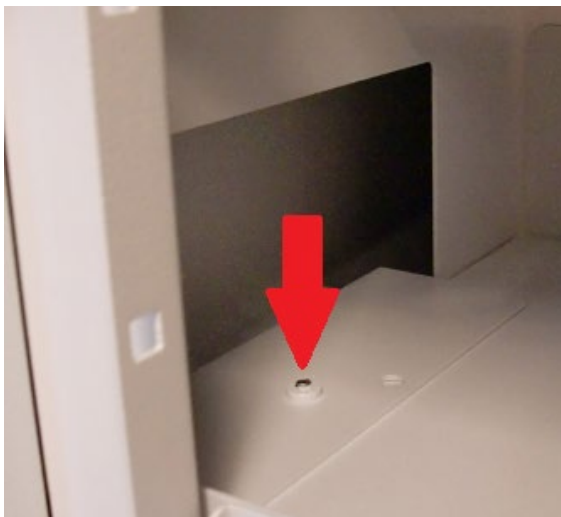
STEP 3 - Installing front end modules

Cart module bay



Cart base contains two module bays, one of either side. Module bays are located on shelf mounted to the back of the cart base, just under the work surface.

Modules are interchangeable side-to-side to allow customization based on options ordered and stress lab layout.



Cart base is shipped with covers over the module openings. Appropriate covers can be opened by removing fastener using a #2 **Philips** screwdriver.



Modules are interchangeable side-to-side to allow customization based on options ordered and stress lab layout.

Tango and **AM12Q** should be installed on closest side to treadmill.

STEP 3 - Installing front end modules (continued)

Q-Stress AM12Q Module Installation



AM12Q is shown installed flush with cart oval cutout and patient cable connected. Make sure to install **AM12Q** on side of cart closest to treadmill.

(the patient cable does not need to be connected yet)

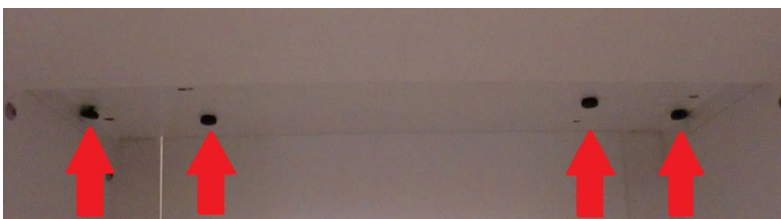


AM12Q front for patient cable connection.



AM12Q back with USB cable connection.

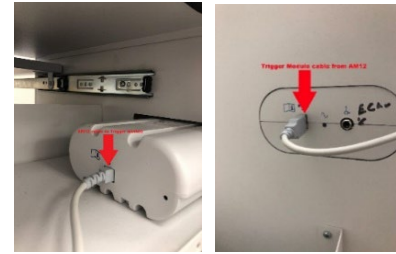
Module installation into cart



The modules are installed and secured with (2) screws in the upper corners of the storage compartment. Picture to left shows **AM12Q** and trigger module install.

When the trigger module is not included in the installation:

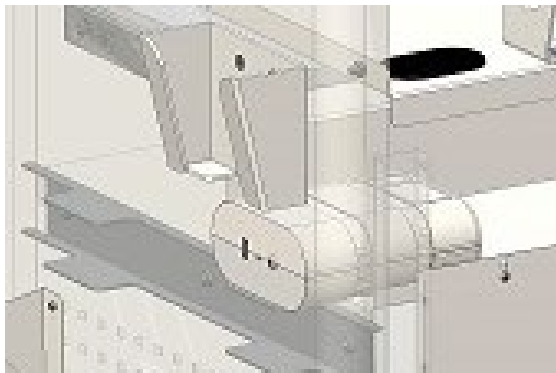
Connect the **AM12Q** to any available PC USB port.



When using Trigger Module:
Connect USB cable from back of the **AM12Q** to the **ECG A port** on trigger module (side facing outside of cart).

STEP 3 - Installing front end modules (continued)

For units with Trigger Module



Trigger module is shown installed flush with oval cutout located on side of cart. **Use side of cart farthest from the treadmill.**



Trigger module front for **AM12Q** connection to the ECG A connector and one analog out connection.



The Trigger Module back has (2) **currently non-functional** analog out connections, an ECG B connector for a **WAM-UTK** connection, (1) TTL output connection, and a USB PC connector.

Q-Stress Front End (**AM12Q**) and Trigger Module Connection

Connections:

1. Connect the **AM12Q** output (via USB cable) to the trigger module



ECG A input connector. These module ends are inside the stress cart.

2. Connect the trigger module output (USB cable) to any available PC USB port.
3. Connect the **Q-Stress** patient cable to the **AM12Q** front cable connector.
4. Connect other external devices to the analog/TTL connectors for ECG SYNC purposes.

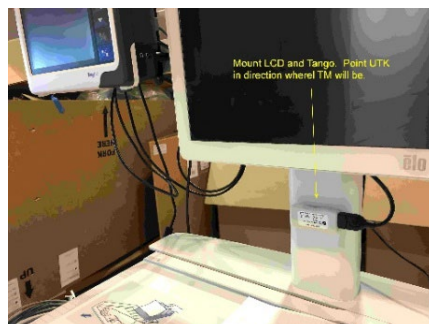
STEP 3 - Installing front end modules (continued)

WAM module installation



Connections:

1. Plug the 6 ft black USB extension cable into the port on the top of monitor post.
2. Plug the other end of the cable into the **UTK**.
3. Adhere the **UTK** (via **Velcro**) to the front of the monitor post under the LCD so it can be seen, pointing the **UTK** in the direction of the treadmill.
4. Plug the beige USB cable (that is hanging down from inside the monitor post) into the ECG B port on the trigger module.
5. (The picture shows black cable in this port but the cable is typically beige)
6. Hang the **WAM** unit into the **WAM** holder.



RJ45 and LAN Isolation Adapter Connections (Optional)



Connect the LAN isolator adapter to the Network Port (RJ45 connection) shown above right and connect the institution LAN cable to the isolator. Then use the **Velcro** provided to attach the isolation adapter in a convenient location, as shown above left.

Remote Keypad (Optional)



Connect the USB cable from the remote keypad to any available USB port on the back of the CPU.

Drivers will be automatically installed.

STEP 4 - Installing a Laser Printer (optional)

When a laser printer is to be installed with the **Q-Stress** system, place the printer on the cart as shown and route the bridge power cable to the isolation transformer. Route the printer USB cable to any available USB port on the CPU.



The cart back panel has been removed for easy access to the printer back during installation. This is done via removal of two M4 x 6 mm screws at the top of the panel.

STEP 5 - Installing a Thermal Writer

When a thermal writer is to be installed with the system, slide the **Z200+** into the cutout cart desktop as shown below. Install the A4 paper spacer following included instructions if necessary.

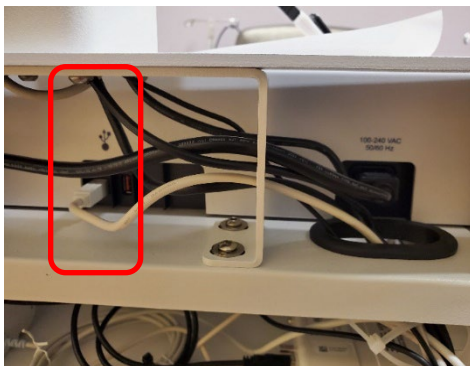


Route the power cable for the **Z200+** thermal writer through the channels and cutouts to the isolation transformer and the USB data communication cable.

Z200+ v1 is no longer supported – v2 USB interface ONLY.

Connect one end of the USB cable to the USB B connector on the **Z200+** thermal printer and the other end to the USB A connector on the back of the **Q-Stress** PC following the channels and cutouts (see connections below).

Z200+ v2 USB Connection

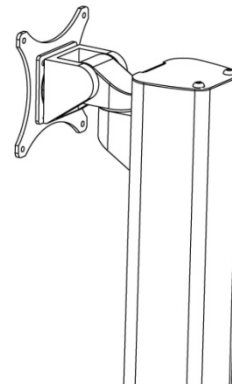




Z200+ v2 connect here.

STEP 6 - Display assembly

For units with 24" LCD display



- Use #2 **Philips** screwdriver to attach the 24" LCD display to the mounting plate of the monitor mount assembly using the screws supplied with the display. Refer to instructions supplied in the display box.
- Connect the VGA video cable to the monitor. Route cable through the monitor mount down into the PC compartment in the cart base. Connect the VGA cable to the PC by using the VGA to HDMI adapter provided with the PC.

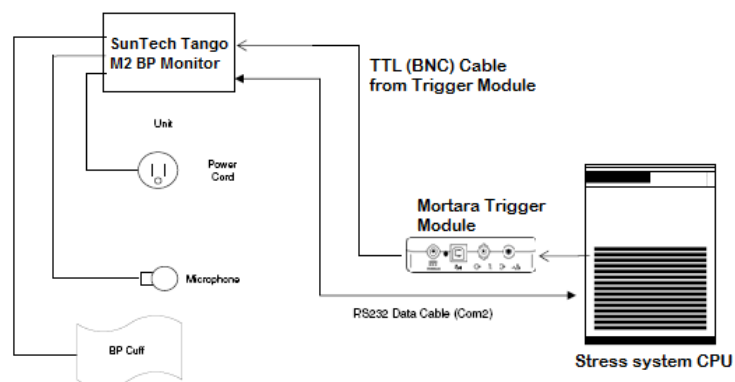
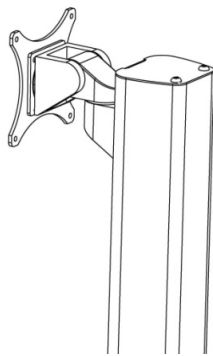


If the monitor is supplied with a HDMI port/cable, it can be connected directly using the HDMI cable.

- Organize and secure cables per suggestions in Step 7.

STEP 6 - Display assembly (continued)

For units with 24" LCD display and blood pressure monitor arm



STEP 6 Display assembly (continued)

- The **Tango** BP monitor arm is bolted between the 24" LCD display and the monitor mount, placing the monitor at the same height and depth as the LCD.
- **Tango** BP monitor arm is interchangeable side-to-side to allow customization based on options ordered and cardiac stress lab layout.
- Use #2 **Philips** screwdriver to attach the 24" LCD display to the mounting plate of the monitor mount assembly using the screws supplied with the display. Refer to instructions supplied in the display box.
- Feed the AC power cable up through the bottom of the display post, until it comes out through the hole in the front of the post. Connect the AC power cord to the monitor and the other end to the isolation transformer.
- Connect the VGA video cable to the monitor. Route cable through the monitor mount down into the PC compartment in the cart base. Connect the VGA cable to the PC by using the VGA to HDMI adapter provided with the PC.



If the monitor is supplied with a HDMI port/cable, it can be connected directly using the HDMI cable.

- Use a #2 **Philips** screwdriver to attach the **Tango** BP monitor to the arm using the 4x 8-32 screws supplied with the arm. It may be helpful to connect the power and data cables to the monitor before fastening it to the arm.

Connecting the Tango M2

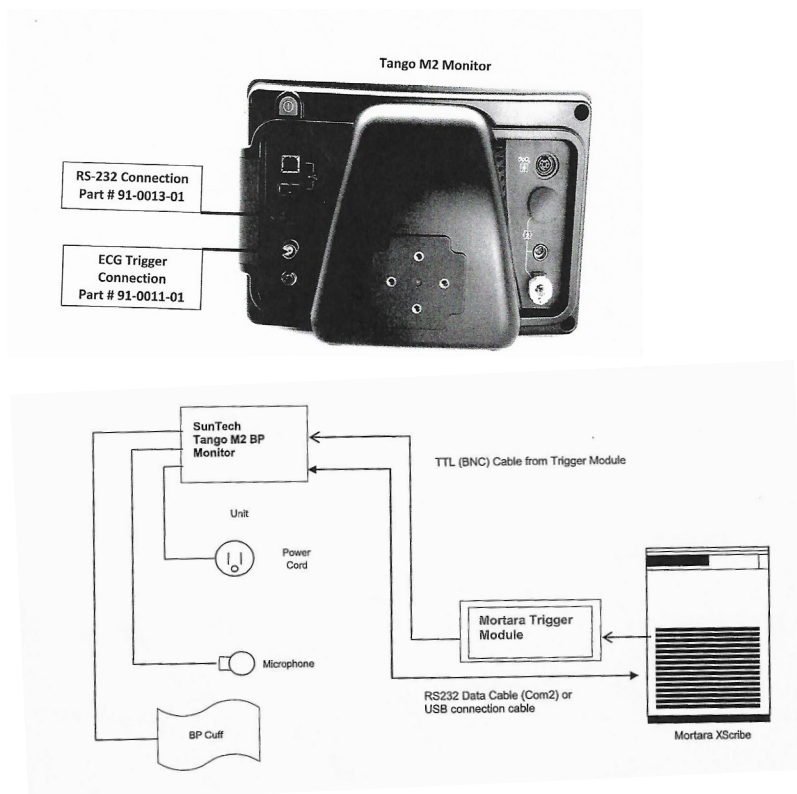
The directions below come with the **Tango** unit – see box for most recent version.

1. Verify Correct RS-232 cable is present (both ends are 9 pin female connectors)

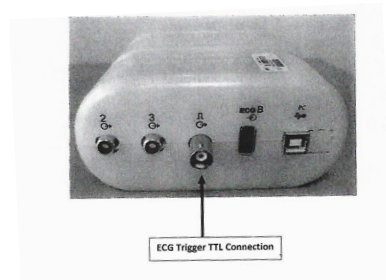
The **RS-232 Cable** enables the **Q-Stress** to prompt the **Tango M2** when it needs a BP measurement and allows the **Tango M2** BP reading to be transferred to the **Q-Stress** reports and display.

The **ECG Trigger Cable** (both ends are BNC male connections) This cable provides the ECG signal from the XScribe to the **Tango M2**.

2. Connect both the RS-232 and the ECG cables to back of **Tango M2** according to picture below.



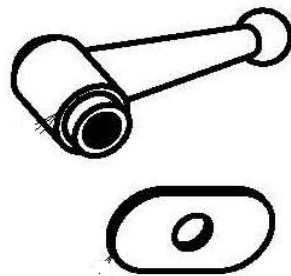
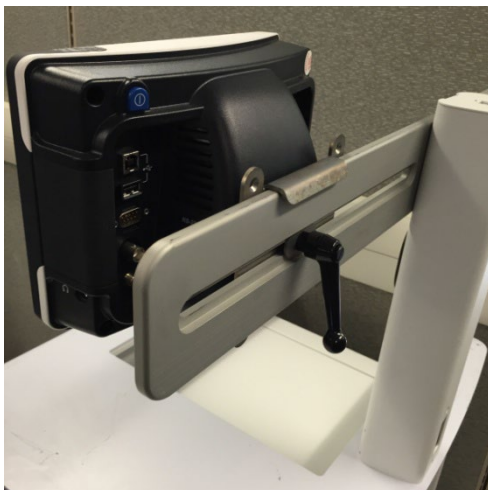
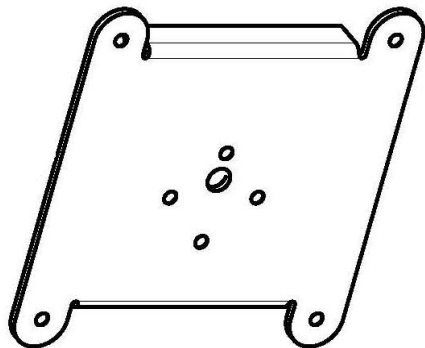
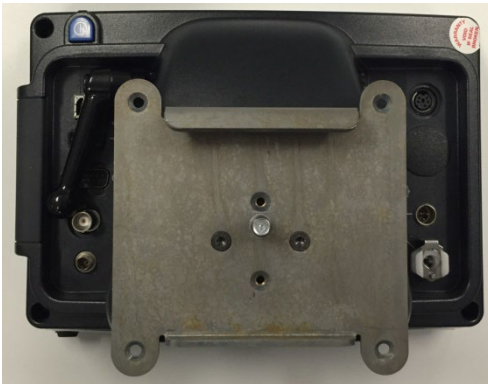
3. Connect the ECG Trigger cable from the **Tango M2** monitor to the TTL connection on back or the Trigger module (if this connector is already in use a BNC splitter may be needed).

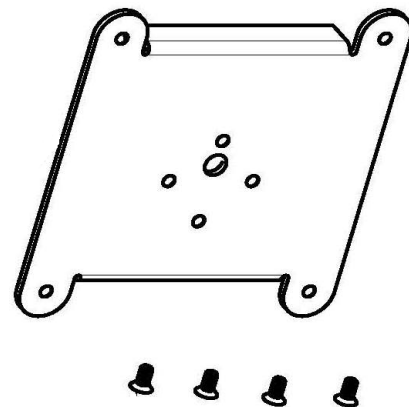
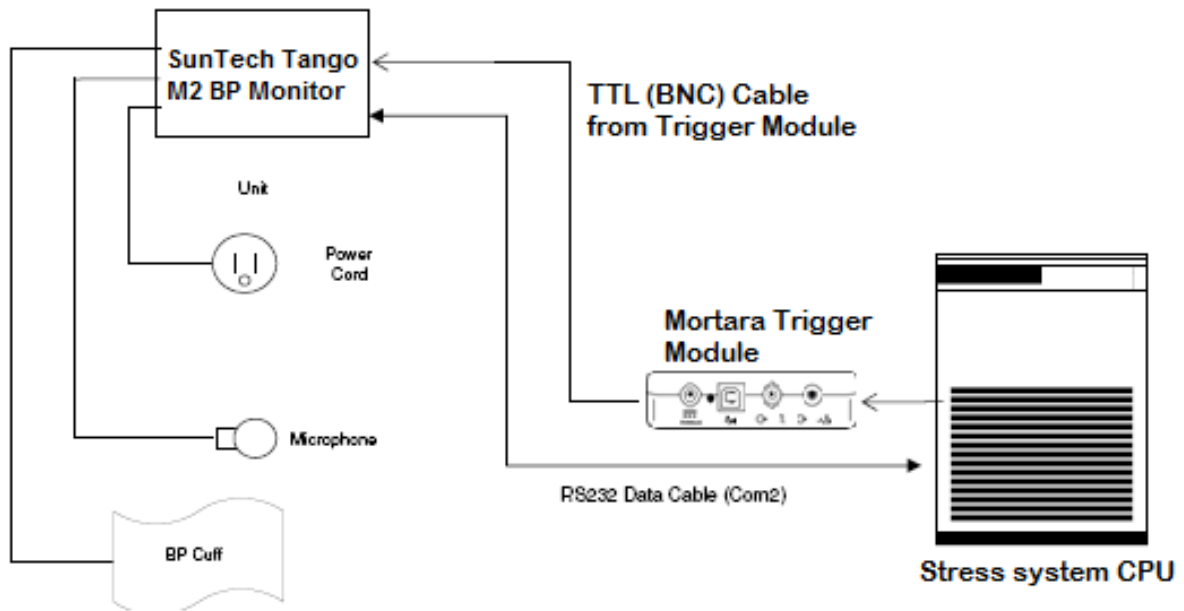


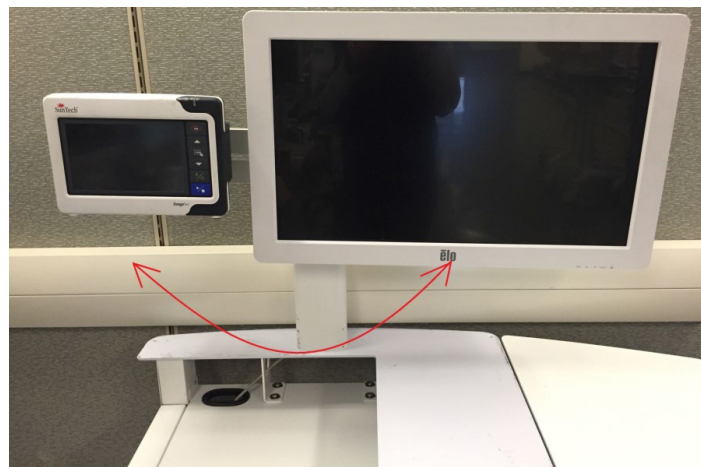
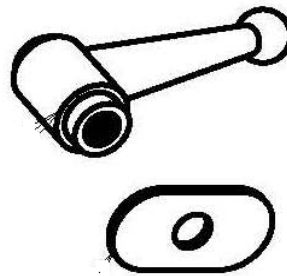
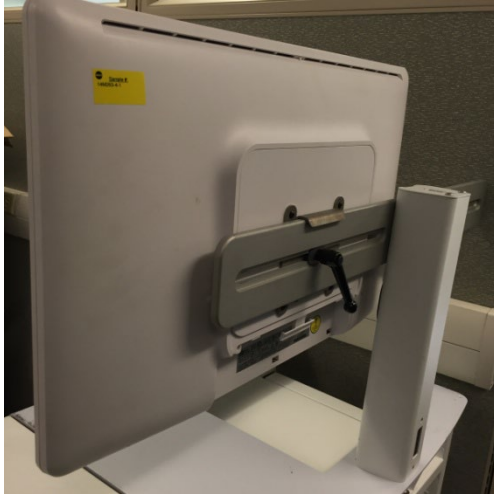
4. Connect the RS-232 Cable (9 pin connector) to the COM 2 port on back of **Q-Stress** computer.

STEP 6 Display assembly (continued)

For units with 24" Touch Monitor panel display







- The **Tango** BP monitor mount and the touch monitor display are interchangeable side-to-side to allow customization based on options ordered and cardiac stress lab layout.
- Use #2 **Philips** screwdriver to attach the 24" touch monitor to the mounting bracket set aside in Step 4. Use 4x M4 screws supplied with the bracket. Hang bracket on crossbar and secure with oval washer and black handle. Refer to instructions supplied in the display box.
- Remove the covers for the monitor connections from the monitor connectors.
- Feed the AC power cable up through the bottom of the display post, until it comes out through the hole in the front of the post. Connect the AC power cord to the monitor and the other end to the isolation transformer.

- Connect the VGA video cable to the monitor. Route cable through the monitor mount down into the PC compartment in the cart base. Connect the VGA cable to the PC by using the VGA to HDMI adapter provided with the PC.



If the monitor is supplied with a HDMI port/cable, it can be connected directly using the HDMI cable.

- Connect the USB cable to the monitor. Route the cable through the monitor mount into PC compartment in the stress cart base. Connect the other end to a USB port on the back of the PC.



- Use a #2 **Philips** screwdriver to attach the blood pressure monitor to the arm using the 4x 8-32 screws supplied with the arm. It may be helpful to connect power and data cables to the monitor before fastening to the arm. Hang bracket on crossbar and secure with black handle.

Connecting the Tango M2

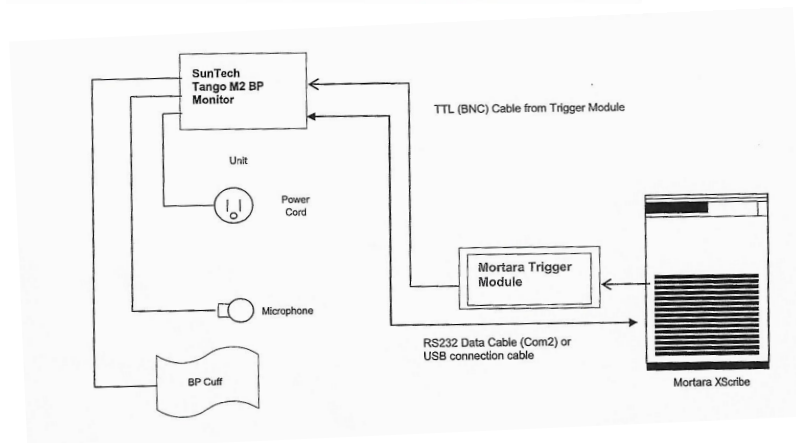
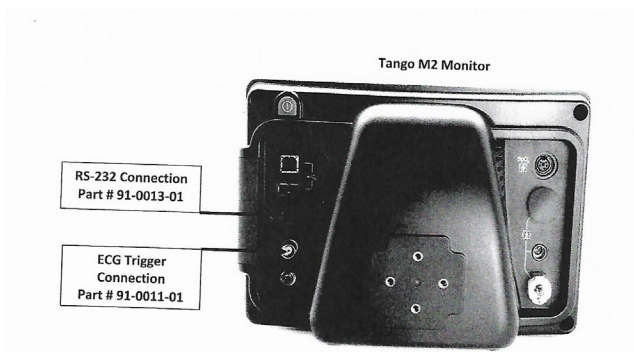
The directions below come with the **Tango** unit – see box for most recent version.

1. Verify Correct RS-232 cable is present (both ends are 9 pin female connectors)

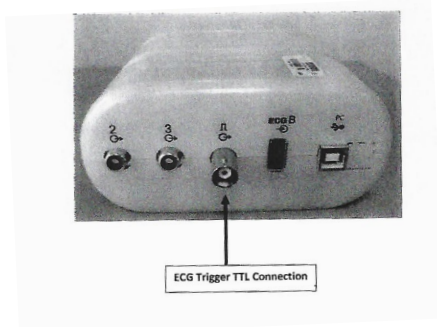
The **RS-232 Cable** enables the **Q-Stress** to prompt the **Tango M2** when it needs a BP measurement and allows the **Tango M2** BP reading to be transferred to the **Q-Stress** reports and display.

The **ECG Trigger Cable** (both ends are BNC male connections) This cable provides the ECG signal from the XScribe to the **Tango M2**.

2. Connect both the RS-232 and the ECG cables to back of **Tango M2** according to picture below.



3. Connect the ECG Trigger cable from the **Tango M2** monitor to the TTL connection on back or the Trigger module (if this connector is already in use a BNC splitter may be needed).



4. Connect the RS-232 Cable (9 pin connector) to the COM 2 port on back of **Q-Stress** computer.

STEP 7 Organizing the Cables



Organize the cables neatly at the cart back, routing them through the cable channels, secured with nylon tie wraps.

Depending on the installation and options, choose one side of the cart base to run power cables and the other to run signal (USB, VGA, RS-232, etc.) cables. This will reduce the interference from the power lines.



- Route the keyboard cable through the cutout in the keyboard tray back to the rear CPU connection.
- Route the mouse cable from the desktop down to the rear CPU connection.

Leave all extra parts and cables inside the **Q-Stress** drawer. If the Customer needs to change configurations later, they will need these pieces.

Supporting Information



- The system serial number is available in the Programs menu (Start → All Programs → Mortara Modality Manager → Modality Manager Activation Tool) and is also on the Product Identification card label.
- User manuals are electronically available as shown on the provided electronic instructions for use card. The appropriate language PDF can be copied to the computer desktop for quick access.
- The software CD is also included.
- A business card with your contact information can be inserted in the mouse pad pocket.
- A cardiac stress lead placement and prep poster is included in a mailing tube.
- Instruct the customer to place items in a safe and convenient location.

Completed Q-Stress System with the LCD and Tango M2 Mounted

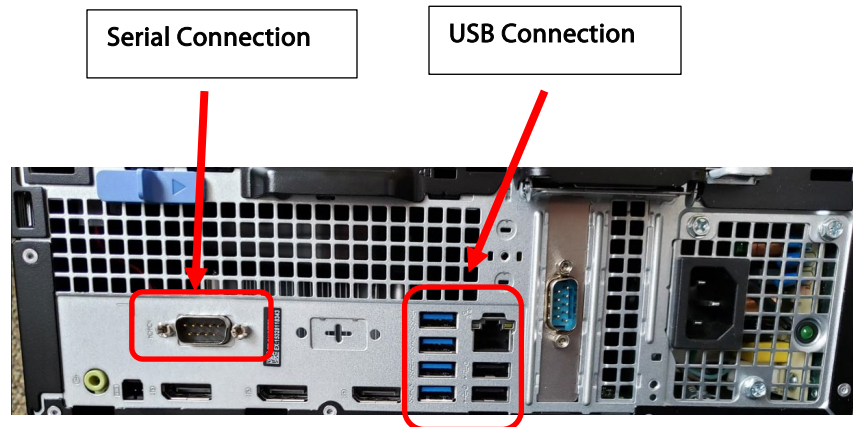


Finished Cart with the **Z200+** Thermal Writer configuration, 24" LCD, **SunTech Tango M2 BP** monitor and Computer components installed.

Connect the Exercise Device

Treadmill

Connect the treadmill to the computer **COM1** port via the Serial cable provided (recommended), or via USB cable. No further preparation is needed.



Ergometer

Use the instructions that came with the ergometer device to connect it to the Stress computer.

Front-End Components

Material Supplied for Installation

AM12Q Components

- **Q-Stress** Front End, **AM12Q**, Module (9293-062-50)
- USB Trunk Cable **AM12** (8358-003-50, Qty 1)
- **Q-Stress** 43" AHA Patient Cable (60-00184-01)

Trigger Module (optional) includes

- Trigger Module (30012-024-50, Qty 1)
- Cable USB Type A-to-B Full Speed (6400-012)

Optional Kit for Wireless ECG Acquisition

Optional **WAM** Kit (41000-036-50) includes

- **WAM** (30012-019-54)
- **UTK** module with USB extension cable (30012-021-51 and 773249)
- Carry Case with Belt (422201)
- **WAM** holder for stress cart attachment (9911-023-43)

Optional Kits for Module Installation on the Treadmill Rail

Optional TM55/TM65 Rail Clamp Kits for the **AM12Q** and the Trigger Module

- **AM12Q** Rail Clamp Kit (9911-021-50)
- Trigger Module Rail Clamp Kit (9911-022-50)

Q-Stress Software Installation and Configuration

When a turnkey standalone configuration is purchased, software installation and activation are performed at the factory prior to system shipment.

When a distributed configuration consisting of client workstations, review stations, and server systems is purchased, software installation is performed on-site by authorized Baxter personnel. Refer to the following pages for instruction.

Refer to the **Q-Stress** User Manual for instructions on how to configure and operate the cardiac stress testing application.

System Setup

Do not power on the system.

AC Power Setup

Ensure that the input and output voltage settings on the isolation transformer are set appropriately for the local power at 115V or 230V.

Verify that all components to be connected to the isolation transformer are able to accept the specified output voltage. Reconfigure any components that require manual input voltage adjustments.

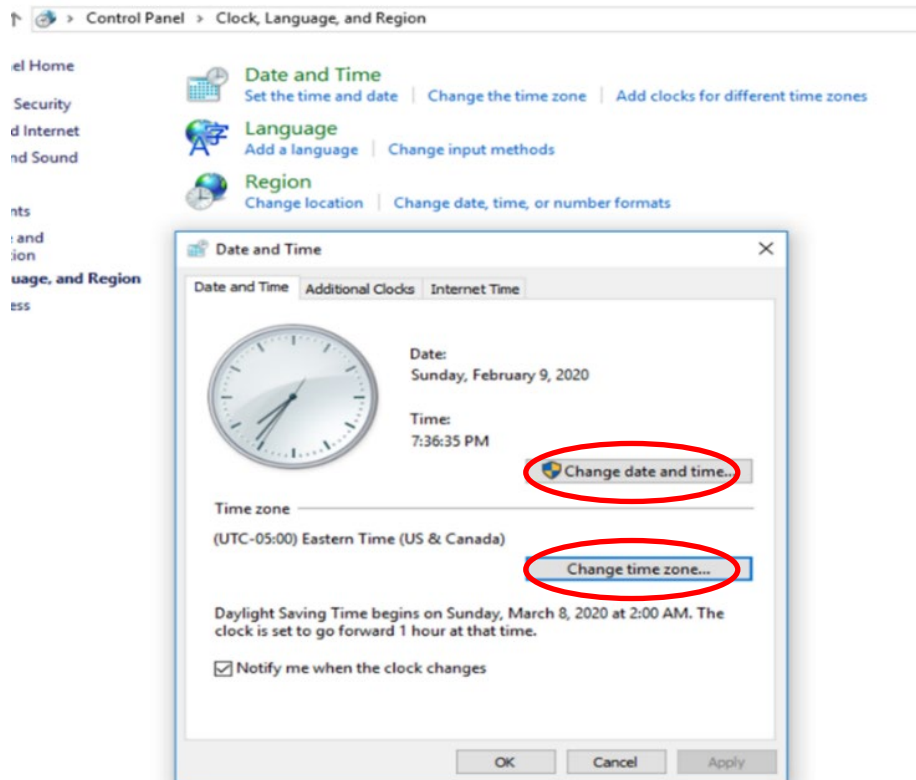
NOTE: Some components are auto switching and do not require you to set the proper voltage.

Then move the power switch to the on (I) position.

Field Service Configuration Items:

Check/Change Date and Time

- Type control panel in search bar.
- Select Clock, Language, and Region.
- Click on Set time and date (blue text underneath DATE and TIME).
- Select Time zone and pick correct time zone for customer location.
- If time still not correct, Select Change date and time and enter correct time and date.



Q-Stress Software Installation Process

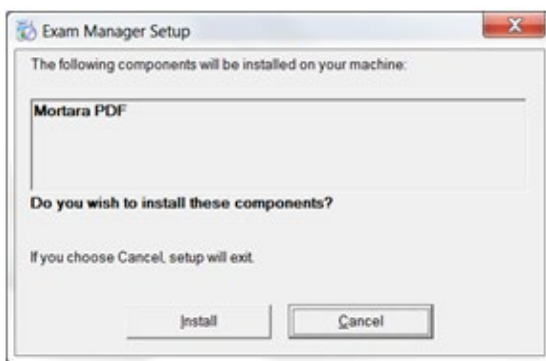
Only used for distributed systems, not factory installed and activated, skip both the software application installation and activation sections if factory provided.

Log in to **Windows** with an account having Local Administrator privileges. Navigate to the location of the software to be installed and double-click on the "**Setup**" application file. If asked to allow the program to make changes to the computer, click **Yes**.

Note: For a distributed configuration, the server node (Full Install setup type) is required to be installed prior to the installation of any Client or Review Station setups.

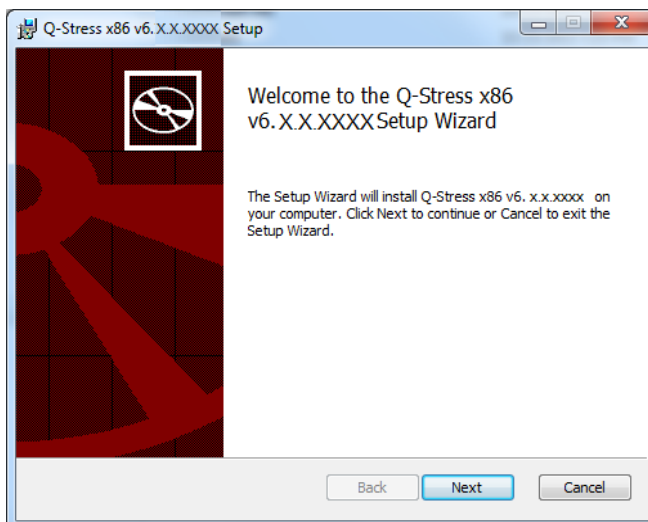
Full Install Installation

1. If prompted to install "Mortara PDF" click **Install**.

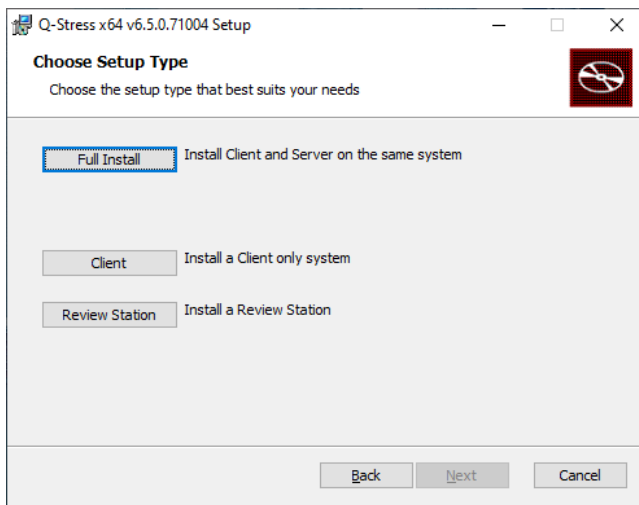


If the following error occurs after the reboot of the system ("The following error occurred attempting to install E:\Mortara.ExamManager\ExamMgr_Bootstrapper.exe. The system cannot find the drive specified."), attempt to launch the setup application again.

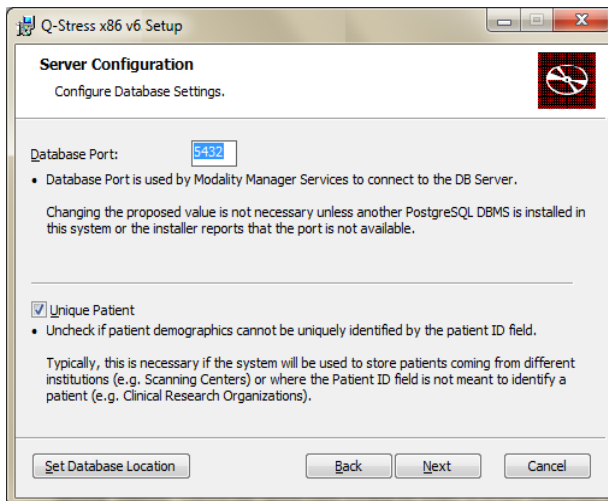
2. Click **Next** on the setup wizard.



3. Select **Full Install** in the Choose Setup Type dialog to install a Full Install Workstation.

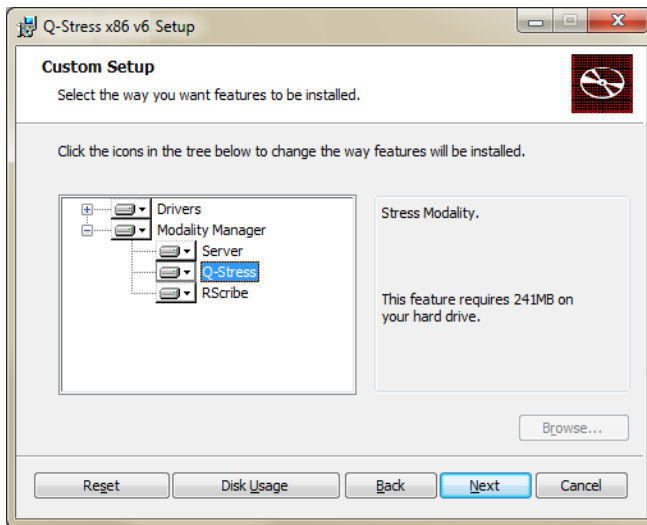


4. Click **Next** to continue.
5. Keep the default selections (unless there is a reason to change) and click **Next**. The Set Database Location button allows you to browse to a location for installation of the **Q-Stress** application and database other than the local default (C:\) directory.

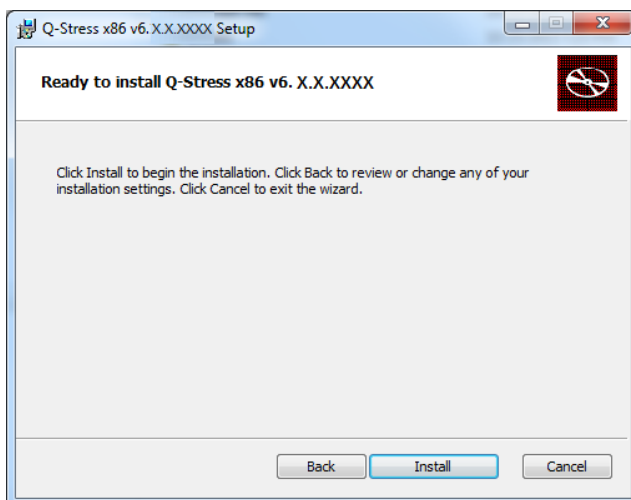


NOTE: The selected database location and application location must be located at different sub-paths (i.e. can't be in same folder or sub-folder) and can't be OS drive base path (i.e. C:/).

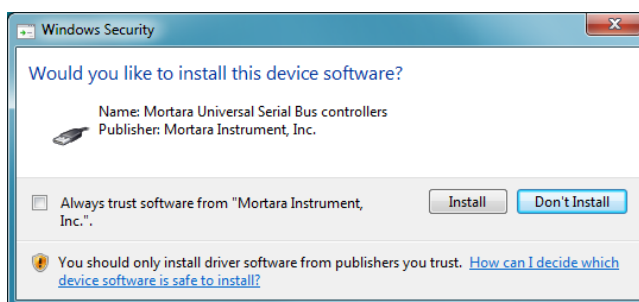
6. With Modality Manager selected, click **Browse** to navigate to the desired location for installation.
7. Click **Next**.



8. Click **Install** (this process takes a few minutes). Wait while the program is being installed.



9. Enable "Always trust software from Mortara Instrument, Inc." and then click **Install** to install front-end drivers.



The wizard will now load the software files to the defined location and, after a while, present the Modality Manager Configuration Utility window. All settings in this dialog should remain as default (no need for Remote slot path). Do not be concerned about the word "Exit". Your settings will be saved, and the process will proceed to the final step of the installation.

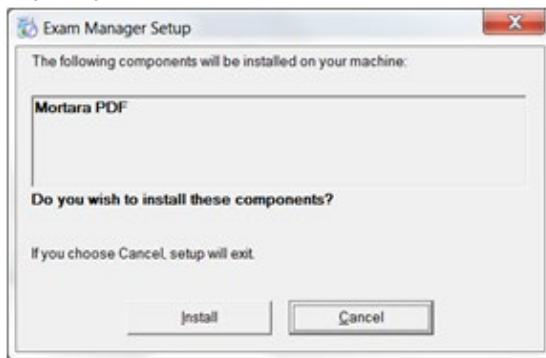
10. Click **Exit** to continue. Wait while the program is starting services, loading samples into the database, and finishing the installation.

NOTE: If an error occurs during the loading of samples into the database, execute the following steps:

1. Open the command prompt as an administrator.
2. Navigate to the modality manager installation folder (default is C:\Program Files x86\Mortara Instruments Inc\)
3. Enter the following command: "TestDBLoader.exe /demo /silent /data_path:"C:\Program Files (x86)\Mortara Instrument Inc\ModalityMgr\Samples\Stress\EXAM001" /modality:Stress /status:Acquired"

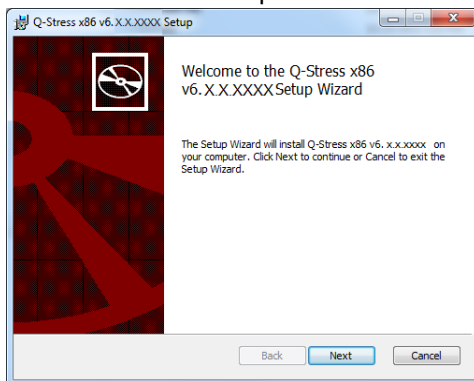
Client / Review Station Installation

1. If prompted to install **Mortara PDF** click **Install**.

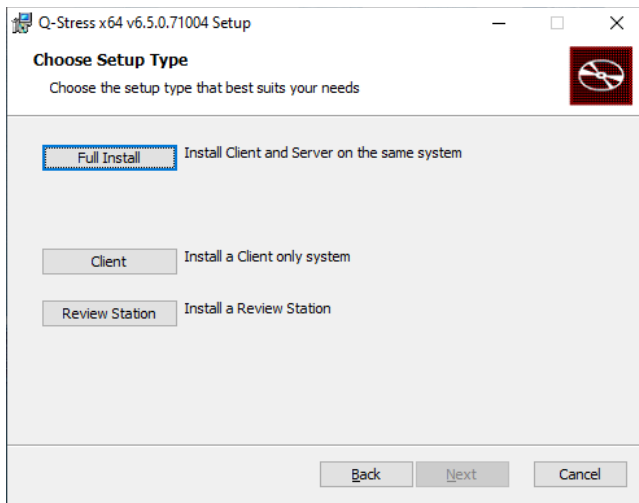


If the following error occurs after the reboot of the system (The following error occurred attempting to install E:\Mortara.ExamManager\ExamMgr_Bootstrapper.exe. The system cannot find the drive specified.), attempt to launch the setup application again.

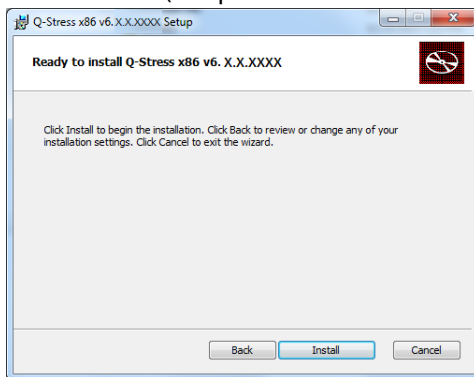
2. Click **Next** on the setup wizard.



3. Select **Client** or **Review Station** in the "Choose Setup Type" dialog to install.

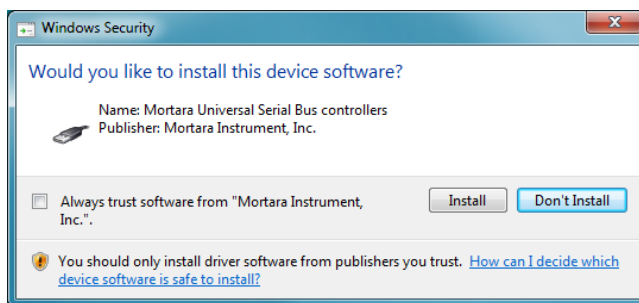


4. Click **Next**.
5. Select **Install** (this process takes a few minutes). Wait while the program is being installed.



6. Enable "Always trust software from Mortara Instrument, Inc." and then click **Install** to install front-end drivers.

NOTE: Front end drivers are not installed on review stations.

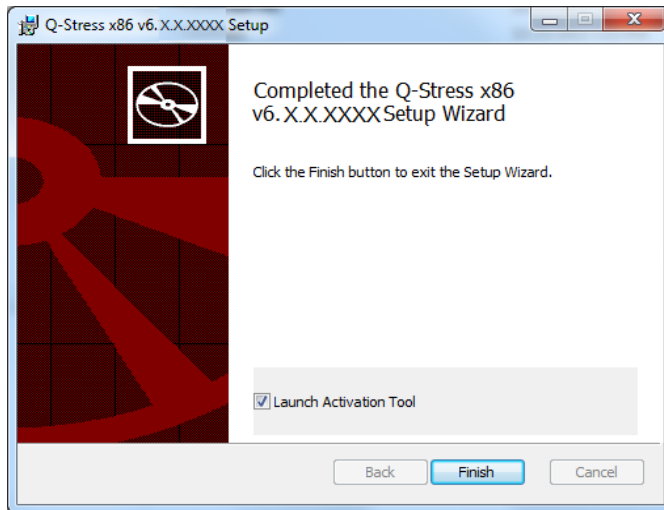


The wizard will now load the software files to the defined location and, after a while, present the Modality Manager Configuration Utility window. Configure the Server Address to match the IP address of the **Q-Stress** Full Install system. Default units and login mode configuration will not be available on the client or review station. Do not be concerned about the word "Exit". Your settings will be saved and the process will proceed to the final step of the installation.

7. Select **Exit** to continue. Wait while the program is starting services and finishing the installation.

The **Launch Activation Tool** checkbox is enabled as a default and will open the dialog allowing you to request a

permanent activation code.



8. Click **Finish** to complete the installation process.

Once completed, the **Q-Stress** icon is available on the desktop and the program will be active for a period of 14 days.

Activate the Q-Stress software

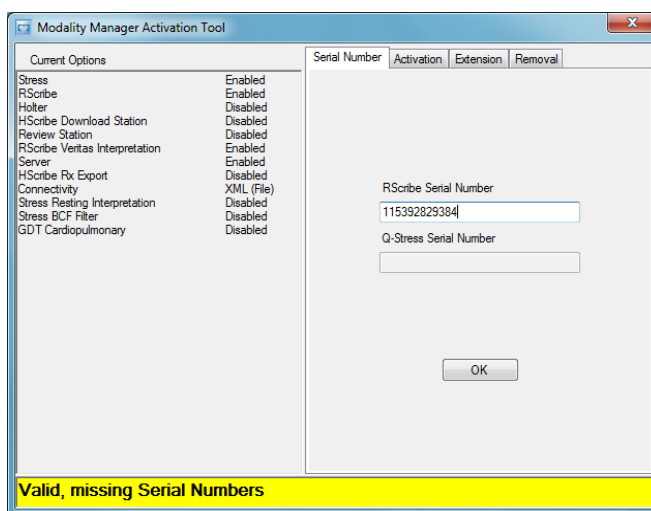
Only used for distributed systems, not factory installed and activated, skip both the software application installation and activation sections if factory provided.

To prepare for permanent activation, navigate to the following menus if the Modality Manager Activation Tool is not already open:

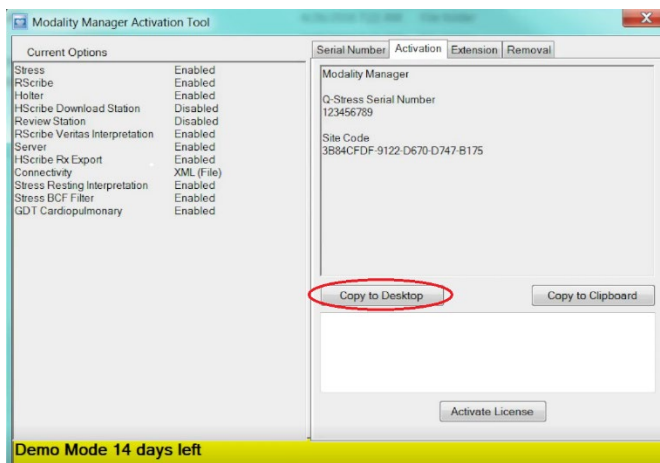
- Start menu
- All Programs
- Mortara Instrument
- Modality Manager Activation Tool (click **Yes** when prompted to allow changes to the computer)

Enter the **Q-Stress** System Serial Number or the program will remain locked or invalid.

1. Enter the system serial number or numbers then click **OK**.



2. Click **Copy to Desktop** and a file is sent to the CPU desktop.



Q-Stress License Activation Request

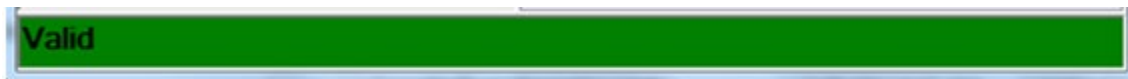
Cut and paste the file to your memory stick and then send the output file via e-mail to HRC_mor_Tech.Support@baxter.com as an Activation Request. Include the System Order configuration part

number in the e-mail so the code will enable ordered features (e.g. QS-6BA-AAAXB). Upon receipt of this information, an activation code will be generated by Baxter Tech Support and returned to you via e-mail.

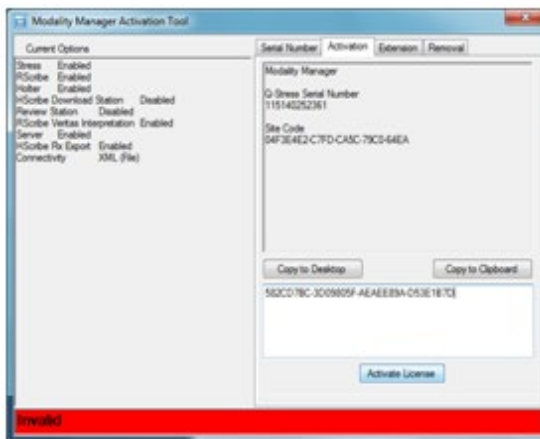
Q-Stress License Activation

Start the Modality Manager Activation Tool if the dialog is not already displayed:

- Start menu
 - All Programs
 - Mortara Modality Manager
1. Click **Yes** to allow changes to the computer.
 2. Enter the received activation code into the large text box located above the “Activate License” button.
 3. Click the **Activate License** button and the Software License Status will show as **Valid**.



After 14-days have passed, the program becomes invalid as shown below.



Product Identification Card

The Product Identification Card contains information regarding the system purchased and the software license associated with the system.

As Scribe systems can be configured as full install systems, or client/server configurations, the Product Identification Card should be labeled depending on the manner in which the system is configured during the installation process, then the card is inserted into the pouch provided (9930-037) and either placed in the transport cart drawer or affixed via the pouch magnets to the PC for future reference as shown below.

If the PC is a full install system, both the client and server labels should be placed on the same Product Identification Card. If the server is in a separate IT location, the server label should be delivered to the IT staff for storage and future reference.



Bitlocker Key (only for systems using hard drive encryption)

A new system that has been factory configured with hard drive encryption should have included a hard copy page with the **Bitlocker** Key printed on it. Locate this page and provide the **Bitlocker** Key to the facility IT department for future use.

If the **Bitlocker** Key cannot be located, a second copy is also attached to the Device History Record (DHR) by the manufacturing site. The DHR can be retrieved if needed.

Exchange PCs configured by the service team also ship with a hard copy of the **Bitlocker** Key. The secondary copy for service exchange PCs are stored in the ERP system under the equipment record by serial number.

Optional Laser Printer Configuration

HP LaserJet Mx01

1. Use the installation disc that accompanies the **HP Mx01** printer to install the printer.
2. Once the printer is installed, click on **Start ► Devices and Printers**. Right click on the **HP LaserJet M50x Series PCL 6** printer and then select **Printer Properties**.
3. Click on the **Advanced** tab and then select "New Driver" to add one of the following drivers based on whether the PC is a 32 bit or 64 bit system.
 - PCL5 v5.4 32bit
 - PCL5 v5.4 64 bit

NOTE: The drivers can be found on the installation CD (**Q-Stress\Drivers\HPPCL5Drv**).
4. Once the driver is loaded, be sure it is selected from the driver menu and click **Apply**.
5. While still on the **Advanced** tab, uncheck the **Enable Advanced Printing Features** checkbox, then click **OK**.
6. Right click on the **HP LaserJet M50x Series PCL 6** printer and then select **Printing Preferences**. Click on the **Paper/Quality** tab. Under Print Quality, select **600 dpi** and then set the default paper size to **Letter** for US customers and to **A4** for International customers.
7. Right click on the **HP LaserJet M50x Series PCL 6** printer once again, select **Printer Properties**, and from the General tab click on **Print test page** and verify it prints correctly.

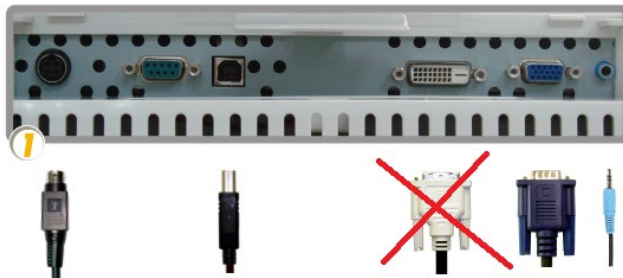
Optional Z200+ V2 Thermal Printer Configuration

The optional **Z200 + V2** thermal printer with USB connection communicates with the Proxy Service. The instruction and software to install the Proxy Service is provided on the media shipped with the **Z200+** USB assembly.

Optional Touch Monitor Configuration

ELO Model ET2401L Touch monitor

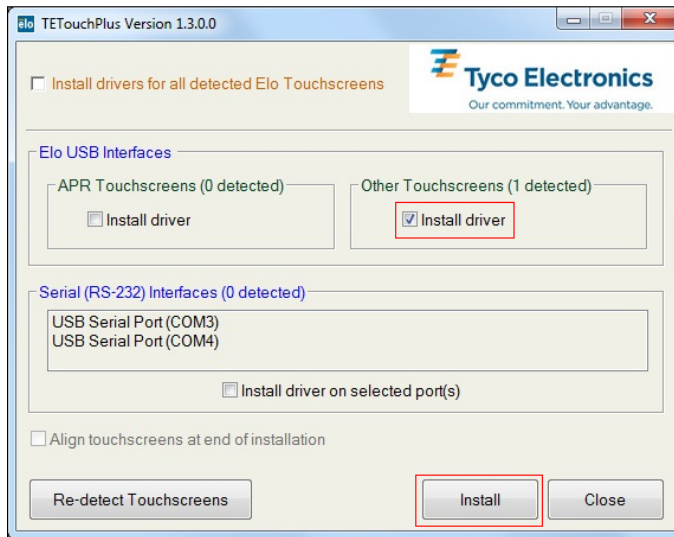
1. Remove the cable cover on the back of the monitor to access the connector panel.
2. Connect 4 cables from monitor to CPU: VGA, Audio input, USB touch screen output, and DC power input.



3. Reinstall the cable cover and secure with appropriate screws.
4. Insert the "Touch Tools Drivers and Documentation" CD that accompanies the **ELO** touch monitor into the computer's CD-ROM drive. The CD should automatically run the **ELO** Touch Tools application. Select "Install Driver for This Computer".



5. Select the “install driver” box under “ELO USB Interfaces – Other Touchscreens”



6. After accepting the end-user license agreement, the drivers will finish installing. Reboot the stress system after the install is complete.

Optional Tango M2 Monitor Q-Stress Setup

Tango M2Monitor Setup (refer to instructions included in box with **Tango** unit for more details).

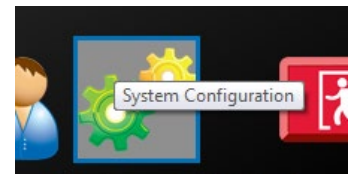
1. When the operating screen is displayed, press the SELECT button once. This will bring up the MAIN MENU screen.
2. Using Up and Down arrows, highlight MONITOR SET UP and press SELECT button.
3. Using the UP and Down arrows, highlight STRESS SYSTEM and press SELECT button.
4. Using the UP and DOWN arrows, scroll through the list until X-SCRIBE is highlighted and press SELECT button.
5. Using the UP and DOWN arrows, select EXIT twice to return to operating screen

Section 3 – Test Q-Stress Basic Functions

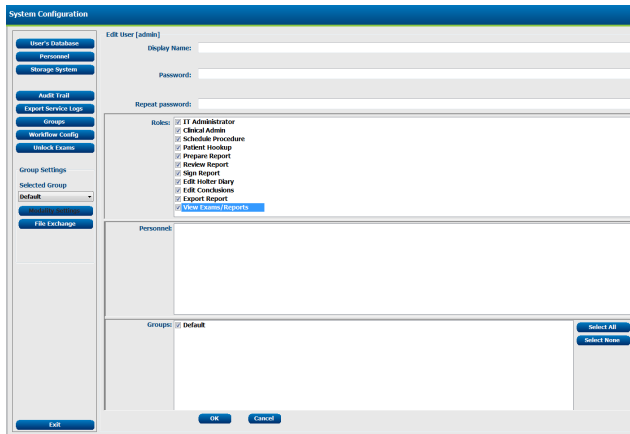
1. Double-click the **Q-Stress** icon to open the program.

The first time you login (both Username and Password: **admin**), you will need to select the **System Configuration** icon to setup full access to all functions.

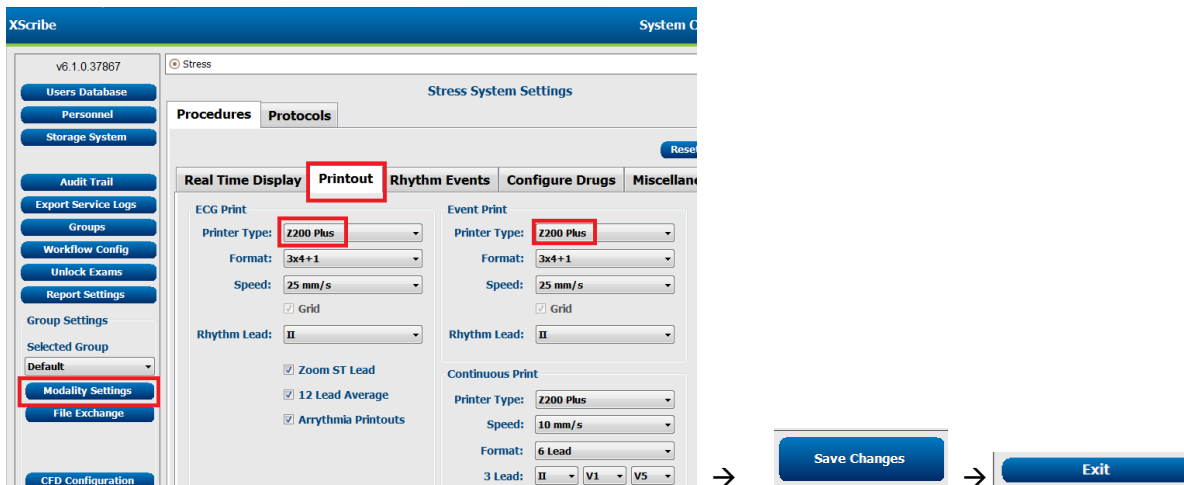
*** Most all program icons are unavailable (gray) until you do this. ***



2. Select the **User's Database** button and you will see the "IT Admin" user. Double-click on the name to open the role privileges and check all functions.



3. Click **OK** → **Exit** → **Exit** and start up the **Q-Stress** program again.
4. Select the **System Configuration** icon and then the **Modality Settings** and the **Printout** tab. Set the Printer Type to **Z200+** under ECG Print, Event Print, and Continuous Print.
5. Select the **Save Changes** and then **Exit** buttons.



Pairing the WAM

Required if **WAM** is part of install.

1. Hook **WAM** up to simulator.
2. Click on this icon  to **Start a Stress Test**.
3. Enter **Test** in the Last Name field and **112233** in the ID field.



Q-Stress Start

Exam Information

Last Name: Test First Name:

Middle Name: Gender: Race:

DOB: Age: Years

Height: in Weight: lb

ID: 112233 Second ID:

Admission ID:

Address: City:

Postal Code: State: Country:

Home Telephone: Work Telephone:

Mobile Telephone: Email Address:

Angina: History of MI: Indications:

Prior Cath: Prior CABG:

Smoking: Diabetic: Medications:

Family History: Pacemaker: ☐

Referring Physician: Notes:

Procedure type:

Location:

Max HR: bpm

Target HR: bpm

Max Workload: W

Target Workload: W

Technician:

Attending Phy:

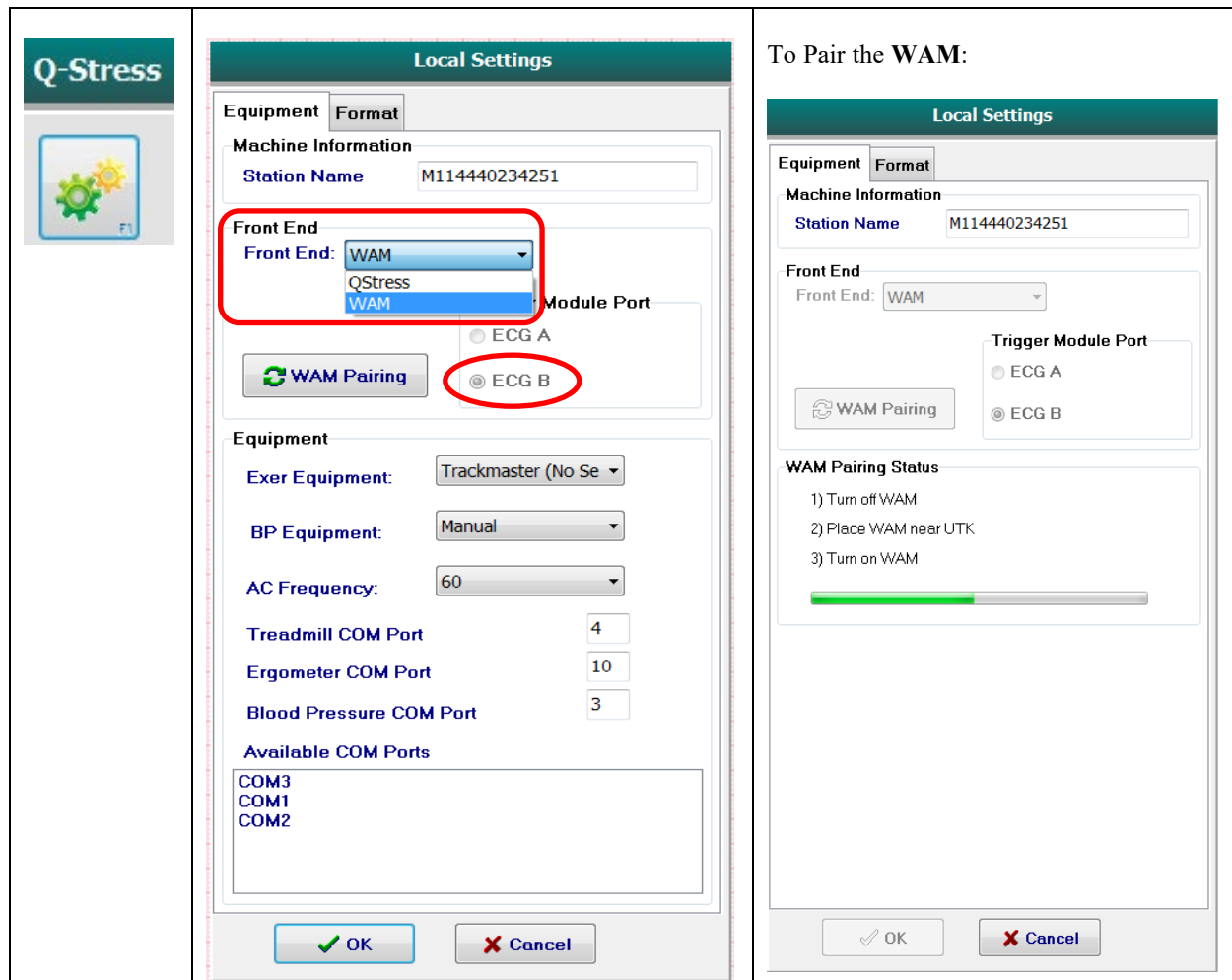
Start Exam **Clear** **Exit**

MWL Patients

Patient ID

4. Select the **Start Exam** button.

Select the **Settings** icon (gear box) in the upper left corner of the display to open the Local Settings window.



5. Connect simulator to **WAM**
6. In Front End box, select **WAM**.
7. Confirm when pairing **WAM**, Trigger Module port is set to ECG B.
8. Ensure that the **UTK** is connected to the ECG B port on the Trigger Module (if present).
9. Make sure **WAM** unit is off
10. Select the **WAM Pairing** button.
11. Once the message pairing is shown, turn on **WAM**. If pairing is working will happen quickly. If pairing is still trying after 15 seconds, push Cancel pairing and turn off **WAM**. Repeat **WAM** Pairing process until **WAM** is successfully pair. **WAM** pairing could take several tries to get connected.

Once finished and an ECG simulator has been connected, you will see the simulated waveform on the display.

If not using Tango BP system

1. Choose the proper Equipment from the drop-down lists.
 - Set Exer Equipment is set to proper treadmill (TM55, TM65) or Trackmaster NO SOURCE if not using treadmill.
 - If using treadmill, make sure Treadmill **COM port is set to 1**.
 - If using Ergometer, make sure Ergometer COM port matches port # used to connect Ergometer.
 - BP Equipment is set to Manual.
 - AC frequency is set to local frequency of 50 or 60 Hz.

Equipment

Exer Equipment: Trackmaster (No Se ▼)

BP Equipment: Manual ▼

AC Frequency: 60 ▼

Treadmill COM Port 4

Ergometer COM Port 10

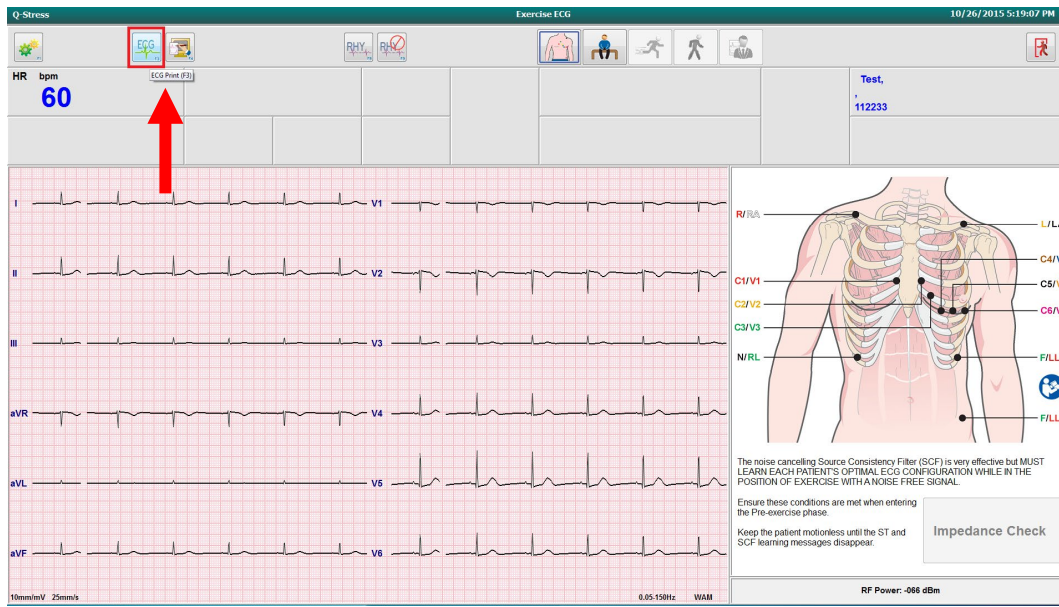
Blood Pressure COM Port 3

Available COM Ports

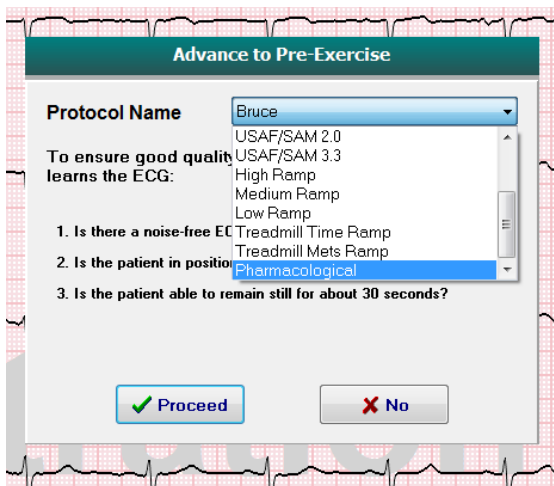
COM3
COM1
COM2

OK Cancel

If Treadmill fail error is present during pretest, always check what COM port the Treadmill is set to and confirm which COM port the Treadmill is connected to back of PC via Serial cable.



2. Select the **ECG** button and a 12-lead ECG will print to the configured printer (**Z200+** thermal writer or Default **Windows** printer). Check/Adjust paper to make sure the edges are not getting crimped.
3. If you do not see waveforms check that the **UTK** is connected to the ECG B port on the Trigger Module if present.
4. Select the Pre-Exercise icon  to advance to Pre-Exercise.
5. Select BRUCE protocol (If no treadmill connected to **Q-Stress**, USE Pharmacology protocol)



6. Click **Proceed**.
7. Wait for heartbeat to show up in middle square (this can take up to 45 seconds as the machine finds average heartbeat).
8. When the 3rd button (person exercising) turns to color, Select **Start Belt**.



If treadmill is connected properly to **Q-Stress** it should turn on now. If not check that treadmill emergency stop button is not activated and that the treadmill cable is properly connected to **Q-Stress** computer. Ensure that the belt is moving according to the programmed speed and there is no "Treadmill Fail" message in the upper right area of the display.

9. With the treadmill running push the Emergency stop switch and verify that the treadmill does stop. After verify, turn the Emergency stop switch clockwise and verify that the switch pops up.
10. When 4th button is activated click it to end test
11. When 5th button is activated Click it to End Exam
12. **Exit** the *Start a Stress Test* display, and then click on the **Exit** button to exit the application.

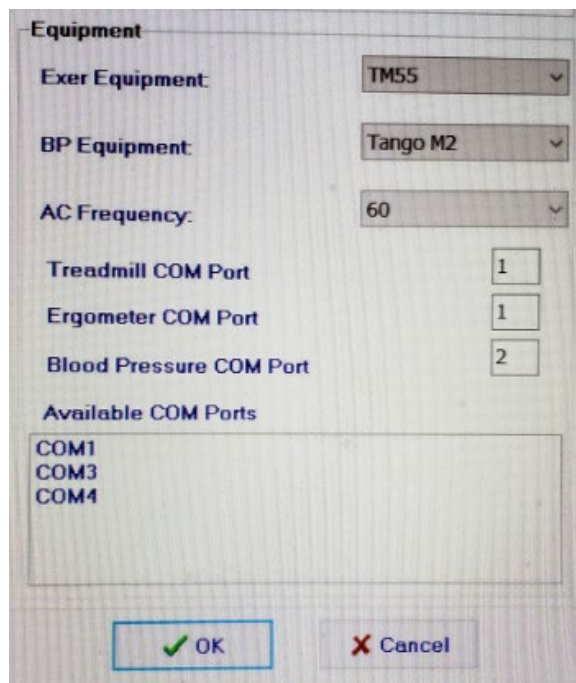
Repeat for wired connection.

1. Ensure that the patient cable is connected to the **AM12Q** module and the **AM12Q** is connected.
2. Attach simulator to wired patient cable plugged into **AM12Q**.
3. Click **Q-Stress** icon.
4. Select Gear box to open settings.
5. Select **Q-Stress** ECG A.
6. Enter Test into field.
7. Repeat test by repeating Steps 2-12 above.

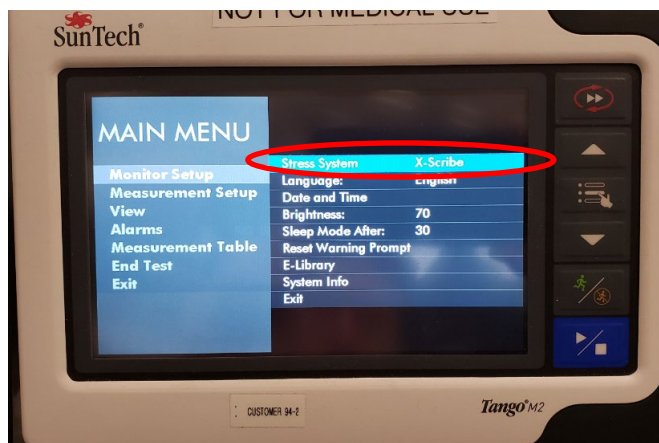
MAKE SURE to RESET back to **WAM** settings if a **WAM** unit is part of this install.

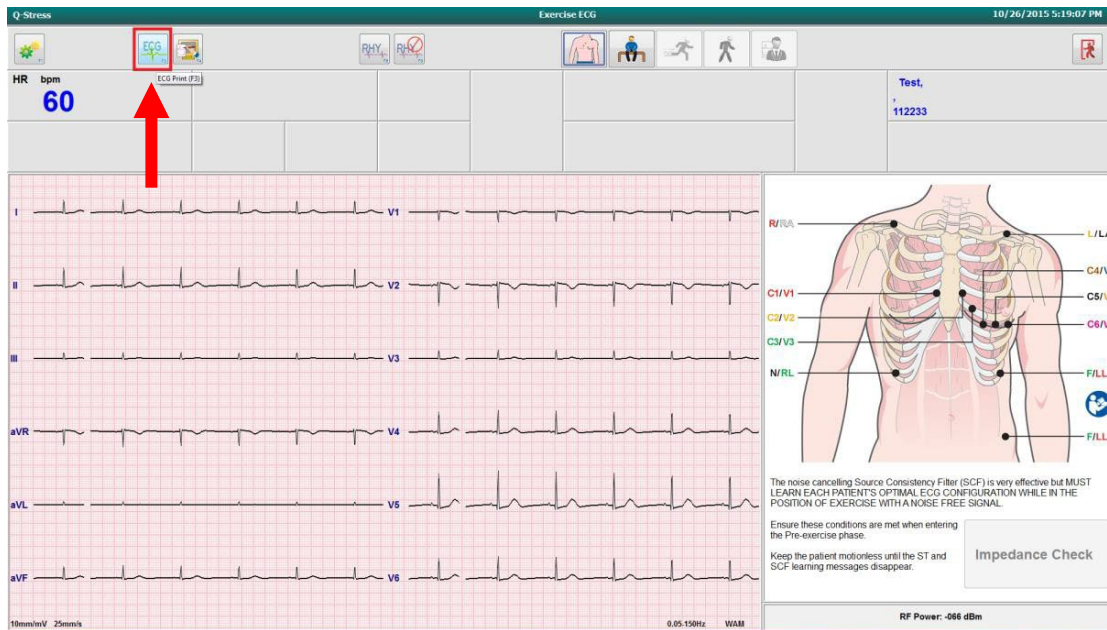
If using **Tango BP** system:

1. Choose the proper Equipment from the drop-down lists
 - Set Exer Equipment is set to proper treadmill (**TM55, TM65**) or **Trackmaster NO SOURCE** if not using treadmill
 - If using treadmill, make sure Treadmill COM port is set to **COM1**.
 - If using Ergometer, make sure Ergometer COM port matches port # used to connect Ergometer.
 - BP Equipment is set to **Tango M2** (or appropriate) BP monitor.
 - Make sure BP COM Port is set to **COM2**.
 - AC frequency is set to local frequency of 50 or 60 Hz.

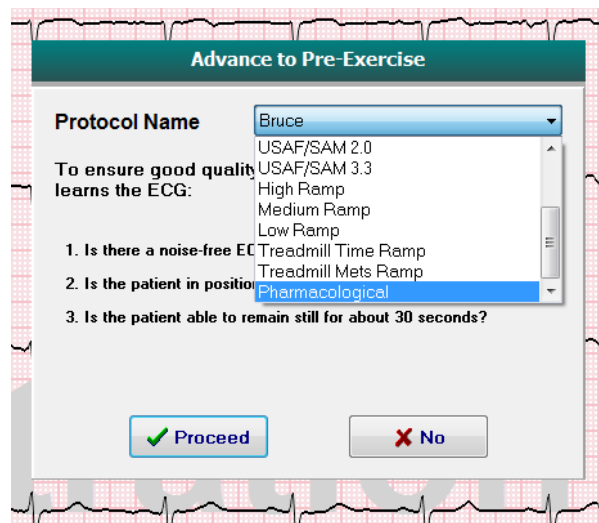


2. Make sure **Tango** is set to **XScribe** using the Main Menu on **Tango** screen, as shown below.





3. Select the **ECG** button and a 12-lead ECG will print to the configured printer (**Z200+** thermal writer). Check/Adjust paper to make sure the edges are not getting crimped.
4. If ECG waveforms are present, the system is connected using **WAM**. If no waveforms are present, then you would check the UTK port connection.
5. Select the Pre-Exercise icon  to advance to Pre-Exercise.
6. Select BRUCE protocol (If no treadmill connected to **Q-Stress**, USE Pharmacology protocol).



7. Click **Proceed**.
8. Wait for heartbeat to show up in middle square (this can take a little bit as the machine finds average heartbeat) up to 45 seconds.
9. When the 3rd button is activated (person exercising) Icon will turn into color. Select start belt.

10. If treadmill is connected properly to **Q-Stress** it should turn on now. If not check that treadmill emergency stop button not activated and that cable is properly connected to **Q-Stress**. Ensure that the belt is moving according to the programmed speed and there is no "Treadmill Fail" message in the upper right area of the display.
11. If you are using a **Tango** BP cuff you should hear it noise coming from cuff as it inflates. If no noise check BP cuff connections and **Tango** unit operation per Manual in **Tango** unit box.
12. When 4th button is activated click it to end test.
13. When 5th button is activated click it to End Exam.
14. Exit the Start a Stress Test display, and then click on the **Exit** button to exit the application.

Repeat for wired connection.

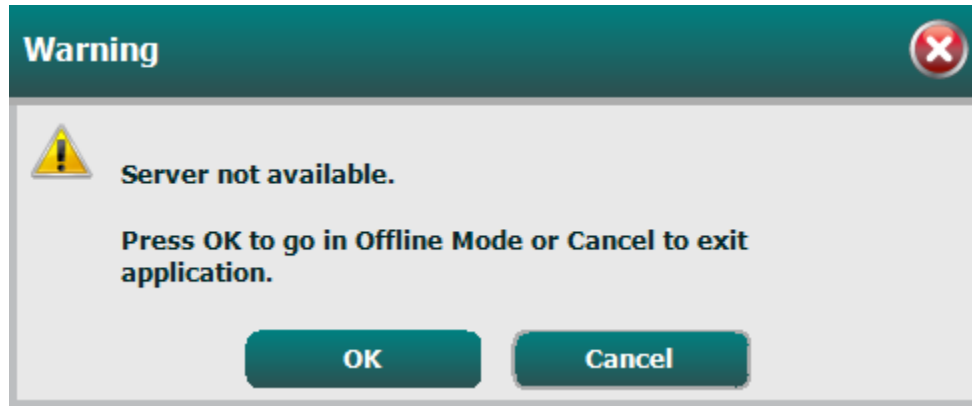
1. Ensure that the patient cable is connected to the **AM12Q** module and the **AM12Q** is connected.
2. Attach simulator to wired patient cable plugged into **AM12Q**.
3. Click **Q-Stress** icon.
4. Select gear box to open settings.
5. Select **Q-Stress** ECG A.
6. Enter Test into field.
7. Repeat test by repeating Steps 2-14 above.

MAKE SURE to RESET back to **WAM** settings if a **WAM** unit is part of this install.

Section 5 – Troubleshooting

Only needed if error below is encountered.

After rebooting the PC and launching the **Q-Stress** application, you may experience the following error:



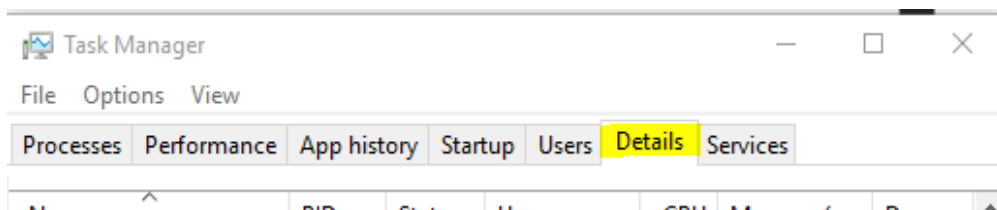
The **CorScribeDBSvc** used with **Q-Stress** can become unresponsive after the application software installation process has been completed. Since the **CorScribeAppServer** is dependent on the **CorScribeDBSvc**, this results in the user receiving a “**Server not available**” error message when attempting to login to the stress application.

Restarting the services manually will not restore normal operation.

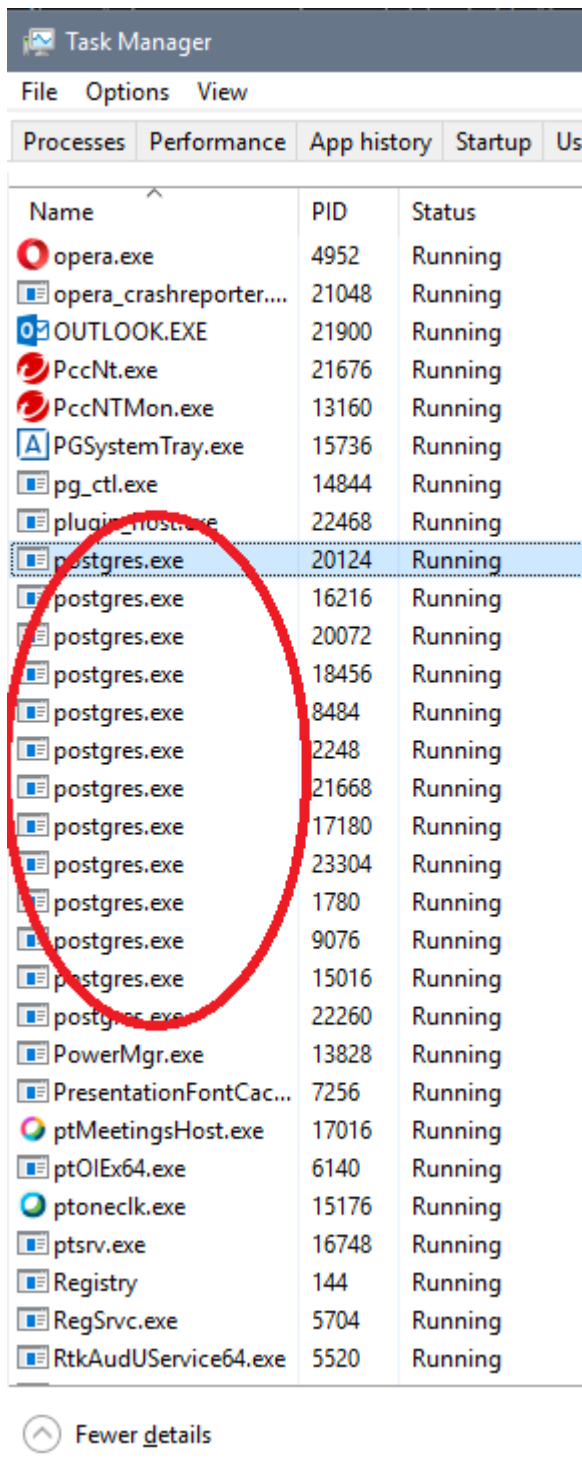
To restore normal operation, stop the postgres processes, then delete the **postmaster.pid** file. Once this is accomplished, restart **CorScribeDBSvc** and **CorScribeAppServer** and **CorScribeLogServer**.

The steps below define how to perform the process:

1. Launch **Task Manager** with Administrative Rights from the **Windows** Start Menu.
2. Select the **Details** tab on the **Task Manager** as shown below.

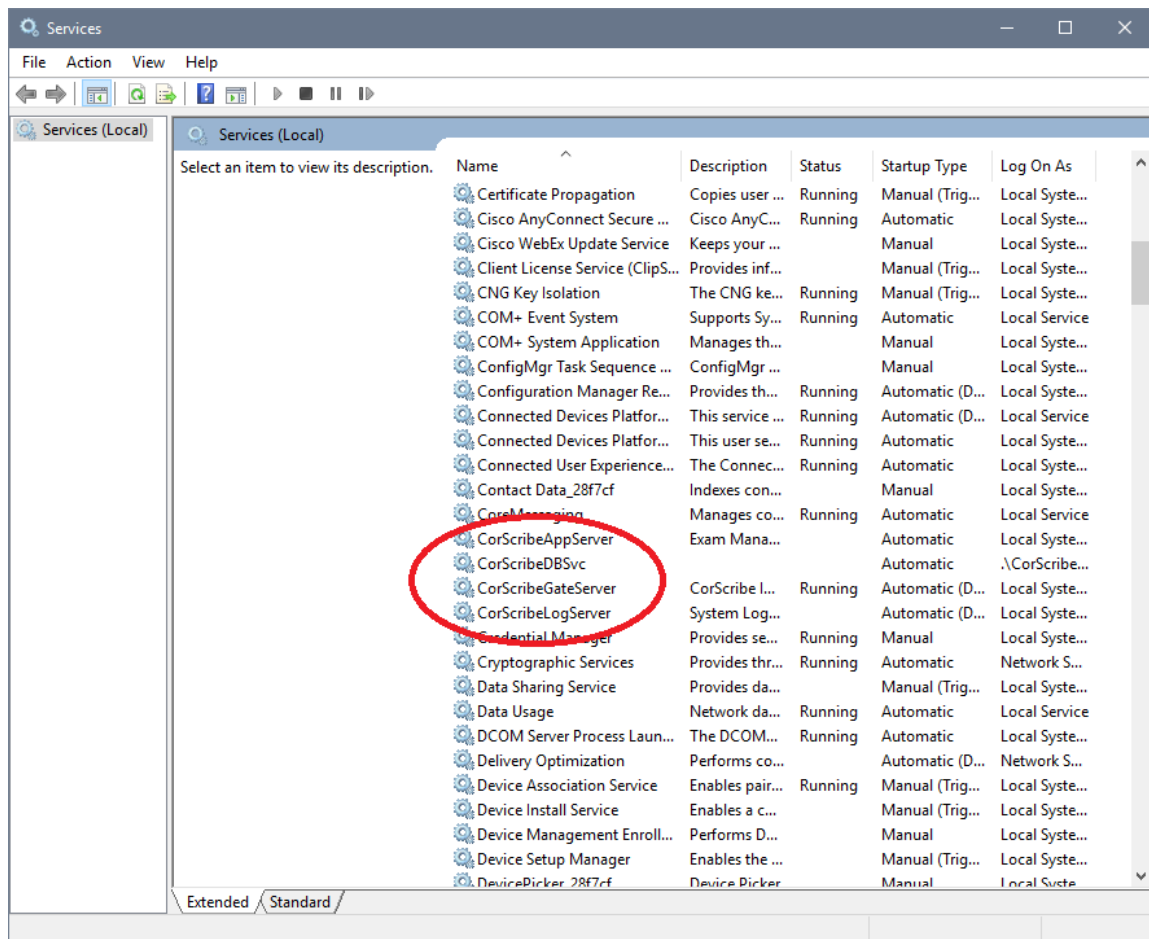


- Find the **postgres.exe** processes and click **End Task** on **all** the postgres processes.
The number of postgres processes may vary from the example shown below.



- Launch **Windows Explorer**.

5. Navigate to where the **postmaster.pid** file exists.
(Default directory is: **C:\ProgramData\MiPgSqlData\pgdata**)
6. Delete the **postmaster.pid** file
7. Launch the **Services** Application with Administrative Rights from the **Windows** Start Menu.



8. Right click on the **CorScribeDBSvc** and select **Start**
9. Right click on the **CorScribeAppServer** and select **Start**
10. Right click on the **CorScribeLogServer** and select **Start**
11. Visually verify that all **CorScribe** the services are running
12. Launch the **Q-Stress** application and verify that the **Server not available** message does not occur.