

**ONLY  
USE THESE  
INSTRUCTIONS  
WHEN SETTING  
UP THE  
SUN MACHINE 450  
SERIAL D UNIT  
FOR THE FIRST  
TIME**

# Installation Instructions

**INSTALLATION MUST BE PERFORMED  
BY  
QUALIFIED EQUISERV PERSONNEL ONLY**

## INSTALLATION OVERVIEW:

The Installation Instructions listed are for the SUN MACHINE 450 Serial D. The unit is shipped as a fully assembled unit with the exception of the items as listed in the PARTS & ACCESSORIES LIST. To insure that the most recent release of operating software is received, the software will be added to the unit before it is shipped to the customer.

**NOTE:** *There are several upgrade kits that are available for the Sun Machine 450. The Sun Machine 450 must be completely setup and verified for proper operation before installing any of these kits. Install the kits one at a time verifying proper operation of the unit and upgrade prior to installing the next upgrade kit.*

## PARTS & ACCESSORIES LIST:

PART NUMBER	DESCRIPTION	QTY
0002-0133-15	Test Lead Assembly, Jumper	1
0301-0944-01	Filter Element,75 Micron	1
0528-1088-01	Paper, Printer	1
0552-0043	Adapter, Thexton Gm/Ford Coil Terminal	1
0552-0103-01	Pad, Mouse	1
0552-0120-01	Adapter, Thexton Chry/Jeep/Eagle	1
0552-0130-02	Mouse, 3 Button Black PS/2	1
0647-0170	Tee, Vacuum	1
0669-0623	Hose 1/8"	1
0669-0733	Hose 3/16"	1
0669-0734	Hose 1/4"	1
0672-0035-01	Test Clip, Wire Piercing	1
0682-1049-01	Labels, Stickers	4
0692-1834-01	Quality Control Questionnaire SEL 1403C	1
0692-2291-01	Warranty Registration Form	1
0787-0035	Cap, Exhaust probe	1
1-2385	Cover, Keyboard	1
1747-0101	Test Adapter Assembly, Pat Pickup	1
1747-0102	Test Adapter Assembly, Hei Pickup	1
1-8081	Filter Element, 8 Micron	1
3-27326AUSC1	2002 Vehicle Limits Data Update CD	1
3-27326AUSD1	2002 Vehicle Limits Data Update Floppy	1
3-27326AUSD2	Pre-1981 Vehicle Limits Floppy	1
3988-0255-01	Test Assembly, Exhaust Hose 3/16"	1

PART NUMBER	DESCRIPTION	QTY
4100-5016-01	Screw, Shoulder, 5/16-18 x 3/8" LG	3
5-04431-240	Hose, Poly, 1/4" Id	24"
6002-0346	Test Lead Assembly, Jumper W/Probe	1
6004-0544-02	Test Lead Assembly, Pattern Dual Hd	2
6004-0763-02	Test Lead Assembly, Pattern Conventional	1
6004-0775-02	Cable, Secondary "Y" Adapter	1
6004-0819-01	Adapter, Universal Pattern Pickup	1
6005-0171-03	Test Lead Assembly, Current Pickup	1
6005-0182-02	Test Lead Assembly, Universal	1
6006-0003	Test Lead Assembly, Vac Hose	1
7009-1374-08	Test Lead Assembly, Timing Light	1
7009-1869-01	Test Assembly, Exhaust Probe Assembly	1
7009-2325-02	Test Lead Assembly, Trigger Pickup	1
8-2663	License Certificate	1
EAE0050L20A	LED Printer, OkiPage 10E or	1
EAE0050L40A	LED printer, OkiPage 14E	
EAK0157L15B	Software Kit	1
EAW0058C00A	Test Lead Assembly, Volt/Ohm Pinpoint	1
EAW0060C00A	Cable, Adapto	1
EERC102A	Remote Control	1
EESP304A	Software, Snap Link (found in EAK0157L15B kit)	1
MT3000-400B	Vacuum Waveform Probe	1
MT3000A440	Low Amps Probe	1
SS1495	POP (Point Of Purchase) Kit	1
TEEOS108D	Installation Instructions	1
ZEEOS140B	Operator's Manual	1

**REQUIRED TOOLS:** \_\_\_\_\_

- Complete Tool Kit

**INSTALLATION INSTRUCTIONS:** \_\_\_\_\_

**NOTE: STEPS 1 THROUGH 6 WILL REQUIRE TWO OR MORE PEOPLE.**

1. Cut and remove the straps. Carefully slide the unit carton off the shipping pallet. Remove the top of the shipping carton.
2. Remove the carton by sliding the carton over top of the unit.
3. Remove foam packing from around the sides of the unit.
4. Lean the Sun Machine 450 so that half of the foam base can be removed.
5. Lean the Sun Machine 450 so that other half of the foam base can be removed.
6. Remove tape from ALL drawers and covers.
7. Remove bubble wrap from Keyboard, located in the keyboard drawer.
8. Inventory all items using the Parts & Accessories List and inspect for damage. The Unit Accessories are located in the bottom drawer of the unit. The Literature Kit is also located in the bottom drawer of the unit.

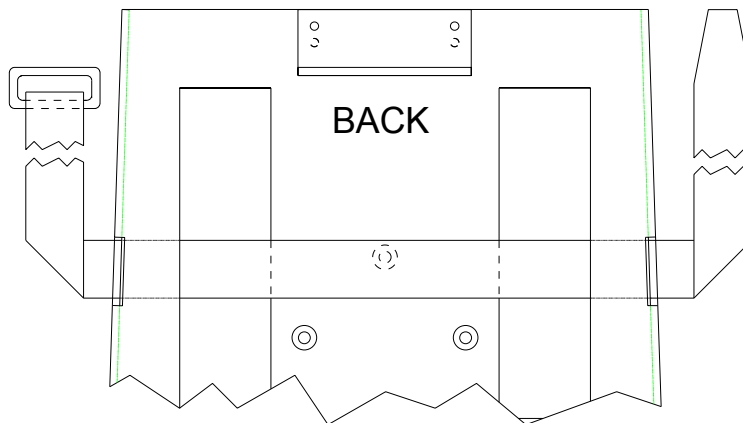
**NOTE: ANY SOFTWARE OR HARDWARE OWNERS' MANUALS AND PRE-LOADED SOFTWARE THAT COME WITH THE COMPUTER, SUCH AS MICROSOFT® WINDOWS® 98 AND THE SUN MACHINE 450 OPERATING SOFTWARE PACKAGE ARE LOCATED IN THE BOTTOM DRAWER OF THE UNIT.**

**NOTE: ANY REGISTRATION CARDS FOR THE INSTALLED SOFTWARE SUCH AS MICROSOFT® WINDOWS® 98 MUST BE FILLED OUT AND SENT IN BY THE CUSTOMER TO ENSURE COMPLIANCE WITH ANY SOFTWARE LICENSING AGREEMENTS.**

**NOTE: THE BOOM IS SHIPPED IN THE LOWER POSITION AND WILL NEED TO BE RAISED TO PROPER HEIGHT.**

9. Open the back cover of the unit, locate the boom journal and remove the stop bolt on the boom. Raise the boom approximately 7 inches to expose new stop bolt hole; place the stop bolt into the new hole.
10. Locate the shoulder screws (4100-5016-01), install the shoulder screws in the three holes at the bottom of the boom journal. The shoulder screw heads must be on the inside of the journal.
11. The monitor is shipped separately from the unit. Remove the monitor from the box and inspect the monitor for damage.
12. Remove the swivel base of the monitor if attached.

**NOTE: IF YOU ARE MOUNTING A 15" SAMPO MONITOR, THE BACK MOUNTING BRACKET MUST BE TURNED AROUND AS SHOWN IN FIGURE 1.**



**Figure 1, Monitor Base Plate for 15" Sampo Monitor.**

13. Place the monitor into the monitor base plate with the back of the monitor pushed snug against the back bracket. Slide the front bracket snug up to the front of the monitor and tighten the nuts of the brackets.
14. Fasten the Velcro straps over the top of the monitor and snug down.
15. Discard the A.C. Cable supplied with the monitor. Use the A.C. Cable found attached to the top of the unit.
16. Connect monitor power, data, mic and audio cables to the unit.
17. Locate the Mouse and install the Mouse cable to the mouse connector of the connector plate on the left side of the unit.
18. Locate the printer paper (0528-1088-01) in the bottom storage drawer. Load printer paper into paper cassette of the Printer (100 Sheets maximum). A portion of the remaining paper can be placed under the Printer.
19. Connect all Test Leads and the Vacuum Hose to the respective connectors located on the boom of the Sun Machine 450. Store any unused leads and accessories in the lower storage drawer.

### **Starting Windows 98 for the first time**

21. Turn on the analyzer. Windows will boot to the **Window 98 Setup Wizard**.
22. When prompted: Enter the shop owner's name in the **Name:** field, and the shop name in the **Company:** field, then select **Next >**.
23. The end-user (customer) must select **I accept the agreement** to accept the **License Agreement**, then select **Next >**.
24. Enter the **Product Key** number from the **Certificate of Authenticity** found on the **Getting Started Microsoft Windows 98** book that came with the analyzer, then select **Next >**.
25. Select **Finish**.

26. Enter the shop owner's name in the **User Name:** field, and then select **OK**. **Do Not Enter A Password.**
27. **Date/Time Properties:** Select your time zone, set the date and time, and select **Apply**, then select **OK**.
28. Enter the **validation code** and select **OK**.
29. You will be prompted to insert the Initial Installation floppy disk into the unit. Place the **Sun Machine Initial Installation** disk in the floppy drive then select **OK**.
30. You will be prompted to insert the Sun Machine software upgrade floppy disk into the unit. Place the **Sun Machine Software upgrade** disk in the floppy drive then select **OK**. Once completed remove the floppy disk from the drive.
31. Deselect the **Show this screen each time Windows starts** box on the **Welcome** window.
32. Close the **Welcome** window by pressing the **X** in the upper right corner of the **Welcome** window.
33. If the Windows desktop size does not closely match the monitor viewing area, you will need to change the refresh rate in the windows program. Select **Start** ⇒ **Settings** ⇒ **Control Panel**.
34. From the Control Panel Select **Display**. From display select the **Settings** tab and then select the **Advanced** button.
35. Select the **Adjustments** tab and then select the **Refresh Rate** button. Select **Show All Refresh Rates** (select **OK** within the message box that appears).
36. Select 75Hz non-interlaced for the refresh rate and select **Change** (select **OK** within the message box that appears).
37. Select **Yes** to the message box **"Did windows reappear correctly"**.
38. Select **OK** (select **OK** within the message box that appears).
39. Select **OK** to close the Display window, close the settings window by selecting the **X** in the upper right hand corner of the Display window.

### Configure the Speakerphone Software

40. Double-click the **Quick Link Message Center** icon on the right side of the screen, to start the program.
41. Type in your "Local Area Code" and then press **ENTER**.
42. Select **I Agree** on the **Quick Link Message Center III Setup Wizard**.
43. Complete the requested information and select **Next >**.
44. Complete the address information and select **Next >**.
45. When prompted to choose a modem, verify that the **"US Robotics 56K Voice PCI"** is highlighted, and select **Next >**.
46. Next a modem setup box will appear and automatically detect the modem.
47. After the modem has been detected select **Next >** and deselect **"Electronically register this product."**
48. Click on **Finish** and ignore any error that may come up.
49. Click on **OK** and click on **Continue** and click on **Continue** again to proceed past the Advertisements.
50. When an **"Upgrade"** window appears, click on **Cancel**.
51. Select **View** and click on **Speakerphone**.
52. Select **View** and click on **Speed Dial**.
53. Adjust the Microphone Volume Control level to about 1/3 volume.
54. Adjust Speaker Volume Control to maximum.
55. Close the **Quick Link Message Center III** window by clicking on the **X** in the upper right-hand corner of the box.

## SAMPO Monitor Display Position Adjustment (DOS Mode)

When entering or leaving the Sun Machine program, if the monitor screen jumps to the right or left, perform steps 56 through 65 to correct.

56. Perform the following steps only while in the Sun Machine program.
57. Using the front buttons on the monitor, select the **OSD** button. This will bring up a monitor adjustment window.
58. Using the **Select** “+” or “-” buttons on the front of the monitor, highlight **Horizontal Position** symbol, as shown in figure 2 below.
59. Using the **Adjust** “+” or “-” buttons on the front of the monitor, adjust the horizontal position to the center of the monitor screen.
60. Using the **Select** “+” or “-” buttons on the front of the monitor, highlight **Horizontal Sizing** symbol, as shown in figure 2 below.
61. Using the **Adjust** “+” or “-” buttons on the front of the monitor, adjust the horizontal size to the desired size on the monitor screen.
62. Using the **Select** “+” or “-” buttons on the front of the monitor, highlight **Vertical Position** symbol, as shown in figure 2 below.
63. Using the **Adjust** “+” or “-” buttons on the front of the monitor, adjust the vertical position to the center of the monitor screen.
64. Using the **Select** “+” or “-” buttons on the front of the monitor, highlight **Vertical Sizing** symbol, as shown in figure 2 below.
65. Using the **Adjust** “+” or “-” buttons on the front of the monitor, adjust the vertical to the desired size on the monitor screen.

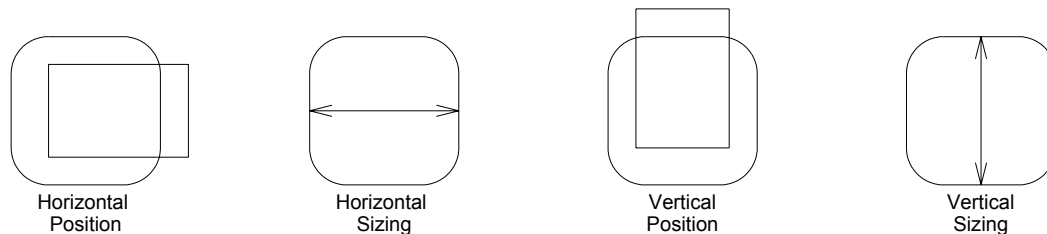


Figure 2, Monitor Adjustment Symbols

### Check Printer Selection

This unit may come with either the OkiPage 10E printer or the OkiPage 14E printer; use the following procedure to check proper printer setup.

66. From the Windows Desktop select **Start** ⇒ **Settings** ⇒ **Printers**.
67. Check to see which printer you are using by looking at the label next to the LED Control Panel (Top Right-hand side of printer); it will read either OkiPage 10E or OkiPage 14E
68. Verify that there is a checkbox beside the appropriate printer icon in the Printers window. If not, right click on the appropriate icon and double-click on the **Set as Default** selection.
69. Right-click on the default printer and select **Properties**.
70. Select **Print Test Page**.
71. Wait for the printer to print the test page. If printed correctly click on **Yes**, if not click on **No** and troubleshoot accordingly.

If you are using a different printer or you need to load, the proper printer drivers for this unit perform the following:

72. Insert the Sun Machine Ver 5.0 CD-ROM disk into one of the CD-ROM drives.

73. Select **Start** ⇒ **Run**, in the run window type

L . P d f ] b h Y f g P d f ] b h Y f ' X f ] j Y f ' ] b g h U ` ` " \ h a Ⓔ, (where L is the letter of the CD-ROM Drive you have the CD inserted in).

**NOTE: IF YOU DO NOT HAVE AN INTERNET BROWSER LOADED ON THIS UNIT TYPE**

**L . P d f ] b h Y f g P d f ] b h Y f ' X f ] j Y f ' ] b g h U ` ` " 8 C 7 Ⓔ, THIS WILL BRING UP A WORDPAD VERSION OF THE INSTRUCTIONS.**

74. This will bring up the driver install document for all of the LED printers.

### **Check Printer Properties (Skip this step if your analyzer does not have a printer)**

75. Select the **Start** ⇒ **Settings** ⇒ **Printers**.

76. Press the right mouse button over the printer icon for the installed printer on the Printers page.

77. Select **Properties** on the dialog.

78. Select the **Details** tab.

79. Select the **Port Settings...** button.

80. Verify that there is no check mark on **Spool MS-DOS print jobs**, then select **OK**.

81. Select the **OK** button on the printer properties dialog.

82. Close the **Printers** window by pressing the **X** in the upper right corner of the window.

### **Check Network Adapter Properties**

**NOTE: THESE SETTINGS ARE ONLY USED IF THIS UNIT IS NOT BEING ATTACHED TO A NETWORK. IF YOU ARE ATTACHING THIS UNIT TO A NETWORK, REMOVE THE CHECKMARK FROM THE DISABLE IN THIS HARDWARE PROFILE CHECK BOX.**

83. Select the **Start** ⇒ **Settings** ⇒ **Control Panel** ⇒ **System**.

84. Select the **Device Manager** Tab from the **System Properties** Window.

85. Select the **plus sign (+)** to the left of **Network Adapters** to expand the list.

86. Highlight **Intel 82558-Based...** adapter then select **Properties** in the **Device Manager** Tab.

87. Under the **General**, tab in the **Intel 82558-Based...** dialog box place a check mark in the box next to **Disable in this hardware profile**. Select **OK** ⇒ **OK**.

88. Select **Start** ⇒ **Shut Down** ⇒ **Restart** ⇒ **OK**, this will restart the computer so the changes will take effect.

### **Check CD-ROM Properties**

89. Select the **Start** ⇒ **Settings** ⇒ **Control Panel** ⇒ **System**.

90. Select the **Device Manager** Tab from the **System Properties** Window.

91. Select the **plus sign (+)** to the left of **CD-ROM** to expand the list.

92. Select one of the **CD-ROM** drive's listed.

93. Select **Properties** on the **Device Manager** tab.

94. Select **Settings** on the **CD-ROM** Properties dialog.

95. Verify that there is no check mark on **Auto insert notification** in the **Settings** tab.

96. Select the **OK** button on the **CD-ROM** Properties dialog.

97. Repeat steps 92 through 96 for each CD-ROM drive installed.

98. Select the **OK** button on the **System Properties** dialog.

### **Check Power Properties**

99. Select **Start** ⇒ **Settings** ⇒ **Control Panel** ⇒ **Power Management**.

100. Set **Turn off monitor** and **Turn off hard disks** to **Never**.
101. Select the **OK** button on the **Power Management Properties** dialog.
102. Close the **Control Panel** window by pressing the **X** in the upper right corner of the window.

**NOTE: AFTER INSTALLING THE SOFTWARE, A FOUR-GAS CALIBRATION IS REQUIRED.**

**INSTALLATION COMPLETE**

**2002 VEHICLE DATA UPDATE INSTALLATION INSTRUCTIONS:** \_\_\_\_\_

1. Before continuing with these instructions, turn unit on and start the Sun Machine program. Allow the warm up to complete its 15-minute countdown.
2. If all parameters calibrate (turn green) continue with these instructions. If any of the parameters do not calibrate (stay red or black) then place a service call to have any repairs performed before continuing with these instructions.
3. Place the **2002 Vehicle Data Update Install Floppy** (3-27326AUSD1) floppy disk into the floppy disk drive.
4. Close all running applications including Sun Toolbar.
5. From the desktop, select **START** ⇒ **RUN**.
6. In the command line area in the “**RUN**” window type `5 . P ] b g h U ` `` and then select “**OK**”.
7. Follow the on-screen prompts to complete the software load.
8. Remove the 2002 Limits Floppy.
9. Place the **Pre-1981 Limits** (3-27326AUSD2) floppy in the drive.
10. Repeat steps 5 thru 7.
11. Once the limits update has been loaded to enable the changes, you must exit windows and reboot the computer.
12. Remove the floppy disk from the Floppy Drive. Select **START** ⇒ **Shut Down** ⇒ **Restart the computer** ⇒ **Yes**.
13. Provide the customer with the **2002 Limits CD** (3-27326AUSC1). This CD contains only under hood pictures.

**2002 UPDATE COMPLETE**