

# Installation Instructions

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

## INSTALLATION OVERVIEW: \_\_\_\_\_

The Installation Instructions listed are for the SUN MACHINE 400. The unit is shipped as a fully assembled unit with the exception of the monitor, printer and the items listed in the PARTS & ACCESSORIES LIST. To insure that the most recent release of Sun Machine 400 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 400. The Sun Machine 400 must be completely set up 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: \_\_\_\_\_

**NOTE: The Sun Machine 400 is shipped with one of two types of printers, a 24 pin dot matrix or an LED printer. Depending on the type of printer ordered by the customer, the appropriate paper would be included at time of shipping.**

PART NUMBER	DESCRIPTION	QTY
0002-0133-15	Test Lead Assembly	1
0301-0944-01	Filter Element,75 Micron	1
0524-0994-01	Paper, Printer (24 Pin Dot Matrix Printer)	1
0528-1088-01	Paper, Printer (LED Printer)	1
0552-0043	Adapter, Thexton Gm/Ford Coil Terminal	1
0552-0089-01	Mouse, 3 Button White	1
0552-0103-01	Pad, Mouse	1
0552-0120-01	Adapter, Thexton Chry/Jeep/Eagle	1
0669-0220	Hose, Poly, 1/4 Id	24"
0672-0035-01	Test Clip	1
0682-1049-01	Labels, Stickers	4
0692-1834-01	Quality Control Questionnaire SEL 1403C	1
0692-1928-01	Product Registration Form	1
0692-2291-01	Warranty Registration Form	1

PART NUMBER	DESCRIPTION	QTY
0787-0035	Cap	1
1-241	Washer, #8 Flat	2
1747-0101	Test Adapter Assembly, Pat Pickup	1
1747-0102	Test Adapter Assembly, HEI Pickup	1
1-7726	Screw, TF, 10-32 x 1/2" LG.	4
1-8081	Filter Element,8 Micron	1
1-9406	Screw, 8-32 x 1/2"	2
2161-0023	Hangers	4
3988-0255-01	Test Assembly, Exhaust Hose 3/16"	1
4100-5016-01	Screw, Shoulder, 5/16-18 x 3/8" LG.	3
6002-0346	Test Lead Assembly	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
6005-0182-02	Test Lead Assembly, Universal	1
7009-1869-01	Test Assembly, Exhaust Probe Assembly	1
7009-2325-02	Test Lead Assembly, Trigger Pickup	1
7049-0004-01	Oxygen Sensor	1
EAW0058C00A	Test Lead Assembly, Volt/Ohm Pinpoint	1
SS1495	POP (Point of Purchase) Kit	1
TEEOS111A	Installation Instructions	1
ZEEOS111A	Operators Manual	1

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

- Complete Tool Kit

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

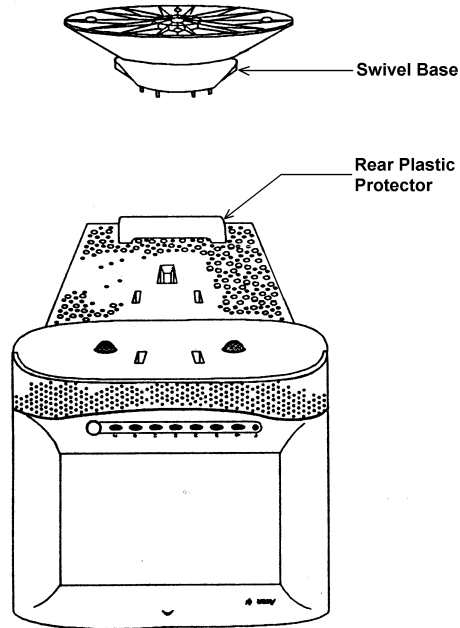
**NOTE: Steps 1 through 8 will require two or more people.**

1. Cut and remove the straps. Remove the top of the shipping carton.
2. Remove the carton by sliding the carton over top of the unit.
3. Locate the Sun Machine 400 Operating Software Package. The software could be located on the outside of the carton or on the inside if there is a slot in the shipping carton. Remove the software package and set aside.
4. Locate the printer paper (0528-0994-01 or 0528-1088-01) and set aside.
5. Remove unit-packing material from around the sides of the unit.
6. Carefully slide the unit and foam base partially off of the shipping pallet.
7. Lean the Sun Machine 400 so that the shipping pallet and half of the foam base can be removed.
8. Lean the Sun Machine 400 so that other half of the foam base can be removed.
9. Remove tape from ALL drawers and covers.
10. Remove bubble wrap from Keyboard, located in the keyboard drawer.
11. 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 95, are located in the bottom drawer of the unit.**

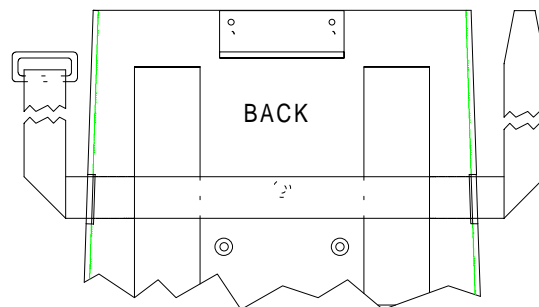
**NOTE: Any REGISTRATION CARDS for the installed software such as Microsoft® Windows 95 must be filled out and sent in by the customer to ensure compliance with any software licensing agreements.**

12. Locate the four hangers (2161-0023) and the four 10-32 x 1/2" Hex Screws (1-7726). Attach the two hangers to the left side and two to the right side of the unit using the hex screws.
13. The monitor is shipped separately from the unit. Locate the monitor box.
14. Remove the monitor from the box and inspect the monitor for damage. Discard the A.C. Cable supplied with the monitor.
15. Remove the swivel base and the rear plastic protector from the ACER monitor and discard. Refer to figure 1, below. If you have a Sampo monitor, just remove the swivel base if attached.



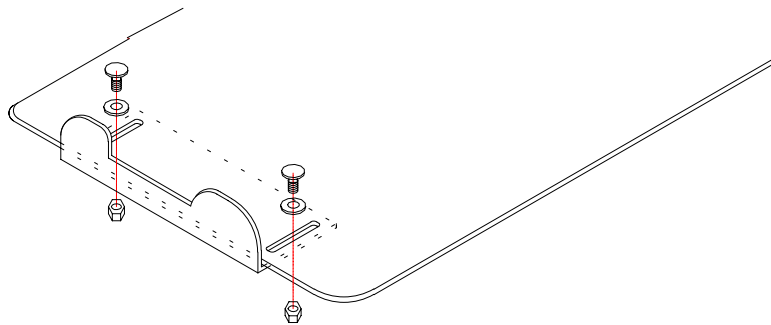
**Figure 1, Monitor Bottom View**

**NOTE: IF YOU ARE MOUNTING A 15" SAMPO MONITOR, THE BACK MOUNTING BRACKET MUST BE TURNED AROUND AS SHOWN IN FIGURE 2.**



**Figure 2, Monitor Base Plate for 15" Sampo Monitor.**

**NOTE: IF YOU ARE MOUNTING A 17" ACER MONITOR, USE THE TWO 8-32 X 1/2 SCREWS (1-9406) AND THE 2 FLAT WASHERS (1-241) THAT ARE FOUND IN THE UNIT ACCESSORIES AND MOUNT THE BRACKET AS SHOWN IN FIGURE 3.**



**Figure 3, Monitor Base Plate for 17" Acer Monitor.**

16. 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.
17. Fasten the Velcro straps over the top of the monitor and snug down.
18. Use the A.C. Cable found attached to the unit to connect power for the monitor. Connect the data cable from the monitor to the connector plate on the left rear side of the unit.
19. Locate the Mouse and install the Mouse cable end to the COM 2 connector, of the connector plate on the left rear side of the unit.
20. Remove the Printer from the box and inspect for damage.
21. Remove the packing tape and plastic tabs from the printer. If the printer is the Okidata 390 printer install the ribbon cartridge. If the printer is the OKIDATA OL600 or OKIPAGE 6E LED printer, follow the proper procedure in the Printer's Manual for installing the toner cartridge.
22. Pull the printer shelf out to its full extent. On the printer shelf there are two studs to keep the printer from sliding around the drawer.
23. Place the printer over the studs.
24. Discard the AC Cable supplied with the Printer. Use the AC Cable found attached to the unit.
25. Attach the printer data cable to the data connector on the printer.
26. Locate the printer paper (0528-0994-01 or 0528-1088-01). Load paper for the printer.
27. Connect all Test Leads to the respective connectors located on the boom of the Sun Machine 400. Store any unused leads and accessories in the lower storage drawer.
28. Open the back panel of the unit.
29. Remove the stop bolt on the boom tube. Slide the boom up approximately 7 to 8 inches; reinstall the stop bolt in the new hole that is 7 to 8 inches lower on the boom than the hole from which the stop bolt was just removed.
30. Locate the 3 shoulder bolts 5/16-18 x 3/8" LG (4100-5016-01). Install the screws on the bottom of the boom journal, there are three holes pre-threaded for these bolts. The heads of the screws go on the inside of the journal tube.
31. Close the back panel of the unit.

**NOTE: The Okidata 390 Turbo printer must be properly configured before unit is turned on for the first time perform steps 32 through 37 to configured printer. If you are using any printer other than the Okidata 390 proceed to step 38.**

32. Turn computer power switch off (located on the front of the computer). Turn main power switch on (located on the back of the unit).
33. Turn printer power switch on. On the printers front panel press the **SHIFT** and **SEL** to enter menu mode, press the **Print (Park)** button, this will print out the printer configuration.

34. The emulation mode line should read **Printer Control, Emulation Mode, EPSON LQ**. If not refer to the Okidata ML390/391 Turbo User Guide page E-11 to change menu setting.
35. The character set line should read **Symbol Sets, Character Set, Set II**. If not refer to the Okidata ML390/391 Turbo User Guide page E-23 to change menu setting.
36. If no changes need to be made press the **SHIFT** and **SEL** to exit menu mode
37. Turn main power switch off (located on the back of the unit). Turn computer power switch on (located on the front of the computer).

**Starting Windows 95 for the first time**

38. Windows 95 must be properly setup before loading any other software. Turn main power switch on (located on the back of the unit) and follow the on-screen prompts to complete the set up. Steps 39 through 55 will assist with this setup.
39. Enter **Customer Name** (Shop Owner), **Shop Name** and select **Next >**.
40. Select **“I accept the Agreement”**, select **Next >**.
41. Enter the **OEM number** (found on the “Certificate of Authenticity”) select **Next >**.
42. Select **Finish**.

**NOTE: Windows 95 will ask you to enter a password. DO NOT ENTER A PASSWORD**

43. Enter **Shop name** under **“User Name”** field select **OK**.
44. When asked to confirm password select **OK**.
45. Select **Proper Time Zone** for your region, select **Date** and **Time Tab**. Set proper time and date, select **Apply** then select **OK**.
46. Add **Printer Wizard**, select **Next >**.
47. Select **Local printer**, select **Next >**.
48. Select the printer Manufacturer and Printer from the following list then select **Next >**.

Model of Installed Printer	Select Manufacturer from list	Select Printer from list
Okidata 390 Turbo	Okidata	ML 590
Okidata OL600E	HP	LaserJet II P
OkiPage 6E	HP	LaserJet 4 P

**Table 1 Printer Setup**

49. If asked to **“Keep Existing Drivers”** select **“Yes”**.
50. Select **“LPT1: Printer Port”**, select **Next >**.
51. When asked for the **“Printer Name”** select **Next >**
52. Select **“Yes”** for print test page, select **Finish**.
53. Wait for printer to print page. If the printer printed the page, select **“Yes”**. If the page did not print select **“No”** and troubleshoot accordingly.
54. Windows will want to restart. Select **OK** to restart windows. If windows does not restart you may have to manually restart windows.
55. When **“Welcome to Windows”** is displayed Windows setup is completed.

**Set Printer Properties**

56. Press the **Start** button on the task bar.
57. Highlight **Settings**.
58. Highlight and select **Printers**.

59. Depress the **right mouse button** with the cursor arrow over the printer icon for the printer previously selected, such as the HP LaserJet 4 P, on the **Printers** window.
60. Highlight and select **Properties** from the list.
61. Select the **“Details tab”**.
62. Select **“Port Settings”**.
63. From the selections, find the **“Spool MS-DOS print jobs”** and **“Uncheck”** or disable spooling, then select **OK**.
64. Select the **OK** button on the **“Printer Properties Page”**.
65. Close the Printers window by selecting the **“X”** in the upper right hand corner of the window.

### Install the Video Driver and Set Monitor Display Properties

66. Depress the **right mouse button** anywhere on the desktop.
67. Select **Properties** from the pop-up menu.
68. Select the **“Settings”** tab on the **“Display Properties”** window.
69. Select the **“Advanced Properties”** button on the **“Settings”** tab.
70. Select the **“Change”** button on the **“Adapter”** tab.
71. Select the **“Have Disk”** button on the **“Select Device”** window.
72. Put the disk labeled **“STB Vision 95 tm Powergraph 64 V Windows 95 Display Support Video”** driver disk in drive A:
73. Select the **“OK”** button on the **“Install from Disk”** window to accept **“Copy manufacturer’s files from: A:\”**.
74. Select **“STB Powergraph 64 Video, with STB Vision 95”** on the **“Select Device”** window and Select **“OK”**.
75. Select the **“Apply”** button on the **“Advanced Display Properties”** window.
76. Select the **“OK”** button on the **“Advanced Display Properties”** window.
77. While still in the **Display Properties** window **Settings** tab, set the **Color Palette, Desktop Area,** and **Font Size** according to table 2, or the user’s preference.

Monitor Type	Color Palette	Desktop Area	Font Size
Plug-n-Play Monitor	High Color (16 bit)	1024 x 768	Small Fonts
AcerView 7156s	High Color (16 bit)	1024 x 768	Small Fonts
AcerView 7156is	High Color (16 bit)	1024 x 768	Small Fonts
AcerView 7176is	High Color (16 bit)	1024 x 768	Small Fonts

**Table 2 Monitor Resolution Setup**

78. Select the **“Apply”** button on the **“Display Properties”** window.
79. Remove the disk from drive A:
80. Select the **“Yes”** button on the **“System Settings Change”** dialog box to restart the computer.
81. Select the **“OK”** button on the **“STB Vision 95”** dialog box.
82. Select the **“OK”** button on the **“STB Vision 95 Monitor Options”** dialog box.
83. Select the **“OK”** button on the **“STB Vision 95”** dialog box.
84. Select the **“OK”** button on the **“Refresh Rate Test”** dialog box.
85. Select the **“OK”** button on the **“STB Vision 95”** dialog box.
86. Select the **“OK”** button on the **“STB Vision 95 Control Panel”**.

### Set CD-ROM Properties

85. Press the **right mouse button** over **My Computer** on the **desktop**.
86. Select **Properties** on the pop-up dialog.
87. Select the **Device Manager** tab on the “**System Properties**” dialog box.
88. Select the **plus sign (+)** to the left of **CD-ROM** to expand the list.
89. Select **TOSHIBA CD-ROM**.
90. Select **Properties** on the **Device Manager** tab.
91. Select **Settings** on the **TOSHIBA CD-ROM Properties** dialog box.
92. **Deselect** “**Auto insert notification**” on the **Settings** tab.
93. Select the **OK** button on the **TOSHIBA CD-ROM Properties** dialog box.
94. Repeat the above five steps (starting with step 89) for each CD-ROM installed.
95. Select the **OK** button on the “**System Properties**” dialog box.

### Set Power Properties

96. Select the **Start** button on the **task bar**.
97. Select **Settings**.
98. Select **Control Panel**.
99. Double-click the **Power icon**.
100. **Deselect** “**When powered by AC power**” on the **Disk Drives** tab.
101. Select the **OK** button on the “**Power Properties**” dialog box.
102. Close the **Control Panel** window by selecting the “**X**” in the upper right hand corner of the window.
103. Get the Sun Machine 400 software package that was set aside in step 3. Using the installation instructions provided in the software package, install the CD ROM Software into the Sun Machine 400.
104. Complete the Field Quality Control Questionnaire SEL 1403C (0692-1834-01) and follow the instructions on the form for mailing.
105. Insert these Installation Instructions in the rear of the Sun Machine 400 Service Manual for future reference.

**NOTE: *This tester is equipped with a 4-gas analyzer: see the Emissions Chapter of the Sun Machine 400 Service Manual for the calibration and checkout.***

**INSTALLATION COMPLETE**