



Performing the Workstation PMI

Technical Manual

Computer Workstation PMI

Exercise Objective:

In this exercise, you'll perform a Preventive Maintenance Inspection on a personal computer. You'll collect the appropriate tools together and use them correctly to complete this exercise.

Name:	
Period:	
Date:	

Discussion of Fundamentals:

We perform the preventive maintenance inspection (PMI) to preserve the reliability of the equipment we use. Through careful inspection, cleaning, and maintenance our computer workstations will perform better and longer than those that are neglected. The PMI also allows us to detect serious problems before they occur and perhaps prevent system crashes and reduce equipment down time.

Required Materials:

- Work Order
- Equipment ID Tag
- Computer Work Station
- Spray and Wipe Cleaner
- Alcohol
- Soft-Bristled Brush
- Stiff-Bristled Brush
- Cotton Swabs
- Lint-Free Towels
- Compressed Air
- Vacuum
- PC Technician Toolkit
- Cleaning Diskette
- Adhesive Remover
- 3½" Floppy Diskette
- Diagnostics Software
- CSS Service Disk

Procedure:

Complete each of the following steps in this exercise. When you see a √... That's an indication that you need to do something. This is an **abbreviated** guide to performing a preventive maintenance inspection of a computer workstation. Refer to the **PC Preventive Maintenance Guide Technical Manual** for details on how to complete each step. Print out this exercise and use it to keep track of your progress while performing the following steps.

A. INITIAL WORKSTATION INSPECTION

Preparation: Workstation completely assembled and operational. Power **OFF**. Rings, watches and jewelry must be removed.

- 1.√ Make sure you have a valid work order and the equipment has an ID tag on it if the item is in the shop.
- 2.√ Inspect for any defective or missing parts. Record the parts and a description of their defect on the work order.
- 3.√ Visually inspect the workstation to be sure the...
 - ✓ Power supply selector switch is set to the appropriate voltage.
 - ✓ Computer and monitor power cables are connected.
 - ✓ Monitor's video cable is connected to the computer's video card.
 - ✓ Keyboard is connected to the computer.

- ✓ Mouse is connected to the correct computer port.

() Supervisor Check

- 4.✓ Turn the monitor on and wait a few minutes for it to warm up.
- 5.✓ Turn the computer on and observe the monitor screen. It should blank and then display various boot up messages. If not, turn the computer off and ask for supervisor assistance.
- 6.✓ Allow the computer to boot to the DOS prompt or Operating System.

() Supervisor Check

- 7.✓ Turn the computer and monitor off.
- 8.✓ Disconnect all power and data cables from the back of the computer.
- 9.✓ Remove all workstation components from the computer table.
- 10.✓ Wipe down the computer table with spray and wipe detergent.

() Supervisor Check

B. CENTRAL PROCESSING UNIT (CPU)

Preparation: Workstation disassembled with the CPU's power **OFF** and **unplugged**. Rings, watches and jewelry must be removed.

- 1.✓ Rattle-test the CPU.
- 2.✓ Position the CPU on the computer table or workbench.
- 3.✓ Remove the CPU cover placing the mounting screws in a parts box or bag.
- 4.✓ Set the cover off to the side.
- 5.✓ Examine the inside of the CPU and Inspect for any defective or missing parts. Look for cut cables, loose connectors or hardware, and burned components. Record any defects on your work order.
- 6.✓ Test the CMOS backup battery and record the voltage on your work order.
- 7.✓ If the voltage is below 2 VDC remove and replace the battery.

() Supervisor Check

- 8.✓ Check for chip-lift and reseal socketed chips on the mainboard if necessary.
- 9.✓ Clean the adapter card edge connectors and reseal the interface cards on the mainboard.
- 10.✓ Vacuum or blowout the inside of the computer cabinet.

() Supervisor Check

- 11.✓ Reinstall the case cover.
- 12.✓ Wipe down the exterior of the CPU cabinet cleaning off any streaks or smudges.
- 13.✓ Remove any unnecessary adhesive labels or tape. Clean off any adhesive residue with adhesive remover.
- 14.✓ Position the CPU on the computer table ready to use.

() Supervisor Check

C. PC MONITOR

Preparation: Workstation disassembled with the Monitor's power **OFF** and **unplugged**. Rings, watches and jewelry must be removed.

- 1.√ Examine the monitor and inspect for any defective or missing parts. Record these parts and a description of their defect on the work order.
- 2.√ Rattle test the monitor.
- 3.√ Clean air vents and cabinet seams.
- 4.√ Clean all external surfaces.
- 5.√ Remove any unnecessary adhesive labels or tape.
- 6.√ Wipe down the monitor cabinet and display screen cleaning off any streaks or smudges.

() Supervisor Check

D. PC KEYBOARD

Preparation: Workstation disassembled with the keyboard **unplugged**. Rings, watches and jewelry must be removed.

- 1.√ Put the keyboard feet in their home position.
- 2.√ Examine the keyboard looking for any defective or missing parts. Record these parts and a description of their defect on the work order.
- 3.√ Rattle test the keyboard. Investigate and correct if the keyboard fails the rattle test.
- 4.√ Clean between the keycaps with a soft bristled brush. Create a cleaning hole if necessary.
- 5.√ Using compressed air or vacuum, carefully remove any dust or debris from the keyboard.
- 6.√ Use a swab wet with alcohol sides of each keycap.
- 7.√ Clean the tops of all keycaps and all external surfaces with spray and wipe cleaner.
- 8.√ Remove any unnecessary labels or tape.

() Supervisor Check

E. PC MOUSE

Preparation: Workstation disassembled with the mouse **unplugged**. Rings, watches and jewelry must be removed. If you are inspecting an optical mouse, skip to the last step.

- 1.√ Examine the mouse looking for defective or missing parts. Record these parts and a description of their defect on the work order.
- 2.√ Rattle test the mouse. Investigate and correct if the mouse fails the rattle test.
- 3.√ Remove the mouse ball retaining ring and mouse ball from the mouse housing. Disassemble the mouse only if necessary.
- 4.√ Using compressed air or vacuum, carefully remove any dust or debris from the inside of the mouse housing.
- 5.√ Use a swab wet with spray cleaner to clean the position rotors and pressure rollers. You may need to use a fingernail or the wooden end of the swab to break caked-on dirt loose from the rotors.
- 6.√ Clean the mouse ball by gently washing it with a lint-free towel wet with spray cleaner.

- 7.√ Reassemble the mouse housing.
- 8.√ Remove any unnecessary adhesive labels or tape.
- 9.√ Wipe down the outside surface of the mouse with spray and wipe detergent.

() **Supervisor Check**

F. OS, System, and Drive Maintenance

Preparation: Workstation completely assembled and **plugged in.**

Workstation Inspection

- 1.√ Turn ON the monitor and let it warm up.
- 2.√ Observe the POST and other boot messages. Investigate and correct any errors. Ask your supervisor for help if necessary.

() **Supervisor Check**

OS and Software Update

- 1.√ Install the latest OS updates and service packs.
- 2.√ Install the latest Antivirus Signature update.

() **Supervisor Check**

Data and Information Backup

- 1.√ Using the Windows Backup Utility, backup all BATCH files to a floppy disk.

() **Supervisor Check**

Diagnostics Testing

- 1.√ Run diagnostics software to perform a quick test of the CPU, memory, display, keyboard, mouse, and disk drives. Record any discrepancies on your work order and inform your supervisor.

() **Supervisor Check**

Floppy Disk and CDROM Drive Head Cleaning

- 1.√ Clean the floppy disk drive heads.
- 2.√ Clean the CDROM drive head lens.

() **Supervisor Check**

Hard Disk Drive Maintenance

- 1.√ Run the ANTIVIRUS detection software on all executable files.
- 2.√ Run the surface check utility. (SCANDISK)
- 3.√ Run the disk optimization utility. (DEFRAG)

() **Supervisor Check**

G. WORKSTATION SETUP

Preparation: Workstation completely assembled and **plugged in.**

- 1.√ Position the workstation components as they would be used by the customer.
- 2.√ Adjust all the front panel controls for an appropriate display.

Contrast	Center Position
Brightness	Center Position
Horizontal	Display Field Centered Left to Right
Width	.25" Margin on Left and Right Side of Display Screen
Vertical	Display Field Centered Top to Bottom
Height	.25" Margin on Top and Bottom of Display Screen
Pincushion	Left and Right Edges of Display are Straight
Degauss	Degauss the monitor screen

- 3.√ Adjust focus for the sharpest image.
- 4.√ Organize all data and power cables in a neat and orderly fashion.
- 5.√ Gather tools and supplies and throw away used materials.
- 6.√ Wipe down the work area one last time.
- 7.√ Have the customer sign the Work Order once the job is complete.
- 8.√ Return the completed Work Order to the dispatcher.