

PC9/P9 Chassis Fan Replacement

Introduction

These instructions explain how to replace the fans that cool the maintenance compartment and the configuration bay in the PC9 Industrial PC or the P9 PowerStation. They include steps for disassembling the unit, removing an old fan, installing a new fan, and reassembling the unit.



Warning For safety reasons, the unit should be opened only by qualified service personnel.

Warning Be sure to observe electrostatic discharge (ESD) precautions while working inside the unit.

To complete this procedure, you will need the following items:

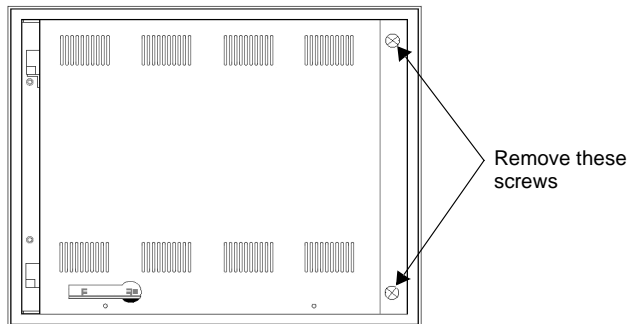
- Replacement Fan for PC9/P9 (FAN-9000)
- Phillips-head screwdriver
- 5/16" nut driver

Disassembling the Unit

To disassemble the unit, follow these steps:

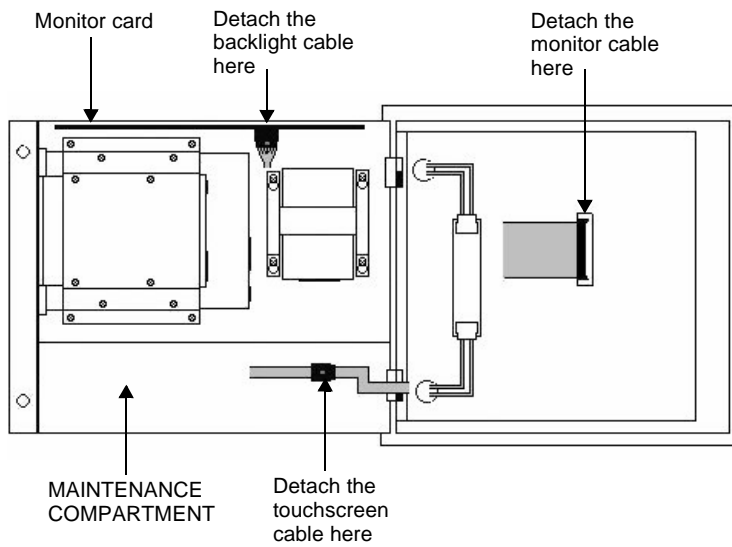
1. Turn off the unit.
2. Disconnect the unit from the power source.
3. Disconnect all cables attached to the unit.
4. Remove the two screws securing the backshell to the faceplate assembly, as shown in Figure 1 on page 2.

Figure 1: Opening the Backshell



5. Swing the backshell away from the faceplate.
6. Detach the three cables connecting the faceplate assembly and backshell, as shown in Figure 2.

Figure 2: Disconnecting Cables

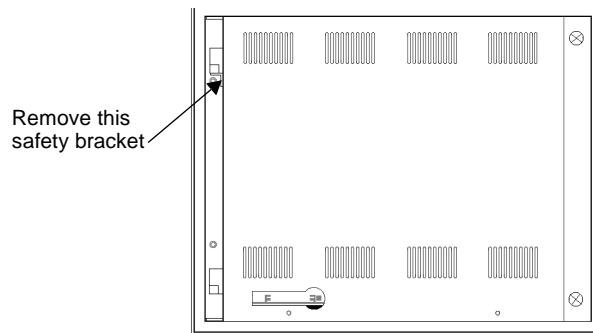


- a. Detach the monitor (ribbon) cable from its connection at the center of the monitor frame (push back the locking clamps from either side of the connector).
- b. Detach the touchscreen cable from its extender in the maintenance compartment.

- c. Detach the backlight cable from its connection on the monitor card (press down on the small tab on the lower half of the connector, and pull the cable out).
7. Remove the safety bracket below the upper hinge of the backshell by removing the screw that holds the bracket in place. This bracket is shown in Figure 3.

Warning Make sure that both the faceplate assembly and backshell are supported when you remove the safety bracket and when you open the backshell.

Figure 3: Removing the Safety Bracket



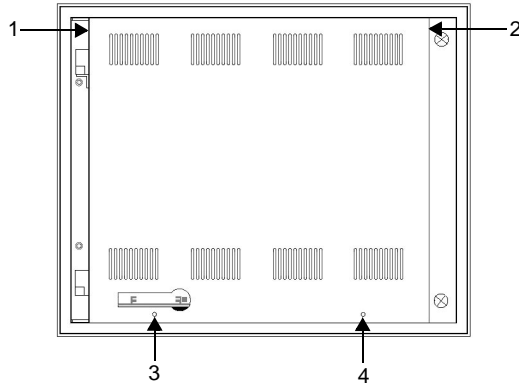
8. Lift the backshell off its hinges, and place it on a static dissipative mat, in a location free from dirt and moisture and protected against static discharge. You may leave the faceplate mounted in the enclosure.

Warning When lifting the backshell, grasp it from the outside. Be careful **not** to touch the monitor card, located inside the top of the maintenance compartment. The monitor card is shown in Figure 2 on page 2.

9. If you are replacing the configuration bay fan, remove the four retaining screws holding the back cover onto the unit, as shown in Figure 4 on page 4.

Note Screws 1 and 2 are located at the sides of the cover; screws 3 and 4 are in the back of the cover.

Figure 4: Removing the Back Cover



10. Slide the back cover off the unit.

Removing an Old Fan

Fan removal procedures will differ, depending upon whether you are replacing the maintenance compartment fan or the configuration bay fan. Both procedures are described below.

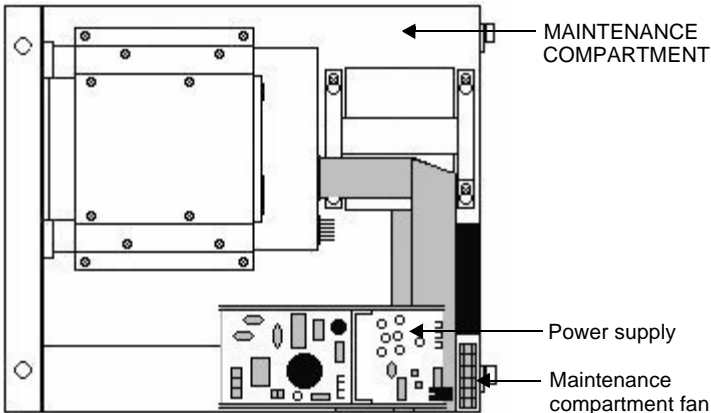
Removing the Maintenance Compartment Fan

To remove the maintenance compartment fan, you must first remove the system's power supply. This section gives instructions for removing both components.

To remove a previously installed maintenance compartment fan, follow these steps:

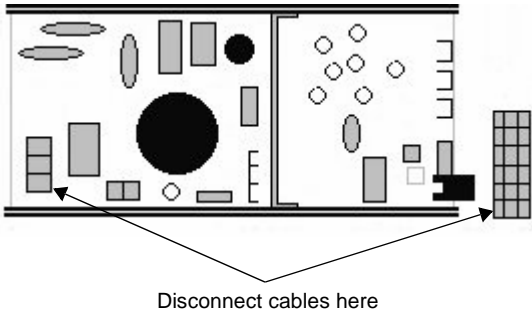
1. Locate the maintenance compartment fan and the power supply in the maintenance compartment, as shown in Figure 5 on page 5.

Figure 5: Maintenance Compartment



- 2. Disconnect the cables at the left and right sides of the power supply, as shown in Figure 6.

Figure 6: Disconnecting the Power Supply Cables

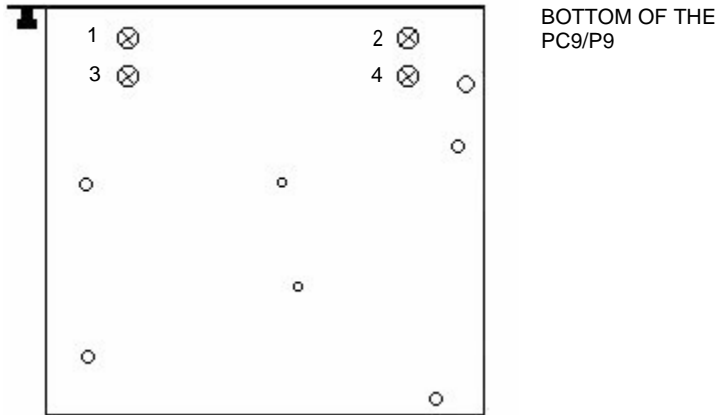


- a. Detach the cables on the left from the power supply itself.
- b. Detach the cables on the right from the connector just to the right of the power supply.

Important Each set of cables is gathered in a cable harness, and each harness has a plastic tab that you must pull back in order to detach the harness.

- 3. Lay the unit on its back so that the bottom of the unit is facing you.
- 4. While holding the power supply in place, remove the four retaining screws that secure the power supply to the bottom of the unit. These screws (1, 2, 3, and 4) are shown in Figure 7 on page 6.

Figure 7: Removing the Power Supply Screws



Remove screws 1, 2, 3, and 4

Important These four screws are of different sizes, and two (screws 1 and 2) are secured by nuts on the inside of the unit. Be sure to capture the nuts when you remove the screws. When you install the new power supply, replace the same size screws in the same locations as the ones you removed.

5. With the power supply removed, detach the maintenance compartment fan cable from its connection on the riser card.

Note Note where this connection is so that you can attach the new fan cable in the same place.

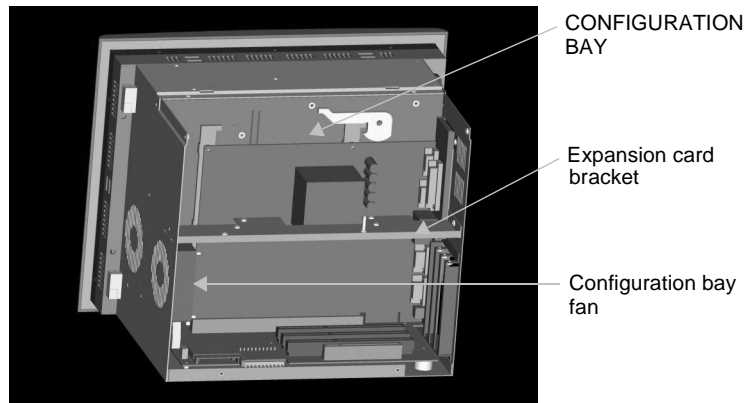
6. Using the nut driver, remove the four nuts holding the fan in place.
7. Slide the fan off the four screws on which it is mounted.

Removing the Configuration Bay Fan

To remove a configuration bay fan, follow these steps:

1. Locate the fan at the left side of the configuration bay, as shown in Figure 8 on page 7.

Figure 8: Configuration Bay Fan



2. Remove the expansion card bracket and any installed expansion cards.
3. Detach the fan cable from its connection on the riser card.

Note Note where this connection is so that you can attach the new fan cable in the same place.
4. Using the nut driver, remove the four nuts holding the fan in place.
5. Slide the fan off the four screws on which it is mounted.

Installing a New Fan

To install a new fan, follow these steps:

1. Slide the new fan onto its four mounting screws:
 - If you are installing a maintenance compartment fan, make sure that the arrow on the side of the fan is pointing toward the inside of the unit.
 - If you are installing a configuration bay fan, make sure that the arrow printed on the side of the fan is pointing toward the outside of the unit.

Warning You can mount the new fan in any orientation. However, make sure that the arrow on the side of the fan is pointing in the direction indicated above.

2. Attach the fan cable to its connection on the riser card—the same place from which you removed the old fan cable in step 3 above.

Warning Make sure that no part of the cable will become entangled in the fan blades.

3. Using the nut driver, replace the four nuts that you removed in step 4 above, when removing the old fan.

Important Fasten the nuts snugly, but do not overtighten them, or you could crack the fan housing.

4. If you are installing a maintenance compartment fan, replace the power supply by completing the following steps:
 - a. Place the unit on its back.
 - b. Replace the power supply in the unit, aligning the screw holes in the bottom of the power supply with those in the bottom of the unit.
 - c. Replace the four screws that you removed when removing the power supply. Be sure to include the nuts with screws 1 and 2.
 - d. Re-attach the two sets of cables that you disconnected from the power supply in step 2 on page 5.
 - e. Turn the unit upright.
5. If you are installing a configuration bay fan, replace any expansion cards and the expansion card bracket that you removed in step 2 on page 7.

Reassembling the Unit

To reassemble the unit, follow these steps:

1. If you replaced the configuration bay fan, complete the following steps:
 - a. Fit the two tabs in the top of the back cover into the two slots at the top of the configuration bay.
 - b. Slide the back cover onto the unit.

2. Replace the backshell on its hinges.

Warning When lifting the backshell, grasp it from the outside. Be careful **not** to touch the monitor card, located inside the top of the maintenance compartment. The monitor card is shown in Figure 2 on page 2.

3. Re-attach the backlight cable, touchscreen cable (if necessary), and monitor cable to their connections. (Press the monitor cable connector into its socket until the locking clamps on either side of the socket snap into place).
4. Close the backshell against the faceplate assembly.
5. Replace the safety bracket that you removed in step 7 on page 3, and fasten it in place with its retaining screw.
6. Fasten the backshell to the unit by replacing the two screws that you removed in step 4 on page 1.
7. Reinstall the unit in its enclosure.
8. Reconnect power and other cables to the unit.

Your fan replacement is complete. You may now restart the unit.

