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IPC-610

Industrial PC Chassis

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Chapter 1 General Information

1.1 Introduction

The IPC-610 is a PC/AT-compatible computer designed for industrial applications. This rugged, all-steel chassis meets the EIA RS-310C 19" rackmount standard. The unit includes a 14-slot PC-bus compatible passive backplane, and a more efficient switching power supply in a single fan-cooled chassis.

The passive backplane configuration of the IPC-610 minimizes downtime, simplifies troubleshooting, makes upgrading easier and allows for a more efficient system package. All electronic components are modular in design and can be easily serviced. The IPC-610 accommodates most plug-in cards, including CPU, video, disk controller, and I/O interface cards. They can be conveniently installed and replaced from the top of the unit.

The IPC-610 will withstand shock, vibration, dust, and a wide range of operating temperatures in harsh industrial environments. The chassis is positively pressurized by two filtered push-pull cooling fans to exclude dust and dirt. A lockable door protects drives and switches from tampering and foreign particles.

Note: There are several special versions of the IPC-610 also available. The IPC-610MB-XXX is designed to use the popular and inexpensive "Baby AT" and "ATX" form-factor motherboards. The IPC-610-XXX-25X is designed to use the popular "ATX" 250 W power supply. For more detailed information, contact your local dealer.

1.2 Specifications

General

- **Construction**: Heavy-duty steel
- **Disk drive capacity**: Two half-height 5¼" drives and one 3½" drive accessible from the front panel; and two 3½" HDDs inside the chassis
- **Cooling system**: One 32 CFM cooling fan (flow-out) on the rear panel for the power supply, another 86 CFM fan (flow-in) on the front panel with an air filter
- **Keyboard connector**: Pre-wired DIN connectors on both front and rear panels
- **Controls**: Reset, power on/off and keyboard-lock switches
- **Indicators**: LEDs for power on/off, HDD and keyboard-lock
- **Speaker**: One 8 Ω, ¼ watt speaker
- **Weight**: 19 kg (41.8 lbs)
- **Paint color**: Pantone 415C (light gray)
- **Dimensions (W x D x H)**: 482 x 452 x 177 mm (19" x 17.8" x 7")

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Environmental Specifications

- **Operating temperature**: 0 ~ 50° C (32 ~ 122° F)
- **Relative humidity**: 10 ~ 95% @ 40° C, non-condensing
- **Vibration (operating)**: 5 ~ 17 Hz, 0.1" double amplitude displacement; 17 ~ 500 Hz, 1.5 g acceleration peak to peak
- **Shock (operating)**: 10 g acceleration peak (11 ms duration)
- **Safety**: C-UL approved
- **EMI**: Meets FCC/VDE Class A
- **CE compliant**

1.3 Dimensions

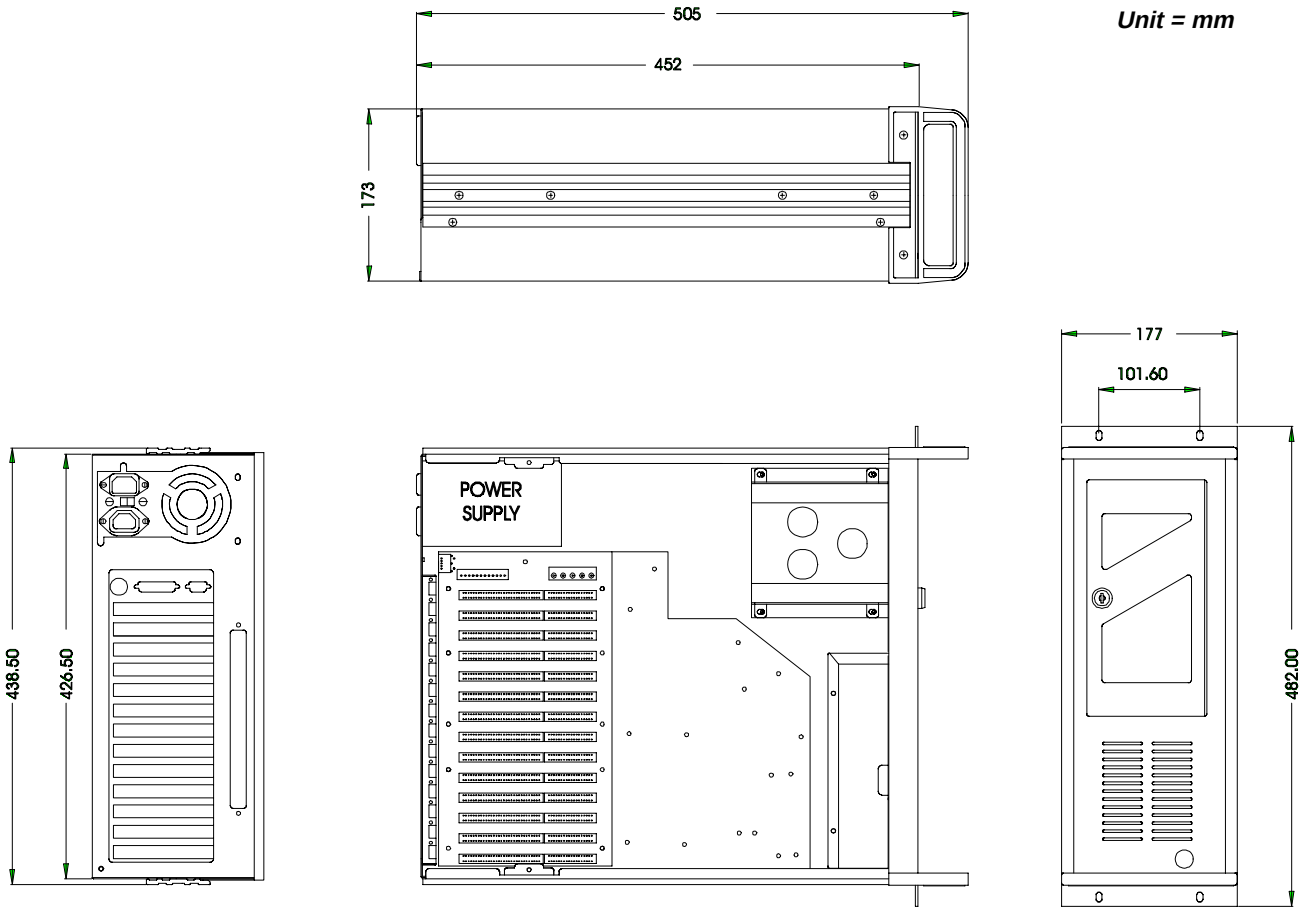


Figure 1-1: IPC-610 dimensions

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Chapter 2 System Setup

Setting up your IPC-610 requires only a screwdriver and a small amount of time. Before you begin, you should also gather together all of the cards you plan to install, as well as the keyboard you plan to use.

A lockable door is located on the chassis front cover, providing access to the control panel. This offers protection and security against damage and unauthorized access. The control panel functions include power on/off, keyboard lock, reset switch and three LED indicators (power on, keyboard lock and HDD) to assist in monitoring system status. On the rear panel there is a grounding point (earthing point) located on the bottom right hand corner. This provides an earth for the whole system and is attached via a screw.

WARNING: Disconnect all power from the chassis before you install the CPU cards. Unplug the power cord from the wall; turning off the power switch alone is not sufficient. If you are not sure what to do, take the job to an experienced professional.

2.1 Removing the Cover

There are screws which secure the cover to the chassis. They are along the sides, near the top. Remove them, and then slide the cover to the rear of the chassis. See Fig. 2-1 below:

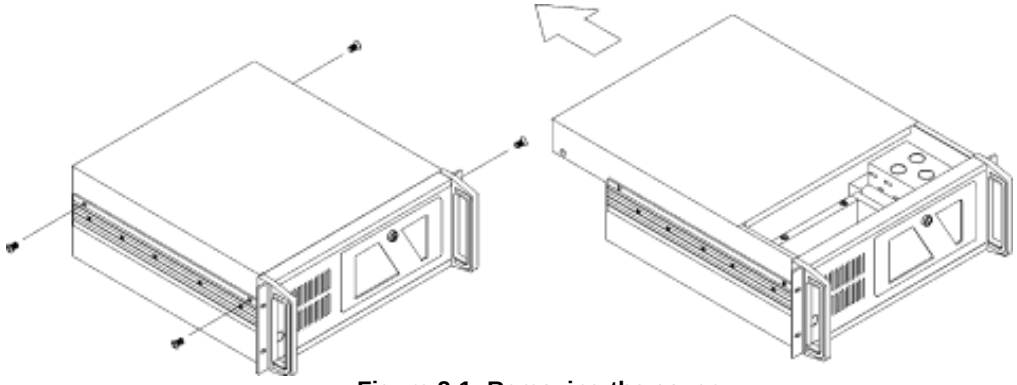


Figure 2-1: Removing the cover

2.2 Adding Your Disk Drives

1. Remove the four outer screws which mount the shock-resistant drive-bay to the chassis. (See Fig. 2-2)
2. Slide the drive bay about 2 cm toward the rear, to a location where it is not obstructed by the upper rim. Lift it free of the chassis.
3. Remove the cover to the drive bay front and insert the drives into their proper locations in the drive bay. (See Fig. 2-3)

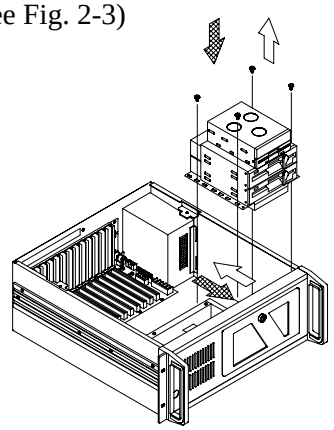


Figure 2-2: Inserting/removing the drive bay

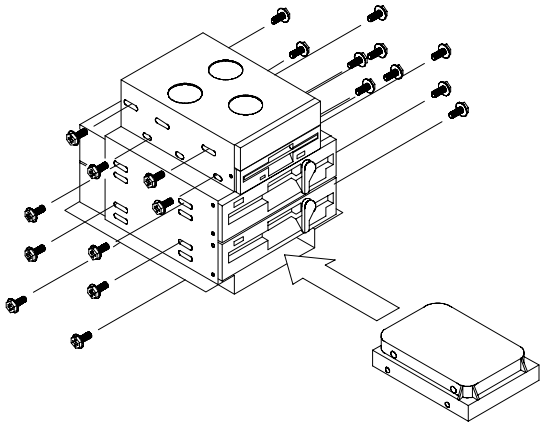


Figure 2-3: Inserting the drives into the drive bay

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2.3 The Hold-down Clamp

The IPC-610 uses a hold-down clamp to ensure the plug-in cards are securely fastened. It also offers protection against shock and vibration. To install your cards into the passive backplane, proceed as follows:

1. Detach the hold-down clamp by removing the two screws located at each end and lifting it off the chassis. (See Fig. 2-4)
2. Insert the rubber buffers (provided) into the hold-down clamp. These buffers offer the plug-in cards two levels of protection against vibration. (See Fig. 2-5)

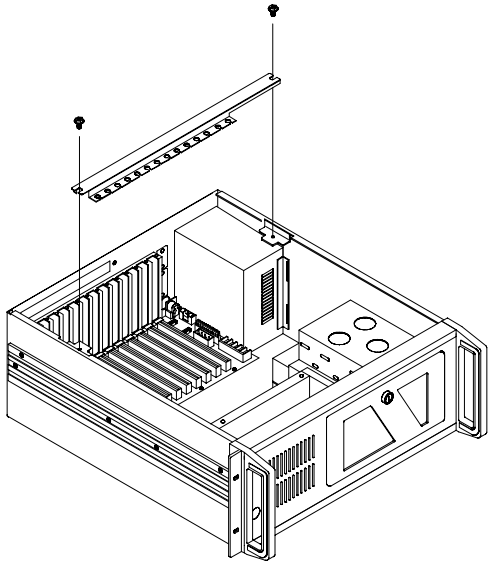


Figure 2-4: Detaching the hold-down clamp

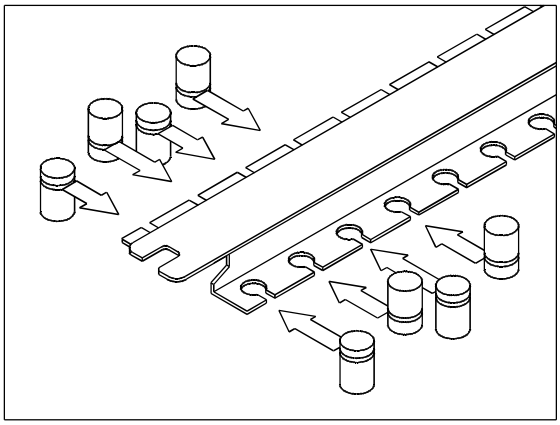


Figure 2-5: Inserting the rubber buffers

2.4 Connecting the Keyboard

Two 5-pin DIN keyboard connectors, wired in parallel, are provided. One is on the front panel, near the fan intake; and one is on the rear of the chassis, next to the power supply. You may connect your keyboard to either. Note that both connectors are notched for correct orientation. (See Figs. 2-6 and 2-7 below)

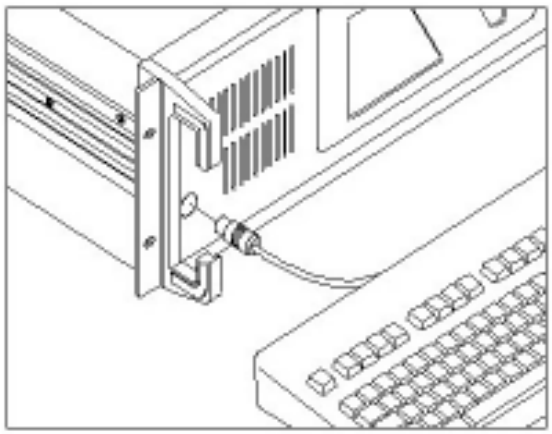


Figure 2-6: Front keyboard connection

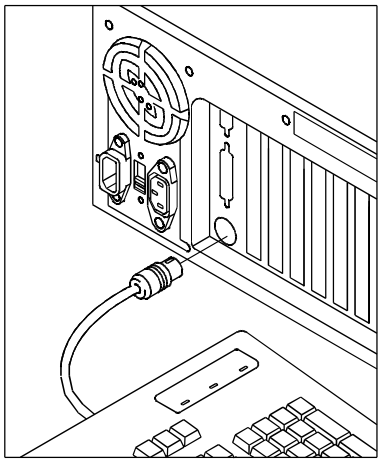


Figure 2-7: Rear keyboard connection

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2.5 Replacing the Filter

The filter is located next to the lockable door. Under continuous use, the filter should be removed about once a month. To replace the filter, refer to Fig. 2-8 below and do the following:

1. Open the lockable door.
2. Take the filter out by gently pulling the tab and sliding the filter to the right.
3. Slide a new filter in until it snaps into place.
4. Close and lock the lockable door.

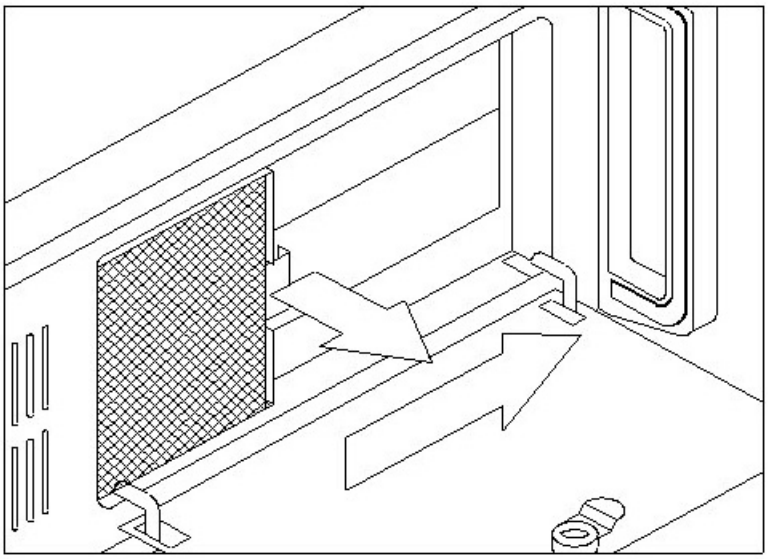


Figure 2-8: Replacing the filter

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Appendix A Rear Cover and Window

A.1 Changing the Rear Cover According to Power Supply Used

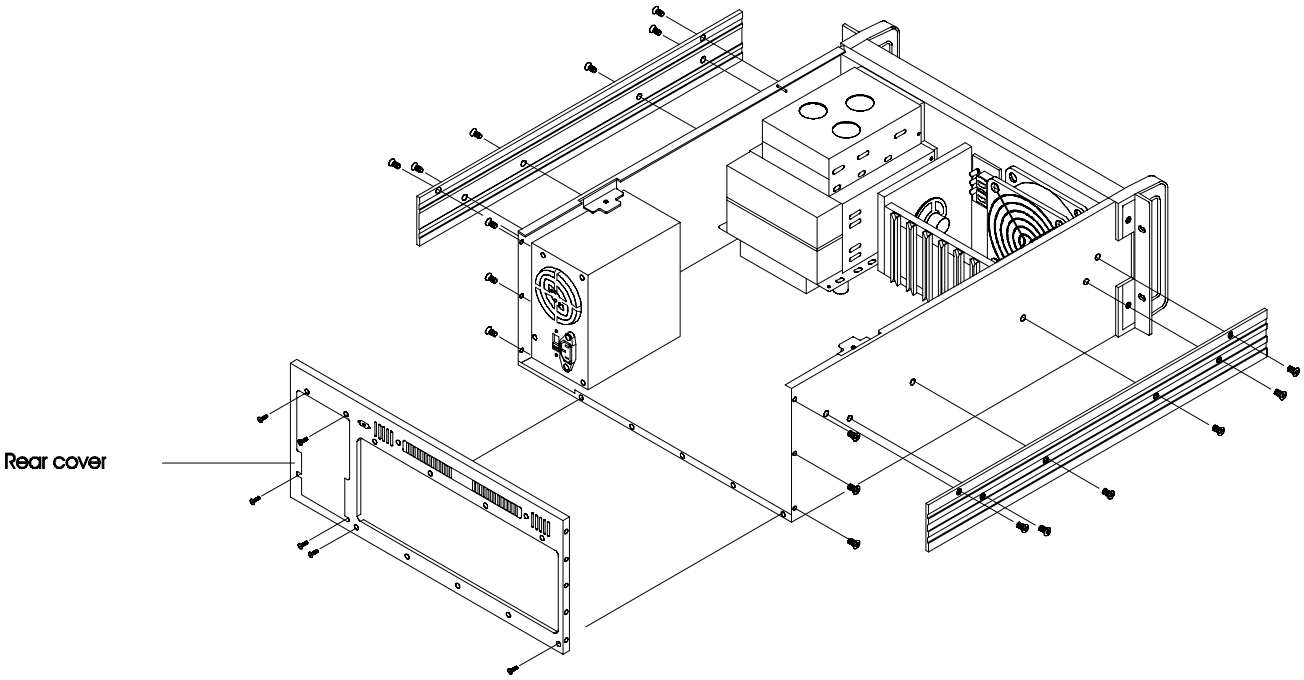


Figure A-1: IPC-610 with PS/2 size power supply

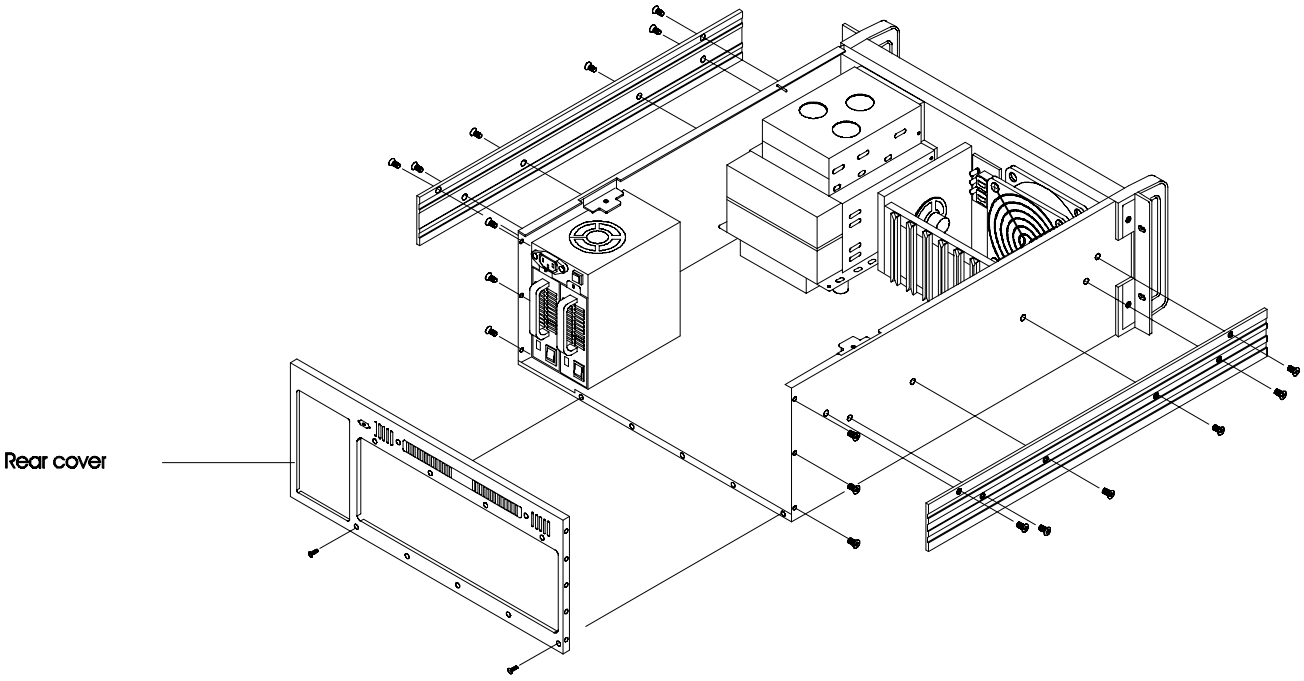


Figure A-2: IPC-610 with redundant power supply

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A.2 Changing the Rear Window of the Backplane

1. Select the backplane you want to install, such as the PCA-6114, PCA-6114P4, PCA-6114P4R, PCA-6114P7, PCA-6114P10, etc.
2. To change the backplane's rear window, see Fig. A-3.

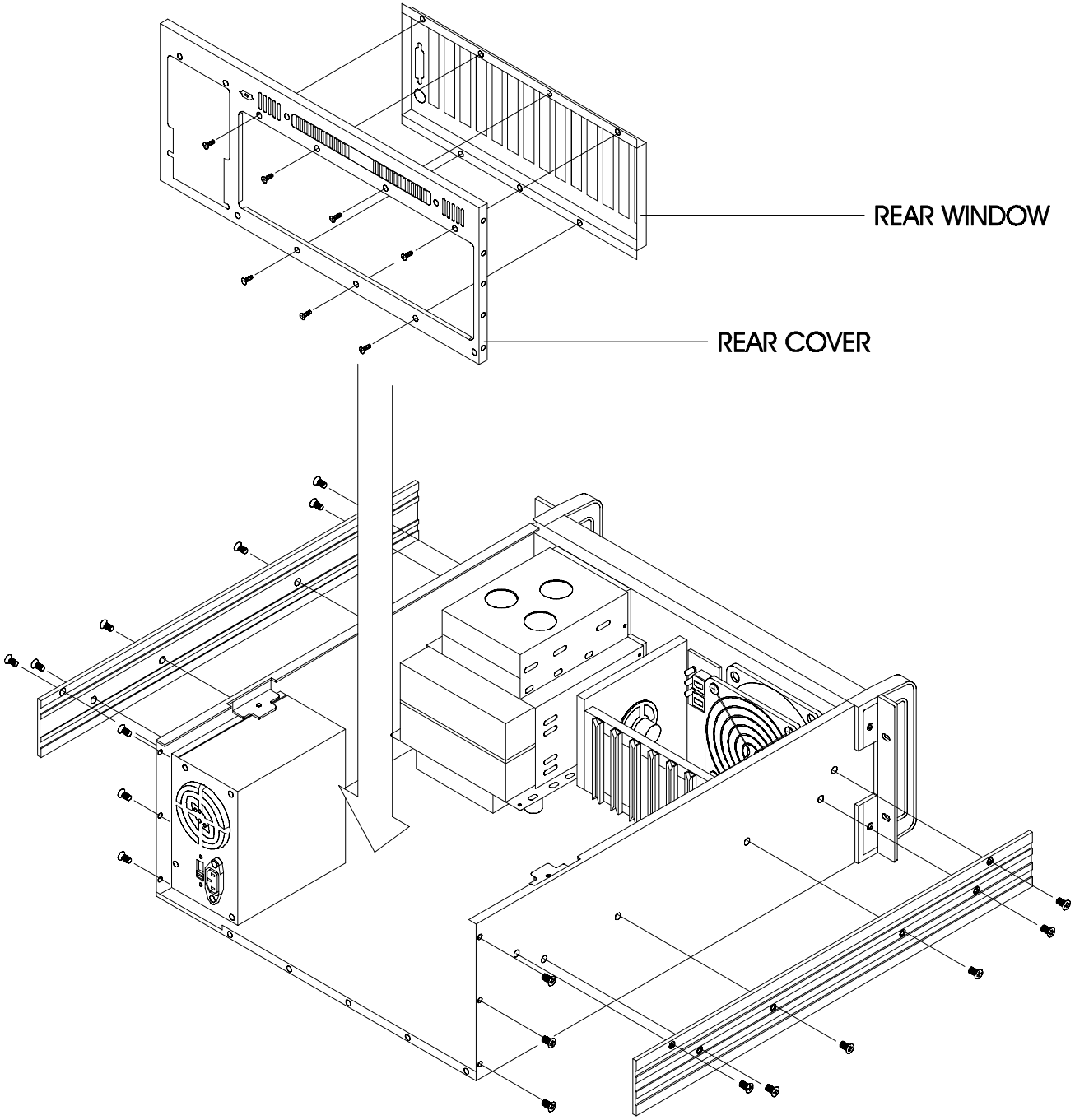


Figure A-3: Rear window of IPC-610 for standard 14-slot backplane, with PS/2 size power supply

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Appendix B Exploded Diagrams

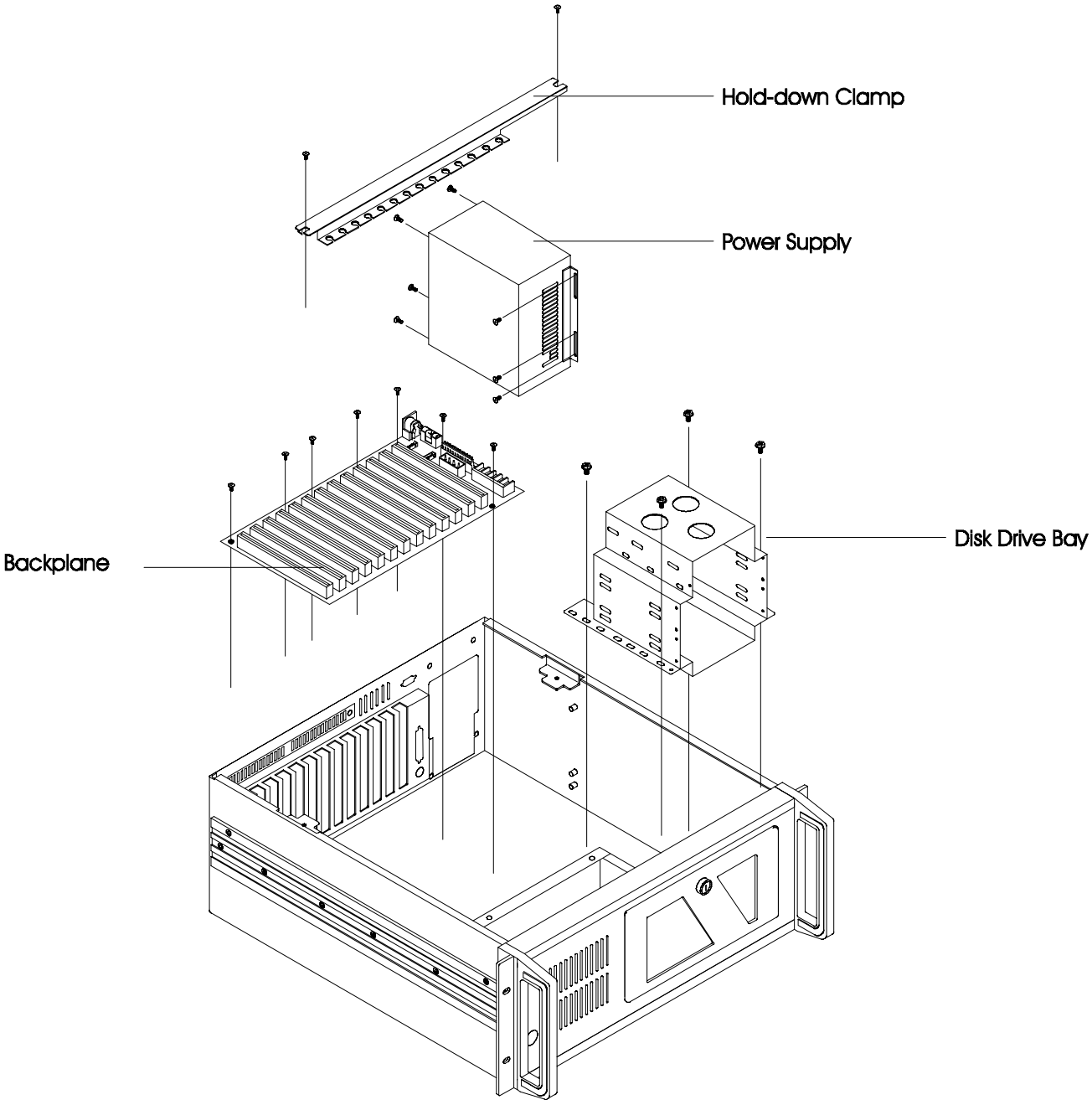


Figure B-1: IPC-610 exploded diagram (internal components)

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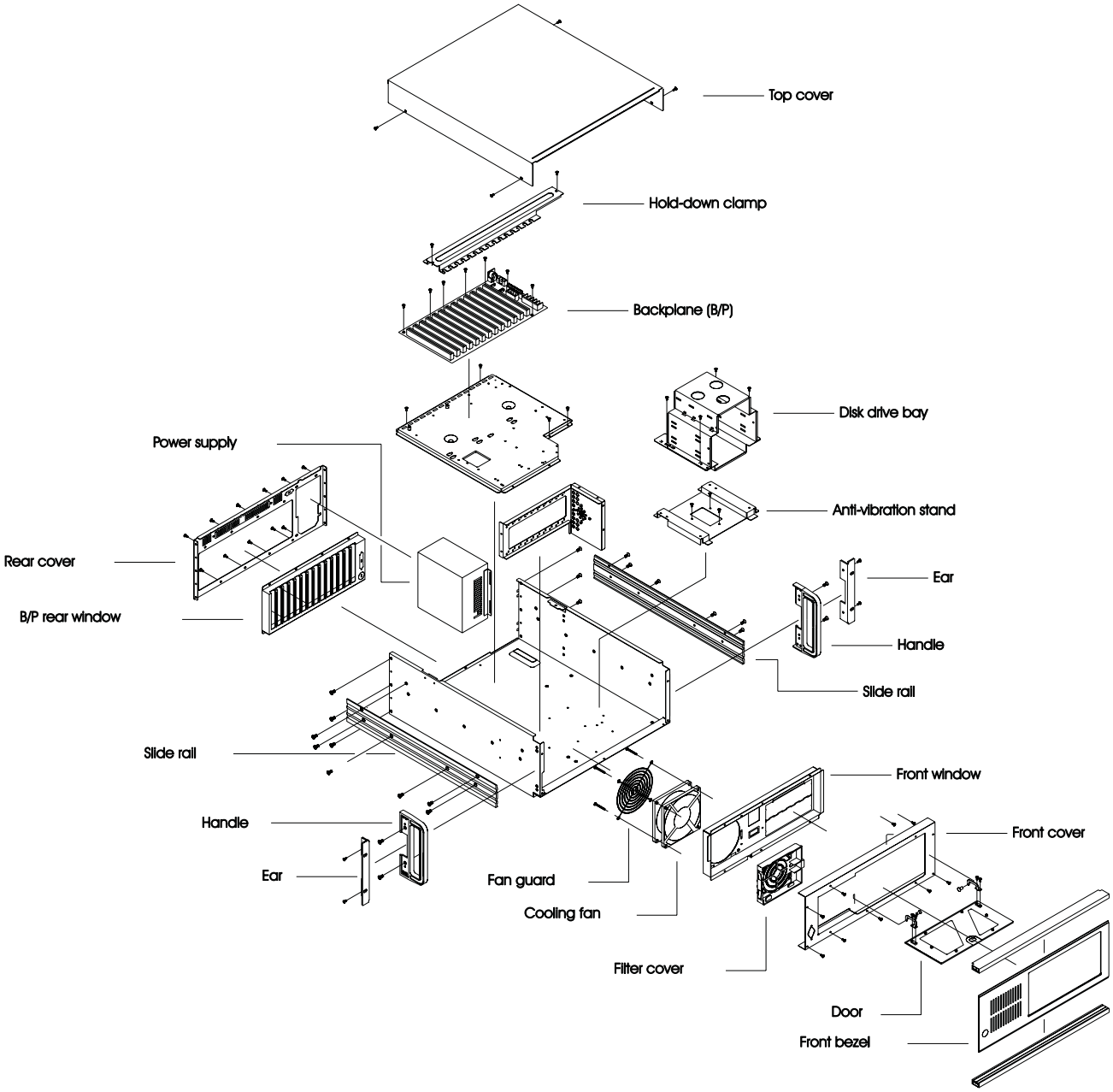


Figure B-2: IPC-610 exploded diagram (case components)

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Appendix C Safety Instructions

C.1 English

1. Read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3 . Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or sprayed detergent for cleaning. Use a moist sheet or cloth for cleaning.
4. For pluggable equipment, the socket-outlet should be installed near the equipment and should be easily accessible.
5. Keep this equipment protected from humidity.
6. Lay this equipment on a reliable surface when installing it. A drop or fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct when connecting the equipment to the power outlet.
9. Place the power cord in such a way that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the mains to prevent damage from transient overvoltage.
12. Never pour any liquid into any opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should only be opened by qualified service personnel.
14. If any of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well or you cannot get it to work according to this User's Manual.
    e. The equipment has been dropped and/or damaged.
    f. The equipment has obvious signs of breakage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONDITIONED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.

    The sound pressure level at the operator's position according to IEC 704-1:1982 is equal to or less than 70 dB(A).

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C.2 German - Wichtige Sicherheishinweise

1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die NetzanschluBsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daB diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim AnschluB an das Stromnetz die AnschluBwerte.
9. Verlegen Sie die NetzanschluBleitung so, daB niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von authorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
    a: Netzkabel oder Netzstecker sind beschädigt.
    b: Flüssigkeit ist in das Gerät eingedrungen.
    c: Das Gerät war Feuchtigkeit ausgesetzt.
    d: Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioni ert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
    e: Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
    f: Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weiger.

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