

Antec
Believe it.



MINI SKELETON-90

USER'S MANUAL

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MINI SKELETON-90 USER'S MANUAL

THINK BEYOND THE BOX

At Antec, we continually refine and improve our products to ensure the highest quality. It's possible that your new case will differ slightly from the descriptions in this manual. This isn't a problem; it's simply an improvement. As of the date of publication, all features, descriptions, and illustrations in this manual are correct.

Disclaimer

This manual is intended only as a guide for Antec's computer enclosures. For more comprehensive instructions on installing the motherboard and peripherals, please refer to the user's manuals that come with those components.

The innovative Mini Skeleton case by Antec features an open-air design, giving you the freedom to design your ideal Mini-ITX computing solution without the usual limitations that come with a standard enclosure. This enclosure consists of two major parts – the Component Tray and the Frame. The Component Tray is the main structure holding your motherboard, 5.25" device, HDDs and power adapter/PCB. It can slide in and out of the Frame for component installation.

The Mini Skeleton comes with the EP-90 90-watt power adapter, which supplies your computer with sufficient power to operate reliably.

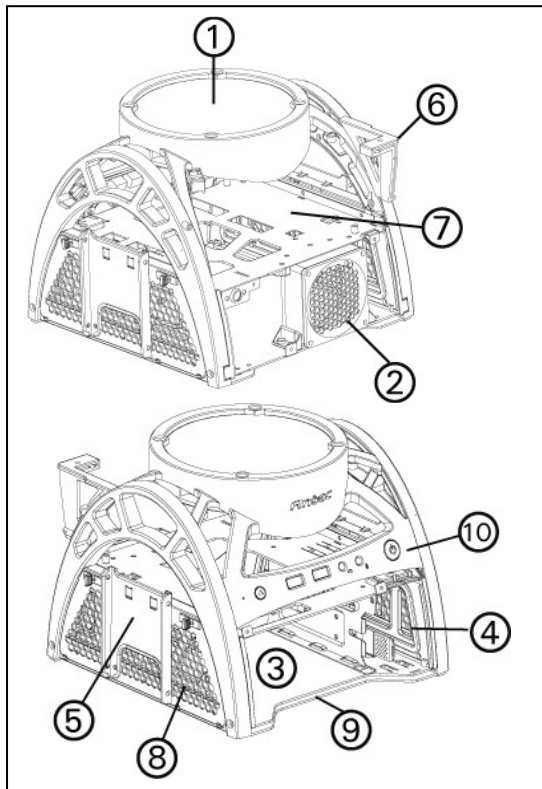
Note: The Mini Skeleton comes without any panels or cover. Antec does not recommend that users place any liquid-containing items (drinks, food, sprays, etc.) near it. It is highly recommend that you keep your pets or children away from it.

1.1 CASE SPECIFICATIONS

Case Type	Open-Air Mini-ITX
Color	Metallic Silver
Dimensions	7.5" (H) x 8.3" (W) x 9.1" (D) 190mm (H) x 210mm (W) x 230mm (D)
Weight	5.5 lbs / 2.5 kg
Cooling	1 x 150mm 3-Speed Blue LED Overhead Fan 1 x 70mm Rear Intake Fan
Drive Bays	2 x Quick Release 2.5" Hard Drive Bays 1 x Quick Release 5.25" Bay 2 x Externally Mounted 2.5" Hard Drive Bays
Motherboard Size	Mini-ITX
Front I/O Panel	2 x USB 2.0 Audio In and Out (HDA and AC'97)
Power Supply	EP-90: 90-watt power adapter and PCB

1.2 DIAGRAM

1. Top 150mm TriCool™ 3-speed blue LED fan
2. Rear 70mm fan
3. 5.25" drive bay
4. Internal 2 x 2.5" HDD bays
5. External 2 x 2.5" HDD mounts
6. Half-height PCI card mount
7. Motherboard mount – Mini-ITX
8. Removable side screens
9. Removable component tray
10. Front I/O panel
11. EP-90 power adapter (not pictured)



1.3 EP-90 POWER SUPPLY SPECIFICATIONS

The Mini Skeleton-90 is powered by an EP-90 power adapter.

Input Characteristics:

Rated Voltage	Input Voltage Range	Frequency Range
100 VAC ~ 240 VAC	90 VAC ~ 264 VAC	50 Hz ~ 60 Hz

Output Characteristics:

Rated Power	Rated Voltage	Voltage Range	Output Current	Ripple & Noise
90W	19V	18.4V ~ 20.0V	0A ~ 4.7A	300 mV

The EP-90 is rated at least 85% efficient at 100 VAC and 240 VAC input voltage and maximum load.

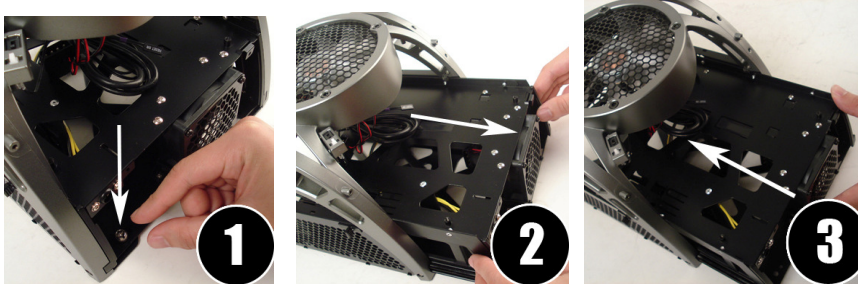
A variety of industrial-grade safety circuitry will help protect your computer: OVP (Over Voltage Protection), SCP (Short Circuit Protection), and OCP (Over Current Protection). Sometimes the PSU will “latch” into a protected shutdown state. This means that you will need to power off the adapter and clear the fault before it will function again.

There are no user-replaceable fuses in the EP-90.

HARDWARE INSTALLATION GUIDE

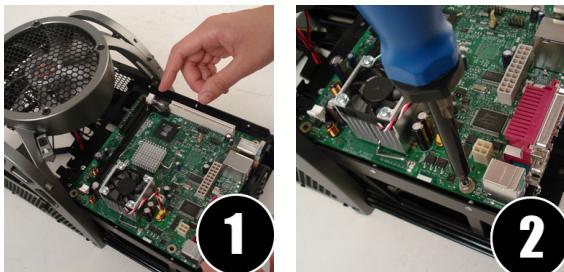
This manual is not designed to cover CPU, RAM, or expansion card installation. Please consult your motherboard user's manual for specific mounting instructions and troubleshooting. Before proceeding, check the manual for your CPU cooler to find out if there are steps you must take before installing the motherboard.

2.1 REMOVING/REPLACING THE COMPONENT TRAY



1. With the rear of the case facing you, remove the thumbscrew at the left side of the Component Tray.
2. Pull back on the rear of the tray until it stops.
3. To replace the tray, slide the tray back into the chassis from the rear until it locks into place, then replace the thumbscrew on the left side of the Component Tray.

2.2 MOTHERBOARD INSTALLATION



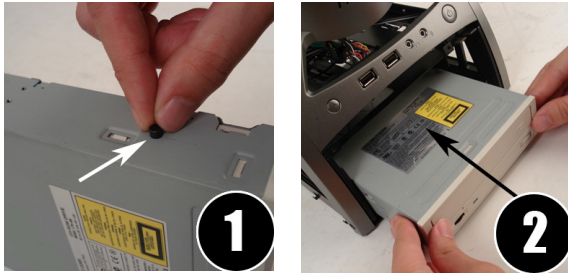
Slide out the Component Tray from the Frame as detailed in section 2.1.

1. Line up the motherboard with the standoff holes on the Motherboard Tray.
2. Screw in the motherboard to the standoffs with the provided Phillips-head screws.

Replace the Component Tray in the Frame as detailed in section 2.1.

Note: You do NOT need to install an I/O panel for the Mini Skeleton. Your motherboard should come with one. Keep it in a safe place. You will need it if you decide to move your motherboard to a traditional case in future.

2.3 5.25" DEVICE INSTALLATION

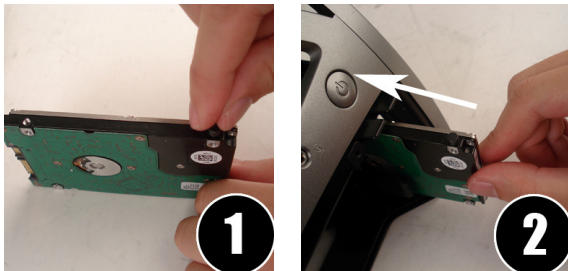


1. In your tool bag, find one of the black screws and attach one to your 5.25" device at the right upper side.
2. While facing the front of the case, insert your 5.25" device into the slot in the Component Tray until it locks into position.

Note: It may be necessary to remove the side screens as detailed in section 2.5 to effectively route cables to your device. Pause when the device is halfway inserted, connect the power and data cabling, and then complete installing the device.

2.4 2.5" DEVICE INTERNAL INSTALLATION

Your Mini Skeleton case has the ability to mount 2.5" hard drive devices vertically inside the frame for convenient storage capacity.

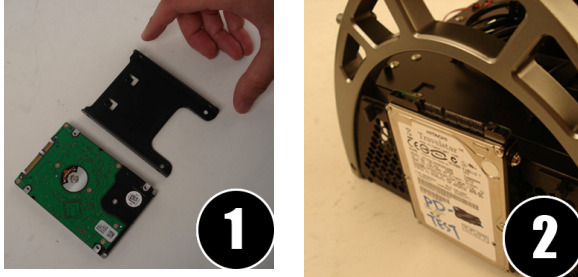


1. In your tool bag, find one of the black screws and attach one to your 2.5" device at the front screw holes.
2. While facing the front of the case, position the 2.5" device vertically and slide it into one of the 2.5" HDD mounting slots in the Component Tray until it locks into position (make sure the black screw faces up).

Note: It may be necessary to remove the side screens as detailed in section 2.5 to effectively route cables to your device. Pause when the device is halfway inserted, connect the power and data cabling, and then complete installing the device.

2.5 2.5" DEVICE FRAME-MOUNTED INSTALLATION

Your Antec Mini Skeleton case has the ability to mount up to two additional 2.5" devices externally on the Frame for additional storage capacity.

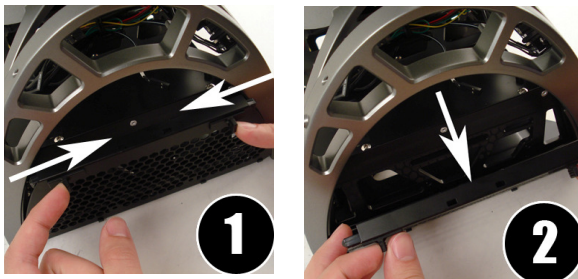


1. Align your 2.5" device with the included 2.5" device mounting plates and secure them together with the included screws.
2. Hook the mounting plate along the sides of the Frame.

Note: It may be necessary to remove the motherboard tray and/or side screens as detailed in section 2.6 to effectively route cables to your devices.

2.6 REMOVING THE FRAME SIDE SCREEN PANELS

Removing the screens on either side of the Frame will allow access to the lower level of the Component Tray for power and data cable routing.

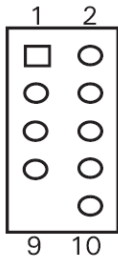


1. Locate and simultaneously press inward the two tabs on the left and right of the screen panel.
2. Pull the panel away from the Frame.

CONNECTING THE FRONT I/O PORTS

3.1 USB 2.0 PORTS

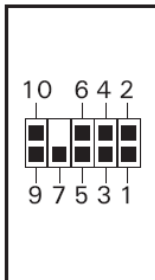
Connect the front I/O panel USB cable to the USB header pin on your motherboard. Check your motherboard user's manual to ensure that it matches the table below:



Pin	Signal Names	Pin	Signal Names
1	USB Power 1	2	USB Power 2
3	Negative Signal 1	4	Negative Signal 2
5	Positive Signal 1	6	Positive Signal 2
7	Ground 1	8	Ground 2
9	Key (No Connection)	10	Empty Pin

3.2 AC'97 AND HD AUDIO PORTS

Connected to your front I/O panel there is an Intel® standard 10-pin AC'97 connector and an Intel® 10-pin HDA (High Definition Audio) connector. The pin assignments for these connectors are as follows:



Pin	Signal Names (HDA)	Pin	Signal Names (AC'97)
1	MIC2 L	1	MIC In
2	AGND	2	GND
3	MIC2 R	3	MIC Power
4	AVCC	4	NC
5	FRO-R	5	Line Out (R)
6	MIC2_JD	6	Line Out (R)
7	F_IO_SEN	7	NC
8	Key (no pin)	8	Key (no pin)
9	FRO-L	9	Line Out (L)
10	LINE2_JD	10	Line Out (L)

You can connect either the AC'97 or the HDA connector, but not both at once, to your motherboard depending on the spec of the motherboard. Locate the internal audio connectors from your motherboard or sound card and connect the corresponding audio cable. Consult your motherboard or sound card manual for the pin-out positions.

3.3 POWER SWITCH / RESET SWITCH / HARD DISK DRIVE LED CONNECTORS

Connected to the front of the Mini Skeleton-90 case Frame are LED and switch leads for power, reset, and HDD LED activity. Attach these to the corresponding connectors on your motherboard. Consult your motherboard manual for specific pin positions. For LEDs, colored wires are positive (+). White or black wires are negative (-). If the LED does not light up when the system is powered on, try reversing the connection. For more info on connecting LEDs to your motherboard, see your motherboard user's manual.



Note: There is no Power LED in this case. The illuminated case fans will turn on when there is power to the computer.

COOLING SYSTEM

4.1 150MM OVERHEAD TRICOOL™ FAN

Because of the Mini Skeleton's unique and innovative open-air design, one 150mm intake fan cools all of your system components. This overhead fan is adjustable to three different speeds, allowing you to choose the best speed suited to your needs. The default speed of the fan is Low.

150mm Fan Specifications:

Size: 150mm
Rated Voltage: DC 12V
Operating Voltage: 10.8V~13.2V

Speed (RPM)	Input Current	Airflow	Static Pressure	Acoustic Noise	Input Power
2600 (max.)	0.3A (max.)	2.8 m ³ / min (100 CFM)	2.56mm-H2O (0.1 inch-H2O)	33 dBA	3.6W
2000	0.22A	2.3 m ³ / min (81.3 CFM)	1.7mm-H2O (0.07 inch-H2O)	28.5 dBA	2.64W
1500	0.2A	1.77 m ³ / min (62 CFM)	1.0mm-H2O (0.04 inch-H2O)	22.8 dBA	2.4W

4.2 70MM REAR FAN

Located on the rear lower level of the Component Tray, one rear 70mm fan provides the air intake for your Mini Skeleton case.

70mm Fan Specifications:

Size : 70mm
Rated Voltage : DC 12V
Operating Voltage : 10.8V~13.2V

Speed (RPM)	Input Current	Airflow	Static Pressure	Acoustic Noise	Input Power
2000	0.12A	0.6 m ³ / min (20 CFM)	1.68mm-H2O (0.066 inch-H2O)	20.2 dBA	1.44W

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