Thermalright AXP-90 X53

Thermalright AXP-90 X53 Low Profile CPU Air Cooler
USER MANUAL

Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Thermalright AXP-90 X53 Low Profile CPU Air Cooler. Please read this manual thoroughly before installation and use to ensure proper functionality and longevity of the product. The AXP-90 X53 is designed for compact systems requiring efficient cooling within a limited space.

Key Features

- **Compact Design:** Premium-quality low-profile CPU cooler with a total height of 53mm, ideal for small form factor builds.
- **Broad Compatibility:** Supports Intel sockets 115X/1200 and AMD AM4 platforms.
- **Enhanced Heat Dissipation:** Features 4x6mm heat pipes for efficient thermal transfer.
- **Quiet Operation:** Equipped with a 90mm TL-9015 PWM fan, designed for low noise levels (≤22.4dBA).
- **Robust Construction:** All-metal platform with a backplate fastener and secondary reflow soldering process for durability and reliable contact.

Setup and Installation

Proper installation is crucial for optimal cooling performance. Follow these steps carefully.

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Video: AXP90 X53 Air Cooler Series Installation Tutorial. This video demonstrates the complete installation process for Intel 115X/1200 and AMD AM4 sockets.

1. **Prepare the Cooler:**
   Remove the protective plastic sticker from the cooler's base before applying thermal compound. Ensure the heat pipes are clean and free of debris.

AGHP TECHNOLOGY

Adopt AGHP 4×6mm anti-gravity heat pipe to solve the effect of anti-gravity in vertical and horizontal directions.
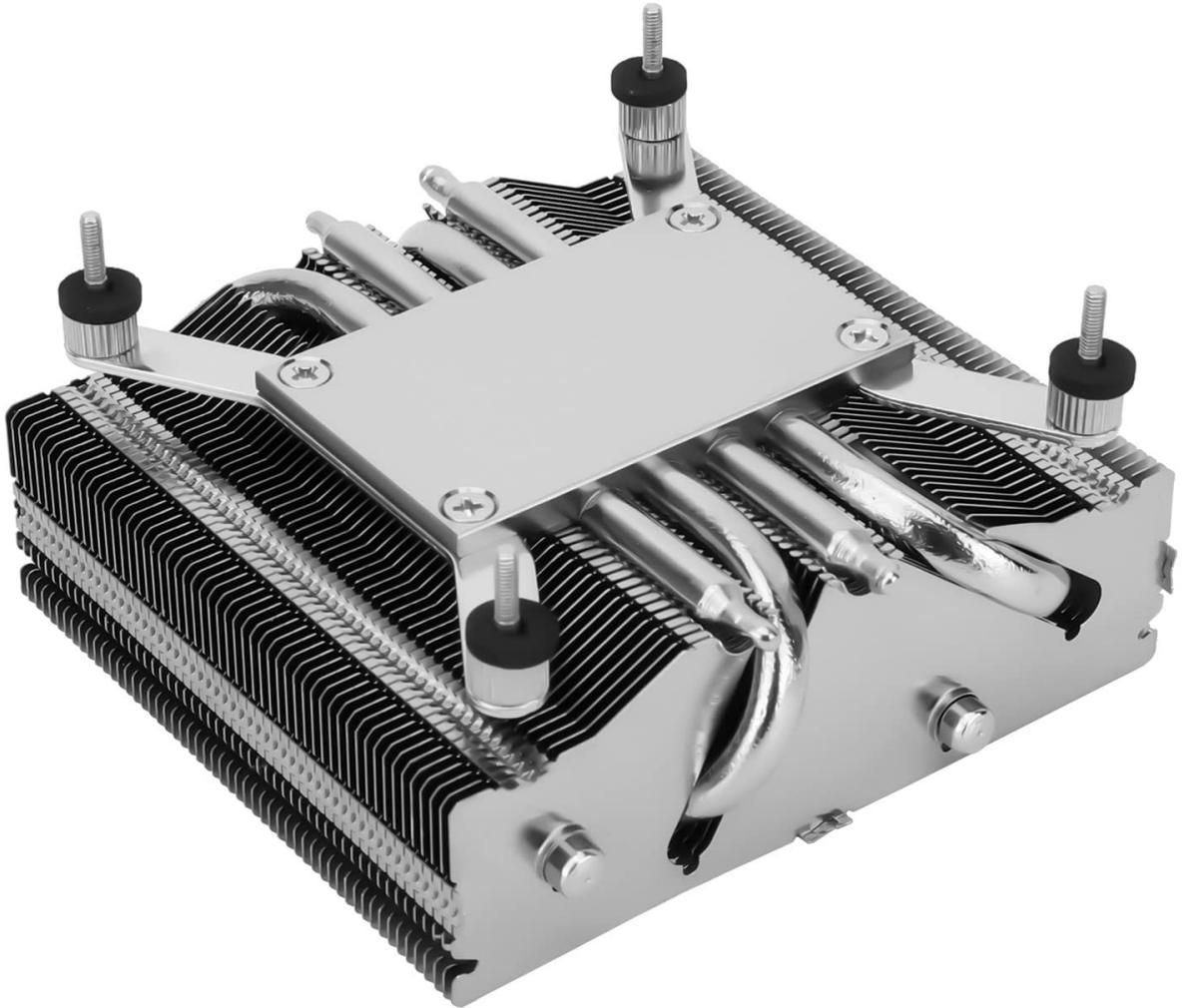

Image: The base of the AXP-90 X53 cooler, highlighting the AGHP (Anti-Gravity Heat Pipe) technology for efficient heat transfer in various orientations.

2. **Apply Thermal Compound:**

   Apply a small, pea-sized amount of thermal compound to the center of your CPU's integrated heat spreader (IHS). Do not spread it manually; the pressure from the cooler will distribute it evenly.

3. **Install Backplate:**

   For Intel sockets, ensure the backplate is oriented correctly (LGA115X/1200 side facing the motherboard). For AMD AM4, use the AM4 side. Place the backplate on the backside of the motherboard, aligning the mounting holes.

ELABORATE COLLOCATION

RAM compatibility, easy installation, superb thermal conductivity.

| Down-flow cpu cooler | AMD/Intel platform backplane | With TF7 thermal paste |

Image: Components of the AXP-90 X53 cooler, including the down-flow CPU cooler, AMD/Intel platform backplate, and TF7 thermal paste.

4. **Mount the Cooler:**

   Carefully place the heatsink onto the CPU, ensuring the mounting screws pass through the motherboard holes and align with the backplate. Be mindful of the heatsink's airflow direction relative to your case's airflow.

Matching TL-9015 low noise fan (92mm thin fan), the overall height is 53mm, with ITX motherboard compatible design.
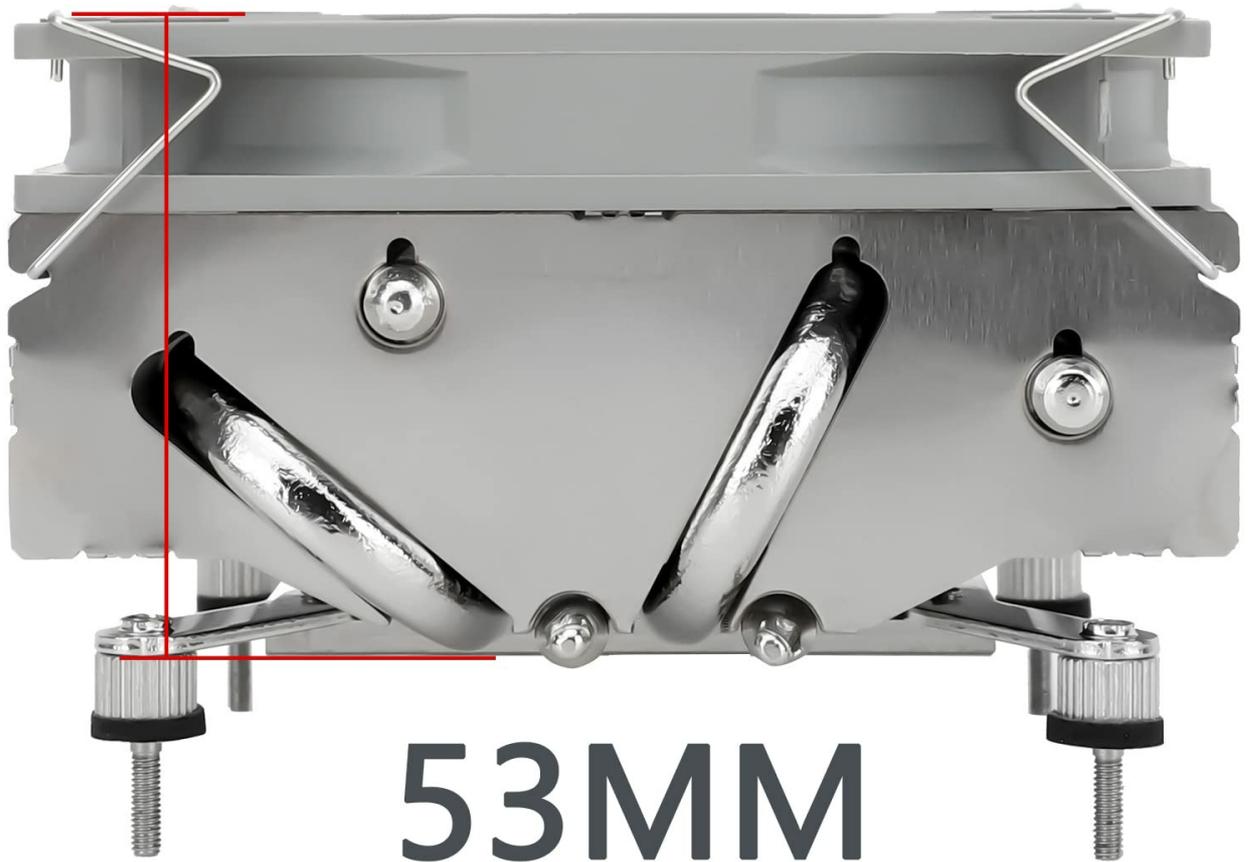

53MM

Image: Side view of the AXP-90 X53 cooler, illustrating its compact 53mm total height, designed for ITX motherboard compatibility.

5. **Secure the Cooler:**

   From the backside of the motherboard, secure the backplate and heatsink using the four hex nuts. Tighten them in a diagonal pattern until snug, but do not overtighten to avoid damaging the motherboard or CPU socket.

6. **Connect Fan:**

   Connect the 4-pin PWM fan header to the CPU_FAN socket on your motherboard. Ensure the connection is secure.

TL-9015

Pair with 92mm slim profile fan

Image: The TL-9015 92mm slim profile fan, which pairs with the AXP-90 X53 cooler for efficient and quiet operation.

Operating Instructions

Once installed, the Thermalright AXP-90 X53 operates automatically, controlled by your motherboard's PWM fan settings. Ensure your system's BIOS/UEFI settings are configured to manage the CPU fan speed based on temperature for optimal cooling and noise balance.

- **Initial Boot:** Monitor CPU temperatures during the first boot and under load to confirm proper installation and thermal compound application.
- **BIOS/UEFI Settings:** Access your motherboard's BIOS/UEFI to adjust fan curves if you desire a different balance between cooling performance and noise levels.
- **System Airflow:** Ensure adequate case airflow to support the cooler's performance. Proper intake and exhaust fans in your PC case will significantly impact overall system temperatures.

Maintenance

Regular maintenance helps maintain optimal performance and extends the lifespan of your CPU cooler.

- **Dust Removal:** Periodically clean dust from the heatsink fins and fan blades using compressed air or a soft brush. Accumulation of dust can impede airflow and reduce cooling efficiency.

- **Fan Inspection:** Check the fan for any signs of wear, damage, or unusual noise. Ensure the fan spins freely without obstruction.

- **Thermal Compound:** While not frequently required, consider reapplying thermal compound every few years or if you notice a significant increase in CPU temperatures.

Troubleshooting

If you encounter issues with your Thermalright AXP-90 X53 cooler, refer to the following common problems and solutions:

- **High CPU Temperatures:**

  - Ensure the cooler is securely mounted and making full contact with the CPU.
  - Verify that thermal compound was applied correctly and evenly.
  - Check for dust buildup on the heatsink fins and fan.
  - Confirm that the fan is spinning and connected to the CPU_FAN header.
  - Review BIOS/UEFI fan settings to ensure the fan curve is appropriate for your CPU's thermal load.

- **Fan Not Spinning:**

  - Check the fan cable connection to the motherboard's CPU_FAN header.
  - Ensure the fan is not obstructed by cables or other components.
  - Test the fan on a different fan header if available, or try a different fan to isolate the issue.

- **Excessive Fan Noise:**

  - Check for loose fan screws or vibrations.
  - Clean any dust or debris from the fan blades.
  - Adjust fan speed settings in BIOS/UEFI to a quieter profile if temperatures allow.

Specifications

AXP90 X53 DIMENSION
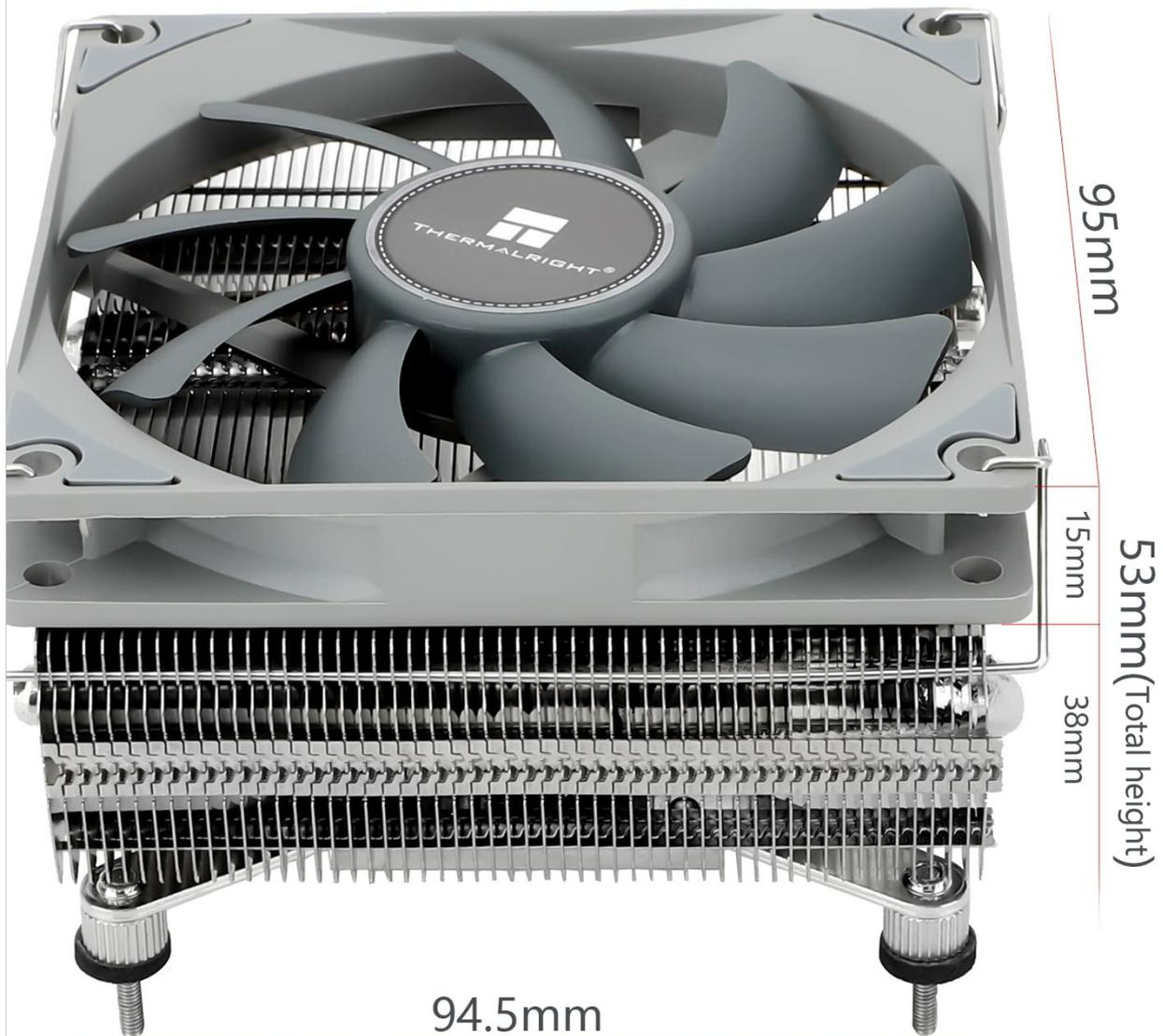

95mm

15mm

53mm(Total height)

38mm

94.5mm

Image: Detailed dimensions of the AXP-90 X53 cooler, showing its 94.5mm width, 95mm length, and 53mm total height (38mm heatsink + 15mm fan).

Feature	Specification
Product Dimensions	94.5mm (L) x 95mm (W) x 53mm (H)
Heatsink Dimensions	94.5mm (L) x 95mm (W) x 38mm (H)
Heatsink Weight	300g
Heat Pipes	4 x 6mm units
Fan Model	TL-9015 PWM Fan
Fan Dimensions	92mm (L) x 92mm (W) x 15mm (H)
Fan Weight	55g
Fan Rated Speed	2700 RPM ± 10%

Rated Noise	≤22.4 dBA
Air Flow Capacity	42.58 CFM (MAX)
Static Pressure	1.33 mm/H$_2$O (MAX)
Rated Current	0.18 A
Rated Voltage	12V DC
Power Connector Type	4-Pin PWM
Fan Bearing	Hydraulic Bearing
Thermal Power Capability	150W
Compatible Sockets	Intel: LGA 1150/1151/1155/1851/1200; AMD: AM4

Warranty and Support

Thermalright products are manufactured to high-quality standards. For specific warranty information, please refer to the warranty card included with your product or visit the official Thermalright website. For technical support or inquiries, please contact Thermalright customer service through their official channels.