



INTEL

AMD

Dear customer,

Thank you very much for choosing the Noctua NH-U12S.

First introduced in 2005, our NH-U12 series has won more than 600 awards and recommendations from leading international hardware websites and magazines.

The NH-U12S is the latest addition to this prestigious series and I'm confident that you will be able to sense some of the research, attention and care we've put into making this product.

Enjoy your Noctua NH-U12S!

Yours sincerely,



Roland Mossig, Noctua CEO

This manual will guide you through the installation process of the SecuFirm2™ mounting system step by step.

Prior to installing the cooler, please consult the compatibility centre on our website (ncc.noctua.at) and verify that the cooler is fully compatible with your motherboard, CPU, RAM and case. Please also make sure that there are no compatibility issues with any other components.

Double check that the heatsink and fan clips do not make contact with the VGA card, other PCIe cards, motherboard heatsinks or any other components.

Noctua cannot be held responsible for any damage or losses caused by compatibility issues.

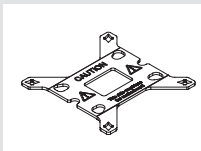
Should you encounter any difficulties, please check the FAQs on our website (faqs.noctua.at) and don't hesitate to contact our support team at support@noctua.at.

Multilingual versions of this manual are available on our website: www.noctua.at/manuals

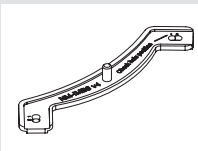
INTEL

LGA1851, LGA1700,
LGA1200 & LGA115x

Required mounting parts:



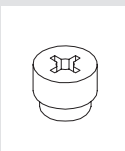
1x NM-IBP4
backplate



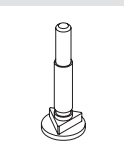
2x NM-IMB3
mounting bars



4x NM-ICS1
clip-on spacers



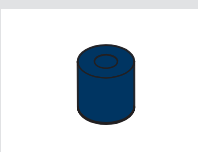
4x NM-ITS1
thumb screws



4x NM-IBT5
bolts



4x NM-IPS1
black plastic spacers for
LGA1200/115x



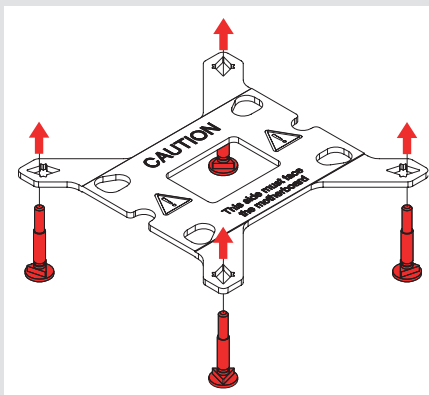
4x NM-IPS3
blue plastic spacers for
LGA1851/1700

1 Removing the motherboard

If you would like to use the cooler on an assembled system and your case does not have a cut-out at the rear side of the motherboard tray, you must first remove the motherboard from the case in order to be able to install the supplied backplate.

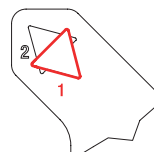
2 Setting up the backplate

First, identify the side of the backplate that should face the motherboard (marked with caution signs). Then choose the appropriate hole spacing for your socket and insert the four bolts into the backplate from the opposite side (marked with model name, SecuFirm2™ branding and numbers for hole spacing) at the appropriate position.

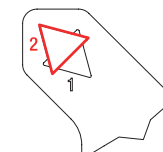


Use hole position 1 for LGA1200/LGA115x (LGA1150, LGA1151, LGA1155, LGA1156) and hole position 2 for LGA1851/LGA1700:

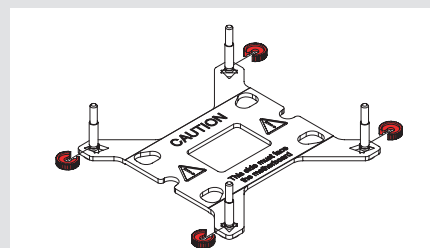
Position 1:
LGA1200/115x



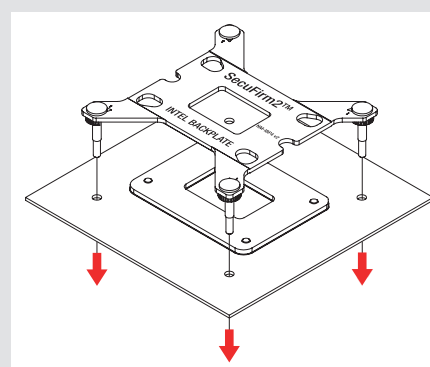
Position 2:
LGA1851/1700



Fix the bolts using the NM-ICS1 clip-on spacers.



3 Attaching the backplate



Caution: The supplied backplate will install over the motherboard's stock backplate, so the motherboard's stock backplate must not be taken off.

Place the backplate on the rear side of the motherboard so that the bolts protrude through the mounting holes.

4 Installing the mounting bars

Please first choose the correct set of plastic spacers and the correct set of holes on the mounting bars according to whether you are using an LGA1200/LGA115x (LGA1150, LGA1151, LGA1155, LGA1156) or an LGA1851/LGA1700 socket motherboard.

Use the black NM-IPS1 plastic spacers for LGA1200/LGA115x (LGA1150, LGA1151, LGA1155, LGA1156) and the blue NM-IPS3 spacers for LGA1851/LGA1700.

LGA1200/115x



NM-IPS1 (black)

LGA1851/1700



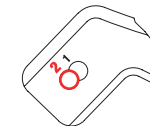
NM-IPS3 (blue)

Use hole position 1 for LGA1200/LGA115x (LGA1150, LGA1151, LGA1155, LGA1156) and hole position 2 for LGA1851/LGA1700:

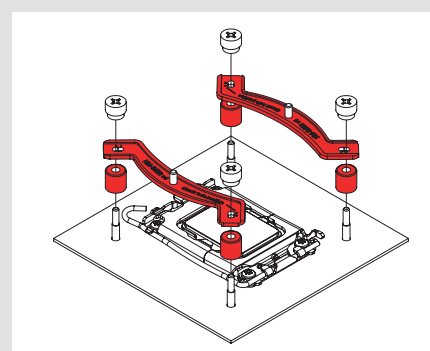
Position 1:
LGA1200/115x



Position 2:
LGA1851/1700

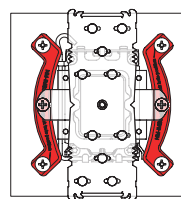


Put the plastic spacers onto the bolts of the backplate, then add the mounting bars.

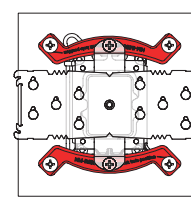


Caution: Choose the alignment of the mounting bars according to the desired final orientation of the cooler:

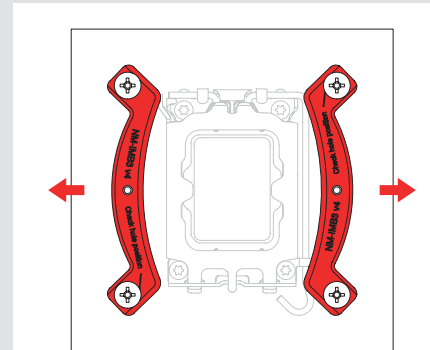
Orientation 1
(default orientation)



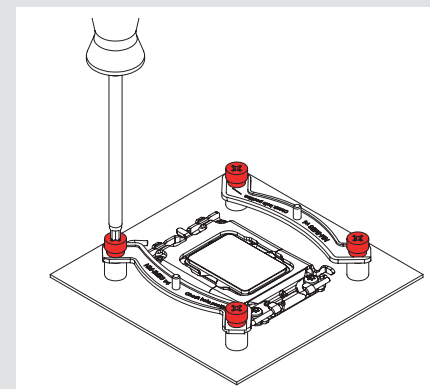
Orientation 2



Caution: Make sure that the curved sides of the mounting bars are pointing outwards.



Fix the mounting bars using the four NM-ITS1 thumb screws.

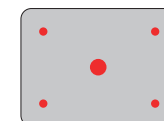


Caution: Gently tighten the screws until they stop, but do not use excessive force (max. torque 0.6 Nm).

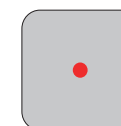
5 Applying the thermal paste

If there are residual traces of thermal paste or thermal pads on your CPU, please clean them off first. Then apply the supplied NT-H1 thermal paste onto the CPU as shown in the following images.

For LGA1851/LGA1700, apply 5 small dots; 4 dots with ~2mm diameter near the corners plus 1 dot with 3-4mm diameter in the centre:



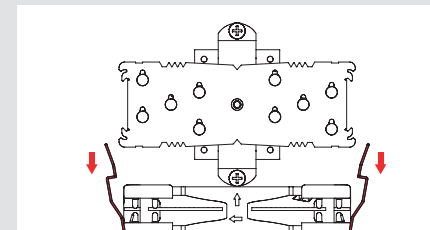
For LGA1200/LGA115x (LGA1150, LGA1151, LGA1155, LGA1156) apply a single 4-5mm dot in the centre:



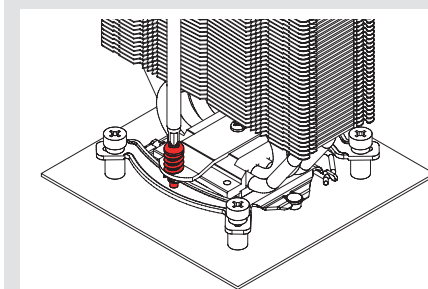
Caution: Applying too much thermal paste will lower heat conductivity and cooling performance!

6 Fastening the heatsink to the CPU

Caution: Please first take off the fan as well as the protection cover at the bottom side of the heatsink.



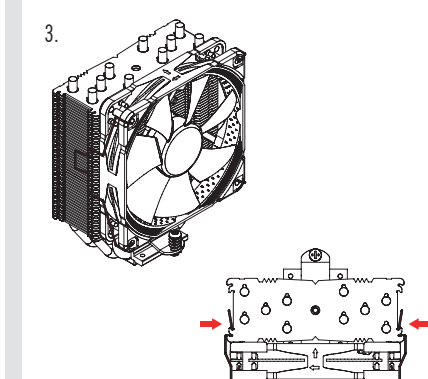
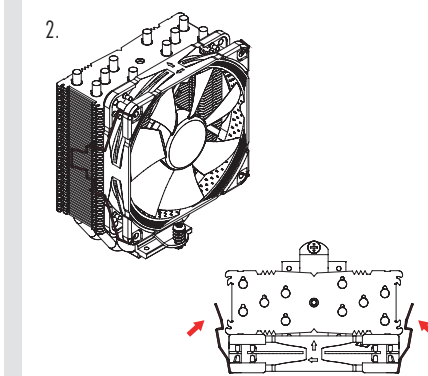
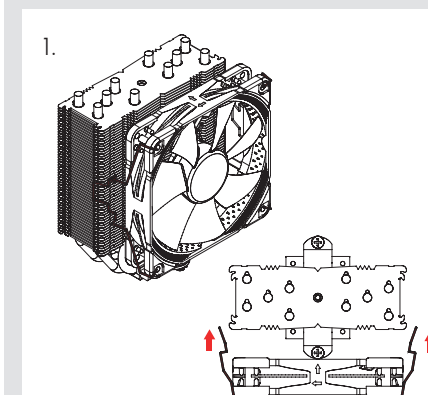
Then put the heatsink onto the CPU and screw it to the screw threads of the mounting bars. Perform 2-3 turns on each screw, then repeat until both are fully tightened.



Caution: Gently tighten the screws until they stop, but do not use excessive force (max. torque 0.6 Nm).

7 Fan setup

Reattach the fan to the heatsink using the supplied steel clips:





Connect the fan to the motherboard's CPU fan header. Depending on your CPU and the temperature inside the case, you may interconnect the supplied NA-RC6 Low-Noise Adaptor (L.N.A.) in order to further reduce the fan's operating noise.

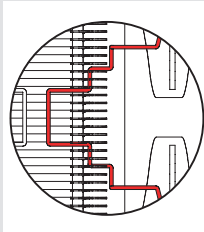
Caution: When using the L.N.A., check the temperature of your CPU using appropriate software (e.g. the respective applications of your motherboard manufacturer), in order to evade automatic throttling of the CPU due to the increased temperature. If the cooling performance is insufficient, please increase case ventilation or remove the L.N.A.

Adding a second fan

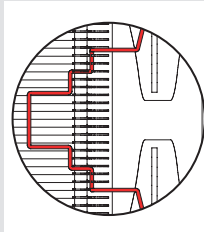
The NH-U12S includes an extra set of fan clips and an extra set of thicker anti-vibration pads for installing a second NF-F12 fan in push/pull mode in order to further improve cooling performance.

Please use the thicker anti-vibration pads on the rear NF-F12 fan for improved acoustics if space allows. The splitter cable supplied with the retail NF-F12 fan can be used to control the speed of both fans via the same motherboard fan header.

Clip position for thick pads:



Clip position for standard pads:



While Noctua recommends using an NF-F12 fan for best results in dual fan mode, the extra set of fan clips can also be used to install most other fans. In this case, please put the supplied self-adhesive anti-vibration strips onto the heatsink to avoid vibrations being transmitted to the cooler.

! Transporting your system

As it is not possible to reliably calculate or control the forces that act upon a system during transport (e.g. in shipping), we generally recommend, for safety reasons, taking the fan off the heatsink in order to reduce the weight below 700g. Noctua cannot be held responsible for any damage that may arise due to excessive stress during transport if you keep the fan installed.

! Warranty, support and FAQs

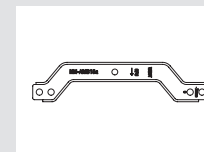
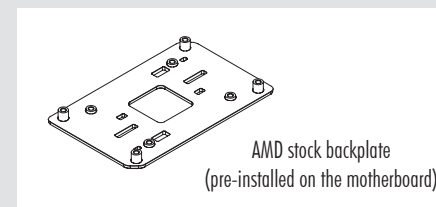
Even with high-grade products and strict quality control, the possibility of defects cannot be eliminated entirely. Therefore, we aim at providing the highest possible level of reliability and convenience by offering a warranty period of 6 years and direct, fast and straightforward RMA service.

Should you encounter any problems with your NH-U12S, please don't hesitate to contact our support team (support@noctua.at).

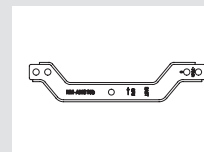
Please also consult the FAQ section on our website: [faq.noctua.at](https://www.noctua.at/faq)

AMD AM5 & AM4

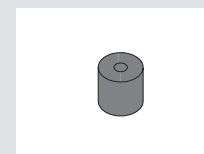
Required mounting parts:



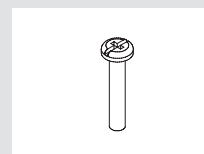
NM-AMB15a mounting bar



NM-AMB15b mounting bar



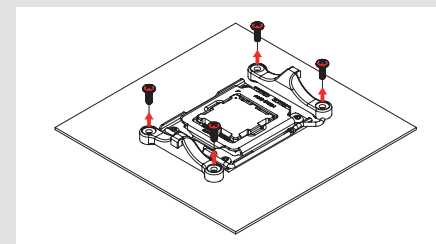
4x NM-APS4 grey plastic spacers



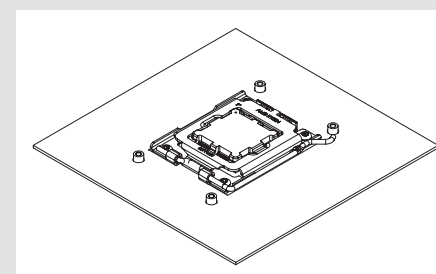
4x NM-ALS1 long screws

1 Removing the stock retention module — putting the backplate in place

The SecuFirm2™ mounting system will install directly to the motherboard's stock backplate, so please first remove the motherboard's stock CPU cooler retention module by unscrewing it from the backplate (if it has not already been removed for previous installations).

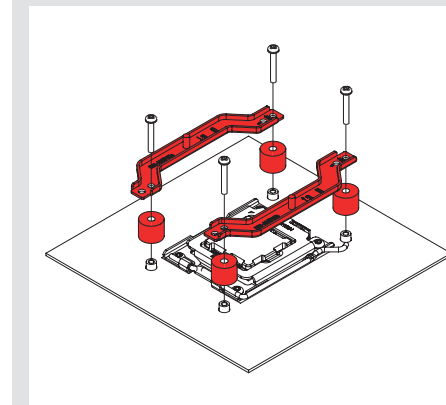


On AM4, the stock backplate will become loose when unscrewing the retention module, so hold it in place for the next step. If you have lost your stock AM4 backplate, please contact us at support@noctua.at. On AM5, the stock backplate is screw-fixed to the socket, so should simply remain in place.



2 Installing the mounting bars

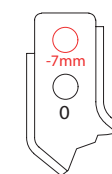
First put the plastic spacers onto the screw threads of the backplate. Then fix the NM-AMB15 mounting bars using the four NM-ALS1 long screws.



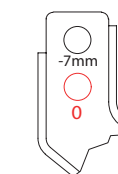
On AM5 and Ryzen 5000/3000 series AM4 CPUs, choose the -7mm offset hole position to ensure optimal contact quality and performance.

On other AM4 CPUs, or if there are any compatibility issues in the offset position (e.g. clearance with motherboard heatsinks), please choose the standard position (0).

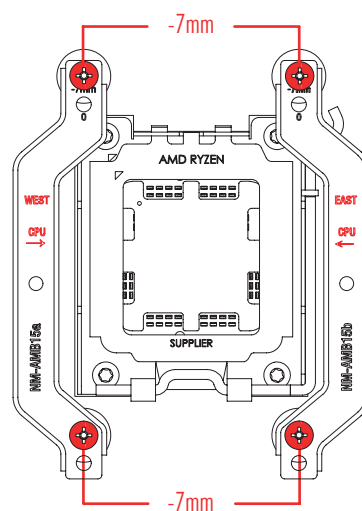
Offset position



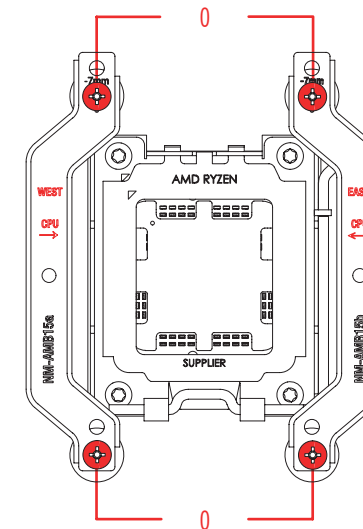
Standard position (no offset)



Offset position



Standard position (no offset)



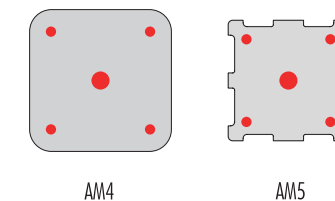
Caution: Make sure that the "CPU →" markings point towards the CPU and that the NM-AMB15a bar with the "WEST" marking is installed on the west (left) side of the socket and the NM-AMB15b bar with the "EAST" marking is installed on the east (right) side of the socket, as shown above.

Gently tighten the screws until they stop, but do not use excessive force (max. torque 0.6 Nm).

3 Applying the thermal paste

If there are residual traces of thermal paste or thermal pads on your CPU, please clean them off first.

Then, apply 5 dots of the supplied NT-H1 thermal paste; 4 small dots with ~2mm diameter near the corners plus 1 dot with 3-4mm diameter in the centre:



Caution: Applying too much thermal paste will lower heat conductivity and cooling performance!

4 Fastening the heatsink to the CPU

Please refer to step 6 of the Intel installation manual.

5 Fan setup

Please refer to step 7 of the Intel installation manual.

! Transporting your system

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