

The Dos and Don'ts of Installing a Fanless Computer

Fanless computers offer efficient and powerful computing performance without failure-prone fans. Ventless construction also prevents contaminate ingress which can cause damage to internal components. But when it comes to installing a fanless computer, here are a few important things to keep in mind.

Do...

Carefully consider where you install your computer

- Make sure no other heat-producing equipment is located below the PC, and that nothing is mounted above the PC that could be sensitive to being warmed by the heat rising off the PC's heatsink fins. Allowing adequate space around the system for air to pass over the fins will also help ensure optimal performance.

Install the computer facing the "right" way

- Fanless systems can be installed with the cooling fins in virtually any orientation as long as there is adequate air space around them (more on that below). Installing systems on a vertical surface with the fins perpendicular to the floor, creating a convection chimney, often results in the best possible performance.

Expect the computer to get warm

- Fanless cooling relies on a combination of internal conduction and external convection to move heat from internal components to the external cooling fins where it can be dissipated into the air. Your system being hot to the touch means that the cooling solution is working.

Use a dedicated power supply

- When possible, use the computer's own power supply and keep its power input independent from other equipment.

Account for other environmental concerns

- Our fanless PCs are sturdy but they are not invulnerable to environmental contaminants. Shield the PC from dust and debris as much as possible to optimize performance and longevity.

Don't...

Stack anything on top of your fanless PCs

- Proper airflow over the enclosure fins is essential for fanless cooling. Stacking additional equipment or other items on top of the fins will inhibit cooling capabilities. Maintaining an inch of clearance above and on the sides of the system is a good rule of thumb to ensure proper airflow over the cooling fins.

Install systems in a fully enclosed area

- Our cooling solutions are very efficient, but if your system is installed in an enclosed location, like a vehicle trunk or a cramped, unventilated cabinet, ambient temperatures can quickly rise beyond specified limits.

Use just any power adapter

- As mentioned above, how your system is powered is vital to proper performance. The power adapter supplied with your fanless PC may provide electrical protections not native to the PC. Without those protections damage can result. Verify the computer has the required protections if DC power is being used or if another power source is being considered.

Forget about cable management

- Fanless industrial computers are frequently subjected to wear and tear from every angle. To ensure secure connections and long-term reliability, don't rely exclusively on connectors to support a cable over time. Cables can fail at strain points or damage connector pins from cross loading or vibration wear.

Expect setup to be challenging

- Though they are built to more strict specifications, our computers are as easy to set up as an off the shelf PC. In most cases you will find a similar selection of ports, software options, and settings.

Install the system in direct sunlight

- Solar gain (the increase in temperature caused by solar radiation) adds up to 90W per square foot of thermal load. Whether the sun shines on the computer itself, or on an enclosure with the computer inside, try to limit direct sun exposure.