

## Forced cooling mod for 2.2kW air cooled square CNC spindles



Cederb

[VIEW IN BROWSER](#)

updated 24. 12. 2022 | published 24. 12. 2022

## Summary

Using a Delta PFR0612XHE, or another high flow 60mm fan

[Hobby & Makers](#) > [Tools](#)

Tags: [delta](#) [cnc](#) [cooling](#) [spindle](#) [square](#) [rattm](#)  
[2point2kw](#) [2kw](#) [rattmmotor](#) [pfr0612xhe](#)

Our 2.2kW air-cooled square spindle from "Rattmmotor" on one of the CNC machines at [Stockholm Makerspace](#) had lots of problems with running super hot on lower speeds, since the small impeller-style fan is running directly of the spindle shaft, and provides very little flow under about 10-15krpm.

We decided to change this to forced cooling instead.

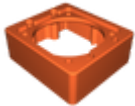
So we removed the original back cover and the impeller, then I took the cover with me to [3DVerkstan](#) and got it scanned in super high detail in the Shining3D Autoscan Inspec.

Imported the file into Fusion 360, aligned it, and drew up a new back cover with an integrated mount for a super high flow Delta 60mm fan ([PFR0612XHE](#)).

After we added this, we have no problem with cooling at any spindle speed.

The design is made to have four M4 heat-set inserts, but you can mount the fan with screws and nuts, or just glue if you don't have any.

## Model files



**spindle-fan-shroud.stl**

## License ©



This work is licensed under a  
[Creative Commons \(4.0 International License\)](https://creativecommons.org/licenses/by-sa/4.0/)

**Attribution-ShareAlike**

- 
- ✗ | Sharing without ATTRIBUTION
  - ✓ | Remix Culture allowed
  - ✓ | Commercial Use
  - ✓ | Free Cultural Works
  - ✓ | Meets Open Definition