

Kovolit, a.s., Brno

Energy Transfer in Industry with MACH Heat Pumps

Heat is accumulated during industrial processes, especially in foundry environment, engineering production and also in many other plants of manufacturing industry. This heat is of no use and it may even obstruct accuracy of the manufacturing process - some companies only let heat out, other also know how to reuse it.

KOVOLIT, a.s., seated in Modřice, solved a similar problem of cooling the production area. They needed a more effective cooling that would replace existing cooling towers and also wanted to use heat accumulated during manufacturing processes to heat up hot service water. Mr. Mareček, Ing., director of KOVOLIT, a.s., told us: „Our goal was that a single company would design a solution, lay out project documentation and deliver the whole work and guarantee parameters given beforehand.“

TC MACH, s.r.o., specializes in interesting application not only for family houses but also for industry. The solution we designed based on MACH heat pump offers heating power in the extent of 400 to 660 kW with corresponding cooling power in the extent of 350 to 540 kW.



TC MACH



Technology was installed in July 2007 and underwent a heavy period of testing during hot summer days. After this test operation, it was successfully handed over in September 2007.

Basic specifications of delivered technology:

heating power	400 to 660 kW
cooling power	350 to 540 kW
max. temperature of sucked air	40 °C
possibility of transferring heat in selectable percentage	yes
return on investment	2.3 years

Works on the whole project began with a 2-months analysis. During the analysis, we had to gather the most accurate client data, especially:

- Cooling water flow rate
- Temperature gradient of water cooling
- Cooling power of the existing towers
- Determining average production line duty cycle with relation to providing requested production of products
- Determining optimal temperature of cold water to be used in the whole production complex
- Judging current state of heating system
- Hot service water consumption of 650 employees a single shift
- Utilizing the produced heat to the utmost
- Handling extra additional cooling of the production process

TC MACH,s.r.o.

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