

Combined cooling, compact designing – with MMC by KTR

An Interview with Joachim Grunwald

Editors:

Mr. Grunwald, may we ask you to briefly introduce yourself to our readers!

Joachim Grunwald:

I started working with KTR about seven years ago. Today I am working as a Product Manager for MMC cooling systems. With my previous jobs I was able to gain more than 25 years of experience in the business of coolers. Then KTR offered me the opportunity of using my knowledge of coolers in a new context: KTR has supplied coupling systems and I. C.-engines for agricultural machines as well as generators and power packs extremely successfully for several decades. They all have one thing in common: If they are to operate smoothly over a long period, they will have to be optimally cooled.

Editors:

KTR is mainly known as Kupplungstechnik Rheine producing coupling technology. What was the reason for KTR to include coolers in their programme?

Grunwald:

This is not totally new. KTR's product portfolio has comprised coolers for some years already, e. g. the bellhousing with integrated oil/air cooler PIK for stationary hydraulics. KTR has been quite diversified in the hydraulic market for a long time. However, they were in lack of an independent oil/air cooler which can be positioned separately and which is more powerful. To close this gap the oil/air cooler OAC was generated first followed by MMC. The OAC coolers are meanwhile handled by my colleague Hendrik Stroet of the Business Unit Hydraulics. Within the Business Unit Engineered Solutions I am in charge of the MMC series. This allows me to concentrate fully on one cooling system.

Editors:

What does the combination of letters MMC mean?

Grunwald:

That is quite simple. In other words, there are two options: On the one hand MMC can be translated as "Mobile Machine Cooler". This is a product name known internationally. Since KTR is operating globally, we chose an abbreviation which is understood everywhere. Apart from that MMC also signifies "Multi Media Cooler" which is a cooling housing that allows for cooling several media: water, oil, charge air or fuel.

Editors:

How do we have to imagine an MMC cooler?

Grunwald:

The MMC cooler we supply is installed on those machines that are manufactured in a series. These may be construction or agricultural machines or a wind power plant. These are the markets KTR has been working in successfully for many

years. Staying with the construction machine, since the bauma is coming soon: In this case the machine is driven directly by an I. C.-engine or a hydraulic motor providing for the option of speed control. Today the power packs are quite sophisticated so that an integrated cooler for the engine coolant has become necessary. Apart from that the motors are charged which requires cooling of charge air. Since the diesel engine usually drives a hydraulic system, the oil may have to be cooled as well. That is why multitasking – in other words multicooling – in very narrow spaces is required. For that purpose a compact combined cooler with one fan drive only is most suitable.

That is easy to say, but far from easy to realize.

Editors

In what way?

Grunwald:

The reason is that every machine looks different and the cooler has to be adapted to the machine. Every MMC by KTR is a customized design for a special application. Our customer specifies how much mounting space is available, how the fan drive is to be realized, what cooling capacity is required and a number of other parameters. This is quite a complicated issue!



Joachim Grunwald – KTR Product Manager with the MMC cooler. E-Mail: j.grunwald@ktr.com

Editors:

How do you get the right result? In other words: How does the customer get exactly the cooler he needs?

Grunwald:

First of all we make use of our simulation software KULI calculating various options. At the end of the day we have to provide a defined cooling capacity in a limited mounting space. To do so, we are in a position to make adjustments now and then, e. g. amend the type of laminas, the dimensions, the fan, the drive and so on. Thus, we have on hand many options to find the optimum solution together with our customers.

Editors:

This means that the customer cannot simply order the MMC from the catalogue?

Grunwald:

That would be a nice idea! But no, we have to consider the individual demands and specifications with every customer. The solution looks different every time. That is why a catalogue is not really available, but rather options of prototypes. That is similar to a passenger car: Special solutions are realized here on a large scale. The KTR catalogue shows our standard solutions only. For the coolers these are the series OAC and OPC.

Editors:

Could you please tell us some more details about the applications of MMC combined coolers?

Grunwald:

Apart from construction machines "related" agricultural machines can be cooled by MMC well. Here again we can find diesel engines with or without turbo loaders, hydraulic circuits and gearboxes. All these are components that may require a cooling system. We also approach manufacturers of diesel generators, since they are facing similar demands. Another application range is wind energy. In close collaboration with our colleagues we developed a cooling system cooling gearbox oils or generator coolants, as an example, meeting the demand by varying the speed of fans. This does not only save an enormous amount of energy, but it also cools the moods of the residents by reducing noise emissions significantly. This system is called MMC eco, because it combines both economical and ecological demands in a perfect way, thus kills two birds with one stone.

Editors:

Could you please mention some more highlights of application?

Grunwald:

It is best to have a look at it live: at KTR's booth 537 in hall A4 at the BAUMA taking place in Munich from 11th to 17th April. The company HATZ which is also located in hall A4 exhibits, as an example, the new 4-cylinder kit motor which an MMC developed by us is installed in, in addition to the BoWex FLE-PA coupling by KTR which may be applied as an option. Other manufacturers of construction machines exhibiting at the fair use KTR coolers, too. Come along, I will show you where.

Editors:

That is a good idea. How can we find you?

Grunwald:

As I mentioned before, we are located at the bauma in hall A4 at booth 537. It is best if you contact me or one of my colleagues directly.

Before and after the exhibition I will be available to you at j.grunwald@ktr.com or by phone at every time.

[MMC coolers at ktr.com](#)

[Catalogue of coolers](#)

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