

TitanX

**Finds More Role For
New Engine Cooling
System**

Matt Moore

Acquired by Tata AutoComp early this year, TitanX will continue to work independently, leveraging Tata AutoComp's technical synergies and scale. **Matt Moore**, Vice President Research, Technology and Engineering, TitanX Engine Cooling, in an interview with **Sharad Matade** of **AutoParts Asia**, explained the changing role of engine cooling systems from a mere engine heat reducer to an optimiser of fuel efficiency and the life and effectiveness of the whole engine system. He talked about the new technologies, SCR and DPF, and the emerging opportunities in the Asian markets. TitanX is also getting ready for the shift from diesel combustion engines to some kind of electro-mobility for heavy trucks that may come faster than anticipated.

Q: Though TitanX is operating separately, has it got any advantage on the design, research, product development, and marketing fronts, after the acquisition by Tata AutoComp Systems?

A: TitanX is a separately managed entity in the Tata Autocomp Group. We have a clear integration road map to leverage the technical synergies and the scale of Tata Autocomp to the advantage of both. We call it Best of Both. We are looking for the synergies between the two companies while maintaining an independent road map for the development of TitanX.

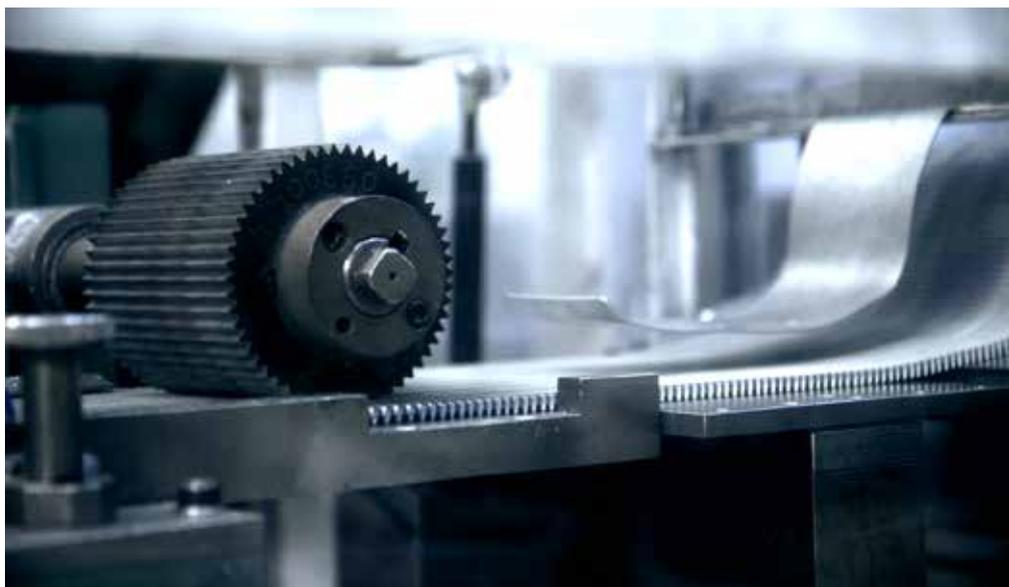
Q: How does TitanX help OEMs to optimize thermal efficiency without compromising on fuel economy?

A: TitanX understands the system behind cooling and how the different heat exchangers interact with one another. TitanX helps OEMs to balance their heat exchanger systems among the air conditioning condenser, the radiator and the charge air cooler. Each individual component works well by itself. Similarly all the components work well together for optimal thermal efficiency throughout the operating life of the vehicle.

It is easy to make one heat exchanger pretty good, it is hard to make it great. You really need an expert like TitanX when you want to get two or three heat exchangers to work well together in all operating conditions. And that's how TitanX brings value to its customers.

Q: Cooling system is not only to reduce the heat of the engine but also to increase its sustenance in the long-term. At the same time, light weight components are becoming mandatory. How do you meet both the requirements?

A: TitanX always designs heat exchanger systems for the life of a



vehicle. As the interpretation of life of vehicle continues to increase, our design targets, and the life of the products that we design, increase along with it. We are certainly contributing to the sustainability of the vehicle by making components that last throughout the life of the vehicle.

Our job is to reduce the heat of the engine, but actually the job of a cooling

system is to regulate the heat of the engine within a very specific zone. Inside that zone we maximize the effectiveness of oils and coolant, and the effectiveness of how the whole system works together. This makes sure that not only the heat exchangers, but also the diesel engine, the pistons, the rings and all the systems that are involved continue to live to the maximum designed lifetime.



Light weight components are not seen by TitanX as a restriction. With the advanced manufacturing and design simulation tools we have today, we are able to continuously push back the boundaries and the thickness of the materials we can use and still maintain the same design life time in the sustainable life of vehicle performance that we always have.

In addition to those fantastic simulation tools, we also have our suppliers, who continue to work on higher grade alloys. They are stronger or easier to process, which further allow us to meet the weight, and therefore fuel, requirements of our OEM customers.

Q: With EGR playing the secondary role along with the fuel saving emission technologies SCR (selective catalytic regeneration) and DPF (diesel particulate filter), when achieving Euro-6 where do you find opportunities to grow?

A:The implementation of SCR is one of the first changes that has been made within heavy trucking in the last 20 years that has actually caused an improvement in the emissions from a vehicle without increasing the heat. As we are certainly all aware, EGR cooling has drastically increased the amount of heat that was being injected to the coolant and therefore to the overall inefficiency of the engine. A lot of other changes we have made to improve the fuel efficiency of engines are in direct conflict with the fuel economy of the engine. So higher emissions have not only been a fuel penalty, but it has also been a heat penalty.

With the implementation of SCR and DPF we can better optimize the full potential of a heat exchanger system to bring down fuel economy without the limitations of the ever-increasing demands from the engine.

All the heat that a diesel engine generates is a waste and therefore adds to emissions and degrades from fuel economy, so we are very happy to optimize the heat that an efficient diesel engine is making.

Going forward, the need to have tighter control and higher reliability heat exchangers will continue. We see SCR as a way to optimize diesel engines and therefore it is good for the entire eco system of trucks and therefore good for TitanX.

Q: There is fuel penalty while accomplishing higher emission regulations. How is TitanX supporting the OEMs to minimise the fuel loss?

A:The most significant way TitanX can make sure that we minimize fuel loss for the OEMs is to make sure that we have a well-balanced system that cools enough, but not too much, in all operating conditions. These well-balanced systems by their nature end up being lighter and therefore take less fuel. But more importantly, they also optimize fan engagement.

TitanX is bringing help to the industry not only through its OEM offerings of having the right heat exchangers and design in the truck to begin with, but we also bring to our aftermarket customers OEM quality components,

which also are balanced after the original specs of the vehicles. Putting any kind of heat exchanger in the system can unfortunately have some heavy unintended consequences on fuel loss.

Q: Growth of EGR may be more in the engines with less than 130HP. Do you see this as a positive trend for TitanX?

A:In general, TitanX does not get involved in engines below 130hp so we don't think the trend is going to have a significant impact on our market.

Q: The company has a high level of vertical integration at its production sites. Please elaborate this and how does this help the company to achieve its targets on production, quality and meet the clients' requirements?

A: Every company has to make a decision on the level of vertical integration it is going to take, because it is impossible to be an expert of everything, it's important to integrate into your company the things that you have a true expertise for and/or things that can have a significant outcome on your process that you don't believe you can purchase sufficiently.

TitanX has made those decisions like any other corporation. We have decided for a fairly high level of vertical integration. When we look back at what it takes to end up with lighter and thinner heat exchangers that still have the durability demand that we need - which is life of vehicle - we think that

it is very important to manufacture the core critical components ourselves for our heat exchangers. We do that all across our product lines, be it oil coolers or chassis mounted heat exchangers.

It also helps us in production because we control a larger portion of the supply chain, and therefore it is easier for us to make sure that we don't only deliver on the quality and function requirements of our customers, but also the delivery demands that they may have. It is also good for cost, because we do the things we work on the best.

Q: How do you see the growth in the Asian markets?

A: We are a company that has been primarily focused on the western truck market. We are continuously amazed and impressed by the resilience and

Q: TitanX has a vision to achieve the number one position in the supplier of powertrain cooling solutions to the commercial vehicle industry. How do you plan to achieve this?

A: It is important for TitanX to take a leadership position in the heavy truck cooling industry and the only way you can do that is to bring value to the industry. The trucking industry is tasked with a very high level of responsibility for moving the majority of the goods in the world and doing that in a cost-effective way that does not harm the environment, even improve the overall environment that we live in.

It is important for TitanX to facilitate it in every way that we can, for our customers to meet their targets of being able to move freight efficiently

increase in the price of the vehicle. For this every year we have to bring down the cost of our products, and that means that every year we have to bring down the cost of the material we buy, of our production processes, and the labour content we have in our products and even the cost of administering the company. TitanX has a wide and distributed cost approach that really challenges all costs up and down the value chain to make certain that we are able to meet our customers' and the industry's expectations for continuous cost reduction.

Q: What is your strategy for the aftermarket?

A: TitanX is not a direct actor in the commercial vehicle aftermarket and our strategy is to support our customers in any way we can to ensure their success. Our goal is not only to provide the right products for our customers, on time and for the right price, but also to deliver always and in all situations the OEM quality components that will not have a negative effect on the operation of the rest of the vehicle.

Q: Tell us about the company's China operations.

A: The company currently operates one division in China and manufactures two of our product lines there. We are currently manufacturing and supplying transmission oil coolers in China for one of our major OEM customers.

We have a wide production capacity there and we are capable of making both engine coolers and transmission oil coolers. We are also assembling stationary power cooling modules in our facility in China and providing those directly to Chinese customers.

Q: What are your future organic and inorganic growth plans?

A: At TitanX, we have an aggressive growth plan. Our vision is to be the leader in powertrain cooling systems of the commercial vehicle industry. We are fortunate to serve many customers in many parts of the world, and being aware of their needs and growth plans gives us an edge.

On the technology front we are constantly innovating to ensure we can offer cutting-edge technology to our customers. We are investigating on cooling solutions for hybrid and battery electric vehicles. The shift from diesel combustion engines to some kind of electro-mobility also for heavy trucks may come faster than anticipated. **APA**



the positive trends that have been proven repeatedly by the Asian truck market.

It's impressive to reflect on the fact that right now, over 50 percent of the vehicles built in the world are built in Asia. So, Asia is a key growth market for the industry and therefore an industry that is very interesting to TitanX. Particularly as we see that with the transition into the next level of technology and emissions more and more governments in the area have not only enforced their emission rules, but also made very clear statements on their interest in enforcing weight regulations, brake regulations and other such opportunities to bring a higher level of technology trucks into those markets.

So, we recognize the overall macro trend that goes on in the market and we certainly see the growth in technology as an opportunity for TitanX.

and cleanly for their end-customers. We are going to achieve the number one position by making sure that we continue to evolve our products and systems to meet our customers' present and potential future needs.

Q: Could you elaborate on the internal continuous cost reduction programme?

A: The automotive market is highly competitive worldwide. There is continuous expectation of an improvement in the cost of basic systems in the vehicles as we are continually challenged to increase the levels of safety equipment, environmental control and – when you look at the future trends – to increase the levels of automation and even further levels of fuel economy. It is important that the components that are in a vehicle today have their costs reduced in such a way that we can bring all these advanced features to the customers without any drastic