

Tech Talk tips / techniques / training

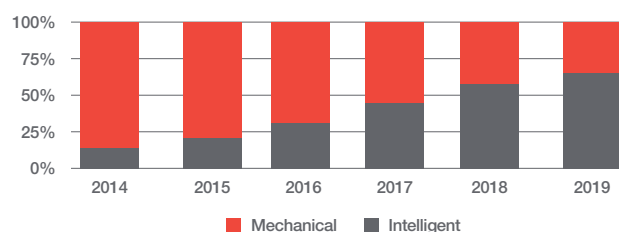
Thermal Management systems & coolants

Every component and system in a modern vehicle is designed to make a positive contribution towards reducing harmful emissions and improving fuel economy, to meet the environmental demands of governments around the globe. Modern cooling systems being developed for original fitment by the world's leading vehicle manufacturers, by companies such as Schaeffler, play a major part in helping to achieve these constantly moving and increasingly more stringent targets.

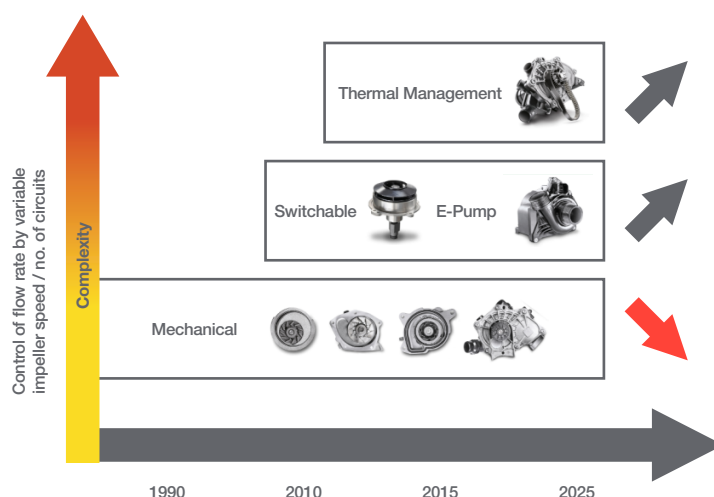
The vehicle cooling process is becoming more elaborate as new systems that need adequate cooling to function continue to be added; EGR, Turbochargers and even batteries on hybrid vehicles - each system adds its own corresponding pipework complexities.

Cooling also doesn't mean just 'cooling', as the system also contributes to the faster warm up of engines and gearbox lubricants, which has a dramatic effect on reducing emissions. All this complexity demands more technologically advanced solutions for previously simple parts such as water pumps, which are now responsible for regulating the flow of coolant to other components and systems around the vehicle.

New car registrations development



Water Pump Complexity



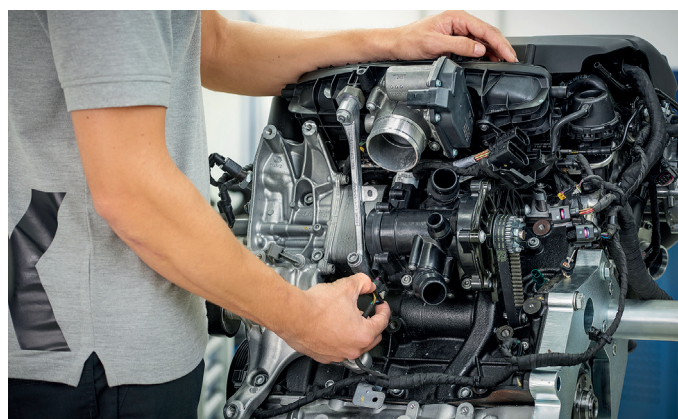
In the Audi A3 e-tron, for instance, the system conditions the cabin as well as cooling the internal combustion engine, gearbox and high-voltage components. All are integrated into the various cooling circuits, with the thermal management system controlling each element to ensure that they reach and maintain their individual optimum operating temperature as quickly as possible.

In advanced hybrid vehicles, this can also change depending on the drive mode. For instance, the operational demands of each system can vary dramatically as the motor changes between electric mode and boost mode, with each circuit requiring a different level of flow to ensure the highest levels of reliability, comfort and efficiency are achieved and maintained.

Advanced electric water pumps and integrated 'system-in-a-box' Thermal Management Modules (TMMs) have been born from the necessity to keep up with the demands of modern vehicle technology – and not only will they need to continue to adapt to meet the challenges of the future, but so will independent mechanics!

The benefits of a modern thermal management system:

- Reduce harmful emissions and fuel consumption
- Optimum cooling system temperatures achieved 30% faster
- Engine oil target temperature achieved 50% faster
- Quicker to respond (thermostats are slow to operate and can also negatively affect pressure)
- Individual systems can be controlled independently
- Engine service life increased
- Cabin comfort increased



Source: Schaeffler (UK) Ltd, 2018

New engine technologies and demanding environmental legislation means that manufacturer specific coolant specifications are now the norm. Due to the huge number of applications, a single industry standard coolant will no longer suffice, as new, modern engine require high performance coolants.

Be sure to use the correct product in a vehicle; modern products last longer, protect better and are designed to be more compatible with all the different metals, plastics and rubbers you find in a modern cooling system. Most importantly of all, they are manufacturer approved and cover a wide range of specifications, essential for servicing 'in warranty' vehicles.

Even where the fluid is being used to service an older or classic vehicle, a high quality traditional product should still be used. Traditional technology products like Comma Super Coldmaster or Super Long Life Red do not carry any manufacturer approvals but they do meet industry minimum standards including BS6580.

Manufacturer Approved

					
Silicate	OAT	SI-OAT	SI-OAT	Hybrid	PSi-OAT
3 Year Life	5 Year Life	5 Year Life	5 Year Life	6000 Hours Life	5 Year Life

Standard


2 Year Life
No Approvals

How can I make sure I get it right?

The safest way to select the right coolant is to use Comma's application tool at www.CommaOil.com. Here you will find product recommendations with our 100% compatibility guarantee for engine oil and antifreeze & coolant for European vehicles going back over 30 years. It also covers brake fluid, transmission and power steering fluid recommendations.

Or download the 'Comma Oil Finder' app from Google Play and the App Store

