YOUR FIRST PLACE TO LOOK.

Metzger
AUTOTEILE

# Thermal Management

Quality for Every Temperature from Metzger Autoteile

# Thermal Management by Metzger Autoteile – far more than No. 1 in thermostats.

Metzger Autoteile not only leads the way in vehicle coverage, for example when it comes to coolant thermostats or expansion tanks. Modern Thermal Management from Metzger Autoteile is the complete package when it comes to maintaining ideal temperature ranges. For the engine, electronics and battery.

More than 4,000 references for virtually all vehicle applications – with the range continuously expanded and optimized.

Our USP: Metzger Autoteile continuously develops products in close cooperation with manufacturers and specifically optimizes them for the aftermarket. The result: practical, easy-to-install and durable solutions that make a difference – today and tomorrow.

For more than 45 years, Metzger Autoteile has stood for expertise, reliability and continuous development in the international aftermarket.

**With Metzger Autoteile, you are always one step ahead in the market.**

Thanks to innovative strength, experience and a product range trusted by professionals worldwide.

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AWARDED EXCELLENCE

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# Quality Assurance at Metzger Autoteile – tested down to the last detail.

At Metzger Autoteile, quality is no coincidence. It is the result of clearly defined processes, many years of experience and technical expertise. A dedicated in-house quality assurance department supports every product from development through to market launch.

In close cooperation with suppliers and manufacturers, components are analyzed, specified and systematically further developed. This includes extensive testing, such as material analyses, dimensional and fit checks, as well as functional and load tests.

Every product is thoroughly evaluated and documented. Only after successful technical approval is it added to the Metzger Autoteile product range and made available to the aftermarket.

Through this systematic approach to quality assurance, Metzger Autoteile ensures consistently high product quality, functional reliability and dependable performance in use.

# Thermostats, Coolant

Metzger AUTOTEILE
LEADING* in Coolant Thermostats

## Perfect temperature. Maximum performance.

Art. Nr. 4006331 Art. Nr. 4006504

Thermostats for reliable engine temperatures under all operating conditions.

Precise thermal management protects the engine, reduces wear and supports efficient fuel consumption. Metzger Autoteile offers high-quality coolant thermostats for reliable and long-lasting vehicle performance.

**Vehicle applications:**
Art. No. 4006331 (OE A 270 200 06 15*) e.g. Mercedes-Benz CLA (117)
Art. No. 4006504 (OE 98 494 439 80*) e.g. Opel Grandland (A18)

* OE number for reference purposes only.

*Leading position in coolant thermostats in the independent aftermarket (IAM) in Europe, based on vehicle coverage and product cross-references to OE and competitor numbers. Analysis based on the Topmotive Market Indicator, as of 06/2026.

Learn more

**New to the range and already a true bestseller**

# Thermostat, Coolant
## Art. No. 4006518

**Vehicle applications:**
Art. No. 4006518 (OE 212002554R*)
e.g. Renault Kangoo (KW)

* OE number for reference purposes only.

Learn more

# Thermostat Housings

## Thermostat housings from METZGER – reliable quality for optimum coolant control.

Tested quality, excellent fit and durable materials for reliable performance in everyday use.

Learn more

# Expansion Tanks, Coolant

## Reliable volume compensation. Dependable cooling.

Robust, precise-fitting and durable – METZGER expansion tanks ensure reliable volume compensation and a dependable coolant supply. High-quality materials and careful workmanship ensure maximum operational reliability and a long service life.

*Leading position in coolant expansion tanks in the independent aftermarket (IAM) in Europe, based on vehicle coverage.
Analysis based on standard aftermarket catalogs, as of 08/2026.

Learn more

# Coolant Flanges

## Trouble-free coolant circuit and maximum operational reliability.

METZGER coolant flanges provide secure and durable connections between the components of the cooling system. Their high dimensional accuracy ensures easy installation and reliable sealing. Extensive quality testing ensures reliable long-term performance.

Learn more

# Water Pumps, Engine Cooling

## Efficient cooling. Powerful performance for a reliable coolant circuit.

The water pump ensures continuous coolant circulation and reliably protects the engine from overheating. METZGER water pumps stand out for their high performance, durability and precise fit.
Every METZGER water pump is manufactured to high quality standards and thoroughly tested – for reliable operation and a long service life.

Learn more

# Thermostat Types and How They Work.

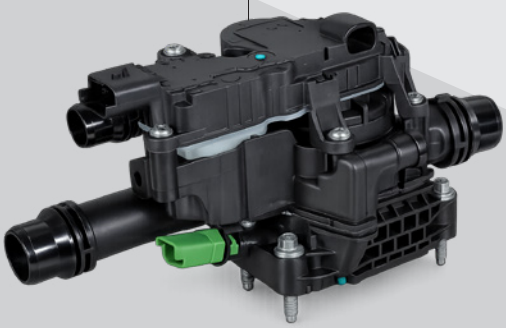
## Wax-Element Thermostat

The classic wax-element thermostat operates entirely mechanically and requires no electrical control. Inside, it contains a special expansion wax. When the coolant reaches a precisely defined temperature – depending on the design, for example 85, 87, 90 or 92 °C – the wax expands, pushes against a piston and opens the valve. Simple, robust and proven for decades.

## Map-Controlled Thermostat

A further development of the wax-element thermostat is the map-controlled thermostat. The basic principle remains the same, but an additional electrical heating element is integrated into the wax element. The engine control unit can activate this heating element via a PWM signal, allowing the wax element to be heated as required. The artificially increased temperature inside the thermostat causes it to open before the coolant reaches its actual switching temperature.

Under high load – for example when driving on the motorway – the system can thus proactively cool the engine to around 80–85 °C. Under partial load, by contrast, the control unit deliberately allows the engine to run hotter, at temperatures of up to 105–110 °C, which can reduce friction losses and improve fuel efficiency.



## Thermal Management Module with Rotary Slide Valve

The most technically advanced systems are thermal management modules with rotary slide valves. These no longer use a conventional valve. Instead, an electrically driven rotating slide valve controls several coolant circuits simultaneously: the cylinder head, engine block, cabin heating and, depending on the vehicle, transmission oil cooling or other auxiliary systems. A key advantage is the so-called zero-flow phase during a cold start, in which the coolant remains completely stationary, allowing the engine to reach its operating temperature as quickly as possible.

**Read this METZGER Expert Tech Tip online.**

# INSTALLING THERMOSTATS CORRECTLY:

**Avoid mistakes. Prevent damage.**

## Common Sources of Error

Mechanical thermostats have a small bleed valve, identifiable by a loosely fitted ball, a bore or – depending on the design – a notch in the valve plate. It must be installed in the correct position to allow air to escape upwards. If the thermostat is installed in the wrong orientation, an air pocket may form around the expansion element, causing the thermostat to open too late or not at all.

**No additional silicone sealant should be used** on thermostats with a molded rubber seal. Excess material can squeeze inward, harden, break off and block the valve mechanism or the small passages of a map-controlled thermostat. As thermostat housings are made of plastic, the specified tightening torques must be observed. **Overtightened bolts can cause hairline cracks** that may only begin to leak weeks later under thermal stress.

**Moisten O-rings with fresh coolant before installation** to prevent twisting or damage.

## Risks of Inadequate Bleeding

If an air pocket remains at the thermostat housing after filling, the wax element lacks thermal contact with the hot coolant because air conducts heat less effectively. The engine overheats and the temperature gauge moves into the red zone, while the thermostat remains closed because it still senses a low temperature.

**Air pockets in the cylinder head are even more dangerous:**
They create local hot spots where the coolant begins to boil. The resulting vapor bubbles collapse (cavitation) and can permanently damage surfaces around the cylinder head gasket or in the aluminum cylinder head.

Electronic rotary slide valves and map-controlled thermostats are particularly susceptible, as they may also rely on coolant for internal lubrication of the actuator motor. If the system runs dry, permanent damage or complete failure may result.

## Practical Tip for Workshops

When working on modern cooling systems, a vacuum filling tool is recommended to fill the system with virtually no air bubbles. Depending on the manufacturer's specifications, a diagnostic bleeding procedure should follow to fully open all electric valves and rotary slide valves and remove any remaining air.
**Always use the specified coolant.**

- **Bleeding upwards**
- **Do not use additional silicone sealant**
- **Observe tightening torque**
- **Moisten O-rings**
- **Use vacuum filling**

# Coolant Control Valves

## Intelligent cooling. Efficient control.

METZGER coolant control valves precisely regulate the coolant flow and help maintain an optimal engine temperature. This ensures efficient cooling performance and reliable vehicle operation.

Learn more

# Sensors, Coolant Temperature

## coolant temperature sensors for reliable readings.

METZGER coolant temperature sensors accurately measure the engine temperature and provide reliable signals for efficient engine management and optimal cooling performance.

Learn more

# Discover even more METZGER expertise:

Our “Hoses & Lines” brochure provides a complete overview of our product range at a glance

Explore Hoses & Lines Range.

# Coolant Pipes

## Reliable flow.
## Long-lasting performance.
## For a reliable coolant supply.

METZGER coolant pipes ensure the reliable flow of coolant between system components. They stand out for their precise fit, corrosion resistance and long service life.

Learn more

# Vent Hoses, Expansion Tank

## Reliable venting.
## Reliable cooling.

METZGER vent hoses ensure controlled venting of the cooling circuit and support the function of the expansion tank.

Learn more

# Radiator Hoses

## Reliable radiator hoses for consistent flow, high durability and long-lasting performance.

Our radiator hoses made from high-temperature-resistant elastomers offer outstanding quality, maximum operational reliability and reliable coolant flow – even under demanding conditions. Precision-manufactured for an optimal fit and reliable sealing.

Learn more

# Sensors, Coolant Level

## Coolant level under control. Engine protected.

Learn more

METZGER coolant level sensors precisely monitor the coolant level and provide an early warning if the level is too low. This helps protect the engine and ensures reliable operation.

# Connectors, Coolant Line

## METZGER connectors for permanently reliable and leak-tight coolant flow.

METZGER connectors provide secure and reliable connections between coolant lines. Thanks to their precise fit and high-quality materials, they ensure a permanently leak-tight connection and trouble-free coolant circulation.

Learn more

# Cap, Coolant Tank

## Small component. Big impact. Reliable pressure regulation in the cooling system.

Learn more

METZGER caps reliably seal the coolant tank and ensure the correct operating pressure in the cooling system. This helps prevent coolant loss and supports efficient engine cooling.

# Thermal Management taken further.

## More products from METZGER Autoteile.

Breather Screws/ Valves, Radiator

Brackets, Expansion Tank (Coolant)

Repair Sets, Harness, Coolant Temperature

Mountings, Radiator

Oil/Coolant Temperature Sensors

Temperature Switches, Coolant Warning Lamp

Bolts, Radiator Cap

Sealing Plugs, Coolant Flanges

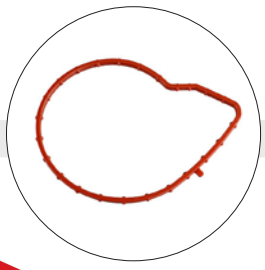
Heat Exchanger, Traction Battery

Retaining Springs, Temperature Sensor

Chillers

Thermostats, EGR cooling

Coolant Collection Tank, Electric Motor



Gasket, Water Pump

Thermostats, Oil Cooling

Seal Ring, Coolant Tube

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