Filters, Oils and Coolants

KEEP EVERYTHING RUNNING SMOOTHLY.

A Rolls-Royce solution

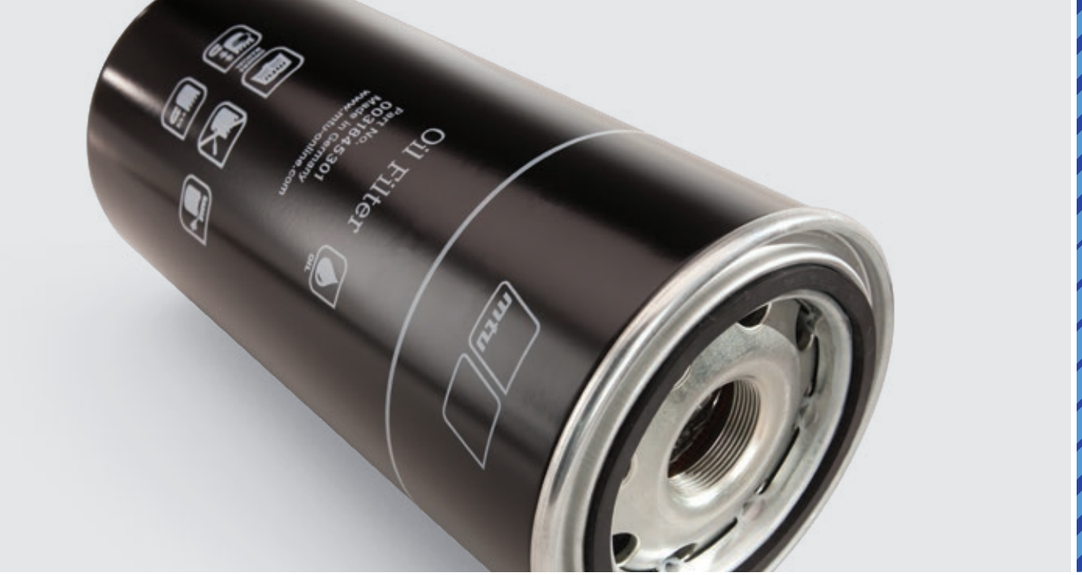
YOU'VE MADE A POWERFUL INVESTMENT. WE'LL HELP YOU PROTECT IT.

Our engines and systems are built to deliver robust, reliable performance. But our commitment to your success doesn't end there. For peak performance, longer life and optimized costs, rely on the only service portfolio designed specifically with your equipment in mind.

Improve performance and extend equipment life.
- Avoid the unexpected with professional service from MTU-certified technicians
- Keep your equipment running smoothly with genuine filters, oils, coolants and OEM parts
- Empower your operators and maintenance personnel with extensive, hands-on training
- Keep a good thing going with factory reman and overhaul solutions

Optimize costs without increasing risk.
- Maximize fuel economy and uptime with preventive maintenance services
- Achieve cost-certainty and optimal availability with a ValueCare Agreement
- Protect against the cost of repairs with Extended Coverage beyond the standard warranty
- Proactively monitor equipment health and activity from afar with Digital Solutions
- Spend less on parts without compromising quality through our remanufacturing program

MTU ValueCare products and services are available worldwide through our extensive network of more than 1,200 service locations. Contact your local service partner today and ask how MTU ValueCare can be customized to meet your unique needs..



KEEP EVERYTHING RUNNING SMOOTHLY.

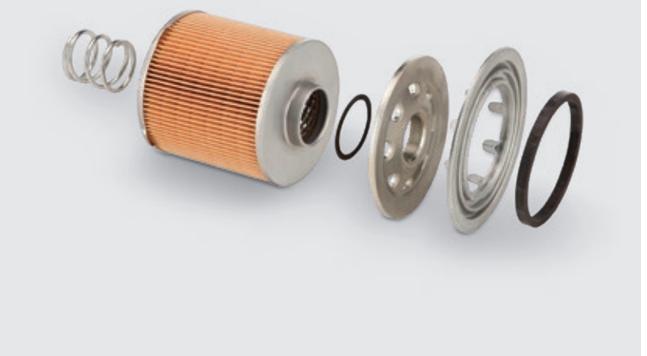
To protect your engine or system, only the best is good enough. Genuine filters, oils and coolants work in perfect harmony with your equipment to maximize its performance, prolong its life and protect it—making them an essential part of your preventive maintenance program.

Not all consumables are created equal—maintenance products that have not been tested by MTU can lead to significant engine damage. MTU filters, oils and coolants are the only consumables rigorously tested and approved by MTU for use in MTU diesel and gas engines and systems—an assurance only MTU can provide. Available for a wide range of applications, their superior design and top-quality materials maximize performance and minimize total cost of operation—and enhance your peace of mind.

Keep it clean.
MTU filters provide high-quality filtration of harmful particles, prevent leaks, provide efficiency under differential pressures and preserve safe operation.

Protect and lubricate.
MTU diesel and gas engine oils lubricate moving parts to prevent wear, fight corrosion, dissipate heat and remove abrasive particles.

Maintain optimal temperatures.
MTU coolants, available as concentrates and premixes, are perfectly formulated to provide maximum protection for your cooling system.



Filters

KEEP IT CLEAN.

Filtering is a balancing act of microscopic proportions. To be completely effective, filters must protect critical engine areas from harmful particles and contaminants that can cause premature wear and reduce component life without restricting the flow of air, fuel or oil and compromising engine performance. Our full line of air, fuel and oil filters are formulated specifically for your engines and designed to resist premature plugging and resist collapse, even under severe duty, to ensure reliable performance and long life.

The service life of a filter is a function of its design, construction and durability. Providing reliable filtration throughout a predictable service interval requires impeccable design, robust materials and laborious testing—and is exactly what sets our genuine filters apart as the only filters tested and approved by MTU for use in your equipment.

Air Filters

RELIABLE FILTRATION BY DESIGN.

Fuel and air are the essential ingredients for engine combustion. And modern diesel engines require impeccably clean air in order to breathe. This presents a huge challenge at many worksites, where dust, sand, moisture, soot, pollen and many other substances are constantly present. Without adequate filtration, engine performance will undoubtedly suffer. There's only one way to ensure optimum protection in the harsh conditions and remote locations where your engines work: genuine air filters.

Built to remove harmful particles without restricting airflow, MTU air filters protect vital components such as turbochargers, intake air coolers, valves and other sensitive components. MTU air filters are engineered to retain large particles that can cause sudden machine failure, while protecting against the ingress of water and reducing the number of smaller particles that can lead to component wear. Through high-quality design and materials, they filter air efficiently and reliably to ensure optimum composition of the air-fuel mixture.

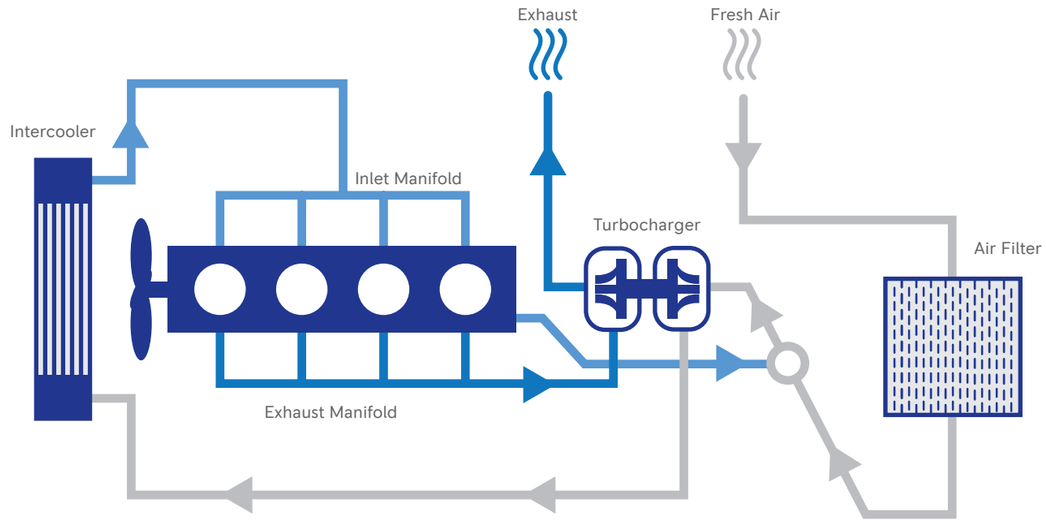
Why are genuine air filters so important for your equipment?

High-quality filter media
MTU air filters are engineered with high standards to prevent unwanted airborne particles from entering the combustion chamber and causing engine failure or premature wear. Through superior design and materials, MTU air filters provide optimum protection for the engine, while keeping its performance at a consistent, high level.

Airtight seal
Every MTU air filter is designed based on proprietary OEM dimensions and tolerances, enabling the seal to provide an airtight fit with the housing, with no potential for bypass. Material is resistant within normal temperature ranges, and designed to retain its elasticity throughout the filter's service life.

Built for stability
Highly stable pleated bellows maintain their shape in all operating conditions, ensuring ideal airflow. Embossed filter media is stabilized with glue beads, support inserts or pleat lock for maximum durability, with special paper impregnation to protect against moisture.

Diesel Engine Air System.

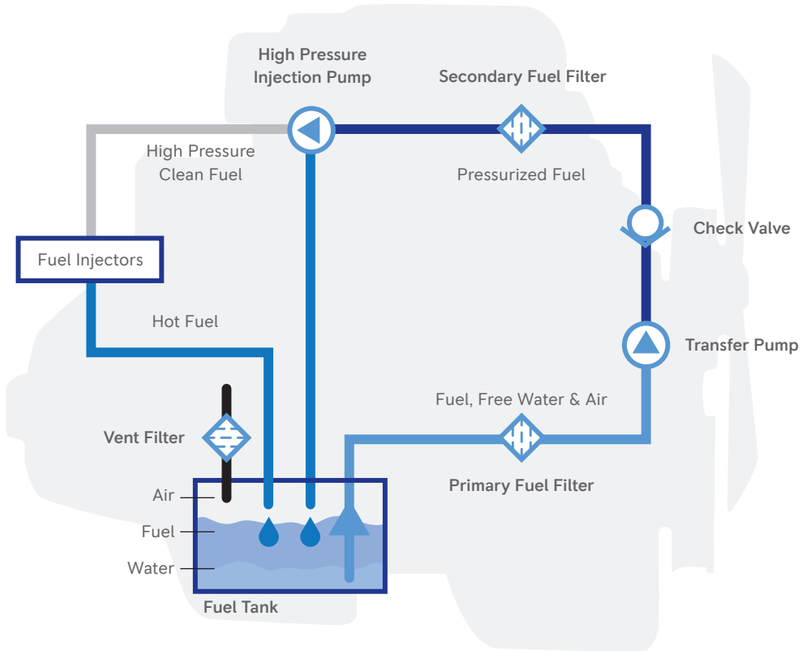


An air filter comparison:

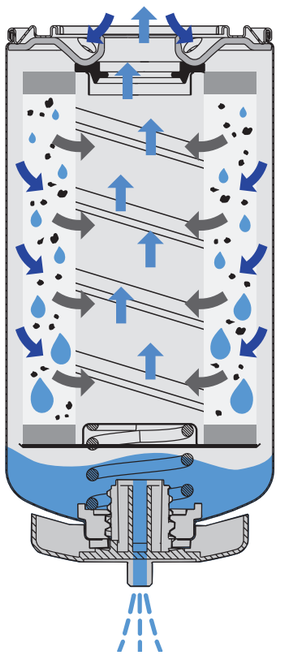
Genuine
- High-quality filter media: Designed to deliver consistent high engine performance for specific applications. Durability is enhanced with tear-proof and pulsation-resistant design. High-efficiency particulate separation ensures small particles are captured, with an exceptional dust-holding capacity to ensure optimal filtration and long service life.
- Superior sealing: A reliable seal provides an airtight fit with the housing, preventing air bypass. Material is resistant within normal temperature ranges and retains elasticity throughout service life.
- Exceptional stability: Pleated bellows maintain shape under all operating conditions and allow for ideal airflow. Embossed filter media is stabilized with glue beads, support inserts or pleat lock. Media impregnation protects against moisture.

Non-Genuine
- Low-quality filter media: Material not resistant to tearing, allowing unfiltered air into the engine. Contamination of mass airflow sensor can result in incorrect readings and higher fuel consumption. Inadequate air supply to engine with possible loss of power and increased engine wear. Filter media is standardized across all applications. Coarse media is inefficient and allows fine particles to pass through. Low dust holding capacity may cause unplanned service.
- Inferior sealing: Low-quality material is too hard or soft to form airtight seal. Material loses elasticity when exposed to engine vibrations and temperature changes. Seals may crack leading to bypass. Bellow ends may be overlapped without joint allowing continuous bypass.
- Inadequate stabilization: Embossment or stabilizing inserts are inadequate or missing. Media compresses and pleats stick together, reducing filtration surface area and causes lower capacity and possible media tearing. Inadequate or lack of impregnation allows media to absorb moisture and swell, causing wavy appearance and weak media.

Diesel Engine Fuel System



Filter Operation



Clean, unfiltered fuel enters the filter through the baffle/thread plate.

Specialized filter media removes water droplets.

Droplets bead-up along sides of chamber as they fall into the drain bowl.

Water is removed through drain at the bottom of the unit.

Fuel Filters

ENGINEERED FOR TODAY'S HIGH FUEL STANDARDS.

Advanced fuel system technologies such as common rail enable your engines to deliver more power from less fuel—with lower emissions. These technological advancements use high injection pressures to achieve target performance levels and emissions standards, placing extraordinary demands on fuel quality. Any potential contaminant that might lead to abrasive damage at the high injection pressures must be controlled.

MTU fuel systems rely on advanced filtration in order to prevent premature wear or other serious damage to sensitive components, such as the high-pressure fuel pump or injectors. Using multi-stage filtration technology, MTU fuel filters reliably remove harmful contaminants, and protect sensitive components, ensuring peak performance and long life from MTU engines.

Our fuel filters protect engines against these harmful contaminants:

- Particulate and debris may enter the fuel during distribution and storage tank transfer.
- Water is a primary catalyst to corrosion and reduced fuel lubricity.
- Wax/paraffin is harmful in cold weather, causing drop out of fuel.
- Microbes (bacteria) may form at the boundary between the fuel and water.
- Fuel Degradation Products (FDP) are caused by the fuel's thermal and oxidative instability before combustion.
- Asphaltenes in diesel fuel may accumulate over time and form a black tar-like material.
- Air coming in contact with fuel from leaks in the system can cause adverse effects.

Why are genuine fuel filters so important for your equipment?

Reliability over the entire service interval
MTU fuel filters are designed for maximum efficiency and high holding capacity. As a result, they provide effective, efficient filtration throughout the entire service interval.

High separation efficiency
MTU fuel filters are engineered for high separation efficiency, for optimal reliability. Specialized high-quality filter media reliably removes contaminants and water that causes corrosion and reduces the lubricity of the fuel, protecting the engine from disruptions to the combustion process and potential damage to system components.

High contaminant holding capacity
When large volumes of contaminants and water accumulate, filters must be replaced frequently. MTU fuel filters are built for maximum holding capacity. As a result, they deliver longer filter life, minimizing your operating costs.

Built to last
Heavy-duty components—such as baffle plates, springs, seams, can housings, liners and springs—all contribute to ensuring robust and resilient filters that are built to withstand tough off-highway conditions.

Oil Filters

PERFORMANCE DEPENDS ON PURITY.

As the only oil filters approved for use in your engines, our oil filters provide almost perfect particle separation by retaining even the smallest particulates. By limiting the concentration of solid contaminants in the lube oil, unwanted changes in oil consistency and viscosity are prevented, and oil quality and effectiveness are protected. This maximizes engine power and operating efficiency throughout the oil change interval.

Why are genuine oil filters so important for your equipment?

Excellent filtration of harmful particles
High-quality filter insert/elements consisting of folded filter paper deliver long service life by working effectively throughout the entire oil change interval. Folding the filter paper results in a geometrically stronger design with increased surface area for maximum strength and dirt absorption, and minimal pressure loss. The paper elements are also impregnated, which prevents premature deterioration by protecting against water and tensides, while also making the material temperature resistant.

Oil leak prevention
The seal retainer prevents leaks that can lead to engine fire or harm the environment by protecting against water that can lead to corrosion.

Efficiency under differential pressures
The support tube maximizes filter effectiveness by ensuring strength and preventing internal leak at the filter element when differential pressures occur.

Safe operation
A corrosion-protected housing with high crushing strength offers high stability during operation, installation and removal throughout the entire service life of the filter.

Continuous oil supply
When the filter is clogged or at cold starts, the filter bypass valve maintains continuous oil supply to the engine. A continuous oil supply is very important because it prevents unwanted dry friction and possible engine damage as a result.

An oil filter comparison

Genuine
- Features exceptional pleated media designed to resist high-pressure differentials and chemical substances in the oil. As a result, almost perfect particle separation is achieved, retaining even the smallest contaminants.
- Remains effective throughout the service interval.
- Housing is engineered to endure high operating pressure with extreme peaks and standard pressure resistance in the casing and other components.
- Bypass valve ensures adequate oil supply under exceptional circumstances. Closed during normal operating conditions, the bypass valve circumvents the filter during cold starts or if it becomes clogged.

Non-Genuine
- Lacks stable pleat geometry and has a lower dirt capacity. As a result, smaller particles remain in the oil, which may increase engine wear and shorten service life.
- Tears easily when exposed to high-pressure differentials, allowing unfiltered oil to enter the oil circuit and cause substantial damage.
- Housing utilizes inferior sealing materials that may cause oil leaks between the filter housing and the engine block. When sprayed with water, inadequate surface protection can cause corrosion, eventually leading to oil leaks. Undersized housing or inferior quality increases risk of bursting and major engine damage.
- Bypass valves may fail to open in time, allowing the engine to run without lubrication and potentially causing major damage. If the bypass valve is broken or inhibited, a malfunction highly impacts engine wear due to the constant circulation of unfiltered oil.

Oils

PROTECT AND LUBRICATE.

Engine oils play a vital role in protecting engines and systems. Our full line of genuine oils is formulated specifically for your equipment based on intensive research.

Choosing the right oil for an engine or system depends on several factors such as power output, heat generation, application, planned usage and whether the crankcase is open or closed. The consequences of choosing the wrong oil are significant—ranging from compromising an engine's performance to shortening its life and potentially voiding the warranty.

MTU diesel and gas engine oils are designed to optimize engine efficiency and protect against corrosion and harmful wear based on how an engine will be used in the field. They're selected based on their ability to provide outstanding piston cleanliness, even under extreme conditions. Exceptional thermal stability and consumption control keeps the viscosity of the oil consistent and reduces shearing—even in the most severe applications. Special anticorrosive additives protect the engine from grid and surface breakup, while dispersants and detergents collect abrasive microscopic particles and soot so the filter can remove them.

Why are genuine oils so important for your equipment?

Prevents wear
MTU diesel and gas engine oils lubricate your engine's moving parts, including piston, crank and camshaft, to prevent wear. Lubricating oil creates a separating film between surfaces, minimizing direct contact between moving parts and decreasing abrasion.

Fights corrosion
Special anticorrosive additives in the oil defend your engine from grid and surface breakup.

Heat dissipation
Moving engine parts cause friction which wastes otherwise useful power by converting energy to heat. MTU engine oils help dissipate heat and together with the coolant, cools the engine and prevents overheating.

Evacuation of particles
A clean engine is an efficient engine. However, working conditions can produce abrasive microscopic particles and soot. High-quality additives in MTU oil (dispersants and detergents) absorb these harmful particles and circulate them through the oil circuit to the oil filter, where they are removed.

Coolants

MAINTAIN OPTIMAL TEMPERATURES.

Coolants keep engine and system temperatures optimal under all operating conditions. Thanks to extensive research, our coolants are designed to optimally protect your equipment, with exceptional thermal transfer characteristics and high temperature stability.

MTU coolants are perfectly formulated to provide maximum protection for MTU engines and systems according to how they're used in the field. Their low freezing point prevents damage in cold environments, while their elevated boiling point safeguards against hot conditions and severe duty, preventing overheating. Genuine MTU coolants also protect against all kinds of corrosion—which leads to leaks and other costly damage—by producing a durable protective layer that insulates cylinder liners and water pumps from cavitation (pitting) damage.

Why are genuine coolants so important for your equipment?

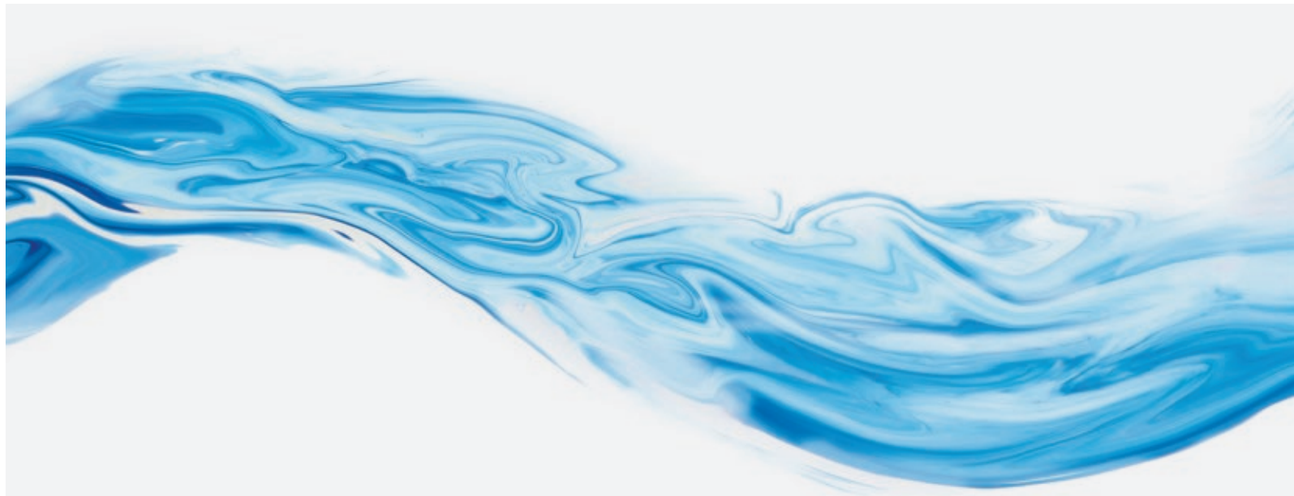
Heat dissipation
Cooling fluid (a mixture of coolant concentrate and water) absorbs and removes thermal energy generated during combustion. With outstanding thermal transfer characteristics, genuine MTU coolants protect the engine block, cylinder heads and other components against overheating and engine damage, which can result in costly repairs and downtime.

Corrosion prevention
Without MTU coolant, the oxygen in the water can lead to a chemical reaction with the metallic components in the cooling system during engine operation. To avoid this problem and prevent corrosion, MTU coolants contain suitable additives, which form a protective film on engine components.

Cavitation protection
Cavitation involves the formation and break-up of vapor bubbles in engine coolant cavities such as water pumps and cylinder liners. When vapor bubbles implode, they cause a crater-like material erosion known as cavitation. MTU coolants guard against this problem, forming a protective film on metal components. The film acts as a shield that absorbs energy from imploding vapor bubbles.

Specially formulated antifreeze
Since water expands when it freezes, using water-soluble corrosion inhibitors in the cooling system of a combustion engine can cause extensive damage. MTU Antifreeze Concentrate is specially formulated for use at extremely low temperatures in cold regions, as the glycol constituents in the antifreeze can be adjusted to lower the coolant's freezing point to an acceptable level.

Environmentally friendly
Genuine MTU coolants are generally free from nitrites, amines and phosphates.



Service Network

LOCAL SUPPORT. WORLDWIDE.

The most important part of your power system isn't a part at all—it's your local service team. With more than 1,200 service locations worldwide—backed by regional Parts Logistics Centers in Europe, Asia and America—you can count on responsive support by expert technicians, wherever work takes you. To find your local service partner, visit **www.mtu-solutions.com**.

Always on call, 24/7
Whether it's connecting you with a local service partner or assigning an urgent problem to a dedicated team of MTU experts, we're ready to assist you—wherever you are, whatever you need.

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