

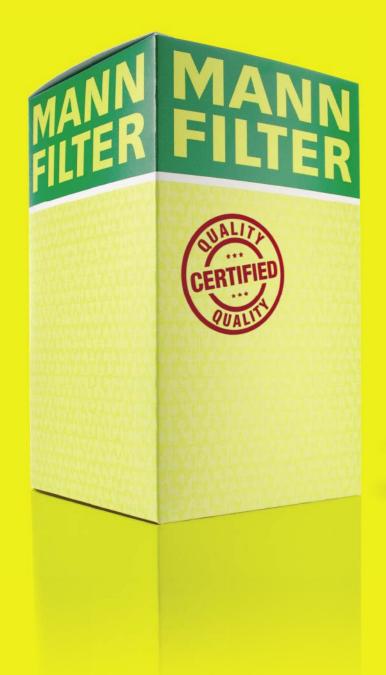
# **Drive better with us!**

Filter solutions from MANN-FILTER for cars and light delivery vans



More technology than meets the eye!

# At MANN-FILTER, we strive for only one thing: the best!





### **Quality in research and development**

- · MANN-FILTER is continuously working on the further development of products and production processes.
- · A wide variety of test systems and processes based on ISO standards are already applied in the product development phase.
- · Prototypes are tested for functional reliability in large-scale function and endurance tests.
- · In series production too, MANN-FILTER products are regularly audited to Group specifications which apply to all locations world-wide.



# **Quality in production**

- · Every production location in the world works according to the production and quality assurance guidelines defined and reviewed by the main factory in Marklkofen (Bavaria, Germany).
- · Before they are introduced, all new manufacturing and production processes are tested and approved by an independent quality body.
- · Qualified employees ensure that only original equipment quality leaves the factory - no matter where they are in the world.



## **Quality in control**

- · Regular independent certification audits ensure that products are manufactured to the same standards all over the world regardless of the
- · Every production location has its own quality organisation with a quality officer in charge.
- · All production factories are certified to Technical Specification ISO/TS 16949:2002. Certification is reviewed every year and repeated every three
- · MANN-FILTER complies with the environmental standards contained in DIN EN ISO 14001. All production locations are certified to this international standard.



# The subtle difference

Your car clearly knows that filter solutions have everything to do with the small details long before you even notice. You only realise it when the cabin filter starts to lose its performance in spring when the pollen count is at its peak.

simply because they are doing their job right.

This is precisely what development engineers and exequipment quality. perts at MANN+HUMMEL have been doing for over 70 years, day in, day out. Over the years, so many inno- If you want to play safe when selecting the right filter, vations have come onto the market for the benefit of choose filters from MANN-FILTER.

In short, vehicle filters are only at their best when you people, vehicles and of course the environment. Relianotice absolutely nothing between two service intervals ble partners and a world-wide sales organisation ensure that filter solutions from MANN-FILTER are now available almost everywhere in the world - of course in original

# **MANN-FILTER** benefits that pay off for you





- Over 70 years' experience in developing new filter solutions
- Tested original equipment quality
- **+** Long service life
- **+** Wide range of filters
- + Full range of services and much more

# **Oil filters from MANN-FILTER**

# They make things run smoothly and last longer

The combustion process produces dirt particles and combustion residue which find their way into the engine oil. An oil filter removes this residue reliably from the engine oil. Without it, it would no longer be possible to supply the engine with the clean oil it needs or provide the necessary protection from wear. The risk to the engine is a loss of power and an increase in oil consumption. It may even result in engine damage in the worst case.

#### Better to be on the safe side

MANN-FILTER oil filters reliably remove impurities from oil circuits. Clean oil reduces friction in the bearings, lubrication gaps and moving parts and helps to maintain the engine service life.

#### **Good for the environment**

Oil filter elements from MANN-FILTER can be fully incinerated and are easy to dispose of. In addition, the development of new filter media places great importance on using as many materials as possible made of regenerative raw materials.

#### **Meet every requirement**

Oil filters from MANN-FILTER are available in a wide variety of constructions for various applications:

- · Oil filter elements and spin-on oil filters for main flow and bypass applications
- Metal-free and very environmentally friendly filter elements
- · Gearbox oil filter elements
- bypass flow of free flow centrifuges

### **Advantages of MANN-FILTER oil filters**

- Optimum protection for the engine
- **•** Pressure-resistant and anticorrosion protected spin-on filter housing
- + Long life filter media
- + Long life sealing rings
- + Non-return stop membrane made of high quality silicone
- Teflon-coated bypass valves
- + Fast filter change with practical release devices



# **Fuel filters from MANN-FILTER**

# **Protect engines from having a heart attack**

Modern engines are continually pumping out more and more power from less and less fuel. This is the job of highly sensitive and complex components such as the fuel injection system. Serious damage from wear and corrosion can be avoided by filtering out dirt particles and free water suspended in the fuel.

#### **Reliable protection**

MANN-FILTER fuel filters reliably separate dust, rust, water and all other dirt particles that cause wear. This ter element contamination by foreign particles to a miniprotects sensitive components and ensures the operational reliability of the engine.

#### **Equal to their task**

Modern and highly sensitive fuel injection systems reguire innovative new solutions at the highest quality level. This is another segment which is optimally covered forms: by the wide variety of fuel filters from MANN-FILTER. Take the high performance MULTIGRADE filter media as an example.

#### **Highest quality**

Technical cleanliness is a basic quality feature which is gradually gaining in importance as engines become more and more fuel efficient and fuel injection systems filters produced in this way optimally match the purpose are highly sensitive. MANN-FILTER meets this challenge head on by providing a complete quality management

system along the entire value added chain - from suppliers through to the servicing workshop - to reduce filmum. Components sensitive to contaminating particles can therefore be produced under cleanroom conditions - which you can recognise by the CCM label.

#### **Designed for top performance**

Fuel filters from MANN-FILTER come in a variety of

- · Fuel filter elements some metal-free
- · Spin-on fuel filters
- · Inline fuel filters

### **MULTIGRADE**: more performance – more protection

Multilayer MULTIGRADE F filter media have a much higher performance than the usual market standard. Fuel for which they were made.

# **Advantages of MANN-FILTER fuel filters**

- + Very high separation efficiency
- **①** Very high functional reliability of fuel injection components
- **+** Greater engine protection
- **•** Very high reliability over the entire service interval
- Maximum safety margins





# **Air filters from MANN-FILTER**

### **Top protection against ingested dirt**

Soot, particles, pollen and other substances are a constant companion along every kilometre of the road. If the air filter is not in perfect condition or intact, dirt particles can enter the combustion chamber, score marks on the pistons and lead to premature engine wear. Even electronic components such as sensors located along the path between the air intake and the combustion chamber may also sustain damage due to inadequate filtration and be destroyed in the worst case. This may but need not happen if you opt for quality from MANN-FILTER.

#### **Tough performer**

quality, air filters from MANN-FILTER are extremely robust and retain their shape. The filter elements are an easy match for even strong mechanical loads, for exam- in top shape ple when fitted in confined spaces or locations difficult to access. They filter the intake air efficiently and reliably to ensure optimum composition of the air-fuel mixture – a vital precondition to keep engine output at a constant level.

#### Clean solution

The majority of MANN-FILTER air filters can be completely incinerated and can therefore be disposed of without any problem.

#### Flame-retardant

Glowing cigarettes may pose a serious danger if the air filter is not treated with a flame retardant impregnation. Numerous MANN-FILTER air filters already have this

special impregnation which is insoluble in water. It reli-Through high grade workmanship in original equipment ably prevents the air filter from bursting into flames if hot cigarette ash is ingested into the air intake.

Trapezoidal, oval-conical or stepped - MANN-FILTER offers a wide variety of products with hundreds of shapes to meet increasing demands even in confined spaces.

#### High performance in a compact size

Micrograde G is MANN-FILTER's response to the automotive industry's demand for space-saving solutions, greater dust capacity and longer service intervals. The cellulose fibre filter medium has a gradient structure which swallows up to 20% more dirt than comparable paper filters containing standard cellulose filter media.

## **Advantages of MANN-FILTER air filters**

- + Functional reliability over the entire service interval
- Very high level of dirt separation efficiency
- + Low flow resistance
- Long term 100% impermeability
- Special paper impregnation provides highly stable pleats
- **+** Water resistance due to special impregnation
- + Optimum protection for the engine, air flow meters and other sensors



To prevent the engine from suffocating, the air filter must be replaced at regular intervals - preferably by an appropriate MANN-FILTER product in original equipment quality. Refer to the car manufacturer's specifications for the date of the next filter change.



# **Cabin filters from MANN-FILTER**

### So that occupants can take a deep breath and relax

Dust, pollen, soot and also pollutant gases such as nitrogen oxides or ozone can make travelling by car a very difficult experience. Especially asthma sufferers really appreciate a good climate in the car interior. People who need to breathe relaxed at any time in a car rely on cabin filters from MANN-FILTER.

#### **Effective protection**

MANN-FILTER cabin filters offer almost 100% protecinterior, which is a special help to children and those who suffer from allergies or asthma. MANN-FILTER ca- Well made bin filters are also an effective protection for air condi- MANN-FILTER cabin filters come in two versions: firstly tioning systems.

### **Reliability from the factory**

cabin filters. Today, almost every second cabin filter fitted to a new vehicle is made by MANN+HUMMEL.

#### Easy to handle

Detailed workshop manuals help MANN-FILTER worktion against unwanted particles - and in the form of a shops and car owners to change filters. The easy to uncombination filter even against pollutant gases. They derstand instructions describe how to find the fitting locacreate a pleasant atmosphere of well-being in the car tion quickly and it takes no time at all to fit the new filter.

a high quality particle filter and secondly a combination filter with activated carbon. The activated carbon layer embedded in fleece bonds pollutant gases such as ni-In Europe more than 90% of vehicles are equipped with trogen oxides, fuel vapours or ozone in the pores which are 10,000 times finer than a human hair. This leaves absolutely no chance for unwanted guests in the interior.

# **Advantages of MANN-FILTER cabin filters**

- Optimum ventilation of the vehicle interior due to very high air flow rates
- **±** Even the smallest of particles is reliably filtered
- **+** Constant filtration performance over the entire service interval
- **+** Excellent filtration results by combining mechanical and electrostatic separation
- + Perfect fit
- **+** Excellent air-tightness
- Detailed mounting instructions
- + Easy to fit
- **•** Wide range coverage



The longer the service life of cabin filters, the more they become charged with dirt, pollen, dust and bacteria. Regular filter changes are therefore indispensable to ensure safety when driving and maintain the right climate in the interior.

