

SEALING

VIBRATION
CONTROL

CABIN
AIR FILTER

COMPANY PRESENTATION



**PREMIUM QUALITY
FROM YOUR DYNAMIC AND RELIABLE PARTNER.**

Place of presentation, date
Author with title, first name, last name



FREUDENBERG
SEALING TECHNOLOGIES



Vibracoustic



micronAir

a brand of  **FREUDENBERG**



SEALING

VIBRATION
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CABIN
AIR FILTER

TOGETHER ON THE ROAD TO SUCCESS.



FREUDENBERG
SEALING TECHNOLOGIES



Vibracoustic



micronAir®

a brand of  **FREUDENBERG**



Who we are and what we offer

Corteco is the sales organization of the Freudenberg Group focused specifically on the Independent Automotive Aftermarket (IAM)

- We offer over 26,000 spare parts in OEM quality, supported by the research and manufacturing capabilities of the Freudenberg Group
- We trade seals, vibration control parts, cabin air filters and brake hoses
- We add flexible, aftermarket oriented service and logistics to the excellent quality of the Freudenberg Group products



Our markets

- Passenger cars
- Light commercial vehicles
- Truck & trailer
- Agriculture



History

Establishment of
Corte & Cosso
in Turin (Italy)

1932: Establishment
of the brand Corteco



Foundation of
TRANstec



Carbon activated
filter production



Foundation of
Corteco France 



Branches established in
Poland, Russia,
N. Africa, Americas
and Asia



2011: EU Central
Distribution Center in
Germany

Corteco global with
over 15 locations
worldwide



1920

1936

1978

1996/97

2000

2001

2003

2006

2008




2012

2014


2016





Agreement with **Carl
Freudenberg company**,
distribution of technical
leather goods for engines

Corteco brand
established in Turin (Italy), 
Viernheim (Germany) 
and Lutterworth (UK). 



Transtec changes
company name to
Corteco USA 

Foundation of
Corteco China 

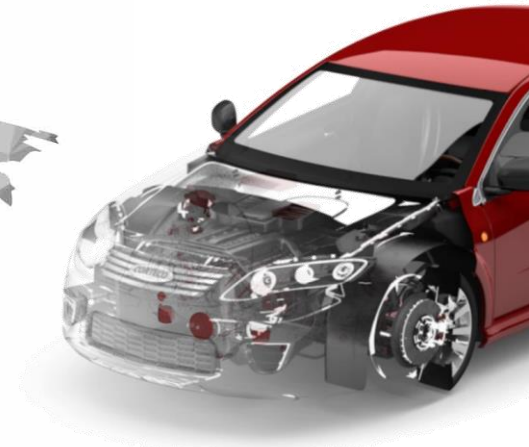
Foundation of
Corteco India 

Acquisition of
ASL (UK)



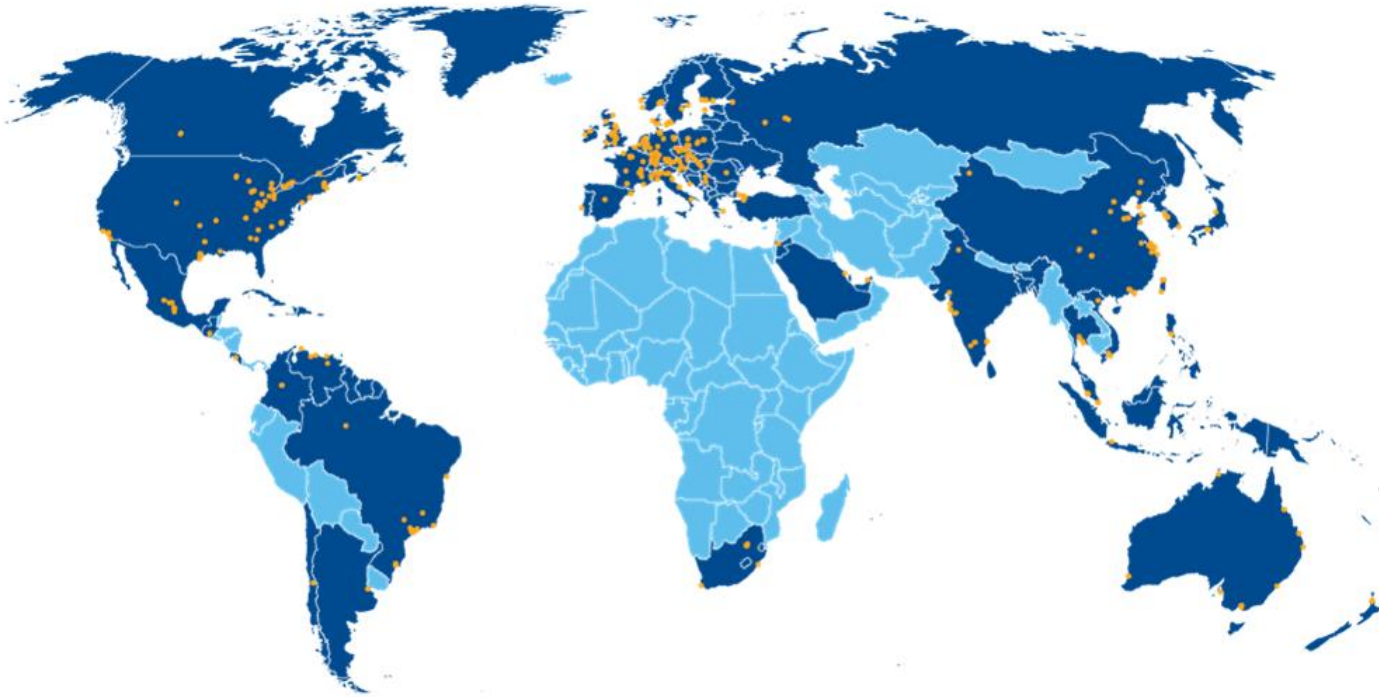
Americas & European
operations consolidated to
a global platform 

15 locations worldwide

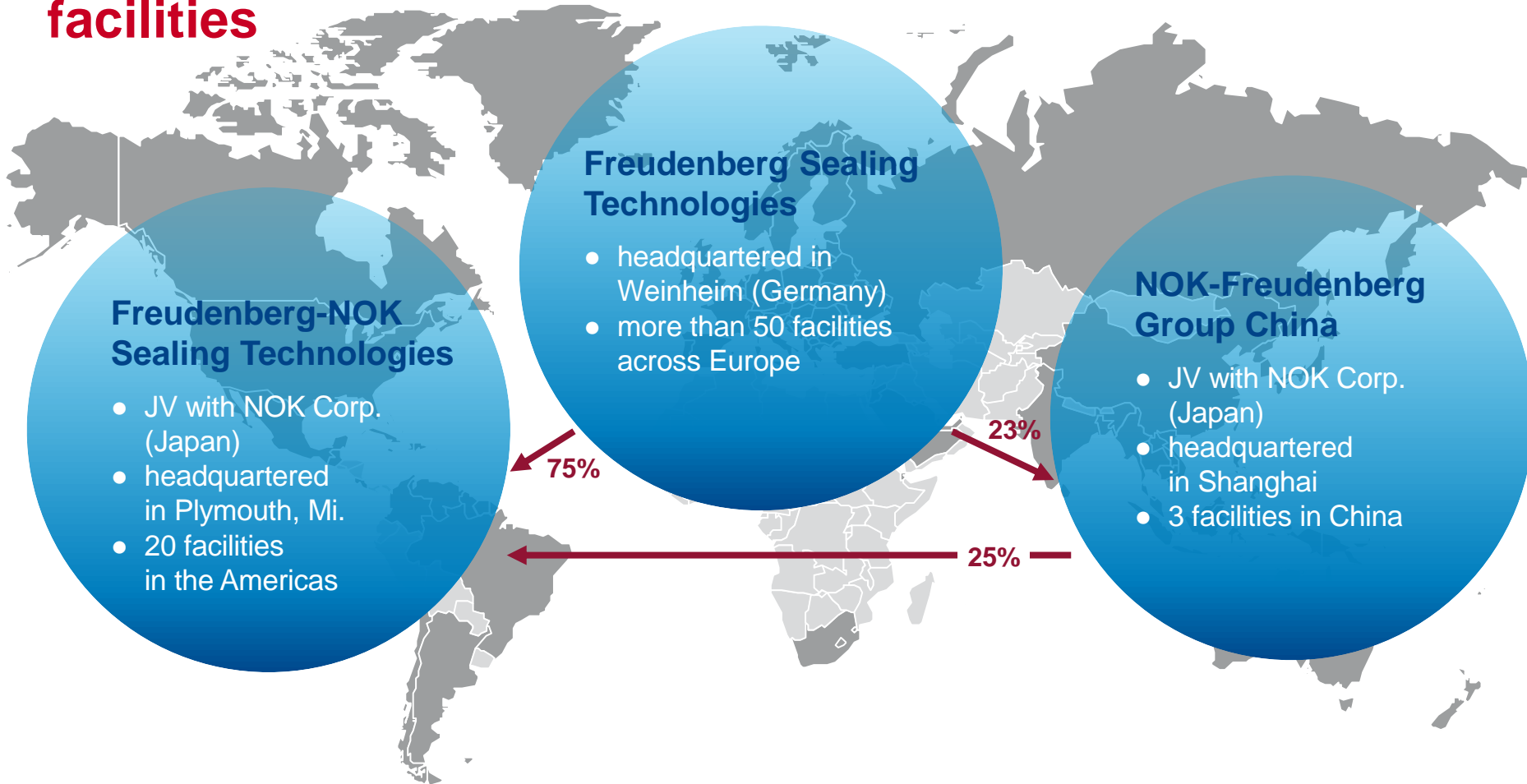


Corteco has manufacturing plants / distribution centers in 15 different countries, but through the Freudenberg Group, we reach customers in 60 countries around the world.

Freudenberg Global presence: Locations in around 60 countries



Freudenberg - global player, local hero: Close to customers in 60 countries with more than 75 production facilities



Brand overview



FREUDENBERG SEALING TECHNOLOGIES

Parent company
Company for Sealing products

FREUDENBERG SEALING TECHNOLOGIES

FREUDENBERG-NOK
Brands for Sealing products

FREUDENBERG FILTRATION TECHNOLOGIES

Company for
Filter products

micronAir[®]

Brand for Cabin Air Filters and
Engine Intake Filters

Distributor and brand
of automotive spare parts
for the Independent
Automotive Aftermarket



Vibracoustic

Company for
Vibration Control products

Vibracoustic

Brand for
Vibration Control products

FREUDENBERG-NOK
INNOVATING TOGETHER

Company for Sealing products

TRANStec[®]

Brand for Automatic Transmission
and Power Steering Kits



Member of a strong group

Freudenberg is the world's leading OE supplier in sealing, vibration control and cabin air filters

- All major OEM's trust in the Freudenberg quality
- € 8,6 billion turnover
- More than 48,000 employees
- € 4,3 billion turnover as Automotive OE supplier
- Main share holder of NOK Japan for Asian applications
- Locations in 60 countries
Headquarter in Weinheim, Germany
- Commitment to highest product quality, material & technology excellence
- Family-owned business for over 160 years



OE quality spare parts

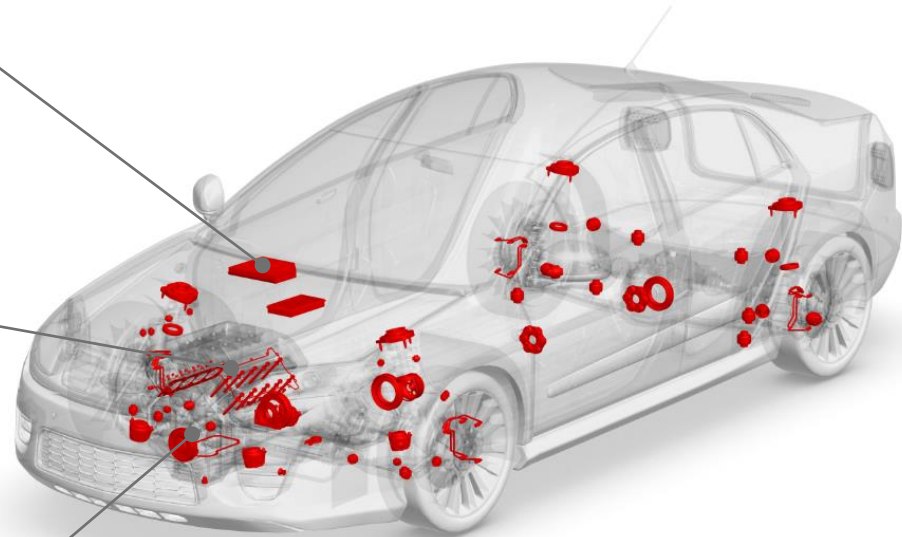
- Particle Cabin Air Filters
- Carbon Activated Cabin Air Filters
- Engine Intake Air Filters



- Oil Shaft Seals
- Encoder Seals
- Gaskets & Head bolts
- Oil Drain Plugs
- Valve Stem Seals
- Valves
- Sealing Pastes
- Brake Hoses
- Plug and Seal

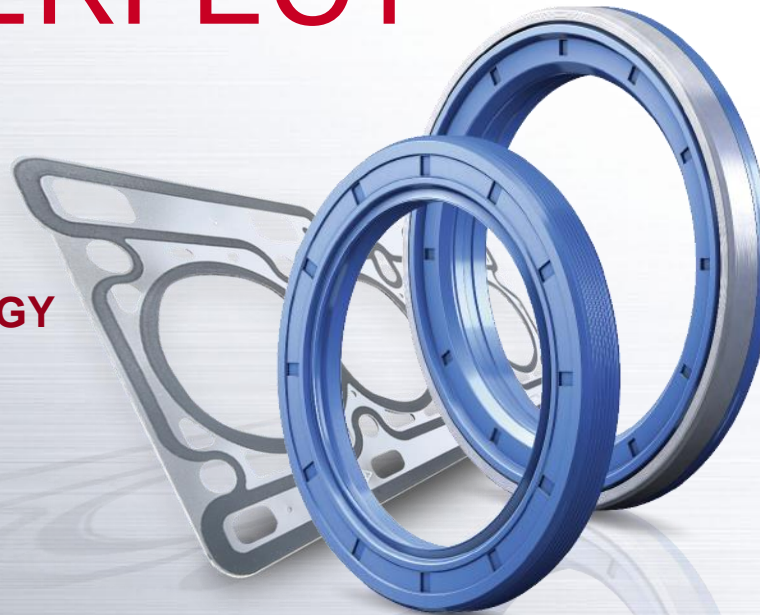


- Engine and Gearbox Mounts
- Pulleys
- Suspension Mounts
- Hydraulic Accumulators
- Flexible Propshaft Coupling
- Bearing for Chassis and Powertrain



OUR FORWARD THINKING. YOUR PERFECT FIT.

SEALING TECHNOLOGY
IN OEM QUALITY.



FREUDENBERG
SEALING TECHNOLOGIES

Sealing



Freudenberg Sealing Technologies designed and manufactured the first radial shaft seal in 1929 and continues to deliver innovative solutions at the highest level.

As the aftermarket distribution arm of the Freudenberg Group, Corteco can draw on many decades of that manufacturing expertise.

- Over 6,500 different shaft seals (Simmering®)
 - Around 1,500 oil seals for agricultural and commercial vehicles
 - Over 550 hydraulic seals
 - 110 oil seals for clutch replacements
 - 120 oil seal kits for timing belt replacements
 - 3 high-performance sealing pastes
- Over 7,000 gaskets
 - Over 205 cylinder head bolt kits
 - 60 differential gasket kits
- Around 180 Oil drain plugs with over 50 Oil drain plug kits incl. washers
- 190 Valve stem seals
- Over 320 Valves
- Brake hoses

“LESS is more. MORE RESPONSIBILITY.”

Freudenberg Sealing Technologies demonstrates its commitment to a cleaner environment by investing in long-term research and development programs designed to achieve significant reductions in vehicle emissions.

The key to greater fuel economy is less oil seal friction on the shaft. In order to achieve this, Freudenberg experts focused their attention on basic sealing efficiency parameters:

- Less contact spread
- Improved PTFE lip design

Significant benefits include:

- Better fuel economy
- Reduced oil consumption
- More efficient dynamic sealing
- Lower working temperatures
- Improved power retention



Expert Seals



CSWS®

Composite seals with integrated sensor.

- Evolution of the C-SEAL
- Integrated encoder and sensor to communicate with electronic devices



ESS® Energy Saving Seal

PTFE design with FKM (Viton) compound, improving performance and leading to a significant friction reduction.

- Reduction in fuel, oil consumption and CO2 emissions
- Improved dynamic sealing efficiency (visco pump principle)



C-SEALS®

Composite seals with integrated flange.

- Easy and precise mounting to avoid axial misalignment



CASCO®

Seal with ESS technology integrated into a cassette with an advanced “axial” sealing lip design.

- Lower CO2 emission levels
- Longer lasting, despite extreme working conditions



RWDS®

Seal with integrated sensor.

- More compact than CSWS
- Lightweight design
- Easy and precise mounting

Copy vs Original part



Corteco original Oil Seal

An oil seal is a very simple component but essential for vehicle functionality.

The standard version mainly comprises a metal insert, rubber layer and spiral spring. Its key function is to prevent engine oil leakage.

Only if the oil seal is correctly designed and produced respecting OE specifications, will it maintain long life performance.



Copy Oil Seal

Copied oil seals run the risk of oil leakage, potentially damaging engine components and increasing vehicle repair costs.

Characteristics of a copied oil seals

- Spiral helix is less defined
- Color of the rubber mixture deviates from the original
- Insufficient dynamic sealing contact

Only an oil seal specialist has the right knowledge to develop an efficient and high-performance part.

The identification of a copied seal is almost impossible without a microscope, so trust the expert in sealing.

Gaskets



Corteco supplies Cylinder Head Gaskets and corresponding bolt kits as well as silicone sealing paste.

- **Cylinder head gaskets**
- **Vale cover gasket**
- **Manifold gaskets**
- **Oil pan gaskets**
- **Sealing kits**
- **Cylinder head bolt kits**
- **Sealing pastes**
- **Oil drain plugs**

The cylinder head gasket sits between the engine block and cylinder head. Its main purpose is to seal the different engine gases and fluids from each other (e.g. oil, cooling water).

The cylinder head gasket must be able to withstand the dynamic and thermal forces that are transmitted by the cylinder head and the engine block.

Multi layer steel (MLS) head gaskets increase engine performance and reduce CO2 emissions, and are in line with vehicle manufacturer's demand for an increased life span of components.

Valve Stem Seals

Valve Stem Seals are developed for engines in a variety of vehicles, which often operate under harsh conditions in extreme environments.

They ensure a precise level of controlled oil leakage specified by vehicle manufacturers. So, excessive oil leakage that adversely affects the catalyst filtration capacity is avoided.

Catalysts reduce the number of contaminants dispersed into the atmosphere, significantly reducing the impact on the environment. By installing Freudenberg Sealing Technologies Valve Stem Seals, customers can help to ensure that their engines will benefit from:

- Increased efficiency
- Consistent performance
- Reduced oil consumption
- Optimized catalyst performance
- Extended operational lifetime



GAS-LIP®

Valve stem seal with gas-lip technology to reduce the "blow-by-effect".

- Optimization of oil consumption
- Significant reduction in exhaust gas emissions

Brake Hoses



Freudenberg looks back on more than 40 years of brake hose production for OEM's.

- Almost 90% coverage of European car-park
- Over 1,960 brake hoses for about 1,800 vehicle models
- 100% pressure tested – piece by piece
- Checked according to D.O.T. and MVSS 106 standard

OUR PERSONAL DRIVE. YOUR DRIVING COMFORT.

VIBRATION CONTROL
COMPONENTS IN OEM QUALITY.



 Vibracoustic

Vibration Control



Based on the extensive material and development know-how of the Freudenberg Group, we offer vibration control components and repair kits in OEM quality for more than 27,500 types of vehicles.

All products are designed to meet the highest quality standards and are manufactured using the latest production methods.

Vibrations often arise as a result of aging components or poor quality vibration dampers. Unwanted vibrations can spread throughout the vehicle and cause damage to the engine and other components.

- The vibration control range includes over 2,275 items
- 255 pulleys
 - 50 start-stop pulleys
 - 50 repair kits containing a pulley, bolt and washer
- Over 1500 engine mounts
- 290 suspension strut mounts
 - 125 strut mounts with ball bearing

Pulley

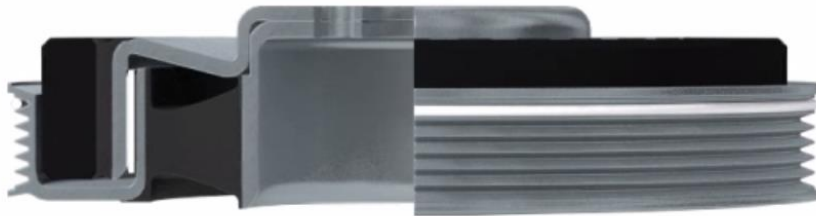


Original torsional vibration damper - individually and in practical Bolt Kits

A torsional vibration damper decouples the belt drive from the crankshaft. It minimizes the transmission of vibration and therefore the stress on all adjoining components. The lifecycle duration of belt and belt tensioner is extended and driving comfort increased significantly. Only original quality pulleys with new bolts guarantee easy mounting and the highest degree of safety.

- 255 pulleys
 - 50 start-stop pulleys
- 50 repair kits containing a pulley and bolt
- 54 bolt kits

Copy vs Original part

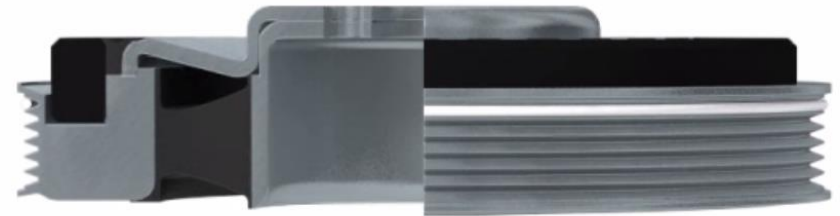


Corteco Original Pulley

Formulated elastomer materials, specially developed rubber to metal bonding technology and a viscous oil formulation provide

- Optimal reduction of vibration
- Noise reduction

Only original pulleys with new bolts guarantee easy mounting and the highest degree of safety.



Copy Pulley

Solely metal and no or little rubber leads to

- Risk of damage to the engine and auxiliary units through increased vibrations
- Increased engine noise

The identification of a copied pulley is almost impossible without a cross-section, so trust the expert for original quality pulleys.

Engine Mounts



Engine and gearbox mounts provide optimum ride comfort.

They are a combination of acoustic isolation, the same function of conventional rubber mounts, with a balanced damping performance. Each rubber mixture has special damping properties and needs to be matched precisely to the specific application.

Corteco offers conventional, hydraulic or switchable mounts in original quality with the highest performance, fitting accuracy and safety.

- Hydro mounts
- Switchable engine mounts
- Lightweight mounts

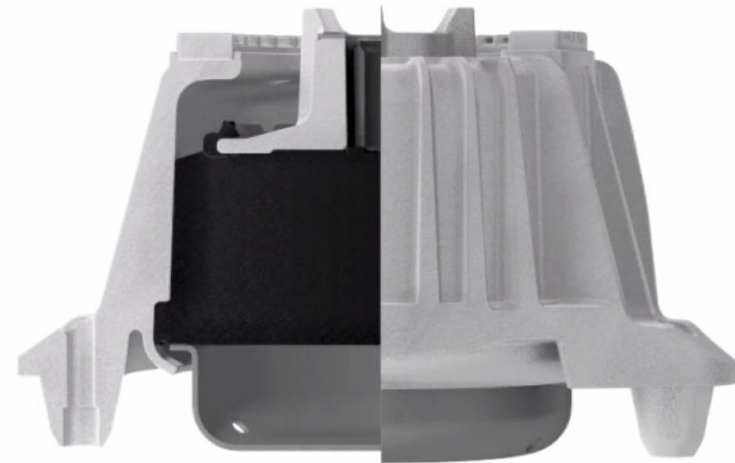
Copy vs Original part



Corteco Original Engine Mount

Formulated elastomer materials and specially developed rubber to metal bonding technology provide:

- Isolation of noise, vibration and forces caused by acceleration and deceleration
- Design adapted to weight and vibration of engine



Copy Engine Mount

An inadequate rubber-metal bonding leads to an incomplete or non-existent damping system, which increases vibrations and decreases driving comfort. Auxiliary units may also be affected.

The identification of a copied pulley is almost impossible without a cross-section, so trust the expert for original quality engine mounts.

Top Strut Mounts



The suspension strut mounts isolate the dynamic forces of the suspension strut and the spring thus avoiding the transfer of vibration to the vehicle body.

The top strut mount is designed to ensure the driver and passengers are protected as much as possible from the sudden shock input caused by driving over bumps, obstacles and pot holes. They perform a damping function and are essential to vehicle stability and road holding. The strut mount also helps isolate tire noise.

- 290 suspension strut mounts
 - Strut mounts with integrated ball bearing
 - Strut mount kits with ball bearing

Start-Stop Components



Automatic start-stop systems provide a 5 to 7% improvement in fuel economy and a similar reduction of carbon dioxide emissions. More than half of the cars currently produced are equipped with start-stop systems.

On average, an ordinary pulley and engine mount will have to withstand up to 50,000 to 70,000 starts. **A start-stop pulley and engine mount, on the other hand, will have to endure 500,000 to 700,000 starts.**

There are over 20,000 Vibration Control, Sealing and Filtration products and more than 1,410 of these are specifically for start-stop applications.

The Corteco range already includes:

- 112 start-stop engine mounts covering over 41 million vehicles
- 50 start-stop pulleys covering over 4.5 million vehicles
- 11 start-stop pulley kits including pulleys and matching bolts



OUR DEEP EXPERTISE. YOUR HEALTH PROTECTION.

CABIN AIR FILTERS
IN OEM QUALITY.



micronAir®

Cabin Air Filter



Nearly one in two of all new cars equipped with cabin air filtration are already fitted with Freudenberg micronAir® filter protection.

Corteco cabin air filters remove the irritants that cause sneezing fits, watery eyes, runny noses or breathing issues.

Cleaner air provides clearer visibility and improves road safety.

- Corteco offers the largest range of particle and carbon activated filters in Europe
- Over 800 cabin air filters
- 21 micronAir® engine intake air filters



Cabin Air Filters in comparison



Particle Filter

Constant clean air and clear visibility with micronAir® Cabin Air Filters

- Remove pollen from the air
- Extend the service life of the entire air conditioning and ventilation system
- Prevent poor visibility caused by fogged-up windows



Carbon Activated Filters

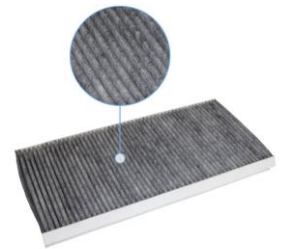
Constant clean air and clear visibility

- Same filter properties as particle filters

Offer additional protection from

- Exhaust emissions and ozone
- The intrusion of unpleasant odors

Combi-filters serve a dual function: Health risks are minimized while the driving comfort is maximized



Copy vs Original part



Corteco Original Cabin Air Filter

The perfect combination of electrostatic and mechanical filtration makes all the difference. micronAir® filters achieve excellent filtering results through

- Dust retention capacity: maximum filter efficiency even after long-term operation
- High stability in shape - designed for a perfect fit
- Anti-bacterial filter material
- High gas absorption: 99% of ozone are captured by carbon-activated filters
- Tear resistant: withstands great forces. Resistant to damage by sharp objects like screwdrivers.



Copy Cabin Air Filter

- Dust retention capacity: low filter efficiency due to reduced usable filter area caused by pressed pleats
- Irregular pleats cause clogging and limit filter efficiency and gas adsorption
- Low stability in shape: pleats can collapse
- Low resistance to humidity causes bacteria and odor development
- Tear resistance: inferior filter material rips off fast

The identification of a copied cabin air filter is almost impossible without a thorough inspection, so trust the expert for cabin air filtration.

Engine intake air filters



Engine intake air filters protect engines from industrial and natural pollutants, thus increasing the lifetime of an engine.

- Optimum fuel-air mixture provides fuel economy and helps to reduce exhaust emissions
- Air filters lead to improved initial filtration performance with 150% longer service life
- All micronAir® Engine intake air filters are made of synthetic fleece, which is a more efficient filter than a paper medium
- The fully synthetic material is resistant to ageing and pressure surge

Components for Trucks, agricultural, construction and utility Machinery

Specific attention is paid to spare parts for TracTech applications, where extreme working conditions require a robustness of quality in order to ensure long-lasting service life.

The Corteco range of components for Trucks, agricultural, construction and utility Machinery includes

- Radial shaft such as cassette seals, Casco seals and hydraulic sealing kits
- Valve stem seals
- Cabin air filters
- Bushings such as ultra bushings



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AIR FILTER

**Together on
The road to success.**

