# **SPARE PARTS**

# Solutions Guide







One part can change the life of your machine **We've got it.** 





Founded in 1958 by the Braud family with the creation of a forklift truck "that handles everything", Manitou Group today has a worldwide presence. A leader in rough-terrain handling, the group designs, manufactures, distributes and maintains equipment for all sectors of activity.

Handling machines renowned worldwide for their quality and versatility in construction, agriculture and industrial. Our range is completed by compact machines specifically designed for the needs of the construction industry under the Gehl brand.

With machines that offer proven productivity even in unusual situations, from narrow warehouses to weathered harbors, Manitou and Gehl guarantee optimum performance, anywhere, anytime.





World leader in materials handling, personnel lifting and earthmoving. Manitou and Gehl offer a wide choice of machines to meet your standard and intensive handling needs.





As both a machine and an accessory manufacturer, you benefit from the technical knowledge, practical experience and control tests needed to ensure the perfect efficiency of the machine and accessory combination. By choosing an original accessory and respecting Manitou and Gehl compatibility, you're sure to get the best out of your machine





An efficient solution is a well-maintained solution. From connected machines to extended coverage and fast delivery of genuine spare parts, our comprehensive service guarantees that your Manitou or Gehl will be ready whenever and wherever you need it. You take care of your business, we take care of your machines.

# **YOUR Machine**

We know you need more than just a machine. You need customized equipment, designed specifically for your work, with dedicated accessories to maximize efficiency, supported by services to suit both your budget and your business. This is what Manitou and Gehl have to offer.

#### **Applications**

- Logistics / distribution centers
- Industrial
- Materials handling
- Agriculture
- Construction sites and personnel lifting

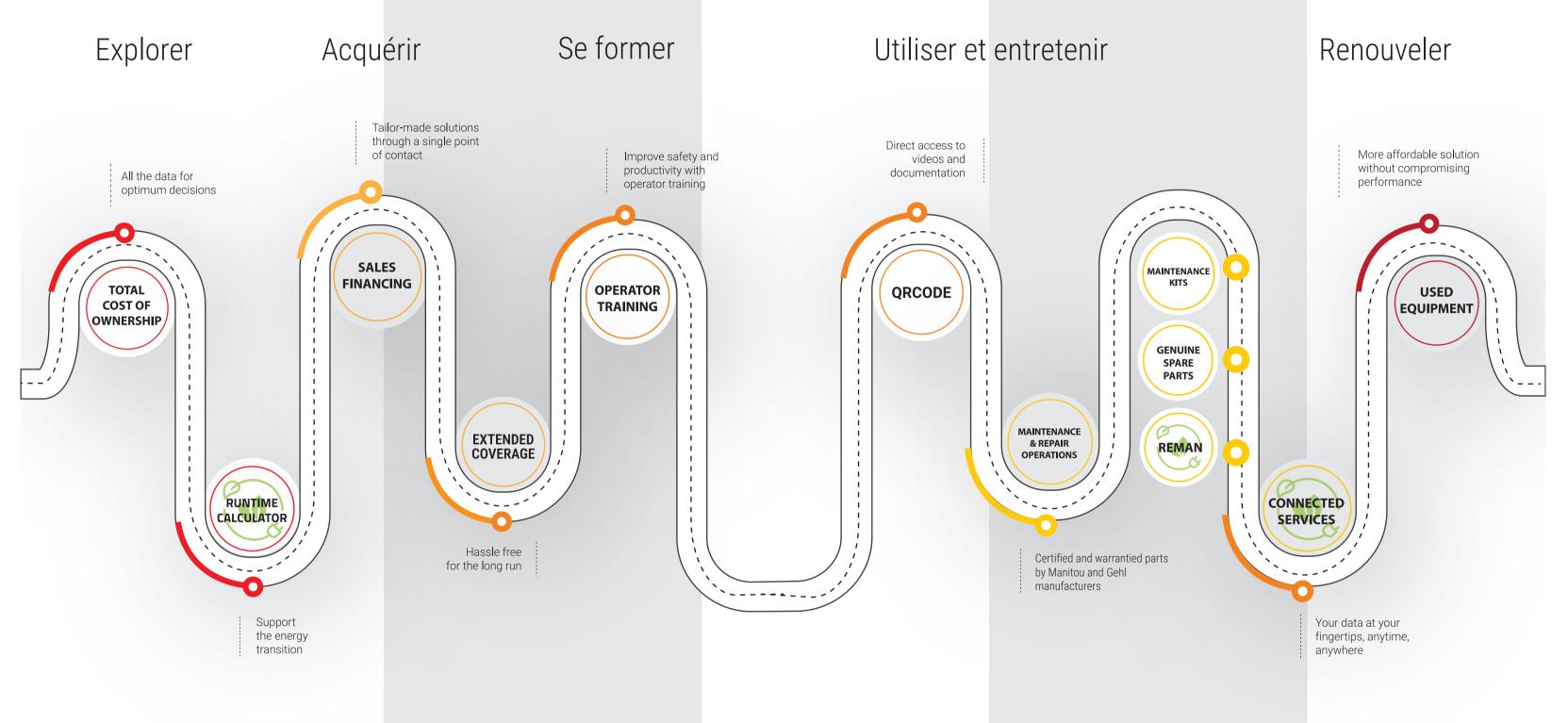




# Your solution provider, for









# SERVICES AND SOLUTIONS VALUE-ADDED SERVICES

#### CONNECTED SERVICES

Monitor machine usage and behavior from anywhere, anytime, in real time. Keep an eye on your most valuable assets.

Single point of contact for tailored financing solutions.

Loan, lease or rent - with specific services.

#### FINANCING SOLUTION

OPERATOR TRAINING

Heavy range machine and attachments hands-on training at your location with a Manitou Subject Matter Expert.

### **USED.COM PLATFORM**

A dedicated marketplace where Manitou and Gehl dealers promote and sell second-hand machine revised, repaired or refurbished.



These services are **available depending on the region.** Please contact your dealer for more information.

#### MAINTENANCE CONTRACT

Pay as you go or for the long term, preventive and curative maintenance to maximise machine's lifespan and TCO.

#### **EXTENDED COVERAGE**

Full support for parts and labour up to 6 years and/or 6,000 hours.



#### **MAINTENANCE KIT**

Ready to use maintenance kits for Dealers to support preventive maintenance with genuine parts and ensure uptime for the long run.



You can order your maintenance kit for the recommended periodic maintenance when you order your machine. Contact your dealer to find out more!





# **GENUINE SPARE PARTS**

### **MANITOU GROUP PARTS**

#### PERFORMANCE, SAFETY AND DURABILITY

Maintaining and repairing your Manitou or Gehl machine requires quality spare parts.

Genuine Manitou Group Parts are the only range of spare parts certified by the manufacturers of your Manitou or Gehl machine.

Opting for genuine Manitou Group Parts means guaranteeing your machine optimum longevity, unalterable performance and maximum safety.



#### WHY CHOOSE GENUINE MANITOU GROUP PARTS SPARE PARTS?

Selected by our engineering departments, our original parts are designed specifically for each machine model and comply with strict quality standards. Unlike adaptable parts, they ensure perfect compatibility and preserve the integrity of your machine.

#### THE BENEFITS OF GENUINE MANITOU GROUP PARTS SPARE PARTS









- **Perfect fit**: Designed to match the technical specifications of Manitou and Gehl machines.
- **Resistant materials:** High quality and durability, reducing premature wear.
- **Safety standards:** Compliance with manufacturer's requirements.
- **Technical updates:** Constant evolution for optimum performance.
- Certifications and warranties: Rigorous controls and thorough testing before marketing.
   Genuine parts are guaranteed against material or design defects following assembly.
- Fast availability: A worldwide logistics and distribution network.

#### A WORLDWIDE NETWORK FOR OPTIMUM AVAILABILITY



4 main logistics centers
France / Italy / USA / India

Nearly 800 dealers

worldwide



of genuine spare parts



**3 distribution centers**South Africa / Brazil / Singapore



Shipment between 24 and 72 hours depending on geographical area and type of order

#### YOUR DEALER'S KNOW-HOW

Expert, your Manitou or Gehl dealer is trained and certified to advise you on servicing your machine with genuine parts. If you have your machine serviced by your authorized dealer, you can be sure of:

- Precise diagnostics by expert technicians
- Listening and advice for your specific needs
- Parts availability to avoid machine downtime
- Support and additional services to keep your machine running smoothly throughout their life cycle.





# DEMAND QUALITY FOR YOUR MANITOU AND GEHL MACHINES

Using non-compliant parts can lead to compatibility problems and premature wear of your equipment.

With genuine Manitou Group Parts, you can maintain your machine's performance and extend its service life, even under the most demanding conditions.

Take no chances: insist on Manitou Group Parts to ensure the performance and safety of your equipment.





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**BATTERIES** 





# OIL



# Manitou Group Parts oil plays a crucial role in the operation and longevity of your machine



#### **4 ESSENTIAL FUNCTIONS:**



**Lubrication:** Oil forms a protective film that reduces wear and energy consumption by limiting friction between parts.



**Cooling:** Oil dissipates the heat generated by friction, protecting your machine's various components.



**Cleanliness:** It suspends impurities (dust, residues, particles), which are then captured by the filter.



**Protection:** Thanks to anti-corrosion additives, oil protects internal surfaces. By forming a protective film around metal components, your machine is protected from humidity, oxygen in the air and certain combustion oxides.

#### **COMPOSITION OF A QUALITY OIL**

#### Base oil

Determines viscosity. This base component can be a mineral, semi-synthetic or synthetic oil.



#### Viscosity grade (index)

Optimizes oil performance according to temperature variations.



#### Performance additive

Ensures specific properties such as detergency, anti-wear protection, oxidation resistance and corrosion control.





#### **OIL CHANGE: AN ESSENTIAL STEP**

Over time, oil degrades and accumulates impurities (soot, dust, moisture). To maintain its efficiency:

- 1 Change the oil regularly, following the recommendations in the Operator's Manual.
- 2 Regularly check the oil level between two oil changes to detect any leaks or over-consumption of oil. This is to avoid accelerated wear on contact parts.

One gallon of used oil can pollute 1 million gallons of water! Respect current regulations on waste sorting: dispose of your used oil at the appropriate collection points.

#### WHY CHOOSE MANITOU GROUP PARTS GENUINE OIL?

Manitou Group Parts oils is designed to meet the needs of your Manitou and Gehl machines. They are rigorously tested to match your machine's specifications.

- Adapted performance: Each oil is formulated to match the characteristics of your machine, whether it's the engine, axles or hydraulic systems.
- **Continuous innovation:** Thanks to constant research, Manitou Group Parts oil incorporate advanced technologies (thermal stability, cold fluidity, low pour point).
- Optimized performance: By complying with maintenance recommendations, you can guarantee your machine optimum efficiency and extended service life









#### **ENGINE OIL**

#### **Manitou Group Parts**

Performance and longevity for your Manitou and Gehl machines



Manitou Group Parts engine oils are specifically developed to meet the requirements of engine manufacturers and engine standards (Tier 3, 4 and 5). They protect against corrosion and impurities, while contributing to performance and durability.

#### WHY CHOOSE MANITOU GROUP PARTS GENUINE ENGINE OIL?

Using a non-validated oil can compromise the performance and reliability of your engine.

With Manitou Group Parts certified engine oil, you benefit from an oil that complies with engine manufacturers' specifications:

- Maximum performance and long-lasting protection.
- Reduced environmental impact thanks to components selected for their quality.

#### OIL: THE "LIFEBLOOD" OF YOUR ENGINE

Without oil, your engine cannot run. Respect maintenance intervals and use only genuine Manitou Group Parts oils.

Recommended by machine manufacturers Manitou and Gehl, they are the only oils certified to preserve the performance, safety and reliability of your Manitou or Gehl machine.



#### **REGULAR OIL CHANGES: A NECESSITY**

Worn oil loses its properties, leading to accelerated engine wear.

Depending on the type of machine you have, a first oil change may be necessary after 100 hours of use.



Refer to your machine's **Operator's Manual.** 



#### THE VISCOSITY

Viscosity is an oil's resistance to flow. Simply put, it's the property of an oil to form a protective film between moving

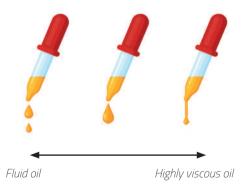
parts, to prevent metal-to-metal contact.

An oil must not be too viscous when cold, so that it can circulate rapidly in the engine and ensure lubrication at start-up.

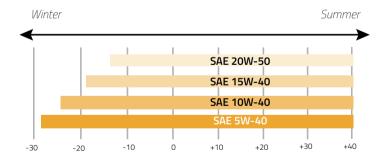
Cold starts account for over 50% of engine wear.

On the other hand, when hot, an oil must not be too fluid to withstand high mechanical stresses and prevent the oil film from breaking, leading to seizure. Multigrade oil meets both these requirements.

#### Schematic diagram of oil viscosity



#### Schematic diagram of multigrade oil indexes, SAE classification



#### Example: 10W-40

- The smaller the first number (10W), the more fluid the oil is when cold and suitable for use at low temperatures.
- The higher the second number (40), the more viscous the oil is when hot, and the more capable it is of withstanding high temperatures.







#### **HYDRAULIC, TRANSMISSION AND AXLE OIL Manitou Group Parts**

Productivity and performance for your Manitou and Gehl machines

#### WHY CHOOSE MANITOU GROUP PARTS HYDRAULIC OILS?

Specially designed for your machine, Manitou Group Parts hydraulic oils guarantee:

- Exceptional cold fluidity
- Excellent shear strength
- High thermal stability
- Anti-oxidant properties
- Low pour point: down to -39°C.

These characteristics ensure:

- Optimum performance
- Longer hydraulic system life
- Increased work safety



#### WHY NOT USE NON GENUINE OIL?

Unsuitable or contaminated oil can slow down cylinders by 20% and increase wear, reducing your output. Type 46 ISO "HM" oils from other suppliers are not suitable for Manitou and Gehl machines.



Observe the intervals recommended in the **operating instructions.** 

#### **BIO HYDRAULIC OIL**

Manitou Group parts has developed an eco-labeled (n°FR/27011) Bio hydraulic oil for use in severe machine conditions, wherever the environment may be threatened by oil contamination.

Its eco-labeled design minimizes the effects of pollution in the event of accidental leaks or discharges.





#### WHY USE MANITOU GROUP PARTS AXLE OIL?

A Manitou or Gehl machine axle incorporating a submerged brake and differential is subjected to heavy stress during repeated braking or prolonged use. Appropriate lubrication is essential to:

- Reduce component wear.
- Ensure long-lasting performance.

#### MANITOU GROUP PARTS OILS, SPECIALLY FORMULATED FOR

#### Automatic transmissions and torque converters:

- Enhanced anti-wear performance.
- Low pour point.
- High antioxidant power.
- Total compatibility with Manitou Group Parts seals.

#### Components containing submerged brakes:

- Resistance to extreme pressures.
- Excellent anti-wear and anti-foam properties.
- High service stability.

These lubricants guarantee precise, fast and smooth gear shifting, whatever the ambient temperature, thus increasing the durability of your machine's transmission components.

Optimum lubrication guarantees the smooth running and long life of your Manitou and Gehl machine.



To find out about the specific products and references developed in our wide range of engine oils, ask your expert Manitou Group Parts dealer.





# **FILTERS**



Genuine Manitou Group Parts filters: the right choice for high-performance filtration



Specially designed to meet the unique needs of your machines, Manitou Group Parts filters are developed to exacting standards. Certified by Manitou and Gehl, they guarantee the protection and durability of your machine.

Thanks to their high-precision filter media and high particle retention capacity, genuine Manitou Group Parts filters ensure maximum efficiency for your machines, even in the most demanding environments.

#### THE DIFFERENT MANITOU GROUP PARTS FILTERS AND THEIR ROLES



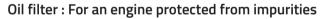
#### Air filter: Keeping the engine running smoothly

The air filter plays an essential role in combustion by blocking airborne dust that can be harmful to the engine.



#### Hydraulic filter: The key to productivity

The hydraulic filter protects the circuit and the hydraulic pump by retaining impurities and particles generated during operation.





The oil filter prevents contamination of the engine circuit by impurities of internal or external origin. Impurities can be of various types, here are a few examples:

- External particles: sand, dust, fibers.
- Internal contaminants: scale, rust, metal particles, welding beads.



#### Fuel filter: Protecting the injection system

The fuel filter traps water and particles in the fuel tank, preventing seizure of the injection pump or damage to the injectors.



#### Cabin filter: For healthy cabin air

The cabin filter removes particles, dust and pollen from the air entering the cab, ensuring a healthy working environment for the operator.



#### WHY CHOOSE MANITOU GROUP PARTS GENUINE FILTERS?

- **Perfectly compatible** with the technical specifications of your Manitou and Gehl machine.
- Quick and easy assembly to minimize downtime.
- **High-quality materials guarantee optimum** performance throughout the recommended service life of your machine between 2 periodic maintenance intervals.
- Manufacturer's warranty for lasting peace of mind.
- Fast delivery thanks to our international dealer network.

Investing in genuine Manitou Group Parts filters guarantees the productivity, safety and longevity of your machines.

#### WHY RESPECT REPLACEMENT INTERVALS?



**Performance:** A protected machine is a high-performance machine.



**Durability:** Regular maintenance reduces the risk of premature wear and extends component life.



**Economy:** Optimized replacement intervals minimize maintenance costs and maximize machine availability.

Filters play a crucial role in keeping your machine running smoothly. Respect replacement intervals in accordance with Manitou or Gehl machine manufacturers' recommendations.



Refer to your machine's **Operator's Manual.** 



To guarantee optimal maintenance, consider taking out a maintenance contract with your Manitou or Gehl dealer, or opt for maintenance kits.







# OIL FILTER Manitou Group Parts

The essential element for your engine's health

The oil filter plays a central role in the proper functioning and durability of the engine. It continuously filters impurities from the oil, whether they are external (dust, sand, volatile elements) or internal (sludge, mechanical wear residues). Thanks to this continuous cleaning function, the oil filter keeps the engine clean, ensures high-quality lubrication, and prevents premature wear of components.

#### THE BENEFITS OF MANITOU GROUP PARTS GENUINE OIL FILTER?

Manitou Group Parts oil filters feature a filter membrane: a real barrier against dust and particles, preventing moving parts from seizing up and deteriorating.

#### High-performance filtration

- High-quality filter media: Retains abrasive particles, dust, and combustion residues with high efficiency.
- High retention capacity: Ensures optimal filtration while extending the filter's service life.



Special bypass valve:
 Ensures continuous lubrication in case of clogging.

 Prevents filter leaks or bursting due to overpressure
 Protects against unexpected machine downtime.



#### Robustness and durability

• Designed for the most demanding conditions: extreme temperatures, high pressures, vibrations, and intense stress.

#### Perfect compatibility

• Manitou Group Parts original filters are specially designed to meet the needs of your machine. They are quick and easy to install, as they are perfectly matched to the manufacturer's recommendations.

#### Long-term savings

- Optimized replacement intervals to reduce your machine's maintenance costs (TCO: Total Cost of Ownership).
- Extended service life that minimizes downtime and preserves engine performance.
- Increased resale value of your machine, with periodic maintenance performed using genuine Manitou Group Parts filters.

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#### WHY FOLLOW THE REPLACEMENT SCHEDULE?

It is essential to replace your oil filter at the recommended intervals to avoid:

- Filter clogging: Saturation of the filter elements restricts oil flow, reducing lubrication of moving parts.
- **Premature engine wear:** Impurities that are not retained can cause irreversible damage to mechanical components.
- Risk of leakage: A defective or clogged filter can cause excess pressure in the oil circuit.

Change your oil filter every year or every 500 hours of use to maintain the performance and longevity of your machine.



Follow the manufacturer's maintenance intervals listed in your Operator's Manual. Recommendations for use may vary depending on the machine model.



To find out about the specific products and part numbers available in our wide range of filters, ask your expert Manitou Group Parts dealer.

#### WHY NOT CHOOSE ANOTHER OIL FILTER?

Using a filter that is not suitable for your machine can result in:

- Inferior filtration, allowing harmful impurities to pass through.
- Premature wear of engine components.
- Malfunctions due to incomplete or irregular lubrication.

#### WHY CHOOSE MANITOU GROUP PARTS GENUINE OIL FILTER?



#### Quality and performance

Developed according to strict specifications, it meets the specific requirements of your machine.



#### Reliability

Advanced technologies, such as the bypass valve and high-efficiency filter media, guarantee maximum safety.



#### Manufacturer's warranty

Each filter is validated by Manitou Group Parts teams to ensure compatibility and performance in line with original specifications.







### **HYDRAULIC FILTER**

**Manitou Group Parts** 

The essential role of an invisible protector

In a Manitou or Gehl machine, the hydraulic system often contains more than 26 gallons of hydraulic oil, and this fluid must be constantly protected from contaminants.

The hydraulic filter is one of the key components of this system: it acts as the "kidneys" of your machine, purifying the oil and ensuring that all hydraulic components function properly.

#### THE BENEFITS OF MANITOU GROUP PARTS GENUINE HYDRAULIC FILTER

To ensure optimum efficiency, Manitou and Gehl machine manufacturers offer original hydraulic filters. Certified by the manufacturer, they are equipped with advanced technology such as the "high efficiency" hydraulic cartridge:

- **High filtration capacity:** Manitou Group Parts filters significantly increase impurity retention, protecting the entire hydraulic system.
- Increased durability: The high-quality materials used ensure prolonged operation, even in extreme conditions.



#### THE CONSEQUENCES OF A POOR QUALITY HYDRAULIC FILTER

Choosing a non-compliant or poor quality hydraulic filter can result in:

#### Insufficient filtration

Contaminants circulate freely in the system, causing irreversible damage: scratches, blockages, and leaks in valves and flaps.

#### Premature wear

Components such as pumps and valves deteriorate quickly. A clogged filter can reduce the performance of your machine by 20%.

#### Critical breakdowns

Without adequate filtration, blockages or leaks in the hydraulic system can immobilize and damage the machine, resulting in high repair costs.



Follow the instructions in your machine's **Operators Manual:** replace the hydraulic filter according to the manufacturer's recommendations.







# FUEL FILTER Manitou Group Parts

Optimal quality for maximum protection

#### WHY CHOOSE MANITOU GROUP PARTS GENUINE FUEL FILTERS?

Manitou Group Parts original fuel filters are designed to guarantee the purity of the fuel supplied to your engine. They ensure effective filtering of impurities and reliable extraction of water from the diesel fuel.

Water, which is heavier than fuel, is trapped in the pre-filter's water collector, allowing clean diesel fuel to pass through to the main filter. This process prevents corrosion of sensitive engine components (injection pump, injectors), thereby extending their service life.

Fine filtration, water separation, fuel heating and cooling: Manitou Group Parts original filters offer optimum performance, even under high pressure or low temperature conditions.

#### TECHNICAL SPECIFICATIONS OF MANITOU GROUP PARTS FUEL FILTER

- Filtration surface area: approximately 15% larger than adaptable filters.
- Reliable, custom-designed seal for a perfect seal.
- **Specific bypass valve** calibration for optimal filtration.
- Service life adapted to your machine's maintenance intervals.

#### WHY REPLACE YOUR FUEL FILTER REGULARLY?

Keeping your fuel filter clean is one of the best ways to maintain the reliability and durability of your engine. A fuel filter in good condition is essential for:

- Extending engine life: it protects components such as the fuel pump and injectors, preventing corrosion and premature wear.
- Improve your machine's performance: clean fuel ensures optimal operation and prevents interruptions.
- Reduce fuel consumption: effective filtration contributes to cleaner combustion.

#### THE ROLE OF THE PRE-FILTER



In very dusty or humid environments, the pre-filter plays a crucial role.

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It helps to significantly reduce fuel consumption by trapping a large proportion of suspended dust. As a result, it significantly extends the service life of the main fuel filter.



#### THE RISKS OF NON-GENUINE FILTERS

Using adaptable filters can have serious consequences:

- Insufficient filter surface area: increased risk of uncollected particles.
- Inaccurate dimensions: problems with installation and sealing.
- Incorrect bypass valve calibration: opens too early, no filtration
- Poor quality central tube: leaks and risk of damage to the filter paper.

These defects can cause irreversible damage to the engine, immobilize your machine, and result in high repair costs, while voiding your machine's warranty.

#### A HIGH-PERFORMANCE FUEL FILTER FOR ENGINE PROTECTION

Dust is the number one enemy of an engine's fuel system. Even the smallest particle can damage the injectors and cause premature wear of the injection pumps. This impairs performance, leading to excessive fuel consumption or even total engine failure.

Manitou Group Parts original fuel filters effectively capture impurities and prevent water from entering the distribution system. Their rigorous specifications guarantee maximum protection for injectors, thereby reducing the risk of injection pump seizure.



Follow the manufacturer's maintenance intervals listed in your **operator's manual**. Recommendations for use may vary depending on the machine model.



Find a wide range of fuel filters perfectly suited to your Manitou or Gehl machine. For more information, contact your expert Manitou Group Parts dealer.







# AIR FILTER Manitou Group Parts

An essential component for optimal machine performance

#### THE ROLE OF MANITOU GROUP PARTS AIR FILTER

Air filters protect your engine from external impurities and pollutants. Under full load, an engine can consume up to 500 m3 of air per hour, depending on the environment (climate, season, geographical area).

This dust and particles can turn into an abrasive paste, causing damage to the engine.

The air filter acts as a barrier, ensuring optimal performance of your Manitou and Gehl material handling equipment.

#### MAINTENANCE RECOMMENDATIONS

- 1 Clean the air filter regularly.
- 2 Replace the primary filter and safety filter according to the intervals recommended by the manufacturer and listed in your maintenance logbook.



Please note that filter replacement intervals may vary depending on the machine model. Refer to your machine's **operators manual.** 

#### WHY CHANGE THE AIR FILTER?

A clogged or damaged air filter leads to increased fuel consumption and loss of power. This can result in:

- Premature engine wear.
- Loss of machine performance.
- Increased fuel consumption.
- Higher emissions of polluting gases.



To maintain the performance and durability of your machine, follow the maintenance schedule and consider a maintenance contract with your Manitou or Gehl dealer.

#### **OPTIMAL MAINTENANCE**

Advice from Manitou Group Parts:

#### Clean the filter

Use a low-pressure air compressor to clean the filter from the inside out. This prevents microperforations in the filter paper.

#### Do not do

Never tap the filter to remove dust.

#### Store filters

Store new filters in airtight boxes to prevent contamination.





#### THE BENEFITS OF MANITOU GROUP PARTS GENUINE AIR FILTER?

Change your air filter to maintain the performance and longevity of your machine. (Refer to the operators manual for your Mantou or Gehl machine).



**Filtration efficiency** up to 99.99%, capturing fine impurities and limiting harmful residues. It protects your engine from wear and optimizes the combustion cycle.



**Advanced technology,** resistant to harsh environments (dusty, humid or low temperatures).



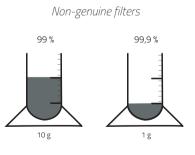
**Safety and certification,** each filter is carefully tested to meet the strict standards of Manitou Group Parts.

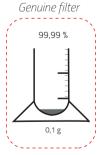


**Durability and performance,** thanks to a larger filtering surface area than standard filters. It extends the life of your machine and reduces your long-term costs.

#### Efficiency of an air filter based on its filtration percentage (per 1 kg of dust):

- Manitou Group Parts air filters ensure filtration of up to 99.99%, allowing only tiny dust residues to pass through the circuit.
- With less efficient filtration, residues would impact the service life of your engine.









# **FILTERS**

# AIR FILTER Manitou Group Parts

A key factor for optimal machine performance

#### THE RISKS OF USING NON-GENUINE FILTERS

- Insufficient filtration: coarser pores allow harmful particles to pass through.
- Reduced service life: premature clogging and rapid wear.
- **Risk of malfunction:** inaccurate dimensions and low pressure resistance.
- Impact on the engine: loss of power, increased pollutant emissions, and excessive fuel consumption.

#### **COMPARISON TABLE**

Comparison table between a genuine Manitou Group Parts filter and the «alternative» filters available on the market. (Genuine Manitou Group Parts filter reference: 563416)

	**************************************	FILTER A	FILTER B	FILTER C
Filtration efficiency	99.59%	99.26%	98.86%	99.38%
Collapse test > Pressure resistance	> 18,100 Pa	> 18,100 Pa	> 6,000 Pa	> 10,000 Pa
<b>Dust retention capacity</b> > Filter service life before clogging Target: 600 g	650.2 g	635.8 g	794 g	669 g

#### **CABIN FILTER**

#### **Manitou Group Parts**

An essential role in ensuring optimal air quality

#### THE ROLE OF CABIN FILTERS

Whether your machine is equipped with air conditioning or not, it has a cabin filter. This filter plays an essential role in purifying the air entering the cabin to ensure optimal air quality.

It removes particles, dust, and dirt, allowing the driver to breathe clean air. A cabin filter in good condition can trap up to 98% of dust and pollen.

- Ambient and plant dust, pollen
- Fuel combustion smoke
- Soot, bacteria

A cabin air filter that has not been maintained or replaced in accordance with the maintenance recommendations may cause polluting particles to be recirculated into the ventilated air.

This promotes the growth of bacteria, which can cause lung congestion and allergic reactions.



#### **MAINTENANCE ADVICES**



To ensure healthy air in the cab and avoid any impact on the driver's health, be sure to clean or replace these filters regularly in accordance with the maintenance instructions for your Manitou or Gehl machine.



To find out about the specific products and part numbers developed within our wide range of filters, ask your expert Manitou Group Parts dealer.





# **MAINTENANCE**

#### **MAINTENANCE KIT**

#### **Manitou Group Parts**

A periodic maintenance kit for your peace of mind

#### A COMPLETE SOLUTION FOR YOUR PERIODIC MAINTENANCE

Manitou Group Parts simplifies the maintenance of your machines with maintenance kits specially adapted to your Manitou or Gehl machine model. The maintenance kits contain all the components required for the periodic maintenance of Manitou or Gehl machines, excluding oils.

In full compliance with the manufacturer's recommendations, Manitou Group Parts has developed complete kits specific to your machine.

**Simplified management** for greater peace of mind allows you to:

- Plan your maintenance schedules and anticipate machine downtime.
- Limit the risk of installing non-certified adaptable parts that could damage your machine.



Refer to the **operator manual** for your machine.



You can also find the FIRST CARE KIT offer in the configurator. When purchasing your machine, order the maintenance kit for your chosen model. For more information on the availability of this offer, please contact your dealer.

#### **GENUINE PARTS: MANUFACTURER-CERTIFIED QUALITY**

- **Quality and performance:** Made exclusively from original parts, our maintenance kits guarantee quality and performance in line with the maintenance intervals recommended by Manitou and Gehl.
- Optimized machine service life: our selection of high-quality original parts limits the risk of downtime and additional costs in the event of a breakdown.
- Improved resale value of your machine: maintenance with original parts increases the value of your machine.
- Warranty preserved: using Manitou Group Parts preserves your machine's warranty.

#### A KIT PERFECTLY SUITED TO PERIODIC MAINTENANCE

Kit references created specifically to match the technical specifications of your machine include all parts required to maintain your machine according to the manufacturer's recommended service intervals.

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Contact your dealer to have your machine serviced using the specific maintenance kits.

# WHY USE MANITOU GROUP PARTS GENUINE PARTS?

Maintaining your machine with genuine Manitou Group Parts means:



**Maintain productivity :** Continuous machine performance and reduced risk of downtime in the event of troubleshooting.



**Perfect compatibility:** genuine parts correspond to the maintenance intervals recommended by Manitou and Gehl.



**Reduce costs:** Prevents premature replacement of machines while maximizing their resale value.





**Increase component lifespan:** Optimizes performance by limiting investments due to preventable failures.

#### COMPOSITION OF MAINTENANCE KITS

Manitou Group Parts maintenance kits contain all the parts needed\* for a complete overhaul in accordance with Manitou or Gehl machine manufacturers' recommendations:

250-hour, 500-hour, 1000-hour, and 2000-hour kits contain original parts such as:

- Engine air filter
- Fuel filter
- Cabin air filter
- Hydraulic/Transmission filter
- Fuel pre-filter
- Belt
- Oil filter

\*Oil not included



The contents of maintenance kits may vary depending on your machine model and kit reference number. Please refer to the **operator manual** for your Manitou or Gehl machine.







# **COOLANT**Manitou Group Parts

Complete protection for your machine engines

New technologies such as environmental standards require manufacturers and engine builders to develop increasingly technical solutions to ensure maximum engine performance while respecting the environment.

Manitou Group Parts' high-end coolants provide complete protection for the engine block of Manitou or Gehl machines. They protect the engine against overheating, freezing, and corrosion.

#### WHY USE MANITOU GROUP PARTS COOLANT?

Coolant is essential for ensuring the performance, longevity, and reliability of your machine. Here are its main advantages:



**Long-lasting protection:** coolant protects metal engines and radiators from corrosion thanks to a high-performance organic inhibitor system that creates a protective film on metal surfaces. By reducing the risk of overheating, corrosion, cavitation, and freezing, coolants prevent breakdowns.



**Thermal efficiency:** Designed to improve heat transfer, the coolant prevents the engine from overheating (up to +106°C) and offers protection against freezing (down to -37°C depending on the product).



**Manufacturer compliance:** All our coolants comply with Manitou and Gehl specifications and those of European manufacturers. They guarantee perfect compatibility with your machine and optimal performance over the long term. Suitable for modern engines, our coolants are developed to meet the requirements of more compact and lighter engines, while maintaining their reliability.



**Extended service life:** Their 100% organic formulation provides enhanced corrosion protection, extending the service life of the cooling system.

#### THE DEMANDS OF MODERN ENGINES AND THEIR CONSEQUENCES

The modern engines in Manitou and Gehl machines meet high standards in terms of fuel economy, low weight, and environmental friendliness. This means:

- Optimized cooling: Smaller motors require more efficient heat dissipation.
- **New materials:** Aluminum and magnesium, used to make engines lighter, require enhanced corrosion protection.

Our coolants are specially developed to meet these technical requirements.

In addition, most of our coolants are non-CMR (carcinogenic, mutagenic, reprotoxic) and therefore limit the harmful effects of these types of liquids.



#### A RANGE SUITED TO ALL NEEDS

#### Coolant 25°C/-35°C:

- Ready to use, yellow in color with an integrated leak detector.
- Manufactured from manufacturer-approved antifreeze for maximum safety.
- Protection against overheating (+104°C for -25°C) and freezing (-25°C or -35°C).
- Compatible with all other types of coolants (miscible).
- Enhanced corrosion protection thanks to 100% organic technology.

#### Special coolant for extreme cold (-37°C à -40°C):

- Ideal for extreme environments where temperatures drop below -30°C.
- Protects the engine and cooling system in harsh conditions.

#### Coolant Type D:

- Recommended for aluminum radiators.
- Available with integrated leak detector.
- Compliant with French standard NFR 15 601 to guarantee certified performance.

#### **USE ADVICES**

#### Complete drain

Before adding new coolant, it is advisable to drain the cooling system completely to avoid mixtures that could impair performance.



For optimal operation, refer to the **operators manual** for your Manitou or Gehl machine for recommended drain intervals.



To ensure compatibility with your engine, consult your Manitou Group Parts expert dealer.





# **LIQUIDS**

### ADBLUE® SOLUTION

**Manitou Group Parts** 

Complete protection for modern engines

Just like Manitou Group Parts coolants, Manitou Group Parts ADBlue® solution provides complete protection for the engine block of your Manitou or Gehl machines.

#### THE ROLE OF ADBLUE®

For engines that comply with Tier 4 and 5 standards, and machines equipped with SCR (Selective Catalytic Reduction) technology, ADBlue® reduces toxic emissions into the air to comply with current environmental standards.

ADBlue® is an **aqueous solution** that converts 85% of the nitrogen oxides (or NOx) contained in exhaust gases into nitrogen and water vapor and harmless nitrogen.

It consists of 32.5% purified urea\* and 67.5% demineralized water. (\*Synthetic compound produced from ammonia and carbon dioxide)



#### **OUR 3 POINTS SAFETY ADVICE**

#### 1 Product safety:

- Only purchase products bearing the ADBlue® name, as the quality of products sold under the names "urea solution" or "AUS" is not guaranteed.
- This solution freezes at -11°C but can be used once thawed.
- ADBlue® must be stored away from light and in an environment where the temperature does not exceed 30°C.
- Keep your ADBlue® equipment clean and free from dust and dirt.

#### Safety instructions:

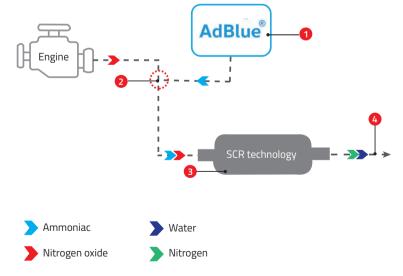
- ADBlue® is not an additive and must not be mixed with other liquids or fuels, as this may damage your system.
- Do not use equipment (funnel, can, jerry can, etc.) that has been used for other liquids to fill up with ADBlue®. If ADBlue® is spilled on metal, brick, or concrete, clean the surface to prevent corrosion (be careful when filling the tank).



#### Environmental safety:

- Avoid getting AdBlue on your clothing and skin. If this happens, rinse with water.
- ADBlue® is not poisonous, but if swallowed, drink plenty of water and contact a doctor.
- Do not dispose of ADBlue® in the sewer system. It must be disposed of in accordance with special waste regulations.

#### **HOW SCR TECHNOLOGY AND ADBLUE® WORK?**



- 1 ADBlue® is stored in a separate tank from the fuel.
- 2 Injection into the exhaust system.
- 3 The injection causes a chemical reaction in the catalytic converter of the SCR system.
- As a result of the reaction, harmful exhaust gases are converted into water vapor and nitrogen (harmless to the environment).





### **DAILY MAINTENANCE**

#### **GREASES AND LUBRICANTS**

Manitou Group Parts

Essential for material handling machines

#### LUBRICATION: AN ESSENTIAL PART OF MACHINE MAINTENANCE

Designed for handling, your Manitou or Gehl machine is used extensively, exposed to harsh weather conditions, dusty environments, and handling various loads, which place heavy demands on your machine when in motion. Lubrication is an essential step in maintaining the reliability and performance of your Manitou or Gehl machine. It allows for:

- **Reduced wear** on mechanical parts subject to friction
- Protection of parts against external influences (dust, water, solvents, heat).
- Creation of a sealing barrier and a constant supply of lubricant.
- **Reduction in energy** and heat loss due to friction.

Regular and appropriate lubrication extends the service life of mechanical components and optimizes the performance of your machine.

#### RANGE OF MANITOU GROUP PARTS GREASES AND LUBRICANTS

Manitou Group Parts offers a wide range of products to meet all your lubrication needs, whether general or specific:

- Multi-purpose grease for all trucks and material handling equipment.
- Specialized greases for chains, bearings, masts, connectors, seals, and plastics.
- Lubricants for specific parts (example: gears, heat-conducting parts).



#### **ADDITIONAL TOOLS**

To facilitate the application of greases and lubricants, Manitou Group Parts offers a complete range of complementary tools:

- Oil distribution set with pump: transportable, equipped with a 4-meter hose, a digital meter, and a drip-free nozzle for precise dosing.
- Electric grease pump: supplied with 2 rechargeable batteries, a charger, a hydraulic hose and a grease cartridge.
- Manual lever pumps: ideal for precise and tailored lubrication.
- Grease gun: lightweight, powerful, and durable, even after 5,000 cycles.

These tools ensure optimal application of lubricants, even on hard-to-reach parts.





#### MAINTENANCE AND LUBRICATION FREQUENCY

To ensure optimal lubrication, it is crucial to follow the maintenance intervals recommended by the manufacturer. Regular checks are not enough: applying the right grease to the different components is essential to prevent premature wear and maximize performance.



Refer to the operators manual for your Manitou or Gehl machine.

#### DIAGNOSTIC AND ANALYSIS KIT

Test kits are available to check the quality of fluids:

- Oil analysis kit: diagnosis of engine oil and hydraulic oil to check for oil contamination and identify faults and lubrication requirements.
- Fuel analysis kit: fuel quality and pollution control to prevent a drop in engine performance.



Consult your expert Manitou Group Parts dealer for kits available in your country.

#### THE BENEFITS OF MANITOU GROUP PARTS LUBRICATION PRODUCTS



**Reliability and performance:** rigorous selection of components for long-lasting results



**Cost reduction:** the right greases and lubricants minimize unexpected downtime and preserve the value of your machine.



**Environmental sustainability:** regular maintenance increases the service life of your machine while reducing waste.

Demand the best for your Manitou and Gehl machines with genuine Manitou Group Parts!





### **DAILY MAINTENANCE**

#### **MAINTENANCE PRODUCTS**

Manitou Group Parts

Regular maintenance is essential for good performance

To guarantee the performance and longevity of Manitou or Gehl machines, regular maintenance is essential. Manitou Group Parts offers a complete range of solutions to keep your machines clean, well maintained, and protected.

Find here the different categories of products dedicated to daily maintenance for professionals and cleaning.

#### **CLEANING PRODUCTS**

It includes solutions tailored to cleaning machines and their environment:

- Products for cleaning seats, carpets, door panels, windows, chrome, painted and plastic parts.
- Cleaning solutions for removing exhaust fumes and insect marks from windshields and headlights.
- **Solutions for cleaning hands** after mechanical operations, with biodegradable formulas and no petroleum solvents.
- Absorbent and cleaning products suitable for greasy and slippery work environments.

#### **STARTING AID**

This includes solutions to improve **fuel performance and ensure optimal starting:** 



- Starting fluids that facilitate engine start-up in cold weather.
- **Products designed for defrosting** windows and locks to ensure optimal use in cold weather.



#### **MECHANICAL MAINTENANCE**

This category includes products for the maintenance and proper functioning of mechanical components:

- Solutions for **detecting air and gas leaks** and inspecting cracks on metal surfaces.
- Cleaning and degreasing products for preparing surfaces prior to the application of adhesives or sealing solutions.
- **Special lubricants** to ensure the protection and smooth running of moving parts.
- Rust and corrosion removal **treatments and solutions** to protect metal components.

#### **BODYWORK MAINTENANCE**

It includes solutions for repairing and maintaining the structure and external components of machines:

- Adhesives and sealants for joints, windows and fittings.
- Fastening solutions to ensure the safety of threaded assemblies.
- Products for **protecting metal surfaces** against external damage.



All maintenance and servicing solutions selected by Manitou Group Parts are available from your dealer.





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### **DAILY MAINTENANCE**

#### **BODYWORK PAINTS**

**Manitou Group Parts** 

Protection and added value for your machines

To maintain the aesthetic and functional qualities of your machine, Manitou Group Parts offers a complete range of paints suitable for regular bodywork maintenance. A well-maintained machine, protected against corrosion and dirt, will have a higher resale value.

#### THE PROPERTIES AND COMPOSITION MANITOU GROUP PARTS PAINT

A paint is a fluid preparation that is spread in a thin layer to form a protective and decorative coating after drying. It contains four main components:

- The binder: ensures the adhesion and strength of the coating.
- Powdered materials (pigments and fillers): affect color, strength and other mechanical properties.
- Solvents ensure the paint flows smoothly and is easy to apply.
- Additives provide specific properties (preservation, drying, etc.).

Caution: Solvents are flammable and may form explosive mixtures with air in the presence of a heat source.

#### **OUR 8 POINTS SAFETY ADVICE**

- 1 Choose the right tools and products: Make sure you select paint and tools that are suitable for your surface. Clean them with appropriate solvents.
- 2 Prepare the surface: Clean the surface thoroughly to remove any dirt and grease.
- 3 Observe atmospheric conditions:
  - Ideal temperature: between 20 and 25°C.
  - Do not apply below 15°C.
- 4 Mix the paint properly: Shake the aerosol can well or stir the pot before application.

- 5 Test the paint: Apply it to a small area to check compatibility.
- 6 Paint carefully: Spray from a distance of 25-30 cm, in thin layers, and in two directions (horizontal and vertical).
- Ventilate indoor spaces: If you are painting indoors, ensure that the area is well ventilated.
- 8 Store and manage waste: Keep solvents in sealed containers, away from moisture and heat. Paint waste must be disposed of at approved facilities.



#### APPLICATION ADVICE FOR MANITOU GROUP PARTS PAINT

For optimal results, several complementary coats can be applied, depending on your needs:

#### Primer coat

Improves grip and protects against corrosion

#### **Undercoats**

Hide imperfections and provide a barrier effect.

#### Top coat

Provides the final visual appearance and protects against damage (impacts, weather conditions...)

#### **SAFETY AND PROTECTION**

Protect yourself during application:

- Wear gloves, goggles and suitable respiratory protection.
- Ventilate the area to limit inhalation of solvents.
- Do not smoke, eat or drink near paints or solvents.

#### THE REGULATIONS

Manitou Group Parts paints meet the criteria of the NF Environment and European Ecolabel standards:

- Low content of volatile organic compounds (VOCs).
- Exclusion of hazardous metals and toxic substances.

Manitou Group Parts paints are lead-free and comply with environmental standards.

#### PAINT BOOTH: A PROFESSIONAL INSTALLATION

At our dealerships, paint booths ensure high-quality application while minimizing the risks associated with flames and flammable solvents. They also protect your machine from dust and external contaminants.



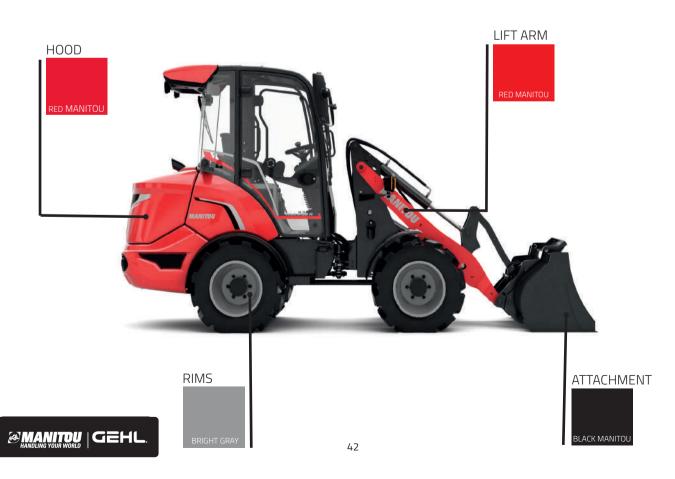
Extended color palette, you will find all the color used by manufacturers and compliant with the RAL color used in the factory for your Manitou or Gehl machine.

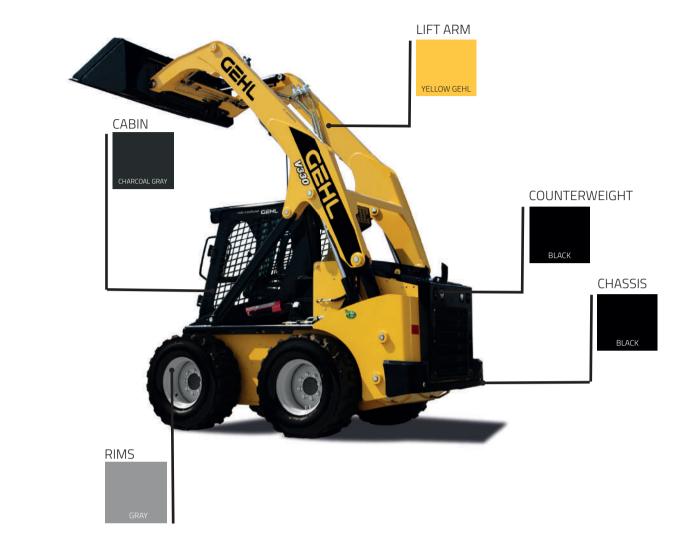




# **BODYWORK PAINTS**









# **HYDRAULIC PARTS**

#### WHY CHOOSE MANITOU GROUP PARTS HYDRAULIC PARTS?

When you choose Manitou Group Parts hydraulic parts and accessories, you are choosing:



**Reliability:** Tested and certified components for your machine.



**Safety:** Parts adapted to pressure and performance requirements.



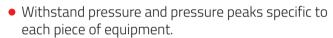
**Durability:** Optimal protection against wear and risks associated with non-compliant parts.

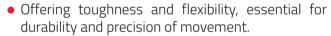
#### **HYDRAULIC HOSES**

Manitou Group Parts hydraulic hoses are essential for your telescopic machines or handling equipment. They ensure the circulation of hydraulic fluid under pressure to move the key components of your machine (boom, cylinder, bucket).

#### **HOW TO CHOOSE YOUR HOSES?**

Only genuine Manitou Group Parts hydraulic hoses meet the requirements of your machine. They are designed to:









#### WHY USE GENUINE MANITOU GROUP PARTS HOSES?

Manitou Group Parts hoses are developed according to strict specifications, including:

- Technical approval by the Manitou or Gehl design office to guarantee safety and performance.
- Certified anti-leakage and maximum pressure marked on each hose.
- Protective caps to prevent contamination of the hydraulic system.

#### The use of non-approved hoses may result in:

- Reduced performance and durability of your machine.
- Risks of accidents for operators and the working environment.
- A technical incompatibility that could seriously damage the hydraulic system.



Contact your Manitou or Gehl dealer for part numbers and personalized service.





#### WHEN SHOULD YOU REPLACE YOUR HOSES?

Regularly check the condition of your hoses for signs of wear:

- Appearance of metal strands or wear on the protective rubber.
- Change in color or signs of chemical corrosion.

Regular visual inspection helps prevent accidents caused by unexpected breakage.

The Manitou Group Parts reference is engraved on the metal fittings and the maximum pressure is indicated on the hose.

#### **HOW CAN THEY BE CHANGED?**

- 1 Ensure safety: Work on a machine that is switched off and has a depressurized hydraulic circuit
- **2** Cleanliness first: Check that the connections are clean to prevent contamination.
- **3 Genuine Manitou Group Parts hoses:** Use these exclusively to ensure compatibility with your machine.



Refer to the user manual for all steps involved in the procedure.

Your Manitou or Gehl dealer is your preferred point of contact for advice.

#### **HYDRAULIC PUMP MAINTENANCE**

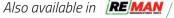
Regular maintenance ensures optimal performance and a longer service life for your machine:

#### Best practices

- Change the hydraulic oil regularly: Drain the tank completely once a year, or more frequently in dusty or dirty environments.
- **Use high-quality oil:** Manitou oils, specially designed for our machines, protect your pump from malfunctions.
- Monitor the oil level: Add oil with the cylinders retracted to adjust the level without spillage.

#### Additional precautions

- Leave a little air in the tank to prevent flow disturbances.
- Check that the filler cap is tight to prevent leaks.





#### **BELT** Manitou Group Parts

To ensure that your machine works properly

Belts play a major role in transmitting movement between the components of your machine. Regular checks for wear and timely replacement are essential to ensure the reliability and performance of your equipment.

#### WHY CHOOSE A GENUINE MANITOU GROUP PARTS BELT?

A custom design for your machine:

- Developed specifically for Manitou or Gehl machines, Manitou Group Parts original belts are **rigorously tested to ensure a perfectly matched length.**
- They ensure the transmission of energy and power to all essential components of your machine: alternator, starter motor, air conditioning compressor, fan, water pump, etc.
- A wide range of spare parts is available (smooth and grooved V-belts, poly-V belts, single and double toothed belts, flat belts, etc.) to meet all your needs.

Manitou Group Parts genuine belt is not just a belt!

- Our belts comply with ISO DIN7053, DIN 2215 and ISO 4183 standards, guaranteeing a length tolerance of plus or minus 1%.
- Manitou Group Parts goes even further by reducing this tolerance to just ±0.1% **for perfect assembly and efficient transmission.**
- They are designed to provide the ideal voltage, reduce component wear and ensure optimal engine performance.

#### ADVANCED TECHNOLOGY FOR MAXIMUM RELIABILITY

- Reinforced to withstand extreme temperatures ranging from -40 to +130 °C.
- Polyester cable structure to ensure low elongation and perfect tension maintenance.
- Manufactured from EPDM with multiple layers for optimal grip, even in wet conditions, ensuring quiet operation.
- Some belts have a built-in wear indicator that lets you know when it's time to replace them.





#### THE BENEFITS OF MANITOU GROUP PARTS GENUINE BELTS



#### Extended service life:

Increased toughness for less frequent replacement.



#### High efficiency:

Efficient power transmission, even during intensive use.



#### Reduced operating costs:

Less wear, fewer interruptions, increased productivity.

All our belts are marked with the Manitou Group Parts reference number, making it easy to find the right part for your machine. Choose performance and durability with genuine Manitou Group Parts belts.



For advice, contact your expert Manitou Group Parts dealer.





#### **ALTERNATOR**

**Manitou Group Parts** 

For the performance and reliability of your machine

The engine environment includes key components that ensure the proper functioning and longevity of your machine. Alternators, starters, belts, turbos and injectors work together to provide stable power supply, reliable starting and optimal power transmission.

#### OPTIMISE PERFORMANCE WITH GENUINE ALTERNATORS

The alternator is a direct current generator driven by the engine via a belt. It recharges the battery and supplies power to the electrical system of your Manitou or Gehl machine.

Certified as original parts, Manitou Group alternators are rigorously selected and tested to guarantee maximum performance and optimised consumption for the specific needs of your machine.

#### WHY CHOOSE GENUINE MANITOU GROUP PARTS ALTERNATOR?

Optimal and constant battery charge:

- Manitou Group Parts alternators are designed **to provide stable regulation**, preventing voltage spikes and current leaks that can damage the battery and all electrical components.
- A constant, controlled charge **extends the life of your battery** and keeps your machine productive.
- The use of a non-genuine alternator may result in power loss and voltage fluctuations, affecting the proper functioning of your equipment.

#### RELIABILITY AND RESISTANCE IN EXTREME CONDITIONS

- Manitou Group Parts alternators are specially designed and tested to withstand demanding operating conditions: dust, humidity, heat, vibrations and thermal shocks.
- Integrated bearings are selected for increased toughness.
- The coils and internal components are manufactured from high-quality materials for maximum durability and consistent performance.





#### PERFECT COMPATIBILITY

A range of alternators approved by our engine manufacturers

- Each Manitou Group Parts alternator is selected during the design phase of your machine and approved by our engine manufacturers to ensure perfect compatibility with your Manitou or Gehl.
- Thanks to this rigorous selection process, our alternators deliver the ideal power and prevent breakdowns caused by poorly matched components.

#### **EXPERT ADVICE: ANTICIPATE WEAR AND TEAR TO AVOID DOWNTIME**

A faulty alternator can result in insufficient battery charge and make it difficult to start the engine. All the electrical components in your machine are subject to heavy use on a daily basis.

They are directly affected by vibrations, badweather and frequent starting and restarting. Remember to check the condition of your alternator and electrical system regularly to avoid the risk of breakdown and ensure the longevity of your machine.

- Measure the voltage at the battery terminals, with the engine off and cold.
- Once the voltage has stabilized, start the engine and check the voltage at the battery terminals.

If this voltage is less than 13 volts, the alternator must be replaced.



For advice, please contact your expert Manitou Group Parts dealer.

Also available in **REMAN** /





# **STARTER**Manitou Group Parts

For the performance and reliability of your machine

#### THE STARTER: MAINTAINING RELIABLE START-UP OF YOUR MACHINE

A starter in poor condition makes it difficult to start the engine. All the electrical components of your machine are subject to significant stress: vibrations, bad weather, thermal shocks and numerous start/restart cycles during a working day.

#### WHY CHOOSE GENUINE MANITOU GROUP PARTS STARTER?

Reliability and performance in all conditions:

- Designed to ensure optimal engine start-up, regardless of weather conditions.
- Withstands repeated start-up cycles for long-lasting performance.
- Perfectly suited to the requirements of your Manitou or Gehl machine: prevents any loss of power or unexpected breakdowns.

#### A STARTER DESIGNED TO LAST

- Carefully selected to withstand extreme demands associated with intensive working conditions.
- Robust design to absorb shocks and minimize premature wear.



#### THE BENEFITS OF MANITOU GROUP PARTS GENUINE STARTER

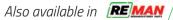


**Maximum reliability:** immediate and trouble-free start-up.



**Increased longevity:** proven resistance to repeated start-up cycles.

Choose excellence with an original Manitou Group Parts starter motor to guarantee the performance and reliability of your machine!







#### INJECTOR AND TURBOCHARGER

**Manitou Group Parts** 

For precision and performance of your machines

The injection system is at the heart of the engine performance of your Manitou and Gehl machines. To ensure peak performance, Manitou Group Parts offers original injectors and injection pumps, designed to deliver absolute precision with every combustion cycle.

#### WHY REPLACE THE INJECTORS ON YOUR MANITOU OR GEHL MACHINE?

Worn or poor-quality injectors can cause difficult starts, reduced performance and non-compliant emissions.

With Manitou Group Parts, you benefit from robust components that are tested and designed to operate with extreme precision.

Each injection lasts 250 millionths of a second and is repeated billions of times over the life of the engine. Only original components can meet this level of demand.



#### WHY CHOOSE MANITOU GROUP PARTS GENUINE INJECTORS?

Manitou Group Parts injectors are designed with spray nozzles whose diameters are measured in microns, ensuring precise injection and optimal performance. They are resistant to fuels of varying quality thanks to a special coating.

#### THE BENEFITS OF MANITOU GROUP PARTS INJECTORS

- Genuine quality, tested and approved.
- Choice between several solutions: new or remanufactured



To maintain the power and longevity of your engine, always replace your pumps and injectors with genuine Manitou Group Parts. For more information, contact your Manitou or Gehl dealer.

Also available in **REMAN** 





#### THE TURBOCHARGER: ENSURING POWER AND RESPONSIVENESS

The turbocharger is a device that increases the mass of air entering the engine by means of a turbine driven by the exhaust air flow. Turbocharger parts are designed specifically for the engines of your Manitou or Gehl machine, ensuring optimal functionality and performance.

#### THE ADVANTAGES OF MANITOU GROUP PARTS GENUINE TURBOCHARGER

The variable geometry turbocharger or turbocompressor ensures high torque values at low engine speeds. On the road, the first tangible advantage of this solution is:

- Engine responsiveness.
- Superior driving comfort guaranteed.
- Optimized combustion and significantly reduced fuel consumption.



All Manitou Group Parts turbochargers are selected to be perfectly suited to the engine of your Manitou or Gehl machine.



Please consult your authorized dealer for advice.





# **BATTERIES**



Choosing genuine batteries ensures longevity and guarantees maximum efficiency. Manitou Group Parts guarantees your peace of mind by reducing breakdowns that immobilize your equipment.



On construction sites, in agriculture and in industrial, handling machine batteries are subject to heavy use.

With multiple starts and stops, use in environments exposed to the elements, vibrations and temperature swings, vou

need to be able to rely on your machine and the performance of its starter battery every day.

#### WHY CHOOSE A MANITOU GROUP PARTS STARTER BATTERY?

Robust and durable, Manitou Group Parts high-quality batteries have been specially selected during the design of the machine. They ensure consistent performance and enhanced reliability even in harsh working environments.

Manitou Group Parts batteries maintain optimal performance throughout their service life, while offering cost and convenience benefits.



- Maintenance-free battery with 1-year warranty: No regular maintenance required, simplifying the upkeep of your machine. These new-generation calcium-based batteries, combined with a sealed closure system, reduce water consumption. The calibration of the internal electrolyte reservoir ensures longlasting operation without any refills.
- **Thermoplastic housing:** Impact-resistant, chemical-resistant and moisture-resistant, ensuring increased durability and maximum waterproofing, even in off-road conditions.
- **High-quality contacts and fastening:** Auxiliary contacts made of silver-plated copper alloy treated against oxidation. Connection by crimping or soldering. Contacts secured by insulated central screw for optimum safety and easy replacement.
- **Autonomy and recharging:** Designed for extended autonomy and fast recharging, thus limiting interruptions.



- **Optimal performance:** Compliant with Manitou or Gehl machine manufacturer requirements, Manitou Group Parts batteries guarantee maximum efficiency at all times, reducing the risk of breakdowns and loss of productivity.
- **Compliance:** Genuine batteries comply with safety and environmental standards, ensuring consistent quality. They are designed in accordance with battery recycling standards (European Directive 2006/66/EC). Our original batteries offer enhanced safety and help protect the environment thanks to a secure Manitou battery tray and cover that prevents acid leaks.

#### **HOW TO CHOOSE A BATTERY?**

- Maximum dimensions: Measure the battery compartment to ensure compatibility.
- **Power consumption:** Estimate the power required based on frequent starts, weather conditions and other specific requirements.
- **Ability to withstand prolonged use:** Increasingly powerful electrical equipment (headlights, air conditioning, heating) requires a battery capable of meeting high energy demands.

#### WHY NOT CHOOSE ANOTHER BATTERY?

Non genuine batteries are not designed specifically for Manitou and Gehl machines, which can result in reduced performance, shorter service life and increased risk of failure.

In addition, they may not meet the same safety and performance standards, thereby seriously compromising the safety and efficiency of your machine.



Please refer to the **user manual** for your machine to find out which battery model is suitable.





# **BATTERIES**

#### INSTRUCTIONS FOR USE AND SAFETY

- To prevent incompatible batteries and chargers or different voltages from being connected, **each box has a corresponding color.**
- **Temperature range:** Manitou Group parts batteries operate efficiently between -20°C and +90°C, making them compatible with a wide range of climatic and environmental conditions.
- **Suitable capacity:** For optimal performance, it is important to choose the battery capacity based on the specific requirements of your machine and tasks.
- **Storage:** Store batteries in a dry, cool, well-ventilated place. Avoid leaving them in damp places or exposing them to extreme temperatures. For long-term storage, it is advisable to store batteries at around 40% of their capacity, especially if they will not be used for several months.
- **Handling:** Handle batteries with care. Avoid dropping them, exposing them to violent shocks or puncturing them. Never attempt to disassemble or modify batteries in any way. Doing so may result in fire or explosion.
- Short circuit protection: Do not allow the battery terminals to come into contact with metal objects (such as coins, nails or tools). This may cause a short circuit and potentially damage the battery, the device or cause injury.
- **Chemical leakage:** In the event of battery fluid leakage (such as acid or lithium), do not touch the substance with your bare hands. Wear protective gloves and avoid contact with your eyes or skin. If leakage occurs, immediately follow the safety instructions provided by the manufacturer or contact a professional.
- **Fire hazard:** Never leave a battery unattended while charging or when used in extreme conditions. If you notice overheating, deformation, or signs of deterioration of the battery, stop using it immediately and disconnect it from the device.
- **Explosion risk:** Some batteries, such as lithium batteries, may pose an explosion risk if used incorrectly. Never attempt to puncture, heat or dispose of a battery in a fire. If the battery is deformed or damaged, stop using it immediately.

#### TECHNICAL SPECIFICATIONS OF OUR BATTERIES:

#### High starting power:

Our batteries are designed with specially engineered grids that allow for better current distribution to increase starting power.

#### Vibration resistance:

Our batteries meet V2 and V3 vibration standards, certifying their robustness in harsh conditions. This resistance is achieved through microporous plastic separators, which limit plate vibration and therefore extend battery life.

#### Increased service life:

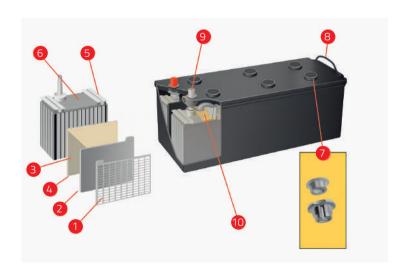
Excellent resistance to charge-discharge cycles and low self-discharge rate. Their high cycling capacity guarantees you a high energy reserve and a low risk of self-discharge. This means you benefit from an increased number of starts.

#### Endurance test (optimal performance longevity test):

Manitou Group Parts batteries meet standards E2 (150 cycles) to E3 (230 cycles). They therefore have a service life twice as long as entry-level batteries.

#### Guaranteed start in all weather conditions:

They are tested in laboratories at temperatures as low as -18°C to ensure they will start in very cold weather and in all geographical areas.



- 1 Grid
- 2 Negative plate
- 3 Positive plate
- 4 Envelope separator

Internal electrical connection (strap)

- 6 Element or group
- 7 Anti-acid screw cap
- 8 Handle
- Connection terminal
- 10 Locking piece



MANITOU PARTS

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# **BATTERIES**

#### TRACTION BATTERIES

These batteries are designed for electric handling equipment. Manitou Group Parts traction batteries are selected for their endurance in intensive use in aerial work platforms, industrial trucks, telescopic handlers and warehouse equipment.

- Longevity: operating life of 3,500 cycles, equivalent to approximately 4 to 5 years.
- Ultra fast charging
- Reduced maintenance: water consumption up to 70% lower than conventional batteries.
- Reliability and performance: increased power availability.

#### LITHIUM-ION BATTERIES

Their characteristics and advantages:



#### **Enhanced safety standards**

Lithium-ion batteries are designed and manufactured in accordance with strict international standards. They are designed to prevent the risk of electric shock, overcharging, excessive discharge, fire or explosion. Detailed safety instructions are provided to ensure safe use and maintenance.



#### Fast and intuitive charging

Thanks to specific chargers and advanced management systems, lithium-ion batteries offer reduced recharging times. The charge status, including voltage and temperature, is displayed in real time on the charger screen, ensuring precise control of the process.

Manitou also offers a new 30 kW **external fast charger** in its range of electric charging solutions, designed for maximum efficiency and extensive compatibility with the MT (telescopic handlers) and ME Lift (electric forklifts) ranges. This charger ensures fast and reliable recharging. It is designed for easy transport and installation, thanks to its integrated lifting slings and fork pockets, and is suitable for difficult terrain conditions.

It will meet the requirements of different markets thanks to adapted plugs and specific voltages, with validated adapters for maximum compatibility. The new charger is scheduled to be launched in the second quarter of 2025, marking a significant step forward towards high-performance and practical charging solutions.





#### Minimal maintenance

Lithium-ion batteries are designed to require little maintenance. They do not require any water to be added or acid to be handled, and are easy to clean, reducing maintenance requirements.



#### **Increased longevity**

For long-term storage, it is recommended to keep the battery at a temperature between 15°C and 25°C and at a charge level of 30% to 50%. These conditions help preserve the battery's capacity and extend its service life. Lithium-ion batteries offer an extended service life, with the ability to perform between 300 and 500 charge/discharge cycles while retaining more than 80% of their initial capacity.



#### Eco-friendly design

Lithium-ion technology is more environmentally friendly than previous technologies, thanks to improved energy efficiency and end-of-life recycling initiatives. Efforts are also being made to reduce the environmental impact of material extraction and battery manufacturing.



#### Optimization and safety: the essential role of BMS in electrical machines

The Battery Management System (BMS) is an essential electronic component in electrical machines, ensuring the monitoring, protection and optimization of battery performance. It monitors parameters such as voltage, current and temperature of each cell in real time, manages charge and discharge cycles, balances cells to maintain a uniform charge, and provides safety features to prevent risks associated with overcharging, over-discharging and overheating. By performing these functions, the BMS helps extend battery life and ensure safe and efficient operation of the electric vehicle.





### **ELECTRICAL PARTS**

#### **ELECTRICAL CONTROL OF YOUR MANITOU OR GEHL MACHINES**

Regular maintenance is essential to ensure the performance and service life of your machine. Electrical components play a major role in the proper functioning of your machine.

#### WHY MONITOR ELECTRICAL COMPONENTS

The electrical components of your Manitou or Gehl machine are subject to heavy use: vibrations, bad weather, thermal shocks, start/restart cycles. Poor maintenance can lead to power surges, short circuits or breakdowns, affecting your productivity.

#### Anticipate failures

Replace corroded terminals, worn fuses, and faulty switches to maintain the integrity of the electrical system.

#### Safety first

Indicator lights and audible alarms must be functional to ensure operator safety.

#### Make starter more reliable

A faulty alternator or starter motor can compromise battery charging and make it difficult to start the engine.

#### HOW TO PROPERLY MAINTAIN YOUR EQUIPMENT

Daily checks are essential to ensure the electrical reliability of your machine:

- 1 Check safety features: Ensure that the audible warning devices, lights (rotating beacon, reverse lights, indicators), and dashboard warning lights are working properly.
- 2 Monitor battery condition: Caps must be securely in place, batteries firmly attached and protective covers correctly fitted.
- 3 Anticipate failures: Replace corroded or defective electrical components (fuses, switches, circuit breakers) to prevent breakdowns.

Act quickly! If a warning light comes on, if an audible alarm is faulty or if your machine struggles to start, replace the relevant part immediately.



Ask your Manitou Group Parts dealer for advice and help in choosing the best solution for your Manitou or Gehl machine!



#### WHY CHOOSE MANITOU GROUP PARTS GENUINE ELECTRICAL PARTS?

The performance of your machine depends on perfect harmony between its components, especially when it comes to electrical parts. That's why Manitou Group Parts applies rigorous selection criteria to guarantee that parts meet strict quality requirements.



**Perfect compatibility:** Parts designed to fit perfectly with the technical specifications of your Manitou or Gehl machine.



**Reliability and durability:** A design tested and validated by our experts for optimal service life.



**Guaranteed safety:** Maintained performance and reduced risk of breakdown.





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#### **REGULATORY LIGHTING**

**Manitou Group Parts** 

Optimal visibility for enhanced safety

The lighting on your Manitou or Gehl machine is essential for optimized visibility and safety conditions for the operator and anyone working around the machine. Manitou Group Parts has selected genuine components to offer the best lighting performance while complying with current standards.

#### A REQUIREMENT FOR ROAD USE

The multi-functional front and rear lights, number plate lights and rotating beacons are approved in accordance with current regulations. They cannot be removed from the machine and must be replaced with parts that comply with European standards.



Specific to France: For road use, lights must comply with European regulations (lighting approvals). In this context, replacement lights must comply with the manufacturer's original approval or undergo a new approval process with the DREAL (Regional Directorate for Environment, Planning and Housing).



In case of replacement, it is recommended to contact your Manitou or Gehl dealer to ensure compliance.

#### THE VARIOUS REGULATORY LIGHTS

#### Rear and front lights

- Includes flashing, stop and reverse functions.
- Designed to withstand high-pressure washing.
- They are waterproof and durable.

#### **Rotating lights**

- Essential for operating handling equipment to signal its presence.
- Compatible with a wide range of machines.
- Compliant with standard R65.
- LED models for reduced energy consumption and long service life.



#### HIGH-QUALITY, DURABLE AND APPROVED LIGHTING

Manitou Group Parts genuine lights are designed to comply with the design and lighting requirements defined by the Manitou or Gehl machine manufacturers' design office. They are manufactured with high-quality components:

- Corrosion and vibration resistant materials.
- Watertight seals compliant with IP standards.
- Circuits and connections protected from damage.

#### COMPLIANCE WITH EUROPEAN STANDARDS FOR MAXIMUM SAFETY

A set of regulations govern the use of different lights on handling machines, and Manitou Group Parts complies with these standards.

**Please note:** The various regulations apply to machines intended for road use. However, it is recommended that you keep your lights in good working order for safety reasons.



- 1 Dipped headlights Road / ECE R112
- Position lights / ECE R7
- 8 Rotating beacon / ECE R65
- 4 Reversing lights / ECE R23
- 5 Brake lights / ECE R7
- 6 Direction indicators / ECE R6
- **7** Rotating beacon / ECE R65
- 8 License plate lights / ECE R4



ECE R3: rear/side reflectors ECE R19: front fog lights ECE R38: rear fog lights ECE R91: side marker lights



For further information, please refer to the regulations in force in your area.





# COMFORT LIGHTING Manitou Group Parts

Precision and durability

Our work lights have been carefully selected to offer you precise lighting and great durability. Designed for demanding environments, they guarantee greater comfort, visibility and safety.

Thanks to optimized light intensity, work carried out at dusk or in complete darkness is made easier by our high-performance LED range.

#### **OPTIONAL LIGHTING**

It is essential to distinguish between approved lighting and optional lighting:

#### Optional headlights:

- Work lights
- Safety lights
- Cabin lights

Optional lights are not intended for road use and are therefore not subject to road regulations. Users are free to choose the equipment that best suits their needs. Optional lighting can be added or removed at any time.

#### TYPES OF FASTENERS AND CONNECTIONS

Manitou Group Parts offers a range of fastening systems to meet your needs:

- Surface mounting
- Mounting on pole
- Suitable for attaching to cradles
- Magnetic attachment

In addition, we offer a range of connectors designed to simplify the installation of lighting on your Manitou or Gehl machine.



Check with your dealer to ensure that the connectors are compatible.





#### **BULBS AND LEDS**

#### **Manitou Group Parts**

Lighting tailored to your working environment

# CHOOSE A FIRE-RESISTANT LIGHT FIXTURE THAT COMPLIES WITH IP AND IK STANDARDS

Heavily used, located in close proximity to loads being handled and subject to jolts caused by uneven ground, our lights must be robust, shock-resistant and weatherproof.

To equip handling machines effectively, it is essential to select lights that are resistant to dust, water, shocks and vibrations. These characteristics are assessed according to IP and IK ratings:

- **IP:** The first digit indicates protection against solids, the second against liquids. Example: IP68 Total protection against dust (6) and prolonged immersion in water (8).
- **IK:** Measures resistance to mechanical impact. Example: IK10 - Resistance to impacts equivalent to 20 joules of energy.

#### WHAT IS A LED?

An LED (Light Emitting Diode) is an electroluminescent diode that converts electricity into light. Compact and easy to integrate into electrical circuits, they work equally well at high and low voltages. Today, it is entirely possible to equip your Manitou or Gehl machines with high-performance, durable LED lighting.

#### THE BENEFITS OF MANITOU GROUP PARTS LED LIGHTING?

LED lighting offers numerous advantages:

- Exceptional lifespan: up to 50 times longer than a traditional incandescent bulb.
- Low energy consumption: up to 80% energy savings compared to traditional light bulbs.
- Impact and vibration resistance: a major advantage for handling machines.
- Superior lighting quality: brightness close to daylight, ideal for night work or in low visibility conditions.
- Instant ignition: no warm-up time, immediate light when switched on.
- Low-temperature efficiency: no overheating or risk of burns from contact with the LED light.
- Optimised thermal management: Manitou LED floodlights are designed to dissipate heat simultaneously, preventing overheating and extending their service life.

Thanks to these advantages, Manitou Group Parts LED projectors optimize your comfort and productivity, allowing you to work more efficiently, for longer and in complete safety.

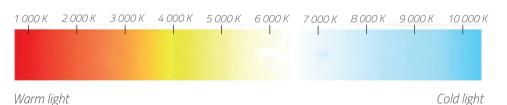


#### **COLOR TEMPERATURE**

Color temperature measures the hue of light emitted by a light source, in degrees Kelvin. It indicates whether the light is warm or cool:

- Temperatures below 4000 K are perceived as warm.
- Higher temperatures are perceived as cold.

The choice of color temperature depends on the workplace.



#### Warm light

Dusty environments Snowfall to reduce glare

#### Cold light

Clear areas for better visibility

In the event of snow or dust in the air, **white light sources** (higher color temperature) tend to scatter more due to the suspended particles. This can cause excessive glare, making vision difficult.

On the other hand, **warmer light** (lower color temperature) such as around 3000K has a longer wavelength and tends to be less scattered by particles suspended in the air. As a result, it reduces glare and improves visibility in snowy or dusty conditions.

#### **COLOR RENDERING INDEX**

The CRI, or Color Rendering Index, is a measure of a light source's ability to accurately reproduce colours compared to a reference source. It is rated on a scale from 0 to 100.





Need help choosing your lamps or bulbs? Contact your expert Manitou Group Parts dealer for personalized advice.





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#### **BULBS AND LEDS**

#### **Manitou Group Parts**

Lighting tailored to your working environment

#### LIGHTING PRINCIPLES

Lumens, Candelas and Lux:

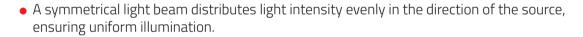
- Luminous flux: measured in lumens (lm), represents the total amount of light emitted by a source in all directions.
- **Light intensity:** measured in candelas (cd), quantifies the concentration of light emitted in a specific direction.
- Illuminance (Ix): on the other hand, expresses the luminous flux density on a given surface, which makes it possible to assess the amount of light received by a space.



The beam angle measures the spread of light from a source, determining its concentration or diffusion.

- A narrow beam angle concentrates the light on a small area.
- A wide angle spreads light over a larger area.

The shape of the beam depends on the shape of the diffuser and the lens.

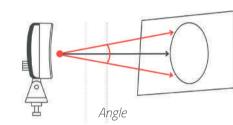


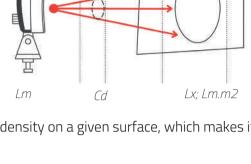
• An asymmetrical light beam is characterised by an uneven distribution of light intensity in different directions. Unlike symmetrical beams, the amount of light emitted varies depending on the angle of projection.



The choice of color temperature and beam angle is crucial:

- A temperature below 4000K (warm light) limits glare in snow or dusty conditions.
- White light (above 4000K) provides better definition of the environment.
- A narrow beam concentrates light on a specific area.
- A wide beam illuminates a larger area.









### **CABIN COMFORT**

#### **SEATS AND SEAT COVERS**

Manitou Group Parts

Key factor in the health of material handling machine operators

Vibrations, uneven ground and physical shocks experienced when using your Manitou or Gehl machines can cause back pain. To protect the daily health of machine operators, Manitou Group Parts offers ergonomic seats designed to reduce fatigue and ensure optimal comfort.

#### A RANGE SUITED FOR ALL REQUIREMENTS

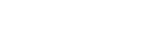
Genuine Manitou or Gehl seats are available in a range of models, from the simplest to the most sophisticated, to suit all machines, all needs and all budgets: from the economical version to versions with mechanical or air suspension, right up to the 'low frequency' version (progressive damping), original seats ensure comfort tailored to your activity and your needs.

#### **KEY FEATURES**



#### Quality and toughness:

Optimised design and choice of materials



#### Safety: ISO 6055 standard and safety belt



#### Advanced ergonomics:

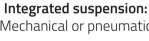
Multiple adjustments (weight, longitudinal, backrest angle)



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#### **Customisation:**

Headrests, armrests and choice of upholstery



Mechanical or pneumatic



#### Manufacturer's quality guarantee

#### STURDY AND ELEGANT DRIVER'S SEAT

To protect your original seat, Manitou or Gehl offers a range of durable seat covers designed for intensive use. Several models are available:

- Fabric cover with coated reinforcement
- Cover made entirely of coated fabric synthetic leather.





#### **ERGONOMICS IS ESSENTIAL**

Users of Manitou and Gehl machines repeat movements that can cause musculoskeletal disorders.

**Ergonomics** plays a key role in reducing unnecessary effort and optimizing working conditions.

#### **LEGISLATION AND SAFETY**

The safety and good condition of your machine are essential before starting a period of intense activity. Since 5 December 1998, European Directive No. 95/63/EC has required a restraint system (safety belt) on all forklift trucks in service. For other countries, comply with local standards.

#### **MECHANICALLY SUSPENDED SEATS**

Ideal for small machines and moderate use, these compact seats effectively absorb vibrations thanks to mechanical suspension under the seat.

#### Key features:

- Vertical suspension with springs and shock absorbers
- Adjustable according to driver weight and height
- Swivel models for better visibility
- Compliant with ISO 6055 standards





# **SEATS AND SEAT COVER**Manitou Group Parts

Key factor in the health of material handling machine operators

#### **AIR SUSPENSION SEATS**

Designed for intensive use, these seats offer superior comfort by absorbing shocks more effectively.

- Adaptive air suspension
- Precise adjustments for a personalized seat
- Swivel option for easy manoeuvring
- Available accessories: armrests, headrests, seat belts with presence sensors

#### THE BENEFITS OF GENUINE MANITOU COVERS

Manitou Group Parts has developed a wide range of covers specifically designed for your seat to prevent wear and tear.

- French manufacturing: Custom design for each seat model
- Stylish design: Black fabric, red stitching and embroidered Manitou logo
- High resistance: Thick foam and reinforced seams
- Protection of genuine seat: Extended service life
- Easy care: Machine washable at 30°C or clean with a sponge
- Simple assembly: Elastic fastening system for a secure fit (instructions included)
- Customization available: Dealer name embroidered on request



## **SOUND SYSTEM**Manitou Group Parts

Optimal sound quality

To improve your comfort and working experience, Manitou Group Parts offers a range of car radios and audio accessories (speakers, radio antennas) specially selected for their reliability and performance.

#### **SPEAKERS**

Genuine Manitou Group Parts loudspeakers deliver clear, dynamic sound, both indoors and outdoors. Each loudspeaker delivers a distinct frequency range for perfect sound reproduction. To meet all your needs, we also offer loudspeakers designed to withstand extreme conditions: heavy exposure to water, corrosion and heat. Each model is tailored to the specific requirements of its application.

#### MODERN, HIGH-PERFORMANCE CAR RADIOS

Manitou Group Parts original car radios offer an updated design and advanced features for optimal driving comfort:

- Weather strip for better anticipation of weather conditions.
- Optimised display with visible clock and extended viewing angle (-30° to +30°).
- Access to Google Assistant/Siri on Bluetooth versions for simplified voice control.
- RDS tuner with DAB/DAB+ option for optimal reception.
- Non-volatile memory for retaining presets and settings even in the event of a power failure.
- Logic On/Off function to preserve your machine's battery.
- Advanced connectivity: USB (MP3/WMA playback), auxiliary inputs and internal/external microphone for hands-free calling.
- CE, E and FCC certifications meeting automotive standards.

International versions of car radios are available in 12V with DAB, ensuring optimal compatibility with your Manitou and Gehl machines.



#### WHY CHOOSE MANITOU GROUP PARTS SOUND SYSTEM?

By choosing Manitou Group Parts sound system solutions, you benefit from seamless integration with your Manitou, and Gehl machines, as well as dedicated quality and after-sales service. Enjoy optimal comfort and sound quality, whatever the operating conditions.





### WINDOWS Manitou Group Parts

Optimal vision for enhanced safety

The quality of your machine's windows ensures a clear field of vision for driver comfort and safety. Manitou Group Parts offers a range of high-quality mirrors and windows to ensure safety when manoeuvring your Manitou or Gehl machine, whatever your working environment.

Genuine windows and mirrors are designed to offer high impact resistance, excellent optical quality and easy installation.

#### THE DIFFERENT TYPES OF MANITOU GROUP PARTS WINDOWS

- Door glass
- Rear windows
- Side and roof windows

Each type of windows, whether curved or flat, is specifically developed by our design office from the moment the machine is designed. The window is designed as an integrated part of the cabin to ensure a seamless appearance and is water tight.

#### THE ROLE OF CABIN WINDOWS

- Protection from the elements.
- Protection from flying debris, gravel, branches or loads during handling.

#### WHY CHOOSE MANITOU GROUP PARTS GENUINE WINDOWS?

Manitou Group Parts windows comply with the quality, design and shape requirements defined by the design offices of Manitou and Gehl manufacturers.

They guarantee optimal visibility, in perfect harmony with the bodywork components and with the usage habits of Manitou and Gehl professional handling machines.

Exposed to projections, impacts and extreme weather conditions, the windshields on your Manitou and Gehl machines are reinforced for your safety:

- Laminated glass: a plastic film inserted between two layers of glass holds the broken glass in place in the event of breakage, reducing the risk of injury.
- **Tempered glass:** five times stronger than conventional glass, it shatters into small, harmless pieces when broken.
- Tinted window: to reduce glare and improve visual comfort.



#### COMPLIANCE AND APPROVAL OF MANITOU WINDOWS

All Manitou window ranges comply with European regulation 43R and feature an approved marking indicating:

- The name of the manufacturer Manitou.
- The regulatory numbers of the country of origin and the approval laboratory.
- The safety technique (tempered or laminated).
- The Manitou reference.

#### MAINTAIN YOUR MACHINE FOR OPTIMUM VISIBILITY

Good visibility requires clean glass in perfect condition. Make sure that:

- Clean your windshield and windows regularly.
- Check the condition of your windshield wiper blades.
- Check your mirrors to eliminate any blind spots.
- Check that the headlights are working properly for optimum visibility in low light conditions.

For cleaning, use specific Manitou Group Parts windshield washer and de-icing fluids.



For further information, please refer to your machine's **operators manual**.

Watch out for cracks in winter: Water infiltration and freezing can weaken a windshield and cause it to break in the event of thermal shock (heating in the cabin). Don't let a small crack become a major problem!



Broken, cracked or scratched glass? Replace it without delay! Choose original Manitou or Gehl glass to ensure the durability and safety of your machine. For assistance, contact your authorized dealer.





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## WIPER BLADES Manitou Group Parts

Optimal visibility for your safety

Manitou Group Parts windshield wipers are essential components for the visibility and safety of Manitou or Gehl machine operators. On the road and on all types of terrain, rain, mud and dust reduce your field of vision. A clean windshield is essential for working efficiently and safely.

windshield wipers are subject to inevitable wear and tear due to external conditions such as frost, heat and temperature changes. The rubber blades lose their effectiveness over time and must be replaced regularly.

#### WHEN SHOULD YOU CHANGE YOUR WIPER BLADES?

It is advisable to change your windshield wipers once a year and check for signs of wear throughout the year:

- Appearance of streaks, smears or areas that have not been wiped clean on the windshield.
- Broken, cracked or raised brushes.
- Wiping is jerky or noisy.

#### WHY CHOOSE MANITOU GROUP PARTS GENUINE WIPER BLADES?

Manitou Group Parts wiper blades are specially designed to fit perfectly on Manitou and Gehl machine windshields.

- **High-quality materials:** the rubber fits perfectly to the curve of the windshield for optimal wiping.
- **Durability and strength:** the springs in the brush arms ensure even pressure for consistent performance, whatever the weather conditions.
- **Safety and reliability**: designed and tested according to the precise specifications of Manitou or Gehl manufacturers, genuine windshield wipers ensure perfect compatibility with your machine.

#### MAINTENANCE FOR PERFECT VISIBILITY FROM THE DRIVER'S SEAT

- 1 Check the condition of your brushes regularly and replace them at least once a year.
- 2 Ensure that the windshield is intact and free from cracks to prevent loss of visibility.
- Ensure that your mirrors and lights are in good working order to maximize safety when manoeuvring.
- Check the windshield washer fluid level and use Manitou Group Parts winter windshield washer fluid (-20°) for effective cleaning and frost protection.

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#### **GENUINE WINTER WINDSHIELD WASHER FLUID**

The Manitou Group Parts winter windshield washer fluid is ready to use and specially formulated to ensure perfect visibility all year round.

- Winter: used neat, it provides anti-freeze and anti-icing protection down to -20°C.
- **Summer:** cleans, degreases, anti-static and anti-mosquito.
- **Biodegradable formula:** made from bio-alcohol, it contains a bittering agent that makes it unpleasant to taste, preventing accidental ingestion.

#### TRUST MANITOU GROUP PARTS GENUINE PARTS

Using unsuitable windshield wipers can compromise your visibility and damage your windscreen. Manitou Group Parts windshield wipers guarantee optimal performance and enhanced safety.



To choose the right model, consult your expert Manitou Group Parts dealer.





#### **PNEUMATIC TIRES**

#### **Manitou Group Parts**

Performance, safety and durability for your handling needs

#### THE ESSENTIAL ROLE OF TIRES

As the only point of contact between your machine and the ground, tyres play an essential role.

- User safety thanks to optimal grip.
- Your machine performs even under the most demanding conditions.
- Durability of your equipment and mechanical components.

Manitou and Gehl select and approve each tire according to strict specifications:

- Sidewall strength for optimal durability.
- Reduced vibration for improved driving comfort.
- Maximum traction, ensured by designs adapted to all types of terrain.
- Longitudinal and lateral stability, essential for safety.

#### WHY CHOOSE MANITOU AND GEHL APPROVED TIRES?



Maximum grip for safe working.



**Increased longevity** even in harsh conditions.



**Superior driving comfort** to reduce operator fatigue.



**Exceptional** traction and stability.



**Even wear** for consistent performance.

#### WHEN SHOULD YOU REPLACE YOUR TIRES?

The service life of a tire for agricultural/construction machinery can vary depending on the conditions of use and storage of the tire: the rubber can harden, dry out and crack. This can cause a serious hazard when the machine is in use.

- 1 Tread depth: If the tread blocks or wear indicator are too low, replace the tire.
- 2 Appearance of the sidewalls and tread: Check for cracks, cuts or tears.
- 3 Valve: Replace it every time you change a tyre to ensure it remains airtight.
- 4 Tire pressure: Check it regularly when the tires are cold, in accordance with the manufacturer's instructions.



#### SIGNS OF WEAR TO WATCH OUT FOR

- Slight cuts: often found on the top of the bars or at the bottom of the structure.
- Cracking: mainly appears on the sidewalls or treads, even without significant wear.
- Tears: cause irreversible damage to the tyre, requiring replacement.



Don't take any risks and follow the Manitou or Gehl manufacturer's recommendations to ensure full compliance with safety standards and load charts. Consult your dealer to identify the tyres approved for your machine.



#### **INFLATION: A CRUCIAL FACTOR**

Correct pressure ensures safety and optimises the performance of your machine:



#### **Correct inflation**

- Safety
- Comfort
- Regular tire wearMachine efficiency



#### **Under inflation**

- Difficulty manoeuvring
- Premature wear of the tire
- Excessive fuel consumption



#### Over inflation

- Poor road holding
- Reduced driving comfort
- Premature wear on the sides



Always check tyre pressure when cold and follow the manufacturer's recommendations to avoid problems. Refer to the **operating instructions** for your machine.





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### **PNEUMATIC TIRES**

### **Manitou Group Parts**

Performance, safety and durability for your handling needs.

#### **TECHNICAL SPECIFICATIONS FOR TIRES**

To fully understand the characteristics listed on your tire:

- 1 Manufacturer's brand
- Trade name
- B Dimensions
  - Example 460/70 R 24:
    Section width: 460 mm
    Tyre series: H/L=70
    Structure: R (Radial)
    It can also be Diagonal (D, X or -)
    Nominal rim diameter: 24 inches
  - Additional information: Some tires include the TUBELESS designation when the tire is mounted without an inner tube.
- 4 Trade name
  - Load and speed indices: Example 159 A8:
     The load index 159 corresponds to a load of 4,375 kg
     The speed index A8 corresponds to a maximum speed of 40 km/h
- **6** Maximum pressure
  - This is the maximum pressure allowed during assembly, expressed in bar.

#### RADIAL OR DIAGONAL: WHICH STRUCTURE SHOULD YOU CHOOSE?

Each tire is designed to meet the specific requirements of each machine.

**DIAGONAL TIRE:** Robust, self-cleaning structure, suitable for rough terrain. Economical solution for demanding conditions.

**RADIAL TIRE:** Advanced technology with steel belt for improved grip, reduced fuel consumption and increased comfort. Ideal for agriculture.

	Durability	Rigidity	Application types	Road use	Even wear	Impact resistance	Purchase cost	Fuel consumption
DIAGONAL TIRE	<b>/</b>	<b>/</b>	Rough land			<b>/</b>	Economical	Higher
RADIAL TIRE	<b>/</b>		Agricultural land	<b>/</b>	<b>/</b>		Higher	Economical







### PNEUMATIC SHAPED SOLID TIRES

Manitou Group Parts

A robust and durable alternative

#### WHY CHOOSE PNEUMATIC SHAPED SOLID TIRES?

Pneumatic shaped solid tires (PSST) are designed to meet the specific needs of industrial and semi-industrial handling on mast trucks or industrial trucks. The solid rubber structure allows them to support heavy loads while ensuring:



Excellent stability and handling.

Resistance to cuts and tearing.





Maximum safety: no risk of punctures.



Extended service life.



Optimal thermal performance.

#### **COMPOSITION OF PNEUMATIC SHAPED SOLID TIRES**

By nature, Solid Tires do not contain air and are composed of several layers of rubber:

#### Base layer

Reinforced with steel braids to ensure optimal attachment to the rim and prevent slippage.

#### Comfort layer

More flexible, it absorbs shocks and stabilises the load being transported.

#### Tread

Suitable for all environments (smooth or paved), it provides ideal grip and manoeuvrability, while reducing the turning radius for indoor use.

#### THE BENEFITS OF MANITOU OR GEHL APPROVED PSST

By choosing Manitou or Gehl approved Solid Tires, you benefit from:

- Low maintenance thanks to their solid rubber construction.
- Superior durability compared to pneumatic tires.
- Enhanced safety for operators, with no risk of punctures.
- **High load capacity**, suitable for demanding environments.
- Excellent resistance to mechanical damage (impacts, cuts, tearing).

Manitou Group Parts offers a wide range of Solid Tires: standard, non-marking (ideal for sensitive floors) and antistatic (suitable for specific environments).



#### WHEN TO REPLACE YOUR PNEUMATIC SHAPED SOLID TIRES

Although solid tires offer exceptional durability, regular checks are essential to ensure:

- User safety.
- The stability and grip of the machine.

Always replace both tyres on the same axle at the same time to ensure optimum stability.

#### SIGNS OF WEAR TO WATCH OUT FOR

- Cracks on the sides.
- Loss of material or excessive tread wear.
- Damage caused by frequent impacts (rails, door thresholds).

These problems can result in loss of comfort, reduced shock absorption performance and increased risk of rollover or snagging.

#### **FAST AND COMPREHENSIVE SERVICE**

To simplify tyre management, your Manitou or Gehl dealer offers a comprehensive service on site or in the workshop:

- Removing old tires.
- Fitting new tires.
- Collection and recycling of used tires.

Manitou Group Parts also offers complete wheels (rims, tires) for quick and easy replacement.



Don't wait until a worn tire becomes a hazard: contact your Manitou or Gehl dealer for personalised advice and fast, efficient service.

#### **ENVIRONMENTAL COMMITMENT**

Manitou Group Parts actively participates in environmental protection through strict waste management (sorting, recycling, and recovery of used tires, and commitment by dealers to an eco-responsible approach).





#### **TRACKS** Manitou Group Parts

For the reliability of your compact loader

As the only point of contact between the ground and the loader, the tracks require a level of quality and selection approved by Manitou Group Parts to ensure user safety, machine performance and longevity.

#### WHY CHOOSE GENUINE MANITOU GROUP PARTS TRACKS?

The track is tested and approved by our research department in accordance with specific specifications:

- Choice of designs for maximum traction
- Safety, and stability of your machine

Manitou Group Parts meets all needs, make the right choice for your machine!

#### MANITOU GROUP PARTS TREAD STYLES

Respect Manitou Group Parts recommendations by selecting only approved tracks for your machine.



- Most popular track.
- Performs well in winter.
- Easy to clean.
- Versatility to use year round and allows operators the ability to go from hard to soft surfaces.



 Superior traction for wet and muddy conditions.



- Multi purpose tread that can perform well on many surfaces.
- Perfect solution for hot paved roads and gravel.
- Reduces vibration.

- durability.



To find out which tracks are available in your area, please contact your dealer.



- Most versatile tread.
- Perfect blend of comfort, performance and
- Turf friendly-perfect for landscaping and golf courses.



Refer to the **operators manual** for your machine.



#### WHEN TO REPLACE YOUR TRACKS?

The life of a track for machinery can vary depending on the conditions of use and storage of the track: the rubber can harden, dry out and develop cracks. These cracks can cause a great danger when using the machine. Tracks should be replaced after 1,200-2,000 hours. Watch out for the following signs of damage to the track.

- 1 Cracks on the tracks: Cracks can occur if you regularly work on rough, rocky terrains or if the machine is operated aggressively. If you find cracks, the tracks need to be replaced.
- Tracks keep losing tension: Tracks tend to stretch over time. Check the tension once a week if you use the machine regularly. Do not tighten the track beyond the tightening instructions. Instead try to replace the track with a track from Manitou Group Parts.
- **3** Worn sprockets: Similar to gears, the sprockets mesh with the track when you drive the equipment. If the sprocket is worn or the track is loose, it will cause them to interlock poorly. It can also cause the sprocket to skip over the lug. This can lead to the track derailing from the sprocket which can be very dangerous.
- 4 Lugs are missing: Lugs can come out if the sprockets continuously slip against them or if they get damaged from debris.
- **6** Worn tread: Your tracks have little to no traction when the track is almost flat and the tread depth is worn. This could affect the equipment's safety and increase the chances of malfunction or damage the undercarriage because of slippage.
- 6 Steel cord is visible: Your tracks are close to snapping if you can see their steel cords. Exposing the cord means that the steel is susceptible to moisture, which could lead to rust and increase the chance of track failure.
- **7** Dry rotted tracks: Exposure to heat, light and various factors on a job site can lead to stress marks





### TRANSMISSION AND BRAKES

#### WHY CHOOSE MANITOU GROUP PARTS?

Transmission systems (gearboxes, axles, drive shafts, angle drives, transfer boxes) and braking systems are essential for the performance and safety of Manitou and Gehl machines.

Using genuine Manitou Group Parts guarantees maximum reliability, optimal performance and enhanced safety, whatever the operating environment.

#### THE BENEFITS OF MANITOU GROUP PARTS TRANSMISSION AND BRAKE PARTS?



#### Compliance with manufacturer specifications:

Manitou Group Parts transmission and brake components are designed and approved by our design office during the design of Manitou and Gehl machines.

Each component fits perfectly into the mechanical assembly, ensuring trouble-free installation and optimal performance. This precision assembly ensures the overall performance of the machine and reduces the risk of failure.



**Safe transmission and braking systems:** Manitou Group Parts original parts ensure that these systems operate in accordance with even the most strict safety standards, protecting users and their working environment.



**Optimal safety:** The braking system is crucial for the safety of operators and the working environment. Original components such as discs, pads and calipers are designed to deliver reliable and consistent braking performance, even in extreme conditions. Using non-certified parts can compromise braking ability and increase the risk of accidents.



**Sustainable performance:** Thanks to high-quality materials and rigorous testing, Manitou Group Parts original parts can withstand the most demanding operating conditions.

For example: Internal components of gearboxes and axles, such as gears, shafts and bearings, are essential for efficient power transmission and adaptability to different loads and terrains.

Our parts are designed to work in perfect harmony with the entire transmission system for consistent, reliable performance and reduced risk of malfunction.





**Mechanical precision:** Manitou Group Parts original steering linkages and steering cylinders ensure precise transmission of steering wheel movements to the wheels. This precision is essential for optimal manoeuvrability, especially when manoeuvring in confined spaces or on difficult terrain. Unsuitable components can cause excessive play or imprecise steering response.



**Increased durability:** Manitou Group Parts original bearings and pinions are manufactured from high-quality materials and to precise tolerances. This ensures superior wear resistance and extends component life, reducing maintenance costs and downtime.



Refer to the **operators manual** for your machine.



Contact your Manitou or Gehl dealer for fast, efficient service.





### **HAND PALLET TRUCKS**

#### WHY CHOOSE MANITOU HAND PALLET TRUCKS?

Manitou offers a wide range of hand pallet trucks designed to meet the requirements of your business (transport, industry, construction, agriculture, etc.). Manitou pallet trucks are equipped with extremely durable forks and chassis, ensuring long-lasting, high-performance use, even in demanding working conditions.

#### A SOLUTION TAILORED TO EVERY NEED

Manitou has selected hand pallet trucks with a variety of features to suit your working environment:

- Standard and premium hand pallet trucks: Ideal for intensive daily use.
- **Short or long forks:** Enable loads to be handled in confined spaces or on non-standard pallets
- High-lift hand pallet trucks: Essential for easily raising loads to working height. Electric model available for optimum ease of use.
- Low-profile or wide fork hand pallet trucks: Perfect for handling standard or non-standard pallets.
- Stainless steel or galvanised hand pallet trucks:
   Designed for the food, chemical and maritime industries.
- Weighing hand pallet trucks: Enable accurate weighing of loads for shipping, receiving, checking or optimizing your stock.



### TECHNICAL SPECIFICATIONS AND CUSTOMER BENEFITS



- Quicklift® system and proportional valve pump: Makes lifting loads easier by reducing effort. (available on selected models)
- Protective valve: Prevents any risk of overload by blocking the forks from lifting.
- High-resistance paint: Epoxy powder coating at 250°C for increased durability.









#### Wheels and castors suited to your floor:

- 1 Nylon wheels: Resistant to abrasive and chemical environments.
- 2 Polyurethane castors: Comfortable to use and protects delicate floors.
- **3** Rubber wheels: Good grip and quiet movement.

**Single rollers:** Designed for flat surfaces and lengthwise pallet handling. **Double rollers:** Suitable for uneven floors, obstacle clearance and transverse pallet handling.

#### SPARE PARTS FOR MANITOU HAND PALLET TRUCKS

Manitou Group Parts has also developed a range of spare parts specifically for Manitou pallet trucks. Using genuine Manitou Group Parts ensures the performance and longevity of your pallet truck. They guarantee optimal operation and preserve your manufacturer's warranty. Manitou Group Parts offers replacement components such as:

- Genuine wheels and rollers for efficient and long-lasting rolling.
- Hydraulic pumps and seals to maintain smooth and precise lifting.



Consider using specific maintenance products: VG32 oil and extreme multi-purpose grease.

#### MAINTENANCE ADVICE

To maximise the service life of your hand pallet truck, follow these recommendations:

- Every 6 months: Replace the hydraulic oil using our Industry Hydro VG32 Manitou Group Parts oil.
- Every month: Apply Manitou Group Parts original extreme multi-purpose grease to the rollers, wheels and joints.
- Regularly check the condition of the wheels and rollers to prevent premature wear.

With Manitou Group Parts, you are investing in pallet trucks designed to last, ensure operator safety and improve your productivity every day.





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### **RETROFIT KITS**



#### WHY CHOOSE MANITOU GROUP PARTS RETROFIT KITS?

With Manitou Group Parts Retrofit Kits, your dealer can add features that were not originally installed on the machine, adapting it to your specific needs, whether in terms of comfort or performance.

This allows you to install additional options to customise the machine at the time of purchase and commissioning.

Your needs change, and your Manitou and Gehl machines adapt to your needs!

#### THE BENEFITS OF A RETROFIT KIT

- Performance optimization: The addition of options such as Stop & Start or the Smart Weighting System improves your machine's technical capabilities, enabling it to meet new operational requirements.
- Improved comfort: Air conditioning, radio, air-suspension seat. Options designed to reduce fatigue and improve operator comfort in the cab.
- Economic gain: Adapt your machine to your needs rather than the other way around, without having to purchase a new one.
- Simplicity and speed: Manitou and Gehl machines are factory-fitted to accommodate these kits, which are perfectly suited to our machines.



- Retrofit kit options can be integrated quickly, meaning that machine downtime is minimal or non-existent!
- **Resale value:** A machine equipped with sought-after options is more attractive to potential buyers, making it easier to resell and increases its value.
- Flexibility: Machines can be customised during commissioning, allowing them to be adapted at the last minute without any logistical constraints.
- Sustainable support: Installing a retrofit kit helps to better meet user expectations and strengthen ties with dealers.

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#### A WIDE RANGE OF OPTIONS FOR INCREASED COMFORT AND EFFICIENCY

With Manitou Group Parts Retrofit Kits, you can equip your machine with numerous options, such as:

- **Vision and safety:** Options including work lights and cameras give you improved visibility of your work area and ensure the safety of the operator and their surroundings with more precise execution of handling tasks.
- Accessory connections: Your most complex accessories can be connected via the hydraulic power supply or the electrical control system for your accessories. By adding options from the catalogue, such as forced operation, you can supply mixing buckets or sweepers with a steady hydraulic power supply.
- **Comfort:** the comfort and ergonomics of the driver's seat can be improved with suspended seats, sound systems or air conditioning to reduce operator fatigue.

#### TECHNICAL SPECIFICATIONS AND GUARANTEED QUALITY

- Manufacturer compatibility: Each kit is designed to fit perfectly with the original machine.
- **Genuine quality:** The components installed are identical to those offered by the factory, guaranteeing Manitou Group Parts quality, safety and performance standards.
- Easy installation for dealership technicians: Technical installation guides are included with the most complex kits to facilitate setup and ensure quick assembly.

#### HOW CAN I OBTAIN AND INSTALL A RETROFIT KIT?



Contact your Manitou or Gehl dealer: They will show you the catalog of options available for your model.

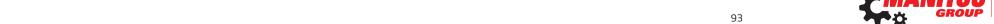
#### Select the kits that suit your needs:

Focused on productivity, comfort or precision of use.

#### Installation by your approved dealer:

To ensure compliance, performance, and maintain the manufacturer's warranty.











Maintain your machine with certified remanufactured spare parts from Manitou Group parts!



Having to repair your machine is always a problem for you and your business.

With REMAN parts, we can bring what matters back to life and give spare parts a new lease on life: your dealer can repair your machine with REMAN parts! These spare parts are covered by the manufacturer's warranty and reduce maintenance costs for your Manitou or Gehl machine.

#### THE SOLUTION: REMAN PARTS

Manitou Group Parts offers remanufactured spare parts, remanufactures with original components, tested and certified to the same quality standards as new parts.

Available in accordance with current standards.

#### **WHY CHOOSE REMAN PARTS?**



**Eco-friendly initiative:** Using the REMAN offer helps reduce the environmental impact of your business (less waste, longer product life cycle).



**Certified reliability:** REMAN parts meet the same quality standards as their original new parts equivalents. They are tested, validated and certified by Manitou Group Parts.



**Economical:** Reduce the maintenance costs of your machine by taking advantage of lower prices than new parts while ensuring the performance of your machine.



**Quick availability:** Pre-assembled parts for quick installation and minimal downtime for your machine.



Manufacturer's warranty: Same warranty (or better) as new parts.

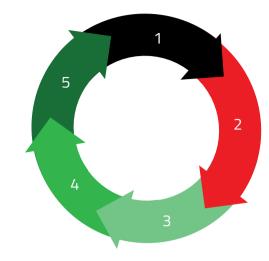
#### **HOW CAN I OBTAIN REMAN PARTS?**



When servicing or repairing your Manitou or Gehl machine, ask your dealer if a REMAN part is available.

With REMAN, you reduce your costs, guarantee the reliability of your machine and help protect the environment!

#### A VIRTUOUS LIFE CYCLE

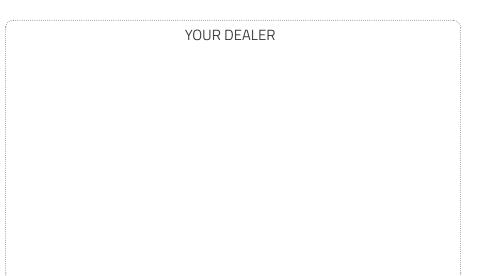


- 1 Your dealer orders and receives a REMAN part to replace a defective part.
- The used part is returned to Manitou Group Parts.
- 3 Manitou Group Parts remanufactures it with original components after a comprehensive audit.
- It is tested and certified according to strict standards: a new REMAN part is born!
- 5 The REMAN part is available for a new order.

#### THE WORLD OF REMAN PARTS











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