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# TCO\* PRACTICAL GUIDE

UNDERSTANDING THE TOTAL COST OF OWNERSHIP  
OF YOUR MACHINES

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\* TCO : Total Cost of Ownership

**MANITOU**  
GROUP

**“ A usage  
transformation  
is underway.”**

Michel Denis  
President & CEO Manitou Group



**C**alculating, understanding and deciding by knowing the cost per hour, per day, or per kilometre is the essence of the pay-per-use approach. Today, optimising our costs according to our needs has become a part of all our lives.

TCO-based thinking has now become a powerful driver of performance innovation. And, by transforming the way we use products and services, it's the basis of a new economic era.

Compared to the controversial practice of planned obsolescence, the TCO-led approach is more respectful of both customers and the environment. That's why, at Manitou Group, it's changed the way we design our handling machines.

For you, as a materials handling professional, this new era is above all synonymous with increased performance and ever more reliable machines.



Michel Denis  
President & CEO Manitou Group


“ More than the purchase price, it is the cost of ownership - and the reduction in ongoing costs - that are important to us. ”

Franck C., Building materials trader



# WHAT IS TCO?

**Cost control** is a major concern for any professional. And today more than ever, the purchase price alone does not reflect the real cost of owning and using a materials handling machine. Assessing your Total Cost of Ownership (TCO) is **essential for controlling and reducing costs**. With this TCO guide, written for both users and equipment rental companies, you will learn **how to properly assess the real cost of a handling solution, whatever your sector: industry, agriculture or construction**.


$$\begin{array}{r} \text{TOTAL COST} \\ \text{OF OWNERSHIP} \\ = \\ \text{Sum of all equipment} \\ \text{costs (€)} \\ \hline \text{Number of hours of use} \end{array}$$

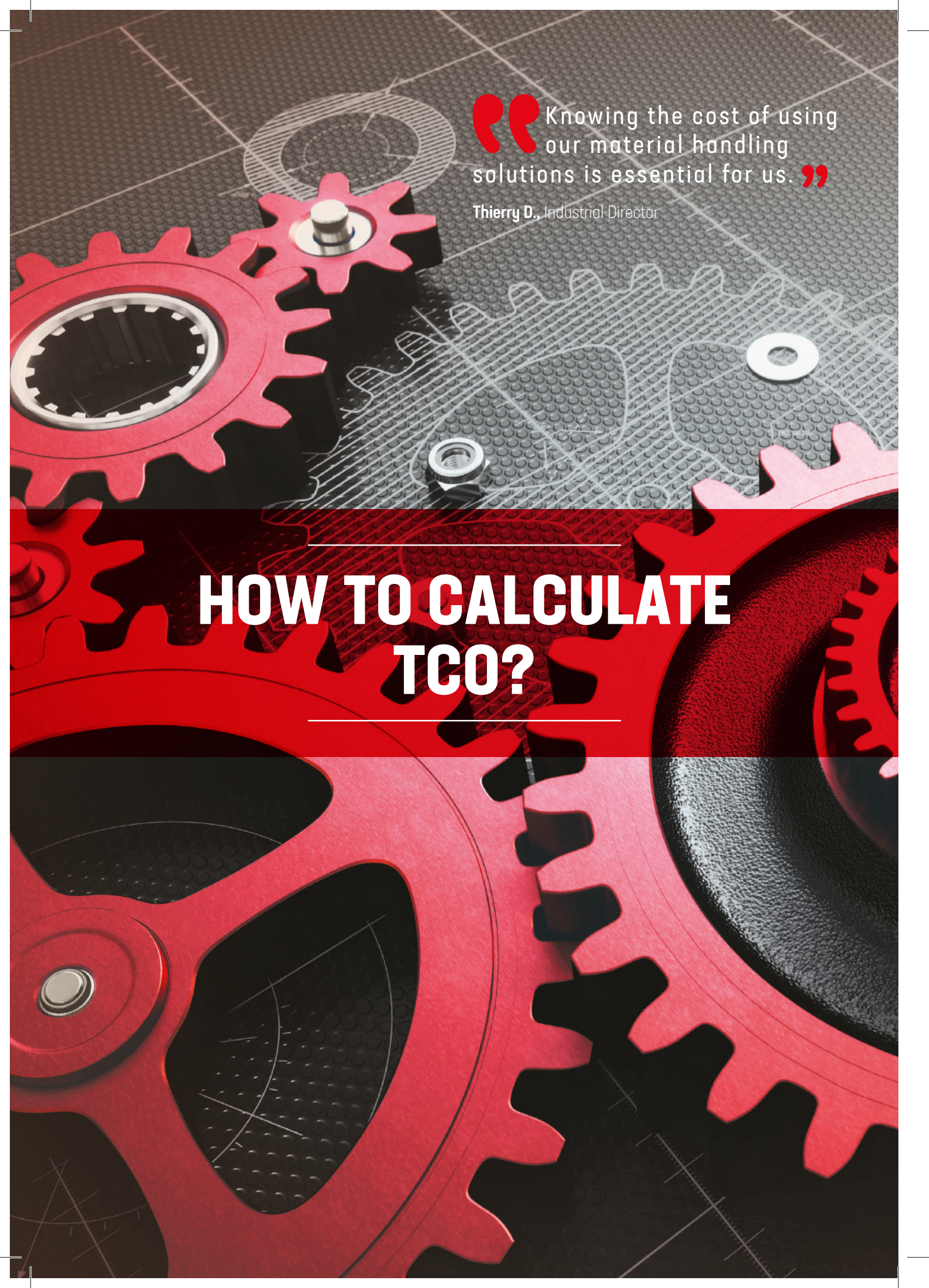
## YOUR TOTAL DIRECT AND INDIRECT COSTS...

Our objective is to help you generate a **complete assessment of costs over the entire lifecycle of the machine**, an analysis that may be known as "total cost of ownership", "life-cycle cost", "whole-life cost", or simply "TCO".

Direct and fixed costs of ownership (including purchase, interest, and residual value) are only part of the equation. In fact, the indirect and variable costs linked to usage of the machine (including maintenance and repair, energy, operation and training) add up to more than 50% of the overall cost.

## .... OVER THE ENTIRE SERVICE LIFE OF THE MACHINE.

Budget line items like **depreciation, financial costs, maintenance, tyres, insurance, energy and training** all need to be taken into account. Yet assessing TCO correctly also requires a long-term perspective that recognizes how your expenses will change over time. Our approach to TCO makes it possible to anticipate and precisely manage these budget items in a way that helps you **optimise your costs over time**.



“Knowing the cost of using  
our material handling  
solutions is essential for us.”

Thierry D., Industrial Director

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# HOW TO CALCULATE TCO?

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# THE SIX MAJOR AREAS OF CONSIDERATION



## 01. DEPRECIATION

Depreciation is **the difference between purchase value and resale value**. Important to note is that purchase price alone cannot provide a reliable indication of resale value, as so much depends on brand perception, the reputation of the specific model, and the availability of spare parts to ensure optimum maintenance over time.



## 02. ENERGY

Energy usage, especially fuel consumption, is currently **your second largest expense**, although the rise of alternative energies is helping to reduce this item significantly.



## 03. MAINTENANCE & REPAIRS

These costs will depend on your vehicle's design, the quality of its components, its settings and operating modes, as well as on **the costs of preventive maintenance, replacement parts and corrective maintenance**. Maintenance and repair costs can vary considerably over time and significantly impact TCO.



## 04. TRACKS & TYRES

Tyres have a major impact on energy consumption, performance - and driver safety. **Choosing the right tyres and regularly monitoring their pressure and wear** will benefit all three.



## 05. COST OF FINANCE

This item includes all **costs related to the acquisition**, insurance and taxation of your equipment, regardless of your financing method. This is usually worked out over the expected lifespan of the vehicle, typically eight to ten years.



## 06. HUMAN RESOURCES

Finally, we need to include the costs of what we call the **Man-Machine Partnership**, including user training and machine handling. When there is a lack of skilled users, the partnership between operator and machine can have a powerful impact on consumption and maintenance costs: inefficient operation and poor driving habits have a direct effect on fuel consumption and mechanical wear.

### DID YOU KNOW

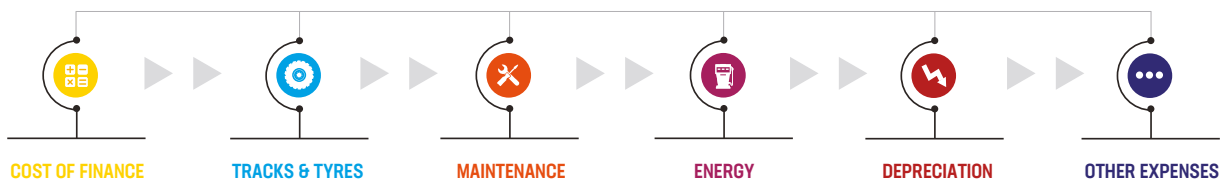
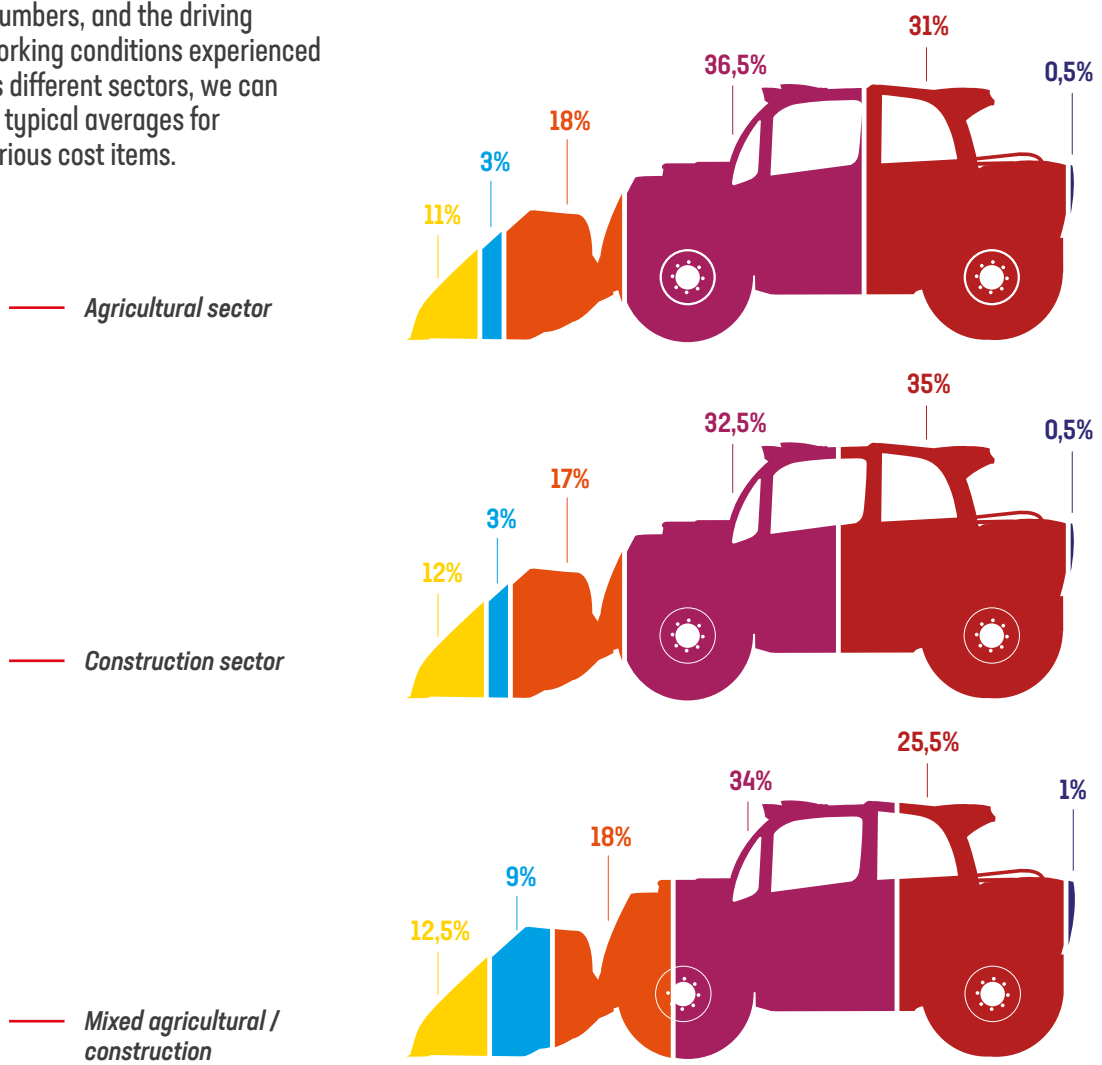


**Over time, inefficient operation has a big impact on TCO.**  
Limiting downtime or fitting machines with Stop & Start options can bring significant TCO benefits.

# FACTORS INFLUENCING TCO

## 1. YOUR INDUSTRY SECTOR

By studying the different tasks, user numbers, and the driving and working conditions experienced across different sectors, we can define typical averages for the various cost items.





## 2. MATCHING THE MACHINE TO YOUR NEEDS

**It is important to analyse your needs in detail.**

The choice of machine type, options and accessories can have a significant impact on your TCO.

- Reduced downtime.
- Reduced transport time.
- Multiple uses.
- Increased productivity.
- Use of additional one-off rentals.



**This is the average TCO of a telescopic handler in Europe. This means that each hour of use costs the owner €20.**

## 3. MACHINE USAGE

Inefficient driving habits or inappropriate use will have an excessive effect on costs, especially fuel consumption. To minimise this item, training of each new user is essential, specifically:

- Personalised, machine-specific training.
- Training in daily maintenance procedures.
- Eco-driving training.



**Christophe M.,**  
*SMB Manager*


“Our construction company manages a fleet of around 20 machines. What matters to us is the availability of the machines as well as their maintenance cost. As a result, we are particularly keen on quality and reliability, to avoid repair and downtime costs. We also have a close look at the costs of parts replacement and labour for preventive maintenance, that is to say, all regular upkeep.”

## 4. CALCULATION METHODOLOGY

TCO calculation methods can vary from one manufacturer to another. To help handling professionals evaluate their fuel consumption clearly, our calculator takes into account **all direct and indirect costs** (insurance, staff costs, etc.) with complete transparency.

Manitou Group bases fuel consumption measurements on a protocol validated by UTAC (Union Technique de l'Automobile, du Motorcycle et du Cycle). This procedure - now the European Standard across the entire industry sector - uses a strictly identical methodology to enable fuel consumption comparisons between different machines.

Manitou Group is now taking this **standard international**, so that it becomes the recognised method for TCO measurement throughout the world.



“Controlling the TCO  
is the final step in the  
optimization of cost structures  
regarding mechanization.”

**Olivier V.**, Farmer

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# TCO HANDY GUIDE

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# STEP 1

## KEY QUESTIONS TO ASK

Ready? To estimate the TCO of one of your machines – or compare it to another machine, even a non-Manitou machine – start with the following questions.  
(Please don't hesitate to ask your dealer for help.)



### USAGE

- Does the chosen machine meet all your needs?

Accurately assessing your machine's duty cycle and working environment is essential to identifying the right solution.



### DEPRECIATION

- How long do you want to keep your machine?
- Do you know its potential resale value?
- How long is your machine under warranty and can you extend it?

Ask your dealer for advice. They will be able to estimate the resale value and advise you on how to maximise it.



### ENERGY

- Do you know the consumption of your machine?
- How is it calculated?
- Are there any alternative models available (hybrid/electric/hydrogen...)?
- What options are available to help me reduce my consumption?

Remember, evaluation methods can vary, so make sure that the advertised fuel consumption is calculated according to the official UTAC rules. Options such as Ecostop or Stop&Start allow you to limit energy consumption and the number of hours on the meter.



### MAINTENANCE & REPAIRS

- Do you get an alert when maintenance is due?
- Can your dealer provide you with a spare machine in case of breakdown?
- Does your dealer have technicians trained on your machine?

Limiting breakdowns and downtime has a direct impact on TCO, making a trusted maintenance partner a priority.



### TYRES

- How much do tyres cost?
- Can I benefit from eco-driving training?

Taking the time to properly commission the machine with your dealer or doing eco-driving training can reduce fuel consumption and wear and tear, especially on the tyres.



### OTHER EXPENSES

- Can I take advantage of training to get the hang of the machine?

# STEP 2 CALCULATE YOUR TCO WITH OUR ONLINE CALCULATOR

Find our simple, comprehensive online calculator at [reduce-program.com](https://www.reduce-program.com). Accessible to all, it allows you to visualise the distribution of fixed and variable costs over the entire life cycle of a machine, from purchase to resale, and includes manufacturers' consumption data. It offers the advantage of pre-set data, based on observed averages and shared consumption data, which you can personalise to your own needs.

Visit  
<https://www.reduce-program.com/calculators/tco>



## DEPRECIATION

### Acquisition price:

Default price according to machine/model & can be changed according to the achieved price.

### Resale value:

Default value based on 1,000 hours of use over 5 years. Don't forget to change your resale value if you have changed any of these 2 criteria.

## ENERGY

### Price per litre or per kWh Average consumption:

Refer to the Reduce-Fuel calculator to calculate this accurately.



## MAINTENANCE

### Preventive/year:

Can be between 0 and 10,000.  
Ask your Dealer for advice.

### Corrective/year:

Can be between 0 and 6,000.  
Ask your Dealer for advice.



## TRACKS & TYRES

### Cost of tracks/tyres:

Can be between 0 and 5,000.  
Ask your Dealer for advice.

### Tracks/tyres lifetime:

Can be between 100 and 6,000.  
Ask your Dealer for advice.



## COST OF FINANCE

### Borrowing rate:

Can be between 0 and 30.

### Material tax/year:

Can be between 0 and 5,000.

### Insurance cost/year:

Can be between 0 and 5,000.



## OTHER EXPENSES

### Safety certificate:

Can be between 0 and 2,000.  
Ask your Dealer for advice.

### Operator cost/year:

No pre-filled value.

### Training cost/year:

No pre-filled value.



“Initially, we wanted to invest in a 26m aerial work platform. To validate our choice, we carried out a TCO approach, taking into consideration the ease of operation on the worksite, the various tasks the machine would be required to perform, as well as the expected duration of each task.

To our surprise, it emerged that a 26m machine exposed us to prolonged idle periods. We finally opted for an intermediate size model, a 20m electric: more advantageous and with an optimal hourly cost. The 7 tonne weight is far less than a 26m platform, and the machine’s dimensions were also an essential factor in our transportation and dismantling calculations. For greater heights, we supplement our fleet with rental equipment.”



**Cyril D.,**  
*Site Manager*



A red Manitou telehandler is shown in operation, with its telescopic boom extended high to reach the upper levels of a modern building. The building features a mix of grey, white, and red panels and large windows. The telehandler has a platform with safety railings and is parked on a paved area next to the building. The sky is overcast with soft light.

**TCO:  
OUR PRIORITY**

In a world where material handling professionals need to optimise every cost and are thinking more in terms of usage than possession, TCO calculation has become all-important. At Manitou Group, each stage of the industrial process is examined to ensure that it furthers the overall objective of reducing the cost of ownership of our machines. Our way of designing our machines goes beyond the assembly line to consider their long-term use.



**“REDUCING THE TCO OF YOUR MACHINE IS OUR PRIORITY.”**

**Maurizio Achilli,**  
Manitou Group Vice President  
Sourcing

« At Manitou Group, the objective of reducing TCO affects every level of the organization. Upstream at the production level of course, but also at the procurement level and the sourcing of spare parts. In recent years, the procurement process has gone through a major transformation with the introduction of TCO-based targets for components, service and spare parts. Every decision takes into account the perfect balance of cost, quality, reliability and price. It's part of a sustainable win-win process for the user.

Reducing TCO also requires us to better integrate our suppliers into our ecosystem in order to innovate. For example, we are researching how refinements to the hydraulic circuits can reduce oil consumption. Or how we can reduce the risk of damage to components exposed to impact, such as the engine bonnet, by using new materials such as more robust and, above all, repairable, resins.

The TCO approach is integral to each stage of the lifecycle - and well beyond the factory fitted equipment. Internally, this is what we call 'TCO-led design' and it all leads to better cost control for our end-users. »



**9,000 HOURS OF TESTING / YEAR**

Every year, at our Ancenis Research and Development Centre (Loire Atlantique, France), we test every single prototype to validate its technical characteristics and also to accurately assess its lifetime cost.

Endurance tests of 500 to 2,000 hours measure fuel consumption, wear and tear and more, guaranteeing increasingly efficient machines.



**OUR NEW MLT 841 NEWAG XL = €600 SAVINGS / YEAR**

TCO savings are designed into every aspect of every new Manitou product. For example, the latest version of our telehandler saves €600 per year.



“WHAT INSPIRES US MOST ARE THE PEOPLE WHO USE OUR MACHINES.”

**Arnaud Sochas,**  
Product Line Innovation Manager,  
Agriculture

« To understand how to reduce our users' costs, we try to place ourselves in their daily lives. On a farm, for example, we noticed that the farmer gets out of his cabin 10 to 30 times a day to deal with a multitude of different things. And that means that the machine is running in idle 15 to 30% of the time. Knowing that each hour of idling costs €10 on average, we committed ourselves as a manufacturer to do something about it.

This is how we developed our Ecostop, which eliminates idling time if no-one is in the cabin. It's currently available as an option, but paying attention to our customers, we're considering providing it as standard.

The return on investment for our customers is immediate - less than 4 months. They're not only saving on fuel but also on wear and tear: reducing preventative maintenance and preserving resale value. »



## ECOSTOP

By reducing total hours of use, the **Ecostop function** lowers fuel consumption and environmental impact, and increases the residual value of MLT agricultural telescopic handlers. This innovation is just part of Manitou Group's global approach to reducing your handling machine's TCO.



## SIMPLIFIED MAINTENANCE

As maintenance is such an important component of TCO, reducing the time each operation takes is a priority.

A prime example is the way we've simplified access to the MT420.





**PP** Simplifying access means  
simplified maintenance and  
real productivity gains. **”**

**Hervé A.**, Site Manager





“Reducing our ecological impact has become a priority. We must be able to combine productivity with respect for nature.”

Nicolas F., Purchasing Manager



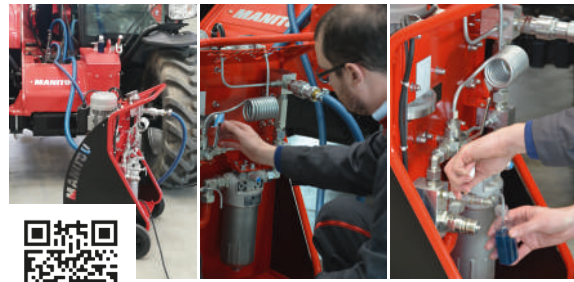
## “THE TCO APPROACH: COMBINING ECONOMY AND ECOLOGY.”

**Olivier Le Pesquer,**  
Service Development Manager  
Manitou Group

« For the past ten years we have committed ourselves to reducing the TCO of our Best Sellers. This approach has been boosted by the growing global concern for reducing, or even avoiding, emissions, noise and waste production, and favouring the reuse of assets and resources.

As this global momentum increases, a whole new maintenance ecosystem is emerging, enabling new operating methods and fundamentally transforming jobs. At Manitou, newly emerging services and ways of working include remote support, professional maintenance (including advice, fluid analysis and decontamination, etc.), online service platforms, the provision of services (including operator training and, energy recharging services, etc.), and also alerts for the safety and protection of individuals. The transformation of uses is definitely underway.

Specifically, our analysis of duty cycles has been central to the evolution of today's intelligent, connected machine. By reducing the consumption of energy, consumables and downtime, our customers benefit from a significantly lower TCO. »



### OIL DECONTAMINATION

Cleaning your oil regularly means fewer oil changes, less oil consumption, and a more efficient machine.



### ELECTRIFICATION

By 2025, the vast majority of Manitou Group's aerial work platforms will be available in electric versions.



### REMAN BY MANITOU

30% cheaper than new, our REMAN range of remanufactured parts is the answer for all those who wish to combine economy and ecology.

Helping you maintain your machines at peak condition, our REMAN range demonstrates our commitment to the circular economy.

In the end, thinking differently about TCO turns a cost-reduction exercise into a driver of customer service innovation: ready for tomorrow's smart, circular and sustainable economy.

**TCO : “Totally Customer Oriented”**

**MANITOU**  
GROUP