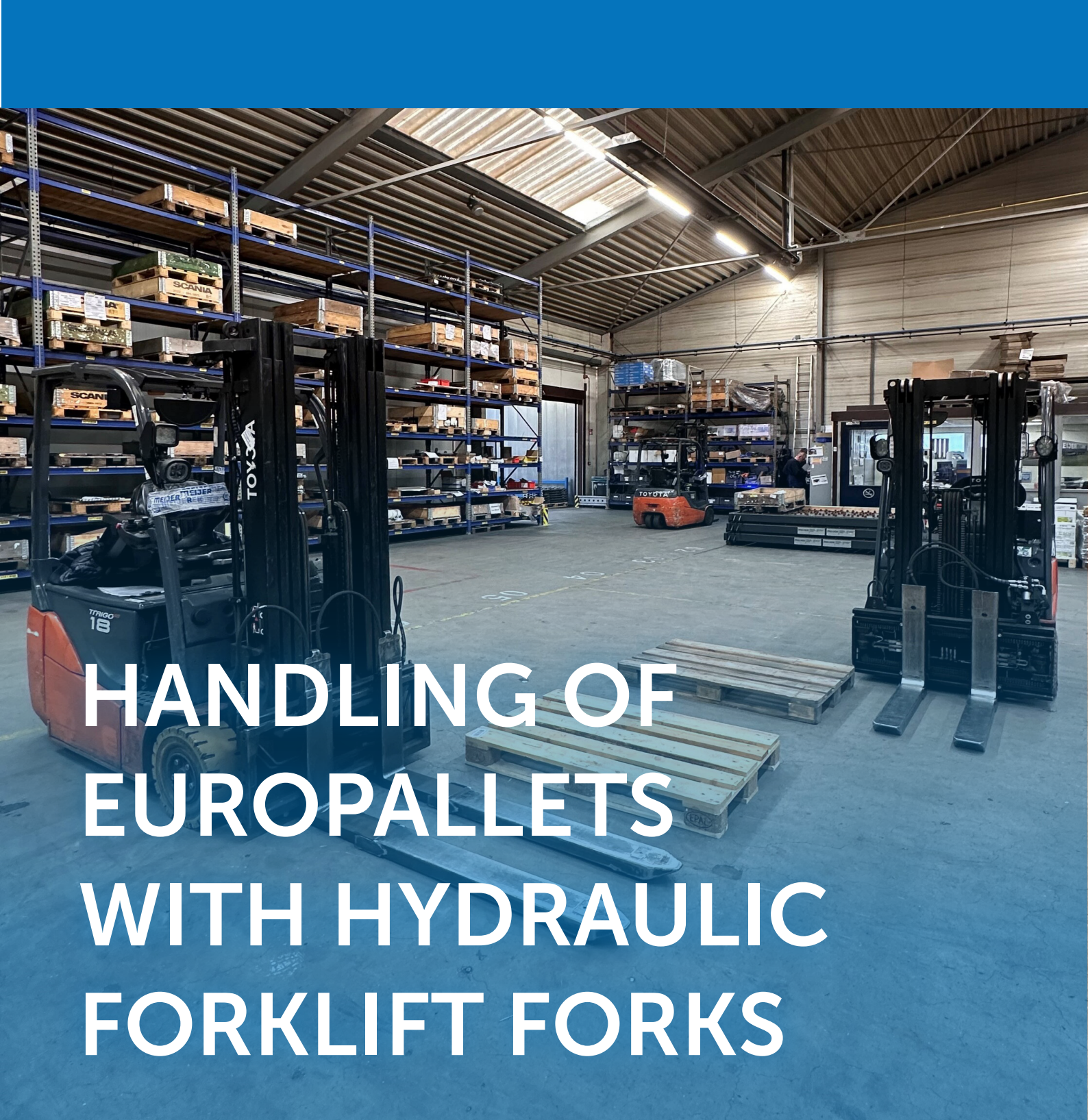




HANDLING OF EUROPALLETS WITH HYDRAULIC FORKLIFT FORKS

***SAFE, EFFICIENT AND
COST-EFFECTIVE.***

TABLE OF CONTENTS

1. Introduction	3
2. What is a Euro Pallet?	4
2.1 Standardization and History	4
2.2 Role in Modern Logistics	4
3. Risks of Using Standard Forklift Forks	5
3.1 Short-Side Pickup (800 mm) – Forks Too Long	5
3.2 Long-Side Pickup (1200 mm) – Forks Too Short	5
3.3 Practical Problems in Daily Operations	6
3.4 Hidden Costs of Damage	7
3.5 Driver Responsibility and Workload	7
4. Hydraulic Reachforks as the Solution	8
4.1 Adjustable Forks for 800 mm and 1200 mm	8
4.2 Improved Safety and Usability	8
4.3 Proven Technology	9
5. Main Benefits of Hydraulic (Telescopic) Forks	10
5.1 Safety and Damage Prevention	10
5.2 Efficiency and Time Savings	10
5.3 Better Maneuverability in Tight Spaces	10
5.4 Increased Productivity and Workflow	10
5.5 Cost Savings and Fewer Damages	10
5.6 Driver Satisfaction and Retention	11
6. Development and Design of Reachforks	12
6.1 Evolution Since the 1980s	12
6.2 Technical Design Features	12
7. Installation of Hydraulic Reachforks	13
7.1 Requirements for Modern Forklifts	13
7.2 Retrofit Options for Older Models	13
7.3 Hydraulic and Electric Control Options	13
8. Economic Benefits and ROI	14
8.1 Damage Prevention and Cost Reduction	14
8.2 Case Example from the Industry	14
8.3 ROI Calculations and Payback Period	14
9. Conclusion	15

INTRODUCTION

Every day, forklift operators move thousands of pallets in warehouses and factories. A large proportion of these are **Europallets**, one of the most common pallet types in Europe. Yet these pallets are still mostly handled with **standard fixed forks** on the forklift, a practice that creates both safety risks and unnecessary costs.

Why continue to work with forks that do not optimally fit the Europallet, when modern **hydraulic extension forks** exist that make this work much safer and more efficient?

In this text, we discuss what Europallets are and how they came to be, what risks and damage can occur when using traditional forks, and how **hydraulically adjustable forks** provide a solution. Finally, we look at the economic benefits and **return on investment (ROI)** of this innovation. The goal is clear: to demonstrate that switching to hydraulic forks not only increases safety, but also quickly pays for itself financially.

2. WHAT IS A EURO PALLET?



2.1 Standardization and History

A Euro pallet (officially EUR pallet) is a wooden pallet with standardized dimensions and specifications established by the European Pallet Association (EPAL).

The classic Euro pallet measures **800 x 1200 x 144 mm** and can safely carry a load of up to **1500 kg**. This pallet type was developed in the mid-twentieth century to increase efficiency in transportation. In 1961, European railroad companies jointly introduced a standard pallet (officially called the EUR pallet, better known as the Euro pallet) to speed up the loading of rail cars and trucks.

This standardization allowed goods to be loaded much faster, according to historical records in just 10% of the time it used to take.

2.2 Role in Modern Logistics

The Euro pallet has since become the cornerstone of logistics in Europe. It is estimated that there are around **650 million EPAL Euro pallets** in circulation worldwide.

These pallets form the backbone of an exchange system: an empty pallet is exchanged for a full one, allowing pallets to be continuously reused and exchanged in the supply chain. Due to their wide applicability and standardized format, Euro pallets can be used almost anywhere, from warehouses to trucks.

Clearly, the Euro pallet has gained tremendous distribution and importance in logistics. At the same time, this means that efficient and safe handling of Euro pallets is of great importance: any incident or damage can occur many times over because there are so many pallets in use. (To illustrate, a new EPAL Euro pallet costs around €25, so it pays to prevent damage).

3. RISKS OF USING STANDARD FORKLIFT FORKS

3.1 Short-Side Pickup (800 mm) – Forks Too Long

Almost all forklifts come standard with fixed forks of a certain length (usually around 1,000–1,200 mm).

When picking up on the short side (800 mm side), the standard forks are longer than the pallet is deep. So the forks will protrude at the back, often about 20 to 40 cm. Those protruding steel forks are a direct risk:

- They can bump into other goods or pallets.
- They can accidentally pick up a pallet directly behind.

The result is damage to nearby products or pallets and even risk of injury. Imagine that behind the pallet you are picking up is another pallet; excessively long forks can inadvertently lift that second pallet, which can then fall down. This type of accident can have serious consequences for bystanders and products.

3.2 Long-Side Pickup (1200 mm) – Forks Too Short

When picking up on the long side (1200 mm side), there is the opposite problem. Standard forks shorter than 1200 mm provide insufficient support along the entire length of the pallet. The forks do not reach to the end of the pallet, so the pallet does not rest fully on the forks.

Especially with heavy loads, this may cause the pallet to tip forward or the pallet boards may break due to the overhanging weight. Such an overturned or broken pallet is not only costly (products can fall and be damaged), but also dangerous, as falling goods can injure personnel.

In other words, one fixed fork length is always a compromise: too long for one side, too short for the other.



3.3 Practical Problems in Daily Operations

These limitations of standard forks lead to several practical problems in the warehouse.

Forklift drivers must work very carefully and precisely to avoid damage. For example, when picking up a Euro pallet from the long side, they deliberately do not let the pallet fully extend until it hits the fork carriage; they let the pallet stand a little away from the mast so that the forks do not stick out at the back.

However, this goes against their training: every driver is taught to push a pallet all the way against the fork carriage for maximum stability. Now they suddenly have to eye-estimate how much space to leave.

In practice, many companies try to solve this by placing markings on the forks (for example, a line indicating "enter here at 1200 mm pallets"). But such markings wear out and are difficult to see from the driver's seat.

Having to constantly stop to check whether the fork is sticking out too far, or maneuvering by feel, slows down the work considerably. Each pallet thus takes just a little more time to pick up safely, which lowers overall handling capacity.



3.4 Hidden Costs of Damage

Using unsuitable forks carries a high risk of damage, and therefore costs.

When a forklift damages a pallet or the load on it, it often has to be completely sorted out and dealt with. Think of scenarios such as:

- A pallet of cargo punctured by a fork has to be returned to the packing department.
- Products have to be re-stacked or replaced.
- An inventory correction has to be made.
- A damage report with photos has to be prepared.
- A truck driver may be waiting for the damage to be resolved.
- A dissatisfied customer is the end result.

All of these collateral consequences cost time and money. Damage to the pallet itself is also a waste, because that pallet represents a value and must be repaired or replaced.

3.5 Driver Responsibility and Workload

Finally, there is the aspect of responsibility and workload.

In traditional situations, when damage occurs, the blame almost automatically falls on the forklift driver: he or she should have been more careful. This puts a lot of pressure on the driver, who is constantly anxious that the forks don't accidentally hit something.

It is actually unfair to place all the responsibility on the driver when the tools (the forks) are not ideal. Moreover, a stressed, overloaded driver may also be at risk himself. For example, if he has to get off the truck to check if forks are properly seated or to correct something, he moves among the machines at risk of being hit by another truck.

In short, the current work with standard forks on Euro pallets unnecessarily increases the risk of damage and injury, increases the workload for drivers and can lead to substantial costs for the company.



4. HYDRAULIC REACHFORKS AS THE SOLUTION

4.1 Adjustable Forks for 800 mm and 1200 mm

Given the above problems, the solution is actually quite logical: make sure the forklift forks adapt to the pallet, rather than the other way around.

This is where hydraulic reachforks come into the picture, also called telescopic forks. These are special forks that mount on the forklift and are adjustable in length. Specifically, these forks can extend from 800 mm to 1200 mm in length and vice versa.

Thus, with a stroke (extension length) of 400 mm, an inserted fork of 800 mm creates exactly an extended length of 1200 mm, or exactly both dimensions of a Euro pallet.



4.2 Improved Safety and Usability

This means that the fork always has the correct length:

- 800 mm when the pallet is picked up from the narrow side, so that nothing protrudes.
- 1200 mm when picked up from the wide side, so that the pallet is fully supported.

At the “touch of a button,” the forklift driver can adjust the fork length from his cab to suit the situation.

So there is no longer any doubt about whether the fork is too long or too short; the operator no longer has to “guess” or work with markings, he simply adjusts the fork to the pallet size and can then tighten the load all the way against the mast as usual, without danger of sticking out or inadequate support.

4.3 Proven Technology

These hydraulically adjustable forks (often operated via an additional hydraulic function on the truck) have been available and developed since the 1980s, and have amply proven their reliability.

In fact, it is a relatively simple modification to the forklift, but one that makes a world of difference in practice. The driver can now stay in the truck and use a lever or knob to change the fork length, even while approaching the pallet.



This increases safety because the driver no longer has to get out of the truck to fit fork extensions, for example; thus reducing the chances of someone driving around in the danger zone or getting hit.

Because the fork is always at the correct length, the entire handling becomes foolproof: mistakes where a fork accidentally extends and hits something are eliminated.

Working with these extendable forks feels more intuitive and enjoyable for drivers because they can simply pick up their pallet as they are trained (fully inserted) without worrying about where the fork tips end up. The result is less stress and higher productivity for the driver.

5. MAIN BENEFITS OF HYDRAULIC (TELESCOPIC FORKS)

5.1 Safety and Damage Prevention

- Forks that are too long no longer protrude from the pallet and thus can no longer hit behind pallets or goods.
- This prevents many damages and significantly reduces the risk of accidents or injuries.
- The load is always fully supported, preventing pallets from tipping or breaking.

5.2 Efficiency and Time Savings

- Due to the adjustable fork length, the driver no longer has to maneuver with millimeter precision or check each time whether the forks are positioned correctly.
- Pallets can be picked up and moved **faster and more fluidly**, reducing the handling time per pallet.
- Changing between different pallet sizes is also uninterrupted.

5.3 Better Maneuverability in Tight Spaces

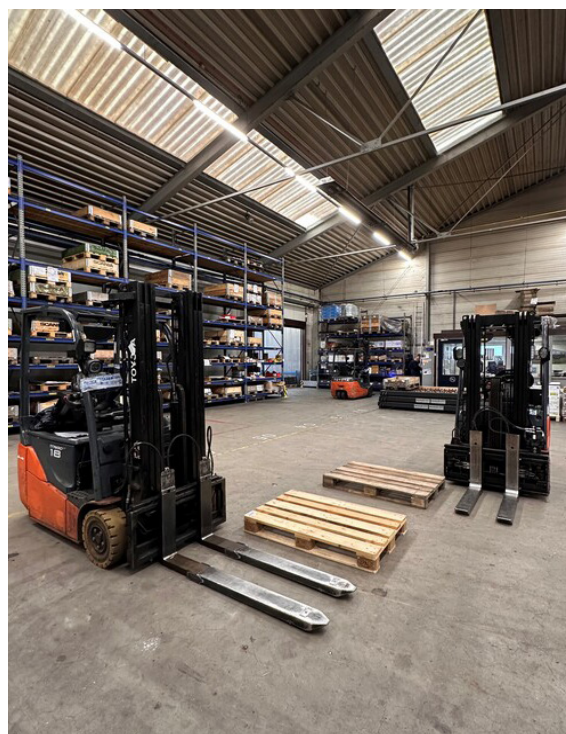
- A forklift with retracted 800 mm forks has a **smaller turning radius** and is easier to maneuver in tight spaces than a truck with fixed 1200 mm forks.
- In narrow aisles or while turning, that shorter length makes a significant difference.
- Only once the pallet is safely in the fork does the operator extend the fork to 1200 mm for full support, thus combining maneuverability with load capacity.

5.4 Increased Productivity and Workflow

- Drivers can use their **normal workflow** (fully insert and pallet against the fork back) without detours or tricks.
- They don't lose time positioning or correcting, which means more pallets can be moved per hour.
- Plus, they don't have to change trucks or use separate fork extenders for different pallets; one truck can handle everything.

5.5 Cost Savings and Fewer Damages

- Because damages are drastically reduced, the company saves costs on broken pallets, damaged products and logistical disruptions.
- Fewer returned goods, less repair work and fewer claims directly mean **lower operating costs**.



5.6 Driver Satisfaction and Retention

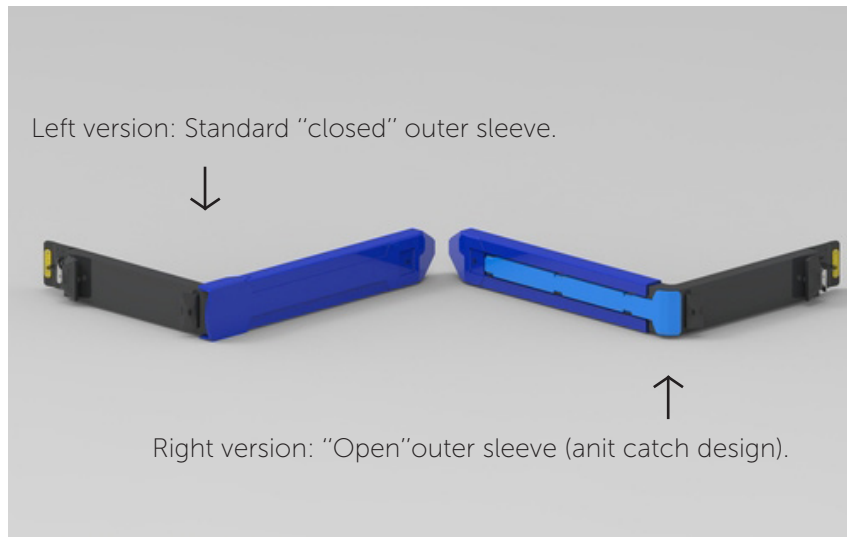
- Forklift drivers experience **less stress** and physical strain.
- They can work faster and with more confidence when the risk of error is low.
- With telescopic forks, they cause less damage and worry, which increases job satisfaction.
- A satisfied driver performs better and is retained longer for the company.

6. DEVELOPMENT AND DESIGN OF REACHFORKS

6.1 Evolution Since the 1980s

The first reachforks were developed in 1980 by Meijer Handling Solutions. Since then, numerous variants have been designed, each tailored to specific applications in logistics.

6.2 Technical Design Features



For applications where the fork length needs to be adapted to **different pallet sizes**, such as Euro pallets, Meijer has developed special reachforks.

These telescopic forks allow the outer tube to be extended and retracted without touching the floor. This is possible thanks to the unique design of the outer sleeve and the special recesses at the bottom of the inner forks.

In addition, the design incorporates a **wear plate**, which ensures a long service life of the inner forks, even under heavy use. This innovative design contributes to both the durability and safety of telescopic fork systems.

7. DEVELOPMENT AND DESIGN OF REACHFORKS

7.1 Requirements for Modern Forklifts

Hydraulically operated telescopic forks are controlled from the cabin of the forklift. This requires an additional hydraulic function in addition to standard functions such as lift, tilt and sideshift.

In the latest generations of lift trucks, this fourth function is often standard.

7.2 Retrofit Options for Older Models

In older models, this function can also be retrofitted. Usually an additional hydraulic hose package is installed through the mast of the forklift for this purpose.

7.3 Hydraulic and Electric Control Options

Alternatively, a valve that distributes hydraulic control of the side-shift function between the side-shift and reachforks can be chosen. In this case, an electric mast cable is also required, as the valve is electrically switched.

The cost of these modifications varies by type and brand of forklift. We recommend obtaining quotes from multiple suppliers to get a good idea of the options and associated investments.

8. ECONOMIC BENEFITS AND ROI

8.1 Damage Prevention and Cost Reduction

In addition to the operational advantages, **hydraulic reachforks** also have clear economic benefits. Damage prevention and efficiency gains translate directly into cost savings and productivity gains.

Every incident that is prevented, whether it is a broken pallet, damaged stock or an operational accident, saves the company money.

As mentioned earlier, a single incident of damage entails all sorts of hidden costs: work stoppage, goods recovery, administrative handling and possibly customer claims.

8.2 Case Example from the Industry

By using extendable forks, some companies have reduced the number of damages almost to zero, resulting in significant savings.

For example, one transportation and warehousing company reported that since switching to **telescopic KOOI® forks**, there has been virtually no more pallet or product damage. In addition, they were able to move more pallets per unit of time, so the investment was very quickly recouped.

8.3 ROI Calculations and Payback Period

Of course, there is an investment involved in purchasing hydraulic reachforks, but it usually pays for itself surprisingly quickly.

Cost analyses show that most extendable fork systems pay for themselves within about **one to two years** due to the reduction in damage and increased productivity.

In addition, the forks themselves last a long time (they are robustly built for heavy use) and require little additional maintenance — usually just periodic checks, not much different than standard forks. Some manufacturers even offer tools such as an **ROI calculator** to calculate exactly how many months you will have your investment out.

ROI-calculator



9. CONCLUSION

Euro pallets are essential in European logistics, but standard forklift forks are poorly matched to them. This mismatch creates risks, damages, and inefficiencies.

Hydraulic reachforks are a **proven, cost-effective solution**:

- Safer for drivers and goods.
- More efficient in daily operations.
- Rapid ROI through damage prevention and productivity gains.

Switching to hydraulic reachforks is not just an operational improvement — it is a **strategic investment in safety, efficiency, and long-term savings**.

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All figures, examples and ROI calculations mentioned are indicative and may vary depending on specific business circumstances. It is up to the user to judge whether the solutions described are suitable for his or her situation

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