

WHITEPAPER

Forklift Attachment Selection Guide

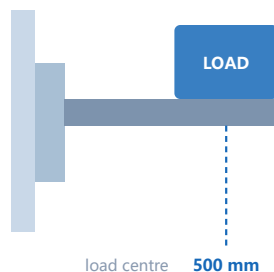
Load first, attachment second, truck third

Attachment Capacity Loss

Every attachment moves the load centre forward and adds its own weight

Standard forks

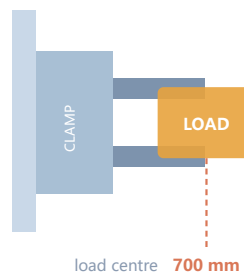
Rated capacity applies



Capacity at 500 mm: **2000 kg**
as per the truck load chart

With carton clamp

Capacity falls — check the derated chart



Capacity at 700 mm: **approx. 1450 kg**
plus the attachment's own weight deducted

Always request a **derated load chart** showing the truck with the specific attachment fitted.
A quotation that gives capacity without the attachment is not comparable.

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1. Why attachments are specified backwards

Most attachment problems start with the same mistake: the truck is chosen first and the attachment is fitted afterwards. The attachment then reduces the truck's capacity, changes its stability, and in some cases voids part of the warranty or makes the truck non-compliant.

The correct sequence is: define the load, choose the attachment for that load, then choose a truck that carries the attachment and the load together.

This guide covers the main attachment families, how each one affects capacity, what information is needed to specify correctly, and the checks that prevent the expensive mistakes.

It is written for warehouse and production engineers, procurement teams, and distributors specifying attachments for their own customers.

2. The load comes first

Before considering any attachment, answer these questions about the load.

Question	Why it matters
What is the load?	Determines the attachment family
What does it weigh?	Determines capacity requirement
What are its dimensions?	Determines the attachment size, not just the truck
Is it rigid, flexible, or loose?	Rigid loads use forks, flexible loads need clamping
Is it uniform, or does it vary?	Variable loads need a wider working range
Is it damaged by pressure?	Determines clamping force limits
Does it need to stay upright?	Determines whether a rotator or positioner is needed
Is it food, chemical, or hazardous?	Determines material and washdown requirements
Does it need to be weighed?	Determines whether a scale is integrated

The unit load, not the individual item, is what the attachment handles. Measure the unit load as it will actually be presented in the warehouse, including any pallet, slip sheet or strapping.

3. Attachment families

Family	Handles	Typical applications
Side shifter	Standard pallets, incremental adjustment	Almost all pallet handling; the most common attachment
Fork positioner	Pallets of varying width	Operations handling multiple pallet standards
Carton clamp	Boxed goods, appliances	White goods, appliances, boxed freight
Bale clamp	Baled material	Recycling, paper, textiles, agriculture
Roll clamp	Paper rolls, cable drums	Paper mills, printing, film and foil
Drum clamp	Steel and plastic drums	Chemical, paint, oil, food processing
Push-pull	Slip sheets	Slip-sheet operations, truck loading
Rotator	Bins, boxes needing tipping	Waste, foundry, food processing
Tipping fork	Containers being emptied	Waste handling, production lines
Extending forks (reach)	Double-deep or difficult access	Racking where a standard fork cannot reach
Man basket / work platform	Personnel lifting	Maintenance, order picking at height
Crane jib	Suspended loads	Construction material, long goods
Fork-mounted sweep	Loose material on the floor	Cleanup, agriculture
Integral scale	Weighing while handling	Any operation needing weight capture

Family	Handles	Typical applications
Multiple pallet handler	Several pallets at once	High-volume distribution

Each of these changes the truck's load chart. Not one of them is a neutral addition.

4. Capacity loss: the number that gets missed

Any attachment moves the load centre forward and adds its own weight. Both reduce the capacity the truck can actually handle.

Two effects combine:

Attachment weight. The attachment is carried by the mast, so its weight is deducted from the available capacity at every load centre.

Load centre shift. Forks are typically 500 mm from the fork face to the load centre. A clamp, rotator or push-pull attachment may add 200 to 500 mm or more of thickness, moving the load centre forward. Capacity falls as load centre increases; the rate is given by the truck's load chart.

The practical consequence:

Attachment	Typical effect
Side shifter only	Small capacity loss, load centre shift of roughly 100 mm
Fork positioner	Similar to side shifter
Carton or bale clamp	Significant; the clamp arms and frame move the centre forward
Roll clamp	Significant, and often needs a dedicated truck
Rotator	Significant; the rotator adds height as well as thickness
Push-pull	Significant thickness added

Attachment	Typical effect
Multiple pallet handler	Large; usually a dedicated truck specification

Always ask for a derated load chart showing the truck with the specific attachment fitted. A quotation that gives capacity without the attachment is not comparable.

5. Hydraulics: how many functions

The truck's hydraulic system must supply every function the attachment needs. Count them.

Attachment	Functions required
Side shifter	1
Fork positioner	1 (both forks together) or 2 (independent)
Carton / bale / roll clamp	1 (open-close)
Clamp with rotation	2 (open-close plus rotate)
Rotator	1 (rotate) or 2 (rotate plus clamp)
Push-pull	2 (push-pull plus clamp)
Tipping fork	1 or 2

A truck ordered with one auxiliary function cannot run a two-function attachment. Adding a function later means new valves, new hoses and possibly a different mast. This is one of the most expensive late changes in a forklift order, and it is entirely avoidable by counting the functions at the specification stage.

6. Clamping force and load protection

For any clamping attachment, the relationship between holding the load and crushing it is the central design question.

Points to establish:

Minimum force needed to hold the load securely during travel and braking.

Maximum force the load can withstand without deformation or damage.

Whether pressure can be regulated so the operator can adjust for different loads.

Whether the load changes during the shift. A clamp set for one product may crush another.

For crushable loads, a pressure regulator or a load-sensing arrangement is usually necessary. Specifying a clamp without establishing the allowable pressure range is how damaged stock happens.

7. What to send when requesting a quotation

Provide all of the following and the quotation can be checked rather than guessed at.

1. **Load description** and a photograph if possible
2. **Unit load weight**, including pallet or packaging
3. **Unit load dimensions** — length, width, height
4. **Load centre** as presented
5. **Attachment type** required, and the number of hydraulic functions
6. **Truck capacity and lift height** available or required
7. **Aisle width** and racking type
8. **Environment** — cold store, washdown, dust, or potentially explosive atmosphere
9. **Shift pattern** and duty cycle
10. **Any regulatory requirement** — for example personnel lifting, which changes the compliance position entirely

Item 10 deserves emphasis. An attachment used to lift people is not a standard attachment with a basket fitted. It carries specific requirements for the platform, the guarding, the control position, the hydraulic system and the certification.

8. Costs people forget

The attachment price is not the whole cost.

Derated capacity — you may need a larger truck to handle the same load, which costs more than the attachment

Extra hydraulic function — valves, hoses, sometimes a different mast

Additional counterweight in some cases

Longer lead time — attachments are often built to order

Spare parts — seals, hoses and wearing parts specific to the attachment

Operator training — clamping and rotating attachments change how the truck is driven

Maintenance access — some attachments make routine service harder, extending downtime

9. Common mistakes

Choosing the truck before the attachment. The sequence determines whether the solution works.

Using rated capacity instead of derated capacity. The truck's headline capacity is for standard forks at a standard load centre.

Not counting hydraulic functions. A late addition is expensive.

Specifying a clamp without a pressure limit. Damaged loads, and a warranty discussion.

Ignoring the environment. A clamp that works in a dry warehouse may not survive washdown or a freezer.

Forgetting the operator. A rotator or clamp changes the driving task; without training, the attachment is used incorrectly.

Assuming the attachment is interchangeable. Fitting a different attachment to the same truck may exceed the derated capacity or the hydraulic capability.

10. Summary

Attachment selection follows a fixed order:

1. Define the unit load precisely.
2. Choose the attachment family for that load.
3. Count the hydraulic functions needed.
4. Calculate the capacity loss and confirm the derated load chart.
5. Check the environment and the material.
6. Confirm the compliance position if people are being lifted.
7. Compare quotations on the derated capacity, not the attachment price.

Do it in this order and the attachment becomes part of a working system. Do it in the wrong order and it becomes an expensive retrofit.

This whitepaper is published by WR Forklift (Taizhou Worui Warehousing and Logistics Equipment Co., Ltd.) as general guidance on attachment selection. Capacity figures, load charts and compliance requirements are specific to each truck and application; confirm the final specification with your supplier.

Contact: sales@wrforklift.com · +86 180 5267 6182 · www.wrforklift.com

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MATERIAL HANDLING EQUIPMENT

Taizhou Worui Warehousing and Logistics Equipment Co., Ltd.

No.666 Kangxi Road, Huzhuang Town, Gaogang District, Taizhou City, Jiangsu Province, China

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CONTACT

+86 180 5267 6182

sales@wrforklift.com

WhatsApp: +86 180 5267 6182

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