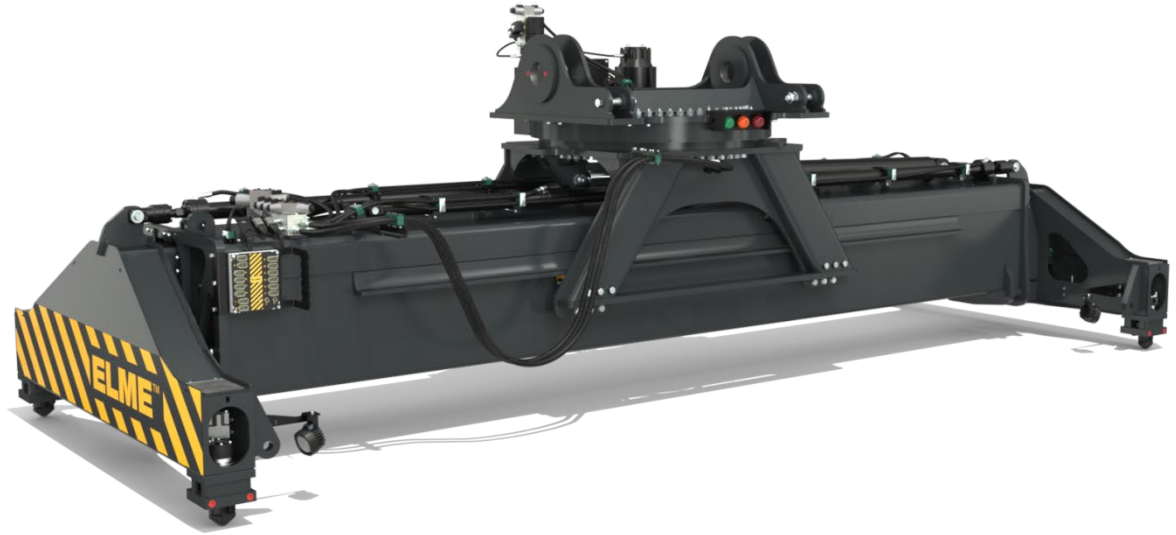
We know container handling is a heavy responsibility.

It's been our business since 1974.

ELME™

Swedish Spreader Systems



ELME Model 817 INNOVATION[E]

The New Generation Spreader for Laden Container Handling

ELME™
Swedish Spreader Systems

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INNOVATION

INNOVATION [E]

Our New Generation of Spreaders evolves from 44 years' experience of adapting to the harsch conditions of container handling.

At ELME this stands for a strong tradition of **innovative** engineering – and an unlimited source of **inspiration**.

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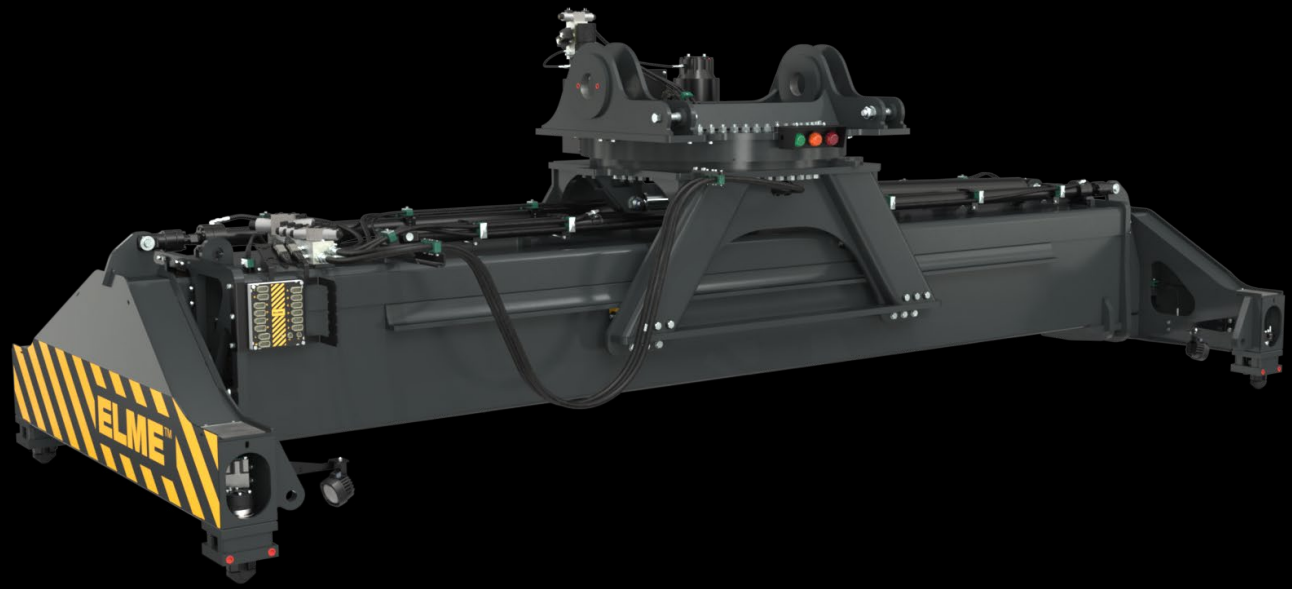
817 INNOVATION HIGHLIGHTS

- **INNOVATION**'s new and improved design implies a New Generation 817 INNOVATION Spreader with the unique combination of increased structural strength and 16 % reduced weight.
- **The New Generation 817 INNOVATION Spreader** is estimated to have an increased life expectancy of 30 % related to fatigue resistance and standard load case conditions.



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LONG-TERM ADVANTAGES

LONG life

Reduced stress levels
Strengthened structural parts

LOW cost of operations

Long service intervals
Easy and fast handling

LESS down time

Easy maintenance
Easy troubleshooting

LESS environmental impact

Greatly reduced emissions
due to 60% less VOC
in new paint

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ELME GENUINE PARTS

- Approved spare parts and accessories
- 100% made in Älmhult, Sweden
- Product labeling
- Twistlock certificate
- Performance, reliability and safety

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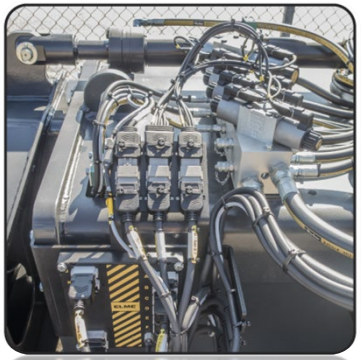


Features of 817 INNOVATION

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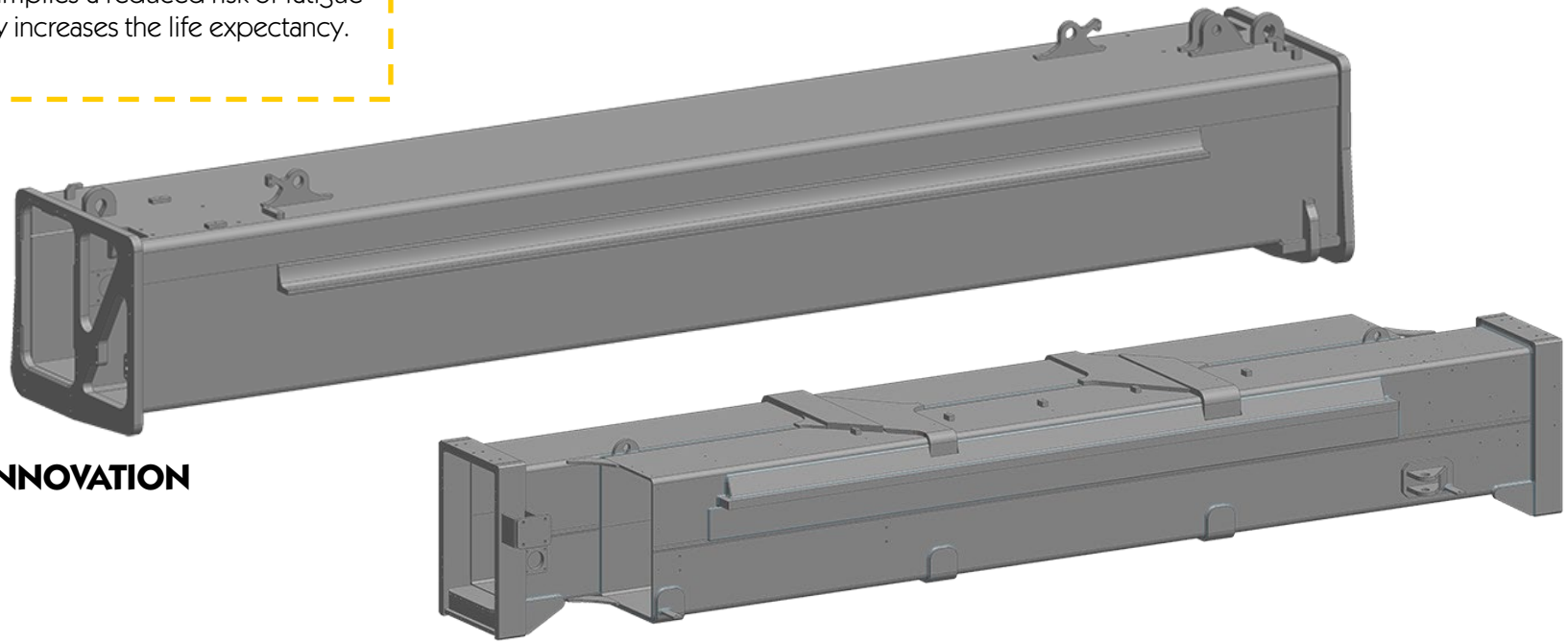
Structural Parts | INNOVATION Improvements

Mainframe

Modification | Beneficially designed and reinforced mainframe.

Advantages | The enhanced torsional stiffness in the mainframe implies a reduced risk of fatigue and consequently increases the life expectancy.



INNOVATION

Previous Generation

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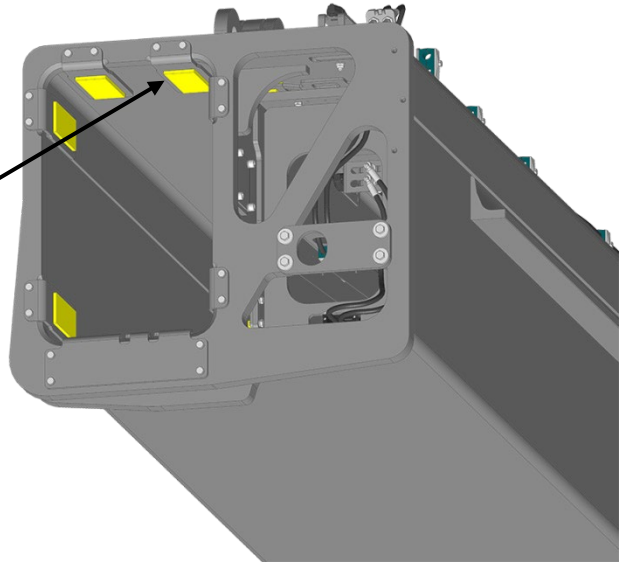
Structural Parts | INNOVATION Improvements

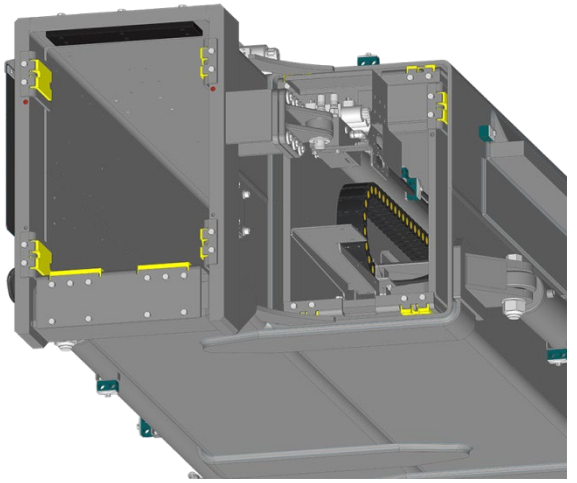
Wear Pads – Mainframe Ring

Modification | Wear pads instead of steel inside the mainframe ring to distribute forces over larger area.

Advantages | This reduces wear in the contact points between mainframe and extension beams that occur when landing the spreader on a container. The reduced wear promotes a longer life expectancy for structural parts.



INNOVATION



Previous Generation

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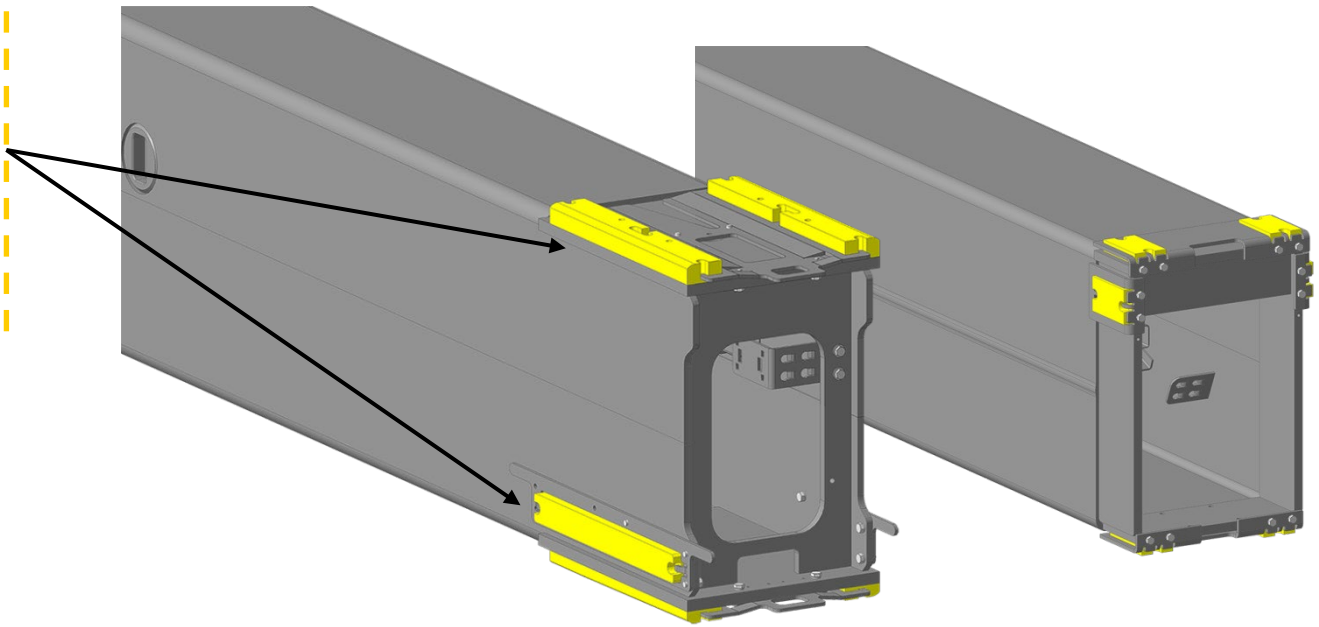
Structural Parts | INNOVATION Improvements

Wear Pads – Extension Beam

Modification | Increased size of all wear pads to distribute forces over larger area.

Advantages | Reduced risk of fatigue due to local tension concentration.



INNOVATION

Previous Generation

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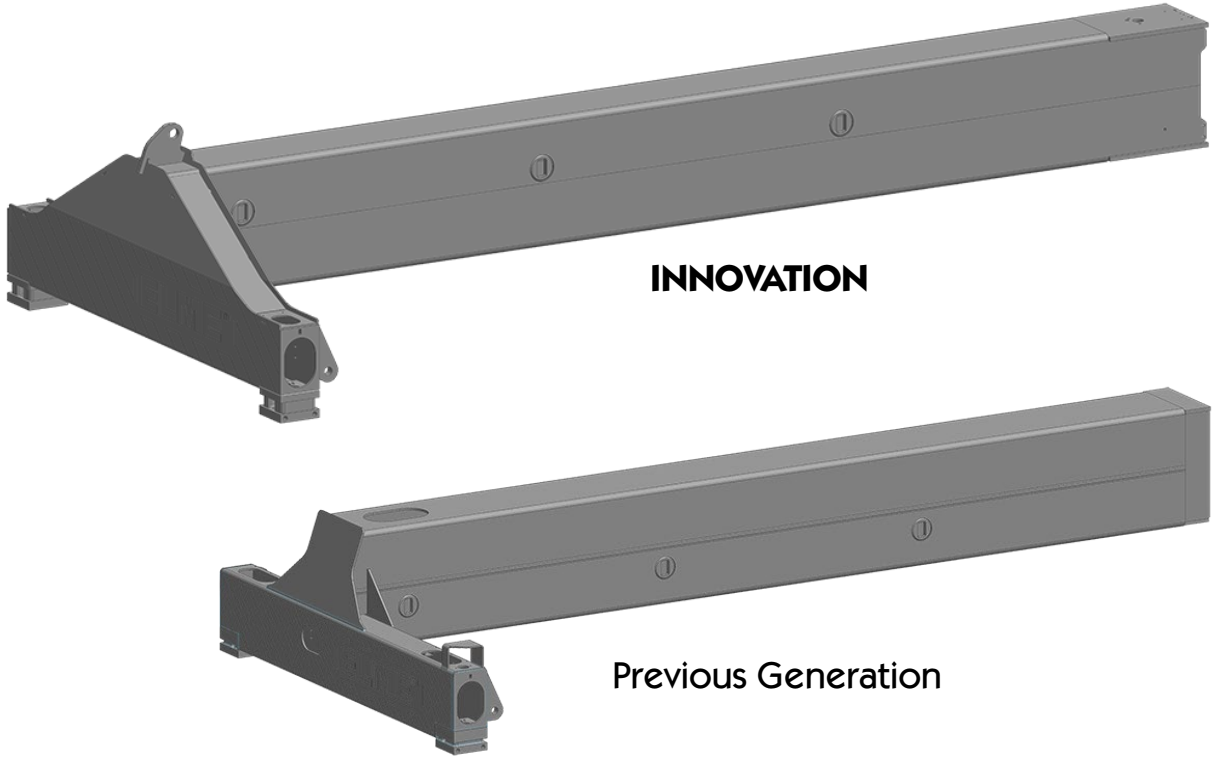
Structural Parts | INNOVATION Improvements

Extension Beam

Modification | Reinforced extension beams with high strength steel material.

Advantages | This implies increased life expectancy for the extension beams.



INNOVATION

Previous Generation

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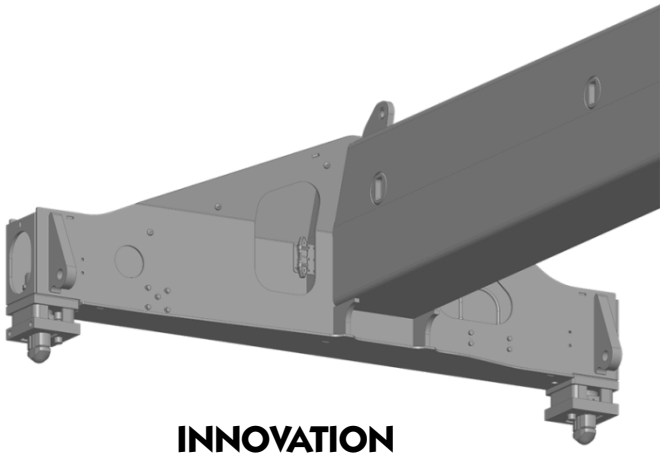
Structural Parts | INNOVATION Improvements

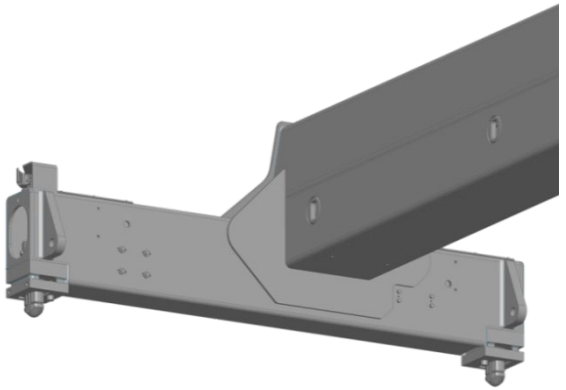
Interface End Beam/Extension Beam



INNOVATION

Modification | Beneficially designed and reinforced interface between end and extension beam.

Advantages | The increased strength in the interface reduces the risk of fatigue due to local tension concentrations.



Previous Generation

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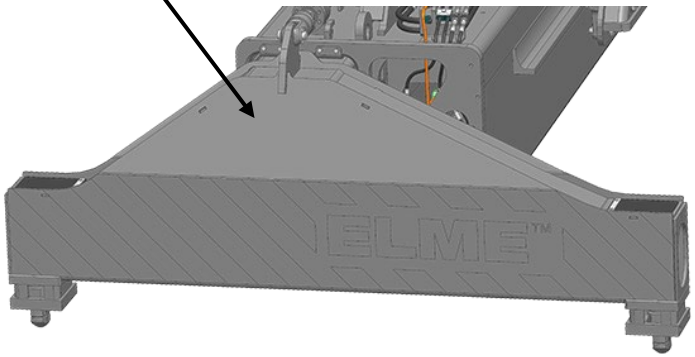
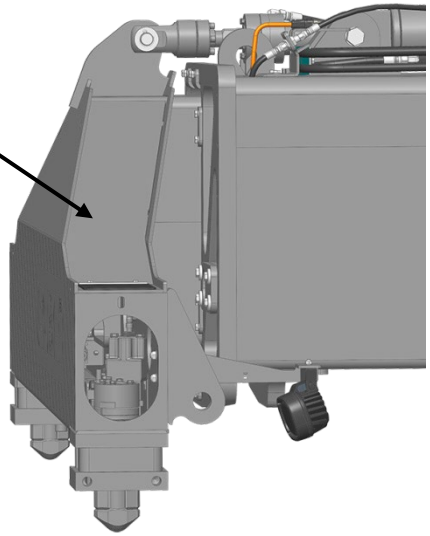
Structural Parts | INNOVATION Improvements

End Beams

Modification | The new generation end beam has a reinforced design.

Advantages | The reinforced end beam implies an increased bending resistance. This implies a longer life expectancy for the end beams.





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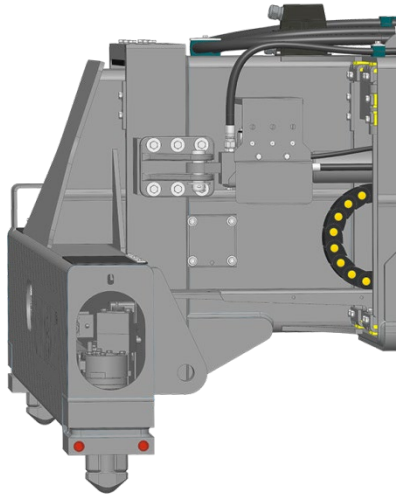

Previous Generation

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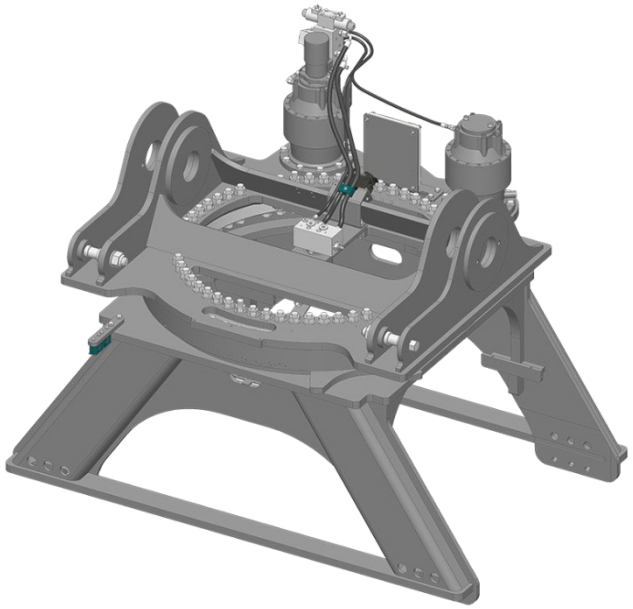
Structural Parts | INNOVATION Improvements

Rotator

Modification | 817 INNOVATION has a more narrow rotator with lighter weight and extended supports.

Advantages | The new beneficial design implies a 400 kg lighter rotator.

The extended supports enable the cylinders to be positioned on top of the spreader which promotes better protection and easier service.



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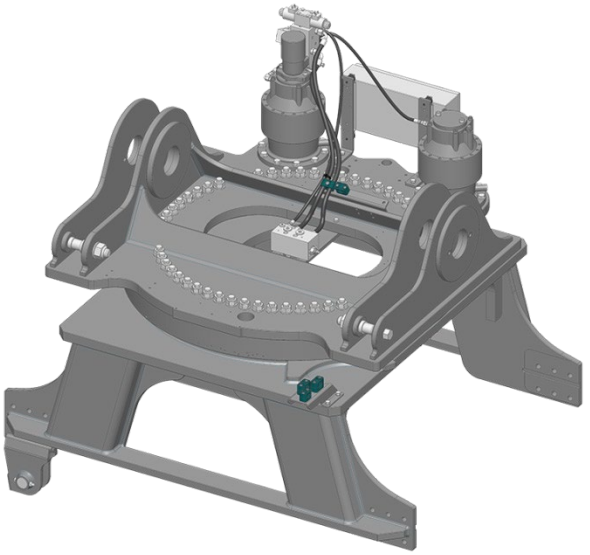

Previous Generation

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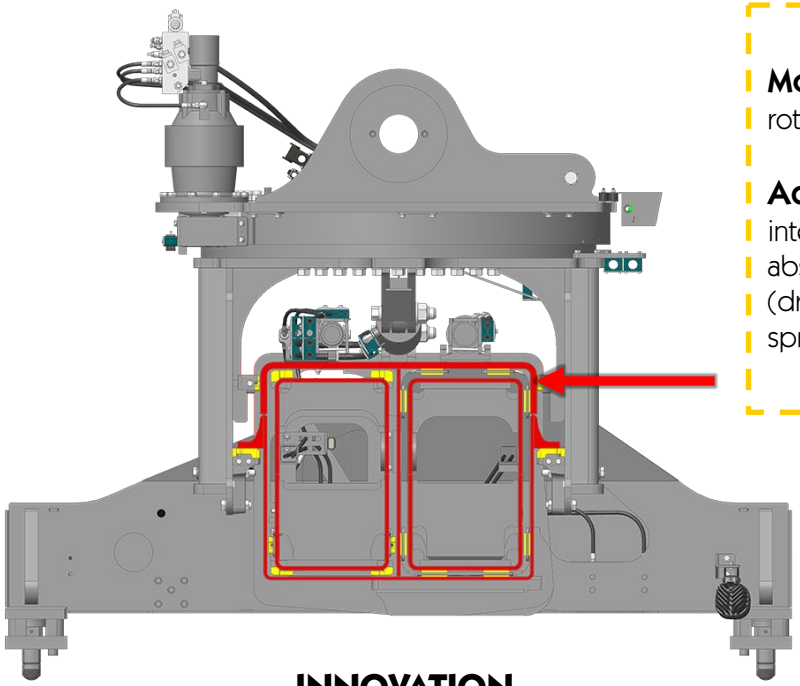
Structural Parts | INNOVATION Improvements

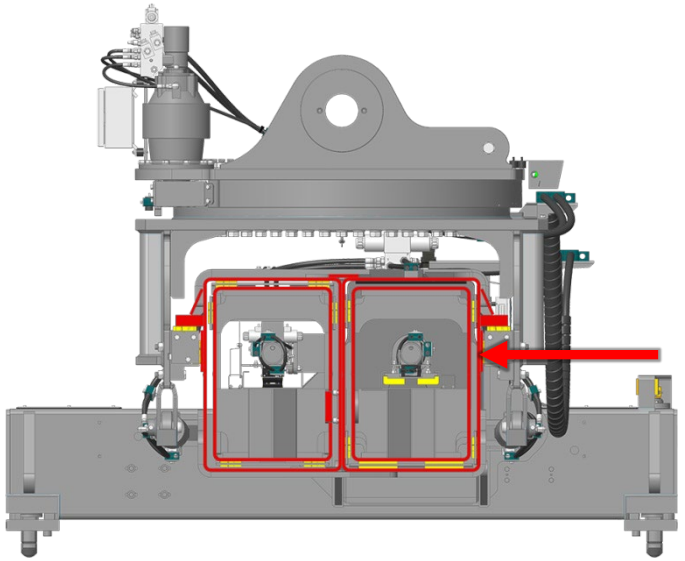
Interface Rotator/Mainframe



INNOVATION

Modification | Redesigned rotator/mainframe interface.

Advantages | The redesigned interface enables a more beneficial absorption of horizontal forces (driving direction) into the spreader.



Previous Generation

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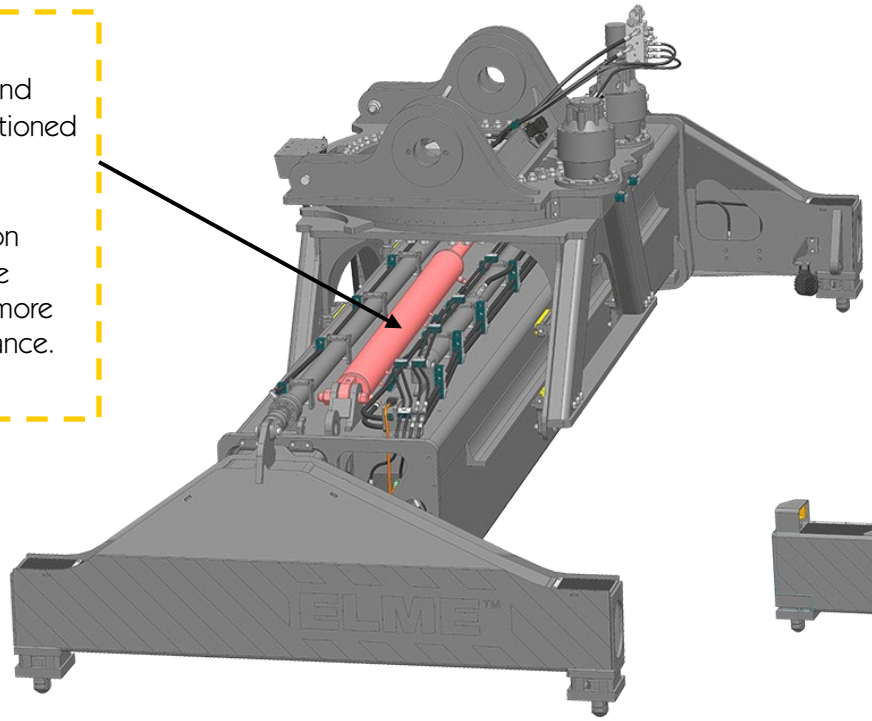
Structural Parts | INNOVATION Improvements

Cylinders

Modification | The side shift and extension cylinders are now positioned on top of the mainframe.

Advantages | The new position implies a better protection for the cylinders. The cylinders are also more easily accessible during maintenance.



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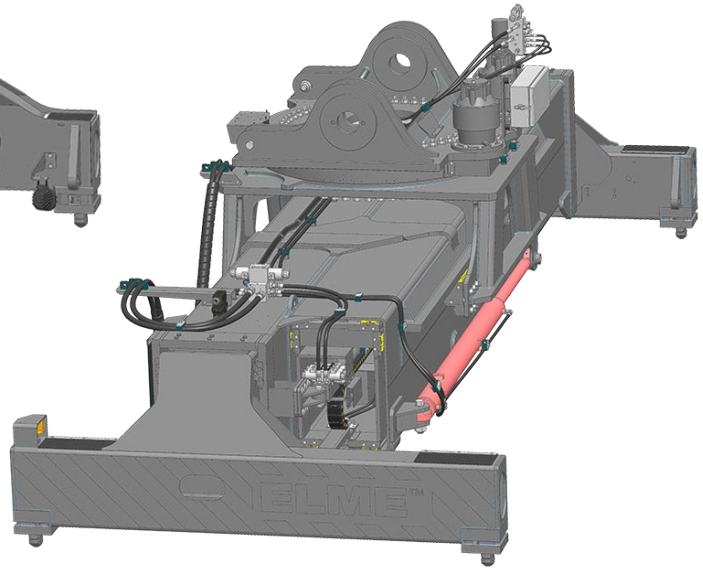

Previous Generation

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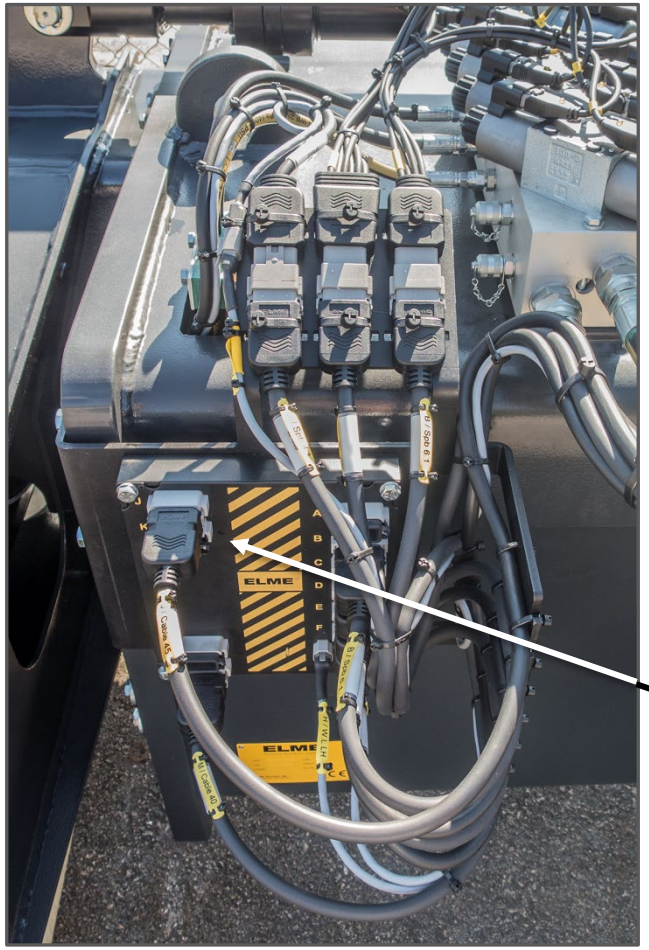
Electrical System | INNOVATION Improvements



Neuron CAN bus | The ELME Neuron CAN bus system is designed for maximum robustness with thick aluminum chassis and inside polyurethane elastomer casting to protect electronics from moisture, chocks and vibration.

It monitors the state of the spreader at all times and indicator lights advise the operator when the spreader is correctly seated, locked or not locked. Each signal is a precondition for the important protection functions of the spreader such as lift interrupt.

Neuron uses J1939 protocol which provides fault code messaging to alert driver and maintenance personnel of component failures. This provides a quicker and easier troubleshooting.

Modification | All INNOVATION Neurons are equipped with deutsch connectors.

Advantages | More reliable in harsher environments. Easy to change cables with “plug n play”-like connectors.

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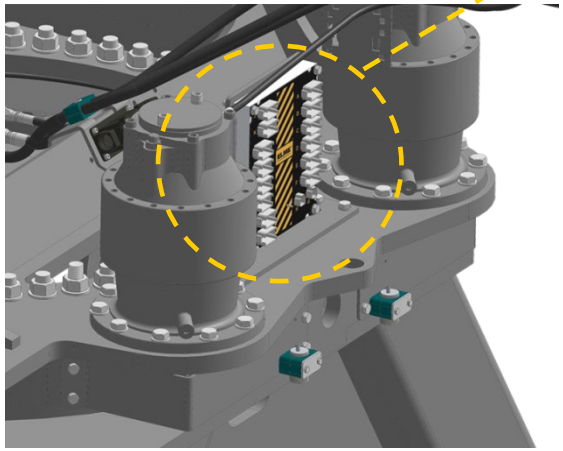
Electrical System | INNOVATION Improvements

Modification | The New Generation control system has a more protected position.

Advantages | The control system is better protected from damage by rough weather conditions and pressure-washing compared to previous generation's electrical cabinet.



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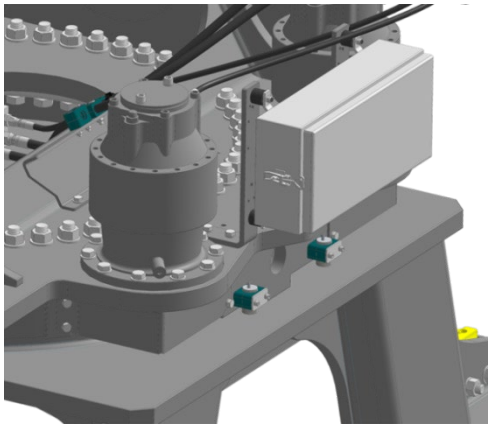

Previous Generation

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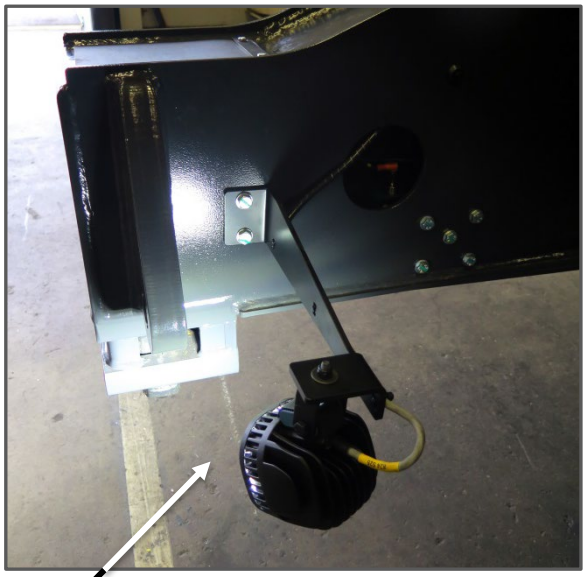
Electrical System | Work Lights

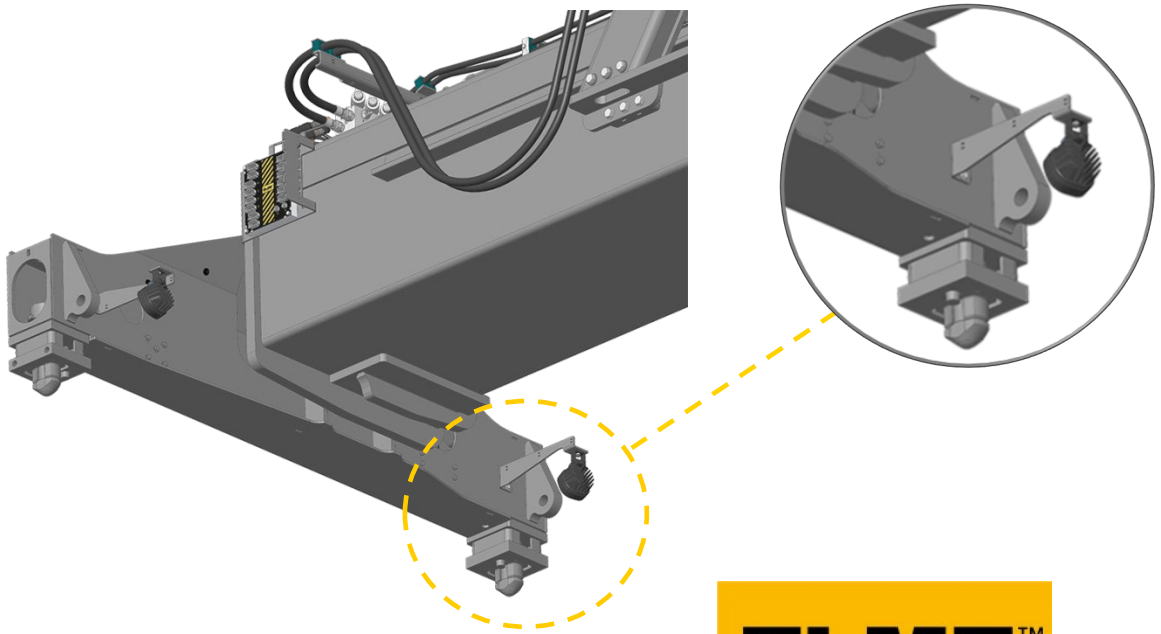


Modification | The LED work light is located next to the twistlock (3000 lumen/light).

Advantages | The LED light is always directed at the twistlock regardless of container size.

Option | Additional work light positioned on the spreader front.

Advantages | The extra LED lights (3000 lumen/light) can be turned in desired direction and are beneficial when e.g. rotating the spreader 180° or for additional light in driving direction. It's also a more favorable solution than mounting extra work lights on the truck.



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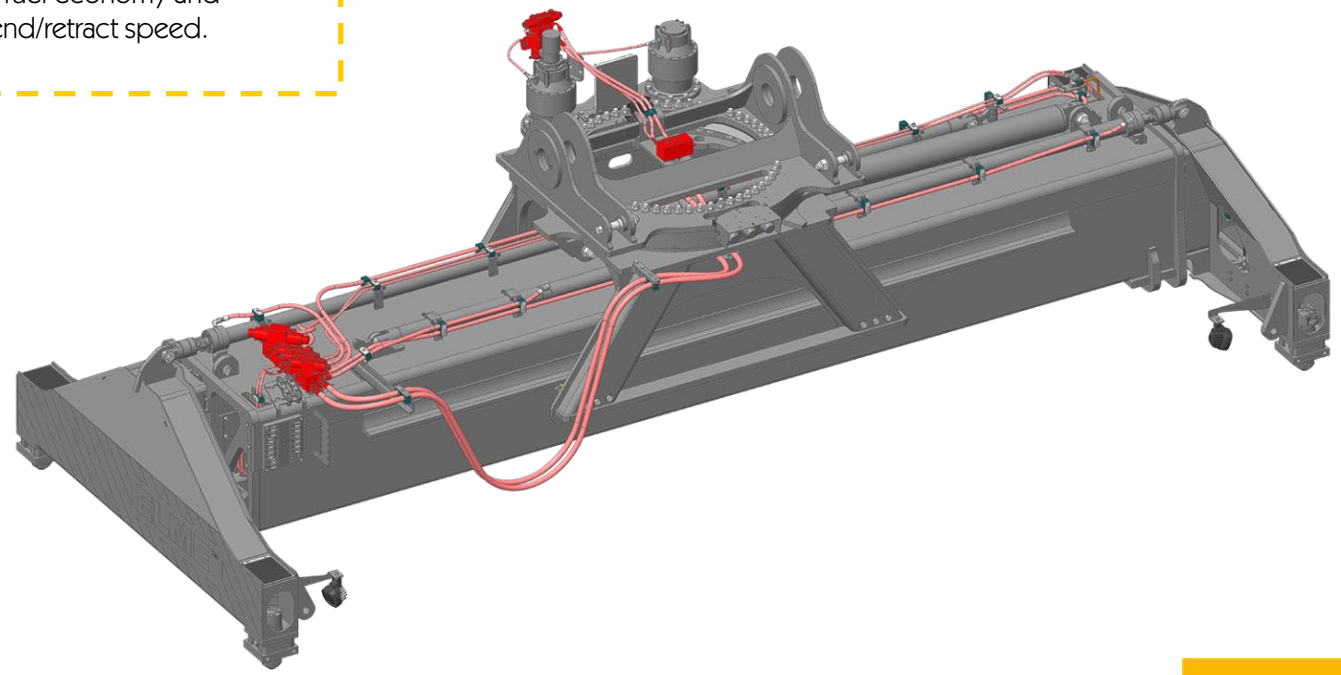
Hydraulics | INNOVATION Improvements

Modification | Improved hydraulic system.

Advantages | The improved hydraulic system with reduced pressure drop minimizes the hydraulic losses throughout the system. This improves the overall fuel economy and increases 20/40' extend/retract speed.

Extend/retract speed	
Telescoping speed, 20-40ft	< 16 sec
Telescoping speed, 40-20ft	< 18 sec
Sideshift speed, ± 800 mm	< 20 sec



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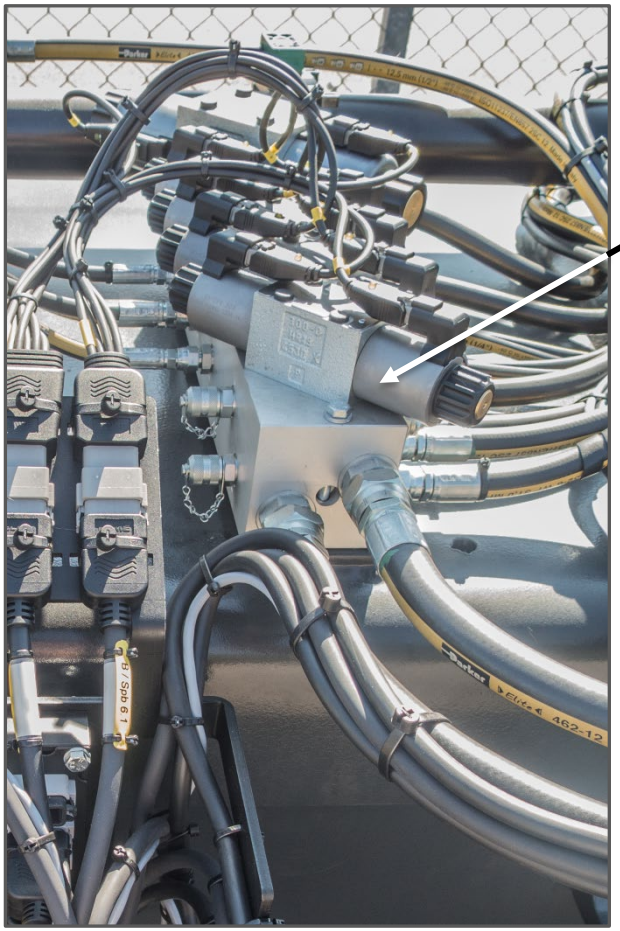
Hydraulics | INNOVATION Improvements



Parker Premium valves | All INNOVATION Spreaders have Parker Premium hydraulic valves.

Advantages | The Premium brand hydraulic valves has a low internal leakage to minimize the hydraulic losses throughout the system, which improves the overall fuel economy.

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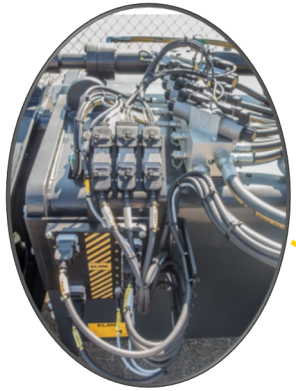
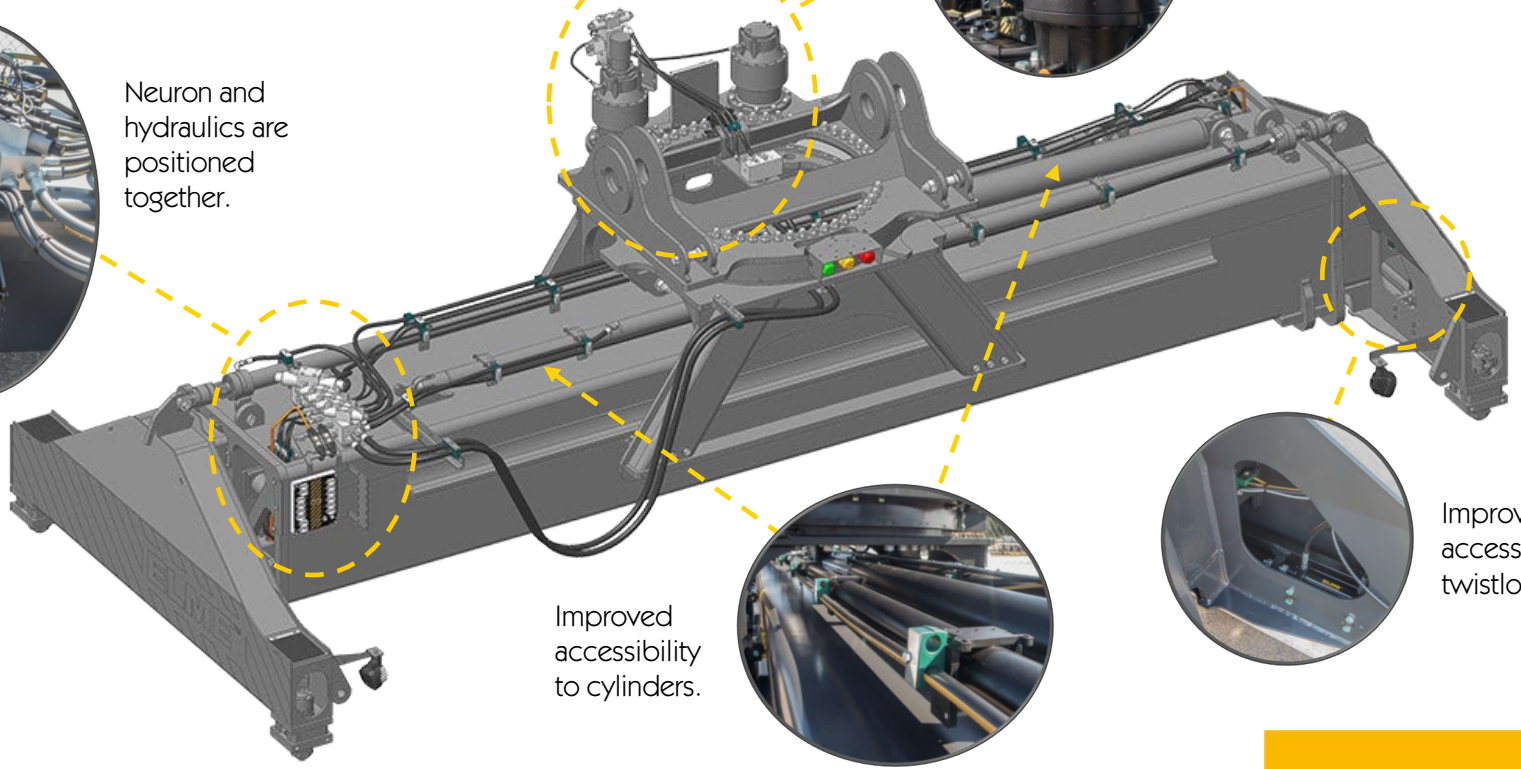
Service | INNOVATION Improvements

Modification | The New Generation design implies an 817 spreader with numerous improvements that promotes easier service.



Neuron and hydraulics are positioned together.

Neuron and hydraulics are positioned together.



Improved accessibility to cylinders.

Improved accessibility to the twistlock system.

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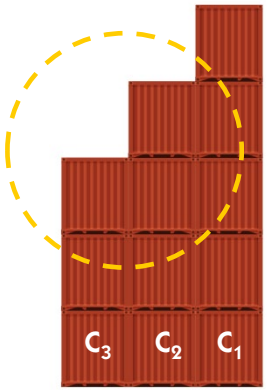
Reduced Weight – Enhanced Opportunities

Modification | INNOVATION's new and improved design implies a New Generation 817 INN. spreader with the unique combination of increased structural strength and 16 % reduced weight.

Advantages | The reduced weight and increased structural strength opens up the possibility to either make improvements on the reach stacker design or increase the lifting capacity.

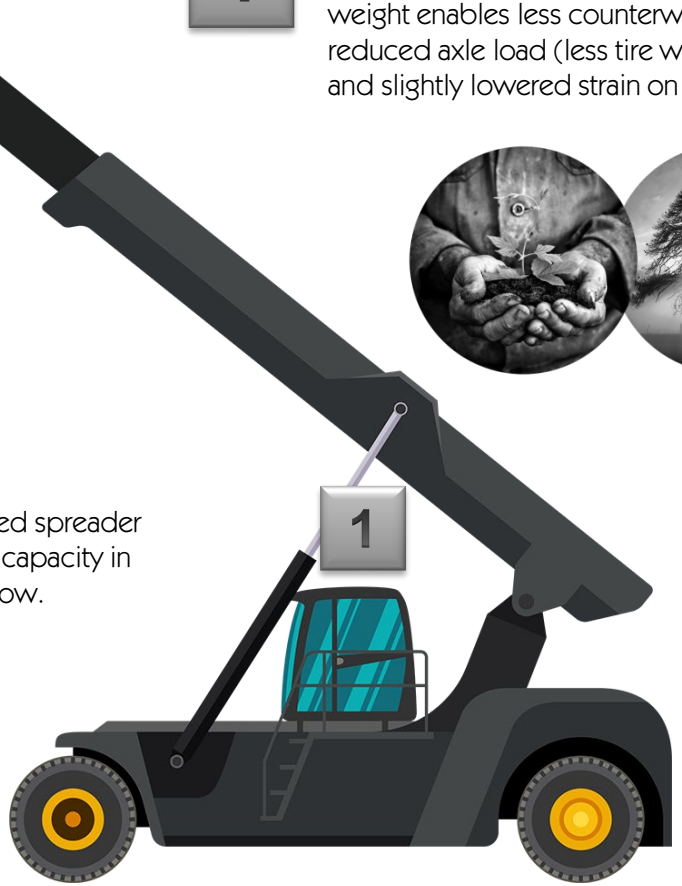
1

Option 1 | The reduced spreader weight enables improvements on the reach stacker design. The reduced weight enables less counterweight and thereby reduced axle load (less tire wear), fuel consumption and slightly lowered strain on the chassi.



2

Option 2 | Utilize the reduced spreader weight to increase the lifting capacity in second and third container row.



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Increased Structural Strength – Increased Life Expectancy

Modification | INNOVATION's state of the art design implies a lighter, stronger and more fatigue resistant 817 INNOVATION spreader with increased structural strength and enhanced durability.

Advantages | These unique qualities shape an evolved 817 INNOVATION Spreader that is estimated to have an increased life expectancy of 30 % related to fatigue resistance and standard load case conditions.

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THANK YOU

For your attention!

ELME™
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