

THE SPECIALISTS

SPRINTER CARRIERS



FLEXIBILITY BETWEEN QUAYSIDE AND CONTAINER STACKYARD EFFICIENT SOLUTION

Konecranes is a leading supplier of handling solutions for ports, terminals and industry. Our special competence results from our many years of experience in the development and production of Konecranes Noell Sprinter Carriers and our intimate knowledge of terminal processes.

DECOUPLING TERMINAL PROCESSES

For terminals that would like to decouple container transport and storage processes, the agile and fast Konecranes Noell Sprinter Carriers with travel speeds up to 32 km/h are the method of choice. Crucial advantage over all other solutions: our sprinter carriers can automatically pick and place containers – and also stack 1-over-1 if required. No other transport or handling equipment is required. This provides fast throughputs and prevents congestion in the ship-to-shore crane area or at the entries to stackyard

FLEXIBLE CONCEPT

A terminal concept with Konecranes Noell Sprinter Carriers offers considerable benefits in terms of versatility. For in addition to a fast route between ship-to-shore and stacking cranes and the decoupling of these functions, they make it possible to implement temporary container stacking areas between unloading points and stackyard. And they also demonstrate their strengths in intermodal operation with direct transshipment onto trains or road trucks, for example.

BUILDING ON PROVEN TECHNOLOGY

Sprinter carriers are based on the technological concept of Konecranes Noell Straddle Carriers, but with lower model height and higher travel speeds. The machines are powered either by a diesel-hydraulic, diesel-electric or a particularly efficient and eco-friendly hybrid system.



Concentrated expertise: sprinter carrier based on straddle carrier technology of Konecranes. Here, the facility in Würzburg, Germany has operated a leading global center of expertise for 50 years.

DYNAMICALLY EXPANDABLE CONCEPT FOR THE FUTURE

Konecranes Noell Sprinter Carriers are ideal for building and expanding entire fleets step-by-step to match your needs. State-of-the-art control, driver assistance systems and their potential for semi or full automation make Konecranes Noell Sprinter Carriers a dynamic concept sure to be a success in the long term.



Decoupled processes: Konecranes Noell Sprinter Carriers particularly impress by virtue of high travel speeds in container transport between quayside and stackyard.

KONECRANES NOELL SPRINTER CARRIERS

- Low specific investment costs
- Highly maneuverable cargo handling machine with lifting capacities up to 60 t
- Productive team of Konecranes Noell Sprinter Carriers and Konecranes Noell Spreaders
- For building and expanding fleets step-by-step
- Especially eco-efficient drive variants
- Potential for semi and full automation

Models	Drive systems			Max. lifting capacities [t]		
	Diesel-hydraulic (H)	Diesel-electric (E)	Hybrid (E ECO)	40	50	60*
NSC 422 H	✓			✓		
NSC 622 H	✓				✓	✓
NSC 424 E		✓		✓		
NSC 624 E		✓			✓	✓
NSC 424 E ECO			✓	✓		
NSC 624 E ECO			✓		✓	✓

* In exceptional cases, maximum lifting capacity of 60 t; actual lifting capacity dependent on spreader capacity

DIVERSE AREAS OF APPLICATION THROUGHOUT THE TERMINAL

FAST AND MULTIFUNCTIONAL

Konecranes Noell Sprinter Carriers are designed for speed and versatility. To cope with the different processes in day-to-day container terminal operation, we have equipped the machines with state-of-the-art technology. An application-oriented holistic system has been created, which allows you to face the challenges of today and tomorrow with confidence.

- 1 Horizontal transport: with compact and maneuverable Konecranes Noell Sprinter Carriers, you can move containers particularly fast from A to B in your terminal
- 2 Rail feeder and loader: If your terminal is connected to the rail network, the machines can transport containers safely to the train or even load them onto it
- 3 Interface to the container stackyard: Konecranes Noell Sprinter Carriers usually serve automated stacking cranes and, thanks to their design, can even stack containers 1-over-1
- 4 Loading and unloading trucks: if trucks drive in and out of your terminal, Konecranes Noell Sprinter Carriers are also the transport medium of choice



FAST AND UNIVERSALLY APPLICABLE

- Fast route between quayside and stackyard
- Particularly easy implementation and enlargement of cargo handling fleets when required
- State-of-the-art assistance systems help to accelerate cargo handling

KONECRANES NOELL SPRINTER CARRIER AT A GLANCE

ALL-ROUND WELL-BUILT

The design of Konecranes Noell Sprinter Carriers takes its cue from conditions prevailing in the terminal. They are easily maneuverable and offer very high travel speeds. Their rigid and durable steel structure and their low center of gravity provide a high degree of safety and convenience for the driver.

The slender portal and an all-round glazed cab offer drivers the best possible view of the whole working area at all times. In combination with the Konecranes Noell Spreader and the use of state-of-the-art components, the result is a highly cost-effective vehicle design.

VETRO CAB DRIVER'S CAB

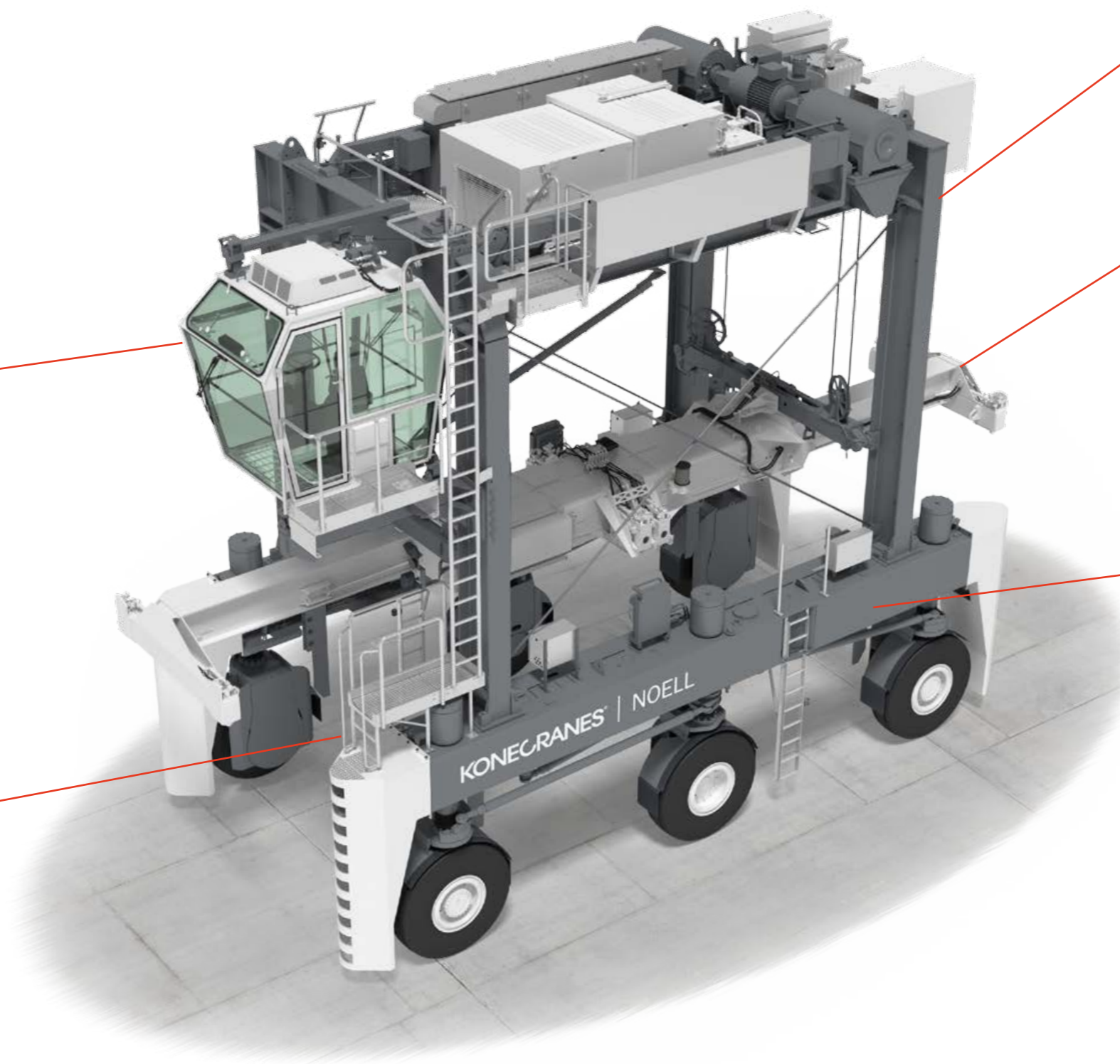
- Large glass panels for good all-round visibility
- Ergonomically designed, adjustable driver seat; electrically rotatable on request
- Advanced air conditioning and heating system
- Clearly structured displays
- Second seat for training instructor (optional)
- Other cab models available



Customer-specific cab configurations possible

STAIRWAYS

- For easy and safe access to the driver's cab and machinery platform
- Second stairway (optional)



PORTAL

- Robust steel design with diagonal braces
- Yoke beam guided by low-maintenance sliding pads in the portal
- Spreader power and hydraulic supply via cable chain

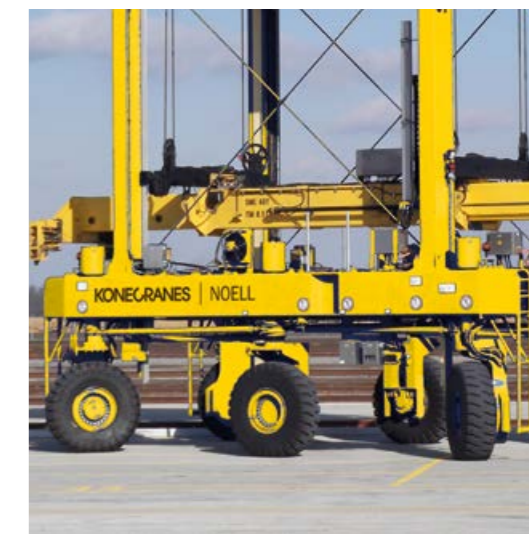
SPREADER

- Konecranes Noell Single-lift and Twin-lift Spreaders
- Patented modular twistlock mounting and locking
- Simple thanks to modern interface technology (CAN bus, corresponding to sprinter carrier)
- Precise and fast thanks to smart sensor system and laser technology
- Soft landing function, automatic set-down function (optional) and low-maintenance guides

For more details please see our dedicated spreader brochure.

TRAVEL GEAR

- Good load distribution thanks to six wheels (option of eight wheels)
- Wheels steered by steering cylinders and rods
- Individual wheel suspension with maintenance-free spring system
- Main fuel tank easily accessible in the carriage beam
- Electrical components well protected on inside of sill beam



MACHINERY PLATFORM IN FOCUS EASILY ACCESSIBLE

Whether Konecranes Noell Sprinter Carriers are equipped with an electric or hydraulic drive system, the machinery platform is always clearly structured. Its components are arranged for easy access in order to make service and maintenance quick and convenient.

The use of durable components ensures long service intervals, which significantly contribute to the high availability of Konecranes Noell Sprinter Carriers.

DRIVE UNIT

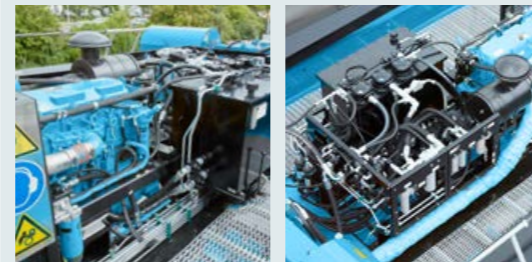
- Power generation unit powers hoist and travel drives
- Diesel engine available to comply with the respective emission standards, currently EU Stage IIIA and IV (EPA Tier 3 and 4f)
- Reduced pollution emissions due to low fuel consumption

ELECTRIC DRIVE



High-performance diesel-generator set with sliding cover for easy access. Ancillary hydraulics module supplies spreader, steering cylinders and brake system.

HYDRAULIC DRIVE



High-power diesel-pump set. Enclosure for reduction of noise emissions (optional)

HOIST SYSTEM

- Maximum lifting capacity 60 t
- Rope drums driven by centrally positioned motor
- Simple, clearly arranged and protected rope guides up to the yoke beam
- Small number of rope pulleys for low rope wear in operation

ELECTRIC DRIVE



Maintenance-free three-phase electric hoist motor

HYDRAULIC DRIVE

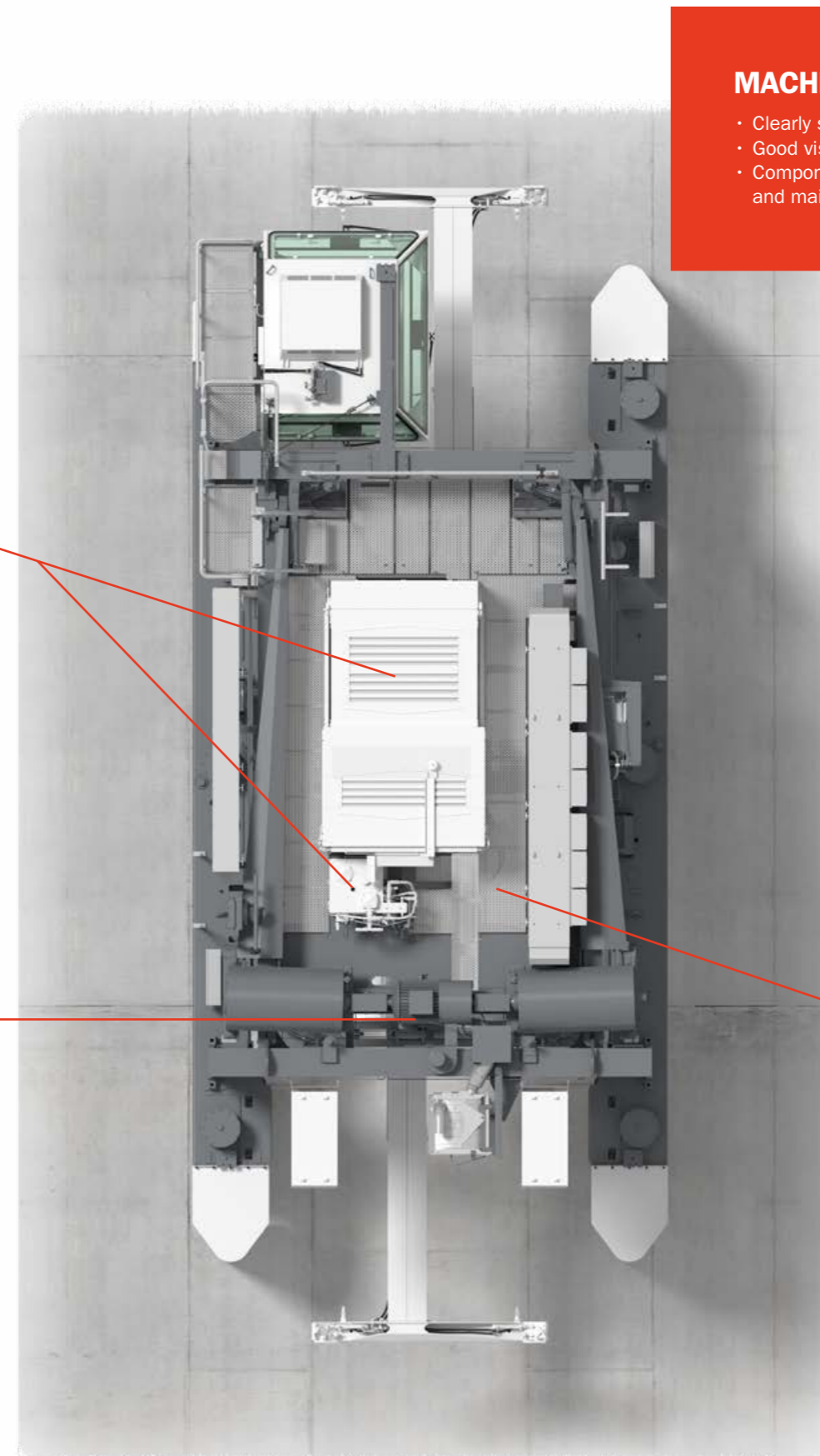


High-performance hydraulic hoist motor

The drive unit positioned at the center of the machinery platform can be fitted with a compartment to reduce noise emissions from the machine if required. The hoist system of Konecranes Noell Sprinter Carriers is positioned at the edge of the machinery platform to save space. It consists of a centrally positioned motor and two synchronized rope drums.

MACHINERY PLATFORM

- Clearly structured
- Good visibility with ample space
- Components easily accessible for service and maintenance



WALKWAYS

- Amply dimensioned

ELECTRICAL DRIVE SYSTEMS

ECO-EFFICIENT

The diesel-electric drive is particularly eco-efficient, reducing operating costs and relieving terminals from exhaust emissions.

HYBRID DRIVE

With their optional hybrid drive, Konecranes Noell Sprinter Carriers have an even greater sustainable impact. For in the hybrid drive, energy regenerated from braking and lowering the spreader is stored in short-term electrical storage modules (Konecranes Noell ECOCaps) and can be fed back into the on-board power system when needed.

ENERGY SAVINGS OF UP TO 20%

The benefits of the hybrid drive not only permit fuel savings of up to 20%, depending on the operating profile of the vehicles, but equally protect the drive components, as consumption peaks are no longer served by the diesel-generator set, but from the Konecranes Noell ECOCap storage. Engine operation optimized in this way also ensures lower noise emissions for the driver and the terminal thanks to smoother running.

ELECTRICAL CABINETS

- Contain electrical equipment and electronics
- All cabinets made of stainless steel; partially air-conditioned

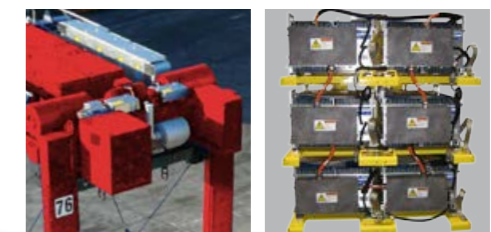


BRAKE RESISTORS

- Placed outside of top frame for optimum heat dissipation
- Both actuated and regulated

HYBRID DRIVE

- Second energy source: additional electrical short-term energy storage unit (Konecranes ECOCap module)
- Maintenance-free, high number of cycles and long service life
- Fuel savings of up to 20% depending on the operating profile
- Optimizes engine operation, ensures smooth running and minimizes noise emissions



Second energy source:
Konecranes Noell ECOCap module



WHEEL DRIVE

- Direct drive units thanks to wheel hub motors
- Maintenance-free three-phase motors
- Low tire wear thanks to electronic steering control

HYDRAULIC DRIVE SYSTEM

LOW INVESTMENT AND EASY MAINTENANCE

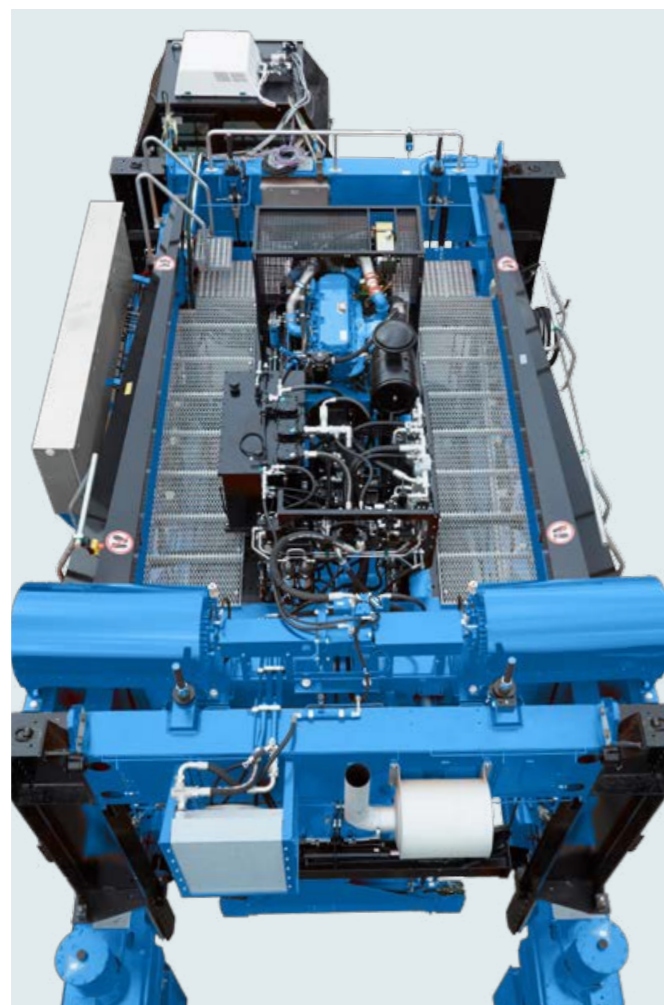
The diesel-hydraulic variant of Konecranes Noell Sprinter Carriers has been tried and tested over many years. Both travel and hoist drives make use of powerful hydraulic motors.

GOOD OPERATING CAPABILITIES

As far as their function, performance parameters and operating capabilities are concerned, the diesel-hydraulic sprinter carriers are a match for their diesel-electric counterparts. Like these, diesel-hydraulic sprinter carriers offer particularly high travel speeds, lifting capacities up to 60 t and can stack containers 1-over-1 high.

MACHINERY PLATFORM

- Ample spaced
- Drive unit and hoist system easily accessible



WHEEL DRIVE

- Two wheels driven by compact and powerful hydraulic motors
- Direct drive with high-performance hydraulic wheel hub motors
- Low tire wear thanks to electronic wheel alignment monitoring

At the same time, terminal operators profit from comparably low initial investments and little need for spare parts. Diesel-hydraulic drive systems also offer benefits in terms of service, as these machines are very easy to maintain.

With all their features, the diesel-hydraulic machines are particularly suited for terminals that are starting a step-by-step growth phase and nevertheless need a highly productive machine for the purpose.

HYDRAULIC DRIVE SYSTEM

- Tried and tested on the market for decades
- Allows low initial investments
- Easy maintenance



Konecranes Noell Sprinter Carriers powered by diesel-hydraulic drive form the backbone of horizontal container transport in many high-performance terminals worldwide.



FROM THE VETROCAB DRIVER'S CAB BRIGHT OUTLOOK

As the interface between man and machine, the Konecranes Noell Vetrocab driver's cab holds the key to safe and productive sprinter carrier operation. Together with industrial designers, ergonomics experts and experienced drivers, we have developed both the cab itself and the intuitive operating concept for you. The result: a cab that is a pleasure to work in – so the driver has everything under control.

The large glass panels provide an excellent all-round view and, together with the good noise insulation and the clear arrangement of all the controls, provide a high degree of convenience and safety. The driver's seat, adjustable for individual body size, the flexibly adjustable pedals and a steering wheel adjustable in height and distance turn the cab into a personal workplace. Drivers also benefit from the advanced air conditioning and heating system.

STATE-OF-THE-ART SAFETY AND ASSISTANCE SYSTEMS

The electronic stability assistant monitors the travel speed of the Konecranes Noell Sprinter Carrier in relation to the spreader position and its curve radius and, through automatic adjustment of the speed, ensures safe travel operation. The clearly structured display, always showing current speeds and spreader position, keeps the driver informed.

Drivers are also supported in their work by state-of-the-art assistance systems. These are partly standard and partly optionally available, further enhancing productivity and safety in the terminal. Among other things, the stability displays, the automatic spreader positioning system (ASPS) and the CAN bus control system for both the sprinter carrier and the spreader functions help to achieve more economical operation.



A cab that drivers like to work in: adjustable steering columns; electrically rotatable driver seat, on request; adjustable pedals



Ideal arrangement: everything in the right place for maximum convenience and safety

WITH THE KONECRANES NOELL FLEET MANAGEMENT SYSTEM

OPERATION DATA ON-LINE

The operation and health status data of vehicles can be remotely monitored via the terminal WLAN network using the Konecranes Noell Fleet Management System (Konecranes Noell FMS) and can be displayed and recorded by software modules in accordance with your needs. In addition, the system permits remote diagnoses to be carried out by Konecranes experts. The Konecranes Noell FMS has a modular structure, so the terminal operator can adapt the system to its requirements.

Depending on the module selected, it is possible to communicate operation data, container handling rates or fault diagnoses, including single-value recording and monitoring of, for example, engine and electronic data, tire pressures or fluid levels – both for individual vehicles and for entire sprinter carrier fleets.

FLEET MORE ECONOMICAL THROUGH DATA TRANSPARENCY

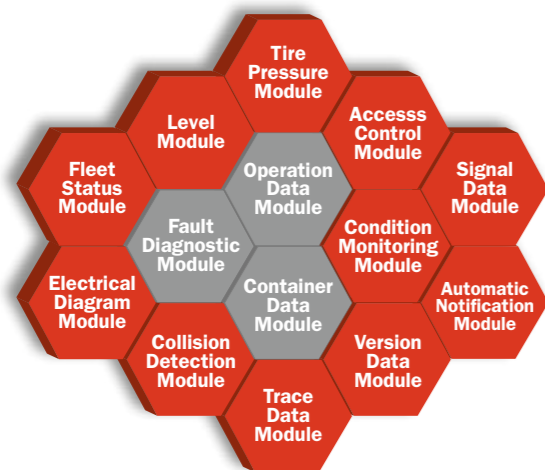
This data transparency makes the fleet more cost-effective, as downtimes for servicing can be planned much better in advance and operating costs can be reduced by service adapted to the local conditions. Diagnoses can also be carried out more specifically and effectively, which results in a higher level of equipment availability.



Everything at a glance: the data on the sprinter carrier fleet are monitored in the terminal control center.



Operation and health status data: operation data are displayed for the driver on large and clearly structured displays.



- Basic modules
- Add-on modules can be individually added and combined

Konecranes Noell Sprinter Carriers equipped with a Konecranes Noell Fleet Management System are provided with three basic modules. If needed, terminal operators can upgrade their FMS step-by-step.

MODULAR FLEET MANAGEMENT SYSTEM

- Remote monitoring via terminal WLAN network
- Gradually adaptable to operating company requirements
- Data transparency makes the fleet more profitable
- Greater handling performance possible
- Interventions can be planned better in advance
- Deployment scheduling adjusted to service intervals
- Service costs can be significantly reduced



Our fleet management system records and transmits a variety of operating data to the terminal control center.

INCREASED HANDLING PERFORMANCE THANKS TO AUTOMATED TERMINAL LOGISTICS

A-SPRINTERS MEET CHALLENGES

Quick and economical loading and unloading of large container vessels with ever increasing capacities demand new technologies in terminal logistics in order to avoid operational bottlenecks and to improve efficiency. These include the semi and full automation of Konecranes Noell Sprinter Carrier fleets.

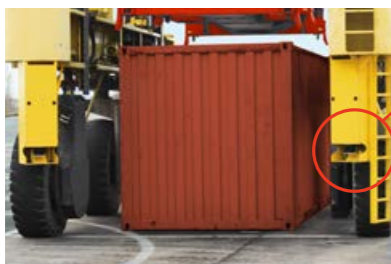
In addition to higher handling rates, the automation of sprinter carriers (A-SPRINTERS) also makes it possible to improve safety and availability. Automation also ensures the consistency and optimization of handling processes, thus reducing fuel consumption and exhaust emissions, which has an overall positive effect on the cost-effectiveness and ecological balance of terminals.

FROM MANUAL TO AUTOMATED OPERATION

The control system of diesel-electric Konecranes Noell Sprinter Carriers is prepared for later automation from the start so that automation-specific components can be retrofitted easily. This permits operators of existing terminals to convert equipment that is currently manually operated to automated, unmanned A-SPRINTER machines without extensive modifications. Similarly, a new terminal can start with manual equipment and, after a successful initial phase, convert to automated operation.

AUTOMATION WITH KONECRANES OPENS UP POTENTIAL

As a pioneer and pacesetter in the automation of handling processes, Konecranes has many years of experience in both equipment technologies and associated management and navigation software which are also used for A-SPRINTER solutions. Simulation and emulation of terminal processes gives terminal operators a clear picture of handling performance, equipment requirements and development potentials before they commit to any investments.



Highest accuracy: laser technology positions the A-SPRINTER precisely above the container.



Works even without a complete modification: the control system of diesel-electric Konecranes Noell Sprinter Carriers is designed in such a way that specific automated solutions can be added without completely modifying existing machines

SPRINTER CARRIER AUTOMATION (A-SPRINTER)

- Konecranes is a pioneer of automated container terminal solutions
- Technologies are well suited for automated sprinter carrier solutions
- Operation can start manually and be automated later
- Permits higher handling speeds
- Provides enhanced safety and availability
- Reduces fuel consumption and exhaust gas emissions

KONECRANES NOELL SPRINTER CARRIERS

DATA AND DIMENSIONS

	N SC 422 H	N SC 622 H	N SC 424 E *	N SC 624 E *
Speeds				
Lifting [m/min]				
– laden (40 t)	20	20	20	20
– laden (50 t)	–	15	–	15
– unladen	24	24	24	24
Lowering [m/min]				
– laden (40 t)	18	18	20	20
– laden (50 t)	–	15	–	15
– unladen	20	20	24	24
Traveling [km/h]				
– laden (30.5 t)	32		32	
– unladen	32		32	
Weights [t]				
Maximum static wheel load				
– laden (40 t, 60 t)	15.7	19.5	16.7	20.5
– unladen	9	9.5	10	10.5
Deadweight **	54	57	60	63
Wheels and tires				
Tire size	16.00 R25	18.00 R25	16.00 R25	18.00 R25
No. of wheels / driven	6 / 2		6 / 4	
Motorisierung				
Standard diesel engine	Caterpillar C13	MTU (Daimler) 6 R 1100		
Maximum power [kW @ rpm]	354 @ 1,800	320 @ 1,700		
Maximum torque [Nm @ rpm]	2,100 @ 1,400	2,100 @ 1,800		
Emission standard	Stage IIIA (Tier 3)	Stage IV (Tier 4 final)		
Alternative engine	–	Caterpillar C13		
Maximum power [kW @ rpm]	–	354 @ 1,800		
Maximum torque [Nm @ rpm]	–	2,100 @ 1,400		
Emission standard	–	Stage IIIA (Tier 3)		
Fuel tank [l]				
Tank capacity	750	1250	750	1250

* Figures also applicable to E ECO

** Depending on the configuration

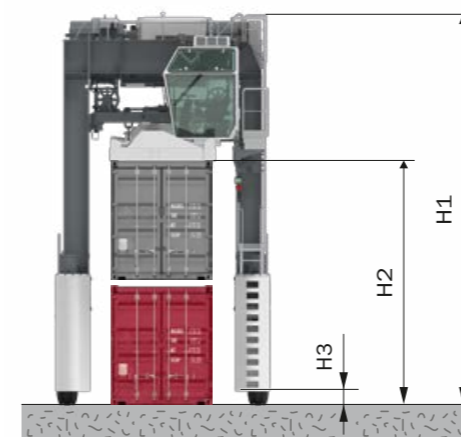
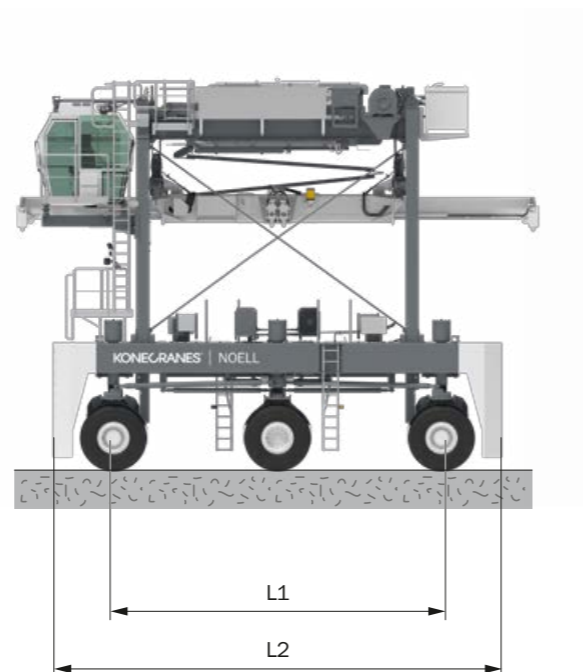
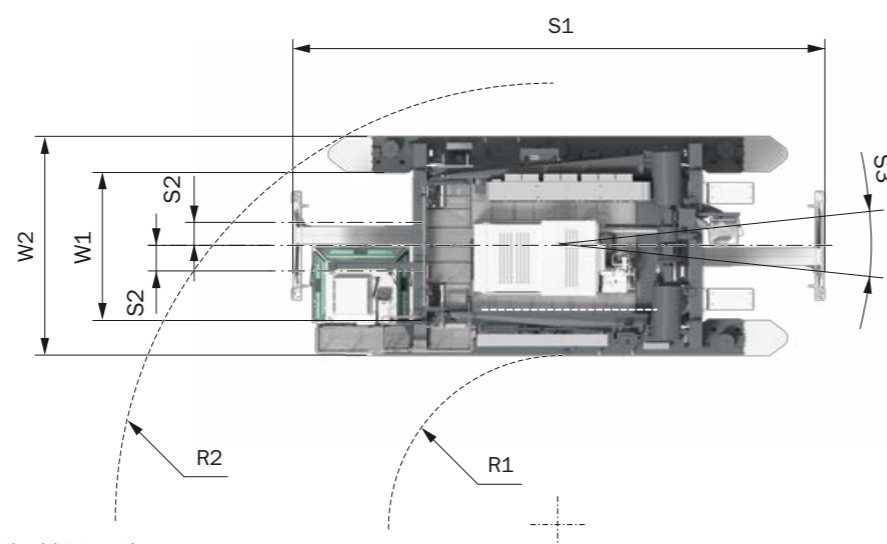


Illustration shows N SC 624 E Konecranes Noell Sprinter Carrier



		N SC 422 H N SC 424 E	N SC 622 H N SC 624 H
Heights [mm]			
H1	Total height	10,670	10,670
H2	Maximum stacking height under twistlocks	6,300	6,300
H3	Chassis clearance height	300	300
Widths [mm]			
W1	Inner chassis width	3,470	3,470
W2	Outer chassis width	4,870	5,040
Lengths [mm]			
L1	Wheelbase, outer axles *	7,700	7,700
L2	Total length	9,300 – 10,300	9,300 – 10,300
Other dimensions [mm]			
R1	Inner turning radius	3,600	3,600
R2	Outer turning radius	9,300	9,300
Konecranes Noell Spreader			
S1	Spreader, single-lift	[ft] 20 / 30 / 40	20 / 30 / 40
	Spreader, twin-lift	[ft] –	2 x 20
S2	Spreader side shift	[mm] +/- 300	+/- 300
S3	Spreader swivel angle	[°] +/- 6	+/- 6

* Figures apply to machines with 6 wheels (figures for 8 wheels on request)

On this page we have compiled the most important dimensions, which apply for both diesel-electric and diesel-hydraulic Konecranes Noell Sprinter Carriers. You will also find the technical data for both machine types. We shall be happy to send you further technical information on request.

ECO-FRIENDLY PAINTWORK TO YOUR CORPORATE SPECIFICATIONS

The Konecranes Noell Sprinter Carrier and the Konecranes Noell Spreader are shown here in our standard colors. All paint used in our factory is eco-friendly.

On request, Konecranes can supply you with sprinter carriers in accordance with your corporate identity guidelines and marked with your own logos.



Our special brochure details the key components, Konecranes Noell Single-Lift and Twin-Lift Spreaders

The generously dimensioned machinery platform provides ample space for all service and maintenance measures



SERVICE-FRIENDLY

- Maintenance costs and wear are minimized by the use of direct drive units and reliable high-grade components
- Quick correction of faults thanks to smart diagnostics systems
- Ease of maintenance thanks to good accessibility to components

YOUR SPRINTER CARRIERS ARE IN THE BEST OF HANDS WITH US COMPREHENSIVE SERVICE

During the development of our sprinter carriers we were already thinking about ease of maintenance. The robust machines are user-friendly thanks to easily accessible maintenance points. Our expertise is based on a high level of vertical integration and is complemented by the use of components from globally renowned manufacturers.

WE MAINTAIN AVAILABILITY

We contribute to maintaining the availability of your sprinter carrier fleet. Our global service organization is local to you in all time zones, and offers you expertise in maintenance and repair in combination with fast delivery of spare parts.

WE PRESERVE THE VALUE OF YOUR MACHINE

We are the right choice to provide support for your sprinter carriers throughout their service life because we built them and therefore know them best. With our comprehensive service portfolio, your sprinter carriers remain state-of-the-art, their service life increases and they maintain their value over many years.



Service to meet your particular needs: full life cycle support by Konecranes

Diagnoses: quick detection and correction of faults thanks to smart diagnostics systems




Manufactured with care: all mechanical, hydraulic and electrical components have been carefully arranged in a clear structure





Konecranes is a world-leading group of Lifting Businesses™, serving a broad range of customers, including manufacturing and process industries, shipyards, ports and terminals. Konecranes provides productivity enhancing lifting solutions as well as services for lifting equipment of all makes. The Group has 18,000 employees at 600 locations in 50 countries. Konecranes is listed on Nasdaq Helsinki (symbol: KCR).

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