



[Transport solutions for the
metallurgy industry

[Full-Range-Supplier

Ladle Carrier

Special transporter for ladles of molten steel for payloads of 100 t to 500 t



Slag Pot Transporter

Robust special vehicle for the safe handling of slag pots for payloads of 40 t to 150 t



U-Frame Transporter

Special vehicle for the handling of slag and scrap for the direct picking up of scrap containers or slag pots for payloads of 40 t to 150 t.



Slab Carrier

A high-performance vehicle which is most suitable for on-site transfer of hot and cold slabs in iron and steel plants. Payloads from 40 t to 150 t.



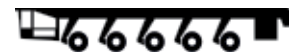
Industrial Lift Transporter with cabin above the platform

Versatile and robust multi-purpose transport system for cost-effective handling of slabs, billets, scrap and finished products such as sheet metal, profiles and coils for payloads of 60 t to 400 t.



Industrial Lift Transporter with cabin below the platform

Compact and manoeuvrable lift transporter for long and extra-long materials (billets, slabs, coils etc.). Highly suitable for confined working areas for payloads of 60 t to over 400 t.



Industrial Lift Transporter with integrated dumping system

For large-sized containers, a strong combination for an extremely economical on-site handling of scrap materials for payloads of 60 t to 250 t.



Scrap Basket Transporter

Special vehicle used for moving pallet scrap baskets with payloads ranging from 50 t to 300 t.



Heavy Load Trailer

Cost-effective transport system for handling pallets, slabs, coils etc. For payloads up to 130 t for vehicles with turning steering frames and up to 240 t with pendulum axles.



Coil Transporter

A vehicle concept developed for the transportation of coils for payloads of 60 t to 200 t. Protection cover for coils to prevent soiling is also available



[TII Transport systems for the metallurgy industry



The sister companies SCHEUERLE, NICOLAS and KAMAG - all subsidiaries of the TII Group - are worldwide leaders in the development and manufacture of top class heavy load vehicles. In the transport of heavy loads, the

TII Group offers its customers not only a wide range of serial products but also the best possible special solution for all transportation tasks regardless how challenging.



Extreme operating conditions, slag up to 1,300 degrees, liquid steel, bulk materials, metre-long red hot slabs or coils weighing several tons and more - the very difficult working conditions in steel and smelting works are a challenge for workers and machinery alike. SCHEUERLE, NICOLAS and KAMAG transport systems are specially developed to meet the requirements of this industry.

Key reasons why our vehicles are used around the world in this sector:

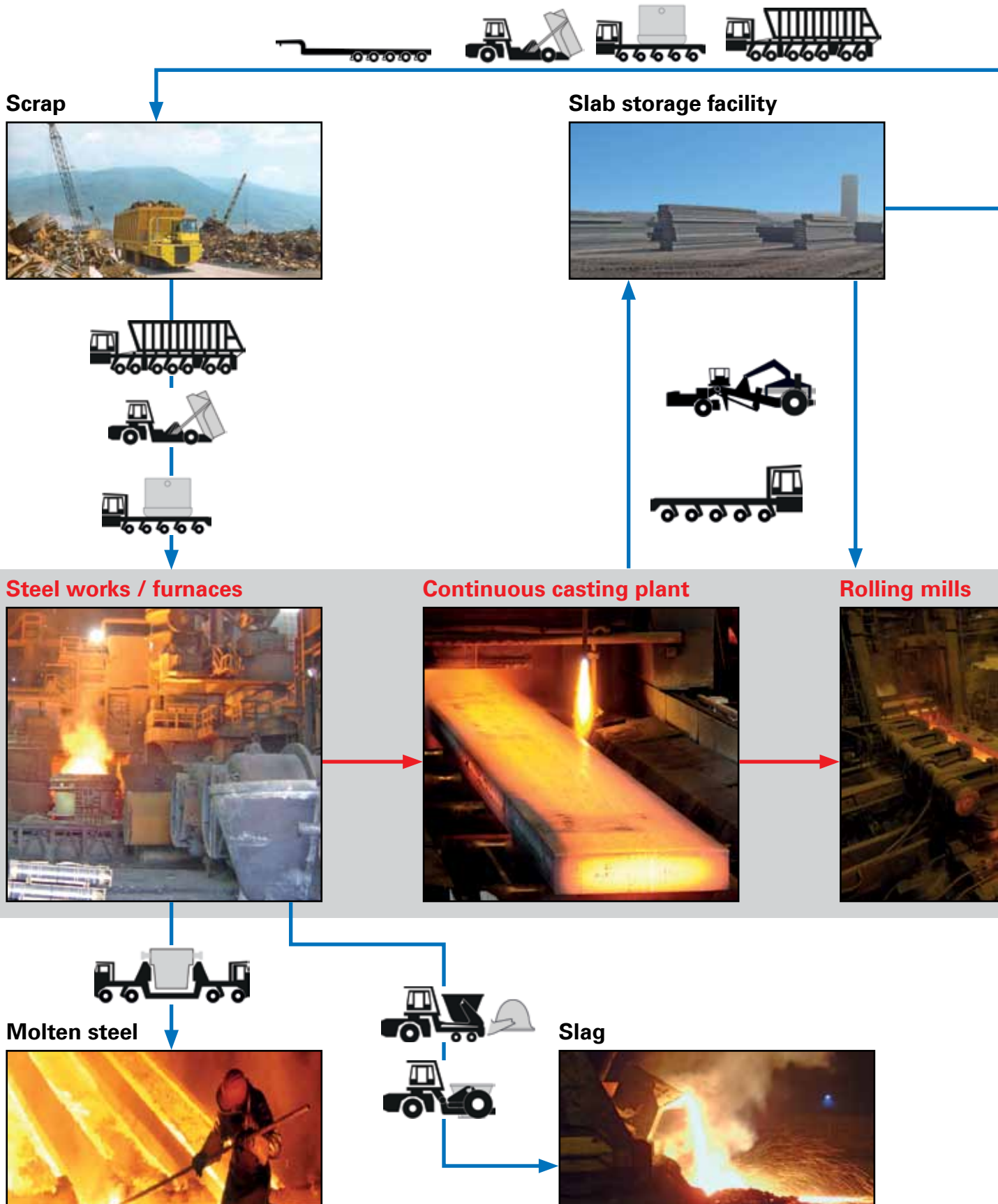
- Reliability
- Efficiency
- Safety

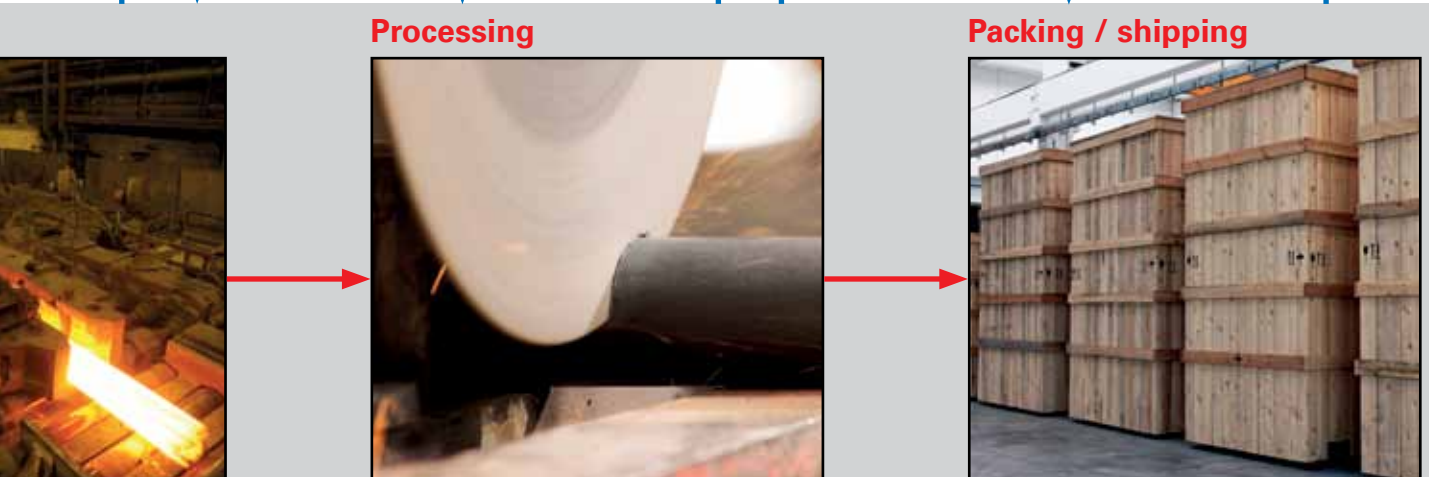
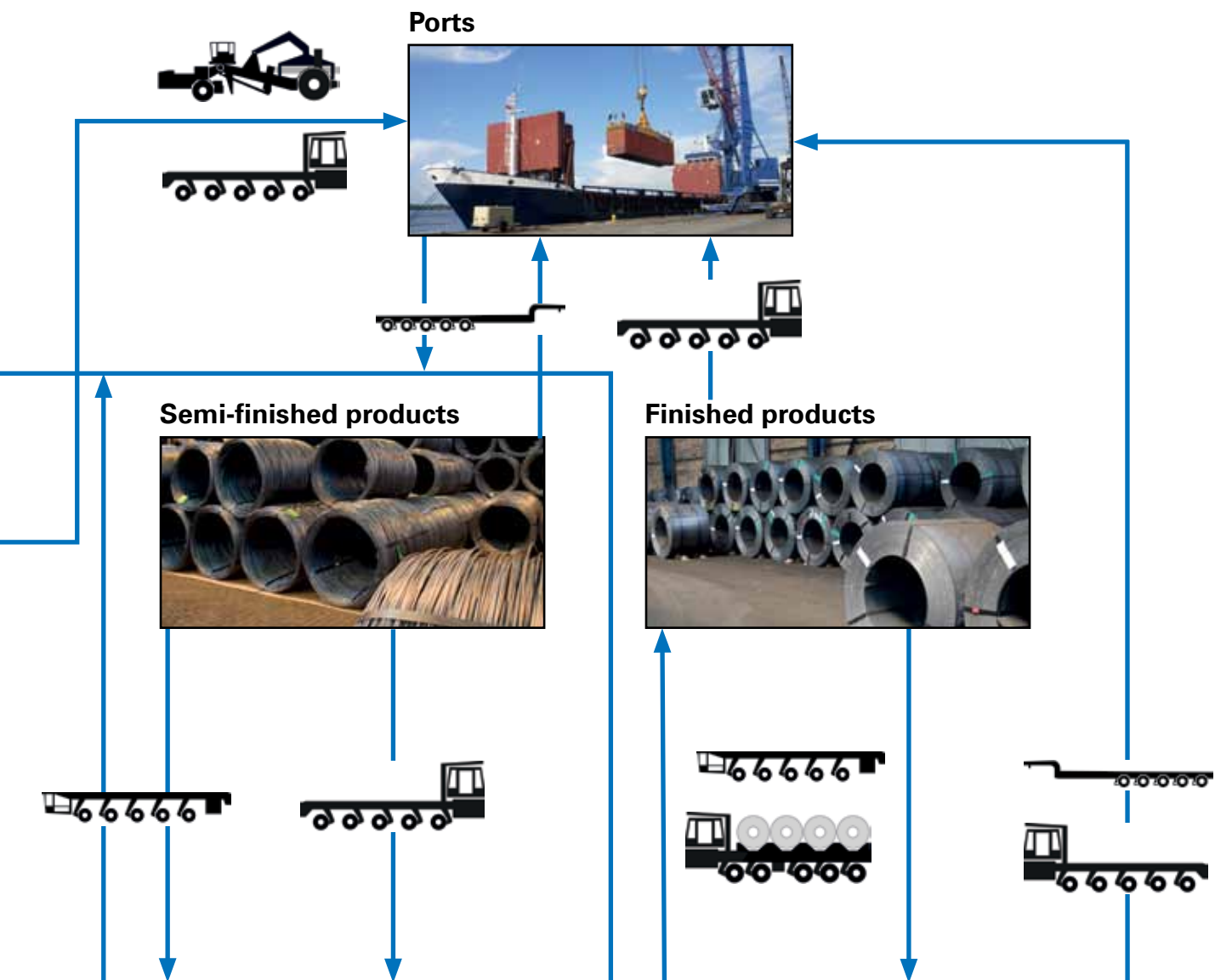
The TII Group offers its clients for the metallurgy industry an extensive transporter and service programme to solve the different transportation problems.

The metallurgical process

The hallmark of the TII Group's business is to provide its worldwide customers not only with individual solutions but also with complete

logistical concepts and a wide range of vehicles for the metallurgy industry.





Ladle Carrier



Slab Carrier



Scrap Basket Transporter



Slag Pot Transporter



Industrial Lift Transporter with cabin above the platform



Heavy Load Trailer



Industrial Lift Transporter with cabin below the platform



Coil Transporter



U-Frame Transporter



Industrial Lift Transporter with integrated dumping system

[Slag & Molten Steel

- for the hardest job in the world

The transportation of molten steel and slag is among the most difficult and dangerous task in a steel plant. The use of custom-specific containers requires individual concepts regarding both pick-up and handling. Slag pot weights of up to 150 t and molten steel ladles

of 500 t are reliably and safely handled with the vehicles of theTII Group. Speeds of up to 35 km/h and gradients up to 15% can be mastered depending on the individual concept.



A prime mover with an approx. 225 KW (300 HP) power train is used for payloads up to 70 t - beyond this, a prime mover with 300 KW (400 HP). This is comprised of a diesel engine, power shift transmission and a rigid axle with central differential and planetary gears arranged around wheel hubs. The single tyres of the prime mover consist of earth-moving machine tyres with large diameters.

With all vehicles of this product group, the driver's cab is well protected with massive, usually heat-resistant material being fitted on the roof and behind the cab. Molten steel transporters as self-loaders, a range of offset platform versions as well as traditional pallet solutions are available.



Slag Pot Transporter on a U-Frame basis.



Ladle Transporter: particularly suitable for handling large and high molten steel ladles.

[Transport solutions and concepts

- Slag Pot Transporter: available as platform and U-Frame vehicles are used around the world in many smelting works and steel mills. They have played a decisive role in the development of modern and cost-effective transportation of molten slag.
- Industrial Lift Transporter: a highly versatile vehicle which can also be used to transport molten steel when fitted with the corresponding pallet. User-specific pallet constructions can be produced on request.
- Ladle Transporter: as offset construction for payloads up to 500 t.



Industrial Lift Transporter with pallet system for transportation of molten steel.



Dumper on a U-Frame basis

Advantages

- Because of tightly sealed special glass windows, a driver's cab protective roof, the standby operation independent from the electronic system and the non-stop information updates via display for all operational sequences a high quantity of safety is guaranteed.
- High comfort, a strong performance and improved ergonomics of the transporter and the driver's cab brings many advantages for the transportation process and the operating personnel.
- Further more the transporter of the TII Group are characterized by a high level of reliability, a long service life and are easy to service and repair.
- The use of high-quality components assure the international availability of spare parts.



With a dumping angle of up to 180 ° the Slag Pot Transporter can be completely emptied.



With the Industrial Lift Transporter, pallets can be directly driven under and lifted up to the required driving position.

[Scrap Management

- Optimal logistical solution for handling scrap and other bulk materials.



8.1

The articulated Scrap Basket Transporter on an Industrial Lift Transporter Basis.



8.2

Due to the electronic multi-mode steering system, pallets can be positioned down to the last millimetre.

The transport of steel scrap takes place under extreme site conditions frequently with dumping body and scrap container pallets. Regardless whether dust, heat and dirty road surfaces, SCHEUERLE, NICOLAS and KAMAG industry transporters with dumping devices have proved themselves time and time again. Depending on customer preferences, the vehicles are configurable with a hydrostatic or hydromechanical drive system.

The vehicle concept is covering payloads of approx. 60 t up to 250 t (including pallets). This applies for speeds of 20 km/h when loaded and 40 km/h for empty runs.

The diesel engines in the power trains range from 130 kW (180 PS) to 440 kW (600 PS) depending on the size of the transport. If necessary, sufficient climbing power is available for 15% gradients.



8.3

Industrial Lift Transporter with scrap container dumping system: ensures a flexible and economical loading and unloading of scrap.



8.4

U-Frame Dumper: the hydraulic cylinder allows a dumping angle of min. 45°.

[Transport solutions and concepts

- **U-Frame Dumper:** combines the function of the bulk cargo transfer with that of pallet transportation. Depending on the profile requirements, hydromechanical or hydrostatic drives are fitted to best suit the situation. For special operations, extremely compact, manoeuvrable smaller U-frame trucks with hydrostatic drives are available.
- **Articulated Scrap Basket Transporter:** this vehicle system has been specially designed for transport operations in scrap management. The Scrap Basket Transporter complete with articulated pendulum prime mover is available with a 60° steering angle on both sides with 2 - 3-axle unit and 90° with a 1-axle unit, and can handle payloads up to 200 t. The lateral pendulum angle of approx. 10° to 12° allows optimal power transmission and low platform torsion when moving on uneven surfaces.
- **Industrial Lift Transporter:** a very strong concept is represented through the scrap container dumping system and the scrap basket system. Based on the proven Industrial Lift Transporter, a logistics solution to handle the toughest of operating conditions was created especially for the transportation of steel scrap.



Advantages: Industrial Lift Transporter

- Steering angles from 60° to 90° allow easy access in restricted loading positions.
- Up to 200 t of scrap can be moved each time without any problems in continuous operations which corresponds to about 10 trucks loads in comparison.
- Containers with integrated support legs can be set down and picked up in next to no time.
- During the time one container is being loaded, the other is driven under and picked up, securely locked in position with the transporter by means of two hydraulically-operated cylinders, hydraulically lifted and then driven to the designated unloading site.
- The driver's seat with all control elements can be swiveled for enhanced operational capabilities. The cab itself can be raised to a higher position if required in order to provide the driver with a better view at all times.



An additional advantage is the swap body and the generous dumping angle of 60° which ensures the complete emptying during the handling of scrap materials.



Scrap Basket Transporter for moving scrap materials in a steel plant.

[Transport of Semi-Finished and Finished Steel Products

In order to ensure unrestricted transportation in the metallurgy industry of up to 200 t of half-finished or finished products, such as slabs, coils, billets, sheet metal or steel profiles, transporters from the TII Group provide effective solutions. Transportation of semi-finished steel products and finished products takes place usually with the use of pallets. For this purpose, high speeds are called for when the vehicle is loaded or unloaded in order to ensure that the required fast handling times are maintained.

The hydrostatic drive - developed by the TII Group - has been installed in the vast majority of these transporters and easily ensures that the required speeds of up to 25 km/h in loaded and 45 km/h in unloaded condition respectively are achieved. For payloads up to 160 t,

SCHEUERLE, NICOLAS and KAMAG Industrial Lift Transporters with their 15" bogies have become a leading player in the industry. Excellent performance capabilities coupled with reliability and long service, has set new standards for this vehicle application.

This transport concept features 2-axle line to 8-axle line variants with a payload of 50 t up to 200 t. For medium-sized payloads above 160 t, transporters with 20" bogies are used (as already found in Scrap Container Transporters). Due to the larger-sized wheels, their off-road capabilities increase. For payloads over 200 t, SCHEUERLE, NICOLAS and KAMAG produce Industrial Lift Transporters with 24" bogies which are unique in this performance class.



When driving under the pallets, loads can be positioned directly on the pallet through the movably fitted cover.



Pallets are adapted to suit the respective products being transported so that a standard basic vehicle can be used for a wide range of products.

[Industrial Lift Transporter

The compact design, high degree of manoeuvrability through the all-wheel steering, hydraulic axle compensation and a wide variety of variants are a prerequisite for a simple integration of modern-day logistical operations in steel plants. The Industrial Lift Transporter is an extremely manoeuvrable and high-performance transportation equipment which, depending on requirements, can be equipped with many different kinds of additional devices, such as:

- Cover for Coil Transporter
- Dumping device for bulk material pallets
- Hydraulics for slag pot dumping pallet
- Weighing device
- Loading crane

[Slab Carrier

For use in metallurgical plants, the TII Group has developed a special vehicle for the transportation of slabs. The slabs can be picked up directly from the ground to be repositioned and stacked to the designated unloading site. This process is realized due to the height adjustable clamp, which is available in different types. Cold and hot slabs can be handled. Due to the clever and reliable technology for comfortable, safe usage and the use of proven standard components trouble-free operations are supported.



The Slab Carrier when positioning slabs.



Payloads from 40 t to 150 t can be handled.

Advantages

- Extremely manoeuvrable - the articulated pendulum prime mover with a 90° steering angle on both sides.
- Robust steel construction for use in smelting works and steel mills.
- User-friendly control technology for ensuring safe handling by the operator.
- Faster handling times, as slabs which are not exactly stacked one above the other, do not have to be re-aligned before moving the vehicle in over the slabs.



Storage of slabs in steel and smelting works.

When making a comparison between a Pallet Transporter and a special designed Slab Carrier for the transport of slabs, this vehicles provide the following advantages:

- No more special pallets with the associated pallet transport logistics are required.
- The slabs can also be stacked and stored on uneven ground.
- Slabs can be stacked even higher than the payload of most pallets allow. This means that a more cost-effective storage space utilization is possible.

[Coil Transporter

Faster transfer of materials, compactness and minimum ground pressure are requirements which are fulfilled by SCHEUERLE, NICOLAS and KAMAG Coil Transporter.

Advantages

- Adjustable pallet designs for differently-sized coils can be produced on request.
- In order to protect the sensitive coils from external influences such as rain as well as ensuring a controlled cooling process of the products, SCHEUERLE, NICOLAS and KAMAG offer a range of covers.



Industrial Lift Transporter for payloads up to 400 t.



Covered coil transport.

[Heavy Load Trailer

The Heavy Load Trailer is a cost-effective transport solution for handling pallets, slabs, coils etc. For payloads up to 130 t for vehicles with turning steering frames and up to 240 t with pendulum axles.

Advantages

- Can be coupled with a standard port tractor.
- The Heavy Load Trailer is also equipped with electronic power steering thereby allowing a wide range of steering programmes such as all-wheel and diagonal steering.
- An automatic positioning aid (Pathfinder) for driving under pallets is optionally available.



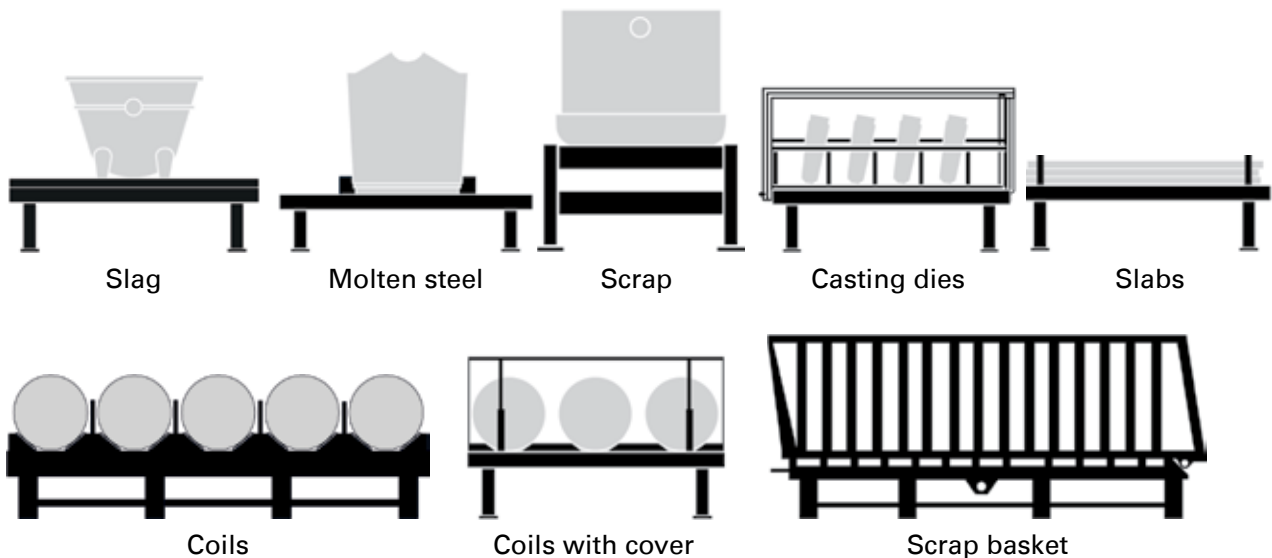
Cost-effective transport solution which can be used for the transportation of a wide range of products.



Heavy Load Trailer with pallet system during the transport of coils.

[The Industrial Lift Transporter

- the all-rounder



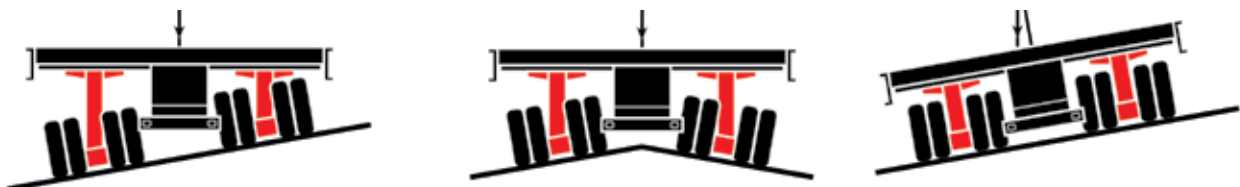
Technical Data

	With hydrostatic drive		With hydromechanic drive	
Tyres	20" twin	15" single	20" single	24" single
Payload range	90 - 660 t	50 - 300 t	60 - 175 t	70 - 220 t
Possible number of axle lines	10	10	8	8
Max. axle load in tonnes	56/64/76	28/32	28	36
Vehicle width min.	4,0 m	2,5 m	3,0 m	3,15 m
Steering	Electronic or mechanical	Electronic or mechanical	Mechanical	Mechanical
Lowered platform high + lifting	1.600 + 700 mm	1.400 + 600 mm	1.430 + 600 mm	1.430 + 600 mm

Axle compensation



The pendulum axle technology also sets new standards in this field. With uneven ground surfaces, the axle compensation automatically ensures uniform load distribution on all wheels.



[State-of-the-art and reliable technology



Joystick control



Diagnosis with data storage



Non-skid device on drive system



Can-Bus technology



GPS monitoring system



Remote control operations



14.1

Industrial LiftTransporter with cabin above the platform.



14.2

Industrial LiftTransporter with cabin above the platform driving under a fully loaded scrap basket.

Due to the better overview and larger space available, customers prefer that the driver's cab is usually positioned above the platform. For logistical concepts with drive-through pallets, vehicles with cabs installed under the platform are also used.



14.3

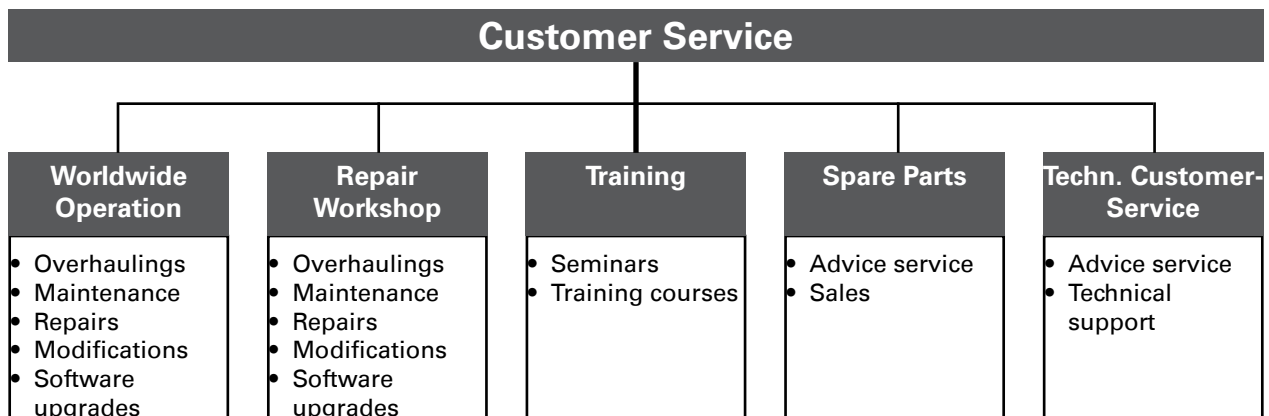
Industrial LiftTransporter with cabin below the platform during a scrap loading procedure.



14.4

When driving under pallets, the cover can be hydraulically raised.

[Service



At your disposal around the world.

The cost-effectiveness of a vehicle is a question of operational readiness and the service life. Through the quality standard of a proven service concept, SCHEUERLE, NICOLAS and KAMAG ensure a high level of availability.

The service departments with trained specialists are available for our customers from the outset. Already during the planning stage as well as the manufacture of a transporter, task-specific characteristics are taken into consideration.

However, in the unlikely event that something is defective, the service team will carry out the repair on the transporter in our workshop or on-site at the customer's facility as fast as possible.

In case of need, our technicians are available worldwide within a very short time - also in the remotest places on Earth



The laptops of the service engineers are equipped with a fault diagnosis system so that the problem can be determined on site and then remedied.



Software updates and adjustments to the system control can also be carried out quickly and efficiently.

Due to many years of experience of our service specialists as well as a well-stocked spare parts inventory, all occurred problems can quickly be solved.

The SCHEUERLE, NICOLAS and KAMAG spare parts service offers a minimum 10-year delivery guarantee of spare parts after the purchase of your transporter.

Spare parts can be ordered online very simple at: www.scheuerle.com, www.nicolas.fr, and www.kamag.com.

Competence

- The TII Group at a glance

SCHEUERLE, NICOLAS and KAMAG are subsidiaries of TII GmbH – Transporter Industry International. The TII Group is a global leader in developing and manufacturing top class heavy goods vehicles and is part of the group of companies owned by the Rettenmaier family from Heilbronn. The multi-entrepreneur Senator E.h. Otto Rettenmaier expressed his fascination with technology by acquiring SCHEUERLE Fahrzeugfabrik GmbH in 1987. NICOLAS Industrie S.A.S was acquired in 1994, and ten years later KAMAG Transporttechnik GmbH & Co. KG. Many years of technical know-how allow the TII Group to set international standards with its heavy goods vehicles.

The heaviest transport of more than 15,000 tons earned SCHEUERLE and KAMAG vehicles an impressive world record. Offshore and aerospace industries, shipyards, plant engineers, iron and steel works, as well as heavy load carriers, count on the transport technology of the TII Group, whose sales and service offer a global presence and comprehensive local support for its customers. All international sales activities for SCHEUERLE, NICOLAS and KAMAG products are handled by TII SALES – Transporter Industry International Sales GmbH & Co. KG.

Examples of our product range



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