



**RETROFIT**  
*FUTURE-PROOF THROUGH THE LATEST TECHNOLOGY*

**TIGROUP**

**SCHEUERLE**

**NICOLAS**

**KAMAG**

**TIIGER**

## RETROFIT OUR SERVICES



### MODERNISATIONS

- The very latest technology for all existing vehicle models



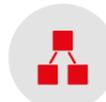
### UPGRADES

- Increase in payload and other performance optimisations



### MODIFICATIONS

- Adapting to accommodate changed conditions e.g. in the production



### ENHANCEMENTS

- Wide range of retrofit options



### REPAIRS

- 100% professional repairs and maintenance work



## RETROFIT – YOUR BENEFITS

- / Modernisation = cost savings compared to buying a new vehicle
- / No time-consuming briefings or employee training courses
- / Enhanced vehicle performance
- / Increase in your productivity
- / Extending the service life of your vehicles
- / New, future-proof technology
- / Compliance with all legal requirements
- / Guaranteed availability of spare parts
- / Minimisation of repairs and downtimes
- / Fast return-on-investment

## RETROFIT FUTURE-PROOF THROUGH THE LATEST TECHNOLOGY

The demands placed on your company are changing and becoming increasingly more complex. As retrofit experts, we are the reliable partner at your side and provide you with customised solutions.

SCHEUERLE, NICOLAS and KAMAG bundle their wide range of competences in the TII Group and have almost 400 years of experience in the construction and retrofitting of heavy-duty and special vehicles.

We have been securing our market leadership for decades now through:

- / Technical expertise
- / Special market knowledge
- / Hands-on mentality
- / Innovation + highest quality

Do you want to make your business future-proof? Then contact us! We will ensure that your fleet of vehicles is updated to conform with the latest technological standards.

Your

Michael Buhl  
Global Head of Service, TII Group

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## MODERNISATION

### IMPROVED ERGONOMICS FOR SHIP SECTION LIFT TRANSPORTERS

#### REQUIREMENTS

The customer wanted to modernise his six ship section lift transporters from 1988-1991 and upgrade them with the latest technology. However, this was on condition that modernisation measures took place during on-going operations.

#### SOLUTIONS

Firstly, the control function and non-stop equipment were upgraded to conform with the latest state of technology and a new switch cabinet was installed. The braking system was partially replaced. A new driver's cab was installed in each of the ship section lift transporters which improved the ergonomics for the vehicle operators.

In order to minimise downtime periods, all modernisation work took place within three predefined time windows. As a result, two of the six ship lift transporters were operational at all times and could therefore maintain plant operations.



#### BENEFITS

- / Easier coupling and enhanced ergonomics for the operator
- / Availability of spare parts ensured
- / Guaranteed operational safety and reliability
- / On-site retrofit in Belfast, Northern Ireland

## MODERNISATION

### SPMT POWER PACK UNITS WITH A NEW SHINE

#### REQUIREMENTS

Two Z320 Power Pack Units for SPMT (Self Propelled Modular Transporter) were to be completely overhauled in order to ensure reliable work operations in the future. The customer operates in the energy sector and wanted to continue using the existing engine with its emissions level and receive a guarantee for all reconditioned components.

#### SOLUTIONS

The Power Pack Units were completely dismantled and all components, such as hoses, couplings, manometers or pump lines, were overhauled or replaced. Defective components were replaced in consultation with the customer. The complete range of electronics, including switch cabinets, were completely refurbished. The PPU's were then re-assembled, sandblasted and re-painted. Scheuerle took care of the functional tests as well as acceptance procedure and test protocol.



#### BENEFITS

- / Operational reliability of the Power Pack Units for the SPMT
- / Technically and optically new PPU's
- / Extensive spare parts availability
- / The engine can continue to be used with the same exhaust emission level
- / Guarantee provided for reconditioned components



## UPGRADES

### MORE LOADING CAPACITY FOR PLATFORM VEHICLES

#### REQUIREMENTS

The customer required a quick and safe solution for transporting a transformer weighing almost 300 tonnes for a southern German electricity grid operator.

#### SOLUTIONS

Within just a few weeks, Scheuerle had developed a new type of adapter in order to accommodate extra heavy transformers. With the newly developed adapters, coupling the hydraulic girder decks in the 24-axle modular InterCombi platform vehicle was now a piece of cake.

#### BENEFITS

- / Higher loading capacity possible
- / Short implementation period of the adapter solution
- / Transport assignments can be safely carried out with existing vehicles
- / Different types of transformers can be accommodated



## UPGRADES

### STRONG TOGETHER WITH A MODERN CONTROL SYSTEM

#### REQUIREMENTS

The customer provides a range of ship construction and repair services and uses several SHTs (ship section lift transporters) comprised of different generation vehicles. More flexibility was wanted and the possibility to form vehicle combinations if required.

#### SOLUTIONS

In order to realise this, a uniform control system for all SHTs was needed. On the older vehicles which were still in good shape, the outdated control technology was upgraded. For this, the electronics boxes, cable sets and cabins were pre-assembled. The kits could then be installed on site in no time at all.

#### BENEFITS

- / Maximum flexibility for the vehicle combinations
- / No new vehicle purchase necessary
- / A minimum of downtime due to pre-assembly
- / Remote support possible in the future



## MODIFICATIONS

### MORE EFFICIENT WITH A MODIFIED SHT

#### REQUIREMENTS

The customer operates in the shipbuilding industry and had reached the limits of capacity in production with his three SHTs (ship section lift transporters). His goal was to build a third-more cruise ships in the same time using the same number of vehicles.

#### SOLUTIONS

Firstly, the entire electrical system of each vehicle was dismantled by technicians. After the adjustment of some steel components, the new electrical system including a new switch cabinet and new driver's cab were installed. Damaged vehicle components discovered during the modification work were immediately replaced. In addition, the technicians installed the latest software. This has enabled the customer to produce three cruise ships instead of two in the same time as before.



#### BENEFITS

- / Production efficiency has been increased by a third
- / No new vehicle purchase necessary
- / Any defective components could be identified and replaced
- / Modification facilitates the integration of the latest vehicle technology

## ENHANCEMENTS

### THE LIGHT HAS DAWNED: ARCTIC PACKAGE

#### REQUIREMENTS

The customer planned to use 1752 SPMT (Self Propelled Modular Transporter) axle lines to carry out heavy-duty transports in northern Russia. Individual vehicle components were to be adapted to accommodate the freezing temperatures so that the vehicles could maintain their performance as well as ensuring that the transport assignments were carried out safely.

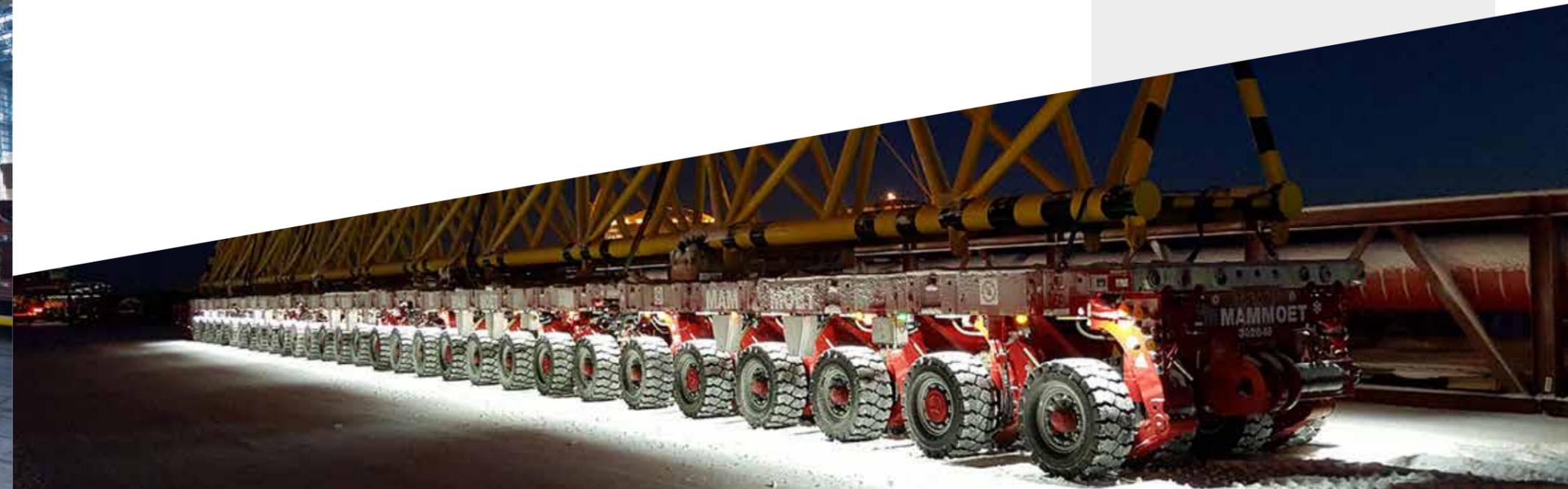
#### SOLUTIONS

The Arctic package includes lighting for each axle along with an additional heating unit. This unit facilitates usage at temperatures of -40 degrees without the vehicle losing any engine performance.



#### BENEFITS

- / Increased operational safety
- / Vehicle performance remains constant
- / Quick and easy and adaptation to accommodate environmental influences (e.g. cold or dark)
- / Self-installation possible
- / Retrofit can be carried out at any time



## REPAIRS

### SAVING COSTS WITH PLUG AND PLAY

#### REQUIREMENTS

In the Middle East, a customer's slag pot carrier was in a desolate condition after a fire. The goal of the customer was to get the vehicle operational as quickly as possible and to keep any repair costs to a minimum.

#### SOLUTIONS

All the required mechanical and hydraulic components were sent directly to and then installed by the customer himself. The electronic and electrical components were pre-assembled, shipped and then installed and made operational through the help of a service technician. With this plug-and-play concept, the slag pot carrier was back in service again in no time at all.



#### BENEFITS

- / Fast re-commissioning
- / Own contribution increases the customer's technical competence
- / Scope of services provided in line with actual customer requirements

## REPAIRS

### AS GOOD AS NEW: INDUSTRIAL LIFT TRANSPORTER

#### REQUIREMENTS

After being damaged by fire, the IHT (Industrial Lift Transporter) had to be completely repaired. The customer assumed that his vehicle, built in 2009, would be equal to a new vehicle after repairs had been carried out.

#### SOLUTIONS

Firstly, the vehicle was completely dismantled. After an overhaul of the bogie unit had been completed, a new power pack, new electrics and a new driver's cabin were installed. Finally, the bodywork was sandblasted and re-painted. After only three months, the customer received a new vehicle which was as good as new.



#### BENEFITS

- / Repairs are cheaper than purchasing a new vehicle
- / Damaged vehicles can be completely repaired
- / Old vehicles are equipped with modern technology



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