



SPMTs
(36 - 40 - 48 - 60 TON)

THE WORLD... OUR PASSION
SINCE 1955

TECHNICAL BROCHURE

OVERVIEW



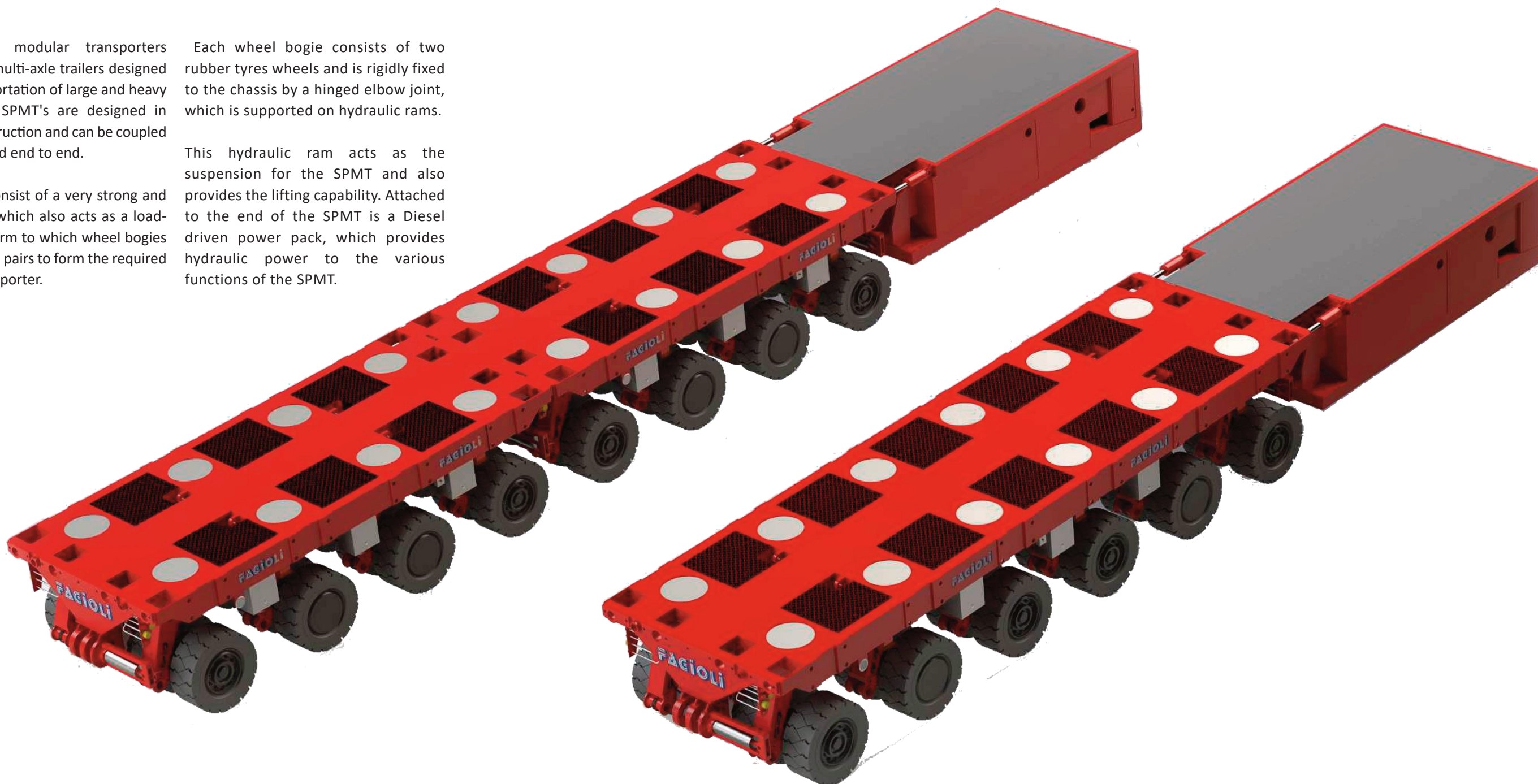
SPMT's: MULTI-AXLE LINES TRAILERS

Self-propelled modular transporters (SPMT's) are multi-axle trailers designed for the transportation of large and heavy cargoes. The SPMT's are designed in modular construction and can be coupled side to side and end to end.

The SPMT's consist of a very strong and rigid chassis, which also acts as a load-carrying platform to which wheel bogies are attached in pairs to form the required length of transporter.

Each wheel bogie consists of two rubber tyres wheels and is rigidly fixed to the chassis by a hinged elbow joint, which is supported on hydraulic rams.

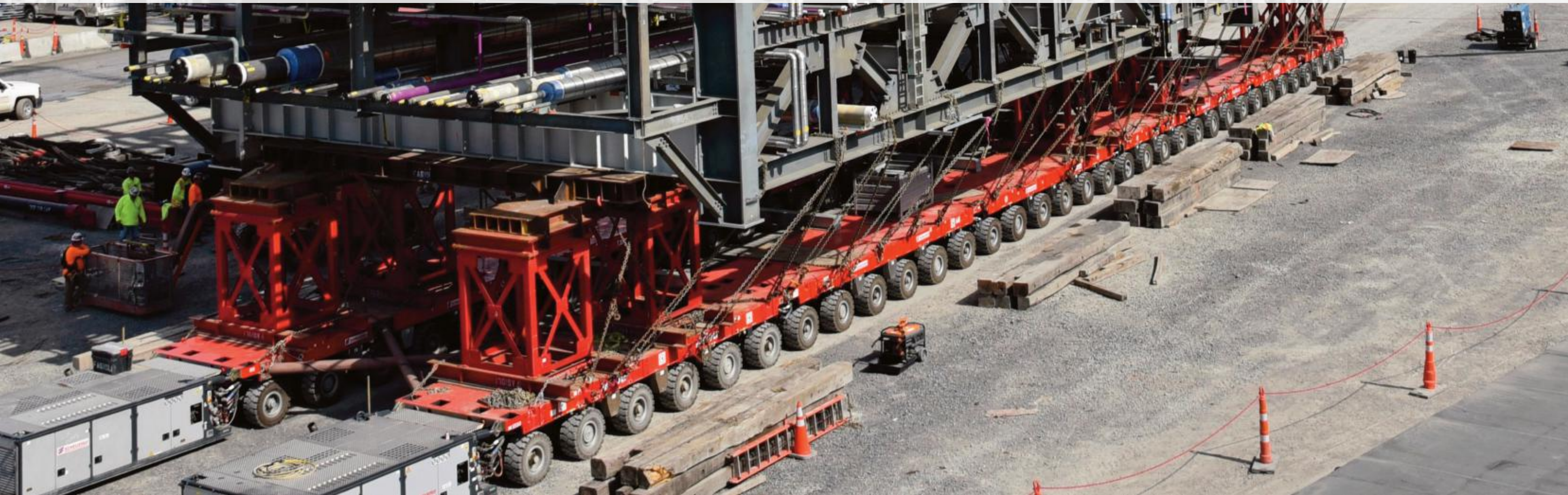
This hydraulic ram acts as the suspension for the SPMT and also provides the lifting capability. Attached to the end of the SPMT is a Diesel driven power pack, which provides hydraulic power to the various functions of the SPMT.



APPLICATIONS



HYDRAULIC POWER



The SPMT is propelled by hydraulic drive motors, which are mounted on the axles of the SPMT. Hydraulic power is supplied from a pump on the power pack to each of the drive motors and speed is controlled via a remote hand operated portable console. Forward and reverse travel is achieved by reversing the flow of hydraulic oil to the drive motors.

Speed of the driven axle is controlled by flow regulators, which prevent over-speed of the wheels occurring. Normal operating speed of the SPMT's is 5 km/hr, but may vary depending on the load and configuration.

To link all hydraulic rams on a single trailer would result in

an unstable transporter bed with no control. The SPMT is normally split hydraulically into three separate hydraulic groups (A three-point suspension) that can be controlled individually from the main power unit. As the SPMT negotiates uneven ground, or gradients the hydraulic fluid will free flow within each suspension to maintain equal loading within each suspension group.

Addition hydraulic fluid can be pumped from Power Unit (PPU) into or out of each cylinder group to adjust the level of the SPMT. Systematic and controlled pumping of hydraulic fluid into or out of each suspension can raise or lower the transporter bed +300mm from the normal running

height of 1500mm. Control of the elevation of the transporter is through the hand operated remote console. Safety valves protect the hydraulic circuit so that the transporter platform does not collapse in the unlikely event of hydraulic failure. The SPMT's are equipped with an electro-hydraulic braking system with hydraulically activated spring loaded brake cylinders installed in the wheel hubs.

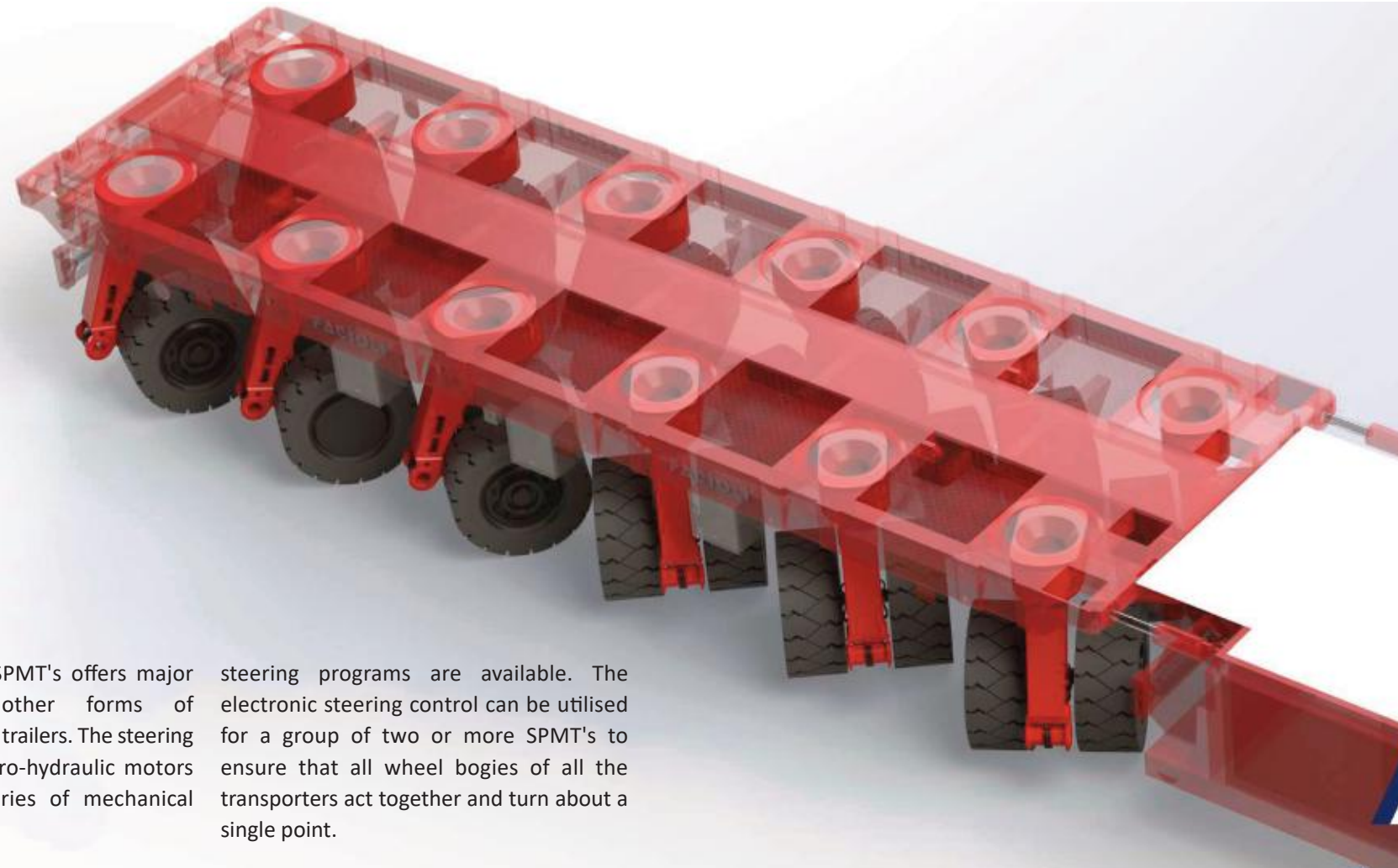
The brakes are controlled through the hand operated remote console. Hydraulic pressure supplied to the brake cylinders pre-loads the brakes and any reduction in this hydraulic pressure will activate the brakes via a mechanical spring; the braking force that results is in proportion to the reduction in

hydraulic pressure. In the event of failure of the diesel power pack, hydraulic pump, electronic control system, or other controlling equipment causing a loss in hydraulic pressure, the brakes will be applied automatically through the spring mechanism. The load carrying capacity of a transporter platform (or group of platforms) is directly proportional to the number of axle line. The capacity of each axle line varies from 36 up to 60 ton gross. A transporter convoy, composed of transporter units and power packs can be controlled by a single operator by means of the hand operated remote console. All units are both CE and TUV certified and are provided with identification plates that allow them to be driven on public roads.

OVERVIEW



STEERING CAPABILITIES

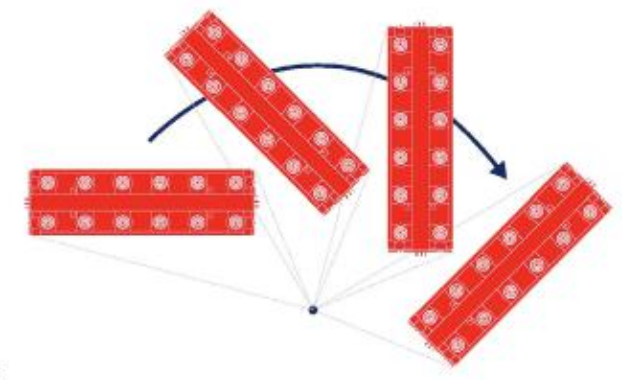
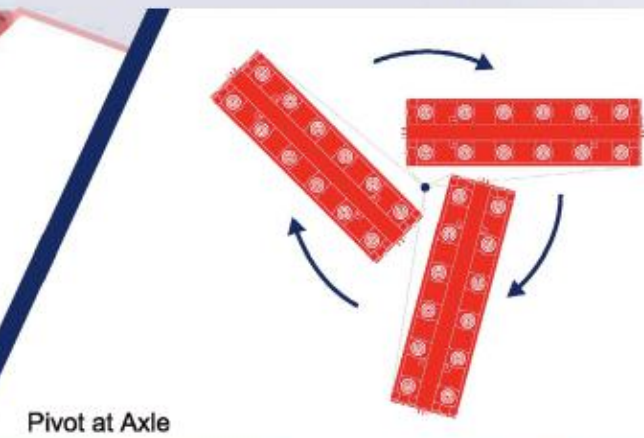
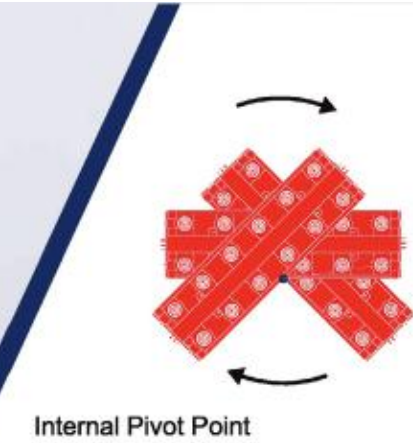


The steering of the SPMT's offers major advantages over other forms of conventional hydraulic trailers. The steering is controlled by electro-hydraulic motors rather than by a series of mechanical steering rods.

Each of the axles of the transporter moves independently and are monitored and controlled by the computerised control system of the transporter. This offers total flexibility of steering options with each wheel bogie able to swing through 260° (+130°). The position of each wheel is controlled electronically through the remote operations console and nine

steering programs are available. The electronic steering control can be utilised for a group of two or more SPMT's to ensure that all wheel bogies of all the transporters act together and turn about a single point.

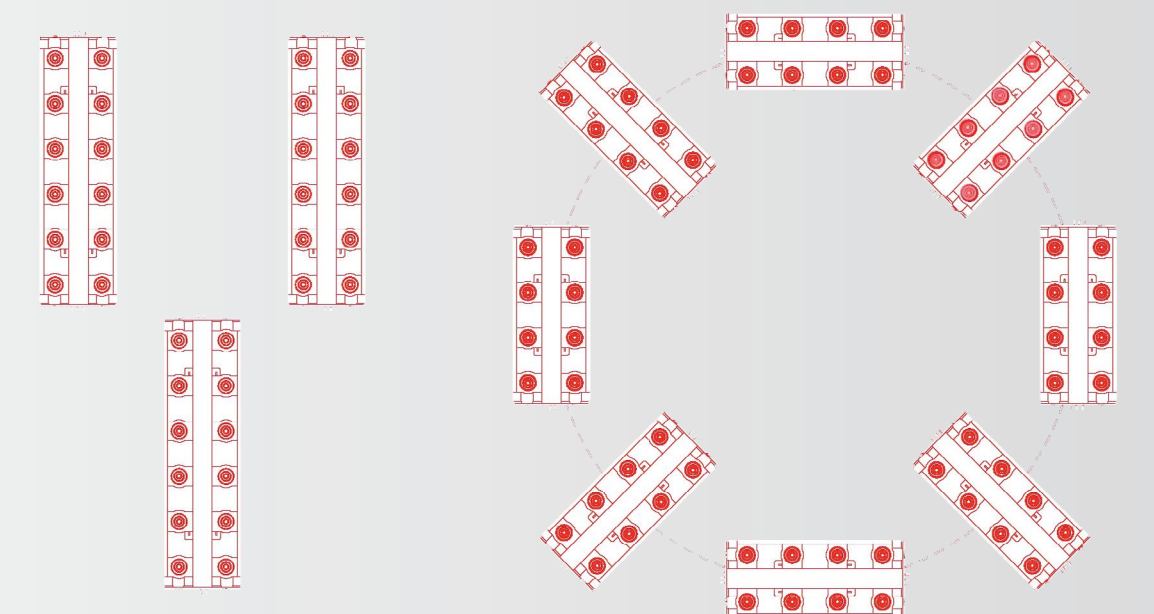
A hydraulic cylinder supports each of the wheel bogies. The cylinders on each bogie can be linked hydraulically to the other wheel bogie cylinders to form groups, this allows free flow of hydraulic fluid between each hydraulic ram allowing the SPMT to negotiate uneven ground, cambers and gradients whilst maintaining equal loading in each hydraulic ram within that group.



OVERVIEW

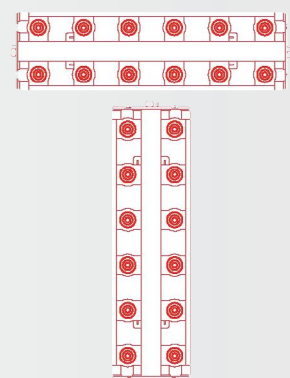


MECHANICAL COUPLING VARIATION

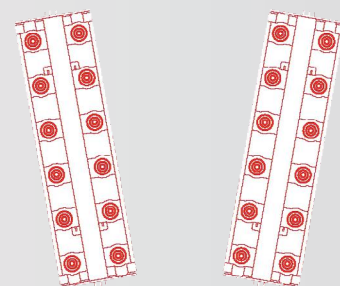


Y Combination

Circle Combination

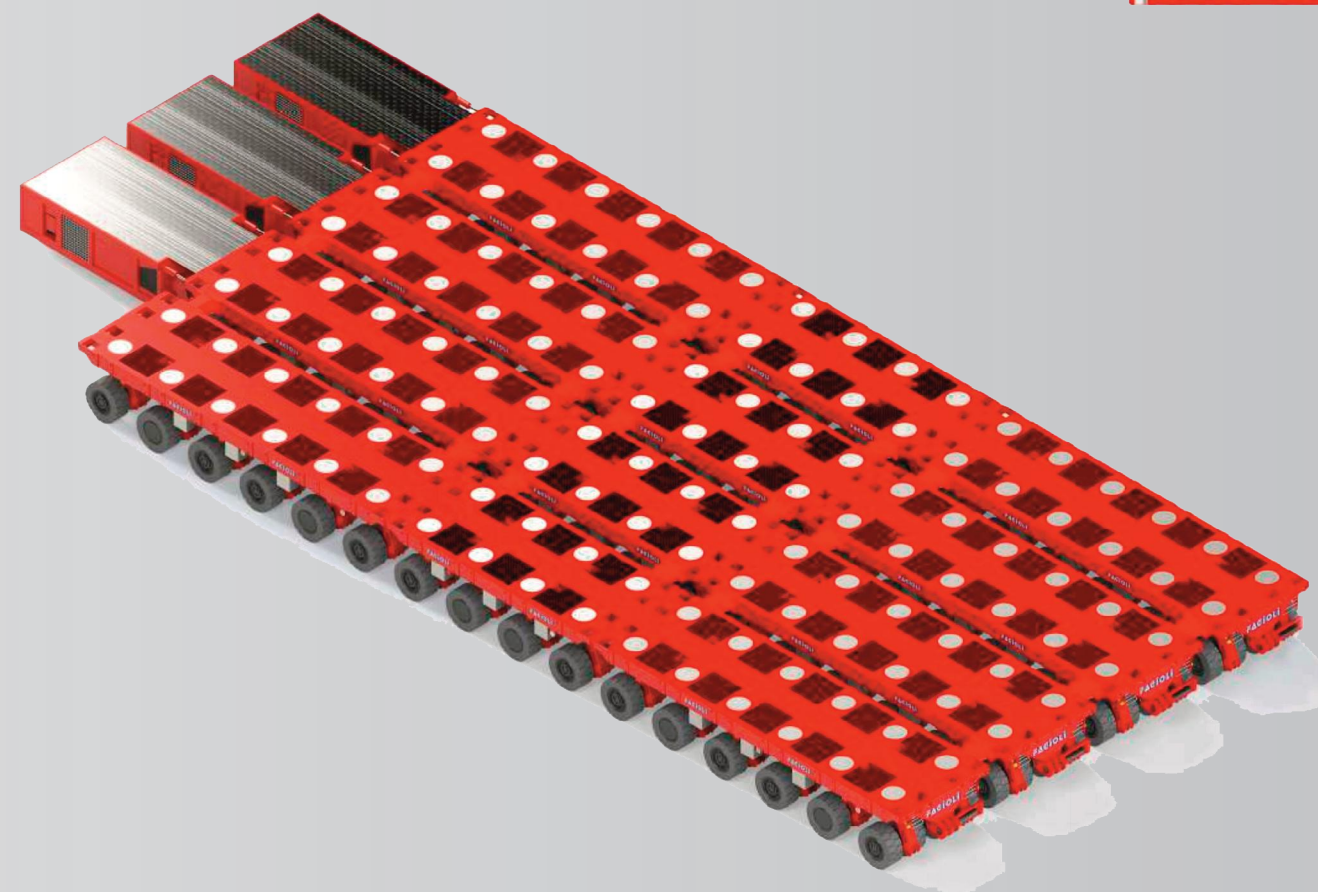
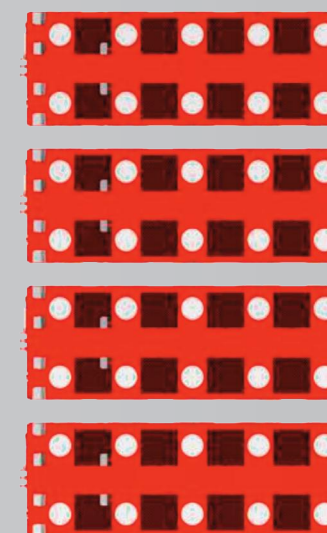


T Combination



V Combination

REGULAR



ALTERNATIVE

SPECIFICATIONS: SPMTs



Types		36 t	40 t	48 t	60 t	
DIMENSIONS	AXLE LINES	Type 1	4	4	4	4
		Type 2	6	6	6	5
	SUSPENSION	Type 1	8 (4 powered)	8 (4 powered)	8 (4 powered)	8 (4 powered)
		Type 2	12 (4 powered)	12 (4 powered)	12 (4 powered)	10 (4 powered)
	TYRES TYPE		355/65 R15 24pr IC40 (Tyre pressure 10 bar)	355/65 R15 24pr IC40 (Tyre pressure 10 bar)	355/65 24pr IC40 (Tyre pressure 12 bar)	33,5x11,25-15 26pr TUBELESS (Tyre pressure 14,5-21,8 bar)
	PLATFORM DIMENSIONS	Type 1	5600 x 2430 mm	5600 x 2430 mm	5600 x 2430 mm	5600 x 2430 mm
		Type 2	8400 x 2430 mm	8400 x 2430 mm	8400 x 2430 mm	7000 x 2430 mm
	INTERAXLE SPACING		1400 mm	1400 mm	1400 mm	1400 mm
	PLATFORM HEIGHT		1500 +/-350 mm	1500 +/-350 mm	1500 +/-350 mm	1500 +/-300 mm
	CAPACITY	AXLE LINE LOAD		36 t	40 t	48 t
CYLINDER PRESSURE		254 bar	282 bar	297 bar	323 bar	
GROSS WEIGHT		Type 1	144 t	160 t	192 t	240 t
		Type 2	216 t	240 t	288 t	300t
DEAD WEIGHT		Type 1	16,5 t	16,5 t	16,5 t	19,1 t
		Type 2	24 t	24 t	24t	23,5 t
PAYLOAD CAPACITY		Type 1	127,5 t	143,5 t	175,5 t	220,9 t
		Type 2	192 t	216 t	264 t	176,5 t
AXLE TRACTION CAPACITY (for one suspension)		67 kN	71 kN	71 kN	73 kN	

SPECIFICATIONS: SPMTs

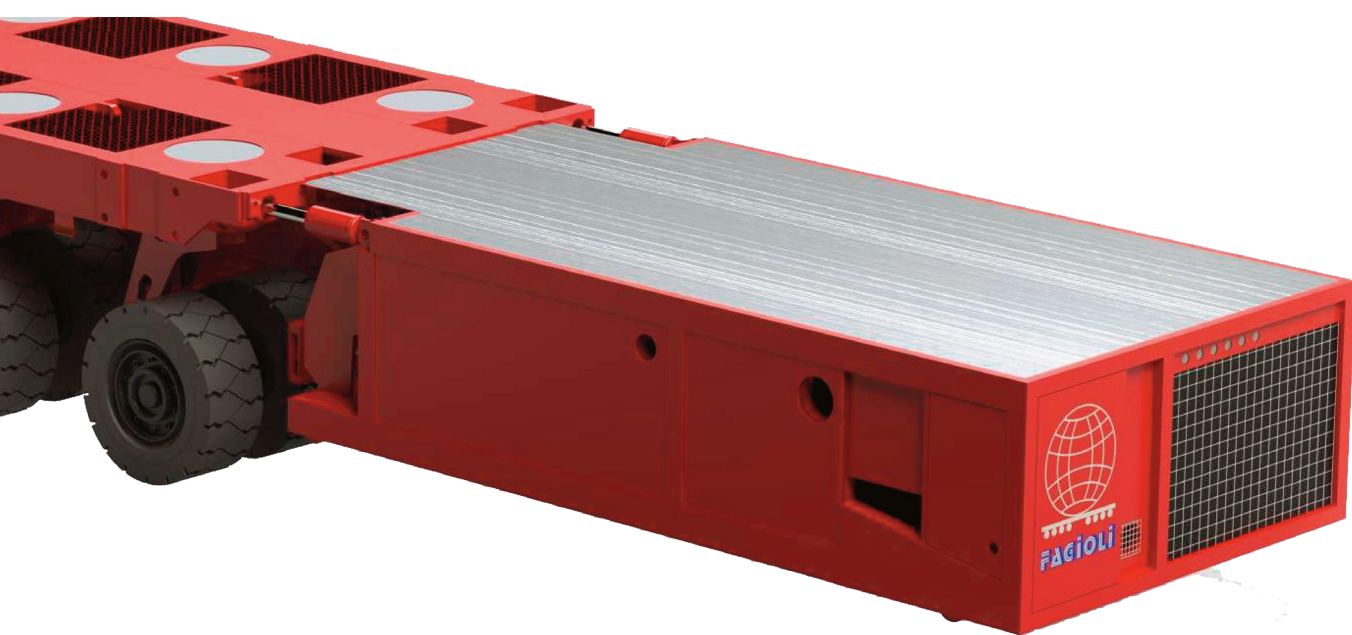


Types		36 t	40 t	48 t	60 t	
MAIN BEAM	STEEL QUALITY	S690	S690	S690	S690	
	MOMENT OF INERTIA	up to 2013	851300 cm ⁴	851300 cm ⁴	851300 cm ⁴	851300 cm ⁴
		2013 to 2018	-	872000 cm ⁴	872000 cm ⁴	872000 cm ⁴
		since 2018	-	1060000 cm ⁴	1060000 cm ⁴	1060000 cm ⁴
	MOMENT OF RESISTENCE	up to 2013	17552 cm ³	17552 cm ³	17552 cm ³	17552 cm ³
		2013 to 2018	-	17795 cm ³	17795 cm ³	17795 cm ³
		since 2018	-	17905 cm ³	17905 cm ³	17905 cm ³
	SHEAR SECTION AREA	237 cm ²	237 cm ²	237 cm ²	237 cm ²	
	ALLOWABLE BENDING STRESS	450 N/mm ²	450 N/mm ²	450 N/mm ²	450 N/mm ²	
	ALLOWABLE SHEAR STRESS	265 N/mm ²	265 N/mm ²	265 N/mm ²	265 N/mm ²	
ALLOWABLE BENDING MOMENT	- +6700 kNm - -5025 kNm	- +6700 kNm - -5025 kNm	- +6700 kNm - -5025 kNm	- +6700 kNm - -5025 kNm		
ALLOWABLE SHEAR FORCE <u>OF COMBINATION</u>	3500 kN	3500 kN	3500 kN	3500 kN		
COUPLING	ALLOWABLE POSITIVE BENDING MOMENT (Load supported between suspension group)	- +6700 kNm	- +6700 kNm	- +6700 kNm	- +6700 kNm	
	ALLOWABLE NEGATIVE BENDING MOMENT	- -5025 kNm	- -5025 kNm	- -5025 kNm	- -5025 kNm	
	ALLOWABLE SHEAR FORCE <u>OF COMBINATION</u>	3500 kN	3500 kN	3500 kN	3500 kN	

SPECIFICATIONS: PPU S



Types		SMALL (TY1)	SMALL (TY2)	MEDIUM	BIG (TY1)	BIG (TY2)
DIMENSIONS	Overall (LxBxH)	2560x2310x1090	3160x2420x1100 mm	4260x2420x1100 mm	4660x2310x1090 mm	4780x2400x1110 mm
	Lenght with module	2400 mm	3000 mm	4100 mm	4500 mm	4620 mm
	Max Inclination	12°	12°	12°	12°	12°
	DEAD WEIGHT	4150 kg	4300 Kg	6400 Kg	7500 Kg	7850 Kg
CAPACITY	POWER	110 kW	129 kW	202 kW	335 kW	368 kW
	ELECTRICAL	24 V	24 V	24 V	24 V	24 V
	OIL TANK CAPACITY	420 l	420 l	700 l	850 l	1000 l
	FUEL TANK CAPACITY	175 l	200 l	230 l	450 l	400 l



- Power pack units (PPU's) can be attached to either (or both) universal and bolt end couplings to supply power for hydrostatic self-propulsion, hydraulic axle support lift and lower system, VD-steering, hydraulic brake system and for supply of the electric/electronic systems.
- Distribution gear and hydraulic axial piston pump with variable displacement for the various working systems. Hydrostatic propulsion, lift/lower system, steering and brake system and distribution gear flanged directly to the diesel engine with hydraulic axial piston pump.
- Hydraulic oil tank (approx. 700l tr) designed for the operation with extended combinations. Tank designed in stainless steel.
- Diesel fuel tank with a volume of approximately 400l. PPU's hydraulically adjustable on the coupling side, which is advantageous for barge operations.
- Four adjustable landing gear, lifting eyelets for crane loading as well as lashes for forklift operation.
- PPU's completely covered. System connection lines for direct longitudinal coupling as well as side connection for the PPU's in a compound operation. Operating and control instruments arranged and protected in the terminal box.
- PPU's completely equipped and ex-works tested.
- Electronic throttle control of the single PPU as well as control of the PPU's in a compound. In addition, manually actuated accelerator for emergency operation.
- Engine Power up to 355 kW.



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