



Robotic tow tractor P-MATIC

Series 1190

Safety

Thanks to its smart safety management, the P-MATIC anticipates and reacts autonomously to its direct environment. Advanced obstacles' detection provides real time speed adjustment to enhance the productivity while offering the utmost safety.

Performance

The unique infrastructure-free geoguidance system makes the solution flexible and scalable. Stand alone or within larger fleets of robotic trucks, the P-MATIC can easily interact with the customer's environment (doors, conveyors..) and even interface with WMS/ERP. The P-MATIC will always deliver the optimal drive speed to achieve the maximum throughput.

Comfort

The P-MATIC is natively designed to work in a shared environment with people. The user-friendly interface provides all needed controls & information at a glance. Moreover, the dual driving mode makes the P-MATIC intuitive to switch automatic/manual.

Reliability

Fully integrated in the warehouse product range, the P-MATIC benefits from all Linde quality standards, and the robust "DRIVEN BY BALYO" navigation technology. Always available, the P-MATIC will support your business 24/7 while offering significant costs-savings.

Productivity

Efficiency at work, efficiency in servicing.

With a computerized & remote diagnostic system, combined with predictive maintenance program, the P-MATIC remains available at any time.

Features

Driving system

- Standard truck converted into a robotic truck
- Dual driving mode - automatic/manual
- Navigation laser, safety front scanner, 3D camera, embedded computer, emergency stop buttons, light and sound warning indicators



Geoguidance navigation

- Innovative infrastructure-free technology (no reflector)
- Relies on existing structural features (walls, columns, racks...)
- Real time mapping and localization
- Seamless integration in existing layouts, gradual extension or global deployment



Smart safety

- Real time speed-adaptive detection fields
- Dynamic cornering detection fields
- Autonomous decision-making capability with 3D camera
- Natural cohabitation with operators and other trucks
- Pallets or obstacles detection thanks to the rear laser scanner



User interface

- 7" LCD touch screen
- Robotic truck, battery and system status
- Real time task management and report
- Intuitive path localization
- Service mode with PIN access
- Log extraction via USB



Operations management

- Trailers transport management
- Stand alone or WMS/ERP directed
- Supervisor software for task and smart traffic management
- Various task triggers: call buttons, sensors, PLCs, Supervisor software ...

Subject to modification in the interest of progress. Illustrations and technical details could include options and not binding for actual constructions. All dimensions subject to usual tolerances.

Technical Data according to VDI 2198

Characteristics	1.1	Manufacturer		LINDE/BALYO
	1.2	Model designation		P-MATIC
	1.2a	Series		1190
	1.3	Power unit		Battery
	1.4	Operation		Robotic/manual
	1.5	Load capacity/Load	Q (t)	5.0
	1.7	Rated tractive force	F (N)	1800
Weights	1.9	Wheelbase	y (mm)	1050 ¹⁾
	2.1	Service weight	(kg)	1080 ²⁾³⁾
Wheels/Tyres	2.3	Axle load without load, front/rear	(kg)	634 / 446
	3.1	Tyres rubber, SE, pneumatic, polyurethane		Polyurethane
	3.2	Tyre size, front		Ø 254 x 102
	3.3	Tyre size, rear		2x Ø 250 x 80
	3.4	Auxiliary wheels (dimensions)		2x Ø 100 x 40
	3.5	Wheels, number front/rear (x = driven)		1x + 2 / 2
	3.6	Track width, front	b10 (mm)	544 ¹⁾
Dimensions	3.7	Track width, rear	b11 (mm)	675 ¹⁾
	4.8	Height of seat/stand on platform	h7 (mm)	710 / 910
	4.9	Height of tiller arm in operating position, min/max	h14 (mm)	1020 / 1120
	4.12	Towing coupling height	h10 (mm)	300 / 290 / 345 / 400
	4.17	Rear overhang	l5 (mm)	365
	4.19	Overall length	l1 (mm)	1750 ⁴⁾
	4.21	Overall width	b1/b2 (mm)	798 / 790
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	40
	4.35	Turning radius	Wa (mm)	1485 ⁵⁾
	4.36	Minimum pivoting point distance	b13 (mm)	1360
Performance	5.1	Travel speed, with/without load	(km/h)	8 / 8
	5.5	Tractive force, with/without load	(N)	1800
	5.6	Maximum tractive force, with/without load	(N)	4000
	5.7	Climbing ability, with/without load	(%)	<3.0 / 14.0
	5.8	Maximum climbing ability, with/without load	(%)	5.0 / 14.0
	5.9	Acceleration time, with/without load	(s)	6.5 / 4.6
Drive	5.10	Service brake		Electro-magnetic
	6.1	Drive motor, 60 minute rating	(kW)	3
	6.2	Lift motor, rating at S3 15%	(kW)	1.7
	6.3	Battery according to DIN 43531/35/36 A,B,C,no		no
	6.4	Battery voltage/rated capacity (5h)	(V/Ah)	24 / 375
	6.5	Battery weight (± 5%)	(kg)	295
Others	6.6	Power consumption according to VDI cycle	(kWh/h)	1.16
	8.1	Type of drive control		LAC
	8.4	Noise level at operator's ear	(dB(A))	< 70

1) (± 5 mm)
 2) Figures with battery, see line 6.4/6.5.
 3) (± 10%)
 4) +10mm with hook

5) ± 0 mm = 3 PzS lateral; + 100 mm = 3 PzS vertical and 4PzS lateral;
 + 150 mm = 4 PzS vertical; + 225 mm = 4 PzS vertical

Standard Equipment/Optional Equipment

Standard Equipment

Navigation module on a robust frame with lighting signals, control panel, touch screen, communication module, navigation laser, front safety scanner, traction & steering software management
 Drive wheel and tandem load wheels polyurethane
 Lateral change 4PzS
 Pre-setting for wet battery
 Key switch truck access
 Lighting status column
 3D camera for volume perception (technical conditions apply)

Optional Equipment

Pre-setting for gel battery
 Fixed battery stand 2 batteries
 Cable/connector Flex
 Cable/connector Perfect
 3 m cable extension
 2D curtain laser
 Blue spots single
 Additional louder horn
 Call button (COMBOX)

