Linde Material Handling

Tow Tractors

P60 – P80

Capacity 6.0 t – 8.0 t | Series 1191

Convenient power packs

→ Decoupled and sprung wheel attachment of all three wheels for quiet and safe journeys

→ Large amount of pulling power and small turning radius for exceptional handling performance even in tight spaces

→ More leg room, adjustable operator's seat and steering wheel angle, and intuitively arranged control elements for a high degree of operating comfort

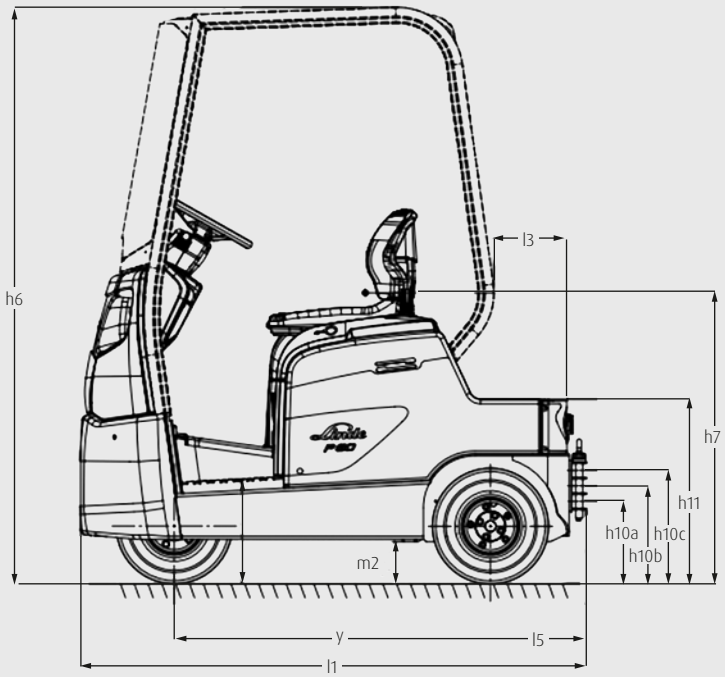
→ Towing power of 6 to 8 tonnes for efficient transport of goods

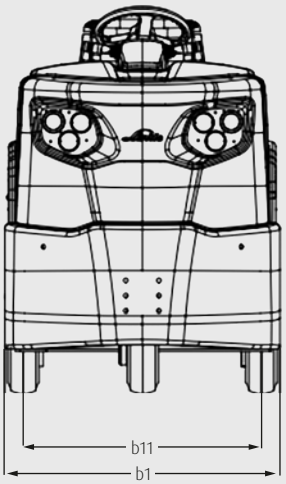
→ Maximum speed without load of 20 km/h for fast empty runs

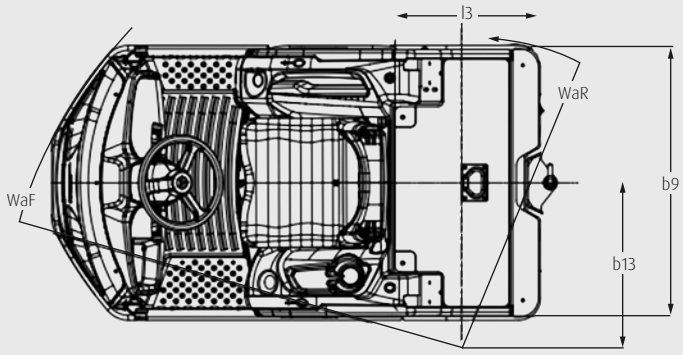
TECHNICAL DATA (According to VDI 2198)

Characteristics	1.1	Manufacturer		Linde MH	Linde MH
	1.2	**Model**		**P60**	**P80**
	1.2a	Series		1191-01	1191-01
	1.3	Power unit		Battery	Battery
	1.4	Operation		Seat	Seat
	1.5	Load capacity / Load	Q (t)	0.15 / 6.0 [1) 2)]	0.15 / 8.0 [1) 2)]
	1.7	Rated tractive force	F (N)	1200	1600
	1.9	Wheelbase	y (mm)	1190 [3)]	1190 [3)]
Weights	2.1	Service weight	kg	1260 (1515) [4) 5)]	1280 (1535) [4) 5)]
	2.2	Axle load with load, front / rear	kg	550 / 860 (662 / 1003) [4) 5)]	560 / 870 (672 / 1013) [4) 5)]
	2.3	Axle load without load, front / rear	kg	550 / 710 (662 / 853) [4) 5)]	560 / 720 (672 / 863) [4) 5)]
Wheels / Tyres	3.1	Tyres rubber, SE, pneumatic, polyurethane		Pneumatic	Pneumatic
	3.2	Tyre size, front		4.00-8 / 6PR	4.00-8 / 6PR
	3.3	Tyre size, rear		4.00-8 / 6PR	4.00-8 / 6PR
	3.5	Wheels, number front / rear (x = driven)		1 / 2x	1 / 2x
	3.7	Track width, rear	b11 (mm)	860 [3)]	860 [3)]
Dimensions	4.7	Height of overhead guard (cabin)	h6 (mm)	1915 / (2070) [3)]	1915 / (2070) [3)]
	4.8	Seat height relating to SIP / stand height	h7 (mm)	1020 [3)]	1020 [3)]
	4.12	Towing coupling height	h10 (mm)	285, 340, 395 [3)]	285, 340, 395 [3)]
	4.13	Platform height, unladen	h11 (mm)	645	645
	4.16	Loading platform, length	l3 (mm)	520 (265) [5)]	520 (265) [5)]
	4.17	Rear overhang	l5 (mm)	350	350
	4.18	Loading platform, width	b9 (mm)	900 [3)]	900 [3)]
	4.19	Overall length	l1 (mm)	1830 [3)]	1830 [3)]
	4.21	Overall width	b1 / b2 (mm)	996 [3)]	996 [3)]
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	135 [6)]	135 [6)]
	4.35	Turning radius	Wa (mm)	1650 [7)]	1650 [7)]
	4.36	Minimum pivoting point distance	b13 (mm)	600	600
Performance	5.1	Travel speed, with / without load	km / h	12 / 20	10 / 20
	5.5	Tractive force, with / without load	N	1200	1600
	5.6	Maximum tractive force, with / without load	N	6500	6500
	5.7	Climbing ability, with / without load	%	see tow diagrams	see tow diagrams
	5.8	Maximum climbing ability, with / without load	%	see tow diagrams	see tow diagrams
	5.10	Service brake		Electric / hydraulic	Electric / hydraulic
Drive	6.1	Drive motor rating S2 60 min	kW	4.5 (AC)	4.5 (AC)
	6.3	Battery according to DIN 43531 / 35 / 36 A,B,C,no		43 531 A	43 531 A
	6.4	Battery voltage / rated capacity (5h)	(V) / (Ah) o. kWh	48 / 375	48 / 375
	6.5	Battery weight (±5 %)	kg	560	560
	6.6	Power consumption according to VDI cycle	kWh / h	3.84 (cycl. 2012)	4.27 (cycl. 2012)
Others	8.1	Type of drive unit		Electronic / stepless	Electronic / stepless
	10.7	Sound pressure level LpAZ (at the driver's seat)	dB(A)	60	60
	10.8	Towing coupling, design / type, DIN 15 170		see option list	see option list

1) Based on level, dry surface with rolling resistance of 200N / t. Refer to tow diagrams for specific operating conditions and when the application involves inclines or ramps
2) Load capacity (carrying on platform) 150 kg
3) (±5 mm)
4) (±10 kg)
5) Values in parenthesis with cabin
6) (±2 mm)
7) (±20 mm)

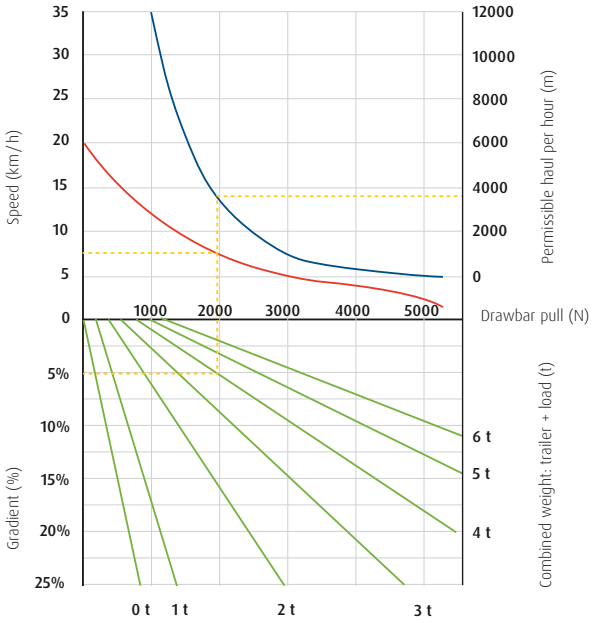

h6
l3
h7
h11
h10a
h10c
h10b
m2
y
l5
l1


b11
b1

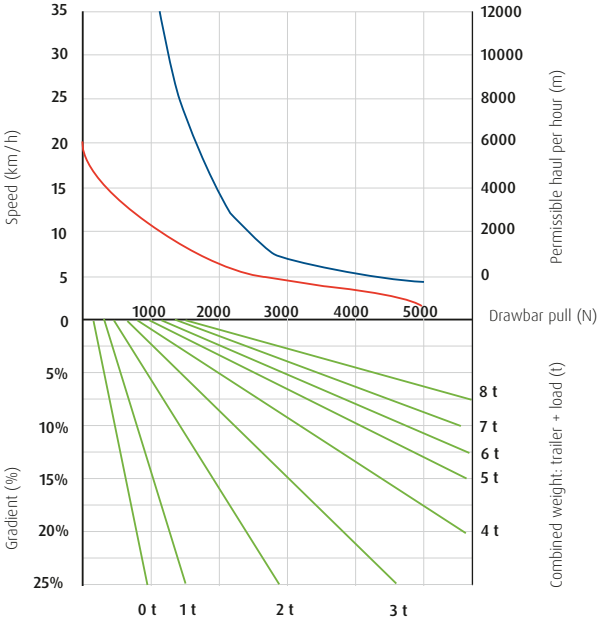

l3
WaR
WaF
b9
b13

TOW DIAGRAMS

P60



P80



Example

Permissible haul per hour (m)*

Speed (km/h)

Load (t)

* The permissible haul per hour is the total distance travelled, including the return journey and any downhill gradients.

The example shown illustrates a tractor that is transporting 4 t, on a ramp of 5% gradient, with a maximum driving speed of 7.5 km/h and a maximum travel distance of 3700 m per hour.

Information

Unbraked trailer load recommendation

	P60	P80
Maximum recommended unbraked trailer load	2.5 t	2.5 t

For trailer loads exceeding 2.5 tons and for all trailer loads where a gradient is involved it is recommended that braked trailers are used.

STANDARD AND OPTIONAL EQUIPMENT

	Model / Equipment	P60	P80
Safety	Linde Curve Assist	●	●
	Constant speed on gradients	●	●
	Emergency circuit isolator	●	●
	Duplicated fail-to-safe-circuitry	●	●
	Lap belt	○	○
	Electric horn	●	●
Service	Heavy-duty steel chassis	●	●
	Easy service access to all key components	●	●
	Diagnostic computer port (CAN bus system)	●	●
Digitalisation	Digital interactive display	●	●
	Battery discharge status & working hours	●	●
	Travel speed (km/h)	●	●
	Power setting adjustment	●	●
	Indicators & information for optional equipment	●	●
Operation/ Load Handling	Front tubular mounting for optional equipment such as mirrors, pad holder, data terminals etc. (only without cabin)	○	○
	Vertical pole at the rear for optional equipment such as beacon, bin etc.	○	○
	Opportunity charging	○	○
	On-board charger	○	○
Environment	Linde high frequency AC traction controller is sealed against the ingress of dust and water	●	●
	Individual travel speed reduction	○	○
	Audible warning in reverse	○	○
	Several modular cabin versions like sun protection, roof & windows, flexi doors, full metal doors, cabin heating	○	○
Electronics	Sealed and reverse polarity protected connectors ensure excellent vibration proof contact	●	●
	Inching control (forwards & backwards) on both sides at the rear chassis	○	○
	Pedestrian traction buttons (forwards traction only) on both sides of the chassis for order picking applications	○	○
	48V DIN batteries up to 375 Ah capacity	○	○
	Battery roll-off adapter, for use with pallet truck	○	○
Workplace	Generous storage compartments	●	●
	Auxiliary power supply socket (12 V) in dashboard	●	●
	Key switch	●	●
	PIN code access	○	○
	Adjustable PVC covered seat	●	●
	Deluxe seat with mechanical suspension	○	○
	Deluxe Super Comfort with air suspension and heating	○	○
Tractor	Three wheel configuration for optimum manoeuvrability	●	●
	Excellent stability	●	●
	Side battery exchange, 48V circuit	●	●
	Single pedal accelerator and direction lever	●	●
	Rear multi-position towing coupling	●	●
Attachment / Couplings	3 position hook (rear)	●	●
	Rockinger 244D auto. (rear)	○	○
	3 position hook (front)	○	○
	Rockinger 244D auto. (front)	○	○
	Metal front protection shield	○	○
Axles and Tyres	Pneumatic tyres	●	●
	Superelastic SE 4.00 x 8	○	○
	Superelastic SE non marking	○	○
Drive and Braking System	Two stage travel speed selection	●	●
	Resilient cushioning and swinging arm suspension on all three wheels	●	●
	4,5 kW sealed AC drive motor	●	●
	Four independent braking systems	●	●
	Regenerative electric braking as accelerator released	●	●
	Automatic electro-magnetic parking brake	●	●
	Gradient hold control & start assist without roll-back	●	●
	Self adjusting hydraulic drum brakes on all three wheels	●	●
Lighting	Lighting systems (bulb or LED)	○	○
	Road lighting LED	○	○
	Add. LED rear light, high	○	○
	Working light LED, Pos. 7	○	○

● Standard equipment ○ Optional equipment

CHARACTERISTICS

Road lighting LED

Safety

→ Four separate braking systems for efficient braking in all operating situations
→ Hill-start assist to prevent the truck from rolling backwards on gradients
→ Good all-round view and solid steel chassis for optimum protection for the operator and the work area

Intuitive automotive layout

Ergonomics

→ Easily accessible and intuitively arranged control elements for efficient truck operation
→ Large access area with rounded corners and non-slip steps to enable the operator to enter the truck effortlessly
→ Large, easily accessible storage compartments for work equipment

Airport application

Handling

→ Modular concept with equipment options such as sun protection, side windows, sliding doors and enclosed, heated cabs for maximum flexibility
→ 4.5 kW AC drive motor for considerable towing power
→ Precise control and small turning circle for easy manoeuvrability in narrow aisles

Easy service access to all key components

Service

→ Long maintenance intervals for high availability
→ Easy access to all the important components thanks to service-friendly design
→ Comprehensive truck diagnostics via laptop for low service costs
→ Multifunction display for the perfect overview of the truck and battery status indicators

Presented by:

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

Linde Material Handling

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