## Standard Equipment/Optional Equipment

### Standard Equipment

### General

Four wheel configuration Pneumatic tyres Platform length 2,200 mm Tractor without cab Left or right hand drive steering position Adjustable steering column Comprehensive integrated display Single pedal accelerator and direction lever Full suspension PVC driver's seat Non-suspension PVC passenger seat Hydrostatic power steering Two exterior mirrors Remote inching control Automatic single position, rear towing coupling Trailer lighting socket Dual circuit hydraulic disc brakes on all four wheels Standard colour scheme - vermilion and charcoal grey Full road lighting Heated rear screen (with full cabin)

### **Optional Equipment**

### Platform length 2,600 mm

- Cab with front and rear screens, wipers and washers, and two Automatic single position, front and/or rear exterior mirrors: - without sides or - with flexible roll up sides or
- hinged doors
- Optional cab with front and rear screen wipers/washers Electric or diesel heater High torque (2 x 10 kW) drive motor only with 320 Ah battery
- Rear lights mounted high at rear of cab
- Reverse warning beeper
- Contoured solid (superelastic) tyres

### Electronics

80 V circuit/Highly efficient energy saving system 2 x 2.5 kW maintanance free AC drive motor Advanced Linde AC digital controller Precise control of speed and acceleration Programmable performance parameters

### Batteries and chargers

80V, 210 to 320 Ah to IEC Easy battery change A range of chargers is available to suit application

### Safety

Keyswitch Emergency circuit isolator Fail-to-safe circuitry Traction isolated by seatswitch and/or parking brake Electrical overload protection Comprehensive warning lights Electric horn

### Towing couplings:

- Automatic single position, remote, rear - Multi-position, front and/or rear 240 mm rear coupling extension Remote inching control Aluminium lift-out side panels Hinged aluminium side panels with or without flexible cover and framework Fabric covered seats Heated seats Full suspension passenger seat Alternative colour schemes



## Safety

The heavy duty chassis and cab module provide assured protection for the operator while three independent braking systems deliver responsive stopping power for all situations including automatic speed control descending gradients. A low centre of gravity ensures outstanding stability.

### Performance

With the dual capability carrying 2 tonne on the platform and towing nominal loads of 4.5 tonne, the W 20 offers flexible high performance which is optimised by the Linde digital AC control system that provides precise, energy saving control of acceleration and speed for high productivity.

### Comfort

A low step facilitates access to spacious operator's cabin where the automotive layout of the pedals, direction lever, steering wheel and controls, together with a fully adjustable suspension seat provides a comfortable and fatigue-free working environment. Cab suspension dampers and a spring damped suspension system front and rear ensures superb levels of driving comfort.

### Reliability

Designed for intensive heavy duty applications the rugged, robot-welded chassis is constructed from heavy section steel plate for optimum torsional stiffness and rounded corners for high resistance to impacts. All key components are protected within the chassis while electronic components are housed in sealed aluminium enclosures for assured reliability & long life.

### Service

Two powerful, high torque 2.5 kW AC drive motors provide impressive pulling and carrying power for a variety of applications. The energy saving Linde AC digital controller combined with excellent manoeuvrability and an intuitive interface bet-ween the operator and tractor, translates that power into ver-satile, seamless performance and high productivity.

## Linde Material Handling



# Features

### Chassis

- $\rightarrow$  Long and short platform versions
- $\rightarrow$  Robot welded heavy guage steel plate
- $\rightarrow$  Maximum torsional resistance and rigidity  $\rightarrow$  High impact protection for operator and
- components → Low profile chassis for all-round visibility



 $\rightarrow$  Hydrostatic power steering

 $\rightarrow$  Effortless manoeuvrability

 $\rightarrow$  Adjustable steering column

 $\rightarrow$  Large lock-to-lock angle

### Ergonomics

- $\rightarrow$  Ergonomic automotive pedal and control layout
- $\rightarrow$  Spacious leg and headroom
- $\rightarrow$  Storage space for documents, pens and beverage holder
- → Excellent all-round visibility

### Operator's compartment

- $\rightarrow$  Low step access to spacious cabin
- $\rightarrow$  Hinged cabin doors  $\rightarrow$  Fully adjustable comfort-class
- operator's seat  $\rightarrow$  Cabin isolated from chassis by
- hydraulic dampers  $\rightarrow$  Ergonomic automotive pedal and control layout
- → Multi-function instrument display



### Platform

- $\rightarrow$  Generously proportioned platform
- $\rightarrow$  2,200 mm or 2600 mm platform length  $\rightarrow$  Easily adapted to suit specific
- applications
- $\rightarrow$  Optional side panels and rigid covers



### Drive units

Steering

- $\rightarrow$  Two 2,5 kW maintenance-free AC drive motors
- $\rightarrow$  Integrated in drive axle with no differential required
- $\rightarrow$  Superb traction with anti-slip control
- $\rightarrow$  Reduced power to inner wheel during cornering
- $\rightarrow$  High-torque flexibility and performance



 $\rightarrow$  Three independent braking systems

 $\rightarrow$  Electric push-button parking brake

 $\rightarrow$  Regenerative electric braking as

accelerator pedal is released

disc brakes (rear)

on gradients

→ Hydraulic disc brakes (front) external

 $\rightarrow$  Superb regenerative braking control

### Serviceability

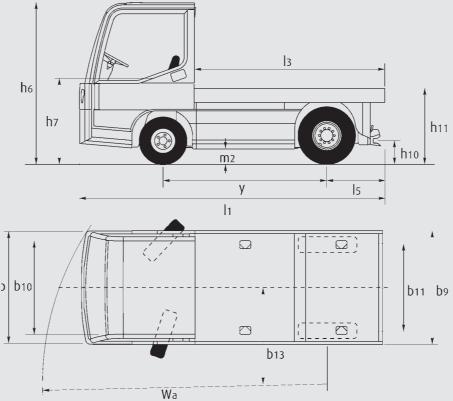
Braking

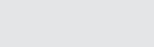
- $\rightarrow$  Easy access for maintenance and battery
- $\rightarrow$  CAN bus diagnostic facility for reduced service intervals
- $\rightarrow$  Multi-function instrument display assists scheduled maintenance planning
- $\rightarrow$  Maintenance-free AC drive technology

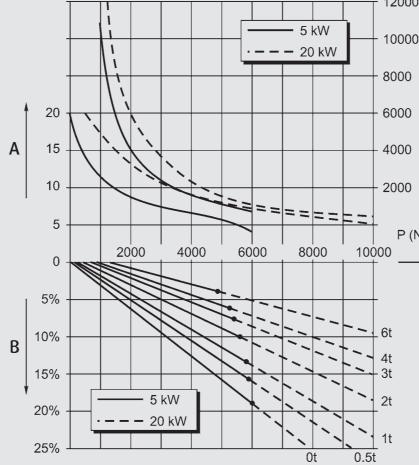


# Technical Data according to VDI 2198

	1.1	Manufacturer		LINDE	LINDE
Characteristics	1.2	Model desgination		W20 (2200)	W20 (2600)
	1.3	Power unit		Battery	Battery
	1.4	Operation		Seat	Seat
	1.5	Load capacity	Q (t)	2.0 <sup>1)</sup>	2.0 1)
	1.7	Rated tractive force	F (N)	500 / 900 - 800 / 1200 2)	500 / 900 - 800 / 1200 2)
	1.9	Wheelbase	y (mm)	1900	1900
ts	2.1	Service weight	(kg)	3100	3200
Weights	2.2	Axle load with load, front/rear	(kg)	2300 / 2800	2100 / 3100
$\geq$	2.3	Axle load without load, front/rear	(kg)	1800 / 1300	1800 / 1400
Wheels/Tyres	3.1	Tyres rubber, SE, pneumatic, polyurethane		Pneumatic	Pneumatic
	3.2	Tyre size, front		6.00 R9	6.00 R9
	3.3	Tyre size, rear		7.00 R12	7.00 R12
	3.5	Wheels, number front/rear (x = driven)		2 / 2x	2 / 2x
	3.6	Track width, front	b10 (mm)	1080	1080
	3.7	Track width, rear	b11 (mm)	1020	1020
	4.7	Height of overhead guard (cabin)	h6 (mm)	1820	1820
	4.8	Height of seat/stand-on platform	h7 (mm)	745	745
	4.12	Towing coupling height	h10 (mm)	240, 295, 350, 405	240, 295, 350, 405
	4.13	Platform height, unladen	h11 (mm)	840	840
	4.16	Loading platform, length	l3 (mm)	2200	2600
sions	4.17	Rear overhang	l5 (mm)	730	1130
Dimensions	4.18	Loading platform, width	b9 (mm)	1300	1300
Ō	4.19	Overall length	1 (mm)	3530	3930
	4.21	Overall width	b1/b2 (mm)	1300	1300
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	150	150
	4.35	Turning radius	Wa (mm)	3280	3280
	4.36	Minimum pivoting point distance	b13 (mm)	1095	1095
	5.1	Travel speed, with/without load	(km/h)	15 / 20 - 20 / 25	15 / 20 - 20 / 25
e	5.5	Tractive force, with/without load	(N)	500 / 900 - 800 / 1200	500 / 900 - 800 / 1200
Performance	5.6	Maximum tractive force, with/without load	(N)	5600 / 6000 - 9600 / 10000	5600 / 6000 - 9600 , 10000
Per	5.7	Climbing ability, with/without load	(%)	see performance graph	see performance graph
	5.10	Service brake		Electric/hydraulic	Electric/hydraulic
	6.1	Drive motor, 60 minute rating	(kW)	2x 2.5 - 2x 10 <sup>3)</sup>	2x 2.5 - 2x 10 <sup>3)</sup>
	6.3	Battery according to DIN 43531/35/36 A,B,C,no		43 536 / A	43 536 / A
Drive	6.4	Battery voltage/rated capacity (5h)	(V/Ah)	80 / 320	80 / 320
	6.5	Battery weight (± 5%)	(kg)	858	858
	6.6	Power consumption according to VDI cycle	(kWh/h)	upon request	upon request
10	8.1	Type of drive control		AC - microprocessor	AC - microprocessor
Others	8.4	Noise level at operator's ear	(dB(A))	upon request	upon request
	8.5	Towing coupling, design/type, DIN 15 170		upon request	upon request
	Refe 2) Base	ed on level, dry surface with rolling resistance of 200 N/t. er to towing. ed on level, dry surface with rolling resistance of 200N/t. rr to graph for specific operating conditions and when the applica-	3) High torq only!	inclines or ramps. ue 2x10kW motor is available in co	njunction with 320Ah battery







### Comment on diagram

Load/gradient combination by full line can be raised from stationary on the gradient. The permissible haul per hour is the total distance travelled, including the return journey and any downhill gradients. It is recommended that braked trailers are used for trailer loads exceeding 9 tons and for all trailer loads where a gradient is involved.

### 12000

10000 8000 6000

C

P (N)

→D

A =	Speed (km/h)		
B =	Gradient		
C =	Permissible haul per hour (m)		
D =	P (N) drawbar pull		
E =	Combined weight (trailed plus carried)		

Ε