

UNIRROL



















Pallet Truck:

Li-ion Powered 1.2T- 1.5T- 2.0T & AGM 2.0T

Pallet Stacker:

Li-ion or AGM Powered 1.2T, Lift height: up to 3.6m



The EDGE Smart Design Pallet Trucks Family

Performance





PTE12N

- 1.2T Capacity Li-ion
- Perfect for light-duty applications.
- Compact & skeleton design
- Fast-charging Li-ion batteries.
- Ideal for occasional operations
- Easy-battery replacement
- High maneuverability

PTE15N

- 1.5T Capacity Li-ion
- Perfect for light-duty applications.
- Compact & sharp design
- Light service weight
- Fast-charging Li-ion batteries.
- Ideal for use on retail stores, lorries.
- Easy-battery replacement





PTE20B

- 2.0T Capacity AGM
- Economic solution for heavy loads move
- Simple but robust skeleton design
- Maintenance-free Lead-acid Battery Pack
- Ideal for industrial applications
- Fast battery replacement
- Powerful drive & pump system



PTE20N

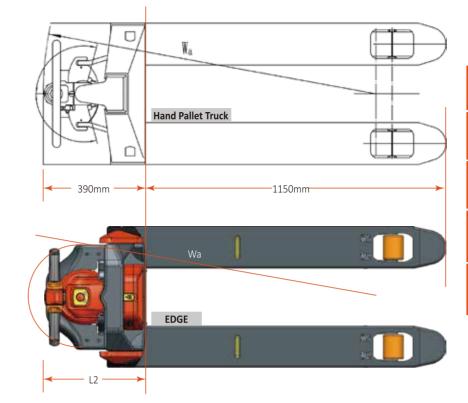
- 2.0T Capacity Li-ion
- Ultimate solution for heavy loads move
- Compact & robust design
- Fast-charging Li-ion batteries
- Easy-battery replacement
- Great grade-ability performance
- Powerful drive & pump system

Smart and Ergonomic Tillers

Compact Design and Vertical Driving

The Edge series trucks are configured with control tillers adopted to meet with application needs based on trucks designated performance.





Model	Body length (L2)	Turning Radius	Weight
PTE12N	387mm	1337mm	124kg
PTE15N	380mm	1330mm	123kg
PTE20N	386mm	1336mm	149kg
PTE20B	478mm	1428mm	175kg

RFID Card Access is Standard for PTE20N optional for all other models

RFID card provides faster access to equipment and ideal for applications when one truck needs to be used by different operators



The tiller bar is supported by the air spring which helps to return the tiller to its vertical position without strike in the end point.

PTE12N

PTE12N

PTE15N, standard for other trucks are equipped with speed reduction function it urns. (Optional for PTE12N and PTE15N, standard for other trucks)

The value of speed reduction is adjustable according to customers preferences.



Our engineers put a lot of efforts to achieve compactness of the trucks in comparison with traditionally used manual and semi-electric products in order to provide full-electric solutions with high efficiency to replace old-fashioned low productive manual and semi-electric equipment and significantly reduce probability of injuries of operators caused by manual pumping or pushing/ pulling. At the same time, the service weight is minimized without compromising the robustness of the trucks esp. for delivery applications where the self-weight of the trucks is critical.

The function of driving with tiller in the **vertical position** helps with work in confined areas, especially in elevators and lorries without sacrificing of safety.



Smart & Replaceable Batteries for Pallet Trucks

The*PTE xxN trucks are equipped with maintenance-free Li-ion batteries, optional capacities for various applications are available, with its fast charging and opportunity charging features (charge whenever you want and as long as time allows) the operation time can be extended significantly.

All pallet trucks batteries are located in battery compartments securely, any possibility of movement is excluded, therefore the reliability of power supply is ensured.

*: xx=Capacity

Light weight of the battery(max. 8kg) and the easiest way of fast battery replacement allows even a female operator to double the working time within seconds. The light weight of the batteries can be achieved through use of Li-ion battery type with high ratio of energy density to its self-weight.

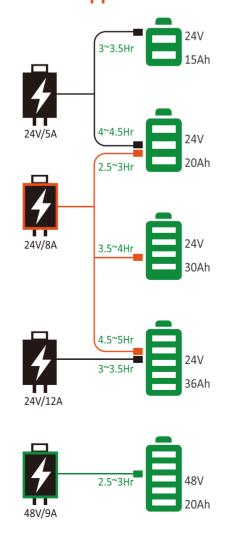




All Li-ion batteries are equipped with on-board Battery Management System (BMS), which provides mandatory control of all important parameters of the battery during charging and operation. With this control, the safety of Li-ion battery during the whole life-cycle is guaranteed. The Li-ion batteries are certified according to international safety transportation(by sea and by air) and operation standards. The BMS communicates with control system of the truck via CAN, the support of the CAN protocols allows to monitor the condition of the battery and make its diagnosis with help of special software which is available for our partners.

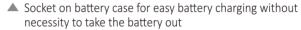


Optional different battery capacities from 20Ah to 36Ah for various applications



Manage your working time with selection of batteries and chargers





The *PTE xxN trucks remains unpowered while charger is connected with the battery charging socket even if the charger is disconnected from the power outlet, therefore, the safety is ensured and the possibility to damage the charger is excluded.

*: xx=Capacity



min. 2.5 hours | Excellent

working time



The positioning of the battery inside the battery compartment is fast and easy thanks to specially designed battery guiding system



▲ Battery cases for pallet trucks are made out of ABS PC material with 15% of glass

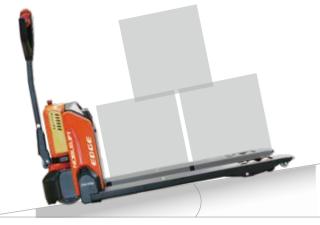


The PTE 20B truck is equipped with maintenance-free AGM battery pack, the charging time is 8 hours.

With the smart design, the battery pack can be replaced when it is necessary to double the operation time.



Gradeablity Performance & Robustness



The Edge series trucks have great performance on ramps even when they are fully loaded regardless their economic positioning, each truck based on its performance level can climb on sufficient level of ramp, therefore, every customer can select the truck with consideration of particular working environment.

Model	PTE12N	PTE15N	PTE20N	PTE20B
Max. grade ability laden	4%	6%	7%	5%
Max. grade ability unladen	16%	16%	16%	16%

The frame of truck is surrounded by stamped steel elements making the truck looking different and also ensuring the protection of components for PTE15N and PTE20N

Forks of the truck with shape for easy entrance and exit from pallets for PTE15N, PTE20B and

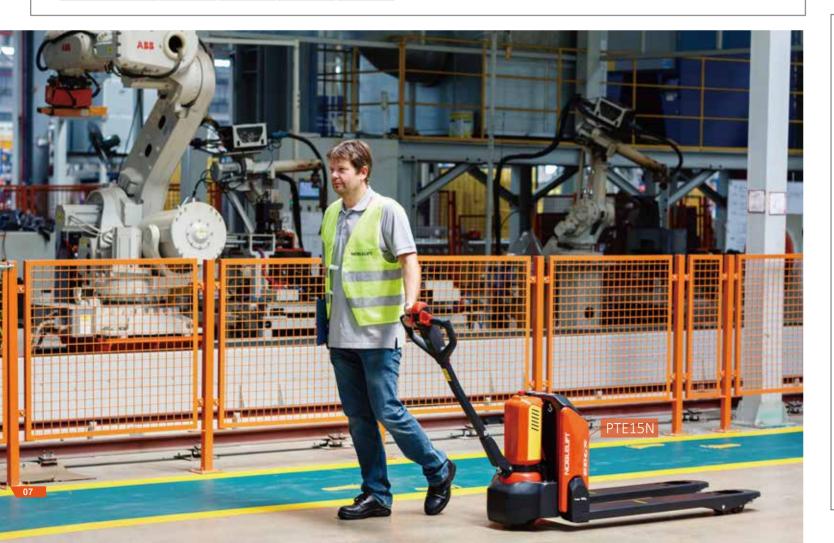
Full length double sided C-shape reinforcements of forks significantly increase strength and rigidity of frame.

Strong steel apron **protects** the operator's feet during work and secures the truck's components from collisions with objects.





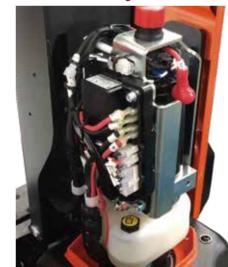






Maintenance Friendly

Drive motor with intelligent Curtis control





For the pallet trucks there are no hoses or pipes used in the hydraulic lifting circuit which significantly improves **reliability** and reduces the amount of potential problems related to leakages through connectors or their seals.

The trucks are equipped with **Curtis** controllers, **CAN-bus** technology makes the diagnostic and troubleshooting easier. The use of proved and certified components helps to ensure the conformity to international safety standards with all the supporting documents available as required by law.



₋ Capac	itv		
	Ready	Min Vo l t	Max Volt
[]	24.50V	0mV	0mV
17.6%	24.300	Avg Vo l t	Communication
	0.00A	0.0mV	Normal

- Realtime ———		
neartime		
Rated Capacity 60.0 Ah	Wh(Current) 0.0	Wh Reset
Discharge Cycle	Discharge Cycle	
Times	Times	
Othor		

Other ———		
Name	Value	Units
Ce ll Temp1	25.3	C
Ce ll Temp1	25.1	C
SOC	45	1/255
Power Temp	27.1	C
Envir Temp	32.2	C
Cell Volt Alarm	none	
Total Volt Alarm	none	
Current Alarm	none	
Temp Alarm	none	
Balance Alarm	none	

Volt —		
Name	Value	Units
Cell	3507	mV
Total	24.5	V
Current	0.0	А
Run(Wh)	0	Wh

Each battery can be diagnosed via CAN connection with help of special software tool, the software can provide information about the battery condition such as balance of cells, amount of charging/discharging cycles, current, energy consumption, temperature, charging/discharging parameters, voltage of every cell, faults and alarms, settings of timing for automatic turn off.

The **EDGE** Smart Design Pallet Stackers

PSE12B

• 1.2T Capacity AGM

• Perfect for light-duty applications.

- Compact & light service weight
- High maneuverability
- Maintenance-free Lead-acid Battery
- Integrated on-board 12A charger
- Ideal for use on mezzanines

PSE12N

- 1.2T Capacity Li-ion
- Perfect for light-duty applications.
- Compact & light service weight
- High maneuverability
- Fast-charging Li-ion batteries.
- Integrated on-board 25A charger
- Ideal for use on mezzanines
- Ultimate solution for light duty operations





Standard For PSE12B and PSE12N





Emergency-reverse &Horn Buttons

Dual butterfly-style thumb driving controls

Electric lifting and lowering

RFID Card Access is optional for PSE12B and standard for PSE12N

RFID card provides faster access to equipment and ideal for applications when one truck needs to be used by different operators



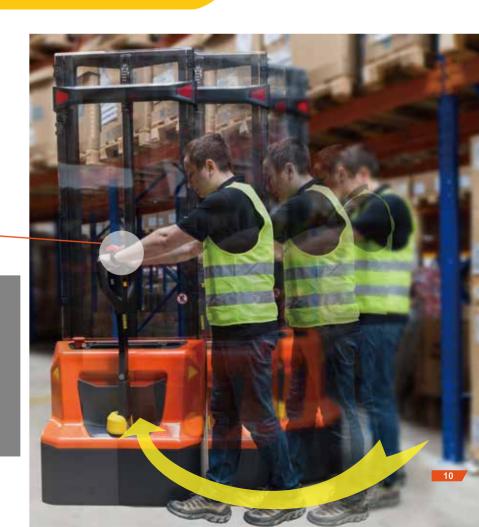
Vertical Driving in Confined Space



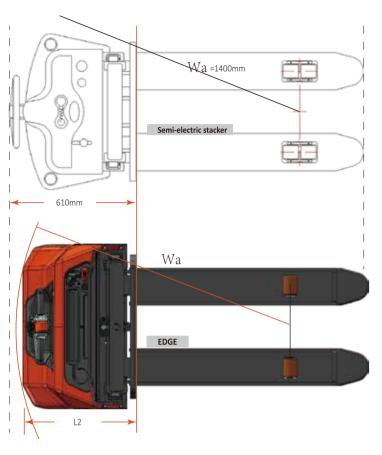
The function of driving with tiller in the **vertical position** helps with work in confined area without sacrificing of safety.

The tiller bar is supported by the air spring which helps to return the tiller to its vertical position without strike in the end point.

safety the trucks are equipped with speed reduction function in turns.



Smart Design with Compact Size and Perfect observation



Model	PSE12B	PSE12N
length(L2)	560mm	560mm
Turning Radius	1350mm	1350mm

Our engineers put a lot of efforts to achieve compactness of the trucks in comparison with traditionally used manual and semi-electric products without sacrificing of stability, robustness, safety and operation comfort.



Wide mast provides perfect observation of forks, the field of view is clear and not interrupted by mast sections, cylinder or chains.



The operator can always clearly see the forks which significantly increases safety of operation

Robustness

Gradeablity Performance





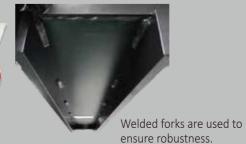


Tiller is made out of PA6 30% of glass fiber material, having high strength.

Capacity of 1200kg with high residual value at maximum height (load center distance 600 mm)

Real mast profiles are used for long life-time, no cheap bended solutions used. All directed to maintain performance of the truck during its life-cycle.







Maintenance Friendly

STANDARD CONFIGURATION & OPTIONS FOR EDGE FAMILY

Convenient and fast access to any component of the truck, no elements are located in areas difficult to reach. No Special tools are required.



Capacity —			
	Ready	Min Volt	Max Volt
רח	24.50V	0mV	0mV
17.6%	24.500	Avg Volt	Communication
	0.00A	0.0mV	Normal

Rated Capacity 60.0 Ah Wh(Current) 0.0 Wh Reset Discharge Cycle Discharge Cycle Times	Realtime		
	Discharge Cycle	Discharge Cycle	Wh Reset

┌ Other ──		
Name	Value	Units
Cell Temp1	25.3	C
Cell Temp1	25.1	C
SOC	45	1/255
Power Temp	27.1	C
Envir Temp	32.2	C
Cell Volt Alarm	none	
Total Volt Alarm	none	
Current Alarm	none	
Temp Alarm	none	
Balance Alarm	none	

┌ Volt		
Name	Value	Units
Cell	3507	mV
Total	24.5	V
Current	0.0	А
Run(Wh)	0	Wh

The software diagnostic tool for lithium batteries can provide full information about battery's condition and its current status. (The above values are for reference only.)

Battery **M**anagement System

CAN-bus

The BMS of battery controls charging and discharging parameters, working temperature, short circuits, has sleeping mode and is able to turn off the power in case of emergency. Communication with BMS and software adjustment is possible via CAN



The electric system is using CAN communication protoco increasing reliability of the system.



SE12B

2x12 85Ah (5Hr) AGM maintenance free batteries are used.

Optionally available 2x12 106Ah (5Hr).



PSE12N

24V 60Ah Lithium LiFePO4 pattery with BMS. Lithium battery has connection minals with screws and ocated inside the steel cas



For PSE12N the charger with current 25A is used The standard charging time is 2.5 hours Opportunity charging supported

For PSE12B the charger

with current 12A is used

The standard charging

ime is 7 hours

The PSE 12N stacker is equipped with maintenance-free 24V/60Ah LiFePO4 type Li-ion battery with fast charging and ultra-high number of charging /discharging cycles during life time; opportunity charging feature basically does not limit your operation time. The integrated BMS provides the same features as the BMS for the batteries of pallet trucks(refer to pallet truck section).

The on-board charger with 25A current can provide full charge for less than 2.5 hours with great efficiency.

The PSE 12B stacker is equipped with 2x12V 85Ah VRLA-AGM maintenance free batteries. Optionally available 2x12V 105Ah batteries for longer operation.

The stacker is equipped with 12A on-board charger. The charging time is 7-8 hours, opportunity charging is not available.



STANDARD PTE12N PTE15N PTE20N PTE20B PSE12B PSE12N **CONFIGURATION OR OPTIONS** Li—ion Li-ion Li-ion AGM AGM Li—ion Standard Battery 48V/20Ah 24V/15Ah 24V/20Ah 48V/20Ah 2x12V/85Ah 24V/60Ah Li-ion Battery 24V/20Ah 0 S 0 0 Li-ion Battery 24V/30Ah 0 0 Li-ion Battery 24V/36Ah 0 AGM 2x12V/106Ah (5 Hr) _ _ _ _ Standard Charger 24V / 5A 24V / 5A 48V / 9A 48V / 3A 24V / 12A 24V / 25A Li-ion Charger 24V/5Ah S S with optional Li-ion Charger 24V/8Ah 0 battery only with 36Ah with 36Ah Li-ion Charger 24V/12Ah battery only battery only Curtis controller S BMS S S S S **CAN-communication** Speed Reduction at Turning S 0 0 S S S Vertical drive/Pin wheel Fast battery replacement S S S S Entry Roller S Single Fork Roller S S S S S S Tandem Fork Rollers 0 0 0 0 On-board charger S S Stability Castors 0 0 High traction drive wheel tyre 0 0 _ Fork length 800/900/1000mm 0 0 0 0 Fork width 370/550/570mm 0 _ Load backrest(42/48/60") 0 0 Pin Code Access 0 S S 0 S S **RFID Access** 0 0 S 0 \bigcirc LED Indicators on Tiller S LCD Display on Tiller 0

Various Options (Pallet Truck)



Optional tandem fork rollers



Optional high traction drive wheel Optional Stability Casters



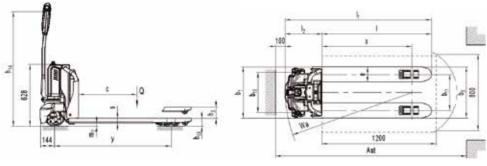
S=Standard

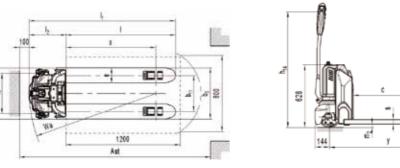
O=Optional



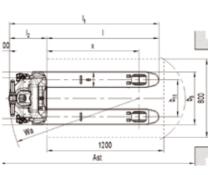
— =not available

Optional backrest





P.4.		
	144 el y	

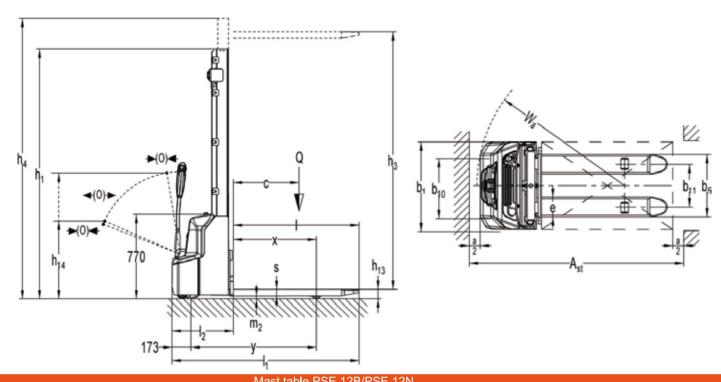


	100	, t	
20 4 A		1-	j j j g
144 Ef y	No.	1200 Ast	

Type sheet for industrial truck	acc. to VDI	2198	
Distinguishing mark			
1.2 Manufacturer's type designation		PT E	12N
1.3 Drive	 -	Bati	tery
1.4 Operator type	 	Pedes	strian
1.5 Load Capacity / rated load	Q(t)	1.	.2
1.6 Load centre distance	c (mm)	60	00
1.8 Load distance, centre of drive axle to fork	x (mm)	94	12
1.9 Wheelbase	y (mm)	11	85
Weight	, ,	104	120
2.1 Service weight	kg	124	129
2.2 Axle loading, laden front/rear	kg	355 / 972	425 / 908
2.3 Axle loading, unladen front/rear	kg kg	101 / 27	106 / 27
Tyres, chassis	1	Dalamath	ana (DLI)
3.1 Tires 3.2 Tire size, front		Polyureth	×70
3.3 Tire size, rear	x w (mm) x w (mm)	80×93(
3.4 Additional wheels(dimensions)	x w (mm)	-/ 80	
3.5 Wheels, number front/rear(x=driven wheels)	- X W (IIIII)	1x/2(1x/4) or $1x/2(1x/4)$	
3.6 Tread, front	b10 (mm)	-/4	
3.7 Tread, rear	b11 (mm)	380	525
Dimensions			
4.4 ¦Lift	h3 (mm)	11	5
4.9 Height of tiller in drive position min./ max.	h14 (mm)	700 /	1160
4.15 Height, lowered	h13 (mm)		0
4.19 Overall length	11 (mm)	15	37
4.20 Length to face of forks	12 (mm)	38	37
4.21 Overall width	b1 (mm)	540	685
4.22 Fork dimensions	s/e/1 (mm)	48 / 160) / 1150
4.25! Width across forks	b5 (mm)	540	685
4.32 Ground clearance, centre of wheelbase	m2 (mm)	3	2
4.34 ¹ Aisle width for pallets800X1200 lengthways (200mm safe distance)	Ast (mm)	20	07
4.35 Turning radius	Wa (mm)	13	37
Performance Data			
5.1 Travel speed, laden/ unladen	km/h	4.6/	4.8
5.2 Lift speed, laden/ unladen	m/s	0.031 /	0.037
5.3 Lowering speed, laden/unladen	m/s	0.069 /	0.051
5.8 Max. gradeability, laden/ unladen	0/0	4 /	
5.10 Service brake		Electron	
Electric- engine			
6.1 Drive motor rating S2 60min	kW	0.0	65
6.2 Lift motor rating at S3 10%	kW	0.:	50
6.3 Battery acc. to DIN 43531/35/36 A, B, C, no	,	N	О
6.4 Battery voltage, nominal capacity K5	V/Ah	24/	15
6.5 Battery weight	kg	4.	4
6.6 Energy consumption acc. to VDI cycle	kWh/h	0.	14
Addition Data			
8.1 Type of drive control		DC speed	d Control
8.4 Sound level at driver's ear acc. to EN 12053	dB(A)	<	
	1		

Type sheet for industrial truck	acc. to VD	l 2198	
Distinguishing mark	1		
1.2 Manufacturer`stype designation	 	PT E15N	PT E20N
.3 Power(battery,diesel,petrolgas,manual)	 		ittery
.4 Operator type			estrian
.5 Load Capacity / rated load	Q(t)	1.5	2.0
1.6 Load centre distance	c (mm)		500
1.8 Load distance ,centre of drive axle to fork	<u>x (mm)</u>	947	951
1.9 Wheelbase Weight	y (mm)	1185	1189
2.1 Service weight	kg	123 126	149 153
2.2 ¦Axle loading, laden front/rear			
2.3 Axle loading, raden front/rear	kg	623/1000 626/1000 96/27 99/27	0 621/1528 625/1528 115/34 119/34
Tyres, chassis	¦ kg	90/21 99/21	113/34 119/34
3.1 ¦Tires	1	Polyuret	thane (PU)
3.2 Tire size, front	x w (mm)		0×70
3.3 Tire size,rear	x w (mm)	80×93	B(80×70)
3.4 Additional wheels(dimensions)	x w (mm)	80	0×30
3.5 Wheels,number front/rear(x=driven wheels)		1x/2(1x/4) or	1x + 2/2(1x + 2/4)
3.6 Tread, front	b10 (mm)		120
3.7 Tread, rear	b11 (mm)	380 525	380 525
Dimensions 4.4 ¦Lift height	h3 (mm)	1	115
4.9 Height of tiller in drive position min. / max.	h14 (mm)		/ 1160
4.15 Height, lowered	h13 (mm)		80
4.19 Overall length	11 (mm)		1536
4.20! Length to face of forks	12 (mm)	380	386
4.21 Overall width	b1 (mm)		540 685
4.22 Fork dimension			
+	s/e/l (mm)		540
4.25 Width across forks	b5 (mm)		540 685
4.32 Ground clearance, centre of wheelbase	m2 (mm)	 	33
4.34 Aisle width for pallets800X1200 lengthways	Ast (mm)	2000	2006
4.35 ¹ Turning radius	Wa (mm)	1330	1336
Performance	,		
5.1 Travel speed, laden/ unladen	km/h	4.6/ 4.8	4.8/ 5.2
5.2 Lift speed, laden/ unladen	m/s	0.020 / 0.025	0.017 / 0.022
5.3 Lowering speed, laden/ unladen	m/s	0.05 / 0.04	0.05 / 0.03
5.8 Gradeability, laden/ unladen	%	6/16	7 / 16
5.10 Service brake	1	Electro	magnetic
Motors	1-W/	0.65	0.75
6.1 Drive motor rating S2 60min	kW	0.65	
5.2 Lift motor rating at S3 10%	kW	0.50	0.8
6.3 Battery acc. to DIN 43531/35/36 A, B, C, no			/
5.4 Battery voltage, nominal capacity K5	V/Ah	24/20(24/30;24	/36) 48/20
6.5 Battery weight (minimum)	kg	4.6	7.5
6.6 Energy consumption acc. to VDI cycle	kWh/h	0.22	0.18
Addition Data			
8.1 Type of drive control	i I	DC spec	ed Control
8.4 Sound level at driver's ear acc. to EN 12053	dB(A)	<	70

Velight Value Va	Type sheet for industrial tru	ck acc. to VD	l 2198	
1.2 Manufacturer's type designation	Distinguishing mark			
1.3 Power(battery, diesel, petrolgas, manual) Battery	The state of the s		PT E2	20B
1.4 Operator type	. – – + – – – – – – – – – – – – – – – –		Batte	ery
1.5 Load Capacity / rated load Q(f) 2.0				
1.6 Load centre distance c (mm) 600		Q(t)	2.0)
1.8 Load distance centre of drive axle to fork x (mm) 946 y (mm) 1281	;			
1.9 Wheelbase y (mm) 1281				
Veight	1.9 Wheelbase			
2.2 Axle loading, laden front/rear kg 670 / 1515 673 / 1519	Weight	, (
2.3 Axle loading, unladen front/rear kg	2.1 Service weight	kg	185	192
2.3 Axle loading, unladen front/rear kg	2.2 Axle loading, laden front/rear	kg !	670 / 1515	673 / 1519
Tires				
Tires Polyurethane (PU) 3.2 Tire size, front x w (mm) 210×70 3.4 Additional wheels(dimensions) x w (mm) 80×30(80×70) 3.4 Additional wheels(dimensions) x w (mm) 80×30 3.5 Wheels, number front/rear(x=driven wheels) 1x/2(1x/4) or 1x+2/2(1x+2/4) 3.6 Tread, front 510 (mm) 420 3.7 Tread, rear 511 (mm) 380 525 5				
3.3 Tire size,rear x w (mm) 80×93(80×70) 3.4 Additional wheels(dimensions) x w (mm) 80×30 3.5 Wheels,number front/rear(x=driven wheels) 1x/ 2(1x/ 4) or 1x +2/ 2(1x +2/ 4) 3.6 Tread, front b10 (mm) 420 3.7 Tread, rear b11 (mm) 380 525 525 Dimensions b12 (iff height h3 (mm) 115 4.9 Height of tiller in drive position min./ max. h14 (mm) 700 / 1160 4.15 Height, lowered h13 (mm) 80 4.19 Overall length 11 (mm) 1628 4.20 Length to face of forks 12 (mm) 47/ 160 / 1150 4.21 Overall width b1 (mm) 540 685 4.22 Fork dimensions s/e/1 (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance	3.1 Tires		Polyuretha	ane (PU)
3.4 Additional wheels (dimensions) x w (mm) 80×30 3.5 Wheels, number front/rear(x=driven wheels) 1x/2(1x/4) or 1x+2/2(1x+2/4) 3.6 Tread, front 510 (mm) 420 3.7 Tread, front 511 (mm) 380 525	3.2 Tire size, front	x w (mm)	210>	<70
1x/2(1x/4) or 1x +2/2(1x +2/4)	3.3 Tire size,rear	x w (mm)	80×93(8	30×70)
3.6 Tread, front 510 (mm) 420 3.7 Tread, rear 511 (mm) 380 525 525	3.4 Additional wheels(dimensions)	x w (mm)	80×	30
Dimensions Discourage Dimensions Discourage Dis	3.5 Wheels,number front/rear(x=driven wheels)		1x/2(1x/4) or $1x$	+2/2(1x +2/4)
Dimensions 4.4 Lift height h3 (mm) 115 4.9 Height of tiller in drive position min./ max. h14 (mm) 700 / 1160 4.15 Height, lowered h13 (mm) 80 4.19 Overall length 11 (mm) 1628 4.20 Length to face of forks 12 (mm) 478 4.21 Overall width b1 (mm) 540 685 4.22 Fork dimensions s/e/1 (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance 5.1 Travel speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors Lift motor rating S2 60min kW 0.8 6.2 Lift motor rating at S3 10%	3.6 Tread, front		420	0
4.4 Lift height h3 (mm) 115 4.9 Height of tiller in drive position min./ max. h14 (mm) 700 / 1160 4.15 Height, lowered h13 (mm) 80 4.19 Overall length 11 (mm) 1628 4.20 Length to face of forks 12 (mm) 478 4.21 Overall width b1 (mm) 540 685 4.22 Fork dimensions s/e/1 (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance	1 /	b11 (mm)	380	525
4.9 Height of tiller in drive position min./ max. h14 (mm) 700 / 1160 4.15 Height, lowered h13 (mm) 80 4.19 Overall length l1 (mm) 1628 4.20 Length to face of forks l2 (mm) 478 4.21 Overall width b1 (mm) 540 685 4.22 Fork dimensions s/e/1 (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance Max (mm) 1428 5.1 Travel speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors Electromagnetic 6.1 Drive motor rating 82 60min kW 0.75 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery weight (minimum) kg 30 6		1.2 ()	1.1	-
Height, lowered				
11 (mm) 1628 12 (mm) 478 420 Length to face of forks 12 (mm) 478 421 Overall width b1 (mm) 540 685 4.22 Fork dimensions s/e/1 (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428				
4.20 Length to face of forks 12 (mm) 478 4.21 Overall width b1 (mm) 540 685 4.22 Fork dimensions s/e/1 (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance S.1 Travel speed, laden/ unladen km/h 4.2 / 4.6 5.2 Lift speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors Motors				
4.21 Overall width b1 (mm) 540 685 4.22 Fork dimensions s/e/l (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance 5.1 Travel speed, laden/ unladen km/h 4.2/ 4.6 5.2 Lift speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors Electromagnetic 6.1 Drive motor rating S2 60min kW 0.8 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery acc. to DIN 43531/ 35/ 36 A, B, C, no No 6.4 Battery weight (minimum) kg 30 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data DC speed Con	4	!		
4.22 Fork dimensions s/e/l (mm) 47 / 160 / 1150 4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance 5.1 Travel speed, laden/ unladen km/h 4.2/ 4.6 5.2 Lift speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors Electromagnetic 6.1 Drive motor rating S2 60min kW 0.75 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery weight (minimum) kg 30 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data DC speed Control				
4.25 Width across forks b5 (mm) 540 685 4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance		bl (mm)	540	685
4.32 Ground clearance, centre of wheelbase m2 (mm) 33 4.34 Aisle width for pallets800X1200 lengthways Ast (mm) 2098 4.35 Turning radius Wa (mm) 1428 Performance 5.1 Travel speed, laden/ unladen km/h 4.2/ 4.6 5.2 Lift speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors 6.1 Drive motor rating S2 60min kW 0.75 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery weight (minimum) kg 30 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data 8.1 Type of drive control DC speed Control	4.22 Fork dimensions	s/e/l (mm)	47 / 160	/ 1150
Ast (mm) 2098	4.25 Width across forks	b5 (mm)	540	685
Performance	4.32 Ground clearance, centre of wheelbase	m2 (mm)	33	
Performance	4.34 Aisle width for pallets800X1200 lengthway	s Ast (mm)	209	8
5.1 Travel speed, laden/ unladen km/h 4.2/ 4.6 5.2 Lift speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors 6.1 Drive motor rating S2 60min kW 0.75 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery voltage, nominal capacity K5 V/Ah 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data 8.1 Type of drive control DC speed Control	4.35 Turning radius	Wa (mm)	142	8
5.2 Lift speed, laden/ unladen m/s 0.025 / 0.030 5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors 6.1 Drive motor rating S2 60min kW 0.75 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery voltage, nominal capacity K5 V / Ah 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data 8.1 Type of drive control DC speed Control	Performance			
5.3 Lowering speed, laden/ unladen m/s 0.075 / 0.063 5.8 Max. gradeability, laden/ unladen % 5 / 16 5.10 Service brake Electromagnetic Motors 6.1 Drive motor rating S2 60min kW 0.75 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery voltage, nominal capacity K5 V / Ah 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data 8.1 Type of drive control DC speed Control	5.1 Travel speed, laden/ unladen	km/h	4.2/	4.6
5.8 Max. gradeability, laden/ unladen 5.10 Service brake Motors 6.1 Drive motor rating S2 60min 6.2 Lift motor rating at S3 10% 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no 6.4 Battery voltage, nominal capacity K5 C5 / 16 Electromagnetic NO NO 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle Addition Data 8.1 Type of drive control DC speed Control	5.2 Lift speed, laden/ unladen	m/s	0.025 /	0.030
5.8 Max. gradeability, laden/ unladen 5.10 Service brake Motors 6.1 Drive motor rating S2 60min 6.2 Lift motor rating at S3 10% 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no 6.4 Battery voltage, nominal capacity K5 C5 / 16 Electromagnetic NO NO 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle Addition Data 8.1 Type of drive control DC speed Control	5.3 Lowering speed, laden/unladen	m/s	0.075 /	0.063
5.10 Service brake Motors 6.1 Drive motor rating S2 60min	+		5 / 1	 16
Motors 6.1 Drive motor rating S2 60min kW 0.75 6.2 Lift motor rating at S3 10% kW 0.8 6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery voltage, nominal capacity K5 V/Ah 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data DC speed Control	+			
6.2 Lift motor rating at S3 10%	Motors			Ü
6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery voltage, nominal capacity K5 V/Ah 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle Addition Data 8.1 Type of drive control DC speed Control	6.1 Drive motor rating S2 60min	kW	0.7	5
6.3 Battery acc. to DIN 43531/35/36 A, B, C, no No 6.4 Battery voltage, nominal capacity K5 V/Ah 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle Addition Data 8.1 Type of drive control DC speed Control	6.2 Lift motor rating at S3 10%	kW	0.8	3
6.4 Battery voltage, nominal capacity K5 V/Ah 48/20 6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data 8.1 Type of drive control DC speed Control	+	10	No)
6.5 Battery weight (minimum) kg 30 6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data 8.1 Type of drive control DC speed Control	¦			
6.6 Energy consumption acc. to VDI cycle kWh/h 0.19 Addition Data 8.1 Type of drive control DC speed Control	+			
Addition Data 8.1 Type of drive control DC speed Control				
8.1 Type of drive control DC speed Control	6.6 Energy consumption acc. to VDI cycle	kWh/h	0.1	9
	Addition Data			C 1
8.4 Sound level at driver's ear acc. to EN 12053 dB(A) <70	4	 		
	8.4 Sound level at driver's ear acc. to EN 12053	dB(A)	<70	0



Mast table FSE 12b/FSE 12N					
Designation	Lowered mast height h1 (mm)	Free lift height h2 (mm)	Lift height h3 (mm)	Extended mast height h4 (mm)	Lift + fork height h3 + h13(mm)
Single stage most	1930	1514	1514	1930	1600
Single-stage mast	2330	1914	1914	2330	2000
	1930	-	2814	3337	2900
Two-stage mast	2080	-	3114	3637	3200
	2280	_	3514	4037	3600



		idustrial truck acc	:. to VDI 2198		
Distingui	shing mark				
1.2	Manufacturer's type designation		PS E12B	PS E12N 600	
1.3	Power (battery ,diesel, petrol, gas, manual)	-		600 attery	
1.4	Operator type			estrian	
1.5	Load Capacity / rated load	Q(t)		1.2	
1.6	Load centre distance	c (mm)		500	
1.8	Load distance ,centre of drive axle to fork	x (mm)		760	
1.9	Wheelbase	y (mm)	1	147	
Veight					
2.1	Service weight	kg	620	585	
2.2	Axle loading, laden front/rear	kg ¦	580 / 1240	560 / 1225	
2.3	Axle loading, unladen front/rear	kg	450 / 170	440 / 145	
yres, ch			Dalana	and have	
$-\frac{3.1}{3.2}$	Tires	-		rethane 210×70	
3.3	Tire size, front Tire size, rear	$-\frac{x \text{ w (mm)}}{x \text{ w (mm)}} - \frac{1}{1}$		84×93	
3.4	Additional wheels(dimensions)	$\frac{1}{x} = \frac{x \cdot w \cdot (mm)}{x \cdot w \cdot (mm)} = \frac{1}{x}$		00×50	
3.5	Wheels,number front/rear(x=driven wheels)			+ 1 / 2	
3.6	Tread, front	b10 (mm)		550	
3.7	Tread, rear	b11 (mm)	400) / 515	
imensio					
4.2	Lowered mast height	h1 (mm)	2.	280	
4.3	Free Lift height	$\frac{h^2}{1 - h^2}$ (mm)			
4.4	Lift height	h3 (mm)	3514		
4.5	Extended mast height	h4 (mm)		037	
4.9	Height of tiller in drive position min./ max.	h14 (mm)		/1150	
4.15	Height, lowered	h13 (mm)	86		
4.19	Overall length	11 (mm)	1710		
4.20	Length to face of forks	12 (mm)	560		
4.21	Overall width	b1 (mm)	800		
4.22	Fork dimensions	s/e/1 (mm)	60 / 180 / 1150		
4.25	Distance between fork-arms	b5 (mm)	570 /685		
4.32	Ground clearance, centre of wheelbase	m2 (mm)	26		
4.33	Aisle width for pallets 1000X1200 crossways	Ast (mm)	2197		
4.34	Aisle width for pallets 800X1200 lengthways	Ast (mm)	2145		
4.35	Turning radius	Wa (mm)	1350		
erforma	ance Data				
5.1	Travel speed, laden/ unladen	km/h	4.5/ 4.7		
5.2	Lift speed, laden/ unladen		0.12 / 0.19		
5.3	Lowering speed, laden/ unladen	m/s	0.13 / 0.11		
5.8	Max. gradeability, laden/ unladen	%	5 / 10		
5.10	Service brake		Electromagnetic		
lectric-					
6.1	Drive motor rating S2 60min	kW	0.65		
6.2	Lift motor rating at S3 4.5%	kW	2.2		
6.3	Battery acc. to DIN 43531/35/36 A, B, C, no		No		
6.4	Battery voltage, nominal capacity K5	V/Ah	2x12/85 ¹⁾ 24/60		
6.5	Battery weight +/-5%	kg ¦	2x27 ²⁾ 19		
6.6	Energy consumption acc: to VDI cycle	kWh/h	0.8		
Additiona					
8.1	Type of drive control		DC		
8.4	Sound level at driver's ear acc. to EN 12053	dB(A)	<70		
1) Onti-	on: 2x12V/106Ah				

1) Option: 2x12V/106Ah

2) 2x12V/106Ah : 2 x 34