

# WSA Series

## Heavy-duty Li-ion Stacker 1200-1600kg

**EP**  
Let's grow together



- Heavy duty stacker designed around Li-ion battery
- High efficiency thanks to the fast lifting and lowering speeds
- Great stacking precision with the proportional lifting control system
- Compact size to maneuver in confined space
- Fast and flexible charging thanks to the integrated charger
- Improved cover with storage space and USB outlet for daily convenience



Manufacturer			EP	EP
Model designation			WSA121	WSA161
Drive			Electric	Electric
Load capacity	Q	kg	1200	1600
Load center distance	c	mm	600	600
Service weight		kg	955	1070
Retracted mast height	h1	mm	1970	2015
Lift height	h3	mm	2915	2915
Length to face of forks	l2	mm	714	774
Overall width	b1/b2	mm	810	810
Fork dimensions	s/e/l	mm	65/170/1150	65/170/1150
Turning radius	Wa	mm	1446	1506
Max. gradeability, laden/unladen		%	8/16	8/16
Travel speed, laden/unladen		km/h	5/5.5	5/5.5
Lifting speed, laden/unladen		m/s	0.23/0.3	0.23/0.3
Lowering speed, laden/unladen		m/s	0.4/0.36	0.4/0.36
Battery voltage/nominal capacity		V/Ah	24/100	24/100

## FEATURE

### Fast stacking speeds and great precision

The WSA series features significantly improved lifting and lowering speeds and can lift forks to 4.5m in 15 seconds. This contributes to fast stacking and maximized turnover efficiency in warehouses. Besides, this truck comes with the proportional lifting system as standard and enables the operator to stack and retrieve pallets more precisely and gently in multi-level racking.



### Improved design combined with practical features

The WSA Series introduces a modern and strong design that will be the new brand identity for the EP equipment warehouse products. Design with users in mind, the strong cover provides storage space and USB outlet. The operator can take documents and stuff in the dedicated pocket, and charge the electronic device on the go without extra fuss.



### Agility and visibility for better operation experience

The WSA series demonstrates a compact size with shorter L2 than the ES-WA series and naturally brings a smaller turning radius. This makes it particularly suitable for moving loads in confined spaces. The WSA161 adopts two side cylinders as standard and offer better visibility.



### Lithium technology with integrated charger

The WSA161 is fully designed around the advantages of lithium technology, with 24V/100Ah Li-ion battery and an integrated charger, which allows for flexible and rapid charging and zero maintenance. 24V/205Ah Li-ion battery is optionally available for long operating period.

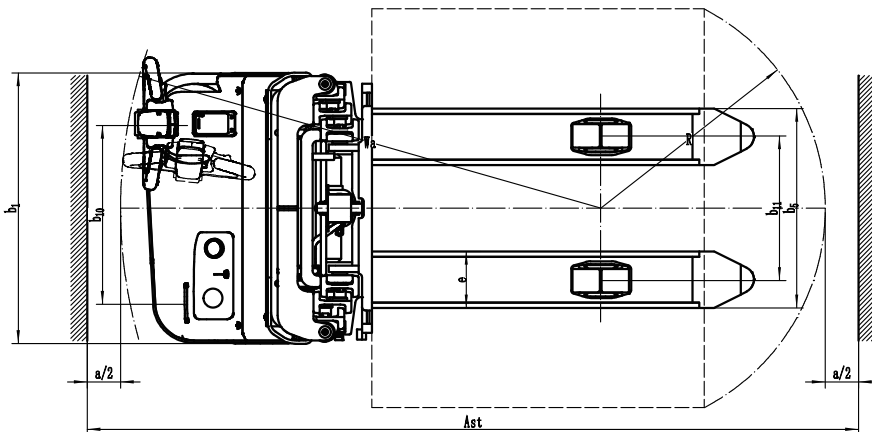
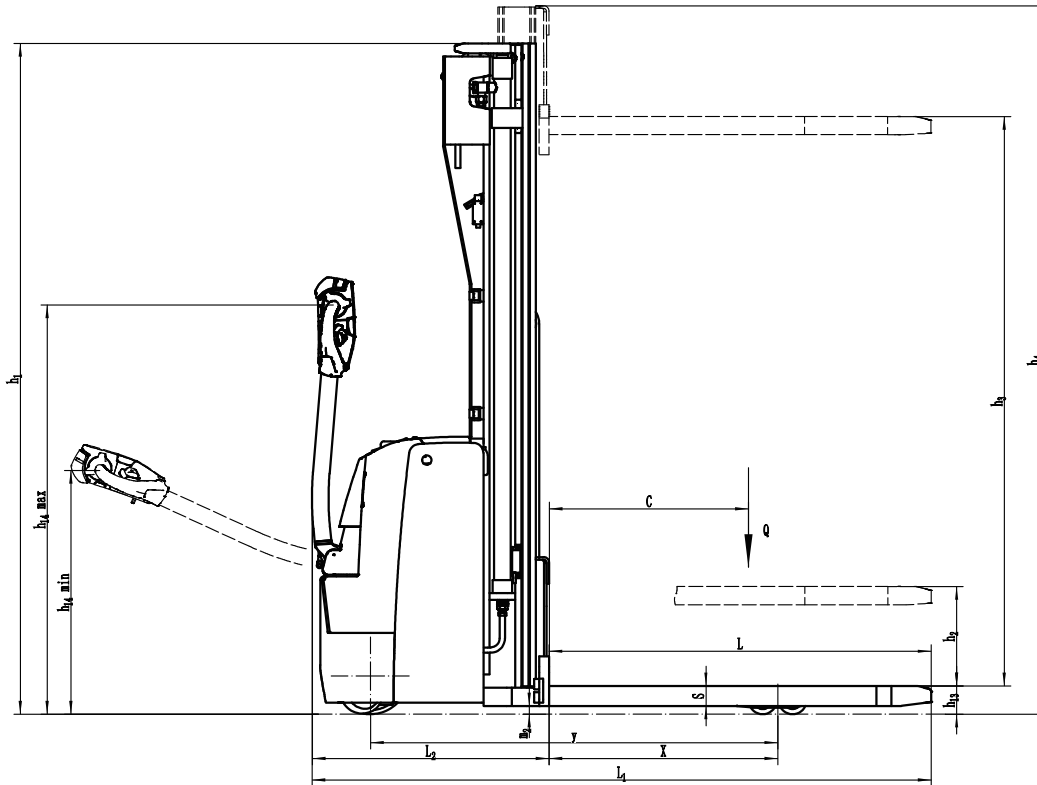


# Heavy-duty stacker 1.2/1.6T

## WSA121/161

Distinguishing mark	1.1	Manufacturer			EP	EP
	1.2	Model designation			WSA121	WSA161
	1.3	Drive			Electric	Electric
	1.4	Operator type			Pedestrian	Pedestrian
	1.5	Load capacity	Q	kg	1200	1600
	1.6	Load center distance	c	mm	600	600
	1.8	Load distance, centre of drive axle to fork	x	mm	690	690
	1.9	Wheelbase	y	mm	1196	1261
	Service weight	2.1	Service weight		kg	955
2.2		Axle loading, laden front/rear		kg	715/1440	780/1890
2.3		Axle loading, unladen front/rear		kg	645/310	730/340
Tyres/chassis	3.1	Tyre type			Polyurethane	Polyurethane
	3.2.1	Tyre size, front		mm	Φ230×75	Φ230×75
	3.3.1	Tyre size, rear		mm	Φ85×70	Φ85×70
	3.4	Additional wheels (caster wheels)		mm	Φ130×55	Φ130×55
	3.5	Wheels, number front/rear (x=drive wheels)		mm	1x +1/4	1x +1/4
	3.6.1	Tread width, front	b10	mm	538	538
	3.7.1	Tread width, rear	b11	mm	406	406
Dimensions	4.0	Max. Lift Height	H	mm	3000	3000
	4.2	Retracted mast height	h1	mm	1970	2015
	4.3	Free lift	h2	mm	\	\
	4.4	Lift height	h3	mm	2915	2915
	4.5	Height, mast extended	h4	mm	3425	3495
	4.6	Initial lift	h5	mm	\	\
	4.9	Height of tiller handle in drive position min./max.	h14	mm	715/1200	715/1200
	4.10	Height of wheel arms	h8	mm	\	\
	4.15	Lowered height	h13	mm	90	90
	4.19	Overall length	l1	mm	1864	1924
	4.20	Length to face of forks	l2	mm	714	774
	4.21	Overall width	b1/b2	mm	810	810
	4.22	Fork dimensions	s/e/l	mm	65×170×1150	65×170×1150
	4.24	Fork carriage width	b3	mm	750	750
	4.25	Distance between fork-arms	b5	mm	570	570
	4.26	Distance between wheel arms/loading surfaces	b4	mm	\	\
	Performance data	4.31	Ground clearance, laden, below mast	m1	mm	25
4.32		Ground clearance, center of wheelbase	m2	mm	25	25
4.34.1		Aisle width for pallets 1000×1200 crossways	Ast	mm	2323	2383
4.34.2		Aisle width for pallets 800×1200 lengthways	Ast	mm	2296	2356
4.35		Turning radius	Wa	mm	1446	1506
5.1		Travel speed, laden/unladen		km/h	5/5.5	5/5.5
5.2		Lifting speed, laden/unladen		m/s	0.23/0.3	0.23/0.3
5.3		Lowering speed, laden/unladen		m/s	0.4/0.36	0.4/0.36
5.8		Max. gradeability, laden/unladen		%	8/16	8/16
5.10		Service brake			Electromagnetic	Electromagnetic
Electric-engine	6.1	Drive motor rating S2 60 min		kW	1.6	1.6
	6.2	Lift motor rating at S3 15%		kW	4.5	4.5
	6.4	Battery voltage/nominal capacity		V/Ah	24V/100AH	24V/100AH
	6.5	Battery weight		kg	40	40
	Addition data	8.1	Type of drive control			AC
10.5		Steering design			Mechanical	Mechanical
10.7		Sound pressure level at the driver's ear		dB(A)	74	74

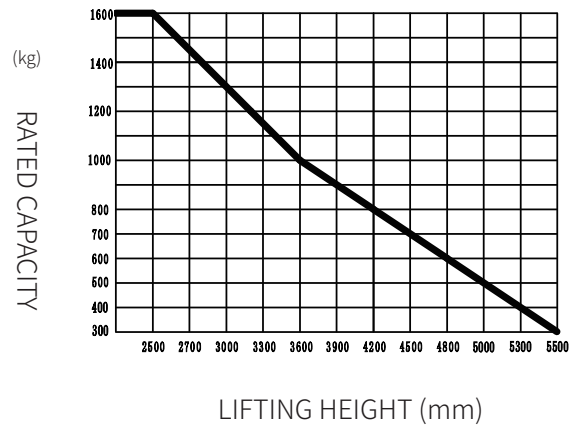
If there are improvements of technical parameters or configurations, no further notice will be given.  
The diagram shown may contain non-standard configurations.



WSA121 RATED CAPACITIES GRAPH



WSA161 RATED CAPACITIES GRAPH



# Mast Option

## WSA121

Mast types	Lift height h3+h13 (mm)	Height, mast lowered h1 (mm)	Free lift h2 (mm)	Height, mast extended h4 (mm)
2-Stage Single Cylinder Mast	2500	1720	\	2935
	2700	1820	\	3135
	3000	1970	\	3435
	3300	2120	\	3735
	3600	2270	\	4035
	3900	2420	\	4335
2-Free Mast	2650	1815	1320	3118
	2950	1962	1470	3412
	3250	2115	1620	3718
3-Free Mast	4000	1820	1345	4445
	4500	2020	1545	4945
	4800	2115	1645	5245

## WSA161

Mast types	Lift height h3+h13 (mm)	Height, mast lowered h1 (mm)	Free lift h2 (mm)	Height, mast extended h4 (mm)
2-Wide Mast	2600	1815	\	3095
	3000	2015	\	3495
	3300	2185	\	3835
	3600	2312	\	4089
	3900	2462	\	4389
	4150	2592	\	4649
2-Free Mast	2650	1815	1320	3118
	2950	1962	1470	3412
	3250	2115	1620	3718
3-Free Mast	4000	1820	1345	4445
	4500	2020	1545	4945
	4800	2115	1645	5245
	5000	2185	1715	5445
	5500	2385	1915	5945

# Option

No.	Optional items	WSA121
1.1	Fork dimension	●1150*570○1150*685
1.3	Fork lowered height	●90
1.4	Fork carriage width	●750
1.5	backrest height	●388
2.1	Load wheel type	●Double
2.2	Load wheel material	●PU
2.3	Drive wheel material	● PU○ Trace PU○ Rubber
2.7	Battery capacity	●100Ah Li-ion
2.8	Charger	●24V-30A internal (Li-ion)
2.9	Battery indicator	●With time( bluetooth)
3.3	Castor wheels	●Yes and not customized
3.4	Water auto-filling system	●No
3.7	Warning lamp	●No○Yes and not customized
3.9	Blue lamp	●No○Yes and not customized
3.10	Area warning lamp	●No○Yes and not customized
3.11	Rearview mirror	●No○Yes and not customized
3.12	Buzzer	●No○Yes and not customized
3.16	Turtle speed	●Yes and not customized
3.23	Telematics	●No○Yes and not customized
3.26	The British standard cannot walk when charged	●No○Yes and not customized
3.27	USB outlet	●Yes and not customized
4.1	Battery side pull function	●No
4.2	Cold storage	●No
4.5	Proportional lift system	●Yes and not customized
5.3	Keypad option	●No○Yes and not customized

Note: ●Standard ○ Optional - Inconformity

No.	Optional items	WSA161
1.1	Fork dimension	●1150*570○1150*685
1.3	Fork lowered height	●90
1.4	Fork carriage width	●750
1.5	backrest height	●388
2.1	Load wheel type	●Double
2.2	Load wheel material	●PU
2.3	Drive wheel material	● PU○ Trace PU○ Rubber
2.7	Battery capacity	●100Ah Li-ion○205AH Li-ion○210AH Lead-acid○240AH Lead-acid
2.8	Charger	●24V-30A internal (Li-ion) ○24V-100A external (Li-ion)○24V-30A external (Lead-acid)
2.9	Battery indicator	●With time( bluetooth)
3.3	Castor wheels	●Yes and not customized
3.4	Water auto-filling system	●No○Yes and not customized (only for Lead-acid battery)
3.7	Warning lamp	●No○Yes and not customized
3.9	Blue lamp	●No○Yes and not customized
3.10	Area warning lamp	●No○Yes and not customized
3.11	Rearview mirror	●No○Yes and not customized
3.12	Buzzer	●No○Yes and not customized
3.16	Turtle speed	●Yes and not customized
3.23	Telematics	●No○Yes and not customized
3.26	The British standard cannot walk when charged	●No○Yes and not customized
3.27	USB outlet	●Yes and not customized
4.1	Battery side pull function	●No
4.2	Cold storage	●No
4.5	Proportional lift system	●Yes and not customized
5.3	Keypad option	●No○Yes and not customized

Note: ●Standard ○ Optional - Inconformity