

Features

Truck	Standard	Options
48V permanent magnet synchronous drive motor	●	
Hydraulic power unit	●	
PU drive wheel	●	
1150mm fork length	●	
570mm outside fork width	●	
Lifting height limit: 1.8m	●	
Soft landing [only available for duplex mast]	●	
48V/80Ah lithium battery[EVE]	●	
Balance wheels	●	
Double load wheels	●	
Fork lift & lower adopts stepless speed regulating	●	
Different length of forks		○
Different width of outside fork		○
Different mast lifting heights		○
48V/105Ah lithium battery [EVE]		○
48V/125Ah lithium battery [CATL]		○
Load backrest		○
Controls and instruments		
Interactive meter	●	
Multi-function tiller	●	
PIN code access	●	
USB power supply	●	
Key switch		○
Electric steering[stand-on type]	●	
System controller	●	
Safety		
Emergency disconnect switch	●	
Turning deceleration[stand-on type]	●	
Mast protection		○
Horn	●	
Other		
48V30A charger		○
48V50A charger		○
Lithium battery[48V/80Ah,EVE] with the on-board charger[48V,20A]		○
Lithium battery[48V/105Ah,EVE] with the on-board charger[48V,20A]		○



EMCOL 



BULLDOG trucks conform to the European Safety Requirements.

X SERIES

HI-RANGE ELECTRIC STACKER
WITH LITHIUM POWER

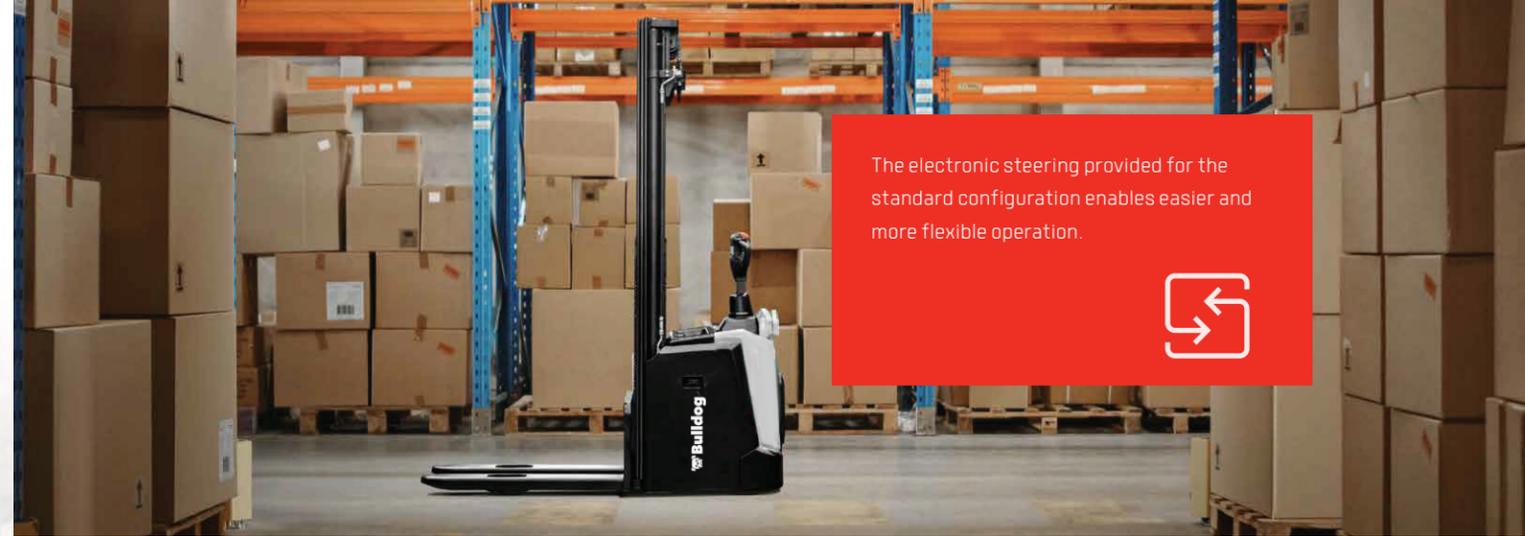
With capacity of 1,200 to 2,000kg



X SERIES HI-RANGE ELECTRIC STACKER

X series Hi-Range Electric stackers are a new generation of products newly developed by BULLDOG for warehousing and logistics applications. Using the advanced permanent magnet brushless drive technology and equipped with a new 48V system, the products have advanced performance, comfortable, safe and reliable operations and low use and maintenance costs, and are ideal tools for loading, unloading and handling palletized goods in warehouses, supermarkets and workshops.

48V
VOLTAGE
WITH
PERMANENT MAGNET
SYNCHRONOUS DRIVE MOTOR



The electronic steering provided for the standard configuration enables easier and more flexible operation.



HIGH PERFORMANCE

- With high power drive motor, provides fast travel speed and good gradeability.
- The permanent magnet synchronous drive system has excellent performance and low energy consumption. The 48V power supply system has less heat generated.
- With the VCU control, the vehicle can be controlled accurately, stably and more efficiently.



(Option) Lithium battery with the on-board charger(48V,20A)

	Pedestrian type	Stand-on type
	6.0 km/h Travel speed (laden)	9.0 km/h Travel speed (laden)
	8.0 % Gradeability (laden)(1.6t)	10 % Gradeability (laden)(1.6t)



RUGGED ON THE OUTSIDE.

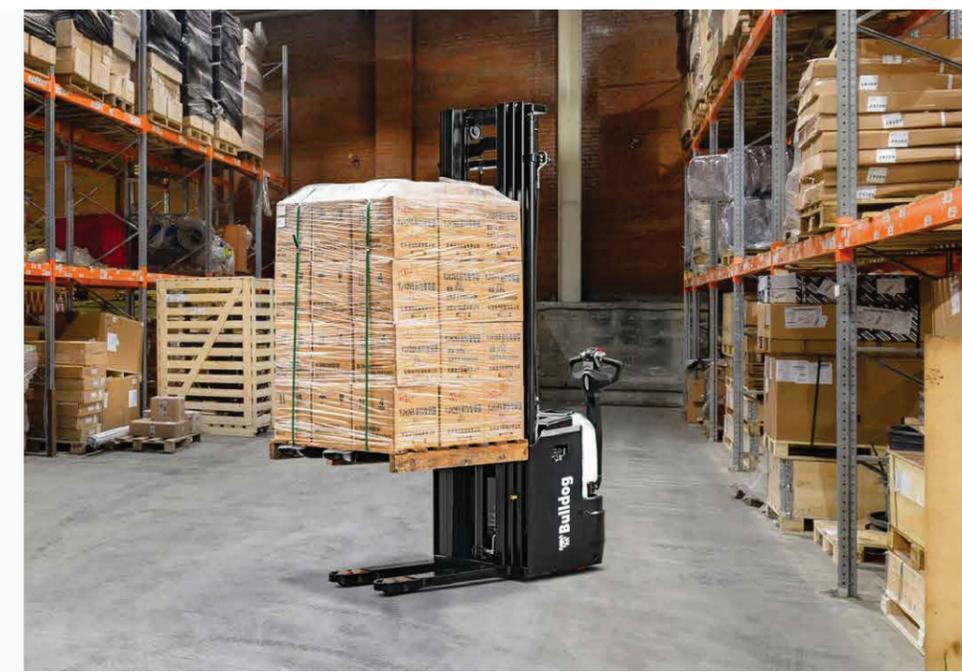
The X series Hi-Range Electric stackers adopts a professional industrial design of exterior and a series family design. The vehicle has a smooth vivid profile and a fully ergonomic design, following the latest exterior design trend.

Made of high-strength steel plates that are molded by stamping, the vehicle exterior is robust, durable and high-grade, and meets environmental protection requirements.



SIMPLE OPERATION

System Stepless lifting and descending speed regulation is provided for the standard configuration, to and spillage more precise fork control and more stable goods lifting and descending.



ENJOY YOUR WORK.

- Optimized designing structure to offer a good visibility and easy entrance of the pallet.
- The compact body and big rounded design provide an ideal operation in limited space, and the wedge designed chassis greatly increases the passing ability.



The standing driving pedal with shock-absorbing design significantly improves standing driving comfort and reduces long-time driving fatigue.



Customer can choose different width of outside fork and length of forks to fit variable pallet.

NEW TILLER

With the novelly developed compact and stylish tiller, all operations can be completed with one hand.



PIN code access

Displayed turtle speed function applied to move slowly and helps to stack goods in narrow spaces.



MAINTENANCE

- Maintenance-free permanent magnet synchronous motor.
- The fault information can be checked directly via the interactive instruments instead of the manual.
- Rear cover can be completely open, operator can see all the components, so the maintenance is very convenient.
- All shafts installed lubricated shaft sleeve and oil cup, provide convenient maintenance and long service life.



MORE PROTECT

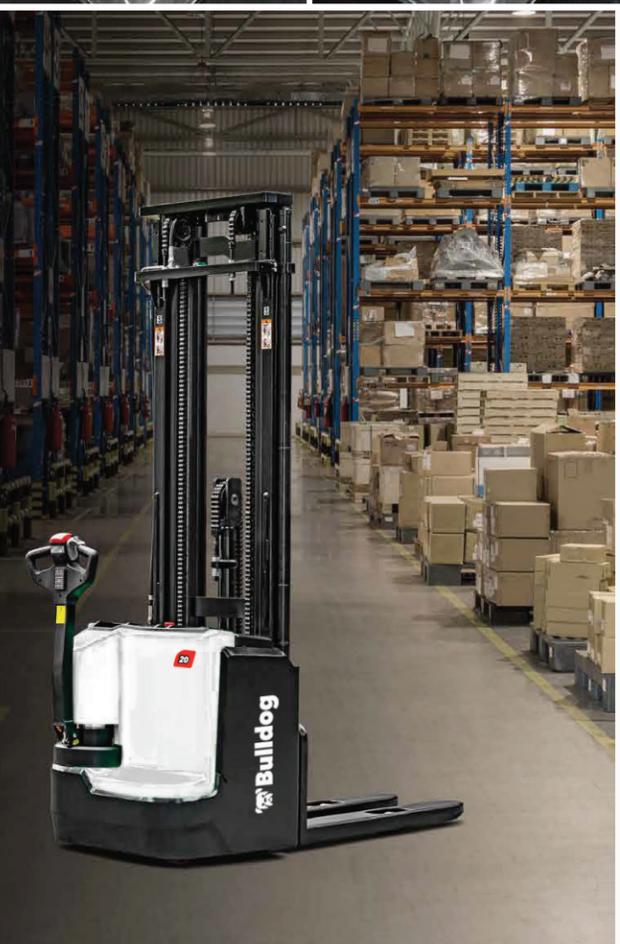
- With the four-point low center of gravity design and a high-strength steel frame structure, the vehicle frame has a large residual load capacity and a long service life.
- Using non-contact proximity switch, it can provides long life and reliable operation.
- H-type mast profile section to provide more stable and rigid performance.
- The battery is reliably fixed and the battery cover is Support by soft materials, so that the vibration and noise generated during the operation of the vehicle are reduced.



Pedestrian type use the new design drive system, the drive motor will not accompany the tiller rotation, it can keep all the cable connect to the drive motor avoid being bent.



With a low noise and low vibration hydraulic power unit to enable stable and reliable lifting and descending.



The power plug is fixed on the truck body to avoid damage from battery installment.



Punch-formed forks to provide more strength and tip guide to provide higher efficient operation.



Water-proof plugs and connectors applied to provide a reliable protection to electric system.

With three braking types:

Releasing brake, reversing brake and emergency brake, the driving safety has been ensured.



The applied slope anti-slip function ensures the safety of the operation.



The emergency button on the tiller head can effectively avoid the harm to the driver.



ADVANCED SAFETY FEATURES

1



After fork lifting 500mm.



2



Decrease speed when turning



3



Soft Landing (Lift)



4



Soft Landing (Lowering)



5



1 Travel speed will be automatically reduced after fork lifting 500mm.

2 Turning speed is automatically reduced when steering only for stand-on.

3 A lifting soft landing is provided for the standard configuration so as to ensure the safety of the vehicle when the fork is lifted to the top. (only available for duplex mast)

4 It has an intelligent soft landing that automatically slows down the lowering speed when the fork is less than 100mm above the ground, effectively protecting cargo safety. (only available for duplex mast)

5 For the standard configuration, a function of stopping lifting when the lifting height reaches the limit of 1.8m and resuming the lifting after the guardrails are retracted is provided to facilitate personnel to escape when high-position goods fall.



BULLDOG provides Li-ion battery (LiFePO4) with 6 years or 12000 hours warranty.

**6 YEARS
WARRANTY**

LITHIUM POWERED

EMPOWER YOURSELF
WITH THE BEST



Li
Lithium

POWER THE POSSIBILITIES
RELIABLE LITHIUM-ION TECHNOLOGY

LITHIUM BATTERY ADVANTAGES



Long service life

4000 full charging cycles with at least 75% residual capacity.



Return on investment

Add flexibility to your operation, cost-saving in the long term, increased efficiencies.



Maintenance free

No topping up of water or checking acid levels.



High energy density

The high energy density of the Li-Ion battery ensures long working times and increases the high availability.



Cold area application

Li-Ion batteries maintain high performance at temperatures below freezing.



High safety and reliability

Intelligent battery management monitoring every important function, no emission of battery gasses.



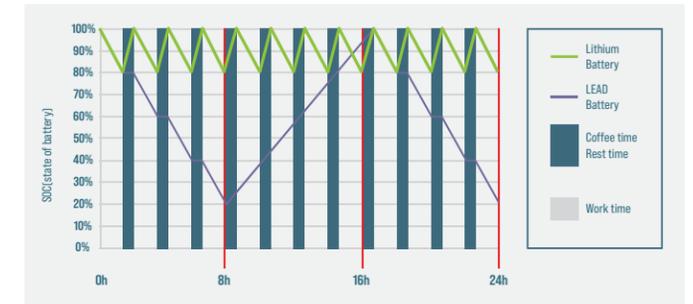
Opportunity charging

Full performance during several shifts thanks to effective interim charging.

FEATURES & BENEFITS THE BULLDOG DIFFERENCE

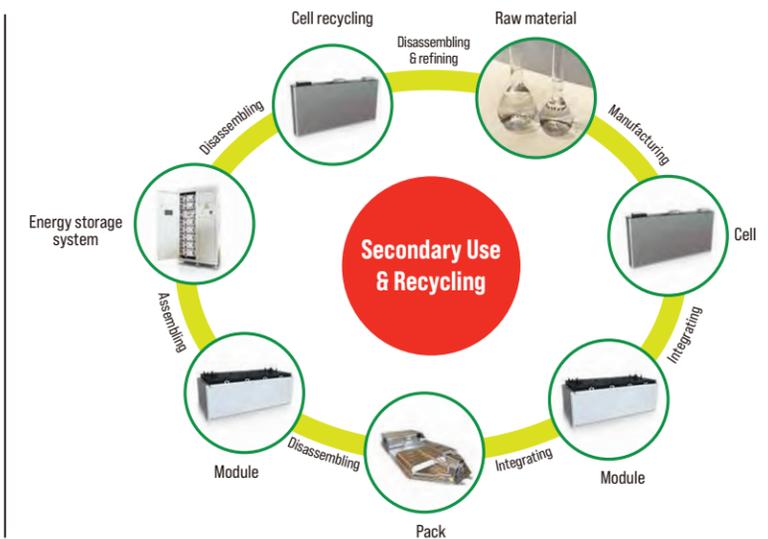
Efficiency

By quick opportunity charging any downtime, such as a lunch break, can be efficiently used and the battery is recharged in a very short period of time. Interim charging does not affect the battery service life.



Safety

- / Intelligent battery management monitoring every important function.
- / Higher user safety, thanks to acid-free use.
- / User friendly due to avoided battery change.
- / No emission of battery gasses.



QUESTION 1

Q: What are the characteristics of lithium batteries, especially when used in high and low temperature environments?

Charging temperature: -30 C -65 C
 Discharge temperature: -30 C -65 C
 Storage environment temperature: -30 C -65 C

After the truck key switch is closed, the instrument battery condition needs to be checked:

1. Confirm that there is no battery system alarm message on the instrument panel.
2. Please check the remaining power before use. It is recommended to use the SOC between 50% and 100%.
3. If the SOC is lower than 20%, it is not recommended to continue using it. Please charge it as soon as possible.

QUESTION 2

Q: What is the charging time and usage time calculation of forklift lithium battery?

1. Available power of lithium battery (kWh) = rated voltage * rated power * 90% (To avoid over-discharge damaging the battery, the forklift is equipped with low power protection (less than 10%).)
 2. Charging time (h) = rated capacity of lithium battery (Ah) * 90% * charger output current (A).
 3. The power consumed for charging (kWh) = the available power of the lithium battery * 93% (the charging efficiency of the charger is calculated as 93%).
 4. Usage time (h) = available power of lithium battery * energy consumption data.
- For specific energy consumption values, please refer to the technical table on the sharing platform.**

QUESTION 3

Q: How does BULLDOG BMS work to ensure the safety of the lithium battery?

BULLDOG BMS (battery management system) can monitor the cells at all times. As a result, BULLDOG lithium power is the reliable solution.



Battery Safety Management:

- Overcharge / over discharge protection
- Overcurrent / over-temperature / low-temperature protection
- Multi-level fault diagnosis protection
- Double fault monitoring



Battery Parameter Detection:

- Battery voltage detection and analysis
- Battery current detection and analysis
- Battery temperature detection and analysis



Equilibrium Management:

- Equalization based on voltage mode
- Equalization based on time mode
- Equalization based on battery cell SOC
- Active / passive equalization optional



Other Features:

- Low cost, low power consumption
- Historical data record
- Flexible cascade expansion
- CRC data validation

1.2t Mast Specification

Type	Max. lifting height h ₃	Ground clearance, fork (h ₃ +h ₁₃)	Lowered height h ₁	Extended height h ₄	Free lift	Load Capacity at 600mm	
						1.2t	
	mm	mm	mm	mm	mm	kg	
Double cylinder duplex wide view	2100 ¹⁾	2190	1540	2590	90	1200	
	2500 ¹⁾	2590	1740	2990	90	1200	
	2700	2790	1840	3190	90	1200	
	3000	3090	1990	3490	90	1200	
	3200	3290	2090	3690	90	1200	
	3400	3490	2190	3890	90	1170	
Duplex full-free wide view	3600	3690	2290	4090	90	1100	
	2100 ¹⁾	2190	1540	2590	1070	1200	
	2500 ¹⁾	2590	1740	2990	1270	1200	
	2700	2790	1840	3190	1370	1200	
	3000	3090	1990	3490	1520	1200	
	3200	3290	2090	3690	1620	1200	
Triplex full-free wide view	3400	3490	2190	3890	1720	1170	
	3600	3690	2290	4090	1820	1100	
	3600 ¹⁾	3690	1660	4080	1195	1100	
	3900 ¹⁾	3990	1760	4380	1295	990	
	4100 ¹⁾	4190	1830	4580	1360	920	
	4300	4390	1890	4780	1425	850	
4500	4590	1960	4980	1495	760		
4700	4790	2030	5180	1560	700		

Note: 1) Optional feature for battery side roll out was necessary, It can make changing the battery easier

1.4-1.6t Mast Specification

Type	Max. lifting height h ₃	Ground clearance, fork (h ₃ +h ₁₃)	Lowered height h ₁	Extended height h ₄	Free lift	Load Capacity at 600mm	
						1.4t	1.6t
	mm	mm	mm	mm	mm	kg	
Double cylinder duplex wide view	2000 ¹⁾	2090	1540	2540	90	1400	
	2400 ¹⁾	2490	1740	2940	90	1600	
	2700	2790	1890	3240	90	1600	
	2900	2990	1990	3440	90	1600	
	3000	3090	2040	3540	90	1600	
	3300	3390	2190	3840	90	1350	
	3500	3590	2290	4040	90	1220	
	3800	3890	2440	4340	90	1080	
	4000	4090	2540	4540	90	1000	
	4200	4290	2640	4740	90	890	
	4500	4590	2790	5040	90	760	
	2000 ¹⁾	2090	1540	2540	1020	1400	
Duplex full-free wide view	2400 ¹⁾	2490	1740	2940	1220	1600	
	2700	2790	1890	3240	1400	1600	
	3000	3090	2040	3540	1520	1600	
	3300	3390	2190	3840	1620	1400	
	3500	3590	2290	4040	1770	1220	
	3500 ¹⁾	3590	1660	4020	1160	1150	
	3800 ¹⁾	3890	1760	4320	1260	1030	
	4000 ¹⁾	4090	1830	4520	1330	950	
	4200	4290	1890	4720	1390	890	
	4500	4590	2030	5020	1490	760	
	4700	4790	2060	5220	1560	700	
	Triplex full-free wide view	4800	4890	2090	5320	1590	730
5000		5090	2160	5520	1660	650	
5200		5290	2230	5720	1730	600	
5500		5590	2330	6020	1830	550	
6000		6090	2500	6520	2000	450	

Note: 1) Optional feature for battery side roll out was necessary, It can make changing the battery easier

2.0t Mast Specification

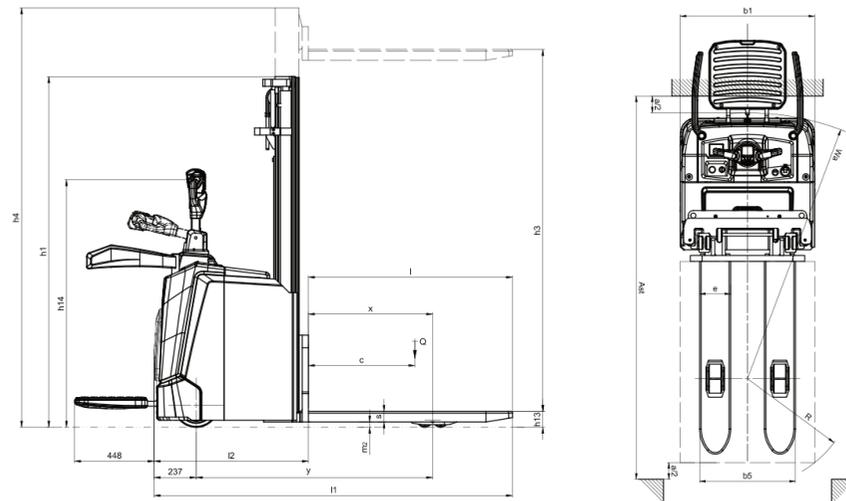
Type	Max. lifting height h ₃	Ground clearance, fork (h ₃ +h ₁₃)	Lowered height h ₁	Extended height h ₄	Free lift	Load Capacity at 600mm	
						2.0t	
	mm	mm	mm	mm	mm	kg	
Double cylinder duplex wide view	2050 ¹⁾	2140	1660	2690	90	2000	
	2250 ¹⁾	2340	1760	2890	90	2000	
	2400 ¹⁾	2490	1830	3030	90	2000	
	2700	2790	1990	3340	90	1800	
	3000	3090	2140	3640	90	1600	
	3200	3290	2240	3840	90	1470	
	3400	3490	2340	4040	90	1340	
	3600	3690	2440	4240	90	1200	
	3800	3890	2540	4440	90	1130	
	4000	4090	2640	4640	90	1050	
	4300	4390	2850	5000	90	950	
	4500	4590	2950	5200	90	860	
Duplex full-free wide view	2050 ¹⁾	2140	1660	2690	1020	2000	
	2350 ¹⁾	2440	1760	2890	1120	2000	
	2400 ¹⁾	2490	1830	3030	1200	2000	
	2700	2790	1990	3340	1350	1800	
	3000	3090	2140	3640	1500	1600	
	3200	3290	2240	3840	1300	1470	
Triplex full-free wide view	3400	3490	2340	4040	1700	1340	
	3600	3690	2440	4240	1800	1200	
	3800	3890	2540	4440	1800	1165	
	3900	3990	1900	4450	1260	1130	
	4000	4090	1965	4650	1300	1050	
	4200	4290	2030	4850	1395	990	
4500	4590	2130	5150	1495	860		
4800	4890	2230	5450	1595	780		
5000	5090	2330	5650	1660	750		
5500	5590	2485	6150	1830	650		
6000	6090	2640	6650	2000	550		

Note: 1) Optional feature for battery side roll out was necessary, It can make changing the battery easier

Technical data

Distinguishing mark	BULLDOG GROUP CO., LTD.				
	1.1	1.2	1.3	1.4	1.5
1.1	Manufacturer (abbreviation)				
1.2	Manufacturer's type designation	CDD12-XT1S-SI	CDD14-XT1S-SI	CDD16-XT1S-SI	CDD20-XT1S-SI
1.3	Drive: electric (battery type, mains, ...), diesel, petrol, fuel gas	Electric	Electric	Electric	Electric
1.4	Operator type: hand, pedestrian, standing, seated, order-picker	Standing	Standing	Standing	Standing
1.5	Rated capacity / rated load	kg	1200	1400	1600
1.6	Load centre distance	c (mm)	600	600	600
1.8	Load distance, centre of drive axle to fork	x (mm)	700	700	700
1.9	Wheelbase	y (mm)	1296	1331	1331
2.1	Service weight	kg	1200	1220	1230
2.2	Axle loading, laden front/rear	kg	876/1524	956/1664	1033/1797
2.3	Axle loading, unladen front/rear	kg	840/360	854/366	861/369
3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		PU	PU	PU
3.2	Tyre size, front		Ø250-80	Ø250-80	Ø250-80
3.3	Tyre size, rear		Ø83-80	Ø83-80	Ø83-80
3.4	Additional wheels (dimensions)		Ø140-55	Ø140-55	Ø140-55
3.5	Wheels, number front/rear [- = driven wheels]		1x-1/4	1x-1/4	1x-1/4
3.6	Tread, front	b10 (mm)	516	516	516
3.7	Tread, rear	b11 (mm)	385	385	385
4.2	Height, mast lowered	h1 (mm)	1840	1890	1890
4.3	Free lift	h2 (mm)	90	90	90
4.4	Lift	h3 (mm)	2700	2700	2700
4.5	Height, mast extended	h4 (mm)	3190	3240	3240
4.9	Height drawbar in driving position min./max.	h14 (mm)	1170/1400	1170/1400	1170/1400
4.15	Height, lowered	h13 (mm)	90	90	90
4.19	Overall length	l1 (mm)	1987 ²⁾	2019 ²⁾	2019 ²⁾
4.20	Length to face of forks	l2 (mm)	834 ³⁾	869 ³⁾	869 ³⁾
4.21	Overall width	b1/b2 (mm)	800	800	800
4.22	Fork dimensions DIN ISO 2331	s/e/l (mm)	60/185/1150	60/185/1150	60/185/1150
4.25	Fork spread	bs (mm)	570	570	570
4.32	Ground clearance, centre of wheelbase	m2 (mm)	25	25	25
4.34.1	Aisle width for pallets 1000 - 1200 crossways	Ast (mm)	2201 ²⁾	2236 ²⁾	2236 ²⁾
4.34.2	Aisle width for pallets 800 - 1200 lengthways	Aat (mm)	2251 ²⁾	2286 ²⁾	2286 ²⁾
4.35	Turning radius	Wa (mm)	1551 ²⁾	1586 ²⁾	1586 ²⁾
5.1	Travel speed, laden/unladen	km/h	9/11	9/11	8/10
5.2	Lift speed, laden/unladen	m/s	0.225/0.47	0.195/0.4	0.18/0.4
5.3	Lowering speed, lade/unladen	m/s	0.45/0.4	0.45/0.4	0.5/0.4
5.8	Max. gradeability, laden/unladen	%	10/16	10/16	8/16
5.10	Service brake		Regenerative	Regenerative	Regenerative
6.1	Drive motor rating S2 60 min	kW	2.2	2.2	2.2
6.2	Lift motor rating at S3 15 %	kW	4.2	4.2	4.2
6.4	Battery voltage / nominal capacity	V/Ah	48/80	48/80	48/80
6.5	Battery weight	kg	60	60	60

Note: 1] According to VDI2198 standard+220mm. 2]According to VDI2198 standard+140mm. 3]Triplex full-free+21mm



Technical data

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1.1	Manufacturer (abbreviation)				
1.2	Manufacturer's type designation	CDD12-XT1-SI	CDD14-XT1-SI	CDD16-XT1-SI	CDD20-XT1-SI
1.3	Drive: electric (battery type, mains, ...), diesel, petrol, fuel gas	Electric	Electric	Electric	Electric
1.4	Operator type: hand, pedestrian, standing, seated, order-picker	Pedestrian	Pedestrian	Pedestrian	Pedestrian
1.5	Rated capacity / rated load	kg	1200	1400	1600
1.6	Load centre distance	c (mm)	600	600	600
1.8	Load distance, centre of drive axle to fork	x (mm)	700	700	700
1.9	Wheelbase	y (mm)	1318	1318	1318
2.1	Service weight	kg	1020	1040	1080
2.2	Axle loading, laden front/rear	kg	625/1595	685/1755	740/1900
2.3	Axle loading, unladen front/rear	kg	685/335	700/340	700/340
3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		PU	PU	PU
3.2	Tyre size, front		Ø250-80	Ø250-80	Ø250-80
3.3	Tyre size, rear		Ø83-80	Ø83-80	Ø83-80
3.4	Additional wheels (dimensions)		Ø140-55	Ø140-55	Ø140-55
3.5	Wheels, number front/rear [- = driven wheels]		1x-1/4	1x-1/4	1x-1/4
3.6	Tread, front	b10 (mm)	510	510	510
3.7	Tread, rear	b11 (mm)	385	385	385
4.2	Height, mast lowered	h1 (mm)	1840	1890	1890
4.3	Free lift	h2 (mm)	90	90	90
4.4	Lift	h3 (mm)	2700	2700	2700
4.5	Height, mast extended	h4 (mm)	3190	3240	3240
4.9	Height drawbar in driving position min./max.	h14 (mm)	790/1205	790/1205	790/1205
4.15	Height, lowered	h13 (mm)	90	90	90
4.19	Overall length	l1 (mm)	1934 ²⁾	1934 ²⁾	1934 ²⁾
4.20	Length to face of forks	l2 (mm)	784 ³⁾	784 ³⁾	784 ³⁾
4.21	Overall width	b1/b2 (mm)	800	800	800
4.22	Fork dimensions DIN ISO 2331	s/e/l (mm)	60/185/1150	60/185/1150	60/185/1150
4.25	Fork spread	bs (mm)	570	570	570
4.32	Ground clearance, centre of wheelbase	m2 (mm)	25	25	25
4.34.1	Aisle width for pallets 1000 - 1200 crossways	Ast (mm)	2200 ²⁾	2200 ²⁾	2200 ²⁾
4.34.2	Aisle width for pallets 800 - 1200 lengthways	Aat (mm)	2250 ²⁾	2250 ²⁾	