

16/18/20B-9

Electric Counterbalance Trucks

MOVING YOU FURTHER

HYUNDAI HEAVY INDUSTRIES



*Photo may include optional equipment.

 **HYUNDAI**

Your satisfaction is **our priority!**

Hyundai introduces a new line of **9-series** battery forklift trucks.

The newly designed 4 wheel counterbalance trucks provide every operator comfortable driving, increased productivity and easy maintenance.



Some of the photos may include optional equipment.

Compact forklift with proven AC technology

Maximum performance

Comfortable operating room

Load indicator

Battery side loading system

Curve control system

Fingertip controlled mini levers available (optional)

Safety system that prevents over loading (optional)



High Efficiency & Optimal Performance



More efficient operating control levers (Optional)

Electronic directional control and secondary horn are mounted to the hydraulic lift lever for quick and precise maneuvering.



Finger tip control levers (Optional)

The finger tip control lever allows more precise control and fatigue-free working. The ergonomically designed armrest can be adjusted up, down, forward and backward for various operator's body type.



Some of the photos may include optional equipment.

Advanced drive and lift performance with proven durability and low maintenance

The enclosed drive and pump motor with AC technology combine power, high maintenance intervals and excellent durability. The brushless AC motors offer improved efficiency and reduction maintenance cost.



Efficient, smooth running and compact design provide you with enhanced performance and highest productivity.

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Some of the photos may include optional equipment.

Curve control

Curve Control limits travel speed based on turning radius, reducing speed for a smooth, precise turning operation for the driver.



Driving Speed

Limit the speed



Designed for compact aisle width and turning radius

The dual drive system enhances the operator's ability to maneuver in small aisle widths using minimum energy consumption. Plus, the drive units and AC motors intergrated in the front axle provide the operator with extremely improved gradient capacity.



Auto fork leveling system (Optional)

In order to improve productivity the auto fork leveling system will automatically stop the tilt movement when the mast is in a straight position.



Gradeability (MAX)

Model	%
16B-9	29.5
18B-9	27.5
20B-9	24.5

Travel Speed (MAX)

Model	mph / km/h
16B-9	10.6 / 17
18B-9	10.6 / 17
20B-9	10.6 / 17

Anti roll back system, travel speed and gradeability

Anti Roll-ack system offers protection against the machine rolling back on a ramp in combination with exceptional ramp start capabilities.

Advanced **Safety**



Excellent visibility for safe operation

Optimized lift cylinder arrangement provides operator with wider visibility.

Some of the photos may include optional equipment.



Panoramic mirror

The panoramic mirror expands the driver's view during operation.

Strong overhead guard

Exceeding EEC and ANSI regulations, the overhead guard offers great protection combined with excellent all around visibility.

The safely designed driver's space makes your operating more comfortable.

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Some of the photos may include optional equipment.

Fork safety features

When the forks are being lowered, a down-control valve maintains the controlled speed. The down-safety valve prevents forks from dropping down in case of sudden damage of hydraulic line.

OPSS (Operator Presence Sensing System)

When the operator is not in the seat all mast and drive movements are inactive.

Lift Lock

Tilt Lock

Drive Lock



Safety lamps & rear reflectors

Halogen headlights and rear LED combination lights offer the driver visibility in all circumstances. Rear reflectors mounted on the counterweight enhance safety for the driver and the work area.

Optimized Ergonomics & Fast and Easy Maintenance



Spacious operator cabin

Some of the photos may include optional equipment.

The BT is designed as a small, compact design, yet the operator compartment has ample room for virtually any operator.



Optimized pedal position and floor mat

The position of accelerator and throttle have been optimized through human engineering.



Low entrance height

In order to get in and out of the cabin in an easy and safe way the height of the entrance step is only 16 inches high.



Adjustable steering wheel

To achieve a comfortable drive position, the angle of the steering column can easily be adjusted through a lever on the right-hand side of the steering column.



Grammer seat

Based on a human engineering design, the easily adjustable suspension seat provides greater comfort reducing operator fatigue.

An ideal arrangement of components ensures easy access and convenience for maintenance.

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Easy battery replacement

Some of the photos may include optional equipment.

The battery compartment is equipped with a side battery removal assembly for easy removal and replacement.



Advanced LCD Monitor

The LCD color monitor with 3.5 inch graphic smart display allows the operator to easily and efficiently control the machine. The monitor provides information about speed & accelerator lever, steer angle & travel direction, battery discharge indicator, hour meter & working mode. The load indicator displays the load weight in the monitor. The operator can select various performance modes to meet all working conditions. It is available in multiple languages (maximum 11) for operator.

H (High) mode N (Normal) mode E (Economic) mode Turtle mode



Brake oil reservoir with level sensor

The enhanced brake oil reservoir, located in the upper left dash is equipped with an electronic level sensor and easily visible through the monitor.



Specification 9 Series

Mast Specification (16/18B-9)

Mast Type	Maximum Fork Height (in / mm)	Overall Height (Lowered) (in)		Free Lift Height (in)				Tilt Angle (deg) Fwd / Bwd	Load Capacity without side shift at 24 in LC (lb)		Load Capacity with side shift at 24 in LC (lb)		Truck Weight (Unloaded) (lb)		
				With Load Backrest		Without Load Backrest			16/18B-9	16B-9	18B-9	16B-9	18B-9	16B-9	18B-9
				16B-9	18B-9	16B-9	18B-9								
2-Stage Limited free lift	V250	99.4 / 2,525	67.7	67.7	1.4	1.4	1.4	1.4	5 / 7	3,200	3,500	3,100	3,500	6,790	7,116
	V270	107.3 / 2,725	71.7	71.7	1.4	1.4	1.4	1.4	5 / 7	3,200	3,500	3,100	3,500	6,817	7,143
	V300	119.1 / 3,025	77.6	77.6	1.4	1.4	1.4	1.4	5 / 7	3,200	3,500	3,100	3,500	6,861	7,187
	* V330	130.9 / 3,325	83.5	83.5	1.4	1.4	1.4	1.4	5 / 7	3,200	3,500	3,100	3,500	6,905	7,231
	V350	138.8 / 3,525	87.4	87.4	1.4	1.4	1.4	1.4	5 / 7	3,200	3,500	3,100	3,500	6,933	7,260
	V370	146.7 / 3,725	91.3	91.3	1.4	1.4	1.4	1.4	5 / 7	3,200	3,500	3,100	3,500	6,962	7,288
	V400	158.5 / 4,025	97.2	97.2	1.4	1.4	1.4	1.4	5 / 7	3,150	3,500	3,040	3,500	7,017	7,341
	V450	178.1 / 4,525	111.0	111.0	1.4	1.4	1.4	1.4	5 / 5	3,040	3,500	2,950	3,430	7,165	7,491
2-Stage full free lift	V500	197.8 / 5,025	120.9	120.9	1.4	1.4	1.4	1.4	5 / 5	2,810	3,370	2,750	3,260	7,240	7,564
	V550	217.5 / 5,525	130.7	130.7	1.4	1.4	1.4	1.4	5 / 5	2,750	3,280	2,660	3,170	7,284	7,608
	VF300	119.1 / 3,025	77.6	77.6	38.3	38.3	57.5	57.5	5 / 5	3,200	3,500	3,100	3,500	6,947	7,271
3-Stage full free lift	VF330	130.9 / 3,325	83.5	83.5	44.2	44.2	63.4	63.4	5 / 5	3,200	3,500	3,100	3,500	6,993	7,319
	VF350	138.8 / 3,525	87.4	87.4	48.1	48.1	67.3	67.3	5 / 5	3,200	3,500	3,100	3,500	7,026	7,352
	TF/TS370	147.0 / 3,735	69.7	69.7	30.4	30.0	49.8	49.8	5 / 5	3,150	3,500	3,040	3,500	7,116	7,440
	TF/TS400	158.9 / 4,035	73.6	73.6	34.3	34.0	53.7	53.7	5 / 5	3,060	3,500	2,950	3,430	7,160	7,485
	TF/TS430	170.7 / 4,335	77.6	77.6	38.3	37.9	57.6	57.6	5 / 5	2,990	3,500	2,880	3,390	7,202	7,529
	TF/TS450	178.5 / 4,535	81.5	81.5	42.2	41.9	61.6	61.6	5 / 5	2,950	3,460	2,840	3,350	7,246	7,571
	TF/TS470	186.4 / 4,735	83.5	83.5	44.2	43.8	63.5	63.5	5 / 5	2,910	3,370	2,800	3,240	7,269	7,595
	TF/TS500	198.2 / 5,035	87.4	87.4	48.1	47.9	67.5	67.5	5 / 5	2,860	3,260	2,750	3,150	7,313	7,639
	TF/TS550	217.9 / 5,535	95.3	95.3	56.0	55.7	75.4	75.4	5 / 5	2,750	3,080	2,600	2,970	7,401	7,725
	TF/TS600	237.6 / 6,035	103.1	103.1	63.9	63.5	83.2	83.2	5 / 5	2,550	2,770	2,460	2,690	7,540	7,866
TF/TS650	257.3 / 6,535	111.0	111.0	71.7	71.4	91.1	91.1	5 / 5	2,160	2,690	2,070	2,580	7,639	7,965	
TF/TS700	277.0 / 7,035	118.9	118.9	79.6	79.3	99.0	99.0	5 / 5	1,870	2,180	1,780	2,090	7,725	8,049	

Mast Specification (20B-9)

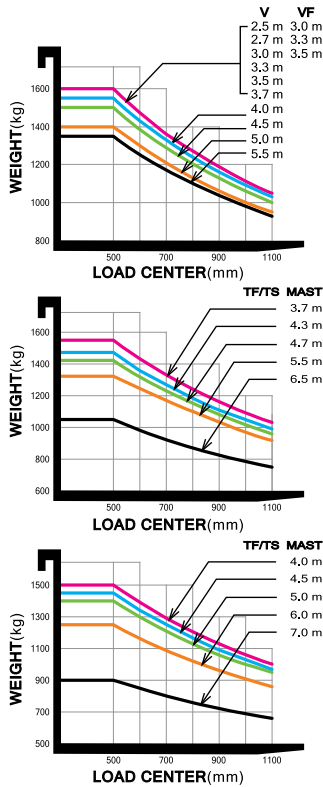
Mast Type	Maximum Fork Height (in / mm)	Overall Height (Lowered) (in / mm)	Free Lift Height (in / mm)		Tilt Angle (deg) Fwd / Bwd	Load Capacity without side shift at 24 in LC (lb / kg)		Load Capacity with side shift at 24 in LC (lb / kg)		Truck Weight (Unloaded) (lb / kg)	
			With Load Backrest			Without Load Backrest		20B-9	20B-9	20B-9	20B-9
			20B-9	20B-9		20B-9	20B-9				
2-Stage Limited free lift	V250	99.6 / 2,5306	68.1 / 1,729	1.6 / 40	1.6 / 40	5 / 7	4,000 / 2,000	3,900 / 1,930	7,597 / 3,446		
	V270	107.5 / 2,730	72.0 / 1,829	1.6 / 40	1.6 / 40	5 / 7	4,000 / 2,000	3,900 / 1,930	7,623 / 3,458		
	V300	119.3 / 3,030	77.9 / 1,979	1.6 / 40	1.6 / 40	5 / 7	4,000 / 2,000	3,900 / 1,930	7,668 / 3,478		
	* V330	131.1 / 3,330	83.8 / 2,129	1.6 / 40	1.6 / 40	5 / 7	4,000 / 2,000	3,900 / 1,930	7,712 / 3,498		
	V350	139.0 / 3,530	87.8 / 2,229	1.6 / 40	1.6 / 40	5 / 7	4,000 / 2,000	3,900 / 1,930	7,740 / 3,511		
	V370	146.9 / 3,730	91.7 / 2,329	1.6 / 40	1.6 / 40	5 / 7	4,000 / 2,000	3,900 / 1,920	7,769 / 3,524		
	V400	158.7 / 4,030	97.6 / 2,479	1.6 / 40	1.6 / 40	5 / 7	4,000 / 2,000	3,900 / 1,920	7,824 / 3,549		
	V450	178.3 / 4,530	111.4 / 2,829	1.6 / 40	1.6 / 40	5 / 5	3,920 / 1,925	3,790 / 1,860	7,972 / 3,616		
2-Stage full free lift	V500	198.0 / 5,030	121.2 / 3,079	1.6 / 40	1.6 / 40	5 / 5	3,790 / 1,850	3,660 / 1,790	8,047 / 3,650		
	V550	217.7 / 5,530	131.1 / 3,329	1.6 / 40	1.6 / 40	5 / 5	3,630 / 1,775	3,520 / 1,710	8,091 / 3,670		
	VF300	119.3 / 3,030	77.9 / 1,979	38.3 / 972	57.5 / 1460	5 / 5	4,000 / 2,000	3,900 / 1,930	7,754 / 3,517		
3-Stage full free lift	VF330	131.1 / 3,330	83.8 / 2,129	44.2 / 1122	63.4 / 1610	5 / 5	4,000 / 2,000	3,900 / 1,930	7,800 / 3,538		
	VF350	139.0 / 3,530	87.8 / 2,229	48.1 / 1222	67.3 / 1710	5 / 5	4,000 / 2,000	3,900 / 1,930	7,833 / 3,553		
	TF/TS370	147.2 / 3,740	70.0 / 1,779	30.0 / 763	49.8 / 1264	5 / 5	4,000 / 2,000	3,900 / 1,930	7,923 / 3,594		
	TF/TS400	159.1 / 4,040	74.0 / 1,879	34.0 / 863	53.7 / 1364	5 / 5	3,960 / 1,950	3,830 / 1,880	7,967 / 3,614		
	TF/TS430	170.9 / 4,340	77.9 / 1,979	37.9 / 963	57.6 / 1464	5 / 5	3,920 / 1,925	3,770 / 1,860	8,009 / 3,633		
	TF/TS450	178.7 / 4,540	81.9 / 2,079	41.9 / 1063	61.6 / 1564	5 / 5	3,880 / 1,900	3,720 / 1,840	8,053 / 3,653		
	TF/TS470	186.6 / 4,740	83.8 / 2,129	43.8 / 1113	63.5 / 1614	5 / 5	3,770 / 1,850	3,660 / 1,790	8,075 / 3,663		
	TF/TS500	198.4 / 5,040	87.8 / 2,229	47.9 / 1216	67.5 / 1714	5 / 5	3,700 / 1,800	3,570 / 1,750	8,119 / 3,683		
	TF/TS550	218.1 / 5,540	95.6 / 2,429	55.7 / 1416	75.4 / 1914	5 / 5	3,480 / 1,700	3,370 / 1,640	8,208 / 3,723		
	TF/TS600	237.8 / 6,040	103.5 / 2,629	63.5 / 1613	83.2 / 2114	5 / 5	3,350 / 1,600	3,170 / 1,540	8,347 / 3,786		
TF/TS650	257.5 / 6,540	111.4 / 2,829	71.4 / 1813	91.1 / 2314	5 / 5	2,690 / 1,300	2,600 / 1,250	8,446 / 3,831			
TF/TS700	277.2 / 7,040	119.3 / 3,029	79.3 / 2013	99.0 / 2514	5 / 5	2,400 / 1,150	2,310 / 1,100	8,532 / 3,870			

* Standard

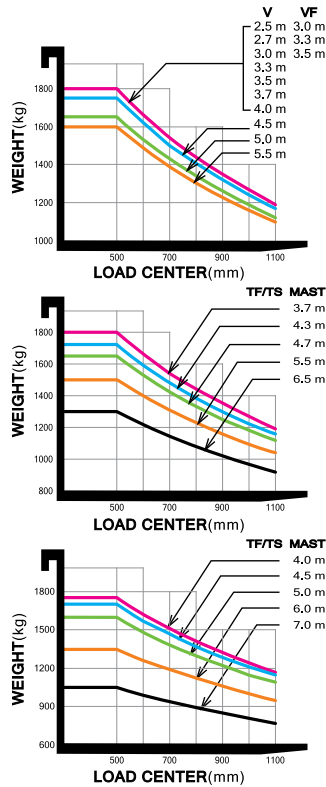
※TS-Mast : Wide Visible 3-Stage Full Free Lift Mast with 2 Free Lift Cylinders.

Load Capacity

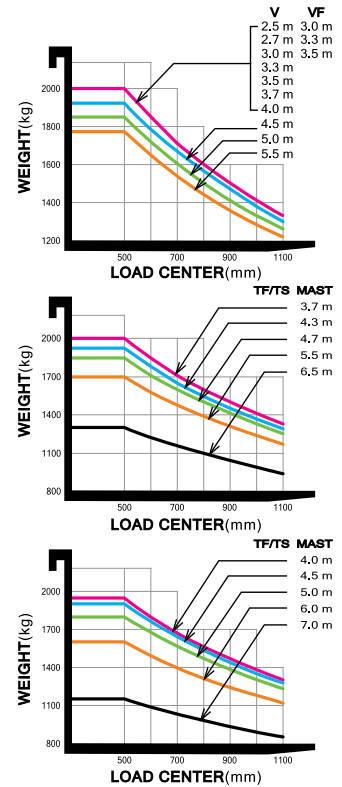
16B-9



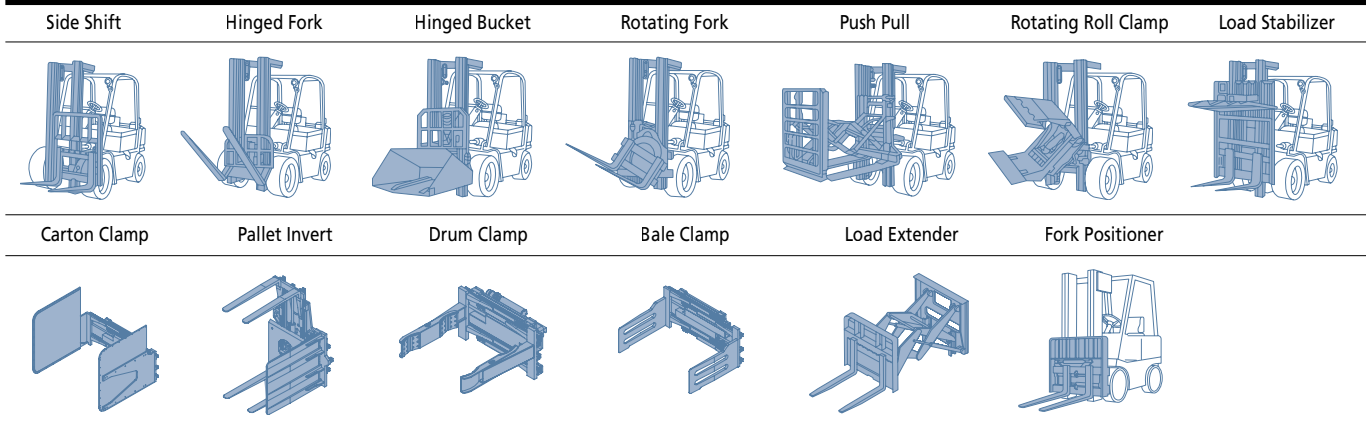
18B-9



20B-9



Various Attachments

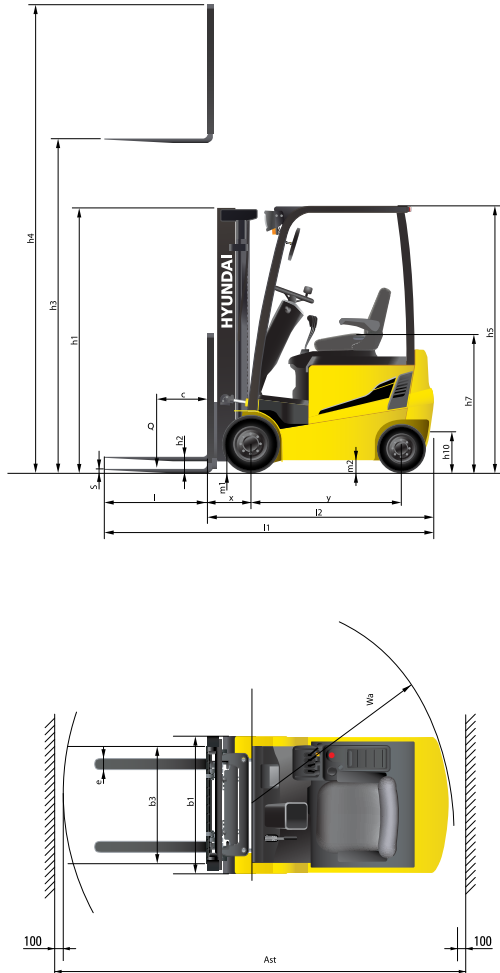


Optional Items

- **Fork (in)**
16/18B-9 : 1.4X3.9X29.5, 33.5, 35.4 (STD), 41.3, 47.2, 53.1, 59.1
20B-9 : 1.6X3.9X35.4 (STD), 37.4, 39.4, 41.3, 45.3, 47.2, 53.1, 59.1, 63.0
- **Overshoe (in)** : 51.2 / 59.1 / 66.9
- **Integral Sideshift**
- **Tire** : SOLID (STD) / Non-marking /
Wide tire [16B-9 : Front tire (200 / 50-10)]
- **Seat** : KAB

- **M.C.V** : 2-Spool (STD), 3-Spool, 4-Spool
- **Auto Fork Leveling**
- **Beacon Lamp**
- **Work Lamp**
- **OPSS** : Mast
- **UL** : ES, EE
- **Cabin**

Dimension



Specification

Identification

		HYUNDAI			
1.1	Manufacturer	HYUNDAI			
1.2	Manufacturer's type designation	168-9	188-9	208-9	
1.3	Drive : electric (battery or mains), diesel, petrol, fuel gas, manual	Electric	Electric	Electric	
1.4	Type of operation : hand, pedestrian, standing, seated, order-picker	Seated	Seated	Seated	
1.5	Load capacity / rated load	Q (lb / kg)	3,500 / 1,600	4,000 / 1,800	4,400 / 2,000
1.6	Load center distance	c (in / mm)	20 / 500	20 / 500	20 / 500
1.7	Load distance, center of front axle to fork	x (in / mm)	14.2 / 360	14.2 / 360	14.4 / 365
1.8	Wheelbase	y (in / mm)	53.3 / 1,355	56.7 / 1,440	56.7 / 1,440

Weights

2.1	Service weight	(lb / kg)	6,945 / 3,150	7,220 / 3,275	7,672 / 3,480
2.2	Axle loading, loaded front / rear	(lb)	9,259 / 1,213	9,872 / 1,316	10,692 / 1,389
2.3	Axle loading, unloaded front / rear	(lb)	3,494 / 3,450	3,534 / 3,686	3,638 / 4,034

Wheels, Chassis

3.1	Tires : solid rubber(V), superelastic(SE), pneumatic(P), polyurethane(PE)		SE	SE	SE
3.2	Tires size, front (Φ x width)		18 x 7-8	200 / 50-10	200 / 50-10
3.3	Tires size, rear (Φ x width)		16 x 6-8	16 x 6-8	16 x 6-8
3.4	Wheels, number front rear (x = driven wheels)		2x / 2	2x / 2	2x / 2
3.5	Track width, front	(in / mm)	35.2 / 895	35.6 / 905	35.6 / 905
3.6	Track width, rear	(in / mm)	34.6 / 880	34.6 / 880	34.6 / 880

Basic Dimensions

4.1	Mast / fork carriage tilt forward / backward	(deg)	5 / 7	5 / 7	5 / 7
4.2	Lowered mast height	h1 (in / mm)	83.5 / 2,120	83.8 / 2,129	83.8 / 2,129
4.3	Free lift height	h2 (in / mm)	1.4 / 35	1.4 / 35	1.6 / 40
4.4	Lift height	h3 (in / mm)	130.9 / 3,325	130.9 / 3,325	131.1 / 3,330
4.5	Extended mast height	h4 (in / mm)	170.1 / 4,320	170.1 / 4,320	170.1 / 4,320
4.6	Overhead guard (cab) height	h5 (in / mm)	81.3 / 2,065	81.3 / 2,065	81.3 / 2,065
4.7	Seat height / Standing height	h7 (in / mm)	38.7 / 982	38.7 / 982	38.7 / 982
4.8	Coupling height	h10 (in / mm)	9.8 / 250	9.8 / 250	9.8 / 250
4.9	Overall length	l1 (in / mm)	115.6 / 2,935	118.9 / 3,020	119.3 / 3,030
4.10	Length to face of forks	l2 (in / mm)	80.1 / 2,035	83.5 / 2,120	83.9 / 2,130
4.11	Overall width	b1 (in / mm)	42.3 / 1,074	43.5 / 1,105	43.5 / 1,105
4.12	Fork dimensions	l / e / s (in)	35.4 x 3.9 x 1.4	35.4 x 3.9 x 1.4	35.4 x 3.9 x 1.6
4.13	Fork carriage ISO 2328, class / type A, B		II / A	II / A	II / A
4.14	Fork - carriage width	b3 (in / mm)	39.6 / 1,006	39.6 / 1,006	39.6 / 1,006
4.15	Ground clearance, loaded, under mast	m1 (in / mm)	3.3 / 85	3.7 / 94	3.7 / 94
4.16	Ground clearance, centre of wheelbase	m2 (in / mm)	3.5 / 90	3.5 / 90	3.9 / 100
4.17	Aisle width for pallets 1,000 x 1,200 crossways	Ast (in / mm)	132.0 / 3,352	134.9 / 3,427	135.7 / 3,447
4.18	Aisle width for pallets 800 x 1,200 lengthways	Ast (in / mm)	137.6 / 3,495	140.7 / 3,575	141.5 / 3,595
4.19	Turning radius	Wa (in / mm)	67.3 / 1,710	70.7 / 1,795	71.3 / 1,810

Performance Data

5.1	Travel speed, loaded / unloaded	(mph)	9.9 - 10.6	9.9 - 10.6	9.9 - 10.6
5.2	Lift speed, loaded / unloaded	(ft/s)	1.4 / 2.0	1.4 / 2.0	1.4 / 2.0
5.3	Lowering speed, loaded / unloaded	(ft/s)	1.6 / 1.5	1.6 / 1.5	1.6 / 1.5
5.4	Max. drawbar pull, loaded / unloaded S2 5min	(N)	15,102 / 14,759	15,190 / 14,710	14,367 / 14,043
5.5	Max. gradient performance, loaded / unloaded S2 5min (%)		29.5	27.5	24.5
5.6	Service brake		Hydraulic	Hydraulic	Hydraulic

E - Motor

6.1	Drive motor rating S2 60 min	(HP / kW)	6.3 / 4.7 x2	6.3 / 4.7 x2	6.3 / 4.7 x2
6.2	Pump motor rating at S3 - 15 %	(HP / kW)	18.8 / 14.0	18.8 / 14.0	18.8 / 14.0
6.3	Battery voltage	(V)	48	48	48
6.4	Battery weight	(lb / kg)	1,874 / 850	2,271 / 1,030	2,271 / 1,030
6.5	Battery dimensions L / W / H	(in)	38.5 / 21.5 / 25.0	38.5 / 24.8 / 25.0	38.5 / 24.8 / 25.0

Other Details

7.1	Type of drive control		AC	AC	AC
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PLEASE CONTACT

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