

16/18/20B-9F

Electric Counterbalance Trucks

MOVING YOU FURTHER

HYUNDAI HEAVY INDUSTRIES



- Some of the photos may include optional equipment.
- All lamps are optional

 **HYUNDAI**
HEAVY INDUSTRIES

Your satisfaction is **our priority!**

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

These Forklifts are designed to achieve optimized performance for every working environment with better economic advantage. They will surely meet the best satisfaction.



- Some of the photos may include optional equipment.
- All lamps are optional

Compact forklift with proven AC technology

Optimized performance

Comfortable operating room

Battery side loading system (Optional)

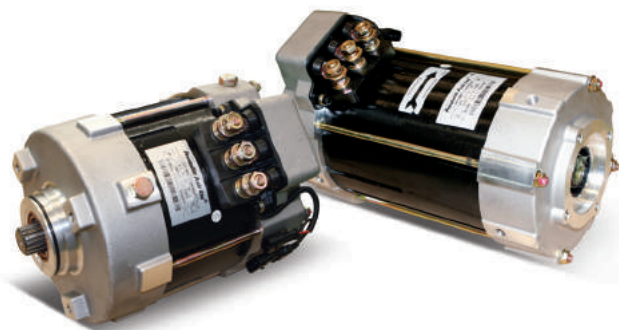
Curve control system



High Efficiency & Optimal Performance



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- All lamps are optional



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.

Advanced technology enables smooth operation and optimal performance with safety.

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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

Using a dual drive system will minimise aisle width and energy consumption.



Gradeability (MAX)

Model	%
16B-9F	22
18B-9F	21
20B-9F	18

Travel Speed (MAX), unloaded

Model	km / h
16B-9F	15
18B-9F	15
20B-9F	15

Anti roll back system, travel speed and gradeability

Anti Roll-back 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.
- All lamps are optional



Panoramic mirror

The panoramic mirror expands the driver's view when backing up.

Strong overhead guard

Exceeding ISO6055 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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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) (Optional)

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

Lift Lock

Tilt Lock

Drive Lock

- Some of the photos may include optional equipment.
- All lamps are optional



Safety lamps(optional) & reflectors

Rear combination lights and halogen headlights offer the driver visibility in all circumstance. Rear reflectors mounted on the counterweight enhance safety for the driver and the application.

Optimised Ergonomics & Fast and Easy Maintenance



Spacious operator cabin

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



Optimized pedal position and Anti Slippad

The position of accelerator and brake pedal 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 400mm 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.



Comfortable Full Suspension Grammer Seat (Optional)

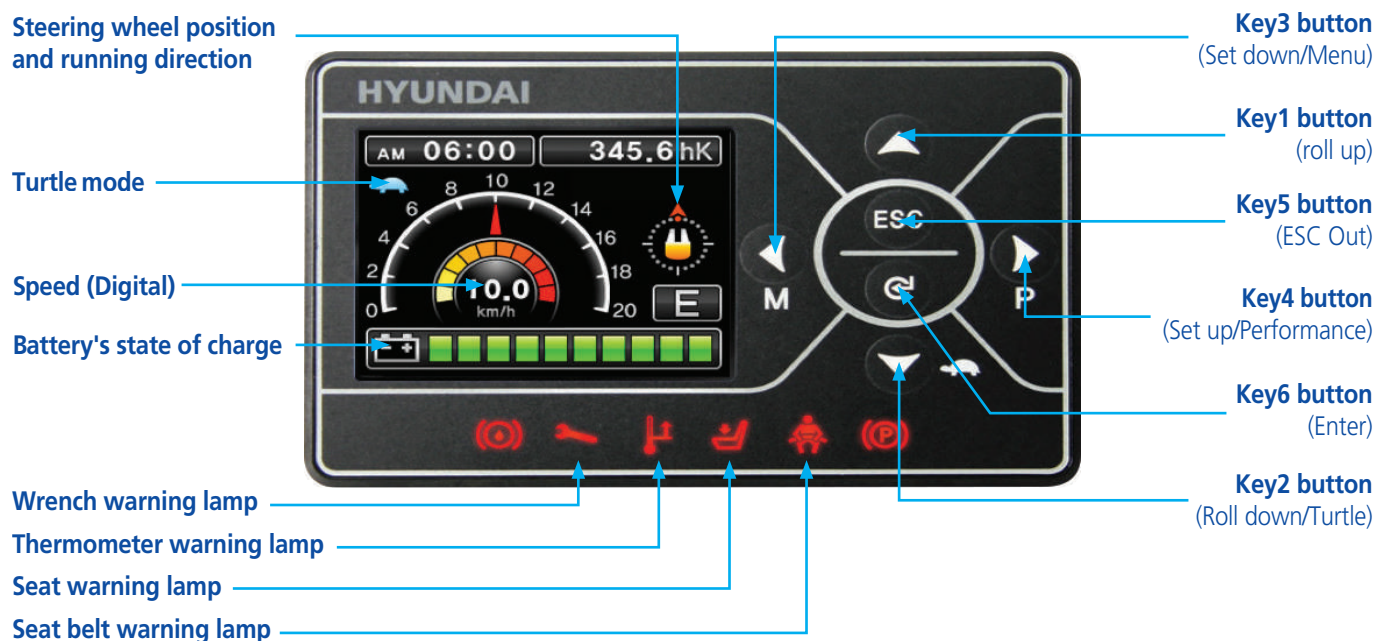
Easily adjustable suspension seat, based on a human engineering design, reduces operator fatigue and provides greater comfort.

- *ELR (Energy Locking Retractor) Type Seat Belt
- *Heating and Head-rest
- *Movable Armrests

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

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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 level, steer angle & travel direction, battery discharge indicator, hour meter & working mode. The operator can select various performance modes to meet all working conditions. It is available multi-languages (maximum 11) for operator.

The monitor also displays information about operation error, system fault, battery level, hour meter plus other various functions. It enables the operator to maintain the forklift in optimum operating condition.

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

Turtle mode



Easy battery replacement (Optional)

The battery compartment is equipped with a side battery removal assembly for easy removal and replacement. (The battery stand is optional equipment.)



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.

New 9 Series

Mast Specification (16/18B-9F)

Mast Type	Maximum Fork Height (mm)	Overall Height (Lowered) (mm)		Free Lift Height (mm)				Tilt Angle (deg) Fwd / Bwd	Load Capacity without side shift at (500mm LC)(kg)		Load Capacity with side shift at (500mm LC)(kg)		Truck Weight (Unloaded) (kg)		
				With Load Backrest		Without Load Backrest			16B-9F	18B-9F	16B-9F	18B-9F	16B-9F	18B-9F	
				16B-9F	18B-9F	16B-9F	18B-9F								
2-Stage Limited free lift	V250	2,525	1,720	1,729	35	35	35	35	5 / 7	1,600	1,800	1,530	1,730	3,078	3,208
	V270	2,725	1,820	1,829	35	35	35	35	5 / 7	1,600	1,800	1,530	1,730	3,091	3,221
	* V300	3,025	1,970	1,979	35	35	35	35	5 / 7	1,600	1,800	1,530	1,730	3,110	3,240
	V330	3,325	2,120	2,129	35	35	35	35	5 / 7	1,600	1,800	1,530	1,730	3,131	3,261
	V350	3,525	2,220	2,229	35	35	35	35	5 / 7	1,600	1,800	1,530	1,730	3,144	3,274
	V370	3,725	2,320	2,329	35	35	35	35	5 / 7	1,600	1,800	1,530	1,730	3,156	3,286
	V400	4,025	2,470	2,479	35	35	35	35	5 / 7	1,550	1,800	1,490	1,730	3,181	3,311
	V450	4,525	2,820	2,829	35	35	35	35	5 / 5	1,500	1,750	1,440	1,680	3,248	3,378
	V500	5,025	3,070	3,079	35	35	35	35	5 / 5	1,400	1,650	1,340	1,590	3,282	3,412
2-Stage full free lift	VF300	3,025	1,970	1,979	9,72	9,81	1,534	1,543	5 / 5	1,600	1,800	1,530	1,730	3,149	3,279
	VF330	3,325	2,120	2,129	1,122	1,131	1,684	1,693	5 / 5	1,600	1,800	1,530	1,730	3,170	3,300
	VF350	3,525	2,220	2,229	1,222	1,231	1,784	1,793	5 / 5	1,600	1,800	1,530	1,730	3,186	3,316
3-Stage full free lift	TF/TS370	3,735	1,770	1,779	772	781	1,260	1,269	5 / 5	1,550	1,800	1,490	1,730	3,226	3,356
	TF/TS400	4,035	1,870	1,879	872	881	1,360	1,369	5 / 5	1,500	1,750	1,440	1,690	3,246	3,376
	TF/TS430	4,335	1,970	1,979	972	981	1,460	1,469	5 / 5	1,475	1,725	1,420	1,660	3,266	3,396
	TF/TS450	4,535	2,070	2,079	1,072	1,081	1,560	1,569	5 / 5	1,450	1,700	1,390	1,640	3,285	3,415
	TF/TS470	4,735	2,120	2,129	1,122	1,131	1,610	1,619	5 / 5	1,425	1,650	1,370	1,590	3,296	3,426
	TF/TS500	5,035	2,220	2,229	1,222	1,231	1,710	1,719	5 / 5	1,400	1,600	1,340	1,540	3,316	3,446
	TF/TS550	5,535	2,420	2,429	1,422	1,431	1,910	1,919	5 / 5	1,325	1,500	1,300	1,450	3,355	3,485
	TF/TS600	6,035	2,620	2,629	1,622	1,631	2,110	2,119	5 / 5	1,250	1,350	1,200	1,300	3,419	3,549
	TF/TS650	6,535	2,820	2,829	1,822	1,831	2,310	2,319	3 / 3	1,050	1,300	1,000	1,250	3,463	3,593
TF/TS700	7,035	3,020	3,029	2,022	2,031	2,510	2,519	3 / 3	900	1,050	860	1,010	3,502	3,632	

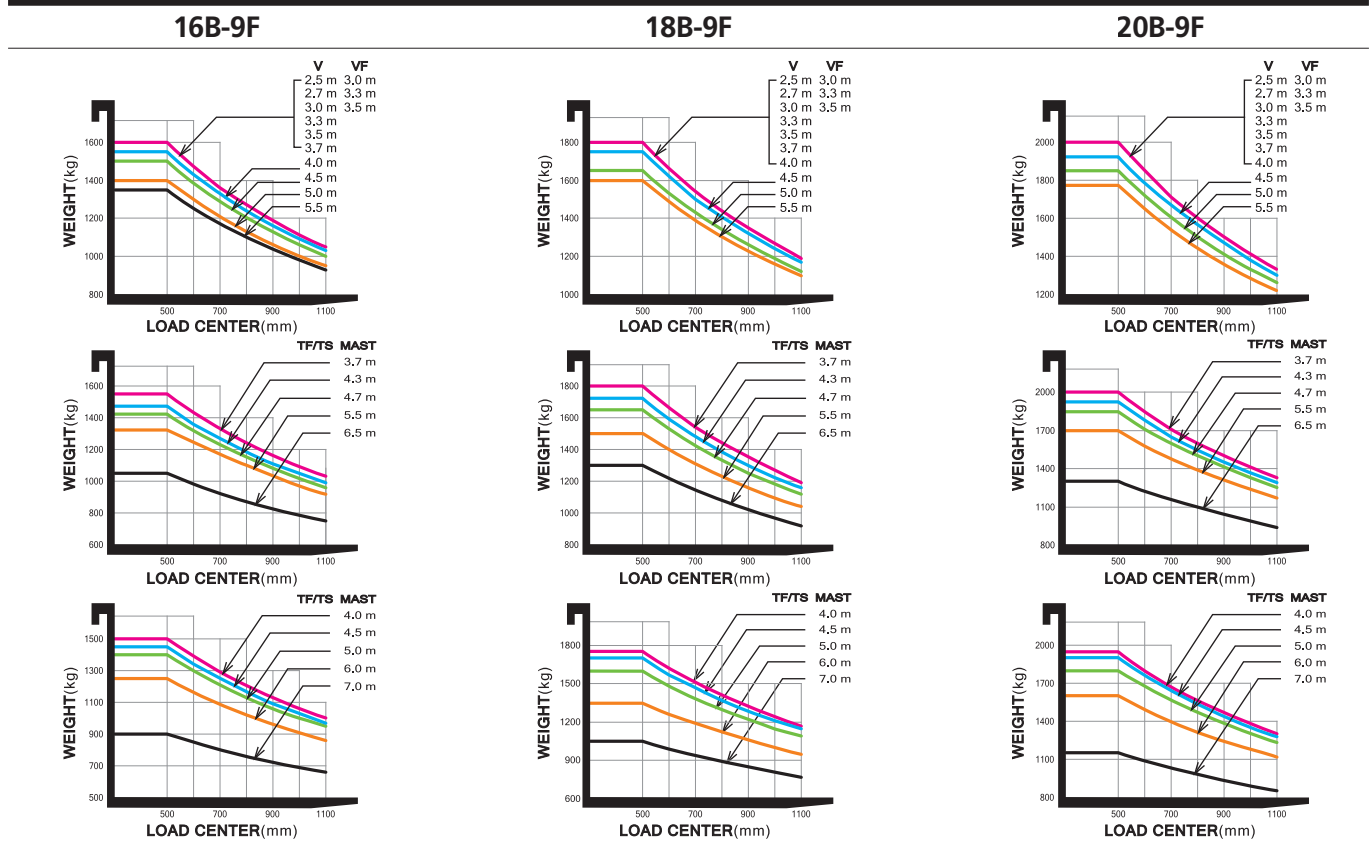
Mast Specification (20B-9F)

Mast Type	Maximum Fork Height (mm)	Overall Height (Lowered) (mm)		Free Lift Height (mm)		Tilt Angle (deg) Fwd / Bwd	Load Capacity without side shift at (500mm LC)(kg)		Load Capacity with side shift at (500mm LC)(kg)		Truck Weight (Unloaded) (kg)	
				With Load Backrest			Without Load Backrest		20B-9F	20B-9F	20B-9F	20B-9F
				20B-9F	20B-9F		20B-9F	20B-9F				
2-Stage Limited free lift	V250	2,530	1,729	1,729	40	40	5 / 7	2,000	1,930	1,930	3,388	
	V270	2,730	1,829	1,829	40	40	5 / 7	2,000	1,930	1,930	3,401	
	* V300	3,030	1,979	1,979	40	40	5 / 7	2,000	1,930	1,930	3,420	
	V330	3,330	2,129	2,129	40	40	5 / 7	2,000	1,930	1,930	3,441	
	V350	3,530	2,229	2,229	40	40	5 / 7	2,000	1,930	1,930	3,454	
	V370	3,730	2,329	2,329	40	40	5 / 7	2,000	1,920	1,920	3,466	
	V400	4,030	2,479	2,479	40	40	5 / 7	2,000	1,920	1,920	3,491	
	V450	4,530	2,829	2,829	40	40	5 / 5	1,925	1,860	1,860	3,558	
	V500	5,030	3,079	3,079	40	40	5 / 5	1,850	1,790	1,790	3,592	
2-Stage full free lift	VF300	3,030	1,979	1,979	986	1,548	5 / 5	2,000	1,930	1,930	3,459	
	VF330	3,330	2,129	2,129	1,136	1,698	5 / 5	2,000	1,930	1,930	3,480	
	VF350	3,530	2,229	2,229	1,236	1,798	5 / 5	2,000	1,930	1,930	3,496	
3-Stage full free lift	TF/TS370	3,740	1,779	1,779	786	1,274	5 / 5	2,000	1,930	1,930	3,536	
	TF/TS400	4,040	1,879	1,879	886	1,374	5 / 5	1,950	1,880	1,880	3,556	
	TF/TS430	4,340	1,979	1,979	986	1,474	5 / 5	1,925	1,860	1,860	3,576	
	TF/TS450	4,540	2,079	2,079	1,086	1,574	5 / 5	1,900	1,840	1,840	3,595	
	TF/TS470	4,740	2,129	2,129	1,136	1,624	5 / 5	1,850	1,790	1,790	3,606	
	TF/TS500	5,040	2,229	2,229	1,236	1,724	5 / 5	1,800	1,750	1,750	3,626	
	TF/TS550	5,540	2,429	2,429	1,436	1,924	5 / 5	1,700	1,640	1,640	3,665	
	TF/TS600	6,040	2,629	2,629	1,636	2,124	5 / 5	1,600	1,540	1,540	3,729	
	TF/TS650	6,540	2,829	2,829	1,836	2,324	3 / 3	1,300	1,250	1,250	3,773	
TF/TS700	7,040	3,029	3,029	2,036	2,524	3 / 3	1,150	1,100	1,100	3,812		

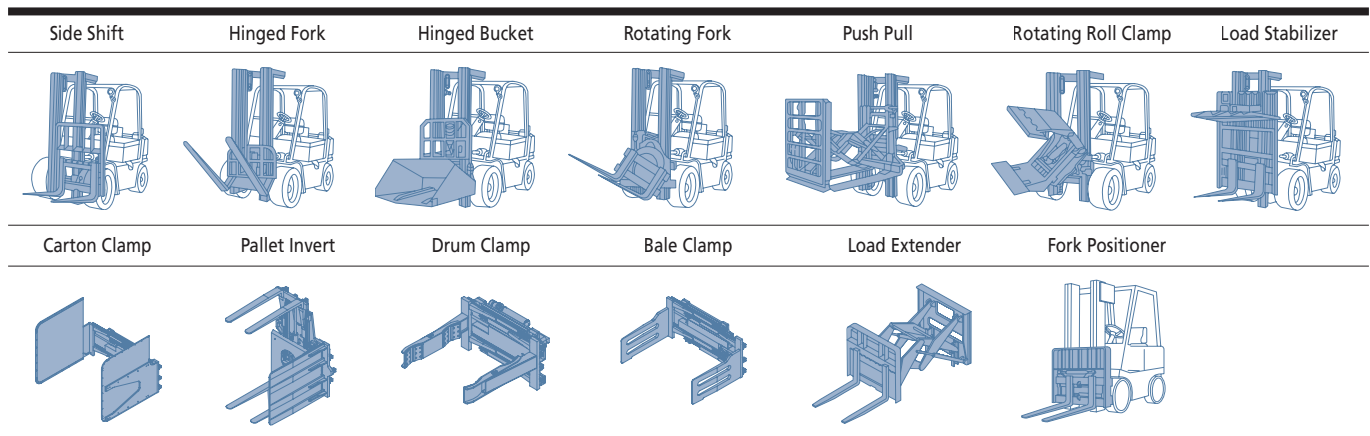
* Standard

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

Load Capacity



Various Attachments

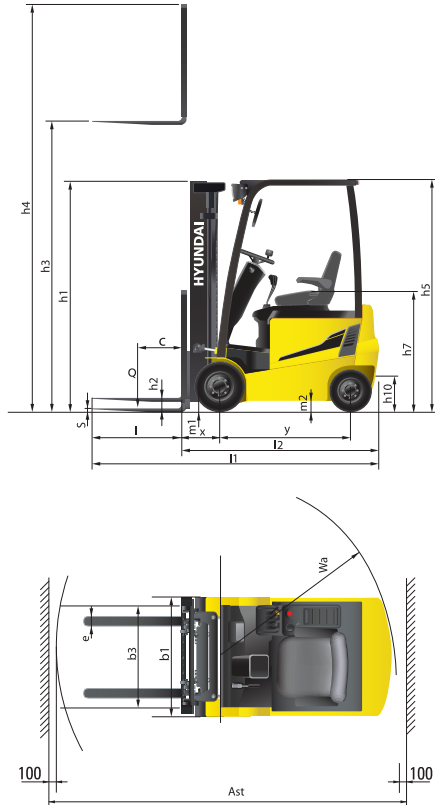


Optional Items

- Fork (mm)
16 / 18B-9F : 35X100X750, 850, 900(STD), 1050, 1200, 1350, 1500
20B-9F : 40X100X900(STD), 950, 1000, 1050, 1150, 1200, 1350, 1500, 1600
- Overshoe (mm) : 1300 / 1500 / 1700
- Integral Sideshift / Sideshift
- Tire : SOLID(STD) / Non-marking / Wide tire [16B-9F : Front tire (200 / 50-10)]
- Seat : semi suspension seat (STD)
Full suspension seat (Armrest, Backrest extension, Heating, Buckle SAW)

- M.C.V : 2-Spool (STD), 3-Spool, 4-Spool
- Beacon Lamp
- Work Lamp and rear combination lamp
- Side Mirror
- OPSS : Mast
- Cold Storage (for -30°C cold working environments)
- Cabin (Fine Top)
- Load Backrest (LBR)

Dimension



Specification

Identification					
1.1	Manufacturer		HYUNDAI		
1.2	Manufacturer's type designation		16B-9F	18B-9F	20B-9F
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 kg	1,600	1,800	2,000
1.6	Load center distance	c mm	500	500	500
1.8	Load distance, center of front axle to fork	x mm	360	360	365
1.9	Wheelbase	y mm	1,355	1,440	1,440
Weights					
2.1	Service weight(including battery)	kg	3,085	3,214	3,394
2.2	Axle loading, loaded front / rear	kg	4,106 / 578	4,437 / 577	4,770 / 624
2.3	Axle loading , unloaded front / rear	kg	1,491 / 1,594	1,562 / 1,652	1569 / 1,825
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)		18x7-8	200 / 50-10	200 / 50-10
3.3	Tires size, rear(Φ x width)		16x6-8	16x6-8	16x6-8
3.5	Wheels, number front rear(x = driven wheels)		2x / 2	2x / 2	2x / 2
3.6	Track width, front	mm	895	905	905
3.7	Track width, rear	mm	880	880	880
Basic Dimensions					
4.1	Mast / fork carriage tilt forward / backward	degrees	5 / 7	5 / 7	5 / 7
4.2	Lowered mast height	h1 mm	1,970	1,970	1,979
4.3	Free lift height	h2 mm	35	35	40
4.4	Lift height	h3 mm	3,025	3,025	3,030
4.5	Extended mast height	h4 mm	4,020	4,020	4,020
4.7	Overhead guard (cab) height	h5 mm	2,065	2,065	2,065
4.8	Seat height / Standing height	h7 mm	1,090	1,090	1,090
4.12	Coupling height	h10 mm	250	250	250
4.19	Overall length	l1 mm	2,935	3,020	3,030
4.20	Length to face of forks	l2 mm	2,035	2,120	2,130
4.21	Overall width	b1 mm	1,074	1,105	1,105
4.22	Fork dimensions	s / e / l mm	35x100x900	35x100x900	40x100x900
4.23	Fork carriage ISO 2328, class / type A, B		II/A	II/A	II/A
4.24	Fork - carriage width	b3 mm	1006	1006	1006
4.31	Ground clearance, loaded, under mast	m1 mm	85	94	94
4.32	Ground clearance, centre of wheelbase	m2 mm	90	90	100
4.33	Aisle width for pallets 1,000 x 1,200 crossways	Ast mm	3,352	3,427	3,447
4.34	Aisle width for pallets 800 x 1,200 lengthways	Ast mm	3,495	3,575	3,595
4.35	Turning radius	Wa mm	1,710	1,795	1,810
4.36	Smallest pivot point distance	mm	-	-	-
Performance Data					
5.1	Travel speed, loaded / unloaded	km/h	14 / 15	14 / 15	14 / 15
5.2	Lift speed, loaded / unloaded	mm/s	330 / 500	330 / 500	330 / 500
5.3	Lowering speed, loaded / unloaded	mm/s	500 / 450	500 / 450	500 / 450
5.6	Max. drawbar pull, loaded / unloaded S2 5min	N	11,550 / 11,345	12,035 / 10,835	12,020 / 10,805
5.8	Max. gradient performance, loaded / unloaded S2 5min	%	22 / 22	21 / 21	18 / 18
5.10	Service brake		Hydraulic	Hydraulic	Hydraulic
E - Motor					
6.1	Drive motor rating S2 60 min	kW	4.0x2	4.0x2	4.0x2
6.2	Pump motor rating at S3 - 15 %	kW	12.0	12.0	12.0
6.4	Battery voltage, nominal capacity K5	V/Ah	48 / 440	48 / 440	48 / 440
6.5	Battery weight	kg	820	1,000	1,000
	Battery dimensions L / W / H	mm	978 / 545 / 636	978 / 630 / 636	978 / 630 / 636
Other Details					
8.1	Type of drive control		AC	AC	AC

*The specifications in this brochure are subject to change for option.

*The options in this brochure are subject to change improve to performance of the forklift.



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