

Hyundai 9-series battery forklift

**16·20BRJ-9**



Some of the photos may include optional equipment.



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**HYUNDAI**  
XITESOLUTION

# Your satisfaction is our priority!

## Compact forklift with proven AC technology

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

The newly designed sit-on reach trucks provide every operator comfortable driving, increased productivity and easy maintenance.



### Performance & Efficiency

- AC traction & Pump motor
- AC controller : ZAPI
- Electromagnetic brake
- Vehicle performance optimized for working condition (H, N, E & Turtle mode)

### Safety

- Curve control system
- Automatic center position at starting
- Anti roll back
- Steering angle sensing system

### Convenience

- 5.6 inch LCD color monitor
- Auto tilt leveling system (OPT)
- Load weight indicator (OPT)
- Fork camera & monitor (OPT)
- Fingertip control (STD) & Joy stick control (OPT)

### Maintenance

- Password starting system
- UL & CE certification DC-DC convertor
- Wide opening & Rotating hood
- Self-diagnosis system

Power & Performance

# Superior Power & Optimal Performance

Efficient, smooth running and powerful performance make your work more productive.



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## Minimum Turning Radius

Compact design suitable for narrow aisle operation guarantees work efficiency and maximum space utilization.



## Versatile Reach Stroke

Multi-roller reach assembly provides for a smooth, controlled and safe load handling system, extended reach allows unsurpassed versatility.



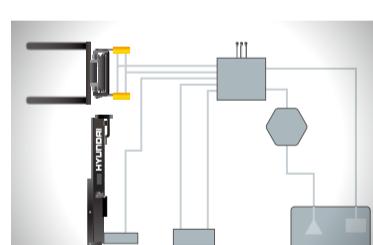
Drive motor & Pump motor

Efficient AC motor guarantees reliability and a optimized motor design provides for low noise levels. Temperature sensor ensure long motor life.



Electro magnetic brake

Increased brake torque and brake stability by electromagnetic load wheel brake.



State of the art Hydraulic System

The latest large-capacity hydraulic system reacts quickly during operation and the low noise control valve increases both efficiency and durability.



ZAPI AC Controller

The 8kHz(high frequency) ZAPI AC controller ensures optimal performance with less energy. Also, it protects the system from overheating and abnormal voltage.

## Excellent Lift speed & Travel speed

The combination of the ZAPI AC controller, drive motor, and pump motor maximizes the work efficiency in logistics.

Lift speed (Loaded)

16BRJ-9



Travel speed (Unloaded)

20BRJ-9



Function to increase work efficiency

① **Vehicle performance optimized for working condition** : This function optimizes the performance of vehicle for the purpose of work, such as speed of operation, maximum working time and operator's proficiency.

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

② **Turtle mode** : When selecting the turtle mode while working in narrow and congested workplace, the travel speed is reduced at a preset speed.



Easy & Comfort

# Optimised Ergonomics & Advanced Safety

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



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## Comfortable Operator Environment

A practically designed full suspension seat is fully adjustable for optimum operating position, reducing operating fatigue.

\*Fabric seat (STD), PVC seat (optional)



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### Comfortable suspension seat

An attractive and adjustable seat, based on a human engineering design, provides great comfort. Also, the angle of the armrest can be adjusted to reduce the fatigue of the driver.

- Grammer Seat
- Adjustable suspension stiffness based on the driver's weight (45~170kg)
- ELR type seat belt standard
- Heater and Backrest extension (OPT)



### FWD/REV Switch & Fingertip control

The forward/reverse switch provides the operator with precise and smooth directional control. And responsive fingertips with less energy offer productivity improvement and safety. So the driver can feel less fatigue.



### Break pedal

Smoother breaking is assured by the balanced design of the pedal and maintenance costs are lowered as the cover is easily replaceable.

## 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. Multilanguage (maximum 12) is available.



### Load weight indicator (OPT)

When lifting a load, a change in hydraulic pressure of the lift line is converted to a measurement of weight displayed in real time, and a warning is given at the time of overload.

### Auto tilt leveling (OPT)

Mounting the angle sensor on the back side of carriage enable operator to easily operate the vehicle by maintaining a level of the fork and ground.

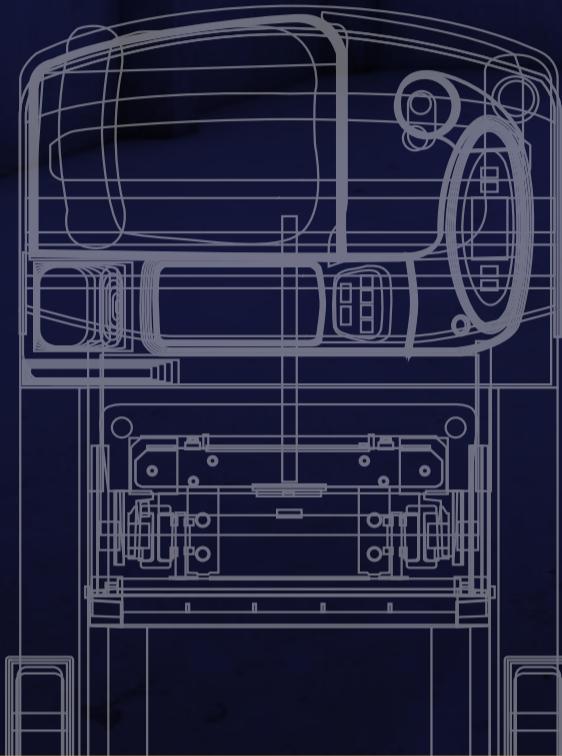
### Height indicator (OPT)

Mounting the height indicator on the side of mast will increase safety and convenience by displaying the height of fork on the LCD monitor in real time.

Secure & Safety

# Excellent visibility Reliable safety

Interior space and strengthened safety device are designed with safety as the priority, thus enable the operator to focus on work safely and conveniently.



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## Excellent visibility for safe operation

Optimized lift cylinder arrangement provides operator with wider visibility.



Non slip floor mat



Strong overhead guard



Headrest cushion pad

The safety overhead guard meets ISO 6055 and ANSI regulations and protects the operator during hazardous work.

A large and soft cushion pad is positioned for operator's safety and comfort.

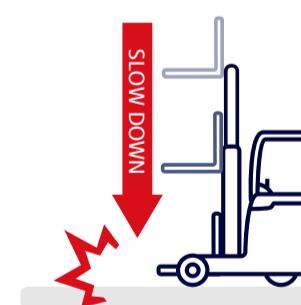
## Safety features

The adoption of a high-sensitivity sensor and advanced safety system can prevent the safety accidents.



### Curve control

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



### 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.



### Anti roll back system

This system prevents the forklift from rolling rapidly down a slope when the joystick lever & brake pedal are not applied while also offering improved ramp start-up abilities.



### Automatic center position at starting

When the key ON, prox switch detects the position of drive wheel, and the wheel turns to the center position automatically.



### Steering angle sensing system

The symbol of the cluster shows the angle of the steering wheel. So the operator can easily predict the direction of the vehicle.

Maintenance & Convenience

# Durability, Easy Maintenance

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



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## Durability, Easy Maintenance

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



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**Reliable MOSFET type controller**

The self-diagnosis function of the controller allows operator to check the fault diagnosis and errors. Also, IP65 controller prevents the entry of water and dust completely.



**Centralized fuse box**

The centralized fuses ensure easy inspection and replacement.



**Battery disconnect lever**

The battery disconnect lever with large handle helps separate the battery connector from the vehicle.



**Emergency switch**

In case of an emergency, the emergency switch is installed to block the battery power supplied to the vehicle to prevent damage and safety accidents.



**DC-DC Converter**

DC-DC converter satisfied with UL & CE prevents from short circuit overload and reverse polarity.



**Easy maintenance**

The rotating hood with hinges can be opened up to 105 degrees. So the operator can check and repair the driving device located underneath the seat.



**Easy battery replacement**

By using the reach out function of the reach cylinder, the battery can be removed, checked, and exchanged easily.



**Hydraulic Filter**

A suction filter is installed inside the hydraulic tank, which prevents the damages of hydraulic pump and MCV valve.



**Password starting system**

The equipment can be managed safely and protected from theft by setting the password.

# New 9 Series Mast Specification

16/20BRJ-9

## 16BRJ-9

Mast Type	Maximum Fork Height		Overall Height (Lowered)		Overall height (Lifted)				Free Lift Height				Tilt Angle		TRUCK WEIGHT (UNLOADED)				
	With Load Backrest		Without Load Backrest		With Load Backrest		Without Load Backrest		Without Load Backrest (3/4-SPool)		Fwd	Bwd	deg	lb	kg				
	in	mm	in	mm	in	mm	in	mm	in	mm									
3-STAGE FULL FREE LIFT	*TF530	208.9	5,306	93.4	2,372	249.4	6,336	228.8	5,812	51.9	1,318	69.3	1,761	53.4	1,357	2	5	7,185	3,259
	TF600	237.8	6,040	105.6	2,683	278.3	7,070	257.7	6,546	64.1	1,629	81.6	2,072	67.6	1,717	2	5	7,401	3,357
	TF650	257.5	6,540	113.5	2,883	298.0	7,570	277.4	7,046	72.0	1,829	89.4	2,272	74.7	1,897	2	5	7,811	3,543
	TF750	295.5	7,506	123.2	3,130	336.1	8,536	315.4	8,012	81.7	2,076	99.2	2,519	83.3	2,115	2	5	7,932	3,598
	TF800	315.2	8,006	131.1	3,330	355.7	9,036	335.1	8,512	89.6	2,276	107.0	2,719	91.1	2,315	2	5	8,069	3,660
	TF850	334.9	8,506	137.7	3,497	375.4	9,536	354.8	9,012	96.2	2,443	113.6	2,886	97.8	2,483	2	5	8,265	3,749
	TF900	354.6	9,006	144.3	3,664	395.1	10,036	374.5	9,512	102.8	2,610	120.2	3,053	104.4	2,651	2	5	8,377	3,800
	TF950	374.3	9,506	150.8	3,831	414.8	10,536	394.2	10,012	109.3	2,777	126.8	3,220	111.0	2,819	2	5	8,490	3,851
	TF1050	413.6	10,506	165.3	4,198	454.2	11,536	433.5	11,012	123.8	3,144	141.2	3,587	125.5	3,187	2	5	8,792	3,988

※ : Standard

## 20BRJ-9

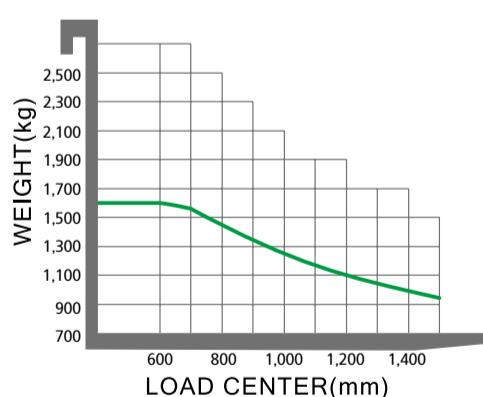
Mast Type	Maximum Fork Height		Overall Height (Lowered)		Overall height (Lifted)				Free Lift Height				Tilt Angle		TRUCK WEIGHT (UNLOADED)				
	With Load Backrest		Without Load Backrest		With Load Backrest		Without Load Backrest		Without Load Backrest (3/4-SPool)		Fwd	Bwd	deg	lb	kg				
	in	mm	in	mm	in	mm	in	mm	in	mm									
3-STAGE FULL FREE LIFT	*TF530	208.9	5,305	93.9	2,386	252.2	6,406	235.2	5,974	50.6	1,285	67.6	1,717	58.2	1,479	2	5	8,375	3,799
	TF630	248.2	6,305	108.0	2,744	291.6	7,406	274.6	6,974	64.7	1,643	81.7	2,075	72.3	1,837	2	5	8,607	3,904
	TF750	295.5	7,505	123.8	3,144	338.8	8,606	321.8	8,174	80.4	2,043	97.4	2,475	88.1	2,237	2	5	9,233	4,188
	TF800	315.2	8,005	131.3	3,336	358.5	9,106	341.5	8,674	88.0	2,235	105.0	2,667	95.6	2,429	2	5	9,372	4,251
	TF900	354.6	9,007	144.5	3,670	398.0	10,108	380.9	9,676	101.1	2,569	118.1	3,001	108.8	2,763	2	5	9,716	4,407
	TF950	374.4	9,509	151.1	3,837	417.7	10,610	400.7	10,178	107.7	2,736	124.7	3,168	115.3	2,929	2	5	9,839	4,463
	TF1000	394.0	10,007	158.6	4,029	437.3	11,108	420.3	10,676	115.3	2,928	132.3	3,360	123.0	3,123	2	5	9,978	4,526
	TF1050	413.7	10,507	165.2	4,196	457.0	11,608	440.0	11,176	121.9	3,095	138.9	3,527	129.6	3,291	2	5	10,203	4,628
	TF1100	433.3	11,007	171.8	4,363	476.7	12,108	459.7	11,676	128.4	3,262	145.4	3,694	136.1	3,457	2	5	10,318	4,680
	TF1150	453.0	11,507	179.3	4,555	496.4	12,608	479.4	12,176	136.0	3,454	153.0	3,886	143.7	3,649	2	5	10,456	4,743
	TF1200	472.7	12,007	185.9	4,722	516.1	13,108	499.1	12,676	142.6	3,621	159.6	4,053	150.3	3,817	2	5	10,578	4,798

※ : Standard

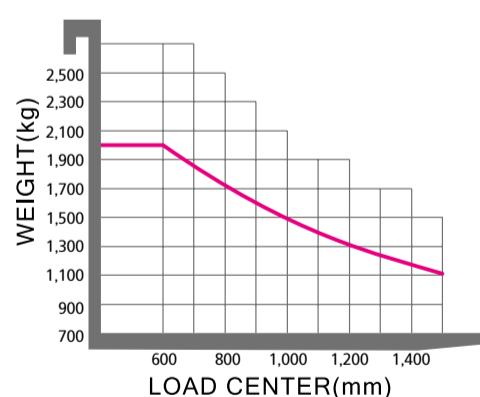
## New 9 Series Mast Specifications

## Load Capacity

### 16BRJ-9



### 20BRJ-9



## Optional Items

- UL(ES)
- Beacon Lamp(Amber)
- Fork Camera, Carriage Camera
- Cold Storage
- Work Lamp (LED)
- Rear Lamp (LED, Bulb)
- Auto Tilt Leveling

- Load Indicator
- Battery
- Charger 3Phases 220 / 380V, 410V, 440V
- Joystick Lever
- Fork Height Indicator & Preselector
- Fork(mm)

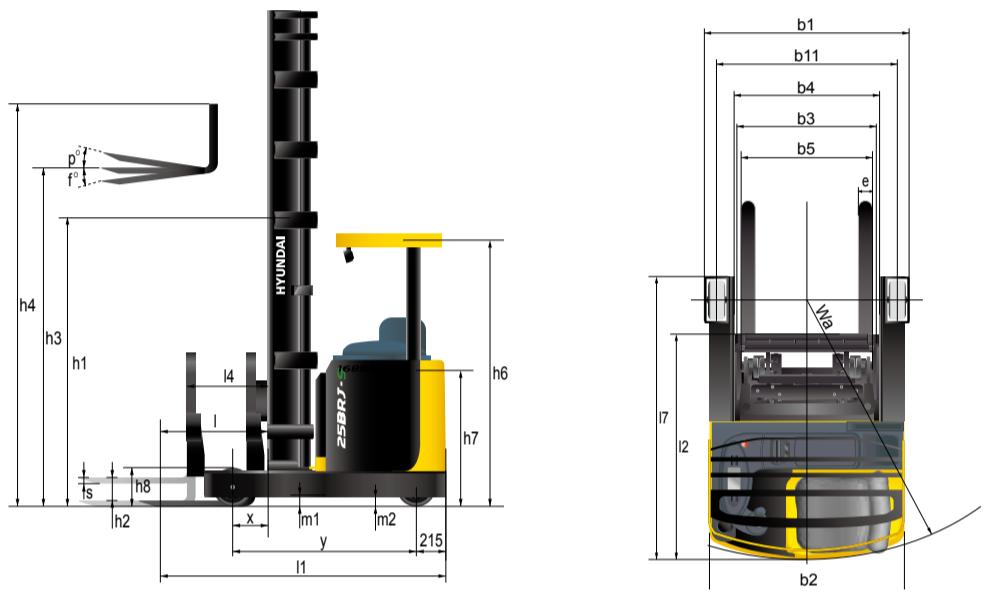
16BRJ-9: 900/950/1,000/1,050/1,200(STD)/1,350/1,500/1,650/1,800

- Sideshift : Max. 140 mm
- Tire : Urethane (STD), Vulkollan (Optional)
- Seat : Fabric (STD), PVC (optional)

## Specification

Identification				
1.1	Manufacturer	Hyundai		
1.2	Manufacturer's model designation	16BRJ-9	20BRJ-9	
1.3	Drive(electric ,diesel,petrol,gas,manual)	electric	electric	
1.4	Type of operation(hand,pedestrian,standing,seated,order-picker)	seated	seated	
1.5	Load capacity / rated load	Q (kg)	1.6	
1.6	Load center distance	c (mm)	600	
1.8	Load distance, center of drive axle(Loadwheel) to fork	x (mm)	364	
1.9	Wheelbase	y (mm)	1,460	
Weights				
2.1	Service weight (incl. battery)	kg	3,259	
2.3	Axle loading, reach in, unloaded front(drive)/rear(load)	kg	2,015 / 1,244	
2.4	Axle loading, reach out, loaded front(drive)/rear(load)	kg	610 / 4,249	
2.5	Axle loading, reach in, loaded front(drive)/rear(load)	kg	1,756 / 3,103	
Wheels, Chassis				
3.1	Tires(solid rubber, superelastic, pneumatic, polyurethane)	PE	PE	
3.2	Tires size, front(Drive)(Φ x width)	345x140	345x140	
3.3	Tires size, rear(Load)(Φ x width)	330x100	355x106	
3.5	Wheels, numbers(x=driven wheels), front(drive)/rear(load)	1x/2	1x/2	
3.6	Track width, front(drive)	b10 (mm)	0	
3.7	Track width, rear(load)	b11 (mm)	1,149	
Basic Dimensions				
4.1	Mast/fork carriage tilt forward/backward	degrees	2 / 5	
4.2	Lowered mast height	h1 (mm)	2,372	
4.3	Free lift (without backrest)	h2 (mm)	1,761	
4.4	Lift height	h3 (mm)	5,306	
4.5	Extended mast height (without backrest)	h4 (mm)	5,812	
4.7	Overhead load guard (cab) height	h6 (mm)	2,116	
4.8	Seat height/ standing height	h7 (mm)	1,039	
4.10	Height of wheel arms	h8 (mm)	326	
4.19	Overall length (Reach In, Fork End)	l1 (mm)	2,511	
4.20	Length to face of forks ( Reach In)	l2 (mm)	1,311	
4.21	Overall width	b1/b2 (mm)	1,279 / 1,270	
4.22	Fork dimensions(hook type)	s/e/l(mm)	40x100x1,200	
4.23	Fork carriage ISO 2328, class/type A,B		2A	
4.24	Fork-carriage width	b3 (mm)	800	
4.25	Overall fork width	b5 (mm)	732	
4.26	Distance between support arms	b4 (mm)	951	
4.28	Reach Stroke	l4 (mm)	563	
4.31	Ground clearance, loaded, under mast	m1(mm)	114	
4.32	Ground clearance, centre of wheelbase	m2(mm)	86	
4.34.1	Aisle width for pallets 1000x1200 crossways	Ast(mm)	2,759	
4.34.2	Aisle width for pallets 800x1200 lengthways	Ast(mm)	2,812	
4.35	Turning radius	Wa(mm)	1,685	
4.37	Length across wheel arms	l7(mm)	1,863	
Performance Data				
5.1	Travel speed, unloaded	km/h	14	14
5.2	Lift speed, loaded/ unloaded	mm/s	370 / 580	300 / 470
5.3	Lowering speed, loaded/unloaded	mm/s	500 / 450	500 / 450
5.8	Max gradient performance, loaded/ unloaded S2.5min	%	12 / 18	12 / 19
5.10	Service brake		electric	electric
E-Motor				
6.1	Dirve motor rating S2 60min	kW	7.5	7.5
6.2	Lift motor rating at S2 5min	kW	14	14
6.3	Battery acc. to DIN 45531/ 35/36 A, B, C,no		DIN45531	DIN45531
6.4	Battery voltage, nominal capacity K5	V/Ah	48 / 300	48 / 500
6.5	Battery weight(min)	kg	750	940
6.7	Battery compartment dimensions L/W/H	mm	1,235 / 287 / 802	1,235 / 358 / 802
Other Details				
8.1	Type of drive control		AC Mosfet	AC Mosfet
8.2	Operating pressure for attachments	bar	170	170
8.3	Oil volume for attachments	l/min	45	45

## Dimension



\* All specifications in this catalog are subject to change according to the optional items.

## New 9 Series

### Hi-MATE, a solution for field control based on data

Data collected at the sensors and modules mounted on equipment during the operation of forklift truck at the operation control system of Hyundai Industrial Vehicle is provided to the mobile device or computer of the customer in real time through the server of Hyundai Construction Equipment. Such visual data can be used for establishing a control plan for safety control in fields, productivity improvement, and cost saving.



#### Equipment operation management

\* Real-time monitoring and follow-up management of individual vehicles, drivers, equipment on-site, and operation information

- Key-on time, travel hours, work hours, and traveling position



#### Equipment status management

\* Supplying information of the forklift truck linked with operation hours, establishing a follow-up management plan

- Indicating fuel remainder, failure information

- Indicating consumable exchange timing, service timing



#### Safe traveling control

\* Checking and follow-up management of safety accident caused by collision between the field system and forklift truck during operation

- Count of collision, size of impact



#### Human resource management

\* Checking and follow-up management such as matching between self-diagnosis and equipment conditions before operation

- Driver authorization, self-diagnosis of equipment conditions

### Data Flow

