

# 110/130/160D-9

Performance Enhanced For Stage IV Engine

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

## **New Diesel Forklift with Proven Quality and Advanced Technology**

- **Maximum performance**
- **Spacious operator's cab**
- **Load weight indicator (Optional)**
- **OPSS System for safe operation**
- **Easy serviceability**
- **4.3Inch Color LCD (Centralized Information Display)**
- **FATC (Full Automatic Temperature Control) Airconditioner (Optional)**



■ Photo may include optional equipment

# High Efficiency & Optimal Performance



Powerful engine and high technology systems provide you with enhanced performance and highest productivity.

**110/130/160D-9**



■ Photo may include optional equipment

## Cummins QSB6.7 Engine 122 kW / 2,300 rpm 74,7 kgf.m / 1,500 rpm



### Powerful Engine

The six cylinders turbo-charged engine is built for power, reliability and economy. This engine meets EPA Tier 4 and EU stage IV emission regulation.

### Excellent fuel efficiency

Fuel consumption rate is improved than previous model.

### DOC (Diesel Oxidation Catalyst)

### SCR (Selective Catalytic Reduction)

No DPF and no DOC required

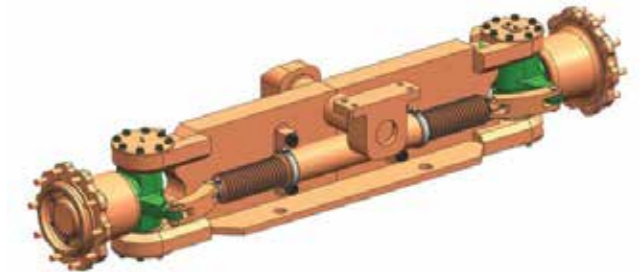
### EGR (Exhaust Gas Recirculation)

- High torque at low speeds
- Excellent transient behavior



### ZF Full-automatic Transmission

Full-automatic transmission gives easy, convenient handling and soft, smooth shifting. The operator can select two kinds of automatic modes. (1st <math>\leftrightarrow</math> 3rd, 2nd <math>\leftrightarrow</math> 3rd)



### Fully Hydrostatic Power Steering

The hydraulic steering system always guarantees smooth and flexible steering, preventing over-run and kick-back.

### Load Sensing System

Only flow required on cylinders is supplied. It makes energy saving. (No excessive flow)



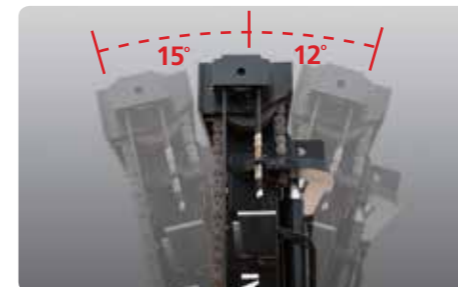
### Durable drive axle

The hypoid type planetary reduction drive axle smoothly delivers desired torque to the drive wheels.



### Wet Disc Brake System

The wet disc brake system is virtually maintenance free and is enclosed to protect from dust and water.



### Increased mast tilting angle

Utilizing the mast tilting angle of 15 degrees forward and 12 degrees backward, the operator can perform loading and unloading jobs safely and rapidly.



### Max. Gradeability (loaded / Unloaded)

Model	%
110D-9	52.1
130D-9	46.9
160D-9	37.7

### Max. Travel Speed (Unloaded)

Model	Km / h
110D-9	35.6
130D-9	35.6
160D-9	35.2

### Faster Travel Speed and Gradeability

The powerful high-output engine provides greater acceleration, better gradeability and faster travel speed on any tough terrain or slope.

# Best Convenience & Optimised Ergonomics



The ergonomically designed cabin provides full support and comfort to the operator.

**110/130/160D-9**



■ Photo may include optional equipment

## Spacious Operator Cabin

The newly designed cabin was conceived for more space, a wider field of view and operator comfort.



MP3 CD Player



Bluetooth Hands Free Remote Control Socket (Optional)



Centralized Instrument switch Panel



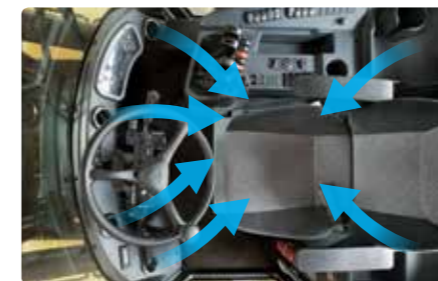
## Luxury (Air-suspension+Heat+HeadRest) seat (Optional)

An attractive and adjustable seat, based on a human engineering design, provides great comfort, safety and durability.



## New Design Cluster

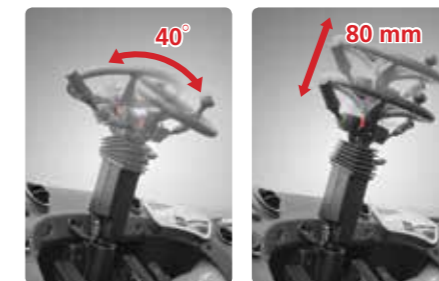
1	Parking lamp	10	Odometer	19	Right turn signal indicator lamp
2	Engine check warning lamp	11	Outside temperature indicator	20	Engine coolant temperature gauge
3	High beam indicator lamp	12	Air-con setting temp. indicator	21	Transmission oil temperature gauge
4	Operator presence indicator lamp	13	Vehicle tilt angle indicator	22	Fuel gauge
5	Seat belt warning lamp	14	Clock	23	Speed gauge
6	Left turn signal indicator lamp	15	T/M information display		
7	Engine RPM indicator	16	Urea level gauge		
8	Load weight indicator(option)	17	Rear wheel angle (option)		
9	Hour meter	18	Mast tilt angle indicator		



## High-output Air Conditioner & Heater (Optional)

Air Vent positions of the air conditioner with integrated the condenser is mounted on cabin front rear side to make a wide room in the cabin. And an air conditioner with high-output and heater always provide you with comfortable environment when you work.

\*Especially Applied FATC (Full Automatic Temperature Control)



## Adjustable steering column

Steering handle is adjustable depending on the operator's body shape. Steering column is adjustable depending on the operator's body size.



## Quick Response of Operating Control Levers

Only minimal operator's effort is required for precise, safe and productive control. (4 Lever : Standard), (3/5 Lever : Option)

# Advanced Safety



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

**110/130/160D-9**



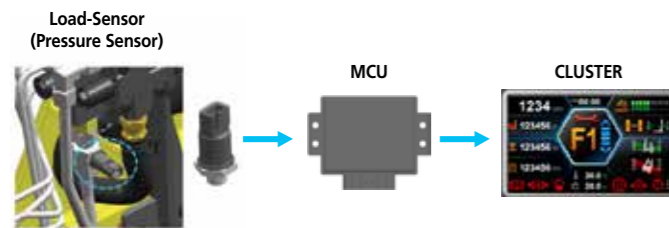
### Engine Control Mode

According to operating load, the operator can select engine mode by changing side panel switch.  
 STD Mode : Fuel reduction mode for light duty operating load  
 POWER Mode : Heavy-duty or operating at slope



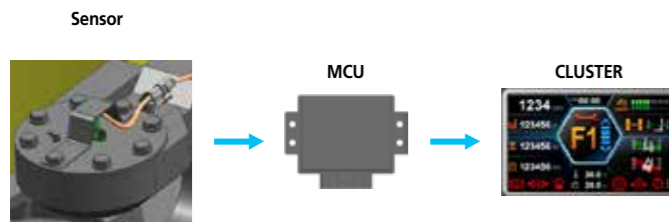
### Adjustable Engine low Idle RPM

While engine runs, idle rpm can be increased in steps of 25rpm and it keeps previously set rpm when engine restarts.



### Weight Indicator (Optional)

The optional Weight Indicator displays the load weight in the monitor. The load sensor reduces the time to check loaded weight and the alarm alerts the driver when overloaded.



### Rear Wheel Angle Monitoring (Optional)

- indicate steering wheel angle for easy operation
- Real-time steering wheel angle display



### Up-to-date Cooling System

The minimum fuel consumption and low noise are available by applying hydraulic cooling fan sensing intake air temperature, transmission oil temperature, coolant temperature and hydraulic temperature.



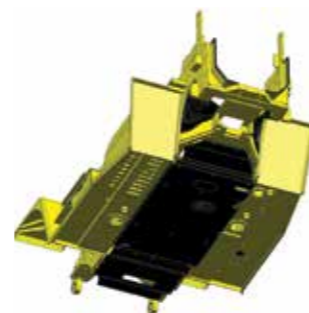
### Cabin Tilting Automatic System

Cabin tilting automatic system makes servicing of all power train components quick and easy. An electrically assisted hydraulic actuated cylinder tilts operator cabin to the left side about 65 degrees for easy access to inside of truck components.



### Rear Tire cover

The Rear tire cover with PE material is equipped to prevent clogging of the radiator from foreign substances.



### Undercover (Optional)

The Under cover protects the engine and components from dusts caused by ground. It helps to lengthen Components life.

### OPSS (Operator Presence Sensing System)

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



■ Photo may include optional equipment



### Highly Durable Mast & Carriage Side Roller

Side roller with great durability for mast and carriage is included.



### Highly durable Carriage

The carriage is very strong cause of applying the high tensile structural steel which has a excellent durability. Work at the narrow space is easy because the width of carriage is narrower than overall width of the vehicle.



### Excellent Night Work

- Various position of work lamp provides the operator more comfortable and safe operating environments.
- Front : fender (2), mast (4)
- Rear : cab (2)
- LED Rear Combination Lamp

# Fast and Easy Maintenance

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

**110/130/160D-9**



## Large Engine Hood

Highly accessible engine compartment assures fast and efficient maintenance.

■ Photo may include optional equipment

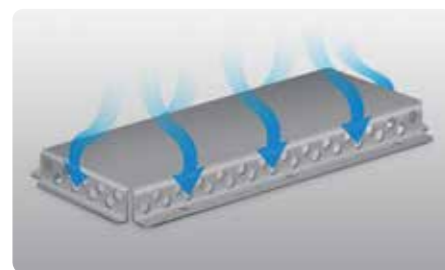


## Rear View Camera (Optional)

The rear view camera makes the operation more easy and convenient and supports 4 camera channels.

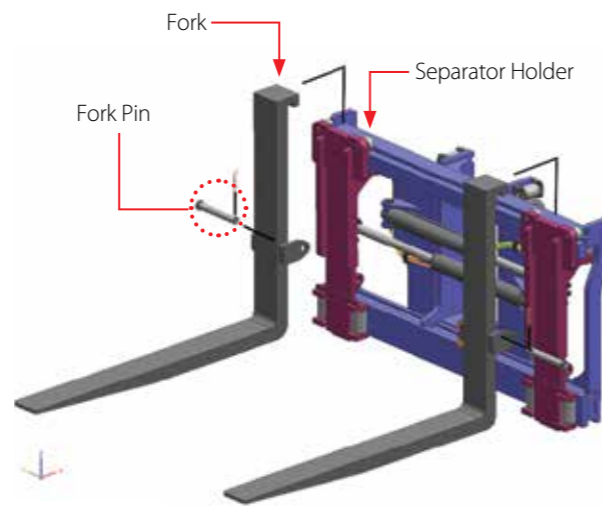


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## Cabin Air Fresh Filter

The cabin is slightly overpressured to keep dust outside of the cabin and to reduce noise levels.



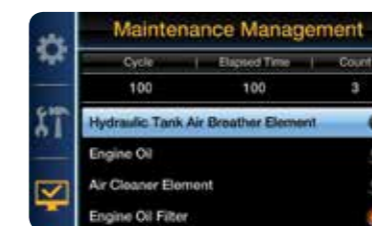
## Separator holder type Fork Carriage (Optional)

To improve handling and easily switch forks and other attachments separator holder system is adopted as an option. It is possible to install various attachments like coil ram easily.



## Master Switch

A master switch disconnects the battery power to protect the electrical system from excess electrical drainage.



## Maintenance Management display



## Engine Start Limit

## Mast Specification (110D-9)

Mast Type		Maximum Fork Height (mm)	Overall Height Lowered (mm)	Tilt Angle (deg) Fwd / Bwd	Load capacity (600 mm LC) (kg)	Truck Weight Unloaded (kg)
2-Stage Limited Free Lift	V280	2805	2900	15 / 12	11000	16242
	* V300	3005	3000	15 / 12	11000	16275
	V330	3305	3150	15 / 12	11000	16351
	V350	3505	3250	15 / 12	11000	16400
	V400	4005	3550	15 / 12	11000	16653
	V450	4505	3800	15 / 12	11000	16778
	V500	5005	4100	15 / 12	11000	16927
	V550	5505	4350	15 / 12	11000	17158
	V600	6005	4650	15 / 12	11000	17310
	V650	6505	4900	15 / 12	11000	17443
2-Stage Full Free Lift	V700	7005	5150	15 / 12	10820	17574
	VS300	3028	3000	10 / 10	11000	16449
	VS350	3528	3250	10 / 10	11000	16589
	VS400	4028	3500	10 / 10	11000	16731
	VS450	4528	3750	10 / 10	11000	16877
	VS500	5028	4000	10 / 10	11000	17134
3-Stage Full Free Lift	VS550	5528	4250	10 / 10	11000	17352
	VS600	6028	4600	10 / 10	11000	17598
	TS450	4521	2950	10 / 10	11000	17405
	TS500	5025	3117	10 / 10	11000	17496
	TS550	5525	3284	10 / 10	11000	17588
	TS600	6023	3551	10 / 10	11000	17733
	TS650	6525	3718	10 / 10	10720	17825
TS700	7025	3935	10 / 10	10380	18066	
TS750	7525	4102	10 / 10	10080	18158	

## Mast Specification (130D-9)

Mast Type		Maximum Fork Height (mm)	Overall Height Lowered (mm)	Tilt Angle (deg) Fwd / Bwd	Load capacity (600 mm LC) (kg)	Truck Weight Unloaded (kg)
2-Stage Limited Free Lift	V280	2805	2900	15 / 12	13000	16958
	* V300	3005	3000	15 / 12	13000	16991
	V330	3305	3150	15 / 12	13000	17067
	V350	3505	3250	15 / 12	13000	17117
	V400	4005	3550	15 / 12	13000	17369
	V450	4505	3800	15 / 12	13000	17494
	V500	5005	4100	15 / 12	13000	17644
	V550	5505	4350	15 / 12	13000	17874
	V600	6005	4650	15 / 12	12610	18026
	V650	6505	4900	15 / 12	12250	18159
2-Stage Full Free Lift	V700	7005	5150	15 / 12	11900	18290
	VS300	3028	3000	10 / 10	13000	17166
	VS350	3528	3250	10 / 10	13000	17306
	VS400	4028	3500	10 / 10	13000	17447
	VS450	4528	3750	10 / 10	13000	17593
	VS500	5028	4000	10 / 10	13000	17850
3-Stage Full Free Lift	VS550	5528	4250	10 / 10	12640	18068
	VS600	6028	4600	10 / 10	12200	18315
	TS450	4521	2950	10 / 10	13000	18186
	TS500	5025	3117	10 / 10	12860	18277
	TS550	5525	3284	10 / 10	12480	18369
	TS600	6023	3551	10 / 10	12100	18514
	TS650	6525	3718	10 / 10	11750	18606
TS700	7025	3935	10 / 10	11380	18847	
TS750	7525	4102	10 / 10	11060	18939	

## Mast Specification (160D-9)

Mast Type		Maximum Fork Height (mm)	Overall Height Lowered (mm)	Tilt Angle (deg) Fwd / Bwd	Load capacity (600 mm LC) (kg)	Truck Weight Unloaded (kg)
2-Stage Limited Free Lift	V295	2950	2950	15 / 12	16000	19679
	* V300	3010	3250	15 / 12	16000	19843
	V330	3310	3400	15 / 12	16000	19937
	V350	3510	3500	15 / 12	16000	19982
	V400	4010	3750	15 / 12	16000	20270
	V450	4510	4000	15 / 12	16000	20424
	V500	5010	4300	15 / 12	16000	20607
	V550	5510	4550	15 / 12	16000	20875
	V600	6010	4850	15 / 12	16000	21057
	V650	6510	5125	15 / 12	15700	21223
2-Stage Full Free Lift	V700	7010	5375	15 / 12	15270	21375
	VS300	3010	3200	10 / 10	16000	19872
	VS330	3310	3350	10 / 10	16000	19951
	VS350	3510	3450	10 / 10	16000	20016
	VS400	4010	3700	10 / 10	16000	20179
	VS450	4510	3950	10 / 10	16000	20435
	VS500	5010	4250	10 / 10	16000	20633
3-Stage Full Free Lift	VS550	5510	4500	10 / 10	16000	20827
	VS600	6010	4800	10 / 10	16000	21088
	TS450	4516	2950	10 / 10	16000	20946
	TS500	5017	3167	10 / 10	16000	21147
	TS550	5515	3333	10 / 10	15680	21295
	TS600	6016	3550	10 / 10	15220	21491
	TS650	6517	3717	10 / 10	14800	21649
TS700	7015	3933	10 / 10	14360	21962	
TS750	7515	4100	10 / 10	13960	22125	

## Optional Items

### Fork (L x W x T) (mm)

- 110D-9 :**  
75 x 200 x 1200 / 75 x 200 x 1500 / 75 x 200 x 1650 /  
75 x 200 x 1800 / 75 x 200 x 2100 / 85 x 200 x 2440 / 85 x 200 x 2600
- 130D-9 :**  
85 x 200 x 1200 / 85 x 200 x 1500 / 85 x 200 x 1650 /  
85 x 200 x 1800 / 85 x 200 x 2100 / 85 x 200 x 2440 / 90 x 200 x 2600
- 160D-9 :**  
90 x 200 x 1200 / 90 x 200 x 1500 / 90 x 200 x 1650 /  
95 x 200 x 1800 / 95 x 200 x 2100 / 95 x 200 x 2440 / 100 x 200 x 2600

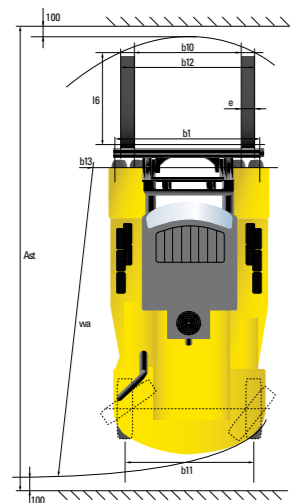
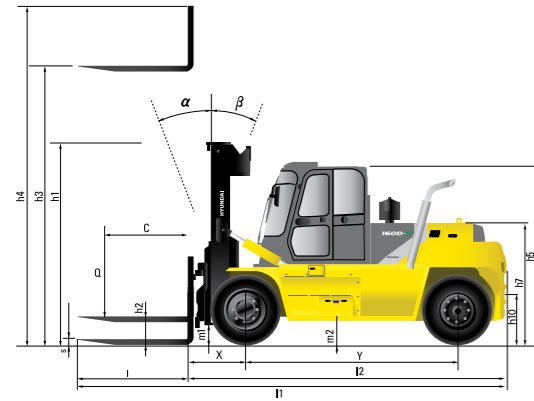
- **MAST :** Duplex Mast / Duplex Mast / Triplex Mast
- **MCV :** 3-Spool / 5-Spool
- **Fork Positioner :** ø 82 / ø 100
- **Integral Side Shift**
- **Separator Holder Type Fork Carriage**
- **Hydraulic Line :** 3-Spool / 4-Spool / 5-Spool
- **Wide Carriage (2730 mm) (160D-9)**

- **Air Compressor**
- **Seat :** Heat, Leather / KAB Air-Suspension Heat Seat
- **Bluetooth Hands Free**
- **Rear View Camera**
- **Weight Indicator**
- **Solid Tire**
- **Top Wiper**
- **Rear Wheel Angle Monitoring**

# New 9 Series

110/130/160D-9

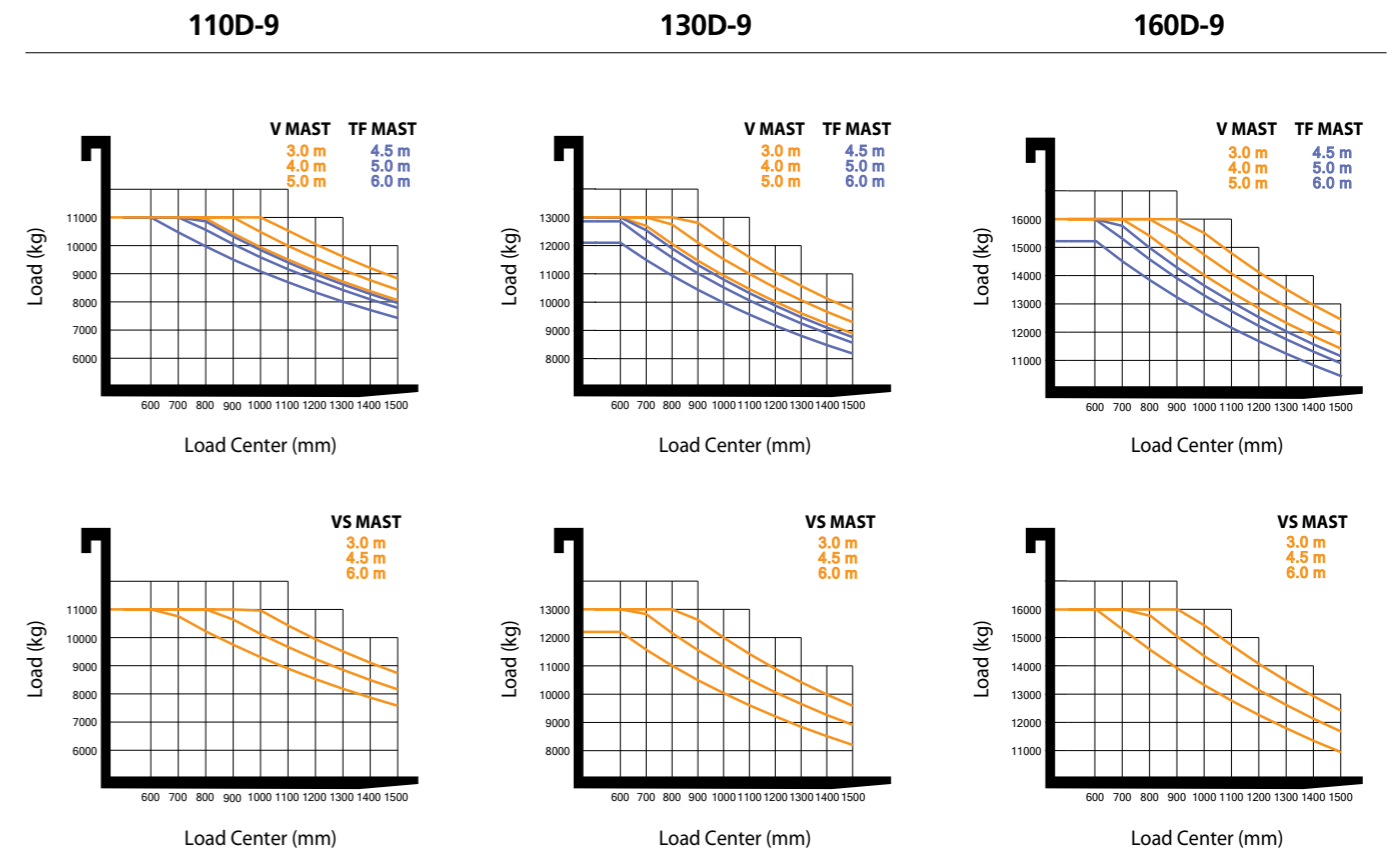
## Dimension



## Specification

Identification					
1.1	Manufacturer	Hyundai			
1.2	Type	110D-9	130D-9	160D-9	
1.3	Drive: electric (battery or mains), diesel, petrol, fuel gas, manual	DIESEL	DIESEL	DIESEL	
1.4	Type of operation: hand, pedestrian, standing, seated, order-picker	seated	seated	seated	
1.5	Load capacity (standard) / Rated load	Q (kg)	11000	13000	16000
1.6	Load center distance	c (mm)	600	600	600
1.8	Load distance, center of drive axle to forks	x (mm)	750	770	815
1.9	Wheelbase	y (mm)	3050	3050	3450
Weights					
2.1	Service weight	kg	16,275	16,991	19,843
2.2	Axle loading, loaded front / rear	kg	23960 / 3315	26775 / 3216	32009 / 3834
2.3	Axle loading, unloaded front / rear	kg	8055 / 8219	7988 / 9003	9446 / 10396
Wheels, Chassis					
3.1	Tires : Pneumatic (P), Solid (S), Non-marking (N)		Pneumatic	Pneumatic	Pneumatic
3.2	Tires size, front		10.00 - 20 - 16PR	10.00 - 20 - 16PR	12.00 - 20 - 18PR
3.3	Tires size, rear		10.00 - 20 - 16PR	10.00 - 20 - 16PR	12.00 - 20 - 18PR
3.5	Number of wheels front / rear (x=driven wheels)		4 x 2	4 x 2	4 x 2
3.6	Track width, front	b10 (mm)	1842	1842	1842
3.7	Track width, rear	b11 (mm)	1910	1910	1958
Basic Dimensions					
4.1	Mast / fork carriage tilt forward / backward (α/β)	degrees	15 / 12	15 / 12	15 / 12
4.2	Lowered mast height	h1 (mm)	3000	3000	3250
4.3	Lift height	h3 (mm)	3005	3005	3010
4.4	Extended mast height	h4 (mm)	4465	4465	4710
4.5	Overhead guard height (cabin)	h5 (mm)	2945	2945	2980
4.6	Seat height / standing height	h7 (mm)	1786	1786	1824
4.7	Coupling height	h10 (mm)	560	560	598
4.8	Overall length	l1 (mm)	5920	5930	6430
4.9	Length to face of forks	l2 (mm)	4570	4580	5080
4.10	Overall width	b1 (mm)	2450	2450	2497
4.11	Fork dimensions	s x e x l (mm)	75 x 200 x 1350	85 x 200 x 1350	90 x 200 x 1350
4.12	Fork carriage width	b3 (mm)	2362	2362	2488
4.13	Ground clearance, loaded, under mast	m1 (mm)	250	250	250
4.14	Ground clearance, centre of wheelbase	m2 (mm)	331	332	369
4.15	Aisle width for pallets 1000 x 1200 crossways (L x W)	Ast (mm)	6655	6660	7280
4.16	Aisle width for pallets 800 x 1200 lengthways (W x L)	Ast (mm)	6655	6660	7280
4.17	Turning radius	Wa (mm)	4350	4350	4895
4.18	Smallest pivot point distance	b13 (mm)	1634	1634	1865
Performance Data					
5.1	Travel speed, unloaded	km/h	35.6	35.6	35.2
5.2	Lift speed, loaded / unloaded	mm/s	440 / 510	430 / 510	350 / 450
5.3	Lowering speed, loaded / unloaded	mm/s	510 / 460	510 / 460	430 / 390
5.5	Drawbar pull, loaded	kg	135	137	136
5.7	Gradient performance, loaded	%	52.1	46.9	37.7
5.10	Service brake		Wet, Hydraulic	Wet, Hydraulic	Wet, Hydraulic
Engine					
6.1	Engine manufacturer / type		Cummins QS86.7	Cummins QS86.7	Cummins QS86.7
6.2	Engine power acc. To ISO 1585	kW	122	122	122
6.3	Rated speed	1/min	2300	2300	2300
6.4	No. of cylinder / cubic capacity	/cm <sup>3</sup>	6 / 6690	6 / 6690	6 / 6690
6.5	Fuel consumption acc. to VDI cycle	ℓ/h	11.1	11.4	12.1
Other Details					
8.1	Type of drive control		Power Shift	Power Shift	Power Shift
8.2	Operating pressure (system/attachments)	bar	210 / 165	210 / 165	210 / 165
8.3	Oil volume for attachments	ℓ / min	159	159	179
8.4	Sound level at driver's ear according to DIN 12053	db (A)	73.5	73.5	73.5

## Load Capacity





- \* Standard and optional equipment may vary. Contact your Hyundai dealer for more information. The machine may vary according to International standards.
- \* The photos may include attachments and optional equipment that are not available in your area.
- \* Materials and specifications are subject to change without advance notice.
- \* All imperial measurements rounded off to the nearest pound or inch.
- \* The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant HFC-134a (Global Warming Potential = 1430).  
The system contains 0.55 kg of refrigerant which has a CO<sub>2</sub> equivalent of 0.7865 metric tonne.



PLEASE CONTACT

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