

160D-9L

Performance Enhanced For Stage IV Engine

MOVING YOU FURTHER

HYUNDAI HEAVY INDUSTRIES



■ Photo may include optional equipment



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**
- **Weight indicator**
- **Easy serviceability**
- **4.3Inch Color LCD (Centralized Information Display)**
- **FATC (Full Automatic Temperature Control) Airconditioner**



■ Photo may include optional equipment

High Efficiency & **Optimal Performance**



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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)

EGR (Exhaust Gas Recirculation)

- High torque at low speeds
- Excellent transient behavior

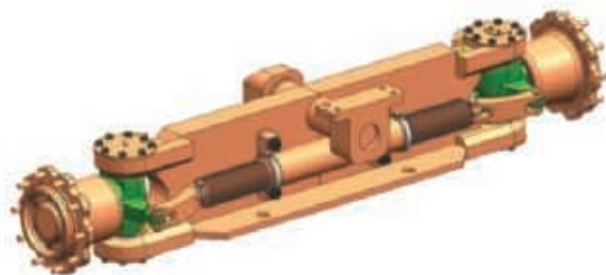
Powerful engine and high technology systems provide you with enhanced performance and highest productivity.

160D-9L



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 <—> 3rd, 2nd <—> 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)



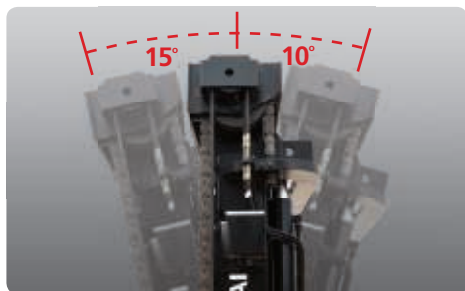
Durable drive axle

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 10 degrees backward, the operator can perform loading and unloading jobs safely and rapidly.



Max. Travel Speed (Unloaded)

Model	Km / h
160D-9L	35.2

Max. Gradeability (Unloaded)

Model	%
160D-9L	33

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



Spacious Operator Cabin

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

■ Photo may include optional equipment



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.

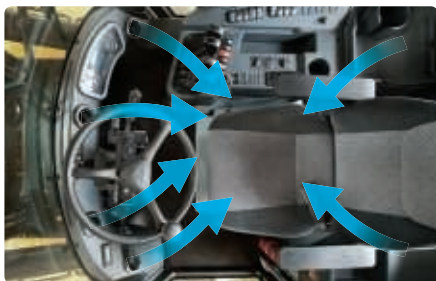
The ergonomically designed cabin provides full support and comfort to the operator.

160D-9L



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.

Advanced **Safety**



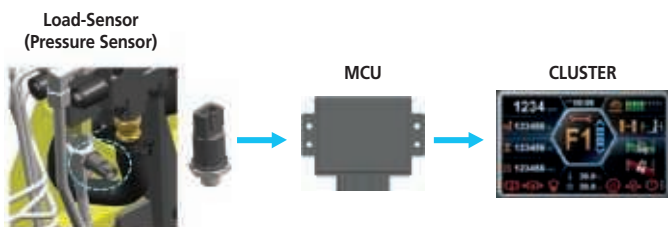
Engine Control Mode

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



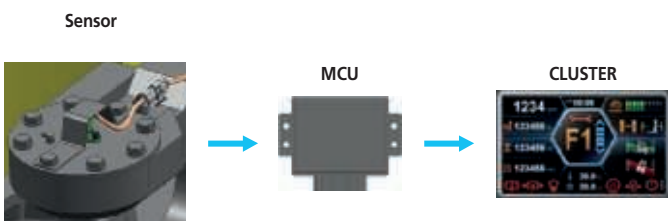
Adjustable Engine low Idle RPM

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



Weight Indicator

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

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



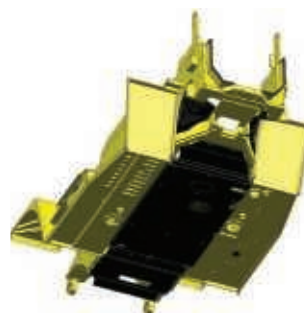
Up-to-date Cooling System

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.



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.

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

160D-9L

**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



■ Photo may include optional equipment

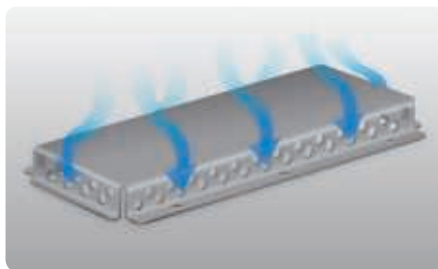


Cabin Tilting Automatic System

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 53 degrees for easy access to inside of truck components.

Large Engine Hood

Highly accessible engine compartment assures fast and efficient maintenance.

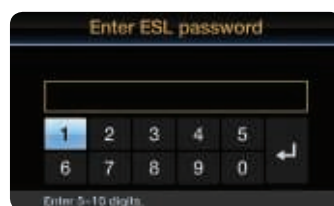


Cabin Air Fresh Filter

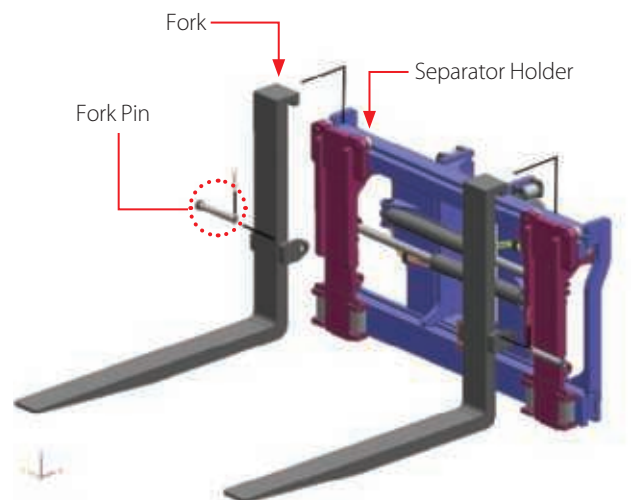
The cabin is slightly overpressured to keep dust outside of the cabin and to reduce noise levels.



Maintenance Management display



Engine Start Limit



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.

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

160D-9L



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Rear View Camera (Optional)

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



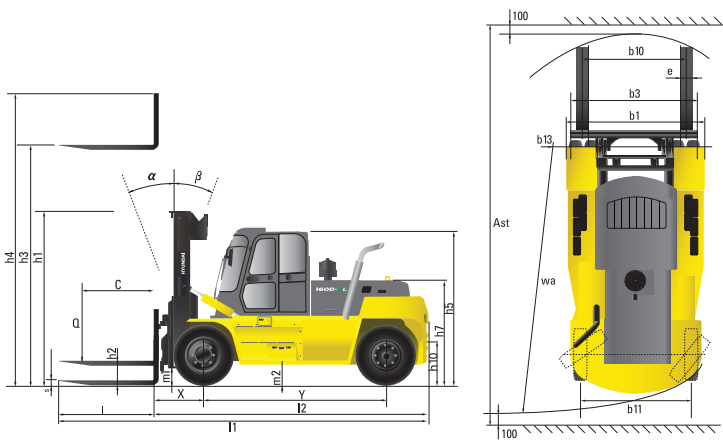
Master Switch

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

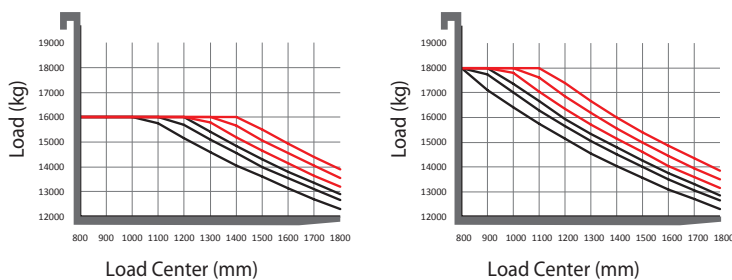
Mast Specification

Mast Type	Overall Height Lowered		Maximum Fork Height		Free Lift		Tilt Angle		Load capacity				Truck Weight Unloaded		
	mm	in	mm	in	mm	in	Fwd	Bwd	900 mm LC	36 in LC	1200 mm LC	48 in LC	kg	lb	
							deg	deg	kg	lb	kg	lb			
2-Stage Limited Free lift	V300	3200	126.0	3020	118.9	0	0	10	10	16000	35,200	16000	35,200	23954	52,809
	V330	3350	131.9	3320	130.7	0	0	10	10	16000	35,200	16000	35,200	24058	53,037
	V350	3450	135.8	3520	138.6	0	0	10	10	16000	35,200	16000	35,200	24129	53,194
	V400	3700	145.7	4020	158.3	0	0	10	10	16000	35,200	16000	35,200	24346	53,672
	V450	3950	155.5	4520	178.0	0	0	10	10	16000	35,200	16000	35,200	24579	54,188
	V500	4200	165.4	5020	197.6	0	0	10	10	16000	35,200	16000	35,200	24766	54,599
	V550	4450	175.2	5520	217.3	0	0	10	10	16000	35,200	16000	35,200	25021	55,162
	V600	4700	185.0	6020	237.0	0	0	10	10	16000	35,200	15800	34,760	25207	55,573
	V650	4950	194.9	6520	256.7	0	0	10	10	16000	35,200	15550	34,210	25392	55,979
3-Stage Full Free lift	TS460	2950	116.1	4634	182.4	1538	61	10	10	16000	35,200	16000	35,200	25044	55,213
	TS508	3100	122.0	5084	200.2	1688	66	10	10	16000	35,200	15600	34,320	25240	55,644
	TS538	3200	126.0	5384	212.0	1788	70	10	10	16000	35,200	15400	33,880	25354	55,896
	TS568	3300	129.9	5684	223.8	1888	74	10	10	16000	35,200	15250	33,550	25468	56,146
	TS600	3420	134.6	6044	238.0	2008	79	10	10	16000	35,200	15100	33,220	25578	56,388
	TS658	3600	141.7	6584	259.2	2188	86	10	10	16000	35,200	14850	32,670	25761	56,792
	TS700	3750	147.6	7034	276.9	2338	92	10	10	16000	35,200	14600	32,120	26007	57,335

Dimension



Load Capacity



Optional Items

- **Fork (mm)**
160D-9L :
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 :** Simplex Mast / Duplex Mast / Triplex Mast
- **Over Shoe :** 1800 / 2000 / 2400 / 2600
- **MCV :** 3-Spool / 5-Spool
- **Fork Positioner :** \varnothing 82 / \varnothing 100
- **Integral Side Shift**
- **Integral Side Shift + Fork Positioner**
- **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**
- **Beacon Lamp (LED)**
- **Air Conditioner & Heater**
- **Rear View Camera**
- **Weight Indicator**
- **Solid Tire**
- **Top Wiper**
- **RMS (Remote Management System)**
- **Rear Wheel Angle Monitoring**
- **Cabin**

* Standard and optional equipment may vary per country. Contact your Hyundai dealer for more information.

* 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 CO2 equivalent of 0.7865 metric tonne.

Specification

Identification

1.1	Manufacturer	Hyundai
1.2	Type	160D-9L
1.3	Drive: electric (battery or mains), diesel, petrol, fuel gas, manual	DIESEL
1.4	Type of operation: hand, pedestrian, standing, seated, order-picker	seated
1.5	Load capacity (standard) / Rated load	Q (kg) 16000
1.6	Load center distance	c (mm) 1200
1.8	Load distance, center of drive axle to forks	x (mm) 999
1.9	Wheelbase	y (mm) 3750

Weights

2.1	Service weight	kg	23954
2.2	Axle loading, loaded front / rear	kg	37448 / 2506
2.3	Axle loading, unloaded front / rear	kg	12065 / 11888

Wheels, Chassis

3.1	Tires : Pneumatic (P), Solid (S), Non-marking (N)	Pneumatic
3.2	Tires size, front	12.00 - 20 - 20PR
3.3	Tires size, rear	12.00 - 20 - 20PR
3.5	Number of wheels front / rear (x=driven wheels)	4 x 2
3.6	Track width, front	b10 (mm) 1860
3.7	Track width, rear	b11 (mm) 2034

Basic Dimensions

4.1	Mast / fork carriage tilt forward / backward (α / β)	degrees	10 / 10 (15 / 10)
4.2	Lowered mast height	h1 (mm)	3200
4.3	Free lift height	h2 (mm)	0
4.4	Lift height	h3 (mm)	3020
4.5	Extended mast height	h4 (mm)	4660
4.7	Overhead guard height (cabin)	h5 (mm)	3075
4.8	Seat height / standing height	h7 (mm)	1910
4.12	Coupling height	h10 (mm)	610
4.19	Overall length	l1 (mm)	8014
4.20	Length to face of forks	l2 (mm)	5564
4.21	Overall width	b1 (mm)	2540
4.22	Fork dimensions	s x e x l (mm)	100 x 250 x 2450
4.24	Fork carriage width	b3 (mm)	2540
4.31	Ground clearance, loaded, under mast	m1 (mm)	245
4.32	Ground clearance, centre of wheelbase	m2 (mm)	380
4.33	Aisle width for pallets 1000 x 1200 crossways (L x W)	Ast (mm)	8902
4.34	Aisle width for pallets 800 x 1200 lengthways (W x L)	Ast (mm)	8902
4.35	Turning radius	Wa (mm)	5220
4.36	Smallest pivot point distance	b13 (mm)	2048

Performance Data

5.1	Travel speed, unloaded	km/h	35.2
5.2	Lift speed, loaded / unloaded	mm/s	330 / 450
5.3	Lowering speed, loaded / unloaded	mm/s	430 / 390
5.6	Drawbar pull, loaded	KN	134518
5.7	Gradient performance, loaded	%	33
5.10	Service brake		Hydraulic

Engine

7.1	Engine manufacturer / type	Cummins QSB6.7	
7.2	Engine power acc. To ISO 1585	kW	122
7.3	Rated speed	1/min	2300
7.4	No. of cylinder / cubic capacity	/cm ³	6 / 6690
7.5	Fuel consumption acc. to VDI cycle	ℓ/h	12.1

Other Details

8.1	Type of drive control	Power Shift	
8.2	Operating pressure for attachments (system / attachments)	bar	230 / 165
8.3	Oil volume for attachments	ℓ / min	203
8.4	Sound level at driver's ear according to DIN 12 053	db (A)	71.2



PLEASE CONTACT