

# 110/130/160D-9

Performance Enhanced For Tier-4 Final

MOVING YOU FURTHER

HYUNDAI HEAVY INDUSTRIES



 **HYUNDAI**  
CONSTRUCTION EQUIPMENT AMERICAS, INC.

Some of the photos may include optional equipment.

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# Your satisfaction is **our priority!**

Hyundai introduces a new line of 9-series diesel forklift trucks.  
The newly designed 4 wheel counterbalance trucks provide a great  
balance of operator comfort, high productivity and easy maintenance.

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## **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
  - Hi-mate (Remote Management System) (Optional)
  - 4.3Inch Color LCD (Centralized Information Display)
  - FATC (Full Automatic Temperature Control) Airconditioner (Optional)
- 



Some of the photos may include optional equipment.

# High Efficiency & Optimal Performance



Some of the photos may include optional equipment.

## Cummins QSB6.7 Engine

164hp/2,300rpm  
8701lb·ft/1,500rpm



### Powerful Engine

The 6 cylinder 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 more than the previous model.

### DOC (Diesel Oxidation Catalyst)

### SCR (Selective Catalytic Reduction)

### EGR (Exhaust Gas Recirculation)

- High torque at low speeds
- Excellent transient behavior

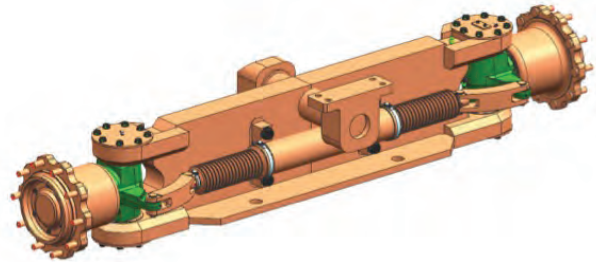
Powerful engine and advanced technology systems provide you with enhanced performance and high productivity.

## 110/130/160D-9



### ZF Full-automatic Transmission

The ZF Full-automatic transmission gives easy, convenient handling and soft, smooth shifting. The operator can select two kinds of automatic modes. (1st↔2nd↔3rd, and 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

This senses the steer oil demand and supplies only the required amount, creating greater energy savings.



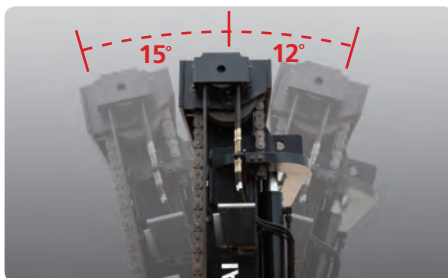
### Kessler Durable drive axle

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	mph
110D-9	22.1
130D-9	22.1
160D-9	21.9

### Faster Travel Speed & Better Gradability

The powerful engine provides greater acceleration, better gradability and faster travel speed on any tough terrains or slopes.

# Best Convenience & Optimized Ergonomics



Some of the photos may include optional equipment.

## Spacious Operator Cab

The new 9 series cab has been redesigned to provide more space, a wider field of view, and greater operator comfort.



MP3 CD Player



Bluetooth Hands Free Remote Control Socket (Optional)



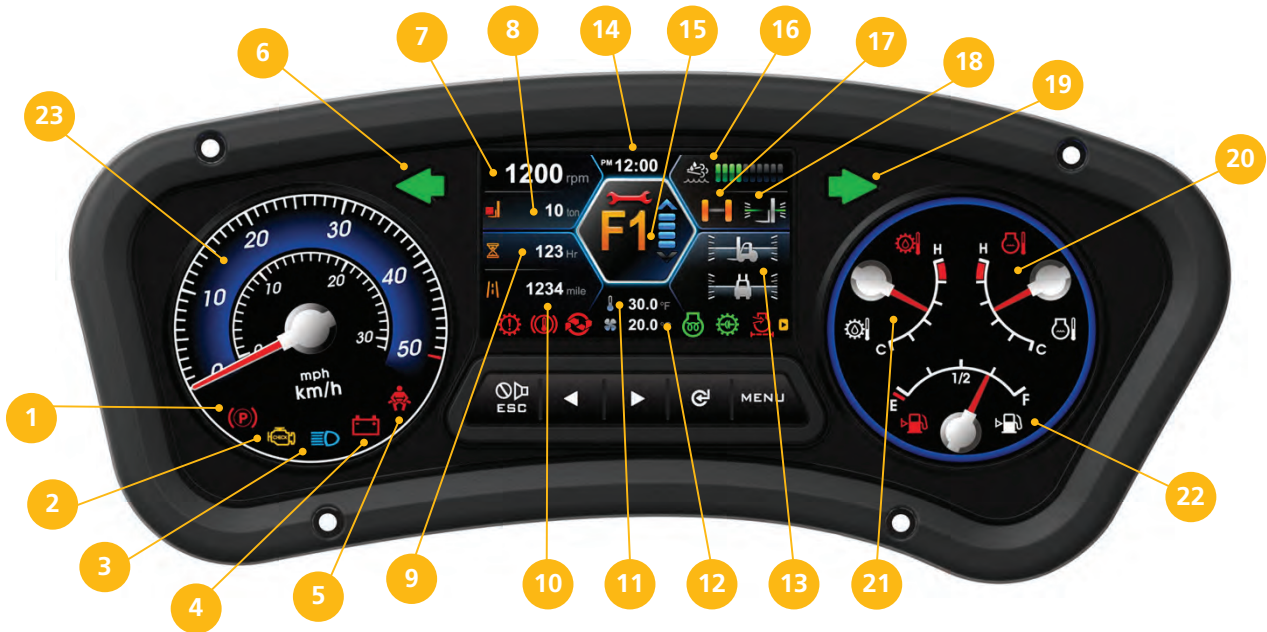
Centralized Instrument Switch Panel



**Luxury (Air-suspension+Heat+HeadRest) Seat (Optional)**  
An attractive and adjustable seat, based on a human engineering design, provides great comfort, safety and durability.

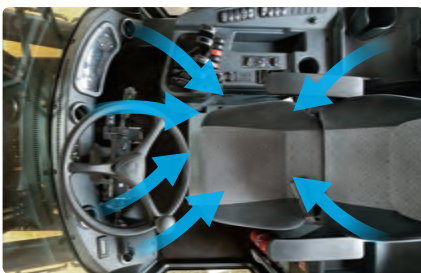
The advanced instrumentation and ergonomically sound cab provides full support and comfort to the operator.

## 110/130/160D-9



### New Design Cluster

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



### Full Climate Control Air Conditioner & Heater (Optional)

Air Vent positions of the air conditioner with the integrated condenser are mounted front and rear to increase room in the cab. The new climate controller heater and air conditioner provides high output to quickly heat or cool, and then maintain the desired comfort level of the operator.



### Adjustable Steering Column

Steering handle is adjustable to the operator's body shape. Infinite adjustability of steering column fits any size operator.



### Smooth Response Operating Control Levers

Minimal effort is required for precise, safe and productive control. (4 Lever : Standard), (3/5 Lever : Option)

# Advanced Safety



## Engine Control Mode

According to operating load, the operator can select engine mode by changing side panel switch.

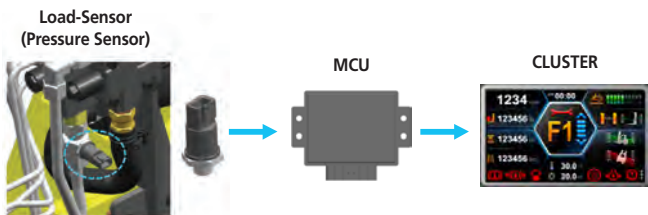
STD Mode : Fuel reduction mode for light-duty operating load

POWER Mode : Heavy-duty or operating at slope



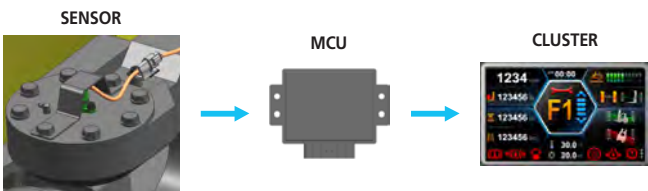
## Adjustable Engine Low Idle RPM

While engine runs, low idle rpm can be increased or decreased by units of 25rpm and it keeps previously set rpm when engine restarts.



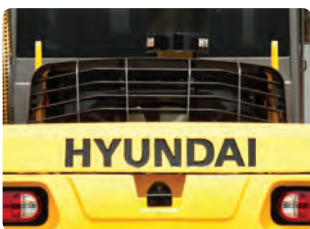
## Weight Indicator (Optional)

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



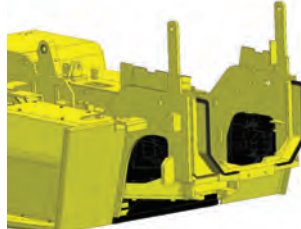
## Up-to-date Cooling System

The minimum fuel consumption and low noise are achievable by applying a hydraulic cooling fan with sensors for intake air temperature, transmission oil temperature, coolant temperature and hydraulic temperature.



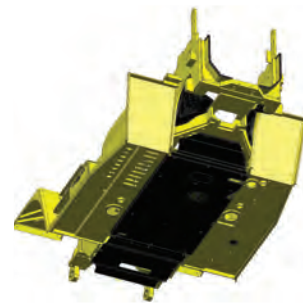
## Electric Tilting Cab

The electric tilting cab makes servicing of all power train components quick and easy. An electrically assisted hydraulic actuated cylinder tilts operator cabin to 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 ground dust.



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

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

**OPSS  
(Operator Presence Sensing System)**

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

**Lift Lock   Tilt Lock   Drive Lock**



Some of the photos 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 constructed of the high tensile structural steel which has excellent durability. The width of carriage is narrower than overall width of the vehicle, which helps maneuvering in tight spaces.



**Excellent Night Work**

- Multiposition work lamps provide the operator with great lighting for safe operating.
- Front : fender(2), mast(4)
- Rear : cab(2)
- LED Rear Combination Lamp

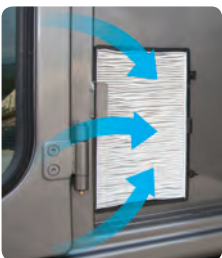
# Fast and Easy Maintenance



## Large Engine Hood

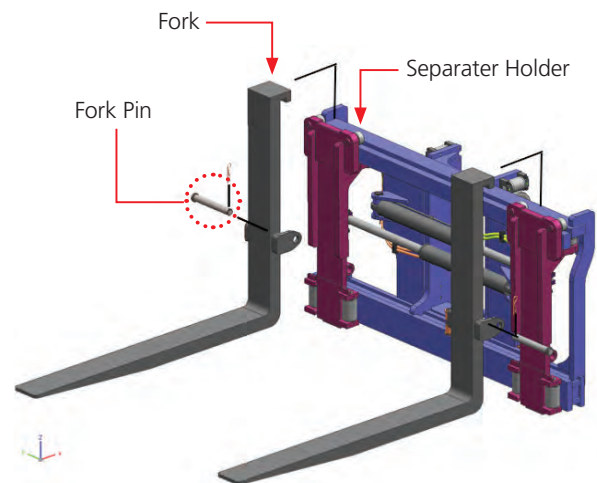
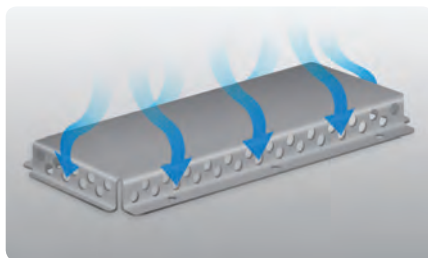
Highly accessible engine compartment assures fast and efficient maintenance.

Some of the photos may include optional equipment.



## Cabin Air Fresh Filter

The internal pressure is maintained to be slightly higher than that of outside to exclude dust and to reduce noise levels.



## Separator Holder Type Fork Carriage (Optional)

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

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

## 110/130/160D-9



### Hi-mate (Remote Management System)

Hi-mate, Hyundai's proprietary remote management system, provides operators and dealer service personnel access to vital service and diagnostic information on the machine from any computer with internet access.



### Rear View Camera (Optional)

The rear view camera supports 4 camera channels to provide great rear visibility.

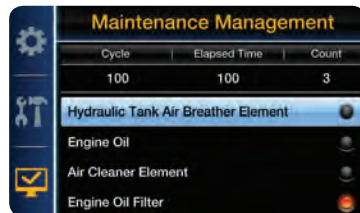


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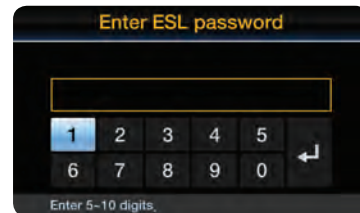


### Master Switch

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



### Maintenance Management Display



### Engine Start Limit

# New 9 Series

## Mast Specification (110D-9)

Mast Type		Maximum Fork Height (in)	Overall Height Lowered (in)	Tilt Angle (deg) Fwd / Bwd	Load capacity (24in LC)(lb)	Truck Weight Unloaded (lb)
2-Stage Limited Free Lift	V280	110.4	114.2	15 / 12	24,251	35,807
	□V300	118.3	118.1	15 / 12	24,251	35,880
	V330	130.1	124.0	15 / 12	24,251	35,048
	V350	138.0	128.0	15 / 12	24,251	36,156
	V400	157.7	139.8	15 / 12	24,251	36,714
	V450	117.4	149.6	15 / 12	24,251	36,989
	V500	197.0	161.4	15 / 12	24,251	37,318
	V550	216.7	171.3	15 / 12	24,251	37,827
	V600	236.4	183.1	15 / 12	24,251	38,162
	V650	256.1	192.9	15 / 12	24,251	38,455
V700	275.8	202.8	15 / 12	10,820	38,744	
2-Stage Full Free Lift	VS300	119.2	118.1	10 / 10	24,251	36,264
	VS350	138.9	128.0	10 / 10	24,251	36,572
	VS400	158.6	137.8	10 / 10	24,251	36,886
	VS450	178.3	147.6	10 / 10	24,251	37,207
	VS500	198.0	157.5	10 / 10	24,251	37,774
	VS550	217.6	167.3	10 / 10	24,251	38,255
3-Stage Full Free Lift	VS600	237.3	181.1	10 / 10	24,251	38,797
	TS450	178.0	116.1	10 / 10	24,251	38,371
	TS500	197.8	122.7	10 / 10	24,251	38,572
	TS550	217.5	129.3	10 / 10	24,251	38,775
	TS600	237.2	139.8	10 / 10	24,251	39,095
	TS650	256.9	146.4	10 / 10	23,634	39,297
	TS700	276.6	154.9	10 / 10	22,834	39,829
TS750	296.3	161.5	10 / 10	22,223	40,032	

## Mast Specification (130D-9)

Mast Type		Maximum Fork Height (in)	Overall Height Lowered (in)	Tilt Angle (deg) Fwd / Bwd	Load capacity (24in LC)(lb)	Truck Weight Unloaded (lb)
2-Stage Limited Free Lift	V280	110.4	114.2	15 / 12	28,660	37,386
	□V300	118.3	118.1	15 / 12	28,560	37,459
	V330	130.1	124.0	15 / 12	28,560	37,626
	V350	138.0	128.0	15 / 12	28,560	37,737
	V400	157.7	139.8	15 / 12	28,560	38,292
	V450	177.4	149.6	15 / 12	28,560	38,568
	V500	197.0	161.4	15 / 12	28,560	38,898
	V550	216.7	171.3	15 / 12	28,560	39,405
	V600	236.4	183.1	15 / 12	27,800	39,736
	V650	256.1	192.9	15 / 12	27,007	40,033
V700	275.8	202.8	15 / 12	26,235	40,323	
2-Stage Full Free Lift	VS300	119.2	118.1	10 / 10	28,560	37,845
	VS350	138.9	128.0	10 / 10	28,560	38,153
	VS400	158.6	138.8	10 / 10	28,560	38,464
	VS450	178.3	147.6	10 / 10	28,560	38,786
	VS500	198.0	157.35	10 / 10	28,560	39,353
	VS550	217.6	167.3	10 / 10	27,866	39,833
3-Stage Full Free Lift	VS600	237.3	181.1	10 / 10	26,896	40,378
	TS450	178.0	116.1	10 / 10	28,560	40,093
	TS500	197.8	122.7	10 / 10	28,351	40,294
	TS550	217.5	129.3	10 / 10	27,514	40,497
	TS600	237.1	139.8	10 / 10	26,675	40,816
	TS650	256.9	146.4	10 / 10	25,904	41,019
	TS700	276.6	154.9	10 / 10	25,089	41,551
TS750	296.3	161.5	10 / 10	24,383	41,753	

## Mast Specification (160D-9)

Mast Type		Maximum Fork Height (in)	Overall Height Lowered (in)	Tilt Angle (deg) Fwd / Bwd	Load capacity (24in LC)(lb)	Truck Weight Unloaded (lb)
2-Stage Limited Free Lift	V295	116.1	116.1	15 / 12	35,274	43,385
	□V300	118.5	128.0	15 / 12	35,274	43,746
	V330	130.3	133.9	15 / 12	35,274	43,954
	V350	138.2	137.8	15 / 12	35,274	44,053
	V400	157.9	147.6	15 / 12	35,274	44,689
	V450	177.6	157.5	15 / 12	35,274	45,027
	V500	197.2	169.3	15 / 12	35,274	45,431
	V550	216.9	179.1	15 / 12	35,274	46,022
	V600	236.6	190.9	15 / 12	35,274	46,423
	V650	256.3	201.8	15 / 12	34,613	46,789
V700	276.0	211.6	15 / 12	33,665	47,124	
2-Stage Full Free Lift	VS300	118.5	126.0	10 / 10	35,274	43,810
	VS330	130.3	131.9	10 / 10	35,274	43,984
	VS350	138.2	135.8	10 / 10	35,274	44,128
	VS400	157.9	145.7	10 / 10	35,274	44,487
	VS450	177.6	155.5	10 / 10	35,274	45,051
	VS500	197.2	167.3	10 / 10	35,274	45,488
	VS550	216.9	177.2	10 / 10	35,274	45,916
	VS600	236.6	189.0	10 / 10	35,274	46,491
3-Stage Full Free Lift	TS450	177.8	116.1	10 / 10	35,274	46,178
	TS500	197.5	124.7	10 / 10	35,274	46,621
	TS550	217.1	131.2	10 / 10	34,568	46,947
	TS600	236.9	139.8	10 / 10	33,554	47,380
	TS650	256.6	146.3	10 / 10	32,628	47,728
	TS700	276.2	154.8	10 / 10	31,658	48,418
	TS750	295.9	161.	10 / 10	30,777	48,77

## Optional Items

### · Fork (L x W x T) (in)

#### 110D-9 :

3.0 x 7.9 x 47.2 / 3.0 x 7.9 x 59 / 3.0 x 7.9 x 65 /  
3.0 x 7.9 x 71 / 3.0 x 7.9 x 83 / 85 x 7.9 x 96 / 85 x 7.9 x 102

#### 130D-9 :

85 x 7.9 x 147.2 / 85 x 7.9 x 59 / 85 x 7.9 x 65 /  
85 x 7.9 x 71 / 85 x 7.9 x 83 / 85 x 7.9 x 96 / 3.5 x 7.9 x 102

#### 160D-9 :

3.5 x 7.9 x 47.2 / 3.5 x 7.9 x 59 / 3.5 x 7.9 x 65 /  
3.7 x 7.9 x 71 / 3.7 x 7.9 x 83 / 3.7 x 7.9 x 96 / 100 x 7.9 x 102

· **MAST** : Simplex Mast / Duplex Mast / Triplex Mast

· **Over Shoe** : 71 / 79 / 94 / 102

· **MCV** : 3-Spool / 4-Spool / 5-Spool

· **Fork Positioner** : ø82 / ø100

· **Integral Side Shift**

· **Integral Side Shift + Fork Positioner**

· **Separator Holder Type Fork Carriage**

· **Hydraulic Line** : 3-Spool / 4-Spool / 5-Spool

· **Wide Carriage (107 in) (160D-9)**

· **Air Compressor**

· **Seat** : Heat, Leather / KAB Air-Suspension Heat Seat

· **Bluetooth Hands Free**

· **Beacon Lamp (LED)**

· **Additional Counterweight Option (160D-9 only)**

· **Air Conditioner & Heater**

· **Rear View Camera**

· **Weight Indicator**

· **Solid Tire**

· **Top Wiper**

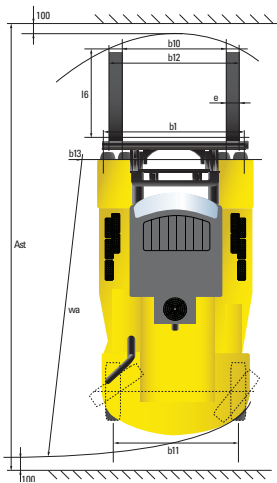
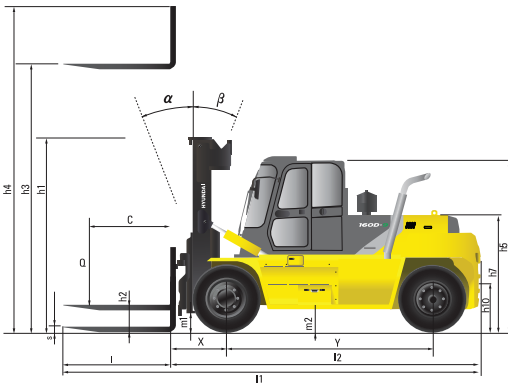
· **RMS(Remote Management System)**

· **Rear Wheel Angle Monitoring**

· **Cab**

# New 9 Series

## Dimension



## Specification

### Identification

Item	Manufacturer	HYUNDAI	HYUNDAI	HYUNDAI
1.1	Manufacturer	HYUNDAI	HYUNDAI	HYUNDAI
1.2	Manufacturer's type designation	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 / rated load	lb 25,000	29,000	35,000
1.6	Load center distance	c in 24	24	24
1.8	Load distance, center of drive axle to fork	x in 30	30	32
1.9	Wheelbase	y in 120	120	136

### Weights

Item	Service weight	lb 35,880	37,459	43,746
2.1	Service weight	lb 35,880	37,459	43,746
2.2	Axle loading, loaded front / rear	lb 52,823 / 7,308	59,029 / 7,090	70,568 / 8,453
2.3	Axle loading, unloaded front / rear	lb 17,758 / 18,120	17,611 / 19,848	20,825 / 22,919

### Wheels, Chassis

Item	Pneumatic, Solid	Pneumatic	Pneumatic	Pneumatic
3.1	Pneumatic, Solid	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	Wheels, number front rear(x = driven wheels)	4 x 2	4 x 2	4 x 2
3.6	Track width, front	in 73	73	73
3.7	Track width, rear	in 75	75	77

### Basic Dimensions

Item	Mast / fork carriage tilt forward / backward	degrees	15 / 12	15 / 12	15 / 12
4.1	Mast / fork carriage tilt forward / backward	degrees	15 / 12	15 / 12	15 / 12
4.2	Lowered mast height	h1 in 118	118	118	128
4.3	Lift height	h3 in 118	118	118	119
4.4	Extended mast height	h4 in 176	176	176	185
4.5	Overhead guard (cab) height	h5 in 77	77	77	78
4.6	Seat height / rel. to SIP	h7 in 70	70	70	72
4.7	Coupling height	h10 in 22	22	22	24
4.8	Overall length	l1 in 233	233	233	253
4.9	Length to face of forks	l2 in 180	180	180	200
4.10	Overall width	b1 in 96	96	96	98
4.11	Fork dimensions	s / e / l in 3 x 8 x 53	3 x 8 x 53	3 x 8 x 53	4 x 8 x 53
4.12	Fork - carriage width	b3 in 93	93	93	98
4.13	Ground clearance, loaded, under mast	m1 in 10	10	10	10
4.14	Ground clearance, centre of wheelbase	m2 in 13	13	13	15
4.15	Aisle width for pallets 1,000 x 1,200 crossways	Ast in 262	262	262	287
4.16	Aisle width for pallets 800 x 1,200 lengthways	Ast in 262	262	262	287
4.17	Turning radius	Wa in 171	171	171	193
4.18	Smallest pivot point distance	in 64	64	64	73

### Performance Data

Item	Travel speed, unloaded	mph 22	22	22
5.1	Travel speed, unloaded	mph 22	22	22
5.2	Lift speed, loaded/ unloaded	ft/min 86 / 100	85 / 100	69 / 89
5.3	Lowering speed, loaded/unloaded	ft/min 100 / 91	100 / 91	85 / 77
5.5	Drawbar pull, Loaded	KN 135	137	136
5.7	Gradient performance, Loaded	% 52.1	46.9	37.7
5.10	Service brake	Wet, Hydraulic	Wet, Hydraulic	Wet, Hydraulic

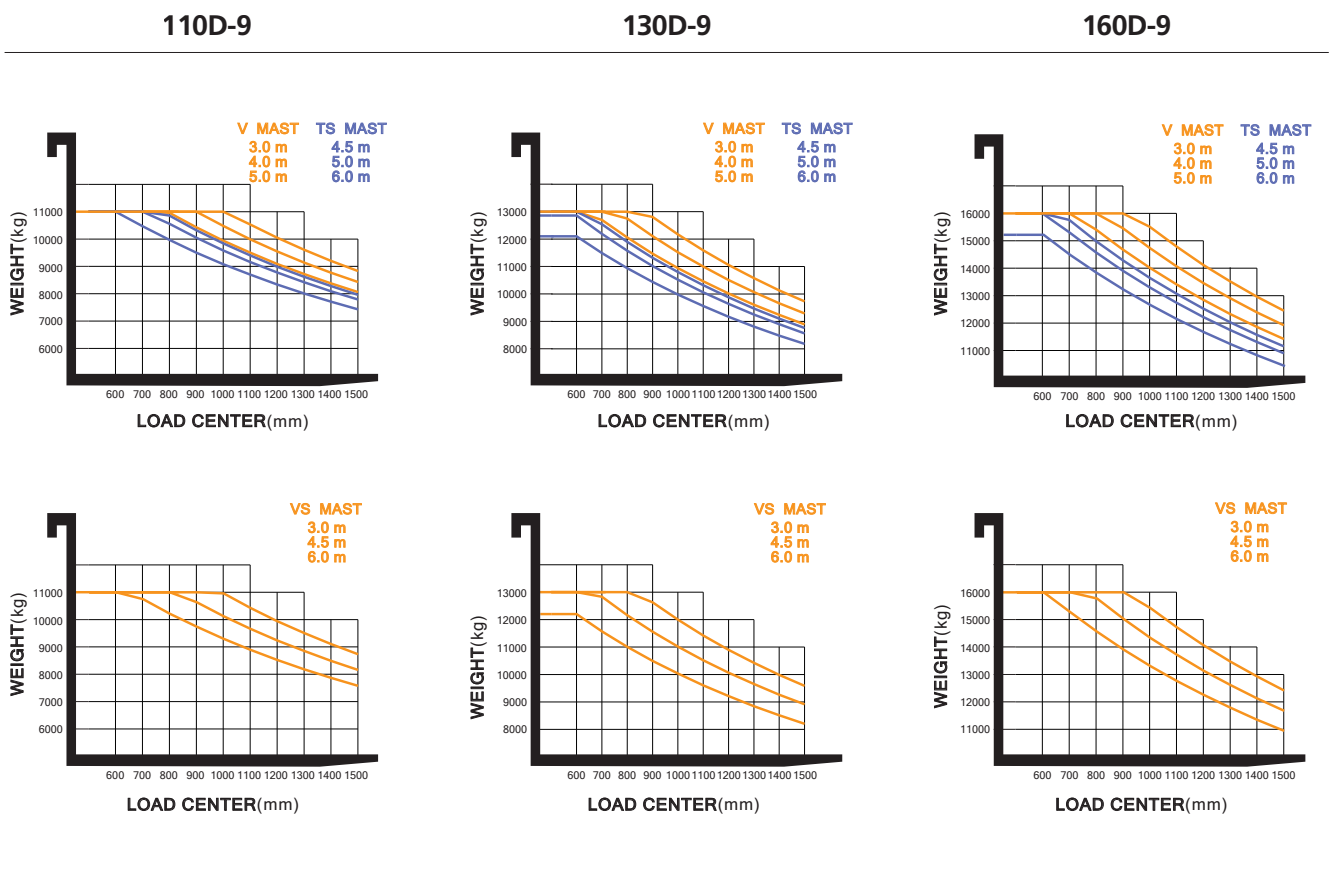
### Engine

Item	Engine manufacturer / type	Cummins QSB6.7	Cummins QSB6.7	Cummins QSB6.7
6.1	Engine manufacturer / type	Cummins QSB6.7	Cummins QSB6.7	Cummins QSB6.7
6.2	Engine power acc. to ISO 1585	hp 164	164	164
6.3	Rated speed	1/min 2,300	2,300	2,300
6.4	No. of cylinder / cubic capacity	/in <sup>3</sup> 6 / 408	6 / 408	6 / 408
6.5	Fuel consumption acc. To VDI cycle	l/h 11.1	11.4	12.1

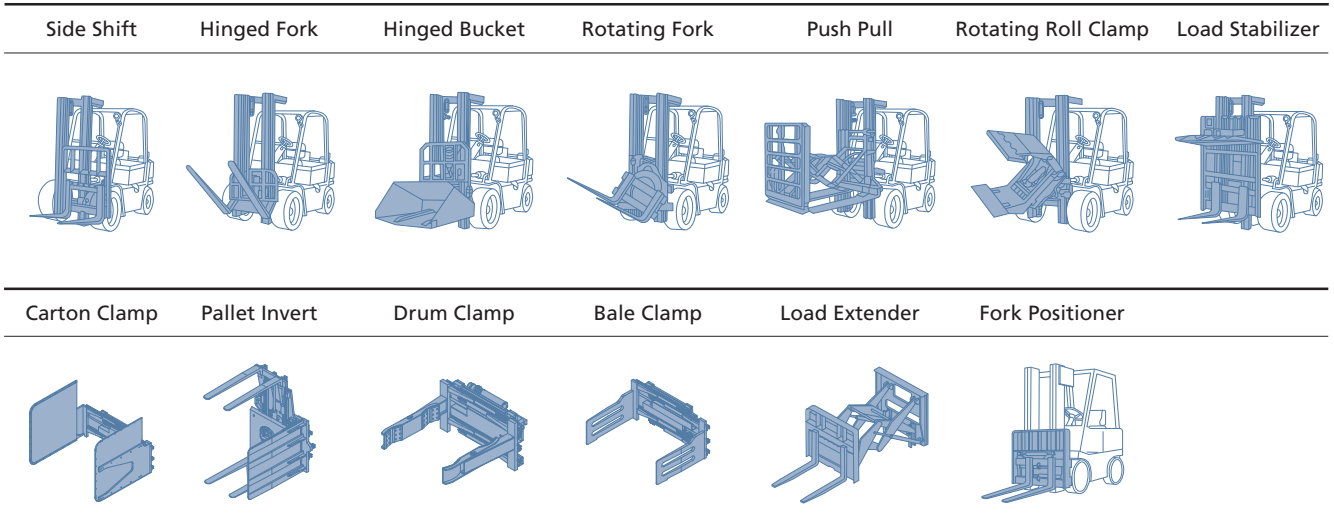
### Other Details

Item	Type of drive control	Power Shift	Power Shift	Power Shift
8.1	Type of drive control	Power Shift	Power Shift	Power Shift
8.2	Operating pressure for attachments(system/attach)	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 12 053	73.5	73.5	73.5

## Load Capacity



## Various Attachments





6100 Atlantic Blvd Norcross, GA 30071  
TEL (678) 823 7777 FAX (678) 823 7778

PLEASE CONTACT

[www.hceamericas.com](http://www.hceamericas.com)

2015. 10 Rev. 0

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