

110/130/160D-9

Performance Enhanced For Tier-4 Final

MOVING YOU FURTHER

HYUNDAI HEAVY INDUSTRIES



HYUNDAI | FORKLIFT HEAVY INDUSTRIES

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2015. 9 Rev. 0

 **HYUNDAI**
HEAVY INDUSTRIES

Some of the photos 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 (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)



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High Efficiency & Optimal Performance



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

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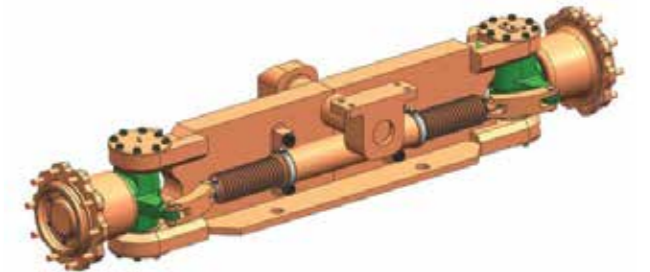


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Full-automatic Transmission

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.

Cummins QSB6.7 Engine

122KW/2,300rpm

74.7kgf.m/1,500rpm



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



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 & Better Gradability

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

Best Convenience & Optimised Ergonomics



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

110/130/160D-9



Some of the photos may include optional equipment.

Spacious Operator Cabin

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



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		



MP3 CD Player



Bluetooth Hands Free Remote Control Socket (Optional)

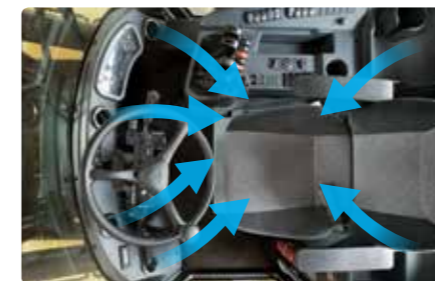


Centralized Instrument Switch Panel



Luxury(Air-suspension+Heat+HeadRest) Seat (Optional)

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



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. Adjustability of steering column makes you more comfortable.



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.

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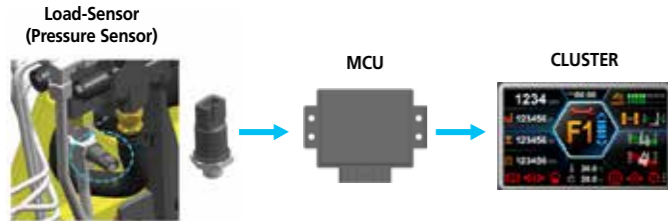
Engine Control Mode

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



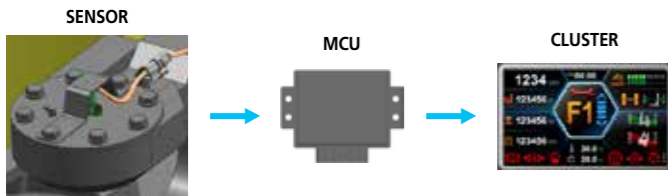
Adjustable Engine Low Idle RPM

While engine runs, low idle rpm can be increased by unit 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

OPSS (Operator Presence Sensing System)

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.



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.



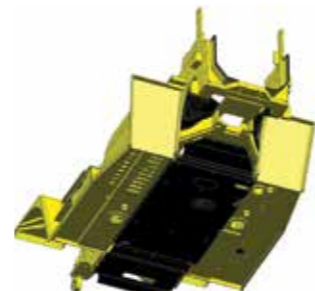
Cabin Tilting Automatic System

Cabin tilting automatic system makes servicing of all power train components quick and easy. An electrically assisted hydraulic actuated cylinder tilts operator cabin to 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 protect the engine and components from dusts caused by ground. It helps to lengthen Components life.



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.

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Large Engine Hood
Highly accessible engine compartment assures fast and efficient maintenance.

Some of the photos may include optional equipment.



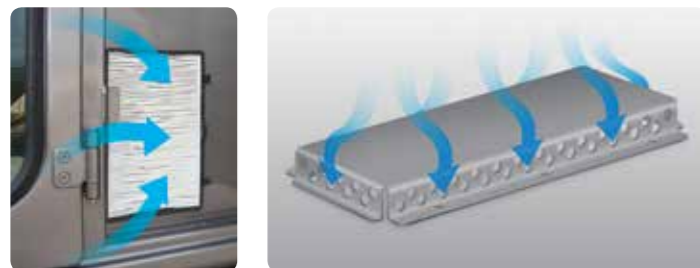
Hi-mate (Remote Management System)
Hi-mate, Hyundai's proprietary remote management system, provides operators and dealer service personnel access to vital service and diagnostic information on the machine from any computer with internet access.



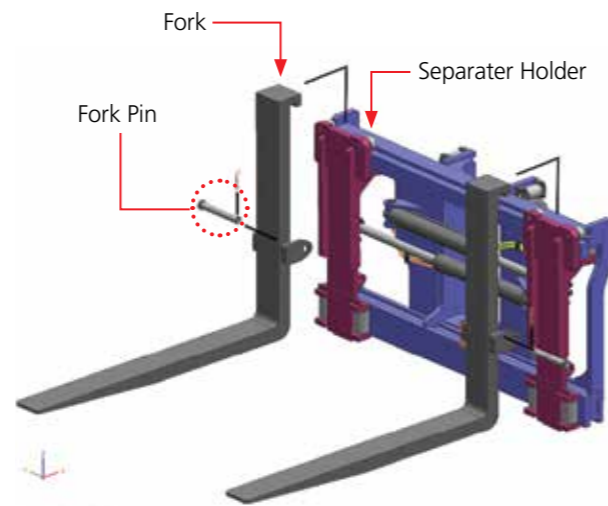
Rear View Camera (Optional)
The rear view camera makes the operation more easy and convenient. And it supports 4camera channels.



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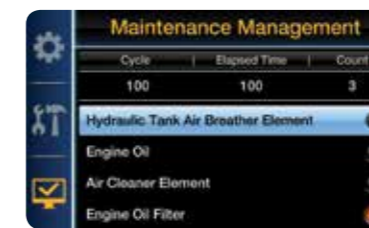
Cabin Air Fresh Filter
The internal pressure is maintained to be slightly higher than that of outside to exclude dust and to reduce noise levels.



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.



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

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Mast Specification (110D-9)

Mast Type		Maximum Fork Height (mm)	Overall Height Lowered (mm)	Tilt Angle (deg) Fwd / Bwd	Load capacity (600mm LC)(kg)	Truck Weight Unloaded (kg)
2-Stage Limited Free Lift	V280	2,805	2,900	15 / 12	11,000	16,242
	※V300	3,005	3,000	15 / 12	11,000	16,275
	V330	3,305	3,150	15 / 12	11,000	16,351
	V350	3,505	3,250	15 / 12	11,000	16,400
	V400	4,005	3,550	15 / 12	11,000	16,653
	V450	4,505	3,800	15 / 12	11,000	16,778
	V500	5,005	4,100	15 / 12	11,000	16,927
	V550	5,505	4,350	15 / 12	11,000	17,158
	V600	6,005	4,650	15 / 12	11,000	17,310
	V650	6,505	4,900	15 / 12	11,000	17,443
V700	7,005	5,150	15 / 12	10,820	17,574	
2-Stage Full Free Lift	VS300	3,028	3,000	10 / 10	11,000	16,449
	VS350	3,528	3,250	10 / 10	11,000	16,589
	VS400	4,028	3,500	10 / 10	11,000	16,731
	VS450	4,528	3,750	10 / 10	11,000	16,877
	VS500	5,028	4,000	10 / 10	11,000	17,134
	VS550	5,528	4,250	10 / 10	11,000	17,352
	VS600	6,028	4,600	10 / 10	11,000	17,598
3-Stage Full Free Lift	TS450	4,521	2,950	10 / 10	11,000	17,405
	TS500	5,025	3,117	10 / 10	11,000	17,496
	TS550	5,525	3,284	10 / 10	11,000	17,588
	TS600	6,023	3,551	10 / 10	11,000	17,733
	TS650	6,525	3,718	10 / 10	10,720	17,825
	TS700	7,025	3,935	10 / 10	10,380	18,066
	TS750	7,525	4,102	10 / 10	10,080	18,158

Mast Specification (130D-9)

Mast Type		Maximum Fork Height (mm)	Overall Height Lowered (mm)	Tilt Angle (deg) Fwd / Bwd	Load capacity (600mm LC)(kg)	Truck Weight Unloaded (kg)
2-Stage Limited Free Lift	V280	2,805	2,900	15 / 12	13,000	16,958
	※V300	3,005	3,000	15 / 12	13,000	16,991
	V330	3,305	3,150	15 / 12	13,000	17,067
	V350	3,505	3,250	15 / 12	13,000	17,117
	V400	4,005	3,550	15 / 12	13,000	17,369
	V450	4,505	3,800	15 / 12	13,000	17,494
	V500	5,005	4,100	15 / 12	13,000	17,644
	V550	5,505	4,350	15 / 12	13,000	17,874
	V600	6,005	4,650	15 / 12	12,610	18,026
	V650	6,505	4,900	15 / 12	12,250	18,159
V700	7,005	5,150	15 / 12	11,900	18,290	
2-Stage Full Free Lift	VS300	3,028	3,000	10 / 10	13,000	17,166
	VS350	3,528	3,250	10 / 10	13,000	17,306
	VS400	4,028	3,500	10 / 10	13,000	17,447
	VS450	4,528	3,750	10 / 10	13,000	17,593
	VS500	5,028	4,000	10 / 10	13,000	17,850
	VS550	5,528	4,250	10 / 10	12,640	18,068
	VS600	6,028	4,600	10 / 10	12,200	18,315
3-Stage Full Free Lift	TS450	4,521	2,950	10 / 10	13,000	18,186
	TS500	5,025	3,117	10 / 10	12,860	18,277
	TS550	5,525	3,284	10 / 10	12,480	18,369
	TS600	6,023	3,551	10 / 10	12,100	18,514
	TS650	6,525	3,718	10 / 10	11,750	18,606
	TS700	7,025	3,935	10 / 10	11,380	18,847
	TS750	7,525	4,102	10 / 10	11,060	18,939

Mast Specification (160D-9)

Mast Type		Maximum Fork Height (mm)	Overall Height Lowered (mm)	Tilt Angle (deg) Fwd / Bwd	Load capacity (600mm LC)(kg)	Truck Weight Unloaded (kg)
2-Stage Limited Free Lift	V295	2,950	2,950	15 / 12	16,000	19,679
	※V300	3,010	3,250	15 / 12	16,000	19,843
	V330	3,310	3,400	15 / 12	16,000	19,937
	V350	3,510	3,500	15 / 12	16,000	19,982
	V400	4,010	3,750	15 / 12	16,000	20,270
	V450	4,510	4,000	15 / 12	16,000	20,424
	V500	5,010	4,300	15 / 12	16,000	20,607
	V550	5,510	4,550	15 / 12	16,000	20,875
	V600	6,010	4,850	15 / 12	16,000	21,057
	V650	6,510	5,125	15 / 12	15,700	21,223
V700	7,010	5,375	15 / 12	15,270	21,375	
2-Stage Full Free Lift	VS300	3,010	3,200	10 / 10	16,000	19,872
	VS330	3,310	3,350	10 / 10	16,000	19,951
	VS350	3,510	3,450	10 / 10	16,000	20,016
	VS400	4,010	3,700	10 / 10	16,000	20,179
	VS450	4,510	3,950	10 / 10	16,000	20,435
	VS500	5,010	4,250	10 / 10	16,000	20,633
	VS550	5,510	4,500	10 / 10	16,000	20,827
	VS600	6,010	4,800	10 / 10	16,000	21,088
3-Stage Full Free Lift	TS450	4,516	2,950	10 / 10	16,000	20,946
	TS500	5,017	3,167	10 / 10	16,000	21,147
	TS550	5,515	3,333	10 / 10	15,680	21,295
	TS600	6,016	3,550	10 / 10	15,220	21,491
	TS650	6,517	3,717	10 / 10	14,800	21,649
	TS700	7,015	3,933	10 / 10	14,360	21,962
	TS750	7,515	4,100	10 / 10	13,960	22,125

Optional Items

· Fork (L x W x T) (mm)

110D-9 :

75 x 200 x 1,200 / 75 x 200 x 1,500 / 75 x 200 x 1,650 /
75 x 200 x 1,800 / 75 x 200 x 2,100 / 85 x 200 x 2,440 / 85 x 200 x 2,600

130D-9 :

85 x 200 x 1,200 / 85 x 200 x 1,500 / 85 x 200 x 1,650 /
85 x 200 x 1,800 / 85 x 200 x 2,100 / 85 x 200 x 2,440 / 90 x 200 x 2,600

160D-9 :

90 x 200 x 1,200 / 90 x 200 x 1,500 / 90 x 200 x 1,650 /
95 x 200 x 1,800 / 95 x 200 x 2,100 / 95 x 200 x 2,440 / 100 x 200 x 2,600

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

· **Over Shoe** : 1,800 / 2,000 / 2,400 / 2,600

· **MCV** : 3-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 (2,730mm) (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)**

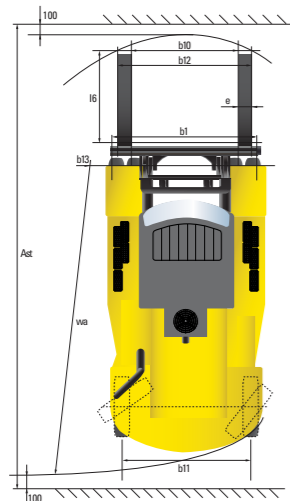
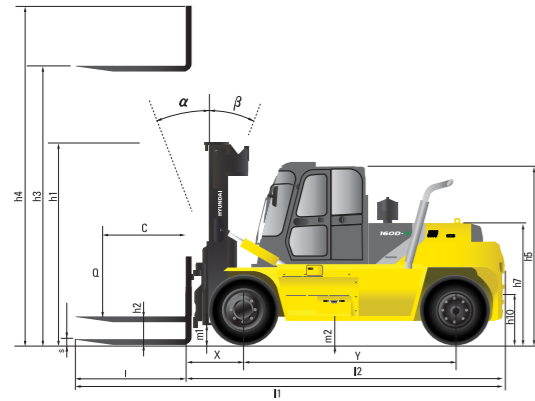
· **Rear Wheel Angle Monitoring**

· **Cabin**

New 9 Series

110/130/160D-9

Dimension



Specification

Identification				
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	kg 11,000	13,000	16,000
1.6	Load center distance	c mm 600	600	600
1.8	Load distance, center of drive axle to fork	x mm 750	770	815
1.9	Wheelbase	y mm 3,050	3,050	3,450

Weights				
2.1	Service weight	kg 16,275	16,991	19,843
2.2	Axle loading, loaded front / rear	kg 23,960 / 3,315	26,775 / 3,216	32,009 / 3,834
2.3	Axle loading , unloaded front / rear	kg 8,055 / 8,219	7,988 / 9,003	9,446 / 10,396

Wheels, Chassis				
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	mm 1,842	1,842	1,842
3.7	Track width, rear	mm 1,910	1,910	1,958

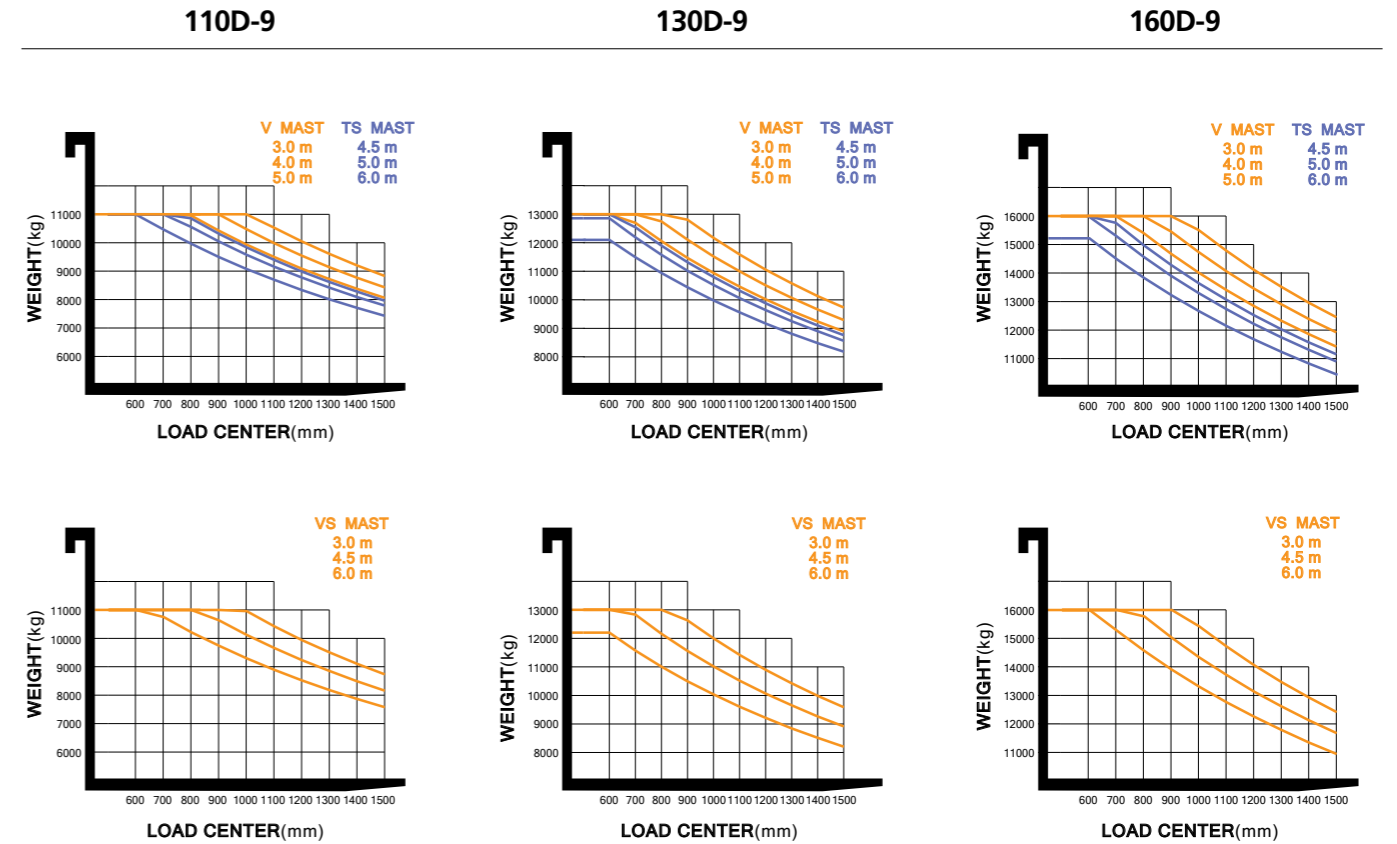
Basic Dimensions				
4.1	Mast / fork carriage tilt forward / backward	degrees 15 / 12	15 / 12	15 / 12
4.2	Lowered mast height	h1 mm 3,000	3,000	3,250
4.3	Lift height	h3 mm 3,005	3,005	3,010
4.4	Extended mast height	h4 mm 4,465	4,465	4,710
4.5	Overhead guard (cab) height	h5 mm 2,945	2,945	2,980
4.6	Seat height / rel. to SIP	h7 mm 1,786	1,786	1,824
4.7	Coupling height	h10 mm 560	560	598
4.8	Overall length	l1 mm 5,920	5,930	6,430
4.9	Length to face of forks	l2 mm 4,570	4,580	5,080
4.10	Overall width	b1 mm 2,450	2,450	2,497
4.11	Fork dimensions	s / e / l mm 75x200x1,350	85x200x1,350	90x200x1,350
4.12	Fork - carriage width	b3 mm 2,362	2,362	2,488
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 1,000 x 1,200 crossways	Ast mm 6,655	6,660	7,280
4.16	Aisle width for pallets 800 x 1,200 lengthways	Ast mm 6,655	6,660	7,280
4.17	Turning radius	Wa mm 4,350	4,350	4,895
4.18	Smallest pivot point distance	mm 1,634	1,634	1,865

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	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				
6.1	Engine manufacturer / type	Cummins QSB6.7	Cummins QSB6.7	Cummins QSB6.7
6.2	Engine power acc. to ISO 1585	kW 122	122	122
6.3	Rated speed	1/min 2,300	2,300	2,300
6.4	No. of cylinder / cubic capacity	/cm³ 6 / 6,690	6 / 6,690	6 / 6,690
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 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

