

## Standard & Option

Specification		35D-9VB	45D-9VB	50Dn-9VB	
Operation	Overhead Guard	●	●	●	
	Overhead Guard - High	○	○	○	
	Overhead Guard - Low with Rain Cover (2,220mm)	○	○	○	
	Overhead Guard - High with Rain Cover (2,350mm)	○	○	○	
	Overhead Guard - Bolt-on with Rain Cover (2,220mm / 2,350mm)	○	○	○	
	Cabin(One door, Two door)	○	○	○	
	Partial Cabin - Front Glass with Wiper	○	○	○	
	A/C	○	○	○	
	A/C & Heater, Heater only	○	○	○	
	Grammer, Full Suspension Heatehr Seat + Arm Rest	○	○	○	
Seat	Non Susp. + OPSS, Seat belt, Buckle SW	●	●	●	
	Grammer, Fabric seat	○	○	○	
	Seat option - Armrest, Belt, Buckle SW, Backrest, Heater	○	○	○	
Lever	Manual Lever	●	●	●	
	Finger Tip	○	○	○	
Other	Radio & USB	○	○	○	
	Rear Horn	○	○	○	
	Extinguisher	○	○	○	
Mast & Attachment	2 Stage Mast - Standard(V300)	●	●	●	
	2 Stage Mast - Standard, Single full free (V, VF)	○	○	○	
	3 Stage mast - Single full free(TF), Dual full free(TS)	○	○	○	
	Fork - Standard(1,200mm)	●	●	●	
	Fork Options - 1,070mm~2,400mm	○	○	○	
	Tilt	8(FWD) / 10(REV)	●	●	●
		8(FWD) / 8(REV), 8(FWD) / 6(REV)	○	○	○
	Carriage	Intergral Shaft Type	○	○	○
		Hook Type	●	●	●
		Wide Carriage (1,600mm/hook, 1,700mm/shaft)	○	○	○
Narrow Carriage (1,300mm/hook, 1,330mm/shaft)		●	●	●	
Special Carriage(1,460mm/shaft)		○	○	○	
Attachment	Fork Positioner - Independent, Synchronized	○	○	○	
	Side Shift	○	○	○	
	Side Shift with Fork Positioner	○	○	○	
	Side Shift(excluding pocket and fork)	○	○	○	
Specification		35D-9VB	45D-9VB	50Dn-9VB	
Hydraulics	3 Spool MCV	●	●	●	
	4, 5 Spool MCV	○	○	○	
	Attached Piping for All MCVs & Masts	○	○	○	
T/M	Electronic (Reverse speed 14km/h (4.5ton unloaded))	●	●	●	
	Mechanical (Reverse speed 14km/h, 17km/h (4.5ton unloaded))	○	○	○	
Power train	Pneumatic	●	●	●	
	Solid	○	○	○	
	Non-Marking	○	○	○	
	Tires	○	○	○	
Tires	Front-Pneumatic + Rear-Solid	○	○	○	
	Front-Solid + Rear-Pneumatic	○	○	○	
	Front Double 15inch, 16 inch (Pneumatic, Solid)	○	○	○	
Lamp	Front LED	●	●	●	
	Front & Rear LED	○	○	○	
Mirror	Panorama Mirror	●	●	●	
	Mirror Options - Side Mirror LH/RH & Outside Mirror LH/RH	○	○	○	
Camera	Rear Camera	○	○	○	
Convenience	Knob-Switch with Direction & Horn	○	○	○	
	Load Sensor	○	○	○	
	Accumulator	○	○	○	
Safety	Auto Tilt	○	○	○	
	Seat Belt Interlock	○	○	○	
	Master Switch to Cut off Electricity from Battery	○	○	○	
	Hi-MATE (Management System)	○	○	○	
	Hazard Switch	○	○	○	
Others	LED Beacon Lamp	●	●	●	
	Safety lamp - Front, Rear, Front&Rear Blue, Red zone	○	○	○	
	HYD Oil - VG46	●	●	●	
	HYD Oil Option - VG 68 for Tropical, VG15/32 for Cold Area	○	○	○	
Frame - Recycling Package (Under cover)	○	○	○		

● STD / ○ OPT

# 35D/45D 50Dn-9VB

Internal Combustion Diesel Engine Forklift Truck



9VB

Stage5 HDI

**9VB series that satisfies both eco-friendliness and cost-effectiveness!**

9VB is an innovative product that satisfies EU Stage 5 Regulations and boasts of optimum fuel efficiency, compact frames, and excellent work performance. It satisfies both eco-friendliness and low TCO (Total Cost of Ownership).

## PRODUCT FEATURES OVERVIEW

**UP  
VALUE**

As times change, the standard  
for high performance should  
also change

■ Optimized hydraulic system and  
New Engine performance

**6%**

Higher fuel-efficiency than  
Tier 4 Final 6% up

■ Applied HDI Engine &  
HDX TM, D/A

**11%**

Top Travel Speed 11% up,  
gradability 10.5% up

### Eco-friendly engine

- Stage 5 Regulation Satisfaction, Powerful Performance
  - HDI DN03 engine

### Innovative cost-effectiveness and reliable durability

- Revolutionary TCO savings
  - Improved fuel efficiency by 6%, operational efficiency by 4%
  - Driving speed by 11%, and climbing ability by 10.5%
- Transmission & Drive axle were designed for heavy-duty applications
- Increased axle oil capacity by 2.5 liters and applied oil cooler
- Extended wheelbase – improves driving comfort & extends continuous operation time (4.5/5.0 tons)
- Application of PFV system to promote automatic regeneration of DPF – HDX patented technology



### Enhanced safety

- Human error prevention - auto-parking brake system
- HAC (Hill Start Assist Control)
- OPSS - travel, lift, and tilt lock
- Forced seat belt wearing - seat belt interlock **Option**
- Engine start limit - password function
- T/M equipped with TCU control
- Equipment posture warning(STD) and overload alarm **Option**

### Outstanding operability ergonomics

- New digital-type cluster with MCU function
- Ergonomic pedal
  - Hanging-type brake and inching pedal
- Improved steering quality
  - Reduced operating force & jamming reduced during reverse rotation
- New air conditioner with enhanced air flow **Option**
- New heater with defrost function **Option**

### Easy service

- Tool-less type Floor plate & Side cover
- Additional features of the cluster with MCU
  - Engine failure diagnosis and history check
  - Management of consumable replacement cycle
- Remote management system - Hi-MATE **Option**
- Muffler management without weight disintegration
- Waterproof and dustproof fuse & relay box
- Horizontal placed MCV with an embedded emergency lowering screw

## 35D/45D/50Dn-9VB

### Eco-friendly Hyundai (HDI) DN03 Engine

The HDI DN03 engine is designed for heavy machinery, meeting Stage 5 emission regulations, with a focus on high energy efficiency and long durability. Its high torque in the low-to-mid speed range improves work efficiency and creates a quieter operating environment.



Rated Output(kW/rpm)	55.3/2,300
Max Torque (kg-m/rpm)	40.8/1,300
Aftertreatment	DOC+DPF

### Innovative reduction of operating expenses

Fuel efficiency is improved compared with DN03 stage 5 by using an optimized engine and applying a load sensing hydraulic system.

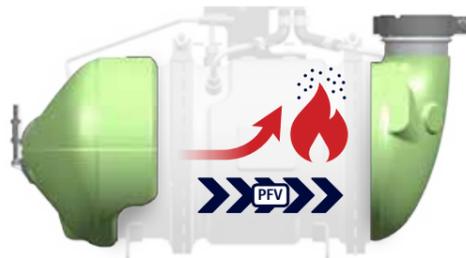
6% ↑

#### Load sensing system & New engine performance

• Fuel economy is based on our internal tests (VDI 2198) and may be different from actual operation.

### Promote automatic regeneration of DPF

When PM accumulates in the DPF, the automatic regeneration program activates to maintain performance. If the engine load is low or the engine stops during this process, the automatic regeneration will be halted.



ENVIRONMENT FRIENDLY  
GREAT PRODUCTIVITY, DURABILITY

UP  
**PERFORMANCE**

Eco-friendly engine and powertrain with significantly increased performance and durability!

Experience newly changed performance.

### HDX Drive axle - With auto parking

The drive axle, designed with an emphasis on durability, features an automatic parking brake to prevent human error and a wet disk brake with semi-permanent lifespan. Additionally, an oil cooler has been added to maintain braking performance in applications with high brake usage.



### HDX Transmission (FWD2/REV1)

The transmission is designed with an expanded clutch pack capacity and oil volume compared to the old model, making it suitable for high-load applications. The TCU is also included as a standard feature to meet Euro safety function regulations.



### Increased wheel base – 4.5/5.0ton

By increased wheel base by 1100mm for driving comfort on rough terrain has improved, enhancing the durability of the steer axle group and extending the lifespan of the steer tires. Additionally, the fuel tank and hydraulic tank capacities have been increased by 6–17%, improving continuous operation capability.

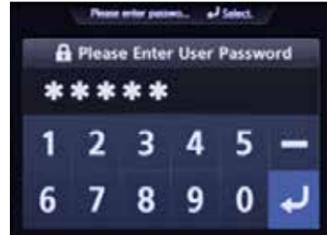


4.5/5.0ton : 2,100mm

## 35D/45D/50Dn-9VB

### Password-Start limit

A password can be set to prevent unauthorized driving by an outsider and theft of the forklift. If the password is set, the engine cannot be started without the password.



### Auto-parking brake

When the engine stops or OPSS starts, the parking brake is automatically activated to prevent human errors. If the driver needs to use the parking brake while the engine is running, driver can apply/release the brake using a dedicated button.



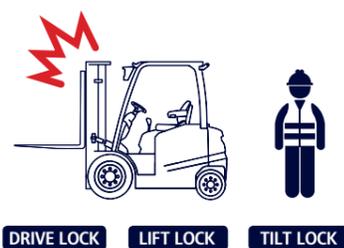
### Hill start assist control

When the forklift stops while climbing a sloped road, the automatic parking brake is temporarily applied to prevent the forklift from rolling back when moving again. This safety feature is very useful when transporting heavy cargo on a sloped road.



### OPSS system

The OPSS restricts driving, lifting, and tilting in when the operator leaves the driver's seat in order to prevent safety accidents.



## ENHANCED SAFETY

# UP SAFETY

Safety at the logistics site is most important, safety is supported by complete reliability

### Speed limit

The maximum driving speed can be set to prevent accidents caused by exceeding the speed limit. Even though the maximum driving speed is set, hill-climbing ability and mast working performance are maintained at the highest level.



### Displaying the road slope (STD) and overload alarm Option

The road slope is sensed and displayed in real time. When the set value is exceeded, the symbol turns red, and a warning buzzer goes off. In addition, the optional cargo weighing device issues an alarm for safety in case of overload.



### Seat belt interlock – forced belt wearing Option

The seat belt interlock system, which restricts forklift operation when the seat belt-wearing order is not observed or the operator releases the belt while driving, prevents operator injury from safety accidents that may occur when the seat belt is not fastened.



## 35D/45D/50DN-9VB

### Cabin Option

With wide field of vision and easy-to-open/shut cabin doors, D-9VB's cabin provides a pleasant driving environment. Furthermore, its modularized design reduces post management costs.



### Air con / Heater Option

① The air conditioner has four air outlets that prevent the blow of cold air from being directed to a particular body. And it is easy to perform maintenance work because the outdoor and indoor unit are integrated.

② The heaters supplies warm air separately to the operator's upper and lower body. A discharge port for removing moisture and frost has been added.



### Multi-functional digital display

A new cluster is applied for improved visibility of the main information needed for equipment operation. The cluster has integrated MCU for various settings and control for efficient operation and safety of the equipment on the LCD.



OUTSTANDING OPERABILITY  
ERGONOMICS

UP  
**CONVENIENCE**

Increasing work efficiency to the next level with consistent convenience in any condition

### Conveniently designed MCV lever

The load-sensing hydraulic control valve incorporates an independent load detection system that links the fork lifting height with lever operation, regardless of the weight of the lifted load.



### Full-suspension seat – Grammer

The full suspension seat of Grammer of Germany has an adjustable cushion depending on the weight of the driver, and convenience specifications such as seat belt switch, arm rests, and heater are optional.



### Easy-to-operate steering handle

The diameter of the handle is reduced by 70mm to minimize the operator's fatigue and the Danfoss 4th generation Orbitrol is applied to reduce noise and improve the reverse rotation jam of the handle.



## 35D/45D/50DN-9VB

### Larger maintenance space

A larger work space is provided for the follow-up management of consumables and major function parts when you open the engine hood (supported with two gas springs, tool-less type side cover and floor plate).

### Self-diagnosis of engine and consumables management

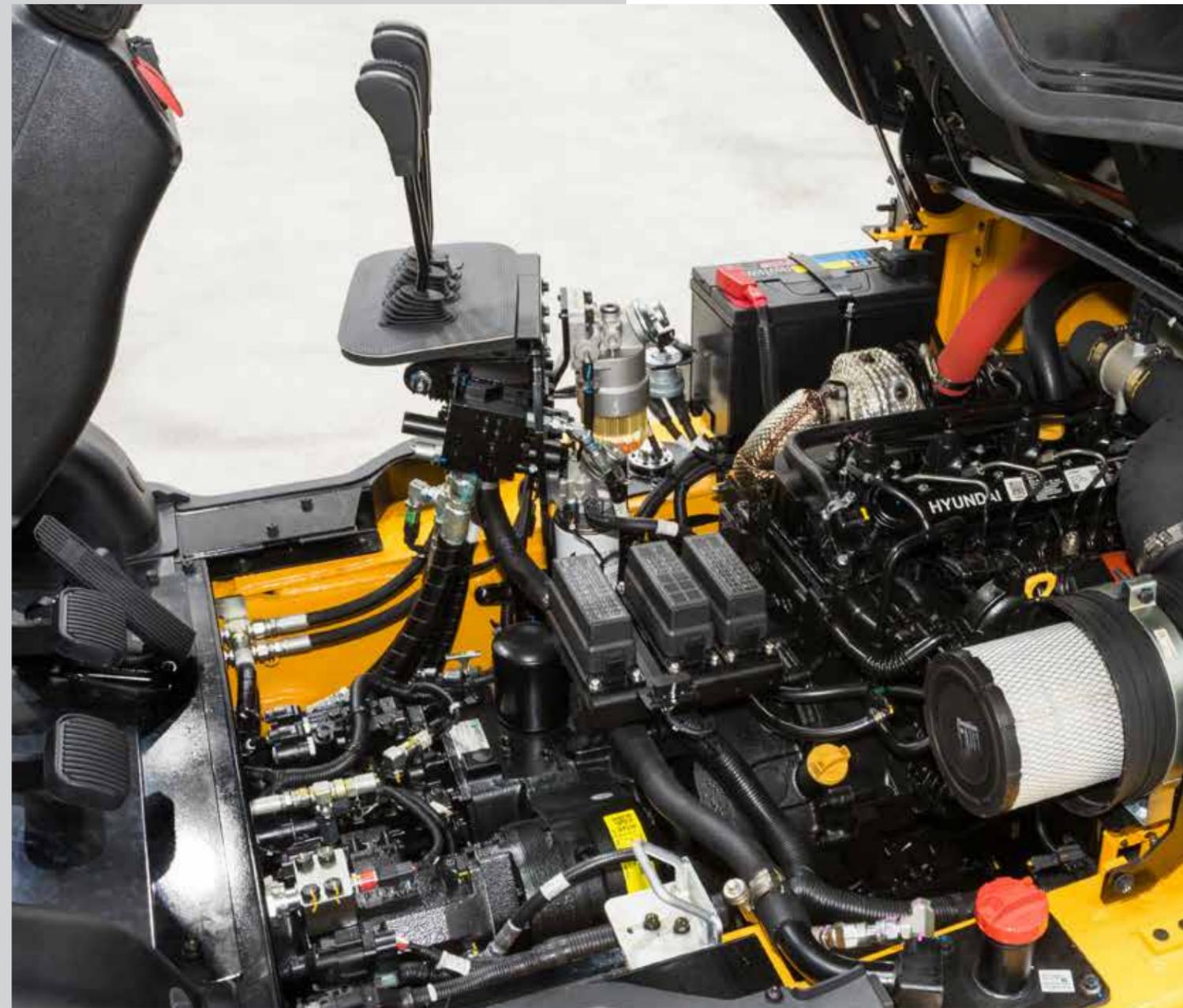
The failure details and history can be checked on the cluster screen. In addition, when the replacement cycle of any consumables is entered into the cluster, parts whose replacement is due are displayed on the monitor.



Item	Interval	Elapse	Count	Alarm
Axle Gear Oil	100	105	0	●
Transmissing Oil	100	105	0	●
Filter	100	105	0	●
Tank Air Breathe...	250	105	0	●
Engine Oil	500	105	0	●
Element	500	105	0	●

### Junction box

The fuse and relay, prone to contamination, are housed in a water- and dust-tight box located within the engine room, minimizing maintenance-related downtime.



### Detachable radiator cover

The plastic tool-less radiator sub-hood on top of the counterweight separated from the main hood reduces the downtime for checking the cooling water level and makeup.



### Exhaust gas aftertreatment system maintenance

Behind the counterweight, the Exhaust gas aftertreatment system maintenance can be serviced without removing the heavy counterweight. The DPF added for Stage 5 must be removed and cleaned internally every 3,000 hours.



## EASY SERVICE

# MAINTENANCE<sup>UP</sup>

Easy maintenance and cost-effective after-sales service  
Even though the work is finished, the satisfaction continues

### Hydraulic control valve

MCV, one of the major functional parts of the hydraulic system, is installed in a horizontal direction to allow the adjustment of hydraulic pressure and exchange of spool without opening the MCV assembly.



## 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

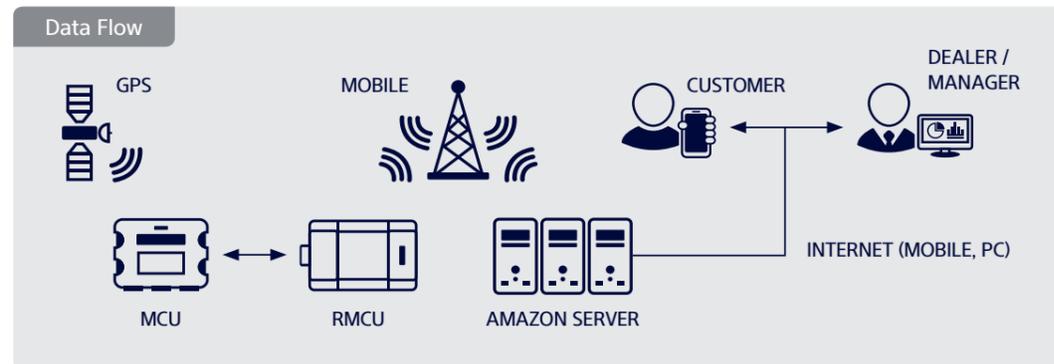
- Count of collision, size of impact



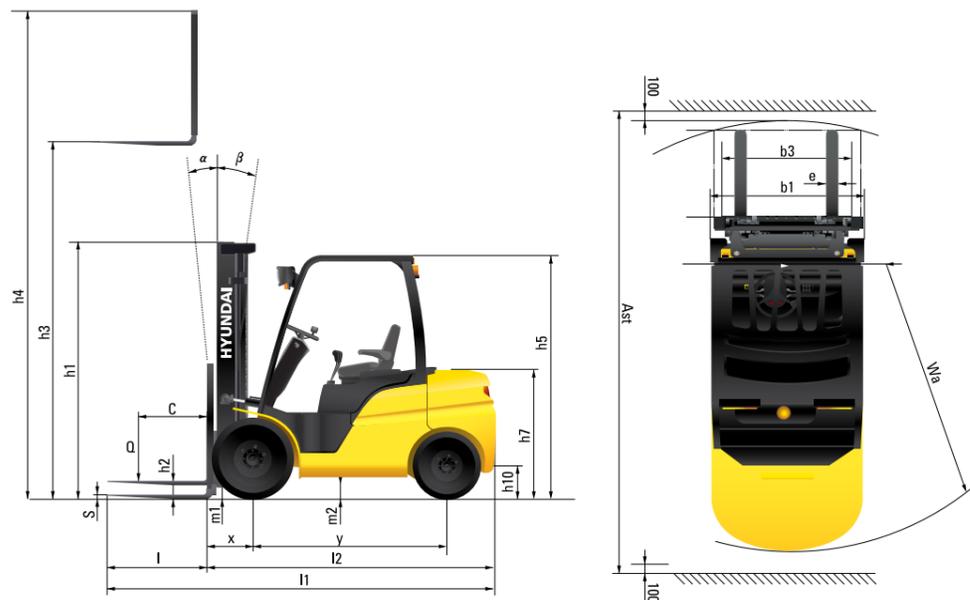
### Human resource management

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

- Driver authorization, self-diagnosis of equipment conditions



## Dimension



## Specification

Identification				
Manufacturer		Hyundai		
Manufacturer's Type Designation		35D-9VB	45D-9VB	50DN-9VB
1.1	Drive: Electric (Battery or Mains), Diesel, Petrol, Fuel Gas, Manual	Diesel	Diesel	Diesel
1.2	Type Of Operation : Hand, Pedestrian, Standing, Seated, Order-Picker	Seated	Seated	Seated
1.3	Load Capacity / Rated Load	kg	3,500	4,500
1.4	Load center distance	c (mm)	600	600
1.5	Load distance, center of front axle to fork	x (mm)	561	561
1.6	Wheelbase	y (mm)	2,030	2,100
Weights				
2.1	Service Weight	kg	5,907	6,911
2.2	Axle Loading, Loaded Front/Rear	kg	8,240/1,167	9,947/1,464
2.3	Axle Loading, Unloaded Front/Rear	kg	2,739/3,168	2,959/3,952
Wheels, Chassis				
3.1	Tires : Solid Rubber(V), Superelastic(SE), Pneumatic(P), Polyurethane(PE)	P	P	P
3.2	Tires Size, Front	8.25-15-14PR	7.50-16-12PR	7.50-16-12PR
3.3	Tires Size, Rear	7.00-12-14PR	7.00-12-14PR	7.00-12-14PR
3.5	Wheels, Number Front Rear(x=Driven Wheels)	2x2	4x2	4x2
3.6	Track Width, Front	mm	1,132	1,282
3.7	Track Width, Rear	mm	1,140	1,140
Basic Dimensions				
4.1	Mast/Fork Carriage Tilt Forward/Backward	degrees	8/10	8/10
4.2	Lowered Mast Height	h1 (mm)	2,235	2,220
4.3	Free Lift	h2 (mm)	120	120
4.4	Lift Height	h3 (mm)	3,020	3,020
4.5	Extended Mast Height	h4 (mm)	4,234	4,147
4.7	Overhead Load Guard(Cab) Height	h5 (mm)	2,370	2,360
4.8	Seat Height/Standing Height(SIP)	h7 (mm)	1,316	1,304
4.12	Coupling Height	h10 (mm)	372	360
4.19	Overall Length	l1 (mm)	4,219	4,504
4.20	Length to Face of Forks	l2 (mm)	3,149	3,284
4.21	Overall Width	b1 (mm)	1,370	1,746
4.22	Fork Dimensions(H x W x L)	l x e x s (mm)	50x122x1070	50x150x1,220
4.23	Fork Carriage ISO 2328, Class/Type A,B	III / A	III / A	III / A
4.24	Fork-Carriage Width(with backrest)	b3 (mm)	1,300	1,600
4.31	Ground Clearance, Under Mast	m1 (mm)	170	155
4.32	Ground Clearance, Centre of Wheelbase	m2 (mm)	202	190
4.34.1	Aisle Width for Pallets 1000x1200 Crossways	Ast (mm)	4,656	4,799
4.34.2	Aisle Width for Pallets 800x1200 Lengthways	Ast (mm)	4,856	4,999
4.35	Turning Radius	Wa (mm)	2,895	3,038
Performance				
5.1	Travel Speed, Loaded/Unloaded	km/h	28/30.3	27.7/29.5
5.2	Lift Speed, Loaded/Unloaded	mm/s	520/540	510/540
5.3	Lowering Speed, Loaded/Unloaded	mm/s	550/550	550/550
5.6	Max. Drawbar Pull, Loaded/Unloaded	N	41,432/39,409	41,405/40,346
5.8	Max. Gradeability, Loaded/Unloaded	%	46.5/20.5	37.6/18.1
5.10	Service Brake		Hydraulic	Hydraulic
Engine				
7.1	Engine Manufacturer/Type		HDI DN03	HDI DN03
7.2	Engine Power Acc. to ISO 1585	kW/rpm	55.3/2,300	55.3/2,300
7.3	Maximum Torque	kgf.m/rpm	40.8/1,300	40.8/1,300
7.4	No. of Cylinders/Displacement	EA/cc	4/3,409	4/3,409
7.5	Fuel Consumption Acc. to VDI Cycle	l/h	4	4.2
Addition Data				
8.1	Type of drive control		Power Shift	Power Shift
8.2	Operating pressure, system/attachments	bar	210/140	210/140
8.3	Oil volume for attachments	LPM	60	60

35D-9VB											
Mast Type	Maximum fork height	Overall height (Lowered)		Free lift height	Tilt angle		Load capacity		Truck weight (Unloaded)		
		Single	Double		Fwd	Bwd	Single	Double	Single	Double	
		mm	mm		deg	deg	kg	kg	kg	kg	
STANDARD	V300	3,000	2,235	2,220	120	8	10	3,500	3,500	5,924	6,081
	V330	3,300	2,385	2,370	120	8	10	3,500	3,500	5,962	6,118
	V370	3,700	2,635	2,620	120	8	10	3,500	3,500	6,005	6,162
	V400	4,000	2,845	2,830	120	8	10	3,500	3,500	6,047	6,204
	V430	4,300	2,995	2,980	120	8	10	3,500	3,500	6,077	6,234
	V500	5,000	3,345	3,330	120	8	6	3,500	3,500	6,211	6,368
2-STAGE FULL FREE LIFT	VF300	3,000	2,235	2,220	1,358	8	8	3,500	3,500	5,961	6,115
3-STAGE FULL FREE LIFT	TF400	4,000	2,135	2,120	1,249	8	8	3,500	3,500	6,181	6,337
	TS420	4,200	2,175	2,160	1,289	8	8	3,500	3,500	6,201	6,357
	TF/TS430	4,300	2,235	2,220	1,349	8	8	3,500	3,500	6,212	6,369
	TF/TS470	4,700	2,385	2,370	1,499	8	8	3,500	3,500	6,267	6,424
	TF500	5,000	2,485	2,470	1,599	8	6	3,500	3,500	6,290	6,447
	TF/TS550	5,500	2,665	2,650	1,779	8	6	3,380	3,470	6,351	6,508
	TF600	6,000	2,845	2,830	1,959	8	6	3,180	3,270	6,420	6,576
	TS650	6,500	2,845	2,830	2,139	8	6	3,060	3,120	6,461	6,618

45D-9VB											
Mast Type	Maximum fork height	Overall height (Lowered)		Free lift height	Tilt angle		Load capacity		Truck weight (Unloaded)		
		Single	Double		Fwd	Bwd	Single	Double	Single	Double	
		mm	mm		deg	deg	kg	kg	kg	kg	
STANDARD	V300	3,000	2,235	2,220	120	8	10	4,500	4,500	6,810	6,937
	V330	3,300	2,385	2,370	120	8	10	4,500	4,500	6,848	6,975
	V400	4,000	2,845	2,830	120	8	10	4,500	4,500	6,933	7,060
	V430	4,300	2,995	2,980	120	8	10	4,500	4,500	6,963	7,090
	V450	4,500	3,095	3,080	120	8	6	4,500	4,500	7,046	7,173
	V500	5,000	3,345	3,330	120	8	6	4,500	4,500	7,097	7,224
2-STAGE FULL FREE LIFT	VF300	3,000	2,235	2,220	1,358	8	8	4,500	4,500	6,842	6,969
3-STAGE FULL FREE LIFT	TF400	4,000	2,135	2,120	1,249	8	8	4,500	4,500	7,067	7,196
	TS420	4,200	2,175	2,160	1,289	8	8	4,500	4,500	7,087	7,216
	TF/TS430	4,300	2,235	2,220	1,349	8	8	4,500	4,500	7,098	7,227
	TS450	4,500	2,295	2,280	1,409	8	8	4,500	4,500	7,117	7,246
	TF/TS470	4,700	2,385	2,370	1,499	8	8	4,500	4,500	7,153	7,283
	TF500	5,000	2,485	2,470	1,599	8	6	4,500	4,500	7,176	7,306
	TF/TS550	5,500	2,665	2,650	1,779	8	6	4,440	4,460	7,238	7,367
	TF600	6,000	2,845	2,830	1,959	8	6	4,190	4,210	7,306	7,435
TS650	6,500	2,845	2,830	2,139	8	6	3,920	4,060	7,348	7,477	

50Dn-9VB											
Mast Type	Maximum fork height	Overall height (Lowered)		Free lift height	Tilt angle		Load capacity		Truck weight (Unloaded)		
		Single	Double		Fwd	Bwd	Single	Double	Single	Double	
		mm	mm		deg	deg	kg	kg	kg	kg	
STANDARD	V290	2,930	2,220	2,205	120	8	10	5,000	5,000	7,192	7,326
	V320	3,230	2,370	2,355	120	8	10	5,000	5,000	7,217	7,351
	V360	3,630	2,620	2,605	120	8	10	5,000	5,000	7,258	7,392
	V390	3,930	2,830	2,815	120	8	10	5,000	5,000	7,294	7,427
	V440	4,430	3,080	3,065	120	8	6	5,000	5,000	7,397	7,531
	V490	4,930	3,330	3,315	120	8	6	5,000	5,000	7,439	7,573
	3-STAGE FULL FREE LIFT	TF360	3,672	2,035	2,020	1,149	8	8	5,000	5,000	7,410
TF390		3,972	2,135	2,120	1,249	8	8	5,000	5,000	7,436	7,558
TF/TS420		4,272	2,235	2,220	1,349	8	8	5,000	5,000	7,461	7,583
TF/TS460		4,662	2,385	2,370	1,499	8	8	5,000	5,000	7,501	7,623
TF490		4,962	2,485	2,470	1,599	8	6	4,970	5,000	7,526	7,648
TF/TS540		5,462	2,665	2,650	1,779	8	6	4,830	4,930	7,578	7,700
TF/TS590		5,972	2,845	2,830	1,959	8	6	4,570	4,910	7,619	7,740
TS640		6,482	2,845	2,830	2,139	8	6	4,440	4,790	7,660	7,782

## Load Capacity

35D-9VB      45D-9VB      50Dn-9VB

