



TECHNICAL SPECIFICATIONS

Pneumatic Diesel Forklift Trucks

D110/130/160S-5

11,000kg to 16,000kg Capacity

PRO5
SERIES



11,000/13,000/16,000 kg Capacities

Engine Powered Forklift Trucks

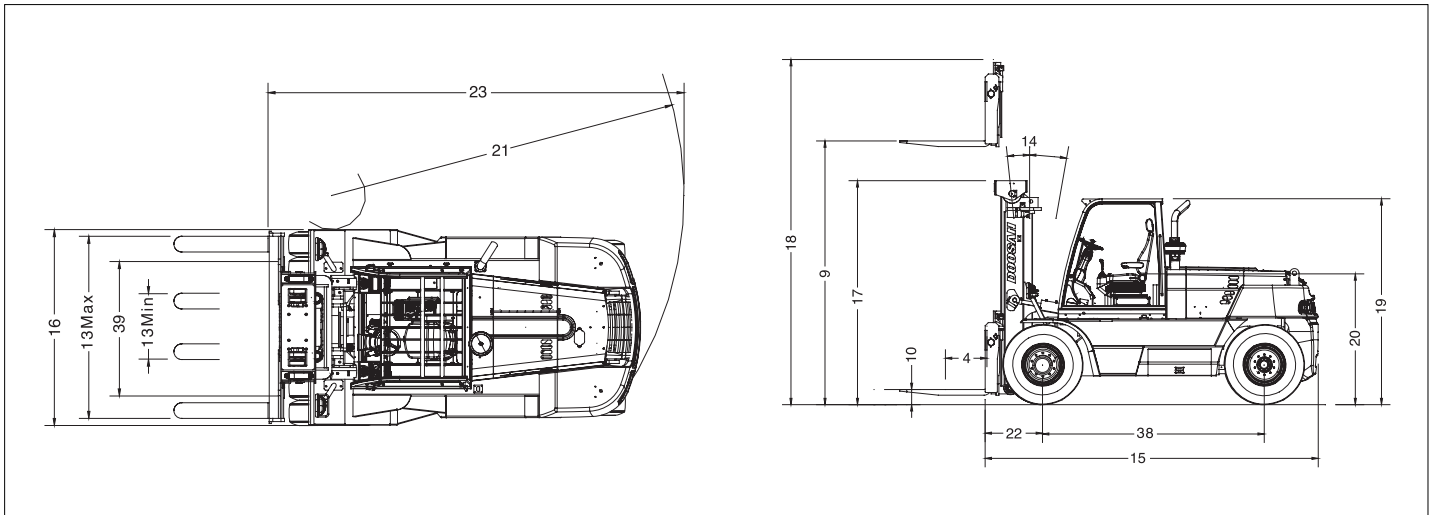
Pneumatic Tire, Diesel

MAIN VEHICLE SPECIFICATIONS

CHARACTERISTICS	1	Manufacturer			DOOSAN		DOOSAN		DOOSAN	
	2	Model			D110S-5		D130S-5		D160S-5	
	3	Load Capacity	at rated load center	kg	11,000		13,000		16,000	
	4	Load Center		mm	600		600		600	
	5	Power Type	Elec, Diesel, LPG, Gasoline		Diesel		Diesel		Diesel	
	6	Operator Type			driver seated		driver seated		driver seated	
	7	Tire Type	P: Pnu, E: Solid Soft, C: Cush		P		P		P	
	8	Wheels (x=Driven)	Front / Rear		2 x 2 / 2		2 x 2 / 2		2 x 2 / 2	
DIMENSIONS	9	Max. Fork Height	with STD 2-stage mast	mm	3,000		3,000		3,000	
	10	Free Lift		mm	0		0		0	
	12	Fork Carriage	ISO Class		-		-		-	
	13	Forks	Length x Width x Thickness	mm	1,350 x 200 x 70		1,350 x 200 x 85		1,350 x 200 x 85	
			Fork Spacing(Min x Max)	mm	470 x 2,140		470 x 2,140		470 x 2,290	
	14	Tilt of Mast	Forward/Backward	deg	15 / 12		15 / 12		15 / 12	
	15	Overall Dimensions	Length to Fork Face	mm	4,340		4,340		4,715	
			Overall Width	mm	2,350		2,350		2,490	
			Mast Lowered Height	mm	2,970		2,970		3,170	
			Mast Extended Height	mm	4,470		4,470		4,670	
			Overhead Guard Height	mm	2,765		2,765		2,928	
	19	Seat Height		mm	1,660		1,660		1,820	
	20			mm	1,660		1,660		1,820	
	21	Turning Radius	Minimum outside	mm	4,040		4,040		4,400	
22	Load Moment Center		mm	755		760		815		
23	Aisle 90 degree stacking(add load length & clearance)		mm	4,790		4,790		5,195		
PERFORMANCE	24	Travel Speed	Loaded/Unloaded	km/h	33.0 / 36.0		33.0 / 36.0		29.0 / 33.0	
	25	Lifting Speed	Loaded/Unloaded	mm/s	450 / 490		430 / 490		410 / 450	
	26	Lowering Speed	Loaded/Unloaded	mm/s	480 / 430		480/430		430 / 410	
	28	Max. drawbar pull	Loaded at 1.0 mph(1.6 km/h)	kg	8,080		8,080		10,400	
	30	Max. gradeability	Loaded at 1.0 mph(1.6 km/h)	%	33		29.5		28.5	
WEIGHT	32	Total Service Weight , Unloaded		kg	15,540		15,540		16,800	
	33	Axle Load	Loaded, Front / Rear	kg	23,340 / 3,200		23,340 / 3,200		26,500 / 3,300	
	34		Unloaded, Front / Rear	kg	7,110/8,430		7,110 / 8,430		7,300 / 9,500	
CHASSIS	35		Number of wheels (F/R)		4 / 2		4 / 2		4 / 2	
	36	Tires	Size , Front		10.00 x 20 - 16PR		10.00 x 20 - 16PR		12.00 x 20 - 18PR	
			Size , Rear		10.00 x 20 - 16PR		10.00 x 20 - 16PR		12.00 x 20 - 18PR	
	38	Wheel Base	Distance	mm	2,850		2,850		3,150	
	39	Tread Width	Front / Rear	mm	1,724 / 1,860		1,724 / 1,860		1,825 / 1,910	
	40	Ground Clearance	Loaded at the lowest point	mm	270		270		270	
			Loaded at center of wheelbase	mm	360		360		370	
	42	Brakes	Service		Foot / Air		Foot / Air		Foot / Air	
	43		Parking		Hand / Air		Hand / Air		Hand / Air	
	POWER TRAIN	45	Battery	Voltage / Ampere	V/AH	24(12 x 2) / 100		24(12 x 2) / 100		24(12 x 2) / 100
49		Engine	Manufacturer		Doosan		Doosan		Doosan	
			Model		DL06 DE08TS		DL06 DE08TS		DL06 DE08TS	
50		Rated Power (DIN)	HP(PS)/rpm		140 / 2,100		140 / 2,200		140 / 2,100	
			kW/rpm		103 / 2,100		103 / 2,200		103 / 2,100	
51		Maximum Torque	kgm/rpm		59 / 1,400		55 / 1,400		59 / 1,400	
52		Cylinders/ Displacements	CC		6 / 5,890		6 / 8,071		6 / 5,890	
55			Type		Full Autoshift		Full Autoshift		Full Autoshift	
	Number of Speed (Fwd/Rev)			3 / 3		3 / 3		3 / 3		
57	Hydraulic Pressure	System	bar	190		190		210		
		Attachment	bar	140		140		140		

Note: Specification values quoted in this specification sheet has been rounded. Performance may vary due to operation conditions. Products and specifications are subject to improvement and change without prior notices.

DIMENSIONAL DRAWING



MAST SPECIFICATIONS and RATED CAPACITIES

Model	Mast Type	Maximum Fork Height	Fully Lowered Height	Fully Extended Height	Free Lift	Rated Load Capacities				
						With Load Backrest	With Load Backrest	Tilt Angle		LC 600mm
								FWD deg	BWD deg	
D110S-5	STD	3000	2965	4465	0	15	12	11000		
		3500	3215	4965	0	15	12	11000		
		4000	3465	5465	0	15	12	11000		
		4500	3715	5965	0	15	12	11000		
		5000	4165	6665	0	15	12	11000		
		5500	4415	7165	0	15	12	10500		
		6000	4665	7665	0	15	12	9500		
D130S-5	STD	3000	2965	4465	0	15	12	13000		
		3500	3215	4965	0	15	12	13000		
		4000	3465	5465	0	15	12	13000		
		4500	3715	5965	0	15	12	13000		
		5000	4165	6665	0	15	12	13000		
		5500	4415	7165	0	15	12	12000		
		6000	4665	7665	0	15	12	11000		
D160S-5	STD	2900	2950	4400	0	15	12	16000		
		3000	3170	4670	0	15	12	16000		
		3500	3420	5170	0	15	12	16000		
		4000	3670	5670	0	15	12	16000		
		4500	3920	6170	0	15	12	16000		
		5000	4370	6870	0	15	12	16000		
		5500	4620	7370	0	15	12	15000		
	6000	4870	7870	0	15	12	14000			
	FFT	3700	2930	5335	1380	15	10	15000		
		4000	3030	5635	1480	15	10	15000		
		4500	3195	6130	1645	15	10	15000		
		5000	3360	6635	1815	15	10	15000		
		5500	3530	7135	1980	15	10	14400		
		6000	3695	7630	2145	15	10	13400		

Note: Mast specifications & Rated Capacities are based on standard chassis with pneumatic tire and without sideshifter.

TECHNICAL INFORMATION

Standard Equipment

- Chassis with Doosan Turbo-charger
- DL06 : 5.9 Liter
- DE08TS : 8.1 Liter
- 3 Speeds full autoshift transmission and inching system
- Fully hydraulic power steering with load sensing
- Integrated Instrument Panel
- Fully air actuated parking brake and service brake
- Deluxe suspension seat with retractable seat belt
- 2 front and rear flood lights and combination lamps
- Reinforced anisometric overhead guard rail for cabin
- Pilot operated lift/ tilt locking 2 spool hydraulic Valve
- High visibility 2 stage 3000 mm(118 in) Mast
- Dual element air cleaner
- 15°Forward / 12°Backward tilt cylinders.
- 1350 mm (53 in) length forks

i Mast

Doosan forklift trucks offer a full range of wide view masts;

- STD double mast : 3.0m(118 in) ~ 6.0m(236 in)
- FFT triple full free mast : 3.7m(145 in) ~ 6.0m(246 in) ;
Suitable for stacking applications in areas with limited height clearance but where maximum lift is also required.
(Available on D160S-5 only)

All masts are steel weldment uprights with rigid cross members for strength and reliability. Secondary lift cylinders have cushioning valves to ensure smooth and silent staging during lifting and lowering.

i Carriage

D110/130/160S-5 series is equipped with high tensile shaft mounting type carriage. An optional integrated sidershifter and fork mover is also available.

i Engine

Full Range Electric Governed Turbocharger Doosan DL06 5.9 liter Diesel Engine

The powerful and reliable 6 cylinder Doosan DL06 5.9 liter diesel engine provides excellent performance for even the toughest applications. Doosan DL06 diesel engine complies with EPA Tier III and Euro Stage 3 emission regulation. High fuel injection system pressure, 4 valves per cylinder and CAC(Charged Air Cooler) turbocharger maximizes engine performance with low fuel consumption rates. The ECU(Engine Control Unit) controls basic engine output functions, such as proper and optimum AFR(Air to Fuel Ratio), engine torque and speeds.

The ECU also protects the engine from abnormal engine conditions, such as 'High Engine Coolant Temp' and 'Low Engine Oil Pressure'.

High Powered Turbo charger Doosan DE08TS 8.1 Liter Diesel Engine

- Low emission to meet EU STAGE \neq —and EPA TIER \neq —emission regulation
- Low noise level by 2-stage injection pressure system
- Optimized combustion chamber design for low smoke and lower fuel consumption
- High power and efficiency at high altitude by turbo-charged intake system
- Reduced diesel knocking noise by right ignition time
- Linear arrangement of cylinders for excellent serviceability
- Heavy duty fuel filter with water separator
- Design for long engine life

i Full Autoshift Transmission and Electric Inching System

The electric control module of the transmission automatically changes truck travel speed based on the engine speed and the load on the drive wheels. With its advanced electric control system, operator is free from the inconvenience of gear shifting while driving.

Also operator can select various operating modes, such as manual shifting, starting at low speed gear shifting or at high speed gear shifting depending on application needs.

The self-diagnostics and easy check-up functions will reduce the time to troubleshoot any problems.

The electric inching system permits even massive loads to be moved with great precision. It is controlled by selection switch activated by the operator.

i Rugged Drive Axle

Planetary gear drive axle consists of four pinion and hypoid differential gears and radial sun and ring gears with steel housing, hardened load bearing spindle and full-floating axle shaft to protect from high impact shock loading.

Gears and bearings are positively lubricated by oil flow.

i Air Shoe Brakes

Large diameter and self-adjusting non-asbestos shoe brakes are provided as standard equipment. The fully air-actuated shoe brakes are boosted by large double air- compressed chambers. S-cam type mechanism provides secure brake force with low brake pedal effort. For operating safety this brake system adopts power-off system, self-lock brake system, which activates the air-parking brake in case of brake line malfunction.

i Side Tiltable Operator Compartment and Cab

Easy access to powertrain components is facilitated by activating the side tiltable operator compartment or optional cab at the touch of a button . The hydraulic actuated cylinder tilts operator compartment or cab to right side about 65 degrees for easy service access.

i Operator Area

Large, anti-skid open steps and long hand grips welded on overhead guard strut provide easy operator access to and from the seat. Infinitely adjustable tilt steer column, and deck-mounted pilot operated hydraulic control levers, ensure operator comfort and reduced fatigue. 6 direction adjustable, operator weight adjustment full-suspension deluxe seat provides comfortable working positions for all sizes of operators.

The integrated easy-to-read instrument panel alerts the operator to all truck conditions at a glance from their seated position.

i Optional Equipment

- Solid Soft Tires
- Tiltable Operator Compartment and Deluxe Operator Cab
- Operator Comfort Features with Operator Cab
 - Air Conditioner / Heater
 - Sound Suppression Package
 - CD Player & Radio for Cabin
- Pilot Operated 3/4/5 Spools Hydraulic Control Valve
- Integral Sidershifter or Integral Sideshifting Fork Positioner
- 4 Working Lights
- 2 Front Lights on Fender
- Rear Strobe Lamp / Spark Arrestor
- Catalytic Muffler
- Battery Isolated Switch
- Lockable Fuel Cap

