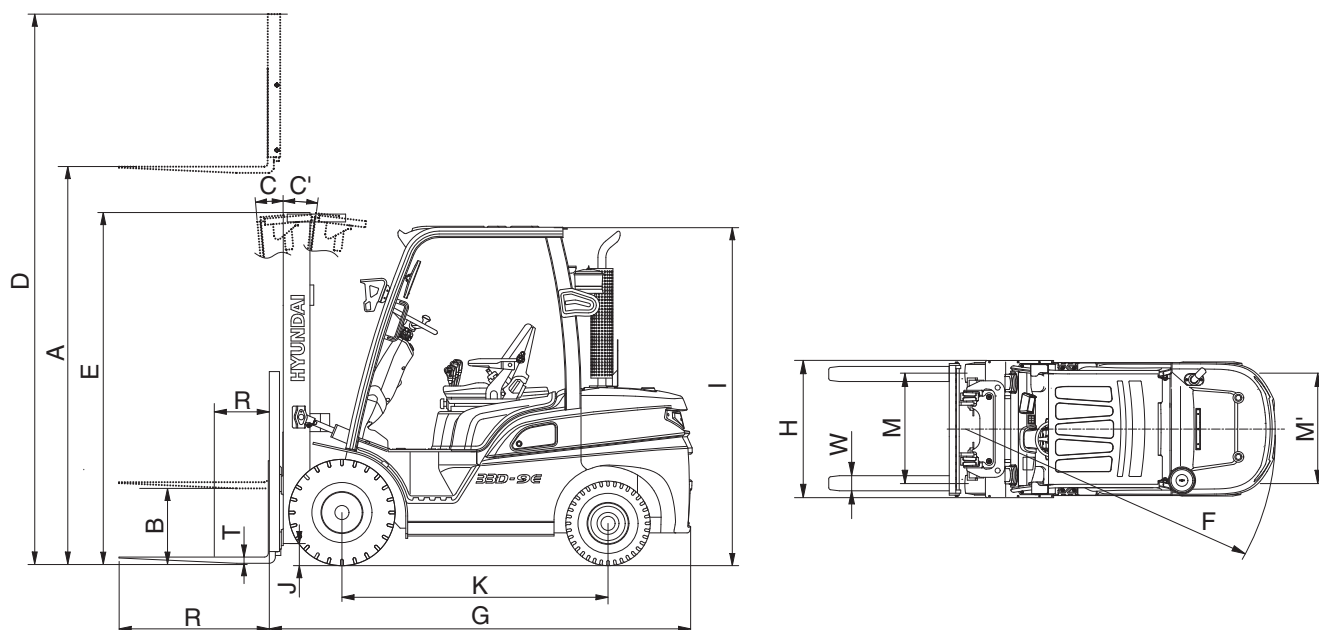


8. SPECIFICATIONS

1. SPECIFICATION TABLE



22D9ESP01

Model			Unit	22D-9E	25D-9E	30D-9E	33D-9E
Capacity			kg (lb)	2200 (4400)	2500 (5000)	3000 (6000)	3300 (6500)
Load center		R	mm (in)	500 (24")	←	←	←
Weight (Unloaded)			kg (lb)	3510 (7740)	3825 (8430)	4219 (9300)	4500 (9920)
Fork	Lifting height	A	mm (ft. in)	3305 (10' 10")	←	←	←
	Free lift	B	mm (in)	155 (6.1")	←	←	←
	Lifting speed (Unload/Load)	NON-Booster	mm/sec	590/530	590/520	490/440	490/430
		Booster	mm/sec	550/500	550/510	460/410	460/400
	Lowering speed (Unload/Load)		mm/sec	420/500	←	←	←
L × W × T		L, W, T	mm (in)	1050×100×45 (41.3×3.9×1.8)	←	1050×122×45 (41.3×4.8×1.8)	←
Mast	Tilt angle (forward/backward)	C/C'	degree	6/10	←	←	←
	Max height	D	mm (ft. in)	4485 (14' 9")	←	←	←
	Min height	E	mm (ft. in)	2175 (7' 2")	←	2190 (7' 2")	2260 (7' 5")
Body	Travel speed (Unload)		km/h	17.1	←	18.4	←
	Gradeability (Load)		%	31.8	28.5	22.3	20.6
	Min turning radius (Outside)	F	mm (ft. in)	2286 (7' 6")	2342 (7' 8")	2413 (7' 11")	2463 (8' 1")
ETC	Operating pressure		kgf/cm ²	200	←	←	←
	Hydraulic oil tank		l (usgal)	36 (9.5)	←	38 (10)	←
	Fuel tank		l (usgal)	60 (15.9)	←	←	←
Overall length		G	mm (ft. in)	2577 (8' 5")	2607 (8' 7")	2676 (8' 9")	2732 (9' 0")
Overall width		H	mm (ft. in)	1200 (3' 11")	←	1228 (4' 0")	←
Overhead guard height		I	mm (ft. in)	2160 (7' 1")	←	2180 (7' 2")	←
Ground clearance		J	mm (in)	130 (3.1")	←	145 (5.7")	←
Wheel base		K	mm (ft. in)	1650 (5' 5")	←	1700 (5' 7")	←
Wheel tread front/rear		M/M'	mm (ft. in)	999/980 (3' 3"/3' 3")	←	1005/980 (3' 6"/3' 3")	←

2. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Unit	Specification
Model	-	Yanmar 4TNE 92
Type	-	Vertical, water-cooled, 4-cycle diesel
Cooling method	-	Water cooling
Number of cylinders and arrangement	-	4 cylinders, in-line
Firing order	-	1-3-4-2
Combustion type	-	Center direct injection system (E-CDIS)
Cylinder bore X stroke	mm (in)	92 × 100 (3.6 × 3.9)
Piston displacement	cc (cu in)	2659 (162)
Compression ratio	-	17.5
Rated gross horse power	ps/rpm	45.4/2450
Maximum gross torque at rpm	kgf · m/rpm	14.7/1600
Engine oil quantity	l (U.S.gal)	7.5 (2.0)
Dry weight	kg (lb)	220 (485)
High idling speed	rpm	2700
Low idling speed	rpm	810 ± 50
Rated fuel consumption	g/ps.hr	173
Starting motor	V-kW	12-2.3
Alternator	V-A	14-55
Battery	V-AH	12-100
Fan belt deflection	mm (in)	10~12 (0.39~0.47)

2) MAIN PUMP

Item	Unit	Specification
Type	-	Fixed displacement gear pump
Displacement	cc/rev	27.7
Maximum operating pressure	bar	250
Rated speed (Max/Min)	rpm	2700/500

3) MAIN CONTROL VALVE

Item	Unit	Specification
Type	-	Sectional
Operating method	-	Mechanical
Main relief valve pressure	kg/cm ²	200/165
Flow capacity	lpm	80

4) POWER TRAIN DEVICES

Item			Specification
Torque converter	Model		KAPEC 280DJ / ★280DK
	Type		3 Element, 1 stage, 2 phase
	Stall ratio		2.90
Transmission	Type		Power shift
	Gear shift (FWD/REV)		1/1
	Control		Solenoid ON/OFF type
	Overhaul ratio	FWD	1.308 / ★1.4375
		REV	1.308 / ★1.4375
Axle	Type		Front-wheel drive type, fixed location
	Gear ratio		14.2 : 1
	Gear		Spiral bevel gear type
Wheels	Q'ty (FR/RR)		Single : 2/2, Double : 4/2
	Front (drive)	2.2	Single : 7.00-12-14 PR
		2.5 (#-0546)	Double : 6.00-15-10 PR
		3.0 (#-0540)	Single : 28 × 9-15-14PR
		3.3 (#-0154)	Double : 6.00-15-10 PR
	Rear (steer)	2.2	Single : 6.50-10-14 PR
		2.5 (#-0546)	
		3.0 (#-0540)	
		3.3 (#-0154)	
	Front (drive)	2.5 (#0547-)	Single : 7.00-12-12 PR
			Double : 6.00-15-10 PR
		3.0 (#0541-)	Single : 8.15-15-14 PR
	Rear (steer)	3.3 (#0155-)	Double : 6.00-15-10 PR
		2.5 (#0547-)	Single : 6.50-10-12 PR
		3.0 (#0541-)	
	3.3 (#0155-)		
Brakes	Travel		Front wheel, wet disk brake
	Parking		Wet disk (negative brake)
Steering	Type		Full hydraulic, power steering
	Steering angle		78.9° to both right and left angle, respectively

★ : Option

3. TIGHTENING TORQUE

No.	Items		Size	kgf · m	lbf · ft
1	Engine	Engine mounting nut (bracket-engine mount)	M12 × 1.25	9.7 ± 1.9	70 ± 13.7
2		Engine mounting bolt (engine-bracket)	M10 × 1.5	7.4 ± 1.5	53.5 ± 10.8
3		Radiator mounting nut	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
4		Torque converter mounting bolt (8EA)	M10 × 1.25	7.4 ± 1.5	53.5 ± 10
5	Hydraulic system	MCV mounting bolt	M10 × 1.5	4 ± 0.5	29 ± 3.6
6		Steering unit mounting bolt	M10 × 1.5	4 ± 0.5	29 ± 3.6
7		Pump mounting bolt	M10 × 1.5	5.3 ± 0.5	38.3 ± 3.6
8	Power train system	Transmission mounting bolt, nut	M16 × 2.0	7.5	54
9		Drive axle mounting bolt, nut	M20 × 1.5	65 ± 3	470 ± 21
10		Steering axle mounting bolt	M20 × 2.5	58 ± 8.5	420 ± 61
11		Front wheel mounting nut	M20 × 1.5	40 ± 10	289 ± 72
12		Separated rim assembling bolt, nut	M10 × 1.25	6.15 ± 0.5	45 ± 4
13			M12 × 1.25	13.3 ± 2.7	96 ± 20
14			M16 × 1.5	31.3 ± 4.7	226 ± 34
15		Rear wheel mounting nut	M16 × 1.5	18 ± 2	130 ± 14
16		Propeller shaft mounting bolt	M10 × 1.5	7.4 ± 1.5	53.5 ± 10.8
17	Others	Counterweight mounting bolt	M30 × 3.5	199 ± 30	1439 ± 217
18		Operator's seat mounting nut	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
19		Head guard mounting bolt, nut	M12 × 1.75	12.3 ± 1.2	89.0 ± 8.7
20		Master support mounting bolt	M16 × 2.0	35.6 ± 7.1	257 ± 51.4