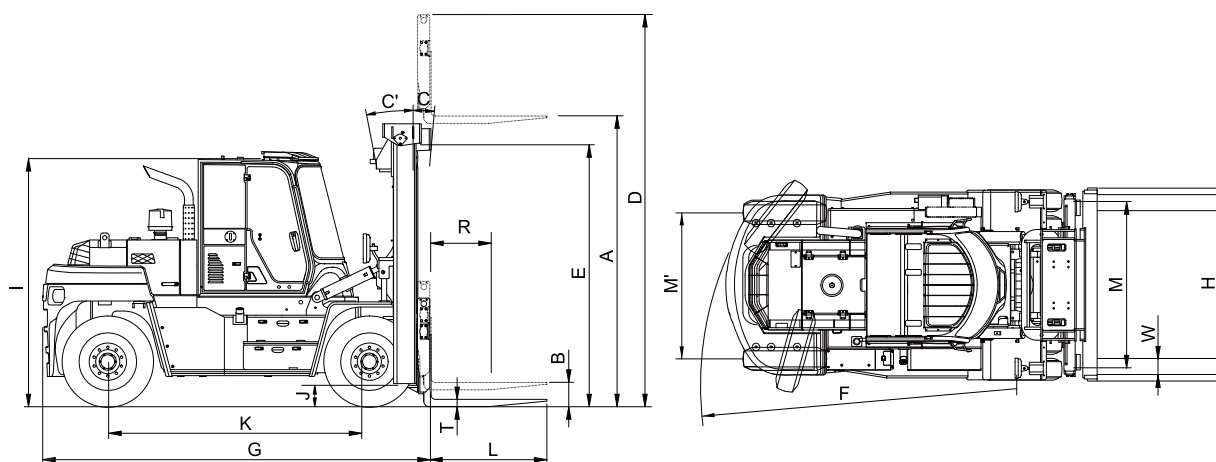


8. SPECIFICATIONS

1. SPECIFICATION TABLE



160D9VSP01

Model			Unit	120D-9V	130D-9V	160D-9V
Capacity			kg (lb)	12,000 (26000)	13,000 (29000)	16,000 (36000)
Load center	R		mm (in)	600 (24")	←	←
Weight(Unloaded)			kg (lb)	16337 (36017)	17105 (37710)	20499 (45098)
Fork	Lifting height	A	mm (in)	3305 (130)	←	←
	Free lift	B	mm (in)	0	←	←
	Lifting speed (Unload/Load)		mm/sec	500/480	←	420/390
	Lowering speed (Unload/Load)		mm/sec	500/550	←	450/550
	L×W×T	L,W,T	mm (in)	1350×200×75 (53.1×7.9×3.0)	1350×200×85 (53.1×7.9×3.3)	1350×200×90 (53.1×7.9×3.5)
Mast	Tilt angle (forward/backward)	C/C'	degree	15/12	←	←
	Max height	D	mm (in)	4765 (188)	←	5010 (197.2)
	Min height	E	mm (in)	3150 (124)	←	3400 (133.8)
Body	Travel speed (Unload)		km/h	35.9	35.8	34.2
	Gradeability (Load)		%	45.1	40.5	42.6
	Min turning radius (Outside)	F	mm (ft·in)	4350 (14' 3")	←	4895 (16' 1")
ETC	System set pressure		kgf/cm ²	235	←	←
	Hydraulic oil tank (V-mast)		ℓ (USgal)	158 (41.7)	←	160 (42.3)
	Fuel tank		ℓ (USgal)	195 (51.5)	←	260 (68.7)
Overall length	G		mm (ft·in)	4570 (15' 0")	4580 (15' 0")	5080 (16' 8")
Overall width	H		mm (ft·in)	2450 (8' 0")	←	2497 (8' 2")
Cabin height	I		mm (ft·in)	2955 (9' 7")	←	2990 (9' 10")
Ground clearance	J		mm (in)	250 (9.8")	←	←
Wheel base	K		mm (ft·in)	3050 (10' 0")	←	3450 (11' 4")
Wheel tread front/rear	M/M'		mm (ft·in)	1842 / 1910 (6' 1" / 6' 3")	←	1842 / 1960 (6' 1" / 6' 5")
Drawbar pull (Load)			kg (lb)	12430 (27403)	12516 (27593)	15829 (34897)

2. SPECIFICATION FOR MAJOR COMPONENTS

1) 120/130D-9V

(1) ENGINE

Item	Unit	Specification
Model	—	Cummins B4.5
Type	—	4 cycle turbocharged, charger air cooled diesel engine
Cooling Method	—	Water cooling
Number of cylinders and arrangement	—	4 cylinders, In-line
Firing order	—	1-3-4-2
Combustion chamber type	—	Direct injection
Cylinder bore × stroke	mm (in)	107 × 124 mm (4.21" × 4.88")
Piston displacement	cc (cu in)	4500 (275.1)
Compression ratio	—	17.2 : 1
Rated gross horse power	ps/rpm	167.2/2200
Maximum gross torque at rpm	kgf · m/rpm	77.9/1200
Engine oil quantity	ℓ (U.S.gal)	11 (2.94)
Dry weight	kg (lb)	383 (844)
High idling speed	rpm	2230±50
Low idling speed	rpm	700~1200
Rated fuel consumption	g/ps.hr	155.9
Starting motor	V-kW	DENSO, 24-4.8
Alternator	V-A	24-70
Battery	V-AH	24-100

2) MAIN PUMP

Item	Unit	Specification
Type	—	Variable displacement axial piston pump
Capacity	cc/rev	63+63
Maximum operating pressure	bar	300
Rated speed (Max/Min)	rpm	2800/300

3) MAIN CONTROL VALVE

Item		Unit	Specification
Type		—	Sectional
Operating method		—	Hydraulic pilot
Lift section	Max flow	lpm	350
	Max pressure	bar	220
	Relief pressure	bar	220
Tilt section	Max flow	lpm	200
	Max pressure	bar	220
	Relief pressure	bar	220
Aux section	Max flow	lpm	220
	Relief pressure	bar	165

(4) STEERING UNIT

Item	Unit	Specification
Type	—	Load sensing/Non load reaction/Dynamic signal
Capacity	cc/rev	369

(5) POWER TRAIN DEVICES

Item		Specification		
Torque converter	Model	05 W 340 (ZF SACH)		
	Type	3 Element, 1 stage, 2 phase		
	Stall ratio	2.362 : 1		
Transmission	Type	Full auto, power shift		
	Gear shift (FR/RR)	3/3		
	Adjustment	Electrical single lever type		
	Overhaul ratio	FR	1 : 5.630	2 : 2.396
		RR	1 : 5.647	2 : 2.404
Axle	Type	Front-wheel drive type, fixed location		
	Gear ratio	11.73 : 1		
	Gear	Ring & Pinion gear type		
Wheels	Q'ty (FR/RR)	Double : 4/2		
	Front (drive)	10.00-20-16 PR		
	Rear (steer)	10.00-20-16 PR		
Brakes	Travel	Front wheel, wet disc brake		
	Parking	Axle pinion, Caliper brake, hydraulic released		
Steering	Type	Full hydraulic, power steering		
	Steering angle	76° to both right and left angle, respectively		

2) 160D-9V
(1) ENGINE

Item	Unit	Specification
Model	—	Cummins 6.7
Type	—	4 cycle turbocharged, charger air cooled diesel engine
Cooling Method	—	Water cooling
Number of cylinders and arrangement	—	6 cylinders, In-line
Firing order	—	1-5-3-6-2-4
Combustion chamber type	—	Direct injection
Cylinder bore × stroke	mm (in)	107 × 124 mm (4.21" × 4.88")
Piston displacement	cc (cu in)	6690 (409)
Compression ratio	—	17.3 : 1
Rated gross horse power	ps/rpm	175.4/2200
Maximum gross torque at rpm	kgf · m/rpm	114.3/1100
Engine oil quantity	ℓ (U.S.gal)	14.2 (3.8)
Dry weight	kg (lb)	583 (1282)
High idling speed	rpm	2230 ± 50
Low idling speed	rpm	700~1200
Rated fuel consumption	g/ps.hr	155.2
Starting motor	V-kW	DENSO, 24-4.8
Alternator	V-A	24-70
Battery	V-AH	24-100

2) MAIN PUMP

Item	Unit	Specification
Type	—	Variable displacement axial piston pump
Capacity	cc/rev	63+63
Maximum operating pressure	bar	300
Rated speed (Max/Min)	rpm	2800/300

3) MAIN CONTROL VALVE

Item		Unit	Specification
Type		—	Sectional
Operating method		—	Hydraulic pilot
Lift section	Max flow	lpm	300
	Max pressure	bar	400
	Relief pressure	bar	220
Tilt section	Max flow	lpm	200
	Max pressure	bar	380
	Relief pressure	bar	220
Aux section	Relief pressure	bar	165

(4) STEERING UNIT

Item	Unit	Specification
Type	—	Load sensing / Non load reaction / Dynamic signal
Capacity	cc/rev	369

(5) POWER TRAIN DEVICES

Item			Specification		
Torque converter	Model		05 W 340 (ZF SACH)		
	Type		3 Element, 1 stage, 2 phase		
	Stall ratio		2.362 : 1		
Transmission	Type		Full auto, Power shift		
	Gear shift (FR / RR)		3/3		
	Adjustment		Electrical single lever type		
	Overhaul ratio	FR	1 : 5.630	2 : 2.396	3 : 0.994
		RR	1 : 5.647	2 : 2.404	3 : 0.997
Axle	Type		Front-wheel drive type, fixed location		
	Gear ratio		12.7 : 1		
	Gear		Ring & pinion gear type		
Wheels	Q'ty (FR / RR)		Double : 4/2		
	Front (drive)		12.00-20-18PR		
	Rear (steer)		12.00-20-18PR		
Brakes	Travel		Front wheel, Wet disk brake		
	Parking		Axle pinion, caliper brake, hydraulic released		
Steering	Type		Full hydraulic, power steering		
	Steering angle		76° to both right and left angle, respectively		

3. TIGHTENING TORQUE

NO	Item		Size	kgf · m	lbf · ft
1	Engine	Engine mounting bolt, nut (bracket-frame)	M24 × 3.0	100 ± 15	723 ± 109
2		Engine mounting bolt (engine-bracket)	M12 × 1.75	12.3 ± 2.4	89.0 ± 17.4
3		Radiator mounting bolt, nut	M12 × 1.75	12.8 ± 3.0	92 ± 21.7
4	Hydraulic system	Hydraulic pump mounting bolt	M12 × 1.75	14.7 ± 2.2	106 ± 15.9
5		MCV mounting bolt	M12 × 1.75	14.7 ± 2.2	106 ± 15.9
6		Steering unit mounting bolt	M10 × 1.5	4.0 ± 0.5	28.9 ± 3.6
7		Tilt cylinder; rod-end bolt, nut	M20 × 2.5	57.9 ± 10	419 ± 72.3
8		Tilt cylinder pin; mounting bolt	M10 × 1.5	6.9 ± 1.4	50 ± 10.1
9	Power train system	Transmission mounting bolt, nut	M16 × 2.0	100 ± 15	723 ± 109
10		Torque converter mounting bolt	M10 × 1.5	4.5 ± 0.6	32.5 ± 4.3
11		Drive axle mounting bolt, nut	M24 × 2.0	100 ± 15	723 ± 109
12		Steering axle mounting bolt, nut	M24 × 3.0	100 ± 15	723 ± 109
13		Front and rear wheel mounting nut	M22 × 1.5	83.2 ± 10	602 ± 72.3
14		Propeller shaft (to T/M and D/Axle)	1/2-20UNF	15.0 ± 2.0	108 ± 14.5
15	Others	Counterweight mounting bolt 1	M30 × 3.5	199 ± 29.9	1440 ± 216
		Counterweight mounting bolt 2	M24 × 3.0	100 ± 15	723 ± 109
16		Operator's seat mounting nut	M8 × 1.25	3.4 ± 0.7	24.6 ± 5.1
17		Cabin mounting bolt	M16 × 2.0	7.5	54.2
18		Mast mounting bolt	M12 × 1.75	12.5 ± 1.3	90.4 ± 9.4