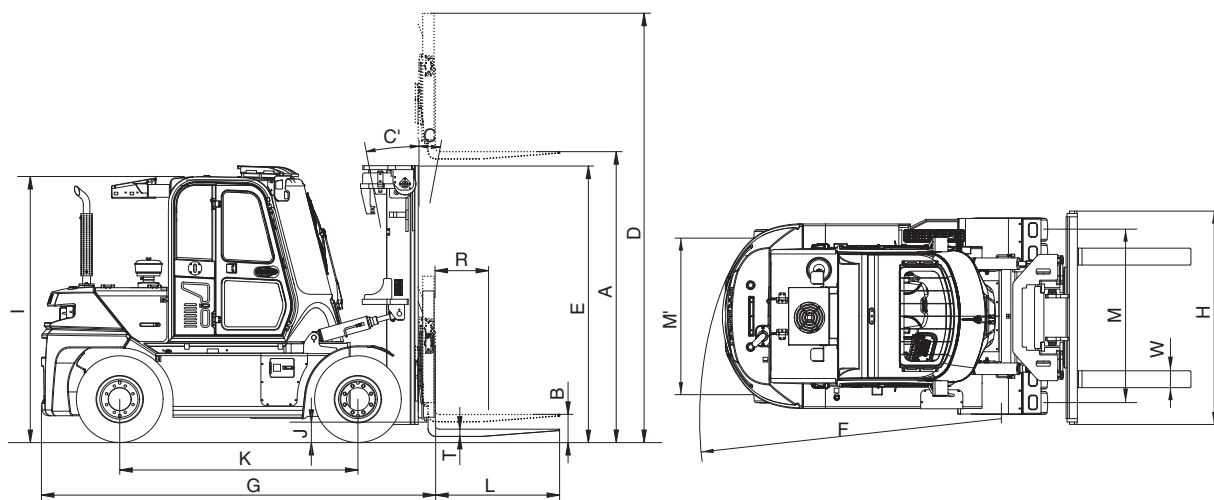


8. SPECIFICATIONS

1. SPECIFICATION TABLE



50D9SP011

Model			Unit	50D-9	60D-9	70D-9	80D-9
Capacity			kg (lb)	5000 (11000)	6000 (13500)	7000 (15500)	8000 (17600)
Load center			mm (in)	600 (24")	←	←	←
Weight(Unloaded)			kg (lb)	8844 (19500)	9591 (21145)	10399 (22926)	11608 (25591)
Fork	Lifting height	A	mm (ft·in)	3030 (9' 11")	←	←	3040 (10' 0")
	Free lift	B	mm (in)	140 (5.5")	←	←	145 (5.7")
	Lifting speed (Unload/Load)		mm/sec	460/440	460/430	460/420	480/410
	Lowering speed (Unload/Load)		mm/sec	450/500	←	←	500/500
	L × W × T	L,W,T	mm (in)	1200 × 150 × 60 (47.2 × 5.9 × 2.4)	1200 × 150 × 65 (47.2 × 5.9 × 2.6)	←	1200 × 180 × 70 (47.2 × 7.1 × 2.8)
Mast	Tilt angle (forward/backward)	C/C'	degree	15/10	←	←	←
	Max height	D	mm (ft·in)	4275 (14' 0")	←	←	4375 (14' 4")
	Min height	E	mm (ft·in)	2515 (8' 3")	←	←	2675 (8' 9")
Body	Travel speed (Unload)		km/h	33.9	33.7	33.6	35
	Gradeability (Load)		%	58.7	50.6	44.4	35.2
	Min turning radius (Outside)	F	mm (ft·in)	3314 (10' 10")	3374 (11' 1")	3436 (11' 3")	3700 (12' 2")
ETC	Max hydraulic pressure		kgf/cm ²	210	←	←	←
	Hydraulic oil tank		l (USgal)	132 (34.9)	←	←	←
	Fuel tank		l (USgal)	171.5 (45.3)	←	←	←
Overall length			G	mm (ft·in)	3516 (11' 8")	3591 (11' 9")	3666 (12' 0")
Overall width			H	mm (ft·in)	2087 (6' 10")	←	2194 (7' 2")
Cabin height			I	mm (ft·in)	2649 (8' 8")	←	←
Ground clearance			J	mm (in)	195 (7.7")	←	250 (9.8")
Wheel base			K	mm (ft·in)	2300 (7' 7")	←	2500 (8' 2")
Wheel tread front/rear			M/M'	mm (ft·in)	1580 / 1604 (5' 2" / 5' 3")	←	1632 / 1700 (5' 4" / 5' 7")

2. SPECIFICATION FOR MAJOR COMPONENTS

1) 50/60/70D-9

(1) Engine

Item	Unit	Specification
Model	—	Cummins QSF3.8
Type	—	Vertical, water-cooled, 4-cycle DI, Tier 4 final 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)	102 × 115 mm (4.0" × 4.5")
Piston displacement	cc (cu in)	3800 (232)
Compression ratio	—	17.2 : 1
Rated gross horse power	ps/rpm	102/2200
Maximum gross torque at rpm	kgf · m/rpm	42.3/1600
Engine oil quantity	ℓ (U.S.gal)	12 (3.2)
Dry weight	kg (lb)	348 (767)
High idling speed	rpm	2450
Low idling speed	rpm	850
Rated fuel consumption	g/kw.hr	220 (at 1600 rpm)
Starting motor	V-kW	24-4.8
Alternator	V-A	24-80
Battery	V-AH	24-80

(2) Main pump

Item	Unit	Specification
Type	—	Axial piston variable gear pump
Displacement	cc/rev	35+35+9.0
Maximum operating pressure	kgf/cm ²	250
Rated speed (Max/Min)	rpm	3000/600

(3) Main control valve

Item	Unit	Specification
Type	—	Sectional
Operating method	—	Hydraulic pilot
Relief valve pressure (Main/Aux)	kgf/cm ²	188/153
Flow capacity	lpm	160

(4) Steering unit

Item	Unit	Specification
Type	-	Load sensing/Non load reaction/Dynamic signal
Capacity	cc/rev	160
Rated flow	lpm	22.7
Relief pressure	kgf/cm ²	145

(5) Power train deviced

Item		Specification		
Torque converter	Model	ZF 3WG94		
	Type	3 Element, 1 stage, 2 phases		
	Stall ratio	2.395 : 1		
Transmission	Type	Full auto, power shift		
	Gear shift (FR/RR)	3/3		
	Adjustment	Electrical single lever type		
	Overhaul ratio	FR	1 : 4.714	2 : 2.341
		RR	1 : 4.711	2 : 2.340
Axle	Type	Front-wheel drive type, fixed location		
	Gear ratio	10.545		
	Gear	Ring & pinion gear type		
Wheels	Q'ty (FR/RR)	Double : 4/2		
	Front (drive)	8.25-15-14 PR		
	Rear (steer)	8.25-15-14 PR		
Brakes	Travel	Front wheel, wet disc brake		
	Parking	Wet disc (negative brake)		
Steering	Type	Full hydraulic, power steering		
	Steering angle	75.87° to both right and left angle, respectively		

2) 80D-9

(1) Engine

Item	Unit	Specification
Model	—	Cummins QSF3.8
Type	—	Vertical, water-cooled, 4-cycle DI, Tier 4 final 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)	102 × 115 mm (4.0" × 4.5")
Piston displacement	cc (cu in)	3800 (232)
Compression ratio	—	17.2 : 1
Rated gross horse power	ps/rpm	102/2200
Maximum gross torque at rpm	kgf · m/rpm	42.3/1600
Engine oil quantity	ℓ (U.S.gal)	12 (3.2)
Dry weight	kg (lb)	348 (767)
High idling speed	rpm	2450
Low idling speed	rpm	850
Rated fuel consumption	g/kw.hr	220 (at 1600 rpm)
Starting motor	V-kW	24-4.8
Alternator	V-A	24-80
Battery	V-AH	24-80

(2) Main pump

Item	Unit	Specification
Type	—	Axial piston variable gear pump
Displacement	cc/rev	35.6+33+7.6
Maximum operating pressure	kgf/cm ²	210
Rated speed (Max/Min)	rpm	3000/600

(3) Main control valve

Item	Unit	Specification
Type	—	Sectional
Operating method	—	Hydraulic pilot
Relief valve pressure (Main/Aux)	kgf/cm ²	188/153
Flow capacity	lpm	160

(4) Steering unit

Item	Unit	Specification
Type	—	Load sensing/Non load reaction/Dynamic signal
Capacity	cc/rev	200
Rated flow	lpm	32
Relief pressure	kgf/cm ²	135

(5) Power train deviced

Item		Specification		
Torque converter	Model	ZF 3WG94		
	Type	3 Element, 1 stage, 2 phases		
	Stall ratio	2.395 : 1		
Transmission	Type	Full auto, power shift		
	Gear shift (FR/RR)	3/3		
	Adjustment	Electrical single lever type		
	Overhaul ratio	FR	1 : 4.714 2 : 2.341 3 : 0.974	
		RR	1 : 4.711 2 : 2.340 3 : 0.974	
Axle	Type	Front-wheel drive type, fixed location		
	Gear ratio	12.4		
	Gear	Ring & pinion gear type		
Wheels	Q'ty (FR/RR)	Double : 4/2		
	Front (drive)	9.00-20-14 PR		
	Rear (steer)	9.00-20-14 PR		
Brakes	Travel	Front wheel, wet disc brake		
	Parking	Wet disc (negative brake)		
Steering	Type	Full hydraulic, power steering		
	Steering angle	75.04° to both right and left angle, respectively		

3. TIGHTENING TORQUE

NO	Item		Size	kgf · m	lbf · ft
1	Engine	Engine mounting bolt, nut	M12×1.25	12.3±3.0	89±21.7
2		Engine bracket mounting bolt	M10×1.5	6.9±1.4	50±10.1
3		Radiator mounting bolt, nut	M10×1.5	6.9±1.4	50±10.1
4	Hydraulic system	Hydraulic pump mounting bolt	M16×2.0	29.7±4.5	215±32.3
5		MCV mounting bolt, nut	M12×1.75	12.8±3.0	93±21.7
6		Steering unit mounting bolt	M10×1.5	6.9±1.4	50±10.1
7	Power train system	Transmission mounting bolt, nut	M16×2.0	7.5	54
8		Torque converter mounting bolt	M10×1.5	6.9±1.4	50±10.1
9		Drive axle mounting bolt, nut	M27×3.0	150±15	1085±109
10		Steering axle mounting bolt, nut	M18×2.5	41.3±6.2	299±44.8
11		Front/Rear wheel mounting nut	M22×1.5	61.2±12	443±86.8
12		Propeller shaft (To axle/TM)	3/8-24UNF	7±0.7	50.6±5.0
13	Others	Counterweight mounting bolt	M30×3.5	199±30	1439±217
14		Operator's seat mounting nut	M 8×1.25	3.4±0.7	24.6±5.1
15		Cab mounting nut	M20×2.5	57.9±8.7	419±63
16		Mast mounting bolt	M20×2.5	57.9±8.7	419±63