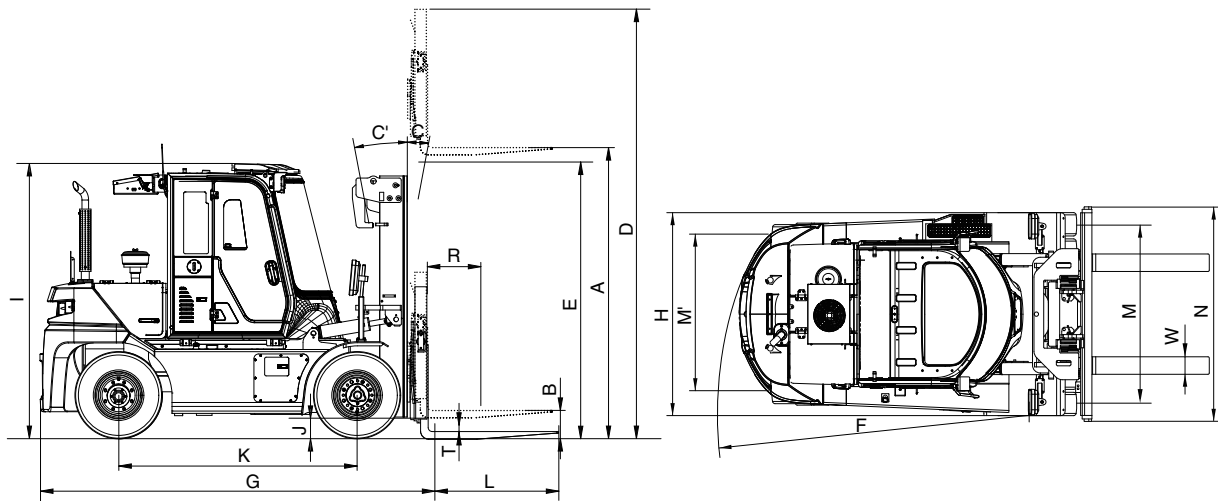


8. SPECIFICATIONS

1. SPECIFICATION TABLE



70D9V8SP01

Model		Unit	70D-9V	80D-9V
Capacity		kg (lb)	7000 (15500)	8000 (17500)
Load center	R	mm (in)	600 (24")	←
Weight(Unloaded)		kg (lb)	10083 (22229)	11518 (25393)
Fork	Lifting height	A	mm (ft. in)	3030 (9' 11")
	Free lift	B	mm (in)	140 (5.5")
	Lifting speed (Unload/Load)	mm/sec (ft/min)	480/450 (94/89)	480/440 (94/87)
	Lowering speed (Unload/Load)		450/500 (89/99)	450/500 (89/99)
	L×W×T	L,W,T	mm (in)	mm (in)
	Carriage width	N	mm (in)	mm (in)
Mast	Tilt angle (forward/backward)	C/C'	degree	15/10
	Max. height	D	mm (ft. in)	4320 (14' 2")
	Min. height	E	mm (ft. in)	2515 (8' 3")
Body	Travel speed (Unload)	km/h (mph)		33.3 (20.7)
	Gradeability (Load)	%		46.8
	Min. turning radius (Outside)	F	mm (ft. in)	3436 (11' 3")
ETC	System set pressure	bar (psi)	210 (3050)	★185 (2680)
Overall length		G	mm (ft. in)	3675 (12' 1")
Overall width		H	mm (ft. in)	2088 (6' 10")
Cabin height		I	mm (ft. in)	2575 (8' 5")
Ground clearance		J	mm (in)	195 (7.7")
Wheel base		K	mm (ft. in)	2300 (7' 7")
Wheel tread front/rear		M/M'	mm (ft. in)	1578 / 1602 (5' 2" / 5' 3")

★ : EU, AN corporate sales equipment

2. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Unit	Specification
Model	—	HMC D4CC
Type	—	Vertical, 4 cycle DI, EU Stage V 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 X stroke	mm (in)	95 × 102 (3.74 × 4.02)
Piston displacement	cc (cu in)	2891 (176.4)
Compression ratio	—	15.8 :1
Rated gross horse power	ps/rpm	110.1/2200
Maximum torque at rpm	kgf-m/rpm	42.8/1600
Engine oil quantity	ℓ (U.S. gal)	9.1 (2.4)
Dry weight	kg (lb)	266 (586)
High idling speed	rpm	2450
Low idling speed	rpm	850
Rated fuel consumption	g/kWh	201
Starting motor	V-kW	12-2.0
Alternator	V-A	13.5-130
Battery	V-AH	12-100
Fan belt deflection	mm (in)	10~12 (0.40~0.47)
CO ₂	g/kWh	648.3

※ This CO₂ measurement results from testing over a fixed test cycle under laboratory conditions a(n) (parent) engine representative of the engine type (engine family) and shall not imply or express any guarantee of the performance of a particular engine.

2) MAIN PUMP

Item	Unit	Specification	
Type	—	Axial piston variable pump	Gear fixed pump
Model	—	Casspa MVP	Casspa PLP
Displacement	cc/rev (in ³ /rev)	67 (4.1)	9.17 (0.56)
Maximum operating pressure	bar (psi)	280 (4060)	250 (3625)
Rated speed (Max/Min)	rpm	2700/600	
Weight	kgf (lbf)	31.6 (69.7)	

3) MAIN CONTROL VALVE (MCV)

Item	Unit	Specification
Type	—	Mono block (3spool), Semi-Mono block (4 / 5spool)
Model	—	Buchholz NG16
Operating method	-	Hydraulic pilot
Maximum flow rated (lift/lower, tilt)	lpm (U.S. gpm)	170 (45), 60 (16)
Lift/tilt relief valve set pressure (DV1)	bar (psi)	210 (3050)
Attachment oil flow rated (aux1/2/3)	lpm (U.S. gpm)	110 / 110 / 110 (29 / 29 / 29)
Attachment relief valve pressure (DV2)	bar (psi)	140 ~ 190 (2030 ~ 2760)
Built-in accessories valve	-	- Manual fork lowering valve (Emergency function) - Adj. max. fork lowering speed, Lower breake valve - Overcenter valve (tilt A2), Priority valve (steering)
Weight	kgf (lbf)	3 spool : 28 (61.7), 4 spool : 36 (79.4), 5 spool : 43 (94.8)

4) STEERING UNIT

Item	Unit	Specification	
		70D-9V	80D-9V
Type	—	Load sensing, Non load reaction	
Model	—	Sauer Danfoss VSP	
Capacity	cc/rev (in ³ /rev)	160 (9.76)	200 (12.2)
Steering relief valve set pressure	bar (psi)	160 ~ 165 (2320 ~ 2390)	
Weight	kgf (lbf)	5.5 (12)	

5) CYLINDER

Index			Unit	Specification	
				70D-9V	80D-9V
Main lift	V300	Tube bore diameter × Rod diameter × Stroke	mm (in)	85×60×1483 (3.34×2.36×58.4)	←
Main lift	TF450			85×60×1483 (3.34×2.36×58.4)	←
Free lift				130×110×767 (5.12×4.33×30.2)	←
Tilt (15/10 degree)				110×50×338 (4.33×1.97×13.3)	110×50×368 (4.33×1.97×14.49)
Steering				80×55×150 (3.15×2.16×5.9)	85×55×149 (3.35×2.16×5.9)
Weight	Lift	V300	kgf (lbf)	66.6 (146.8)	←
	Tilt	15/10 degree		32.4 (71.4)	36.5 (80.5)

6) POWER TRAIN DEVICED

Item			Specification	
			70D-9V	80D-9V
Torque converter	Type		3 Element, 1 stage, 2 phases	
	Stall ratio		2.395 : 1	
Transmission	Model		ZF 3WG94	
	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		10.668	12.332
	Gear		Ring & pinion gear type	
Wheels	Q'ty (FR/RR)		Double : 4/2	
	Front (drive)		8.25-15-14 PR	9.00-20-14 PR
	Rear (steer)		8.25-15-14 PR	9.00-20-14 PR
Brakes	Travel		Front wheel, wet disc brake	
	Parking		Wet disc, SHAR (Spring Actuate Hydraulic Release) type	
Steering	Type		Full hydraulic, power steering	
	Steering angle		75.87° to both right and left angle, respectively	

3. TIGHTENING TORQUE

NO	Item		Size	kgf · m	lbf · ft
1	Engine	Engine mounting bolt	M10×1.25	7.4±1.4	53.7±10.7
2		Engine bracket mounting nut	M10×1.5	6.9±1.4	49.9±10.1
3		Radiator mounting bolt, nut	M10×1.5	6.9±1.4	49.9±10.1
4	Hydraulic system	Hydraulic pump mounting bolt	M16×2.0	19±2	137.5±14.5
5		MCV mounting bolt	M 8×1.25	2.5±0.5	18±3.6
6		Steering unit mounting bolt	M10×1.5	4±0.5	29±3.6
7		Tilt cylinder; rod-end bolt, nut	M16×2.0	23±2	166.4±14.5
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	60.5±5.5	438±39.8
10		Torque converter mounting bolt	M10×1.5	6.9±1.4	50±10
11		Drive axle mounting bolt, nut	M27×3.0	150±15	1085±109
12		Propeller shaft (to axle and TM)	3/8-24 UNF	7.0±0.7	50.6±5.1
13		Steering axle mounting bolt, nut	M18×2.5	41.3±6.2	299±44.8
14		Front and rear wheel mounting nut	M22×1.5	62.0±9.3	448±67.3
15	Others	Counterweight mounting bolt	M30×3.5	100±15	723±108
16		Operator's seat mounting nut	M 8×1.25	2.5±0.5	18.1±3.6
17		Cabin mounting bolt	M12×1.75	12.8±3.0	92.6±21.7
18		Mast mounting bolt	M20×2.5	57.9±8.7	419±63