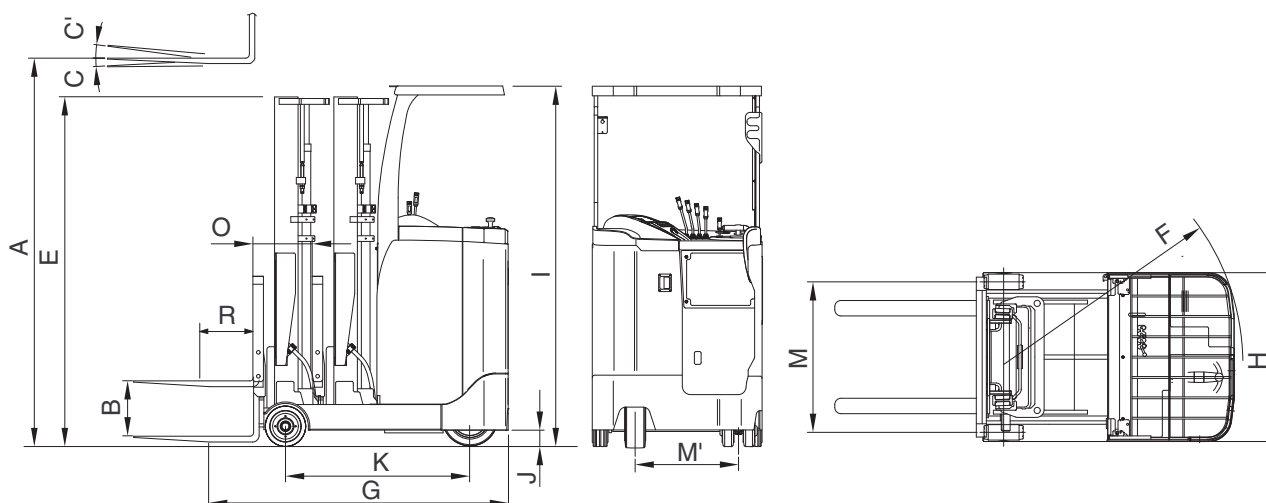


8. SPECIFICATIONS

1. SPECIFICATION

1) 10/13BR-9

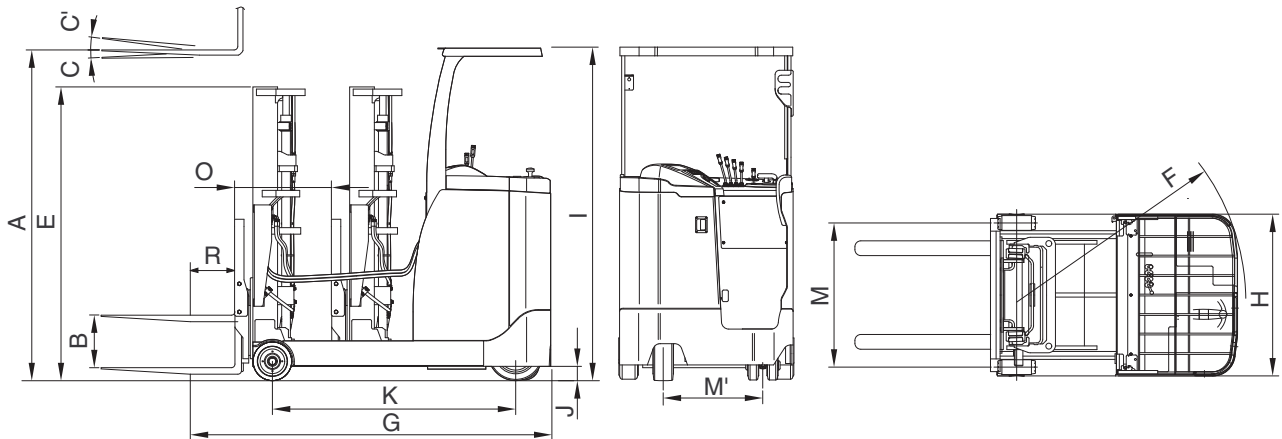


18BR9SP01

Model			Unit	10BR-9	13BR-9
Capacity			kg (lb)	1000 (2000)	1250 (2500)
Load center	R		mm (in)	500 (24")	←
Weight (Unloaded, with battery)			kg (lb)	2105 (4640)	2115 (4660)
Fork	Lifting height	A	mm (ft-in)	3000 (9' 10")	←
	Free lift	B	mm (in)	232 (9.1")	←
	Lifting speed (Unload/Load)		mm/sec	500/320	500/300
	Lowering speed (Unload/Load)		mm/sec	450/500	←
	L × W × T	L, W, T	mm (in)	900 × 100 × 35 (35.4 × 3.9 × 1.4)	←
Mast	Tilt angle (forward/backward)	C/C'	degree	5/5	←
	Max height	D	mm (ft-in)	4025 (13' 3")	←
	Min height	E	mm (ft-in)	1991 (6' 6")	←
Body	Travel speed (Unload)		km/h	11.5	←
	Gradeability (Unload/Load)		%	33/21	32/19
	Min turning radius (Outside)	F	mm (ft-in)	1405 (4' 7")	1438 (4' 9")
ETC	Max hydraulic pressure		kgf/cm ²	135	←
	Hydraulic oil tank		l (usgal)	18 (4.76)	←
Overall length (With fork at reach in)		G	mm (ft-in)	2106 (6' 11")	←
Overall width (Load wheel)		H	mm (ft-in)	1070 (3' 6")	←
Overhead guard height		I	mm (ft-in)	2260 (7' 5")	←
Ground clearance		J	mm (in)	94 (3.7")	←
Wheel base		K	mm (ft-in)	1115 (3' 8")	1150 (3' 9")
Wheel tread (Front/rear)		M/M'	mm (ft-in)	970 *1070/613 (3' 2" *3' 6"/2' 0")	←
Reach stroke		O	mm (ft-in)	330 (1' 1")	365 (1' 2")

* Wide frame

3) 25/30BR-9

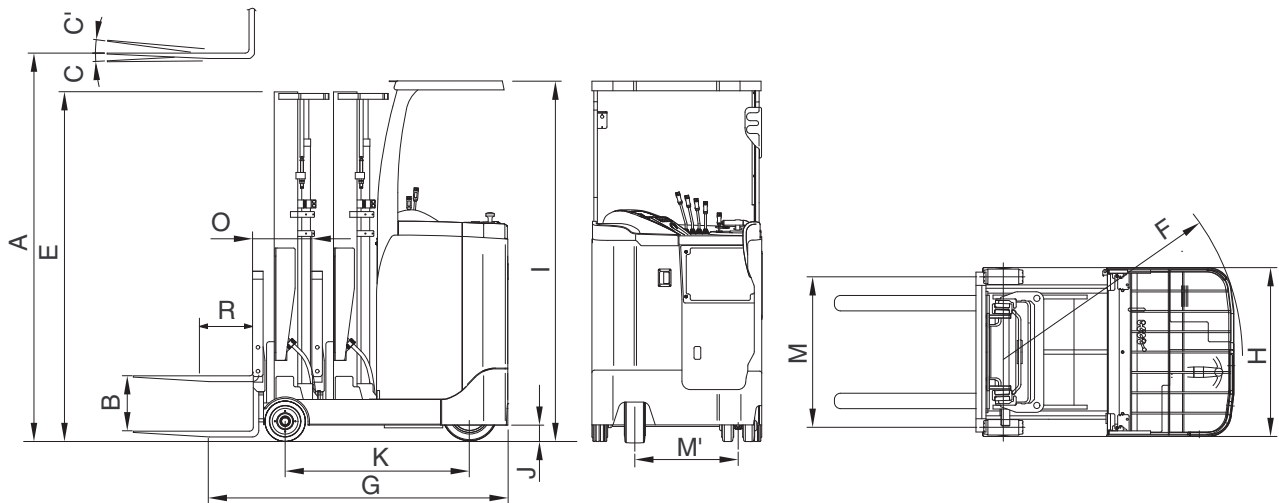


30BR9SP01

Model			Unit	25BR-9	30BR-9
Capacity			kg (lb)	2500 (5000)	3000 (6000)
Load center		R	mm (in)	500 (24")	←
Weight (Unloaded, with battery)			kg (lb)	2862 (6310)	3202 (7060)
Fork	Lifting height	A	mm (ft-in)	3000 (9' 10")	←
	Free lift	B	mm (in)	248 (9' 1")	←
	Lifting speed (Unload/Load)		mm/sec	470/280	430/220
	Lowering speed (Unload/Load)		mm/sec	450/500	←
	L × W × T	L,W,T	mm (in)	1050 × 100 × 45 (41.3 × 3.9 × 1.8)	←
Mast	Tilt angle (forward/backward)	C/C'	degree	5/5	←
	Max height	D	mm (ft-in)	4030 (13' 3")	←
	Min height	E	mm (ft-in)	2025 (6' 8")	←
Body	Travel speed (Unload)		km/h	12	11
	Gradeability (Unload/Load)		%	30/15	26/13
	Min turning radius (Outside)	F	mm (ft-in)	1980 (6' 6")	2077 (6' 10")
ETC	Max hydraulic pressure		kgf/cm ²	190	←
	Hydraulic oil tank		l (usgal)	24 (6.34)	←
Overall length (With fork at reach in)		G	mm (ft-in)	2373 (7' 9")	2403 (7' 11")
Overall width (Load wheel)		H	mm (ft-in)	1200 (3' 11")	1212 (4' 0")
Overhead guard height		I	mm (ft-in)	2294 (7' 6")	←
Ground clearance		J	mm (in)	85 (3.3")	78 (3.1")
Wheel base		K	mm (ft-in)	1695 (5' 7")	1795 (5' 11")
Wheel tread (Front/rear)		M/M'	mm (ft-in)	1060 *1180/689 (3' 6" *3' 10"/2' 3")	1075 *1195/689 (3' 6" *3' 11"/2' 3")
Reach stroke		O	mm (ft-in)	807 (2' 8")	877 (2' 11")

* Wide frame

2) 15/18/20BR-9



18BR9SP01

Model			Unit	15BR-9	18BR-9	20BR-9
Capacity			kg (lb)	1500 (3000)	1800 (3500)	2000 (4000)
Load center	R		mm (in)	500 (24")	←	←
Weight (Unloaded, with battery)			kg (lb)	2310 (5090)	2334 (5145)	2657 (5860)
Fork	Lifting height	A	mm (ft-in)	3000 (9' 10")	←	←
	Free lift	B	mm (in)	232 (9.1")	←	←
	Lifting speed (Unload/Load)		mm/sec	550/340	550/320	470/300
	Lowering speed (Unload/Load)		mm/sec	450/500	←	←
	L × W × T	L, W, T	mm (in)	900 × 100 × 35 (35.4 × 3.9 × 1.4)	←	1050 × 100 × 45 (41.3 × 3.9 × 1.8)
Mast	Tilt angle (forward/backward)	C/C'	degree	5/5	←	←
	Max height	D	mm (ft-in)	4025 (13' 3")	←	←
	Min height	E	mm (ft-in)	1991 (6' 6")	←	←
Body	Travel speed (Unload)		km/h	11	←	11.5
	Gradeability (Unload/Load)		%	50/27	49/25	45/23
	Min turning radius (Outside)	F	mm (ft-in)	1596 (5' 3")	1775 (5' 10")	1790 (5' 10")
ETC	Max hydraulic pressure		kgf/cm ²	190	←	←
	Hydraulic oil tank		l (usgal)	18 (4.76)	←	←
Overall length (With fork at reach in)			G	mm (ft-in)	2189 (7' 2")	2311 (7' 7")
Overall width (Load wheel)			H	mm (ft-in)	1070 (3' 6")	←
Overhead guard height			I	mm (ft-in)	2260 (7' 5")	←
Ground clearance			J	mm (in)	94 (3.7")	79 (3.1")
Wheel base			K	mm (ft-in)	1315 (4' 4")	1500 (4' 11")
Wheel tread (Front/rear)			M/M'	mm (ft-in)	970 *1070/613 (3' 2" *3' 6"/2' 0")	994 *1094/613 (3' 3" *3' 7"/2' 0")
Reach stroke			O	mm (ft-in)	447 (1' 6")	665 (2' 2")

* Wide frame

2. SPECIFICATION FOR MAJOR COMPONENTS

1) 10/13BR-9

(1) MOTOR

Item	Unit	Drive motor	Hydraulic pump motor
Model	-	AMDD4004	ABDD4002
Type	-	AC	←
Rated voltage	Vac	30V 3 ø	←
Output	kW	4.5	14
Insulation	-	Class F	←

(2) BATTERY

Item	Unit	10BR-9	13BR-9
Model	-	VCF198	
Rated voltage	V	48	
Capacity	AH/hr	198/5	
Electrolyte	-	WET	
Dimension (W×D×H)	mm	994×270×581.7	
Connector (CE spec)	-	SB350 (SBE320)	
Weight	kg	370	

(3) CHARGER

Item	Unit	10/13BR-9
Type	-	Constant current, constant voltage
Battery capacity for charge	V-AH	48-198~230
AC input	V	Triple phase 410
		Single phase 220
		Triple phase 220/380
		Triple phase 440
DC output	V	64±1
Charge time	hr	6±2
Connector (CE spec)	-	SB350 (SBE320)

(4) GEAR PUMP

Item	Unit	Specification
Type	—	Fixed displacement gear pump
Capacity	cc/rev	16.5
Maximum operating pressure	bar	210
Rated speed (max/min)	rpm	3000/500

(5) MAIN CONTROL VALVE

Item	Unit	Specification
Type	-	3 spool, 4 spool
Operating method	-	Mechanical
Main relief valve pressure	bar	135

(6) DRIVE UNIT

Item	Unit	Specification
Gear ratio	-	20.125
Oil quantity	l	1.6

(7) WHEELS

Item	10/13BR-9
Type (Load / Drive /Caster)	Urethane / Rubber / Rubber
Quantity (Load / Drive /Caster)	2 / 1 / 2
Load wheel	254 × 100
Drive wheel	306 × 127
Caster wheel	178 × 73

(8) BRAKES

Item	Specification
Brakes (Service & Parking)	Disc brake.

2) 15/18/20BR-9

(1) MOTOR

Item	Unit	Drive motor	Hydraulic pump motor
Model	-	AMDG9001	ABDD4002
Type	-	AC	←
Rated voltage	Vac	30V 3 ø	←
Output	kW	6	14
Insulation	-	Class F	←

(2) BATTERY

Item	Unit	15/18BR-9	20BR-9
Model	-	VCF 280	VCI 300
Rated voltage	V	48	←
Capacity	AH/hr	280/5	300/5
Electrolyte	-	WET	←
Dimension (W×D×H)	mm	994×378×581.7	←
Connector (CE spec)	-	SB350 (SBE320)	←
Weight	kg	480	500

(3) CHARGER

Item	Unit	15/18/20BR-9
Type	-	Constant current, constant voltage
Battery capacity for charge	V-AH	48-280~365
AC input	V	Triple phase 410
		Single phase 220
		Triple phase 220/380
		Triple phase 440
DC output	V	64±1
Charge time	hr	6±2
Connector (CE spec)	-	SB 350 (SBE320)

(4) GEAR PUMP

Item	Unit	Specification
Type	—	Fixed displacement gear pump
Capacity	cc/rev	19.6
Maximum operating pressure	bar	210
Rated speed (max/min)	rpm	3000/500

(5) MAIN CONTROL VALVE

Item	Unit	Specification
Type	-	3 spool, 4 spool
Operating method	-	Mechanical
Main relief valve pressure	bar	190

(6) DRIVE UNIT

Item	Unit	Specification
Gear ratio	-	20.125
Oil quantity	l	1.6

(7) WHEELS

Item	15/18BR-9	20BR-9
Type (Load / Drive / Caster)	Urethane / Rubber / Rubber	←
Quantity (Load / Drive / Caster)	2 / 1 / 2	←
Load wheel	254 × 100	267 × 114
Drive wheel	306 × 145	←
Caster wheel	178 × 73	←

(8) BRAKES

Item	Specification
Brakes (Service & Parking)	Disc brake.

3) 25/30BR-9
(1) MOTOR

Item	Unit	Drive motor	Hydraulic pump motor
Model	-	AMDG9001	ABDD4002
Type	-	AC	←
Rated voltage	Vac	30V 3 ∅	←
Output	kW	6	14
Insulation	-	Class F	←

(2) BATTERY

Item	Unit	25BR-9	30BR-9
Model (Type)	-	VCI 300	VCI 365
Rated voltage	V	48	←
Capacity	AH/hr	300/5	365/5
Electrolyte	-	WET	←
Dimension (W×D×H)	mm	994×378×581.7	←
Connector (CE spec)	-	SB350 (SBE320)	←
Weight	kg	500	580

(3) CHARGER

Item	Unit	25/30BR-9
Type	-	Constant current, constant voltage
Battery capacity for charge	V-AH	48-280~365
AC input	V	Triple phase 410
		Single phase 220
		Triple phase 220/380
		Triple phase 440
DC output	V	64±1
Charge time	hr	6±2
Connector (CE spec)	-	SB 350 (SBE320)

(4) GEAR PUMP

Item	Unit	Specification
Type	—	Fixed displacement gear pump
Capacity	cc/rev	19.6
Maximum operating pressure	bar	210
Rated speed (max/min)	rpm	3000/500

(5) MAIN CONTROL VALVE

Item	Unit	25BR-9	30BR-9
Type	-	3 spool, 4 spool	←
Operating method	-	Mechanical	←
Main relief valve pressure	bar	190	210

(6) DRIVE UNIT (25BR-9 : ~ #0470, 30BR-9 : ~ #0069)

Item	Unit	Specification
Gear ratio	-	20.5
Oil quantity	ℓ	6

(6-1) DRIVE UNIT (25BR-9 : #0471~, 30BR-9 : #0070~)

Item	Unit	Specification
Gear ratio	-	20.8
Oil quantity	ℓ	4.0

(7) WHEELS

Item	25BR-9	30BR-9
Load / Drive / Caster	Urethane / Rubber / Rubber	←
Quantity (Load / Drive / Caster)	2 / 1 / 2	←
Load wheel	267 × 114	267 × 135
Drive wheel	382 × 142	←
Caster wheel	204 × 76	←

(8) BRAKES

Item	Specification
Brakes (Service & Parking)	Disc brake.

3. TIGHTENING TORQUE

1) 10/13BR-9

NO	Items		Size	kgf · m	lbf · ft
1	Electric system	Hyd pump motor mounting bolt	M10×1.5	6.9±1.4	50±10
2		Drive motor mounting bolt	M 8×1.25	2.0±0.2	14.4±1.4
3		Steering motor mounting bolt	M10×1.5	6.9±1.4	50±10
4	Hydraulic system	Hydraulic pump mounting bolt	M10×1.5	5±1.0	36.2±7.2
5		MCV mounting bolt, nut	M 8×1.25	2.5±0.5	18.1±3.6
6	Power train system	Drive wheel mounting bolt	M16×1.5	20.5±1.5	148.3±10.8
7		Load wheel mounting nut	M40×1.5	5±0.5	36.2±3.6
8		Caster wheel mounting bolt	M12×1.75	12.0±1.0	89.8±7.2
9		Drive unit bracket mounting bolt	M12×1.75	14.3±1.0	103.4±7.2
10	Other	Head guard mounting bolt	M14×2.0	19±3.0	137.4±21.7

2) 15/18/20BR-9

NO	Items		Size	kgf · m	lbf · ft
1	Electric system	Hyd pump motor mounting bolt	M10×1.5	6.9±1.4	50±10
2		Drive motor mounting bolt	M 8×1.25	2.0±0.2	14.4±1.4
3		Steering motor mounting bolt	M10×1.5	6.9±1.4	50±10
4	Hydraulic system	Hydraulic pump mounting bolt	M10×1.5	5±1.0	36.2±7.2
5		MCV mounting bolt, nut	M 8×1.25	2.5±0.5	18.1±3.6
6	Power train system	Drive wheel mounting bolt	M16×1.5	20.5±1.5	148.3±10.8
7		Load wheel mounting nut	M40×1.5	5±0.5	36.2±3.6
8		Caster wheel mounting bolt	M12×1.75	12.0±1.0	89.8±7.2
9		Drive unit bracket mounting bolt	M12×1.75	14.3±1.0	103.4±7.2
10	Other	Head guard mounting bolt	M14×2.0	19±3.0	137.4±21.7

3) 25/30BR-9

NO	Items		Size	kgf · m	lbf · ft
1	Electric system	Hyd pump motor mounting bolt	M10×1.5	6.9±1.4	50±10
2		Drive motor mounting bolt	M 8×1.25	2.0±0.2	14.4±1.4
3		Steering motor mounting bolt	M10×1.5	6.9±1.4	50±10
4	Hydraulic system	Hydraulic pump mounting bolt	M10×1.5	5±1.0	36.2±7.2
5		MCV mounting bolt, nut	M 8×1.25	2.5±0.5	18.1±3.6
6	Power train system	Drive unit mounting bolt, nut	M12×1.75	14.3±1.0	103.4±7.2
7		Drive wheel mounting nut	M14×1.5	14±1.5	101.2±10.8
8		Load wheel mounting nut	M50×1.5	5±0.5	36.2±3.6
9		Caster wheel mounting bolt	M12×1.75	10±2.0	72.3±14.4
10		Drive unit bracket mounting bolt	M12×1.75	14.3±1.0	103.4±7.2
11	Other	Head guard mounting bolt	M14×2.0	19±3.0	137.4±21.7