BBA12E1-11

KOMATSU

SHOP MANUAL

FORKLIFT TRUCK

AE50/AM50 Series

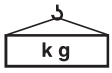
FB10/10F/14/14F/15/15F-12	830001 and up
FB18/18F/20A/20AF-12	830001 and up
FB15G/15GF/18G/18GF/20AG/20AGF-12	830001 and up
FB10M/10MF/13M/13MF-12	825001 and up
FB15M/15MF-12	825001 and up
FB18M/18MF/20M/20MF-12	825001 and up

PRECAUTIONS WHEN PERFORMING THE SERVICE WORK

Always pay attention to “Safety” before starting any work — this is important.
Never attempt any work where danger to yourself or to other persons.
Whenever work requiring safety precautions are described in this manual, a flag mark inserted, always make double sure that safety measures are taken.
Other unmarked work, should always be performed after studying and using your common sense to prevent accidents.

DESCRIPTION OF THE SYMBOLS

The symbols described below are used in this manual for convenience and better understanding.

Symbol	Item	Description
	Safety	Special safety precautions are needed to perform the work.
	Note	Special technical precautions are needed to perform the work
	Tightening torque	Fastening parts that require specified tightening force when assembling.
	**Weight**	Weight of parts or systems
	Coat	Places to be coated with adhesives, etc. when assembling

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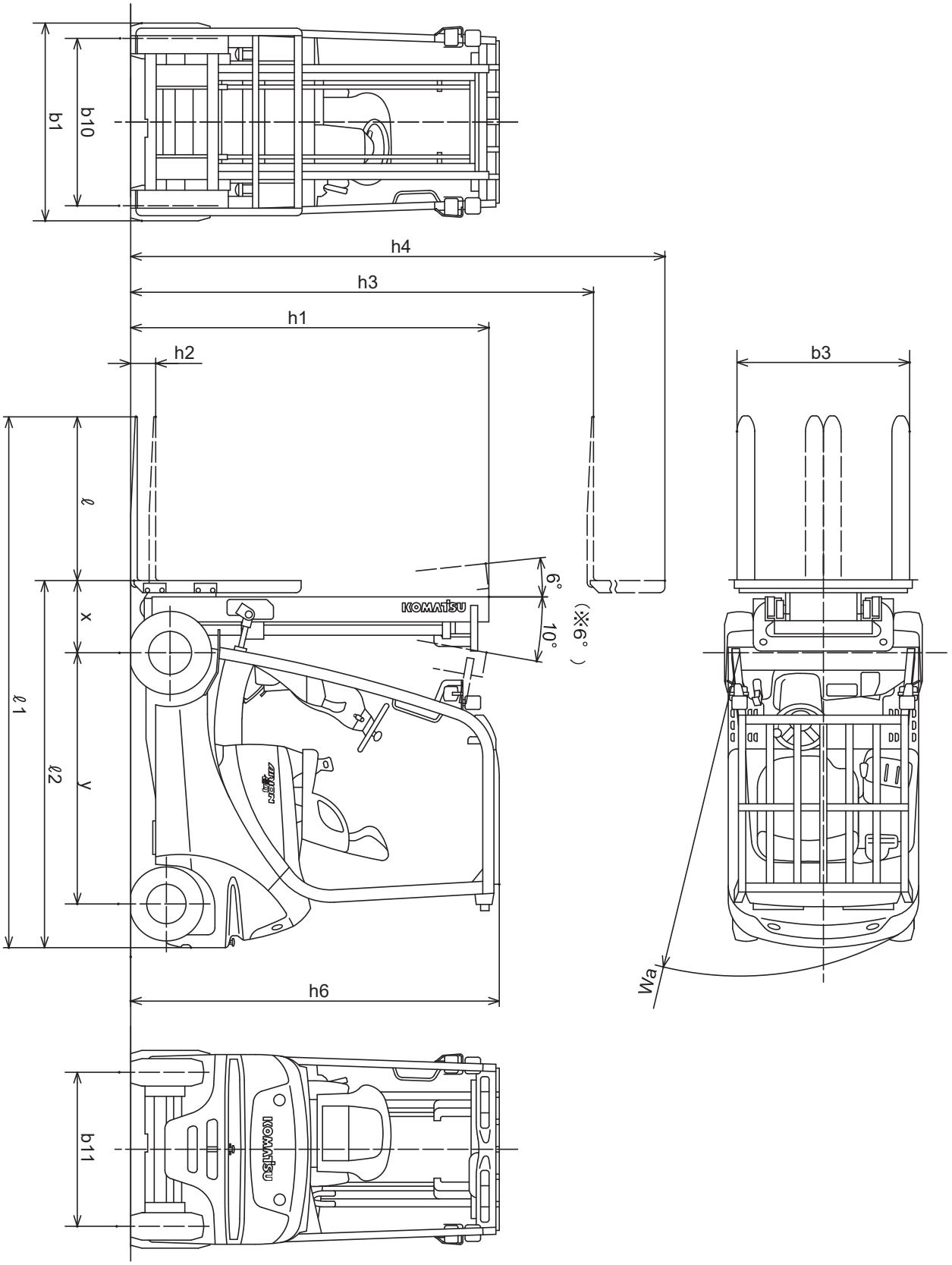
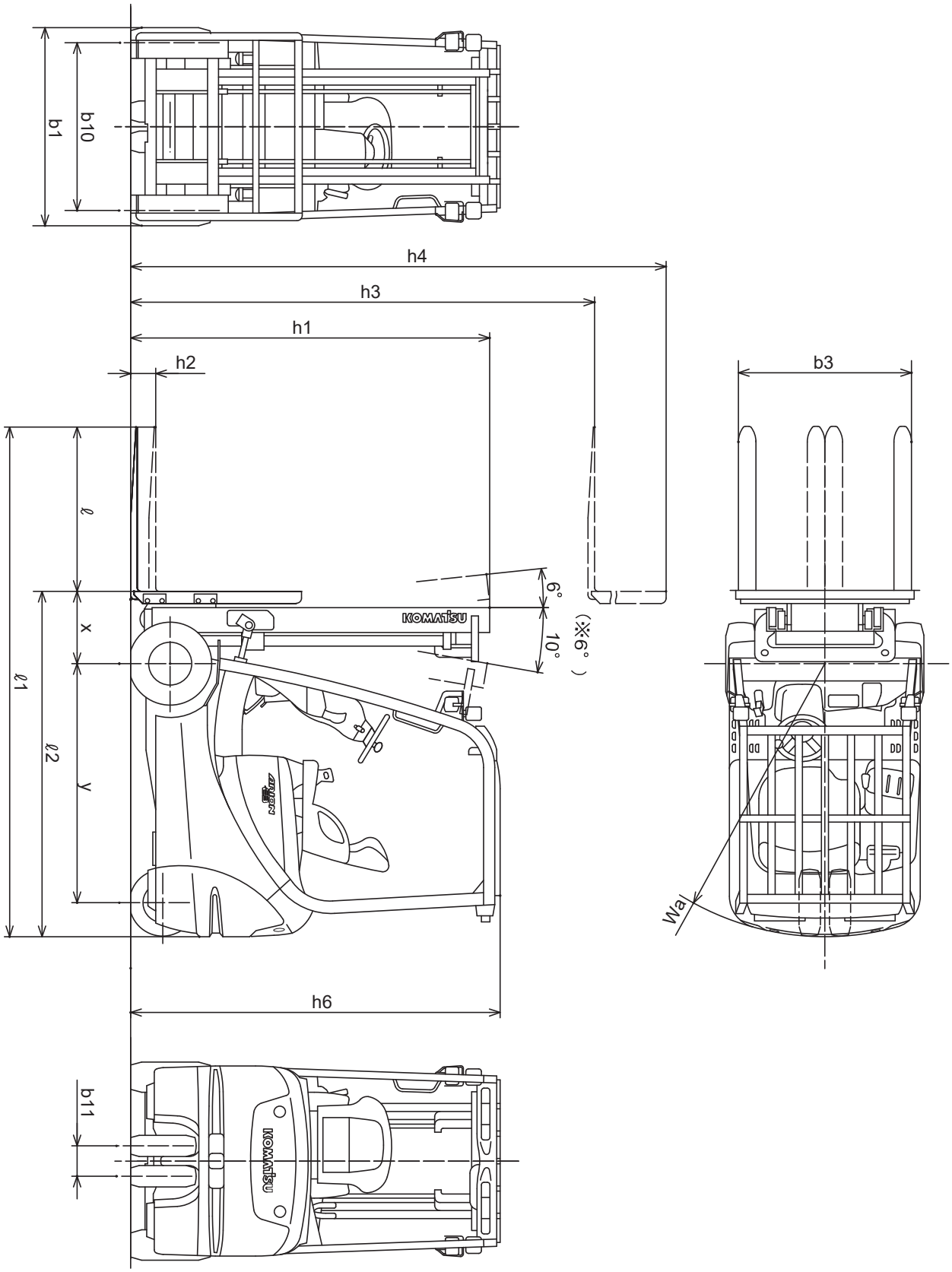
OUTSIDE VIEW

4 wheel vehicle



3 wheel vehicle



SPECIFICATIONS

4 wheel vehicle

Characteristics	1.2	Model	Manufacturer's Designation			FB10-12	FB14-12
	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable			Electric	Electric
	1.4	Operation Type				Sitting	Sitting
	1.5	Rated Capacity	Q	Rated Capacity	kg	1000	1350
	1.6	Load Center	c	Rated Load Center	mm	500	500
	1.6.1	Alternative Capacity	Q2	Capacity@600mm Load Center	kg	900	1210
	1.8	Load Distance	x	Front Axle Center to Fork Face	mm	400	405
	1.9	Wheelbase	y		mm	1410	1410
Weight	2.1	Service Weight	Including Min. Capacity Battery, See line 6.5		kg	2770	2790
	2.2	Axle Loading	Loaded	Front	kg	3080	3680
	2.2.1			Rear	kg	690	460
	2.3		Unloaded	Front	kg	1410	1440
	2.3.1			Rear	kg	1360	1350
Tires	3.1	Tire Type	Cushion, Elastic Cushion, Pneumatic, Polyurethane			Pneumatic	Pneumatic
	3.2	Tire Size	Front			18x7-8-16PR(I)	18x7-8-16PR(I)
	3.3		Rear			16x6-8-10PR(I)	16x6-8-10PR(I)
	3.5	Number of Wheel	Front/Rear (x=driven)			2*/2	2*/2
	3.6	Tread, Front	b10		mm	940	940
	3.7	Tread, Rear	b11		mm	865	865
Dimensions	4.1	Tilting Angle	a/b	Forward/Backward	degree	6/10	6/10
	4.2	Mast Height, Lowered	h1	2-stage Mast	mm	1995	1995
	4.3	Std. Free Lift	h2	2-stage Std. Mast, from Ground	mm	135	140
	4.4	Std. Lift Height	h3	2-stage Std. Mast, from Ground	mm	3000	3000
	4.5	Mast Height, Extended	h4	2-stage Std. Mast	mm	3955	3955
	4.7	Height, Overhead Guard	h6		mm	2070	2070
	4.19	Length, with Std. Forks	l1		mm	2825	2980
	4.20	Length, to Fork Face	l2		mm	2055	2060
	4.21	Width, at Tire	b1	Single	mm	1110	1110
	4.22	Forks	s/e/l	Thickness / Width / Length	mm	31x100x770	35x100x920
	4.23	Fork Carriage Class	ISO 2328, Type A/B/no			Class 2, Type A	Class 2, Type A
	4.24	Width, Fork Carriage	b3		mm	970	970
	4.31	Ground Clearance	m1	Under Mast	mm	95	95
	4.32		m2	at Center of Wheelbase	mm	125	125
	4.33	Right Angle Stacking Aisle	Ast	with L1000 x W1200 pallet	mm	3150	3155
	4.34		Ast	with L1200 x W800 pallet	mm	3350	3355
	4.35	Turning Radius	Wa		mm	1750	1750
Performance	5.1	Travel Speed (FWD)	Loaded / Unloaded		km/h	15.0/17.0	15.0/17.0
	5.2	Lifting Speed	Loaded / Unloaded		mm/s	340/600	340/600
	5.3	Lowering Speed	Loaded / Unloaded		mm/s	450/550	450/550
	5.6	Max. Drawbar Pull	Loaded, 3min. rating		N	9560	9560
	5.8	Max. Gradeability	Loaded, 3min. rating/1.5/h		%	19	19
	5.10	Service Brake	Operation/Control			Foot/Hydraulic	Foot/Hydraulic
	5.10.1	Parking Brake	Operation/Control			Hand/Mechanical	Hand/Mechanical
	5.10.2	Steering	Type			FHPS	FHPS
Drive	6.1	Drive Motor(AC)	60min.rating		kW	4.5	4.5
	6.2	Pomp Motor(AC)	5 min.rating		kW	9.0	9.0
	6.4	Battery Voltage			V	48	48
	6.4.1	Battery Capacity,Min			Ah/5hr	330	330
	6.4.2	Battery Capacity,Max			Ah/5hr	565	565
	6.5	Battery Weight	Min.Capacity Battery,See line 6.4.1		kg	610	610
Others	8.1	Drive Motor Control				Transistor	Transistor
	8.2	Relief Pressure Attachment			bar	176	176
	8.2.1	Reservoir Capacity			Ltr	23	23

FB15-12	FB18-12	FB20A-12	FB15G-12	FB18G-12	FB20AG-12
Electric	Electric	Electric	Electric	Electric	Electric
Sitting	Sitting	Sitting	Sitting	Sitting	Sitting
1500	1750	2000	1500	1750	2000
500	500	500	500	500	500
1350	1570	1800	1350	1570	1800
405	405	425	405	405	425
1410	1410	1470	1540	1540	1540
2930	3170	3620	3270	3300	3660
3980	4400	5020	4040	4440	5030
450	520	600	730	610	630
1490	1490	1720	1630	1630	1790
1440	1680	1900	1640	1670	1870
Pneumatic	Pneumatic	Elastic Cushion	Pneumatic	Pneumatic	Elastic Cushion
18x7-8-16PR(I)	18x7-8-16PR(I)	200/50-10	18x7-8-16PR(I)	18x7-8-16PR(I)	200/50-10
16x6-8-10PR(I)	16x6-8-10PR(I)	16x6-8	16x6-8-10PR(I)	16x6-8-10PR(I)	16x6-8
2*/2	2*/2	2*/2	2*/2	2*/2	2*/2
940	940	950	940	940	950
865	865	865	865	865	865
6/10	6/10	6/10	6/10	6/10	6/10
1995	1995	2110	1995	1995	2110
140	140	150	140	140	150
3000	3000	3000	3000	3000	3000
3955	3955	3970	3955	3955	3970
2070	2070	2070	2070	2070	2070
2980	3015	3100	3115	3115	3170
2060	2095	2180	2195	2195	2250
1110	1110	1160	1110	1110	1160
35x100x920	35x100x920	36x122x920	35x100x920	35x100x920	36x122x920
Class 2, Type A	Class 2, Type A	Class 2, Type A	Class 2, Type A	Class 2, Type A	Class 2, Type A
970	970	970	970	970	970
95	95	95	95	95	95
125	125	125	125	125	125
3155	3190	3275	3335	3335	3395
3355	3390	3475	3535	3535	3595
1750	1785	1850	1930	1930	1970
15.0/17.0	15.0/17.0	14.0/16.0	15.0/17.0	15.0/17.0	14.0/16.0
340/600	320/600	280/500	340/600	320/600	280/500
450/550	450/550	370/440	450/550	450/550	370/440
9560	9560	9045	9560	9560	9045
19	16	14	16	16	14
Foot/Hydraulic	Foot/Hydraulic	Foot/Hydraulic	Foot/Hydraulic	Foot/Hydraulic	Foot/Hydraulic
Hand/Mechanical	Hand/Mechanical	Hand/Mechanical	Hand/Mechanical	Hand/Mechanical	Hand/Mechanical
FHPS	FHPS	FHPS	FHPS	FHPS	FHPS
4.5	4.5	4.5	4.5	4.5	4.5
9.0	9.0	9.0	9.0	9.0	9.0
48	48	48	48	48	48
402	402	468	645	645	645
565	565	565	725	725	725
720	720	760	1085	1085	1085
Transistor	Transistor	Transistor	Transistor	Transistor	Transistor
176	176	176	176	176	176
23	23	23	23	23	23

3 wheel vehicle

Characteristics	1.2	Model	Manufacturer's Designation			FB10M-12	FB13M-12
	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable			Electric	Electric
	1.4	Operation Type				Sitting	Sitting
	1.5	Rated Capacity	Q	Rated Capacity	kg	1000	1250
	1.6	Load Center	c	Rated Load Center	mm	500	500
	1.6.1	Alternative Capacity	Q2	Capacity@600mm Load Center	kg	900	1210
	1.8	Load Distance	x	Front Axle Center to Fork Face	mm	400	400
	1.9	Wheelbase	y		mm	1190	1190
Weight	2.1	Service Weight	Including Min. Capacity Battery, See line 6.5		kg	2600	2710
	2.2	Axle Loading	Loaded	Front	kg	3100	3540
	2.2.1			Rear	kg	500	420
	2.3		Unloaded	Front	kg	1310	1310
	2.3.1			Rear	kg	1290	1400
Tires	3.1	Tire Type	Cushion, Elastic Cushion, Pneumatic, Polyurethane			Pneumatic	Pneumatic
	3.2	Tire Size	Front			18x7-8-16PR(I)	18x7-8-16PR(I)
	3.3		Rear			15x4 1/2-8-12PR(I)	15x4 1/2-8-12PR(I)
	3.5	Number of Wheel	Front/Rear (x=driven)			2*/2	2*/2
	3.6	Tread, Front	b10		mm	940	940
	3.7	Tread, Rear	b11		mm	170	170
Dimensions	4.1	Tilting Angle	a/b	Forward/Backward	degree	6/10	6/10
	4.2	Mast Height, Lowered	h1	2-stage Mast	mm	1995	1995
	4.3	Std. Free Lift	h2	2-stage Std. Mast, from Ground	mm	135	135
	4.4	Std. Lift Height	h3	2-stage Std. Mast, from Ground	mm	3000	3000
	4.5	Mast Height, Extended	h4	2-stage Std. Mast	mm	3955	3955
	4.7	Height, Overhead Guard	h6		mm	2070	2070
	4.19	Length, with Std. Forks	l1		mm	2560	2560
	4.20	Length, to Fork Face	l2		mm	1790	1790
	4.21	Width, at Tire	b1	Single	mm	1110	1110
	4.22	Forks	s/e/l	Thickness / Width / Length	mm	31x100x770	31x100x770
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	4.24	Width, Fork Carriage	b3		mm	970	970
	4.31	Ground Clearance	m1	Under Mast	mm	95	95
	4.32		m2	at Center of Wheelbase	mm	125	125
	4.33	Right Angle Stacking Aisle	Ast	with L1000 x W1200 pallet	mm	2790	2790
	4.34		Ast	with L1200 x W800 pallet	mm	2990	2990
	4.35	Turning Radius	Wa		mm	1390	1390
Performance	5.1	Travel Speed (FWD)	Loaded / Unloaded		km/h	15.0/17.0	15.0/17.0
	5.2	Lifting Speed	Loaded / Unloaded		mm/s	340/600	340/600
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	5.6	Max. Drawbar Pull	Loaded, 3min. rating		N	9560	9560
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	5.10	Service Brake	Operation/Control			Foot/Hydraulic	Foot/Hydraulic
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	5.10.2	Steering	Type			FHPS	FHPS
Drive	6.1	Drive Motor(AC)	60min.rating		kW	4.5	4.5
	6.2	Pomp Motor(AC)	5 min.rating		kW	9.0	9.0
	6.4	Battery Voltage			V	48	48
	6.4.1	Battery Capacity,Min			Ah/5hr	280	280
	6.4.2	Battery Capacity,Max			Ah/5hr	370	370
	6.5	Battery Weight	Min.Capacity Battery,See line 6.4.1		kg	610	610
Others	8.1	Drive Motor Control				Transistor	Transistor
	8.2	Relief Pressure Attachment			bar	176	176
	8.2.1	Reservoir Capacity			Ltr	23	23