SEN05963-03

Shop Manual

FORKLIFT TRUCK

FB10RL(F)/13RL(F) -15
FB15RL(F)/18RL(F) -15
FB10RW/13RW/15RW-15

SERIAL NUMBERS 150001 and up

KOMATSU

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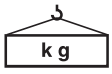
PRECAUTIONS WHEN PERFORMING THE SERVICE WORK

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
	Filling	Oil filling and its amount

10. GENERAL AND SPECIFICATIONS

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SPECIFICATION

1.Main specification

Characteristics	1.2	Model	Manufacturer's Designation				FB10RL-15, FB10RLF-15	FB13RL-15, FB13RLF-15
	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable				Electric	Electric
	1.4	Operation Type	Pedestrian, Driver Standing, Sitting, Order Picking				Standing	Standing
	1.5	Rated Capacity	Q1	Rated Capacity		kg	1000	1250
	1.6	Load Center	c	Load Center		mm	500	500
	1.6.1	Alternative Capacity	Q2	Capacity@600mm Load Center		kg	870	1080
	1.8	Load Distance	x	Front Axle Center to Fork Face		mm	175	175
	1.9	Wheelbase	y			mm	1110	1250
Weight	2.1	Service Weight	Including Min. Capacity Battery, see line 6.5			kg	1985	2000
	2.4	Axle Loading Mast/Forks Extended	Loaded		Front	kg	2555	2855
	2.4.1				Rear	kg	465	430
	2.4.2		Unloaded		Front	kg	905	890
	2.4.3				Rear	kg	1115	1145
	2.5	Axle Loading Mast/Forks Retracted	Loaded		Front	kg	1940	2020
	2.5.1				Rear	kg	1080	1265
	2.5.2		Unloaded		Front	kg	690	635
	2.5.3				Rear	kg	1330	1400
Tyre	3.1	Tyre Type					Solid	Solid
	3.2	Tyre Size	Front				ϕ 260 x 120	ϕ 260 x 120
	3.3		Rear				ϕ 360 x 180	ϕ 360 x 180
	3.4		Additional Wheels				ϕ 127 x 90	ϕ 127 x 90
	3.5	Number of Wheel	Front/Rear(*=driven)				2/1*+2	2/1*+2
	3.6	Tread, Front	b10			mm	975	975
	3.7	Tread, Rear	b11			mm	–	–
Dimenshions	4.1	Tilting Angle	α/β	Forward/Backward		degree	3/5	3/5
	4.2	Mast Height, Lowered	h5	with Std. Mast		mm	1995	1995
	4.3	Std. Free Lift	h2	with Std. Mast, from Ground		mm	105	105
	4.4	Std. Lift Height	h3	with Std. Mast, from Ground		mm	3000	3000
	4.5	Mast Height, Extended	h4	with Std. Mast		mm	3935	3935
	4.7	Height, Overhead Guard	h1			mm	2245	2245
	4.19	Length, with Std. Forks	l 1			mm	1905	1905
	4.21	Width, at Tyre	b1			mm	1095	1095
	4.22	Forks	s/e/l	Thickness/Width/Length		mm	35x100x850	35x100x850
	4.23	Fork Carriage Class	ISO 2328, Type A/B/no				Pin Mount	Pin Mount
	4.24	Width, Fork Carriage	b3			mm	750	750
	4.26	Width, between Reach Legs	b4			mm	752	752
	4.28	Reach Travel	l 4			mm	440	580
	4.31	Ground Clearance	m1	under the Mast		mm	75	75
	4.32		m2	at the center of Wheelbase		mm	80	80
	4.33	Right Angle Stacking	Ast	with L1000 x W1200 pallet		mm	2275	2310
	4.34	Aisle	Ast	with L1200 x W800 pallet		mm	2340	2355
	4.35.1	Turning Radius	Wa			mm	1325	1465
	4.35.2		Wb			mm	670	555
	4.37	Length, without Forks	/7				1470	1610
Performance	5.1	Travel Speed (FWD)	Loaded/Unloaded			km/h	9.5/10.5	9.5/10.5
	5.2	Lifting Speed	Loaded/Unloaded			mm/s	350/540	320/540
	5.3	Lowering Speed	Loaded/Unloaded			mm/s	500/550	460/550
	5.4	Reach Speed	Loaded/Unloaded			mm/s	300/300	300/300
	5.6	Max. Drawbar Pull	3min rating			N	5880	5880
	5.8	Max. Gradeability	Unloaded 1.5km/h, 3min rating			%	32	31
	5.10	Service Brake	Operation/Control				Mechanical, Disc	Mechanical, Disc
	5.11	Parking Brake	Operation/Control				Mechanical, Disc	Mechanical, Disc
	5.12	Steering	Operation/Control				Electric Power Steering	Electric Power Steering
Drive	6.1	Drive Motor (AC)	60min rating			kW	4.5	4.5
	6.2	Pump Motor (AC)	5min rating			kW	9	9.0
	6.2.1	PS Motor (DC)	60min rating			kW	0.3	0.3
	6.4	Battery Voltage				V	48	48
	6.4.1	Battery Capacity, Min.				Ah/5-hour	201	201
	6.4.2	Battery Capacity, Max.				Ah/5-hour	240	240
	6.5	Battery Weight, Min. Capacity				kg	365	365
Others	8.1	Drive Motor Control					MOS-FET inverter	MOS-FET inverter
	8.1.1	Pump Motor Control					MOS-FET inverter	MOS-FET inverter
	8.1.2	PS Motor Control					MOS-FET chopper	MOS-FET chopper
	8.2	Relief Pressure for Attachment				bar	167	167
	8.2.1	Hydraulic Tank Capacity				Ltr	16	16

4.33 and 4.34 Values are not including a cliearance. See Aisle width section for detail.

Characteristics	1.2	Model	Manufacturer's Designation				FB15RL-15, FB15RLF-15	FB18RL-15, FB18RLF-15
	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable				Electric	Electric
	1.4	Operation Type	Pedestrian, Driver Standing, Sitting, Order Picking				Standing	Standing
	1.5	Rated Capacity	Q1	Rated Capacity		kg	1500	1800
	1.6	Load Center	c	Load Center		mm	500	500
	1.6.1	Alternative Capacity	Q2	Capacity@600mm Load Center		kg	1300	1560
	1.8	Load Distance	x	Front Axle Center to Fork Face		mm	175	175
	1.9	Wheelbase	y			mm	1350	1500
Weight	2.1	Service Weight	Including Min. Capacity Battery, see line 6.5			kg	2175	2255
	2.4	Axle Loading Mast/Forks Extended	Loaded		Front	kg	3245	3620
	2.4.1				Rear	kg	475	480
	2.4.2		Unloaded		Front	kg	955	970
	2.4.3				Rear	kg	1265	1330
	2.5	Axle Loading Mast/Forks Retracted	Loaded		Front	kg	2360	2465
	2.5.1				Rear	kg	1360	1635
	2.5.2		Unloaded		Front	kg	715	690
	2.5.3				Rear	kg	1505	1610
Tyre	3.1	Tyre Type					Solid	Solid
	3.2	Tyre Size	Front				ϕ 254 x 114	ϕ 254 x 120
	3.3		Rear				ϕ 360 x 180	ϕ 360 x 180
	3.4		Additional Wheels				ϕ 127 x 90	ϕ 127 x 90
	3.5	Number of Wheel	Front/Rear(*=driven)				2/1*+2	2/1*+2
	3.6	Tread, Front	b10			mm	975	975
	3.7	Tread, Rear	b11			mm	-	-
Dimenshions	4.1	Tilting Angle	α/β	Forward/Backward		degree	3/5	3/5
	4.2	Mast Height, Lowered	h5	with Std. Mast		mm	1995	1995
	4.3	Std. Free Lift	h2	with Std. Mast, from Ground		mm	105	105
	4.4	Std. Lift Height	h3	with Std. Mast, from Ground		mm	3000	3000
	4.5	Mast Height, Extended	h4	with Std. Mast		mm	3935	3935
	4.7	Height, Overhead Guard	h1			mm	2245	2245
	4.19	Length, with Std. Forks	l 1			mm	2005	2075
	4.21	Width, at Tyre	b1			mm	1095	1095
	4.22	Forks	s/e/l	Thickness/Width/Length		mm	35x100x850	38x100x850
	4.23	Fork Carriage Class	ISO 2328, Type A/B/no				Pin Mount	Pin Mount
	4.24	Width, Fork Carriage	b3			mm	750	730
	4.26	Width, between Reach Legs	b4			mm	752	752
	4.28	Reach Travel	l 4			mm	580	730
	4.31	Ground Clearance	m1	under the Mast		mm	75	75
	4.32		m2	at the center of Wheelbase		mm	80	80
	4.33	Right Angle Stacking Aisle	Ast	with L1000 x W1200 pallet		mm	2405	2460
	4.34		Ast	with L1200 x W800 pallet		mm	2450	2475
	4.35.1	Turning Radius	Wa			mm	1560	1715
	4.35.2		Wb			mm	555	555
	4.37	Length, without Forks	/7				1710	1860
Performance	5.1	Travel Speed (FWD)	Loaded/Unloaded			km/h	9.5/10.5	9.5/10.5
	5.2	Lifting Speed	Loaded/Unloaded			mm/s	320/540	300/540
	5.3	Lowering Speed	Loaded/Unloaded			mm/s	460/550	460/550
	5.4	Reach Speed	Loaded/Unloaded			mm/s	300/300	300/300
	5.6	Max. Drawbar Pull	3min rating			N	5880	5880
	5.8	Max. Gradeability	Unloaded 1.5km/h, 3min rating			%	28	27
	5.10	Service Brake	Operation/Control				Mechanical, Disc	Mechanical, Disc
	5.11	Parking Brake	Operation/Control				Mechanical, Disc	Mechanical, Disc
	5.12	Steering	Operation/Control				Electric Power Steering	Electric Power Steering
Drive	6.1	Drive Motor (AC)	60min rating			kW	4.5	4.5
	6.2	Pump Motor (AC)	5min rating			kW	9.0	9.0
	6.2.1	PS Motor (DC)	60min rating			kW	0.3	0.3
	6.4	Battery Voltage				V	48	48
	6.4.1	Battery Capacity, Min.				Ah/5-hour	280	280
	6.4.2	Battery Capacity, Max.				Ah/5-hour	390	390
	6.5	Battery Weight, Min. Capacity				kg	495	495
Others	8.1	Drive Motor Control					MOS-FET inverter	MOS-FET inverter
	8.1.1	Pump Motor Control					MOS-FET inverter	MOS-FET inverter
	8.1.2	PS Motor Control					MOS-FET chopper	MOS-FET chopper
	8.2	Relief Pressure for Attachment				bar	167	167
	8.2.1	Hydraulic Tank Capacity				Ltr	16	16

4.33 and 4.34 Values are not including a cliearance. See Aisle width section for detail

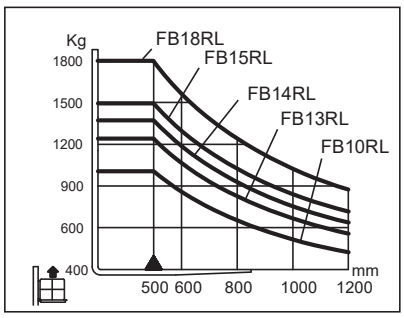
Characteristics	1.2	Model	Manufacturer's Designation				FB10RW-15	FB13RW-15
	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable				Electric	Electric
	1.4	Operation Type	Pedestrian, Driver Standing, Sitting, Order Picking				Standing	Standing
	1.5	Rated Capacity	Q1	Rated Capacity		kg	1000	1250
	1.6	Load Center	c	Load Center		mm	500	500
	1.6.1	Alternative Capacity	Q2	Capacity@600mm Load Center		kg	870	1080
	1.8	Load Distance	x	Front Axle Center to Fork Face		mm	175	175
	1.9	Wheelbase	y			mm	1110	1250
Weight	2.1	Service Weight	Including Min. Capacity Battery, see line 6.5			kg	1985	2000
	2.4	Axle Loading Mast/Forks Extended	Loaded		Front	kg	2560	2860
	2.4.1				Rear	kg	460	425
	2.4.2		Unloaded		Front	kg	910	895
	2.4.3				Rear	kg	1110	1140
	2.5	Axle Loading Mast/Forks Retracted	Loaded		Front	kg	1945	2025
	2.5.1				Rear	kg	1075	1260
	2.5.2		Unloaded		Front	kg	695	640
	2.5.3				Rear	kg	1325	1395
Tyre	3.1	Tyre Type					Solid	Solid
	3.2	Tyre Size	Front				ϕ 260 x 120	ϕ 260 x 120
	3.3		Rear				ϕ 330 x 145	ϕ 330 x 145
	3.4		Additional Wheels				ϕ 150 x 80	ϕ 150 x 80
	3.5	Number of Wheel	Front/Rear(*=driven)				2/1*+2	2/1*+2
	3.6	Tread, Front	b10			mm	975	975
	3.7	Tread, Rear	b11			mm	-	-
Dimenshions	4.1	Tilting Angle	α/β	Forward/Backward		degree	3/5	3/5
	4.2	Mast Height, Lowered	h5	with Std. Mast		mm	1995	1995
	4.3	Std. Free Lift	h2	with Std. Mast, from Ground		mm	105	105
	4.4	Std. Lift Height	h3	with Std. Mast, from Ground		mm	3000	3000
	4.5	Mast Height, Extended	h4	with Std. Mast		mm	3935	3935
	4.7	Height, Overhead Guard	h1			mm	2245	2245
	4.19	Length, with Std. Forks	l 1			mm	1905	1905
	4.21	Width, at Tyre	b1			mm	1080	1080
	4.22	Forks	s/e/l	Thickness/Width/Length		mm	35x100x850	35x100x850
	4.23	Fork Carriage Class	ISO 2328, Type A/B/no				Pin Mount	Pin Mount
	4.24	Width, Fork Carriage	b3			mm	750	750
	4.26	Width, between Reach Legs	b4			mm	752	752
	4.28	Reach Travel	l 4			mm	440	580
	4.31	Ground Clearance	m1	under the Mast		mm	75	75
	4.32		m2	at the center of Wheelbase		mm	80	80
	4.33	Right Angle Stacking Aisle	Ast	with L1000 x W1200 pallet		mm	2275	2310
	4.34		Ast	with L1200 x W800 pallet		mm	2340	2355
	4.35.1	Turning Radius	Wa			mm	1325	1465
	4.35.2		Wb			mm	670	555
	4.37	Length, without Forks	/7				1470	1610
Performance	5.1	Travel Speed (FWD)	Loaded/Unloaded			km/h	9.5/10.5	9.5/10.5
	5.2	Lifting Speed	Loaded/Unloaded			mm/s	350/540	320/540
	5.3	Lowering Speed	Loaded/Unloaded			mm/s	500/550	460/550
	5.4	Reach Speed	Loaded/Unloaded			mm/s	300/300	300/300
	5.6	Max. Drawbar Pull	3min rating			N	6080	6080
	5.8	Max. Gradeability	Unloaded 1.5km/h, 3min rating			%	32	32
	5.10	Service Brake	Operation/Control				Mechanical, Disc	Mechanical, Disc
	5.11	Parking Brake	Operation/Control				Mechanical, Disc	Mechanical, Disc
	5.12	Steering	Operation/Control				Electric Power Steering	Electric Power Steering
Drive	6.1	Drive Motor (AC)	60min rating			kW	4.5	4.5
	6.2	Pump Motor (AC)	5min rating			kW	9.0	9.0
	6.2.1	PS Motor (DC)	60min rating			kW	0.3	0.3
	6.4	Battery Voltage				V	48	48
	6.4.1	Battery Capacity, Min.				Ah/5-hour	201	201
	6.4.2	Battery Capacity, Max.				Ah/5-hour	240	240
	6.5	Battery Weight, Min. Capacity				kg	365	365
Others	8.1	Drive Motor Control					MOS-FET inverter	MOS-FET inverter
	8.1.1	Pump Motor Control					MOS-FET inverter	MOS-FET inverter
	8.1.2	PS Motor Control					MOS-FET chopper	MOS-FET chopper
	8.2	Relief Pressure for Attachment				bar	167	167
	8.2.1	Hydraulic Tank Capacity				Ltr	16	16

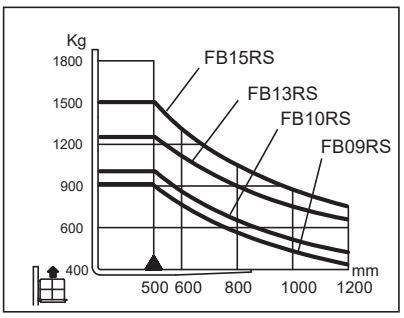
4.33 and 4.34 Values are not including a cliearance. See Aisle width section for detail

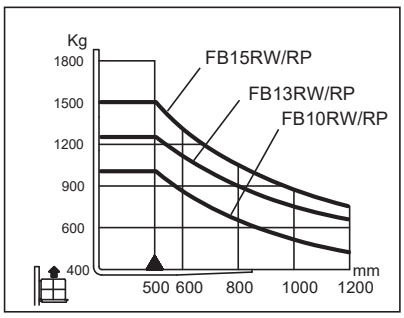
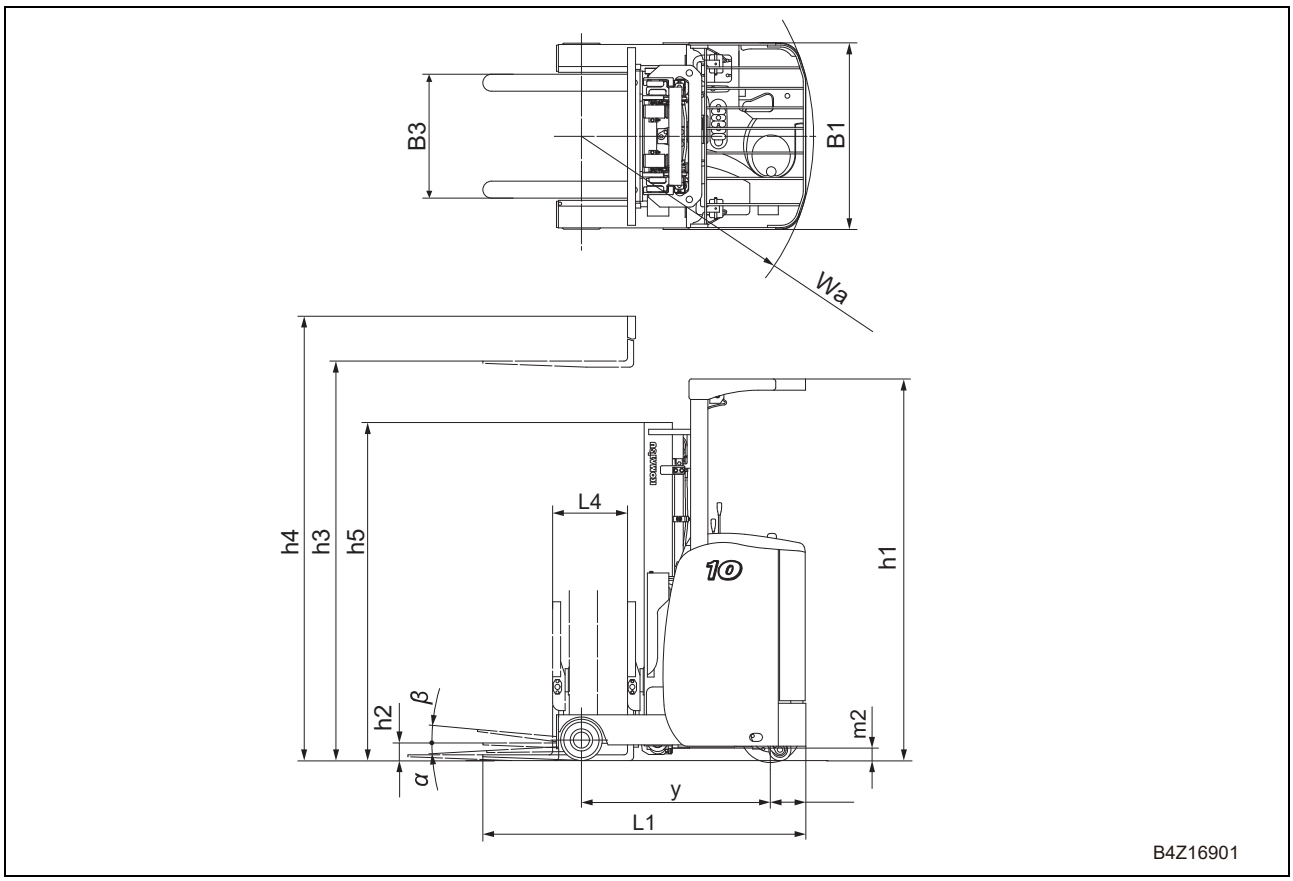
Characteristics	1.2	Model	Manufacturer's Designation				FB15RW-15
	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable				Electric
	1.4	Operation Type	Pedestrian, Driver Standing, Sitting, Order Picking				Standing
	1.5	Rated Capacity	Q1	Rated Capacity		kg	1500
	1.6	Load Center	c	Load Center		mm	500
	1.6.1	Alternative Capacity	Q2	Capacity@600mm Load Center		kg	1300
	1.8	Load Distance	x	Front Axle Center to Fork Face		mm	175
	1.9	Wheelbase	y			mm	1350
Weight	2.1	Service Weight	Including Min. Capacity Battery, see line 6.5			kg	2185
	2.4	Axle Loading Mast/Forks Extended	Loaded		Front	kg	3250
	2.4.1				Rear	kg	470
	2.4.2		Unloaded		Front	kg	955
	2.4.3				Rear	kg	1265
	2.5	Axle Loading Mast/Forks Retracted	Loaded		Front	kg	2365
	2.5.1				Rear	kg	1355
	2.5.2		Unloaded		Front	kg	720
	2.5.3				Rear	kg	1500
Tyre	3.1	Tyre Type					Solid
	3.2	Tyre Size	Front				ϕ 254 x 114
	3.3		Rear				ϕ 330 x 145
	3.4		Additional Wheels				ϕ 150 x 80
	3.5	Number of Wheel	Front/Rear(*=driven)				2/1*+2
	3.6	Tread, Front	b10			mm	975
	3.7	Tread, Rear	b11			mm	-
Dimenshions	4.1	Tilting Angle	α/β	Forward/Backward		degree	3/5
	4.2	Mast Height, Lowered	h5	with Std. Mast		mm	1995
	4.3	Std. Free Lift	h2	with Std. Mast, from Ground		mm	105
	4.4	Std. Lift Height	h3	with Std. Mast, from Ground		mm	3000
	4.5	Mast Height, Extended	h4	with Std. Mast		mm	3935
	4.7	Height, Overhead Guard	h1			mm	2245
	4.19	Length, with Std. Forks	l 1			mm	2005
	4.21	Width, at Tyre	b1			mm	1080
	4.22	Forks	s/e/l	Thickness/Width/Length		mm	35x100x850
	4.23	Fork Carriage Class	ISO 2328, Type A/B/no				Pin Mount
	4.24	Width, Fork Carriage	b3			mm	750
	4.26	Width, between Reach Legs	b4			mm	752
	4.28	Reach Travel	l 4			mm	580
	4.31	Ground Clearance	m1	under the Mast		mm	75
	4.32		m2	at the center of Wheelbase		mm	80
	4.33	Right Angle Stacking Aisle	Ast	with L1000 x W1200 pallet		mm	2405
	4.34		Ast	with L1200 x W800 pallet		mm	2450
	4.35.1	Turning Radius	Wa			mm	1560
	4.35.2		Wb			mm	555
	4.37	Length, without Forks	/7				1710
Performance	5.1	Travel Speed (FWD)	Loaded/Unloaded			km/h	9.5/10.5
	5.2	Lifting Speed	Loaded/Unloaded			mm/s	320/540
	5.3	Lowering Speed	Loaded/Unloaded			mm/s	460/550
	5.4	Reach Speed	Loaded/Unloaded			mm/s	300/300
	5.6	Max. Drawbar Pull	3min rating			N	6080
	5.8	Max. Gradeability	Unloaded 1.5km/h, 3min rating			%	29
	5.10	Service Brake	Operation/Control				Mechanical, Disc
	5.11	Parking Brake	Operation/Control				Mechanical, Disc
	5.12	Steering	Operation/Control				Electric Power Steering
Drive	6.1	Drive Motor (AC)	60min rating			kW	4.5
	6.2	Pump Motor (AC)	5min rating			kW	9.0
	6.2.1	PS Motor (DC)	60min rating			kW	0.3
	6.4	Battery Voltage				V	48
	6.4.1	Battery Capacity, Min.				Ah/5-hour	280
	6.4.2	Battery Capacity, Max.				Ah/5-hour	390
	6.5	Battery Weight, Min. Capacity				kg	495
Others	8.1	Drive Motor Control					MOS-FET inverter
	8.1.1	Pump Motor Control					MOS-FET inverter
	8.1.2	PS Motor Control					MOS-FET chopper
	8.2	Relief Pressure for Attachment				bar	167
	8.2.1	Hydraulic Tank Capacity				Ltr	16

4.33 and 4.34 Values are not including a cliearance. See Aisle width section for detail

2. Allowable Load Table







3. Dimension Diagram