Shop Manual

FORKLIFT TRUCK

FB1ORL(F)/13RL(F) -15

FB15RL(F)/18RL(F) -15

FB10RW/13RW/15RW-15

SERIAL NUMBERS 150001 and up



SECTION INDEX

Λ	Λ	FO	D		M	\cap		
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- 10. GENERAL AND SPECIFICATIONS
- 20. TESTING AND ADJUSTING
- 30. REMOVAL AND INSTALLATION
- **40. DISASSEMBLY AND ASSEMBLY**
- **50. MAINTENANCE STANDARD**
- **60. STRUCTURE AND FUNCTION**
- 70. TROUBLESHOOTING
- **80. YEARLY INSPECTION CRITERIA**
- 90. CONVERSION TABLE

FB10R – 18R-15 00-1

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
A	Safety	Special safety precautions are needed to perform the work.
*	Note	Special technical precautions are needed to perform the work
<u> Nm</u>	Tightening torque	Fastening parts that require specified tightening force when assembling.
k g	Weight	Weight of parts or systems
	Coat	Places to be coated with adhesives, etc. when assembling
	Filling	Oil filling and its amount

00-2 FB10R - 18R-15

10. GENERAL AND SPECIFICATIONS

SPECIFICATION10	0-2
SAFETY ITEMS FOR MAINTENANCE10	0-7
STANDARD TIGHTENING TORQUE FOR BOLTS10-	-14
STANDARD TIGHTENING TORQUE FOR PIPE JOINTS10-	-15
HOW TO USE LOCTITE10-	-16

FB10R – 18R-15 10-1

SPECIFICATION

1.Main specification

П	1.2 Model Manufacturer's Designation						FB10RL-15, FB10RLF-15	FB13RL-15, FB13RLF-15
<i>γ</i>	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable			Electric	Electric	
Characteristics	1.4	Operation Type	Pedes	trian, Driver Standin	g, Sitting, Order Pick	king	Standing	Standing
Fris	1.5	Rated Capacity	Q1	ů ů ů			1000	1250
acte	1.6	Load Center	С	Load Center		kg mm	500	500
Jar	1.6.1	Alternative Capacity	Q2	Capacity@600mm	Load Center	kg	870	1080
5	1.8	Load Distance	x	. ,		mm	175	175
	1.9	Wheelbase	y			mm	1110	1250
Н	2.1	Service Weight	,	ı ing Min. Capacity Ba	attery, see line 6.5	kg	1985	2000
	2.4				Front	kg	2555	2855
	2.4.1	Axle Loading Mast/Forks	Loade	d	Rear	kg	465	430
1	2.4.2	Extended			Front	kg	905	890
Weight	2.4.3		Unloa	ded	Rear	kg	1115	1145
I⊗	2.5				Front	kg	1940	2020
	2.5.1	Axle Loading Mast/Forks	Loade	d	Rear	kg	1080	1265
	2.5.2	Retracted			Front	kg	690	635
	2.5.3		Unloa	ded	Rear	kg	1330	1400
Н	3.1	Tyre Type			rtour	ng ng	Solid	Solid
	3.2	туге туре	Front				ø 260 x 120	φ 260 x 120
	3.3	Tyre Size	Rear				φ 360 x 180	φ 360 x 180
Tyre	3.4	Tyle Size		onal Wheels			φ 127 x 90	φ 127 x 90
J	3.5	Number of Wheel		Rear(*=driven)			ψ 127 x 90 2/1*+2	ψ 127 x 90 2/1*+2
	3.6	Tread, Front	b10	Cart -unveni		mm	975	975
	3.7	Tread, Rear	b10			mm	9/5	975
Н		*		Forward/Pooloword			3/5	3/5
	4.1	Tilting Angle	α/β	Forward/Backward		degree		
	4.2	Mast Height, Lowered	h5	with Std. Mast	C	mm	1995	1995
	4.3	Std. Free Lift	h2	with Std. Mast, from		mm	105	105
	4.4	Std. Lift Height	h3	with Std. Mast, from	n Ground	mm	3000	3000
	4.5	Mast Height, Extended	h4	with Std. Mast		mm	3935	3935
	4.7	Height, Overhead Guard	h1	m			2245	2245
	4.19	Length, with Std. Forks	11	mm			1905	1905
S	4.21	Width, at Tyre	b1				1095	1095
Dimenshions	4.22	Forks		S/e/I Thickness/Width/Length mm			35x100x850	35x100x850
lsr	4.23	Fork Carriage Class		SO 2328, Type A/B/no			Pin Mount	Pin Mount
nel	4.24	Width, Fork Carriage	b3			mm	750	750
Ē	4.26	Width, between Reach Legs	b4	mm			752	752
	4.28	Reach Travel	14			mm	440	580
	4.31	Ground Clearance	m1	under the Mast		mm	75	75
	4.32		m2	at the center of Wh		mm	80	80
	4.33	Right Angle Stacking	Ast	with L1000 x W120		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
\vdash	4.37	Length, without Forks	/7	al/Undonated		1 1	1470	1610
	5.1	Travel Speed (FWD)		d/Unloaded		km/h	9.5/10.5	9.5/10.5
	5.2	Lifting Speed		d/Unloaded		mm/s	350/540	320/540
ce	5.3	Lowering Speed		d/Unloaded		mm/s	500/550	460/550
Performanc	5.4	Reach Speed	_	d/Unloaded		mm/s	300/300	300/300
l o	5.6	Max. Drawbar Pull	3min r			N or	5880	5880
Jef.	5.8	Max. Gradeability		ded 1.5km/h, 3min ra	aung	%	32	31
"	5.10	Service Brake		tion/Control			Mechanical, Disc	Mechanical, Disc
	5.11	Parking Brake		tion/Control			Mechanical, Disc	Mechanical, Disc
Щ	5.12	Steering		tion/Control		110	Electric Power Steering	Electric Power Steering
	6.1	Drive Motor (AC)		rating		kW kW	4.5	4.5
	6.2	Pump Motor (AC)		5min rating			9	9.0
e l	6.2.1	PS Motor (DC)	60min	rating		kW	0.3	0.3
Drive	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
Ш	6.5	Battery Weight, Min. Capacity	L			kg	365	365
	8.1	Drive Motor Control					MOS-FET inverter	MOS-FET inverter
S.	8.1.1	Pump Motor Control					MOS-FET inverter	MOS-FET inverter
Others	8.1.2	PS Motor Control					MOS-FET chopper	MOS-FET chopper
10	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.

10-2 FB10R – 18R-15

Г	1.2	Model	Manu	facturer's Designatio	n		FB15RL-15, FB15RLF-15	FB18RL-15, FB18RLF-15
l _s	1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable				Electric	Electric
Ęċ	1.4	Operation Type	Pedestrian, Driver Standing, Sitting, Order Picking				Standing	Standing
eris	1.5	Rated Capacity	Q1	Q1 Rated Capacity kg			1500	1800
Characteristics	1.6	Load Center	С	Load Center mm		500	500	
har	1.6.1	Alternative Capacity	Q2	Capacity@600mm	Load Center	kg	1300	1560
ျပ	1.8	Load Distance	х	Front Axle Center	to Fork Face	mm	175	175
	1.9	Wheelbase	У			mm	1350	1500
	2.1	Service Weight	Includ	ling Min. Capacity Ba	attery, see line 6.5	kg	2175	2255
	2.4	-	Loade	. al	Front	kg	3245	3620
	2.4.1	Axle Loading Mast/Forks	Loaue	eu	Rear	kg	475	480
ΙĘ	2.4.2	Extended	Unloa	dod	Front	kg	955	970
Weight	2.4.3		Ullioa	ueu	Rear	kg	1265	1330
≶	2.5		Loade	nd.	Front	kg	2360	2465
1	2.5.1	Axle Loading Mast/Forks	Loade	;u	Rear	kg	1360	1635
	2.5.2	Retracted	Unloa	dod	Front	kg	715	690
	2.5.3		Ullioa	ueu	Rear	kg	1505	1610
	3.1	Tyre Type					Solid	Solid
	3.2		Front				φ 254 x 114	φ 254 x 120
	3.3	Tyre Size	Rear				φ 360 x 180	φ 360 x 180
Tyre	3.4		Additi	onal Wheels			φ 127 x 90	φ 127 x 90
l'_	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	-	•
	4.1	Tilting Angle	α/β	Forward/Backward		degree	3/5	3/5
1	4.2	Mast Height, Lowered	h5	with Std. Mast		mm	1995	1995
	4.3	Std. Free Lift	h2	with Std. Mast, fror		mm	105	105
1	4.4	Std. Lift Height	h3	with Std. Mast, fror	m Ground	mm	3000	3000
	4.5	Mast Height, Extended	h4	with Std. Mast		mm	3935	3935
1	4.7	Height, Overhead Guard	h1	mm			2245	2245
	4.19	Length, with Std. Forks	11		mm		2005	2075
I .,	4.21	Width, at Tyre	b1	mm		1095	1095	
Dimenshions	4.22	Forks	s/e/l	/I Thickness/Width/Length mm			35x100x850	38x100x850
Shi	4.23	Fork Carriage Class		SO 2328, Type A/B/no			Pin Mount	Pin Mount
je	4.24	Width, Fork Carriage	b3			mm	750	730
Ë	4.26	Width, between Reach Legs	b4			mm	752	752
	4.28	Reach Travel	14			mm	580	730
1	4.31	Ground Clearance	m1	under the Mast		mm	75	75
1	4.32		m2	at the center of Wh		mm	80	80
	4.33	Right Angle Stacking	Ast	with L1000 x W120		mm	2405	2460
1	4.34	Aisle	Ast	with L1200 x W800) pallet	mm	2450	2475
	4.35.1	Turning Radius	Wa			mm	1560	1715
	4.35.2	Leader Steel	Wb			mm	555	555
\vdash	4.37	Length, without Forks	/7	d/Unloaded		Irma II-	1710 9.5/10.5	1860 9.5/10.5
1	5.1	Travel Speed (FWD)		ed/Unloaded		km/h mm/s		
1	5.2 5.3	Lifting Speed	1	ed/Unloaded ed/Unloaded		mm/s mm/s	320/540 460/550	300/540 460/550
JCe	5.4	Lowering Speed Reach Speed		ed/Unioaded		mm/s	300/300	300/300
Performance	5.6	Max. Drawbar Pull	3min			niii/s N	5880	5880
fori	5.8	Max. Gradeability		ded 1.5km/h, 3min r	ating	%	28	27
Per	5.10	Service Brake		ation/Control	uung	/0	Mechanical, Disc	Mechanical, Disc
Ī	5.10	Parking Brake		ation/Control			Mechanical, Disc	Mechanical, Disc
	5.12	Steering		ation/Control			Electric Power Steering	Electric Power Steering
\vdash	6.1	Drive Motor (AC)		rating		kW	4.5	4.5
1	6.2	Pump Motor (AC)	5min			kW	9.0	9.0
	6.2.1	PS Motor (DC)	-			kW	0.3	0.3
Drive	6.4	Battery Voltage	2 2.1111	60min rating			48	48
ĮΔ	6.4.1	Battery Capacity, Min.				V Ah/5-hour	280	280
1	6.4.2	Battery Capacity, Max.				Ah/5-hour	390	390
1	6.5	Battery Weight, Min. Capacity				kg	495	495
Н	8.1	Drive Motor Control					MOS-FET inverter	MOS-FET inverter
S	8.1.1	Pump Motor Control	1				MOS-FET inverter	MOS-FET inverter
Others	8.1.2	PS Motor Control					MOS-FET chopper	MOS-FET chopper
ō	8.2	Relief Pressure for Attachment				bar	167	167
	8.2.1	Hydraulic Tank Capacity				Ltr	16	16
_		and 4.24 Values are n						

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

FB10R – 18R-15 10-3

1.4		1.2 Model Manufacturer's Designation						FB10RW-15	FB13RW-15
1.5 Wilson Wils	S	1.3	Power Type				Electric	Electric	
1.5 Wilson Wils	stic	1.4	Operation Type	Pedes	Pedestrian, Driver Standing, Sitting, Order Picking			Standing	Standing
1.5 Wilson Wils	teri	1.5	Rated Capacity	Q1	, ,			1000	
1.5 Wilson Wils	raci	1.6	Load Center		Load Center mm				
1.5 Wilson Wils	:ha		<u> </u>				kg		
2.4					Front Axle Center	to Fork Face			
2.4.1 Auto-Loading Mass/Forks 2.4.1 Auto-Loading Mass/Forks 2.4.1 Extended Front kg 910 895 895 2.4.3 2.5.1 Auto-Loading Mass/Forks 2.5.5 Auto-L				,					
2.4.1 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.4.2 2.5.2 2.5.2 2.5.2 2.5.2 2.5.2 2.5.2 2.5.2 2.5.3 2.5.2 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.2 2.5.3 2.5.			Service Weight	Includ	ling Min. Capacity Ba		-		
2				Loade	ed				
Section Content Cont									
2.5.2 Rest Loading Mast/Forks	ght		Extended	Unloa	ded				
2.5.2 Rest Loading Mast/Forks	Vei								
25.2 Retracted Unloaded Front Kg 695 640 780 7325 7395 73	/		Aula Laadina Maat/Farka	Loade	ed		·		
25.3 Unloaded Rear Kg 1325 1395			4				-		
3.2 Tyre Type			Retracted	Unloa	ded		·		
3.3 Tyre Size	\vdash		Tyro Typo	-		Real	ĸy		
3.4 Type Size			l Tyre Type	Front					
Section Additional Wheels			Tyre Size					,	,
3.6 Tread, Front D10 mm 975 975 3.7 Tread, Rear D11 mm 9.5 975 3.7 Tread, Rear D11 mm 9.5 975 4.1 Titing Angle α/β Forward/Backward degree 3/5 3/5 4.2 Mast Height, Lowered his with Sid, Mast mm 1995 1995 4.3 Std. Free Lift his with Sid, Mast mm 1995 1995 4.4 Std. Lift Height his with Sid, Mast mm 1005 105 4.5 Mast Height, Extended hi with Sid, Mast, from Ground mm 3000 3000 4.5 Mast Height, Extended hi with Sid, Mast, from Ground mm 3000 3000 4.5 Mast Height, Extended hi with Sid, Mast, from Ground mm 3935 3935 4.7 Height, Overhead Guard hi mm 2245 2245 4.19 Length, with Sid, Forks 11 mm 1905 1905 4.21 Width, a Tiyre bi mm 1080 1080 4.22 Forks S/ell Thickness/Width/Length mm 35x100x850 35x100x850 4.23 Fork Carriage Class ISO 2328, Type N/B/no Pin Mount Pin Mount 4.31 Ground Clearance mi under the Mast mm 440 580 4.33 Right Angle Stacking Ast with L100x W1200 pallet mm 2275 2310 4.34 Alsie Ast with L100x W1200 pallet mm 2275 2310 4.35 Length, without Forks 77 mm 600 80 4.37 Length, without Forks 77 mm 600 6000 5.1 Travel Speed (FWD) Loaded/Unloaded mm/s 500/550 460/550 5.2 Lifting Speed Loaded/Unloaded mm/s 500/550 460/550 5.3 Service Brake Operation/Control Poeration/Control Mechanical, Disc	/re		1 1310 5120		onal Wheels				
3.6 Tread, Front D10 mm 975 975	Ţ		Number of Wheel						,
3.7 Tread, Rear							mm		
1 Titing Angle			·		1			-	
1985 1995				α/β	Forward/Backward			3/5	3/5
1. 1. 1. 1. 1. 1. 1. 1.					with Std. Mast			1995	1995
Name					with Std. Mast, fror	m Ground	mm		
4.7		4.4		h3			mm	3000	3000
4.19 Length, with Std. Forks 11		4.5	Mast Height, Extended	h4	with Std. Mast		mm	3935	3935
Name		4.7	Height, Overhead Guard	h1			mm	2245	2245
1		4.19	Length, with Std. Forks	11					1905
4.88 Reach Travel 14 mm 440 580		4.21	Width, at Tyre	b1			mm	1080	1080
4.88 Reach Travel 14 mm 440 580	ons	4.22	Forks	s/e/l	Thickness/Width/Lo	ength	mm	35x100x850	35x100x850
4.88 Reach Travel 14 mm 440 580	shi	4.23		ISO 2) 2328, Type A/B/no			Pin Mount	Pin Mount
4.88 Reach Travel 14 mm 440 580	ner	4.24		b3			mm		
4.31 A.32 Ground Clearance m1 under the Mast mm mm mm mm mm mm mm	Din		-				mm		
4.32 Ground Clearance m2 at the center of Wheelbase mm 80 80			Reach Travel				mm		
4.32 Right Angle Stacking			Ground Clearance						
4.34 Aisle Ast with L1200 x W800 pallet mm 2340 2355 1465 4.35.1 Turning Radius Wa mm 1325 1465 4.35.2 Length, without Forks 77 1470 1610 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 5.2 Lifting Speed Loaded/Unloaded mm/s 500/550 460/550 5.4 Reach Speed Loaded/Unloaded mm/s 300/300 300/300 5.4 Reach Speed Loaded/Unloaded mm/s 300/300 300/300 5.5 Max. Drawbar Pull 3min rating N 6080 6080 5.6 Max. Drawbar Pull 3min rating N 6080 6080 5.10 Service Brake Operation/Control Mechanical, Disc Mechanical, Disc 5.11 Parking Brake Operation/Control Electric Power Steering Electric Power Steering 5.12 Steering Operation/Control Electric Power Steering Electric Power Steering 6.1 Drive Motor (AC) 60min rating kW 4.5 4.5 6.2 Pump Motor (AC) 5min rating kW 9.0 9.0 6.3 Battery Voltage V 48 48 6.4 Battery Capacity, Min. Ah/5-hour 240 240 6.4 Battery Capacity, Min. Capacity Min.									
4.35.1 Turning Radius Wa									
4.35.2 Wb Mm 670 555 4.37 Length, without Forks /7					with L1200 x W800	pallet			
4.37 Length, without Forks 77			Turning Radius						
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 5.4 Reach Speed Loaded/Unloaded mm/s 300/300 300/300 5.5 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 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 9.0 9.0 6.4 Battery Voltage V 48 48 6.4.1 Battery Capacity, Min. Ah/5-hour 201 201 6.4 Battery Capacity, Min. Ah/5-hour 240 240 6.5 Battery Weight, Min. Capacity Max. Ah/5-hour 240 240 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 8.1.3 Relief Pressure for Attachment Dar 167 167			Longth without Forks				ITIITI		
5.2 Lifting Speed Loaded/Unloaded mm/s 350/540 320/540	\vdash			_	d/Unloaded		km/h		
S.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 Electric Power Steering Electric Power Steering 5.12 Steering Operation/Control Electric Power Steering Electric Power Steering 6.1 Drive Motor (AC) 60min rating kW 4.5 4.5 6.2 Pump Motor (AC) 5min rating kW 9.0 9.0 6.3 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 Mos-FET inverter 8.1.1 Pump Motor Control Mos-FET inverter Mos-FET inverter 8.1.2 PS Motor Control Mos-FET inverter Mos-FET inverter 8.1.2 PS Motor Control Mos-FET inverter Mos-FET inverter 8.1.2 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.2 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.3 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.4 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.5 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.5 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.5 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.5 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.6 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.7 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.8 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.5 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.5 Relief Pressure for Attachment Dar 167 Mos-FET chopper 8.1.5 Relief P									
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 Electric Power Steering Electric Power Steering 5.12 Steering Operation/Control kW 4.5 4.5 6.2 Pump Motor (AC) 60min rating kW 9.0 9.0 6.2.1 PS Motor (DC) 60min rating kW 0.3 0.3 6.2.1 PS Motor (DC) 60min rating kW 0.3 0.3 6.4.1 Battery Voltage V 48 48 6.4.2 Battery Capacity, Min. Ah/5-hour 201 201 6.4.2 Battery Weight, Min. Capacity kg 365 365 8.1 Drive Motor Control </td <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	4								
Section Sect	nce	5.4							
Section Sect	ma								
Section Sect	rfor					ating			
S.11 Parking Brake Operation/Control Electric Power Steering Electric Power Steering	Pe		,			J	,,,		
Since Steering S									
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 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 8.2 Relief Pressure for Attachment bar 167 167 8.3 PS Motor Control Battery Capacity Austral Capacity								· ·	
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 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 8.2 Relief Pressure for Attachment bar 167 167 8.3 Mostro Control	П						kW		
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 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		6.2					kW	9.0	9.0
6.4.1 Battery Capacity, Minr. Ah/5-hour 240 240 6.5 Battery Weight, Min. Capacity kg 365 365 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 8.1.3 Relief Pressure for Attachment Mos-FET chopper 8.1.4 Drive Motor Control Mos-FET chopper 8.1.5 Relief Pressure for Attachment Mos-FET chopper 8.1.6 Relief Pressure for Attachment Mos-FET chopper 8.1.7 Relief Pressure for Attachment Mos-FET chopper 8.1.8 Relief Pressure for Attachment Mos-FET chopper 8.1.9 Relief Pressure for Attachment Mos-F	_m	6.2.1	PS Motor (DC)	60min	rating		kW	0.3	0.3
6.4.1 Battery Capacity, Minr. Ah/5-hour 240 240 6.5 Battery Weight, Min. Capacity kg 365 365 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 8.1.3 Relief Pressure for Attachment Mos-FET chopper 8.1.4 Drive Motor Control Mos-FET chopper 8.1.5 Relief Pressure for Attachment Mos-FET chopper 8.1.6 Relief Pressure for Attachment Mos-FET chopper 8.1.7 Relief Pressure for Attachment Mos-FET chopper 8.1.8 Relief Pressure for Attachment Mos-FET chopper 8.1.9 Relief Pressure for Attachment Mos-F	rive	6.4					V	48	48
6.5 Battery Weight, Min. Capacity kg 365 365 8.1 Drive Motor Control MOS-FET inverter 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 167 167		6.4.1	Battery Capacity, Min.				Ah/5-hour	201	201
8.1 Drive Motor Control MOS-FET inverter 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 167 167		6.4.2	Battery Capacity, Max.				Ah/5-hour	240	
8.1.1 Pump Motor Control MOS-FET inverter MOS-FET inverter 8.1.2 PS Motor Control MOS-FET chopper 8.2 Relief Pressure for Attachment bar 167 167	L		, , ,				kg		
8.1.2 PS Motor Control MOS-FET chopper MOS-FET chopper 8.2 Relief Pressure for Attachment bar 167 167			1						
or its or	SIS								
or its or	the								
8.2.1 Hydraulic Tank Capacity Ltr 16 16									
	$ldsymbol{ld}}}}}}$	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

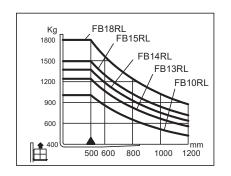
10-4 FB10R – 18R-15

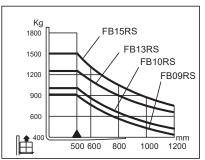
	1 2	Model	Marie	acturorio Docinanti	2	i	FD16DW 16		
	1.2	Model Power Type		acturer's Designation c, Diesel, Gasoline, I			FB15RW-15		
cs	1.3	Power Type				altina	Electric		
isti	1.4	Operation Type		Pedestrian, Driver Standing, Sitting, Order Picking			Standing		
ctei	1.5	Rated Capacity	Q1	1 3			1500		
Characteristics	1.6	Load Center	c	Load Center mm Capacity@600mm Load Center kg			500		
Ch	1.6.1	Alternative Capacity	Q2			kg	1300		
	1.8	Load Distance	Х	Front Axle Center t	o Fork Face	mm	175		
	1.9	Wheelbase	y	ing Min. Consoitu Do	ttoru ooo lina C.F.	mm	1350		
	2.1	Service Weight	includ	ing Min. Capacity Ba		kg	2185 3250		
		A 1	Loade	Loaded Front kg			470		
	2.4.1	Axle Loading Mast/Forks Extended			Rear Front	kg	955		
Weight	2.4.2	Litteriueu	Unloa	ded	Rear	kg kg	1265		
Nei	2.4.3				Front	kg ka	2365		
_		Aula Laadina Maat/Farka	Loade	d		kg kg	1355		
	2.5.1	Axle Loading Mast/Forks Retracted			Rear	kg			
	2.5.2	Reliacieu	Unloa	ded	Front	kg	720 1500		
		Turo Turo			Rear	kg			
	3.1	Tyre Type	Front				Solid		
		Time Cine	Front				φ 254 x 114		
ا يو	3.3	Tyre Size	Rear	onal Wheels			φ 330 x 145 φ 150 x 80		
Tyre	3.4	Number of Wheel					,		
	3.5	Tread, Front		Rear(*=driven) I			2/1*+2 975		
	3.6		b10			mm			
	3.7	Tread, Rear	b11	F		mm	-		
	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		mm	105		
	4.4	Std. Lift Height	h3	with Std. Mast, from	n 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	11	mm			2005		
S	4.21	Width, at Tyre	b1	mm i			1080		
Dimenshions	4.22	Forks	s/e/l	9			35x100x850		
ısh	4.23	Fork Carriage Class		2328, Type A/B/no			Pin Mount		
πеі	4.24	Width, Fork Carriage	b3	mm			750		
	4.26	Width, between Reach Legs	b4			mm	752		
	4.28	Reach Travel	14			mm	580		
	4.31	Ground Clearance	m1	under the Mast		mm	75		
	4.32		m2	at the center of Who		mm	80		
	4.33	Right Angle Stacking	Ast	with L1000 x W120	<u> </u>	mm	2405		
	4.34	Aisle	Ast	with L1200 x W800	pallet	mm	2450		
	4.35.1	Turning Radius	Wa			mm	1560		
	4.35.2	The second control of the second	Wb			mm	555		
Ш	4.37	Length, without Forks	/7	d/I Inloaded		1 n.	1710		
	5.1	Travel Speed (FWD)		d/Unloaded		km/h	9.5/10.5		
	5.2	Lifting Speed		d/Unloaded		mm/s	320/540		
lce	5.3	Lowering Speed		d/Unloaded		mm/s	460/550		
Performance	5.4	Reach Speed		d/Unloaded		mm/s	300/300		
forn	5.6	Max. Drawbar Pull Max. Gradeability	3min ı	ating ded 1.5km/h, 3min ra	nting	N %	6080 29		
Peri	5.8	,			iuiig	%			
	5.10	Service Brake		tion/Control			Mechanical, Disc		
	5.11	Parking Brake		tion/Control			Mechanical, Disc		
Н	5.12	Steering Drive Motor (AC)		tion/Control		1.3.67	Electric Power Steering		
	6.1			rating		kW	4.5		
	6.2	Pump Motor (AC)	5min r			kW	9.0		
ķ	6.2.1	PS Motor (DC)	oumin	rating		kW V	0.3		
Drive	6.4	Battery Voltage					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		
	8.1	Drive Motor Control					MOS-FET inverter		
ers	8.1.1	Pump Motor Control					MOS-FET inverter		
Others	8.1.2	PS Motor Control					MOS-FET chopper		
	8.2	Relief Pressure for Attachment				bar	167		
	8.2.1	Hydraulic Tank Capacity	1			Ltr	16		

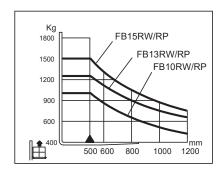
 $4.33\ and\ 4.34\ Values$ are not including a cliearance. See Aisle width section for detail

FB10R – 18R-15 10-5

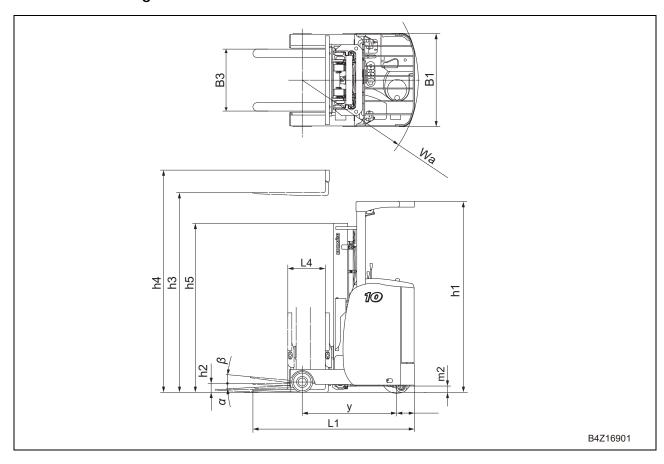
2. Allowable Load Table







3. Dimension Diagram



10-6 FB10R – 18R-15