

SHOP MANUAL

ELECTRIC LIFT TRUCKS CHASSIS

FB10, 15SH

FB20, 25SH

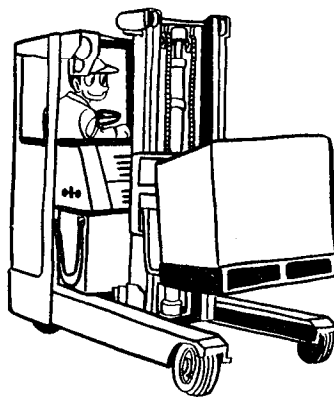
SERIAL NUMBER FB10,15SH : 10001
FB20,25SH : 10001 and up

 **KOMATSU FORKLIFT CO., LTD.**

SHOP MANUAL

FB10,15SH FB20,25SH

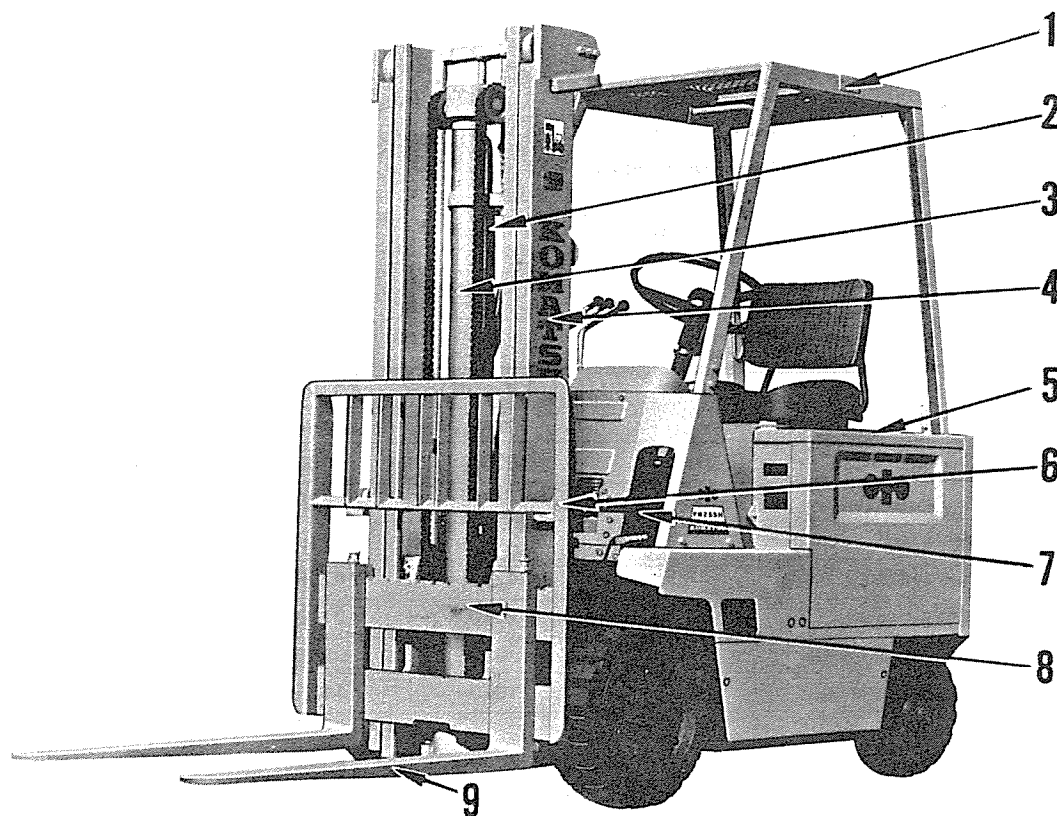
01 GENERAL



CONTENTS

GENERAL	01-01 ~ 01-08
STRUCTURE AND FUNCTION	02-01 ~ 02-07
GENERAL DISASSEMBLY AND ASSEMBLY	03-01 ~ 03-64
POWER TRAIN	04-01 ~ 04-18
BRAKE	08-01 ~ 08-11
STEERING SYSTEM	10-01 ~ 10-30
MAST	12-01 ~ 12-10
MAINTENANCE STANDARD	15-01 ~ 15-25
MACHINE CHECK LIST	17-01 ~ 17-05

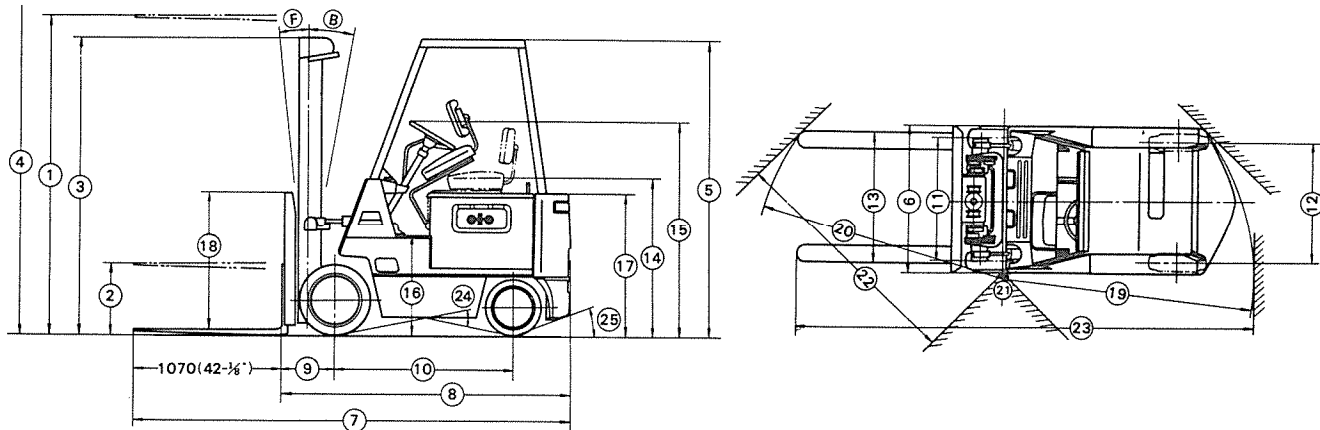
GENERAL VIEW



- 1. Overhead guard
- 2. Lift chain
- 3. Lift cylinder
- 4. Mast
- 5. Battery cover.

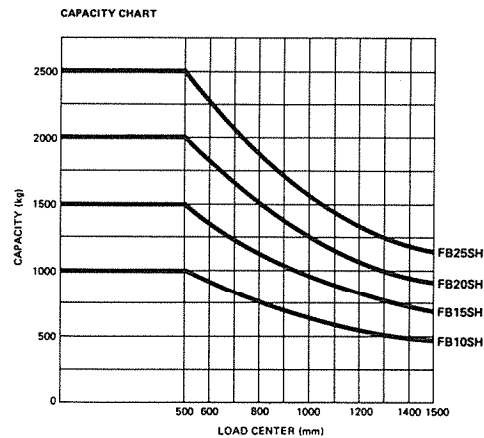
- 6. Back rest
- 7. Tilt cylinder
- 8. Finger bar
- 9. Fork

SPECIFICATIONS



DIMENSIONS

		FB10SH	FB15SH	FB20SH	FB25SH
		mm	mm	mm	mm
1	Lifting height: STD	3300	3300	3300	3300
2	Free lift	430	435	410	410
3	Height of mast lowered	2110	2110	2110	2110
4	Height of mast extended	4255	4255	4350	4350
5	Height of overhead guard	2110	2110	2110	2110
6	Overall width with STD tread	965	965	1030	1030
	Overall width with wide treat	1070	1125	1175	1175
7	Overall length				
	With STD forks	2860	2960	3030	3085
8	Without forks	1790	1890	1960	2015
9	Carriage face from drive axle	335	340	360	360
10	Wheelbase	1150	1150	1250	1250
11	Front tread				
	STD	840	815	850	850
	Wide	945	970	995	995
12	Rear tread	770	770	840	840
13	Fork spread				
	Max.	880	880	930	930
	Min.	200	200	240	240
14	Effective seat height	1100	1100	1110	1110
15	Height to handwheel	1555	1555	1570	1570
16	Height to floor plate	695	695	705	705
17	Height to counterweight	1030	1030	1040	1040
18	Backrest extension height	915	915	1000	1000
19	Turning radius (Rear)	1565	1650	1750	1780
20	Turning radius (Front)	1670	1675	1720	1720
21	Inside turning radius	20	20	20	20
22	Min. intersecting aisle	1580	1625	1690	1705
23	Right-angle stacking aisle	2970	3060	3180	3210
24	Grade clearance				
	Center of truck	22°	22°	20°	20°
25	Rear overhang	23°	23°	28°	25°



CAPACITY DATA

MODEL	CAPACITY and LOAD CENTER	MOMENT RATING
	kg at 500mm	kg-m
FB10SH	1000	835
FB15SH	1500	1260
FB20SH	2000	1720
FB25SH	2500	2150

MOTOR OUTPUT

	FB10SH		FB15SH		FB20SH		FB25SH	
	36 V	48 V	36 V	48 V	36 V	48 V	36 V	48 V
DRIVE	4.5 KW	6.5 KW	4.5 KW	6.5 KW	5.6 KW	8 KW	5.6 KW	8 KW
PUMP	7 KW	10 KW	7 KW	10 KW	10 KW	14 KW	10 KW	14 KW
P.S. PUMP	(0.8 KW)	(1 KW)	0.8 KW	1 KW	0.8 KW	1 KW	0.8 KW	1 KW

FORKS

	FB10SH	FB15SH	FB20SH	FB25SH
	mm	mm	mm	mm
LENGTH	1070	1070	1070	1070
WIDTH	100	100	120	120
THICKNESS	35	40	40	40

TILT ANGLE

	FB10SH	FB15SH	FB20SH	FB25SH
FORWARD	5°	5°	6°	6°
BACKWARD	10° (6°)	10° (6°)	10° (6°)	10° (6°)

UNDERCLEARANCE

	FB10SH	FB15SH	FB20SH	FB25SH
	mm	mm	mm	mm
MAST	95	95	90	90
DRIVE AXLE	95	95	100	100
STEER AXLE	95	95	95	95
COUNTER WEIGHT	140	140	140	140
CENTER OF TRUCK	100	100	125	125

TIRE SIZE (CUSHION)

	FB10SH	FB15SH	FB20SH	FB25SH
DRIVE	18 x 5 x 12-1/8	18 x 6 x 12-1/8	21 x 7 x 15	21 x 7 x 15
STEER	14 x 4-1/2 x 8	14 x 4-1/2 x 8	16-1/4 x 5 x 11-1/4	16-1/4 x 5 x 11-1/4

PERFORMANCE

		FB10SH	FB15SH	FB20SH	FB25SH
TRAVEL SPEED		km/h	km/h	km/h	km/h
Unladen	36V	11.5	10.5	11.5	11.0
	48V	15.0	14.0	15.5	15.0
Laden	36V	10.5	9.5	10.0	9.5
	48V	14.0	12.5	13.0	12.5
LIFTING SPEED		mm/s	mm/s	mm/s	mm/s
Unladen	36V	500	490	430	430
	48V	610	600	550	550
Laden	36V	330	300	290	270
	48V	440	400	380	350
LOWERING SPEED		mm/s	mm/s	mm/s	mm/s
Unladen		450	450	400	400
Laden		450	450	550	550
GRADEABILITY					
Unladen	36V	25%	19%	22%	16%
	48V	25%	19%	22%	16%
Laden	36V	23%	16%	15%	15%
	48V	26%	18%	15%	15%

BATTERY DATA

Battery compartment dimensions	FB10SH	FB15SH	FB20SH	FB25SH
	mm	mm	mm	mm
Width	810 ~ 935	810 ~ 935	900 ~ 990	900 ~ 990
Length	480 ~ 600	560 ~ 680	585 ~ 710	585 ~ 710
Height	585	585	585	585
Max. battery capacity	Ah/6-hour rate	Ah/6-hour rate	Ah/6-hour rate	Ah/6-hour rate
36V	595	680	935	935
48V	425	595	680	680
Battery weight of max. capacity	kg	kg	kg	kg
36V	815	1070	1225	1225
48V	815	1070	1225	1225

COOLANT AND LUBRICANT CAPACITY

	FB10SH		FB15SH		FB20SH		FB25SH	
	ltr.	U.S. Gal	ltr.	U.S. Gal	ltr.	U.S. Gal	ltr.	U.S. Gal
Transfer and differential	2.5	0.7	2.5	0.7	4.8	1.2	4.8	1.2
Hydraulic oil	30	7.9	30	7.9	32	8.5	32	8.5
Brake system	0.6	0.2	0.6	0.2	0.6	0.2	0.6	0.2

Specifications are subject to change without notice or obligation.

WEIGHT DATA

		FB10SH	FB15SH	FB20SH	FB25SH
		kg	kg	kg	kg
Unladen:	Drive axle	1280	1280	1680	1545
	Steer axle	1230	1890	2205	2710
	Total	2510	3170	3885	4255
Laden:	Drive axle	3005	3875	5055	5765
	Steer axle	505	795	830	990
	Total	3510	4670	5885	6755

Above weights are based on truck equipped with 3300mm standard mast, carriage, 1070mm forks and a max. capacity battery.

WEIGHT TABLE

Unit: kg

Unit	FB10SH	FB15SH	FB20SH	FB25SH	Remedy
Drive motor	100		120		
Power train assembly	340	350	470		
Transfer case	45		50		
Drive wheel (each)	35	40	60		
Steering wheel (each)	20		30		
Mast assembly	390		530		Except fork.
Lift cylinder	45		60		
Finger bar	85		90		
Fork (each)	40	45	50		
Tilt cylinder (each)	5		10		
Pump motor	50		65		
Hydraulic pump	20		25		Tumdem pump
Hydraulic control valve	20		20		3-control valve
Steering gear box	20	15	15		Include steering wheel
Power steering motor	25		25		
Steering axle	50		80		Except steering wheel
Solenoid valve	4		4		
Counterweight	80	340	530	930	
Frame	305	325	405		
Overhead guard	40		45		

TIGHTENING TORQUE OF MAIN NUTS AND BOLTS

() : FB20SH, FB25SH

No.	Equipment	Location	Part No.	Tightening torque (kgm)
1	Drive motor	Frame mounting bolt	01050-81445	14 ~ 20
			(526-46-11210)	14 ~ 20
2	Pump motor	Frame mounting bolt	01010-51030	5.5 ~ 7.5
3	Pump motor	Bracket mounting bolt	01010-51025	5.5 ~ 7.5
4	Main controler	Frame mounting bolt	01010-51035	5.5 ~ 7.5
5	Transfer	Motor mounting bolt	01010-51235	9 ~ 12.5
6	Transfer	Drive axle mounting bolt	01010-51030	5.5 ~ 7.5
			(01010-51235)	9 ~ 12.5
7	Transfer	Cap mounting bolt	34A-21-12220	10 ~ 12.5
			(34B-21-12270)	14 ~ 20
8	Transfer	Differential case mounting bolt	01010-50865	2.5 ~ 3.5
			(01010-51070)	5.5 ~ 7.5
9	Transfer	Differential case and bevel	34A-21-11240	10 ~ 12.5
		Gear mounting bolt	(34B-21-12180)	14 ~ 20
10	Drive axle	Hub mounting nut	01582-11411	10 ~ 14
			(01582-11815)	38 ~ 43.5
11	Drive axle	Hub nut	300-22-31241	16 ~ 20
			(34B-21-14151)	30 ~ 50
12	Drive axle	Torque shaft mounting bolt	01050-51030	5.5 ~ 7.5
		Torque shaft mounting nut	01582-11008	5.5 ~ 7.5
			(01050-51235)	9 ~ 12.5
			(01582-11210)	9 ~ 12.5
13	Steering axle	Hub nut	358-27-11230	8.5 ~ 12.5
			(300-22-31241)	10 ~ 12
14	Steering axle	Tie rod end nut	01593-11411	9 ~ 12.5
			(01593-11813)	9 ~ 12.5