

SHOP MANUAL

ELECTRIC LIFT TRUCK

FB20SH- 4

FB25SH- 4

FB30SH- 4

MACHINE MODEL

FB20SH/25SH/30SH

FB20SH/25SH/30SH

SERIAL No.

30001A and up (USA type)

30001 and up (STD type)

USA type ; UL specification

STD type ; General export specification

FOREWORD

Proper operation, maintenance, troubleshooting and repairs are necessary to preserve the performance of vehicles over a long period of time and to ensure that fault and breakdowns do not occur.

The object of this Shop Manual is to provide the information necessary especially in connection with the performance of inspections and repairs mainly in the maintenance areas.

For this purpose, it includes sections on "General and Specifications", "Removal and Installation of Units", "Disassembly and Assembly of Components", "Electrical System" and "Testing and Adjusting".

Maintenance data necessary for the performance of maintenance on the machines is also included, but reference should be made to the Operation and Maintenance Manual for further details.

Reference should also be made to this manual in connection with correct operation of the machine.

The content of the items mentioned above is as follows.

General and Specifications

This chapter indicates the Overall dimensions and specifications, Weight of main components, General locations and Instruments and controls.

Removal and Installation of Units

This chapter gives the details of removal of each unit and their installation, as well as their adjusting method.

Disassembly and Assembly of Components

This chapter provides explanations on structure of each equipment and its disassembly procedure as well as contents of inspection and assembly procedure.

Electrical System

Explanation is provided in this chapter of the electrical parts used inside the machine.

Note: For the description of GE controller, refer to the separate Shop Manual **FB20SH/30SH · 4EG-BE1**.

Testing and Adjusting

Inspection items and adjustment value of each equipment are described in this chapter.

SECTION INDEX

00. FOREWORD

01. GENERAL AND SPECIFICATIONS

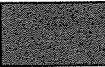
10. REMOVAL AND INSTALLATION OF UNITS

20. DISASSEMBLY AND ASSEMBLY OF COMPONENTS

30. ELECTRICAL SYSTEM

40. TESTING AND ADJUSTING

50. CONVERSION TABLE

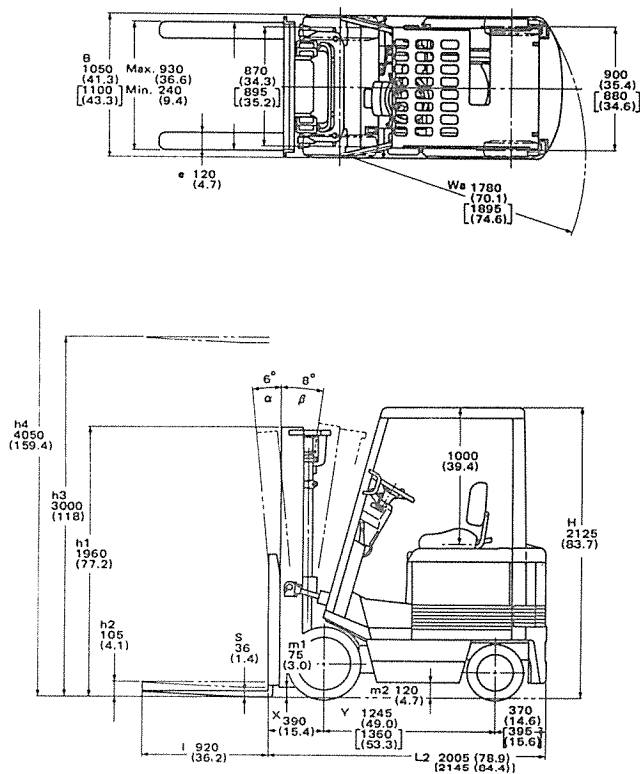


01. GENERAL AND SPECIFICATIONS

Overall dimensions and specifications	01- 2
Weight of main components	01-10
Standard tightening torque for bolts	01-11
Standard tightening torque for pipe joints	01-12
Periodical replacement of safety-assuring parts	01-13
General locations	01-14
Instruments and controls	01-14

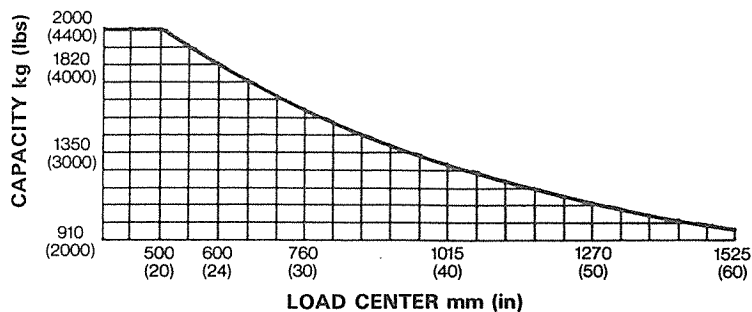
OVERALL DIMENSIONS AND SPECIFICATIONS

FB20SH-4 (STD type)



mm (in), [] : Large capacity battery model

LOAD CAPACITY CHART



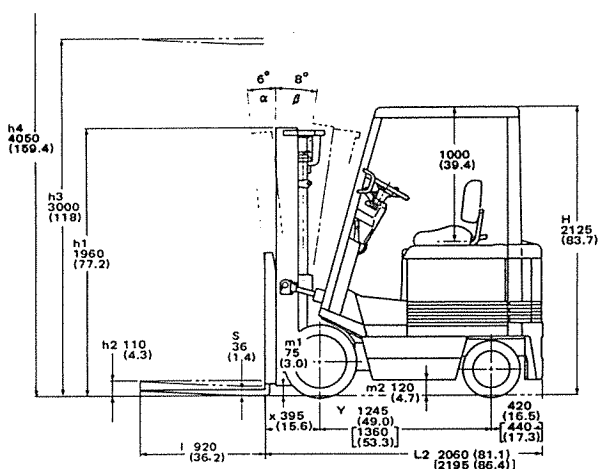
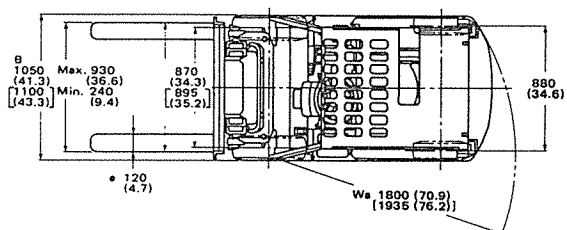
GENERAL AND SPECIFICATIONS

OVERALL DIMENSIONS AND SPECIFICATIONS

* Large capacity battery model

Characteristics	1	Model	Manufacturer's designation			FB20SH-4		* FB20SH-4			
	2	Capacity	Capacity at 500 mm (20") Load Center			kg (lb)		2000 (4,400)			
	3		At 600 mm (24") Load Center			kg (lb)		1820 (4,000)			
	4	Power Type						Electric			
	5	Tire Type	Solid, Pneumatic					Solid			
	6	Operator Type	Driver Standing, Sitting					Sitting			
	7	Wheels (*=driven)	Number		Front/rear			2*/2			
Dimensions	8	Lift	h ₃	Max. Fork height		mm (in)		3000 (118)			
	9		h ₂	Free lift		mm (in)		105 (4.1)			
	10	Forks	s.e.l.	Thickness × Width × Length		mm (in)		36 × 120 × 920 (1.4 × 4.7 × 36.2)			
	11	Tilting Angle	α/β	Forward/Backward		degree		6/8			
	12	Overall Dimensions	H	Height, Overhead Guard		mm (in)		2125 (83.7)			
	13		L ₂	Length to face of forks		mm (in)		2005 (78.9)	2145 (84.4)		
	14		B	Width		mm (in)		1050 (41.3)	1100 (43.3)		
	15		h ₁	Height, Mast lowered		mm (in)		1960 (77.2)			
	16		h ₄	Height, Mast extended		mm (in)		4050 (159.4)			
	17	Turning Radius	Wa	Outside		mm (in)		1780 (70.1)	1895 (74.6)		
18	Load Distance	X	From center of front axle		mm (in)		390 (15.4)				
19	Right angle stacking aisle	Plus load length			mm (in)		2170 (85.4)	2285 (90.0)			
Performance	20	Speeds	Travel and Reverse	Loaded	km/h (mph)	12.0 (7.5)	15.5 (9.6)	11.5 (7.1)	15.0 (9.3)		
	21			Unloaded	km/h (mph)	13.5 (8.4)	16.5 (10.3)	13.0 (8.1)	16.0 (9.9)		
	22		Lifting	Loaded/Unloaded	mm/s (fpm)	330/540 (65/106)	410/650 (81/128)	330/540 (65/106)	410/650 (81/128)		
	23		Lowering	Loaded/Unloaded	mm/s (fpm)	450/500 (89/98)					
	24	Max. Drawbar Pull				N (lb)		* 9800 (2,200)			
25	Gradeability	Loaded/Unloaded			%		13/20	11/18			
Weights	26	Service Weight	Including Battery (See line 42)			kg (lb)		3840 (8,470)	4205 (9270)		
	27	Axle Loading	Loaded		front/rear	kg (lb)		5060/780 (11,200/1,720)	5050/1155 (11,130/2,550)		
28	Unloaded		front/rear	kg (lb)		1590/2250 (3,510/4,960)	1705/2500 (3,760/5,510)				
Chassis & Wheels	29	Tire Size	Front					21 × 7 × 15	21 × 8 × 15		
	30		Rear					16 × 5 × 10-1/2	16 × 6 × 10-1/2		
	31	Wheelbase	y				mm (in)		1245 (49.0)	1360 (53.5)	
	32	Tread	Center of tires		front/rear	mm (in)		870/900 (34.3/35.4)	895/880 (35.2/34.6)		
	33	Ground Clearance	m ₁	Lowest point		mm (in)		75 (3.0)			
	34		m ₂	Center of frame		mm (in)		120 (4.7)			
	35	Brakes	Service					Hydraulic			
	36		Parking					Mechanical			
	37	Steering	Type					Fully Hydrostatic Power Steering			
	Drive	38	Battery (optional)	Type					Lead-acid		
39		Voltage			V		36	48	36	48	
40		STD Capacity			Ah/5-hour rating		780	536	858	624	
41		Large Capacity			Ah/5-hour rating		1005	725	1080	845	
42		Weight, STD Battery with case			kg (lb)		1045 (2,300)	1360 (3,000)			
43		Electric Motors	Drive Motor, 1-hour rating			kW		7.3	9.7	7.3	9.7
44			Pump Motor, 5-minute rating			kW		9.1	12.1	9.1	12.1
45			Power Steering Motor, 1-hour rating			kW		0.45	0.45		
46			Drive Motor Control					SCR			
47			Hydraulic Motor Control					Contactor			
48	Hydraulic	Max. Pressure			bar (psi)		177 (2,560)				
49		Tank Capacity			ℓtr (U.S.gal)		30 (7.9)				

Performance may vary due to operating conditions. The performance shown represents nominal values under typical operating conditions. Most values shown in this publication are rounded. Therefore, direct conversion between metric and imperial may be slightly different from those shown. Specifications are subject to improvements and changes without notice.

FB25SH-4 (STD type)

mm (in), [] : Large capacity battery model

LOAD CAPACITY CHART

