

FOREWORD

This manual covers the service procedures of the TOYOTA BATTERY FORKLIFT **5FBE10-20** Series. Please use this manual for providing quick, correct servicing of the corresponding forklift models.

This manual deals with the above models as of September 1998. Please understand that disagreement can take place between the descriptions in the manual and actual vehicles due to change in design and specifications. Any change or modifications thereafter will be informed by Toyota Industrial Vehicles' Parts & Service News.

TOYOTA Material Handling Company
A Division of TOYOTA INDUSTRIES CORPORATION

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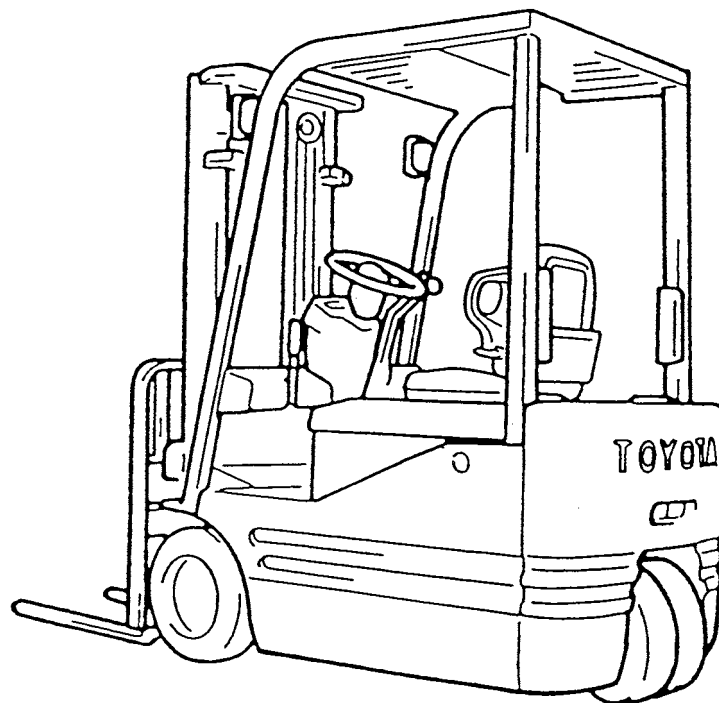
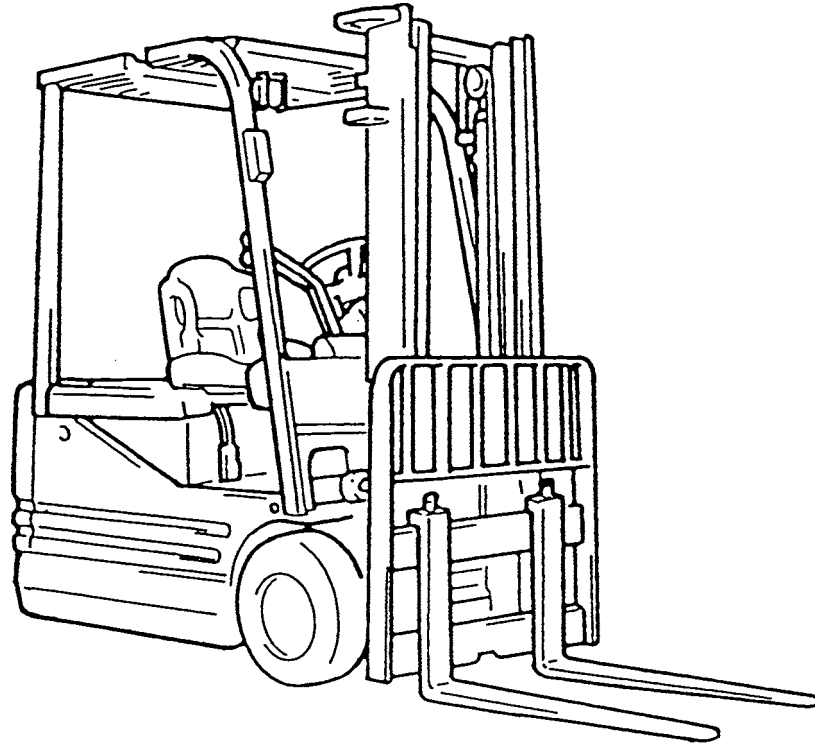
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GENERAL

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EXTERIOR VIEWS

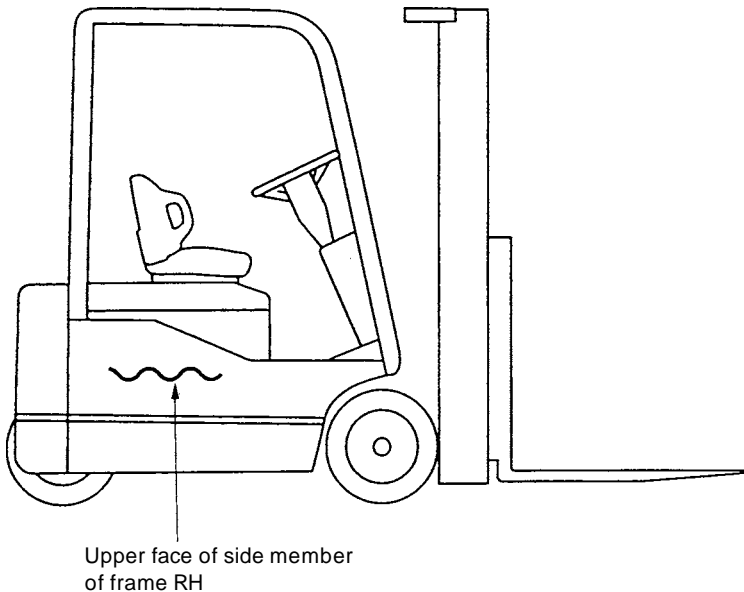


VEHICLE MODEL

Load capacity	Model	Battery capacity AH/5HR	Voltage V	Control circuit
1.0 ton	5FBE10	280	*36 or 48	MCS-III A
1.25 ton	5FBE13	↑	↑	↑
1.5 ton	5FBE15	390	↑	t
1.75 ton	5FBE18	↑	↑	t
1.815 ton	5FBE20	375	↑	t

*: 36 V is provided for UL specification.

FRAME NUMBER

Punching position	 <p>Upper face of side member of frame RH</p>	
	Vehicle model	Punching format
1 ton series	5FBE10	5FBE13-10011 5FBE13E10011 (EEC spec.) (1993.1 ~ 1993.9)
	5FBE13	5FBE13E10011 (EEC spec.) (1993.10 ~)
1.5 ton series	5FBE15	5FBE18-10011 5FBE18E10011 (EEC spec.) (1993.1 ~ 1993.9)
	5FBE18	5FBE18E10011 (EEC spec.) (1993.10 ~)
2.0 ton series	5FBE20	5FBE20-10011

HOW TO USE THIS MANUAL

EXPLANATION METHOD

1. Operation procedure

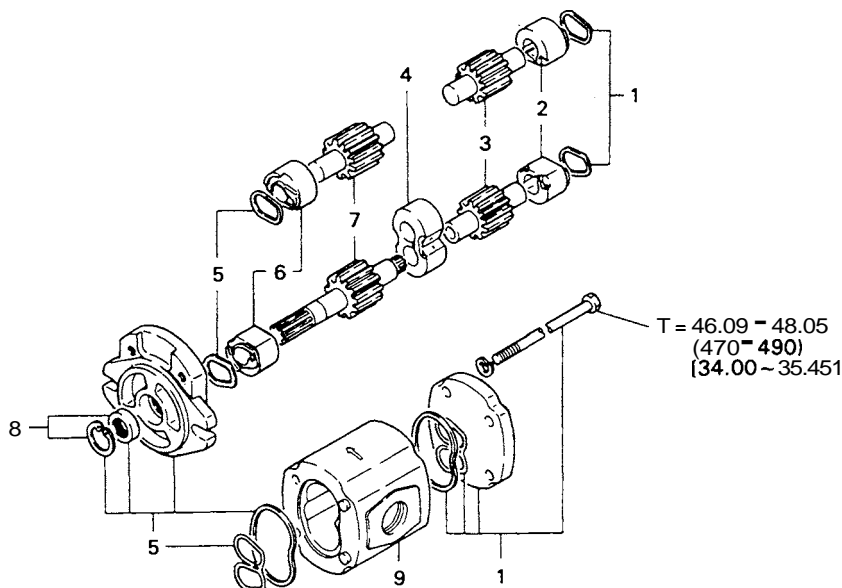
(1) The operation procedure is described in either pattern A or pattern B below.

Pattern A: Explanation of each operation step with a photo or illustration.

Pattern B: Explanation of operation procedure by indicating step numbers in one illustration, followed by explanation of cautions and notes summarized as point operations.

Example of description in pattern B

DISASSEMBLY-INSPECTION-REASSEMBLY Tightening torque unit T=N·m (kgf·cm)[ft·lbf]



Disassembly Procedure

- 1 Remove the cover. **[Point 1]**
- 2 Remove the bush **[Point 2]** ● Operation explained later
- 3 Remove the gear.

Point operations Explanation of key point for operation with an illustration

[Point 1]

Disassembly: Put a match mark when removing the pump cover.

[Point 2]

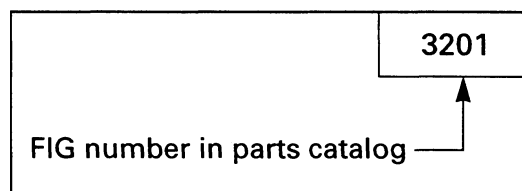
Inspection: Measure the bush inside diameter.

Bush inside diameter limit: 19.12 mm (0.7528 in)

2. How to read components figures

- (1) The components figure use the illustration in the parts catalog for the vehicle model. Please refer to the catalog for checking the part name.
The number at the right shoulder of each components figure indicates the Fig. number in the parts catalog.

(Example)



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3. Matters omitted in this manual

- (1) This manual omits description of the following jobs, but perform them in actual operation:
- ① Cleaning and washing of removed parts as required
 - ② visual inspection (Partially described)

TERMINOLOGY**Caution:**

Important matters of which negligence may cause accidents. Be sure to observe them.

Note:

Important items of which negligence may cause accidents or matters in operation procedure requiring special attention.

Standard: Values showing allowable range in inspection and adjustment.

Limit: Maximum or minimum allowable value in inspection or adjustment.

ABBREVIATIONS

Abbreviation (code)	Meaning	Abbreviation (code)	Meaning
ASSY	Assembly	RR	Rear
EHPS	Electrical hydraulic power steering	SAE	Society of Automotive Engineers (USA)
FR	Front	SST	Special service Tool
L/	Less	STD	Standard
LH	Left hand	T =	Tightening torque
OPT	Option	OOT	Number of teeth (OO)
O/S	Oversize	U/S	Undersize
PS	Power steering	W/	With
RH	Right hand		

LIST OF ABBREVIATIONS AND SYMBOLS

Symbol	Name	Symbol	Name	Symbol	Name
BATT	Battery	FR _Y	Flasher Relay	PB _{SN}	Snubber Print Board
B _Z	Buzzer	H	Horn	PL _W	Working Pilot Lamp
CA	Absorber Capacitor	IWP	Wheel Position Indicator	RA	Absorber Resistor
CAD/P	Drive/Pump Absorber Capacitor	L _{BU-L}	Back-up Lamp, LH	RAD/P	Drive/Pump Absorber Resistor
CH	Charger	L _{BU-R}	Back-up Lamp, RH	PCK1/2	Check Resistor No.1/2
CH _F	Forward Chime	L _{C-L}	Clearance Lamp, LH	SA	Surge Absorber
CH _R	Reverse Chime	L _{C-R}	Clearance Lamp, RH	SLL	Lequid Level Sensor
CSD/P	Drive/Pump Current Sensor	L _{F-L}	Flasher Lamp, LH	SN1	Sunbber No.1
CS _{PS}	Power Steering Current Sensor	L _{F-LR}	Flasher Lamp, LH (Rear)	SNC1/2	Snubber Capacitor 1/2
DAD/P	Drive/Pump Absorber Diode	L _{F-R}	Flasher Lamp, RH	SNR1/2	Snubber Resistor 1/2
D _{CH}	Charger Diode	L _{F-RR}	Flasher Lamp, RH (Rear)	SSP	Steering Pressure Sensor
DC-SDD	DC-DC Converter & Source Drive (Drive)	L _{H-L}	Head Lamp, LH	SS _L	Speed Sensor, LH
DC-SDP	DC-DC Converter & Source Drive (Pump)	L _{H-R}	Head Lamp, RH	SS _R	Speed Sensor, RH
DF1/2	FLY-WHEEL Diode, No.1/2	L _{R-F}	Rotaly Forward Lamp	STH	Thermo Sensor
DF3/4	FLY-WHEEL Diode No.3/4	L _{R-R}	Rotaly Reverse Lamp	SW _{AC}	Accel Switch
DISP	Display	LS _{ATT1/2}	Attachment Limit Switch No.1/2	SW _F	Flasher Switch
DM _{D/P}	Drive/Pump Motor	LS _B	Brake Limit Switch	SW _H	Horn Switch
DM _{PS}	Power Steering Motor	LS _D	Dead Man Limit Switch	SW _{KY}	Key Switch
DS _{BU}	Back-up Direction Switch	LS _{L1/2}	Lift Limit Switch No.1/2	SW _L	Light Switch
DS _F	Forward Direction Switch	LS _{ST}	Stop lamp limit Switch	SW _{PB}	Parking Brake Limit Switch
DS _{FO}	Forward Optional Direction Switch	L _{ST-L}	Stop Lamp, LH	SW _{SC}	Speed Control Switch
DS _R	Reverse Direction Switch	L _{ST-R}	Stop Lamp, RH	TF	Transformer
F1	Drive Fuse	LS _T	Tilt Limit Switch	THR	Thermal Relay
F2	Pump Fuse	L _{T-L}	Tail Lamp, LH	TM	Main Transistor
F3	Power Steering Fuse	L _{T-R}	Tail Lamp, RH	TMD	Main Drive Transistor
F4	Lamp Fuse	L _W	Working Lamp	TMP	Main Pump Transistor
F5	Control Circuit Fuse	MF _L	Forward Contactor, LH	TM _{PS}	Main Power Steering Transistor
F _{CH}	Charger Fuse	MF _R	Forward Contactor, RH	TU	Timer Unit
		MP	Pump Contactor	VRAD	Accel Drive Variable resistor
		M _{PS}	Power Steering Contactor	VRSP	Steering Position Variable resistor (Steering potentiometer)
		MR _L	Reverse Contactor, LH		
		MR _R	Reverse Contactor, RH		
		MS _{CH}	Charger Magnet Switch		
		PB _{CPU}	Computer Print Board		
		PB _{EHPs}	EHPs Print Board		

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