SHOP MANUAL

DX-7 AND DX-8 FORKLIFT TRUCKS

DX-7: FG50/60/70-7

DX-8: FD50/60/70/80-8

S/N 40001-45999

S/N 46001~

DX20





Read and observe all warnings on this unit before operating it.

DO NOT operate this equipment unless all factory installed guards and shields are properly secured in place.

ISSUED: MAY 2005



The information and specifications contained herein were accurate at the time of publication, but may change without notice as required for product improvements. Neither Komatsu Forklift USA, LLC nor its parent company nor any of its subsidiaries will be held responsible for damages due to misuse or inappropriate use of its products.

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INTRODUCTION

This Service Manual has been developed as an information resource to help the reader learn about, understand, repair and maintain the DX20 Series forklift trucks, and the various equipment, systems, inspections, sensors, diagnostic procedures and diagnostic equipment utilized to maintain, adjust and troubleshoot these systems. Although reference is made to maintenance procedures necessary to perform servicing of this vehicle, you should refer to the applicable *Operation and Maintenance Manual* for these lift trucks for more complete maintenance information.

Read this manual carefully, refer to it often and learn the repair, testing and adjustment procedures to the best of your ability. Please note that some illustrations are generic and may not look exactly like your unit in every detail.

Ensure that, when you are working on or around industrial trucks, **Safety is priority Number One**. Read, understand and obey all **WARNINGS** and **CAUTIONS**.

Follow the instructions and procedures presented in this manual when working on these lift trucks and their systems. Damage to the equipment, and possible injury to yourself or others, may result if these procedures are not adhered to carefully.

Keep this manual nearby and accessible for use when necessary. If this book becomes dirty, worn or illegible, contact Komatsu for a replacement. The procedures outlined in this manual will be updated periodically. Be sure that you have the latest revision in order to learn the newest information available. Revision dates will be clearly displayed on the lower left hand corner of the cover page.

This will aid in maintaining your equipment in excellent condition and in ensuring that these lift trucks will operate safely at maximum efficiency.

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FOREWORD

For a machine and its components to maintain their performance for a long time, it is necessary to carry out appropriate operation, preventive maintenance, troubleshooting, and service to prevent failures or problems before they occur.

Of these operations, this shop manual gives information mainly on operations carried out at a repair shop. These include an outline needed for service and maintenance operations, together with details of the structure and function, inspection and maintenance, installation and removal, disassembly and assembly, maintenance standards, troubleshooting, and periodic inspection and adjustment of components for the machine. The units given for tightening torques in this manual use the SI units as the standard, so a conversion table is given at the end of the section 10.

This shop manual has been prepared with the target of making materials that will help you to gain proper knowledge of the product, its structure and function, and proper methods for maintenance, to use proper judgement and remedies when there is a failure or problem with the machine, and to improve the quality of maintenance.

Always be sure that you fully understand the contents of this manual together with the Operation and Maintenance Manual, and make full use of it when handling the machine.

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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 $\widehat{\mathbf{A}}$ 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		
Â	Safety	Special safety precautions are needed to perform the work.		
*	Note	Special technical precautions are needed to perform the work.		
₹ kgm	Tightening torque	Fastening parts that require specified tightening force when assembling.		
kg	Weight	Weight of parts or systems.		
	Coat	Places to be coated with adhesives, etc. When assembling.		

10. GENERAL AND SPECIFICATIONS

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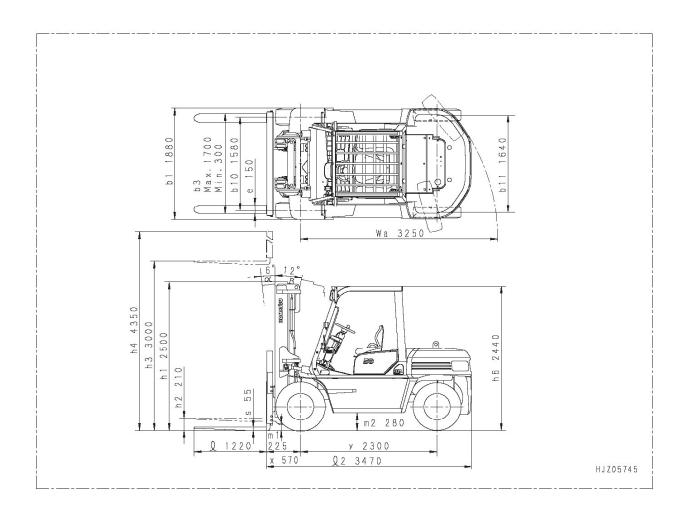
SPECIFICATIONS (FG50-7, FD50-8)

• SPECIFICATION TABLE

	Model		ufacturer's d	lesignation		FG50-7	FD50-8
တ္	Power type	Electric, diesel, gasoline, LPG, ca			ble	Gasoline	Diesel
Characteristics	Operation type	Pedestrian, driver standing, sitting, of				Sitting Sitting	
	Rated capacity	Q Rated capacity			kg	5,000	
	Load center	С			mm	6	00
ľő	Load distance	х	Front axle c	enter to fork face	mm	5	70
	Wheelbase	У			mm	2,300	
Weight	Service weight				kg	7,340 7,645	
	Axle loading		dod	Front	kg	11,105	11,225
			ded	Rear	kg	1,235	1,420
			padad	Front	kg	3,560	3,685
		Unloaded Rea		Rear	kg	3,780	3,960
V	Tyre type	Cus	hion, elastic cu	ıshion, pneumatic, ı	polyurethane	Pneumatic	
	Tyre size	Fro	nt				-18PR(I)
Tyre	Tyre size	Rea	ır			8.25-15-12PR(I)	
 ≥	Number of wheel	Froi	nt/rear (x=dri	ven)		2:	x/2
	Tread, front	b10			mm	1,580	
	Tread, rear	b11			mm	1,640	
	Tilting angle	a/ß			degree		12
	Mast height, lowered	h1			mm	2,500	
	Std. free lift	h2			mm	210	
	Std. lift height	h3			mm	3,000	
₌	Mast height, extended	h4			mm	4,350	
Je.	Height, overhead guard	h6	s		mm		440
ē.	Length, with Std. forks	£1			mm	4,690	
nse.	Length, to fork face	£2			mm	3,470	
Ĕ	Width, at tyre	b1			mm	1,880	
Basic measurement	Forks	s/e/l Thickness/width/length			mm	55x150x1,220	
Bas	Fork carriage class					Class IV, Type A	
Γ.	Width, fork carriage	b3			mm	1,700	
ı	Ground clearance		Under mast	70. j.	mm	225	
1.			At center of		mm	280	
1	Right angle stacking aisle	Ast With 1,000 x 1,200 pallet, lateral			mm	3,820	
	Turning radius	Wa			mm	3,250	
	Travel speed (FWD)		ded,1st/2nd/		km/h	11.0/28.0	11.0/30.0
			paded,1st/2n	100.90 300.000000	km/h	12.0/31.0	12.0/32.0
ခွ	Lifting speed	Loaded/unloaded			mm/s	420/430	530/560
mance	Lowering speed	Loaded/unloaded			mm/s		/580
erforr	Max. drawbar pull	Loaded at 1.5 km/h			kN{kgf}	55{5,610}	49{5,000}
Per	Max. gradeability	Loaded at 1.5 km/h Operation/control			%	52	43
	Service brake Parking brake	• •				Foot/hydraulic	
	Steering Steering	Operation/control				Hand/mechanical Hydraulic power steering	
\vdash	Battery	Type Voltage/capacity at 5-hour rating			V/Ah	12/48	24/56
Engine	Make/model	voltage/capacity at 5-110th fathing			V/AII	NISSAN/TB42	KOMATSU/S6D102E
	Rated output (SAE gross)				kW(HP)	66(88)	77(103)
	Rated RPM				rpm	2,300	2,250
	Max. torque (SAE gross)				Nm{kgf•m}/rpm	275{28}/1,900	392{40}1,600
 	No. of cylinder/displacement				No. of cyl./£{cc}	6/4.169{4,169}	6/5.880{5,880}
	Fuel tank capacity			l l	140		
\vdash	Relief pressure for attachment						
δ.			MPa{kgf/cm ² }	17.5{178}			
Others	Tank capacity			Ł	70		
Ö.	Clutch			Torque converter TORQFLOW			
	Transmission					IURG	(I LOVV

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OUTSIDE VIEW DRAWINGS



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SPECIFICATIONS (FG60-7, FD60-8)

• SPECIFICATION TABLE

Per		Model	Manufacturer's designation				FG60-7	FD60-8
Wheelbase y	SS	Power type				ble	5 FEOGRAFIES (C)	92202 2000002 2000
Wheelbase y	racteristic	5.12					500 CP 10 CP	
Wheelbase y			10/20/27					
Wheelbase y				F F			200	
Wheelbase y	اچ ا	Load distance	х			mm		
Service weight								
Axie loading							A.13	
Axie loading	Weight	<u> </u>			Front			
Tyre type				ded				
Tyre type		Axle loading			1,000,000,000,000		W. V. 1900 W.	AS *ASSOCIONA
Tyre type				paded	Rear		970040 • 077000 · 0010	
Tyre size		Tyre type	Cus	nion, elastic cu	shion, pneumatic,			
Number of wheel Front/rear (x=driven) 4x/2								
Number of wheel Front/rear (x=driven)	ø	Tyre size	Rea	r				
Tread, front Trea	Σ	Number of wheel		nt/rear (x=dri	ven)			
Tilting angle A/B		Tread, front		,		mm		
Tilting angle A/B		Tread, rear	b11			mm	20% (0.500)	
Mast height, lowered h1 mm 2,500			a/ß			degree		
Std. lift height h3 mm 3,000 mm 4,350 mm 4,350 mm 2,440 mm 2,440 mm 4,695 mm 4,695 mm 3,475 mm		Mast height, lowered	h1				2,	500
Mast height, extended h4 mm		Std. free lift	h2			mm	2	15
Height, overhead guard h6 mm		Std. lift height	h3			mm		
Width, fork carriage 53		Mast height, extended	h4			mm		
Width, fork carriage 53	ent	Height, overhead guard	h6			mm		
Width, fork carriage 53	em	Length, with Std. forks	£1			mm		
Width, fork carriage 53	sur	Length, to fork face	ℓ2			mm		
Width, fork carriage 53	ea	Width, at tyre	b1			mm	1,960	
Width, fork carriage 53	Cn	Forks	. 400-0715			mm	60x150x1,220	
Width, fork carriage 53	as	Fork carriage class					Class IV, Type A	
Right angle stacking aisle Ast With 1,000 x 1,200 pallet, lateral mm 5,225 mm 3,250 mm 4,20/430 500/560 mm 5,225 mm 4,20/430 mm 3,250 mm 4,20/430 500/560 mm 4,20/430 mm 4	Ш.	Width, fork carriage	b3			mm	1,700	
Right angle stacking aisle		0	m1 Under mast			mm	225	
Turning radius Wa		Ground clearance		At center of	wheelbase	mm		
Travel speed (FWD)		Right angle stacking aisle				mm	5,225	
Travel speed (FWD)		Turning radius	Wa			mm	3,250	
Lifting speed		Travel speed (EWD)	Loaded,1st/2nd/3rd			km/h	11.0/28.0	11.0/30.0
Lowering speed Loaded/unloaded mm/s 550/580 Max. drawbar pull Loaded at 1.5 km/h kN{kgf} 54{5,510} 46{4,690} Max. gradeability Loaded at 1.5 km/h % 44 35 Service brake Operation/control Hand/mechanical Foot/hydraulic Parking brake Operation/control Hand/mechanical Steering Type Hydraulic power steering Hydraulic power steering Hydraulic power steering Make/model NISSAN/TB42 KOMATSU/S6D102E Rated output (SAE gross) kW(HP) 66(88) 77(103) Rated RPM Parking brake Parking brake Parking brake Parking brake Parking brake Parking brake Operation/control Hand/mechanical Hand/mechanical Parking brake		rraver speed (FVVD)		oaded,1st/2n	d/3rd	km/h	12.0/31.0	12.0/32.0
Max. gradeability	e l	= 2	Loa	Loaded/unloaded		mm/s	420/430	500/560
Max. gradeability	and	Lowering speed	Loaded/unloaded			mm/s		/580
Service brake Operation/control Foot/hydraulic	rın					kN{kgf}	54{5,510}	46{4,690}
Service brake Operation/control Foot/hydraulic	erfo		Loaded at 1.5 km/h			%	W 31	nousette.
Steering Type Hydraulic power steering	۵		D 07.0				(5)	
Battery Voltage/capacity at 5-hour rating V/Ah 12/48 24/56 Make/model Rated output (SAE gross) kW(HP) 66(88) 77(103) Rated RPM rpm 2,300 2,250 Max. torque (SAE gross) Nm{kgf-m}/rpm 275{28}/1,900 392{40}/1,600 No. of cylinder/displacement No. of cyl./g(cc) 6/4.169{4,169} 6/5.880{5,880} Fuel tank capacity & 140 Relief pressure for attachment MPa{kgf/cm²} 17.5{178} Tank capacity & 70 Clutch Torque converter	١.		- 100 to				The second control of the control of	
Make/model NISSAN/TB42 KOMATSU/S6D102E Rated output (SAE gross) kW(HP) 66(88) 77(103) Rated RPM rpm 2,300 2,250 Max. torque (SAE gross) Nm{kgf-m}/rpm 275{28}/1,900 392{40}/1,600 No. of cylinder/displacement No. of cyl./¿cc} 6/4.169{4,169} 6/5.880{5,880} Fuel tank capacity £ 140 Relief pressure for attachment MPa{kgf/cm²} 17.5{178} Tank capacity £ 70 Clutch Torque converter								
Rated output (SAE gross) kW(HP) 66(88) 77(103) Rated RPM rpm 2,300 2,250 Max. torque (SAE gross) Nm{kgf-m}/rpm 275{28}/1,900 392{40}/1,600 No. of cylinder/displacement No. of cyl./¿cc} 6/4.169{4,169} 6/5.880{5,880} Fuel tank capacity & 140 Relief pressure for attachment MPa{kgf/cm²} 17.5{178} Tank capacity & 70 Clutch Torque converter		1.70	Voltage/capacity at 5-hour rating			V/Ah		
Rated RPM								
No. of cylinder/displacement No. of cyl./ε(cc) 6/4.169(4,169) 6/5.880(5,880)	e l							
No. of cylinder/displacement No. of cyl./ε(cc) 6/4.169(4,169) 6/5.880(5,880)	jg							
Fuel tank capacity £ 140 Relief pressure for attachment MPa{kgf/cm²} 17.5{178} Tank capacity £ 70 Clutch Torque converter	Ш	Discourance to the Control of the Co			Nm{kgf•m}/rpm			
Relief pressure for attachment MPa{kgf/cm²} 17.5{178} Tank capacity 2 70 Clutch Torque converter		F	ent		No. of cyl./£{cc}	<u>6 i i k</u>	12 22 23 24 25	
Tank capacity Clutch Torque converter					L			
Tank capacity left Tank capacity left Torque converter left left	,s	Relief pressure for attachment				MPa{kgf/cm ² }		
Ö Clutch Torque converter	Jers	La contraction of the contractio	capacity		l.			
	<u></u>							
Transmission TORQFLOW		Transmission			TORG	FLOW		

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