NISSAN
FORKLIFT

SERVICE MANUAL & TECHNICAL BULLETIN

MODEL D01/D02 SERIES

INTRODUCTION

This service manual has been prepared to provide necessary information concerning the maintenance and repair procedures for the NISSAN FORKLIFT D01 and D02 series.

Any changes effected in the series after publication of this service manual will be announced in a technical bulletin. It is, therefore, recommended that each relevant technical bulletin be inserted in front of each section and be used together with the service manual as a reference.

If a new model requires different service method or has undergone a major change, revised sections will be issued to replace the applicable sections. Each revised section will include the description of how to service the parts for the former specifications. The publication of a revised section will be announced in the technical bulletin.

This service manual consists of nineteen sections as shown in the following table, which gives the updated symbols. When a revised service manual is issued, this "INTRODUCTION" sheet should be replaced with a revised one.

Section	Symbol
GENERAL INFORMATION	(GI)
MAINTENANCE	(MA)
ENGINE TUNE-UP (H20-II, H25, TD27 ENGINE)	(ET)
ENGINE MECHANICAL (H20-II, H25, TD27 ENGINE)	(EM)
ENGINE LUBRICATION & COOLING SYSTEMS (H20-II, H25, TD27 ENGINE)	(LC)
ENGINE FUEL (H20-II, H25, TD27 ENGINE)	(EF)
ENGINE ELECTRICAL (H20-II, H25, TD27 ENGINE)	(EE)
ENGINE REMOVAL	(ER)
AUTOMATIC TRANSMISSION	(AT)
DIFFERENTIAL CARRIER	(DF)
FRONT AXLE	(FA)
REAR AXLE	(RA)
BRAKE SYSTEM	(BR)
STEERING SYSTEM	(ST)
HYDRAULIC SYSTEM	(HD)
LOADING MECHANISM	(LM)
ENGINE CONTROL SYSTEM	(EC)
BODY & FRAME	(BF)
BODY ELECTRICAL	(BE)

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GENERAL INFORMATION

SECTION **GI**

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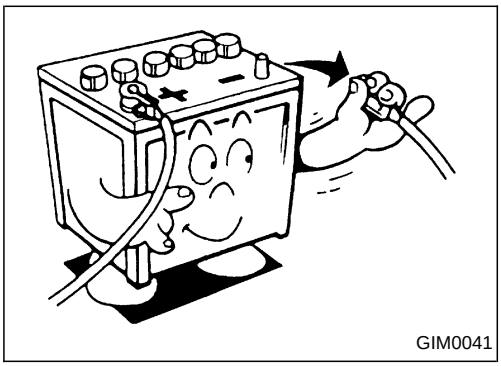
The following precautions should be observed to ensure safe and proper service operations. These precautions are not described in each individual section.

1. Only qualified and authorized personnel should be permitted to maintain, repair, adjust and inspect the lift truck.
2. Do not operate the engine for an extended period of time without proper exhaust ventilation.
   Keep the work area well ventilated and free of any inflammable materials. Special care should be taken when handling any inflammable or poisonous materials, such as gasoline, refrigerant gas, etc. When working in a pit or other enclosed area, be sure to properly ventilate the area before working with hazardous materials.
   Do not smoke while working on the lift truck.
3. Keep the work area and tools clean.
4. Before starting repairs or examining the lift truck, remove rings and jewelry to prevent an accidental short circuit.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5. Before starting repairs which do not require battery power, always turn off the ignition switch, then disconnect the ground cable from the battery to prevent accidental short circuit.
6. To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe and muffler. Do not remove the radiator cap when the engine is hot.
7. Be extremely careful when jacking up and supporting the lift truck for any reason.

- Before jacking up the lift truck, apply chocks to the wheels to prevent the lift truck from moving.
- Place the lift truck on level concrete.
- Do not jack up the lift truck if it is on gravel, blacktop or dirt.
- Ensure that the wooden blocks used to support the lift truck are strong and stable one-piece units. Never pile one unit on top of the other.
- Never get under the lift truck while it is supported only by the wooden blocks.
- When removing engine and counterweight, the lift truck should not be put on the wooden blocks or stands. Only the wheels should be blocked.

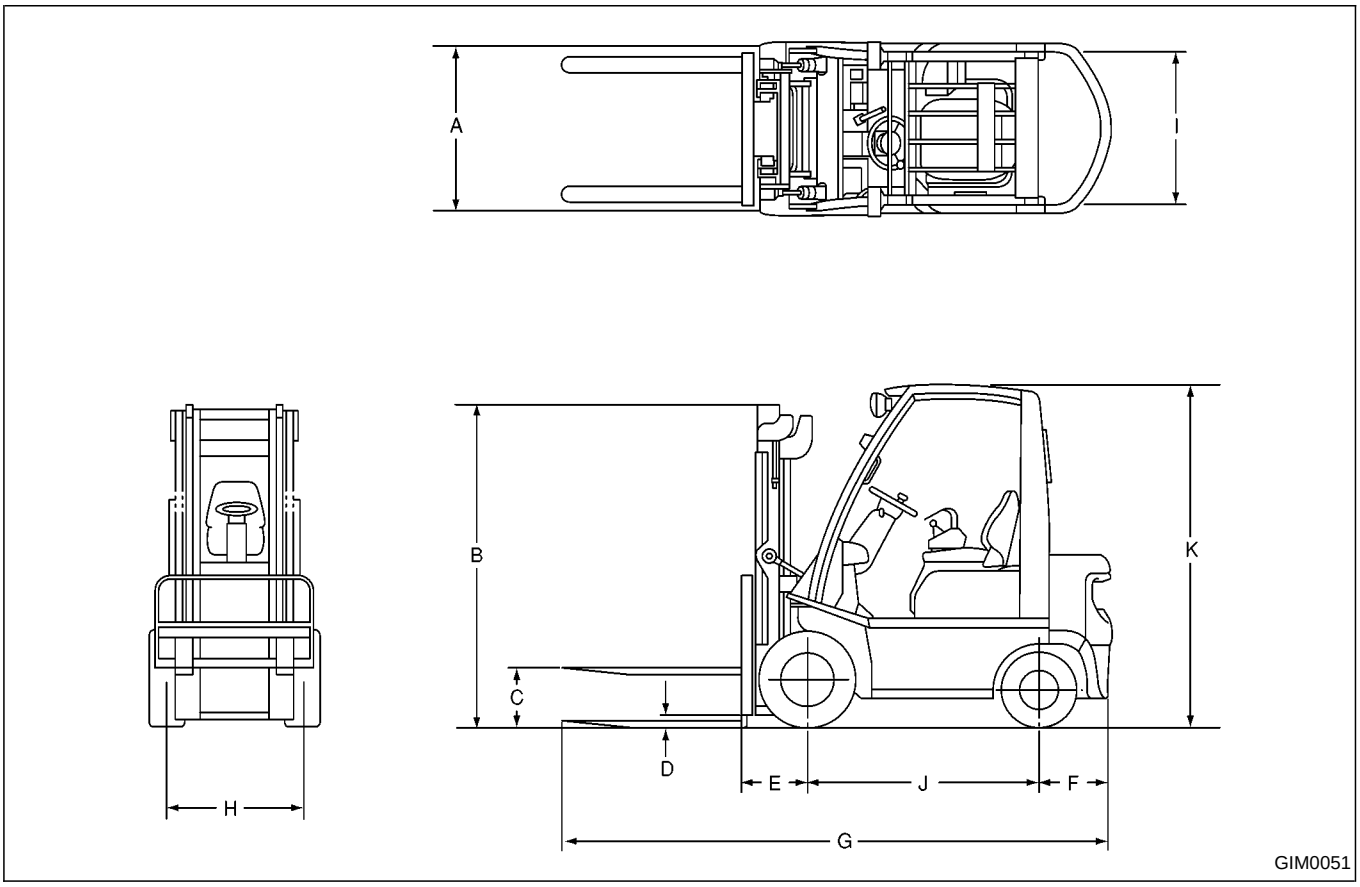
8. Clean all disassembled parts in the designated liquid or solvent prior to inspection or assembly.
9. Replace oil seals, gaskets, packings, O-rings, locking washers, cotter pins, self-locking nuts, etc. as instructed and discard used ones.
10. Tapered roller bearings and needle bearings should be replaced as a set of inner and outer races.

11. Arrange the disassembled parts in accordance with their assembled locations and sequence.
12. After disconnecting vacuum hose or air hose, attach a tag which indicates the proper connection to prevent incorrect connection.
13. Use only the lubricants specified in the applicable section or those indicated under “Recommended Lubricants”.
14. Use approved bonding agents, sealants or their equivalents when required.
15. The use of the proper tools and recommended essential tools should be used where specified for proper, safe and efficient service repairs.
16. When effecting repairs on the fuel, oil, water, intake or exhaust systems, make certain to check all affected lines for leaks.
17. Dispose of drained oil or the solvent used for cleaning parts in an appropriate manner.
18. Before starting the engine with the top panel open, first connect bypass connectors of the engine stop switch circuit.
19. When disconnecting pressurized pipes or hoses, release the pressure from the line before removing.
    With joystick system:
    - For tilt piping, first place the fork horizontal (tipped slightly forward) and turn the ignition switch off. Next, loosen the piping and let set while the remaining pressure escapes.
    - For lift piping, place the fork at the lowest position, turn the ignition switch off, loosen the shut-off valve and let the remaining pressure escape.
    - For attachment piping (3rd and 4th)
      - Union connector
        Place the attachment in neutral, turn the ignition switch off, loosen the piping, and let set while the remaining pressure escapes.
      - Coupling
        Installing and removing the cup may be difficult if the remaining pressure inside the piping is high. If this is the case, turn the ignition switch ON and while idling tip the lever (3rd and 4th) backwards or forwards, and one of the cups will come off. Then tip the lever in the other direction and remove the other cup.

    With mechanical system:
    To lift piping, turn the ignition switch off, and operate the lift lever several times downward.

MODEL D01, D02 SERIES

Pneumatic tire models



Unit: mm (in)

	PD01A15(P)U FD01A15U	PD01A18(P)U FD01A18U	UD02A20(P)U FD02A20U	UD02A25(P)U FD02A25U	UGD02A30(P)U FGD02A30U
A. Overall width	1,080 (42.5)		1,157 (45.6)		1,230 (48.4)
B. Overall height	1,995 (78.5)				2,025 (79.7)
C. Free height	155 (6.1)		150 (5.9)		
D. Min. ground clearance	115 (4.5)				145 (5.7)
E. Front overhang	400 (15.7)	405 (15.9)	455 (17.9)		485 (19.1)
F. Rear overhang	445 (17.5)	480 (18.9)	425 (16.7)	450 (17.7)	525 (20.7)
G. Overall length	3,360 (132.3)	3,400 (133.9)	3,630 (142.9)	3,705 (145.9)	3,870 (152.4)
H. Front tread	890 (35.0)		965 (38.0)		1,005 (39.6)
I. Rear tread	900 (35.4)		970 (38.2)		975 (38.4)
J. Wheelbase	1,415 (55.7)		1,650 (65.0)		1,760 (69.3)
K. Overhead guard height	2,115 (83.3)		2,130 (83.9)		2,155 (84.8)

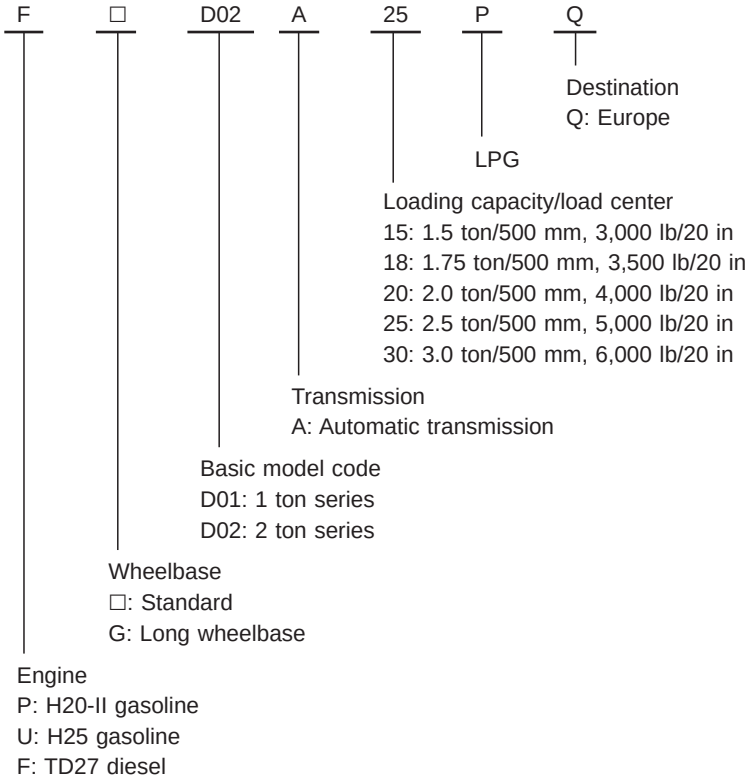
MODEL D01 SERIES

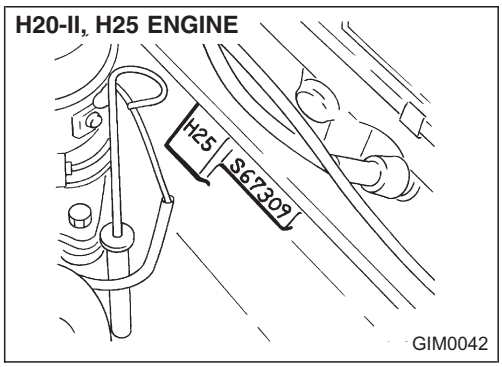
Lifting capacity/Load center		Model	Engine	Transmission	Differential carrier	Wheel rim size ... offset mm (in)	Tire
1.5 ton/500 mm	3,000 lb/20 in	PD01A15(P)U	H20-II	F136V	H263	Front: 5.00F x 10DT Rear: 3.00D x 8DT	Front: 6.50-10-14PR(I) Rear: 5.00-8-8PR(I)
		FD01A15U	TD27				
1.75 ton/500 mm	3,500 lb/20 in	PD01A18(P)U	H20-II				
		FD01A18U	TD27				

MODEL D02 SERIES

Lifting capacity/Load center		Model	Engine	Transmission	Differential carrier	Wheel rim size ... offset mm (in)	Tire
2 ton/500 mm	4,000 lb/20 in	UD02A20(P)U	H25	F136V	H296	Front: 5.00S x 12DT Rear: 4.00E x 9DT	Front: 7.00-12-14PR(I) Rear: 6.00-9-10PR(I)
		FD02A20U	TD27				
2.5 ton/500 mm	5,000 lb/20 in	UD02A25(P)U	H25				
		FD02A25U	TD27				
3 ton/500 mm	6,000 lb/20 in	UGD02A30(P)U	H25		H310	Front: 7.00T x 15 Rear: 5.00F x 10DT	Front: 28 x 9-15-14PR(I) Rear: 6.50-10-14PR(I)
		FGD02A30U	TD27				

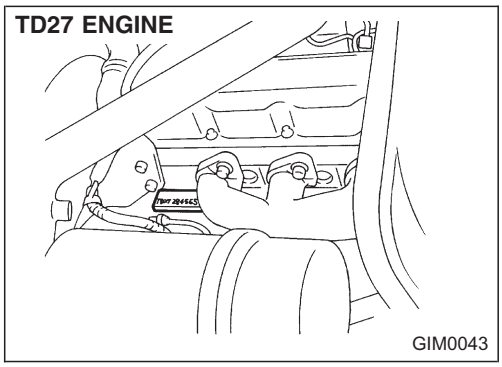
PREFIX AND SUFFIX DESIGNATIONS

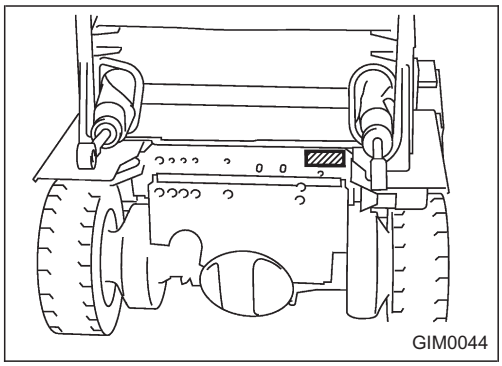




Engine Serial Number

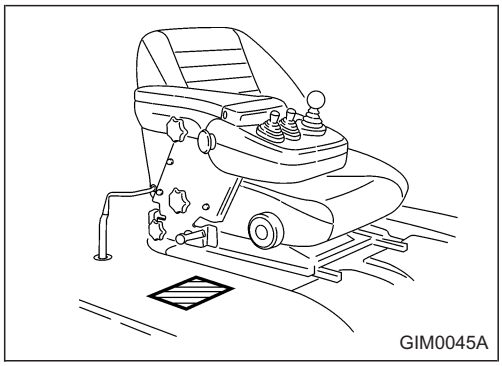
H20-II - SXXXXX
H25 - SXXXXX
TD27 - XXXXXX



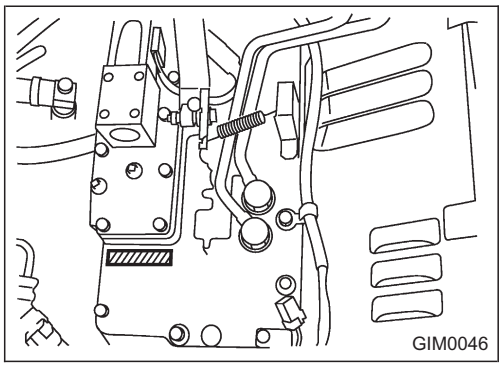


Chassis Serial Number

PD01 - XXXXXX
FD01 - XXXXXX
UD02 - XXXXXX
FD02 - XXXXXX
UGD02 - XXXXXX
FGD02 - XXXXXX



Lift Truck Identification Plate and Load Chart



Transmission Serial Number

Approximate Weight

MODEL D01 SERIES

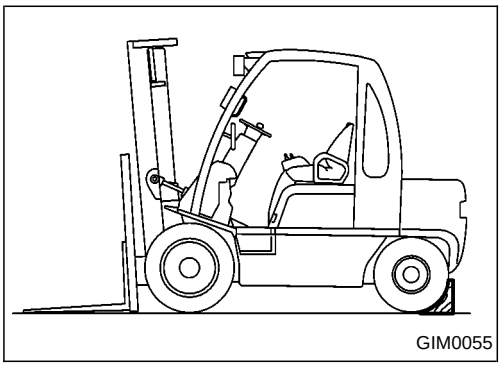
Unit: kg (lb)

Model	Weight distribution		Truck weight
	Front	Rear	
PD01A15U	1,220 (2,690)	1,225 (2,701)	2,655 (5,854)
PD01A15PU	1,225 (2,701)	1,410 (3,109)	2,635 (5,810)
FD01A15U	1,245 (2,745)	1,525 (3,363)	2,770 (6,108)
PD01A18U	1,200 (2,646)	1,675 (3,693)	2,875 (6,339)
PD01A18PU	1,205 (2,657)	1,645 (3,627)	2,850 (6,284)
FD01A18U	1,230 (2,712)	1,760 (3,881)	2,990 (6,593)

MODEL D02 SERIES

Unit: kg (lb)

Model	Weight distribution		Truck weight
	Front	Rear	
UD02A20U	1,580 (3,484)	1,790 (3,947)	3,370 (7,431)
UD02A20PU	1,560 (3,440)	1,780 (3,925)	3,340 (7,365)
FD02A20U	1,620 (3,572)	1,865 (4,112)	3,485 (7,684)
UD02A25U	1,500 (3,308)	2,230 (4,917)	3,730 (8,225)
UD02A25PU	1,480 (3,263)	2,220 (4,895)	3,720 (8,203)
FD02A25U	1,545 (3,407)	2,300 (5,072)	3,845 (8,478)
UGD02A30U	1,740 (3,837)	2,515 (5,546)	4,255 (9,382)
UGD02A30PU	1,715 (3,782)	2,510 (5,535)	4,225 (9,316)
FGD02A30U	1,780 (3,925)	2,590 (5,711)	4,370 (9,636)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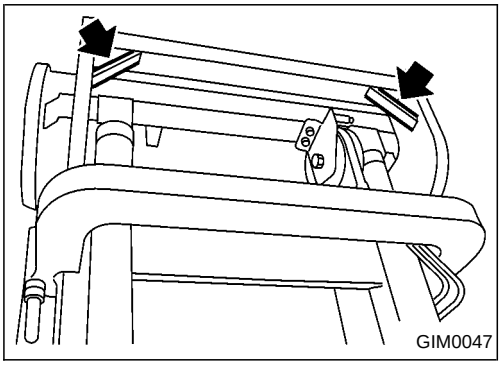
Lifting Points

FRONT SIDE

1. Place chocks behind rear wheels.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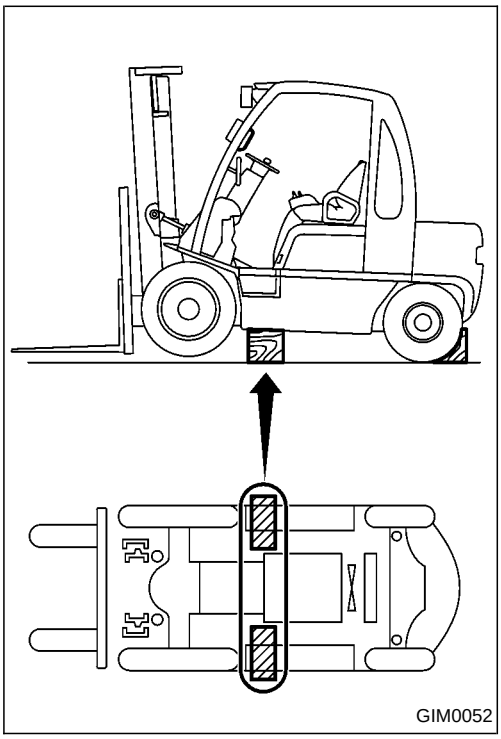
2. Lift outer mast with a hoist.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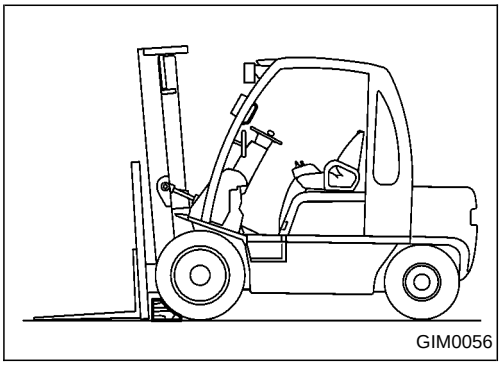
3. Place wooden blocks under both side frames. Gradually lower front end to ground. Be careful not to dislocate blocks while lowering.

WARNING:

- **Use the same size wooden blocks on both sides of the lift truck. Wooden blocks should be one-piece and strong enough to support the weight of the lift truck.**
- **Do not use a supporting block higher than 300 mm (11.81 in).**
- **Raise the lift truck just high enough to place the supporting block under the lift truck.**
- **Never put your feet or hands under the lift truck while lifting or lowering it.**
- **After supporting lift truck with blocks, swing it back and forth and left and right to see if it is safe.**

Lifting Points (Cont'd)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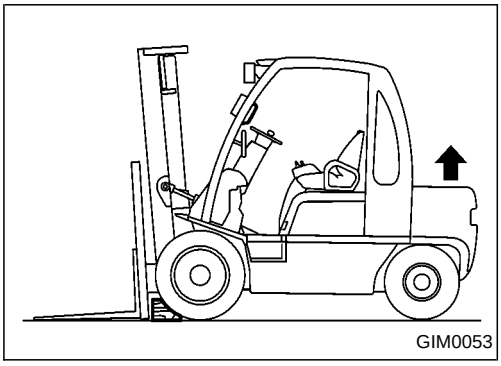
REAR SIDE

1. Place chocks in front of front wheels.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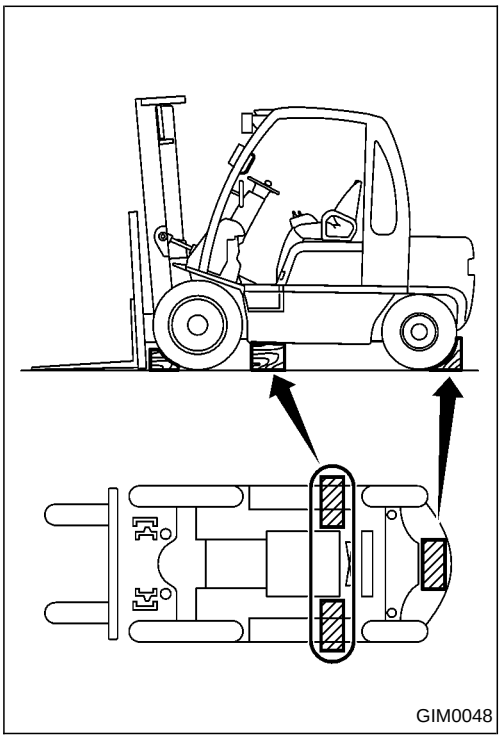
2. Lift counterweight with a hoist.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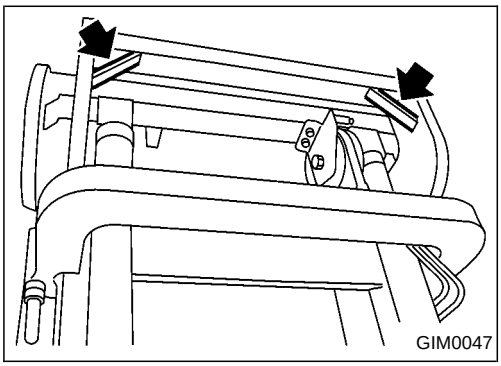
3. Place wooden block under counterweight. Gradually lower rear end to ground. Be careful not to dislocate blocks while lowering.

WARNING:

- **Wooden blocks should be one-piece and strong enough to support the weight of the lift truck.**
- **Do not use a supporting block higher than 300 mm (11.81 in).**
- **Raise the lift truck just high enough to place the supporting block under the truck.**
- **Place the same size wooden blocks under the left and right sides of the frame, as shown in the figure below.**
- **After supporting lift truck with blocks, swing it back and forth and from side to side to see if it is safe.**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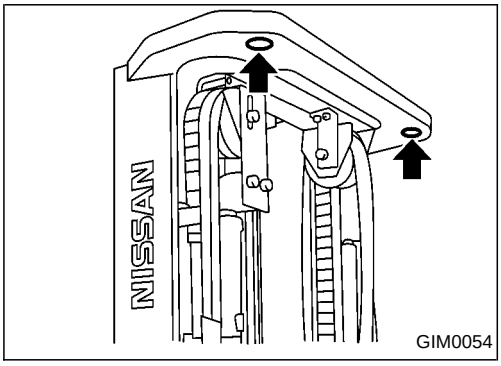

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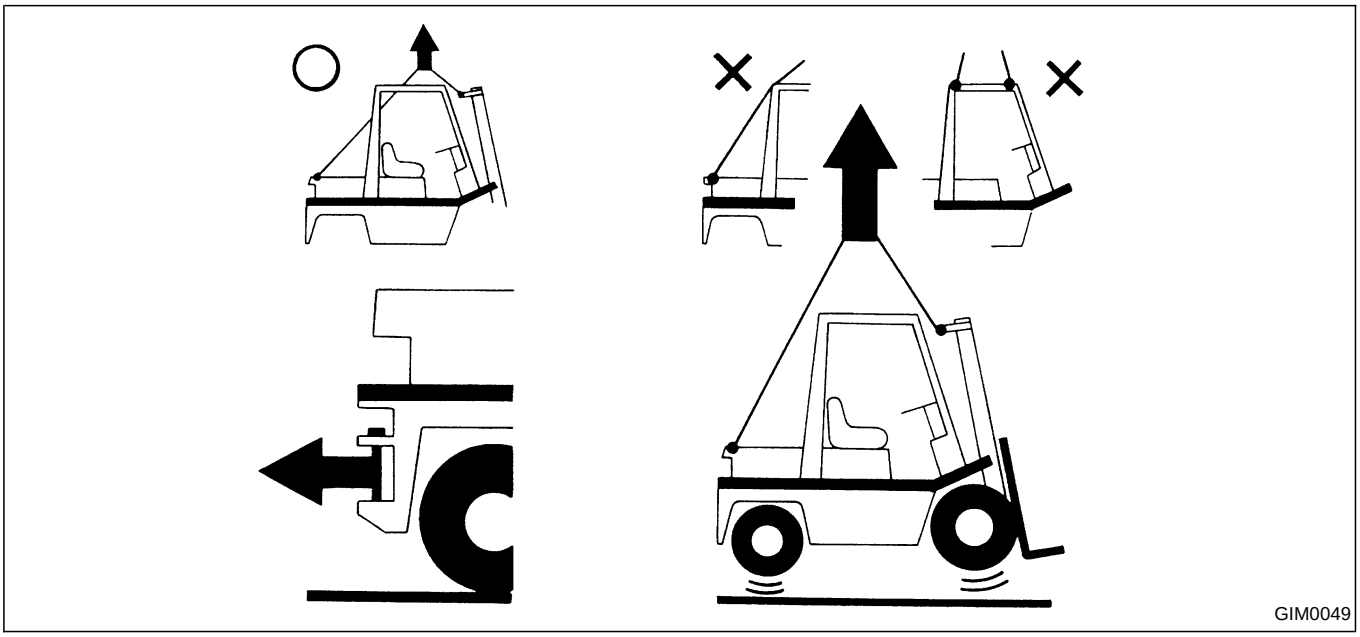
Lifting Up Forklift Truck

When lifting the entire forklift truck, secure wire ropes to hook points (2W MAST) or holes (2F/3F MAST) on both sides of the outer mast cross beam and to the holes on the counterweight, and then utilize a lifting device.

WARNING:

- **Make sure that the wire ropes do not interfere with the overhead guard while lifting the truck.**
- **Ensure that the wire ropes and lifting device are strong enough to support the lift truck safely, as the lift truck is extremely heavy.**
- **Do not use the cab frame (overhead guard) to lift up the truck.**
- **Never get under the lift truck while lifting the truck.**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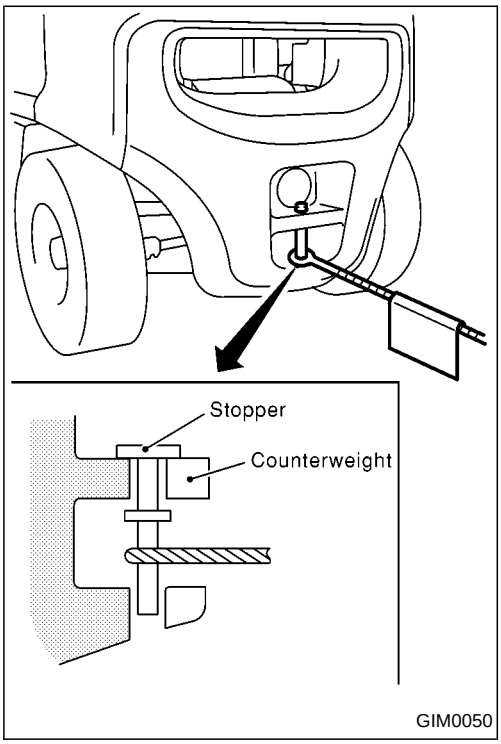


Towing

Before towing a lift truck, secure a wire rope to traction pin. Make sure parking brake is released.

WARNING:

- **Do not attach towing rope to any points other than those designated.**
- **To prevent accidents, do not apply load to wire rope abruptly.**

Special Service Tools play a very important role in the maintenance of the lift truck. These are essential to safe, accurate and speedy servicing.

The working times listed in the column under FLAT RATE TIME in FLAT RATE SCHEDULE are computed based on the use of Special Service Tools.

The identification code of maintenance tools is made up of 2 alphabetical letters and 8-digital figures.

The heading two letters roughly classify tools or equipment as:

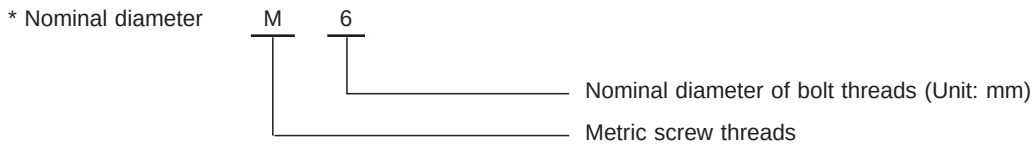
ST00000000

KV00000000

For details, refer to the latter pages of each section.

TIGHTENING TORQUE OF STANDARD BOLTS

Grade	*Nominal diameter mm	Pitch mm	Tightening torque			
			N·m	kg-m	ft-lb	in-lb
4T	M6	1.0	3.0 - 3.9	0.3 - 0.4	—	26 - 34
	M8	1.25	8 - 10	0.8 - 1.1	—	70 - 95
		1.0	8 - 10	0.8 - 1.1	—	70 - 95
	M10	1.5	16 - 21	1.6 - 2.2	12 - 15	—
		1.25	16 - 21	1.6 - 2.2	12 - 15	—
	M12	1.75	27 - 36	2.7 - 3.7	20 - 26	—
		1.25	31 - 40	3.1 - 4.1	23 - 29	—
	M14	1.5	46 - 61	4.7 - 6.3	34 - 45	—
7T	M6	1.0	5.9 - 6.8	0.6 - 0.7	—	52 - 60
	M8	1.25	14 - 17	1.4 - 1.8	11 - 13	—
		1.0	14 - 17	1.4 - 1.8	11 - 13	—
	M10	1.5	26 - 35	2.6 - 3.6	19 - 26	—
		1.25	27 - 36	2.7 - 3.7	20 - 26	—
	M12	1.75	46 - 60	4.6 - 6.2	34 - 44	—
		1.25	50 - 67	5.1 - 6.9	37 - 49	—
	M14	1.5	76 - 102	7.7 - 10.5	56 - 75	—
	M16	1.5	118 - 156	12.0 - 16.0	87 - 115	—
	M18	1.5	177 - 235	18.0 - 24.0	131 - 173	—
	M20	1.5	246 - 323	25.0 - 33.0	181 - 238	—
	M22	1.5	324 - 441	33.0 - 45.0	239 - 325	—
9T	M6	1.0	8 - 10	0.8 - 1.1	—	70 - 95
	M8	1.25	19 - 24	1.9 - 2.5	14 - 18	—
		1.0	20 - 27	2.0 - 2.8	15 - 20	—
	M10	1.5	37 - 50	3.7 - 5.1	27 - 36	—
		1.25	40 - 50	4.0 - 5.2	29 - 37	—
	M12	1.75	65 - 88	6.6 - 9.0	48 - 65	—
		1.25	72 - 97	7.3 - 9.9	53 - 71	—
	M14	1.5	108 - 147	11.0 - 15.0	80 - 108	—
	M16	1.5	167 - 225	17.0 - 23.0	123 - 166	—
	M18	1.5	255 - 343	26.0 - 35.0	188 - 253	—
	M20	1.5	344 - 460	35.0 - 47.0	254 - 339	—
	M22	1.5	471 - 631	48.0 - 64.4	348 - 465	—



1. Special parts are excluded.
2. This standard is applicable to bolts having the following mark embossed on the bolt head.

Grade	Embossed number
4T	4
7T	7
9T	9