

**SERVICE MANUAL &
TECHNICAL BULLETIN**

MODEL F04 SERIES

FOREWORD

This manual contains maintenance and repair procedures.

In order to assure your safety and the efficient functioning of the lift truck, this manual should be read thoroughly. It is especially important that the PRECAUTIONS in the GI section be completely understood before starting any repair task.

All information in this manual is based on the latest product information at the time of publication. The right is reserved to make changes in specifications and methods at any time without notice.

IMPORTANT SAFETY NOTICE

The proper performance of service is essential for both the safety of the technician and the efficient functioning of the lift truck.

The service methods in this Service Manual are described in such a manner that the service may be performed safely and accurately.

Service varies with the procedures used, the skills of the technician and the tools and parts available.

Accordingly, anyone using service procedures, tools or parts which are not specifically recommended by NISSAN must first be completely satisfied that neither personal safety nor the lift truck's safety will be jeopardized by the service method selected.

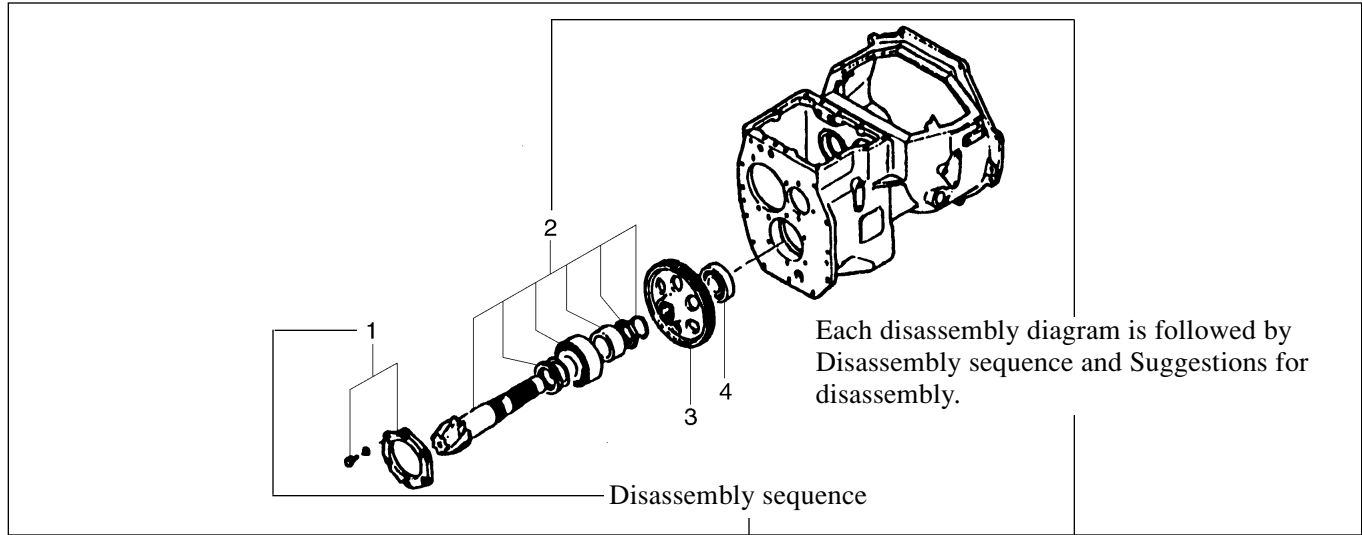
No modifications or alterations to a powered industrial truck, which may affect, for example, capacity, stability or safety requirements of the truck shall be made without the prior written approval of NISSAN, its authorized representative, or a successor thereof. Contact an authorized NISSAN FORKLIFT dealer before making any modification or alteration to your industrial truck that may affect, for example braking, steering, visibility and the addition of removable attachments. After getting approval of NISSAN, its authorized representative, or a successor thereof, capacity plate, decals tags and operation and maintenance handbooks shall also be changed to the appropriate one.

Only in the event that NISSAN is no longer in business and there is no successor in the interest to the business, the user may arrange for a modification or alteration to a powered industrial truck, provided, however, that the user shall:

- A. Arrange for the modification or alteration to be designed, tested and implemented by an engineer(s) expert in industrial trucks and their safety;
- B. Maintain a permanent record of the design, test(s) and implementation of the modification or alteration;
- C. Approve and make appropriate changes to the capacity plate(s), decals, tags and Instruction Handbook;
- D. Affix a permanent and readily visible label to the truck stating the manner in which the truck has been modified or altered together with the date of the modification or alteration, and the name and address of the organization that accomplished the tasks.

HOW TO READ THIS MANUAL

Disassembly diagram (example)

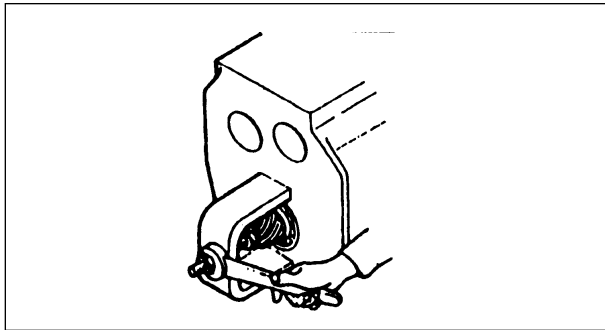


Sequence

1. Cover [Bolt, Washer] (part name)
2. Output shaft (part name)

Suggestion for disassembly

- (1) Output shaft removal



Unit: mm (in.)

Clearance between cylinder and piston	A	0.020 to 0.105 (0.00079 to 0.00413)
	B	0.15 (0.0059)

A: Standard value B: Repair or service limit

Symbols or abbreviations

- OPOption
- R1/4.....Taper pipe thread (external) 1/4 inch (formerly PT1/4)
- Rc1/8.....Taper pipe thread (internal) 1/8 inch (formerly PT1/8)
- G1/4A.....Straight pipe thread (external) 1/4 inch (formerly PF1/4-A)
- Rp1/8.....Straight pipe thread (internal) 1/8 inch (formerly PS1/8)

SAFETY

 **WARNING**

The proper and safe lubrication and maintenance for this forklift truck, recommended by NISSAN, are outlined in the OPERATION & MAINTENANCE MANUAL for these trucks.

Improper performance of lubrication or maintenance procedures is dangerous and could result in injury or death. Read and understand the OPERATION & MAINTENANCE MANUAL before performing any lubrication or maintenance.

The serviceman or mechanic may be unfamiliar with many of the systems on this truck. This makes it important to use caution when performing service work. A knowledge of the system and/or components is important before the removal or disassembly of any component.

Because of the size of some of the truck components, the serviceman or mechanic should check the weights noted in this Manual. Use proper lifting procedures when removing any components.

Following is a list of basic precautions that should always be observed.

1. Read and understand all warning plates and decals on the truck before operating, lubricating or repairing the product.
2. Always wear protective glasses and protective shoes when working around trucks. In particular, wear protective glasses when pounding on any part of the truck or its attachments with a hammer or sledge. Use welders gloves, hood/goggles, apron and other protective clothing appropriate to the welding job being performed. Do not wear loose-fitting or torn clothing. Remove all rings from fingers when working on machinery.
3. Do not work on any truck that is supported only by lift jacks or a hoist. Always use blocks or jack stands to support the truck before performing any disassembly.

 **WARNING**

Do not operate this truck unless you have read and understand the instructions in the OPERATION & MAINTENANCE MANUAL. Improper truck operation is dangerous and could result in injury or death.

4. Lower the forks or other implements to the ground before performing any work on the truck. If this cannot be done, make sure the forks or other implements are blocked correctly to prevent them from dropping unexpectedly.
5. Use steps and grab handles (if applicable) when mounting or dismounting a truck. Clean any mud or debris from steps, walkways or work platforms before using. Always face truck when using steps, ladders and walkways. When it is not possible to use the designed access system, provide ladders, scaffolds, or work platforms to perform safe repair operations.
6. To avoid back injury, use a hoist when lifting components which weigh 23 kg (50 lb.) or more. Make sure all chains, hooks, slings, etc., are in good condition and are of the correct capacity. Be sure hooks are positioned correctly. Lifting eyes are not to be side loaded during a lifting operation.
7. To avoid burns, be alert for hot parts on trucks which have just been stopped and hot fluids in lines, tubes and compartments.
8. Be careful when removing cover plates. Gradually back off the last two bolts or nuts located at opposite ends of the cover or device and pry cover loose to relieve any spring or other pressure, before removing the last two bolts or nuts completely.
9. Be careful when removing filler caps, breathers and plugs on the truck. Hold a rag over the cap or plug to prevent being sprayed or splashed by liquids under pressure. The danger is even greater if the truck has just been stopped because fluids can be hot.

10. Always use tools that are in good condition and be sure you understand how to use them before performing any service work.
11. Reinstall all fasteners with same part number. Do not use a lesser quality fastener if replacements are necessary. Do not mix metric fasteners with standard nuts and bolts.
12. If possible, make all repairs with the truck parked on a level, hard surface. Block truck so it does not roll while working on or under truck.
13. Disconnect battery and discharge any capacitors (electric trucks) before starting to work on truck. Hang "Do not Operate" tag in the Operator's Compartment.
14. Repairs, which require welding, should be performed only with the benefit of the appropriate reference information and by personnel adequately trained and knowledgeable in welding procedures. Determine type of metal being welded and select correct welding procedure and electrodes, rods or wire to provide a weld metal strength equivalent at least to that of parent metal.
15. Do not damage wiring during removal operations. Reinstall the wiring so it is not damaged nor will it be damaged in operation by contacting sharp corners, or by rubbing against some object or hot surface. Do not connect wiring to a line containing fluid.
16. Be sure all protective devices including guards and shields are properly installed and functioning correctly before starting a repair. If a guard or shield must be removed to perform the repair work, use extra caution.
17. Always support the mast and carriage to keep carriage or attachments raised when maintenance or repair work is performed, which requires the mast in the raised position.
18. Loose or damaged fuel, lubricant and hydraulic lines, tubes and hoses can cause fires. Do not bend or strike high pressure lines or install ones which have been bent or damaged. Inspect lines, tubes and hoses carefully. Do not check for leaks with your hands. Pin hole (very small) leaks can result in a high velocity oil stream that will be invisible close to the hose. This oil can penetrate the skin and cause personal injury. Use cardboard or paper to locate pin hole leaks.
19. Tighten connections to the correct torque. Make sure that all heat shields, clamps and guards are installed correctly to avoid excessive heat, vibration or rubbing against other parts during operation. Shields that protect against oil spray onto hot exhaust components in event of a line, tube or seal failure, must be installed correctly.
20. Relieve all pressure in air, oil or water systems before any lines, fittings or related items are disconnected or removed. Always make sure all raised components are blocked correctly and be alert for possible pressure when disconnecting any device from a system that utilizes pressure.
21. Do not operate a truck if any rotating part is damaged or contacts any other part during operation. Any high speed rotating component that has been damaged or altered should be checked for balance before reusing.

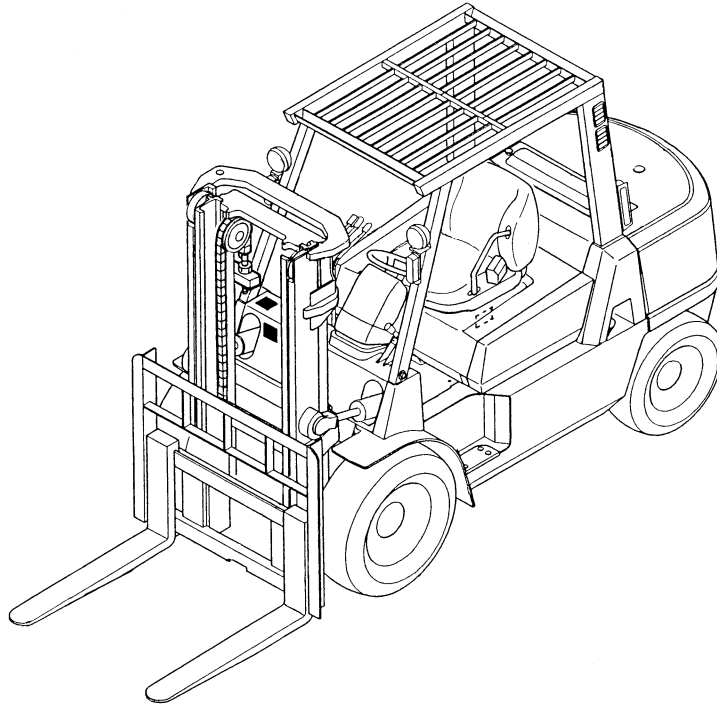
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Model View



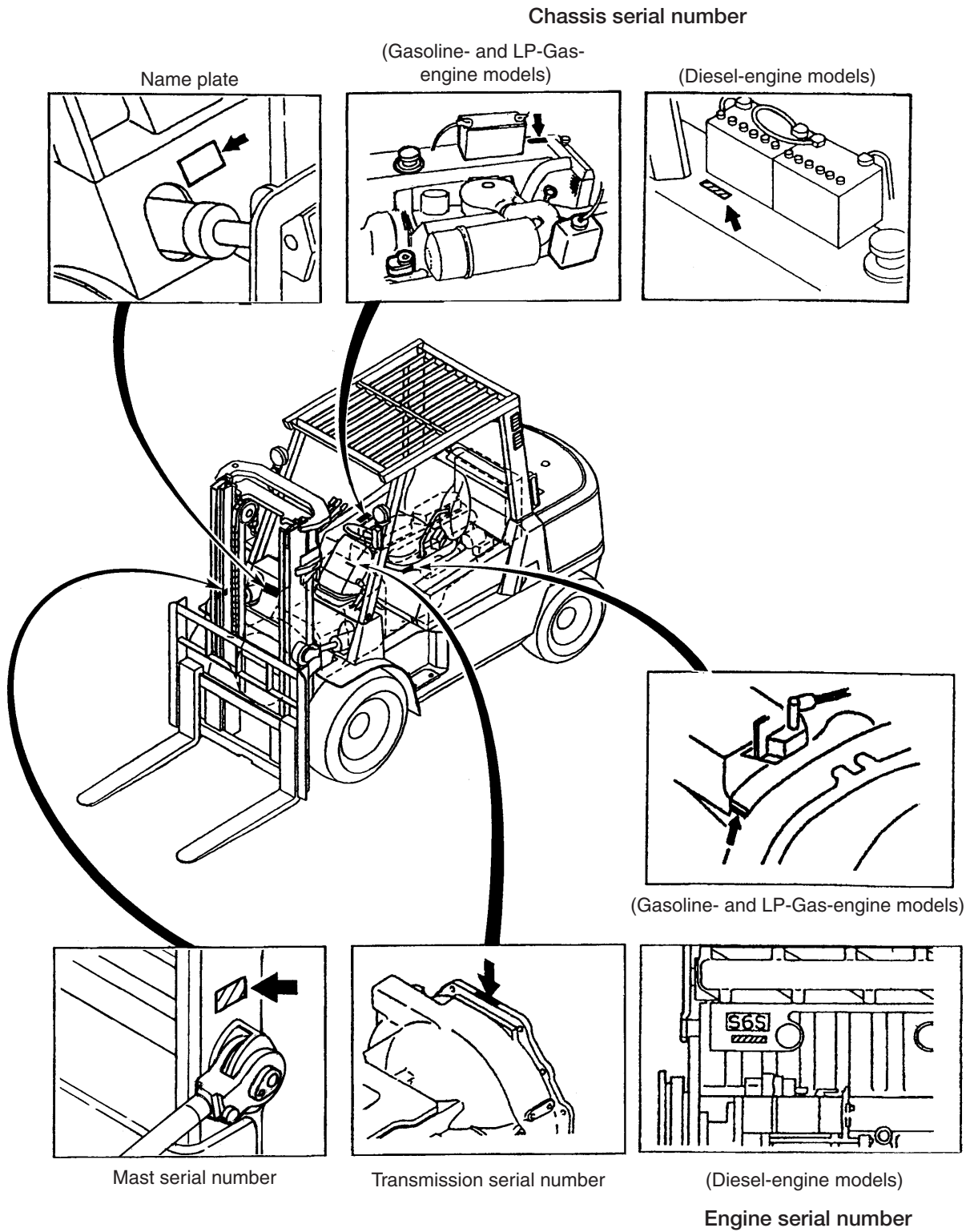
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Truck Models Covered

This Service Manual furnishes servicing and maintenance information for the following trucks:

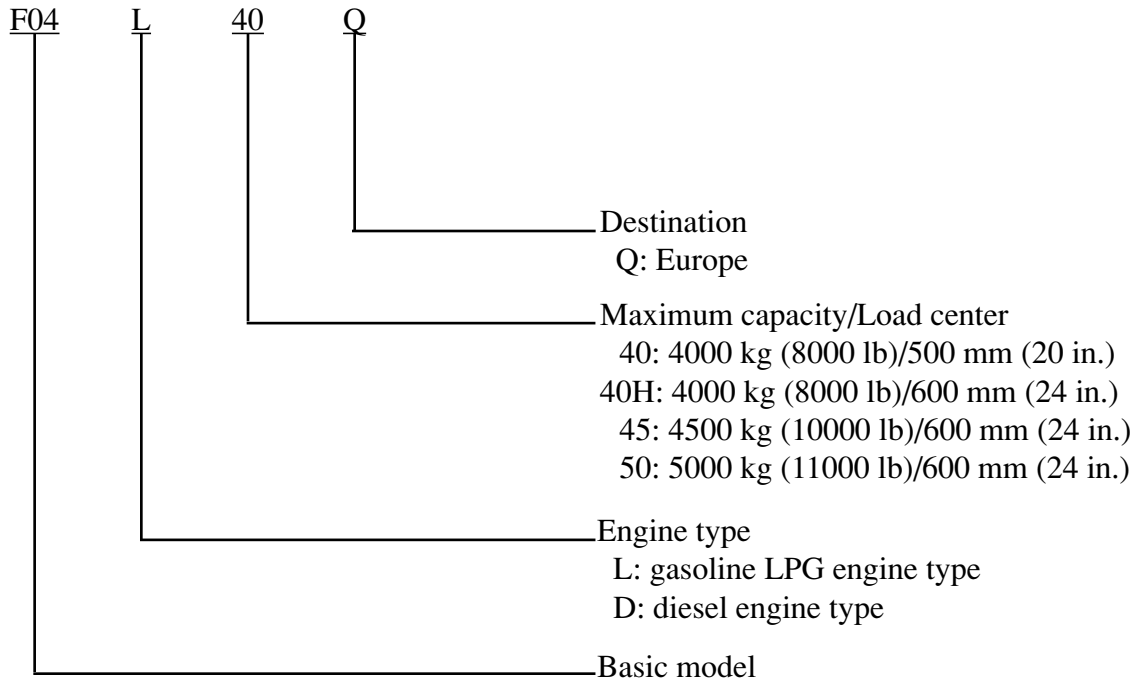
Truck model	Transmission	Model code – Serial number	Engine mounted
F04L40Q	Powershift (AT)	EN29B – 00011- up	G6 (GM4.3L) gasoline (LPG) engine
F04L40HQ	Powershift (AT)	EN29B – 50001- up	G6 (GM4.3L) gasoline (LPG) engine
F04L45Q	Powershift (AT)	EN29B – 80001- up	G6 (GM4.3L) gasoline (LPG) engine
F04L50Q	Powershift (AT)	EN33A – 50001- up	G6 (GM4.3L) gasoline (LPG) engine
F04D40Q	Powershift (AT)	EN19C – 00011- up	Mitsubishi S6S diesel engine
F04D40HQ	Powershift (AT)	EN19C – 50001- up	Mitsubishi S6S diesel engine
F04D45Q	Powershift (AT)	EN19C – 80001- up	Mitsubishi S6S diesel engine
F04D50Q	Powershift (AT)	EN28B – 50001- up	Mitsubishi S6S diesel engine

Serial Number Locations

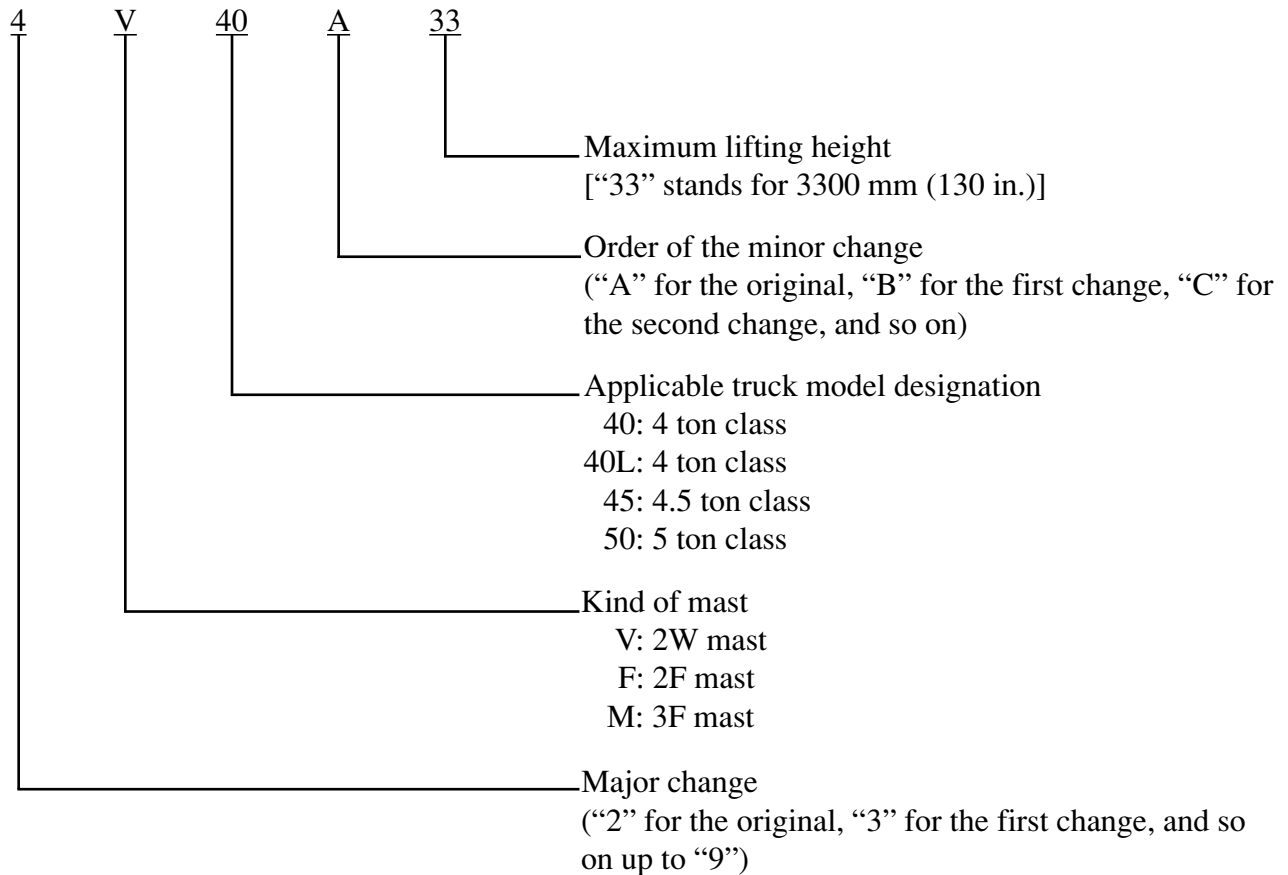


Chassis and Mast Model Identification

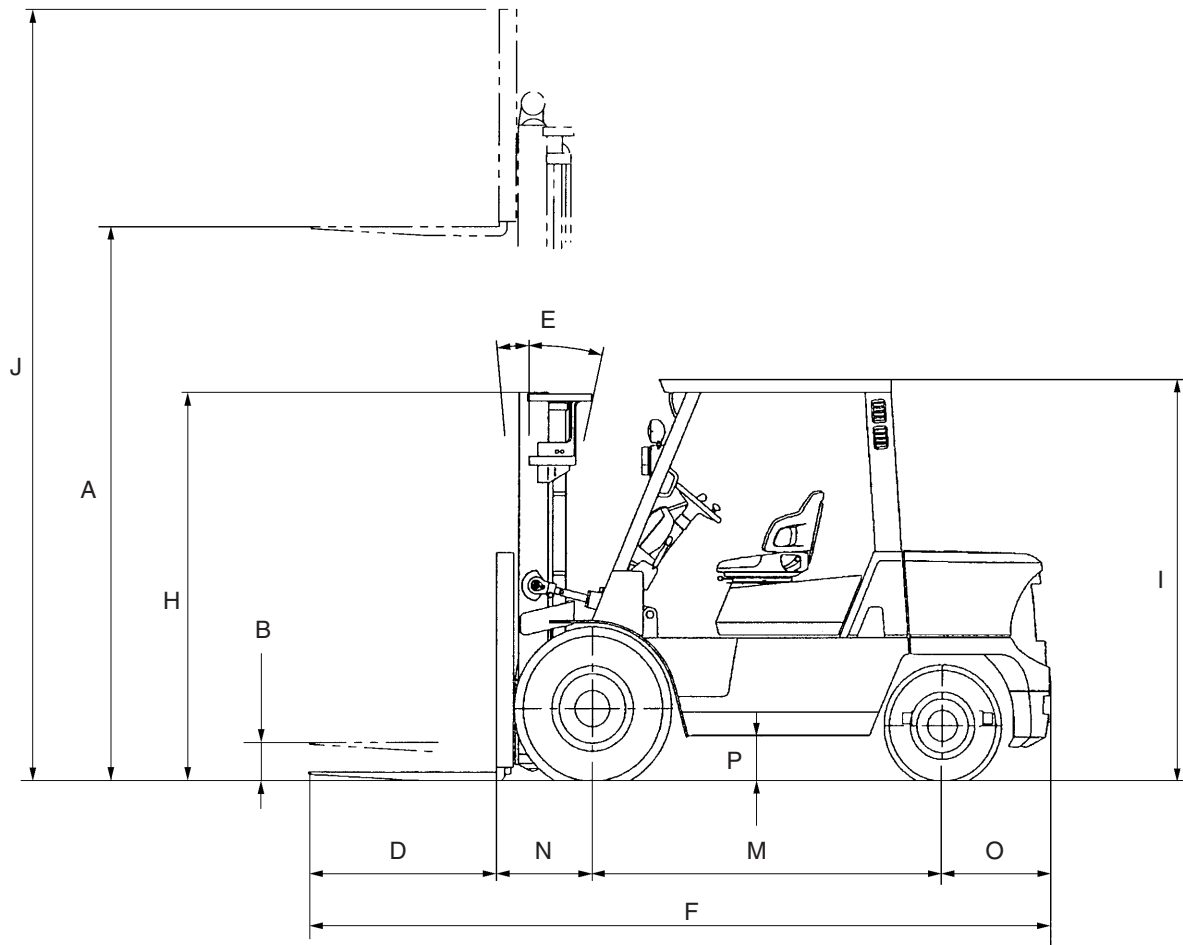
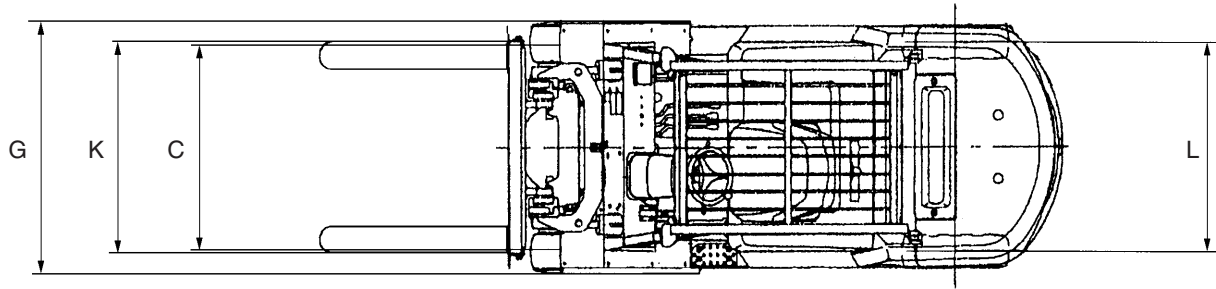
[Chassis]



[Mast]



Dimensions



202762A

Unit: mm (in.)

Ref. No.	Truck Model		F04L40Q	F04L40HQ	F04L45Q	F04L50Q
			F04D40Q	F04D40HQ	F04D45Q	F04D50Q
A	Maximum lift		3300 (130)			
B	Free lift		150 (5.9)			160(6.5)
C	Fork spread (outside)		300 to 1190 (12 to 47)			
D	Fork length		1220 (48)			
E	Tilt angle (forward – backward)		6° – 10°			
F	Overall length		4290 (168.9)	4340 (170.9)	4395 (173)	4525 (178.2)
G	Overall width (outside of tires)	Single tire	1415 (55.7)	1460 (57.5)		
		Dual tire	1780 (70.1)			1965 (77.4)
H	Overall height (to top of mast lowered)		2320 (91.5)		2400 (94.5)	
I	Overall height (to top of overhead guard)		2250 (88.6)			
J	Overall height (mast extended)		4430 (174.4)			4580 (180.5)
K	Tread (front)	Single tire	1175 (46.3)			
		Dual tire	1310 (51.6)			1445 (56.9)
L	Tread (rear)		1180 (46.5)			
M	Wheelbase		2000 (78.7)			2150 (84.6)
N	Front overhang		557 (21.9)		562 (22.1)	582 (22.9)
O	Rear overhang		513 (20.2)	563 (22.2)	613 (24.1)	573 (22.6)
P	Underclearance (at frame)		252 (9.9)			

Technical Data

Item		Truck Model		F04L40Q F04D40Q	F04L40HQ F04D40HQ	F04L45Q F04D45Q	F04L50Q F04D50Q	
		Model code		F04L: EN29B F04D: EN19C				F04L: EN33A F04D: EN28B
Type		Standard						
General	Capacity/load center kgf/mm (lbf/in.)	4000/500 (8000/20)	4000/600 (8000/24)	4500/600 (10000/24)	5000/600 (11000/24)			
	Maximum lift mm (in.)	3300 (130)						
	Lift speed (rate load) mm/sec (fpm)	F04L: 510 (100) F04D: 500 (98)			F04L: 440 (87) F04D: 430 (85)		F04L: 430 (85) F04D: 420 (83)	
	Lowering speed (rate load) mm/sec (fpm)	500 (130)						
	Tilt angle (forward – backward)	6° – 10°						
	Free lift mm (in.)	150 (5.9)				160 (6.5)		
Performance	Travel speed of powershift transmission models km/h (mph)	Forward	19.5 (12.1)	19.5 (12.1)	19.5 (12.1)	24.5 (15.2)		
		Reverse	19.5 (12.1)				24.5 (15.2)	
	Minimum turning radius mm (in.)	2735 (107.7)	2775 (109.3)	2820 (111)	2965 (116.7)			
	Steering angle	Inside	83°					
		Outside	56°33'					
	Minimum intersecting aisle mm (in.)	Single tire	2360 (92.9)	2400 (94.5)	2450 (96.5)	2510 (98.8)		
Dual tire		2490 (98)	2520 (99.2)	2570 (101.2)	2740 (107.9)			
Tires	Front tires (size and inflation pressure) kPa (kgf/cm ²) [psi]	Single tire	8.25-15-14PR (I) 785 (8.0) [114]	300-15-18PR (I) 785 (8.0) [114]				
		Dual tire	7.50-16-12PR (I) 686 (7.0) [99.5]					
	Rear tires (size and inflation pressure) kPa (kgf/cm ²) [psi]	7.00-12-14PR (I) 686 (7.0) [99.5]			7.00-12-14PR (I) 834 (8.5) [121]			
Truck weight	Single drive tire (unloaded) kg (lb)	F04L: 5630 (12400) F04D: 5710 (12600)	F04L: 6030 (13300) F04D: 6120 (13500)	F04L: 6600 (14500) F04D: 6680 (14700)	F04L: 7080 (15600) F04D: 7160 (15800)			
	Dual drive tire (unloaded) kg (lb)	F04L: 5810 (12800) F04D: 5900 (13000)	F04L: 6160 (13600) F04D: 6250 (13800)	F04L: 6730 (14800) F04D: 6820 (15000)	F04L: 7250 (15900) F04D: 7320 (16100)			

Truck Model		F04L40Q	F04L40HQ	F04L45Q	F04L50Q
		Item			
Engine (gasoline and LP-gas)	Engine model	G6 (GM4.3L)			
	Manufacturer	General Motors			
	Type	Gasoline (LPG)			
	Cooling system	Water cooled			
	No. of cylinders – arrangement	6 – 90° V			
	No. of strokes	4			
	Type of combustion chamber	Semi -spherical			
	Valve arrangement	Overhead			
	Type of cylinder liners	Integral			
	Cylinder bore × stroke mm (in.)	101.6 × 88.39 (4.00 × 3.48)			
	Displacement cc (cu in.)	4293 (262)			
	Compression ratio	9.2 : 1			
	Rated output kW/rpm	69.5/2450			
	Maximum torque N·m (kgf·m) [lbf·ft]/rpm	305 (31.0) [224]/1200			
	Low idle engine speed rpm	750			
	High idle engine speed rpm	2450			
	Dimensions (L × W × H) mm (in.)	710 × 620 × 740 (28.0 × 24.4 × 29.1)			
	Weight kg (lb)	260 (573)			
	Installation position	Rear			
	Ignition	Spark			
Firing order	1 – 6 – 5 – 4 – 3 – 2				
Initial ignition timing BTDC deg	0° Gasoline/ 8° L.P.G				
Fuel tank capacity liter (U.S. gal)	115 (30)				

GENERAL INFORMATION

Item		Truck Model		F04L40Q	F04L40HQ	F04L45Q	F04L50Q
Ignition system	Ignition coil	Type	Mold				
		Manufacturer	AC Delco				
	Distributor	Type	Pointless				
		Manufacturer	AC Delco				
		Type of spark advance control	Internal solid state circuit				
	Spark plug	Model	#41-932				
		Manufacturer	AC Delco				
		Size mm (in.)	14 (0.55)				
Gap mm (in.)		1.24 (0.0488)					
Fuel system	Carburetor	Type	1FZ				
		Manufacturer	AISAN Kogyo Co.				
	Fuel pump	Type	Electromagnetic				
		Manufacturer	Jidosha Kiki				
Air cleaner	Type × Number		Cyclone with paper element × 1				
	Manufacturer		Nippon Rokaki				
Engine lubrication system	Type		Pressure feed				
	Oil pump		Gear pump				
	Oil filter		Paper element				
	Oil cooler		Oil to water type				
	Refill capacities	Oil pan liter (U.S. gal)	4.2 (1.1)				
		Oil filter & cooler liter (U.S. gal)	0.8 (0.2)				
Total liter (U.S. gal)		5.0 (1.3)					

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