NISSAN FORKLIFT

PLATINUM SERIES

OPERATOR'S MANUAL

for L01/L02

L012-E

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For trucks with the CE marking, please use this manual together with the separate OPERATOR'S MANUAL SUPPLEMENT that accompanies this manual.

NISSAN FORKLIFT OPERATOR'S MANUAL
MODEL L01,L02 SERIES

⚠ WARNING

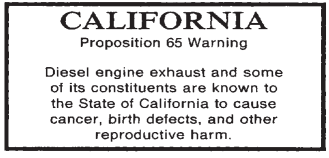
- This original manual contains important safety information and must be made available to the operator.
- Keep this manual in the pocket on the seatback.
- Do not operate the forklift unless you have reviewed and fully understand the Operator's Manual.
- Do not operate this forklift unless trained and authorized by your employer. Improper operation may result in a serious or fatal injury to yourself or others. Make sure you read and understand the Operator's Manual supplied with this forklift. Failure to follow all of the instructions in this manual could be a violation of the Occupational Safety and Health Act.
- On December 1st, 1998 the Occupational Safety and Health Administration (OSHA) adopted a new and stringent Powered Industrial Truck Operator Training rule. Based on the Industrial Truck Standard Development Foundation (ITSDF) B56 1993 standard, Operator Training is now spelled out in detail. The employer shall ensure that operators of powered industrial trucks are competent and trained in the safe and proper operation of the powered industrial trucks. This training will include formal training, practical demonstration and an on-site evaluation.

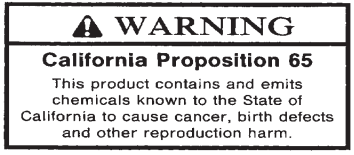
OSHA also requires a proper pre-shift inspection and any repair required shall be done by a person trained and authorized to repair industrial trucks.

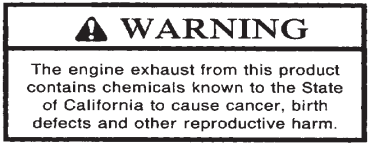
As the employer you should be familiar with the rules of 29 CFR 1910.178(1) as well as ITSDF B56 for the user. You should also be aware of any state OSHA rules that may differ from the federal rules.

The following warning is provided pursuant to California Health &

Safety Code Sections 25249.5 et. seq.







WARNING

Following is an important message for the operator.

Do not operate this truck unless you are trained and authorized by your employer. Improper operation may result in a serious or fatal injury to yourself or others. Make sure that you read and fully understand the Operator's Manual supplied with this truck. Failure to follow all instructions in this manual could be a violation of the Occupational Safety and Health Act.

Disclosure of Regulation Applicability for California customers only.

To owner/operators of Nissan Forklift diesel models in California: ARB Regulation 2449(d)(3) June 2008. Starting June 15, 2008 the California Air Resources Board (CARB) placed a limit in idling time for in use off road diesel powered equipment. "When operated in California, any off-road diesel vehicle may be subject to the California Air Resources Board In-Use Off-Road Regulation. It therefore could subject to retrofit or accelerated turnover requirements to reduce emissions of air pollutants. For more information, please visit the CARB website at http://www.arb.ca.gov/msrog/ordiesel/ordiesel.htm. At a minimum you should review the following section: 2449(d)(3), 2449(i), 2449(h)(8).

A WORD TO NISSAN FORKLIFT OPERATORS

This Original Manual describes operating procedures, daily checks and simple maintenance for safe usage of your Nissan Forklift industrial truck. We urge you to read this manual carefully before operating a Nissan Forklift industrial truck to familiarize yourself with the safety instructions. An operator of any industrial truck should maintain safety as the number one priority at all times. In addition, we strongly recommend that you obtain and read the Industrial Truck Standard Development Foundation (ITSDF) B56 Manual entitled "Safety Standard for Low Lift and High Lift Trucks" before operating any industrial truck. These instructions will not only reduce mechanical issues with a forklift, but may also save a life.

Contact your Local Authorized NISSAN FORKLIFT Dealer, hereafter referred to as Local Authorized Dealer, to keep your industrial truck in peak operating performance. If you encounter any problems with a Nissan Forklift industrial truck, contact your Local Authorized Dealer and request a complete checkup. The dealership will ensure that your forklift is serviced in accordance with the latest factory approved methods. This manual is not a training manual, it is a guide to help trained and authorized operators safely operate this forklift. Please consult your employer for proper training on the appropriate use of this forklift while performing your job. Illustrations in this manual will show the operator the correct procedures for checking, starting, operating and stopping this forklift.

All information, specifications and illustrations in this manual are based on the latest data obtainable at the time of publication. Nissan Forklift reserves the right to make changes or improvements at any time without notice.

NOTE:

For trucks with the CE marking, please use this manual together with the separate OPERATOR'S MANUAL SUPPLEMENT that accompanies this manual.

This Operator's Manual has been prepared on the assumption that your truck is fully equipped (including all optional equipment). Thus if you have any questions regarding equipment, please contact your Local Authorized Dealer.

Nissan Forklift Corporation, N.A.
240 N. Prospect St.
Marengo, IL 60152 USA

NISSAN FORKLIFT *A Wholly Owned Subsidiary of Nissan Motor Co. Ltd.*

A Word to the NISSAN Forklift Owner/ Employer

On December 1st, 1998 the Occupational Safety and Health Administration (O.S.H.A.) adopted a new and stringent Powered Industrial Truck Operator Training rule 29 CFR 1910.178(1). Based on the Industrial Truck Standard Development Foundation (ITSDF) B56 2000 standard, Operator Training is now spelled out in detail. The employer shall ensure that Operators of powered industrial trucks are competent and trained in the safe and proper operation of powered industrial trucks. This training will include formal training, practical demonstration and on-site evaluation.

OSHA also requires a proper pre-shift inspection and any repair required shall be done by a person trained and authorized to repair industrial trucks.

As the employer you should be familiar with the rules of 29 CFR 1910.178(1) as well as ITSDF B56 for the user. You should also be aware of any state OSHA rules that may differ from the federal rules.

Nissan Forklift model L01 and L02 series trucks meet all applicable requirements of ITSDF B56 at time of manufacture. NFC will not assume, and expressly disclaims, any liability for injuries or damages arising from or caused by the removal, disconnection or disengagement of any part from any of its trucks. NFC recommends that all replacement parts be of OEM (Original Equipment Manufacturer) origin.

Any modifications and/or additions which affect capacity or safe operation of industrial trucks manufactured by NFC may not be performed without NFC's prior written approval. A user should consult the Local Authorized Dealer if the user's intended application is outside the designed performance characteristics of the vehicle.

CONTENTS

WARRANTY COVERAGE AT A GLANCE

To Nissan Forklift Valued Customers

Your Nissan Forklift may be covered by one or more of the following warranty coverages, depending on your location. Included in your delivery package with this Operator's Manual should be a separate Warranty Statement, which will explain your coverage.

Basic Coverage*	12 months / 2,000 hours
Powertrain	24 months / 4,000 hours
Emission Control Warranty LSI	36 months or 2,500 hours (General Parts)
Emission Control Warranty LSI	36 months or 4,000 hours (Powertrain Parts)
Long-Term Emission Control Warranty LSI	60 months or 3,500 hours (General Parts)
Long-Term Emission Control Warranty LSI	60 months or 4,000 hours (Powertrain Parts)
Emission Related Warranty CI	60 months or 3,000 hours (General Parts)

LSI = Large Spark Ignited Engines above 25 HP (gas, LPG, LNG)

CI = Compression Ignited Engines (all Diesel)

The above warranty coverage applies to both U.S. EPA and CARB Emission Regulation standards only.

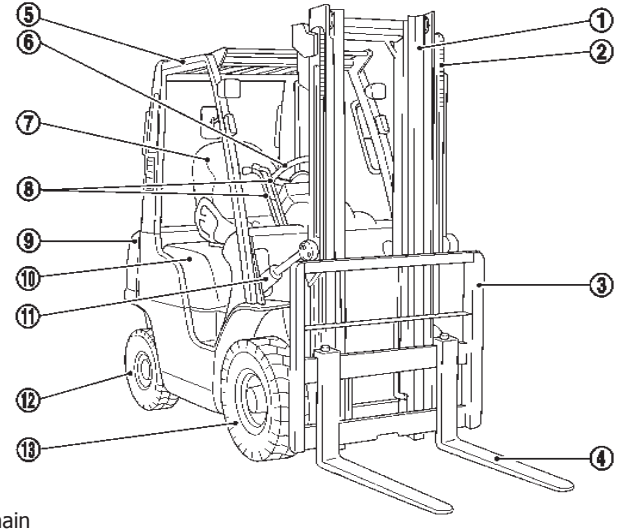
These warranty time periods are for units shipped in the United States and its territories.

For exclusion and limitations, see separate Warranty Statement included with start-up manuals.

*Warranty coverage for tires, battery, optional equipment, and hang on attachments are provided by the local component manufacturer's representatives, directly.

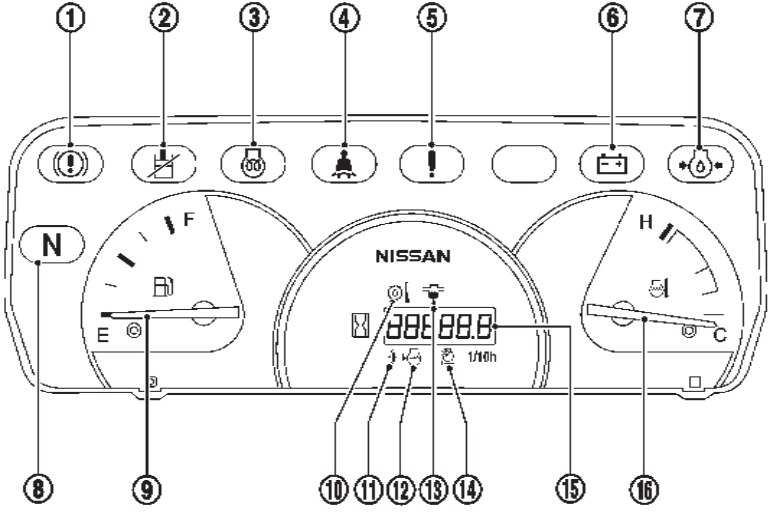
For warranty coverage and statements outside of the U.S., please contact your Local Authorized Dealer.

NAME OF COMPONENTS



1. Mast
2. Lift Chain
3. Backrest
4. Fork
5. Overhead Guard
6. Steering Wheel
7. Operator's Seat
8. Control lever
9. Counter weight
10. Top panel
11. Tilt cylinder
12. Rear tire
13. Front tire

INSTRUMENTS

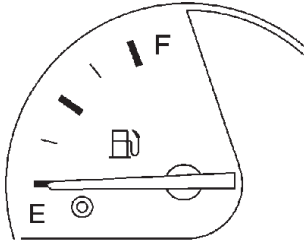


1. Brake warning lamp or brake fluid level warning lamp (option)
2. Loading interlock indicator lamp
3. Glow plug indicator lamp (diesel engine vehicle)

   LPG level warning lamp (LPG-gasoline dual fuel vehicle)and LPG tank bracket
4. Seatbelt warning lamp
5. Multi-purpose warning lamp
6. Charge warning lamp
7. Oil pressure warning lamp
8. Neutral position indicator lamp or F/R interlock indicator lamp (A/T vehicle)
9. Fuel meter
10. Automatic transmission fluid temperature warning lamp (A/T vehicle)
11. Clutch wear indicator lamp (Option-Not used in North America)
12. Cooling water level warning lamp
13. Fuel filter (water accumulation) warning lamp (Diesel engine)
14. Air cleaner plugging indicator lamp
15. Hour meter, error code
16. Cooling water temperature meter

Meter illumination

An illumination lamp is provided for meters to ensure visibility at night. The illumination lamp can be turned on and off, regardless of the position of the ignition switch.



Fuel meter

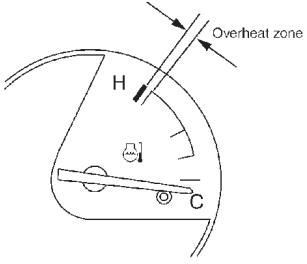
When the ignition switch is in the ON position, the fuel meter indicates the amount of fuel remaining in the tank. Place the lift truck on a level surface when checking the amount of fuel, because the fuel meter does not indicate the amount of fuel with accuracy when the lift truck is inclined.

F position: The fuel tank is full.

E position: The fuel tank is empty.

NOTE:

- **If your lift truck is an LPG - gasoline dual fuel vehicle, the fuel meter will not work when the lift truck is operated on LPG.**
- **When operating the lift truck on LPG, check from time to time to be sure that the LPG level warning lamp is not lit and the LPG level alarm is not on.**
- **To check the remaining amount of LPG, use the fuel gauge on the LPG cylinder.**



Water temperature meter

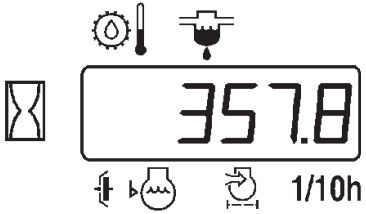
When the ignition switch is set at ON, the water temperature meter operates and pointer indicates coolant temperature. The cooling water temperature is proper when the pointer is between C (Cold) and H (Hot) on the meter gauge.

CAUTION

If the pointer indicates “”H’’ position and remains there for more than a few minutes, stop the lift truck and cool the engine at idling speed. After stopping the engine, check the coolant level and fan belt deflection.

Note to the Operator:

All EFI units in North America have a creep home feature which will reduce engine RPMs if coolant temperature remains near the “H” position. This would indicate the unit should be serviced by your Local Authorized Dealer.

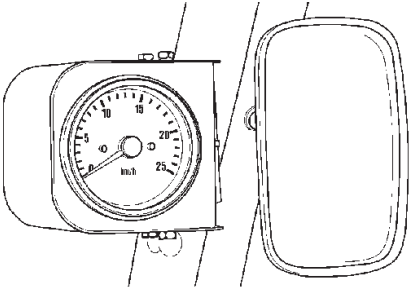


Hour meter

The hour meter operates when the ignition switch is in the ON position. The hour meter on the LCD indicates the cumulative operating time of the lift truck in hours. The decimal number at the right end denotes tenths of hour, that is, the number 1 refers to 6 minutes. Make use of the hour meter for managing the periodic maintenance schedule, the operating time, and so on.

NOTE:

The hour meter is designed to count and indicate the period of time for which the ignition switch was in the ON position.



Speedometer(Option)
(Not available in North America)

This speedometer indicates the running speed of the lift truck. Always drive the lift truck at safe speeds.

Charge warning lamp

With the ignition switch ON, the warning lamp glows red when the alternator is not supplying current to the electrical system. After the engine starts, the lamp should go out, indicating that the engine lubricating system is operating properly.

CAUTION

If the lamp glows or flickers occasionally during normal operating, the alternator and electrical system should be checked.

Oil pressure warning lamp

This lamp glows red when the ignition switch turns ON. After the engine starts, the lamp should go out, indicating that the engine lubricating system is operating properly.

CAUTION

If the lamp glows under ordinary operating conditions, stop the engine immediately and check the engine lubrication system.

Glow plug indicator lamp (Diesel engine vehicle) AND

LPG tank mounting bracket & Low LPG fuel warning. (LPG and Dual fuel engines)

Diesel Models Only

This lamp goes on when the ignition switch is ON, and goes out when the glow plugs have been preheated.

CAUTION

- **If the lamp remains lit after the glow plugs are preheated, this indicates an abnormality in the glow system.**
- **Have the system checked at your Local Authorized Dealer or other competent service shop.**

LPG tank mounting bracket & Low LPG fuel warning. (LPG and Dual fuel engines)

- **For LPG tank mount bracket & low LPG fuel: lamp is lit when key is turned on. If lamp remains on and warning buzzer sounds with key on or after engine is started the LPG tank mounting bracket (either swing out or swing down type) is not secure (latched). (Refer to page 49) Turn off engine, set park brake and then check tank mounting bracket and latch correctly.**

- **If lamp comes on during operation and there is NO buzzer, the LPG tank is out of or nearly out of fuel. Have LPG cylinder tank replaced immediately.**

Multi-purpose warning lamp

This lamp indicates that something is wrong with the lift truck. Depending on the abnormal event that occurred, the lamp lights up or blinks, as described in the table.

Type of warning	Lights or blinks	Description
Display of a warning on the LCD	Lights up	The warning lamp lights up when a warning is displayed on the LCD. For more information, refer to "LCD warning display" on page 13.
Occurrence of a minor failure	Lights up	A failure code (a three-digit number) is displayed on the LCD.
Occurence of a major failure	Blinks	A failure code is displayed on the LCD, and at the same time, the brake warning lamp, loading interlock indicator lamp, and engine oil pressure warning lamp blink.

CAUTION

If this lamp lights up or blinks during operation, stop operation immediately, report to the person having management duties and take necessary measures, or consult your Local Authorized Dealer for inspections.

Seatbelt warning lamp

This lamp indicates that the seatbelt is not fastened securely. It will light up if the seat belt is not fastened when the ignition switch is turned to the ON position, and it will go off when the seat belt is fastened.

Loading interlock indicator lamp

This lamp will blink if the control lever is operated when the operator's seat is unoccupied. In such a case, the cargo handling system will not operate, even if you operate the control lever to perform forward tilt operation or fork lowering operation.

Brake warning lamp

This lamp indicates that the parking brake is applied. It will light up if the parking brake is applied when the ignition switch is in the ON position, and it will go off when the parking brake is released.

Brake fluid level warning lamp (Option)

This lamp is the same as the brake warning lamp. It will light up if brake fluid in the reservoir comes down below the lower limit (MIN position). If this lamp lights up, immediately report to the person having management duties and take necessary measures, or contact your Local Authorized Dealer for inspections.

N Neutral position indicator lamp (A/T vehicle)

This lamp indicates that the selector lever is in the neutral position. It is lit when the ignition switch is in the ON position and the selector lever is in the neutral position, and it goes off when the selector lever is shifted to the forward or reverse position.

N F/R interlock indicator lamp (A/T vehicle)

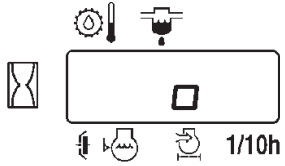
This lamp is the same as the neutral position lamp. It will blink if the selector lever is shifted to the forward or reverse position when the operator's seat is unoccupied. To turn off the lamp, sit on the operator's seat correctly and shift the selector lever back to the neutral position.

LCD warning display

If an abnormal event occurs, the display will blink and display a 0 (zero) under the corresponding warning symbol. When a warning is displayed on the LCD, the multipurpose warning lamp also lights up.

NOTE:

An hour meter is displayed on the LCD under normal operating conditions. When a warning is displayed, however, the hour meter disappears from the LCD.

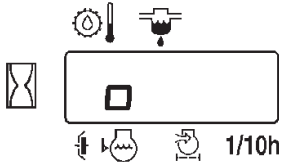


Air cleaner plugging indicator lamp (Option, but standard in North America)

This lamp will light up if the air cleaner element is clogged up when the ignition switch is in the ON position and the engine is running. Clean or replace the air cleaner element as soon as possible. (For more information, refer to "”Air cleaner” on page 89.)

CAUTION

Continuing driving while the lamp is lit may lead to a reduction in the engine output or engine damage.

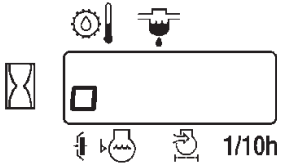


Cooling water level warning lamp (Option, but standard in North America)

This lamp comes on when the ignition switch is turned to START. If the lamp comes on while the lift truck is in operation, it indicates that the coolant in the radiator reservoir tank has dropped below the MIN. level. Add coolant to the MAX. level.

CAUTION

Continuing driving while the lamp is lit may lead to overheating of the engine.

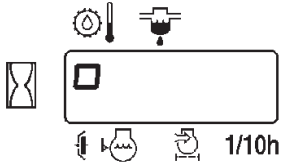


Clutch wear indicator lamp (M/T vehicle - option)

This lamp comes on when the ignition switch is turned to START. If the lamp comes on while the lift truck is in operation, it indicates that the clutch plate is worn to the "wear limit". When the lamp comes on while in operation, immediately have the clutch plate checked by your service dealer.

CAUTION

Continued use of a worn clutch plate may damage the flywheel.

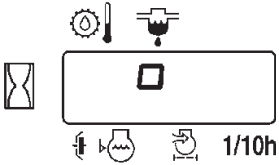


Automatic transmission fluid temperature warning lamp (A/T vehicle)

This warning lamp will light up if the automatic transmission (A/T) fluid temperature rises extremely high. If this lamp lights up during operation, immediately move the lift truck to a safe place where the forklift does not obstruct the passage of people or other vehicles, and wait for the fluid temperature to come down, while keeping the engine idling. The lamp goes off when the fluid temperature comes down to a normal level.

NOTE:

- **Check the level of automatic transmission fluid. (For more information, refer to "Automatic transmission fluid level" on page 73.)**
- **If the warning lamp lights even though the transmission fluid is at a normal level, ask your Local Authorized Dealer for inspections.**



Fuel filter (water accumulation) warning lamp (3.3L-4C diesel engine vehicle)

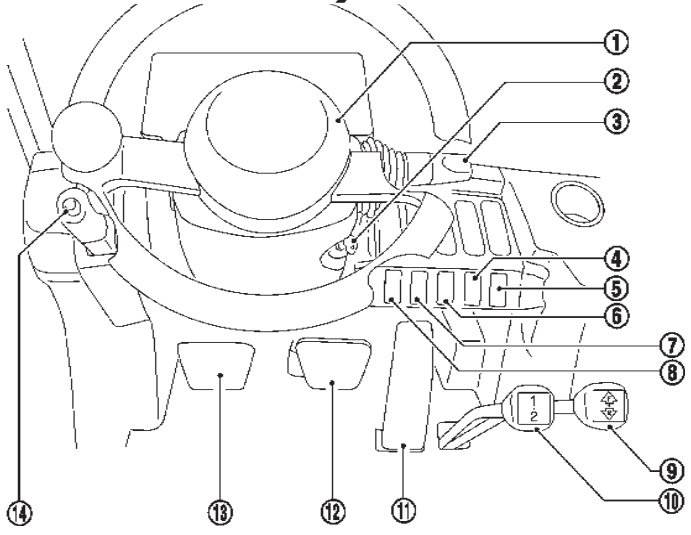
This lamp will light up if water in the sediment chamber (fuel filter) exceeds the specified level.

If this lamp lights during operation, stop the engine as soon as possible and drain water from the sediment chamber (fuel filter). (For more information, refer to "FUEL FILTER" on page 86.

NOTE:

Continuing driving could result in seizing up of the fuel injection pump.

SWITCHES AND CONTROLS (M/T VEHICLE) (OUTSIDE NORTH AMERICA)



(1) Horn switch

(2) Key switch

(3) Lighting switch and turn signal switch

(4) Throttle sensitivity adjust switch (option)

(5) Back buzzer ON/OFF switch (option)

(6) Maximum speed change switch (option)

(7) Backup operation switch (option)

(8) Fuel-change switch (LPG - gasoline dual fuel vehicle)

(9) Forward-reverse lever

(10) Gear shift lever

(11) Accelerator pedal

(12) Brake pedal

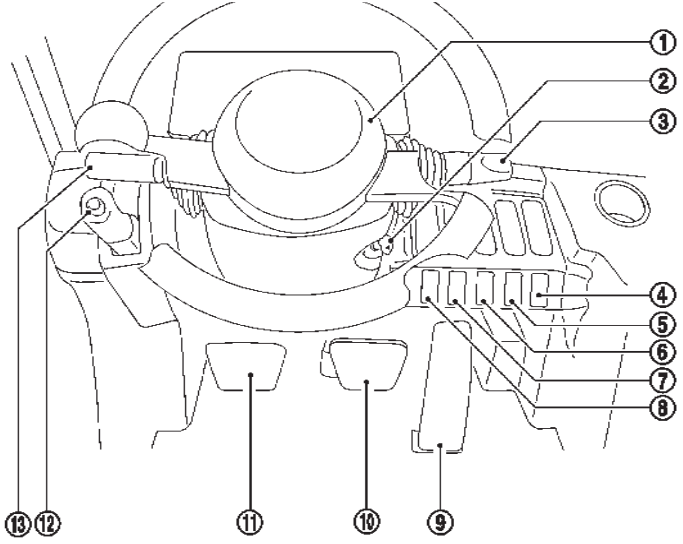
(13) Clutch pedal

(14) Parking brake lever

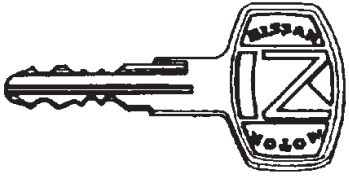
NOTE:

The locations of (9) Forward-reverse lever and (10) Gear shift lever can be opposite, depending on the model (option).

SWITCHES AND CONTROLS (A/T VEHICLE)



1. Horn switch
2. Key switch
3. Lighting switch and turn signal switch
4. Back buzzer ON/OFF switch (option) (Not for North America)
5. Throttle sensitivity adjust switch (option)
6. Maximum speed change switch (option)
7. Backup operation switch (option)
8. Fuel-change switch (LPG - gasoline dual fuel vehicle)
9. Accelerator pedal
10. Brake pedal
11. Inching brake pedal
12. Parking brake lever
13. Selector lever

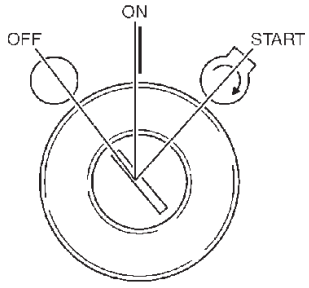


Ignition key

Insert the ignition key in the ignition switch to start or stop the engine.

NOTE:

- **Every Nissan Forklift industrial truck comes with two ignition keys. Use one key for operation and store the other in a safe place as a spare.**
- **Be sure to take a note of the key number in case the key is lost. You need to specify the key number when placing an order for additional spare keys with your Local Authorized Dealer.**



Key switch

OFF position:

The position that allows the ignition key to be inserted into or removed from the ignition switch. When the ignition switch is in this position, all electric circuits are opened but the following can be turned on and off.

- Horn
- Lamps by operating the lighting switch
- Rear operating lights (option)
- Braking lamps by the application of the brake

ON position:

The position in which the ignition switch is placed when the engine is running. When the ignition switch is in this position, all electric circuits are opened.

START position:

To start the engine, turn the ignition switch to ON position, then to START. When you take your hand off the ignition key after starting the engine, the key returns to this ON position automatically.

NOTE:

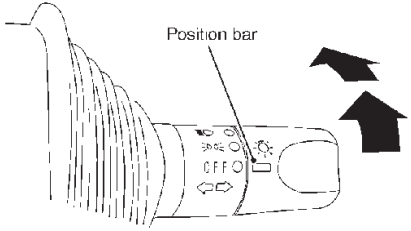
- **If you leave the ignition switch in the ON position while the engine is stopped, the battery may run down and may make it impossible to start the engine. To avoid this, always return the ignition switch to the OFF position after stopping the engine.**
- **During operation, the ignition switch is in the ON position and never turn it to the OFF or START position.**
- **Do not operate the starter for a long time when starting the engine.**
- **If the engine does not start even though you operate the starter repeatedly, return the ignition switch to the OFF position, wait for a while until the battery is restored to a normal voltage level, and then try to start the engine again.**

Gasoline engine vehicle:

Do not operate the starter for more than 10 consecutive seconds. If the engine does not start, wait for at least 10 seconds and then try to start it again.

Diesel engine vehicle:

Do not operate the starter for more than 30 consecutive seconds. If the engine does not start, wait for at least 30 seconds and then try to start it again, starting with preheating.



Lighting switch

To turn on one of the lamps in the table, turn this switch to align the position bar (|m-) on the switch knob with the corresponding mark on the switch main unit.

Switch mark	Headlamp	Meter illumination, clearance lamp, tail lamp and license plate lamp
OFF	OFF	OFF
	OFF	ON
	ON	ON

CAUTION

Do not touch the headlamp lens when the headlamp is lit or immediately after the headlamp is turned off, because it is very hot.

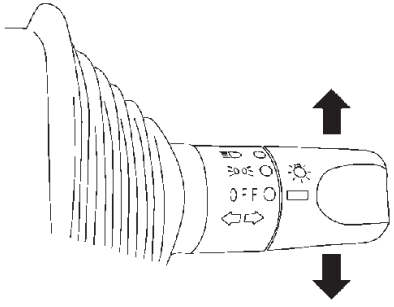
NOTE:

You can turn on and off lamps by turning the lighting switch, regardless of the position of the ignition switch.

Do not forget to turn off all lamps when leaving the lift truck, or else the battery may run down.

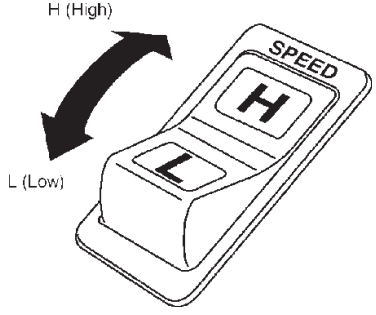
Horn switch

Pushing the switch in the center of the steering wheel will sound the horn, regardless of key position.



Turn signal switch (Option)

Push the switch lever forward when turning left, and pull it backward when turning right. The appropriate turn signal will blink. Upon completion of turn, be sure to return the lever to its original position.



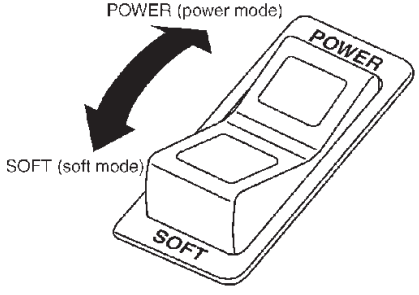
Maximum speed change (Option)

This switch allows you to switch the maximum speed between H (high speed mode) and L (low speed mode). Press the H (high) side of the switch if there is no need to limit the maximum speed to a low level, or press the L (Low) side to limit the maximum speed to a low level.

The lamp on the side you pressed lights up, indicating which speed mode is currently selected.

CAUTION

- **Do not change the maximum speed when the lift truck is running, it could cause load to shift.**
- **Only authorized Nissan Forklift dealers are allowed to change running speed settings. So if necessary, ask your Local Authorized Dealer to do so.**



Throttle sensitivity adjust switch (Option)

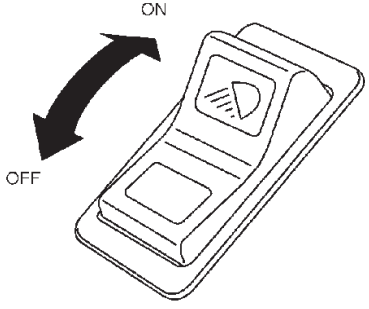
This switch allows you to switch starting acceleration between POWER (power mode) and SOFT (soft mode). Press the POWER side of the switch to accelerate the lift truck at a normal rate, or press the SOFT side to accelerate the lift truck slowly.

The lamp on the side you depressed lights up, indicating which power mode is currently selected. You can switch from one mode to the other, as described in the table.

Switching operation	During driving	During a halt
From "POWER" to "SOFT"	Possible	Possible
From "SOFT" to "POWER"	Impossible	Impossible

NOTE:

The switching from the SOFT mode to the POWER mode can be made only when the accelerator is released.



Rear work light operation switch (Option)

This switch is used to turn on and off the rear operating light that illuminates rearward for nighttime operation or operation in poorly illuminated areas.

Rear work light (cont.)

Press the lamp symbol-marked side of this "seesaw" switch to turn on the lights, or press the opposite side to turn off the lights. The lamp in the switch lights up when the rear operating light is turned on.

CAUTION

Do not touch the lens of a rear operating light when the light is lit or immediately after it is turned off, because it is very hot.

NOTE:

- **The rear operating light can be turned on, regardless of the position of the ignition switch. So leaving light ON causes the battery to run down and sometimes makes it impossible to start the engine.**

CAUTION

- **Some state or local laws prohibit the turning on of backward or rear facing illumination lamps on public roads.**

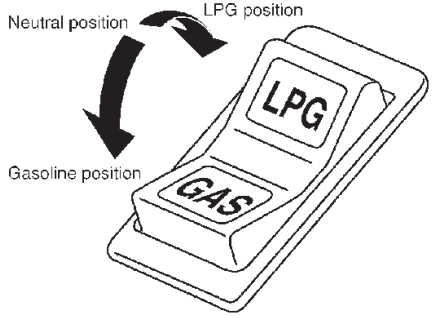
- **The rear work light, if turned on, will obstruct the passage of other vehicles on public roads. To avoid this, always turn rear work light off when driving on any public roads.**

LPG level warning lamp (LPG - gasoline dual fuel vehicle)

This lamp comes on when the fuel pressure in the LPG cylinder comes down below 98 kPa (1 kgf/cm2) (20 psig). (Refer to page 11).

CAUTION

When the lamp is on, replace the LPG cylinder as soon as possible. Continuing the use of the vehicle while the alarm is on causes fuel to run out and will result in engine stalling.



Fuel-change switch (LPG - gasoline dual fuel vehicle)

This switch is used to switch fuel from LPG to gasoline or from gasoline to LPG.

LPG position: Turn to this position to use LPG.

Fuel change switch (cont.)

Neutral position: Turn to this position to exhaust fuel from the fuel pipe.

Gasoline position: Turn to this position to use gasoline.

The lamp for the fuel currently used lights up.

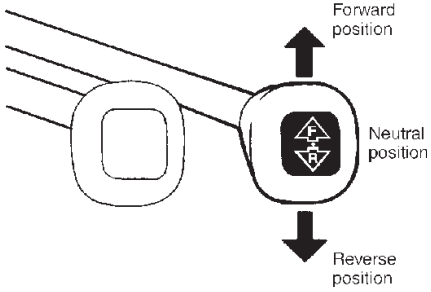
WARNING

Do not manipulate the charge valve (green or gray), or else LPG may leak out to atmosphere.

NOTE:

- **When the engine is running, you can switch between fuels by operating the switch.**
- **To switch from one fuel to the other, strictly follow the given steps after warming up the engine.**
- **To prevent deterioration of gasoline, drive the lift truck on gasoline several kilometers once every two weeks or so.**
- **The engine does not start when the selector switch is in the neutral position. So do not forget to turn the switch to the LPG or gasoline position before starting the engine.**

Manual Transmission



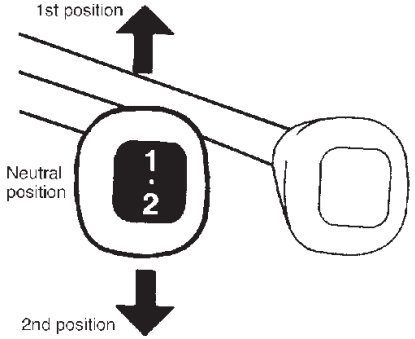
Forward-reverse lever (M/T vehicle outside North America)

This lever is used to change the running direction of the lift truck (forward or reverse). Push the lever forward to drive forward, or pull it towards you to back up. The neutral position is at the midpoint.

CAUTION

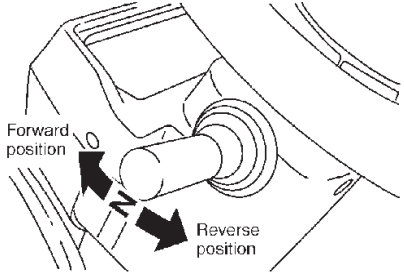
- **When starting the engine, always return the forward-reverse lever to the neutral position.**
- **When operating the lever while the engine is running, be sure to fully depress the clutch pedal.**
- **Do not operate the forward-reverse lever before the lift truck comes to a full stop. When operating the lever, do it correctly while pressing the clutch pedal flat.**

● Depending on the model used, the gear shift lever may be placed on the right side of the forward-reverse lever (optional). Before use, therefore, make sure of the position of each lever to avoid operating the wrong lever.



Gear shift lever (M/T vehicle)

This lever is used to shift gears between low speed (1st speed) and high speed (2nd speed). Push the lever forward to shift to low gear, or pull the lever towards you to shift to high gear. The neutral position is at the midpoint.



Selector lever (A/T vehicle)

Automatic Transmission

This lever is used to change the running direction of the lift truck (forward or reverse). Push the lever forward to drive forward, or pull the lever towards you to back up. The neutral position is at the midpoint.

The same operating method goes for the selector lever arranged on the right side of the forward-reverse lever (option).

CAUTION

● When starting the engine, shift the selector lever back to the neutral position.

● Press the inching brake pedal flat.

● Do not change the running direction by operating the lever before the lift truck comes to a full stop. Doing so applies excessive force to the drive system and may cause it to break down.

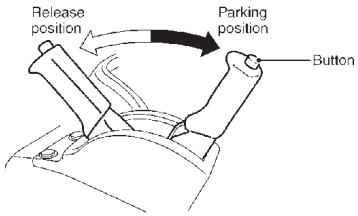
Moreover, a rapid change of the running direction may cause cargo to shift or fall or make it difficult for the operator to maintain a correct driving posture.

● When stopping the lift truck temporarily with the selector lever left in the forward or reverse position, be sure to keep the brakes applied or fully pull up the parking brake lever to prevent the lift truck from moving unexpectedly.

(It can move even when the engine is idling.)

NOTE:

The engine cannot be started when the selector lever is in any position other than the neutral position.



Parking brake lever

When parking the lift truck, fully pull the lever towards you. To release the parking brake, push the lever forward with the push button on top of it held down.

When parking the lift truck on a slope, fully pull the lever towards you and set a chock behind each wheel.

WARNING

Always depress the brake or inching pedal before releasing the parking brake to avoid movement of unit before operator selects a direction.

WARNING

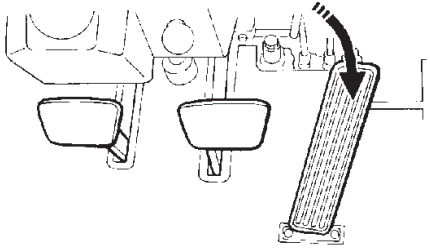
Driving the lift truck with the parking brake applied could cause the brakes to fail due to overheating. Also, it accelerates brake pad wear.

NOTE:

To remind the operator to apply the parking brake, an alarm will sound if:

● The operator leaves the operator's seat without applying the parking brake while the ignition switch is in the ON position: or

● The operator turns off the ignition switch without applying the parking brake, no matter whether he is sitting in the operator's seat.

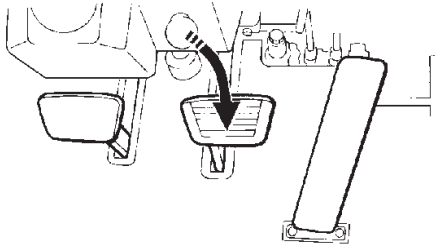


Accelerator pedal

This pedal allows you to adjust the rotational speed of the engine. The engine speed changes according to the degree to which the accelerator pedal is depressed.

CAUTION

Do not depress the accelerator pedal quickly but depress it slowly to prevent a sudden or rapid start or a shift or fall of cargo.

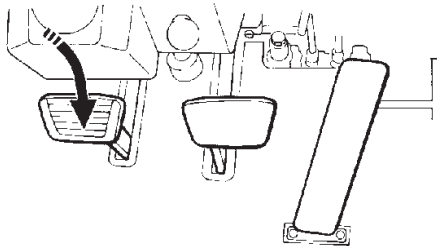


Brake pedal

This pedal allows you to bring the forklift to a stop or slow it down.

WARNING

- **Do not brake the lift truck too hard. Doing so may cause the lift truck to become unbalanced and could result in a serious accident.**
- **Adjust the braking effort according to the cargo weight.**
- **Do not leave your foot on the brake pedal during driving. Doing so may cause the brakes to fail because of overheating. Also, it hastens the wearing away of the brake pads.**



Inching brake pedal (A/T vehicle)

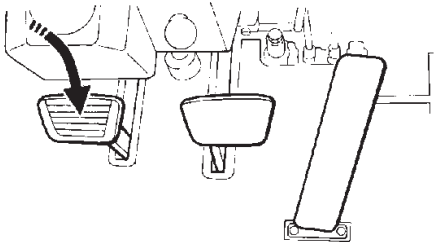
Automatic Transmission

The inching brake pedal allows you to finely adjust forward and reverse running speed.

The clutch begins to slip when you slightly depress this pedal, and the clutch is completely disengaged and the brakes are applied when you further depress the pedal, in which case the inching brake pedal acts in the same way as a brake pedal.

WARNING

- **Do not leave your foot on the inching brake pedal when driving the forklift.**
- **Doing so may cause the clutch to slip and prevent engine brake from taking effect. Moreover, it could cause the brakes to fail because of overheating.**
- **Also, doing so may cause the hydraulic clutch in the transmission to slip and give off a large amount of heat, causing the clutch to overheat, wear down in a short time or seize up in the worst case.**



Clutch pedal (M/T vehicle)

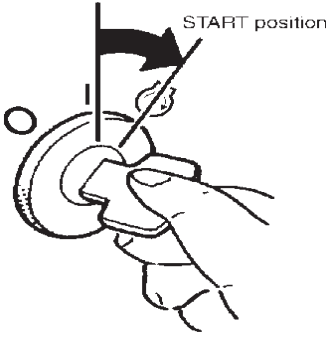
This pedal is used along with the forward-reverse lever or the gearshift lever.

When operating the forward-reverse lever or the gearshift lever, depress the clutch pedal flat, shift the forward-reverse lever or the gearshift lever from one position to another, and then slowly take your foot off the clutch pedal.

CAUTION

Do not leave your foot on the clutch pedal when driving the lift truck.

Doing so may cause the clutch to slip and hastens the wearing away of the clutch discs.



Gasoline engine starting (Including LPG - gasoline dual fuel vehicle)

WARNING

- **Do not breathe exhaust gases; they contain colorless and odorless carbon monoxide. Carbon monoxide is a dangerous gas and can cause unconsciousness or death.**
- **Do not run the engine in closed spaces or poorly ventilated rooms such as a garage or refrigerator, etc.**

Follow the procedure outlined below to start the engine.

LPG - gasoline dual fuel vehicles have a fuel-change switch. Use this switch to select the desired fuel.

When using LPG, slowly open the (red) discharge valve on LPG cylinder (tank) to start engine.

1. Pull the parking brake lever up as far as possible. Move the forward-reverse lever (M/T vehicle) or the selector lever (A/T vehicle) to the neutral position.

2. Depress the clutch pedal (M/T vehicle) or the inching brake pedal (A/T vehicle) as far as it can go.

3. Remove your foot from the accelerator pedal. Turn the starter to start the engine.

NOTE:

- **Do not operate the starter for more than ten seconds. If the engine fails to start within ten seconds, release the starter and wait for ten seconds before attempting to start the engine again. This allows the battery time to recover.**
- **For carburated engines only, when restarting engine in a very warm to hot (above 90°F) environment, slowly depress accelerator pedal fully to floor.**

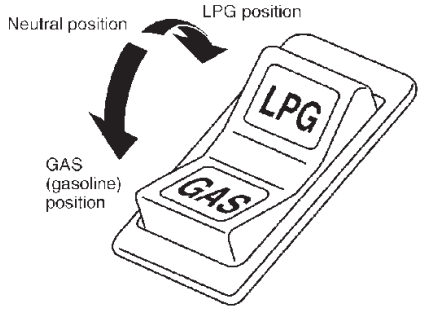
4. After starting the engine, allow it time to warm up. Allow the engine to idle for one minute after starting. Then, press the accelerator pedal lightly and release it. If the surrounding temperature is high, lightly pressing and releasing the accelerator pedal will reduce engine speed and permit quiet warming up. This also results in fuel savings.

NOTE:

- **The engine is cold immediately after starting. Do not intermittently race the engine or run the engine at high speeds immediately after starting.**
- **Do not move the key to the START position when the engine is running. Damage to the starter motor will result.**
- **After operation always close the LPG (red) discharge valve on LPG cylinder (tank) after shutting engine off (down).**
- **After operation, if the forklift is not used for several hours or more, or during cold weather seasons, park the lift truck with the fuel-change switch positioned on the gasoline side. This helps to start the engine more easily the next time. (LPG - gasoline dual fuel vehicle)**
- **Engine speed is high immediately after starting. Exercise caution when moving the vehicle or handling cargo.**

WARNING

- **Inspect the condition of LPG hose connections and check for gas leaks from LPG hoses and pipes before starting engine.**
- **In the event of LPG leakage or some other abnormal occurrence, close the discharge valve immediately. Have your LPG system checked at your Local Authorized Dealer.**



Fuel-change switch (LPG - gasoline dual fuel vehicle)

WARNING

Do not operate (turn on or open) the LPG cylinder (tank) change (refill) valve. Opening the valve may cause LPG gas to leak into the atmosphere and could cause a dangerous fire hazard.

To change from LPG operation to gasoline operation

1. Press the fuel-change switch and change switch position from the LPG to the neutral.

2. Shut off the red or discharge valve on the LPG cylinder side.

3. Let engine run at idle until it stops.

4. After the engine has completely stopped, move the fuel-change switch to the GAS position. Restart the engine.

CAUTION

Directly switching LPG over to GAS without the fuel-change switch first being positioned at neutral causes the remaining fuel (LPG) and gasoline to be mixed, resulting in a poorly operating engine. Before changing over the switch positions, always exhaust the remaining fuel (LPG) by setting the switch to the neutral position.

To change from gasoline operation to LPG operation

1. Press the fuel-change switch and change switch position from GAS to neutral. Slightly depress the accelerator pedal and hold it to allow the engine to race. Continue pressing the accelerator pedal until the engine stops.

2. After the engine has completely stopped, open the red discharge valve on the cylinder side and move the fuel-change switch to the LPG position. Restart the engine.

CAUTION

Directly switching GAS over to LPG without the fuel-change switch first being positioned at neutral causes the remaining fuel (gasoline) and LPG to be mixed, resulting in a poorly operating engine. Before changing over the switch positions, always exhaust the remaining fuel (gasoline) by setting the switch to the neutral position.

NOTE:

- **Change over the fuel-change switch positions as per the operating procedure of this switch. Otherwise, the air/fuel ratio of fuel (mixture) is negatively affected, making it difficult to start the engine.**
- **In case of driving a LPG-gasoline dual fuel vehicle using LPG during the cold weather seasons, first start the engine using gasoline and then change over to LPG with fuel-change switch after warm-up.**
- **Do not use the fuel-change switch to change fuels when the engine is running. Change fuels only after the engine has completely stopped.**

● Operate the vehicle with gasoline for several kilometers at least once every two weeks. This will prevent gasoline deterioration.

● Do not change fuels immediately after starting the engine. Allow the engine to warm up before changing fuels.

● With the fuel-change switch set to the neutral position, the engine cannot be started. Before starting the engine, always change the switch position over to LPG or gas.

Carefully follow the procedures below when turning the engine off after LPG operation.

1. Move the fuel-change switch to the neutral position.

2. Let the engine idle until it stops.

3. Make sure that all of the remaining LPG (in the piping and other receptacles) has been used. After the engine stops, turn the key switch to the OFF position.

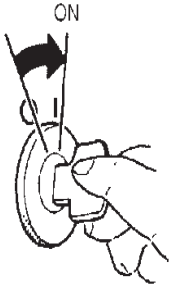
4. After completion of operation and before storing the vehicle for an extended period, completely close the (red) discharge valve. Check the engine for gas leakage. Refer to "”LPG cylinder replacement” on page 95.

WARNING

● In the event of gas leakage, an accident, or some other abnormal occurrence, immediately and completely close the discharge valve (colored red). Have your LPG system checked at your Local Authorized Dealer.

● If the lift truck is not used for several hours or more after operation, park the lift truck with the fuel-change switch to the GAS position. It helps the next engine start more easily the next time.

Glow plug indicator lamp



DIESEL ENGINE

Starting

1.Set the parking brake lever and move the forward-reverse lever (M/T vehicle) or the selector lever (A/T vehicle) to the NEUTRAL position.

2.Depress the clutch pedal (M/T vehicle) or the inching brake pedal (A/T vehicle) as far as it can go.

3. When the ignition key is set to the ON position, the glow plug indicator lamp on the instrument panel goes on, indicating that engine preheating has started.

Keep the ignition key in the ON position until the glow plug indicator lamp goes out (indicates completion of preheating).

NOTE:

Engine preheating is controlled automatically corresponding to the engine coolant temperature, atmospheric air temperature and so forth, and the glow plug indicator lamp goes out when the engine is preheated to the specified temperature.

4. When the glow plug indicator lamp has gone out, turn the ignition key to the START position while depressing the accelerator pedal fully, until the engine starts.

NOTE: (For diesel engines only)

● Do not operate the starter for more than 30 consecutive seconds.

● If the engine does not start even after continuously operating the starter for approx. 30 seconds, turn the ignition key to OFF position and then wait for about 30 seconds. Subsequently, try to start it again from the preheating process.

5. After the engine has started, release the accelerator pedal gradually and then perform warm-up of the engine.

NOTE:

● When restarting, return the ignition key to the OFF position once, then turn it to the START position.

● Regardless of atmospheric temperature, always perform warm-up for approx. 5 minutes. During warm-up, check for any abnormal condition of meters, warning lights or indicator lamps.

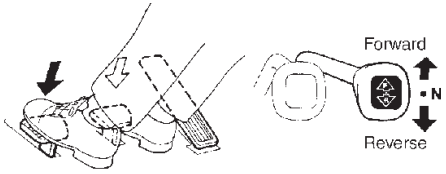
● Failure to properly warm-up the engine can cause degradation and shortened life of engine.

● When it is not necessary to preheat the engine because of high engine coolant temperature immediately after it stops or for some other reasons, the engine can be started by turning the key switch to START position before the glow plug indicator lamp goes out.

● If the glow plug indicator lamp is not lit, and abnormal condition may exist. In this case, promptly contact your Local Authorized Dealer to inspect the unit.

Stopping

To stop the engine, turn the ignition key to the OFF position; engine will then stop.



GEARSHIFT LEVER

M/T vehicle

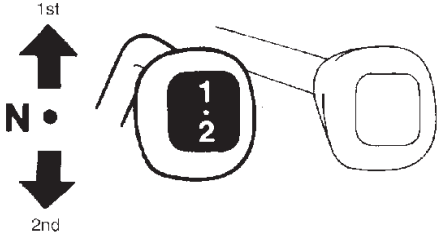
FORWARD-REVERSE lever and GEARSHIFT lever

The "FOWARD-REVERSE" lever is used to make a directional change.

1. Release the accelerator pedal.

2. Depress brake while fully depressing the clutch pedal immediately before the lift truck stops.

3. Further depress the brake pedal, to completely stop the lift truck.



4. When the lift truck completely stops, position the forward-reverse lever in forward or reverse.

CAUTION

While the lift truck is moving, do not change the forward-reverse lever positions. Otherwise, the transmission may be damaged.

The "GEARSHIFT" lever permits selection of different transmission gear ratios.

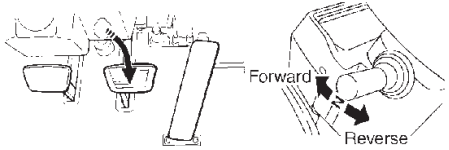
1. Simultaneously with the release of accelerator pedal, fully depress the clutch pedal.

2. Change the gear shift from 1st to 2nd or from 2nd to 1st.

3. When the gear shift is positioned in the desired place, depress the accelerator pedal while gradually releasing the clutch pedal.

CAUTION

Positioning the gear shift in 1st without decelerating the lift truck may cause a gear shift shock, or sudden deceleration, which could result in shifted or fallen load or damaged transmission.



Automatic Transmission

This lever is used to change the direction of the lift truck, forward and reverse.

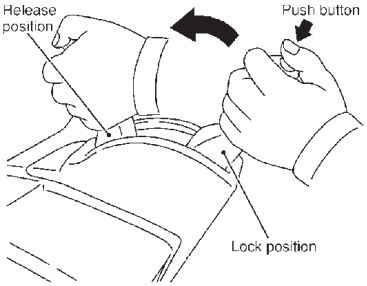
1. Release the accelerator pedal.

2. Depress the brake pedal, to stop the lift truck.

3. When the lift truck completely stops, move the selector lever to the forward or reverse position.

CAUTION

While the lift truck is moving, do not change over the selector lever positions. Otherwise, the transmission may be damaged.

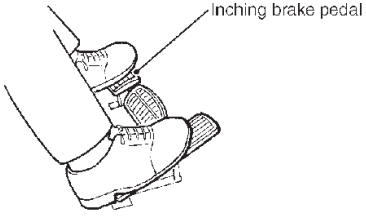


PARKING BRAKE

To set the brake, pull the parking brake lever backward. To release the brake, press the button and then push the parking brake lever forward. Before leaving the lift truck, be sure to apply the parking brake securely.

WARNING

Always depress the brake or inching pedal before releasing the parking brake to avoid movement if unit before operator selects a direction.



INCHING BRAKE PEDAL (A/T VEHICLE)

1. Fully depress the inching pedal.

2. Move the selector lever to the forward or reverse position.

3. Depress the accelerator pedal little by little. At the same time, gradually releasing the inching brake pedal moves the lift truck bit by bit.

WARNING

- **When the inching/brake pedal is depressed fully the service brake will be applied. However the inching/brake pedal should not be used as the method of stopping the unit. In normal traveling operation, the inching/brake pedal should only be used during loading or unloading which requires short controlled movement of the forklift.**

- **During deceleration on any grade use only the brake pedal or an increase or decrease in speed by using the accelerator. Do not use or depress inching pedal as this would put transmission in neutral mode.**

LOAD CONTROL LEVERS

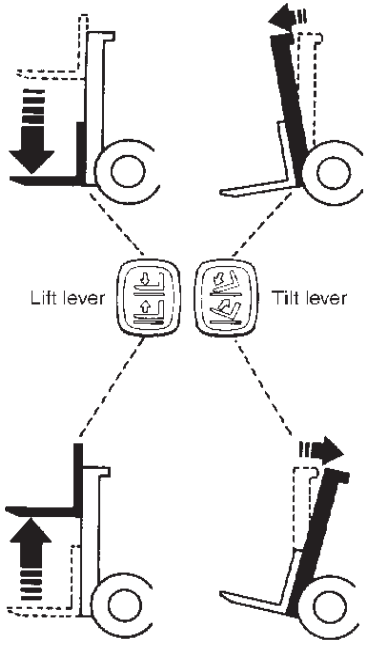
To control the loading mechanism for moving the fork up and down and forward and backward tilting the mast has two operating methods: double lever type or single lever type.

Before using the lift truck, make sure which operating lever type is adopted in controlling the loading mechanism and thoroughly read the related instruction manual.

WARNING

- **Always sit in the operator's seat when operating the lever.**
- **Operating the control lever without properly sitting in the operator's seat causes the loading interlock warning lamp to blink and the loading mechanism to be inactive.**
- **Before operating the lever, make certain that the surrounding area is clear and it is safe to proceed.**
- **If the engine is stopped, operation of the lever to the downside or lowering direction may cause the fork & mast to go down due to its own weight or the cargo that may be on the forks. Which may cause serious damage or injury.**
- **Always avoid any abrupt or sudden lever operation which may cause loads to shift or fall off fork or cause forklift to become off balance and tip over**

2-lever type



This method uses two levers: a lift lever for moving the fork up and down and a tilt lever for tilting the mast forward and backward:

- Lift lever:

Lift: Pull the lever to the operator side.

Lower: Push the lever forward.

- Tilt lever:

Forward: Push the lever forward.

Backward: Pull the lever to the operator side.

WARNING

- **Do not perform forward tilt while raising the forks, as this may cause loads to shift or fall, which could affect vehicle stability.**
- **Do not perform forward tilt while lifting loads in higher positions. This may cause loads to shift or fall, which could affect vehicle stability.**

NOTE:

- **Control of lifting speed:**

Can be changed by controlling the tilt angle of lever and by how much the operator depresses the accelerator pedal.

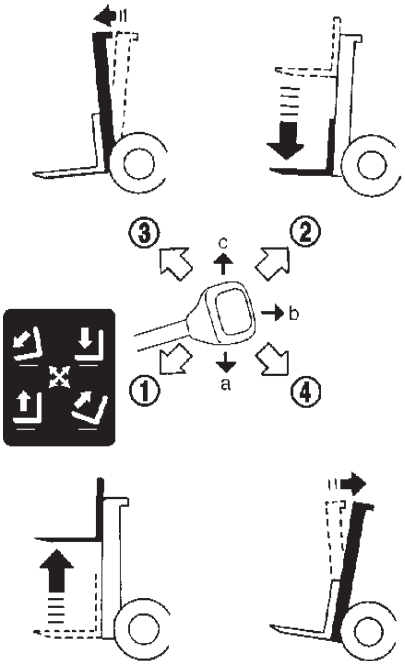
- **Control of lowering speed:**

Can be changed only by controlling the tilt angle of lever. Do not depress the accelerator pedal.

- **Control of forward and backward tilting speeds:**

For both forward and backward tilts, the speed can be changed by controlling the tilt angle of lever and by how much the operator depresses the accelerator pedal.

1-lever type



This method performs up and down movements of fork and forward and backward tilting of mast using a single lever:

① Lift: Diagonally pull the lever to the left side of operator.

② Lower: Push the lever in the right forward direction.

③ Forward: Push the lever in the left forward direction.

④ Backward: Diagonally pull the lever to the right side of operator.

Simultaneous operations are also allowed by combining up and down movements and forward and backward tilts.

This may be done by moving the lever into the a, b, or c position.

a:Backward tilt while lifting: Pull the lever to the center of operator side.

b:Backward tilt while lowering: Turn over the lever to the right side of center.

c:Forward tilt while lowering:Push the lever in the center forward direction.

WARNING

Do not perform forward tilt while raising the forks, as this may cause loads to shift or fall, which could affect vehicle stability.

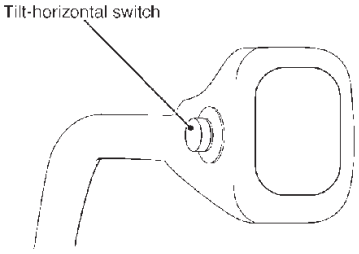
NOTE:

- **Control of lifting, forward tilting and backward tilting speeds:**

Can be changed by controlling the tilt angle of lever and by how much the operator depresses the accelerator pedal.

- **Control of lowering speed:**

Can be changed only by controlling the tilt angle of lever. Do not depress the accelerator pedal



Tilt-horizontal switch (Option)

When forward tilt is performed with the mast tilted backward, the forward tilt operation can automatically be stopped in the position where the fork is level.

Performing forward tilt while pressing the tilt-horizontal switch moves the mast as shown in the following list, depending on the loading condition and lifting height:

Loading condition	Lifting height	Forward tilt
Without load	Low lifting height	Automatically stops in the hoizontal fork position
	High lifting height	
With load	Low lifting height	No automatic forward stop to horizontal
	High lifting height	

With load: Turning ON the tilt-horizontal switch during operation will not automatically stop tilt in horizontal but will continue in manual operation mode.

NOTE:

- **In case of double lever method, the tilt-horizontal switch is attached to the tilt lever.**
- **The tilt-horizontal switch is kept ON while pressed and turned OFF when released.**
- **Unless the tilt-horizontal switch is pressed, normal forward and backward tilt operations are performed.**

CAUTION

The horizontal fork position allowing automatic stops means a position parallel to the road surface. Do not use this function if the road suface is not level.

TRAVELING

While traveling, the mast should be titled back and the forks lowered to approximately 200 mm (8 in) above the ground.

WARNING

Avoid sudden or quick steering movement or acceleration with or without a load. Such operation may cause the operator to lose control of forklift.

TURNING

The smaller the radius of a turn to be made, the lower the speed of the lift truck should be. When making a sharp turn, always drive the lift truck at low speed.

WARNING

- **Because the movement of a lift truck is different from that of a passenger car, always reduce speed while making turns to ensure that the forks and counterweight will clear objects during the turn. Turning at high speed could result in loss of control and a potential lateral tip over.**
- **Do not make a turn with the fork lifted high or at a high speed. This could result in a loss of control and potential tip over.**

CLIMBING

For safety reasons, when driving a loaded lift truck up a steep grade, it must be driven forward with the load in front; on a downgrade, backward, with the load behind.

On Nissan Forklift industrial trucks equipped with an automatic transmission, standing starts and stopping on a slope can be accomplished by manipulating the accelerator and brake pedals as required.

For stopping, the brake pedal should be used, at all times.

For traveling, depress the accelerator pedal. To make a standing start on a slope, the parking brake can be utilized in place of the brake pedal.

STOPPING AND PARKING

To stop the lift truck, remove foot from the accelerator pedal and step on the brake pedal.

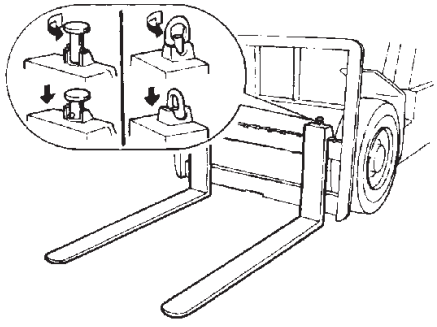
WARNING

- **Do not make sudden stops as the lift truck may pitch forward and drop it's load.**
- **When leaving the lift truck, set the parking brake, adjust the mast to an upright position, lower the forks until they rest on the ground and turn off the ignition key.**

NOTE:

If the operator leaves the operator's seat without pulling the parking brake lever, the warning buzzer alerts the operator.

If operator is more than 25 ft. from unit or out of sight of the forklift the key should be removed.



FORKS

The fork-to-fork distance can be properly adjusted by unlocking the lock pins on the forks. These pins are unlocked by pulling them up and turning them 90° in either direction. Forks must be equally located from the center of the lift truck. After correct fork-to-fork distance is obtained, secure the forks with the lock pins.

NOTE:

Various kinds of forks are available depending on the lifting capacity. Select proper forks so that the specifications stamped on the upper face of them will meet the lifting capacity of your lift truck. Do not use forks below the lifting capacity of your lift truck.

WARNING

In United States

Forks should be inspected daily for any damage, bending or other abnormal conditions. Report any conditions to your supervisor.

ITSDF & OSHA require that forks be replaced if worn more than 10%, this should be checked during normal P.M. or at minimum, yearly by your Local Authorized Dealer.

LOADING AND UNLOADING

LOADING

Adjust distance between the forks so that they are at or near the same distance from the center line of the lift truck. The wider the interval between forks, the better the balance. Be sure to apply the fork latches after setting the forks.(Refer to page 41.)

Approach slowly, straight toward the load, and stop just in front of it. Adjust mast to vertical position, matching the height of the forks to the position of the pallet. Advance slowly and completely insert forks beneath the load. Set the forward-reverse lever to NEUTRAL and apply the parking brake. Then raise the load. Confirm that the load is stable and tilt it backward. Release the parking brake and back the lift truck slowly.

TRANSPORTATION

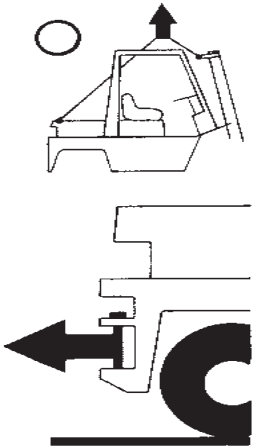
When transporting loads, the lift truck should be driven carefully at slow speed with the load kept low and tilted back. When the load is big enough to block forward visibility, drive the lift truck backward. Follow the safety rules.

UNLOADING

Slowly approach the unloading site and stop facing straight ahead.

Move the forward-reverse lever into NEUTRAL and apply the parking brake. After adjusting the mast to the vertical position, raise the load a little above the stack on which it is to be placed. Release the parking brake and advance slowly into the proper position for stowing. Apply the parking brake and place the forward-reverse lever in NEUTRAL.

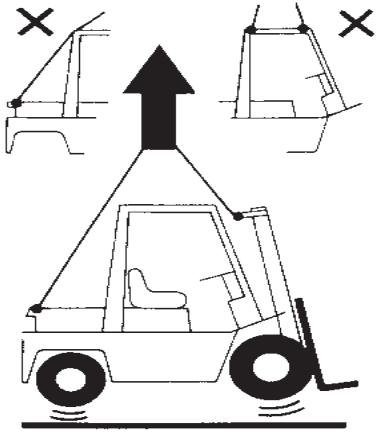
Slowly lower the forks to set down the load. After moving the forward-reverse lever to REVERSE, release the parking brake and back the lift truck up until the forks separate completely from the load.



LIFTING UP FORKLIFT TRUCK

WARNING

Only use the method as a last resort to move the forklift if the normal work application requires repeated lifting. Permanent lifting devices must be mounted on unit by Nissan Forklift Corp., Ltd. contact your Local Authorized Dealer for more details.



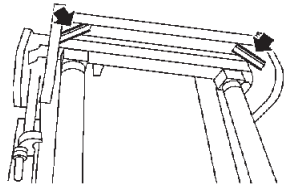
When lifting the entire lift truck, secure wire ropes to holes on both sides of the outer mast cross beam and to the hook on the counterweight, and then utilize a lifting device.

WARNING

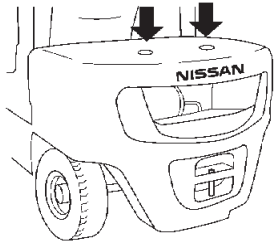
- **Make sure that the wire ropes do not interfere with the overhead guard while lifting the lift truck.**
- **Make sure that the wire ropes and lifting device are strong enough to support the lift truck safely, as the lift truck is extremely heavy.**
- **Do not use the cab frame (overhead guard) to lift up the truck.**
- **Do not get under the lift truck while lifting the truck.**

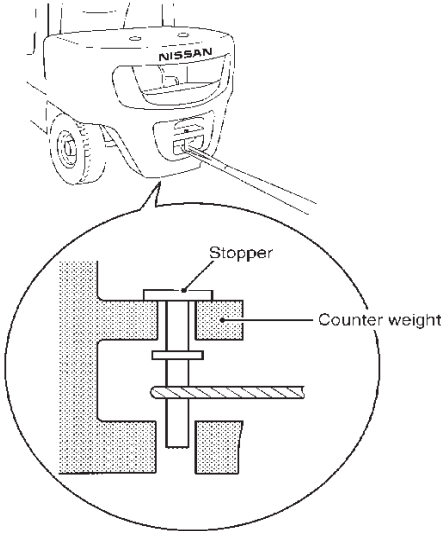
Hook point

Front



Rear





TRACTION BAR

Use the traction bar only when required to assist in pulling or dragging unit from ditch or from being stuck.

WARNING

Never use the traction bar for towing your truck or other vehicles.

CAUTION

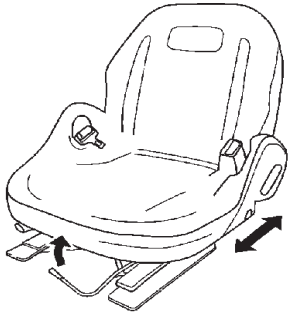
● Always ensure traction bar is fully inserted until stopper touches against counterweight. This will reduce the possibility of bar slipping.

●The traction bar is not a towing or drawing pin or coupling, and should only be used for assistance in that type of operation.

● When using wire, cables, or chains to pull or drag an object ensure that all items are in good condition and are not damaged.

● Always gently draw towing cables or chains so as not to cause any shock, abrupt movements which could cause traction bar to slip, bend or become damaged.

● If traction bar or towing device slips, pulls out, or becomes damaged stop the towing operation and replace damaged parts or discontinue that type of operation.



SEAT ADJUSTMENT

Fore-and-aft control lever

The fore-and-aft control lever is located at the front of the seat track.

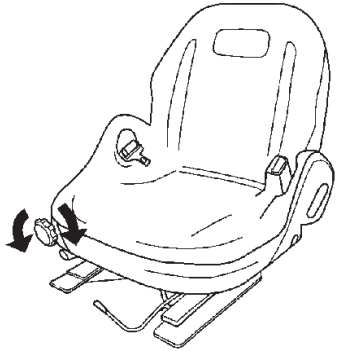
To adjust the seat position, pull the lever upward and hold it there while sliding the seat forward or backward to the desired position.

Release the lever to lock the seat.

Before operating the lift truck, be sure the seat is locked securely.

WARNING

- **Before adjusting the seat, turn the ignition key off, and set the parking brake.**
- **Be sure to adjust the seat position while the lift truck is stationary.**

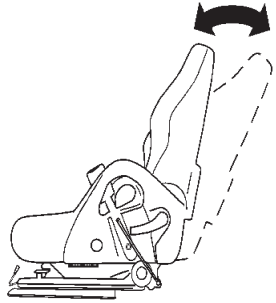


Position of lever may vary.

Suspension seat operator's weight adjustment

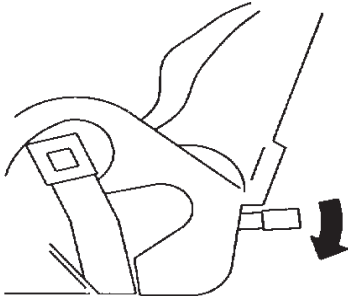
Adjust the suspension seat to the operator's weight by turning the weight adjustment dial at the front right side of the seat.

Optimum fine adjustment for operating surface conditions is also possible.



Backrest inclination adjustment

Adjust the backrest to the desired angle while pulling the lever located to the left of the seat. Release the lever to lock the backrest.

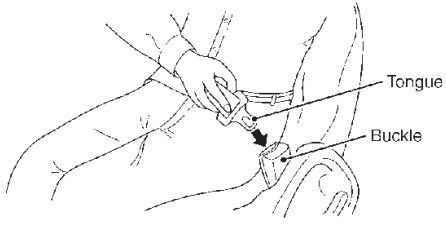


WARNING

- **Do not excessively recline the backrest, or the seatbelt may not perform as designed in an accident.**
- **When adjusting the angle of the backrest, gently do it while holding the backrest by hand. Hasty and rough adjustment may cause an injury, for instance the back of the seat may bump against the operator's face and body, or the operator's finger may get caught between the backrest and the grip.**

NOTE:

- **The backrest can be tilted forward depending on the situation.**
- **The tilting manner is the same as tilting backward, but it cannot be fixed in a forward position.**
- **There is a seat pocket on the rear side of the seat backrest. This is for the operator manual and should be mounted on the forklift at all times.**



Seatbelt

1.Holding the tongue pull out the seatbelt slowly.

2.Position the backrest low & snug on the hips.

NOTE:

If the seatbelt cannot be pulled out because it is locked, loosen it once and pull it out once more.

3.Being careful not to twist the seatbelt, insert the tongue into the buckle until it "clicks".

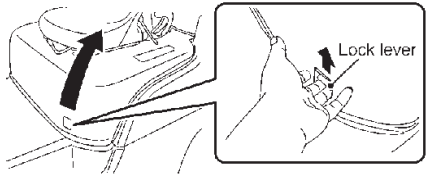
To unfastening the seatbelt, press the button on the buckle and pull the tongue out of it. While lightly holding the tongue, let the seatbelt slowly retract.

NOTE:

When unfastening the seatbelt, be sure to hold the tongue because the tongue may be pulled rapidly together with the seatbelt.

WARNING

- **The seatbelt should be adjusted so it fits snugly across the hips, not the waist. A belt worn too high could increase the risk of internal injuries in an accident.**
- **Do not wear the seatbelt if it is twisted. Doing so may reduce its effectiveness.**
- **Do not adjust the seatbelt to be loose such as lengthening it intentionally by use of a clip, this may reduce its effectiveness.**
- **Do not excessively tilt back the backrest, otherwise the seatbelt may not perform as designed.**
- **Do not put any foreign substance into the buckle or belt retractor, as this can seriously affect its performance and may prevent proper latching.**
- **Nissan Forklift recommends that pregnant women use seatbelts. The seatbelt should be worn snug, and always position the lap belt as low as possible around hips, not the waist. Contact your doctor for specific recommendations.**
- **Nissan Forklift recommends that injured persons use seatbelts. Check with your doctor for specific recommendations.**
- **Periodically check to see that the seatbelt and metal components, such as buckles, tongues, retractors, flexible wires and anchors, work properly. If loose parts, deterioration, cuts or other damage on the webbing is found, the entire seatbelt assembly should be replaced.**
- **To clean the seatbelt webbing, apply a mild soap solution or any solution recommended for cleaning upholstery or carpet. Then wipe with a cloth and allow the seatbelt to dry in the shade. Do not allow the seatbelt to retract until they are completely dry.**



Top panel

The top panel can be opened toward the rear of the vehicle.

WARNING

The top panel is automatically retained by the gas stay.

Open operation:

1.Tilt the steering wheel all the way forward and upward. Use the service release latch (yellow) lever. Refer to page 51.

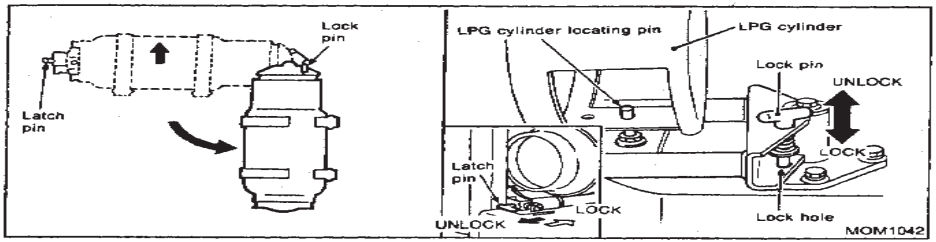
1a. For LPG & dual fuel units with swing down or out LPG tank mounting, you must swing out (down) LPG tank before opening top panel.

2.Pull the lever on the left side of the operator's seat upward to tilt the backrest forward.

3.Push the lever in the front left side of the top panel upward to unlock the top panel, and lift the top panel rearward while pushing the lever.

NOTE:

- **For opening the top panel rearward, refer to the Top Panel Open Procedure Label on the body.**
- **Before opening the top panel swing open the LPG cylinder as follows:**



LPG cylinder holder opening procedure

1. Pull out the latch pin to unlock the LPG cylinder holder. Slowly open the LPG cylinder holder 90°.

2.Insert the lock pin into the lock pin hole.

3.Perform the top panel opening procedure

WARNING

Before opening the top panel, make sure the lock pin is properly inserted into the lock pin hole.

LPG cylinder holder closing procedure

Before closing the LPG cylinder holder, make sure the top panel is properly closed.

1. Pull out the lock pin. Slowly close the LPG cylinder holder, then lock with the latch pin.

WARNING

Make sure the latch pin is properly locked.

2.While seated in the operator's seat, turn the key switch on.

3. Check to see that cylinder lock indicator light is off.

4. If the light is on, turn the key off and check that the swing mount is secured and locked.

5. Check to see if the switch is damaged.

WARNING

Only authorized Nissan Forklift service technicians should make repairs and/or adjustments to the switch or latch.

Refer to pages 94 to 105 for additional information on the LPG - gasoline dual fuel vehicle.

Top panel closing procedure:

1.Make sure that the steering wheel is tilted upward.

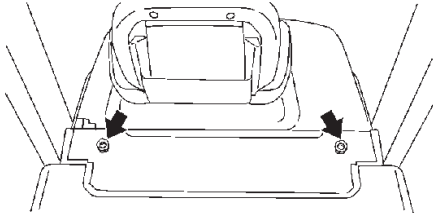
2.By pressing in the front of top panel, completely close until latched.

3.Raise the backrest of the operator's seat up to the original position.

4.Pull the steering wheel toward the operator's seat to the limit so that it is locked.

WARNING

- **Keep fingers clear when closing the top panel.**
- **On lift trucks equipped with a top panel lock, make sure the top panel is securely locked.**



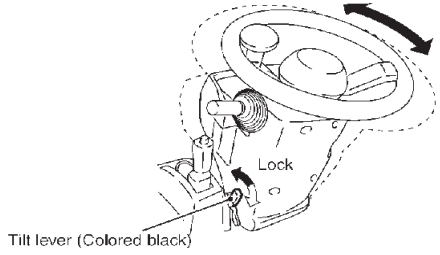
Radiator cover

The radiator cover can be removed with the top panel closed.

For inspection of the radiator or replenishment of the engine coolant (cooling water), loosen the right and left bolts by hand.

NOTE:

- **Be absolutely sure to hand-tighten the bolts when reinstalling the radiator cover.**
- **Refer to page 68 for information on the engine coolant level check procedure.**



STEERING WHEEL

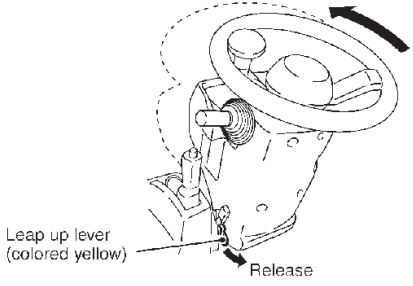
Tilt adjustment

The position of the steering wheel can be adjusted. To adjust, push down on the tilt lever (colored black) located on the left side of the steering column, and move the wheel to the desired position. After selecting the wheel position, pull up on the lever fully to lock.

WARNING

- **Before adjusting the steering wheel, turn the ignition key off and set the parking brake.**

- **Be sure to adjust the steering wheel position while the lift truck is stationary.**
- **After adjustment, force the steering wheel upward or downward to assure it is locked securely.**



Service Release Latch (yellow lever)

Press the steering wheel forward while depressing the service release latch (yellow) on the left side under the steering wheel, and the steering wheel tilts forward in whole.

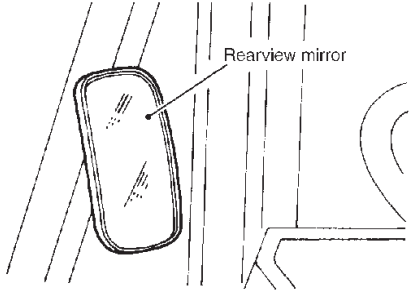
For returning the steering wheel to the original position, pull it toward the operator's seat to the limit. The service release latch returns to the original position and the steering wheel is locked automatically.

WARNING

- **Before starting the engine, make sure that the steering wheel is returned to the original locked position.**
- **Do not operate the lift truck with the steering wheel in the service release position, as an accident could result.**

NOTE:

The steering wheel position adjusted by the tilt mechanism does not vary when it is tilted.



REARVIEW MIRROR

Adjust the right and left rearview mirrors respectively by hand so that both assure the best rearview.

WARNING

Never use only the rearview mirrors for operating the lift truck in reverse due to limited visibility. Always turn and look in the direction of travel before proceeding.

PRECAUTIONS FOR COLD AND HOT WEATHER

In cold weather

- **Oil and grease**

Use engine oil and grease suitable for ambient temperature. Refer to ”RECOMMENDED LUBRICANTS” on page 84.

- **Coolant**

When coolant might freeze under low ambient temperature, drain out the coolant completely. In such cold weather, a recommended 50/50 mix of anti-freeze solution only, should be put into the cooling system.

Anti-freeze:

[Example]

Anti-freeze			
coolant capacity	0.8 liters (3/4 Imp qt)	1.7 liters (1-1/2 Imp qt)	2.5 liters (2-1/4 Imp qt)
5.0 liters (4-3/8 Imp qt)	-7°C (19°F)	-18°C (0°F)	-35°C (-31°F)

COOLING SYSTEM BLEEDING INSTRUCTIONS

WARNING

- **Never remove the radiator cap when the engine is hot. Serious burns could be caused by high-pressure fluid or steam escaping from the radiator.**

- **Always ensure that the coolant is cooled down sufficiently before removing the radiator cap. When opening the radiator cap, wrap the cap with a shop cloth and turn the cap slowly to release the internal pressure.**

NOTE:

- **Use only Nissan Forklift long-life coolant (LLC) with the proper mixture ratio for the vehicle’s working environment.**

- **Engine coolant must be disposed of properly. Check your local regulations.**

1. Remove the radiator cover and open the engine hood. Remove the radiator cap.

2. Place an appropriate size container under the radiator referring to the table below. Open the drain cock of the radiator and extract the coolant.

3. After draining all the coolant, securely close the drain cock.

4. Prepare coolant mixture referring to the table on page 52.

5. With the radiator cap removed, locate the engine coolant system bleeder screw. The bleeder screw location varies depending on the model of engine. This screw will either be located in the thermostat housing or on the top of the water pump. Please refer to the pictures below for the location of the bleeder screw.

6. Completely remove the bleeder screw, **pay close attention to the sealing washer that it does not fall off the screw as it is being removed**.

7. Add the recommended engine coolant mixture into the radiator, when the engine coolant comes out of the bleeder hole with no air bubbles install the bleeder screw and tighten to 6.3 - 8.0 N-m (55.7 - 75.8 in lbs) of torque.

8. Also add coolant to the reservoir tank up to the full line.

9. With the radiator cap removed, start the engine and accelerate above idle RPM to purge the air out of the LP vaporizer. Continue to operate the engine until thermostat opens and you can visually see the coolant moving in the radiator.

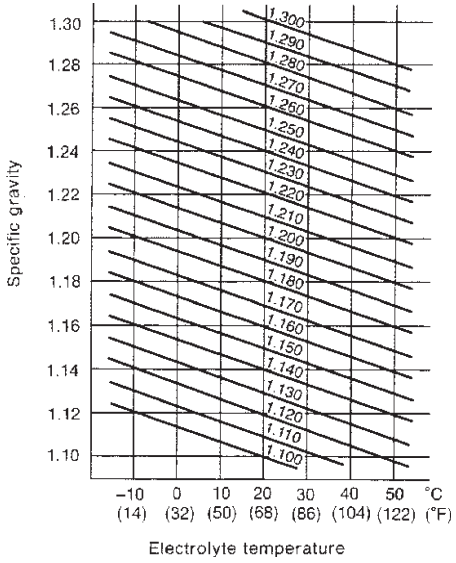
10. Top off the coolant (approximately 1" from top of radiator) in the radiator after all air has been purged.

11. Securely attach the radiator cap.

12. Turn off engine.

13. Close the engine hood and install the radiator cover.

14. Start the engine, check for leaks, and ensure engine temperature stays within operating range. If the unit starts to overheat there is still air in the cooling system, repeat steps 5 to 14.



- **Battery**

Battery should not be left in discharged state. When battery performance becomes questionable, check the specific gravity of the electrolyte, terminals of battery and alternator.

The normal specific gravity is 1.260 as corrected at 20°C (68°F). It changes about 0.0007 for every 1°C (1.8°F). If the specific gravity of electrolyte does not indicate the desirable value, charge the battery soon.

PROCEDURE FOR JUMP STARTING EFI ENGINES

WARNING

Always follow the instructions below. Failure to do so could result in damage to the charging system and cause personal injury.

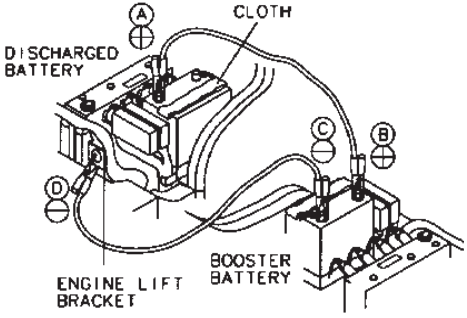
1. If the booster battery is in another vehicle, position the two vehicles to bring their batteries near each other.

Do not allow the two vehicles to touch.

2. Apply the parking brake. Shift the transmission into N (Neutral). Switch off all unnecessary electrical systems (lights, etc.).

3. Remove vent caps on the battery (if so equipped). Cover the battery with an old cloth to reduce explosion hazard.

4. Connect jumper cables in the sequence illustrated (A , B , C , D)



CAUTION

- **Always connect positive (+) to positive (+) and negative (-) to body ground (for example, strut mounting bolt, engine lift bracket, etc.)- not to the battery.**

- **Never use a booster battery or source of greater voltage, or it could damage engine electrical compounds.**

- **Make sure the jumper cables do not touch moving parts in the engine compartment and that the cable clamps do not contact any other metal.**

5. Start the engine of the booster vehicle and let it run for a few minutes.

6. Keep the engine speed of the booster vehicle at about 2,000 rpm, and start the engine of the vehicle being jump started.

CAUTION

Do not keep the starter motor engaged for more than 10 seconds. If the engine does not start right away, turn key off and wait 3 to 4 seconds before trying again.

7. After starting the engine, carefully disconnect the negative cable and then the positive cable.

8. Replace the vent caps (if so equipped) be sure to dispose of the cloth used to cover the vent holes as it may be contaminated with corrosive acid.

9. To start your engine with a booster battery, the instructions and precautions below must be followed.

WARNING

- **I done incorrectly, jump starting can lead to a battery explosion, resulting in severe injury or death. It could also damage your vehicle.Explosive hydrogen gas is always present in the vicinity of the battery. Keep all sparks and flames away from the battery.**

- **Do not allow battery fluid to come into contact with eyes, skin, clothing or painted surfaces. Battery fluid is a corrosive sulfuric acid solution which can cause severe burns. If the fluid should come into contact with anything, immediately flush the contacted area with water.**

- **Keep battery out of the reach of children.**

● The booster battery must be rated at 12 volts. Use of an improperly rated battery can damage your vehicle.

● Whenever working on or near a battery, always wear suitable eye protectors (for example, goggles or industrial safety spectacles) and remove rings, metal bands, or any other jewelry. Do not lean over the battery when jump starting.

● Do not attempt to jump start a frozen battery. It could explode and cause serious injury.

● Your vehicle has an automatic engine cooling fan. It could come on at any time. Keep hands and other objects away from it.

In hot weather

● Oil

Engine oil should be changed to summer type oil. (Recommended lubricants.)

● Coolant

Because the engine is more likely to overheat in hot weather, the lift truck should be parked in shade. Overheating sometimes comes from old, worn, or cracked hoses, connections, loosened radiator cap, or old, worn, or cracked fan belt. So carefully check the cooling system to maintain the best cooling effect.

● Battery

Since the battery electrolyte evaporates in hot weather, it is necessary to refill the battery with distilled water. (Refer to page 68.)

SAFETY RULES FOR OPERATION (GENERAL)

WARNING

Serious injuries or death can be caused by carelessness, inattention or lack of training. A forklift operator should be carefully selected to ensure that he/she has been properly trained and is mentally and physically capable of operating this machinery.

The Nissan Forklift industrial truck has been designed and manufactured in accordance with the applicable safety standard ITSDF B56. Safety Standard for Low and High Lift Trucks. This standard provides guidelines for the design and safe use of forklift trucks. Copies may be obtained from the Industrial Truck Standard Development Foundation (ITSDF) / ANSI 345 East 47th Street, New York, NY 10017.

SAFETY RULES FOR OPERATION (CONTINUED)

The Occupational Safety and Health Administration has requirements for the use of lift trucks in the work place. OSHA safety requirements for lifts can be found at 29 CFR 1910. 178 or by contacting your local OSHA office. OSHA requires all operators to be trained.

Forklift training is available from many sources including your Local Authorized Dealer. All forklift operators must be trained and given an opportunity to review this manual.

WARNING

- **Operator must be trained and authorized to drive the lift truck, and must understand safety rules for lift truck operation in the work place.**
- **Inspect the lift truck before operating. Do not operate lift truck if it is in need of repair. If it is in need of repair, tag the lift truck, remove the key, and report the condition to the proper authority. Do not attempt repair unless you are trained and authorized to perform repairs.**

WARNING

- **Do not remove overhead guard or backrest unless specifically authorized.**
- **Make sure that forward-reverse lever is set in neutral and hand brake is applied before starting the engine. Do not start or operate the lift truck if you are not in designated operator's position.**

WARNING

- **Do not allow anyone on any part of the lift truck while moving or lifting.**
- **Do not allow anyone to stand or ride on the forks, pallet, etc.**

WARNING

- **Do not allow anyone to stand or walk under the elevated portion of the forks whether it is empty or loaded.**
- **Operate truck and elevate load only from proper seated position.**
- **Keep hands, feet and other parts of your body inside the operator's compartment at all times.**
- **Do not put any part of your body into the mast structure or between the mast and the lift truck.**

WARNING

- **Do not park with the load elevated. Hydraulic systems can change over time and cause a load to drop.**
- **The load capacity of the truck is determined at 500mm or 20 inches. Raising the load makes the truck less stable. Always carry the load low and tilted back.**

WARNING

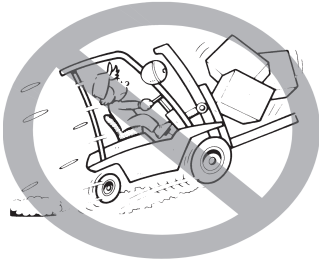
- **Space forks as far apart as the load will permit.**
- **Always carry loads with the mast tilted to the backmost position, never forward. Do not elevate loads except during stacking.**
- **The truck is equipped with an audible backup alarm. The user should determine whether the alarm is an appropriate safety device for the work environment.**

WARNING

- **Maintain a careful lookout for people and obstructions, and watch the path of travel. Watch clearances, especially overhead and tail swing. When visibility is obstructed, use extreme caution. Yield right of way to pedestrians.**
- **If the load obstructs the front view, drive the lift truck in reverse.**

WARNING

- **Do not overload lift truck. Check the load chart for load weight and load center information. Always pick up loads as close to weight center as possible to avoid off-center loading.**



WARNING

- **Avoid sudden starts, stops or turns. Slow down for turns and on uneven or slippery surfaces that could cause lift truck to overturn or slide.**
- **Use special care when traveling without load as risk of lateral overturn may be greater than when traveling with load.**

WARNING

- **Before entering trucks or trailers, be certain the brakes on the lift truck or trailer are applied and the wheel chocks are in place or trailer is locked to the loading dock.**

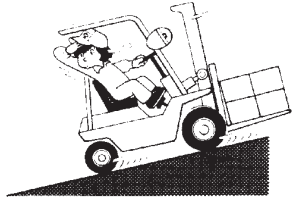
WARNING

- **Before driving over a dockboard or bridge plate, be certain that it is properly secured. Drive carefully and slowly across the dockboard or bridge.**

Never exceed its rated capacity.

WARNING

- **Use special care when operating on slopes. Travel slowly and do not angle across or turn.**



WARNING

- **When ascending or descending slopes, drive the lift truck with the load facing upgrade.**
- **Do not handle unstable or loosely stacked loads. When handling long, high or wide loads, use special care to ensure stability and carefully watch the surrounding conditions.**

WARNING

- **When approaching cross aisles, slow down, and sound horn if visibility is obstructed.**
- **Before leaving the lift truck, be sure that forks or attachments are lowered, forward-reverse lever is in neutral, parking brake is applied and ignition key is turned off. Avoid parking lift truck on a slope.**
- **Look in the direction of travel. Be sure there are no pedestrians in the path of travel.**

WARNING

- **When filling the tank with fuel or recharging the battery, stop the engine and place the lift truck only in designated area with good ventilation. Keep away from arcs, sparks, flames or lit cigarettes.**
- **Do not breathe exhaust gases: they contain colorless and odorless carbon monoxide. Carbon monoxide is a dangerous gas and can cause unconsciousness or death.**

WARNING

- **Exhaust gases in a small space or multiple truck environment may expose the operator or other persons to carbon monoxide dangers.**

Do not run the engine in closed spaces or poorly ventilated rooms such as a garage or refrigerator, etc.

- **Before operation, make sure that the seatbelt is secure and the top panel latch is in the locked position.**

DANGER

IN CASE OF TIP-OVER

- **Be extremely careful to prevent the lift truck from tipping over during operation. Slow down the lift truck sufficiently when turning a corner or tight curve.**

- **The following precautions should be closely observed to ensure safe operation of the lift truck as well as to protect personnel against injury.**

- **Always make sure that your seat belt is securely fastened ans the top panel latch is in the locked position.**

- **If the lift truck begins to tip, DO NOT ATTEMPT TO JUMP CLEAR. The lift truck will fall faster than you can jump.**

- **Brace your feet and hold yourself inside the operator compartment by holding onto the steering wheel with both hands.**

IN CASE OF OFF DOCK

- **The operator should stay with the truck if it falls off a loading dock or ramp. The operator should hold on firmly and lean away from the point of impact.**

DAILY CARE AND INSPECTION

DAILY CARE AND INSPECTION

To maintain your lift truck in proper condition, ready for safe operation, be sure to perform the daily checks indicated below.

If you note any abnormality, notify your supervisor or your Local Authorized Dealer.

Do not operate the lift truck if it is in need of repair.

1.Check engine oil level.

2.Check engine coolant level,and also check engine cooling system for leakage.

3.Check battery fluid level in each cell.

4.Check leakage and amount of brake fluid.

5.Check steering wheel play.

6.Check automatic transmission oil level and leakage.

7.Check hydraulic oil level and oil line leaks.

8.Check fuel line (hoses, pipings, connections) for leaks. Also check fuel tank drain plug for leaks.

9.Check water seperator of fuel filter. If necessary, drain water from water seperator.

10.Check tire pressure and checkfor looseness, wear or damage of wheel nuts and bolts.

- Remove objects that are embedded in the tread.

- Check for damage and friction of wheels and for bends and cracks in rim.

11.Check operation of horn,head lamp and all indicators.

12.Check operation of hydraulic control valve.

13. Check the mast operation for the following items:

- Smooth lifting and lowering

- Smooth roller rotation

- Wear or damage to chains

- Lift bracket and forks for bend and damage

14.Check safety start system operation.

15.Check brake pedal operation.

16.Check the parking brake operation.

17. Check the back rest and overhead guard for proper installation and function.

18.Check fork latches.

19. Check forks for cracks, breaks, bend and wear.

20.Check the radiator core for clogging.

● If there is dirt or dust on the radiator core, the engine may overheat. Clean the radiator core with compressed air or steam so as not to deform the core fins.

21.To assist you in ensuring that the operator conducts a complete inspection, a sample daily check is shown on the next page: It should also be noted that this is an OSHA requirement.

NISSAN FORKLIFT CORPORATION
(SAMPLE) Operator's Daily Checklist and Safety Inspection
I.T.A. Class 4 & 5

IMPORTANT Check each item listed at the start of each shift/work period. Notify your supervisor and/or Maintenance Department if there are any problems with the truck. DO NOT OPERATE A TRUCK WITH ANY MALFUNCTION.

TRUCK DETAILS:

☐ Gas ☐ LPG ☐ DIESEL Serial/Unit Number: Hours:

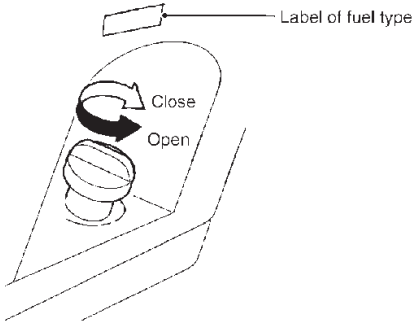
Review and check the following list. Provide any additional information as necessary. Check each item either as Good (OK) or No Good (NG). IMPORTANT In the case of NG identify by item # and explain in comments section.

#	OK	NG	Visual Check Items	#	OK	NG	Operational Check Item
01			Forks: altered, bent, worn, stops, pin/latch-locks	17			Horn: Properly attached, operaion, correct loudness
02			Load Back Rest: bent, damaged, loose, missing	18			Service Brakes: function ok, linkage, loose-binding, grabbing
03			Tires-Wheels: wear, damaged, lug nuts tight or missing	19			Parking Brake: function ok, linkage, proper adjustment
04			Engine Oil: level, dirty,leaking.	20			Seat Brake (if equipped): proper operation, correct adjustment
05			Hydraulic Oil: level, dirty, leaking	21			Mast: proper lift-lower function, wear or damage to mast rails lift-chain
06			Radiator: fluid level, condition of hoses, condition of core,leaks	22			Tilt: loose-binding, excessive drift, chatters, leaks
07			Fuel Tanks: level, condition of lines-hoses-connectors, leaks	23			Carriage and Attchment(s): operation, mounting, leaks, looseness
08			Battery: connections-clamps, state of charge, electrolyte level leaks	24			Control Levers: operation, proper and free return to neutral position
09			Covers, Panels, Sheet-Metal: damaged, insecure, missing	25			Directional Controls: loose/binding, find neutral position OK
10			Overhead Guard: bent-deformed, cracked, loose, missing	26			Engine: Runs rough, smokes, leaks, noisy operation
11			Warning Labels-Decals, Operators Manual: unreadable,incomplete, missing	27			Steering: loose/binding, leaks, drifts, oil leaks
12			Operator Restraint System: insecure,damaged, incomplete,improper operation	28			Warning Lights (if equipped): Secure, operational
13			Data-ID Plate, Capacity Plate: incorrect, damaged, unreadable,missing	29			Back-Up Alarm: Mounting, operational, correct loudness
14			Gauges-Instruments: inoperable, unreadable, damaged, missing	30			Head-Tail, Working Lights: Mounting, operational
15			Brake System: loose-damaged linkage, reservoir fluid level, leaks				
16			Head-Tail, Working-Warning Lights: loose mounting, damaged,missing				

Additional explanation(s) of NG problems indicated above:_____

_____

Operator's Name:_____ Supervisor's Approval/OK:_____Date of Inspection/Check:_____



Fuel recommendation

WARNING

- **Be sure to stop the engine before fuel refilling.**
- **Make sure there is no fire or flammable objects in the vicinity of the engine. Use only unleaded fuel in the fuel tank of gasoline engine equipped vehicles. Use only diesel fuel in the fuel tank of diesel engine equipped vehicles.**

The fuel inlet is located on the body of left rear side.

When refilling the fuel, make sure of the indication label not to use wrong fuel by mistake. Turn the fuel cap counterclockwise to remove it.

If the fuel cap has the optional lock and key, insert the key into the keyhole on the fuel cap and turn the key clockwise for locking or turn it counterclockwise for unlocking.

After refilling, be sure to turn the fuel cap clockwise until it clicks twice or more.

Gasoline to be used

- Except Germany: Regular (unleaded)
- For Germany: Normal gasoline leaded DIN 51 600 or normal unleaded DIN 51 607.

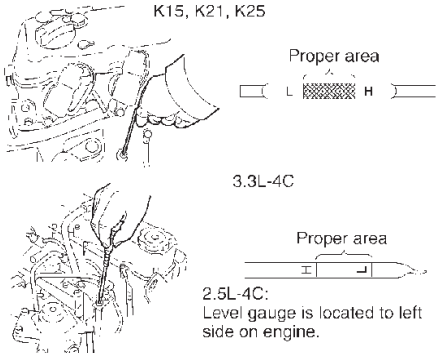
CAUTION

- **Be careful not to allow water or debris to enter the fuel tank during refilling, as it may cause damage to the EFI fuel system components.**
- **Do not use the fuel that has been stored for a long time. Such fuel may adversely affect engine performance or shorten its service life, because of possible contaminants in the fuel.**
- **If the fuel spills out of the fuel inlet, wipe it off and clean area by inlet completely.**

Diesel engine vehicle

The diesel engine is designed to run only on diesel fuel with at least a minimum of 42 cetane rating.

For LPG Fueling Refer to Page 104.



Engine oil level

To check oil level, pull out the level gauge, wipe it clean and reinsert; remove it again to read oil level.

The level should be between the "L" and "H" marks.

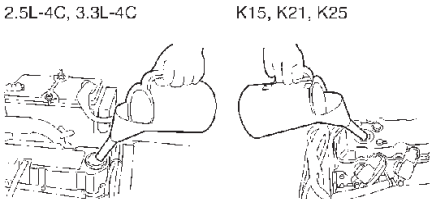
After checking the oil level, be sure to return the oil level gauge to the original position.

CAUTION

Do not run the engine when the engine oil level is lower than the minimum indicator (L) mark, as the engine could be damaged or seize up. If the engine oil level is lower than the minimum indicator (L) mark, add engine oil through the oil inlet until the oil level reaches the specified amount.

NOTE:

When checking the engine oil, be sure to do it on a level surface before starting the engine or at least 5 minutes after the engine stopped.



Refilling engine oil

1. For refilling the engine oil tank with engine oil, remove the oil filler cap and slowly pour genuine Nissan Forklift Motor Oil into the tank while checking the oil level with the oil level gauge until the oil reaches the specified oil level.

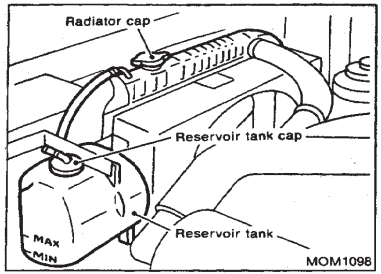
CAUTION

- **Carefully pour engine oil into the oil filler so as not to contaminate with dust and foreign substances. If the oil spills out, immediately wipe it out.**

- **Ensure the oil filler cap is tightened. If the oil filler cap is not properly tightened, engine problems may result.**

2.5 minutes after refilling engine oil, check if the oil level is between the upper limit (H) and lower limit (L) indicator marks with the oil level gauge.

3. Restore the oil filler cap and oil level gauge to their respective original positions.



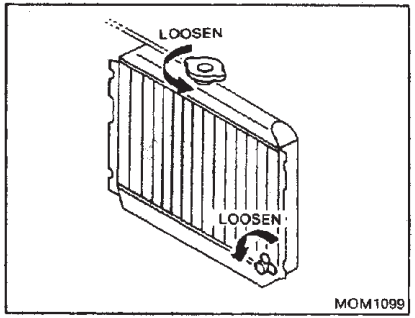
Engine coolant level

Visually check the amount of coolant in the reservoir tank when the engine is cold. If the coolant level is below the "MIN" level, remove the reservoir tank filler cap and add coolant until the "MAX" level is reached. If the reservoir tank is empty, check the coolant level in the radiator. If there is insufficient coolant in the radiator, pour coolant into the radiator up to the cap and also pour it into the reservoir tank up to the "MAX" level.

If it becomes necessary to repeatedly add coolant, your cooling system should be inspected by your Local Authorized Dealer.

WARNING

- **Never remove the radiator cap when the engine is hot: serious burns could be caused by high pressure fluid escaping from the radiator.**
- **Wrap a thick cloth around cap and carefully remove the cap by turning it a quarter turn to allow built-up pressure to escape. When all hissing, steam and liquid stops, slowly turn cap all the way off.**



Changing engine coolant

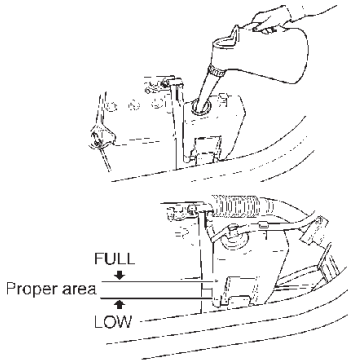
1. Open the radiator cap and drain cock to drain the coolant. Then flush the cooling system.

2. Close the drain cock securely.

3. Fill the radiator with new coolant up to the filler opening. Fill the reservoir tank up to the "MAX" level. Then put on the radiator cap.

4. Run the engine to normal operating temp on dash meter panel.

5. Stop the engine and after it completely cools down, refill the coolant up to the radiator filler opening. Fill the reservoir tank.



3. If the reservoir tank is empty, refill the radiator and the reservoir tank with the coolant at the same time. For refilling the coolant in the radiator, remove the radiator cover first and then slowly turn the radiator cap while wrapping it with a cloth to remove it. After removing the radiator cap, fill the radiator with coolant.

4. After refilling the coolant, tighten the reservoir tank filler cap and radiator cap tightly.

WARNING

To avoid being scalded, do not attempt to change the coolant when the engine is hot.

NOTE:

Refer to page 52 for the proper mixing ratio of anti-freeze solution to coolant.

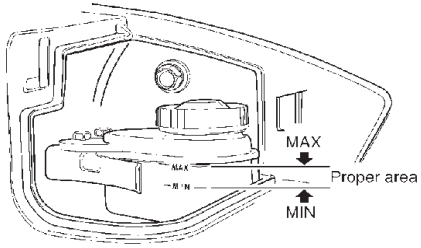
CAUTION

- **The long-life coolant can degrade the coated surface. If it adheres to the coated surface, wash the coolant away with water.**
- **Be sure to use the long-life coolant specified by Nissan Forklift Corp., Ltd. The cooling performance and anticorrosive treatment won't be assured if another coolant is used.**
- **Do not refill the coolant above the "FULL" level of the reservoir tank. If it exceeds the "FULL" level, it may spill out as the engine is warmed up. Carefully refill the coolant so as not to contaminate it with foreign substances.**

Refilling engine coolant

1. Refill engine coolant in the reservoir tank.

2. Remove the reservoir tank filler cap.



Brake fluid level

Clutch fluid level (M/T vehicle)

NOTE:

The brake fluid reservoir tank also serves as the clutch fluid reservoir tank. For manual transmission only.

Check if the brake fluid level in the brake fluid reservoir tank inside the lid on the left side of the instrument panel is within the proper range. If the level is lower than the "MIN" level, refill the reservoir tank with Nissan Forklift Brake Fluid.

At the same time, visually check the outside and periphery of the reservoir tank for brake fluid leak or stain.

WARNING

- **Use DOT3 (F.M.V.S.S. No. 116) brake fluid only.**
- **If brake fluid leak or stain is detected, immediately report it to your supervisor or contact your Local Authorized Dealer to inspect and repair it. Do not operate the lift truck until it is completely repaired.**
- **If a brake fluid other than that specified by Nissan Forklift Corp.,Ltd. or old brake fluid is used, it may cause deterioration in the performance of the brakes and could potentially lead to an accident. Make sure you only use the specified brake fluid.**
- **Be careful not to allow the brake fluid to remain in contact with the coated surface, as the brake fluid can degrade the coated surface.**
- **When refilling the brake fluid reservoir tank with the brake fluid, be careful not to mix dust and foreign substances in the fluid.**
- **If excessive amounts of the brake fluid are used, immediately report it to your supervisor or contact your Local Authorized Dealer to inspect it.**

Refilling brake fluid

Refilling clutch fluid (M/T vehicle)

Turn the brake reservoir tank cap counterclockwise to remove it, and slowly pour the brake fluid (Nissan Forklift Brake Fluid) into the tank until the fluid level reaches the "MAX" level.

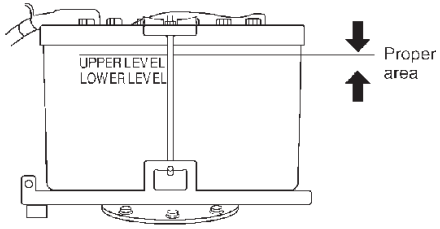
WARNING

- **When refilling the brake fluid reservoir tank with brake fluid, be careful not to mix dust and foreign substances in the fluid.**
- **If brake fluid other than that specified by Nissan Forklift Corp., Ltd. or old brake fluid is used, it may cause deterioration in the performance of the brakes and could potentially lead to an accident. Make sure you only use the specified brake fluid.**

Refilling Brake Fluid (continued)

WARNING

- **Be careful not to allow the brake fluid to remain in contact with the coated surface, as the brake fluid can degrade the coated surface. If the brake fluid adheres to the coated surface, immediately wipe it off and clean area so that no liquid remains on the coated surface.**
- **If excessive amounts of brake fluid are used, immediately report it to your supervisor or contact your Local Authorized Dealer to inspect it.**



Battery fluid level

Open the top panel, then check the fluid level in each battery cell.

Refilling battery fluid

If the electrolyte (battery fluid) is insufficient, remove the caps from the battery and refill the respective battery cells with distilled water only until the fluid level reaches the "UPPER LEVEL" with care not to contaminate the fluid with dust and foreign substances.

At the same time, visually inspect the battery body for cracks or damage. If there is damage, immediately replace the battery with a new one.

After refilling the battery with distilled water, tighten the respective caps tightly. If the battery fluid spills out, wash it away with water and wipe down the wet surface.

WARNING

- **Since the battery produces explosive hydrogen gas, handle it in a place where there are no sources of ignition or open flame.**
- **Do not let a person who does not have knowledge of the battery and its handling manner inspect or maintain the battery.**

WARNING

- **Since the battery fluid contains sulfuric acid, be sure to wear proper protective clothing (goggles, rubber gloves, etc). Be careful not to get the fluid in eyes, on the skin or clothes, otherwise it may cause blindness, burns, or damage to the clothes. If the battery fluid contacts part of the body, immediately wash it away with a great deal of cool water. If the fluid gets into eyes, immediately flush the eyes and consult a doctor as soon as possible. If the fluid is swallowed by mistake, immediately gargle repeatedly with a great deal of cool water, drink much water and consult a doctor as soon as immediately.**

- **If battery fluid flows or leaks out of the battery, immediately neutralize it with an acid neutralizer (sodium bicarbonate, slaked lime, sodium carbonate, etc.) and then thoroughly wash it away with water, as it may cause corrosion of the floor or parts.**

WARNING

- **Do not put anything metal, such as a tool on the battery. If metal contacts the terminal, it may cause not only shortcircuit but a burn or explosion because the hydrogen gas produced by the battery may catch fire from the spark generated by shortcircuit.**

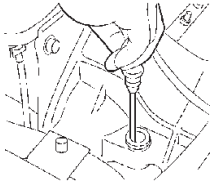
- **Check the battery fluid level once a week to prevent the battery from running short of the electrolyte. If the battery is used with insufficient battery fluid, the battery may explode. When refilling the battery with the battery fluid, do not pour the fluid above the "UPPER LEVEL".**

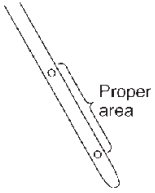
- **If the battery is used when the battery fluid level is below the ""LOWER LEVEL", it may shorten the service life of the battery and may cause explosion of the battery because insufficient battery fluid promotes deterioration in internal parts of the battery.**

- **Be careful not wipe down the top of the battery with dry cloth, not to cover the battery with vinyl sheet or not to dust the battery, because this may generate static electricity and potentially cause the battery to explode.**

WARNING

- **Do not touch the battery with the charged body, otherwise it may cause an explosion of the battery because of ignition from static electricity.**





Automatic transmission fluid level

1. Stop the engine after idling for about 10 minutes.

2. Open the top panel and check if there is leak of the automatic transmission fluid. Then, pull out the level gauge and wipe down the tip of the gauge with clean cloth.

3. Insert the level gauge to the limit and gently pull it out again.

4. Make sure the fluid adhered to the tip of the level gauge is not extremely worn, discolored, or contaminated by foreign substances, also check if the fluid level is within the proper range.

5. If the fluid is insufficient, refill the automatic transmission with the specified fluid so that the level gauge reads the proper range.

CAUTION

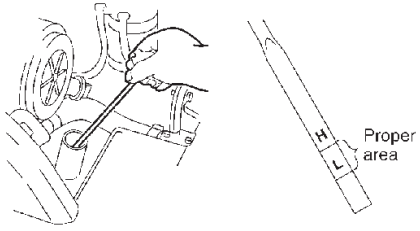
- **Do not operate the forklift with insufficient automatic transmission fluid, as the lift truck may be disabled from running.**
- **If the transmission fluid is extremely worn, discolored or contains foreign substances, immediately report it to your supervisor or contact your Local Authorized Dealer to inspect it.**

Refilling automatic transmission fluid

Automatic transmission fluid can be added through the level gauge hole. Checking the fluid level with the level gauge, pour the Nissan Forklift Matic Fluid B or C into the level gauge hole until the fluid level is in the proper range.

CAUTION

- **Do not use any automatic transmission fluid other than those specified by Nissan Forklift Co., Ltd. otherwise it may cause failure in the torque converter. Be sure to refill the automatic transmission with the specified quantity of the Nissan Forklift Matic Fluid B or C.**
- **Be careful not to mix dust or foreign substance in the transmission fluid during refilling.**



Hydraulic oil

Check the oil level in the hydraulic oil tank.

1. After visually checking for oil leakage, turn the hydraulic oil filler cap located in the right side of the operator's seat to remove it.

2. Wipe down the level gauge attached to the cap with clean cloth. Insert the clean level gauge into the hydraulic oil filter (do not screw the level gauge in) and pull it out again.

3. If the oil level that can be checked on the level gauge is between the two indicator lines marked on the level gauge, the quantity of the hydraulic oil is normal.

NOTE:

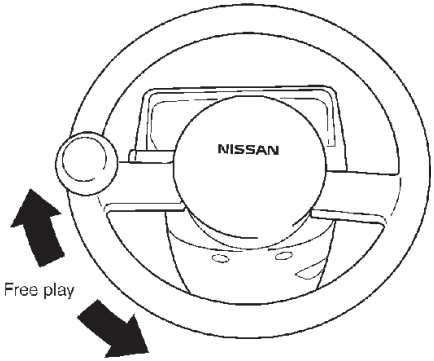
For correctly checking the hydraulic oil level, park the lift truck on level ground and stand the mast vertically with the fork lowered to the limit (contacting ground).

Refilling hydraulic oil

Remove the hydraulic oil filler cap. While checking the hydraulic oil level with the level gauge, pour the specified hydraulic oil (Nissan Forklift Hydraulic Oil) into the oil filler until the oil level is in the proper area.

CAUTION

- **Do not use any hydraulic oil other than those specified by Nissan Forklift Corp., Ltd. as it may cause not only deterioration in the performance of the lift truck but could result in an accident.**
- **Carefully add the hydraulic oil so as not to mix dust and foreign substances in the oil.**

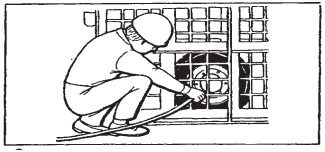


Steering wheel (Spin Knob optional)

Turn the steering wheel to the right and left; a play in circumference of less than 30 mm (1.18 in) at idling is normal.

If there is excessive play or looseness, have the steering wheel adjusted by an your Local Authorized Dealer or other competent service shop.

Wheel and Tire



WARNING

- **OSHA safety procedures must always be followed. Refer to OSHA 1910.177.**
- **Always use correct procedures when servicing or replacing pneumatic tires on multi-piece rim sets.**
- **Failure to use proper procedures can cause explosive separation of tire and rim set, and death or serious injury could result.**
- **When inflating or deflating tires, a suitable safety cage or barrier shall be used.**
- **Only properly trained personnel should replace pneumatic tires on multi-piece rim sets.**

Tire Pressure: (Pneumatic and compact pneumatic models)

NOTE: There is the pneumatic type cushion tire without inner tube (so-called tubeless tire or non-puncture tire) supplied. Such the tire has no need of tire pressure check.

U.S. manufactured models only

Unit:bar (kPa, kgf/cm², psi

Vehicle	Front tire (drive)	Tire pressure
1.5t, 1.8t, 2.0t	6.50-10/10PR	7.0 (700, 6.9, 102)
2.0t, 2.5t, 2.75t	7.00-12/12PR	7.0 (700, 6.9, 102)
2.8t,3.0t	28x9-15/12PR	7.0 (700, 6.9, 102)
3.5t	250-15/16PR	9.0 (900, 8.8, 131)
AL01 1.5t,1.8t	6.00-9/12PR	10.0 (1000, 9.8, 145)
AL02	21x8-9/12PR	8.8 (883, 9.0, 128)
Vehicle	**Rear tire (steer)**	**Tire pressure**
1.5t, 1.85t,2.0t	5.00-8/8PR	7.0 (700, 6.9, 102)
2.0t, 2.5t, 2.75t	6.00-9/10PR	7.0 (700, 6.9, 102)
2.8t,3.0t	6.50-10/10PR	7.0 (700, 6.9, 102)
3.5t	6.50-10/12PR	7.0 (700, 6.9, 102)
AL01 1.5t,1.8t	5.00-8/8PR	7.0 (700, 6.9, 102)
AL02	18x7-8/14PR	7.0 (700, 6.9, 102)

WARNING

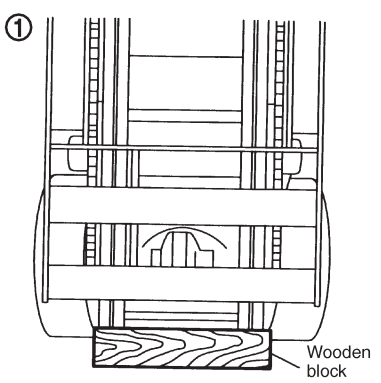
- **Tires used on Nissan Forklift industrial trucks manufactured in Japan, Spain, and the U.S. are different. Do not mix different sizes or tire types which could affect stability.**
- **If tire pressure is not correct it can affect the forklift's stability, potentially resulting in a tip over, it can also cause bursting or premature wear or explosive separation of the multi-piece rim set.**
- **When checking the tire pressure, do not face the tire side to avoid a danger because the tire pressure is very high.**
- **This could also result in death or serious injury.**

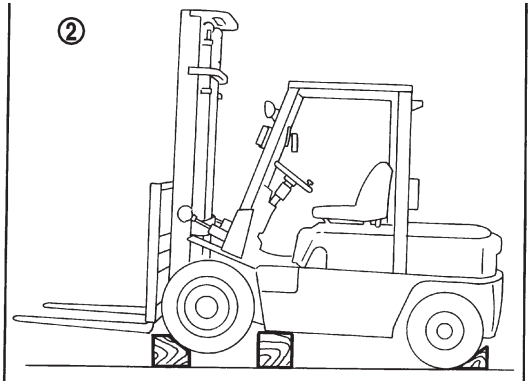
Cushion Models Standard Tire Sizes

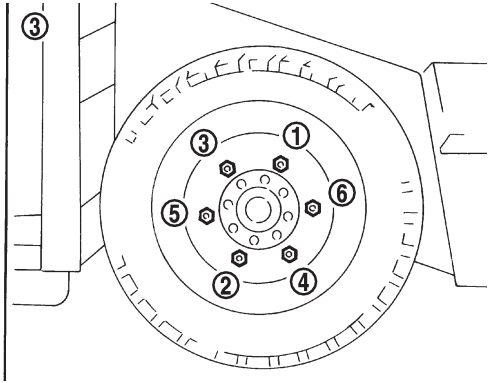
Vehicle	Type	Tire size	Tire load capacity
1.5t, 1.25t, 2.0t	Drive	18-6-12.12	Standard
	Steer	14-5-10	*HiLoad
2.0t, 2.5t	Drive	21-7-15	Standard
	Steer	16.25-6-11.25	Standard
2.8t, 3.0t, 3.3t	Drive	21-8-15	Standard
	Steer	16.25-6-11.25	*HiLoad
3.0t	Drive	22-8-16	Standard
	Steer	18-6-12.12	*HiLoad
3.5t, 3.6t	Drive	22-9-16	Standard
	Steer	18-6-12.12	*HiLoad

WARNING

***Only use the OEM Recommended HiLoad steer tire as listed in parts catalog. This will reduce the possibility of premature wear to the tire, wheel hub and/or steer linkage. This may effect overall stability both while traveling and during load handling which could cause a tip over or loss of load condition.**







Tire replacement

WARNING

- **Do not get under or ride on the lift truck when it is jacked up. Doing so could result in serious injury or death.**
- **Use a jack with a capacity of 3.0 tons or more.**

CAUTION

- **Always park the lift truck on a flat, level and solid surface.**
- **Unload cargo from the lift truck.**
- **Do not start or stop the engine or operate control levers from any position other than the operator's seat.**
- **Keep the parking brake lever fully applied.**

CAUTION

- **Make sure the forward-reverse lever and the gearshift lever are in the neutral position. (M/T vehicle)**
- **Make sure the selector lever is in the neutral position. (A/T vehicle)**

NOTE:

There are two types of wheel nut wrenches: large one for front wheels and small one for rear wheels.

Front tire:

1.Place the lift truck on a level and solid surface.

2. Start the engine and raise the carriage about 250 mm (9.84 in).

3. Place chocks behind the rear wheels to prevent movement of the lift truck.

4. Loosen the wheel nuts one or two turns each by turning them counterclockwise.

5. Tilt the mast fully backward, place a wooden block under each side of the outer mast.

CAUTION

- **Use hardwood or plastic blocks that do not slip easily and are strong enough to withstand the vehicle weight. Do not use broken or cracked blocks or metal blocks that slip easily.**

CAUTION

- **Use wood blocks of the following size. Height: Allows the block to tightly fit between the backward tilted mast and the road surface.**
- **Width: 50 to 100 mm (1.97 to 3.94 in) larger then the longitudinal length of the mast rail.**
- **Length: 20 to 40 mm (0.79 to 1.57 in) larger than the width of the outside mast.**
- **To prevent the lift truck from inclining, do not place wood blocks of different heights under the right and left masts.**

6. Tilt the mast forward until the front tires are raised from the surface.

WARNING

- **Do not operate the control lever quickly. Doing so may cause the mast on wood blocks on the ground to become unstable.**
- **Stop jacking up lift truck when the tires are clear of the ground. Jacking up the lift truck excessively high could cause it to roll over.**
- **If the front wheels are lifted for a long time by means of the mast, the mast may incline backward by itself. To prevent this, be sure to insert a wood block which goes from side to side of the frame.**
- **Do not remove wheel nuts until the front tires are raised from the ground.**

7. Support the lift truck by putting additional wooden blocks under each side of the front-end frame as shown on page 78. Stop the engine.

8. Remove the wheel nuts and replace the front tire.

WARNING

- **When removing the tire from the wheel rim, do not remove rim set bolts and nuts before releasing air.**
- **Never get under the lift truck while it is supported only by the wooden blocks.**

9. Reinstall the wheel nuts and temporarily tighten them in the sequence shown on page 78.

CAUTION

Each wheel nut has a conical bearing surface and each hole in the rim is countersunk so that they can fit with each other. After attaching all wheel nuts, make sure each nut tightly fits with the countersunk hole. If wheel nuts are attached in the wrong direction, they may loosen easily and may cause bolts to break and the wheel to come off.

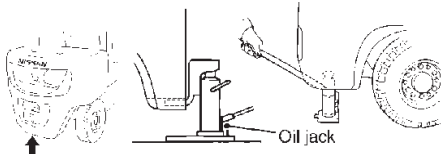
10. Start the engine and remove the wooden blocks from the underside of the frame.

11. Lower the lift truck slowly by tilting the mast fully backward. Remove the wooden block from under the mast, and remove the chocks.

12. Tighten the wheel nuts to the specified torque in a crisscross fashion. Refer to the "Tightening torque" table on page 83.

13. Adjust the tire pressures to the value specified in the "Tire pressure" table on page 76.

14. After replacing a tire, drive the lift truck a little and check the tightening torque of each wheel nut again.



Rear tire:

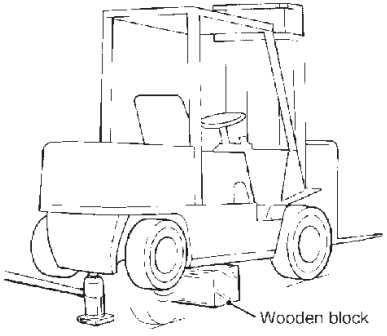
NOTE:

To replace a tire, contact properly trained personnel, your Local Authorized Dealer or other competent service shop.

1. Place the lift truck on a level and solid surface.

2. Apply the parking brake, and place chocks behind the front tires to prevent movement of the lift truck.

3. Place the jack under the cutout portion at the bottom of the counterweight, as shown in the above illustration.



WARNING

- **Never get under or ride on the lift truck when it is jacked up. Doing so could result in serious injury or death.**
- **Use a jack with a capacity of 3.0 tons or more.**

4. Loosen the wheel nuts one or two turns each by turning them counterclockwise.

WARNING

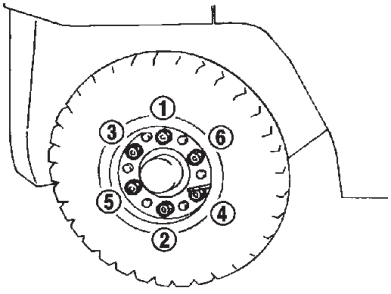
- **Do not remove wheel nuts until the rear tires are raised from the ground.**

5. Jack up the lift truck slowly until the rear tires clear the ground, and support the lift truck by putting wooden blocks under each side of the rear end frame as shown in the illustration.

WARNING

- **Stop jacking up the lift truck when the tires slightly get off the ground. Jacking up the lift truck excessively high could cause it to tip over.**
- **Use hardwood or plastic blocks that do not slip easily and are strong enough to withstand the vehicle weight.**

Do not use broken or cracked blocks or metal blocks that slip easily.



6. Remove the wheel nuts and replace the rear tire.

WARNING

- **When removing the tire from the wheel rim, do not remove rim set bolts and nuts before releasing air.**
- **Never get under the lift truck while it is supported only by the wooden blocks.**

7. Reinstall the wheel nuts and temporarily tighten in the sequence shown in the above illustration.

8.Remove the wooden blocks and lower the lift truck slowly until the rear wheel touches the ground. Then remove the chocks and the jack.

9.Tighten the wheel nuts to the specified torque in a crisscross fashion. Refer to the "Tightening torque" table on page 83.

10.Adjust the tire pressure to the value specified in the "Tire pressure" table on page76.

11.After replacing a tire, drive the lift truck a little and check the tightening torque of each wheel nut again.

Tightening torque:

Unit: <nm> (kg-m, ft-lb)

Model				L01 series		L02 series	
				1.0 t, 1.5 t, 1.75 t, 2.0 t	2.0 t, 2.5 t	2.75 t, 3.0 t	3.5t
Pneumatic Tire Model	Front (Drive)	Single tire		167 to 226 (17 to 23, 123 to 166)	245 to 294 (25 to 30, 181 to 217)	441 to 588 (45 to 60, 325 to 434)	441 to 588 (45 to 60, 325 to 434)
		Double tire	Standard	167 to 226 (17 to 23, 123 to 166)*4	B 539 to 686 (55 to 70,398 to 506)*1	N 539 to 686 (55 to 70, 398 to 506)*1	N 539 to 686 (55 to 70, 398 to 506)*1
				167 to 226 (17 to 23, 123 to 166)*5	588 to 735 (60 to 75, 434 to 542)*2	588 to 735 (60 to 75, 434 to 543)*2	588 to 735 (60 to 75, 434 to 542)*2
			Special	B 167 to 226 (17 to 23, 123 to 166)*1	B 539 to 686 (55 to 70, 398 to 506)*1	N 539 to 686 (55 to 70, 398 to 506)*1	N 539 to 686 (55 to 70, 398 to 542)*2
				78.4 to 98 (8 to 10, 58 to 72)*3	588 to 735 (60 to 75, 434 to 542)*2	588 to 735 (60 to 75, 434 to 542)*2	588 to 735 (60 to 75, 434 to 542)*2
				167 to 226 (17 to 23, 123 to 166)*2	–	–	–
	Rear (Steer)			167 to 226 (17 to 23, 123 to 166)	167 to 226 (17 to 23, 123 to 166)	167 to 226 (17 to 23, 123 to 166)	210 to 256.7 (21 to 26, 155 to 189)

B Bolt

N Nut

*1: Inner wheel
*2: Outer wheel nut
*3: Hub nut (Outer hub)
*4: Wheel nut
*5: Wheel composite nut

Unit: Nm (kg-m, ft-lb)

Cushion Tire Model		CL01	CL02	CGL02	GL02
	Front (Drive)	174 to 186 (18 to 19, 128 to 137)	197 to 245 (20 to 25, 145 to 181)	245 to 294 (25 to 30, 181 to 217)	266 to 332 (27 to 34, 146 to 245)
	Rear (Steer)	Hub is maintained by wheel bearing & rolling torque as noted in service manual.			

Drain plug

Remove the drain plug before washing the inside of the fuel tank. To do this, turn the drain plug counterclockwise.

● When removing the drain plug, be careful not to lose the packing. Before installing the drain plug, be sure to install the packing.

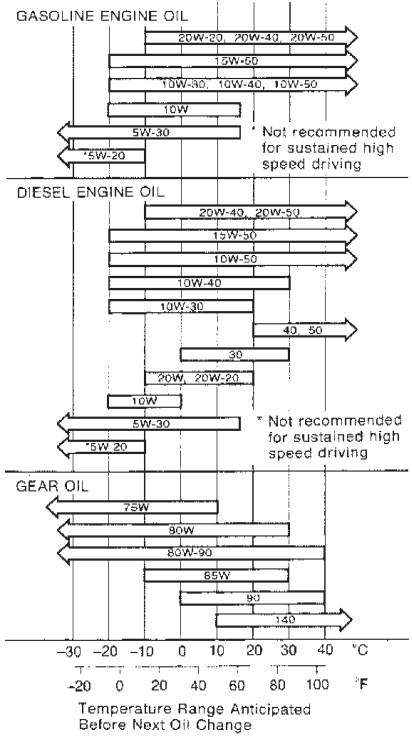
Tightening torque:

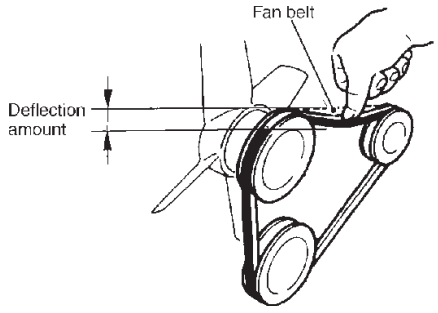
25 - 39 <nm> (2.5 - 4.0 kg-m, 18 - 28 ft-lb)

RECOMMENDED LUBRICANTS

Item		Specifications	Remarks
Engine oil	Gasoline	API SD or SE	Refer to RECOMMENDED VISCOSITY NUMBER
	Diesel	API CC or CD	
Gear oil	Transmission	API GL-4 or 5	
	Differential	API GL-4 or 5	
Grease	Chassis	N.L.G.I. 1	Lithium soap base
	Wheel Bearing	N.L.G.I. 2	
	Mast and chain guide bar	N.L.G.I. 2	
Power steering oil		Hydraulic oil I.S.O. VG32	-
Hydraulic oil		Hydraulic oil I.S.O. VG32	Wear-proof oil
Automatic transmission oil		Type DEXTRON or M2C-33E or F	-
Brake fluid		DOT3 (F.M.V.S.S. No. 116)	F.M.V.S.S.: Federal Motor Vehicle Safety Standard
Anti-freeze		_	Permanent anti-freeze (Ethylene glycol base)

RECOMMENDED SAE VISCOSITY NUMBER





ENGINE

Fan belt

Check the belt deflection by applying moderate thumb pressure at a point midway between the pulleys. If necessary, adjust the belt deflection.

Fan belt deflection:

K15, K21, K25

11 to 13 mm

(0.43 to 0.51 in)

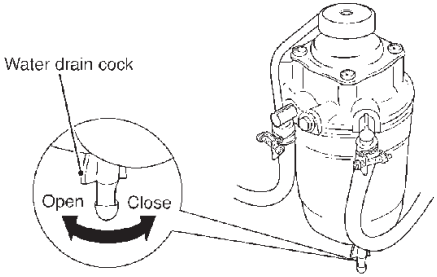
2.5L-4C, 3.3L-4C

Approx. 13 mm

(Approx. 0.51 in)

WARNING

- **Be sure the engine is not running and the parking brake is applied securely.**
- **Keep hands clean.**



FUEL FILTER

Draining water from water separator (2.5L-4C, 3.3L-4C diesel engine vehicle)

If the fuel filter warning lamp lights while the engine is running, drain any water that is in the fuel filter. Proceed as follows:

1. Open the top panel. Refer to "Top panel" on page 47.

2. Place a container under the fuel filter.

3. Put the saucer under the water drain cock, and then loosen the water drain cock 4 to 5 turns to drain water.

4. After the water has been completely drained and tighten the drain cock.

WARNING

- **Never allow open flames, smoking, or other sources of ignition in the area of fuel filter.**
- **Every part remains very hot immediately after the engine has stopped. So wear protective gloves and perform the operation carefully so as not to touch heated parts around the water drain cock.**

CAUTION

- **Fuel may also gush out along with water drained. If fuel splashes over parts, wipe it off completely.**
- **If operation is continued for a long time while the sediment chamber (fuel filter) level warning lamp is lit, the fuel injection pump might seize up.**

Air purge (Diesel engine vehicle)

NOTE:

2.5L-4C, 3.3L-4C vehicle is unnecessary air purge operation.

When refilling empty fuel tank and/or draining water from water separator, purge the air out of fuel system. Proceed as follows:

1. Loosen the air purge screw at upper part of fuel filter.

2. Move the priming pump up and down until no further air-bleed comes out of the air purge screw.

3. Tighten the air purge screw.

WARNING

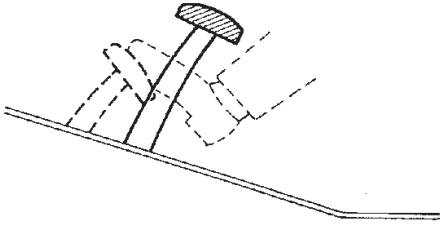
- **Do not smoke or hold a flame near the operation area.**

CAUTION

- **Do not remove the screw completely, or else a large amount of fuel may spout out.**
- **Fuel may gush out from the air purge screw hole during air purge. So be sure to block the hole with cotton waste or the like to prevent fuel from splashing over surrounding parts.**
- **If fuel spills during replenishment, be sure to wipe if off.**

NOTE:

After draining water from the fuel filter, then perform air purge operation.

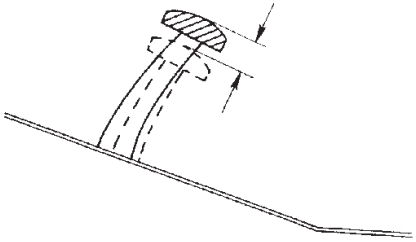


CHASSIS AND BODY

Brake pedal

When the engine is running and the brake pedal is fully depressed, the distance between the upper surface of the pedal pad and floor board should be 60 mm (2.36 in) or more.

When this distance approaches the prescribed limit value, have the brake adjusted by your Local Authorized Dealer or other competent service shop.

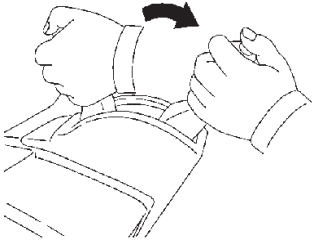


Pedal free play

The standard free play of the pedal is as follows:

Unit: mm (in)

Model	All models
Brake pedal	1 to 3 (0.04 to 0.12)
Clutch pedal (M/T model)	2 to 5 (0.08 to 0.20)



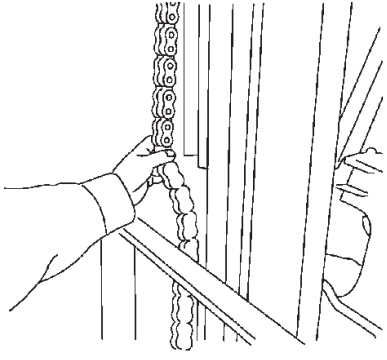
Parking brake lever

Make sure the parking brake works properly when pulled and then returns to its original (release) position.

Pulling force at gripping position:

245 to 294 N

(25 to 30 kg, 55 to 66 lb)



Lift chain

Check lift chain tension periodically. Set the fork level at position of 20 to 30 mm (0.79 to 1.18 in) from the ground and depress the mid-point of the lift chain with the finger.

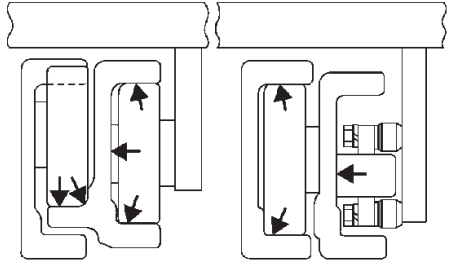
Deflection:

25 to 35 mm (0.98 to 1.38 in)

If the deflection is not within the specifications, have the chain adjusted by your Local Authorized Dealer or other competent service shop.

WARNING

- **Never put your foot under the fork during checking.**



Lubrication points

Lubricate the following points periodically in accordance with the Periodic Maintenance and Lubrication Schedule chart.

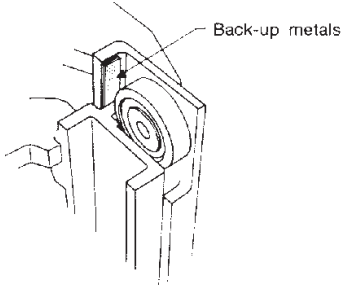
MAINTENANCE

Mast

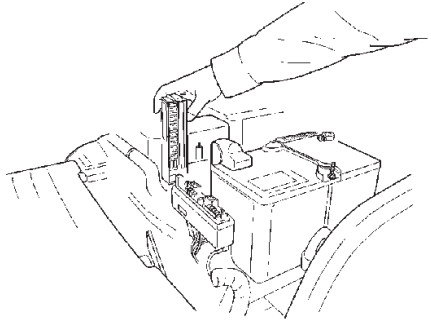
Apply a coat of grease to the thrust metals and back-up metals.

NOTE:

- **The lubrication interval will vary with working conditions. During months in which working conditions are severe, it will be necessary to grease the parts frequently.**

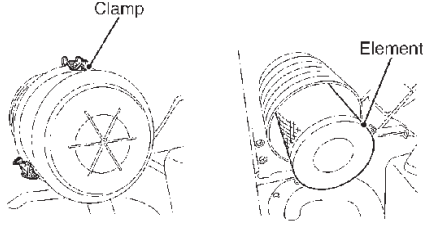


- **When lift trucks are operated, apply a coat of grease to the contact surface of the lift roller and inner mast or outer mast.**



Fuses

The fuse box is installed in front of the battery under the top panel. Remove the fuse box cover and visually check if the fuse is not blown. If the fuse is burned out, replace it.



Air cleaner

1.Remove the three clamps securing the air cleaner case and take the element out carefully. ·

2.Clean the element by tapping it by hand or blow compressed air to it from the inside.

3.After cleaning, visually check the element and replace it if still dirty.

CAUTION

- **When cleaning the air cleaner element, always wear a dust mask and dustproof glasses. OSHA requires air nozzles be used to reduce pressure to no more than 30 psi.**

NOTE:

For cleaning, use compressed air with a pressure of 687 kPa (7 kgf/cm2) or less.

PERIODIC MAINTENANCE AND LUBRICATION SCHEDULE FOR EMISSION CONTROL SYSTEM MAINTENANCE

Engine Family Name: 5NSXB02.147C, 5NSXB02.548C Engine Model: K21, K25

Before delivery of your new Forklift, your Dealer provides a pre-delivery inspection and adjustment service specified by the factory and designed to ensure satisfactory performance. The following tables list the servicing required to keep your Forklift operating at peak mechanical condition, and should be attended to as indicated below, preferably by your Local Authorized Dealer.

Maintenance Operation	Maintenance Intervals														
Periodic maintenance should be performed after specified intervals have elapsed in month or hours, whichever comes first.	Months	1	2	3	4	5	6	7	8	9	10	11	12	.....	18
	Hundreds of hours	2	4	6	8	10	12	14	16	18	20	22	24	.....	36
ENGINE COMPARTMENT MAINTENANCE (EXCEPT LPG FUEL SYSTEM)															
1. Intake & exhaust valve clearance (Operating Temp)		A		A			A			A			A	.....	A
2. Drive belt tension		I	I	I	I	I	I	I	I	I	I	I	I	.....	I
3. Engine oil	(A)	R		R			R			R			R	.....	R
4. Oil filter	(A)	R		R			R			R			R	.....	R
5. Engine coolant (L.L.C.)													R	.....	
6. Air cleaner element	(A)	C	C	C	C	C	C	C	C	C	C	C	R	.....	R
7. Spark plugs	(A)	I	I	I	I	I	I	I	I	I	I	I	I	.....	I
8. PCV valve	(A)			R			R			R			R	.....	R
ENGINE COMPARTMENT MAINTENANCE (LPG FUEL SYSTEM)															
1. Piping or pipr connector portion for gas leakage		I	I	I	I	I	I	I	I	I	I	I	I	.....	I
2. Tar in vaporizer		D	D	D	D	D	D	D	D	D	D	D	D	.....	D
3. LPG fuel filters				R			R			R			R	.....	R

***Note: (1) Under dusty or other dirty operating conditions more frequent maintenance is necessary.**

NOTE: Nissan Forklift recommends a complete tear down, inspection, and resealing of the vaporizer before 6,000 hours of service. This maintenance is necessary for units that are not running the recommended HD5 grade LPG, or using an unknown fuel quality.

Abbreviations: I=Inspect. Correct or replace if necessary. R=Replace A=Adjust C=Clean D=Drain

All above listed items must be maintained in order to meet and keep emission control systems operating at design levels. Failure to maintain system could compromise the warranty.

***For reference only:** Normal operating conditions and time is based on a clean, dry type of environment and 1,200 hours or less in one year.

MAINTENANCE SCHEDULE

(2) Chassis and Body Maintenance

The inspection/service items listed below are described in this chapter. The symbols in the timing column have the following meanings, ● : Inspection/service in accordance with the occupational safety and health regulations, ❍ : Inspection/service recommended by Nissan Forklift. The inspection/service timings shown below are based on the assumption that the vehicle is operated for 200 hours in a month. When determining the inspection/service timing, take into account the actual working conditions of the vehicle.		Timing	
		Self-imposed inspection	
		Monthly	Annual
	Working hours	200	2400
1. Inspection of battery fluid level		❍	●
2. Inspection of specific gravity of battery fluid		❍	❍
3. Inspection/adjustment of clutch pedal (M/T only)		●	●
4. Inspection of clutch fluid (M/T only)		❍	●
5. Inspection of automatic transmission fluid level		❍	●
		6 months (every 1200 working hours)	
6. Inspection of A/T line pressure		If necessary	
7. Inspection of stall speed		If necessary	
8. Inspection of differential gear oil level (including inspection of manual transmission oil level)			●
9. Replacement of differential gear oil		6 months (every 1200 working hours)	
10. Application of wheel bearing grease		12 months (every 2400 working hours)	
11. Inspection of wheel bearing for looseness (Inspection/adjustment of preload)		●	●
12. Adjustment of steering axle		If necessary	
13. Inspection of tire air pressure		●	●
14. Inspection of tire for wear		●	●
15. Inspection of wheel nut		●	●
16. Inspection of brake fluid level		●	●
17. Replacement of brake fluid		12 months (every 2400 working hours)	
18. Inspection/adjustment of brake pedal		●	●
19. Inspection/adjustment of inching brake pedal		❍	●
20. Inspection of brake lining for wear			●

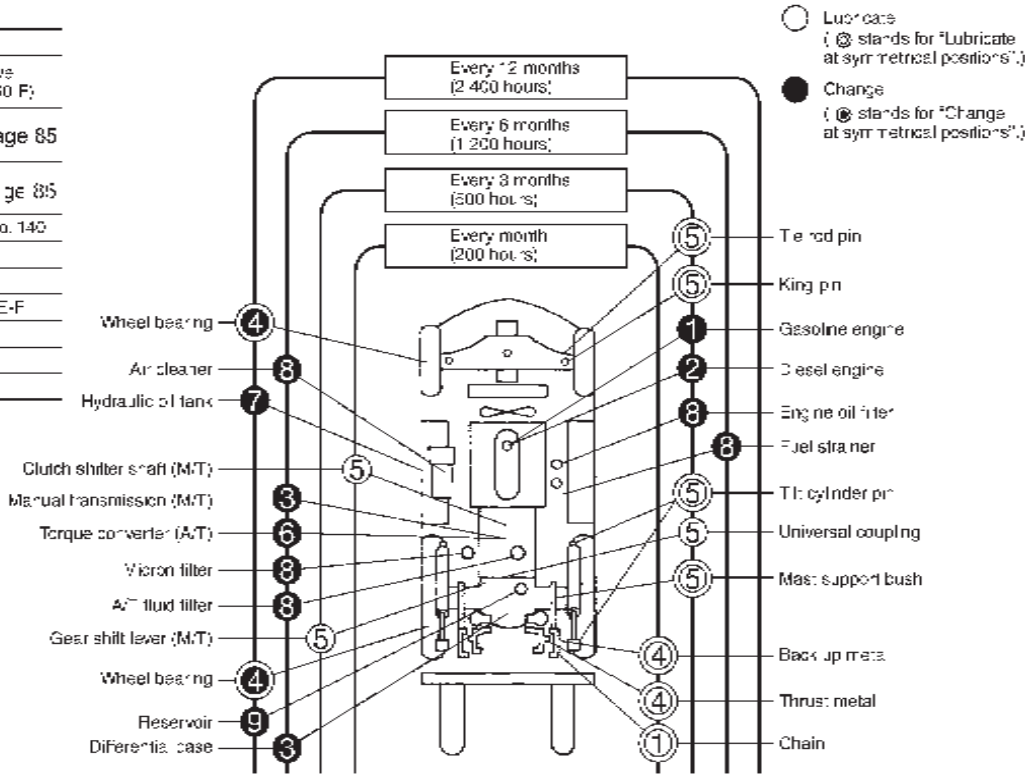
MAINTENANCE SCHEDULE

(2) Chassis and Body Maintenance (continued)

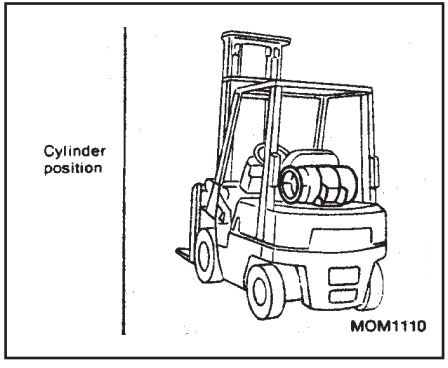
Inspection/service item	Working hours	Timing	
		Self-imposed inspection	
		Monthly	Annual
		200	2400
21. Adjustment of shoe clearance			●
22. Inspection/adjustment of hand brake operation effort			●
23. Inspection of steering wheel for play and looseness		●	●
24. Inspection of steering wheel operation effort		●	●
25. Inspection of steering system fluid pressure		If necessary	
26. Inspection of hydraulic fluid level		●	●
27. Replacement of hydraulic fluid		12 months (every 2400 working hours)	
28. Replacement of micron filter		6 months (every 1200 working hours)	
29. Cleaning of suction filter		12 months (every 2400 working hours)	
30. Inspection of hydraulic pressure		If necessary	
31. Inspection of fork		●	●
32. Inspection of carriage height		If necessary	
33. Inspection/adjustment of lift chain tension		●	●
34. Inspection of carriage height		If necessary	
35. Inspection/adjustment of mast roller		If necessary	
36. Adjustment of mast roller clearance		If necessary	
37. Inspection of mast operation		●	●
38. Inspection of cylinder operation		●	●
39. Inspection of cylinder		●	●
40. Applying grease		See the lubrication schedule chart	
41. Inspection/replacement of fuses		If necessary	
42. Bulb replacement		If necessary	

LUBRICATION CHART

	Item	Surface oil	
		Below 16°C (60°F)	Above 16°C (60°F)
①	Gasoline engine oil	See page 85	See page 85
②	Diesel engine oil	See page 85	See page 85
③	Gear oil	SAE No. 90	SAE No. 140
④	W.B. grease	N.L.G.I No. 2	
⑤	Chassis grease	N.L.G.I No. 1	
⑥	A/T fluid	Dexron or V2C-33E-F	
⑦	Hyd. oil	I.S.O. VG32	
⑧	Replace or clean element		
⑨	Brake fluid	FMVSS Dot 3	



PRECAUTIONS FOR USING THE LPG MODEL



LPG model

WARNING

- **LPG IS HEAVIER THAN AIR. It will settle on your clothes and the surface around you, displacing oxygen necessary for breathing.**
- **Open flames can cause flash fires.**
- **Check all connections for damage or leaks. If the truck will not start after you change cylinders, have an authorized, qualified mechanic check it.**

WARNING

Internal combustion forklifts are not recommended for use in enclosed or confined spaces because of possible build-up of carbon monoxide gases which are colorless and odorless, and could cause unconciousness and/or death.

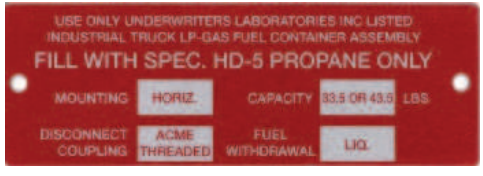
When changing LPG (liquified petroleum gas) cylinders, please follow these basic rules:

- Never allow open flames or other sources of ignition in the area.
- Wear protective equipment (i.e. safety glasses, gloves).
- Change only in well ventilated areas.
- Do not use or park near fire.
- Do not expose to direct sun rays for extended periods of time.
- Inspect equipment pipe connections for gas leaks at matting sections.
- Only a person who is familiar with replacing LPG should replace the cylinder.
- LPG is heavier than air.

Recommended LPG Fuel Type:

Nissan Forklift recommends the use of HD5 LPG. Use of any other grade may cause the following: Increased emissions, increased maintenance, and decreased performance.

Nissan Forklift does not recommend any fuel system additives or cleaners.



Cylinder Size

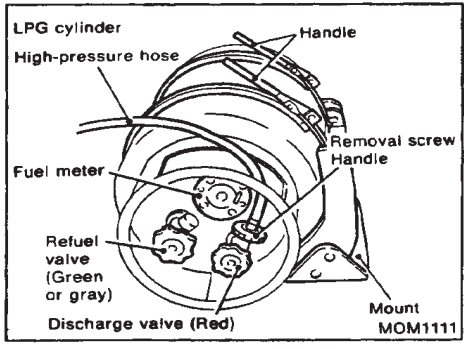
(1) Except US models

Cylinder Size	Vehicle classification	Cylinder			
		Capacity	Weight	Diameter	Length
	1.0 - 3.0 ton (2000 - 4000 lb)	36L (9-1/2 US gal 7-7/8 Imp gal)	15 kg (33 lb)	320 mm (12.60 in)	660 mm (25.98 in)

(2) US models (*)

	Vehicle	Weight Filled	Weight Empty	Diameter	Length
Cylinder Size	1 ton L01/CL01	38 lb	33 lb	12″	27-1/4″
	2 - 3 ton L02 Standard	38 lb	33 lb	12″	27-1/4″
Optional	L02 2 ton only	70 lb	43 lb	12″	33-5/16″

*Aluminum cylinder only, steel cylinder sizes may vary.



LPG cylinder handling instructions (All except US produced LPG cylinder unit)

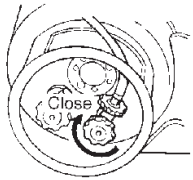
LPG cylinder replacement

WARNING

- **Replace the cylinder in a well ventilated area.**
- **While replacing the cylinder, never use or get close to fire.**

● **Use LPG cylinders with the capacity shown in the table on page 95.**

The cylinder is installed on the vehicle with the discharge valve on the left side when viewed from the rear of the vehicle. The high-pressure hose is connected to the discharge valve with a threaded screw type connector or a quick-coupling device. The LPG cylinder replacement procedure with the thread screw type device is described below.



LPG cylinder replacement procedure

Swing-back type LPG cylinder mount

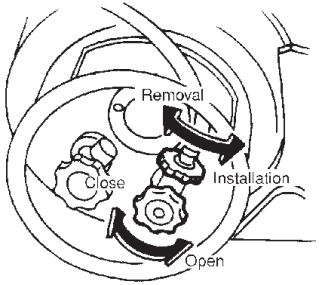
WARNING

Be sure to wear gloves in order to prevent any propane vapor from contacting the skin.

1.Turn the discharge valve slowly at the cylinder side to the right (clockwise) to fully close the valve. Place the fuel-change switch in the LPG position. Allow the engine to run until it stops naturally (fuel exhausted). Turn the key switch to the OFF position.

WARNING

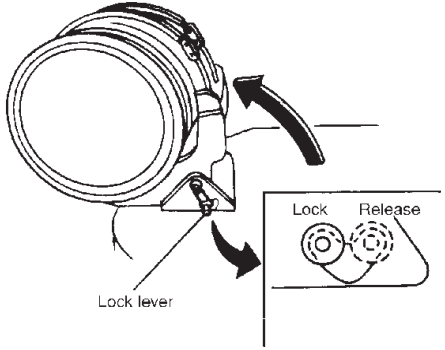
Do not touch the refuel valve (green or gray) on the LPG cylinder. It is very dangerous to open the valve, because it will let LPG leak out to the atmosphere which could cause a fire hazard.



2.Turn the high-pressure valve removal screw handle to the left (counterclockwise when looking directly at the front of the valve) and disconnect the high-pressure hose. Take care not to damage the packing around the tip of the hose.

3.Go to the other side of the vehicle.

4.Move the lock lever to the release position. Tilt the cylinder toward the rear of the vehicle.



5.Loosen the handle and release it to allow the cylinder to drop. Install the new cylinder in the reverse order of removal.

6.The lock lever is of a self-locking type but make sure that the lock lever is locked securely. If it is not locked, then lock it manually.

WARNING

- **Make sure the high-pressure hose is free from twists after installation.**
- **Make sure the lock lever is locked securely.**

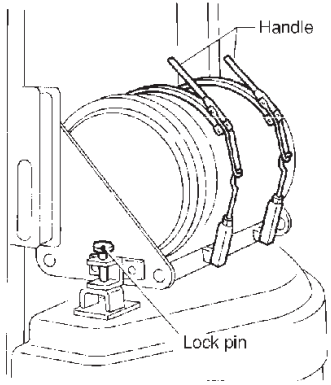
NOTE:

- **Install the LPG cylinder in the vehicle with the discharge valve on the cylinder facing to the left as viewed from behind the vehicle. When connecting a high-pressure hose to the takeoff value, screw the hose in, using a handle.**
- **Place the LPG cylinder on the mount with the "UP" mark on the cylinder facing upward, so that the LPG fuel meter works correctly and all LPG can be used.**

Swing-open type LPG cylinder mount (Option)

During vehicle service procedures requiring opening of the top panel, the LPG cylinder mount must first be moved to prevent it from interfering with the operator's seat. The optional swing-open type cylinder mount provides easy and convenient cylinder mount movement. Follow the procedure outlined below to replace the LPG cylinder on swing-open type cylinder mount equipped vehicles.

1.The cylinder discharge valve is located on the right side when viewed from the rear of the vehicle (swing-back mount equipped vehicles have the discharge valve on the left side). The disconnection procedure for the high-pressure hose and the LPG cylinder is the same for both the swing-back type mount and the swing-open type mount. Perform Steps 1 and 2 as described under the item for the swing-back mount.



2.Loosen the handle and release it to allow the cylinder to drop.

WARNING

Do not attempt to replace the LPG cylinder with the mount in the open position. Replace the LPG cylinder only with the mount locked to the top of the counterweight.

NOTE:

The cylinder is heavy. Hold the cylinder firmly during the replacement procedure.

Follow the removal procedure in the reverse order to install the new LPG cylinder.

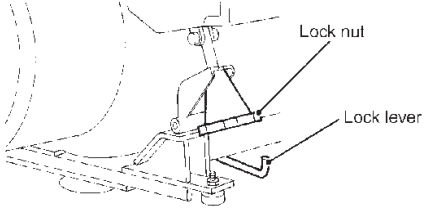
WARNING

Connect the high-pressure hose to the cylinder taking care not to twist the hose.

Make sure that the lock handle is in the locked position at the completion of the replacement procedure.

Slide type LPG cylinder mount (Option)

1.Disconnect high-pressure hose from LPG cylinder. Disconnection procedure for the high-pressure hose and the LPG cylinder is the same for both the swing-back type mount and the slide type mount. Perform steps 1 and 2 as described under the item for the swing-back mount.



2.Make sure that the LPG cylinder is secured with a lock nut and a lock lever.

3.Pull the lock lever on the right-rear side of the mount to the right to unlock the mount, and pull out the LPG cylinder by moving it backward along with the mount as far as they will go.

4.Loosen the lock nut, detach the band and the cover (for the LPG cylinder) at the same time, and incline the cylinder forward to unload the cylinder.

5.Follow these steps in reverse to install a new LPG cylinder.

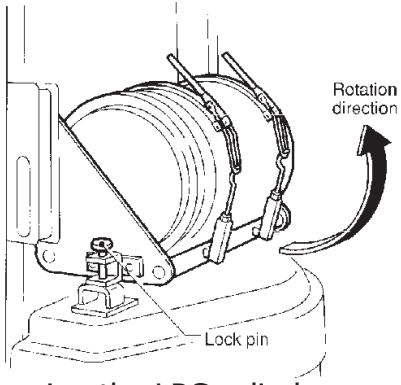
6.The lock lever is designed to be locked automatically when the mount is pushed forward. Make sure that the lock lever is locked securely, and if not, lock it manually.

NOTE:

- **Install the LPG cylinder in the vehicle with the discharge valve on the cylinder facing to the left as viewed from behind the vehicle.**
- **Place the LGP cylinder on the mount with the "”UP” mark on the cylinder facing upward, so that the LPG fuel meter works correctly and LPG can be used to the last drop.**

WARNING

- **Make sure the high pressure hose is free from twists after installation.**
- **Make sure the lock lever is locked securely.**

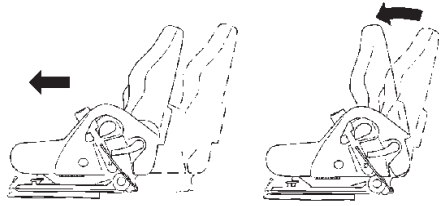


Opening the LPG cylinder equipped vehicle's top panel

Swing-open type:

1. Lift the lcok pin at the side of the LPG cylinder mount. Rotate the cylinder approximately 90 degrees toward the rear of the mount.

2. Open the top panel. Refer to "Top panel" on page 47.

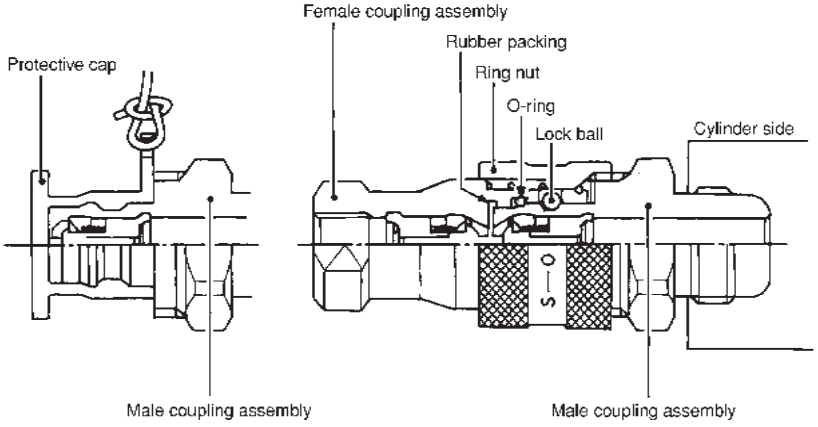


Swing-back type, slide type:

1. Release the lock lever for the LPG cylinder mount and tip the LPG cylinder backward (swing-back type) or pull out (slide type).

2. Slide the operator's seat to the frontmost position, fully incline the backrest forward, and open the top panel. Refer to "Top pnael" on page 47.

(Quick coupling part nomenclature)



Cylinder replacement procedure with quick coupling

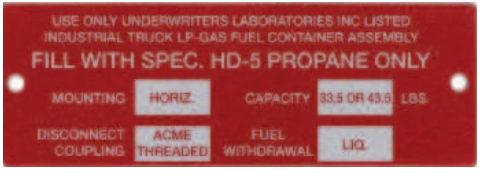
1. Turn the discharge valve (colored red) at the cylinder side to the right until the valve is completely closed.

Place the fuel-change switch in the LPG position. Wait until the engine stops naturally (runs out of fuel). Turn the key switch to the OFF position.

Recommended LPG Fuel Type:

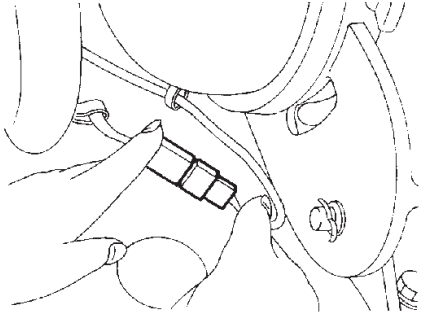
Nissan Forklift recommends the use of HD5 LPG. Use of any other grade may cause the following: Increased emissions, increased maintenance, and decreased performance.

Nissan Forklift does not recommend any fuel system additives or cleaners.

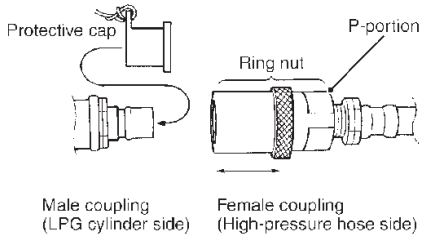


WARNING

- **Do not operate the refuel valve (green or gray color).**
- **It is very dangerous to open the refuel valve, because it causes LPG to leak out.**



1. Disengage the connector of the LPG fuel meter. For Nissan Forklift industrial trucks manufactured outside the U.S.

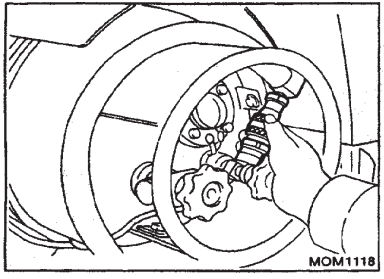


2. Hold the P part of the female coupling (coupling on he high-pressure hose side) with one hand and push it toward the shut off valve, while sliding the locking part of the coupling toward the high-pressure hose with the other hand.

The male coupling (coupling on the LPG cylinder side) and the female coupling repel each other and are detached with a snap by force of the springs in them. (The couplings snap when they disengaged.)

3. Hold the female coupling and pull it out straight.

4. Put the supplied protective cap on the male coupling.



For areas outside North America

Turn the quick coupling ring nut to the left (counterclockwise when viewed from the hose). Turn the quick coupling to the left (when viewed from the discharge valve) and pull the hose and coupling free of the assembly.

The symbol (S-O) is stamped on the ring nut. (S) indicates the tightening direction. (O) indicates the loosening direction.

NOTE:

- **Do not strike the coupling with a mallet or similar object during the removal procedure. Doing so can result in coupling distortion and other damage.**
- **Be sure to install the protective cap to the male assembly side cap ring after cylinder (container) removal.**

Coupling connection precautions

- **Inspect the male assembly side for dust or other foreign material. Clean the assembly if required. If the female side assembly O-ring is dry, apply a small amount of oil and grease to it so that it rotates smoothly.**
- **Take care not to damage the O-ring side facing the male assembly during the connection procedure.**

Connect the lock ball. Check that the ring nut has returned to the specified position. Turn the ring nut to the right to thread it into position.

After replacing with a new cylinder, proceed as follows:

WARNING

- **When disconnecting the high-pressure hose, do not stand where the remaining LPG may splash you, or you may be seriously injured.**

- **Do not disconnect the high-pressure hose when the engine is running. This could cause discharge of LPG and potential serious injury.**

- When connecting the high-pressure hose to the LPG cylinder, remove the protective cap from the male coupling.

- Align the female coupling with the male coupling, and push the female coupling against the shut off valve with the part P held with a hand. The locking part of the female coupling then automatically slides towards the high-pressure hose.

- When you further push the coupling against the valve, the locking part automatically slides and engages with the male coupling with a snap. (The couplings snap when they are engaged and locked each other.) The connection of the high-pressure hose to the LPG cylinder is now complete.

- Slowly open the discharge valve to the full-open position. (Do not open the discharge valve quickly; this may activate the pressure check valve so that the gas can not flow properly.)

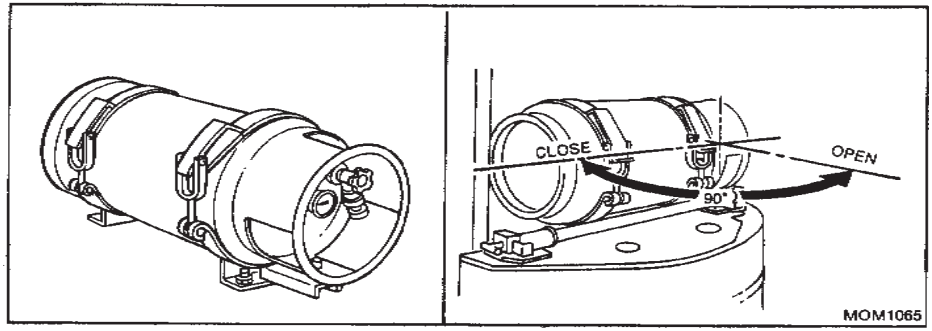
Place soapy water over the high-pressure hose connection to make sure no gas leaks occur.

- After making sure there are no gas leaks, turn the key switch to start the engine. If the engine does not start, the pressure check valve may activate to hamper the gas flow. In that case, turn the key switch to "OFF", close the discharge valve, slowly open it and repeat step 1.

- If the abnormalities such as gas leaks are noted, close the discharge valve and have your LP gas system checked by your Local Authorized Dealer.

Stationary type

Swing open or Swing down type



CHANGING LPG CYLINDER

(US manufactured models)

There are two types of LPG cylinder holders, as described below.

(1) One type is secured to the upper surface of the counterweight. (L02 and GL02 series vehicles)

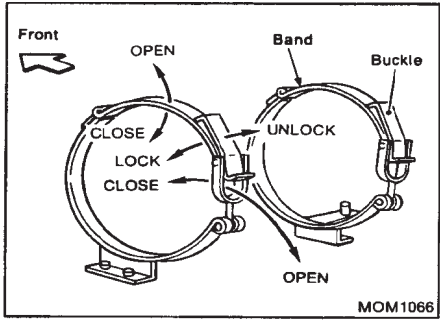
(2) The other type is swing open type. It is opened 90° in the right rear direction. (All except L02 and GL02 series vehicles)

NOTE:

The LPG cylinder removal and installation procedures are the same for the two types (1) and (2) indicated the the left.

WARNING

Before installing a new cylinder, be sure that rack is locked in place to the counterweight. (Swing open types only)



REMOVING LPG CYLINDER

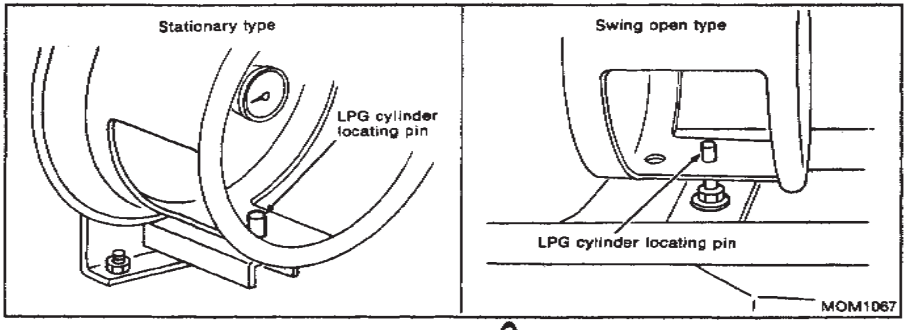
1. Turn OFF (close) the cylinder valve while engine is running.

2. When engine stops turn the ignition key switch to the OFF position.

3. Slowly unthread the hose fitting.

4. Pull the buckle to unfasten it, then put the tank clamp band over in the forward direction.

5. Remove the LPG cylinder from the holder.



INSTALLING CYLINDER

1. Check LPG hose, tubing for damage, or areas of possible leakage. Notify your supervisor of any leaks.

2. Check the condition of the O-ring. Review page 100.

3. Lift the full cylinder into position.

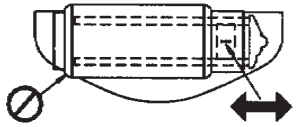
WARNING

- **A full cylinder will be much heavier than the empty cylinder just removed.**
- **Make sure cylinder is in the correct locating pin.**

4. Place the clamp band onto the LPG cylinder, then lock with the buckle.

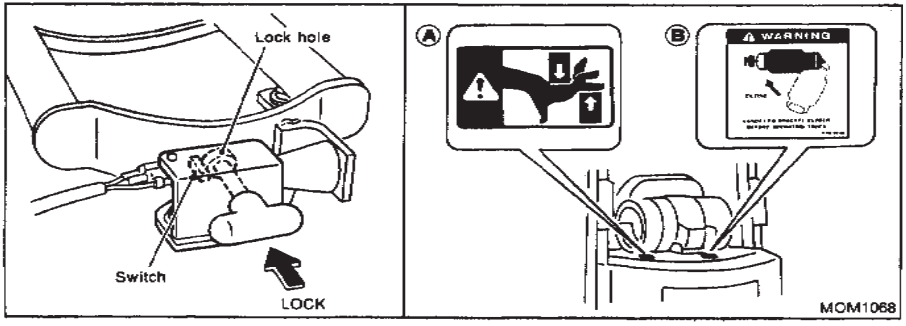
WARNING

Make sure the LPG cylinder is securely held in place by means of the handle and the high pressure hose is free from twisting.



WARNING

- **Do not operate truck with LPG fuel tank overhanging profile fo truck, damage to tank, serious injury or death may occur.**
- **Fuel tank locating pin must be properly positioned to eliminate fuel tank overhang.**



5. Connect the hose after the cylinder is locked into the normal operating position.

6. Turn on the valve and recheck for leaks.

7. Return safety equipment to storage.

8. While seated in the operator's seat, turn the key switch to "ON".

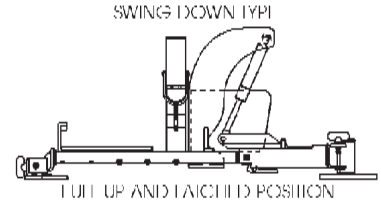
9. Check to see that the cylinder bracket lock indicator light on dash is off. (See page 10.)

If the light is on, turn the key off and check that the swing mount is secured and locked.

10. Check to see if the switch is damaged.

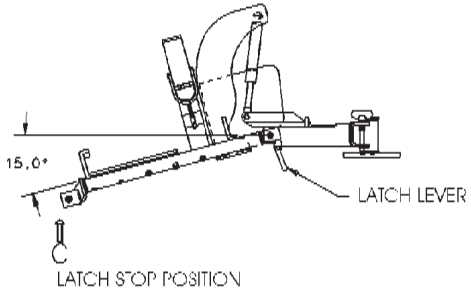
WARNING

Only authorized Nissan Forklift dealers should make repairs and/or adjustments to the switch, latch, or bracket.

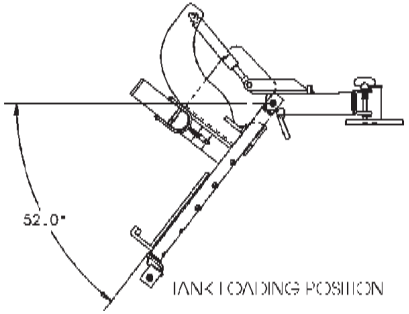


Operating Procedure:

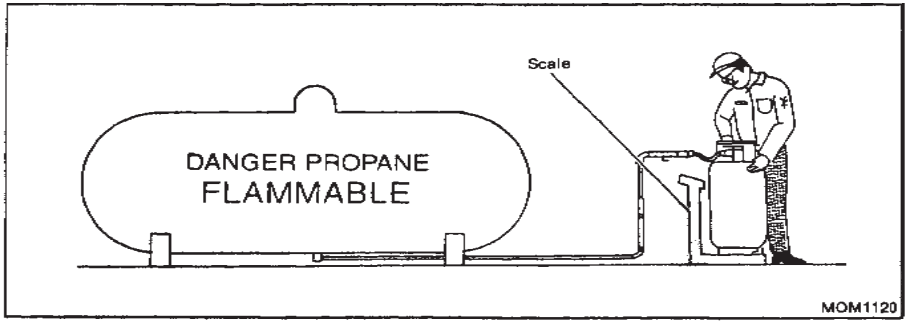
A) To fully close bracket, press down on end of bracket with left hand, hold latch lever up with right hand, and release bracket.



B) Bracket must be in full up position before rotating to lock position on truck.



C) A minimum force is required to lift bracket to full up position. Excessive force may cause damage if latch lever is not released.



REFILLING LPG CYLINDERS

WARNING

- **Only a trained and authorized person should be allowed to refill LPG tanks.**
- **Do not refill cylinders while mounted on a truck.**
- **Make sure you know and understand the proper procedure for filling an LPG cylinder.**
- **Know all local fire codes.**
- **If you have any questions about refilling LPG cylinders, please ask your supervisor.**
- **If problems with filling occur, call your LPG supplier.**

The weight scale method to fill the cylinder is highly recommended to protect the environment and to reduce fire hazards. This method will reduce overfilling and the discharge of LPG into the environment.

- Store full and empty cylinders according to local fire codes.
- When filling the LPG cylinder with LPG, always observe the laws or regulations in your country, state or province.

PERIODIC MAINTENANCE SCHEDULE

Before delivery of your new Forklift, your Dealer provides a pre-delivery inspection and adjustment service specified by the factory and designed to ensure satisfactory performance. The following tables list the servicing required to keep your Forklift operating at peak mechanical condition while meeting EPA & CARB Emission requirements, and should be attended to as indicated, preferably by your Local Authorized Dealer.

Maintenance Operation	Maintenance Intervals														
Periodic maintenance should be performed after specified intervals have elapsed in month or hours, whichever comes first.	Months	1	2	3	4	5	6	7	8	9	10	11	12	.....	18
	Hundreds of hours	2	4	6	8	10	12	14	16	18	20	22	24	.....	36
LPG FUEL SYSTEM															
1. Piping or pipe connector portion for gas leakage		I	I	I	I	I	I	I	I	I	I	I	I	.....	I
2. Tar in vaporizer		D	D	D	D	D	D	D	D	D	D	D	D	.....	D
3. Piping or pipe connector portion for damage		I	I	I	I	I	I	I	I	I	I	I	I	.....	I
4. Mounting bracket of LPG cylinder for looseness or damage		I	I	I	I	I	I	I	I	I	I	I	I	.....	I
5. Piping or pipe connector portion for gas leakage	(1)													.....	
6. LPG fuel filters				R			R			R			R	.....	R

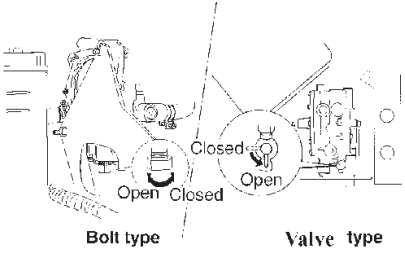
NOTE: (1) At time of LPG cylinder replacement, inspect pipe connectors for gas leakage with soapy water.

NOTE: Nissan Forklift recommends a complete tear down, inspection, and resealing of the vaporizer before 6,000 hours of service. This maintenance is necessary for units that are not running the recommended HD5 grade LPG, or using an unknown fuel quality.

Abbreviations: I=Inspect. Correct or replace if necessary. R=Replace A=Adjust C=Clean D=Drain

All above listed items must be maintained in order to meet and keep emission control systems operating at design levels. Failure to maintain system could compromise the warranty.

***For reference only:** Normal operating conditions and time is based on a clean, dry type of environment and 1,200 hours or less in one year.



Draining of tar from the vaporizer (LPG - gasoline dual fuel vehicle)

CAUTION

This should only be done by a trained & authorized person.

The vaporizer is an apparatus used during LPG operation to control and reduce fuel pressure within the LPG cylinder and regulate vaporization. The vaporization process produces tar (sticky liquid) which accumulates in the vaporizer.

When or if tar accumulation becomes excessive, emission levels and idling speed adjustment could be adversely affected. Tar must be purged from the vaporizer at least once a month.

1. The tar purging procedure should be performed when the engine is at operating temperature (warm).

2. Shut off (close) LPG cylinder tank, (red) discharge valve then let idle.

3. Turn the ignition key to the OFF position.

4. Get off the lift truck after pulling out the key, to open the top panel. Refer to ""Top panel" on page 47.

5. Put a cloth for collecting tar on the outlet.

6. For the valve cock type, open the purge valve cock. For the plug (bolt) type, slowly remove the plug.

7. Tar will drip. When it stops, the procedure is over.

8. Close the purge valve cock or fix the purge plug (bolt). If tar is adhered to the body or surrounding place, completely wipe it out with a cloth.

9. Close the top panel to finish the work.

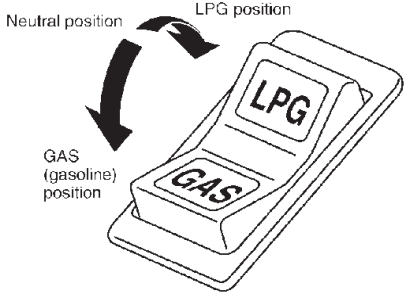
WARNING

Do not touch the vaporizer or its surrounding parts at high temperature, as it may cause burns. Whenever operating the purge valve cock or plug, always wear protective gloves.

NOTE:

- **If you removed the battery to gain access to the drain, it is necessary to do an "Idle Air Volume Relearn" see pages EC-49 and EC-50 in the Chassis Service Manual).**
- **Nissan Forklift recommends a complete tear down, inspection, and resealing of the vaporizer before 6,000 hours of service. This maintenance is necessary for units that are not running the recommended HD5 grade LPG, or using an unknown fuel quality.**

LPG - gasoline dual fuel vehicle:



WARNING

Carefully follow the below procedures when turning the engine off after LPG oepration:

(1) Completely close the discharge valve (colored red).

(2) Press the fuel-change switch to set the neutral position.

(3) Let the engine idle until it stops.

(4)Make sure that all of the remaining LPG (in the piping and other receptacles) has been used. After the engine stops, turn the ignition key to the OFF position.

- **If the lift truck is not used for several hours after the operation, park the lift truck with fuel-change switch set to the GAS position. This helps the engine start more easily the next time.**
- **After completion of operation and before storing the vehicle for an extended period, completely close the discharge valve (colored red). Check the engine for gas leakage. Refer to "”LPG cylinder replacement” on page 95.**
- **In the event of LPG leakage, an accident, or some other abnormal occurrence, immediately and completely close the discharge valve (colored red). Have your LPG system checked at an authorized service facility.**

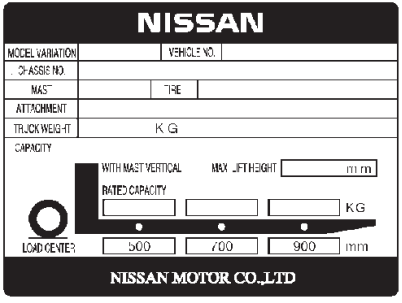
STORAGE FOR LONG PERIOD

- Place lift truck on level ground.

- Disconnect all cables from battery terminals to minimize self-discharging. It is better to remove and store battery in a cool and dry place.

- Keep tires inflated at normal air pressure.

- Drain cooling system throughly and refill system before operation. In case of being filled with long life coolant, it is not necessary to drain cooling system.

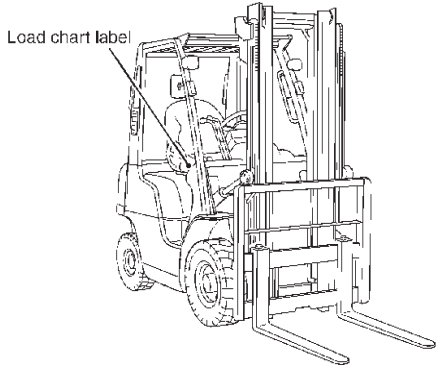


LOAD CHART

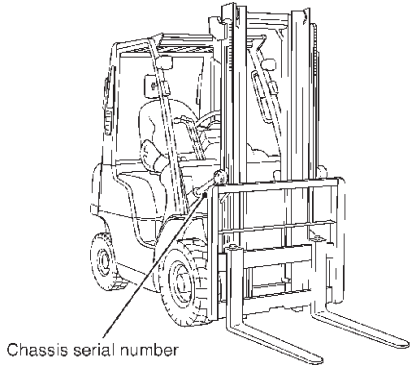
The load chart, attached to front panel, indicated all necessary information regarding the type of attachments, lifting cpacity, etc.

WARNING

Do not exceed the rated capacity of the lift truck.



Refer to the "LOAD CHART" label attached to the right side of the front panel.



CHASSIS SERIAL NUMBER

The number is stamped on the front panel.

IDENTIFICATION NUMBERS

US manufactured models

Cushion models

CPL01	-	9N0001
APL01	-	9T0001
CPL02	-	9P0001
(9W0001 (if NFC uses all 9P0001 to 9P9991)		
CUL02	-	9Q0001
CUGL02	-	9R0001

Compact pneumatic models

APL01	-	9T0001
APL02	-	9U0001

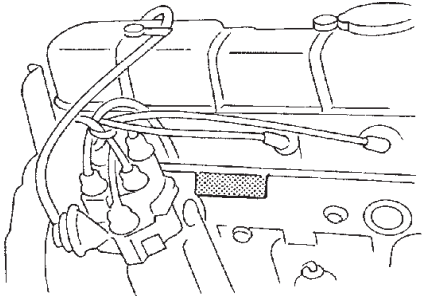
Pneumatic models

PL01	-	9G0001
PL02	-	9H0001
UL02	-	9J0001
UGL02	-	9L0001
YL02	-	9K0001
YGL02	-	9M0001
UJL02	-	9U0001
YJL02	-	9Y0001

CHASSIS SERIAL NUMBER

(Manufactured outside U.S.)

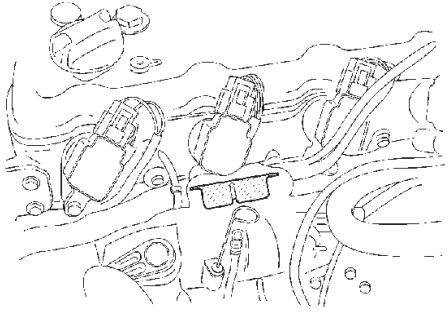
L01	-	xxxxxx
PL01	-	xxxxxx
YL01	-	xxxxxx
PL02	-	xxxxxx
UL02	-	xxxxxx
UGL02	-	xxxxxx
YL02	-	xxxxxx
YGL02	-	xxxxxx
Lift truck model		Chassis serial number



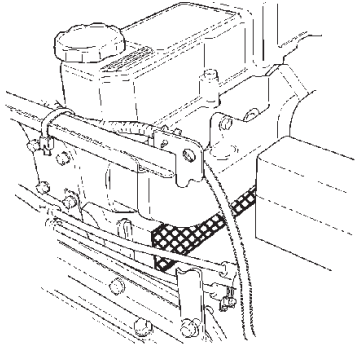
ENGINE SERIAL NUMBER

Gasoline engine (Carburetor type)

(Not used in North America)



Gasoline engine (K15, K21, K25 EGI type)



Diesel engine (2.5L-4C, 3.3L-4C)

SPECIFICATIONS

LO1 SERIES NORTH AMERICA MANUFACTURED MODELS

PERFORMANCE

Model		1.5 ton (3,000 lb.) w/ K21			1.75 ton (3,500 lb.) w/ K21		
Item		Pneumatic	Cushion	Compact	Pneumatic	Cushion	Compact
Load capacity	kg (lb.)	1,500 (3,000)	1,500 (3,000)	1,500 (3,000)	1,750 (3,500)	1,750 (3,000)	1,750 (3,000)
Load center	mm (in.)	500 (24)	500 (24)	500 (24)	500 (24)	500 (24)	500 (24)
Maximum fork height STD	mm (in.)	3,960 (155.9)	4,558 (179.3)	4,245 (167.1)	3,960 (155.9)	4,558 (179.3)	4,245 (167.1)
Tilt angle (Forward/Backward)	degree	6/12	5/10	5/10	6/12	5/10	5/10
Lifting/ (F/L /N/L)	mm/sec (FPM)	620 (122)	620 (122.1)/	670 (131.9)/	620 (122)	620 (122.1)/	670 (131.9)/
Lowering		650 (127.9)	650 (128.0)	710 (139.8)	650 (127.9)	650 (128.0)	710 (139.8)
speed		500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)
Free Lift	mm/sec (in.)	155 (6.1)	155 (6.1)	155 (6.1)	155 (6.1)	155 (6.1)	155 (6.1)
Min. turning radius (Outside)	mm (in.)	1,935 (76.2)	1,935 (76.2)	1,935 (76.2)	1,970 (77.6)	1,970 (77.6)	1,970 (77.6)
Travel speed Fwd (N/L) AT	km/h (MPH)	19 (11.8)	17.5 (10)	17 (10.6)	19 (11.8)	17.5 (10)	17 (10.6)
Rev (N/L) AT	km/h (MPH)	19 (11.8)	17.5 (10)	17 (10.6)	19 (11.8)	17.5 (10)	17 (10.6)
Drawbar Pull Full Load	AT kg (lb.)	1,680 (3,705)	1,550 (3,417)	1,700 (3,748)	1,680 (3,705)	1,550 (3,417)	1,700 (3,798)
No Load	AT kg (lb.)	1,120 (2,470)	700 (1,543)	902 (1,984)	1,120 (2,470)	700 (1,543)	902 (1,984)
Gradeability Full Load	AT %	38	38	42	38	38	42
No Load	AT %	28	20	28	24	18	26
Truck Weight No Load	Kg (lb)	2,680 (5,908)	2,700 (5,952)	2,645 (5,831)	2,845 (6,272)	2,960 (6,393)	2,815 (6,206)

SPECIFICATIONS

LO1 SERIES NORTH AMERICA MANUFACTURED MODELS

PERFORMANCE

Model		2.0 ton (4,000) K21	
Item		Pneumatic	Cushion
Load capacity	kg (lb.)	2,000 (4,000)	2,000 (4,000)
Load center	mm (in.)	500 (24)	500 (24)
Maximum fork height STD	mm (in.)	3,960 (155)	4,555 (179.3)
Tilt angle (Forward/Backward)	degree	6/12	5/10
Lifting/ (F/L /N/L) Lowering speed	mm/sec (FPM)	620 (122) 650 (127.9) 500 (98.4)	620 (122) 650 (127.9) 500 (98.4)
Free Lift	mm/sec (in.)	155 (6.1)	155 (6.1)
Min. turning radius (Outside)	mm (in.)	2,010 (79.1)	1,800 (70.9)
Travel speed Fwd (N/L) AT	km/h (MPH)	19 (11.8)	17.5 (10.9)
Rev (N/L) AT	km/h (MPH)	19 (11.8)	17.5 (10.9)
Drawbar Pull Full Load	AT kg (lb.)	1,690 (3,705)	1,550 (3,417)
No Load	AT kg (lb.)	1,330 (2,932)	700 (1,543)
Gradeability Full Load	AT %	38	38
No Load	AT %	24	16
Truck Weight No Load	Kg (lbs)	2,985 (6,581)	3,090 (6,812)

DIMENSIONS L01

Model			1.5 ton (3,000 lb.) K21			1.75 ton (3,500 lb.) K21		
Item			Pneumatic	Cushion	Compact	Pneumatic	Cushion	Compact
Overall length (without fork)		mm (in.)	2,260 (89.0)	2,070 (81.5)	2130 (83.9)	2,290 (90.2)	2,100 (82.7)	2,160 (88.2)
Overall width	Single	mm (in.)	1,065 (41.5)	970 (38.2)	1,035 (40.7)	1,065 (41.9)	970 (38.7)	1,035 (40.7)
	SPL double	mm (in.)	1,480 (58.3)	NA	NA	1,480 (58.3)	NA	NA
Overall height OHG		mm (in.)	2,115 (83.3)	2,060 (81.1)	2,108 (83)	2,115 (83.3)	2,060 (81.1)	2,108 (83)
Mast (Lowered)		mm (in.)	2,184 (86)	2,105 (82.9)	2,140 (84.3)	2,184 (86)	2,105 (82.9)	2,140 (84.3)
MAST (Extended) w/ backrest		mm (in.)	3,960 (155.9)	4,555 (179.3)	4,245 (167.1)	3,960 (155.9)	4,555 (179.3)	4,245 (167.1)
Front tread	Single	mm (in.)	890 (35.0)	820 (32.3)	870 (34.3) x	890 (35.0)	820 (32.3)	870 (34.3)
	SPL double	mm (in.)	1,095 (43.1)	NA	NA	1,095 (43.1)	NA	NA
Rear tread		mm (in.)	900 (35.4)	820 (32.3)	885 (34.8)	900 (35.4)	820 (32.3)	885 (34.8)
Wheelbase		mm (in.)	1,400 (55.1)	1,190 (46.9)	1,290 (50.8)	1,400 (55.1)	1,190 (46.9)	1,290 (50.8)
Overhang (front)		mm (in.)	400 (15.7)	580 (15.0)	390 (15.4)	400 (15.7)	380 (15.0)	390 (15.4)
Overhang (rear)		mm (in.)	460 (18.1)	500 (19.7)	450 (17.7)	460 (18.1)	530 (20.9)	480 (18.9)
Fork length		mm (in.)	1,070 (42)	1,070 (42)	1,070 (42)	1,070 (42)	1,070 (42)	1,070 (42)
Fork (width x thickness)		mm (in.)	100 (4) x 40 (1.5)	100 (4) x 40 (1.5)	100 (4) x 40 (1.5)	100(4) x 40 (1.5)	100 (4) x 40 (1.5)	100 (4) x 40 (1.5)
Ground clearance (under mast)		mm (in.)	115 (4.5)	75 (3.0)	100 (3.9)	115 (4.5)	75 (3.0)	100 (3.9)
Ground clearance (under frame)		mm (in.)	150 (5.9)	110 (4.3)	140 (5.5)	150 (5.9)	110 (4.3)	140 (5.5)
Ground clearance (under power unit)		mm (in.)	135 (5.3)	65 (2.6)	95 (3.7)	135 (5.3)	65 (2.6)	95 (3.7)

DIMENSIONS L01

Model				2.0 ton (4,000 lb.) K21	
Item				Pneumatic	Cushion
Overall length			mm (in.)	2,320 (91.3)	2,135 (84.1)
Overall width		Single	mm (in.)	1,065 (41.9)	970 (38.2)
		SPL double	mm (in.)	1,480 (58.3)	NA
Overall height	OHG		mm (in.)	2,115 (83.3)	2,060 (81.1)
	Mast (Lowered)		mm (in.)	2,184 (86)	2,105 (82.9)
	MAST (Extended)	w/ backrest	mm (in.)	3,960 (155.9)	4,445 (179.3)
Front tread		Single	mm (in.)	890 (35.0)	820 (32.3)
		SPL double	mm (in.)	1,095 (43.1)	NA
Rear tread			mm (in.)	900 (35.4)	820 (32.3)
Wheelbase			mm (in.)	1,400 (55.1)	1,190 (46.9)
Overhang (front)			mm (in.)	400 (15.7)	380 (15)
Overhang (rear)			mm (in.)	520 (20.5)	656 (87.6)
Fork length			mm (in.)	1,070 (47)	1,070 (42)
Fork (width x thickness)			mm (in.)	100 (3.9) x 38 (1.5)	100 (4) x 40 (1.5)
Ground clearance (under mast)			mm (in.)	115 (4.5)	75 (3.0)
Ground clearance (under frame)			mm (in.)	150 (5.9)	110 (4.3)
Ground clearance (under power unit)			mm (in.)	135 (5.3)	65 (2.6)

SPECIFICATIONS

LO2 SERIES NORTH AMERICA MANUFACTURED MODELS

PERFORMANCE

Model		2.0 ton (4,000 lbs.) K21/ K25/ 3.3LD		2.5 ton (5,000 lbs.) K21/ K25/ 3.3LD		
Item		Pneumatic	Cushion K21/ K25	Pneumatic	Cushion K21/ K25	Compact
Load capacity	kg (lb.)	2,000 (4,000)	2,000 (4,000)	2,500 (5,000)	2,500 (5,000)	2,500 (5,000)
Load center	mm (in.)	500 (24)	500 (24)	500 (24)	500 (24)	500 (24)
Maximum fork height STD	mm (in.)	3,960 (155.9)	4,555 (179.3)	3,960 (155.9)	4,555 (179.3)	
Tilt angle (Forward/Backward)	degree	6/12	5/10	6/12	5/10	5/10
Lifting/ (F/L /N/L)	mm/sec (FPM)	600 (118.1)	600 (118.1)	600 (118.1)	600 (118.1)	620 (122)
Lowering		650 (127.9)	650 (127.9)	650 (127.9)	650 (127.9)	650 (127.9)
speed		500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)
Free Lift	mm/sec (in.)	150 (5.9)	150 (5.9)	150 (5.9)	155 (5.9)	155 (5.9)
Min. turning radius (Outside)	mm (in.)	2,120 (835)	1,930 (76.7)	2,180 (85.9)	1,990 (78.3)	2,050 (80.7)
Travel speed Fwd (N/L) AT	km/h (MPH)	19.5 (12.1)	17 (10.6)	19.5 (12.1)	17 (10.6)	17 (10.6)
Rev (N/L) AT	km/h (MPH)	19.5 (12.1)	17 (18.6)	19.5 (12.1)	17 (10.6)	17 (10.6)
Drawbar Pull Full Load	AT kg (lb.)	1,790 (3,836)	1,650 (3,638)	1,790 (3,836)	1,650 (3,638)	1,700 (3,768)
No Load	AT kg (lb.)	1,560 (3,439)	800 (1,764)	1,560 (3,439)	800 (1,764)	992 (2,153)
Gradeability Full Load	AT %	31	33	27	28	28
No Load	AT %	28	21	24	14	21
Truck Weight No Load	Kg (lb)	3,335 (7,352)	3,230 (7,121)	3,675 (8,102)	3,600 (7,936)	3,590 (7,914)

SPECIFICATIONS

LO2 SERIES NORTH AMERICA MANUFACTURED MODELS

PERFORMANCE

Model			2.8 ton 5,500 lb K21/K25/3.3LD*			3.0 ton 6,000 lb K21/K25/3.3LC*		
Item			Pneumatic*	Cushion K21	Cusion K25	Pneumatic*	Cushion (S)	Cushion
Load capacity		kg (lb)	2,750 (5,500)	2,750 (5,500)	2,750 (5,550)	3,000 (6,000)	3,000 (6,000)	3,000 (6,000)
Load center		mm (in)	500 (24)	500 (24)	500 (24)	500 (24)	500 (24)	500 (24)
Maximum fork height STD		mm (in)	3,290 (129.5)	3,300 (130)	3,300 (130)	3,290 (129.5)	3,300 (130)	3,300 (130)
Tilt angle (Forward/Backward)		degree	6/12	5/10	5/10	6/12	5/10	5/10
Lifting / Lowering speed	(F/L /N/L)	mm/sec (FPM)	530/ 580 (104.3/ 114.1)	480/ 520 (94.5/ 102.4)	530/ 580 (104.3/ 114.1)	530/ 580 (104.3/ 114.1)	530/ 580 (104.3/ 114.1)	530/ 580 (104.3/ 114.1)
			500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)	500 (98.4)
Free lift		mm/sec (in)	140 (5.5)	198 (7.8)	198 (7.8)	140 (5.5)	216 (8.5)	216 (8.5)
Min. turning radius (Outside)		mm (in)	2,240 (88.2)	2,020 (79.5)	2,020 (79.5)	2,300 (90.6)	2,050 (80.7)	2,055 (80.9)
Travel speed	Fwd (N/L) AT	km/h (MPH)	19.5 (17.1)	17 (10.6)	17 (10.6)	19.5 (12.1)	17 (10.6)	18.5 (11.5)
	Rev (N/L) AT	km/h (MPH)	19.5 (17.1)	17 (10.6)	17 (10.6)	19.5 (12.1)	17 (10.6)	17 (10.6)
Drawbar pull	Full load	AT kg (lb)	1,860 (4,101)	1,650 (3,638)	1,900 (4,189)	1,860 (4,101)	1,900 (4,189)	3,009 (1,365)
	No load	AT kg (lb)	1,840 (4,057)	750 (1,653)	750 (1,653)	1,890 (4,167)	800 (1,764)	1,150 (2,535)
Gradeability	Full load	AT %	30	27	32	28	28	44
	No load	AT %	25	16	16	24	16	18
Truck weight	No load	kg (lb)	4,125 (9,094)	4,015 (8,860)	4,015 (8,860)	4,255 (9,381)	4,420 (9,347)	4,360 (9,612)

(S) Short Wheel Base

SPECIFICATIONS

LO2 SERIES NORTH AMERICA MANUFACTURED MODELS

PERFORMANCE

Model		3.25 ton (6,500 lb.) w/ K25	3.5 ton (7,000 lb.) w/ K25 3.3 LD*		4.0 ton (8,000lb.) w/ K25
Item		Cushion (S)	Pneumatic*	Cushion	Cushion
Load capacity	kg (lb.)	3,250 (6,500)	3,500 (7,000)	3,500 (7,000)	4,000 (8,000)
Load center	mm (in.)	500 (24)	500 (24)	500 (24)	500 (24)
Maximum fork height STD	mm (in.)	3,100 (122)	3,300 (130)	3,100 (122)	3,100 (122)
Tilt angle (Forward/Backward)	degree	5,110	6/12	5/10	5/10
Lifting/ (F/L /N/L) Lowering speed	mm/sec (FPM)	450/ 470 (88.6/ 92.5) 420/ 360 (87.7/ 70.4)	450/ 470 (88.6/ 92.5) 420/ 360 (87.7/ 70.4)	450/ 470 (88.6/ 92.5) 420/ 360 (87.7/ 70.4)	450/ 470 (88.6/ 92.5) 420/ 360 (87.7/ 70.4)
Free Lift	mm/sec (in.)	208 (8.2)	150 (5.9)	208 (8.2)	208 (8.2)
Min. turning radius (Outside)	mm (in.)	2,070 (81.5)	2,390 (94.1)	2,095 (82.5)	2,130 (83.9)
Travel speed Fwd (N/L) AT	km/h (MPH)	17 (10.6)	19 (11.8)	18.5 (11.5)	18.5 (11.5)
Rev (N/L) AT	km/h (MPH)	17 (10.6)	19 (11.8)	17 (10.6)	17 (10.6)
Drawbar Pull Full Load	AT kg (lb.)	1,900 (4,189)	1,880 (3,990)	2,825 (6,228)	2,825 (6,228)
No Load	AT kg (lb.)	800 (1,764)	1,800 (3,968)	2,100 (2,425)	1,100 (2,425)
Gradeability Full Load	AT %	24	23	38	34
No Load	AT %	16	22	18	15
Truck Weight No Load	Kg (lb)	4,455 (9,801)	4,730 (10,428)	4,740 (10,428)	5,055 (11,121)

(S) Short Wheel Base

DIMENSIONS L02

Model				3.25 ton (6,500 lb) K25	3.5 ton (7,000 lb) K25 3.3LD		4.0 ton (8,000 lb) K25
Item				Cushion	Pneumatic	Cushion	Cushion
Overall length (without forks)			mm (in)	2,445 (96.3)	2,260 (89)	2,320 (91.3)	2,360 (92.8)
Overall width		Single	mm (in)	1,150 (45.3)	1,070 (42.1)	1,070 (42.1)	1,125 (46.3)
		SPL double	mm (in)	1,640 (64.6)	NA	NA	NA
Overall height	OHG		mm (in)	2,120 (83.5)	2,085 (82.1)	2,085 (82.1)	2,090 (82.3)
	Mast (Lowered)		mm (in)	2,184 (86)	2,110 (83.1)	2,110 (83.1)	2,110 (83.1)
	Mast (Extended) w/backrest		mm (in)	3,960 (155.9)	4,555 (179.3)	4,555 (179.3)	4,245 (167.1)
Front tread		Single	mm (in)	960 (37.8)	890 (35)	890 (35)	975 (38.4)
		SPL double	mm (in)	1,205 (47.4)	NA	NA	NA
Rear tread			mm (in)	975 (38.4)	890 (3.5)	890 (3.5)	930 (36.6)
Wheelbase			mm (in)	1,600 (63.0)	1,400 (55.1)	1,400 (55.1)	1,500 (59.1)
Overhang (front)			mm (in)	455 (17.9)	410 (16.1)	410 (16.1)	385 (15.2)
Overhang (rear)			mm (in)	415 (16.3)	450 (17.7)	510 (20.1)	450 (17.7)
Fork length			mm (in)	1070 (42)	1,070 (42)	1,070 (42.1)	1,070 (42.1)
Fork (width x thickness)			mm (in)	100 (4.0) x 40 (1.5)	100 (4.0) x 40 (1.5)	100 (4.0) x 40 (1.5)	100 (4.0) x 40 (1.5)
Ground clearance (under mast)			mm (in)	115 (4.5)	80 (3.1)	80 (3.1)	75 (3.0)
Ground clearance (under frame)			mm (in)	155 (6.1)	130 (5.1)	130 (5.1)	130 (5.1)
Ground clearance (under power unit)			mm (in)	135 (5.3)	105 (4.1)	105 (4.1)	65 (2.6)

DIMENSIONS L02

Model				2.8 5,500 lbs K21/K25/3.3LD*		3.0 6,000 lbs K21/K25/3.3LD*		
Item				Pneumatic*	Cushion	Pneumatic*	Cushion S	Cushion
Overall length (without forks)			mm (in)	2,625 (103.4)	2,385 (93.9)	2,685 (105.7)	2,420 (95.3)	2,450 (96.5)
Overall width		Single	mm (in)	1,250 (44.2)	1,095 (43.1)	1,250 (49.2)	1,095 (43.1)	1,115 (43.9)
		SPL double	mm (in)	1,640 (64.6)	NA	1,640 (64.6)	NA	NA
Overall height	OHG		mm (in)	2,150 (84.6)	2,085 (82.1)	2,150 (84.6)	2,085 (82.1)	2,090 (82.3)
	Mast (Lowered)		mm (in)	2,184 (86)	2,110 (83.1)	2,184 (86)	2,110 (83.1)	2,110 (83.1)
	Mast (Extended) w/backrest		mm (in)	4,140 (163)	4,555 (179.3)	4,140 (163)	4,555 (179.3)	4,445 (175)
Front tread		Single	mm (in)	1,030 (40.6)	910 (35.8)	1,030 (40.6)	910 (35.8)	910 (35.8)
		SPL double	mm (in)	1,210 (47.6)	NA	1,210 (47.6)	NA	NA
Rear tread			mm (in)	980 (38.6)	890 (35)	980 (38.6)	890 (35)	890 (35)
Wheelbase			mm (in)	1,620 (63.8)	1,400 (55.1)	1,700 (66.9)	1,400 (55.1)	1,500 (59.1)
Overhang (front)			mm (in)	485 (19.1)	440 (17.3)	485 (19.1)	450 (17.7)	435 (17.1)
Overhang (rear)			mm (in)	520 (20.5)	545 (21.5)	500 (19.7)	510 (22.4)	435 (10.1)
Fork length			mm (in)	1,070 (42)	1,070 (42)	1,070 (42)	1,070 (42)	1,070 (42)
Fork (width x thickness)			mm (in)	40 x 100 (1.5 x 4)	40 x 100 (1.5 x 4)	40 x 100 (1.5 x 4)	40 x 100 (1.5 x 4)	40 x 100 (1.5 x 4)
Ground clearance (under mast)			mm (in)	14.5 (5.7)	80 (3.1)	145 (5.7)	80 (3.1)	80 (3.1)
Ground clearance (under frame)			mm (in)	18.5 (7.3)	145 (5.7)	185 (7.3)	145 (5.7)	145 (5.7)
Ground clearance (under power unit)			mm (in)	165 (5.7)	100 (3.9)	165 (5.7)	100 (3.9)	95 (3.7)

DIMENSIONS L02

Model				3.25 ton (6,500 lb) K25	3.5 ton (7,000 lb) K25 3.3LD		4.0 ton (8,000 lb) K25
Item				Cushion	Pneumatic	Cushion	Cushion
Overall length (without forks)			mm (in)	2,445 (96.3)	2,755 (105.5)	2,495 (98.2)	2,540 (100)
Overall width		Single	mm (in)	1,115 (43.9)	1,280 (50.4)	1,165 (45.9)	1,165 (45.9)
		SPL double	mm (in)	NA	1,720 (67.7)	NA	NA
Overall height	OHG		mm (in)	2,085 (87.1)	2,155 (84.8)	2,090 (82.3)	2,090 (92.3)
	Mast (Lowered)		mm (in)	2,103 (87.8)	2,300 (90.6)	2,110 (83.1)	2,110 (83.1)
	Mast (Extended) w/backrest		mm (in)	4,535 (178.5)	4,055 (159.7)	4,540 (178.7)	4,540 (178.7)
Front tread		Single	mm (in)	910 (35.8)	1,060 (41.7)	940 (37)	940 (37)
		SPL double	mm (in)	NA	1,230 (48.4)	NA	NA
Rear tread			mm (in)	890 (35)	980 (38.6)	930 (36.6)	930 (36.6)
Wheelbase			mm (in)	1,400 (55.1)	1,700 (66.9)	1,500 (59.1)	1,500 (59.1)
Overhang (front)			mm (in)	455 (17.9)	490 (19.3)	455 (17.9)	455 (17.9)
Overhang (rear)			mm (in)	595 (23.4)	565 (22.2)	540 (21.3)	585 (23.0)
Fork length			mm (in)	1,070 (42)	1,070 (42)	1,070 (42)	1,070 (42)
Fork (width x thickness)			mm (in)	50 x 125 (2 x 5)	50 x 125 (2 x 5)	50 x 125 (2 x 5)	50 x 125 (2 x 5)
Ground clearance (under mast)			mm (in)	80 (3.1)	150 (5.9)	80 (3.1)	80 (3.1)
Ground clearance (under frame)			mm (in)	145 (5.7)	190 (7.5)	145 (5.7)	145 (5.7)
Ground clearance (under power unit)			mm (in)	95 (3.7)	170 (6.7)	95 (3.7)	95 (3.7)

FUEL & OIL CAPACITY

Model			L01 series			L02 series					
Item						2.0, 2.5 ton (4,000, 5,000 lb)			2.75, 3.0, 3.5 ton (5,500, 6,000, 7,000 lb)		
			L	Imp	US	L	Imp	US	L	Imp	US
Fuel tank	Pneumatic-tire model US manufactured		47.6	10.5 gal	12.6 gal	66.7	14-1/8 gal	17.5 g	72.1	15.8 gal	17.5 gal
Fuel	Cushion compact		39.7	8.7 gal	10.5 gal	44.7	10.6 gal	12.7 g	52.4	17.6 gal	15.2 gal
Hydraulic	Cushion/compact		26	5.7 gal	6.8 gal	38	8.4 gal	10 g	45	7.9 gal	11.9 gal
Hydraulic oil tank	Pneumatic-tire model US manufactured		30	6.6 gal	7.9 gal	44.6	9.7 gal	11.6 g	49.1	10.8 gal	12.9 gal
Transmission oil	Pneumatic tire model	A/T 1-speed A/T	8.0	7 qt	8.5 qt	9.0	7-7/8 qt	9-1/2 qt	9.0	7-7/8 qt	9-1/2 qt
		M/T 3-shaft GOM	8.5	7-1/2 qt	NA	8.5*1	7-1/2 qt*1	NA	10*1	8-3/4 qt*1	NA
	Cushion tire model	A/T 1-speed A/T	8.0	7 qt	8-1/2 qt	8.0	7 qt	8-1/2 qt	10.0	8-3/4 qt	10-5/8 qt
		2-speed A/T	-	-	-	10.0	8-3/4 qt	11 qt	10.0	8-3/4 qt	11 qt
Differential oil	Pneumatic tire model		3.0	2-5/8 qt	3-1/8 qt	3.0	2-5/8 qt	3-1/8 qt	5.0	4-3/8 qt	5-1/4 qt

*1: Including differential oil

BULBS

Item		Wattage (W)
Headlamp		55
Rear combination lamp	Stop / Tail	21/5
	Turn signal	21
	Back-up	21
Front turn signal lamp		27
Back operation lamp		55
Meter illumination lamp		1.4
Indicator warning lamp		2

ENGINE

Model		K15 GOM	K21	K25	2.5L - 4C GOM	3.3DL - 4C
Item						
Type		Gasoline, LPG, Dual Fuel			Diesel	
Cylinder arrangement		4-cylinder, in-ine				
Valve mechanism		Overhead vavle type				
Bore x Stroke	mm (in)	75.5 x 83.0 (2.972 x 3.268)	89.0 x 83.0 (3.504 x 3.268)	89.0 x 100 (3.504 x 3.937)	88 x 103 (3.46 x 4.06)	94 x 120 (3.70 x 4.72)
Total displacement	cm^3 (cu in)	1,486 (90.68)	2,065 (126.01)	2,488 (151.82)	2,505 (152.86)	3,331 (203.26)
Compression ratio		9.0	8.7	8.7	22	22
Firing order		1-3-4-2	1-3-4-2	1-3-4-2		
Rated output hp/rpm			55/ 2700	60.3/ 2700		59/ 2300
Rated torque fdh/rpm			119/ 1600	142/ 1600		248/ 1800

OIL & WATER CAPACITY

Model	K15 GOM		K21			K25			2.5L - 4C GOM		3.3DL-4C		
Item	L	Imp qt	L	Imp qt	US qt	L	Imp qt	US qt	L	Imp qt	L	Imp qt	US qt
Engine oil (with oil filter)	3.8	3-3/8	3.8	3-3/8	4	3.8	3-3/8	4	9	7-7/8	9	7-7/8	9.5
Coolant			8.7	7-5/8	9-5/8	7.9	7	8-3/8			10.8	9-1/2	11-3/8

INDEX

INDEX