

Chapter 5 OPERATION

5.1 NEW FORKLIFT TRUCK BREAK-IN

Correct "break-in" is important for operation and the long life of your forklift truck. The first 100 service hours of operation are the "break-in period". Carefully read the following precautionary instructions:

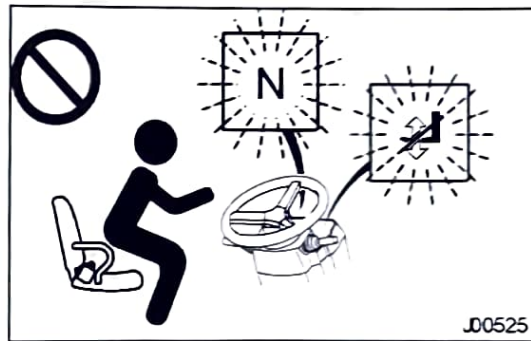
CAUTION

- After starting the engine, BE SURE to run it at idle speeds with no load for about 5 minutes. During this time, check all the meter panel indicator icons.
- DO avoid long periods of idling. This may cause cylinder wall glazing and prevent the piston rings from seating properly.
- DO NOT pump the accelerator pedal and DO NOT rev up the engine. This may cause cylinder wall scuffing and scoring.
- If the forklift truck does not have to be put to work immediately, or the operation is light and slow, break in the forklift truck under a simulated working condition.
- Try NOT to drive the forklift truck continuously at the same speeds as the parts tend to better adjust themselves to other parts if various speeds are used. Also, try NOT to make severe brake applications to allow the brake linings to seat against the brake drums.
- Operate the forklift truck under a lighter load and lower speeds than normal.
- It is recommended to replace and lubricate oils at shorter intervals than normal periods.
- Carefully check on and around the forklift truck for loose bolts and nuts. Retighten them as required.

5.2 BEFORE STARTING ENGINE

WARNING

- BE SURE to read "SAFETY RULES FOR FORKLIFT TRUCK OPERATORS" for your safety and the safety of fellow workers.
- BE SURE to perform the DAILY (PRE-START) INSPECTION.
- Where forklift trucks are used on a round-the-clock basis, they must be inspected after each shift.



WARNING

If at any time a forklift truck is found to be in need of repair, defective, or in any unsafe conditions, the forklift truck must be taken out of service until it has been restored to safe operating condition. Report it immediately to the designated authority.

FC model

Your forklift truck has the operator presence switch installed in the operator seat. You are unable to move the mast and attachments unless you are seated.

MC model

The mast interlock system will work only for the lift and tilt levers.

Attachments can be moved regardless of whether the mast interlock function is operating or not.

Therefore, when the attachment lever is operated, some of the attachments will move, even though the engine is not running or the key switch is in the

OFF position, as a result of the handling load or of its own weight.

The starting mechanism in forklift trucks with powershift transmission is disabled until the operator is seated. When the key switch is in the ON position, the mast interlock indicator icon and driving interlock indicator icon in the meter panel blink unless the operator sits on the operator seat properly. In addition, the seat belt warning icon glows when the seat belt is not worn or when it is not inserted into the seat belt buckle properly.

5.2.1 GASOLINE / LPG DUAL FUEL TYPE

⚠ WARNING

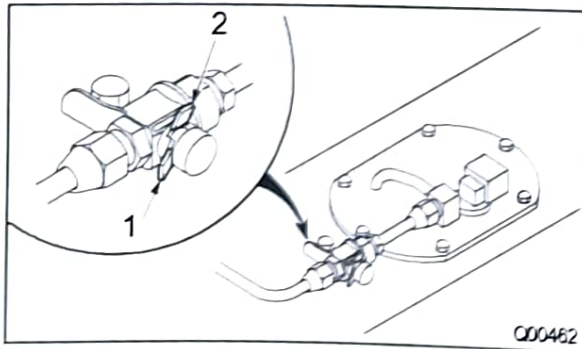
- LP-Gases and Gasoline are flammable. Leakage of these could cause a fire and explosion.
- Before replacing the fuel from LPG to gasoline, BE SURE to check the fuel line for deterioration and loose connection in accordance with the maintenance section shown in this manual.

⚠ CAUTION

If the forklift truck will be operated with LPG for a long time, check gasoline fuel lines to make sure all the fuel lines are empty. If they are not empty, drain the fuel from the tank and run the engine until the fuel in the lines is used up.

Instruction for changeover of fuel between LPG and gasoline

Open the fuel shut-off valve. The fuel shut-off valve is located inside the engine hood.



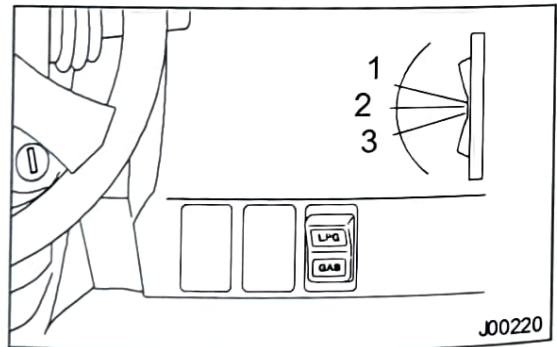
- 1. OPEN
- 2. CLOSE

To change from LPG to Gasoline

- (1) Turn the key switch to the OFF position and close the valve on the LPG tank. Leave the fuel selector switch in the (LPG) position.
- (2) Turn the key switch to the START position. The engine should not start. If the engine starts, leave it running until it stops by itself.
- (3) Turn the key switch to the OFF position and then place the fuel selector switch to the (GAS) position. Now the engine can be started using gasoline.

To change from Gasoline to LPG

- (1) Turn the key switch to the OFF position and place the fuel selector switch to the OFF position.
- (2) Turn the key switch to the START position. The engine should not start. If the engine starts, leave it running until it stops by itself.
- (3) Turn the key switch to the OFF position and then place the fuel selector switch to the (LPG) position. Open the valve on the LPG tank. Now the engine can be started using LPG.



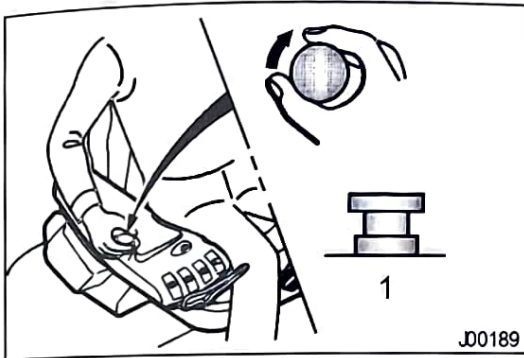
- 1. LPG
- 2. OFF
- 3. GAS

NOTE: If operating on gasoline and with no LP tank installed, hook the LP hose to the bracket by screwing the coupling into place. It will secure the hose.

5.2.2 FC MODEL

Make sure the emergency stop button (if equipped) is in the OPERATE position (being released).

NOTE: You are unable to move the mast and attachments if the emergency stop button is in STOP (lock) position (being pushed down).

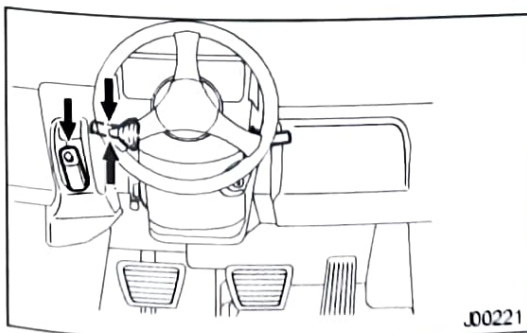


1. WORKING POSITION

⚠ WARNING

Before starting, always adjust the rear view mirror (if equipped) at a safe location, as adjustment while driving could lead to accidents.

- (1) Depress the brake pedal.
- (2) Apply the parking brake lever.
- (3) Make sure the direction lever is in the NEUTRAL position.
- (4) The engine will not start unless the direction lever is in the NEUTRAL position.
- (5) If the engine stalls, place the direction lever in the NEUTRAL position, turn the key switch to the (OFF) position, and turn it to the (START) position to start the engine.



⚠ WARNING

BE SURE to fasten the seat belt before operating the forklift truck. Remember, the seat belt will not restrain you in an accident if it is not fastened properly.

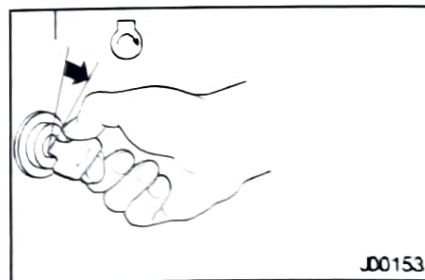


5.3 STARTING GASOLINE ENGINE

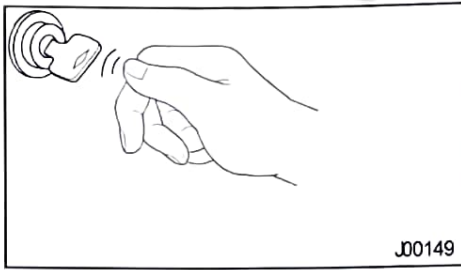
⚠ CAUTION

- DO NOT leave the key in the ON position when the engine is NOT running. This may run down the battery and damage the ignition coil.
- DO NOT crank the engine for more than 10 seconds at any one time. This may cause the battery to run down.

- (1) Turn the key to the START position to crank the engine (no more than 10 seconds at a time).



1. ON
 2. START
- (2) Release your hand when the engine starts. Release the accelerator pedal if pressed for starting a warm engine.

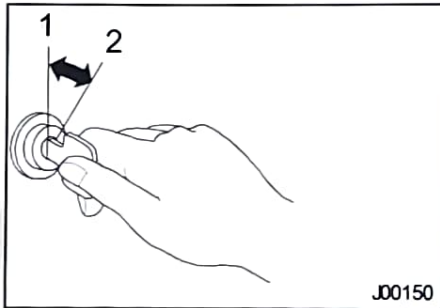


- (3) Let the engine warm up for about 5 minutes.

If the engine won't start:

Turn the key to the OFF position and wait for about 30 seconds before re-cranking the engine.

If the engine won't start, see Engine Won't Start, Page 5-5.



1. OFF
2. START

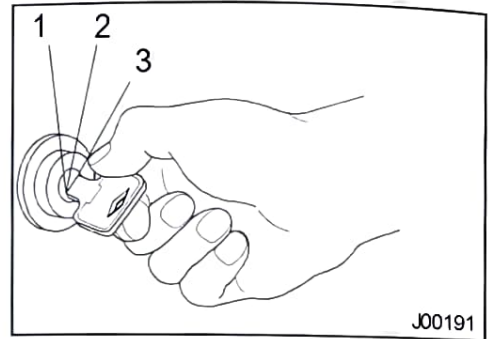
5.4 STARTING LPG ENGINE

⚠ WARNING
LPG fuel is flammable and could cause injuries and fires. Inspect LPG fuel lines and fittings for leaks.

⚠ CAUTION
DO NOT leave the key in the ON position when the engine is NOT running. This may cause the battery to run down.

- (1) Open the fuel valve by turning it slowly counterclockwise. Observe the LPG gauge (if equipped).

- (2) Turn the key switch to the START position. Release your hand when the engine starts.
- (3) If the engine does not start, DO NOT depress on the accelerator. Turn the key switch to the OFF position, then repeat Step 2.

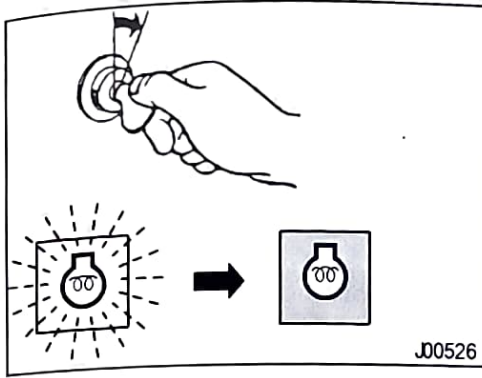


1. OFF
2. ON
3. START

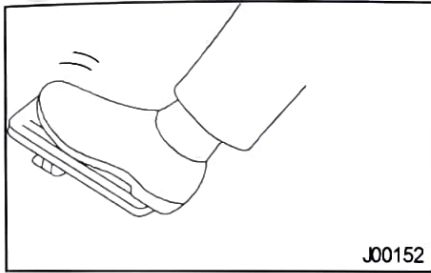
5.5 STARTING DIESEL ENGINE

⚠ CAUTION
<ul style="list-style-type: none"> - DO NOT leave the key in the ON position when the engine is NOT running. This may cause the battery to run down. - DO NOT crank the engine for more than 10 seconds at any one time. This may cause the battery to run down.

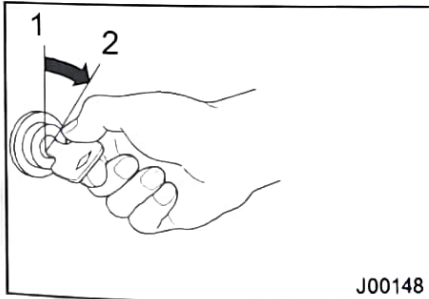
- (1) Turn the key switch to the ON position and wait until the glow plug indicator icon goes out. The glow plug indicator icon glows only at 0°C (32°F) and below for D04EG diesel models.



- (2) Depress the accelerator pedal fully and hold in this position. (For S4S diesel models)

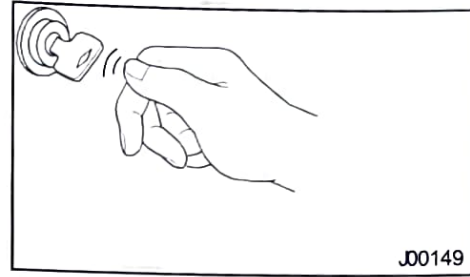


- (3) Turn the key switch to the START position to crank the engine (no more than 10 seconds at a time).



1. ON
2. START

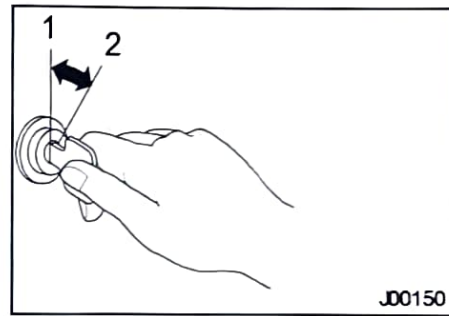
- (4) Release your hand when the engine starts. Release the accelerator pedal.



If the engine won't start

Turn the key switch back to the OFF position and wait approximately 30 seconds before cranking again.

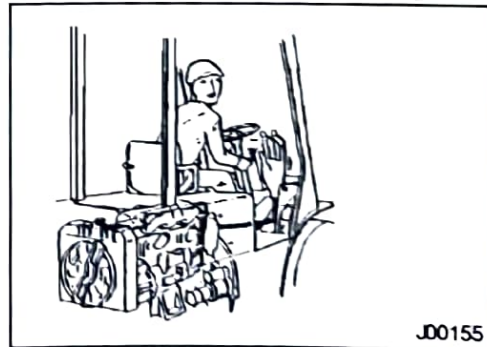
If the engine won't start, see Engine Won't Start, Page 5-5.



1. OFF
2. START

5.6 ENGINE WON'T START

Consult your authorized Mitsubishi forklift truck dealer if the engine still does not start after you have attempted the following:



Does the starter crank the engine?

YES

Check the fuel level gauge to see if there is enough fuel in the tank. If not, refuel it.

NO

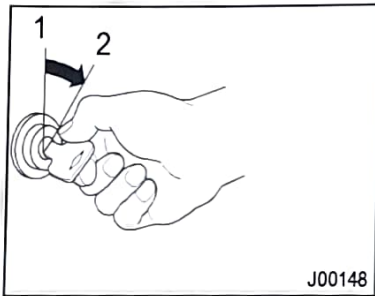
The battery is dead if the head lights do not turn ON or dimly light.

5.6.1 WHEN ENGINE IS "FLOODED"

LPG engine model

Turn the key switch to the START position.

NOTE: The head lights should be turned OFF for easier starting.



1. OFF
2. START

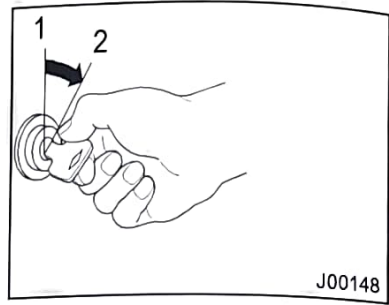
⚠ CAUTION
DO NOT start the engine by pushing or towing the forklift truck. This may cause serious injury to the operator and damage to the forklift truck.

5.6.2 WHEN ENGINE IS STARTED AFTER LONG RECESS

LPG engine model

Turn the key switch to the START position.

NOTE: The head lights should be turned OFF for easier starting.



1. OFF
2. START

Diesel engine model

Air in the fuel system may cause starting failure. In this case, have your authorized Mitsubishi forklift truck dealer prime the fuel system or check the fuel system for possible problems.

5.7 AFTER STARTING ENGINE

⚠ WARNING
If the warning icon keeps turning ON, correct the problem before operating the forklift truck. Contact your authorized Mitsubishi forklift truck dealer for repairs.

⚠ CAUTION
<ul style="list-style-type: none"> - BE SURE to warm up the engine regardless of the weather. - Failure to warm up the engine may cause poor lubrication and incomplete fuel combustion resulting in poor engine performance.

Check the warning icons and gauges frequently during operation to make sure all systems are working properly.

- (1) Run the engine at idle speeds without a load for about 5 minutes.
- (2) During warm-up, check to see that systems are operating properly.
 - Are all the warning icons in the meter panel OFF?
 - Does the engine coolant temperature gauge show the WHITE zone?

- Are exhaust noise and smoke color normal?
- No excessive vibration?

5.8 BEFORE MOVING FORKLIFT TRUCK

⚠ WARNING

DO NOT allow other personnel to enter the area around the mast!

It could cause other personnel to get caught between the mast and forklift truck when operating the mast, leading to serious injury or death.



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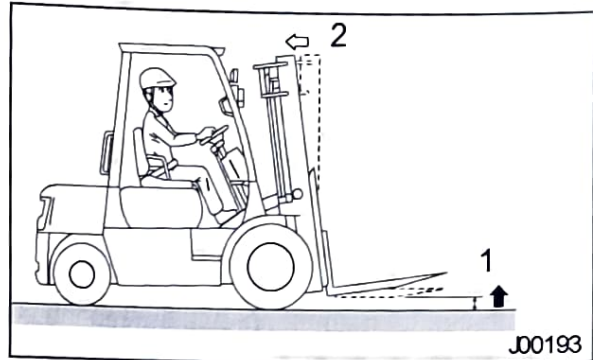
⚠ CAUTION

Before starting the engine, sit properly in the operator seat and make sure the following:

- No one is around the forklift truck.
- The parking brake is applied.
- The direction lever is in the NEUTRAL position.

- (1) Pull the lift lever to raise the forks to a safe traveling height of 15 to 20 cm (6 to 8 in.) from the floor.

- (2) Tilt the mast fully back.



J00193

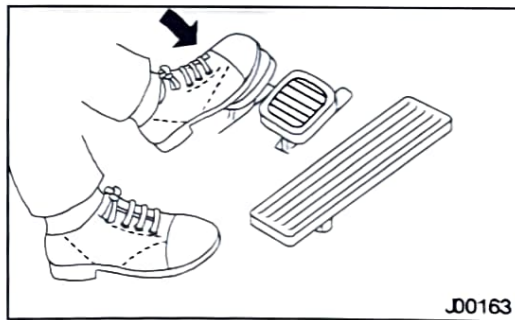
1. 15 TO 20 CM (6 TO 8 IN.)
2. TILT BACK

5.9 FORKLIFT TRUCK OPERATION

⚠ CAUTION

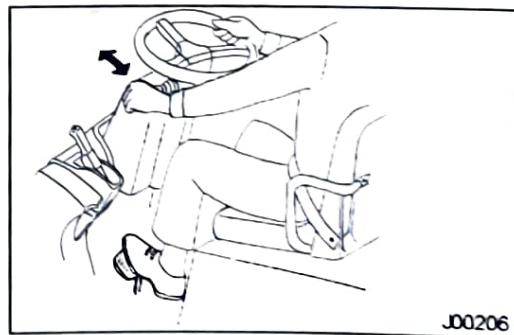
DO NOT "ride" the clutch/inching pedal during travel. This causes a partly disengaged condition that will result in premature clutch plate wear.

- (1) Depress the inching pedal fully.



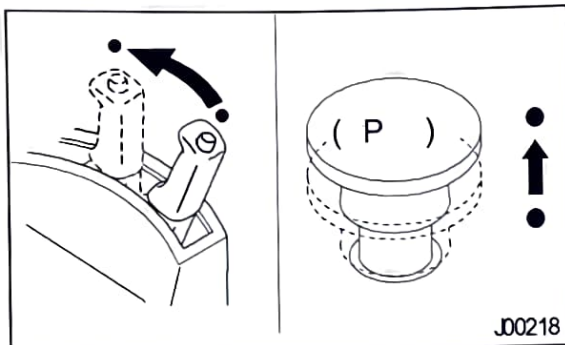
J00163

- (2) Move the direction lever to FORWARD or REVERSE position.

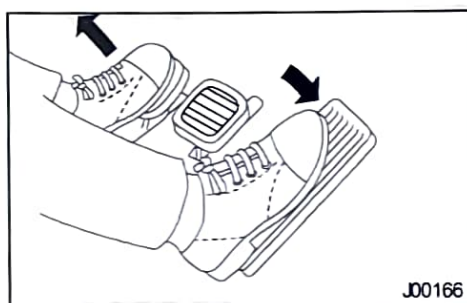


J00206

- (3) Press the top button on the parking brake lever and push the parking brake lever FORWARD to release. Pull the parking brake switch to release. (for models with WDB)

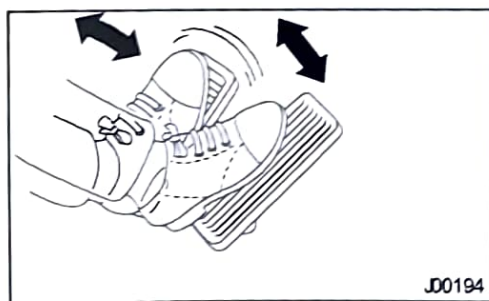


- (4) Gradually depress the accelerator pedal while releasing the inching pedal.



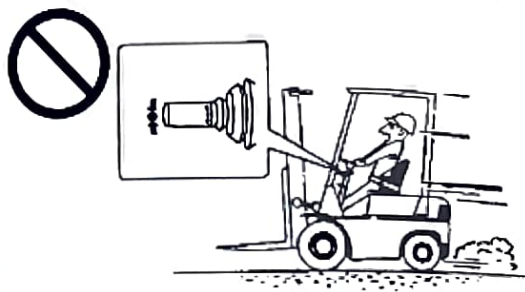
5.9.1 CHANGING SPEED

Depress the accelerator pedal to increase travel speed. Depress the brake pedal to slow down.



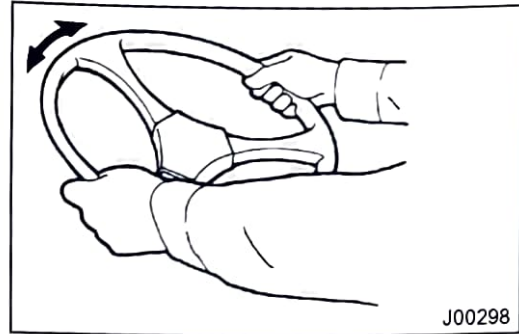
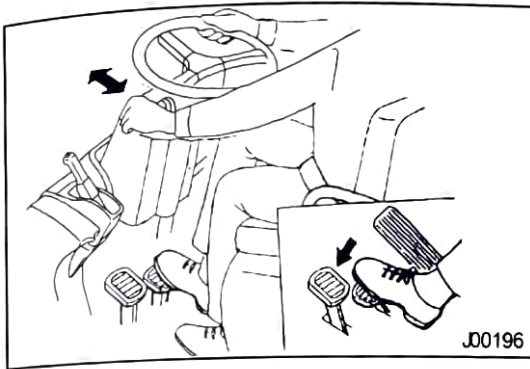
WARNING

DO NOT move the direction lever to the NEUTRAL position during travel. This could cause the engine to race.



5.9.2 CHANGING DIRECTION

Be sure to come to a complete stop before changing directions.



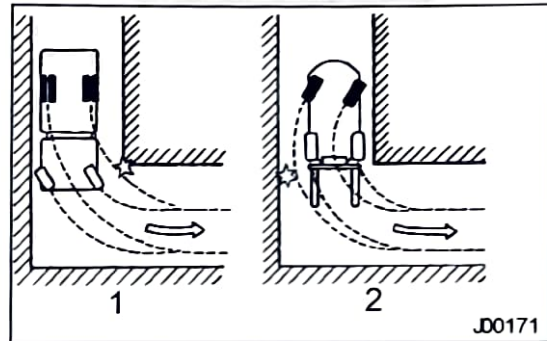
5.9.4 STEERING (TURNING)

A forklift truck is different from most other vehicles because it is steered by the rear wheels. This causes an exaggerated tail swing.

⚠ WARNING

BE SURE to watch for people or hazards in the direction of travel.

J00169



1. OTHER VEHICLES
2. FORKLIFT TRUCK

⚠ CAUTION

- Directional changes without coming to a complete stop may cause premature damage to the driveline.
- For a smoother ride and maximum service life of driveline components, bring the forklift truck to a complete stop before changing direction.

⚠ WARNING

When working in close quarters, drive more slowly when making turns. Start the turn as close to the inside corner as the tail swing will permit.

J00172

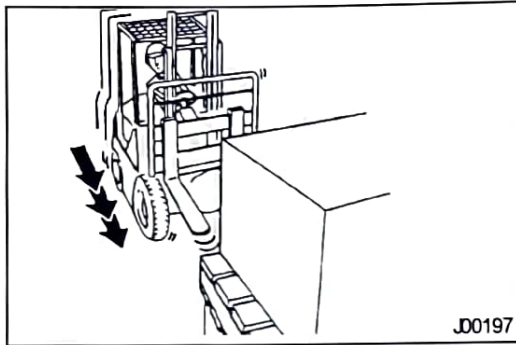
5.9.3 OPERATING TECHNIQUES

Turn the steering wheel with BOTH HANDS. When handling loads, stop the forklift truck to operate the tilt, lift and attachment levers with the RIGHT HAND.

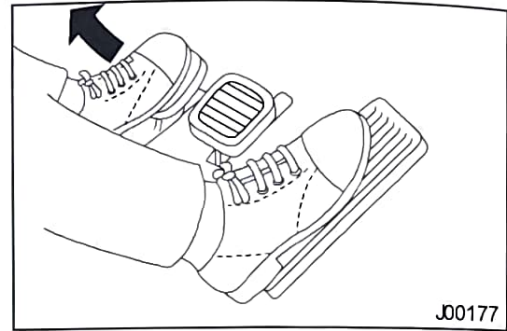
5.9.5 INCHING

The purpose of the inching pedal is to provide precise forklift truck inching control at very slow travel speed and high engine revolutions.

You can move your forklift truck slowly while maintaining the engine speed by varying the position of the inching pedal. Use this pedal when approaching the load for loading and unloading.

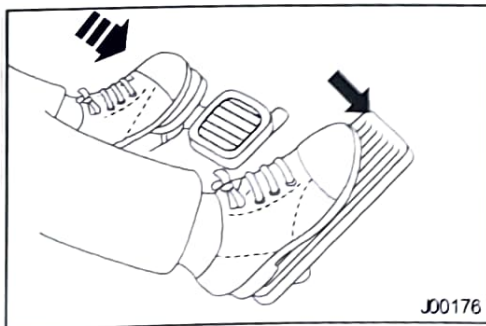


- (5) When the left foot is slowly taken off the inching pedal, the forklift truck will advance slowly.
- (6) Insert the forks slowly, making sure that they do not hit the pallet.
- (7) Stop inserting the forks after the heels of the forks come into light contact with the pallet.



CAUTION
DO NOT ride the inching pedal. This causes a partly disengaged condition that may result in premature clutch plate wear. DO NOT depress inching pedal when inching is unnecessary.

- (1) Stop the forklift truck ahead of the load platform.
- (2) Apply the parking brake lever, place the direction lever to the NEUTRAL position, tilt the mast VERTICALLY, and raise the forks to the height of the pallet insertion openings.
- (3) Depress the inching pedal fully down, place the direction lever to the FORWARD position, and release the parking brake.
- (4) Gently depress the accelerator pedal.



5.10 STOPPING FORKLIFT TRUCK

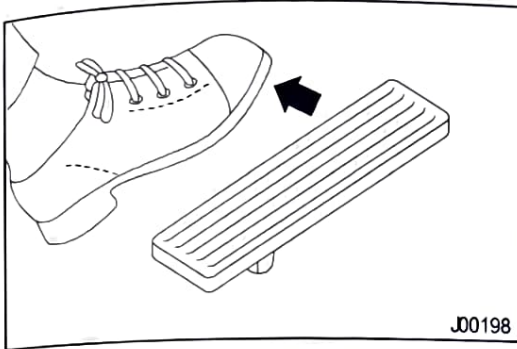
WARNING
If brake linings have become wet after cleaning the forklift truck or after driving through a large area of water, stopping distance could be increased. In this case, gently apply service brake several times while driving slowly in a safe area until brake linings have dried out and normal braking action is restored.

WARNING
Avoid sudden stops. This could cause the load to fall off the forks or the forklift truck to tip over.

A line drawing of a forklift truck tipping over to its right side. A large load is falling off the forks. A 'no' symbol (a circle with a diagonal slash) is in the top left corner of the diagram. The code 'J00203' is located in the bottom right corner of the diagram.

(For use without wet disc brake option)

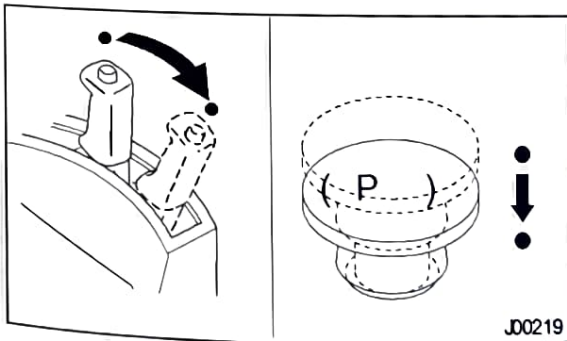
- (1) Release the accelerator pedal.



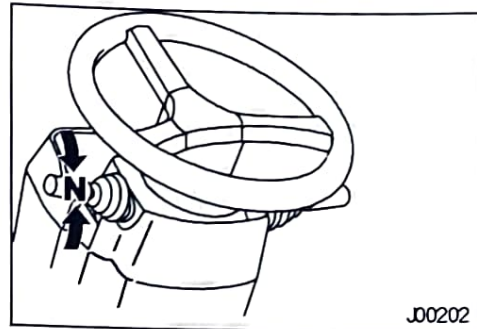
- (2) Press the brake pedal and come to a complete stop.



- (3) Apply the parking brake fully back. For models with wet disc brake, push the parking brake switch.



- (4) Place the direction lever to the NEUTRAL position.



5.11 PARKING FORKLIFT TRUCK (AFTER STOPPING)

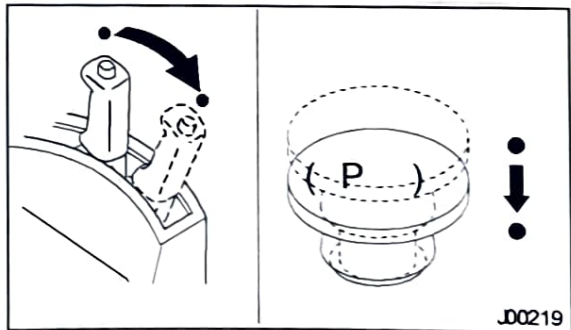
⚠ WARNING

Park safely

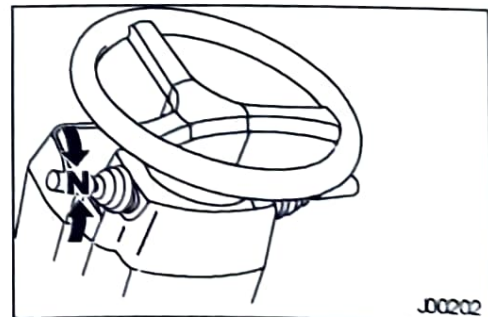
- Select a hard level ground.
- BE SURE to park in the designated parking area.

For use with wet disc brake option

- (1) Push the parking brake switch.



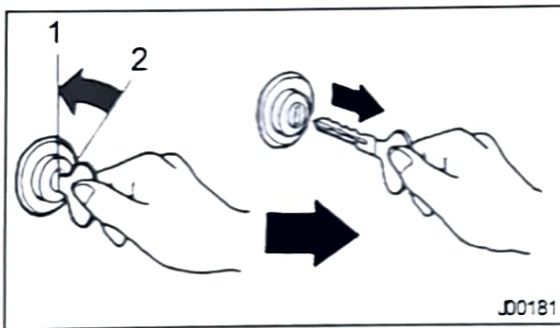
- (2) Place the direction lever in the NEUTRAL position.



- (3) Slightly, tilt the mast FORWARD and lower the forks to the floor until the forklift tips touch the floor.



- (4) Turn the key switch back to the OFF position to turn the engine OFF. When leaving the forklift truck, be sure to remove the key from the key switch.
- (5) Block the wheels securely.
- (6) Return the key to a key rack if required by supervisor.

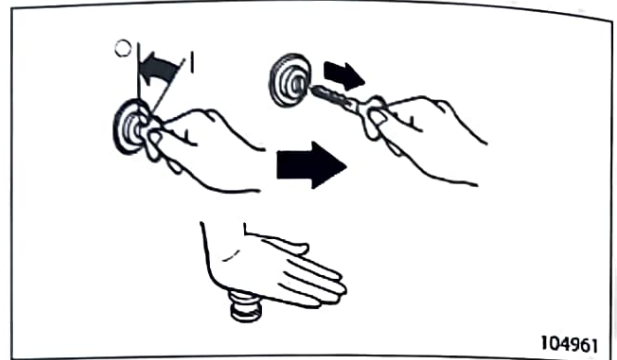


1. OFF
2. ON

For FC model

1. Turn the key switch back to the OFF position to turn the engine OFF. When leaving the forklift truck, be sure to remove the key.

2. Push the emergency mast stop button (if equipped) to prevent the mast and attachments from moving.
3. Block the wheels securely.
4. Return the key to a key rack if required by supervisor.

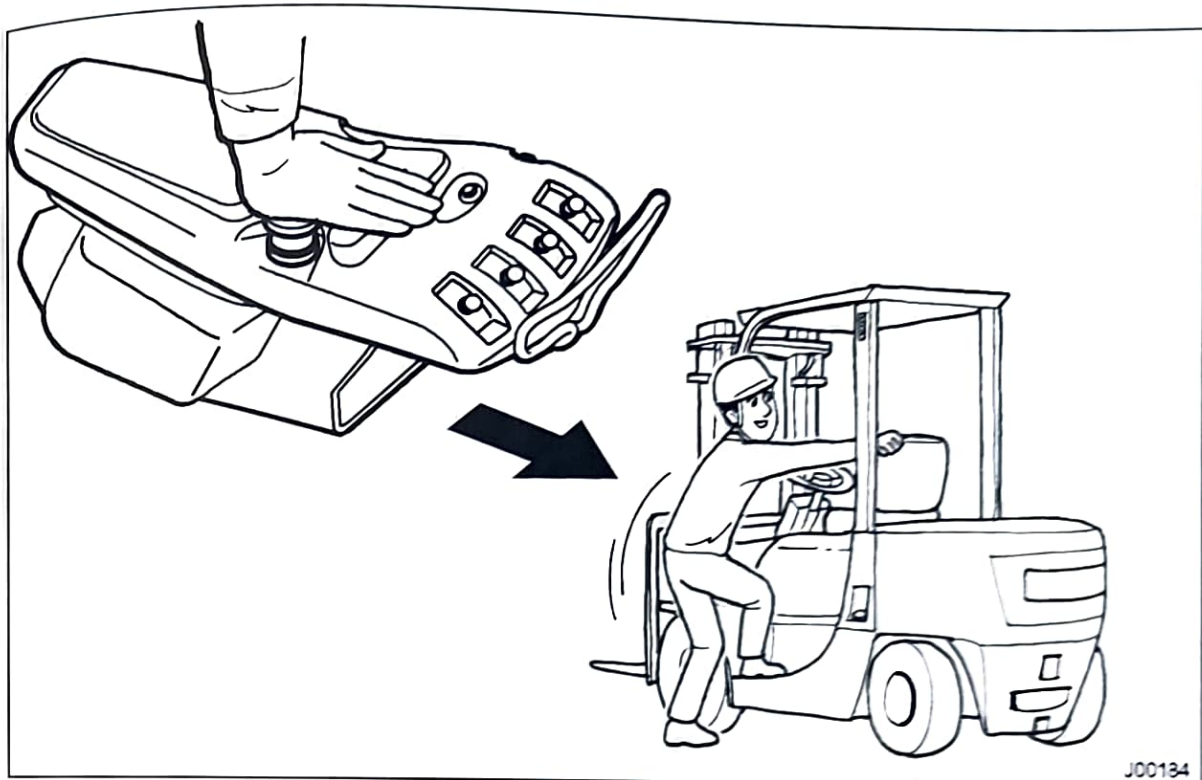


⚠ WARNING

Get off safely

- Get off after the forklift truck has come to a complete stop and the above parking procedure has been followed.
- DO NOT jump off.
- DO NOT get off from the front right of the forklift truck.

5.12 LEAVING FORKLIFT TRUCK (FC MODEL)



J00134

- (1) Apply the parking brake.
- (2) Place the direction lever to the NEUTRAL position.
- (3) Tilt the mast forward and lower the forks to the ground.
- (4) Remove the key from the key switch.
- (5) Push down on the emergency stop button (if equipped) to stop the movement of the mast and attachments.

⚠ WARNING

- DO NOT travel at high speed with a load.
- DO NOT travel at high speed and at the high fork position.
- Be careful when moving the forklift truck on a downward slope.

5.12.1 FOR USE WITH WET DISC BRAKE OPTION

Automatic deceleration function

This function will automatically activate the service brake if the accelerator pedal is released while the forklift truck is traveling faster than a set-up speed, and the automatic deceleration function will continue until the forklift truck slows down to the preset speed.

NOTE: The automatic deceleration level setting should be set up by your authorized Mitsubishi forklift truck dealer for your own level.

Controlled rollback function

This function helps to prevent undesired backward movement of the forklift truck when the driver changes from stepping on the brake pedal to the acceleration pedal when starting on a grade.

⚠ CAUTION

- This function works after stopping the forklift truck without depressing the accelerator pedal.
- This function is cancelled when the accelerator pedal is depressed after the direction lever is placed in either FORWARD or REVERSE. When starting on a grade, depressing the inching pedal causes a disengaged condition. Be aware of the forklift truck slipping downward.

Flexcontrol™ function

This function prevents the power train from damage due to a mistake by the operator and has two functions, A and B.

⚠ WARNING

- DO NOT travel at high speed with a load.
- Make sure no one is around the forklift truck until the completion of the forward or reverse shifting operation.
- DO NOT travel at high speed and at the high fork position.
- Be careful when moving the forklift truck on a downward slope.

NOTE: While the Flexcontrol™ function is working, the automatic deceleration function will be working too.

Function A

Jack-rabbit-start prevention function. This function permits the forklift truck to start if the accelerator pedal is depressed after setting the direction lever to either in the FORWARD or REVERSE position.

Function B

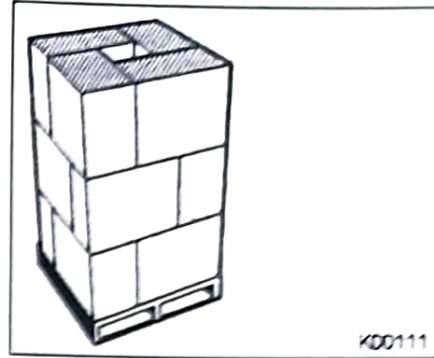
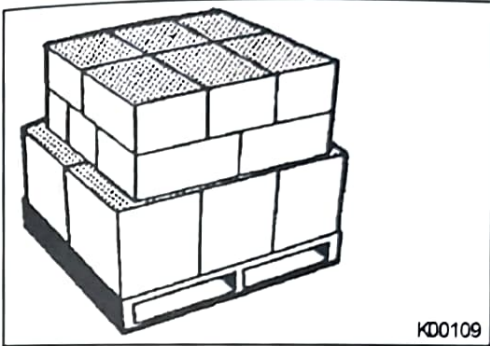
FORWARD / REVERSE shifting mistake prevention function. This function disables the FORWARD / REVERSE shifting operation if the driver attempts to shift while the forklift truck is traveling faster than a given speed.

Chapter 6 OPERATING TECHNIQUES

6.1 STACKING METHODS

6.1.1 STACKING DIFFERENT SIZE LOADS

Make sure larger containers in a load are at the bottom of the stack and smaller ones at the top; or heavier containers at the bottom and lighter ones at the top.



6.2 HANDLING LOADS SAFELY

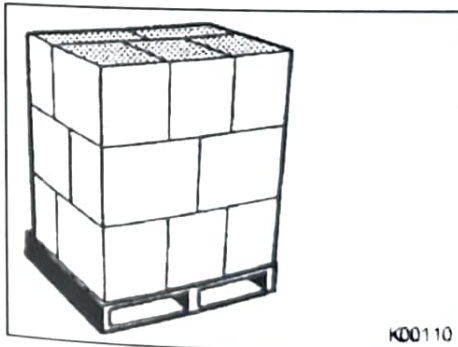
WARNING

Handle **ONLY** stable loads to prevent the load from falling!

- Handle balanced loads only
- Visually make sure that boxes or containers have not collapsed or are potentially dangerous.
- If the loads are not balanced or there is a danger of collapse, take appropriate measures such as binding with a band or loading the material into another container
- **DO NOT** use broken pallets. It could cause the load to collapse.

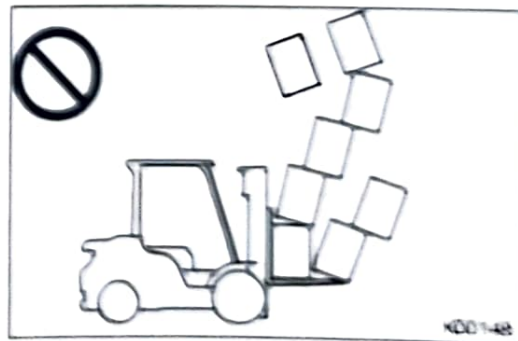
6.1.2 STACKING SMALL IDENTICAL LOADS

As in bricklaying, place layers of containers alternately so each container will sit across parts of two or more containers in the layer below. This type of stack is more stable and less likely to fall down.



6.1.3 STACKING LARGE IDENTICAL LOADS

This is one of the most common patterns for stacking large identical containers. Better load stability is achieved by reversing the end-to-side direction on each succeeding layer



⚠ WARNING

Handle ONLY loads within the capacity of the forklift truck as shown on the capacity plate.

⚠ WARNING IMPROPER OPERATION OR MAINTENANCE COULD RESULT IN INJURY OR DEATH

MODEL: FG30N	MAX FORK HEIGHT	MAST VERTICAL	
SERIAL NO:			
ATTACH 1:			
ATTACH 2:			

TRUCK WEIGHT ±5%	A-B LOAD CENTER		D-OFFSET		CAPACITY	
	kg	lbs	mm	in	kg	lbs
			600	24		
					3000	6000

MEETS DESIGN SPECIFICATIONS ANSI/ISO 856-1 & CAN ICE 2-NUMBER 2
ENGLISH UNITS 1/1000

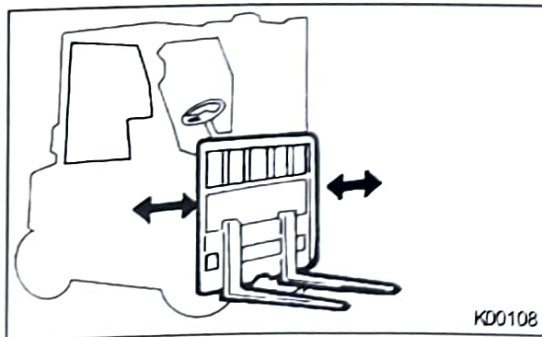
F00553

⚠ WARNING

Spread the forks out depending on type of load or pallet for even distribution. Set the forks wide apart, so that the load becomes balanced while on the forks. In general, it is best around 60% of the width of the pallet.

KD0107

Not every load can be handled using only the forks. Some loads will require a special attachment.



6.3 CORRECT OPERATING STEPS

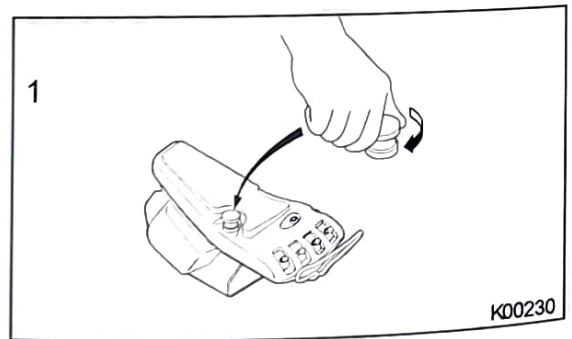
Follow the correct operating Steps 1 through 4 before you operate the forklift truck. Make sure the mast interlock indicator icon is OUT.

Correct operating steps

- (1) Sit properly and buckle the seat belt securely.

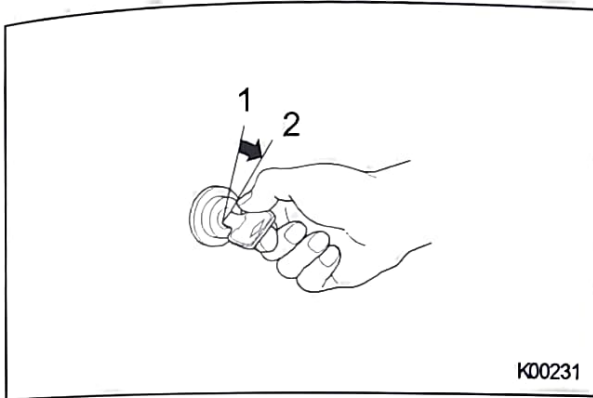


- (2) Turn the emergency stop button (if equipped) clockwise to the OPERATE position.



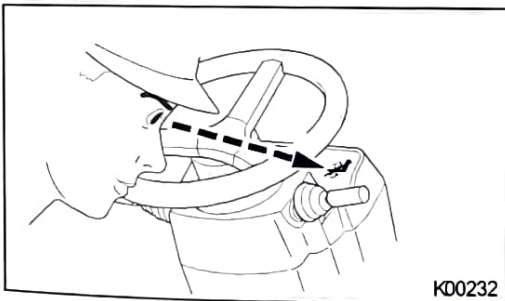
1. (FC MODEL)

- (3) Turn the key switch to the START position.



KD0231

1. ON
 2. START
- (4) Make sure the mast interlock indicator icon is OUT.



KD0232

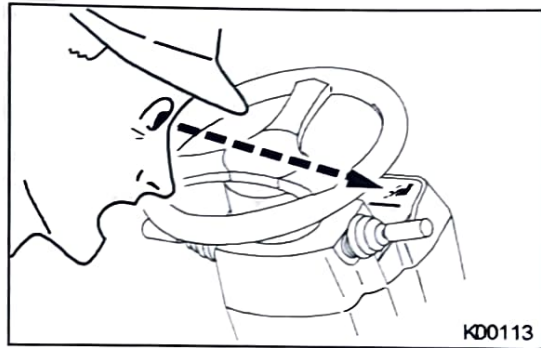
- NOTE:**
- Be sure to operate the lift, tilt, attachment levers, emergency stop button, and lowering speed selector switch (optional) with your **RIGHT HAND**.
 - See Inching, Page 5-10, Lifting the Load, Page 6-5, Traveling With the Load, Page 6-6, and Unloading, Page 6-8.
 - If the mast interlock indicator icon blinks, see Incorrect Operating Steps, Page 6-3 and Mast Interlock System, Page 11-16.

6.4 INCORRECT OPERATING STEPS

In the following three examples, the mast interlock indicator icon blinks and the mast and attachment would not move (FC model) / the mast would not move (MC model) even though the operating levers

are in the OPERATING position. This is not a fault but the function of the interlock system. In this case, follow each instruction in "Remedy".

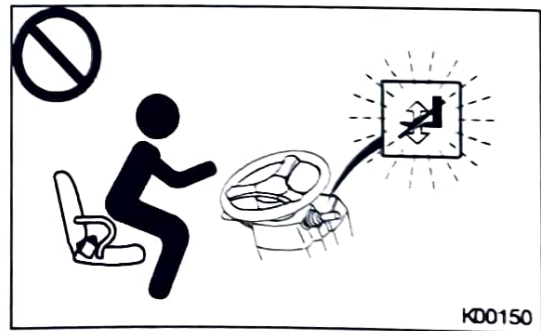
The mast interlock system will work only for the lift and tilt levers. Attachments can be moved regardless of whether the mast interlock function is operating or not. Therefore, when the attachment lever is operated, some of the attachments will move, even though the engine is not running or the key switch is in the OFF position, as a result of the handling load or of its own weight.



KD0113

Example 1

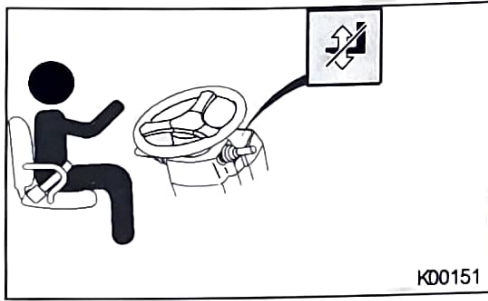
The mast interlock indicator icon will blink when the key switch is in the ON position and you are not properly sitting in the operator seat.



KD0150

Remedy

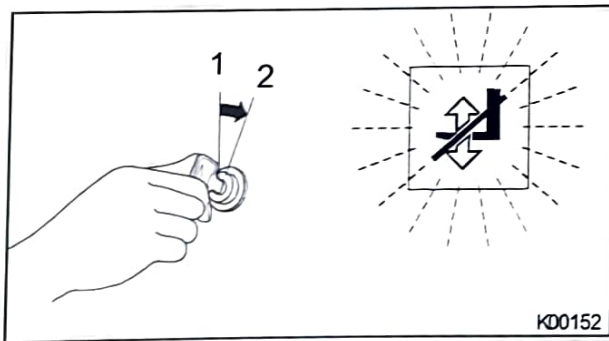
Sit securely. This causes the mast interlock indicator icon to go OUT and you can operate the lift or tilt lever.



NOTE: The mast interlock indicator icon will blink when you sit on the operator seat while the lift or tilt lever is placed to the OPERATING position. To clear this function, move the lift or tilt lever to the NEUTRAL position.

Example 2

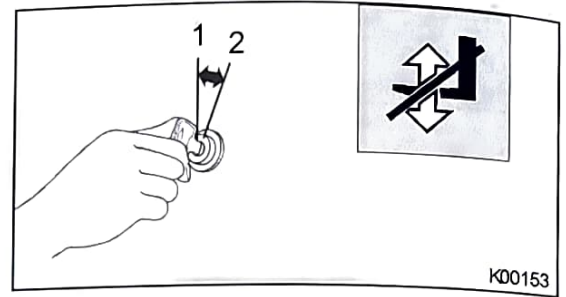
The mast interlock indicator icon will blink when you turn the key switch to the ON position or start the engine while the lift or tilt lever is placed to the OPERATING position.



1. OFF
2. ON

Remedy

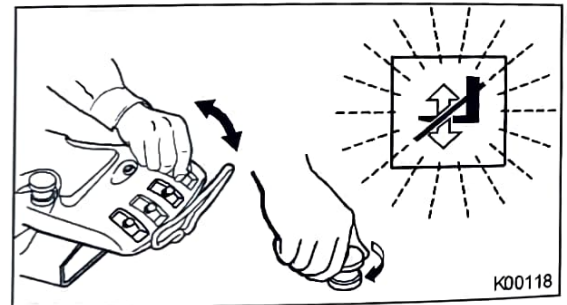
- (1) Place the lift or tilt lever to the NEUTRAL position and turn the key switch to the OFF position once.
- (2) Turn the key switch to the ON position.
- (3) Make sure the mast interlock indicator icon is OUT
- (4) Turn the key switch to the START position.



1. OFF
2. ON

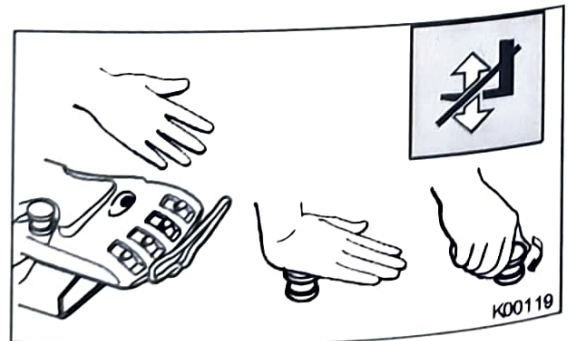
Example 3 (FC model)

The mast interlock indicator icon will blink when you return the emergency stop button (if equipped) to the OPERATE position while the lift or tilt lever is placed to the OPERATING position.



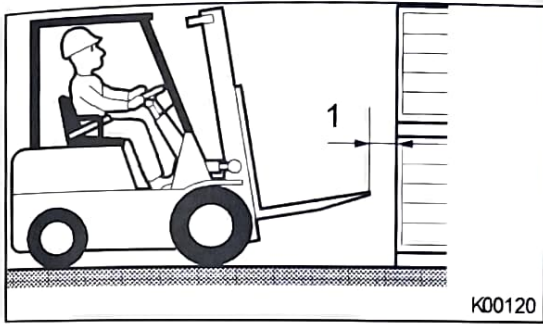
Remedy

- (1) Place the lift or tilt lever to the NEUTRAL position.
- (2) Push down on the emergency stop button once, then return it to the OPERATE position.
- (3) Make sure the mast interlock indicator icon is OUT
- (4) Start operation.



6.5 LIFTING THE LOAD

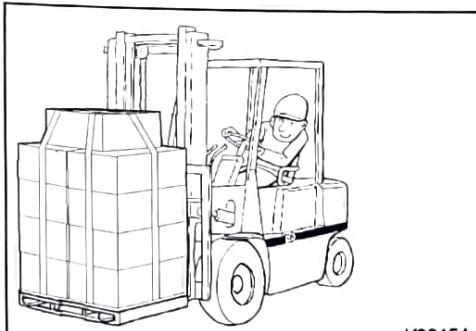
- (1) Move up to the load and stop the forklift truck 20 to 30 cm (8 to 12 in.) short of the load.
- (2) Make sure the forklift truck is square with the load and the forks are at the correct height.



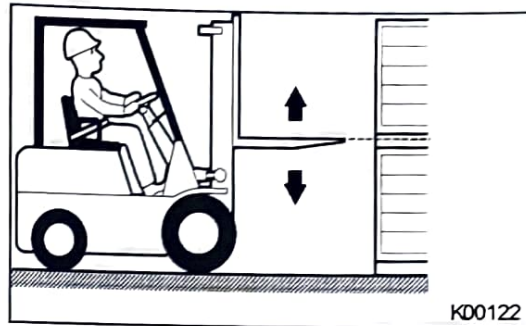
1. 20 TO 30 CM (8 TO 12 IN.)

WARNING

When you pick up loads that extend above the load backrest extension height, band them together to reduce the risk of items from falling.

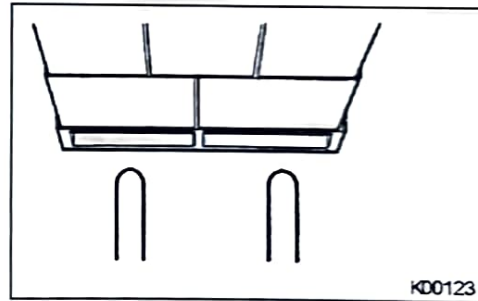


- (3) Tilt the mast FORWARD to the VERTICAL position, and again make sure the forks are at the correct height.

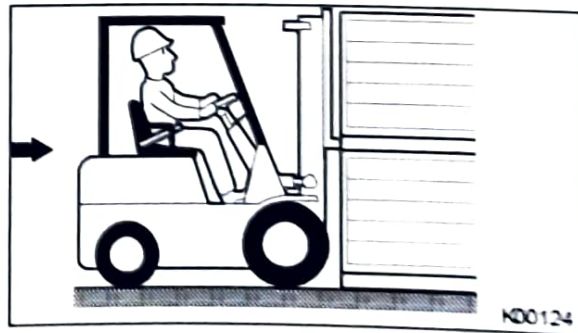


WARNING

Only stable or safely arranged loads must be handled. DO NOT pick up an off-center load. Make sure the weight of the load is centered between the forks.

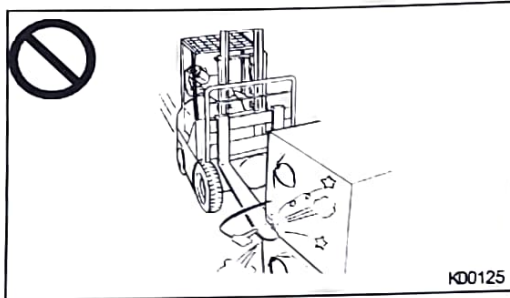


- (4) Place the direction lever into the FORWARD position and slowly move the forklift truck forward.
- (5) Slide the forks into the pallet until they are fully under the load.

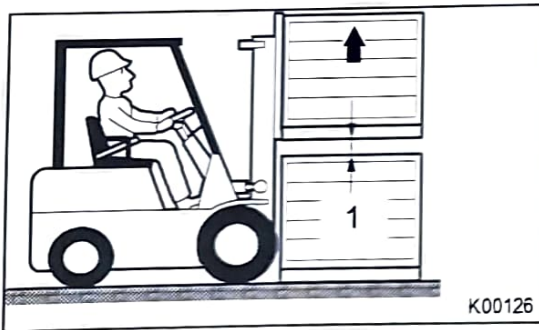


WARNING

Avoid approaching the load at high speeds. Under all travel conditions, operate the forklift truck at a speed that will permit it to be brought to a stop in a safe manner.



- (6) Carefully lift the load about 10 cm (4 in.) off the stack. Slowly return the lift lever to the NEUTRAL position.

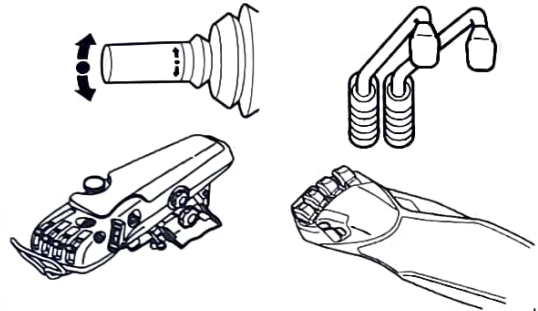


1. 10 CM (4 IN.)

WARNING

DO NOT mistake the direction and control levers!

If you operate the wrong lever, collision of the forklift truck with persons or objects could occur, or you could drop the load.



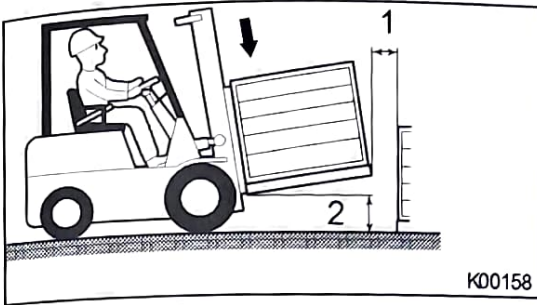
6.6 TRAVELING WITH THE LOAD

- (1) Look behind you.
- (2) Place the direction lever into the REVERSE position.



- (3) Slowly move the forklift truck 20 to 30 cm (8 to 12 in.) away from the stack, and then stop the forklift truck.

- (4) Lower the forks to a position 15 to 20 cm (6 to 8 in.) from the ground.



KD0158

1. 20 TO 30 CM (8 TO 12 IN.)
2. 15 TO 20 CM (6 TO 8 IN.)

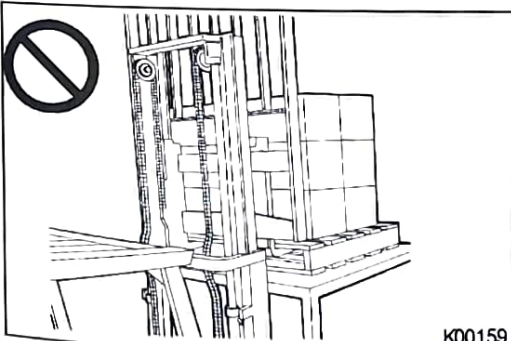
- (5) Tilt the mast fully back to cradle the load.

WARNING

Slack lift chains means there is a rail or lift bracket hang up. Raise the mast before you move.

When stacking loads:

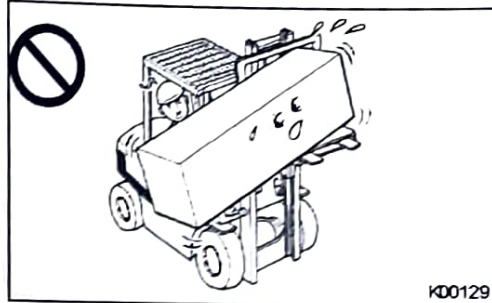
- Watch the condition of the lift chains.
- If they go slack, stop lowering. Then raise the load and lower it again.



KD0159

WARNING

DO NOT pick up an off-center load. Make sure the weight of the load is centered between the forks.



KD0129

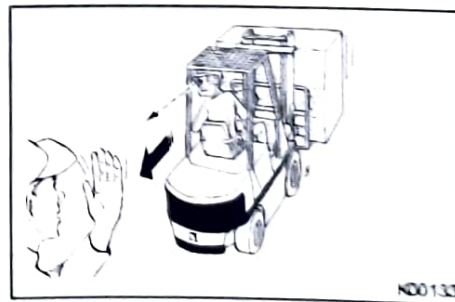
- (6) Look around to make sure your drive area is clear.
- (7) Sound the horn.
- (8) Move the forklift truck into the work area.



KD0132

WARNING

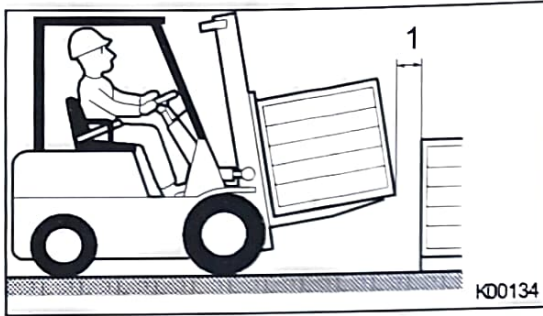
If the load blocks your view, or when you travel down a grade with the load, drive in REVERSE. Always look in the direction of travel.



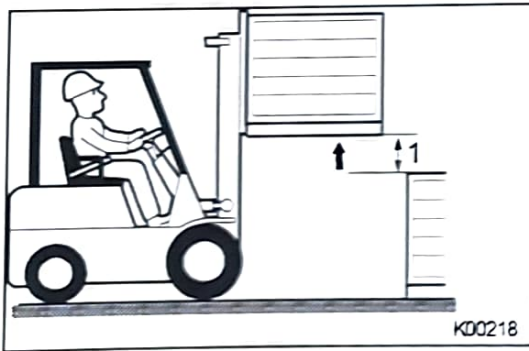
KD0133

6.7 UNLOADING

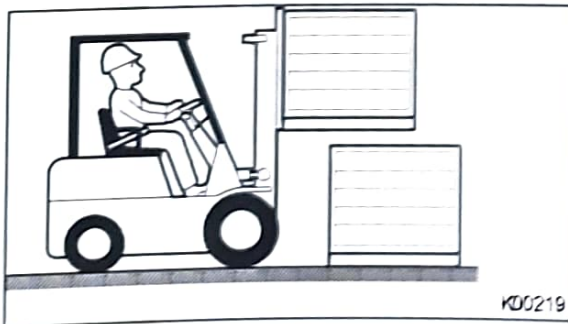
- (1) Stop the forklift truck 20 to 30 cm (8 to 12 in.) short of the unloading area.



1. 20 TO 30 CM (8 TO 12 IN.)
- (2) Tilt the mast FORWARD to the VERTICAL position.
- (3) Lift the load 10 to 15 cm (4 to 6 in.) higher than the stack.

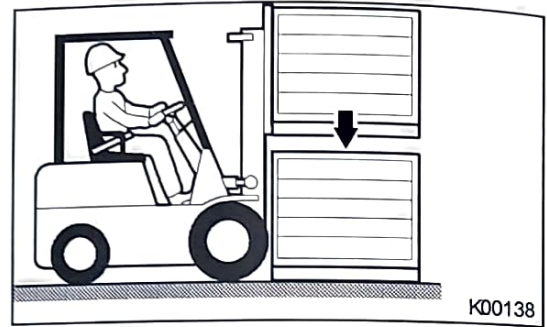


1. 10 TO 15 CM (4 TO 6 IN.)
- (4) Slowly move the forklift truck FORWARD to position the load just above the stack.



- (5) Carefully lower the load onto the stack.

- (6) Lower the forks just enough so that the forks no longer have contact with the load.



- (7) Look behind you.
- (8) Sound the horn.
- (9) Place the direction lever into the REVERSE position and carefully back the forklift truck away from the load.

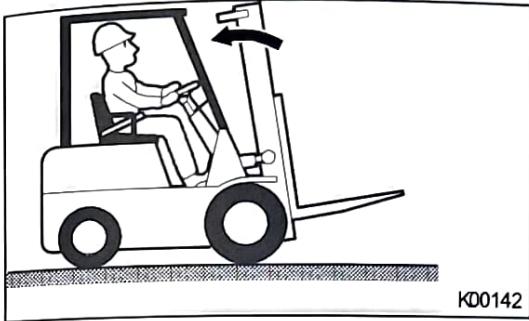


- (10) When you disengage the forks, stop the forklift truck.
- (11) Lower the forks to a position 15 to 20 cm (6 to 8 in.) from the ground.



- (12) Operate the tilt lever to tilt the mast fully back.
- (13) Look around to see that it is safe to drive in your work area.

- (14) Place the direction lever into the REVERSE position.
- (15) Sound the horn.
- (16) Move up to your next position.



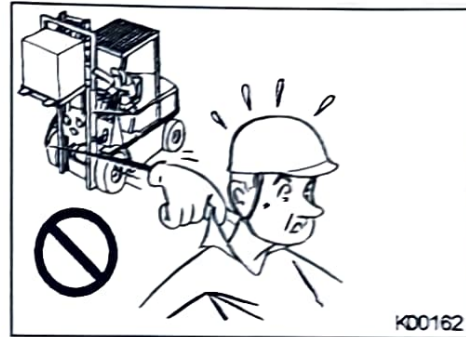
⚠ WARNING

Be careful not to drag the forks.



⚠ WARNING

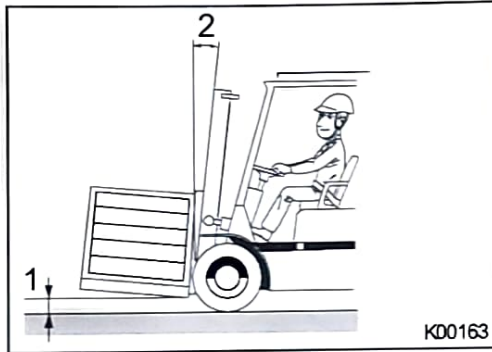
- DO NOT travel with the mast tilted FORWARD or with the load in the elevated position. This will increase the possibility of the forklift truck tipping over.
- DO NOT tilt the mast with the load in the elevated position.
- DO NOT leave the forklift truck with the load in the elevated position.



6.8 WORKING ON GRADES

6.8.1 NORMAL TRAVEL POSITION

- Keep the forks or the load at a safe travel height, which is 15 to 20 cm (6 to 8 in.) from the ground.
- Tilt the mast back more than 6° when the forklift truck is empty. Tilt the mast fully BACKWARD when the forklift truck is loaded.

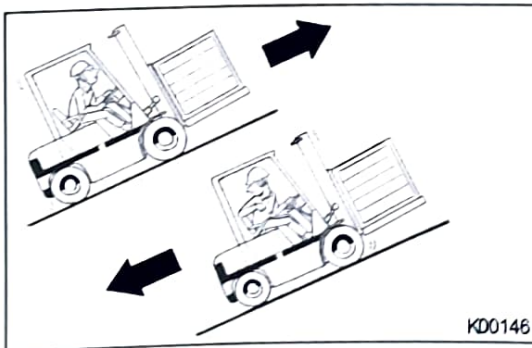


1. 15 TO 20 CM (6 TO 8 IN.)
2. 6° TILT BACK

6.8.2 TRAVELING ON A GRADE

WARNING

- DO NOT continuously use the brake pedal alone. This could result in brake failure and an accident.
- DO NOT use the inching pedal when traveling down a grade. This prevents the engine from acting as a brake.
- DO NOT place the direction lever in the NEUTRAL position when traveling down a grade.



Travel up a grade in the FORWARD direction and down a grade in the REVERSE direction when the forklift truck is loaded. When traveling down a long grade, switch the speed selector switch to 1 speed, and use engine brake and service brake.

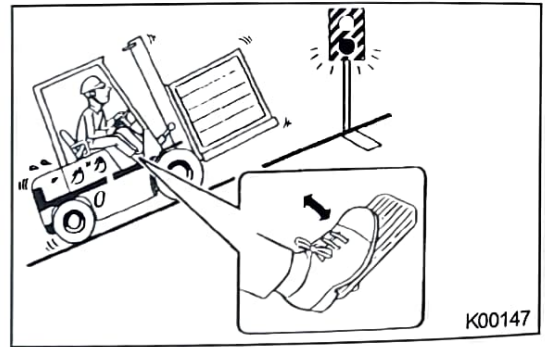
6.8.3 STOPPING ON A GRADE

WARNING

DO NOT apply the parking brake on a steep grade.

CAUTION

Depress the brake pedal when you have to stop the forklift truck on a grade. DO NOT hold the forklift truck by pressing the accelerator pedal. This may cause clutch plate wear or torque converter failure.



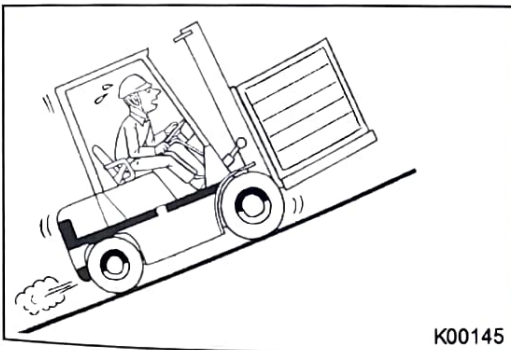
When traveling up or down a steep grade:

- (1) DO NOT turn the engine OFF.
- (2) DO NOT make any turns.
- (3) DO NOT travel across the grade.

6.8.4 STARTING ON A GRADE (ENGINE STALLS ON A GRADE)

PowerShift™

- (1) Apply the parking brake.
- (2) Depress the brake pedal.
- (3) Place the direction lever in the NEUTRAL position.
- (4) Start the engine.
- (5) Place the direction lever in the FORWARD position.
- (6) Raise the forks or load to the normal travel position.
- (7) Quickly shift your right foot from the brake pedal to the accelerator pedal.
- (8) Release the parking brake while gradually pressing the accelerator pedal.



K00145

NOTES

Chapter 7 STORING THE FORKLIFT TRUCK

7.1 END OF EACH SHIFT STORAGE

To ensure the long life of your forklift truck, be sure to take the following steps at the end of each shift:

- (1) Park the forklift truck in an authorized area.
- (2) Block the wheels securely.
- (3) Check under the forklift truck for oil or coolant leaks.
- (4) Clean the forklift truck to keep it free of dirt and oil. This will make it easier to spot loose or defective parts.

WARNING

BE SURE to pull the parking brake fully back before blocking the wheel!

- Before blocking or releasing the wheel, make sure that the parking brake is applied. If not, the forklift truck could start moving by itself, resulting in accidents.
- Perform a thorough walk-around inspection for any damage. Report all damage or faulty operation immediately. DO NOT operate the forklift truck that has a maintenance problem.
- DO NOT put your hand between the tire and wheel chock when using a wheel chock to block wheels. The forklift truck may move, causing your hand to be pinched.

CAUTION

- DO NOT expose the controllers and their related sensors to rainwater. DO NOT sprinkle water over the controllers and their related sensors when washing the forklift truck.

7.2 LONG TERM STORAGE

If your forklift truck is stored for any length of time, take the following safety precautions to reduce the risk of deterioration of the forklift truck components. If it is necessary to store the forklift truck outdoors, park it on a hard level ground covered with wooden blocks, and cover it with a water-proof plastic sheet to protect it from humidity or dust.

7.2.1 FUEL SYSTEM

Gasoline engine forklift trucks

Gasoline evaporates, leaving a sticky gum deposit in the fuel pump and carburetor. Drain the fuel from the tank and run the engine until the fuel in the lines is used up.

Diesel engine forklift trucks

Drain the fuel from the tank and run the engine until the fuel in the lines is used up.

LPG engine forklift trucks

Due to fire hazards, forklift trucks can present a storage problem. Store them in an outdoor shelter or detached garage. If the shelter is attached to another building, the separating walls should have a fire resistance rating of more than one hour. The shelter should have sprinklers and floor-level ventilation.

7.2.2 HYDRAULIC SYSTEM

After parking your forklift truck for storage, retract all the hydraulic cylinders to minimize rod exposure. This will reduce the risk of rusting of the sliding contact surfaces of the rods.

To prevent rusting of the cylinder interior and rods, and deterioration of the seals, periodically operate each cylinder for lift, tilt and the attachment to full stroke.

7.2.3 ENGINE COOLING SYSTEM

Protect the cooling system from freezing by draining the system or by adding an antifreeze mixture.

7.2.4 ENGINE CYLINDERS

Over a long storage period, the cylinders may rust from moisture condensation within the cylinders.

CHAPTER 7 STORING THE FORKLIFT TRUCK

To reduce the risk of rusting of cylinder walls, drive until an engine warms up once in one week.

When using anti-rust engine oil to the engine, crank the engine several times with the starter to spread the oil uniformly on the cylinder walls.

7.2.5 BATTERY

Remove the batteries from the forklift truck and recharge them. Store them in a dry, cool place.

7.2.6 CONTROLLER

Moisture is harmful to the controller.

7.2.7 OTHER

More precautions may have to be taken according to the place of storage, storage period, and season.

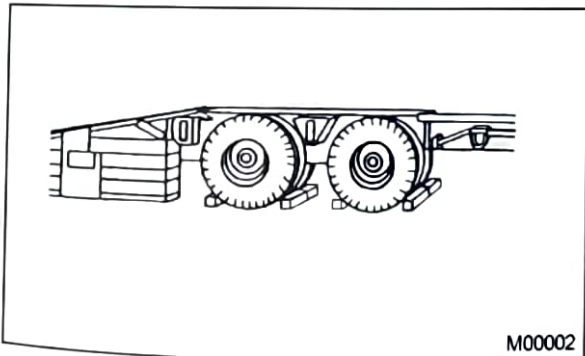
When you store your forklift truck, consult your authorized Mitsubishi forklift truck dealer.

Chapter 8 TRANSPORTATION HINTS

8.1 FORKLIFT TRUCK LOADING AND SHIPPING

Be sure to take the following safety precautions before loading and shipping forklift trucks:

- Always block the trailer or rail car wheels before loading the forklift truck.
- Position the forklift truck on the truck bed or rail car.
- Apply the service brake and then apply the parking brake. Place the direction lever in the NEUTRAL position.
- Turn the key switch to the OFF position and remove the key.
- Block the wheels and secure the forklift truck with tiedowns.
- Do not turn the steering wheel after the forklift truck has been secured. It may loosen the tie-downs.



- Weight and instructions given here apply to forklift trucks manufactured by Mitsubishi Caterpillar Forklift America Inc.
- Use proper rated cables and slings for lifting. Position the crane so the forklift truck is level when lifted.
- Spreader bar widths should be sufficient to prevent contact with the forklift truck.
- Use the tie-down locations provided for forklift truck tie down.

CAUTION

Incorrect lifting or tie-downs may cause a load to shift and cause injury and/or damage.

NOTE: Check the state and local laws governing weight, width, and length of a load. Contact your authorized Mitsubishi forklift truck dealer for shipping instructions for your forklift truck.

WARNING

Check travel route for overpass clearances. Make sure there is adequate clearance if the forklift truck being transported is equipped with a high mast or cab. Remove ice, snow, or other slippery material from the shipping forklift truck and loading dock.

8.2 FORKLIFT TRUCK LIFTING AND TIE DOWN INFORMATION

Take the following safety precautions when lifting or tying down forklift trucks:

NOTES

Handwritten notes area with horizontal lines.

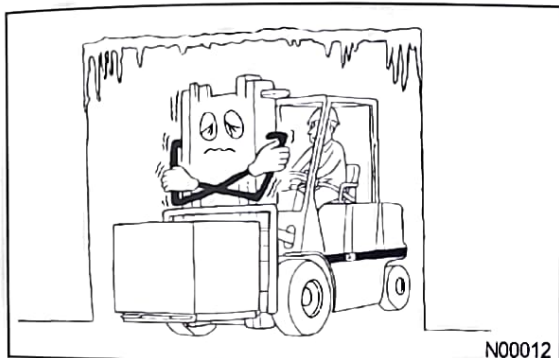
Chapter 9 SPECIAL SITUATIONS

9.1 CARE IN COLD WEATHER

9.1.1 FUEL OILS AND LUBRICATION OILS

⚠ CAUTION

Use diesel fuel to fit the ambient temperatures. The cetane number should be 40 minimum. If you operate the forklift truck where ambient temperatures are normally low, you may need fuel with a high cetane number.



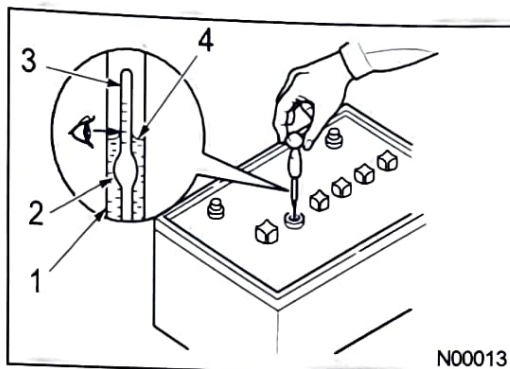
⚠ CAUTION

- Cloud point must be 6°C (11°F) below the lowest ambient temperature.
- Use engine oil and gear oil to fit the ambient temperature.

9.1.2 BATTERY

- Contact your battery manufacturer for the specific gravity of your battery.
- When you park your forklift truck overnight, leaving it outside a garage, remove the battery and keep it warm.

NOTE: The electrolyte of a fully charged battery will not freeze to -35°C (-31°F).



1. GLASS TUBE
2. ELECTROLYTE
3. FLOAT
4. ELECTROLYTE LEVEL

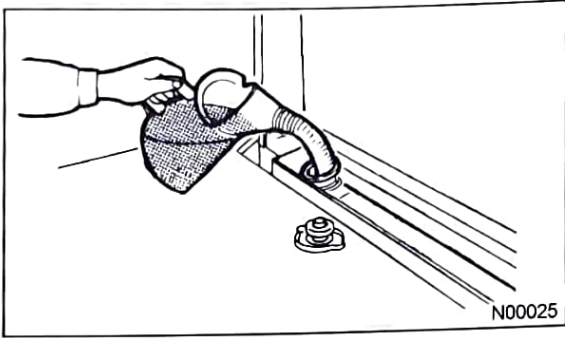
⚠ CAUTION

- After distilled water has been added to the battery, run the engine for a while. This mixes the added water with the electrolyte and will reduce the risk of freezing and damaging the battery.
- DO NOT attempt to restore a battery's charge by pouring boiling water over it. This may break the battery case, resulting in acid contact with skin or eyes.

9.1.3 ENGINE COOLANT

- Antifreeze used in the engine cooling system of a new forklift truck shipped from the manufacturer provides sufficient freeze protection to -30°C (-22°F).
- If ambient temperatures are below -30°C (-22°F), add antifreeze.

NOTE: For type and concentration of antifreeze, consult your authorized Mitsubishi forklift truck dealer.

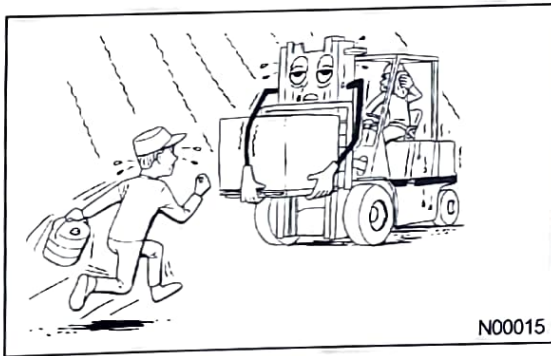


9.2 CARE IN HOT WEATHER

9.2.1 FUEL OILS AND LUBRICATION OILS

Use fuel oil, engine oil and gear oil to fit the ambient temperatures.

NOTE: For selection of fuel oil, engine oil and gear oil, consult your authorized Mitsubishi forklift truck dealer.



9.2.2 BATTERY

In hot and/or dry weather, check the battery cells for proper electrolyte level more often than in cold weather. Add distilled water whenever the level is low.

9.2.3 ENGINE COOLANT

⚠ WARNING

Be careful NOT to have scalding hot coolant or steam blow out of the reserve tank. Remove the radiator cap only after engine cools.

NOTE: Coolant evaporates rapidly and the engine is likely to get overheated when the forklift truck is operated continuously or on a grade. During such an operation, observe the engine coolant gauge for symptoms of overheating.

⚠ CAUTION

If the engine coolant gauge shows the RED zone, the engine may be overheated.

NOTE: If the engine coolant gauge shows the RED zone, see If the Engine Coolant Temperature Gauge Shows Red Zone, Page 10-5.

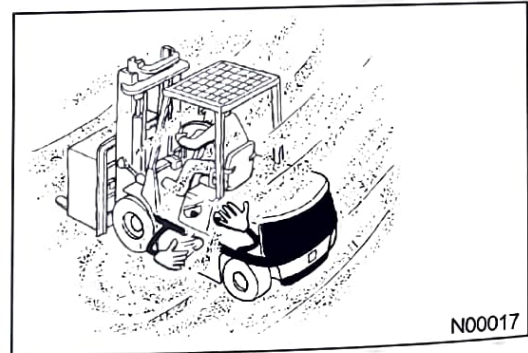
9.3 SEVERE DUST OR LINT CONDITIONS

Check and service the air cleaner element more frequently.

Recommended
Inspection Period

Every 50 service hours
or weekly, whichever
comes first

Check the radiator core more frequently for clogging or debris build-up. Clean or wash the forklift truck as required.



Chapter 10 TROUBLESHOOTING

10.1 STALLED ENGINE

If the engine stalls, hydraulic pressure is lost in the power steering. This increases your steering effort. In this case, stop your forklift truck in a safe area and restart the engine.



P00116

10.2 STARTING WITH JUMPER CABLES

To start a forklift truck with a "run-down" battery, use a booster battery or jumper cables from the battery of a second forklift truck.

⚠ WARNING

- Batteries give off flammable gas which could explode.
- Keep flames and sparks away from batteries. They could cause gas to explode.
- DO NOT allow jumper cable ends to contact each other or the forklift truck.
- DO NOT smoke when checking battery electrolyte levels.
- Electrolyte is an acid and could cause injury if it contacts skin or eyes. Always wear eye protector when starting an engine in the forklift truck with jumper cables.
- Incorrect jump start procedures could cause an explosion that could result in injuries. Turn OFF all lights and accessories on the stalled forklift truck.
- Always connect battery positive (+) to battery positive (+) and battery negative (-) to engine body.
- Jump only with a battery source of the same voltage as the stalled forklift truck.

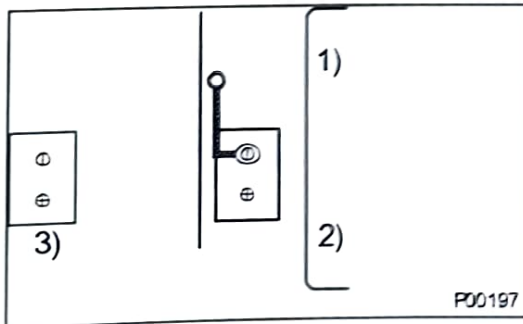
⚠ WARNING

- DO NOT try to start the engine by pushing the forklift truck.
- BE SURE to connect the cable end 4 to the ENGINE BODY. If it is connected to the negative (-) terminal of the battery, sparks could ignite the gases.

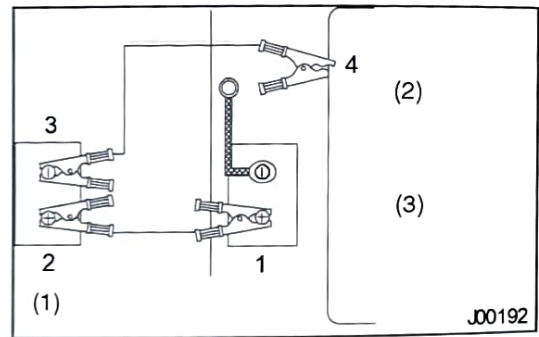
CAUTION

- Connect the jumper cables away from the moving parts in the engine compartment.
- DO NOT touch the cable with wet hands. If touched, it may result in an electrical shock.
- When carrying batteries, provide short circuit prevention to the terminals. If metals come in contact with the terminals, a short circuit could result.

- NOTE:**
- Use a 12 volt jumper cables to jump start the forklift truck. This forklift truck has a 12 volt starting system. Use only equal voltage for jump starting. Use of a welder or higher voltage will damage the electrical system.
 - Jumper cables are available at your authorized Mitsubishi forklift truck dealer.
 - Turn OFF the battery switch before the boost connection to prevent damage to electrical components on the stalled forklift truck. Many "dead" batteries can be recharged.
 - To start a forklift truck with a "run-down" battery, use a booster battery or jumper cables from the battery of a second forklift truck.



- 1) CABLE END
 - 2) FORKLIFT TRUCK BEING STARTED
 - 3) "GOOD" BATTERY
- (1) Position the second forklift truck, with its engine running, within jumper cable distance.
 - (2) Connect the jumper cables in the sequence shown. DO NOT short across the positive (+) and negative (-) terminals.
 - (3) After connecting the cables, increase the engine speed of the second forklift truck's engine and then start the engine of the stalled forklift truck that has the "run-down" battery.
 - (4) After the engine starts, disconnect the jumper cables in the reverse sequence.



- (1) "GOOD" BATTERY
- (2) CABLE END
- (3) TRUCK BEING STARTED

10.3 IF LIGHTS WON'T GLOW

⚠ CAUTION

- DO NOT use a fuse that is overrated. DO NOT use a wire or aluminum foil for a fuse. It could overheat or burn.
- Always replace fuses with fuses of the correct amperage.
- If a fuse burns out immediately after being changed and you cannot locate the cause, have your authorized Mitsubishi forklifttruck dealer make a circuit check.
- Always use a light bulb of the same wattage.

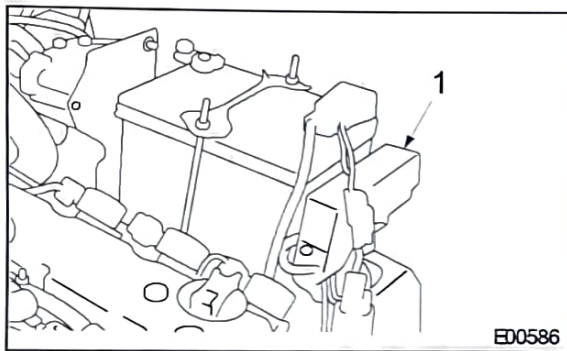
Fuse amperage table

Circuit	Capacity	
	Gasoline	Diesel (S4S)
VCM	20A	20A
Fuel Pump	10A	-
Fuel Cut	-	10A
Meter Panel	10A	10A
Backup Light	15A	15A
Working Light	15A	15A
ETC	15A	-
Optional	20A	20A
Spare	15A	15A
Head Light	15A	15A
Horn	10A	10A
Stop light	10A	10A
EGI	30A	-
EGI	30A	-

Circuit	Diesel (D04EG)
Battery	100A
Alternator	100A
Head Light, Parking Light, Tail Light	15A
Horn, Warning Alarm, IGN Switch, IGN Relay	10A
Stop Light, Meter Panel	10A
Wiper, Washer	15A
Working Light	15A
ECU	30A
Spare Power Supply	20A
VCM	20A
Meter Panel, Speed meter, Input Unit, Output Unit, Gateway Controller	10A
Flasher Relay, Backup Relay, Backup Light, Backup Alarm, Turn Signal Light	15A
ECU, Key Switch, Backup Relay Warning Buzzer Relay, Spare Power Supply, Wiper Relay, Alternator	10A

10.3.1 HOW TO CHECK FUSES AND LIGHTS

- (1) Push clip 1 and pull up to remove cover.
 - To replace, hook cover on clip 2 and push until clip 1 locks in place.
- (2) Check fuses one by one with volt meter for continuity.
 - If fuse fails continuity test, replace the fuse with a new one.

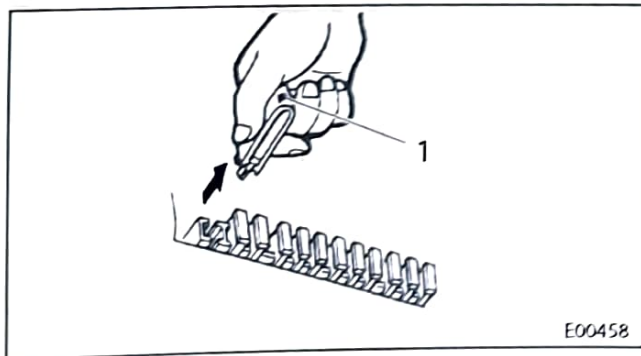


E00586

1. FUSE

- (3) Push the clip 1 and pull up this side of the cover.
 - Release from the hook 2 on the other side.
 - When the cover is put back, do not push upper side. Hook the cover correctly from lower side.

NOTE: To remove the fuse or insert a replacement fuse, use the puller located inside the fuse panel lid.

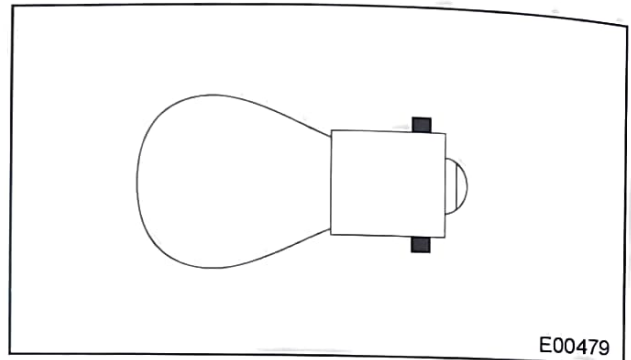


E00458

1. PULLER

- (4) Check to see if fuse is blown.

- (5) Check to see if light is burned out if there is no problem with the fuses.
- (6) Lights may be burned out.



E00479

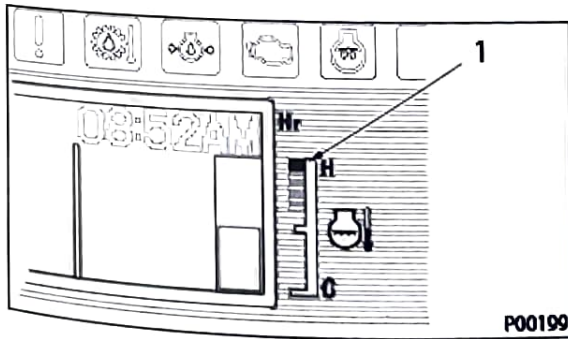
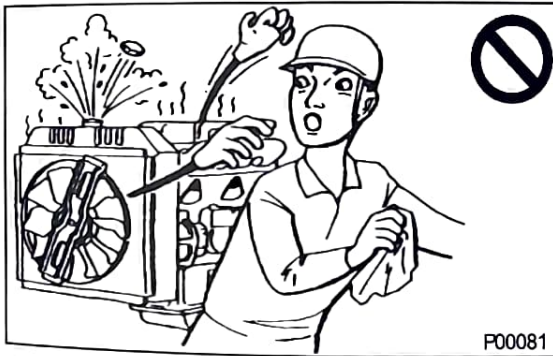
Light Type	Capacity
Head Light	12V-48W
Working Light (Optional)	12V-55W

Light Type		Capacity
Front	Turn Signal Light	12V-27W
	Clearance Light	12V-10W
Rear	Tail / Stop Light	12V-23W / 8W
	Backup Light	12V-18.4W
	Turn Signal Light	12V-20W

10.4 IF THE ENGINE COOLANT TEMPERATURE GAUGE SHOWS RED ZONE

⚠ WARNING

- DO NOT attempt to remove the radiator filler cap if the engine is overheated. To avoid scalding hot coolant and steam from blowing out of the radiator, wait until the engine has cooled.
- DO NOT add cold water to an overheated engine, this could cause engine damage. Wait for the engine to cool, if possible. If not, slowly pour water into the radiator.
- Immediately turn the engine OFF if the fan belt is broken.



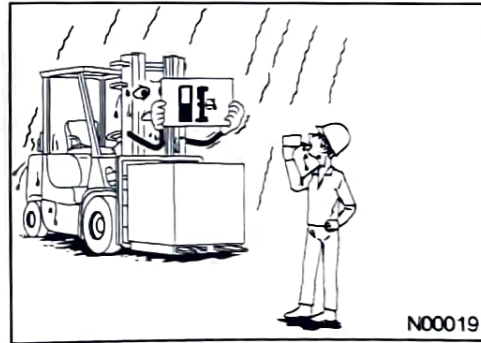
1. OVERHEAT

⚠ CAUTION

If any of the following liquids are spilled on the floor, clean up immediately. If not cleaned up, it could result in slipping, skidding or environmental pollution.

- Oil or grease
- Coolant
- Gasoline or diesel fuel
- Brake fluid
- Electrolyte

- (1) Park the forklift truck in a safe area.
- (2) Raise the engine hood and seat assembly to ventilate the engine compartment.
- (3) Allow the engine to idle for a while. DO NOT attempt to turn the engine OFF.
- (4) Turn the engine OFF after the engine coolant temperature gauge shows the WHITE zone.

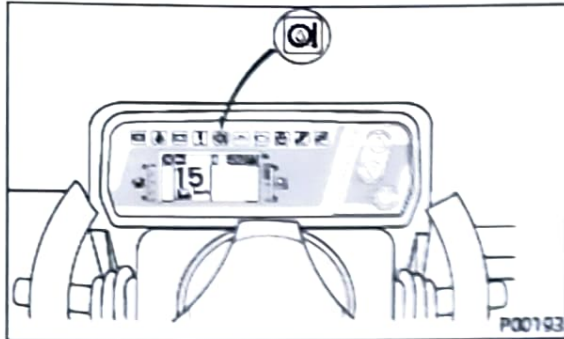


- (5) Check the following:
 - Lack of coolant
 - Loose or broken fan belt
 - Engine oil level
 - Dirt buildup in radiator air passages

10.5 IF TORQUE CONVERTER OIL TEMPERATURE WARNING ICON GLOWS (POWERSHIFT)

- (1) Stop the forklift truck in a non-traffic area.
- (2) Apply the parking brake.

- (3) Place the direction lever in the NEUTRAL position.
- (4) Run the engine at low idle for a while.
- (5) After the warning icon has gone OUT, operate the forklift truck again.



10.6 TROUBLE WITH THE LPG EQUIPMENT

⚠ WARNING

- If you smell gas or notice something wrong with LPG equipment during operation, immediately stop the forklift truck in a safe area, turn the key switch to the OFF position, close the fuel valve of the LPG tank, and try to find the cause. (It is recommended that a test kit be used for detecting a gas leakage.)
- If the internal pressure of the LPG tank rises too high and causes the relief valve to open to let out the excess pressure, sprinkle water over the tank. At the same time, extinguish any fire or flame source (such as a pilot lamp) and eliminate the possibility of creating sparks near the forklift truck. Ventilate the work place.
- When gas leakage is evident, close the fuel valve as soon as possible. Extinguish the fire or flame sources nearby to prevent spark conditions.
- There is a possibility of fire after a collision or when the forklift truck turns over. If this happens, close the LPG fuel valve of the LPG tank as soon as possible.
- Use a dry chemical (powder) or carbon dioxide type extinguisher. DO NOT use water. When possible, however, have large quantities of water poured over the LPG tank to cool it down while the fire is being extinguished.

⚠ CAUTION

If the warning icon does not go OUT, or if it constantly glows, contact your authorized Mitsubishi forklift truck dealer.

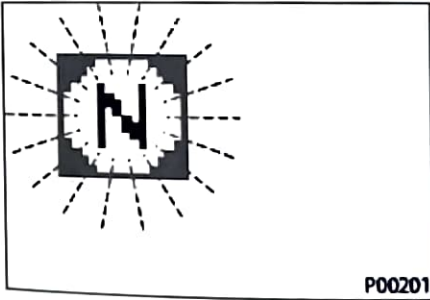
10.7 IF THE FORKLIFT TRUCK WON'T CHANGE DIRECTION

If the operator half rises from the operator seat for more than 2 seconds with the direction lever being placed in the FORWARD or REVERSE position, the operator presence switch in the operator seat activates the driving interlock system. Check the following points if the forklift truck will not move even after the direction lever is shifted to the FORWARD or REVERSE position:

Does the driving interlock Indicator icon blink on the LCD screen?

YES

- (1) Sit properly on the operator seat.
- (2) Return the direction lever to the NEUTRAL position.
- (3) Place the direction lever to the FORWARD or REVERSE position.

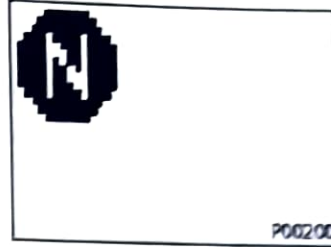


NO

Stop working and move the forklift truck to a safe area. Turn the engine OFF and contact your authorized Mitsubishi forklift truck dealer.

- (1) Return the direction lever to the NEUTRAL position.
- (2) Apply the parking brake.
- (3) Turn the key switch to the OFF position.

- (4) Attach an "OUT OF SERVICE" or similar warning tag to a conspicuous place at the operator compartment of the forklift truck in order to let other people know your forklift truck is down.

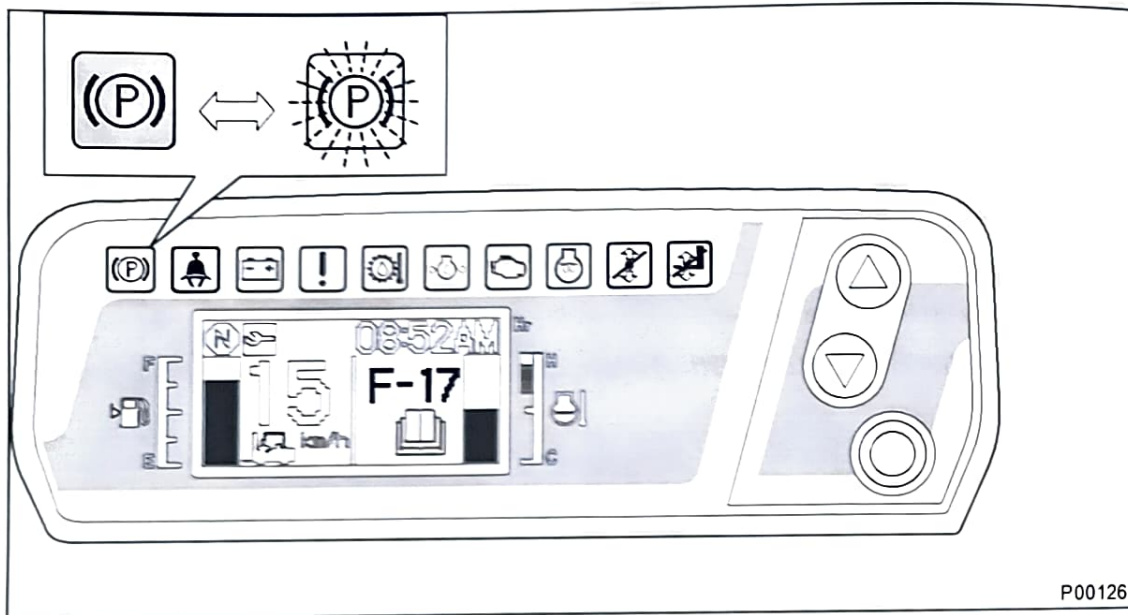


10.8 IF THE FORKLIFT TRUCK WON'T MOVE

If the operator half rises from the operator seat for more than 2 seconds with the direction lever being placed in the FORWARD or REVERSE position,

the operator presence switch in the operator seat activates the driving interlock system.

Check the following points if the forklift truck will not move even after the direction lever is shifted to the FORWARD or REVERSE position:



P00126

Does the parking brake warning icon blink on the meter panel?

YES

- (1) Sit properly the operator seat.
- (2) Apply the parking brake
- (3) Release the parking brake.

NO

It is faulty.

Contact your authorized Mitsubishi forklift truck dealer after taking the following safety measures

1. Return the direction lever to the NEUTRAL position.
2. Apply the parking brake
3. Turn the key switch to the OFF position.
4. Attach a "DO NOT OPERATE" or similar warning tag to a conspicuous place at the operator compartment of the forklift truck in order to let other people know your forklift truck is non-operational.

10.9 IF THE MAST AND ATTACHMENTS STOP MOVING

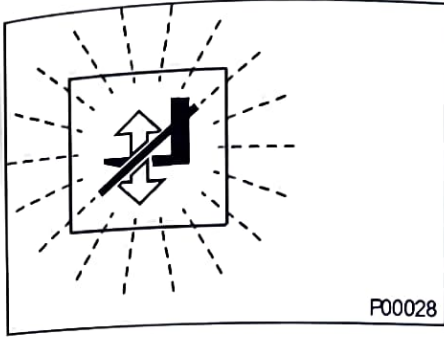
If the operator half rises from the operator seat for more than 2 seconds without the lift or tilt lever being placed in the NEUTRAL position, the operator presence switch in the operator seat activates the mast interlock system.

Check the following point if the mast (attachments) will not move even after the lift or tilt lever is shifted to other than the NEUTRAL position.

Remedy

- (1) Sit properly on the operator seat.
- (2) Return the lift or tilt lever to the NEUTRAL position.

- Operate the lift or tilt lever.

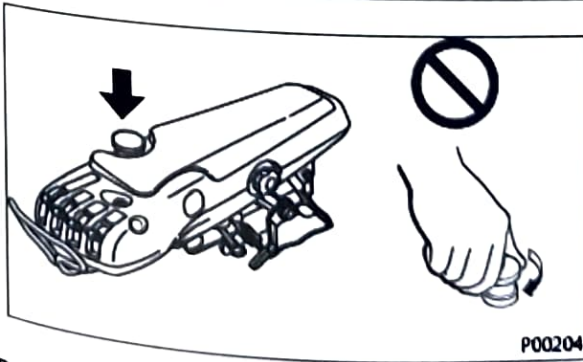


NOTE: If the mast interlock system remains in a locked condition after taking the above steps, contact your authorized Mitsubishi forklift truck dealer immediately.

10.10 IF THE MAST AND ATTACHMENTS MALFUNCTION (FC MODEL)

Push down on the emergency stop button (if equipped) to stop the mast and attachments.

⚠ WARNING	
-	If you see the mast or attachment malfunctioning, push down on the emergency stop button. Contact your authorized Mitsubishi forklift truck dealer immediately.
-	DO NOT attempt to return the emergency stop button to the OPERATE position for operating the forklift truck before an authorized mechanic arrives on the scene.



Push down on the emergency stop button, and take the following safety measures:

- Move the forklift truck to a safe area

- Return the direction lever to the NEUTRAL position.
- Apply the parking brake.
- Turn the key switch to the OFF position.
- Attach an "OUT OF SERVICE" or similar warning tag on the mast or fork of the forklift truck in order to let other people know your forklift truck is down.
- Contact your authorized Mitsubishi forklift truck dealer immediately.

10.11 IF A TIRE BLEW OUT

⚠ CAUTION	
A flat tire tilts the forklift truck, which makes it difficult to turn the steering wheel properly. To keep operating the forklift truck with a flat tire may cause an accident.	

Remedy

- Stay calm and firmly hold on to the steering wheel.
 - Gently release the accelerator pedal to slow down.
 - Park the forklift truck in a safe area.
 - Replace the punctured tire with a new one.
- NOTE:** Contact your authorized Mitsubishi forklift truck dealer for requesting to replace tires.

10.12 REPLACING TIRES

⚠ WARNING

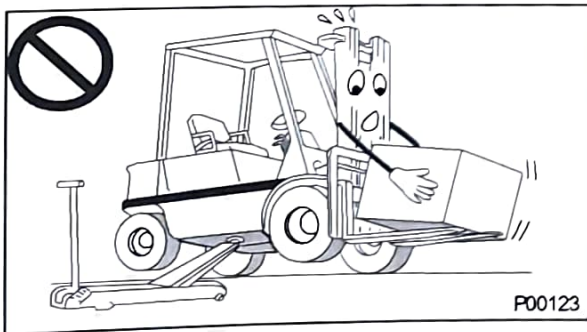
- When replacing tires, replace them in sets, even if only one of the tires is damaged. If both new and used tires are used on the same axle, tilting of the mast and rapid tire wear will result.
- Make sure the replacement tire is of the same size, type, and load range as indicated on the manufacturer name plate.
- Use only tires recommended by the manufacturer. See manufacturer name plate for correct tire size.

⚠ WARNING

- Consult your authorized Mitsubishi forklift truck dealer for proper tire replacing procedure.
- Replacing a tire and adjustment procedures must be made by a trained mechanic.
- Perform all maintenance with proper equipment.

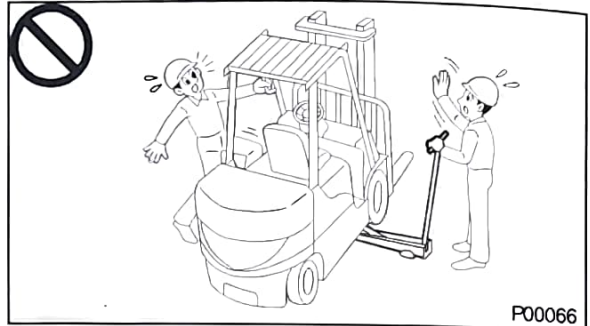
⚠ WARNING

DO NOT attempt to replace the tire with the forklift truck loaded. Injury and/or damage could result.



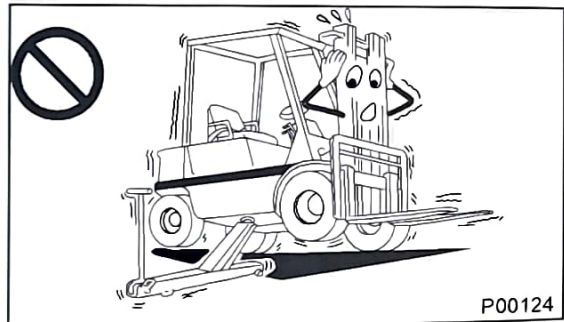
⚠ WARNING

BE SURE that no one is on the forklift truck when raising the front or rear tires.



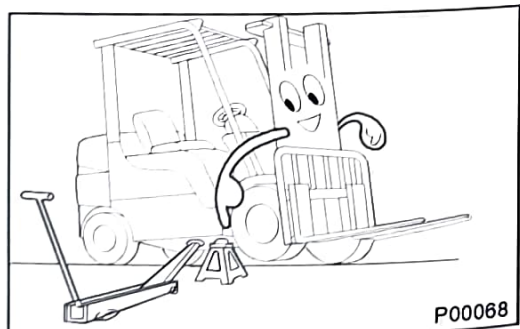
⚠ WARNING

Stop raising the forklift truck when the tire clears the ground. DO NOT raise the forklift truck more than necessary.



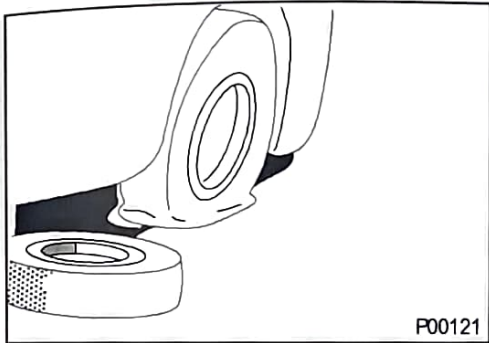
⚠ WARNING

DO NOT place any part of your body under the forklift truck until the forklift truck is securely supported with jack stands after jacking it up.

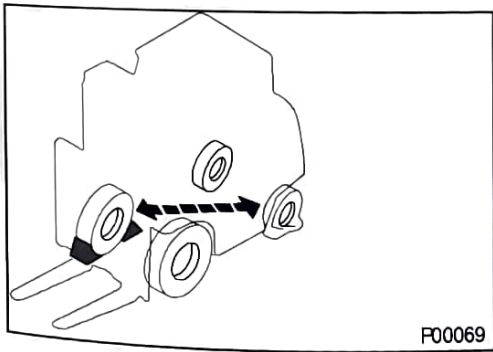


10.12.1 BEFORE REPLACING A TIRE

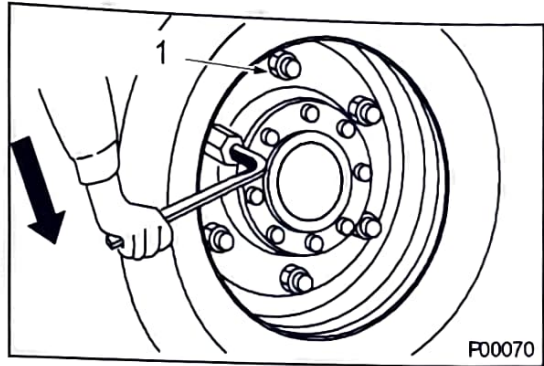
- (1) Park the forklift truck on hard and level surface.
- (2) Lower the forks until the fork tips touch the floor.
- (3) Apply the parking brake.
- (4) Place the direction lever in the NEUTRAL position.
- (5) Turn the engine OFF.



- (6) Prepare tools, jack and wheel blocks.
- (7) Block the wheel diagonally opposite to a raised wheel.

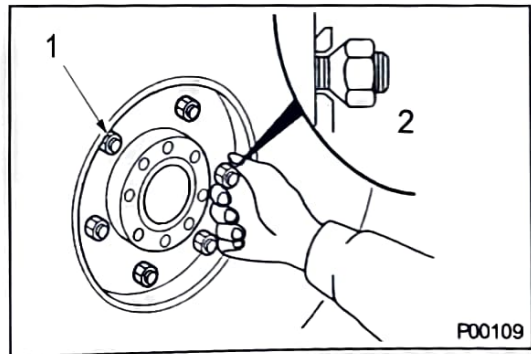


NOTE: For jacking point, see Raise Front Wheel, Page 10-11.



1. WHEEL NUT

- (3) Raise the forklift truck by operating the jack until the tire just clears the ground.
- (4) Remove the wheel nuts (loosened in Step 1).
- (5) Firmly hold the wheel with both hands and remove it from the forklift truck.



1. WHEEL NUT
2. COUNTERSINK

Jack capacities	
1 ton model	3 tons (6700 lbf), minimum
2 to 3 ton model	5 tons (12000 lbf), minimum

WARNING
DO NOT loosen rim bolts.

10.12.3 RAISE FRONT WHEEL Jacking Method

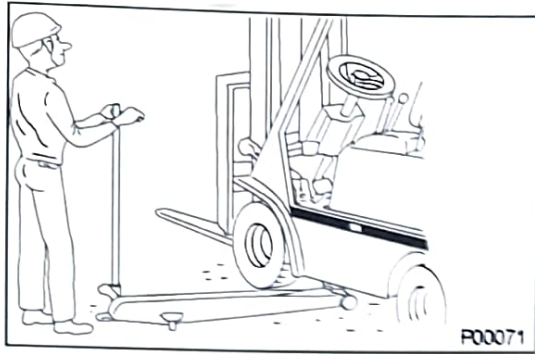
- (1) Position the jack under the frame and raise the forklift truck with the jack until the front wheel clears the ground.

10.12.2 TO REMOVE WHEEL

- (1) Loosen the wheel nuts about two turns.

NOTE: Only loosen the wheel nuts. DO NOT remove them.

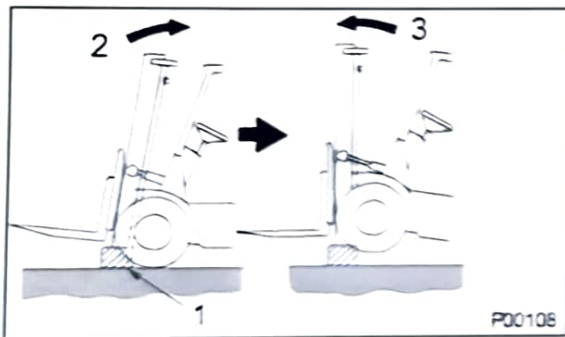
- (2) Position the jack under the forklift truck at the specified jacking point.



- (2) Place the jack stands on both sides under the frame to support it.

"Self-jacking" method

- (1) Tilt the mast fully back, place wood blocks under the mast, and tilt the mast FORWARD.

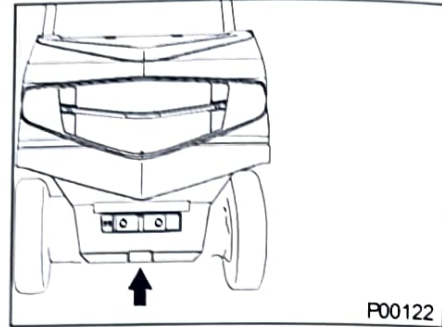


- 1. WOOD BLOCK
- 2. TILT BACKWARD
- 3. TILT FORWARD

- (2) Place the jack stands on both sides under the frame to support it.

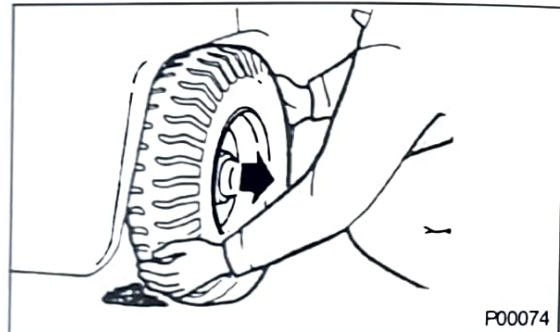
10.12.4 TO RAISE REAR WHEEL

- (1) Position the jack under the counterweight at the recessed point and raise the rear wheel
- (2) Place the jack stand under the frame to support it.



CAUTION

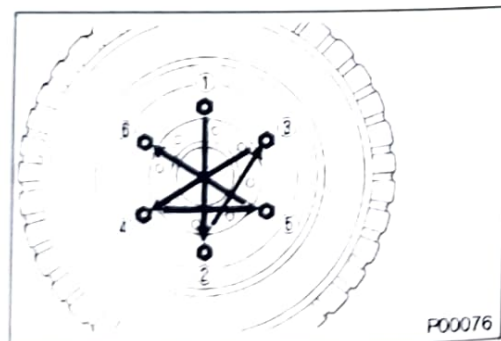
Be careful NOT to strip the bolt threads when removing the wheel.



10.12.5 TO INSTALL WHEEL

- (1) Install the wheel and tighten the wheel nuts finger tight until their clamping surfaces come into full-face contact with the counter bores in the rim.

NOTE: Make sure the clamping surfaces of the wheel nuts and countersinks are free of dirt.



- (2) Lower the forklift truck by operating the jack until the tire just touches the ground. Then tighten the wheel nuts in the sequence shown, in two or three steps, to the specified torque.
- (3) Lower the forklift truck fully and restore the jack and tire.
- (4) Make sure the tire pressure is correct. For the pressure, see Specifications (Standard Models), Page 12-6.

- (5) After tire replacement, drive the forklift truck for a while and then recheck the torque of the wheel nuts.

Tightening torques for wheel nuts

Forklift truck type	Side	Proper operating force	
1 ton model	Front	141 to 172 (14 to 17) [104 to 127]	
	Rear	STD (2P)	141 to 172 (14 to 17) [104 to 127]
		OP (4P)	
2 to 3 ton model	Front	300 to 375 (30 to 38) [221 to 277]	
	Rear	STD (2P)	141 to 172 (14 to 17) [104 to 127]
		OP (4P)	210 to 256 (21 to 26) [155 to 189]
3.3 to 3.5 ton model	Front	300 to 375 (30 to 38) [221 to 277]	
	Rear	STD (4P)	210 to 256 (21 to 26) [155 to 189]

Unit: N·m (kgf·m) [lbf·ft]

10.12.6 TO ADD AIR TO TIRES

⚠ WARNING

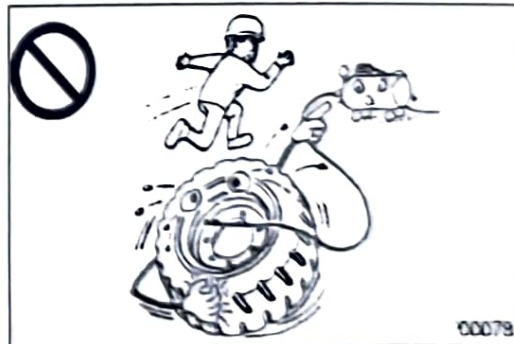
- The forklift truck uses high pressure tires. DO NOT overinflate the tire.
- When adding air, check the rim for damage that could permit air to leak from the tire.
- The use of an inflation cage, or some other safety device, helps reduce the risk of serious injury.
- When adding air to the tire, or when checking tire pressure, BE SURE to keep your body away from the side.



F00077

⚠ WARNING

- When adding air to the tire using an air compressor, make sure the compressor valve is correctly set. Failure to follow this precaution could damage the tire.
- Always maintain correct tire pressure.



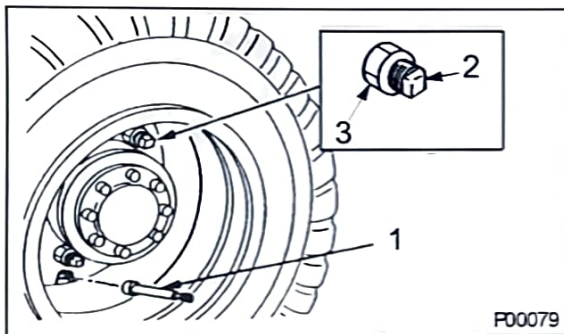
00078

10.12.7 DUAL TIRE (OPTIONAL)

Steps other than the followings are the same as those for single-wheel forklift trucks.

- (1) Remove extension valve.
- (2) Unscrew outer wheel nuts and remove the outer wheel.
- (3) Unscrew inner wheel nuts and remove the inner wheel.
- (4) Install the inner wheel and, after lowering the forklift truck, tighten inner wheel nuts to the specified torque.
- (5) Raise the forklift truck again, install the outer wheel. After lowering the forklift truck, tighten outer wheel nuts.

NOTE: Check inner wheel nuts for tightness even when replacing the outer wheel.



1. EXTENSION VALVE
2. INNER WHEEL NUT
3. OUTER WHEEL NUT

10.13 DIAGNOSTIC TROUBLESHOOTING CODES (DTCS) AND EXPLANATIONS

Contact your authorized Mitsubishi forklift truck dealer when the diagnostic code is displayed.

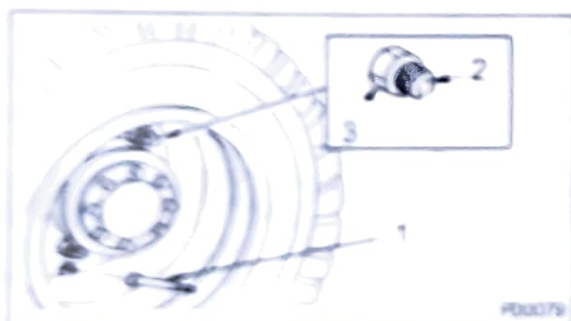
Code	Explanation	Code	Explanation
D-01	Accelerator sensor warning	D-78	Throttle reference point warning
D-07	Fuel rail pressure warning	D-79	Throttle close WS stick warning
D-09	Injector N/V-cylinder 1	D-91	Stepping motor warning
D-10	Injector N/V-cylinder 2	D-92	Intake manifold pressure sensor warning
D-11	Injector N/V-cylinder 3	D-93	Intake manifold temperature sensor warning
D-12	Injector N/V-cylinder 4		
D-24	Engine speed sensor warning		
D-25	Engine over-run warning	E-03	VCM communication warning
D-29	Atmospheric pressure sensor warning	E-04	ECM communication warning
D-30	CAN signal warning	E-05	DCM communication warning
D-31	Starter relay warning	E-07	MP communication warning
D-32	Engine coolant temperature sensor warning	E-21	Air flow meter warning signal
D-33	ECU system warning	E-22	Water temperature sensor warning signal
D-34	Injector circuit warning	E-23	Throttle sensor warning signal
D-35	Fuel temperature sensor (Inlet) warning	E-24	Accelerator sensor warning signal
D-37	Valve position sensor warning	E-25	O ₂ sensor warning signal
D-38	EGR gas temperature sensor warning	E-26	O ₂ sensor heater warning signal
D-39	EGR position sensor warning	E-27	POS sensor warning signal
D-40	EGR motor warning	E-28	PHASE sensor warning signal
D-51	Memory check warning	E-29	Self-shut system warning
D-52	Supply power voltage warning	E-30	ECCS C/U warning signal
D-53	VCM communication warning	E-31	Electronic control throttle control warning signal
D-54	ECM communication warning	E-32	Overheat signal (STEP1)
D-55	DCM communication warning	E-33	Overheat signal (STEP2)
D-57	MP communication warning	E-34	Spark system warning signal
D-61	Engine overrun	E-35	LPG fuel injector disconnection diagnostic result signal

10.12.7 DUAL TIRE (OPTIONAL)

Steps other than the followings are the same as those for single-wheel forklift trucks.

- (1) Remove extension valve
- (2) Unscrew outer wheel nuts and remove the outer wheel
- (3) Unscrew inner wheel nuts and remove the inner wheel
- (4) Install the inner wheel and, after lowering the forklift truck, tighten inner wheel nuts to the specified torque
- (5) Raise the forklift truck again, install the outer wheel. After lowering the forklift truck, tighten outer wheel nuts.

NOTE Check inner wheel nuts for tightness even when replacing the outer wheel



- 1 EXTENSION VALVE
- 2 INNER WHEEL NUT
- 3 OUTER WHEEL NUT