

# OPERATION



## WARNING

Please be sure that you fully understand this manual and the precautions related to safety for the lift truck.

When operating the lift truck, always strictly follow these precautions. Failing to heed this warning may result in serious injuries.

## 3.3 OPERATION

### 3.3.1 START-UP INSPECTION

#### CAUTION

- Do not operate the lift trucks before completing start-up inspection.
- Report abnormality, if any, immediately to the administrator. Never operate the lift truck in question until the repair is completed.

For your safe operation, always make the start-up inspection.  
For details about the start-up inspection and daily maintenance, see "4.2 START-UP INSPECTION (PAGE 4-2)".

### 3.3.2 MOUNTING/DISMOUNTING AND OPERATING POSTURE ADJUSTMENT

#### MOUNTING/DISMOUNTING

#### CAUTION

- Mount or dismount the lift truck only after the lift truck comes to a complete stop.
  - Never jump on or off the lift truck. It is extremely dangerous.
  - Do not hold on the control levers or steering wheel when mounting or dismounting the lift truck.
  - Keep the handrails (assist grips) and step clean all the time, and repair the damage, if any.
  - Do not use the handrails (assist grips) for any other purpose than mounting or dismounting the lift truck.
- 
- Always mount and dismount the lift truck from the left side.
  - While mounting or dismounting the lift truck, always support yourself securely with your hands and feet at more than 3 locations; put your left foot on the step (2), grab the assist grip (1) with your left hand, and grab the backrest or hip support (3) of the seat with your right hand.



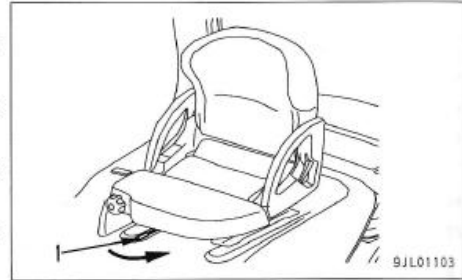
## SEAT POSITION ADJUSTMENT

**CAUTION**

- Adjust the seat position before getting on the lift truck, or at the time of operator change. (Adjust only when the lift truck is at a complete standstill.)
- Adjust the seat position so that you can fully depress the brake pedal while reclining yourself against the backrest.

## TYPE A

1. Park the lift truck. For details on parking, see "3.3.8 TEMPORARY STOPPING AND PARKING (PAGE 3-30)".
2. Take a seat and pull the lever (1) to the left. (The operator's seat can slide back and forth in this condition.)
3. Bring the operator's seat to the optimum position and release the lever (1). The seat is locked in this condition.
4. After adjusting the seat, check that it is firmly locked by pulling it forwards/backwards.



## TYPE B

1. Park the lift truck. For details on parking, see "3.3.8 TEMPORARY STOPPING AND PARKING (PAGE 3-30)".
2. Take a seat and pull up lever (1). This will allow movement of the seat forward or back.
3. Bring the operator's seat to the optimum position and release the lever (1). The seat is locked in this condition.
4. After adjusting the seat, check that it is firmly locked by pulling it forwards/backwards.



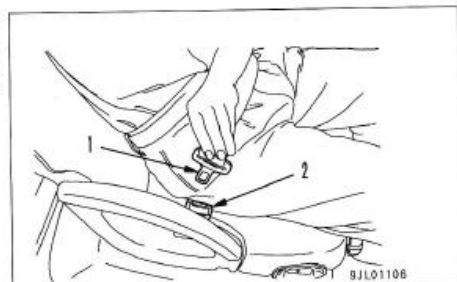
## FASTENING AND UNFASTENING THE SEAT BELT

**CAUTION**

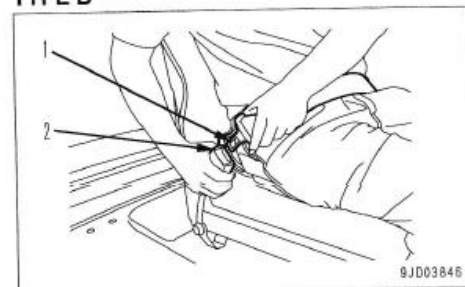
Always wear your seat belt during operations.

1. Pull the tongue (1) out of the belt holder located on the left side of the operator's seat and push it into the buckle (2) on the right until it clicks into place. The safety seat belt is locked in this condition.

## TYPE A



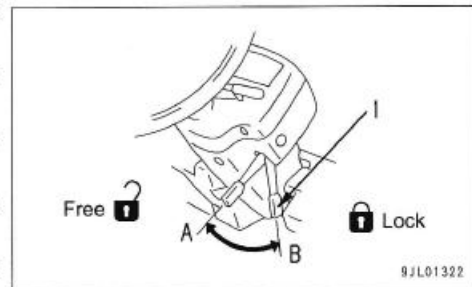
## TYPE B



**ADJUSTING STEERING WHEEL POSITION****CAUTION**

- Always stop the lift truck completely before adjusting the position of the steering wheel.
- After adjusting, move the steering wheel backward and forward to check that it is locked securely in position.

1. Park the lift truck. For details on parking, see "3.3.8 TEMPORARY STOPPING AND PARKING (PAGE 3-30)".
2. Pull up the tiltable steering wheel lock lever (1) to the position (A).
3. Move the steering wheel back and forth to select the optimum position.
4. Push down the tiltable steering wheel lock lever (1) to the position (B) to lock the steering wheel.
5. After adjusting the steering wheel, check that it is firmly locked by pushing and pulling it.



### 3.3.3 STARTING, GEAR SHIFTING, AND TRAVELING

#### STARTING ENGINE

#### ⚠ WARNING

Do not attempt to start the engine by short-circuiting the engine starting circuit. Such a malpractice can cause a serious bodily injury and fire.

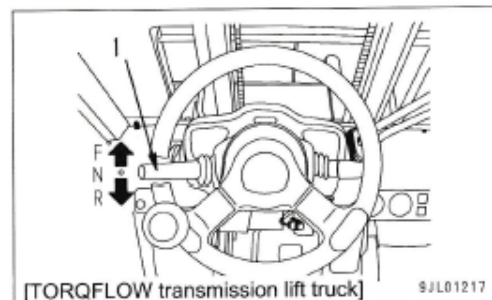
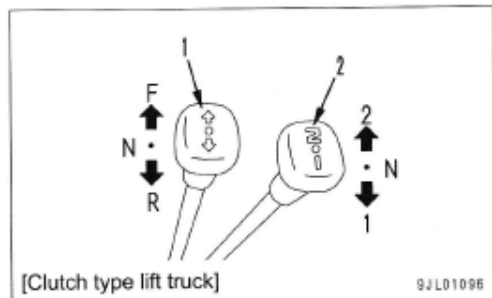
#### ⚠ CAUTION

- Start the engine only after sitting down in the operator's seat.
- Before starting the engine, move the forward/reverse lever and high/low speed lever (clutch type lift truck) to the neutral positions, and pull the parking brake lever in the direction to the rear of the lift truck.
- Exhaust gas is toxic. When starting engine indoor or in a poorly-ventilated site, take extreme care for ventilation.
- If you lean forward or sideways, or if you are not seated properly while operating the lift truck on an uphill, the system will cut off power to the engine and the lift truck may slither down, which can result in an accident or a crash. Maintain the correct right posture while traveling uphill.

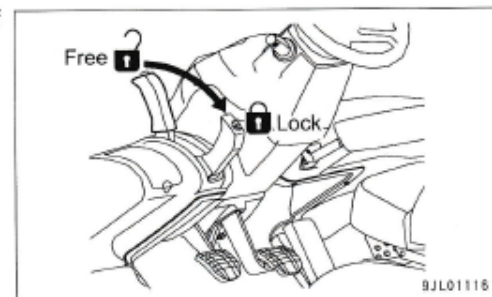
1. Move the forward/reverse lever and high/low speed lever to the N (neutral) positions.

#### REMARK

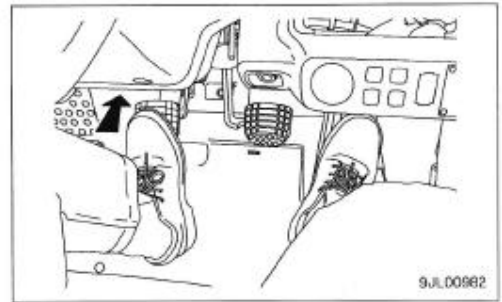
The engine does not start unless the forward/reverse lever is set in the N (neutral) position.



2. Apply parking brake by pulling the lever to the rear direction of the lift truck. (Parking brake being applied)



3. For the TORQFLOW transmission lift truck, depress the inching pedal.  
For the clutch type lift truck, fully depress the clutch pedal.



#### 4. Starting Switch Operation

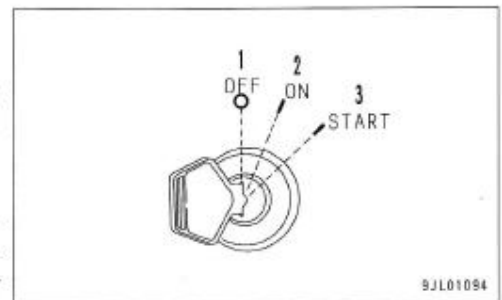
- Gasoline engine

Turn the starting switch key to the [ | ] (START) position (3) with the foot off the accelerator pedal. The engine will start up.

- Diesel engine

Turn the starting switch key to the [ | ] (ON) position (2). The glow indicator in the instrument panel lights up to indicate the engine preheating starts. The glow indicator goes off in 8 seconds (⊙ refer to preheat time), telling that preheating has been finished.

Turn the starting switch key to the [ | ] (START) position (3) with the accelerator pedal slightly depressed. The engine will start up.



#### ⊙Preheating time

The necessary preheating time varies depending on the ambient temperature and engine temperature. Use the followings as rough guide. If the engine is started while preheating, the preheating is terminated automatically.

- 12°C(53.6°F): Preheating not required
- 0°C(32°F) : Several seconds
- 20°C (-4°F) : 8 seconds

Starting the engine when ambient temperature is below -15°C (5°F)

When the ambient temperature is below -15°C (5°F), start the lift truck engine according to the following procedure.

- (1) Turn the starting switch key to [ | ] (START) position (3) and rotate the engine for a maximum of approximately 20 seconds.
- (2) If the engine does not start after approximately 20 seconds, return the starting switch to [ ○ ] (OFF) position (1). Wait for approximately one minute. Then, turn the starting switch key to [ | ] (START) position (3) again and rotate the engine for a maximum of approximately 20 seconds.
- (3) If the engine still does not start, return the starting switch to [ ○ ] (OFF) position (1). Again, wait for approximately one minute. Then, start the engine for the third time.

When the engine has started up, release the engine starting switch key immediately. The key will automatically return to the [ | ] (ON) position (2). Make sure the key is kept in this position while the engine is rotating.

#### 5. Warm-up the engine.

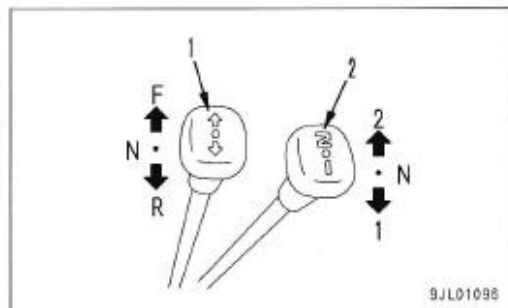
- Gasoline engine lift truck: The warming-up run is terminated automatically after the engine has warmed-up.
- Diesel engine lift truck : Release the accelerator pedal and continue with a warming-up run for a while.

## NOTICE

- The starting switch key must be at the [○] (OFF) position (1) while the engine is not running. Do not leave the starting switch key in the [ ] (ON) position (2). The battery capacity goes down, making it difficult to start up the engine.
  - Limit the use of the starting motor within 10 seconds and do not let it run continuously beyond 10 seconds. (\*)
  - Wait for another 20 seconds before using the starting motor again. (\*)
  - Do not turn the starting switch key to the [ ] (START) position (3) while the engine is running.
- \* : These rules do not apply to a diesel engine lift truck when ambient temperature is below -15°C (5°F).

## STARTING LIFT TRUCK OFF

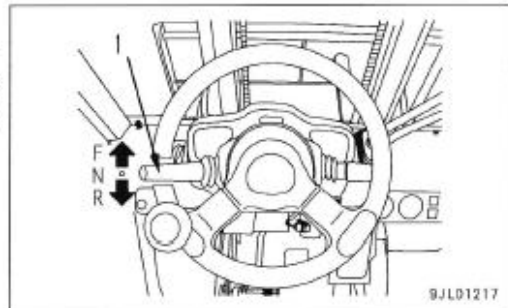
1. Carry out the following operations for each clutch type and TORQFLOW transmission lift truck.
  - Clutch type lift truck: Depress the clutch pedal fully, and move the forward/reverse lever (1) to the forward [↑] (F) or reverse [↓] (R) position and the high/low speed lever (2) to the [1] (Low) position.



## NOTICE

When operating the forward/reverse lever or high/low speed lever, be sure to fully depress the clutch pedal.

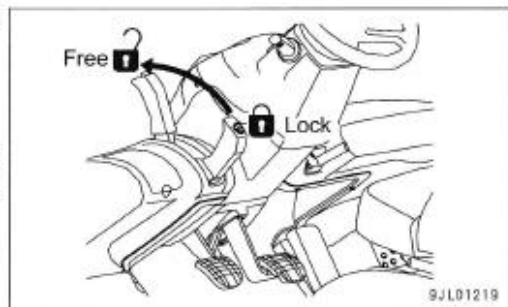
- TORQFLOW transmission lift truck : Depress the inching pedal and move the forward/reverse lever to either the forward [↑] (F) or reverse [↓] (R) position.



2. Return the parking brake lever in the direction of the front of the lift truck to the free position. (Parking brake being released)

## NOTICE

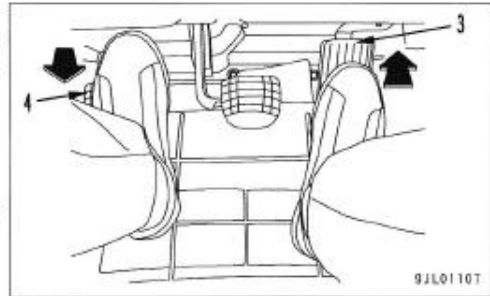
- If you travel the lift truck with the parking brake lever pulled in the direction to the rear of the lift truck, the brake will overheat and the braking effect may be lost. Also it accelerates wear on the brakes.
  - If you had traveled long distance with this condition, have your lift truck inspected by FORKLIFT distributor.
3. Check that the direction of travel and the area around the lift truck are safe.



4. The lift truck will start up, if you release the clutch pedal (4) or inching pedal (4) slowly while gently depressing the accelerator pedal (3). Take your foot off the clutch pedal (4) or inching pedal (4) once the lift truck starts to move.

**NOTICE**

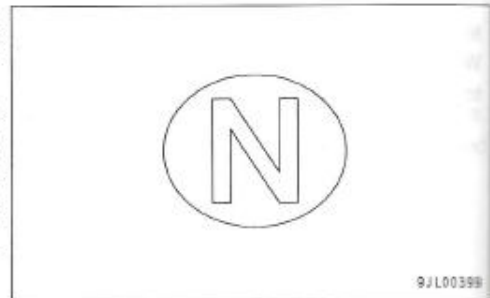
Do not rest the foot on the clutch pedal, inching pedal, or brake pedal except when so required.

**TRAVEL INTERLOCK (ENGINE POWER CUTOFF)**

- This safety device disables operation of the lift truck if you are seated in such a posture that your weight is not fully applied to the seat, like standing up or leaning forward or sideways. If you take such posture, the travel interlock activates in approx. three seconds and cuts off the transmission of engine power. Then the lift truck does not move any more even if you depress the accelerator pedal or operate the forward/reverse lever.



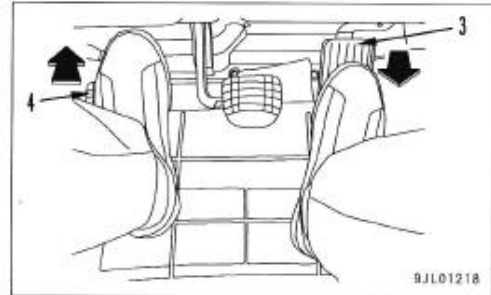
- While travel interlock is activated, the travel interlock warning lamp on the instrument panel flashes. (The lamp doubles as the neutral indicator lamp.)
- Return to travel condition: Seat yourself properly and return the forward/reverse lever to the N (neutral) position. Then the lift truck is ready for travel again. Take this step only after you check the surroundings for safety.
- This Traveling Interlock does not brake the lift truck forcibly.



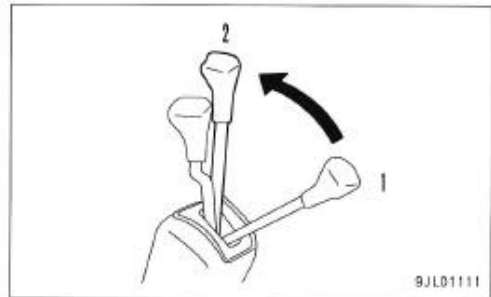


**SHIFTING GEAR (CLUTCH TYPE LIFT TRUCK ONLY)**

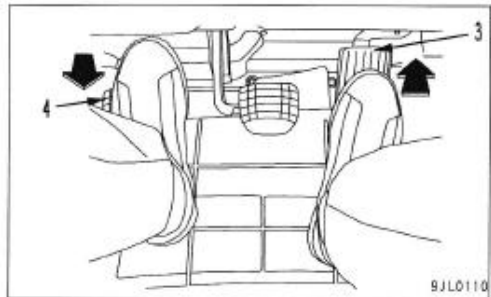
1. Release the accelerator pedal (3) and fully depress the clutch pedal (4) at the same time.



2. Move the high/low speed lever from [1] (Low) to [2] (High).

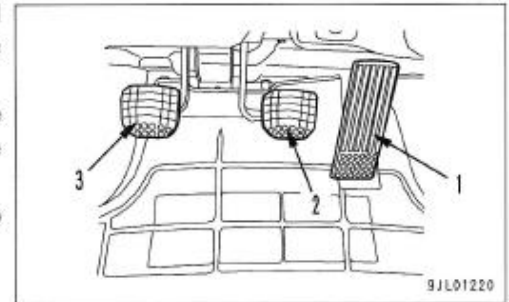


3. When the lever is set in position (the high gear meshes), gradually release the clutch pedal (4) while depressing the accelerator pedal (3).

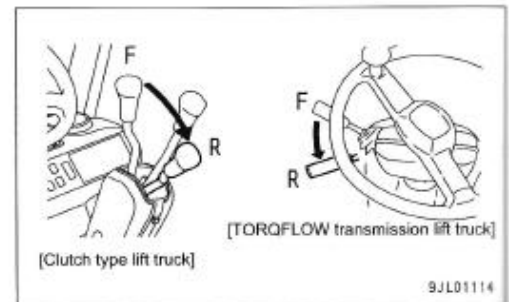


**SHIFTING DIRECTION**

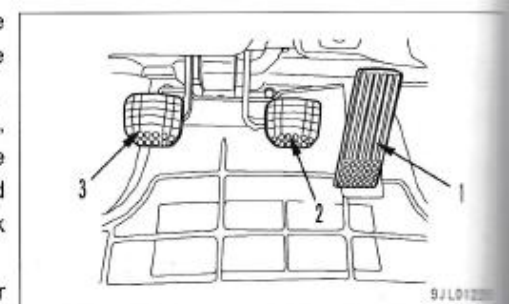
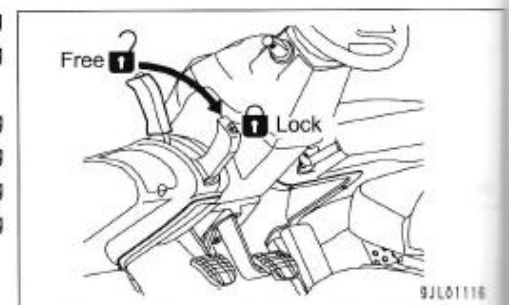
1. Release the accelerator pedal (1), depress the brake pedal (2), then fully depress the clutch pedal (3) immediately before the lift truck stops.
2. After the lift truck stops completely, move the forward/reverse lever from the forward [↑] (F) to reverse [↓] (R) position or vice versa.  
For the clutch type lift truck, move the high/low speed lever to the [1] (Low).

**NOTICE**

Shift the direction only after the lift truck stops completely.

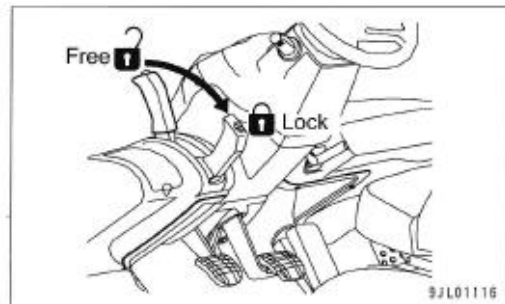
**3.3.4 STARTING AND STOPPING ON SLOPE**

1. When starting off the lift truck on an upslope, pull the parking brake lever in the direction to the rear of the truck. (Parking brake activated)
2. While gradually depressing accelerator pedal (1) (releasing the clutch pedal (3) in case of a clutch type), return the parking brake lever to the forward direction of the truck slowly, allowing the lift truck to climb up the slope. (Parking brake being released)
3. When the lift truck has gained some speed, release the parking brake lever completely. Climbing speed can be controlled by the amount of accelerator pedal (1) depressed.
4. When slowing down or stopping the lift truck on an upslope, release the accelerator pedal (1) gradually (depressing the clutch pedal (3) simultaneously in case of a clutch type) and depress the brake pedal (2) immediately before the lift truck stops.
5. After the lift truck stops completely, pull the parking brake lever to the rear direction of the lift truck. (Parking brake activated)



**FOLLOW THE STEPS FOR PARKING**

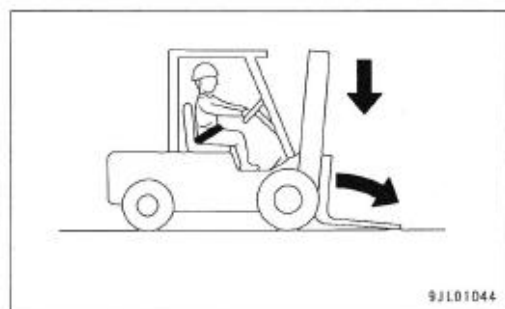
1. Stop the lift truck on level ground.
2. Pull the parking brake lever to the rear direction of the lift truck. (Parking brake activated)
3. Set the forward/reverse lever and high/low speed lever to N (neutral).



4. Tilt the mast forward and lower the forks to the floor.
5. Turn the starting switch key to the [O] (OFF) position.
6. Pull out the starting switch key and leave the lift truck.

**REMARK**

If you leave the lift truck without pulling the parking brake lever in the direction to the rear of the lift truck, an alarm buzzer will sound.



### 3.3.9 LOAD HANDLING OPERATION

#### FORK SPREAD ADJUSTMENT

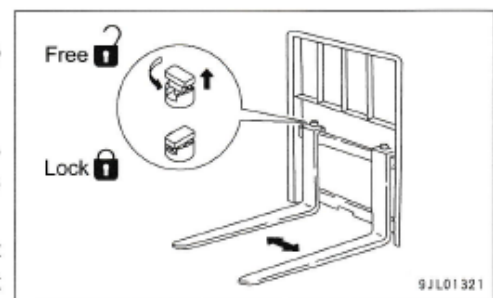
Before carrying out load handling, always adjust the space between the forks to fit the size of the pallets and loads.

#### CAUTION

Take extreme care not to get hands or fingers caught while fork spread adjustment.

1. Move the lift truck in front of the load, and stop.
2. Position the mast vertically and raise the forks 10 cm (4 in) above the ground.
3. Tilt the mast forward.
4. Pull up the knob of the fork stopper and turn it 90 degrees to the Free position. (In this condition, the forks can be moved to the left or right.)
5. Adjust the fork spread corresponding to the load size so that the load center of gravity coincides with the center of the lift truck.
6. Set the mast vertical, turn the fork stopper 90 degrees and lower the knob to the Lock position. (In this condition, the forks are locked in position.)
7. After fork spread adjustment, check that the forks are secured with the fork stopper.

If forks are not secured, there is the danger that the forks freely move sideways to let the load fall, while the lift truck is traveling.



**LIFT INTERLOCK**

- If you operate the lift truck in such a posture that your weight is not fully applied to the seat, like standing up or leaning forward or sideways, the Load Handling Interlock activates in approx. three seconds. Then each motion of the fork and mast is locked and none of them moves any more even if you operate the lift control lever or the tilt control lever.



9JL00833

- While lift Interlock is in operation, the lift interlock warning lamp on the instrument panel flashes. (See the figure at right.)
- Return to operation condition : When you seat yourself properly on the operator's seat, the lift truck is ready for load handling operation again. Start the load handling operation again only after you check the surroundings for safety.



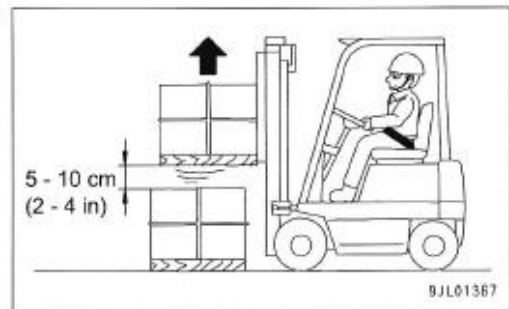
9JL00820

**PICKING UP**

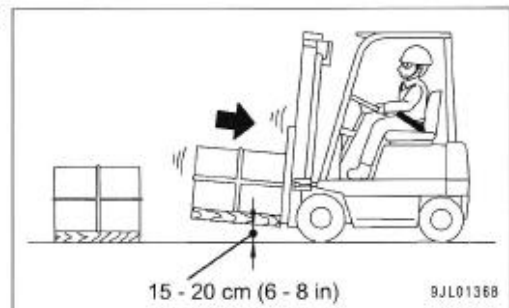
1. Insert the fork up to the bottom.
2. If the fork cannot be inserted up to the bottom at one go, drive the lift truck forward until the fork is inserted into a pallet by 2/3 to 3/4 of the fork length and lift the load by 5 - 10 cm (2 - 4 in).

Then drive the lift truck backward by 10 - 20 cm (4 - 8 in), lower the load once and then drive the lift truck once again until the fork is inserted up to the bottom.

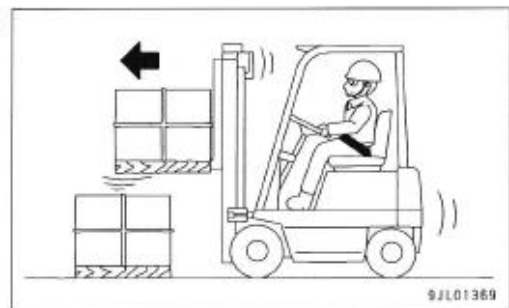
3. Raise the load 5 - 10 cm (2 - 4 in) and reverse the lift truck to a position where the load can be lowered.



4. Lower the load to the height of 15 - 20 cm (6 - 8 in) above the ground and tilt the mast back.

**STACKING**

1. Stand the mast vertically and lift forks 5 - 10 cm (2 - 4 in) past the stacking position. Advance the lift truck slowly.
2. Lower the load once to the desired place.
3. Pull the fork out of the pallet.



### 3.3.10 CHECKING AFTER OPERATION

After all the above procedures have been finished and each part of the lift truck is cleaned, and before it is stored, carry out the following inspections.

1. Leakage of fuel, water, and battery electrolyte.
2. Cracks or damage.
3. Check faults found during operation and report them to the administrator. Be sure to place a sign or other notice identifying "Do Not Use". (if necessary)
4. Lubricate the units (if necessary)

For the procedure during cold weather, procedure with overheated engine, long-term storage, and loading and unloading of lift truck, refer to the followings:

- For the procedure during cold weather, see "4.6 RUNNING IN COLD WEATHER (PAGE 4-39)".
- For the procedure with overheated engine, see "4.7 ACTION IN ENGINE OVERHEATING (PAGE 4-41)".
- For the long-term storage, see "4.11 LONG-TERM STORAGE (PAGE 4-45)".
- For the loading and unloading of lift truck, see "4.13 LOADING AND UNLOADING OF LIFT TRUCK (PAGE 4-47)".