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**Brief Introduction**

This Manual shall be kept and repeatedly read by operators.

· The items of this Operating Manual include Correct Selection, Simple Maintenance, and Routine Examinations.

· Please read this Manual carefully, prior to operation, for proper driving and maintenance to ensure safety and effective material conveyance.

· Discrepancy may exist between the items of this Manual and the actual situation, for product improvement.

· Please lease or transfer this Manual together with the truck if the forklift truck is leased or transferred.

· Please contact the Sales Department of our Company if you are confronted with any issue.

Instructions for symbols with ⚠ or ☞ are very important to your and others' safety, and please follow this instructions.

| | |
|---|---|
| ⚠ Danger | Indicating forthcoming dangerous situation, and it will result in death or severe injury if it is not avoided, while you must follow this instruction. |
| ⚠ Warning | Indicating potential dangerous situation, and it will result in death or severe injury if it is not avoided, while you must follow this instruction. |
| ⚠ Attention | Indicating potential dangerous situation, and it may possibly result in slight or moderate injury if it is not avoided, while you must follow this instruction. |
| ☞ Note | Sentences related directly or indirectly to personal safety and forklift truck maintenance |

## I Safety

Safety is your undertaking and liability. This chapter has mainly introduced the basic safety rules and warnings during normal use of the typical forklift truck. However these are applicable to the vehicles of special specifications with masts and attachments

### 1. Applications of Forklift Truck

(1) Main Applications of Forklift Truck

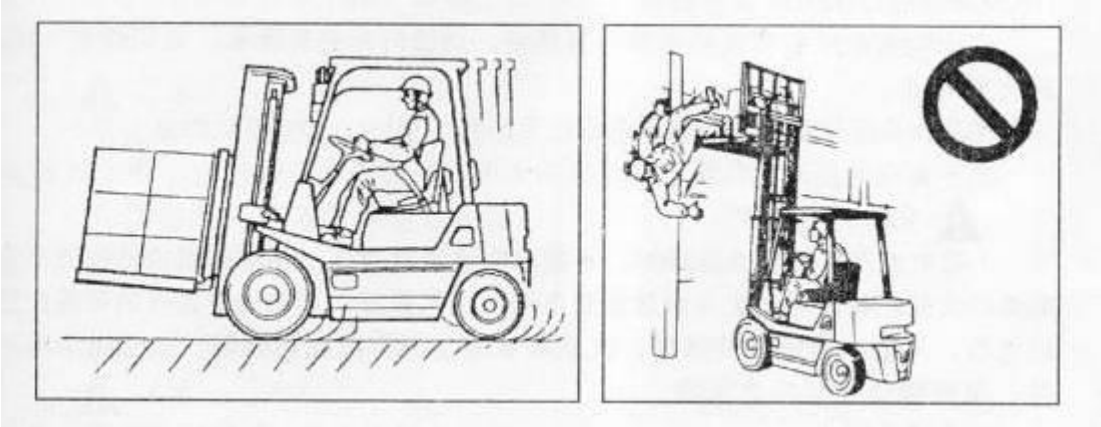
The main application of forklift truck is to convey the cargo on pallet, and is able to stack it on a certain height. In addition, after proper attachments are fitted with the forklift truck, it is also able to convey and stack cargos not placed on pallets.

(2) Prohibited for Use beyond the Applications

Application beyond applications means running after someone is carried, lifting someone to a very high altitude, or traction of other vehicles, etc. The application methods forbidden in this manual shall be absolutely prohibited nor allowed for use.

Demonstrations for Use beyond Applications:

- Someone standing on fork and pallet.
- Someone standing on pallet to press against cargo.
- Hanging steel wire directly on fork and going up to lift cargo.
- Traction of other vehicles.
- Pushing cargo or other vehicles using fork.
- Opening/closing doors of other trucks using fork.



### 2. Operating Sites and Working Environments of Forklift Truck

(1) Ground Status

The operating sites of forklift truck should be flat and firm pavement or ground, and the ventilation condition is good.

The performance of forklift truck depends on the ground status, the running speed shall be properly adjusted, and special care shall be taken during running on inclined roads or rough pavements.

⚠ Warning

**· It shall be ensured for the trucks running on muddy roads are able to stop in time.**

**· Keep away from stones and stumps, and run slowly at a decelerated speed when they are unavoidable. Pay attention not to damage the chassis of truck.**

Anti-skid chain shall be used during running on icy and snowy pavements, rush acceleration, rush parking, and rush turning shall be avoided, and the running speed shall be controlled through accelerator Pedal force.

⚠ Warning

· The driving force of forklift truck may be increased, after anti-skid chain is fitted, but the side skidding performance is reduced, for which special attention shall be aroused.

(2) Climatic Conditions

⚠ Warning

· Under the situation when wind power is very strong, try as much as possible to avoid high lifting actions of mast, to avoid drop of cargo, which may cause accident injury to driver.

(3) Measures for Coping with Coldness and Torridity

a) Oils

Use oils adaptive to ambient temperature.

In a cold climate, the fuel tank shall be always full of fuel. In this way, the air amount in the fuel tank can be reduced to the minimum extent, and the icing phenomenon caused by moisture condensation can also be eliminated to avoid the evil consequence of the hard start of the fuel system caused by rust.

Hydraulic Oils: L-HM32 (≥-19℃) is now used, and L-HV32 (≥-33℃) is optional in highly cold regions.

Heavy Duty Truck Gear Oils: GL-5 85W/90(-15~49℃) is now used, and GL-5 80W/90 is optional in highly cold regions.

b) Battery

· The Freezing season

Under normal charging condition, the electrolyte freezing point is about -35℃.

Keep the battery charged in good condition. The battery shell may be damaged by electrolyte solidification, so the charging capacity should reach at least 75% of the total capacity in order to prevent the solidification.

The most effective way is to keep the specific gravity at 1.260, but not higher than this value.

• In the hot season

The electrolyte water can be easily evaporated in the hot season, so please add distilled water at any moment. Check it once a week and add distilled water.

When the ambient room temperature is high, the battery specific gravity shall be dropped to 1.220 ± 0.01.

The battery has a higher efficiency at high temperature, so no other maintenance is needed.

⚠ Danger:

· Gas generated by battery may possible explode when confronted with fire. Don’t smoke or use open fire nearby, especially during charge, and don’t generate electric arc and sparks nearby battery. It shall be well ventilated when battery is stored in a closed space or is being charged. The sulfuric acid contained in battery may cause burning. Don’t splash sulfuric acid to eyes, skin, and clothes. If sulfuric acid is contacted, flush immediately using clear water, and shall go to hospital when sulfuric acid is splashed into eye.

c) Cooling System

The cooling system of the forklift truck is equipped with 50% volume of long life antifreeze with the freezing point of -35℃.

To keep good cooling performance in hot climate, more attention should be paid to the water tank and cooling system. The truck should be parked in the shade.

If radiating fins in water tank have been blocked, overheating may occur. In this case, it is necessary to clean

them with compressed air and check whether the water tank is leaking. Check whether the fan belt is loose, if so, adjust to the specified tension.

Even if the engine is overheated and the coolant (water) is boiling, it is necessary to let the engine rotate with idle speed for few moments to lower temperature before shutting the engine off. Because the coolant is mixed with long life antifreeze, it is not allowed to add water immediately but open the engine hood to lower the temperature of the engine with the help of nature air.

(4)Working Environment

When temperature is at -15℃～40℃, humidity is 50～70%, and the height above sea level is ≤1800m, this forklift truck is able for normal work.

Under special working environments, this forklift truck may possibly be unable to be used at standard specification. Make sure to consult with and inquire from our Company, if the forklift truck may possibly be used under following environments.

· Harbor or seashore areas with danger of salt corrosion.

· Chemical factories where forklift truck may possibly affected by acid liquids of other chemical medicines.

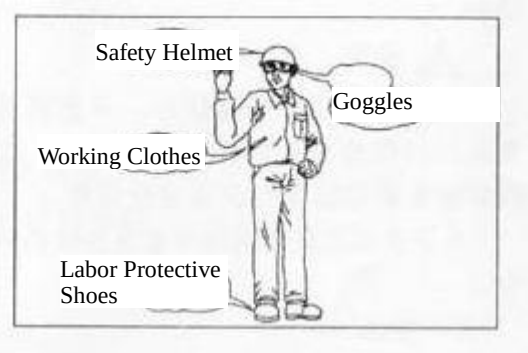
· Environments where danger for initiation of explosion may possibly exist for dust or explosive gases.

· Cold or torrid regions, or high-altitude regions.

· Environment where certain amount of harmful substance is discharged.

· Do not operate and use forklift truck unwillingly under atrocious climatic conditions such as simultaneous occurrence of lightning storm or strong wind, etc, and the forklift truck can only be operated and used after visibility has turned good waiting for fog to clear away as in another instance during the happening of dense fog.

• When the forklift truck is used indoors, the exhaust (carbon monoxide) can be dangerous. Therefore, when the operation must be used indoors, be sure to open the windows so that adequate ventilation can be obtained.




**3. Safety Issues before Use**

(1) Acquirement of Operating Qualification

⚠ Attention

· Only those operators who have been trained and approved can be allowed to operate forklift truck.

· The properties of brake, accelerator, and hydraulic control handle for each forklift truck with same technical parameters may not be the same completely. Carefully read this Manual and the label plates on the truck, and get familiar with respective operating items, before driving the forklift truck.

(2) Dress During Driving Forklift Truck

⚠ Attention

· Please put on work clothes, labor protective shoes, and wear safety helmet when truck is driven.

· Please don’t wear loose clothes, for the sake of safety, to avoid being caught up on leading to unexpected danger.

(3)Driving Forklift Truck after Alcoholic Drinks Strictly Prohibited

⚠ Attention

· Please don’t drive the forklift truck when you feel tired, and not concentrated, or after taking anesthetic or drunk alcoholic.

(4)Safety of Working Site

⚠ Attention

· Before operation and use of forklift truck is begun, water, oil, sand, ice, or snow, and other conditions leading to slippery must be removed first, as such pavements may very possibly result in driver’s loss of control over forklift truck.

· Don’t allow forklift truck to run on rugged pavements or pavements with tracks as well as pits and ditches, or on the pavements with sharp protrusions, as all such pavements may possibly injure the forklift truck or give rise to danger for turnover of forklift truck. Forklift truck must run on smooth pavements, to avoid danger occurrence.

· If the noise of working environment is too high, it will disturb the driver and for driver to get tired very easily. Danger may also happen for pedestrians as they have no way to notice the cautious sounds of forklift truck. On this account, driver must pay doubled attention to the surrounding safety when forklift truck is used under noisy environment.

· Sufficient light source must be available on working sites, for the need of safety.

· During operation on platform or gangway board at dock, tipping danger exists with forklift truck. Please use cushion blocks or take other protective measures to prevent turnover.

(5) Keeping the Driver’s Cab Clean

⚠ Attention

· The driving cab shall always be kept clean.

· Please don’t operate forklift truck, when hand is wet and skidding or is oil stained.

· Don’t put tools or other metal objects in driving cab, which may hinder the actions of control rod or pedal.

(6)Integrity of Forklift Truck

⚠ Attention

· Overhead guard and backrest shall be equipped when forklift truck is delivered from factory.


☞ Notes:

· Overhead guard is used for protection against drop of objects. What’s worth attention is the overhead guard is used for protection against impaction of dropped small objects and cabinets, but cannot hold up the dropping impaction of rated loads.

Protective measures for falling objects shall be taken beforehand.

⚠ Warning

· Without the approval in writing of our Company, it is not allowed to refit or add any operating devices to forklift truck, and otherwise it may possibly affect the rated load or safe operation.

· Avoid installing any parts that may block off the driver’s sight line.

(7)Regular Maintenance

⚠ Attention

· Performing daily examination and repair as well as regular examination and repair

⚠ Warning

· When forklift truck is found to be damaged or present with failure, stop operation and timely notify the maintainers about the status of forklift truck. The forklift truck cannot be operated before it has been thoroughly examined and repaired.

(8)Avoiding Fire Hazard

⚠ Attention

· In order to prevent the occurrence of fire hazard, accident, or other unpredictable state of affairs, set the fire extinguishers properly, and operate the fire extinguishers according to their application requirements.

(9)Overloading Prohibited

⚠ Attention

· Avoid overloading, observe the allowable load and load curve of forklift truck, and allow the center of gravity for the cargo to be located in the place of load center.

☞ Note

· Allowable load means the maximum load of cargo placed in the area of fork load center.

(10)Using Proper Pallet

⚠ Attention

· Use pallet with both proper size and strength to bear the weight of cargo.

· Ensure that the cargo is fixed on pallet, and has proper shape.

· It is prohibited to convey cargo without pallet.

**4. Safety Issues before Use and during Operation**

(1)Notices during Initial Startup

⚠ Attention

· Pull up hand brake.

- Shift gear and place the operating handle in neutral gear
- Step on the clutch pedal or brake pedal

· Adjust seat, to facilitate hand/foot control.

· Ensure that there is no person on, under, in front of, or behind the forklift truck.

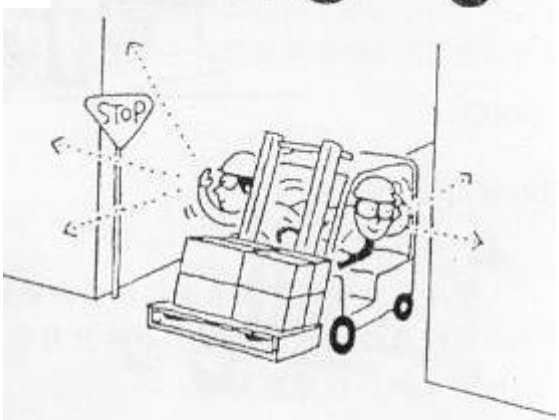
(2)Safety Status around Forklift Truck

⚠ Attention

· When bulky cargo is carried, and when sight line is not satisfactory, please reverse running or be guided by others.

· During reverse Running, it is required to face the rear area, and run after direct confirmation of the rear area. Rearview mirror and reversing buzzer are the auxiliary devices.

· Person shall be available for guide when forklift truck is driven in a narrow passage.




· Driver shall park the truck at the crossroad or other places where line of sight is blocked off, and the truck is to be re-driven when it has been confirmed that there is no person on left or right.

· Ensure that there is enough safety distance between forklift truck and roadside or the edge of platform, to prevent fall-off of forklift truck.

· Forklift truck is different from automobile, as it is steering with rear wheels. Decelerate running speed, when turning place is approached, and then turn steering wheel for the rear part of forklift truck to turn.

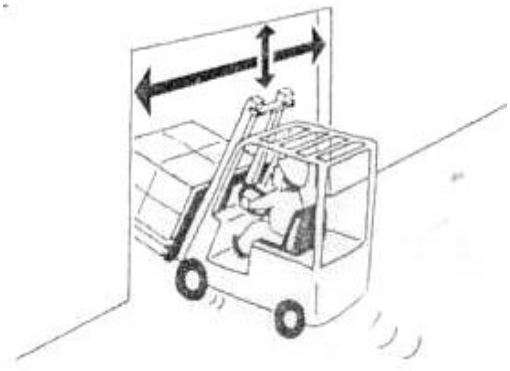

(3)Aggressive Driving Prohibited

⚠ Attention

· Avoid turning on key switch, under the situation of pushing down accelerator pedal.

· Avoid sudden start, brake, or turning. Sudden start or brake may give rise to fall-off of cargo, while sudden turning may lead to turnover of forklift truck and result in severe accident.


· Operate the control handle in both cases, no matter it is under full load or empty load status. When fork is at high position, it may cause danger for fall-off of cargo or turnover of forklift truck.



☞ Notes

· Avoid running over the baffle or obstacle dropped to pieces on ground

· Decelerate running speed and hoot, when passing other forklift trucks.

· Avoid running into soft ground.

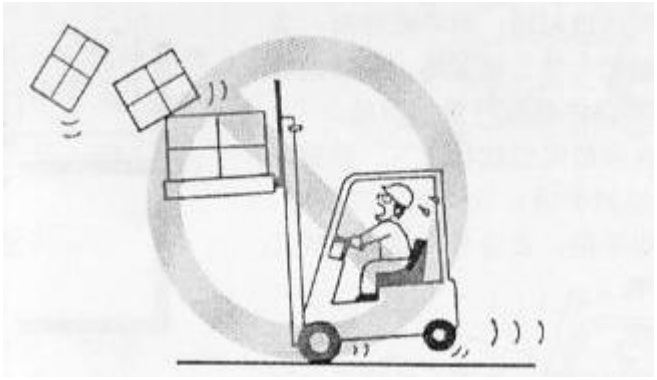
· Please decelerate running speed, when running on damp, slippery, unsmooth, or inclined pavements.

· Ensure that there is certain clearance between mast and roof as well as access door.


(4)Driving during Rise of Fork Prohibited

⚠ Attention

· Avoid driving forklift truck when fork is rising, and otherwise it may cause unstable status and possibly result in turnover of forklift truck.



(5)Work with Fork Prohibited

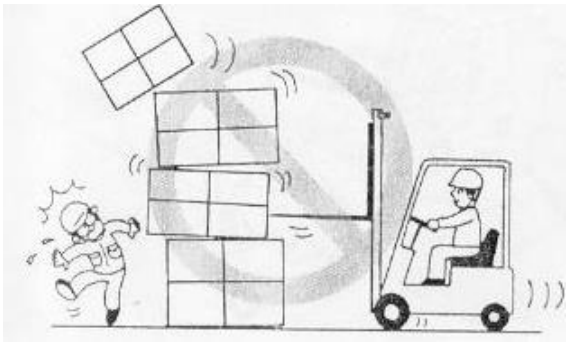
⚠ Attention

· Avoid squeezing and pushing cargo or lifting cargo using fork tip, and it may cause jitter of forklift truck or cargo, when fork tip is used for lifting cargo.

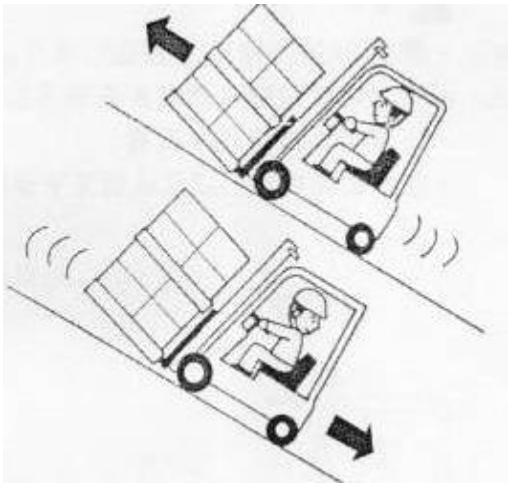
(6)Push/Pull Operation Prohibited

⚠ Attention

· It is not allowed to push/pull cargo using forklift truck, and otherwise cargo may possibly be damaged or fall off.



(7)Driving on Ramp



⚠ Attention

· Following rules shall be observed when forklift truck is driven on a ramp.

With Load: Forward running during upgrade, while backward running during downgrade

No Load: Backward running during upgrade, while forward running during downgrade

· Run the forklift truck with brake during downgrade, and ensure that the fork and the ground do not bump into each other.

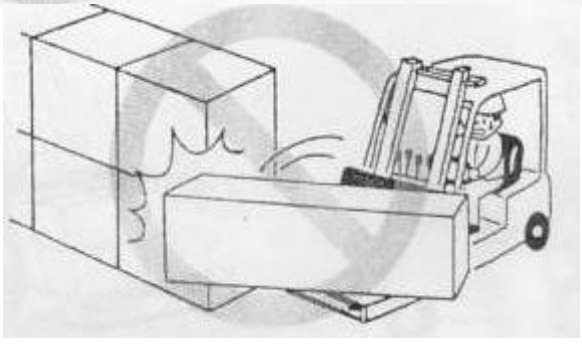
· Avoid steering or loading-unloading operation on a ramp, and otherwise there is danger for forklift truck to turn over.

(8)Offset Load Stacking Prohibited

⚠ Attention

· It must be ensured that cargos are arranged and placed safe and steady during stacking using forklift truck, while fork shall be accurately inserted into pallet, and at the same time the center of gravity for the cargo and the center of forklift truck shall be maintained consistent.

· When offset loaded cargo is conveyed, it is liable for cargo to fall off, and forklift truck to turn over.



(9)Anyone on/under Forklift Truck Prohibited

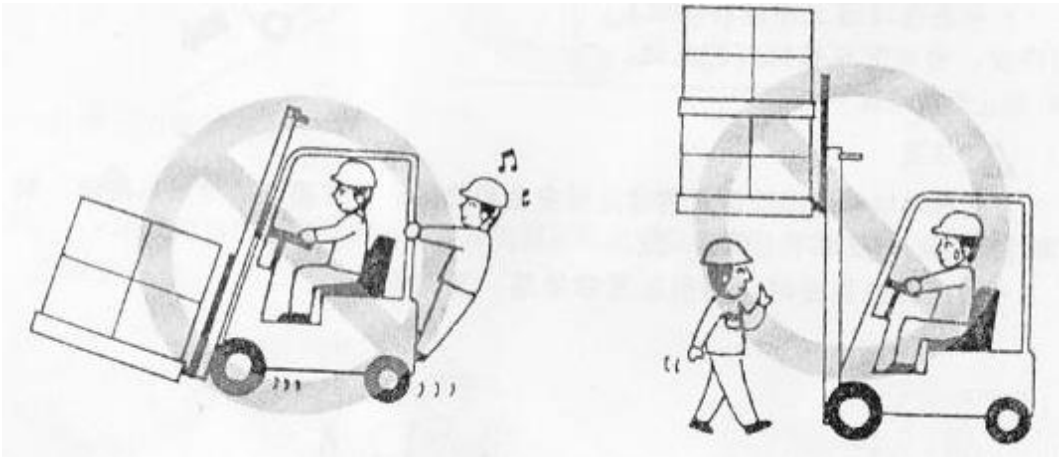
⚠ Warning

· It is strictly prohibited to carry anyone on fork or pallet.

· It is not allowed for anyone to take the forklift truck except driver.

· Avoid using anyone to replace counter weight.

· It is prohibited for anyone to stand on cargo and pass under the fork.



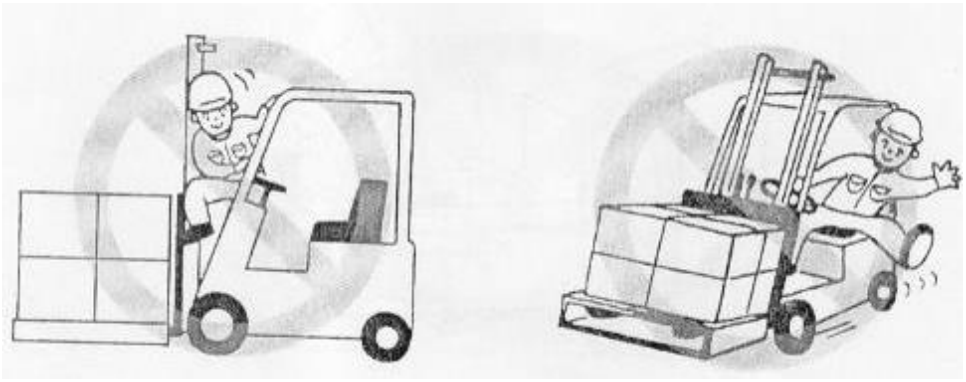
(10)Entry into Mast Mechanism Prohibited

⚠ Warning

· It is prohibited for any part of human body to enter into between the mast mechanism and the truck body.

⚠ Attention

· Please place your body under the overhead guard, and it is not allowed to stretch any part of your body outside the truck body.



(11)Rise of Fork Prohibited, during Forward Tilt of Mast

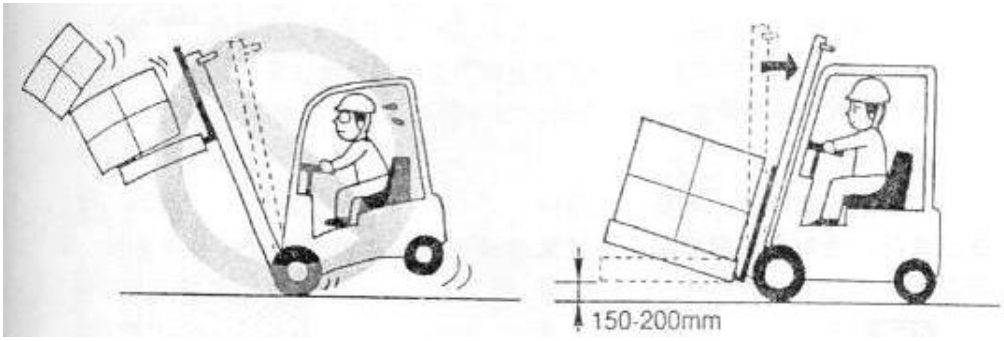
⚠ Attention

· During forward tilt of mast, it is not allowed to lift cargo or start forklift truck, and the mast shall be back tilted to place when cargo is lifted or forklift truck is started, to stabilize cargo. During running (with load or without load), the distance between the fork and the ground shall be maintained at 150-200mm.

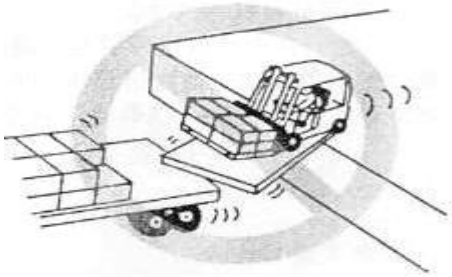
· It is not allowed for mast to tilt forward, under the status when cargo is being forked**.**

· The forklift truck shall be stopped first when cargo is to be lifted.

· Avoid loading-unloading cargo, when forklift truck is under the tilted status.




(12)Into-Carriage Operation



⚠ Attention

· Loading-unloading operation can only be performed on cargo deck with trailer properly fixed for forklift truck.

· Fix bridge piece properly and examine its strength, prior to start of operation.

· Decelerate the truck during access into the carriage, and pay attention to the safety of bridge piece.

(13)Getting on/off Forklift Truck

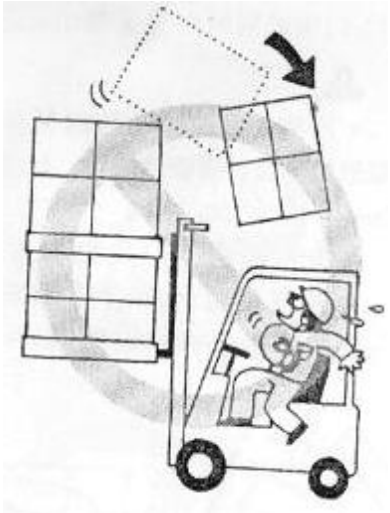
⚠ Attention

· It is prohibited to jump on/off the forklift truck.

· Hold the handle with hand, and step the foot on pedal, when getting on/off the forklift truck.

· It is not allowed to hold steering wheel or operating rod, when getting on/off the forklift truck.

(14)Cargo Superelevation Prohibited



⚠ Attention

· Cargo shall be placed against the backrest. The height of cargo cannot exceed the backrest, and otherwise it is liable to cause cargo to slide towards the direction of operator, while driver may possibly be bruised by cargo.

· The superposed stacked cargo shall be properly fixed using rope before conveyance, to prevent collapse.

(15)Anti-loosening of Chain

⚠ Attention

· When chain is loose, avoid extracting the fork from inside the pallet, and otherwise it may cause fall-off of cargo or turnover of forklift truck.

☞ Notes

· When chain is loose, pull a little bit the lifting handle upward, for fork to rise, so as to correct the loose status of chain.

· When value of change in chain pitch exceeds the standard value by 2%, the chain must be replaced, to ensure the load-bearing safety.

(16)Fork Adjustment

⚠ Attention

· Adjust the spacing of fork to the most proper position, according to the size of pallet for loading cargo. Pay attention not to push down to hand, during adjustment.

· After for spacing adjustment is completed, fix the fork using fork fixed pin. If it is not fixed, it is liable to move during running process, cargo may possibly fall off, and may also possibly squeeze the cargo into pieces.

(17)Conveyance of Superwidth Cargo

⚠ Attention

· Pay special attention to driving, when superlength and superwidth cargo is conveyed.

· Slow down during both steering and lifting cargo, to avoid cargo movement, and at the same time pay attention to surrounding safety.

· When superwidth cargo is .conveyed, it is required for forklift truck to be equipped with proper widened fork carriage and lengthened fork. Its load-bearing capacity shall be within the specified center of load, and its load-bearing capacity is the same as that of the standard fork carriage, but the center of cargo shall be superposed as much as possible with the center of forklift truck, with offset to be controlled within 100mm from the center of 1-4t forklift truck, and within 150mm with offset from the center of 5-10t forklift truck. Its load-bearing capacity is the same as that of the standard fork, and once the center of load moves forward, make sure for load reduction.

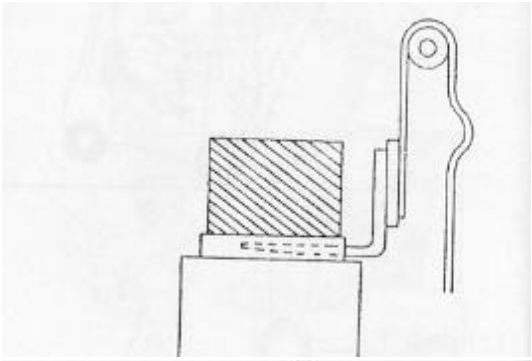
(18)Bare-handed Unloading Prohibited

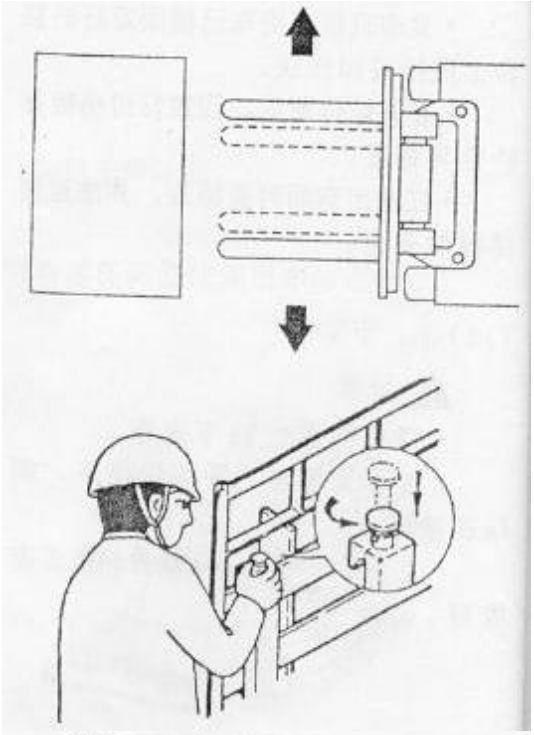
⚠ Attention

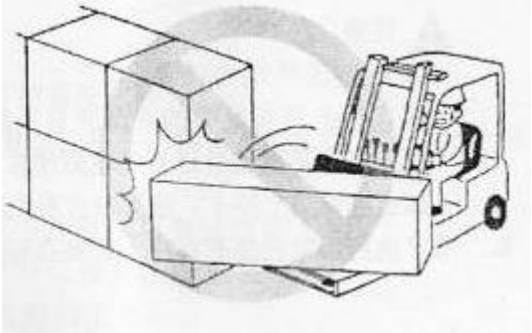
· Don’t unload cargo using hand, as falling danger exists with cargo.

(19)Parking of Failure Truck

☞ Notes







· If forklift truck is parked at roadside, caution or “Failure” shall be marked on the truck, and the key shall be pulled off.

· If fork cannot be dropped for failure, a rather obvious mark shall be made in this place, to prevent bumping into other vehicles and pedestrians.

(20)Notices after Work Completion and Departure from Forklift Truck

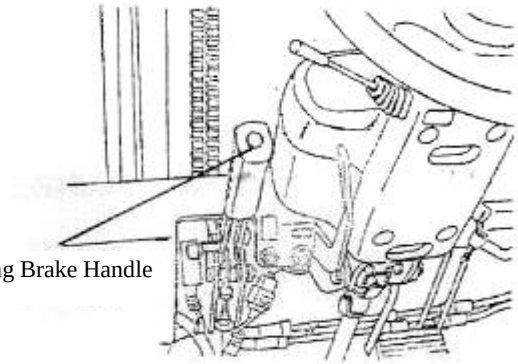
☞ Notes

· Mast shall tilt forward slightly, while fork shall be dropped naturally, and otherwise, danger for stumbling and injuring other’s human body may exist.

· Place the direction hand on neutral position.

· Pull up the parking brake handle.

· Turn off the key switch and take off the key.



Parking Brake Handle

(21)Parking

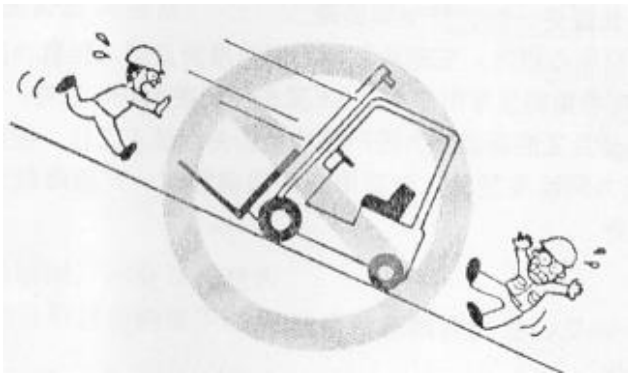
⚠ Attention

· Please park the forklift truck in the designated place.

· Enough strength must be available in the parking place and it will not hinder traffic safety.

· It is prohibited to park in or nearby the place of inflammables.

· It is prohibited to park on a slope, as unpredictable movement may occur with forklift truck. If it has to be parked on a ramp, stopping blocks shall be added in the places of tyres to prevent movement of forklift truck.



(22)Noise

The maximum noise value outside the forklift truck shall not be larger than 89dB (A), and the measurement method is to be executed according to JB/T3300 Standard. Measure the noise with sound pressure level in the place of driver, and measure the noise with sound power level around.

⚠ Attention

· Noise value may increase, in both cases when working pavement is rough or rugged, and distortion of tyre is large.

**5. Safety Issues during Service and Maintenance**

(1)Sites for Maintenance and Service

⚠ Attention

· They shall be the designated sites and able to provide the service office with enough equipment and safety protective facilities.

· This site shall be a level ground.

· This site shall be well ventilated.

· This site shall be provided with fire extinguishing devices.

(2)Notices before Maintenance and Service

⚠ Attention

· No smoking

· Wearing various protective appliances (safety helmet, shoes, goggles, gloves, and boots) and suitable clothes

· Wiping off the effluent oil timely

· It is required to firstly clean up the original dirty oil and dust on the joints using brush or cloth, and then to add lubricating oil, when lube is added.

· It is required to turn off the key switch and pull off the battery plug, except for the needs in some cases.

· It is required to drop the fork to ground, when the forklift truck is maintained and serviced.

· Use compressed air to clean electrical components, and it is not allowed to use bottled gas or steam.

(3)Notices for Maintenance and Service

⚠ Attention

· It is required to take care not to place the foot under the fork, and not to be stumbled by the fork.

· It is required to fill up cushion blocks and other objects under the inside mast, when fork is raised, to avoid sudden drop of the fork and the mast.

· It is required to carefully open and close the front bottom plate and the battery container cover plate, to avoid finger extrusion.

· It is required to make a mark to facilitate later continued work, when it cannot be completed for a single time.

· Avoid maintenance work before the internal pressure of oil circuit is dropped, as very high pressure exists in hydraulic circuit.

· It is required to see doctor for diagnosis and treatment immediately, when anyone is injured by HP electricity.

· Don’t use the mast assembly as a ladder.

· It is strictly prohibited to put your hand, foot, and body in between the truck frame and the mast.

· When maintenance and service are performed during heat engine, please pay attention that the temperature of transmission device or hydraulic system is possibly rather high. On this account, the truck shall be cooled down prior to maintenance and service, to prevent accidental scald.

(4)Examination and Replacement of Tyre

⚠ Attention

· Tyre shall be disassembled and assembled by the service office designated by our Company.

· It is required for professionals to convey the HP air.

· It is required to wear safety goggles, when compressed air is used.

· Don’t loosen the bolts and nuts in the connecting place of wheel rim, when tyre is disassembled, as HP gas is available inside the tyre, and loosening of bolt, nut, and rim may give rise to very dangerous situation.

(5)Use of Jack (during Tyre Replacement)

⚠ Warning

· It is not allowed for human body to get into under the forklift truck, when jack is used to jack up the truck.

⚠ Attention

· It shall be ensured that there is no body and no load either on the forklift truck, when jack is used to jack up the truck.

· It is required to stop using jack, when wheels of forklift truck are off ground, and fill up the cushion blocks under the truck, to avoid drop of the forklift truck.

· Actions shall be taken not to allow forklift truck to slide, before jack is used to jack up the truck.

(6)Requirements for Discharge of Wastes (Electrolyte Waste Liquid, and Oil, etc)

⚠ Attention

· The waste liquids on the forklift truck shall be recovered according to the stipulations of local government, and it is not allowed to discharge them at discretion.

**6. Safety Issues for Use of Battery**

(1)No Smoking

⚠ Attention

· The battery will separate out hydrogen during the process of charge and application, and it may possible cause explosion and fire hazard, when electric sparks and lighted cigarette get close to the battery.


(2) Prevention of Electric Shock

⚠ Attention

· Battery has high pressure and energy. Don't touch the conductor of battery**,** during installation and maintenance, and otherwise electric shock or severe bruise may possibly happen.

(3) Correct Connection

⚠ Attention

· The positive and negative poles shall not be reversely connected, when battery is charged, and otherwise it may possibly cause high temperature, burning, smoke, or explosion.

(4) It is prohibited to put metal objects on the battery.

⚠ Attention

· Don't allow the contact of positive and negative poles because of bolt or tool which may cause short circuit, and will possibly give rise to injury and explosion.

(5) Overdischarge Prohibited

⚠ Attention

· Avoid using the forklift truck up to the time when it is unable to move anymore before it is stopped, and otherwise the battery service life will be shortened. It is required for battery to be charged, just when alarm indicator light for capacity of battery flashes continuously.

(6)Keeping Clean

⚠ Attention

· Keeping Clean the Surface of Battery

· Don’t use dry cloth, and chemical fiber fabric to clean the surface of battery, and don’t use polyethylene film to cover the battery, as such operation may possibly generate static electricity which may initiate accident.

• Static electricity can cause an explosion.

· Clean the uncovered top part of battery using wet cloth.

(7)Wearing Protective Suit

⚠ Attention

· It is required to wear safety goggles, rubber gloves and rubber boots, when battery is maintained.


(8)Battery Electrolyte Harmful to Human Body

⚠ Attention

· Battery electrolyte is made of diluted sulfuric acid, and care shall be taken during conveyance.

· When electrolyte is adhered to eye, skin, and clothes, it may possibly cause visual injury and bruise.

(9)Emergency Treatment Method

☞ Notes:

When accident happens, emergently and immediately contact the doctor according to the following methods.

· When splashed on skin: It is required to wash for 10-15 minutes using water.

· When splashed into eye: It is required to wash for 10-15 minutes using water.

· When it is contaminated in a large area: Neutralize battery electrolyte using baking soda (sodium bicarbonate) or wash the contamination using water.

· When it is swallowed: Drink large quantities of water and milk.

·When splashed on clothes: Take off the clothes immediately.

(10)Fastening down the upper cover of battery

⚠ Attention

· Fasten down the upper cover of battery to prevent leakage of battery electrolyte.

· Pay attention not to add too excessive electrolyte, and overspill of electrolyte may cause electric leakage.

(11)Cleaning

⚠ Attention

· Avoid cleaning the forklift truck when battery is on the truck, and otherwise it may cause battery damage.

· Battery cannot be flushed with water, and shall be wiped using clean wet towel.

· Screw down the battery upper cover to prevent water inlet.

(12) Seawater

⚠Attention

• Battery can not be wet by rain or sea water, which can damage the battery or cause fire.

(13)Abnormal Effects of Battery

⚠ Attention

Please contact the Sales Department of our Company, when following situations occur with battery:

· Battery smells.

· Electrolyte turns to be turbid.

• Electrolyte gets dirty.

· Temperature of electrolyte turns to be high.

· Reducing speed of electrolyte is too fast.

(14)Disassembly Prohibited

⚠ Attention

· Don’t extract electrolyte from batter up to the degree when pole plate is exposed in the air.

• Do not drain the electrolyte from the battery.

· Don’t split the battery.

· Don’t repair the battery.

(15)Storage

⚠ Attention

• When the battery is unused for a long period, it should be stored in a well-ventilated place which is difficult to catch fire.

(15)Disposal of Scrapped Battery

⚠ Attention

· It is required to contact the Sales Department of our Company, when scrapped battery is disposed.

**7. Safety Issues for Installation, Adjustment, and Use of Attachments**

(1)Installation of Attachments

In order that the attachments will not slide leftwards and right wards along the fork carriage of forklift truck during operating process, resulting in safety issue, make sure for the installation to be rational, reliable, and safe.

After being put up and installed, the attachments with upper hooked stop blocks shall be embedded into the gaps of the meshed crossbeam, for the offset of centerline for attachment and the center of fork carriage to be within a ranger less than 50mm, and otherwise it may affect the traverse stability of forklift truck. After being put up and installed, the attachments with rotating functions (paper roll clamp, bale clamp, multi-purpose clamp, and barrel clamp) shall be welded with stop blocks on both sides in the places connected between crossbeam on the fork carriage and the attachments, to prevent the occurrence of leftward and rightward slide of attachments during operating process. When attachments with lower hooked locations are installed, the clearance in the

fitting place of the lower hook and the place of crossbeam under the fork carriage at the same time shall be properly adjusted.

The form of Hook installation for attachments of various medium and small tonnages in the world are all adopted, and the requirements of international standard ISO 2328 (Installation Dimensions of Hook Fork and Fork Carriage for Forklift Trucks" must be strictly followed to select the attachments to match the forklift truck.

(2)Use of Attachments

a)Operation of attachments with forklift trucks shall be provided with practical experience in driving and operation of forklift trucks, and at the same time it is required to firstly get familiar with related instructions on the label plates for the attachments of forklift truck, read relevant operating manuals (especially the user guides, installation instructions, and other data of professional companies for attachments), and fully understand the basic performances and operating methods of attachments for the forklift truck, especially it is required to have a fairly detailed understanding about the allowable loads and lifting heights of the attachments as well as the dimensions of cargo and the applicable scopes of attachments.

b) When attachments of forklift truck with multiple functions are operated, it shall not allow the two actions to be performed at the same time, and the other action must proceed only after one action has been completed.

c) It is strictly prohibited for attachments of forklift truck to be used overloaded, and unbalanced loading at high cargo position is not advocated. It can only be operated in a short time for the unbalanced loading operation at high cargo position (especially when it is the flat clamp of side-moving type with combination valve used for control, namely the flat clamp shared by side-moving cylinder and adjustable distance cylinder), while the offset shall be strictly controlled within a range of 100mm both leftward and rightward, respectively.

d) It is strictly prohibited for attachments of forklift truck to run under the status of high cargo position.

e) It is strictly prohibited for anyone to stand within a 1.5m range under the attachments of forklift truck and under the shadow of cargo (except for the driver's position protected with overhead guard), to avoid accident.

f) It is strictly prohibited for attachments of forklift truck to perform emergency brake to the CBU during the running process, and it is required to run at a slow speed when the truck is loaded.

g) Any modifications in the aspects of attachments for forklift truck related to safety and performance are strictly prohibited, without the technical approval of our Company.

⚠ Attention

"Bearing Capacity of Attachments" indicated in the samples of manufacturers for various attachments is only a kind of evaluation of estimate for the attachments themselves under stress, while it is not the bearing capacity of attachments adaptable to this large system of the whole forklift truck. The rated bearing capacity of forklift truck shall be taken as the bearing capacity, and the bearing capacity of attachment themselves is the smallest among the three integrated bearing capacities of CBU. As the actual rated bearing capacity on the final data plate after forklift truck is matched with attachments, so long as the mass of cargo conveyed does not exceed this allowable value, it may satisfy applications of various working conditions. Generally speaking, the integrated bearing capacity of CBU is the smallest numerical value among the three after calculation.

## 8. Safety Issues for Use of LPG Forklift Truck

(1) Notices When Filling Gas

a) There are two ways for LPG forklift truck refueling, one is to change a cylinder, and the other is to directly inflate the steel cylinder of the forklift truck.

•Filling gas or change cylinder must be executed in a well-ventilated, safe outdoor place which complies with local fire safety standard.

• Forklift truck must be parked stably and shut down, and then the operator leaves the driver's seat.

• Carefully handle the steel cylinder, when unloading it from the forklift truck, it should not be collided, thrown or rolling on the ground.

• When filling gas, it must be carried out by a trained and experienced personnel.

• During the gas filling process, the relevant staff must monitor the entire process and not to leave the site.

b) For each time of changing or inflating a cylinder, the operator should develop the habit of checking the steel cylinder.

• Whether the cylinder has serious dents, scratches or rust or not.

• Whether the appearance of all parts of the cylinder has obvious damages, any air leaks or not.

• Whether the safety relief valve of the cylinder is blocked or not.

• Check whether the steel cylinder is within the validity period of the annual review. If it is expired, it shall be reported to the local authorities for annual review as soon as possible. For the steel cylinder having a service life of 15 years without the recognition of relevant departments, it will be rejected.

⚠Attention

If any of the above situations exists, the steel cylinder shall not be used or filled with gas again, and it shall be replaced and repaired.

(2) Quality and Composition of LPG Fuel

The purity of LPG has a direct impact on the operations of forklift truck. If the LPG contains impurities, foreign matters, moisture or excessive tar components, the pipes and fittings of LPG system will be blocked and then be failed. For example, the engine running may not be smooth, and the horsepower output may be inadequate. And more seriously, it may cause engine flameout and hard start and so on.

• The LPG fuel with high purity, low impurities, water and tar, especially with a propylene content of not more than 5% must be used.

• If the user is in a place with poor local gas source, be sure to implement regular maintenance to remove accumulated foreign matter and tar in the LPG system, and replace the filter netting to ensure the smooth running of the engine; the worse is the fuel quality, the shorter is the maintenance cycle.

• In cold areas or temperature is sub-zero, the natural evaporation of LPG is slowed down, so at this time the propane component of LPG should be added to facilitate evaporation.

(3) Treatments for Accident and Emergency

a) General LPG is added with odorant, so it is easy to detect leakage if the smell is smelt:

• Immediately drive the forklift truck to the outdoor ventilated area, turn off the engine and make sure that

there are no fireworks nearby.

• Wind and close the manual switch on the steel cylinder.

• Carefully and gradually check the pipes, joints and LPG conversion devices, find out the leak position, and invite a qualified or experienced technical personnel for repair.

b) If an accident occurs:

• Immediately park the truck and shut down the engine.

• Wind and close the manual switch on the steel cylinder.

• Make sure that there are no fireworks near the forklift truck, and a fan is assisted to diffuse the air leakage if necessary.

• Invite a qualified and experienced technical staff for thorough examination of the problems and fix them.

C) If fire occurs:

• If possible, wind and close the manual switch on the steel cylinder.

• If there is water source nearby, water the steel cylinder to keep it cool.

• Immediately notify the fire department for fire fighting.

• If the steel cylinder is also on fire, the adjacent personnel nearby should be urgently evacuated.

(4) Notices for Use:

• Forklift truck shall not work in a place with fire source.

• All the wire connectors of forklift truck must be firm to prevent short circuits or other faults.

• The fuel meter of instrument stand of single-fuel LPG forklift truck is not used, and please see the liquid level gauge on the steel cylinder.

• Do not add flammable liquid into the fuel tank of single-fuel LPG forklift truck. But after clearing the fuel tank, the non-burning and anti-freezing material can be added and then the tank filler can be covered.

• The LPG with high purity, good quality and composition shall be used as far as possible.

• According to the recommended method of original gasoline engine manufacturer, the regular maintenance should be implemented, which includes the ignition system, cooling system, intake and exhaust system, engine body and other mechanical equipment. In addition, the machine oil, spark plug and air filter net should be regularly changed.

• LPG system should be regularly maintained.

• If the LPG system is failed, it should be reported to the original refitting factory for repairs as soon as possible, and then it will be repaired by the designated repair factory.

**9. Label Plates**

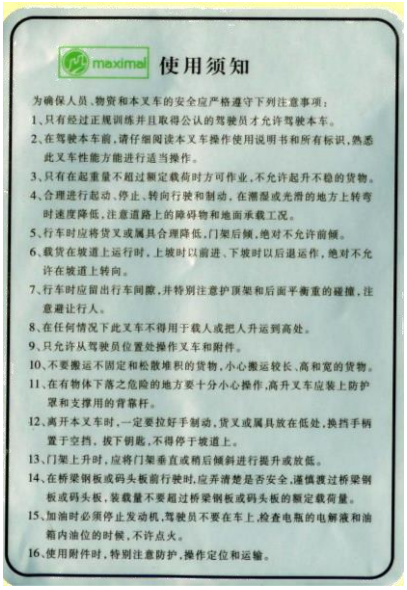
Label plates pasted on truck are used to indicate operating methods and notices of truck. This is not only the consideration for you, but also the consideration for the truck. Please re-paste the label plate immediately, after any of them is dropped out.

(1)Safety Label Plate

⚠ Warning

(2)Label Plate of Notices for Use

⚠ Attention



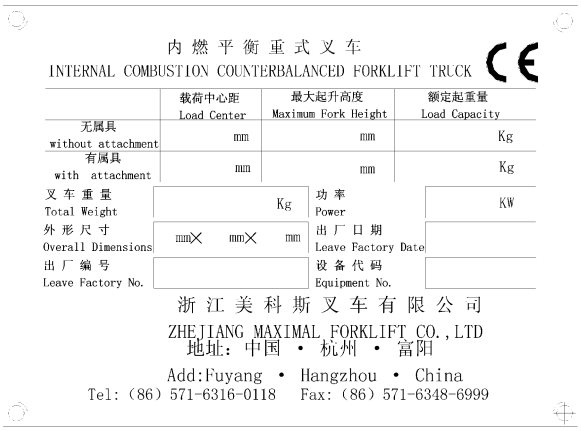
maximal 使用须知

为确保人员、物资和本叉车的安全应严格遵守下列注意事项：

1、只有经过正规训练并且取得公认的驾驶员才允许驾驶本车。
2、在驾驶本车前，请仔细阅读本叉车操作使用说明书和所有标识，熟悉此叉车性能方能进行适当操作。
3、只有在起重量不超过额定载荷时方可作业，不允许起升不稳的货物。
4、合理进行起动、停止、转向行驶和制动，在潮湿或光滑的地方上转弯时速度降低，注意道路上的障碍物和地面承载工况。
5、行车时应将货叉或属具合理降低，门架后倾，绝对不允许前倾。
6、载货在坡道上运行时，上坡时以前进、下坡时以后退运作，绝对不允许在坡道上转向。
7、行车时应留出行车间隙，并特别注意护顶架和后面平衡重的碰撞，注意避让行人。
8、在任何情况下此叉车不得用于载人或把人升运到高处。
9、只允许从驾驶员位置处操作叉车和附件。
10、不要搬运不固定和松散堆积的货物，小心搬运较长、高和宽的货物。
11、在有物体下落之危险的地方要十分小心操作，高升叉车应装上防护罩和支撑用的背靠杆。
12、离开本叉车时，一定要拉好手制动，货叉或属具放在低处，换挡手柄置于空挡，拔下钥匙，不得停于坡道上。
13、门架上升时，应将门架垂直或稍后倾斜进行提升或放低。
14、在桥梁钢板或码头板前行驶时，应弄清楚是否安全，谨慎渡过桥梁钢板或码头板，装载量不要超过桥梁钢板或码头板的额定载荷量。
15、加油时必须停止发动机，驾驶员不要在车上，检查电瓶的电解液和油箱内油位的时候，不许点火。
16、使用附件时，特别注意防护，操作定位和运输。

(3)Data Plate for Fork Loading-Unloading Truck

⚠ Attention



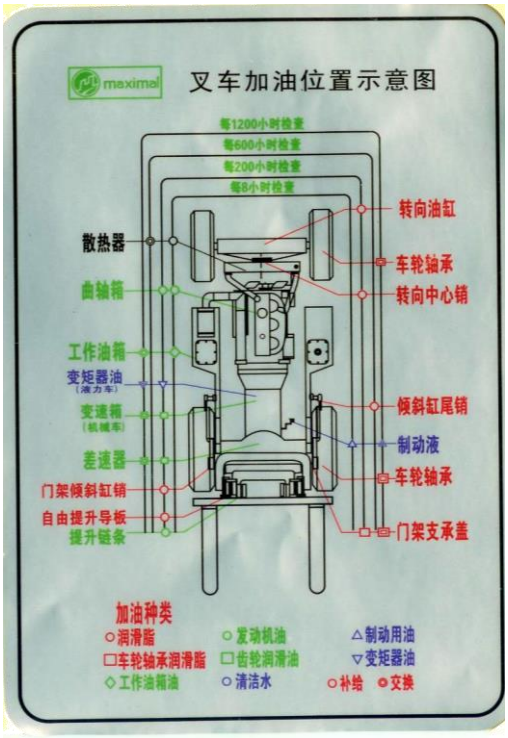
内燃平衡重式叉车
INTERNAL COMBUSTION COUNTERBALANCED FORKLIFT TRUCK CE

| | 载荷中心距 Load Center | 最大起升高度 Maximum Fork Height | 额定起重量 Load Capacity |
|---|---|---|---|
| 无属具 without attachment | mm | mm | Kg |
| 有属具 with attachment | mm | mm | Kg |

| | | | |
|---|---|---|---|
| 叉车重量 Total Weight | Kg | 功率 Power | KW |
| 外形尺寸 Overall Dimensions | mm× mm× mm | 出厂日期 Leave Factory Date | |
| 出厂编号 Leave Factory No. | | 设备代码 Equipment No. | |

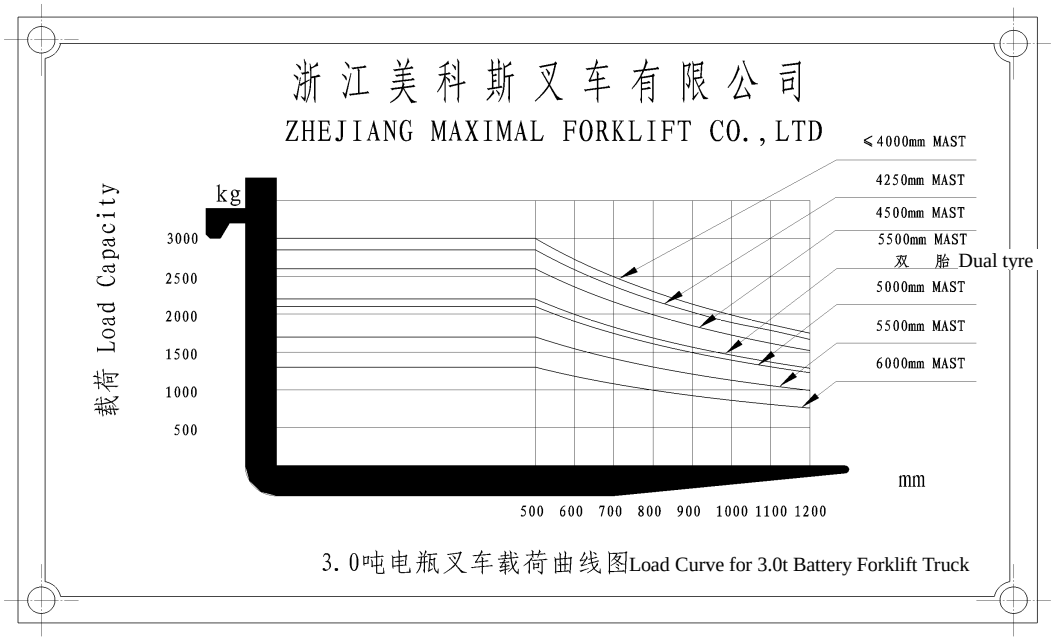
浙江美科斯叉车有限公司
ZHEJIANG MAXIMAL FORKLIFT CO.,LTD
地址：中国 • 杭州 • 富阳
Add:Fuyang • Hangzhou • China
Tel:（86）571-6316-0118 Fax:（86）571-6348-6999

(4) Label Plate for Lubricating System Drawing



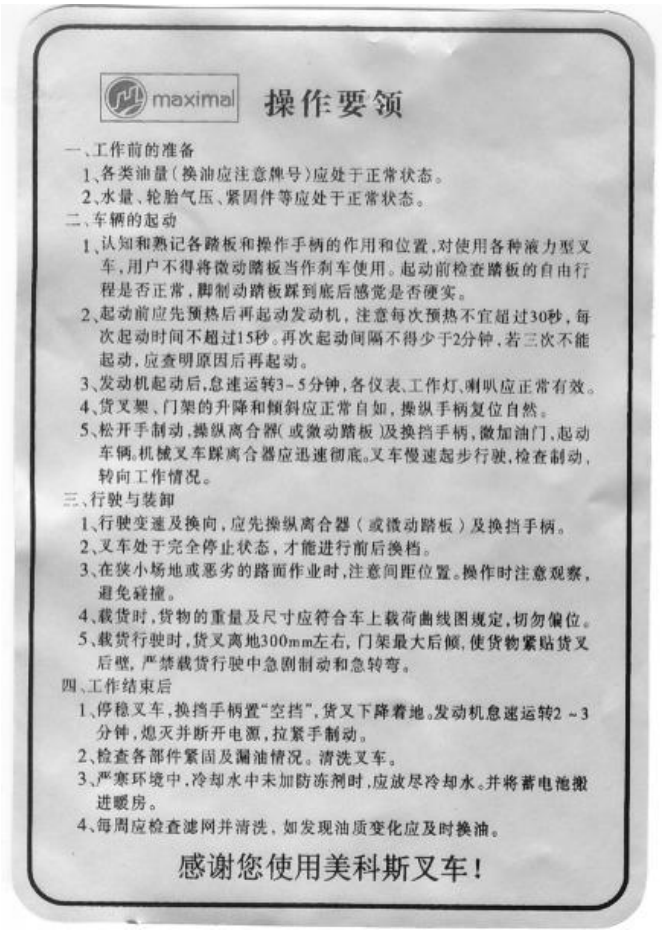

(5) Label Plate for Load Curve Diagram(Demonstration)

⚠ Attention



(6) Label Plate for Essentials of Inspections Before Start

⚠ Attention



maximal 操作要领

一、工作前的准备
1、各类油量（换油应注意牌号）应处于正常状态。
2、水量、轮胎气压、紧固件等应处于正常状态。

二、车辆的起动
1、认知和熟记各踏板和操作手柄的作用和位置，对使用各种液力型叉车，用户不得将微动踏板当作刹车使用。起动前检查踏板的自由行程是否正常，脚制动踏板踩到底后感觉是否硬实。
2、起动前应先预热后再起动发动机，注意每次预热不宜超过30秒，每次起动时间不超过15秒。再次起动间隔不得少于2分钟，若三次不能起动，应查明原因后再起动。
3、发动机起动后，怠速运转3～5分钟，各仪表、工作灯、喇叭应正常有效。
4、货叉架、门架的升降和倾斜应正常自如，操纵手柄复位自然。
5、松开手制动，操纵离合器（或微动踏板）及换挡手柄，微加油门，起动车辆。机械叉车踩离合器应迅速彻底。叉车慢速起步行驶，检查制动，转向工作情况。

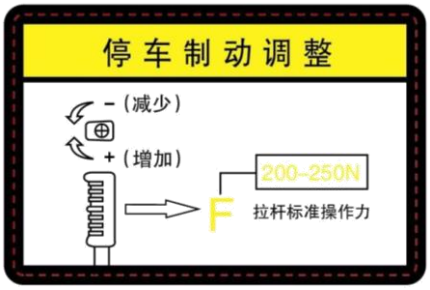
三、行驶与装卸
1、行驶变速及换向，应先操纵离合器（或微动踏板）及换挡手柄。
2、叉车处于完全停止状态，才能进行前后换档。
3、在狭小场地或恶劣的路面作业时，注意间距位置。操作时注意观察，避免碰撞。
4、载货时，货物的重量及尺寸应符合车上载荷曲线图规定，切勿偏位。
5、载货行驶时，货叉离地300mm左右，门架最大后倾，使货物紧贴货叉后壁，严禁载货行驶中急剧制动和急转弯。

四、工作结束后
1、停稳叉车，换挡手柄置"空挡"，货叉下降着地。发动机怠速运转2～3分钟，熄灭并断开电源，拉紧手制动。
2、检查各部件紧固及漏油情况。清洗叉车。
3、严寒环境中，冷却水中未加防冻剂时，应放尽冷却水。并将蓄电池搬进暖房。
4、每周应检查滤网并清洗，如发现油质变化应及时换油。

感谢您使用美科斯叉车！

(7) Label Plate for Parking Brake Adjustment

⚠ Attention



(8)Label Plate for Adding Hydraulic Oil

☞ Note:


(9)Label Plate for Tyre Safety (**Pneumatic Tyre**)

⚠ Warning

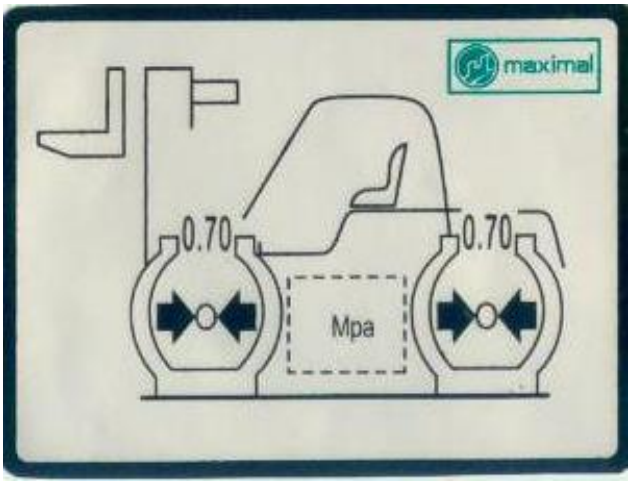

(10)Label Plate for Lifting

⚠ Attention

(11)Label Plate for Prohibition from Entering Rear Space of Mast

⚠ Warning


(12)Data Plate for Tyre Air Pressure (Pneumatic tyre) (Demonstration)




(13)Label Plate for Attention to Hand Injury

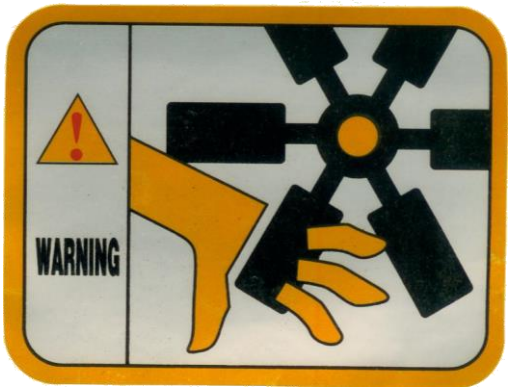
⚠ Warning

(14) Label Plate for Filling Fuel Oil

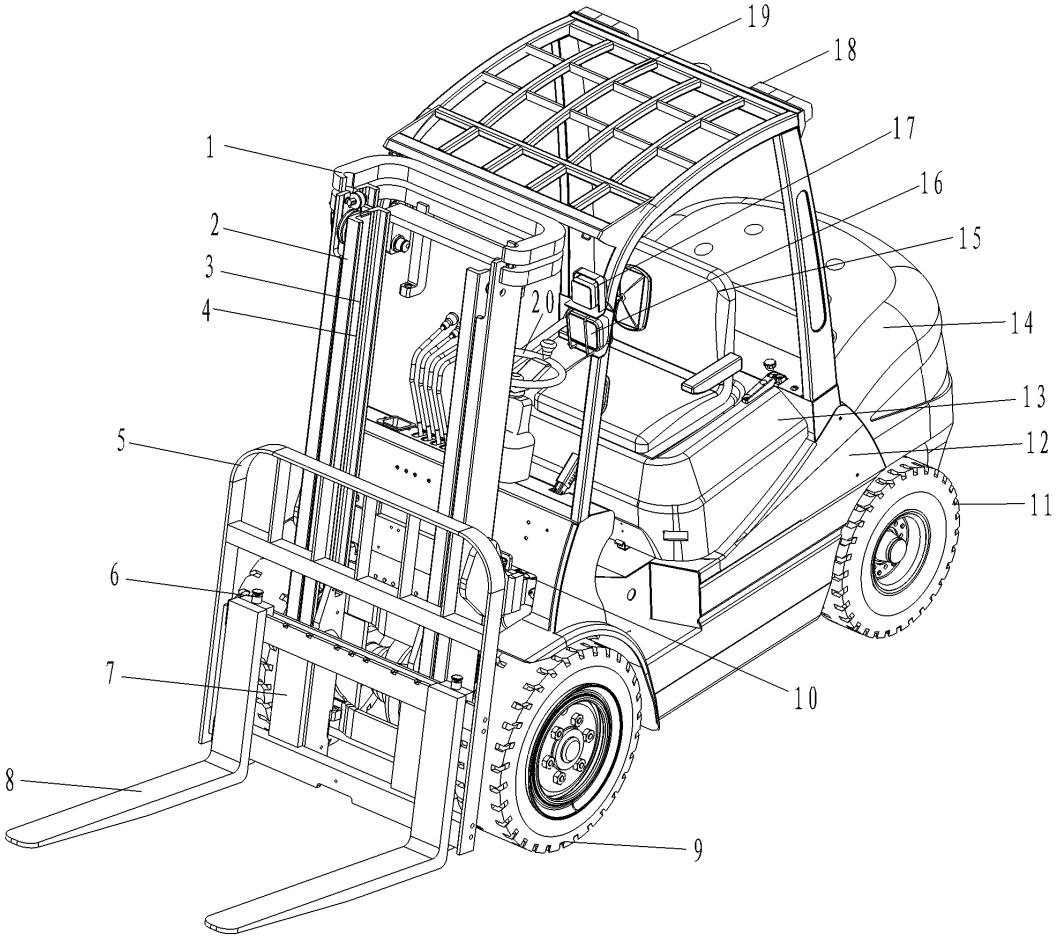
(15) Label Plate for Filling Antifreeze


(16) Label Plate for Fan Safety

⚠ Warning

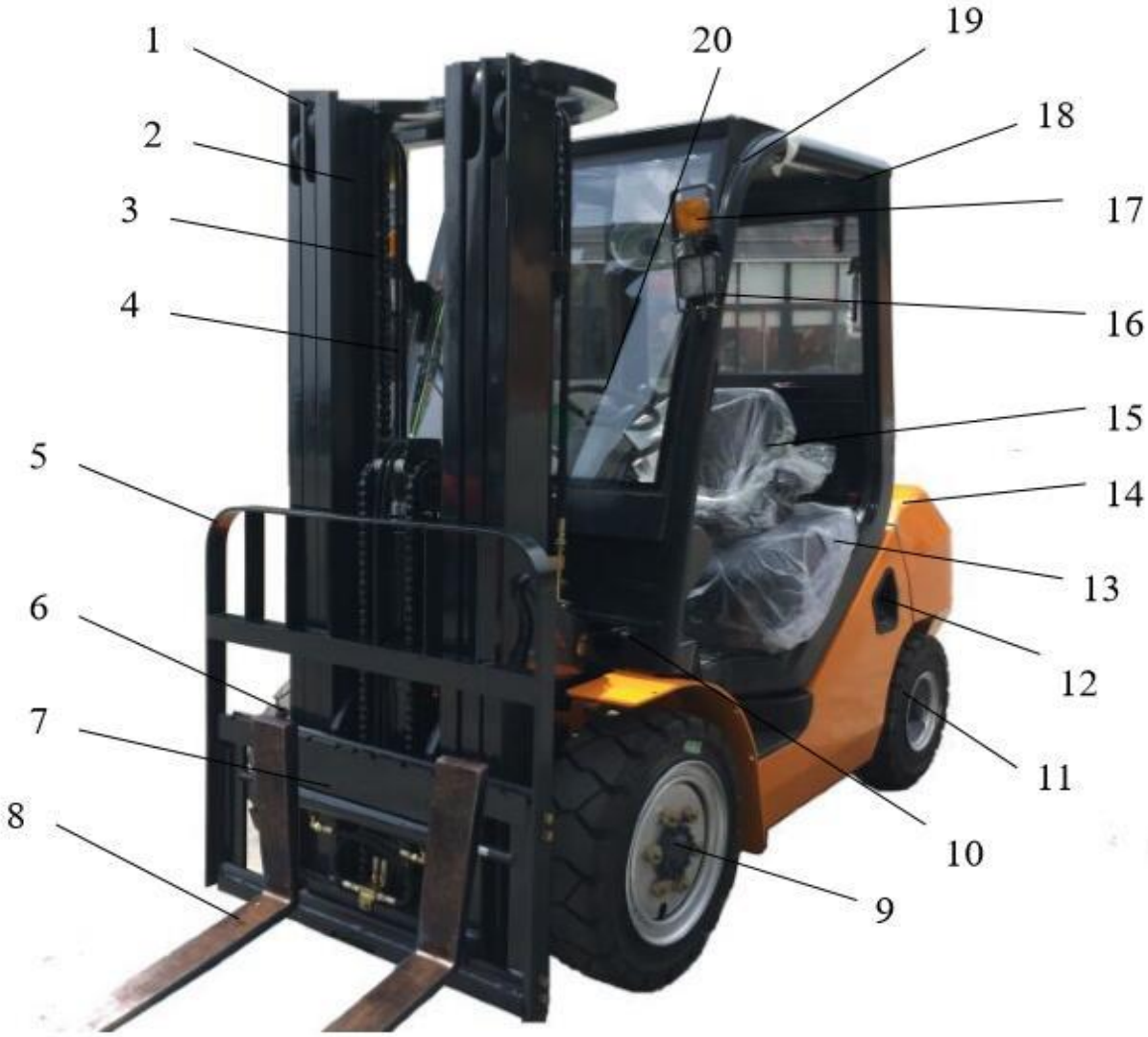


## II Operating Devices and Operating Methods




1. Outside Mast
2. Inside Mast
3. Lifting Chain
4. Lifting Cylinder
5. Backrest
6. Fork Locating Pin
7. Fork Carriage
8. Fork
9. Driving Axle
10. Steering Wheel
11. Fuel Tank Cover
12. Combustion Engine Cover
13. Tilting Cylinder
14. Driver's Seat
15. Steering Wheel
16. Front Headlight
17. Front Combination Light
18. Overhead Guard
19. Rear Combination Lamp
20. Counterweight

M series internal-combustion forklift truck




1. Outside Mast
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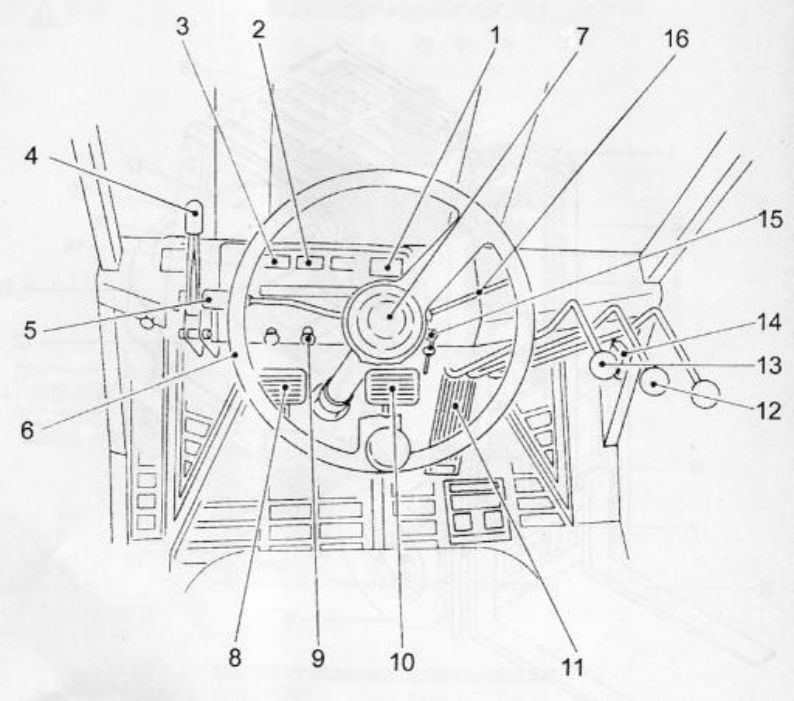
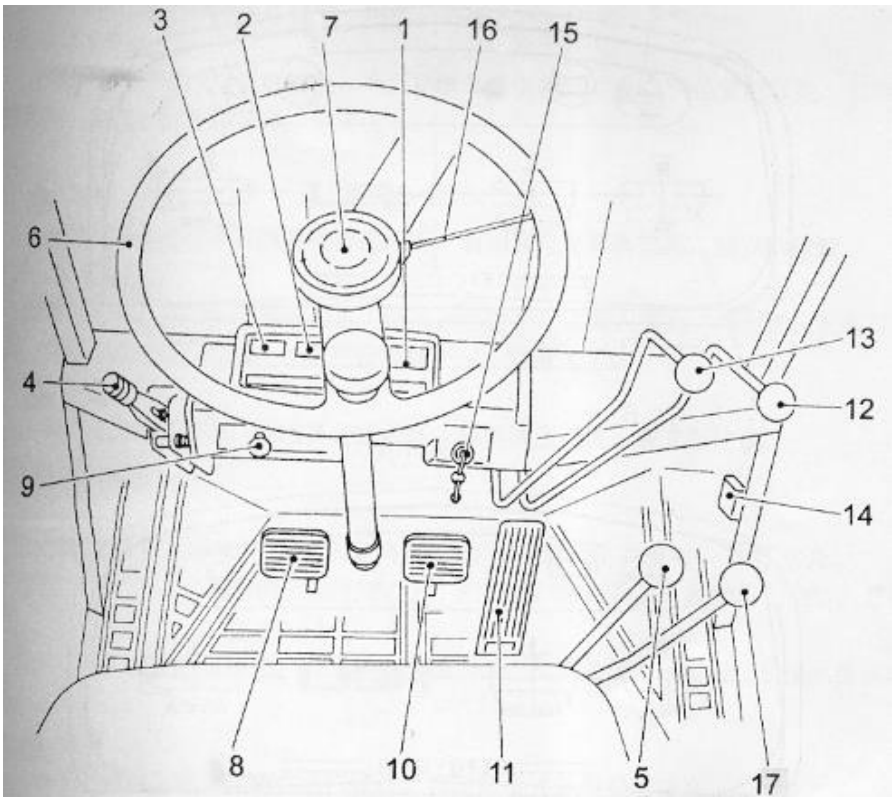
A series internal-combustion forklift truck



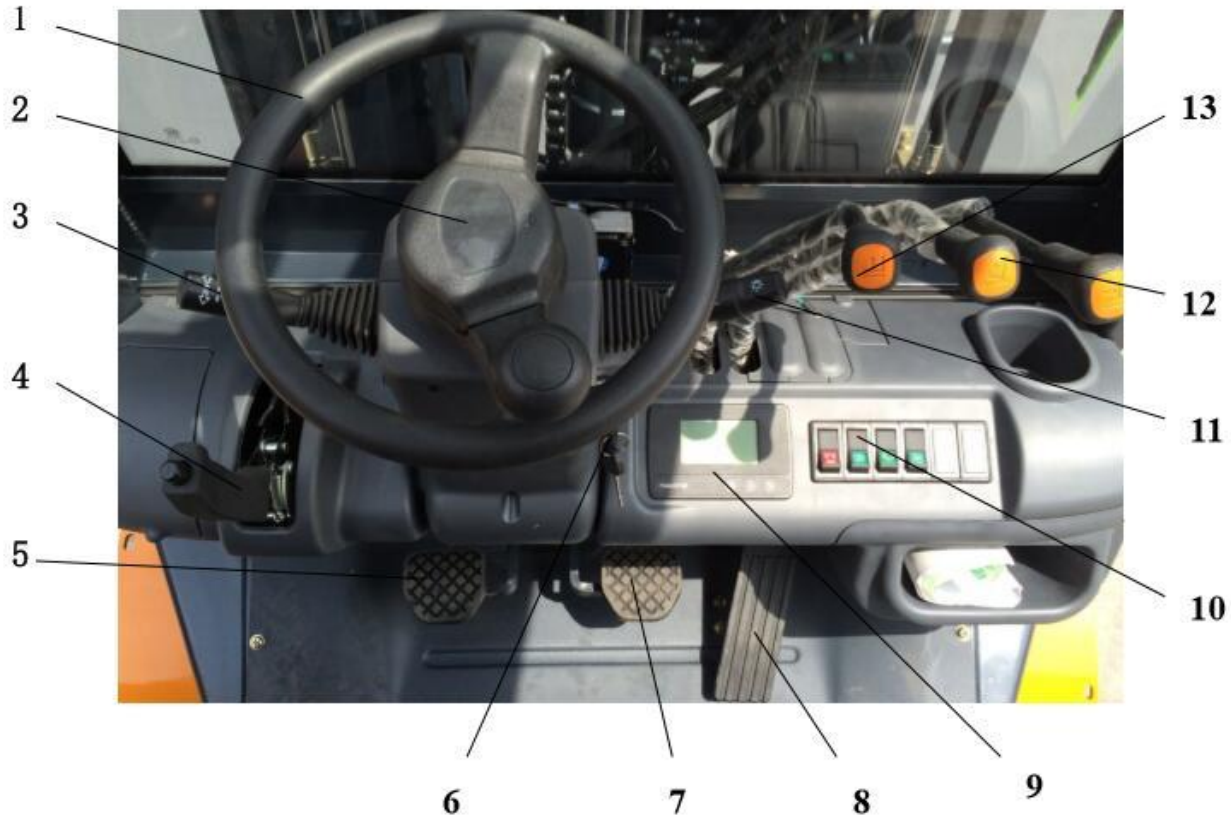

1. Hourmeter
2. Water Temperature Gauge
3. Fuel Gauge
4. Parking Brake Handle
5. Forward - Backward Handle
6. Steering Wheel
7. Horn Pushbutton
8. Inching Pedal
9. Light Switch
10. Brake Pedal
11. Accelerator Pedal
12. Tilting Handle
13. Lifting Handle
14. Fuse Box
15. Preheating Starter Switch
16. Turn Signal Handle

M series Hydraulic Transmission Forklift Truck



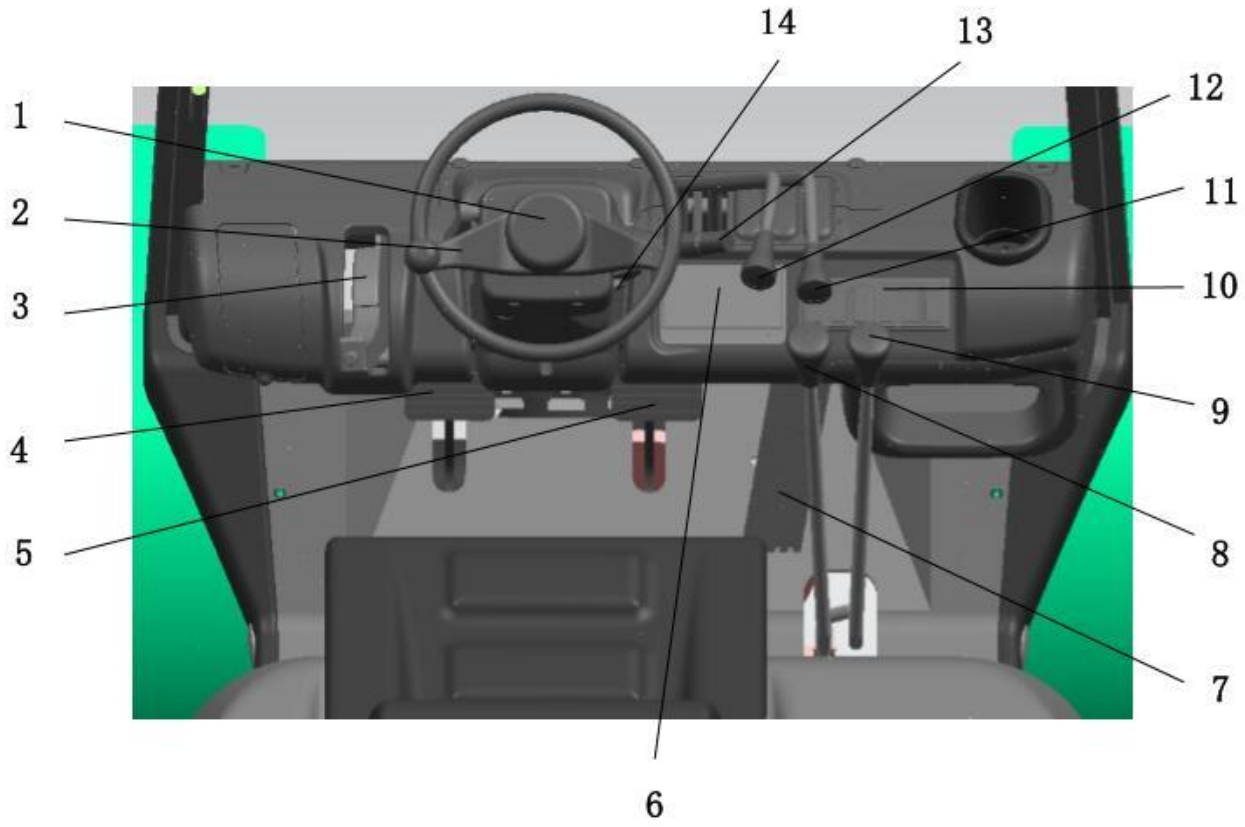

1. Hourmeter
2. Water Temperature Gauge
3. Fuel Gauge
4. Parking Brake Hand
5. Forward - Backward Handle
6. Steering Wheel
7. Horn Pushbutton
8. Inching Pedal
9. Light Switch
10. Brake Pedal
11. Accelerator Pedal
12. Tilting Handle
13. Lifting Handle
14. Fuse Box
15. Preheating Starter Switch
16. Turn Signal Handle
17. Gear Lever

M series Mechanical Transmission Forklift Truck




1.Steering Wheel
2.Horn Pushbutton
3.Forward - Backward Handle
4.Parking Brake Handle
5. Inching Pedal
6.Preheating Starter Switch
7.Brake Pedal
8.Accelerator Pedal
9. Combined Display
10.Combined Switch
11.Turn Signal Handle
12.Tilting Handle
13.Lifting Handle

A series Hydraulic Transmission Forklift Truck

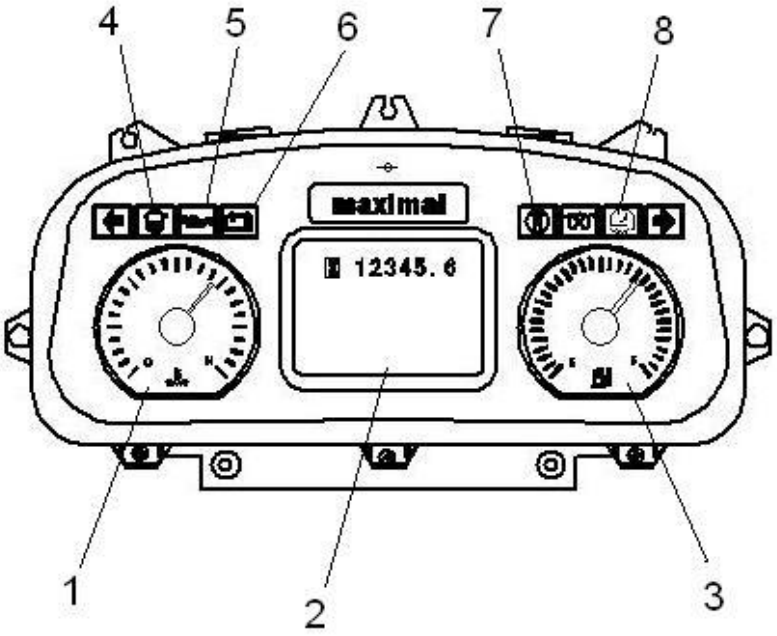



1.Horn Pushbutton
2.Steering Wheel
3.Parking Brake Handle
4.Inching Pedal
5.Brake Pedal
6.Combined display
7.Accelerator Pedal
8.Forward - Backward Handle
9.Gear Lever
10. Combined switch
11. Tilting Handle
12. Lifting Handle
13. Turn Signal Handle
14. Preheating Starter Switch

A series Mechanical Transmission Forklift Truck

**1. LCD (Liquid Crystal Display) Instruments**

M series internal-combustion forklift truck




1. Water temperature gauge 2.Hourmeter 3. Fuel gauge

4. Oil water separator indicator 5. Oil pressure indicator lamp 6. Charging indicator

7. Neutral indicator lamp 8. Air filter indicator lamp

1) Water temperature gauge: indicates the temperature of engine coolant.

2) Hour meter: indicates the accumulative engine working hours

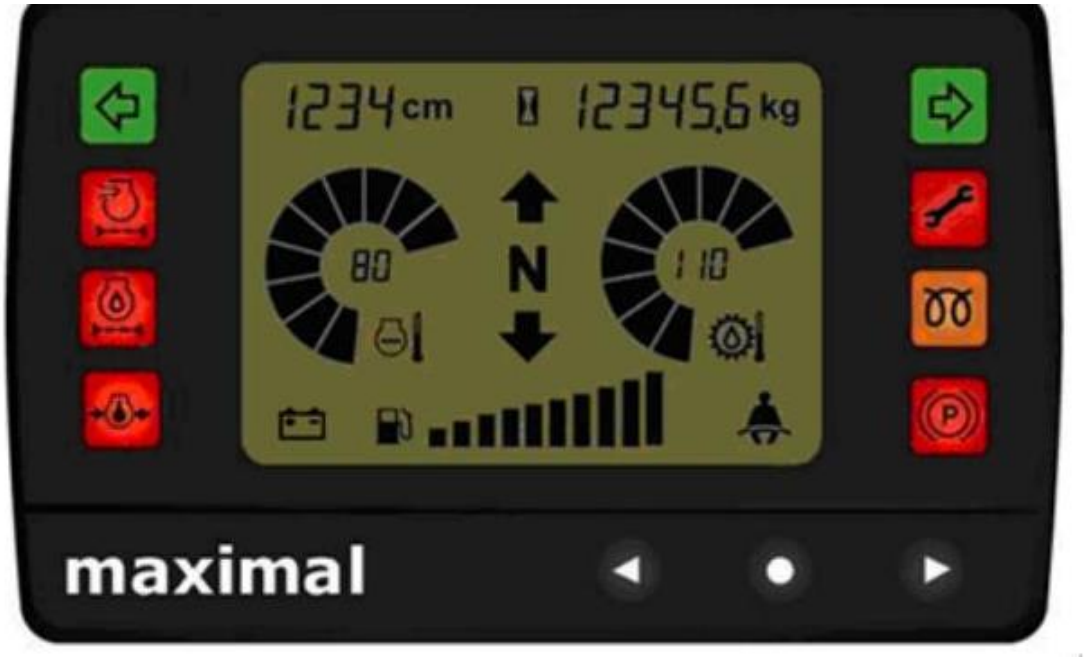
3) Fuel gauge: indicates the fuel volume in fuel tank.

4) Oil water separator signal display: turn the start switch clockwise to gear Ⅰ(energizing gear) before the engine is started, at this moment, the water sinking indicator lights up and will automatically go off after the engine is started. If this indicator lights up during the engine's working time, it indicates that the accumulative water in oil water separator is beyond the warning water level and it is necessary to drain water. After the accumulative water is drained, the indicator lamp will automatically go off.

5) Engine oil pressure signal display: clockwise turn the start switch to gear Ⅰ (energizing gear) before the engine is started, at this moment, the oil pressure indicator lights up and will automatically go off after the engine is started. If this indicator lights up during the engine's working time, it indicates that the engine oil pressure is too low and lubricating effect is bad, and it is necessary to park the vehicle for inspection.

6) Non-charge signal display: clockwise turn the start switch to gear Ⅰ (energizing gear) before the engine is started, at this moment, the Charging indicator lights up and will automatically go off after the engine is started. If this indicator lights up during the engine's working time, it indicates that the charging circuit has fault and cannot give charge, and it is necessary to park the vehicle for inspection.

A series internal-combustion forklift truck




Remark:

Hour meter and weighing share a digital area, hour meter work when power on, press any key, then display the weight and KG, at the same time, hour meter chart go out .

 ：Left turn indicator lamp, said forklift turn left signal lamp work.

 ：Right turn indicator lamp, said forklift turn right signal lamp work.

 ：Air filter clogging indicator lamp,said air filter clogging.

 ：Oil-water separation indicator lamp, said water is excessive in the oil-water separator , need manual drainage.

 ：Low oil pressure indicator lamp, show that the engine oil pressure is low

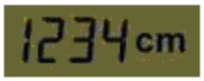
 ：The fault indicator lamp, show the engine has fault.

 ：Preheating indicator lamp, said preheating system work.

 ：Hand brake indicator lamp, said the handbrake is in a state of pull up.

 ：Charging indicator lamp, said the generator do not charge on the battery.

 ：The seat indicator lamp, said operator does not sit in the correct posture.




：Indicate the mast lift height.


：Display forklift run time when the forklift switched on, press any button to switch to display the goods weight.


：Display the engine temperature.

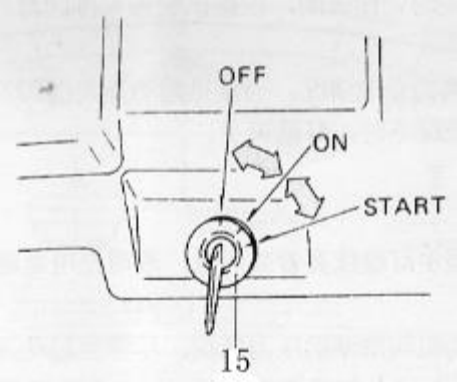

：Display the transmission torque converter oil temperature.


：Display gear state, arrow up said move forward position, arrow down said move backward position, N said neutral position.

：Display the oil capacity of the fuel tank.

**2. Switches Part**

M series internal-combustion forklift truck




(1) Preheating start switch

OFF

This position is for key inserting in and out. In this position, both the gasoline engine and diesel engine can be stopped running.

ON

When the start switch is in “ON” position, the electrical circuit is closed. When the engine is started, the switch key is in this position.

START

When the key is turned to “START” position, the starting motor is engaged. When your hands leave the key, the key can automatically return back to “ON” position with the help of elastic force.

⚠ Caution

·When the engine is shut off, do not place the start switch in “ON” position, because it may cause battery creepage.

·When the engine is running, do not turn the start switch to “START” position, because it may cause motor damage.

·The time of engine engagement should not exceed 15 seconds each time and wait for 20 seconds for starting again.

(2) Light Switch

Light switch can be pulled out by two gears.

| Gear / Light | 0 （OFF） | Gear Ⅰ | Gear Ⅱ |
|---|---|---|---|
| Width Light | OFF | ON | ON |
| Front Headlight | OFF | ON | ON |

⚠ Attention

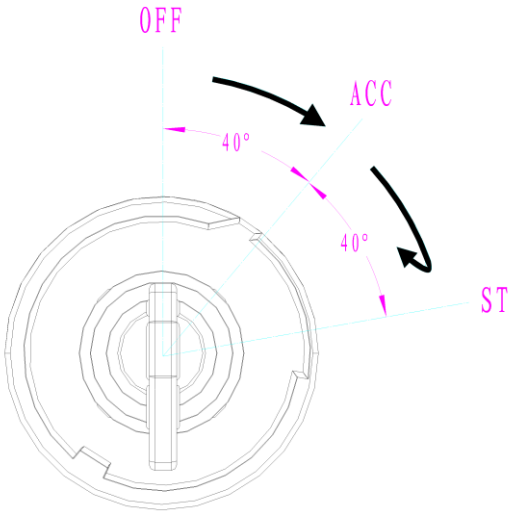
On/Off of this light is irrelevant with the position of key switch, and so pay attention not to forget turning off the light.

(1) Preheating start switch

Before the engine starting, the gear lever should in the neutral position, at this point, the display shows neutral (N), otherwise the engine will not be able to started. This is because the forklift has the start-up protection function, to prevent the risk.

The key switch is under ‘OFF’ , can insert/pull out the key, when the engine started, return the key switch to ‘OFF’, the engine will automatically shut down.

Turn the key switch to ACC, the forklift electrify, preheating system works automatically, heating the air, preheating indicator lamp is light up, indicator the preheating system state. After 8 ~ 12 s, preheating work completed, preheating system automatically stop working, and turn the key switch to ST , start the engine. After the engine starting, loosen the key switch, key switch is reset to the ACC.




Note:

1. The engine stopped, please do not put the key switch at the ACC, so as not to cause the battery power loss;
2. The engine is running, please do not turn the key switch to ST, to prevent the damage of starter motor;
3. The startup, a start time is not more than 5 s, the intervals of 2 start time should be more than 120 s, if still can't start the engine for continued 3 times, should first find out the reason and start.

(2) the light and sound alarm system

The system includes a variety of lighting equipment, lights, horn, reversing buzzer, etc.

Combination lamp: combination lights include head lamp (55 w), and width lamp (5 w), the turn signal lamp(21 w) of three parts;

Three color taillights: three color taillights include the turn signal lamp (21 w), and width lamp (5 w), the brake lamp (21 w), reversing light (10 w) of four parts;

Reversing light(55 w);

Warning lights (2 w).

**3. Control Part**

(1)Steering Wheel

The forklift truck will turn right, when steering wheel is turned rightward, while the truck turns left, when steering wheel is turned leftward. The rear part of forklift truck is able to swing outwards.


M series internal-combustion forklift truck

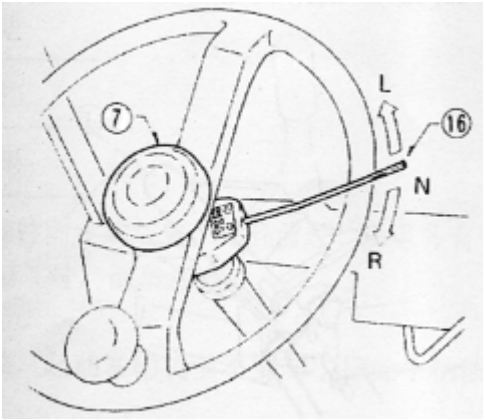
A series internal-combustion forklift truck

⚠ Warning

As full hydraulic steering is applied to the forklift truck, the steering will be very difficult, when steering motor has stopped running. The steering motor must be started immediately, for steering for a second time.

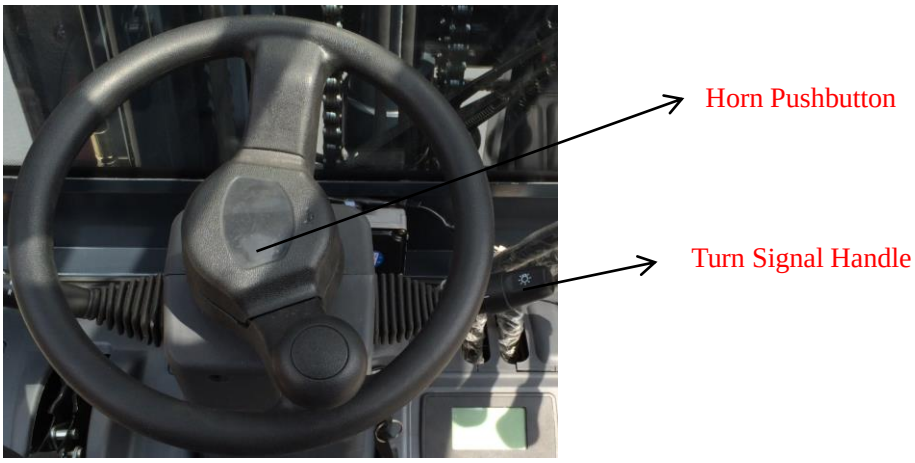
(2) Horn Pushbutton ⑦

M series internal-combustion forklift truck




When press the rubber cover in the centre of the steering wheel, bumming sounds can be produced. Even if the start switch is in “OFF” position, the horn can still produce sounds.

A series internal-combustion forklift truck




The center of the steering wheel button is the horn push button, when pushed,the horn sound.

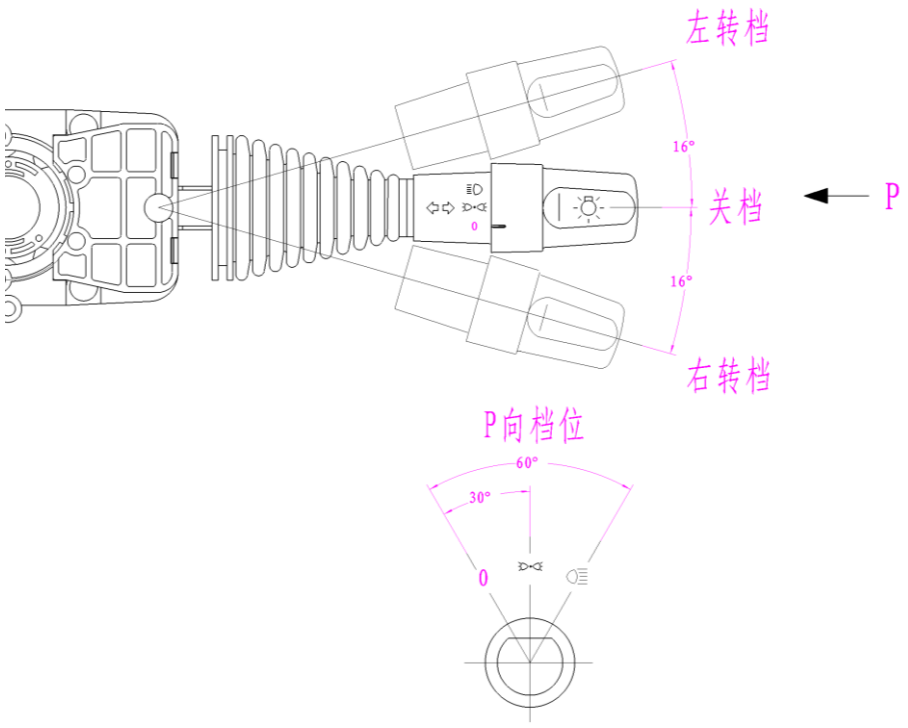
(3) Turn Signal Handle ⑯

This handle represents turn directions of forklift truck. When the handle is in turn position, the turn signal indicator begins to flash.

| | |
|---|---|
| R | Turn right indicator |
| N | Neutral position |
| L | Turn left indicator |

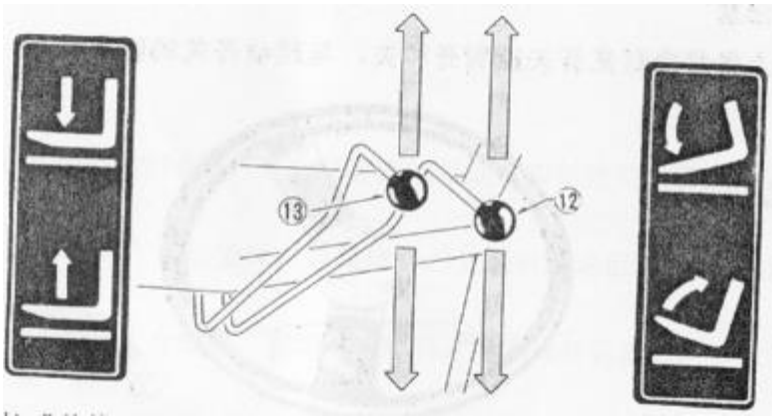
⚠ Attention

· Turn signal handle cannot automatically return back to the neutral position like that of in common car, it needs manual reset.

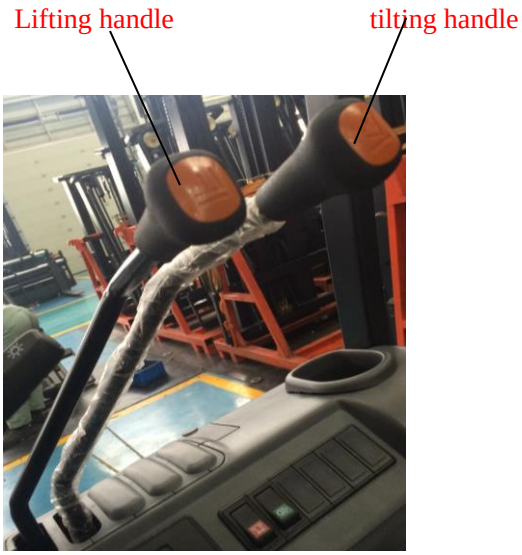


A series internal-combustion forklift truck turn signal handle

4) Lifting Control Rod



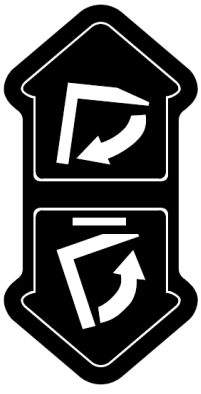

M series internal-combustion forklift truck




A series internal-combustion forklift truck

Pushing/pulling this handle forward or backward for the fork to be able to fall and rise. The rising speed is controlled by the back tip angle of the handle, while the falling speed is controlled by the front tip angle of the handle.

(5)Tilting Control Rod

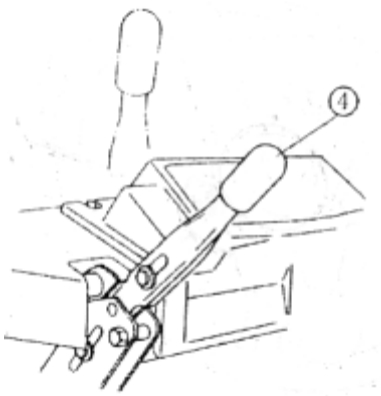


Tilt of mast can be achieved through pushing/pulling the tilting handle forward or backward. Push forward this handle for mast to tip forward, and pull backward this handle for mast to tip backward. Tipping speed depends on the tip angle of the handle.

⚠ Attention

The multi-way valve carries front tipping autolocking valve, and the mast is unable to tip forward even if the tipping handle is pushed forward, when electric circuit is disconnected.

(6)Hand Brake Control Handle




M series internal-combustion forklift truck A series internal-combustion forklift truck

During parking brake, this handle acts on the front wheel through back tip, for brake to generate braking force. Push forward the handle to loosen the brake.

Micro switch is available on the left side of hand brake, and pulling tight the handle may invalidate the operation.

⚠ Warning

Make sure to fill up the wheels firmly using firm wedge blocks, if the forklift truck has to be parked on a ramp.

(7) Gear Shift Lever⑤⑰

**Mechanical Transmission Forklift Truck**

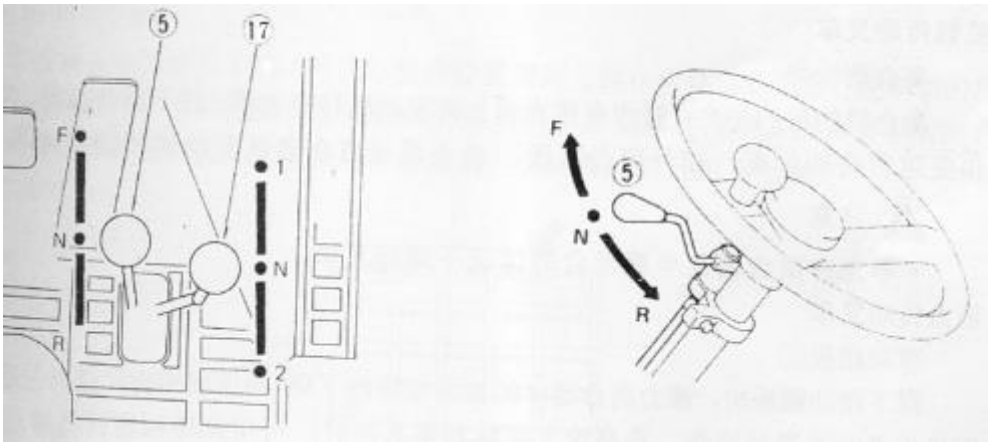
Forward – backward lever⑤

| | |
|---|---|
| F | Forward |
| N | Neutral |
| R | Backward |

Gear change lever ☞

| | |
|---|---|
| 1 | Low speed |
| N | Neutral |
| 2 | High speed |

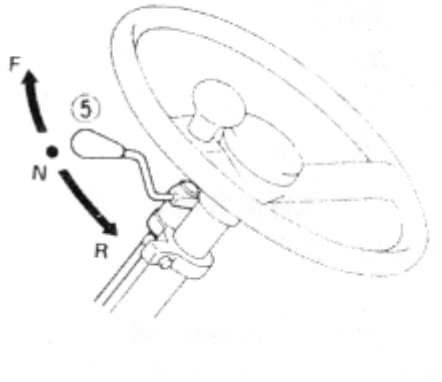
The plate of transmission control is fixed type device with two gears in forward and backward directions. The clutch pedal must be stepped completely before changing gears. It is necessary to let the truck in a complete brake condition before variable speed operation. When moving the lever for backup, the backup lamp lights up.



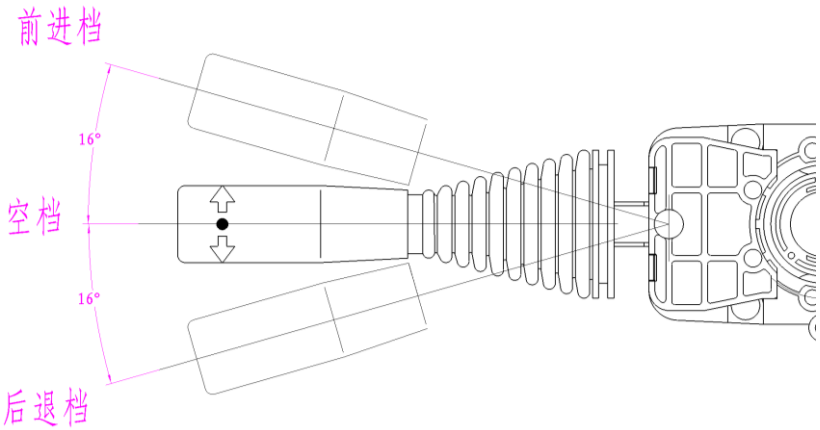

**Hydraulic Transmission Forklift Truck**

Forward – backward lever ☜

M series internal-combustion forklift truck




| | |
|---|---|
| F | Forward |
| N | Neutral |
| R | Backward |

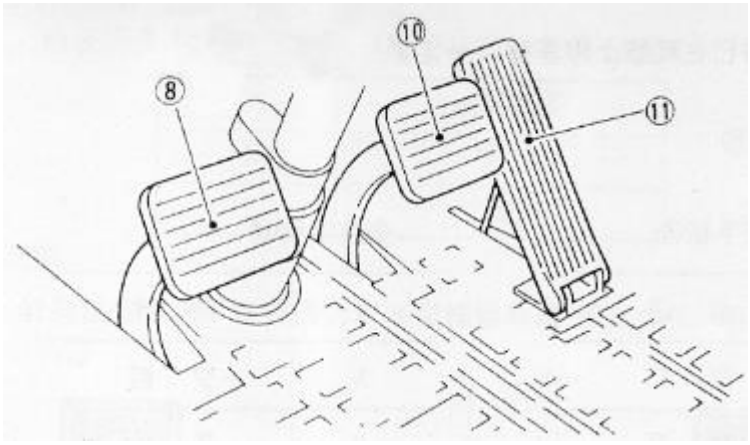



Transmission control is a steering rod fixed type device with one gear in forward and backward. It is necessary to park the truck completely before changing gears. When moving the lever for backup, the backup lamp lights up.

⚠ Attention

·Because a neutral switch is installed, this lever must be turned to neutral position before starting the engine.

(8) Foot control




Refer to the above figure: clutch pedal or brake pedal (left), brake pedal (middle) and accelerator pedal (right).

**Mechanical Transmission Forklift Truck**

Clutch pedal ⑧

The purpose of installing the clutch is to facilitate the operator to connect or separate engine and gearbox. If stepping the clutch pedal, the engine is separated from gearbox, while loosening the clutch pedal, the power can be transmitted from engine to gearbox via clutch.

⚠ Attention

·It is not allowed to operate the forklift truck when the clutch is in semi-connection and semi-separation condition.

**Hydraulic Transmission Forklift Truck**

Inching pedal

When stepping the inching pedal, oil pressure in hydraulic clutch decreases (needle of oil pressure gauge points to the left side), and the operator is allowed to give inching operation. When running the lifting system at high speed condition, this pedal can be used to move the forklift truck slowly.

When this pedal is stepped completely, it can also be used as a brake pedal.

⚠ Danger

·When start the engine on downhill or slope road condition, it is necessary to use brake pedal rather than inching pedal. If using inching pedal on downhill road condition, the vehicle will descend under the action of the inertia due to the brake control has no effect on the engine, therefore the brake control of the vehicle is bad. If using inching pedal when starting on slope road condition, the vehicle will coast down the slope under the action of the inertia, and it is very dangerous.

Accelerator pedal

Stepping the accelerator pedal can improve running speed of the engine, while releasing this pedal, the engine will run at idle speed.

Brake pedal

Pressing the brake pedal can reduce the speed or stop the vehicle, meanwhile, the brake lamp lights up.

**4. Truck Body Part**

(1)Seat and Seat Adjusting Lever

Move the seat adjusting lever rightwards, to adjust seat to a position comfortable for sitting and easy for operation. Prior to operation, operator shall adjust the seat properly and ensure that the seat has been reliably locked up.

(2)Overhead Guard

M series internal-combustion forklift truck

A series internal-combustion forklift truck

The overhead guard is used to protect operator from being injured by falling objects from above. It must have enough anti-impaction strength. It supper gap is used for hoisting battery. It is strictly prohibited to use forklift truck without overhead guard.

(4) Backrest

⚠ Attention

·The backrest is an important safety part which can prevent the goods loaded on the fork sliding to the

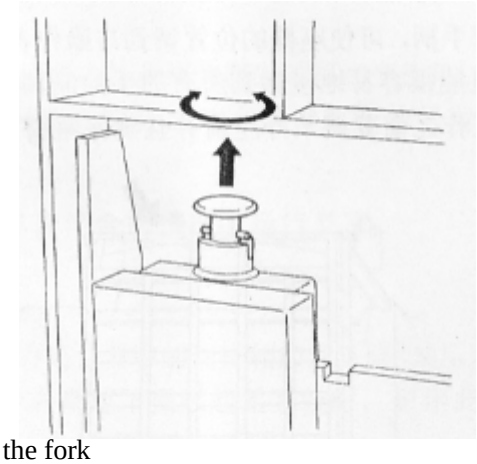
operator. It is dangerous to install loosely, use after detaching and use after modification.

(5) Hood of internal combustion engine

The hood of internal combustion engine can be opened completely to facilitate maintenance services. If you want to open the hood of internal combustion engine, just pull up the latch on internal combustion engine hood, with little force, the internal combustion engine hood can be opened with the help of the spring in internal combustion engine hood. If you want to close the hood of internal combustion engine, just press the front part of the hood down until the latch is in locking condition.

⚠ Warning

·When you close the hood of internal combustion engine, pay attention not to stick your fingers in it.



(6) Positioning pin of the fork

The positioning pin of the fork can lock the fork in a fixed position. The clearance of the fork can be adjusted by means of pulling the positioning pin up and turning 1/4 circle, and fixing it in required position. The adjustment of fork clearance should be subject to the requirements of the specified loading goods.

⚠ Warning

·After placing the fork in a position symmetric to the centerline of the vehicle, lock the positioning pin.

(7) Towing pin

Towing pin is applicable only to the following conditions:

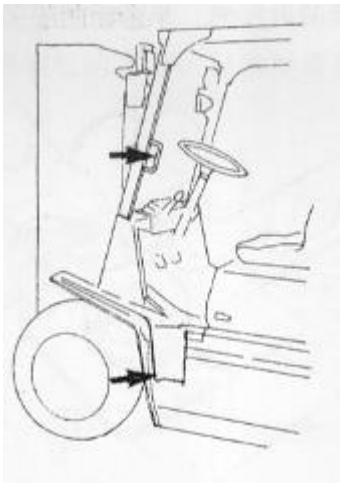
·Use when the forklift truck is in trouble condition and cannot continue to drive (such as wheel's sinking into the side ditch);

·Load or unload goods to the forklift truck for transportation.

⚠ Attention

·It is strictly forbidden to use it in towing or towed operation.

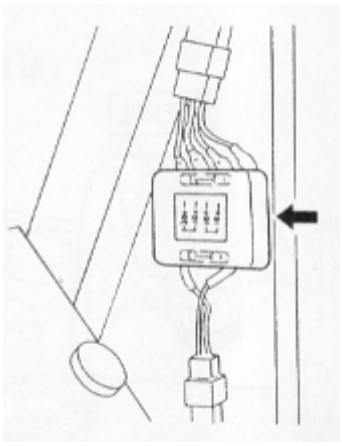
(8) Safety pedal and safety handle



Safety pedals are equipped in both sides of the vehicle body. Safety handle is located on the left support of overhead guard. It is necessary to use safety pedals and safety handle when getting on or off the vehicle.

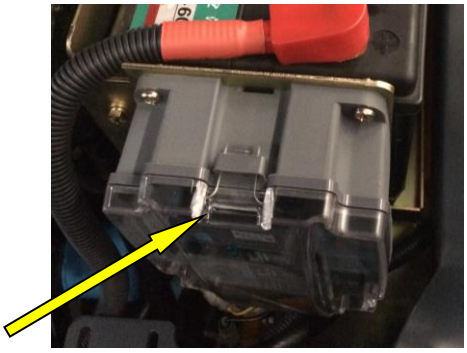
(9) Fuse box

M series internal-combustion forklift truck



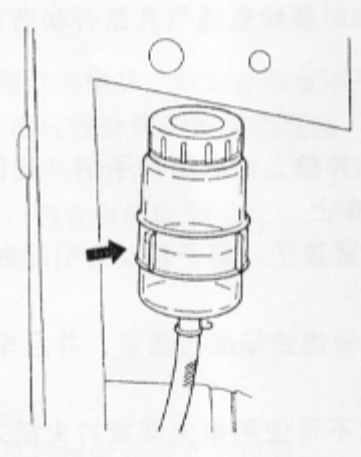
Fuse box is installed in the right side of inner surface of instrument panel.

A series internal-combustion forklift truck

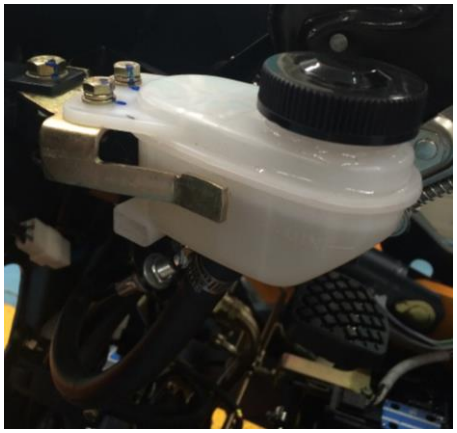


The fuse box installed in the electrical box.

(10) Brake fluid reservoir



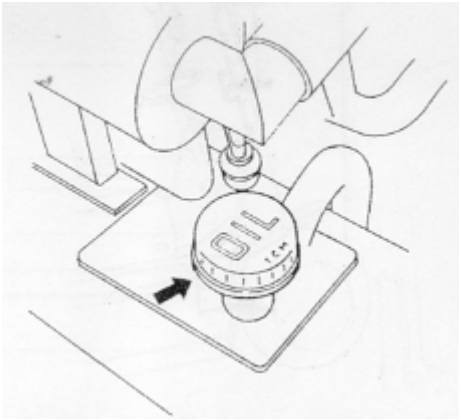
M series internal-combustion forklift truck



A series internal-combustion forklift truck

The brake fluid reservoir is installed in the left side of inner surface of the instrument panel. The reservoir is semi-transparent so that we can observe the level of the brake fluid from the outside.

(11) Cover of the hydraulic oil tank




Cover of the hydraulic oil tank is installed in the right inner side of the inner combustion engine hood from which the hydraulic oil is filled. The cover is also equipped with dipstick.

(12) Fuel tank cap

M series internal-combustion forklift truck

A series internal-combustion forklift truck

Fuel tank cap is located on the left rear side of the vehicle body. To open it, just turn it in counterclockwise direction.

⚠ Attention

·A vent hole is located in fuel tank cap so that the air can enter into the fuel tank. If the vent hole is blocked, some troubles will occur in fuel system. When filling fuel each time, check whether the vent hole is in

good status.

⚠ Attention

—Fill fuel—

·Stop the vehicle, shut down the engine and place the parking brake lever in lock position. Make sure there are no open fire and no smoking around. The driver should not stay in vehicle when filling fuel.

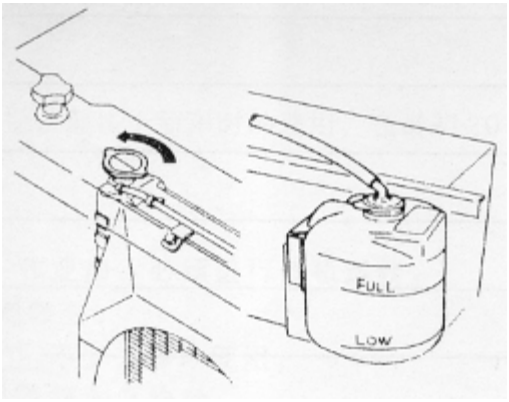
·It is necessary to cover the cap after filling fuel. A loose cap may cause fuel leakage or start a fire under poor condition.

·Before starting the engine, make sure the cap of the fuel tank is covered tightly and there is no fuel leakage on or around the vehicle.

·When checking the fuel level, be mindful not to use open fire such as fire from match or cigarette lighter.

(13) Water tank cap

Water tank cap is located in the lower part of rear cover plate of the internal combustion engine. It is unnecessary to open this cap for daily inspection.




(14) Water tank

Feeding tank is located near the battery.

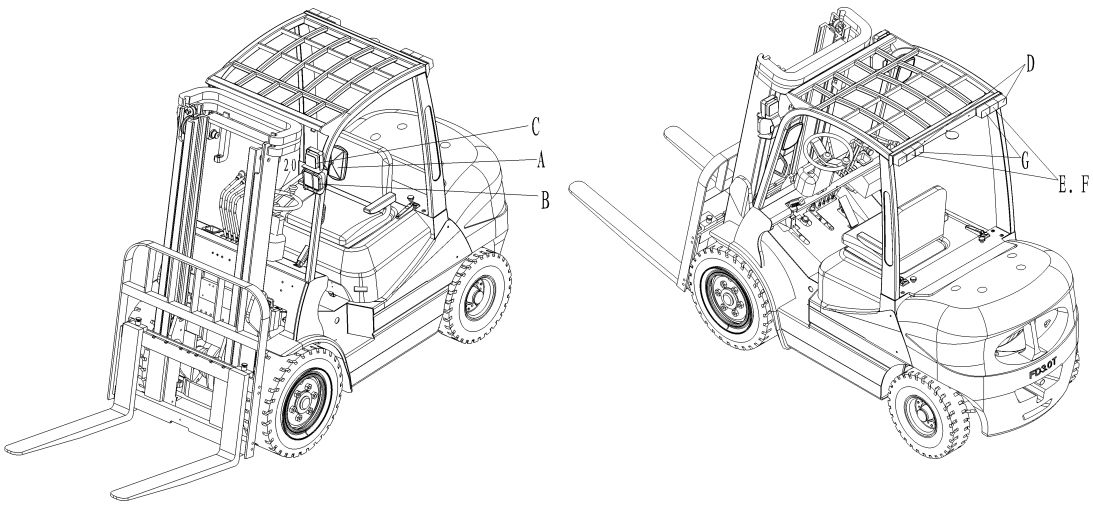
⚠ Warning

·Do not open water tank cap if the temperature of the engine is too high. Turn the cap aside to lower the pressure of the water tank, and then open the cap.

·Do not open water tank cap with gloves on hand.

(15) Lamps

M series internal-combustion forklift truck



The front part of the vehicle is equipped with two headlamps B and front combination lamp C (turn signal lamp and width lamp).

The rear part of the vehicle is equipped with rear combination lamps including turn signal lamp D, width lamp E, brake lamp F and backup lamp G.

A series internal-combustion forklift truck

Combination lamp：head lamp（55W），width lamp（5W），turn signal lamp（21W）

Three color taillights：three color taillights include the turn signal lamp（21W），width lamp（5W），brake lamp （21W），reversing light （10W）back light（55W）；

Warning light（2W）。

⚠ Attention

·Check the working conditions of lamps. If there is any lamp burn, lampshade damage or dirt, replace or repair it immediately.

·If it is required to install a rear illuminating lamp, contact sales department of our company, we will send technician to install it for you.

(16) Rear-view mirror A

⚠ Attention

·Keep the surface of rear-view mirror clean.

·Adjust the surface of rear-view mirror to a position where the rear part of the vehicle can be seen clearly.

## III Driving and Operation

Some notices for correct driving operation are introduced here, in order for your truck to maintain good performance, safe use, and frequent operation.

### 1. Use of New Truck

The service life of your truck depends on use at the time when the truck is new. In the early stage of 200-h operation, please pay high attention to the following items:

⚠ Attention

· Do what you can think of for service and maintenance.

· Avoid harsh operation, and avoid unreasonable use.

· Add lubricating oil and lubricating grease timely, and replace oil timely.

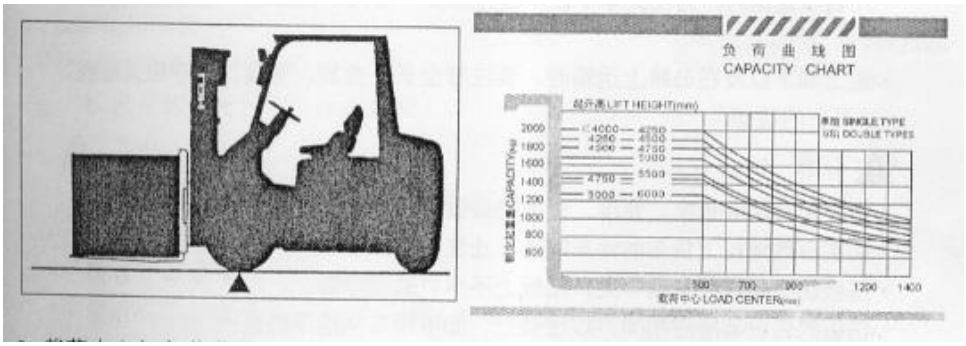
· Strictly execute the Battery Service Manual.

**2. Relationship between Load and Forklift Truck Stability**

Within the load curve, the forklift truck takes the center of front wheel as pivot point, to maintain the mutual balance for the load on truck body and fork. Pay attention to the load amount and the load center, to maintain the truck stability.

⚠ Warning

· If it goes beyond the load curve, danger exists for the rear wheel to be raised and under an atrocious situation, as the forklift truck may possibly turn over, leading to severe accident. As indicated in the figure, the same result exists with cargo closed to fork tip and increase in cargo weight, while under such circumstances, the loading capacity shall be reduced along with.




**3. Load Center and Load Curve**

Load center is the distance from the front end face of fork to the cargo center of gravity. The abovementioned load curve diagram has indicated the relationship between the truck load center and the allowable load quantity (load allowable for use). The data plate is pasted on the truck, and it shall be replaced with a new one, if damaged or lost.

⚠ Warning

· If the truck is equipped with attachments for disposal of cargos, such as side moving device, bucket, or rotating fork, its load allowable for use lower than the corresponding standard trucks (without any attachment) is attributed to the following reasons:

a) Load for weight of equivalent attachments is reduced.

b) The load allowable for use is reduced in the same principle, as the length of attachments has aroused the load center to move forward.

· The installation of attachments has aroused the load center to move forward, called “Loss of Load Center”.

· Avoid exceeding the load allowable for use of load curve pasted on truck or attachments.

**4. Stability of Forklift Truck**

The standard for stability of forklift truck is specified in ISO or other standards. However the stabilities described in these standards are not applicable to all the operating status, while the stabilities of forklift truck vary for different operating status.

Under following operating status, the maximum stability is ensured:

a) The ground is level and firm.

b) The truck is operated under standard no-load status or loaded status.

Standard No-Load Status: Fork or other load-bearing accessories 30cm off ground, and mast free from load and properly back tipped

Standard Loaded Status: For or other load-bearing accessories 30cm off ground, with the load quantity allowable for use at the standard load center, and the mast properly back tipped

⚠ Warning

· During cargo loading-unloading, try as much as possible to tip forward or backward at a minimum degree. Unless the load is firmly fixed or rigid cargo rack is used, or the lifting height is low, and otherwise avoid tipping forward.

**5. Conveyance and Loading-Unloading of Forklift Truck**

(1)Conveyance of Forklift Truck

⚠ Attention

· When cargo truck is used for conveyance, in order not for the forklift truck to move about inside the carriage, the wheels shall be stopped, and the forklift truck shall be properly fixed using rope, etc.

· Attention shall be paid to the whole length, whole width, and whole height, when forklift truck is loaded, unloaded as well as conveyed on highways, and relevant legal regulations shall be observed.

(2)Loading-Unloading of Forklift Truck

⚠ Attention

· Please use lap plate typical of enough length, width, and strength.

· Pull up the parking brake of the cargo truck practically and effective, and the wheels shall be stopped.

· The lap plate shall be practically fixed at the center of carriage, and grease shall not be attached on the lap plate.

· The left and right heights of lap plate shall be the same, to facilitate a stable operation of vehicle when forklift truck is loaded-unloaded.

· In order to prevent danger, please don’t change direction or perform any traverse movement on the lap plate.

· When forklift truck is loaded onto cargo truck, reversing operation shall be performed slowly, in order for the left and right tyres to come aboard at the same time.

(3)Lifting of Forklift Truck

⚠ Attention

· Forklift truck shall be lifted by personnel who have been specially trained.

· Rope shall be used to hook up the designated lifting position on forklift truck.

· The rope used shall have enough bearing capacity.

· Designated lifting positions are also available for the detachable parts and components on forklift truck.

**6. Starting Forklift Truck**

(1)Before Starting Forklift Truck

· Prior to truck operation, it shall be examined as to whether or not all the control devices and warning devices are under normal operation, and it is prohibited to start forklift truck, if there is any damage or failure which has not yet been corrected.

· Examine the safety status around the truck.

• Check the security situation around the vehicle.

• Make sure that the gear shift lever and multi-way valve handle are placed in the neutral and the parking brake lever is fully engaged.

a) Start Gasoline Engine

• Cooler

Step the accelerator pedal for 2-3 times and release it by means of foot getting away from it, return the preheating start switch to "START" position and start the engine, and then release the switch key after starting the engine.

· Heat engine

Step a half and hold the accelerator pedal, return the preheating start switch to "START" position and start the engine, and then release the switch key after starting the engine.

⚠Attention

·When warmly start the engine, do not completely press the accelerator pedal, for this may cause hardness to start. Meanwhile, step the accelerator pedal for several times may also cause hardness to start.

b) Start Diesel Engine

Turn the preheating start switch to "ON" position until the preheating indicator goes off and then turn the preheating start switch to "START" position. If it is hard to start the engine, check whether the fuel level is too low, the condition of air mixing in fuel system or whether preheating wire is broken down.

(2) After Starting Engine

·Preheating the engine (about 5 minutes)

·Check the engine – rotation (sounds or gears)

⚠Attention

·Check the sounds of fire (or misfire)

·Check air exhaust condition (density)

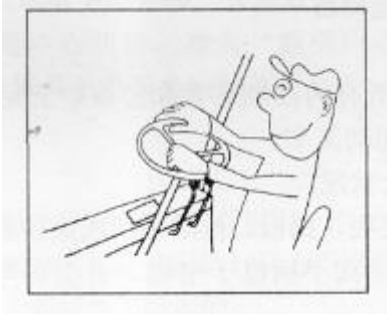
·Make sure that all indicator lamps go off.

·After the engine is preheated completely, completely operate the handle of multiple unit valve for 2-3 times to check its working condition.

**7. Running**

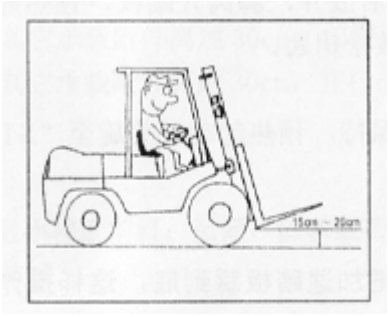
(1)Operator's Posture

Hold the handgrip of steering wheel using left hand, and the right hand is gently put up on the steering wheel and get ready for loading-unloading operation.

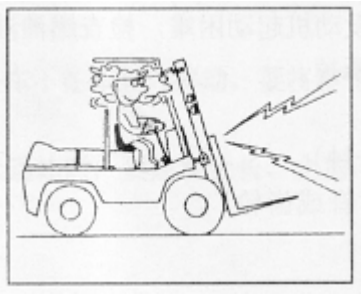


(2)Basic Running Status

The bottom surface of fork is off ground by 15~20cm, and the mast tips back in place.

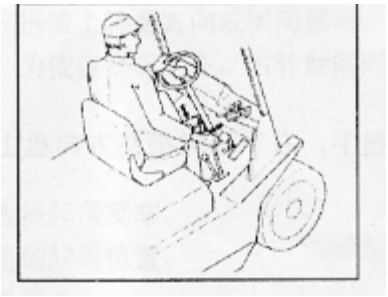



Look around the forklift truck, examine the safety. Send out signal prior to start of truck.



**Power transmission forklift truck**

Step the clutch pedal and operate gear shift knob.



Loosen the handle for parking brake, and turn on the commutator switch.

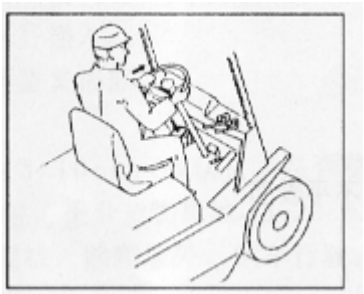
Slowly push down the accelerator pedal for truck to start running. Sudden commutation is prohibited during forward/backward operation.

⚠Attention

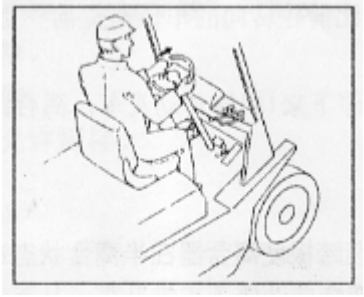
• Do not step the clutch pedal during the running.

**Hydraulic Transmission Forklift Truck**

Step the brake pedal and operate forward – backward gear shift knob



Release the parking brake handle.



Release the brake pedal and step the accelerator pedal, the vehicle begins to run.

(3) Gear shift

It is allowed to start the vehicle at high gear under unloading condition, while it is necessary to start the vehicle at low gear under loading condition.

**Mechanical Transmission Forklift Truck**

a) Stop the vehicle before changing the travel direction of the vehicle.

b) When changing high gear into low gear or changing low gear into high gear, release the accelerator

pedal after the engine is accelerated, meanwhile step the clutch pedal, place the gear shift knob in the required position, and then release the clutch pedal and step the accelerator pedal.

Hydraulic Transmission Forklift Truck

a) Stop the vehicle before changing the travel direction of the vehicle.

(4) Deceleration

**Mechanical Transmission Forklift Truck**

Because this forklift truck is equipped with synchromesh transmission, it is unnecessary to give a secondary clutch operation. Release the accelerator pedal, completely step the clutch pedal, place the gear shift knob in gear I position, and step the accelerator pedal after releasing the clutch pedal.

**Hydraulic Transmission Forklift Truck**

Slightly loosen the accelerator pedal, and step the brake pedal if necessary.

⚠ Warning

The truck must be decelerated

· At crossroads

· In crowded places

· On rough grounds and other rugged surfaces

· approaching cargo or obstacle

(3)Steering

Different from normal vehicles, the steering wheel of forklift truck is mounted in the rear part, which allows the rear part to rotate outwards during steering. Slow down the truck, and steer the direction towards the side to be turned, and the steering wheel will rotate somewhat beforehand compared with the truck of front-wheel turning.

(4)Stopping or Parking

Decelerate, push down the brake pedal for truck to stop, and place the reversing handle on the neutral gear.

⚠ Attention

Parking: Park the truck in the place where traffic is not hindered, and

a) Pull up the handle for parking brake.

b) Drop the fork to ground.

c) Turn the key switch to “OFF” position, and press the emergency power disconnecting switch.

d) Take off the key and keep it properly.

⚠ Warning

· Safety Parking

a)Truck to be parked on a level ground – It is the best to park the truck in a spacious place, and if it has to be parked on a slope, park the truck horizontally on the slope, and stop the wheels using wedge blocks, to prevent accidental downslide.

b) Truck shall be parked in a designated area or a place where traffic is not hindered, and labels or signal lights may be set around the truck, if required.

c) Truck shall be parked on a firm and hard ground, and it is to be avoided to park the truck on a loose and soft muddy land or a rather slippery pavement.

d) In the case when lifting system is damaged, and the fork fails to drop on ground, hang a warning flag on the

end of the fork, and park the truck in a place where traffic is not hindered.

(7)Recovery Service of Failure Forklift Truck

⚠ Attention

· If failure occurs with forklift truck during operation, the truck shall be dragged away timely for repair, to avoid hindering the operation of other vehicle and personnel.

**8. Loading**

(1)The spacing of fork shall be as large as possible, for a good traverse stability.

(2)The forklift truck and the cargo shall be aligned, when for inserts into pallet or directly into cargo.

(3)The fork must be inserted in parallel, relative to the pallet.

(4)The fork shall be fully inserted, up to the rootage of the fork.

(5)Cargo Lifting

a) Lift cargo firstly off ground by 5-10cm, and confirm whether or not cargo is steady.

b) Then, tip the mast backward. Lift the cargo off ground by 15-20cm, and then begin running.

(6)There is a hindrance when bulky cargo is conveyed, and the truck shall reversely run, except for climbing a slope.

⚠ Attention

· The loading direction used for fork shall not be reverse to the design loading direction.

· It is not allowed for fork to carry cargo alone.

· It is not allowed for fork to be used to drag cargo.

· It is not allowed for all the parts of fork to be welded.

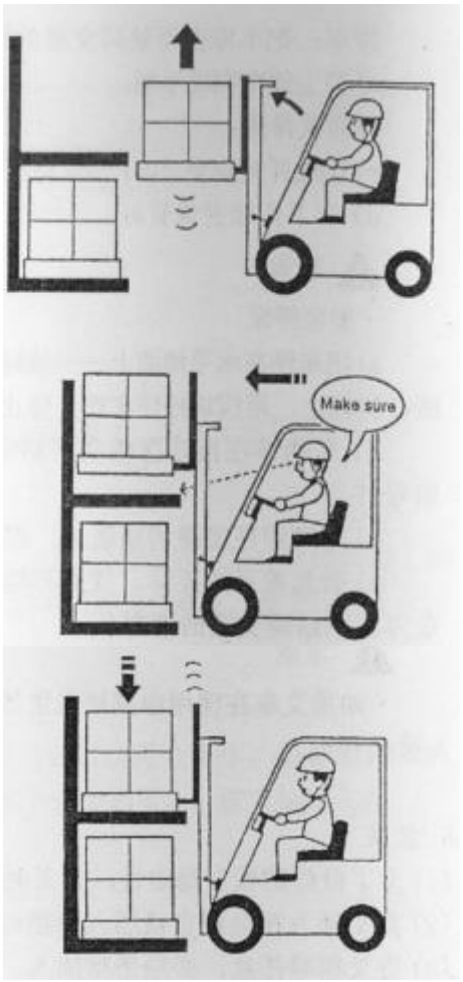
**9. Stacking**

⚠ Attention

· The following items shall be examined, before operation of forklift truck starts:

a) Ensure that there is no cargo to fall or damaged cargo in the loading area.

b) Ensure that there is no object and cargo stack that may hinder safety.




Stacking shall be performed according to the Following procedure:

(1) Run at a decelerated speed when the stacking area is approached.

(2)Park the truck in front of the stacking area.

(3)Examine whether or not it is safe around the stacking area.

(4)Adjust the position of forklift truck, for forklift truck to be located in front of the position where the cargo is place in the stacking area.

(5)The mast is vertical to the ground and the nosing fork exceeds to height of stacked cargo.

(6)Examine the stacking position and run forward, to park the truck at a proper position.

(7)Ensure that cargo is above the cargo stacking position. Slowly drop the fork, and ensure that cargo has bee properly placed.

☞ Notes

·When cargo is not completely placed on rack or bearer:

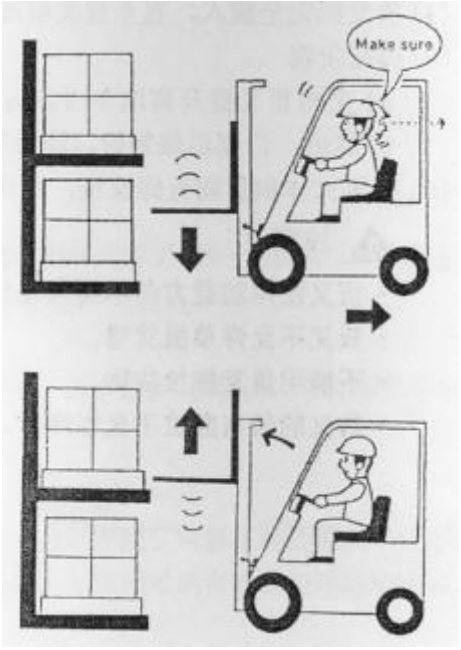
a) Lower the cargo until the fork no longer bears the weight.

b) Run the forklift truck backwards by 1/4 length of the fork.

c) Then lift the fork by 50-100mm, move the truck forward and then place the cargo on a proper stacking position.

(8)Observe the space behind the forklift truck, and run the truck backward to avoid bump of fork and pallet into each other.

(9)Make sure that the front part of fork has left the Cargo or pallet, and lower the fork to facilitate running.




**10. Unpiling**

Unpiling shall be performed in the following procedure:

(1)It is required to run at a decelerated speed when the truck approaches the cargo to be conveyed.

(2)Park the truck in front of the cargo (30cm distance between cargo and fork tip).

(3)Adjust the position of forklift truck in front of the cargo.

(4)Ensure that no overloading will happen for the cargo.

(5)The mast is vertical to the ground.

(6)Observe the fork position and move the forklift truck forward, until the fork is completely inserted into pallet.

☞ Notes

· When it is difficult for fork to be completely inserted into pallet:

a) Insert a length 3/4 of the fork and raise one point of the pallet (50-100mm).

b) Insert the fork completely into the pallet.

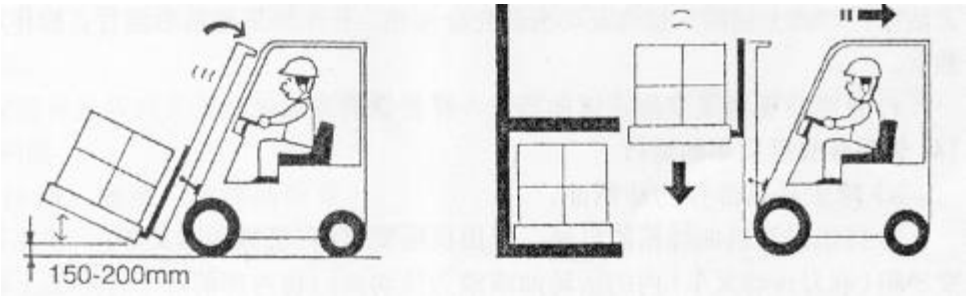
(7)After fork is inserted into pallet, raise the pallet (50-100mm).

(8)Observe the space around and move the forklift truck until the cargo is lowered.

(9)Drop the cargo to off ground by 150-200mm.

(10)Tip the mast backwards to ensure the stability of cargo.

(11)Convey the cargo to the destination.




**11. Storage**

(1)Before Storage

The forklift truck shall be thoroughly cleaned, and examined according to the following procedure, before it is stored:

a) Clean and remove the oil and grease attached on the truck body using cloth and clear water, as per requirement.

b) When truck body is cleaned, examine the overall situation of the vehicle, and it is especially required to examine whether or not the vehicle body is sunken or damaged, whether or not tyre is worn through, and

whether or not iron nail or stone is embedded inside the tyre tread pattern.

c) Fulfill the oil tank with the specified oil

d) Examine whether or not oil leakage exists.

e) Add lubricating grease as per requirement.

f) Examine whether or not the nuts for wheel hub and the jointing surface of cylinder piston rod are loosened, and whether or not bruise and draw mark exist on the surface of piston rod.

g) Examine whether or not the rotation for roller of mast is smooth.

h) Uplift the lifting cylinder to the top, and allow the cylinder to be filled up with oil.

i) In the winter or cold season, the long-acting antifreeze does not need to be released, while the cooling water should be exhausted.

⚠ Warning

· So long as it is found that the forklift truck needs to be repaired, it ceases to be effective, or it is confronted with unsafe factors, the situation shall be reported to managerial personnel, and the forklift truck shall be stopped for use until it recovers to safe status.

(2)Routine Storage

a) Park the forklift truck in the designated place, and fill up the wheels using wedge blocks.

b) Turn the gear-shift handle to the neutral position, and pull up the parking brake handle.

c) Turn the key switch to “OFF” position, operate the control rod for multi-way valve for a number of times, and release the remaining pressure in the cylinder and the pipeline.

d) Take off the key and have it placed and kept in a safe place.

(3)Long-range Storage

Following service and examination items shall be performed based on the service for “Routine Storage”:

a) Park the truck in a relatively high and hard ground, in consideration about rainy season.

b) Remove the battery from on the forklift truck. Even if the forklift truck is parked outdoors or indoors, the battery shall be placed in a dry, shady, and cool place, if the place is wet and hot, to be charged once every month.

c) Coat the antirust oil to the exposed parts such as cylinder piston rod and the shafts that may possibly be rusted.

d) Cover the parts and components liable to be affected with damp.

e) The truck shall be operated at least once a week. The oil and grease on piston rod and shafts shall be removed, the power supply shall be turned on, to allow the truck to operate forward and backward at a slow speed, and the hydraulic control shall be operated for a number of times.

f) It is avoided to park the forklift truck on such loose and soft pavements of bitumen in summer.

(4)Operation of Forklift Truck after Long-range Storage

a) Remove the antirust oil for the exposed parts.

b)Remove the extraneous substance and water in hydraulic oil tank.

c)Charge the battery, mount it on the forklift truck, and connect with the lead wire of battery.

d)Carefully examine everything prior to start.

e) Add the coolant the required liquid level.

f) Charge the battery and load it onto the forklift and connect with the battery leads.

g) Careful inspection before starting.

h) Preheat forklift.

**IV Regular Examination and Maintenance**

A comprehensive examination of the forklift truck in advance may avoid truck failure generation and inability to reach its due service life. The number of hours listed in the Regular Maintenance Timetable is determined, based on 8-hour work a day and 200-hour work a month for the forklift truck.

Detailed records shall be kept after examination, and the records shall be retained for 3 years.

⚠ Attention

· Only personnel who have been trained or who have passed the qualification assessment can maintain and repair forklift truck.

· Daily and monthly examination and maintenance may be accomplished by operators themselves.

**1. Examination Requirements**

(1)Only authentic parts and components are used.

(2)Only authentic or designated oils and greases are used.

(3)Clean up the oil filler port and grease nipple using brush or cleaning cloth prior to oil or grease addition.

(4)The truck shall be parked on a level ground for examination of oil level and oil addition.

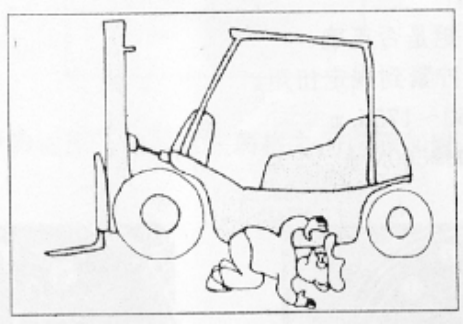
(5) Prevention, service, and maintenance shall be regularly performed, and attention shall be paid not to injure yourself.

(6)In the case when you have to work on the listed fork and under the attachments, stay pole shall be used to support the fork or the attachment, to prevent downslide of fork and inner mast.

(7)It shall be reported to the managerial personnel, if any place of damage or failure is found, and it is prohibited to use this forklift truck before it is repaired.

**2. Examination Items**

(1)Examination for Leakage of Hydraulic Oil and Transmission Case Oil



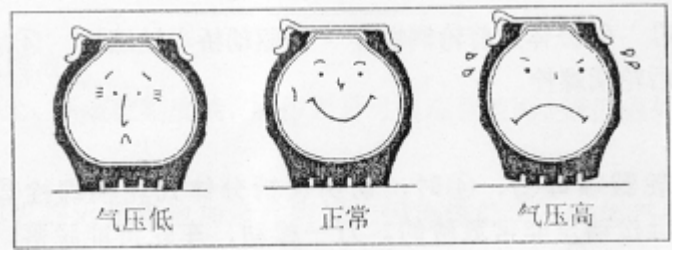
Examine whether or not oil leakage exists with joint of hydraulic pipe or driving system, and examination may be performed through touch using hand or visually.

Check whether there are impurities in the fuel or not.

⚠Warning

• If fuel leak is discovered before operations, do not start the vehicle, and exclude the leakage before starting the engine.

(2)Examination of Tyre Air Pressure (Pneumatic Tyre)




Low Pressure Normal High Pressure

Examine the status of tyres. Too low air pressure may reduce the service life of tyre, and increase electricity consumption. Different air pressures for left and right tyres or damage of tyre may cause different steering forces.

The data plate pasted on the side of the hood of electric forklift truck has indicated the tyre standard air pressures.

| Capacity / Tire pressure | 1-1.8t | 2-2.5t | 3-3.5t | 4T | 4-4.5T | 5-7t | 8-10t |
|---|---|---|---|---|---|---|---|
| Front tire/ KPa | 790 | 860 | 970 | 930 | 930 | 830 | 760 |
| Rear tire/ KPa | 1000 | 860 | 790 | 790 | 860 | 830 | 760 |

Screw off the valve cap counterclockwise, and use barometer to measure air pressure of tyre. Adjust the pressure to specified value if required, and screw on the lid cap after it is confirmed that there is no air leakage.

Examine whether or not damage exists with the surface of tyre connected with ground or its side face, and whether or not wheel rim is distorted.

As a very high air pressure is required by tyre of forklift truck to bear a heavy load, any extremely tiny distortion of wheel rim or damage of tyre surface connected with ground may both cause accident.

⚠ Warning

· After tyre and rim have been assembled, all the bolts and nuts shall be tightened to the specified torques, before it is allowed for tyre to be charged, and the charge tyre shall be provided with expansion energy. Tyre air pressure shall not exceed the specified value.

· When air compressor is used for air charge, first of all the pressure shall be properly adjusted. As the maximum output of pressure for air compressor is very high, and it may cause severe accident if it is improperly adjusted.

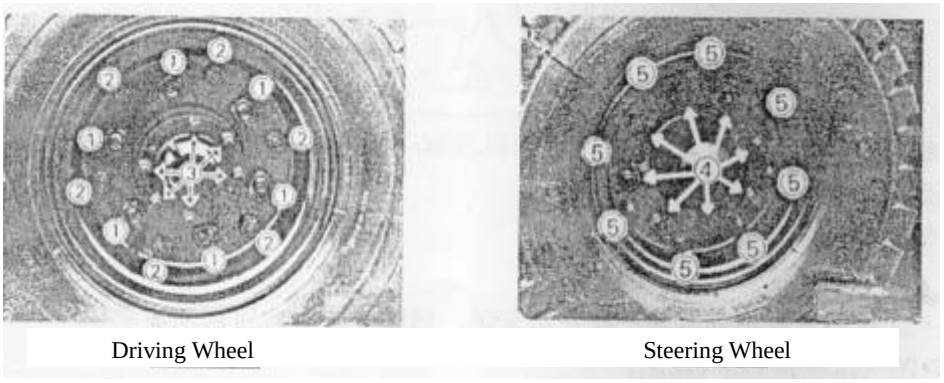
(3) Examination of Wheel Hub Nut Torque

Examine whether or not the hub nut torque is correct.

All the wheel hub nuts shall be tightened to the specified torques.

1-1.8t:150-175N.M

2-3.5t:480-560 N.M



Driving Wheel　　Steering Wheel

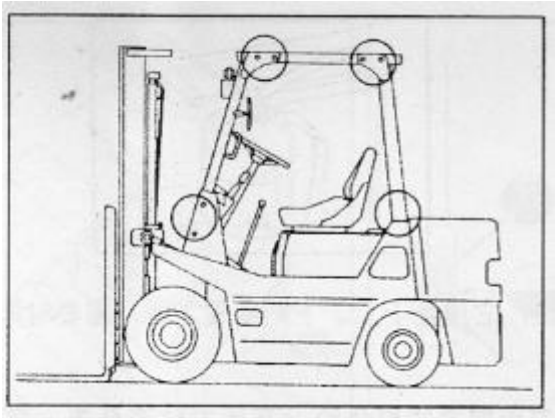
①Wheel Hub Nuts ②Separate Front Wheel Hub Bolts ③Driving Axle Half Shaft Bolts ④Rear Wheel Hub Nut ⑤Separate Rea Wheel Hub Bolt

⚠ Attention

· When wheel hub nut is detached, never demount the separate wheel hub bolt by mistake.

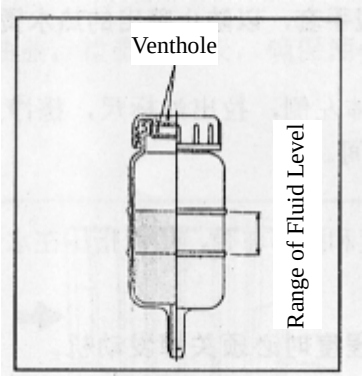
· It is very dangerous for wheel hub nut to be loosened. In case it is loosened, the wheel may drop out, leading to turnover of the truck.

(4)Examination of Overhead Guard



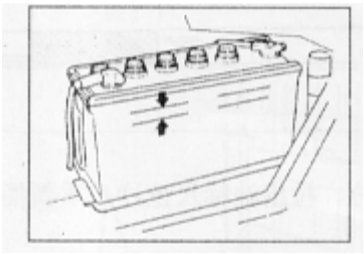
The overhead guard plays a protective function, and it shall be ensured that it is firmly mounted and all the structural components are firm.

(5)Examination of Brake Fluid Level




Examine the level of brake fluid reservoir, and the fluid level shall be between the two cases. It shall be avoided for dust or water to enter into fluid reservoir, during addition.

(6)Examination of Battery Electrolyte



Examination for Quantity of Battery Electrolyte

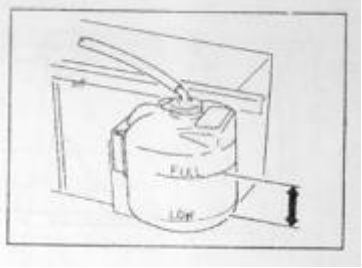
There are scale lines for upper and lower liquid levels on the battery container, and the operator may observe the liquid level which shall be located between the 2 lines.

⚠ Danger

· It is not allowed for open fire to approach around the fluid filling hole of battery, as it may generate hydrogen and cause explosion in this place.

⚠ Warning

(7) Coolant Level Inspection



Check the liquid level of the feeding tank. The liquid level should be in a place between lower and upper scale marks. Add coolant if necessary.

⚠Warning

·Special care should be exercised when opening the water tank pressure cap. Sudden releasing of the pressure will produce vapor stream and may cause personal injury. Wrap the cap with thin cloth or other similar things and slowly loosen the cap to let the vapor stream flow out, and then remove the cap. To avoid hot water scald hands, do not wear gloves.

(8) Engine Oil Level Inspection

Engine oil level gauge is located on the left side of the engine, draw the oil level gauge out and insert it again after cleaning the ulnar head to check whether the oil level is located between two scale lines.

(9) Fan Belt Tension Level Inspection

Check the tension of the fan belt and whether it is damaged by means of pressing the middle part of the belt between the water pump and generator with thumb

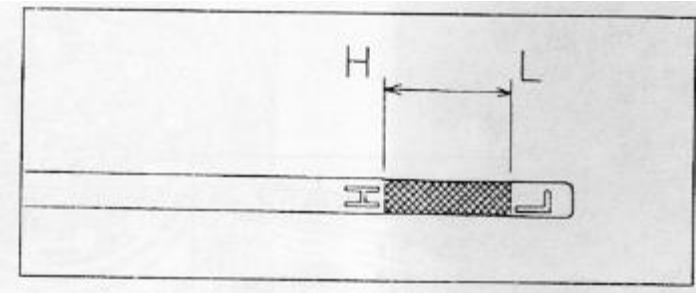
⚠Warning

·The engine must be turned off when checking the tension of the fan belt.

(10)Examination of Rear Combination Light

Examine whether or not damage or soilage exists with the rear combination light (tail light, parking light, and reversing light).

(11)Level of Hydraulic Oil




Examine the hydraulic oil level using oil leveler, pull out the oil leveler and wipe it up. Re-insert it and then pull it out, to see whether or not the oil level is located between the high and low two scale lines.

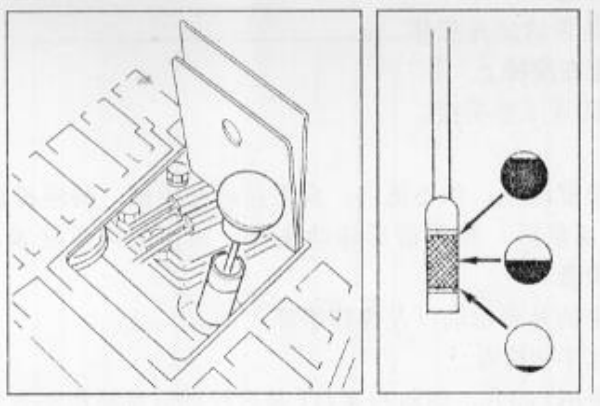
⚠ Attention

· Power supply shall be turned off, the fork shall be dropped to the ground, and the forklift truck shall be parked on a level surface, when oil level is examined.

(12)Pipeline of Cylinder

Visually examine whether or not oil leak exists with hydraulic pipeline, as well as lifting and tilting cylinders.

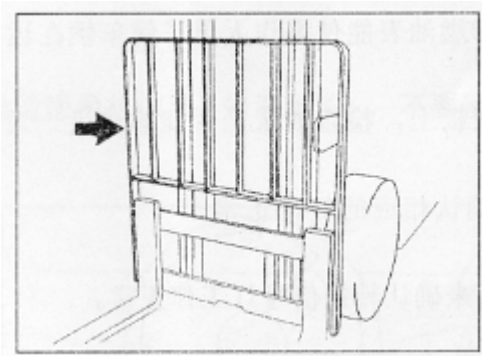
(13) Power Shift Gearbox Oil Level



**Hydraulic Transmission Forklift Truck**

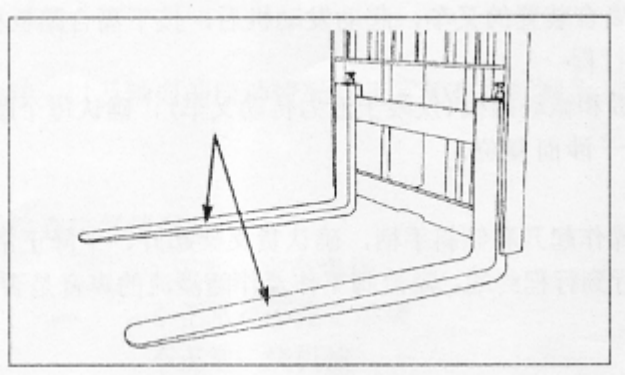
Open the inspection cap and draw the filler cap out, and check the oil level gauge to make sure that the oil level is in proper scale position. If necessary, add particular hydraulic oil.

(14)Examination of Backrest



Examine whether or not the mounted bolts for backrest are loosened, and they shall be tightened up when required.

(15)Fork and Fork Positioning Pin



Examine the mounting status of for positioning pin, and whether or not the fork is distorted or cracked.

(16)Front Headlight and Front Combination Light

Examine whether or not the lamp screens are clean or damaged.

Take care not for your finger to be injured for compression by hood.

(17)Seat Adjustment

Ensure that the seat is at a proper position, and pull the adjusting handle rightward, if improper, to adjust the seat to a position where it is easy for foot and hand operations. Slightly move the seat forward or backward, after adjustment, and ensure that it is reliably locked up.

(18)Examination of Reversing Handle

Examine whether or not reversing handle is loosened and the operating hand feeling.

(19)Examination of Multi-way Valve Operating Handle

Examine whether or not operating handles (Lifting, Tilting, and Attachments) are loosened, and whether or not operation is easy.

(20)Examination for Operation of Parking Brake

It shall be confirmed that the parking brake is safe and reliable, after the parking brake operating handle is pulled up.

Preparation prior to Start

Before turning on the power supply, ensure that the gear-shift handle is located at neutral gear, and parking brake is reliable. v

(21)Instruments

Hourmeter, trouble meter and running speedometer enable operators to understand the situation of truck during operation.

(22) Inspection of fuel volume

The fuel gauge is installed on the instrument panel. Check whether the fuel volume can satisfy the requirements of a day's working use.

(23)Lamplights

Turn on the light switch, and confirm that corresponding lights are all under normal conditions.

(24)Examination of Turn Signal

Operate the turn signal handle to confirm the normal work of turn signal light.

(25)Examination for Operation of Horn Pushbutton

Press the horn pushbutton to confirm whether or not the horn is able to hoot.

(26) Inspection of clutch pedal

**Mechanical Transmission Forklift Truck**

Check whether the action of clutch pedal is stable.

For the forklift truck equipped with hydraulic clutch device, the inspection should be carried out by means of pressing clutch pedal after starting the engine.

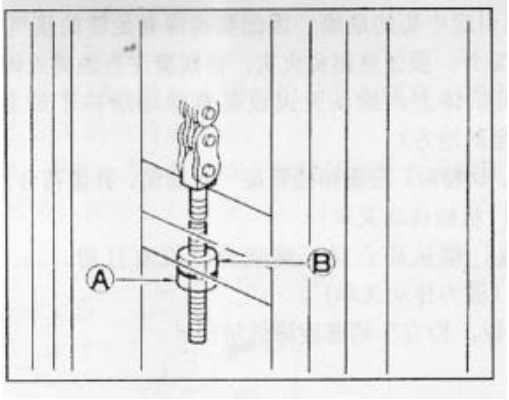
(27) Idle stroke of brake pedal

Step the brake pedal and inching pedal (only applies to hydraulic transmission forklift truck) to check whether the actions of all pedals are stable and the pedals can reset without interference.

(28) Mast operation

Press the horn and operate the lifting and tilting handle to check whether the lifting and falling of the fork arm is normal and the tilting of the mast is stable. Check whether the cylinder piston can run to the end of travel, the working condition and sound of overflow valve is normal. Pay attention to the sound of system operation.

(29)Examination of Tensioning Degree for Lifting Chain



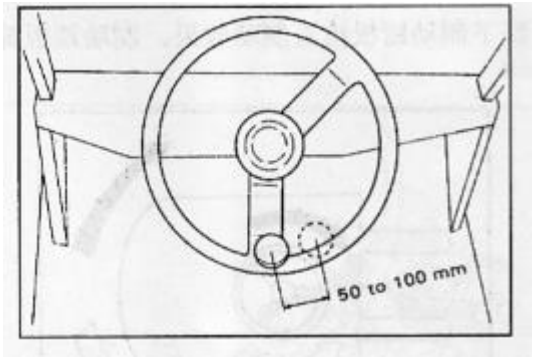

Examine the tensioning degree of lifting chain and whether or not anomaly exists with it.

When tensioning degree is examined, the cargo fork shall be lifted by about 5cm, and the middle part of the chain is to be pushed and pressed using thumb. Confirm whether or not the tensioning degrees of left and right chains are consistent, while the locking nut (A) for the fixed pin shall be loosened, and the adjusting nut (B) shall be screwed and adjusted to adjust the chains.

⚠ Attention

· Please use mechanical oil (such as hydraulic oil) for lubrication of lifting chains, and avoid using lubricating grease.

(30)Steering Wheel Free Stroke




Examine the rotation as well as the axial loosening status of steering wheel. The normal free stroke is 50-100mm, and axial loosening is not allowed.

(31) Inspection of air exhaust

Inspect the air exhaust condition after preheating the engine.

No color or light blue normal: complete combustion

Black abnormal: incomplete combustion

White abnormal: burn oil

Check whether there are abnormal sounds or variations in engine and driving system.

⚠ Danger

·Because the engine exhausted air is harmful and may cause danger of poisoning when starting and using the forklift truck in a closed space, make sure there is sufficient oxygen in this place. Regularly inspect the volume of exhaust air emission. Inspection of air exhaust should be carried out outdoor and be careful to avoid fire, and particularly be careful to the leakage of oil or other fuel materials. Do not leave the waste cloth or paper on the engine body, and place the fire-extinguishing equipment in proper position and learn how to use them.

Running at low speed – (in a safe place)

·It is necessary to recheck the volume of exhaust air and comply with the requirements of specified government rules and regulations after the engine is repaired or adjusted.

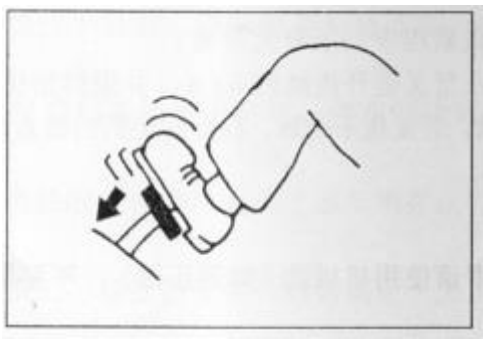
(32) Inspection of clutch control (mechanical transmission forklift truck)

Step the clutch pedal and make sure the clutch is engaged normally without slipping.

Inspection of inching pedal (hydraulic transmission forklift truck)

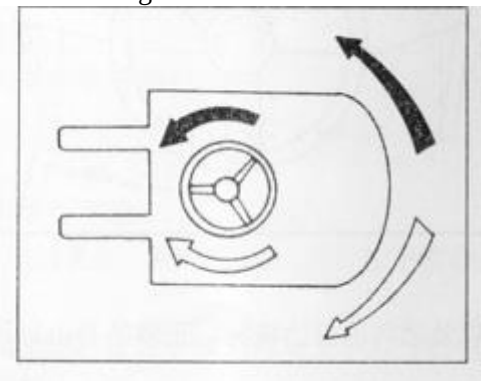
Slightly step the inching pedal to check the deceleration condition of the vehicle.

(33)Examination of Brake



Drive the truck at a slow speed and push down the brake pedal to examine the braking effect. The brake light turns on, after the brake pedal is pushed down.

(34)Examination of Steering



Turn the steering wheel, when truck is running at a slow speed, and observe whether or not the left and right steering forces are consistent, and whether or not other abnormal effects exist.

(35)Examination of Parking Brake

Confirm that the truck running at a slow speed can be braked and parked, after the parking brake handle is pulled up.

(36)Examination of Reversing Light and Reversing Buzzer

The reversing light turns on and the reversing buzzer hoots, when direction control handle is placed at the backward gear.

3. **Maintenance**

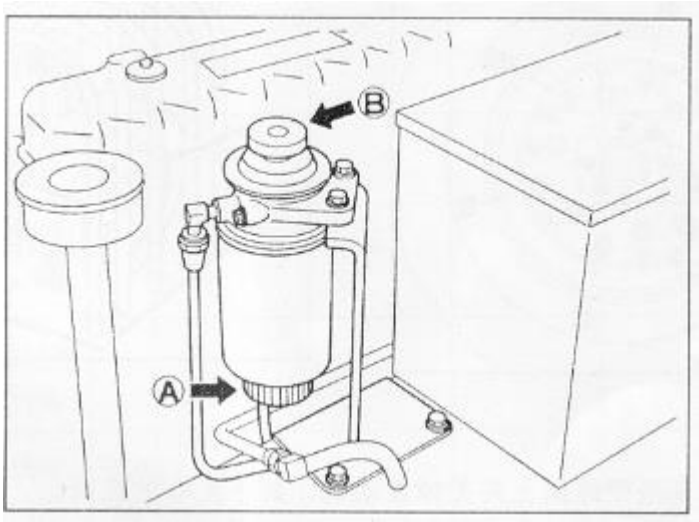
**Diesel Vehicle**

When the indicator of oil-water separator lights up

a) Turn off the engine, rotate (A) section for 4 to 5 circles to loosen water drainage screw plug, keep pressing pump (B) until water completely flow out of the oil-water separator.

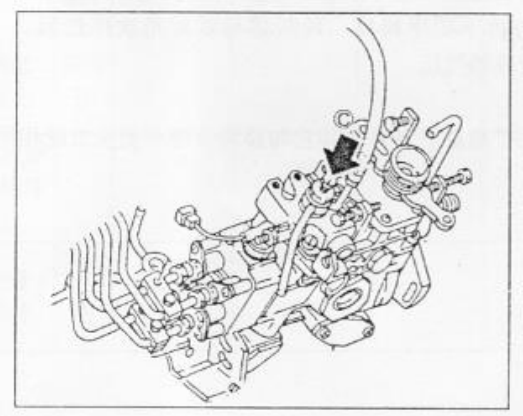
b) Tighten the water drainage screw plug and press the pump (B) for several times to check whether the screw plug has leakage.

c) Make sure the indicator goes off after starting the engine.




（2）Air exhaust of fuel system

**Diesel Vehicle**



a) Turn off the engine and loosen the exhaust plug (C) on injection pump, press the pump to exhaust air until the fuel flow out of the screw plug.

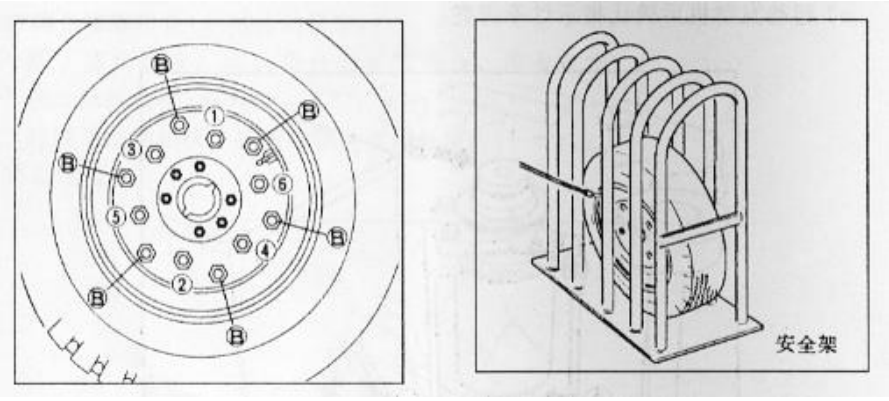
b) Tighten the exhaust plug to ensure that no fuel leaks.

(3)Replacement of Fuse Wire

Fuse wire is able to protect electrical system, and to prevent over-high current. If it occurs that some part fails to work, possibly the corresponding fuse wire is already burned out, and it must be replaced with a fuse wire of the same capacity.

(4)Replacement or Repair of Tyre

Get ready the tools and jack prior to replacement of repair.




a)Front Wheel

· Park the truck on a firm and hard pavement and turn off the engine, and demount all the loads.

· Pull up the parking brake hand le and fill up the wheel using wedge block, and place the jack under the truck body.

· Jack up the truck and maintain the tyre on ground, loosen the nuts for wheel hub, but don’t remove the tyre.

· Continue jacking up the truck until the tyre is off ground, take off the nuts and remove the tyre.

· The installation of tyre is contrary to the disassembly sequence, and the wheel hub nuts shall be tightened up in a diagonal order.

Examine the tyre air pressure, after it has been assembled.

b)Rear Wheel

The procedure is the same as the repair and replacement methods for the front wheel, except that the jack shall be placed under the counter weight.

**4. Regular Maintenance Timetable**

This timetable is set based on the standard working time and operating conditions, and please perform the maintenance beforehand, if the forklift truck is working under atrocious conditions ("●" indicating replacement).

## Engine

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semi-annually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Engine | Visually examining engine running status | | ○ | ○ | ○ | ○ | ○ |
| | Sound of engine | | ○ | ○ | ○ | ○ | ○ |
| | Exhaust color | | ○ | ○ | ○ | ○ | ○ |
| | Cleaning or replacing air filter core | | | ○ | ○ | ● | ● |
| | Examining crankcase and cleaning scale | | | | ○ | ○ | ○ |
| | Examining and adjusting valve clearance | Thick Feeler Gage | | | | ○ | ○ |
| | Tightening cylinder head bolt | Torque Wrench | | ○ Only first for gasoline engine | | | ○ Only for C240 Diesel Engine |
| | Examining cylinder compression pressure | Pressure Gauge | | | | | ○ |
| Crankshaft Ventilation Device | Examining the blocked or damaged status of valve and pipe | | | | | ○ | ○ |
| Speed Governor or Injection Pump | Examining the maximum rotational speed at no load | Tachometer | | | | | ○ |
| Lubrication System | Whether or not oil leak with engine | | ○ | ○ | ○ | ○ | ○ |
| | Examining oil volume and cleanliness | | ○ | ○ | ○ | ○ | ○ |
| | Replacing engine oil | | | ● 50 Hours for First Time | ● | ● | ● |
| | Replacing engine oil filter core | | | ● 50 Hours for First Time | ● | ● | ● |

## Engine

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semi-annually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Fuel System | Visually examining whether or not oil leak with oil pipe, oil pump, and oil tank | | ○ | ○ | ○ | ○ | ○ |
| | Examining whether or not fuel filter is blocked | | | | ○ | ○ | ○ |
| | Cleaning fuel filter (gasoline engine) | | | | ○ | ○ | ● |
| | Replacing fuel filter (diesel engine) | | | | ● | ● | ● |
| | Examining nozzle, and adjusting pressure status (diesel engine) | Injection test machine | | | | ○ | ○ |
| | Examining loosening status for the connecting mechanism and cleanliness of carburetor | | | | ○ | ○ | ○ |
| | Ignition moment (diesel engine | Time Meter | | | ○ | ○ | ○ |
| | Jet moment (diesel engine) | | | | | | ○ |
| | Water discharge for fuel tank | | | | ○ | ○ | ○ |
| | Cleaning fuel tank | | | | | ○ | ○ |
| | Examining fuel volume | | ○ | ○ | ○ | ○ | ○ |
| Cooling System | Coolant volume | | ○ | ○ | ○ | ○ | ○ |
| | Leaking status | | ○ | ○ | ○ | ○ | ○ |
| | Rubber hose ageing status | | | | ○ | ○ | ○ |
| | Performance and installation status of radiator cover | | | ○ | ○ | ○ | ○ |
| | Cleaning or replacing coolant | | | | ● | ● | ● |
| | Examining tensioning force and damage status for belt of fan | | ○ | ○ | ○ | ○ | ○ |

**Power Transmission**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semi-annually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Clutch | Examining idle stroke of clutch pedal and clearance between pedal surface and bottom plate when clutch is disengaged | Dividing Ruler | ○ | ○ | ○ | ○ | ○ |
| | Sound and operating status | | ○ | ○ | ○ | ○ | ○ |
| | Slide and engagement status | | ○ | ○ | ○ | ○ | ○ |
| Mechanical Transmission Case | Operating status of gear-shift lever and whether or not loosened | | | ○ | ○ | ○ | ○ |
| | Examining leakage | | ○ | ○ | ○ | ○ | ○ |
| | Replacing oil | | | | | ● | ● |
| Hydraulic Transmission Case | Leaking status | | ○ | ○ | ○ | ○ | ○ |
| | Examining oil volume and replacing oil | | | ○ | ○ | ● | ● |
| | Operating and loosening status of gear-shift lever | | | ○ | ○ | ○ | ○ |
| | Performance of control valve and hydraulic clutch | | ○ | ○ | ○ | ○ | ○ |
| | Performance of inching valve | | ○ | ○ | ○ | ○ | ○ |
| | Idle stroke and movement status of inching pedal | | ○ | ○ | ○ | ○ | ○ |
| | Replacing oil suction filter core | | | ● 200 Hours for First Time | | ● | ● |
| Front Axle | Leaking examination | | ○ | ○ | ○ | ○ | ○ |
| | Replacing oil | | | | | ● | ● |
| | Loosening status of mounting bolt | Detection Hammer | | ○ | ○ | ○ | ○ |

**Wheel**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Tyre | Charged Pressure | Barometer | ○ | ○ | ○ | ○ | ○ |
| | Crack or Damage | | ○ | ○ | ○ | ○ | ○ |
| | Ground Touchdown Wearing Status | | | ○ | ○ | ○ | ○ |
| | Abnormal Wearing Status | Depth Gauge | ○ | ○ | ○ | ○ | ○ |
| | Whether or not Nail, Stone, or other Extraneous Substance Present on Tyre | | | ○ | ○ | ○ | ○ |
| Tyre Installation | Whether or not Nuts are Loosened to be Examined | Detection Hammer | ○ | ○ | ○ | ○ | ○ |
| | Damage Status to be Examined | | ○ | ○ | ○ | ○ | ○ |
| Wheel Rim Wheel Spoke | Damage Status of Wheel Rim, Rim Spoke, and Disc Wheel | | ○ | ○ | ○ | ○ | ○ |
| Axle Bearing | Loosening and Noise to be Examined | | | ○ | ○ | ○ | ○ |
| | To be Wiped up and Re-filled with Lubricating Oil | | | | | ● | ● |
| Axle | Distortion, Crake, and Damage Status of Axle Body to be Examined | | | ○ | ○ | ○ | ○ |

**Steering System**

| Item | Examination Items | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Steering Wheel | Clearance to be Examined | | ○ | ○ | ○ | ○ | ○ |
| | Axial Loosening to be Examined | | ○ | ○ | ○ | ○ | ○ |
| | Radial Loosening to be Examined | | ○ | ○ | ○ | ○ | ○ |
| | Operating Status to be Examined | | ○ | ○ | ○ | ○ | ○ |
| Steering Gear | Whether or not Mounting Bolts are Loosened to be Examined | | | ○ | ○ | ○ | ○ |
| Steering Knuckle of Rear Axle | Whether or not the King Pin is Loosened or Damaged to be Examined | | | ○ | ○ | ○ | ○ |
| | Bend, Distortion, Crake, or Damage Status to be Examined | | | ○ | ○ | ○ | ○ |
| | Installation Status to be Examined | Detection Hammer | | ○ | ○ | ○ | ○ |
| Steering Cylinder | Operating Status to be Examined | | ○ | ○ | ○ | ○ | ○ |
| | Whether or not Leakage Exists to be Examined | | ○ | ○ | ○ | ○ | ○ |
| | Whether or not Loosening Exists during Installation and Articulation to be Examined | | | ○ | ○ | ○ | ○ |

**Brake System**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Brake Pedal | Idle Stroke | | ○ | ○ | ○ | ○ | ○ |
| | Pedal Stroke | Diving Ruler | ○ | ○ | ○ | ○ | ○ |
| | Operating Status | | ○ | ○ | ○ | ○ | ○ |
| | Whether or not Air Present in Brake Pipe | | ○ | ○ | ○ | ○ | ○ |
| Parking Brake Control | Whether or not Brake is Safe and Reliable and Brake Stroke is Enough | | ○ | ○ | ○ | ○ | ○ |
| | Control Performance | | ○ | ○ | ○ | ○ | ○ |
| Rod, and Guy Cable, etc | Control Performance | | ○ | ○ | ○ | ○ | ○ |
| | Whether or not Connection is Loosened | | ○ | ○ | ○ | ○ | ○ |

**Brake System**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually7 (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Pipeline | Damage, Leakage, and Crack | | | ○ | ○ | ○ | ○ |
| | Connecting and Clamping Parts, or Loosening Status | | | ○ | ○ | ○ | ○ |
| Brake Master Cylinder and Wheel Cylinder | Leakage Status | | | ○ | ○ | ○ | ○ |
| | Oil Level to be Examined for Oil Replacement | | ○ | ○ | ○ | ● | ● |
| | Master Cylinder and Wheel Cylinder Acting Status | | | | | | ○ |
| | Wear or Damage Status of Master Cylinder and Wheel Cylinder | | | | | | ○ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Master Cylinder and Wheel Cylinder Leakage and Damage Status | | | | | | ● |
| Brake Drum and Brake Shoe | Whether or not Mounting Parts of Brake Drum are Loosened | Detection Hammer | | ○ | ○ | ○ | ○ |
| | Wearing Status of Friction Plate | Vernier Calipers | | | | | ○ |
| | Status of Brake Shoe Action | | | | | | ○ |
| | Whether or not Fixed Pin is Rusted | | | | | | ○ |
| | Damage Status of Return Spring | Diving Ruler | | | | | ○ |
| | Whether or not Operating Time Interval of Automatic Regulating Device is Proper to be Examined | | | | | | ○ |
| | Wear and Injury Status of Brake Drum | | | | | | ○ |
| Brake Bottom Plate | Whether or not Bottom Plate is Distorted | | | | | | ○ |
| | Whether or not Cracked | | | | | | ○ |
| | Whether or not Loosening Exists during Installation | | | | | | ○ |

**Lifting System**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Fork | Damage, Distortion, and Wear Status of Fork | | ○ | ○ | ○ | ○ | ○ |
| | Damage and Wear Status of Positioning Pin | | | | ○ | ○ | ○ |
| | Crack and Wear Status of Welded Parts for Hook at Rootage of Fork | | | ○ | ○ | ○ | ○ |
| Mast Fork Carriage | Whether or not Welded Place on Inside Mast/Outside Mast and Cross Beam is Cracked or Damaged | | | ○ | ○ | ○ | ○ |
| | Whether or not Welded Place of Tilting Cylinder Bracket and Mast is under Poor Connecting Condition, Cracked, or Damaged | | | ○ | ○ | ○ | ○ |
| | Whether or not Welding of Inside/Outside Masts is under Poor Connecting Condition, Cracked or Damaged | | | ○ | ○ | ○ | ○ |
| | Whether or not Welding of Fork is under Poor Connecting Condition, Cracked or Damaged | | | ○ | ○ | ○ | ○ |
| | Whether or not Roller is Loosened | | | ○ | ○ | ○ | ○ |
| | Wear and Damage Status of Bearing Bush for Mast | | | | | | ○ |
| | Whether or not Bolts for Support Cover of Mast is Loosened | | | ○ | | ○ | ○ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Whether or not Bolts for Bottom of Lifting Cylinder, Bolts for Head of Piston Rod, U-bolts, and Bolts for Guide Rail of Walking Beam are Loosened | | | ○ | | ○ | ○ |
| | Crack and Damage Status of Roller and Roller Shaft | | | ○ | ○ | ○ | ○ |
| Chain and Sprocket | Tensioning Status, Whether or not Distorted, Damaged, or Rusted of Chain to be Examined | | ○ | ○ | ○ | ○ | ○ |
| | Oil to be Added for Chain | | | ○ | ○ | ○ | ○ |
| | Riveted Pin and Loosening Status | | | ○ | ○ | ○ | ○ |
| | Sprocket Distortion and Damage Status | | | ○ | ○ | ○ | ○ |
| | Whether or not Chain Sprocket Bearing is Loosened | | | ○ | ○ | ○ | ○ |

**Lifting System**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Attachments | Whether or not Status is Normal to be Examined | | | ○ | ○ | ○ | ○ |
| Lifting Cylinder | Whether or not Piston Rod, Piston Rod Thread, and Connection are Loosened, as well as Distortion and Damage Status | Detection Hammer | ○ | ○ | ○ | ○ | ○ |
| | Operating Status | | ○ | ○ | ○ | ○ | ○ |
| | Leakage Status | | ○ | ○ | ○ | ○ | ○ |
| | Wear and Damage Status of Pin and Cylinder Steel-backed Bearing | | | ○ | ○ | ○ | ○ |
| Hydraulic Pump | Whether or not Oil Leak or Noise Exists with Hydraulic Pump | | ○ | ○ | ○ | ○ | ○ |
| | Wearing Status of driving Gear for Hydraulic Pump | | | ○ | ○ | ○ | ○ |

**Hydraulic System**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Hydraulic Oil Tank | Oil Quantity to be Examined, or Oil to be Replaced | | ○ | ○ | ○ | ○ | ○ |
| | Suction Oil Filter Core to be Cleaned up | | | | | ○ | ○ |
| | Extraneous Substance to be Removed | | | | | ○ | ○ |
| Return Oil Filter | Return Oil Filter to be Replaced | | | | | ● | ● |
| Control Valve Rod | Whether or not Connection is Loosened | | ○ | ○ | ○ | ○ | ○ |
| | Operating Status | | ○ | ○ | ○ | ○ | ○ |
| Multi-way Valve | Oil Leakage | | ○ | ○ | ○ | ○ | ○ |
| | Operating Status of Safety Valve and Tilting Autolocking Valve | | | ○ | ○ | ○ | ○ |
| | Safety Valve Pressure to be Measured | Oil Pressure Gauge | | | | ○ | ○ |
| Piping Joint | Leakage, Loosening, Crack, Distortion, or Damage Status | | ○ | ○ | ○ | ○ | ○ |
| | Pipe to be Replaced | | | | | | ● 1-2 Years |

**Electrical System**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semi-annually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Ignition Device (Gasoline Engine) | Whether or not distributor cap is cracked | | | | ○ | ○ | ○ |
| | Whether or not spark plug is burned out | | | | | | ○ |
| | Adjusting the clearance of spark plug | Feeler Gage | | | ○ | ○ | ○ |
| | Cleaning the clearance of spark plug | | | | ○ | ○ | ○ |
| | Mounting status of cover and HP wire | | | | | | ○ |
| | Whether or not distributor is burned out | | | | | | ○ |
| | Wear and injury status of center part for distributor | | | | | | ○ |
| | Filling lubricating oil to rotating shaft | | | | ○ | ○ | ○ |
| | HP wire breakage status | Test Meter | | | | | ○ |
| Start Motor | Pinion meshing status | | | | ○ | ○ | ○ |
| Battery | Electrolyte volume and cleaning | | | ○ | ○ | ○ | ○ |
| | Examining specific weight of electrolyte | | | | ○ | ○ | ○ |
| Electric Wire | Wire harness injury and loosening status | | | ○ | ○ | ○ | ○ |
| | Loosening status of connection for electric circuit | | | | ○ | ○ | ○ |

**Safety Devices and Accessories**

| Item | Examination Item | Tool | Daily (8 Hours) | Monthly (200 Hours) | Quarterly (600 Hours) | Semiannually (1200 Hours) | Annually (2400 Hours) |
|---|---|---|---|---|---|---|---|
| Seat | Whether or not Bolts are Damaged or Loosened to be Examined | | | | | ○ | ○ |
| Truck Body | Whether or not Truck Frame and Crossbeam are Damaged or Cracked | | | | | | ○ |
| | Whether or not Rivets or Bolts are Loosened | Detection Hammer | | | | | ○ |
| | Repaired Places to be Examined, if Required | | ○ | ○ | ○ | ○ | ○ |
| | Comprehensive Examination | | | | | | ○ |
| Lubricating Grease to be Added or Oil to be Replaced | Lubricating Status of Underpan to be Examined after Cleaning | Grease Gun | ○ | ○ | ○ | ○ | ○ |
| | Oil in Oil Tank to be Examined | | | | | | ○ |

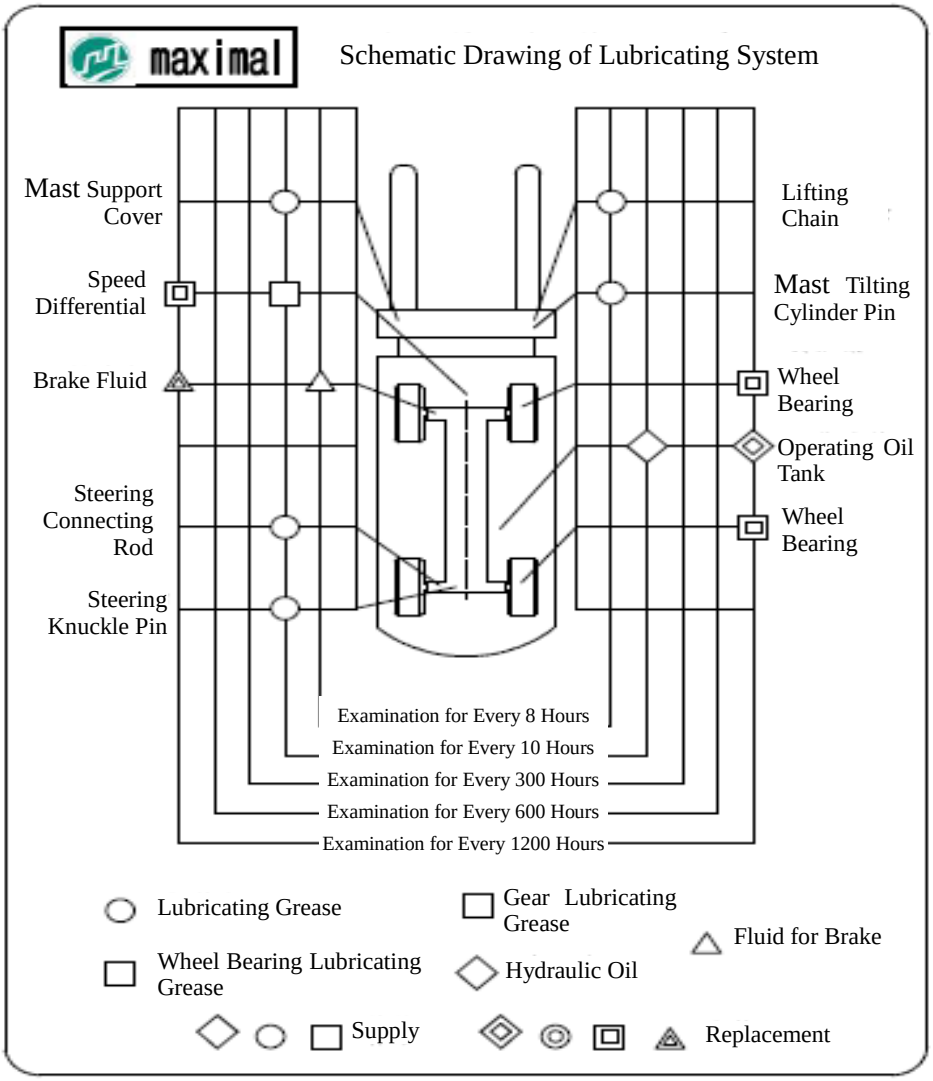
⚠ Attention

· When oil different from that specified for this truck, its replacement cycle cannot be the same as that specified in this Manual. On this account, the time for replacement shall be shortened by 1/2 or 1/4 compared with the time specified in this Manual.

· Though high-viscosity oil has wide operating temperature range, frequent replacement is still required. This is because that additive will slowly deteriorate, for viscosity to be lowered, and it will damage hydraulic system severely at the time of high temperature.

## V Miscellaneous

### 1. Drawing of Lubricating System



**2. Oils Used for Forklift Truck**

<table>
<tr><td>Name</td><td>Original Oil Product</td><td colspan="5">Brand, Code, and Temperature of Use</td></tr>
<tr><td>Gasoline</td><td></td><td colspan="5">93# or 97#</td></tr>
<tr><td rowspan="2">Diesel Oil</td><td rowspan="2"></td><td>Brand of Light Diesel Oil</td><td>0#</td><td>-10#</td><td>-200#</td><td>-300#</td></tr>
<tr><td>Application Temperature (℃)</td><td>≥4</td><td>≥-5</td><td>≥-14</td><td>≥-29</td></tr>
<tr><td rowspan="2">Gasoline Engine Oil (SF)</td><td rowspan="2">Kunlun</td><td>Viscosity Grade</td><td>5W/30</td><td>10W/40</td><td>10W/30</td><td>15W/40</td></tr>
<tr><td>Application Temperature(℃)</td><td>-30～+30</td><td>-25～+40</td><td>-25～+30</td><td>-20～+40</td></tr>
<tr><td rowspan="2">Diesel Engine Oil (CD)</td><td rowspan="2">Kunlun</td><td>Viscosity Grade</td><td>5W/30</td><td>10W/30</td><td>15W/40</td><td>20W/50</td></tr>
<tr><td>Application Temperature(℃)</td><td>-30～+30</td><td>-25～+30</td><td>-20～+40</td><td>-15～+50</td></tr>
<tr><td rowspan="2">Hydraulic Oil</td><td rowspan="2">Kunlun</td><td>Viscosity Grade</td><td colspan="2">L-HM32Antiwear Hydraulic Oil</td><td colspan="2">L-HV32Low Temperature Antiwear Hydraulic oil</td></tr>
<tr><td>Application Temperature(℃)</td><td colspan="2">≥-5</td><td colspan="2">≥-20（in Open Air in Cold Regions）</td></tr>
<tr><td>Torque converter oil</td><td>Kunlun</td><td colspan="5">6# Torque converter oil</td></tr>
<tr><td>Brake Fluid</td><td>Qiushi</td><td colspan="5">DOT3Synthetic Brake Fluid (GB12981-2003 HZY-3)</td></tr>
<tr><td>Lubricating Grease</td><td>Kunlun</td><td colspan="5">3#General Lithium Base Lubricating Grease(-20℃～+120℃)</td></tr>
<tr><td rowspan="2">Heavy-duty Truck Gear Oil</td><td rowspan="2">Kunlun</td><td>Viscosity Grade</td><td colspan="2">GL-5 85W/90</td><td colspan="2">GL-5 80W/90</td></tr>
<tr><td>Application Temperature(℃)</td><td colspan="2">-15～+49</td><td colspan="2">-25～+49</td></tr>
<tr><td rowspan="2">Anti-freeze Fluid</td><td rowspan="2">Kunlun</td><td>Code</td><td>FD-1</td><td>FD-2</td><td>FD-2A</td><td>FD-3</td></tr>
<tr><td>Application Temperature(℃)</td><td>≥-25</td><td>≥-35</td><td>≥-45</td><td>≥-50</td></tr>
</table>

Note:

·It is recommended to use Kunlun brand oil products

Oil products of different brands cannot be blended in use.