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HANGCHA

5t-10t R Series

Internal Combustion Counterbanlance Forklift Truck

OPERATION AND MAINTENANCE MANUAL

CPCD50/60/70/80/100-RW28
CPYD50/60/70-RW17（CPQD50/60/70-RW17-Y）
CPCD50/60/70-RW38

CE

Original Instruction

HANGCHA GROUP CO., LTD.

Jan.2011 5th EDITION

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Foreword

Thanks for your purchasing our forklift truck.

The R series IC forklift trucks for 5t-10t ,these trucks adopt a new type coppery radiator with tube and belt, and modified heat emission channels. The load security control and the engines all achieve EU Ⅱ and EPA Ⅱ exhaustion standard.

This operation manual is the explanations that how to use 5t-10t R-series forklift truck correctly. It will instruct you how to operate safety and precautionary maintenance. All that in charge of operation, maintenance and management must read and comprehend this manual well. Only in this way it can exert the forklift truck's potential and it will protect your safety.

This manual is also applicable to other types of container forklift truck.

If you have any questions please keep touches with HANGCHA GROUP CO., LTD. sales department or let the agents know.

Ⓒ Jan. **2011 5th EDITION**

HANGCHA GROUP CO., LTD.

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1. General Rules

To make the truck and you safety, operator should obey these rules below:

1. Only trained and authorized operator shall be permitted to operate the truck.
2. Before start truck you should check all control and alarm device, if there are any damaged or objection, you could not operate it until repaired it.
3. When carry the load, the weight should not much overload. The fork shall insert in the load entirely and well proportioned. It is not permitted use only one fork to load.
4. You should operate the truck smoothly when start, turning, travel, brake and parking. On a slick or wet road, you should decrease speed when turning.
5. Load travel should lower the goods down and tilt the mast backwards.
6. Be carefully when traveled on a grade. If the slope angle is bigger than 10%, travel forward up slope and backward down slope. Never turn sideways and stack load on an incline.
7. Notice the foot passenger, barrier, pothole and the clearance upside.
8. It is prohibit picking up a man or standing on the fork.
9. No permitted to stand or walk under the fork.
10. No permitted to operate the truck or attachment on other position except the operator’s seats.
11. Do not carry the load unpackaged. Be carefully to carry these goods with large size.
12. Notice the load not drop from the load bracket for those trucks that overall maximum lift height is higher than 3 meters. If necessary, make some protective measure.
13. Travel with load as low as possible and tilt back the mast.
14. Before driving over a dock-board or bridge-plate, be sure that it is properly secured and strong enough to sustain the weight.
15. Make sure that there is no naked flame near the area, never smoke. The driver should not remain seated when adding fuel.
16. The truck with attachments should be treated as a loaded truck.
17. Handle with automatic pitch fork of the forklift when the load must not make lateral operation, so as not to lose balance and forklift components of the damage caused
18. When leave the truck, you should let the fork down, make the shift lever neutral shut down the engine and cut the power. Parking on a grade, make sure to tighten the brake lever. If necessary, use a block when parking on a grade for a long time.

19.If the truck suddenly get out of order, or for leakage of electrolyte,hydraulic oil or brake oil, when lifting goods or grade climbing, it needs to rush to repair and let the truck be in safe state, then connect with maintainer or sales representative.

20.In the process of install and assemble,it will be noise and libration.Pls choose the right tool and assembly method.Depress the noise and libration as soon as possible to reduce the noise pollute to circumstance.

21.The work road surface for forklift should be stability and unknit,cement,blacktop or beton.If there are snow,ice,water or other eyewinker,bar.Eliminate all,then work.Otherwise the truck will be out of control and lead the safety accident.

22. Move the truck to the place which respect traffic when it anchor.If the reason is brake or turn system,move it by a suitable truck(Reference the part of truck move);Other reason,use a suitable truck to traipse,tie the cord outside of truck.Pls abide by the traffice regulations when traipse the truck on calzada.

23. After take-down the hood,water tank cover board,overhead,backrest of mast,unallowed operate the truck or load cargo.

24. There are enough light at truck work ground.At night,open the head lamp to collocate enough lamp-house.

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

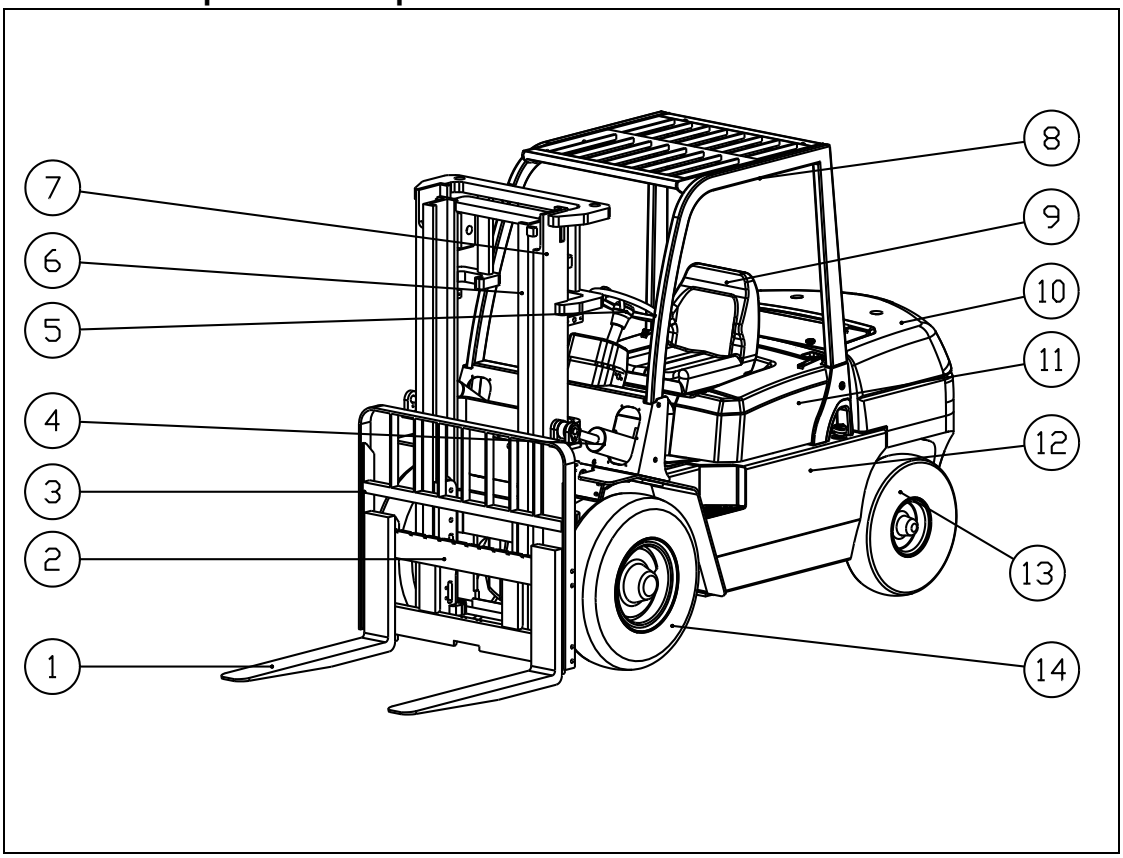
a)arrange for the modification or alteration to be designed, tested and implemented by an engineer(s)expert in industrial trucks and their safety;

b)maintain a permanent record of the design, test(s)and implementation of the modification or alteration;

c)approve and make appropriate changes to the capacity plate(s),decals, tags and instruction handbook;

d)affix a permanent and readily visible label to the truck stating the manner in which the truck has been modified or altered together with the date of the modification or alteration, and the name and address of theorganisation that accomplished the tasks.

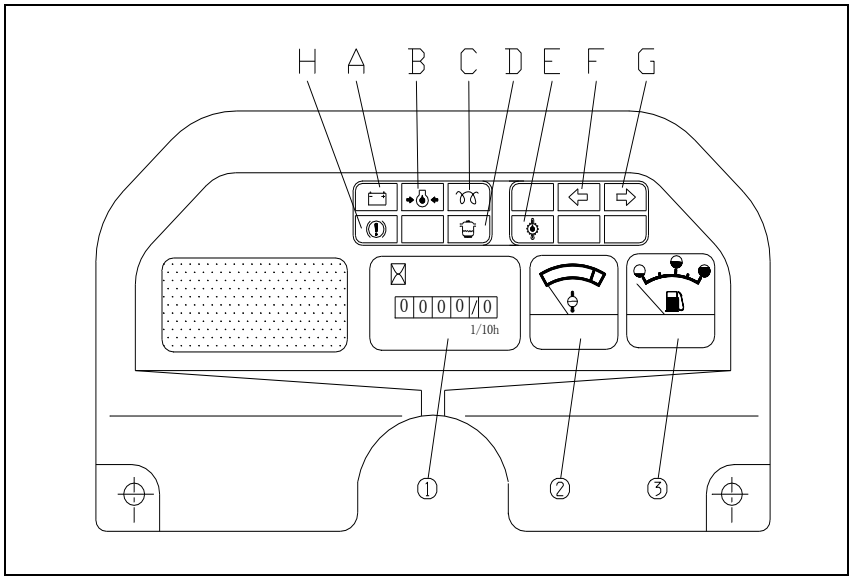
2. Name of main parts or component



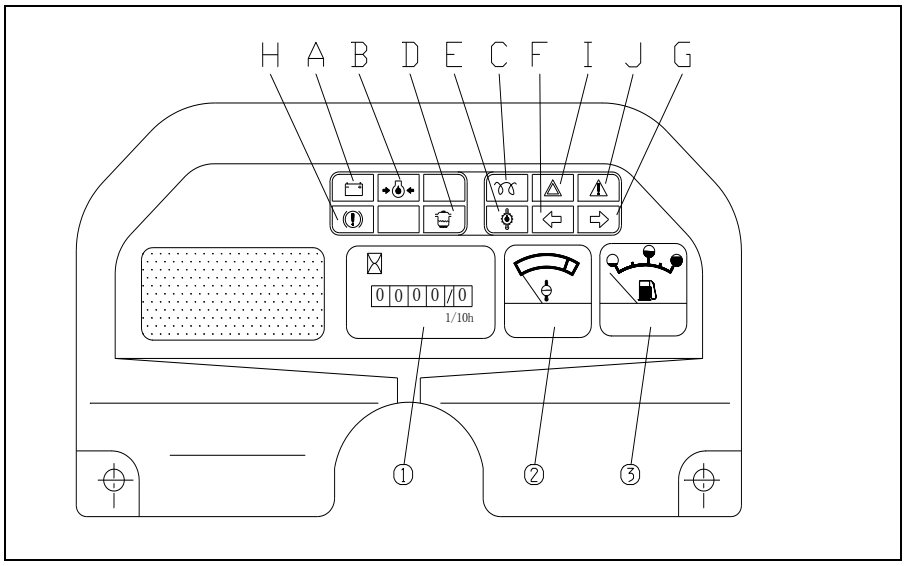
1. Fork 2.Fork F 3. Backrest 4. Tilting cylinder 5. Steering wheel 6. Mast 7.Mast 8. Overhead guard 9. Seat 10. Counterbalance weight 11. Cover hood 12.Frame 13. Rear wheel 14. Front wheel

Instruments

W17



W28、W38



Hourmeter[1]

When the Key Switch on the position **| (ON)** , Hourmeter begin to work.When work an hour, Hourmeter will increase a number.

Hourmeter display the hours of the truck works.

Water temperature gauge [2]

Whern the Key Switch on the position **| (ON)**,Water temperature begin to work. This gauge indicates the temperature of Engine Cooling Water.normally, the pointer at range of 60℃115℃

Caution :

If the pointer points red zone,, please stop the truck at once .Decrease the engine speed to make the engine cool. Check the cooling fluid if enough and the fan belt's elasticity if fit.

Fuel gauge [3]

The gauge indicates the fuel level in the tank when the key is at | (ON) position.

Charge（A）

This lamp indicates the battery condition of charge. The lamp comes on when the ignition switch is set at "ON", but it goes out as the engine starts and accelerator pedal is pressed.

Caution

If the light continues to stay lit or lights up during operation, the charging rate is low and should be checked immediately.

Oil pressure alert lamp（B）

This lamp indicates the pressure condition of engine lube oil. Although it lights up when the engine switch is set at "ON", once the engine starts up and the accelerator pedal is pressed, this lamp goes out.

Caution

If this light continues to stay lit or lights up during operation, the pressure is lower than 0.05Mpa and should be checked immediately.

Glow indicator (C)

Turn the key to ➲ "ON" position and the indicator lights up for a moment. After the indicator goes out, turn the key to."Start" position

Sedimentor indicator (D)

In normal state, once the starter is set to ➲"ON" position, this lamp lights up. After the engine is started up, it goes out.

This lamp lights up when water in sedimentor reaches to a certain level, while the engine is running.

If this lamp continues to stay lit or lights up during the engine running, stopping the engine and discharge water immediately.

Caution

If this light continues to stay lit or lights up during operation,.Fuel injection pump may be broken.

Torque Converter temperature [E]

In normal state, once the starter is set to "ON" position, this lamp lights up. After the engine is started up, it goes out.

During work time if the oil temperature exceed the normal rang(60~120°C) the indicator light on.

Caution

If warning lamp stay lit,please stop the truck at once, Decrease the engine speed to make the engine cool.Otherwize,check the oil quantity or check others.

Brake pressure lower warning indicator light（H）(only for 8-10ton)

It indicator the all hydraulic brake accumulator pressure.After start the engine,the brake pressure of truck will be based.After start the engine,press the pedal a few times so that increase the pressure till the light off.Then move the truck.This light is bright, means less pressure.It should be check the hydraulic system oil route.

Caution

1、After start the engine,press the pedal a few times so that increase the pressure .

2、Aften engine flameout,there are limited times for brake(3-5 times for different model). Release the accumulator power,the truck without any brake.In case of dangerous,don't jump from truck,strain hand brake,let the truck slow stop.

3、Unallowed that the truck coast on the ramp in flameout.Strain the hand brake,then start the engine.If the engine couldn't be start,don't start by slide.It about your safely.

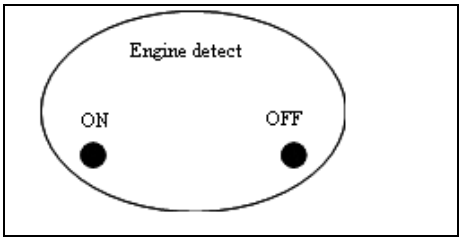
Caution

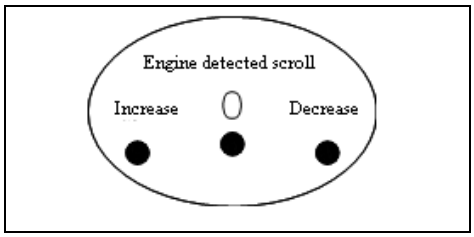
Before maintain the brake and hydraulic system of 8-10t,the truck should be flameout,press the brake pedal 5-10 times to release the power.Otherwise,it is dangerous about service people.

Warning indicator（I）（J）（only W28、W38）

（I）Red guiding light，（J）Yello guiding light.Any light lit,express the malfunction of engine, you must stop to examine, remove the trouble base on the showing malfunction yard. If there are mult-malfunction,check them on the other pages.

Engine malfunction detect switch（only W28、W38）





When the engine has something wrong，put the Key Switch at the position | （ON）, “Engine detect”switch at “ON”位，（J）Indictator continous lit（I）Indictator display malfunction yard by various frequency, remove the trouble base on the showing malfunction yard.

If there are muti-malfunction ,you can watch the other malfunctions by using “Engine detect flp”.After removed the malfunctions,（I）（J）indictator get out.Put “Engine detect”switch “OF”,Key switch O（OF）and only After 30seconds can start the engine.

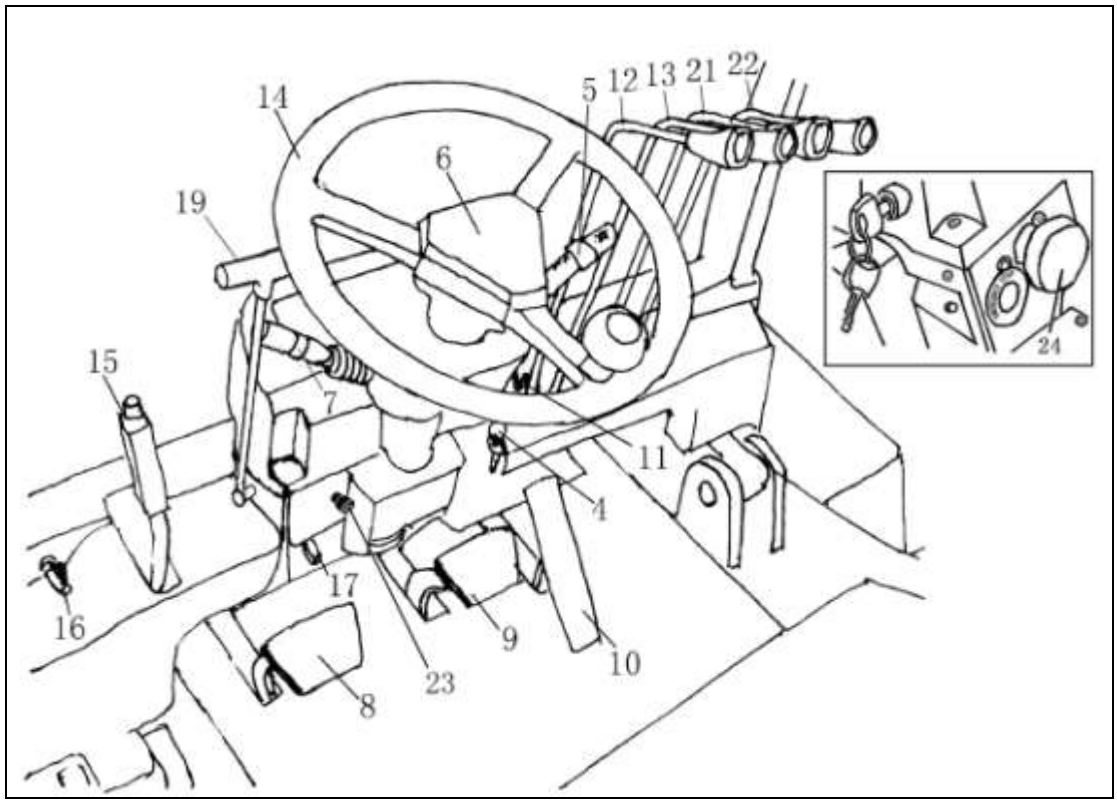
left turn indicator（F）

When the vehicle turns left, you should allocate the turning guiding lights in the front shift to an earlier date, now the light is bright.

right turn indicator（G）

When the vehicle turns right, you should allocate the turning guiding lights in the back shift to an earlier date, now the light is bright.

Controls



4. Key Switch 5.Combination Switch（Turn lamp、Head lamp、Side lamp switch）

6.Horn-pull button 7. Forward reverse gear switch[electrical change

8. Micro-pedal 9. Brake pedal 10. Accelerator pedal

11. Chock line [RW28、RW38 None] 12. Lift lever 13. Tilt lever

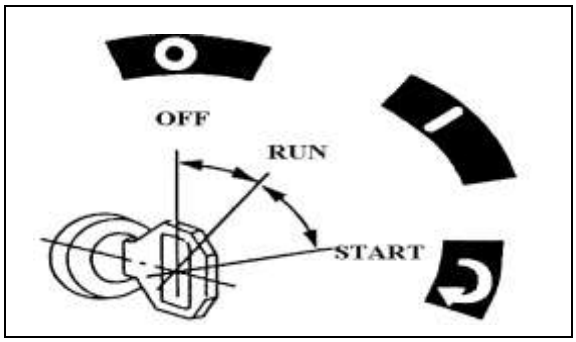
14. Steering hand wheel 15. Parking brake lever

16. Engine hood fastener switch 17. Steering wheel regulating handle

21. Lift fork side shift lever(Only 8-10t） 22. Right fork side shift lever(Only 8-10t）

23. Engine idle speed control button[RW28、RW38 None]

24. Emergency power switch（optional）



Key [4]

OFF（O）

This is the position at which the key inserted or drawn out.

Gasoline engine and diesel engine stop at this position.

ON（|）

The electric circuit is closed with the starter switch at "|"(ON). After the engine is started, the key is at this position.

（Start）

As the key is placed in the "START" position, the starter motor is engaged. When removing hand off key, it is automatically returned to the "ON" position by spring force.

Turn the key to "|" position and the indicator lights up for a moment. After the indicator goes out, turn the key to "Start" position.

Engine start process [Only RW28、RW38]

Turn the key to "|" position,(I),(J)indictator,Oil temperature ,Preheat indicator lighs up,Engine come into selttes state.If there are no malfunction,the lights get out one by one.Otherwize,（I）（J）indictator continue to stay lit.After solve the problem,start the engine.

Caution:

1. Do not keep the starter switch in the "|"(ON) position while engine is shut down. This result in a discharge battery.
2. With the engine running, do not turn the starter switch into the (START) position, since there is a danger of the starter motor being damaged.
3. Do not keep the starter engaged for more than 5 seconds at a time. Wait about 120 seconds before trying again.

Combination switch[5]（Turn signal switch,Head lamp,Side lamp switch）（Except RW18A、RW19A）

Combination switch lies right of the steering column，include Turn signal,Head lamp and side lamp switch.

When truck turning,turn this switch forward and back,so it is the turn signal switch.**R**-Right turn lamp，**N**-Neutral，**L**- Lift turn lamp.

The turn signal level does not automatically return to the neutral position. Reset it by hand.

When turn the switch on the top,it is the switch of Head and side lamp.It has three positions.

Turn to first position—Side lamp lights up；

Turn to second position—Head and Side lamp lights up；

off ——Pull off.

Horn-pull button[6]

Press the rubber cover at the center of steering wheel to sound horn.

Forward and Reverse switch[17]

Before change the direction，pressedthe brake pedal to stop the truce,then change the electrical direction switch correspond to the request direction.

Turn forward——Froward；

Turn back————Reverse；

Middle————Neutral.

Only at the Neutral ,can start the truck.

Pedal.

The ico of tortoise and rabbit on the Handle.

Front revolve(tortoise）-- first geal（slow geal）

Rear revolve(rabbit） -- second geal （quick geal）

	tortoise	rabbit
Front	first geal	second geal
Rear	first geal	second geal

Note：
1、Start the truck when the handle at middle position.
2、The truck step,climb slope,turn to tortoise position.

Inching pedal [8]

As the inching pedal is pressed, the oil pressure in the hydraulic clutch drops accordingly (the needle of the oil pressure gauge swings to the left) allowing the operator to perform inching operation. Use this pedal to inch the truck while operating the hoist system at a high speed.

When pressed to the full, this inching pedal serves as a brake pedal also.

Caution

Do not use the inching pedal too much. Long time use or use as rest would cause high temperature of transmission oil, or result in slipping of clutch.

Brake pedal[9]

As the Brake pedal pressed, Truck traveling speed decrease or stop.The brake lamp lights up at the same time.

Accelerator pedal [10]

Press down the accelerator pedal, engine rotating speed increase, traveling speed of truck increased. On the contrary, when loosen the pedal, engine rotating speed and truck traveling speed will decrease.

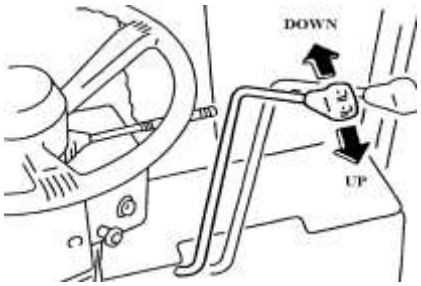
RW28、RW38 is electrical throttle。

Lift lever [12]

To control the forks raise or low.

Pulling-raise, Pushing-low.

Lifting speed can be controlled by tilt backwards angle of lever and accelerator pedal effort while the lowering speed can be controlled by tilt forwards angle of the lever.



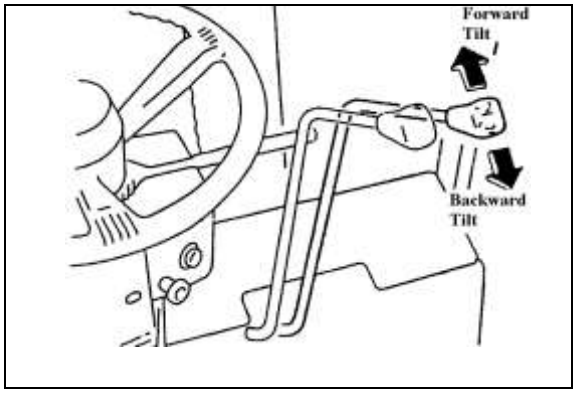
Tilt level [13]

The mast can be tilted by operation of this tilt lever: pulling on this lever backwards will tilt the mast backwards, and pushing it forwards will tilt the mast forwards.

The tilt speed can be controlled by tilt angle of the lever and accelerator pedal effort.

Caution

The tilt lock mechanism built in the hydraulic control valve does not allow the mast to tilt forwards while the engine is being shut down even if the tilt level is pushed forwards



Lift fork side shift lever(Only 8-10t） [21]

Lift side fork can shift by pushing the handle,Push the handle forward,the lift side fork will shift to right; Push the handle backward it will shift to lift.

5-7t,No this lever.

Right fork side shift lever(Only 8-10t） [22]

Right side fork can also shift by pushing the handle,Push the handle forward,the right side fork will shift to liftt; Push the handle backward it will shift to right.

5-7t,No this lever.

Caution：The forklift with automatic changing distance on load,please do not operate the side shift lever.Avoid losing blance and being broken elements.

5-7t，No this lever.

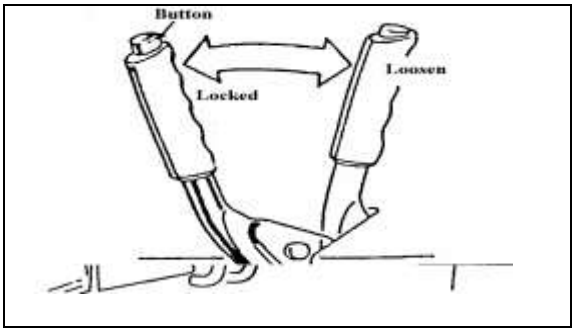
Steering wheel [14]

The steering hand-wheel is operated in the conventional manner, that is, when the wheel is turn right, the truck will turn to the right; when the wheel is turned left, the truck will turn the left. The steer wheels are located at the rear of the truck. These cause the rear of truck to swing out when a turn is made

Warning

This truck is provided with the power steering, so heavy hand-wheel operation is caused when the engine comes to a stall. To put the power steering in operation again, restart the engine without delay.

Parking brake lever [15]



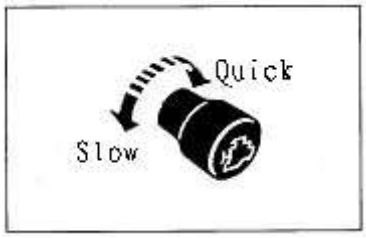
Move the lever back，Tighen；move the lever forward ,Release。Before you leave the truce,Move the lever back.

Caution ： When the truck's brake system out of control or some emergency hapend,you can tighen this lever,brake the truck.

Engine hood fastener switch [16]

To avoid opening the engine hood fastener limitless, Do that may heart you.so we set the engine hood fastener.To open the engine hood,you must pull out the fastener,and the hood will raise slowly by the spring force.If you wang to close the hood,please press down the hood.

Engine idle speed control button [23]（None W28、W38）



The button could adjust engine idle speed.Clockwise rotation, the speed increase;contrarotate, the speed down.

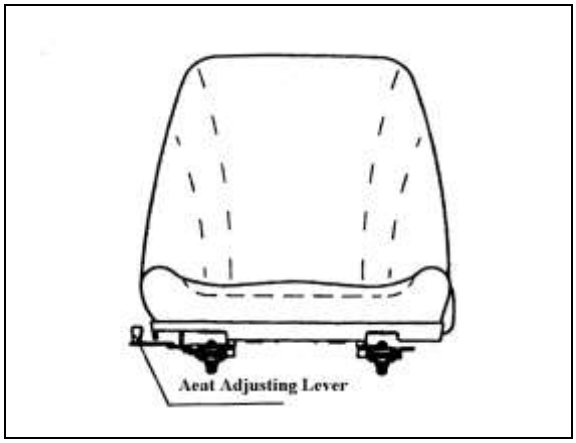
Start the engine,release the accelerator pedal slowly.Then circumvolve Clockwise rotation until engine move placidity.

Body and others

Load bracket

Load bracket can ensure stabilization when loading the goods. It's forbidden to use the forklift truck without the load bracket.when loading big goods, make the goods back rely on the Load bracket as much as possible.

Seat



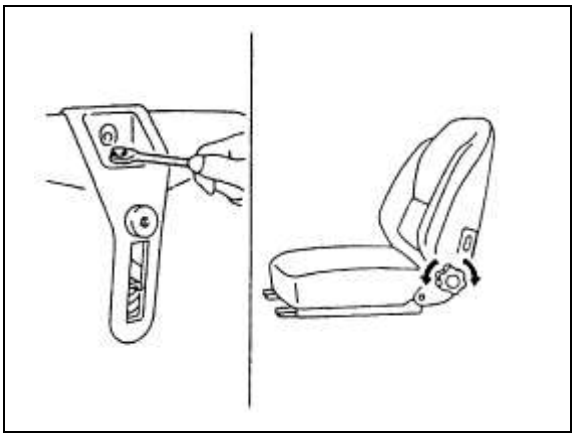
Seat adjusting lever

Adjust operator's seat to position, which is comfortable for you and provides easy access to all hand and foot controls. The seat is unlocked by moving the adjusting lever to the right. Before proceeding with work, adjust operator's seat and make sure that it is securely locked.

⚠ Warning!

a. Before adjusting the lever, you'd better turn of the key switch.

b. Stop the truck to adjust the seat.



Seat weight support adjusting

Use spanner to adjust the bolt which is at the back of seat, or adjust the knob for supporting the weight on seat at the lift side of seat, to adjust the hanging's weight basing on person's weight.The weight adjustment range is 55-110kg.

It's better to sit on the seat when adjusting.

Safety belt

While you are on the vehicle and wearing the Safety belt, at the same time, your back and waist should close to the seat as much as possible.

Check whether the bolts which fixed seat belt were loose frequently. It is forbidden to use the Safety belt when the belt was tie a knot. Do not let the belt press on the hard or fragile objects. And also do not make friction with the sharp edge to avoid damaging the belt. Do not let the seat back tilted too much, otherwise the Saftey belt will not be able to correctly elongation.

The components which on the Safety belt can not be removed arbitratly. If the Safety belt used frequently, you should always do exterior inspection, when found something abnormal, please immediately replace new belt. The belt can be used for 3-5years, when found something abnormal, it should be scrapped early.

Overhead guard

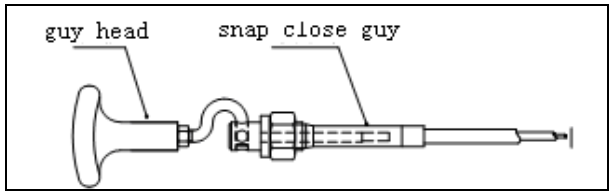
The overhead guard used is strong enough to meet safety standard, and protects the operator from falling materials. It's permitted to use forklift without overhead guard.

Hood and snap close

To avoid opening the hood at discretion, a snap close is set here. Open the snap close first then the hood can be open.

Tension wire clamp

To avoid opening the hood at discretion,a special tool is there. Tension wire clamp is special tool.



Hood

The hood can be swung up fully to provide easy maintenance service. You can lift up the hood with little effort with an aid of hood damper. To lock the hood, push down on the front of hood until it covers.

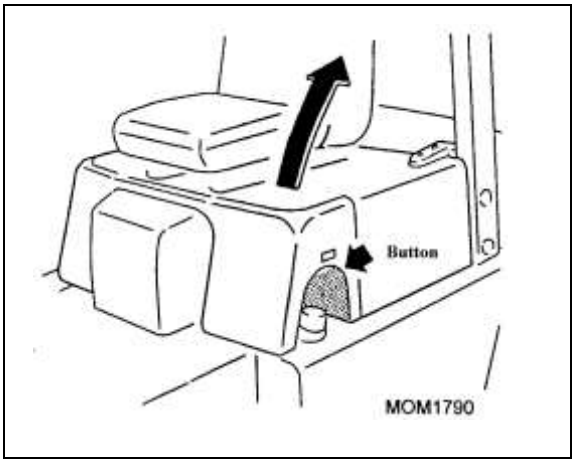
Note:

a.Before open the hood,the handle of the snap close should be pulled out first

b.Use caution not to catch your fingers in the hood when closed.

⚠ Warning

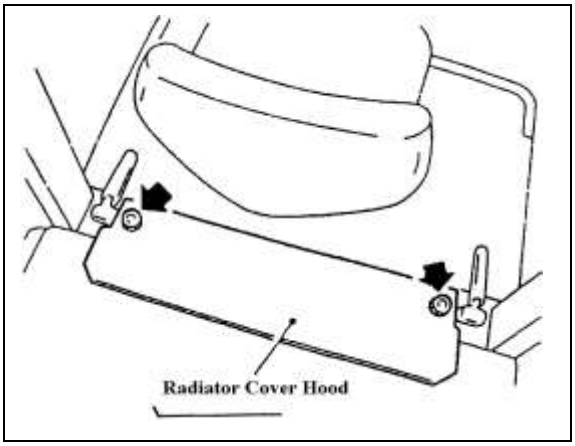
Maintenance the hood after engine flameout to avoid body or other part hurt.But when the body donot touch with part,it allow that engine is not flameout and the hood is open for find the failure through ears.



Radiator cover hood (Only for Europe especial or option)

Open the radiator cover hood,it should be special use tool(SOCKET spanner).

You can open the radiator cover hood even close the engine hood, so to inspect the coolant fluid.



Caution:

Retighten the bolt on the cover hood.

Radiator cap and coolant reservoir

The reservoir is located inside the hood.

The radiator is located under the cover plate at the rear of the hood.

Warning

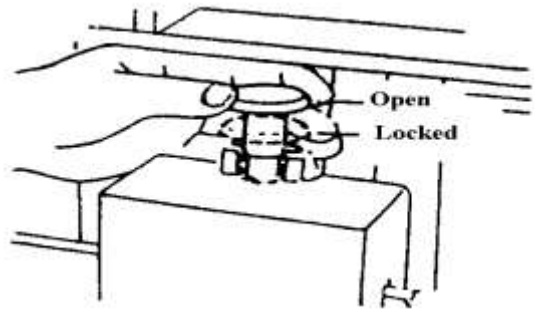
Do not remove the radiator cap abruptly while water's temperature is higher 70℃. Turn the cap a little to the left to relieve the pressure in the pressure in the radiator, and then remove the cap.

Do not wear glove when removing radiator cap.

The antifreeze fluid is dangerous for your health, if touched to skin, please wash clean by water.

Fork stopper（5t-7t）

It's used to adjust fork spacing and to lock the forks in position. pull up fork stoppers, turn 90°, according to loads to handle the forks spacing



Warning!

The forks should be set symmetrically to machine centerline and fork stoppers should always be set.

The lower beams of fork have a hatch to load or unload forks.

The fork is forbidden to fix on the location where the hatch locates. Check the bolt at the middle of the fork bracket which is used to prevent load fork at the hatch.

Fork replacement

When the right or left fork have become deformed gravely or the rift appears,they should be I twinning replacement.

Changing method：

5t-7t

1).The vehicle is parked in solid level road；

2).The mast comes down till the fork is away from a field five to ten millimeter, moving the fork in centre, make lower part aim at breach；

3).Make the mast face forward inclination, make the vehicle retreat slowly, the fork come off；

4).The new fork twinning field is put in the floor stably. pull up the locating pin, The carry-scraper centre line alignment fork works slowly, make the mast face forward inclination when Will get in touch with them；

5). When the fork hang to enter a crossbeam, make the mast face backward inclination till perpendicularity；

6).Adjust fork spacing to the location needing, Relax the locating pin.

8t-10t

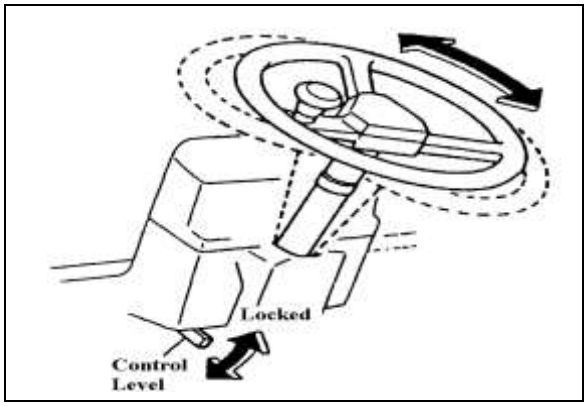
1).The vehicle is parked in solid level road；

2).Operate the lift and right side fork lever,make the two forks move to center;

③Remove the cylinder of changing distance between two forks;
④Hoist the two forks;
⑤Pull lower portion of fork to remove its lower jaw and lift it out.
Assembly is opposite to remove.

Caution: Be careful when removing and installing the forks, as they are heavy

Steering column tilting angle adjustment



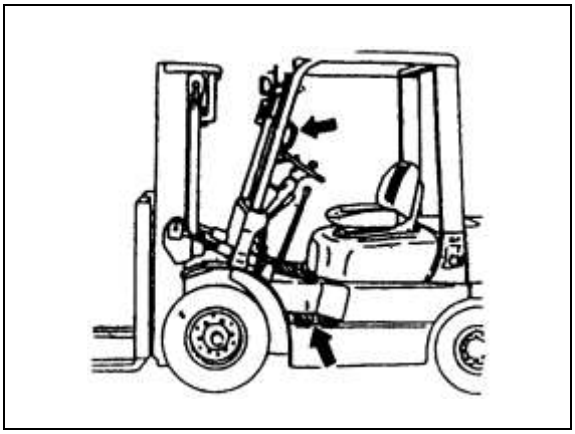
The tilting angle of the steering wheel is adjustable to suit individual operators. The steering column is unlocked by pushing down the lever at the left side of turning rod, then adjust the angle suit to the driver, and pull up the lever to lock.

Warning

a. After stop the truck and pull on the parking brake lever then to adjust the tilting angle of steering column.
b. After adjust the angle and pull the steering wheel to make sure tighten the lock rod.

Safety step and safety grip

The safety steps are provided on both side of the truck body. The safety grip is provided on the front left pillar of the overhead guard. Use the safety step and safety grip facing the truck when mounting and dismounting the truck. hydraulic fluid, lock the cap.

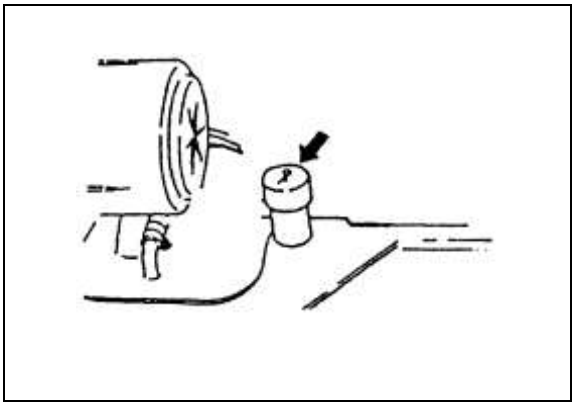


Brake grease nipple

Brake grease nipple lies under the lower left bottom

Hydraulic oil tank cap

The cap lie in the engine hood,on the right side of truck bracket. open the hood to injecgt the oil,inject the clean hydraulic oil through oil filling port.Oil inject over,close the cap.



Fuel reservoir cap

The fuel reservoir cap is located at the rear left side of the truck body. The fuel reservoir cap has the breather inside it to allow air to enter the reservoir. Check to see that the breather is in good condition every time addition of fuel is made.

Warning

--- Fuel handling---

1. Stop the truck, shut down the engine and apply the parking brake securely. Make sure that there is no naked flame near the area. Never smoke. The driver should not remain seated when adding fuel.
2. After addition of fuel is finished, securely close the reservoir cap. A loose cap could cause fuel leak or fire hazard in the worst case.
3. Before attempting to start the engine, make certain that the fuel reservoir cap is securely tightened and that no fuel is split on or around the truck.
4. For the purpose of fuel level inspection, never use naked flame such as a match or lighter.

Rearview mirror

There are two rearview mirror on the safeguard for operator to see rear accident.

3. Safety instructions

1. Only trained and authorized operator shall be permitted to operate the truck.

2. Inspect the truck at periodic intervals for oil or water leak, deformation, lousiness, etc. If neglected, short life of components will be caused and in the worst case a fatal accident would occur.

Make sure to replace the “key safe parts” at periodical inspection.

Wipe off oil, grease or water from the floor board and foot and hand controls, if any.

Shut down the engine before inspecting the engine and its allied components. Especially use caution to the engine fan.

When inspecting the radiator or muffler, exercise caution not to get burnt.

3. Any time you find that the trucks are not functioning properly, operation of the truck should be halted and the condition reported to the supervisor.

When doing maintenance in the high place (such as mast, front and rear lights) should be care of slide and clamped.

If any warning lamp comes on, move to a safe place and check or repair the trouble.

When doing maintenance, take care of edges and corners to lacerate hands, head and other parts of body.

The sign of defect should be put on the defecting forklift truck.

4. Don’t use an open flame to check level, or for leakage, of fuel, electrolyte or cooling water.

Never smoke while inspecting the battery, handling fuel or working on the fuel system. There is a danger of explosion.

At working place fire extinguisher should be prepared.

Never fill the fuel tank with the engine running.

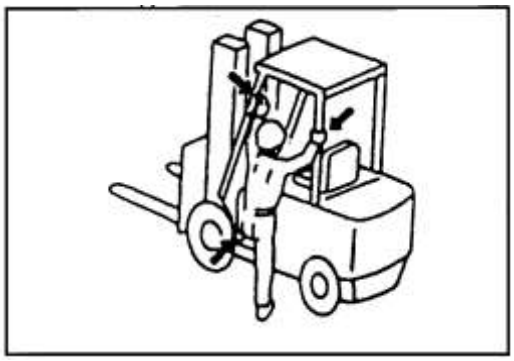
5. Warm up the temperature of water to 70℃ before operation; and cool down the temperature water to lower 70℃ after work.

If the temperature of the water tank higher than 70 degree, never open the tank cap.

6. When using your truck in an enclosed space, make sure there is enough ventilation. If needed, use a ventilation fan. Don’t work in a closed working space because of the tail gas of truck is dangerous to health.

It’s forbidden to use truck under a circumstance of flammability and easy to blast.

7. Never mount or dismount the moving truck. Use the safety step(s) and safety grip facing the truck when mounting or dismounting the truck.



8. Never attempt to work the controls unless properly seated.

Before staring, adjusting the seat so you can get easy access to all hand and foot controls.

9. Before staring, make sure no one is under, on and close to the truck.

The forward-reverse lever is in neutral.

10. Park the truck on a level surface and apply the parking brake securely. If parking on a grade is unavoidable, be sure to block the wheel.

Put the forks on the ground or floor and tilt a little forwards. Shut down the engine and remove the key.

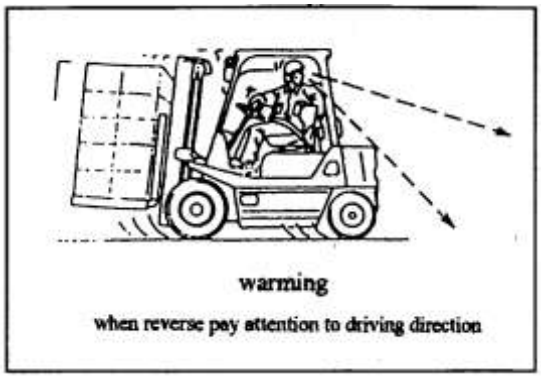
11. Operate the controls smoothly-don’t jerk the steering wheel. Avoid sudden stops, starts or turns.

12. Observe speed and traffic control signs.

When traveling on public roads or streets,

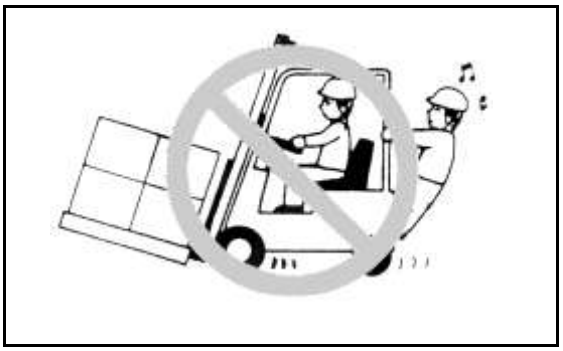
obey all local traffic regulations

13. Pay attention to the route of the truck, be sure to make a wide sight.

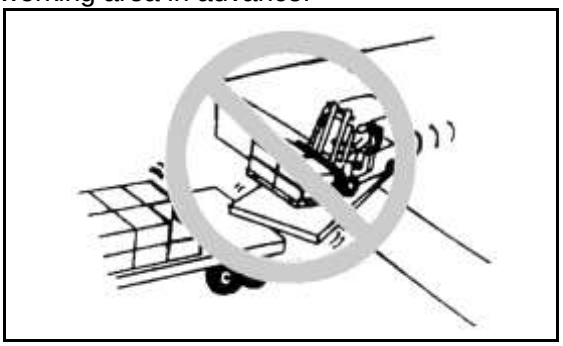


e

14、Never allow other person(s) to ride on the forks, pallets or on the truck.



15. Before driving over a dock-board or bridge-plate, be sure that it is properly secured and strong enough to sustain the weigh. Check the ground or floor condition of working area in advance.

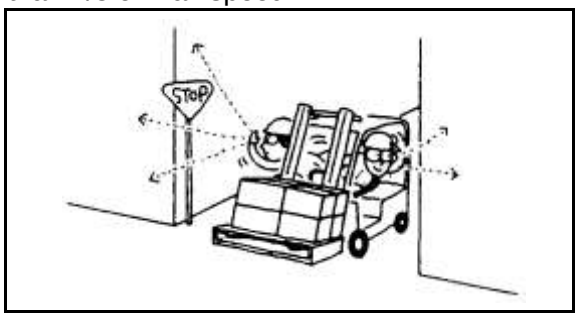


16. Keep your mind on your work.

17. Keep your head, hands, arms, feet and legs within the confines of the operator's compartment. Never reach into upright for any reason.

18. When handling bulky loads, which restrict your vision, operate the machine in reverse or have a guide.

19. Slow down and sound horn at cross aisles and other locations where vision is restricted. The speed should be keep slower than 1/3 of max speed.



20. Keep fluid cans, row cotton, paper or chemicals away from the truck during operation since there is a danger of their firing or exploding due to exhaust gas from the muffler.

21. Use head lights and required work light and clearance lights at night. And travel at a low speed.

22. The work surface should be solidity and flatness such as cement road surface, bituminous macadam and beton road surface.

The climatic conditions that the trucks designed for are: temperature is

–20℃—50℃; wind speed is lower than 5m/s; air relative humidity is less than 90%(25℃).

Inspect the surface over which you will run. Look for holes, drop-offs, obstacles, and

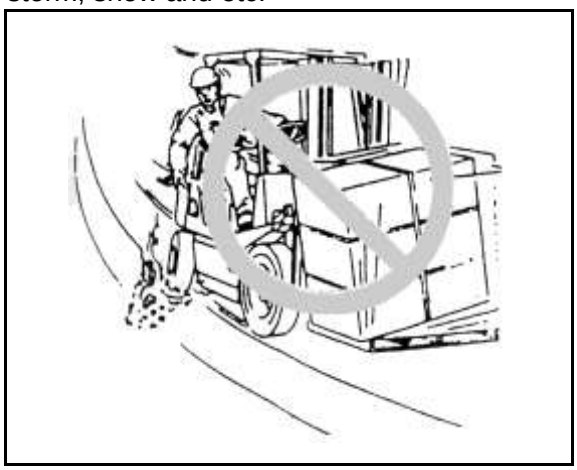
look for rough spots. Look for anything that might cause you to lose control, bog down or upset.

Clear away trash and debris. Pick up anything that might puncture a tire or let the load lose balance.

Slow down for wet and slippery roads. Stay away from the edge of the road. If unavoidable, use extreme caution.

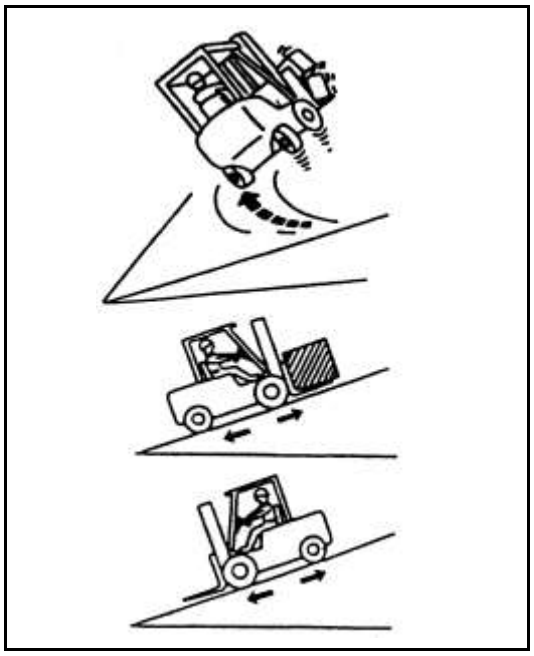
Rugged surface would cause vibration of truck and noise. The high air pressure of tyres will cause vibration and noise, too.

Do not operate the truck when the weather is execrable, such as windy, thunder storm, snow and etc.



23. When operating loaded truck, have the rear end of your machine pointed downhill. When operating unloaded truck, have the rear end of your machine pointed upgrade.

Never turn sideways on an incline. There is danger of the truck turning over.



24. When running down on a grade, use engine idle speed. At the same time use the brake pedal intermittently.

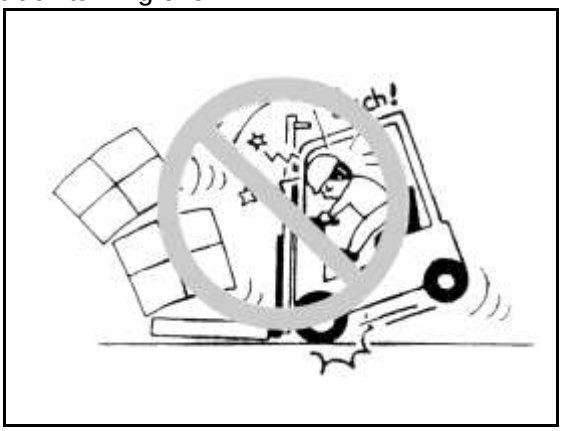
25. It is dangerous to travel with forks higher than appropriate position regardless of whether loaded or not. Keep the good traveling posture. (When traveling, the forks should be 15 to 30 cm above the ground or floor.)

Do not operate the side shift mechanism, if equipped, when the forks are raised and loaded, since this will cause the truck to be unbalanced.

A truck with attachments should be considered as with loads.

26. Travel with load as low as possible and tilted back.

27. Avoid braking too sharply or descending on a grade at a high speed. There is danger of loads falling down or the truck turning over.



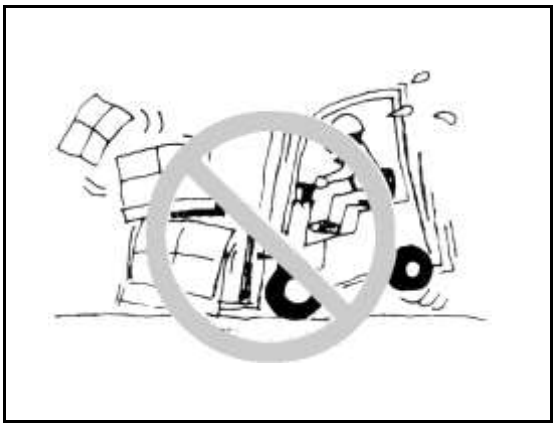
28. Always brake to full stop before reversing direction of travel.

29. Taking account of the shape and material of loads to be handled, use a proper attachment and tools.

Avoid hoisting the load, with wire rope hung on the forks or attachment, since the wire rope may slide off. If needed, a qualified personnel for slinging operation should perform, making use of a hook or crane arm attachment.

Take care not to protrude the forks out of the load. The protruded fork tips may damage or turn over the adjacent load.

30. Know the rated capacity of your lift truck and its attachment, if any, and never exceed it.

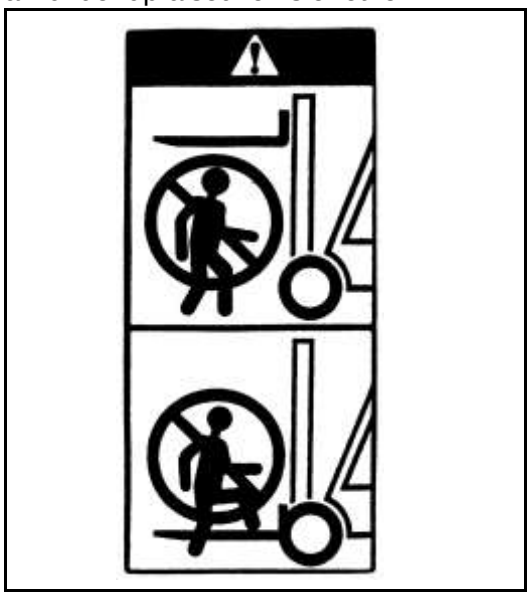


Do not use a man as an additional counterweight. It's quite dangerous.

31. ZHEJIANG HANGCHA ENGINEERING MACHINEARY CO., LTD. offers a variety of attachments, such as forks, bucket, rotating roll clamp, load grab or hinged forks. Don't use such attachments and special equipment for applications other than specified.

32. Safeguard is used to prevent us from hitting of the higher goods. Load bracket is used to ensure loading stable. The forklift truck without two items is forbidden to be used.

33. Never permit anyone to stand or walk under upraised forks or other



attachments if machine is so equipped.

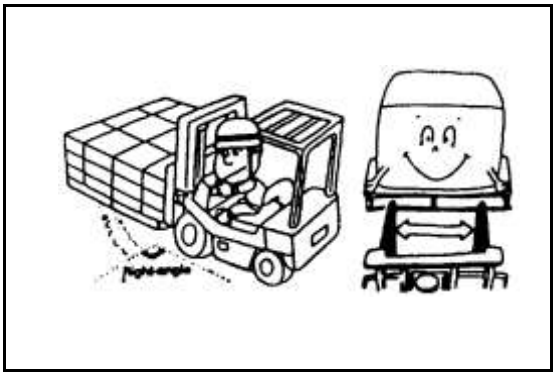
Never permit anyone to stand on the forks.

34. Don't put your head or body into

the interspace of mast and safeguard, what may cause life risk

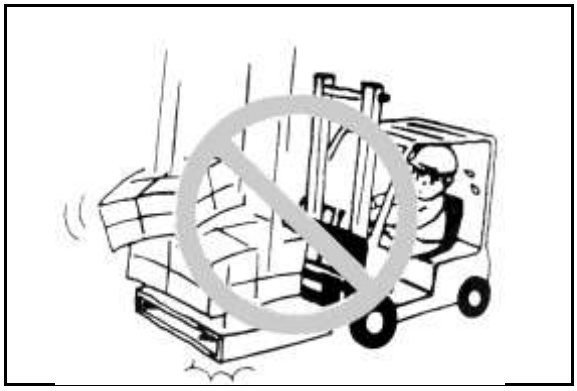
Don’t put your hand into the interspace of inner mast and outer mast

35. When load is to be retrieved from a pile, enter the area squarely. Engage forks into the pallet carefully.



36. Don’t enter into loads at a high speed. Always make certain that your load is stable before lifting the forks.

Be sure to once stop in front of the load to be lifted, and make certain that there is no obstacle, then engage the load by driving forwards.



37. Make certain that your load is well stacked and evenly positioned across both forks. Don’t attempt to lift a load with only one fork.

On the truck with an attachment such as a load grab, make certain that the load is securely and correctly grabbed, and pull the loading control level to the full (increase to relief pressure).

38. Never lift loads with the truck inclined. Avoid loading work on a grade.

39. Don’t stack loads on forks in such a way that the top of loads exceeds the load backrest height. If unavoidable, make the load stable securely. When handling bulky loads that restrict your vision, operate the truck in reverse or have a guide.

40. Use minimum forward and reverse tilt when stacking and unloading loads. Never tilt forward unless load is over stack or at low lift height.

When stacking loads on a high place, once make the mast vertical at a height of 15 to 20 cm above the ground and then lift the load farther. Never attempt to tilt the mast beyond vertical when the load is raised high.

To unloading loads from a high place, insert forks into the pallet and drive backwards, then lower the load. Tilt the mast back after lowering. Never attempt to tilt the

mast with the load raised high.

41. Don’t tow the truck that its engine is in trouble, or steering system doesn’t work correctly or its braking system has been disabled

Obey the communication rules on the road when towing the truck.

42. Dress the overalls or other protective uniforms, suck as safety helmet, safety shoes etc. Don’t dress necktie or other accouterments.

43. Workplace shoud be have fire extingnishers. Operator shuod know the place of fire extingnishers and the use of fire extinguishers.

44. Before Maintaining the brake and hydraulic system of 8-10ton, first of all, you should flameout the vehicle. And press the brake padel for 5-10 times to release the energy in the accumulator.

45. You should use the Safety belt correctly, it should be level, can not be distorted. You’d better tie the belt inthe hip but not at waist line. If a vehicle overturned in the accident, the driver first to do is flameout the vehicles, in order to avoid burning vehicles or explosion. When flameout, open your legs, then used your hands to seize the steering wheel in your room or fixed roof-care, shoring body firmly in the seats, to facilitate the lifting of seat belts.

46. Markings on the machine describe warning and methods to operate the lift truck. When operating the machine, observe and follow all markings on the machine in addition to this operator’s manual.

Replace damaged or missing decals and name plate.

4. 8 hour (daily or every shift) check

1.Check leaks of oil, fuel or water

> **⚠ Warning!**
>
> Don't attempt to operate the truck if leaked fuel is found through pre-operational check. Correct the leak before starting engine

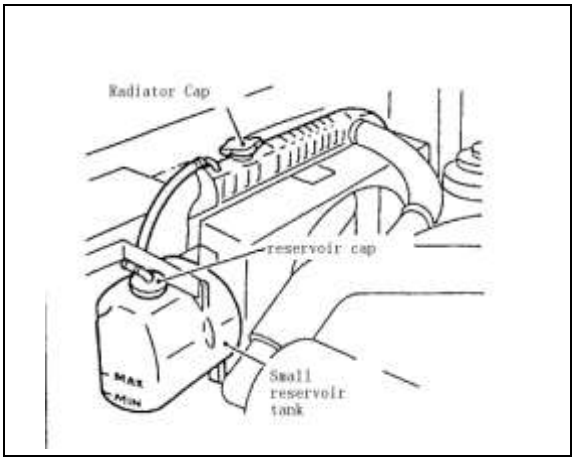
Check if the engine, connector of hydraulic pipe, radiator and driving system are leakage or not. Do not use an open flame to check level, or for leakage, of fuel, electrolyte or cooling water.

2. Check water level in the radiator

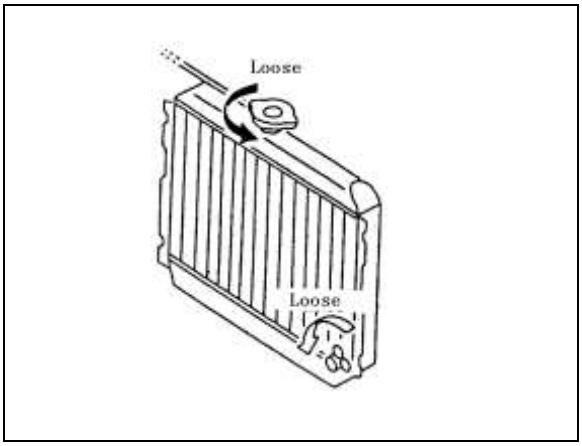
Inspect the small reservoir tank to see the coolant level is between Min and Max position when the engine is cool. If there is no coolant any more in the reservoir tank, please add some coolant to radiator. Otherwise it may damage to engine.

> **⚠ Warning!**
>
> When the water temperature of the engine higher than 70 degree, please do not open the pressure cap of the radiator. Loosen cap slowly to allow steam to escape. After that, tighten cap securely. It is good practice to use thick waste cloth or the like when removing the cap. Avoid putting on gloves, since you may get burnt at your hand if hot water splashes on it.

> **Caution**
>
> Adding clean water to radiator. If you use antifreeze, use the same brand of antifreeze.



3. Replace the engine cooling fluid



1）.Open the radiator cover and loosen the drain cover, let the oil flow out, then wash the cooling system.

2）. Screw the drain cover tighten.

3）. Add cooling fluid to radiator up to way out.

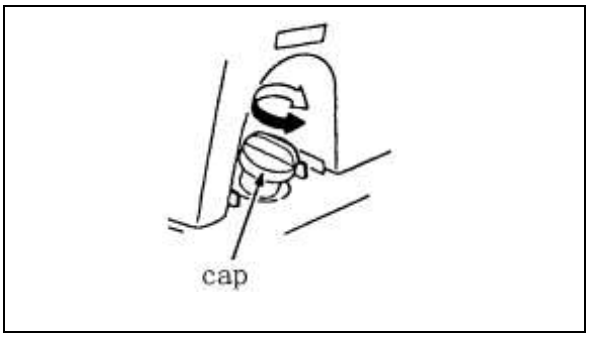
4）. Let the engine run fully.

5）. Stop the engine, after cool down fully, still add cooling fluid to radiator up to way out, and add cooling fluid to coolant reservoir "MAX" position.

6）.Check the drain cover if leakage.

> **⚠ Warning！**
>
> When the water temperature of the engine higher than 70 degree, please do not open the pressure cap of the radiator avoiding scald.

4. Fuel lever check

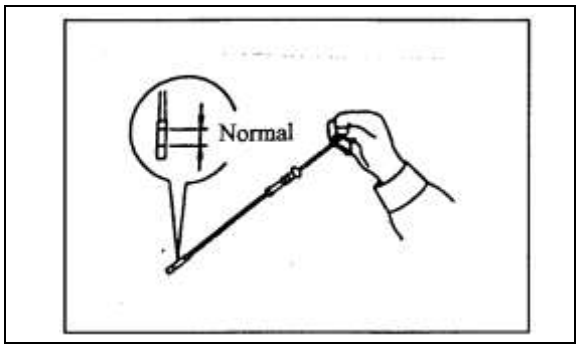


The fuel level gauge is provided on the indicator panel. Check that fuel level is sufficient for the day's work. The fuel filler port is provided at the rear left pillar of the overhead guard

5. Engine oil level check

Caution
When check the engine oil, should let the forklift truck on the level ground.
When check the engine oil, it is exact when the engine is cool.

Remove the dipstick, clean the rod and reinstall. Pull it out again and check the oil level. The level should be within the mark on the dipstick.



6. Brake fluid level check

Check the fluid level in the brake fluid reservoir. The level should be between the two seams of the reservoir. When adding fluid, due care should be taken prevent air entering the brake tube.

Caution
When adding fluid, due should be taken to prevent dirt or water from entering the reservoir.

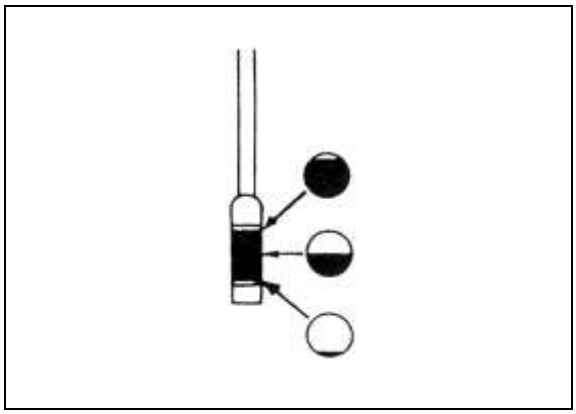
Brake fluid is dangerous to health; you should avoid touching it by skin.

7.Battery electrolyte check

There is a little ball in battery capacity display, this ball can change its color as density of electrolyte changing, it is called electric eye. The ball will be green when the capacity is normal ,density of electrolyte reaches the standard; it will be white when capacity is not enough, density of electrolyte does not reach the standard; it will be red when the electrolyte is acute shortage ,look over whether the shell is broken, leaking or the battery has fault. SEE<Operational method of maintenance free lead acid battery>

8.Power shift transmission fluid level

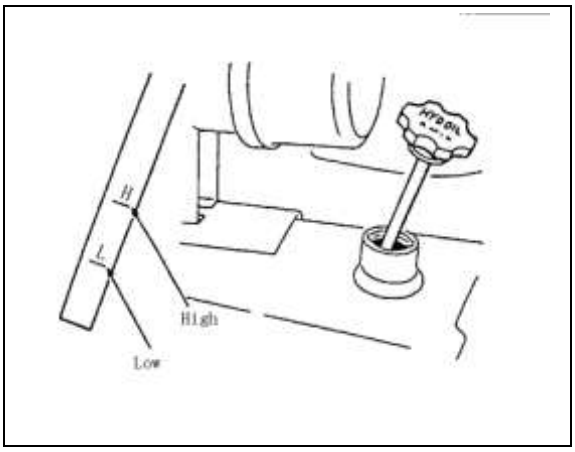
Open the inspections cover and remove the filler cap. Inspect the lever gauge to make sure that the fluid level is on the upper mark of the gauge.



9.Hydraulic oil level

Check the oil level in the hydraulic oil tank.

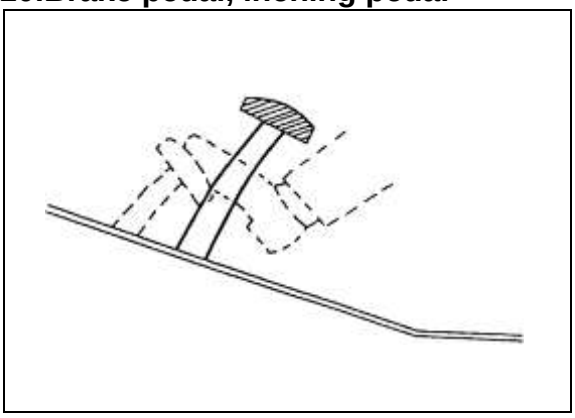
The oil level should be in the place between two slots,



	Free height	Free play
Brake pedal	140±50	1-3
Inching pedal	140±50	touching bolt of inching pedal – brake pedal: 0.9-3.4mm

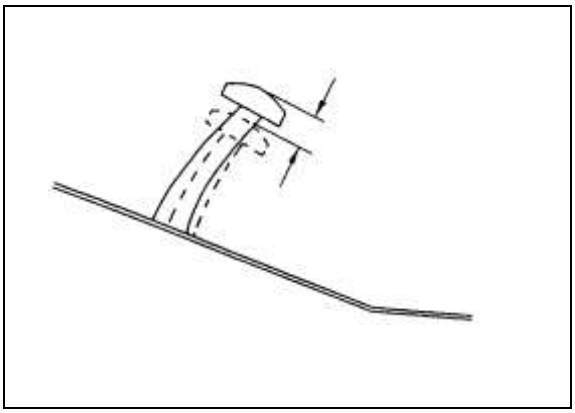
Height and the clearance H(mm):

10.Brake pedal, inching pedal



Press the brake pedal fully when the engine is running, the distance between brake pedal and front soleplate should be more than 60mm.

Check the inching pedal through the same method.

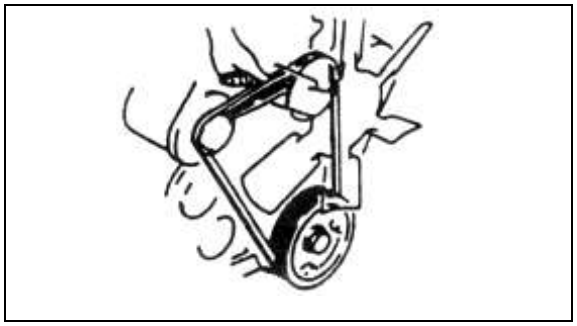


11. Parking brake lever

Make sure that the parking brake lever return back is in good condition after securely applied.

The force on this lever should be 100-300N.

12. Fan belt tension check



Stop the engine.

Use finger to press the belts at the midway between the water pump pulley and the generator pulley by a press, and check the drop distance if is up to standard.

QSB4.5、QSB3.3 Engine have auto tension round, fan belt don’t need adjust.

Warning

If the belt has already been pulled long, cut out or has no surplus, it should be changed.

If the engine is still running, it's permitted to carry on this check avoiding fingers or sleeves being caught up in.

13. Horn

Press the horn button to make certain the horn sounds.

14.Drivers seat adjustment

Make sure the driver's seat is properly located. If not properly, shift the adjusting lever to back and move the driver's seat to a position which provides easy access to all foot and hand controls.

15.Shift lever(s) check

Check the shift lever(s) for looseness and operation for smooth.

16.lifting lever, tilting lever and attachment lever check(5-7t)

Check the loading levers (for lift, tilt and optional attachment) for looseness and smooth operation.

Increase the rotate speed of engine, make certain that the lifting lever, tilting lever and attachment lever in good work condition.

lifting lever, tilting lever, fork tilt lever(8-10t)

Check the loading levers (for lift, tilt and frok tilt) for looseness and smooth operation.

Engine start

Engine start before confirming gear stick zero stalls, apply the brake manually reliable。

17. Head lamp check

Make sure that the head lamp is lighting when the key is at "ON" poisition.

18. Turn signal check

Make sure that the turn signal operates properly by moving the turn signal lever.

19.Instruments and sensors

Make sure that hour meter, water temperature indicator, oil temperature indicator, transmission fluid sensor and fuel sensor etc., properl

20.Mast and forks

Check the mast and forks to make sure:

1）.There is no crack and bend on the forks, and the forks are installed on the fork bracket.

2）.Check if there have leakage of oil cylinder and tubing.

3）.Check the rollers' rotation.

4）.Check the mast if there have crack and bend.

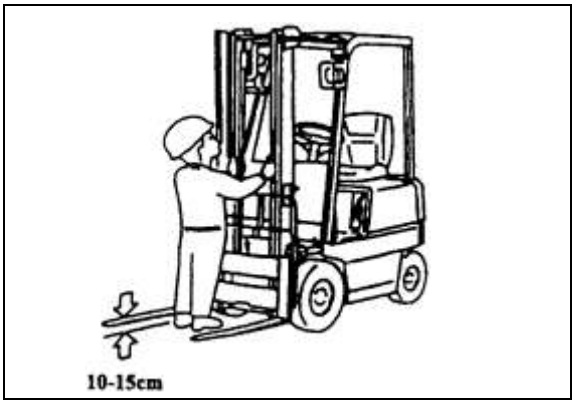
5) .Operate the lever of lifting ,tilting and attachment, check the mast if it's in good condition, and pay attention to system operating sound.

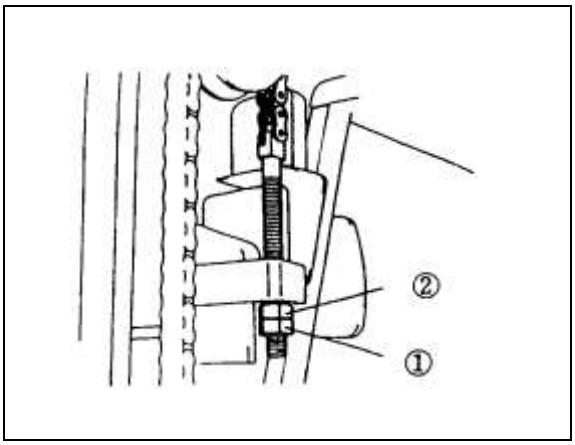
21. Lift chain tension check

1）. Raise the fork about 10-15 cm above the ground and make it vertical.

2）. Push the middle of the chain with the thumb. Make certain the tension for the right and left chains are even.

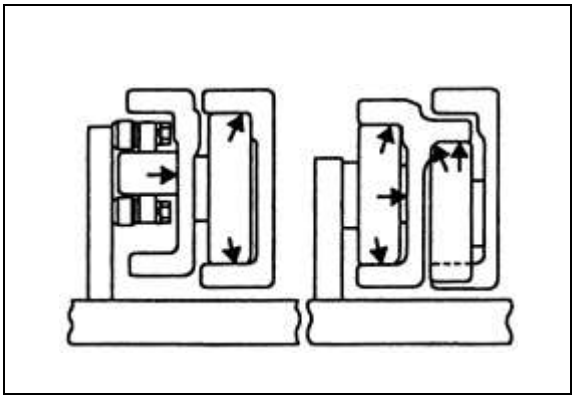
3）. Adjust the tension: Loosen the lock nut 1, screw the nut 2 and adjust the chain to make the equal tension, turning the adjusting nut 1 of the chain anchor pin.





22. Lubrication of mast

Lubrication here on schedule, refers to figure as below:

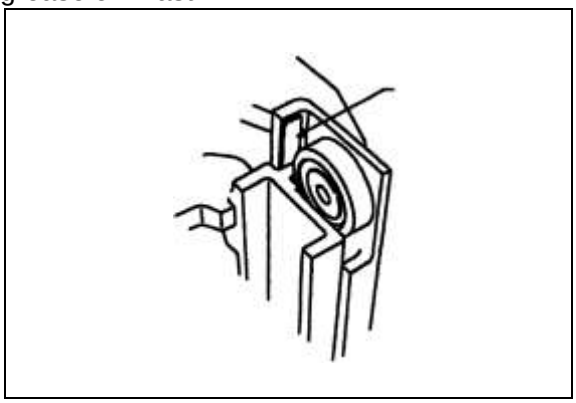


Mast

Paint lubrication grease on the slide support.

Note:

a). The periods of paint lubrication grease depend on the truck's work condition. If works heavy, please paint much more grease on mast.



b). To assort with the truck's operation, paint some lubrication grease on the surface where the idler pulley and inside and outside masts touchs.

23. Turning

1）. Operate the truck running slowly.

2）.Turn the steering wheel to left and right 3 round respectively.

3）. Check that the steering forces are equal in right and left.

24. Exhaust gas check

Colorless	Normal: complete combustion
Black	Abnormal:incomplete combustion
Blue	Abnormal: oil burns
White	Abnormal: water come in the burnt house

Warning!

Don't start the lift truck in bad ventilation space. There is carbon monoxide in the exhaust gas, it is very dangerous.

25. Inching operation check

Press the inching pedal a little and check whether the truck speed decreases.

26. Brake test

Run the truck slowly and press the brake pedal to check the braking effect. When the brake pedal is pressed, the stop lamp comes on.

27. Parking brake test

1）. Operate the truck running slowly.

2）. Can be stopped by pulling on the parking brake lever. Bias should not be occurred.

28. Back-up lamp and buzzer check

The back-up lamp comes on and buzzer sounds when the shift lever or directional control lever is placed in reverse position.

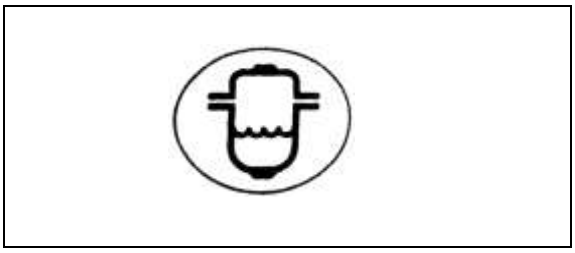
29.Water discharge from sedimentor (Diesel)

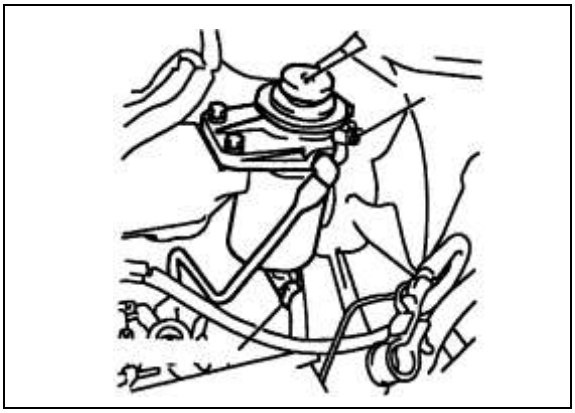
When the sedimentor indicator lamp lights up, it means need water discharge.

1）. Put a container under the fuel filter.

2）. Loosen away the drain bolt, then loosen the drain plug by turning 4 to 5 turns to dewater.

3）. Fasten the drain bolt and plug after the water was discharged.





30. Air-bleeding fuel system Diesel

During add fuel or discharge water from sedimentor, it's also need to bleed air in the fuel system.

1）. Loosen the bleed plug

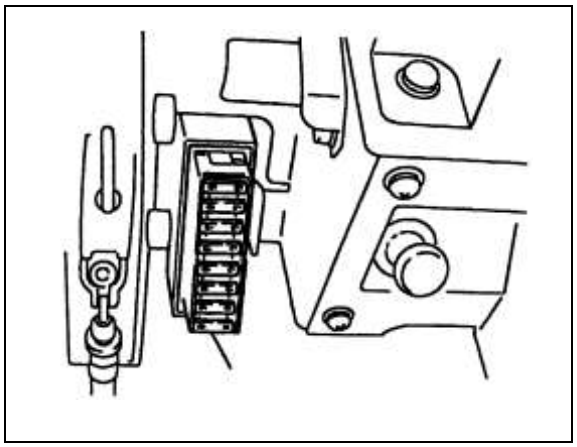
2）. press the priming pump until fuel coming through the bleed plug contains no bubble.

3）. Fasten the bleed plug.

31. Fuse box

The fuse box is location at the left side of the instrument panel. Before replace a new one fuse, please find out the cause of problem at first.

Please replace the same capacity fuse.



32. Tyre pressure

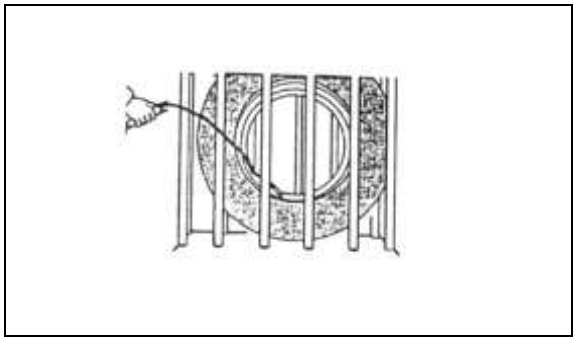
Turn the tire valve cap contrarotate and move it. Using a tire pressure gauge, measure the inflation pressure, and adjusting it to the specified pressure, if needed. After making sure there is no sir leakage from the tire valve, reinstall the cap. Check that each tire does not get damaged at the tread surface or side face or bending at the rim.

Warning!

Since the forklift truck needs tires that have a high inflation pressure to carry heavy loads, even a small bending of rims or damage at the tread surface could cause an accident.

Warning

When using an air compressor, first adjust the air pressure of the compress-or. Failure to do so will cause a serious accident, since the compressor delivers the maximum pressure.



Tire pressure GB/T2982-2001

> **Warning**
>
> All nuts and bolts should be properly installed and tighten before inflating tire and rim assembly. An inflated tire contains potentially explosive energy. Don't over inflate.

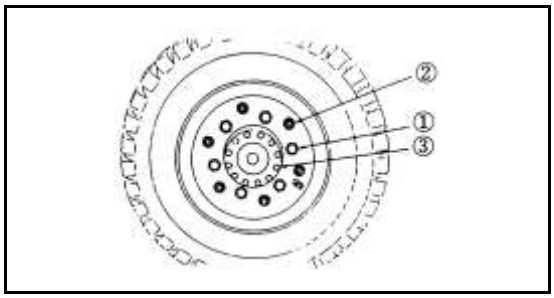
Truck type	Driving wheels（Front	Turning wheels（Rear wheel）
5t-10t	830kPa	830 kPa

33. Hub nut torque check

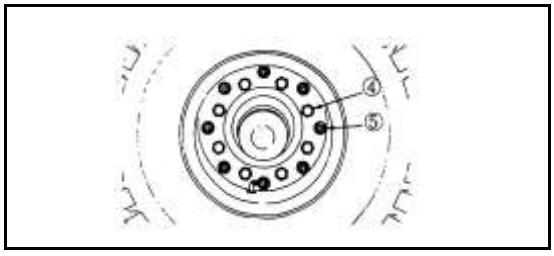
Check hub nuts should be tightened to the specified torque securely.

1）.Hub nut
2）.Divided rim bolt (some truck haven't)
3）.Drive shaft bolt
4）.Rear hub nut
5）.Divided rim bolt

Driving wheel （front wheel）



Turning wheel（rear wheel）



Tighten torque refer to <<Bolt tighten torque force table>>

34. The change of tyre

Front wheel

1) Place lift truck on level concrete.

2) Start engine and raise carriage about 100mm height.

3) Place chocks behind rear wheels to prevent movement of forklift.

4) Loosen wheel nuts 1-2 turns each by turning them counter-clockwise.

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

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

Caution:

> Do not allow loose nuts before the front wheels leave away from the ground.

7) Support forklift truck by putting additional wooden blocks under each side of the front-end frame as shown below. Stop the engine.

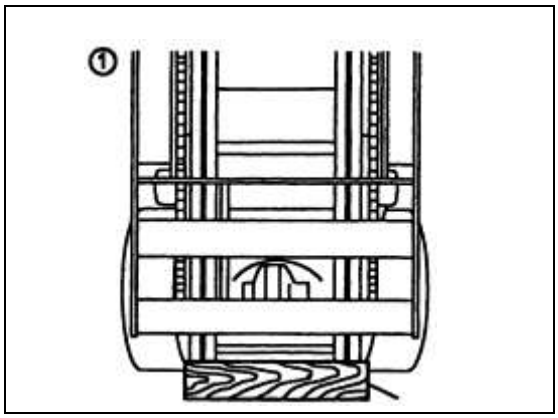
8) Take out the wheel nut and replace the front wheel tire.

> **Warning!**
>
> a. When removing tire from wheel rim, do not remove rim set bots and nuts before releasing air.
> b. Make sure that wooden blocks used to support lift truck are solid, one-piece units.
> c. Never get under forklift while it is supported only by wooden blocks.

9) Retighten the wheel nut temporarily.

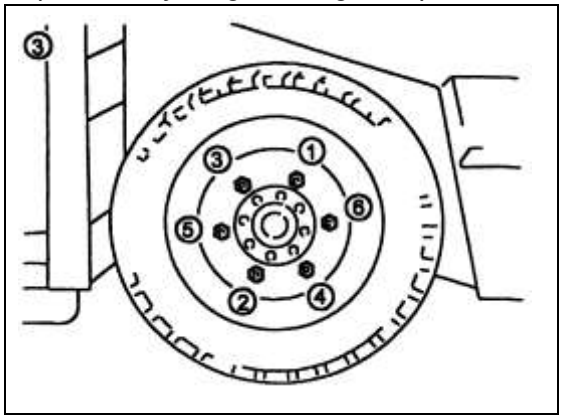
10) Start the engine, and take out the wooden block.

11) Tilting backward the mast and lower down the mast slowly, then take out the wooden block under the outer mast and rear wheel.



12) Retighten the wheel nut with right tighten torque.

13) Inflation tyre again to right air pressure.



Rear wheel

1) Place lift truck on level concrete.

2) Pull the parking brake lever and place chocks before front wheels to prevent movement of forklift.

3) Put the lifting jack under the counterweight.

Caution:

Make sure the jack capacity is bigger than 2/3 of service weight of forklift.

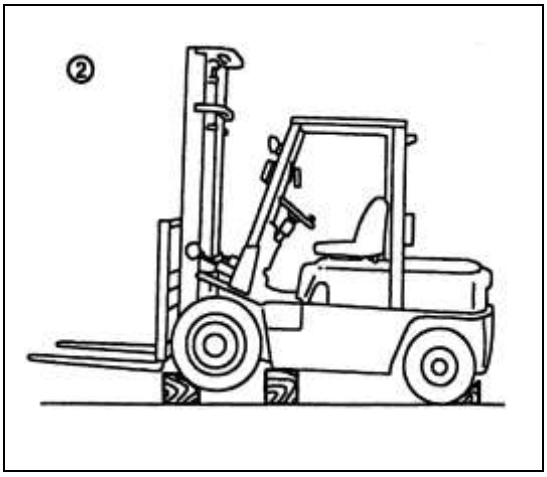
4) Loosen wheel nuts 1-2 turns each by turning them counter-clockwise.

⚠ Warning!

Do not move wheel nuts until rear tires are raised from ground.

5) Raised the forklift by swing the rod of jack until it out of ground. Support forklift truck by putting additional wooden blocks under each side of the front-end frame as shown below.

6) Take out the wheel nut of rear wheel,



then replace the wheel.

⚠ Warning!

a. When removing tire from wheel rim, do not remove rim set bots and nuts before releasing air.

b. Make sure that wooden blocks used to support lift truck are solid, one-piece units.

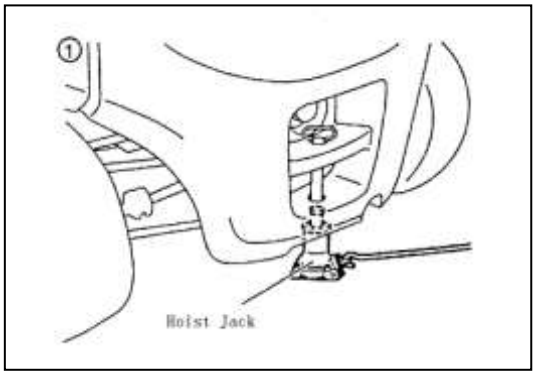
c. Never get under forklift while it is supported only by wooden blocks.

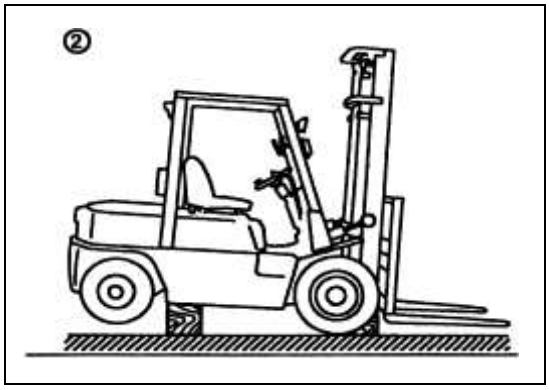
7) Retighten the nut on consequence as figure show below:

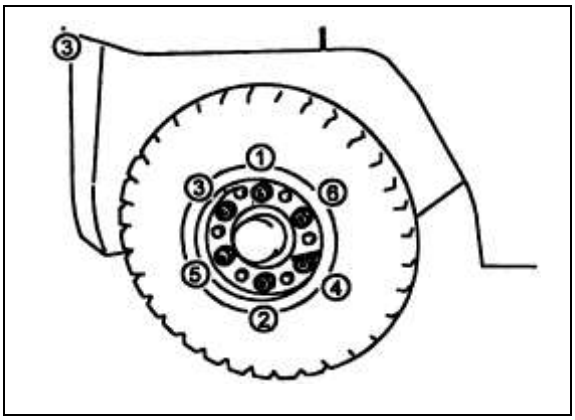
8) Remove the wooden block under chassis body. Let down the forklift slowly. Then take away the chocks before the front wheel.

9) Retighten the wheel nut with right tighten torque.

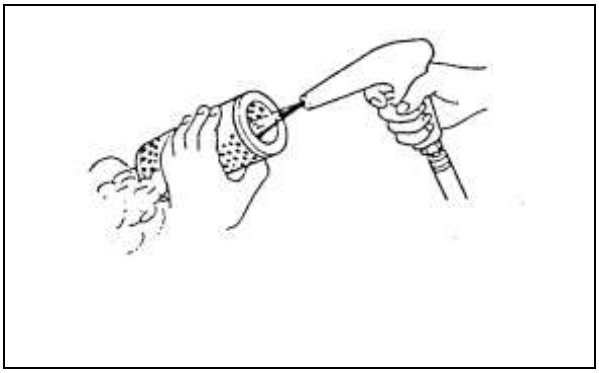
10) Inflation tyre again to right air pressure.







35 Air clearner maintenance



Generally:

When the truck works for 50～25hours,(truck Traffic 4000～20000Km)Please maintenance the filteration tube .

After 6 times maintenance.please replace the filtration tube.

Caution:

If your turck works in worse environment,please maintenance or replace more frequently.

The truck works in the environmnet where is much dust,you should reduce the period of maintenance and replace.we suggest maintaining every 8 to 50 hours.Corresponding,replace the filteration tube every 100 to 300 hours.

Maintenance methods:

1.Remove the covering of air cleaner;

2.Get out the filtration tube..

3. blowing dust using compressed air.

Warning!

1.The dust may fly to your eyes,so you'd better wear your glasses to protect your eyes.

2. Do not maintenance or replace your filtration tube,will make your engine works short.

5. Structure and stability of truck

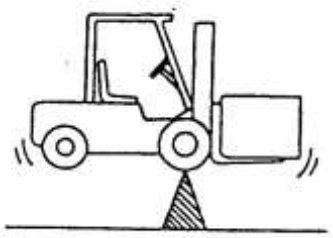
It is very important for operator to know the truck's structure and relationship between load and stability.

Caution | **The structure of the truck**

The basic structure of the truck is mast (include mast and forks) and body (include tire).

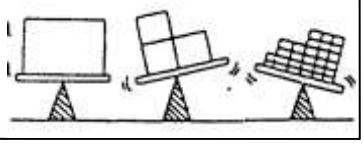
The lift truck keeps the balance of weight between the truck body and the load on the forks with the center of the front wheels as a fulcrum when the rated capacity load is placed in position.

Due care should be paid to the weight and the center of gravity of loads to maintain the stability of the truck.



Caution | **Load center**

There is difference because of the loads' shape, gravity, such as box, board and large roller. It is very important to distinguish the difference and the gravity center of loads.



Warning!

If the truck will turn over, do not attempt to get out of the truck, because the speed of overturn is much fast than you. You should hold the steering wheel handle, and this practice will let you in the seats.Pls tie belt.

Caution | **Gravity and stability**

The combined center that is composed of the barycenter and the load center determine the stability of lift trucks.

When unloaded, the barycenter does not change;

When loaded, the barycenter is determined by the truck and the load's center.

The barycenter is also determined by the tilting and lifting of the mast.

The combined center is determined by these factors:

Load's size, weight and shape.

The lifting height.

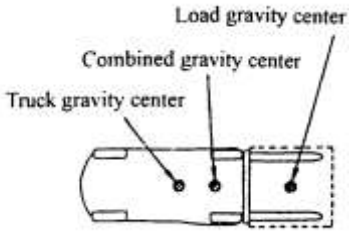
The tilting angle.

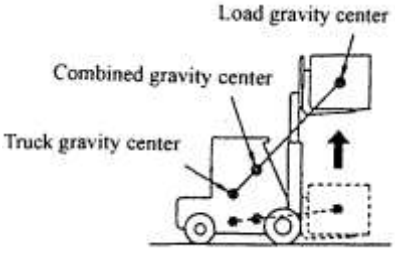
The pressure of the tire.

The radius of turning.

The road and grade's angle.

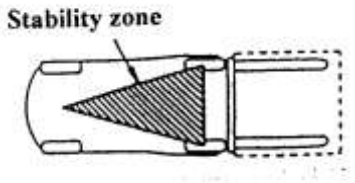
The attachments.





Caution the stability zone of the barycenter

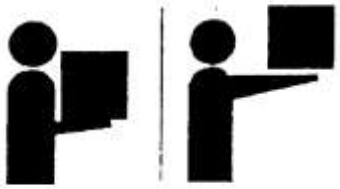
In order to make the truck stable, the combined center must be in the triangle which is made up of two points that the two front wheels attach ground and the midpoint of the back driving axle.



If the combined center is in the front driving axle, the two front wheels become two fulcrums, the truck will overturn. If the combined center departures the triangle, the trucks shall overturn in the corresponding direction.

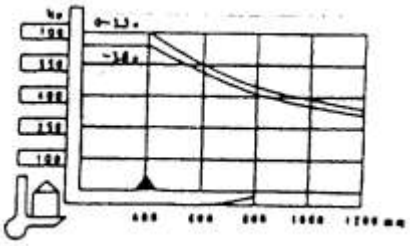
Caution the max load

The distance between the load center and the front surface of forklift or load bracket (select the min) on the forklift is called LOAD CENTER DISTANCE. The max gravity that the truck can load is called MAX LOAD on condition that the load is on the load center distance. The relationship of MAX LOAD and LOAD CENTER DISTANCE is specified on the load capability chart. If the load center is moved near the front of forklift, the load should be cut down.



Caution the load capability chart

This chart shows the relationship of MAX LOAD And the location of LOAD CENTER DISTANCE. Check whether the load and load center distance is in the range referred by the chart. Put the most important parts near the load bracket if the shape of goods is complex.



Caution speed and acceleration

It is very dangerous to press the brake suddenly. It may result in capsizal or sliding down of the load because of huge force to the front.

Centrifugal force will be formed during turning and its direction is from the turning center to the outer. The force may result in the capsizal of truck. Right-and-left stable zone is very small, so the truck's speed must be reduced when turning to prevent capsizal. If the truck conveys the load which is on the high location, feasibility of capsizal is very big.

6.Operation

⚠ Warning!

Be fore controls and warning devices for proper operation. If any damage of fault is found, don't operate truck until cure operating the truck, check all corrected.

Star-up

Starting diesel engine

1）. Make sure that the shift lever(s) and loading levers are in neutral and hold position.

2）. Turn the ignition switch to ON position after turning the ignition switch to START position.

Caution

If you can not start the engine in 5 seconds, should switch to OFF, after 2 minutes then start it again.

If you can not start the engine 3 times continuously should check the truck to the core.

Caution

If the temperature lower than –5 degree, crank the engine by turning the ignition key to "START". Release key when engine starts.

Starting gasoline engine

1）.Make sure that the shift lever(s) and loading levers are in neutral and hold position.

2）.Cold engine.

Pull out the choke button fully. Depress the accelerator pedal to the floor two or three times and release it. With your foot OFF the pedal, crank the engine by turning the ignition key to "START". Release key when engine starts.

3）. Warm engine

Do not pull out the choke button. Press down the accelerator pedal halfway and cold. Crank the engine by turning the ignition key to "START". Release key when engine starts.

Caution

Do not press down the accelerator pedal fully when starting warm engine. This operation may harden the engine starting. Pressing down the accelerator pedal several times will cause harder starting.

Caution

The starting time should less than 5 seconds a time, the interval between two starting should much than 15 seconds.

After engine has started

1）. Warm up the engine (for about 5 minutes)

2）. Check the rotation (sound or gear) of the engine.

Caution

Diesel model

After starring up the engine, accelerate it's speed to the arrange of 1800-2000r/min, and warm it without work.

Gas model

After cranking the engine, push in the choke button step by step observing the warm-up condition and stability of speed of the engine. Push in the choke button fully after making sure the engine is completely warmed up.

·Check the combustion (or misfiring) sound.

·Check the condition (density) of exhaust.

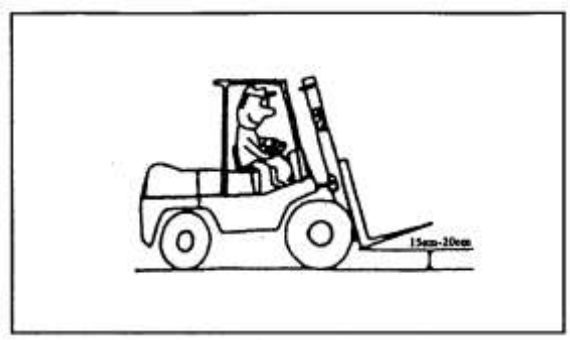
·Make sure that all the warming lamps are off.

·After thoroughly warming up the engine, operate the loading levers 2 to 3 times in their full stroke and check their working conditions.

Traveling

1）. Hold the knob on the steering wheel with your left hand and get the right hand ready for loading working, lightly putting it on the wheel.

2）. Set the bottom of the fork 15 to 20 cm above the ground and fully tilt back the upright.



3）.Check the safety around the machine and give a signal when starting the engine.

Clutch type

1）.Depress the clutch pedal and engage the shift levers.

2）.Release the parking brake lever.

3）.Gradually release the clutch pedal while depressing the accelerator pedal to start the machine.

Caution

Do not rest your foot on the clutch pedal while you are driving.

Torque converter type

1）.Depress brake pedal and engage the forward-reverse lever.

2）.Release the parking brake lever.

3）. Release brake pedal and depress the accelerator pedal to start the machine.

Gear shifting

Clutch type machines

·Always stop the truck before reversing the direction of travel.

·When gear shifting from high to low speed or vice versa, once increase the engine speed and release accelerator pedal. At the same time, press the clutch pedal while shifting the shift lever into the desired position. Then press the accelerator pedal while releasing the clutch pedal.

Torque converter type machines

·Always stop the truck before reversing the direction of travel.

·Shift the shifting lever.

Slow down

Clutch type machines

Since the machine uses the synchromesh transmission, it is not necessary to perform the double clutch operation. Remove your foot from the accelerator pedal, press the clutch pedal to the full, place the speed shift lever into the “first speed” position, and press the accelerator pedal while releasing the clutch pedal.

Torque converter type machines

Release accelerator pedal depression a little, and press the brake pedal, if needed.

Steering

Unlike general passenger-cars, the steer wheels are located at the rear of the truck. These cause the rear of the truck to swing out when a turn is made.

Slow down the truck and move toward the side to which you are turning. The steer hand wheel should be turned a bit earlier than as with the front wheel steering car.

Stopping or parking the truck

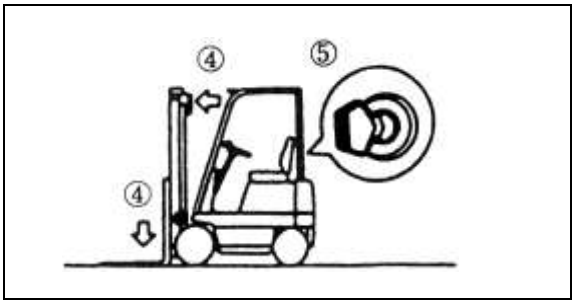
1. Slow down and press the brake pedal to stop the truck (in the case of clutch type machine, the clutch pedal is used).

2. Place the shift lever in neutral.
3. Apply the parking brake by pulling up on the parking brake lever.
4. Down the forks on the ground, and tilt the mast forward maximum.
5. Place the key switch in “OFF” to shut down the engine. In the case of the diesel truck, pull out the engine stop button. Remove the key and keep it.

Caution

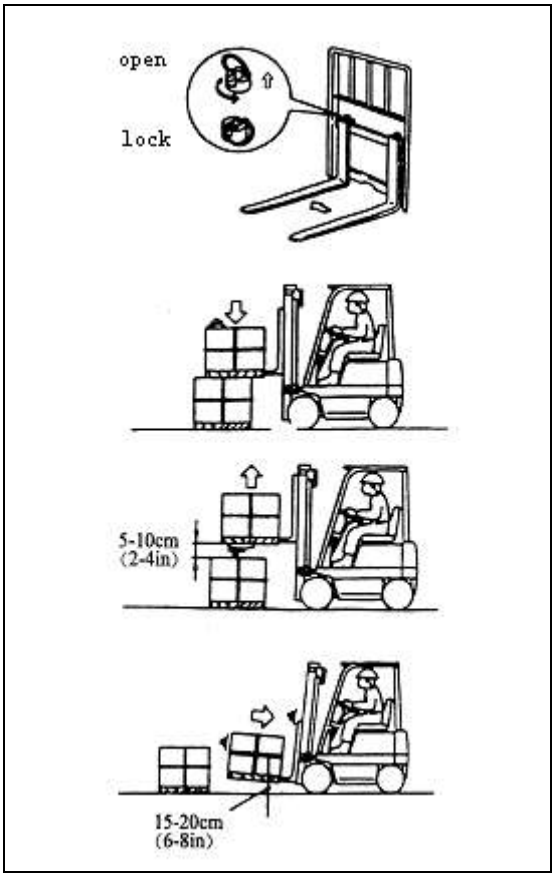
·Don’t dismount from the moving machine.

·Never jump off the machine.



Load

- The forks should be adjusted sidewise to maintain proper balance of load.
- Place the machine right in front of the load to be handled.
- The pallet should be evenly positioned across both forks.
- Insert forks into the pallet as far as possible.
- To raise loads from the ground.



1）. First lift the forks 5 to 10 cm off the ground or floor and make sure loads rest stable.

2）.Then, tilt the mast backwards fully and lift forks up to 15 to 20 cm off ground then start running.

·When handling bulky loads which restrict your vision, operate the truck in reverse except when climbing grades.

Stacking load

- When approaching the deposit area slow down your truck.
- Once stop the truck right in front of the area where your load is to be deposited.
- Check the condition of the deposit position.
- Tilt the mast forward until forks become horizontal. Raise forks until they are a little higher than the deposit position.
- Move forward to place the load

directly over the desired area and stop the truck.

• Make sure your load is just over the desired area. Slowly lower the load into position. Make sure the load is securely stacked.

• Disengaged forks from the load by using necessary lift-tilt operation and then back away.

• After making sure the fork tips leave the load, lower the forks to the basic position (15 to 20 cm off the ground).

• Tilt the mast backwards.

Warning!

Never tilt the mast with loads upraised 2m or more.

Don’t leave or dismount from the truck when the load is raising high.

Remove load

• When approaching the area where the load is to be retrieved, slow down your truck.

• Stop the truck in front of the load so that the distance between the load and fork tips is about 30 cm.

• Check the condition of the load.

• Tilt the mast forward until forks become horizontal. Elevate forks up to the position of the pallet or skid.

• Make sure forks are positioned properly for the pallet. Move forward slowly to insert forks into the pallet as far as possible and then stop the truck.

Caution

If the forks are hard to be fully inserted, use the following procedure: move forward and insert 3/4 of the forks. Raise the forks 5 to 10 cm and move backward 10 to 20 cm with the pallet or skid on the forks, then lower the pallet or skid on the stack. Move forward again to insert the forks fully.

• Raise the forks 5 to 10 cm off the stack.

• Check all around the truck to insure that the path of travel is unobstructed and back away slowly.

• Lower forks to a height of 15 to 20 cm above the ground. Tilt the mast backward fully and move to the desired area.

Measures against cold and hot weathers Oil

Use the oil suitable for ambient temperature.

Battery

·In cold weather

To prevent the freezing, charge at least 75% of the whole capacity.Also it is effective to keep the specified gravity up to 1.260, but not higher than this value.

·In hot weather

As the water of electrolyte is especially likely to evaporate in hot weather, replenish distilled water from time to time.In a region where the ambient temperature is intensely hot, it is practicable to lower the specified gravity of a completely charged battery down to 1.220±0.01.

Antifreeze of radiator

Warning!

·Antifreeze is harmful to your health, do not eat it.

·Far away from children.

Your truck is generally shipped with the cooling system filled with Long Life Coolant of

50% volumetric mixture. The freezing point of the coolant of such a mixing ratio is –36.5 degree. When the coolant is not enough, you can add CALTEX ELC6280 antifreeze in the tank. In hot weather: To maintain good cooling effect, special care should be paid to radiator and cooling system.

Clean the radiator

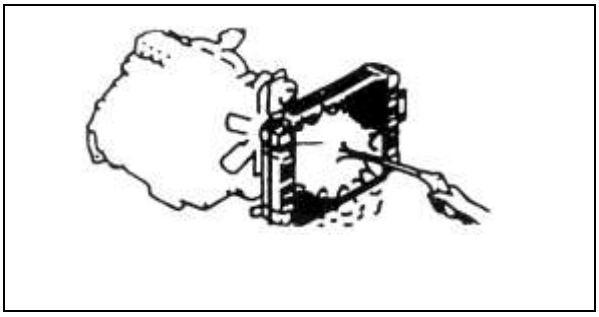
Warning!

The dust will enter your eyes if you have not worn a dust proof glass.

If the radiator has been jammed by dust, this may cause the radiator over hot. So you should use compress air, water or high pressure vapors to clean the radiator.

Caution!

When using compressed air or vapor to clean the spreading-heat slices, put the ejecting mouse vertically to the slices.



Check the fan belt tension

If the belt loosens, adjust it

When the engine is too hot…

When the engine is too hot, do not stop it immediately, just do these things:

1. Run the engine at low speed
2. Open the hood in order to increase the fan speed.
3. When the water temperature decreased, stop the engine.
4. Check the radiator; add water or antifreeze if needed.

7. Deposit

Deposit daily

1）. Park your truck on a level ground-preferably in a wide area. If parking on a slope is unavoidable, position the truck so that it cross the slope and block the wheels to prevent accidental roll.

2）.Make sure the shift level on neutral position.

3）.Pull the hand brake.

4）.Shut down the engine and control the lift and tilt level several times so that the inner pressure in the hydraulic tube will decreased.

5）.Take down the key and deposit it in a safe position.

Warning!

You should tell the manager if you find any failure about the truck, then repair it immediately.

Do the following things:

1）.Clean the oil and grease with cloth and water on the truck body.

2）.Check the whole situation of truck, especially the tyres.

3）. Fill the oil tank with destined fuel.

4）.Check whether the hydraulic oil, the engine oil, fuel and the cooling liquid are leakage.

5）. Fill lubricate grease.

6）. Check whether the junction plane between the nuts of wheel boss and the piston of hydro cylinder is loose, and whether the surface of piston has been pulled.

7）. Check whether the wheels of mast roll stably.

8）. Lift the lifting cylinder to the top and fill it with oil.

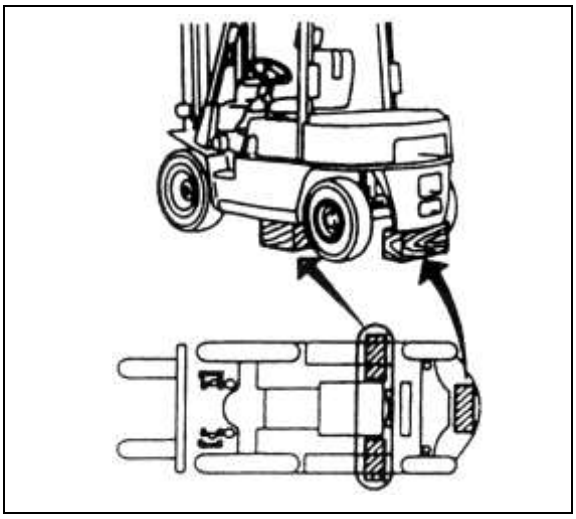
9）.In cold weather, it needn’t to discharge the antifreeze, but the cold water should be removed completely.

Deposit the truck for a long time

Deposit the truck for a long time, fill up the truck body and counter weight with block to reduce the load of the two rear wheels.

Warning!

a.The block must be single and hard enough to support the truck.
b.Don’t use a block with high than 300mm（11.81 inch）.
c.Lift the truck to height of placing on the bearing block.
d.Place two same size blocks under the left and right sides of the truck.
e.After supporting the truck with block, swing the truck forward, backward, left and right, check it’s safety.



On the basic of the “deposit” you should do these checks and maintain additional:

1. Take down the battery and recharge it once a week, place it in the shade.
2. Brush antirust oil on those parts which is exposed such as piston rod and axle.
3. Put a cloth on vent-plug and air-cleaner.
4. Start the engine once a week. If the water has already been let out, add water in the radiator. Then start the fork lightly.
5. In summer, it is not recommendatory to park the fork on asphaltum roa

Running after deposit for a long time

1.Get down the antirust oil on the exposed parts.

2.Vent the gear oil of the crankcase, driving axle, transmission box (clutch type), hydraulic transmission box (torque converter type) clear it and add with new gear oil.

3.Clean out dirty things and water in the hydraulic oil reservoir and fuel reservoir add with new hydraulic oil.

4. Check the clearance of the valve, gas valve cap and other parts on the engine.

5. Adding antifreeze or water.

6 .Recharge the battery, then install on the truck.

7. Check others carefully such as start, running, turning, lifting etc.

8. Warm-up your truck

8. Maintenance

Preventive maintenance schedule

○ — Check, revise, adjust

× — Replace

Note: (1) If the working place has much duty or other pollutions, the times of maintenance should be increased.

(2) If the parts is abnormal such as engine power descend, emit black smoke or noise increase before the replacing time is coming ,it should be check. Sometime it needs to adjust fuel injector pressure and fuel atomization.

Note:

1. The fork lift truck needs termly inspection and maintenance, make it in good working condition.
2. Inspection and maintenance are usually ignored, you must find the problems and solve it in time.
3. Use the orthodoxy spare part of HANGZHOU fork lift truck general plant.
4. Don’t use different oil when changing or adding oil.
5. Don’t throw away the waste oil or electrolyte liquid as you wish. Should deal with it depend on the local environmental protection.
6. Maintenance on schedule
7. After you make a maintenance, you’d better make a record.
8. Forbid to repair the fork lift truck if you haven’t been trained.

Counterbalance weight (unit: Kg)

Model of truck	5t	6 t	7 t
Counterbalance weight(kg)	2420±30	3000±30	3600±30
Overall dimension (L×W×H)(mm)	1180×1690×1076	1180×1690×1076	1180×1690×1076

Model of truck	8t	10t
Counterbalance weight(kg)	4000±30	4540±30
Overall dimension (L×W×H)(mm)	1250×1960×1220	1250×1960×1220

Checking Item	Service required	Tools	Monthly (166hrs)	Trimonthly (500 hrs)	Semiannually (1000 hrs)	Annually (2000hrs)
	1. Check the valve clearance is correct	clearance gauge	○	○	○	○
Engine	2. Fan belt tension check		○	○	○	○
	3.Retighten cylinder head bolt		○	○	○	○
	4.Clean the outface of radiator（1）	z	○	○	○	○
	5. Replace engine oil（1）		×	×	×	×
	6.Replace the oil cleaner (diesel engine)（1）		×	×	×	×
	7. Replace engine cooling fluid					×
	8. Clean the air cleaner element (gasoline engine)			×	×	×
	Replace the air cleaner element (diesel engine)		○	○	○	○
	9. Drain the water of oily water separator （ diesel engine）		○	○	○	○
	10. Clean or replace the filter element of air cleaner		○	○	×	×
	11. Idling of engine	tachometer	○	○	○	○
	12. Ignition timing（gasoline engine ）		○	○	○	○
	13.Spark plug （ gasoline engine）		○	○	○	○
	14. Check distributor point、cover and rotor （gasoline engine）（1）		○	○	○	○
	15. Lining of distributor（IC ignition system）（1）					○
	16.Check fuel injector,adjust pressure（diesel engine）（2）			○	○	
	17 .P. C. valve and pipe blocking or damage				○	○
	18. Battery electrolyte check				○	○

Maintenance of chassis and body

CHECKING ITEM	Service required	Tools	Monthly (166hrs)	Trimonthly (500 hrs)	Semiannually (1000 hrs)	Annually (2000hrs)
CLUTCH	Check clutch pedal for free travel and clearance between pedal surface and floor when clutch is unlocked		○	○	○	○
	Release bearing lubricate			○	○	○
Mechanical Transmission	Check oil level, and replace it if needs		○	○	○	×
TORQUE CONVERTER TRANSMISSION	Clean oil filter element				○	○
	REPLACE OIL (1)		First time		×	×
Driving axle (FRONT AXLE)	Check differential oil, and replace it if needs		○	○	○	×
	CHECK CONNECTION AND RETIGHTEN MOMENT		○	○	○	○
Brake and inching system	Check and adjust brake pedal for free travel and clearance		○	○	○	○
	Replace brake fluid					×
	Check for proper brake operation		○	○	○	○
	Check and inching brake pedal for free travel and clearance		○	○	○	○
Hydraulic system	Check for oil level, Change oil（1）				×	×
	Clean oil return suction strainer（1）				×	×
	Proper work of the hydraulic oil pump		○	○	○	○
	Proper work of control valve		○	○	○	○
	Check for oil leaks, looseness, collapse, deformation and damage		○	○	○	○
	Clean the hydraulic oil reservoir				○	○
Lifting system	Check chain for tension		○	○	○	○
	Lubrication of chains		○	○	○	○
	Check chain and bearing for damage or deformation		○	○	○	○
	Check lifting cylinders for proper operation and		○	○	○	○

	connection					
	Check tilting cylinders for proper operation and connection		○	○	○	○
	Check for forks and stopper pins for damage or wear		○	○	○	○
	Check fork base and hook welding for defective cracks or wear		○	○	○	○
	Check roller of mast and lifting bracket parts for cracks or damage			○	○	○

Table for bolt's tight moment

unit：N•m

Bolt's diameter	Grade			
	4.6	5.6	6.6	8.8
6	4∽5	5∽7	6∽8	9∽12
8	10∽12	12∽15	14∽18	22∽29
10	20∽25	25∽31	29∽39	44∽58
12	35∽44	44∽54	49∽64	76∽107
14	54∽69	69∽88	83∽98	121∽162
16	88∽108	108∽137	127∽157	189∽252
18	118∽147	147∽186	176∽216	260∽347
20	167∽206	206∽265	245∽314	369∽492
22	225∽284	284∽343	343∽431	502∽669
24	294∽370	370∽441	441∽539	638∽850
27	441∽519	539∽686	637∽784	933∽1244

Note: ·Use entirely 8.8 grade bolt in the important joint position.

·Bolt's grade can be found in the head of the table, if it can't be found, the grade is 8.8.

Periodic replacement of key safe parts

· Some parts can’t be found damnification or multilaton though schedule maintenance. In order to make sure the safety of truck, please replace these parts termly listed in following table. If there is any off-normal happened on these parts before replacement time, please replace it deservedly.

Name of key safe parts	service life (years)
Brake hose or hard tube	I～2
Hydraulic rubber hose for lifting system	I～2
Lifting chain	2～4
High pressure rubber hose or tube for hydraulic system	2
Grease cup for brake fluid	2～4
Tube for fuel	2
Sealing member, rubber articles inside of hydraulic system	2

Table for the oil used in the truck

Description	Shop sign,Code name	Capacity	Remark	
LPG		40	Only for LPG truck	
Diesel	0#(summer) -10#~-35#(winter)	110	5t-7t	Diesel vehicle
		120	8t-10t	
Diesel engine oil	General season:CD grade 15W／40 or according engine maintenance manual	11-15	Only RW28(Cummins Engine) Request CD grade 15W／40	
	Winter:CD grade 10W／30 or according engine maintenance manual		Only RW28(Cummins Engine) Request CD grade 10W／30	
	very cold environment CD5W/30 or CD5W/40		Only RW28(Cummins Engine) Request CD grade 5W／30 or 5W/40	
GM4.3L Single fuel engine	General season:SF grade 15W／40 or according engine maintenance manua	12	Only RW17-Y	
	Winter:SF grade 10W／30 or according engine maintenance manual			
	very cold environment SF grade 5W/30 or SE grade 5W/40			
Hydraulic oil	General season : L—HM32	110-120	Mast height is increased by 1 meter, or hydraulic oil increased 10L.	
	Wear low temperature hydraulic oil L-HV32			
Hydrodynamic power transmission oil	6# or 8# hydrodynamic power transmission oil (winter)	25	Except RW19A、RW18A	
	DEXRON-III(caltex)	16-20	Only RW19A、RW18A	
Gear oil	GL-5 85W／90	11	5t-7t.	driver Bridge
		14	8t-10t	
Brake liquid	Caltex DOT3 or Choice HZY3 brake liquid(note add after factory)	1.5		
Antirust antifreeze liquid	Caltex	23	5t-7t.	Scale 1:1
		28	8t-10t	
Industrial Vaseline	2#		Electrode of Storage battery	
Lubrication grease	Currency lithium group lubricate grease			

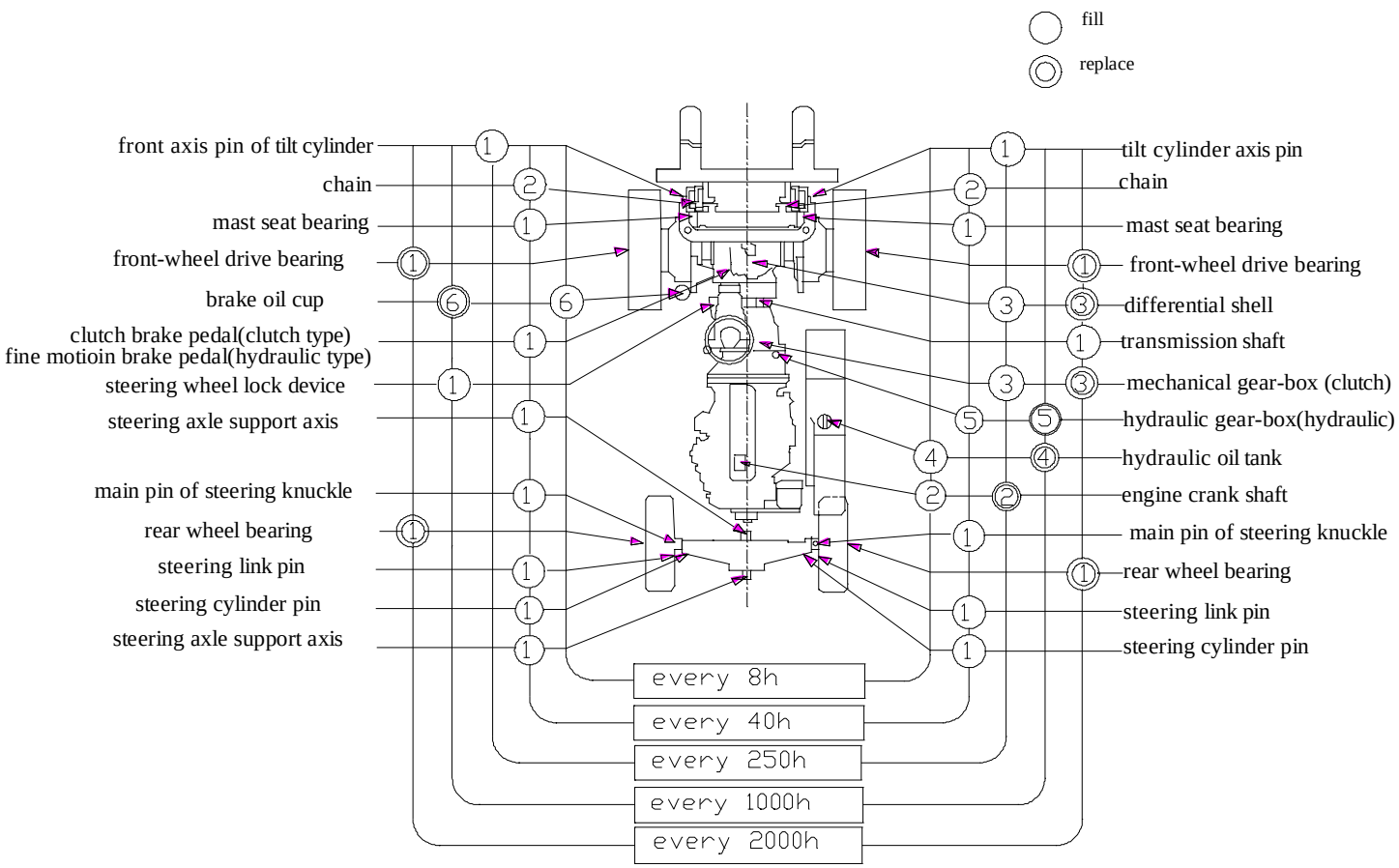
Note：

• Fork Lift Truck have been injected with the antirust antifreeze liquid, you may not let it out even in the severe winter. If it needs, add it full according demands. Usually it is replaced about 2∽4 year.

• If Fork Lift Truck haven’t been injected with the antirust antifreeze liquid, user can inject it according to demands. if the truck haven’t been injected with it ,you must let the cooling water out in the winter.

• When mast higher than 3 meiter,Mast height is increased by 1 meter, or hydraulic oil increased 10.

Lubrication system drawing



1.atuo general purpose lithium lubricating grease.
2.engine oil
3.gear oil
4.hydraulic oil
5.torque converter oil
6.brake fluid

Note:

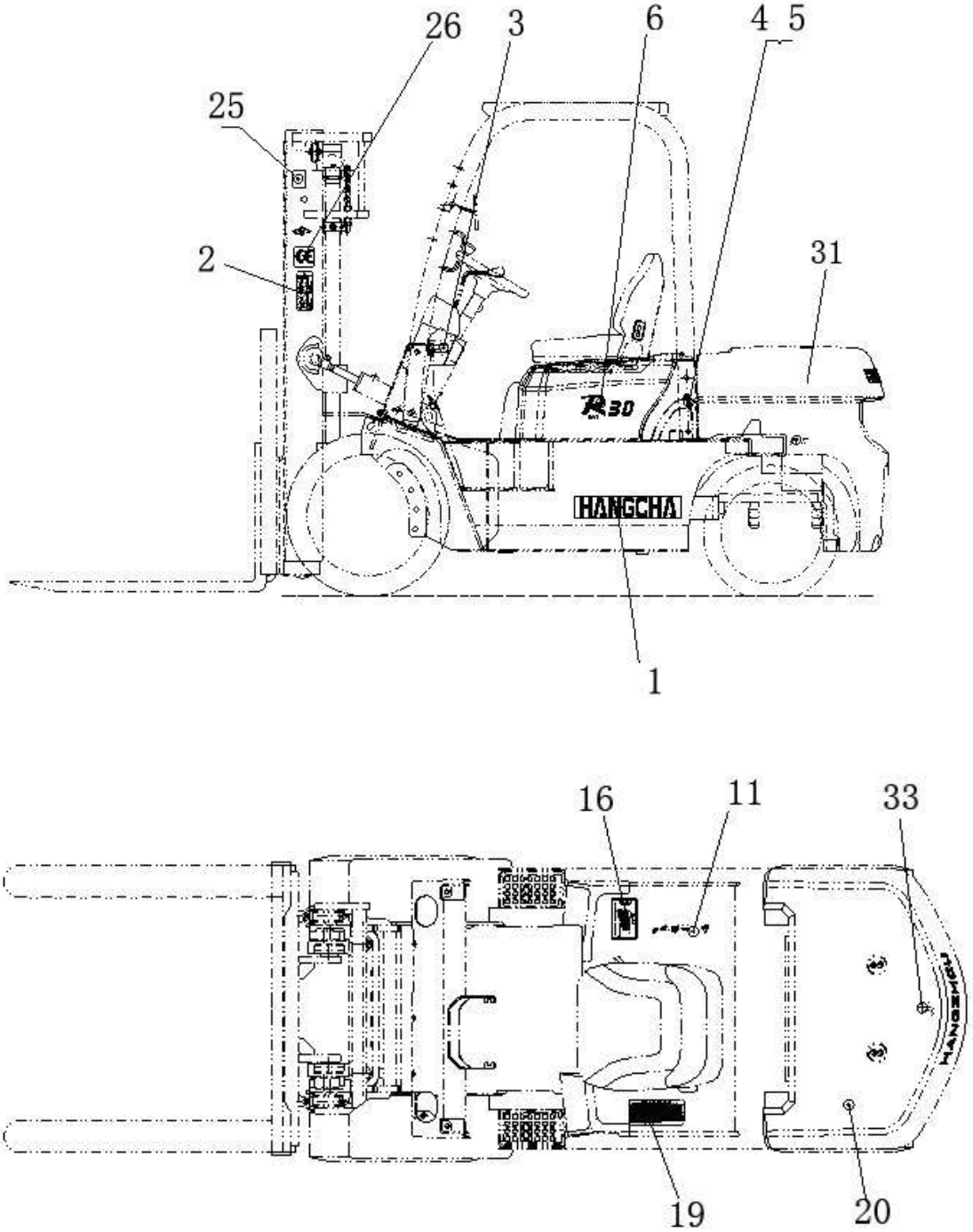
1. Lubrication depend on the model,pls see the table for the oil used in the truck.

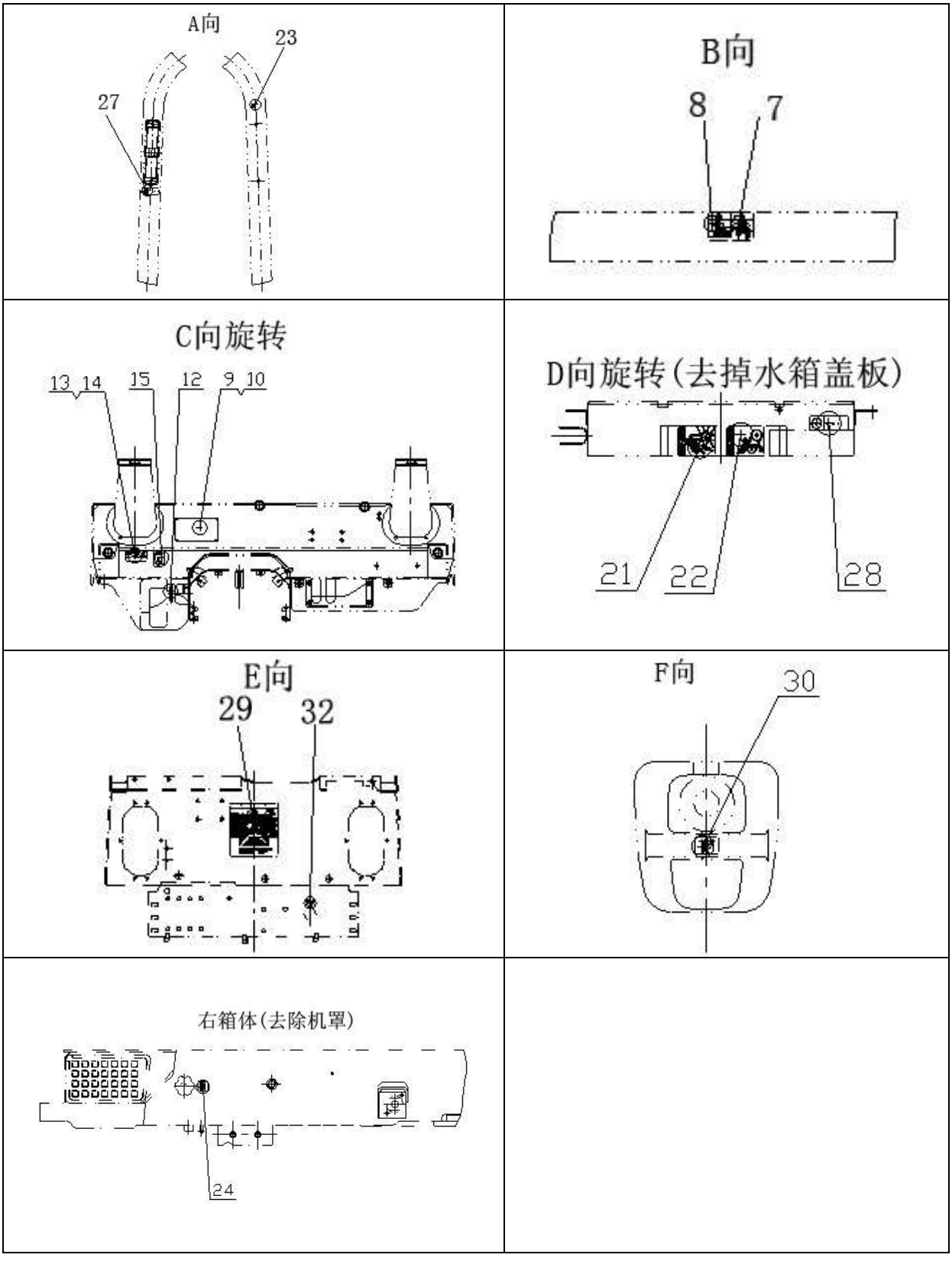
2.Lubrication for mast,pls see the 8 hour (daily or every shift) check.

Circumstance protect:1 clean, maintain,repair truck at the appoint place.
2.Before disassembly pipe,tie-in or relate part,should be use the special case to load the used oil(include cooling fluid, engine oil,hydraulic oil,transmission oil, Hydrodynamic power transmission oil,brake liquid, Lubrication grease)and used battery.
3. Replaced the aforementioned oil,shall be according with the Circumstance protect law to callback,it couldn't be dumped and discarded to prevent the pollution of the environment.

Safety consciousness: the cooling fluid, engine oil,hydraulic oil,transmission oil, Hydrodynamic power transmission oil is circulating in high temperature for a long time.Pls change it after down 70 degree.Don't touch with skin,or else scald or canker skin.

Different scutcheon in different position





1. sample label 2. Danger label 3.fuse label 4.Diesel label 5.Gasoline label 6. tonnage scutcheon
7. Danger label 8. Danger label 9. product nameplate 11.belt label 12. Gears label 13. operate label 2

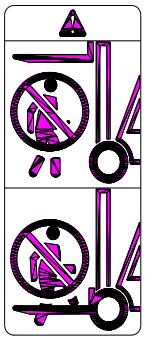
14. operate label 2 15.hand brake label 16.load curve scutcheon 17. load curve scutcheon 18. load curve scutcheon
19. warning label 21. fan cut hand label 22. strap nip hand label 23.noise label 24.hydraulic pressure oil label
25. lift scutcheon 26.CE label 27. No swash label 28. antifreeze label 29. lubricate system label
30.tie spot label 31.tyre pressure label 32.horn label 33.LPG label

1、Sample label

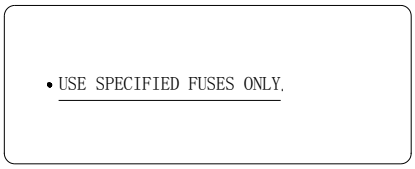
HANGCHA

2、Danger label:on the outside of mast

Don't stand on or under fork，otherwise the life in danger.



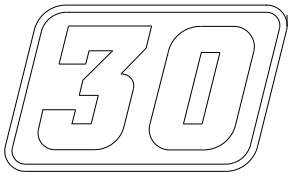
3、Fuse label（Only for Europe or option）



4、Diesel label:the position to add oil which at rear leg of left overhead
（Only for Europe or option）(Gasoline、LPG truck without)

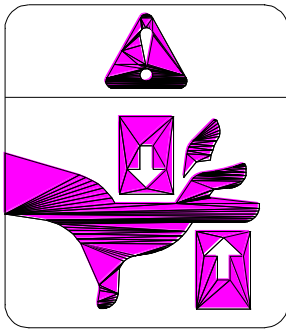
5、Gasoline label:the position to add oil which at rear leg of left overhead
（Only for euro or option）(Gasoline、single fuel LPG truck without)

6、Tonnage scutcheon



For example:“30”means the capacity is 3.0 ton,if lift highly or with attachment,the capacity is less.

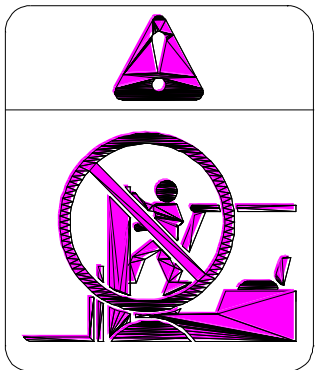
7、Danger label



Inside and outside mast,fork frame are parts of lift and down.Unallowed that put hand in the mast.

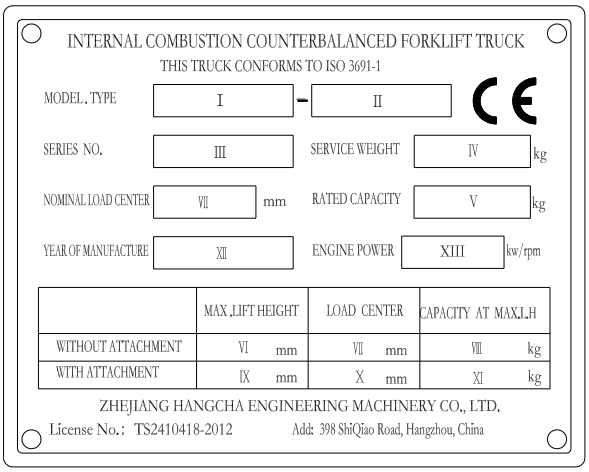
Pls check or repair this part after engine flameout. There is nobody on the truck or others to prevent operate the mast handle by accident.

8、Danger label

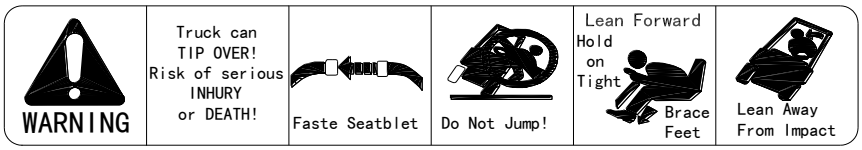


（Padlock mast label） Caution:It relate to your life,once the body in the mast,instrument and overhead,it is dangerous. Pls check or repair this part after engine flameout. There is nobody on the truck or others to prevent operate the mast handle by accident.

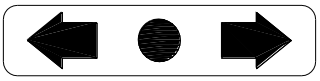
9、Product nameplate



11、belt label（Defend incline warn label）

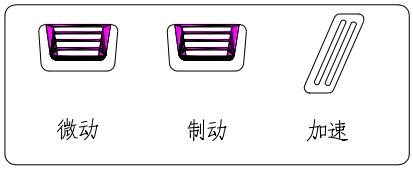


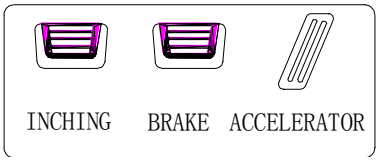
12、Gears label



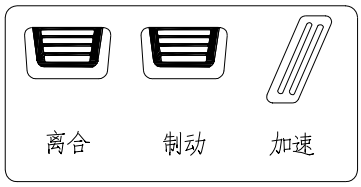
13、14 operate label 2

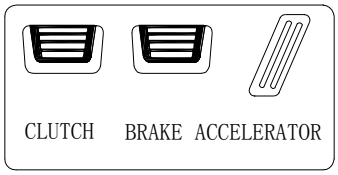
Automatic truck



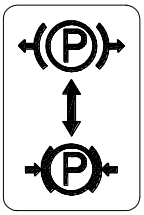


Mechanism truck





15、Hand brake label(only for Europe or option)

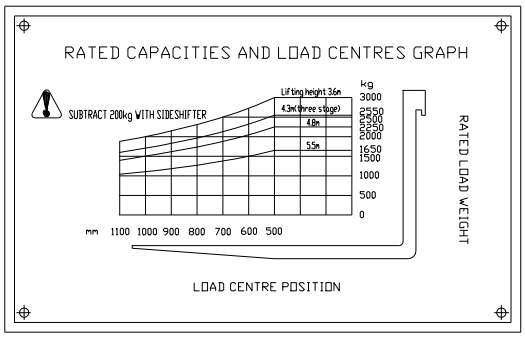


16、Load curve scutcheon

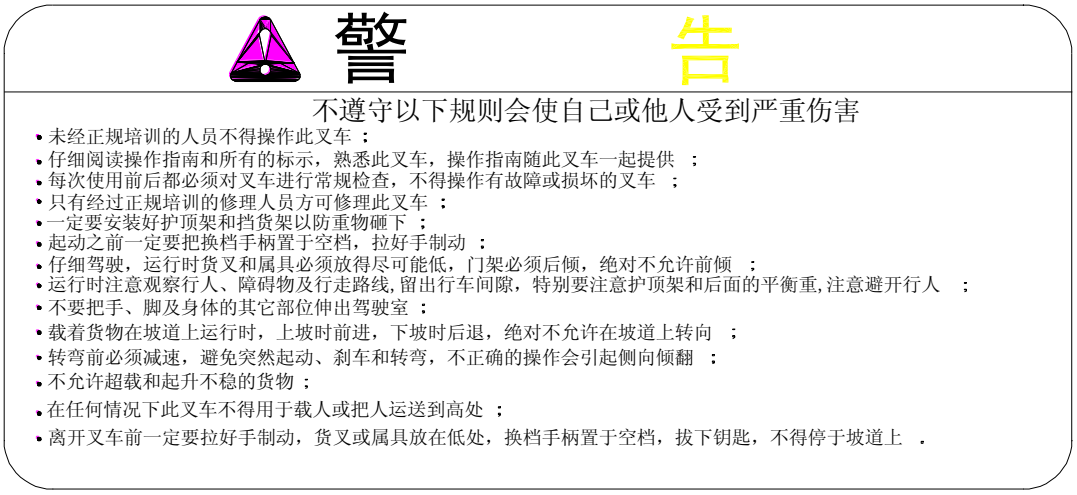
It shows the connection between load center position and max load,max lifting height.

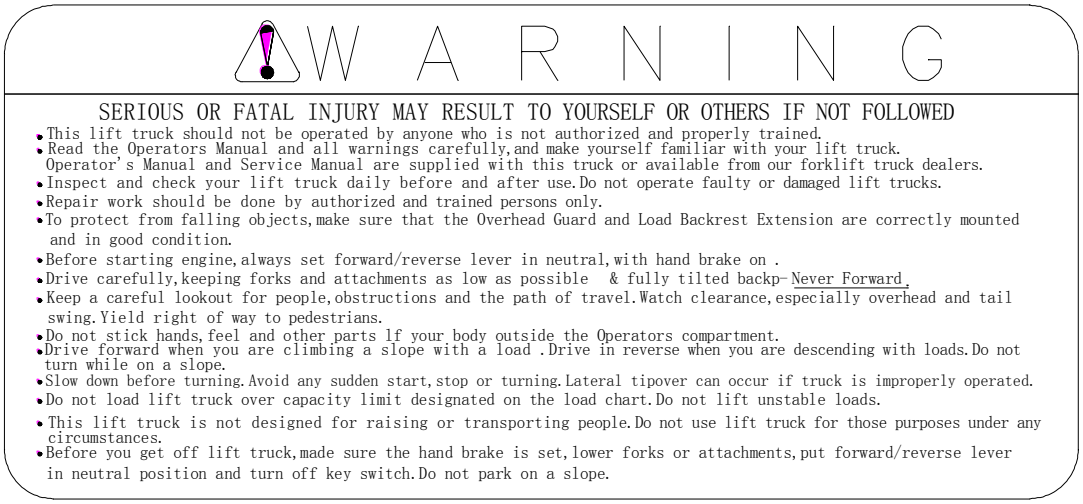
With sideshifter and attachment,the capacity is reduce.The same as lifting height is increase. Before loading,pls check the load and load centre is in the range of load capacity chart..If the

figure of load is complex, pls let the most heavy part of load is in the centre of fork and close to backrest.

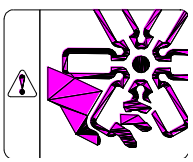


19、Warning label

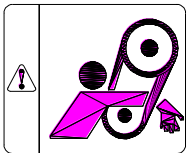




21、fan cut hand label



22、strap nip hand label

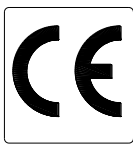


23、Noise label(only for Europe or option)

24、Hydraulic pressure oil

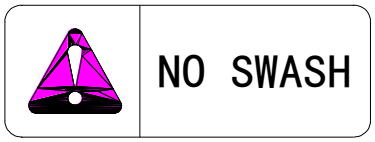
25、Lifting label: it shows the lift position and method when truck lift. Avoid the cord touch then attaint the light when lifting.

26、CE label(only for euro or option)

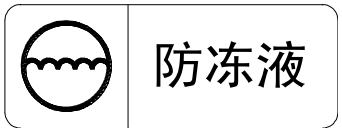


27、No swash label

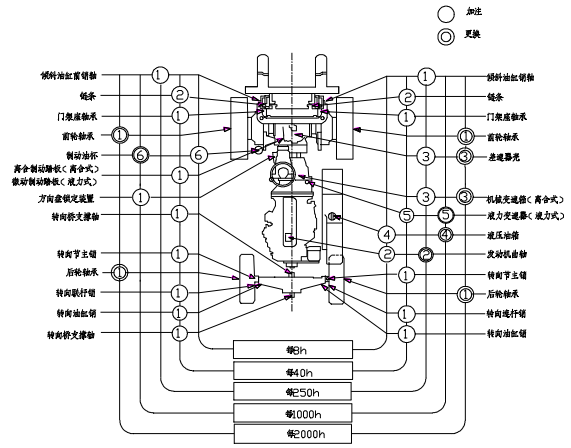
It is on the right back leg of overhead guard.It is air intake pipe of engine,no swash at transom window,prevent water intake when clean.



28、antifreeze label

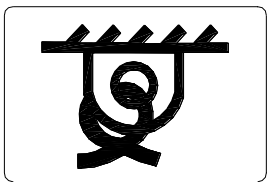


29、lubricate system label

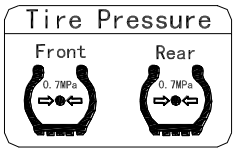


1.汽车通用锂基润滑油
2.发动机油
3.齿轮油
4.液压油
5.变矩器油
6.制动液

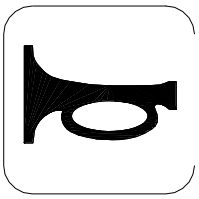
30.tie spot label(only for Europe or option)



31.tyre pressure label



32.horn label(only for Europe or option)



33.LPG label（only for LPG or double fuel truck）(only for Europe or option)

The label on the tank:

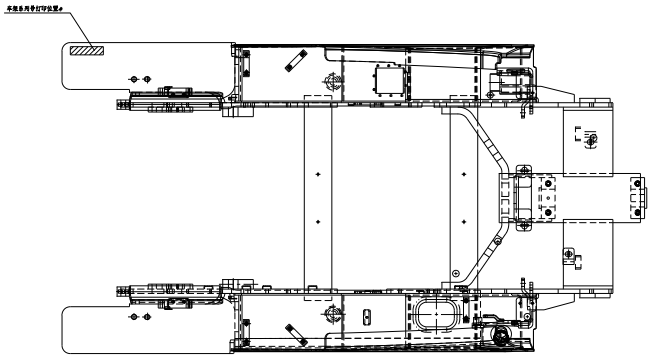
LPG tank most weight 52kg

LPG tank most pressure 2.2MPa

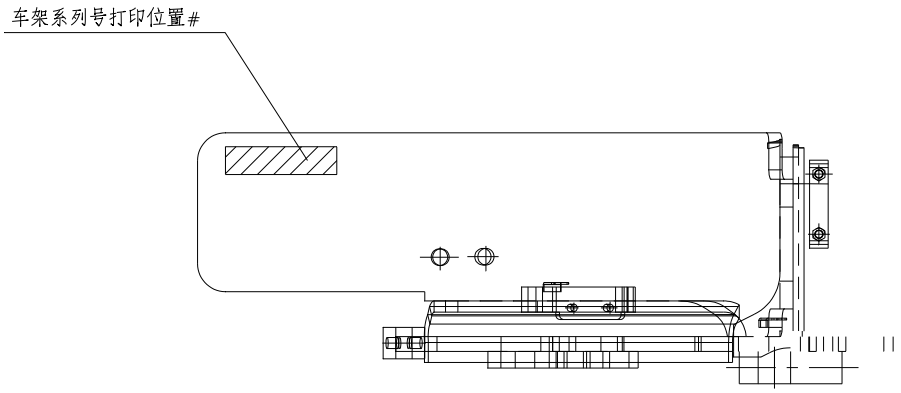
Bracket support most weight 105kg

Chassis number position

One chassis number on one truck,the position is right of chassis.



Detail



9. Truck's convey, lifting, towing

Hoist the truck

• Use the steel wire ropes to tie the holes in the two side of the outside mast's beam and the hook of the counter balance, then use the lifting device to hoist the truck.

Warning

• When hoist the truck, don't coil the overhead guard with the steel wire.

• The steel wire ropes and the lifting device must be very firm to support the truck because the truck is very heavy.

• Don't lift the truck by hoist the overhead guard.

• When lifting the truck, don't take yourself below the truck.

Convey

•The forklift truck is designed for material handling and short-distance transportation only.

It is inappropriate for long-distance transportation. The Fork Lift Truck（5-7t） must be transported by ship, train or lorry, of 10t loading(10t need 15t loading lorry etc). Tighten the brake lever, take woods to block the front ad tear wheels and bind the truck body with enough strong rope, to avoid slippage during transportation.

Towing

• The towing rod on the bottom of the counter balance is used to pull and drag the truck, For installing the rod, first remove the towing rod and then install the ropes. After that, loose the rod.

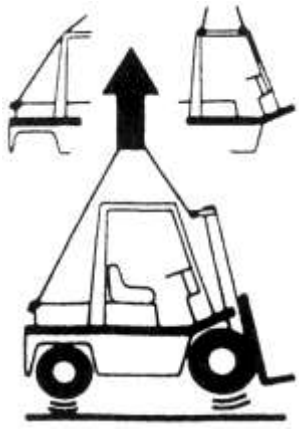
Note: Loosen the brake lever.Change to middle-gear,care safe traffic,towing mark.

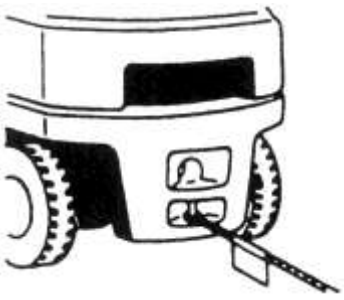
Don't tow the truck which turn system abnormal and brake system broke. Tow the truck on the road pls obey traffic rules.

Warning

a. Don't tie the steel wire ropes on the unfixed position

b. Don't carry a load to steel wire ropes suddenly.





10. Type signification

Model	Engine	Main transmission	Rated capacity(t)/ Load center(mm)
CPCD50/60/70/80/100-RW28	QSB4.5 diesel (Cummins)	YQXD100H10 Hydrodynamic power transmission gear box	5/600,6/600,7/600, 8/600,10/600
CPYD50/60/70-RW17 （old model: CPQD50/60/70-RW17-Y）	GM4.3L LPG single fuel engine	YQXD100HA YQXD100HA1 Hydrodynamic power transmission gear box	5/600,6/600,7/600
CPCD50/60/70-RW38	QSB3.3-C99 （Cummins）	YQXD100H10（5t-6t） YQXD100H12（7t） YQXD100H10-3（7t） Hydrodynamic power transmission gear box	5/600,6/600,7/600

11.Truck specification

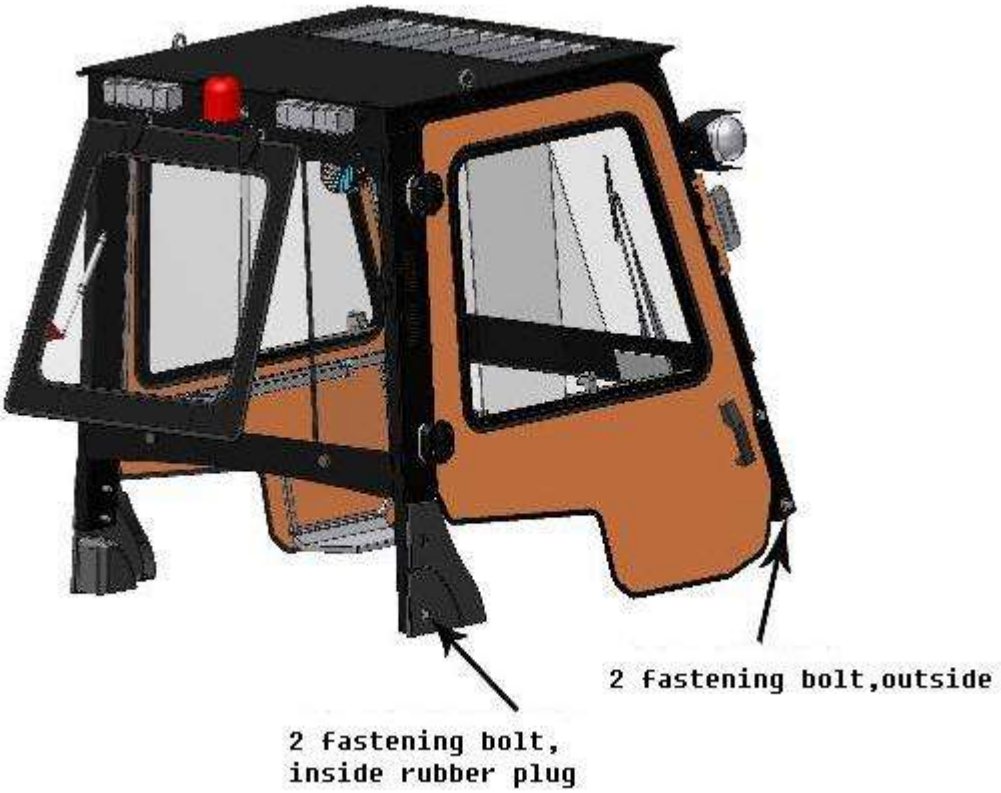
Model		CPCD50-RW28	CPCD60-RW28	CPCD70-RW28
Rated capacity kg		5000	6000	7000
Load center mm		600	600	600
Max. lifting height mm		3000	3000	3000
Free lifting height mm		160	160	160
Max lifting speed mm/s		420	400	360
Tilting angle F/B		6°/12°	6°/12°	6°/12°
Max traveling speed km/h		29	29	29
Ground clearance mm		210	210	210
Min turning radius mm		3160	3200	3280
Max grade ability %		20	20	20
Wheel base mm		2250	2250	2250
Wheel thread (F/R) mm		1489/14600	1190/1130	1190/1130
Service weight kg	Mechanical	/	/	/
	Hydrodynamic	8000	8400	9300
Overall dimension (L×W×H) (without forks) mm		4675×1990×2500	4675×1990×2500	4800×1990×2500
Tyre (F/R)		8.25-15-14PR/4 8.25-15-14PR/2	8.25-15-14PR/4 8.25-15-14PR/2	8.25-15-14PR/4 8.25-15-14PR/2
Battery V/ capacity Ah		24/90/20h	24/90/20h	24/90/20h
Diesel Englines	Model	QSB4.5		
	RATED CAPACITY/RPM	81kW/2500 r/min		
	Max torque/rpm	353N·m/1650 r/min		
	Displacement L	4.460		

Model		CPCD80-RW28	CPCD100-RW28
Rated capacity kg		8000	1000
Load center mm		600	600
Max. lifting height mm		3000	3000
Free lifting height mm		160	160
Max lifting speed mm/s		420	420
Tilting angle F/B		6°/12°	6°/12°
Max traveling speed km/h		29	29
Ground clearance mm		250	250
Min turning radius mm		3690	3990
Max grade ability %		20	20
Wheel base mm		2800	2800
Wheel thread (F/R) mm		1600/1700	1600/1700
Service weight kg	Mechanical		
	Hydrodynamic	11300	13000
Overall dimension (L×W×H) (without forks) mm		5395×2165×2700	5720×2165×2700
Tyre (F/R)		8.25-15-14PR/4 8.25-15-14PR/2	8.25-15-14PR/4 8.25-15-14PR/2
Battery V/ capacity Ah		24/90/20h	24/90/20h
Diesel Englines	Model	QSB4.5	
	RATED CAPACITY/RPM	81kW/2500 r/min	
	Max torque/rpm	353N·m/1650 r/min	
	Displacement L	4.460	

Model		CPYD50-RW17 (CPQD50-RW17-Y)	CPYD60-RW17 (CPQD60-RW17-Y)	CPYD70-RXW17 (CPQD70-RXW17-Y)
Rated capacity kg		5000	6000	7000
Load center mm		600	600	600
Max. lifting height mm		3000	3000	3000
Free lifting height mm		160	160	165
Max lifting speed mm/s		426	426	377
Tilting angle F/B		6°/12°	6°/12°	6°/12°
Max traveling speed km/h		24	24	24
Ground clearance mm		170	170	170
Min turning radius mm		3160	3200	3280
Max grade ability %		20	20	20
Wheel base mm		2250	2250	2250
Wheel thread (F/R) mm		1489/14600	1190/1130	1190/1130
Service weight kg	Mechanical	/	/	/
	Hydrodynamic	8000	8400	9300
Overall dimension (L×W×H) (without forks) mm		4675×1990×2500	4675×1990×2500	4800×1990×2500
Tyre (F/R)		8.25-15-14PR/4 8.25-15-14PR/2	8.25-15-14PR/4 8.25-15-14PR/2	8.25-15-14PR/4 8.25-15-14PR/2
Battery V/ capacity Ah		24/90/20h	24/90/20h	24/90/20h
LPG single fuel Englines	Model	GM 4.3L		
	Rated capacity/rpm	74 kW/2300 r/min		
	Max torque/rpm	301N·m/1600 r/min		
	Displacement L	4294		

Model		CPCD50-RW38	CPCD60-RW38	CPCD70-RW38
Rated capacity kg		5000	6000	7000
Load center mm		600	600	600
Max. lifting height mm		3000	3000	3000
Free lifting height mm		160	160	160
Max lifting speed mm/s		440	440	415
Tilting angle F/B		6°/12°	6°/12°	6°/12°
Max traveling speed km/h		23	23	23
Ground clearance mm		170	170	170
Min turning radius mm		3160	3200	3280
Max grade ability %		20	20	20
Wheel base mm		2250	2250	2250
Wheel thread (F/R) mm		1489/1460	1489/1460	1489/1460
Service weight kg	Mechanical	/	/	/
	Hydrodynamic	8000	8400	9300
Overall dimension (L×W×H) (without forks) mm		4660×1990×2500	4710×1990×2500	4790×1990×2500
Tyre (F/R)		8.25-15-14PR/4 8.25-15-14PR/2	8.25-15-14PR/4 8.25-15-14PR/2	8.25-15-14PR/4 8.25-15-14PR/2
Battery V/ capacity Ah		24/90/20h	24/90/20h	24/90/20h
LPG single fuel Englines	Model	QSB3.3-C99（Cummins）		
	Rated capacity/rpm	74kW/2200 r/min		
	Max torque/rpm	415N·m/1600 r/min		
	Displacement L	3.3		

12.Cabin use,dismantles and install



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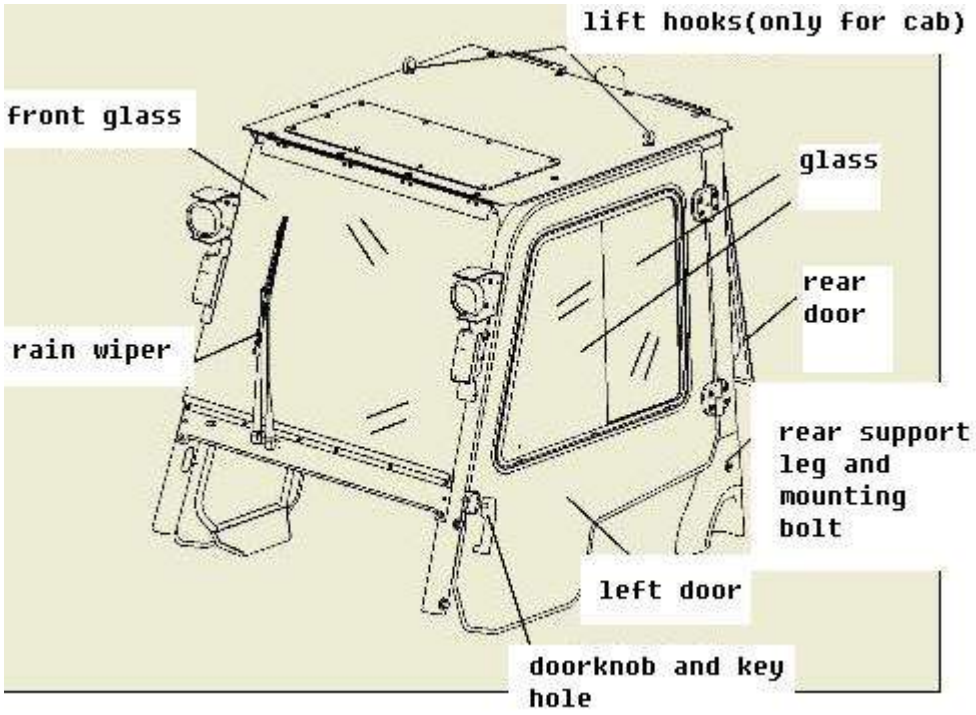


The operation of cab:
1.Open left door with key, enter into cab.
2.Close door, make sure left and right door close before working.
3.The glass of left and right door can be moved by draw button on the glass.
4.The rear door can be opened by loosing lock buckle.

Disassembling cab:
1.Stop the truck on solid and smooth level ground; close switch , pull down hand brake.
2.Remove 4 bolts from left front and right front legs. To high position exhaust, the fastening bolts should be removed
3.Pull out 4 rubber plugs from left rear and right rear legs,remove 4 bolts from left rear and right rear legs.
4.Lift cab a little with crane.
5.Remove switch connection of fan,rain wiper,alarm light etc., remove wire from 4 support legs, and slip into support legs.
6.Put down cab slowly and lightly, avoid pressing wire and keep wire intact. .

Installing cab:
The installing procedure is opposite to removing procedure. But remove the bolts which connect head frame and support legs, after fastening support legs and truck body, then fastening connected bolts connected head frame and support legs,fastening torque of bolts connected support legs and truck body :T=137~167 N·m. bolts for connecting head frame and support legs:T=110~140 N·m

13.Note the use of LPG forklifts

CPYD50-RW17（CPQD50-RW17-Y)、CPYD60-RW17 (CPQD60-RW17-Y) 、CPYD70-RXW17 (CPQD70-RXW17-Y) install GM4.3L LPG single fuel engine from U.S.A. LPG fuel system consists of LPG cylinder,filter,pressure reducing regulator and mixer. LPG comes from the LPG cylinder, passing through the combination valve, the high-pressured pipe, the filter, and the solenoid valve in sequence, enters the LPG vaporizer to vaporize, then mix with air in certain proportion in the mixer, and combust in the engine cylinder to drive the forklift truck to work..There are filter, pressure reducing regulator and mixer ect on the GM 4.3L.

Pressure reducing regulator（W17-Y with it）

There are two function of pressure reducing regulator: 1.pressure reducing:it reducing the LPG press from solenoid valve into atmosphere.2.evaporation:LPG become to gas that absorb the power from engine circle.

Mixer （W17-Y with it）

The mixer is to mix the vaporized LPG with air and to send them into the engine to meet kinds of working conditions according to the engine.

LPG cylinder

1 function

It composed of safety valve, LPG inlet, quick fitting and other relevant accessories. It supports and stores fuel, and it is fixed at the back of truck. The functions:

a.shut off valve

It control inlet and outlet line of the LPG.

b.Charging limit valve

open the charging limit valve to charge LPG till the charging device is automatically closed when 70%- 80% volume of the container is full.

c.Level indication

The digital shows percentage of the remainder volume.

d.Outpouring limit valve

When outpouring exceeds the stated value, or the pipe is broken, the outpouring device on the valve will be closed automatically.

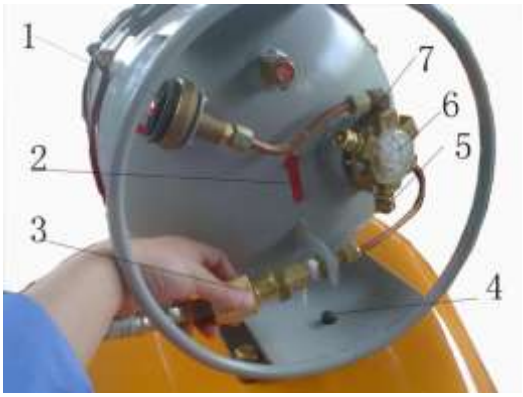
e. Safety valve

Safety valve will open automatically when pressure in cylinder is over the standard pressure.

2. Main parameters

Work temperature:-40~+60℃；Work pressure ：2.2MPa；opening pressure of safety valve：2.5±0.2MPa；Max. copacity ： 80% of cylinder volume。

3．Cylinder structure



1. Charge valve（inlet port and dustproof cover） 2. Installing mark 3.Outlet valve（outlet connector） 4. Fixed pin
5. Outlet shut off valve 6.Level indication 7. Inlet shut off valve

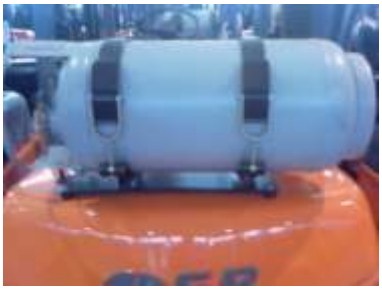
4. Cylinder replacement

Paste safety operation procedures on cyliner

（1） make the truck stay on flat and stability ground, stop engine, pull hand brake;
（2）remove cylinder：a. Close outlet shut off valve, and remove outlet connector.

b. Loosen cylinder fixed parts, see followed Fig:

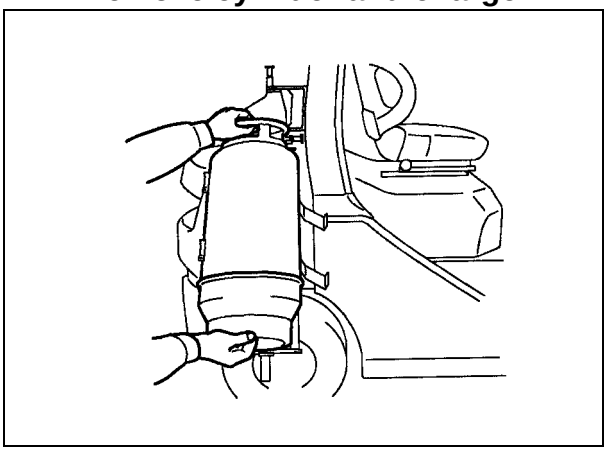
Metal band bracket



buckle belt bracket

 Buckle belt and tighten device	 1. Right hand hold tighten device, use forefinger,middle finger, and ring finger to pull lock buckle out.
 2 . Keep 1 procedure，and push up tighten device till touch cylinder.	 3 . Keep the lock buckle out and pull downward the whole tighten device.
 4. Then buckle belt is loosened from tighten device	5. Remove the left tighten device from buckle belt by the same way.

Remove cylinder and charge



Notice :

1. Please avoiding cylinder hit counterpoise when taking it down form truck.
2. Make sure the outlet shut off valve closed.
3. When charging the place must have charging license which is awarded by Quality and Technical Supervision Bureau . It is forbidden to charge by self and the component must accord with table.

Notice ： a) 1# may use more than -20℃；

b) 2 # may use more than -10℃；

c) 3 # may use more than 0℃.

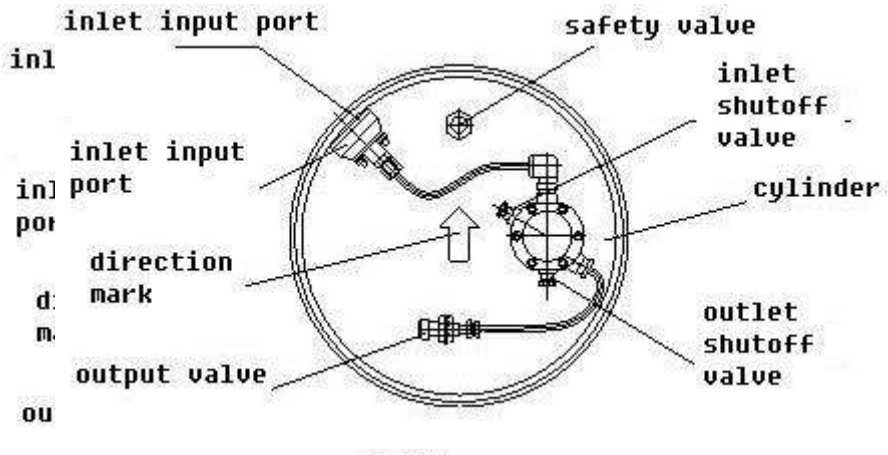


Table 1 technique parameter of LPG special for vehicle

Item component com position	Quality parameter			Trial
	1#	2#	3#	
37.8^{0}C vapour (indication) kPa	≤1430	890～1430	660～1340	GB/T 6602[a]

Component %	propane	＞85	＞65～85	40～65	SH/T 0614[b]
	Butane and advanced	≤2.5	—	—	
	Pentane and advanced	—	≤2.0	≤2.0	
	alkene	≤10	≤10	≤10	
	Butadiene （1,3butadiene ）	≤0.5	≤0.5	≤0.5	
remainder	100ml remainder after evaporation ml	≤0.05	≤0.05	≤0.05	SY/T 7509
	Observe soiled-oil	pass	pass	pass	
density（20^0C ） kg/m^3		actual ly measure	actually measure	actually measure	SH/T 0221[c]
Sheet copper corrosion		≤1	≤1	≤1	SH/T 0232
Total sulfur content /(mg/m^3)		＜270	＜270	＜270	SH/T 0222[d]
sulphuretted hydrogen		zero	zero	zero	SH/T 0125
free water		zero	zero	zero	Eyeballing

1： gaseity content , total sulfur content is at 0℃、101.35kPa.
2：can measure sample whether it exists free water by eyeballing when measuring density.

[a] evaporation pressure can be evaluated by GB/T 12576， measured by GB/T 6602 when arbitration。
[b] component can be measured by SH/T 0230，but measure dby SH/T 0614 when arbitration.
[c] density can be measured by GB/T 12576,but measured by SH/T 0221 when arbitration.
[d] Total sulfur content can be measured by SY/T 7508，but measured by SH/T 0222 when arbitration.

From : PRC STANDARD 《LPG IN VEHICLE》（GB 19159-2003）

LPG change tank:

（1）Take canvas glove to avoid the leaking gas to frostbite finger when gas changing.

（2）Make sure the place is clear and the air is ventilating when charging LPG, it is forbidden to smoke ,keep away from other naked flame

（3）Fill LPG as following: Lay the LPG cylinder flat, and set the charging limit valve upward,then screw off the dust cap on the charging valve, plug the filling connector, open the inlet shutoff valve to charge LPG till 80% rated volume of the container is full (the charging device is automatically closed when 80% rated volume of the container is full), take out the filling

connector, screw down the dust cap and the charging limit valve.

Check all parts and make sure they are all at intact condition.

（4）Lift the cylindeCr up to truck, and fix it, let the arrow （①）be upward, then insert the fixed pin to cylinder.

Cylinder fixed way:

Metal belt bracket

The fixed way is opposite to disassemble way.

Buckle belt bracket

a.Hold strain device with right hand,take buckle belt with left hand, direct to the notch on ratchet wheel

b. Pass buckle belt through the notch on ratchet wheel.

c.Pull buckle belt downward with left hand, pull out the lock buckle with forefinger, middle finger and third finger in right hand,and push up to touch cylinder at the same time.

d. Keep the buckle belt tensioning and keep the lock buckle out,revolve strain device downward with right hand till touch cylinder.

e. Keep it tensioning with left hand, hold the strain device ,loose lock buckle ,and rotate strain device several times till it can not be pushed.

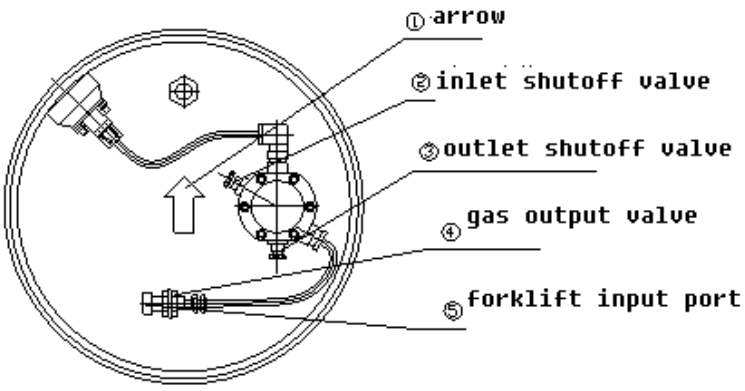
f.Turn downward till touch cylinder.

（5）Make sure the inlet and outlet shutoff valve （②③）are on closed state.

（6）Connect the inlet connector（⑤）with outlet valve（④）,and tighten.

（7）Open outlet shutoff valve slowly（③）.

（8）Make sure there is no leaking before using, if there is some leaking, close outlet shutoff valve （③） in time, turn on the forklift input connector,（⑤）。



Notice ：after installing cylinder, then connect the connecting pipe with quick connector, open outlet shutoff valve 3,smear every joint with soap bubble to check whether the joint is leaking, if there is leaking at joint, eliminate the problem, then fire forklift. Please close outlet shutoff valve3 when the forklift is finishing working.

Notice during usage

(1)when charging LPG assemble, at first open inlet shutoff valve, close outlet shutoff valve, when charge is done, close inlet shutoff valve.

(2)When take assembly to the truck, it should be fixed and make the arrow direction upward, and inlet shutoff valve closed. Connnecting inlet connector with assembly outlet port,and then revolve to tighten ,open outlet shutoff valve, make sure it no leak, and convenient to use.

(3)it must check the cylinder assembly whether leak or not per charging and fixing it on truck.

(4)Please prevent dust to enter into the inlet, and revolve dustproof cover after filling LPG out.to protect the airproof of check valve.

(5)it is forbidden to change the pressure of safety valve.

(6)call the qualified unit to check and maintain ,it is forbidden to repair by self. And keep apart the abnormal cylinder.

(7) this assembly has 2 ways to fill LPG, one is volume and the other is weight. Weight : make sure the cylinder stand vertically when filling LPG. Volume : make sure the cylinder lay horizontally when filling LPG, and let the direction mark up.

(8) Please obey the 《gas cylinder safe supervise rule》awarded by the State Bureau of Quality and Technical Supervision when charging ,transporting, depositing ,using and inspecting.

(9) When fixing and disassembling cylinder please do it lightly, it is forbidden to hit other object. Keep cylinder assembly intact and do not disassemble ,adjust and replace components.

(10) The LPG conform to GB11174 can be recharging, the maximum volume is no more than 80% of cylinder.

(11) The LPG must be charging at the place awarded by qualified Quality and Technical Supervision Bureau , it is forbidden to charging by self

(12) charging unit must vacuumize or displace with nitrogen when the new or recheck cylinder is using at the first time.

(13) Before reinstalling cylinder, lay the cylinder horizontal perpendicular to installing sign, close outlet shutoff valve, open inlet shutoff valve, see the finger of fluid indicator wether is lifting with the charging fluid when charging. Stop charging when the limit charging valve is working in time, and check whether the finger of fluid indicator is at the correct position. Close inlet shutoff valve

after charging out.

(14)Check the forklift truck fully ahead to ensure no leak of LPG, then open the LPG outpouring valve on the LPG cylinder, check more to ensure no leak of LPG fuel system before starting-up.

（15）If there is LPG leak during operation, shut off the LPG switch and the outpouring valve at once, check every part and all connection to see if there is leak or loose, and get rid of it in time. Fuel by petrol before malfunction is removed.

（16）If there is 10 minutes halt, you should shut off the LPG switch and the outpouring valve.

(17) Cylinder must be avoiding under the blazing sun for quite a long time, and keep it far away from heat source, and forbidden to heat cylinder with heat source which the temperature is more than 40℃

(18) It should have no less than 0.5% the cylinder volume to remain.

(19) It is forbidden to modify cylinder mark and colour sign.

(20) cylinder must be taken to the special unit per 5 years to inspect ,the unit have qualification awarded by pressure vessel safety supervisor bureau.

（21）Observe the level indication frequently during operation, if it is found that LPG consumption is not in proportion to working time, you should stop to check where is leakage, and shut off power, the LPG valve and all valves concerned at once to take good measure in time.

（22）Park the truck at the shady and ventilated site; close the valves on the LPG cylinder. Never insolate the truck in the sun long.

（23）Shut off power and all valves after the truck is garaged. Keep good ventilation and extinguishing measure in the garage.

（24）Never repair the LPG cylinder, valves or pipes at garages or parking lots, any smoke on the truck.

Service & maintenance

1.This truck has been taken pressure trial and performance test before leaving factory. If there is performance failure, strictly forbid repairing without permission.

2.Close the valves on the LPG cylinder before disassembly and maintenance of the LPG device.

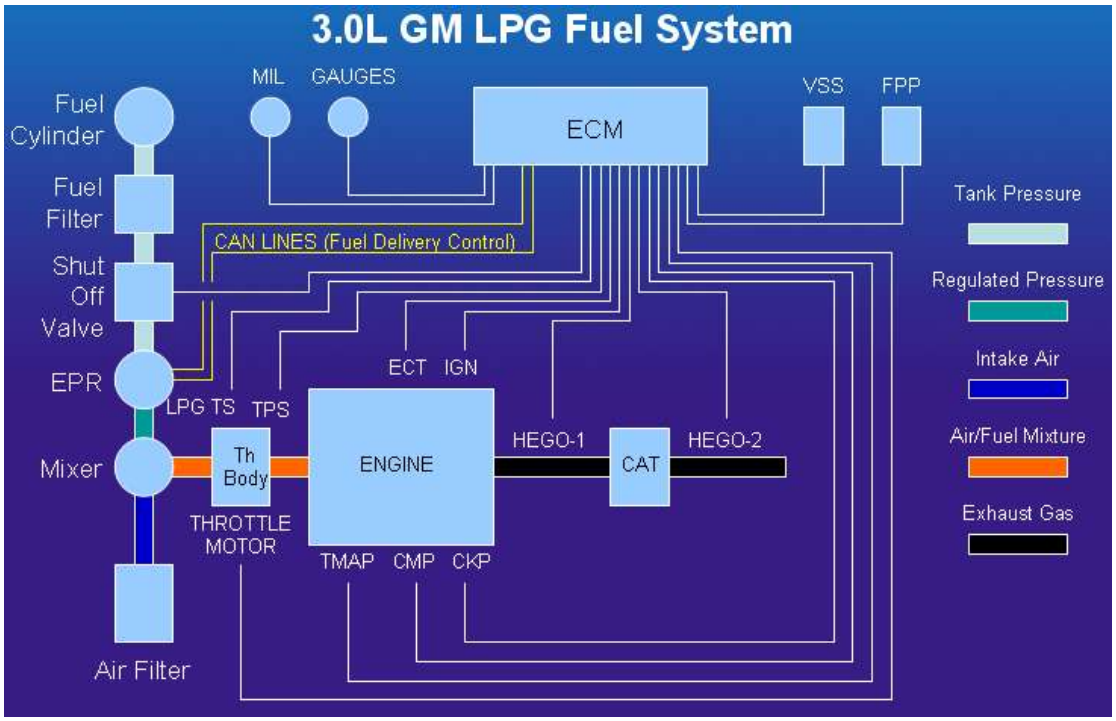
3.Suitably adjust the measure valve, for LPG consumption is changing with season.

4.Check and clean often the air cleaner and the LPG filter, replace it with a new one in time if there is any damaged.

5.After finishing the LPG forklift debugging and one day well run (or a full container of LPG is used up), you should adjust the LPG vaporizer again to ensure proper ratio of fuel to air.

6.Check the electric system after every three months have elapsed if any switch connection-peg is oxidized or rusted, and get rid of it in time.

7.Take a routine care for the whole LPG fuel system after every one year working, that is, clean the vaporizer, check airproof capacity of each tie-in in the high pressurized pipes and the low pressurized pipes.



LPG SYSTEM CHART

14.Operational method of lead acid battery

1. Lead acid battery and its application

Lead acid battery is used for power start engine, and it can be for voltage regulation and overload generator substitute power, it has following strengths: low internal resistance, stable end voltage, large support current, low water cost, huge capacity, nice starting performance at low temperature, light pole corrosion, light mass, low fault rate, convenient maintenance. The Maintenance-free batteries are all sealed besides 2 vent holes (for overflowing a little air from battery) at the side of Maintenance-free battery. Low-maintenance lead-acid batteries plus liquid left in the battery cover mouth.

2. Storage and maintenance

1. Storage

The place for storing battery should be clean, dry, airy, and the battery should be charging every 3 months.

2. Maintenance

2. If truck will be stored over 30 days, the following should be done:

Maintenance-free battery

1) Insure the green point visual in inner capacity display;

2) Disconnecting negative earth wire to avoid discharging by additional current release;

3) Keep the battery charge completely if the battery can not be removed down from truck;

4) Make a general schedule, charge every 30-45 days;

5) Check battery when the green point of liquid densimeter at battery are invisible, then charge or replace battery;

When that did not see a battery hydrometer on the green point, the battery check, charge or replace batteries.

Low-Maintenance battery

1) Ensure that the battery electrolyte fluid level in the UPPER LEVEL.

2) Disconnecting negative earth wire to avoid discharging by additional current release;

3) Keep the battery charge completely if the battery can not be removed down from truck;

4) Make a general schedule, charge every 30-45 days;

5) When the liquid level below the LOWER LEVEL, please add water to the UPPER LEVEL, do not add, no measure will overflow corrode your vehicle!

3. Notice for usage

Battery can produce explosive gas, electrolyte has corrosive, and the current can burn skin from battery producing, please flush immediately when electrolyte touch skin or eyes, then go to hospital if serious.

l) Human body, especially the head should be far away from battery, and the protected glass must be wearing.

- Forbid battery emerging in naked fire or spark.
- Connect active and negative pole with electrical equipment correctly to avoid burning battery or electrical equipment.
- To avoid short circuit of battery, the electric things are forbidden to cover at battery.

4. Check the battery

Check the Maintenance-free battery

There is a little ball in battery capacity display, this ball can change its color as density of electrolyte changing, it is called electric eye. The ball will be green when the capacity is normal, density of electrolyte reaches the standard; it will be white when capacity is not enough, density of electrolyte does not reach the standard; it will be red when the electrolyte is acute shortage, the shell should be carefully examined whether there is rupture, leakage or battery failure.

Check the Low-Maintenance battery

As the forklift is used in a high temperature ambient ,and the battery easily consumes water, you should do pay attention to the liquid level when using the forklift. There is an aperture for adding liquid in the cover of the battery. Please add enough water up to the UPPER LEVEL when the liquid level is below the LOWER LEVEL and be sure the water is not so much that can spill out to erode your forklift.

When lacking of the electrolyte, please check whether the surface is damaged or leaky, or the battery is conking out.

15.Attachment use,assembly and safety rule

Hangcha will choose attachment that according with International standard ISO2328《Forklift pothook fork and install size of carriage》,such as clamp,rotator,paper roll clamp,carrying ram,sideshifter ect.

1、Attachment use.

（1） Know well the content of nameplate on attachment,read the instruction manual before Usage.(Especially the manual from attachment company)Before operate the attachment,the people should be traning and obtain the qualification.

(2) It should be understand the basic capability and operate methods of attachment.Especially the admit load,lift height,size of cargo and adapt range of attachment.

（3）Operate the multi-functional attachment,such as with sideshifter,clamp or rotator,it unallowed two action at one time.Operate one functional then do another one.

（4）Prohibit the cargo at a high position when truck move with attachment.If the size of cargo is biger,prohibit the truck move on.Transport the cargeo,it make sure that the distance of bottom of cargo and ground is less than 300mm and mast incline back.

（5）The weight of cargo couldn't exceed the limited value of combination carrying capacity of forklift and attachment.Unallowed that partial load at high position.It is a short time work for attachment with sideshifter.Partial load is around 100mm(Above 5 ton(including 5 ton),the sideshifter movable within 300mm.

（6）In the range of the projection forth 2m of the lower of attachment and cargo,prohibit stand to avoid the suddenness except the driver position under overhead.

（7）Unallowed an emergency brake in moving.Run slowly with load.

（8）Prohibit outside force when attachment working.

（9）It couldn't be use at malfeasance situation and overstep normal work range

（10）When the attachment failure,prohibit use without check.

Check and maintenance :

（1）Check the clearance of carriage beam and below catch of attachment if accord the attachment manual.

（2）Check the rise catch is right on the flute of fork carriage.

（3）Use the auto currency lithic-grease per 500 hours to bearing surface.

（4）If the tighten firmware become flexible.

（5）Check the tie-in of hydraulic pressure loop,if tube attaint.Prohibit use after repair.

（6）Check the drive of attachment timing or turn the component if fray or block,change betimes.

（7）Check each element if in normal under load.attachment is work in gear.If not,check the hydraulic pressure loop,find out the broken part,change airpoof or whole loop part.

2、Attachment assembly

！Caution

1、Untempered technology licence of our company,any refit at safety and capability to attachment is strict prohibit.

2、Fact rating load capacity should be the least of rating load capacity,the load capacity of attachment,colligate load capacity of truck.Generally speaking,the colligate load capacity of truck is the least.Attachment load capacity just a count value of attachment pressure.

3、Assembly go to in reason,credibility,safety to avoid the attachment glide around carriage in using.

4、After hang attachment,embed the rise catch block to the gap of top beam,let the offset of centre line of attachment and carriage is less than 50mm.Otherwise,it will be affect the landscape orientation stability of forklift.

5、To these attachment with rotating function, such as paper roll clamp, bale clamp,muti-purpose clamp, drum clamp, it needs to weld chock block in the joint of of carriage beam and attachement to prevent move from side to side in th operation.

6、Assembly the attachment of below catch orientation,it need to adjust the clearance between below catch and beam of carriage.

16.Related safety instrucion and standard

The model by CE certification which according to the follow instruction and standard: DIRECTIVE 2006/42/EC OF THE EUROPEAN PAMENT AND OF THE COUNCIL, DIRECTIVE 2000/14/EC OF THE EUROPEAN PAMENT AND OF THE COUNCIL, EN1726-1:1998(Engineering Industry truck safety standardize), EN12053:2001, EN1175-2:1998, EN13059:2002 coordinate standard.

- Main safety factor will according with DIRECTIVE 2006/42/EC OF THE EUROPEAN PAMENT AND OF THE COUNCIL and EN1726-1:1998、EN1175-2:1998 standard.
- Noise will according with EN12053:2001 and 2000/14/EC.
- Vibrational parameter will according with ISO5349-2:2001、EN13059:2002.
- Electromagnetism compatible will according with 2004/108/EEC、EN12895:2000.

杭叉集团股份有限公司
Hangcha GROUP Co.,Ltd.

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EC DECLARATION OF CONFORMITY

MANUFACTURE

Name: Hangcha GROUP Co., Ltd.
Address: 398 Shiqiao Road, Hangzhou 310022, P. R. China

THE TECHNICAL DOCUMENTATION WAS COMPILED BY:

Name:
Address:
Post:

HEREBY DECLARES THAT THE PRODUCT DESCRIBED BELOW:

Description: Industrial truck – Counterbalanced Lift truck
Model:
Serial number: Net engine power: kW
Manufacturing year:

COMPLIES WITH THE PROVISIONS OF THE FOLLOWING EUROPEAN DIRECTIVES:

2006/42/EC Machinery Directive
2004/108/EC EMC Directive
97/68/EC Engine pollutant emission Directive

2000/14/EC & 2005/88/EC Noise Directive

Conformity assessment procedure followed: Annex V of Noise Directive 2000/14/EC
Holder of the technical documentation
Name:
Address:
Measured sound power level: dB
Guaranteed sound power level: dB

COMPLIES WITH THE PROVISIONS OF THE FOLLOWING HARMONIZED STANDARDS:

EN 1726-1:1998+A1:2003	Safety of industrial trucks - Self-propelled trucks up to and including 10 000 kg capacity and industrial tractors with a drawbar pull up to and including 20 000 N
Annex I of Machinery Directive 2006/42/EC	Essential health and safety requirements relating to the design and construction of machinery

Done at (place):
On (date):

Name of the signatory:
Title:

Signature: _____

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Hangcha GROUP Co.,Ltd.
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Annex I of Machinery Directive 2006/42/EC	Essential health and safety requirements relating to the design and construction of machinery

Done at (place):
On (date):

Name of the signatory:
Title:

Signature: _____

17.Maintenance Record

Date	Maintenance Content	Maintenance Man

HANGCHA GROUP CO., LTD.

Manufacturing site:

88 Donghuan Road, LinAn Econimic Development zone, Zhejiang, P.R.China ZIP:311305

Registered Address

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