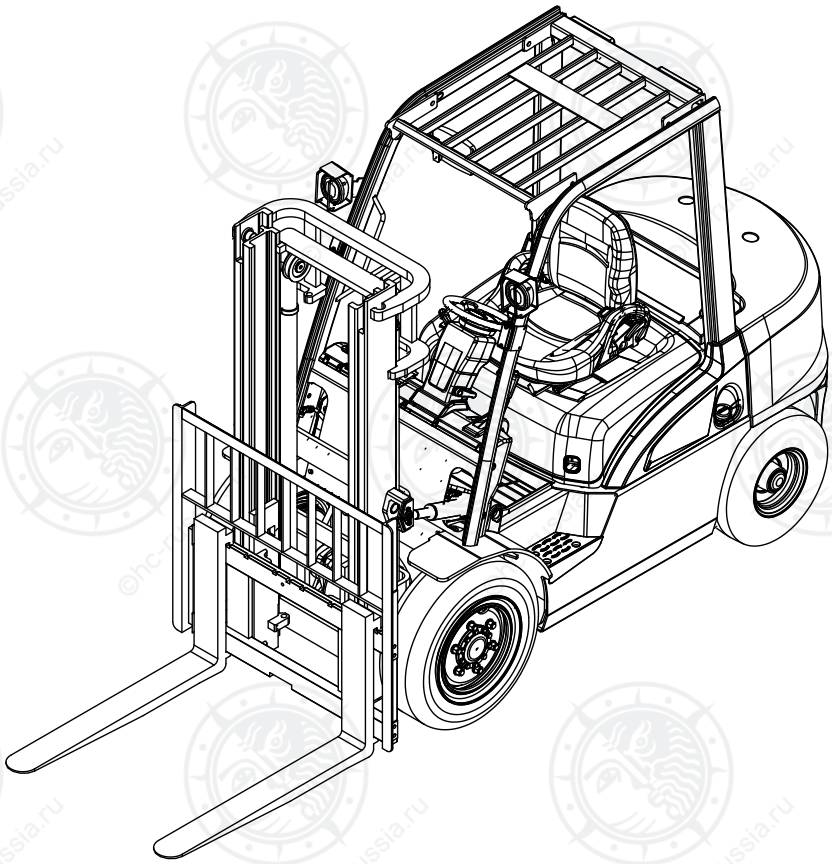
X Series

Internal Combustion Counterbalanced Forklift Truck

1.0t-X5.0t

OPERATION AND MAINTENANCE MANUAL



HANGCHA GROUP CO., LTD.
02/2025

Preface

The 1-X5.0t X series internal combustion counterbalanced forklift truck is a new model developed by our company, and features high energy efficiency and environmental protection, an attractive shape and superior performance.

G71/G72/G76 forklift trucks are equipped with high-pressure common-rail electronically controlled engines conforming to China III emission standards, featuring high injection pressure and high torque at low speed, low emissions and optimized fuel economy.

G98/G92/G93/G82/H5 forklift trucks are equipped with electronically controlled engines conforming to China IV emission standards, featuring high injection pressure and high torque at low speed, low emissions and optimized fuel economy.

China IV forklift trucks over 4t are equipped with emission devices, operators should carefully read the information about them in this manual to avoid the loss of life and property due to improper operation. China IV forklift trucks over 4t are equipped with truck-mounted terminals, but the intelligent modules are not optional.

This manual introduces the safety, operation, general structure and maintenance procedures for this forklift truck. The drivers, maintenance staff and equipment management staff must read and familiarize themselves with this manual before use.

Some contents in this manual may be different from your forklift truck due to continuous design updates and product improvements.

The illustrations and pictures used in this manual may not be exactly the same as the detailed structure of your forklift truck.

This manual is also applicable to container forklift trucks and forklift trucks equipped with attachments.

For any queries, please contact the sales company or agent of HANGCHA GROUP CO., LTD.

Website for Intelligent modules for this forklift truck:<http://hcfims.com>

©02. 2025, HANGCHA GROUP CO., LTD.

Contents

I. Instructions for use 1
II. Forklift truck component names 3
1. Main load-bearing structural parts 4
2. Instrumentation 7
2. Operating instructions for instrument keys： 19
3. Controls and switches 22
4. Body and other parts 29
III. Safety regulations 34
IV. Maintenance 40
1. Daily maintenance (8 hours) 40
2. Weekly maintenance (40 hours) 43
3. Every one and a half month maintenance (250 hours) 49
4. Semi-annual maintenance (1000 hours) 53
5. Annual maintenance (2,000 hours) 55
6. Two-yearly maintenance (4,000 hours) 56
7. Others 57
V. Forklift truck structure and stability 60
VI. Operation 63
1. Start 63
2. Operation 64
3. Loading 65
4. Stacking 65
5. Unstacking 65
VII. Storage 67
1. Daily storage 67
2. Long-term storage 67
3. Operation of forklift trucks after long-term storage 68
VIII. Maintenance 69
1. Regular maintenance schedule 69
2. Tightening Torque Table of Common Bolts 80
3. Regular replacement of key safety parts 81
4. Forklift Oil List 82
5. Lubricating System Diagram 87
IX. Various signs/labels: various signs or labels are affixed to different parts of the forklift truck. 89
X. Lifting, handling and towing of the forklift truck 97
XI. Model meaning 99

XII. Main technical performance parameters 107
XIII. Precautions for using the LPG forklift truck 170
XIV. Usage and maintenance methods for the lead-acid battery 185
XV. Use, installation and safety rules for attachments 189
XVI. OPS (Operator Presence Sensing) system instruction 192
XVII. Forklift daily check and maintenance sheet 194

I. Instructions for use

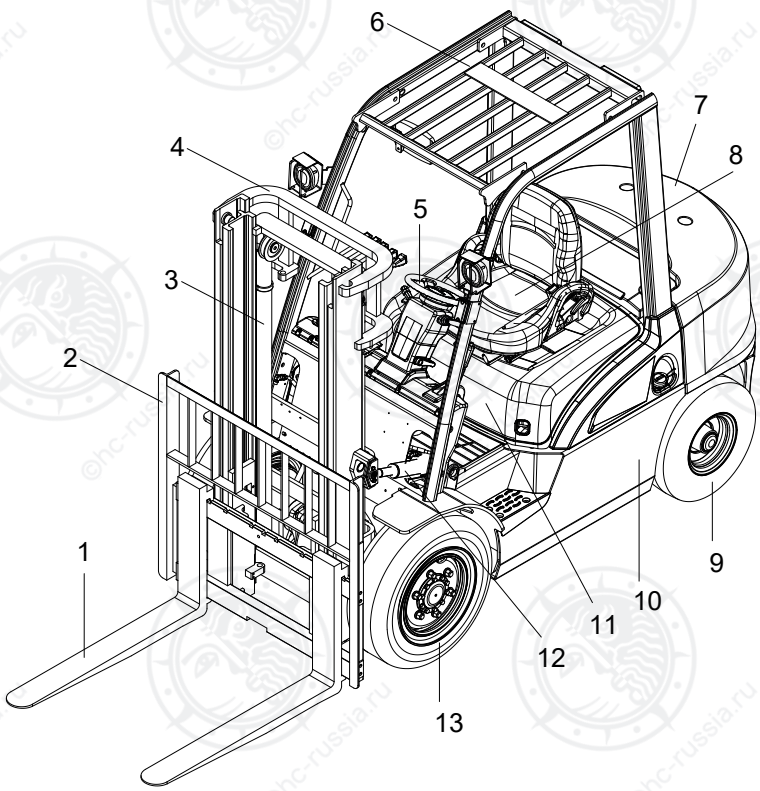
In order to ensure personal and equipment safety, the driver should take the following precautions:

1. Only drivers with proper training and a valid license should operate the vehicle.
2. Check each control and alarm device before driving, and any damage or defects should be repaired before operation.
3. The load should not exceed the specified value when handling; the forks should be fully inserted into the load so that it is uniformly positioned on the fork; do not use a single fork to lift cargo.
4. Start, turn, drive, brake and stop smoothly; slow down on wet or slippery roads when steering.
5. Loads should be placed as low as possible and the mast should tilt backward when driving.
6. Be careful when driving on ramps; move forward when driving up gradients greater than one in ten and move backwards when driving down ramps; do not turn when driving up or down ramps; do not carry out loading and unloading operations when the forklift is in motion.
7. Pay attention to pedestrians, barriers, and bumpy surfaces when driving and be aware of the upper clearance of the forklift truck.
8. Do not stand on the forks and do not carry passengers.
9. Do not stand under the forks or walk under the forks.
10. Do not operate the truck and its attachments from anywhere except the driver's seat.
11. Do not handle unsecured or loosely stacked cargo and be careful when handling large cargo.
12. Protect cargo on high lifting forklift trucks with a lift height of more than 3m from falling down and take preventive measures if necessary.
13. Try to tilt the mast backward when the high lifting forklift truck is in operation and tilt forward within the minimum range during loading and unloading operations.
14. When driving on wharfs or temporary decking, you should be extra careful and drive slowly.
15. The driver should not stay in the truck and should shut down the engine when refueling; keep sources of ignition away when checking the battery or fuel tank level.
16. When a forklift truck with attachments is idling, it should be operated in the same manner as a loaded forklift truck;
17. Drop the forks to the ground, switch the gear lever to the neutral position, engage the parking brake device properly, shut down the engine, and disconnect the power when leaving the truck. Engage the parking brake device properly when parking on ramps; place cushion blocks under the wheels when parking for a long time.
18. In the event of a sudden fault when lifting cargo or driving on gradients, causing leakage of storage battery electrolyte, hydraulic oil and brake fluid, or a flat tire etc., personnel should be organized for repair immediately, the truck should be kept in a safe condition, and professional maintenance personnel or the seller should be contacted.
19. Noise and vibration will be generated during installation and assembly processes; please choose proper tools and assembly methods to reduce the impact of noise pollution on the environment.
20. The work surface where the forklift truck is used should be a solid and flat cement pavement,

asphalt pavement or concrete pavement. When there is snow, ice, water or other foreign matter on the road, the truck can only be used after it has been fully cleared away; otherwise, the truck is likely to lose control, resulting in an accident.

21. In the event of breakdown, the truck should be first moved to a place where it does not obstruct traffic. If the breakdown is caused by the brake system or steering system, the truck should be carried away with a proper carrier loader (see the vehicle handling content); if it is caused by other reasons, the truck should be towed with an appropriate vehicle; rope should be fixed outside the truck body when towing. Obey traffic rules when towing a forklift truck on the highway.
22. Do not operate the forklift truck or carry cargo after disassembling the internal combustion engine hood, water tank cover plate, overhead guard, mast backrest or other protective devices.
23. There should be sufficient lighting in the truck working area. Turn on the head lights when working at night, there should be sufficient lighting in the work area.
24. Do not conduct side shift operations with a forklift truck equipped with automatic adjustable distance forks when it is loaded to prevent the forklift truck from losing balance and damaging components.
25. Please do not tilt the mast forward or backward or lift the mast to the extreme position during idling where possible before the hydraulic oil temperature reaches normal operating level.
26. Do not revise or modify the forklift truck without the written approval of the forklift truck manufacturer; otherwise, it may affect the rated load and stability or safe operation. This includes: Assembly and disassembly of brakes and steering, changes to the field of vision and attachments. When the forklift truck manufacturer agrees to revise or modify the truck, they should also agree to update and revise the bearing nameplate, label, and operation and maintenance manual.
27. If the forklift manufacturer is no longer in operation and no other enterprise has taken over the business, the user needs to seek a capable industrial forklift manufacturer for technical support with its refitted documents. In which case, the user must follow these rules:
    (1) Submit the modified and refitted scheme to the engineers from a industrial forklift manufacture for further design, test and application, and the safety of the refitted forklift trucks should be guaranteed.
    (2) Keep a permanent record of the modifications made to the forklift design, test and application.
    (3) Update and properly revise the bearing nameplate, label, and operation and maintenance manual.
    (4) Attach a permanent and visible label to the forklift truck (the label should contain this information: refit method, date, responsible company and address).

II. Forklift truck component names



1. Fork	2. Backrest	3. Lifting hydraulic cylinder	4. Mast
5. Steering wheel	6. Overhead guard	7. Counterweight	8. Driver’s seat
9. Rear wheel	10. Frame	11. Hood	12. Tilt cylinder
13. Front wheel			

1. Main load-bearing structural parts

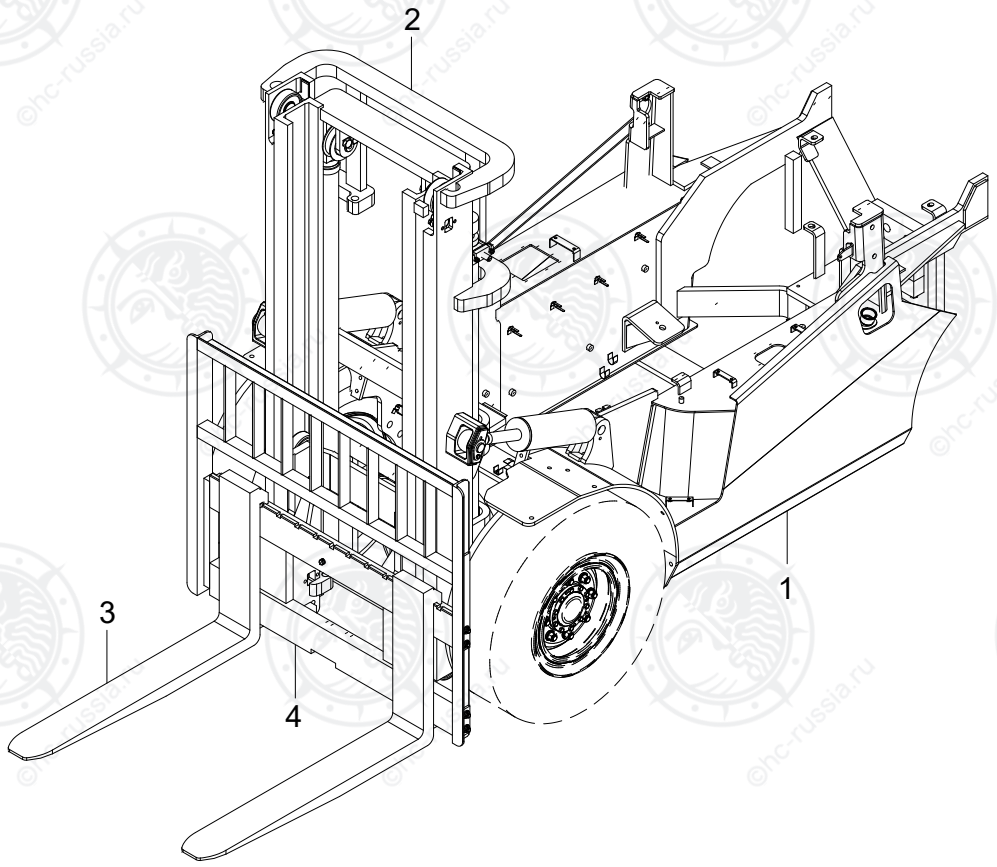


Fig. 1-1 Main Load-bearing Structural Parts

1. Frame 2. Mast 3. Fork 4. Fork arm carrier

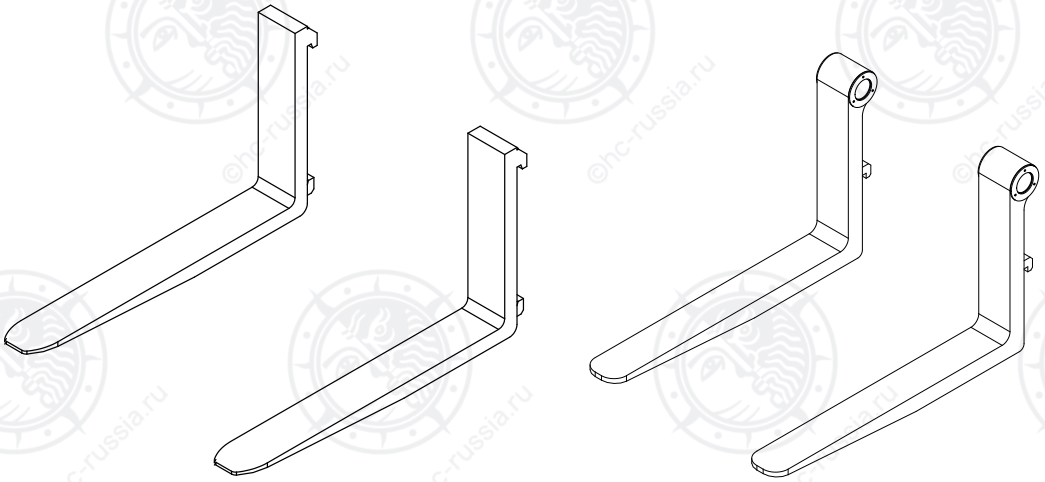


Fig. 1-2 Fork

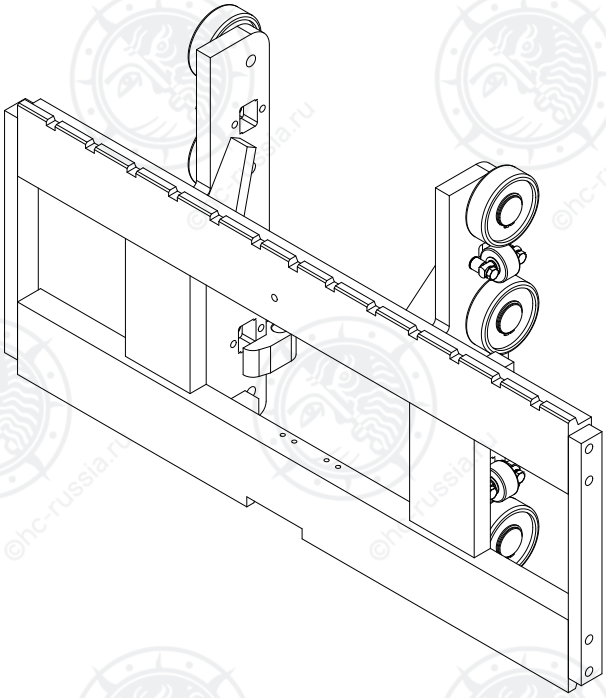


Fig. 1-3 Fork arm carrier

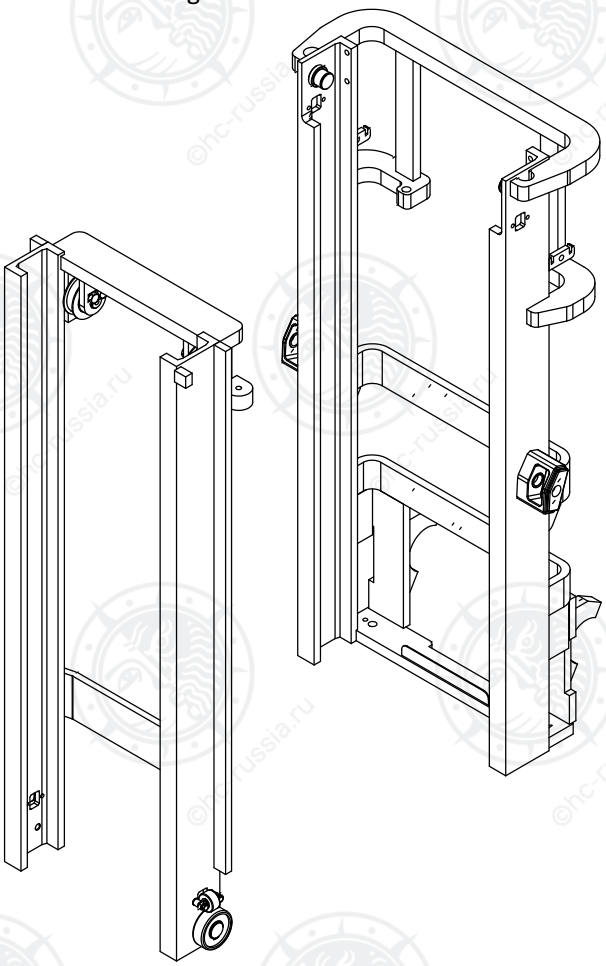


Fig. 1-4 Inner/outer mast

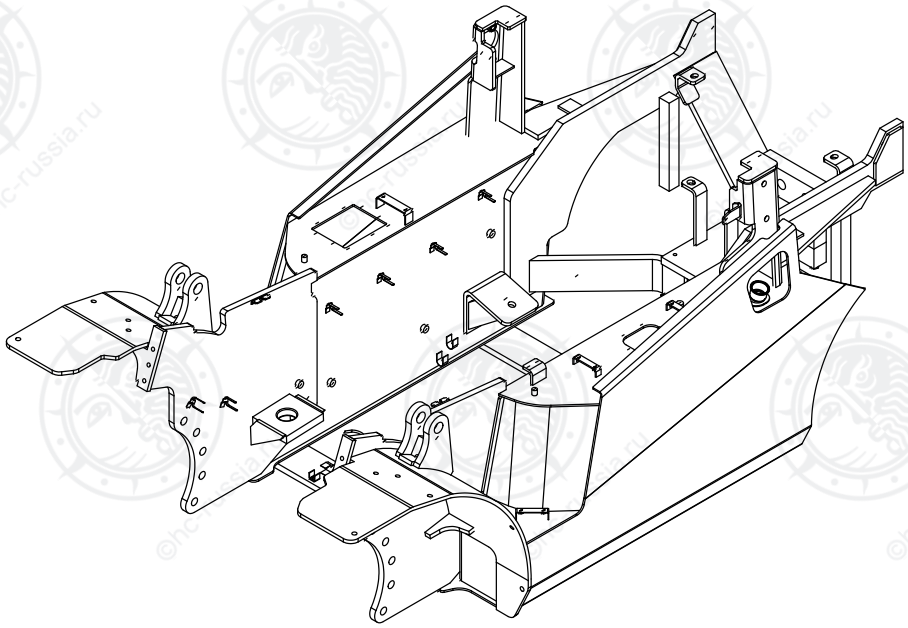
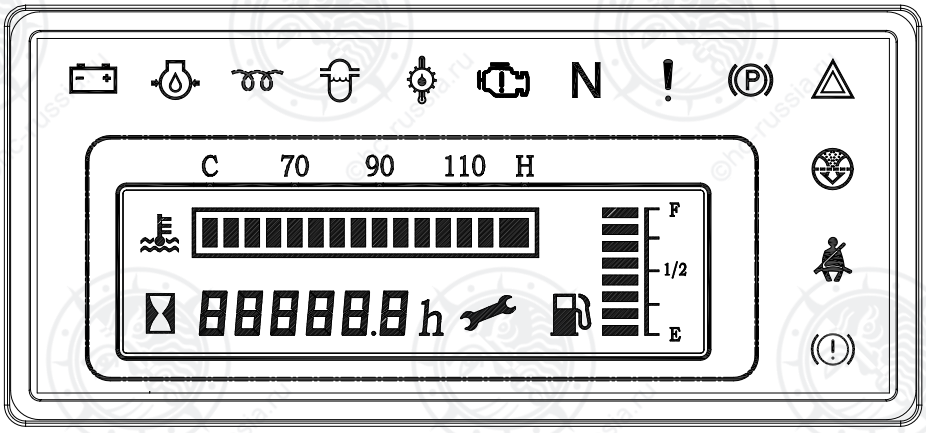


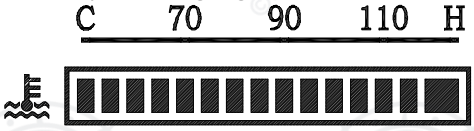
Fig. 1-5 Frame

The frame, masts, forks and fork arm carrier are the main load-bearing structural parts of the forklift truck and have sufficient strength and rigidity. The optional attachments are equivalent to the forks and are also treated as main load-bearing structural parts.

2. Instrumentation



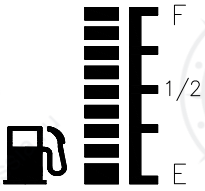
Water temperature gauge



When the ignition key switch is in the | (open) position, the water temperature gauge is active, displaying the engine coolant temperature; in normal operation the LCD will show that it is within the range 60℃-110℃.

> Caution
>
> Stop operation immediately when the liquid-crystal display is in the red area and reduce engine speed to cool down the engine and then shut it down. Check the coolant level is sufficient and whether the fan belt is tight.

Fuel gauge



When the ignition key switch is in the | (open) position, the fuel gauge will display the approximate fuel level in the fuel tank.

It is recommended to fill up the fuel tank everyday after work.

Stopwatch

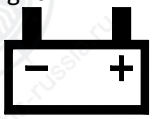


When the ignition key switch is in the | (open) position, the stopwatch will start running. The stopwatch reading will increase by one for every hour of operation.

The stopwatch displays the cumulative working hours of the forklift truck.

> Caution
>
> After the cumulative hours reaches the first 100h and a certain period of time, the “wrench” icon will flash for 1 hour, which indicates that the forklift truck needs to be serviced. See monthly maintenance after first flash. See the information about the maintenance cycle schedule in detail for each cycle. The specific flash time depends on the actual situation.

Charging indicator light



The light displays the battery charge status, turns on when the starting switch is in the | (open) position, and turns off when the engine is started.

Caution
If the light continues to turn on or flash during operation, it indicates that the charging is abnormal and immediate inspection is required.

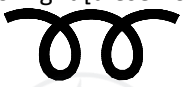
Engine oil pressure alarm indicator light



The light displays the pressure of the engine lubricating oil, the light turns on when the starting switch is in the | (open) position, and turns off when the engine is started.

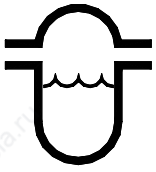
Caution
If the light continues to turn on or flash during operation, it indicates that the oil pressure is less than 0.05MPa and immediate inspection is required.

Preheat indicator light [diesel forklift trucks]



The light turns on for a short period after the switch is moved to the | (open) position, and the switch can be moved to the ⇄ (start) position to start the engine after the light turns off.

Oil-water separator indicator light [diesel forklift trucks]



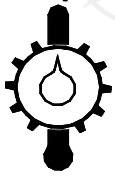
In general, the light turns on when the starting switch is in the ⇄ (start) position, and turns off when the engine is started.

The light turns on when the water precipitation reaches a certain level when the engine is running.

If the light continues to turn on or flash when the engine is running, the engine should be shut down immediately to discharge water.

Caution
If operation is continued after the light turns on, the fuel oil injection pump may be damaged.

Transmission oil temperature alarm light [hydraulic forklift trucks]



In normal conditions, the light turns on when the starting switch is in the ⇄ (start) position. It turns off when the engine is started. When the engine is running and the transmission oil temperature exceeds the normal range (60℃ -120℃), the alarm light will turn on.

Caution
If the alarm light turns on, please stop operation immediately and reduce engine speed to cool down until the light turns off. The oil level should be checked or other inspections should be conducted.

Engine fault indicator light [for forklift trucks with an electronically controlled engine]



When the light turns on, it indicates that there is a fault and the forklift truck must be stopped immediately and the fault must be addressed based on the engine fault code table.

Maintenance personnel can diagnose the faults based on the fault indicator light (flashing code) or connect the ECU diagnosis interface with the diagnostic equipment to read the fault code information stored in the ECU.

See the engine manual for details.

4.0t-X5.0t forklift trucks with W57 PSI engines: If the indicator light turns on, it means that there are engine faults. Checks should be made after the engine is shut down.

Cummins engine models: if this light turns on, it indicates that one operating parameter of the engine exceeds the engine safety limit and the engine power is reduced, the engine should be stopped for further inspection.

Neutral start indicator light (EPS based forklift trucks)



When the truck is temporarily stopped, the direction lever should be in the neutral position; in this position the light will turn on.

The truck can only be started when it is in neutral.

The truck must not be in the neutral position when driving downhill.

OPS indicator light (optional function)

When the light turns on, it indicates that the driver is not on the driver's seat or is not sitting properly.

Parking indicator light



When the light turns on, it indicates that the parking brake is applied. In order to drive the truck, the parking brake lever (i.e. hand brake lever) should be released and the light will turn off.

Warning

Driving the truck when the light is on may cause damage to the engine, drive system and other parts.

Major fault indicator light [for forklift trucks with an electronically controlled engine]



Cummins engine models: if this light turns on, it indicates that the engine has a serious fault and that engine power is greatly reduced. If the status remains the same and the engine protection shutdown is enabled, this light will flash for 30 seconds to warn the driver of an impending shutdown event before the engine stops.

Air filter alarm indicator light



When the light turns on, it indicates that the air filter in the air intake system is blocked and the truck must be stopped to clean the air filter.

Seat safety belt alarm indicator light (optional configuration)



When the start key is in the "|", position, the engine is not started and the driver is not on the driver's seat. If the safety belt is not fastened properly, the safety belt alarm indicator light will turn on.

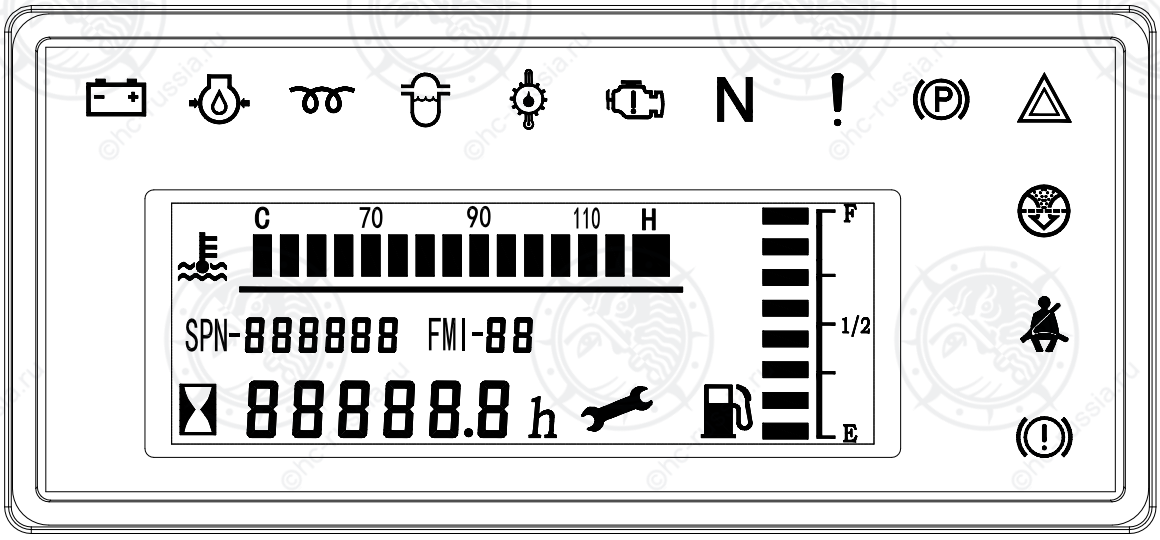
If the safety belt is not fastened or loose when the driver is operating the vehicle, the buzzer alarm will sound and the safety belt alarm indicator light will turn on at the same time. This is to remind the driver to safely park and

refasten the safety belt; the buzzer alarm will then stop and the safety belt alarm indicator light will turn off.

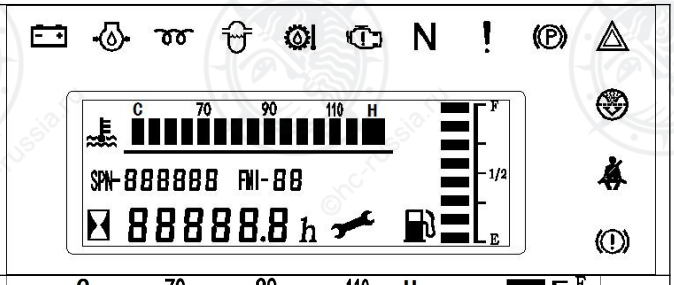
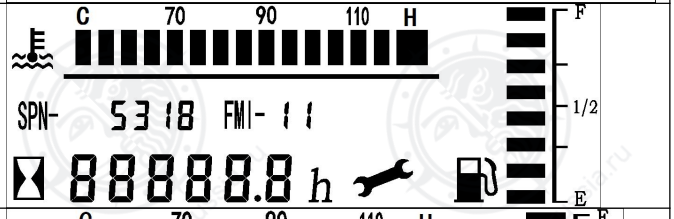
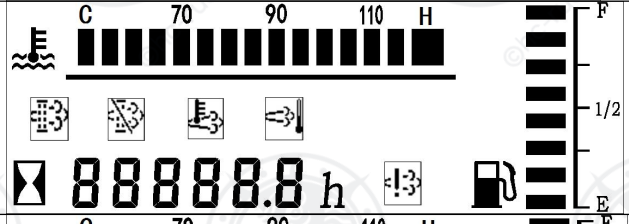
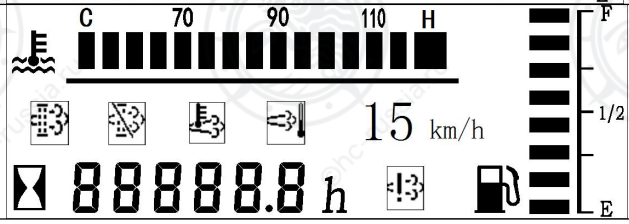
Low brake pressure alarm indicator light



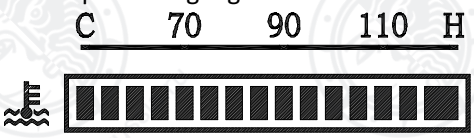
The indicator light in the 1.0t-X5.0t forklift truck is not operative.



1. Homepage display

① **Instrument self-test:** When the instrument is powered on, the system starts the self-test.	
② **Fault code warning display:** Display the fault code.	
③ **DPF display:** Display the DPF-related indicator lights. (4t - 5t)	
④ **Speed display:** Display the speed (optional speed sensor)	

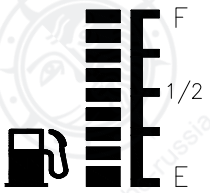
Water temperature gauge



When the ignition key switch is in the | (open) position, the water temperature gauge is active, displaying the engine coolant temperature; in normal operation the LCD will show that it is within the range 50℃-110℃.

> Caution
>
> Stop operation immediately and reduce engine speed to cool down the engine and then stop the engine when the liquid-crystal display is in the red area. Check the coolant level is sufficient and whether the fan belt is tight.

Fuel gauge



When the ignition key switch is in the | (open) position, the fuel gauge will display the approximate fuel level in the fuel tank.

It is recommended to fill up the fuel tank every day after work.

Stopwatch

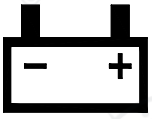


When the ignition key switch is in the | (open) position, the stopwatch will start running. The stopwatch reading will increase by one for every hour of operation.

The stopwatch displays the cumulative working hours of the forklift truck.

> Caution
>
> After the cumulative hours reaches the first 100h and 350h and a certain period of time, the “wrench” icon will flash for 1 hour, which indicates that the forklift truck needs to be serviced. See monthly maintenance after first flash. See the information about the maintenance cycle schedule in detail for each cycle. The specific flash time depends on the actual situation.

Charging indicator light



The light displays the battery charge status, turns on when the starting switch is in the | (open) position, and turns off when the engine is started.

> Caution
>
> If the light continues to turn on or flash during operation, it indicates that the charging is abnormal and immediate inspection is required.

Engine oil pressure alarm indicator light



The light displays the pressure of the engine lubricating oil, the light turns on when the starting switch is in the | (open) position, and turns off when the engine is started.

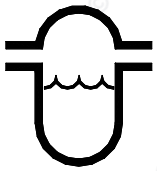
> Caution
> If the light continues to turn on or flash during operation, it indicates that the oil pressure is less than 0.05MPa and immediate inspection is required.

Preheat indicator light [diesel forklift trucks]



The light turns on for a short period after the switch is moved to the | (open) position, and the switch can be moved to the ➲ (start) position to start the engine after the light turns off.

Oil-water separator indicator light [diesel forklift trucks]



In general, the light turns on when the starting switch is in the ➲ (start) position, and turns off when the engine is started.

The light turns on when the water precipitation reaches a certain level when the engine is running.

If the light continues to turn on or flash when the engine is running, the engine should be shut down immediately to discharge water.

> Caution
> If operation is continued after the light turns on, the fuel oil injection pump may be damaged.

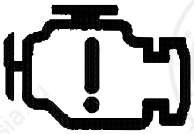
Transmission oil temperature alarm light [hydraulic forklift trucks]



In normal conditions, the light turns on when the starting switch is in the ➲ (start) position. It turns off when the engine is started. When the engine is running and the transmission oil temperature exceeds the normal range (60 ℃ -120℃), the alarm light will turn on.

> Caution
> If the alarm light turns on, please stop operation immediately and reduce engine speed to cool down until the light turns off. The oil level should be checked or other inspections should be conducted.

Engine fault indicator light [for forklift trucks with an electronically controlled engine]



When the light turns on, it indicates that there is a fault and the forklift truck must be stopped immediately and the fault must be addressed based on the engine fault code table.

Maintenance personnel can diagnose the faults based on the fault code displayed on the fault code indicator light or connect the ECU diagnosis interface with the diagnostic equipment to read the fault code information stored in the ECU.

See the engine manual for details.

Neutral start indicator light

N

When the truck is temporarily stopped, the direction lever should be in the neutral position; in this position the light will turn on.

The truck can only be started when it is in neutral.

The truck must not be in the neutral position when driving downhill.

Vehicle-mounted terminal fault indicator light (standard configuration for domestic vehicles), OPS indicator light (optional function for export vehicles)

!

Vehicle-mounted terminal fault indicator light: the light "！" turns on when there are any faults in the vehicle-mounted terminal communication antenna, positioning antenna and CAN bus, the signal is not normal, or the vehicle is in a dismantled state. When the light is on, it is necessary to check the vehicle-mounted terminal and notify the service provider.

OPS indicator light: When the light turns on, it indicates that the driver is not on the driver's seat or is not sitting properly.

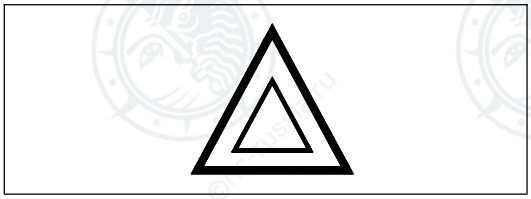
Parking indicator light



When the light turns on, it indicates that the parking brake is applied. In order to drive the truck, the parking brake lever (i.e. hand brake lever) should be released and the light will turn off.

> Warning
> Driving the truck when the light is on may cause damage to the engine, drive system and other parts.

Major fault indicator light [for forklift trucks with an electronically controlled engine]



Air filter alarm indicator light



When the light turns on, it indicates that the air filter in the air intake system is blocked and the truck must be stopped to clean the air filter.

Seat safety belt alarm indicator light (optional configuration)



When the start key is in the "|", position, the engine is not started and the driver is not on the driver's seat. If the safety belt is not fastened properly, the safety belt alarm indicator light will turn on.

If the safety belt is not fastened or loose when the driver is operating the vehicle, the buzzer alarm will sound and the safety belt alarm indicator light will turn on at the same time. This is to remind the driver to safely park and refasten the safety belt; the buzzer alarm will then stop and the safety belt alarm indicator light will turn off.

Low brake pressure alarm indicator light



The indicator light in the 1.5t -5.0t forklift truck is not operative.

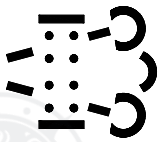
Fault indicator light

When the forklift truck has a fault, the corresponding fault code will be displayed.

SPN- - - - - - - FMI- - -

> Warning
>
> When any fault code is displayed on the fault indicator light, the forklift truck should be shutdown for maintenance.

Regen indicator light



There are four kinds of working state: passive regen, driving regen, parked regen, and service regen (aftersales solution).

Passive regen: the regen. working state indicator light and the regen indicator light turn off. The forklift truck will automatically activate passive regen. only when the exhaust temperature meets the required value and the driver does not need to take any action. If the forklift truck operates with low load at low speed for a long time, resulting in low exhaust temperature and regen. conditions are not satisfied, passive regen. will not be activated.

Caution

As the regeneration temperature is high, there should not be any combustible materials near the exhaust system or the truck. Do not regenerate in gas stations, dusty places or other flammable and explosive areas.

Driving regen:

G93: The regen. working state indicator light and the regen. indicator light turns on. The forklift truck will automatically activate active regen. only when the DPF resistance is greater than the preset value, manual intervention is not required and normal operation can be maintained. During regen., the fuel consumption of the forklift truck will increase and after a period of regen., **the regen. indicator light will turn off and the regen. working state indicator light will turn on. After the regen. process is finished, the regen. working state indicator light will turn off automatically** and the forklift truck will no longer be in the regen state, this indicates that the removal of diesel particulates is finished and the DPF resistance is lower than the preset value.

G82: The regen. working state indicator light turns on and the regen indicator light turns off. The forklift truck is in regen. working state. At that time, manual intervention is not required and normal operation can be maintained. When the regen. working state indicator light automatically turns off, it indicates that particulate removal is completed and the DPF resistance is below the preset value.

The driver should reduce the running time with a light load as much as possible to increase the exhaust temperature and extend the time between regens.

Caution

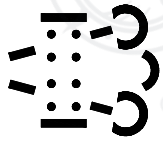
As the regeneration temperature is high, there should not be any combustible materials near the exhaust system or the truck. Do not regenerate in gas stations, dusty places or other flammable and explosive areas.

Parked regen: 1. The regen indicator light turns on and the carbon content in the DPF is high. It is recommended that the driver stops the forklift truck for parked regen. To ensure safety, the driver should park the forklift truck in an open space without any safety hazards as soon as possible and then complete the DPF parked regen. as required. **2. The regen. indicator light flashes slowly,** the engine fault indicator light turns on, **the carbon content in DPF is too high, and the engine power is limited.** To ensure safety, the driver should park the forklift truck in an open space without any safety hazards as soon as possible and then complete DPF parked regen.

G93:

Indicator light	 Slow flash	 Turn on
Fault code	SPN:520466 FMI:02	

G82:

Indicator light	 Slow flash	 Turn on
Fault code	SPN:3251 FMI:31	

Parked regen conditions:

①The forklift truck is parked on a well-ventilated flat road.

②Engage the hand brake.

③Release the accelerator pedal.

④Keep the steering lever in the neutral position (gear N).

⑤Warm up the forklift truck until the water temperature reaches 45℃.

⑥The regen inhibit switch is not on.

⑦No DPF and engine related faults

⑧Start the engine and let it run at idle speed.

Warning

In case of emergency, parked regen must be inhibited by exiting one of the parked regen conditions - ②③⑥.

Caution

As the regeneration temperature is high, there should not be any combustible materials near the exhaust system or the truck. Do not regenerate in gas stations, dusty places or other flammable and explosive areas.

A high temperature hazard warning sign should be placed near the engine during the regen process to prevent people getting burnt.

If the driver does not initiate parked regen within a limited period of time, the forklift truck will trigger the torque-limiting function, which may cause damage to the engine and emissions system.

The driver should pay attention to safety, should not leave the site, and should monitor the engine conditions during regen.

The driver should not stop the engine during regen; otherwise it is likely to cause a DPF fault.

Start parked regen (see operating instructions for keys)

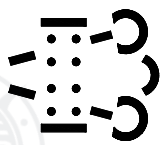
Regen lasts about 20min to 40min, **do not interfere with the regen process except in situations that endanger the safety of the vehicle or personnel,** to prevent adverse effects on the system. It is normal for slight smoke to be generated in the regen process. After the regen, the engine will run at idle speed again, the regen

indicator light will automatically turn off, regen is finished and the driver can operate the forklift truck normally.

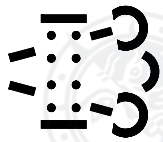
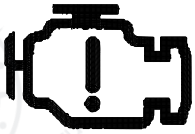
Service regen: the regen indicator light flashes quickly and the engine fault indicator light turns on.

When the DPF has been severely blocked, the engine has reduced power and torque, and the forklift truck does not work normally, aftersales staff should be contacted for service regen.

G93:

Indicator light	 Flashes quickly	 Turn on
Fault code	SPN:520466 FMI:02	

G82:

Indicator light	 Flashes quickly	 Turn on
Fault code	SPN:3251 FMI:13 (activated for a long time) or SPN:3251 FMI:16 (activated in case of excessive flow resistance)	

Inhibit indicator light



When the light turns on, it indicates that the engine regen is inhibited and parked regen should be activated manually.

Caution

When working in an environment that is not suitable for DPF regeneration (e.g. flammable and combustible places), please activate the inhibit regen mode so that the inhibit regen indicator light turns on. After leaving the area, please cancel the inhibit mode promptly so that the inhibit indicator light turns off and active regen can continue.

Warning

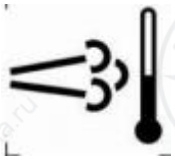
If active regen has been inhibited, the exhaust filter and exhaust will become blocked and the working performance of the forklift truck will degrade until the engine fault indicator light is activated.

EATS system fault indicator light



If the EATS has a fault or exceeds the designated operating parameters, the engine fault light will turn on at the same time. Please contact our after-sales service staff and provide the fault codes for further diagnosis.

DPF regen working state indicator light



When this light turns on, it indicates that the DPF is in the parked regen or driving regen process; when it turns off, it indicates that DPF active regen is not activated, or is suspended or terminated.

Caution

As the regeneration temperature is high, there should not be any combustible materials near the exhaust system or the truck. Do not regenerate in gas stations, dusty places or other flammable and explosive areas.

EATS high temperature alarm light

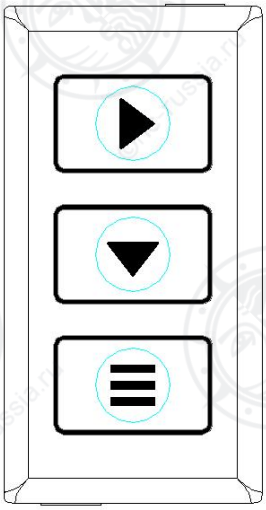


When this light turns off, it indicates that the EATS is in a normal range; and when it turns on, it indicates that the EATS temperature exceeds the preset threshold value, in this instance, stop the active regen and then clean it at the service station.

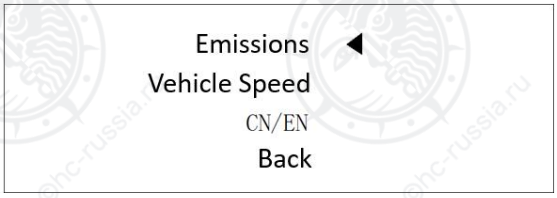
2. Operating instructions for instrument keys:

Caution

Please ensure the handbrake is engaged and the gear-shifting switch is in the "N" position before any operations.

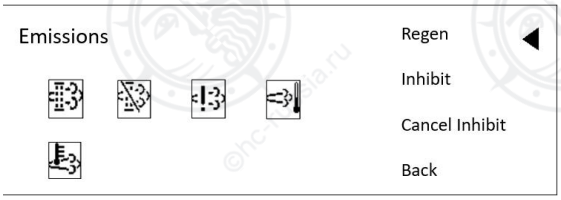
Key 1: Move to the right	
Key 2: Move down or decrease progressively	
Key 3: Function menu or confirm	

Enter the setting information display interface after pressing Key 3.



2.1 Emissions system

With the cursor on "Emissions", press Key 3 and enter the emissions system setting page.



Press Key 2 and move the cursor.

Request regen: When the cursor is on "Regen",

press Key 3 and wait for a short time, the regen indicator light will turn on, which indicates that the forklift truck will start parked regen once the parked regen conditions are met.

Caution

As the regeneration temperature is high, there should not be any combustible materials near the exhaust system or the truck. Do not regenerate in gas stations, dusty places or other flammable and explosive areas.

A high temperature hazard warning sign should be placed near the engine during the regen process to prevent people getting burnt.

If the driver does not initiate parked regen within a certain period of time, the forklift truck will trigger the torque-limiting function, which may cause damage to the engine and emissions system.

The driver should pay attention to safety, should not leave the site, and should monitor the engine conditions during regen.

The driver should not stop the engine during regen; otherwise it is likely to cause a DPF fault.

Inhibit regen: When the cursor is on “Inhibit”, press Key 3, the inhibit indicator light will turn on, which indicates that the forklift truck is in the regen inhibited state.

Caution

When working in an environment that is not suitable for DPF regeneration (e.g. flammable and combustible places), please activate the inhibit regen mode so that the inhibit regen indicator light turns on. After leaving the area, please cancel the inhibit mode promptly so that the inhibit indicator light turns off and active regen can continue.

Warning

If active regen has been inhibited, the exhaust filter and exhaust will become blocked and the working performance of the forklift truck will degrade until the engine fault indicator light is activated.

Cancel inhibit: When the cursor is on “Cancel Inhibit”, press Key 3 to cancel the regen inhibited state, wait for a short time and the inhibit indicator light will turn off.

Caution

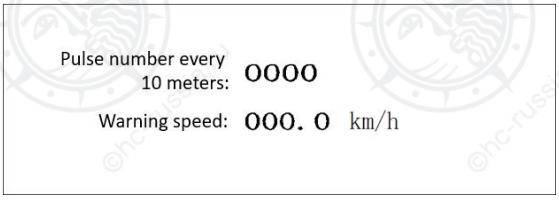
After leaving the area that is not suitable for DPF regeneration (e.g. flammable and combustible places), please cancel the inhibit mode promptly so that the inhibit indicator light turns off and active regen can continue.

Back: When the cursor is on the “Back”, press Key 3 to return to the setting page.

2.2 Speed setting

When the cursor stops at "Speed Setting", press

“Key 3” to enter the speed setting page.

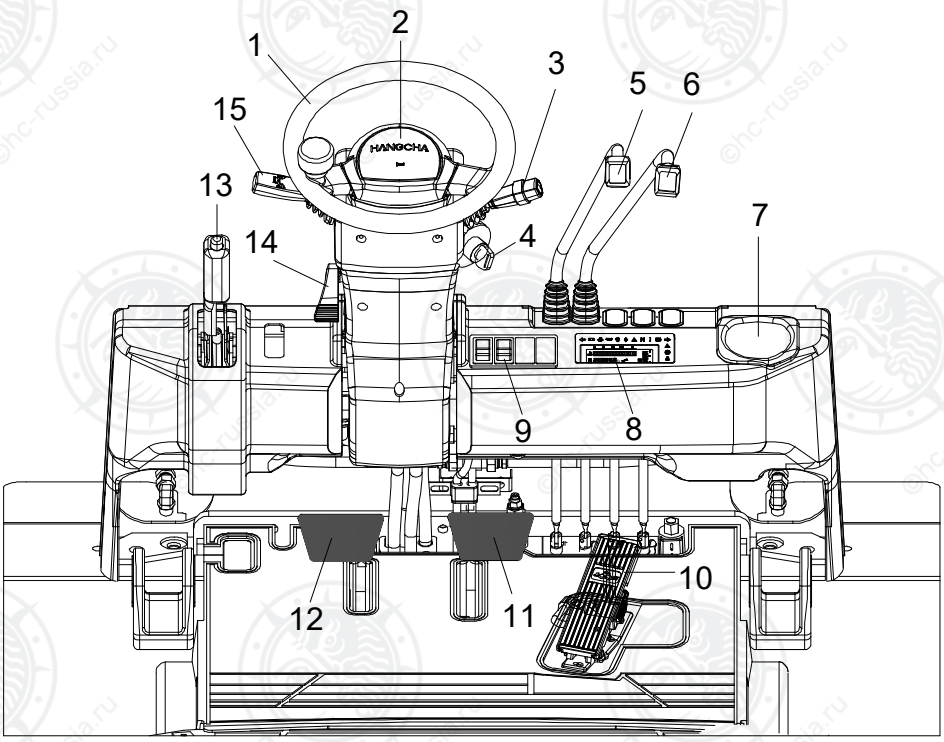


Press “Key 2”, the number changes from large to small, then press “Key 1”, the cursor jumps to the next number; press “Key 2” together with “Key 1” to set the pulse number and alarm speed as required, then press “Key 3” when finished. This completes the speed setting.

2.3 English/Chinese settings

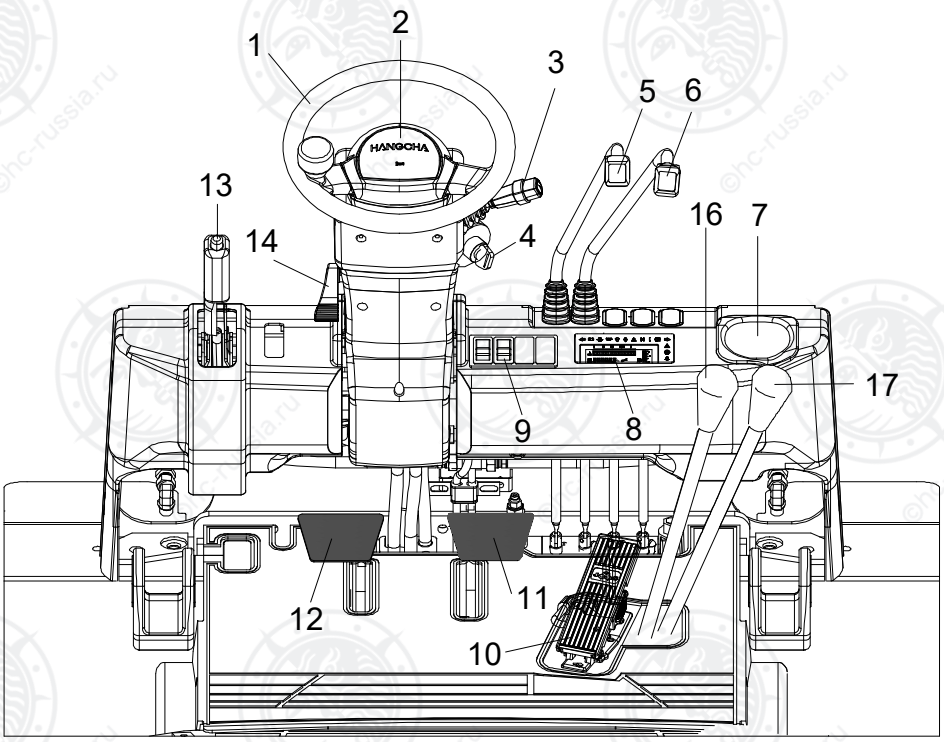
When the cursor stops at "CN/EN", press “Key 3” to switch between English and Chinese.

3. Controls and switches



1.0t-x5t Hydraulic drive forklift truck

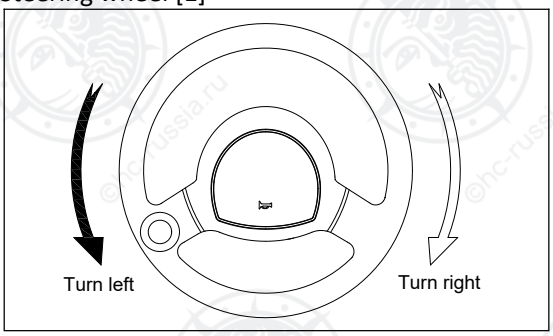
1. Steering wheel
2. Horn
3. Combination light switch
4. Ignition key switch
5. Lifting lever
6. Tilt lever
7. Cup holder
8. Instrument
9. Rocker switch
10. Accelerator pedal
11. Brake pedal
12. Inching pedal
13. Hand brake lever
14.Steering wheel adjustment switch
15. EPS based lever (hydraulic drive forklift truck)



1.0t-3.8t Mechanical drive forklift truck

1. Steering wheel
2. Horn
3. Combination light switch
4. Ignition key switch
5. Lifting lever
6. Tilt lever
7. Cup holder
8. Instrument
9. Rocker switch
10. Accelerator pedal
11. Brake pedal
12. Clutch pedal
13. Hand brake lever
14. Steering wheel adjustment switch
16. Direction lever
17. Gear-shift lever (mechanical transmission)

Steering wheel [1]



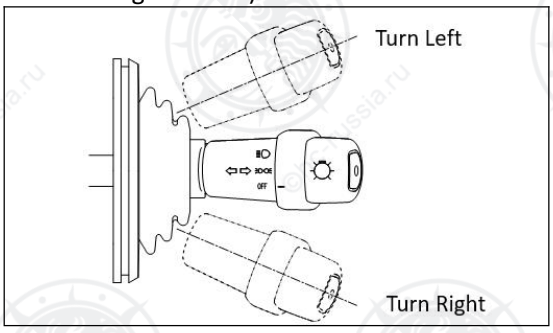
Controls the driving direction of the truck
Anticlockwise rotation
turns the truck to the left; clockwise rotation turns the truck to the right.

Warning
The forklift is equipped with a fully hydraulic steering mechanism. When the engine shuts down, it will be very difficult to steer the forklift. Before turning again, the engine must be restarted immediately.

[Horn button 2]

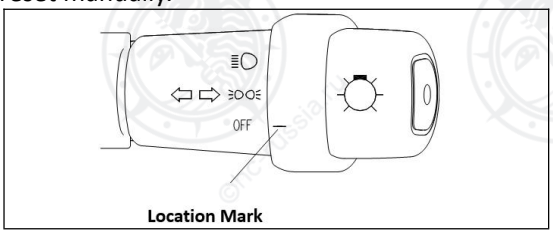
The horn will sound by pressing the horn button in the center of the steering wheel.

Combination switch [3] (turn signal switch and combined light switch)



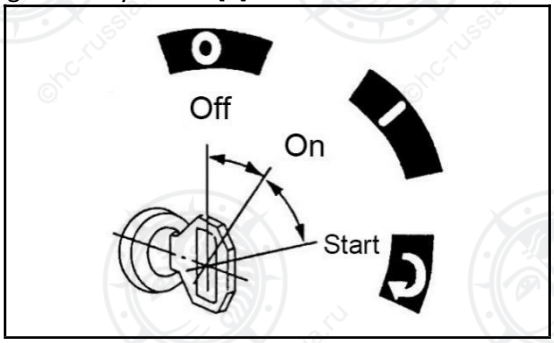
The indicator light switch is on the right side of the steering column and the switch is toggled when turning.
Push the switch lever forward to turn left and pull it backward to turn right. The corresponding turn signal light will flash.
Push forward-left turn indicator light; N-neutral; pull back-right turn indicator light.

The indicator light switch does not return to the neutral position automatically, and must be reset manually.



To turn on the headlights, the front signal light and the width light, turn this switch to align the position marker on the switch handle with the corresponding symbol on the switch body.

Ignition key switch [4]



O (off): The position to insert and pull out the key; when the key is in this position, the engine shuts down.

| (On): When the start key is in "|", the circuit is connected; after the engine is started, the key remains in this position.

(Start): When the key is in the " " position, the engine is started; after the engine is started, the key automatically returns to the "|" position after releasing.

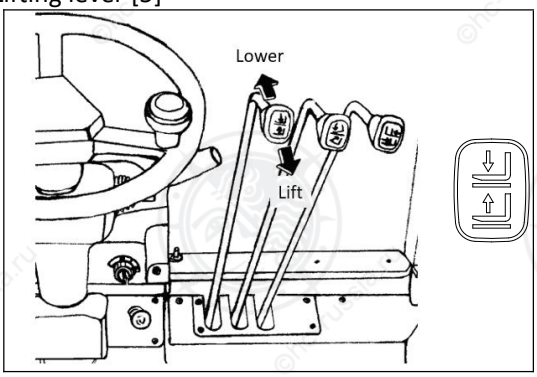
Diesel engine

When starting, the key is turned to the "|" position and the preheat indicator light [I] turns on for a while; after the light turns off, the key can be rotated to the " " position to start the engine.

Caution
1. When the engine stops, do not leave the key in the "|" position to avoid battery discharge.
2.When the engine is running, do not put the key in the " " position to avoid motor damage.
3. When starting, the starter motor cannot

continuously rotate for more than 5s and the interval between consecutive starts should be 120s.

Lifting lever [5]

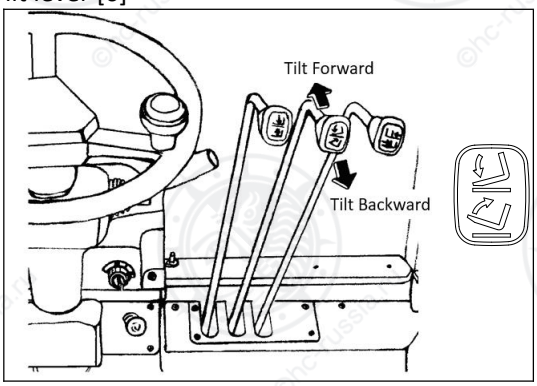


This lever is used to lift or lower the forks.

Push forward - Down; Pull back - Up

The lifting speed is controlled by the backward tilt angle of the lever and the accelerator pedal. The lowering speed is only controlled by the forward tilt angle of the lever.

Tilt lever [6]



This lever is used to tilt the mast forward and backward.

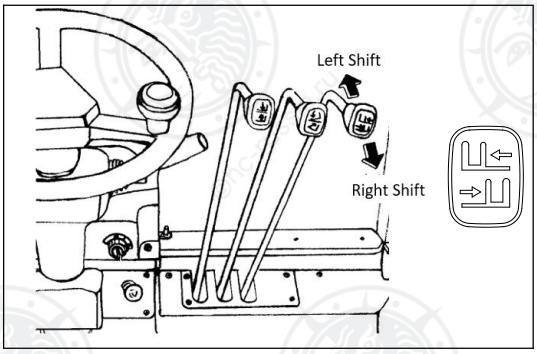
Push forward - Forward tilt; Pull back - Backward tilt

The tilt speed is determined by the tilt angle of the lever and the throttle control.

Caution

The multi-way valve is equipped with a forward tilt self-locking valve. Therefore when the engine shuts down, the mast cannot tilt forward even if the tilt lever is pushed forward.

Sideshift control lever



This lever is used to move the side shift frame to the left or right.

Push forward – Move left; Pull back – Move right

The side shift speed is determined by the tilt angle of the lever and the throttle control.

Accessory control lever

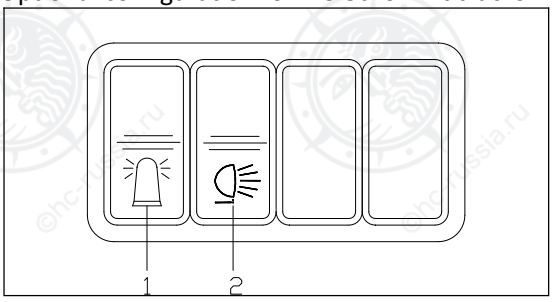
The accessory control lever refers to side shift control lever, turning control lever or other accessory control levers, depending on the installed equipment.

Cup holder [7]

A cup holder is set on the right side of the instrument stand for the driver to place a cup.

Rocker switch [9]

Optional configuration for 1-5.5t forklift trucks

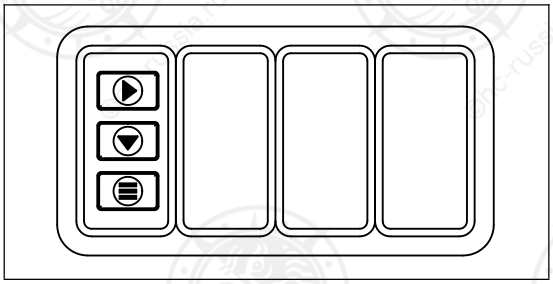


1. Alarm light switch: When pressed down, the alarm light will flash; when pressed up, the alarm light will turn off.

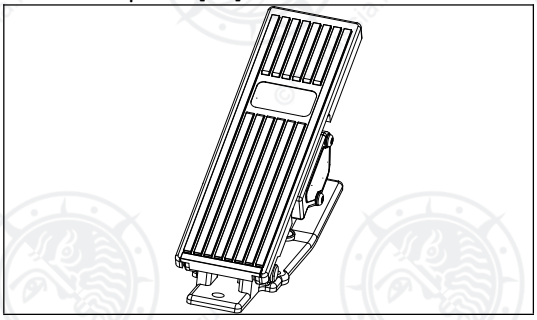
2. Rear headlight switch: When pressed down, the rear headlight will turn on; when pressed up, the rear headlight will turn off.

Rocker switches in forklift trucks with a cab may be different in configuration. There may be additional functions like ventilation and

demisting.
Standard configuration for 4-5.5t China IV forklift trucks

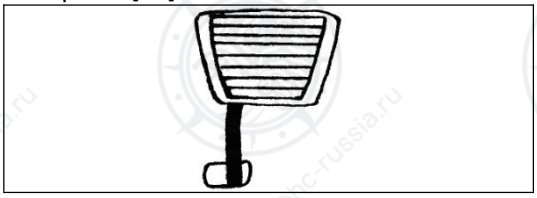


Accelerator pedal [10]



When the accelerator pedal is pressed, the engine speed and the forklift speed will increase; when the accelerator pedal is released the engine speed and the forklift speed will decrease.

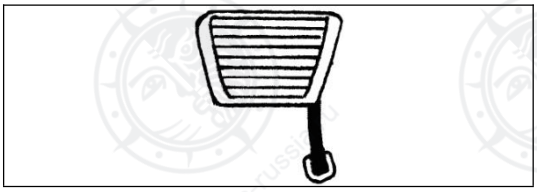
Brake pedal [11]



When the brake pedal is pressed the truck slows down; when the brake pedal is pressed to the bottom, the truck stops. When the pedal is released the truck runs freely.

> Caution
> Avoid emergency braking. Emergency braking can easily cause the truck to tilt or

Inching pedal [12]



When the pedal is pressed, the oil pressure of the hydraulic clutch will drop. When the pedal is pressed harder, the forklift truck will be braked. The pedal can be used when the forklift truck slows down to approach cargo or conducts loading and unloading operations.

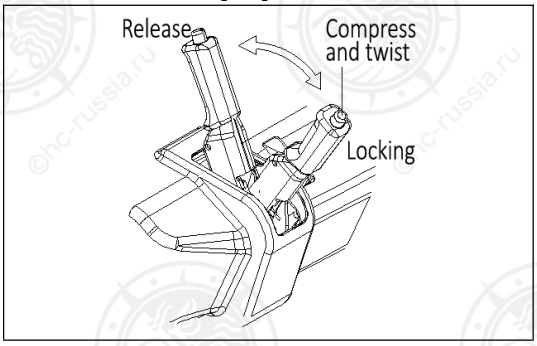
> Caution
> Do not use the inching pedal excessively. If the pedal is used as a footrest or used for a long time, it may cause overheating of the

Clutch pedal [12] (manual transmission)

Depress the clutch pedal to separate the engine and transmission; release the clutch pedal to transmit the power from the engine to the transmission via the clutch.

> Caution
> Do not drive the forklift truck when the clutch is not fully engaged.

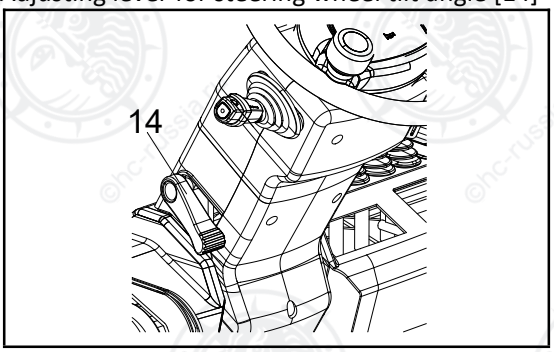
Hand brake lever [13]



Pull the lever back to engage and push the lever forward to release. Engage the lever before the leaving the forklift truck.

> Caution
> In the event of brake system failure or emergency, the lever can be engaged for emergency braking. Do not use the hand brake to slow down during normal use.

Adjusting lever for steering wheel tilt angle [14]



The position of the steering wheel can be adjusted. To perform adjustment, pull the adjusting lever installed on the left side of the steering hub column, move the steering wheel to the desired position, and push down the adjusting lever to lock.

Caution

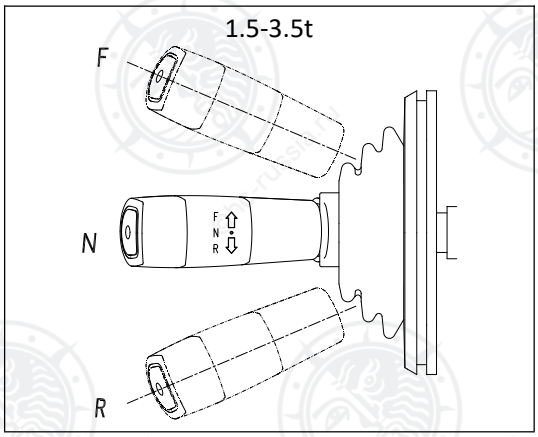
a. Adjust the steering wheel tilt angle only after the forklift truck has stopped and the hand brake is engaged.

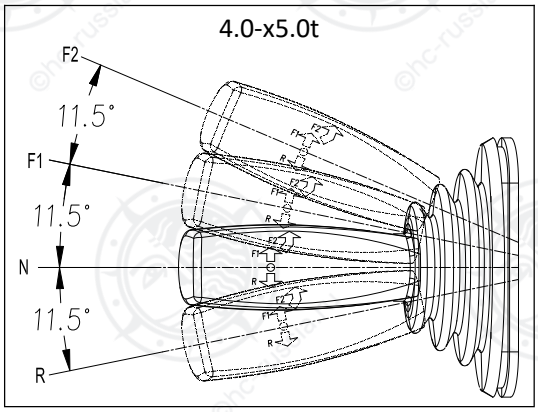
b. Forcibly move the steering wheel up and down to ensure that it has been locked after adjusting.

Steering lever [15] [EPS based]

The steering lever is installed on the left side of the steering hub column. This series of forklift trucks are EPS based and the functions realized by moving the lever forward and backward are as follows:

1.5-3.5t	F	Forward
	N	Neutral
	R	Reverse
4.0-x5t	F2	Forward Gear II
	F1	Forward Gear I
	N	Neutral
	R	Reverse





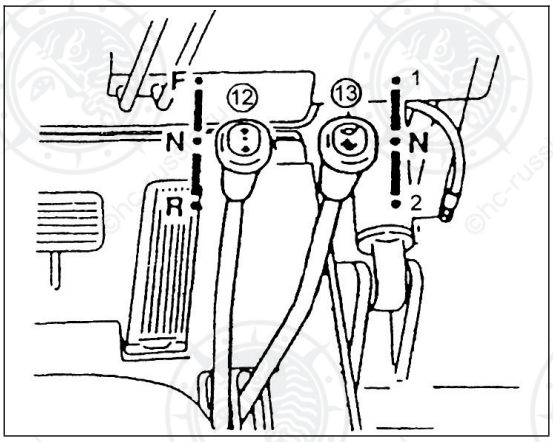
Press the brake pedal to the bottom to fully stop the truck before changing the driving direction; push the lever forward to engage forward gear I; pull up and push the lever forward to engage forward gear II from gear I. Press the brake pedal to slow down if it is required to reverse; pull back the lever to engage reverse gear I; pull up and push the lever back to engage reverse gear II from reverse gear I.

Caution

The engine can only be started when the lever is in the neutral position.

Steering lever [16] (manual transmission)

Gear-shift lever [17] (manual transmission)



Mechanical drive mode

[16] F - Forward N - Neutral R - Reverse

[17] 1 - Low speed N - Neutral 2 - high speed

Manual transmission has two forward gears and two reverse gears. Fully depress the clutch pedal [8] before shifting gear. Stop the forklift truck before steering. The reversing light turns on when reversing.

Emergency power-off switch (optional configuration)

Press down the emergency power-off switch to disconnect the electric appliances from the battery.

If the forklift truck needs to be restarted, the emergency power-off switch should be toggled.

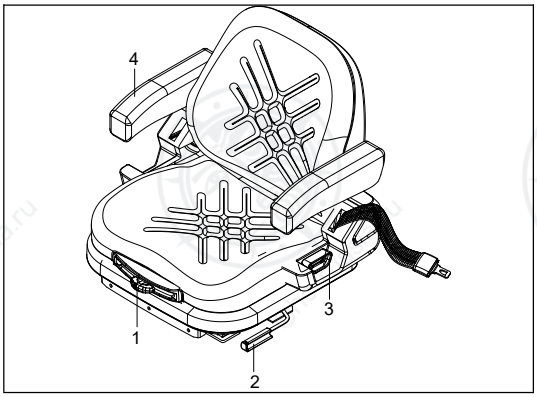
Reset the emergency power-off switch 30s after shutdown.

4. Body and other parts

Load-backrest

The load-backrest ensures the stable loading of cargo. The forklift truck must not be operated without a load-backrest.

Driver's seat



1. Driver's seat weight adjustment handle
2. Forward and backward adjustment handle for the driver's seat
3. Backrest angle adjustment handle
4. Handrail adjustment knob

· Driver's seat weight adjustment

The weight adjustment lever can be lifted up and put in the corresponding horizontal weight position for the user.

· Forward and backward adjustment of the driver's seat

Pull the adjustment handle inward by hand, then push the whole seat forward and backward to reach the desired position, the handle is automatically locked when lowered.

· Backrest angle adjustment

While sitting on the driver's seat, lean back on the backrest, pull the backrest angle adjustment lever upward with your left hand, lean forward or backward, and release the lever until the backrest angle reaches the desired position.

·Handrail adjustment

The handrail tilt angle can be adjusted by rotating the adjustment knob. When rotating the knob outward, the front end of the handrail will lift. When rotating the knob inward, the front end of the handrail will lower.

Warning

- The ignition key switch must be turned off before adjusting the driver's seat.
- The seat position can be adjusted only when the forklift truck has stopped.
- For safety reasons, do not adjust the driver's seat when driving.
- For front and rear adjustment and backrest angle adjustment, the handle should be pulled into place to ensure that the structure is completely disengaged before adjustment.
- After adjustment, the levers should return to the locked position. Ensure that all the components are locked securely before using the forklift truck.

Safety belt

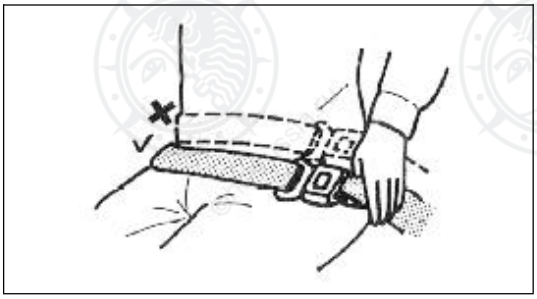
· Fasten the safety belt

An auxiliary action is required before pulling out the safety belt which may require some familiarization.

One type of seat: You need to press the white round button (with the text "press to release") with one hand, and then the seat belt can be pulled out with the other hand. Then, the belt can be inserted into the socket on the other side of the driver's seat.

You may also encounter another kind of driver's seat: The driver's seat with a rotating safety belt box. When the safety belt box is rotated forward, the safety belt cannot be pulled out; when the box is rotated backward, the safety belt can be pulled out and inserted into the socket on the other side of the driver's seat; the safety belt box has to be rotated forward again to return to the normal working position.

Your back and waist should be as close to the driver's seat as possible when fastening the safety belt. Do not fasten the safety belt at the abdomen.

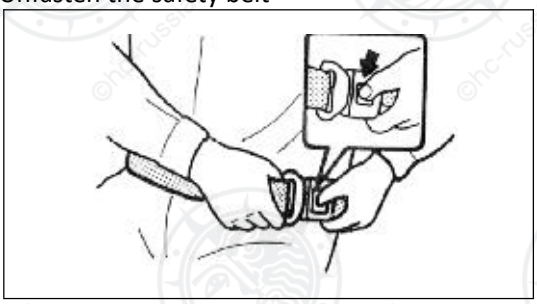


Do not tilt the backrest too much; otherwise, the safety belt will not be extended correctly.

Do not knot or twist the belt.

Keep the safety belt fastened tightly during daily operation to protect yourself and reduce injury if the truck rolls over.

·Unfasten the safety belt



Press the red button (with the text "PRESS") on the socket with your left thumb to unfasten the safety belt.

·Check the safety belt

Frequently check whether the bolt to fix the safety belt is secure. Do not press the safety belt on hard or fragile objects and do not rub the safety belt with sharp objects to avoid damage.

Do not disassemble components on the safety belt without permission. Visual inspections should be routinely conducted for belts that have been used frequently.

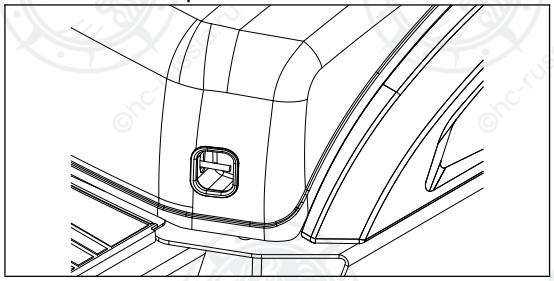
- Cutting or fraying;
- Wear or damage of metal parts, including the locating point;
- Buckle or retractor fault;
- Damage.

If any abnormality is found, a new belt should be fitted immediately; the service life of the belt is 3 years; if any abnormality is found, the belt should be replaced in advance.

Overhead guard

The overhead guard protects the operator from falling objects. It must have sufficient impact strength. The forklift truck must not be used without an overhead guard.

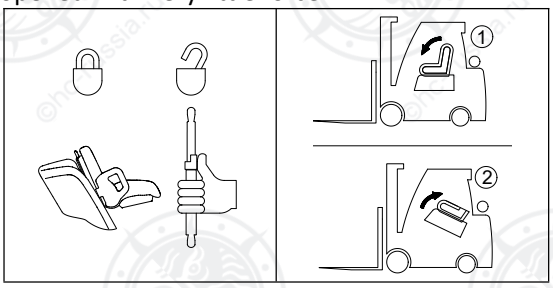
Lock catch components



In order to prevent the internal combustion engine hood from being opened without permission, the truck is fitted with a locking hood; in order to open the internal combustion engine hood, the lock handle should be pulled. The internal combustion engine hood can then be released.

Internal combustion engine hood

The internal combustion engine hood with a large opening is convenient for service and maintenance. The inner air strut of the internal combustion engine hood allows it to be fully opened with very little force.



Press the red button on the gas spring when closing; then, release the lock catch; press down the head of the internal combustion engine hood to close it; a click indicates that the hood has locked.

Caution

In order to open the internal combustion engine hood, a key is required. Position the key horizontally and push backward to open the engine hood.

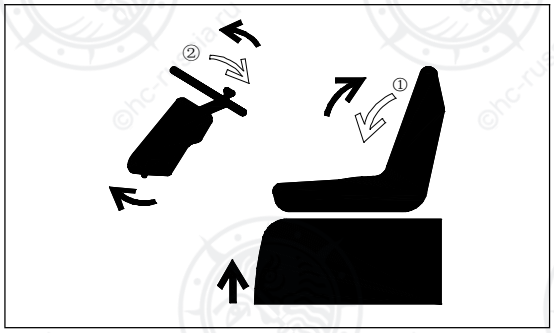
Take care to prevent your fingers from being trapped by the hood when closing.

Warning

The engine must be shut down during maintenance and repair under the internal combustion engine hood. Take care to prevent your hands or other body parts from being clamped by moving parts. However, provided the hands, feet, head, and body do not touch the components, it is permissible to open the internal combustion engine hood without turning off the engine in order to diagnose the fault by listening for abnormal noises.

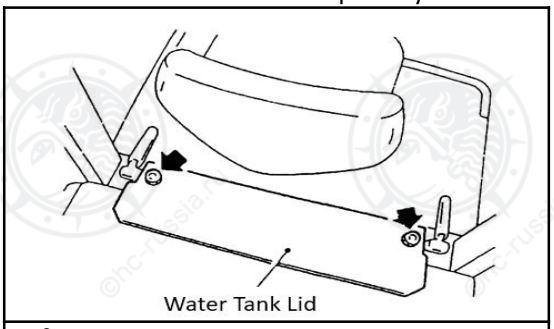
Move the steering wheel forward and lean the backrest forward before opening the engine hood.

Return the steering wheel and backrest to original positions after closing the engine hood.



Water tank cover plate

The water tank cover plate can be removed when the internal combustion engine hood is closed to check the coolant quantity.



Caution

Reinstall the water tank cover plate and fasten the bolt with your hands.

Trucks exported to Europe should be fixed with a hexagon bolt; before moving, it should be released with a socket spanner; the bolt should be tightened with a socket spanner during reinstallation

Water tank lid and additional water tank

The additional water tank is in the internal combustion engine hood.

The water tank lid is under the rear cover plate of the internal combustion engine hood.

Warning

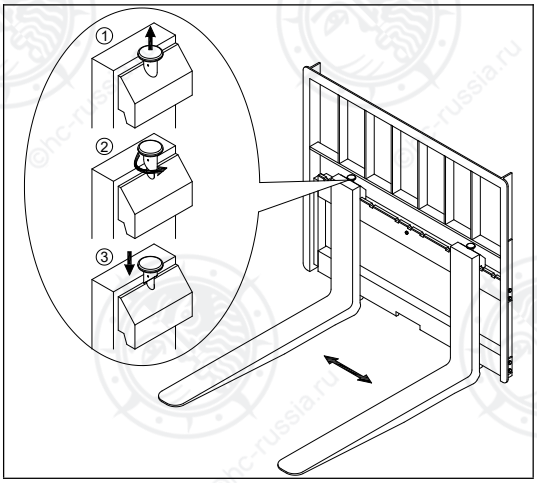
· Do not open the water tank lid when the engine water temperature is higher than 70 ℃. Press the lid down and slightly rotate it to the left to reduce the pressure in the water tank.

· Do not open the water tank lid when wearing gloves.

· The antifreeze is corrosive and toxic and should be rinsed off when your skin and body are exposed to it. Keep children away from the antifreeze.

Fork positioning pin

It is used when adjusting the fork spacing. Pull out the stop dowel, rotate by 180°, and adjust the forks to the required position for the cargo to be unloaded.



Warning

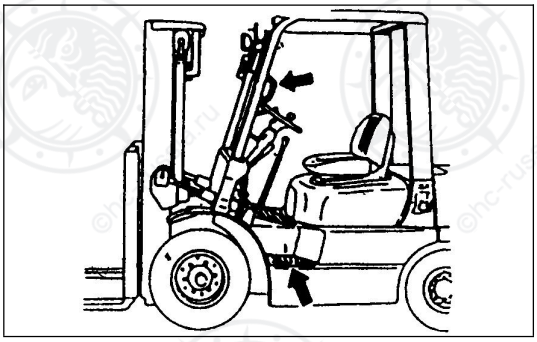
The fork spacing adjustment should be based on the center line of the forklift truck and symmetrical on the left and right sides; the stop dowel should be tight after adjusting.

There is an opening on the lower beam of the fork arm carrier for loading and unloading forks.

Do not use the fork in the open position to prevent the fork from falling off from the open position. Regularly check the bolt in the middle of the fork arm, which prevents the fork from being used in the open position.

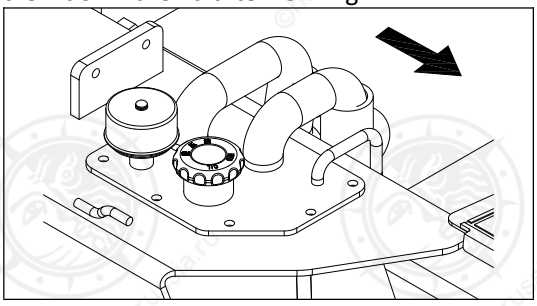
Step and handrail for getting on and off the forklift truck

The body is provided with a step for getting on and off on both sides; the handrails are installed on the left and right pillars of the overhead guard. Please use the handrails for safety when getting on and off the forklift truck.



Hydraulic oil tank lid

The hydraulic oil tank lid is on the right frame of the internal combustion engine hood that can be opened when refilling. Replenish with clean hydraulic oil through the oil filling port and screw down the lid after refilling.



Fuel tank lid



Fuel tank lid without a lock



Fuel tank lid with a lock (LPG single-fuel trucks only)

The fuel tank lid is on the left rear side of the body. There is a vent in the fuel oil tank and the vent should be checked for blockages when refuelling.

Note: Do not pour the gasoline into the fuel tank, because gasoline is not used for the LPG single-fuel trucks. To prevent the incorrect fuel being added, the fuel tank lid is equipped with a lock.

Caution

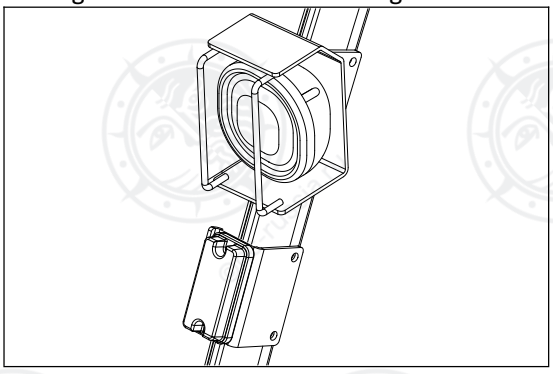
1. When refueling, the forklift truck must be stopped, the engine must be shut down, and the hand brake lever must be engaged; the driver must get off and there should be no naked flames nearby.
2. The lid has to be screwed down after refuelling; otherwise the fuel will leak, which may result in a fire.
3. The engine can be started only after wiping up the spilled fuel.
4. Naked flames are prohibited when checking the fuel level.

Mirror



A mirror is installed on the upper right of the overhead guard for observing conditions behind the truck or when reversing.

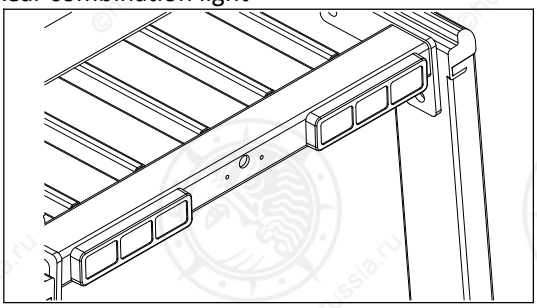
Headlight and front combination light



The two headlights and the front combination light (turn signal light and width light) are

mounted on the front support of the overhead guard. Pay attention to the protecting lights; if there is any dust, they should be wiped clean; if there is any damage, they should be replaced.

Rear combination light



The rear combination lights include the turn signal light, tail light, brake light and reversing light. Pay attention to protecting the lights; if there is any dust, they should be wiped clean; if there is any damage, they should be replaced.

ECU diagnosis interface



The ECU diagnosis interface of the engine is under the right engine hood of the truck and is provided with a dust cover.

Regularly check whether the dust cover is damaged and remove any dust and oil contamination on the ECU diagnosis interface.

III. Safety regulations

1. Only trained and approved operators can operate the forklift truck.

2. Oil/water leakage, deformation and looseness should be regularly checked; otherwise, the service life of the truck will be shortened; in severe cases, it may cause an accident.

Ensure that “key safety parts” are replaced in regular checks.

Wipe off oil, grease or water on the baseplate, pedal and control lever.

Shut down the engine, especially the fan when checking the engine and associated parts.

Take care to avoid scalding when checking the water tank or silencer.

3. Whenever the truck is found to be faulty, you should stop operations and report the condition to the management personnel.

During maintenance at height (such as the mast, front light and back light), take care to avoid getting trapped and slipping.

If the alarm indicator light turns on or in case of any other fault, the truck should be driven to a safe place for checks or troubleshooting.

Protect your hands, head and body from scratching at corners and sharp edges you may touch during maintenance and repair.

Hang the “fault” sign on the truck as a reminder.

4. Do not check the fuel oil level, electrolyte, cooling water and leakages when there is a naked flame nearby.

Do not smoke to avoid explosions when checking the battery, refilling with fuel oil or checking the fuel oil system.

The workplace should be provided with a fire extinguisher.

Do not refuel when the engine is running.

5. Warm up the forklift truck until the water temperature is 70℃ before operation.

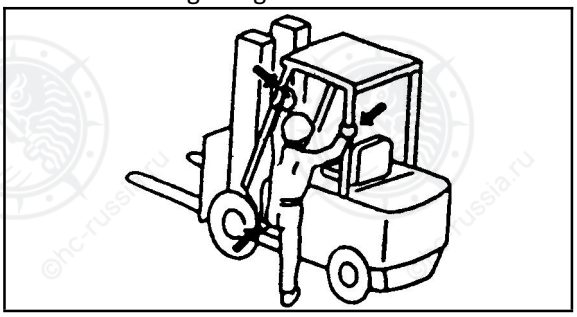
Do not open the water tank lid when the water temperature is higher than 70℃.

6. The exhaust gas (carbon monoxide - CO) is harmful to the human body; there should be sufficient ventilation when the forklift truck is operated in an enclosed space; and an exhaust fan should be provided if necessary.

Caution

The truck should not be used in flammable and explosive environments.

7. Do not get on or off the forklift truck when it is in use; please use the safety pedal and safety handrail when getting on or off.



8. Operate the forklift truck only when sitting properly.

Adjust the seat position for good hand and foot control before starting.

9. Before starting, confirm:

① Whether there are any people near the forklift truck.

② Whether the front and rear reverse lever is in the neutral position.

10. Pull up the hand brake when parking on a flat road; if the truck has to be stopped on a ramp, a wedge must be placed under the wheels.

Shut down the engine and take out the key when the forks are lowered to the ground and slightly tilted forward.

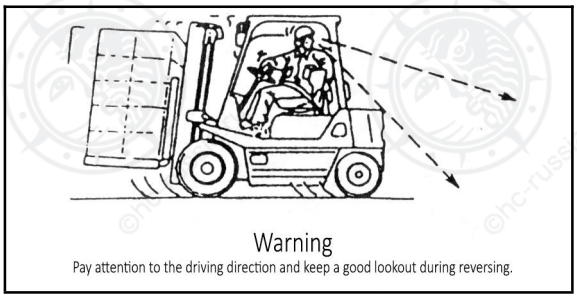
11. Be stable and accurate when operating the truck. Avoid emergency stops, emergency starts or emergency steering.

12. Control the speed and obey traffic signals.

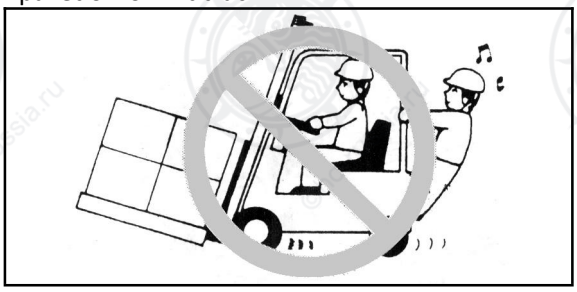
Caution

Obey traffic rules when driving on the highway or street.

13. Pay attention to the driving direction and keep a good lookout.



14. Other people must not sit on the fork, pallet or forklift truck.



15. When crossing a ship deck or bridge, confirm that it is fixed correctly and has enough strength to bear the weight of the forklift, and check the ground conditions of the work site in advance.



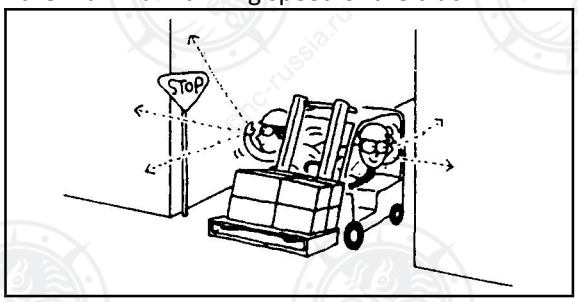
16. Focus on the work.

17. Keep your head, arms, legs and feet in the cab and do not extend them out of the cab for any reason.



18. Please drive in reverse or under guidance when handling very large cargo that obstructs visibility.

19. Slow down and sound the horn when passing through junctions or other sections with poor visibility; limit the speed to 1/3 of the maximum driving speed of the truck.



20. The forklift truck should be driven away from LPG tanks, wood, paper and chemical substances; the exhaust gas from the silencer may cause combustion or explosions.

21. The headlights and clearance lights should be used during night operation; the driving speed must be controlled.

22. The work surface of the forklift truck should be a solid and flat cement pavement, asphalt pavement or concrete pavement.

The following normal climatic conditions should be met when the truck is in operation:

--Mean ambient temperature under continuous operation conditions: +25℃;

--Maximum short term ambient temperature (≤1h): +40℃;

--Minimum ambient temperature under normal indoor conditions: +5℃;

--Minimum ambient temperature under normal outdoor conditions: -20℃;

--Altitude: ≤2,000m.

Caution

Check the road to be driven for holes, abrupt slopes, barriers, bumps, and road conditions that may cause loss of control and vibration.

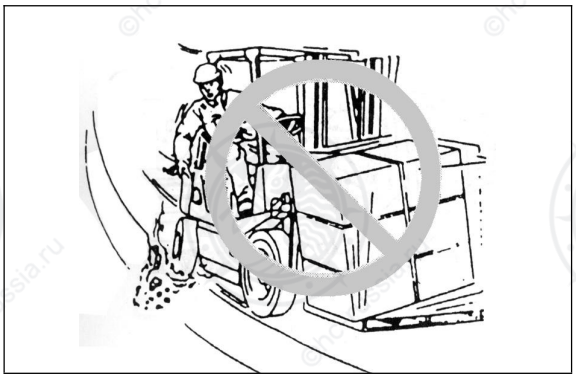
·Remove rubbish, debris and foreign matter that may puncture tires and throw cargo out of balance.

·Slow down on slippery roads, do not drive on the edge of the road, and take extra care when it cannot be avoided.

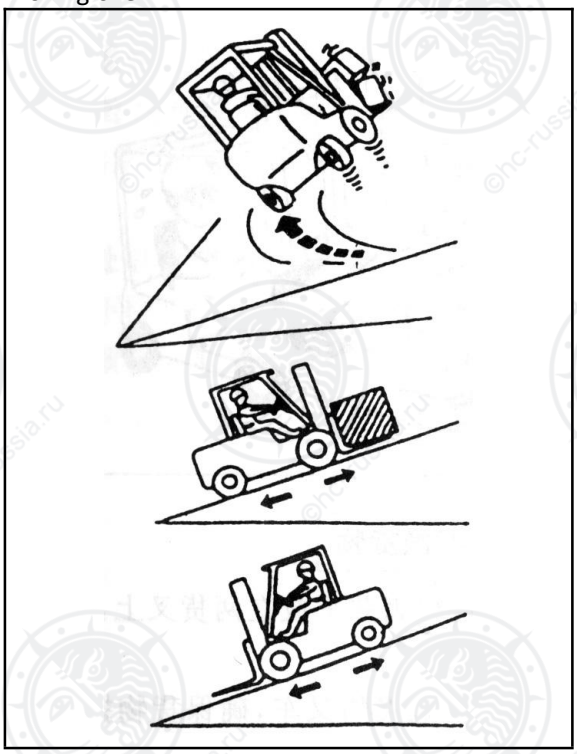
·Uneven ground will cause vehicle vibration and noise. High tire pressure will cause vehicle vibration and noise.

Warning

Do not use the forklift truck in sand, snow, lightning, rain, wind and other bad weather conditions.



23. Reverse downhill and climb facing forward when loaded. The opposite applies when unloaded. Do not turn on ramps to avoid rolling over.



24. Reverse downhill and climb facing forward when loaded.

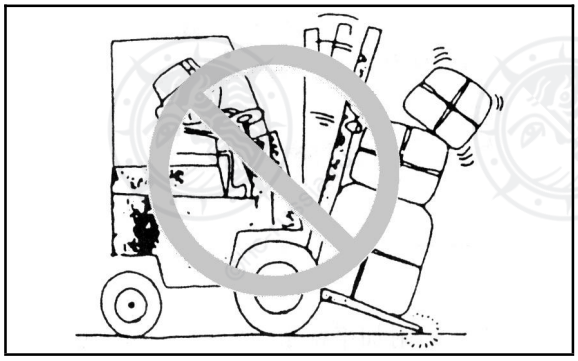
25. It is dangerous to lift the forks when driving with or without load; the standard driving condition (the distance between the forks and the ground is 15cm-30cm) should be adhered to.

Do not conduct side shift operations when the forks are raised to protect the forklift truck from losing balance.

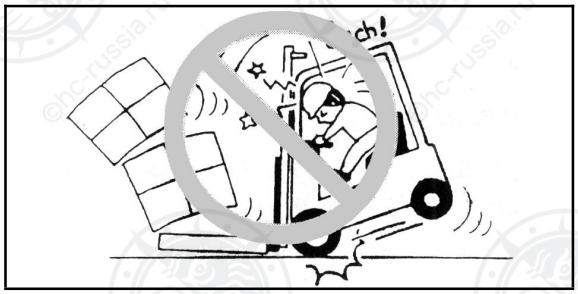
Forklifts with attachments should be considered vehicle loads.



26. The mast should tilt backward and the height of cargo should be lowered as much as possible when the truck is operated under load.



27. Avoid emergency stops or driving fast downhill to prevent cargo from falling or the truck from rolling over. Emergency brake hazards.



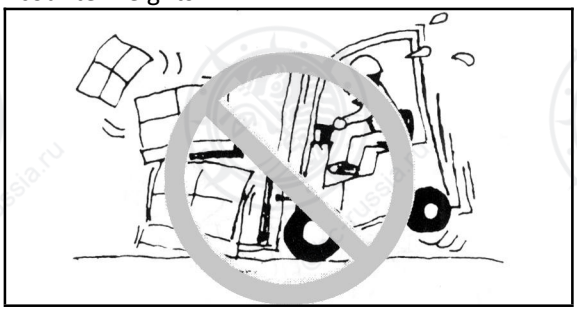
28. The forklift truck can only reverse after coming to a complete stop, and vice versa.

29. Select proper attachments and tools according to the shapes and materials of cargo loaded.

Do not hang ropes on the forks or attachments to lift cargo, because the rope may slip; if necessary, a person with lifting operation qualifications should lift cargo with a lifting hook or a boom.

Caution
Do not let the forks touch the road surface to avoid damaging the fork tip and road surface.

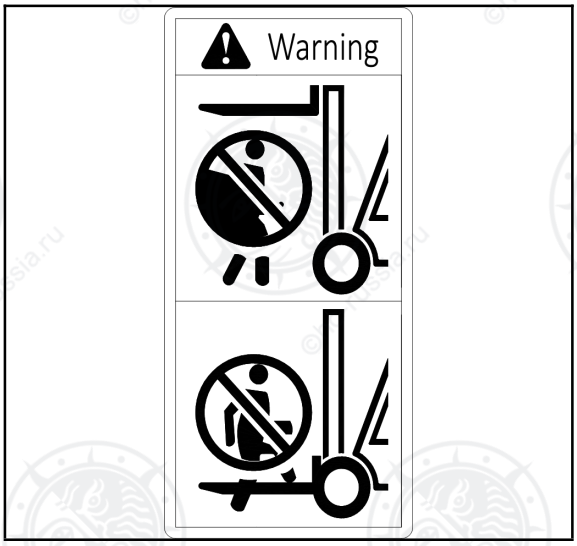
30. Know the load curves of the forklift truck and attachments, and do not overload. It is very dangerous to use artificial additional counterweights.



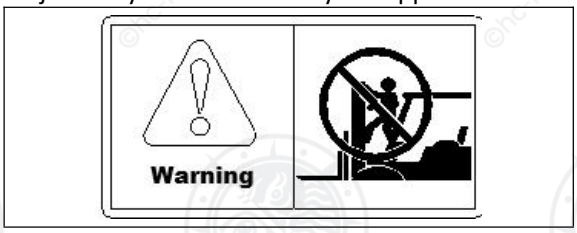
31. The overhead guard can protect you from being hit by falling cargo. The load-backrest ensures the stable loading of cargo. Forklifts should not be used without overhead guards and load-backrests.

32. Do not stand or walk under the forks or attachments.

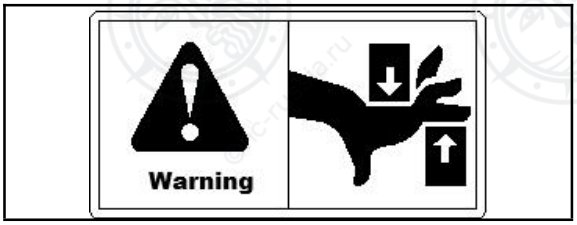
Do not stand on the fork.



33. Do not place your head or body between the mast and the overhead guard. You may be injured if your head or body is trapped.



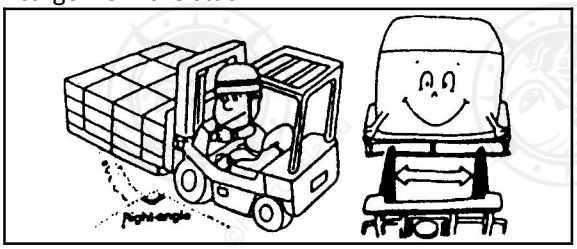
Do not stretch your hands between the inner mast and the outer mast.



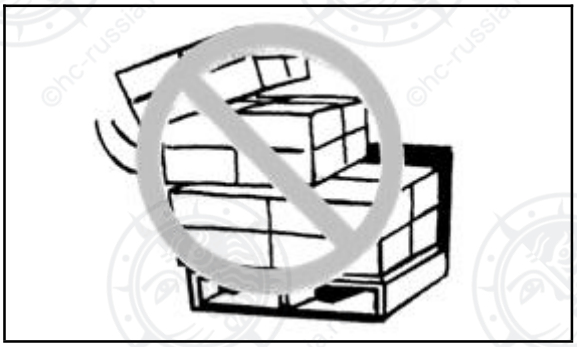
34. When the noise near the driver's ear is greater than 80dB, the driver should take hearing protection measures.

Caution
Rough or bumpy working surfaces and high tire deformation will increase the noise level.

35. Enter the area from the front and carefully insert the forks into the pallet when taking cargo from the stack.



36. Cargo must not deviate from the fork center; when cargo is not aligned with the fork center, or when the truck turns or crosses uneven surfaces it may easily fall down. The possibility of rollover is also increased.



37. Do not lift cargo at high speed. cargo should be fixed reliably before lifting the fork. Pause before lifting cargo and lift it after confirming there are no obstacles.

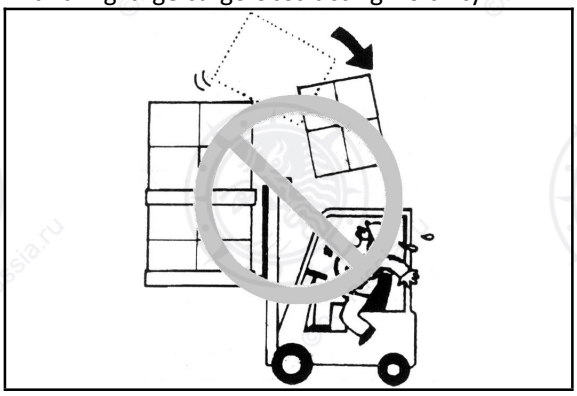


38. Ensure that the cargo is tied firmly and placed flat on the two forks; do not lift cargo with a single fork.

For forklift trucks with attachments (like flat holding clamps), cargo should be tied firmly and clamped; the multiway valve control lever should then be pulled into place.

39. Do not lift cargo when the forklift truck is on a slope and avoid loading and unloading operations on ramps.

40. The stacking height of the cargo should not exceed that of the load-backrest; if it cannot be avoided, the cargo should be fixed firmly. Please drive in reverse or under guidance when handling large cargo obstructing visibility.



41. Reduce the forward tilt angle as much as possible when stacking for unloading; when the height of cargo is slightly higher or lower than that of the stacking layer, cargo can tilt forward.

When stacking at height and the distance to the ground is 15cm-20cm, the mast should be vertical and then lifted; be careful to not tilt the mast when the cargo is lifted.

When picking up goods at height, insert the fork into the pallet, slowly lift, back up and then descend, lower the rear mast and tilt it backward. Never tilt the mast when the goods are at height.

42. Do not tow a forklift truck with a faulty engine, abnormal steering system or damaged brake system.

Obey traffic rules when towing a forklift truck on the highway.

43. Wear overalls and other personal safety protective devices, such as earplugs, safety hat, goggles, dust mask, safety shoes, anti-static clothing etc. at work as appropriate; do not wear a tie or attachments for your own safety.

44. The workplace should be provided with a fire extinguisher. The user can choose to provide a fire extinguisher for the truck, which is generally installed on the rear leg of the safety frame for easy access.

The driver and management personnel should be familiar with the position and operation of the fire extinguisher.

45. Use a pallet when handling small objects and do not place them on the forks directly.

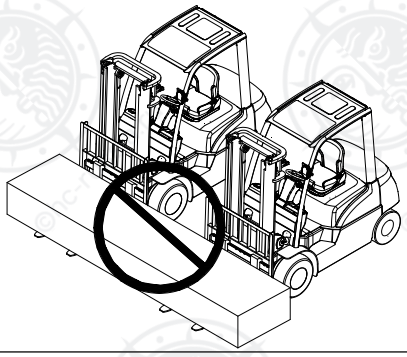
46. There are warnings and operation methods on the truck labels. Please operate according to the directions of the manual and truck labels.

Check labels, signs and marks, and replace damaged or missing labels, signs and marks.

47. Various attachments are provided from HANGCHA for the user, such as rotating clamps, flat holding clamps, side shift forks, and booms, which are to be used exclusively. If attachments are required to be refitted, the permission of the manufacturer must be obtained. Do not refit your attachments without permission.

48. As improper use of a cell phone by the driver will endanger life and property safety, safety rules prohibit the driver from using a cell phone: the use of cell phones or other electronic communication devices unrelated to the truck is prohibited during operation.

49.It is strictly prohibited to use two or more forklifts to jointly transport the same object, as this can easily lead to the forklifts overturning or tipping over, potentially causing personal injuries or fatalities.



Warning

Exhaust fumes

- **The exhaust fumes from internal combustion engines contain carbon monoxide and other harmful chemicals. Carbon monoxide is a colorless and odorless toxic substance and can cause loss of consciousness or death without any symptoms. Long-term exposure to exhaust fumes or emission chemicals may cause cancer, birth defects and other reproductive harm. Avoid exposure to engine exhaust fumes.**
- **If the engine is operating in an enclosed space, proper ventilation should be provided and the exhaust fumes should be vented to the outside. Do not exceed the acceptable air pollutant limits.**
- **Follow the inspection and maintenance schedules and procedures in this manual and the engine manual. Do not modify or refit the emissions, ignition or fuel system.**

Warning

Fire risk

- **If there are flammable gases, vapors, liquids, dust or fibers in the operating area of internal combustion engined forklift trucks, fires may be caused when the hot engine surface and exhaust fumes are exposed to them. The surface temperature of engine and exhaust parts may exceed the ignition temperatures of common solvents, fuel oil, engine oil, paper and other organic materials (wood, agricultural weeds/grains, cotton and wool, etc). Sparks from exhaust fumes can also ignite these materials. The surface temperature of the engine and exhaust pipe will rise after the engine is turned off, thus the risk of fires may be increased. The engine compartment should be inspected immediately after the forklift truck was operated in an area containing flammable dust, fibers or paper, and all debris should be removed.**

IV. Maintenance

For more detailed maintenance information, please refer to the Regular Maintenance and Lubrication Cycle Table.

1. Daily maintenance (8 hours)

Daily maintenance also doubles as a pre-drive inspection.

1. Leakage check: Electrolyte, hydraulic oil, cooling liquid and hydraulic transmission oil

> Warning
> Do not drive the truck if a fuel leak is found before work; start the engine only after eliminating the leakage.

Check whether there are any fuel leaks or water leaks in the engine, hydraulic pipe connectors, water tank and drive system by hand and visual inspection.

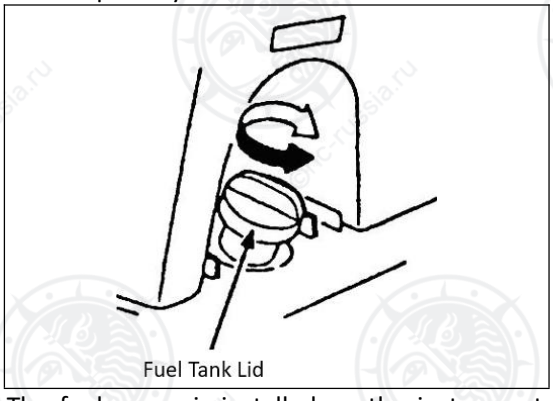
2. Visual inspection

Check whether lights and instruments work normally.

Check tires, air pressure and bolts for looseness.

Check whether the tires are damaged and whether tire pressures are normal.

3. Fuel quantity check

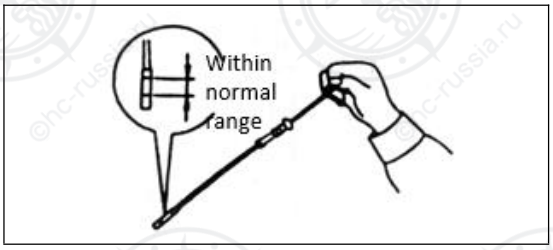


The fuel gauge is installed on the instrument panel to check the fuel level everyday before work. Fill up the fuel tank every day after work. The fuel filler is on the left leg of the overhead guard.

4. Engine oil level check

> Caution
> ·The forklift truck must placed on a flat surface to conduct the oil level check.
> · When the engine has cooled, the level can be checked accurately.

Pull out the oil dipstick first, wipe the scale head, reinsert it and pull it out to check whether the oil level is between the two scale marks.



5. Engine coolant quantity check

Check the coolant level in the additional water tank when the engine is cool. If it is lower than “MIN”, it should be supplemented to “MAX”. If there is no coolant in the additional water tank, the coolant quantity in the main water tank should be checked. If the coolant quantity in the main water tank is insufficient, coolant with a freezing point of -36.5℃ should be added to the water tank lid; the coolant should be supplemented to the “MAX” level of the additional water tank.

> Caution
> The water added to the water tank should be clean tap water. If antifreeze is used, the same antifreeze should be added.
> Pay special attention to the water tank and cooling system in hot seasons.

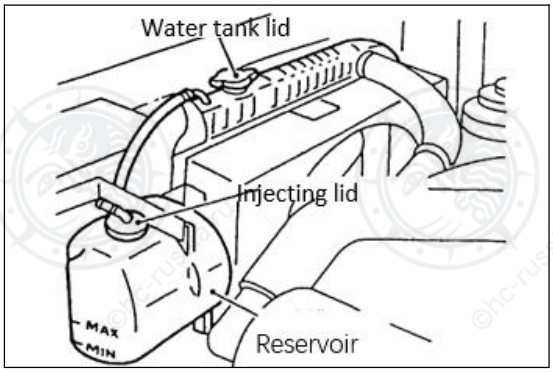
Warning

·Do not open the water tank lid when the engine water temperature is higher than 70℃. Press the lid and slowly turn to the left to allow the steam to escape, place a thin cloth around the lid and unscrew it.

·Do not screw the water tank lid with gloves to avoid being scalded by high pressure hot water.

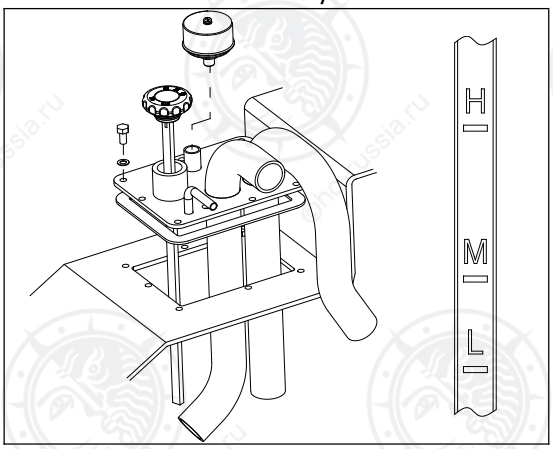
·Antifreeze contains substances harmful to the human body. If you swallow it by accident, you should induce vomiting immediately and go to hospital.

· Keep children away from the antifreeze.



6.Hydraulic oil tank level check

Check the oil level in the hydraulic oil tank



1. The scale line “L” marks the lower limit of the hydraulic oil level, and the hydraulic oil level must be higher than this scale line for trucks with a mast no greater than 4 m.

2. The scale line “M” marks the lower limit of the high mast, and the hydraulic oil level must be higher than this scale line for trucks with a mast over 4 m and trucks equipped with attachments.

3. The scale line “H” marks the upper limit of hydraulic oil level, but it may be higher than this limit for trucks equipped with attachments.

7. Brake fluid quantity check (1.0t-X5.0t)

Check the brake fluid reservoir. Check whether the brake fluid quantity is within the scale; if the liquid quantity is insufficient, please top it up and check whether there is air in the brake line.

Caution

Prevent dust and water from mixing with the brake fluid when adding it.

Brake fluid is toxic and corrosive and should be rinsed off if you are exposed to it.

Replacement of brake fluid

See the Daily maintenance (1000 hours)

8. Light check

Ensure that the light turns on when the ignition key switch is on.

9. Indicator light check

Toggle the indicator light control lever and check whether the indicator light operates normally.

10. Hand brake check

① The truck slows down.

② The truck brakes and stops when the hand brake lever is pulled up. The truck must not deviate.

11. Reversing light and reversing buzzer check

When the shift lever is in the R position, the reversing light turns on and the reversing buzzer sounds.

12. Steering

① The truck should be driven slowly.

② Turn the steering wheel three turns clockwise and anticlockwise, respectively.

Check whether the left and right steering force are the same.

13. Horn

Press the horn button and check whether the sound is normal.

14. Seat adjustment and safety belt check

Pull the seat adjusting lever back, adjust the

driver's seat to a comfortable position for your hands and feet, release the seat adjusting lever, and lock it.

Check whether the safety belt works normally.

15. Shift lever

Check whether the shift lever is loose and whether it is stable when shifting gear.

16. Lift lever, tilt lever and accessory lever

Check that the lift lever, tilt lever and accessory lever are secure and they return properly.

Increase the engine speed, respectively operate the lift lever, tilt lever, and accessory lever, and ensure that the forks can be fully lifted and lowered and the mast can tilt forward and backward.

17. Instruments and sensors

Check whether the stopwatch, water-thermometer, oil thermometer, transmission oil temperature sensor, fuel sensor, engine water temperature sensor, oil pressure sensor and others are normal.

18. Clutch pedal, brake pedal and inching pedal

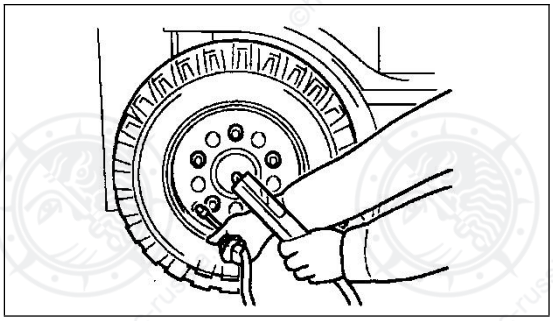
Depress the clutch pedal to make it fully disengage.

Slow down and step on the brake pedal; after stepping on the brake pedal, the brake light should turn on.

Slow down and step on the inching pedal; check whether the inching pedal function is normal.

19. Tire check and tire pressure check

Screw the cap back on after confirming that there is no air leakage; check whether there is damage on the tire surfaces and sides and whether the rims are deformed.

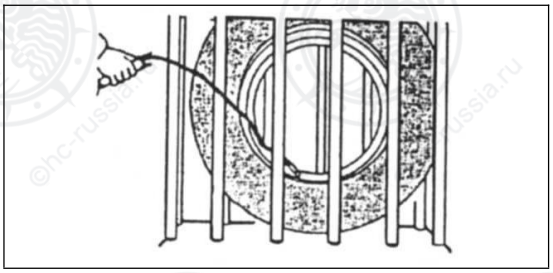


Unscrew the cap anticlockwise and measure the tire pressure with an air pressure gauge. Increase the pressure to the specified value if it is insufficient.

Warning

The forklift truck tires require very high pressure to bear loads; tiny deformation of the rim or surface damage to the tire may cause an accident.

When using an air compressor, as the maximum output pressure of the air compressor is higher than the specified



Tire pressures should adopt the new standard GB/T2982-2014:

Model	Driving wheel (front wheel)	Steering wheel (rear wheel)
1t-1.8t	790kPa	1000kPa
2t-2.5t	860kPa	860kPa
3t-3.5t	830kPa	790kPa
4t-X5t	830kPa	860kPa
5.5t	930kPa	860kPa

2. Weekly maintenance (40 hours)

Add the following maintenance items in addition to daily maintenance.

1. Air filter maintenance

In general: Please service the filter after the truck has been operated for 50-250 hours.

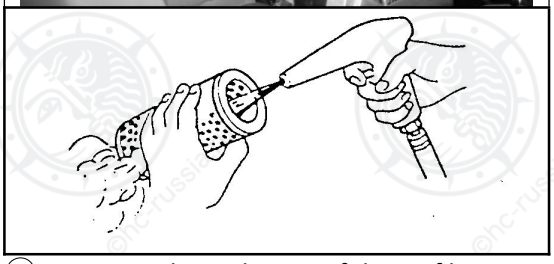
Please replace the filter after six maintenance cycles.

> Caution
> If the truck is used in harsh working conditions, the maintenance and replacement cycle of the filter should be more frequent.

For trucks in a harsh working environment with a large amount of dust, the maintenance and replacement cycle should be shortened according to the actual situation, and it is recommended to maintain the filter every 8-50 hours and replace it with a new one every 100-300 hours.

Maintenance procedures for 1.0t-X5.5t trucks:





① Remove the end cover of the air filter.

② Remove the main filter cartridge and the safety filter cartridge and then separate them.

③ The main filter cartridge is the outer filter cartridge. Blow out the dust inside and outside the main filter cartridge with compressed air.

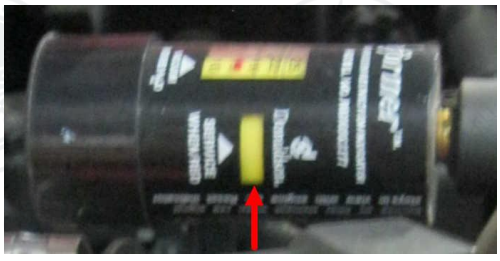
④ The safety filter cartridge is the inner filter cartridge: clean it by tapping with your hand, but not by blowing with air. Special attention should be paid to this requirement.

> Warning
> 1、 Airborne dust may get into your eyes, so protective glasses should be used before blowing.
> 2、 Failure to maintain and replace the filter cartridges on time as required will lead to early engine damage.

For forklift trucks equipped with air filter maintenance indicators (optional):



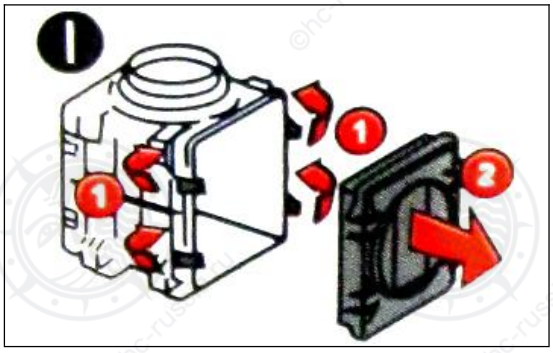
Scale line: Engine air intake resistance

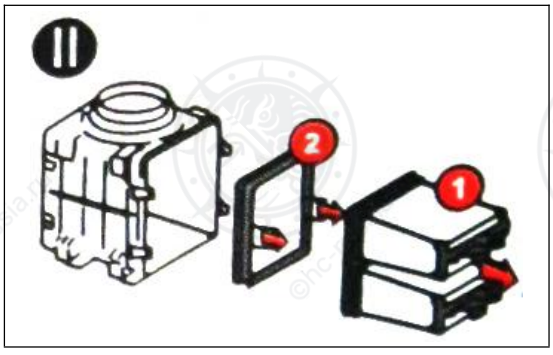


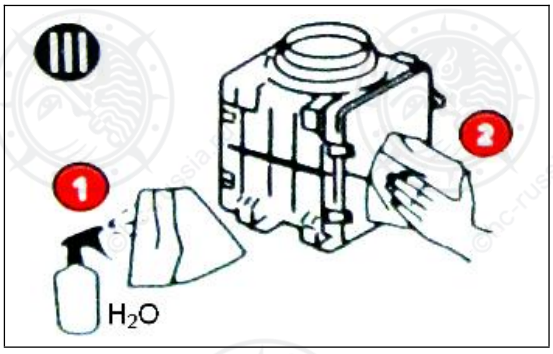
Viewing window	Engine air intake resistance
Yellow	No air intake resistance, no maintenance needed currently.
Yellow + Red	Slight air intake resistance, maintenance needed
Red or the air pressure is larger than 6.2kPa	Severe air intake resistance, maintenance required or replace the main filter cartridge

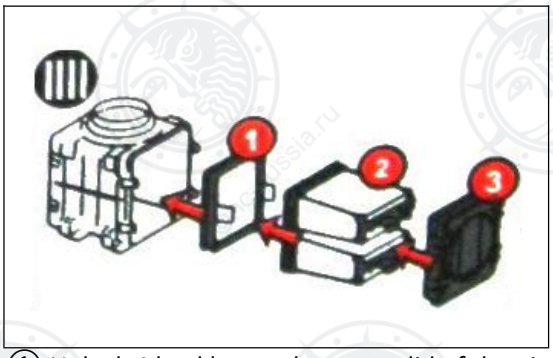
① It is not necessary to remove all the filter cartridges during the maintenance of the main filter cartridge since the safety filter cartridge does not need any maintenance.
② If the main cartridge has been serviced 3 times or the viewing window still shows red after the maintenance, the main filter cartridge and the safety filter cartridge need to be replaced at the same time.
③ After maintaining or replacing the filter cartridges, please press the reset button on the top to reset the viewing window.

Maintenance procedures for 4.0t-X5.0t W58 trucks:





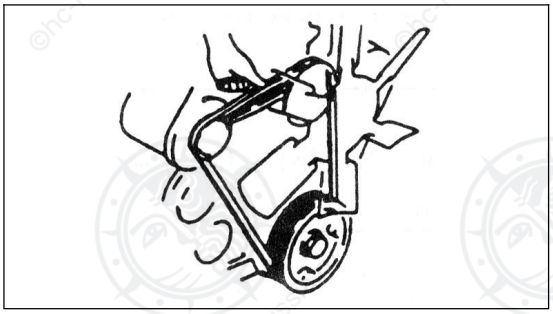




① Unlock 4 buckles on the access lid of the air filter.
② Hold the buckles with your hands and pull the access lid outward to open it.
③ Slightly shake the main cartridge with your hands and slowly take it out.
④ It is not necessary to service the safety filter cartridge. Replace the safety filter cartridge: Slightly shake it with your hands and slowly take it out.
⑤ Clean the two inner sides of the housing with a cloth to ensure it is properly mounted and sealed.
⑥ Check the safety filter cartridge and mount it into the housing.
⑦ Check the main filter cartridge and mount it into the housing.
⑧ Mount the lid with the dust cap downward.
⑨ Lock the buckles to complete the assembly.

Warning
Failure to maintain and replace the filter cartridges on time as required will lead to

2.Fan belt



Shut the engine down.
Use your finger to apply 10kg force downward in the middle of the two pulleys to check whether the deflection complies with the specified value.

Engine	Deflection (mm)
1.0t-3.5t	
K21, K25	11-13
4TNE92 4TNE98	New 8-12 (＜5min) Old 10-14 (≥5min)
4TNV94L	New 5-8 (＜5min) Old 7-10 (≥5min)
C240	8-12
S4S	12

Use your finger to apply 4 kg - 5kg force downward in the middle of the two pulleys to check whether the deflection complies with the specified value.

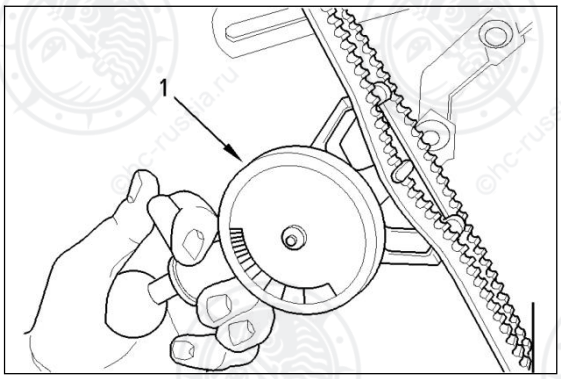
Engine	Deflection (mm)
4D27XG31 4D32XG31 4D32RG30 4D32XG40 CY4BG531 4D35Y41 YCF3657-T480 C490BPG-416	10-15

Use your finger to apply 6kg force downward in the middle of the two pulleys to check whether the deflection complies with the specified value.

Engine	Deflection (mm)
GM4.3L	≤13

Perkins 1104D engine: check items

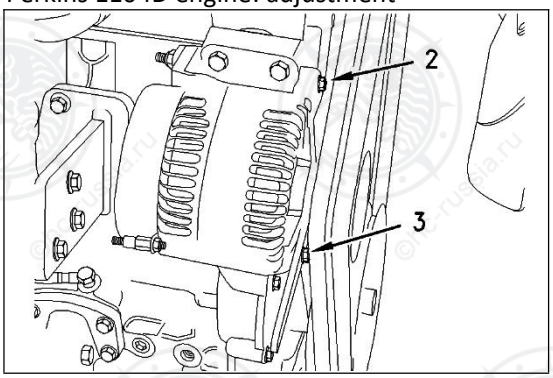
A suitable gauge should be used to accurately check the belt tension.



Place the belt tension meter (1) in the center of the longest free length to measure its tension. The correct tension of a new belt is 535N. If the belt tension is lower than 250N, please adjust it to 535N.

If two belts are used, please check and adjust the tension of them both.

Perkins 1104D engine: adjustment



1. Loosen the AC generator pivot bolt (2) and (3).
2. Move the AC generator to increase or reduce the belt tension. Tighten the AC generator pivot bolts and connecting rod bolts with a torque of 22N.m.

QSB3.3, QSB4.5, QSF2.8 and F2.8CS449 Cummins engines are equipped with auto-tensioning pulleys, so it is not necessary to adjust the fan belt tension.

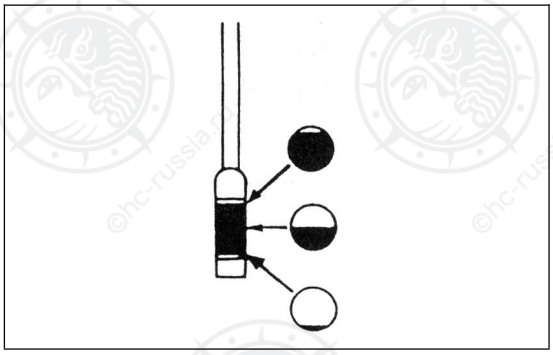
Caution

If the belt has been stretched beyond the adjustment margin or is cut or cracked, it should be replaced.

The belt deflection can only be checked when the engine is stopped to prevent fingers from being trapped or clothing being caught by the machine.

3. Oil level of hydrodynamic transmission

Open the inspection cover, pull out the level scale and check whether the oil level is between the scale range as required.



4. Mast and fork inspection

Check the mast and forks to ensure that:

① The fork is not cracked or bent and firmly and correctly mounted on the fork arm.

② Check the oil cylinder and oil pipe for any oil leakage.

③ Check the rotation of the rollers.

④ Check the mast for cracks and deformation.

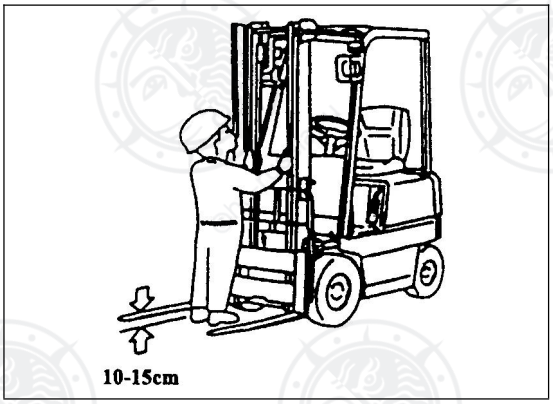
⑤ Manipulate the lifting, tilting, and metal handle to check whether the mast works normally and whether there is any abnormal noise.

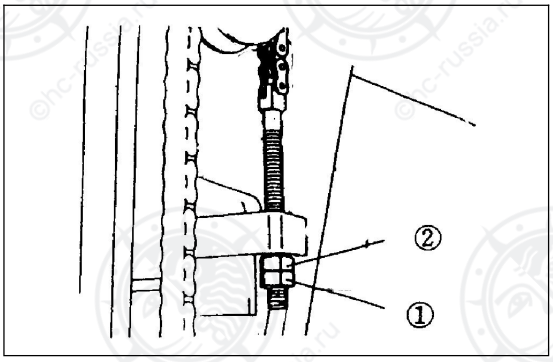
5. Chain tension check

① Raise the fork by 10cm-15cm with the mast vertical.

② Press the middle of the chain with your thumb to check whether the tension of the left and right chains are the same.

③ Tension adjustment: loosen locknut 1, screw nut 2 to adjust the chains so that the tension of the two chains are the same, and then tighten locknut 1.



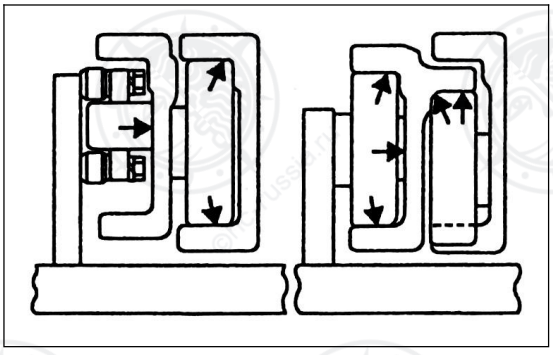


6. Lubrication of the mast

According to the requirements of the regular maintenance and lubrication cycle, the following parts should be lubricated regularly.

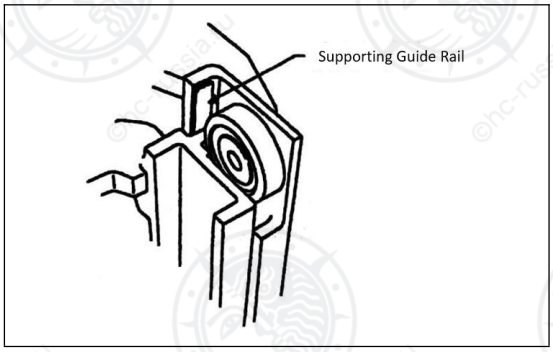
① The lubrication cycle should be changed according to the operating conditions. In the busy months of operation, the lubrication cycle should be shortened.

② In order to ease the forklift operation, apply a layer of grease to the contact surface of the lifting guide wheel and the inner & outer mast.



Mast

Apply a layer of grease on the supporting guide rails.



Warning

When applying grease, park the forklift on a flat road, turn off the engine and engage the hand brake. Take care to avoid your hands and body from being caught when lubricating, and take care to avoid falling when lubricating at high level.

7. Chain lubrication

Use a brush dipped in engine oil to lubricate the chains on the left and right sides.

8. For the lubrication of the following parts, see the Lubrication System Diagram for details.

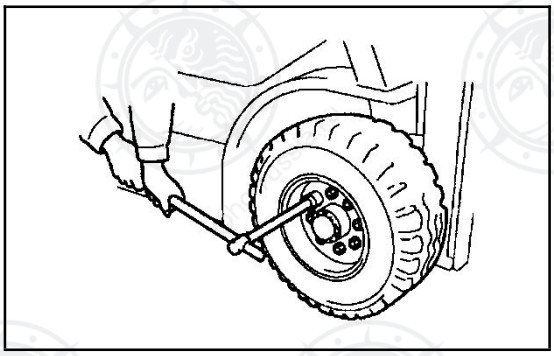
① Lubrication of mast seat bearing;
② Lubrication of inching brake pedal;
③ Lubrication of steering axle support shaft;
④ Lubrication of steering knuckle spindle;
⑤ Lubrication of steering linkage pin;
⑥ Lubrication of steering cylinder pin.

9. Bolt and nut tightening

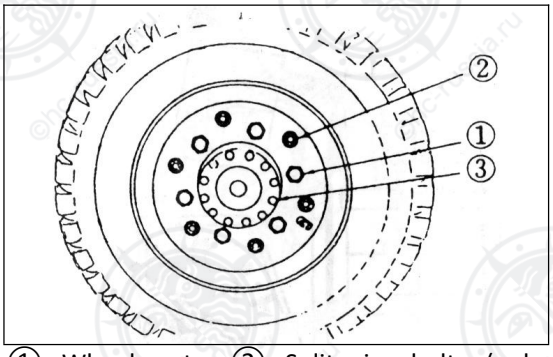
See the maintenance cycle table.

10.Tire nut tightening torque check

Check whether the tightening torque of the wheel nuts meets the requirements.



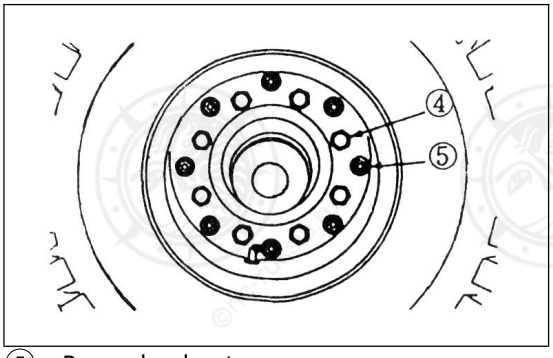
Driving wheel (front wheel)



① Wheel nuts; ② Split rim bolts (only applicable for 1-1.8t forklift trucks); ③ Half shaft bolts

	Tonnage	Tightening
Wheel nut	1.0t-1.8t	157-176
	2.0t-3.5t	363-490
	4.0t-X5.0t	441-558

Steering wheel (rear wheel)

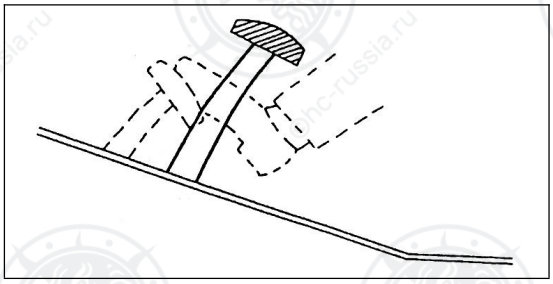


⑤ Rear wheel nut;

	Tonnage	Tightening
Wheel nut	1.0t-1.8t	78-98
	2.0t-3.5t	157-176
	4.0t-X5.0t	363-490

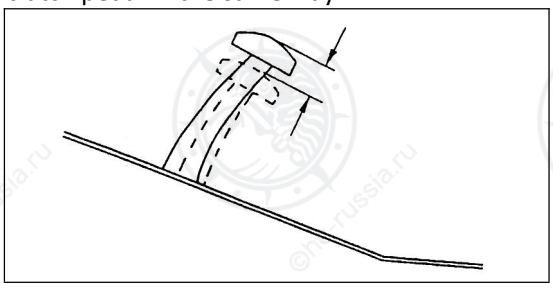
⑤ Split rear rim bolts.

11. Brake pedal, inching pedal and clutch check



With the engine still running, press the brake pedal fully down, the distance between the surface of the brake pedal and the floor should be 60mm or more.

Check the height of the inching pedal and clutch pedal in the same way.



1.0t-3.8t height and free clearance: mm

	Height	Free clearance	Pedal idle travel
Brake pedal	135±5	1-3	1-3
Inching pedal	135±5	Inching pedal contact bolt - brake pedal: 0mm	
Clutch pedal	135±5	2-5	30-40

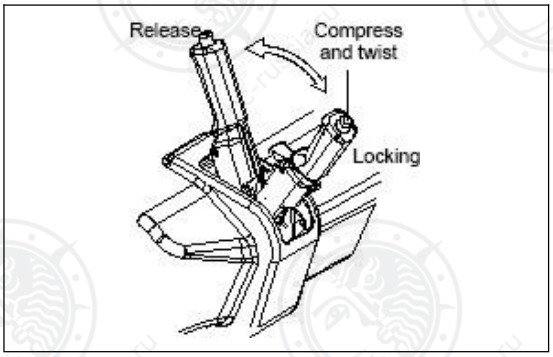
4.0-X5.0t height and free clearance: mm

	Height	Free clearance	Pedal idle travel
Brake pedal	140±5	1-3	1-3
Inching pedal	140±5	Inching pedal contact bolt - brake pedal: 0mm	
Clutch pedal	140±5	2-5	24-30

12. Hand brake

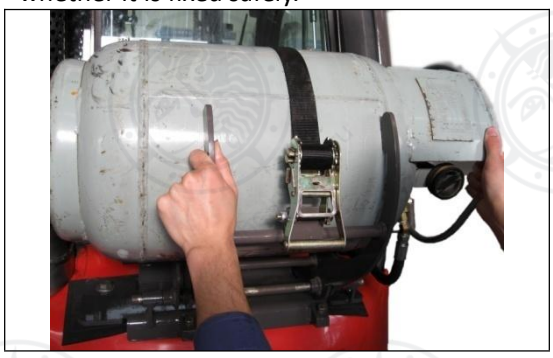
Make sure the hand brake handle acts normally after it is tightened and then loosened to its original position.

1.0t-X5.0t Tension requirement: 245N-295N



13.Cylinder frame (LPG trucks only)

Pull the cylinder outward to check whether its frame is secure and put it back to check whether it is fixed safely.



3. Every one-and-a-half-month maintenance (250 hours)

Add the following maintenance items in addition to the weekly maintenance.

1. Replace the engine oil and oil filter (the first 100h and then every 250 hours thereafter)

① Start the engine, warm it up fully, and then turn it off.

② Remove the oil filler cap and oil pan drain plug and drain the engine oil.

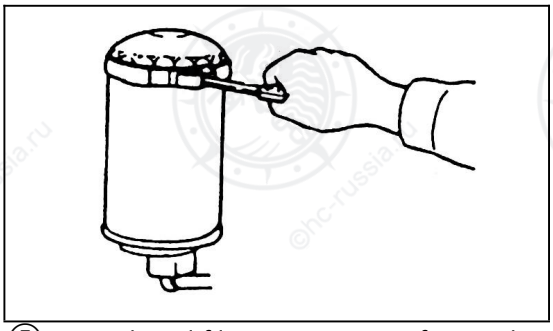
> **Warning**
>
> Be careful not to scald yourself as the engine oil may be hot.

·Emulsified oil indicates that coolant has mixed with the oil and the cause should be found and corrected.

·Thin oil indicates that the oil contains gasoline.

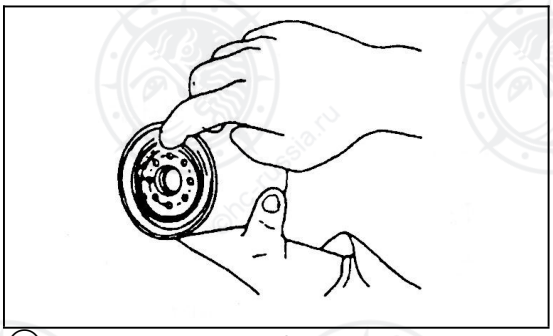
③ Wipe clean and install the drain plug and gasket. Tightening torque of oil drain plug: 29N·m - 39 N·m

④ Remove the oil filter with a suitable tool.



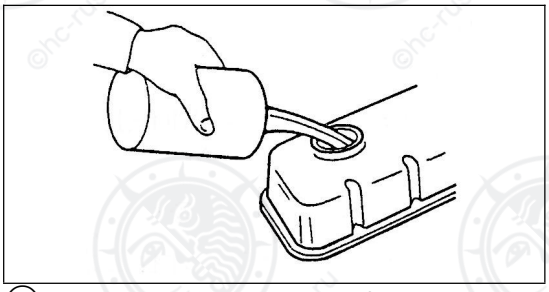
⑤ Wipe the oil filter mounting surface with a clean cloth.

⑥ Apply a small amount of oil to the rubber ring of the new oil filter.



⑦ Install the new oil filter by hand only, do not use a wrench to tighten it.

⑧ Refer to the Forklift Oil List and add the recommended oil.



⑨ Start the engine and check if there is any oil leakage in the area around the oil drain plug and oil filter.

If there is any visible leakage, it indicates that the part is not properly installed.

⑩ Warm up the engine sufficiently, then shut it down for a while to check the oil level. Add more engine oil if necessary.

When checking the oil level, the forklift should be parked on level ground.

2. Add lubricating grease on the front and rear pins of the tilt cylinder.

Wipe the filling point clean and then squeeze out the old oil.

3. Check the gear oil of the drive axle housing and add more if necessary.

If the working environment is dusty, it is recommended that after the truck has worked for the first 200 hours the gear oil in the drive axle housing is changed.

4. Replace the transmission oil filter (only for the first time, and then every six months

thereafter).

Check the condition of the hydrodynamic transmission fluid, taking into account the application environment, e.g. if the working environment is dusty, then the Automatic Transmission Fluid (ATF) should be changed. This is only applicable for the initial change.

① Park the forklift truck on a horizontal road, lower the forks to the ground, tilt the mast back, pull up the hand brake handle firmly, put the transmission in neutral and turn off the engine.

> ⚠ Warning
> Hot hydraulic oil, ATF and components may scald the human body. Do not touch hot hydraulic oil or associated components.

② Remove the rubber gasket and front base.

③ Remove the filter and dispose of it according to local regulations.

④ Wipe the filter base and make sure the old gasket on the base has been removed.

⑤ Apply a small amount of ATF to the new filter cartridge gasket.

⑥ Fit the filter by hand. When the filter touches the base, re-tighten it 1/2 to 3/4 turn.

5. Change the hydrodynamic transmission ATF (only for the first time, and then every six months afterwards).

Park the forklift truck on a horizontal road, lower the forks to the ground, pull up the hand brake handle firmly, put the transmission box in neutral and turn off the engine.

> ⚠ Warning
> Hot hydraulic oil, ATF and components may scald the human body. Do not touch hot hydraulic oil or associated components.

① Put a container under the transmission (with a volume of 20 liters or more).

② Remove the oil drain plug and drain the oil into the container.

③ Clean the oil drain plug and install it.

④ Take out the oil dipstick, add the ATF (see the Forklift Oil List) and then replace the dipstick.

⑤ Start the engine. With the brake pedal depressed, while the engine is idling, place the transmission in forward and reverse to prime the clutch.

⑥ Put the transmission in neutral and pull the hand brake up.

⑦ Remove the dipstick and observe the fluid level. If the fluid level is insufficient, add more ATF to keep the fluid level between the maximum scale line and the minimum scale line.

⑧ Check the filter and oil drain plug for any leakage.

⑨ Turn off the engine and install the front base.

6. Fuel system exhaust [diesel engines]

Bleed air from the pipelines of the fuel system in the following cases:

·After running out of fuel and then refuelling.

·After maintenance of the fuel system (e.g. replacing the fuel filter, draining water from the fuel filter/oil-water separator or replacing the fuel system components).

> ⚠ Caution
> If the fuel system contains any air, it must be bled out before the diesel engine is started.

Air bleeding process for trucks with electric fuel pumps:

① Place a suitable container under the air outlet.

② Loosen the air outlet by 2 or 3 turns.

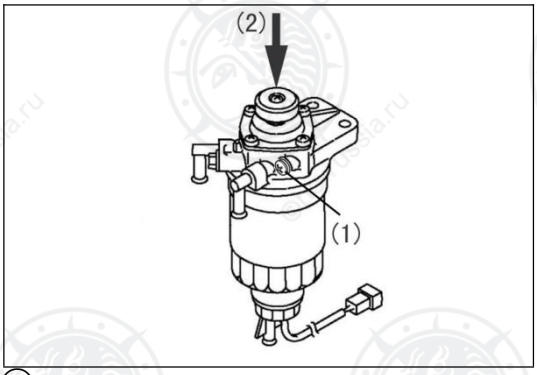
③ Rotate the switch to the “ON” position and hold it for 10-15s until fuel with no bubbles flows out of the air outlet.

④ Tighten the air outlet.

⑤ Clear away the spilled fuel and dispose of it properly.

⑥ Do not fill the fuel system by turning the engine with the the starter motor. It may lead to the starter motor overheating or damage to the coil, pinion and/or gear ring.

Manual air bleed process:



① Place a suitable container under the air outlet.

② Loosen the air outlet (1) by 2 or 3 turns.

③ Operate the fuel filling pump (2) until fuel with no bubbles flows out of the air outlet.

④ Tighten the air outlet.

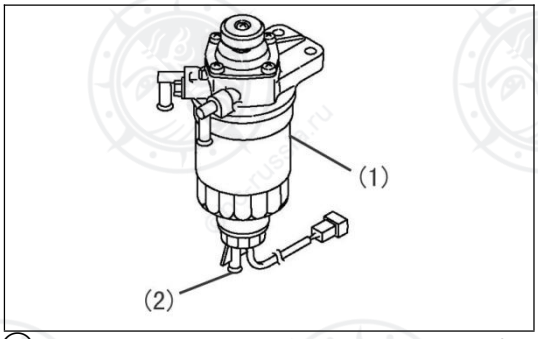
⑤ Clear away the spilled fuel and dispose of it properly.

⑥ Do not fill the fuel system by turning the engine with the the starter motor. It may lead to the starter motor overheating or damage to the coil, pinion and ／ or gear ring.

7. Oil-water separator water drainage [diesel engines]

Please drain the accumulated water if the fuel filter alarm light turns on while the engine is running.

For non-Cummins diesel engines:



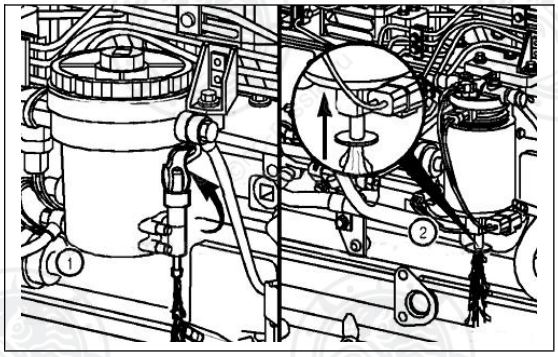
① Place a suitable container under the fuel filter to collect the dirt.

② Loosen the drain plug (2) at the bottom of the fuel filter. Drain all the water that has accumulated inside.

③ Tighten the drain plug by hand.

④ After completing these operations, be sure to fill the diesel system with fuel.

Cummins diesel engine:



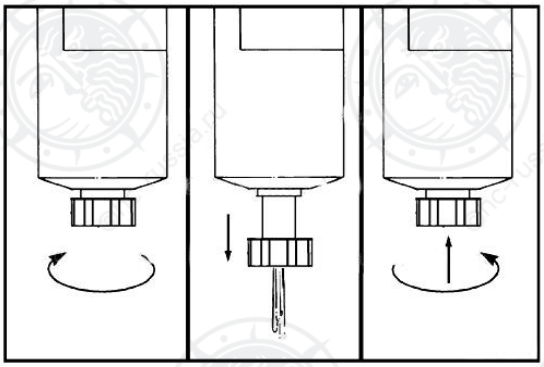
Tanked type:

① Turn off the engine;

② Place a container under the fuel filter;

③ Lift the drain valve lever until the fluid is completely drained from the drain tube and the fuel is clean;

④ Push up the drain lever until the fluid is completely drained from the tube.



Rotating type:

① Turn off the engine;

② Place a container under the fuel filter;

③ Open the drain valve by hand. Rotate the valve about 3.5 turns counterclockwise until the valve drops by 25.4mm and starts to drain.

④ Drain the water in the separator until clean fuel is seen.

Caution

Do not overtighten when closing the drain valve. Overtightening will damage the threads. To close the valve, lift the valve and rotate it clockwise until it is hand tight.

8. Exhaust check

Colorless	Complete combustion - normal
Black	Incomplete combustion - abnormal
Blue	Engine oil burning - abnormal
White	Water in combustion chamber - abnormal

Warning

Do not run the engine in places with poor ventilation because the exhaust contains carbon monoxide which is poisonous to humans.

9. Battery and electrolyte inspection

For details, please refer to the procedures for Using and Maintaining Lead-Acid Batteries.

4. Semi-annual maintenance (1000 hours)

Add the following maintenance items in addition to the monthly maintenance.

Add the following maintenance items in addition to the monthly maintenance.

1. Replacement of brake fluid (1.0t-X5.0t)

① Park the forklift truck on a horizontal road at the designated maintenance place, lower the forks to the ground, pull up the hand brake handle firmly, put the transmission in neutral and turn off the engine.

② Take off the rubber dust cap on the drain port, put the two ends of a prepared transparent hose in the drain port and the waste oil collection bottle respectively, and then use a wrench to loosen the drain port screw counterclockwise while the other person on the forklift repeatedly presses the brake pedal. The brake fluid will be sprayed from the drain port, pay attention to the level of the brake fluid reservoir, and add new brake fluid as the fluid level drops. Tighten the drain port screws after clear brake fluid flows out.

③ Repeatedly press the brake pedal to the bottom and hold it there while the person under the forklift loosens the drain port screws, then tightens the screws after clear brake fluid comes out and asks the person on the forklift to release the brake pedal. Repeat the above operation several times until there are no air bubbles in the released brake fluid. Pay attention to the fluid level in the brake fluid reservoir and add new brake fluid as the level drops.

> ⚠ Caution
> Prevent dust and water from mixing with the brake fluid when adding it.
> Brake fluid is toxic and corrosive and should be rinsed off if you are exposed to it.

2. Lubrication of the steering wheel locking device

Apply lubricating grease to the steering wheel locking device.

3. Check, clean and replace the hydraulic return oil filter, breathing apparatus and filter screen

Park the forklift truck on a horizontal road, lower the forks to the ground, tilt the mast back, engage the handbrake firmly, put the transmission box in neutral and turn off the engine.

① Loosen the bolts on the upper cover assembly of the hydraulic oil reservoir.

② Remove the return oil filter from the upper cover.

③ Install the new return oil filter by hand.

④ Remove the filter screen from the oil reservoir.

⑤ Install a new filter screen by hand.

⑥ Install the upper cover of the oil reservoir and tighten the bolts.

⑦ Remove the breathing apparatus, clean and dry it with a clean and non-flammable cleaning agent and a number of separate air filter screens.

⑧ Install the breathing apparatus.

⑨ Start the engine and operate the hydraulic system so that the entire system is primed with hydraulic oil. Check for leaks.

⑩ Turn off the engine to check the oil level. Retract all cylinder rods so that the oil level remains between the scales of the dipstick.

4. Check, clean and replace the fuel filter

> Caution
> In dusty or dirty operating environments, it is necessary to clean the fuel filter once a month and replace it every six months.

① Remove the fuel filter assembly.

② Remove the sensor assembly.

③ Install the existing sensor assembly and apply a little clean fuel to the filter sealing point before installing a new one.

> Caution
> Do not refill the filter with fuel before installation. Otherwise, it will accelerate the wear of the fuel system components.

④ Install the new filter assembly.

⑤ Turn the new filter until the gasket is attached to the sealing surface.

⑥ Tighten it by 2/3 turn.

5. Annual maintenance (2,000 hours)

Add the following maintenance items in addition to the semi-annual maintenance.

1. Change hydraulic oil

Park the forklift truck on a horizontal road, lower the forks to the ground, tilt the mast back, engage the handbrake firmly, put the transmission box in neutral and turn off the engine.

> **Warning**
> Hot hydraulic oil, ATF and components may scald the human body. Do not touch hot hydraulic oil or associated components.

① Place a container (with a volume over 60 liters) under the hydraulic oil reservoir, remove the hydraulic oil reservoir drain plug and drain the hydraulic oil into the container.

② Remove the hydraulic oil dipstick and hydraulic oil reservoir cover.

③ Take out the magnet in the reservoir to clean it, and at the same time flush the drain port at the bottom of the reservoir with hydraulic oil.

④ Clean and install the oil drain plug.

⑤ Fill the hydraulic oil reservoir. See the Forklift Oil List. Install the hydraulic oil reservoir cover and dipstick.

⑥ Start the engine and operate the multi-valve lever and steering system to fill the whole system with hydraulic oil.

⑦ Check each hydraulic component and pipeline for oil leakage.

⑧ Turn off the engine, retract all the cylinder rods, and check the oil level of the hydraulic oil reservoir. Add hydraulic oil to the required scale line.

2. Change the hydrodynamic transmission ATF

See the Change the hydrodynamic transmission ATF in the Monthly Maintenance Sheet

3. Change the front wheel bearing lubricating grease

Refer to the content on the drive axle hub in the Maintenance Manual, disassemble the wheel bearing, and then change the grease.

4. Change the rear wheel bearing lubricating grease

Refer to the content on the steering axle in the Maintenance Manual.

5. Change drive axle gear oil

Park the forklift on horizontal ground. Put it in neutral and turn off the engine.

① Take off the oil drain plug and drain the oil into a container. Clean the oil drain plug.

② Install the oil drain plug.

③ Remove the air vent plug and oil level plug. Add oil into the drive axle housing from the curved plug seat hole until the oil overflows from the horizontal plug hole. See the "Refilling Amount".

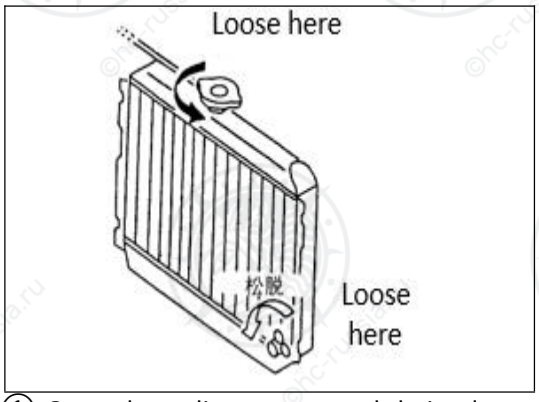
④ Install the horizontal plug and curved plug holder.

⑤ Start the forklift truck. Let the engine idle and put the direction control handle in the neutral position.

⑥ Remove the horizontal plug. Maintain the oil level until the oil overflows.

6. Two-yearly maintenance (4,000 hours)

1. Change the engine coolant (every 2-4 years)



① Open the radiator cover and drain plug to drain the coolant, then flush the cooling system.

② Tighten the drain plug.

③ Fill the radiator with coolant up to the port.

④ Let the engine run fully.

⑤ Stop the engine, fill the radiator with coolant up to the port after it has cooled down completely, then add coolant to the reservoir up to the Max. level.

⑥ Check if there is any leakage from the drain plug.

> **Warning**
>
> To avoid the risk of scalding, never change the coolant when the engine coolant temperature is higher than 70℃.

The engine coolant added must be an anti-rust & anti-freeze coolant. Refer to the Forklift Oil List.

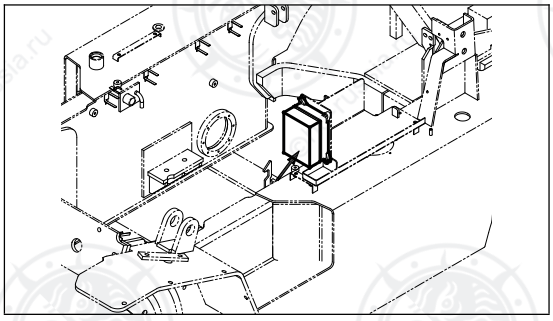
7. Others

1.Fuses and relays

① Before replacing any defective fuse or relay, please find out the cause of failure.

② Replace the fuse with a new one of the correct specifications.

The forklift control unit is installed on the left side of the engine inside the internal combustion engine hood.

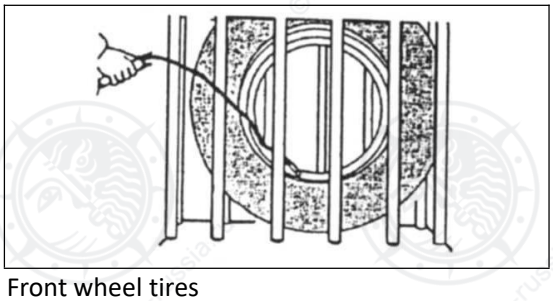


2. Tire replacement

Warning

• When using an air compressor, as the maximum output pressure of the air compressor is higher than the specified pressure of the tire, the pressure setting should be adjusted first; otherwise it may cause a serious accident.

• In order to ensure safety, the tire should be placed in a protective frame during inflation.



Front wheel tires

a） Park the forklift on level and solid ground.

b） Start the engine and raise the mast by approximately 100 mm.

c） Place wooden blocks behind the rear wheels to prevent the forklift from moving.

d） Loosen each wheel nut 1-2 turns counterclockwise.

e） Tilt the mast backward and place wooden blocks at the sides of the outer mast.

f） Tilt the mast forward until the front wheels are lifted off the ground.

Caution

Do not loosen the nuts until the front wheels have been lifted off the ground.

g） Place wooden blocks on each front side of the forklift frame to support the forklift and then turn off the engine.

h） Remove the wheel nuts and replace the front wheels.

Caution

a. When removing the tire from the hub, the rim bolts and nuts should not be removed until deflating.

b.The wooden blocks should be solid and strong enough.

c. When the forklift is supported with wooden blocks only, do not lay under the forklift.

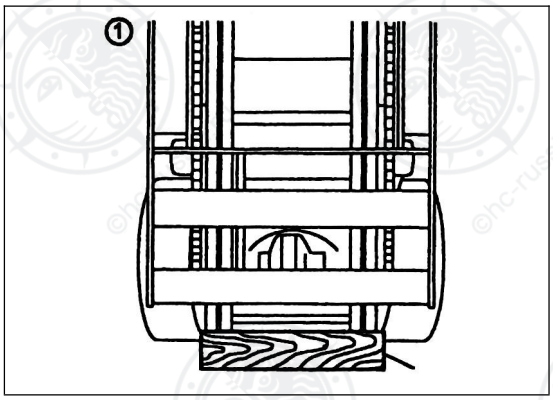
i） Put on the nuts in sequence as shown in the diagram and lock them temporarily.

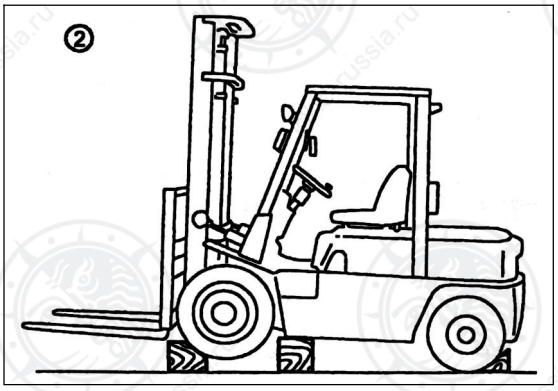
j） Start the engine and remove the wooden blocks from the forklift frame.

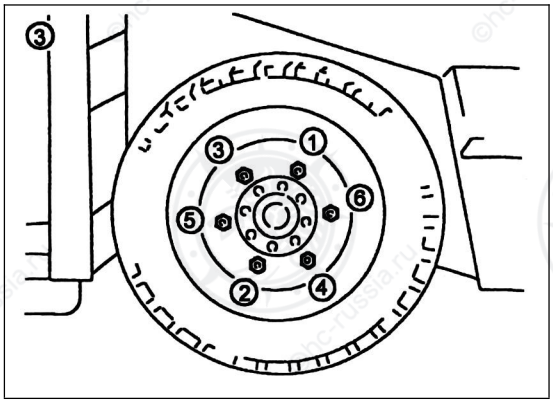
k） Tilt the forklift frame backward so that the forklift is slowly lowered, and then take out the wooden blocks under the forklift frame and at the rear wheels.

l） Tighten the tire bolts symmetrically and crosswise in sequence.

m） Adjust the tire pressure to the specified value.







Rear wheel tires

a） Park the forklift on level and solid ground.

b） Engage the hand brake and place wooden blocks behind the front wheels to prevent the forklift from moving.

c） Place the jack at the bottom cut of the counterweight as shown in the diagram.

Note: Make sure the minimum bearing weight of the jack is 2/3 of the total weight of the forklift truck.

d） Loosen the nuts on the wheel 1-2 turns counterclockwise.

> **Warning**
>
> Do not remove the nuts until the rear wheels are lifted off the ground.

e） Slowly lift the forklift with a jack until the rear wheels are completely off the ground. Place wooden blocks on each rear side of the forklift frame to support the forklift as shown in the diagram.

f） Remove the wheel nuts and replace the rear tires.

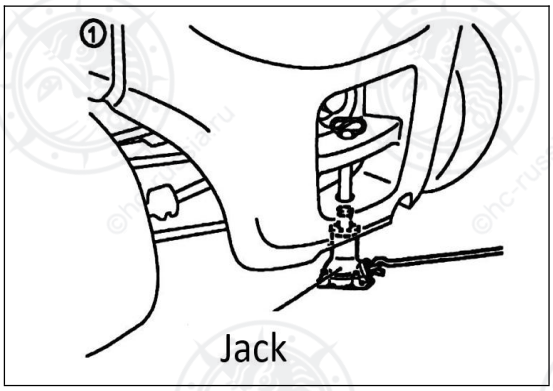
> **Warning**
>
> a. When removing the tire from the hub, the rim bolts and nuts should not be removed until deflating.
>
> b. Make sure that the wooden blocks used to support the forklift are solid and strong enough.
>
> c. When the forklift is supported with wooden blocks only, do not lay under the forklift.

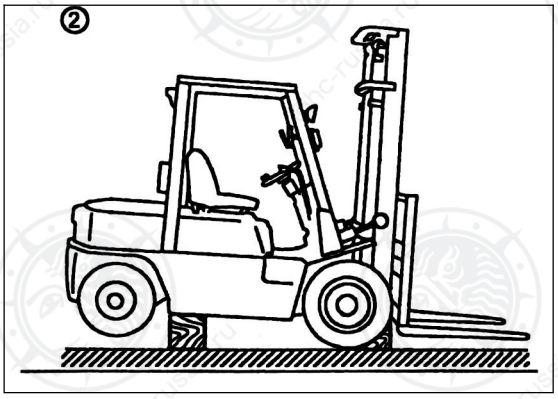
g） Put on the nuts in sequence as shown in the diagram and lock them temporarily.

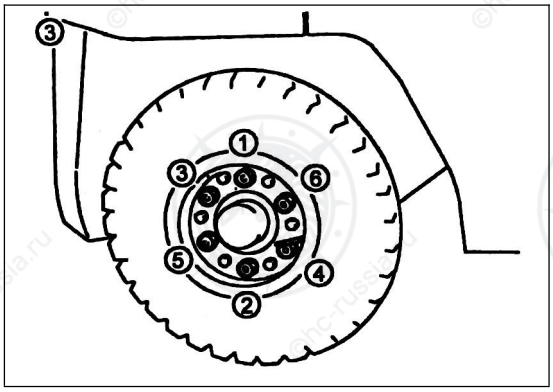
h） Remove the wooden blocks under the frame, lower the forklift slowly to the ground and remove the wooden blocks and jack behind the front wheels.

i） Tighten the nuts to the specified torque in a crosswise manner. Please refer to the Tightening Torque Table.

j） Adjust the tire pressure to meet the specified parameters.







3. Preparation for hot/cold conditions

Select oil with an appropriate viscosity for the ambient temperature.

4. Clean the radiator fins

> **Warning**
>
> Airborne dust may get into your eyes, so protective glasses or dust goggles should be used.

If the radiator fins are blocked, it will cause overheating, so compressed air, steam or water should be used to blow the fins.

> **Caution**
>
> When using compressed air or steam to clean the radiator fins, place the nozzle at a right angle to the radiator.



5. Operations for an overheated engine

If the engine is overheated, do not stop the engine immediately, the following steps should be taken:

①Run the engine at low speed.

②Open the hood to improve the ventilation of the engine bay.

③Stop the engine when the water temperature decreases.

④Check the coolant and add water if necessary.

6. DPF ash removal

The longer the DPF is run, the more ash (combustion residue) will be collected in the filter. Excessive ash accumulation can adversely affect DPF performance.

If there is an alarm or every 4,000 working hours (every 2,000-3,000 hours for Yuchai engines), it is necessary to contact the after-sales service to clean the DPF with a professional ash cleaning device.

For any queries, please contact the sales company or agent of HANGCHA GROUP CO., LTD.

V. Forklift truck structure and stability

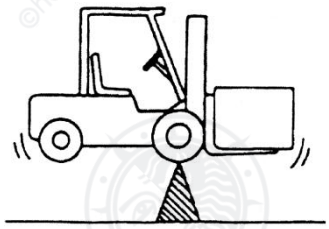
Be aware that the structure and stability of the forklift truck are very important to safe operation.

Caution	Forklift truck structure

The basic components of the forklift truck are the lifting device (forks and mast) and the forklift truck itself at the rear (with tires).

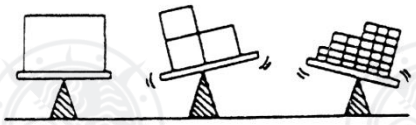
The front wheels of the forklift truck can be used as a fulcrum to keep balance between the center of gravity of the forklift truck and that of the load.

The relationship between the center of gravity of the forklift truck and that of the load is critical to the operation of the forklift truck.



Caution	Center of gravity of load

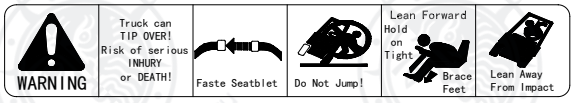
The load profiles handled with the forklift truck vary; in order to evaluate the forklift truck and stability, it is very important to identify the center of gravity for loads in different shapes from boxes to boards and rectangular objects.



Warning

Do not jump out of the truck if the forklift truck starts to roll over. The forklift truck will roll over much faster than you can jump out of the truck; you should extend your feet and keep your hands on the steering wheel firmly to hold you in the cab.

Please fasten the safety belt securely.

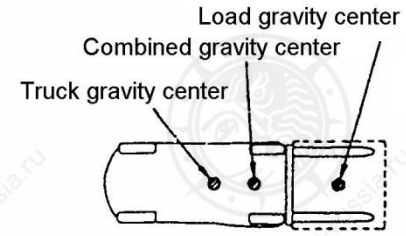


Caution	Center of gravity and stability

The center of gravity of the forklift truck depends on the combined center of gravity of the forklift truck.

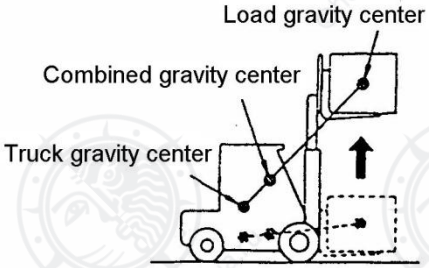
When the forklift truck is unloaded, the center of gravity remains unchanged; when it is loaded, the center of gravity is formed by the combined center of gravity of the forklift truck and the load.

The center of gravity of the load is determined by whether the mast is tilted forward or backward or whether it is lifted or lowered, thus the combined center of gravity can change.



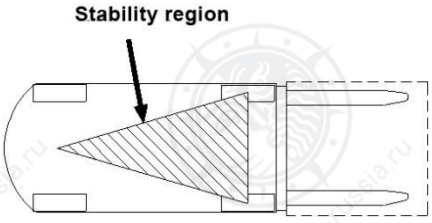
The combined center of gravity of the forklift truck is determined by the following factors:

- · Load magnitude, weight and shape;
- · Lift height;
- · Tilt angle of the mast;
- · Tire inflation pressure;
- · Acceleration, deceleration and turning radius;
- · Road conditions and road tilt angle;
- · Accessory type.



Caution	Stable center of gravity region

In order to make the forklift truck stable, the combined center of gravity has to be within the triangle formed by contact point of the front left and right tires and the midpoint of the rear axle.



If the combined center of gravity is on the rear axle, the two front tires will form a fulcrum and the forklift truck will tilt forward. If the combined center of gravity moves out of the stable center of gravity triangle, the forklift truck will roll over in the direction towards the combined center of gravity.

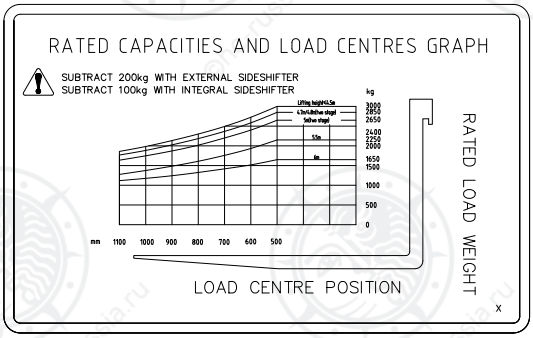
Caution	Maximum load (weight and load center distance)

The horizontal distance between the center of gravity of the load on a fork and the load-backrest of the fork or the front surface of the fork (whichever is smaller) is called the load center distance. The maximum load refers to the maximum load that the fork can bear at the standard load center distance. The relationship between the maximum load and the load center distance is shown on the Bearing Capacity Chart of the forklift truck. If the load center distance moves towards the front fork, the overall center of gravity will move forward, thus the load has to be reduced.



Caution	Bearing Capacity Chart

The chart shows the relationship between the location of the load center distance and the maximum load. Check whether the load and the load center distance are within the allowable range of the Bearing Capacity Chart before loading. If the load shape is complicated, the heaviest part should be placed in the center of the fork and close to the load-backrest.



Caution	Speed and acceleration

A static object should remain static without an external force. Similarly, a moving object continues to move at the same speed without an external force, which is referred to as inertia.

Due to inertia, when the forklift truck starts to move forward, a force acts backwards; when the truck stops, a force acts forward. It is dangerous to suddenly apply the brake, because the forklift truck will roll over or the load will slide when a large force acts forward.

When the forklift truck turns, a centrifugal force will be applied outwards from the turning center. The forklift truck can be pulled out and rolled over by the force. The left and right stability regions are small; thus, the forklift truck should slow down to avoid rolling over when turning. If the forklift truck carries a high load and the overall center of gravity is high, the forklift truck may easily tilt forward, to the left or to the right.

VI. Operation

Warning
If the forklift truck has any damage or faults, it should not be started before repairing.

1. Start

Starting the diesel forklift truck

① Pull the shift lever in the neutral position.

②Start after rotating the starting switch to " ➲ " position, and then put the key back to "|".

Caution
·If the truck fails to start within 5s, the starting switch should be rotated to "O" and the truck should be restarted after an interval of 2 min.
·If the truck fails to start three consecutive times, the cause should be investigated.

Caution
·When the ambient temperature is lower than -5℃, the key should be rotated to the right in the "|" position for preheating; after the preheat indicator light turns off, the key can be rotated to "➲" for starting.

Starting gasoline forklift trucks

① Engage the gear shift lever in the neutral position.

② Cool the engine down.

Open the choke knob fully, depress the accelerator pedal 2-3 times and release it, rotate the key switch to the "START" position to start the engine and then release it.

③ Warm up the engine.

Do not open the choke knob, depress the accelerator pedal halfway and hold it, rotate the key switch to the "START" position to start the engine and then release it.

Caution
Do not depress the accelerator pedal to the bottom when starting a hot engine as it may cause failure to start. The engine will not start easily even if the accelerator pedal is depressed several times.

Caution
The starting time should not exceed 5s and the intervals between starting attempts should not be less than 2min.

After the engine is started

① Preheat the engine for about 5min.

② Check the operating conditions of the engine.

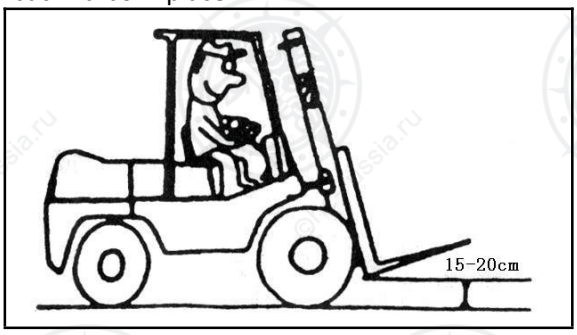
Caution
Diesel engine
Depress the accelerator to make it run at an intermediate speed (1,800r/min - 2,000r/min) after the diesel engine is started to preheat the engine without load.
Gasoline engines
After the gasoline engine is started, gradually push the choke forward, observe the warm up condition and the stability of the gasoline engine speed, and then push the choke fully forward after confirming that the engine has warmed up.

· Check the compression (no ignition) sound.
· Check exhaust conditions.
· Confirm that all indicator lights have turned off.
· Operate the multi-way valve control lever 2-3 times throughout the process and check the operations of the mast after the engine is fully warmed up.

2. Operation

①Hold the steering wheel lever with your left hand. Put your right hand on the steering wheel gently to get ready for loading/unloading operations.

②When the distance between the fork bottom and the ground is 15cm-20cm, the mast will tilt backwards in place.



③Look around the forklift truck to see if there are any pedestrians and sound the horn.

Manual transmission forklift trucks

·Depress the clutch pedal and operate the gear shift lever.

·Release the hand brake.

·Depress the accelerator pedal and slowly release the clutch pedal at the same time to drive the truck.

Caution

Do not step on the clutch pedal when driving the truck.

Hydraulic drive forklift trucks

·Step on the brake pedal and operate the front/rear changeover switch.

·Release the hand brake.

· When the brake pedal is released and the accelerator pedal is depressed, the truck will start moving.

Gear shift

Manual transmission forklift trucks

·Stop the truck before shifting gear.

·Depress the clutch pedal, and toggle the shift lever, release the clutch pedal and then depress the accelerator pedal.

Hydraulic drive forklift trucks

·Stop the truck before shifting gear.

·Toggle the shift lever.

Slowing down

Manual transmission forklift trucks

The mechanical transmission is equipped with a synchronizer, release the accelerator pedal, depress the clutch pedal to the bottom, place the shift lever in Gear I, release the clutch pedal and then depress the accelerator pedal.

Hydraulic drive forklift trucks

Slightly release the accelerator pedal, and step on the brake pedal, if necessary.

Steering

The forklift truck is different from ordinary vehicles, because its rear wheels are used for steering; the rear counterweight is rotated outwards at the time of steering.

Slow down and rotate the steering wheel towards the side to turn; the steering wheel needs to be rotated a little bit earlier than front steered vehicles.

Parking

① Slow down, step on the brake pedal to stop the truck (on manual transmission forklift trucks, step on the clutch at the same time).

② Place the shift lever in the neutral position.

③ Pull up the hand brake.

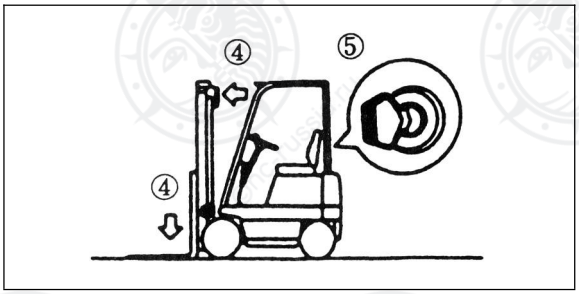
④ Lower the forks to the ground and tilt the mast forward to the maximum extent.

⑤ Shut down the engine when the ignition key switch is in the “O” position; pull out the engine shutdown lever from the diesel forklift truck, take out the key and keep it safe.

Caution

·Be careful when getting off the truck and do not jump out.

·The truck should not stop on the driving route.



3. Loading

·Adjust the fork spacing to keep cargo balanced.

·The truck should be facing the cargo when loading.

·The pallets should be symmetrically placed on the two forks.

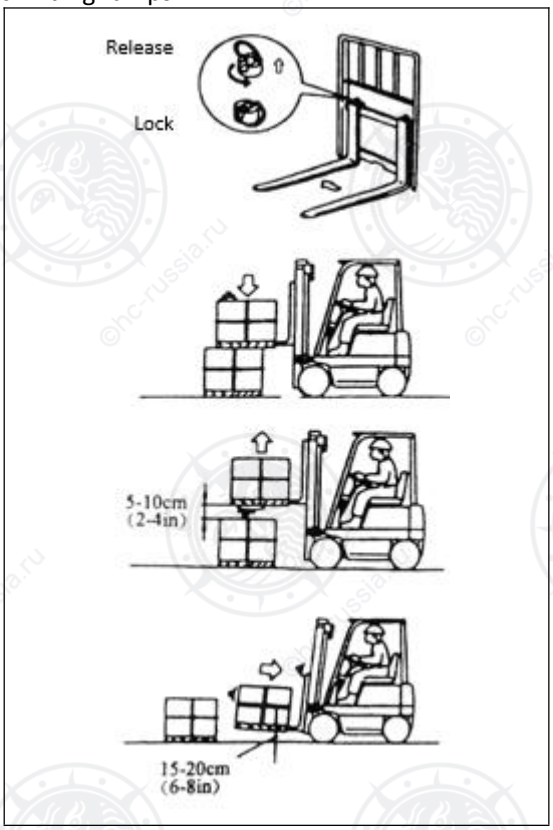
·The forks should be inserted into the pallets.

·Lifting cargo:

①First lift the forks 5cm-10cm above the ground to confirm whether the cargo is secure.

②Then, tilt the mast backwards, lift the cargo 5cm-10cm above the ground, and start to drive.

· Please drive in reverse when handling large cargo that obstructs visibility, except when climbing ramps.



4. Stacking

·Slow down when approaching the place to store the cargo.

·Park the truck in front of the place to store the cargo.

·Check the place to store the cargo.

·Tilt the mast forward to the fork level and lift the forks to a position slightly higher than the unloading site.

·Move forward, put the cargo on the unloading site and stop.

·Slowly lower the forks after confirming that the cargo is above the unloading site and confirm that the cargo is safe and in place.

·Conduct necessary lifting and tilting operations, move the forklift truck back and take the forks out from the cargo.

·Lower forks to 15cm-20cm above the ground after fork tips are clear from the cargo.

·Tilt the mast backwards.

Warning

·Do not tilt the mast when the load is lifted above 2m.

·Do not get off the truck or leave the truck when the load is at a high level.

5. Unstacking

·Slow down when the forklift truck approaches the place to pick up the cargo.

·Park when the forklift truck is 30cm away from the cargo.

· Check the cargo condition.

·Tilt the mast forward to the fork level and lift the forks to the position of the pallet or crosstie.

·Confirm whether the forks are aligned with the pallets, move forward slowly, try to insert forks into the pallets and stop.

Caution

·If it is difficult to insert forks fully into the pallets, the truck can move forward to insert the forks 3/4 of the way into the pallets. Lift the forks 5cm-10cm, move the truck backwards 10cm-20cm, lower the pallets or crossties, and move the truck forward to fully insert the forks into the pallets or crossties.

·Lift the forks 5cm-10cm above the stacking place.

·Look around the truck, confirm whether there are any obstacles, and move backwards slowly.

·Lower the forks to 15cm-20cm above the ground, tilt the mast backwards, and transport the cargo to the destination.

VII. Storage

1. Daily storage

a） Park the forklift at the designated place and use wedge blocks to support the wheels.

b） Place the shift lever in the neutral position.

c） Pull up the hand brake handle.

d） Turn off the engine and operate the multi-valve handle several times to release the remaining pressure in the oil cylinder and pipeline.

e） Remove the key and keep it in a safe place.

Warning

Once a forklift is found to be defective, it should be reported to the management and repaired immediately.

Then the following maintenance items should be carried out.

a） Remove oil and grease from the vehicle body with a cloth and water.

b） Check the overall condition of the vehicle, in particular check whether the tires are damaged or have any foreign objects such as nails.

c） Fill the fuel tank with specified fuel.

d） Check for leaks of hydraulic fluid, engine oil, fuel or coolant.

e） Apply lubricating grease.

f） Check whether the mating surface of the wheel nut and cylinder piston rod is loose and whether the surface of the piston rod is scratched.

g） Check whether the mast rollers act smoothly.

h） Raise the lifting cylinder to the top to fill the cylinder with oil.

i） In winter or cold environments, long-lasting antifreeze does not need to be drained, but if cooling water is used, the reservoir should be emptied.

2. Long-term storage

When the forklift is parked for a long time, use wooden blocks to support the vehicle body and counterweight to reduce the loading on the rear wheels.

Warning

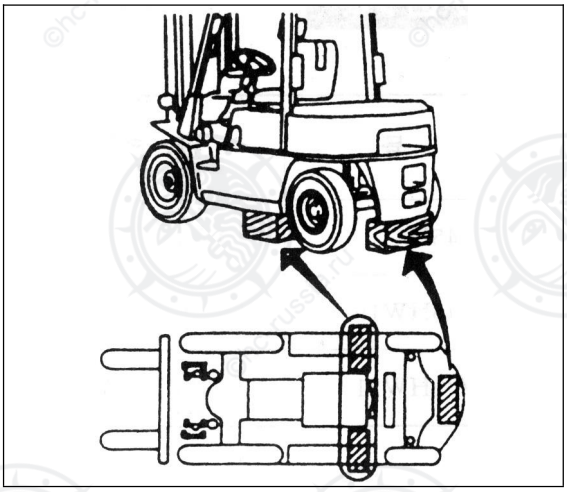
a. The wooden block must be solid and should be strong enough to support the weight of the forklift truck.

b. Do not use blocks higher than 300 mm (11.81 inches).

c. Raise the forklift just enough to place it on the supporting blocks.

d. Place blocks of the same size under the left and right sides of the forklift frame.

e. After supporting the forklift with the blocks, push the forklift back and forth & left and right to check whether it is stable.



Carry out the following maintenance and checks in addition to maintenance as required in Daily Storage.

a） Remove the battery from the forklift, put it in a dry and cool place, and charge it once a month.

b） Apply anti-rust oil to exposed parts such as the piston rod and shaft that may rust.

c） Parts such as vent plugs and air filters should be covered to prevent water ingress.

d） Start the forklift truck once a week. If the cooling water was drained out, it should be refilled. Install the battery. Remove the anti-rust oil on the piston rod and shaft, start the engine and warm up fully, run slowly back and forth, operate the mast to raise and lower, and tilt back and forth several times.

e）Forklift trucks should not be parked on asphalt roads in summer.

3. Operation of forklift trucks after long-term storage

a）Remove the anti-rust oil from the exposed parts.

b）Drain the oil from the engine crankcase, drain the gear oil or ATF in the drive axle housing and hydrodynamic transmission (only for hydrodynamic transmission forklift trucks), clean the interior and add new oil.

c）Clear away the foreign matter and water in the hydraulic oil tank and fuel tank.

d）Remove the engine cylinder head, valve and rocker arm shaft, and check whether each valve clearance is normal.

e）Add coolant to the specified scale line.

f）Charge the battery, mount it on the forklift and connect the battery leads.

g）Carefully carry out the pre-start inspection to check the starting, forward, reverse, steering, lifting, lowering, front and rear tilting functions of the forklift truck.

h）Preheat the forklift truck.

VIII. Maintenance

Note:

a）Do not repair forklifts without training.

b）It is necessary to perform regular checks and maintenance to keep the performance of the truck at optimum.

c）When operating in dusty or polluted environments, it is necessary to increase the frequency of maintenance.

d）Checks and maintenance are often neglected, so it is better to find the problems early and solve them in time.

e）When changing or adding oil, do not use oil which is not the same as the original.

f）If the engine power drops, there is any black smoke or the engine noise becomes louder before maintenance is due, inspections and checks should be carried out and the opening pressure of the diesel nozzle and fuel atomization state should be adjusted if necessary.

g）The used oil/fluid and used battery should be recycled according to the local environmental protection laws and regulations to prevent pollution of the environment, rather than poured away or disposed of at will.

h）Develop a comprehensive maintenance and repair plan.

i）Complete records should be made after each maintenance and repair.

j）Use the spare parts from Hangcha.

1. Regular maintenance schedule

○——Check, correction, adjustment

×——Replacement

Note:

(1) When operating in dusty or polluted environments, it is necessary to increase the frequency of maintenance. The tips on maintenance dates from the intelligent module are only for reference. Please see this Manual for the maintenance cycle and items.

(2) If the engine power drops, there is any black smoke or engine noise becomes louder before the maintenance period arrives, inspections and checks should be carried out and the opening pressure of the diesel nozzle and fuel atomization state should be adjusted if necessary.

(3) Replace the engine lubricating oil at the first 100h and then every 250 hours thereafter. For common-rail engines, the maintenance cycle may be appropriately shortened. (For details, please refer to the Engine Maintenance Manual).

Engine Regular Maintenance Schedule

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Engine.	Visual inspection of the engine running condition (including sound, exhaust color)		○	○	○	○	○
	Clean or replace the air filter cartridge (Blow the outer filter cartridge and pat the inner filter cartridge, i.e. safety filter cartridge)		○	○	○	×	×
	Oil-water separator water drainage (Diesel engines)		○	○	○	○	○
	Check crankcase and remove dirt				○	○	○
	Check and adjust valve clearance	Plug gauge		First time ○	○	○	○
	Tighten the cylinder cover bolts	Torque wrench		First time ○	○	○	○
	Ignition plug (gasoline engine)			○	○	○	○
	Check the distributor block contact, lid and rotor (gasoline engine) (1)			○	○	○	○
	Check the distributor block interior (IC ignition system) (1)						○
Common-rail engine	Check whether the rail pressure sensor and its line operation is normal		○	○	○	○	○
	Check whether the accelerator pedal is normal.		○	○	○	○	○
	Check the functions of the rail pressure relief valve and check for leaks		○	○	○	○	○
	Check the ECU function and wiring		○	○	○	○	○
	Check the camshaft sensor and its line				○	○	○
	Check the crankshaft sensor and its line				○	○	○
	Fill with specified fuel		○	○	○	○	○

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
	DPF Cleaning		Clean the DPF in case of an alarm or every 4000 working hours.				
Maintenance Item	**Maintenance Content**	**Tool**	**Daily (8h)**	**Every month and a half (250h)**	**Trimonthly (500h)**	**Semi-annually (1,000h)**	**Annually (2,000h)**
LPG Engine	1. Check the LPG pipelines and the joints for any leakage (1)		○	○	○	○	○
	2. Drain the tar from the pressure reducing regulator		○	○	○	○	○
	3. Check the pipelines and the joints for any damage		○	○	○	○	○
	4. Check the LPG tank mounting bracket for any looseness or damage		○	○	○	○	○
	5. LPG Filter				○	○	×
Crankshaft ventilator	Check for clogged or damaged PCV valves and tubes					○	○
Speed controller or injection pump	Check maximum speed while unloaded	Tachometer					○
Lubrication System	Check the engine for leaks		○	○	○	○	○
	Check the oil level and cleanliness		○	○	○	○	○
	Change the engine oil (1)			× First time (100h)	×	×	×
	Change the engine oil filter cartridge (1)			× First time (100h)	×	×	×
Fuel System	Visual inspection of oil pipes, oil pumps and oil tanks for leaks		○	○	○	○	○
	Replace the fuel filter			×	×	×	×
	Check the nozzle and adjust the pressure state (diesel engine) (2)	Fuel injection testbed			○	○	○
	Ignition timing (gasoline engine)			○	○	○	○

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
	Injection time (diesel engine)						○
	Water drainage of fuel tank				○	○	○
	Clean the fuel tank					○	○
	Check the fuel amount		○	○	○	○	○
Cooling . System .	Coolant amount		○	○	○	○	○
	Check for any leakage		○	○	○	○	○
	Change the engine coolant						× (2-4) years
	Check the fan belt tension and check for any damage		○	○	○	○	○
	Clean the water tank outer surface			Monthly in summer	○	○	○
	Performance and mounting condition of water tank cover			○	○	○	○
	Condition of the inlet/outlet tube					○	○

Regular Maintenance Schedule for Transmission System

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Clutch	Check and adjust the height and free clearance of the clutch pedal			○	○	○	○
	Check the clutch release bearing lubrication				○	○	○
Manual transmission	Check the oil level and replace it if necessary			○	○	○	×
Hydraulic . transmissio	Clean the coarse filter screen			○ First time		○	○
	Replace the oil filter					×	×
	Check for any leakage		○	○	○	○	○
	Check the oil amount or change it			× First time	○	○	×

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
n . .	Idle running state of inching pedal .		○	○	○	○	○
	Performance of control valve and hydrodynamic clutch		○	○	○	○	○
	Performance of inching valve		○	○	○	○	○
	Operation and looseness of the shift lever .			○	○	○	○
Drive axle (front axle)	Check the hub bearing for looseness and noise .			○	○	○	○
	Clean and refill lubricating oil					×	×
	Check for leakage		○	○	○	○	○
	Check the axle body for any deformation, cracks or damage				○	○	○
	Check the tightness of the bolts in the joints of the vehicle frame .				○	○	○
	Check the tightening torque of the hub nuts .	Torque wrench	○	○	○	○	○

Regular Maintenance Schedule for Wheels (Front/Rear)

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Tires .	Inflation pressure	Pressure gauge	○	○	○	○	○
	Wear, cracks or damage		○	○	○	○	○
	Check the tires for any nails, stones or other foreign matter			○	○	○	○
	Check the rim for any damage		○	○	○	○	○
	Looseness of split rim bolts .	Inspection hammer	○	○	○	○	○

Regular Maintenance Schedule for Steering System

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Steering wheel.	Check the clearance		○	○	○	○	○
	Check for looseness in the axial direction		○	○	○	○	○
	Check for looseness in the radial direction		○	○	○	○	○
	Check the operating condition		○	○	○	○	○
Steering.	Check the bolts for looseness			○	○	○	○
Steering knuckle of rear axle	Check the pin for looseness			○	○	○	○
	Check for any deformation, cracks or damage			○	○	○	○
	Check the installation condition	Inspection hammer		○	○	○	○
Steering cylinder.	Check the operating condition		○	○	○	○	○
	Check for any leakage		○	○	○	○	○
	Check for any looseness of the installation and knuckle joint			○	○	○	○

Regular Maintenance Schedule for Brake System

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Brake. pedal.	Idle running	Calibrated scale	○	○	○	○	○
	Pedal travel		○	○	○	○	○
	Check the operating condition		○	○	○	○	○
	Check the brake line for air		○	○	○	○	○
Parking brake operation	Check whether the brake is safe and reliable, and has enough travel.		○	○	○	○	○
	Operating performance		○	○	○	○	○
Rod,	Operating performance			○	○	○	○

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
dragline, and others	Check the joint for looseness			○	○	○	○
Pipeline.	Damage, leaks, cracks			○	○	○	○
	Check the joints and clamping parts for any looseness			○	○	○	○
Brake master cylinder, Wheel cylinder	Check for any leakage			○	○	○	○
	Check the oil level, or change it		○	○	○	×	×
	Operating condition of brake master cylinder and wheel cylinder						○
	Check the brake master cylinder and wheel cylinder for any leaks or damage						○
Brake master cylinder, Wheel cylinder	Check the brake master cylinder, piston cup and non-return valve for any wear or damage and replace if necessary.						×
Brake drum. and Brake shoe.	Check the components of the brake drum for any looseness	Inspection hammer		○	○	○	○
	Wear of friction lining	Vernier caliper					○
	Operating condition of the brake shoe						○
	Check the fixed pin for any rusting						○
	Check the return spring for any damage	Calibrated scale					○
	Check whether the clearance is appropriate during the operation of the self-adjusting device						○
	Check the brake drum						○

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
	for any wear or damage						
Brake backing plate	Check for any deformation						○
	Check for any cracks	Flaw detector					○
	Check for any looseness during the installation	Inspection hammer					○

Regular Maintenance Schedule for Hydraulic System

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Hydraulic oil tank	Check the oil level or change it (1)		○	○	○	○	×
	Clean the oil absorption filter (1)					○	○
	Replace the return oil filter (1)					×	×
	Clear away any foreign objects					○	○
Control valve stem	Check the joint for looseness		○	○	○	○	○
	Check the operating condition		○	○	○	○	○
Filter	Check for any leakage			○	○	○	○
Multi-way valve	Check for any oil leakage		○	○	○	○	○
	Safety valve and tilt self-locking valve Check the operating condition			○	○	○	○
	Measure the safety valve pressure	Oil pressure gauge				○	○
Pipeline. joint.	Check for any leakage, looseness, fracture, deformation or damage			○	○	○	○
	Replace the pipe						× 1-2 years

Regular Maintenance Schedule for Electrical System

Maintenance	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Starting motor	Gear engagement				○	○	○
Storage battery	Check the electrolyte level and add more distilled water if necessary.		○	○	○	○	○
	Clean the storage battery			○	○	○	○
Wires	Wire harness damage, any looseness .			○	○	○	○
	Any looseness in circuit connections				○	○	○
Steering indicator light	Check the operating and installation condition		○	○	○	○	○
Horn	Check the operating and installation condition		○	○	○	○	○
Lights and bulbs	Check the operating and installation condition		○	○	○	○	○
Backup buzzer	Check the operating and installation condition		○	○	○	○	○
Display	Check the operating condition		○	○	○	○	○

Regular Maintenance Schedule for Lifting System

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Chain. , Chain wheel	Check the chain tension and check for any deformation, damage or rust.		○	○	○	○	○
	Lubricate the chain			○	○	○	○
	Check the riveted pin for any looseness			○	○	○	○
	Check the chain wheel for any deformation or damage			○	○	○	○

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
	Check the chain wheel gear for any looseness			○	○	○	○
attachments	Check the operating status			○	○	○	○
Lifting cylinder. Tilt cylinder.	Check the piston rod, the thread and joint for any looseness, deformation or damage.	Inspection hammer	○	○	○	○	○
	Check the operating condition		○	○	○	○	○
	Check for any leakage		○	○	○	○	○
	Check the pin and steel-backed bearing of the cylinder for any wear or damage			○	○	○	○
Hydraulic. pump	Check the hydraulic pump for any leakage or noise		○	○	○	○	○
	Check the driving gear of the hydraulic pump for any wear and tear			○	○	○	○
Fork.	Check the forks for any damage, deformation or wear		○	○	○	○	○
	Check the stop dowel for any damage or wear				○	○	○
	Check the welded part of the hook at the root of fork for any cracks or wear			○	○	○	○
Mast. Fork arm carrier	Check the welding between the inner/outer mast and beam for any cracks or damage			○	○	○	○
	Check the welded part between the tilt cylinder frame and mast for any poor welding, cracks or damage			○	○	○	○
	Check the inner/outer mast for any poor welding, cracks or damage			○	○	○	○
	Check the fork arm for any poor welding, cracks or			○	○	○	○

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
	damage						
	Check the roller for any looseness			○	○	○	○
	Check the bearing shaft bush of the mast for any wear or damage						○
	Check the bearing cap bolts of the mast for any looseness	Inspection hammer		○	○	○	○
	Check the bolts at the bottom of the lifting cylinder, bolts at the top of piston rod, U-bolts and the bolts of the movable beam guide rail for any looseness	Inspection hammer		○	○	○	○
	Check the roller, roller shaft and welded part for any cracks or damage			○	○	○	○

Regular Maintenance Schedule for Safety Devices and attachments

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
Overhead Guard and load-backrest	Check whether they are secured	Inspection hammer	○	○	○	○	○
	Check for any deformation, cracks or damage		○	○	○	○	○
Rearview mirror	Check for any dirt or damage		○	○	○	○	○
	Check the rear visibility		○	○	○	○	○
Driver's seat	Check the bolts for looseness or damage					○	○
Forklift body	Check the frame and beam for any damage or cracks						○
	Check the rivets and bolts for any looseness						○
Apply	Check the lubrication of the			○	○	○	○

Maintenance Item	Maintenance Content	Tool	Daily (8h)	Every month and a half (250h)	Trimonthly (500h)	Semi-annually (1,000h)	Annually (2,000h)
lubricating grease or change the oil	chassis after cleaning						
	Check the oil in the reservoir						○
OPS system	Check the operating condition		○	○	○	○	○

2. Tightening Torque Table of Common Bolts

Nominal Diameter mm	Strength Grade (Unit: N·m)			
	4.6	5.6	6.8	8.8
6	4 - 5	5 - 7	7 - 9	9 - 12
8	10 - 12	12 - 15	17 - 23	22 - 30
10	20 - 25	25 - 32	33 - 45	45 - 59
12	36 - 45	45 - 55	58 - 78	78 - 104
14	55 - 70	70 - 90	93 - 124	124 - 165
16	90 - 110	110 - 140	145 - 193	193 - 257
18	120 - 150	150 - 190	199 - 264	264 - 354
20	170 - 210	210 - 270	282 - 376	376 - 502
22	230 - 290	290 - 350	384 - 512	512 - 683
24	300 - 377	370 - 450	488 - 650	651 - 868
27	450 - 530	550 - 700	714 - 952	952 - 1269
30	540 - 680	680 - 850	969 - 1293	1293 - 1723
33	670 - 880	825 - 1100	1319 - 1759	1759 - 2345
36	900 - 1100	1120 - 1400	1694 - 2259	2259 - 3012
39	928 - 1237	1160 - 1546	1559 - 2079	2923 - 3898

Note:

- All key joints use bolts in 8.8 Grade.
- The bolt grade can be found in the head, if not it is 8.8 Grade

3. Regular replacement of key safety parts

It is difficult to find any damage to some parts through regular maintenance, thus in order to ensure the safety of forklift operation, the user should regularly replace the parts given in the table below.

If the replacement time is not reached and there is any abnormality in these parts, the defective parts should be replaced immediately.

Key Safety Part	Service Life (Years)
Brake hose or rigid pipe	l-2
Hydraulic rubber hose for the lifting system	l-2
Lifting chain	2 - 4
High-pressure rubber hose and flexible tube for the hydraulic system	2
Brake fluid reservoir	2 - 4
Fuel hose	2
Sealing parts and rubber parts in the hydraulic system	2

4. Forklift Oil List

1.0T-3.8t Forklift Oil List

Name	Model/Code	Volume (L)	Remarks
Gasoline	92#/95# 93#/97#	45	1.0t-1.8t
		60	2.0t-3.8t
Diesel	0# (Summer) -10# to -35# (Winter)	45	1.0t-1.8t
		60	2.0t-3.8t
LPG		40	
Diesel engine oil	Normal weather: CH-4, 15W／40 Winter: CH-4, 10W／30 Severely cold environments: CH-4, 5W/30, or refer to the Engine Maintenance Manual	6.5-7.4	Except for W56
	Normal weather: CH-4, 15W／40 Winter: CH-4, 10W／30 Severely cold environments: CH-4 5W-40, or refer to the Engine Maintenance Manual	6.3	W56
Diesel engine oil	Normal weather: CI-4 15W／40 Winter: CI-4, 10W／30 Severely cold environments: CI-4 5W-40, or refer to the Engine Maintenance Manual	6.5-7.4	China IV Engine
LPG engine oil	Normal weather: SF 15W/40 Winter: SF 10W/30 (Severely cold environments: Caltex API SAE 5W-40) or refer to the Engine Maintenance Manual	3.5-4	K21, K25
Hydraulic oil	L-HM32 (Severely cold environments: L-HV32)	36 - 41	1.0t-1.8t
		45 - 51	2.0t-2.5t
		49 - 55	3.0t-3.8t
Automatic Transmission Fluid (ATF) (transmission)	6# Automatic Transmission Fluid (ATF) (Severely cold environments: 8# ATF)	7	1.0t-1.8t XYQXD Transmission
		8.5	2.0t-3.5t XYQXD Transmission
		6.8	1.0t-3.5t XYQXF Transmission
	Great Wall ATF-IIIH (filled before	4.5	1.0t-3.8t Okamura

Name	Model/Code	Volume (L)	Remarks
	leaving the factory) or the equivalent in Class DEXRON-III.		Transmission
		9	1.0t-3.8t B1 Trucks
Gear oil	85W/90 (GL-5), (Severely cold environments: 80W/90 (GL-5))	4.5	1.0t-1.8t Mechanical truck
		5.4	2.0t-2.5t Mechanical truck
		10.3	3.0t-3.8t Mechanical truck
		4.5	1.0t-1.8t Hydraulic truck
		5	2.0t-2.5t Hydraulic truck
		5.8	3.0t-3.8t Hydraulic truck
Brake fluid (Added to brake fluid reservoir)	Choice HZY3 brake fluid (filled before leaving the factory) or DOT3 brake fluid	1.5	
Antifreeze (water tank)	FD-2 multi-effect antifreeze coolant	10 - 11	1.0t-3.8t
Industrial vaseline	2#		Battery electrode pole
Grease (each lubrication point)	General purpose automotive lithium grease		

4.0t-X5.0t Forklift Oil List

Name	Model/Code	Volume (L)	Remarks
Gasoline	92#/95# 93#/97#	80	
Diesel	O# (summer) (w58 sulphur content: ＜15ppm) -10# to -35# (winter)	80	(Cummins w58 sulphur content: ＜ 15ppm)
LPG		40	
Diesel engine oil	Normal weather: CH-4, 15W／40 Winter: CH-4, 10W／30 Severely cold environments: CH-4 5W/30, or refer to the Engine Maintenance Manual	12	Except for G93 and G82
	Normal weather: CI-4 15W／40 Winter: CI-4, 10W／30 Severely cold environments: CI-4, 5W/30); or refer to the Engine Maintenance Manual	12	G93 engine
	APE SAE 15W/40,CJ-4/SJ	≈11 See the engine manual or dipstick scale for specific filling amount	Low-ash engine oil G82
Gasoline engine oil	Normal weather: SF 15W/40 Winter: SF 10W/30 (Severely cold environments: Caltex API SAE 5W/40) or refer to the Engine Maintenance Manual	12	W57
Hydraulic oil	L-HM32 (Severely cold environments: L-HV32)	About 80	When the mast is lifted by 1 meter, 5-5.5 liters of hydraulic oil should be added.
Automatic Transmission Fluid (ATF)	6# Automatic Transmission Fluid (ATF)	12	Except for trucks used for handling stones
	ATF3	12	CPCD55-XRXG73BN-S CPCD55-XRXG76BN-S CPCD55-XRXG82BN-S
Gear oil	85W/90 (GL-5), (Severely cold environments: 80W/90 (GL-5) or 70W/90)	5.5	Hydraulic truck: for drive axle
		14	Mechanical truck: 7 liters for drive axle and mechanical transmission respectively

	Mobil ATF 424	8	CPCD55-XRXG73BN-S CPCD55-XRXG76BN-S CPCD55-XRXG82BN-S
Brake fluid	Choice HZY3 brake fluid (filled before leaving the factory) or DOT3 brake fluid	1.5	
Antifreeze coolant	FD-2 multi-effect antifreeze coolant	18	
Industrial vaseline	2#		Battery electrode pole
Grease (each lubrication point)	General purpose automotive lithium grease		

Note:

• The forklift truck was filled with anti-rust and antifreeze coolant at the factory. It is not necessary to drain the coolant even in winter. Fill its reservoir to the required level if necessary and change it once every 2-4 years.

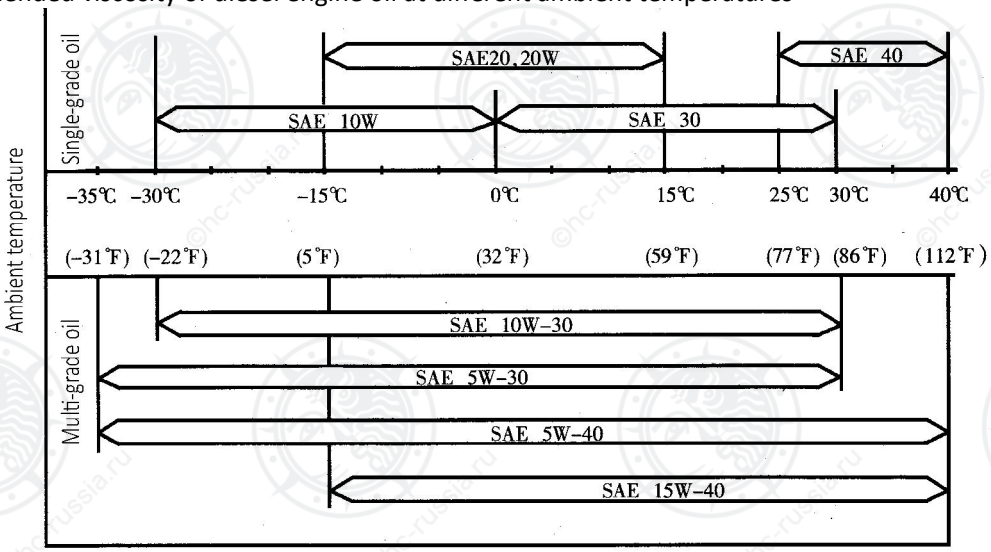
• If the forklift truck was not filled with anti-rust and antifreeze coolant at the factory, the user should add it as required. In winter, the cooling water must be drained out of forklift trucks not filled with anti-rust and antifreeze coolant.

Different brands of oil should not be mixed and used together.

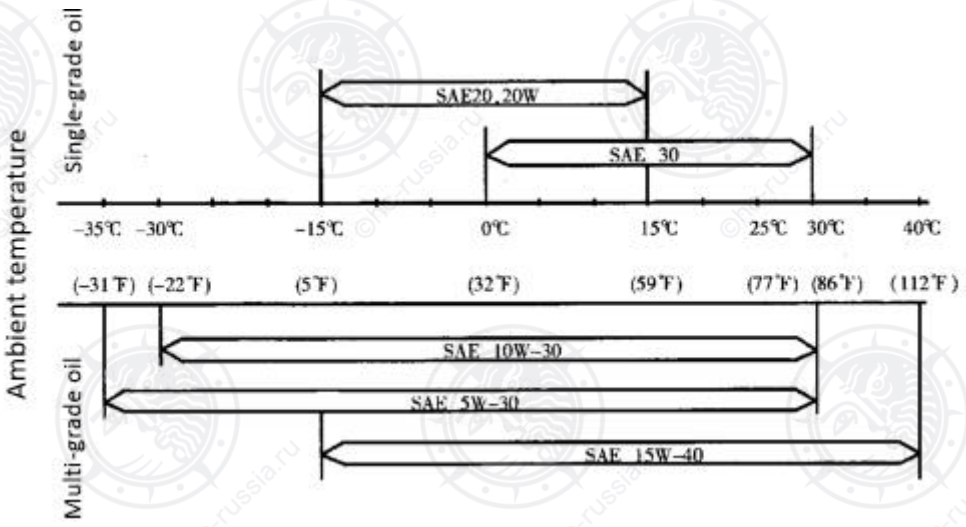
- The quality of diesel oil should comply with GB 19147-2016, and the sulfur content of diesel oil should not be greater than 10mg/kg.

- Great Wall hydraulic oil, ATF, and gear oil are added before the truck leaves the factory.

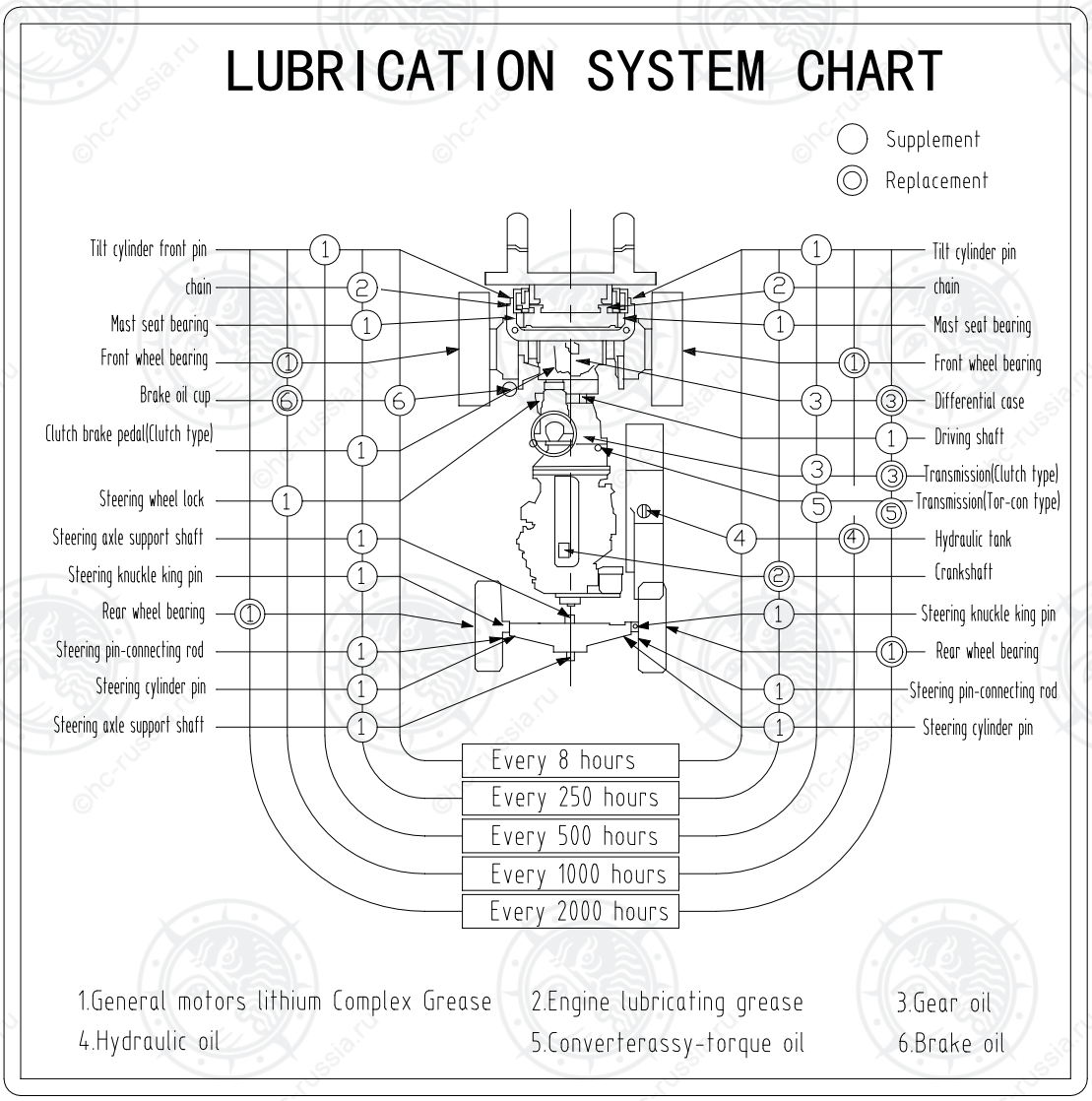
Recommended viscosity of diesel engine oil at different ambient temperatures



Recommended viscosity of gasoline engine oil at different ambient temperatures


Ambient temperature
Single-grade oil
SAE20, 20W
SAE 30
-35℃ -30℃ -15℃ 0℃ 15℃ 25℃ 30℃ 40℃
(-31℉) (-22℉) (5℉) (32℉) (59℉) (77℉) (86℉) (112℉)
Multi-grade oil
SAE 10W-30
SAE 5W-30
SAE 15W-40

5. Lubricating System Diagram



Note: 1. Please refill the truck with the specific lubrication oil according to the specific truck model based on the Forklift Oil List.

2. Refer to the Weekly Maintenance (40h) for the lubrication of the mast and chain.

Environmental protection:

1. Clean, maintain and repair the vehicle at the designated place.

2. Before dismantling the pipeline, joints or related parts, special containers should be used to receive used fluids (including coolant, engine oil, hydraulic oil, transmission oil, ATF, brake fluid, grease, etc.) and used batteries.

3. The used oil/fluid should be recycled according to the local environmental protection laws and regulations to prevent pollution of the environment, rather than poured away or disposed of at will.

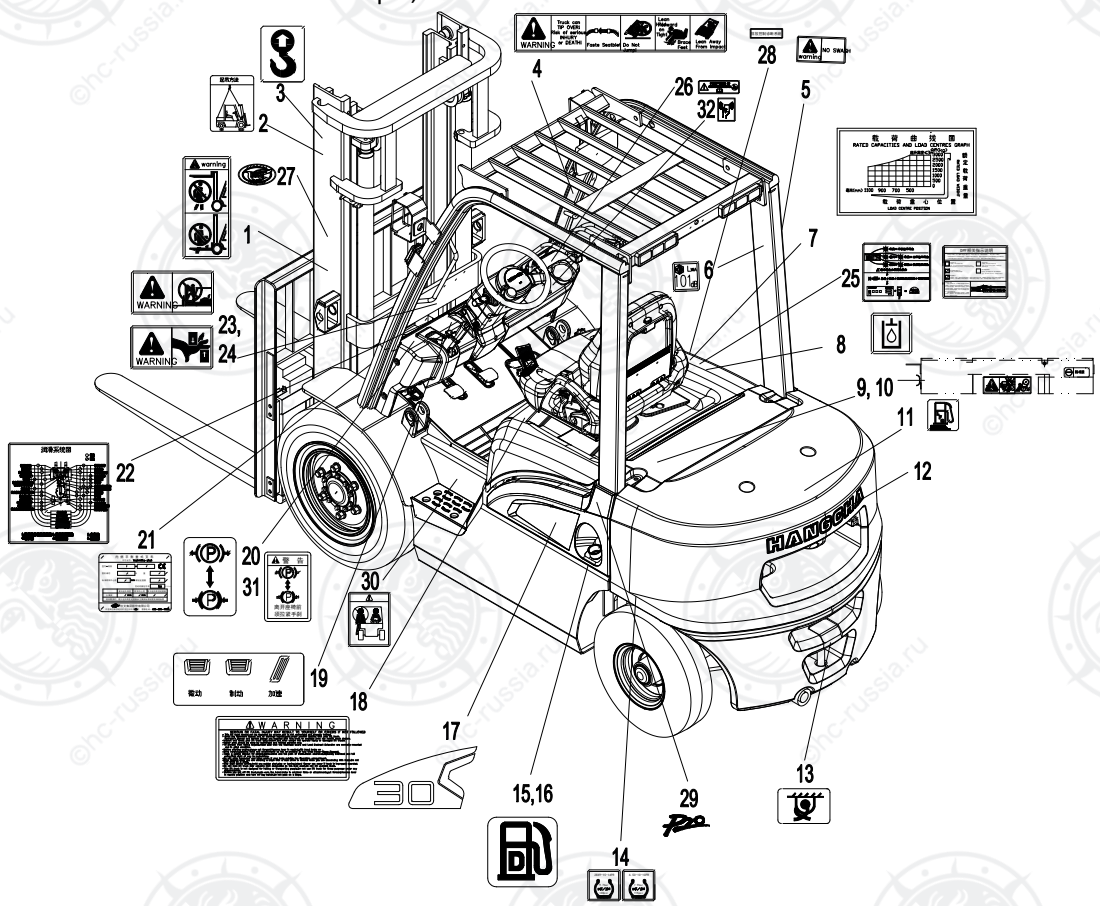
Safety awareness:

The temperature of coolant, engine oil, hydraulic oil, transmission oil and ATF after a long operation is

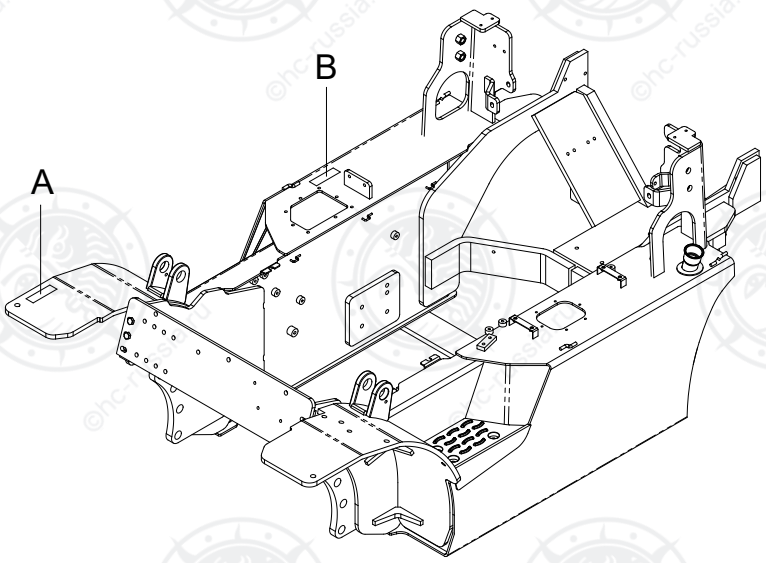
very high, the oil change should not be carried out until the temperature drops below 70℃; skin should be protected, otherwise the oil will burn or corrode the skin.

IX. Various signs/labels: various signs or labels are affixed to different parts of the forklift truck.

The 1-3.8t truck is taken as an example, the 4-X5t truck is similar.



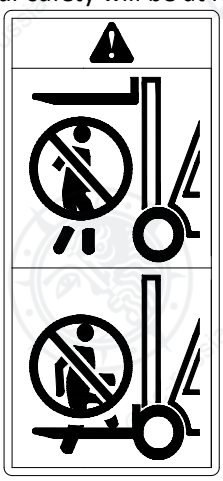
1. Hazard label	2. Lifting label	3. Lifting label	4. Safety belt label
5. No flushing label	6. Noise mark	7. Load curve sign	8. Hydraulic oil label
9. Cutting and clamping labels	10. Antifreeze label	11. LPG label	12. Typeface label
13. Tie-down point label	14. Tire pressure label	15. Diesel label	16. Gasoline label
17. Tonnage label	18. Warning label	19. Control label	20. Hand brake label
21. Product nameplate	22. Lubricating system label	23. Hazard label	24. Hazard label
25. Regen operating instruction label		26. DPF warning label	27. China IV emission label
28. Emission control diagnosis system label		29. “PRO” label	30.Passenger prohibition label
31.Hand brake label	32.Card swiping label		



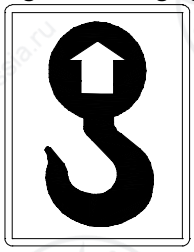
A. Frame S/N.

B. Mechanical environmental protection code

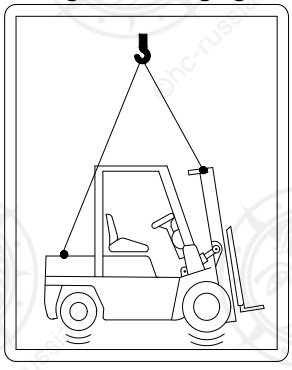
1. Hazard label: Stuck on the outer mast
Do not stand on or under the fork arm carrier; otherwise, your safety will be at risk.



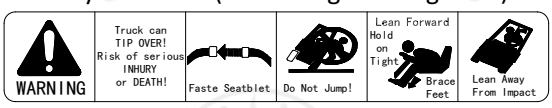
2. Lifting label: Indicates the lifting position and method of the truck. When lifting, prevent the rope from rubbing and damaging the lamp.

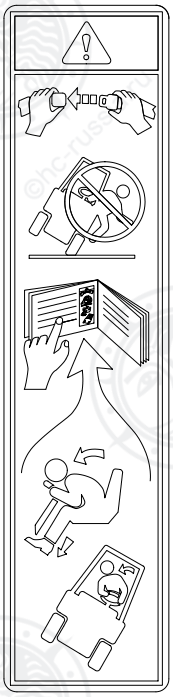


3. Lifting label: Indicates the lifting position and method of the truck. When lifting, prevent the rope from rubbing and damaging the lamp.

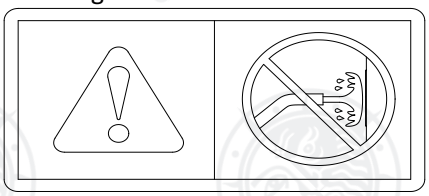


4. Safety belt label (anti-tilting warning label)

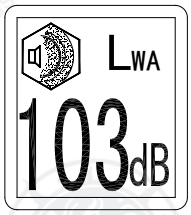


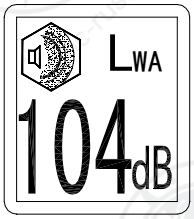


5. No flushing label. It is on the right leg of the right safety shelf by the engine air intake; there should be no water allowed near the intake when flushing the truck.

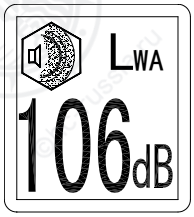


6. Noise label
1.0t-3.5t





4.0t-X5.0t

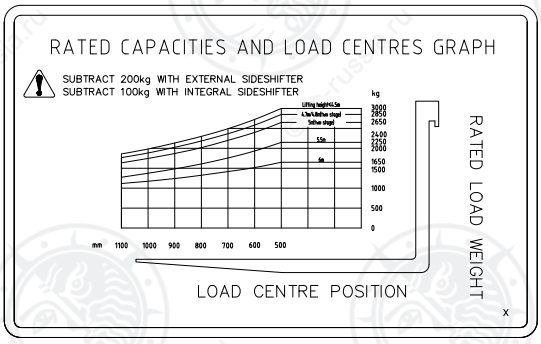


7. Load curve sign
It shows the relationship between the location

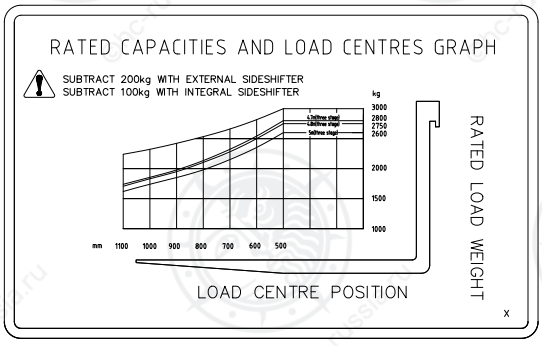
of the load center distance and the maximum load or maximum lift height.

The load capacity of trucks with a sideshifter and attachments is reduced. When the lift height is increased, the load capacity will decrease. Check whether the load and the load center distance are within the allowable range of the Bearing Capacity Chart before loading. If the load shape is complicated, the heaviest part should be placed in the center of the fork and close to the load-backrest.

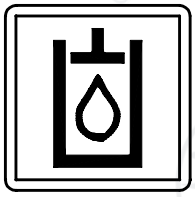
2-stage mast



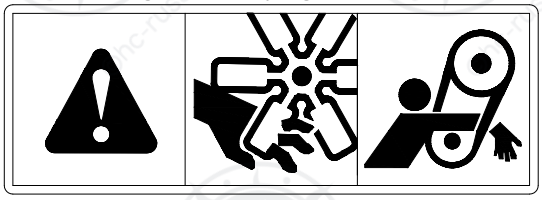
3-stage mast



8. Hydraulic oil label



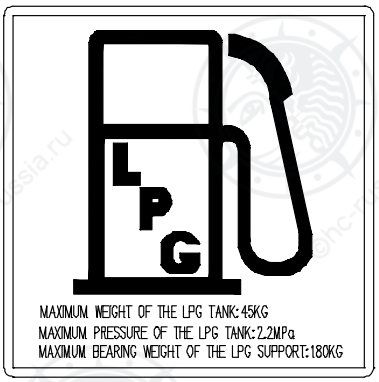
9. Fan cutting and clamping labels



10. Antifreeze label



11. LPG label (only LPG trucks and dual fuel vehicles)



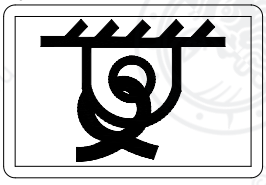
The label is affixed to the cylinder.

Marks the maximum weight (52kg) of the LPG tank

Maximum LPG pressure (2.2MPa)

Maximum weight (105kg) borne by the support

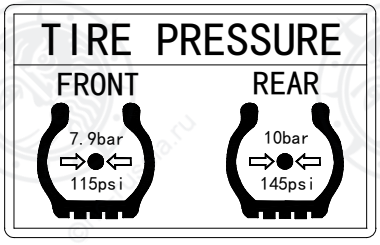
13. Tie-down point label



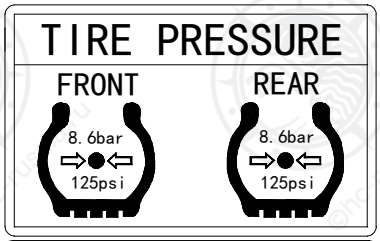
14. Tire pressure label

OLD:

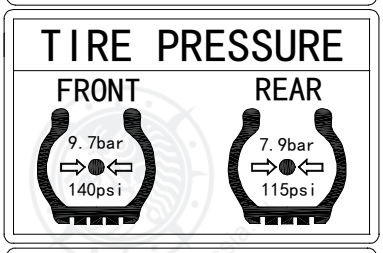
1.5t~1.8t



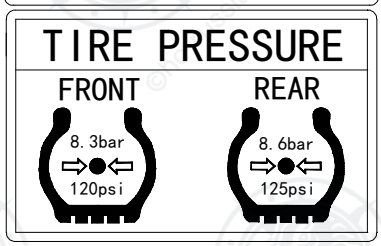
2.0t~2.5t



3.0t~3.5t

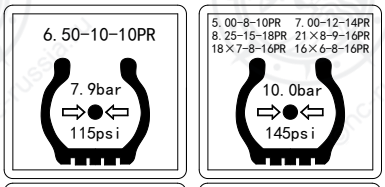


4.0t~X5t

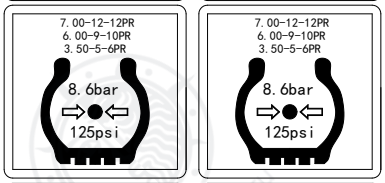


NEW:

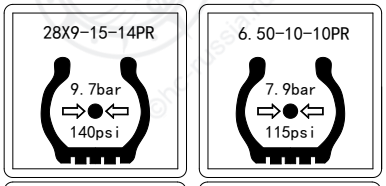
1.5t~1.8t



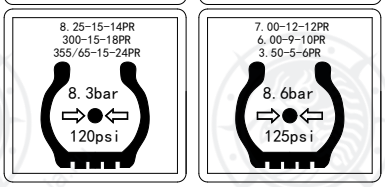
2.0t~2.5t



3.0t~3.5t



4.0t~X5t



15. Diesel label: Indicates that the oil filler is on the left rear leg of the overhead guard.

(No such label on gasoline trucks and LPG trucks)

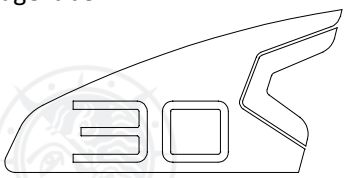


16. Gasoline label: Indicates that the oil filler is on the left rear leg of the overhead guard.

(No such label on diesel trucks and single fuel LPG trucks)

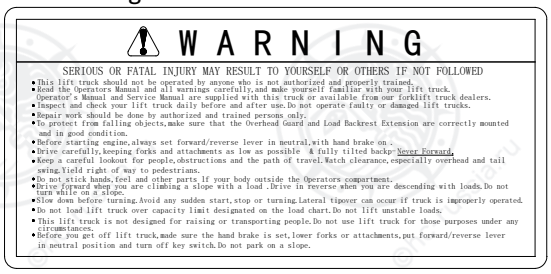


17. Tonnage label

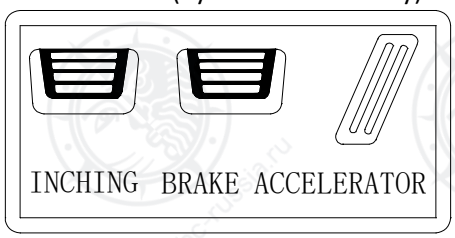


"30" indicates that the Rated load capacity is 3.0t, but if the lift height is increased or there are attachments, the Rated load capacity will decrease.

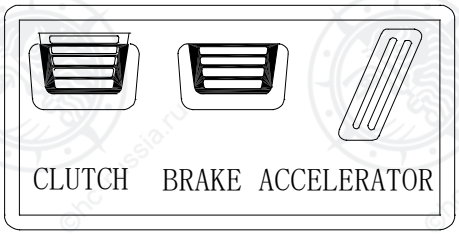
18. Warning label



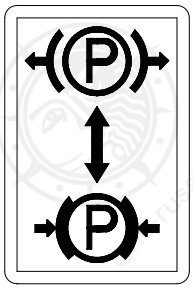
19. Control label 1 (hydraulic trucks only)



Control label 2 (mechanical trucks only)



20. Hand brake label

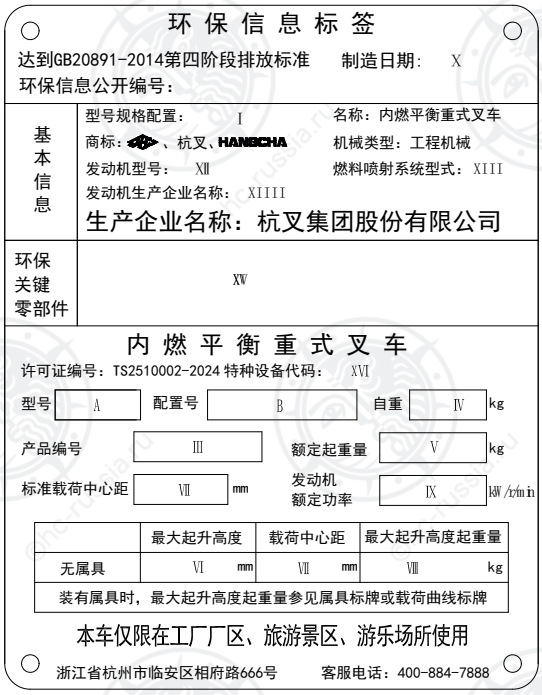


21、Product nameplate

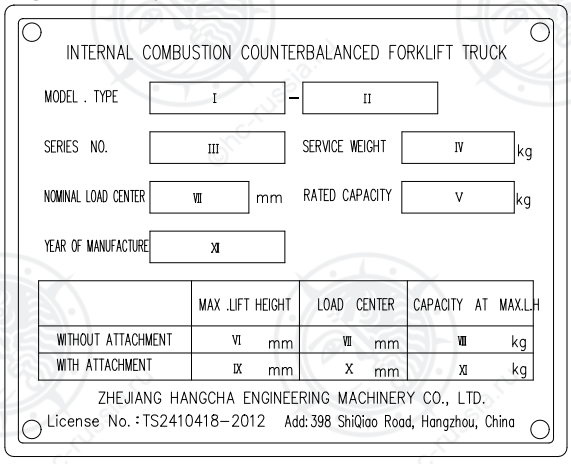
CE nameplate



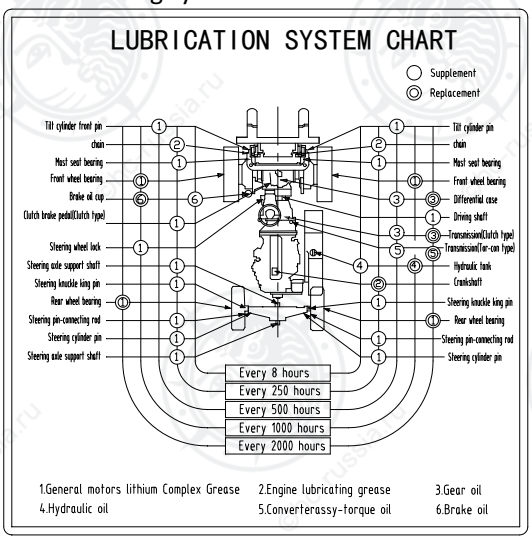
China IV nameplate



English nameplate



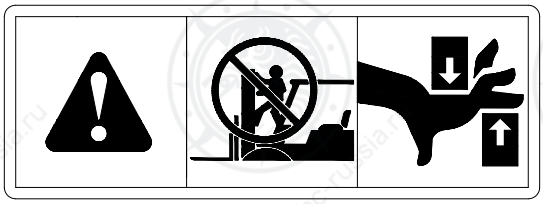
22. Lubricating system label



23. Hazard label

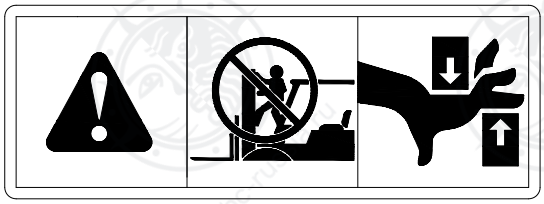
Inner and outer masts and fork arm carriers are sliding parts for lifting and lowering; do not place your hands between the inner and outer masts.

If it is necessary to inspect or repair this part, the inspection and repair can only be carried out after the engine is turned off. There must be no other people on the truck; people outside the truck should not operate the truck to avoid an accident arising from misuse of the mast lever.



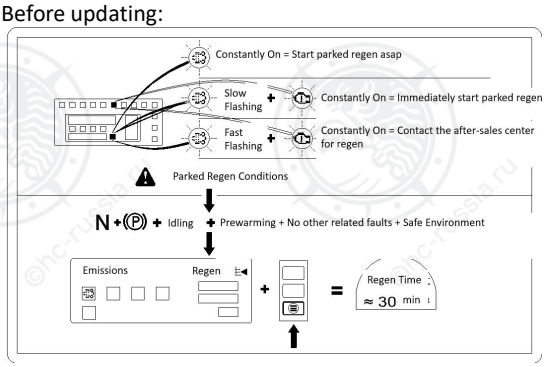
24. Hazard label (Keep clear of mast label)

Warning: Danger to your life. If you become trapped between the mast and instrument stand or overhead guard, you will be at risk of serious injury. If it is necessary to inspect or repair this part, the inspection and repair can only be carried out after the engine is turned off. There must be no other people on the truck; people outside the truck should not operate the truck to avoid an accident arising from misuse of the mast lever.

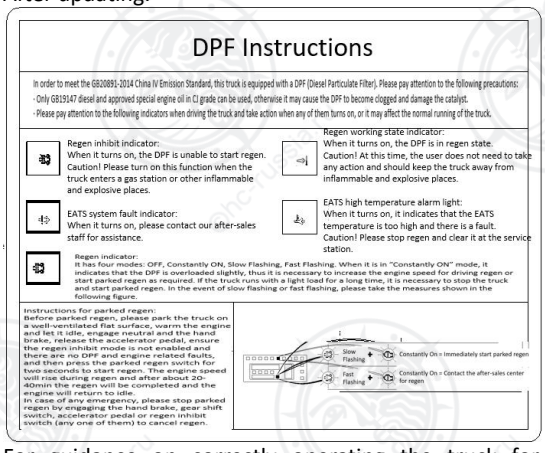


25、Regen operating instruction label (4t-5t China IV trucks only)

Before updating:

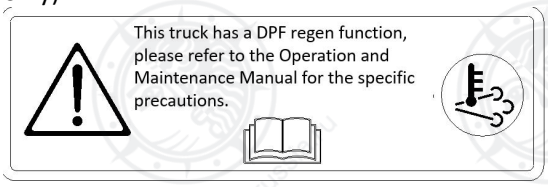


After updating:

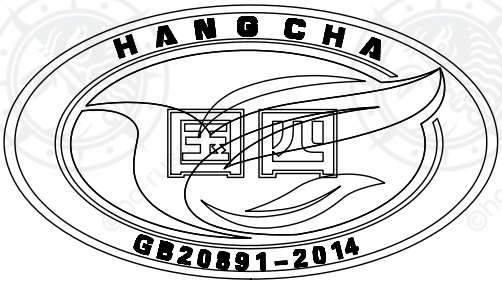


For guidance on correctly operating the truck for regen., please refer to the regen. related content as described under China IV Instruments of this Manual.

26、DPF warning label (4t-5t China IV trucks only)

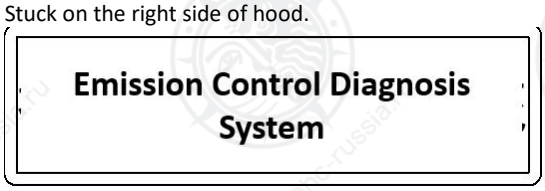


27、China IV emission label (China IV trucks only)



28、Emission control diagnosis system label (China IV trucks only)

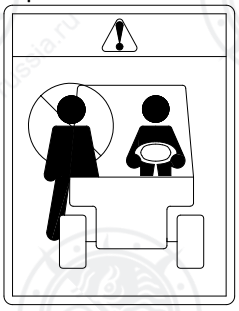
Stuck on the right side of hood.



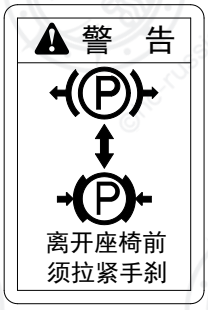
29、“Pro”label



30、Passenger prohibition label



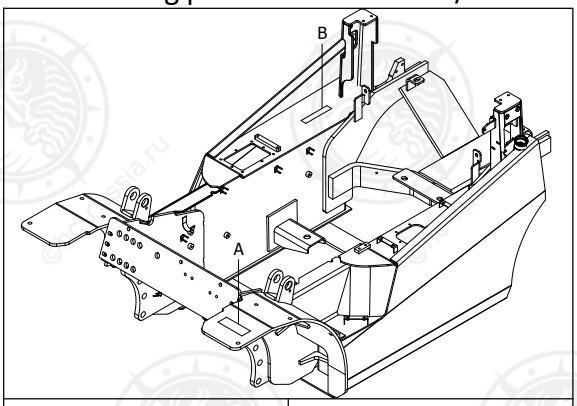
31、Hand brake label（Chinese）



32、Card swiping label（Chinese）



33、Marking positions for frame S/N



A. Frame S/N	B. Mechanical environmental protection code

X. Lifting, handling and towing of the forklift truck

Lift the forklift truck

•Tie the steel rope on the lifting hole and counterweight lifting hook at both ends of the beam of outer mast firmly and lift the forklift truck with the lifting device.

Warning

- Do not wind the steel rope around the overhead guard when lifting the forklift truck.
- The steel rope and the lifting device must be strong enough to safely support the forklift truck, because the truck is extremely heavy.
- Do not lift the forklift truck with the cab frame (overhead guard).
- Do not stand under the forklift truck when lifting it.

Handling

The forklift truck can be used for loading and unloading and short distance transport, but should not be used for long distance transport. If the forklift truck is transported over a long distance, it should be handled with a ship, train or vehicle with load capacity of more than 5t. Chock the wheels with wedges firmly and tie the body down firmly at the same time to protect the truck from sliding during transport.

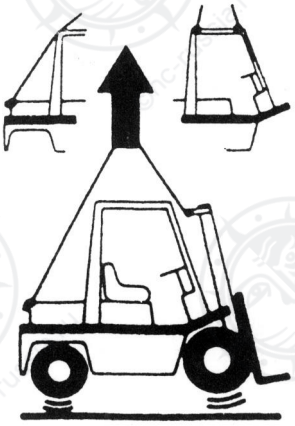
Towing

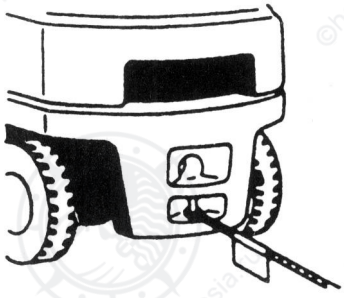
The drag pin under the counterweight can only be used for pulling the forklift truck; the drag pin should be pulled out first when towing; then, the steel rope should be installed, and the drag pin should be reinstalled.

Note: Release the hand brake lever.

Towing method after truck damage:

Release the hand brake lever. Pull the shift lever into the neutral position. Pay attention to traffic safety and hang the towing sign.





Caution

- Do not tow trucks with defective steering systems or damaged brake systems.
- Obey traffic rules when towing a truck on the highway.

Warning

- Only attach the steel rope to the specified position.
- Do not suddenly apply load on the steel rope.

XI. Model meaning

Note: The truck with B1 transmission and the truck with F transmission have the same engine model. Apart from the transmission models, the other parts of them are the same.

1t-1.8t

Model	**Engine**	Hydraulic/mechanical transmission	**Rated Lift Capacity (t) / Load center distance**
CPC10/15/18-XRG71	4D27XG30-003 Diesel engine	XR150-120000-G00	1/500, 1.5/500, 1.8/500
CPCD10/15/18-XRG71		XR160-120000-G00	1/500, 1.5/500, 1.8/500
CPCD10/15/18-XRG71F		XRF160-120000-G00	1/500, 1.5/500, 1.8/500
CPC10/15/18-XRG71J	4D27XG40-001 Diesel engine	XR150-120000-G00	1/500, 1.5/500, 1.8/500
CPCD10/15/18-XRG71J		XR160-120000-G00	1/500, 1.5/500, 1.8/500
CPCD10/15/18-XRG71JF		XRF160-120000-G00	1/500, 1.5/500, 1.8/500
CPCD15/18-XRG71JB1		XRB1630-120000-G00	1.5/500, 1.8/500
CPC15/18-XRW10	ISUZU GK-C240NKFC-01	XR150-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRW10		XR161-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRW10B(B1)		B:Y43160X-000-G00 B1:XRB1630-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRW10F		XRF160-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRW43	Cummins QSF2.8T3NA49 Diesel engine	XR161-120000-G00	1/500, 1.5/500, 1.8/500
CPQD15/18-XRW21	K21 Gasoline Engine GCT	XR161-120000-G00	1.5/500, 1.8/500
CPQD15/18-XRW21F		XRF160-120000-G00	1.5/500, 1.8/500
CPQYD15/18-XRW21		XR161-120000-G00	1.5/500, 1.8/500
CPQYD15/18-XRW21F		XRF160-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRW91F	4D27XG30-300 Diesel engine	XRF160-120000-G00	1.5/500, 1.8/500
CPQD15/18-XRW21B(B1)	K21 Gasoline Engine GCT	B:Y43160X-000-G00 B1:XRB1630-120000-G00	1.5/500, 1.8/500
CPQYD15/18-XRW21B(B1)			1.5/500, 1.8/500
CPCD15/18-XRG98	4D29X41-008 Diesel engine	XR160-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRG98F	4D29X41-007 Diesel engine	XRF160-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRG98B1		XRB1630-120000-G00	1.5/500, 1.8/500

Model	**Engine**	Hydraulic/mechanical transmission	**Rated Lift Capacity (t) / Load center distance**
CPCD15/18-XRW32B1	4TNE92-HRJ Diesel engine	XRB1630-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRW32F		XRF160-120000-G01(NEW) XRF160-120000-G00(OLD)	1.5/500, 1.8/500
CPYD15/18-XRW51B1	K21 LPG	XRB1630-120000-G00	1.5/500, 1.8/500
CPCD15/18-XRH5	Cummins F2.8CS449 Diesel engine	XR161-120000-G00	1.5/500, 1.8/500

2t-2.5t

Model	Engine	Hydraulic/mechanical power transmission	Rated Lift Capacity (t) / Load center
CPC20/25-XRG72	4D32XG30-004	XR250-120000-G00	2/500, 2.5/500
CPCD20/25-XRG72		XR260-120000-G00	2/500, 2.5/500
CPCD20/25-XRG72F		XRF260-120000-G01	2/500, 2.5/500
CPC20/25-XRG92	4D32XG40-200	XR250-120000-G00	2/500, 2.5/500
CPCD20/25-XRG92		XR260-120000-G00	2/500, 2.5/500
CPC20/25-XRG72J	4D32XG40-001	XR250-120000-G00	2/500, 2.5/500
CPCD20/25-XRG72J		XR260-120000-G00	2/500, 2.5/500
CPCD20/25-XRG72JF	4D32XG40-002	XRF260-120000-G01	2/500, 2.5/500
CPCD20/25-XRG72JB1		XRB2630-120000-G00	2/500, 2.5/500
CPC20/25-XRW10	ISUZU GK-C240NKFC-01	XR250-120000-G00	2/500, 2.5/500
CPCD20/25-XRW10		XR261-120000-G00	2/500, 2.5/500
CPCD20/25-XRW10B(B1)		B:Y43160X-000-G00 B1:XRB2630-120000-G00	2/500, 2.5/500
CPCD20/25-XRW10F		XRF260-120000-G01	2/500, 2.5/500
CPCD20/25-XRW43	Cummins QSF2.8T3NA49 Diesel engine	XR261-120000-G00	2/500, 2.5/500
CPCD20/25-XRW43B		Y43160X-000-G00	2/500, 2.5/500
CPCD20/25-XRW43F		XRF260-120000-G01	2/500, 2.5/500
CPCD20/25-XRW56	Yanmar 4TNV94L-BXPHZ Diesel engine	XR261-120000-G00	2/500, 2.5/500
CPCD20/25-XRW56B		Y43160X-000-G00	2/500, 2.5/500
CPCD20/25-XRW56F		XRF260-120000-G01	2/500, 2.5/500
CPQD20/25-XRW22	K25 Gasoline Engine GCT	XR261-120000-G00	2/500, 2.5/500
CPQD20/25-XRW22B(B1)		B:Y43160X-000-G00 B1:XRB2630-120000-G00	2/500, 2.5/500
CPQD20/25-XRW22F		XRF260-120000-G01	2/500, 2.5/500
CPQYD20/25-XRW22		XR261-120000-G00	2/500, 2.5/500
CPQYD20/25-XRW22B(B1)		B:Y43160X-000-G00 B1:XRB2630-120000-G00	2/500, 2.5/500
CPQYD20/25-XRW22F		XRF260-120000-G01	2/500, 2.5/500

Model	Engine	Hydraulic/mechanical power transmission	Rated Lift Capacity (t) / Load center
CPC20/25-XRW55	Mitsubishi S4S	XR250-120000-G00	2/500, 2.5/500
CPCD20/25-XRW55B(B1)		B:Y43160X-000-G00 B1:XRB2630-120000-G00	2/500, 2.5/500
CPCD20/25-XRW55F		XRF260-120000-G01	2/500, 2.5/500
CPCD20/25-XRW92F	4D32XG30-300	XRF260-120000-G01	2/500, 2.5/500
CPCD20/25-XRW33B(B1)	YANMAR 4TNE98	B:Y43160X-000-G00 B1:XRB2630-120000-G00	2/500, 2.5/500
CPCD20/25-XRW33F		XRF260-120000-G01	2/500, 2.5/500
CPQYD20/25-XRW21	GCT K21 LPG	XR261-120000-G00	2/500, 2.5/500
CPCD20/25-XRG92F	Xinchai 4D32X41-002	XRF260-120000-G01	2/500, 2.5/500
CPCD20/25-XRG92B1		XRB2630-120000-G00	2/500, 2.5/500
CPYD20/25-XRW52F	GCT K25 LPG	XRF260-120000-G01	2/500, 2.5/500
CPYD20/25-XRW52B(B1)		B:Y43160X-000-G00 B1:XRB2630-120000-G00	2/500, 2.5/500
CPCD20/25-XRG59	Dachai CA498-05T3-A250	XR2616-100000-000	2/500, 2.5/500
CPCD20/25-XRG60	Dachai CA498-06T3R-A249	XR2616-100000-000	2/500, 2.5/500
CPCD20/25-XRH5	Cummins F2.8CS449 Diesel engine	XR261-120000-G00	2/500, 2.5/500
CPCD20/25-XRH5B1		XRB2630-120000-G00	2/500, 2.5/500
CPCD20/25-XRH5F		XRF260-120000-G01	2/500, 2.5/500
CPCD20/25-XRG2	C490BPG-416 Diesel engine	XR260-120000-G00	2/500, 2.5/500

3t-3.5t

Model	Engine	Hydraulic/mechanical transmission	Rated Lift Capacity (t) / Load center
CPC30/35/38-XRG72	4D32XG30-004 Diesel engine	XR300-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG72		XR310-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG72F		XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPC30/35/38-XRG72J	4D32XG40-001 Diesel engine	XR300-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG72J		XR310-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG72JF	4D32XG40-002 Diesel engine	XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG72JB1		XRB3130-120000-G00	3/500, 3.5/500 3.8/500
CPC30/35/38-XRG92	4D32XG40-200 Diesel engine	XR300-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG92		XR310-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG92B1		XRB3130-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG92-GW		XR310-120000-G00	3/500, 3.5/500 3.8/500
CPC30-XRW10	ISUZU GK-C240NKFC-01	XR300-120000-G00	3/500
CPCD30-XRW10		XR311-120000-G00	3/500
CPCD30/35-XRW10B(B1)		B:Y43160X-000-G00 B1:XRB3130-120000-G00	3/500, 3.5/500
CPCD30-XRW10F		XRF310-120000-G01	3/500
CPCD30/35-XRW43	Cummins QSF2.8T3NA49 Diesel engine	XR311-120000-G00	3/500, 3.5/500
CPCD30/35/38-XRW43B		Y43160X-000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRW43F		XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPCD30/35-XRW56	Yanmar 4TNV94L-BXPHZ Diesel engine	XR311-120000-G00	3/500, 3.5/500
CPCD30/35/38-XRW56B		Y43160X-000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRW56F		XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPQD30/35-XRW22	K25 Gasoline Engine GCT	XR311-120000-G00	3/500, 3.5/500
CPQD30/35/38-XRW22B(B1)		B:Y43160X-000-G00 B1:XRB3130-120000-G00	3/500, 3.5/500 3.8/500
CPQD30/35/38-XRW22F		XRF310-120000-G01	3/500, 3.5/500 3.8/500

Model	Engine	Hydraulic/mechanical transmission	Rated Lift Capacity (t) / Load center
CPQYD30/35/38-XRW22	K25 Gasoline Engine GCT	XR311-120000-G00	3/500, 3.5/500 3.8/500
CPQYD30/35/38-XRW22B(B1)		B:Y43160X-000-G00 B1:XRB3130-120000-G00	3/500, 3.5/500 3.8/500
CPQYD30/35/38-XRW22F		XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG92F	4D32X41-002 Diesel engine	XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPC30/35-XRW55	Mitsubishi S4S-DPEU2	XR300-120000-G00	3/500, 3.5/500
CPCD30/35-XRW55B(B1)		B:Y43160X-000-G00 B1:XRB3130-120000-G00	3/500, 3.5/500
CPCD30/35/38-XRW55F		XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRW92F	4D32XG30-300 Diesel engine	XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRW52F	K25 LPG	XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRW52B(B1)		B:Y43160X-000-G00 B1:XRB3130-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35-XRG59	Dachai CA498-05T3-A25 0	XR3116-100000-000	3/500, 3.5/500
CPCD30/35-XRG60	Dachai CA498-06T3R-A2 49	XR3116-100000-000	3/500, 3.5/500
CPCD30/35/38-XRW33B(B1)	YANMAR 4TNE98	B:Y43160X-000-G00 B1:XRB3130-120000-G00	3/500, 3.5/500
CPCD30/35/38-XRW33F		XRF310-120000-G01	3.8/500
CPCD30/35/38-XRH5	Cummins F2.8CS449 Diesel engine	XR311-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRH5B1		XRB3130-120000-G00	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRH5F		XRF310-120000-G01	3/500, 3.5/500 3.8/500
CPCD30/35/38-XRG2	C490BPG-416 Diesel engine	XR310-120000-G00	3/500, 3.5/500 3.8/500

4t-X5t

Model	Engine	Hydraulic/mechanical transmission	Rated Lift Capacity (t) / Load center distance (mm)
CPCD40/45-XRG76	Yuchai YC4DK90-T304	XR460-120000-G00	4/500, 4.5/500
CPCD50-XRXG76			5.0/500, 5.5/500
CPCD40/45-XRG75	DCD CY4BG531-2	XR460-120000-G00	4/500, 4.5/500
CPCD50-XRXG75			5.0/500, 5.5/500
CPCD40/45-XRG75-GW			4/500, 4.5/500
CPCD50-XRXG75-GW			5.0/500, 5.5/500
CPCD40/45-XRW34	Perkins 1004D-44T	XR463-120000-G00	4/500, 4.5/500
CPCD50-XRXW34			5.0/500, 5.5/500
CPCD40/45-XRW35	Perkins 1004D-44	XR463-120000-G00	4/500, 4.5/500
CPCD50-XRXW35			5.0/500, 5.5/500
CPQYD40/45-XRW57	PSI GM4.3L LX Dual fuel engine:	XR464-120000-G00	4/500, 4.5/500
CPQYD50-XRXW57			5.0/500, 5.5/500
CPC40/45-XRG73	Xinchai 4D32RG30	XR452-120000-G00	4/500, 4.5/500
CPC50-XRXG73			5.0/500, 5.5/500
CPCD40/45-XRG73	Xinchai 4D32RG30	XR461-120000-G00	4/500, 4.5/500
CPCD50-XRXG73			5.0/500, 5.5/500
CPCD55-XRXG73BN-S		XBN458-130000-G01	5.5/500
CPCD40/45-XRW76	Mitsubishi S6S-G365CSFL	XR463-120000-G00	4/500, 4.5/500
CPCD50-XRXW76			5.0/500
CPCD40/45-XRW76BN	Mitsubishi S6S-G365CSFL	XBN458-130000-G02	4/500, 4.5/500
CPCD50-XRXW76BN			5.0/500
CPCD40/45-XRW19	TD42AA	XR467-120000-G00	4/500, 4.5/500
CPCD50-XRXW19			5.0/500
CPCD40/45-XRG93	Xinchai 4D32YG40-001	XR461-120000-G00	4/500, 4.5/500
CPCD50-XRXG93			5.0/500

Model	Engine	Hydraulic/mechanical transmission	Rated Lift Capacity (t) / Load center distance (mm)
CPCD40/45-XRG93-GW			4/500, 4.5/500
CPCD50-XRXG93-GW			5.0/500
CPCD40/45-XRG82	Yuchai YCF3675-T480	XR461-120000-G00	4/500, 4.5/500
CPCD50-XRXG82			5.0/500
CPCD55-XRXG82BN-S		XBN458-130000-G02	5.5/500
CPCD55-XRXG76BN-S	Yuchai YC4DK90-T304	XBN458-130000-G02	5.5/500

XII. Main technical performance parameters

1.0-1.8t

Model		CPCD10-XRG71	CPC15-XRG71 CPCD15-XRG71	CPC18-XRG71 CPCD18-XRG71
Rated load capacity kg		1000	1500	1750
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		155	155	155
Max. lift speed, full load mm/s		460	580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5	17.5
Min. ground clearance, mm		115	115	115
Min. outside steering radius mm		2035	2035	2060
Max. gradeability, full load %		18	18	18
Wheelbase mm		1475	1475	1475
Wheel track (front/rear) mm		890/920	890/920	890/920
Weight kg		2720	2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-8PR/2	6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60
Diesel engine oil	Model	4D27XG30-003		
	Rated power/rpm	34kW/2500 r/min		
	Max. torque/rpm	140N·m / (1000-1800) r/min		
	Displacement (L)	2.670		

Model		CPCD15-XRG71F	CPCD18-XRG71F
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-10PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Diesel engine oil	Model	4D27XG30-008	
	Rated power/rpm	34kW/2500 r/min	
	Max. torque/rpm	140N·m / (1000-1800) r/min	
	Displacement (L)	2.670	

Model		CPC15-XRG91	CPCD15-XRG91	CPC18-XRG91	CPCD18-XRG91
Rated load capacity kg		1500	1500	1750	1750
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		155	155	155	155
Max. lift speed, full load mm/s		580	580	580	580
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5	17.5	17.5
Min. ground clearance, mm		105	115	105	115
Min. outside steering radius mm		2035	2035	2060	2060
Max. gradeability, full load %		20	25	20	25
Wheelbase mm		1475	1475	1475	1475
Wheel track (front/rear) mm		890/920	890/920	890/920	890/920
Weight kg		2720	2720	2880	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3205×1090×2120	3235×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	4D27XG40-201			
	Rated power/rpm	34kW/2500 r/min			
	Max. torque/rpm	140N·m / (1000-1800) r/min			
	Displacement (L)	2.670			

Model		CPCD15-XRG71JF CPCD15-XRG71JB1	CPCD18-XRG71JF CPCD18-XRG71JB1
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-10PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Diesel engine oil	Model	4D27XG40-002	
	Rated power/rpm	34kW/2500 r/min	
	Max. torque/rpm	140N·m / (1000-1800) r/min	
	Displacement (L)	2.670	

Model		CPC15-XRW10 CPCD15-XRW10	CPC18-XRW10 CPCD18-XRW10
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		610	610
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Diesel engine oil	Model	ISUZU GK-C240NKFC-01	
	Rated power/rpm	35.4kW/2500r/min	
	Max. torque/rpm	139.9N·m/ 1800 r/min	
	Displacement (L)	2.369	

Model		CPCD10-XRW43	CPCD15-XRW43	CPCD18-XRW43
Rated load capacity kg		1000	1500	1750
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		155	155	155
Max. lift speed, full load mm/s		500	500	500
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5	17.5
Min. ground clearance, mm		105	105	105
Min. outside steering radius mm		2000	2000	2030
Max. gradeability, full load %		20	20	20
Wheelbase mm		1475	1475	1475
Wheel track (front/rear) mm		890/920	890/920	890/920
Weight kg		2510	2660	2785
Dimensions (including forks) (L×W×H)		3205×1090×2120	3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60
Diesel engine oil	Model	Cummins QSF2.8T3NA49		
	Rated power/rpm	36kW/2500r/min		
	Max. torque/rpm	186N·m/ 1500 r/min		
	Displacement (L)	2.8		

Model		CPCD15-XRW32F CPCD15-XRW32B1	CPCD18-XRW32F CPCD15-XRW32B1
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		19	19
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90
Diesel engine	Model	4TNE92-HRJ	
	Rated power/rpm	32.8kW/2450 r/min	
	Max. torque/rpm	142N·m/1600 r/min	
	Displacement (L)	2.659	

Model		CPCD15-XRW32B	CPCD18-XRW32B
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		19.3	19.3
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90
Diesel engine	Model	4TNE92-HRJ	
	Rated power/rpm	32.8kW/2450 r/min	
	Max. torque/rpm	142N·m/1600 r/min	
	Displacement (L)	2.659	

Model		CPQD15-XRW21	CPQD18-XRW21
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		500	500
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		20	20
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Gasoline engines	Model	GCT K21	
	Rated power/rpm	31.2kW/2250 r/min	
	Max. torque/rpm	143.7N·m/1600 r/min	
	Displacement (L)	2.065	
	Power type	Gasoline	

Model		CPQD15-XRW21B CPQD15-XRW21B1	CPQD18-XRW21B CPQD18-XRW21B1
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		510	510
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		18	18
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		20	20
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Gasoline engines	Model	GCT GK21	
	Rated power/rpm	31.2kW/2250 r/min	
	Max. torque/rpm	143.7N·m/1600 r/min	
	Displacement (L)	2.065	
	Power type	Gasoline	

Model		CPQYD15-XRW21B CPQYD15-XRW21B1	CPQYD18-XRW21B CPQYD18-XRW21B1
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		510	510
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		18	18
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		20	20
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Gasoline engines	Model	GCT GK21	
	Rated power/rpm	31.2kW/2250 r/min	
	Max. torque/rpm	143.7N·m/1600 r/min	
	Displacement (L)	2.065	

Model		CPCD15-XRW91F	CPCD18-XRW91F
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Gasoline engines	Model	4D27XG30-300	
	Rated power/rpm	34kW/2500 r/min	
	Max. torque/rpm	140N·m/(1600-1800) r/min	
	Displacement (L)	2.670	

Model		CPCD15-XRG98	CPCD18-XRG98
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90
Diesel engine	Model	4D29X41-008	
	Rated power/rpm	34kW/2500 r/min	
	Max. torque/rpm	150N·m/1600 r/min-1800 r/min	
	Emission standards	China IV	

Model		CPCD15-XRG98F CPCD15-XRG98B1	CPCD18-XRG98F CPCD18-XRG98B1
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		580	580
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		115	115
Min. outside steering radius mm		2035	2060
Max. gradeability, full load %		25	25
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2720	2880
Dimensions (including forks) (L×W×H)		3205×1090×2120	3240×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90
Diesel engine	Model	4D29X41-007	
	Rated power/rpm	34kW/2500 r/min	
	Max. torque/rpm	150N·m/1600 r/min-1800 r/min	
	Emission standards	China IV	

Model		CPCD15-XRH5	CPCD18-XRH5
Rated load capacity kg		1500	1750
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		155	155
Max. lift speed, full load mm/s		500	500
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5
Min. ground clearance, mm		105	105
Min. outside steering radius mm		2000	2030
Max. gradeability, full load %		20	20
Wheelbase mm		1475	1475
Wheel track (front/rear) mm		890/920	890/920
Weight kg		2650	2785
Dimensions (including forks) (L×W×H)		3205×1090×2120	3235×1090×2120
Tires (front/rear)		6.5-10-10PR/2 5.00-8-10PR/2	6.5-10-10PR/2 5.00-8-8PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90
Diesel engine	Model	F2.8CS449	
	Rated power/rpm	36kW/2500 r/min	
	Max. torque/rpm	186N·m/ 1500 r/min	
	Emission standards	China IV	

2-3.8t

Model		CPC20-XRG72 CPCD20-XRG72	CPC25-XRG72 CPCD25-XRG72	CPC30-XRG72 CPCD30-XRG72	CPC35-XRG72 CPCD35-XRG72
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		21	21	19	19
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2440
Max. gradeability, full load %		25	25	25	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/975	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3610×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	4D32XG30-004			
	Rated power/rpm	45kW/2500 r/min			
	Max. torque/rpm	200N·m / (1500-1800) r/min			
	Displacement (L)	3.168			

Model		CPC20-XRG92 CPCD20-XRG92	CPC25-XRG92 CPCD25-XRG92	CPC30-XRG92 CPCD30-XRG92	CPC35-XRG92 CPCD35-XRG92
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		21	21	19	19
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		25	25	25	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/975	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	4D32X41-001			
	Rated power/rpm	36.8kW/2500 r/min			
	Max. torque/rpm	200N·m / (1400-1600) r/min			
	Displacement (L)	3.168 China IV			

Model		CPC38-XRG92	CPCD38-XRG92
Rated load capacity kg		3800	3800
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		170	170
Max. lift speed, full load mm/s		430	430
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		19	19
Min. ground clearance, mm		130	130
Min. outside steering radius mm		2480	2480
Max. gradeability, full load %		20	20
Wheelbase mm		1700	1700
Wheel track (front/rear) mm		1005/970	1005/970
Weight kg		4950	4950
Dimensions (including forks) (L×W×H)		3880×1225×2150	3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60
Diesel engine	Model	4D32X41-001	
	Rated power/rpm	36.8kW/2500 r/min	
	Max. torque/rpm	200N·m / (1400-1600) r/min	
	Displacement (L)	3.168 China IV	

Model		CPCD30-XRG92-GW	CPCD35-XRG92-GW
Rated load capacity kg		3000	3500
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		165	170
Max. lift speed, full load mm/s		490	430
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		19	19
Min. ground clearance, mm		130	130
Min. outside steering radius mm		2400	2450
Max. gradeability, full load %		25	20
Wheelbase mm		1700	1700
Wheel track (front/rear) mm		1005/970	1005/970
Weight kg		4380	4750
Dimensions (including forks) (L×W×H)		3770×1225×2450	3850×1225×2450
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90
Diesel engine	Model	4D32X41-001	
	Rated power/rpm	36.8kW/2500 r/min	
	Max. torque/rpm	200N·m / (1400-1600) r/min	
	Displacement (L)	3.168 China IV	

Model		CPCD38-XRG92-GW
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		430
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		19
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		20
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/970
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2450
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90
Gasoline engines	Model	4D32X41-001
	Rated power/rpm	36.8kW/2500 r/min
	Max. torque/rpm	200N·m / (1400-1600) r/min
	Displacement (L)	3.168 China IV

Model		CPCD20-XRG92F	CPCD25-XRG92F	CPCD30-XRG92F	CPCD35-XRG92F
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		21	21	19	19
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		25	25	25	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/975	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	4D32X41-002			
	Rated power/rpm	36.8kW/2500 r/min			
	Max. torque/rpm	210N·m / (1400-1600) r/min			
	Displacement (L)	3.168 China IV			

Model		CPCD38-XRG92F
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		430
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		19
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		20
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/970
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60
Gasoline engines	Model	4D32X41-002
	Rated power/rpm	36.8kW/2500 r/min
	Max. torque/rpm	210N·m / (1400-1600) r/min
	Displacement (L)	3.168 China IV

Model		CPC20-XRW10 CPCD20-XRW10	CPC25-XRW10 CPCD25-XRW10	CPC30-XRW10 CPCD30-XRW10
Rated load capacity kg		2000	2500	3000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		590	590	470
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		21	21	19
Min. ground clearance, mm		105	105	130
Min. outside steering radius mm		2270	2330	2400
Max. gradeability, full load %		20	15	15
Wheelbase mm		1650	1650	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975
Weight kg		3450	3850	4380
Dimensions (including forks) (L×W×H)		3610×1155×2120	3680×1155×2120	3770×1225×2150
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90/20h	12/90/20h	12/90/20h
Diesel engine	Model	ISUZU GK-C240NKFC-01		
	Rated power/rpm	35.4kW/2500r/min		
	Max. torque/rpm	139.9N·m/ 1800 r/min		
	Displacement (L)	2.369		

Model		CPCD20-XRW33	CPCD25-XRW33	CPCD30-XRW33	CPCD35-XRW33
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		21	21	19	19
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		25	25	25	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	YANMAR 4TNE98			
	Rated power/rpm	42.1kW/2300r/min			
	Max. torque/rpm	186N·m/ 1700 r/min			
	Displacement (L)	3.319			

Model		CPCD20-XRW43	CPCD25-XRW43	CPCD30-XRW43	CPCD35-XRW43
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		21	21	18	18
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2440
Max. gradeability, full load %		20	20	20	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3600×1155×2120	3675×1155×2120	3800×1225×2150	3870×1225×2170
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90/20h	12/90/20h	12/90/20h	12/90/20h
Diesel engine	Model	Cummins QSF2.8T3NA49			
	Rated power/rpm	36.5kW/2500r/min			
	Max. torque/rpm	186N·m/ 1500 r/min			
	Displacement (L)	2.8			

Model		CPCD20-XRW56	CPCD25-XRW56	CPCD30-XRW56	CPCD35-XRW56
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		21	21	18	18
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2440
Max. gradeability, full load %		20	20	20	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3600×1155×2120	3675×1155×2120	3800×1225×2150	3870×1225×2170
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90/20h	12/90/20h	12/90/20h	12/90/20h
Diesel engine	Model	Yanmar 4TNV94L-BXPHZ			
	Rated power/rpm	34.6kW/2400r/min			
	Max. torque/rpm	(191.5-208.5) N·m/ 1500(±100) r/min			
	Displacement (L)	3.054			

Model		CPQD20-XRW22	CPQD25-XRW22	CPQD30-XRW22	CPQD35-XRW22
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load		560	560	450	350
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load		21	21	18	18
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius		2270	2330	2400	2440
Max. gradeability, full load		20	20	20	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear)		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks)		3600×1155×2120	3675×1155×2120	3800×1225×2150	3870×1225×2170
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60/20h	12/60/20h	12/60/20h	12/60/20h
Gasoline engines	Model	GCT(NISSAN) K25			
	Rated power/rpm	37.4kW/2300 r/min			
	Max. torque/rpm	185N·m/1600 r/min			
	Displacement (L)	2.488			
	Power type	Gasoline			

Model		CPQYD20-XRW22	CPQYD25-XRW22	CPQYD30-XRW22	CPQYD35-XRW22
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load		560	560	450	350
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load		21	21	18	18
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius		2270	2330	2400	2440
Max. gradeability, full load		20	20	20	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear)		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks)		3600×1155×2120	3675×1155×2120	3800×1225×2150	3870×1225×2170
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60/20h	12/60/20h	12/60/20h	12/60/20h
Gasoline engines	Model	GCT(NISSAN) K25			
	Rated power/rpm	37.4kW/2300 r/min			
	Max. torque/rpm	185N·m/1600 r/min			
	Displacement (L)	2.488			
	Power type	Gasoline/LPG			

Model		CPC20-XRW55 CPCD20-XRW55	CPC25-XRW55 CPCD25-XRW55	CPC30-XRW55 CPCD30-XRW55	CPC35-XRW55 CPCD35-XRW55
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load		600	560	480	410
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load		21	21	18	19
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius		2270	2330	2400	2450
Max. gradeability, full load		25	20	20	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear)		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks)		3600×1155×2120	3675×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60/20h	12/60/20h	12/90/20h	12/90/20h
Diesel engine	Model	Mitsubishi S4S-DPEU2			
	Rated power/rpm	35.3kW/2250r/min			
	Max. torque/rpm	177N·m/ 1700 r/min			
	Displacement (L)	3.331			

Model		CPCD20-XRW92F	CPCD25-XRW92F
Rated load capacity kg		2000	2500
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		160	160
Max. lift speed, full load mm/s		620	620
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		21	21
Min. ground clearance, mm		105	105
Min. outside steering radius mm		2270	2330
Max. gradeability, full load %		25	25
Wheelbase mm		1650	1650
Wheel track (front/rear) mm		965/973	965/973
Weight kg		3450	3450
Dimensions (including forks) (L×W×H)		3615×1155×2120	3615×1155×2120
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90
Diesel engine	Model	4D32XG30-300	
	Rated power/rpm	36.8kW/2500 r/min	
	Max. torque/rpm	186N·m/(1600-1800) r/min	
	Displacement (L)	3.168	

Model		CPCD30-XRW92F	CPCD35-XRW92F	CPCD38-XRW92F
Rated load capacity kg		3000	3500	3800
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		165	170	170
Max. lift speed, full load mm/s		490	430	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		19	19	19
Min. ground clearance, mm		130	130	130
Min. outside steering radius mm		2400	2450	2480
Max. gradeability, full load %		25	20	20
Wheelbase mm		1650	1650	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975
Weight kg		4380	4750	4950
Dimensions (including forks) (L×W×H)		3770×1225×2150	3850×1225×2150	3880×1225×2150
Tires (front/rear)		28×9--10-14PR/2 6.50-10-10PR/2	28×9--15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90
Diesel engine	Model	4D32XG30-300		
	Rated power/rpm	36.8kW/2500r/min		
	Max. torque/rpm	186N·m/(1,600-1,800) r/min		
	Displacement (L)	3.168		

Model		CPCD20-XRG59	CPCD25-XRG59	CPCD30-XRG59	CPCD35-XRG59
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		630	630	510	440
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		20	20	19	19
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		25	25	25	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	CA498-05T3-A250			
	Rated power/rpm	36kW/2500r/min			
	Max. torque/rpm	196N·m/ 1800 r/min			
	Displacement (L)	3.168			

Model		CPCD20-XRG60	CPCD25-XRG60	CPCD30-XRG60	CPCD35-XRG60
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		630	630	510	440
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		20	20	19	19
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		25	25	25	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	CA498-05T3-A250			
	Rated power/rpm	36kW/2500r/min			
	Max. torque/rpm	196N·m/ 1800 r/min			
	Displacement (L)	3.168			

Model		CPYD20-XRW52B	CPYD25-XRW52B	CPYD30-XRW52B	CPYD35-XRW52B
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load		560	560	450	385
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load		21	21	20	20
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius		2270	2330	2400	2450
Max. gradeability, full load		20	20	20	15
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear)		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60	12/60
Gasoline engines	Model	GCT GK25 LPG			
	Rated power/rpm	35kW/2400 r/min			
	Max. torque/rpm	170N·m/1600 r/min			
	Displacement (L)	2.488			
	Power type	LPG			

Model		CPYD38-XRW52B
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		385
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		20
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		15
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/975
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60
Gasoline engines	Model	GCT GK25 LPG
	Rated power/rpm	35kW/2400 r/min
	Max. torque/rpm	170N·m/1600 r/min
	Displacement (L)	2.488
	Power type	LPG

Model		CPYD20-XRW52F	CPYD25-XRW52F	CPYD30-XRW52F	CPYD35-XRW52F
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load		560	560	450	385
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load		19	19	17.9	17.9
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius		2270	2330	2400	2450
Max. gradeability, full load		20	20	20	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear)		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR 6.00-9-10PR	7.00-12-12PR 6.00-9-10PR	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60	12/60
Gasoline engines	Model	GCT GK25 LPG			
	Rated power/rpm	35kW/2400 r/min			
	Max. torque/rpm	170N·m/1600 r/min			
	Displacement (L)	2.488			
	Power type	LPG			

Model		CPYD38-XRW52F
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		385
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		17.9
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		20
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/975
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/60
Gasoline engines	Model	GCT GK25 LPG
	Rated power/rpm	35kW/2400 r/min
	Max. torque/rpm	170N·m/1600 r/min
	Displacement (L)	2.488
	Power type	LPG

Model		CPCD20-XRH5	CPCD25-XRH5	CPCD30-XRH5	CPCD35-XRH5
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		20	20	18	18
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		20	20	20	18
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/975	1005/975	1005/975
Weight kg		3450	3850	4380	4700
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	Cummins F2.8CS449			
	Rated power/rpm	36kW/2500 r/min			
	Max. torque/rpm	186N·m/ 1500 r/min			
	Displacement (L)	2.8			
	Emission standards	China IV			

Model		CPCD38-XRH5
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		430
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		18.6
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		15
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/975
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90
Diesel engine	Model	Cummins F2.8CS449
	Rated power/rpm	36kW/2500 r/min
	Max. torque/rpm	186N·m/ 1500 r/min
	Displacement (L)	2.8
	Emission standards	China IV

Model		CPCD20-XRH5F	CPCD25-XRH5F	CPCD30-XRH5F	CPCD35-XRH5F
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5	18.6	18.6
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		20	20	20	18
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/975	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	Cummins F2.8CS449			
	Rated power/rpm	36kW/2500 r/min			
	Max. torque/rpm	186N·m/ 1500 r/min			
	Displacement (L)	2.8			
	Emission standards	China IV			

Model		CPCD38-XRH5F
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		430
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		18.6
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		15
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/975
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90
Diesel engine	Model	Cummins F2.8CS449
	Rated power/rpm	36kW/2500 r/min
	Max. torque/rpm	186N·m/ 1500 r/min
	Displacement (L)	2.8
	Emission standards	China IV

Model		CPCD20-XRH5B1	CPCD25-XRH5B1	CPCD30-XRH5B1	CPCD35-XRH5B1
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		17.5	17.5	18.6	18.6
Min. ground clearance, mm		105	105	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		20	20	20	18
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/975	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7.00-12-12PR/2 6.00-9-10PR/2	7.00-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	Cummins F2.8CS449			
	Rated power/rpm	36kW/2500 r/min			
	Max. torque/rpm	186N·m/ 1500 r/min			
	Displacement (L)	2.8			
	Emission standards	China IV			

Model		CPCD38-XRH5B1
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		430
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		18.6
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		15
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/975
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90
Diesel engine	Model	Cummins F2.8CS449
	Rated power/rpm	36kW/2500 r/min
	Max. torque/rpm	186N·m/ 1500 r/min
	Displacement (L)	2.8
	Emission standards	China IV

Model		CPCD20-XRG2	CPCD25-XRG2	CPCD30-XRG2	CPCD35-XRG2
Rated load capacity kg		2000	2500	3000	3500
Load center distance mm		500	500	500	500
Max. lift height mm		3000	3000	3000	3000
Free lift height mm		160	160	165	170
Max. lift speed, full load mm/s		620	620	490	430
Tilt angle of mast, forward/backward		6°/12°	6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		22	22	20	19
Min. ground clearance, mm		105	130	130	130
Min. outside steering radius mm		2270	2330	2400	2450
Max. gradeability, full load %		20	20	20	20
Wheelbase mm		1650	1650	1700	1700
Wheel track (front/rear) mm		965/973	965/973	1005/975	1005/975
Weight kg		3450	3850	4380	4750
Dimensions (including forks) (L×W×H)		3615×1155×2120	3680×1155×2120	3770×1225×2150	3850×1225×2150
Tires (front/rear)		7-12-12PR/2 6.00-9-10PR/2	7-12-12PR/2 6.00-9-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2	28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90	12/90	12/90	12/90
Diesel engine	Model	C490BPG-416			
	Rated power/rpm	40kW/2650 r/min			
	Max. torque/rpm	160N·m / (1800-2000) r/min			
	Displacement (L)	2.67			

Model		CPCD38-XRG2
Rated load capacity kg		3800
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		170
Max. lift speed, full load mm/s		430
Tilt angle of mast, forward/backward (°)		6°/12°
Max. running speed, no load km/h		19
Min. ground clearance, mm		130
Min. outside steering radius mm		2480
Max. gradeability, full load %		15
Wheelbase mm		1700
Wheel track (front/rear) mm		1005/975
Weight kg		4950
Dimensions (including forks) (L×W×H)		3880×1225×2150
Tires (front/rear)		28×9-15-14PR/2 6.50-10-10PR/2
Voltage (V) / Capacitance (Ah)		12/90
Diesel engine	Model	C490BPG-416
	Rated power/rpm	40kW/2650 r/min
	Max. torque/rpm	160N·m / (1800-2000) r/min
	Displacement (L)	2.67

4-X5t

Model		CPCD40-XRG76	CPCD45-XRG76	CPCD50-XRXG76
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	160
Max. lift speed, full load mm/s		440	440	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		36	33	31
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2310	4200×1490×2310	4245×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60
Diesel engine	Model	Yuchai YC4DK90-T304		
	Rated power/rpm	66kw / 2200r/min		
	Max. torque/rpm	350N·m / (1400-1700) r/min		

Model		CPCD40-XRG75	CPCD45-XRG75	CPCD50-XRXG75
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	160
Max. lift speed, full load mm/s		440	430	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		30	27	25
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4160×1420×2310	4180×1490×2310	4235×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60
Diesel engine	Model	DCD CY4BG531-2		
	Rated power/rpm	60kw / 2200r/min		
	Max. torque/rpm	300N·m / (1000-1800) r/min		

Model		CPCD40-XRG75-GW	CPCD45-XRG75-GW	CPCD50-XRXG75-GW
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		440	440	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		30	27	25
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2810	4200×1490×2810	4245×1490×2810
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		24/60	24/60	24/60
Diesel engine	Model	DCD CY4BG531-2		
	Rated power/rpm	60kw / 2200r/min		
	Max. torque/rpm	300N·m / (1400-1800) r/min		

Model		CPCD40-XRW34	CPCD45-XRW34	CPCD50-XRXW34
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		440	440	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	23
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		20	20	20
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160 / 1130	1190/1130	1190/1130
Weight kg		6150	6350	6700
Dimensions (including forks) (L×W×H)		4160×1420×2310	4180×1490×2310	4225×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60
Diesel engine	Model	Perkins 1004D-44T		
	Rated power/rpm	57.5kW/2200 r/min		
	Max. torque/rpm	309N·m/1400r/min		
	Displacement (L)	4.40		

Model		CPCD40-XRW35	CPCD45-XRW35	CPCD50-XRXW35
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	160
Max. lift speed, full load mm/s		440	430	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		24	24	26
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		20	20	20
Wheelbase mm		2000	2000	2150
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6300	6500	6850
Dimensions (including forks) (L×W×H)		4160×1420×2310	4180×1490×2310	4235×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60
Diesel engine	Model	Perkins 1004D-44		
	Rated power/rpm	56kW/2200 r/min		
	Max. torque/rpm	265N·m/1700r/min		
	Displacement (L)	4.41		

Model		CPQYD40-XRW57	CPQYD45-XRW57	CPQYD50-XRXW57
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		460	460	400
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		32	29	27
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2310	4200×1490×2310	4245×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/60	12/60	12/60
Dual fuel engine:	Model	GM4.3L LX		
	Rated power/rpm	74kw / 2300r/min		
	Max. torque/rpm	301N·m/ 1700 r/min		
	Displacement (L)	4.294		
	Power type	LPG		

Model		CPCD40-XRG73	CPCD45-XRG73	CPCD50-XRXG73
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		440	430	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		30	27	25
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6300	6500	6850
Dimensions (including forks) (L×W×H)		4160×1420×2310	4180×1490×2310	4225×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/105	12/105	12/105
Diesel engine	Model	Xinchai 4D32RG30-001		
	Rated power/rpm	60kW/2200 r/min		
	Max. torque/rpm	300N·m/ (1600-1800) r/min		

Model		CPC40-XRG73	CPC45-XRG73
Rated load capacity kg		4000	4500
Load center distance mm		500	500
Max. lift height mm		3000	3000
Free lift height mm		160	160
Max. lift speed, full load mm/s		440	430
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°
Max. running speed, no load km/h		25	25
Min. ground clearance, mm		170	170
Min. outside steering radius mm		2700	2720
Max. gradeability, full load %		20	20
Wheelbase mm		2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130
Weight kg		6300	6500
Dimensions (including forks) (L×W×H)		4160×1420×2310	4180×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/105	12/105
Diesel engine	Model	4D32RG30-002	
	Rated power/rpm	50kW/2300 r/min	
	Max. torque/rpm	250N·m/(1500-1700) r/min	

Model		CPC50-XRXG73
Rated load capacity kg		5000
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		160
Max. lift speed, full load mm/s		380
Tilt angle of mast, forward/backward (°)		6/12
Max. running speed, no load km/h		23
Min. ground clearance, mm		170
Min. outside steering radius mm		2780
Max. gradeability, full load %		20
Wheelbase mm		2000
Wheel track (front/rear) mm		1190/1130
Weight kg		6850
Dimensions (including forks) (L×W×H)		4225×1490×2310
Tires (front/rear)		300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/105
Diesel engine	Model	4D32RG30-001
	Rated power/rpm	60kW/2200 r/min
	Max. torque/rpm	320N·m/(1500-1700) r/min

Model		CPCD55-XRXG73BN-S
Rated load capacity kg		5500
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		165
Max. lift speed, full load mm/s		530
Tilt angle of mast, forward/backward (°)		9/9
Max. running speed, no load km/h		25
Min. ground clearance, mm		170
Min. outside steering radius mm		2880
Max. gradeability, full load %		20
Wheelbase mm		2100
Wheel track (front/rear) mm		1190/1130
Weight kg		7200
Dimensions (including forks) (L×W×H)		4325×1530×2270
Tires (front/rear)		300-15-18PR/2 7.00-12-14PR/2
Voltage (V) / Capacitance (Ah)		12/105
Diesel engine	Model	4D32RG30-017
	Rated power/rpm	60kW/2200 r/min
	Max. torque/rpm	320N·m / (1500-1700) r/min

Model		CPCD40-XRW76	CPCD45-XRW76	CPCD50-XRXW76
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	160
Max. lift speed, full load mm/s		460	520	450
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		26	26	26
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		20	22	20
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2310	4200×1490×2310	4245×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		24/60	24/60	24/60
Diesel engine	Model	Mitsubishi SPD-S6S-G3-3 China III Mitsubishi SPC-S6S-239-1 Euro Ⅲ A		
	Rated power/rpm	52kW/2300 r/min		
	Max. torque/rpm	248N·m/1700r/min		

Model		CPCD40-XRW76BN	CPCD45-XRW76BN	CPCD50-XRXW76BN
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	160
Max. lift speed, full load mm/s		520	520	450
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		26	26	26
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		25	22	20
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2310	4200×1490×2310	4245×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		24/60	24/60	24/60
Diesel engine	Model	Mitsubishi SPD-S6S-G3-3 China III Mitsubishi SPC-S6S-239-1 Euro Ⅲ A		
	Rated power/rpm	52kW/2300 r/min		
	Max. torque/rpm	248N·m/1700r/min		

Model		CPCD40-XRW19	CPCD45-XRW19	CPCD50-XRXW19
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	160
Max. lift speed, full load mm/s		460	460	460
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		26	25	26
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		20	27	20
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2310	4200×1490×2310	4245×1490×2310
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		24/60	24/60	24/60
Diesel engine	Model	TD42AA NISSAN		
	Rated power/rpm	59kW/2300 r/min		
	Max. torque/rpm	254N·m/1800r/min		

Model		CPCD40-XRG93	CPCD45-XRG93	CPCD50-XRXG93
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		440	430	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		30	27	25
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2250	4200×1490×2250	4245×1490×2250
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/105	12/105	12/105
Diesel engine	Model	Xinchai 4D35Y41-003		
	Rated power/rpm	55.8kW/2200 r/min		
	Max. torque/rpm	320N·m/1600r/min		
	Emission standards	China IV		

Model		CPCD40-XRG93-GW	CPCD45-XRG93-GW	CPCD50-XRXG93-GW
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		440	440	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		30	27	25
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2810	4200×1490×2810	4245×1490×2810
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		12/105	12/105	12/105
Diesel engine	Model	Xinchai 4D35Y41-003		
	Rated power/rpm	55.8kW/2200 r/min		
	Max. torque/rpm	320N·m/1600r/min		
	Emission standards	China IV		

Model		CPCD40-XRG82	CPCD45-XRG82	CPCD50-XRXG82
Rated load capacity kg		4000	4500	5000
Load center distance mm		500	500	500
Max. lift height mm		3000	3000	3000
Free lift height mm		160	160	165
Max. lift speed, full load mm/s		440	430	380
Tilt angle of mast, forward/backward (°)		6°/12°	6°/12°	6°/12°
Max. running speed, no load km/h		25	25	25
Min. ground clearance, mm		170	170	170
Min. outside steering radius mm		2700	2720	2780
Max. gradeability, full load %		30	27	25
Wheelbase mm		2000	2000	2000
Wheel track (front/rear) mm		1160/1130	1190/1130	1190/1130
Weight kg		6200	6400	6750
Dimensions (including forks) (L×W×H)		4180×1420×2250	4200×1490×2250	4245×1490×2250
Tires (front/rear)		8.25-15-14PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2	300-15-18PR/2 7.00-12-12PR/2
Voltage (V) / Capacitance (Ah)		24/60	24/60	24/60
Diesel engine	Model	Yuchai YCF3675-T480		
	Rated power/rpm	55.8kW/2200 r/min		
	Max. torque/rpm	330N·m/1600r/min		
	Displacement (L)	3.621		
	Emission standards	China IV		

Model		CPCD55-XRXG76BN-S
Rated load capacity kg		5500
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		165
Max. lift speed, full load mm/s		530
Tilt angle of mast, forward/backward (°)		9/9
Max. running speed, no load km/h		25
Min. ground clearance, mm		170
Min. outside steering radius mm		2880
Max. gradeability, full load %		20
Wheelbase mm		2100
Wheel track (front/rear) mm		1190/1130
Weight kg		7200
Dimensions (including forks) (L×W×H)		4325×1530×2270
Tires (front/rear)		300-15-18PR/2 7.00-12-14PR/2
Voltage (V) / Capacitance (Ah)		24/60
Diesel engine	Model	YC4DK75-T303
	Rated power/rpm	55kW/2200 r/min
	Max. torque/rpm	315N·m / (1400-1700) r/min
	Displacement (L)	3.621

Model		CPCD55-XRXG82BN-S
Rated load capacity kg		5500
Load center distance mm		500
Max. lift height mm		3000
Free lift height mm		165
Max. lift speed, full load mm/s		530
Tilt angle of mast, forward/backward (°)		9/9
Max. running speed, no load km/h		25
Min. ground clearance, mm		170
Min. outside steering radius mm		2880
Max. gradeability, full load %		20
Wheelbase mm		2100
Wheel track (front/rear) mm		1190/1130
Weight kg		7200
Dimensions (including forks) (L×W×H)		4325×1530×2270
Tires (front/rear)		300-15-18PR/2 7.00-12-14PR/2
Voltage (V) / Capacitance (Ah)		24/60
Diesel engine	Model	Yuchai YCF3675-T480
	Rated power/rpm	55.8kW/2200 r/min
	Max. torque/rpm	330N·m/1600r/min
	Displacement (L)	3.621
	Emission standards	China IV

XIII. Precautions for using the LPG forklift truck

For the detailed instructions on 1.0t-3.5t single/dual-fuel forklift trucks, please refer to the Operation and Maintenance Manual for R/XF/X Series 1.5t-3.5t LPG Forklift Trucks

Equipped with USA GM4.3 LX dual-fuel engines
CPYD40-XRW57, CPYD45-XRW57, CPYD50-XRXW57, CPYD55-XRXW57 CPQYD40-XRW57, CPQYD45-XRW57, CPQYD50-XRXW57, CPQYD55-XRXW57

The LPG fuel system mainly consists of a steel cylinder, filter, pressure reducing regulator, and mixer. LPG enters the pressure reducing regulator from the steel cylinder through the combination valve and high pressure pipeline via the filter. After vaporization, LPG enters the mixer and mixes with air in a certain proportion, then enters the engine cylinder for combustion and provides motive power for the forklift. The GM 4.3L engine is provided with a pressure reducing regulator, mixer and other LPG elements.

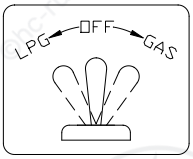
1. LPG filling and replacement

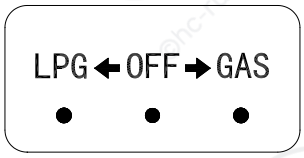
After the fuel in the steel cylinder is used up, it must be replaced. First, close the outlet stop valve, loosen the quick coupling, cover the outlet joint of the steel cylinder with a dust cap, and remove the steel cylinder from the truck, and fill it at the gas station. Place the steel cylinder flat during filling, put the intake limit valve at the upper end (the included angle between the liquid level gauge and the horizontal line should be 60°), unscrew the dust cover on the filling valve, insert the filling valve, open the intake limit valve for filling, take out the filling plug when LPG reaches 80% of the steel cylinder volume (when filling to 80% of rated capacity, the limiting device can be automatically closed). Pull out the filling plug, screw on the dust cover of the filling valve, and tighten the intake limit valve when the filling is complete.

Connect the forklift truck line with the quick coupling after installing the steel cylinder at the correct angle (the included angle between the liquid level gauge and the horizontal line should be about 60°), open the outlet stop valve switch of the steel cylinder, and check whether there is a gas leak. If a gas leak is found, the forklift truck can only be started after troubleshooting. Please close the valve on the steel cylinder after using the forklift truck each time.

2. Operation and use of dual fuel changeover switch

1. If switching to GAS mode, the engine fuel is gasoline.
2. If switching to LPG mode, the engine fuel is LPG.
3. If switching to neutral, neither of the above fuels are circulating.





3. Starting the dual fuel engine

(1) Start with gasoline

Shut off LPG, turn on the gasoline switch for a few seconds, rotate the ignition key, and start the motor to run the engine with gasoline.

(2) Start with LPG

① Start without gasoline in the carburetor: If it is known that there is no gasoline in the carburetor before starting, the engine can be started directly with LPG, i.e. turn off the gasoline switch, turn on the LPG switch for a few seconds, then turn on the key to start the motor and the engine can run.

② Start with gasoline in the carburetor: It is not easy to start with LPG at this time, so the only way

is to start the engine with gasoline: turn off the LPG switch and the gasoline switch first (place the switch to the "OFF" position), and then start the engine with gasoline. When the gasoline in the carburetor is about to run out and the engine speed becomes low, turn on the LPG switch again and then start the engine with LPG. Alternatively, after all the gasoline in the carburetor runs out and the engine stops running, turn on the LPG switch, rotate the key to start the motor, and then the engine can run.

4. Fuel switching when the engine is running

Switch from LPG to GAS:

① Turn the fuel changeover switch from the "LPG" position to the "OFF" position, depress the accelerator pedal slightly and hold it still to let the engine accelerate until it stops running.

② After the engine has stopped completely, turn the fuel changeover switch to the "GAS" position before restarting the engine.

Switch from GAS to LPG:

① Turn the fuel changeover switch from the "GAS" position to the "OFF" position. Depress the accelerator pedal slightly and hold it still to let the engine accelerate until it stops running.

②After the engine has stopped completely, open the outlet stop valve of the LPG cylinder and turn the fuel changeover switch to the "LPG" position, and then restart the engine.

Caution

1. Never use the fuel changeover switch to change fuel when the engine is running. Always remember that it should only be used after the engine has stopped totally.

2. Drive the truck for at least several kilometers with gasoline every two weeks to prevent the gasoline from degrading.

3. Do not change the fuel used immediately after the engine is started; the engine should be at normal working temperature before changing the fuel.

Pay special attention to the following points when the forklift truck is running on LPG:

Check whether there is a gas leak in the LPG steel cylinder and pipelines before driving.

Shut down the engine using the following methods after LPG is used:

① Rotate the fuel changeover switch to neutral;

② Let the engine idle until it stops;

③ Ensure that all of the remaining LPG has been used up. Rotate the ignition key switch to “off” after the engine stops.

4. The outlet stop valve of the steel cylinder should be fully closed and the engine should be checked for air leakage after use if it is going to be stored for a long time.

5. If air leakage, faults or other abnormalities are found during operation, the outlet stop valve of the steel cylinder should be closed immediately and professional maintenance personnel should be sent to check the LPG system.

5. Precautions

(1) If an LPG leak is found when the forklift truck is in use, the LPG switch should be turned off; the hydraulic valve should be closed; the pipe joints of device units and fasteners should be checked for looseness or leakage and promptly dealt with. The truck should be driven using gasoline if the faults are not eliminated.

(2) Gasoline 93# or vehicle LPG should be used for dual-fuel vehicles; otherwise, the accuracy of ignition timing will be affected, affecting performance.

(3) When the parking time is more than 10min, the LPG switch (or hydraulic valve) should be closed.

(4) When the engine is running, the water temperature should be 70℃-85℃.

6. Pressure reducing regulator

The pressure reducing regulator has two functions: I. Pressure reducing function. It can reduce the LPG pressure of the steel cylinder to barometric pressure; II. Evaporation function. LPG can be vaporized by absorbing the heat circulating in the engine.

7. Mixer

According to the engine running condition, the mixer sends the vaporized LPG mixed with air into the engine to meet the requirements of the engine.

8. Steel cylinder

(1) Functions

It consists of a safety valve, LPG inlet, outlet quick coupler, and corresponding fittings, it is the fuel storage supply system for LPG forklift trucks, and is installed at the rear. Main functions are:

a. Stop valve

Hand valve to control inlet and outlet pipes.

b. Filling limit valve

Automatically closed when the LPG quantity reaches 70%-80% of steel cylinder capacity.

c. Liquid level display

Directly displays the liquid level in the steel cylinder.

d. Flow limit valve

Automatically closed when the flow rate is too high (system damage and flow rate exceeding the design value).

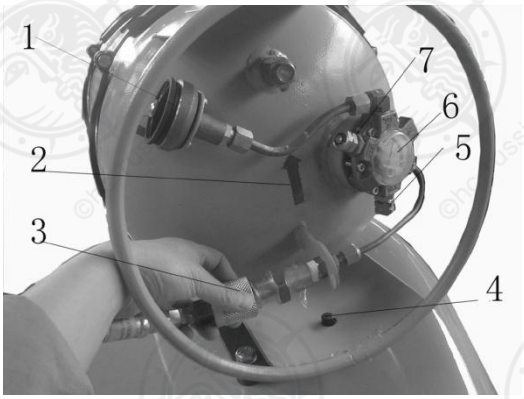
e. Safety valve

When the cylinder pressure exceeds the specified pressure, the safety valve automatically opens the pressure relief to prevent accidents.

(2) Main parameters

Working temperature: -40℃ to +60℃; working pressure: 2.2MPa; opening pressure of safety valve: 2.5 MPa ± 0.2MPa; maximum filling volume: 80% of steel cylinder volume.

(3) Steel cylinder structure



1 Filling valve (filling port and dust cap)	2. Mounting sign
3. Outlet valve (outlet joint)	4. Dowel pin
5. Outlet stop valve	6. Liquid level gauge
7. Inlet stop valve	

(4) Replacement of steel cylinder

Affix the operating instructions for safe use on the steel cylinder (see Fig. 1)

1. Park the truck on flat and solid road, shut down the engine and pull up the hand brake.
2. Remove the steel cylinder:

a. Close the outlet stop valve and loosen the outlet joint. (See Fig. 2)



Fig. 1

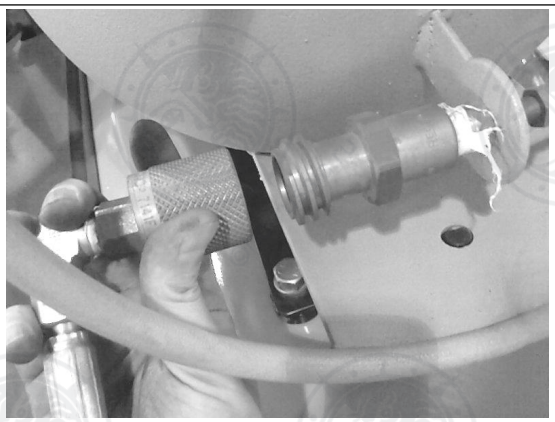
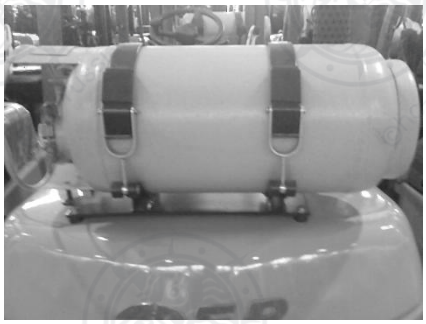


Fig. 2

b. Loosen the steel cylinder. See the following schematic diagram for specific steps.

Steel belt bracket

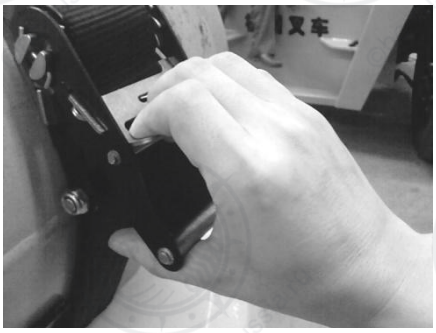




Buckle bracket



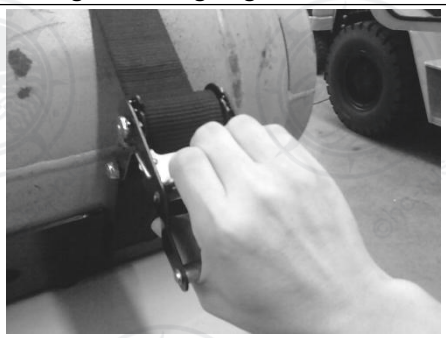
Buckle and tensioner



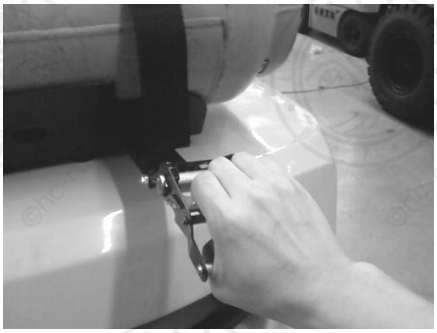
1. Hold the tensioner with your right hand and pull out the lock catch with your forefinger, middle finger and ring finger.



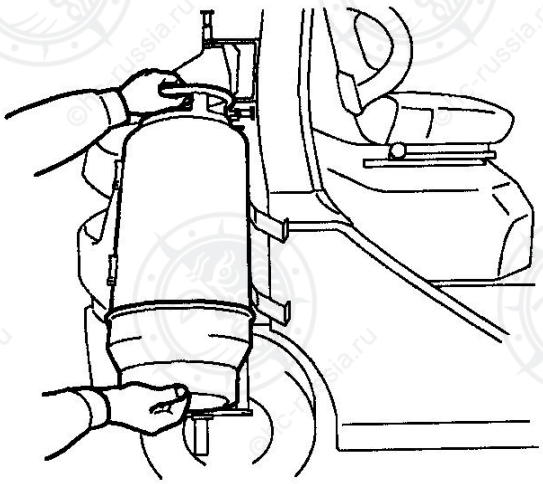
2. Continue 1, and push the tensioner up to press against the steel cylinder



3 Continue to pull out the lock catch and pull the entire tensioner down hard

 4. Release the buckle from the tensioner	5. Release the buckle from the side tensioner with the same method.

Remove the steel cylinder and fill it at a gas station



Notes:

1. Protect the steel cylinder from colliding against heavy blocks and take care when lifting, because it is heavy.
2. Ensure that the stop valve at the outlet end is closed.
3. The steel cylinder has to be filled at a gas station with an LPG filling permit issued by the quality and technology supervision bureau. Do not refill LPG privately; the LPG needs to conform to the Table 1: Automotive LPG Technical Requirements.

Note：a) Product No. 1, which can be used at ambient temperature above -20℃;

b) Product No. 2, which can be used at ambient temperature above -10℃;

c) Product No. 3, which can be used at ambient temperature above 0℃.

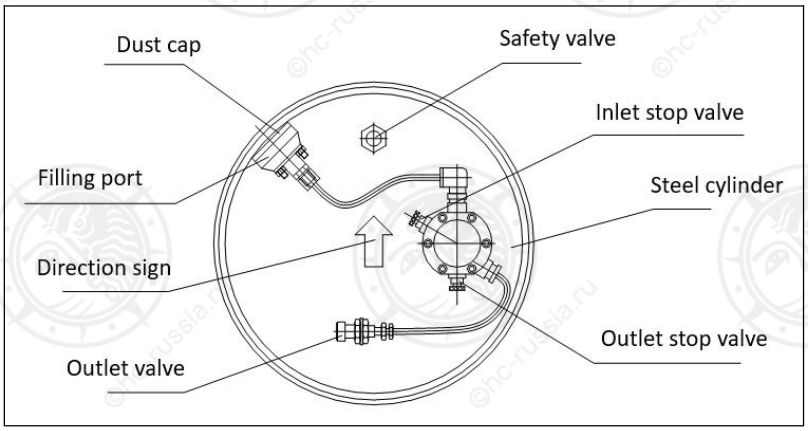


Table 1: Automotive LPG Technical Requirements.

Item		Quality Index			Test Method
		No. 1	No. 2	No. 3	
Vapor pressure (37.8℃, gauge pressure) /kPa		≤1430	890 - 1,430	660 - 1340	GB/T 6602[a]
Content mass fraction/%	Propane	＞85	＞65-85	40 - 65	SH/T 0614[b]
	Butane	≤2.5	—	—	
	Pentane	—	≤2.0	≤2.0	
	Total olefin	≤10	≤10	≤10	
	Butadiene (1, 3 butadiene)	≤0.5	≤0.5	≤0.5	
Residue	Evaporated residue / (mL/100mL)	≤0.05	≤0.05	≤0.05	SY/T 7509
	Oil stain check	Pass	Pass	Pass	
Density (20℃)/(kg/m3)		Actual measurement	Actual measurement	Actual measurement	SH/T 0221[c]
Copper corrosion/grade		≤1	≤1	≤1	SH/T 0232
Total sulphur content / (mg/m3)		＜270	＜270	＜270	SH/T 0222[d]
Hydrogen sulfide		None	None	None	SH/T 0125
Free water		None	None	None	Visual inspection

Note 1: The total sulfur content is the gaseous sulfur content at 0°C and 101.35 kPa.
Note 2: Check whether there is any free water in the specimen by visual inspection while measuring the density.

a. The evaporation pressure can be calculated as per GB/T 12576, but subject to the GB/T 6602 in case of arbitration.
b. The content can be measured as per SH/T 0230, but subject to SH/T 0614 in case of arbitration.
c. The density can be measured as per GB/T 12576, but subject to the SH/T 0221 in case of arbitration.
d. The total sulphur content can be measured as per SY/T 7508, but subject to the SH/T 0222 in case of arbitration.

Source: National Standard of the People's Republic of China: Automotive liquefied petroleum gas

(GB 19159-2003)

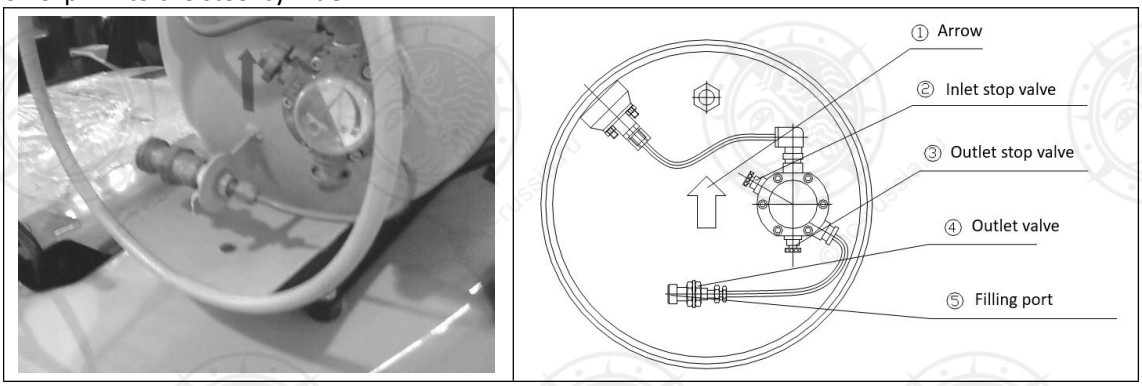
9. Operation steps for LPG cylinder replacement

(1) You must wear canvas gloves when refilling with gas to protect yourself from frostbite caused by evaporation of leaked gas.

(2) You should refill gas in a ventilated and empty space, should not smoke, and should avoid other naked flames.

(3) When filling with LPG, you should place the steel cylinder flat, put the intake stop valve at the upper end, unscrew the dust cover on the intake stop valve, insert the filling plug, open the intake stop valve for filling, and take out the filling plug when the LPG quantity reaches 80% of steel cylinder volume (when filling to 80% of rated capacity, the limit device will be automatically closed). Pull out the filling plug, screw on the filling valve dust cover, and tighten the intake limit valve when the charge stops. **Check whether the components of each part are in good condition.**

(4) Lift the steel cylinder on the truck and fix the cylinder firmly with arrow ① pointing up. Insert the dowel pin into the steel cylinder.



(5) Ensure that the inlet and outlet stop valves ②③ are closed.

(6) Connect the forklift truck inlet ⑤ with the outlet valve and fasten them.

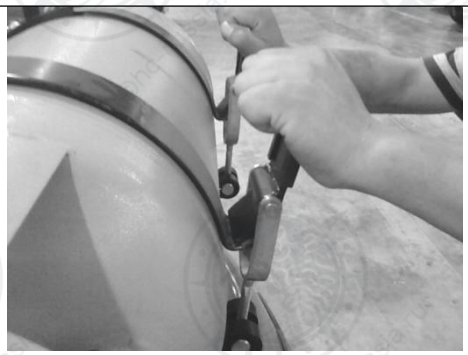
(7) Slowly open the outlet stop valve ③.

(8) Use the cylinder after confirming that there is no leakage, close the outlet stop valve ③ immediately if there is any leakage, and unscrew the inlet ⑤ of the forklift truck.

Note: Connect the pipelines with the quick coupling after mounting the steel cylinder, open the outlet stop valve ③, apply soap bubbles to each pipe joint to check for any leakage, if any leakage is found, the forklift truck can only be started after troubleshooting. Please close the outlet stop valve ③ each time after using the forklift truck.

10. Steel cylinder mounting method:

Steel belt bracket



Steel belt fixation methods are the reverse of the disassembly steps

Buckle bracket

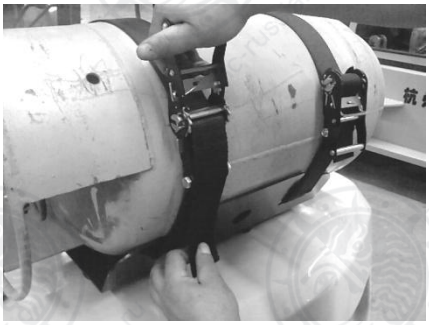


a) Hold the tensioner with your right hand and carry the buckle with your left hand

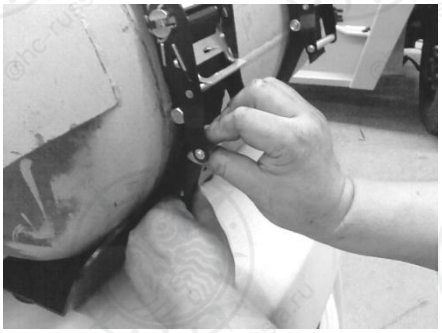
Align with the ratchet shaft slots



b. Insert the buckle into the ratchet shaft slots



c. Pull down the buckle tightly with your left hand, pull out the lock catch with your forefinger, middle finger and ring finger of your right hand, and push up it to press against the steel cylinder at the same time.



d. Tighten the buckle, keep the lock catch pulled out, and continue to rotate the tensioner downward with your right hand until it presses against the steel cylinder.

 e. Continue to tighten with your left hand, hold the tensioner with your right hand, release the lock catch, and rotate the tensioner upward and downward several times until it cannot be moved.	 f. Pull it down to press against the steel cylinder.

11. Precautions for use

(1) Open the stop valve at the intake end first and close the stop valve at the outlet end when the assembly is filled with LPG; close the stop valve at the intake end after filling.

(2) The assembly should be installed firmly on the truck; the direction arrow on the end surface of the steel cylinder should point up; the stop valves at the intake and outlet ends should be closed. Connect the interface at the input end of the forklift truck with that at the outlet end of the assembly, screw them in, open the stop valve at the outlet end, and check whether there is any leakage.

(3) Check for leakage when filling with LPG and every time the truck is used.

(4) Prevent dust ingress at the gas inlet of the intake end and rotate the dust cover straight after filling with LPG to ensure the gas inlet check valve is tight.

(5) The opening pressure of the safety valve has been factory set and should not be changed without permission.

(6) In case of any problem, it must be overhauled by a qualified organization, and should not be adjusted, dismantled and repaired without permission. Faulty steel cylinders should be stored separately.

(7) The assembly can be filled with LPG in two ways: the volume method and the gravity method. If the gravity method is used for filling, the steel cylinder needs to be placed vertically; if the volume method is used for filling, the steel cylinder needs to be placed flat with the direction sign pointing up.

(8) Filling, transport, storage, use and inspection of the steel cylinder should be in strict accordance with <Italic>Cylinder Safety Supervision Regulations</Italic> issued by the national administration of quality and technology supervision

(9) Steel cylinders must be gently assembled and disassembled and should not collide against each other or be subject to other external impacts. Steel cylinder combination components should be in good condition and should not be dismantled, adjusted or replaced without

permission.

(10) The steel cylinder can be filled with LPG in accordance with GB11174; the maximum filling quantity should be no more than 80% of the steel cylinder volume.

(11) Steel cylinders must be filled at gas stations with an LPG filling permit issued by the quality and technology supervision bureau. Filling without permission is prohibited;

(12) When a new steel cylinder or refurbished steel cylinder is used for the first time, the filling station should conduct vacuum or nitrogen displacement treatment;

(13) Before reinstallation, the steel cylinder should be positioned according to the vertical installation mark on cylinder, and placed flat; the outlet stop valve should be closed; the intake stop valve should be opened. Check whether the liquid level gauge pointer rises with the liquid level synchronously when filling. Stop filling immediately and check whether the liquid level gauge pointer is in the normal position if the limit valve activates. The intake stop valve has to be closed after filling.

(14) Check for leakage and other abnormalities before using the steel cylinder, defective steel cylinders should not be used.

(15) If an LPG leak is found when the forklift truck is in use, the LPG switch should be disconnected; the outlet stop valve should be closed; the pipe joints of device units and fasteners should be checked for looseness or leakage and promptly dealt with.

(16) When the parking time is more than 10min, the outlet stop valve should be closed.

(17) The steel cylinder should be kept away from exposure to the sun, heat sources and naked flames. The steel cylinder must not be heated above 40℃.

(18) The gas in the steel cylinder should not be completely depleted and the remaining gas should be no less than 0.5% of the specified filling quantity.

(19) Do not change the steel stamp and color mark of the steel cylinder without permission.

(20) The steel cylinder must be delivered to an inspection organization with a pressure vessel safety supervision organization approval qualification for regular inspection every five years according to the specified inspection date.

(21) Changes in the steel cylinder gas volume should be monitored when the forklift truck is in use; if the gas consumption is found to be inconsistent with working hours, the truck should be stopped to check whether there is a gas leakage; if gas leakage is found, the power supply and valves should be disconnected and closed immediately and remedial measures should be taken at once.

(22) The forklift truck should be stopped in a cool and ventilated place, steel cylinder valves should be closed, and the steel cylinder should be kept away from exposure to the sun.

(23) The power supply and valves should be disconnected and closed when the forklift truck enters the garage, which should be well ventilated and provided with fire fighting facilities.

(24) Do not repair the LPG steel cylinder, valves or pipes in the garage or parking lot; the driver should not smoke in the truck.

12. Maintenance and repair

1. The forklift truck passed the pressure test and quality inspection when leaving the factory; if any quality problem arises during use, repair without permission is prohibited.

2. The outlet stop valve of the steel pipe should be closed before disassembly and repair of the LPG device.

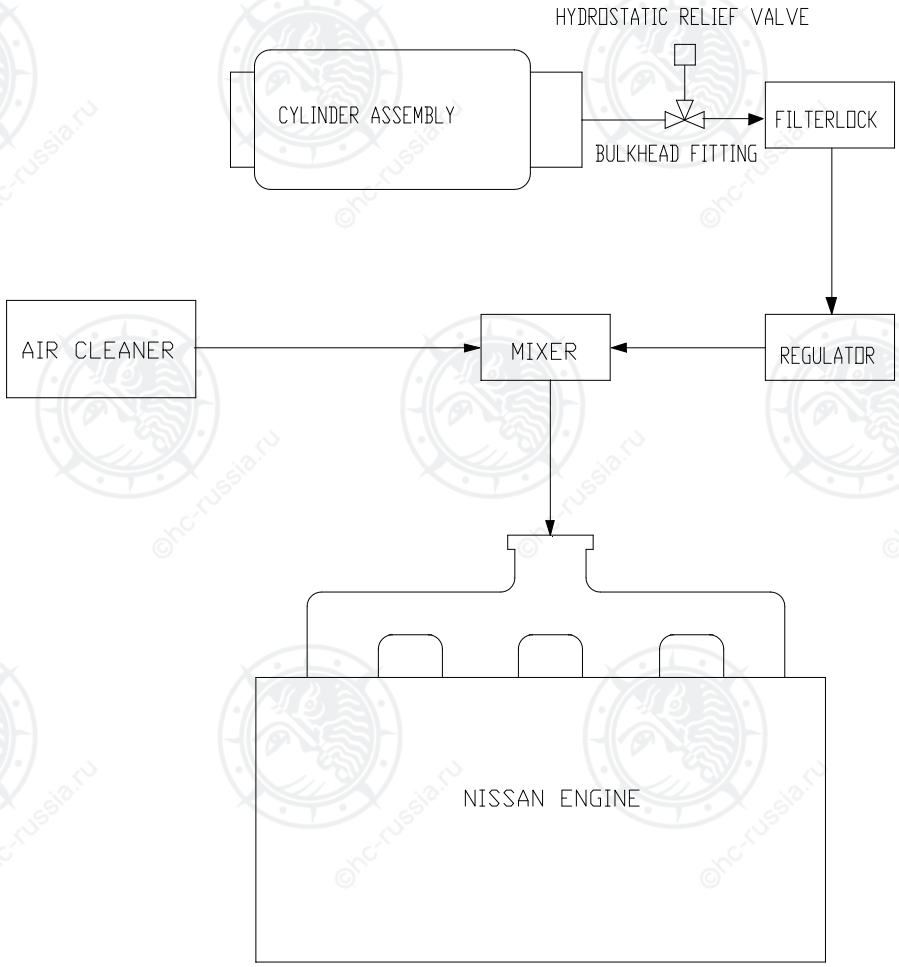
3. The gas consumption of the forklift truck may vary with the seasons and the mixer should be regulated properly.

4. The air cleaner and LPG cleaner need to be checked and cleaned frequently and should be replaced promptly in case of any damage. The air cleaner element should be cleaned frequently.

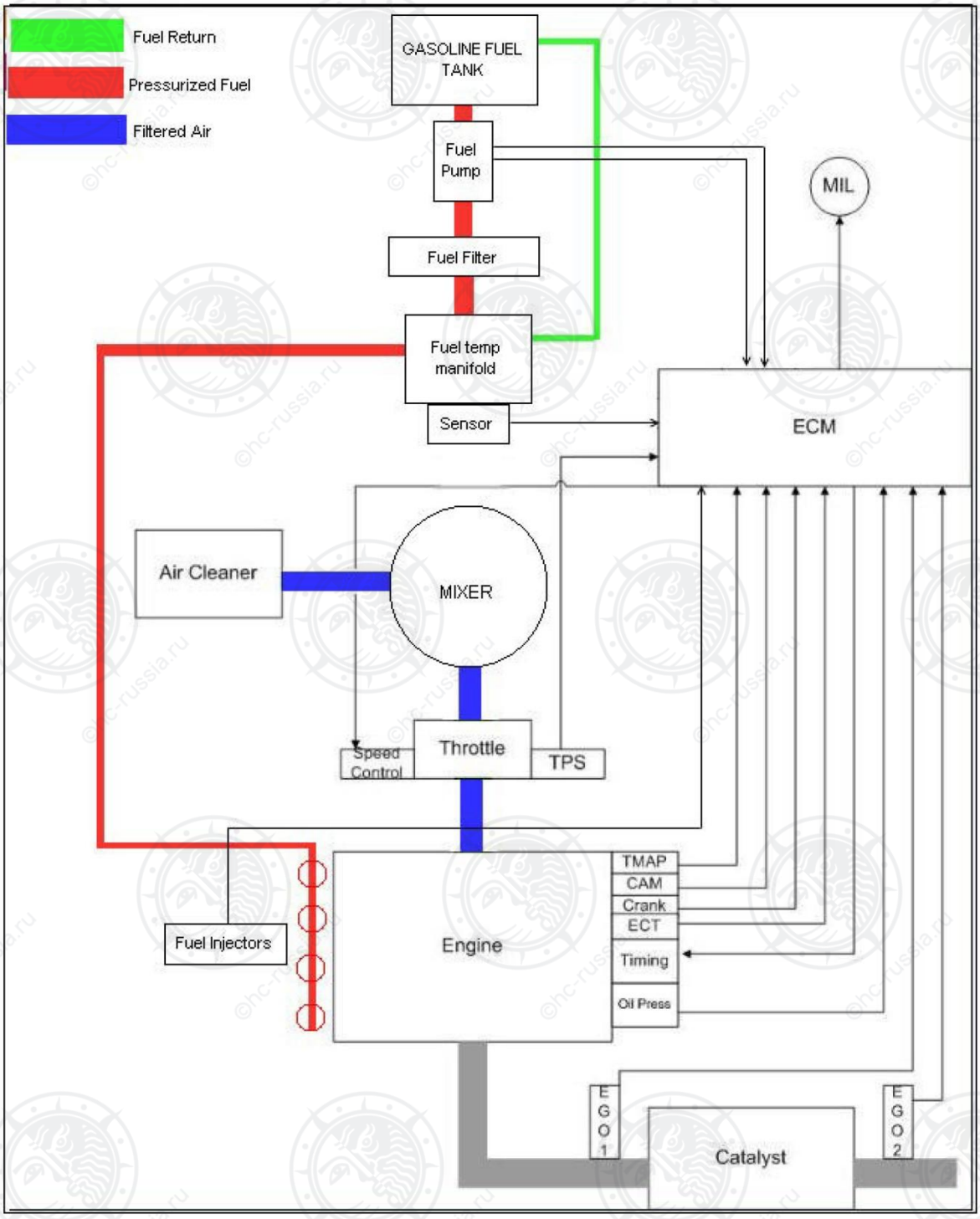
5. After assembly, debugging of the LPG forklift truck or at the end of a working day (or use of a cylinder of gas), the pressure reducing regulator has to be regulated to ensure the proper air-fuel ratio.

6. The connections of the electric appliance switch system should be checked for oxidization and rust after being used for three months; if any is found it should be removed immediately.

7. Regular maintenance should be conducted for the complete LPG fuel system after being used for a year; maintenance content includes cleaning of the pressure reducer and a check of high pressure and low pressure gas pipe joints for tightness.



IMPCO, LPG Fuel System Diagram



GM4.3L, LPG Fuel System Diagram

XIV. Usage and maintenance methods for the lead-acid battery

I. Lead-acid battery and use

The battery is used as the power source to start the engine, and it is used as the power supply of the voltage regulator and overload generators. Light weight, low failure rate, easy to use and maintain. All batteries are sealed except for maintenance-free batteries which are provided with two vents (to release gas produced by the battery) on both sides. The lead-acid battery is provided with a filling hole on the upper cover of battery.

II. Battery storage and handling

① Batteries should be stored in a dry and ventilated place at temperature of 5℃-40℃, kept away from children and fireworks, kept away from exposure to the sun, radiation and other heat sources, and out of the rain.

② Batteries should not be stored in more than 4 layers; each layer should be separated by cardboard to avoid damaging battery pole column.

③ Be gentle when handling batteries; do not tilt, invert, throw, or crush batteries and protect them from severe impacts to avoid battery leakage and damage.

④ When batteries are provided with a lifting rope or lifting handle, these should be carefully checked for security before handling; do not repeatedly sway when handling to prevent the lifting rope or lifting handle from detaching, causing battery to fall.

Caution

Batteries that have been put aside for a long time or are not frequently used should be maintained regularly and their charging conditions should be checked.

- Maintenance-free batteries should be maintained every three months.
- Standard lead-acid batteries should be maintained once a month.

III. Battery inspection and maintenance

If the truck has been continuously running, it should be stopped for at least 30 minutes before checking and disassembling the batteries.

① Check whether the battery case has cracks, damage or electrolyte leakage.

② Do not let the batteries become too discharged; charge promptly when the voltage is lower than 12.5V.

③ The power level indicator displays battery status after the batteries are installed.

④ Ensure that battery terminal is not corroded, the connecting parts are not loose, there is no external cracking and the fixing clamp is not loose.

3.1 Maintenance-free batteries without power level indicator: The user does not need to add water and liquid during use.

3.2 Maintenance-free batteries with power level indicator: The user needs to add some water and liquid during use.

3.2.1 Battery inspection

When the battery capacity status is normal and the electrolyte density reaches the standard, the observation window shows green. When the battery capacity is insufficient, and the density of the electrolyte is reduced, the observation window shows white. If the observation window shows red, it indicates a serious shortage of electrolyte, and the case should be carefully checked for cracking, leakage or battery failure.



1. Green: Sufficiently charged.

2. White: Insufficiently charged.

3. Red: Replace battery.

See tips on the battery label for details about battery display state.

3.2.2 Battery inspection

1) Ensure that the built-in capacity display (observation window) is green;

2) Disconnect the battery negative ground strap to prevent battery discharge due to additional current drain;

3) When batteries cannot be removed from the truck, they should be kept fully charged;

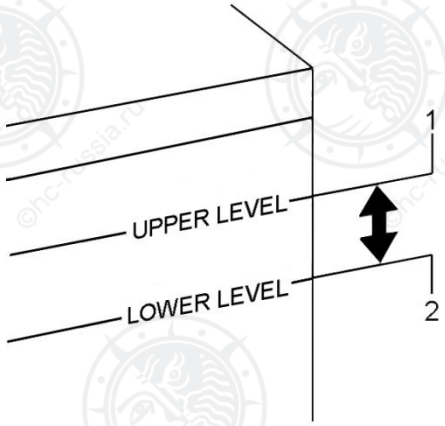
4) A regular schedule should be formulated and batteries should be charged once every 30-45 days.

5) When the green state is not visible through the observation window, batteries should be checked and charged, distilled water should be supplemented or the batteries should be replaced.

3.3 Standard lead-acid battery: The user should keep an eye on the liquid level during use so water can be added as required.

3.3.1 Battery inspection

As the ambient temperature around the forklift truck is high, batteries consume water easily; please keep an eye on liquid level during use; there is a filling hole on the upper cover of the battery; when the liquid level is lower than minimum level, please add distilled water to the upper level; do not overfill or the liquid will overflow and corrode the truck.



Check and confirm whether the liquid level is between "UPPER LEVEL“ and "LOWER LEVEL"

1: "UPPER LEVEL"

2: "LOWER LEVEL"

If the liquid level is at or lower than “Lower Level”, distilled water should be added.

When the electrolyte level is found to be seriously insufficient, the case should be carefully checked for cracking, leakage or battery failure.

When the battery capacity status is normal and the electrolyte density reaches the standard, the observation window shows green. When the battery capacity is insufficient, and the density of the electrolyte is reduced, the observation window shows white. If the observation window shows red, it indicates a serious shortage of electrolyte, and the case should be carefully checked for cracking, leakage or battery failure.

See the tips on the battery label for details about battery display state.

3.3.2 Battery maintenance

1) Ensure that the battery electrolyte is at the UPPER LEVEL.

2) Disconnect the battery negative ground strap to prevent battery discharge due to additional current drain;

3) When batteries cannot be removed from the truck, they should be kept fully charged;

4) A regular schedule should be formulated and batteries should be charged once every 30-45 days.

5) When the battery electrolyte is below the LOWER LEVEL, please add distilled water to the UPPER LEVEL, and put the vent plug back to the original position, and tighten it.

Caution Avoid overfilling when adding distilled water. Overflow when refilling batteries may cause corrosion.

IV. Before refilling batteries

During recharging, the hydrogen produced by batteries is flammable and explosive. Therefore, pay attention to the following matters before operation:

· If batteries that are still installed on the truck are recharged, the ground cable must be disconnected.

· When connecting and disconnecting battery charger cables, the power switch on the charger should be off.

Caution

·It is only safe to charge batteries in open areas. Do not charge batteries in a poorly ventilated garage or enclosed room.

·Do not charge batteries when the engine is running. All attachments must be turned off.

V. Precautions for using batteries

Batteries can produce explosive gases, the electrolyte is corrosive, and batteries can generate enough current to burn your skin. When handling batteries or working nearby them, you should observe the following precautions:

Caution

·Wear safety goggles when working nearby batteries.

·Do not contact the battery terminal with tools to avoid sparks.

·Do not expose batteries to naked flames and sparks.

·When batteries are connected with electrical equipment, attention should be paid to the correct connection of positive and negative electrodes to avoid fires.

·Do not place conductive items on batteries to avoid short circuits.

·Avoid splashing electrolyte on your eyes, skin, or clothing.

·Keep batteries away from children.

Emergency measures for electrolyte:

· If the electrolyte gets into your eyes,

You should rinse your eyes with clear water for at least 15min and see a doctor immediately. If possible, you should continue to clean your eyes with a sponge or cloth that can absorb water on the way to hospital.

· If the electrolyte spills onto your skin

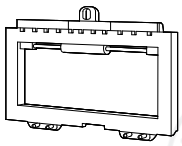
you should clean the site thoroughly. If you feel burning or pain, you should see a doctor immediately.

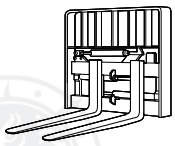
· If the electrolyte spills on your clothing

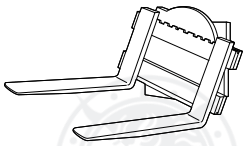
it can penetrate clothing and stick on your skin. You should take off your clothing immediately and take the previously mentioned measures if necessary.

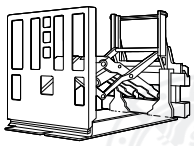
XV. Use, installation and safety rules for attachments

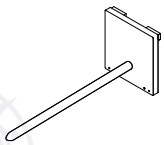
Hangcha selects attachments, such as the flat clamp, rotating clamp, roll clamp, string rod, sideshifter and others in accordance with ISO2328 Fork Lift Trucks-Hook-on Type Fork Arms and Fork Carriers-Mounting Dimensions.

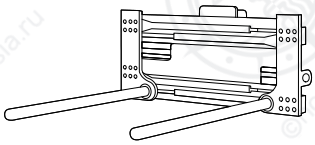

Sifeshifter

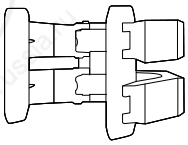

Fork Positioner

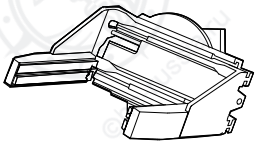

Rotator

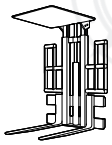

Push-puller

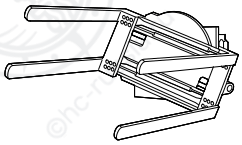

String rod


Round rod clamp


Roll clamp


Brick clamp


Load bearing stabilizer


Rotating fork

1. Use of attachments

(1) Become familiar with the relevant content on the nameplate of the forklift truck, read the relevant operation manual carefully before use (especially the user manual and installation manual of the professional accessory company), and be trained and qualified to operate the forklift truck attachments.

(2) Fully understand the basic performance and operation methods of forklift attachments, especially the allowable load, lift height, cargo size and the fitting range of attachments;

(3) When operating forklift truck attachments with multiple functions, such as side shift, clamping or rotation, do not perform multiple operations at the same time. One action can be carried out only after the other one is completed.

(4) Forklift trucks provided with attachments must not be driven when the cargo is at a high level; when the cargo volume is too large do not drive the forklift truck forwards; when transporting cargo, ensure that cargo is 300mm above the ground, and the mast is tilted backward;

(5) The weight of the cargo should not exceed the limit of the combined bearing capacity of the forklift truck and attachments. Try not to load eccentrically at high cargo positions. Attachments with side shift function can only be operated for a short time. Eccentric load is strictly limited to 100mm on the left and right (the side shift amount for side shifters above 5 tons (including 5 tons)) is within the range of ±150mm);

(6) Except for the driver's position which is protected by the overhead guard, it is strictly prohibited to stand within 2 meters of the projection area under attachments and cargo to avoid injury.

(7) It is strictly prohibited to emergency brake forklift trucks with attachments when driving and it is necessary to drive slowly with a load.

(8) Do not allow external forces to act on the truck when the attachment is working; it is forbidden to

use the attachment for unsuitable purposes, and the normal working range of the attachment must not be exceeded;

(9) Do not use attachments for unsuitable purposes, do not exceed the normal scope of work of attachments;

(10) When attachments are faulty, they should not be used until the fault has been eliminated.

The following inspection and maintenance should be carried out frequently

(1) Check whether the spacing between the lower beams of the forks of the forklift truck and the lower hooks of attachments conform to the requirements of the accessory manual.

(2) Check whether the upper hook is properly embedded in the groove of the fork arm carrier of the forklift truck.

(3) The upper and lower sliding support surfaces should be lubricated with general lithium-based grease for automotive use every 500 hours.

(4) Check fasteners for tightness.

(5) Regularly check whether hydraulic circuit connections are loose and whether the hose is damaged. If it is damaged, it must not be used before repair.

(6) Regularly check whether the transmission or rotating elements of attachments are worn or stuck, and replace them promptly if any damage or defect is found.

(7) In the case of dynamic loads, check whether the working elements of the attachments are normal, whether the working pressure of the attachments is normal, and whether the attachments work normally. If not, it is necessary to check the hydraulic circuit, find any leaking elements, and replace the seals or the whole circuit.

2. Installation of attachments

Warning

1. Without the technical permission of the company, it is strictly prohibited to modify the safety and performance of the forklift truck attachments.
2. The actual rated bearing capacity shall be the rated bearing capacity of the forklift truck, the bearing capacity of attachments, or the overall bearing capacity of the complete truck, whichever is the smallest. Generally speaking, the comprehensive bearing capacity of the complete truck is the lowest of the three. “Bearing capacity of attachments” is a calculated value for the force applied on attachments.
3. The installation and positioning should be reasonable, reliable and safe, to avoid attachments sliding from side to side along the fork arm carrier of the forklift truck during use.
4. After the attachments are mounted, if there is a upper hook block, it should be embedded in the notch of the upper beam, so that the offset between the center line of attachments and that of the fork arm carrier is less than 50mm; otherwise, it will affect the lateral stability of the forklift truck.
5. For attachments with a rotation function, (roll clamp, soft clamp, multi-purpose rigid arm clamp, bucket clamp) after hanging and installation, stop blocks should be welded on both sides of the joint between the upper beam of the fork arm carrier and the attachments to prevent sliding when operating them;
6. When attachments with lower hook positioning are installed, the joint spacing between the lower hook and the lower beam of the fork arm carrier should be adjusted appropriately.

XVI. OPS (Operator Presence Sensing) system instruction

OPS system (EPS based hydraulic trucks only)

The OPS (Operator Presence Sensing) system is mainly used for safety protection, that is, when the operator is not in the correct driving position, the forklift cannot be driven and transported, thereby reducing accidents caused by misuse.

Forklift truck shutdown conditions

When the driver leaves his/her seat or his/her safety belt is loose (if the safety belt protection switch is provided) and the hand brake is not pulled up, the buzzer will sound an alarm.

Without the safety belt protection switch: When the driver sits back on the driver's seat properly or pulls up the hand brake, the buzzer alarm will turn off.

With the safety belt protection switch: When the driver first sits back on the driver's seat properly and fastens his/her safety belt or pulls up the hand brake, the buzzer alarm will turn off.

Forklift truck start conditions

1. Start

The forklift truck can be started normally when the driver sits on the driver's seat properly, fastens the safety belt (if the safety belt protection switch is provided), or engages the hand brake, and pulls the shift switch to the neutral position. If the shift switch is not pulled to the neutral position, the truck cannot be started.

Warning

If the forklift truck is parked on a ramp, you must press the brake pedal to the bottom to start the truck to prevent the truck from rolling back.

2. Forward and backward protection

When you are ready to drive the forklift truck after the engine has started, you can start the truck normally by pulling the shift switch to forward gear 1 or reverse gear 1. If the shift switch is pulled to forward gear 2 or backward gear 2 directly, the neutral indicator light will flash; if the truck cannot be started, the shift switch should be returned to the neutral position to release protection.

When the driver leaves his/her seat or his/her safety belt is loose (if the safety belt protection switch is provided) for more than 3s when the forklift truck is driving, the buzzer will sound an alarm, the neutral indicator light will flash, the OPS indicator light will turn on, and the truck will be automatically stopped.

When the driver sits on the driver's seat properly again, the buzzer alarm will turn off and the OPS indicator light will turn off; when the shift switch is pulled to the neutral position, the flashing neutral indicator light will constantly turn on; when the shift switch is pulled forward or backward, the forklift truck will resume normal operation.

Caution

Some models are not equipped with an "!"OPS indicator light on the instrument panel.

For the forklift trucks with seats provided with a safety belt protection switch, after the driver first sits back on the driver's seat properly and fastens his/her safety belt, normal operation can be conducted.

The neutral indicator light flashes: The shift switch is in the neutral position by default in the program, and the driver is reminded about pulling to the neutral position.

Warning

If the OPS system is activated by accident when driving uphill, it will disconnect the driving power, making the forklift truck roll backwards. In order to avoid accidents, the driver must sit on the driver's seat properly when driving uphill.

3. Working device protection

When the driver leaves his/her seat or his/her safety belt is loose (if the safety belt protection switch is provided) for more than 3s when operating, the buzzer will sound an alarm, the OPS indicator light will turn on, and the handling operation will be automatically stopped. If the driver sits on the driver's seat properly again, the handling operation will continue.

Caution

For the forklift trucks with seats provided with a safety belt protection switch, after the driver first sits back on the driver's seat properly and fastens his/her safety belt, normal operation can be conducted.

Tilt the lever and accessory lever to the initial positions before releasing protection.

OPS controller faults

In the event of the following conditions, the forklift truck should be stopped in a safe place and Hangcha agency should be contacted for inspection.

a) When you are ready to start the forklift truck, and you pull the shift switch to forward gear 1 or backward gear 1, the neutral indicator light flashes.

b) When you pull up the hand brake, the buzzer continues to sound an alarm.

c) When the shift switch is pulled to the neutral position, the neutral indicator light continues to flash.

d) When the driver leaves his/her seat or his/her safety belt is loose (if the safety belt protection switch is provided) for more than 3s, the buzzer does not sound an alarm, and the OPS indicator light does not turn on.

e) When the driver sits on the driver's seat properly again, the buzzer continues to sound an alarm and the OPS indicator light does not turn off.

Caution

Some models are not equipped with an "!"OPS indicator light on the instrument panel.

XVII. Forklift daily check and maintenance sheet

Date	Check and Maintenance Item	Operator

HANGCHA GROUP CO., LTD.

National customer service hotline: 400-884-7888

■ Address: No. 666, Xiangfu Road, Lin‘an District, Hangzhou City, Zhejiang Province, China
■ Tel: 0571-88926666 (headquarter) 85191117
■ Fax: 0571-85131772 ■ Postcode: 311305
■ Website: http://www.zjhc.cn ■ E-mail: sales@zjhc.cn

■ Address For: OVERSEAS USERS
■ Address: 666 Xiangfu Road, Lin'an,Hangzhou, Zhejiang, China
■ Fax: 0086-571-88926789 0086-571-88132890 ■ ZIP:311305
■ Web: http://www.hcforklift.com ■ E-mail: sales@hcforklift.com