

OPERATORS MANUAL

Starke EcoMaxx Series Rough Terrain Forklifts

ECO-FD30-35RT4

Rev 08-2019



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Foreword

Through reading the original operation instructions carefully, the user can master the technical knowledge necessary for the safe operation of forklifts.

We sincerely recommend that you to read the manual and be sure to the detail in mind including content, It's the only way for the machine were able to reduce the failure and to play the highest security features under such normal operation and proper maintenance. It is strictly prohibited to users to refitting vehicle privately; thus all the consequences of this Company shall not be responsible for. Every driver can do to comply with the safety rules listed in the manual, we believe, is a big help for you under safe operation.

The operating instructions are written for different types of forklift. The operator must pay attention to the implementation of the specific provisions of the corresponding forklift models in operational use and maintenance process

Our Company will research and development for the equipment continually. Therefore, customers should understand that we have this authority to modify the shape, equipment and technology. For this reason, from the operating instructions of the content may not be extended out for any equipment specific properties of those rights.

STATEMENT

Vehicles under the manual are special-purpose vehicles for specific places such as factory, tourist attraction, playground etc. according to « Special Equipment Safety Supervision Regulations» .

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A Provisions using

The manual is an integral part of the operating instructions must be strictly observed. Your country's relevant laws and regulations will not be affected.

The forklift is described in the Operating Instructions for a ground handling equipment, which is suitable for lifting and transporting goods.

The customer must be based on the data operate and maintenance of the forklift within the Operating Instructions. The equipment is used for any other purpose, but is not in line with the provisions of the operating behavior; it may result in personal injury of forklift or other property damage. It is important that we need to prevent the overload caused by the load overweight or sway in one side. You must comply with the maximum load limitation prescribed in the equipment the nameplate or load graphical. Equipment using must ensure that legible load graphical, for any damage must be replaced. Shall not be used in an area of fire and explosion hazards. Nor in the area of easy to cause corrosion rust or dust in the ground transportation equipment.

The obligations and responsibilities of the equipment user: In the instructions, “the equipment user” means every natural or legal person use directly or appoints others to use the ground transportation equipment. In the special case of the lease, rental, equipment user on behalf of the parties to hold the prescribed operating obligations under the terms of the contract entered into between the owners and users of equipment.

Equipment user must be fit for the purpose provisions ensure that the use of forklift, and remove all the dangers that may endanger the life and health of the operator or a third party. In addition, equipment user must be strict compliance with the accident prevention regulations and other safety regulations, as well as the operation of the equipment, maintenance and repair guidelines. The user must ensure that all operators read carefully and fully understand the contents of the instructions.

If you do not comply with the instructions, the Company's quality assurance will be lapsed automatically. If the client and / or third-party to perform the non-standard operation without authorization, this Company for the resulting loss also does not undertake any responsibilities

Mounting accessories: the additional equipment installation needed or retrofitting, it must obtain prior written consent from the Company if the ground transports equipment impacted or have added. In accordance with the actual situation, you may also have to obtain the consent from the local authorities. Approved by the local authorities and do not represent the views of the Company, the consumer still need to obtain the authorization of the Company. In addition, the use of attachments may speed up the forklift wear out.

Trailer and towing loads: the forklift had to be used to towing the trailer or load compliance.

B forklift introduction

1 Useable range description

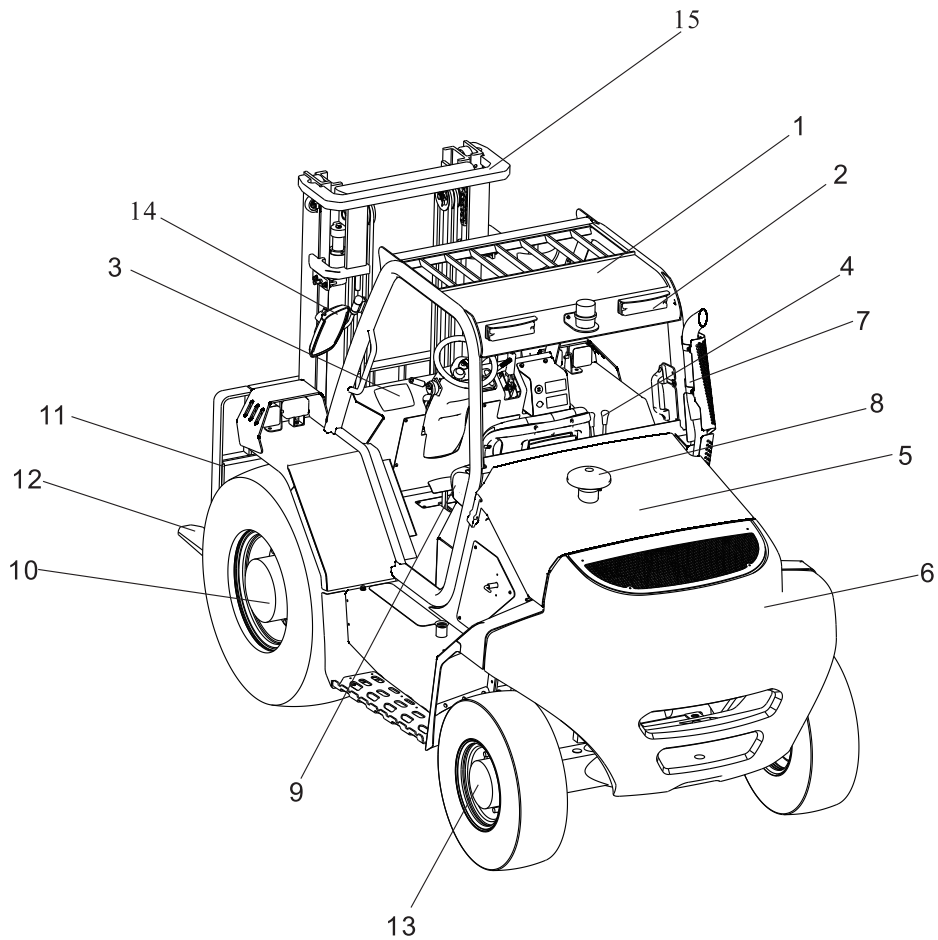
FD30RT4, FD35RT4 Rough Terrain forklift, equipped with a sliding differential four wheel drive system, has excellent off-road performance, It can be used not only in port, station, freight yard, factory workshop, warehouse, circulation center and so on, but also in non paved pavement such as farm and quarry.

Forklift models and maximum rated capacity:

Model	Max Rated Capacity*)	Load Center
FD30RT4	3000Kg	500mm
FD35RT4	3500Kg	500mm

*)Please comply with the specified rated capacity in forklift illustrated.

2 Components and Function



Serial number	Name	Serial number	Name
1	Overhead guard	9	Seat
2	Back lights	10	Drive axle
3	Instrument Panel	11	Lift Bracket
4	Lever	12	Fork
5	Hood	13	Steering drive axle
6	Counter weight	14	Front combination lamps
7	High exhaust pipe	15	Mast
8	Air intake cap		

2.1 Forklift device

Power system: Engine power is 55kW. It is much better than other brand, so that it has higher driving speed and more stable working performance. The transmission can achieve the best balance between high performance and low fuel consumption.

The driver's seat: The driver's seat is the center of a forklift. The steering Pillar and the seat of direction can be adjusted, comes with paper storage box for driver storage of personal belongings and documents.

Electrical system: the whole machine adopts high brightness LED light source, which has long life and low power consumption. CAN technology is adopted to reduce the number of electrical cables substantially. It also improves the reliability of electrical system and improves the efficiency of maintenance. It has integrated central electric control box, which can complete the repair and maintenance .

Drive system: This forklift is a four wheel drive system, and the front and rear axle is equipped with an adaptive limit slip differential, which has excellent cross-country performance and no wheel skidding. It also has two / four wheel drive switching function. It is more oil saving and environmental protection by using two wheel mode when driving on the pavement. The four drive mode can be opened when driving on the muddy road to help the vehicle to pass smoothly and safely. Two / four wheel drive switch only needs to switch through an electronic switch. The four wheel drive system needs no special maintenance, and is convenient and reliable.

Braking system: multi disc wet braking system is adopted for vehicle brake, with strong braking force, high reliability and daily maintenance free. It can cope with all kinds of complex pavement conditions. No fear of rain and dust.

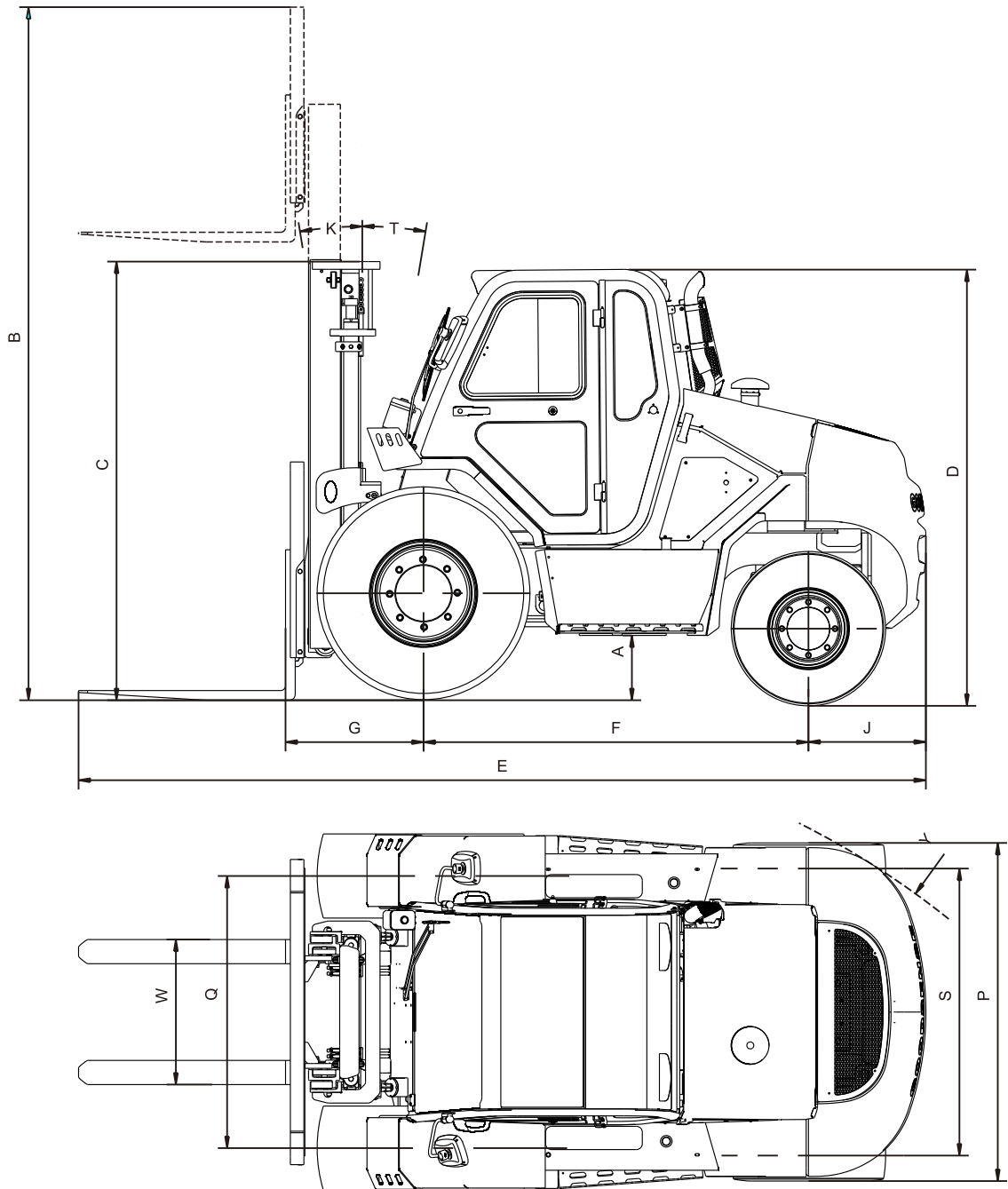
Steering system: the forklift adopts full hydraulic steering, which is portable and reliable.

Mast: the mast is made of high strength channel steel, improve the mast system so that the machine can get more reliable stability and stronger lifting performance. And has a wider field of vision, so that it does not prevent the driver from observing the state of the fork.

Head-guide:when the machine needs maintenance or repair, the operator press the electronic switch to open the head-guide, convenient, labor saving, and improve the efficiency of maintenance. At the same time, it also has manual turnover mechanism, which can be switched to manual rollover when the engine or hydraulic system cannot be used.

3 The main technical parameters

The technical data given below are in line with national standards technical changes and additional rights reserved.



Forklift outline drawing

Main Technical Parameters

Model		Unit	FD30RT4	FD35RT4
Rated Capacity		Kg	3000	3500
Load Center		mm	500	500
Lift Height		mm	4245	4245
Mast Tilt Angle (F/R)		°	10/12	10/12
Lifting (Full load)		mm/s	480	480
Free Lift		mm	120	90
Max Traveling Speed		km/h	24	24
Turning Radius Y		mm	4380	4380
Gradeability (Laden)		%	30	30
Outlook	Length E	mm	3300	3305
	Wide P	mm	1850	1850
	Overhead Guard Height D	mm	2250	2250
Mast Lowered Height C		mm	2230	2260
Mast Extended Height B		mm	4245	4245
Fork (L×W×T)		mm	1220×125×45	1220×125×50
Front Overhang G		mm	700	705
Wheelbase F		mm	1990	1990
Lateral fork adjustment W		mm	250-1500	250-1500
Ground Clearance A		mm	350	350
Tread	Front tire Q	mm	1407	1407
	Rear tire S	mm	1484	1484
Battery	Voltage	v	12	12
	Capacity	Ah	120	120
Tires	Front tire		405/70-20-14PR	405/70-20-14PR
	Rear tire		10.0/75-15.3-12PR	10.0/75-15.3-12PR
Service weight		kg	5700	5900

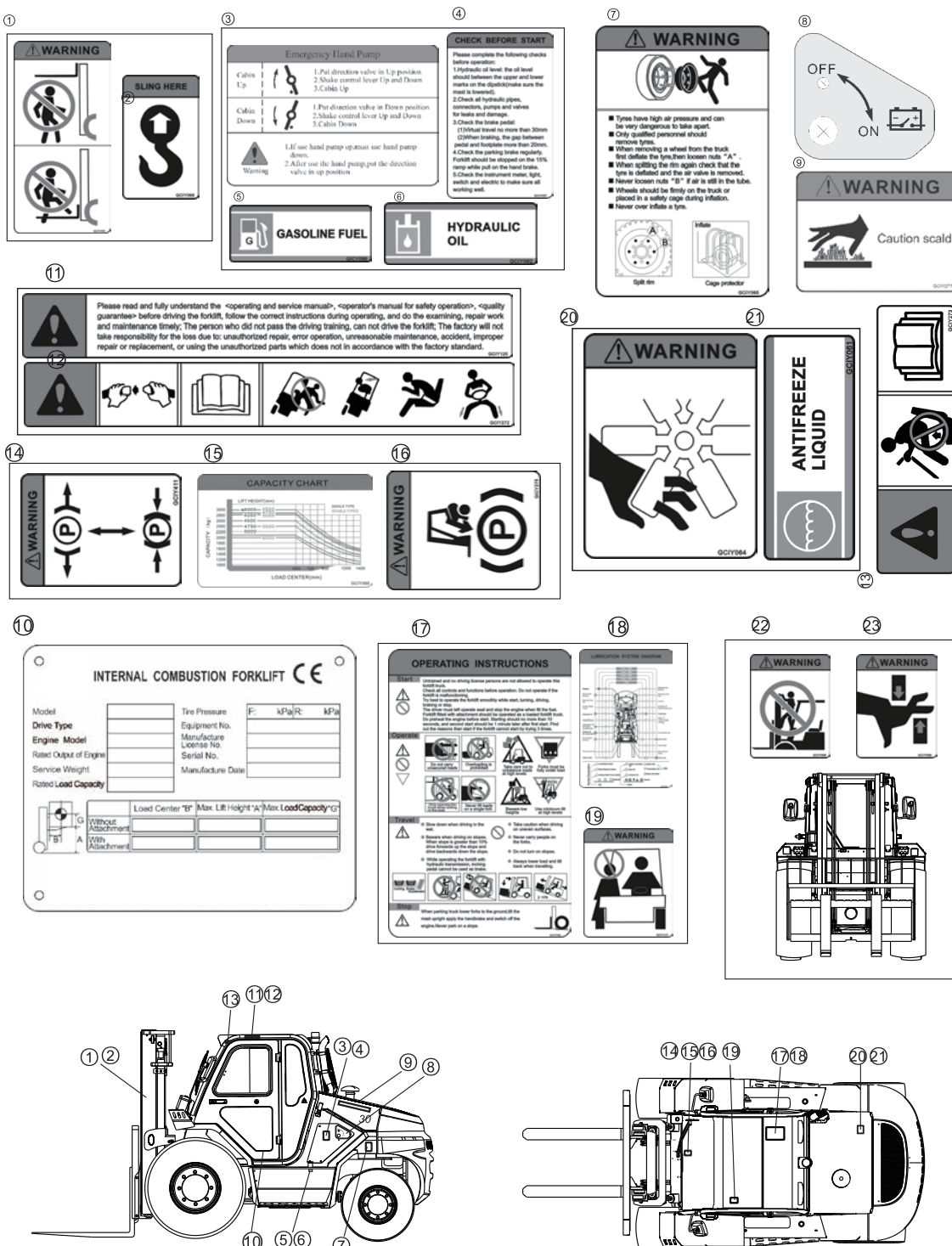
3.1 Working condition

Environmental temperature

For a long time in the environment of large changes in temperature or humidity forklift must install special equipment, and to obtain the permission of the manufacturer to run in the environment within -20 ° C to 40 ° C.

4 Warning Marks

Warning Marks are attached to a vehicle . Before driving it , please be sure to read them carefully .



Serial number	Name	Serial number	Name
1	Decal, safety	13	Read instructions warning
2	Decal, sling	14	Decal
3	Emergency hand pump Decal	15	Decal, capacity chart
4	Decal, caution	16	Decal, parking brake adjustment
5	Decal, fuel	17	Decal
6	Decal, adding hydraulic oil	18	Decal, iubrication chart
7	Decal, tire safety	19	Ban manned sign
8	Power switch logo	20	Decal, antifreeze liquid
9	Exhaust pipe safety signs	21	Decal, fan safety
10	Name plate	22	Decal, padlod mast space
11	Fasten seat belts warning logo	23	Decal, notice thumb hand
12	Warning logo		

4.1 Forklift nameplate

INTERNAL COMBUSTION FORKLIFT

Model	24	Tire Pressure	F: 30 kPa	R: kPa
Drive Type	25	Equipment No.	31	
Engine Model	26	Manufacture License No.	32	
Rated Output of Engine	27	Serial No.	33	
Service Weight	28	Manufacture Date	34	
Rated Load Capacity	29			

	Load Center "B"	Max. Lift Height "A"	Max. Load Capacity "G"
Without Attachment	35	36	37
With Attachment	38	39	40

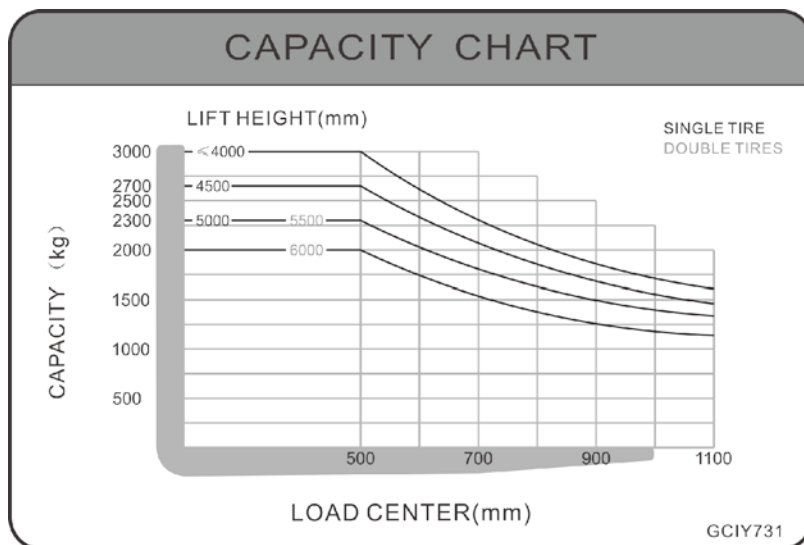
Serial number	Name	Serial number	Name
24	Forklift model	33	Serial No.
25	Drive Model	34	Manufactur date
26	Engine Model	35	Load center (mm)
27	Rated Output of Engine	36	Capacity(Kg)
28	Weight (Kg)	37	Max. lift height (mm)
29	Rated capacity (Kg)	38	Load center(with attachments)
30	Inflation perssure (Kpa)	39	Capacity(with attachments)
31	Equipment code	40	Max. lift height(with attachments)
32	Manufacture License No.		

Any questions about forklift or spare parts please provide forklift serial number (fill in the table above).

4.2 Forklift graphical

Forklift illustration shows the mast in a vertical state, the rated load of the truck Q (kg). The scutcheon are listed in the form of the curve D (mm) and the desired lifting height H (mm) to determine the distance of load center and the corresponding maximum capacity.

For example:



If the forklift is with 4.5m mast, the load capacity should be lower than the standard load of 2700Kg. However, the position of the load center is located away from 700mm at the rear of the fork. According to the graph, to identify the load center point of 700mm on the map first, along this point up, with the deadweight lines intersected, then from the point of intersection to the left, for a horizontal line to intersect with the deadweight line, this intersection is lifting deadweight about 2350Kg, 2700Kg, has far exceeded this number, you must reduce it.

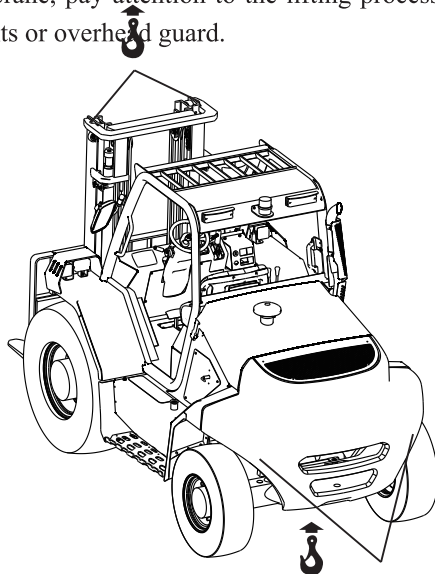
C Crane loading and transport

1 Crane loading

It only use lifting equipment with sufficient load capacity (loading weight > service weight, please look through the forklift nameplate).

- Park in the required place.
- Fix the mast beams in the hole for hoist and open the hood.

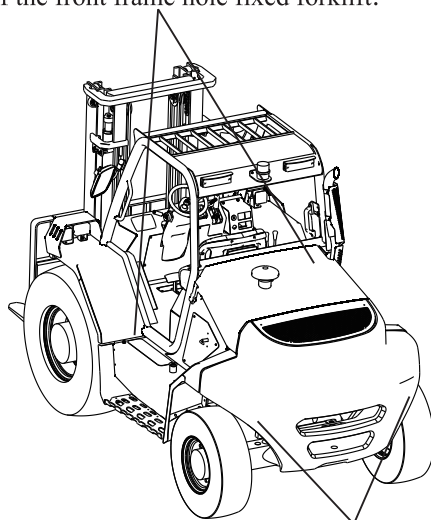
Install the fixed tools of crane, pay attention to the lifting process, these fixed lifting tool does not touch to the forklift components or overhead guard.



2 Safety device of forklift transportation

When operate the truck or trailer transportation is needed fix the forklift properly. The truck or trailer must have a fixed ring. Loading forklift shall be operated by specially trained personnel. To ensure that the correct handling security measures to be implemented accurately at all times.

Use the hook on the inside of the front frame hole fixed forklift.



D Operation instructions

1 The using safety regulations of forklift

Driving License: forklift driving can only be operated by specially trained technicians. The operator must go through the testing of the equipment, be familiar with the device driver and load handling skills, get the appointment from the equipment using party or the principal formally.

Driver's rights, obligations and codes of conduct: Drivers must understand their rights and obligations, received forklift truck operation guidance on the use of training, and are familiar with the operation instructions of the content. All the rights must be granted to operating personnel

When operating the forklift, that operators need to walk with vehicle, they must put on the protective boot.

Non-working personnel forbids the use of equipment: During the use of forklift, the driver should take full responsibility for the equipment. Who have the responsibility to prohibit non-working personnel driving or operating forklift. Fork lift truck shall not be used for carrier or enhancing personnel.

Equipment damage and defects: If damage or other defects are found in the forklift trucks or their fittings, operators must immediately report to the competent personnel. The forklift which is not perfect in performance (such as tyre wear or brake failure, etc.), shall not be used without proper repairation.

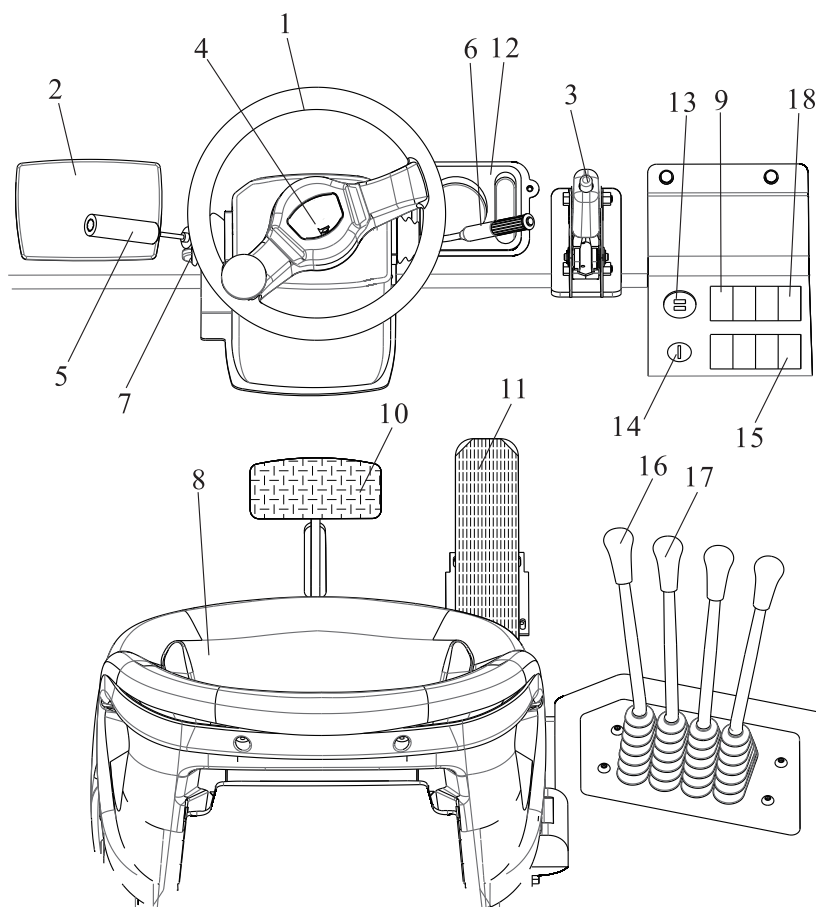
Equipment maintenance: Without special training and licensing, the driver shall not repair or change forklift truck without authorization. The driver absolutely does not disable or adjust safety device and switch.

Dangerous areas: Risk area which refers to the risk of injury to personnel area are mainly from the truck itself and its load components (such as fork tooth and fittings, etc.), and the driving and lifting movement. The danger zone also includes the area that may be caused by the loaded object falling or working device dropping or falling.

Non-working personnel must be far away from the danger zone. Dangerous areas must hang warning signs. If refused to leave the danger zone, the non-working personnel must immediately stop forklift truck.

Safety device and warning signs: must strictly abide all rules the manual inside about safety device, warning marks and warning provisions.

2 Operation and instructions displaying element



Number	Operation and displaying element	Number	Operation and displaying element
1	Steering wheel	10	Brake pedal
2	Instrument	11	Accelerator pedal
3	Parking brake	12	Tool box
4	Horn switch	13	USB Charging Port
5	Combination shift switch	14	Key switch
6	Light wiper switch	15	Combination switch
7	Steering wheel adjustment handle	16	Lifting lever
8	Seat	17	Tilt lever
9	2/4WD switch	18	Cab tilting switch

2.1 Switch and control

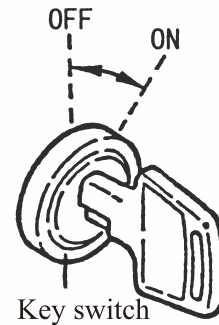
(1) Key switch

OFF: Engine stop position. When the key is in this position, the forklift stops running and the key can be inserted or pulled out.

ON: Engine operation position. When the key is in this position, the engine runs continuously and it can carry out vehicle operation.

START: Engine start position. When the key is in this position, the engine will start.

After engine starting, release the key and it will return to the (ON) position automatically.



⚠ Caution

- Never operate the ignition switch without firstly sitting on the seat .Otherwise , the forklift could start to move uncontrolled , causing an accident .
- Do not leave the switch in the (ON) position when the engine is stopped . It may cause over discharge of the battery .
- Do not turn the switch to the START position while the engine is running .
- Before starting the engine, the transmission shift switch should be in the position of "neutral".
- Do not start the engine continuously when the engine is difficult to start, try again after 30 seconds, each start time should not exceed 30 seconds.

⚠ Caution

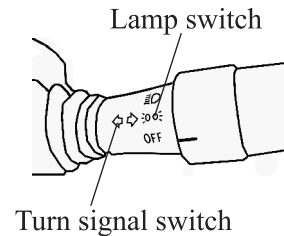
- In case of the anti-restart ignition switch (optionally available) , be sure to shift the switch to the (OFF) position before attempting to start the engine again .
- When the ignition switch OFF (engine off) , the fork will not move down even if the lift lever is so operated . However , if you sit in the seat and turn on the ignition switch , you can lower the fork . Do not operate the lift lever before getting on the vehicle and starting the engine . (key off lift lock)
- If the diagnosis lamp does not go off even when the operator sits on the seats , the battery power may be low . In such a case , do not drive the vehicle until the lamp goes off , otherwise the vehicle may not be operated properly . If you are obliged to drive the vehicle , do so with utmost care . Also , stop driving and ask a Good Sense dealer for inspection if the lamp does not go off 1-2 minutes after the engine starting , or when you race the engine for a while . (For diesel vehicles, the diagnosis lamp may be lighted for a while to warm up the engine after cold starting . This is , however , not engine trouble or failure.)

(2) Light control switch

Turn the handle of the combined light switch to select the light shift.

Lamp \ Operation	OFF	Wide Light	Head lamp
Wide Light	×	○	○
Head lamp	×	×	○

○:Lamp-on ×:Lamp-off



⚠Caution

Do not keep lamps , such as head lamps , on for a long time when the engine is stopped . It may cause over discharge of the battery to make engine starting impossible

(3) Turn signal switch

Make the turn signal lamp flashing.

Lamp	Operation
Left turn	Push forward
Right turn	Pull backward

The signal switch will be operated when the ignition switch is ON .

(4) Combination shift switch

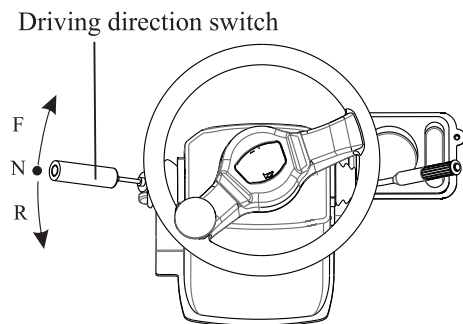
Indicate the driving direction.

Moving forward: Put the shift ahead and keep it in a forward gear, then step on the accelerator pedal to make the forklift move forward.

Moving backward: Put the shift switch back to make it in a "back" gear, and then step on the accelerator pedal to make the forklift back.

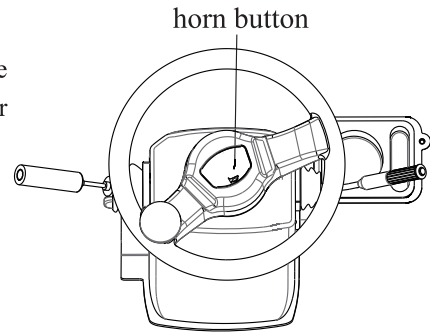
Attention:

- The driving speed is controlled by the angle of the accelerator pedal you bore down.
- When park the forklift, the direction switch handle should be placed in the middle. (N)
- Do not slam on the accelerator pedal to avoid forklift starting or accelerating suddenly.



(5) The horn button

Press the button on the steering wheel center to peel the horn. Even if the key switch is turned off, but the speaker also sounds.

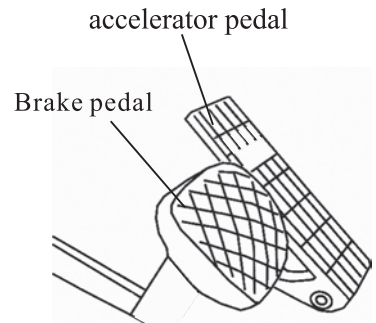


(6) Brake pedal and the accelerator pedal

Step on the accelerator pedal slowly. The speed of forklift is controlled by the angle of the accelerator pedal.

Attention:

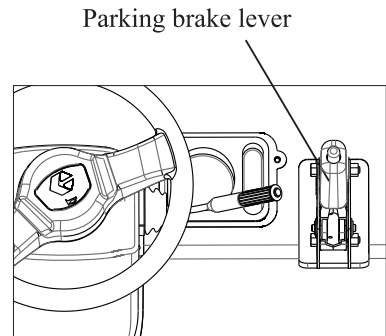
- When the brake pedal is depressed, to ensure that the foot from the accelerator pedal.



(7) Parking brake lever

In order to prevent the forklift moving, pull the parking brake lever completely when park the forklift.

Ready to drive, you need to hold down the button on the parking brake, and then the parking brake lever is pushed forward to the end.



(8) Lift lever

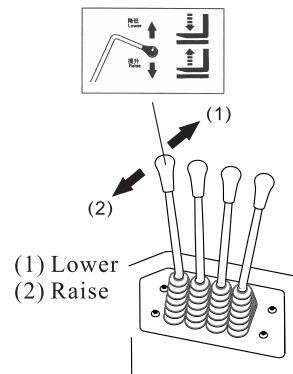
Raise and lower the forks .

Raise.....Pull backward

Lower.....Push forward

The lifting speed can be adjusted by the degrees of accelerator pedal depression and lever operating stroke .

The lowering speed can be adjusted only by the degree of lever operating stroke .



(9) Tilt lever

Tilt the mast forward and backward .

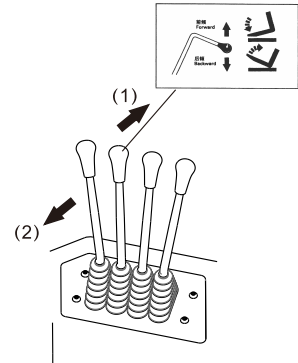
Forward.....Push forward

Backward.....Pull backward

The forward , backward or tilting speed can be adjusted by the degrees of accelerator pedal depression and lever operating stroke .

Caution

. Always operate the tilt lever from a seated position .



(1)Forward tilting

(2)Backward tilting

(10)Four drive switch

The four-wheel drive switch can control the forklift "two wheel drive" and "four wheel drive".

When the forklift runs on the pavement with better road condition, it is suggested to use two wheel drive mode. When the two wheel drive mode is low, the vehicle oil consumption is low and the tire life can be extended at the same time.

When the vehicle is running on the slippery road, it can enable the four wheel drive mode to get better climbing and cross-country capability.

When switching from the "two wheel drive" mode to the "four wheel drive" mode, it is necessary to switch in the case of slow parking or slow speed (less than 5km/h), otherwise it may affect the gearbox life. Meanwhile, when the four-wheel drive switch is operated from "two wheel drive" to "four wheel drive" gear, we need toggle the lock on the switch to prevent misoperation.



(11) Cab tilting switch and hand pump

When the vehicle needs to turn up the cab because of maintenance or overhaul, it can choose one of the following two ways to operate.

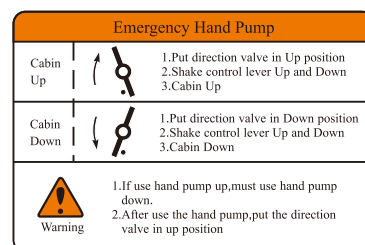
•When engine and hydraulic system work normally:

- (a) Get off and stand on the right side of the vehicle.
- b) Open the key switch on the dashboard.
- c) Start the engine.
- d) Operate the tilted stem and tilt the door forward to the end.
- e) Press the tilting switch on the instrument board to turn the cab up.
- f) To carry out maintenance or maintenance work.
- g) Press the tipping switch on the instrument board to lower the cab.
- h) The operation of the tilted stem to restore the door frame in situ.
- I) Shut down the engine.



•When engine fails to start or hydraulic system fails:

- a) Use a spanner to open the cover plate with the position of the hand pump on the right rear side of the vehicle, as shown below.



- b) Twist the valve to the "rise" position.
- c) Put the rocker on the hand pump.
- d) Shake the rocker up and down and lift the cab.
- e) To carry out maintenance or maintenance work.
- f) Twist the valve to the "down" position.
- g) Put the rocker on the hand pump.
- h) Shake the rocker up and down and drop the cab.
- I) After use, the reversing valve must be placed in the "lifting" position.

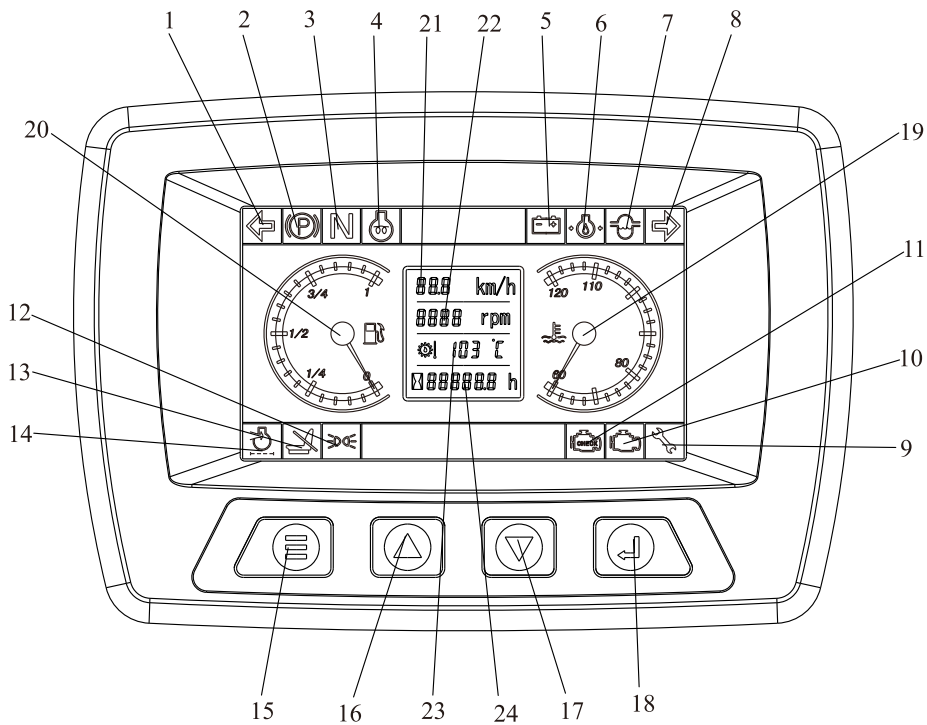
⚠ Notes

After using the hand pump to turn the cab up, we must also use the hand pump to drop the cab, otherwise it may cause the hand pump to have an oil pot and oil shortage. When the hydraulic system is discharged or misoperated, the hand pump oil pot is short of oil, it can unscrew the circular block cover on the hand pump, and add the hydraulic oil that is consistent with the hydraulic oil brand in the hydraulic tank.

When the hand pump oil oil, by shaking the rocker will feel very light, and shaking the rocker cab without reaction.

2.2 Instrument

(1) Instrument appearance figure



- | | |
|------------------------------------|-----------------------------|
| (1) Left steering signal | (13) Seat lock instructions |
| (2) Parking brake instructions | (14) Air filter alarm light |
| (3) Neutral instructions | (15) Menu button |
| (4) Preheat instructions | (16) Page up button |
| (5) Charging instructions | (17) Page down button |
| (6) Oil pressure low alarm | (18) Carriage-return button |
| (7) Oil-water separation alarm | (19) Water temp |
| (8) Right steering signal | (20) Fuel meter |
| (9) Maintenance instructions | (21) Vehicle speedometer |
| (10) Engine operation instructions | (22) Engine tachometer |
| (11) Engine fault instructions | (23) Oil temp |
| (12) Width lamp signal | (24) Chronograph |

(2)Working Process and direction for use

Direction display (1) (8)

When the direction light works, the instrument light will flash at the same time.



Parking brake instructions (2)

When the parking brake is in working condition, the indicator lights up and the vehicle is unable to move at this time.



Neutral instructions (3)

When the shift switch is in neutral, the indicator lights up.



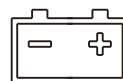
Preheat instructions (4)

When the temperature is low, the engine will automatically heat up the intake before starting, and the indicator will light up.



Charging instructions (5)

When the generator starts working normally, the indicating lamp will go out when the engine starts.



Oil pressure low alarm (6)

When the engine oil pressure is too low, the indicator will light up.



Oil-water separation alarm (7)

When the indicator light is on, the oil and water separator should be inspected, and the drain switch should be opened for drainage.



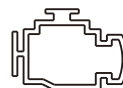
Maintenance instructions (9)

When the indicator lights up, we need to maintain the engine according to the maintenance instructions.



Engine operation instructions (10)

When the engine is in operation, the indicating lamp will light up.



Engine fault instructions (11)

When the engine runs malfunction, the indicator will light up, and the LCD will display relevant fault information.



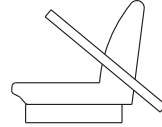
Width lamp signal (12)

When the wide light is working, the instrument indicator lights up.



Seat lock instructions (13)

When the operator without the correct posture when sitting in the seat, the indicator lights up, unable to operate the vehicle at this time.



Air filter alarm light (14)

When the inlet pressure is too large, the indicator lights up. At this time, we should check whether the air filter is jammed, and then we need to change the air filter element.



Water temp (19)

Show the temperature of the current engine cooling water of the vehicle.



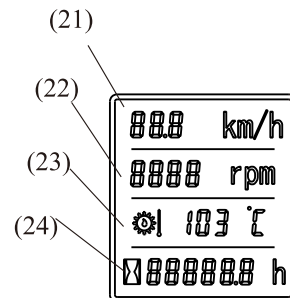
Fuel meter (20)

Indicating the proportion of fuel remaining in the fuel tank.



Vehicle speedometer (21)

Show current vehicle speed.



Engine tachometer (22)

Show current engine speed.

Oil temp (23)

Indicating the proportion of fuel remaining in the fuel tank.

Chronograph (24)

Display the total running time of the vehicle.

(3) Brief operation's introduction:

(1) Startup

Before starting the generator, put the direction switch into zero; otherwise, the generator can't be operated. This is because the safety-start-protection function has been designed in the control box. Rotate the starting switch to first gear clockwise one — electricity position, connect the gauge and the lit power supply, the diesel generator start to become hot automatically and the indicating lamp is lit, after 3.5 seconds the preheat indicating lamp is extinguished automatically and the preheat hour is controlled for 13.5 seconds by relay.

Rotate the starting switch to the second gear—the starting gear and then operate the generator.

After starting the generator, push the directing switch forward, that is at the forward gear accelerate acelerograph, speed up the forklift. If push the directing switch backward, at that time the lamp which indicates backing the car will be on and buzzer will also be on.

(2)The lamp switch: push the first gear and the forward and backward lamp is on .Put to the second place and the forward big lamp is on, at that time, the lamp indicating the width is also on.

(3)The signal indicating the transfer of direction: push the switch of the lamp of transferring direction backward, the transferring signal lamp of the forward combined lamp and the back combined lamp at the right side of forklift is twinkling. Push the switch of the lamp of transferring direction forward, the transferring signal lamp of the forward combined lamp and the back combined lamp at the left side of forklift is twinkling.

(4)The breaking signal: when the forklift needs to brake, step the stepper and the back combined lamp will be on red.

(5)Backing signal: when the forklift needs to back, pull the direction switch backward, at that time the transmission is put on the backing gear then the car—backing lamp of the back combined lamp will be on white, meanwhile, the buzzer of the forklift backing is on.

(6)Indication of non—chargeable signal: before starting the generator, put the starting switch on the electric gear, at this time, the indicating lamp is on and after starting the generator, the lamp will extinguish automatically. If the generator is on the work condition, the indicating lamp will be on indicating the chargeable circuit can't be charged and should be checked.

(7)Signal of oil pressure sequel of generator: before starting the generator, push the starting switch to the electric gear, at this time, the indicating light of oil pressure will be on, after the generator has started, the lamp will extinguish automatically. If the generator is on the working condition, the indicating lamp of the oil pressure will be on which indicates the

oil pressure of generator is too low and the lubrication is not very good and it should be checked immediately.

(8) Signal of the oil—water separator: before starting the generator, put the starting switch to the electric gear, at this time, the indicating lamp of the oil— water separator will be on, after the generator has started, the lamp will extinguish automatically. If the indicating lamp is on in the course of the operation, which indicates the water in the oil—water separator has surpassed the alarming position. Then push the levy immediately to let out the water, and the light back to normal.

(9) Flaming oil gauge: indicating the reserve volume of the flaming oil in the oil tank, When the fuel gauge pointer reaches red, it indicates the reserve volume of oil in oil tank is too low and should add oil to the oil tank.

(10) Water temperature gauge: indicating the temperature of generator's cooling liquid

(11) Gauge: accumulate work hour of the generator

3 Put the forklift truck into use

Before the equipment input operation or lift heavy goods , forklift driver should obliged to make sure that there is no other staff stay in the dangerous area.

3.1 The compulsory check before operating the forklift in daily use

- Visual inspection for forklift truck, pay a special attention to the wheels and weight-carrying parts and make sure there is no damnification.
- Check the tensioning degree of the weight-carrying chain to see whether it is uniform or not.
- Visual inspection for the fixing of the storage battery and connection status of the electric cable.
- Test the status of the lights.
- Test the operating force of the parking brake and braking effect.
- Check the function of safety belt.
- Check the function of the instrument.
- Check the hydraulic pressure system leaks, working oil sufficiency, add enough lubricating oil on the lubrication parts.

3.2 Adjust the driver's seat

In order to obtain a comfortable driving effect, must according to the driver's figure to adjust the driver's seat.

Adjustment of the seat backrest

-Clockwise rotation of the backrest adjustment knob, push the backrest back forcibly to let the backrest tilted backwards.

-Clockwise rotation of the backrest adjustment knob, release the backrest let the let the backrest tilted forwards.

And release the backrest adjustment knob to lock the backrest.

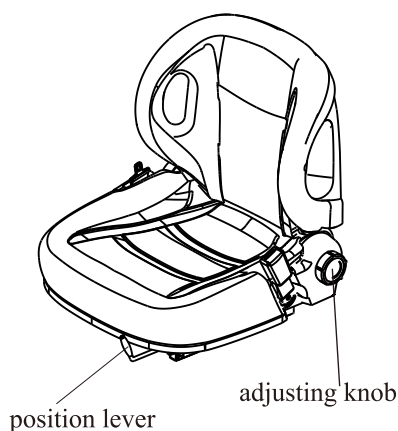
Adjustment of the seat position:

-Pull the driver's seat locator bar to the left, at the same time move the backrest back and forth to the right position.

-Loosen and wedge the seat position lever.

After adjusting the seat, must ensure that the locating device is wedged again. There should be no more adjustment during the driving.

The adjusting operation above is only applicable standard model of seat. If you are not use the standard model of seat, please abide by the adjustment operation provided by the manufacturer. During the adjustment, it should be taken to ensure that the driver is available to use all operation elements during the driving.



3.3 Adjust the steering column

-Pull the steering column positioning device and move it back and forth to the position you need.

-Lock the positioning device again.

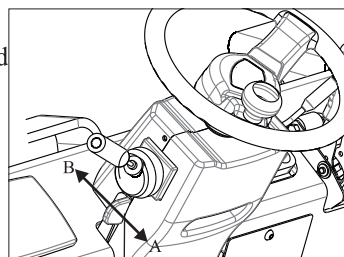
3.4 Starting device

-Close power switch.

Methods:

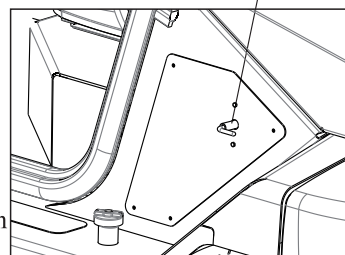
-Counterclockwise rotation switch, until the switch is locked in the slot.

-Let the key insert into the switch lock. And turn right into 'I' stop position.



steering column
positioning device

power switch



3.5 Safety belt

Please fasten the safety belt before driving the forklift.

When accident occurs, the safety belt can play an important role in protecting the driver.

Clean the safety belt regularly, avoid soiling (e.g. while still covering protection). If the locking device or the tightening device of the safety belt happened to be frozen, please unfreeze and wipe the water stains to avoid a second freezing.

Making any changes on the safety belt is not allowed, or it will cause danger for the reason of function fault.

-Every time after the accident, the safety belt must be replaced.

-Assembling and servicing must use the original spare parts.

The replacement of the damage or failure of safety belt must be made by franchised dealer or manufacturer's branches.

The measures should be taken under special circumstance

It is strictly prohibited to unfasten the safety belt for jumping to escape when the forklift truck has the risk of rollover.

Jumped out of the car may lead to more serious physical injury.

Correct operation:

-Upper body bend to the steering wheel.

-With both hands grip the steering wheel firmly and support with the feet.

-Let the body lean toward the direction that opposite the forklift overturned direction.



4 The Driving , Operation and Daily maintenance of the forklift

The driver and administrator of the forklift must keep “Safety First ” in mind and conduct the safe and standard operation according to the *Instruction book of utility and maintenance* and *The Driver manual*.

4.1 Transportation of forklift

Pay attention to the followings when carrying the forklift to the container or the car:

- (1) Brake the brake level.
- (2) Fix the mast and count weight by steel cable both front and rear, the front and rear tire should be cushioned .
- (3) When hanging, according to the instruction of the “anging signal ” lift the loads.

4.2 Safekeeping of forklift

- (1) No fuel in tank don't let out if the cooling liquid is rustproof and antifreeze liquid.
- (2) Apply the rustproof oil to the nonlacquer surface and apply lubrication to the up-and-down roller hinge.
- (3) Low the bracket to the lowest level.
- (4) Put on the brake shift.
- (5) Cushion the forward and backward wheel.

4.3 Pre-operation check

Pre-operation checks and weekly inspections are the responsibility of the Good Sense industrial vehicle users .

Be sure to perform a pre-operation check before beginning working with ensure safety .



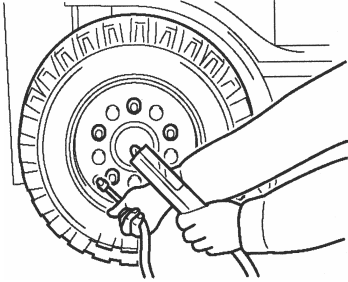
Item	Inspection
Previously detected malfunction	Correct
Exterior	Vehicle body , oil leakage , water leakage, loose parts, exterior damage .
Wheels	Tire pressure , wear or damage , rims hub nuts.
Lamps	Lamp condition , damaged lamps .
Hydraulic oil	Oil lever , contamination , consistency .
Radiator	Coolant lever , antifreeze requirement .
Engine	Oil lever , contamination , consistency , noise , exhaust .
Clutch	Engagement , pedal , play .
Brake pedal	Pedal play , braking effect .
Brake fluid	Fluid level.
Parking brake	Operating force , braking effect .
Steering wheel	Looseness , play , vibration , veering .
Horn	Sound .
Instruments	Functioning .
Load handling system	Parts , oil leakage , cracking , looseness .
Fuel	Amount .

(1) Walk around inspection

Vehicle uprightness

Does the vehicle lean to one side or the other ?

If so , check for a tire puncture or a problem of the undercarriage .



(2) Beneath the vehicle

Check for any oil or water leakage on the ground or floor where the vehicle is parked .

Check for loose parts or damage .

If any unusual condition is found , have the vehicle inspected with the help of a Good Sense dealer .

(3) Tire inspection

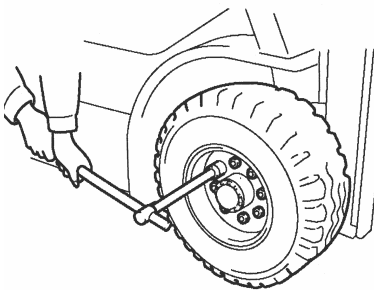
Tire pressure inspection

1. Use a tire pressure gauge and measure the inflation pressure .
Adjust it to the proper level .

2. After the adjustment , check whether air is leaking from the valve .

Damage , crack and wear of tires and rims

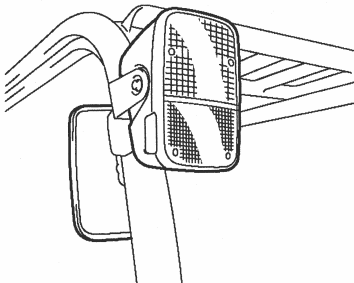
Check the tires for damage and wear , and the rims for bending .
If the tires are damaged , or there is a marked difference in the wearing of tires between the front and rear or between the left and right is perceived , or bent rims are found , ask a Good Sense dealer for inspection .



(4) Hub nut inspection

Check the tightness of the hub nuts .

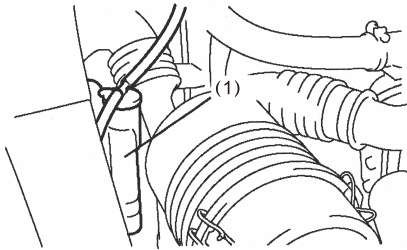
Avoid uneven torque and tighten all of the nuts uniformly .



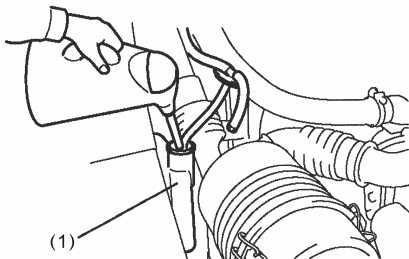
(5) Lamp inspection

Are the filaments intact ? Is there any lens damage ?

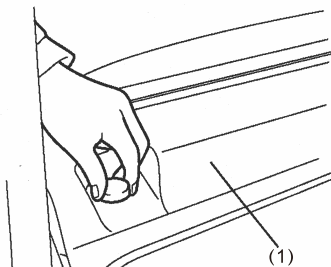
Always keep the lenses clean to ensure proper forward vision .



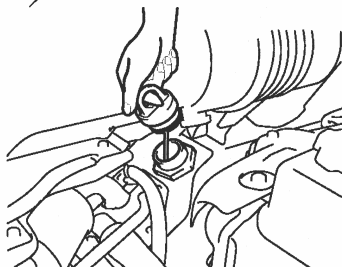
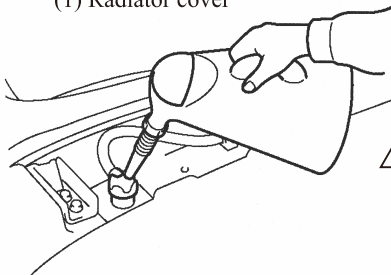
(1) Reservoir tank



(1) Reservoir tank



(1) Radiator cover



(6) Engine compartment inspection

Engine coolant level check and supply

Level check and supply of engine coolant shall be performed while the coolant is cool .

1. With the engine off , open the engine hood and check the engine coolant level in the reservoir tank .

Note :

The reservoir tank equipment to the radiator automatically supplies the engine coolant when the coolant quantity in the radiator becomes insufficient .

2. Keep the coolant level between the upper and lower limits . If the level is below the lower limit , adjust coolant to the upper limit .

3. The concentration of long life coolant (LLC) in the engine coolant must be 30% (or 50% in a frigid zone .)

Note :

If no engine coolant remains in the reservoir tank . Be sure to check the coolant level in the radiator , too .

(7) Checking the engine coolant level in radiator

1. Remove the radiator cover .
2. Remove the cap and check the coolant level from the filler port .
3. If the engine coolant is not visible through the filler port , fill appropriately diluted coolant (LLC) into the port .

Note :

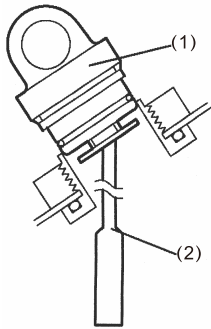
Close and tighten the radiator cap , match the pawl on the reverse side of the cap with the notch on the filler port and turn the cap fully clockwise while applying a downward force .

⚠ Warning

When the engine is hot , it is very dangerous to remove the cap. Coolant level check must always be performed when the engine is cold .

(8) Checking hydraulic oil level

Always stop the engine and lower the fork to the ground before checking the level of the hydraulic oil , while the vehicle is on level ground .Oil pollution level should be limited within twelve degrees.



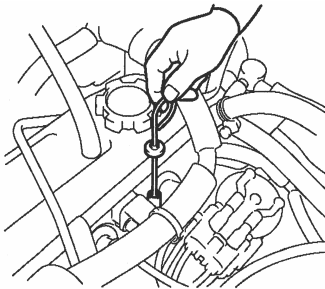
(1) Oil cap
(2) Level identifier

1. Open the engine hood and remove the oil cap .
2. Wipe the level gauge attached to the oil cap with clean cloth, and insert it again into the tank .

Note :

Inspect the oil level by placing the level gauge on the opening of the oil supply inlet without pushing the oil cap in .

3. Extract the level gauge gently and check if the oil adhesion is up to the level line .
4. If the oil level is insufficient , add oil . Spilled and splashed oil must be wiped off thoroughly . Adjust the oil level so that it will fall within a range of 0 thru +10mm from the lift-high mark on the gauge as illustrated on the left side .



(9) Engine oil inspection

1. Park the vehicle on a flat ground . If the vehicle is inclined , the indicated level may be incorrect .
2. The oil level must be checked before starting the engine or at least 3 minutes after the engine is stopped .
3. Extract the oil level gauge and wipe it with clean cloth . Insert it again and check if the oil level is between the F and L levels .
4. If the oil level is below the L line , add oil up to the F line .

(10) Adding engine oil

1. To supply oil , remove the filler cap and pour oil through the filler port . Never let the oil level exceed the F line .
2. The oil supplied must be appropriate for the season .
SAE40 Ambient temperature higher than 30°C
SAE40 Ambient temperature 0°C to 30°C
SAE40 Ambient temperature -10°C to 0°C

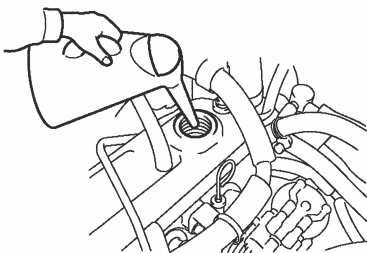
⚠ Caution

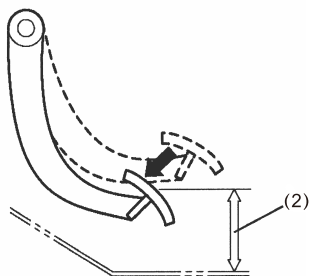
Always use the same brand of oil if possible .

Leakage inspection

Check the engine compartment for any oil or fuel leakage.

Clean the radiator if it is clogged and check if there are any foreign objects, such as paper or others, onto the radiator grill .





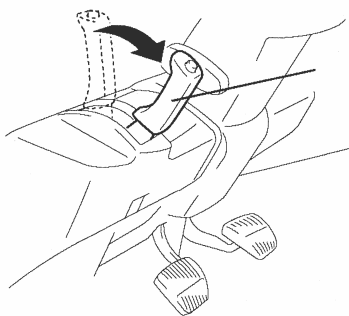
(1) Brake pedal
(2) Brake pedal floor clearance

(11) Brake pedal inspection

1. Depress the brake pedal fully , and check the floor clearance (clearance between the pedal and floor).
2. Make sure that the pedal does not go any further when it is kept depressed .
3. Also check that no abnormality is observed with pedal depression and return .
4. Manually depress the brake pedal to check the play until a resistance is felt .

⚠ Warning

Ask a Good Sense dealer for inspection if the play is excessive, pedal movement is abnormal or brake performance is improper .



(1) Parking Brake lever

(12) Parking brake inspection

Parking brake lever

Check the operating force required for pulling the parking lever fully .

⚠ Warning

Ask a Good Sense dealer for inspection if any abnormality is found .

(13) Engine inspection

Start the engine and warm it up sufficiently .

1. Check each meter and warning lamp to see there is no abnormality .
2. Check if the engine is generating abnormal sound or vibration .
3. Check the exhaust gas color to see it is normal .

Colorless or light blue exhaust indicates complete combustion ;

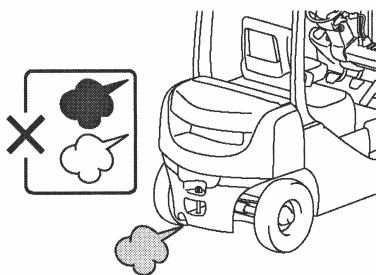
black exhaust , incomplete combustion ; and white exhaust , burning oil as a result of oil getting into the cylinders .

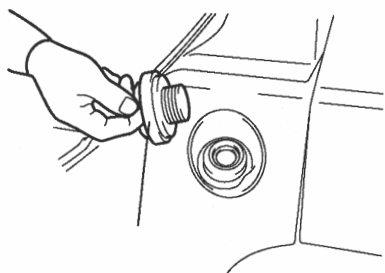
⚠ Warning

. The exhaust gas is harmful . Before you start the engine inside a building or enclosure , insure a sufficient ventilation .

. The gasoline engine carburetor is equipped with the automatic choke that keeps the engine running at a relatively high speed for a while .

Do not be bothered , however , becomes the engine resumes a normal speed upon warning enough .





(14) Fuel level check and supply

1. Observe the fuel meter to see if the fuel is sufficient .

Note :

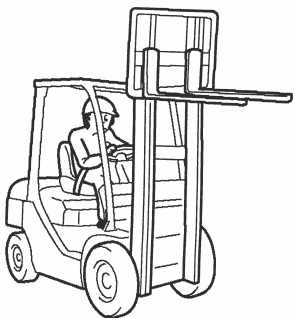
After the end of daily operation , fill the tank with fuel to prevent the moisture of the air out side the tank from mixing with the fuel .

2. When supplying fuel , stop the engine , remove the fuel tank cap by turning it counterclockwise , and pour fuel through the fuel filler neck .

3. After fueling , be sure to tighten the fuel tank cap .

⚠ Caution

- . Always stop the engine and keep any fire source away before and during the fueling operation .
- . Carefully prevent entrance of water and dirt into the tank during fueling .



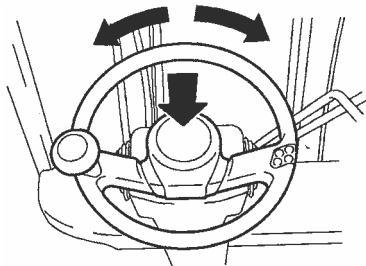
(15) Load handling system

1. Check the fork installation state for cracks and bending .
 2. Check for mast distortion , chain tension and oil leakage from cylinders and piping .
 3. Operate the lift and tilt levers to check their operating state.
- If anything unusual is found , have the vehicle inspected at a Good Sense dealer .

(16) Steering wheel inspection

Note :

Perform inspection after starting the engine .



1. Check the steering wheel play with the rear wheel and set in the straight traveling direction .
2. Turn the steering wheel in the circumferential direction and also move it up and down to make sure there is no looseness .
3. Push the horn button to see the horn sounds normally .
4. If any abnormality is found , ask a Good Sense dealer for inspection .

(17) Safety Inspection

Note :

Keep broad safe space when inspection to prevent the sudden movement of forklift .

Parking Brake Inspection :the forklift can not move or lift until the operator leaves the seat .

Checking step :

1. Forklifts should be on the stable and flat ground , and lock the parking brake lever .
2. Set the forward /backward switch on Neutral , starting switch ON and lift the fork 10 cm off ground .
3. Release the brake pedal and the accelerate pedal .
4. Set the forward / backward switch on F or R .
5. Set the starting switch on start position to check if the starter can work .
6. Close the starting switch .

4.4 Operation of the forklift

- (1) The driver who has been trained and held the driver license can drive the forklift
- (2) The operator should wear the shoes, hat, clothes and gloves, which can be used as the safety protection during the operation
- (3) Check the control and alarm mechanism before driving .If find the damage or flaw, operate after repair
- (4) The load should not surpass the standard value during the transportation , the fork should completely insert fully below the goods and put the goods on the fork evenly ,using single fork to lift the goods is not allowed
- (5)Successfully start the machine , turn around , steer , brake and stop . Drive slowly when turning around on dankish or slippy road surface .
- (6) Tilt the mast backward , and lower goods when running .
- (7) Carefully driving , when running on the ramp which lean degree more than tenth ,steering forward when up to the ramp , drive reverse when down to the ramp . Forbid turning around , loading and unloading when up or down to the ramp .
- (8) Paying attention to passerby , barrier , pothole during the running , also the space above the forklift .
- (9) Forbid to stand on the fork and not allowed carry people .
- (10) Standing under the forklift and walking under the forklift is not allowed.
- (11) Operating the vehicles and apparatus out of the drive seat is not allowed.
- (12) Pay attention to the goods in case of falling when lifting the forklift more than three meters, when necessary, take the protective action.
- (13) Lean the bracket backward as often as possible in terms of operating the longer lifting fork and the load work should be conducted upward and backward within the minimum range.
- (14) Be more careful and drive slowly when driving on the quay or the interim board.

(15) The driver should not be on the forklift and extinguish the generator when adding the fuel and don't lit fire when checking the battery or the position of the oil tank.

(16) When operating the empty forklift, operate it like the loading forklift.

(17) Don't carry unfixed or loose goods and carry the bigger goods more carefully.

(18) The fork should lay groundly, and make the handle on the neutral gear, cut off the power when leaving the forklift; Pull the parking brake when stopping on the slope or flat ground, if would stop for a long time, cushion the tire.

(19) Don't open the lid of the water tank when the generator is very hot.

(20) The pressure of relief valve of control valve and the steering unit has already been set after production, Don't adjust randomly during the operation so as to avoid to destroy the whole hydraulic system or the hydraulic components because of the pressure is too high.

(21) Charging the tire should follow the "Tire pressure " signal.

(22) Forklift noise on the operator seat is measured by sound pressure level while around the operator is measured by sound power level. The noise in the operator seat is not more than 98dB(A), radiated noise is not more than 114dB(A). Vibration pass to operator is less than 5m/s^2 .

(23) In order to move the extra-wide goods, the users can choose "The super-long fork". What should be mention is that the loading capacity of the super- long fork should comply with the loading curve. Within the standard loading criteria, its loading capacity should be equal to that of the standard forks, the loading center should be moved forward while downloading the work, but using the tip of fork or colliding the goods are not allowed. Attach great importance to safety when driving or twisting.

(24) Check the chain regularly in the process of using in order to guarantee the good lubricating condition between the chains; the degree of loosing and tightening of the left and right hinge is the same. If the chain has the phenomenon of being damaged in the process of using. When the change values of hinge distance vary from the 2% of the standard volume, the chains must be changed so as to guarantee the safety.

(25) Get protection from the accidental fires and personal injury . The position of fire extinguisher and fire aid boxes should be checked and usage of them should be familiar .

(26) Operate on the rough ground , arouse noise and strengthened vibration could be result in hurting body , such as back pain . Please operate the forklift on the flat road or ground .

(27) Do not dismount the overhead guard and backrest ! Install them for protecting operators from the falling objects . Overhead safeguard meet the safety standard .

(28) Forbid to maintain the forklift at a high position .

(29) Forbid to do dismantlement of Good Sense forklift privately, if indeed demanded , please contact sale agent and after service department first .

(30) Please strictly choose Good Sense preparative articles and spare parts. we will not take any corresponding responsibility if you don't normally use appointed Good Sense preparative articles and spare parts .

(31) Pay special attention to the disposal of rejectament in case of polluting environment. Waste liquid should be poured into appointed container . Strictly abide rules and prescribe when dealing with deleterious matters , e.g. sump , impregnant , battery , refrigeration oil .

(32) Please repair the forklift in time when there is something wrong with the forklift . Except some parts which are prescribed in the manual can be repaired by oneself ,please contact the appointed sale agent or Good Sense dealers in time when the forklift should be repair urgently or rush to repair .

(33) Forbid to install or change attachment privately, if in demand, please contact Good Sense sale agent or Good Sense dealers .

(34) Forbid to operate the forklift in the gale weather . The forklift may have the danger of turning over when loading the super big bulk goods in gale weather .

(35) Must check the emission value after maintenance.

4.5 Operating Cautions:

(1) In the process of using the forklift, if encountering the “ boiling of the pot ” of the radiator or the high temperature of the cooling water, don't open the radiator immediately. In order to find the reason, open the lid and let the engine run at the middle speed and then twist the radiator lid slowly, put the generator lid away again after a while to prevent the cooling liquid spurting and hurting the operators. While twisting the radiator lid, twist in the right position; otherwise cannot establish the standard pressure system.

(2) To the radiator which use the pure water as the cooling fluid, the water of the radiator can be discharged only when the water will be frozen in the cold weather . The radiator should be removed and be washed in the boiling soda water so as to eliminate the pollutants and sediments of the radiator.

(3) To the radiator of which the cooling liquid often uses the rustproof or antifreeze liquid, the different kind of antifreeze liquid and water can't be added randomly. The same type of the rustproof and antifreeze liquid should be added when the antifreeze liquid is leaking or evaporating. The antifreeze liquid can be used both in summer and winter and doesn't need to be changed for a whole year. Generally, it should be discharged and be filtered, then continue to use.

(4) According to the different working conditions, the dust on the surface of the generators should be removed regularly with detergents or the condensed air or high-pressure water (the pressure is less than 4kg/cm) .

4.6 The oil of lift fork

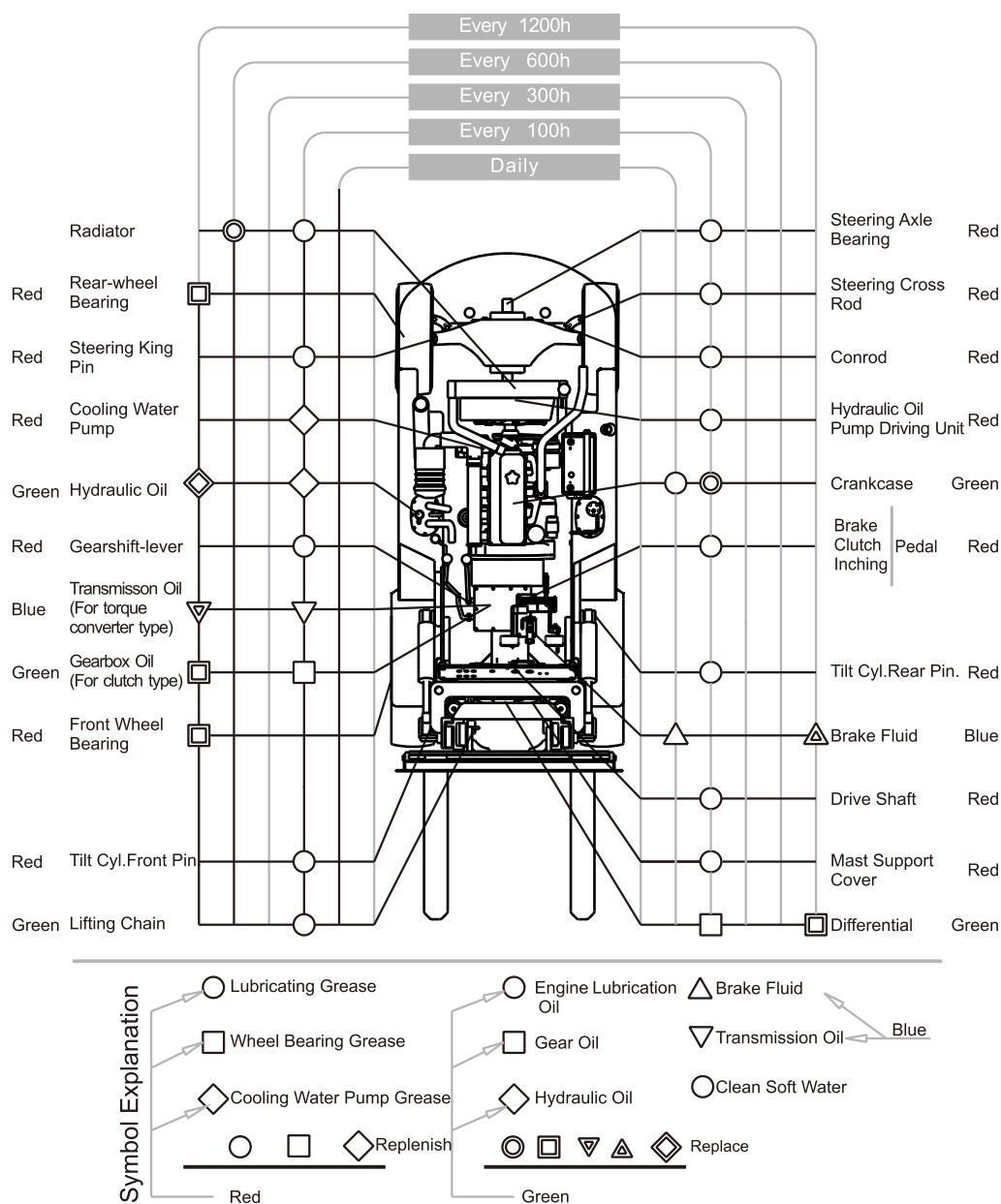
Name	Brand and temp. of using				
Diesel	Brand(diesel)	0#	-10#	-20#	-35#
	Temp. of using	≥4	≥-5	≥-5~-14	≥-14~-29
Engine oil	Sticky grade	CJ-4 10W-40			
Hydraulic oil	Sticky grade	L-HM46 wearable hydraulic oil		L-HV32 low temp. wearable oil	
	Temp. of using	≥-5		≥-20(cold region)	
Torque converter oil	8# Tor-con oil				
Lubricating oil	3# lithium base grease (-20℃~120℃)				
Gear oil of heavy-laden vehicle	Sticky grade	SAE85W/90			
Antifreeze fluid	Number	-25℃		-45℃	
	Temp. of using	≥-25		≥-45	

Removable parts

Item		Model FD	Units	30	35
Mast	Exterior size		mm	2059×1530×468	2094×1530×477
	weight		kg	1022	1139
Counter weight	Exterior size		mm	1135×1420×916	1135×1420×916
	weight		kg	1820	2150

4.7 Lubrication system picture:

LUBRICATION SYSTEM DIAGRAM





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