

# I. Specified Use

The forklift mentioned in this manual is a semi electric self-lift stacker. It is ground transport equipment. It is suitable to transport goods with cargo.

## **Warning!**

1. This forklift cannot be used for other purpose.
2. This forklift need to avoid overload or overload caused because of incorrect goods placement.
3. It is forbidden to operate in dangerous circumstances, such as fire or explosion etc..
4. This forklift cannot be used in those following environment, which is easy to corrosion, rusty or full with dust. This forklift is forbidden to use on the uneven surface.

User need to confirm this forklift is only used for prescribed use and needs to assure the safety and avoid danger of user-self or other third party . User needs to comply accident prevention regulations, other safe technology regulations, equipment' operation, maintenance and repair guidelines. User need to ensure all operators of this forklift will read and understand contents of this manual totally.

If do not comply this manual, all guarantee of our company will become invalid. Without permit of our company's customer service department, if the customer or the third party operates this equipment non-standard, our company shall not be liable for any lose arising therefrom.

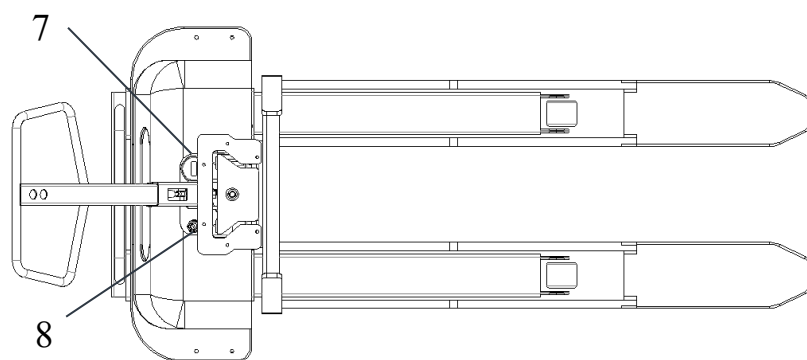
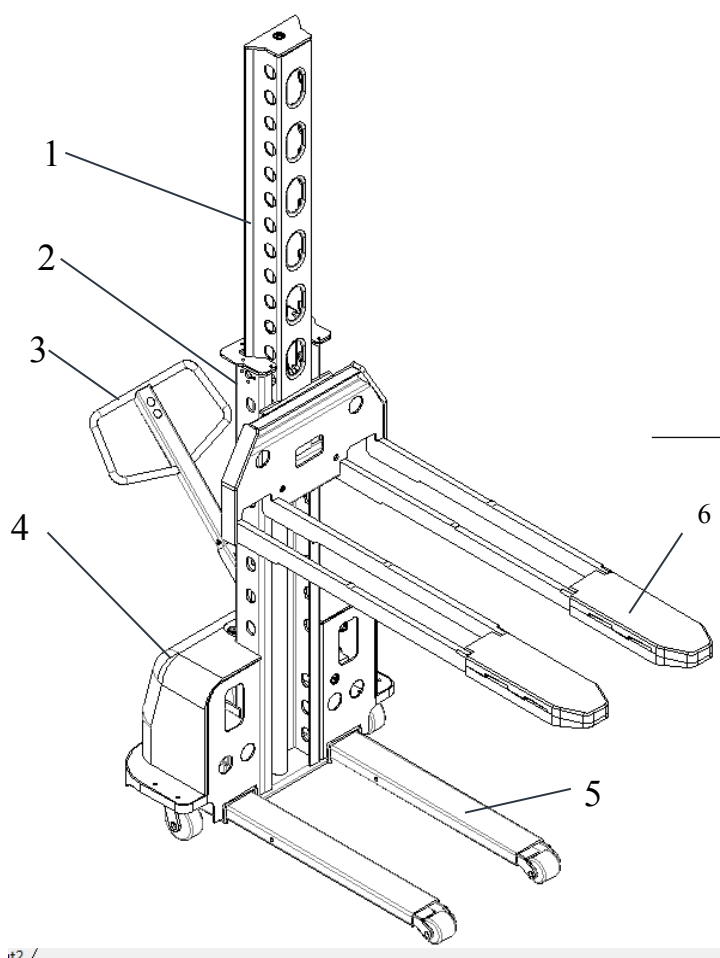
## II. Forklift Introduction

### 1. Forklift's Model No. And Specification

Model. No.		CDD05Z
Max. Load	kg	500
Total Weight	kg	240
Lift Motor Power	KW	DC0.8
Battery Voltage/Capacity	V/Ah	12/45
Max Lift Speed (Full-load / No-load)	mm/s	45/60
Max Descent Speed (Full-load)	mm/s	70
Load Center	mm	400
Type of Operation		Walk
Type of Wheel		Nylon

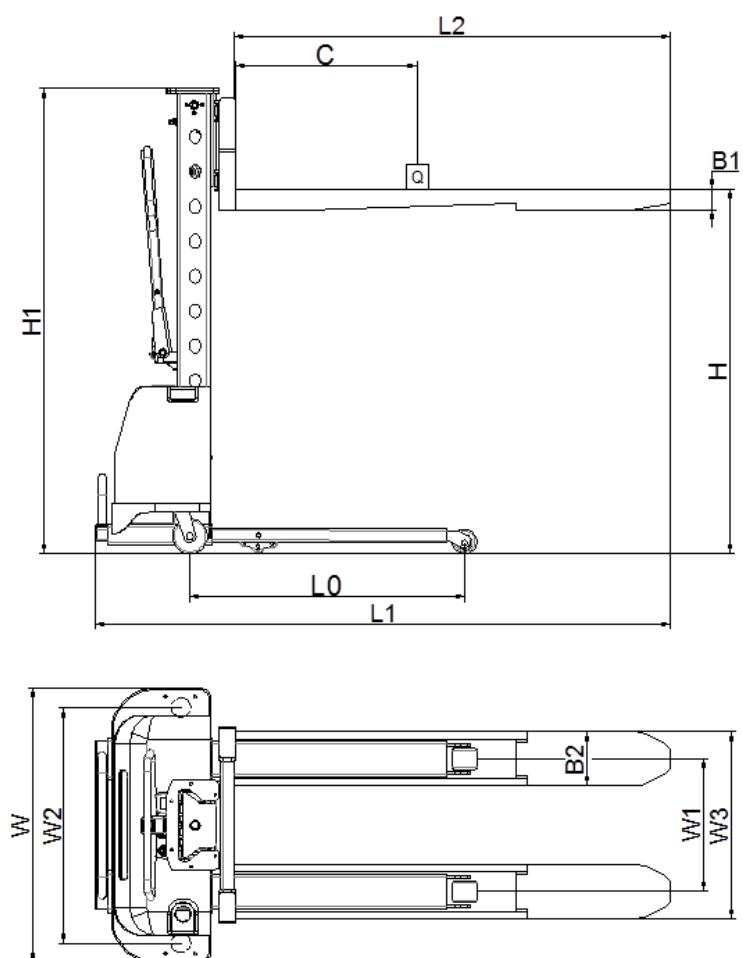
### 2. Forklift Components

No.	Description	No.	Description
1	Door Frame	5	Elastic Outriggers
2	Frame	6	Fork
3	Operating Handle	7	Coulombmeter
4	Cover	8	Key Switch



### 3. Forklift Size

Features	1.1	Model			CDD05Z
	1.2	Type of Power			Battery
	1.3	Max. Load	Q	kg	500
	1.4	Load Center	c	mm	400
	1.5	Wheelbase	L0	mm	815
	1.6	Wheel Distance: FR	W1	mm	380
	1.7	Wheel Distance: RR	W2	mm	665
	1.8	Type of Operation			Walk
Size	2.1	Front Wheel		mm	$\phi 70 \times 60$
	2.2	Universal Wheel		mm	$\phi 100 \times 45$
	2.3	Middle Wheel		mm	$\phi 40 \times 25$
	2.4	Length of Outriggers		mm	1000
	2.5	Max. Fork Height	H	mm	800/900/1000/1100/1200/1300
	2.6	External Distance Between Forks	W3	mm	535
	2.7	Length of Fork	L2	mm	1250
	2.8	Thickness of Fork	B1	mm	60
	2.9	Width of Fork	B2	mm	155
	2.10	Overall Length	L1	mm	1570
	2.11	Overall Width	W	mm	786
	2.12	Overall Height (Mast Closed)	H1	mm	1150/1197/1297/1397/1497/1597



## III. Operation and Use

### 1. Safety Regulations of Forklift Use

**Driving Permission:** Only those professional training person can operate the forklift. Operator must be tested by equipment manufacturer, very skilled about equipment operation and load things, and also should be officially appointed by equipment manufacturer or manufacturer's entrusted party.

**Demands of Driver:** Driver must be trained professionally about forklift and its use. He/She needs to comprehend all contents of this manual.

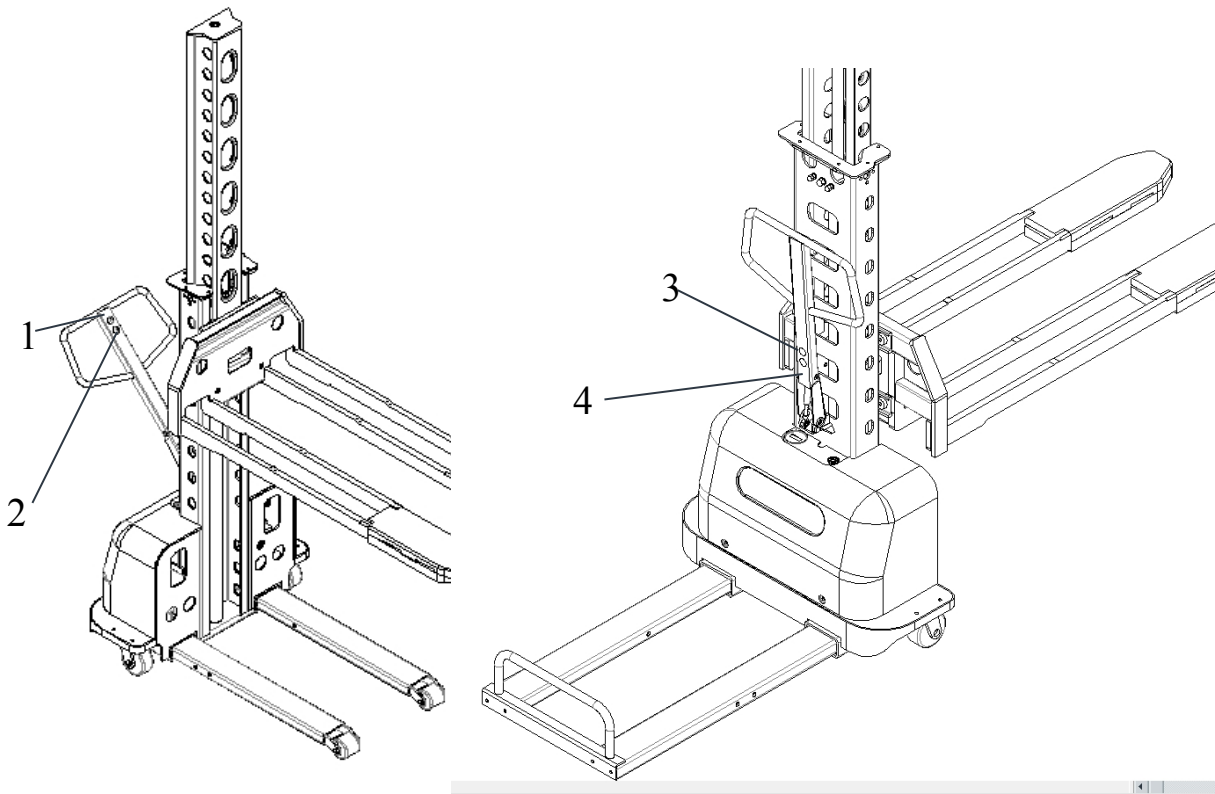
**Non-staff Members are forbidden to use this equipment.:** Driver needs to take all responsibilities during forklift use. Driver must prevent non-staff members driving or operate forklift. The forklift cannot be used for carrying people.

**Equipment damage and defect:** Once find damage or other defect on the forklift or its attachments, he/she need to report to the supervisor and do not operate this imperfect performance forklift immediately, such as wheel heavy wear, fork deformation and vehicle smoking etc.. He/She does not allowed to use forklift before equipment has been repaired well.

**Equipment Maintenance:** Without professional training and permission, driver cannot repair or change forklift without authorization. Driver absolutely cannot stop or adjust safety device and safety switch.

**Safety and Warning Signs:** Need to strictly comply with regulations in this manual all about device equipment, warn signs and warn instructions.

## 2. Button Instruction

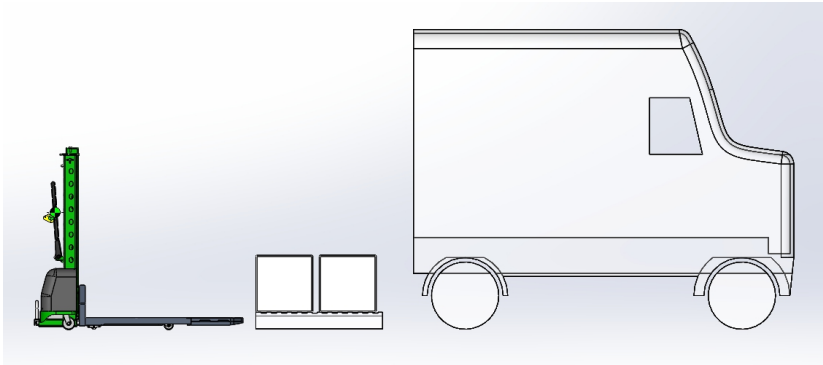


No.	Description	No.	Description
1	Fork Lift Button (Body Descent Button)	3	Body Descent Button (Fork Lift Button)
2	Fork Descent Button (Body Lift Button)	4	Body Lift Button (Fork Descent Button)

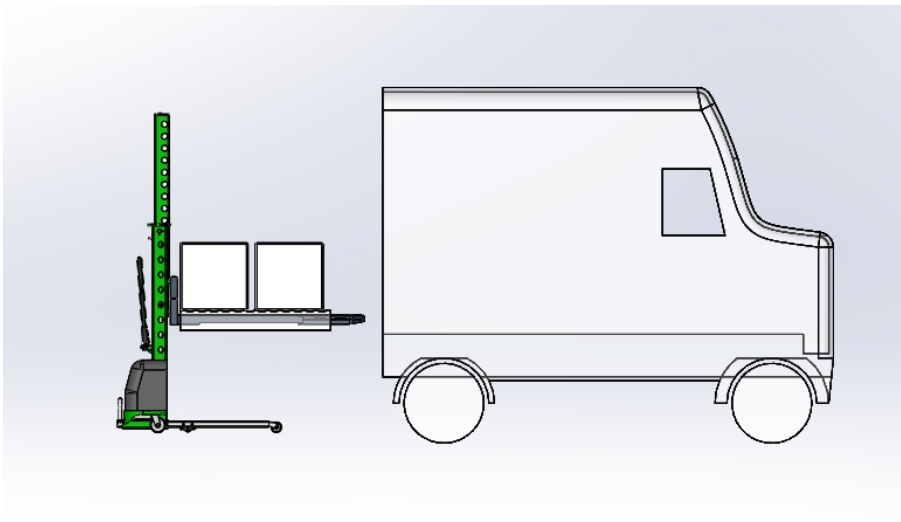
### 3. Forklift Operation

#### 3.1 Steps of Fork and Goods to the Cargo

Adjust the fork to appropriate height, go straight towards plate and then lift 20mm



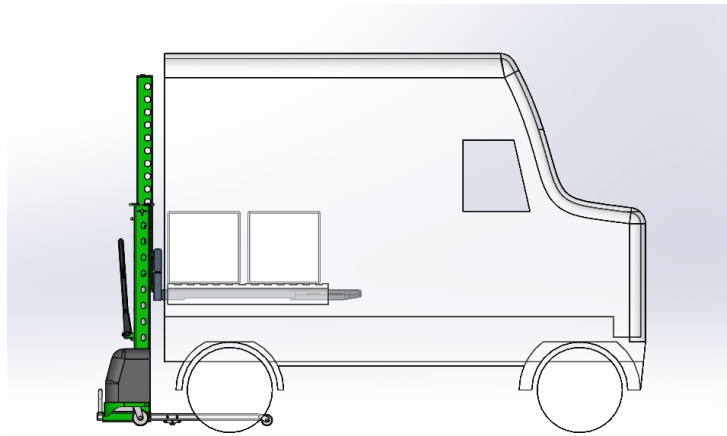
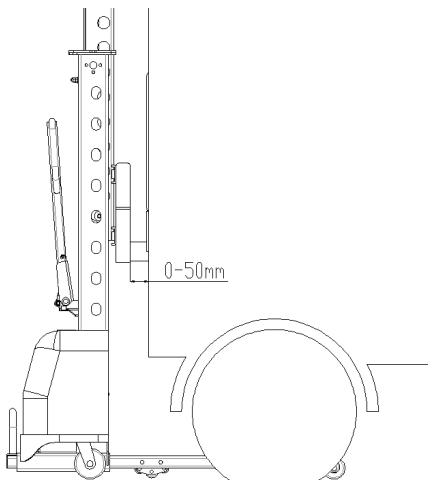
Make the forklift transport to carriage compartment, aim at the carriage and the lift goods plate higher than carriage



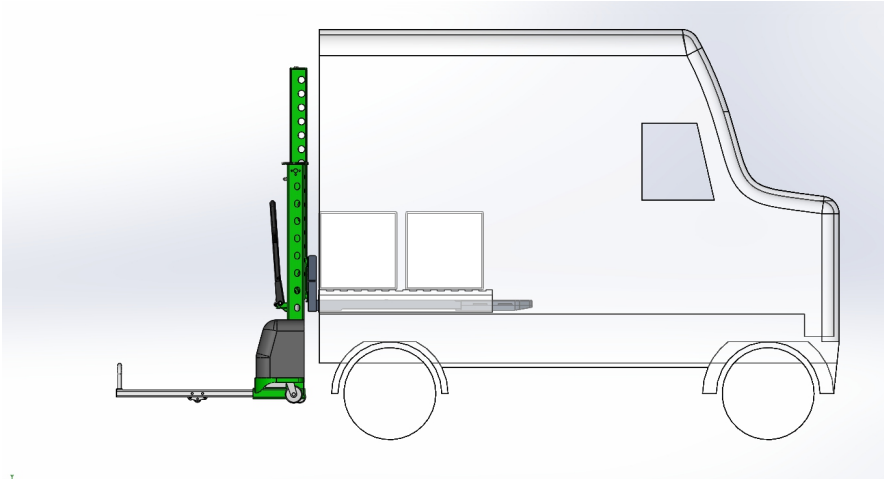
Push the goods towards carriage, ensure to leave 0-50mm distance between fork

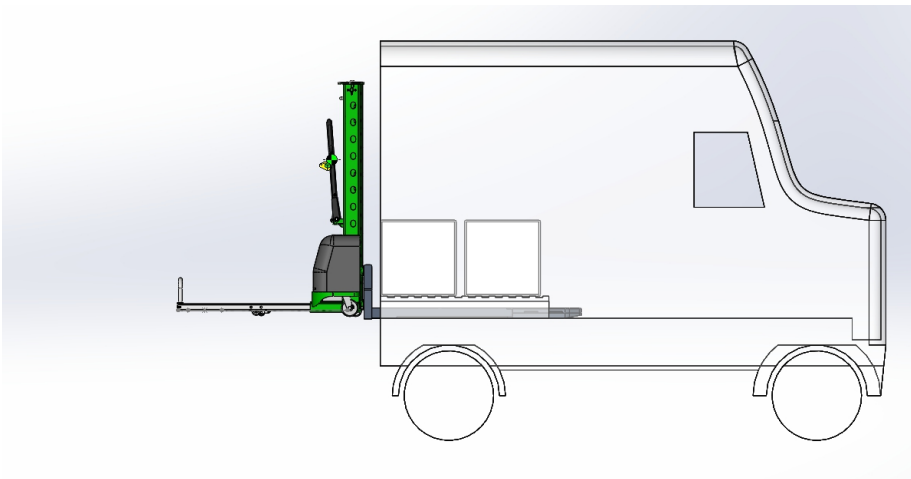


vertical plane and carriage tail.

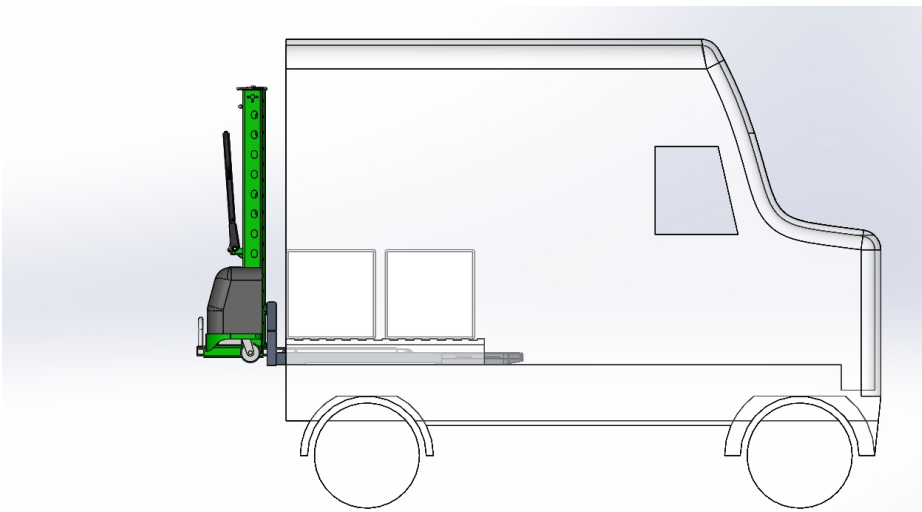


Press button 3 to put goods into carriage, and then press button 4 to lift forklift body leave ground. After that, pull-out elastic outriggers. As shown

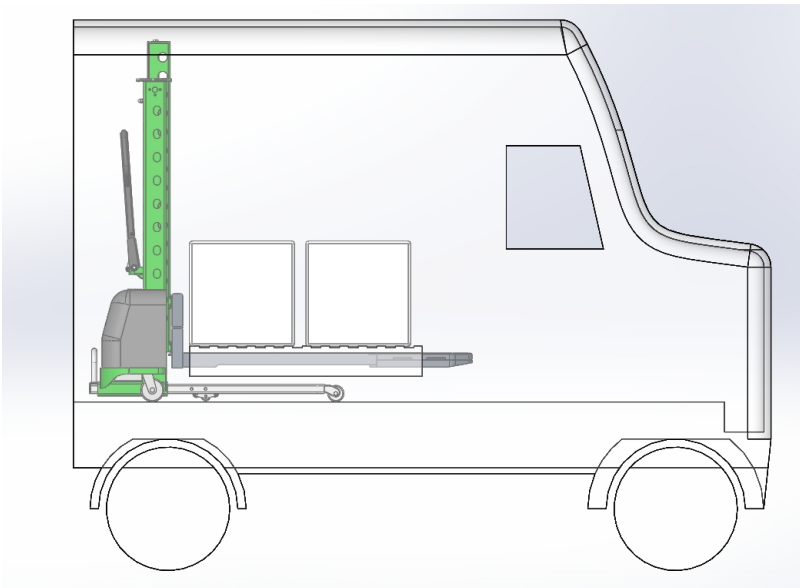
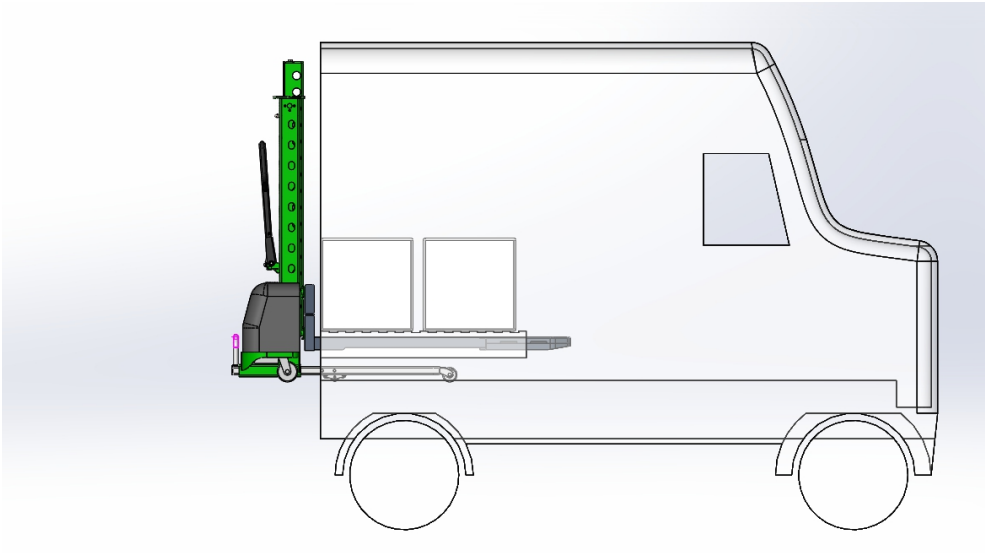




Push outriggers into body after body at its highest point



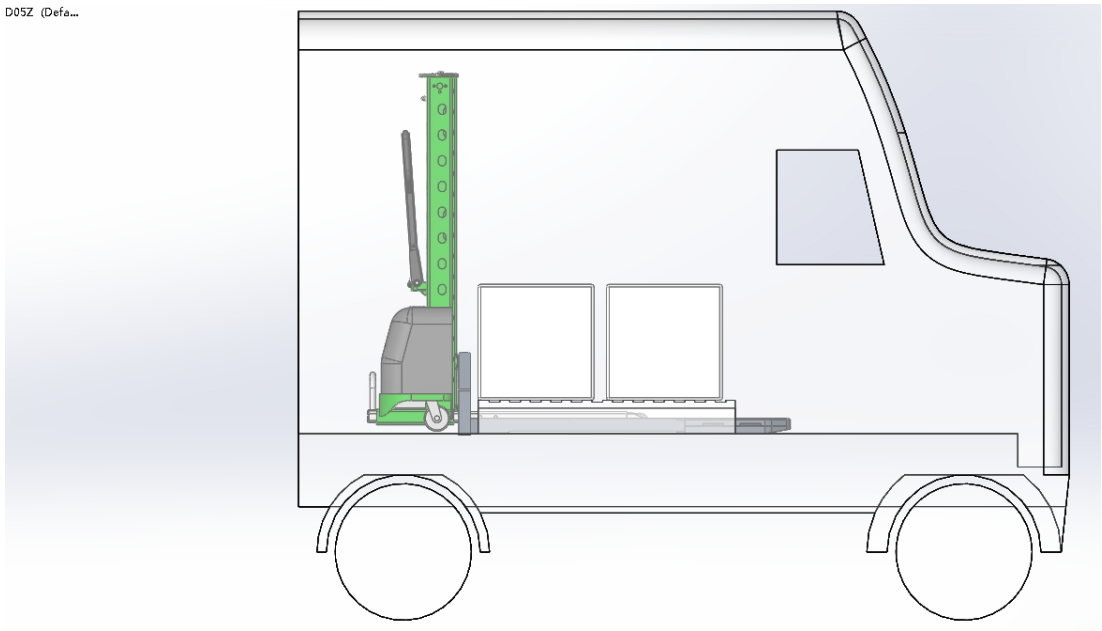
Press button 3 to lift goods, and then push forklift with goods into carriage



When goods at right place, press button 2 to put down the goods and make fork

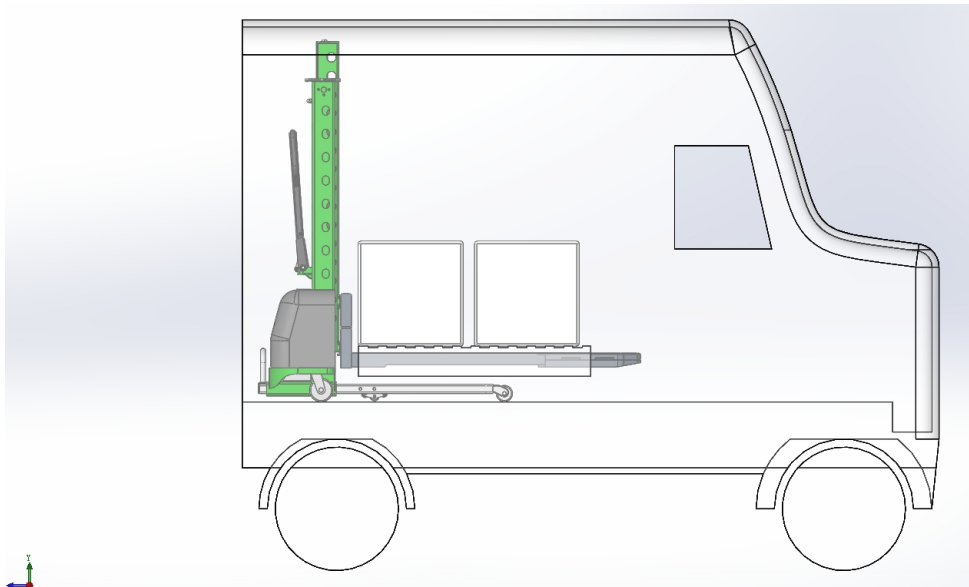
descent to the carriage plate. Pull forklift until it cannot move any more. Close carriage door and then begin to transport.

D05Z (Defa...



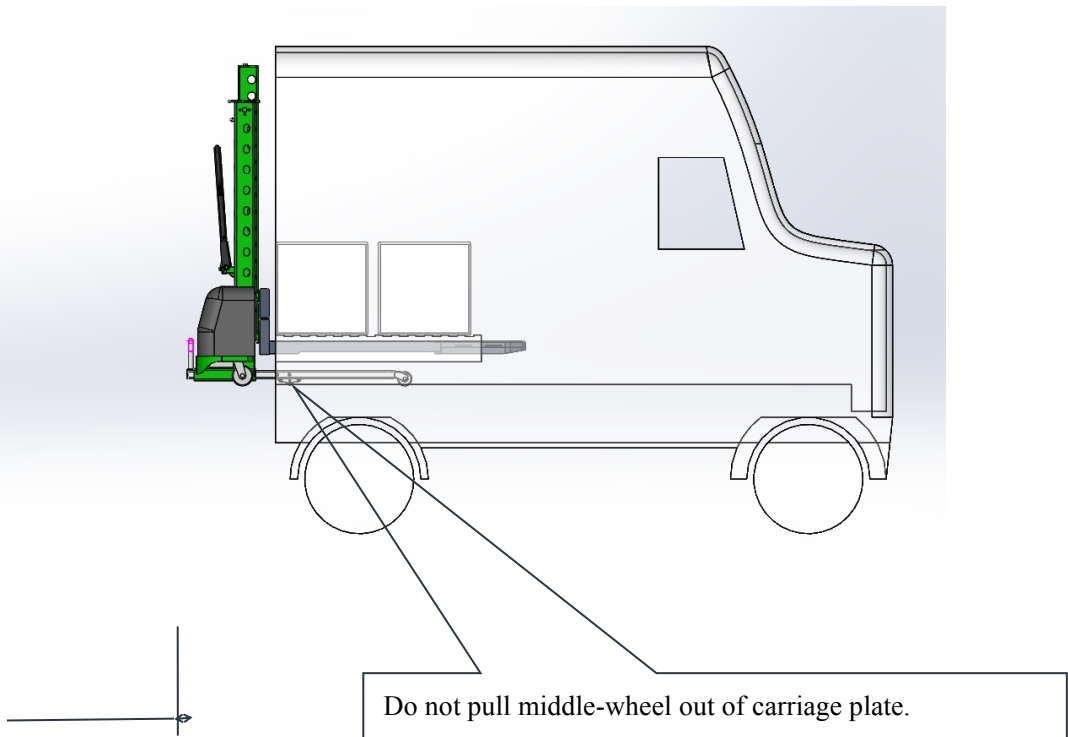
### 3.2 Steps of Fork and Goods Get off the Cargo

Open the door and lift goods

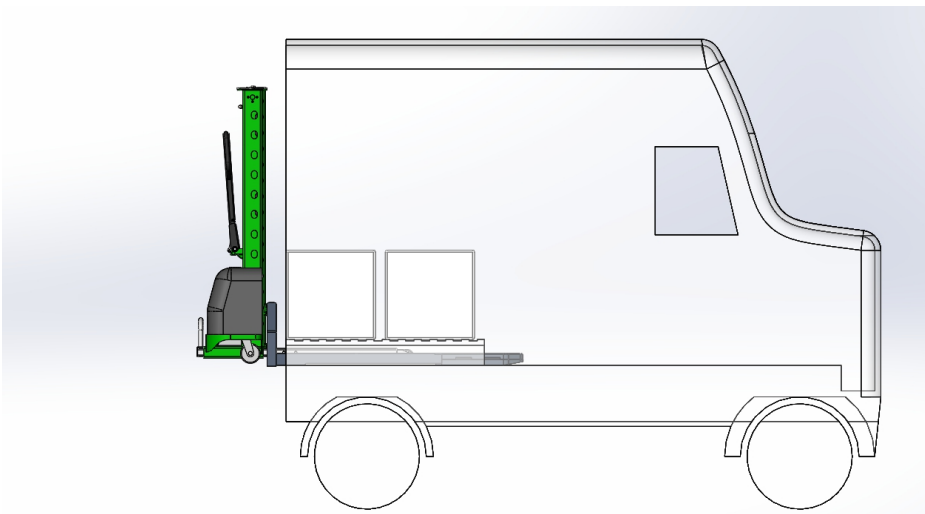


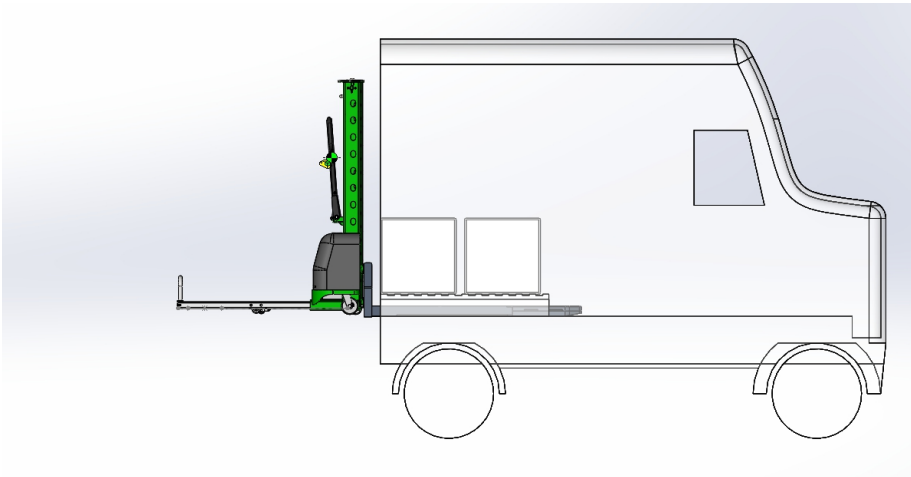
Pull the forklift body out of carriage, ensure to leave 0-50mm distance between fork

vertical plane and carriage tail.

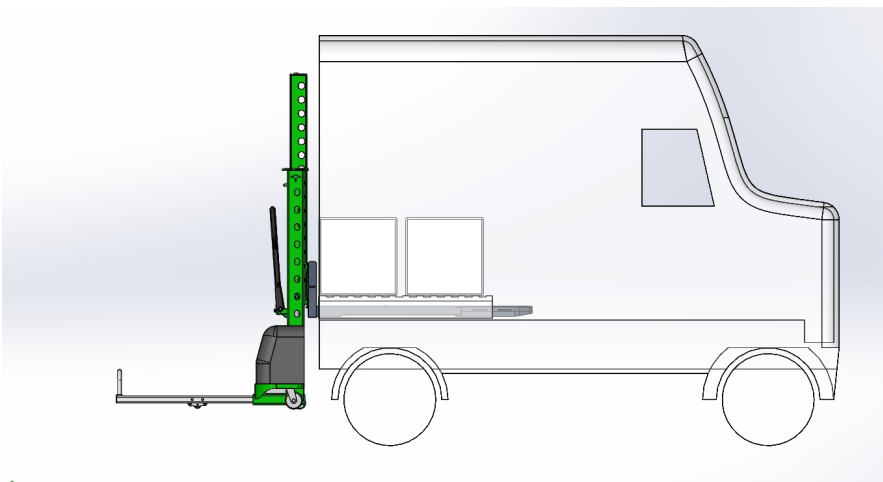


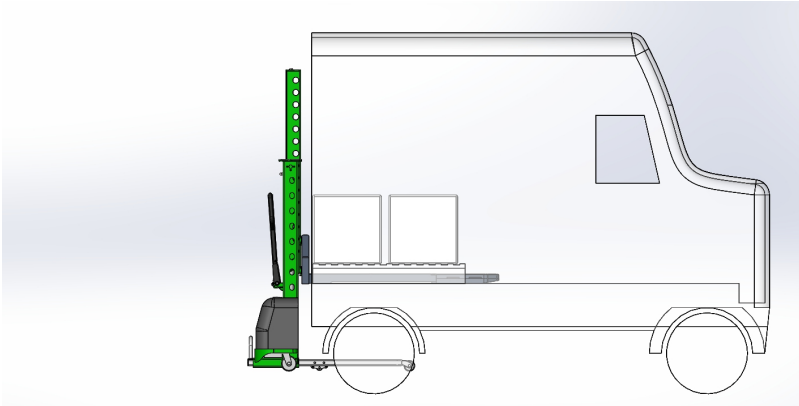
Put down the goods and lift forklift body and pull out outriggers



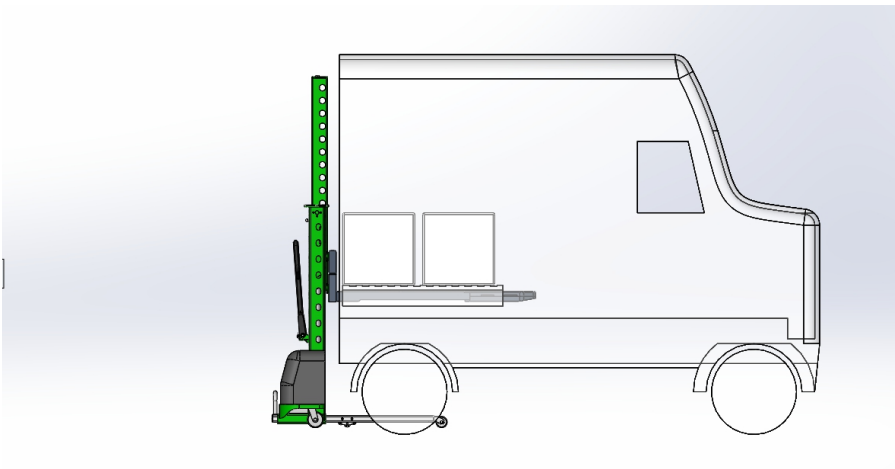


Press button 3 and descent forklift body. Pull outriggers into forklift after it leaves carriage

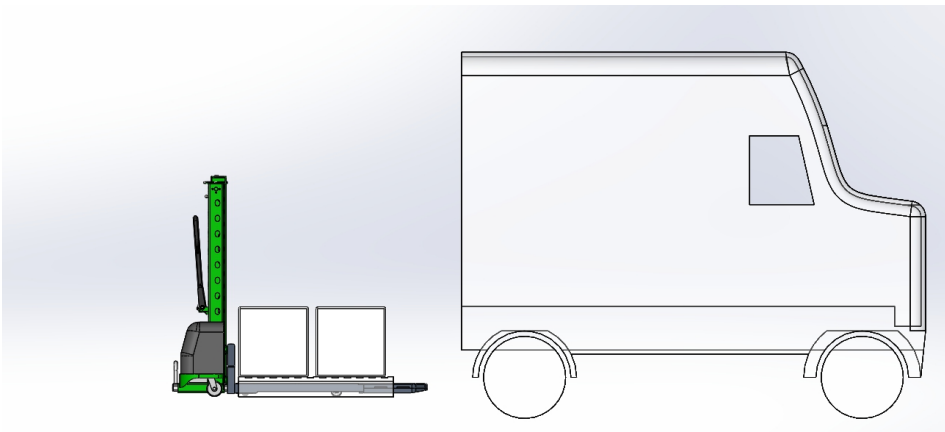




Press button 1 to lift goods and then leave carriage plate (Need to wait 3-5 seconds when lifting)



Transport goods to specified location



## **4. Checks Before Use**

### **4.1 Checks before first use**

1. Check and confirm all parts are installed firmly on the forklift. No parts are missing or loose.
2. Check appearance of forklift to ensure there is no damage or deformation.
3. Check and ensure battery voltage is in normal range (Battery voltage will be 20% higher than nominal voltage). All battery connect lines cannot be corrosion. Please charge the battery when use first time.
4. Check whether charging line, charging plug and socket is crazed or not. Check whether there is abrasion or connect loosen.

### **4.2 Checks in Daily Operation**

1. Please check whether there is leakage of hydraulic oil or electrolyte on the ground which forklift parking.
2. Check whether the fork cracks or bends
3. Check whether the wheel cracks, damages or abnormal abrasion. Check whether wheel fastening piece loosen.
4. Check is there any lines or other goods en-lace on the wheels.
5. Check whether battery connection lines loose or damage. If yes, need to adjust or change the line.
6. Check the lift and descent function of fork
7. Check whether there is abnormal noise

## **5. Safety Operation Regulations**

### **5.1 Start**

Insert the key and then turn to ON

### **5.2 Forward and Back**

1. Press Button 1 to lift fork 20mm higher than the ground



2. Pull handle to move the vehicle forward and Push handle to move back.

**Warning!** Vehicle cannot be used on the ramp

### 5.3 Deceleration and Braking

1. Manual control vehicle' s deceleration and braking

### 5.4 Stop

If driver will leave the forklift, even only for a little while, he needs to stop forklift well.

1. Drive the forklift to the smooth ground
2. Descent fork to lowest position
3. Turn the key switch to OFF

**Warning!**

Do not put forklift on the ramp. Fork descends to lowest position.

### 5.5 Load and Discharge

Operate strictly according to manual steps

**BE CAUTION:**

1. Please move slowly when close to loading or discharge area.
2. Please ensure goods are put stable when fork lifts the plate
3. To avoid roll-over, please operate forklift carefully when turning with goods on the fork

**Warning!**

1. Warning: Know the weight of goods before load plate. Overload is forbidden.
2. Try to put good in the middle of two forks. Avoid load on one fork.
3. When forklift transports with goods, the fork height will be lower

than 30mm.

4. Strictly prohibit illegal operation. Incorrect operate will caused vehicle tipping.

**Notice:** Please equip suitable plate according to fork size

## 6. Fault Help

### 6.1 Forklift moving means when having fault

If find forklift failure when use, but still need to move the forklift:

1. Use the cane or other forklift to move it. Need to notice whether the cane or other forklift can load it when moving.

#### **BE CAUTION!**

Need to take out the key, no matter what means you use to move this failure forklift.

### 5.2 The Reason of Fault and Solution

Following form is to help user check and solve small fault or those problems caused by incorrect operation. Please check fault according to this form and to confirm the reason to caused fault.

Fault	Possible Reasons	Solutions
Fork cannot lift or descent	1. Insufficient hydraulic oil of lifting machine 2. Insufficient battery charge 3. over-load	1. check hydraulic oil of lifting machine 2. check coulombmeter. Please charge the battery if needed

		3. To confirm weight of goods is less than forklift's max load.
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If the problem is still existing, even have checked according to the above form, please contact our customer-service department. Only special trained after-sale service person can check and solve problem further.

## IV. Maintenance, Charging and Replacement of Battery

### 1. Safety Operation Regulations of Battery

Please park the forklift well before having operate on the battery

**Maintenance Person:** Only those special trained person can maintain, charge or replace the battery. During operation, must strictly comply with this manual and the regulations of battery manufacturer.

**Fire Prevention Measures:** Cannot smoke or use fire around the battery. Please keep forklift 2 meters away from flammable materials and those work devices which easy to cause fire

**Disposal of Waste Battery:** To dispose waste battery, he/she must comply to environmental regulations or current laws about disposal of waste battery. He/she also must dispose under manufacturer's instruction.

### 2. Battery Model and Basic Specifications

Model	6DM-EVF45
Rated Voltage	12V
No. Of Battery	1
Battery Capacity	45Ah
Each Battery Size(mm)	223 (L) × 122 (W) × 177 (H)
Each Battery Weight (kg)	13.5

### 3. Battery Maintenance

3.1 This forklift uses gelled non-maintenance lead acid battery. Needn't supplement electrolyte during use.

3.2 Check connection position whether there is corrosion, abrasion or damage between battery connection lines and terminal. If needed, please replace battery connection lines and ensure to tighten nut of battery connection terminal.

#### **Be Caution!**

Please clean it if battery connection lines or terminal is damaged or corrosion. If heavy damaged or corrosion, please replace it. Otherwise, it may caused fire because of overheated when operating.

3.3 Tighten the fixing nut of battery platen, and ensure the battery has been placed on the body fixed.

3.4 After use, please charge the battery every time. Try your best to avoid excessive discharge and keep forklift full charge all the time. Cannot charge the batter only when battery is completely dead.

## 4. Battery Charging

4.1 Please insert charger plug to body plug rightly first and then another side of battery plug connect with AC plug. Charger will check battery status and then start to charge. Charger will automatically fill the battery power. When the battery is in full power, charger will automatically close and stop to charge.

### **Be CAUTION!**

1. Battery will release an explosive gas (hydrogen) when charging. Therefore, please make sure the charging area is well ventilated charging. Do not cover the forklift during charging.
2. Please park forklift well first before charging.

### **Warning:**

1. Check whether wire or connection device is cracked or abrasion. If there is problem, replace it promptly. Keep the terminal of connection line clean and dry.
2. Please do not pull charger line when pull out the connection of charger plug and forklift socket.
3. Please turn off the power supply before charging. Do not operate during charging.

## 4.2 Charging Indication of Charger

1. LED indicator light does not work.
2. LED indicator light is red: battery is in charging
3. LED indicator light is green: battery is full of power and charging is over.

### **Warning!**

1. Do not try to repair charger by yourself.
2. The circuit voltage of charger is 220V ~ 110V and current is 5-8A. Please choose suitable main control circuit. Do not overload the main control circuit.
3. Please replace charger if it is loose or damage in any form. Check whether wire or terminal is cracked or abrasion. If there is problem, replace it promptly.

4. Do not use charger near volatile liquids such as gasoline, paint and their dilution objects and other flammable materials. The charger can ignite flammable materials and volatile gases.

5. Keep the charger dry. Do not expose it to rain or other liquids.

6. Fix all lines and cables to avoid the danger caused by its move or in-lacing.

7. To avoid overheated of charger, do not cover or block its cooling window

**Danger!** If following things happen, please do not use charger

1. Charger plug is loose or poor contact

2. Charger plug or wire is heat

3. There is damage of charger plug, socket or terminal in any form .

4. Charger with above problems may cause fire or personnel injury.

## 5. Replacing Battery

1. Open body cover, remove connection line on the terminal or battery

2. Unscrew and take off connection bolt and battery platen between battery and forklift body.

3. Bring up battery

Battery installation is in reverse order. Notice the battery position.

**Be Caution!**

1. Please park the forklift well before replacing battery.

2. Please make sure the replaced type of battery is the same type as the old one.

Cannot use starting battery used in car.

## V. Maintenance of Forklift

## 1. Cleaning of Forklift

Before cleaning, he/she must park the forklift safely and make sure to turn off all the power supply to avoid forklift move or slide accidentally.

1. Turn off the power before cleaning
2. Those parts, far away from electrical components, can be washed by water, such as front fork.
3. Front fork lifting parts can be wiped with a damp rag.
4. Forklift cover and handle need to be wiped with a dry rag. (There is no distinct traces of water after wiped.)
5. Before the cleaning of inner electrical components, must loosen connection bolt of battery and turn off the power.
6. Take off the body cover and then clean those inner electrical components with low intensity suction gas, dehydrated compressed air or non-conductive anti-static brush.
7. Battery can be cleaned by wet rag. But battery only can be used after dry.
8. Need to clean the appearance of forklift one time every day. Battery and electrical components need to be cleaned at least every 6 months.

**After cleaning, please notice following things before use.**

1. Check the function of key switch
2. Check whether the function of lift and descent is good.
3. Please follow the third chapter third section “Forklift Operation” to use forklift rightly.

**Be Caution!** Do not let the electrical components be damp or short circuit.

1. It is strictly prohibited to wash Electrical equipment by water. Otherwise, it

may damage the electrical components and then caused function fault.

2. Cannot clean by combustible liquids. Take all necessary measures in the cleaning process to prevent electrical sparks during operation, for example, those spark caused because of short circuit.

3. Cannot clean by steam flow equipment.

### **Warning!**

1. All operation involves electrical system only can be operated by professional electrical training person.

2. Please take off all conductive articles, such as ring and metal watch before electrical operation.

## **2. Inspection and Maintenance of Forklift**

Periodic inspection and maintenance of forklift is necessary to ensure longer use, effective and orderly work of forklift. It is also important preventive measures to protect peoples' physical and mental health.

1. Check whether support parts is well not not. If steel parts is damaged, please repair it before use.

2. Check the wheel wear to make sure it can keep whole forklift stable. Otherwise replace the wheel.

3. After 24 hours' use of new forklift, user needs to check machine and those bolts and nuts of electrical system, especially bolts and nuts on roller. Please re-fasten them if necessary.

4. Check whether the air spring is normal, otherwise repair it or replace it.

6. Check whether move or back is normal, otherwise, need to use it after troubleshooting.

7. Check whether the button on handle is well, otherwise, repair it.



8. Check all connection places of hydraulic system and oil tube have oil spill or not when lifting and descent. Check whether it can lift and descent to specified location. Otherwise, repair and replace parts having problems.

Above inspection and maintenance should be checked before use every day.

Following points should be checked one time at least every 3 months.

1. Check lift and descent function is good or not when carrying goods.
2. Check battery total voltage and unit voltage is normal or not. If need to change battery, please follow instruction of the forth chapter fifth section "Replacing Battery".

### **Warning:**

1. If operator find any problems when inspecting and maintaining, do not dis-assemble and maintain without permission. He/she must report to supervisor and then check and repair by professional person. Only can use forklift after all problems are solved.
2. The quality of wheel will directly affects the stability and driving performance of equipment, so it may leads to accident risk if using those wheels that do not conform to our specifications.
3. Do not use forklift any more if find abnormal thing and stink when checking.
4. Do not let battery overturn when replace it.

## **3. Regular Maintenance of Forklift**

Totally standardized maintenance is one of the most important necessities to ensure the stable and reliable performance of forklift. Ignore regular maintenance may cause the failure or malfunction of forklift. That maybe has potential safety threat to staff and operator.

**3.1 The maintenance of normal use should pay attention to the following points.**

1. Damaged steel parts need welding. Please dis-assemble electrical parts before welding to avoid damage.
2. Please add hydraulic oil immediately if hydraulic lifting height is insufficient. But do not add to much, otherwise it may overflows.
3. Keep battery clean and dry. Please charge battery everyday if have used forklift.

**3.2 Pay attention to following points before long-term storage:**

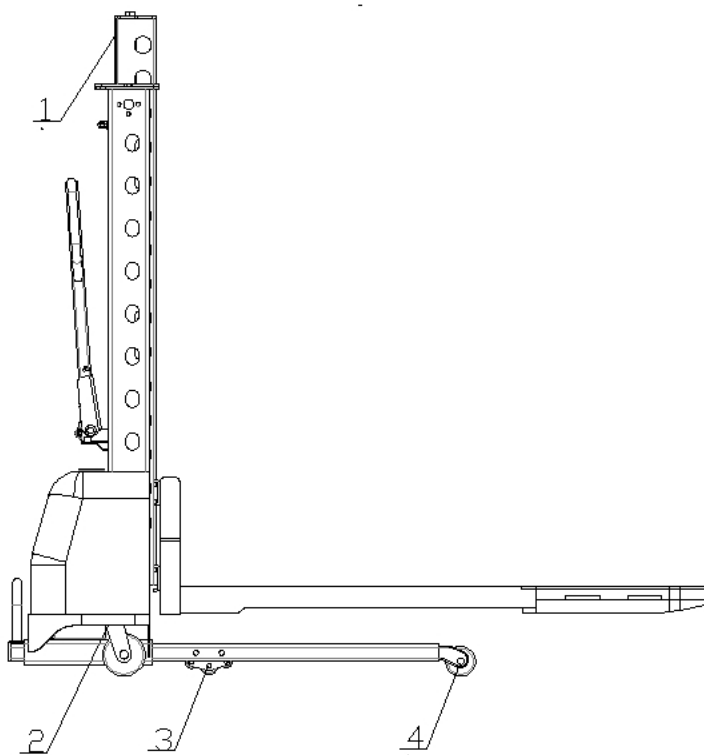
1. Check the level of hydraulic oil. Please add hydraulic oil if necessary.
2. Apply a thin layer of lubricating oil or grease on those mechanical parts without surface treatment.
3. The battery should be cleaned regularly and charged once a month to full capacity.
4. Remove connection terminal on the battery. Apply Vaseline on the electrode bolt, and comply with the instructions and regulations of the battery manufacturer.

**Waring!**

Please deal with forklift according to the second section of this chapter “Inspection and Maintenance of Forklift” before re-use the forklift.

**4. Lubrication**

According to the lubrication position mentioned below, lubricate and maintain according to the lubrication and maintenance identification table.



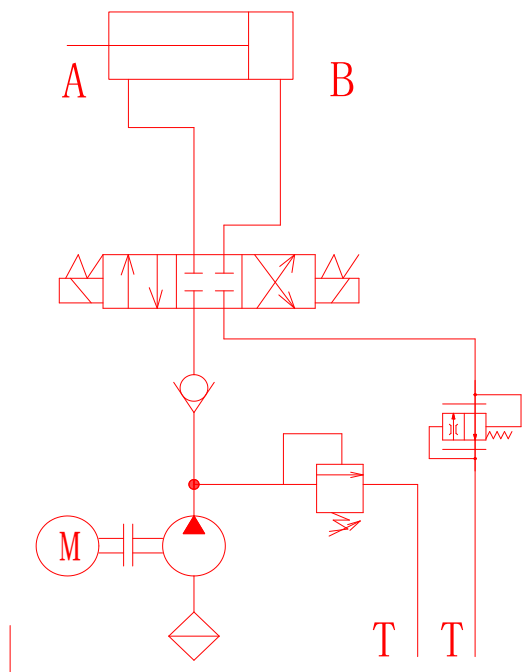
### Lubrication Maintenance Table

No	Lubrication Part	Lubrication point	Lubricant lift and lubricant code				Lubrication Method
			week	month	season	year	
1	Frame Track	4		L		H	Brushing
2	Balance Wheel Shelf Bearing	2		L			Injecting Oil Cup Pressure
3	Middle Wheel	2		L			Brushing
4	Front Wheel	2		L			Brushing

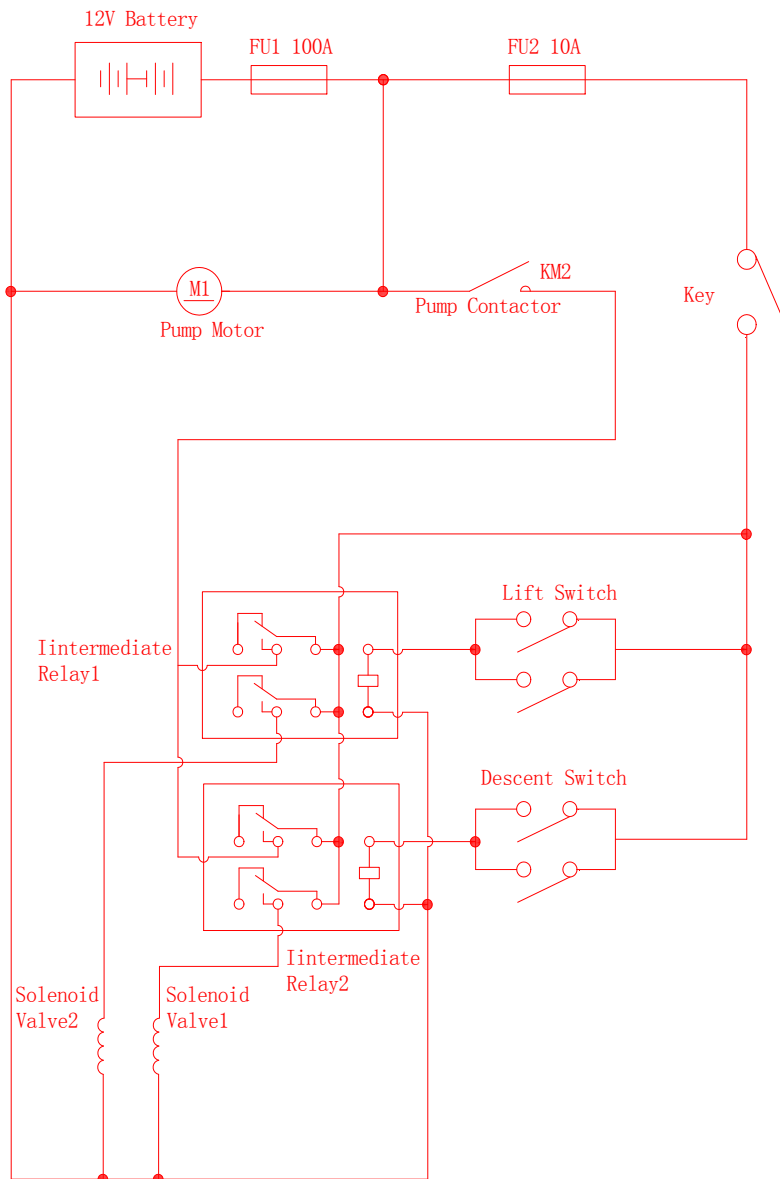
Memo: L means lithium grease

## VI. Schematic Diagram

### 1. Hydraulic Schematic Diagram



## 2. Electrical Schematic Diagram



## VII. Quality Assurance Scope

7.1 Guarantee: 6 months or 1000 hours since the date of forklift purchase

7.2 Scope of Exemption:

7.2.1 The quality failure, parts damaged or other lose, causes by do not use and maintain forklift rightly and do not do following instructions,

7.2.2 Those quality problem causes by using non-designated oil,

7.2.3 The quality problem causes because of incorrect operate, overload and amplification work ability adjusted by oneself,

7.2.4 The lose causes by force majeure,

7.2.5 The circumstances occur because of the change of time, such as the small changes of paint and plating,

7.2.6 The quality problem causes because of unauthorized changes to the products' original structure or technical conditions without our permission,

7.2.7 Other Collateral loss causes by product quality, such as reputation loss and closing loss etc.,

7.2.8 Without the on-site treatment or authorized repair of our company's maintenance service personnel, the user disassemble, repair or replace parts by self, which destroyed the quality failure or quality accident scene, and cannot be identified as the quality problems of the company's products.

7.2.9 Exceeding the quality guarantee period,

7.2.10 Such vehicle cannot work properly problem, causes because user use non-original produced parts or parts without the approval of our company when he/she maintain it,

7.2.11 These parts lose or damage in transit which is not under our company' s transportation.

### **7.3 Confirmation of Replacement Parts**

7.3.1 When Domestic customers need to repair because of products' failure, he/she must to contact with our repair shop. Then the forklift will be repaired by our repair person or authorized personnel. Otherwise, our company will not be responsible for all losses and expenses incurred.

7.3.2 When asks for free replacement parts, export-products purchaser must provide clear damaged parts pictures and written materials about the damaged and analyzed by cause, that have been signed by the parties

### **7.4 Special Note:**

7.4.1 The following components are wearing parts, there is no guarantee or after-sale service.

- All plugs, sockets, fuses, various kinds of oil (such as hydraulic oil etc.), all rubber products and other consumables (such as tires, friction pads and gaskets, etc.)

7.4.2 The quality guarantee period of the following components is half of the normal quality guarantee period.

- Components with contacts, such as relay (electronic rely, starting reply, intermediate reply and safety reply) etc.

- Various switches (forward, backward, horn, proximity switch and micro-switch etc.)

7.4.3 Once exceeding the quality guarantee period, we will charge the material cost according to the regulations.