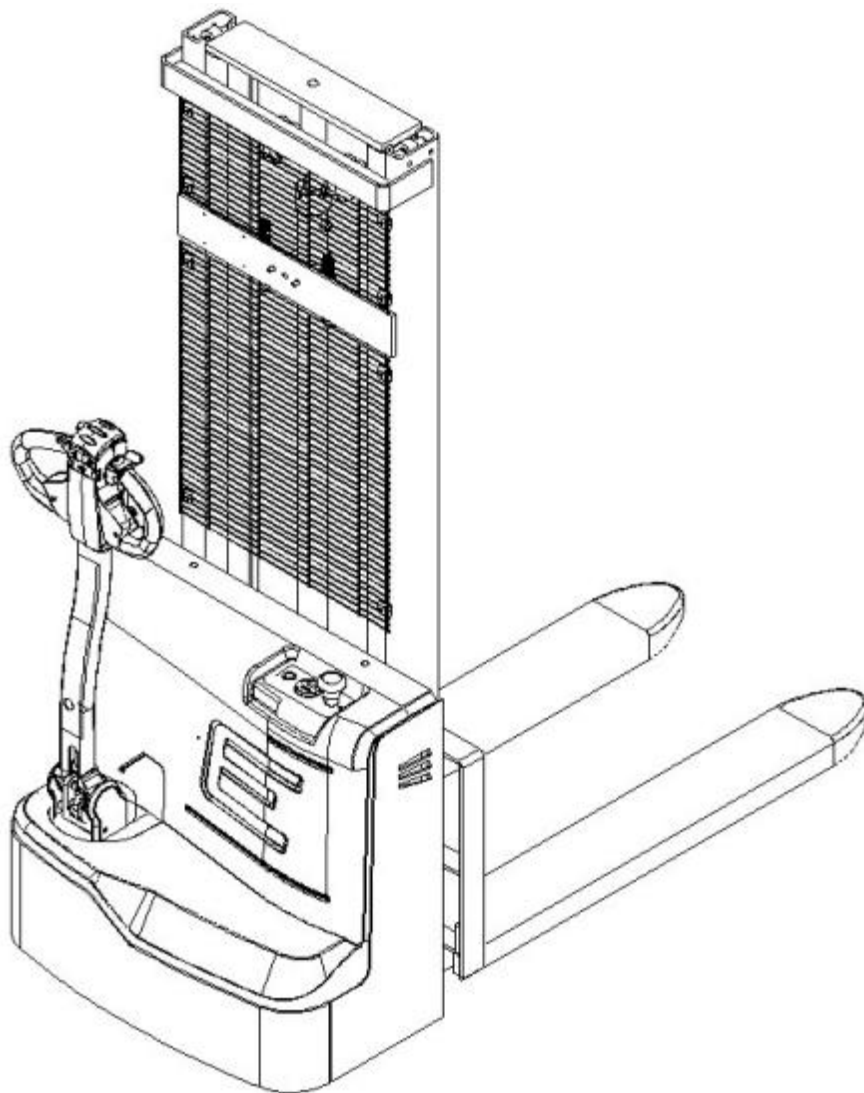


CDDA Series

Electric stacker

Operation Manual



Foreword

The present original operating instructions are designed to provide sufficient instruction for the safe operation and maintenance of the stacker. Please be sure to read this operator manual carefully if you are operator or are in charge of the stacker, before you operate and service the stacker. Only in this way can you protect yourself and make the stacker play a role as much as possible.

Our stackers are subject to ongoing development, so maybe there are some differences between your product and the description in this manual. And the operator manual details will be different because of customer's special requirements.

If you have any questions, please keep in touch with the sales department or let the dealer know.

Notes:

1. This manual is used for operation and maintenance, the detail parameters, size and specifications in context are only for reference, the real parameters will depend on sale files.
2. Manual pictures for reference only, the real car shall prevail, and shall not affect the manual use.
3. Manual pictures only sign for one of the models in these series models.

WARNING!
**TO PREVENT SERIOUS RISK OF INJURY TO
YOURSELF AND OTHERS OBSERVE THE
FOLLOWING SAFETY INSTRUCTIONS.**

These stackers may become hazardous if adequate maintenance is neglected. Therefore, adequate maintenance facilities, trained personnel and procedures should be provided.

Maintenance and inspection shall be performed in conformance with the following practices:

1. A scheduled planned maintenance, lubrication and inspection system should be followed.
2. Only qualified and authorized personnel shall be permitted to maintain, repair, adjust, and inspect stacker.

3. Before leaving the stacker:

- Do not park the stacker on an incline.
- Fully lower the load forks.
- Press the emergency brake switch .
- Set the key switch to the "OFF" position and remove the key.

4. Before starting to operate stacker:

- Be in operating position
- Place directional control in neutral
- Before operating stacker, check functions of lift systems, directional control, speed control, steering, warning devices and brakes.

5. Avoid fire hazards and have fire protection equipment present. Do not use open flame to check lever, or for leakage of electrolyte and fluids or oil. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.

6. Brakes, steering mechanisms, control mechanisms, guards and safety devices shall be inspected regularly and maintained in legible condition.

7. Capacity, operation and maintenance instruction plates or decals shall be maintained in legible condition.

8. All parts of lift mechanisms shall be inspected to maintain them in safe operating condition.

9. All hydraulic systems shall be regularly inspected and maintained in conformance

with good practice. Cylinders, valves and other similar parts shall be checked to assure that "drift" has not developed to the extent that it would create a hazard.

10. Stacker shall be kept in a clean condition to minimize fire hazards facilitate detection of loose or defective parts.

11. Modifications and additions which affect capacity and safe stacker operation shall not be performed by the customer or user without manufacturer's prior written approval. Capacity, operation and maintenance plates or decals shall be changed accordingly.

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Correct use and Application

The stacker described in the present operator manual is an industrial stacker designed for lifting and transporting load units.

It must be used, operated and serviced in accordance with the present instructions. Any other type of use is beyond the scope of application and can result in damage to personnel, the stacker or property. In particular, avoid overloading the stacker with loads which are too heavy or placed on one side. The data plate attached to the stacker or the load diagram are binding for the maximum load capacity. The stacker must not be used in fire or explosion endangered areas, or areas threatened by corrosion or excessive dust.

Proprietor responsibilities

For the purposes of the present operator manual the “proprietor” is defined as any natural or legal person who either uses the stacker himself, or on whose behalf it is used. In special cases (e.g. leasing or renting) the proprietor is considered the person who, in accordance with existing contractual agreements between the owner and user of the stacker, is charged with operational duties.

The proprietor must ensure that the stacker is used only for the purpose it is intended for and that danger to life and limb of the user and third parties are excluded. Furthermore, accident prevention regulations, safety regulations and operating, servicing and repair guidelines must be followed. The proprietor must ensure that all stacker users have read and understood this operator manual.

Failure to comply with the operator manual shall invalidate the warranty. The same applies if improper work is carried out on the stacker by the customer or third parties without the permission of the manufacturer’s customer service department.

Adding accessories

The mounting or installation of additional equipment which affects or enhances the performance of the stacker requires the written permission of the manufacturer. Local authority approval may also need to be obtained.

Local authority approval does not however constitute the manufacturer’s approval.

1.Stacker Description

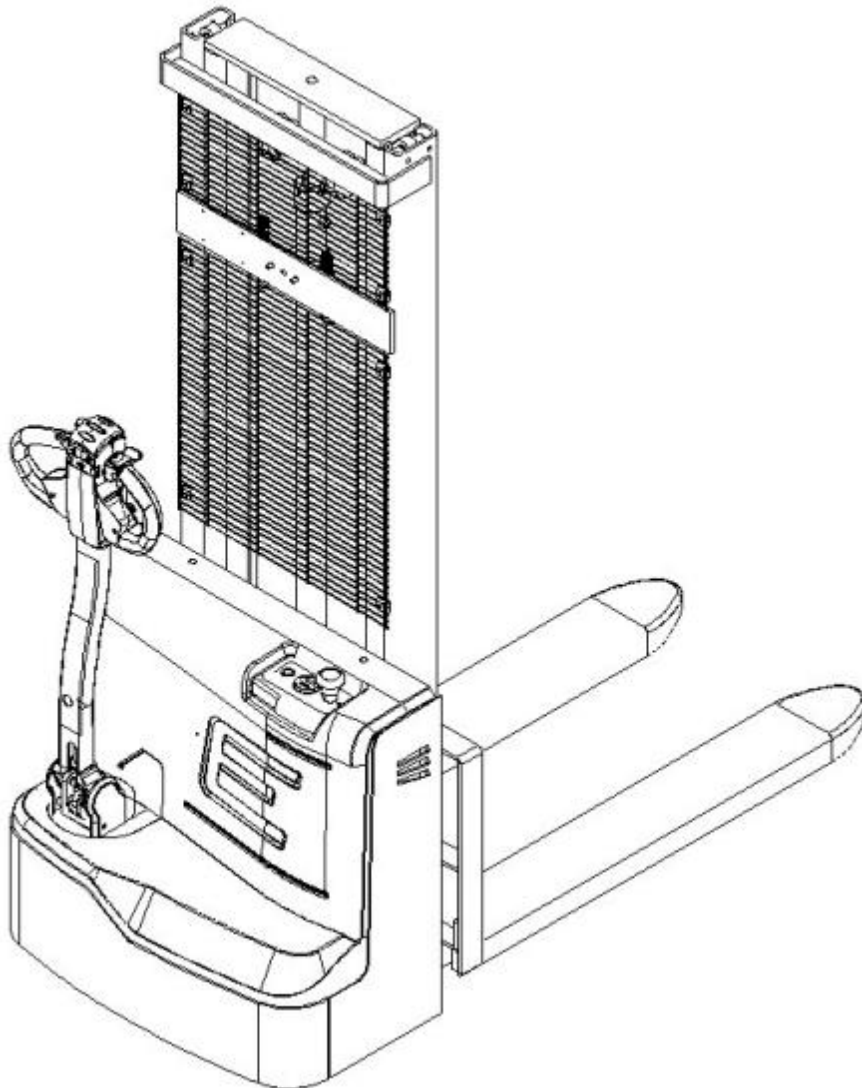
1.1Application

The stacker is tiller guided electric stacker with a steered drive wheel.

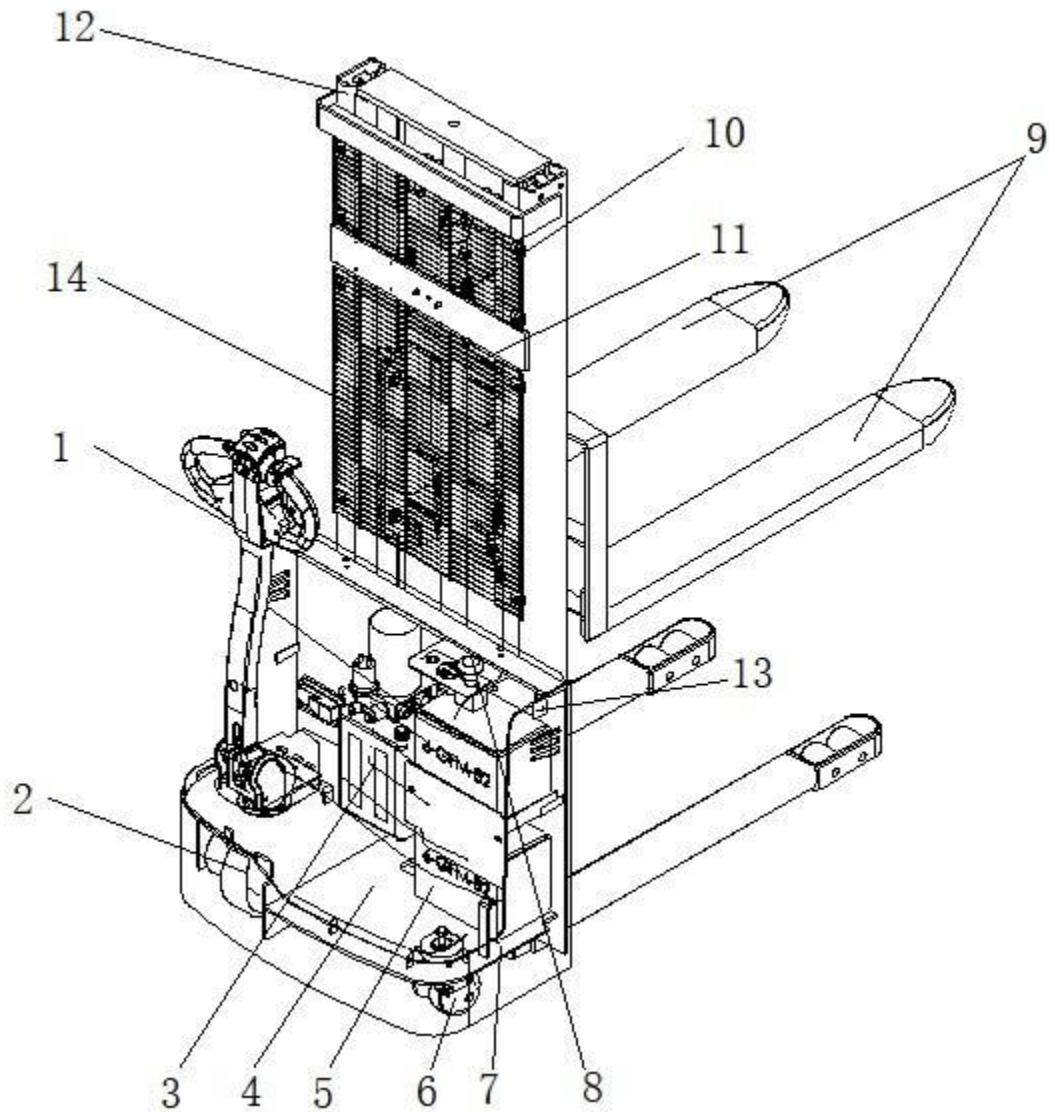
It is designed for use on horizontal floors to lift and transport palletised goods. Open bottom pallets or roll cages can be lifted.

The capacity can be obtained from the data plate.

The capacity with respect to lift height and load center of gravity is indicated on the capacity plate.



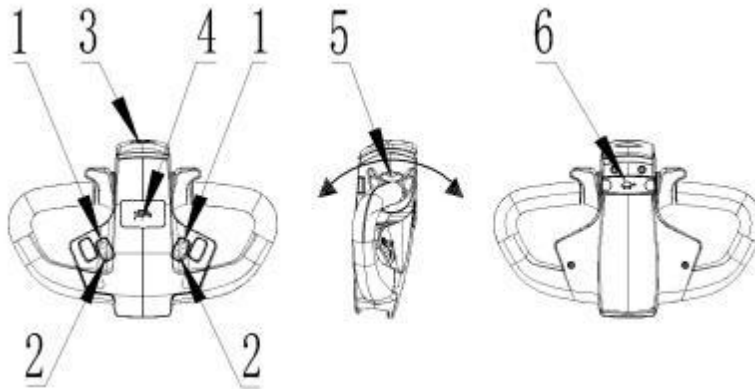
1.2 Stacker Assemblies



Item	Component	Item	Component
1	Control Handle	8	Emergency stop switch
2	Driving wheel	9	Lift mechanism
3	Hydraulic Pump	10	Chain
4	Cover	11	Lift Cylinder
5	Battery	12	Inner Mast
6	Balance wheel	13	Battery charge connector
7	Chassis	14	Wire mesh

1.2.1 Control Handle

Item	Component	Function
1	“Lift/Lower” button	Raises load forks/ Lowers load forks.
2	Warning signal button	Triggers a warning signal.
3	Travel switch	Controls the driving speed and direction
4	Collision safety switch	Safety function which, when activated, forces the stacker to reverse until the switch restored to neutral.
5	Turtle speed switch	Controls the driving speed lower.
6	Turtle speed switch	Controls the driving speed lower.



1.2.2 Dashboard

Key switch(1)

Switches control current on and off.

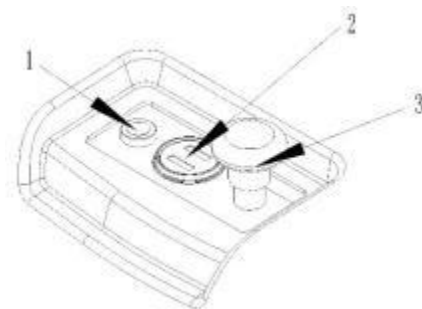
Removing the key prevents the stacker from being switched on by unauthorised personnel.

Battery discharge indicator(2)

The battery module can display the battery status, the elapsed time and the remaining battery capacity.

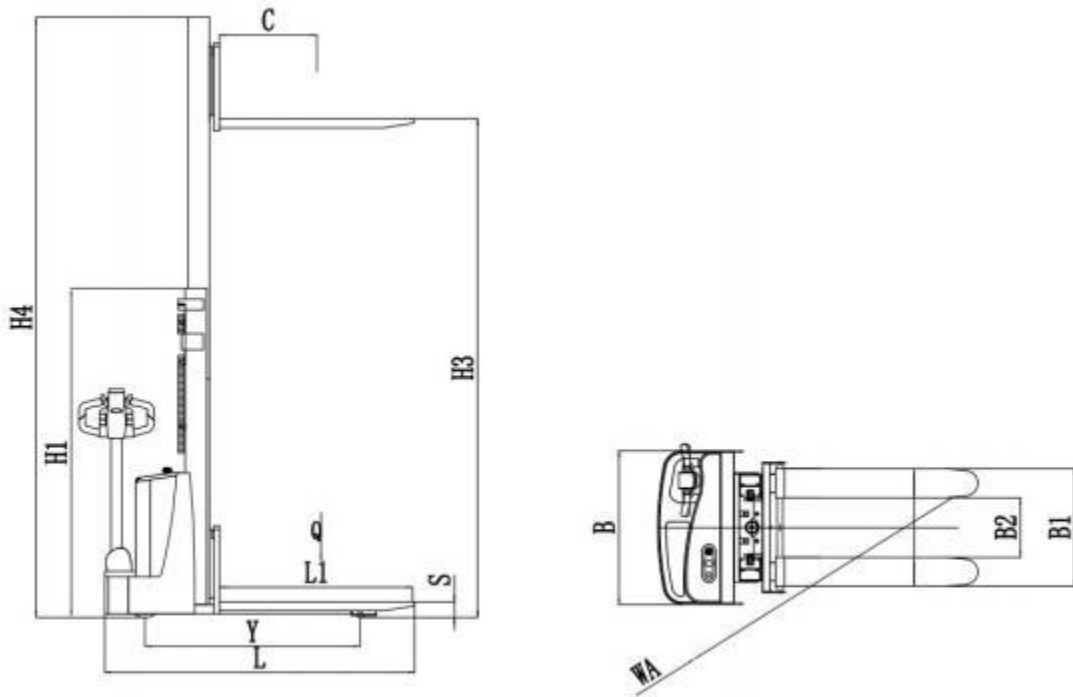
Emergency stop switch (3)

Press the emergency brake switch(2), all electrical functions are cut out and the stacker automatically brakes.



2. Performance data and Dimensions for standard stackers

1.1	Series		CDDA
1.2	Drive model		Electric (Battery)
1.3	Operation mode		Walkie
1.4	Load capacity	Q(kg)	1500/1600
1.5	Load center	C(m)	600
2.1	Service weight (Incl. battery)	kg	460/530/550/580
3.1	Wheel		Rubebrr
4.1	Fork lifting height	h3(m)	1600/2000/2500/3000
4.2	Overall height, lowered	hm1(m)	2083/1583/1833/2083
4.3	Overall height, lifted	h4 (m)	2083/2733/3233/3733
4.4	Fork height, lowered	S(mm)	≤90
4.5	Overall length	L(mm)	1857
4.6	Overall width	B(mm)	850
4.7	Fork length	L1(m)	1150
4.8	Wheelbase	Y(mm)	1256
4.9	Outside fork width	B1(m)	680
4.10	Inside width	B2 (m)	355
4.11	Outer turning radius	W a(m)	1505
5.1	Travel speed, laden/ unladen	mm/s	3. 1/3.4
5.2	Lifting speed, laden/ unladen	mm/s	143/83
5.3	Lowering speed, laden/ unladen	mm/s	97/81
5.4	Maximum gradeability, laden/	%	7/4
6.1	Type of drive control		DC
6.2	power rating	Kw	0.75
6.3	Type of lifting motor		DC
6.4	power rating	Kw	2.2
7.1	Voltage	V	DC24V
7.2	rated capacity	Ah	2*70/2*80
8.1	Sound level at operator's ear	dB	< 70



Note:

The parameters of this model are standard model parameters, and the parameters of non-standard customized models are subject to technical drawings. The company continuously introduces new technologies, continuously optimizes existing models, and updates and improves colors, specifications, configurations, etc. without prior notice.

3. Commissioning

3.1 Using the Stacker for the First Time Only operate the stacker with battery current.

Preparing the stacker for operation after delivery or transport.

Procedure

- Check the equipment is complete.
- Check the hydraulic oil level.
- Install the battery if necessary (where required), do not damage battery cable.
- Charge the battery, (see "5.2 Charging the battery").

When the stacker is parked the surface of the tyres will flatten. The flattening will disappear after a short period of operation.

3.2 During brake-in

We recommended operating the machine under light load conditions for the first stage of operation to get the most from it. Especially the requirements given below should be observed while the machine is in a stage of 100 hours of operation.

- Must prevent the new battery from over discharging when early used. Please charging when remain power less than 20%.
- Perform specified preventive maintenance services carefully and completely.
- Avoid sudden stop, starts or turns.
- Oil changes and lubrication are recommended to do earlier than specified.
- Limited load is 70~80% of the rated load.

4. Operation

4.1 Safety Regulations for the Operation of Stackers

Driver authorisation: The stacker may only be used by suitably trained personnel, who have demonstrated to the proprietor or his representative that they can drive and handle loads and have been authorised to operate the stacker by the proprietor or his representative.

Driver's rights, obligations and responsibilities: The driver must be informed of his duties and responsibilities and be instructed in the operation of the stacker and shall be familiar with the operator manual . The driver shall be afforded all due rights . Safety shoes must be worn with pedestrian operated stackers.

Unauthorised Use of Stacker: The driver is responsible for the stacker during the time it is in use. He shall prevent unauthorised persons from driving or operating the stacker. It is forbidden to carry passengers or lift personnel.

Damage and Faults: The supervisor must be immediately informed of any damage or faults to the stacker. Stackers not safe for operation (e.g. wheel or brake problems) must not be used until they have been rectified.

Repairs: The driver must not carry out any repairs or alterations to the stacker without the necessary training and authorisation to do so. The driver must never disable or adjust safety mechanisms or switches.

Hazardous area: A hazardous area is defined as the area in which a person is at risk due to stacker movement, lifting operations, the load handler (e.g. forks or attachments) or the load itself.

This also includes areas which can be reached by falling loads or lowering operating equipment.

- Unauthorised persons must be kept away from the hazardous area.
- Where there is danger to personnel, a warning must be sounded with sufficient notice.
- If unauthorised personnel are still within the hazardous area the stacker shall be brought to a halt immediately.

Safety Devices and Warning Signs: Safety devices, warning signs and warning instructions shall be strictly observed.

4.2 Operate and run the stacker

4.2.1 Preparing

Before the stacker can be commissioned, operated or a load unit lifted, the driver must ensure that there is nobody within the hazardous area.

- Checks and operations to be performed before starting daily work
 - Visually inspect the entire stacker (in particular wheels and load handler) for obvious damage.

4.2.2 Travel, Steering, Braking

1. Driving

Set the control handle to the travel zone

(B). Set the travel switch to control the driving speed and direction.

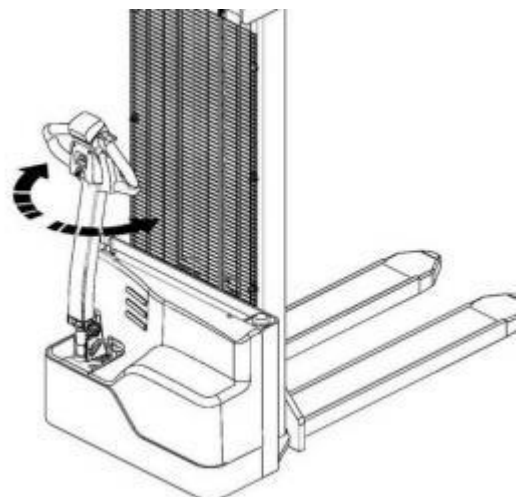
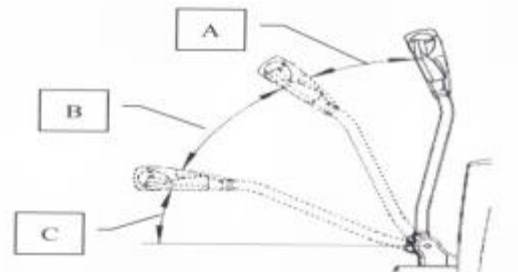
2. Steering

Apply the control handle to the left or right.

3. Braking

The brake pattern of the stacker depends largely on the ground conditions. The driver must take this into account when operating the stacker.

The driver must be looking ahead when travelling. If there is no hazard, brake



moderately to avoid moving the load .

The stacker can brake in four different ways:

- Emergency braking
- Automatic braking
- Regenerative braking
- Inversion braking

- Emergency braking

Press the emergency brake switch, all electrical functions are cut out and the stacker automatically brakes.

- Automatic braking

When the control handle is released it automatically sets itself to the upper brake zone (A&C) and automatic braking ensues.

4.2.3 Lifting, transporting and depositing loads

Unsecured and incorrectly positioned loads can cause accidents

- Instruct other people to move out of the hazardous area of the stacker. Stop working with the stacker if people do not leave the hazardous.
- Only carry loads that have been correctly secured and positioned. Use suitable precautions to prevent parts of the load from tipping or falling down.
- Do not transport with bad handbarrow (as stacker and stock) .
- Never stand underneath a raised load handler.
- Do not stand on the load handler.
- Do not lift other people on the load handler.
- Insert the forks as far as possible underneath the load.

Lift

Press “Lift” button until the height you need.

Lower

Press “Lower” button until the lowest position.

4.2.4 Parking the stacker securely

When you leave the stacker it must be securely parked even if you only intend to leave it for a short time.

- Press “Lower” button, fully lower the load handler.
- Fully lower the forks.
- Press the emergency brake switch.
- Turn off the key switch and remove the key.

5. Battery Maintenance & Charging

5.1 Safety regulations for handling acid batteries

Park the stacker securely before carrying out any work on the batteries.

Maintenance personnel

Batteries may only be charged, serviced or replaced by trained personnel. The present operator manual and the manufacturer's instructions concerning batteries and charging stations must be observed when carrying out the work.

Fire protection

- Smoking and naked flames must be avoided when working with batteries.
- Wherever a stacker is parked for charging there shall be no inflammable material or operating fluids capable of creating sparks within 2 meters around the stacker.
- The area must be well ventilated.
- Fire protection equipment must be provided.

Protection against electric shock

- Battery has high voltage and energy.
- Do not bring short circuit.
- Do not approach tools to the two poles of the battery, which can cause the sparkle.

5.2 Charging the battery

Safety regulations for Charging the battery

- To charge the battery, the stacker must be parked in a closed and properly ventilated room.
- Do not place any metal objects on the battery.
- Before charging, check all cables and plug connections for visible signs of damage.
- Before start and finish charging to make sure power is turn OFF.
- It is essential to follow the safety regulations of the battery and charging station manufacturers.

5.3 Battery maintenance

Do not overuse battery

- If you use up the energy of battery till the forklift immovability, you will shorten its working hours.
- Shower for battery appears need for charge, please charge it quickly.

Battery maintenance

The battery cell covers must be kept dry and clean. The terminals and cable shoes

must be clean, secure and have a light coating of dielectric grease. Batteries with non insulated terminals must be covered with a non slip insulation mat.

Battery storage

If batteries are taken out of service for a lengthy period they should be stored in the fully charged condition in a dry, frost-free room. To ensure the battery is always ready for use a choice of charging methods can be made:

- a monthly equalizing charge as in point 4.2

6. Stacker Maintenance

6.1 Operational safety and environmental protection

- The servicing and inspection operations contained in this chapter must be performed in accordance with the intervals indicated in the servicing checklists.
- Any modification to the stacker assemblies, in particular the safety mechanisms, is prohibited. The operational speeds of the stacker must not be changed under any circumstances.
- Only original spare parts have been certified by our quality assurance department. To ensure safe and reliable operation of the stacker, use only the manufacturer's spare parts. Used parts, oils and fuels must be disposed of in accordance with the relevant environmental protection regulations. For oil changes, contact the manufacturer's specialist department.
- Upon completion of inspection and servicing, carry out the activities listed in the "Recommissioning" section.

6.2 Maintenance Safety Regulations Maintenance personnel

Stackers must only be serviced and maintained by the manufacturer's trained personnel.

The manufacturer's service department has field technicians specially trained for these tasks. We therefore recommend a maintenance contract with the manufacturer's local service center.

Lifting and jacking up

When a stacker is to be lifted, the lifting gear must only be secured to the points specially provided for this purpose.

When jacking up the stacker, take appropriate measures to prevent the stacker from slipping or tipping over (e.g. wedges, wooden blocks).

You may only work underneath a raised load handler if it is supported by a sufficiently strong chain.

Cleaning

Do not use flammable liquids to clean the stacker.

Prior to cleaning, all safety measures required to prevent sparking (e.g. through short circuits) must be taken. For battery-operated stackers, the battery connector must be removed.

Only weak suction or compressed air and non-conductive antistatic brushes may be used for cleaning electric or electronic assemblies.

If the stacker is to be cleaned with a water jet or a high-pressure cleaner, all electrical and electronic components must be carefully covered beforehand as moisture can cause malfunctions. Do not clean with pressurised water.

After cleaning the stacker, carry out the activities detailed in the “Recommissioning” section.

Electrical System

Only suitably trained personnel may operate on the stacker’s electrical system. Before working on the electrical system, take all precautionary measures to avoid – electric shocks.

For battery-operated stackers, also de-energise the stacker by removing the battery connector.

Welding

To avoid damaging electric or electronic components, remove these from the stacker before performing welding operations.

Settings

When repairing or replacing electric or electronic components or assemblies, always note the stacker-specific settings.

Tyres

The quality of tyres affects the stability and performance of the stacker. When replacing factory fitted tyres only use original manufacturer’s spare parts, as otherwise the data plate specifications will not be kept.

When changing wheels and tyres, ensure that the stacker does not slew (e.g. when replacing wheels always left and right simultaneously).

6.3 Servicing and inspection

Thorough and expert servicing is one of the most important requirements for the safe operation of the stacker. Failure to perform regular servicing can lead to stacker failure and poses a potential hazard to personnel and equipment.

The service intervals stated are based on single shift operation under normal operating conditions. They must be reduced accordingly if the stacker is to be used in conditions of extreme dust, temperature fluctuations or multiple shifts.

The following maintenance checklist states the tasks and intervals after which they should be carried out. Maintenance intervals are defined as:

W = Every 50 service hours, at least weekly

A = Every 250 operating hours

B = Every 500 operating hours, or at least annually

C = Every 2000 operating hours, or at least annually

W service intervals are to be performed by the customer.

In the run-in period - after approx. 100 service hours - or after repair work, the owner must check the wheel nuts/bolts and re-tighten if necessary.

Maintenance Checklist

		Maintenance interval ●			
		W	A	B	C
Braking	Check magnetic brake air gap.			●	
Electrical system	Test instruments, displays and control switches.	●			
	Test warning and safety device.		●		
	Make sure wire connections are secure and check for damage.			●	
	Test micro switch setting.	●			
	Check relays.			●	
	Fix the motor and cable			●	
Power supply	Visually inspect battery		●		
	Visually inspect battery plug			●	
	Check battery cable connections are secure, grease terminals if necessary.			●	
Travel	Check the transmission for noise and leakage.			●	
	Check travel mechanism, adjust and lubricate if necessary. Check control handle recuperating function.		●		
	Check wheels for wear and damage.			●	
	Check wheel bearings and attachments.			●	
Stacker frame	Check stacker frame for damage.			●	
	Check labels are present and complete			●	
	Check mast attachment			●	
Hydraulic operations	Test hydraulic system.		●		
	Check that hose and pipe lines and their connections are secure, check for leaks and damage.		●		
	Check cylinders and piston rods for damage and leaks, and make sure they are secure.			●	
	Check load chain setting and tension if necessary.			●	
	Visually inspect mast rollers and check contact surface wear level			●	
	Check forks, load handler for wear and damage			●	

Check hydraulic oil level			•	
Replace hydraulic oil.				•
Check and clean hydraulic oil filter. Replace it if necessary.				•

6.4 Decommissioning the stacker

If the stacker is to be decommissioned for more than two months, e.g. For operational reasons, it must be parked in a frost-free and dry location and all necessary measures must be taken before, during and after decommissioning as described.

On decommissioning the stacker must be jacked up so that all the wheels are clear of the ground. This is the only way of ensuring that the wheels and wheel bearings are not damaged.

If the stacker is to be out of service for more than 6 months, further measures must be taken in consultation with the manufacturer's service department.

6.5 Safety checks to be performed

Carry out a safety check in accordance with national regulations. We have a special safety department with trained personnel to carry out such checks. The stacker must be inspected at least annually (refer to national regulations) or after any unusual event by a qualified inspector. The inspector shall assess the condition of the stacker from purely a safety viewpoint, without regard to operational or economic circumstances. The inspector shall be sufficiently instructed and experienced to be able to assess the condition of the stacker and the effectiveness of the safety mechanisms based on the technical regulations and principles governing the inspection of stackers.

A thorough test of the stacker must be undertaken with regard to its technical condition from a safety aspect. The stacker must also be examined for damage caused by possible improper use. A test report shall be provided. The test results must be kept for at least the next 2 inspections.

6.6 Final de-commissioning, disposal

Final, proper decommissioning or disposal of the stacker must be performed in accordance with the regulations of the country of application. In particular, regulations governing the disposal of batteries, fuels and electronic and electrical systems must be observed.

7. Troubleshooting

This chapter is designed to help the user identify and rectify basic faults or the results of incorrect operation. When locating a fault, proceed in the order shown in the table.

Fault	Possible cause	Action
Stacker does not start.	<ul style="list-style-type: none">• Key switch in “OFF” position• Battery charge too low• Faulty fuse• Stacker in charge mode	<ul style="list-style-type: none">• Set key switch to “I”• Check battery charge, charge battery if Necessary• Test fuses• Interrupt charging
Load can be not lifted	<ul style="list-style-type: none">• Hydraulic oil level too low• Excessive load	<ul style="list-style-type: none">• Check the hydraulic oil level• Note maximum capacity (see data plate)

If the fault cannot be rectified after carrying out the remedial procedure, notify the manufacturer 's service department ,as any further troubleshooting can only be performed by specially trained and qualified service personnel.