SolidHub

INSTRUCTIONS MANUAL

Electric stacker

HEF1200/4

Please read this manual before using the product and follow the instructions it contains!

CONTENT

GENERAL

MAINTENANCE

FOREWORD

Congratulations on the purchase of your new electric stacker with driver's platform HEF1200/4.
This easy to operate electric stacker is made of high quality materials, especially designed for a long lasting and reliable operation. For your own safety and for the correct operation of the electric stacker, please read and follow these operating instructions before using the stacker.

It is best to keep these operating instructions. Check the electric stacker for transport damage.
Damaged electric stackers must not be used.

The stacker is used to electrically raise and lower the transport load to the desired height. Improper handling can result in injuries or damage to the machine. The operator / user must ensure correct use, ensuring that the electric stacker is only used by trained and authorised persons.

SAFETY INSTRUCTIONS

- Read the warning signs on the stacker and the instructions in this manual before use.
- Do not operate the electric stacker unless you are familiar with it and trained to do so.
- Do not use the stacker unless you have checked that it is in perfect condition. Pay particular attention to the chain, wheels, drawbar, chassis, control unit, mast, battery, etc.
- Do not use on very dirty floors or in explosive environments.
- Only use on level ground. Do not work on slopes.
- Do not transport persons on the forks.
- When lifting the forks, make sure that nobody stands or walks under the forks.
- Wear gloves when using the forks.
- Do not move the electric stacker when the goods are lifted to a height above 300 mm.
- When transport / lifting goods, keep a safety distance of 600 mm between all persons.
- Always distribute the weight of the goods equally between both forks. Never use only one fork. The centre of gravity of the goods should be in the middle of the two forks.
- Observe the goods during transport. If the goods become unstable and threaten to fall / tilt, stop operation immediately with the emergency stop button.
- Do not load beyond the maximum capacity.
- Operation must be carried out with at least 50 lux lighting.
- Suitable for indoor operation at a room temperature between +5 °C and +40 °C.
- Carry out the maintenance work according to the regular inspection.
- The battery should be charged in a dry and ventilated place and away from open fire.
- Modifications and changes to the device not approved by the manufacturer will void the warranty.

TECHNICAL DATA

CHARACTERISTICS

Type	Unit	Value
Brand		SolidHub
Model		HEF1200/4
Rated traction weight	kg	1200
Lift	mm	4000
Capacity at highest height	kg	600
Service weight (include battery)	kg	1076
Load centre	mm	600
Axle centre to fork face	mm	600
Wheel base	mm	1270
Controller		CURTIS

DIMENSIONS

Type	Unit	Value
Height of mast, lowered	mm	2500
Height of mast, extended	mm	4500
Fork Height, lowered	mm	90
Overall length	mm	1993 / 2413
Overall width	mm	812
Fork dimensions	mm	1150 / 185 / 55
Min. Ground clearance	mm	30
Aisle width with pallet 1000 x 1200 across forks	mm	2160 / 2540
Aisle width with pallet 800 x 1200 along forks	mm	2130 / 2520
Min. Turning radius	mm	1525 / 1935

WHEELS

Type	Unit	Value
Wheels type		Polyurethan
Wheels, number front / rear (x = driven)		1 x + 2 / 4

PERFORMANCE

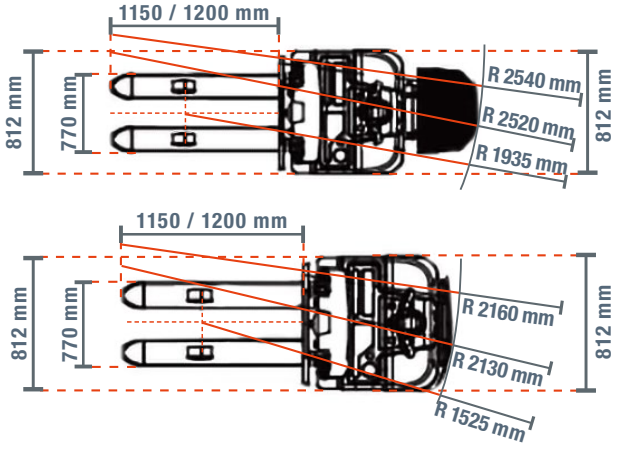
Type	Unit	Value
Travel speed, with / without load	km/h	6 / 6
Lifting speed, with / without load	mm/s	130 / 180
Lowering speed, with / without load	mm/s	100 / 200
Max. gradeabillity loaded / unloaded	%	6 / 8
Service brake		Electromagnetic brake

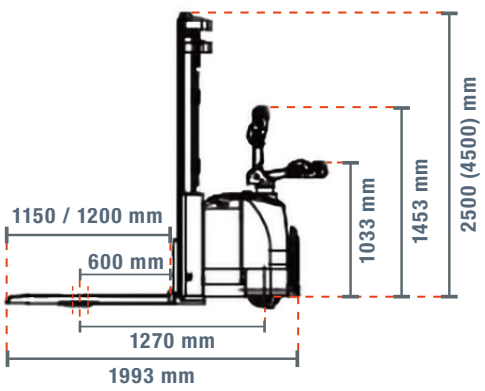
DRIVE

Type	Unit	Value
Drive motor	kw	AC 1.5
Lift motor	kw	DC 3
Battery voltage/rated capacity	V/Ah	24 / 210
Battery weight (± 5 %)	kg	192

OTHERS

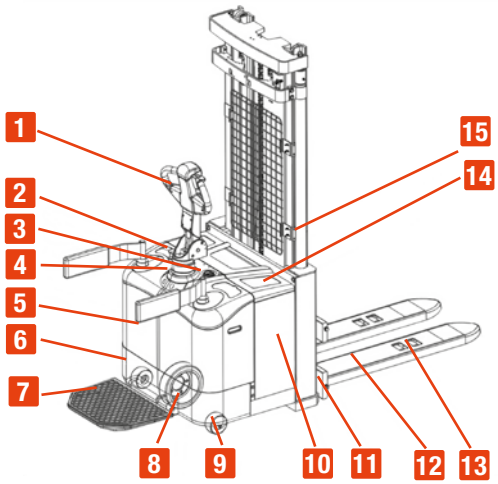
Type	Unit	Value
Steering type		Electric power steering



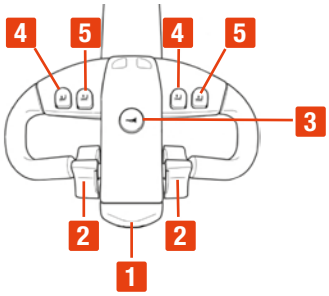


OVERVIEW OF THE MAIN COMPONENTS

No.	Name
1	Operating handle
2	Emergency stop button
3	Key / lock
4	Battery discharge indicator
5	Cover plate
6	Frame
7	Driver‘s platform
8	Drive wheel
9	Support wheels
10	Battery
11	Backrest
12	Fork
13	Fork wheels
14	Battery cover
15	Pole



No.	Name	Function
1	Emergency stop button	Protection of the driver, stops the machine immediately
2	Drive switch	Direction of travel and speed
3	Horn	Signal
4	Lift button	Lifting the forks
5	Lowering button	Lowering the forks



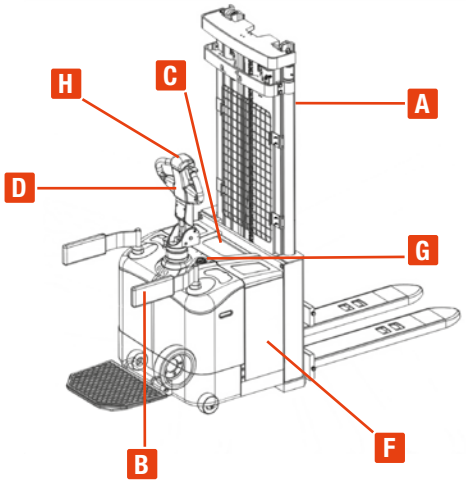
SAFETY DEVICES AND WARNING SIGNS

A Warnings: - Do not stand under the fork
- No riding on electric stacker

B Falling protection
C Symbol for load curve
D Note: Read and follow the instructions
F Nameplate
G Emergency stop switch, drawbar button
H Safety switch, belly switch

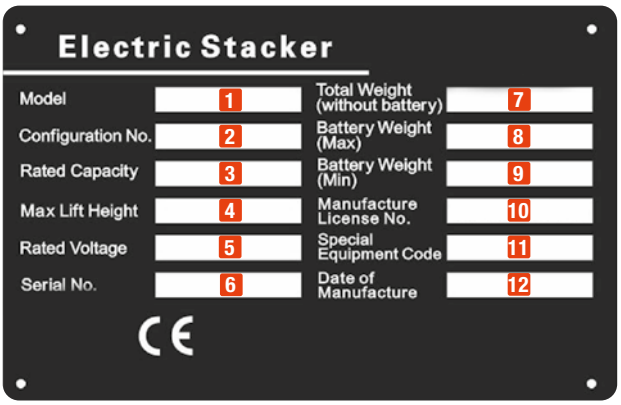
The electric stacker has an emergency stop switch (**G**) which stops all lifting, falling and driving functions and disables the electromagnetic brake. Pull the switch out again after pressing this function. Insert the key (**3**) and turn it clockwise. For safety and to prevent unauthorised use, the key must be turned anticlockwise and pulled out.

Follow the instructions on the safety labels. Please replace damaged or missing security stickers immediately.



NAMEPLATE

No.	Description
1	Name, Type
2	Configuration Number
3	Rated Capacity (kg)
4	Max Lift Height
5	Rated Voltage
6	Serial Number
7	Total Weight (without battery) (kg)
8	Battery Weight maximum (kg)
9	Battery Weight minimum (kg)
10	Number of Manufacture License
11	Code for optional equipment
12	Date of manufacture



MAINTENANCE

HYDRAULIC OIL

Please check the oil level every six months. The oil should be hydraulic **oil: ISO VG32**, its viscosity should be 32cSt at 40 °C, the total volume is about 4.0 litres.

DAILY INSPECTION AND MAINTENANCE

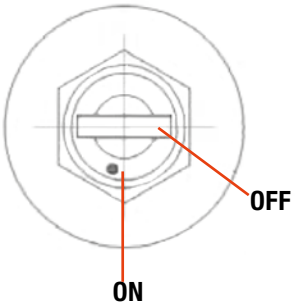
Check the electric stacker daily before use, paying particular attention to the wheels and axles. Foreign objects such as cloths, etc. can block the wheels, fork, mast or chain. After finishing the work with the electric stacker and before checking, unload the forks and lower them to the lowest position.

- Visual inspection for damage to pipes, wires, scratches, deformations or cracks.
- Check for leaks in the hydraulic system.
- Check the condition of the vehicle when driving straight ahead.
- Check the chain and roller for damage or corrosion.
- Check that the wheel moves smoothly.
- Press the emergency stop button to check the emergency brake function.
- Check brake function, check handle lever switch.
- Press the buttons to check the lifting and lowering function.
- Check that there is no damage and that the protective grille is correctly installed.
- Check the horn.
- Check that all screws and nuts are tightened.
- Check the function of the key switch.
- Check the speed limit switch (symbol: turtle).

OPERATING INSTRUCTIONS

When operating this electric stacker, please observe the warning and safety instructions. Make sure that you always look in the direction of travel and that no goods or objects obstruct or restrict your view.

Make sure that the goods are placed stable and safe for transport in the middle of the fork. To start, turn the key clockwise, position „ON“ (3).



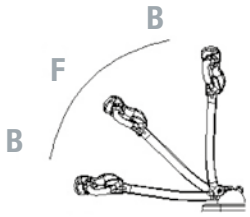
The battery must be fully charged once before first use.
Please ensure that both the battery and the charging cable of the device are undamaged.

CONTROL SYSTEM

Start the electric stacker, bring the tiller to an inclined position („F“). Operate the direction lever on the tiller (12): Forward „V“ or Reverse „R“. By carefully moving the direction lever, you control the speed until the desired speed is reached.

Position the directional lever in the centre to slow the stacker down to a complete stop / parking position. If the stacker is stopped permanently, apply the parking brake.

Always drive carefully and keep your eyes on the road - adjust the speed if necessary.

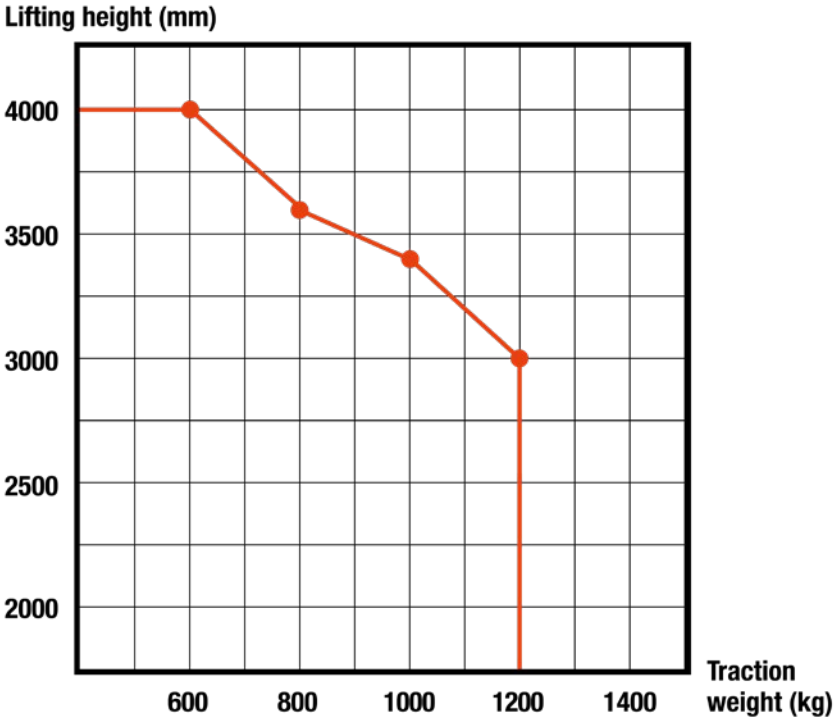


STEERING

The steering is activated by steering the drawbar to the right and left. The steering motor then steers the electric stacker in the appropriate direction.

LOAD CURVE

The load curve shows the horizontal load capacity of the largest load Q [kg].
and the lifting height H [mm] corresponding to the vehicle with a load center of 600 mm.
At a lifting height of 3500 mm, the maximum load capacity Q is up to 900 kg.



LIFTING OF LOADS

Never load the electric stacker beyond the specified capacity. The maximum load capacity of this stacker is 1200 kg. The maximum load capacity can be found on the type plate of your product. To move, place the fork completely under the goods to be lifted and press the lifting button (4) until you reach your desired lifting height.

LOWERING OF LOADS

Carefully press the down button (5) and watch the goods. As soon as the weight has been reduced and the pallet stands securely, carefully pull out the fork.

APPLY THE BRAKES

The load braking performance depends on the ground conditions and the load of the electric stacker.
Activate the brake function as follows: The stacker brake is activated by moving the direction lever (1) back to position „0“ or by releasing this lever. Or by moving the direction lever in the opposite direction until it begins to move in the other direction.

When the tiller is moved up or down into the braking zone (B), the vehicle braking is activated. When the emergency stop switch is pressed, the handle is automatically moved to the braking zone and the parking brake is activated. The large red safety button on the head of the tiller means that this function can also be triggered with the upper body. The electric stacker slows down and comes to a standstill until reverse.

IN CASE OF EMERGENCY

In case of an emergency, press the emergency stop switch (2). All electrical functions are stopped. Maintain a safety distance.

PARKING

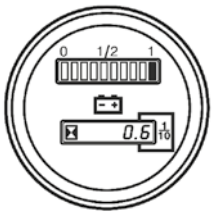
Never park the electric stacker on a slope or sloping terrain! This electric stacker is equipped with an electromagnetic parking brake and a parking brake.

When not in use, always set the fork to the lower position and park the stacker in a safe area. Turn the key counterclockwise to the „off“ position and remove the key.

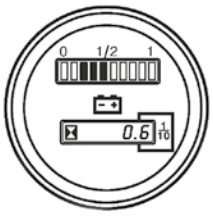
BATTERY DISCHARGE STATUS AND OPERATING HOURS COUNTER

The hour counter shows the hours already worked by the machine. The counter starts running as soon as the machine is switched on.

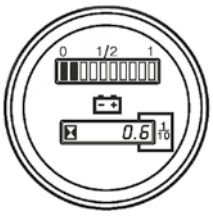
The battery discharge status is indicated by 10 LEDs on the battery discharge indicator. There are 5 green, 3 yellow and 2 red LEDs. One LED corresponds to 10% of the battery capacity.



full



almost empty



empty

CHARGING AND REPLACING THE BATTERY

- Only qualified personnel should repair or recharge the battery. Please be sure to follow the operating instructions.
- This battery must be filled up with water.
- Battery recycling must comply with state laws and regulations. Please comply with these regulations.
- Improper handling, e.g. use near fire or gas, can cause an explosion! For this reason, the storage of flammable materials or flammable liquids in the battery charging area is prohibited. Smoking is prohibited and the area must be well ventilated.
- Before charging or installing the battery, park the electric stacker safely (parking position).
- The electric stacker is equipped with acid battery 24 V / 210Ah.
- Note: Please observe the maximum operating temperature of the battery.
- The use of unsuitable fire protection equipment can lead to acid burns. In case of fire, a reaction with the battery acid can occur when water is used to extinguish the fire. This may cause acid burns.
- Powder extinguisher must be used instead of water.

BATTERY MAINTENANCE

The batteries must be kept dry and clean. Terminals and cable lugs must be clean, lightly greased with end grease and tightened securely.

Battery	Value
Volt	24 V
Capacity	210 Ah

Charger	Value
Input	AC 220 V / 50 / 60 Hz
Output	DC 24 V / 50 A

Check the electrolyte level after charging. If the fill level is low, top up with distilled water until the maximum fill level is reached.

Do not fill the cells before the charging process, as the electrolyte will heat up and the fill level will continue to rise. This will result in overflowing.

BATTERY REPLACEMENT

When a battery is changed, it must be the same weight as the original battery. The weight of the battery is very important for the stability and braking performance of the electric stacker.
It is not allowed to change the weight and size of the battery.
Disconnect the battery cables and lift the battery out of the electric stacker using another pallet stacker, crane or forklift.
The procedure for installing the new battery is the other way round.

CHARGING THE BATTERY

After approximately 4 hours (normal load) the battery of the electric stacker must be charged. Only charge the battery in well ventilated places. When charging is complete, disconnect the plug from the mains and store it safely in the chassis. If the battery is completely discharged, the charging process takes approximately 5 hours.

- The battery must be charged within 24 hours of use.
- Before charging, the power supply must be completely disconnected. To do this, switch off the unit and press the emergency stop button.
- Open the battery cover
- Connect the battery to the charger and start the charging process on the charger.
- After charging the battery, the charger is disconnected from the battery again and the battery cover is closed.
- If the water level in the battery cells is too low, they must be topped up with distilled water.

REGULAR INSPECTIONS

Only qualified and trained personnel may service the electric stacker. Before maintenance, please remove any goods from the forks and move them to the lowest position (parking position of the forks).

Only use special cranes / hoists to lift the stacker. Be sure to position an additional safety device (such as a jack, wedge or wood) under the stacker. Special care must be taken when servicing the handlebars. The gas spring is under pressure. Carelessness during maintenance is a source of accidents.

Please use only approved original spare parts.

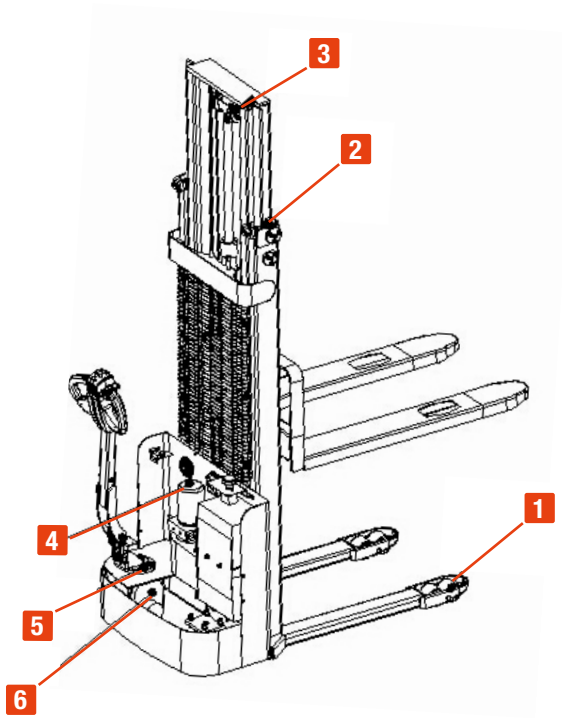
Please note that leakage of hydraulic oil can lead to machine failure and possibly to an accident.
Have only one technician, trained for work on the pressure regulating valve, carry out the work. If you need to replace a wheel, please follow the above instructions. The impeller must be round and must not show any abnormal wear. Regularly service the electric stacker using the checklist provided in the instruction manual.

The respective inspection points (plus equipment identification) for the periodic inspections/thorough examinations are to be checked in an integrated manner in the associated inspection report of the lifting equipment, taking into account the mandatory fulfilment of the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER). (Recommendation: FEM4.004)

LUBRICATION POINTS

The illustration shows the points which must be greased regularly.
Grease specification: DIN51825, standard grease.

No.	Name
1	Wheel bearing
2	Steel frame
3	Chain
4	Hydraulic system
5	Steering bearings
6	Gearbox



INSPECTION AND REFILLING OF THE REQUIRED HYDRAULIC OIL TYPE

Hydraulic oil L-HV32
The viscosity is 32 - 38
Based on the model, the oil quantity is approx. 2.5 to 3.0 liters.
Waste oil, used batteries or other special materials
must be recycled under national law.

CHECKLIST FOR MAINTENANCE / INSPECTION

		50h / 1x Week	500h / 1x Half-year	1000h / 1x Year	2000h / 1x Year
	Hydraulic system				
1	Check the hydraulic oil cylinder, the piston is quiet and no fluid is leaking		•		
2	Check the hydraulic connections and hoses for damage and leaks		•		
3	Check the hydraulic oil level and top up oil if necessary		•		
4	Replace hydraulic oil after 12 months or 1500 operating hours				•
5	Check and adjust the pressure valve function (+ 10 %)				•
	Mechanics				
6	Check the fork for deformation or cracks		•		
7	Check the chassis for deformation or cracks		•		
8	Check that all screws are tightened properly		•		
9	Check the gearbox for noise and leakage		•		
10	Check the wheels / rollers for deformation and/or damage		•		
11	Lubricating the steering				•
12	Control and lubrication centre		•		
13	Check grease nipple	•			
14	Replace protection and/or protection board, if damaged	•			
	Electrics				
15	Check if wires are damaged		•		
16	Check electrical connections and the terminal		•		
17	Testing the emergency stop switch function		•		
18	Check the electric motor for noises		•		
19	Detector		•		
20	Check fuses and replace if necessary		•		
21	Test of the acoustic signal		•		
22	Check overcharge protection		•		
23	Check that the frame is tight (insulation test)		•		
24	Check the function and wear of the accelerator		•		
25	Check the drive motor of the electrical system		•		
	Brake system				
26	Check the brake performance; if necessary replace the brake discs or adjust the distance between the brakes		•		
	Battery				
27	Check the battery voltage		•		
28	Clean and lubricate clamp, check for corrosion and damage		•		
29	Check whether the battery housing is damaged		•		
30	Check if the power cable is damaged			•	
31	Start protection program check during charging			•	
	Functions				
32	Test of the signal tone	•			
33	Checking the Electromagnetic Brake with Air Gap	•			
34	Testing the emergency brake function	•			
35	Test of reverse braking and regenerative braking function	•			
36	Testing the large red emergency stop switch on the drawbar (belly switch)	•			
37	Check the steering function	•			
38	Check the lifting and lowering function	•			
39	Check the key switch for damage	•			
	Miscellaneous				
42	Check that all labels are legible and complete	•			
43	Check whether the protective grille is damaged	•			
44	Inspect tyres and adjust or replace if worn		•		
45	Perform a test run	•			

TROUBLESHOOTING

If there is a fault and/or the electric stacker does not work, please stop using the stacker and press the emergency stop button (2). Park in a safe area, turn the key switch (3) counterclockwise and remove the key.

Immediately inform your responsible employee and/or contact customer service.

Problem	Reason	Solution
The forks cannot be lifted to the maximum height	Overloading of the max. load capacity	The maximum load capacity is indicated on the rating plate
	Battery is too weak	Charging the battery
	The fuse is out	Check and possibly replace the fuse
	The hydraulic oil is not sufficient	Check and if necessary top up the hydraulic oil
	The oil pressure is too low; oil leaks	Check and if necessary replace sealing hoses and/or cylinder
No oil	Oil level is too low	Increase the oil level
The forks cannot be lowered	Shut-off valve is dirty/blocked	Check the hydraulic oil and cleaning control valve. Change the hydraulic oil as necessary
	Removing electromagnetic valve opens or is damaged	Check or replace solenoid valve
The stacker does not respond	The battery is being charged	When the battery is fully charged Pull the power plug
	The battery is not connected	Connect the battery correctly to the charger
	The fuse is out	Check the fuse and replace it where appropriate
	Low battery	Charging the battery
	The emergency stop switch is activated	Pull the button to reset the emergency stop
	The drawbar is not in the correct position	Moving the tiller out of the braking zone
Electric stacker only travels in one direction	Accelerator / connections are damaged	Check the accelerator and the connection
Stacker runs very slowly	Low battery	Check the charge level of the battery and charge it
	The electromagnetic brake is activated	Release the electromagnetic brake
	The drawbar is not connected correctly or the cable is damaged	Check wiring
The stacker suddenly starts	Damage to the controller	Replace the controller
	The accelerator is not returned to the center position	Repair or replace the accelerator

SERVICE & CONTACT

Contact our product experts and find help and solutions for your product. Here you will find all contact information listed by country and language: www.topregal.co.uk/en/service

Responsible for the content:
TOPREGAL GmbH
Industriestrasse 3
70794 Filderstadt
GERMANY
www.topregal.com

UKCA Declaration of Conformity

The manufacturer

TOPREGAL UK Ltd.
Carlton Drive Crumlin
Gwent NP11 4EA

hereby declares that the following product

Product name:

SolidHub
Electric stacker

Type:

HEF1200/4 with driver‘s platform

Serial number:

HEF1200/4-1000000000 - HEF1200/4-9999999999

that the equipment is in conformity with the following relevant UK legislations and applied standards:

2006/42/EC Machine Directive

EN ISO 12100
EN 1175-1+A1
EN 12053 +A1
EN 13059+A1
EN 16307-1+A1
EN ISO 3691-1+ AC

Name and adress of the person who is authorized, compile the technical documentation:

TOPREGAL UK Ltd.
Carlton Drive Crumlin
Gwent NP11 4EA

Place: Crumlin UK
Date: 10.09.2020

Juergen Effner
Chief Executive Officer

SolidHub

V 05.04.24