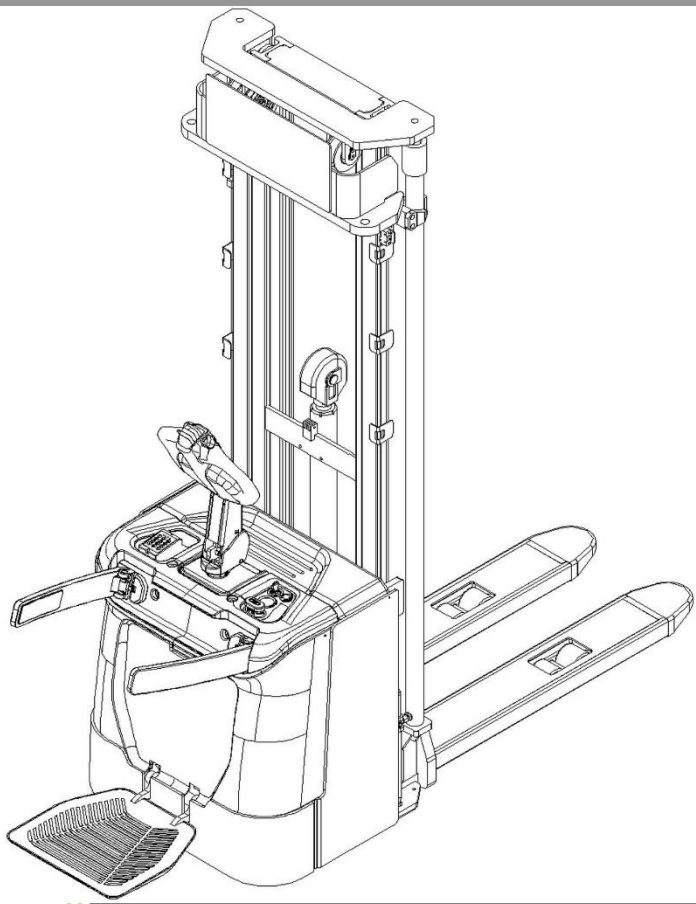
INSTRUCTION MANUAL

Electric Stackers

PS12N/PS16N/PS20N PS26N/PS35N/PS44N



WARNING

Do not use the electric truck before reading and understanding these operating instructions.

NOTE:

- **Please check the designation of your present type at the last page of this document as well as on the ID-plate.**
- **Keep for future reference.**

Version 08/2023

PS XXN-SMS-004-EN

FOREWARD

Before operating the electric stacker, read this ORIGINAL INSTRUCTION HANDBOOK carefully and understand the usage of the truck completely. Improper operation of the truck may create a danger situation. This handbook describes the usage of different electric stackers. When operating and servicing the truck, make sure, that it applies to your type.

Keep this handbook for future reference. If this or the warning/caution labels are damaged or got lost, please contact your local dealer for replacement.

Note: Different model names are used for different markets, the numbers in name reflect the capacity of truck in KG or LBS:

- PS12N/PS16N/PS20N
- PS26N/PS35N/PS44N (US-market)

ATTENTION:

- Environmentally hazardous waste, such as batteries, oil and electronics, will have a negative effect on the environment or health, if handled incorrectly.
- The waste packages should be sorted and put into solid dustbins according to the materials and be collected disposal by local special environment protection bureau. To avoid pollution, it's forbidden to throw away the wastes randomly.
- To avoid leaking during the use of the products, the user should prepare some absorbable materials (scraps of wooden or dry duster cloth) to absorb the leaking oil in time. To avoid second pollution to the environment, the used absorbable materials should be handed in to special departments in terms of local authorities.
- Our products are subject to ongoing developments. The information written in this handbook is provided as reference for operating and servicing the stacker and may vary in terms of description of particular features of the truck.

NOTE: On this manual, the left sign means warning and danger, which can lead to death or serious injury if not followed.

Copyright

TABLE OF CONTENTS

1. CORRECT APPLICATION 1
2. DESCRIPTION OF THE STACKER 2
   a. Overview of the main components 2
   b. Main technical data 3
   c. Description of the safety devices and warning labels (Europe and other, except USA) 6
   d. Identification plate 8
3. WARNINGS, RESIDUAL RISK AND SAFETY INSTRUCTIONS 9
4. COMMISSIONING, TRANSPORTING, DECOMMISSIONING 10
   a. Commissioning 10
   b. Lifting/transportation 10
   c. Decommissioning 11
5. DAILY INSPECTION 12
6. OPERATING INSTRUCTIONS 13
   a. Parking 13
   b. Residual lift diagram 13
   c. Lifting 13
   d. Lowering 14
   e. Travelling 14
   f. Steering 15
   g. Braking 15
   h. Malfunctions 16
   i. Emergency 16
7. PIN-CODE PANEL 17
   a. Introduction 17
   b. Main parameters 17
   c. Main functions 17
   d. Operation 17
   e. Pin-code panel indicator 18
8. BATTERY SAFETY, CHARGING AND REPLACEMENT 19
   a. Battery safety 19
   b. Charging the battery 29
   c. Battery replacement 36
9. AQUAMATIC SYSTEM (OPTION) 37
   a. Water After Charge 37
   b. Watering Intervals 37
   c. Operation 37
10. REGULAR MAINTENANCE 39
   a. Maintenance checklist 39
   b. Lubricating points 41
   c. Check and refill hydraulic oil 41

d. Checking electrical fuses 42
e. Removing, reattaching guarding 42
11. TROUBLE SHOOTING 43
12. WIRING/ CIRCUIT DIAGRAM 45
a. Electrical circuit diagram 45
b. Hydraulic circuit 49
13. SPECIALIZED STIPULATIONS FOR THE US- AMERICAN MARKET 51
a. Foreword/ Compliance 51
b. Identification plate 52
c. Description warning labels (only US- market) 53
d. Technical data for US market 55
Original CE Declaration of conformity 58

1. CORRECT APPLICATION

It is only allowed to use this electric stacker according to this instruction handbook.

The trucks described in this handbook are self-propelled pedestrian controlled electric power stackers, with electrically powered lifting function. The trucks are designed for stacking operations in dedicated racking by lifting and lowering the palletized loads up to the desired lifting heights.

A wrong usage can cause human injuries or can damage equipment.
The operator/ the operating company has to ensure the correct usage and has to ensure, that this truck is used only by staff, which is trained and authorized to use this truck.

The truck has to be used on substantially firm, smooth, prepared, level and adequate surfaces. The truck is intended to be used for indoor applications with ambient temperatures between +5°C and + 40°C and for intensive operations without crossing permanent obstacles or potholes. Operating on ramps is not allowed. During the operation the load must be placed approximately on the longitudinal center plane of the stacker.
Lifting or transporting of people is forbidden. During traveling the load must be lowered to the height below 300 mm.

It is not allowed to use this truck on tail lifts or loading ramps.

The capacity is marked on the load diagram as well on the Identification plate. The operator has to consider the warnings and safety instructions.
Operating lighting must be minimum 50 Lux.

<u>Modification</u>
No modifications or alterations to this truck which may affect, for example, capacity, stability or safety requirements of the truck, shall be made without the prior written approval of the original truck manufacturer, its authorized representative, or a successor thereof. This includes changes affecting, for example braking, steering, visibility and the addition of removable attachments. When the manufacturer or its successor approve a modification or alteration, they shall also make and approve appropriate changes to capacity plate, decals, tags and operation and maintenance handbooks.

Only in the event that the truck manufacturer is no longer in business and there is no successor in the interest to the business, may the user arrange for a modification or alteration to a powered industrial truck, provided, however, that the user:
a) arranges for the modification or alteration to be designed, tested and implemented by an engineer(s) expert in industrial trucks and their safety,
b) maintains a permanent record of the design, test(s) and implementation of the modification or alteration,
c) approves and makes appropriate changes to the capacity plate(s), decals, tags and instruction handbook, and
d) affixes a permanent and readily visible label to the truck stating the manner in which the truck has been modified or altered, together with the date of the modification or alteration and the name and address of the organization that accomplished those tasks.

By not observing these instructions, the warranty becomes void.

2. DESCRIPTION OF THE STACKER

a. Overview of the main components

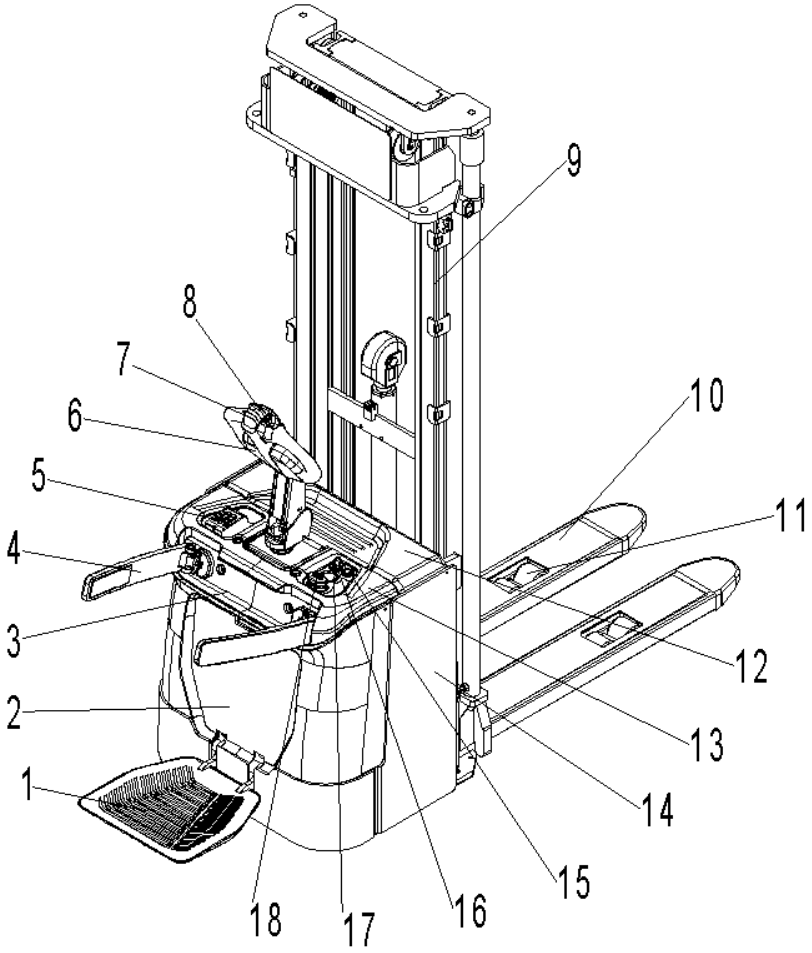


Fig. 1: Overview main components

1. Platform
2. Main cover
3. Protective arm cover
4. protective arm
5. Pin-code panel (option)
6. Tiller
7. Safety button/Belly button
8. Accelerator
9. Mast
10. Fork
11. Load roller
12. Battery cover
13. Top cover
14. Chassis
15. USB port
16. Key switch
17. Discharge indicator and charging indicating LED
18. Emergency button

b. Main technical data

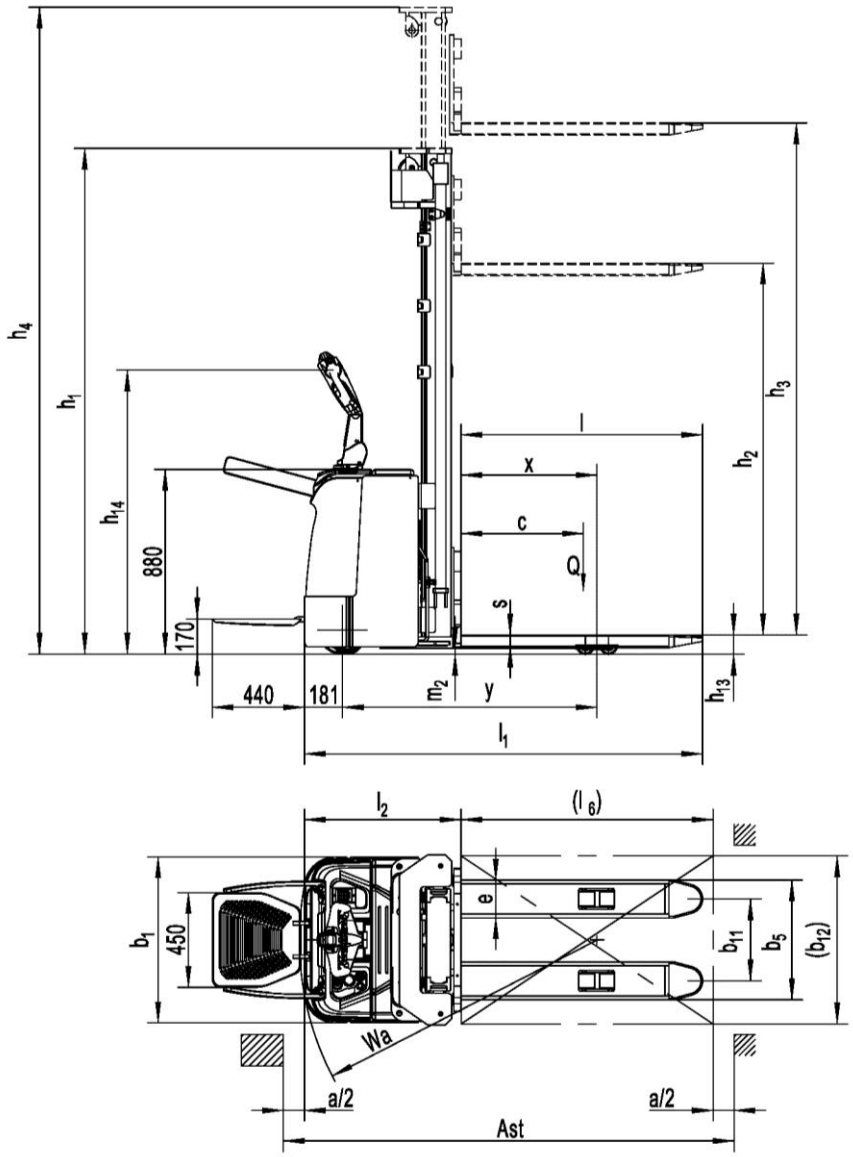


Fig. 2: Technical data

Table 1: Main technical data for standard version

	Type sheet for industrial truck acc. to VDI 2198					
General data	1.2	Manufacturer`s type designation		PS12N(3600)	PS 16N(5500)	PS 20N(4600)
	1.3	Power (battery ,diesel, petrol, gas, manual)		Battery		
	1.4	Operator type		Pedestrian		
	1.5	Load Capacity / rated load	Q(t)	1.2	1.6	2.0
	1.6	Load centre distance	C(mm)	600		
	1.8	Load distance ,centre of drive axle to fork	x(mm)	647		
	1.9	Wheelbase	y(mm)	1167	1215	1327

Weight	2.1	Service weight	Kg	1080	1380	1620
	2.2	Axle loading, laden front/rear	Kg	860/1420	1040/1940	1210/2410
	2.3	Axle loading, unladen front/rear	Kg	780/320	940 /440	1090/540
Tires, chassis	3.1	Tires		Polyurethane (PU)		
	3.2	Tire size, front	∅xW (mm)	∅230×70		
	3.3	Tire size, rear	∅xW (mm)	∅84×70		
	3.4	Additional wheels(dimensions)	∅xW (mm)	∅150x54		
	3.5	Wheels, number front/rear(x=driven wheels)		1x+1/4		
	3.6	Track, front	b10(mm)	510		
	3.7	Track, rear	b11(mm)	390/505		
Dimensions	4.2	Lowered mast height	h1(mm)	2308	2410	2228
	4.3	Free Lift height	h2(mm)	1760	1820	1520
	4.4	Lift height	h3(mm)	3510	5410	4510
	4.5	Extended mast height	h4(mm)	4080	5980	5200
	4.9	Height of tiller in drive position min./ max.	h14(mm)	950/1350		
	4.15	Height, lowered	h13(mm)	90		
	4.19	Overall length	l1(mm)	1855 [1)]	1896 [1)]	2025 [1)]
	4.20	Length to face of forks	l2(mm)	705 [1)]	746 [1)]	875 [1)]
	4.21	Overall width	b1(mm)	790		
	4.22	Fork dimensions	s/e/l(mm)	60/180/1150		
	4.25	Distance between fork-arms	b5(mm)	570/685		
	4.32	Ground clearance, centre of wheelbase	m2(mm)	28	28	23
	4.33	Aisle width for pallets 1000X1200 crossways	Ast(mm)	2285 [1)]	2325 [1)]	2455 [1)]
	4.34	Aisle width for pallets 800X1200 lengthways	Ast(mm)	2250 [1)]	2290 [1)]	2420 [1)]
	4.35	Turning radius	Wa(mm)	1380 [1)]	1420 [1)]	1550 [1)]
Performance	5.1	Travel speed, laden/ unladen	km/h	7.0/8.0	7.0/8.0	6.0/7.0
	5.2	Lift speed, laden/ unladen	m/s	0.09/0.14	0.13/0.20	0.13/0.20
	5.3	Lowering speed, laden/ unladen	m/s	0.25/0.20	0.28/0.23	0.28/0.23
	5.8	Max. gradeability, laden/ unladen	%	6/12	6/12	6/12
	5.10	Service brake		Electromagnetic		
Electric	6.1	Drive motor rating S2 60min	kw	1.4	1.4	1.4
	6.2	Lift motor rating at S3 10%	kw	1.5	3.2	3.2
	6.3	Battery acc. to DIN 43531/35/36 A, B, C, no		2VBS	3VBS	3PZS
	6.4	Battery voltage, nominal capacity K5	V/Ah	24/180	24/270	24/350
	6.5	Battery weight	kg	175	230	288
	6.6	Energy consumption acc: to VDI cycle	kWh/h	0.95	1.34	1.70
Other	8.1	Type of drive control		AC- speed control		
	8.4	Sound level at driver's ear acc. to EN 12053	dB(A)	<70		

1）With unfolded platform: + 440 mm

Type	Lowered mast height h1(mm)	Free Lift height h2(mm)	Lift height h3(mm)	Extended mast height h4(mm)	Lift+fork height h3+h13(mm)
PS12N					
Two stage mast	1958	—	2810	3380	2900
	2108	—	3110	3680	3200
	2308	—	3510	4080	3600
Two stage mast FFL (Full-Free-Lift)	1958	1410	2810	3380	2900
	2108	1560	3110	3680	3200
	2308	1760	3510	4080	3600
PS16N					
Two stage mast	1958	—	2810	3380	2900
	2108	—	3110	3680	3200
	2308	—	3510	4080	3600
Two stage mast FFL (Full-Free-Lift)	1958	1410	2810	3380	2900
	2108	1560	3110	3680	3200
	2308	1760	3510	4080	3600
Three stage mast	2008	—	4210	4780	4300
	2108	—	4510	5080	4600
Three stage mast FFL (Full-Free-Lift)	1708	1120	3310	3880	3400
	1908	1320	3910	4480	4000
	2008	1420	4210	4780	4300
	2108	1520	4510	5080	4600
	2343	1756	5210	5780	5300
	2410	1800	5410	6110	5500
PS20N					
Two stage mast	2078	—	2810	3500	2900
	2228	—	3110	3800	3200
	2428	—	3510	4200	3600
Two stage mast FFL (Full-Free-Lift)	1978	1310	2610	3300	2700
	2078	1410	2810	3500	2900
	2228	1560	3110	3800	3200
	2428	1760	3510	4200	3600
Three stage mast	2128	—	4210	4900	4300
	2228	—	4510	5200	4600
Three stage mast FFL (Full-Free-Lift)	1978	1310	3910	4600	4000
	2128	1420	4210	4900	4300
	2228	1520	4510	5200	4600

c. Description of the safety devices and warning labels (Europe and other, except USA)

For the USA –market, the description of the safety and warning labels is mentioned in chapter 13.

A Crane hook label

B Warning decal: Do not step under or on the forks

C Residual lift capacity sticker

D Never reach through

E Identification plate (ID-plate)

F Sticker to read and follow these instructions

G Sign of filling point

H Warning sticker

J Indicating sticker

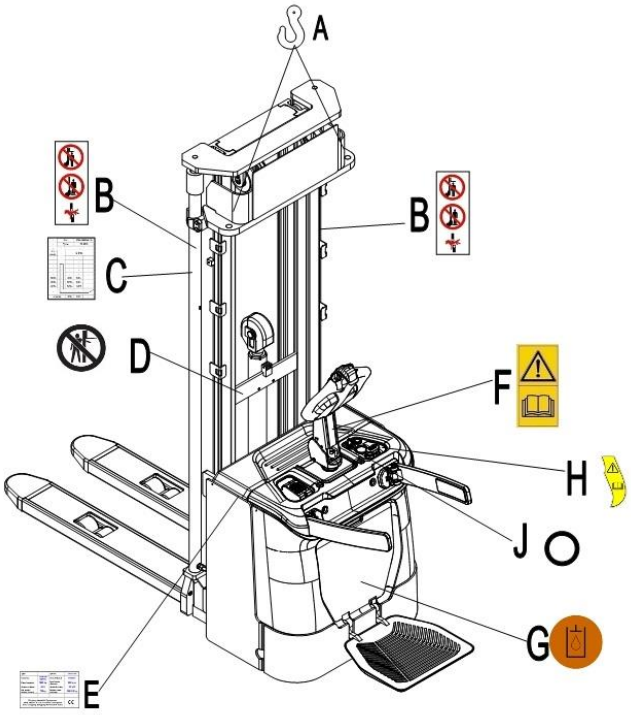
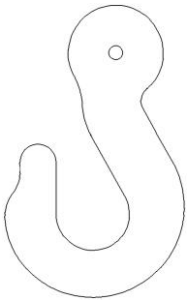


Fig. 3: Safety and warning labels

The truck has an emergency button (18) which stops all lifting-, lowering-, driving- functions and engages the failsafe electromagnetic brake when it is pushed. By pulling this button, the truck can be operated after the controller checked the functions. Before operating, insert the key and turn the switch (16) clockwise or, in case the truck is equipped with Pin-code panel, press the start-button and enter the Pin-code or use RFID access card. To prevent against unauthorized access, turn the key anti-clockwise and remove it if you do not operate this truck or, in case the truck is equipped with Pin-code panel, press the start-button or press the X button of pin-code panel. The truck is equipped with a safety (belly) button (7) which switches the driving function away from the operator, if the truck travels towards the operator and the tiller is in its operating zone. Follow also the instructions given on the decals. Replace the decals if they are damaged or missing.

Crane hook label (A)



Warning decal:
Do not step under or on the forks (B)

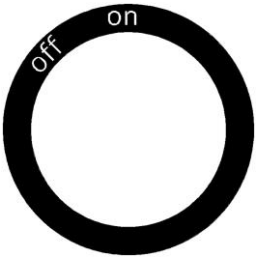
Never reach through (D)

Sticker to read and follow these instructions (F)

Sign of filling point (G)

Warning sticker (H)

Indicating sticker (J)



d. Identification plate

1 Designation, type
2 Serial number
3 Rated capacity in kg
4 Supply voltage in V
5 Own mass (self weight) in kg without battery
6 Name and address of manufacturer)
7 Battery weight minimum/ maximum
8 Nominal power in kW
9 Load center distance
10 Manufacturing data
11 Option

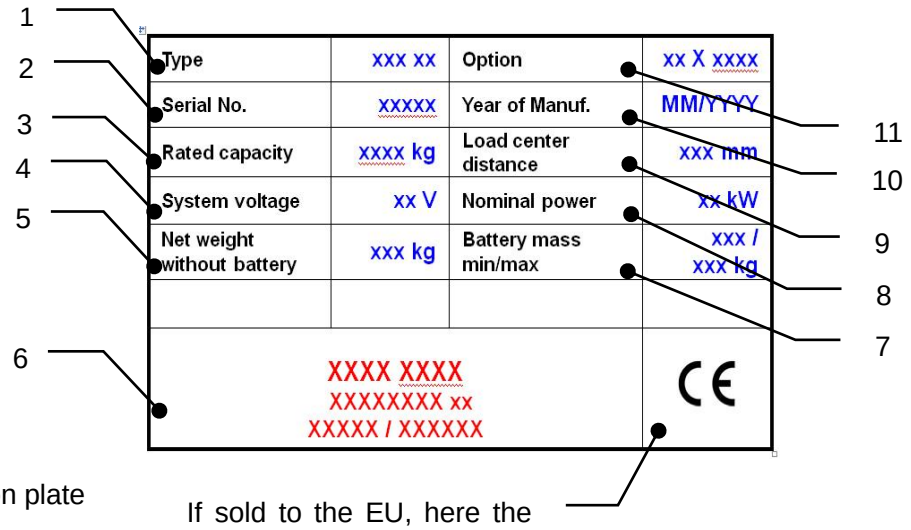


Fig. 4: Identification plate

If sold to the EU, here the place of the CE marking

3. WARNINGS, RESIDUAL RISK AND SAFETY INSTRUCTIONS

DO NOT

- Drive outside the stacking operation with a lifted load higher than the lifting point.
- Put foot or hand under or into the lifting mechanism.
- Allow other person than the operator to stand in front of or behind the truck when it is moving or lifting/lowering.
- Overload the truck.
- Put foot in front of the wheels, injury could result.
- Lift people. People could fall down and suffer severe injury.
- Push or pull loads.
- Use this truck on ramps.
- Use the truck without a removed protective screen
- locate load at side or end of forks. Load must be distributed evenly on the forks.
- Use the truck with unstable or unbalanced load.
- Use the truck without manufacturer's written consent.
- Supply on board charger with AC voltage other than 100V or 240V.

Watch difference in floor levels when driving. Load could fall down or the truck could get uncontrollable. Keep watching the condition of load. Stop operating the truck if load becomes unstable. Brake the truck and activate the emergency button (18) by pushing when sliding load on or off the truck. If the truck has any malfunctions, follow chapter 10.

Practice maintenance work according to regular inspection. This truck is not designed to be water resistant. Use the truck under dry condition. Prolonged continuous operation might cause damage of the power pack. Stop operation if temperature of hydraulic oil is too high.

- When operating the truck, the operator has to wear safety shoes.
- The truck is intended to be used for indoor applications with ambient temperatures between +5°C and + 40°C.
- The operating lighting must be minimum 50 Lux.
- It is not allowed to use the truck on ramps.
- To prevent unintended sudden movements when not operating the truck (i.e. from another person, etc.), switch off the truck and remove the key.
- Lifted loads could become unstable at wind forces. In the case of wind forces do not lift the load if there is any influence to the stability.
- Lifted loads can overlap the field of view, take all necessary safety measures and use visual aid if necessary.
- Avoid any crashes of the foldable platform against surrounding objects, especially moving in Fw direction as it may lead to crushing and shearing hazards. Always maintain safe speed according to the working environment.

4. COMMISSIONING, TRANSPORTING, DECOMMISSIONING

a. Commissioning

Table 2: Commissioning data

Type	PS12N	PS16N	PS20N
Version/ Lift [mm]	3600	5500	4600
Commissioning weight [kg]	1080	1500	1660

After receiving our new truck or for re-commissioning you have to do following before (firstly) operating the truck:

- Check if are all parts included and not damaged
- Install and charge the battery (follow chapter 8)
- Do the work according to the daily inspections as well as functional checks.

b. Lifting/transportation

For transporting, remove the load, lower the forks to the lowest position and fix the truck safe with dedicated lifting gear according to Fig. 5.

Lifting

USE DEDICATED CRANE AND LIFTING EQUIPMENT
DO NOT STAND UNDER THE SWAYING LOAD
DO NOT WALK INTO THE HAZARDOUS AREA DURING LIFTING

Lower the forks and park the truck securely.
Fasten the truck according to fig. 5 by fixing dedicated lashing belts to each side of the truck's crane hook holes and fasten the other side at the transporting truck.

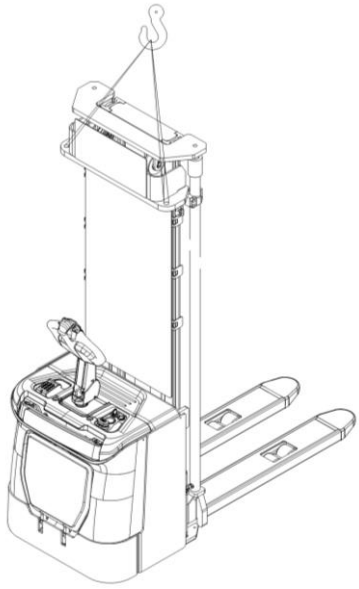


Fig. 5: Lifting with a crane

Transportation

DURING TRANSPORTATION ON A LORRY OR TRUCK, ALWAYS FASTEN THE TRUCK SECURELY

Lower the forks and park the truck on the metal plate securely. Fix the forks by the metal plank with two screws to the bottom metal plate. Fasten the truck by dedicated lashing belts according to fig. 6 and fasten the other side at the transporting truck.

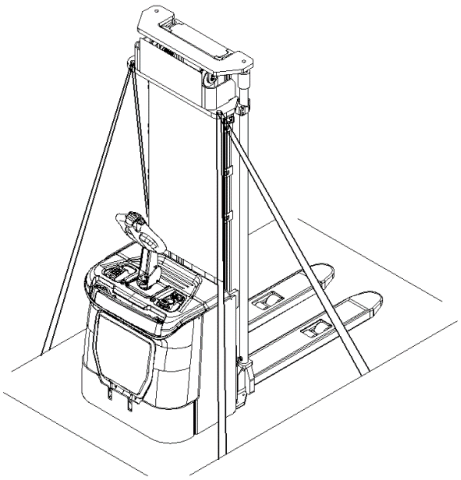


Fig. 6: Fixing points

c. Decommissioning

For storage, remove the load, lower the truck to the lowest position, grease all in this handbook mentioned greasing points (regular inspection) protecting the truck against corrosion and dust. Remove the batteries and jack the truck safely, so that there will be no flattening of wheels after storage.

For final decommissioning hand the truck to a designated recycling company. Oil, batteries and electric components must be recycled due to legal regulations.

5. DAILY INSPECTION

This chapter describes pre-shift checks before putting the truck into operation.
Daily inspection is effective to find the malfunction or fault on this truck. Check the truck on the following points before operation.

Remove load from truck and lower the forks.
DO NOT USE THE TRUCK IF ANY MALFUNCTION IS FOUND.

- Check for scratches, deformation or cracks.
- Check if there is any oil leakage from the cylinder.
- Check the vertical creep of the truck.
- Check the chain and rollers for damages or corrosion.
- Check the smooth movement of the wheels.
- Check the function of the emergency brake by activating the emergency button.
- Check, the tiller arm switch braking function
- Check the lifting and lowering functions by operating the buttons.
- Check if the protective screen has no damages and that is correctly assembled.
- Check the audio warning signal.
- Check if all bolts and nuts are tightened firmly.
- Check the function of the key switch.
- Check the speed limitation switch.
- Visual check if there are any broken hoses or broken electric wires.
- If supplied with a backrest extension, check it for damages and correct assembling.

6. OPERATING INSTRUCTIONS

BEFORE OPERATING THIS TRUCK, PLEASE FOLLOW THE WARNINGS AND SAFETY INSTRUCTIONS (CHAPTER 3).
BEFORE OPERATING THIS TRUCK, ENSURE THAT THE LOAD OR OTHER EQUIPMENT NOT CAUSES INSUFFICIENT VISIBILITY!

Make sure that the load is palletized and stable and that the daily inspection is carried out. For starting, insert the key and turn it clockwise to the “ON”- position. Eventually before inserting the key switch (Fig.1,16), the emergency button (Fig.1,18) must be pulled carefully.
Press the horn button (22) to activate the audible warning signal.

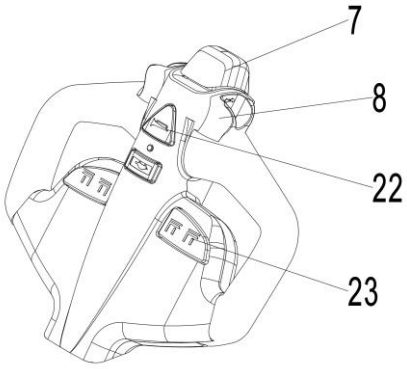


Fig. 7: Tiller operating controls

a. Parking

DO NOT PARK THE TRUCK ON INCLINED SURFACES

The truck is equipped with an electromagnetic failsafe stopping and parking brake.
Always lower the forks fully and drive the truck to a safe area. Turn the key anti- clockwise to the “Off” – position and remove the key.

b. Residual lift diagram

The residual lift diagram indicates the maximum capacity Q [kg] for a given load center c [mm] and the corresponding lift height H [mm] for the truck with horizontal load.
The white markings on the mast indicate if the specific lifting limits reached.
For instance with a load center of gravity distance c of 600 mm and a maximum lift height H of 5500 mm, the max. capacity Q is 600 kg.

Type	PS16N		
Mast	5500		
h3+h13 (mm)	Q (kg)		
5500	600	350	
5300	700	400	
4600	800	500	
4300	900	600	
3600	1000	700	
3200	1200	900	
2900	1400	1100	
2500	1600	1200	
c (mm)	600	700	

Fig. 8: Residual lift diagram

c. Lifting

DO NOT OVERLOAD THE TRUCK! THE MAXIMUM CAPACITY IS 1200/1600/2000 kg WHEN THE LOAD CENTER IS 600MM.
LIFT ONLY CAPACITIES ACCORDING TO THE RESIDUAL LIFT DIAGRAM.

Travel with the lowered forks fully underneath the pallet and press the lifting button (Fig. 7, 23) until you reached the desired lifting height.

In case the sideways protective arms are opened the lifting above 1800 mm will not be possible which is mandatory safety function in case of truck's tip over or falling objects. In case of tip over an operator needs to step off and away from the truck.

In order to lift forks higher close both protective arms and continue lifting.

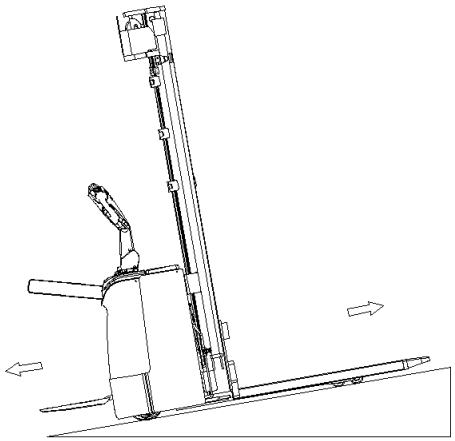


Fig. 9: Load facing uphill

d. Lowering

If the forks are in the racking, firstly travel out of the racking carefully with or without the pallet. By travelling out of the racking, take care that the forks are not touching the racking.
Press the lowering button (Fig. 7, 23) carefully.
Lower the load until the forks are clear of the pallet, then drive the truck carefully out of the load unit.

e. Travelling

TRAVEL ON INCLINES ONLY WITH THE LOAD FACING UPHILL (Fig. 9).
DO NOT TRAVEL ON INCLINES MORE THAN SPECIFIED WITH THE TECHNICAL DATA.
TRAVELLING IS ONLY ALLOWED IF THE FORKS ARE LOWERED DOWN TO THE LIFTING POINT (<300MM).

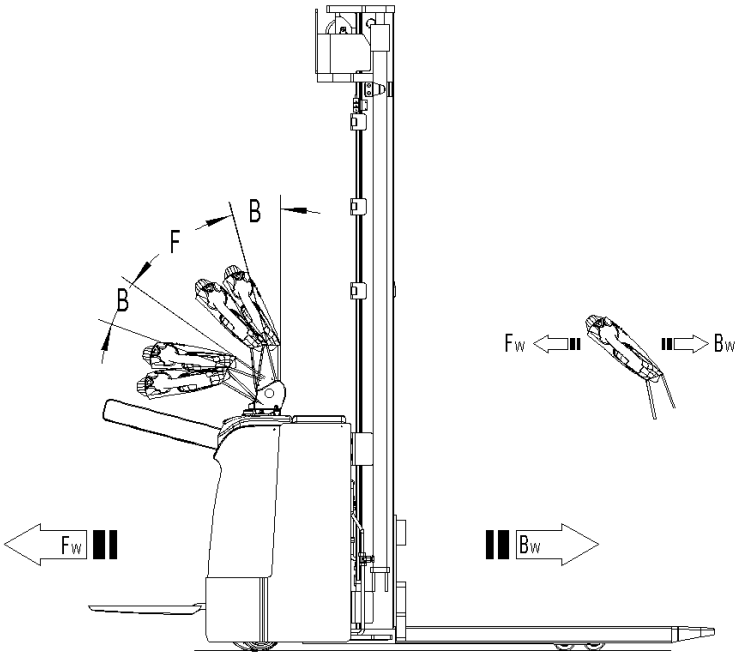


Fig.10: Operating direction

After starting the truck by turning the inserted key to the “ON”- position or by activation from Pin-code

panel carefully move the tiller to the operating zone (‘F’, fig.10).
Turn the accelerator button to the desired direction forward ‘Fw.’ Or backwards ‘Bw.’(fig. 10).
Control the travelling speed by moving the accelerator button (8) carefully until you reached the desired speed.
If you move the accelerator button back to the neutral position, the controller decelerates the truck until the truck stops. If the truck stopped, the parking brake will be engaged.
Drive carefully the truck to the destination. Watch the route conditions and adjust the travelling speed with the accelerator- button.

THE TRUCK IS EQUIPPED WITH A FOLDABLE PLATFORM AND SIDEWAYS PROTECTIVE ARMS. PAY ATTENTION, THE BEHAVIOR FOR THE RIDE-ON MODE IS DIFFERENT TO THE PEDESTRIAN MODE.

Besides the pedestrian mode, following travelling modes can be used:

- Travelling with platform (1) folded downside and sideways arms (4) in protective position
  Travelling with maximum speed.
- Travelling with platform (1) folded downside and sideways arms (4) folded downside
  Depending on the Controllers parameter setting, reduce the speed, not higher than 6km/h.
- Travelling with platform (1) folded upright and sideways arms (4) folded downside
  Depending on the Controllers parameter setting, reduce the speed, not higher than 6km/h.

f. Steering

OPTIONAL THE TRUCK CAN BE EQUIPPED WITH AN ELECTRIC STEERING SYSTEM. TAKE CARE BY OPERATING A TRUCK WITH THIS KIND OF SYSTEM; THE BEHAVIOR OF THE TRUCK MIGHT BE DIFFERENT WITH A TRUCK WITHOUT ELECTRIC STEERING SYSTEM.

Operator is steer the truck by moving the tiller to the left or right side.

g. Braking

THE BRAKING PERFORMANCE DEPENDS ON THE TRACK CONDITONS AND THE LOAD CONDITONS OF THE TRUCK

The braking function can be activated on several ways:

- By moving the accelerator button (8) back to the initial ‘0’ position or by releasing the button, the regenerative braking is activated. The truck brakes until it stops.
- By moving the accelerator button (8) from one driving direction directly to the opposite direction, the truck brakes regenerative until it starts travelling into the opposite direction.
- The truck brakes, if the tiller is moved up or down to the braking zones (‘B’). If the tiller is released, the tiller moves automatically up to the upper baking zone (‘B’).
  The truck brakes until it stops.

- The safety (belly) button (7) prevents the operator from being crushed. If this button is activated, the truck decelerates and/ or starts travelling into the backwards direction (‘Bw.’) for a short distance and stops. Please consider, that this button also operates, if the truck is not travelling and the tiller is in the operating zone.

h. Malfunctions

If there are any malfunctions or the truck is inoperative, please stop using the truck and activate the emergency button (18) by pushing it. If possible, park the truck on a safe area, turn the key switch (16) anti- clockwise and remove the key, in case the truck is equipped with Pin-code panel, press the start-button or press the X button of pin-code panel. Inform immediately the manager and, or call your service. If necessary, tow the truck out of the operating area by using dedicated towing/ lifting equipment.

i. Emergency

In emergencies or in the event of tip over (or off dock), keep safe distance immediately. If possible push the emergency button (18). All electrical functions will be stopped.

7. PIN-CODE PANEL

The truck can be equipped with an optional pin-code panel (5), and a button (26) will replace the key switch (16) if equipped with pin-code panel.

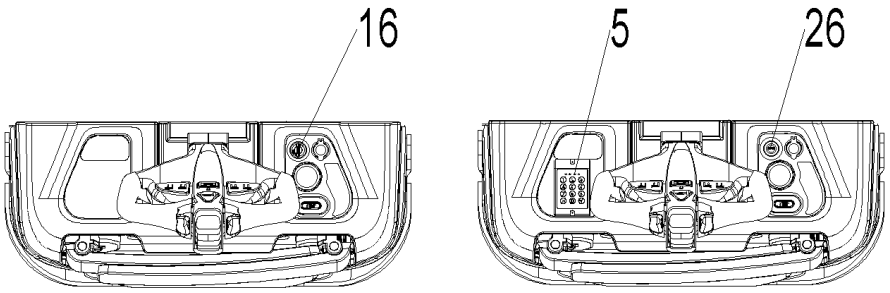


Fig. 11: Pin-code panel

a. Introduction

Pin-code panel is an electronic system for access limitation. The truck will not able to be operated before typing a correct password, the main function is to prevent unauthorized operation.

b. Main parameters

Working voltage：12V-60V
Ambient temperature：-40℃ to +90℃
IP grade：IP65

c. Main functions

This pin-code panel supports Max. one password and five cards.

Please check the administrator password on the separated instruction. Default user password is 1234, you can use it immediately. If you need to change the password, please refer to separated instruction.

d. Operation

1. ID card

Put the ID card close to the code panel, there will be a short buzzer if it is a valid ID card, then the blue light is on, truck can be operated. (If the red light is on, means you made some mistakes during card start or card is not valid. The truck can't be used)

2. Password

- Type the password, press "√" button. If the password is correct the truck can be operated.
- To turn off the truck press "×". The truck will go out from the operation mode.
- To start operation again need to re-enter the password.

e. Pin-code panel indicator

Red	fault code
Yellow	waiting for further instruction
Blue	active
Green	power on

8. BATTERY SAFETY, CHARGING AND REPLACEMENT

a. Battery safety

- Only qualified personnel is allowed to service or charge the batteries. The instructions of this handbook and from the battery manufacturer must be observed.
- Lead-acid batteries and lithium batteries are allowed.
- Be aware about the risk of accumulation of hydrogen under battery cover, keep it opened during charging.
- Recycling of batteries undergoes with national regulations. Please follow these regulations.
- By handling batteries, open fire is prohibited, gases may cause explosion!
- In the area of battery charging neither burning materials nor burning liquids are allowed. Smoking is prohibited and the area must be ventilated.
- Park the truck securely before starting charging or installing/changing the batteries
- Before finishing the maintenance work, make sure, that all cables are connected correctly and not disturbed towards other components of the truck.

LEAD-ACID TRACTION BATTERIES WITH LIQUID ELECTROLYTE AND LITHIUM BATTERIES ARE ALLOWED. THE WEIGHT OF THE BATTERIES HAS AN INFLUENCE TO THE TRUCKS OPERATING BEHAVIOR. PLEASE CONSIDER THE MAXIMUM OPERATING TEMPERATURE OF THE BATTERIES.

Depending on the version, the truck is equipped with different battery types. The following table shows which combinations are intended as standard.

1.Description of the lithium-ion battery

The lithium-ion battery is a battery with rechargeable cells, the battery is designed for industrial trucks and can withstand related vibrations during operation. The battery is equipped with special connections for charging and discharging operations. Do not try to install or connect improper connectors to the battery.

The battery is equipped with BMS – battery management system, which performs the control of battery condition and implements related safety protocols to protect the battery and cells from damages caused by operation or environmental conditions. The BMS controls the following safety functions and conditions: voltage, temperature, undervoltage, overvoltage, overtemperature, overcurrent, short circuit, etc. The internal resistance of lithium battery is generally low, which minimizes heat generation and maximizes the available power of the truck.

Temperature range for using the battery is from +5°C to +40°C. Low temperatures reduce the effective battery capacity, high temperatures reduce the battery’s life time. The temperature difference between the two sides of the battery shall not exceed 5°C.

Only approved battery chargers must be used to charge the lithium battery.

2.Lithium-ion battery Decals

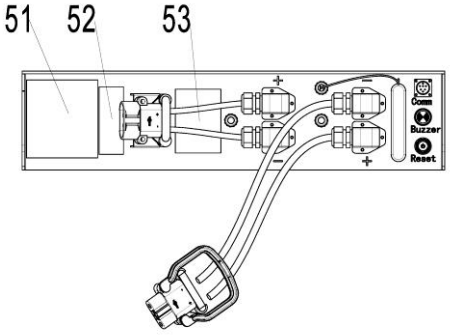


Fig. 12: Battery Decals

Table 3: Battery Decals

Item	Description
51	Identification plate
52	Bar code and two-dimensional code
53	Warning Label

Identification plate and Warning label

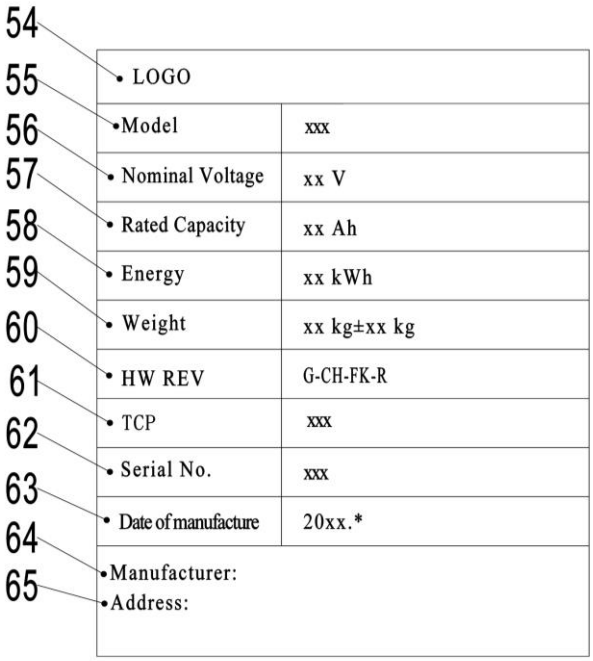


Fig. 13: Identification plate

Table 4: Identification plate

Item	Description
54	Manufacturer trademark
55	Model designation
56	Rated voltage
57	Rated Capacity
58	Energy
59	Battery weight
60	Hardware revision
61	TCP
62	Serial No.
63	Production date
64	Battery manufacturer
65	Manufacturer's address

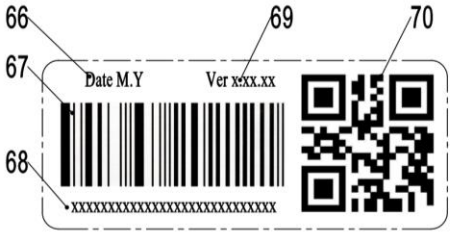


Fig. 14: Bar code and two-dimensional code

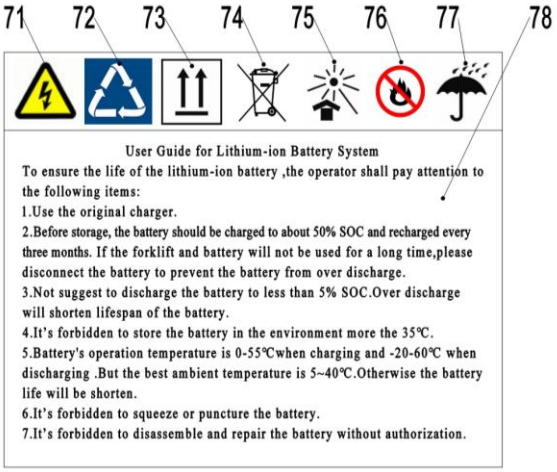


Fig. 15: Warning Label

Table 5: Bar code and two-dimensional code

Item	Description
66	Production date
67	Battery information bar code
68	Bar code interpretation
69	Software version of battery
70	Battery information 2D code

Table 6: Warning Label

Item	Description
71	Electrical hazard marker
72	Rechargeable logo
73	Vertical upward packing, transportation
74	No putting into ordinary garbage bins
75	No long-term exposure to sunshine
76	Stay away from fire
77	Keep out of the rain
78	Guide to use

3.Safety Instructions, Warning Indications and other Notes of Lithium-ion battery

Safety regulations for handling lithium-ion batteries

Do not try to make any repairs or servicing of lithium batteries. Replacement of parts is not assumed.

Risk of electric shock and burning

The battery's charging and discharging connectors have open terminals, avoid any body contacts, contamination or direct contacts with objects which can cause short circuit connection of terminals. Use necessary pre-cautions and protective caps to secure the open terminals. The connectors should be maintained in clean and dry conditions.

Use only batteries designed and approved by the manufacturer for the truck.
Do not try to modify or alter the battery.

Any damage or defects to the charger can result in accidents. Use only charger approved by the manufacturer of the truck, which is suitable for used battery

In case charger has any damages or defects, exclude the charger from operation and contact your service provider. Do not modify or try to repair the charger.

Improper use of charger or use of wrong charger can cause damages to a battery or charger. Follow the required charger specifications; If the operation voltage of the charger is out of the applicable voltage range, the charger or battery may be damaged causing serious safety risks. The charger in use must be approved by the battery (truck) manufacturer.

Reversed connection of charging plug is prohibited. Follow the instruction for correct connection. For disconnection of charging plug use dedicated grip and never pull out the plug by means of cable.

Stop charging immediately if any abnormalities are detected, e.g. severe temperature increase, deformation of battery case, smoke, noise etc.

Intermediate charging

Lithium batteries support so called opportunity charging. The lithium battery, which is not fully discharged can be charged in any time. However, frequent opportunity charging not to the full charging state and stop of charging process before the appearance of corresponding indication of charger may result in dis-balance voltage of cells which increases the battery BMS calculation error. In order to effectively deal with this phenomenon, charge the battery in full allowing the automotive balancing process to be completed at least once a week.

Do not charge a fully charged battery

Note that in order to prevent the battery from continuing restart of charging under fully charged condition causing reduction of battery lifetime, the BMS has a protection function that prohibits recharging of fully charged battery. The charger will not work while battery is fully charged.

Potential hazards

If equipment is used according to its design purpose, following the correct operations procedures, there are no hazards anticipated.

The following hazards can arise in the event of improper use:

- Physical damage to the battery in case a battery falls or is deformed through impacts. Mechanical damages can cause leakages of harmful materials, fire or battery explosion.
- Short circuits may be caused by connecting the two battery terminals, for instance caused by water or intentional/unintentional connections.
- Temperature damages caused by placing of batteries in overheated environment conditions or being exposed to impact of fire, open sunlight etc. can cause leakages of harmful materials, fire or battery explosion.

In order to avoid fire, explosion and/or leakage of harmful materials, a safe place for storing non-functional or damaged batteries until the service arrives on site must satisfy the following criteria:

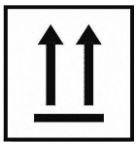
- Do not store in places where personnel is located.
- Do not store in places with valuable objects and close to valuable objects.
- A Class D fire extinguisher must be available on demand.
- There should not be any fire or smoke detectors in the storage area in order to ensure that an automatic fire detection system is only activated in the event of actual danger (e.g. flames).
- No ventilation intake pipes should be in the facility to exclude spreading of discharged content within a building.

Examples of where to store a non-functional battery:

- Roofed outdoor position.
- Ventilated container.
- Covered fire resistant box with pressure and smoke discharge option.

Symbols - Safety and Warnings

Table 7: Symbols - Safety and Warnings

	Caution! Battery short-circuit is prohibited.
	The battery can be recharged cyclically
	Vertical upward packing, transportation and use
	Used lithium-ion batteries must be treated as hazardous waste. Lithium-ion batteries marked with the recycling symbol and the sign showing a crossed-out waste bin must not be disposed of with ordinary household waste.
	Protect the lithium-ion battery from solar radiation or other forms of heat radiation. Do not expose the lithium-ion battery to heat sources.
	Avoid fire and short circuits causing overheating. Do not ignite or locate batteries close to open flame, heat sources or sparks. Keep lithium-ion batteries away from heat sources.
	The battery is not completely waterproof and should be avoided for a long time in the rain. If the battery is wet, wipe the dry connector in time.

Explosion and fire hazard

Physical damage, thermal effects or incorrect storage in the event of a defect can result in explosions or fire. The battery materials can be flammable.

Particular hazard from combustion products

The lithium batteries may be damaged by a fire. When extinguishing a lithium battery fire, the following information must be taken into consideration.

Contact with combustion products can be hazardous

Fire produces combustion products, which can occur in the form of smoke, through leaking fluids, escaping gases, debris as well decomposition products of certain chemicals. These combustion products are substances that enter the body through the respiratory tract and/or the skin can

produce and adverse effects such as choking.

Avoid contact with combustion products.
Use protective equipment.

Special firefighting protective equipment

Use self-contained breathing apparatus.
Wear protective equipment.

Additional firefighting instructions

To prevent secondary fires, the lithium-ion battery must be cooled from the outside. Fluids or solids must never be directed into the lithium battery.
Suitable extinguishing agents

- Carbon dioxide extinguisher (CO2)
- Water (not on mechanically opened or damaged batteries)

Unsuitable extinguishing agents

- Foam
- Grease fire extinguishing agents
- Powder extinguishers
- Metal fire extinguishers (PM 12i extinguishers)
- Metal fire powder PL-9/78 (DIN EN 3SP-44/95)
- Dry sand

Instructions for cooling an overheated, non-physically damaged battery

This type of damage may be caused by a short circuit inside the battery, which may result in leakage of harmful materials, fire or battery explosion.

Material discharge

Battery electrolyte fluid can be hazardous

Electrolyte fluid can be discharged if the battery is physically damaged. Avoid its contact with skin or eyes. If the contact happened:

- Rinse the affected parts with big amount of water and request for medical assistance immediately.
- In case of skin irritation or if any substances are breathed in request the medical assistance immediately.

Precautionary measures for personnel

- Keep personnel away, avoid any contact with smoke or discharged materials.
- Block off the affected area and ensure its reasonable ventilation.
- Wear personal protective equipment. If vapors, dust or aerosols are presented use

self-contained breathing apparatus.

Precautionary measures for the environment

Do not allow spilled fluids to enter the water system, drainage system or the underground water.

Cleaning measures

The leaked fluid must be removed professionally following the related protocols.

Battery lifetime and maintenance

The lithium-ion batteries are maintenance-free.

Deep discharge can damage the battery

Self-discharge without periodical recharge can lead the battery to fully discharged state. Full discharge shortens the service life of the battery and can cause deep discharge and activation of related safety protocols when battery will not be able to be charged anymore.

Before a long period of inactivity, the battery must be charged to 40%~60%.
Control the level of battery charge at least every 12 weeks and re-charge if necessary.
The temperature range for storing of the battery should be within the range of 0°C to 30°C.

If the battery is deeply discharged or if the battery temperature is below the permissible level, the battery will not charge. Deep discharged batteries can never be charged. Due to the risk of condensate formation, batteries that have been stored at 0°C or below must only be charged after natural warming up to at least +5°C, forced heating is forbidden.

Instructions for safe handling of batteries

- Do not modify the battery.
- Do not open, damage, drop, penetrate or deform the battery.
- Do not throw the battery into a fire.
- Protect the battery from overheating.
- Protect the battery from direct sun light.
- Follow storage and charging procedures
- Protect the battery from water damages and other impacts

Failure to comply with these safety instructions can result in fire and explosion or the leakage of harmful materials.

Pre-shift checks before the system is put into operation

Check that the battery is in its normal condition, has no evidence of damages, leakages, abnormal findings, e.g. high temperature, smell, smoke etc. The surface of the battery should be clean and dry, without evidence of water damages, marks of rust on terminals and housing (if applicable). Connecting cables and plugs are in good condition.

Faults

If any damage is found to the battery or battery charger contact the service provider immediately. Do not open the battery or attempt to repair it.

Disposal and transport of a lithium-ion battery

Instructions for disposal

Lithium-ion batteries must be disposed in accordance with the relevant national environmental protection regulations. Batteries must be treated as hazardous waste. Batteries must not be disposed with ordinary waste.

Shipping information

The lithium-ion battery is a hazardous material. The applicable regulations must be fulfilled during transportation.

Shipping functional batteries

Functioning batteries can be shipped in accordance with the related regulations

Shipping faulty batteries

To transport faulty lithium-ion batteries, contact the service provider. Faulty lithium batteries require following of special transporting procedures.

b. Charging the battery

Battery indicator

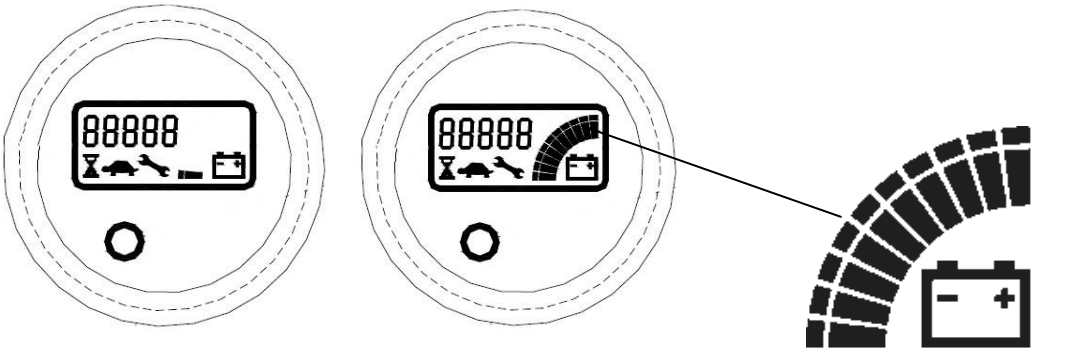


Fig. 16: Battery indicator

The battery's state of charge indication is integrated in the LCD display; it is shown by ten notches. Each notch represent the 10% of the battery charge. As the battery becomes discharged, the notches turn off progressively, one after the other, in proportion to the value of the residual battery charge. When BATTERY LOW alarm appears on the controller, the battery symbol which is under the notches blinks. Special statuses appear in the display unit as error codes.

Table 8: Error codes

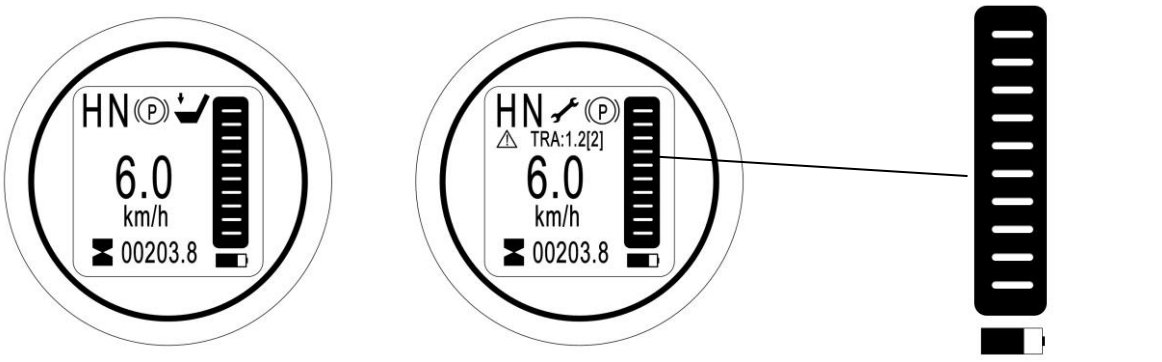
Code	The error code appears if ...	Effect
0	The battery charge is low.	Lift function is deactivated and travel speed is reduced.
90	The lithium-ion battery charge is low.	Lift function is deactivated and travel speed is reduced.

Other main functions

Table 9：Main symbol specification

	**Turtle Symbol:** It is normally off, when it appears (fixed) it shows activation of the “soft” mode of the truck, in which maximum speed and acceleration are reduced.
	**Monkey Wrench Symbol:** It is normally off, when it appears (fixed) it shows the request of programmed maintenance or the alarm state. In this case the relative code will be displayed.
	**Hourglass Symbol:** It is normally off, it blinks when the hour meter is working.

Battery Indicator(EN1175-2020)



Normal working state Fault state Battery State of charge

Fig.17: Battery discharge indicator (EN1175-2020)

The main interface displays content as shown in Fig.17.

Displays the battery symbol and the current battery level (10 squares, each representing 10% of the battery)
The square gradually disappear as the battery discharges. Special statuses appear in the display unit as error codes.

Table 10: Error codes

Code	The error code appears if ...	Effect
9-6	The battery charge is too low.	Lift function is deactivated.

Other main functions

Hour meter
Digital counter after hourglass symbol shows the hours worked.

Operating mode and truck speed
The number in the center of battery indicator shows traveling speed.

Working state
The upper left corner of the battery indicator shows the state of truck and its mode (normal speed and turtle speed, a turtle symbol will appear in turtle speed mode);

Charging the Battery with external Charger or build-in Charger

Maintenance personnel

Batteries may only be charged, serviced or replaced by trained personnel. These operating instructions and the battery manufacturer's instructions must be observed when performing these operations.
Park the truck securely before carrying out any work on the batteries.

General information

- When using an external charger to charge, the charge status of the battery is indicated by LEDs on the charger; When charging with the built-in charger, the battery's charging status is indicated by an LED light on the dashboard.
- The charging time depends on the battery charge status. The time it takes to charge an almost fully depleted battery depends both on the battery capacity and the charge current. The approximate duration can be calculated as follows:
  Charging time = capacity of battery / charge current of battery charger.
- The lithium-ion battery can also be used when not fully charged. In this case, the remaining operating time is reduced.
- Charging continues automatically after a mains failure is restored.

The battery temperature rises by approx. 13°C during charging. Battery charging should only start when the battery temperature is below 40°C. The battery temperature before charging should be at least 5°C.

- Before charging ensure that you are using an appropriate charger for charging the installed battery.
- Optional built-in charger can only be used with 110V or 220V.
- The room, where you are charging, must be ventilated.
- The exactly charge status can be only checked from the dischrge indicator. To control the status, the charging must be interrupted and the truck must be started.

The trucks are equipped with the following batteries:

Table 11: Available batteries

Manufacturer`s type designation	Battery type	Capacity	Weight	Max. dimensions （Length×Width×Height）
PS12N	Lead-acid battery	2PzB-24V160Ah	155kg	660x146x657mm
	Lead-acid battery	2PzB-24V180Ah	165kg	660x146x657mm
	Li-battery	24V100Ah	54kg	624x146x590mm
	Li-battery	24V150Ah	59kg	624x146x590mm
PS16N	Lead-acid battery	3VBS-24V210Ah	185kg	752x172x657mm
	Lead-acid battery	3VBS-24V240Ah	210kg	752x172x657mm
	Lead-acid battery	3VBS-24V270Ah	230kg	752x172x657mm
	Li-battery	24V150Ah	72kg	752x172x657mm
	Li-battery	24V200Ah	81kg	752x172x657mm
PS20N	Lead-acid battery	3PZS-24V270Ah	230kg	624x284x627mm
	Lead-acid battery	3PZS-24V350Ah	288kg	624x284x627mm
	Li-battery	24V200Ah	90kg	624x284x627mm

Charging the battery

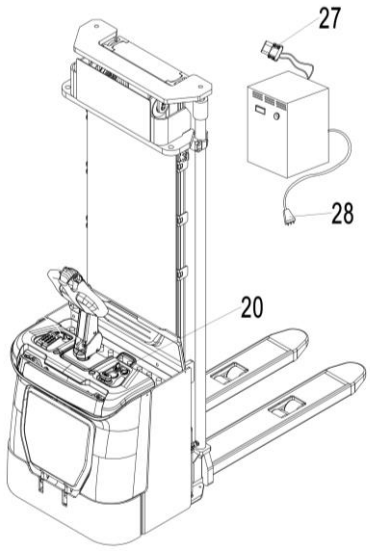


Fig. 18: Lead-acid battery charging

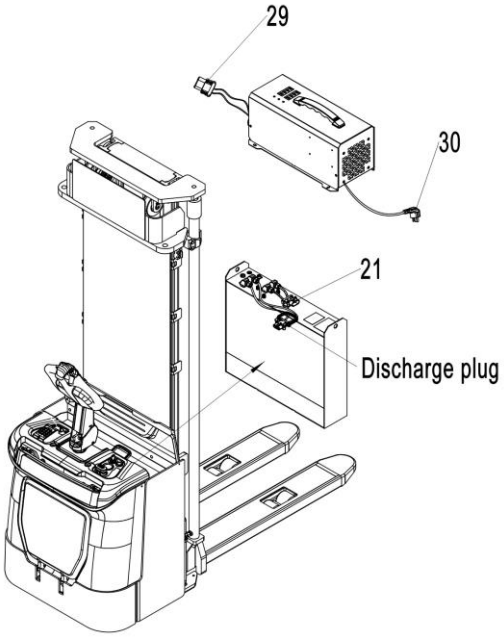


Fig.19: Li-battery charging

Requirements

- The truck is parked securely.
- ➢ Lower the forks and remove the load, park the truck at a dedicated secured area with a dedicated power supply.
- The battery charger is approved for the battery type in use.

Tools and Material Required

- Battery charger

Procedure

External Lead-acid battery charger

- Switch the truck off. Open the battery cover and let it stay upright.
- Pull out the battery plug(20) and connect it (20) to the charging plug of the charger(27).
- Then connect the main plug (28) of the battery charger to the power supply.
- The battery start being charged
- Once the battery is charged, disconnect the battery charger from the power supply before unplugging it from the battery.
- Connect the battery plug with the plug at the truck. Close the battery cover.

External Li-battery charger

- Switch the truck off. Open the battery cover and let it stay upright.
- Connect the the battery plug(21) and the charging plug of the charger(29) .
- Then connect the main plug (28) of the battery charger to the power supply.
- The battery start being charged
- Once the battery is charged, disconnect the battery charger from the power supply.
- Close the battery cover.

Build-in charger (not comply with EN1175-2020)

- Switch the truck off.
- Pull out charging plug (31) and connect it to the power supply.
  - ➢ The battery start being charged when the red LED lights up.
  - ➢ The charging process is completed when the green LED lights up.
- When charging is finished, disconnect the charging plug (31) from the power supply and place it in the designated pocket.

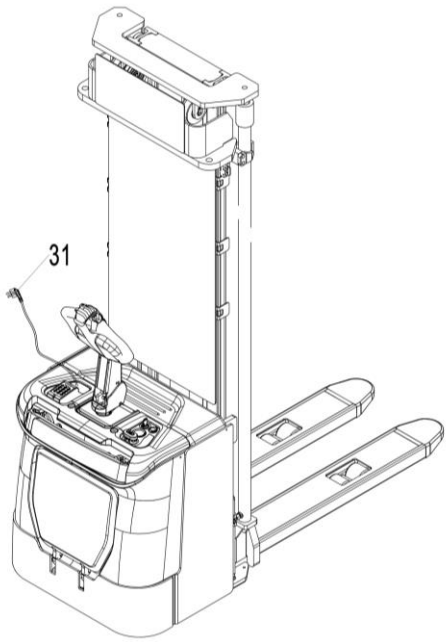


Fig.20: Charging by built in charger

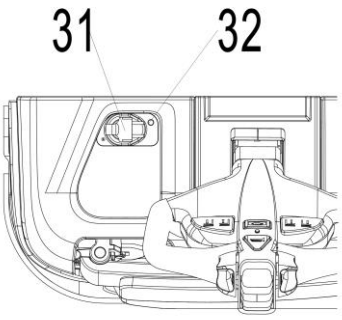


Fig. 21: LED status

Status of the LEDs

Table 12: LED-Status

LED- signal	Function
Red	Battery discharged
Orange	Charging
Green	Fully charged

The trucks are equipped with the following chargers:

Table 13: Available external charger

Manufacturer`s type designation	Battery type	Battery Specification	Charger specification
PS12N	Lead-acid battery charger	2PzB-24V160Ah	24V/25A
	Lead-acid battery charger	2PzB-24V180Ah	24V/25A
	Li-battery charger	24V100Ah	24V/60A
	Li-battery charger	24V150Ah	24V/60A
PS16N	Lead-acid battery charger	3VBS-24V210Ah	24V/30A
	Lead-acid battery charger	3VBS-24V240Ah	24V/30A
	Lead-acid battery charger	3VBS-24V270Ah	24V/35A
	Li-battery charger	24V150Ah	24V/60A
	Li-battery charger	24V200Ah	24V/80A
PS20N	Lead-acid battery charger	3PZS-24V270Ah	24V/35A
	Lead-acid battery charger	3PZS-24V350Ah	24V/45A
	Li-battery charger	24V200Ah	24V/80A

Table 14: Available build-in charger

Manufacturer`s type designation	Battery type	Battery Specification	Charger specification
PS12N	Lead-acid battery charger	2PzB-24V160Ah	24V/25A
		2PzB-24V180Ah	24V/25A
PS16N		3VBS-24V210Ah	24V/30A
		3VBS-24V240Ah	24V/30A
		3VBS-24V270Ah	24V/35A
PS20N		3PZS-24V270Ah	24V/35A
		3PZS-24V350Ah	24V/45A

c. Battery replacement

PS 12/16/20N without sideways battery

Removing the battery

Requirements

- The truck is parked securely.
- Switch off the stacker. (by the key or start-button))
- The emergency disconnect switch(fig1.18) is actuated.

Procedure

- Open the battery cover and pull out its hinge. Then, remove the battery cover.
- Pull out the battery plug (20).
- Take the battery out with a crane.

The installation is in the reverse order.

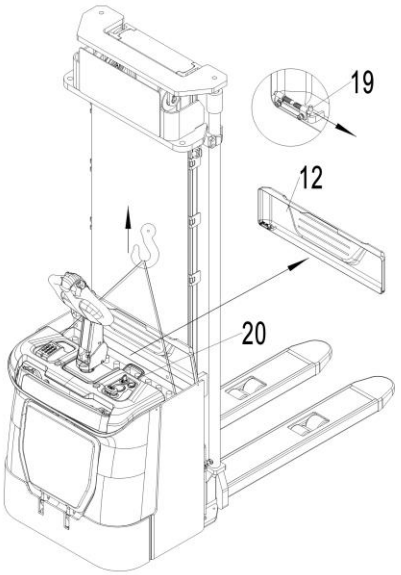


Fig. 22: Battery replacement without sideways battery

PS 16/20N with sideways battery (option)

Removing the battery

Requirements

- The truck is parked securely.
- Switch off the stacker. (by the key or start-button))
- The emergency disconnect switch(fig1.18)
- is actuated.

Procedure

- Open the battery cover and let it stay upright.
- Disconnect battery plug (20)
- Pull out the lock pin (24), turn up the battery locker (25)
- Pull out the battery from side.

The installation is in the reverse order.

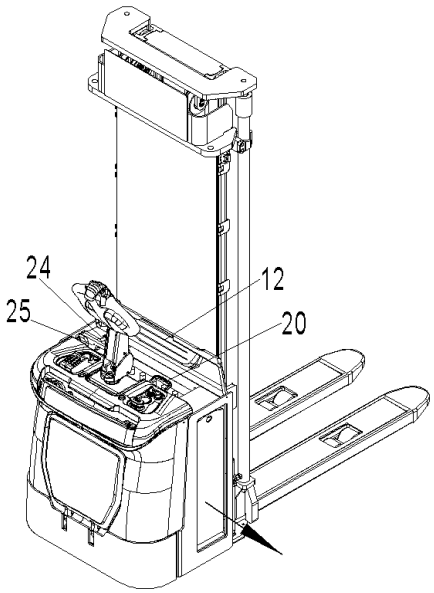


Fig. 23: Battery replacement with sideways battery

9. AQUAMATIC SYSTEM (OPTION)

The truck can be equipped optional with aquamatic watering system.

a. Water After Charge

Electrolyte levels drop during discharge and rise during charge. In addition, charging generates heat, fluid expansion and explosive gases. Watering a battery before charge (or with a low charge level) can lead to boil over resulting in potential damage of the watering system, battery and vehicle.

Water, when needed, must be added to a fully charged battery. Prior to charging, there must be sufficient water to cover the plates. If the battery has been discharged (partially or fully), the water level should still be above the plates.

b. Watering Intervals

Watering intervals are dependent on the local climate, charging methods, application, and age of batteries. It is recommended for new batteries to be checked once a month and older batteries be checked weekly until you get a feel for your water consumption rate.

Typically for a heavy use application, watering a maximum of once per week is recommended, and for light use applications once per month. Do not water a battery that has been sitting for an extended period of time with no activity (non-use or not on charge) such as a battery that has sat idle over the weekend. It is best to water a warm battery that has just been fully charged.

Water quality is important to maintain the life of your battery and watering system. Always use water that meets the quality requirements of your battery's manufacturer.

c. Operation

1. Remove dust cover

Fig. 24: Remove dust cover

Fig. 25: Mate couplers

2. Mate couplers

Insert the male coupler on the single point watering system into the female coupler on the end of the water supply.

3. Observe flow indicator

As the cells fill, the red balls inside the flow indicator will spin. As the valves close, the balls will begin to spin slower until they come to a stop. This indicates that all valves have closed and filling is complete.

Fig. 26: Observe flow indicator

Fig. 27: Disconnect couplers

4. Disconnect couplers

When the balls stop spinning, and not before, immediately disconnect the couplers by depressing the push button on the female coupler

If the water supply is left connected after the filling process is finished, it could lead to an overfill.
Disconnecting before the balls come to a complete stop will lead to under filled cells.

5. Replace dust cover

Place dust cover back over the male coupler and place feed tube on top of battery.

Fig. 28: Replace dust cover

10. REGULAR MAINTENANCE

- Only qualified and trained personnel is allowed to do maintenance on this truck.
- Before maintaining, remove the load and lower the forks to the lowest position.
- If you need to lift the truck, follow chapter 4 b by using designated lashing or jacking equipment. Before working, put safety devices (for instance designated lift jacks, wedges or wooden blocks) under the truck to protect against accidental lowering, movement or slipping.
- Please pay attention by maintain the tiller arm, platform or protective arms. The gas pressure springs are pre-loaded by compression. Carelessness can cause injury.
- Use approved and from your dealer released original spare parts.
- Please consider that oil leakage of hydraulic fluid can cause failures and accidents.
- It is allowed to adjust the pressure valve only from trained service technicians.

If you need to change the wheels call your service partner as the procedure requires use of special lifting equipment and needs to be performed by trained personnel. The castors must be round and they should have no abnormal abrasion.
Check the items emphasized maintenance checklist.

a. Maintenance checklist

Table 15: Maintenance checklist		Interval (Month)			
		1	3	6	12
	Hydraulic				
1	Check the hydraulic cylinder, piston for damage noise and leakage		•		
2	Check the hydraulic joints and hose for damage and leakage		•		
3	Inspect the hydraulic oil level, refill if necessary		•		
4	Refill the hydraulic oil (12 month or 1500 working hours)				•
5	Check and adjust the function of the pressure valve (1200/1600/2000 kg +0/ +10%)				•
	Mechanical system				
6	Inspect the forks for deformation and cracks		•		
7	Check the chassis for deformation and cracks		•		
8	Check if all screws are fixed		•		
9	Check mast and chain for corrosion, deformation or damages, replace if necessary	•			
10	Check the gearbox for noise and leakage		•		
11	Check the wheels for deformation and damages, replace if necessary		•		
12	Lubricate the steering bearing				•
13	Inspect and lubricate the pivot points		•		
14	Lubricate the grease nipples	•			
15	Replace the guarding and/or protective screen if it is damaged	•			
	Electric system				
16	Inspect the electric wiring for damage		•		
17	Check the electric connections and terminals		•		

18	Test the Emergency switch function		•		
19	Check the electric drive motor for noise and damages		•		
20	Test the display		•		
21	Check if correct fuses are used, if necessary replace.		•		
22	Test the audio warning signal		•		
23	Check the contactors		•		
24	Check the frame leakage (insulation test)		•		
25	Check function and wear of the accelerator		•		
26	Check the electrical system of the drive motor		•		
	Braking system				
27	Check brake performance, if necessary replace the brake disc or adjust the air gap		•		
	Battery				
28	Check the battery voltage		•		
29	Clean and grease the terminals and check for corrosion and damage		•		
30	Check the battery housing for damages		•		
	Charger				
31	Check the main power cable for damages			•	
32	Check the start-up protection during charging			•	
	Function				
33	Test the audio warning signal	•			
34	Check the air gap of the electromagnetic brake	•			
35	Test the emergency braking	•			
36	Test the reverse and regenerative braking	•			
37	Test the safety (belly) button function	•			
38	Check the steering function	•			
39	Check the lifting and lowering function	•			
40	Check the tiller arm switch function	•			
41	Test the key switch of damages and function	•			
42	Test the speed limitation switch (lifting height >~300mm)	•			
	General				
43	Check if all decals are legible and complete	•			
44	Check if the protective screen and or guarding is not damaged	•			
45	Inspect the castor, adjust the height or replace it, if worn out		•		
46	Carry out a test run	•			

b. Lubricating points

Lubricate the marked points according to the maintenance checklist. The required grease specification is: DIN 51825, standard grease.

1 Load roller bearing
2 Mast
3 Chain
4 Hydraulic system
5 Steering bearing
6 Platform rotating part

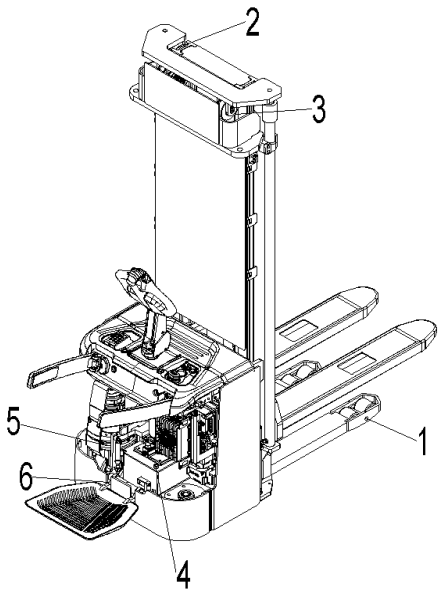


Fig. 29: Lubricating points

c. Check and refill hydraulic oil

It is recommended to use hydraulic oil in connection with average temperature:

Environment temperature	–5℃~25℃	>25℃
Type	HVLP 32，DIN 51524	HLP 46，DIN 51524
Viscosity	28.8-35.2	41.4 - 47
Amount	9.4L (depends on specific model)	

Waste material like oil, used batteries or other must be probably disposed and recycled according to the national regulations and if necessary brought to a recycling company.
The oil level height shall be in the not lifted position min. 9.3L to 9.5L.
If necessary add oil at the filling point.

d. Checking electrical fuses

Remove the main cover. The fuses are located according to Fig. 30; the size is according to table 16.

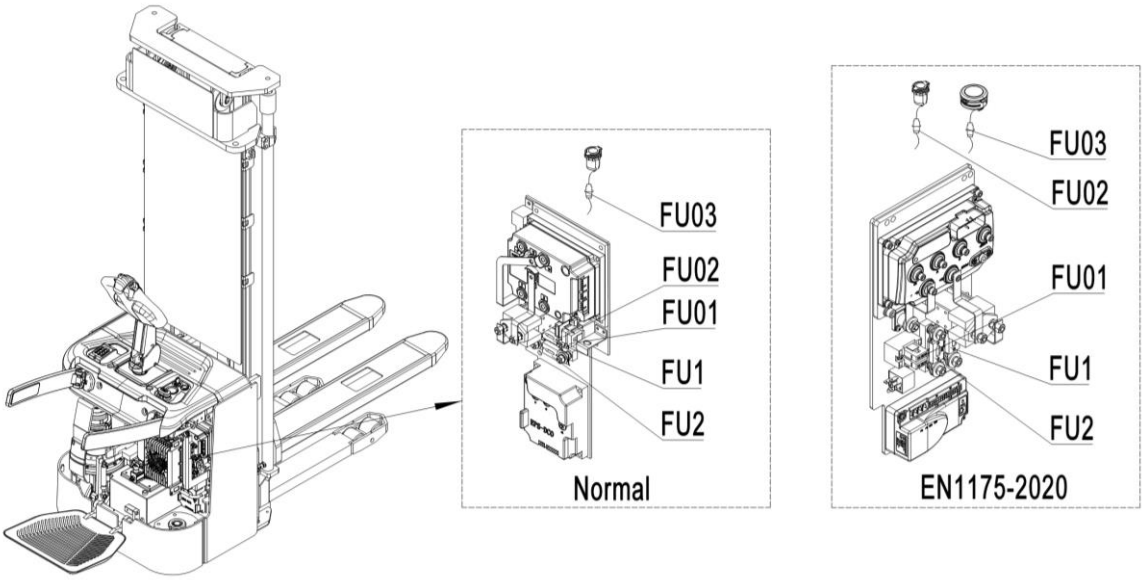


Fig. 30: Location of fuses

Table 16: Size of the fuses

	Resistance (Normal)	Resistance (EN1175-2020)	Nate
FU1	350A	350A	
FU2	30A	30A	Only for EPS
FU01	10A	10A	
FU02	10A	1.5A	
FU03	1.5A	0.5A	

e. Removing, reattaching guarding

DO NOT USE THIS TRUCK, IF THE GUARDING IS DAMAGED OR NOT CORRECTLY ASSEMBLED!

If the guarding needs to be removed - de-attach holding clamps carefully. For reattaching place the screen to its correct position and place holding clamps back to their original position. If you need to replace parts, please call your service partner. Please make sure that the screen is fixed correctly and that the fixing elements are not damaged.

11. TROUBLE SHOOTING

- If the truck has malfunctions follow the instructions, mentioned in chapter 6.

Table 17: Trouble shooting

TROUBLE	CAUSE	REPAIR
Load can't be lifted	Load weight too high	Lift only the max. capacity, mentioned on the ID-plate
	Battery discharged	Charge the battery
	Lifting fuse faulty	Check and eventually replace the lifting fuse
	Hydraulic oil level too low	Check and eventually refill hydraulic oil
	Oil leakage	Repair the hoses and/or the sealing of the cylinder
	Lifting stops at ~1800mm	Move the protective arms into the downside position
	Lifting stops at ~1800mm	Check the sensor for the protective arm
	Height sensor for 1800mm height defect	Check the height sensor on the mast
Oil leakage from air breathing	Excessive quantity of oil.	Reduce oil quantity.
Stacker not starts operating	Battery is charging	Charge the battery completely and then remove the main power plug form the electrical socket.
	Battery not connected	Connect the battery correctly
	The fuse is faulty	Check and eventually replace fuses
	Battery discharged	Charge the battery
	Combined emergency switch is activated	De-activate the combined emergency switch by insert and pull the knob.
	Tiller in the operating zone	Move the tiller firstly to the braking zone.
	Protective arms in the upright position, platform folded upright	Move the protective arms into the downside position
	Foldable platform or protective arms in one of the allowed positions	Check the proximate sensors for the arms and platform
	Foldable platform or protective arms not in one of the allowed positions	Check the correct function of the arms and/or platform
Only travelling in one direction	The accelerator and the connections are damaged.	Check the accelerator and the connections.
The stacker only travels very slowly	The battery is discharged.	Check the battery status at the discharge indicator
	The electromagnetic brake is	Check the electromagnetic

	engaged.	brake
	The relating tiller cables are disconnected or damaged	Check the tiller cables and connections.
	Defective height sensor for reduced speed at ~300mm height	Check the sensor
	Electric system overheated	Stop using and cool down the truck
	Defective heat sensor	Check and if necessary replace the heat sensor
The stacker starts up suddenly	The controller is damaged.	Replace the controller.
	The accelerator not moves back to its neutral position.	Repair or replace the accelerator.

If the truck has malfunctions and can't be operated out of the working zone, jack the truck up and go with a load handler under the truck and safe the truck securely. Then move the truck out of the aisle.

12. WIRING/ CIRCUIT DIAGRAM

a. Electrical circuit diagram

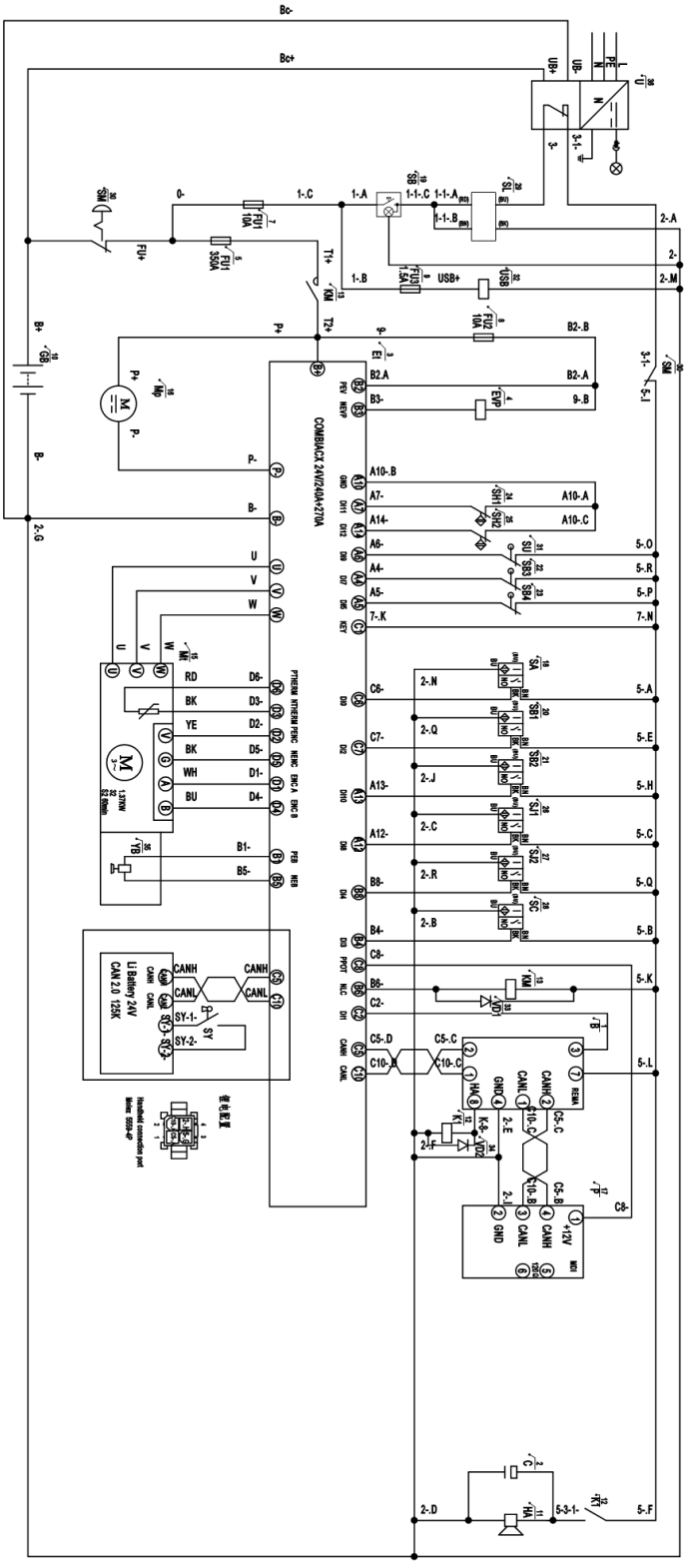


Fig. 31: Electric diagram manual steering

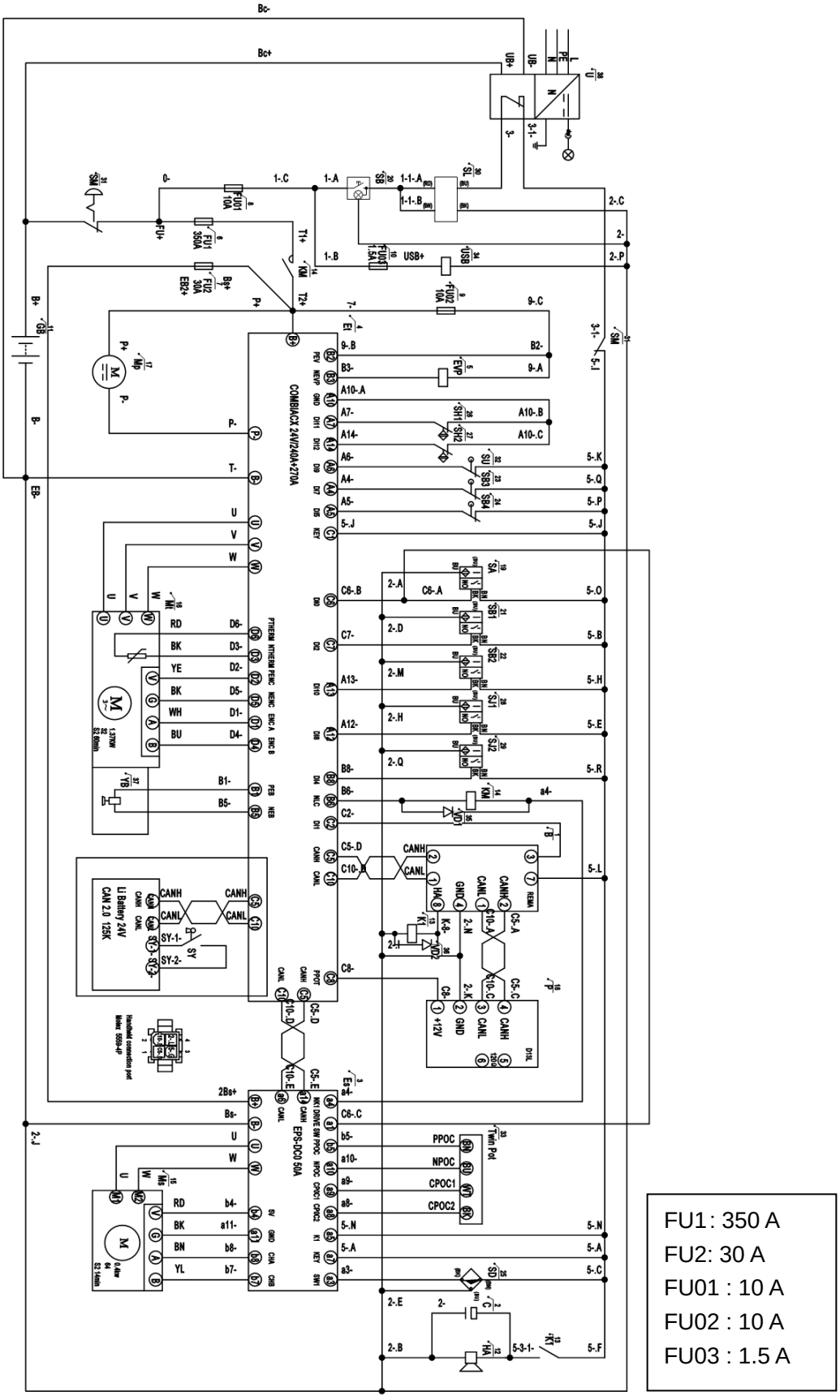


Fig. 32: Electric diagram EPS

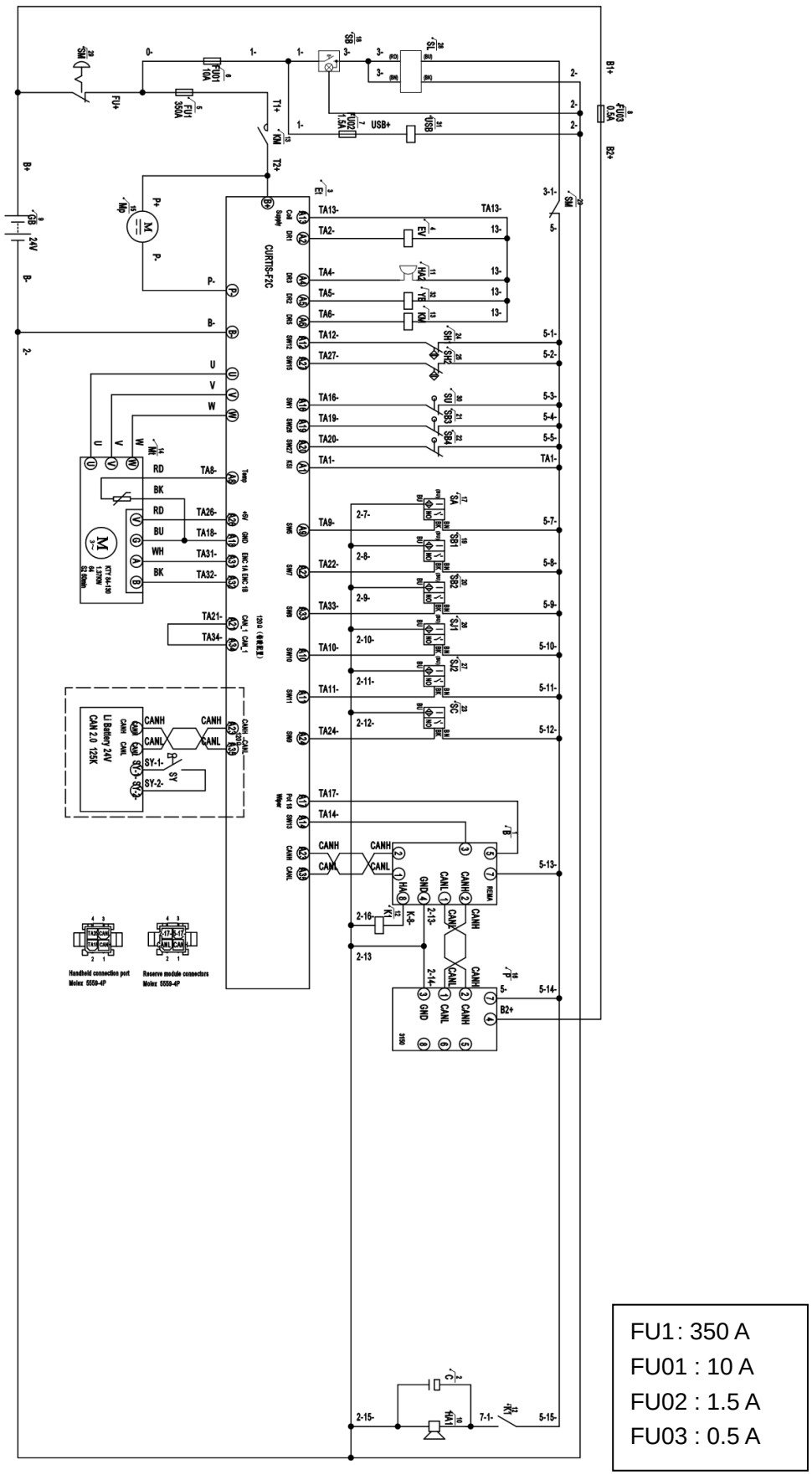


Fig. 33: Electric diagram manual steering(EN1175-2020)

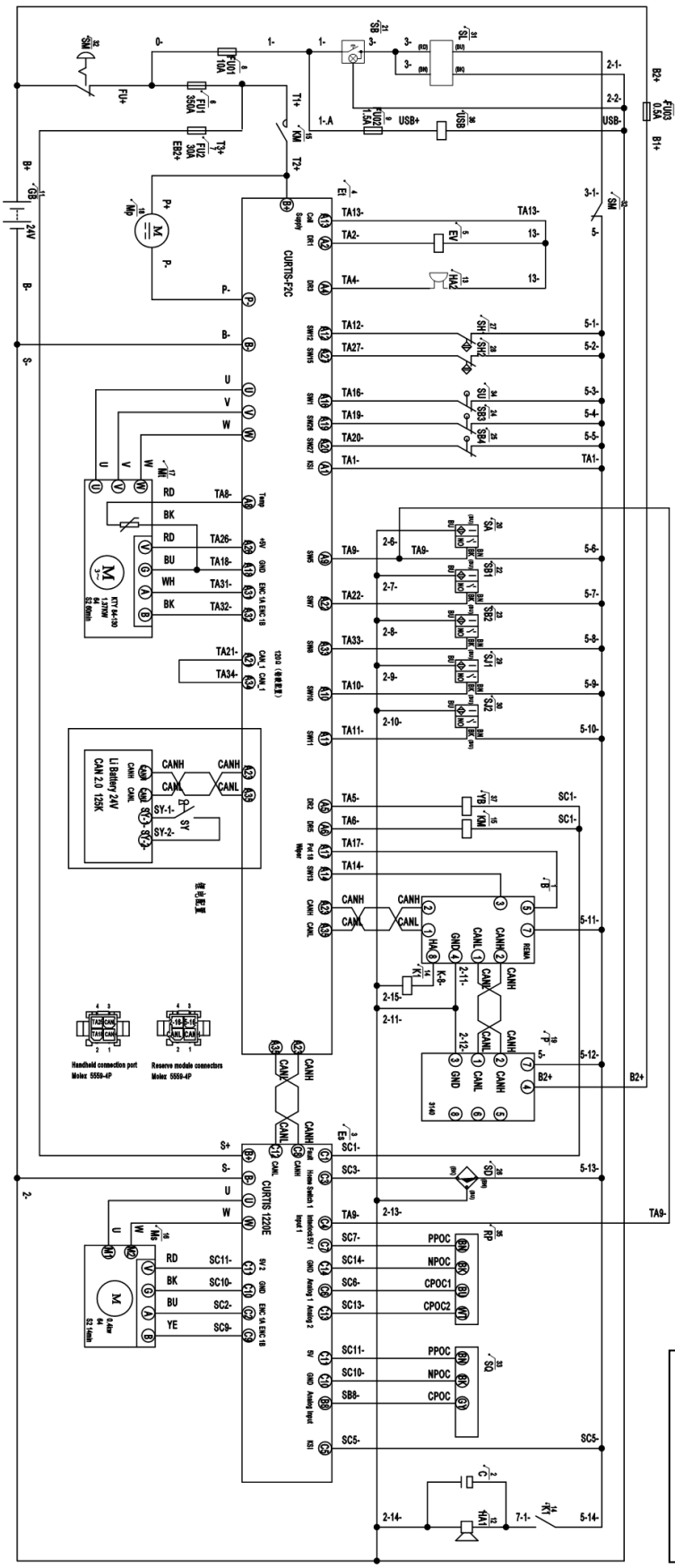


Fig. 34: Electric diagram EPS(EN1175-2020)

b. Hydraulic circuit

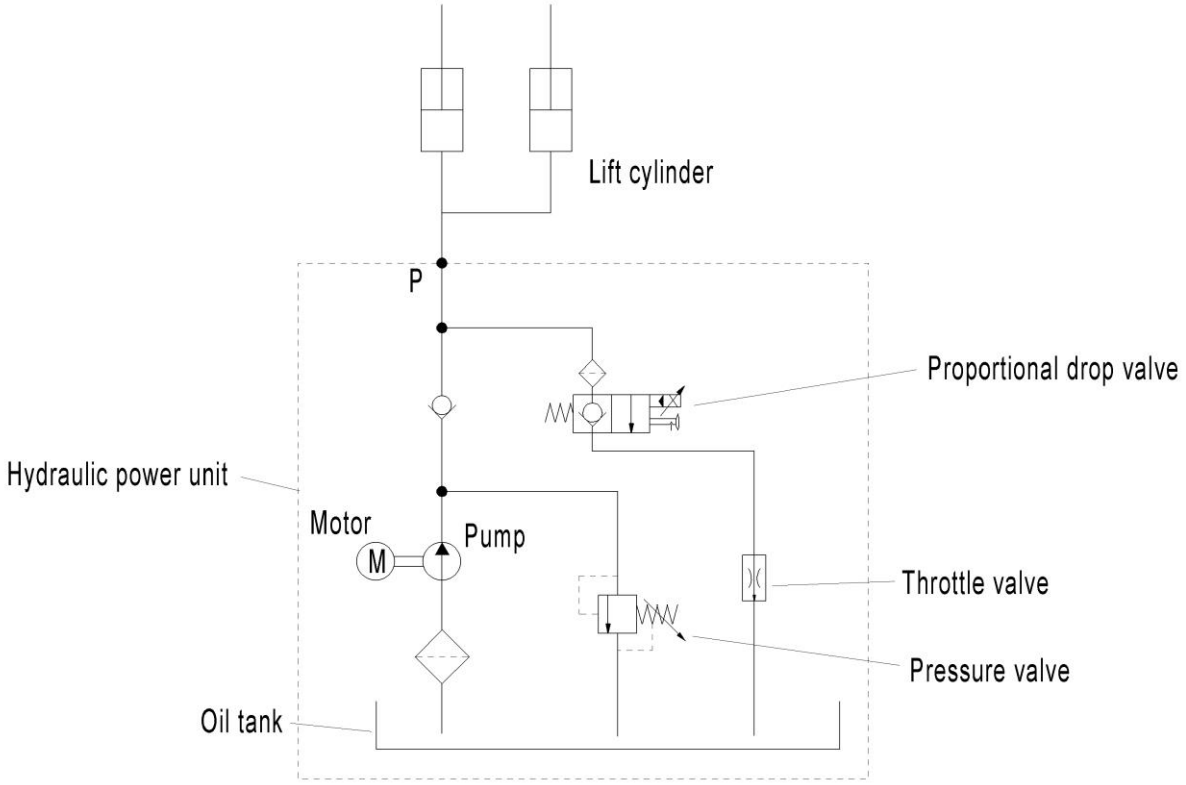


Fig. 35: Hydraulic circuit (HPI 1.5KW)

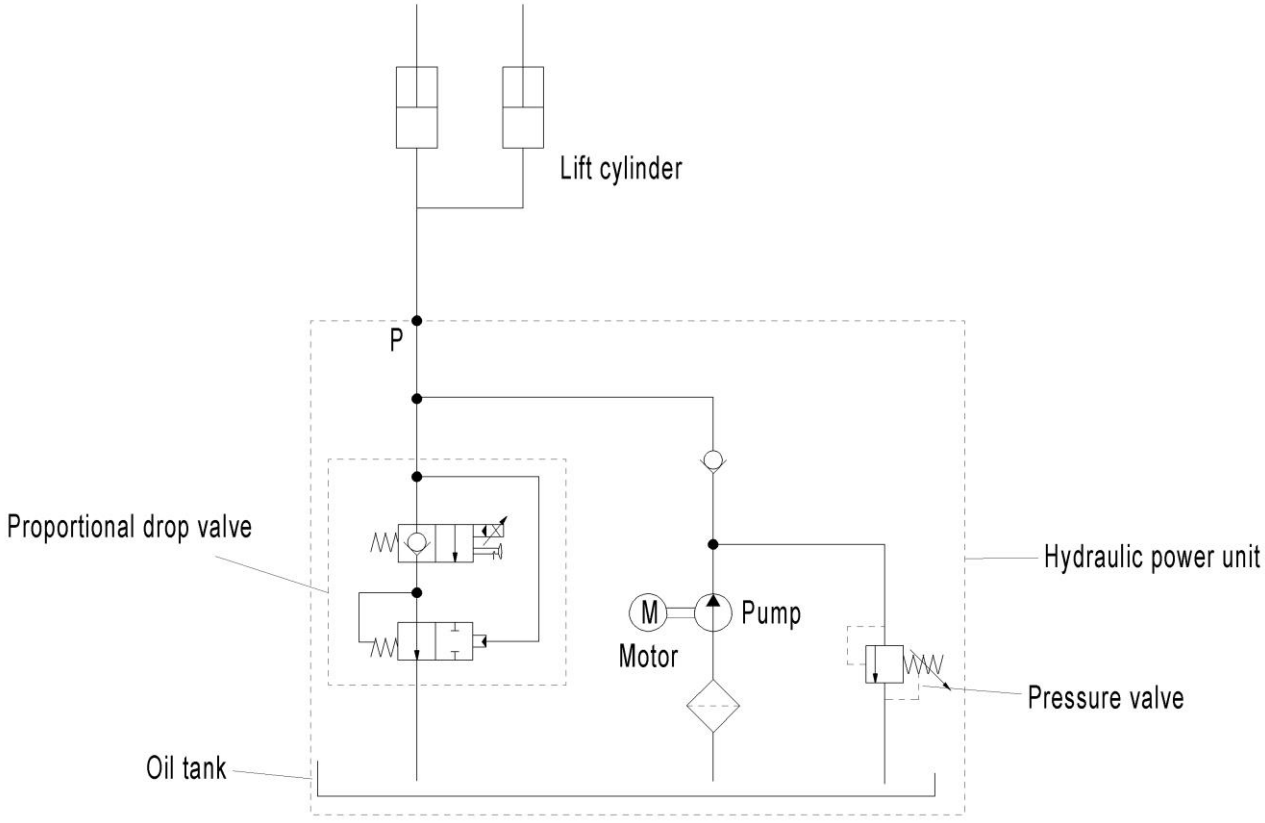


Fig. 36: Hydraulic circuit (HPI 3.2KW)

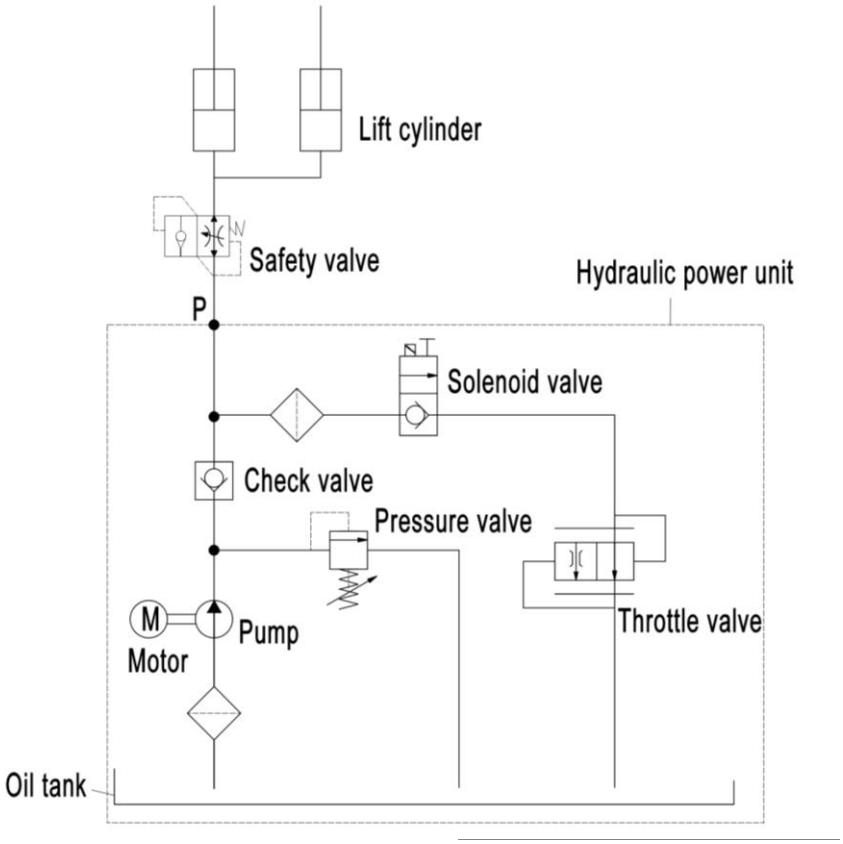


Fig. 37: Hydraulic circuit (VIBO 3.0KW)

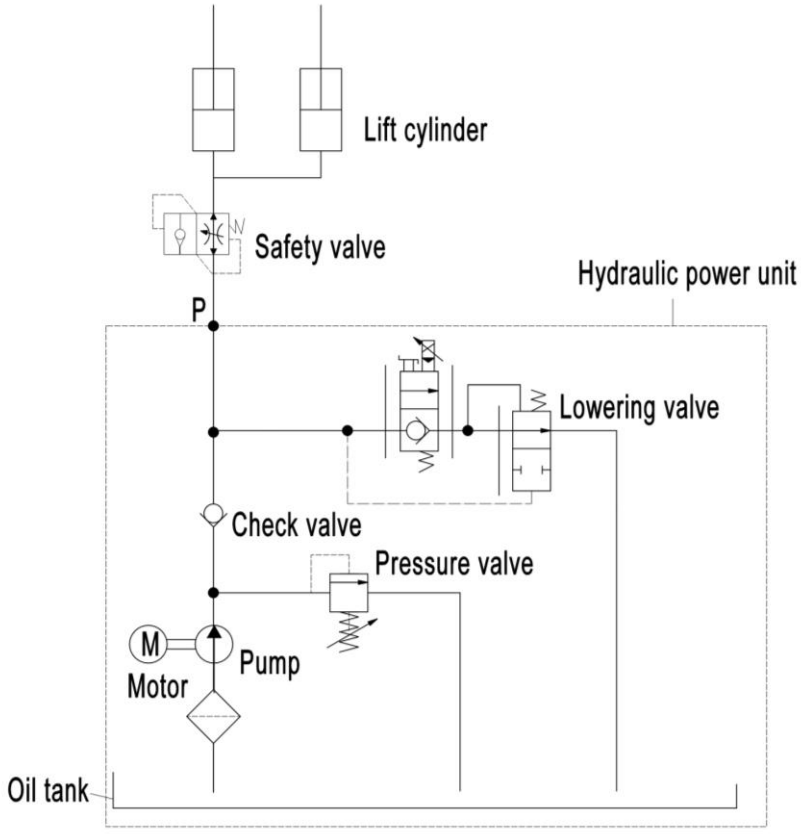


Fig. 38: Hydraulic circuit (VIBO 3.2KW)

13. SPECIALIZED STIPULATIONS FOR THE US- AMERICAN MARKET

The content in this chapter is specialized for the US-American market.

a. Foreword/ Compliance

Operating this truck requires knowledge which can be acquired from this instruction handbook. This handbook must be kept available throughout the entire period of use of the industrial truck.

IT IS LAW; YOU MUST BE TRAINED AND CERTIFIED TO OPERATE THIS TRUCK! READ AND OBEY ALL WARNINGS AND INSTRUCTIONS IN THIS MANUAL AND ON THE TRUCK!

Only properly trained operators are allowed to operate a powered industrial truck. Your employer must train you and certify, that you are qualified to operate this truck (required by OSHA § 1910.178). The training must satisfy OSHA requirements and as minimum the topics mentioned in this handbook. Depending on the context in this operating manual, the user can refer to several people, including the owner of the truck, anyone who leases or borrows this truck, and the operator as defined in ASME B56.1. Please pay attention to the section in ASME B56.1 concerning the operator. In this standard, it is defined that the safe operation is the responsibility of the operator (ASME B56.1-2003, Part II, section 5.1.1). You and others can be seriously injured or even killed if you don't use this truck correctly. Before operating your truck, inspect your truck and ensure that it is in correct working order. This truck was designed and built to current industry and government standards. For more information see following:

- ASME B56.1 (American Society of Mechanical Engineers)
- OSHA §1910.178 (Occupational Safety and Health Act)
- UL 583 (Underwriters Laboratory)
- ANSI Z535.4 (American National Standards Institute)

⚠ DANGER This sign indicates hazard situations, if not avoided, will result in serious injury or death. The instructions or precautions to this message must be observed to avoid the potential risk of injury or death.

⚠WARNING If not followed, warning indicates hazard situations which may lead to moderate injury. The instructions or precautions to this message must be observed to avoid the potential risk of injury or death.

⚠ CAUTION If not followed, caution indicated situations which may lead to minor injury. Instructions or precautions must be observed to avoid minor injury.

b. Identification plate

(01) Truck Model
(02) Serial Number
(03) Year Of Manufacture
(04) Truck Weight without Battery
(05) Battery Weight Min
(06) Battery Weight Max
(07) Rated Capacity
(08) Distance Between Fork And Ground
(09) Load Center Distance
(10) Capacity, Max.Height
(11) Distance Between Fork And Ground Max
(12) Load Center Distance
(13) Lifting Height Max
(14) Battery voltage
(15) Battery Capacity
(16) Battery Amp Hour Rate
(17) Attachment
(18) Fork Dimensions(LxW)
(19) B56.1 Standard Statement
(20) Truck Manufacturer Information

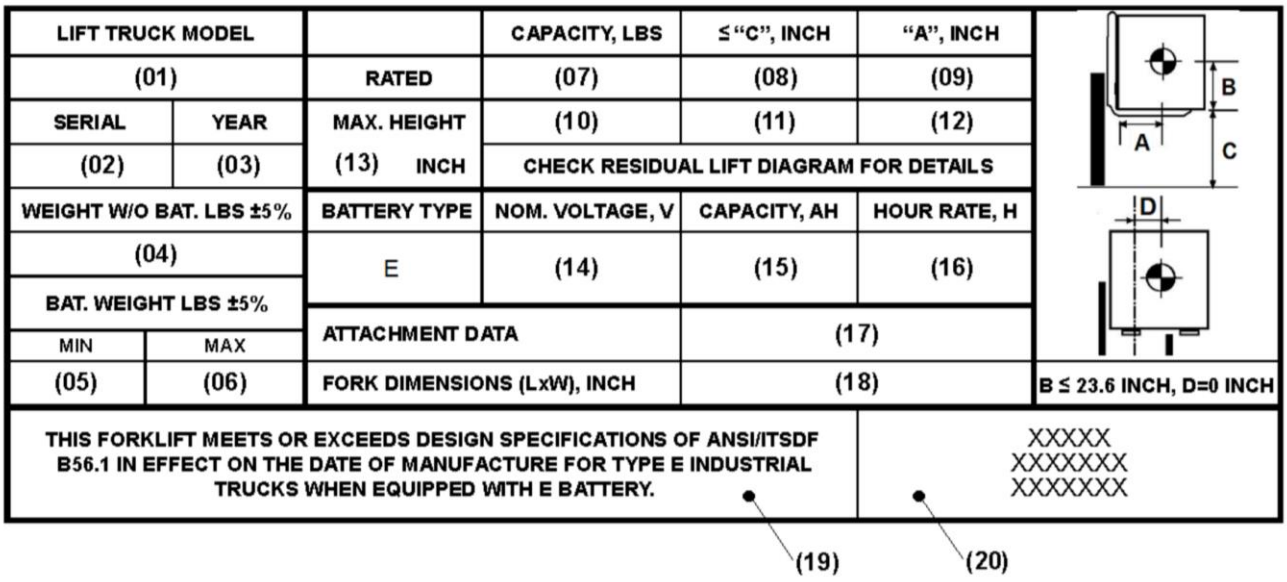


Fig. 40: Identification plate (US)

As an example, the actual identification plate shall prevail.

c. Description warning labels (only US- market)

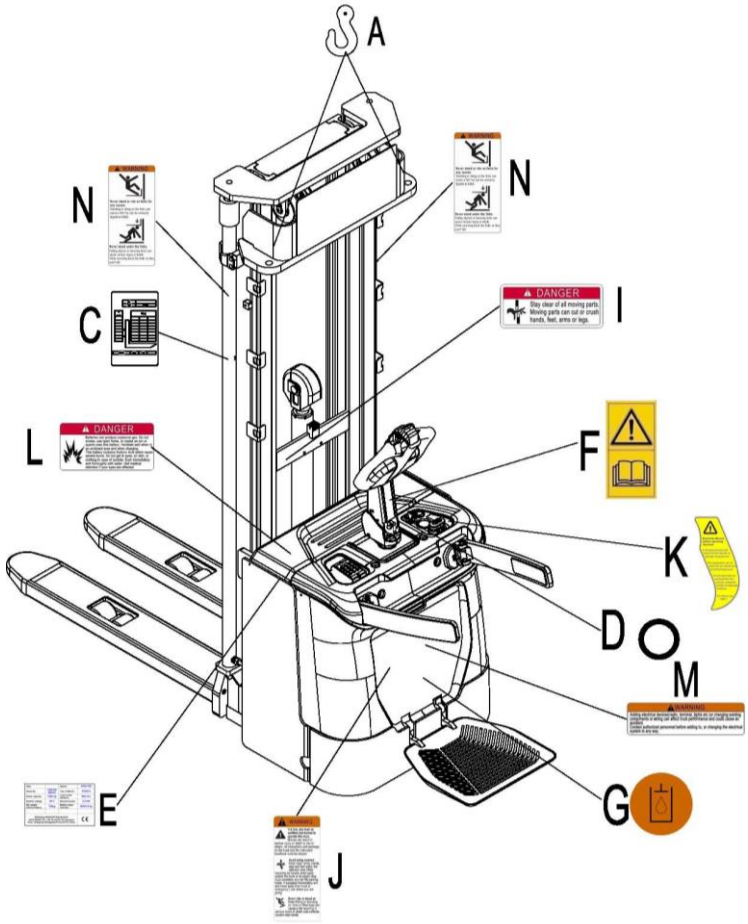


Fig. 38: Warning labels and safety devices (only USA)

A Crane hook label
C Residual lift capacity sticker
D Indicating sticker
E Identification plate (ID-plate)
F Sticker to read and follow these instructions
I Sign danger being crushed
K Warning sticker
G Sign oil filling point
J Sign warning stay clear stop truck
L Sign danger battery
M Sign warning electrical devices
N Sign not under, on forks

The truck is equipped with an emergency button (18) which stops all lifting-, lowering-, driving- functions and engages the failsafe electromagnetic brake when it is pushed. The function is described in chapter 2c. Follow the instructions given on the decals. Replace the decals if they are damaged or missing.

Sign read and follow this instruction (F)

Sign warning electrical devices (M)

Sign danger being crushed (I)

Sign danger battery (L)

Sign not under, on forks (N)

Sign oil filling point (G)

Sign warning stay clear stop truck (J)

d. Technical data for US market

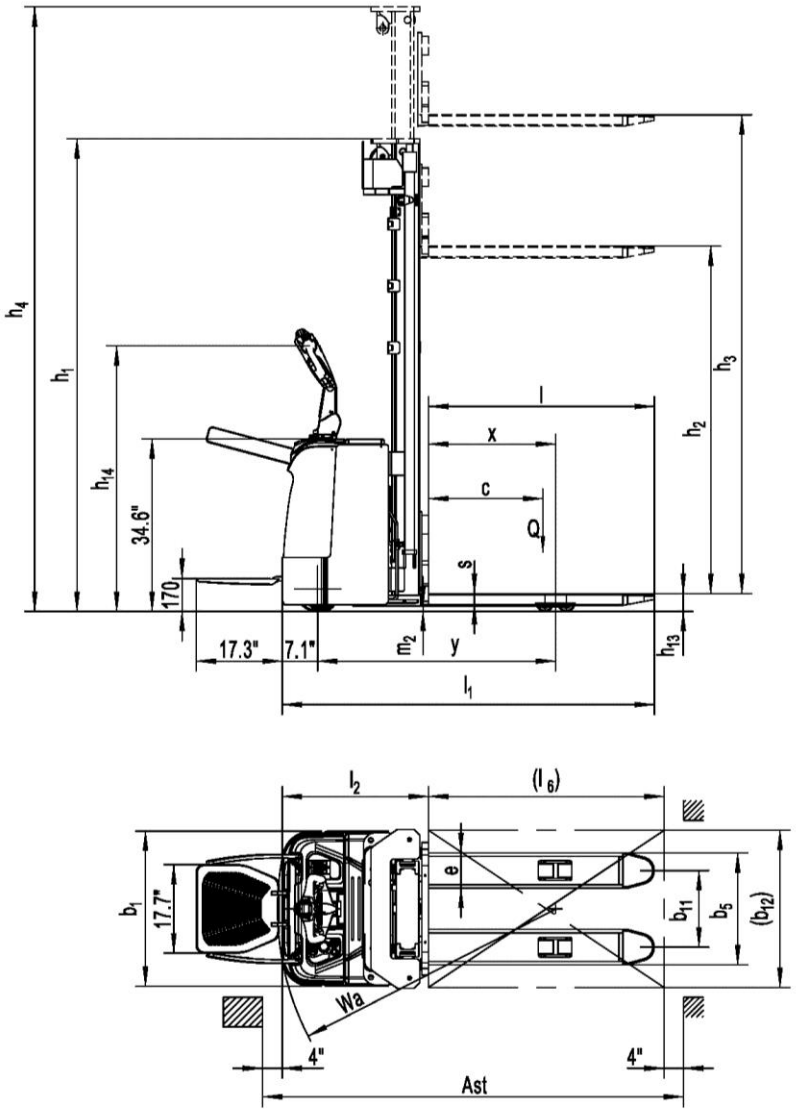


Fig. 40: Technical data (US)

Table 18: Main technical data for standard version (US market)

	Type sheet for industrial truck acc. to VDI 2198					
Distinguishing mark	1.2	Manufacturer`s type designation		PS26N	PS35N	PS44N
	1.3	Power (battery ,diesel, petrol, gas, manual)		Battery		
	1.4	Operator type		Pedestrian		
	1.5	Load Capacity / rated load	Q(lbs)	2640	3520	4400
	1.6	Load centre distance	C(in)	24		
	1.8	Load distance ,centre of drive axle to fork	x(in)	25.5		
	1.9	Wheelbase	y(in)	45.9	47.8	52.2
Weight	2.1	Service weight	lbs	2376	3036	3564
	2.2	Axle loading, laden front/rear	lbs	1892/3124	2288/4268	2662/5302
	2.3	Axle loading, unladen front/rear	lbs	1716/704	2068 /968	2398/1188
Tires	3.1	Tires		Polyurethane (PU)		

	3.2	Tire size, front	∅xW (in)	∅9×2.76		
	3.3	Tire size, rear	∅xW (in)	∅3.3×3		
	3.4	Additional wheels(dimensions)	∅xW (in)	∅5.9x2		
	3.5	Wheels, number front/rear(x=driven wheels)		1x+1/4		
	3.6	Track, front	b10(in)	20.5		
	3.7	Track, rear	b11(in)	15.3/19.9		
Dimensions	4.2	Lowered mast height	h1(in)	90.9	94.9	87.7
	4.3	Free Lift height	h2(in)	69.3	71.7	59.8
	4.4	Lift height	h3(in)	139.0	213.8	178.3
	4.5	Extended mast height	h4(in)	160.9	240.6	205.0
	4.9	Height of tiller in drive position min./ max.	h14(in)	37.4/53.2		
	4.15	Height, lowered	h13(in)	3.5		
	4.19	Overall length	l1(in)	73.0 1)	74.6 1)	79.7 1)
	4.20	Length to face of forks	l2(in)	27.8 1)	29.4 1)	34.5 1)
	4.21	Overall width	b1(in)	31.1		
	4.22	Fork dimensions	s/e/l(in)	2.4/7.1/45.3		
	4.25	Distance between fork-arms	b5(in)	22.4/27.0		
	4.32	Ground clearance, centre of wheelbase	m2(in)	1.1	1.1	0.9
	4.33	Aisle width for pallets 39.4”X47.2”crossways	Ast(in)	90.0 1)	91.5 1)	96.7 1)
	4.34	Aisle width for pallets 31.5”X47.2” lengthways	Ast(in)	88.6 1)	90.2 1)	95.3 1)
	4.35	Turning radius	Wa(in)	54.3 1)	55.9 1)	61.0 1)
Performance data	5.1	Travel speed, laden/ unladen	mph	4.4/5.0	4.4/5.0	3.7/4.4
	5.2	Lift speed, laden/ unladen	fpm	17.7/27.6	25.6/39.4	25.6/39.4
	5.3	Lowering speed, laden/ unladen	fpm	49.2/39.4	55.1/45.3	55.1/45.3
	5.8	Max. gradeability, laden/ unladen	%	6/12	6/12	6/10
	5.10	Service brake		Electromagnetic		
Electric- engine	6.1	Drive motor rating S2 60min	HP	1.9	1.9	1.9
	6.2	Lift motor rating at S3 10%	HP	2.0	4.3	4.3
	6.3	Battery acc. to DIN 43531/35/36 A, B, C, no		2VBS	3VBS	3PZS
	6.4	Battery voltage, nominal capacity K5	V/Ah	24/180	24/270	24/350
	6.5	Battery weight	lbs	385	506	634
	6.6	Energy consumption acc: to VDI cycle	kWh/h	0.95	1.34	1.70
Additional data	8.1	Type of drive control		AC- speed control		
	8.4	Sound level at driver`s ear acc. to EN 12053	dB(A)	<70		

1）With unfolded platform: + 17.3 in

Type	Lowered mast height h1(in)	Free Lift height h2(in)	Lift height h3(in)	Extended mast height h4(in)	Lift+fork height h3+h13(in)
PS26N					
Two stage mast	77	—	111	133	114.5
	83	—	123	145	126.5
	91	—	139	161	142.5
Two stage mast FFL (Full-Free-Lift)	77	55.5	111	133	114.5
	83	61.4	123	145	126.5
	91	69.3	139	161	142.5
PS35N					
Two stage mast	77	—	111	133	114.5
	83	—	123	145	126.5
	91	—	139	161	142.5
Two stage mast FFL (Full-Free-Lift)	77	55.5	111	133	114.5
	83	61.4	123	145	126.5
	91	69.3	139	161	142.5
Three stage mast	79	—	167	188	170.5
	83	—	178	200	181.5
Three stage mast FFL (Full-Free-Lift)	62	44.1	131.1	152.8	134.5
	75	52	155	176	158.5
	79	55.9	167	188	170.5
	83	59.8	178	200	181.5
	92	69.1	206	228	209.5
	95	71.0	214	241	217.5
PS44N					
Two stage mast	82	—	111	138	114.5
	88	—	123	150	126.5
	96	—	139	165	142.5
Two stage mast FFL (Full-Free-Lift)	78	51.6	104	130	107.5
	82	55.5	111	138	114.5
	88	61.4	123	150	126.5
	96	69.3	139	165	142.5
Three stage mast	84	—	167	193	170.5
	88	—	178	205	181.5
Three stage mast FFL (Full-Free-Lift)	78	51.6	155	181	158.5
	84	55.9	167	193	170.5
	88	59.8	178	205	181.5

Original CE Declaration of conformity

[GB] Original CE Declaration of conformity
The signatory hereby declares that the specified machine conforms to the EC Directive 2006/42/EC (Machine Directive), and 2014/30/EU (Electro-Magnetic Compatibility, EMC) including their amendments as translated into national legislation of the member countries. The signatory is individually authorized to compile the technical documents and declares that the following standards, including the normative procedures contained therein, have been applied:

[D] Original EG- Konformitätserklärung
Der Unterzeichner erklärt hiermit, dass die angegebene Maschine den EG-Richtlinien 2006/42/EG (Maschinenrichtlinie) und 2014/30/EU (Elektromagnetische Verträglichkeit, EMV) einschließlich ihrer Änderungen in der Umsetzung in die nationale Gesetzgebung der Mitgliedsländer entspricht. Der Unterzeichner ist zur Zusammenstellung der technischen Unterlagen einzeln befugt und erklärt, dass folgende Normen, einschließlich der darin enthaltenen normativen Verfahren, angewendet wurden:

[E] Original DECLARACIóN DE CONFORMIDAD CE
El signatario declara por la presente que la máquina especificada cumple con la Directiva CE 2006/42/EC (Directiva de Máquinas) y 2014/30/EU (Compatibilidad Electromagnética, EMC) incluidas sus enmiendas traducidas a la legislación nacional de los países miembros. El firmante está autorizado individualmente para compilar los documentos técnicos y declara que se han aplicado los siguientes estándares, incluidos los procedimientos normativos contenidos en ellos:

[F] Originale DECLARATION DE CONFORMITE CE
Le signataire déclare par la présente que la machine spécifiée est conforme à la directive CE 2006/42/CE (directive machine) et 2014/30/UE (compatibilité électromagnétique, CEM), y compris leurs modifications telles que traduites dans la législation nationale des pays membres. Le signataire est individuellement autorisé à compiler les documents techniques et déclare que les normes suivantes, y compris les procédures normatives qu'elles contiennent, ont été appliquées:

[NL] Origineel EG-CONFORMITEITSVERKLARING
De ondertekenaar verklaart hierbij dat de gespecificeerde machine voldoet aan de EG-richtlijnen 2006/42/EG (machinerichtlijn) en 2014/30/EU (elektromagnetische compatibiliteit, EMC) inclusief hun amendementen zoals vertaald in de nationale wetgeving van de aangesloten landen. De ondertekenaar is individueel gemachtigd om de technische documenten samen te stellen en verklaart dat de volgende normen, inclusief de normatieve procedures die daarin zijn opgenomen, zijn toegepast:

[P] Original DECLARAÇÃO DE CONFORMIDADE CE
O signatário declara que a máquina especificada está em conformidade com a Diretiva EC 2006/42/EC (Diretiva de Máquinas) e 2014/30/EU (Compatibilidade Eletromagnética, EMC), incluindo suas emendas traduzidas para a legislação nacional dos países membros. O signatário está individualmente autorizado a compilar os documentos técnicos e declara que as seguintes normas, incluindo os procedimentos normativos neles contidos, foram aplicadas:

[I] Originale DICHIARAZIONE DI CONFORMITÀ CE
Il firmatario dichiara che la macchina specificata è conforme alla Direttiva CE 2006/42/CE (Direttiva macchine) e 2014/30/UE (Compatibilità elettromagnetica, EMC) compresi i relativi emendamenti tradotti nella legislazione nazionale dei paesi membri. Il firmatario è autorizzato individualmente alla compilazione dei documenti tecnici e dichiara che sono state applicate le seguenti norme, comprese le procedure normative ivi contenute:

[BG] Оригинален ЕВРОПЕЙСКА ОБЩНОСТ - ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ
С настоящото подписалото лице декларира, че посочената машина отговаря на Директива на ЕО 2006/42/ЕС (Директива за машини) и 2014/30/EU (Електромагнитна съвместимост, ЕМС), включително техните изменения, преведени в националното законодателство на страните-членки. Подписалото лице е лично упълномощено да съставя техническите документи и декларира, че са приложени следните стандарти, включително съдържащите се в тях нормативни процедури:

[CZ] Originál EG - PROHLÁŠENÍ OSHODĚ
Signatář tímto prohlašuje, že uvedený stroj je ve shodě se směrnicí ES 2006/42/ES (Směrnice o strojích) a 2014/30/EU (Elektromagnetická kompatibilita, EMC) včetně jejich změn ve znění přeložené do národní legislativy členských zemí. Podepisující osoba je samostatně oprávněna sestavit technické dokumenty a prohlašuje, že byly použity následující normy, včetně normativních postupů v nich obsažených:

[DK] Original EF-OVERENSSTEMMELSESERKLÆRING
Underskriveren erklærer hermed, at den specificerede maskine er i overensstemmelse med EF-direktivet 2006/42/EC (maskindirektivet) og 2014/30/EU (elektro-magnetisk kompatibilitet, EMC) inklusive deres ændringer som oversat til national lovgivning i medlemslandene. Underskriveren er individuelt bemyndiget til at udarbejde de tekniske dokumenter og erklærer, at følgende standarder, inklusive de normative procedurer indeholdt deri, er blevet anvendt:

[EST] Originaal EL vastavusavaldus
Allakirjutanu kinnitab käesolevaga, et nimetatud masin vastab EÜ direktiivile 2006/42/EÜ (masinadirektiiv) ja 2014/30/EL (elektromagnetiline ühilduvus, EMC), sealhulgas nende muudatustele, nagu on tõlgitud liikmesriikide siseriiklikesse õigusaktidesse. Allakirjutanul on individuaalselt õigus koostada tehnilisi dokumente ja ta kinnitab, et on kohaldatud järgmisi standardeid, sealhulgas neis sisalduvaid normatiivprotseduure:

[FIN] Alkuperäinen EU-YHDENMUKAISUUSSELOSTUS
Allekirjoittaja vakuuttaa täten, että määritetty kone on EY-direktiivin 2006/42/EY (konedirektiivi) ja 2014/30/EU (sähkömagneettinen yhteensopivuus, EMC) mukainen, mukaan lukien niiden muutokset, sellaisina kuin ne on käännetty jäsenmaiden kansalliseen lainsäädäntöön. Allekirjoittaja on henkilökohtaisesti valtuutettu kokoamaan tekniset asiakirjat ja vakuuttaa, että seuraavia standardeja, mukaan lukien niihin sisältyvät normatiiviset menettelyt, on sovellettu:

[GR] Πρωτότυπο ΔΗΛΩΣΗΣΥΜΜΟΡΦΩΣΗΣΕΟΚ
Ο υπογράφοντος δηλώνει με το παρόν ότι το συγκεκριμένο μηχάνημα συμμορφώνεται με την Οδηγία 2006/42/ΕΚ (Οδηγία Μηχανών) και 2014/30/ΕΕ (Ηλεκτρομαγνητική Συμβατότητα, ΕΜC) συμπεριλαμβανομένων των τροποποιήσεών τους όπως έχουν μεταφραστεί στην εθνική νομοθεσία των χωρών μελών. Ο υπογράφοντος είναι ατομικά εξουσιοδοτημένος να συντάξει τα τεχνικά έγγραφα και δηλώνει ότι έχουν εφαρμοστεί τα ακόλουθα πρότυπα, συμπεριλαμβανομένων των κανονιστικών διαδικασιών που περιέχονται σε αυτά:

[H] Eredeti EU KONFORMITÁSI NYILATKOZAT
Az aláíró ezennel kijelenti, hogy a megadott gép megfelel a 2006/42/EC (gépirányelv) és a 2014/30/EU (elektromágneses összeférhetőség, EMC) irányelveknek, beleértve azok módosításait a tagországok nemzeti jogszabályaiba lefordítva. Az aláíró egyénileg jogosult a műszaki dokumentumok összeállítására, és kijelenti, hogy a következő szabványokat, beleértve az abban foglalt normatív eljárásokat, alkalmazták:

[LT] Originalus ES atitikimo deklaracija
Pasirašęs asmuo pareiškia, kad nurodyta mašina atitinka EB direktyvą 2006/42/EB (mašinų direktyvą) ir 2014/30/ES (elektromagnetinį suderinamumą, EMC), įskaitant jų pakeitimus, išverstus į šalių narių nacionalinius teisės aktus. Pasirašęs asmuo yra individualiai įgaliotas rengti techninius dokumentus ir pareiškia, kad buvo taikomi šie standartai, įskaitant juose nurodytas normines procedūras:

[LV] Oriģināls ES atbilstības deklarācija
Parakstītājs ar šo apliecina, ka norādītā iekārta atbilst EK Direktīvai 2006/42/EK (Mašīnu direktīva) un 2014/30/ES (Elektromagnētiskā saderība, EMC), ieskaitot to grozījumus, kas ir tulkoti dalībvalstu nacionālajos tiesību aktos. Parakstītājs ir individuāli pilnvarots sastādīt tehniskos dokumentus un apliecina, ka ir piemēroti šādi standarti, tostarp tajos ietvertās normatīvās procedūras:

[N] Opprinnelig EU-KONFORMITETSERKLÆRING
Underskriveren erklærer herved at den spesifiserte maskinen er i samsvar med EC-direktivet 2006/42/EC (maskindirektivet), og 2014/30/EU (elektromagnetisk kompatibilitet, EMC) inkludert deres endringer som oversatt til nasjonal lovgivning i medlemslandene. Underskriveren er individuelt autorisert til å sammenstille de tekniske dokumentene og erklærer at følgende standarder, inkludert de normative prosedyrene som finnes deri, er brukt:

[PL] Oryginalny DEKLARACJA ZGODNOŚCI WE
Sygnatariusz niniejszym oświadcza, że określona maszyna jest zgodna z dyrektywą WE 2006/42/WE (dyrektywa maszynowa) i 2014/30/UE (kompatybilność elektromagnetyczna, EMC) wraz z ich poprawkami w tłumaczeniu na ustawodawstwo krajowe krajów członkowskich. Sygnatariusz jest indywidualnie

upoważniony do sporządzania dokumentacji technicznej i oświadcza, że zastosowano następujące normy, w tym zawarte w nich procedury normatywne:

[RO] Original DECLARAŢIE DE CONFORMITATE CE

Semnatarul declară prin prezenta că maşina specificată este conformă cu Directiva CE 2006/42/CE (Directiva Maşini) şi 2014/30/UE (Compatibilitate electro-magnetică, EMC), inclusiv amendamentele acestora, astfel cum au fost traduse în legislaţia naţională a ţărilor membre. Semnatarul este autorizat individual să întocmească documentele tehnice şi declară că au fost aplicate următoarele standarde, inclusiv procedurile normative cuprinse în acestea:

[RUS] Оригинал Декларация соответствия стандартам ЕС

Настоящим подписывающая сторона заявляет, что указанная машина соответствует Директиве ЕС 2006/42/ЕС (Директива по машинам) и 2014/30/ЕС (Электромагнитная совместимость, ЭМС), включая их поправки, переведенные в национальное законодательство стран-членов. Подписавшаяся сторона имеет индивидуальное право на составление технических документов и заявляет, что были применены следующие стандарты, включая содержащиеся в них нормативные процедуры:

[S] Original EG-KONFORMITETSFÖRKLARING

Undertecknaren intygar härmed att den specificerade maskinen överensstämmer med EG-direktivet 2006/42/EC (maskindirektivet) och 2014/30/EU (elektromagnetisk kompatibilitet, EMC) inklusive deras tillägg som översatts till nationell lagstiftning i medlemsländerna. Undertecknaren är individuellt behörig att sammanställa de tekniska dokumenten och förklarar att följande standarder, inklusive de normativa procedurerna som finns däri, har tillämpats:

[SK] Originál vyhlásenie o zhode

Signatár týmto vyhlasuje, že špecifikovaný stroj je v súlade so Smernicou ES 2006/42/EC (Smernica o strojoch) a 2014/30/EU (Elektromagnetická kompatibilita, EMC) vrátane ich dodatkov preložených do národnej legislatívy členských krajín. Signatár je individuálne oprávnený zostavovať technické dokumenty a vyhlasuje, že boli aplikované nasledujúce normy vrátane normatívnych postupov v nich obsiahnutých:

[SLO] Original EU IZJAVA O SKLADNOSTI

Podpisnik s tem izjavlja, da je navedeni stroj v skladu z Direktivo ES 2006/42/ES (Direktiva o strojih) in 2014/30/EU (Electro-Magnetic Compatibility, EMC), vključno z njunimi spremembami, kot so prevedene v nacionalno zakonodajo držav članic. Podpisnik je posamično pooblaščen za sestavo tehnične dokumentacije in izjavlja, da so bili uporabljeni naslednji standardi, vključno z normativnimi postopki, ki jih vsebuje:

[TR] Orijinal AB Uygunluk Açıklaması

İmza sahibi, belirtilen makinenin AB Direktifi 2006/42/EC (Makine Direktifi) ve 2014/30/EU (Elektro-Manyetik Uyumluluk, EMC) ve bunların üye ülkelerin ulusal mevzuatına tercüme edilen değişiklikleri ile uyumlu olduğunu beyan eder. İmza sahibi, teknik belgeleri derlemeye bireysel olarak yetkilidir ve burada yer alan normatif prosedürler dahil olmak üzere aşağıdaki standartların uygulandığını beyan eder:

<the applied standards have to be shown here>

(1) Type: **XX XX– Self-propelled industrial truck**

(2) Serial No: **XXXXXXXX**

(3) Year of constr.: **YYYY**

(4) Manufacturer: Noblelift Intelligent Equipment Co., Ltd.
528 Changzhou Road, Taihu Sub-district, Changxing, 313100, PR China

(5) Responsible for compiling the technical documentation: <Company name>,
<Company Address>

(6) Date: <Place>, **YYYY.MM.DD**

(7) Authorized signatory: <Position> **Mr. Sample**

(1) Type/ Typ/ Tipo/ Modello/ Tyyppi/ Tipo / ΤΥΠΟΣ/ Típus/ Tip/ Тип/ Tips/ Tipas/ Tüüp:
(2) Serial No./ Serien-Nr./ N°. de série/ Serienummer/ Nº de serie/ Numero di serie/ Serienr./ Sarjanro/ αυξάνωναριθμός/ Seriové číslo/ Szériaszám/ Nr.Seryjny/ Serijska številka/ Výrobné číslo/ Серийныйномер/ Seri No./ Seerianr./ Sērijas Nr./ Serijos numeris:
(3) Year of constr./ Baujahr/ Année de constr./ Bouwjaar/ Año de constr./ Anno di costruzione/ Produktionsår/ Byggeår/ Tillverkningsår/ Valmistusvuosi / Ano de fabrico / έτοςκατασκευής/ Rokvýroby/ Gyártásiév/ Rokprodukcji / Letnik / Годизготовления / Üretimyılı / Väljalaskeaasta / Izgatavošanas gads / Gamybosmetai
(4) Manufacturer/ Hersteller/ Fabricante/ Fabricant/ Fabrikant/ Fabricante/ Produttore/ производител/ Výrobce/ Fabrikant/ Tootja/ Valmistaja/ Κατασκευαστής/ Gyártó/ Gamintojas/ Ražotājs/ Produsent/ Producent/ Producător/ Производитель/ Tillverkare/ Výrobca/ Proizvajalec/ Üretici firma
(5) Responsible for compiling the technical documentiton/ Verantwortlich für die Zusammenstellung der technischen Dokumentation/ Responsable de compilar la documentación técnica/ Responsable de la compilation de la documentation technique/ Verantwoordelijk voor het samenstellen van de technische documentatie/ Responsável pela compilação da documentação técnica/ Responsabile della compilazione della documentazione tecnica/ Отговаря за съставянето на техническата документация/ Zodpovídá za sestavení technické dokumentace/ Ansvarlig for udarbejdelse af den tekniske documentation/ Vastutab tehnilise dokumentatsiooni koostamise eest/ Vastaa teknisen dokumentaation laatimisesta/ Υπεύθυνος για τη σύνταξη της τεχνικής τεκμηρίωσης/ Felelős a műszaki dokumentáció összeállításáért/ Atsakingas už techninės dokumentacijos sudarymą/ Atbildīgs par tehniskās dokumentācijas sastādīšanu/ Ansvarlig for sammenstilling av teknisk dokumentasjon/ Odpowiedzialny za kompletowanie dokumentacji technicznej/ Responsabil cu intocmirea documentatiei tehnice/ Ответственный за составление технической документации/ Ansvarig för att sammanställa den tekniska dokumentationen/ Zodpovedá za zostavenie technickej dokumentácie/ Odgovoren za pripravo tehnične dokumentacije/ Teknik dokümantasyonun derlenmesinden sorumlu
(6) Date/ Datum/ Data/ Fecha/ datum/ Dato/ päiväys/ Kuupäev/ Datums/дата/ Dátum/ dátum/ tarih/ ημερομηνία
(7) Authorised signatory/ ImAuftrag/ pour ordre/ Incaricato/ Por orden de/ por procuração/ op last van/ påvegneaf/ påuppdrag/ Etteroppdrag/ psta./ Ülesandel / pavedus / v.i. / Попоручению / megbízásából /длъжностнолице / z pověření / z poverenia / po nalogu / napolecenie / din sarcina / adına / θαη' ελληνή