OWNER'S MANUAL

WPS HYDRAULIC PUSH STACKER

ACTUAL PRODUCT MAY NOT APPEAR EXACTLY AS SHOWN

WARNING

Do not operate or service this product unless you have read and fully understand the entire contents of this manual. Failure to do so may result in property damage, bodily injury or death.

BLUE GIANT®

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1.0 ABOUT THE WPS HYDRAULIC PUSH STACKER

The WPS Hydraulic Push Stacker is a modern and highly versatile work positioning stacker for your material handling needs.

- 2900 lb. (998 kg) capacity
- Manually propelled with push button lift / lower control mounted on dashboard
- Adjustable straddles - 36" (914mm) to 50" (1270mm) ID
- Built-in 10 AMP plug-in battery charger for 115/1/160 power supply

1.1 OWNER'S PURCHASE RECORD

OWNER'S PURCHASE RECORD Please record information for future inquiries and to validate warranty. (See Section 2.1 for warranty validation)	
Dealer:	**Date in Service:**
	Number of Units:
Owner's Name:	**Order Number:**
Serial Number:	**Year of Construction:**

The manufacturer offers a full line of dock levelers, dock safety equipment, accessories, ergonomic and scissor lift equipment, seals and shelters, and industrial trucks. Concurrent with a continuing product improvement program, specifications are subject to change without notice (see section 2.2 of this manual). Please contact the manufacturer for latest information. Some features illustrated may be optional in certain market areas.

2.0 INTRODUCTION

The following is a quick reference to important procedures that must be followed while using the dock equipment. It is not intended to cover, or suggest that it does cover, all procedures necessary to ensure safe operation. All operators should be aware of and abide by all workplace safety regulations applicable to the operation of the dock equipment. These laws and regulations include but are not limited to:

- The Occupational Safety and Health Act (USA)
- Occupational Safety and Health Acts for Individual States (USA)
- Canadian Material Handling Regulations

For additional information on these regulations as well as industry standards that may apply to this product, please contact:

ANSI
American National Standards Institute

American National Standards Institute (ANSI)
1430 Broadway
New York, NY 10018
Telephone: (212) 642-4900

Also a member of:

LDEM
LOADING DOCK EQUIPMENT MANUFACTURERS

Loading Dock Equipment Manufacturers
A Product Section of Material Handling Industry of America
A Division of Material Handling Industry
8720 Red Oak Blvd, Suite 201
Charlotte, NC, 28217-3992
Telephone: (704) 676-1190

2.1 WARRANTY INFORMATION

Thank you for purchasing Blue Giant products. We appreciate your business, and are confident that our product will serve you for many years to come. In the event that you experience a problem with our product, our Warranty Center is here to support the Blue Giant product(s) that you have purchased.

To validate warranty on recently purchased equipment, please complete and submit your information with our online Warranty Registration at **www.BlueGiant.com**.

DEALER INFORMATION
Name:
Contact:
Telephone:

For more information about Blue Giant Warranty Support, please contact your local Blue Giant Equipment dealer, representative or authorized partner near you. You may also visit www.BlueGiant.com or phone 1.905.457.3900.

* Note that failure to validate warranty at the time of receipt can seriously affect the outcome of any claim.

2.2 EXCLUSION OF LIABILITY

The manufacturer assumes no liability for damage or injury to persons or property which occur as a result of defects or faults in or incorrect use of dock equipment. The manufacturer also assumes no liability for lost profits, operating downtimes, or similar indirect losses incurred by the purchaser. Injury to third parties, irrespective of its nature, is not subject to compensation.

The manufacturer reserves the right to make changes at any time to the modules, components, and accessories, concurrent with its continuing product development program. Specifications, operating instructions, and illustrations included in this manual are subject to change without notice. Please contact manufacturer for the latest information.

2.3 MANUFACTURER'S NOTE

This industrial truck has been carefully inspected and tested at the manufacturer's plant prior to shipment, but should be checked upon receipt for transport damage. Any observed transport damage is to be listed on the signed copy of the freight document. Notify the freight forwarder of any damage WITHIN 48 HOURS.

2.4 SAFETY PROCEDURES

1. Do not operate this truck unless you have been trained and authorized to do so

2. Do not operate this truck until you have read and understood all of the safety information and instructions contained herein and on the truck.

3. Do not operate this truck until you have checked its condition. Give special attention to wheels, controls, lifting systems, including steering mechanism, guards, and safety devices.

4. Report the need for truck repairs to your supervisor immediately and do not operate truck until repairs are made. Neglect may cause a minor repair to become a major service problem and cause the truck to become unsafe.

5. This truck is intended for use on smooth level hard surfaces only. Do not use on ramps or grades, rough, or broken floors.

6. Do not load truck beyond capacity shown on serial name plate on truck.

7. Do not lift with the fork tips or one fork only.

8. This equipment is designed for evenly centered loads with forks completely supporting the load. Off-centering of loads can result in a dangerous operating condition and may cause damage or injury.

9. Always look in direction of travel. Use caution when visibility is obstructed by load.

10. Extreme caution must be used when handling loosely stacked/packaged loads.

11. Watch swing clearance when turning near walls, racks, pillars, or other obstacles.

12. Start, stop, change direction, and travel smoothly. Slow down for turns and on uneven or slippery surfaces that cause the truck to slide or tip. Be aware that the truck behaves differently without a load than with a load.

13. Observe applicable traffic regulations. Yield right of way to pedestrians.

14. Do not ride on this equipment.

15. Do not carry passengers or lift personnel.

16. Before you leave the truck, fully lower lifting mechanism.

2.5 MOVING DANGER

WARNING

When the stacker lifts the fork to a height greater than 10" (254mm) for stacking operating, the stacker must move slowly and the continual travel distance must not exceed 6' (1.8m). It is prohibited to handle goods for a long distance when the height of the fork is greater than 10" (254mm).

2.6 APPLICATION ENVIRONMENT

- Ambient temperature no higher than +40°C and no lower than -25°C.
- When the ambient temperature reaches +40°C, the relative humidity should not exceed 50%. Higher relative humidity is allowed at lower temperature.
- Hard, level, smooth finished floors only.
- Use of the unit in environment with flammable and/or explosive and/or acid and/or alkali corrosive substances is prohibited.

2.7 LOADING SPECIFICATION

The unit is designed for the horizontal transportation of loads on a level, fixed base. The load must be evenly distributed on pallets or similar receptacles. The ideal loading mode is that the gravity center of heavy goods is at the central position of the fork. The maximum load-carrying capacity is shown on the appropriate designation plate and on the load sticker on the unit. When there exists defective load, the rated carrying capacity shall be reduced. If the load on the forks is one sided, there is a risk of the forks bending or the load slipping off. Supporting or shifting the load with the fork tips is to be avoided in all cases, as this results in damage to the appliance. In order to preserve the wheels and chassis the unit must not be driven over very uneven ground.

2.8 MAXIMUM INCLINE OR DECLINE GRADES

The WPS Series Hydraulic Push Stacker is suitable for stacking and handling materials on hard, level, smooth finished floors only.

2.9 SAFETY WITH TALL LOADS

Transporting with tall loads (e.g. machines) changes the center of gravity of the load so unfavorably that the unit including the load, goes out of control and may overturn on a curve. Loading, (e.g. onto a truck or mobile loading ramps) is prohibited.

Conveying persons or using the unit as a form of roller skate is not permissible. Foodstuffs are only to be transported in packed form. Direct contact with the unit is to be avoided.

The accident prevention regulations for industrial trucks and the safety regulations applicable to the user must be complied with.

3.0 OPERATOR'S MANUAL SAFETY MESSAGE COLOR IDENTIFICATION

This manual includes color-coded safety messages that clarify instructions and specify areas where potential hazard exists. To prevent the possibility of equipment damage and serious injury or death, please observe strictly the instructions and warnings contained in the messages. If warning decals become damaged or missing, replace them immediately. Avoid accidents by recognizing dangerous procedures or situations before they occur.

DANGER

Serious injury or death will likely occur if the instructions are not followed.

NOTICE

Procedures marked notice must be followed in order to prevent damage to machinery.

WARNING

Serious injury or death may occur if the instructions are not followed.

CAUTION

Instructions marked caution concern safe operating procedure. Failure to comply may result in personal injury.

3.1 WPS HYDRAULIC PUSH STACKER SPECIFICATIONS

The following data must always be specified to ensure correct processing of your spare parts order:

- Truck type (capacity)
- Serial number of the unit
- Complete part number

ASSEMBLY DRAWINGS:

- General dimension drawing
- Handle and pump assembly
- Frame assembly

MODEL	WEIGHT	CAPACITY	FORK LENGTH
WPS22-63	850 lb (386 kg)	2200 lb (1000 kg)	42" (1067mm)
WPS22-118	990 lb (449 kg)		
WPS22-130	1060 lb (481 kg)		
WPS22-150	1190 lb (540 kg)	2200 lb (1000 kg) (rated for 1320 lb for heights over 130")	

3.2 STRADDLE ADJUSTMENT

To adjust the straddles on the stacker, remove the weight of the machine from the straddles by lifting / jacking under the straddle tube. Turn set screws counterclockwise to loosen tension from the straddles. Slide straddles to desired setting. Apply small amount of "Loctite" #271 to set screws and tighten. Remove lifting / jacking device.

Straddle legs must not be:

- Less than 25% of the stackers maximum lift
- More than 50" (1270mm)

4.0 BEFORE USE INSPECTION

Workplace safety regulations require that all trucks be inspected before each shift. Follow inspection list below to complete this check. If anything is found to be wrong with the stacker, then it must be taken out of operation. Do not use a truck which fails this inspection.

4.1 INSPECTION LIST

Safety Equipment

- Warning decals: ensure all decals are in place and readable.
- Mast safety screen: is it in place and free of obvious damage?

General Operation

- Foot pedal parking brake: Test brake for proper braking.
- Battery: Check if there is any electric power in the batteries with the method pictured below. Pull the general power supply switch out to turn on the general power supply, unlock the electric lock on the dash, check the electric energy meter on the instrument panel of the stacker. If the zero end grid is bright, it indicates there is no electric power in the batteries and charging should be conducted at once. It is strictly prohibited to operate the stacker without electric power, as that will greatly reduce the service life of the batteries and may even damage the batteries.
- Lift / lower control: Operate lift function to full lift height. Listen and watch for unusual sounds or jerky motions. Operate lower control until forks are fully lowered. Listen and watch for unusual sounds or jerky motions. Throughout inspection, look for signs of hydraulic fluid leaks.

Forks and Carriage

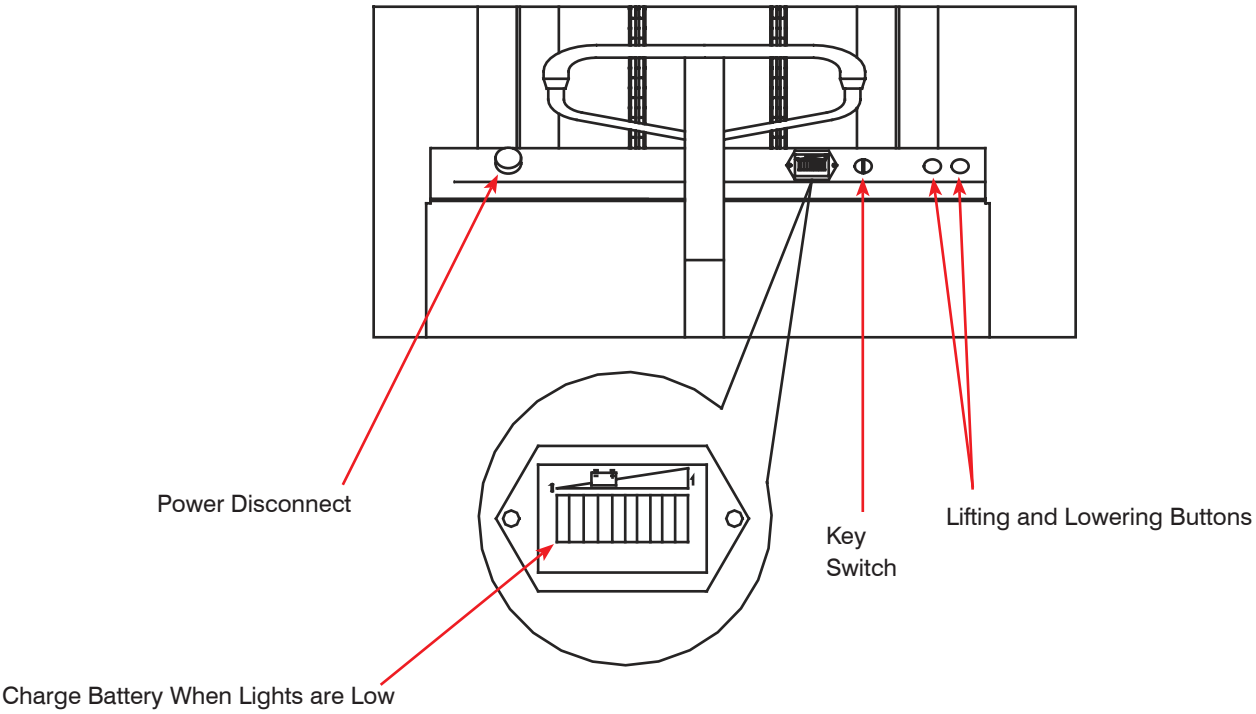
- Inspect forks for cracks, wear, and alignment. Obvious damage fails inspection. Maximum allowable fork blade wear is 10% of fork back (vertical member of fork).
- Fork carriage: Carriage is part of truck to which forks attach. Inspect carriage for cracks, damage, or wear.

Wheels

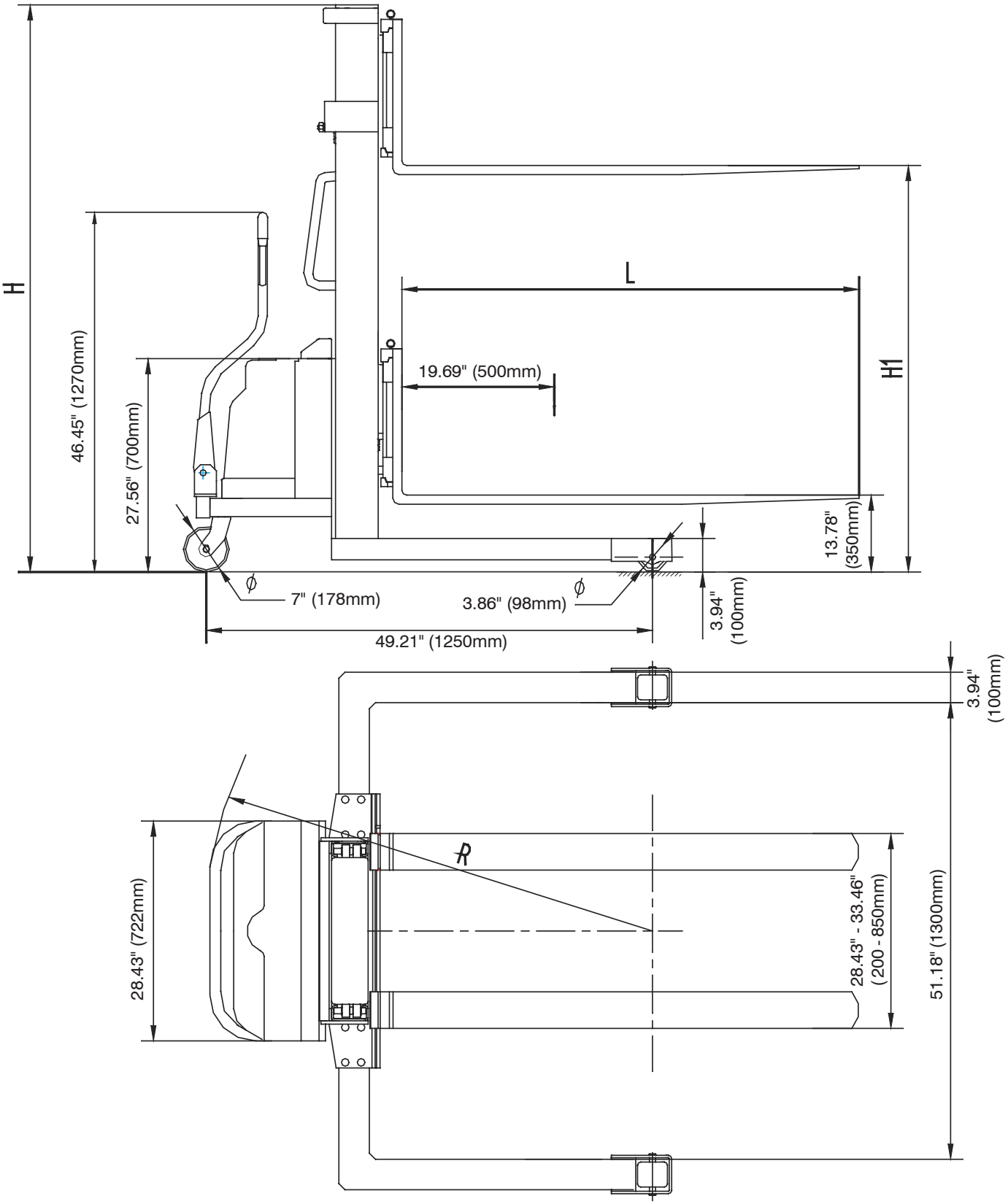
- All tires must be inspected for cuts, breaks, and signs of de-bonding (coming away from rim).
- Material embedded in tires or axles must be removed (i.e. steel shavings, string, plastic wrap, etc.).

DANGER

Disconnect battery before attempting removal of embedded materials.



5.0 GENERAL DIMENSIONS



6.0 OPERATING INSTRUCTIONS

WPS Hydraulic Push Stackers (manually propelled, battery powered hydraulic lift) are easy to operate safely and effectively by careful compliance to the following instructions:

⚠ WARNING

Keep all people clear from stacker while moving stacker, lifting, and transporting load.

1. To move stacker, securely grasp the ergonomic push / pull handles or spring pivot steering handle with both hands. By pushing or pulling the stacker by your choice of handle type, steer and move stacker slowly on level, smooth finished floors only. Be sure to keep feet clear of stacker while moving / positioning stacker.

2. Move slowly and adjust forks as required to insert both forks evenly and completely under the load. Set foot pedal brake before lifting load.

3. Load must be distributed equally on both forks and toward the mast. Do not allow more than half the load to extend beyond load center. Do not lift load with fork tips only and do not lift unstable or loose load.

4. Turn key switch "On." Pull the general power supply switch out to turn on the general power supply, unlock the electric lock on the dash.

5. To lift load, depress the lift button on the dashboard. When desired height is reached, lifting will stop when button is released. Do not exceed maximum lifting height. Do not exceed maximum lifting capacity.

⚠ WARNING

Do not move the stacker while the forks are lifting or lowering. For emergency stop, quickly press the power switch to cut off the power supply if the stacker gets out of control.

6. When load is safely lifted and ready to be moved, disengage foot pedal parking brake. To move load, repeat Step 1 and move stacker with load, safe distance to clear obstructions before stopping and lowering load for transport.

⚠ WARNING

When the stacker lifts the fork to a height greater than 10" (254mm) for stacking operation, the stacker must move slowly and the continual travel distance must not exceed 6' (1.8m) It is prohibited to handle goods for a long distance when the height of the fork is greater than 10" (254mm) high.

7. To lower forks, unit must be stationary. Push the lowering button on the dashboard and, when desired height is achieved, release the button.

8. Transport load with forks at lowered height 4" - 8" (102 - 203mm) from smooth finished floor.

9. To remove load, follow Step 6 to lower load to finished floor and pull stacker / forks completely away from the load and out of the pallet.

10. When stacker is not in use, the forks should be lowered to the lowest position.

⚠ DANGER

Never stand or put any part of the human body under load and/or forks.

7.0 BATTERY AND CHARGER INFORMATION

WARNING

The charging environment requires good ventilation and there should be no flame, otherwise explosion may occur.

The care and maintenance of the battery is very important to efficient equipment operation and maximum battery life.

The battery electrolyte level should be checked before each charge of the battery. The level should be maintained at one-half inch above plates or just below the lower lip of the filler hole at all times. If low, add distilled water preferably at the end of the charge. Do not overfill.

Always keep vent plugs tightly in place when cleaning battery. When properly watered and charged, the battery will remain clean and dry. All that is necessary is to brush or blow off and dust or dirt, which may accumulate on it.

However, if electrolyte has spilled, it should be neutralized with a solution of baking soda and water. Then rinse the battery with cool water from a low pressure hose to remove the soda and water. If battery stays wet consistently, it may be an indication of overcharging or overfilling.

The equipment is supplied with 100 volt/1/60 cycle AC charger that, when plugged into a 110 volt outlet, will automatically charge the battery to its proper level.

WARNING

Do not operate stacker while the charger is plugged in. Failure to follow this instruction may result in damage to the stacker.

8.0 MAINTENANCE

Whether the stacker can operate efficiently depends on proper maintenance. When maintenance is ignored, the stacker may pose a threat to human lives and cause property damage. Routine inspection should be conducted, when the stacker is in operation, to eliminate abnormal conditions. Never use a stacker with maintenance issues to insure safety and to prolong the service life of the stacker.

Maintenance: The maintenance of the stacker is divided into routine maintenance and regular maintenance for mechanical, hydraulic, and electrical systems.

Routine Maintenance: Clean the surface of the stacker body and the storage battery and check the condition of the battery supply cable.

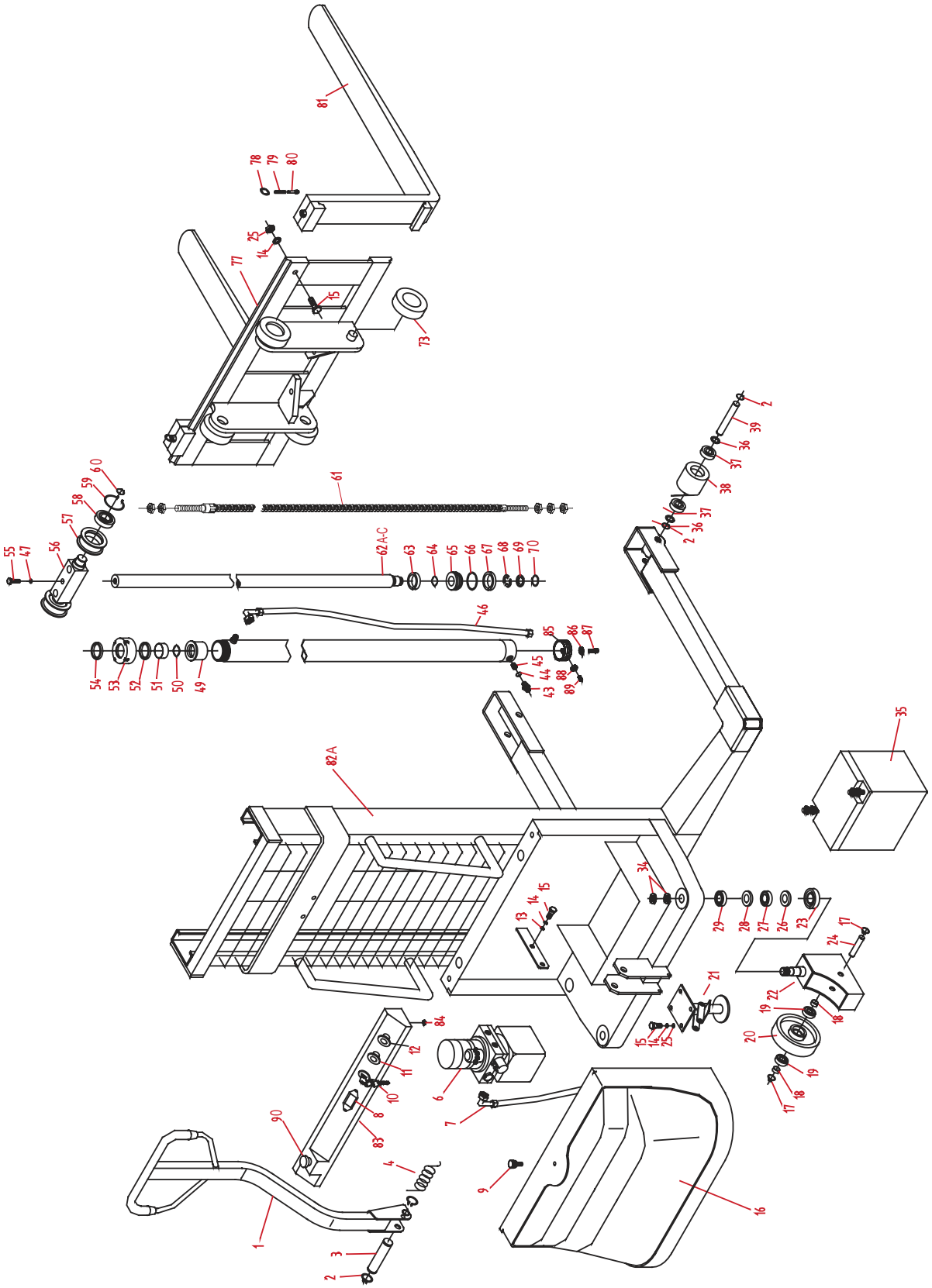
Maintenance for Mechanical System: To be performed a minimum of twice a year. Examine the oil cylinder, check for any leakage externally or internally, and examine the hydraulic connection and the hose for reliability and leakage. The hydraulic oil should be kept clean and generally it should be replaced every 12 months. ISO oil product standard is adopted for the hydraulic oil.

When the ambient temperature is between minus 5~ plus 40° C, HL-N46 or HL-N68 should be used.
When the ambient temperature is between minus 35~ minus 5° C, HL-N46 or HV-N68 should be used.

The replaced waste oil should be treated according to local rules and regulations.

Maintenance for Electrical Equipment: To be performed a minimum of once every three months. Examine whether the specific gravity of the electrolytic solution of the storage battery [specific gravity at 1.24 (at 25° C) in tropical areas and 1.26 (at 25° C, in other areas] fits and the terminals are clean. Otherwise, the specific gravity of the electrolytic solution should be cleaned, tightened and coated with white grease. Examine if the connections of the electrical devices are reliable, the switches are normal and the insulation is okay. (The insulating resistance between the electrical devices and the stacker body should be above 0.5MΩ).

9.0 STACKER ASSEMBLY



9.0 STACKER ASSEMBLY CONT'D.

ITEM	PART NO.	DESCRIPTION	QTY.
1	080-WPS1	Handle	1
2	080-WPS2	Retaining Ring	10
3	080-WPS3	Shaft	1
4	080-WPS4	Spring	1
6	080-WPS6	Pump (Powerpack)	1
7	080-WPS7	Screw	1
8	080-WPS8	Battery Discharge Indicator	1
9	080-WPS9	Screw	1
10	080-WPS10	On/Off Switch	1
11	080-WPS11	Button (Lift)	1
12	080-WPS12	Button (Lower)	1
13	080-WPS13	Washer	2
14	080-WPS14	Washer	8
15	080-WPS15	Screw	6
16	080-WPS16	Cover	1
17	080-WPS17	Retaining Ring	4
18	080-WPS18	Washer	4
19	080-WPS19	Bearing	4
20	080-WPS20	Wheel (Nylon)	2
21	080-WPS21	Lock	1
22	080-WPS22	Wheel Housing	2
23	080-WPS23	Bearing	2
24	080-WPS24	Shaft	2
25	080-WPS25	Nut	8
26	080-WPS26	Washer	2
27	080-WPS27	Bearing	2
28	080-WPS28	Washer	2
29	080-WPS29	Bearing	2
34	080-WPS34	Nut	4
35	080-WPS35	Battery	2
36	080-WPS36	Washer	4
37	080-WPS37	Bearing	4
38	080-WPS38	Wheel (Nylon)	2
39	080-WPS39	Shaft	2
43	080-WPS43	Fastener	1
44	080-WPS44	Washer	1
45	080-WPS45	Valve	1
46	080-WPS46	Hose	1

ITEM	PART NO.	DESCRIPTION	QTY.
49	080-WPS49	Retainer	1
50	080-WPS50	O-Ring	1
51	080-WPS51	Bush	1
52	080-WPS52	Pressure Ring	1
53	080-WPS53	Cap	1
54	080-WPS54	Pressure Ring	1
55	080-WPS55	Screw	1
56	080-WPS56	Shaft	1
57	080-WPS57	Roller	2
58	080-WPS58	Bearing	2
59	080-WPS59	Retaining Ring	2
60	080-WPS60	Retaining Ring	2
61	080-WPS61	Chain	2
62A	080-WPS62A	Piston - 63" (1600mm)	1
62C	080-WPS62C	Piston - 118" (2997mm)	1
63	080-WPS63	Washer	1
64	080-WPS64	O-Ring	1
65	080-WPS65	Piston	1
66	080-WPS66	O-Ring	1
67	080-WPS67	Pressure Ring	1
68	080-WPS68	Split Washer	1
69	080-WPS69	Washer	1
70	080-WPS70	Retaining Ring	1
73	080-WPS73	Roller	8
77	080-WPS77	Carriage	1
78	080-WPS78	Pull Ring	2
79	080-WPS79	Spring	2
80	080-WPS80	Pin	2
81	080-WPS81	Fork	2
82A	080-WPS82A	Outer Mast 63" / 118" (1600 / 2997mm)	2
83	080-WPS83	Dash	1
84	080-WPS84	Nut	2
85	080-WPS85	Cap	1
86	080-WPS86	Washer	1
87	080-WPS87	Screw	1
88	080-WPS88	Nut	2
89	080-WPS89	Screw	2
90	080-WPS90	Power Button	1

10.0 RECOMMENDED SPARE PARTS LIST

DESCRIPTION	LOCATION OF USE	TYPE / SPECIFICATION	QUANTITY
Key to the Electric Lock	Unlock the Electric Lock	—	2
Charging Plug and Socket	Matched with the Charger	—	1 set
Fuse	Electric Equipment	10A	1
Fuse		160A	1
Sealing Ring	Oil Cylinder	UHS40	1
O Type Sealing Ring		50 x 3.55	1
O Type Sealing Ring		23.6 x 3.55	1
Dustproof Ring		d14	1
Composite Ring	Oil Inlet of Cylinder	DH40	1

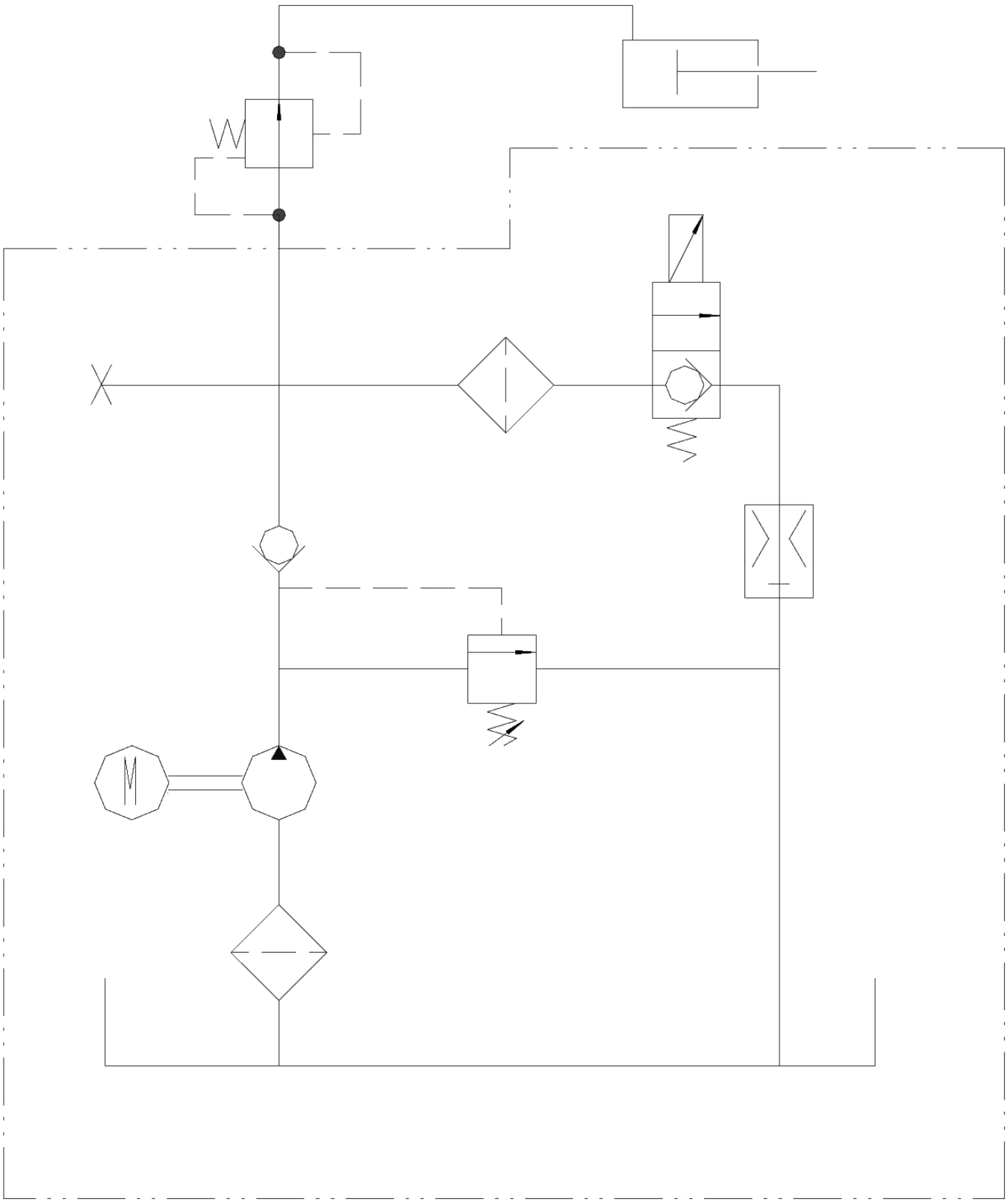
11.0 INDUSTRIAL TRUCK TROUBLESHOOTING

WARNING

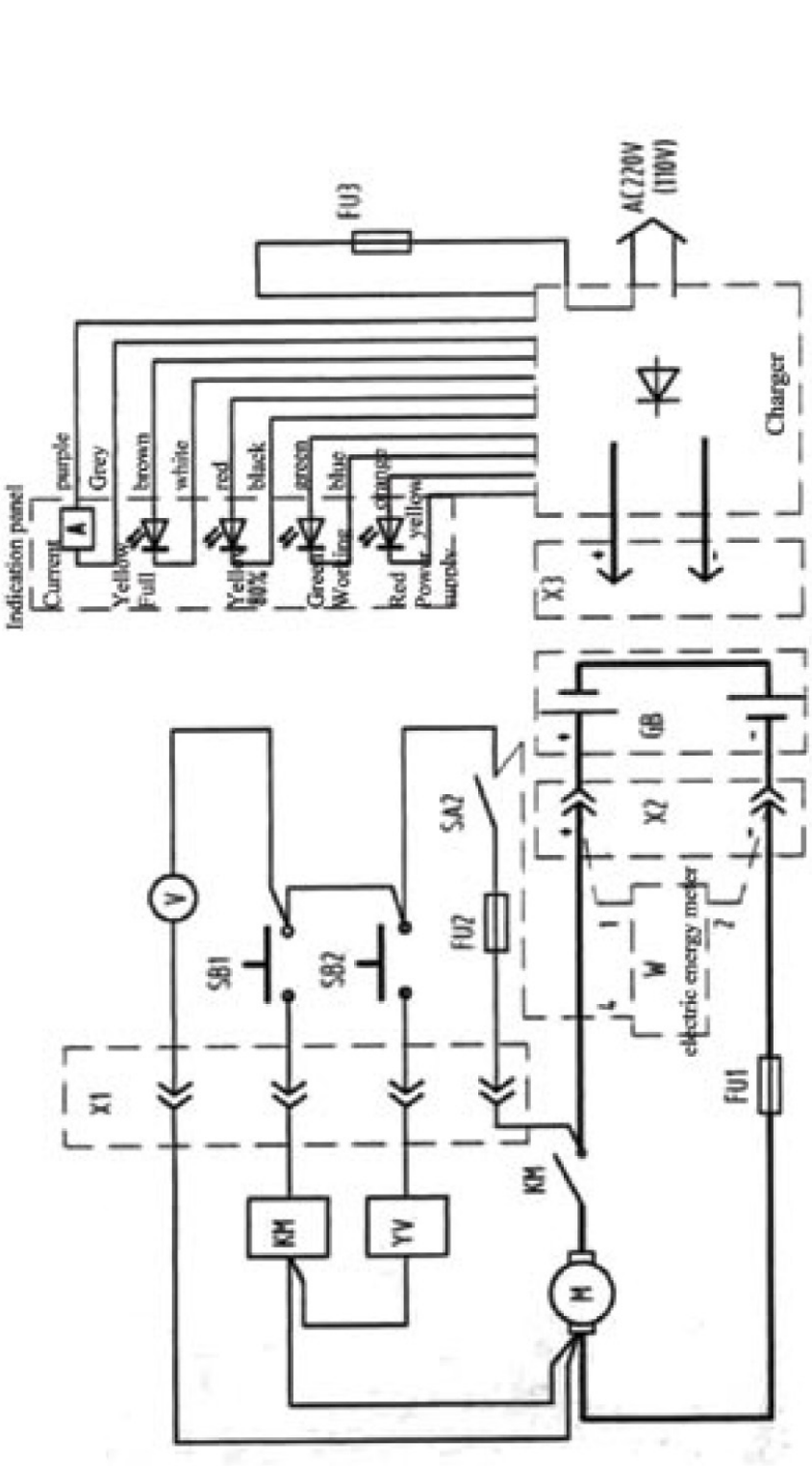
Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

PROBLEM	PROBLEM CAUSE
The forks will not lift.	1. Overloaded - Reduce the load 2. The pressure of the overload valve is too low - Adjust the pressure higher 3. Internal abnormal leakage in the lifting oil cylinder - Replace the seals 4. Insufficient hydraulic oil - Add appropriate quantity of filtered hydraulic oil 5. Insufficient voltage of the storage battery - Charge the battery 6. The power switch has not been turned on - Turn on the power switch 7. Electric lock is locked or damaged - Unlock the electric lock or repair 8. Damaged oil pump motor - Repair or replace 9. Damaged oil pump - Repair or replace 10. Damaged lifting button - Repair or replace
The forks cannot be lowered.	1. Internal door-frame is overloaded and deformed - Repair or replace 2. External door-frame is overloaded and deformed - Repair or replace 3. Dead frame roller - Repair or replace 4. Frame guiding rod is curved - Repair or adjust 5. Oil return hole is blocked - Clean 6. The electromagnetic valve is out of control - Troubleshoot
Reduced end voltage of the battery.	1. Damaged battery - Repair or replace 2. Low level of the electrolytic solution - Add electrolytic solution 3. Foreign matter in the electrolytic solution - Replace electrolytic solution

12.0 HYDRAULIC DIAGRAM



13.0 ELECTRICAL DIAGRAM



M: Motor of the hydraulic station
SA1: Emergency stop switch
V: Voltmeter
FU2: 10A Control fuse
X3: Charging plug

KM: Contactor of the hydraulic station
SA2: Key switch
GB: 12V Battery group
X1 Control connection socket

YV: Electromagnetic valve of hydraulic station
SB1: Lifting button
FU1: 160A General fuse
X2: Battery connector

Wire gauge: Power cable (thick cable) - 16mm^3
Control cable - 0.75mm^3

Note: If it is connected to the electric energy meter (W), it is not connected to the voltmeter (V)

Note: There are two types of charger, built-in and external. The indicating panel of the built-in type is separate from the charger and installed on the panel of the stacker.

NOTES

NOTES

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