

HYDRAULIC PUSH STACKER WPS

OWNER'S MANUAL



! WARNING!

DO NOT OPERATE OR SERVICE THIS PRODUCT UNLESS YOU HAVE READ AND FULLY UNDERSTOOD THE ENTIRE CONTENTS OF THIS MANUAL. FAILURE TO DO SO MAY RESULT IN PROPERTY DAMAGE AND/OR BODILY INJURY.

SAFETY PROCEDURES

INTRODUCTION

The following is intended to be a quick reference to some of the important procedures to follow while using this stacker. It is not intended to cover, or suggest that it does cover, all procedures required to be followed to ensure safe operation. Operators should be aware of and abide by all workplace safety regulations that may apply to the operation of this stacker. These laws and regulations include but are not limited to:

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

In addition to these regulations, industry standards such as the American National Standards Institute (ANSI) "ASME B56.10 Safety Standard for Manually Propelled High Lift Industrial Trucks" applies to this equipment.

To obtain a copy of this standard, contact the Sales Department:

American National Standards Institute

1430 Broadway

New York, NY 10018

(212) 642-4900

Further Reference:

Electric Lift Pallet Stackers according to ISO3691: 1980 "Safety Specification of Industrial Vehicles"

SAFETY PROCEDURES

UNTRAINED PERSONNEL SHALL NOT BE ALLOWED TO OPERATE THE STACKER

- 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 and 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/package 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 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.*

EXCLUSION OF LIABILITY

The manufacturer assumes no liability for damage or injury to persons or property which has occurred as a result of defects or faults in the hydraulic push stacker delivered or due to incorrect use. The manufacturer also assumes no liability for lost profits, operating down times, or similar indirect losses which the buyer has incurred. Damage to third parties, irrespective of its nature, is not subject to compensation

The operating instructions are not subject to notification of amendment. The descriptions and illustrations included in our operating instructions and replacement parts list are not binding. In the interests of further development, we reserve the right to make any changes at any time to the modules, components and accessories which we deem to be expedient, or for technical reasons, while retaining the essential features of the models described here.

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WARRANTY

The guarantee includes material and assembly defects on parts which prove to be incorrect or inadequate for normal use when tested by the manufacturer and which are returned to the manufacturer free of charge within the guaranteed period of 12 months.

The guarantee expires if inappropriate or unadvised repair is undertaken by the user.

Blue Giant offers a full line of dock levelers, dock safety equipment, accessories, ergonomic and scissor lift equipment, and industrial trucks. Concurrent with our continuing product improvement program, specifications are subject to change without notice. Please contact Blue Giant for latest information. Some features illustrated may be optional in certain market areas.

OWNER'S PURCHASE RECORD

Dealer:	Date in Service:
Owner:	Number of Units:
Order Number:	Year of Construction:
Serial Number(s):	

CHECK SHIPMENT BEFORE USE

The hydraulic push stacker is to be carefully checked at the manufacturer's plant before shipment. In order to ensure that no damage has occurred during transport, the hydraulic push stacker should be checked upon receipt for transport damage and to ensure correct operation. Damage due to transport is to be listed on the signed copy on the freight document. The freight forwarder must be notified of any damage within 48 hours. Damaged hydraulic push stacker must not be put into use.

MOVING DANGER

WARNING! - When the stacker lifts the fork to a height greater than 10" for stacking operation, the stacker must move slowly and the continual travel distance must not exceed 6'0". It is prohibited to handle goods for a long distance when the height of the fork is greater than 10".

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 hydraulic push stacker in environment with flammable and/or explosive and/or acid and/or alkali corrosive substances is prohibited.

LOADING SPECIFICATION

The hydraulic push stacker 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 hydraulic push stacker. 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 hydraulic push stacker must not be driven over very uneven ground.

MAXIMUM INCLINES OR DECLINE GRADES

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

SAFETY WITH TALL LOADS

Transporting with tall loads, (e.g. machines) changes the center of gravity of the load so unfavorably that the complete hydraulic push stacker 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 hydraulic push stacker as a form of roller skate is not permissible. Foodstuffs are only to be transported in packed form. Direct contact with the hydraulic push stacker is to be avoided.

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

WPS SERIES SPECIFICATIONS

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

- a) Truck type (capacity)
- b) Serial number of the truck
- c) Complete Part Number

ASSEMBLY DRAWINGS:

General Dimensional Drawing
Handle & Pump Assembly
Frame Assembly

Model:	Weight:	Capacity:
WPS22-63	850 lbs (385.55 kg)	2,200 lbs (1,000 kg)
WPS22-118	990 lbs (449 kg)	2,200 lbs (1,000 kg)
WPS22-130	1060 lbs (480.8 kg)	2,200 lbs (1,000 kg)
WPS22-150	1190 lbs (540 kg)	2,200 lbs (1,000 kg) (rated 1320 lb for heights over 130")

Fork length: 42" (1067 mm)

Please fill in Owner's Purchase Record with the following details:

- serial number(s)
- dealer name
- date in-service
- owner's name
- order number
- year of construction

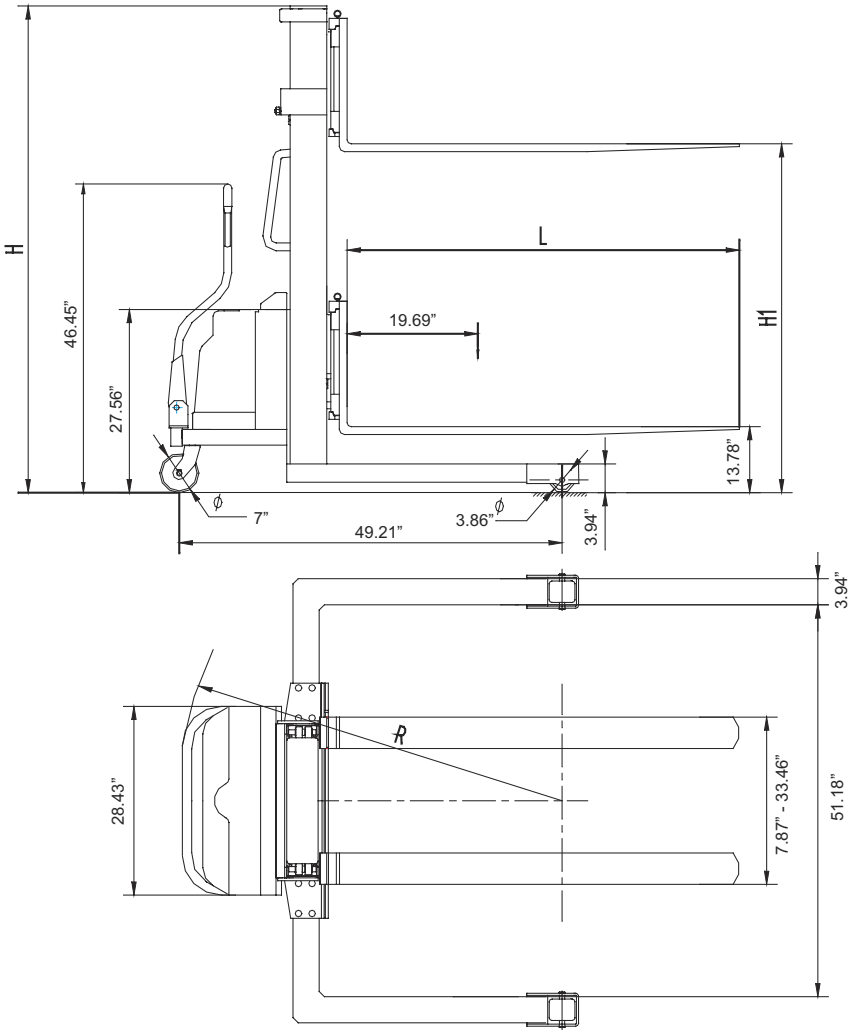
STRADDLE ADJUSTMENT

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 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" (1270 mm)

GENERAL DIMENSIONAL DRAWING



BEFORE USE INSPECTION

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

INSPECTION POINT LIST:

1 Safety Equipment

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

2 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 indicated in Figure 1. 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. Oper-

ate 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.

3 Forks and Fork Carriage

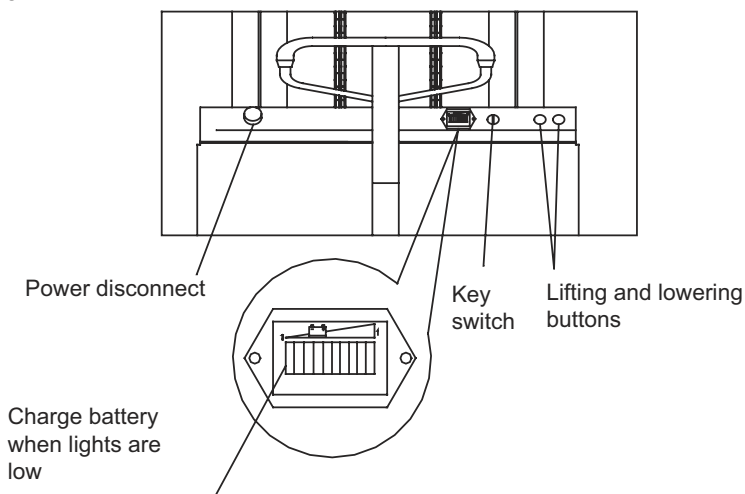
- Inspect forks for cracks, wear and alignment. Obvious damage fails inspection. Maximum allowable fork blade wear is 10% of fork back (vertical member of fork).
- Fork carriage - carriage is part of truck to which forks attach. Inspect carriage for cracks, damage or wear.

4 Wheels

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

DANGER! Disconnect battery before attempting removal of imbedded materials.

Figure 1



OPERATING INSTRUCTIONS

WPS Series 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 with both hands the ergonomic push/pull handles or spring pivot steering handle. By pushing or pulling 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 dash. 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" for stacking operation, the stacker must move slowly and the continual travel distance must not exceed 6'0". It is prohibited to handle goods for a long distance when the height of the fork is greater than 10" high.

7. To lower forks, unit must be stationary. Push the lowering button on dash and when desired height is achieved release button.
8. Transport load with forks at lowered height of 4" - 8" 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.

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

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.

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 any 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 a 110 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.

ELECTRICAL DIAGRAM

M1: Motor of the hydraulic station
 KM: Contactor of the hydraulic station
 YV: Electromagnetic valve of hydraulic station
 SA1: Emergency stop switch
 SA2: Key switch
 SB1: Lifting button
 SB2: Lowering button
 V: Voltmeter
 GB: 12V battery group
 FU1: 160A general fuse
 FU2: 10A control fuse
 X1: Control connection socket
 X2: Battery connector
 X3: Charging plug

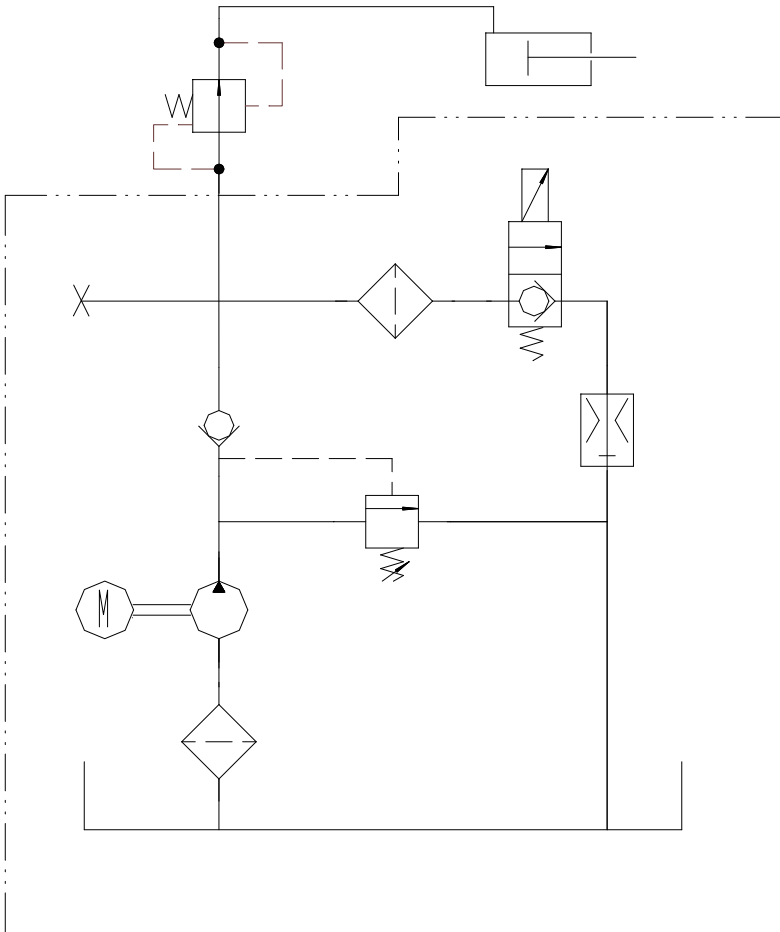
Note: If it is connected to the electric energy meter (W), it is not connected to the voltmeter (V).

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 sticker.

Mark	Place	Division	File rev. No.	Signature	mm-dd-yy
Design	Lin Hua		Standardization		02/02/
Review					
Process			Approval		

Page of	
Sluge mark	Weight
1:1	Scale

HYDRAULIC DIAGRAM



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 electric 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: Twice a year. Add lubricant to the bearings of the drive wheel and the door-frame, examine the firmness of the fixing and ensure fittings, the flexibility of the wheels, the door-frame rollers, the forks lift and lower normally. The operation noise of the stacker should be no more than 70dB after maintenance.

Maintenance for Hydraulic System: 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, HV-N46 or HV-N68 should be used.

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

Maintenance for Electric Equipment: 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 adjusted as required and the terminals 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).

TROUBLE SHOOTING GUIDE

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

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	Electric equipment	160A	1
Sealing ring	Oil cylinder	UHS40	1
O type sealing ring	Oil cylinder	50× 3.55	1
O type sealing ring	Oil cylinder	23.6× 3.55	1
Composite ring	Oil inlet of cylinder	d14	1
Dustproof ring	Oil cylinder	DH40	1

STACKER ASSEMBLY PARTS LIST

Drawing Reference Number	Blue Giant Part Number	Quantity Per Unit	Description
1	080-WPS1	1	Handle
2	080-WPS2	10	Retaining Ring
3	080-WPS3	1	Shaft
4	080-WPS4	1	Spring
6	080-WPS6	1	Pump (power pack)
7	080-WPS7	1	Screw
8	080-WPS8	1	Battery Discharge Indicator
9	080-WPS9	1	Screw
10	080-WPS10	1	On/Off Switch
11	080-WPS11	1	Button (lift)
12	080-WPS12	1	Button (lower)
13	080-WPS13	2	Washer
14	080-WPS14	8	Washer
15	080-WPS15	6	Screw
16	080-WPS16	1	Cover
17	080-WPS17	4	Retaining Ring
18	080-WPS18	4	Washer
19	080-WPS19	4	Bearing
20	080-WPS20	2	Wheel (nylon)
21	080-WPS21	1	Lock
22	080-WPS22	2	Wheel housing
23	080-WPS23	2	Bearing
24	080-WPS24	2	Shaft
25	080-WPS25	8	Nut
26	080-WPS26	2	Washer
27	080-WPS27	2	Bearing
28	080-WPS28	2	Washer
29	080-WPS29	2	Bearing
34	080-WPS34	4	Nut

STACKER ASSEMBLY PARTS LIST

Drawing Reference Number	Blue Giant Part Number	Quantity Per Unit	Description
35	080-WPS35	2	Battery
36	080-WPS36	4	Washer
37	080-WPS37	4	Bearing
38	080-WPS38	2	Wheel (nylon)
39	080-WPS39	2	Shaft
43	080-WPS43	1	Fastner
44	080-WPS44	1	Washer
45	080-WPS45	1	Valve
46	080-WPS46	1	Hose
49	080-WPS49	1	Retainer
50	080-WPS50	1	O-ring
51	080-WPS51	1	Bush
52	080-WPS52	1	Pressure ring
53	080-WPS53	1	Cap
54	080-WPS54	1	Pressure ring
55	080-WPS55	1	Screw
56	080-WPS56	1	Shaft
57	080-WPS57	2	Roller
58	080-WPS58	2	Bearing
59	080-WPS59	2	Retaining ring
60	080-WPS60	2	Retaining ring
61	080-WPS61	2	Chain
62A	080-WPS62A	1	Piston - 63"
62C	080-WPS62C	1	Piston - 118"
63	080-WPS63	1	Washer
64	080-WPS64	1	O-ring
65	080-WPS65	1	Piston
66	080-WPS66	1	O-ring
67	080-WPS67	1	Pressure ring

STACKER ASSEMBLY PARTS LIST

Drawing Reference Number	Blue Giant Part Number	Quantity Per Unit	Description
68	080-WPS68	1	Split washer
69	080-WPS69	1	Washer
70	080-WPS70	1	Retaining ring
73	080-WPS73	8	Roller
77	080-WPS77	1	Carriage
78	080-WPS78	2	Pull ring
79	080-WPS79	2	Spring
80	080-WPS80	2	Pin
81	080-WPS81	2	Fork
82A	080-WPS82A	2	Outer mast - 63" /118"
83	080-WPS83	1	Dash
84	080-WPS84	2	Nut
85	080-WPS85	1	Cap
86	080-WPS86	1	Washer
87	080-WPS87	1	Screw
88	080-WPS88	2	Nut
89	080-WPS89	2	Screw
90	080-WPS90	1	Power button



85 Heart Lake Road South
Brampton, Ontario, Canada L6W 3K2
Phone: 905-457-3900 • Fax: 905-457-2313
www.BlueGiant.com

BLUE GIANT EQUIPMENT CORPORATION