

Operation and Service Manual

ST30EWW	ST50EW	ST100E
STL38E	STL65E	ST100EWN
ST38E	ST65E	STW38E
STL50E	ST80E	STW50E
ST50E	ST80EWW	STW65E

Read this manual carefully and understand completely before operating stackers. Keep filing this manual for future reference. If this copy is lost, please contact your local supplier for a replacement.

Explanation of Terms and Symbols












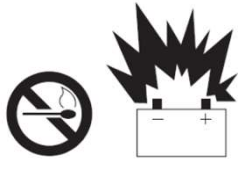
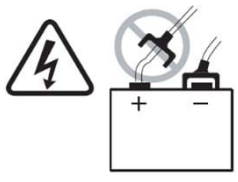

In this manual, 「Warning」, 「Caution」 are defined and specified as below. Notice of Warnings are very important for safe operations. As these are very Important to protect operators from accidents resulting in personal injury and death, and damage to property, so make sure to read thoroughly and understand fully before operation.

Warning Incorrect operation may result in serious injury or death of the operator.

Caution Incorrect operation may result in injury and damage to the property.

⚠ Warning !

© Hazard or unsafe practice which, if not avoided, may result in DEATH or SEVERE PERSONAL INJURY and PROPERTY DAMAGE.

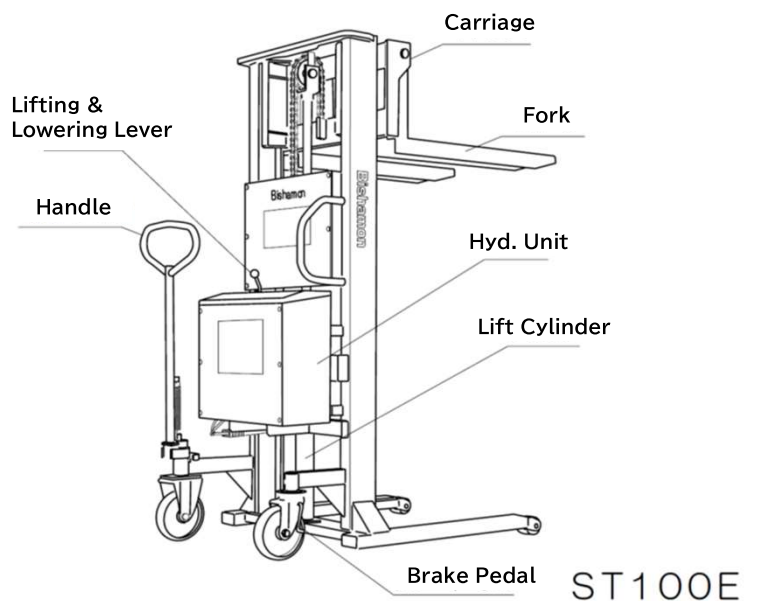
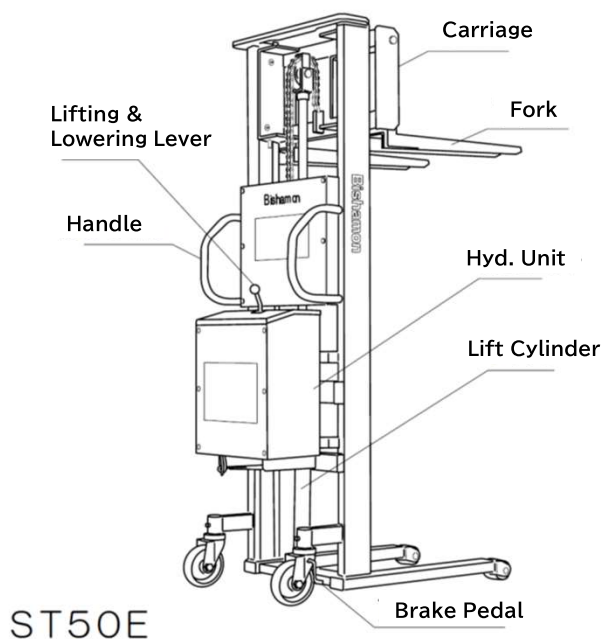
			
DO NOT use lifter on slope, unlevel or soft surface. Lifter may become unstable and /or uncontrollable. SEVERE PERSONAL INJURY and PROPERTY DAMAGE could result.	Always travel with forks in lowered position. SEVERE PERSONAL INJURY and PROPERTY DAMAGE could result.	DO NOT load one fork more than other and DO NOT load tips on forks. SEVERE PERSONAL INJURY or DEATH could result.	NEVER sit, stand or ride on forks. SEVERE PERSONAL INJURY or DEATH could result.
			
NEVER go under forks. SEVERE PERSONAL INJURY or DEATH could result.	DO NOT overload lifter. ALWAYS stay within designated capacity and load center rating.	Replace chain every four years or if inspection reveals excessive wear on links, pins, side plates and deformed, bent, rusted or broken links.	DO NOT use in areas of multi level floor surface that could create loss of control and result in SEVERE PERSONAL INJURY.
			
DO NOT put hand near chain sprocket or other moving parts. SEVERE PERSONAL INJURY could result.	KEEP FEET CLEAR of rolling wheels that could result in SEVERE PERSONAL INJURY.	USE ONLY in areas clear of all personnel and objects to prevent severe personal injury and property damage.	KEEP AWAY from open flame when charging battery. Handle battery after fully reading the instruction manual.
		<div> <h4>Initial Charging</h4> <p>Battery is not charged upon delivery. Please charge after reading this Operation and Service Manual and the manual supplied with charging</p> </div>	
Fully attach the battery terminal cover. Danger of fire or electric shock from short circuit could result.	SHOCK HAZARD ! Disconnect power plug before opening Switchboard and Control Panel.		

Caution !

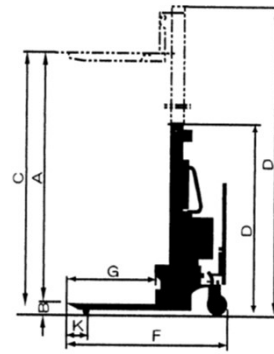
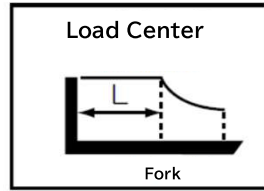
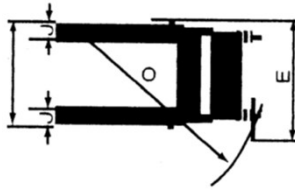
© Hazard or unsafe practice which, if not avoided, may result in MINOR or MODERATE PERSONAL INJURY and PROPERTY DAMAGE.

1. READ THIS OPERATION MANUAL COMPLETELY BEFORE USING AND THOROUGHLY UNDERSTAND AND FOLLOW ALL SAFETY INSTRUCTIONS. Wrongful use may result in accident.
2. This stacker lifter is designed to use on smooth floor with balanced, stable, firmly stacked load that is within capacity and load diagram. DO NOT use for any other purpose than its intended use.
3. Stacker lifter shall be operated by TRAINED personnel only. OPERATOR shall read "Operation Manual" completely and thoroughly understand the controls and operation of this equipment BEFORE operating the lifter.
4. Do Not lower the fork with load with fast speed. Or it may result in impact load and damage the stacker.
5. ALWAYS observe lifter and ALWAYS stay at the controls while the lifter is in motion. RELEASE controls and STOP lifter immediately if load on the lifter appears to become unstable. NEVER leave the loaded lifter unattended unless the forks are fully lowered position.
6. Set the parking brake and park the stacker when moving the load onto the fork. Or the unit may start to move all of a sudden during moving of the load and may result in falling of the load.
7. DO NOT use lifter with unstable, unbalanced or loosely stacked load. Unbalanced loads may become unstable and fall. SEVERE PERSONAL INJURY and PROPERTY DAMAGE could result.
8. Do Not handle unsecured or unstable load that could fall backwards.
9. Perform the inspection following to the instructions of Operation Manual.
10. Do Not alter or modify the stackers in any way.
11. Do Not use forks or lift as a hoist or to pull up the load. SEVERE PERSONAL INJURY and PROPERTY DAMAGE could result.
12. Keep the forks be widened equally in operation. Or it may result in damage to the unit and falling of the load.
13. ALWAYS keep feet, hands and fingers away from casters, load wheels and all moving components. SEVERE INJURY could result.
14. ALWAYS perform maintenance and inspection with lifter unloaded.
15. Do Not keep raising or lowering a load continuously over 40 seconds. The Motor may overheat.
16. When replacing batteries, fuses etc., be sure to remove the battery Negative (-) terminal first.
17. Overuse of the battery may result in overdischarge and decrease the life of the battery.
18. Do Not move too fast. Or it may result in the inability of the control of the unit.
19. The lifter is NOT waterproof and is intended to be used in a dry environment and at a moderate temperature range.

1. Name of Components



2. Specifications



	Model	ST30EWW	STL38E	ST38E	STW38E	STL50E	ST50E	ST50EWN	STW50E
	Capacity (Kgs)	300	380			500			
A	Vertical Travel (mm)	1500	1200	1500	2420	1200	1500		2420
B	Fork Min. Height (mm)	90							
C	Fork Max. Height (mm)	1590	1290	1590	2510	1290	1590		2510
D	Overall Height (Min-mm)	1969	1666	1966	1708	1669	1969		1734
D'	Overall Height (Max-mm)				2923				2949
E	Overall Width (mm)	1375	641		673	683		875	883
F	Overall Length (mm)	1485	1078		1092	1085			1689
H	Max. Width of forks (mm-Fork Outside)	600	558		600				726
I	Min. Width of forks (mm-Fork Outside)	232							275
G	Fork Length (mm)	1000	600						1000
J	Fork Width (mm)	110							125
K	From Front Wheel end to Fork End (mm)	234	119		41	34			352
*	Location of Fork at lowered position	B	A					B	A
L	Load Center (mm)	500	300						500
	Outside distance between Arms (mm)	1375	544		586			871	700
	Inside distance between Arms (mm)	1175	352		394			679	500
	Front Wheel (Polyurethane) OD x W (mm)	Φ70 X 73							
	Rear Wheel (Polyurethane) OD x W (mm)	Φ150 X 42							Φ200 X 42
	Lifting Motor (KW)	0.7 KW							0.9KW
O	Minimum Turning Radius (mm)	1413	923		1026			1103	1344
	Battery Capacity	64Ah/5HR	36Ah/5Hr		64Ah/5Hr				92Ah/5Hr
	(12V) JIS Standard	95D31R	55B24R		95D31R				130E41R
	Lifting Speed (Seconds)	22	16	21	22	18	22		30
	Lowering Speed (Seconds)	Adjustable							
	Machine Weight (Kgs.)	229	151	156	241	187	192	202	363
	Oil Volume (Litter)	1.55	1.24	1.55	1.51	1.24	1.55		2.50

	Model	STL65E	ST65E	STW65E	ST80E	ST80EWW	ST100E	ST100EWW
	Capacity (Kgs)	650			800		1,000	
A	Vertical Travel (mm)	1200	1500	2420	1500			
B	Fork Min. Height (mm)	90						
C	Fork Max. Height (mm)	1290	1590	2510	1590			
D	Overall Height (Min-mm)	1667	1967	1734	1967			
D'	Overall Height (Max-mm)			2949				
E	Overall Width (mm)	883				1400	903	934
F	Overall Length (mm)	1889		1489	1689		1489	
H	Max. Width of forks (mm-Fork Outside)	726						688
I	Min. Width of forks (mm-Fork Outside)	275						
G	Fork Length (mm)	1200		800	1000		800	
J	Fork Width (mm)	125						
K	From Front Wheel end to Fork End (mm)	352		152	352	152		
*	Location of Fork at lowered position	A				B	A	B
L	Load Center (mm)	600		400	500	500	400	
	Outside distance between Arms (mm)	700				1400	700	900
	Inside distance between Arms (mm)	500				1200	500	700
	Front Wheel (Polyurethane) OD x W (mm)	Φ70 X 73						
	Rear Wheel (Polyurethane) OD x W (mm)	Φ200 X 42						
	Lifting Motor (KW)	0.9KW						
O	Minimum Turning Radius (mm)	1524		1344	1304	1694	1344	1391
	Battery Capacity	64Ah/5Hr		92Ah/5Hr	64Ah/5Hr			
	(12V) JIS Standard	95D31R		130E41R	95D31R			
	Lifting Speed (Seconds)	28	35	30	35			
	Lowering Speed (Seconds)	Adjustable						
	Machine Weight (Kgs.)	318	323	358	322	347	321	331
	Oil Volume (Litter)	2.21	2.76	2.50	2.76			

* Location of Fork at lowered position A : On top of Arm(Leg), B : At side of Arm(Leg)

Specifications are subject to change without notice

3. Pre-Operation Checks



Caution ! —
DO NOT use this stacker at all if repairs are required or if you suspect a malfunction.

Perform the Pre-Operation checks before operating everyday.

1. Any damage, distortion or crack in post
2. Any damage, distortion or crack in carriage and forks
3. Smooth movement of front and rear wheels
4. Any oil leak from hydraulic line or cylinder
5. Any damage, kink or crack in chain
6. Check if brake works properly
7. Any natural lowering
8. Fastening of bolts and nuts
9. Is battery liquid at adequate level ?
10. Looseness of battery terminal
11. Is battery fixed firm ?
12. Smooth movement of Lifting & Lowering Lever. Does lever return to neutral when released ?

4. Operation

(1) Lifting and Lowering

Forks can be lifted and lowered by operating Lifting & Lowering Lever.

- ① Forks lift up by tilting the lever towards operator
- ② Forks lower by pushing the lever forward.

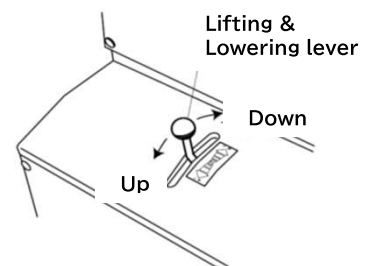
Lifting and lowering speed can be adjusted by pushing and tilting angle.



Caution ! —
DO NOT lift up the load or anything above the rated capacity.
DO NOT lift the load only at the tip of the forks. Lift up the load within loading diagram(※) capacity.



※ Load Center is the distance from root of the fork for the max capacity available. Refer to the loading diagram of each model.



Caution ! —
DO NOT keep lifting with excessive slow lifting speed and continuously over 40 seconds.
Rapid lowering operation may result in load collapse and dangerous. Also rapid lowering and sudden stop may result in impact load and damage the unit.

(2) Moving (Maneuvering)

Hold Handle and move unit carefully.

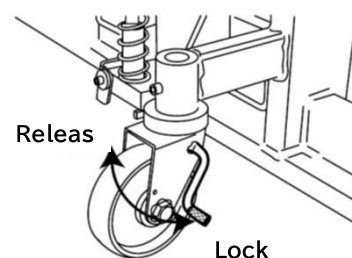


Caution ! —
DO NOT move or turn around with load kept at high position.
DO NOT push Lowering Lever when moving.

(3) Brake

Brake is installed on the right side flexible wheel.

- ① To Lock —
Step down the lever of the caster to lock the brake on the wheel.
- ② To Release —
Pull up the brake lever by toe.



Caution ! —
Make sure to set the brake whenever the lift is not moving.

(4) Battery and Charging

■ How to Charge Battery

- ① Make sure that battery fluid is present up to the designated fluid level. Add purified water if the fluid is insufficient.
- ② Unplug the battery socket and insert the charging device into the open socket (indicating as "charging port") to charge the battery.
- ③ Refer to the instruction manual supplied with the charger regarding methods of use.

⚠ Warning

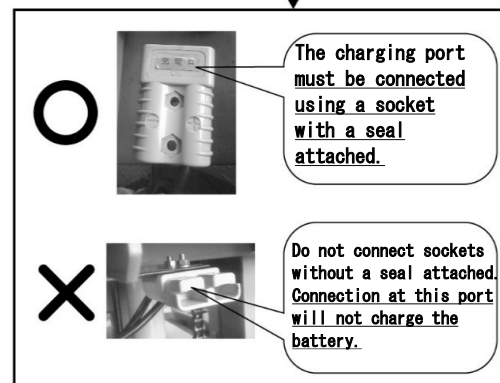
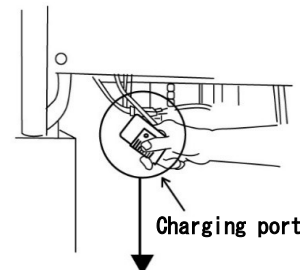
- Keep battery away from open flame when charging. Battery may be at risk of explosion.
- Choose a well-ventilated area to charge the battery. Hydrogen gas may be produced, creating the danger of explosion.
- Charging the battery with insufficient battery fluid repeatedly also could result in the risk of explosion.

■ Battery Life

- ① Battery is a consumable product and is not applicable for the product warranty.
- ② Battery can be used for 150 to 180 charges, but maintenance and storage conditions also strongly influence the life of battery.

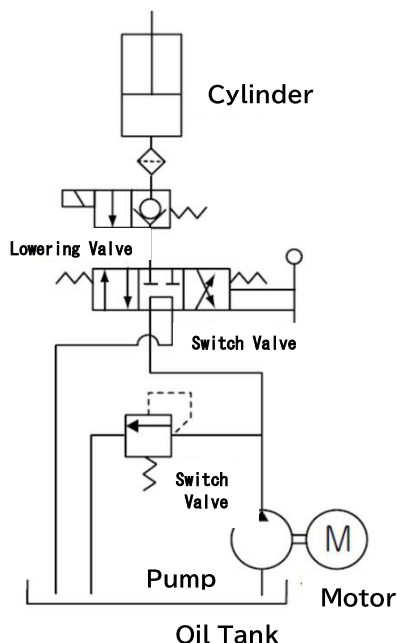
⚠ Caution !

Cover the battery terminal completely. Electrical short circuit can cause danger of fire, or electric shock. DO NOT overcharge or boost the charger. Also DO NOT discharge the battery 100%.

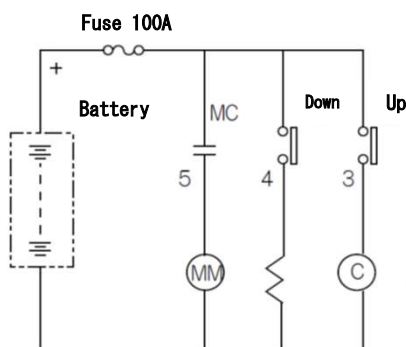


5. Circuit Diagram

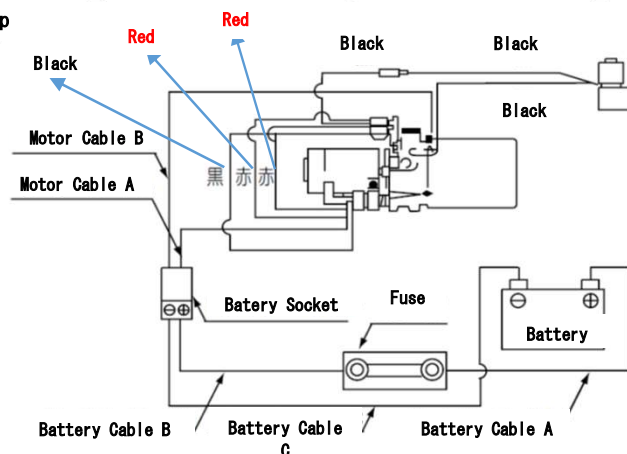
【 Hydraulic Circuit 】



【 Electric Circuit 】



【 Actual Wiring Schematic 】



6. Periodic Inspections

Perform the periodic inspections for safe operation.

1. Ensure that the chain is not rusted, broken, cracked, or missing links (Monthly)
2. Ensure that battery terminal cover is without abnormality (Monthly)
3. Check the sliding portion of roller inside post, grease fitting of the chain bracket portion, and grease up the chain. (Every 6 months)
4. Ensure that the density of each battery cell is 1,270 (at 20°) or greater after charging. (Every 6 months)
5. Change the motor oil (Every 12 months)

■ Types of Hydraulic Oil

Viscosity classification ISO VG32 abrasion resistant hydraulic fluid oil;
Fluid volume : 1.6 liters

Oil Brand	Product Name
Esso	Nuto H32, HP32, Unipower SQ32
Idemitsu	Super Hydraulic Fluid 32
Showa Shell	Terasu Oil 32, K32
Mobile	Mobile DTE24
Cosmo	Cosmo Hydro AW32
Kygnus	Unit Oil WR32

■ Replacing Battery

Battery used for this stacker is JIS standard battery. Make sure to replace with same standard spec.

Applicable Model No.	JIS Spec.
STL38E, ST38E	GR-55B24R
STL50E, ST50E, ST50EWN, ST30EWN, STL65E, ST65E, ST80E, ST80EWN, ST100E, ST100EWN, STW38E	GR-95D31R
STW50E, STW65E	GX-130E41R

⚠ Caution !

Caution on Battery :

- Make sure to remove the battery socket before work.
- Always be cautious of a short circuit.
- DO NOT mistake the (+) and (-) terminals.
- Make sure to cover the (+) terminal.
- Make sure to secure the battery with a battery clamp to prevent vibrating etc.

7. Troubleshooting

The below show how to deal with relatively minor malfunctions. For other further issues, please contact your supplier of this stacker.

Symptoms of malfunction		Possible Cause	Action
Does not rise	Motor does not run	• Wiring defects	Check through 【Actual Wiring Schematic】
		• Battery Socket is loose	Fix the socket firmly
		• Battery is not fully charged	Check battery and charge
	Motor is running	• Relief Valve is not adjusted Properly	Readjust Relief Valve
Lowers naturally		• Power Unit(Pump) defects	Replace Power Unit (Pump)
		• Hydraulic Oil is not full	Fill the oil
		• Defective seating of Lowering Valve	Replace Lowering Valve
Do not lower		• Piping defects	Repair location of leak
		• Defective Lowering Valve	Replace Lowering Valve
		• Piping defects	Check through 【Actual Wiring Schematic】
Oil Leak	At Cylinder	• Defective Seals	Replace Cylinder seals
	At Pipe or Joint	• Improper fastening	Check and Fasten
	At Air Breather	• Excessive Oil	Adjust fluid to appropriate level

8. Disposal

When disposing of this stacker, dispose of the metal, non-metal, plastic, and hydraulic oil components separately. There are regulations for disposing of the hydraulic oil, so make sure to sort and follow the local rules. If you have any questions regarding disposal, please check with your supplier of the stacker.

9. Product Warranty Conditions

Warranty

Should the unit malfunction within the warranty period (Within one (1) year of purchase) when it has been operated in accordance with the user manual and the warning labels on the unit, we will adjust the defective component, repair it, or send a replacement part free of charge. However, this does not apply in the case of secondary damage or any damage to which any of the following apply:

- (1) Damage or injury resulting from incorrect operation, improper inspection, improper storage, or any other type of negligence
- (2) Damage of injuries resulting from changes (modifications) that negatively impact the product's operation mechanism
- (3) Consumable parts that are damaged and need to be replaced
- (4) Damage or injury resulting from fires, earthquakes, wind, floods, or other natural disasters or external factors
- (5) Problem resulting from specified parts not being used
- (6) Error in the warranty claim process (Ex: failure to indicate Model or Serial No. etc.)
- (7) Damage or injury resulting from installation
- (8) Repairs performed not by our company or not by our authorized dealer
- (9) Damage confirmed to be the result of overuse, user error, or accident

Furthermore, all rubber components and other naturally degradable products used in this products and its accessories, as well as all consumable products, fall outside the scope of this warranty.

This lift is not waterproof, so rust, corrosion, short circuits, and other damage caused by water is not covered under warranty.

How to Claim Warranty

If you decide to file claim for this product based on the above, please contact your dealer. The dealer will carry out the necessary procedures. In addition, we can not decide whether or not any particular situation falls within the scope of this warranty.

10. After Sales Service

• Product does not work properly	→	Review the manual and try to find solution
• Product still does not work properly	→	Contact your supplier and request repairs
• Repairs within the warranty period	→	The warranty is valid one year from the date of purchase. We will service your product in accordance with warranty conditions.
• Repairs out of warranty period	→	Consult with your supplier
• Availability of Spare Parts	→	The spare parts are available for 8 years after discontinuing manufacturing

Contact your lifter supplier for any information regarding after service.
When contacting your lifter supplier, provide following information.

- Model No.
- Serial No.
- Purchase Date
- Conditions of trouble

Record the above information in the table below for future inquiries.

Type	
Serial No.	
Purchase Date	
Lifter Supplier	
Installer	
Trouble Date and conditions	Date :
	Date :
	Date :
	Date :