

Instruction Manual

Lateral Pallet Tilter (LT0892)



Note: Owner/Operator must read and understand this instruction manual before using the lateral pallet tilter.

1. Before the first operating the machine, you should learn:

Please read, understand and follow these safety rules, maintenance, operating instructions and repair before operating this machine so as to prolong the lifetime of the machine and avoid death or damage of material.

- Please read the Instruction Manual carefully.
- The safety rules, maintenance, operating instructions.
- Proper application.
- Risks with improper use.
- Please replace the bolt with hole of Part No.138 before use.

2. General specifications

| | | |
|----------------------------|-------|---------------------------|
| Model | | LT0892 |
| Capacity | (kg) | 800 |
| Pressure | (MPa) | 25 |
| Max. Fork Height | (mm) | 920 |
| Min. Fork Height | (mm) | 88 |
| Width Overall Forks | (mm) | 540 |
| Fork Length | (mm) | 1150 |
| Fork Width | (mm) | 150 |
| Fork Lateral Tilting Angle | (°) | Each 20 of left and right |
| Load Wheel Diameter | (mm) | Ø80x70 |
| Steering Wheel Diameter | (mm) | Ø160x50 |
| Total Length | (mm) | 1630 |
| Total Width | (mm) | 694 |
| Total Height | (mm) | 1320 |
| Net Weight | (kg) | 210 |

3. Operating features of the machine

3.1 The machine has the same working function as the normal stacker.

3.2 When stacking, we can make the left or right side of the machine

nearer to the stacking area, then turn the winch to tilt the fork, overturn the material to the stacking area or on the stacking goods, without unloading by man, which is safe and free of labor.

3.3 Because the capacity of load is not big, the height of stacking is not high, the operating force of winch is not big when tilting.

4 Safety rules

4.1 Optimum safety

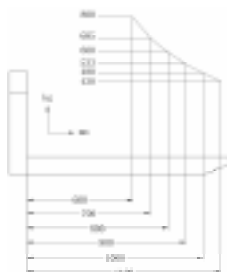
4.1.1 Use the correct operation, the operator should stand after the control level whenever push/pull or ascend/lower.

4.1.2 When using the lateral tilting function, the operator should stand the reverse side of the stacking area to operate the winch. Pay attention to the direction of operating the winch, which can not be wrong, or so may result in death or damage of material.

4.1.3 Avoid overloads

Note: the center distance of load and load is inverse ratio, that is the load center is nearer to the heel of the fork, the load is bigger, while the center distance is farther, the load is smaller. (Dia.1) Please obey this regulation strictly, never exceed the regulation of this diagram, because the weight and center of the load influence the intensity of the fork, if it is overloaded there is a risk of bending.

Diagram



Dia.1

4.1.4 Avoid offset loads

Except obeying the regulation of diagram, the load must be distributed evenly on forks or pallets, avoid of left or right offset, then the load will not overturn when lifting or transporting.

4.1.5 Driving loaded

The machine is designed for use on even and level floor. During transport the forks shall be raised as little as possible. Transport with raised forks should be made over the shortest possible distances and at low speed. Do not transport when tilting goods on the machine, this is not safe.

4.1.6 Driving the machine on the slope

- 1) The machine shall be unloaded or a small load.
- 2) The load shall be in the lowest position.
- 3) The gradient shall be no more than 2° when dragging the machine.
- 4) The operator shall be on the upper position whether upgrade or downgrade.

4.2 Safety regulations

- 1) Never stand or walk under a raised load.
- 2) Before lowering the forks, make certain that no foreign elements can hinder the free lowering of the forks.
- 3) The machine is designed for use on even and level floor.
- 4) During transport the forks shall be raised as little as possible.
- 5) Transport with raised forks should be made over the shortest possible distances and at low speed.
- 6) Brake when lifting or lateral tilting load in stacking area.
- 7) Do not use a damaged or malfunctioning machine.
- 8) Do not use a machine with a worn, damaged or more than 3% elongation chain.
- 9) Conduct a thorough pre-operation inspection prior to each use.

5 Maintenance and operating instructions

5.1 Lifetime of the machine

Regular inspection, repair and the replacement of worn or defective parts in good time will prolong the life of the machine.

“Prevention is better than repair”, therefore ensure:

5.1.1 Correct usage.

5.1.2 Regular cleaning.

5.1.3 Oil changes at the correct intervals.

5.1.4 Periodic safety inspection.

5.2 Lubrication and oil change

Under normal conditions the machine requires no lubrication (except bearing of tilting assembly). All ball bearings are sealed or half-sealed and treated with molybdenum disulphide grease. So it has self-lubricating function during moving.

Use the hydraulic type oil according to the table below.

| Temperature | Oil |
|-------------|----------------------|
| -20 ~+40 | L-HV46 Hydraulic oil |

5.3 Oil change

5.3.1 Draining:

- 1) Lower the forks to bottom position.
- 2) Loosen the screw (1112) of filling hole in external cylinder.
- 3) Remove the discharge valve shaft (133) and spring (135), then drain off the oil in external cylinder. If remove the discharge valve body (130Q) and steel ball (129), drain off the oil in external cylinder, pump piston and oil pipe normally.

5.3.2 Filling:

- 1) Install the lowering valve assembly.
- 2) Fill the hole with oil. Oil quantity: 1.1 liters.
- 3) Expel the air from the pump unit, then tighten the screw of filling hole.

5.4 Seal leakage

Locate the point at which oil leakage appears and then replace defective seals.

5.5 The safety valve does not seal completely

The safety valve (W) will open when the load reaches the 20% of the capacity, the safety valve must seal completely in capacity, no leakage. (This has been set in factory, do not regulate it under general conditions.)

With a certain load on the forks, press the pump rod by the control lever quickly so that oil quickly flows over the hydraulic valve. If the forks do not lift or tilt, it is because that the overflow valve does not close (not seal), regulate the pressure of the spring of the overflow valve. If this does not solve the problem, the valve insert must be replaced by new ones or the whole safety assembly.

5.6 Bleeding the hydraulic system

The pump will not operate if there is air in the hydraulic system.

The system can be bled as follows:

- 1) Loosen the screw (1112) of the filling hole in external cylinder.
- 2) With a certain load on the forks (about 200kg), pump the control lever to make the forks up to the top, then open the lowering valve quickly to make the forks down to the bottom.
- 3) Open the lowering valve, keep on pumping the control lever many times, then lift fork again, lower again until expel the air.

5.7 Adjustments of the three working positions of the handle

5.7.1 Three working positions of the handle

- 1) Lift position (the position of fork lifting): The handle is in the bottom position.
- 2) Normal position (Neither lift nor lower position): The handle is in the neutral normal position.
- 3) Lower position (The position of fork lowering): The handle is in the upper position.

5.7.2 Adjustment of normal position

- 1) Place the handle bar in normal position.
- 2) Press the control lever to the lowest position.
- 3) Regulate the nut (H1104) on the guiding rod (H5906) of control

lever and the regulating screw (140M) on the crank link (139M) to make the crank link be dragged (now the lowering valve is open, but hydraulic valve is close), while the forks in the state of neither lower nor lift position.

5.7.3 Adjustment of lifting position

- 1) Place the handle bar in lifting position.
- 2) Pump the control lever, the crank link (139M) shall not be dragged (now the lowering valve and hydraulic valve is close), the forks in the working state of lifting.
- 3) If the forks do not lift, regulate the nut (H1104) and the regulating screw (140M), until satisfy the needs of normal position and lifting position simultaneously.

5.7.4 Adjustment of lowering position

- 1) Pull the handle bar in lowering position.
- 2) The crank link (139M) shall be dragged, and make the lowering valve and hydraulic valve open completely, the forks in the lowering state.
- 3) If the forks do not lower, regulate the nut (H1104) and the regulating screw (140M), until satisfy the needs of three state positions simultaneously.

5.8 Forks height adjustment

Two rollers (F1207) in the upper carriage are mounted on eccentric axle (F5922), turn the eccentric axle, and adjust the tilting angle of the carriage so that they can be adjusted.

Adjustments:

- 1) Loosen the setting screw (F5919, each one on the left and right.).
- 2) Lock the hexagon point of the eccentric axle (F5922) with a wrench, the eccentric axle can now be turned to give the necessary adjustment.
- 3) Turn the eccentric axle back can make the fork tilt to the front (that is the front is low and the back is high), Turn the eccentric axle front can make the fork tilt to the back (that is the front is high and the

back is low).

- 4) To ensure the same load on all rollers, the eccentric axle (F5922) must be adjusted on both sides and to the same position.
- 5) Tighten setting screw M8 of each side after adjustment.

Note: The eccentric axle can only adjust the front or back of fork, can't adjust the tilting clearance of left or right of fork.

5.9 Cleaning

When cleaning the machine, do not direct the jet onto bearings and seals. Otherwise the grease will be washed out and the life of the equipment shortened.

6 Troubles shooting

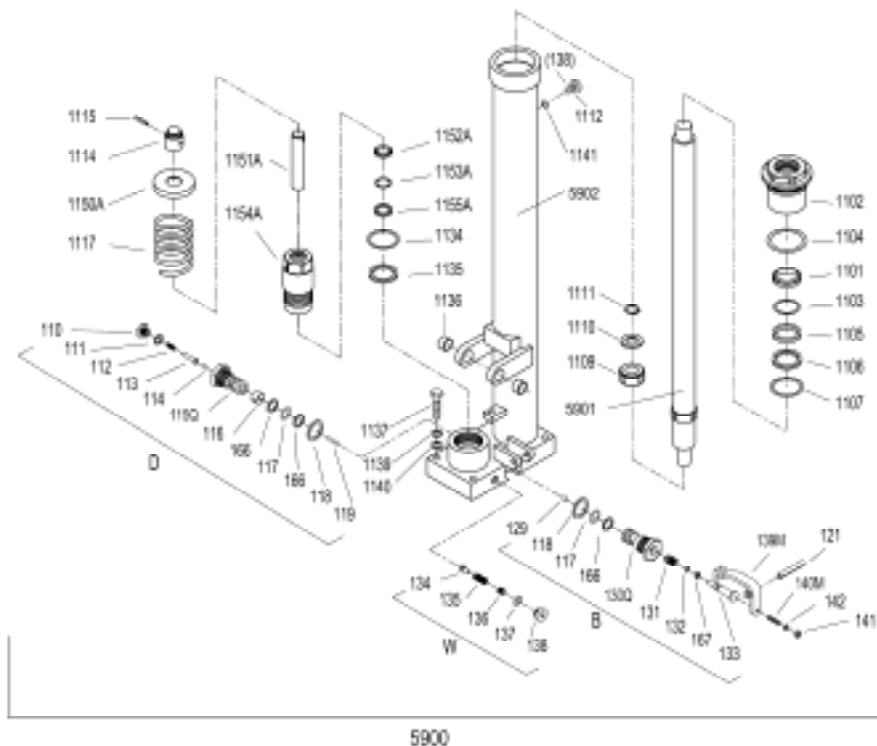
When the machine is used every day, adjustments and the replacement of worn parts might be necessary. For the frequency of troubles, causes and actions please refer to the following table.

| NO | TROUBLE | CAUSE | ACTION |
|----|--|---|--|
| 1 | The forks do not lift up. | -Not enough hydraulic oil. -Discharge valve is not sealed or locked. - Air in the hydraulic oil. -Overflow valve is not sealed or out of adjustment. -Overload the machine seriously. | -Pour in more oil. -Adjust the discharge valve, eliminate locking. -Expel the air. -Adjust the overflow valve or replace component. -Lift according to the rated capacity. |
| 2 | The forks do not lift to maximum height. | -Not enough hydraulic oil. | -Add more oil. |
| 3 | The forks unable to lift capacity load. | -Overflow valve is out of adjustment or not sealed completely. | -Adjust or replace the overflow valve. |

| | | | |
|---|--|--|--|
| 4 | The forks sink after they have been raised. | <ul style="list-style-type: none"> - Pressure valve does not seal completely. -Seals leakage. | <ul style="list-style-type: none"> -Adjust the pressure valve. -Replace seals with new ones. |
| 5 | The forks lifting speed is low (Quantity of lifting is small) | <ul style="list-style-type: none"> - Air in the hydraulic oil. -Discharge valve is not sealed. -Seals leakage. | <ul style="list-style-type: none"> -Expel the air. -Adjust the discharge valve or replace component. -Replace seals with new ones. |
| 6 | The forks do not descend. | <ul style="list-style-type: none"> -Discharge valve is locked or out of adjustment. -Low temperature, viscosity class is large. -The rod is deformed resulting from a seriously unbalanced load. -A part has been damaged or been deformed resulting from unbalanced load. | <ul style="list-style-type: none"> - Adjust or bleed the trouble. -Replace the hydraulic oil applied to the low temperature. -Replace the rod. -Repair or replace component. |
| 7 | The forks do not descend to the lowest height. | <ul style="list-style-type: none"> -The length of lifting chain is out of adjustment. | <ul style="list-style-type: none"> -Adjust the lifting chain. |
| 8 | The forks do not tilt or heavy on handle and noisy when tilting. | <ul style="list-style-type: none"> -The screw is damaged. -The bearing is damaged. -Turning axle is worn and locked. | <ul style="list-style-type: none"> -Replace the screw. -Replace the bearing. -Replace the turning axle and bushing. |

If the problem cannot be solved according to the above table, please contact the manufacturer.

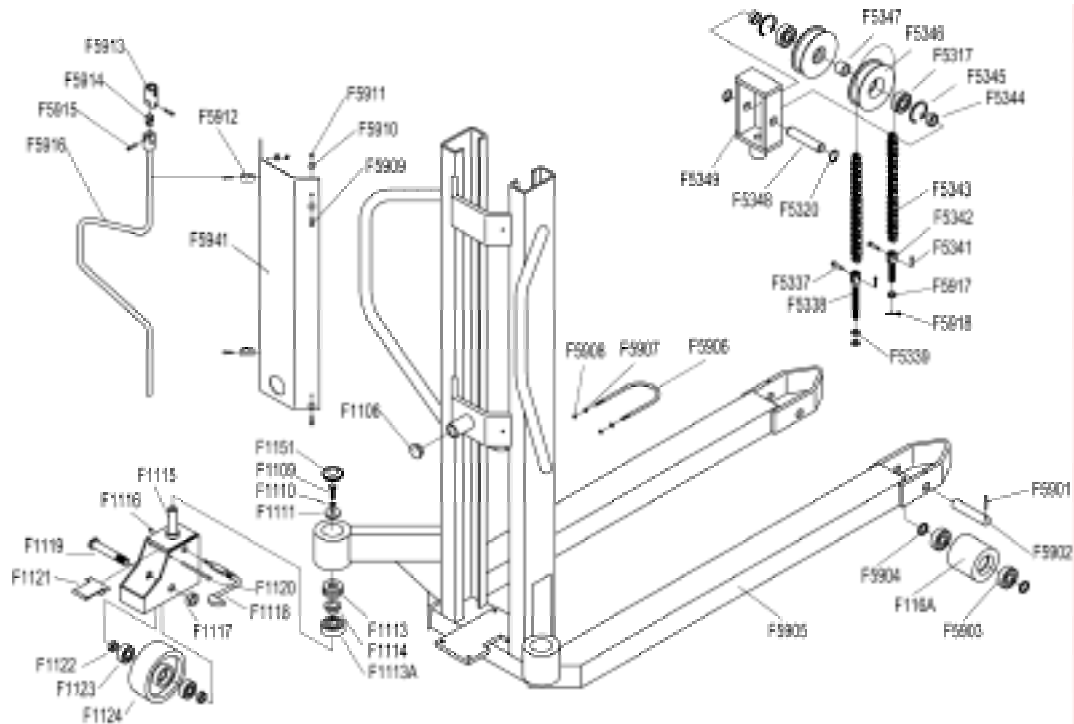
Hydraulic Assembly



Parts List of Hydraulic Assembly

| Parts No. | Description | Q'ty | Parts No. | Description | Q'ty |
|-----------|--------------------|------|-----------|---------------------------|------|
| 5900 | Hydraulic assembly | 1 | 1154A | Pump cylinder | 1 |
| 5901 | Rod | 1 | 1155A | Seal ring | 1 |
| 5902 | Welded frame | 1 | 110 | Screw | 1 |
| 1101 | Dust proof ring | 1 | 111 | Red copper washer | 1 |
| 1102 | Cylinder | 1 | 112 | Spring | 1 |
| 1103 | O-ring | 1 | 113 | Pressure rod | 1 |
| 1104 | O-ring | 1 | 114 | Steel ball | 1 |
| 1105 | Seal ring | 1 | 115Q | Pressure valve body | 1 |
| 1106 | Spacing washer | 1 | 116 | Split ring | 1 |
| 1107 | O-ring | 1 | 117 | O-ring | 2 |
| 1109 | Guide casing | 1 | 118 | Red copper washer | 2 |
| 1110 | Washer | 1 | 119 | Steel needle | 1 |
| 1111 | Retaining ring | 1 | 121 | Spring pin | 1 |
| 1112 | Screw | 1 | 129 | Steel ball | 1 |
| (138) | Screw | 1 | 130Q | Discharge valve body | 1 |
| 1114 | Pressure cap | 1 | 131 | Spring | 1 |
| 1115 | Spring pin | 1 | 132 | O-ring | 1 |
| 1117 | Spring | 1 | 133 | Discharge valve shaft | 1 |
| 1134 | O-ring | 1 | 134 | Valve taper core | 1 |
| 1135 | Red copper washer | 1 | 135 | Spring | 1 |
| 1136 | Bushing | 2 | 136 | Pressure regulating screw | 1 |
| 1137 | Bolt | 4 | 137 | O-ring | 1 |
| 1139 | Spring washer | 4 | 138 | Screw | 1 |
| 1140 | Plain washer | 4 | 139M | Crank link | 1 |
| 1141 | O-ring | 1 | 140M | Setting screw | 1 |
| 1150A | Spring cover | 1 | 141 | Nut | 1 |
| 1151A | Pump rod | 1 | 142 | Spring washer | 1 |
| 1152A | Dust proof ring | 1 | 166 | Retainer | 3 |
| 1153A | O-ring | 1 | 167 | Retainer | 1 |

Frame Assembly

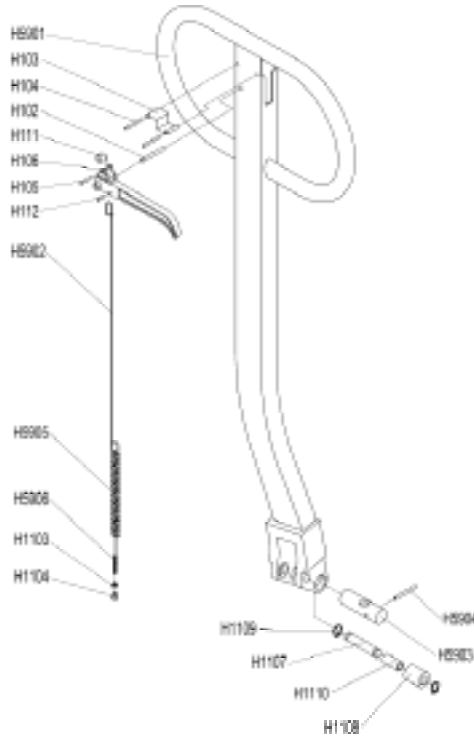


Parts List of Frame Assembly

| Parts No. | Description | Q'ty | Parts No. | Description | Q'ty |
|-----------|--------------------|------|-----------|------------------------|------|
| F5901 | Spring pin | 2 | F1114 | Dividing bush | 2 |
| F5902 | Load roller axle | 2 | F1115 | Steering wheel bracket | 2 |
| F5903 | Bearing | 4 | F1116 | Locking nut | 2 |
| F5904 | Dividing bush | 4 | F1117 | Hexagon nut | 22 |
| F5905 | Frame assembly | 1 | F1118 | Control level of brake | 2 |
| F5906 | Type U bolt | 1 | F1119 | Steering wheel axle | 2 |
| F5907 | Plain washer | 2 | F1120 | Axle | 2 |
| F5908 | Locking nut | 2 | F1121 | Spring leaf | 2 |
| F5909 | Hex socket screw | 4 | F1122 | Bushing | 4 |
| F5910 | Small washer | 6 | F1123 | Bearing | 4 |
| F5911 | Nut | 4 | F1124 | Steering wheel | 2 |
| F5912 | Spring hoop | 2 | F1151 | Dust proof cover | 2 |
| F5913 | Contact casing | 1 | F5317 | Bearing | 2 |
| F5914 | Contact block | 1 | F5320 | Retaining ring | 2 |
| F5915 | Axle | 2 | F5337 | Axle | 4 |
| F5916 | Welded crank | 1 | F5338 | Bolt | 2 |
| F5917 | Slotted nut | 2 | F5339 | Hexagon nut | 4 |
| F5918 | Split pin | 2 | F5341 | Split ring | 4 |
| F5941 | Safety net | 1 | F5342 | Bolt | 2 |
| F116A | Load roller, Nylon | 2 | F5343 | Chain | 2 |
| F1106 | Rubber cushion | 1 | F5344 | Dividing bush | 2 |
| F1109 | Bolt | 2 | F5345 | Retaining ring | 2 |
| F1110 | Spring washer | 2 | F5346 | Chain pulley | 2 |
| F1111 | Pressboard | 2 | F5347 | Dividing bush | 1 |
| F1113 | Bearing | 2 | F5348 | Chain pulley axle | 1 |
| F1113A | Bearing | 2 | F5349 | Chain pulley bracket | 1 |

Parts List of Carriage Assembly

| Parts No. | Description | Q'ty | Parts No. | Description | Q'ty |
|------------------|--------------------|-------------|------------------|--------------------|-------------|
| F5919 | Setting screw | 2 | F5932 | Bearing | 2 |
| F5920 | Welded carriage | 1 | F5933 | Pin | 4 |
| F5921 | Sliding pad | 4 | F5934 | Plain washer | 4 |
| F5922 | Eccentric axle | 2 | F5935 | Bolt | 4 |
| F5923 | Plastic plate | 1 | F5936 | Fixing block | 2 |
| F5924 | Screw | 4 | F5937 | Fork assembly | 1 |
| F5925 | Runner bracket | 1 | F5938 | Screw | 2 |
| F5926 | Axle | 1 | F5939 | Spacing cover | 1 |
| F5927 | Retaining ring | 2 | F5940 | Retaining ring | 4 |
| F5928 | Sliding block | 1 | F1129 | Retaining ring | 4 |
| F5929 | Parallel pin | 2 | F1130 | Bearing | 4 |
| F5930 | Screw shaft | 1 | F1207 | Roller | 4 |
| F5931 | Washer | 2 | | | |



Parts List of Handle

| Parts No. | Description | Q'ty | Parts No. | Description | Q'ty |
|-----------|-------------------|------|-----------|----------------|------|
| H5901 | Control level | 1 | H1109 | Retaining ring | 2 |
| H5902 | Steel wire rod | 1 | H1110 | Bushing | 1 |
| H5903 | Axle | 1 | H102 | Spring pin | 1 |
| H5904 | Spring pin | 1 | H103 | Spading plate | 1 |
| H5905 | Chain | 1 | H104 | Spring pin | 2 |
| H5906 | Guiding rod | 1 | H105 | Spring pin | 1 |
| H1103 | Nut | 1 | H106 | Handle | 1 |
| H1104 | Nut | 1 | H111 | Steel roller | 1 |
| H1107 | Steel roller axle | 1 | H112 | Spring pin | 1 |
| H1108 | Steel roller | 1 | | | |

Assembly list

| Assembly | Description |
|----------|-----------------------|
| 5900 | Hydraulic ass'y |
| B | Lowering valve ass'y |
| D | Hydraulic valve ass'y |
| W | Safety valve ass'y |