

STEP ERGO Strap Table with Built In Scale and Adjustable Height Semi-automatic Strapping Machine (Manual)



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COMPANY INTRODUCES

"We believe packaging solutions for our customers should be simple, easy to use, ergonomic and sustainable.

We offer a wide range of packaging products and solutions, and web design and engineer production lines specifically built to your needs.

Our motto is simple: Sal-Tech Easy Packaging makes your life simpler through engineering and good design, and your job less stressful. We Keep Things Together."

Gunnar Salbæk Owner/CEO

About Sal-Tech

Sal-Tech Easy Packaging offers a wide range of solutions for simple and reliable packaging of your products.

If it is a standard or a special solution that's needed for your assignment, we have a creative input to solve your needs, securing you an up to date packaging application.

Sal-Tech Easy Packaging is 100% owned by Gunnar Salbæk,

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declares:

As a manufacturer and distributor, as fully responsible, for **STEP Ergo Strap Table with Built – in Scale and Adjustable Height** for being verified and in compliance in accordance with the safety and health requirements listed in the following directives:

In accordance with the Machinery Directive 98/37 / EC, 73 / 23EEC, 89/336 / EEC and 93/68 / EEC and other relevant directives.

And that we use:

EN 12100-1EN 12100-2, EN 60204-1, EN 294, EN 349, EN 1050, EN 50081-2, "Electromagnetic Compilation - Generic Emission Standard Part 2. Industrial Environments." EN 8500822 "Electromagnetic Compatibility -Generic Immunity Standard Part 2. Industrial environment.

The Product is in accordance with the above.

Tinglev 01.12.2018

Gunnar Salpæk/Director Sal-Tech Easy Packaging and Sal-Tech HKG Limite



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Warnings:

In order to use the machine safely, please read following warnings before operation.

Warning: Be sure to follow WARNING words in each page in this manual. Failure to observe the WARNING, It will damage the machine or cause serious injury and even death.

Attention: Be sure to follow WARNING words in each page in this manual. Failure to observe the WARNING, It will damage the part of machine or make the machine goes wrong.

Please read the following warnings and attention carefully

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Attention	
	Customers do not install and try to operate the machine without the presence of the staff from our company or our agent.
Attention	
Warning	Please do not place the machine on slope and do not move the machine while it is running.
warning.	Please do not place the machine on the wet floor or the room with much dust.
Warning:	
	If power branch runs with other machines in the meantime, it will not only damage the
	machine's function but also damage plugs. If sockets excessive heat, posing a fire hazard. Special
	attention: be sure to ready for special voltage and capacity of the machine used.
Warning:	
	The earth terminal must connect to the earth. If not connect to earth or not full connected, it will happen shock danger.
Warning:	
	If use extended wire, the cut area must above2mm ² and length less than 10m. Otherwise, it will not only damage the machine, and also cause hazard of fire because of overheat of plug and socket.
Warning:	
	Please wear a glove, eye protections and breathing mask while installing and operating the machine.
Warning:	
	The machine is used for strapping products or packages. Please do not put your hands or body close to the main machine body. Warning:
	Please do not take off the panel, cover, door and other parts to use the machine.





	Taking off the parts will cause machine faulty and easy to cause human injury.
Warning:	
	Please do not remake the machine. Use the remade machine will cause human injury.
Warning:	
	Please do not put the wire on the passageway of forklift. Once the coat of wire is damaged or the wire is broken, it will cause danger.
Warning:	
	Please do not insert or pull out attaching plug with wet hand. Avoid shocking danger.
Warning:	
	It has shocking danger while strapping water or wet products.
Warning:	
14/00000000	Please make sure pull out the plug if do not use the machine.
warning:	Inculation degradation will requit in electric check on fire due to looke as
Warning:	insulation degradation will result in electric snock of fire due to leakage.
warning.	
	temperature. It will cause fire risk.



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1. STRAPPING MACHINE DESCRIPTION INSTRUCTION AND SPECIFICATION

1-1 Machine general description

It is a semi-automatic machine that applies strap on packaged. It is with following accessories:

Operation manual: it is for you to use the semi-automatic strapping machine safely and correctly. And it describes how to solve problem when it has troubles.

Tools: for simply repair and clean the machine.

! Warning: Do not use the affiliate tools to remake the machine.

! Warning: Before operate the machine, please turn the power switch to [O] (OFF) position. Pull out the power plug and cutoff the power supply. Otherwise it may

happen hazards of shock, burning and been drawn into machine

1-2 Machine specification (standard)

SPECIFICATIONS:		
Dimension	2000x800mm	
Strap Type	PP	
Strap Width	12mm	
Tension	2-55kg	
Lifting Height	700-1100mm	
Static load	Up to 200kg	
Plug Type	Type K Siemens	
Power Output	0.25 Kw, 2.5 A	
Power Supply	230V, 50/60 Hz, 1 Ph	
STEP Item No.	25001020	

1-3 Warning mark

The following mark cannot be removed or replaced. It is located where may be dangerous to human body. The power supply must be cut off before repair the machine.

① The mark as fig as 1-3-1 cannot be removed or replaced randomly. It is on the heating parts of machine. Please do not touch the parts that have this mark to avoid scald.





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② The mark as fig as 1-3-2 cannot be removed or replaced randomly. Generally it is in the position of electrical parts.





③ It has clamping hazard on the transition device part. Do not repair the machine while it is running. Do not stretch hands into the parts where have the mark as fig 1-3-3.



Fig 1-3-3

Note: while working please make sure recognize other marks to operate the machine safely and avoid danger.

1-4 Fix and installation

The machine must be installed on the dry, flat, strong ground and near to power supply. The power supply should be conform with that on the machine nameplate. The installation place should accord with following conditions:

Temperature -20°C-40°C

Moisture	≤90%RH
Base	Max load 350kg/m ²
Space	Min: 2000mm×1500mm
Other	Dry and ventilated, far away from smoke and corrosive materials.

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1-5 ERGO Strap Table Parts



1-6 Transportation and storage

If long-distance transport or long-term store the machine, it should be packaged by wooden case or strong carton and fixed on the hard backing board. Put absorption of moisture and coat rust inhibitor in the machine. Do not place any heavy goods on top of the case. Do not put the machine inverted during transportation and storage.

After long-distance transport or long-term storage, please check all the moving parts before connect to the power supply.

1-7 Movement

Moving by forklift (see Fig. 1-7-1). Make sure that no violent collision occurs and the center of the gravity is steady while moving, in case the machine is damaged or the parts are loose leading to the failure of machine.

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- 2 PREPARATION BEFORE RUNNING Install strap coil The installation method accord to Fig. 2-1-1: Step:
 - 1) Screw off the hand wheel.
 - 2) Quit the front strap reel.
 - 3) Put in the PP strap with correct direction.
 - 4) Close the front strap reel.
 - 5) Tighten the hand wheel clockwise.



Fig. 2-2-1 chart of strap reel

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2-2 Strap threading step

2-2-1 Diagrammatic sketch of threading strap for STEP ERGO Strapping Head



Step:

- 1) Pull the PP straps from the strap reel about one meter.
- 2) Pass the straps through ring (A) and (B), then to transition wheel (C), and come out from the side.
- 3) According to the indication, insert the head of the straps to (D) 4) Continue to feed straps until it pass through the rollers (E).
- 5) Press the feeding straps button which can feed straps. The strap comes out from (F) point. Then finish threading strap.

2-3 Description of control panel button

2-3-1 The control panel is at the left part of front board. See Fig. 2-3-1

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Turn on the switch, the red light is on and the machine can operate. Turn off the switch, cut off the power, the machine stop running.

- (2) Tension adjusting button (TENSION) Rotate the button and the tension force will change accordingly. When the tensioning is small, the speed of retreat strap is slow. If the tensioning is big, the speed of retreat strap is faster.
- (Note: when the tensioning is big, please careful to operate and avoid hurt from PP strap.) (3) Cooling adjustment button (COOL TIME)
- Rotating the knob can avoid the strap burst when the tension force is too big or PP strap too thin.
 (4) Length adjustment button (TIMER)
 Each scale is about 500 mm, clockwise adjustment, the tie will be more long; otherwise, it will be much
- shorter.(5) Manual start button (MANUAL)

You can manually start LS4 switch, with the same function Of PP band interpolation

(6) Manually send back with buttons (FEED/HOME)

The machine shows "zero" (green light is bright), You can press the button and manually into the PP band. At the same time press the button in the back with a belt can also be zero .

2-3-2 The function of potentiometer on PCB RV1

Adjust RV1, measure the voltage between two ends of capacitance C17. Adjust it clockwise, the voltage will increase and then the minimum tension increase. Adjust it anti-clockwise, the voltage will decrease and then the minimum tension decrease.

(Usually it is adjusted before deliver and no need to adjust again.)

RV2

When the machine starts, it has 15 second to warm up. When it warms up, the indicator on the PC board flickers. The warm up process stops if the indicator not flickers. Adjust RV2 clockwise, the heating voltage between two ends of the heater increase. Adjust it anti-clockwise, the heating voltage between two ends of the heater decrease. (Usually it is adjusted before deliver and no need to adjust again if the temperature can reach requirements.)

2-4 Instruction of adjustment

1. Temperature adjustment: You can see clearly on the distribution box, temperature increase when turn clockwise. The adhesive effect will be not very good if the temperature too is high or too low. So do not adjust too much for one time. Adjust it is between 4-6 will be OK.

2. Width adjustment: This machine is designed specially. Users can adjust (2) (3) (4) and benchmark' width (1) or (2) to use 6mm-15mm width PP straps. Generally, it will be 1mm longer than actual width. If the PP with poor quality, the width should be longer.

Otherwise send back will be a failure. See Fig. 2-4-1:

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3 START AND RUNNING Introduction of control system

There is intact electrical diagram in this manual. Now introduce the function of some micro switch and quick heater system. See Fig. 3-1-1.

- **LS1:** In the LS2. When it is in home position, its contact point is hold out against by the cam of micro switch. After on cycle strapping, the program will control to send out PP strap automatically.
- LS2: Outside of LS1. It is controlled by program to tension and cool.
- **LS4:** Under the sliding board. When begin to strap, the strap head insert through the chute. A shrapnel makes it touch the contact point of switch and then begin to strap.
- **HL1:** Quick heat piece is at the right side of fan. When the machine starts, it can reach the proper temperature within 20 second.
- Fan1: Fan, it can exhaust smoke while strapping.
- M1: Main motor controls the cam, cut strap and adhesive PP strap.

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M2: Send and retreat strap motor. It controls sending strap and tensioning work.







Fig. 3-1-1

3-2 Clean and adjustment

1.) Up skateboard

The up skateboard should be exactitude cooperate with left and right press bar. And we must keep the skateboard move up and down, left and right freely. So this part must keep clean and often maintain. See Fig. 3-2-1 and the process as following:

A. Take away the pull spring which is on the sway rocker that under the skateboard.

B. Move backward the up skateboard and take out.

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- C. Wipe clearly the slot part between up skateboard and left right press bar.
- D. Moving the up skateboard forward and backward to check whether it moves smoothly or not. If need adjust, skate on the right aim at front top slot, left slot aim at back top slot, assure middle knife can drop and cut.
- E. Add some lubrication oil in the gap between skateboard and press bars.









Fig. 3-2-1

2.)Micro-switch cam

The position of micro-switch cam related to the action of micro switch LS1 and LS2. When the machine is zero set, LS1 is close circuit and LS2 is open circuit. Because LS1 and LS2 join together, do not need to consider the adjustment method of LS1 and LS2. Loosen the fixed screw. The cam have three faces, one high, one concave and one normal. When LS1 adjust to the highest face, it is close circuit. When LS1 adjust to the normal face, it is open circuit.

3.)Middle knife and front top knife

The middle knife and front top knife must cooperate exactly to cut off strap. So the clear and maintenance are very important. See Fig. 3-2-2, the step as following: A. Take away the pull spring of middle knife and front point knife.

- B. Move the up skateboard backward, take out the middle knife and then take out the front point knife.
- C. Wipe the middle knife, front top knife and knife groove clearly.
- D. Fit on the front top knife, and then install the middle knife and spring.
- E. Add some lube to around the middle knife, front top knife and back top knife.
- F. If the middle knife and front top knife cannot cut off the strap after long-term usage, take out the middle knife, take out the spring fixing screw and fit to the other side.

And then install the middle knife. So that changes to the sharp incision.

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4 MAINTENANCE AND LUBRICATION

The material of the strap is PP, which is easily out of shape if in high temperature and fire. Please do not place the strap near the inflammable and explosive products. If the strap is bend or out of shape, the machine may appear trouble and cannot strap normally. Cleaning and lubricating is important measures to prolong its service life. The strap powder and slices can be caused by friction during the strapping and usually gather in space between machine head and electrical component. The powders must be cleaned up in time, at least once a week. (Cut off the power supply during cleaning.)

4-1 Once a week maintenance regulation

Open the table panel, use air gun to blow the powder and clean inside of the machine with lubrication oil.

- 1. Movement part of up and down skateboard.
- 2. Movement part of heater.
- 3. Holes of the three knives .

Check the force of all spring. Check whether the strap store balance pole is flexible through simple movement. Strap several cycles, check the visible and audible trouble.

4-2 Once a month (strapping 100000 cycles) maintenance regulation

Check whether bearing of machine head is flexible. Whether the strap sending roller is flexible Whether the temperature of heater changes Whether the gear wheel has been worn The force of spring is correct.

4-3 Once half a year (strapping 600000 cycles) maintenance regulation

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Check the heating device. If necessary, replace it. Check the joint piece of PC board.



Check the function of every switch,

4-4 Once a year (strapping 1200000 cycles) maintenance regulation

Clean the inside parts and adds lubrication oil.

4-5 Parts list

Code	Description	Quantity	Remark
YS GB25	Inner hexagon spanner	1	M2.5
YS GB30	Inner hexagon spanner	1	M3
YS GB40	YS GB40 Inner hexagon spanner		M4
YS GB50	Inner hexagon spanner	1	M5
YS GB0810	Open spanner	1	8x10
YS GB1214	Open spanner	1	12x14
YS GA04	Cross screwdriver	1	4

5 TROUBLE EXAMINE AND REPAIR

Here list some common trouble. Users can solve it refer to the following list.

Warning:

Please make sure turn the switch to [O] (OFF) position. Pull out the plug and screwing out the bolts that fix the table panel. Open the panel to adjust. It may occur shock or hurt caused by machine start. Screw up the bolt and then get through power supply.

Warning:

When repair the machine must be our company's serviceman, or trainee who has accept "service and technical lecture" to repair it. Non-electrical machinery person is strictly prohibited to disassemble and repair.

Trouble, cause and troubleshooting

No	Trouble	Cause	Troubleshooting
1	No action after insert the strap	LS4 micro switch fault	LS4 micro switch fault or shrapnel is blocked by foreign material and cannot touch connect point.
		PC board or switch power not good	Replace PC board or switch power
2	Not send strap automatically	The potentiometer that control the length on null line	Adjust the feed strap knob, every scale about one meter. Adjust clockwise, adjust scope bigger send strap longer. No sending strap when it is in zero position

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		Thread strap incorrectly	Thread the strap according to the manual or the diagrammatic sketch at the right side of the door.
		There is foreign material in the up and down extension.	Clean the machine periodically.
		The bearing of middle knife is	Cause by improper operation.
2	Not out strop	broken	Replace the bearing
5	Not cut strap	Cutter of the middle knife is worn	There are two cutter sides. Change to another side to continue.
4	Adhesive not good	Temperature adjust improper	If the max temp. can no adhesive well, adjust the W2 on the PCB to increase the temp.
		The spring on the heater fault	The spring is exhausted. Replace it.
			Heater piece is not in right position and
		Hostor piece adjust improper	touch the PP strap or knife, so that it
		neater piece aujust improper	cannot heat.
			Adjust it accordingly.
		The bearing of middle knife is broken	Replace the bearing
		The temperature is too high	Check whether the fan is faulty.
			Repair or replace it.
		The tension force is too large	
			Adjust to make the tension smaller. Or increase the cooling time.
5	Cannot reset	LS4 micro switch fault	LS4 contact point cannot release. Adjust the shrapnel gap. Check if there anything blocks the shrapnel.
		LS1 not good	Cannot detect the position. PCB faulty lamp flicker. Replace LS1
			Retreat strap cannot detect the position.
	Cut strap while pe	LS2 not good	PCB faulty lamp flicker.
6	tension		Replace LS2
		Tension is too small	Adjust to make the tension bigger. Adjust W1 on PCB to make it bigger.

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6 PARTS DRAWING AND LIST

6-1 Knife and skateboard assembly



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Detailed parts list

No	Code	Description	Qty
01	YS AS1-11	1# knife combination	1
02	YS AS1-12	2# knife combination	1
03	YS AS1-13	3# knife combination	1
1	YS A0200	Mechanism base	1
2	YS A0173	Right press bar	1
3	YS A0172	Left press bar	1
4	YS A0171	Up skateboard	1
5	YS A0191	Up skateboard barrier sheet	1
6	YS A0192	Skateboard pull rod	1
7	YS A0205	adjusting block	1
8	YS A0214	Spring drawing board	1
9	YS A0204	Skateboard arm	1
10	YS A0201	Electric heating arm	1
11	YS AS1-114	1# knife	1
12	YS AS1-117	2# knife	1
13	YS AS1-118	3# knife	1
14	YS A0107	Cross bar	1
15	YS A0131	Contacts copper sleeve	1
16	YS A0130	Bottom slide contact	1
17	YS EW001	Micro switch, no roller	1
18	YS A0107	Cross bar	1
19	YS A0206	Heat-resistant cover	1
20	YS A1079	Electric heating head	1
21	YS A1081	Electric heating press sheet	1
22	YS A1080	Electric heating bakelite sheet	1
23	YS A0202	Electric head fixed block	1
24	YS A0203	Electric heating fixing board	1
25	YS A0209	Rocker arm shaft	1
26	YS A0210	Rocker arm shaft sleeve	1



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27	YS AS1-115	Knife neck	3
28	YS AS1-116	Knife screw	3
29	YS AS1-513	Cross bar screw	1
30	YS HL101122	Long extension spring φ1.0*φ10.8*22	2
31	YS A0211	Send with spring	2
32	YS A1100	Tensioning press spring	1
33	YS 231042	Spring in knife ¢2.3*¢10*42	3
34	YS A0132	Skateboard extension spring	2
35	YS A1094	Electric tension spring	1
36	YS HL121020	Short extension spring ϕ 1.2* ϕ 10*20	1



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6-2 Cam and Reduction Gear Box Assembly

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No	Code	Description	Qty
1	YS EA012	DC cam motor	1
2	YS A0150	Gear box cover	1
3	YS A0152	Transition gear wheel	1
4	YS A0151	Output gear wheel	1
5	YS A0207	Cam shaft	1
6	YS DJ172912	Cushion ring ϕ 17*29*12	2
7	YS DJ17298	Cushion ring ϕ 17*29*8	2
8	YS DJ17296	Cushion ring ϕ 17*29*6	1
9	YS DW17295	Cushion ring ϕ 17*29*0.5	1
10	YS A0208	Cam spacer	1
11	YS A0139	Skateboard cam	1
12	YS AS1-207	3# knife cam	1
13	YS AS1-208	Electric heating cam	1
14	YS A0140	2# knife cam	1
15	YS AS1-205	1# knife cam	1
16	YS AS1-210	Cross bar reset cam	1
17	YS A0137	Retreat strap cam	1
19	YS AS1-215	Micro switch base sheet	1
21	YS EW002	Micro switch, with roller wheel	2
24	YS A0153	Motor fixing sleeve	1

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6-3 Send and retreat strap assembly

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Detailed parts list

No	Code	Description	Qty	Remark
1	YS A0180	Belt sending base	1	
2	YS A0181	Gear cover	1	
3	YS A0182	Reduction gear	1	
4	YS A0184	Eccentric shaft	1	
5	YS A0183	Send pulley	1	
6	YS A0220	Iron gear	1	
7	YS A0221	Driven wheel	1	
8	YS A0186	Upper strap way	1	
9	YS A0105	Adjustment board	1	
10	YS A0188	Upper strap way cover	1	
11	YS A0187	Lower strap way	1	
12	YS A0189	Lower strap way cover	1	
13	YS A0170	Pulley gasket	2	
14	YS A0190	Pulley shaft	1	
15	YS A0222	Insert aluminum plate	1	
16	YS A0223	Insert belt adjustment board	1	
17	YS A0185	Tighten rod	1	
18	YS EA013	DC motor retreat	1	

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6-4 Machine frame

Detailed parts list

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No	Code	Description	Qty
1	YS A0010	AS-50 frame	
2	YS A0011	AS5 stainless steel table panel	1
3	YS AS1-611	Arch support	1
4	YS AS1-612	Cover support punch sleeve	1
5	YS A0090	Stainless steel iron blocking device	1
6	YS AS1-614	Guide strap pulley	1
7	YS A0014	Pulley rack	1
8	YS AS1-615	Guide strap pulley shaft	1
9	YS A0016	Angle iron legs tube	0-2
	YS A0018	Square tube legs tube	0-1
10	YS A0017	Angle iron beams strengthened	0-2
10	YS A0019	Square tube beams strengthened	0-1
11	YS LA1675	Screw stem universal castor	2
12	YS LB1675	Screw stem universal castor with brake	2
13	YS AS1-601	Door Strap way	1
14	YS A0027	Strap way pulley	
15	YS A0028	Strap way pulley shaft	
16	YS A0029	Strap way pulley rack	1

6-5 Strap reel and brake assembly

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6-5-1 Strap reel assembly

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No	Code	Description	Qty
1	YS A0061	Outside strap reel	1
2	YS A0060	Inside strap reel	1
3	YS A0402	Brace claw	4
4	YS A0050	AS-10 strap reel shaft	1
5	YS AS1-709	Handle	1
6	YS AS1-801	Brake rod pulley Shaft	1
7	YS AS1-802	Brake pulley	1
8	YS AS1-803A	Brake rod roller wheel support	1
9	YS AS1-814	Brake belt	1
10	YS A0015	AS-10 brake rod	1
11	YS A0064	Small fixed sleeve	1
12	YS A0404	Reel support tube	1
13	YS A0400	Brake spring	1

6-5-3 STEP ERGO brake parts

Detailed parts list

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No	Code	Description	Qty
1	YS AS1-801	Brake rod pulley shaft	1
2	YS AS1-802	Brake pulley	1
3	YS AS1-803	Brake rod roller wheel rack	1
4	YS A0024	AS-11 brake rod	1
5	YS AS1-814	Brake belt	1
6	YS A0023	AS-11 brake support	1
7	YS A0064	Small fixed sleeve	1
8	YS A0400	Brake spring	

6-6 Electrical parts

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No	Code	Description	Qty
1	YS APC-10N1	PC board combination, APC-10N1	1
2	YS ED001	250W switch power supply	1
3	YS A0013	Electrical box cover	1
4	YS EF001	Micro fan 24VDC	1
5	YS EK002	Red switch	1
6	YS EP002	Potentiometer 250K	4
7	YS UN001	Rotate button (black)	3
8	YS EN001	Yellow button	1
9	YS EN002	Green button	1
10	YS UN002	Rotate button (red)	1

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7 ELECTRICAL SCHEMATIC DIAGRAM

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LP7510 Weighing Indicator

Item no. 95060004 User manual edition: A 031017 GUS

User's Manual

Edition:01-081008

Hallbrookcomponents.com

Load Cell

Controller

Scale

Preface

Thanks for using LP7510 Weighing indicator,

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ALL products are been strictly tested and inspected before shipment. You will benefit from its strong function and good quality.

Locosc is devoted to weighing technology development, industrial scales produce and technical service. If you have any suggestion on our product, do not hesitate to contact us. Contact info. Is as bellows:

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1 Safety instruction and notice for battery use

For safety operation pls. follow the safety instruction.

The Non professional staff can not set. Calibrate, inspect or fix the the weighing display

Pls. make sure the weighing display have good ground in using

The Company provided for the maintenance-free and rechargeable battery , low self-discharge rate, long life, and work temperature -10-40 °C. The new battery will make the best effective after two or three complete charge. Each time charge should keep at 6 to 8 hours, not more than 12 hours. when use battery-powered, the work time is 20-30 hours when the battery fully charged, when the indicator showed that "LOBATT", means the battery is under power. Pls. charge at once.

Charging method:

1. Random specific power adapter plugged into AC power outlet, the circular DC power supply plug into "DC" jack on the indicator back cover.

2. Open the power switch to "on", power-on self test, go into weighing status . "batter" status light does not on, in a battery is charging

3. Charging time 6 to 8 hours later , take off the adapter, "battery" light on, means battery-powered.

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Note:

 In order to keep the battery in best use condition, so suggest that monthly charge and discharge the battery completely at least once, the method is to use the indicator until the battery if finished automatically shut down the indicator and then recharging again.
 If the battery when not in use for a long time, please take out the batteries from the indicator in order to avoid battery leakage and damage the indicator .Do not use the battery for a long time, it is essential to charge the batter every 2 or 3 month. Or the battery will expire.

3. Pls. make sure the indicator is powered off then change the batteries, or it will have an impact on the indicator life.

4. when replace the battery. The correct connection is : connect the red line to the plugs in red mark; and the black line to the plugs in black mark, Be sure wiring is correct, or it will cause damage to load cell, explosive, and the main board damage

5. Our Company only responsible for approved the standard battery and power adapter by our company. And not take any responsibility for any damage by the accessories offered by third-party.

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2 Main functions and parameter 2.1 main functions: Weighing function: Zero, gross, net, accumulating, printing, counting, animal -weighing. Toggle operation: kg/lb Options: Pinter RS232/RS485 serial interface or second display Classifying scales (with I/O card)

2.2 technical parameter

Accuracy class 6000 e Resolution display: 30, 000 ADC: 2,000,000 Zero stability error $TK_0 < 0.1 \mu V//K$ Span stability error TK_{spn} < ± 6 ppm//K Conversion time 50 ms 0.12 µV /count Sensitivity (internal) Input voltage -30~30mV DC Excitation circuit 5 VDC, 4 wire connection, all strain gauge, min. 50 Ω , e.g.: 6 load cell of 350 Ω

AC power	AC100~2	250V
DC power	DC6V/4A	h rechargeable batter,700mA.
Operation temp	erature	- 10 °C ~ + 40 °C
Storage temperature		- 40 °C ~ + 70 °C

3 Installation and connection

3.1 Installation method

There are 3 installation method for LP7510

- 1. Wall mounting: Use screw M5 to fix the base of the weighing display to the wall
- 2. Table mounting: Adjust the elevation of the weighing display and the base. And then put it on the table.
- 3. Column mounting: Take off the base, then use screw M8 to fix the feet to the column

3.2 Connection

3.2.1 Supply power connection

2 kinds of power supply : One is AC 100-240V; another is in-built storage battery DC supply power, with charger.

AC powered connection method:

1. Open the back cover of the weighing display. And take off the

Water-proof connector with AC mark. And insert the equipped power

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Line insider the back cover.

2. Fix the 3 core line to 5 bit terminal block J1 on the back cover AC power board. Shown as the below picture.

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J1 pin	Pin symbol	AC supply power	
1	GND	Power ground line (yellow)	
2	L	Power fire line (brown)	
3	Ν	Power zero line (blue)	

Built-in rechargeable connection method:

Open the back cover of the weighing display controller. Connect the red lines of the terminals to battery terminal (positive) with red mark;

Black line connect battery terminals(negative) with black mark.

3.2.2 Connection of load cell and indicator

1. Weighing display of the incentives voltage for the load cell is 5VDC, the largest output current 120mA, maximum connect 6 pcs 350-ohm load cell;

2. Load cell (or the signal cable for the junction box) is connected with 5 bit

Connection terminal (J2) on the weighing display circuit-board.

3. Open Weighing display controller back cover, insert signal line into the water-proof joint with "Load cell" signs. And conect signal cable to terminals J2, and make sure screw fixed tightly. Connection as below drawing:

3.2.3 Serial interface connection method(option)

To connect with computers, second display, printer, and other communications equipment, Pls. purchase RS232 with DB9 joint and COM port together with the indicator. better choose the shielded twisted-pair. Length no longer than 15 meters.

- 1. Through RS232 or RS485 interfaces can be connected to the big screen;
- 2. Through RS232 or RS485 interfaces can be connected to the computer;
- 3. Through RS232 or RS485 interfaces can be connected to a printer and have printing function.
- 4. Serial communication interface at the back of the display controller marked the RS232-joint BD9 as the below drawing:

Q	\bigcirc	\bigcirc	Q	0
((3 (3 (3 (>]

Pin function and definition as bellows:

DB9 joint	Definition	Function	
2	TXD	Sending data	
3	RXD	Receiving data	
5	GND	Ground interface	
6	V+	Printer power (positive)	
8	V-	Printer power(negative)	

Note: Only 2 pin and 5 pin connecting with second display5. Serial interface reception command:

RS232COM serial interface can receive simple ASCII command. And Command word and role as follows:

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Command	Name	Role
Т	Tare off command	Save and clear tare
Z	Zero command	Zero the gross weight
Р	Print command	Print the weight
G	Gross/net weight shift command	Gross/net weight shift
R	Read gross/ net weight	Read gross/net weight

6. Continuous output:

Reaction of command "R" are same as continuous output

S1: weight status, ST=standstill, US= not standstill,

OL= overload

S2: weight mode, GS=gross weight, NT=net weight

S3: weight value sign, "+" or " –"

S4: weight unit sign, "kg" or "lb"

Data: weight value, including decimal point

CR: carriage return

LF: line feed

3.2.4 I/O connection(option)

1. The indicator I / O card can achieve external control command operation via an external input 4, and to complete remote control by computer or other controlling instrument.

2. Output 4 signal through the I / O card and can be connected with external control equipment for the realize the automatic control function of the external control or the executive instrument. The indicator can set 4 function pack, the function of each function pack can output respectively 4 different signals.

3. input function. Input port and input signals as bellows:

Input port	Port definition	Function instruction	
ln1	Zero input port	External zero signal input	
In2	Tare output port	External tare signal input	
ln3	Print input port	External print signal input	
In4 Gross/net weight input port		External gross and net	
		weight signal input	

4. functions include output port and info. As bellows:

Function pack	Output port	Port definition	Function instruction
	Out1	Overload output	Indicator output
0		port	overload signal
0	Out2	Eligible output port	Indicator output eligible
			overload signal
			38

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	Out3	Under load output port	Indicator output under load signal
	Out4	Reserve	No output signal
	Out1	Overload output port	Indicator output overload signal
1	Out2	Eligible output port	Indicator output eligible overload signal
	Out3	Under load output port	Indicator output under load signal
	Out4	Zero output port	Output zero bit signal
	Out1	Overload output	Indicator output
2		port	overload signal
	Out2	Eligible output port	Indicator output eligible overload signal
	Out3	Under load output	Indicator output under
		port	load signal
	Out4	Stable output port	Output stable signal
2	Out1	Zero output port	Output zero bit signal
	Out2	Tare output port	Output tare signal
5	Out3	Stable output port	Output stable signal
	Out4	Reserved	No output signal

5. I/O card port is on I/O BD9 type joint of weighing display. The pin Definition and connection as bellows:

54321

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DB9	Pin definition	Port
1	First input pin	ln1
2	Second input pin	In2
3	Third input pin	In3
4	Fourth input pin	In4
5	GND	I/O public groud
6	First output pin	Out1
7	Second output pin	Out2
8	Third output pin	Out3
9	Fourth output pin	Out4

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4 Instruction

4. 1 Display and main key

Instruction:

When the light of status is on, the means are as follows:

- [kg] ——weight unit sign kg
- 【Ib】——weight unit sign lb
- **[**count **]** count function
- 【battery】——in-built battery is working
- 【zero】——weight is zero
- **[**stable **]** —weight is standstill
- 【gross】——weight is gross
- 【net】——weight is net
- 【tare】——have set tare
- $\mbox{[total]}$ —-totalizing function level
- 【over】——weight is over upper limit
- [ok] ——acceptable weight
- 【under】——weight is under lower limit

LED light on means- the weighing data show on the display or setting the is working

Key functions of weighing level and operation

total	Press 5s to enter into and leave totalizing-scale operation Press 1s to totalize a weighing value during totalizing on
count	Press 5s to enter into and leave totalizing-scale operation Press 1s to convert pcs mode to weight mode for 4s during counting on
10 kg/lb	Press first times to convert display kg/lb to lb/kg for 4s Press second times to higher resolution display×10 for 4s Remarks: pressing two times continuously is invalid
net gross	Press first times to convert gross mode to net mode Press second times to convert net mode to gross mode

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tare retare	Press first times to set gross weight > 0 into memory tare, the weight display changes automatically to net mode and light status of net and tared. Press second times to clear memory tare the weight display changes automatically to gross mode and light status of gross. Conditions: status light of standstill is on
zero	Press to set the gross weight to zero within ±1/4d Conditions: status light of standstill is on & actual gross weight is with zero setting range
print	Press to print current weighing documents Conditions: status light of standstill is on

Open/Close — open or power off the indicator

4.2 Basic operation

4.2.1 Switch on & off

1. Switch on: pls. connect the power for AC power supply. and connect the battery line for rechargeable battery. Before

switch on the indicator. the "kg" light on. It means the connection is ok. then press **OFF** after 2s. the indicator show"000000-9999999". After the self inspection. It go the weighing mode.

2. Switch off: Press the OFF key, 2s latter. Auto power off, only kg light is on. Take off the AC power supply or the battery. The kg light off.

4.2.2 Zero operation

1. Initial zero setting

When switching on the indicator, if the weight on the scale is within the initial zero range, indicator will put is zero automatically, and gross weight will show zero.

2. Zero setting

It is effective in gross weight status, when the minus data or nonzero data is within the zero setting range. Press key. Than go to the zero.

4.2.3 10 times higher resolution and toggle operation.

1. Press UNIT key. the 10 times higher resolution weighing data shown on the display. And after 4s back to weighing status. Press UNIT again, the indicator proceed the toggle operation. And after 4s return.

2. Weight unit---kg/lb toggle operation. If the unit is kg, the kg light is on. Press UNIT key. it change to lb. and lb light on. After 4s back to kg automatically. And kg light on at the same time.

4.2.4 Tare operation

1. Tare function

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When gross weight shown on the display, Press TARE key. the TARE light on. Indicator save the data and at same time NET light on. Net weight is zero.

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ON

zero

net

total

again.

total

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2. Retare function

When NET light on. Press TARE key, the TARE and NET light off . It means the indicator already clean the tare. And show the gross weight.

3. Tare operation condition.

Only the weight on the scales keep standstill and the light on. The tare operation is effective.

4.2.5 G.W/N.W operation switch

net gross

When the indicator show the gross weight. Press key, the net weight show. And light on. Press Back to gross weight display. And N.W light off. G.W light on.

4.2.6 Weight accumulating operation

1. weight accumulating operation

total

tota

1. when the weight is zero.. Press and keep it 2s latter. "SUON" show on the indicator. The light is on at same time.

2. when adding the weight to the scales. if you want the present weight be added. Press 2s, and "n 01" (means the first time accumulating)show on the indicator, after 2s back to the present weight.

3. when the first weighing and accumulating is finished. Take off the weight. And enter second weighing. Press 2s for confirmation "(n 02)(means second accumulating). Then the total weight for the first & second weighing show on the display. After 2s back to the actual weight on the scales. repeat this operation again can accumulating many times.

4. when accumulating finish. Press for 2s. and "SU OFF" show on the indicator. Back to normal weighing status.

Note: when weight is accumulated, the weight on the scale should be standstill. And light on steadily

2. Check the total weight

Press. Firstly show the accumulating times (for example" n 02) then show the total weight. 2s latter back to the weighing.

4.2.7 Count operation

Two ways for count operation.

1. sampling and then get the average unit weight.:

If you don't know the unit weight. firstly get the total weight. Then do sampling and get unit weight. Then input the quantity. and go to the count operation.

2. Input the average unit weight: if already known the unit weight, add the goods. Then input the unit weight. We can get the quantity

How to get the unit weight:

coun

1. Press to display zero. Then put goods on the scales that you know the quantity.

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2. Press till it show " PC on", then automatically show "000" means it already go to the count

count

key, till "PC 1" show on the display, and 1 means sampling and then get the average unit

weight.

3. Press the

print

and "PCS 00" show on the indicator Press

4. Use \leftarrow and \rightarrow to shift the cursor, and \uparrow and \downarrow to adjust the parameter. Input the goods quantity on the scales. and suppose there are 5 pcs. Then input "PCS 05" (Note: the sample qty should be below 99)

print

5. Press to perform parameter setting. And count.

print

6.Put goods on the scales. and the quantity show on the indicator.

count

If you want the weight, Press . It will show on the indicator. The weight status light and "PCS" light on. 4s latter back to show qty.

4.3 Input the known average unit weight method:

1. when the weight is zero. Put goods that you already known the unit weight.

2. Press till "PC on" show on the indicator and then "000" automatically show. Means already into counting. print count 3. Press and

1s and release, and " PCS 1" show on the indicator. use \leftarrow and \rightarrow to shift the cursor, and \uparrow and \downarrow to adjust the parameter. And change the "PCS 1" to "PCS 2" 2 means input the known average unit weight mode.

print

4. Press and input known unit weight to count. " 0000.00"

Show on the indicator. use \leftarrow and \rightarrow to shift the cursor, and \uparrow and \downarrow to adjust the parameter. Input known average unit weight. Suppose the unit weight is 1 kg, then input "0001.00"

- print
- perform the set average unit weight to count. Put goods on the scales. and the quantity will show on 5. Press

the indicator. If you want the weight. press , weight will show on the indicator. And weight & "PCS" status light on. 4s latter automatically show quantity

4.4 Indicator for livestock scales(animal scales)

When the indicator used for livestock scales. only set the digital filter C13 1.and C14 2 is ok. steps as follows

count

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Note: when for livestock weighing, set the digital filter 1 for C13. The No. is bigger, the weighing will be more stable. And change is slower.

Set the digital filter 2 for C14, The No. is smaller. The weighing change faster. Adjust the C13 and C14 . can control the weighing stability and speed suitable for animal weighing.

4.5 Classifying scales operation

The classifying function is optional, set the C20 C21 C22 C23 and it can have the overload or under load alarming function. As follows

Menu	Optional function	Parameter
C 20	Value for upper limit	When the weight reach this value.
	alarm on	Indicator output the overload signal
C 21	Value for upper limit	When the weight reach this value.
C 21	alarm off	Indicator stop the overload signal
C 22	Value for lower limit	When the weight reach this value.
C 22	alarm on	Indicator output the underload signal
C 23	Value for lower limit	When the weight reach this value.
	alarm off	Indicator stop the underload signal

1. when set C20 C21 C22 C23 default=000000, it means close the upper limit(overload) and lower limit(under load) alarm 2. when set C20=C21, C22=C23, it means open upper limit(overload) and lower limit(under load) alarm. It mainly suit for classifying mode. For example:

The accepted range for a bag of rice is 24.9-25.0kg, setting as follows

1). Press and print . Till it show CO1. enter into setting parameter

print

2). Use $\leftarrow \rightarrow \uparrow \downarrow$ to set the C20. Press . And it show "0000 00"

3). Follow the above steps. Set the C20 C21 C22 C23 as follows Upper limit: C20=C21=25.10 kg

Lower limit: C22=C23=24.90 kg

count

4). Finish the setting. Press . Than back to weighing status

If the actual weight is 25.00kg, status light is ok

If the actual weight is 24.80kg, status light is under

If the actual weight is 25.20kg, status light is over

3. when set "0000.00" for C20=C21. and C22=lower limit

C23=upper limit. It means use lower & upper limit independent. for example the application for hopper scales:

for a hopper scales. the target control weight is 100-150kg, the I/O card in the indicator to control the open & close the valve. As follows:

- 1). Set C20 C21 C22 C23 as above
- 2). Set C20=C21=0000.00
- 3). Set C22=lower limit alarm. C22=100kg
- 4). Set C23=upper limit alarm. C23=500kg
- 5). Return the menu. Back to weighing status.

If the actual weight is under 100kg, UNDER light on. Indicator output the Under weight signal. Open the valve to add goods If the actual weight is over 500kg, OVER light on. Indicator output the Over weight signal. close the valve

4. when set C20>C21,C21<C23. it means delay the alarming. For example:

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If the actual weight is over 90.00, open the over load alarm; when the actual weight is under 12.00kg. open the under load alarm.

Set an alarm delay data can avoid some untrue alarm. For example when the actual weight is 89.90. it is within the acceptable arrange, but if the hopper is moved by wind or shake. The value possibly come to 90.1t. than the untrue alarm

will happen. To avoid it. We can set a 0.5t alarm delay. As follows: C20=90.00t, C21=89.50t; C22=12.00t, C23=12.50t;

In application:

When the actual weight =90.00t. open overload alarm. Indicator output over load alarm signal; When the actual weight =89.50t. close overload alarm. Indicator stop over load alarm signal; When the actual weight =12.00t. open under load alarm. Indicator output under load alarm signal; When the actual weight =12.50t. close under load alarm. Indicator stop under load alarm signal; C20与C21, C22与C23 relationship as follows:

Upper Limit Alarm (Over)

Lower Limit Alarm (Under)

4.6 Second display, printer, computer communication(optional)

The print function is optional. If it is needed, it should add RS232 on the main board and build-in serial interface mini type printer or outside

Portable printer. Pls. see the details in the manul"3.2.3" serial interface connection method.

1. Second display. Printer. Computer communication parameter

Setting.

Press

and and Letter to the menu. Use $\, \leftarrow \,
ightarrow \, \uparrow \, \downarrow$

to adjust the C27 C28 C29. steps as follows:

Menu	Option function	Parameter setting
C27	Communication mode	C27=0 means shut off C27=1 means continuous sending. Connect to big display C27=2 connect printer C27= 3 command mode from supervisory
C28	Serial interface Baud rate	C28=0 baud rate=1200 C28=1 baud rate=2400 C28=2 baud rate=4800 C28=3 baud rate=9600
C29	Data bit and calibration bit	C29=0 means 8, none C29=1 means 7, even C29=2 means 7, odd

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2. Second display using method

Connect with second display according to the "3.2.3" in this manual and Set C27=1. and C28 & C29 the same data bit and calibration with second display. After finish setting. Restart the indicator and second display. If the same data shown on the indicator and second display. Means it works regularly

3. Printer operation:

This indicator can connect with built-in mini serial interface printer and outside serial interface portable printer. And built-in printer is setted

Within the factory

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Indicated need setting according to the communication data for the outside portable printer.
1. communication method set: Press and enter to function menu. Adjust to C27. press for
confirm. And set "C27 2" press again.
2. Serial interface baud rate set: after set the C27. indicator show C28. press enter to C28 setting. Set the serial interface baud rate the same with equipped printer. For example: the printer baud rate is 9600 bt/s. set " C28 3". Press
Print . Save the setting. Enter to C29
3. Data bit and calibration bit set: the indictor show C29. Press
Set the serial interface data bit and calibration bit the same with equipped printer.
4. Print operation: after the above setting is finished. Press . Then press the back to the weighing.
Press .

The print result as bellows: NO: XX Gross: XXXX Tare: XXXX Net: XXXX

Date: XXXX.XXXX

Time: XX.XX.XX

5. Error resolution and daily maintenance

		Error code list
Error code	Reason	Resolution
	Overflow:	1. Take off the goods from scales
υυυυυυ	measuring value is above FSD +	2. Recalibration
	overload range	3. Check load cell
		4. Chang main board
	Underflow:	1. Recalibration
nnnnnn	measuring value is below	2. Check load cell
	negative display range	3. Chang main board
ERR1	During calibration:	Input weight of the
	no enter the calibration weight value	calibrated weights
	During calibration:	Add weights. Recommend
ERR2	the used calibration weight value	the weights is 15-80% the
	is too low	Max. capacity
	During collibration:	1. Check the installation is
ERR3	input voltage is negative	ok or not
		2. Check the connection

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		for load cell is ok or not
ERR4	During calibration: measuring value is not standstill	Check the scales installation is ok and the make sure the goods on the scales is stable
ERR5	Checksum error of EEPROM	 Power off the indicator and re open again Change main board
Lobat	The voltage of rechargeable battery is too low	Recharge the battery

Daily maintenance

1. Regularly clean the panel and body with soft cotton sheets and cleaning detergent. Industrial cleaning solvents can not be used to clean keyboard and display panel, and the solvent can not spray directly on the instrument.

2. In order to ensure indicator display clearly and useful life, the instrument should not be placed directly on sunlight. And can not be placed on dust and vibration serious area.

3. Sensors and indicator should be well connected, the system should have a good ground, away from strong electric field, magnetic field, sensors and indicator should stay away from flammable and explosive materials.

Battery maintenance:

1. Please note that when used in the emerging low-voltage meter "LOBATT" suggests that this occurred when prompted, for charging the battery immediately.

2. Under charging and over charging is prohibited; when replace and maintain the battery you should know the distinction between negative electrode to prevent short-circuit and anti connection so as not to damage the battery and instrumentation.

3. Battery can not close to flame or heat source to prevent damage of the batteries and indicator or others

ltem No.	Name	Model No.	UNIT	QTY
1	Display controller	LP7510	SET	1
2	Packing bag		PCS	1
3	Accessories bag		PCS	1
		GB/DC9V	PCS	1
		US/DC9V	PCS	1
4	Devicer events	UK/DC/9V	PCS	1
4	Power supply	EU/DC9V	PCS	1
		AU/DC9V	PCS	1
		Others	PCS	1
5	English/ Chinese	User's manual	PCS	1
	instruction	Operating manual	PCS	1
6	RS232 joint	D 9 cores	PCS	1
7	Load cell joint	5 core quick	PCS	1
		connecter		
8	Serial interface signal	Φ5/5 core shield	PCS	1
	line	line		
9	AC Power supply	3 cores Φ0.75mm	PCS	1
10	Fuse	0.5A fuse	PCS	1
11	Base	Wall type	PCS	1
		installation base		
12	Product certification		PCS	1
13	Packing list	LP7510	PCS	1

6. Packing list LP7510 display controller packing list

Pls. check the goods and accessories according to the packing list

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After you open the carton. If anything missing or other question. Pls. contact us soonest. Our contact info. Is below the preface. We will resolve the problem soonest.

User guide for Serial Interface for LP7510 Weighing Indicator

Serial Interface is needed to be able to transfer data to another device such as

- : Printers
- : Secondary display monitor (LCDs, Video Projectors)
- : PC
- : other communications equipment

Item needed to connect LP7510 to other devices (serial interface)

RS232 /DB9 connector

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View of the Communication Ports of LP7510 device

Front and Back View

To connect LP7510 to Printer

Connect the RS232 connector from the LP7510 port towards the RS232 port on the printer

The print result will be as below:

- NO: XX
- Gross : XXXX
- Tare : XXXX
- Net : XXXX
- Date : XXXX.XXXX
- Time : XX.XX.XX

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Power supply port & Load Cell (Weigher) port

RS232 /DB9 port

The usual number display on the weigher itself and on the print out result will be Ex.

0000.00 (2 digits after the decimal point)

- decimal notation can be set pls. refer to Machine manual for the complete instruction and guide on proper settings.

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To connect LP7510 to a PC

Usual purpose is for data storage and Management Info. Sys to be used in different areas within the
organization and other purposes.

You can connect the LP7510 RS232 port to any of the ff: on the PC communication ports

NOTE: To be able to connect the LP7510 device, you must make sure that you have purchased the

needed adapter so that you can match the RS232 connector to any of the different USB port type you

- Various type of USB Port
- Various type of RS232 Port

(depends on the PC)

wish to connect to.

 Type
 Port Image
 Connector Image

 4.5mm x 12.0mm
 Image

 Type A
 Image

 7.3mm x 8.5mm
 Image

 Type B
 Image

 3.0mm x 6.8mm
 Image

 Mini-B
 Image

Various type of USB Ports on PC with their equivalent connectors

Various types of RS232 ports on PC and their equivalent connectors

NOTE: To be able to connect the LP7510 device, you must make sure that you have purchased the needed adapter so that you can match the RS232 connector to any of the different RS232 port type you wish to connect to.

Typical appearance of Data from device to PC screen will be like this.

(It Depends on the Software used)

Note: LP7510 Weighing Indicator device is designed for simple weighing function, this is designed to run on any Software for Data collection and other related softwares. It is the duty of the User what Software to purchase/install.

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Example is an image from a PC where a Software called Zigbee is used to transfer and show data on PC from LP7510 Weigher Indicator.

INSTALLATION INSTRUCTION for Linear Actuator/Lifting Column

Accessories:

FHT08 Controller		1 PC
FCT06 Control Box	1 PC	
Power Cord	1 PC	
FRT07 Lifting Column (95090004)	2PCS	

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FRT07Lifting Column 95090004

Specifications

Input Voltage :	230 VAC
Output Powder:	24 VDC
Load Capacity:	1000N
Speed:	12mm/s
Stroke:	400mm
Install size:	550mm
Operation Temp.:	0-40°C
Type of Duty:	S2—20min (In 20 Minutes, at the most could work in 2 min)

Instructions:

1. Connect the control box, controller, the lifting column and the power cord.

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- 2. Connect with the 230VAC
- 3. Press button Up to the Top, then Stop.
- 4. Press button Down to the Bottom, then Stop.
- 5. If something happened and the two lifting columns couldn't work together, it needs to be reset to the start position.

Option 1: Press button Down to the bottom (don't release) and then it will up about 5mm and stop, release the button, then the column could work.

Option 2: Press button Down to the bottom, release the button, then press it again about 5 seconds and the reset started, the process is press button Down all the time.

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