Instruction   Manual

Pallet Truck with Scale

Please read this product manual carefully before use
Please keep this product manual for reference

Thank you for using this hand pallet truck with scale. For your safety and correct operation of the scale, please read these instructions carefully before using it.

NOTE: (1) All of the information reported herein is based on data available at the moment of printing. The factory reserves the right to modify its own products at any moment without notice and incurring any sanction. So it is suggested to always verify possible updates.

(2) Prior to use this hand pallet truck with scale, the battery of scale must be charged enough.

1. GENERAL SPECIFICATIONS

Model	Capacity	Graduation	Weighing Accuracy	Fork size		
				Length	Width over forks	Fork Width
HR550	2000/3000kg	0.5 kg	± 0.05%	1150mm	560mm	160mm
HR680	2000/3000kg	0.5 kg	± 0.05%	1150mm	690mm	160mm

Materials and specifications are subject to change without notice.

2. TO ATTACH HANDLE TO PUMP UNIT

2.1 Remove the handle component (H100), insert it into the pump shell .

2.2 Insert the axle at one end of the pump shell, then pump shell and handle components (H100) connection. Please note axlethe position of the hole, Let the steel wire and nut on the chain (H09) through the axle hole (See thehandle component diagram).

2.3 Spring pinfixed the axle.

2.4 Handle (H01) press the pump plunger, and remove the pin

2.5 Raise the crank link and put the pin on rod and chain (H09) into the groove of crank link .

3. TO ADJUST RELEASE DEVICE

On the handle of the pallet truck, you will find the control lever (H06) which can be set in three positions (See Fig. 1): LOWER=to lower the forks; NEUTRAL=to move the load; ASCENT=to raise the forks. After assembling the handle, you can adjust the three positions.

3.1 First tighten the setting screw on the crank link until the LOWER position function works.

3.2 If the forks elevate while pumping in the NEUTRAL position, turn the setting screwclockwise until pumping the handle does not raise the forks andthe NEUTRAL position functions correctly.

3.3 If the forks descend while pumping in the NEUTRAL position, turn the setting screw counter-clockwise until the forks do not lower.

3.4 If the forks do not descend when the control lever (H06) is in the LOWER position, turn the setting screw clockwise until raising the control lever (H06) lowers the forks. Then check the NEUTRAL position as per item 4.2 and 4.3.

3.5 If the forks do not lift while pumping in the ASCENT position, turn the setting screw counter-clockwise until the forks elevate while pumping in the ASCENT position. Then check the NEUTRAL and LOWER position as per item 4.2, 4.3 and 4.4.

4. MAINTENANCE

4.1 OIL

Please check the oil level every six months. Total oil amount is about 260 ml, add injection oil 50-100 ml, this must be with the forks in the lowered position.

Add or change the hydraulic oil according to the table below.

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

4.2 HOW TO EXPEL AIR FROM THE PUMP UNIT

Air may enter the unit when the seals are replaced. Lift the control lever (H06) to the LOWER position, then move the handle up and down for several times.

4.3 DAILY CHECK AND MAINTENANCE

Daily check of the pallet truck can limit wear and tear of the unit. Pay special attention to the wheels, （AY11), the axles (AY08, AY17, AY15), the handle (H100), the forks (AY01) and lift and lower control.

4.4 LUBRICATION

Use motor oil or grease to lubricate all moveable parts.

5. GUIDE TO SAFE OPERATION

For safe operation of the truck, please read all warning signs and instructions here and on the truck before using this truck.

5.1 Do not operate the pallet truck unless you are familiar with it and have been trained or authorised to do so.

5.2 Do not operate the truck unless you have checked its condition. Give special attention to the wheels, the handle assembly, the forks, lift and the lower control.

5.3 Do not use the truck on sloping ground.

5.4 Never place any part of your body in the lifting mechanism or under the forks or load. Do not carry passengers.

5.5 The operator should wear gloves and safety shoes for protection.

5.6 Do not handle unstable or loosely stacked loads.

5.7 Do not overload the truck.

5.8 Do not subject to unbalanced load, either side to side or along the length of the frame (refer to Fig. 2/B).

5.9 The capacity of the truck assumes an evenly distributed load with the centre of the load being at the halfway point of the length of the forks (refer to Fig. 2)

5.10 Make sure that length of the forks matches the length of the pallet.

5.11 Lower the forks to lowest height when the truck is not being used.

5.12 At other specific conditions or places, the operator should operate the pallet truck carefully.

6. TROUBLE SHOOTING

NO	TROUBLE	CAUSE	ACTION
1	The forks do not lift to maximum height.	-Not enough hydraulic oil.	-Add more oil.
2	The forks do not lift up.	-Not enough hydraulic oil. -The oil has impurities. -Discharge valve is out of adjustment. -Air in the hydraulic oil.	-Pour in more filtered oil. -Change the oil. -Adjust the setting screw. -Expel the air.
3	The forks do not descend.	-The rod and the pump cover are deformed resulting from a seriously unbalanced load. -A part has been broken or been deformed resulting from unbalanced load. -The setting screw is not in the correct position.	-Replace the rod or pump cover. -Repair or replace component. -Adjust the setting screw .
		-Seals worn out or damaged.	-Replace seals with new ones.

4	Leaks	-Some parts may be cracked or worn out.	-Check and replace with new ones.
5	The forks descend without being lowered.	-Impurities in the oil cause the discharge valve to fail to close. -Air in the oil. -Seals worn or damaged. -Discharge valve is out of adjustment.	-Replace with filtered oil. -Expel the air. -Replace with new ones. -Adjust the setting screw.

7. BATTERY POWER DATA AND REPLACEMENT

7.1 How to change batteries:

7.1.1 Loosen the screws on the battery cover and remove the cover.

7.1.2 open the screw on battery and pull out battery ,out the socket.

7.1.3 put the new battery and insert the socket.

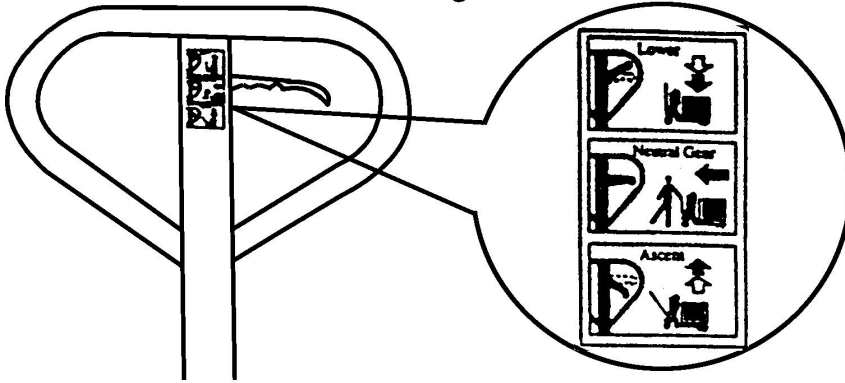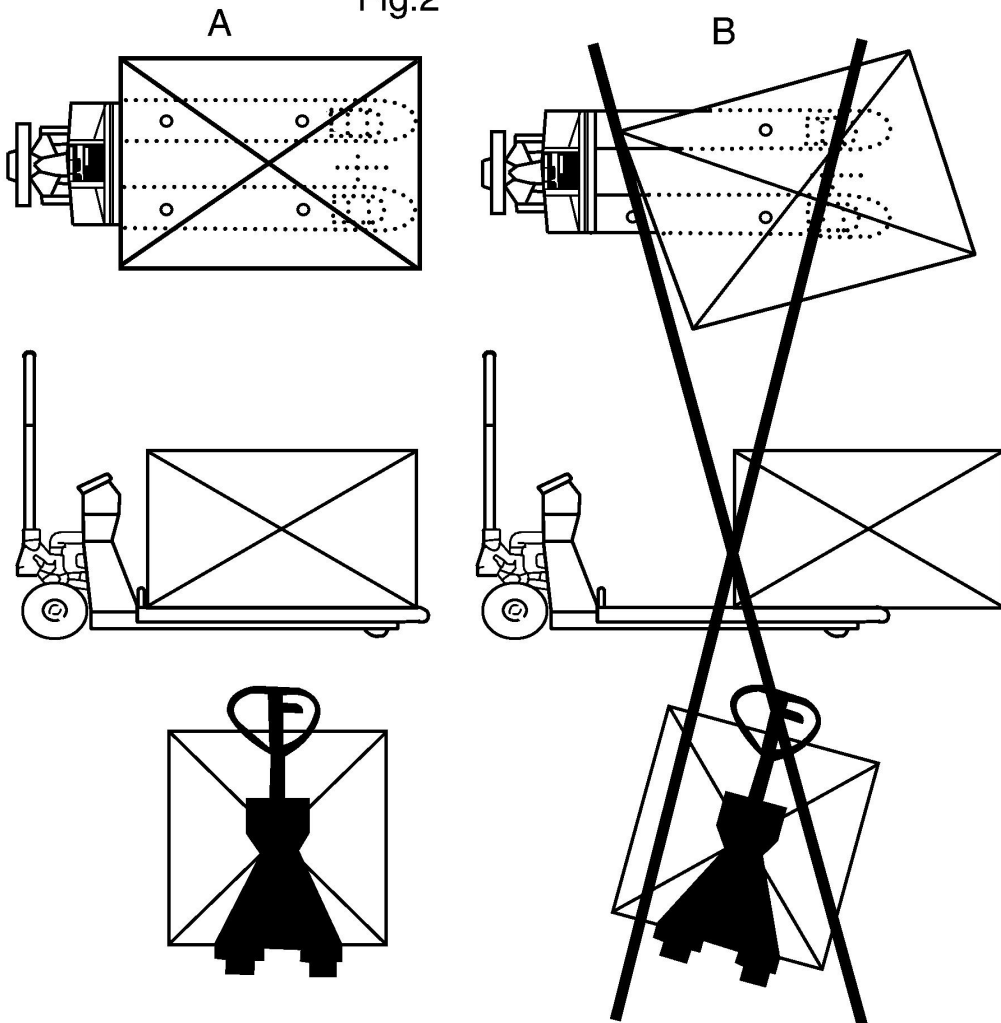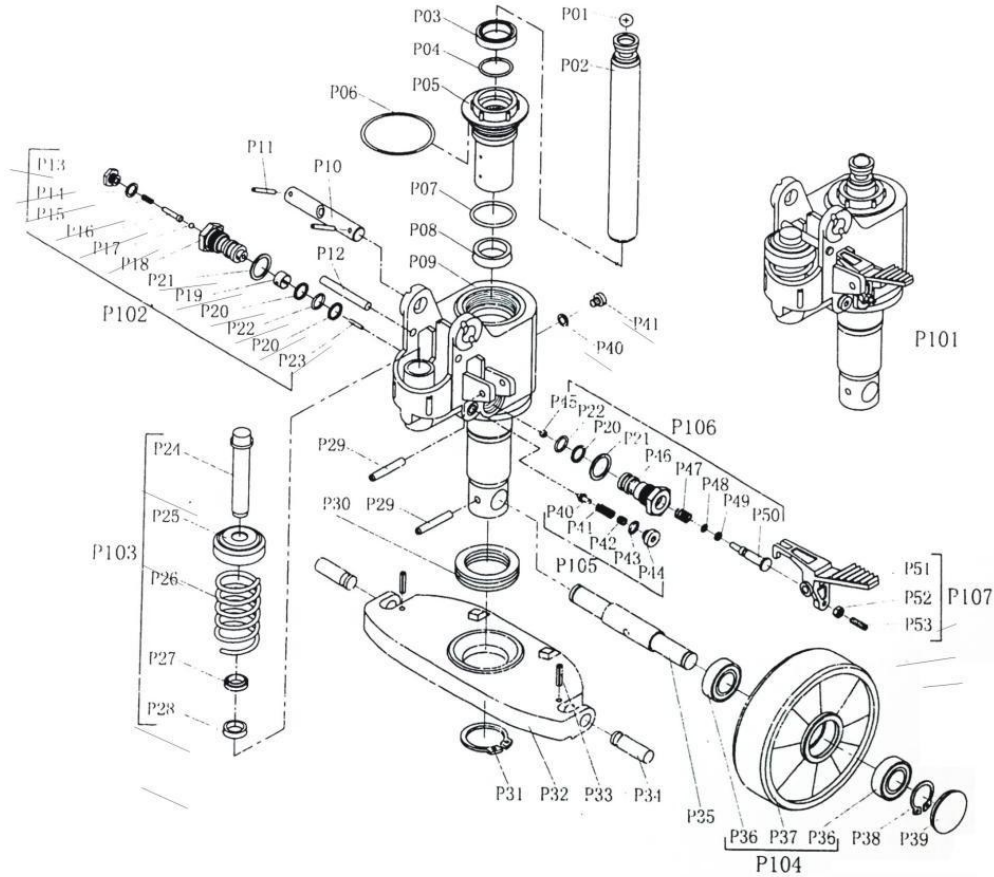7.1.4 Screw the battery cover plate back into position.

Fig.1

Lower

Neutral Gear

Ascent

Fig.2

A

B

PARTS DRAWING OF PUMP ASSEMBLY

油缸组件零件清单
Parts List of Pump Assembly

序号 Part No	名称 Designation	数量 Quantity	序号 Part No	名称 Designation	数量 Quantity	序号 Part No	名称 Designation	数量 Quantity
P01	钢球 Steel ball	1	P22	O型圈 O-ring	2	P43	O型圈 O-ring	2
P02	千斤顶 Wheel jack	1	P23	钢针 Cylindrical roller	1	P44	螺钉 Screw	2
P03	防尘圈 Dust ring	1	P24	泵柱塞 Pump rod	1	P45	钢球 Steel ball	1
P04	O型圈 O-ring	1	P25	弹簧罩 Springshield	1	P46	放压阀体 Discharge valave body	1
P05	液压体 Cylinder	1	P26	弹簧 Spring	1	P47	放压弹簧 Valve spring	1
P06	O型圈 O-ring	1	P27	防尘圈 Dust ring	1	P48	O型圈 O-ring	1
P07	O型圈 O-ring	1	P28	液压涨圈 Seal ring	1	P49	挡圈 Leaf spring	1
P08	液压涨圈 Seal ring	1	P29	弹性销 Spring pin	2	P50	放压阀杆 Discharge valave shaft	1
P09	泵壳 Pumg body	1	P30	轴承 Bearing	1	P51	曲柄阀杆 Crank link	1
P10	销轴 Axis pin	1	P31	轴用挡圈 Retaining ring	1	P52	螺母 Nutsert	1
P11	弹性销 Spring pin	2	P32	菱形板 Diamondplate	1	P53	紧定螺钉 Set screw	1
P12	工艺销 Pin	1	P33	弹性销 Spring pin	2			
P13	螺钉 Screw	1	P34	活动销 Movable pin	2	P101	油缸组件 Pump assembly	1
P14	紫铜垫圈 Copper washer	1	P35	后轮轴 Trailing axle	1	P102	压力阀组件 Pressure valve	1
P15	压力弹簧 Pressure spring	1	P36	轴承 Bearing	4	P103	泵体组件 Pump piston assembly	1
P16	压棒 Pressure bar	1	P37	聚氨酯转向轮 Polyurethane wheels	2	P104	转向轮组件 Steerable wheel assembly	2
P17	钢球 Steel ball	1	P38	轴用挡圈 Retaining ring	1	P105	溢流阀组件 Overflow valve	1
P18	压力阀体 Pressure valve body	1	P39	防尘盖 Dust cover	1	P106	放压阀组件 bleed-offvalve	1
P19	阻油片 Leaf spring	1	P40	针阀 Needle valve seat	1	P107	脚踏板组件 Pedal assembly	1
P20	挡圈 Retaining ring	3	P41	弹簧 Spring	1			
P21	紫铜垫圈 Copper washer	2	P42	调节螺钉 Governing screw	1			

PARTS DRAWING OF HANDLE
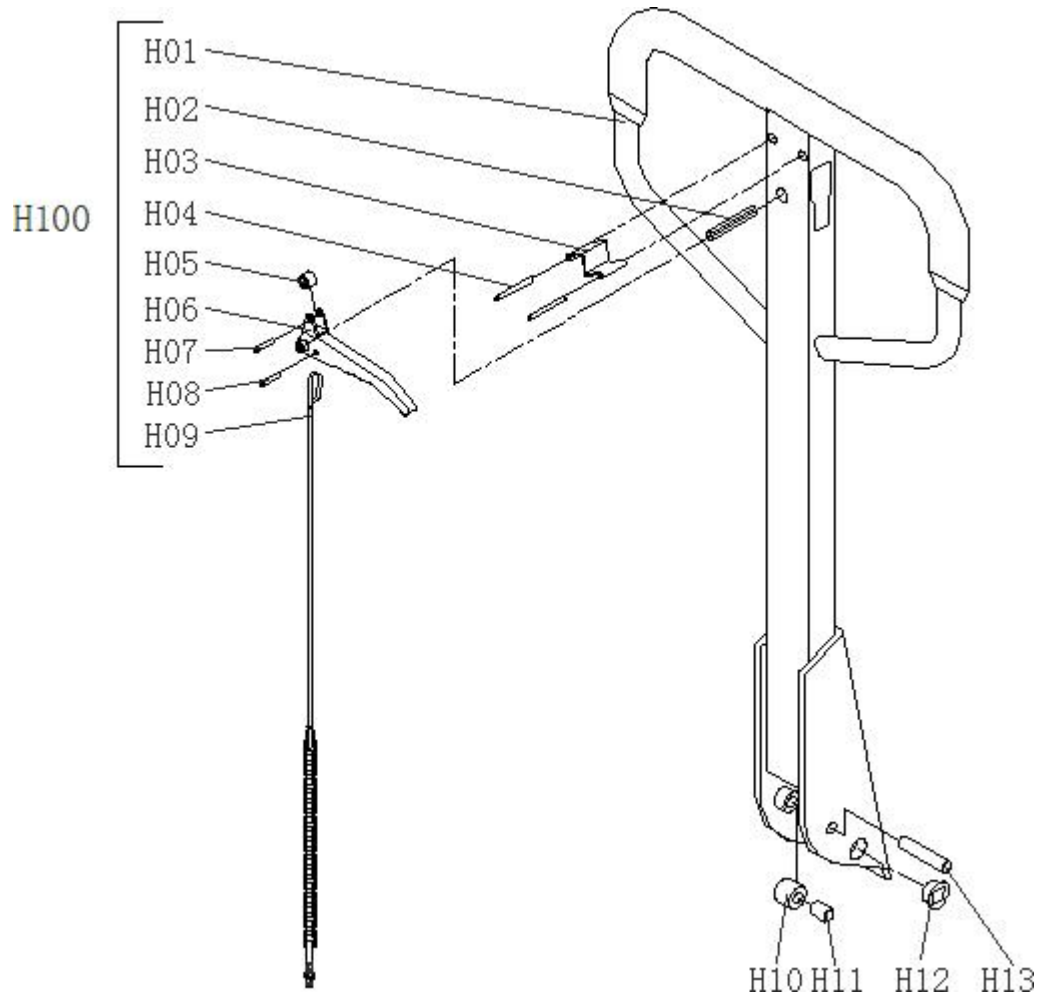
PARTS LIST OF HANDLE

No.	Description	Q'ty	No.	Description	Q'ty
H01	Handle	1	H07	Spring pin	1
H02	Spring pin	1	H08	Spring pin	1
H03	Spring leaf	1	H09	Chain wire	1
H04	Spring pin	2	H10	Clanying roller	1
H05	Nylon roller	1	H11	Bushing	1
H06	Control lever	1	H12	Bushing	2
			H13	Axis	1

PARTS DRAWING OF FRAME
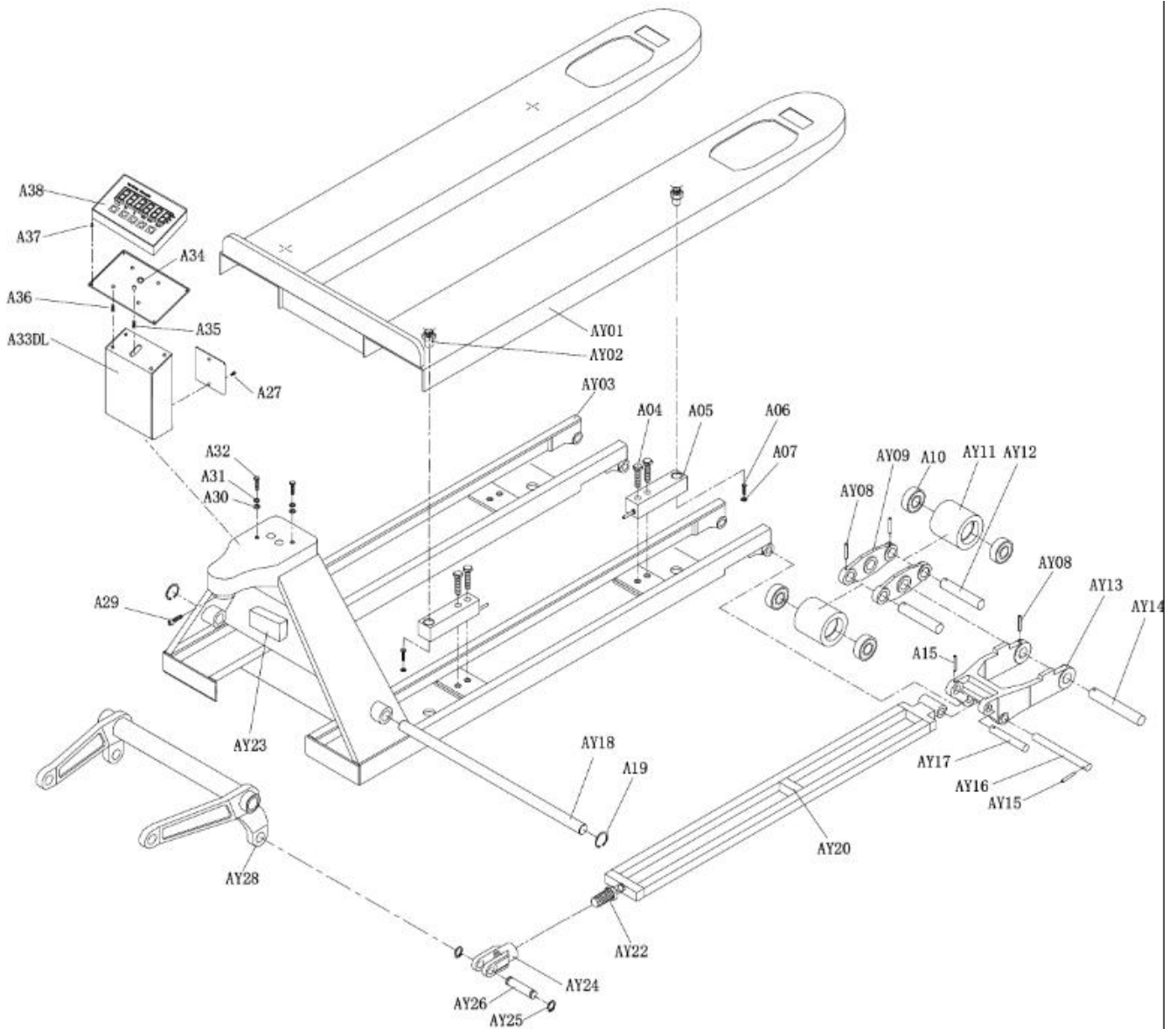
Meter printer configuration
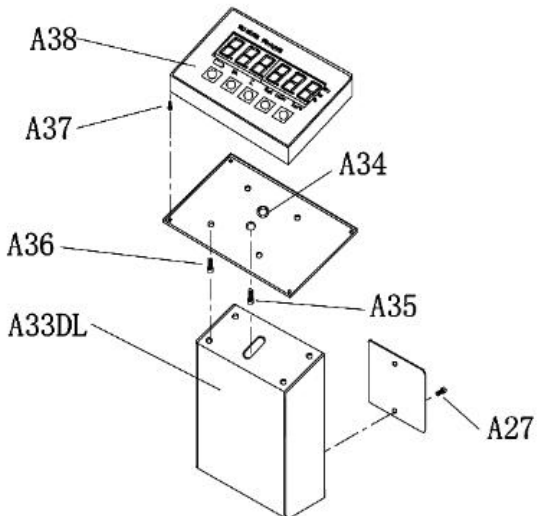
PARTS LIST OF FRAME

Part NO.	Denomination	Quantity	Part NO.	Denomination	Quantity
AY01	Weighing Plate	1	AY20	Pull rod	1
AY02	Position screw	4	AY22	Screw shaft	2
AY03	Frsme	1	AY23	Junction box	1
A04	Screw	8	AY24	Fork joint	2
A05	The weighing sensor	4	AY25	Split pin	2
A06	Screw	4	AY26	Joint pin	2
A07	Nut	4	A27	Screw	2
AY08	Spring pin	8	AY28	Elevation	1
AY09	Wheel frame	4	A29	Screw	1
A10	Bearing	8	A30	Washer	2
A11	The wheel	4	A31	Spring washer	2
AY12	Wheel axle	4	A32	Screw	2
AY13	Wheel frame	2	A33DL	Instrument box	1
AY14	Shaft	2	A34	Washer	1
AY15	Spring pin	2	A35	Screw	1
AY16	Shaft	2	A36	Screw	4
AY17	Pin shaft	2	A37	Screw	4
AY18	The major axis	1	A38	Meter	1
A19	Ring	2			

9.Precautions for indicator use

▲The connection between the sensor and the indicator must be reliable, and the shield wire of the sensor must be reliably grounded

▲When the indicator is powered on, it is not allowed to plug and unplug to all connecting wires to prevent static damage to the indicator or sensor

▲Sensors and indicator are electrostatic sensitive equipment, so anti-static measures must be taken during the use

▲In thunderstorm season, the system must implement reliable lightning protection measures to prevent the damage of sensor and indicator caused by lightning stroke, and ensure the personal safety of operators and the safe operation of weighing equipment and related equipment

▲It shall not be used in the places with combustible gas or combustible steam, or in the tank system with pressure

▲Indicators and sensors shall be far away from strong electric field, strong magnetic field, strong corrosive objects and inflammable and explosive materials

▲Do not use strong solvent (such as benzene, nitro oil) to clean the shell

▲Do not inject liquid or other conductive particles into the indicator to prevent indicator damage and electric shock

▲This product is not allowed to open the lead seal without authorization of the technical supervision department, and the lead seal cannot be calibrated without damage

☆Battery is consumable, not included in the scope of "Three Guarantees"

☆In order to extend the life of the battery, it is necessary to fully charge the battery before using it

☆If it is not used for a long time, it must be charged every two months for about 20 hours

☆Handle or install with care to avoid strong vibration, impact or impact, short circuit of battery internal electrode and damage of battery

◆In order to ensure clear display and service life of the indicator, it should be placed relatively flat places and should not be placed under direct sunlight

◆The indicator should not be used in the place with serious dust and vibration, and should not be used in the humid environment

◆Before plugging and unplugging the connecting line between the indicator and external equipment, the power supply of the indicator and related equipment must be cut off

◆The external interface of the indicator shall be used in strict accordance with the method indicated in the operation manual, and the connection shall not be changed without permission

◆This indicator is not allowed to be opened at will, otherwise it will not be warranted.

There is high-voltage and strong electricity in the indicator. Non professionals should not repair by themselves to avoid greater damage, personal injury or accident to the system

◆Within one year from the date of sale, if there is any non-human fault in the normal use environment, it belongs to the warranty scope. Please send the copy of the product and invoice (with the number consistent) to the special maintenance point or dealer for professional maintenance

◆In case of exceeding the warranty period and man-made fault or other accidental damage, the manufacturer shall charge the repair cost

Due to the improvement of product function, the printed version may be slightly different from the actual product. Please contact the company for the latest electronic version.

1.0 General

KL-T8 digital indicator main board adopts high-strength anti-interference single-chip microprocessor and high-precision $\triangle$ - Σ A / D conversion technology, which is convenient for secondary development for customers, and can be used in platform scale, weighbridge, forklift and other weighing occasions.

Main functions: accumulation,animal scale,counting,printing,RS232 communication. technical parameter

◆Executive standard: GB/T 7724-2008
◆Accuracy level: III calibration index n=3000
◆A / D conversion mode: Adopt $\triangle$ - Σ technology, 10 times per second
◆Input sensitivity: ≥1.5uV/e
◆Sensor supply bridge voltage: DC 5V, 1-6 numbers of 350 Ω resistance strain gauge sensors can be connected
◆Signal input range: -16mV~18mV
◆Sensor connection mode: 4-wire
◆6V battery charger: Input 110 ~ 220VAC output 7.3VDC
◆External battery: 6V4AH
◆Division: 1 / 2 / 5 / 10 / 20 / 50 optional
◆The storage temperature: -20oC 60oC, humidity 10% ~ 95% (RH), non condensing
◆Weight: Around 0.5kg

2.0 Install
2.1 Main board diagram
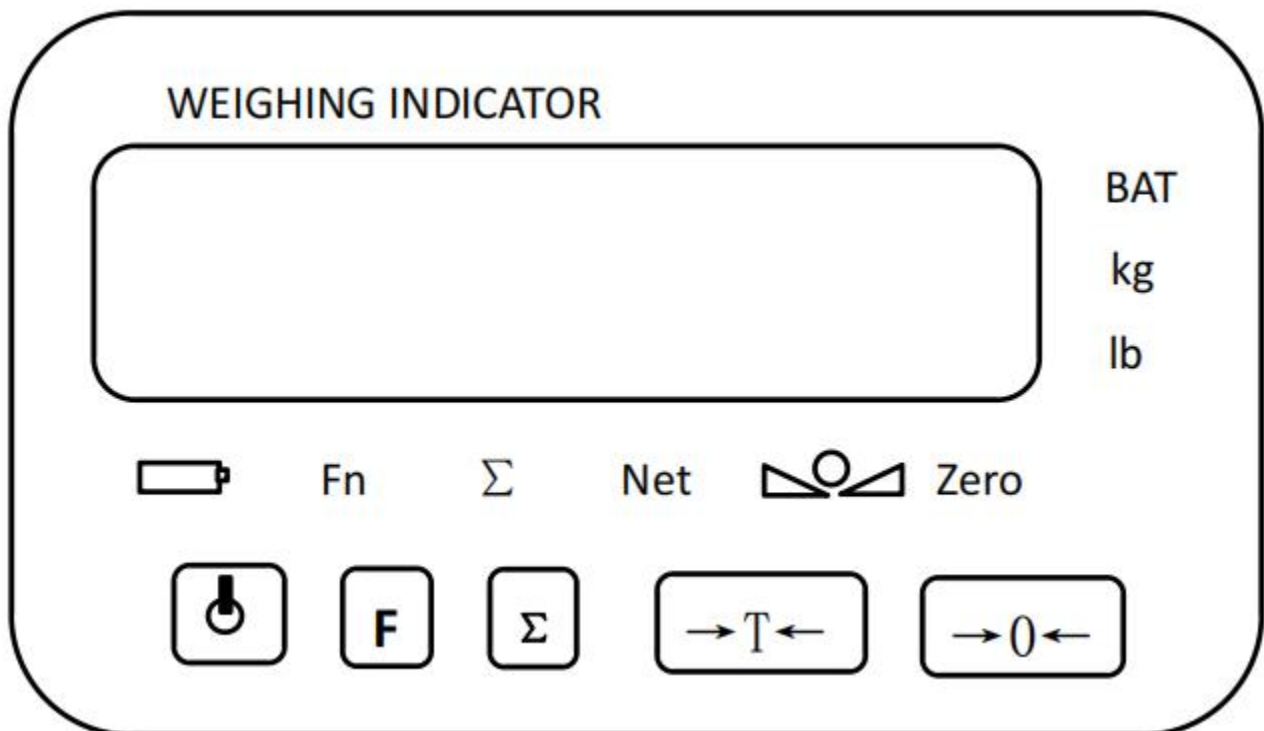
2.2 Specification Terminal Description

JP6 connecting terminal	SHL	shield line		JP3(TTL) JP4(RS232) connecting terminal	BY	Printer busy signal
	S-	Sensor signal input-			RX	receiving terminal
	S+	Sensor signal input+			TX	transmitting terminal
	E+	Sensor positive excitation			GND	earth wire
	E-	Sensor negative excitation			With our thermal printer	

JP2 connecting terminal	CAL	Calibration switch External light switch Click to enter the calibration interface		JP8 connecting terminal	Thermal Printer Power Supply Port With our thermal printer

JP1 connecting terminal	Indicator Battery Interface		JP7 connecting terminal	Indicator adapter interface input110-220VAC output7.3VDC

▲ The connection between the sensor and the indicator must be reliable, the sensor shield line and the metal shell must be reliably connected with ground. The connecting wire shall not be allowed to be plugged in and out of the instrument to prevent electrostatic damage to the indicator and sensor.

▲The sensor and the indicator are all electrostatic sensitive equipment, and anti-static measures must be taken when using .It is strictly forbidden to do electric welding or other strong electricity operation on the weighing table. In thunderstorm season, reliable lightning protection measures must to be implemented to prevent the damage of sensor and the indicator caused by lightning strike, ensure the personal safety of operators and the safe operation of weighing equipment and related equipment.

3.0 Operation instruction

3.1 Key instruction

S1：Power on/off Key

Key	PCB label	Function 1: Light press under normal weighing condition	Function 2: Long press in normal weighing condition	Function 3: After entering parameter setting
F	S2	According to the function of parameter setting, refer to 3.7	Enter parameter settings, refer to 3.7	Exit parameter settings
∑	S3	Accumulation, refer to 3.5 Printing, refer to 3.6	View total cumulative，refer to 3.5	Change set parameters
→T←	S4	Tare operation，refer to 3.4	N/A	Digital Flashing Position Right Shift
→0←	S5	Zeroing operation	N/A	Confirm the parameters of the current setting
	S1	Power off Key		

3.2 Power on and power on automatic zero setting Press the power key to control the indicator's electric source, and the indicator can be self-checked and displayed after the machine is turned on. If the scale deviates from the zero point when the calibration is completed, the indicator will automatically set zero if it is still in the range of automatic zero setting, the indicator will display zero and the "zero position" indicator light will be on, and if it deviates from the zero setting range, the current reading will be displayed. If "--" is set in the boot zero range, which is the last shutdown zero, Zero setting is not performed, it automatically reads the zero point at the last shutdown and displays the current weight.

3.3 Manual zero setting
Press the "→0←" button to set zero in the range of manual zero at the gross weight of the indicator, when in the "net weight" display mode is invalid

3.4 Tare Operation
When the gross weight and net weight are larger than zero, the tare operation can be carried out when it is stable, after pressing the "→T←" key the indicator display reading is "0" , the tare is the current gross weight, and enters the "net weight" display mode, the "net weight" indicator light is on; when the gross weight is "0" and in the "net weight" display mode, press the "→T←" key to exit the "net weight" display mode.

3.5 Accumulation, cumulative and zero-clearing operations
1, When the net weight is bigger than the minimum weighing value (5 division) and isstable, press the "∑" key to accumulate the current net weight, the "∑" indicator lights up and display the total accumulative value, and then display the accumulative number of times 【n ***】 after 3 seconds, it automatically display accumulative state after 3 seconds; the next operation must be done after the net weight is smaller than the minimum weighing value;
2, In the weighing state long press "∑" key until buzzer prompt release ," Fn" and "∑" is light on, can read the total cumulative amount, press "→0←" key to read the cumulative number of times, and then press "0" key to exit;
3, Long press the "∑" key to enter the cumulative display, press the "→T←" after the prompt [CLEAr-]. That is, prompt whether to clear the cumulative amount, press "→0←" key to clear, press "F" key to exit, do not clear.
The instructions are as follows:
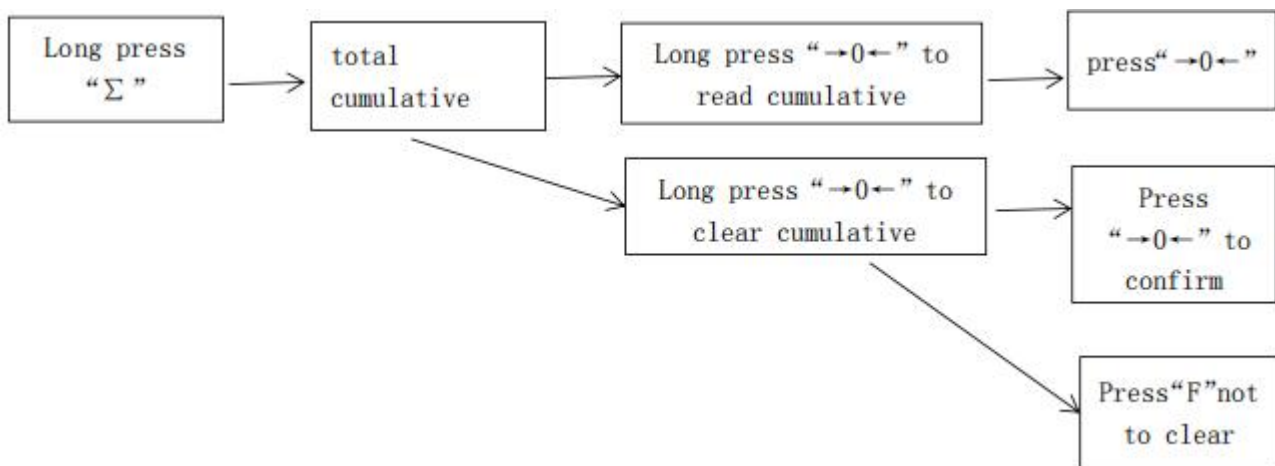
3.6 Print Function

1. Communication mode CO parameter set to 7
2. Can be connected to serial printer for printing
3. When the net weight is larger than the minimum weight value (5 division) and stable, press "∑" key to print the current net weight, gross weight.

3.7 Other Parameter Setting And Function Description

Under normal weighing state ,long press the "F" key until the buzzer prompts you to let go ,and then enter parameter setting.The detailed steps are as follows:

Step	Operation	Display	Note
1	Long press"F"key to enter"∑"key switch "→0←"key to confirm	[Fn **]	Sets the work of the Function key（function）: [Cot]:Tally Function [--]: Keystroke no function
2	"∑"key switch "→0←" to confirm	[PS **]	Power saving mode selection （Power Save）: [oFF]:Turn off power saving mode [oN] : Turn on the power-saving mode ,enter the power-saving mode 3 minutes after the weight is stabilized,and only the last bit of the meter circulates to display fields [onP]:Power-saving enhanced mode automatically shuts off 2 minutes after power-saving mode is turned on
3	"∑"key switch "→0←" to confirm	[br****]	Set the baud rate （Baud Rate）: 600-9600bps optional
4	"∑"key switch "→0←" to confirm	[Co *]	Set the communicate mode （ Communicate Mode）:1-7 optional；The detailed format is shown below

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★If parameter setting is completed,just press"F" key to exit quickly.

Introduction of counting function：

When the key "F" is pressed, the indicator "F" lights up, the unit indicator lights out, and cancel the decimal point indicating,it shows that the display quantity state hasbeen entered. Place the samples which has been known the quality on the weighing platform, long press "F" key, the indicator shows "30" and flashing, input the sample number, press "→0←" key can make the flashing position to the right, press "Σ" key increase flashing digits , press "→0←" key to confirm, and then display the number.

Communication mode format：

Serial Number	The number of each frame	Annotation
1	8	Reverse send the net weight data, If the net weight is 23.45kg, ASCII code =54.3200; If the net weight is -23.45kg, the ASCII code =54.320-
2	8	Reverse send the gloss weight data：Format such as 1
3	14	Forward send net weight data with unit indication, if net weight is 23.45kg, send ASCII code =0023.45(kg) Finally with hexadecimal OD,OA ends
4	14	Forward send gross weight data with unit indication as format 3
5	indeterminate	Instruction response mode: Instruction format 02 "Instruction" 03 (hexadecimal) There are 5 instructions in total, ranging from ASCII code 'A' - 'E' : for example, gross weight is 23.45kg, net weight is 13.45kg, tare weight is 10.00kg 'A' : Gross weight, indicator return: GW:0023.45 (kg) 'B' : read net weight, indicator return: NW:0013.45 (kg) 'C' : Tare weight, indicator return: TW:0010.00 (kg) 'D' : Manual zero setting, indicator return: 'D' 'E' : Tare operation, indicator return: 'E' All return commands start + 02, end + 03 (hexadecimal)
6		Automatic output of net weight and accumulated data during accumulative operation, which can be printed by serial port printer
7		The accumulative function is canceled. At the same time, press the accumulative key to print gross weight and net weight, which can be printed by serial port printer

3.8 Battery maintenance and precautions

Use a sensor on full charge, no power saving mode, can work continuously for about 30 hours, if using power saving mode can be extended by another 1/3 or longer.When the adapter is plugged in, the meter automatically charges the battery, and the "charging" indicator light of the meter will be prompted according to the charging situation when it is turned off: when the battery is insufficient, the indicator light is red; when the battery is fully charged, it is green; the charging time of shutdown is around 24 hours.

The battery is consumable and does not belong to the scope of "three guarantees"

★In order to extend the service life of the battery,it must be fully charged before use.If the indicator is not used for a long time, it must be charged every two months for 24 hours each time.
★In handling or installation must be carefully placed, avoid strong vibration, avoid impact or impact, to prevent the battery internal electrode short circuit, damage to the battery.

3.9 Low voltage alarm and automatic shutdown

If only using the battery for work, when the battery power is low (the voltage is less than 5.8V or so), a low voltage reminder will be issued. The indicator light of "out of power" of the instrument will flash and display [Lo BAt] every one minute to prompt the user to charge as soon as possible.When the battery power is seriously low (the voltage is less than 5.6V or so), the indicator will shut down automatically

4.0 Calibration method

Step	Operation	Display	Annotation
		[CAL]	Represents to enter the calibration state, press"→0←"key to enter the next step
1	"Σ"key select division values "→0←" to confirm	[E 01]	Set the division value: 1、2、5、10、20、50
2	"Σ"Key to select decimal point "→0←"key to confirm	[dC 0.000]	Setting the position of the decimal point: The indicator represents the position of the decimal point in an intuitive manner. For example:0.000
3	Set full range	[F03.000]	Set full range: Press"→T←"key moves the scintillation position to the right; "Σ"key to increase scintillation number; "→0←"key to confirm, and enter the next step. For example, 3.000
4	When zero point stabilizes Press "→0←"key to confirm	[noLoAd]	Zero calibration: make the indicator in the state of balance, press "→0←" to confirm after stabilizing.
5	Load weight Input load weight	[AdLoAd] Automatically switch to	Linear calibration: load weight, the closer to full range, the better.Operate the same as setting the full range.

		weighing display after 2 seconds [003.000]	After the stability indicator is on for 5 seconds, press "→0←" to confirm, and exit calibration automatically.For example: 003.000
	Return to working status	[00 3.000]	End of calibration, display current weight

5.0 Other calibration parameter settings

Step	Operation	Display	Annotation
		[Zero]	Represents to enter other calibration parameters，press"→0←"key to enter the next step
1	"Σ"key to switch"→0←" button to confirm	[Zot *.*]	Zero tracking range（Zero Trace）:0-4d
2	"Σ"key to switch"→0←" key to confirm	[nt **]	Manually set the zero range(Manual Set Zero) full range 0,2,4,10，20，100%
3	"Σ"key to switch"→0←" key to confirm	[At **]	Auto Set Zero（Auto Set Zero） full range0,2,4,10，20，100% When [--] is selected to save the shutdown zero function, that is, the last manual zero set before the last shutdown will be taken as the starting zero next time, and the automatic zero setting will not be carried out again
4	"Σ"key to switch"→0←" key to confirm	[FL ***]	Filter Settings（Filter） [S t b]: stable algorithm（Stable） [SEn]:sensitive algorithm（Sensitive）

6.0Error message prompt

Indicator display	Annotation
Err 01	Beyond the zero range
Err 02	Does not meet the accumulation requirements
Err 03	Weight overload, or poor sensor contact
Err 04	The total amount is unstable at calibration
Err 05	Wrong load calibration, too small load or reverse AD
Err 06	Does not meet tare requirements, weighing platform instability or overload
Err 09	Data read check error, data storage core
Err 10	Boot check error, MCU damaged