TSCALE

TPSS series

Pallet Scales

User's guide

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SECTION 1 INTRODUCTION

The TPSS series of pallet scale provides an accurate, fast weighing solution for pallet truck.

There are 4 series scales within the range, with 2 different fork size and optional built-in min printer.

All the keypads are mechanical switches and the displays are large easy to read liquid crystal type displays (LCD). The LCD's are supplied with a backlight.

All units include automatic zero tracking, weighing unit change, pretare, gross/net change and an accumulation facility that allows the individual weights to be stored and recalled as an accumulated total.

SECTION 2 SPECIFICATIONS

Model	TPSS
Max Lifting weight	2000kg
Min. Fork Height	85mm
Max. fork height	200mm
Fork length	1135mm
Fork overall width	555mm/688mm
Individual fork width	180mm
Capacity	1000kg/2000kg
division	0.5kg/1kg
External resolution	1/2,000
Internal resolution	1/600,000
Stabilisation Time	1 Seconds typical
Operating Temperature	0°C - 40°C / 32°F - 104°F
Power supply	External AC adapter, 9V 800mA, built-in rechargeable battery (lead acid, 6V/10Ah)
Calibration	Automatic External
Display	$5^1/_2$ digits LCD digital display with 52mm high digits (EL backlight)
Interface	RS-232 Output Optional
Load cells	4 load cells

SECTION 3 INSTALLATION

3. 1 GENERAL INSTALLATION

Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.

Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the scales in water.

Keep the scales clean.

Do not stack material on the scales when they are not in use.

Please ascent the pallet before read weight data.

Please don't read data when pallet truck moving.

Please charge battery to full before use, see detail in SECTION 9.

3. 2 INSTALLATION OF TPSS SERIES

3.2.1 Install handle

The handle is packing separate from pallet truck.

1. Loosen the setting screw (140H) on the crank link (139H).

2. Remove three screws (H109) and three spring washers (H110) from the base (103).

3. Place the handle (H101) on the base (103), please note: Feed the rod and chain (H107) through the centre of the base (103) and axle (109).
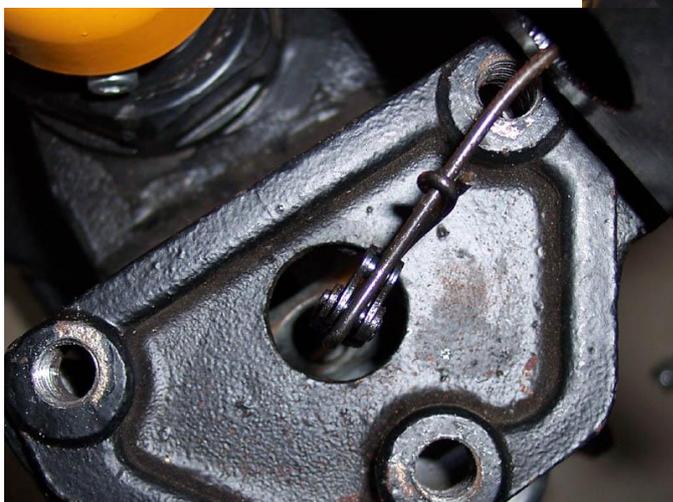
4. Insert three screws (H109) with spring washers (H110) into the base (103). Then tighten them securely.

5. Raise the crank link (139H) and put the pin on rod and chain (H107)

into the groove of crank link (139H).
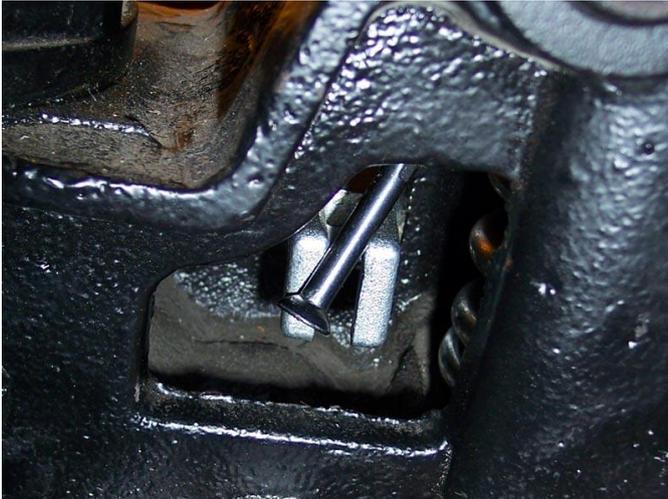
3.2.2 to adjust release device

On the handle of the pallet truck, you will find the control lever (H106) which can be set in three positions

1. First tighten the setting screw (140H) on the crank link (139H) until the LOWER position function works.

2. If the forks elevate while pumping in the NEUTRAL position, turn the setting screw (140H) clockwise until pumping the handle does not raise the forks and the NEUTRAL position functions correctly.

3. If the forks descend while pumping in the NEUTRAL position, turn the setting screw (140H) counter-clockwise until the forks do not lower.

4. If the forks do not descend when the control lever (H106) is in the LOWER position, turn the setting screw (140H) clockwise until raising the control lever (H106) lowers the forks. Then check the NEUTRAL position as per item 2 and 3.

5. If the forks do not lift while pumping in the ASCENT position, turn the setting screw (140H) counter-clockwise until the forks elevate while pumping in the ASCENT position. Then check the NEUTRAL and LOWER position as per item 2, 3 and 4.

SECTION 4 PALLET TRUCK OPERATE

4. 1 CONTROL LEVER
the control lever (H106) which can be set in three positions
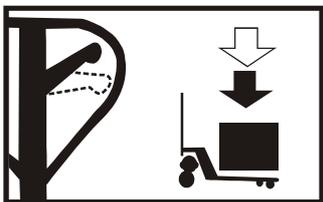
 LOWER: to lower the forks

 NEUTRAL: to move the load
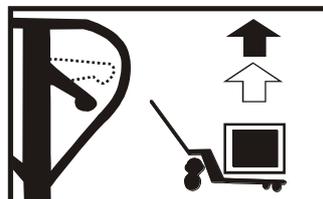
 ASCENT: to raise the forks. After assembling the handle, you can adjust the three positions.

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

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

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.

3. Do not use the truck on sloping ground.

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

5. The operator had better take on wear gloves and security shoes for labor protecting.

6. Do not handle unstable or loosely stacked loads.

7. Do not overload the truck.

8. Do not subject to unbalanced load, either side to side or along the length of the frame

9. The capacity of the truck assumes an evenly distributed
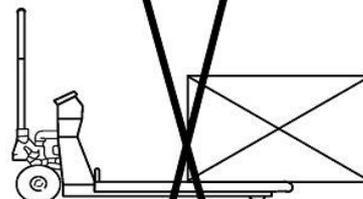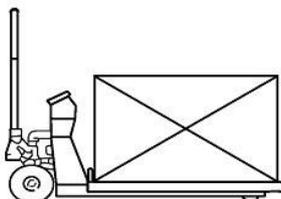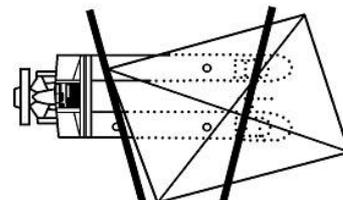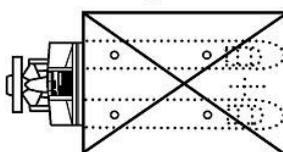
load with the centre of the load being at the halfway point of the length of the forks.

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

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

12. At other specific conditions or places, the operator should be carefully to operate the pallet truck.

4. 3 MAINTENANCE

4.3.1 OIL

Please check the oil level every six months. The volume of oil is about 0.3lt.

Use the hydraulic type oil according to temperature scale below.

Temperature	Oil
-5℃~+45℃	L-HM68 Hydraulic oil (equivalent to ISO VG68)
-15℃~-5℃	L-HM46 Hydraulic oil (equivalent to ISO VG46)

4.3.2 HOW TO EXPEL AIR FROM THE PUMP UNIT

The air may come into the hydraulic because of transportation or pump in upset position. It can cause that forks do not elevate while pumping in the ASCENT position. The air can be banished in the following way: Let the control lever (H106) to the LOWER position, then move the handle (H1501) up and down for several times.

4.3.3 DAILY CHECK AND MAINTENANCE

Daily check of the pallet truck can limit wear as much as possible. Give special attention to the wheels (127, F116 or F117), the axles (F114, F118, F121, F122), the handle (H101), the forks (F110) and lift and lower control. The forks should be unloaded and lowered in the lowest position when the job is over.

4.3.4 LUBRICATION

Use motor oil or grease to lubricate all moveable parts.

SECTION 5 KEY DESCRIPTIONS

ZERO or ⇥0⇤

Set the zero point for all subsequent weighing. The display shows zero.

A secondary function ↵, of "Enter" key when setting parameters or other functions.

TARE or ⇥T

Tares the scale. Stores the current weight in memory as a tare value, subtracts the tare value from the weight and shows the results. This is the net weight.
A secondary function ▲ of incrementing the active digit when setting a value for parameters or other functions.

PT

Pretare key, press this key to recall pretare, hole this key for 3 seconds for store pretare values.
▶ move the active digit right when setting values for other functions.

M+

adds the value to the accumulation memory. In zero point, press this key to show current total value, when you select optional mini printer, press key will also print the results to printer.
◀ Move the active digit left when setting values for other functions.

G/N

Gross weight/Net weight display shift, only available after do tare/pretare operate
Secondary function (**C**) , is to act as a clear key when setting values for parameters or other functions.

UNIT or **U**

Press this key to select the weight unit.
It also have secondary function (ESC) , is to return to normal operation when the scale is in a parameter setting mode.

ON/ OFF or ⏻

Turn on or off the power.

SECTION 6 DISPLAYS

The LCD display will show a value and a unit to the right of the digits.
In addition there are symbols for TARE, GROSS weight, Zero and for Low battery

Low Battery Symbol

Net weight mode

Weighing Units
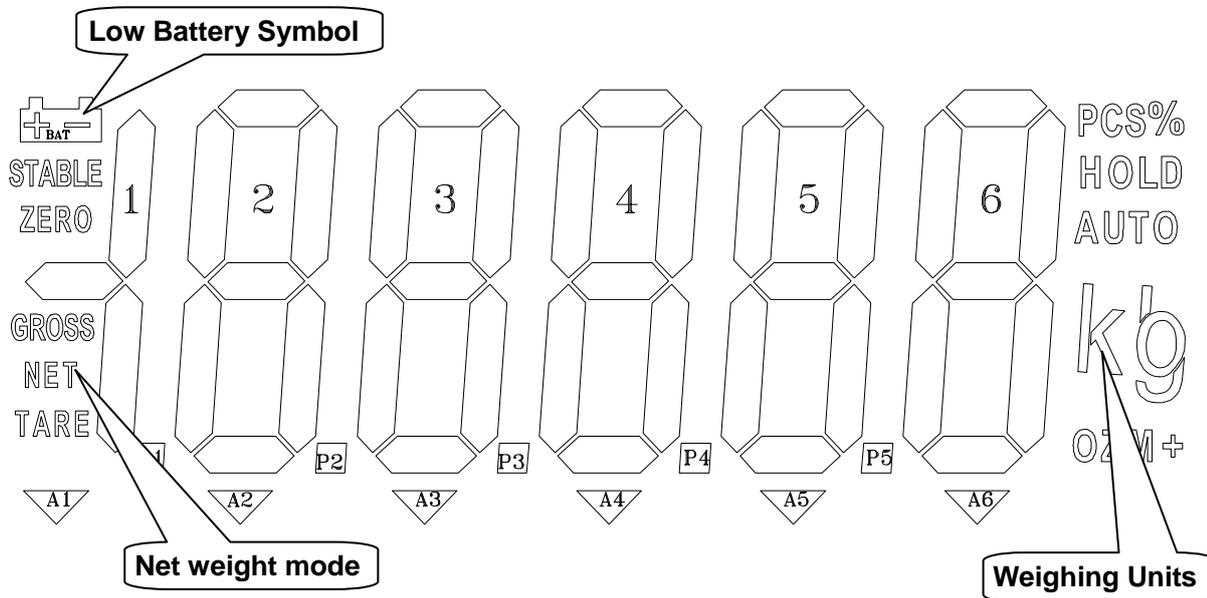
SECTION 7 OPERATION

7.1 BASIC OPERATE

7.1.1 Zeroing The Display

You can press the **ZERO** key at any time to set the zero point from which all other weighing and counting is measured, within 2% of power up zero. This will usually only be necessary when the pallet is empty. When the zero point is obtained the display will show the indicator for zero.

The scale has an automatic rezeroing function to account for minor drifting or accumulation of material on the pallet. However you may need to press the **ZERO** key to rezero the scale if small amounts of weight are shown when the pallet is empty.

7.1.2 Taring

Zero the scale by pressing the **ZERO** key if necessary. The zero indicator will be on.

Place a container on the pallet, a value for its weight will be displayed.

Press the **TARE** key to tare the scale. The weight that was displayed is stored as the tare value and that value is subtracted from the display, leaving zero on the display. The "GROSS" indicator will be off and "NET" indicator on. As product is added only the weight of the product will be shown. The scale could be tared a second time if another type of product was to be added to the first one. Again only the weight that is added after taring will be displayed.

When the container is removed a negative value will be shown. If the scale was tared just before removing the container this value is the gross weight of the container plus all product that was removed. The zero indicator will also be on because the pallet is back to the same condition it was when the **ZERO** key was last pressed. Press **TARE** key again to escape "NET" mode.

7.1.3 Weighing operate

Put the control lever in the LOWER position and lower the truck to lowest position.
Press the **ON/OFF** key until the backlight on. After the indicator being checked by itself, it display "0kg".
Put the forks under pallet and judge by eyes it will be balanced load. Put the control lever in the ASCENT position, pump the handle to make the fork rise, until you can make sure the pallet leave ground. The stable reading of the indictor is the gross weight of the goods (total weight of the pallet and the goods).

7.1.4 Net/Gross change

This function only available after do TARE operate (or pretare, NET indicator ON), press **N/G** key can shift NET weight display and GROSS weight display (in GROSS

display mode, GROSS indicator ON, in NET display mode, NET indicator on).

7.1.5 Change weighing unit

Press U key to change weighing unit, only weighing unit set as ON can by shown after press U key, see SECTION 8 parameter setting.

7.2 ACCUMULATED TOTAL

7.2.1 accumulate note

Every time before do accumulate operate, please empty the fork (ZERO indicator on), and stable (STABLE indicator on). Accumulate operate only available current weight more than 20d (min. capacity)

7.2.2 accumulate operate

After weighing a pallet with goods, display show weight data, after STABLE indicator on, press M+ key, the weight displayed will be stored in memory.

The display will show "ACC 01" and then the total in memory for 2 seconds before returning to normal.   If the optional min printer is installed the weight will be output to a printer.

Remove the weight, allowing the scale to return to zero and put a second weight on. Press the M+ key, the display will show "ACC 02" and then the new total.

Continue until all weights have been added.

The scale can do accumulation operate 99 times at most.

7.2.3 memory recall

To view the totals in memory press the M+ key in zero point (ZERO indicator on), display will show "ACC n" (n is current accumulate times) and then the total in memory for 2 seconds, then returning to normal

If you install a mini printer, when do memory recall operate, printer will print out accumulate report (total value)

7.2.4 memory clear

To clear the accumulate data in memory, just press G/N key during total values display mode.

7. 3 PRETARE

7.3.1 use pretare

press PT key, display show "PtL 0", press TARE key to select Preset item (0~9, total 10 preset item), then press ZERO key to sure, the tare value store in pretare item will used for current weighing, scale enter NET mode.

7.3.2 store pretare value

To store tare value to pretare item, just hold PT key for 3 second, display will show current tare value, if you want to modify this data, just use M+/PT key to move active digit, use TARE key to change value, press ZERO key to sure, if you want to use current tare value, just press ZERO, then display will show "$Pt5\ 0$", press TARE key to select pretare item (0~9, total 10 preset item), after you select, press ZERO key to sure, pretare value stored in memory.

SECTION 8 PARAMETERS

The scale has 4 parameters that can be set by the user plus a method of entering the calibration section.

To set parameters press the ZERO key and TARE key at the same time (hit and release at the same time).

The display will show the first function, "F I Un it".
Pressing the TARE key will cycle through the other functions.
Pressing ZERO key will allow you to set the function.   It may be necessary to either use TARE key set a value or using the M+ and PT key to move the active digit and then using the TARE key to increment a digit,   followed by the ZERO key to enter the value. Use the U key to leave a parameter unchanged.

For example when the display shows "F I Un it" press the ZERO key to begin.

The display will show "on lb", press the TARE key to set the to set weighing unit ON/OFF status.

After pressing the ZERO key to sure, scale will show next weighing unit, use TARE key to set, ZERO key sure, after you set, press U key to escape.

FUNCTION MENU SETTINGS

FUNCTION	SUB-FUNCTION	DESCRIPTION	DEFAULT VALUE
F I U nt		Sets the displayed unit of weight. Select kg, Lb, ozt(ounce). *If all unit weight set off, the unit key will no function.	Kg/lb
F2 dAt i	yy	Set year, The display will show current year or 00.01.01. Enter new year	2000/01/01 00:00
	m̄ dd	Set date, the display will show current date or 01.01, enter new date, format mm.dd (month/date)	
	HHm̄	Set time, The display will show current time or 00.00. Enter new time, format hh.mm (hour/minute)	
	*scale have no built in real time clock, after power off, scale will reset, when turn on the power, the date and time will be 2000/01/01 00:00		
F3 oFF	C LoC F	Set clock off or on, oFF: don't use clock function on: TPSS will turn to clock display after TPSS standby for 5 minutes	CLK off
	bt	Set the backlight to be on, automatic or off,	auto

		on: always on AUto: hit key and weight more than 20d, backlight auto on oFF: always off	
	oFF	Set the auto power off time. 0/3/5/15/30 minutes.	
F4 Prt		Set the printer format or mode 0: no printer, (continuously mode) 1: print format 1 2: print format 2 3: print format 3 4: print format 4 5: print format 5	1
ProG	P in	Enter the programming and calibration menus by entering the correct password. See the section 10.	

When the scales are set to display in other units of weight the accumulation function is still keeping the weight in kilograms.

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SECTION 9 BATTERY OPERATION

The weighing indicator is operated from the battery. The battery life is approximately 80 hours.

When the battery needs charging a symbol on the weight display will turn on. The battery should be charged when the symbol is on. The scale will still operate for about 30 minutes after which it will automatically switch off to protect the battery.

To charge the battery simply plug into the mains power. The scale does not need to be turned on.

The battery should be charged for 15 hours for full capacity.

Just at the left side of display window, there is an LED to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be charged. If the LED is green the battery has a full charge. If it is Red the battery is nearly discharged and yellow indicates the battery is being charged.

When you get new scale, please charge battery at first.

Even you haven't use the scale, please also charge battery every 3 month.

As the battery is used it may fail to hold a full charge. If the battery life becomes unacceptable then contact your distributor.

SECTION 10 TECHNICAL PARAMETERS

10.1 ENTER TECHNICAL PARAMETER SETTING MODE

Press **ZERO** key and **TARE** key when normal weighing mode to enter setting mode, display shows "F 1Un iƖ", press **TARE** key until display shows "P roL", press **ZERO** key, display shows "Pn", You can press **M+**, **U**, **TARE** key orderly to enter technical setting mode, press **TARE** key to select parameter, press Zero key to sure, press U key to escape.

It may be necessary to either use **TARE** key set a value or using the **M+** and **PT** key to move the active digit and then using the **TARE** key to increment a digit.

10.2 FUNCTION SETTING TABLE

FUNCTION	SUB-FUNCTION	DESCRIPTION
P 1 rEF	A2 0	This option is used to select the auto zero maintain Options : 0 (no zero tracking), 0.5d, 1d, 2d, 4d
	0AUƖo	This option is used to select the auto zero range when turn the indicator. Options : 0%, 2%, 5%, 10%, 20%
	0 rAnGE	This option is used to select the manual zero range when press the ZERO key. Options: 2%, 4%, 10%, 20%, 50%, 100%
	SPEEd	Set ADC speed, press U. Wt. Key to select ADC speed, press Tare key to enter 7.5: 7.5 times per second 15: 15 times per second 30: 30 times per second 60: 60 times per second Note: 15 times per second or 30 times per second are recommendatory
P 2 CAL	dEC ı	This option is used to select the decimal Options : 0, 0.0, 0.00, 0.000
	ınC	This option is used to select the division Options : 1, 2, 5, 10, 20, 50
	C AP	This display will show xxxxxx for setting the capacity.
	CAL	Calibrate, see detail below
	CoUnƖ	This display will show xxxxxx for indicating the internal counts.
	Grū	Set the gravity. Input the local gravity directly.

10. 3 CALIBRATE

Enter technical parameter setting mode, press **TARE** key until display show "P2 CAL", press **ZERO** key to enter, press **TARE** key until display show "CAL", press **ZERO** key to enter calibrate.

After enter calibrate mode, the display will show "UnLd".

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Remove any weight from the fork, after STABLE indicator on, press the ZERO key.

The display will show calibrate weight value, you can use M+, PT, TARE key to set the weight value (use M+, PT key to move active digit, use TARE key to change value, also you can press G/N key to make value as 0), after you input, press ZERO key to sure, display will show "LoAd", add calibrate weight on fork, after STABLE indicator on, press ZERO key to sure.

If the calibration is acceptable the display will return to normal. If an error message is shown try calibration again as a disturbance may have prevented a successful calibration.

If the problem persist then contact your dealer.

SECTION 11 ERROR CODES

ERROR CODES	DESCRIPTION	RESOLUTION
- - - - -	Over range	Remove weight from the scale. If the problem persist contact your dealer for assistance.
Err 1	Date Setting Error	Enter date using correct format and reasonable values. Format: yy:mm:dd
Err 2	Time Setting Error	Enter time using correct format and reasonable values. Format: hh:mm:ss
Err 4	Zero Setting Error	The scale was outside the normal zero setting range either when it was turned on or when the ZERO key was pressed. Remove weight from the scale and try again. Use the TARE key to set the display to zero value. If the problem persist contact your dealer for assistance.
Err 6	A/D out of range	The values from the A/D converter are outside the normal range. Remove weight from the scale if overloaded, make sure the pan is attached. Indicates the load cell or the electronics may be faulty. If the problem persist contact your dealer

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APPENDIX1: PRINT FORMAT

Format 1

Without tare weight:

DATE： 2005/06/12

TIME： 12:12:30

18.30kg

With tare weight:

DATE： 2005/06/12

TIME： 12:12:30

G. W.   20.50kg

N.W.   18.30kg

Format 2

COMPANY NAME

DATE： 2005/06/12

TIME： 12:12:30

1. 1.36kg

2. 2.54kg

3. 3.06kg

TOTAL   6.96kg

Format 3

NO.   3

G.W.   20.50kg

N.W.   18.30kg

Format 4

NO.   3

N.W.   18.30kg

Format 5

DATE： 2005/06/12

TIME： 12:12:30

NO.   3

N.W.   18.30kg

TOTAL   60.40kg

Format 6/7/8

DATE/TIME/No/N.W./G.W./T.W./COMPANY NAME/TOTAL/--------------/.

All of these above items could be selected, and also the order could be set as you required, you just need to set the item as 1,2,3…

APPENDIX2 : DRAWING OF PUMP ASSEMBLY AND HANDLE
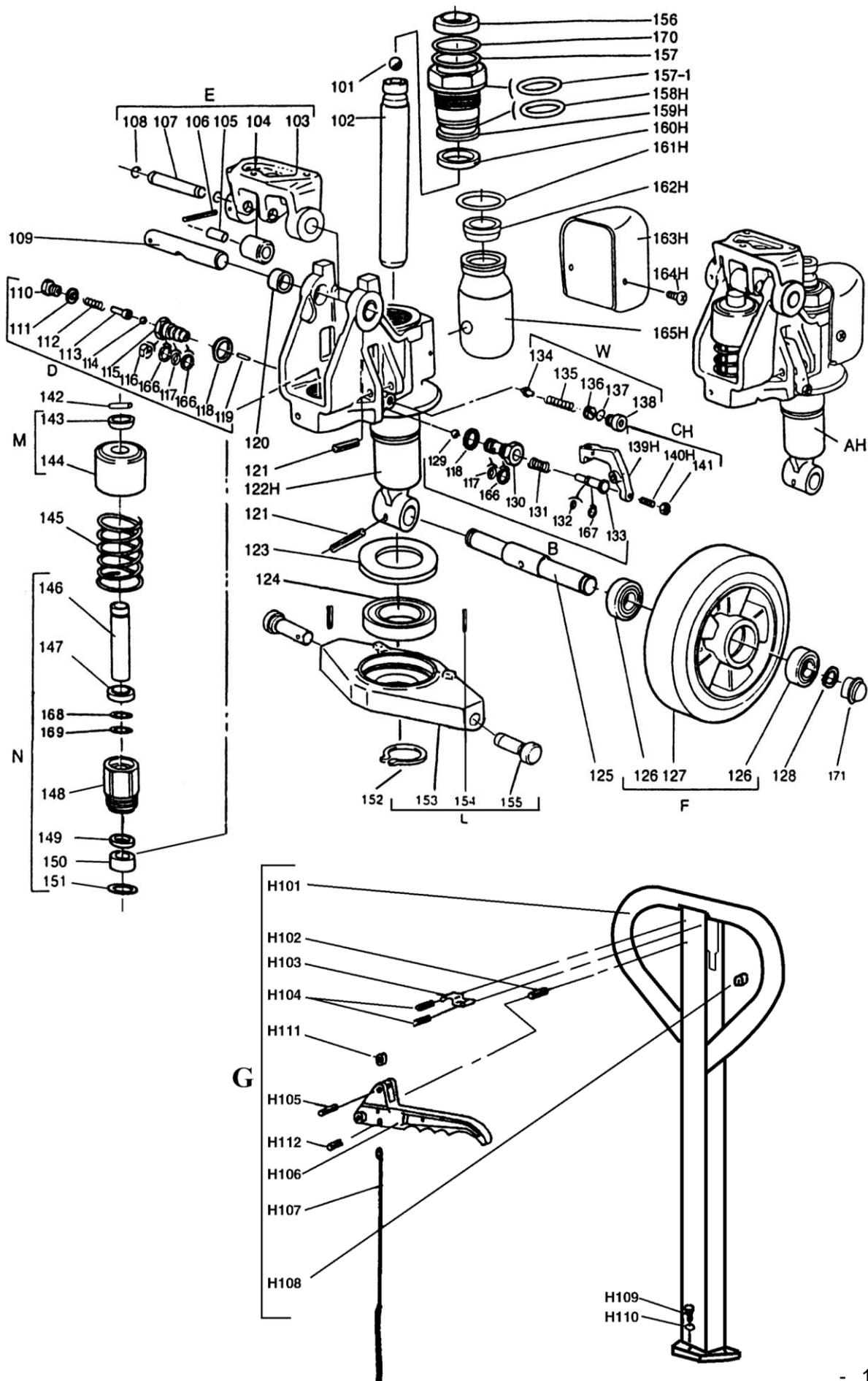
Parts List of Pump Assembly

Part No.	Description	Q'ty	Part No.	Description	Q'ty
101	Steel ball	1	136	Pressure regulating screw O-ring	1
102	Rod	1	137	Screw	1
103	Base	1	138	Crank link	1
104	Steel roller	1	139H	Setting screw	1
105	Bushing	1	140H	Nut	1
106	Pin	1	141	Parallel pin	1
107	Shaft	2	142	Retaining cover	1
108	Retaining ring	1	143	Spring cover	1
109	Axle	1	144	Spring	1
110	Screw	1	145	Pump rod	1
111	Washer	1	146	Dust proof ring	1
112	Spring	1	147	Pump cylinder	1
113	Pressure rod	1	148	Seal ring	1
114	Steel ball	1	149	Nylon bushing	1
115	Pressure valve body	1	150	Red copper washer	1
116	Split ring	1	151	Retaining ring	1
117	O-ring	2	152	Rhombus plate	1
118	Washer	2	153	Pin	1
119	Steel needle	1	154	Dowel pin	2
120	Bushing	2	155	Dust proof ring	2
121	Pin	2	156	O-ring	1
122H	Pump body	1	157	O-ring	1
123	Dust cover	1	157-1	O-ring	1
124	Bearing	1	158H	Cylinder	1
125	Steering wheel axle	1	159H	Seal ring	1
126	Bearing	4	160H	O-ring	1
127A	Steering wheel, Nylon	2	161H	Filler plug	1
127B	Steering wheel, Polyurethane	2	162H	Reservoir cover	1
127C	Steering wheel, Poly/Nylon	2	163H	Screw	1
127D	Steering wheel, Rubber	2	164H	Reservoir	2
128	Retaining ring	2	165H	Retainer	1
129	Steel ball	1	166	Retainer	3
130	Discharge valve body	1	167	Retainer	1
131	Spring	1	168	O-ring	1
132	O-ring	1	169	Retainer	1
133	Discharge valve shaft	1	170	Dust cover	1
134	Valve taper core	1	171	Bearing Cover	2
135	Spring	1			

Parts List of Handle

Part No.	Description	Q'ty	Part No.	Description	Q'ty
H101	Handle	1	H107	Rod and chain	1
H102	Spring pin	1	H108	Rubber cushion	1
H103	Spring leaf	1	H109	Screw	3
H104	Spring pin	2	H110	Spring washer	3
H105	Spring pin	1	H111	Nylon roller	1
H106	Control lever	1	H112	Spring pin	1

Appendix3 : Drawing of frame
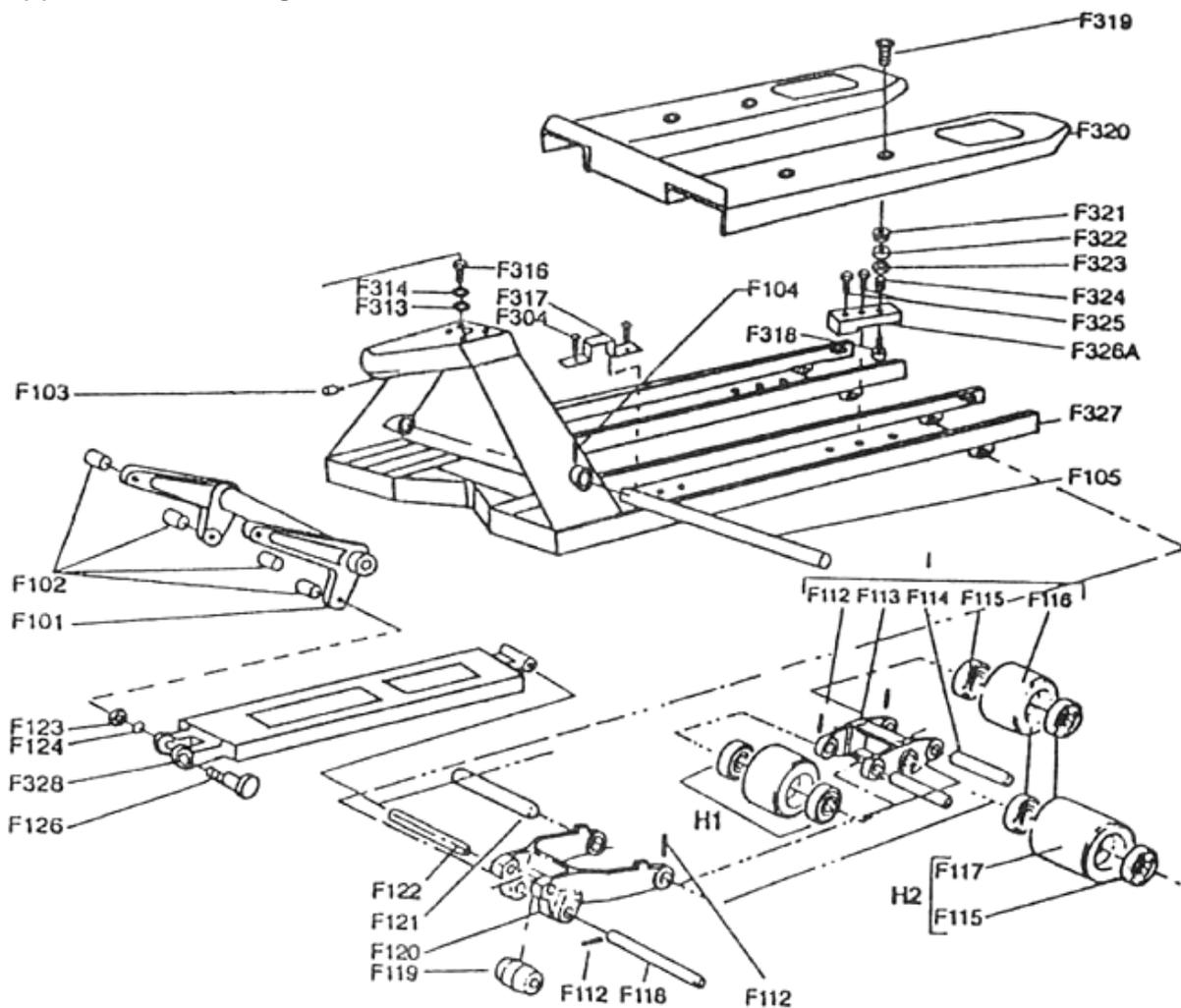
Parts List of Frame

Part No.	Description	Q'ty	Part No.	Description	Q'ty
F304	Screw	4	F102	Bushing	4
F313	Washer	4	F103	Hexagon socket screw	1
F314	Spring washer	3	F104	Spring pin	1
F316	Bolt	4	F105	Torsion tube shaft	1
F317	Wire clip	2	F112	Spring pin	8/4*
F318	Screw	4	F113	H-link	2
F319	Fix screw	4	F114	Load roller axle	4
F320S	Cover plate assembly	1	F115	Bearing	8/4*
F320L	(555mm)	1	F116B	Poly load roller, tandem type	4
F321	Cover plate assembly	4	F117B	Poly load roller, single type	2
F322	(690mm)	4	F118	Axle	2
F323	Convex spherical washer	4	F119	Roller	2
F324	Concave spherical washer	4	F120	Wheel frame	2
F325	Bolt	8	F121	H-link axle	2
F326B	Load cell	4	F122	Pull rod axle	2
F327S	Frame (555mm)	1	F123	Nut	2
F327L	Frame (690mm)	1	F124	Spring washer	2
F328	Pull rod	2	F126	Eccentric pin	2
F101	Torsion tube assembly	1			

Note*: Quantity for tandem roller is 8, for single roller is 4.

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TAIWAN SCALE is a international supplier with more than 30 years experience in the production and sale of electronic weighing equipment.

Products are supplied and serviced from our company locations in the CHINA, TAIWAN and distributed through a world wide dealer network, also we make OEM/ODM products for world wide customer.

TAIWAN SCALE's products are predominantly designed for the laboratory, medical, business and industrial markets.

The product range can be summarised as follows:

− Counting scales for general industrial and warehouse applications
− Digital weighing/check-weighing scales
− High performance platform scales with extensive software facilities including parts counting, percent weighing etc.
− Digital electronic scales for medical use
− Retail price computing scales
− Floor scales
− Truck scale
− Crane scales
− Weighing indicator for platform scales, floor scales and truck scales
− Hand push and pull gauge
− Customize auto weighing systems

TAIWAN SCALE and their distributors offer a full range of technical services such as on site and workshop repair, preventative maintenance and calibration facilities.

TAIWAN SCALE operates an approved quality management system and is certified to ISO9001:2000.

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