PUDA

Electronics Co.

DCS-CDZL

SINGLE NET WEIGHING HOPPER BAGGING SCALE

OPERATOR'S MANUAL

Dear customer:

Thank you very much for choosing the DCS-CDZL bagging scale for your production needs. With proper operation procedures and maintenance, the DCS-CDZL bagging scale will provide years of trouble free operation and production. Before using your new bagging scale, please read this manual carefully and keep it filed for future reference.

Again, thank you for choosing DCS-DCZL manufacturer by PUDA Electronics.

Sincerely,

Sebastian Cao

PUDA International Packaging Equipment

Table of contents:

The DCS type final packing scales made in our company adopts Japanese UNIPLUSE F701 type weighing controller and Siemens LOGO! 24RC, their features are high accurate and stable, with complete functions, and are easy for operation. They are applied mainly to all kind of materials final packing. It is capable of finishing all control proceeding except placing bags manually.

1. Functions and features

    28 ON/ OFF input, output(16 in／12out）

•• Full automatically fast and small feeding control

•• LOGO! 24LRC is used for the linkage control of production process

• Auto free fall compensation function

    Auto zero tracking function

•• Overshoot inspecting and inhibiting function.

•• Full digital front panel calibration and parameter setting.

2. Mainframe panel

    2.1 Front panel instruction:
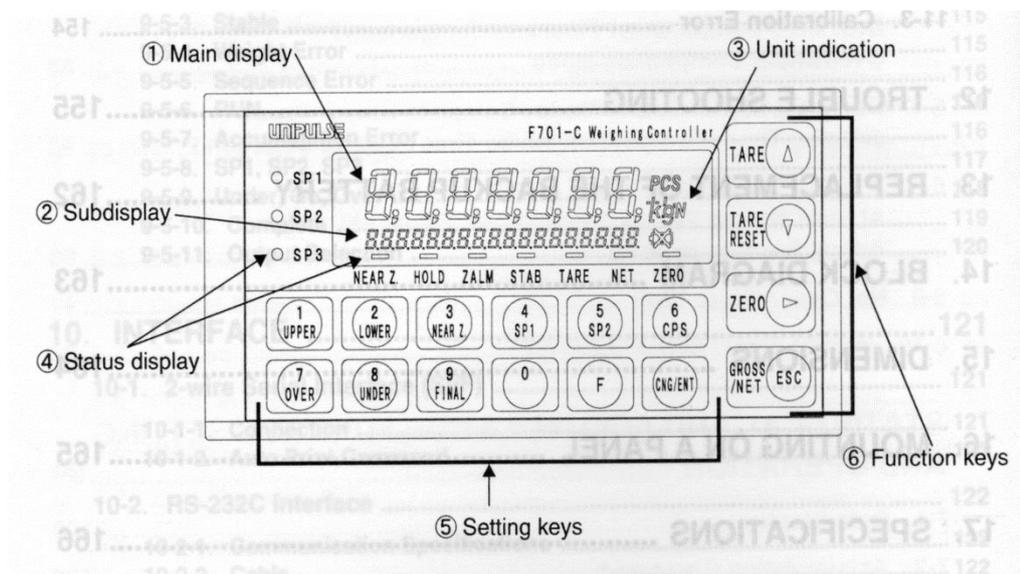
① Main display: used to display weight, error, setting.

② Sub display: used to display quantity, out of tolerance, upper/lower limit, accumulating value etc.

③ Unit indication: used to display the setting unit form.

④ Status display: used to display the instrument actual working status.

⑤ Setting keys: used for parameters setting.

⑥ Function keys: used to convert the display status of instruments.

2.2 Rare panel instruction:

●
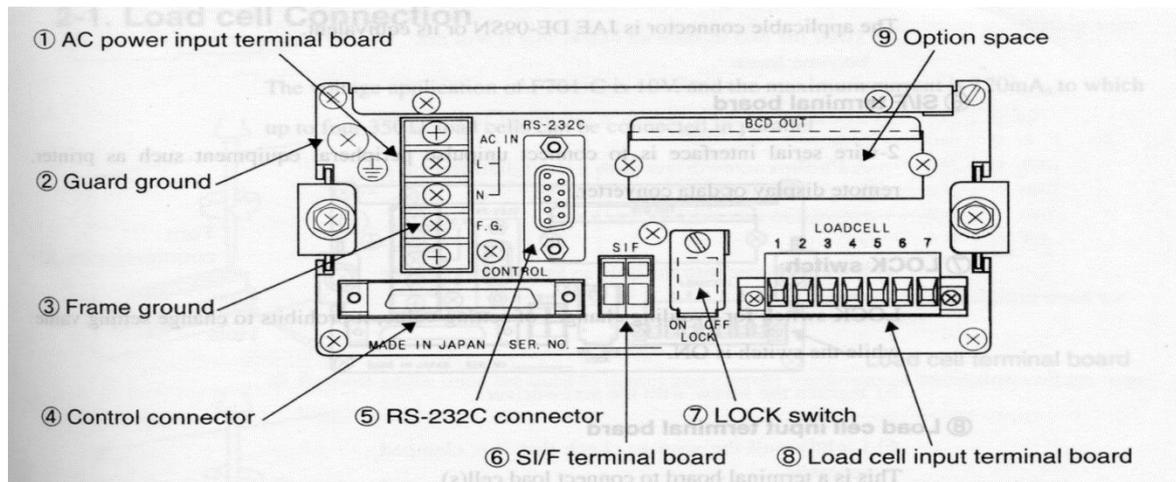
① AC power input terminal board: used to connect power

② Protective earthing: used for ground protection.

③ Frame ground: used for input ground of instrument power.

④ Control connector: for the input and output connector of instruments.

⑤ RS-232 connector: used for connecting the 232 connector.

⑥ SI/F connector: used for connecting the peripheral devices.

⑦ Lock switch: used to lock the setting value.

⑧ Load cell input terminal board: used to connect load cell.

⑨ Option space: used for the other connectors choosing.

3. Specifications

3.1 general specifications

3.1.1 Power supply voltage: 480V 60HZ, undulation ＜±10%, non strong noise and high frequency signal interference.

　　　　Notice: A. monitor power must separate from motor power.

　　　　　　　B. If local power supply undulation range is bigger than±10%, the manostat must be used

　　　　　　　C: power line connection forbids connecting not firm.

3.1.2 Power filter: affixed in it

3.1.3 Working temperature: $-10 \sim 40$ ℃

3.1.4 Maximum humidity: less than 85%R.H. the machine can not dew.

3.1.5 Working air pressure: 0.6 ~ 1.0 M Pa

3.1.6 Material conditions: corn, barley etc.

3.1.7 Power consumption: per unit total power consumption is less than 2kw

3.1.8 Accuracy grade: 0.5

3.1.9 Range ability: base on machine conformation, the range can be set; the value is less than 50kg.

3.1.10 Instrument consumption: approx. 15VA

3.1.11 Instrument net weight: approx. 1.0kg

3.1.12 Instrument size: 144×72×160mm

3.2 Analog block

3.2.1 Load cell power: DC10V. Two 350Ω load cells can be connected in parallel.

3.2.2 Zero adjustment range: 0 ~2mV\V

3.2.3 Span adjustment range: 0.3mV/V~3.2mV/V

3.2.4 Input sensitivity: 0.3 μV/COUNT

3.2.5 Transform speed: 200 times/ second.

3.2.6 Non-linearity: within 0.01%F.S

3.2.7 Zero drift: within 0.2μV/℃

3.2.8 Gain drift: 15ppM/℃

3.2.9 Internal resolution: 24BIT (binary system)

3.2.10 Maximum display accuracy: 1/10000

3.3 Display block

3.3.1 Main display section: 7-digit 10.4mm high brightness green nixietube;

3.3.2 Weight display: main display 5-digit 10.4mm high brightness green nixietube;

3.3.3 Sub display: 18- digit 10.4mm high brightness green nixietube;

3.3.4 Status display: using fluorescent display tube in fixed character display section:

SP3- small feeding	SP2-middle feeding	SP1-fast feeding
ZT-zero point	ZALM- zero error	STAB-stabilization
TARE-tare subtraction	NET-net weight	HOLD-hold
NZ-zero zone etc.		

3.3.5 Weigh unit: kg, g, t, N and Ib

3.3.6 Minus display: "－"

3.3.7 Overweight display: "LOAD", "OFL1", "OFL2", and "OFL3"

3.3.8 Decimal point position: can select 4 kinds;

3.4 keyboard block: 16 keys sound keyboard

[TARE]: tare subtraction

[TARE RESET]: tare subtraction reset

[G/N]: gross weight/net weight

[ZERO]: setting zero

[CEG/END]: change/confirmation

[F]: function keys

[1] Digital key1	[UPPER]: upper limit
[2] Digital key2	[LOWER]: lower limit
[3] Digital key3	[ZEAR Z.]: near zero
[4] Digital key4	[SP1]: fast feeding
[5] Digital key5	[SP2]: middle feeding
[6] Digital key6	[CPS]: free fall
[7] Digital key7	[OVER]: overweight
[8] Digital key8	[UNDER]: underweight
[9] Digital key9	[FINAL]: final
[0] Digital key 0	

4. Working principle

The load cells convert their own weight of the weighing supporter into electrical signal. And pass the signal to instrument, after the A/D converter transform the analog signal into digital signal, the datum are passed to CPU, CPU cleans to zero, then CPU outputs control signal. CPU starts simultaneously to detect the material weight in weighing hopper. When the weight reaches to presetting fast feeding, material discharging speed slower and enters into small feeding. When the weight reaches to the presetting value, material feeding stops. The weighing process is over. LOGO! 24RC detects meantime the mainframe running state, and controls switch action.

Note: The instrument actually can output fast, middle, small three kind of control signal, and in order to operate easily we just adopt middle and small signal, but for the operator presetting fast feeding value and presetting small feeding

value corresponding to instrument middle and small signal.

4.1 Actuator and action

    4.1.1 Bag clamping device: clamp the bag mouth tightly, lest the bag fall down

    4.1.2 Weighing hopper: weigh the discharged materials.

    4.1.3 Cylinder: base on the solenoid valve airflow direction to control actuator.

    4.1.4 Throttle valve: used for controlling the speed of cylinder

4.2 control section and action

    4.2.1 Instrument: its action is receiving and converting the electric load cell signal to digital signal, and base on its change to control the implement organ.

    4.2.2 Load cell: its action is that covert the weight signal to electric signal

    4.2.3 Solenoid valve: base on the mainframe electric signal to change the airflow direction. Sequentially control the cylinder.

    4.2.4 Button switch: Auto, manual, power on, start, stop, bag clamping, manual loosing bag, manual feeding, manual discharging.

    4.2.5 LOGO! 24R: Logical control center, control each actuator action, such as control the motion of bag clamping device and cylinder etc.

    4.2.6 Indicator: power indication, auto indication, manual indication, over/under indication.

    4.2.7 Rotary switch: Conveyor corotation/inversion, sewing machine running.

5. Installation requirement

The packing machine should be installed safely. Shake is not permitted during packing, lest influence weighing accuracy. If power supply undulation range is bigger than ±10%, the manostat must be used. The packing machine installation should keep away from electromagnetism interference source.

6. Parameter setting and calibration for instrument F701-C

6.1 The connect of the load cell

Terminal block number:	1	2	3	4	5	6	7
Connect way:	SIG+	SIG-	+EXC	+S	-EXC	-S	F.G.

••6.2 F701-C switches input and output definition:

Terminal block number	character	note
A1	COM	Common port
A2	input	gross/net (G/Z)
A3	input	digital zero on
A4	input	tare subtraction on
A5	input	tare subtraction off
A6	output	zero
A7	output	Fast feeding
A8	output	Middle feeding
A9	output	Small feeding
A10	output	under
A11	output	over
A12	common earth	com
B1	common earth	com
B2	input	setting choosing
B3	input	setting choosing

B4	input	setting choosing
B5	input	setting choosing
B6	output	lower limit
B7	output	upper limit
B8	output	stable
B9	output	setting choosing
B10	output	setting choosing
B11	output	setting choosing
B12	common earth	COM

Instruction: Output interface needs an external DC 24 V power supply. The output is an open-collector output of transistor. It can directly drive DC 24V relay, the drive current can reach to 120 mA. Or use for the implement organ drive and state indication. Input signal connect hand keys or other switch. Cut-off time is more than 50 Ms.

COM is common terminal; they are connected in the mainframe.

When the machine select the sequence control mode, the input and output detail are as follow:

Terminal Output capacity: $IC＝120mA$ （ＭＡＸ）

Near Z: the output turns on when the weighing value $\leqslant$ the near zero setting value

Fast feeding: start signal turns ON, when the weigh value$\leqslant$ the preset weight destination－fast feeding preset value ON, to drive fast feeding

Middle feeding: start signal turns on, when the weigh value$\leqslant$the preset weight destination－middle feeding preset value ON, to drive the middle feeding

Small feeding: start signal turns on, when the weigh value $\leqslant$ the preset weight destination—fall preset value ON, to drive small feeding

Under: the under signal turns on, following feeding end and judge when the weigh value $<$ the preset weight destination minus the preset underweight allowance

Over: the over signal turns on, following feeding end and judge when the weight value $>$the preset weight destination plus the preset overweight allowance

Go: The go signal turns on, following feeding end and judge when the weight value is between the preset weight destination minus the underweight allowance and the preset weight destination plus overweight allowance

Stop: in automatic mode, while feeding end, the stop signal turns on

Lower limit: the lower limit output turns on, when weight value $<$ the set lower limit value

Upper limit: the upper value limit output turns on, when weight value$>$ the set upper limit value

Stable: the stable output turns on, when the weight value is stabilized.

- **Input:**

Gross/net: (level input) when the input turns OFF, display net weight. When the input turns ON, display gross weight

Digital setting zero: (edge input) when the input turns on, set gross to zero.

Tare subtraction ON: (edge input) when the input turns on, subtract tare and set net weight to zero.

Tare subtraction OFF: (edge input) when the input turns on, relieve above tare subtract weighting.

6.3 Parameter setting and calibration

Before the machine leaves factory, It have been completed the primary demarcate and parameter setting. It needs to calibrate once more before putting on production. In general, after using a period (1-2 month) demarcate and correct the instrument. But when any section of weighting system is changed or the current parameter can not reach the demand of user, please correct the instrument. The detail descriptions as follow:

6.3.1 Instrument demarcate and correction:

A. When the instrument is corrected, please do in following order:

1.1 close the controller power supply, and then connect the load cell.

1.2 open the mainframe parameter lock, namely turn the double inline switch of rear panel to OFF (when the mainframe parameter lock closed, demarcate and change of setting value are forbidden)

1.3 open the power supply, confirm the display value or if the display is overflowing (for example LOAD, OFL1 etc.)

1.4 change the filter and display setting value to make display stable (see "setting parameter" section)

1.5 make sure weighting maximum and minimum scale and setting respectively (see "setting parameter" section)

1.6 When the weight of the poise is known, set the weight value of the poise (see "setting parameter" section)

1.7 base on demand; set gross weight over and net weight over (see "setting parameter" section)

1.8 preheat the mainframe and load cell, open the machine for 30 minutes

1.9 demarcate type selection: according to following order operating

press 【F】 → 【CNG/ENT】 → 【9】 → 【CNG/ENT】 keys, hereafter weight value display is changed to "gross weight value", digital zero is relieved, zero detecting function is forbidden.

B. zero point correction

2.1 check the situation that the load cell and weighing supporter perimeter connect with other things, if there are other dispensable things or load.

2.2 make sure the stable light is bright (STAB), if not bright, can not be corrected

2.3 operate zero point correction key, if the weight change to zero, the correction work is over. According to following order operating

press 【F】 → 【CNG/ENT】 → 【9】 → 【CNG/ENT】 → 【ZERO】 → 【CNG/ENT】 keys, instrument displays 【ZE 0.12kg】 → 【9 0.00kg】 , press "0" key to exit under this status.

2.4 error indication

a. "CErr2" or "LOAD": initial deduction value of the tare is above adjustment range

b. "CErr3"or —"LOAD": initial deduction value of the tare is negative. Check if connection of load cell is correct and if there is any contact with other parts of the installation position.

c. "CErr9": weight value does not reach to stable state, calibration breaks off

C. Span calibration: (factual weight calibration)

3.1 Put a poise that is less than load cell maximum range ability on the scale (best more than 50% of maximum range ability)

3.2 Check the situation that the load cell and weighting hopper perimeter connect with other things, if there are other dispensable things or load. Move the poise forth and back on the weighing hopper frame to make the poise display value same when moved forth and back. Take off the poise and correct zero point newly. Put the poise on the weighing hopper again to check to reach the requirements.

3.3 make sure the stable light is bright (STAB), if not bright, can not be calibrated.

3.4 use span calibration keys to set the weight value, when the display value is equal to the setting value. Calibration is over, the process as follow:

press 【F】→【CNG/ENT】→【9】→【CNG/ENT】→【1】→【CNG/ENT】→【#】【#】【#】【#】【#】→【CNG/ENT】 keys, "# # # # #" is the weight of thepoise. if press 【1】 the display value is the same as the weight of the poise, can pass over the value input, when instrument displays 【SP 020.00kg】 → 【9 020.00kg】 , press "0" key to exit.

 3.5 error direction

A: "CErr1" make the zero calibrate point again.

B: "CErr6": the output of load cell does not reach to span adjustment range

C: "CErr7" or "— LOAD": the output of load cell is negative

D: "CErr8": or "LOAD": the output of load cell is above span adjustment range

E: "CErr4": the span setting value is greater than the maximum weighing capacity.

F: "CErr5": the span setting value is "00000"

G: "CErr9": weight value does not reach to stable state, calibration break off

3.6 After the instrument is fixed, when first connect the power supply, maybe occur following error display:

A. "LOAD": input signal is above A/D adjustment range.

B. "—LOAD": non-signal input, load cell input open circuit

C."OFL1": net weight display ＞ over net weight setting value

D."OFL2": gross weight display ＞ maximum weighting value

E."OFL3":gross display ＞ over gross weight setting value

F.【Z.ALM】: digital zero range is above digital zero setting range

Remarks: After calibration, can't change the "maximum weighting value" and "minimum scale" again. If the calibration work does not be done again and the other setting values do not be changed again, in order to avoid error operation to cause the data change, please close the mainframe parameter lock.

••6.3.2 Parameter setting

Relative description: After F701 weighting controller is set, all kinds of functions take effect, and setting value change and confirmation are started from setting mode selection.

setting mode0【F】   【0】

setting mode1【F】   【1】

setting mode2【F】→【CNG/ENT】→【2】→ 【CNG/ENT】

setting mode3【F】   【3】

setting mode4【F】   【4】

setting mode5【F】   【5】

setting modes8【F】   【8】

calibration mode【F】   【9】

 once select【F】, each parameter can be set, then every key turns to selection key of the setting mode.

【CNG/ENT】key predigest to【C/E】key in following description.

Setting mode 0:

press 【F】→【C/E】→【0】→【C/E】, enter setting mode 0 . In this kind mode, the following Parameters can be set in the following procedure.

● （ U P P E R   L I M I T）: It should maintain the original setting value, and it is not valid for this device.

● （ L O W E R   L I M I T）: It should maintain the original setting value, and it is not valid for this device.

● （ N E A R   Z E R O)

   【3】→【C/E】→〖＃〗〖＃〗〖＃〗〖＃〗〖＃〗→【C/E】

   "＃＃＃＃＃" is setting zero near value, its unit is the same as the weighting display unit.

    When weighting value is within this range, the "zero "output turns ON. In the process of discharge it is taken grant that the bag has been discharged. •

● （ S E T   P O I N T 1)

 ••【4】→【C/E】→〖＃〗〖＃〗〖＃〗〖＃〗〖＃〗→【C/E】

   "＃＃＃＃＃" is used for setting fast feeding value., its unit is the same as the weighting display unit, in the process of feeding, when the factual weighting materials weight≥ final-sp1, the "sp1" output is OFF.

● （ S E T   P O I N T 2)

 • 【5】→【C/E】→〖＃〗〖＃〗〖＃〗〖＃〗〖＃〗→【C/E】

   "＃＃＃＃＃" is used for setting middle feeding value. Its unit is the same as the weighting display unit. in the process of feeding, when the factual weighting materials weight≥ final-sp2,   the "sp2" output is OFF.

● （ C P S)

 •【6】→【C/E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C/E】

   "＃＃＃＃" is setting free fall value, its unit is the same as the weighting display unit. It is the advance value that stops arc gate. It can be corrected automatically.

- （O V E R）
  - 【7】 → 【C/E】 → 〖#〗〖#〗〖#〗 → 【C/E】

    "＃＃＃" is setting over value, its unit is same as the weighting display unit. after feeding, when the factual weighting materials weight-final＞ over value, the "over" output is ON.
- （U N D E R）
- ・・ 【8】 → 【C／E】 → 〖#〗〖#〗〖#〗 → 【C／E】；
  - ・・ "＃＃＃"is setting under value. Its unit is the same as the weighting display unit. after feeding,

    when the final- factual weighting materials weight＞ under value, the "under" output is ON. When the compensation feeding is set to "ON", the small feeding signal ON acts.
- （F I N A L）
- ・・ 【9】 → 【C／E】 → 〖#〗〖#〗〖#〗〖#〗〖#〗 → 【C／E】；
  - ・・"＃＃＃＃＃"is setting final value, its unit is the same as the weighting display unit.

    Setting mode 1

    press 【F】 → 【C/E】 → 【1】 → 【C/E】 enter into setting mode 1

    In this mode the parameters can be set in the following procedure.

  （C O M P A R I S O N   I N H I B I T   T I M E）
    【1】 → 【C/E】 → 〖#.〗〖#〗〖#〗 → 【C/E】

  "＃.＃＃"is setting comparison inhibit time, its unit is second. In the process of feeding, when the factual weighing materials weight≥ final-sp1, the"sp2" output has been keeping ON in the period, and the controller don't judge factual weighting materials weight; when the factual weighting materials weight≥ final-sp2, the"sp3" output has been keeping ON in the period, and the controller don't judge factual weighting materials weight.
- （T I M E R）
    【2】 → 【C/E】 → 〖#.〗〖#〗〖#〗 → 【C/E】

  "＃.＃＃" is setting judging time. The unit is second.
- （T I M E R）
  - ・・【3】 → 【C/E】 → 〖#.〗〖#〗〖#〗 → 【C/E】

  "＃.＃＃" is setting output end time. The unit is second.
- （A D J U S T   F E E D I N G   T I M E）
    【4】 → 【C／E】 → 〖#.〗〖#〗〖#〗 → 【C／E】；
  - □□ "＃.＃＃" is setting adjust feeding time, the unit is second.

    It is invalid for the machine, and the previous value should be kept.
- （A Z   T I M E S）
    【5】 → 【C/E】 → 〖#〗〖#〗 → 【C/E】

  "＃＃" is setting AZ times. When the start feeding, the value prescribe the cycle span becoming automatically digital zero
- （J U D G I N G   T I M E S）
- ・ 【6】 → 【C/E】 → 〖#〗〖#〗 → 【C/E】

  " ＃＃" is setting judging times. After the end feeding, the value prescribe the cycle span of judging automatically factual weighting value
- （A F F C）
  - ・ 【7】 → 【C/E】 → 〖#〗〖#〗〖#〗〖#〗〖#〗 → 【C/E】

  "＃＃＃＃＃" is setting automatic free fall control value, its unit is the same as the weighting display unit, auto free fall compensation act only in this range.
- （ANALOG FILTER）
    【8】 → 【C／E】 → 〖#〗 → 【C／E】；
    " 〖#〗 "is analog filter： 3：8HZ
    2：6HZ

<div align="center">

1：4HZ

0：2HZ

</div>

● （ T A R E W E I G H T)

【9】→【C／E】→〖＃〗〖＃〗〖＃〗〖＃〗〖＃〗→【C／E】;

□ "＃＃＃＃＃"is tare weight，its unit is the same as the weighting display unit；

Setting mode 2

press 【F】→【C/E】→【2】→【C/E】, enter setting mode 2. Under this mode the following parameters can be set in the following procedure.

● （W E I G H I N G F U N C T I O N 1）

• • 【1】→【C／E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C／E】;

• • Previous "＃＃＃＃" setting data (0111) in this machine must be kept

● （W E I G H I N G F U N C T I O N 2）

• • 【2】→【C／E】→〖＃〗〖＃〗〖＃〗〖＃〗〖＃〗→【C／E】;

• • "＃＃＃＃＃" is the value of setting weighing function 2, previous "####" setting data (01202) in this machine must be kept

● （W E I G H I N G F U N C T I O N 3）

• • 【3】→【C/E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C/E】

"＃＃＃＃" is the value of setting weighing function 3:

First bit ＃: auto free fall compensation coefficient

<div align="center">

3: cps. Coefficient 1/4

2: cps. Coefficient 2/4

1: cps. Coefficient 3/4

0: cps. Coefficient 4/4

</div>

• Second bit ＃: auto free fall compensation setting

<div align="center">

1: auto free fall compensation ON

0: auto free fall compensation OFF

</div>

• • Third bit ＃: average count of auto free fall compensation (1~9)

Fourth bit ＃: digital tare weight subtraction setting

<div align="center">

1: digital tare weight subtraction ON

2: digital tare weight subtraction OFF

</div>

● （S E Q U E N C E M O D E）

• 【4】→【C/E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C/E】

Must keep original setting (1011)

● （FUNCTION KEY INVALID）

• • 【5】→【C／E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C／E】;

• • "＃＃＃＃" is function inhibited value

first bit ＃:	【TARE】key		1: valid	0: invalid
second bit ＃:	【T.RST】key		1: valid	0: invalid
third bit ＃:	【ZERO】key		1: valid	0: invalid
fourth bit ＃:	【G/N】key		1: valid	0: invalid

● （F I L T E R）

• • 【6】→【C／E】→〖＃〗〖＃〗〖＃〗→【C／E】;

• • 〖＃〗〖＃〗〖＃〗 : the value of setting digital filter（0—256）;

● （M O T I O N D E T E C T I O N）

• • 【7】→【C／E】→〖＃.〗〖＃〗〖－〗〖＃〗〖＃〗→【C／E】;

• • Keep original setting data (10-03) in this machine.

● Z E R O T R A C K I N G）

【8】→【C／E】→〖#.〗〖#〗→【C／E】；

• •   Setting period: 0.0—9.9 second.

●   （ZERO TRACKING RANGE）：

•   【9】→【C／E】→〖#〗〖#〗〖#〗〖#〗→【C／E】；

☐   "＃＃＃＃"is setting tracking range 0—9999；

Setting mode 3

press 【F】→【C/E】→【3】→【C/E】, enter setting mode 3. In this kind mode, the following parameters can be set in the following procedure.

●   （BALANCE   WEIGHT VALUE）：

• •   【1】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】；

• •   "＃＃＃＃＃" is setting balance weight value, its unit is the same as the weighting display unit, the value should be the poise weight value when the instrument is corrected.

●   （CAPACITY）：

• •   【2】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】；

• •   "＃＃＃＃＃" is setting maximum weight value, its unit is the same as the weighting display unit, the value is less than rated range of the load cell.

●   （MIN.SCALE DIVISION）：

• •   【3】→【C／E】→〖#〗〖#〗〖#〗→【C／E】；

• •   "＃＃＃" is setting minimum scale, the range is from 1 to 100.

    capacity/ minimum scale division ≤10000

●   （NET OVER）：

• •   【4】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】；

• "＃＃＃＃＃" is setting over net value, if the weighing display value＞ the setting value, the controller panel display "OFL1" error.

●   （GROSS OVER）：

• •   【5】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】；

"＃＃＃＃＃" is setting over gross value, if the weighing display value＞ the setting value, the controller panel display "OFL3" error.

●   （DZ REGULATION VALUE）：

• •   【6】→【C／E】→〖#〗〖#〗〖#〗〖#〗→【C／E】；

•   "＃＃＃＃" Setting digital zero value range ；

●   （FUNCTION SELECTION）：

• •   【7】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】；

• •   "＃＃＃＃" Setting function selection value.

    Previous setting data (13213) in this machine must be kept

●   （GRAVITIONAL ACCELERATION）：

    【8】→【C／E】→〖#〗〖#〗→【C／E】；

    It is invalid in the machine; the previous data 09 should be kept.

●   （GRAVITIONAL ACCELERATION）：

    【9】→【C／E】→〖#.〗〖#〗〖#〗〖#〗→【C／E】； • •

• •   It is invalid in the machine; the previous data 9.798 should be kept.

• **Setting mode 4:**

• •   Under the mode, the parameters are almost communication interface parameter, please keep original value, there is no this interface in the machine (omit).

    Press 【F】→【C／E】→【4】→【C／E】into setting mode 4，under this mode, the parameter can be stetted as following:

●   （EXTERNAL FUNCTION SELECTION）：

【7】→【C／E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C／E】;

It is invalid in the machine; the previous data 10001 should be kept.

● （SETTING VALUE LOCK）:

【8】→【C／E】→〖＃〗〖＃〗→【C／E】;

"＃＃"is setting feature selection value;

First bit LOCK1:   1: ON
                          0: OFF
   Second bit LOCK2   1: ON
                          0: OFF

● （RESTRICTION ON THE TARE SUBTRACTION FUNCTION）:

【9】→【C／E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C／E】;

It is invalid in the machine; the previous data 0111 should be kept.

Setting mode 5:

Press 【F】→【C／E】→【5】→【C／E】 enter setting mode 5. Under this mode the following parameters can be

● （INPUT SELECTION）

【1】→【C／E】→〖＃〗〖＃〗〖＃〗〖＃〗→【C／E】;

First input selection 4 （B5 pin）:
    6: Total removal
    5: Total command
    4: Stop
    3: Start
    2: Feeding /Discharging
    1: Judge
    0: Holding
Second input selection 3 （B4 pin）:
    6: Total removal
    5: Total command
    4: Stop
    3: Start
    2: Feeding /Discharging
    1: Judge
    0: Holding
Third input selection 2 （B3 pin）:
    6: Total removal
    5: Total command
    4: Stop
    3: Start
    2: Feeding /Discharging
    1: Judge
    0: Holding
Forth input selection 1 （B2 pin） :
    6: Total removal
    5: Total command
    4: Stop
    3: Start
    2: Feeding /Discharging

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1: Judge

0: Holding

● （OUTPUT SELECTION）

【2】→【C／E】→〖#〗〖#〗〖#〗→【C／E】;

First output selection 3（B11 pin）:

1: Total error

0: Running

Second output selection 2（B10 pin）:

1: Complete output

0: Continue to output

Third output selection 1（B9 Pin）:

2: Weight error or sequence error

1: Sequence error

0: Weight error

Setting mode 8:

Press【F】→【C／E】→【5】→【C／E】enter into setting mode 5, the following parameters can be observed under this setting mode:

· · The specific operating method :

● AVERAGE WEIGHT:

【1】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● （MAX.VALUE）:

【2】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● （MIN.VALUE）:

【3】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● GENERAL STANDARD DEVIATION:

【4】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● SAMPIE STANDARD DEVIATION:

【5】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● ACCUMULATION COUNT:

【6】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● LATEST ACCUMULATION DATA:

【7】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● MAX.-MIN.:

【8】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

● OPTIONAL BOARD:

【9】→【C／E】→〖#〗〖#〗〖#〗〖#〗→【C／E】;

Setting mode 9:

Press【F】→【C／E】→【9】→【C／E】enter into 9, the following parameters can be set under this mode:

· · Specific operating method:

● SPAN CALIBRATION:（see page 9）

● EQUIVALENT CALIBRATION:

【2】→【C／E】→〖#〗〖#〗〖#〗〖#〗〖#〗→【C／E】;

Setting range: 0.5000—3.2000。

● PASS WORD:

【9】→【C／E】→〖1〗〖2〗〖3〗〖5〗→【C／E】;

This parameter is used for remove the accumulation count in setting mode 8.

6.3.3 Keyboard operation:

1). 【TARE】 tare subtraction

Press the key, the tare weight is subtracted, the net weight becomes zero.

2). 【TARE.RESET】 tare subtraction reset

Pressing the key can release the above function of tare subtraction, but the setting value of tare subtraction doesn't
be released.

3). 【G/N】 gross weight/ net weight switch key

Press the key, the weight value is switched between Gross and Net, and exit setting status function.

4). Keys mode switch

Pressing 【F】, 【CNG/ENT】 and 【number key】 keys can enter the all kind of setting and operation mode.

※Notice: When turn on the power, setting mode is changed automatically to mode 0

5). 【ZERO】 digital zero

Pressing 【ZERO】 and 【CNG/ENT】 keys can zero the weight value.

※Notice: When the value becomes zero, the weight display value must be in the zero range (2% of the max
capacity). Otherwise, the value can not become zero and the Z.ALM light turns on. When zero is not right, please
find the reason and obviate the malfunction, and then operate digital zero again.

When the mode is shifted to "standard mode", digital zero reset, in meantime the zero unconventionality reset too.

7. Control box operation description

The control box is the control center in the machine, it must be protected carefully, and it should
be put in the place without dust and corrosive air.

7.1. Indicator light definition

7.1.1. 【Power indication】: When the power supply turns on, the indicator light turns on

7.1.2. 【Auto indication】: When the machine is in automatic state, the indicator light turns on

7.1.3. 【Manual indication】: When the machine is in hand operation state, the indicator light turns on

7.1.4. 【Over/under indication of scale】: When over/under, the indicator light turns on

7.2. Switch and button switch definition

7.2.1. 【Auto Operation】: Press this button, the machine enter auto operation status, the auto operation indicator
lights on.

7.2.2. 【Manual Operation】:Press this button, the machine enter manual operation status, the manual operation
indicator lights on.

7.2.3. 【Start】: When choose auto running state, Press the button, the machine will enter auto cycle packing.

7.2.4. 【Stop】: Press the button can stop the auto and manual state, and can close the feeding and errors output.

7.2.5 【Clamping bag】: Placing the bag on the bag clamping device, press this button; the clamping device will
clamp the bag.

7.2.6. 【Manual discharging】: When manual operation, press this button, the discharging door open and fill.

7.2.7 【Manual loosen bag】: Press the button and loosen the clamping device, can not loosen bag when discharging,
prevent material flowing to the ground

7.2.8 【Manual charging】: On manual operation status, press this button, charging manually.

Note: When instrument display Err 2, press 【stop】 again, remove error output, otherwise not running next time.

7.2.9 【belt conveyor foreward/rollback】: Control the belt conveyor foreward or rollback.

7.2.9 【Sewing machine running】: Control the sewing machine on and off.

8. Operation description

Work according to following order operation

8.1 Close all air switch in control box, 【power on】 indication light turns on. The equipment put through the power

supply and enters into ready mode. The instrument displays "000000". After self-inspection, enters the waiting state. Set the parameters and the functions for running (instrument parameters refer to attached list of operation manual) , Check the pressure meter of filtering pressure relief valve, the pressure should be between 0.4 and 0.6 MPa.

Check if the discharging cylinder of weighing hopper is whether at closing position.

Calibrate load cells according to instrument calibration process above at using the packing machine first time.

Check if the indication light near instrument panel is bright. If it is not bright, please check parameters of near zero, the process as follows:

Press 【3】 on instrument, the instrument display 03 # # #.# #. The digit at right side is the setting value near zero, and the value is 2kg normally.

If the value is not 2kg, please modify according to following process:

Press 【3】 → 【CNG/ENT】 →【# # #.# #】, which input value near zero. For example, the value is 1kg, input 00100→ 【CNG/ENT】.

If the value is more than 2kg, please calibrate load cell over again and then input packing weight, which is the target value. The operation process as follows:

Press 【9】 → 【CNG/ENT】 →【# # #.# #】, which input packing weight, for example 50kg, input 05000→ 【CNG/ENT】.

Regulate the middle feeding value of Item 05 and free fall value of Item 06. The values of middle feeding and fall value are needed to regulate repetitiously. The regulating method as follows

If the packing accuracy is ≤±2 kg, please increase or decrease the Item 06 value of instrument. The methods are as above. Increase the value of free fall, the packed weight will be reduced, whereas the packed weight will be increased.

If the packing accuracy is ≥±2 kg , please adjust the head snail of small feeding cylinder to minish opening size of weighing hopper door at small feeding.

The method as below:

Find the site of small feeding air cylinder (as the below picture), the above one is small feeding air cylinder, the below one is big feeding air cylinder.

The setting value of Item 05 is usually about 8kg. If the accuracy can not be controlled and the time of small feeding is too short, it can suitably increase, and then according to above method to adjust the time of small feeding, which not be less than 2s.

Put bag well and touch the detecting switch near clamping device, and bag will be clamped tight. Please check the degree of tightness of clamping device as the wallop is very large when weighing hopper discharge material. If clamping device is too lax, please check the gas pressure and make sure it is not less than 0.4 Mpa.

8.2 Automatic running mode

8.2.1 Press "auto running" press, "auto running" indicator light turns bright and machine enters into auto running status.

8.2.2 Press 【start】button on gate of control box, when the instrument displays stably (STAB light on the bottom of instrument turns bright), show value on instrument （net weight state, NET light on bottom of instrument turns bright） less than zero point set value (03, now the NEAR.Z light on the bottom of instruments turns bright), scale instrument start and calibrated the display value to zero. Big feeding and small feeding solenoid valve get electricity, big and small cylinder run simultaneously. Discharging gate opens and the angle of opening is max, the packing machine is in big feeding state.

When show weight > (target value (item 09) minus set value of small feeding presetting value (item 05)), big feeding solenoid valve lose electricity, big feeding cylinder closed, discharging gate closes partly, this moment angle of opening of discharging gate is minimum and packing machine is in small feeding state.

When show weight > (target value (item 09) minus free fall set value (item 06), small cylinder and discharging gate close. The packing finishes. It will output the signal of finishing weighing after the value displays stably and the instrument judges. Now placing the bag and press 'bag clamping' button or touching the detector switch nearby the bag-clamping device, it clamping the bag, discharging door open, material filling into bag. When finish discharging

and indicator light near zero point on instrument becomes bright, discharging gate closed, when delay some time, instrument starts and begins next process. Packing process is same as above. Meanwhile clamping unit opens after delay sometime of bag clamping device, bags will be conveyed by conveyor. User can fasten the bag by pressing 【clamping】button or checking switch, after some delay time, weighing hopper starts discharging.

During auto running procedure, if something goes wrong, please press 【stop】button stop packing and remove some error output, but the clamping device will not open, press 【manual loosing】button and loose bag.

8.3 Manual operative method:

8.3.1 In manual mode, when press button of manual feeding, the weighing instrument doesn't start that be equivalent to work in static state, operator controls accuracy manually.

8.3.2 Press the button 【manual running】the indicator light of manual operating becomes bright and machine enters into manual running state.

8.3.3 Now can press 【manual running】button to feed weighing hopper, the small feeding arc gate open, manually feeding to hopper. When the manual feeding material reach the target weight, loose button, the small feeding arc gate closed, stop feeding, press 【bag clamping】to clamp the bag, press【manual discharging】and fill the material into the bag, and then press button of 【manual loosing bag】 and the clamping unit looses the bag, finish one manual packing.

Notice:

A．In feeding, we should avoid empty warehouse phenomenon. Otherwise in feeding suddenly, the error is bigger.

B．In feeding, we should avoid the bigger change of the material flux; accordingly make sure stable small feeding process. Finally insure the accuracy

C．When the measure work is started, the filling speed is faster and the weight display value increases faster. When the weight near the presetting value, the weight display increase slower. These phenomenons are all normal. If the measure value does not reach to the final value subtract dribble feeding and the weight display value increase too low, we generally think that materials become vault or the feeding mouth is jammed. In this case, we need hand solve.

9. Common fault handling

9.1 There is no direction on the panel and no any action of mechanical parts when start up, please check fuse, it still cannot work regularly if replace it, please handle it by professional.

9.2 The direction on panel is improper and display unit displays random character, please check if the power source is normal or reset again.

9.3 When show value checked is inconsistent with real value, please calibrate load cell over again that listed in instrument specification

A. Check the weighing unit and weighing hopper don't touch outer casing.

B. Check if excitation voltage of sensor is normal, the voltage position between instruments LOADSELL terminal 3 and 5 is 10V; the voltage between 1 and 2 is 0-20mV.

C. Check if the weighing value is stable before feeding. If weighing value is not stable, check resistance value, resistance value between +EXC and −EXC is 415±15Ω, resistance value between +SIG and −SIG is 365±15Ω;

D. Check if the wiring of load cell is broken off, short circuit or bad connection.

E. Check if both top and bottom of load cell stock with materials.

F. Check if there is compound leakage after feeding material each time.

G. Check if the discharging door is closed in time after finishing feeding. Please confirm show value of pressure gauge of filtration voltage regulator of packer is 4 Mpa. Then adjust shutdown speed through control throttle on cylinder.

I. Check if the installation of weighing unit is firm, please adjust well if changed.

Note: When check charged weight, please check the material weight bagged which operates regularly (without scattered material、compound leakage etc) and show value meets error range. If show value is inconsistent with real weight, please adjust it referring to the method above; if the error of show value is extremely big and it cannot be leveled of after long time; please adjust referring to the method below:

J. Adjust machine parameter and make each weighing circle have a small feeding process that greater than 2 seconds.

K. Solve vibration problems of machine body and make the body escape all vibrating body to operate in smooth environment.

Please calibrate again if that cannot satisfy the requirements after checking.

9.4 If each action is out of line, please check:

9.4.1 Strong electronic noise jamming

9.4.2 Signal with high frequency disturbance;

9.4.3 Strong static disturbance;

 And clear above several points. About stable breakdown, please solve them referring to method below;

A. Press button of clamping bag, the clamping unit doesn't response. Check pressure of compressed air and solenoid valve YV1, and check if LOGO works regularly, if the indicator light of LOGO becomes red or yellow, it means LOGO goes wrong and please check referring to steps below:

①Check if the data connector on the left of LOGO connects firmly.

②Check if coil in of LOGO power supply connects firmly.

③Check if the power supply with 2 4 V is normal.

B. No feeding when presses the start button:

(A).Weight value of weighing hopper is excess of the preset value of 03 term.

(B).Data of body vibration cannot be leveled off;

(C).Control circuit break off or bad connection.

①Starting relay damaged or contact point is in bad connection, it cannot start.

②Stop button damaged and contact point is in bad connection.

③24V power is short circuited

④Do not start running state

（D）.The data do not in zero range after put down the bags; the bag chair can not return position and start the next cycle. Check as following:

①The tracheas that connect to weighing controller occurs affixation force

②After running for a period time, the zero changes

③There is the remainder on the weighing controller

④Load cell connection occurs malfunction.

9.5 Stop feeding, and display has no change, these abnormity phenomenons mostly are caused by exterior power supply interfere, and you need to start the machine newly. If you still can not obviate the malfunction, you must check the machine completely.

9.6 Do not clamp the bags or clamp the bags before you do not press the button.

9.6.1. Check if the 24VDC output by the control power supply is normal.

9.6.2. Check the button switch (loose contact).

9.7 If the machine still could not work normally, check whether the wire fall off or loosen contact, If have the phenomenon, joint and fix it, then start the machine again.

9.8 Error display during running

A. Error 1

When Start signal turns on, the Stop signal turns on

Reason: Stop signal switch or circuitry perhaps short circuit

B. Err2: during feeding, the Stop signal turns on

Reason: input the Stop signals manually

C. Err3: "ZALM" (Zero alarm) turns on (weighting value over digital zero range) according to set Auto Zero Count

Reason: a: there is remainder on the weighing controller

a: after discharge, weighing controller occur affixation force

c: digital range too small can not run

d: the cycle is zero point of "AZ times"

D. Err4: during starting, near zero output turns off

Reason: a: there is remainder on the weighing controller

b: after discharge, weighing controller occur affixation force

c Near zero too small, can not run

d: setting mode 〖２〗〖４〗 is "＃＃１＃"

e. Weighing cycle does not become digital zero

E.Err5: After start, the weight value is over the setting value during –fasting feeding value   during feeding

Reason: same with Err 4.

9.9   Press any button, packing machine no action and the indicator light turn off.

a. check the power source, the voltage meet 220V±10%

b. check the direct-current source whether has 24V output.

c. check the LOGO! Whether in normal running mode

d. check the LOGO! Program is whether complete.

Note: LOGO! Operation please check Machine documents CD.

Solve Ways: All the error display and output can all be solved by Turning OFF Stop signal, return to the dead weighing state.

If still can not run noemally, open the control box, check the circuit if it short circuit, open circuit, loose contact and wire break off, if have these situation , weld it , fix and restart.

• 9.10 • Low packing accuracy.

If the packing accuracy is lower during packing, reasons as following:

A.   Check if the air source meet requirement, pressure is too small, it will cause arc gate action slow, causing the inaccurate feeding.

B.   Calibrate the packing machine again, see chapter 3 Machine technical parameter.

C.   Adjust instrument free fall value.

Adjust instrument 06 free fall setting value, when first time using packing machine , it need adjust repeatedly, methods as following, after packing weight more than or less than the target setting value, range within 1kg,increase or decrease instrument 06 fall value, increase fall value packing weight reduce, otherwise increase.

D.   Increase small feeding time

05 item small feeding advanced value usually is 5kg, if can not control accuracy, maybe small feeding time is short, can increase small feeding time. Make sure small feeding time no less than 2s.

E.   Adjust small feeding arc gate angle.

Checking small feeding, if the angle is too large, it will cause too fast feeding and bad accuracy, if the angle

is too small, it will cause insufficient feeding or no feeding, at this time can adjust the interval of the arc

gate, methods as following.

Adjust the nut on the tail end of the fixed air cylinder(the above cylinder is small feeding, the below one is

fasting feeding cylinder), find the small cylinder adjusting bolt.

As the below picture showing:
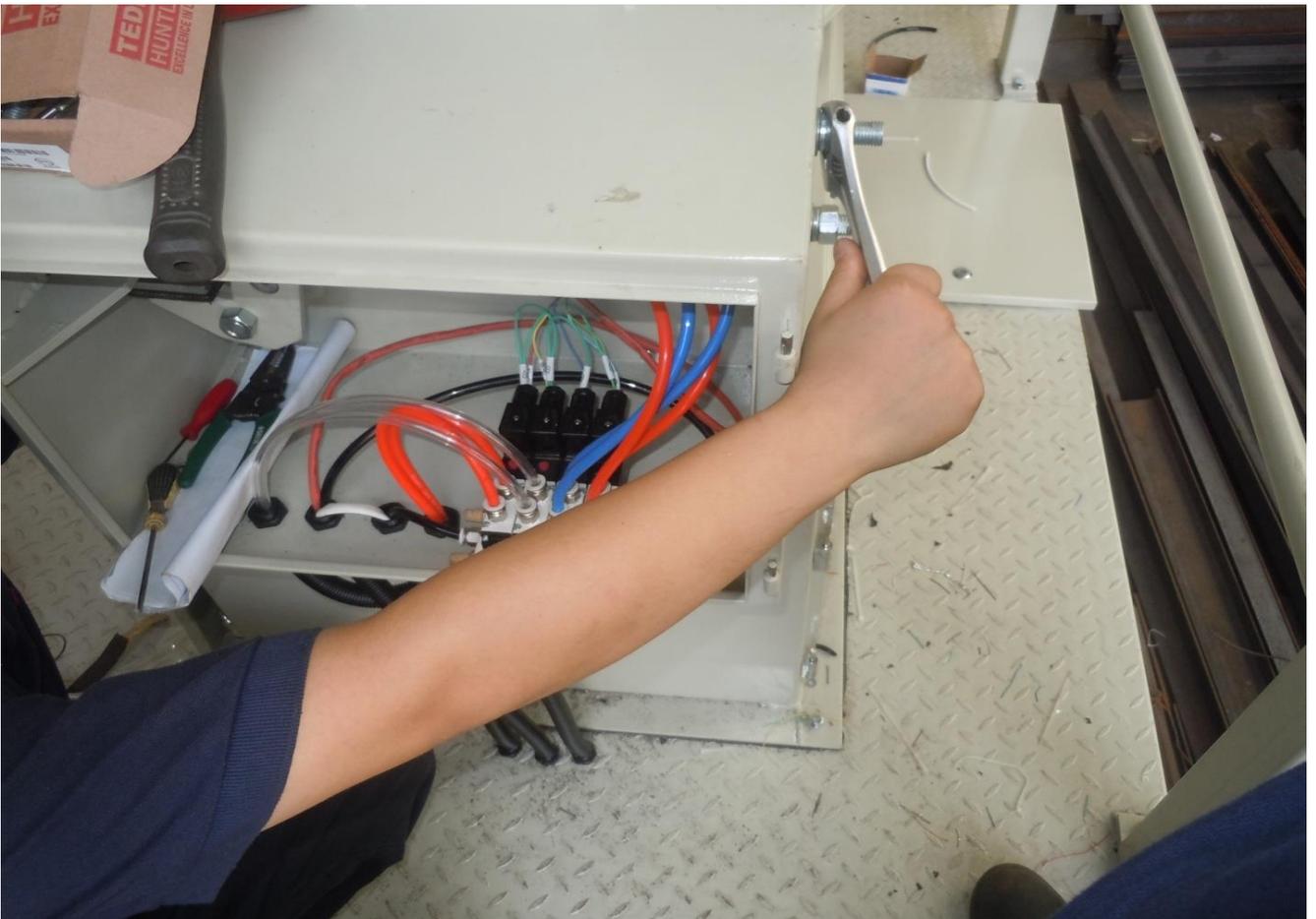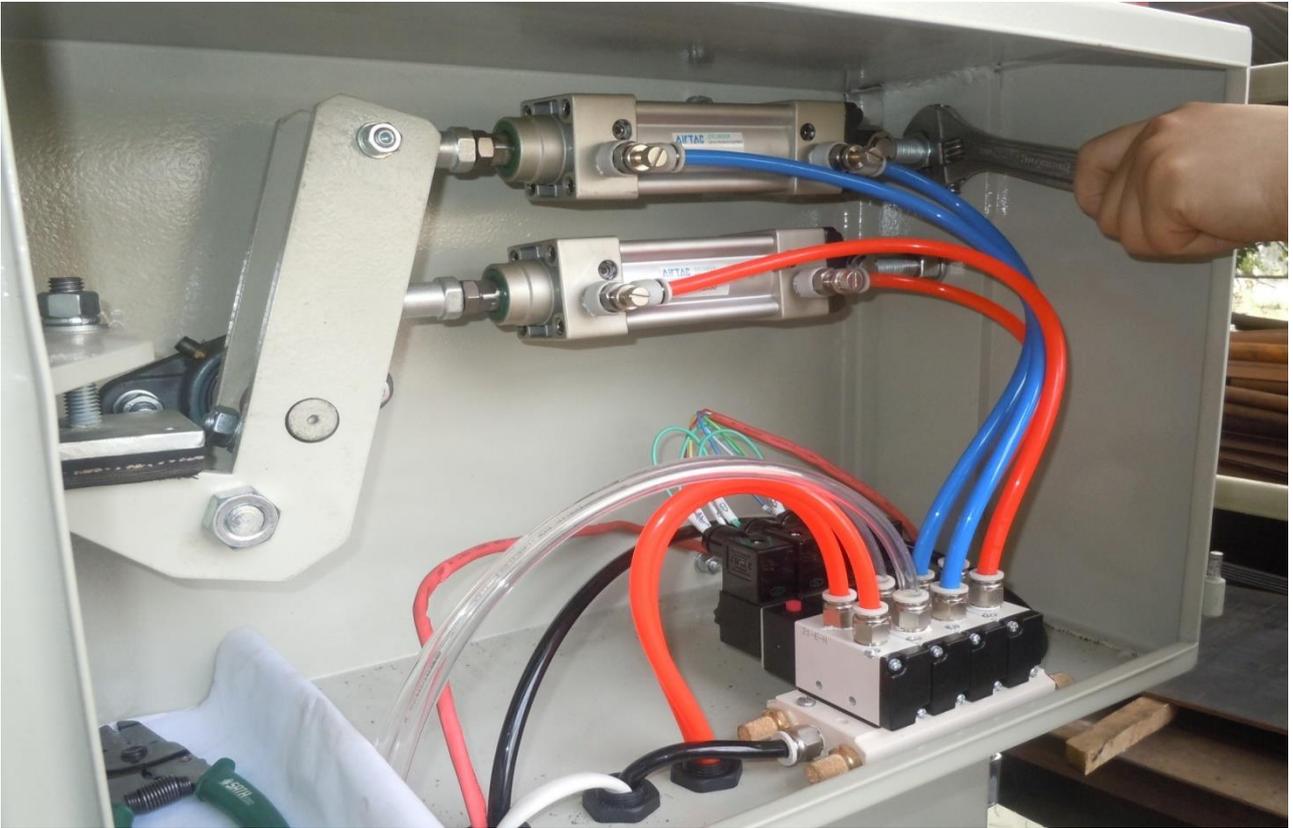
Make the air cylinder move to the end, check the size of the small feeding mouth when operating,
Notice the size can not too big.(as the below picture)
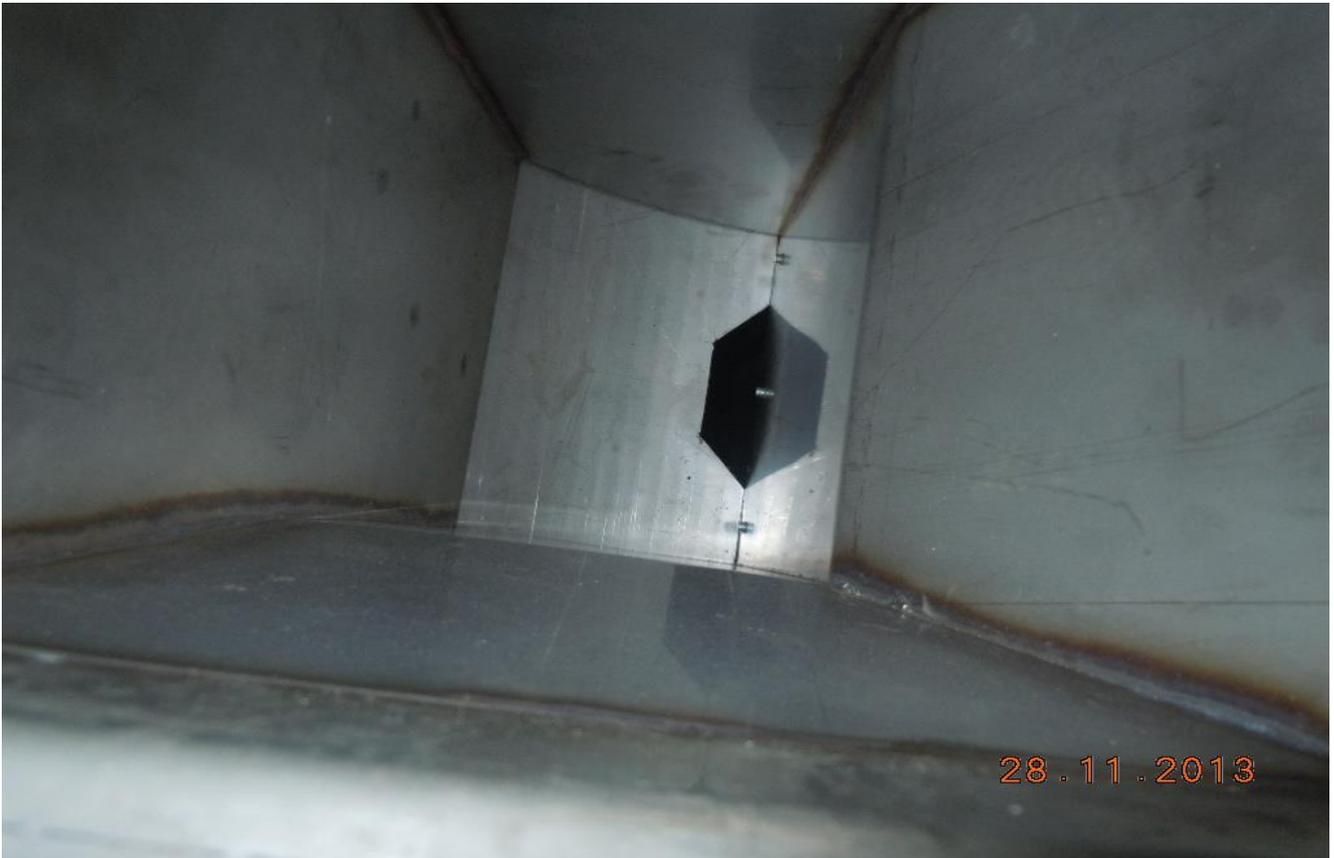
Note: the above pictures are our weighing hopper standard adjustment pattern, maybe a little different with the actual machine, but the adjusting principle is same.

9.11 Not packing normally.

a. Renew instrument parameter

b. Demarcate packing machine

c. If the instrument display weight more than 0-3 item setting value, please increase the item value.

d. Increase item 2-6 parameter, it is digital filtering constant, increasing can improve anti-jamming capability of instrument.

e. Checking the 24V power source in control cabinet has output or not, insurance whether fusing.

f. Checking the PLC in control cabinet whether in running mode. (indicator light is green at running mode)

g. Checking Auto button and clamping button node and connecting whether switching well.

h. Checking incoming line power voltage whether phase loss.

If still can not solve please contact with our company.

10. Maintenance

⑴ Educate in full- scale worker to take care of the device.

⑵ Before the machine run, best preheat and run without load for 30 minutes.

⑶ Do not allow knock the cabinet or parts of machine with any objects, it will damage the machine and cause danger. So Buyer should organize people to study operating criterion in order to understand operating process and protect machine.

⑷ Any person can not adjust the parameter or open the cabinet unless the assigned members or the original factory repair member.

⑸ After ending the work, clean the control box interior, electromagnetic valve and terminal board etc. prevent to heap the dust.

⑹ How to use and maintain air source triple pieces

① check the part before use it (if the parts are damaged ,the connection is loosen)

② take notice of the air flow direction, fix the part vertically.

③ When the inlet and outlet installed with one connector, airflow quantity reduce about 10%. When the filter precision rise one class, the air flow quantity reduce 7%

④ When use decompression valve and filtration decompression valve, loose the adjustment hand wheel to zero position, fix well pressure indicators and switches on the related position of decompression valve and filtration decompression valve and ensure no air leaking (the position of pressure indicator and switch can interchange), and then adjust to related pressure after venting according to requirements.

（7）Cylinder maintenance

① check the work situation of diversion filter and oil atomizer often. Let out the water and fill in the oil in time. Add the antifriction in the cylinder after using it for six months.

② If use tail single, double ear type cylinder or middle swing cylinder, add the lube to the tail stock or pendulum shaft in time

③ Regular inspecting each part of cylinder, check if there is some loosen in connecting parts, if there is some leakage in sealing parts. If yes, please repair in time.

④ The maintenance of cylinder. When the cylinder is broken-down, please disposes and removed the malfunction as attached list 1.

11. Main components:

11.1 PLC: LOGO! 24RC   Siemens

11.2 Weighing instruments: F701-C   Unipulse

11.3 VFD: ATV312HU11N4   Schneider

11.4 Electric elements   Schneider

11.5 Pneumatic elements   Festo

12. Additional description

a) The product is made according to enterprise standard Q/PD01-2014

b) The product is accepted according to standard JJG564-2002

Attached list 1: the usual malfunction of the cylinder

Malfunction		Reason	Solve ways
External leakage	Leak between Piston and front cover	1. piston rod installation off center 2. lube supply lack 3. impurity between piston rod and seal ring 4. seal ring aging, damage 5. piston rod scuffing	1. Fix and adjust newly 2. check oil atomizer 3. clear and unset the impurity 4. replace the seal ring 5. repair or replace piston
	Leak between cylinder body and cover	1. four draw rod nut type joining-up screw loose 2. seal ring aging, damage	1. Fixing newly 2. replace the seal ring
	Buffering throttle valve leakage	seal ring aging, damage	replace the seal ring

Internal leakage	Air flow between two end covers	1. cylinder lubricating poorly 2. impurity on seal surface 3. seal ring aging, damage	1. check oil atomizer switch 2. clear and unset the impurity 3. replace the seal ring
Pressure lack		1. external leakage and internal leakage serious 2. mechanism not nimble 3. pressure low 4. loading capacity big and cylinder diameter small	1.Solve leakage problem 2.fixing and adjusting newly 3.rise the working pressure 4.cylinder diameter choosing is not proper
Buffering effect not good		1. buffering seal not good 2. needle valve rod damage 3. piston rod speed too fast	1. replace buffer ring 2. replace needle valve rod 3. lower the piston rod or set buffer mechanism
Piston rod damage	Surface scuffing	1. piston rod connection off center 2. impurity between rod and piston	Slightness: abrasive paper polishing Seriousness: replace piston rod
	Bending break	1. off center load or transverse load 2. shock loading 3. speed too fast	1. eliminate off center load or transverse load 2. eliminate shock or choose thick rod 3. setting buffering
Cylinder strain		1. cylinder lubricating poorly 2. impurity in it	Slightness: abrasive paper polishing Seriousness: replace cylinder

Attached list 2: Factory parameters setting of instrument

Setting mode Function No..	1	2	3	4	5	6	7	8	9
0	100.00	0.00	2.00	*5.00	*2.00	*00.50	*0.50	*0.50	*50.00
1	0.5	0.5	0.5	0.5	01	01	0000.0	3	000.00
2	0111	01302	0141	1011	1111	064	0.5~03	0.5	05
3	20.00	100.00	00.10	100.00	100.00	02.0	13213	09	9.798
5	0243	010							

Except for 03, 04, 05, 06 and 09, restore other parameter as per parameter list, which cannot be modified at will.

Attached list 3: VFD ATV(for conveyor) 312 parameter list

VFD ATV312 parameter list

Menu option	Code	Factory setting	User setting	Remark
SET	Acc	3s	0.5s	Acceleration time

Setting menu	dEc	3s	0.5s	Deceleration time
I-O I/O menu	tcc	2c	2c	2 wires control
	TCT		LEL	Power on self-starting
CTL Control menu	LAC	L1	L3	Access level (advanced feature and manage mixed control mode)
	CHCF	SIN	SEP	Separate mode (control channel and given channel)
	FrI	AI1	AIUI	Given channel (negative knob acts as potentiometer)

If requires changing motor frequency, please refers to following method:

Originally it displays "rdy". It displays "REF" by pressing negative knob. It displays "AIUI" by repressing negative knob. By pressing knob again, it displays "**.*" that means frequency percentage. The upper limit is 100.0 and correspondent frequency is 50Hz. The lower limit is 00.0 and correspondent frequency is 0Hz. If requires setting 25Hz, please rotate negative knob and change to 50.0. Clockwise is plus and anticlockwise is minus. 100.0 correspond to 50Hz and 50.0 correspond to 25Hz. Stores modified parameter by pressing negative knob. Exit setting and return to display by pressing "ESC".

Remake: Please modify the frequency setting during stop state (the pannel display rdy)