Truck **Indicator**

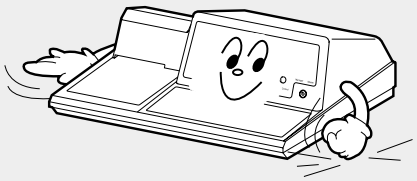
NT-600

OWNER'S MANUAL

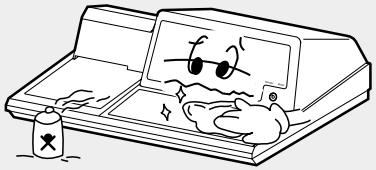
9007-600-0083-0
2006. 02

CONTENTS

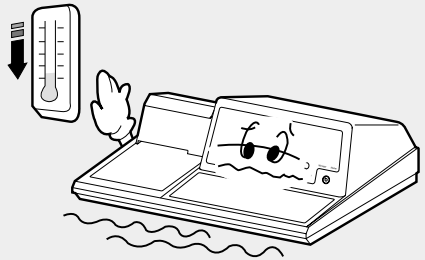
PRECAUTIONS



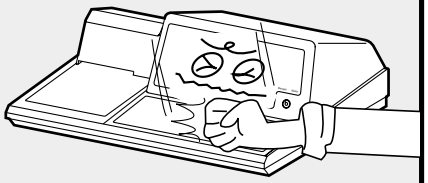
■ Place the indicator on a flat and stable surface.



■ Do not use inflammable materials in cleaning.

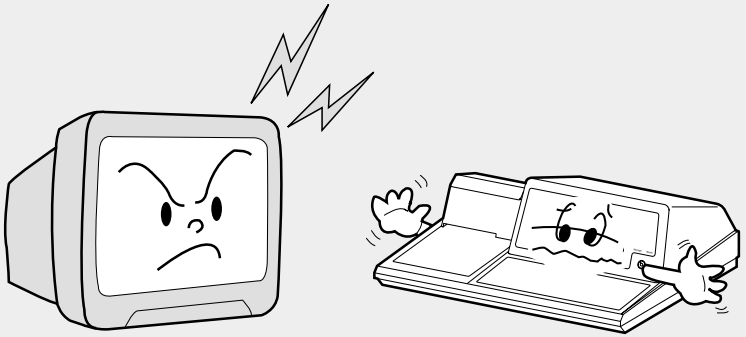


■ Do not subject the scale to sudden temperature changes.



■ Do not severely press because the light pressing of keys can incite the operation.

■ Keep the main body from rain and keep in dry area.



■ Keep the scale away from strong EMI noises may cause incorrect weight readings.

INTRODUCTION

Thank you for purchasing our NT-600 truck weighing indicator.
This indicator is designed to optimize the weighing truck loading and proper ticket printing and all kind of report printing.
NT-600 is passed on high level of quality control program which test on every parts, performance and design. Especially the massage display eases the interactive user ability concerning operating our product.
Please read this manual before operation. All warnings and cautions contained in this manual should be read and understood before handling or maintaining the equipment.
Do not attempt to effect repairs or modifications to this equipment. If a fault occurs that cannot be rectified using the procedures described in this manual, turn off the power, unplug the machine, then contact your authorized CAS representative for assistance.

FEATURES

- Easy operation (massage display)
- Internal printer (weighing certification) Ticket printing support
- Key: alphabet direct key pad
- Report (daily, monthly report printing)
- Free setting is possible on weighing display (max and min weighing)
- Certification ticket format support (2 type)
- Internal Real time clock for AUTO printing
- AUTO self testing function
  Each electric part can be test by own diagnostic program, you can address which part need to be replaced)
- Easy and fast Span calibration. (without dip switch CAL)

MAIN FUNCTIONS

- AUTO DATA SAVE (time, day, collected data) during power failure.
- Digital filter for weighing speed.
- Code1,2,3,4 as goods, customer, destination save function
- Single / Double weighing
- Serial port: External display and PC communication
- Key tare
- CAL switch Lock
  - authorized personal access CAL mode
- Weighing error correction
  - weighing deviation can be reset (A/S) by key setting
- Weight backup during power failure
- Optional
  - RS-422/485 port : long distance data communication
  - External in/out put : input 8 , output 8
  - 1 parallel port: other External printer

SPECIFICATIONS

General Specification	
Power	**AC 86V 220V, 50/60 Hz**
Power Consumption	**Approx. 150W**
Temperature Range	**-5 ~ 40 85% RH**
Product Weight	**Approx. 10.1 kg**
Product Size	**517(W) x 430(D) x 190 (H)**

Analog Part & A/D Conversion	
A/D External Resolution	**1/10,000 (Max.)**
A/D Conversion Speed	**Maximum 50 times/sec**
Load Cell Excitation Voltage	**DC 9V, 8 x 350 Ω load cells**
Input Sensitivity	**0.8 μV/D 120 μV/D**
Zero Adjustment Range	**0.05mV 20mV**
Input Impedance	**Over 100M Ω**
A/D Conversion Method	**Sigma-Delta**
A/D Internal Resolution	**1/1,000,00 0 (Max.)**

Digital Part		
Span Calibration		Full Digital Calibration : SPAC ™ (Single automatic span calibration)
Display		VFD (7 digit) : Current Weight 20*2 English VFD : : Date(Time), Storage-Weight, Car-No., Weighing-No. Code-No. 12*1 Korean VFD : Car-No. Company, Product. Current
		Weight : 7 digits Weighing-No. : 3 digits Car-No. ; 7 digits Date : 5 digits Time : 5 digits Storage-Weight : 6 digits Branch-Code : 3 digits x 4 kinds
Division		×1, ×2, ×5
Display Below Zero		Minus
"ST"(Stable)	▼ LAMP	Weight is stable
"ZERO"	▼ LAMP	Current weight is "0" kg

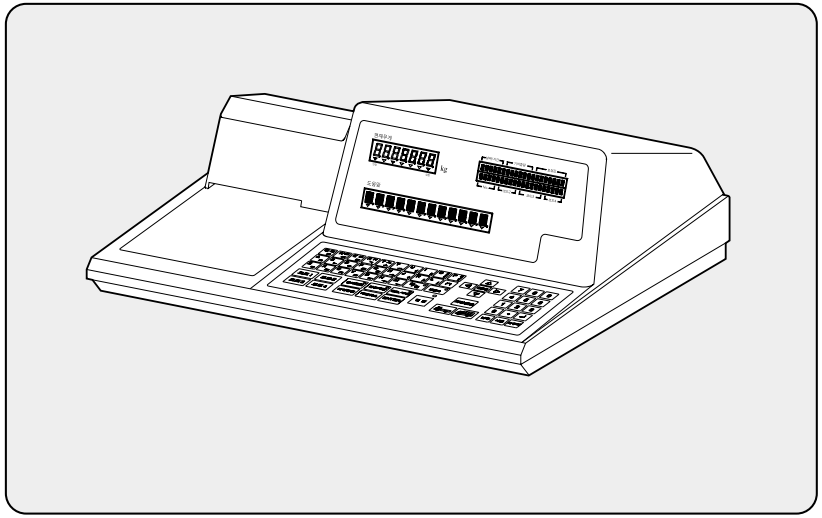
Print Part	
Printer Specification	7*7 Font, Dot Matrix, English & Korean Character, Symbols
Speed	About 2.1 lines / sec
Paper of Printing	Ticket : Print Weighing-Ticket Roll : Print Total Data

Capability of Management	
Registration of Truck	500 Trucks
Data of Daily Account	999 cases
Company, Product	999 units
Summary Sheet	Truck, Branch-Code, Company, Product

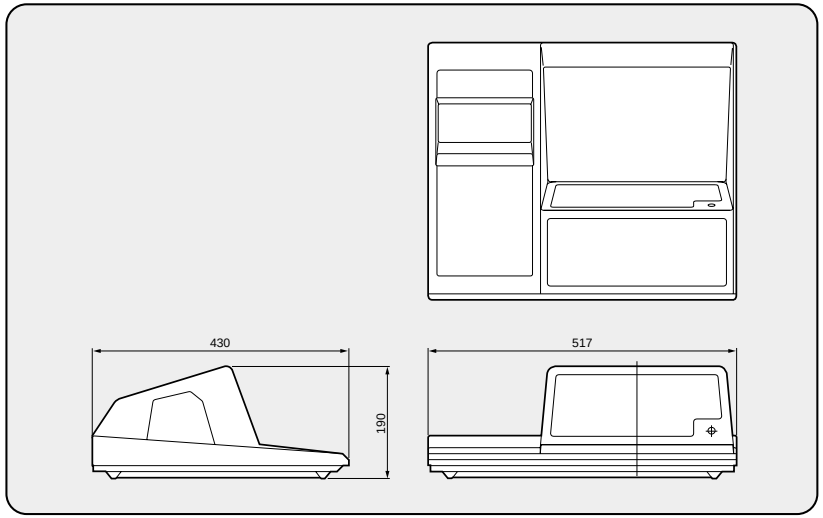
Input & Output		
RS - 232C		PC, Large Sub-Weighing Display
OPTION	RS-485/422	PC, Large Sub-Weighing Display
	Relay-Input	8 Points
	Relay-Output	8 Points

OVERALL VIEW

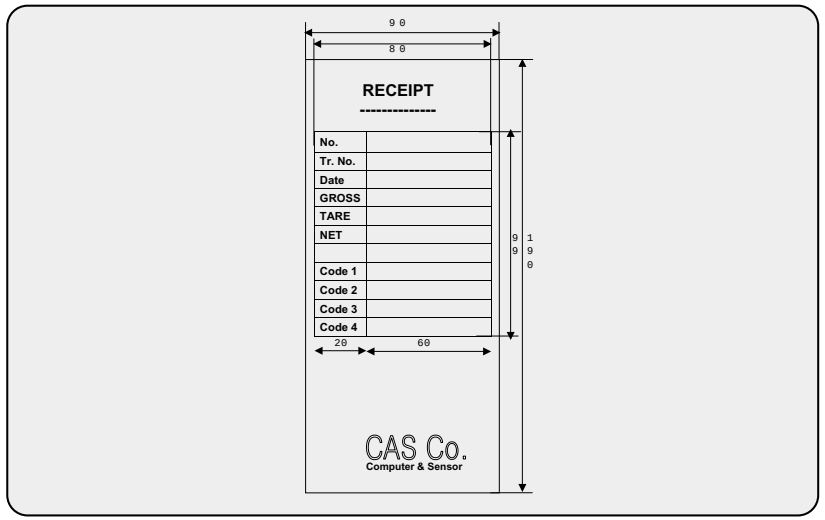
Shape



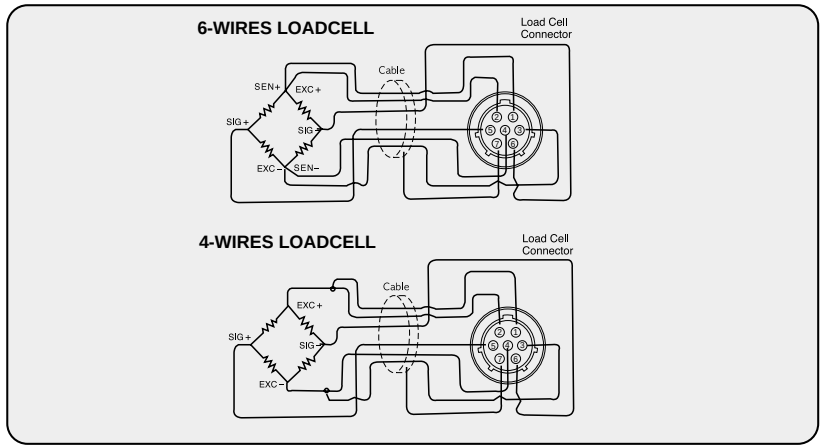
Dimensions



Dimension of ticket



INSTALLATION & CONNECTION



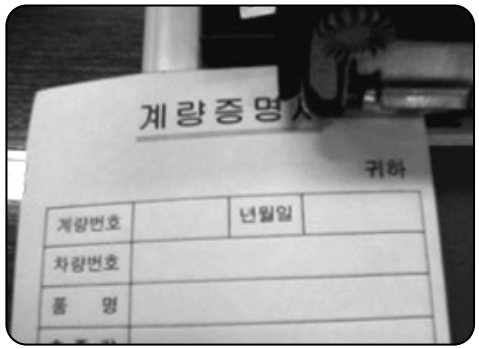
PIN	COLOR	PIN	COLOR	PIN	COLOR
1 (EXC+)	*RED*	*2 (SEN+)*	*BROWN*	*1 (EXC+)*	*RED*
3 (EXC-)	*WHITE*	*4 (SEN-)*	*BLACK*	*5 (SIG+)*	*GREEN*
6 (SIG-)	*BLUE*	*7 (SHIELD)*	*SHIELD*		

Note 1. In case of 4 wires load cell, connect EX+ with SEN+, and connect EX- with SEN-.
Note 2. Wire color can be different depending on the load cell's manufacture or it's model

How to insert a paper for

Paper can be inserted by front or by side.
By front: Insert the paper over paper sensor then wait for it to work automatically.

By side: Insert the paper from left to right then wait for it to work automatically.
From the picture above, the paper should be inserted right till the end.



AC Power

This equipment include auto voltage feature 110V, 220V can be connected without changing a setting.

Power Switch ON

Turn on the power and within a few seconds, 0kg will be displayed.

Calibration

"Err 13" will appear if the weighing setting has not been completed
Go to Ch 12. Weighing setting mode for calibration

How to do the test print

1. S/D key turn off the lamp,

   Press key and press "Y" key.

2. Printing miscellanies weighing (without inputting any vehicle information)

   For example:
   Total weighing : 3000 kg Time - 15 : 22
   Empty Car weighing : 2000 kg Time - 12 : 11
   Real weighing: 1000 kg for printing
   Insert ticket paper
   '1', '2', '1', '1', 'TIME' : It is displayed "E Time OK " in the HELP of VFD.
   '1', '5', '2', 2 ', 'DATE' : It is displayed "F Time OK " in the HELP of VFD.
   '3', '0', '0', '0', 'F' : It is displayed "Full. OK " in the HELP of VFD.
   '2', '0', '0', '0', 'E' : It is displayed "Emp. OK " in the HELP of VFD.
   If you press the 'P' key and then it is displayed "Edit Mode" in the HELP of VFD.

3. In the case of losing the ticket (How to re-print)

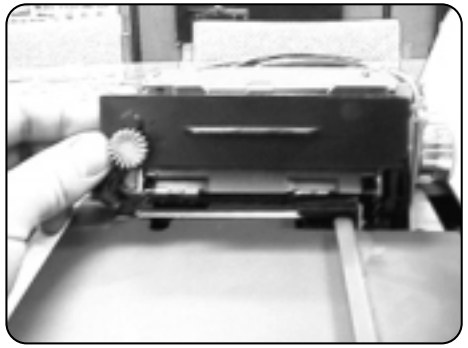
   It is possible to re-reprint the ticket only if you know the serial No.
   In the case that the serial No. is 23, press the key '2', '3', 'A' one by one after inputting the ticket paper
   And then it is displayed "Re Ticket? Y/N" in the HELP of VFD
   Press "Y" key, the ticket is published again.

* Key TARE : Press the numeric key and 'T' key
  If you want 1000 kg of tare-weight, you press the key '1', '0', '0', '0', 'T' one by one.
  If you want to release tare function, you press the key 'T' or '0', 'T' in unload state only.

* After printing, the ticket paper is come out automatically.

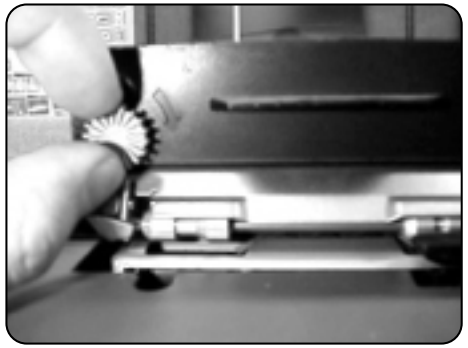
How to change the ribbon of print

When printer quality is getting lighter, replace the ribbon cassette



>> First, attach ribbon.

>> Use both hands to attach the cassette ribbon. Attach rear part of ribbon cassette.



>> Turn the Ribbon tension lever clock wise to tight up the ribbon.

HOW TO USE

How to measure the weight

Turn on the equipment from Rear panel.
Wait until display shows 0Kg. There are two method of weighing.

Single Weighing

In case of Empty vehicle weighing is known or internal memory has the record of the vehicle.
- During the weighing input Empty vehicle weighing.
- If the weight and information of truck is already known.

Double Weighing

This method is weighing the vehicle every time it comes.
Print can be done every time or the data can be stored and be printed on the 2nd weighing.
- To print each weighing data, set F03 from Set Mode to 0.
- To print collected weighing data, set F03 from Set Mode to 1.

Single or Double weighing mode can be changed with 

Key

Examples [1 ~ 12]

Example 1. Simple weighing (The weight of empty vehicle is known)
Vehicle number is '5753' and empty vehicle weight is 1500 kg
①When the vehicle is arrived, press '5' '7' '5' '3' with the key pad for vehicle number

Make sure the lamp of 

key is off.
If the lamp is on, press the key to turn off the lamp.

If the display of memory weight displays ------ ,
then the vehicle is not stored in the data so empty car weight should be entered.
- So press, '1' '5' '0' '0' 'M.WGT' to enter the empty car weight
- To use Code 1, press corresponding number and then press 'CODE 1'
- To use Code 2, press corresponding number and then press 'CODE 2'
- To use Code 3, press corresponding number and then press 'CODE 3'
- To use Code 4, press corresponding number and then press 'CODE 4'

For example, if code 1 and code 2 are used and the corresponding number for code 1 is 23 and code 2 is 75, press '2' , '3' , 'CODE 1' , '7' , '5' , 'CODE 2'

②Insert the print paper and press "  " key or "  " key to print selected print format.

Example 2. Simple weighing (The weight of empty vehicle is unknown)

If the empty vehicle weight is unknown, the vehicle should be weight twice.
There are two ways of weighing.

(A) 1st weighing: Vehicle with the load. 2nd weighing: Vehicle without the load.
(B) 1st weighing: Vehicle without the load. 2nd weighing: Vehicle with the load.

(1) 1st weighing

Empty vehicle weight is unknown for vehicle number '5753'

①When the vehicle is arrived, press '5' '7' '5' '3' 'with the key pad for vehicle number. Make sure the lamp of 

key is ON. If the lamp is on, press the key to turn on the lamp.

- The 1st measured weight is displayed ------ on display.
- To use Code 1, press corresponding number and then press 'CODE 1'
- To use Code 2, press corresponding number and then press 'CODE 2'
- To use Code 3, press corresponding number and then press 'CODE 3'
- To use Code 4, press corresponding number and then press 'CODE 4'

For example, if code 1 and code 2 are used and the corresponding number for code 1 is 23 and code 2 is 75, press '2' , '3' , 'CODE 1' , '7' , '5' , 'CODE 2'

②If the vehicle is without luggage, press  key.
If the vehicle is with luggage, press  key.
Help display will display "1st in Double "

③ When the colleted data is printed, the Help display will display "Saved" and the 1st weighing is done.
For individual print, the Help display will display "Check Ticket!"
then insert the print paper and press print key.

(2) 2nd weighing

Empty vehicle weight is unknown for vehicle number '5753'

①When the vehicle is arrived, press '5' '7' '5' '3' 'with the key pad for vehicle number. The lamp for S/D key is automatically turned ON.

- The 1st measured weight is displayed on the weight memory display.
- To use Code 1, press corresponding number and then press 'CODE 1'
- To use Code 2, press corresponding number and then press 'CODE 2'
- To use Code 3, press corresponding number and then press 'CODE 3'
- To use Code 4, press corresponding number and then press 'CODE 4'

For example, if code 1 and code 2 are used and the corresponding number for code 1 is 23 and code 2 is 75, press '2' , '3' , 'CODE 1' , '7' , '5' , 'CODE 2'

②Insert the print paper and

If the vehicle is without luggage, press key.

If the vehicle is with luggage, press key.

Help display will display "2st in Double"

③Collected data print will print with the 1st weight data.
Individual data print will print without the 1st weight data leaving it blank.

* Caution.
For individual data print, the paper used for 1st weighing measurement must be inserted for 2nd weighing measurement.
Make sure to insert the corresponding 1st print paper for the 2nd measurement.

Example 3. Compensation of ZERO

	VFD Display & Key Input	*Platform*	*Description*
STEP 1		Empty	Zero value has been changed
STEP 2			
STEP 3		Empty	It is after compensation of zero, in which current weight is 0kg.

Note. Zero Range - Within 2% or 10% of Maximum Capacity
(It could be set up in Set menu 11)
To select whether for compensation of zero can be done in stable condition or unstable condition, go to Set menu 13 to select.

Example 4. Product registration and edit product registration
From Code 1 to Code 4, customer can set up and choose according to the needs.
Code registration Number: From 1~999. The number used in Code cannot be used twice.

The chart below is the example of how Code and Used Number can be divided for no overlap and easy management

Kind of Code	Usage Used	Number
CODE 1	Loading Article Code	001 ~ 250
CODE 2	Customer Code 251 ~ 500	
CODE 3	Customer 's Destination Code	501 ~ 750
CODE4	Driver Code 751 ~ 999	

To set Code 1 and as a product name and to register

1 : "IRON"

2 : "SAND"

- Enter [CODE1] [1] [F1] to enter the name edit mode.
- Press [Caps] and enter 'I' 'R' 'O' 'N' 'ENTER'
- Enter [CODE1] [2] [F1] to enter the name edit mode.
- Press [Caps] and enter 'S' 'A' 'N' 'D' ' ' 'ENTER'.

When [Caps] lamp is ON the alphabet is capitalized.

* The Key used to enter symbol

CODE1	CODE2	CODE3	CODE4	M.WGT	BITE PAPER	SAVE DATA
+	♯	&	*	=	,	%
		CANCEL DATA	DATE	TIME	ZERO	
(	)	!	|	?	Space	

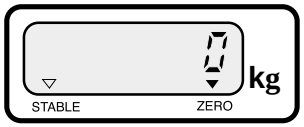
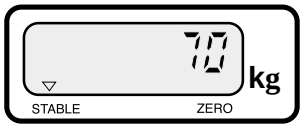
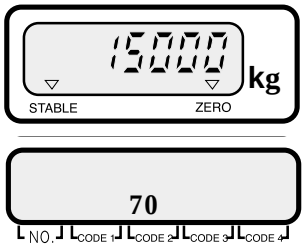
Example 5. Product registration

For example, when Code 1 is for the product and product number for "IRON"

	VFD Display & Key Input	Platform	Description
STEP 1	0 kg STABLE ZERO	Empty	
STEP 2	15000 kg STABLE ZERO	Truck with the article (IRON)	
STEP 3	[1] [0]		Input the CODE of iron
STEP 4	10 kg STABLE ZERO		
STEP 5	[CODE1]		
STEP 6	15000 kg STABLE ZERO 10 NO. CODE 1 CODE 2 CODE 3 CODE 4		Displayed the weight Registered the CODE of article

Note. Enter product number (1~999) and then press [CODE1] to register it as a product number

Example 6. Customer registration
For example, Code 2 is used for customer and customer ‘CAS’ is customer number 70.

	VFD Display & Key Input	Platform	Description
STEP 1		Empty	
STEP 2		The vehicle going to “CAS ”	
STEP 3	7 0		Input the CODE of Iron ‘70’
STEP 4			
STEP 5	CODE2		
STEP 6			Weight display Customer Number is registered and the customer name is printed

Note. Enter product number (1~999) and then press CODE2 to register it as a customer number

Example 7. Vehicle registration and edit vehicle registration

After the display of vehicle information, press F1 and it will ask whether to register or not. Press ‘Y’ to register or any other key will cancel the vehicle registration and move to weighing mode.
To display corresponding information, follow the example below

Vehicle Registration :Press “TRUCK No.” key and corresponding number then press “F1” to go into vehicle registration mode. If the vehicle number is LA5P 5795, enter the first “LA 5P” and press “ENTER”.

CODE 1 : Press corresponding number and press “Code 1 ”
CODE 2 : Press corresponding number and press “Code 2 ”
Weight Memory : Enter the empty vehicle weight and press “M.WGT ”

For example, to register information on vehicle number ‘5753’

CAR NO.	CAR INITIAL	CODE 1	CODE 2	Weight of Empty Car
5795	LA5P	10	102	1500 kg

① TRUCK No. 5 7 9 5 ENTER
F1 ENTER
② 1 0 CODE1 1 0 2 CODE2
③ 1 5 0 0 SAVE DATA
④ F1 Y

Example 8. Setting Date, Time and Day

There are two ways to change.

Method 1 : Press and hold [DATE] key and Turn ON

Method 2 : Enter Set mode and change.

From weighing mode press Set Mode password (3070) and press 'ENTER' then press '1' and press '1'

So press '3' , '0' , '7' , '0' , 'ENTER' , '1' , '1'

The key used for setting

[▶] [◀] Change the numbers

[▲] Change from date setting to time setting

[W] Change Day

[ENTER] Exit from the setting menu

Example: To set time as 10/27/2004 Tuesday 01:20 pm

①From weighing mod, press [3] [0] [7] [0] [ENTER] to enter Set Mode

Press [1] [1] to set Date

② [▶] [0] [▶] [4] [▶] [1] [▶] [0] [▶] [2] [▶] [7]

Set 10/27/2007

③ Press [W] until "Tues" is display in the help display.

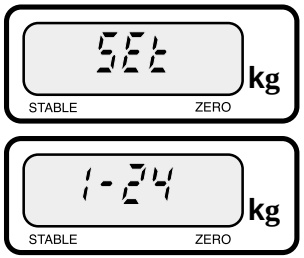
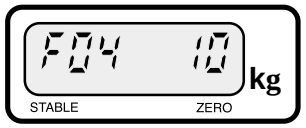
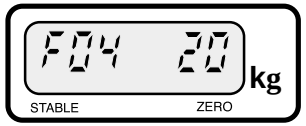
④ Press [▲] to set Time

⑤ [▶] [1] [▶] [3] [▶] [2] [▶] [0] [▶] [0] [▶] [0]

Set 13:20:00

⑥ Press [ENTER] [ENTER] [ENTER] to go back to weighing mode

Example 9. Setting weighing conversion speed

	VFD Display & Key Input	Platform	Description
STEP 1		vehicle	Weighing Mode
STEP 2	[3] [0] [7] [0] [ENTER] [1]		Enter Set Mode
STEP 3			Select from 1~24
STEP 4	[4]		Enter Menu 4 Digital Filter)
STEP 5			Default value is 10 "10" : Normal speed
STEP 6	[1] [0]		
STEP 7			Change the values from "10" to "20" "20" : very slow
STEP 8	[ENTER]		Save and Exit
STEP 9			Weighing Mode

Note. In Set Mode, go into menu 04 to change conversion speed.

Example 10. Daily Report

In Set Mode, there are 11 menus.
(1) Setting
(2) Truck
(3) Code
(4) Daily
(5) Monthly
(6) 1st List

Among the menu select (4) and it has 4 menus.
(1) LIST
(2) by CAR
(3) by CODE
(4) by MIX

To print a daily report, first insert Roll Paper into the printer.
From weighing mode, enter Set Mode by pressing the password (3070) and select 4th menu and again 1st menu.

So press [3] [0] [7] [0] [ENTER] [4] [1]
from weighing mode and when display shows 'Day List : Y / N', press Y key

```
< Daily Report >
-------------------------------
dd/mm/year
No.                  CAR num.
Code1,  code 2,  code 3,  code 4
    Tare             Time
    Gross            Time
-------------------------------
19/11/05
0001                  5795
   15     2     0      0
   90kg              13:36
   500kg             14:10
```

To print the report sorted by vehicle,

press [3] [0] [7] [0] [ENTER] [4] [2]
and when display shows 'List Car : Y / N', press 'Y' key

```
Daily Report by truck No.
   27/10/05
   [CAR No.]
   count,            sum
-------------------------------
   [                 2153 ]
     3,               47560kg
   [                 3181 ]
      1,             8500kg
   [                 LA 7901B ]
      2,             12380kg

-------------------------------
   Total             118440kg
```

To print the report sorted by CODE,

press [3] [0] [7] [0] [ENTER] [4] [3]
and when display shows 'List Code : Y / N', press 'Y' key

```
<Daily Report by code>
   27/10/05
   [CAR No.]
   count,            sum
-------------------------------
   [ 15]             SAMSUNG
      5,             900kg
   [  5]             SCALES
      3,             230kg

-------------------------------
   Total             1130kg
```

To print the mix report sorted by CODE and vehicle,

press [3] [0] [7] [0] [ENTER] [4] [4]
and when display shows 'List Car&Code Y/ N', press 'Y' key

```
<Daily rep. by car & code>
          28/11/05
   Truck No. :      5795
   [code 1]
   count,           sum
-------------------------------
   [  1]
     2,             650kg
-------------------------------
   Total            650kg
-------------------------------

   [code 2]
   count,           sum
-------------------------------
   [ 11]
     1,             1500kg
-------------------------------
   Total            1500kg
```

Example 11. Monthly Report

From weighing mode, enter Set Mode by pressing the password (3070) and select 5th menu and it will ask which CODE to do a monthly report and print. Press among CODE 1, 2, 3, 4 and corresponding monthly report will be printed.

Example 12. Vehicle List

To print vehicle list, enter Set Mode by pressing the password (3070) and select 2nd menu. It will have a list as below

(1) LIST
(2) CLEAR

So press [3] [0] [7] [0] [ENTER] [2] [1]
and when display shows 'List Car : Y / N', press Y key

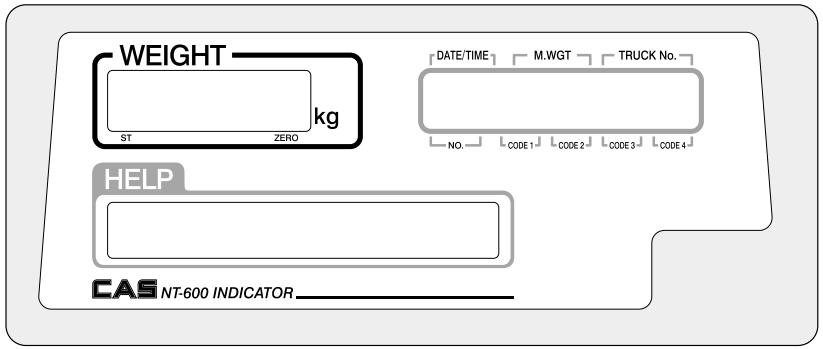
```
<Register Truck List>
   Total 2 trucks

   1.              LA 1234 A
   Tare weight     5000kg

   2.              WD 5795 B
   Tare weight     1000kg

  ------- END ----------
```


FRONT PANEL



ST Lamp : Lights on when weight is stable
ZERO Lamp : Lights on when weight is 0 kg
DATE/TIME : Current Date or Time is displayed.
Date is displayed with '/' and time is displayed with ':'
(Date display example) 12/24 - December, 24th
(Time display example) 11:10 - 11 hour 10 Minute (am)

M.WGT : Sing weighing will display empty vehicle weight.
Double weighing will display the first measured weight.
Maximum 6 digits

TRUCK No. : Vehicle number. 7 digits

NO. : Weighing Number is displayed.
After deleting daily report, counter goes back to 1
If the number reaches close to 1,000, print daily report and delete the daily report.

CODE 1 : 3 Digits. Currently selected product to be displayed
'---' will displayed when it is not used.
In use, corresponding code and name will be printed.

CODE 2 : 3 Digits. Currently selected customer to be displayed
'---' will displayed when it is not used.
In use, corresponding code and name will be printed

CODE 3 : 3 Digits. Currently selected item to be displayed
'---' will displayed when it is not used.

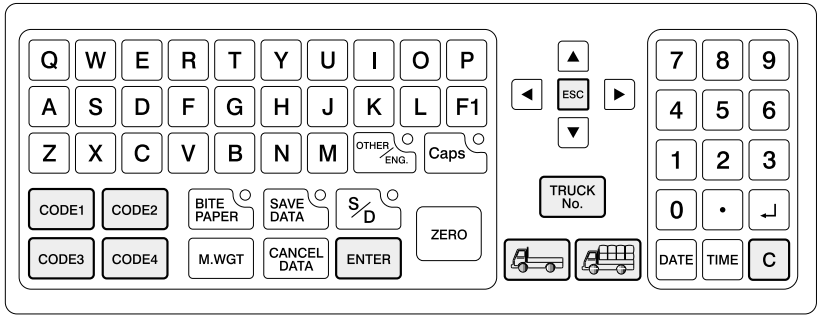
CODE 4 : 3 Digits. Currently selected item to be displayed
'---' will displayed when it is not used.

Help : Character is displayed - 11 characters
Registered product name, customer name and etc. will be displayed.
It will also display as following;
(Press '' key and '' key to switch from menu)
- Full vehicle number Ex) LA6p 5753
- Name registered in CODE 1: Usually Product ex) Iron
- Name registered in CODE 2: Usually Customer ex) CAS Corporation
- Name registered in CODE 3: Usually Destination ex) Seoul
- Name registered in CODE 4: Usually Driver. ex) James
- Current Date, Day. ex) 2004/10/27 Wed.
- Current Time

Note : Code1~4 can input up to 11 characters.
Space and symbols are as 1 character. (Page 16)

But for B print type, because of spacing on print paper.

2. Keyboard



< KEY Description>

ZERO

Zero compensation key, making current weight as 0kg

S/D

Conversion Key for Single weighing or Double weighing
The lamp will turn ON/OFF each time it is pressed.
Single weighing - When empty vehicle weight is known. (Lamp is OFF)
Double weighing - When empty vehicle weight is unknown and requires weighing twice. (Lamp is ON)
There are two ways of weighing for Double weighing.
(A) 1st weighing: Vehicle with the load. 2nd weighing: Vehicle without the load.
(B) 1st weighing: Vehicle without the load. 2nd weighing: Vehicle with the load.

1 ~ 9

USE 1: To enter empty vehicle weight.
ex) In Single weighing, if the empty vehicle weight is 1500 kg,
: press '1', '5', '0', '0', 'M. WGT'
USE 2: To enter Code number. Code can be customized.
For example, use CODE 1 as product code and CODE 2 as customer and
ex) To register product number as 12: Press '1', '2', 'CODE 1'
USE 3: To enter vehicle number.
USE 4: To enter tare weight.

CODE1

USE 1: (Product Number register)

After entering product number with number key(1 ~ 999) press ‘CODE 1’ to register product number. If product print is not wanted set it to 0

Err 7 will occur when more than one product is registered to one number

USE 2: (Product Name Register)

Press ‘CODE 1’ and use number key to enter product number and press ‘F1’ key to enter product name. Input product name and press ‘ENTER’ key and the registration is completed.

Err 7 will occur when more than one product is registered to one number

CODE2

USE 1: (Customer number Registration)

After entering customer number with number key(1~ 999) press ‘CODE 2’ to register customer. If customer print is not wanted set it to 0

Err 7 will occur when more than one product is registered to one number

USE 2: (Customer Name Registration)

Press ‘CODE 2’ and use number key to enter customer number and press ‘F1’ key to enter customer name. Input customer name and press ‘ENTER’ key and the registration is completed.

Err 7 will occur when more than one product is registered to one number

CODE3

User can customize CODE name. ex) Destination, Driver

Err 7 will occur when register number is less than 0 or more than 999.

When it is not used, set it as 0.

CODE4

User can customize CODE name. ex) Destination, Driver

Err 7 will occur when register number is less than 0 or more than 999.

When it is not used, set it as 0.

C

Used for correcting the mistake, such in product number or empty vehicle input.

F1

USE 1: (CODE name registration)

Press ‘CODE 1’ key and use number key to enter code number (1~999) and press this key to enter

Name registration mode. Use keyboard to enter product name and when finished press ‘ENTER’ key

USE 2: (Vehicle Registration)

After displaying the vehicle number, CODE number and empty vehicle weight, press this key then

it will ask whether to register the vehicle. Press ‘y’ to register

SAVE DATA

Each press will turn ON and OFF the lamp.

When lamp is ON, printed data will be stored.

When lamp is OFF, printed data will not be stored.

Data is stored to be included in Daily and Monthly Report.

Caps

Used for entering the CODE name.

Each press will turn ON and OFF the lamp.

When lamp is ON, Capital letter will be inputted.

ENTER

In Normal Mode: Input complete key

Press ‘Truck No.’ key and to enter vehicle number and press ‘ENTER’ to complete input.

Press ‘CODE 1.’ key and to enter product number and press ‘ENTER’ to complete input.

Press ‘  .’ key and to enter empty vehicle weight and press ‘ENTER’ to complete input.

In Calibration Mode, Test Mode, Set mode: Save current statue and exit.

TRUCK No.

Used for entering the vehicle number.

There are two ways to enter vehicle number.

Method 1 : Press ‘Vehicle number’ key and press the vehicle number then Press 'ENTER'

Method 2 : Press the vehicle number then press, ‘Vehicle number’

Print Key: Press the key and the currently selected print format is printed.
Single weighing - Insert the paper and press any key to print complete weighing ticket.
If the empty vehicle is not entered, it will not print.

Double weighing - After all the information (vehicle number, product name, customer, empty vehicle weight) is set, press this key and it will display to enter a paper in the printer.
For first weighing: empty vehicle weight is printed.
(If the data is saved, it will not print but stores the data)
For second weighing: the other entire blank will be printed.

Print Key: Press the key and the currently selected print format is printed.
Single weighing - Insert the paper and press any key to print complete weighing ticket.
If the empty vehicle is not entered, it will not print.

Double weighing - After all the information (vehicle number, product name, customer, empty vehicle weight) is set, press this key and it will display to enter a paper in the printer.
For first weighing: empty vehicle weight is printed.
(If the data is saved, it will not print but stores the data)
For second weighing: the other entire blank will be printed.

USE 1 : Used as a decimal point.
Err 11 will display if the decimal point of input weight is different from the weight on the display.
USE 2 : Used as a period (in CODE Name input).

USE 1: Currently registered vehicle number and Code name is displayed.
Each press will show next list.
USE 2: Used at Setting Date, Time. Moves the cursor from left to right.

Used in Calibration Mode, Test Mode, Set Mode to move to next menu.

Used in Calibration Mode, Test Mode, Set Mode to move to previous menu.

Each press will turn ON and OFF the lamp.
If the lamp is On, the character will be written in Capital letter.
If the lamp is OFF, the character will be written in small case letter.

This key is not used now. If it is pressed, it sounds beep only.

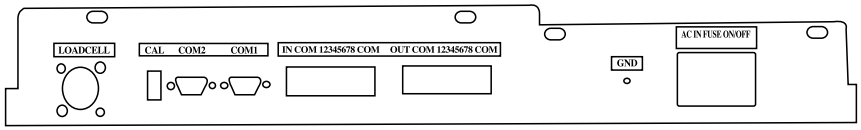
If paper is in the printer, the lamp is ON
If paper is not in the printer, the lamp is OFF
If the lamp is ON for the ticket Type, the lamp will turn off after pushing out the paper

To cancel the saved data

Display current date. ex) 12/24

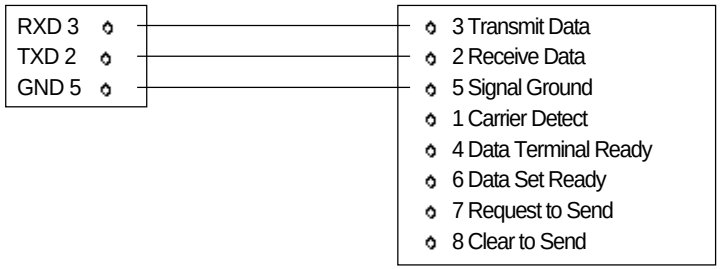
Display current time. Ex) 11:24

REAR PANEL



SERIAL	**Series Interface Port. USE 1: Secondary Display Connection USE 2: PC Connection**	
LOADCELL	**Connects to the Load Cell**	
GND	**Ground terminal : Independent kind 3 grounding**	
AC INLET (86¢¶ 264V)	**AC Power outlet 110V ~ 220V 0V/220V (No AC switcher) Fuse capacity is 2A 250V**	
Option	**Input**	**external input port**
	Output	**Relay output port**

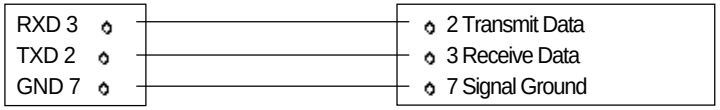
1. Serial Interface (RS-232C)
   COM 2 : Specification for PC Connection
   Connecting with PC



9 pin port (Male)
RS-232C port of NT-600A

9 pin port of PC (Female)

COM 1 : Secondary Display (CD Series) Connector specification
Connecting with Secondary display



9 pin port (Male)
RS-232C port of NT-600A

9 pin port of Sub-display (Female)

When Connecting with PC, output data speed and output method should be configured in SET MODE.

(1) Baudrate : 4800 bps - 38400 bps
    Configure from SET MENU 09 and 10.
(2) DATA bit: 8, Stop bit: 1, Parity bit: None
(3) Code : ASCII
(4) When does the weighted data to be transfer?
    Configure from SET MENU 14
    Always transfer : Set F14 as 1
    When weight is stable : Set F14 as 2
    When Data is demanded : Set F14 as 3

    Computer sends Indicator equipment number to the indicator with 1bit
    (When Equipment Number is 01: 0x01, When Equipment Number is 99: 0x99)

RS-232C Output Data Format

Format (Total 22 Bytes)

		,			,			,	Data(8 bytes)		K	G	CR	LF
US ST OL			GS NT			Dev. ID	Lamp State			Emp				

Device ID : Device ID is to have receiver receiving selective weight data from Indicator.
1 bite is sent.
(Equipment number is set in F24.)

■ Lamp Statue Bit : Shows current Indicator lamp statue whether it is On or OFF

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1	STABLE	1	1	1	1	TARE	ZERO

■ DATA(8 byte) : Weight data including decimal point
For example, 13.5 kg will send 8 byte of '0', '0', '0', '0', '1', '3', '.', '5' in ASCII Code

2. How to connect external input device - Optional
To control NT-600 in far distance, connect key to INPUT terminal.

3. How to connect external output device- Optional
NT-600 Output relay capacity is 500 mW.
For larger load, use separate external relay.

HOW TO LEARN EASILY

1. Basic Description

Difference between single weighing and double weighing

Simple weighing (S/D lamp is OFF)
Simple weighing input empty vehicle weight by hand and weight the vehicle with the load.

Double weighing (S/D lamp is ON)
Double weighing measures the empty vehicle weight and same vehicle with load.
Ticket can be printed every time or data can be saved for to have one printing.

There are two ways of weighing.
(A) 1st weighing: Vehicle with the load. 2nd weighing: Vehicle without the load.
(B) 1st weighing: Vehicle without the load. 2nd weighing: Vehicle with the load.

Empty vehicle weight input
Press "M.WGT" key and input the empty vehicle weight.
For example, press '1', '0', '0', '0' and press "ENTER" key then weight memory information will be changed.

After weighing in this statue, press '  ' key or '  ' key to print ticket.

Product name print
If the number is registered in CODE 1, the name according to the number will be printed.
If 'Rock' is registered for number 10, press '1', '0', 'CODE 1' to set product name.

Customer name print
If the number is registered in CODE 2, the name according to the number will be printed.
If 'CAS' is registered for number 10, press '1', '0', 'CODE 2' to set customer name.

How to insert a Paper
Divide the paper to 3 and insert the paper until it is at the end of the printer and remove hand.

2. Once Weighing (Car which is not registered)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			'5' '7' '3' '5'	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	CAR NO. 5735	CAR NO. 5735		The truck is riding on the platform
2000 kg				The driver is getting off the truck
	Storage Weight 1000		'1' '0' '0' '0' SAVE DATA	The empty weight is 1 ton
				Check the once/twice key is off
				Publish the certificate of weighing
				Push the print paper
			'Any Key'	
				The ticket is printed

Please refer to the table 9-1, (2)-1, (2)-2 with the printed ticket

3. Once Weighing (Car which is not registered, need to register goods & customer)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			'5' '7' '3' '5'	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	CAR NO. 5735	CAR NO. 5735		The truck is riding on the platform
2000 kg				The driver is getting off the truck
	Storage Weight 1000		'1' '0' '0' '0' SAVE DATA	The empty weight is 1 ton
	Code1 012	Code1 Stone	'1' '2' 'Code1'	Product name 'Rock', Code 12
	Code2 052	Code2 CAS	'5' '2' 'Code2'	Customer: 'CAS' Customer Number: 52
				Check the once/twice key is off
				Publish the certificate of weighing
		Check the ticket Paper		Push the print paper
			'AnyKey'	
				The ticket is printed

Please refer to the table 9-1, (3)-1, (3)-2 with the printed ticket

4. Once Weighing (Registered car, need to register the goods & customer)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			5 ' 7 ' 3 ' 5 '	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	Empty vehicle, Code1, Code2 display Stored information	LA9P 5735		The truck is riding on the platform
2000 kg				The driver is getting off the truck
				Check the Single/Double key is off
				Publish the certificate of weighing
				Publish the certificate of weighing
		Check the ticket Paper		Push the print paper
			'Any Key'	
				The ticket is printed

< Table 9-1> Example of publishing the ticket

(2) -1

Serial No.	No. 001	Input Output	
Truck No.	5735		
Date	2005/12/07 Tue		
Total W.	2,000 kg	Time	13:35
Tare W.	1,000 kg	Time	13:35
Net W.	1,000 kg		
Code 1			
Code 2			
Code 3			
Code 4			
It is proved to weigh above in front of You		Sign	
CAS TEL : 032-820-1330			

(3) - 1

Serial No.	No. 001	Input Output	
Truck No.	5735		
Date	2005/12/07 Tue		
Total W.	2,000 kg	Time	13:35
Tare W.	1,000 kg	Time	13:35
Net W.	1,000 kg		
Code 1	2 SAND		
Code 2	52 DONGBOO		
Code 3			
Code 4			
It is proved to weigh above in front of You		Sign	
CAS TEL : 032-820-1330			

(4) -1

Serial No.	No. 001	Input Output	
Truck No.	LA5P 5735		
Date	2005/12/07 Tue		
Total W.	2,000 kg	Time	13:35
Tare W.	1,000 kg	Time	13:35
Net W.	1,000 kg		
Code 1	2 Diamond		
Code 2	CAS Ltd		
Code 3			
Code 4			
		Sign	
CAS TEL : 032-820-1330			

5. Double Weighing (Car which is not registered) - 1st weighing (F03 = 0)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			5 ' 7 ' 3 ' 5 '	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No. '
Weighing	TRUCK No. 5735	TRUCK No. 5735		The truck is riding on the platform
2000 kg				The driver is getting off the truck
	CODE, Memory is empty			Is the truck with the load or Without load?
				Check the once/twice key is off
				For Empty Truck: ,  For load Truck: 
		Save complete		1st weighing is completed

Ticket is not printed but 1st weighing weight is stored in the internal memory.

6. Double Weighing (Car which is not registered) - 2nd weighing (F03 = 0)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			'5 ' '7 3 ' 5'	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	TRUCK No. 5735	Second measurement		The truck is riding on the platform
2000 kg	1st weighing measurement is displayed			The driver is getting off the truck
				Push the print paper
			 or 	For Empty Truck: ,  For load Truck: 
				Printing …
				Measurement is completed

Both 1st and 2nd weighing measurement is printed. For print sample, refer to Table 9-2, (6)-1, 2

7. Double Weighing (Car which is not registered, need to register goods & customer)
- 1st weighing (F03=0)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			'5' '7' '3' '5'	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	TRUCK No. 5735	TRUCK No. 5735		The truck is riding on the platform
2000 kg				The driver is getting off the truck
				What is the product ?
	Code 1 012	Code1, Rock		Product is ,rock ' Code: 12
			'1' '2' 'Code 1'	Where is your destination?
	Code 2 052	Code 2 CAS	'5' 2' 'Code 2'	Customer : CAS Customer CODE: 52
				Make sure ' S/D ' is ON
				Is this your first weghing? Are you going to put it in warehouse?
				Say 'Yes'
		Save Complete		
				Say ,Bye'

Ticket is not printed but 1st weighing weight is stored in the internal memory.

8. Double Weighing (Car which is not registered, need to register goods & customer)
- 2nd weighing (F03=0)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			'5' '7' '3' '5'	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	TRUCK No. 5735	Second measurement		The truck is riding on the platform
2000 kg	1st weighing measurement is displayed			The driver is getting off the truck
				Push the print paper
			or	For Empty Truck : For load Truck:
				Printing …
				Measurement is completed

Both 1st and 2nd weighing measurement is printed. For print sample, refer to Table 9-2, (8)-1, 2

9. Double Weighing (Car which is not registered, need to register goods & customer)
- 1st weighing (F03=1)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			5 ' 7 ' 3 ' 5 '	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	Empty vehicle, Code1, Code2 display Stored information	LA5P 5735		The truck is riding on the platform
2000 kg				The driver is getting off the truck
				Check the Single/Double key is off
				Is the truck with the load or Without load?
				Print weight certification
		Save complented		

Ticket is not printed but 1st weighing weight is stored in the internal memory.

10. Double Weighing (Car which is not registered, need to register goods & customer)
- 2nd weighing (F03=1)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				A truck is coming.
				What is the number of truck?
			'5 ' '7 ' 3 ' '5'	Input the number of truck
5735			TRUCK No.	After that, press 'TRUCK No.'
Weighing	TRUCK No. 5 7 3 5	Second measurement		The truck is riding on the platform
2000 kg	1st weighing measurement is displayed			The driver is getting off the truck
				Push the print paper
			 or	For Empty Truck: ,  For load Truck: 
				Printing …
				Measurement is completed

Both 1st and 2nd weighing measurement is printed. For print sample, refer to Table 9-2, (10)-1, 2

11. Register Code Name - In the case of making code 1 to the code of goods

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0kg				Let's register some product name
				Where is my product list? Nr NAME 1 Rock 2 Sand
	Code 1		'Code1' '1' 'F1'	Press 'Code 1' and press number tosave then press 'F1' KEY to register
		Name registratio Mode	R, o, c, k	When the 'Caps' lamp is ON, Capital Letter inputted.
				Name Input
		Rock	ENTER	After input is completed press 'ENTER' KEY
				Use the same method for product #2.

Make sure that the one product number is given to one product. (1~999)

12. Register Customer Name - In the case of making code 2 to the code of customer

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0kg				Let's register some customer name
				Where is the customer name? # NAME 101 CAS 102 CAS LABEL
	Code 2 101		'Code1' '1' '0' '1' 'F1'	Press 'Code 1' and press number to save then press 'F1' KEY to register
		Name registratio Mode		When the 'Caps' lamp is ON, Capital Letter inputted.
				Name Input
		CAS	ENTER	After input is completed press 'ENTER' KEY
				Use the same method for customer#2.

Make sure that the one customer number is given to one product. (1~999)

13. Register Car Number
(Car No. : 5735, Empty weight : 1000 kg, Code1 : 10, Code2 : 101)

DISPLAY OF NT-600			KEY OPERATION	EXTERNAL STATE & USER 'S JUDGEMENT
WEIGHT	CODE	HELP		
0 kg				Let's register truck number.
				Where is the truck list? # Empty Kg Code1 Code 2 5735 1000 10 101 .....
	Empty truck, Code 1, 2 is currently empty.		'5' '7' '5' '3' TRUCK No.	Input truck Number, then press TRUCK No. key
			'1' '0' '0' '0' M.WGT	Input empty vehicle weight, the press M.WGT key
	Weight memory 1000		'1' '0' Code 1'	Input Code number then press, CODE1 Key
	CODE 1 10		'1' '0' '1' Code 2'	Input Code number then press CODE2 Key
	CODE 2 101		'F 1'	After done inputting press F1 key
			'Y'	If you want to register, press 'Y' Key or press any other key
		Complete		

Once it is registered, registered information is displayed and all the information is printed with Code name and empty vehicle weight.

SET MODE

How to enter set mode

Press the numeral ‘3070’ and ‘ENTER’ key in weighing mode. That is, press ‘3’, ‘0’, ‘7’, ‘0’, ‘<’ In order of left.
To move the weighing mode, press ‘ENTER (<)’ key again.

There are 6 items in SET Mode.
- [1] Change the setting value.
- [2] Manage the fixed truck
- [3] Manage the code
- [4] Daily account
- [5] Monthly account
- [6] List of the first weighing truck
- [ESC] Remove the ticket paper

Please press the number correspond to item which you want to enter.

1. Change the setting value
Available keys

① ~ ⑨ : Used to change the setting value.
▲ ▼ : Move to next SET Menu. If you press in F01, move to F02 and press in F 01, move to F24.

ENTER : Exit after saving the current value.
If you press < in F01, can see the display to select 1 to 24. At this time, if you press < again, the current setting value is save and exit the SET mode and move to the weighing mode

C : Erase the current or input value

SET Mode Menu (F01~F24)

F01	Set the date (Year, Month, Day)
F02	Set the time (Hour, Minute, Second
F03	Select printing type (Weighing double?)
F04	Select the conversion speed
F05	Select the stable condition of weight
F06	Select the automatic zero condition
F07	Weight Backup
F08	Select the type of printer
F09	Select COM1 baud rate
F10	Select COM2 baud rate
F11	Select the range of ZERO-KEY
F13	Select the available condition of ZERO-KEY, TARE-KEY
F14	Select the COM2 transmission method (Stable / Unstable)
F15	Initialize the weighing number
F24	Set the device number (Indicator No.)

■ F 01

Function	Set the date of Year, Month, Day	
Set value	Display	Description
	05. 04. 01	2005-04-01

▶ Note 1. Using the ‘▶’, ‘◀’ key, move the cursor to the position which you want to change.
Note 2. And then change the date - Year, Month, Day.
Note 3. Press ‘W’ key, until the day of week which you want to select.

■ F 02

Function	Set the time		
Set value	Display	Description	
	12. 30. 01	12-30-01	A.M.
	22. 20. 05	10-20-05	P.M.

▶Note 1. Using the ‘▶’, ‘◀’ key, move the cursor to the position which you want to change.
Note 2. And then change the time - Hour, Minute, Second.

■ F 03

Function	Select printing type (Weighing double?)	
Set value (0, 1)	Display	Description
	F03 0	Print each of first weighting data and second weighing data
	F03 1	Print all (first and second weighing data) in the second weighing

▶ Note 1. This function is available in double weighing mode.

■ F 04

Function	Select the conversion speed	
Set value (01~20)	Display	Description
	F04 01	Very fast speed
	F04 10	Normal speed
	F04 20	Very slow speed

▶ Note 1. Please adjust the usage of the conversion speed correspond to current state.
Note 1. Default setting value is 10.

■ F 05

Function	Select the stable condition of weight	
Set value (1~9)	Display	Description
	F05 1	Stable lamp is ON within the change of only one division
	F05 5	Stable lamp is ON within the change of only five divisions
	F05 9	Stable lamp is ON within the change of only nine divisions

■ F 06

Function	Select the automatic zero condition	
Set value (00 ~ 99)	Display	Description
	F06 00	No compensation
	F06 01	Compensation for gradual micro change
	F06 23	Compensation for gradual change below two divisions for 3 seconds
	F06 89	Compensation for gradual change below eight divisions for 9 seconds

▶ Note 1. In the setting value, first numeral is division and second numeral is second
Note 1. Default setting value is 23.

■ F 07

Function	Weight Backup	
Set value (0, 1)	Display	Description
	F07 0	OFF : Have to unload the platform before the power is on
	F07 1	ON : It is return to the prior state when the power is on

▶Note 1. Default setting value is 0, that is OFF.

■ F 08

Function	Select the type of user printer	
Set value (0, 1)	Display	Description
	F08 0	Ticket printer
	F08 1	Sprocket printer (Not support now)

▶Note 1. Even though you select 1 (F08 = 1), this scale is operated with ticket printer.

■ F 09

Function	Select COM1 baud rate			
Set value (0~3)	Display	Description	Display	Description
	F09 0	4800 bps	F09 2	12800 bps
	F09 1	9600 bps	F09 3	38400 bps

▶Note 1. The COM1 baud rate is same to the baud rate of sub display

■ F 10

Function	Select COM2 baud rate			
Set value (0~3)	Display	Description	Display	Description
	F10 0	4800 bps	F10 2	12800 bps
	F10 1	9600 bps	F10 3	38400 bps

▶Note 1. The COM2 baud rate is same to the baud rate of PC program.

■ F11

Function	Select the range of ZERO-KEY	
Set value (0, 1)	Display	Description
	F11 0	02 % : zero key is operated within 02 % of maximum weight
	F11 1	10 % : zero key is operated within 10 % of maximum weight

■ F13

Function	Select the available condition of ZERO-KEY, TARE-KEY	
Set value (0, 1)	Display	Description
	F13 0	Zero, Tare key is operated when the scale is stable.
	F13 1	Always

■ F14

Function	Select the COM2(with PC) transmission method	
Set value (0 ~ 3)	Display	Description
	F14 0	No data transmission
	F14 1	Transmit data in a state of stable & unstable
	F14 2	Transmit data only in stable state
	F14 3	Transmit data only in command mode

▶Note 1. The setting value is 0 in the factory
▶Note 2. If F14 is set to 3, the weighing data is transmitted after receiving the device ID - one byte - which is set in F24.

■ F15

Function	Initialize the weighing number	
Set value (0, 1)	Display	Description
	F15 0	Maintain current number
	F15 1	Initialization (starting from No.1)

▶Note 1. The weighing number is from 01 to 999. Its number is remained regardless of that power is on or off

■ F24

Function	Set the device number (Indicator No.)	
Set value (00 ~ 99)	Display	Description
	F24 00	The number of device is 00.
	F24 05	The number of device is 05.

▶Note 1. This number is used when serial communication is

2. Manage the fixed truck : [2] Truck

The selection lists are displayed as follows

TRUCK
(1) LIST (2) CLEAR

(1) TRUCK LIST : "Car List : Y / N "
If you press "Y " key, the truck list which is registered by the way of registration is printed.
If you press "N " key, shift next step.
After printing or skip, you are asked to delete the truck list
(2) CLEAR : "Del. Car : Y / N "
If you press "Y " key, all lists are deleted.
If you press "N " key, the message "Not delete" is shown and go to first step of "[2] Truck "
If you press "ENTER (<) " key, exit the current mode and go to "SET MODE "
[ESC] Remove the ticket paper

3. Manage the code : [3] Code
The selection lists are displayed as follows

CODE
(1) LIST (2) CLEAR

(1) CODE LIST : "Code List : Y / N "
If you press "Y " key, the code list which is registered before is printed.
If you press "N " key, shift next step.
After printing or skip, you are asked to delete the code list
(2) CLEAR : "Del. Code : Y / N "
If you press "Y " key, all lists are deleted.
If you press "N " key, the message "Not delete " is shown and go to first step of "[3] Code "
If you press "ENTER (<) " key, exit the current mode and go to "SET MODE "
[ESC] Remove the ticket paper

4. Daily account : [4] Daily
The selection lists are displayed as follows

(1) LIST (2) by CAR
(1) by CODE (2) by MIX

(1) DAY LIST : "Day List : Y / N "
If you press "Y " key, the day list which is weighed until now is printed in numerical order.
If you press "N " key, shift next step.
After printing or skip, you are asked to delete the day list :
"Del. List : Y / N "
If you press "Y " key, all lists are deleted.
If you press "N " key, the message "Not delete " is shown and go to first step of "[4] Daily "
If you press "ENTER (<) " key, exit the current mode and go to "SET MODE "
(2) CAR LIST : "List Car : Y / N "
If you press "Y " key, the day list which is weighed until now is printed by car.
If you press "N " key, shift next step.
After printing or skip, you are asked to delete the day list : "Del. List : Y / N"
If you press "Y " key, all lists are deleted.
If you press "N " key, the message "Not delete " is shown and go to first step of "[4] Daily "
If you press "ENTER (<) " key, exit the current mode and go to "SET MODE "

(3) CODE LIST : "List Code : Y / N "
If you press °∞Y°± key, the day list which is weighed until now is printed by code.
If you press "N " key, shift next step.
After printing or skip, you are asked to delete the day list : "Del. List : Y / N"
If you press "Y" key, all lists are deleted.
If you press "N " key, the message "Not delete" is shown and go to first step of "[4] Daily"
If you press "ENTER (<) " key, exit the current mode and go to "SET MODE "

(4) MIX LIST : "Car&Code : Y / N "
If you press "Y " key, the day list which is weighed until now is printed by car & code.
If you press "N " key, shift next step.
After printing or skip, you are asked to delete the day list : "Del. List : Y / N"
If you press "Y " key, all lists are deleted.
If you press "N " key, the message "Not delete " is shown and go to first step of "[4] Daily "
If you press "ENTER (<) " key, exit the current mode and go to "SET MODE "
[ESC] Remove the ticket paper

5. Monthly account : [5] Monthly
Available Keys

CODE1 : print the monthly data of code 1
CODE2 : print the monthly data of code 2
CODE3 : print the monthly data of code 3
CODE4 : print the monthly data of code 4

* NT-600 can store the 999 monthly data.
* It can be printed the monthly data by code key (code 1, code 2, code 3, code 4) : "Print? : Y /N "
Exit the current mode and go to "SET MODE " in the case of "N "
After printing, you are asked to delete the monthly data which you printed out. : Del. List : Y / N
If you want to delete, press "Y " key. If not, press "N " key
* [ESC] Remove the ticket paper

6. List of the first weighing truck : [6] 1st List

It is printed out the car list which is weighed 1st weighing in double weighing mode.

You are asked to print out or not. : "1st List : Y / N "

If you press "Y " key, print out and go to "SET MODE "

If you press "N " , go to "SET MODE " .

TEST MODE

How to enter test mode

Power switch ON while pressing the ZERO key on the front panel of the indicator.

"TEST & CAL"

Being displayed the message : << 1. TEST 2. CAL >> and press '1 ' key to move "Test Mode "

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Key used in the test mode

① ~ ⑨ : Used to change the setting value.

▲ ▼ : Move to next Test Menu

ENTER ↵ : Exit current state and back to the pre-state

Test menu (TEST 1~7)

TEST 1 : Key Test

TEST 2 : VFD Display Test

TEST 3 : Load cell Test and A/D Conversion Test

TEST 4 : Serial Interface Test, COM1 (RS-232)

TEST 5 : Printer Test

TEST 6 : Internal RAM Test

TEST 7 : External Output Test (Relay)

TEST 1

■ FUNCTION : Key test

Key	VFD Display	Description
▲: Next menu ▼: Pre menu ↵: Exit Other Keys : Perform test	tESt 1 1. Key Test	48 99 TEST 1 (0) Press any Key ! If you press any key, display the value of that key

TEST 2

■ FUNCTION : VFD Display test

Key	Display	Description
▲: next menu ▼: pre menu ↵: exit Other Keys : Perform test	tESt 2 2. VFD Test	TEST 2 VFD TEST If you press any key except , and <, Weight Display : '88888888 ' Code Display : 'A~Z, 1~0 '

TEST 3

■ FUNCTION : Load cell test and A/D conversion test

Key	Display	Description
▲: next menu ▼: previous menu ↵: exit ◀ ▶: Change an amplication '1 ' '2 ': Change the AD-speed	tESt 3 3. A/D Test	LOADCELL TEST Gain : 1 Filter : 10 The display shows digital value of current weight. This value means converted digital value.

▶Note 1. Check whether the digital value is changing whenever you load or unload the weight on the platter.
If the digital value is fixed or zero is displayed, please check the connection of loadcell.

TEST 4

■ FUNCTION : Serial interface test (RS-232)

Key	Display	Description
▲: next menu ▼: previous menu ↵: exit Other Keys : Perform test	tESt 4 - - - - - - - - 4.RS Test	Waiting for transmission or reception. COM1 TxD : 31 RxD : 0A (RS - 485) COM2 TxD : 31 RxD : -- Transmit 1 Receive COM1 TxD : 31 RxD : -- COM2 TxD : 31 RxD : 01 (RS - 232) Transmit 1 Receive 1

▶Note 1. Before testing, you have to connect serial port(RS-232) of computer with serial port of indicator and run the communication program such as Hyper Terminal in PC.

Note 2. Send no.1 in PC keyboard and check if indicator receives no.1
Send no.1 in indicator keyboard and check if PC receives no.1

Note 3. Do this test after baud rate is specified in SET mode (F09).

INDICATOR TEST (When it isn't connected with PC)

Connect directly between No. 2(TXD) and No. 3(RXD) in indicator of serial port. If transmitting data is identical with receiving data by pressing key of front panel, this test will be done.

TEST 5

■ FUNCTION : Printer test

Key	Display	Description
▲: next menu ▼: previous menu ↵: exit Other Keys : Perform test	tESt 5 5. Print Test	TEST 5 PRINTER In the case of 'Check Paper ', Please follow the Note 3. After feeding the paper, the message of Note 4 is printed. And 'Good ' message is displayed.

▶Note 1. Perform test only when the printer connection are installed.

Note 2. Previously specify the printer which will be used in the SET mode (F08)

Note 3. In the case that there is no paper in the printer, the message of 'Check Paper' is displayed.
After feeding the paper, press the any key and then is printed.
If you want to cancel the print, press 'ENTER ' key

Note 4. If you want to remove the ticket paper, press 'ESC ' key

Note 5. The test output format of printer is as the follows.

Computer And System
CAS Corporation
http://www.cas.co.kr
TEL 82-2-2225-3500
FAX 82-2-475-4669

TEST 6

■ FUNCTION : Internal RAM test

Key	Display	Description
▲: next menu ▼: previous menu ↵: exit Other Keys : Perform test	tESt 6 6.Flash Test	TEST 6 RAM TEST 'Good' Internal RAM is OK. 'Err41' Data in special address is error. -> Please exchange a new RAM

▶Note 1. In the case that there is no error in RAM, 'Good ' message is displayed. If not so, 'Err41' message is displayed.

TEST 7

■ FUNCTION : External Input , Output (Relay) test

Key	Display	Description
▲: next menu ▼: previous menu ↵: exit 1~8 : Output is ON	tESt 7 7. I/O Test	INPUT: 1 2 3 4 5 6 7 8 x x x x x x x x No input o x x x x x x x The No.1 of input Terminal Is connected. OUTPUT: 1 2 3 4 5 6 7 8 x x x x x x x x No output o x x x x x x x The No.1 of output terminal is connected Output is toggled to o and x with pressing the numeric Value (0 ~ 8) o : being connected x : being not connected

CALIBRATION MODE

How to enter test mode

Power switch ON while pressing the ZERO key on the front panel of the indicator.
"TEST & CAL"
Being displayed the message : << 1. TEST 2. CAL >> and press '2' key to move "Calibration Mode"

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Key used in the calibration mode

① ~ ⑨ : Used to change the setting value.

▲ ▼ : Move to next CAL Menu. If you press in CAL 1, move to CAL 2 and press in CAL 1, move to CAL 7.

ERASER : reset the setting value

ENTER : Exit after saving the current value.
If you press < in CAL 1, can see the display to select 1 to 7. At this time, if you press < again, the current setting value is save and exit the calibration mode and move to the weighing mode

Calibration menu (CAL0~CAL7)

CAL 1 : Maximum Capacity Set
CAL 2 : Minimum Division Set
CAL 3 : Setting Weight
CAL 4 : Zero Calibration
CAL 5 : Span Calibration
CAL 6 : Micro-Span Calibratio
CAL 7 : Change the password to enter in calibration mode.

But, generally CAL 1 ~ CAL 5 can be performed.
If you set to 50 ton scale (minimum division 10kg), please do as the follows.

① Á Power switch ON while pressing the ZERO key on the front panel of the indicator.
② '1. TEST 2. CAL' on the display, press '1' key and 'ENTER' key after inputting password.
③ Press '1' and input the 50000 (Max. Capa.) and press '▲' and input 10 (Min. div.) and press '▲' and input the value of balance weight which you want to weigh and press '▲'.
④ Unload the platform and press 'ZERO' key and wait 10 seconds, display 'LoAd'. At this time load the balance weight and press 'ZERO' key and waituntil displaying the balance weight on the VFD.
⑤ Unload the platform again. And press 'ENTER' key three times. All process is finished.

CAL 1

■ FUNCTION : Maximum Capacity Set (Range : 1kg ~99,999kg)

Key	Display	Description
▲: next menu ▼: previous menu ENTER, ↵: exit 0~9 : Change the set value ERASE : Reset to 0 of set value	C= 50000 C= 5000 1. Max CAPA	50 ton (20,000 kg) 5 ton (05,000 kg) CAL1 - CAL 7 Press number Key !

▶ Note 1. Maximum capacity means the maximum weight that the scale can measure.

CAL 2

■ FUNCTION : Minimum Division Set (Range : 0.001kg ~ 100kg)

Key	Display	Description
▲: next menu ▼: previous menu ENTER, ↵: exit 1,2,5 : Change the set value set the decimal point ERASE : Reset to 0 of set value	d= 10 d= 0.2 d= 0.05 2. Min Div	10 kg 0.2 kg (200 g) 0.05 kg (50 g) CAL1 - CAL 7 Press number Key !

▶ Note 1. The minimum division means the value of one division.
Note 2. If you press any key except '1', '2', '5', '0', error message is displayed.
Note 3. External resolution is obtained by dividing the maximum capacity into the min. division.
Set the resolution to be within 1/10,000.

CAL 3

■ FUNCTION : Setting Weight

Key	Display	Description
▲: next menu ▼: previous menu ENTER, ↵: exit 0~9 : Change the set value ERASE : Reset to 0 of set value	L= 5000 L= 1000 3. Sample W	Set the balance weight to 5,000 kg Set the balance weight to 1,000 kg CAL1 - CAL 7 Press number Key !

▶ Note 1. The range of setting balance weight should be from 10% to 100% of the maximum capacity.
Note 2. The balance weight should be over 10% of the maximum capacity. It it is under 10 %, display error message (Err 22)
Note 3. The balance weight should be under 100% of the maximum capacity. It it is over 100 %, display error message (Err 23)

CAL 4

■ FUNCTION : Zero Calibration

Key	Display	Description
'ZERO' key : Perform the zero calibration ▲: next menu ▼: previous menu ENTER, ↵: exit	UnLOAd - - - - - SUCCESS Err 27	Unload the platform, Press 'ZERO' key Zero Calibration.... After Zero Calibration, Move to Span calibration Error happens

▶Note 1. If Zero calibration is done without any error, "Good " message is displayed and program moves into CAL 5 automatically.
Note 2. If the value of zero is too low, display error message (Err 27)
Note 3. If the value of zero is too high, display error message (Err 26)

CAL 5

■ FUNCTION : Span Calibration

Key	Display	Description
'ZERO' key : Perform the zero calibration ▲: next menu ▼: previous menu ENTER, ↵: exit	LOAd - - - - - SUCCESS Err 24 3. Sample W	Load the balance weight in CAL 3 on the platform And then Press 'ZERO' key Span Calibration.... After Zero Calibration, Move to Span calibration Error happens Calibration is succeeded

▶Note 1. If span calibration is finished successfully, the display shows "SUCCESS " and move to CAL 6 automatically.
Note 2. If span calibration is low, the error message of Err 24 is showed.
Note 3. If span calibration is high, the error message of Err 25 is showed.
Note 4. If span calibration is low or high, adjust the resolution please

CAL 6

■ FUNCTION : Micro-Span Calibration

Key	Display	Description
▲: next menu ▼: previous menu ENTER, ↵: exit	5000 kg 6. Adjust	The VFD shows the current weight cause Calibration is finished. The lamp of VFD indicates internal bias.

▶ Note 1. The bias is 0 when the lamp of VFD is in the middle such as above. The value of bias is -3, -2, -1, 0, 1, 2, 3 from the left-hand edge.

CAL 7

■ FUNCTION : Change the password to enter in calibration mode.

Key	Display	Description
▲: next menu ▼: previous menu ENTER, ↵: exit 0 - 9 : Input the password	FACtOr	Please input the password which you want to.

▶Note 1. The user does not have to use because this menu is used to set the calibration when the balance weight is not here.

ERROR MESSAGE & TROUBLE SHOOTING

In Weighing Mode

Err 01

■ Reason : Initialization of the scale is fail because the value of A/D conversion is unstable.

■ Trouble shooting : Power on after setting the NT-600 and platform without level and vibration.

Err 02

■ Reason : Load cell connection failure or error in A/D conversion part.

■ Trouble shooting : Check connection between connector of Load Cell and Main Body

Err 03

■ Reason : Data in the internal RAM is erased because of any electric shock.

■ Trouble shooting : Set the value which is needed to input in SET Mode again.

Err 04

■ Reason : Internal clock is fail.

■ Trouble shooting : Set the date and time in the SET Mode again. And check the date and time on the VFD

Err 05

■ Reason : The time is over. (When input the code number, weight of an empty vehicle, car number.) - about 4 seconds When the password which is need to enter the SET mode was wrong

■ Trouble shooting : Return to the normal weighing mode automatically.

Err 06

■ Reason : The connection of printer is fail

■ Trouble shooting : Check the connection between printer controller and mechanism.

Err 07

■ Reason : The number of product is over the range (1~999)

■ Trouble shooting : The number of product must be between 1 and 999. After inputting numerals of this range, press CODE1 or CODE2 or CODE3 or CODE4.

Err 08

■ Reason : Zero and Tare key is set not to be operated on the unstable state in the SET Mode

■ Trouble shooting : Set the value of Zero and Tare key in F13 to be operated on the unstable state again.

Err 09

■ Reason : The current weight is out of ZERO range.

■ Trouble shooting : Set the range of operating with ZERO Key within the 2% or 10% of maximum capacity.

Err 10

■ Reason : The weight of an empty vehicle is over the maximum capacity.

■ Trouble shooting : Set the weight of tare to be smaller than maximum capacity. Or set the maximum capacity to be bigger than tare and then do the calibration mode with the balance weight again.

Err 11

■ Reason : The weight of an empty vehicle is out of decimal point range.

■ Trouble shooting : When you input the weight of tare with numeral and '. ' key, input the value within the range.

Err 13

■ Reason : Zero value exceed the initial zero range.

■ Trouble shooting : Remove a weight from the platter and turn on power. Change the load cell, if the load cell is out of order.

Err 14

■ Reason : The length of code name is over the range.

■ Trouble shooting : The length of CODE 1 name is below 11 characters.
The length of CODE 2 name is below 11 characters.
The length of CODE 3 name is below 11 characters.
The length of CODE 4 name is below 11 characters.

Over

■ Reason : Too heavy object is put on platform so that it may exceed the maximum capacity.

■ Trouble shooting : Never put the weight exceeding the maximum capacity. If the load cell is damaged, replace the load cell.

In Calibration Mode

Err 21

■ Reason : Resolution is over the limit. (1/10,000)

■ Trouble shooting : Lower the resolution in one of the below ways. Resolution = Minimum Division / Maximum Capacity Modify
Maximum Capacity in CAL 1 and Minimum Division in CAL 2 of Calibration Menu.
Adjust the resolution below 1/10,000.

Err 22

■ Reason : The weight for span calibration is set to under 10% of Maximum Capacity

■ Trouble shooting : The weight for span calibration should be set to over 10% of the Maximum Capacity (Check it in CAL 1)

Err 23

■ Reason : The weight for span calibration is set over 100 % of the Maximum Capacity.

■ Trouble shooting : The weight for span calibration should be set to under 100 % of the Maximum Capacity (Check it in CAL 1)

Err 24

■ Reason : The value of Span is too low

■ Trouble shooting : Adjust and increase resolution. . It is progressed automatically. So User does from the CAL 4 (Zero Calibration) again.

Err 25

■ Reason : The value of Span is high or low.

■ Trouble shooting : Adjust resolution. It is progressed automatically. So User does from the CAL 4 (Zero Calibration) again.

Err 26

■ Reason : The value of Zero is too high.

■ Trouble shooting : First, check the platform is empty. Even though the platform is unload state, if this message is displayed, Please contact the A/S center.

Err 27

■ Reason : The value of Zero is too low.

■ Trouble shooting : First, check the platform is empty. Even though the platform is unload state, if this message is displayed, Please contact the A/S center.

Err 28

■ Reason: The weight is unstable

■ Trouble shooting : Make sure that the load cell connector is properly installed.

Test Mode

Err 41

■ Reason : The SRAM in the internal memory is fail.

■ Trouble shooting : Please contact the A/S center.

In Set Mode

Err 51

■ Reason : The time which was input is wrong. For example, hour(26) or minute(63)

■ Trouble shooting : Input the time rightly in the SET Mode again.

Err 52

■ Reason : The date which was input is wrong. For example, month (13) or day(32)

■ Trouble shooting : Input the date rightly in the SET Mode again.

OPTIONS

■ 1. RS-422/485
When is it used?
: It is used for wireless data transfer.

■ 2. Large External Display
When is it used?
: It is used to look at the weight in outside.

* The specification could be different without notification due to product development.

MEMO

MEMO