

CI200 Series

Service Manual

LAST Rev. NO :

LAST Rev. Date : 2010. 03. 22

Table of Contents

1. Proper Operation.....	<u>3</u>
1.1 Warning.....	<u>3</u>
1.2 Attention.....	<u>4</u>
2. Classification.....	<u>5</u>
2.1 Display	<u>5</u>
2.2 Key Fubction.....	<u>7</u>
3. Weighing Mode.....	<u>8</u>
3.1 Led Type.....	<u>8</u>
3.2 Lcd Type.....	<u>10</u>
4. System Mode.....	<u>12</u>
5. Set Mode.....	<u>19</u>
6. Test Mode	<u>35</u>
7. Weight Setting (Calibration) Mode.....	<u>38</u>
8. Servicing & Parts Replacement Mode.....	<u>44</u>
9. Option Installing Mode.....	<u>45</u>
10. Update Mode.....	<u>46</u>
11. Exploded Mode	<u>47</u>
12. Revision	<u>60</u>
13. Schemetic.....	<u>61</u>

1. Proper Operation / Introduction

PRECAUTIONS

Warning

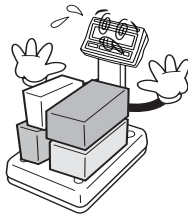
Precautions when installing the scale. To ensure that you get the most from your scale, please follow these instruction.

Do not disassemble the scale.

When any damage or defect occurs, contact your CAS authorized dealer immediately for proper repair.



Do not overload beyond the maximum weight limit.



Scale must be grounded to minimize electricity static.

This will minimize defect or electric shock.

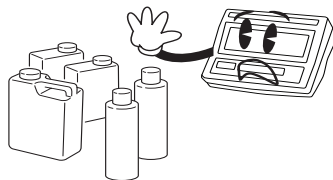


Do not pull the plug by its cord when unplugging.

Damaged cord could cause electric shock or fire.



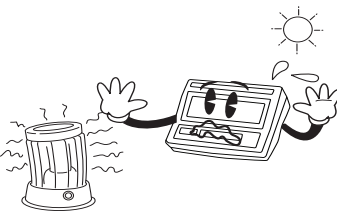
To prevent from fire occurring, Do not place or use the scale near flammable or corrosive gas.



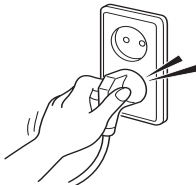
To reduce electric shock or incorrect reading, Do not spill water on the scale or place it in humid condition.



Avoid placing the scale near heater or in direct sunlight.

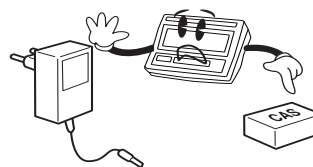


Insert plug firmly to wall outlet to prevent electric shock.



Use proper Adapter.

Incorrect adapter could damage the scale.



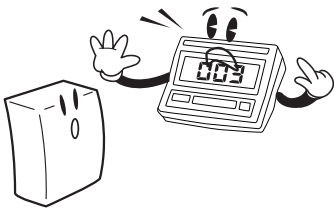
Do not step up on the scale with wet feet. Platter becomes slippery. Humid condition may cause incorrect reading.



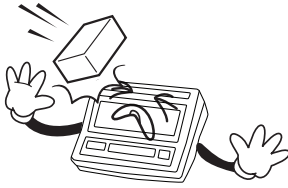
Attention

Make sure to plug your scal into the proper power outlet. For maximum performance, plug into a power outlet 30 minutes before the usage for warm up.

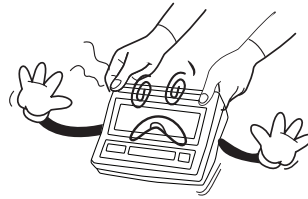
For consistent and accurate reading, maintain periodical check by your CAS authorized dealer.



Avoid sudden shock to the scale.



Grab on the bottom of the scale when moving.



Keep the scale away from other electromagnetic generating devices.

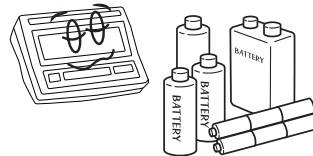
This may interfere with accurate reading.



Place the scale on firm and temperature consistent environment.



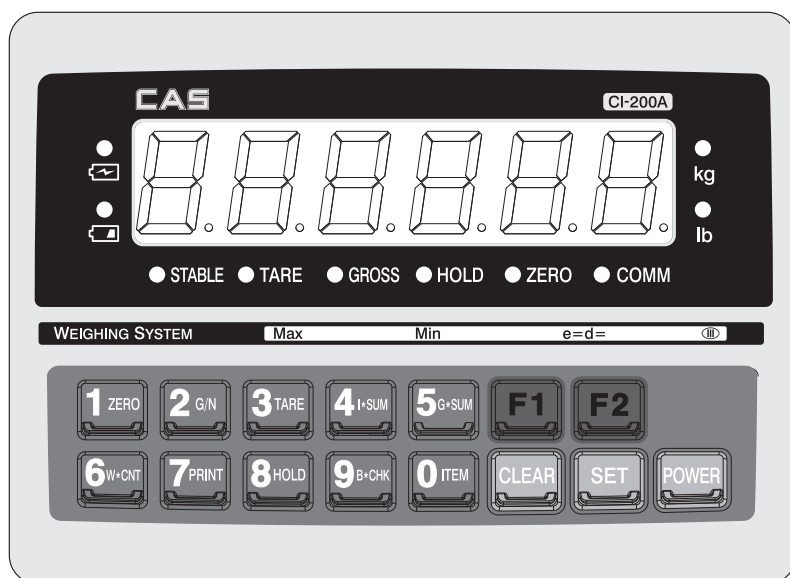
Take the battery out when scale is not in use for long time. Leakage from the batteries is hazardous.



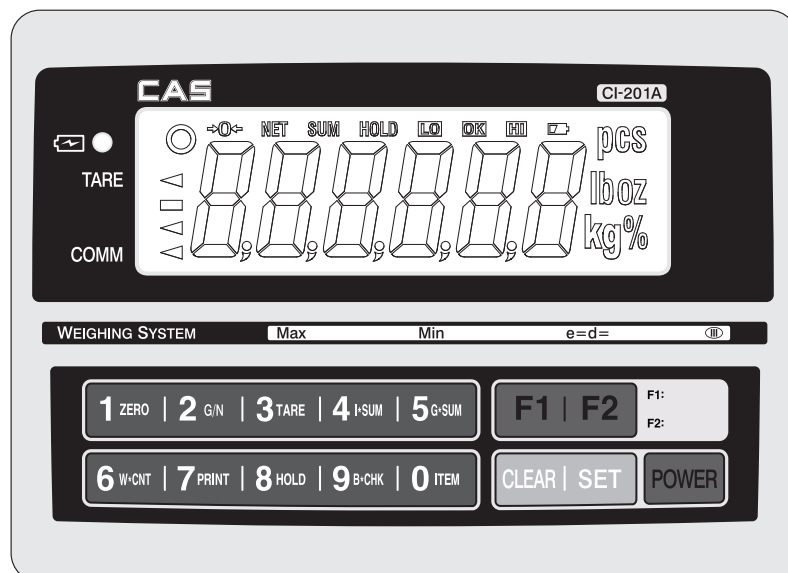
2. Classification

DISPLAY AND KEYBOARD

■ CI200-A(LED)

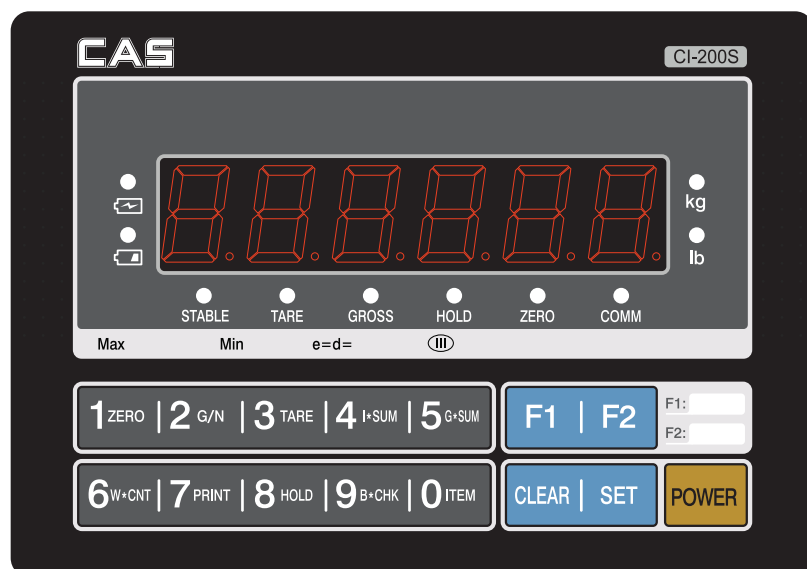


■ CI201-A(LCD)

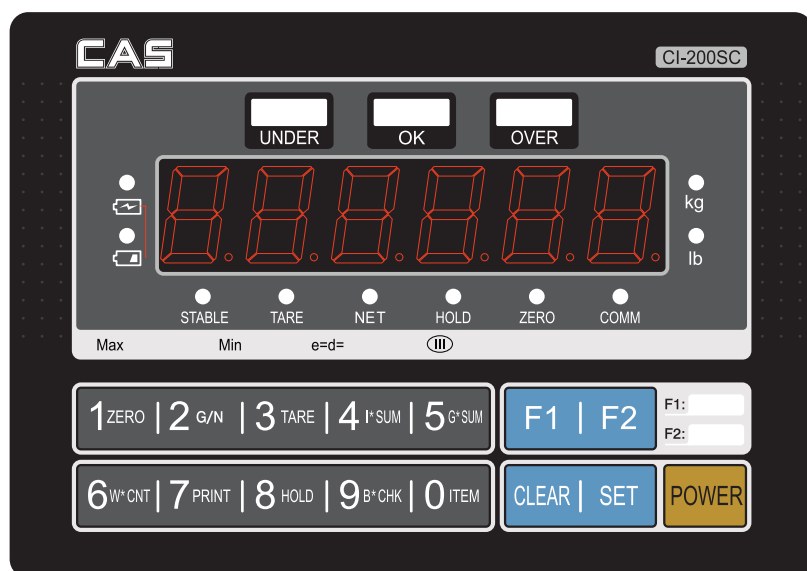


Service Manual – CI200 REV NO :

■ CI200-S



■ CI200-SC



Service Manual – CI200 REV NO :

■ KEY FUNCTION

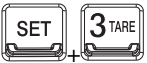
Function Key

	* Some functions can be defined to the needs. (The function set at F17 in the Set Mode will be operated.)
	* Some functions can be defined to the needs. (The function set at F18 in the Set Mode will be operated.)

Number Key

	* It enters 1 in the input mode. * It sets the weight display near zero point to 0. (A range of 2%, 5%, 10%, 20% and 100% can be selected.) * Long press to enter the test mode.
	* It enters 2 in the input mode. * Each press after setting up the tare displays the gross weight and the net weight in turn. (The displayed weight is the net weight when the net weight lamp is one, but the displayed weight is the gross weight when the net weight lamp is off.) * Long press to enter the setup mode.
	* It enters 3 in the input mode. * Use it to weigh with the tare. * The current weight is memorized as the tare by pressing the key. * Press the key when the load tray is empty to release the tare. * Long press to enter the system selection mode.(CI-201A Only)
	* It enters 4 in the input mode. * Use it to check the subtotal (partial summation). * Long press to enter the system weight setup mode. (CI-201A Only)
	* It enters 5 in the input mode. * Use it to check the grand total (entire summation).
	* It enters 6 in the input mode. * Use it to check the weighing count.
	* It enters 7 in the input mode. * Use it for the manual print. (manual print key) (Print format can be changed in the Set Mode.)
	* It enters 8 in the input mode. * Use it to fix the shaking weight.
	* It enters 9 in the input mode. * Use it to check the remaining capacity of battery.
	* Use it to correct any wrong input while entering data. * Use it to enter a decimal point (.) in the weight setup mode and weighing mode.
	* It enters 0 in the input mode. * Use it to register an item number. (0 ~ 19)
	* Use it to save the current status and exit from the weight setup mode, Set Mode and test mode. * Use it to check the current weight value in PCS and percent mode. (CI-201A Only)

Double Key

	* Use it to print the subtotal.
	* Use it to print the grand total.
	* Use it for the tare key. * If the tare is known, enter it using the numeric keys. (If the remaining value occurs when the input value is divided into the minimum unit, the value is rounded and entered.)

Service Manual – CI200 REV NO :

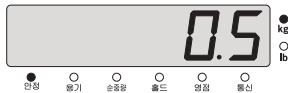
The key tare function cannot be used during the PCS and percent functioning.

3. Weighing Mode

3-1. LED TYPE

(1). Zeroing Function (used when the zero point changes)

■ Range of zero point: within a range set in F13



Zero changed.



Press Zero Key to set the zero lamp on and 0.

(2). Tare Function (used for weighing with a container)

■ Maximum tare set range: maximum weight

* Caution: the weight including the tare cannot exceed the maximum weight.



Put a container on the load tray.
(Container weight: 10kg)



Press the tare key.
(Tare is saved.)



Put an object on the load tray.
(Net weight: 20kg)

■ If you want to know the total weight



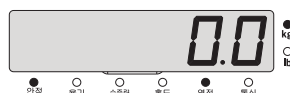
Press the 'total * net weight' key (the value of object's weight + tare is displayed.)

■ If you want to know the net weight



Press the 'total * net weight' key (the value of object's weight is displayed.)
Remove the container and object from the load tray to display the saved tare.

■ If the tare is removed



Remove the container and object from the load tray, if the saved tare is only displayed (picture on the left).
Then press the tare key (picture on the right)

Service Manual – CI200 REV NO :

(3). Hold Function (used for weighing moving objects)

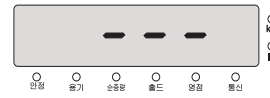
■ Ordinary Hold Function (hold function is performed when the hold key is pressed.)



Put an object on the load tray.



Press the hold key. Hold message is displayed for a second.



The hold weight is calculated for about 3~5 seconds.



The hold weight is displayed.

It returns to the normal status and the hold lamp is turned off if you empty the load tray or press the hold key to release the held weight value.

■ Automatic hold function (the hold function is performed by automatically calculating the maximum weight of moving objects.)



Empty the load tray.



The weight on the load tray is displayed.



The maximum value is displayed with 'HOLD'.

■ It returns to the normal status and the hold lamp is turned off if you empty the load tray or press the hold key to release the held weight value.

※ Note. The hold function carries out operations according to the set value of F10.

2. LCD TYPE

(1). Zeroing Function (used when the zero point changes)

- Range of zero point: within a range set in F13



Zero changed..



Press Zero Key to set the zero lamp on and 0.

(2). Tare Function (used for weighing with a container)

- Maximum tare set range: maximum weight

* Caution: the weight including the tare cannot exceed the maximum weight.



Put a container on the load tray.
(Container weight: 10kg)



Press the tare key.
(Tare is saved.)



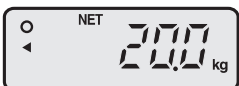
Put an object on the load tray.
(Net weight: 20kg)

- If you want to know the total weight



Press the 'total * net weight' key (the value of object's weight + tare is displayed.)

- If you want to know the net weight;



Press the 'total * net weight' key (the value of object's weight is displayed.)
Remove the container and object from the load tray to display the saved tare.

- If the tare is removed



Remove the container and object from the load tray, if the saved tare is only displayed (picture on the left).
and press the tare key (picture on the right)

(3). Hold Function (used for weighing moving objects)

■ Ordinary Hold Function (hold function is performed when the hold key is pressed.)



Put an object on the load tray.



Put an object on the load tray.



The hold weight is calculated for about 3~5 seconds



The hold weight is displayed.
It returns to the normal status and the hold lamp is turned off if you empty the load tray or press the hold key to release the held weight value.

■ Automatic hold function (the hold function is performed by automatically calculating the maximum weight of moving objects.)



Empty the load tray



The weight on the load tray is displayed.



The maximum value is displayed with 'HOLD'

■ It returns to the normal status and the hold lamp is turned off if you empty the load tray or press the hold key to release the held weight value.

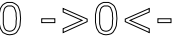
※ Note. The hold function carries out operations according to the set value of F10.

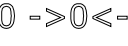
Service Manual – CI200 REV NO :

4. System Mode (201_LCD Only))

4-1. How to Enter the System Mode

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key for about 3 seconds in the weighing mode.	Empty	
2	Screen display: “1. PCS” characters are blinking after “SYSTEM” is displayed.		
3	If  key is pressed, “1. PCS” characters are blinking. If  key is pressed, “2. PER” characters are blinking. If  key is pressed, “3. WGT” characters are blinking.		Select the mode to which you want to move.
4	If  key is pressed, the selected mode is set.		

Weighing Mode (I)	
Initial Screen	Descriptions
 0.000kg	Weighing Mode

Counting Mode (II)	
Initial Screen	Descriptions
 0 PCS	Counting Mode

Service Manual – CI200 REV NO :

퍼센트 모드 (III)	
Initial Screen	Descriptions
0 ->0<- 0.0%	Percent Mode

Service Manual – CI200 REV NO :

4-2. PCS MODE

4-2-1. PCS MODE Sample Input Method (201_LCD Only)

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key for about 3 seconds in the PCS Mode.	Empty	
2	Screen display: “1.SAMPL” characters are blinking.		
3	If  key is pressed, “1. SAMPL” characters are blinking. If  key is pressed, “2. WEIGH” characters are blinking.		Select the input method as desired.
4	Press  +  keys.		
5	Screen display: A/D value is displayed after “SAMPLE” -> “LoAd” is shown.(Wait until the weight is stable.)	Sample	Put samples on the load tray
6	Press  key	Sample	Save sample weight
7	Screen display: “SUCCE” -> “NUMBER” is displayed.	Sample	
8	Enter the number of samples using  ~  keys, and then press  key. (Ex) If 10kg (sample) and 10 pieces, then the unit weight becomes 1kg.	Sample	
9	Screen display: It moves to PCS Mode after displaying “End”.	Sample	

Note 1. The current weight is displayed when  key is pressed during operating “1. PCS MODE”.

Note 2. If the value of 1 PCS is smaller than 0.7 divisions of maximum resolution capacity when the number of samples is entered, Err-21 is displayed.

4-2-2. PCS Mode Direct Input Method (201_LCD Only)

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key for about 3 seconds in the PCS Mode.	Empty	
2	Screen display: “1.SAMPL” characters are blinking.		
3	If  key is pressed, “1. SAMPL” characters are blinking. If  key is pressed, “2. WEIGH” characters are blinking.		Select the input method as desired.
4	Press  +  keys.		
5	Screen display: After “WEIGHT” is displayed, “0.000 KG” is displayed.		Weight input mode
6	Enter the weight of PCS using  ~  keys, and then press  key.		Save sample weight
7	Screen display: It moves to PCS Mode after displaying “End”.		

Service Manual – **CI200 REV NO :**



Note 1. If  key is pressed during operations in the PCS MODE, it shows the current weight for 3 seconds and then returns to the PCS MODE.

Note 2. If the value of Piece Weight to a function key (F17 or F18), you may confirm the unit weight of 1 PCS.

Service Manual – CI200 REV NO :

4-3. PERCENT MODE

4-3-1. Percent Mode Sample Input Method (201_LCD Only)

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key for about 3 seconds in the Percent Mode.	Empty	
2	Screen display: “1.SAMPL” characters are blinking.		
3	If  key is pressed, “1. SAMPL” characters are blinking. If  key is pressed, “2. WEIGH” characters are blinking.		Select the input method as desired.
4	Press  +  keys.		
5	Screen display: A/D value is displayed after “SAMPLE” -> “LoAd” is shown. (Wait until the weight is stable.)	Sample	Put samples on the load tray
6	Press  key	Sample	Save sample weight
7	Screen display: “SUCCE” -> “NUMBER” is displayed.	Sample	
8	Enter the number of samples using  ~  keys, and then press  key. (Ex) If 10kg (sample) and 10 pieces, then the unit weight becomes 1kg.	Sample	
9	Screen display: It moves to Percent Mode after displaying “End”.	Sample	

Note 1. The current weight is displayed when  key is pressed during operating in the Percent Mode.

Note 2. If the value of 1 PCS is smaller than 0.7 divisions of maximum resolution capacity when the number of samples is entered, Err-21 is displayed.

4-3-2. Percent Mode Direct Input Method (201_LCD Only)

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key for about 3 seconds in the PCS Mode.	Empty	
2	Screen display: “1.SAMPL” characters are blinking.		
3	If  key is pressed, “1. SAMPL” characters are blinking. If  key is pressed, “2. WEIGH” characters are blinking.		Select the input method as desired.
4	Press  +  keys.		
5	Screen display: After “WEIGHT” is displayed, “0.000 KG” is displayed.		Weight input mode
6	Enter the weight of 100% using  ~  keys, and then press  key.		Save sample weight
7	Screen display: It moves to Percent Mode after displaying “End”.		

Service Manual – **CI200 REV NO :**



Note 1. If  key is pressed during operations in the Percent MODE, it shows the current weight for 3 seconds and then returns to the PCS Mode.

Note 2. If the value of Piece Weight to a function key (F17 or F18), you may confirm the unit weight of 1 PCS.

4-4. General Function Descriptions

4-4-1. Item Number (Unique Number of Weighing Item: ID) Input Method

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key Screen display: "ID = XX"		"Meaning the value of the current item number"
2	Enter a desired ID using number keys		Input ID(=10)
3	Press  key to save and exit	Item	An item number is registered. The weight is displayed.

Note 1. Product ID has a range of 0 ~ 19.

4-4-2. Key Tare Input Method

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  +  keys	Empty	
2	Screen display: "t = 0.000"	Empty	"Meaning the value of the current item number"
3	Enter a desired ID using number keys		
7	Press  key to save and exit		

Note 1. If the remainder occurs when the input value is divided by the minimum unit, it is rounded and entered.

4-4-3. How to Check Subtotal, Total and Weighing Count

Key	Descriptions
	The current subtotal (partial summation) is displayed.
	The current total (entire summation) is displayed.
 + 	The current subtotal (partial summation) is printed. Subtotal is erased after it is printed.
 + 	The current total (entire summation) is printed. Total is erased after it is printed.
	The current weighing count is displayed.

Note 1. While printing subtotal and total, an error (Err 12) is displayed with no connection to printer, and total and weighing count are erased.
1% unit of weight can be confirmed.

Service Manual – CI200 REV NO :

4-5. How to Enter High Limit (201_LCD , SC Only)

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key. Screen display: "H 0.000"		It means the current high limit.
2	Enter a desired value using  ~  keys.		Change the high limit
3	Press  key to save and exit.	Item	The weight is displayed after the high limit is saved.

Note 1. If the remainder occurs when the input value is divided into the minimum unit, the value is rounded and entered.

4-6. How to Enter Low Limit (201_LCD , SC Only)

Step	Display Screen and Key Input	Load Tray	Descriptions
1	Press  key. Screen display: "L 0.000"		It means the current low limit.
2	Enter a desired value using  ~  keys.		Change the low limit.
3	Press  key to save and exit.	Item	The weight is displayed after the low limit is saved.

Note 1. If the remainder occurs when the input value is divided into the minimum unit, the value is rounded and entered.

Note 2. If the key code value of F17 and 18 was changed from the initial value, the key code should be set again.

* F1 key's basic value is set to the high limit.

* F2 key's basic value is set to the low limit.

* If the weight is greater than the high limit, the "HI" lamp appears on the screen.

If the weight is smaller than the low limit, the "LO" lamp appears on the screen.

If the weight is smaller than the low limit, the "LO" lamp appears on the screen.

4-7. Charge and Use Time

- Charge the battery sufficiently when you use the product after storing it for a long time.
- During the use of device,  sign is shown (LCD) or 'LOW BAT' sign (LED) on the upper right corner, and then the power is turned off after a specific time.
When the power supply of battery reaches 5.6V, the battery alert lamp is turned on. When it reaches 5.2V, the power is automatically turned off.
- When the battery alert lamp is turned on, charge the battery.

4-8. How to Use and Charge the Chargeable Battery

- When an adapter is connected, a red light in the power supply lamp and another red light in the charge lamp are turned on.
When the charging is completed, a green light in the charge lamp is turned on.
- The charging takes about 12 hours.
- The complete charge mark is turned on if an adaptor is connected with no battery.

4-9. Use Time of the Battery

	조건	사용시간
CI-200A CI-200S	-	About 30 hours
C-I201A(LCD)		About 26 hours
CI-200SC	Backlight OFF	About 180 hours
	Backlight ON	About 33 hours

※ Note. The time stated above is subject to change depending on the period of battery use and the number of batteries.

To use the battery for a longer time, adjust the automatic power switch function in F03 and the brightness of display in F25.

5. Set Mode

5-1. How to Enter the Set Mode

Turn on the power while pressing  key at the indicator front to start the Set Mode.

Or, Hold  key for about 3 seconds to move from other mode to the conversion mode.

After finishing the setup in the Set Mode, press  key for a long time

5-2. Descriptions on key operations in the Set Mode



: Use them to change the setup value.



: Save changes in the setup value and move to the higher menu



: Cancel the set value and move to the higher menu

Service Manual – CI200 REV NO :

5-3. Set Menu Descriptions (F00 ~ F99)

General Function		
F01	-	Date Change
F02	-	Time Change
F03	(00)	Auto Power Off
F04	(10)	A/D Converting Speed
F05	(10)	Digital Filter
F06	(00)	Vibration Filter
F07	(02)	Motion Detection Condition
F08	(02)	Automatic Zero Tracking Compensation
F09	(00)	Weight Backup
F10	(00)	Set Hold Type
F13	(10)	Set Zero Range
F14	(01)	ZERO, TARE Keys Availability
F16	(00)	Set the Front Key Input to be Allowed
F17	(00)	Set "F1" Key
F18	(00)	Set "F2" Key
F21	(10)	Set Initial Zero Range
F23	(09)	Set Excessive Weight Check
F24	(00)	Set Backlight Operational Condition (LCD)
F25	(03)	Set LED Brightness or Backlight Brightness

* Note. Number in () is the default at the factory shipment.

Service Manual – CI200 REV NO :

RS-232 Serial Communication Function		
F26	(00)	Device ID
F27	(00)	Parity Bit
F28	(04)	Baud Rate
F29	(00)	COM1 Usage
F30	(00)	COM1 Output Format
F31	(00)	COM1 - Output Mode
F32	(04)	COM2 Baud Rate
F33	(01)	COM2 Usage
F34	(00)	COM2 Output Format
F35	(00)	COM2 - Output Mode
Print Function		
F40	(02)	Set Printer in Use
F41	(00)	Set Print Format
F42	(00)	Automatic Print
F43	(01)	Print Line Feed
F44	-	User Print Message Input
F45	(01)	Print Output
F47	(01)	Data Initialization after Summation Print
F48	(01)	Print Item Number

Checker Function		
F50	(00)	Measurement Mode
F51	(00)	Checker Buzzer On/Off

Set Mode Initialization		
F90		Password Change
F99	-	Set the Set value of Set Mode to the Factory Default

* Note. Number in () is the default at the factory shipment.

Service Manual – CI200 REV NO :

5-4. General Function

F01

Function	Date Change	
Numeric key : assigning data	표시부	Meaning
	Display	January 10, 2002

F02

Function	Time Change	
Numeric key : assigning data	Display	Meaning
	11.30.10	11 o'clock 30 minutes and 10 seconds AM

F03

Function	Auto Power OFF	
Setting range (00 ~ 30)	Display	Meaning
	F03. 00	Not used.
	F03. 10	Automatic power off after 10 minutes in the waiting mode.
	F03. 30	Automatic power off after 30 minutes in the waiting mode.

Note 1. The power is automatically off if the defined time continues at the zero point after the automatic power off is set.

F04

Function	Setting A/D Converting Speed	
Setting range (00 ~ 99)	Display	Meaning
	F04. 10	10 rounds/second
	F04. 20	20 rounds/second
	F04. 80	80 rounds/second

F05

Function	Setting digital filter	
Setting range (00 ~ 50)	Display	Meaning
	F05. 10	Display of average for No. 10
	F05. 30	Display of average for No. 30
	F05. 50	Display of average for No. 50

Service Manual – CI200 REV NO :

F06

Function	Setting vibration filter	
Setting range (00 ~ 99)	Display	Meaning
	F06. 00	Vibration filter OFF
	F06. 10	Compensation for the vibration value of 5 divisions (0.5d * 10)
	F06. 99	Compensation for the vibration value of 49.5 divisions (0.5d * 99)

Note 1. Apply this function to a place with heavy vibrations.

(The display response speed becomes slower when the vibration filter is applied.)

Note 2. This function should be adjusted appropriately to the site while the speed of weight variations in F04 is being lowered little by little.

F07

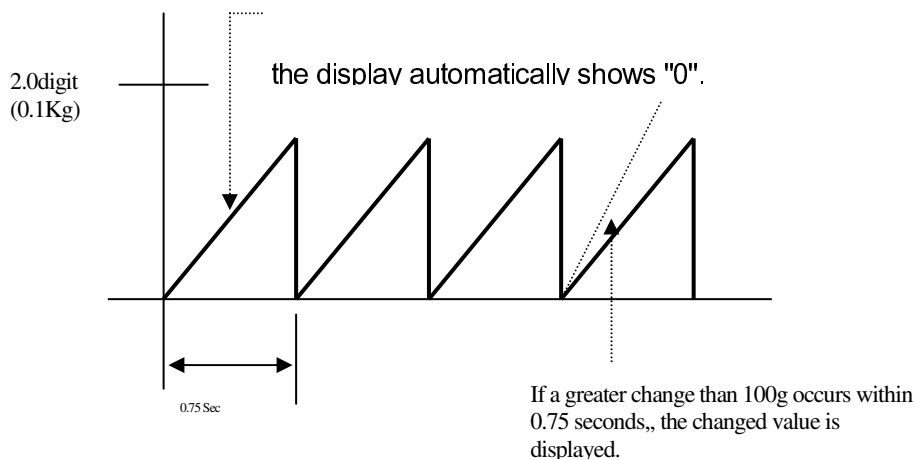
Function	Setting Motion Detection Condition	
Setting range (1 ~ 99)	Display	Meaning
	F07. 1	The 'Stable' lamp is lit if the weight changes within 0.5 division.
	F07. 2	The 'Stable' lamp is lit if the weight changes within 1 division.
	F07. 10	The 'Stable' lamp is lit if the weight changes within 5 division.

F08

Function	Setting Automatic Zero Tracking Compensation	
Setting range (0 ~ 9)	Display	Meaning
	F08. 0	Automatic zero function is not used.
	F08. 1	If it changes slowly to 0.5 divisions or less, it is compensated.
	F08. 2	If it changes slowly to 1.0 divisions or less, it is compensated.
	F08. 9	If it changes slowly to 4.5 divisions or less, it is compensated.

Note 1. This function compensates zero automatically if the weight at the zero point does not exceed the division in a certain range within a specific time.

Ex) If F08 is set to "4" when the maximum displayed division is 120.0kg and the value of a division is set to 0.05kg;



Service Manual – CI200 REV NO :

F09

Function	Weight Backup Function	
Setting range (0, 1)	Display	Meaning
	F09. 0	Weight backup is not used.
	F09. 1	Weight backup is used.

Note 1. As the backup state memorizes the initial status at zero for the weighing machine even during the blackout or when the power is turned off, the weight value is displayed if there is any weighing object in the weighing machine when the power is turned on.
If the weighing tray is empty, press the "ZERO" key to memorize the zero again.

F10

Function	Set Hold Type	
Setting range (0 ~ 3)	Display	Meaning
	F10. 0	Ordinary hold: calculating the average of weights for shaking objects
	F10. 1	Peak hold: calculating the maximum value for shaking objects
	F10. 2	Sampling hold: calculating the sampling value for shaking objects
	F10. 3	Automatic hold: automatically calculating the average weight of shaking objects

Note 1. If any load more than 'Over' is applied or at the zero, the hold is automatically released.

Note 2. Use automatic hold function, when you weight an animal or moving.

F13

Function	Set Zero Range	
Setting range (0~99)	Display	Meaning
	F13. 2	The 'Zero' Key is operated within 2% of the maximum weight.
	F13. 10	The 'Zero' Key is operated within 10% of the maximum weight.
	F13. 99	The 'Zero' Key is operated within 99% of the maximum weight.

Note. Be aware that the load cell can be damaged if you set the value to F13=10% or more.

F14

Function	ZERO and TARE Keys Availability	
Setting range (0, 1)	Display	Meaning
	F14. 0	Always operated.
	F14. 1	Operated when the weight is 'Stable'.

Service Manual – CI200 REV NO :

F16

Function	Set the front key input to be allowed.	
Setting range (0 ~ 1)	Display	Meaning
	F16. 0	The front keys are unlocked.
	F16. 1	The front keys are locked.

Note 1. If it is set to 1, some function keys among the front keys cannot be used.
(Print, Hold, Tare, Step, Subtotal, Grand total, Weighing count, Item number, Setup, etc)

F17

Function	Set the use of function key 1	
Setting range (0~15)	Display	Meaning
	F17. XX	Set function key 1 to the key in the code table.

Note 1. Set the desired functions using <Table 1. Function Key Code>.
(LCD product = "11" and LED product = "0" as the default at the product shipment)

F18

Function	Set the use of function key 2	
Setting range (0~15)	Display	Meaning
	F18. XX	Set function key 2 to the key in the code table.

Note 1. Set the desired functions using <Table 1. Function Key Code>.
(LCD product = "12" and LED product = "0" as the default at the product shipment)

Table 1> Function Key Code Table

Function Name	Key Code	Function Name	Key Code
Empty	00	Hold	08
Zero Point	01	Battery	09
Gross Weight * Net Weight	02	Item Number	10
Tare	03	High Limit (LCD, SC Only)	11
Subtotal	04	Low Limit(LCD, SC Only)	12
Grand Total	05	Tare Lease	13
Weighing Count	06	Piece Weight Value (LCD Only)	15
Print	07		

Service Manual – CI200 REV NO :

F21

Function	Set the initial zero range	
Setting range (02~20)	Display	Meaning
	F21. 02	Set the initial zero up to 2% of the maximum weight
	F21. 10	Set the initial zero up to 10% of the maximum weight
	F21. 20	Set the initial zero up to 20% of the maximum weight

Note 1. Please consult with an engineer because setting 10 or larger value might affect the load cell greatly.

F23

Function	Setting the range of check for the excessive weight (weighing unit)	
Setting range (00~99)	Display	Meaning
	F23 09	Excessive weight from the maximum weight + 9 divisions
	F23. 99	Excessive weight from the maximum weight + 99 divisions

F24(CI-200 LCD)

Function	Backlight Operation	
Setting range (0~5)	Display	Meaning
	F24 0	Backlight off
	F24 1	Backlight on when any key is operated.
	F24 2	Backlight on when the weight changes.
	F24 3	Backlight on when it is 'Stable' after the weight changes.
	F24 4	Backlight on when a key operates or the weight changes.
	F24 5	Backlight on all the time

Note. Although it is set to 5, press the power key shortly to turn off the backlight.

F25

Function	Set Backlight and LED Brightness	
Setting range (1~7)	Display	Meaning
	F25 1	Set 10% of brightness
	F25 2	Set 30% of brightness
	F25 3	Set 50% of brightness
	F25 4	Set 60% of brightness
	F25 5	Set 70% of brightness
	F25 6	Set 90% of brightness
	F25 7	Set 100% of brightness

Note 1. Any value out of the setting range, the brightness will be set to '3'.

5-5. RS-232 (Serial Communication) Function

F26

Function	Set Device ID	
Setting range (00 ~ 99)	Display	Meaning
	F26. 00	Device ID 00
	F26. 99	Device ID 99

Note 1. This function enables to use the unique indicator ID in the command mode.

Service Manual – CI200 REV NO :

F27

Function	Set Parity Bit – RS232C & PRT	
Setting range (0 ~ 2)	Display	Meaning
	F27. 0	Data bit 8, stop bit 1, parity bit: none
	F27. 1	Data bit 7, stop bit 1, parity bit: even number
	F27. 2	Data bit 7, stop bit 1, parity bit: odd number

Note 1. F26 and F27 apply commonly to 2 serial communications (RS232C and PRT).

Serial Communication COM1 Function

F28

Function	Set COM1 Baud Rate	
Setting range (0 ~ 8)	Display	Meaning
	F28. 0	600 bps
	F28. 1	1200 bps
	F28. 2	2400 bps
	F28. 3	4800 bps
	F28. 4	9600 bps
	F28. 5	19200 bps
	F28. 6	38400 bps
	F28. 7	57600 bps
	F28. 8	115200 bps

F29

Function	Set COM1 - Usage	
Setting range (0 ~ 1)	Display	Meaning
	F29 0	Connect to a printer
	F29 1	Connect to a computer or auxiliary display

* If F29: 0 and F33 : 0, "ERR-Set" is displayed with no print.

F30

Function	Set COM1 - Output Format	
Setting range (0 ~ 2)	Display	Meaning
	F30 0	22 bytes for CA
	F30 1	10 bytes for CA
	F30 2	18 bytes for AND

F31

Function	Set COM1 - Output Mode	
Setting range (0 ~ 4)	Display	Meaning
	F31 0	No data out
	F31 1	Transmission for both the stable and instable time (stream mode)
	F31 2	One time transmission after the weight is stabilized.
	F31 3	Transmission only if data is requested. * Data request signal: device ID (F26) _ 1 byte communication (Data on request: 1= 0x01, 10 = 0x0A)
	F31 4	Response to the data request - Command Mode

Set the value of F31 to '1' or more if the print mode is used.

Service Manual – CI200 REV NO :

Note 1. Command Mode Table

Data Request Signal of CI-200												Descriptions on Request Signal	CI-200 Output Signal
0	1	2	3	4	5	6	7	8	9	10	11		
D	dd		K	Z	CR	LF						Zero Point Key	Received Data Return
D	dd		K	T	CR	LF						Zero Point Key	Received Data Return
D	dd		K	G	CR	LF						Gross Weight Key	Received Data Return
D	dd		K	N	CR	LF						Net Weight Key	Received Data Return
D	dd		H	D	CR	LF						Hold Key	Received Data Return
D	dd		K	B	CR	LF						Print Key	Received Data Return
D	dd		K	C	CR	LF						Total Print Key	Received Data Return
D	dd		K	W	CR	LF						Weight Data Request Signal	Received Data Return
D	dd		I	D	0	0	0	0	0	CR	LF	Device Number	Received Data Return
D	dd		H	Y	0	0	0	0	0	CR	LF	Key Tare Value	Received Data Return
D	dd		H	I	0	0	0	0	0	CR	LF	High Limit(LCD Only)	Received Data Return
D	dd		H	L	0	0	0	0	0	CR	LF	Low Limit (LCD Only)	Received Data Return

Note 1. (D : 0x44, dd:00~99, K:0x4B , Z:0x5A , CR : 0x0D, LF: 0x0A)
 dd = Device Number (2byte), CR = 0x0D, LF: 0x0A
 Ex) If a device number is 10, dd becomes 0x31 and 0x30.

Ex) If you want to operate the zero point key when a device number is 11, the indicator operates zeroing if the hex code of “44 31 31 4B 5A 0D 0A” is sent.

Note 1. Command Mode Table

Command (ASCII Code)	Description	Status
HI	High Limit	LCD, SC Read / Write
LO	Low Limit	
KT	Key Tare Value	Read / Write
CO	Code	Read / Write
WT	Current Weight	Read
ZE	Operation with ZERO Key	Read
TR	Operation with TARE Key	Read
GN	Operation with Gross/Net Key	Read
ID	Device Number (ID) Change	Read
HD	Operation with HOLD Key	Read
PR	Operation with PRINT Key	Read
TP	Operation with Total Print Key	Read
PW	POWER OFF	Read

Service Manual – CI200 REV NO :

Read

1	2	3	4	5
Device ID	Command		CR	LF

Note 1. Device ID is hex value and Command is ASCII value.

[Ex] If Device ID is 13, a user wants to know the current weight value -> 0x0d
0x57 0x54 0x0d 0x0a

Write

1	2	3	4	5	6	7	8	9	10
Device ID	Command	DATA (Not include decimal point)						CR	LF

Format for Device ID Change

1	2	3	4	5	6
Device ID	Command	DATA	CR	LF	

Note 2. When you change code and device number, the data value is HEX 1byte.

Serial Communication COM2 Function

F32

Function	Set COM2 Baud Rate	
Setting range (0 ~ 8)	Display	Meaning
	F32 0	600 bps
	F32 1	1200 bps
	F32 2	2400 bps
	F32 3	4800 bps
	F32 4	9600 bps
	F32 5	19200 bps
	F32 6	38400 bps
	F32 7	57600 bps
	F32 8	115200 bps

F33

Function	Set COM2 - Usage	
Setting range (0 ~ 1)	Display	Meaning
	F33 0	Connect to a printer
	F33 1	Connect to a computer or auxiliary display

* If F29: 0 and F33 : 0, "ERR-Set" is displayed with no print.

* COM1 and COM2 cannot be used together as the printer function.

F34

Function	Set COM2 - Output Format	
Setting range (0 ~ 2)	Display	Meaning
	F34 0	22 bytes for CA
	F34 1	10 bytes for CA
	F34 2	18 bytes for AND

F35

Function	COM2 출력방식 설정 (COM2 - Output mode)	
Setting range (0 ~ 2)	Display	Meaning
	F35 0	No data out

Service Manual – CI200 REV NO :

	F35 1	Transmission for both the stable and instable time (stream mode)
	F35 2	무게가 안정된 후 1 회 송신

Set the value of F35 to '1' or more if the print mode is used.

5-6. Print Function

F40

Function	Set a printer to use	
Setting range (0 ~ 2)	Display	Meaning
	F40 0	Not used.
	F40 1	DLP (Label Printer)
	F40 2	DEP (Roll Printer)

F41

Function	Set print format	
Setting range (0 ~ 2)	Display	Meaning
	F41 0	Set print format 0
	F41 1	Set print format 1
	F41 2	Set print format 2

F42

Function	Set automatic print	
Setting range (0, 1)	Display	Meaning
	F42 0	Manual print
	F42 1	Automatic print

Note 1. If the automatic print is set, print can be done with no press of print key when the weight is stable.

F43

Function	Set Line Feed	
Setting range (0 ~ 9)	Display	Meaning
	F43 1	1 Line feed
	F43 9	9 Line feed

Service Manual – CI200 REV NO :

【 Print Format 0 】

Date, Time, Weighing No. (Item No.), Net Weight

2002. 1. 1	12:30
0001 ID_01:	50.0 kg
0002 ID_01:	100.0 kg
0003 ID_01:	200.5 kg

【Print Format 1 】

Date, Time, Weighing No. (Item No.), Net Weight

2002. 1. 1	12:30
0001 ID_01:	50.0 kg
2002. 1. 1	12:40
0002 ID_01:	50.0 kg
2002. 1. 1	12:50
0003 ID_01:	50.0 kg

【 Print Format 2 】

Date, Time, Weighing No. (Item No.), Net Weight

2002. 1. 112:30	
No.0001	ID_01
Gross :	1000.0 kg
Tare :	0.0
kg	
Net :	1000.0 kg
2002. 1. 112:40	
No.0002	

Note 1. If the power is turned off and then on, the number and total are initialized to 0001.

Note 2. The output of item number (ID_XX) depends on the setting in “F48”.

Note 3. The possible number for print is a range of 1~9999.

【 Total Print Format 】

Total Format	

ID_01 TOTAL	

2004.06.24	14:32:54
COUNT	22
WEIGHT	4500.05kg

GRAND TOTAL	

2004.06.24	14:32:58
COUNT	123
WEIGHT	12500.10kg

Note 1. When a label printer (DLP-50) is used, the subtotal and grand total functions are not supported and Err-12 is displayed.

Note 2. After summation, data are maintained or initialized depending on the set value in F47.

Service Manual – CI200 REV NO :

☐ CAS DLP Protocol

Variable	Descriptions
V00	Gross Weight (8 bytes)
V01	Tare (8 bytes)
V02	Net Weight (8 bytes)
V03	Barcode (Net Weight) (8 bytes)
V04	Count in the Count Mode (8 bytes)
V05	Percent in the Percent Mode (8 bytes)

The weight, count and percent cannot be printed at the same time.
Values that can be accurately printed are those for [weight, count and percent].

☐ User's Output Message Protocol

Command (ASCII code)	Descriptions	Status
UM	User output message	Write

The maximum length is 40 bytes. 0xFF should be put in the last byte.
20 bytes are printed in a line and the message starts from the upper left corner.

F44

Function	Enter the user output message	
Set Range (32 ~ 255)	Display	Meaning
	12 - 065	Designate a character "A" equivalent to ASCII code 65 in the 12th data
	00 - 032	To print out the added contents, designate ASCII code 32 to 0th data.
	18 - 255	The end has to be meant by designating ASCII code 255 next to the last data.

 ~  : set number,  : coordinate increase,  : end entry

(If a coordinate increase is done when the input range exceed a range of 32 ~ 255, it will be cleared with "255")

Note 1. This function adds something to write down on the print format.
(Ex: company name, Phone number)

Note 2. Coordinates that can be designated have a range from 0 to 71, of which 0th data designates whether or not to print the added contents (032: printed, others: not printed). Accordingly, the actually printed contents will include contents from 1st data to the part right before the coordinate where data 255 is assigned.

Note 3. If you want to add the company name "CAS" to the existing print format, you might assign as follows;

P00-032 (ASCII code 32: data starts),
P01-067 (ASCII code 67: character C)
P02-065 (ASCII code 65: character A)
P03-083 (ASCII code 83: character S)
P04-255 (ASCII code 255: data ends)

Service Manual – CI200 REV NO :

F45

Function	Set print output	
Setting range (0, 1)	Display	Meaning
	F45 0	Print on both the stable and instable time
	F45 1	Print when the weight is stable.

F47

Function	Initialize data after the summation is printed.	
Setting range (0, 1)	Display	Meaning
	F45 0	Maintain the status
	F45 1	Initialize data after the summation is printed.

F48

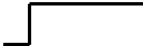
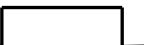
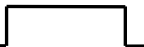
Function	Setting print item number	
설정범위 (0, 1)	Display	Meaning
	F45 0	Not printing item number on print output
	F45 1	Printing item number on print output

5-7. Checker Function

F50

Function	Select the weighing mode (LCD, SC Only)	
Setting range (0 ~ 2)	Display	Meaning
	F50 0	Not used.
	F50 1	Use as the checker mode
	F50 2	Use as the limit mode

[CHECKER MODE]

Weight Comm Signal	0 kg	(Low Limit) 50 kg	(High Limit) 100 kg	OUT PUT
LOW				1 0
HIGH				1 0
OK				1 0

Note 1. All the outputs are generated regardless of the stable status.

[LIMIT MODE]

Service Manual – CI200 REV NO :

Weight Comm Signal	0 kg	(Low Limit) 50 kg	(High Limit) 100 kg	OUT PUT
LOW				1 0
HIGH				1 0
OK				1 0

Note 1. OK signal is displayed only for the stable status.

F51

Function	Set Buzzer On/Off on the Checker Function (LCD, SC Only)	
Setting range (0, 1)	Display	Meaning
	F51 0	General functions are operated as the buzzer.
	F51 1	Buzzer ON when the checker function is OK.

5-8. Other Functions

F90

Function	Password Change	
Setting range (0, 1)	Display	Meaning
	F98. 0	Password not changed.
	F98. 1	Password Changed
Password Change	----	Enter the current password using numeric keys.
	Good	
	----	Enter a new password.
	PASS	
	----	Enter the new password again.
	Change	

F99

Function	Set default	
Setting range (0, 1)	Display	Meaning
	0	No initialization functions for indicator.
	1	Carry out the initialization functions for indicator.

Note 1. To set values to the same as the factory default for the indicator, press the setup key after setting F99 to 1.

6. Test Mode

6-1. How to Enter the Test Mode

Test mode starts when the power is turned on while pressing  key in the front of the indicator.
Press the number for the test menu as you wish.

To enter the weighing mode during test, press  key for a long time.

6-2. Test Menu (TEST 1 - TEST10)

Test 1: Key test

Test 2: Display test

Test 3: Load cell test and A/D conversion test

Test 4: RS-232 serial communication test (COM1, COM2)

Test 5: Printer test

Test 8: EEPROM test

Test 9: Battery test

Test 10: Clock (RTC) test

TEST 1

Function: Key test		
Used key	Display	Descriptions
 : Higher Menu	1 1	When you press any key to test, the number and code for the key are displayed on the screen.

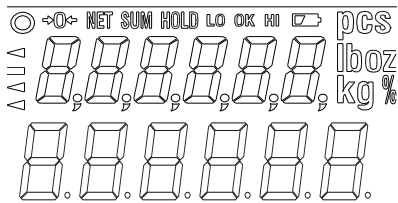
Service Manual – CI200 REV NO :

Other keys: Test

<Key List>

Key	Number	Code	Key	Number	Code	Key	Number	Code
	1	1		6	6		0	12
	2	0		7	9		70	99
	3	2		8	8		28	28
	4	5		9	10		29	29
	5	4		11	13			

TEST 2

Function: Display Screen Test		
Used key	Display	Descriptions
 : Higher Menu Other keys :Test		An LCD lamp is on. An LED lamp is on.

TEST 3

Function: Load cell test and A/D conversion test		
Used key	Display	Descriptions
 :Higher Menu	XXXXXX X.XX	The internal value for the current weight value is displayed. The output value of the current load cell is displayed in mv/V.

Service Manual – CI200 REV NO :



Note 1. If key is pressed, the internal value of the current weight and the output of load cell (mv/V) are displayed repeatedly.

Note 2. Check this number to see if it moves well, while loading or unloading a weight to the load tray. If the number is fixed or “0” is displayed, check the connection of load cell once again.

TEST 4

Function: Serial Communication Test		
Used key	Display	Descriptions
: Higher Menu Other keys: Test	Tx -- Rx ----- 05 --13	Status to wait for transmission or reception Transmission: 5, Reception: 13

Note 1. Run this test while the communication program in the computer (ex: Hyper Terminal) is executing after connecting a serial port in the computer to the serial port on the back.

Note 2. Send ‘1’ from the computer keyboard, check whether or not ‘1’ is received properly on the indicator’s screen, and then check whether or not ‘1’ is received properly on the computer after pressing ‘1’ from the indicator’s keyboard.

TEST 5

Function: Printer Test		
Used key	Display	Descriptions
: Higher Menu Other keys: Test	Print	No abnormality in the printer. Check the connection of the printer connector..

Note 1. Designate a printer used in the Set Mode (F30) in advance.

Note 2. If the printer connection and the designation are done correctly, the following details will be shown in the printer.

CAS Corporation
Come And Succeed
TEL 1577-5578
TEST OK

TEST 8(Except LCD)

Function: EEPROM Test		
Used key	Display	Descriptions
: Higher Menu	ROM OK	Displaying the status of EEPROM operation

TEST 9

Function: Battery test		
------------------------	--	--

Service Manual – CI200 REV NO :

Used key	Display	Descriptions
 : Higher Menu	b 6.15	Displaying the current voltage of battery (6.15V)

TEST 10

Function: RTC Test		
Used key	Display	Descriptions
 : Higher Menu	SEC XX	XX : Displaying the progress of seconds (SEC)

Note 1. If  key is pressed, the current second changes to '0'.

7. Weight Setup (Calibration) Mode

What is the weight setup?

It refers to the calibration to set the displayed value to the actual weight in displaying weights.

How to Access to the Weight Setup Mode

Turn on the power supply to access to the weight setup mode while pressing Cal S/W after removing the sealing. Press the setup key long in the weight setup mode to return to the weighing mode.

7-1. Weight Setup Menu (CAL1 – CAL9)

CAL 1: Maximum capacity

CAL 2: Minimum division and decimal position setting

CAL 3: Weight calibration

3-1. Setting the range of multiple calibration

3-2. Zero calibration

3-3. Setting weight

3-4. Span calibration

CAL 7: Gravity adjustment

CAL 8: Zero adjustment

CAL 9: Factor calibration

CAL 10: Setting dual range

CAL 1 (CAL 1 automatically starts.)

Function: Setting Maximum Value Range of set value: 1 ~ 99,999		
Used key	Display	Descriptions
 :Save and next Menu navigation	C= 10000	Max. value = 10000kg
  : Set value change	C= 10	Max. value = 10kg
 :End		

Note 1. It means the maximum weight value to be weighed by the scale.

CAL 2

Function: Minimum division and decimal position setting Range of set value: 0.001 ~ 9999		
Used key	Display	Descriptions
 :Save and next Menu navigation	d= 0.001	Minimum division 0.001 kg
  : Set value change	d= 0.01	Minimum division 0.01 kg
	d= 0.1	Minimum division 0.1 kg
	d= 1	Minimum division 1 kg
 : Set decimal point and end	d= 10	Minimum division 10 kg

Note 1. To end CAL2, press  key when a decimal point is set.

Note 2. The minimum division means the value of a division.

Note 3. Set the external resolution within 1/30,000 as the value by dividing the maximum weight by the minimum division.
If the external resolution is 1/30,000 or more, Err 21 is shown.

Note 4. The position of a decimal point is decided by the position of a decimal point for the minimum division set in CAL2.

Note 5. If the minimum division is set to any value out of 1, 2 and 5 unit, "ERR DIV" is shown.

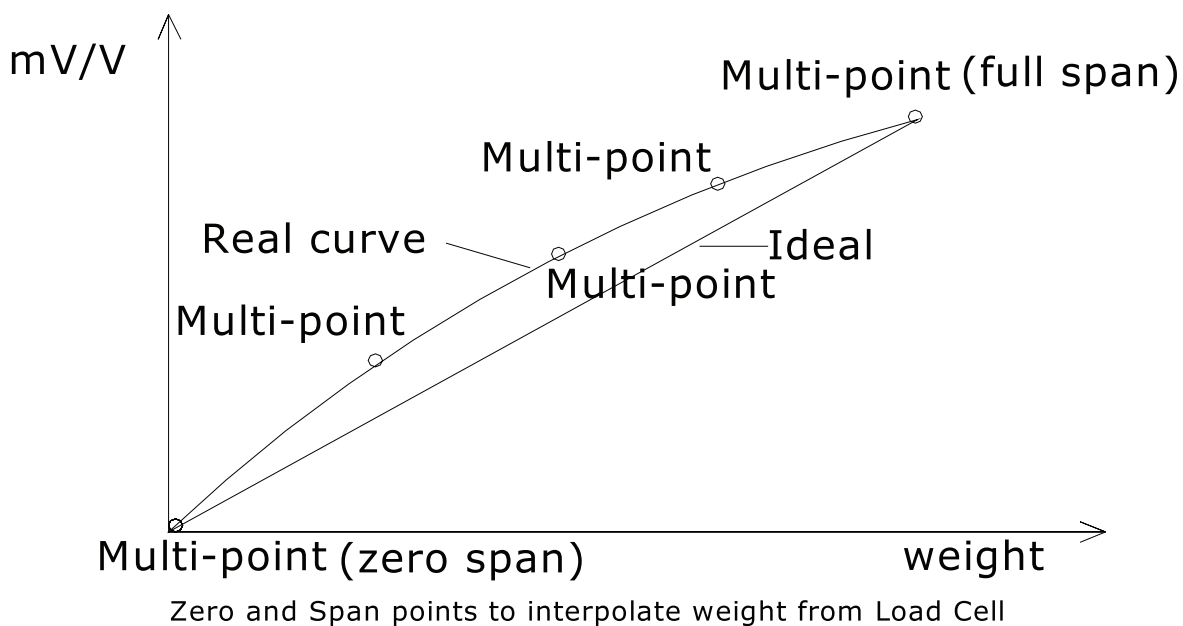
CAL3

CAL3-1

Function: Setting Multi Calibration Step Range of set value: 1 ~ 5		
Used key	Display	Descriptions
 :Save and next Menu navigate	STEP- 1	Setting multi calibration for step 1 (CAL3-3 and CAL 3-4 are carried out once)
 ~  : Set value change	STEP- 3	Setting multi calibration for step 3 (CAL3-3 and CAL 3-4 are carried out three times.)
 End	STEP- 5	Setting multi calibration for step 5 (CAL3-3 and CAL 3-4 are carried out five times.)

* If the actual curve of load cell is a straight line, set the range of weight setup to 1.

* A function to use, when the output of load cell is corrected by setting multiple points in some sections because the actual curve of load cell is not a straight line.



Service Manual – CI200 REV NO :

CAL 3-2

Function: Zero Calibration		
Used key	Display	Descriptions
 :Zeroing	UnLoAd	Empty the load tray and press the setup key.
 :End	1234	The current weight value is displayed. Confirm 'Stable' and press the setup key.
	- - -	Zeroing in progress...

Note 1. If zeroing finished with no error, it moves to Setting Weight (CAL 3-3) although no key is pressed.

Note 2. When zero point is too low, an error message "ERR27" is displayed.

Note 3. When zero point is too high, an error message "ERR26" is displayed.

CAL 3-3

Function: Setting Weight Range of set value: 1 ~ 99,999		
Used key	Display	Descriptions
 :Save and next Menu navigation	LOAD 1	It means the weight setting mode. (Number = multi calibration number)
 ~  : Set value change	W=100.00	100.00 (unit: Kg or Ton)
 :End	W= 0.10	0.10 (unit: Kg or Ton)

Note 1. Set the weight within a range of 10% ~ 100%.

Although 100% of the maximum weight is given as the initial value, enter the desired weight again if the weight is different from the initial value.

(If the weight exceeds the maximum weight, "ERR 23" is displayed.)

If the weight is 10% or less, "Err 20" is displayed and if the calibration is set to 10% or less, the accuracy is lowered.

CAL 3-4

Function: Weight Calibration)		
Used key	Display	Descriptions
 :Span adjustment	LoAd	Load the weight set in CAL 4-3 and press the setup key.
 :End	12345	The current weight value is displayed. Confirm 'Stable' and press the setup key.
	- - -	Span adjustment in progress...

Note 1. CAL 3-3 and CAL 3-4 are repeated as many as STEP is set in CAL 3-1.

At this time, the weight value should be set to a value greater than the previous one.

Note 2. Move to CAL-1 if the span adjustment is over with no error.

Note 3. When zero point is low, an error message "ERR24" is displayed.

Note 4. When zero point is high, an error message "ERR25" is displayed.

Note 5. After finishing calibration, press the setup key for 2 seconds or more to convert to the weighing mode.

Service Manual – CI200 REV NO :

CAL 7

Function: Gravity Adjustment		
Used key	Display	Descriptions
 :Save and next Menu navigation	G-CAL	It means you accessed to the menu for the gravity adjustment.
 ~  : Set value change	Gr-CAL 9.XXXX	Set the gravity for the production place.
 :End	Gr-SET 9.XXXX	Set the gravity for the place to use the product.

Note 1. If the gravity of the indicator production place is different from that of the place to use, the gravity adjustment can be done using this function.

CAL 8

Function: Zero adjustment - calibration when any zeroing error occurs.		
Used key	Display	Descriptions
 :Zeroing	2-CAL	Empty the load tray and press the setup key.
 :End	1234	The current weight value is displayed. Confirm 'Stable' and press the setup key.
	- - -	Zero adjustment in progress...

Note 1. Use this function when zeroing is not passed for any shock to the load cell.

The range of zero adjustment is 0 ~ 2mV/V.

Note 2. Move to CAL-1 if the zero adjustment is over with no error.

Note 3. When zero point is too low, an error message "Err27" is displayed.

Note 4. When zero point is too high, an error message "Err 26" is displayed.

CAL 9

Function: Factor Calibration		
Used key	Display	Descriptions
 :Save and next Menu navigation	NOT USE	This function cannot be used because of multi calibration.
 ~  : Set value change	FACTOR	It means you entered the factor correction mode.
 :End	12345	The current factor is displayed.

Note 1. As this is a menu to set the weight setup with no weight, general users have no need to use it.

Note 2. This can be used only when the range of multi calibration in CAL 4-1 is set to 1.

"NOT USE" is displayed when the range of CAL 4-1 is set to 2 or larger.

Note 3. Enter a password to enter the factor correction mode.

Service Manual – CI200 REV NO :

CAL 10

CAL 10-1

Function: Setting Dual Range Range of set value: 0 ~ 1		
Used key	Display	Descriptions
 :Save and next Menu navigation	DUAL- 0	Dual range function is not used.
 ~  : Set value change		
 :End	DUAL- 1	Dual range function is used.

Note 1. If the resolution capability is 1/10,000 or higher, "OVER" message is displayed and return to the CAL menu mode.

CAL 10-2

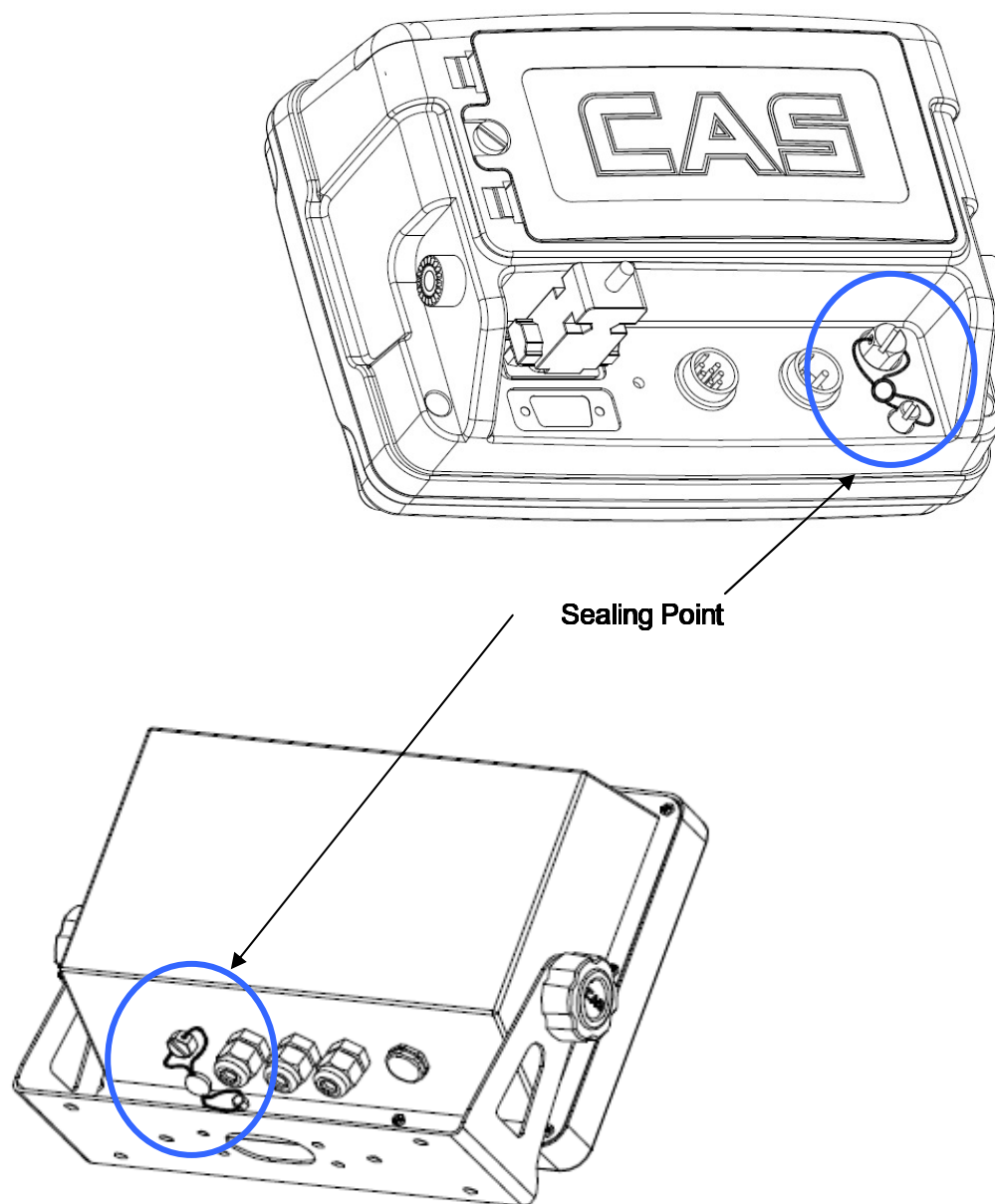
Function: Setting the applied section for the Dual Range Range of set value: 0 ~ 99999		
Used key	Display	Descriptions
 :Save and next Menu navigation	M 1000	Set the dual range under 1000kg
 ~  : Set value change	M 5000	Set the dual range under 5000kg
 :End	M 10000	Set the dual range under 10000kg

Note 1. If the input value is greater than the maximum value, "ERR SET" message is displayed and returned to the CAL menu mode.

7-2. How to Seal the Indicator (Sealing)

After the calibration mode is carried out, proceed to the following step.

1. Tighten the CAL switch bolt.
2. Connect the sealing wire as shown in the picture.
3. Press the sealing wax as shown in the picture.



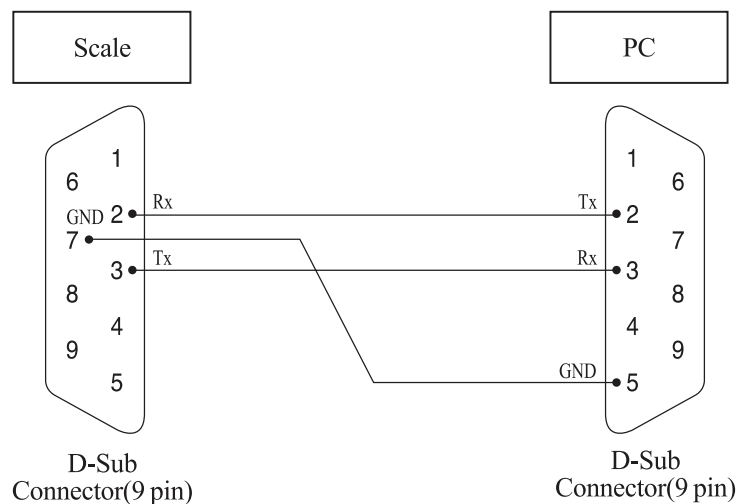
8. Servicing & Parts Replacement

8-1. Error Message from the Weight Setup Mode

Error	Cause	Solution
Err 20	The resolution was set in excess of the tolerance 1/10,000.	Lower the resolution. As the resolution = maximum tolerance / value of one division, adjust the resolution to 1/10,000 or less by correcting either the maximum allowable weight in CAL 1 or the value of one division in CAL3 in the weight setup mode.
Err 21	The resolution was set in excess of the tolerance 1/30,000.	Lower the resolution. As the resolution = maximum tolerance / value of one division, adjust the resolution to 1/30,000 or less by correcting either the maximum allowable weight in CAL 1 or the value of one division in CAL3 in the weight setup mode.
Err 22	The weight for the span adjustment was set to less than 10% of the maximum capacity.	Set the weight to 10% or more of the maximum capacity (set in CAL 1) from CAL 4 in the weight setup mode.
Err 23	The weight for the span adjustment was set to more than 100% of the maximum capacity.	Set the weight within the maximum capacity (set in CAL 1) from CAL 4 in the weight setup mode.
Err 24	Too low span.	Set the weight again by lowering the resolution as the setting of the current resolution is not possible because of either abnormality or lower output in the load cell. Two low weight for PCS and percent sample.
Err 25	Too high span.	There is either any abnormality or too high output in the load cell. Execute steps from the zeroing step in CAL 4 in the weight set up again. Two high weight for PCS and percent sample.
Err 26	Too high zero point.	Check whether or not the load tray is empty. Retry the weight setup after check at the test mode 3.
Err 27	Too low zero point.	Set the weight setting again after confirming what force is given to the load tray of the scale in the test mode 3.
Err 28	Weight is shaking.	Check the connection of the load cell connector.

9. Options Installing

SERIAL INTERFACE

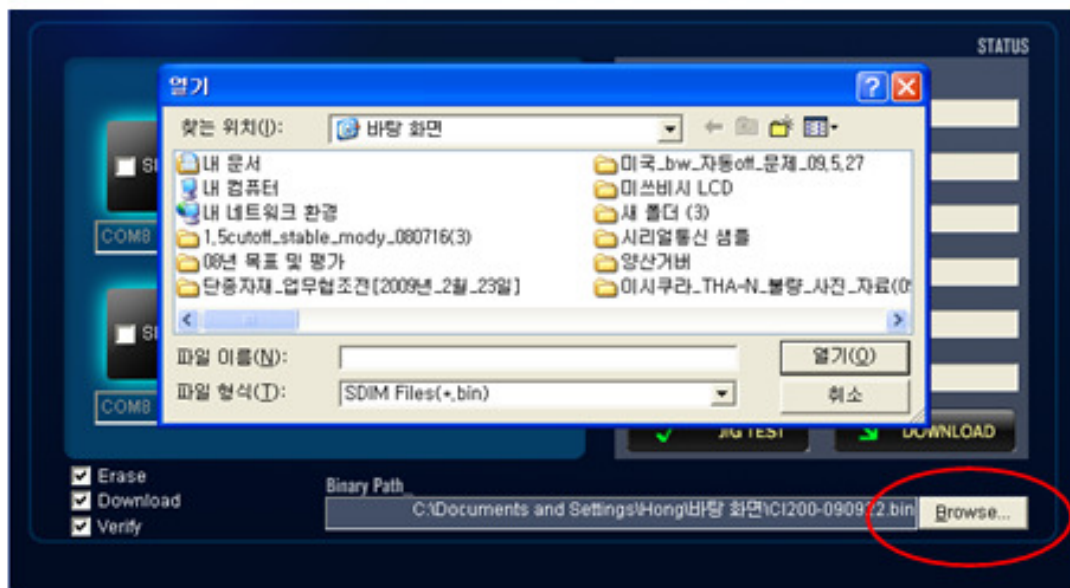


10. Update

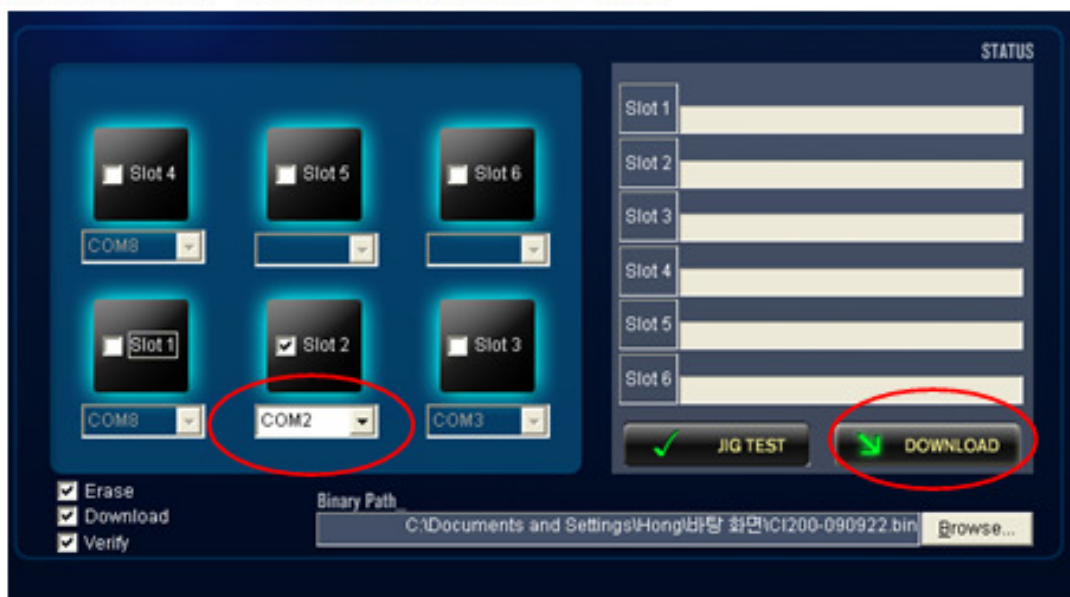
(1) Run IM Loader



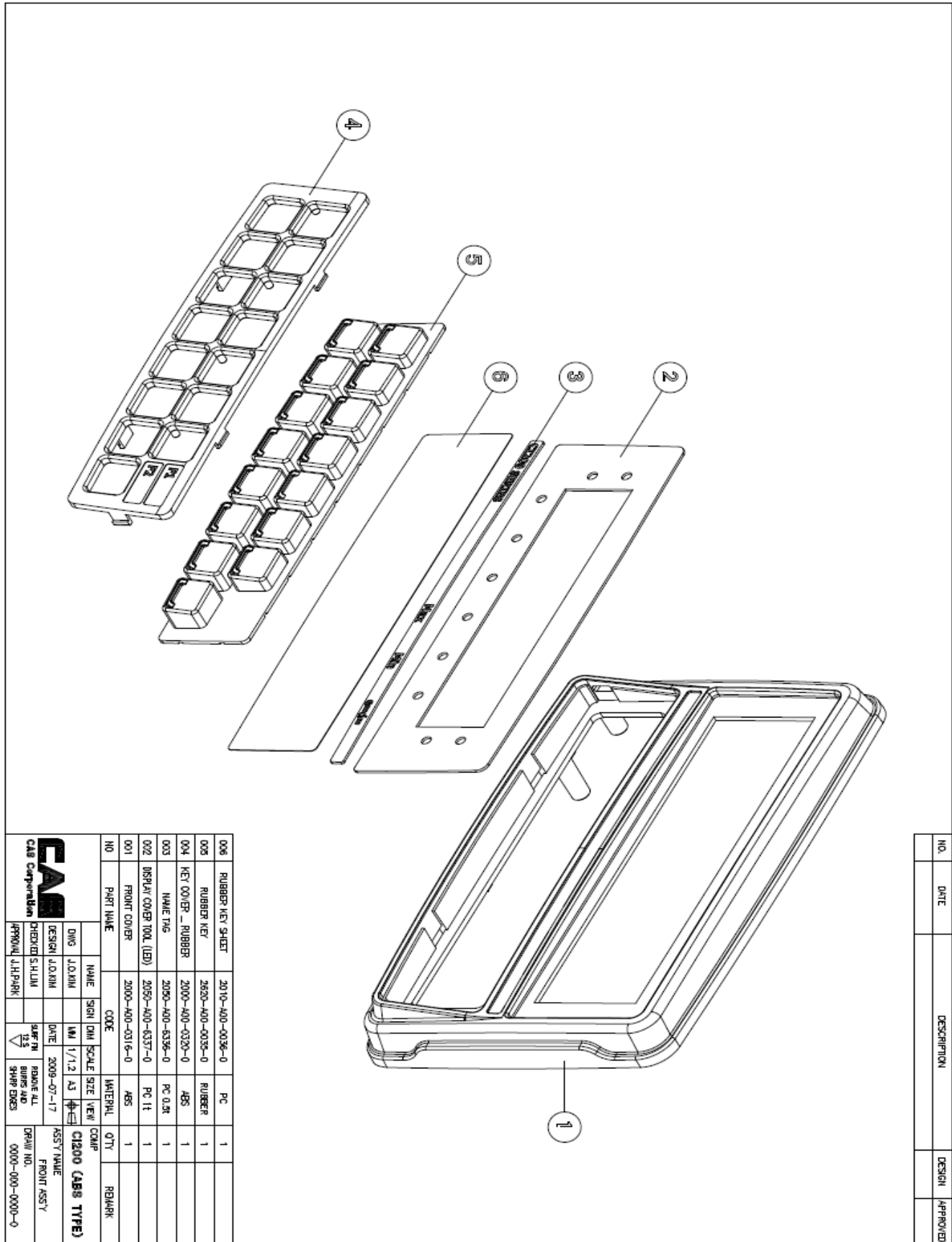
(2) Load Bin File



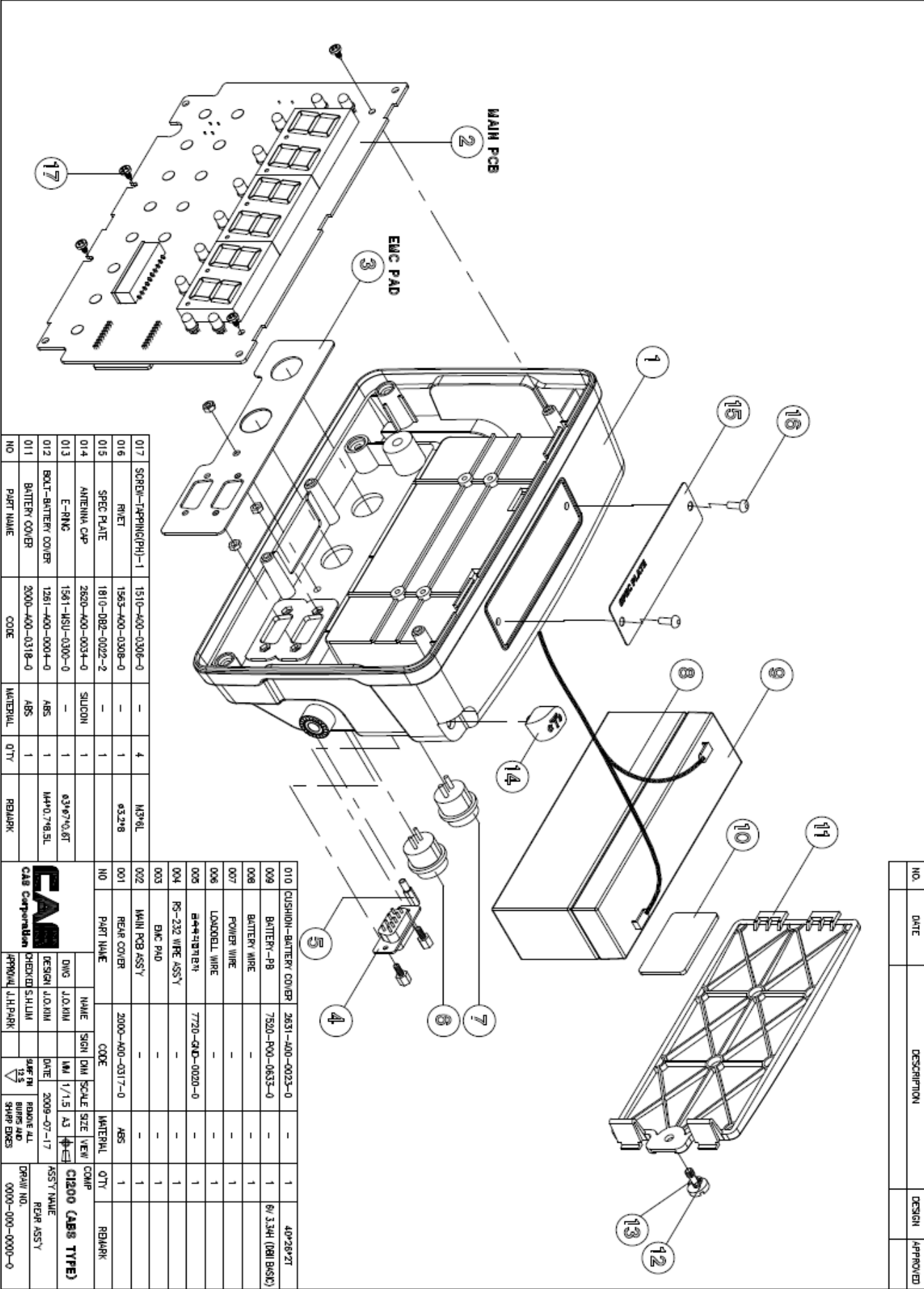
(3) Set Com Port & Start Download



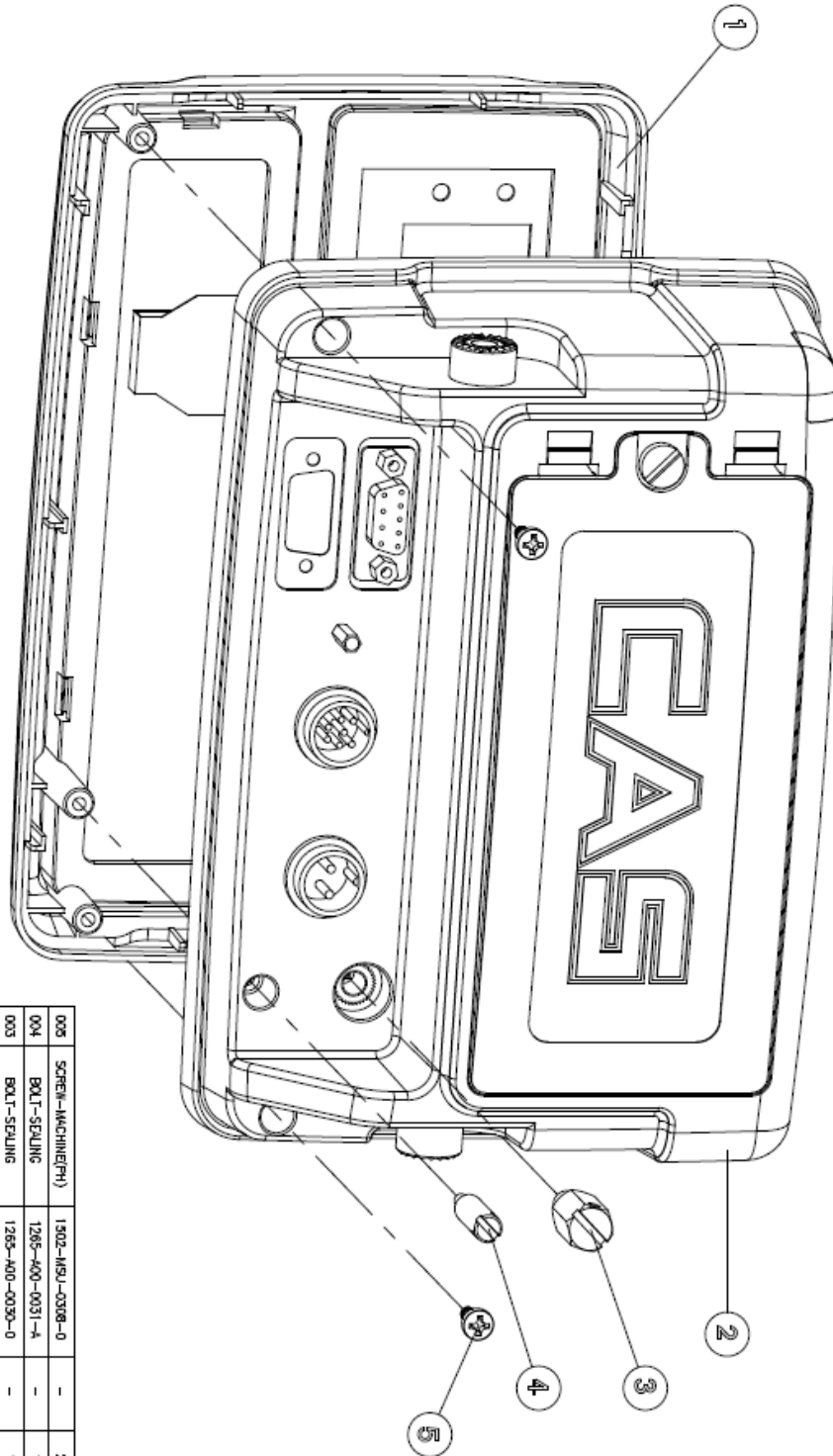
11. Exploded Views & Parts List



Service Manual – CI200 REV NO :



Service Manual – CI200 REV NO :

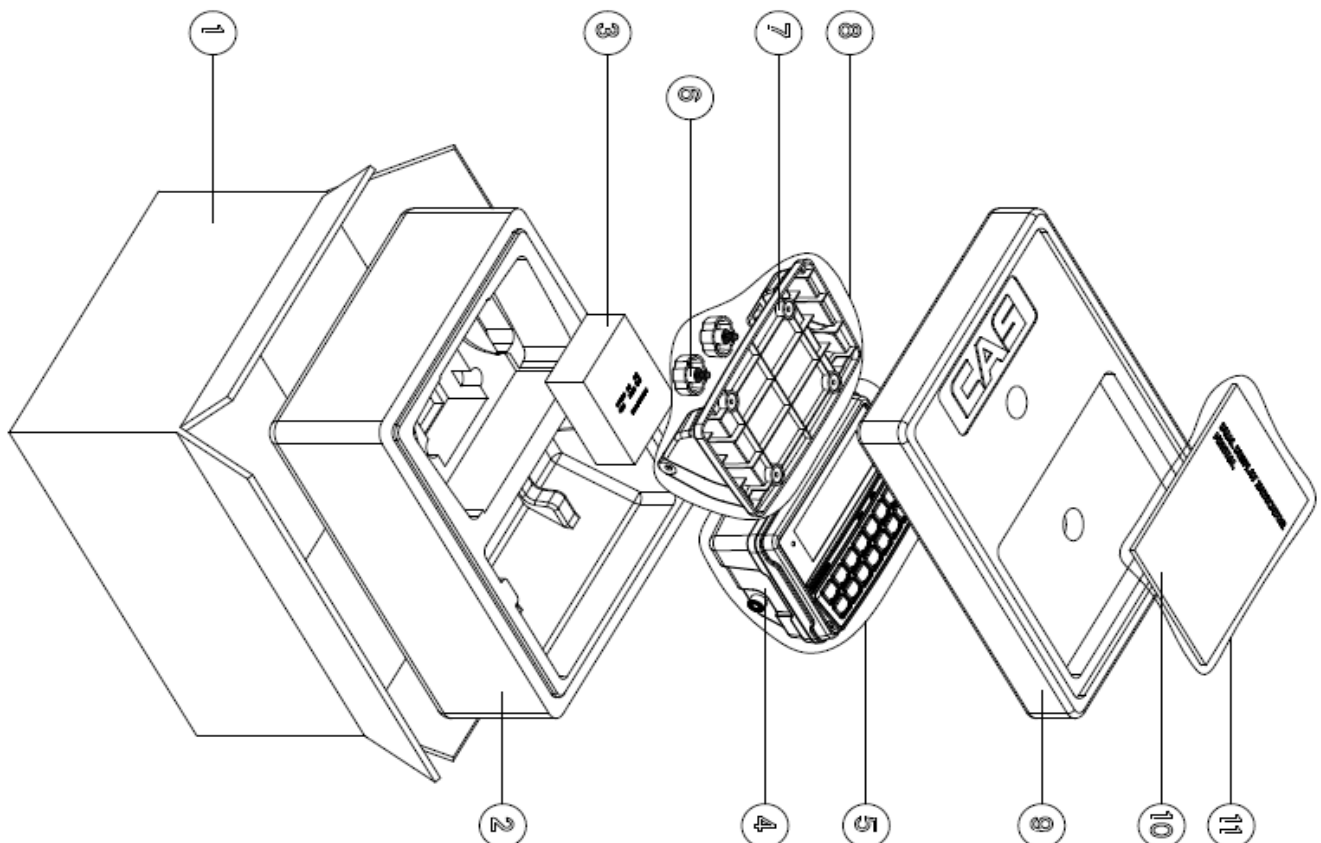


NO.	DATE	DESCRIPTION	DESIGN	APPROVED

NO	PART NAME	CODE	MATERIAL	QTY	REMARK
006	SCREW-MACHINE(PH)	1302-MSJ-0308-0	-	2	
004	BOLT-SEALING	1265-A00-0031-A	-	1	
003	BOLT-SEALING	1265-A00-0030-0	-	1	
002	REAR COVER ASSY	-	-	1	
001	FRONT COVER ASSY	-	-	1	

NAME	SIGN	DATE	SCALE	SIZE	VIEW	COMP
DWG	LO.MM	MM	1/1	A3	3-4	
DESIGN	LO.MM	DATE	2009-07-17			
CHECKED	SH.LIM					
APPROVAL	J.H.PARK					

Service Manual – CI200 REV NO :



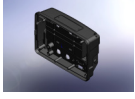
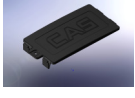
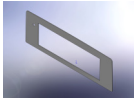
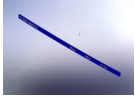
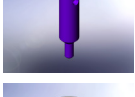
MO.	DATE	DESCRIPTION	DESIGN	APPROVED

[illegible]

Service Manual – CI200 REV NO :

※ CI200 SERIES INDICATOR (ABS TYPE)

※ BODY ASS'Y

No.	IMAGE	CODE	REV.	PART NAME	SPEC	MATERIAL	Q'TY
1		2000-A00-0316	0	FRONT COVER	CI200 206*139*40.05	ABS	1
2		2000-A00-0317	0	REAR COVER	CI200 206*139*64.5	ABS	1
3		2000-A00-0318	0	BATTERY COVER	CI200 158.5*70.8*17.8	ABS	1
4		2050-A00-6335	0	DISPLAY COVER TOOL(LCD)	CI200 182.6*59.1*1T	PC	1
4		2050-A00-6337	0	DISPLAY COVER TOOL(LED)	CI200 182.6*59.1*1T	PC	1
5		2050-A00-6336	0	NAME TAG	CI200 179.6*5.6*1T	PC	1
6		2050-A00-6343	0	RS-232 STICKER	CI200 35.2*14*0.8T	PC	1
7		1810-DB2-0033	5	SPEC PLATE	DB-2(영공) 3 등급, ENGLISH	-	1
8		1563-A00-0308	0	RIVET	Ø3.2*8	-	2
9		1265-A00-0030	0	BOLT-SEALING	M6*23(NT-200, 201A)	-	1
10		1265-A00-0031	A	BOLT-SEALING	M3*26(NT-200,201A)	-	1
11		1261-A00-0004	0	BOLT-BATTERY COVER	M4*0.7*8.5(SUS303)TP-1,2	SUS	1
12		1561-MSU-0300	0	E-RING	Ø3*Ø7*0.6-SUS	SUS	1

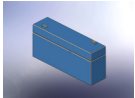
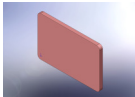
Service Manual – CI200 REV NO :

13		1510-A00-0306	0	SCREW- TAPPING(PH)-1	M3*6	-	4
14		1510-A00-0412	0	SCREW	M4*12L	-	2
15		7720-GND-0020	0	Metallic hexagona ground terminal	TE-501(CI)	-	1

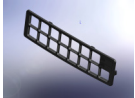
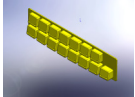
※ BODY ASS'Y _ Delate Electronic Part Wireless Option choosen

No.	IMAGE	CODE	REV.	PART NAME	SPEC	MATERIAL	Q'TY
16		2620-A00-0034	0	ANTENNA CAP	CI200 17.5*15.7*18.8	RUBBER	1

※ BODY ASS'Y _ Delate Battery Option Choosen.

No.	IMAGE	CODE	REV.	PART NAME	SPEC	MATERIAL	Q'TY
17		7520-P00-0633	0	BATTERY-PB	6V3.3AH(DBII BASIC)	-	1
18		2631-A00-0023	0	CUSHION -BATTERY COVER	40*26*2T(MWII,DBB,ER)	-	1

※ RUBBER KEY

No.	IMAGE	CODE	REV.	PART NAME	SPEC	MATERIAL	Q'TY
19		2000-A00-0320	0	KEY COVER _ RUBBER	CI200 180.3*43.6*13.7	ABS	1
20		2620-A00-0035	0	RUBBER KEY	CI200 176.5*39.8*14.7	RUBBER	1
21		2010-A00-0036	0	RUBBER KEY SHEET	CI200 177.5*40.8*0.2T	PC	1

※ C/T BOX ASS'Y

No.	IMAGE	CODE	REV.	PART NAME	SPEC	MATERIAL	Q'TY
22		9100-AB1-0001	0	C/T BOX	CI200 (380*300*169)	-	1

Service Manual – CI200 REV NO :

23		9204-AS0-0021	0	STYROFOAM BOX (UP)	CI200 (380*300*50)	-	1
24		9204-AS0-0022	0	STYROFOAM BOX (LOW)	CI200 (380*300*125)	-	1
25		9303-A00-0004	A	POLY BAG	350*450*0.05T(HEAD)	-	1
26		9301-A00-0003	0	POLY BAG	MANUAL (170*250*0.05T)	-	1
27		9400-A00-0046	0	SILICAGEL	10g	-	2
28		9900-A00-0001	0	SEALING LEAD	-	-	1
29		9900-A00-0002	0	SEALING WIRE	300M/ROLL	-	0.002

※ CRADLE OPTION

No.	IMAGE	CODE	REV.	PART NAME	SPEC	MATERIAL	Q'TY
30		2000-A00-0321	0	CRADLE	CI200 229.1*81.5*130	ABS	1
31		2600-A00-0099	0	CRADLE FOOT	CI200 Ø14.6*Ø5*1.3T	NBR	4
32		2009-A00-0006	0	STOP BOLT	Ø38*17(NT-200,201A)	-	2
33		9302-A00-0005	B	POLY BAG	270*350*0.05T	-	1

※ BATTERY OPTION

No.	IMAGE	CODE	REV.	PART NAME	SPEC	MATERIAL	Q'TY
34		2013-A00-0009	0	BATTERY HOLDER	HDPE 111.7*47.5*16.7	HDPE	1
35		1590-A00-0032	0	BATTERY SPRING A	Ø9*0.6*3(MW-II)	-	1
36		1590-A00-0033	0	BATTERY SPRING B	Ø9*0.6*6*3(MW-II)	-	1

Service Manual – **CI200 REV NO :**

37		1590-A00-0034	0	BATTERY SPRING C	Ø9*0.6*3*6(MW-II)	-	1
38		1590-A00-0035	A	BATTERY SPRING D	Ø9*0.6*8(MW-II)	-	1
39		9505-A00-0041	0	벨크로 데이프	CI200 15*160*1.5T	-	2

Service Manual – CI200 REV NO :

CI-200[LED] Main PCB ASS'Y

No	Part Code	Parts Name	DESCRIPTION	PART TYPE	Unit	Q'ty	Remark
1	61A0A000001A	SDI Module	SDI Module	DIP(1.27Pitch)	EA	1	SDI Module
2	6100PCI02000	PCB-Main	MAIN PCB	2Layers	EA	1	PCB MAIN
3	6236IS062780	IC(LED DRIVER)	TD62783AF		EA	1	U4
4	6236IS00573A	IC(LATCH)	74HC573D		EA	2	U2,U3
5	6236IS020030	IC(TR ARRARY)	ULN2003AD		EA	1	U1
6	6232IS032320	IC(INTERFACE)	SP3232ECY(3.3V)	TSSOP16	EA	1	U5
7	6242I003406A	IC(DC DC CONVERTER)	MC34063AD	SOIC-8	EA	1	U8
8	6220IS0C5020	IC(REGULATOR)	XC6204C502MR	SOT-25	EA	2	U9,U11
9	6220IS0C3320	IC(REGULATOR)	XC6204C332MR	SOT-25	EA	1	U7
10	6241IS003930	IC(OP AMP)	LM393D(SOP)	SOIC-8	EA	1	U10
11	6220IS078090	IC(REGULATOR)	LM7809	D-PAK	EA	1	U6
12	6281I0022220	TRANSISTOR-CHIP	2N2222	SOT-23	EA	5	Q1,Q2,Q3,Q4,Q5
13	6294ICP01840	DIODE-CHIP	KDS184	SOT-23	EA	2	D10
14	6291IS058190	DIODE-CHIP	1N5819	SMD	EA	4	D11,D12,D13,D15,
15	6291IP054060	DIODE	1N5406	DIP	EA	1	D14
16	6712CHP02700	CONDENSER-CHIP	CL21F 270KBNC	2012	EA	4	C5,C12,C14,C16
17	6712CHP04710	CONDENSER-CHIP	CL21F 471KBNC	2012	EA	1	C27
18	6712CHP01020	CONDENSER-CHIP	CL21F 102KBNC	2012	EA	4	C7,C8,C9,C10
19	6712CHP01040	CONDENSER-CHIP	CL21F 104KBNC	2012	EA	13	C1,C2,C3,C6,C13, C15,C17,C25,C26, C28,C29,C30,C31
20	6712CHP01050	CONDENSER-CHIP	CL21F 105KBNC	2012	EA	7	C4,C11,C18,C19, C22,C23,C24
21	6710CAP0103B	CONDENSER-CERAMIC	0.01uF/3KV		EA	3	CV1,2,3
22	6706C1601000	CONDENSER-ELEC-CAP	100uF/16V ø6.3	SMD	EA	5	CE1,CE2,CE5,CE6, CE7
23	6706C2504700	CONDENSER-ELEC-CAP	470uF/25V ø10	SMD	EA	2	CE3,CE4
24	6512CJ000033	RESISTOR 2W	CFR 0.33Ω (±5%)	DIP	EA	1	R35
25	6527ID00000B	RESISTOR-CHIP	0Ω RESISTOR	SMD	EA	10	R1,2,4,7,10,13,

Service Manual – CI200 REV NO :

		1/10W	(2012)				15, 16, 17, 18
26	6527ID004700	RESISTOR-CHIP 1/10W	RR1220P-470D (47Ω)	2012	EA	9	R3, 5, 6, 8, 9, 11, 12, 14, 41
26	6527ID030000	RESISTOR-CHIP 1/10W	RR1220P- 301D (300Ω)	2012	EA	1	R55
27	6527ID003300	RESISTOR-CHIP 1/10W	RR1220P-331D (330Ω)	2012	EA	1	R27
28	6527ID300100	RESISTOR-CHIP 1/10W	RR1220P-102D (1KΩ)	2012	EA	2	R29, R49
29	6527ID300200	RESISTOR-CHIP 1/10W	RR1220P-202D (2KΩ)	2012	EA	3	R40, 47, 54
30	6527ID300470	RESISTOR-CHIP 1/10W	RR1220P- 472D (4.7KΩ)	2012	EA	1	R28
31	6527ID301000	RESISTOR-CHIP 1/10W	RR1220P- 103D (10KΩ)	2012	EA	7	R19, R21, R26, R30, R39, R51, R34
32	6527ID302000	RESISTOR-CHIP 1/10W	RR1220P- 203D (20KΩ)	2012	EA	6	R37, 38, 44, 45, 50, 52
33	6527ID303300	RESISTOR-CHIP 1/10W	RR1220P- 333D (33KΩ)	2012	EA	1	R46
34	6527ID304700	RESISTOR-CHIP 1/10W	RR1220P- 333D (47KΩ)	2012	EA	2	R32, 33
34	6527ID310000	RESISTOR-CHIP 1/10W	RR1220P- 104D (100KΩ)	2012	EA	3	R36, R48, R53
35	6527ID349900	RESISTOR-CHIP 1/10W	RR1220P- 4993D (499KΩ)	2012	EA	1	R43
36	6527ID368000	RESISTOR-CHIP 1/10W	RR1220P- 684D (680KΩ)	2012	EA	1	R42
37	6670T0001020	INDUCTOR-CHIP	MMZ Y102C	2012	EA	15	L1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 17, 18
38	6670T0102200	INDUCTANCE	220uH (NT SERIES)	DIP	EA	1	L13
39	6800F0002200	EMI FILTER	EFST221YTB (220pF)	DIP-3	EA	8	F1, 2, 3, 4, 5, 6, 7, 8
40	6800F0035650	EMI BEAD FILTER	BFS-3565AOB	DIP	EA	1	BD1
41	6804F0010040	LINE FILTER	T1004 (HM3A)	DIP	EA	1	L15
42	7230D00C0270	LED	SND1020 UOR	DIP-18	EA	3	LED1, 2, 3
43	7232DRG00040	LED LAMP	ø5- (R, G) BL-BVT 204 (ANODE)	DIP	EA	1	LED4
44	7232DR00005A	LED LAMP	ø5-LED	DIP	EA	9	D1, 2, 3, 4, 5, 6, 7, 8, 9

Service Manual – **CI200 REV NO :**

45	7813C000040A	PIN HEADER	A2-40PA-2.54DS		EA	1	CON5, SW18
46	7802CLL00030	CONNECTOR (WAFER)	LWL0640-03 (LSW250-03)		EA	1	CN2 (ADAPTOR)
47	7804CCN73030	CONNECTOR (WAFER)	5273-03 (LPH03-03)		EA	1	CN3 (BAT)
48	7805CCN67030	CONNECTOR (WAFER)	03-5267		EA	2	CON4, CON6
49	7801CLW0007A	CONNECTOR (WAFER)	LW0640-07 (GOLD)		EA	1	LC1 (LOADCELL)
50	7807CFP00100	FPC-CONNECTOR	FCZ254-10R		EA	1	CON3
51	7600STA19020	TACK S/W	11902(DJTA-1102)		EA	1	SW15
52	7600SLD00020	SLIDE S/W	INCA-2(DJMM-12V)		EA	1	SW16
53	7620S0516000	FUSE	1.6A/250V ø5 UL, S, VDE, BSI (ㄗ)		EA	1	FUSE
54	7630S0002050	FUSE HOLDER	GF-205B (EXP-300L)		EA	1	FUSE
55	7520P0002000	BATTERY-LIMN	CR1220-PIN TYPE		EA	1	BT1
56	7002Z0001200	PIEZO BUZZER	14A4012P (EFM-250A)	BZ-14-CS	EA	1	BUZ1
57	7562P1202CE0	Adaptor	12V/1.25A		EA	1	

Service Manual – CI200 REV NO :

CI201[LCD] Main PCB ASS'Y

No	Part Code	Parts Name	DESCRIPTION	PART TYPE	Unit	Q'ty	Remark
1	61A0A000001A	PCB-SDI MODULE	61A0-A00-0001-0	DIP(1.27Pitch)	EA	1	SDI Module
2	6100PCI02010	PCB-Main	PCB MAIN(CI201)	2Layers	EA	1	PCB MAIN
3	6224I0016210	IC(LCD Driver)	HT1621	TSSOP48	EA	1	U1
4	6232IS032320	IC (INTERFACE)	SP3232ECY (3.3V)	TSSOP16	EA	1	U2
5	6242I003406A	IC(DC DC CONVERTER)	MC34063AD	SOIC-8	EA	1	U3
6	6220IS0C5020	IC (REGULATOR)	XC6204C502MR	SOT-25	EA	2	U4, U5
7	6220IS0C3320	IC (REGULATOR)	XC6204C332MR	SOT-25	EA	1	U6
8	6241IS003930	IC (LINEAR)	LM393D (SOP)	SOIC-8	EA	1	U7
9	6220IS078090	IC (REGULATOR)	LM7809	D-PAK	EA	1	U8
10	6281I0022220	TRANSISTOR-CHIP	2N2222	SOT-23	EA	5	Q1, 2, 3, 4, 6
11	6281I0016660	TRANSISTOR-CHIP	KTA1666	SOT-89	EA	1	Q5
12	6294ICP01840	DIODE-CHIP	KDS184	SOT-23	EA	2	D1, 2
13	6291IS058190	DIODE-CHIP	1N5819	SMD	EA	4	D4, 5, 6, 7
14	6291IPO54060	DIODE	1N5406	DIP	EA	1	D3
15	6712CHP02700	CONDENSER-CHIP	CL21F 270KBNC	2012	EA	4	C7, 10, 12, 14
16	6712CHP04710	CONDENSER-CHIP	CL21F 471KBNC	2012	EA	1	C23
17	6712CHP01020	CONDENSER-CHIP	CL21F 102KBNC	2012	EA	4	C1, 2, 3, 4
18	6712CHP01040	CONDENSER-CHIP	CL21F 104KBNC	2012	EA	15	C5, 8, 11, 13, 15, 20, 21, 22, 24, 25, 26, CB1, CB2, CB3, CB4
19	6712CHP01050	CONDENSER-CHIP	CL21F 105KBNC	2012	EA	6	C6, 9, 16, 17, 18, 19
20	6706C1601000	CONDENSER-ELEC- CAP	100uF/16V ø6.3	SMD	EA	6	CE3, 4, 5, 6, 7, 8
21	6706C2504700	CONDENSER-ELEC- CAP	470uF/25V ø10	SMD	EA	2	CE1, 2
22	6710CAP0103B	CONDENSER- CERAMIC	0.01uF/3KV		EA	3	CV1, 2, 3
23	6512CJ000033	RESISTOR 2W	CFR 0.33Ω (±5%)		EA	1	R14
24	6527ID004700	RESISTOR-CHIP 1/10W	RR1220P-470D (47Ω)	2012	EA	1	R16

Service Manual – CI200 REV NO :

25	6527ID010000	RESISTOR-CHIP 1/10W	RR1220P-101D(100Ω)	2012	EA	4	R7, 8, 9, 10
26	6527ID030000	RESISTOR-CHIP 1/10W	RR1220P-301D(300Ω)	2012	EA	1	R35
27	6527ID300100	RESISTOR-CHIP 1/10W	RR1220P-102D(1KΩ)	2012	EA	1	R26
28	6527ID300200	RESISTOR-CHIP 1/10W	RR1220P-202D(2KΩ)	2012	EA	3	R15, 30, 31
29	6527ID300220	RESISTOR-CHIP 1/10W	RR1220P- 222D(2.2KΩ)	2012	EA	1	R11
30	6527ID300470	RESISTOR-CHIP 1/10W	RR1220P- 472D(4.7KΩ)	2012	EA	1	R12
31	6527ID300820	RESISTOR-CHIP 1/10W	RR1220P- 822D(8.2KΩ)	2012	EA	1	R2
32	6527ID301000	RESISTOR-CHIP 1/10W	RR1220P-103D(10KΩ)	2012	EA	10	R1, 3, 4, 13, 17, 22, 27, 42, 44, 34
33	6527ID303300	RESISTOR-CHIP 1/10W	RR1220P-333D(33KΩ)	2012	EA	5	R5, 6, 20, 21, 25
34	6527ID304700	RESISTOR-CHIP 1/10W	RR1220P-333D(47KΩ)	2012	EA	2	R32, 33
35	6527ID310000	RESISTOR-CHIP 1/10W	RR1220P- 104D(100KΩ)	2012	EA	6	R23, 24, 28, 29, 43, 45
36	6527ID349930	RESISTOR-CHIP 1/10W	RR1220P- 4993D(499KΩ)	2012	EA	1	R19
37	6527ID368000	RESISTOR-CHIP 1/10W	RR1220P- 684D(680KΩ)	2012	EA	1	R18
38	6670T0001020	INDUCTOR-CHIP	MMZ Y102C	2012	EA	16	L1~12, 14, 16 BD1, BD2
39	6670T0102200	INDUCTANCE	220uH(NT SERIES)	DIP	EA	1	L13
40	6800F0002200	EMI FILTER	EFST221YTB(220pF)	DIP-3	EA	8	F1~8
41	6800F0035650	EMI BEAD FILTER	BFS-3565AOB	DIP	EA	1	BD5
42	6804F00- 1004-0	LINE FILTER	T1004(HM3A)	DIP	EA	1	L15
43	7224D0000030	BACK LIGHT	ED, DBII-LCD (one module) □		EA	1	BL
44	7212D000010A	LCD	2402TF-P, B1 (DB- II, DBB, NT) YEEBO		EA	1	LCD

Service Manual – CI200 REV NO :

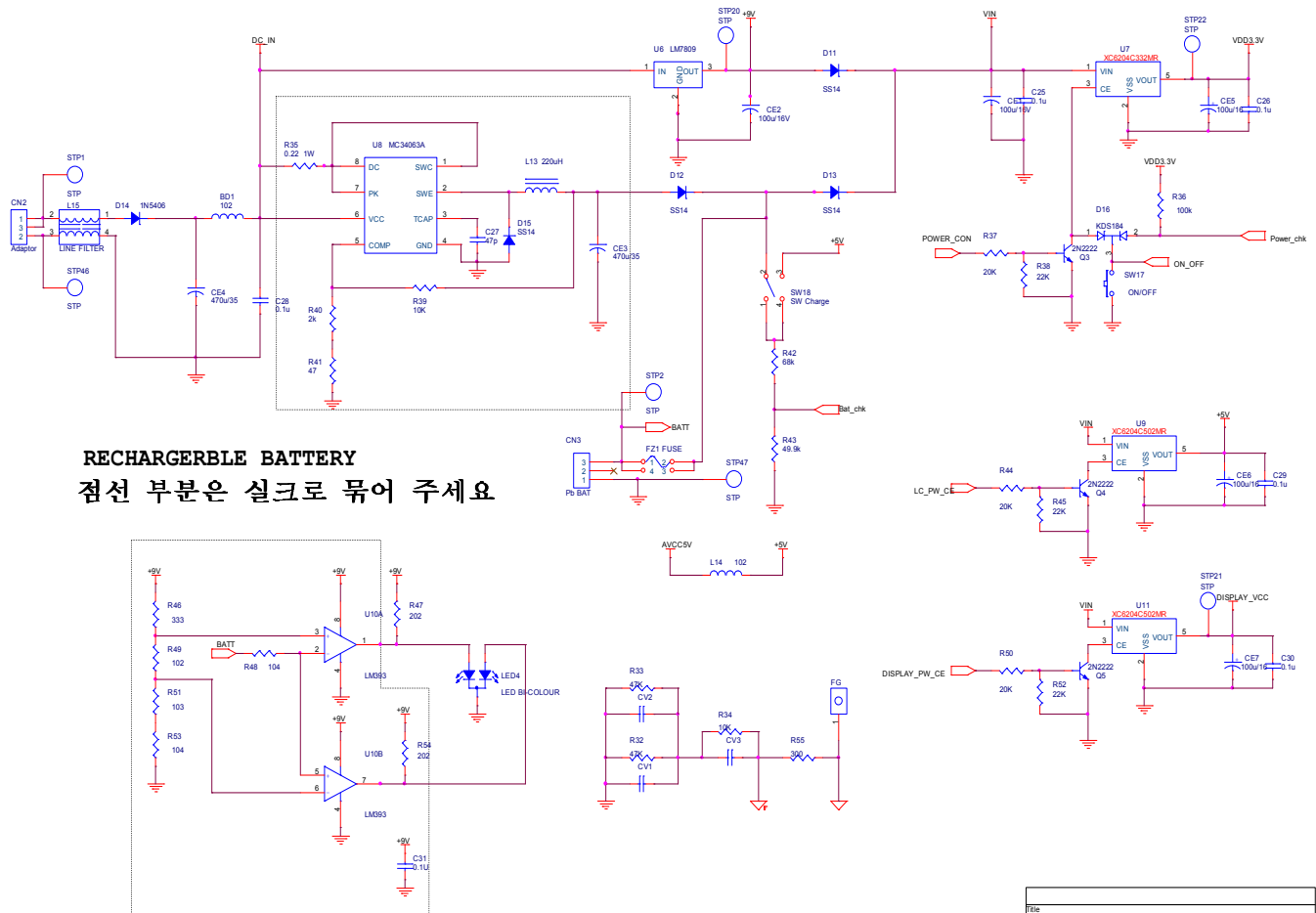
45	7232DRG00040	LED LAMP	ø5- (R, G) BL-BVT 204 (ANODE)		EA	1	LED
46	7813C000040A	PIN HEADER	A2-40PA-2.54DS		EA	1	JP2, SW1, OP1
47	7804CCN73030	CONNECTOR (WAFER)	5273-03 (LPH03-03)		EA	1	CN2 (BAT)
48	7802CLL00030	CONNECTOR (WAFER)	LWL0640-03 (LSW250-03)		EA	1	CN1 (ADAPTOR)
49	7805CCN67030	CONNECTOR (WAFER)	03-5267		EA	2	CN4, 6
50	7801CLW0007A	CONNECTOR (WAFER)	LW0640-07 (GOLD)		EA	1	CN3 (LOADCELL)
51	7600STA19020	TACK S/W	11902(DJTA-1102)		EA	1	CAL_KEY1
52	7807CFP00100	FPC-CONNECTOR	FCZ254-10R		EA	1	CN5
53	7620S0516000	FUSE	1.6A/250V ø5 UL, S, VDE, BSI (⚡)		EA	1	FUSE
54	7630S0002050	FUSE HOLDER	GF-205B (EXP-300L)		EA	1	FUSE
55	7520P0002000	BATTERY-LIMN	CR1220-PIN TYPE		EA	1	BT1
56	7002Z0001200	PIEZO BUZZER	14A4012P (EFM-250A)	BZ-14-CS	EA	1	BZ1

12.Revision

NO	CAUSE	DATE	APPROVAL	

Service Manual – CI200 REV NO :

1-3. Power



File	<Title>	Rev
Size	Document Number	<Doc>
A3		
Date	Friday, September 25, 2009	Print 3 of 3

Restrict the part shown in dotted line by silk.

Service Manual – CI200 REV NO :

2-2. Power

