

REV : 00
MAY 19, 1998

DB-1H SERIES

SERVICE MANUAL

C A S CORPORATION

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CHAPTER-I

THE GENERAL INTRODUCTIONS

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A. PREFACE

Thank you for the purchasing of CAS scale.
This scale has been designed with CAS reliability, under rigid quality control and with outstanding performance.
Your departments can enjoy with this high quality reliable CAS product.
We believe that your needs will be satisfied and you will have proper reliability with in variable weight.
This manual will help you with proper operations and care of the DB series.
Please keep it handy for the future references.

B. THE PRECAUTIONS

1. Make sure that you plug your scale into the proper power outlet.
2. Place the scale on a flat and stable surface.
3. Plug into a power outlet 30 minutes before operations.
4. Keep the scale away from strong EMI noises may cause incorrect weight readings.
5. This scale must be installed in a dry and liquid free environment.
6. Do not subject the scale to sudden temperature changes.
7. Do not subject the platter to sudden shocks.
8. If the scale is not properly level, please adjust the 4 legs at the bottom of the scale (turn legs clockwise or counterclockwise) so as to center the bubble of the leveling gauge inside the indicated circle.

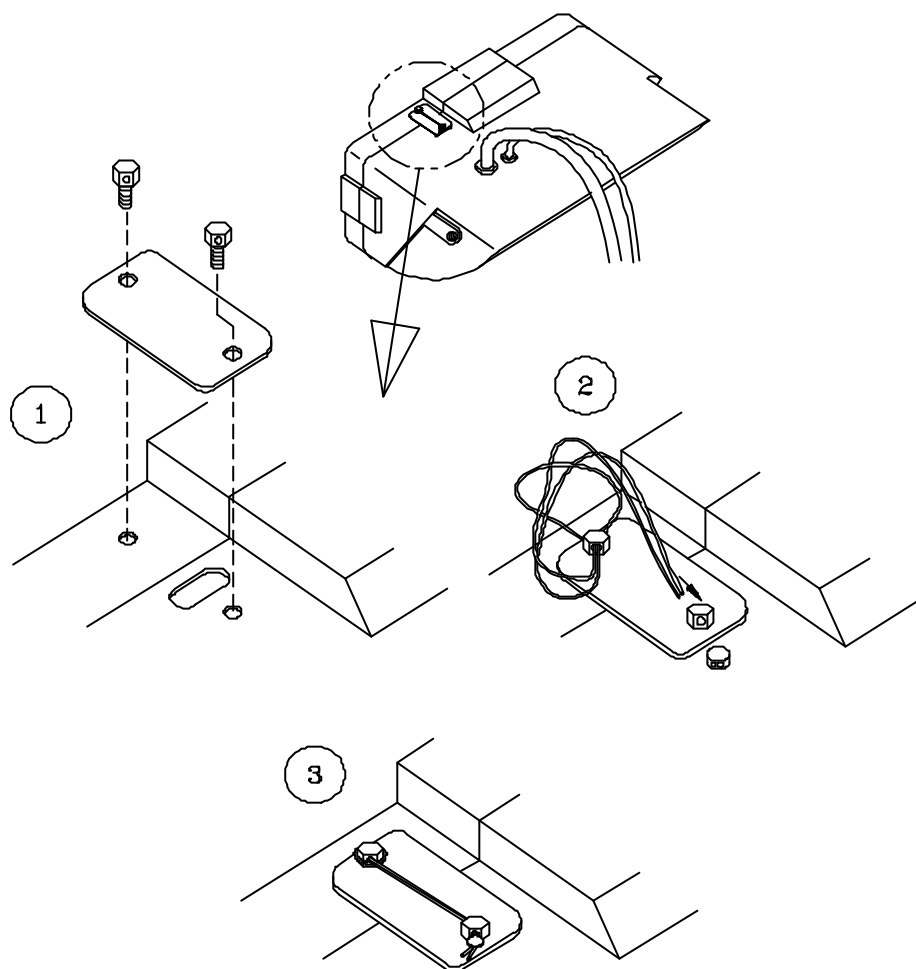
C. THE SPECIFICATIONS

MODEL	DB -1H			
CAPACITY	50 x 0.01kg	120 x 0.02lb	150 x 0.05kg	300 x 0.1 lb
DISPLAY; HEIGHT	Vacuum Fluorescent Display			
DISPLAY DESIGNATORS	ZERO and TARE			
MAXIMUM TARE	-50.00 kg	-99.99lb	-99.95kg	- 300.0 lb
POWER SOURCE	110V /220V 50, 60 Hz			
POWER CONSUMPTION	APPROX. 10W			
PLATTER (")	129.54 x 96.52			
PRODUCT SIZE (")	165.1 x 106.68 x 184.15			

Notice : The specifications are subject to change for improvement without notice.

D. SEALING METHOD

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CHAPTER-II

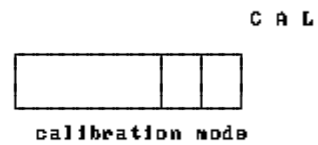
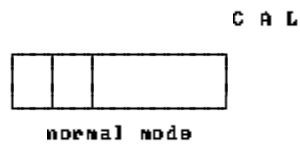
THE CALIBRATIONS

=====

A. SET THE CALIBRATION MODE

The CAL switch is located underneath of a hole on the bottom of the front cover of head.

1. Remove a seal plate.
2. Slide CAL switch to the CAL position.

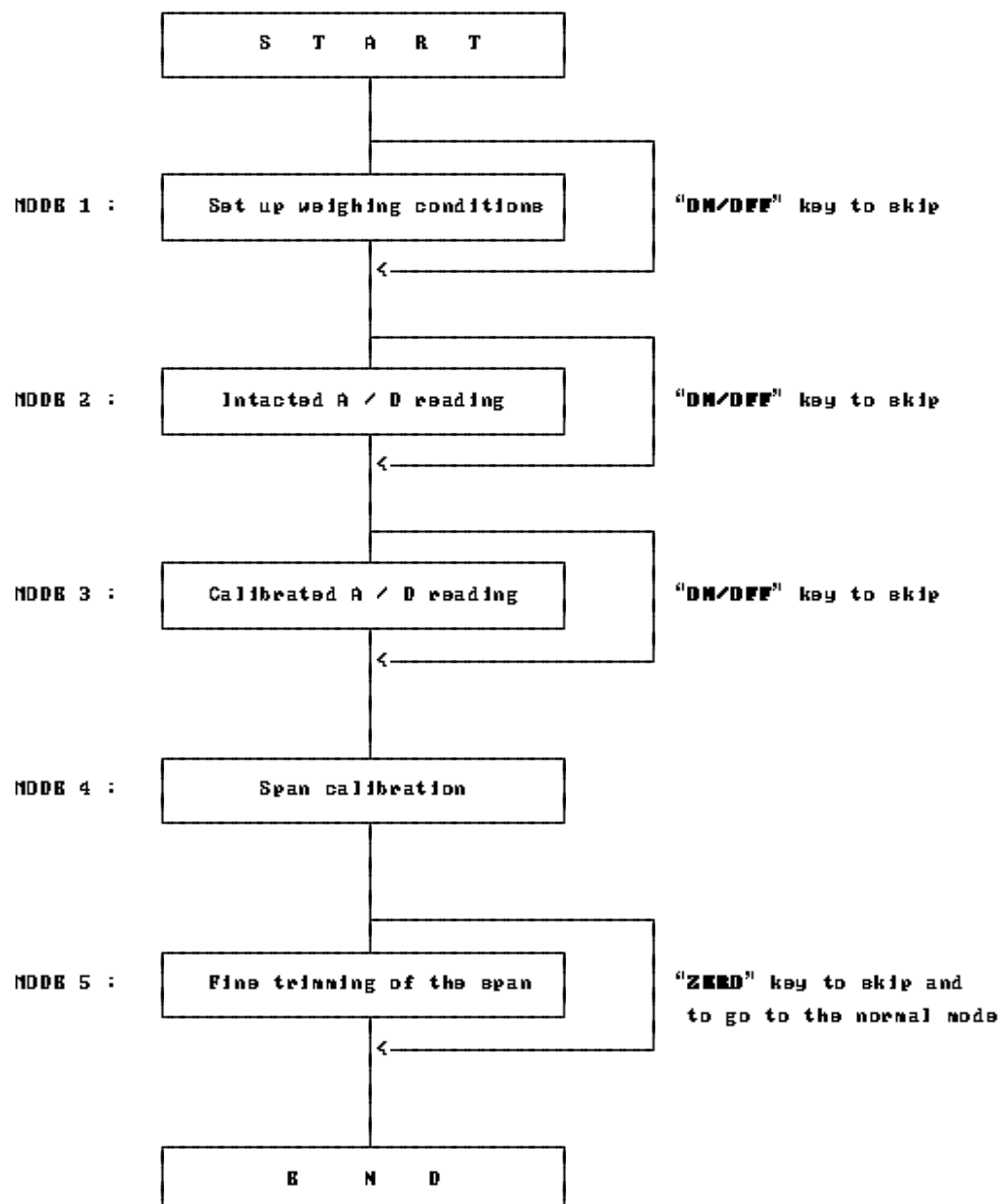


3. Plug into the AC outlet.
-> The display shows "CAL" three times.

B. THE MODES

This scale has 5 modes to set the weighing conditions and the span calibration.

These 5 modes are described as below.



B. 1 THE MODE 1

In this mode 1, a various weighing conditions can be set.

Weighing conditions for capacity, external resolution, and decimal point etc.

In this mode, below three keys have an alternative functions respectively.

*	(or kg/lb) =>	Numeric increment
--	---------------	-------------------

TARE	=>	Digit shift
---	----	-------------

ZERO	=>	Enter
---	----	-------

* For entire set of weighing conditions, please refer to the APPENDIX 1.

B. 2 THE MODE 2

In this mode 2, intacted A/D reading is shown on the display.

This intacted A/D reading is necessary to check an initial zero point and a span range, when either a load cell was replaced or an analog module was replaced.

Unless above both replacements, skip to this mode 2 by pressing the "ON/OFF" key.

B. 3 THE MODE 3

In this mode 3, a calibrated A/D reading is shown on the display.

This mode helps to do a fine span trimming without span calibration(MODE 4).

B. 4 THE MODE 4

In this mode 4, an actual span of the scale is calculated by digital calibration method.

The sign "ULoad", means empty the weighing pan, "LOAd" means, load a full weight on the weighing pan.

* If you want to quit this span calibration, press the "ZERO" key while either "ULoad" or "LOAd" is shown on the display.

B. 5 THE MODE 5

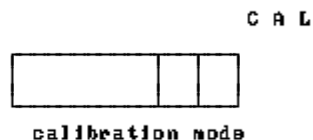
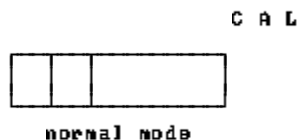
Finally in this mode 5, a fine span trimming is obtained after a span calibration(MODE 4)

C. THE SPAN CALIBRATION(MODE 4)

C. 1 SET THE CALIBRATION MODE

The CAL switch is located underneath of a hole on the bottom of the front cover of head.

1. Remove a seal plate.
2. Slide CAL switch to the CAL position.



3. Plug into the AC outlet.
-> The display shows "CAL" three times.

C. 2 ENTRY OF THE MODE 4

Enter to span calibration mode as below.

Key Operations

DN/OFF

=>

DN/OFF

=>

DN/OFF

=>

DN/OFF

=>

DN/OFF

=>

Display

C SEt

=>

1-XX

Mode 1

X.XXX

Mode 2

X.XXX

Mode 3

Blank

ULOAD

Mode 4

C. 3 SPAN CALIBRATION

In this MODE 4, "ULoad" is shown on the display.

1. Press the "ON/OFF" key,
-> The display shows a count down 8 to 0.
-> "LAd" is shown on the display.
2. Load a full weight on the platter gently.
3. Press the "ON/OFF" key,
-> The display shows a count down again,
-> The display shows "End" and be blanked.
4. Remove a full load from the platter.

*If you want to quit this span calibration, press the "ZERO" key while either "ULoad" or "LAd" is shown on the display.

With above operations, the span calibration is finished, and following paragraph A.4 guides to confirm the span and to do fine trimming for more accurate weighing.

However when fine trimming is not needed, press the "ZERO" key to skip following MODE 5 and exit to the normal mode.

C. 4 CONFIRMATION OF THE SPAN(MODE 5)

This mode 5 is only available after performance of a previous span calibration(mode 4).

1. Press the "TARE" key.
-> The display shows the initial zero point.
2. Press the "ZERO" key to read a span(net weight),
-> The display shows "0".
3. Load a full weight on the platter gently.
Unless the display has 30,000 +-1, perform a fine trimming.
4. If a span value is higher than 30,000, press the "÷" or "kg/lb" key twice for a decreasing and less than 30,000, press the "÷" or "kg/lb" key and press the "TARE" key for an increasing.
5. At the end of fine trimming, press the "ON/OFF" key.
6. Press the "ZERO" key to exit and go to the normal mode.
7. Return the CAL switch to the normal position(initial position).

D. THE SPAN CALIBRATION FROM REPAIR

D. 1 SET THE CALIBRATION MODE

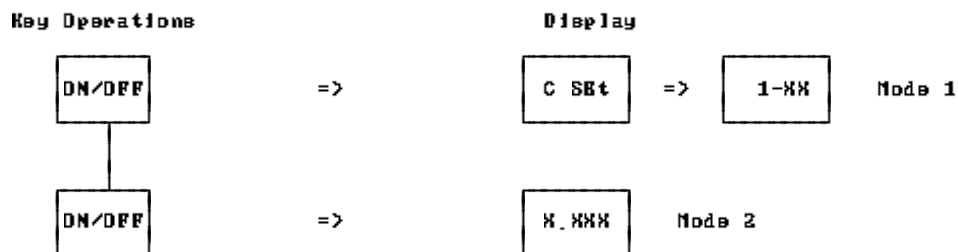
The CAL switch is located underneath of a hole on the bottom of the front cover of head.

1. Remove a seal plate.
2. Slide CAL switch to the CAL position.



3. Plug into the AC outlet.
-> The display shows "CAL" three times.

D. 2 CHECK THE INITIAL ZERO AND SPAN(MODE 2)



1. Press the "TARE" key to check the initial zero point.
The initial zero point must be lower than 20,000 counts.
2. Press the "ZERO" key to check the span.
3. Load a full weight on the platter gently.
The span must be higher than 30,000 counts.
4. Remove a full load on the platter.
5. Press the "DN/OFF" key three times to go to the MODE 4.

D. 3 THE SPAN CALIBRATION(MODE 4)

In this MODE 4, the display shows "ULoad".

1. Press the "DN/OFF" key.
-> The display shows a count down 9 to 0.
-> "LDA" is shown on the display.
2. Load a full weight on the platter gently.
3. Press the "DN/OFF" key.
-> The display shows a count down again,
-> The display shows "End" and be blanked.
4. Remove a full load from the platter.

*If you want to quit this span calibration, press the "ZERO" key while either "ULoad" or "LDA" is shown on the display.

With above operations, the span calibration is finished, and following paragraph B.4 guides to confirm the span and to do a fine trimming. However when fine trimming is not needed, press the "ZERO" key to skip following MODE 5 and exit to the normal mode.

D. 4 CONFIRMATION OF THE SPAN(MODE 5)

This mode 5 is only available after a performance of previous span calibration(mode 4).

1. Press the "TARE" key.
-> The display shows the initial zero point.
2. Press the "ZERO" key to read a span (not weight).
-> The display shows "0".
3. Load a full weight on the platter gently.
Unless the display has 30,000 +-1, perform fine trimming.
4. If a span is higher than 30,000, press the "÷" or "kg/lb" key twice for a decreasing and less than 30,000, press the "÷" or "kg/lb" key and touch the "TARE" key for an increasing.
Whenever you press these keys, a count can be changed.
5. At the end of fine trimming, press the "ON/OFF" key.
6. Press the "ZERO" key to exit and go to the normal mode.
7. Return the CAL switch to the normal position (initial position).

E. THE SPAN CALIBRATION WITH A PARTIAL LOAD

For the purpose of convenience, a partial span calibration is provided.

E. 1 SET TO THE CALIBRATION MODE

The CAL switch is located underneath of a hole on the bottom of the front cover of head.

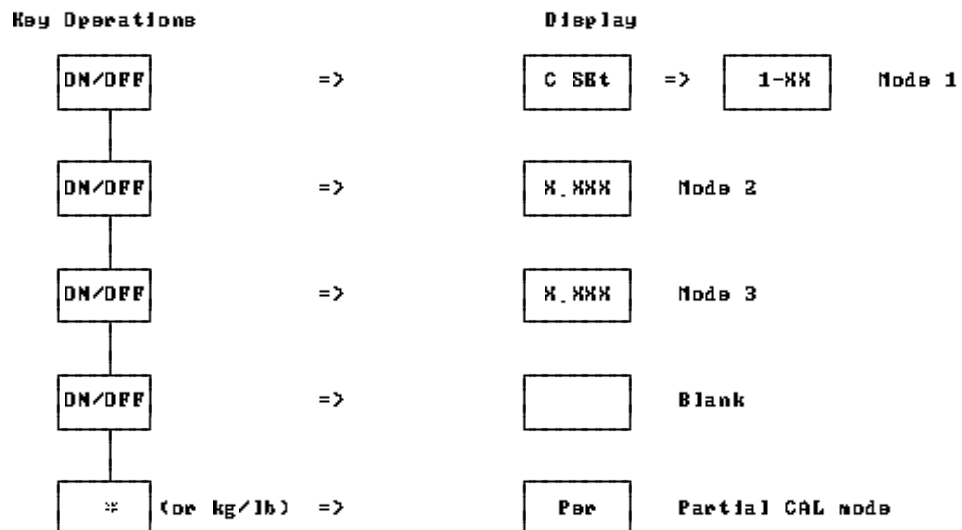
1. Remove a seal plate.
2. Slide CAL switch to the CAL position.



3. Plug into the AC outlet.
-> The display shows "CAL" three times.

E. 2 ENTRY OF A PARTIAL CALIBRATION

Enter to partial span calibration mode as below



E. 3 INPUT A PARTIAL LOAD BY PERCENTAGE

In this mode, below three keys have an alternative functions respectively.

% (or kg/lb) => Numeric increment

TARE => Digit shift

ZERO => Enter

Enter a desired partial load by percentage using above three keys.
Press the "DN/OFF" key to move to MODE 4.

E. 4 THE SPAN CALIBRATION

In this MODE 4, "ULoad" is shown on the display.

1. Press the "ON/OFF" key,
-> The display shows a count down 8 to 0.
-> "LDA" is shown on the display.
2. Load a full weight on the platter gently.
3. Press the "ON/OFF" key,
-> The display shows a count down again,
-> The display shows "End" and be blanked.
4. Remove a full load on the platter.

*If you want to quit this span calibration, press the "ZERO" key while either "ULoad" or "LDA" is shown on the display.

With above operations, the span calibration is finished, and following paragraph C.5 guides to confirm the span and to do a fine trimming. However when fine trimming is not needed, press the "ZERO" key to skip following MODE 5 and exit to normal mode.

E. 5 CONFIRMATION OF THE SPAN(MODE 5)

This mode 5 is only available after a performance of previous span calibration(mode 4).

1. Press the "TARE" key,
-> The display shows the initial zero point.
2. Press the "ZERO" key to read a span(not weight).
-> The display shows "0".
3. Load a full weight on the platter gently.
Unless the display has 30,000 +-1, perform fine trimming.
4. If a span is higher than 30,000, press the "÷" or "kg/lb" key twice for a decreasing and less than 30,000, press the "÷" or "kg/lb" key and touch the "TARE" key for an increasing.
Whenever you press these keys, a count can be changed.
5. At the end of fine trimming, press the "ON/OFF" key.
6. Press the "ZERO" key to exit and enter to normal mode.
7. Return the CAL switch to the normal position(initial position).

CHAPTER-III

THE PART REPLACEMENTS

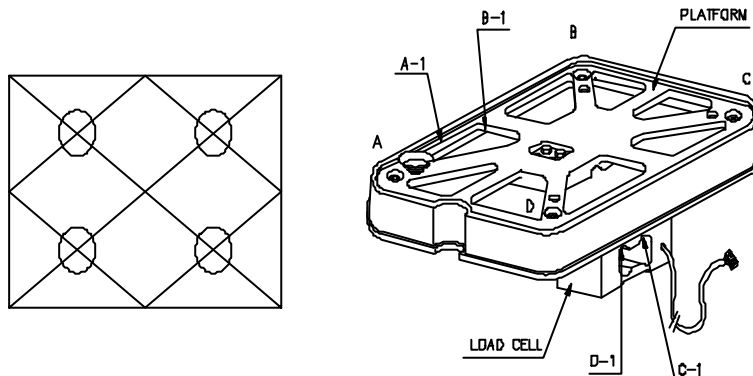
A. REPLACEMENT OF THE LOAD CELL

A. 1 REPLACEMENT OF THE LOAD CELL

- A.1.1 Remove the platter.
- A.1.2 Remove the platform on the load cell with a hex wrench.
- A.1.3 Disconnect a load cell connector wire.
- A.1.4 Remove the load cell from the body.
- A.1.5 Replace the load cell by a new one.
- A.1.6 Connect a load cell connector wire.
- A.1.7 Place the platform on the load cell.
- A.1.8 Place the platter on the platform.

A. 2 CORRECTION OF THE ECCENTRICITY

- A.2.1 Set the calibration mode.
- A.2.2 Set the MODE 2.(CHAPTER 11, D.2)
- A.2.3 Rezero the display by pressing the "ZERO" key, if it is needed.
- A.2.4 Place 1/3 the scale capacity on the platform by turns as shown in belows.



- A.2.5 File each corner which has a less output than the others.
And check each point is within ± 1 count tolerance with $\frac{1}{4}$ of a full load.

A. 3 THE SPAN CALIBRATION

Refer to the SPAN CALIBRATION FROM REPAIR in the Chapter 11.

B. REPLACEMENT OF THE ANALOG MODULE

B. 1 REPLACEMENT OF THE ANALOG MODULE

- B.1.1 Disassemble a head.
- B.1.2 Take out a main circuit board in head.
- B.1.3 Desolder an analog module pins(11 points) on the main board.
- B.1.4 Replace an analog module by a new one.
- B.1.5 Install a main board to head.
- B.1.6 Assemble a head.

B. 2 THE SPAN CALIBRATION FOR THE ANALOG MODULE

Refer to the SPAN CALIBRATION FROM REPAIR in the CHAPTER-11.

C. REPLACEMENT OF THE DIGITAL MODULE

C. 1 REPLACEMENT OF THE DIGITAL MODULE

- C.1.1 Disassemble a head.
- C.1.2 Take out a main circuit board in head.
- C.1.3 Desolder a digital module pins(48 points) on the main board.
- C.1.4 Replace a digital module by a new one.
- C.1.5 Install a main board to head.
- C.1.6 Assemble a head.

C. 2 THE INPUT FOR THE DIGITAL MODULE

In the digital module, it has a nonvolatile memory and contains a factor for a digital span calculations and the weighing conditions.

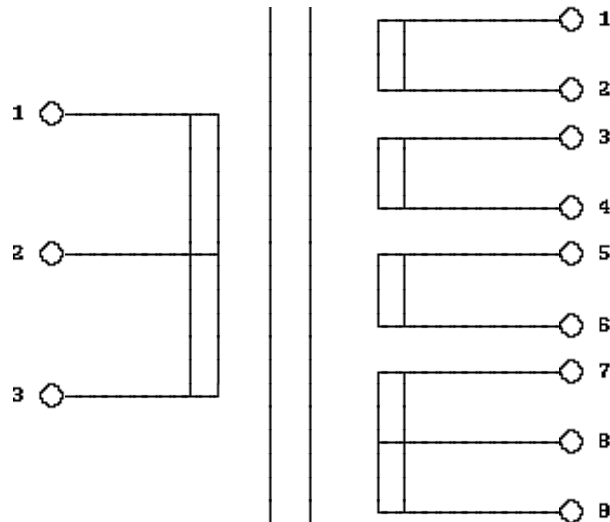
Therefore all those input procedures must be performed.

Refer to APPENDIX-1.

CHAPTER-IV

THE TRANSFORMER

A. THE TRANSFORMER



QUALITY OF LEAD WIRE AND LENGTH						
	NO.	COLOR	WIRE LENGTH	TREATMENT (mm)	mA	V
INPUT	1	WHITE	200 mm	± 10		0
	2	BROWN	"	"		110
	3	RED	"	"		220
OUTPUT	1	GRAY	250 mm	"	100	16.5
	2	PURPLE	"	"	100	8.8
	3	BLUE	"	"		
	4	GREEN	"	"		
	5	YELLOW	"	"	50	28
	6	ORANGE	"	"		
	7	RED	"	"	700	1.65
	8	BROWN	"	"	0	0
	9	BLACK	"	"	700	1.65

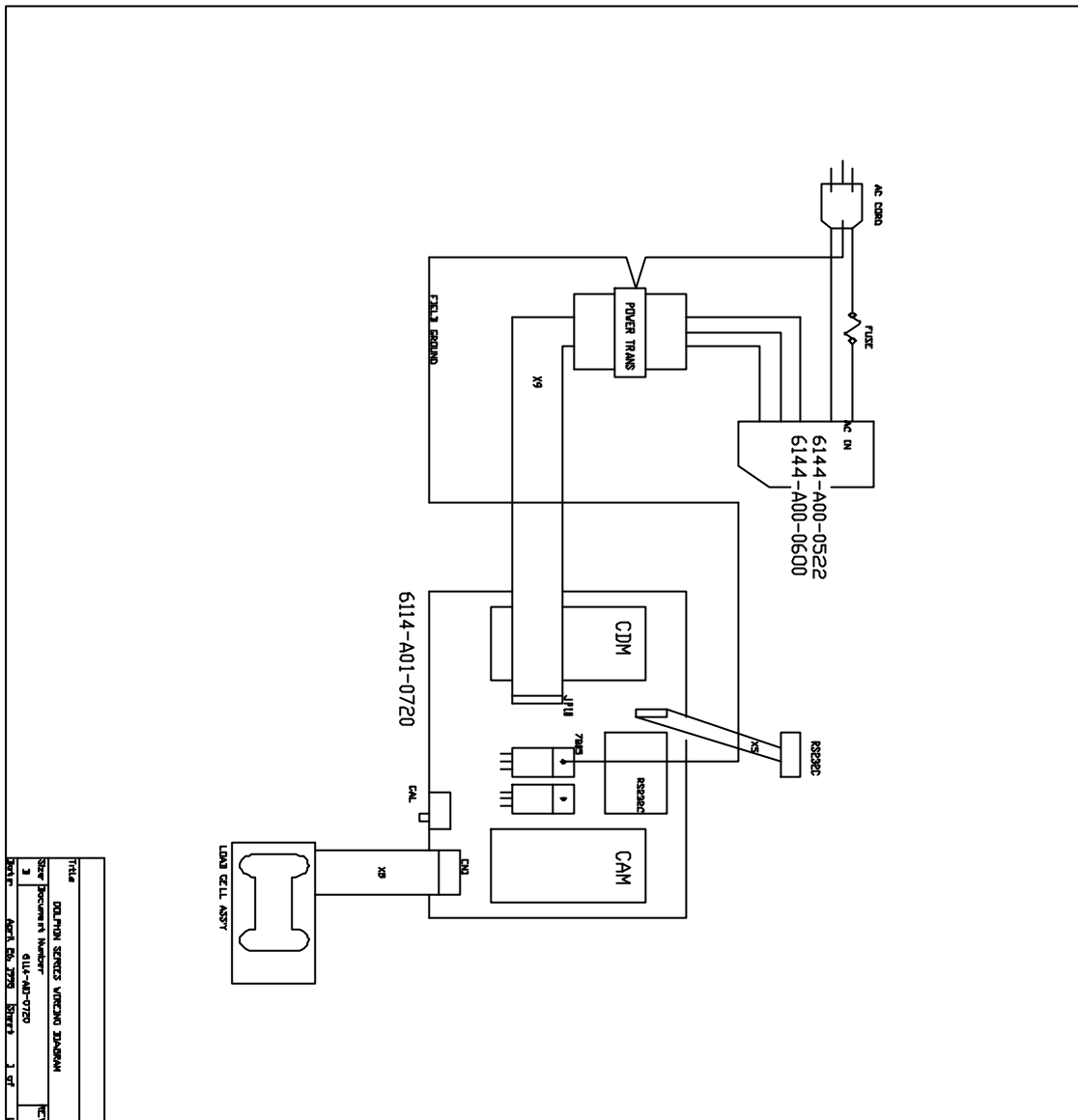
∴ CORE : 48 X 25 mm
 ∴ 50Hz / 60Hz

CHAPTER-V

THE SCHEMATICS AND THE DIAGRAMS

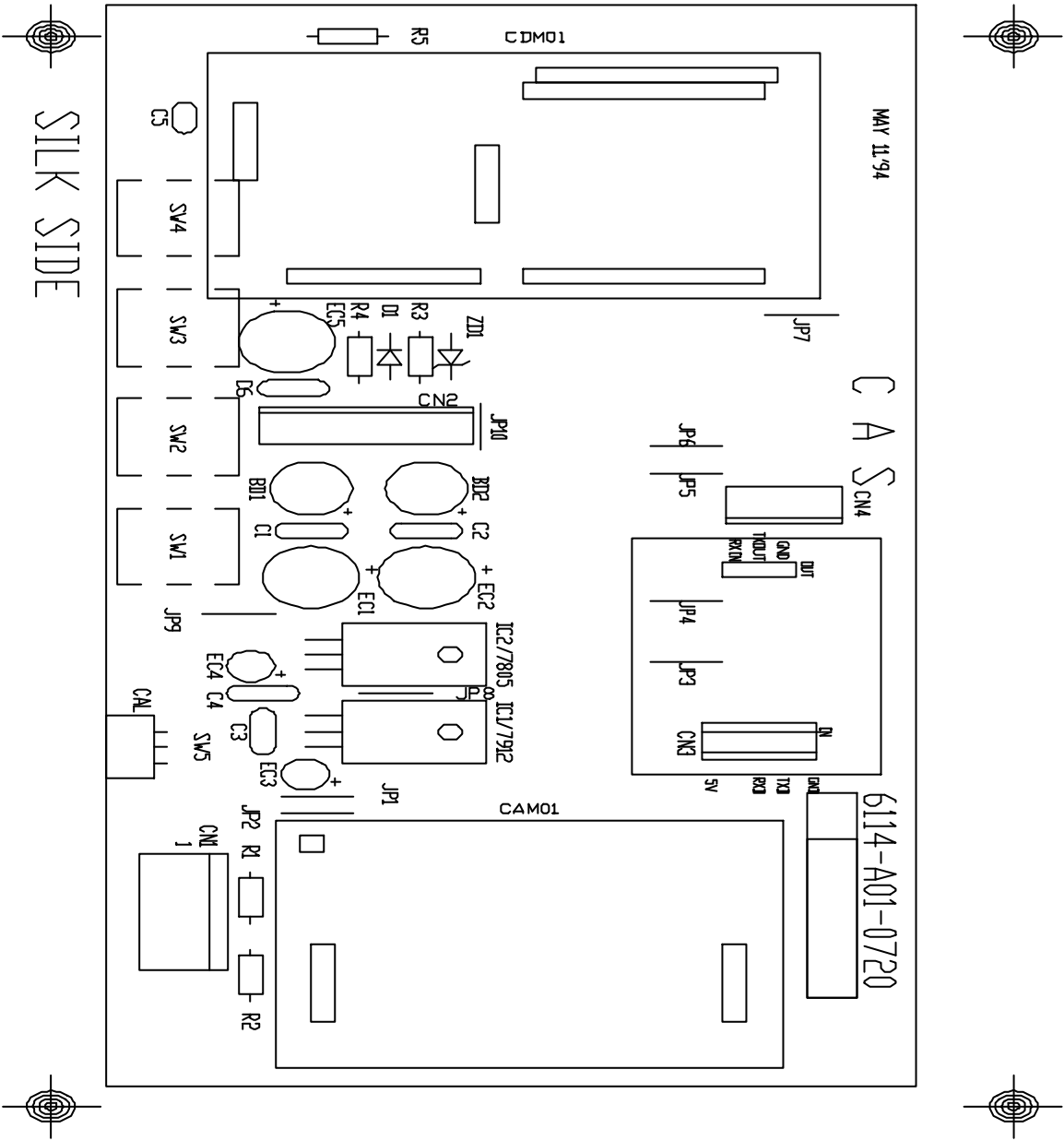
B. WIRING DIAGRAM

REV : 00



C. PARTS LOCATION

REV : 00



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CHAPTER-VI

THE ERROR MESSAGES

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A. THE ERROR MESSAGES

These error messages will guide you to do a quick troubleshooting.

A.1 "Err 1"

The "Err 1" can be happen when a current zero point has shifted from the last span calibration.

A.1.1 If a dead load of load cell has changed.

To use a different dead load from the last span calibration, the span calibration must be done before use.

However, a dead load should be lower than 20,000 counts in calibration mode 5.

A.1.2 If the contact resistance of a load cell connector is poor, clean the load cell connector or replace it.

A.1.3 If the zero point of a load cell has shifted.

Replace the load cell.

A.1.4 If the analog module has failed, replace the analog module.

For ordering, call for the name CAM 01.

A.2 "Err 2"

A.2.1 The "Err 2" is not a real error, only it prompts return CAL switch to the normal position.

A.3 "Err 10"

A.3.1 The "Err10" means a failure of the analog module.

Replace the analog module with a new one.

For ordering, call for the name CAM 01.

A.4 "Err 11"

A.4.1 The "Err11" means a writing error of the internal nonvolatile memory.

To recognize this error, be sure to voltages on the circuits and do a calibration procedures.

Nevertheless, the display shows same "Err11", replace the digital module.

For ordering, call for the name CDM 01.

A.5 "Err 12"

A.5.1 The "Err12" warns that the scale has lost of the parameters for under

weighing regulations or has lost of the factors for a digital span calculation.

To recover this, enter each condition codes again.

Refer to APPENDIX-1.

A.6 "Err 13"

A.6.1 The "Err 13" means the soft key code is broken.

To recover this error, find which key is lost the soft key code and then enter this code again.

Refer to APPENDIX-1.

CHAPTER-VII

THE OTHERS

A. FOR THE SERIAL INTERFACES

THE PROTOCOLS FOR THE CAS STANDARD SERIAL INTERFACE

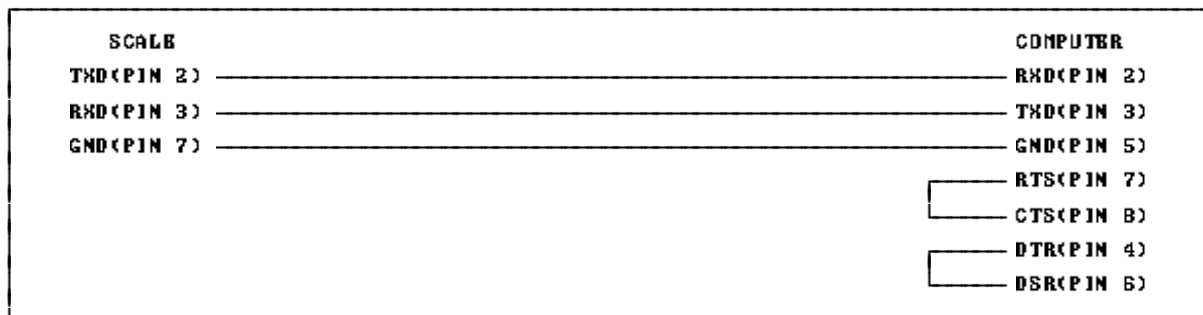
THIS IS HALF-DUPLEX COMMUNICATION RS-232C.

A. 1 THE COMMUNICATION AGREEMENTS

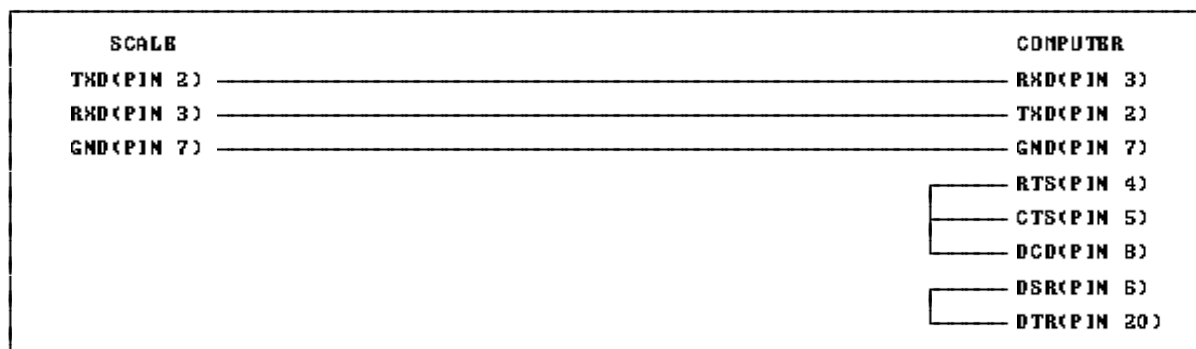
1. BAUD RATE -> 9,600 BPS
2. DATA BIT -> 8 BIT
3. STOP BIT -> 1 BIT
4. PARITY BIT -> NO
5. COMMUNICATION LEVEL -> RS-232C LEVEL
6. DATA FORMAT -> ASCII
7. THE COMMAND DEFINITIONS
 - 7-1. "ENQ" -> 05H
 - 7-2. "ACK" -> 06H
 - 7-3. "NAK" -> 15H
 - 7-4. "SDH" -> 01H
 - 7-5. "STX" -> 02H
 - 7-6. "ETH" -> 03H
 - 7-7. "EDT" -> 04H
 - 7-8. "DC1" -> 11H
 - 7-9. "DC2" -> 12H
 - 7-10. "DC3" -> 13H
 - 7-11. "DC4" -> 14H

A. 2 THE WIRE CONNECTIONS

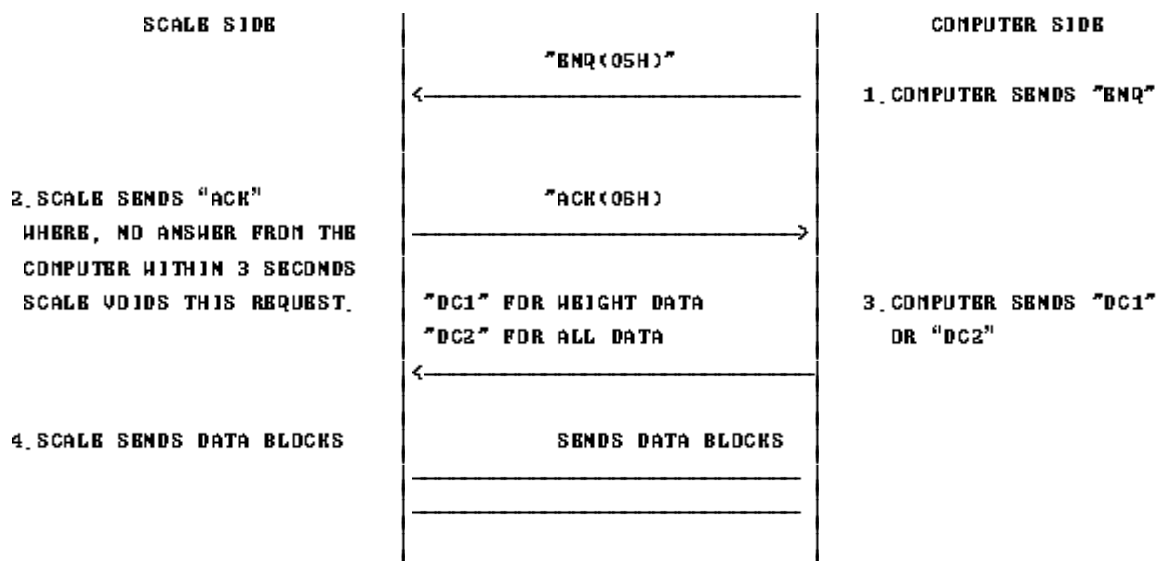
A.2.1 THE WIRE CONNECTIONS OF THE D-SUB 9 PIN CONNECTOR OF A COMPUTER SIDE



A.2.2 THE WIRE CONNECTIONS OF THE D-SUB 25 PIN CONNECTOR OF A COMPUTER SIDE

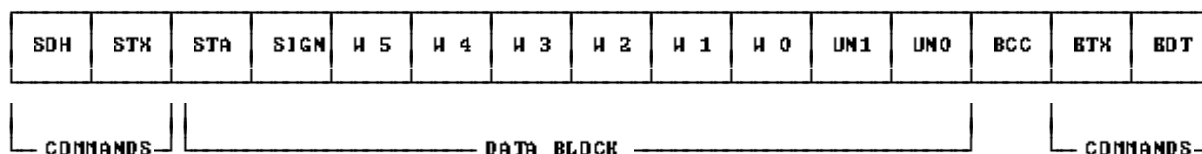


A.3 THE PROTOCOL



A.4. THE DATA TRAINS

1. THE DATA TRAINS FOR THE "DC1"



REMARKS :

- . STA -> A WEIGHING STATUS OF THE SCALE
SCALE IS STABLE -> "S", UNSTABLE -> "U"
- . SIGN -> SIGN OF THE HEIGHT DATA
ZERO AND POSITIVE HEIGHT -> " ", NEGATIVE HEIGHT -> "-",
OVER LOAD -> "F"
- . H5 THROUGH H0 -> HEIGHT DATA
BUT ALL "F"s WHEN THE SCALE IS PUT ON OVER LOAD.
- . UN1 THROUGH UN0 -> UNIT OF HEIGHT(kg OR lb)
- . BCC -> BLOCK CHECK CHARACTER
BCC IS CREATED BY EXCLUSIVE-OR OF A DATA BLOCK.

2. THE DATA TRAINS FOR THE "DC2"

SDH	STX	P 7	P 6	P 5	P 4	P 3	P 2	P 1	P 0	BCC	ETX
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

STX	STA	SIGN	H 5	H 4	H 3	H 2	H 1	H 0	UN1	UN0	BCC	ETX
-----	-----	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

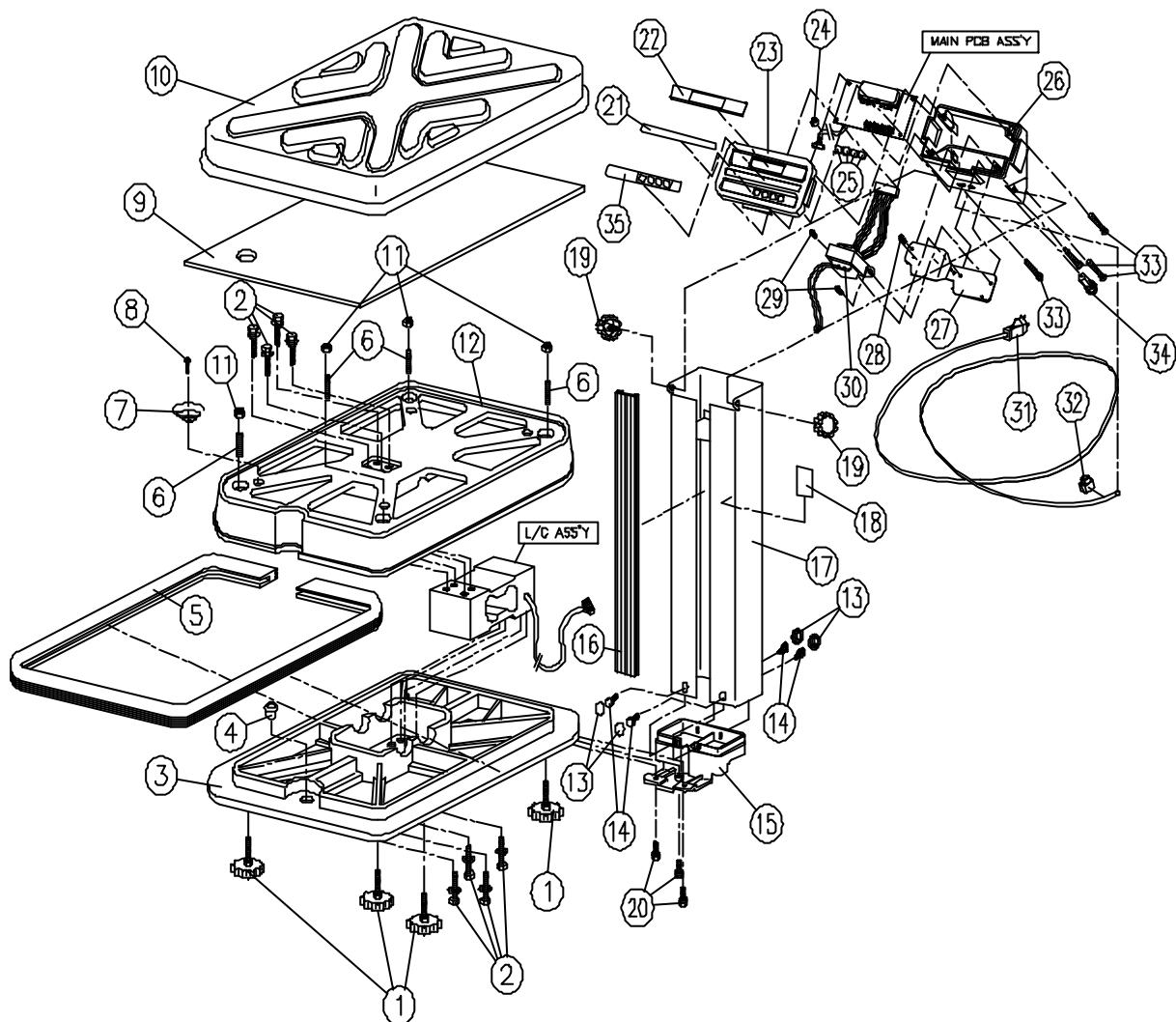
STX	P 7	P 6	P 5	P 4	P 3	P 2	P 1	P 0	BCC	ETX	EDT
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

REMARKS ;

- . STA -> A WEIGHING STATUS OF THE SCALE
SCALE IS STABLE -> "S" , UNSTABLE -> "U"
- . SIGN -> SIGNS OF THE HEIGHT DATA
ZERO AND POSITIVE HEIGHT -> " " , NEGATIVE HEIGHT -> "-" ,
OVER LOAD -> "F"
- . P7 THROUGH P0 -> PRICE DATA
IF THE OVER FLOW IS HAPPEN IN PRICE, ALL "F"s WILL FILL TO DATA BLOCK
OF THE PRICE.
- . H5 THROUGH H0 -> HEIGHT DATA
BUT ALL "F"s WHEN THE SCALE IS PUT ON OVER LOAD.
- . UN1 THROUGH UN0 -> UNIT OF HEIGHT(kg OR lb)
- . BCC -> BLOCK CHECK CHARACTER
BCC IS CREATED BY EXCLUSIVE-OR OF EACH DATA BLOCKS.

B. EXPLODED VIEW(MECHANICAL PART)

REV : 00



C. FULL PARTS LIST

REV : 00

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
ASS'Y MAIN PCB						
1	1502-A00-0308-0	MACHINE SCREW (PH)	M3*8	EA	2	IC1, 2
2	1540-A00-0300-0	NUT (HEX)	M3*0.5	EA	2	IC1, 2
3	6100-PDB-0720-0	MAIN PCB	6114-A01-0720	EA	1	
	6100-PDB-0722-0	MAIN PCB	6114-A01-0722 (kg/1b Ver)	EA	1	
4	6220-100-7805-0	IC (REGULATOR)	LM7805	EA	1	IC2
5	6220-100-7812-0	IC (REGULATOR)	LM7812CT	EA	1	IC1
6	6280-1BR-0153-0	BRIDGE-DIODE	RB-153	EA	2	BD1, BD2
7	6281-1PD-4004-0	POWER-DIODE	1N4004	EA	1	D1
8	6282-1ZE-4736-0	ZENER-DIODE	6.2V/1W	EA	1	ZD1
9	6515-R0J-0203-0	RESISTOR 1/4W	CFR 20K(±5%)	EA	1	R5
10	6515-R0J-0303-0	RESISTOR 1/4W	CFR 30K(±5%)	EA	2	R3, R4
11	6704-C50-0220-0	ELECTRIC-CONDENSER	200uF/25V(SG)	EA	1	EC5
12	6704-C25-0470-0	ELECTRIC-CONDENSER	470uF/25V(SG)	EA	1	EC1
13	6704-C16-1000-0	ELECTRIC-CONDENSER	100uF/16V(SG)	EA	1	EC2
14	6704-C16-0100-0	ELECTRIC-CONDENSER	100uF/16V	EA	2	EC3, EC4
15	6710-CAP-0104-0	CERAMIC-CONDENSER	0.1uF/25V	EA	5	
16	7844-W00-0100-0	JUMP WIRE	0.6*10mm	EA	10	
17	7600-SLD-0002-0	SLIDE S/W	INCA-2	EA	1	CAL
18	7801-CLW-0003-0	CONNECTOR (WAFER)	LH 0640-03	EA	1	
19	7801-CLW-0008-0	CONNECTOR (WAFER)	L2 0640-08	EA	1	CN2
20	7808-CGD-0005-0	CONNECTOR (WAFER)	1143-05(GOLD)	EA	1	CN1
21	7600-STA-1104-0	TACT S/W	KPT-1104	EA	4	SW1-SW4
22	2631-A00-0003-0	FIP CUSHION	30*20*1t	EA	1	
23	7202-D00-0078-0	FIP & VFD	CV7DB	EA	1	
	7202-D00-0528-0	FIP & VFD	F-52B (kg/1b Ver)	EA	1	
ASS'Y ANALOG MODULE						
1	1050-A00-0008-0	SHIELD CASE (CAN)	60.2*37*18*1t	EA	1	
2	1510-A00-0236-0	TAPPING SCREW-1	2.3*6	EA	1	
3	1810-A00-0013-0	ANALOG PLATE	43*14.5(CAN)	EA	1	
4	6121-PMD-0100-0	ANALOG PCB	6144-A01-0100	EA	1	
5	6236-1S0-4011-0	IC(D-NDS-GATE)	UPD4011BG	EA	1	
6	6236-1S0-4066-0	IC(ANALOG SW)	UPD4066BG	EA	1	
7	6240-1S0-0177-0	IC(OP-AMP)	OP-177GS	EA	1	
8	6240-1S0-0040-0	IC(OP-AMP)	UPC4072G2	EA	2	
9	6281-100-1504-0	CHIP TRANSISTOR	MTA1504 SY	EA	3	
10	6284-1CP-0181-0	SWITCHING DIODE	KDS 181 (SMD)	EA	1	
11	6527-R00-0101-0	CHIP RESISTOR 1/10W	RR1220P-1010(100Ω)	EA	2	
12	6527-R00-0222-0	CHIP RESISTOR 1/10W	RR1220P-2220(2.2K)	EA	1	
13	6527-R00-0103-0	CHIP RESISTOR 1/10W	RR1220P-103(10K)	EA	6	

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
14	6527-R00-4992-0	CHIP RESISTOR 1/10W	RR1220P-4992D(49.9K)	EA	2	
15	6527-R00-0104-0	CHIP RESISTOR 1/10W	RR1220P-104D(100K)	EA	4	
16	6540-RPR-11K5-0	PRECISION RESISTOR	FLAY 11K500B	EA	2	
17	6550-RM0-0400-0	NETWORK RESISTOR	2B-35-ME16(1K/10K)	EA	1	
18	6702-CAP-0106-0	CHIP TANTAL	10MCS 106 MB TER	EA	1	
19	6702-CAP-0685-0	CHIP TANTAL	16MCS 685 MB TER	EA	2	
20	6800-F00-0220-0	EMI FILTER	220PF(TDK)	EA	2	
21	6712-CHP-0104-0	CHIP CONDENSER	CL21F 104 NBNC	EA	10	
22	6720-CAP-0105-A	POLYESTER CONDENSER	1 μ F/63V J RATE BDX-TYPE	EA	1	
23	6720-CAP-0474-0	POLYESTER CONDENSER	0.47 μ F/63V J RATE BDX TYPE	EA	3	
24	6722-CAP-0104-0	P.P CONDENSER	DTM-104J/100V	EA	1	
25	7B10-C00-92B4-0	CONNECTOR	92B400-40(MALE)	EA	0.275	
ASS'Y DIGITAL MODULE						
1	1050-A00-0009-0	SHIELD CASE (CDM)	60.2*37*19*14	EA	1	
2	1510-A00-0236-0	TAPPING SCREW -1	2.3*6	EA	1	
3	1810-A00-0015-0	DIGITAL PLATE	43*14.5	EA	1	
4	6101-PMD-0010-0	DIGITAL PCB	6101-PMD-0010-0	EA	1	AP-1
5	6200-IPU-0154-0	IC	MSMB3C154H-024GS-VIK	EA	1	
6	6205-ISO-2416-0	IC (EEP-ROM)	M24164S-C7000	EA	1	
7	6210-ISO-6052-0	IC (RESET)	H6052 V1 (SDT223)	EA	1	
8	6224-ISO-1631-0	IC (FIP-DRIVER)	UPD16310GF-3LB	EA	1	
9	62B1-100-1504-0	CHIP RESISTOR 1/10W	RR1220P-101D (100 Ω)	EA	4	
10	6527-R00-0101-0	CHIP RESISTOR 1/10W	RR1220P-222D(2.2K)	EA	6	
11	6702-CAP-0106-0	CHIP TANTAL	10MCS 106 MB	EA	1	
12	6712-CAP-0180-0	CHIP CAPACITOR	18PF/50V (CL21C180J)	EA	2	
13	62B1-100-1504-0	CHIP TRANSISTOR	MTA1504 SY	EA	1	
14	6712-CHP-0104-0	CHIP CONDENSER	CL21F 104 NBNC	EA	4	
15	7010-ZM0-1105-A	CRYSTAL	11.0592 MHZ(ATS-49/U)	EA	1	
16	7B10-C00-92B4-0	CONNECTOR	92B400-40 (MALE)	EA	1.2	

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
ASS'Y BODY						
1	2010-A00-0005-0	FOOT	M10*1.5*45.5	EA	4	
2	1521-A00-0825-0	HEXAGON BOLT (HA)	M8*25(B.Bt)	EA	4	
3	1110-A00-0004-0	BODY	AL 534*365*70	EA	1	
4	2022-A00-0003-0	W/L GAGE ASS'Y	1B*21*14.5-BLACK	EA	1	
5	2600-A00-0001-0	WAIST BAND	15*16.3	EA	1	
6	1532-A00-0830-A	WRENCH BOLT (ST)	M8*30-SUS	EA	4	
7	1580-A00-0018-0	GROUND SPRING	SUS304, $\varnothing$ 0.8*20*20	EA	1	
8	1502-A00-0408-0	MACHINE SCREW (PH)	M4*8	EA	1	
9	B304-A00-0008-0	DUST COVER CUSHION	EVA 2t, 440*560	EA	1	
10	1000-A00-0001-0	DUST COVER	530*406*54	EA	1	
11	1540-A00-0800-0	NUT (HEX)	M8*1.25	EA	4	
12	1110-A00-0001-0	PLATFORM	AL 520*385*44	EA	1	
13	2014-A00-0001-0	HEXAGON BOLT CAP	14*18*12.2(H)	EA	4	
14	1520-A00-0610-0	HEXAGON BOLT	M6*10	EA	4	
15	1110-A00-0005-0	BRACKET	AL 200*162*83	EA	1	
16	2020-A00-0003-0	SUPPORT COVER	PVC 50.6*8.5*560	EA	1	
17	1030-A00-0067-0	SUPPORT	187.5*86.5*580	EA	1	
18	1810-A00-0010-0	SPEC PLATE	DOLPHIN	EA	1	
19	2001-A00-0056-0	STOP BOLT	M8*P1.25*28.5	EA	2	
20	1520-A00-0627-0	HEXAGON BOLT (FT)	M6*27-SUS	EA	3	
ASS'Y HEAD						
21	2200-A00-0112-0	NAME PAD	LEXAN 172*12	EA	1	
22	2050-A00-0141-A	DISPLAY COVER	PC 181.8*33.8	EA	1	
23	2000-A00-0038-0	HEAD COVER	214*115(AS)	EA	1	
24	7640-S00-0504-0	CORD STOPPER	5M4(HSL, ASDVL)	EA	1	
25	2000-A00-0057-0	K/B SWITCH KNOB	11.5*11.5*3.8	EA	4	
26	2000-A00-0038-0	HEAD	214*127(AS)	EA	1	
27	1030-A00-0007-0	TRANS BRACKET	164*63*1.2t(AS)	EA	1	
28	1512-A00-0408-0	TAPPING SCREW (PH)-2	4*8	EA	1	
29	1512-A00-0412-0	TAPPING SCREW (PH)-2	4*12	EA	2	
30	7502-PAP-0220-0	POWER TRANS (4B)	220V/50-60Hz	EA	1	
31	7560-PAC-0013-0	AC CORD	B-02(2.1M-UL)	EA	1	
32	7640-S00-0604-0	CORD STOPPER	SR-6M-4	EA	1	
33	1502-A00-0440-0	MACHINE SCREW(PH)	M4*40	EA	4	
34	7630-S00-0030-A	FUSE HOLDER	FH-30	EA	1	
35	2200-A00-0051-0	KEY PAD	LEXAN 181.4*26	EA	1	
ASS'Y OTHER						
1	7650-S00-0010-0	TIE BAND	100mm	EA	1	
2	7704-G00-0040-0	TERMINAL CAP	HT-C-2.0*15(YELLOW)	EA	7	
3	7760-GND-0078-0	EARTH TERMINAL	GP140078	EA	2	
4	7860-GND-0310-0	GROUND TERMINAL ASS'Y	310mm	EA	1	
5	7834-W00-0110-0	SHIELD WIRE ASS'Y	5P*5P*200m/m	EA	1	

NO	MAT'L NBR CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
ASS'Y C/T BOX						
1	1521-MSU-0608-0	HEXAGON BOLT (HA)	M6*8.5-SUS	EA	4	
2	7620-S00-0200-0	FUSE	0.2A/250V	EA	1	
3	B002-A00-0076-0	MANUAL	DB-1H	EA	1	
4	B301-A00-0003-0	MANUAL POLY BAG	170*250*0.05	EA	1	
5	B305-A00-0002-0	SET POLY BAG	550*750*0.05	EA	1	
6	B400-A00-0040-0	SILICAGEL	10g	EA	2	
7	B107-AC1-0002-0	C/T BOX	745*510*325	EA	1	
8	B107-AD2-0001-0	C/T BOX	760*525*345	EA	1	
9	B107-AP0-0002-0	PAD	740*505	EA	1	
10	B207-AS0-0001-0	STYROPOL BOX	740*146*146	EA	1	
11	B207-AS0-0002-0	STYROPOL BOX	740*146*146	EA	1	
12	B207-AS0-0003-0	STYROPOL BOX	740*505*155	EA	1	
13	7640-S00-0012-0	CORD STOPPER	DADC-12M	EA	1	
14	7B60-GND-1500-0	GROUND TERMINAL ASS'Y	1500mm	EA	1	
15	B300-A00-0001-0	FUSE POLY BAG	50*60*0.05t	EA	1	
16	B300-A00-0002-0	FUSE POLY BAG	80*150*0.05t	EA	1	
17	B303-A00-0003-0	SUPPORT POLY BAG	330*700*0.05t	EA	1	
18	B303-A00-0004-0	HEAD POLY BAG	350*450*0.05t	EA	1	
ASS'Y LOAD CELL				EA	1	

CHAPTER-VIII

APPENDIX-I

A. INPUT CODES FOR THE DIGITAL MODULE

A. 1 THE ALTERNATIVE KEY FUNCTIONS

A.1.1 In this mode, the function of three keys are converted as below Fig. 1.

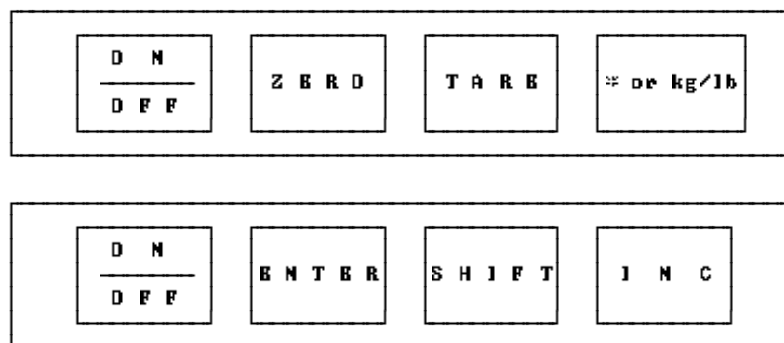


Fig. 1

- A.1.2 "INC" -> This key does increase the number by one at current number.
And also any numeral can be increased from "0" to "F"(hexadecimal)
- A.1.3 "SHIFT" -> This key shifts to the next numeric digit.
- A.1.4 "ENTER" -> This key saves the current code or revised code.

A. 2 INPUT FOR WEIGHING CONDITION CODES

- A.2.1 Set the scale to the calibration mode.
- A.2.2 Press the "DN/DFE" key (MODE 1).
-> The display shows "C-Set" and then "1-XX".
- A.2.3 Enter each weighing condition code. Refer to Table 1 through Table 4 under 1 / 3,000 of external resolution.

THE CODES FOR STANDARD VERSION

S T E P	30 kg	60 kg	150 kg	60 lbs	150 lbs	300 lbs
1	B 1	B 1	B 1	B 1	B 1	B 1
2	2 0	2 1	2 2	2 1	2 2	2 0
3	4 0	4 0	4 0	4 0	4 0	4 0
4	2 2	2 2	2 2	A 2	A 2	A 1

Table 1

THE CODES FOR HOLD VERSION

S T E P	30 kg	60 kg	150 kg	60 lbs	150 lbs	300 lbs
1	B 1	B 1	B 1	B 1	B 1	B 1
2	2 0	2 1	2 2	2 1	2 2	2 0
3	4 1	4 1	4 1	4 1	4 1	4 1
4	2 2	2 2	2 2	A 2	A 2	A 1

Table 2

THE CODES FOR PRINTER VERSION

*.NOTE ; This printer interface feature is only available with CAS TDP PRINTER P-202

S T E P	30 kg	60 kg	150 kg	60 lbs	150 lbs	300 lbs
1	B 1	B 1	B 1	B 1	B 1	B 1
2	2 0	2 1	2 2	2 1	2 2	2 0
3	4 2	4 2	4 2	4 2	4 2	4 2
4	2 2	2 2	2 2	A 2	A 2	A 1

Table 3

THE CODES FOR kg/lb VERSION

S T E P	30 kg	60 kg	150 kg	60 lbs	150 lbs	300 lbs
1	B 1	B 1	B 1	B 1	B 1	B 1
2	2 0	2 1	2 2	2 1	2 2	2 0
3	4 3	4 3	4 3	4 3	4 3	4 3
4	2 2	2 2	2 2	A 2	A 2	A 1

Table 4

A. 3 THE SPAN CALIBRATION

Refer to SPAN CALIBRATION FROM REPAIR in chapter-11.