M350 INTELLIGENT PRINTER

INSTRUCTION MANUAL

UNIPULSE

12 Jun. 2009
Rev.1.02

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1 Introduction

This is the M350 INTELLIGENT PRINTER INSTRUCTION MANUAL. For full performance of the M350 Intelligent Printer, read through this manual before use.

2 How to Use This Manual

This manual is organized into the three parts:

Basics: Provides basic operations of the M350 Intelligent Printerfor a user who is not familiar with the M350.

Functions: Covers all the functions of the M350. Consult this part as required.

Troubleshooting: Describes actions to be taken on any abnormality in the M350, such asabnormal print and shutdown.

3 Basics

This part includes basic operations of the M350:

■Setup

- Power Connection
- SI/F Connection
- SI/FII Connection
- BCD IN Connection
- RS-232C Connection
- External Command Terminal Connection
- Power On

■Basic Print

- Data Print
- Grand Total / Sub Total Print

■Setting of Ink Ribbon

■Setting of Roll Paper

3.1 Setup

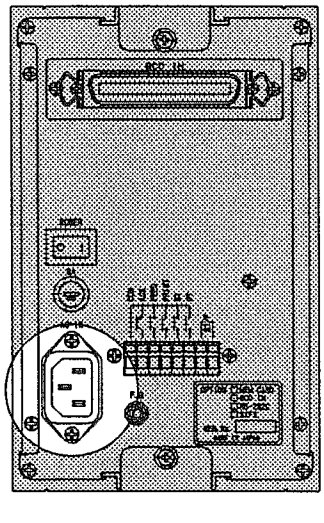
Use the following procedure to set up the M350:

1. Connect the power supply.
2. Connect the M350 to the indicator (data transmitter).
   - SI/F connection
   - SI/FII connection
   - BCD IN connection
   - RS-232C connection
3. Turn on the power.

3.1.1 Connect the power supply.

Connect the attached AC power cord to the AC power input connector.

M350 rear panel



AC power input connector

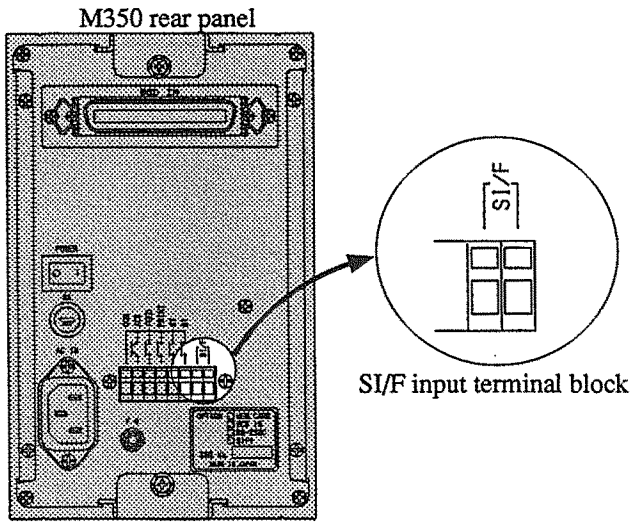
CAUTION:
AC supply voltage range is 90V to 125V AC. If this limit is exceeded, malfunction, unstable operation, or breakage will result.

3.1.2 Connect to the indicator (data transmitter)

Connect the M350 to an indicator from UNIPULSE or a data transmitter such as a PC and a sequencer. Grand Total four connection types (SI/F, SI/FII, BCD, and RS-232C) are available.

3.1.2.1 SI/F

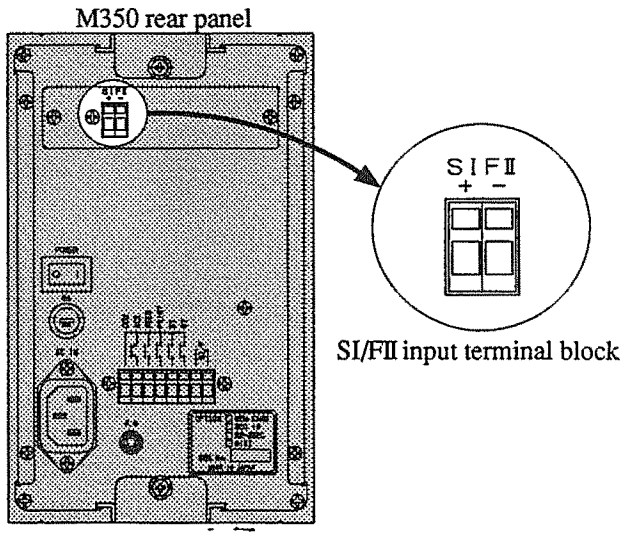
Use the SI/F input terminal block to connect the M350 directly to an indicator from UNIPULSE.



- Use parallel two-core cables or cabtire cables.
- To prevent malfunction, make wiring separately from lines with high noise or AC lines.

3.1.2.2 SI/FII (Option)

Use the SI/FII input terminal block to connect the M350 directly to an SI/FII-compatible indicator from UNIPULSE. Use of twisted-pair cables is recommended.



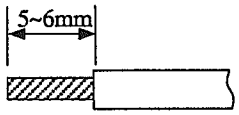
CAUTION: SI/FII has positive and negative polarities. Reversing the polarity prevents normal transmission. SI/FII is optional. SI/F and SI/FII cannot used at the same time. If both terminals are connected, only SI/FII is effective.

3.1.2.3 Connecting SI/F and SI/FII

Follow the procedure below to connect two-core cables to the SIF or SIFII terminal block:

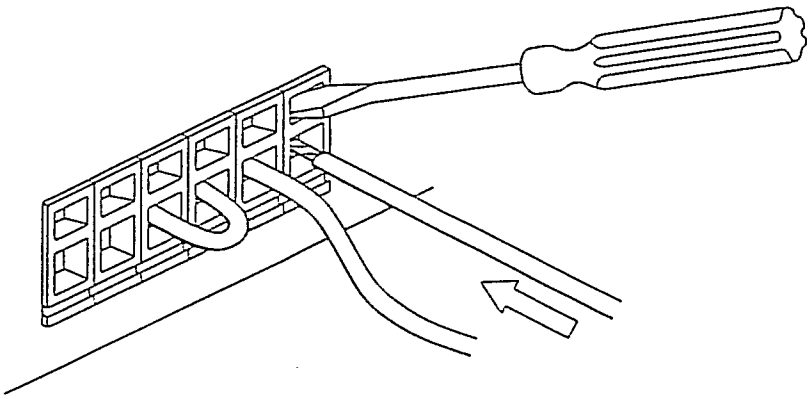
(1) Remove wire sheath by 5 to 6mm.

(2) Twist the end taking care not to disassemble the core.



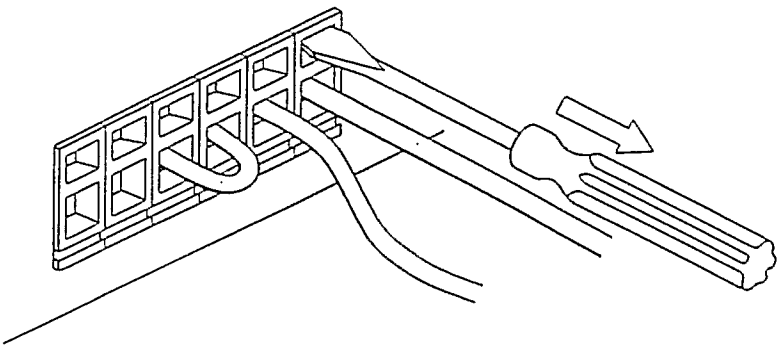
(3) Fit the attached screwdriver into the upper slot and insert firmlyslightly upward.

(4) Insert the wire into the lower slot taking care not to disassemble the tip.



(5) Pull out the screwdriver.

(6) Pull the wire softly to ensure that it is clamped.



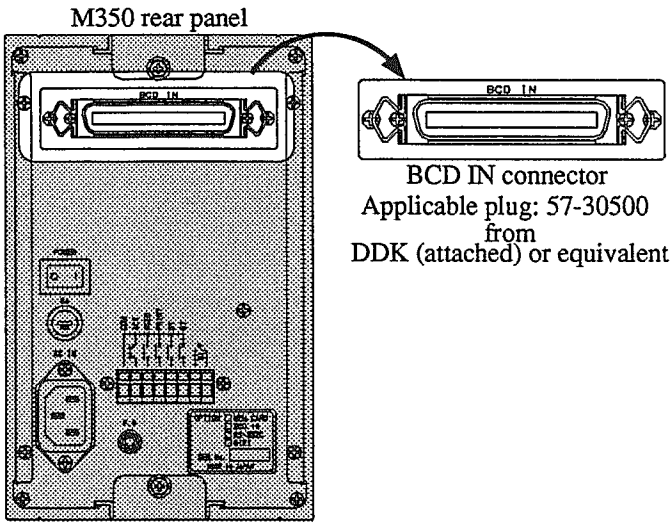
CAUTION:

Available wires are 0. 2 to 2. 5mm2 in cross section. Avoid attaching a crimp-style terminal to the wire tip or soldering.

Twist the cables before using multiple wires.

3.1.2.4 BCD (Option)

Use the BCD IN connector to connect the M350 to the optional BCD output terminal of an indicator from UNIPULSE or to the connector on the BCD output board of a PC or a PLC.

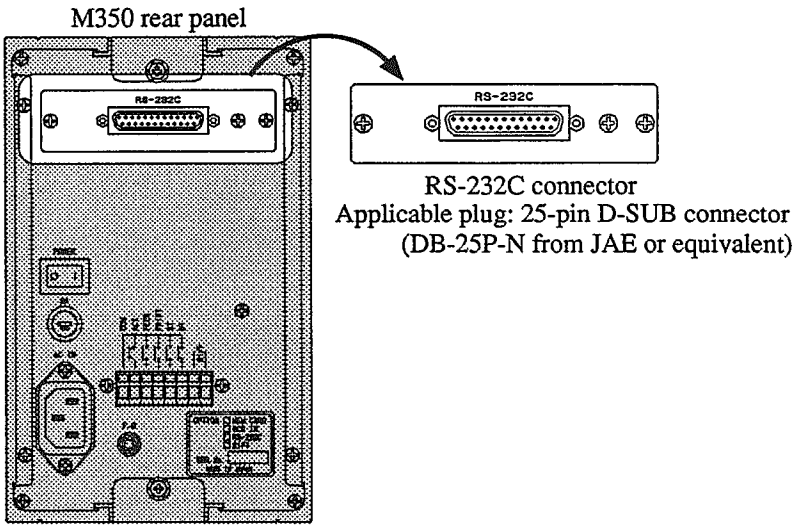


Connector pin assignment

1	COM	26	Code 1 0 Input
2	DATA 1 Input	27	〃 2 0 〃
3	〃 2 〃	28	〃 4 0 〃
4	〃 4 〃	29	〃 8 0 〃
5	〃 8 〃	30	〃 1 0 0 〃
6	〃 1 0 〃	31	〃 2 0 0 〃
7	〃 2 0 〃	32	〃 4 0 0 〃
8	〃 4 0 〃	33	〃 8 0 0 〃
9	〃 8 0 〃	34	〃 1 0 0 0 〃
10	〃 1 0 0 〃	35	〃 2 0 0 0 〃
11	〃 2 0 0 〃	36	〃 4 0 0 0 〃
12	〃 4 0 0 〃	37	〃 8 0 0 0 〃
13	〃 8 0 0 〃	38	〃 1 0 0 0 0 〃
14	〃 1 0 0 0 〃	39	〃 2 0 0 0 0 〃
15	〃 2 0 0 0 〃	40	〃 4 0 0 0 0 〃
16	〃 4 0 0 0 〃	41	〃 8 0 0 0 0 〃
17	〃 8 0 0 0 〃	42	〃 1 0 0 0 0 0 〃
18	〃 1 0 0 0 0 〃	43	〃 2 0 0 0 0 0 〃
19	〃 2 0 0 0 0 〃	44	〃 4 0 0 0 0 0 〃
20	〃 4 0 0 0 0 〃	45	〃 8 0 0 0 0 0 〃
21	〃 8 0 0 0 0 〃	46	Over Input
22	Code 1 〃	47	Minus (polarity) input
23	〃 2 〃	48	
24	〃 4 〃	49	Read command input
25	〃 8 〃	50	

3.1.2.5 RS-232C (Option)

Use the RS-232C connector to connect the M350 to the connector on the RS-232C board of PC or a PLC.

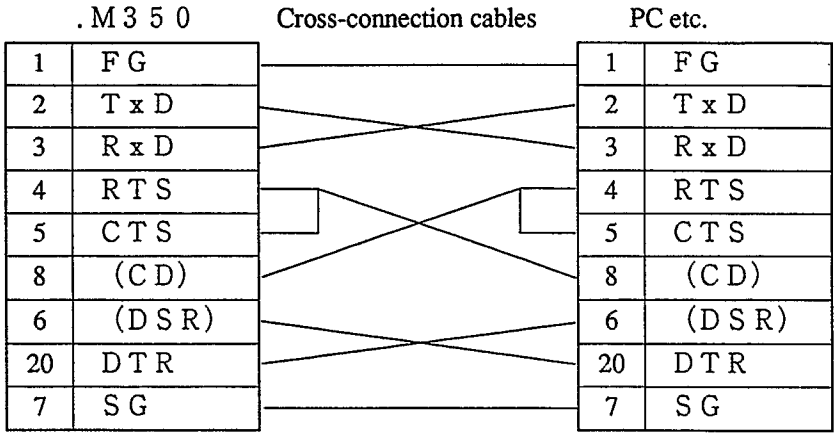


RS-232C connector
Applicable plug: 25-pin D-SUB connector
(DB-25P-N from JAE or equivalent)

Connector pin assignment

1	*	COM	14		
2	OUT	TxD	15		
3	IN	RxD	16		
4	OUT	RTS	17		
5	IN	CTS	18		
6		(DSR)	19		
7	*	COM	20	OUT	DTR
8		(CD)	21		
9			22		
10			23		
11			24		
12			25		
13					

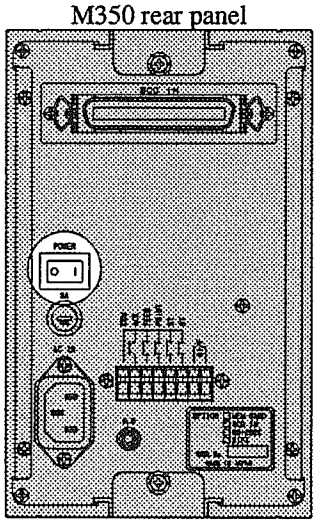
Example of cable connection

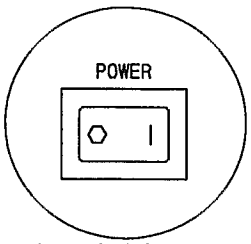


3.1.3 Power Input

Turning on the power switch feeds power to start the M350. On startup, a startup beep sounds, and the startup screen is displayed for approximately two seconds.

M350 rear panel





Place the switch in the position with "|" mark to turn on the power.

Startup screen

```
Intelligent
Printer Ver1.05
```

3.2 Basic Print

3.2.1 Data Print

Setting has been made to the M350 at shipment to allow basic print (standard print).

Data print example

・Standard print Count Input data

Count	Input data
1234	-123.45kg
1235	-234.56kg
1236	345.67kg

Count and input data are printed

Each time the PRINT key is pressed, the one-time data entered then is printed. To delete the data printed (to exclude data from grand total/sub total), press the DELkey and the ENT key in this order. This prints the last printed data again andexcludes the data from grand total/sub total data.

The M350 features application prints where additional information is available, as wellas standard print. The following shows application print examples. For details, referto the setting of application print.

Data print example

・With time

Time	Count	Input data
11:23	1234	45.678kg
11:24	1235	-56.789kg

Time Count Input data Print time is printed

· With code

Code	Count	Input data
123456	2468	67.891kg
ABCDEF	2469	-78.912kg

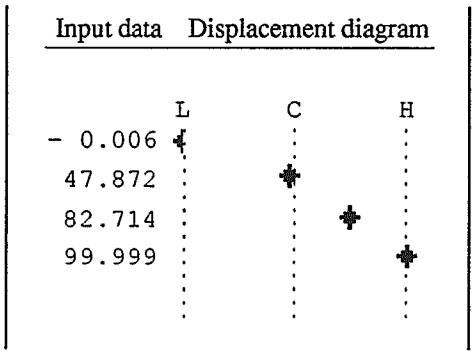
Code Count Input data Print data includes code names. Data is classified and collected into grand total or sub total.
(maximum 32 types)

· With time and code

Time Code	Count	Input data
11:40 123456	2468	67.891kg
11:41 ABCDEF	2469	-78.912kg

Time Code Count Input data Print time and code are printed.

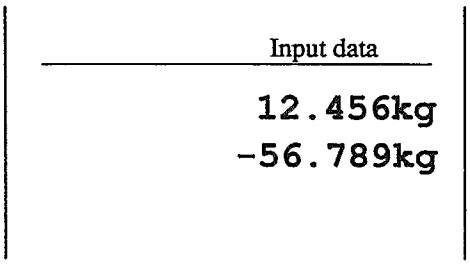
· Displacement diagram



Ex)
Displacement diagram with TARGET being 50. 000kg and RANGE being 50. 000kg.

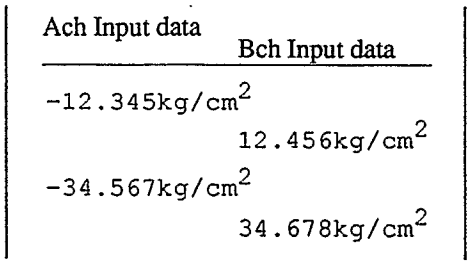
TARGET (target value) and RANGE is set using the histogram target value Ach andhistogram range Ach.

· Double width size print



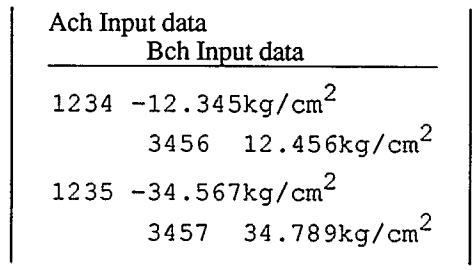
Input data is printed in double width size.
(Up to four unit characters are printed.)

· Double print



Ach/Bch input data is printed.

· Double print (with count)



· Quadruple print

Ach Input data
Bch Input data
Cch Input data
Dch Input data

12.345kg/cm^2
23.456kg/cm^2
34.567kg/cm^2
45.678kg/cm^2
56.789kg/cm^2
67.891kg/cm^2
78.912kg/cm^2
89.123kg/cm^2

· Quadruple print (with count)

Ach Input data
Bch Input data
Cch Input data
Dch Input data

1234 12.345kg/cm^2
2345 23.456kg/cm^2
3456 34.567kg/cm^2
4567 45.678kg/cm^2
1235 12.346kg/cm^2
2346 23.457kg/cm^2
3457 34.568kg/cm^2
4568 45.679kg/cm^2

3.2.2 Grand Total / Sub Total Print

This function collects printed data. Setting has been made to the M350 at shipment to allow basic grand total print(standard grand total print).

Difference between grand total (GT) and sub total (ST) operations

Grand Total (GT) and Sub Total (ST) use the same format with the following difference inoperation:

GT: Prints the grand total data and clear each pieces of data. The next print starts with the count no. 1.

ST: Prints out the sub total data while storing the previous separate data. The nextprint starts with the subsequent count.

Grand total print example

· Standard grand total print

```
--- GRAND TOTAL  Ach ---

DATE     1994/02/04 13:15
COUNT              4532
GT           1234567.89kg
```

Print time, grand total, and count are printed. When grand total of multiple channels such as double print and quadruple print areoutput, grand total by channel and grand total of all channels (TOTAL ALL) are printed.

```
--- GRAND TOTAL  ALL ---

COUNT              8724

             9876543.21kg
```

Pressing the GT key and the ENT key in this order prints the grand total data, clearing the previous print data from memory.

Pressing the ST key and the ENT key in this order prints the sub total data.

The M350 features application prints where additional information is available, as wellas standard print. The following shows application print examples. For details, referto the setting of application print.

Data print examples

· With code

```
--- GRAND TOTAL  Ach ---

DATE     1993/07/23 10:15
CODE                   A2
COUNT                 408
ST              158.363kg
```

Grand total by code and Grand total of all codes are printed.
Up to 32 codes may be listed.

· With average / maximum / minimum data

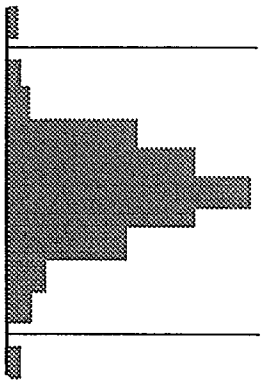
```
--- GRAND TOTAL  Ach ---

DATE     1993/07/23 10:15
CODE                   A2
COUNT                 408
ST              158.363kg

SDn-1             0.310kg
AVE              12.010kg
MAX              13.222kg
MIN              11.567kg
```

· With statistical data

```
--- GRAND TOTAL  Ach ---

DATE      1993/07/23 10:15
CODE                  A2
COUNT                408
ST              158.363kg

SDn-1            0.310kg
AVE             12.010kg
MAX             13.222kg
MIN             11.567kg
R(MAX-MIN)       1.655kg

TARGET          12.000kg
RANGE            0.300kg
H OVER TIMES          1
L OVER TIMES          3


--- GRAND TOTAL  Bch ---

DATE      1993/07/23 10:15
CODE                  A2
COUNT                408
ST              158.363kg

SDn-1            0.310kg
AVE             12.010kg
MAX             13.222kg
MIN             11.567kg
R(MAX-MIN)       1.655kg

TARGET          12.000kg
RANGE            0.300kg
H OVER TIMES          1
L OVER TIMES          3
```

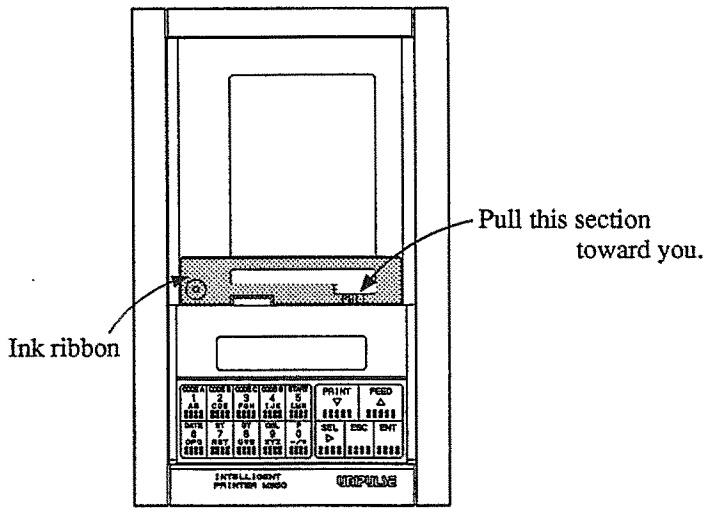
• With histogram

```
--- GRAND TOTAL  Ach ---

DATE     1993/07/23 10:15
CODE                  A2
COUNT                408
ST              158.363kg

SDn-1             0.310kg
AVE              12.010kg
MAX              13.222kg
MIN              11.567kg
R(MAX-MIN)        1.655kg

TARGET            5.000kg
RANGE             5.000kg
H OVER TIMES           1
L OVER TIMES           3

HIGHEST 10.001~
U4        8.889~ 10.000kg
U3        7.778~  8.888kg
U2        6.667~  7.777kg
U1        5.556~  6.666kg
T         4.444~  5.555kg
L1        3.333~  4.443kg
L2        2.222~  3.332kg
L3        1.111~  2.221kg
L4            0~  1.110kg
LOWEST         ~ -0.001kg

HI     1
U4     5
U3     6
U2    54
U1    79
T    110
L1    81
L2    53
L3    11
L4     5
LOW    3
```

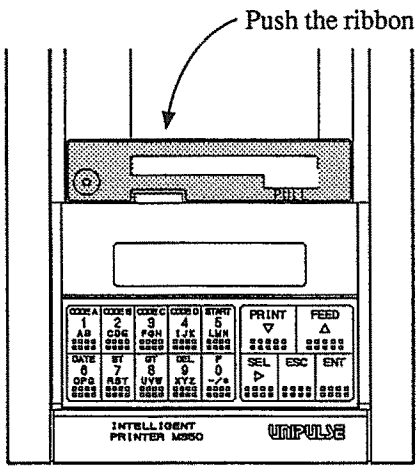


3.3 Setting of Ink Ribbon

1. Press the PUSH OPEN marking to open the front panel then pull up to remove theacrylic cover.
2. Remove the roll paper.
3. Pull toward you the "PULL" section of the ink ribbon then remove it.



4. Attach a new ink ribbon in the right direction.



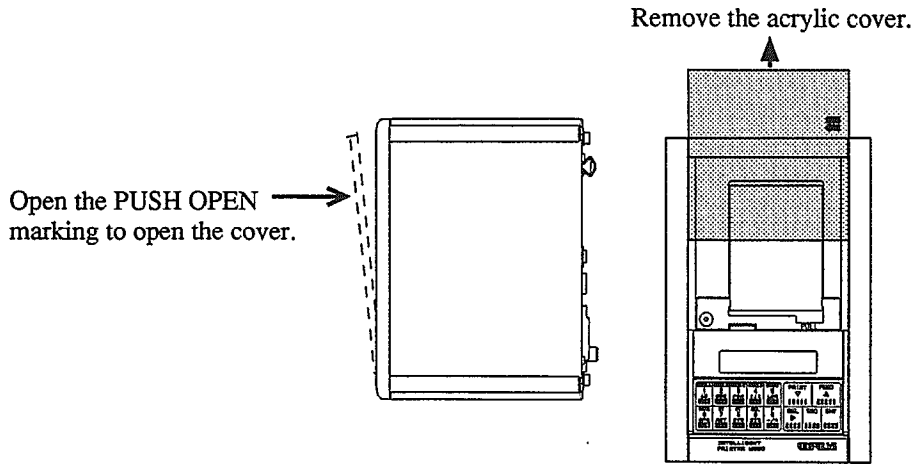
5. Set roll paper and wrap paper end around the roll take-up shaft.

Use PR350 ink ribbon.
An ink ribbon is factory attached at shipment.

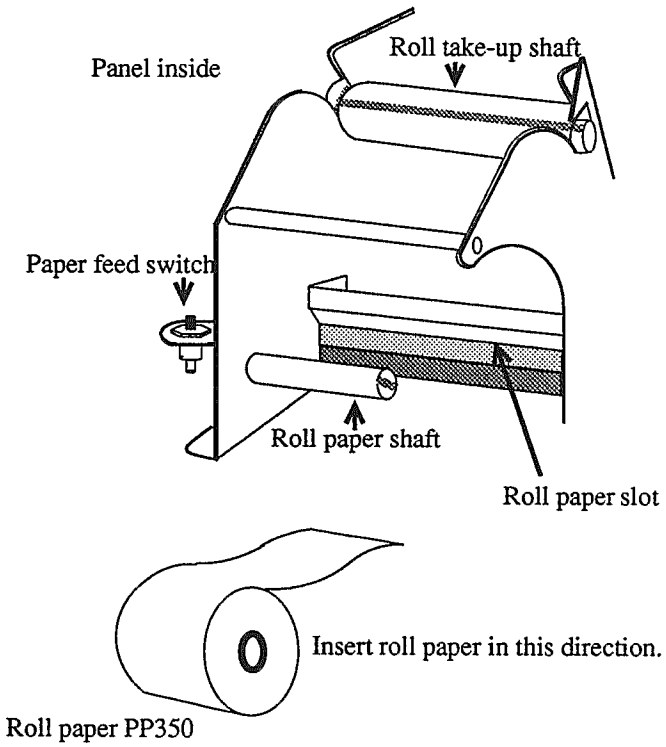
3.4 Setting of Roll Paper

Follow the procedure below to replace roll paper.

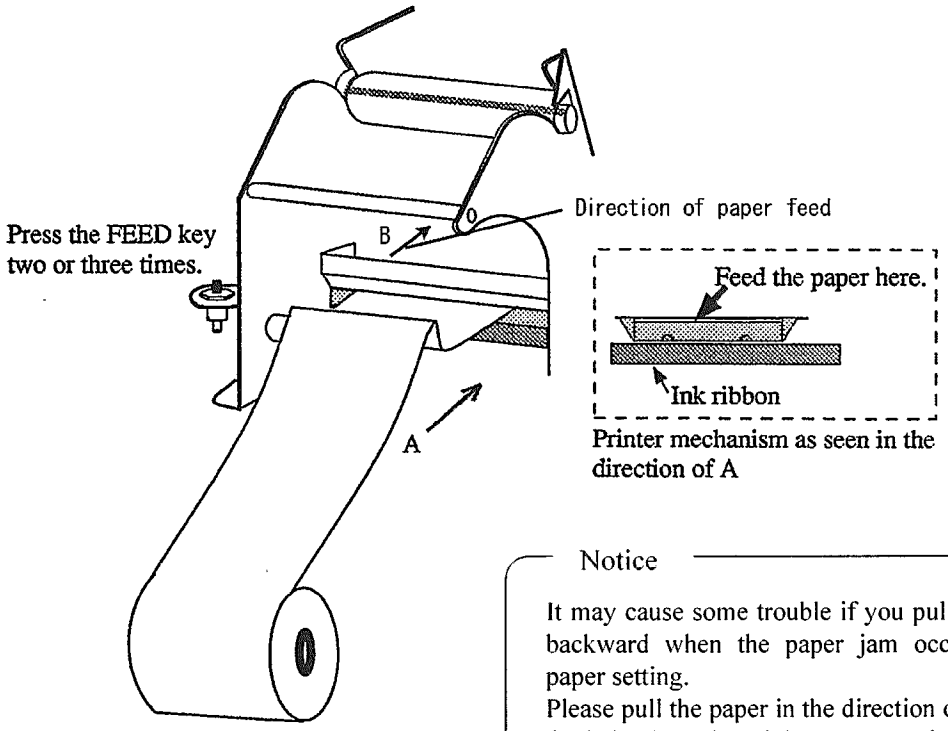
1. Press the PUSH OPEN marking to open the front panel then pull up to remove theacrylic cover.



2. Open up the front panel then remove the roll shaft.Set new roll paper.



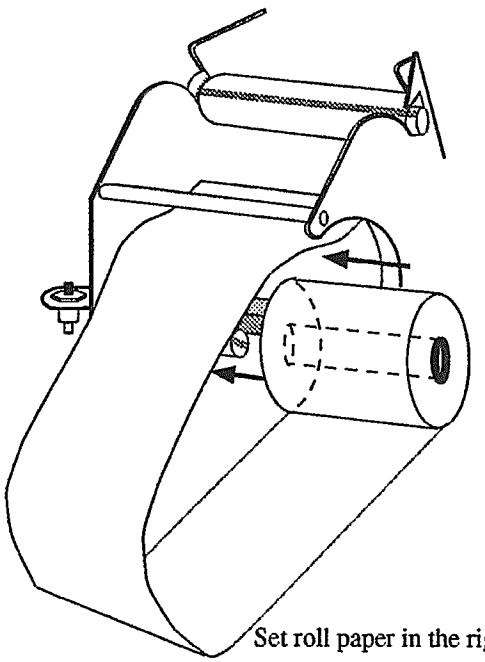
3. Insert the end of roll paper into the roll paper slot, then press the FEED key to passthe roll paper through the printer mechanism.



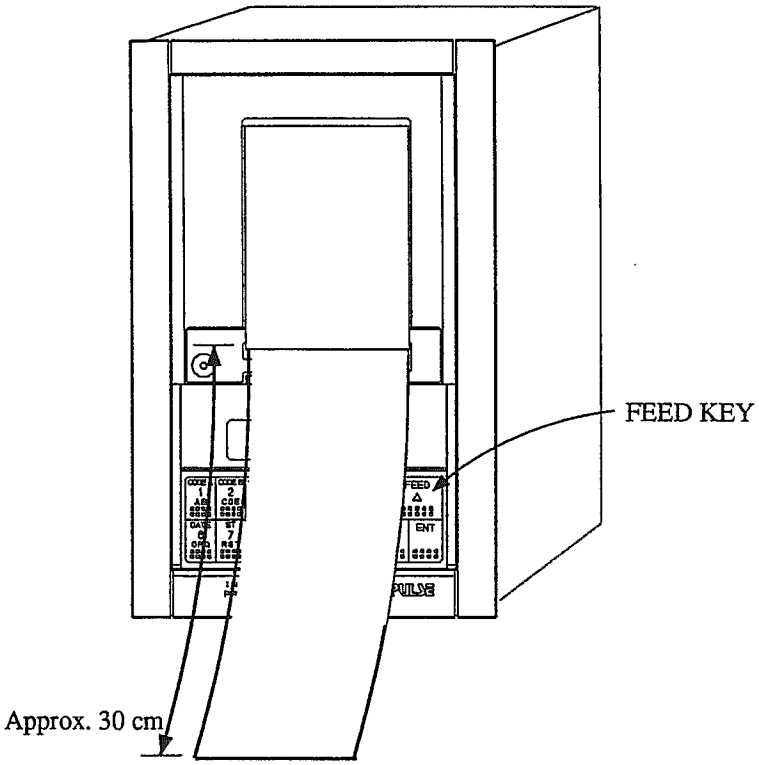
Notice

It may cause some trouble if you pull the paper fast or backward when the paper jam occurred during the paper setting.
Please pull the paper in the direction of the arrow paper feed slowly and straight to remove it after stopping the paper feed.
Cut the power then on again when it doesn't return normally after removing the paper.

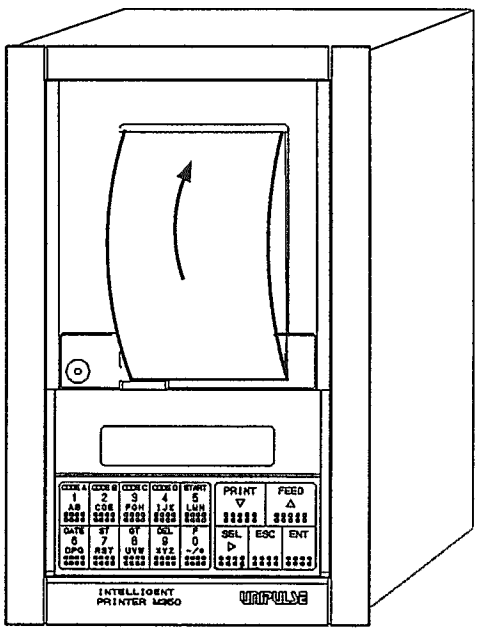
4. Set roll paper onto the roll paper shaft.



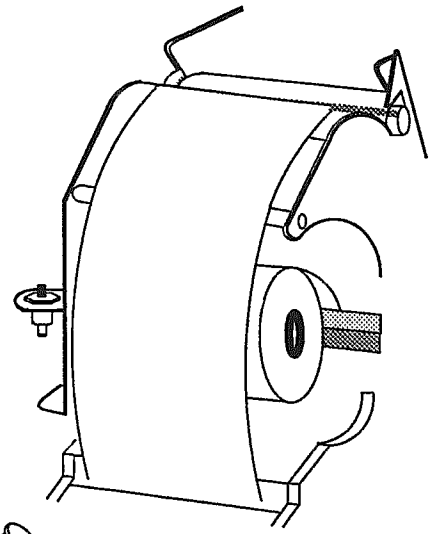
5. Close the panel, then press the FEED key so that roll paper extends approximately 30cm as shown in the figure.



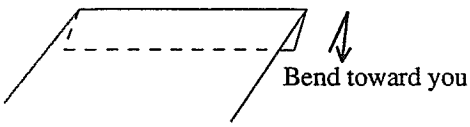
6. Insert roll paper into the roll paper slot in the upper area of the panel to let thepaper in the M350.



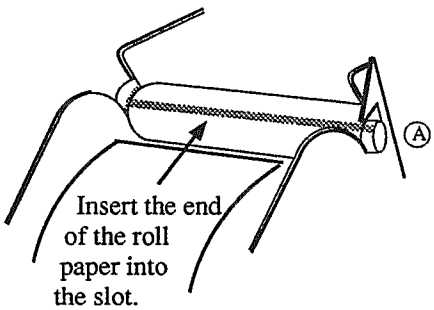
7. Open the front panel, then insert the end of the roll paper into the slot of the rollpaper take-up shaft.

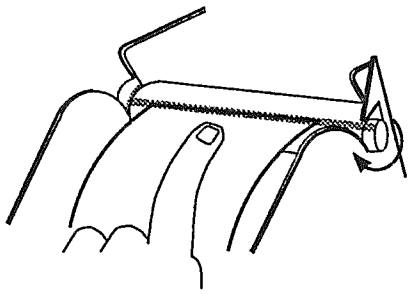


To prevent loose take-up, bend the end of the roll paper toward you and insert itinto the slot of the take-up shaft.



8. Set roll paper and wrap paper end around the roll take-up shaft.





Press the FEED key two or three times while softly holding down the portioninserted in the above step Ⓐ, so that the roll paper is secured on the shaft.

4 Functions

The following describes all the functions of the M350:

■Part Names and Functions

■Display

■Setting of Application Print

- Setting Mode Tree Chart
- Setting Method
- Detailed Setting Items

General Operation Setting

Date / Print Data Selection / Unit Selection / Print Every / Print Every Format / Automatic Print / Interval PrintInterval Seconds / Grand Total Print Format / Types of Sub Totals / Histogram Target value / Histogram Range / Standard Deviation / Data Adding On/Off / PRINT Key / Batch Total / Feed Lines

Option Setting

Code Selection / Number of Code Digits / Decimal Point Position (BCD IN) / Input Logic (BCD) / Data Transmission Conditions (RS-232C) / Data Receiving ID Number (SI/FII) / Command Receiving GID Number / Command Sending OID Number / Brand Table

Memory Card

Format / Data Print / Memory Card Free

Maintenance

Test Print / Sample PrintSelf Test

Special Print

Over Print

Initialization

■Classification by Code

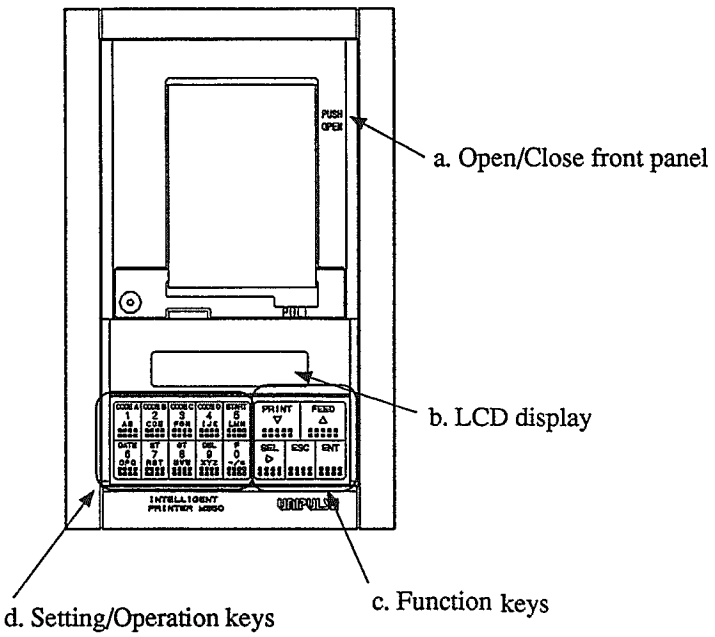
- Print Samples
- Input of Codes

■Interface

- SI/F
- SI/FII
- BCD
- RS-232C
- Print Command
- Memory Card

4.1 Part Names and Functions

4.1.1 Front Panel



a. Open/Close front panel

Incorporates print roll paper, ink ribbon cassette, and memory card. Pressing firmly the PUSH OPEN marking opens the front cover toward you. Slide the acrylic board upward to replace roll paper or ink ribbon with spare.

b. LCD indicator

A 16-digit by 2-line dot matrix LCD indicator. Displays M350 print data, status, and data input source in the print mode; displayssetting items and values in the setting mode.

c. Function keys

Function keys are used to issue command to the M350.

PRINT ▽	Prints the latest input data.
FEED △	Feeds paper by one line.
SEL ▷	Selects setting items and set value digits.
ESC	Escape key used for suspending the current setting or moving to the immediately higher-rank menu.
ENT	Entry key used for starting changing or validating set values.

d. Setting/Operation Keys

Setting/Operation keys comprise numeric keys used for setting the M350, letter keys, katakana keys, and operation keys used for operating the M350.

Setting: Numeric 1, letters A and B, symbol Space, and the first column of the katakana syllabary
Operation: Enters the Ach brand input mode.

Setting: Numeric 2, letters C, D, and E, and the ka column of the katakana syllabary
Operation: Enters the Bch brand input mode.

Setting: Numeric 3, letters F, G, and H, and the sa column of the katakana syllabary
Operation: Enters the Cch brand input mode.

Setting: Numeric 4, letters I, J, and K, and the ta column of the katakana syllabary
Operation: Enters the Dch brand input mode.

Setting: Numeric 5, letters L, M, and N, and the na column of the katakana syllabary
Operation: Starts the interval print. This key serves as a print stop key during the interval print.

Setting: Numeric 6, letters O, P, and Q, and the ha column of the katakana syllabary
Operation: Prints the date.

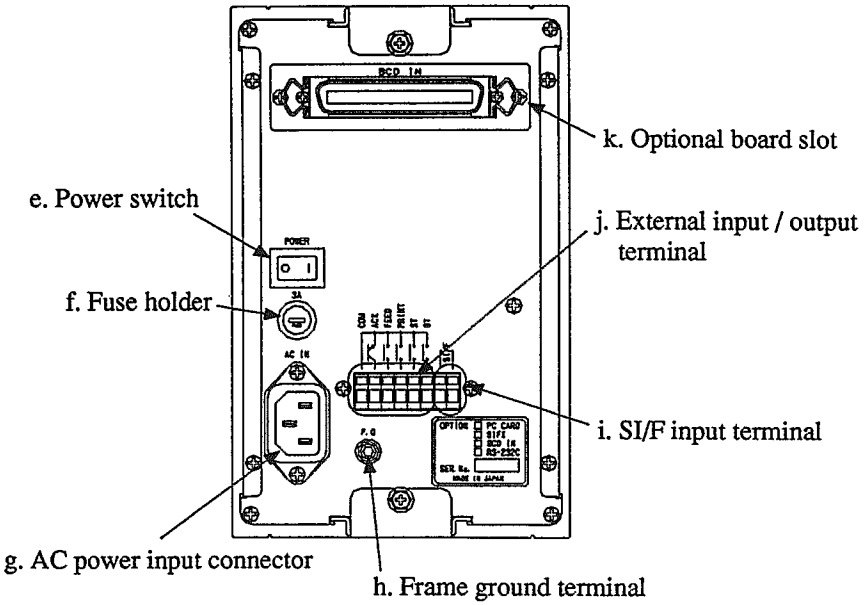
Setting: Numeric 7, letters R, S, and T, and the ma column of the katakana syllabary
Operation: Prints the sub total.

Setting: Numeric 8, letters U, V, and W, and the ya column of the katakana syllabary
Operation: Prints the grand total, clearing the previous print data.

Setting: Numeric 9, letters X, Y, and Z, and the ra column of the katakana syllabary
Operation: Prints the last printed data again, excluding it from the grand total (subtotal).

Setting: Numeric 0, signs - (minus), / (slash), * (asterisk), the wa column of the katakana syllabary, voiced sound symbol (゛), and semivoiced sound symbol (゜).
Operation: Enters the setting mode.

4.1.2 Rear Panel



e. Power switch

Turns on/off the power supply. Placing the switch in the "1" position turns on the power, and in the "0" position,turns off the power.

f. Fuse holder

Built into the AC power circuit, this fuse holder houses a 3A midget fuse.

g. AC power input connector

Connects an AC power cord. Input voltage is 90 to 125V AC and the frequency is 50/60Hz.

h. Frame ground terminal

Grounding terminal. Ground this terminal to prevent any accident by electric shock orfault due to static electricity.

i. SI/F input terminal

A two-core serial interface to connect to an indicator from UNIPULSE parallel two-core cables or cabtire cables.

j. External input/output terminal

Terminal block for signal input/output

GT: Terminal for grand total command input signal. On receiving a signal, prints the grand total, clearing the previous print data.

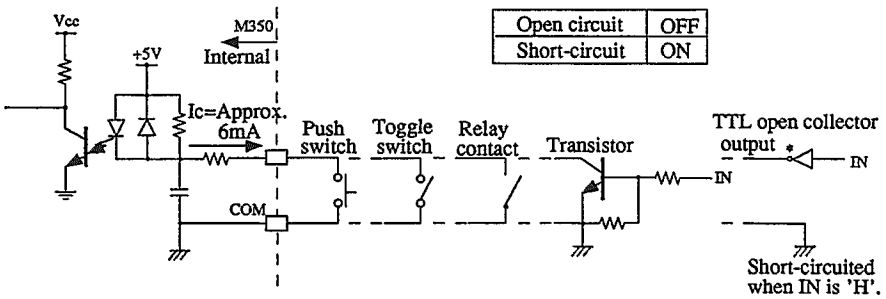
ST: Terminal for sub total command input signal. On receiving a signal, prints the sub total.

PRINT: Terminal for print command input signal. On receiving a signal, prints the latest input data.

FEED: Terminal for paper feed command input signal. On receiving a signal, feeds paper by one line. Serves as a batch total print command input if batch print is selected.
ACK: Output terminal for sending acknowledgment signal for PRINT signal. Outputs a signal when the M350 receives the PRINT command.
COM: Common terminal on the external input/output terminal block

Signal input circuit short-circuits and opens an input terminal and the COM terminal to input signals. Short-circuiting is made through contact making such as relay and switches or without contact making such as transistors and open collector output TTLs.

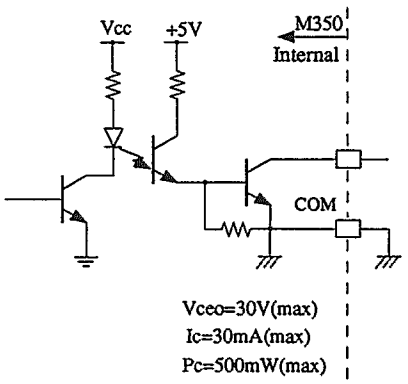
Internal circuit (input)



Open circuit	OFF
Short-circuit	ON

Signal output circuit is the transistor open collector output.

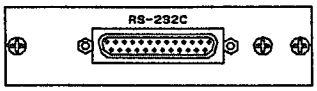
Internal circuit (output)



· Transistor state

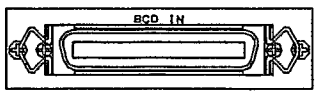
Output data	Transistor
0	OFF(Open circuit)
1	ON(Short-circuit)

k. Optional board slot A space to store an optional interface board. One of BCD input, RS-232C, and SI/FII may be stored.



RS-232C

SI/FII

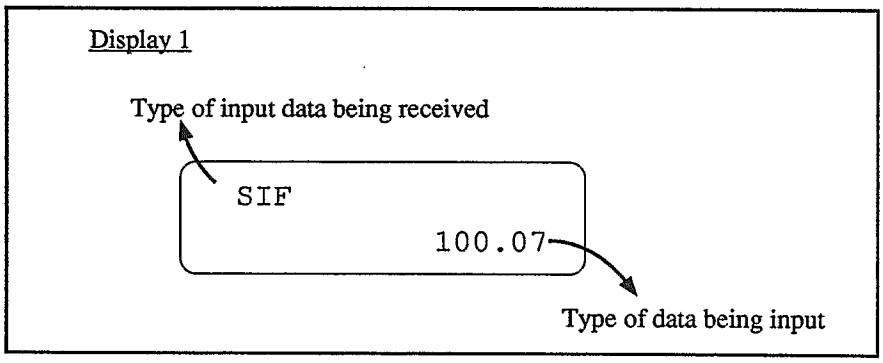


BCD IN

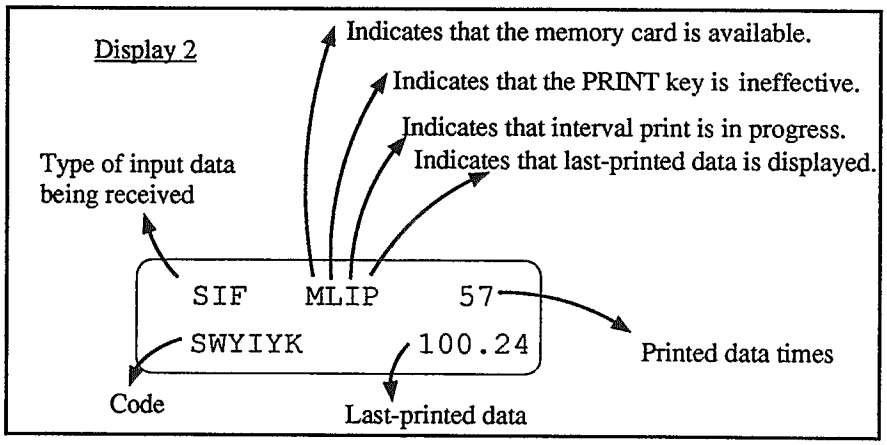
4.2 Display

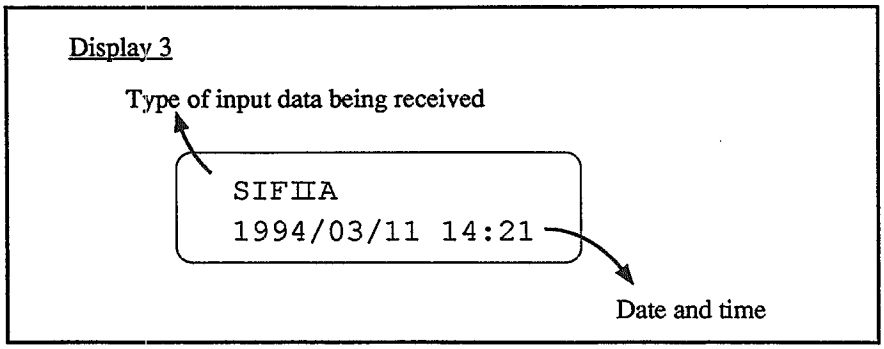
The M350 can display the current printer state on the LED indicator of the front panel.

Display covers:



Display can be switched using the SEL key.





Each time the SEL key is pressed, display shifts: Display 1 -> Display 2 -> Display 3

Pressing the ESC key obtains Display 1.

During double or quadruple print, each channel is displayed in the "P" position of Display 2 to sequentially provide input data on each channel.

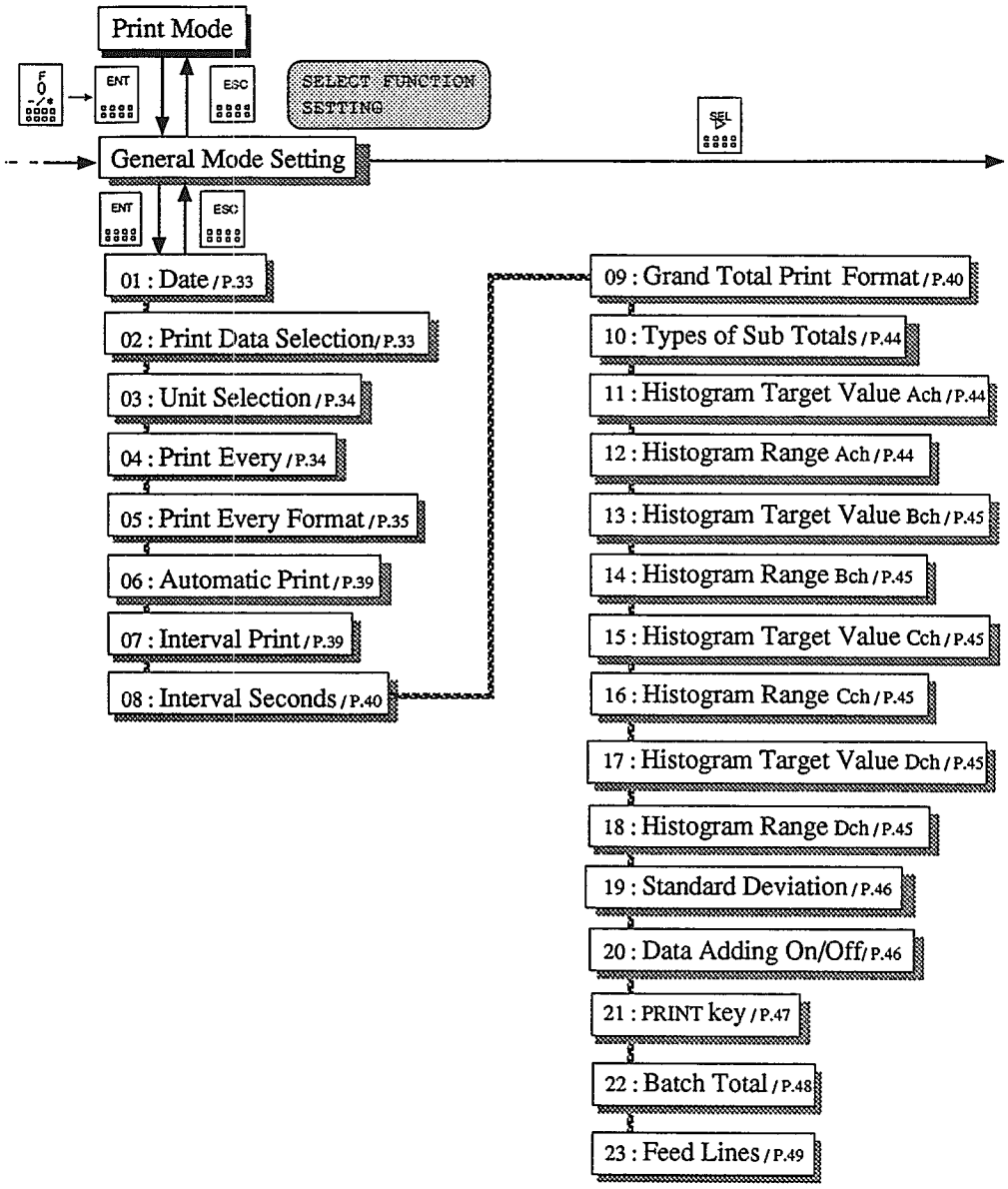
Double print: A -> B

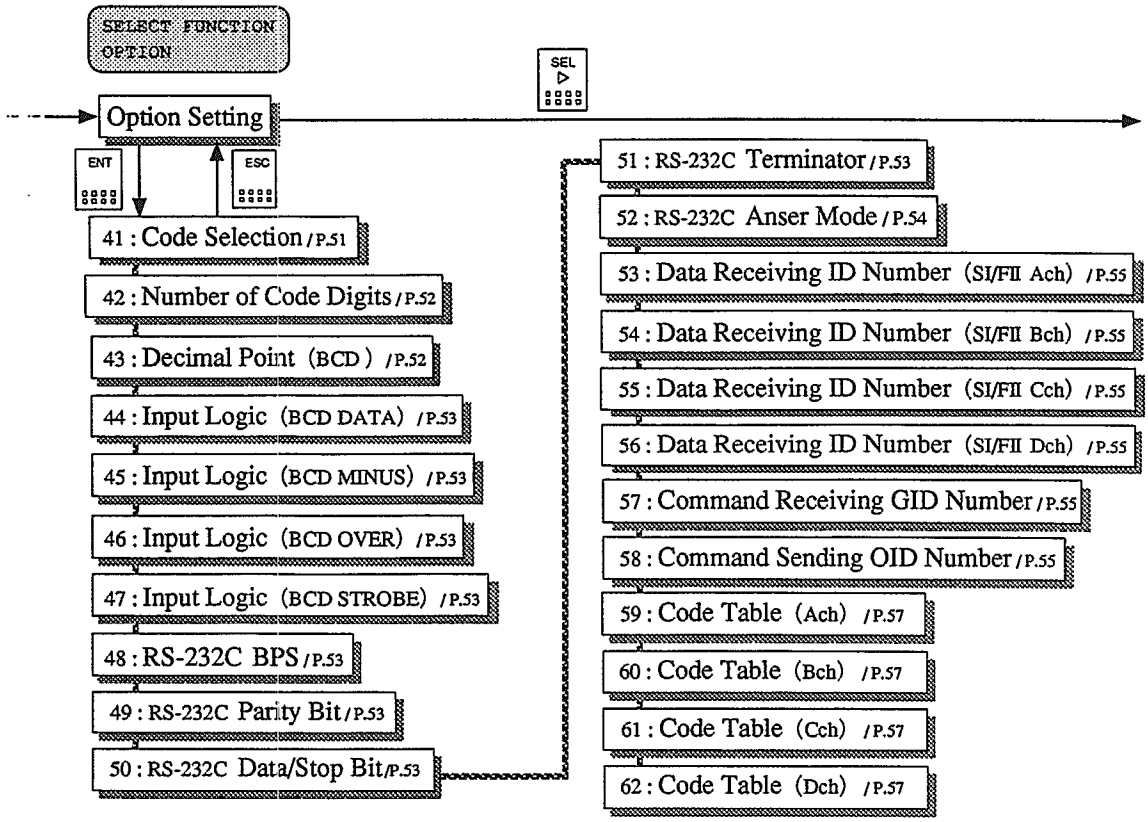
Quadruple print: A -> B -> C -> D

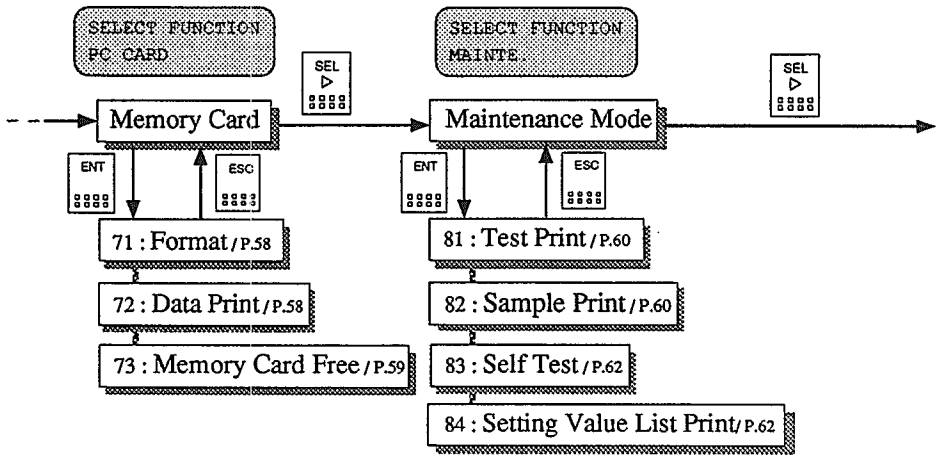
4.3 Setting of Application Print

4.3.1 Setting Mode Tree Chart

he M350 has the general operation setting mode, option setting mode, memory card, and maintenance mode as well as print modes.Hierarchy of these modes is shown below.







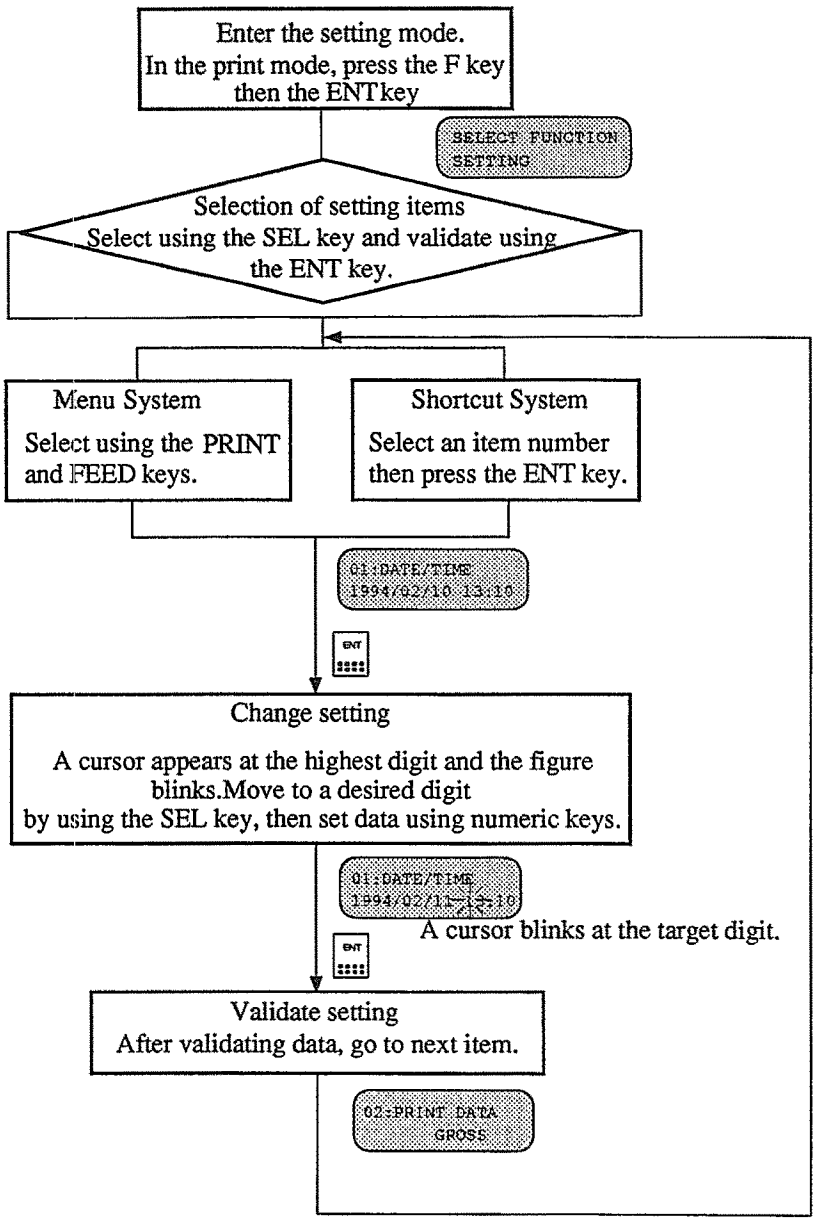
CAUTION:

Unnecessary setting screens are not displayed depending on option configuration andsetting contents.

4.3.2 Setting Method

Setting mode of the M350 is tree-structured. A user can move between menus by using the SEL, PRINT, and FEED keys to perform necessary setting.Each setting item is assigned its own number; the shortcut function is available wheresimple input of a number selects the pertinent setting item.

Setting Procedure



4.3.3 Detailed Setting Items

· General Operation Setting

01: Date

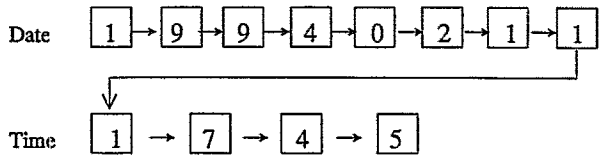
```
01:DATE/TIME
1994/02/11 19:10
```

Changes date and time setting. The M350 adjusts date and time setting at shipment. Use this function when a minute setting is needed.

How to set data

Directly enter numerics for date and time.

Ex)Entering PM 5:45, February 11, 1994



CAUTION:
Use two digits when entering date and time. For May, 05 For 7th, 07 For 8 o'clock, 08 For 6 minutes, 06, etc.
Use the 24-hour system when entering time. For PM 5:00, 17:00, etc.

02: Print Data Selection

```
02:PRINT DATA
INDICATE
```

Select the type of print data by using the SEL key. Data that can be printed includes the four types: Indicated value (INDICATED) Net weight value (NET) Gross weight value (GROSS) Tare weight value (TARE)

· To print the indicated value on a load cell indicator, normally set the M350 to"Indicated Value". Select net weight vale, gross weight vale, or tare weight value ifwishing to print corresponding data.
· Select "Indicated Value" when printing the indicated value on a digital indicator.

CAUTION:
Print types selected here are effective only when printing data using SI/F or SI/FIIinterface. When data is printed via the BCD parallel input terminal or RS-232C inputterminal, input data is printed irrespective of the type selected here.

03:Unit Selection

03: PRINT UNIT
g

Select the unit to be printed by using the SEL key. Total 43 types are available.

No.	Unit	Type	No.	Unit	Type
00	No unit		22	kg · m	Force
01	t	Mass	23	N.m	Moment
02	g		24	Pa	Pressure
03	kg		25	mmHg	
04	lb		26	kg/cm^2	
05	μm	Length	27	N/m^2	Stress
06	mm		28	kg/s	Mass folw
07	m		29	kg/h	
08	km		30	t/s	
09	cm^3	Volume	31	t/h	
10	m^3		32	m^3/s	Flow
11	l		33	m^3/h	
12	m/s	Velocity	34	l/s	
13	km/h		35	l/h	
14	m/s^2	Acceleration	36	K	Temperature
15	Hz	Frequency	37	℃	
16	kHz		38	° F	
17	MHz		39	%	Percentage
18	rpm	Revolving speed	40	kN	Force
19	kg/m^3	Density	41	kpa	
20	N	Force	42	Mpa	
21	kg · cm				

CAUTION:

When double width size print is selected in the Print Every format, maximum four unit characters are printed. If a five-or-more character unit is selected, only the first four characters are printed.

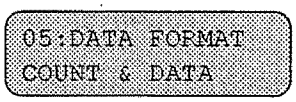
04: Print Every

04: PRINT EVERY
ON

Select whether data is printed every time by using the SEL key. Normally set this function to ON. Turning off the Print Every does not print data but stores it in the M350. If grand total or sub total is obtained, all the data stored until then is gathered and printed.

Print Every ON	Print Every OFF
1 100.24kg 2 100.23kg 3 100.25kg 4 100.24kg 5 100.23kg 6 100.23kg 7 100.22kg --- GRAND TOTAL Ach --- DATE 1994/02/11 17:30 COUNT 7 GT 701.64kg	Respective data is stored in the internal memory of the M350. --- GRAND TOTAL Ach --- DATE 1994/02/11 17:30 COUNT 7 GT 701.64kg

05: Print Every Format



Select the data print format by using the SEL key. Total ten types are available:

	Print format	Display
1	Standard print	COUNT & DATA
2	With time	TIME & CNT & DAT
3	With code	CODE & CNT & DAT
4	With time and code	ALL DATAS
5	Displacement diagram	GRAPH
6	Double width size print	DOUBLE SIZE
7	Double print	2 SORCE PRINT
8	Double print (with count)	2 SORCE & COUNT
9	Quadruple print	4 SORCE PRINT
10	Quadruple print (with count)	4 SORCE & COUNT
11	Through print	THROUGH PRINT

Data print example

1. Standard print

Count	Input data
1234	-123.45kg
1235	-234.56kg
1236	345.67kg

2. With time

Time	Count	Input data
11:23	1234	45.678kg
11:24	1235	-56.789kg

Print time is printed.

3. With code

Code	Count	Input data
123456	2468	67.891kg
ABCDEF	2469	-78.912kg

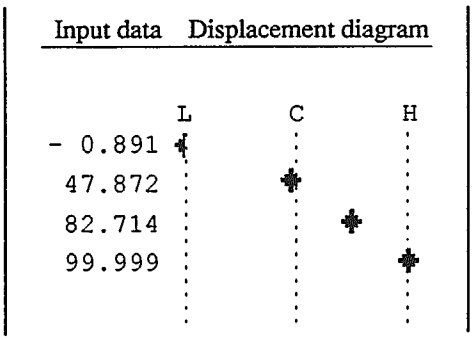
Print data includes code names.
Data is classified and collected into grand total or sub total (maximum 32 types).

4. With time and code

Time Code	Count	Input data
11:40 123456	2468	67.891kg
11:41 ABCDEF	2469	-78.912kg

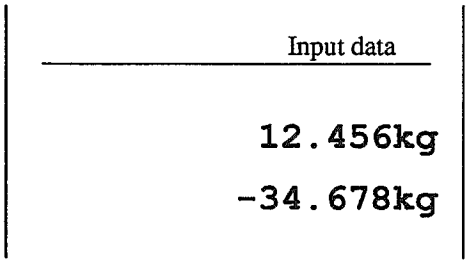
Print time and code are printed.

5. Displacement diagram



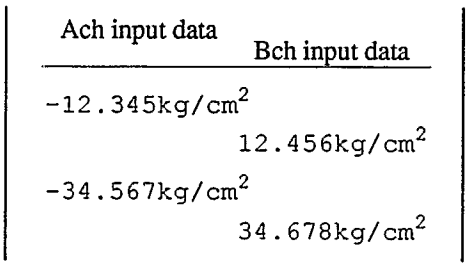
Input data is represented by a displacement diagram.
Ex)
Displacement diagram with
TARGET being 50. 000kg and RANGE
being 50. 000kg.

6. Double width size print



Input data is printed in double width size.
(Up to four unit characters are printed.)

7. Double print



Ach / Bch input data is printed.

8. Double print (with count)

Ach input data
Bch input data

1234 -12.345kg/cm^2
3456 12.456kg/cm^2
1235 -34.567kg/cm^2
3457 34.789kg/cm^2

9. Quadruple print

Ach input data
Bch input data
Cch input data
Dch input data

12.345kg/cm^2
23.456kg/cm^2
34.567kg/cm^2
45.678kg/cm^2
56.789kg/cm^2
67.891kg/cm^2
78.912kg/cm^2
89.123kg/cm^2

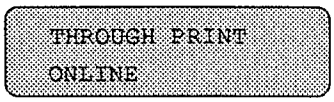
10. Quadruple print (with count)

Ach input data
Bch input data
Cch input data
Dch input data

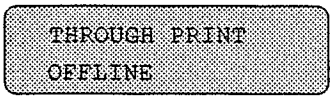
1234 12.345kg/cm^2
2345 23.456kg/cm^2
3456 34.567kg/cm^2
4567 45.678kg/cm^2
1235 12.346kg/cm^2
2346 23.457kg/cm^2
3457 34.568kg/cm^2
4568 45.679kg/cm^2

11. Through Print

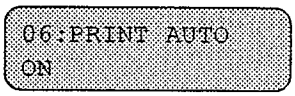
ASCII characters sent via the RS-232C interface is printed. To start the Through Print, press the PRINT key in the print mode. The display is:



To stop the Through Print, press the PRINT key. The display changes:



06: Automatic Print



The SI/F, SI/FII, and RS-232C interfaces can send print commands to the M350 to perform automatic print. This function selects whether to perform automatic print by using the SEL key.

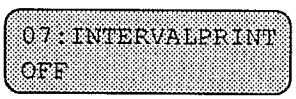
Effective (ON): Prints data in the following cases:

- Print command is received from one of the interfaces.
- The PRINT key is pressed.
- Signal is input to the rear panel PRINT terminal block.
- Print command is sent from SI/FII.

Ineffective (OFF): Prints data in the following cases:

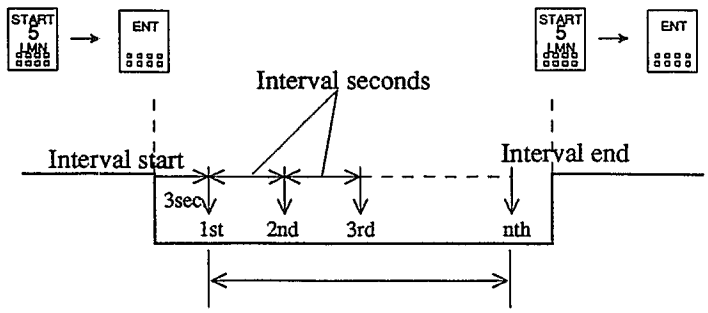
- The PRINT key is pressed.
- Signal is input to the rear panel PRINT terminal block.
- Print command is sent from SI/FII.

07: Interval Print



Select whether to perform print data at a fixed interval by using the SEL key. Setting the interval print to effective (ON) performs automatic print with the intervalseconds specified under 08: Interval Seconds.

Interval print timing



Prints data with the interval seconds specified under 08: Interval Seconds.

08: Interval Seconds

```
08:INTERVAL TIME
 0005
```

Set in seconds the interval for interval print. Setting range is 1 to 9999 seconds in steps of one second.

CAUTION:
When Print Every is set to displacement diagram (GRAPH), the interval range is 2 to 9999 seconds. If it is set to quadruple print (4SORCE PRINT), 4 to 9999 seconds, and if set to doubleprint (2SORCE PRINT), 2 to 9999 seconds. Setting a value below this range prevents setting of a respective item.

When Print Every is set to OFF, print interval can start with 1 second irrespective ofthe print format.

09: Grand Total Print Format

```
09:GT/ST FORMAT
COUNT & TOTAL
```

Select the grand/sub total print format by using the SEL key. Total five types are available:

	Print format	Display
1	Standard print	COUNT & TOTAL
2	With code number	CODE & CNT & GT
3	With average/maximum/minimum data	WITH MAX,MIN,SD
4	With statistical data	WITH STAT DATA
5	With histogram	WITH HYST GRAPH

Data print examples

1. Standard print

```
---  SUB TOTAL  Ach  ---

DATE     1994/02/04 13:15
COUNT              4532
GT          1234567.89kg
```

2. With code number

```
---  SUB TOTAL  Ach  ---

DATE     1993/07/23 10:15
CODE                 A2
COUNT               408
ST             158.363kg
```

3. With average/maximum/minimum data

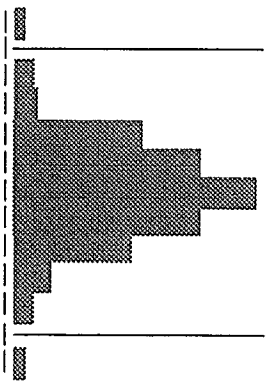
```
---  SUB TOTAL  Ach  ---

DATE     1993/07/23 10:15
CODE                 A2
COUNT               408
ST             158.363kg

SDn-1            0.310kg
AVE             12.010kg
MAX             13.222kg
MIN             11.567kg
```

4. With statistical data

```
---  SUB TOTAL  Ach  ---

DATE     1993/07/23 10:15
CODE                  A2
COUNT                408
ST              158.363kg

SDn-1             0.310kg
AVE              12.010kg
MAX              13.222kg
MIN              11.567kg
R(MAX-MIN)        1.655kg

TARGET           12.000kg
RANGE             0.300kg
H OVER TIMES           1
L OVER TIMES           3


---  SUB TOTAL  Bch  ---

DATE     1993/07/23 10:15
CODE                  A2
COUNT                408
ST              158.363kg

SDn-1             0.310kg
AVE              12.010kg
MAX              13.222kg
MIN              11.567kg
R(MAX-MIN)        1.655kg

TARGET           12.000kg
RANGE             0.300kg
H OVER TIMES           1
L OVER TIMES           3
```

5. With histogram

```
---  SUB TOTAL  Ach  ---

DATE     1993/07/23 10:15
CODE                  A2
COUNT                408
ST              158.363kg

SDn-1             0.310kg
AVE              12.010kg
MAX              13.222kg
MIN              11.567kg
R(MAX-MIN)        1.655kg

TARGET           12.000kg
RANGE             0.300kg
H OVER TIMES           1
L OVER TIMES           3

HIGHEST  12.301~
U4       12.234~ 12.300kg
U3       12.167~ 12.233kg
U2       12.101~ 12.166kg
U1       12.034~ 12.100kg
T        11.966~ 12.033kg
L1       11.900~ 11.965kg
L2       11.833~ 11.899kg
L3       11.766~ 11.832kg
L4       11.700~ 11.765kg
LOWEST         ~ 11.699kg
```



10: Types of Sub Totals

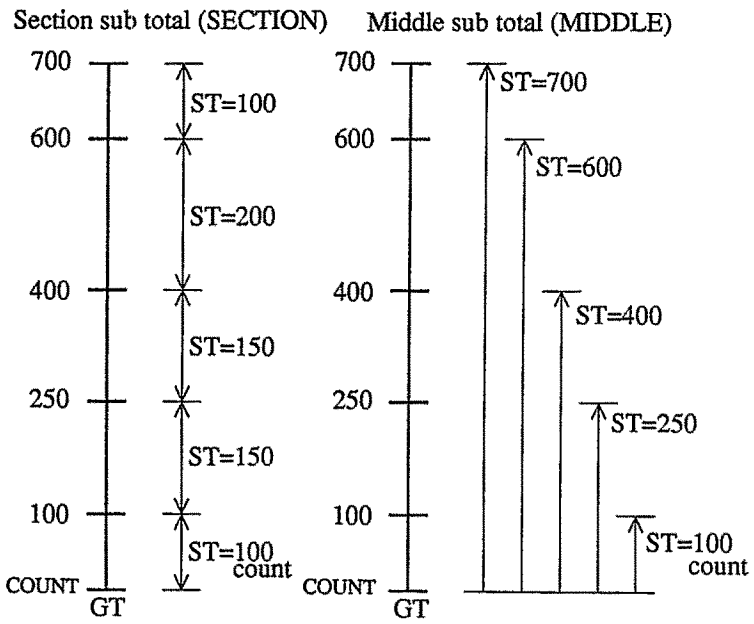
```
10:ST MODE
MIDDLE
```

Select the type of sub total by using the SEL key. Sub totals include the section sub total and middle sub total.

・Section sub total and middle sub total

Section sub total: Prints section sub total from the last sub total to the current subtotal.

Middle sub total: Prints section sub total from the last grand total to the current subtotal.



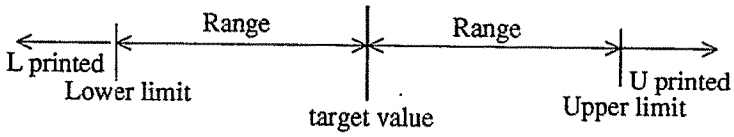
11: Histogram Target Value Ach

```
11:TARGET Ach
+000.00
```

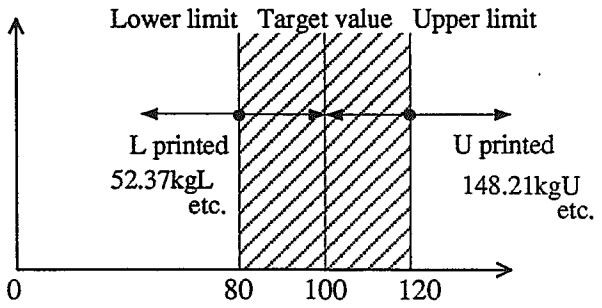
12: Histogram Range Ach

```
12:RANGE Ach
 999.99
```

Set the "target value" required for calculating statistical data and histogram andallowable upper/lower range. If data exceeding the range is input, U (upper limit exceeded) or L (lower limitexceeded) is printed as print data. Switching between signs (+,-) uses the SEL key andnumeric input uses numeric keys.



Ex) Target value is 100, range is 20



Setting here applies to target value and range for displacement diagram also.

13: Histogram Target Value Bch	13:TARGET Bch +000.00
14: Histogram Range Bch	14:RANGE Bch 999.99
15: Histogram Target Value Cch	15:TARGET Cch +000.00
16: Histogram Range Cch	16:RANGE Cch 999.99
17: Histogram Target Value Dch	17:TARGET Dch +000.00
18: Histogram Range Dch	18:RANGE Dch 999.99

Set the histogram target values and ranges for Bch, Cch, and Dch. Switching between signs (+,-) uses the SEL key and numeric input uses numeric keys.

CAUTION:
Histogram range is 5 to 99998.

19: Standard Deviation

19:SD. METHOD
σ n

Select the expression of standard deviation by using the SEL key.

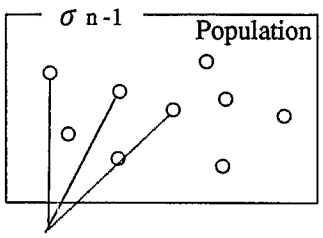
Expression of standard deviation

σ n-1 :Several pieces of sample data of a population is printed and used to assume standard deviation of the entire population.

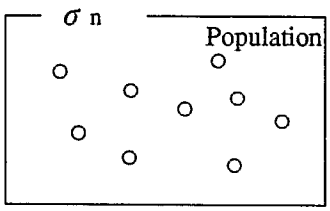
$$\sigma_{n-1} = \sqrt{\frac{\sum_{i=1}^{n}(x_i-\bar{x})^2}{n-1}}$$

σ n :Allthe data in the population is printed and used to obtain standard deviation of the population.

$$\sigma_n = \sqrt{\frac{\sum_{i=1}^{n}(x_i-\bar{x})^2}{n}}$$



Sample data is printed to assume standard deviation of the entire population.



All the data in the population is printed to obtain standard deviation.

20: Data Adding On/Off

20:DATA ADDING
ON

Select whether to exclude print data from grand/sub total. Selecting Data Adding OFFprints an asterisk (*) at the end of the print data and excludes it from grand/sub totaldata. Use the SEL key for this function.

```
1                100.21kg
2                100.18kg

2                100.47kg*
2                100.56kg*
2                100.87kg*

3                100.15kg
4                100.17kg


--- GRAND TOTAL  Ach ---

DATE     1994/02/11 10:02
COUNT                   4
GT               400.71kg
```

Printed for data addition

←Data adding off
An asterisk (*) follows the data.

←Data adding on

Normally select "Data Adding On". When conducting a print test in such occasions asinstalling equipment, select "Data Adding Off". Selecting "Data Adding Off" prints data irrespective of the setting under 04: PrintEvery.

21: PRINT Key

```
21:PRINT KEY
ON
```

Select whether to enable or disable the PRINT key on the front panel.

CAUTION:
Setting here pertains to whether the PRINT key on the front panel is enabled or disabled; it has no relation to the input from the PRINT terminal on therear panel or automatic print command from SI/F, SI/FII, or RE-232C.

Selection uses the SEL key.

Enabled: ON
Disabled: OFF

When wishing to prevent print from being caused by operation error on an automaticdevice, disable the PRINT key and use the automatic print command or input from thePRINT terminal for printing data.

22: Batch Total

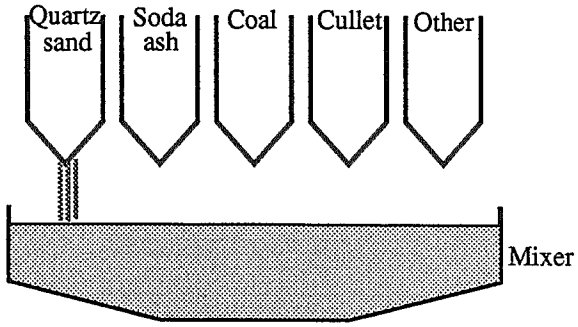
22:BATCH TOTAL
OFF

Select whether to perform Batch Total or not. Selecting batch total changes the FEED terminal block into the "batch total print" terminal.

What is Batch Total?

Batch Total assumes small measurements as a one-time measurement and prints data based on this assumption.

Ex) Compounding of materials for glass



Usually glass is made by compounding materials such as quartz sand, soda ash, coal, and cullet and agitating these materials in a mixer. Batch Total print here printspercentage of glass materials based on respective measurements of these materials.

Batch total print example

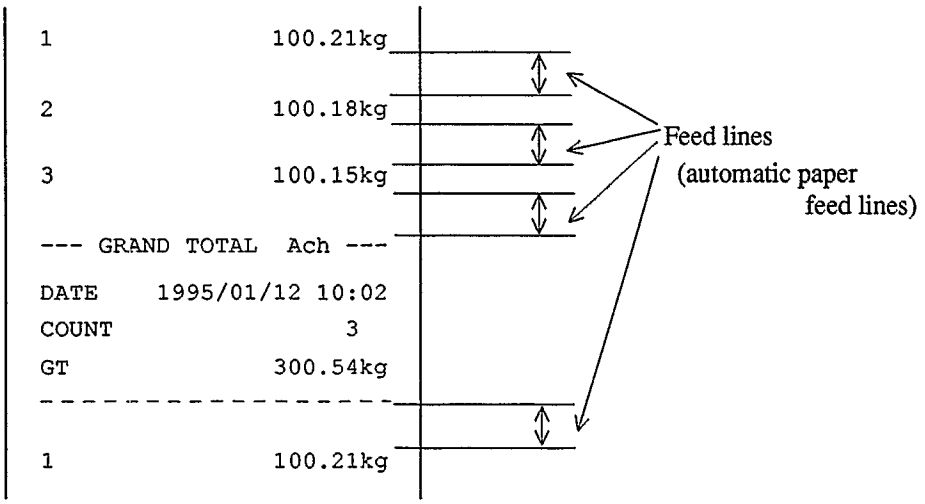
```
   1            365.16kg
   2             10.14kg
   3             10.08kg
   4              5.03kg
   5              2.01kg
----- BATCH  TOTAL -----
DATE    1994/03/23 13:29
COUNT                  1
BT               392.42kg
------------------------

   6            360.50kg
   7             11.00kg
   8             10.15kg
   9              5.50kg
  10              2.88kg
----- BATCH  TOTAL -----
DATE    1994/03/23 13:29
COUNT                  2
BT               390.03kg
------------------------

  11            367.10kg
  12             9.98kg
  13            10.05kg
  14             4.89kg
  15             1.50kg
----- BATCH  TOTAL -----
DATE    1994/03/23 13:29
COUNT                  3
BT               393.52kg
------------------------
```

```
  16            365.49kg
  17             10.35kg
  18             10.01kg
  19              4.77kg
  20              2.11kg
----- BATCH  TOTAL -----
DATE    1994/03/23 13:30
COUNT                  4
BT               392.73kg
------------------------


--- GRAND TOTAL  Ach ---
DATE    1994/03/23 13:30
COUNT                 20
GT              1568.70kg
------------------------
```

23: Feed Lines

23:FEED LINES
0

Set the number of feed lines that follow Print Every, ST, or GT print.



Feed line setting uses the numeric keys 0 to 9. The larger the numeric is, the broaderthe line interval becomes. Normally 0 is used. When visually checking print data each time print is made, set 3 or4 lines.

This function is effective for Print Every, ST, GT, sample print, and TEST print alone. The FEED key is used to feed one line by one push.

· Option Setting

41: Code Selection

```
41 :CODE METHOD
KEYBOARD
```

Select the method for code selection by using the SEL key. Selection of codes may be done from the front panel keyboard, BCD, RS-232C, andSI/FII. The code table may be used to print katakana or alphabetic code names throughspecification of numerics (numbers).

Display	Selection method	Available characters
KEY BOARD	Keyboard	Numerics, alphabetic characters, katakana, hyphen, slash, space
OPTION	BCD	Numerics, hyphen, space
	RS-232C	Numerics, alphabetic characters, katakana, hyphen, slash, space
	SI/FII	Numerics
KEY-TABLE	Keyboard	Code table No.
OPT-TABLE	BCD	Code table No.
	RS-232C	
	SI/FII	

What is a code table?

This function allows a user to register code names corresponding to two-digitnumerics from 00 to 31 (code table number) and to print the pertinent code namethrough specification of a table number from BCD or a keyboard. A code table may beset separately for each channel (A to D). The KEY-TABLE is a code table used for specifying a code table number from thekeyboard. The OPT-TABLE is a code table used for specifying a code table numberfrom optional interfaces such as BCD, RS-232C, and SI/FII.

Example of code table registration (OPT-TABLE)

Code table No.	Printed code name
00	CX15
01	CX30
02	CX50
⋮	⋮
31	CX108

If this code table number is specified from an optional interface,

this code name will be printed and classified.

Register code tables under 59: Code Table (Ach) to 62: Code Table (Bch).

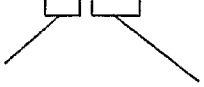
42: Number of Code Digits

```
42:VALID FIGURE
6
```

Set the number of digits of code name to be classified. Normally up to six digits may be used for a code name. Setting 5 or fewer digitsallows printing of characters excluded from code classification.

Ex) If Four-digit code name is used:

Code
15-SUG ·····A
26-SLT ·····B
42-PEP ·····C
28-SUG ·····A
12-SLT ·····B
06-PEP ·····C



This part is printed and excluded from classification.

Codes are classified by this part alone.

Accordingly, classification is made by A, B, and C in the above figure.

Setting two-digit code names is convenient when using a code table.

43: Decimal Point Position (BCD)

```
43:DECIMAL POINT
```

Set the decimal point position for data input from BCD, by using the SEL key. Totalfive positions are available:

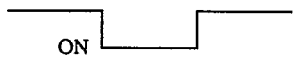
0 0 0 0 0
0 0 0 0.0
0 0 0.0 0
0 0.0 0 0
0.0 0 0 0

44: Input Logic (BCD DATA)	44:DATA LOGIC NEGATIVE
45: Input Logic (BCD MINUS)	45:SIGN LOGIC NEGATIVE
46: Input Logic (BCD OVER)	46:OVER LOGIC NEGATIVE
47: Input Logic (BCD STROBE)	47:STROBE LOGIC NEGATIVE

Select a BCD input logic (positive / negative logic) by using the SEL key.
Setting of a logic may be made separately for items:

Data, code (BCD DATA)
Minus sign (BCD MINUS)
Over (BCD OVER)
Read command (BCD STROBE)

- Negative logic (initial vales)



ON when short-circuited with COMMON

- Positive logic

ON when circuit is open

Normally the negative logic is used.

48: RS-232C Data Transmission Speed	48:RS232C BPS 9600
49: RS-232C Parity Bit	49:RS232C PARITY ODD
50: RS-232C Data/Stop Bit	50:RS232C BIT 7BIT 1STOP
51: RS-232C Terminator	51:RS232C TERM CR+LF

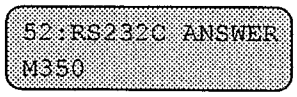
Select the RS-232C interface data transmission conditions by using the SEL key.

Data transmission conditions include the following (Underlined value is an initialvalue.):

Data transmission speed (RS-232C BPS)	9600/4800/2400/1200 bps
Parity bit (RS-232C PARITY)	NON/ODD/EVEN
Data/Stop bit (RS-232C BIT)	7bit 1stop/7bit 2stop/8bit 1stop/8bit 2stop
Terminator (RS-232C TERM)	CR+LF/CR

CAUTION:
When printing a katakana code, set the RS-232C character length of the M350 and the PC (setting No. 50) to 8 bits. If set to 7 bits, transmission of katakana data is disabled.

52: RS-232C Answer Mode



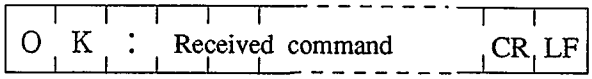
The M350, on receiving data or a command from the RS-232C interface, returns the data or the command to the host computer. This is called answerback. Select the answerback format by using the SEL key.

M250 Mode

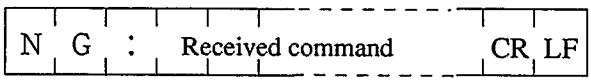
Echoes back every command received.
Echoes back an invalid command also. (For example, a code name is received although the code input method has been set on the front panel keyboard.)

M350 Mode

Returns every command received, with the information on whether the command wasexecuted or not in the header.
When a command was received and executed:



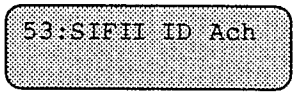
When an invalid command was received:



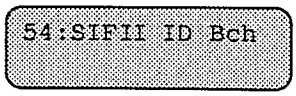
Select the M250 mode when using in the M350 a software program for the UNIPULSEintelligent printer M250. Normally use of the M350 mode is recommended.

CAUTION:
When programming includes multiple commands being sent in succession, make suchprogramming that the next command is not sent until an answerback is not received.

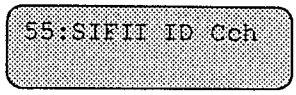
53: Data Receiving ID Number (SI/FII Ach)



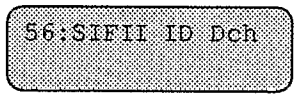
54: Data Receiving ID Number (SI/FII Bch)



55: Data Receiving ID Number (SI/FII Cch)



56: Data Receiving ID Number (SI/FII Dch)



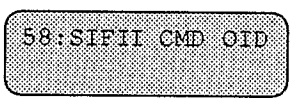
Set the ID number of SI/FII where print data is received. A given value from 0 to 3 maybe assigned as an ID number.

CAUTION:
Assign separate ID numbers for channels A to D. If a same number is used, systemmalfunction will result.

57: Command Receiving GID Number/

Set the GID number of SI/FII where print, paper feed, and value setting commands arereceived. A given value from 0 to 3 may be assigned as a GID number.

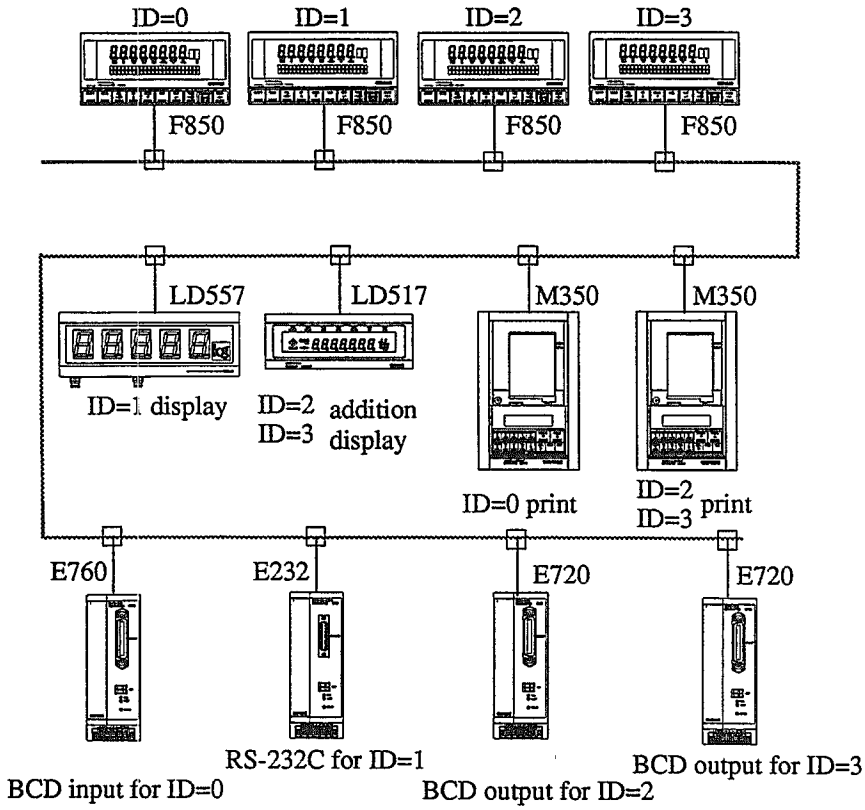
58: Command Sending OID Number/



Set the answerback-sending OID number to a command received from SI/FII. A given value from 0 to 3 may be assigned as an OID number.

●ID Number of SI/FII

For SI/FII, total four master indicators are connected in the same network, each ofwhich is assigned an ID number. This ID number is used for grouping.



Because devices having separate ID numbers may be wired in the same network, wiringcost is reduced and maintenance is facilitated.

●GID and OID

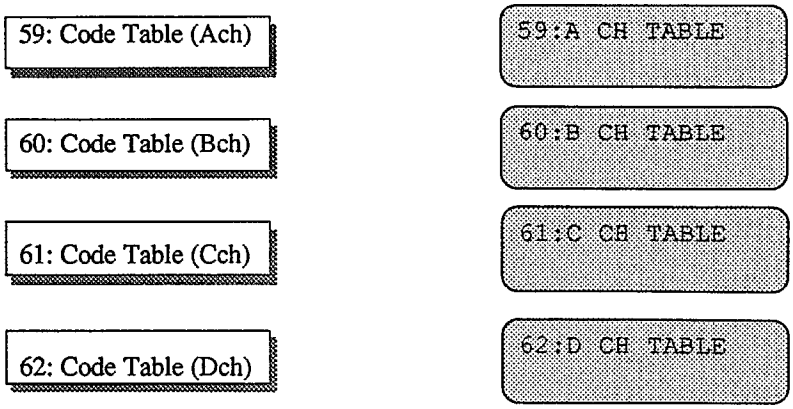
ID numbers of SI/FII includes GID and OID. Normally GID (Group ID) is called an IDnumber.

GID: Setting of the indicator group. Set the ID number of the indicator to receivedata.

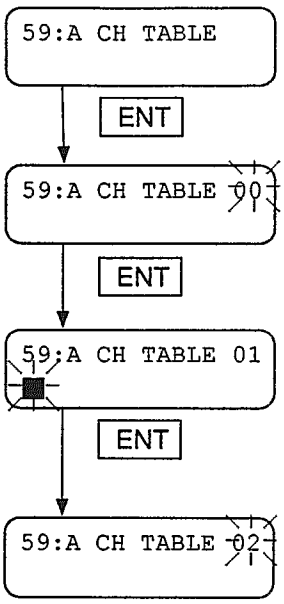
OID: Setting of the ranking in a group. Setting is made as shown in the table below.

OID	Device
0	Indicator
1	E760
2	E232 (E920)
3	E720, E920, M255, M350

External converters and D/A converters need no OID setting. -Avoid duplicate OID setting in a group (GID).



Register a code table number and its corresponding code name.



Select a code table number (00 to 31) by using the up and down arrow keys.

Enter a maximum 6-digit code name by using numeric keys. Available characters are numerics, alphabetic characters, katakana, and symbols (-, *, /, space). To move between digits, use the right arrow key.

The code table number counts up auto atically. Enter next code name. To terminate data entry, press the ESC key.

Numeric keys work as follows in the code name registration:

1 : 1→A→B→_→ア→イ→ウ→エ→オ→_
2 : 2→C→D→E→カ→キ→ク→ケ→コ→_
3 : 3→F→G→H→サ→シ→ス→セ→ソ→_
4 : 4→I→J→K→タ→チ→ツ→テ→ト→_
5 : 5→L→M→N→ナ→ニ→ヌ→ネ→ノ→_
6 : 6→O→P→Q→ハ→ヒ→フ→ヘ→ホ→_
7 : 7→R→S→T→マ→ミ→ム→メ→モ→_
8 : 8→U→V→W→ヤ→ャ→ユ→ュ→ヨ→ョ
9 : 9→X→Y→Z→ラ→リ→ル→レ→ロ→_
0 : 0→ー→／→＊→ワ→ヲ→ン→゛→゜→_

'_' represents a space.

· Memory Card

71: Format

71:FORMAT

This is a command for formatting a memory card. Press the ENT key in the 71: FORMAT. This starts memory card formatting.

CAUTION:
Data cannot be stored in a memory card until it is formatted. Formatting a memory card erases all the existing data in the card.

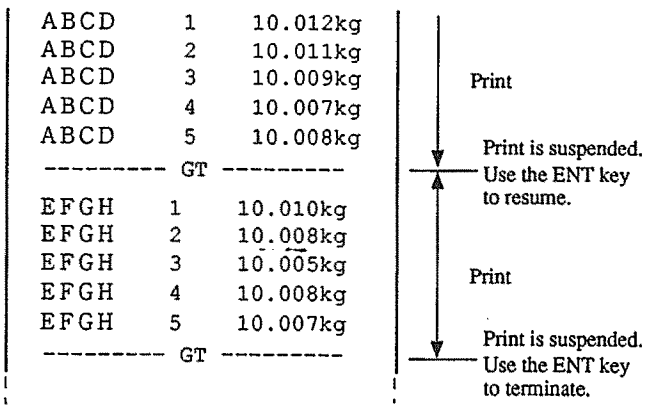
72: Data Print

72:DATA PRINT

This function is used to print all the data in a memory card.

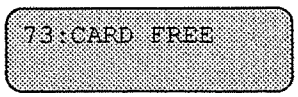
CAUTION:
Performing the data print operation clears the data stored in the M350 internalmemory. Obtain grand total of the internal memory data beforeperforming data print.

Press the ENT key in the 72: DATA PRINT menu. DATA CLEAR? is displayed. Selecting YESclears the internal data of the M350 and starts printing the memory card data. Selecting NO returns to the 72: DATA PRINT menu. If GT is recorded among the memory card data, suspend data print where a GT command isencountered. To resume processing, press the ENT key. To terminate processing, press the ESC key.



CAUTION:
Currently specified Print Every format and grand total format are used for data print. Setting made when data was recorded is not stored in memory.

73: Memory Card Free



This function is used to allow a memory card to be removed/inserted. Remove and insert a memory card while 73: CARD FREE OK is displayed. To exit from this menu, press the ESC key. Pressing the ENT key and inserting a card displays the guideline of the number of freelines in the bottom left corner of the LCD.

CAUTION:
Avoid removing/inserting a memory card elsewhere than the memory card free status, to prevent damage to the data.
Number of free lines in the memory card is just a guideline. How many more lines are available for data recording in units of 10 lines.

Pressing the ENT key in the CARD FREE status allows checkup of memory card status on the LCD.

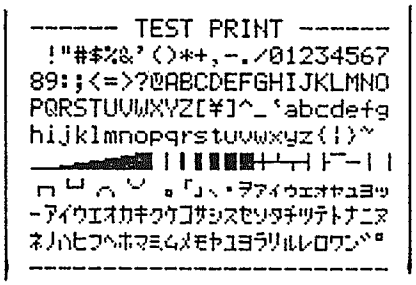
IN:	Memory card is correctly inserted.
OUT:	Memory card is missing.
GOOD:	Memory card is in normal operation.
BAT-NG:	Memory card battery has expired.
WP:	Write-protect switch is ON (recording is disabled).

・Maintenance Mode

81: Test Print

```
81:TEST PRINT
```

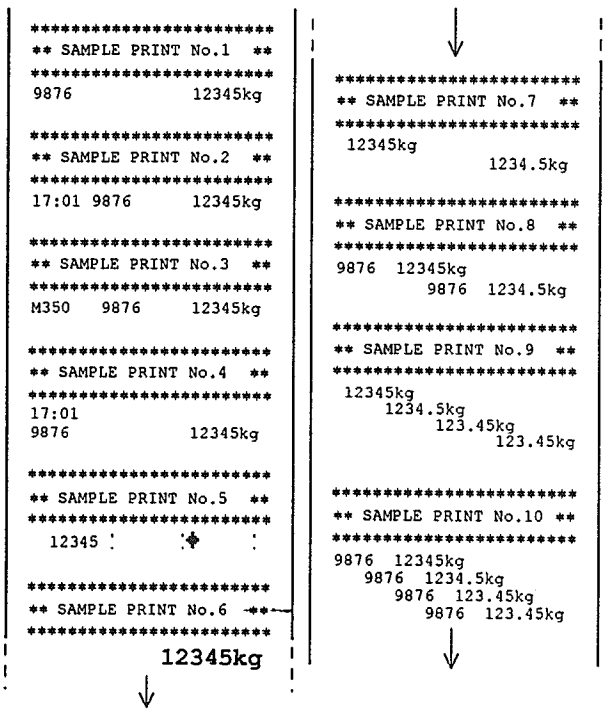
Use this function to print all the characters available in the M350. Pressing the ENT key while 81: TEST PRINT is displayed starts printing characters.

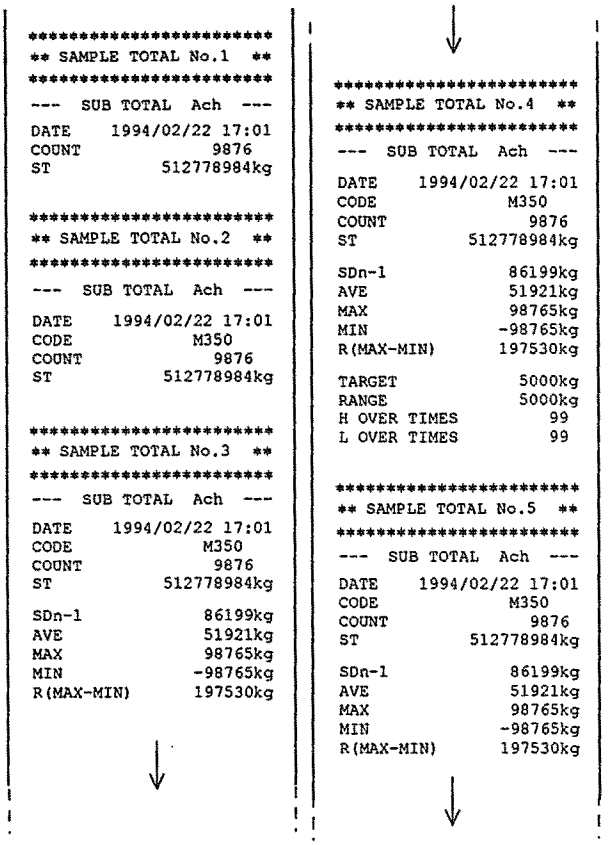


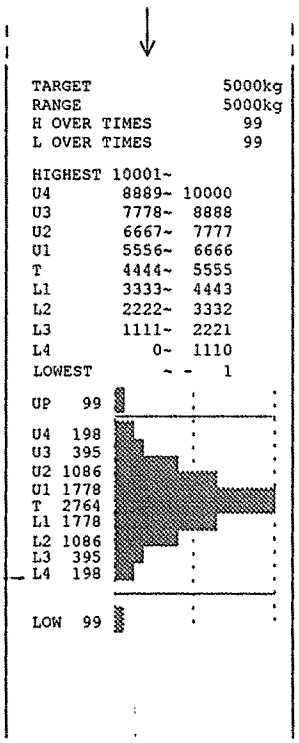
82: Sample Print

```
82:SAMPLE PRINT
```

Use this function to print the Print Every and grand total formats. Pressing the ENT key while 82: SAMPLE PRINT is displayed starts printing the formats.




** SAMPLE TOTAL No.1 **
--- SUB TOTAL Ach ---
DATE 1994/02/22 17:01
COUNT 9876
ST 512778984kg
** SAMPLE TOTAL No.2 **
--- SUB TOTAL Ach ---
DATE 1994/02/22 17:01
CODE M350
COUNT 9876
ST 512778984kg
** SAMPLE TOTAL No.3 **
--- SUB TOTAL Ach ---
DATE 1994/02/22 17:01
CODE M350
COUNT 9876
ST 512778984kg
SDn-1 86199kg
AVE 51921kg
MAX 98765kg
MIN -98765kg
R(MAX-MIN) 197530kg
** SAMPLE TOTAL No.4 **
--- SUB TOTAL Ach ---
DATE 1994/02/22 17:01
CODE M350
COUNT 9876
ST 512778984kg
SDn-1 86199kg
AVE 51921kg
MAX 98765kg
MIN -98765kg
R(MAX-MIN) 197530kg
TARGET 5000kg
RANGE 5000kg
H OVER TIMES 99
L OVER TIMES 99
** SAMPLE TOTAL No.5 **
--- SUB TOTAL Ach ---
DATE 1994/02/22 17:01
CODE M350
COUNT 9876
ST 512778984kg
SDn-1 86199kg
AVE 51921kg
MAX 98765kg
MIN -98765kg
R(MAX-MIN) 197530kg


TARGET 5000kg
RANGE 5000kg
H OVER TIMES 99
L OVER TIMES 99
HIGHEST 10001~
U4 8889~ 10000
U3 7778~ 8888
U2 6667~ 7777
U1 5556~ 6666
T 4444~ 5555
L1 3333~ 4443
L2 2222~ 3332
L3 1111~ 2221
L4 0~ 1110
LOWEST ~ 1
UP 99
U4 198
U3 395
U2 1086
U1 1778
T 2764
L1 1778
L2 1086
L3 395
L4 198
LOW 99

83: Self Test

```
83:SELF TEST
```

Conduct the ROM/RAM test of the M350. Pressing the ENT key while 83: SELF TEST is displayed starts the self test. When the M350 is operating normally, the following message appears with the buzzersounding, and the next setting item is displayed.

```
83:SELF TEST
RAM:O ROM:O BE69
```

This display may be changed depending on the purchase period and option configuration.

When any abnormality is detected, "RAM: X or ROM: X is displayed and the displayfreezes.

CAUTION:
If the self test is not terminated successfully, the M350 is suspected to be faulty. Contact UNIPULSE or its representative from which you purchased the product forrepairs.

84: Parameter List Print

```
84:PARAM. LIST
```

Use this function to print current parameter list of the M350. Pressing the ENT key while 84: PARAM. LIST is displayed starts printing the parameter list.

```
**********************
**   PARAMETER  LIST   *
**********************
01:DATE/TIME
        1994/03/11 14:42
02:PRINT DATA
                  INDICATE
03:PRINT UNIT
                       kg
04:PRINT EVERY
                        ON
05:DATA FORMAT
        CODE & CNT & DAT
06:PRINT AUTO
                        ON
07:INTERVALPRINT
                        ON
08:INTERVAL TIME
                      0001
09:GT/ST FORMAT
        WITH HYST GRAPH
10:ST MODE
                    MIDDLE
11:TARGET Ach
                    +50.000
          ↓
```

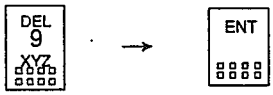
```
          ↓
12:RANGE Ach
                    49.999
13:TARGET Bch
                   +00.000
14:RANGE Bch
                     99999
15:TARGET Cch
                   +00000
16:RANGE Cch
                     99999
17:TARGET Dch
                   +00000
18:RANGE Dch
                     99999
19:SD. METHOD
                      σn
20:DATA ADDING
                      ON
21:PRINT KEY
                      ON
22:BATCH TOTAL
                     OFF
23:FEED LINES
                       0
          ↓
```

Print contents vary depending on set values.

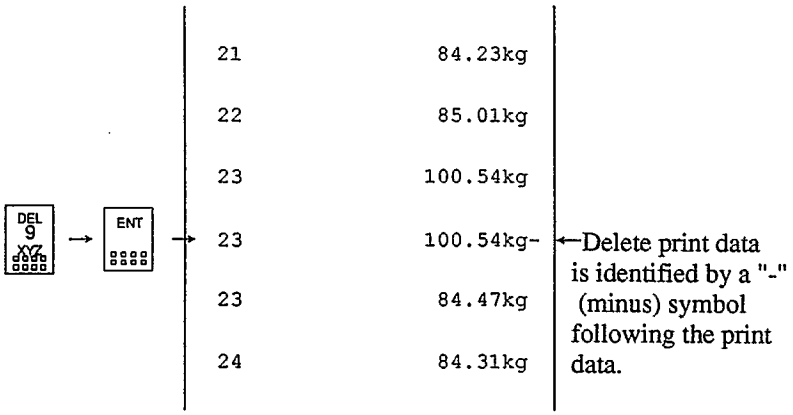
· Special Print

Delete Print

Use this function to delete printed data, i. e. , to exclude the data from grand total orsub total. Only a single piece of data last printed may be deleted.



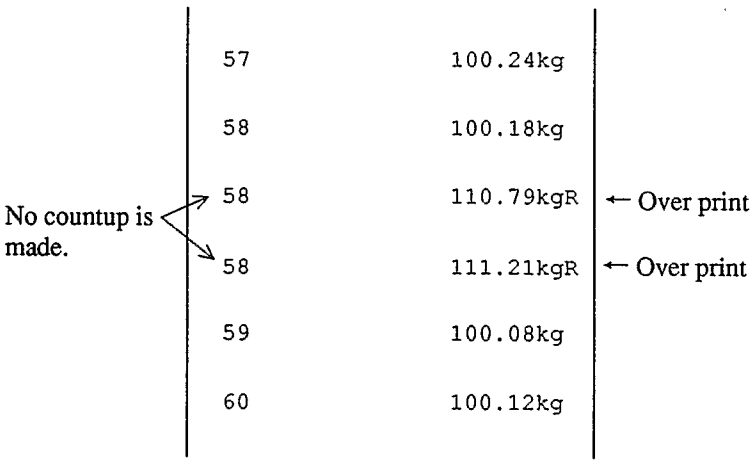
This operation prints the last printed data again, excluding it from the grand/subtotal.



Over Print

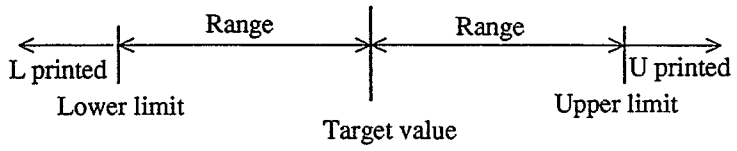
Use this function to identify print data that exceeds the print range set in the M350. Range Over (U/L) and Over Status (R) are available.

1) Over Status (R)If Over Status is found in the print data, the data is followed by an "R" symbol andexcluded from the grand/sub total. No countup is made either.

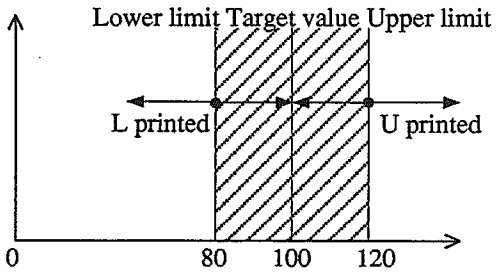


Over Status is automatically sent from the indicator for SI/F and SI/FII. For BCD input,Over Print is made when a signal is input to the 46th pin "Over Input".

2) Range Over (U/L) If the range specified for the histogram target value and histogram range is exceeded, U or L is printed following the print data.



Ex) Target value is 100, range is 20




```
82          100.15kg
83          110.21kg
84          123.05kgU   ← U (Upper limit over)
85           78.74kgL   ← L (Lower limit over)
86          100.04kg
```

If Range Over (U/L) and Over Status (R) have occurred at the same time, Over Status (R) is printed.

・Initialization

Use this function to clear all internal memory of the M350 and overwrite the data withdata at shipment.

CAUTION:
Take extreme care when performing the operation because once cleared, data or settingscannot be recovered.

Initialization procedure

1) Turn off the power switch on the rear panel.
2) Turn on the power switch with the FEED key held down.
3) The following display appears with a beep sound:

```
ALL DATA INITIAL
 OK?→ENT CAN?→ESC?
```

4) Entering the ENT key executes initialization.
5) Pressing the ESC key cancels initialization.

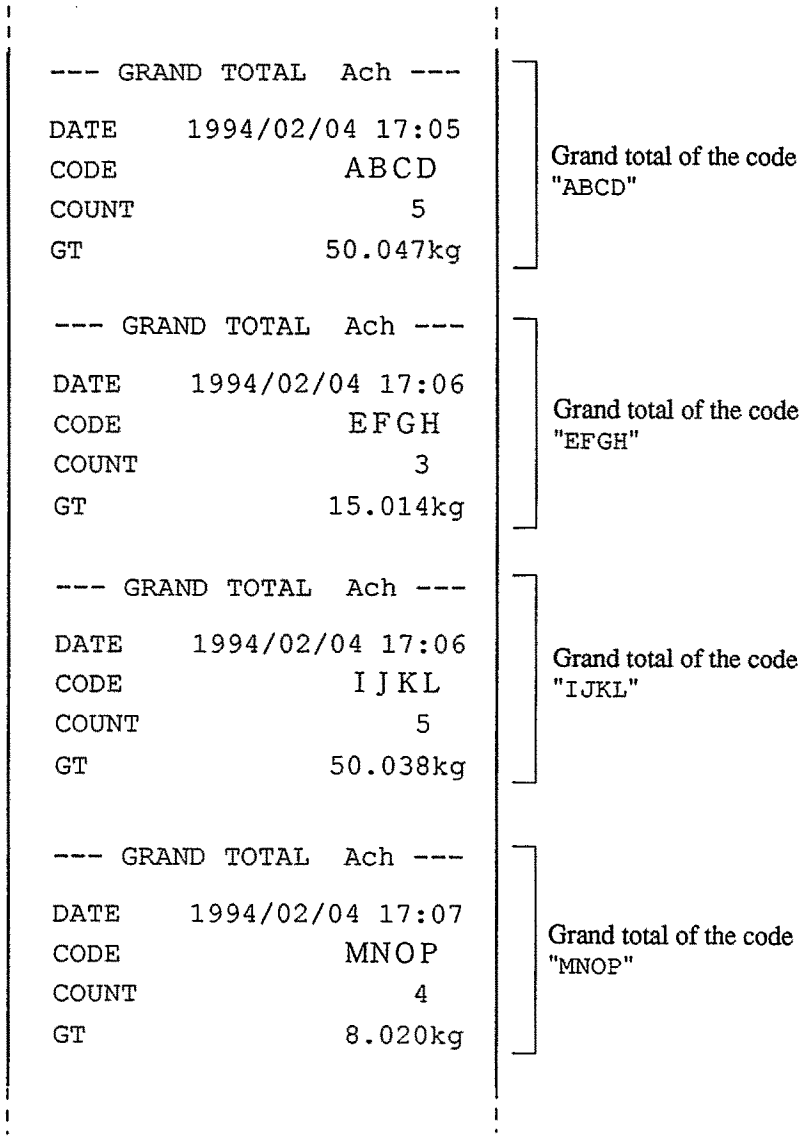
4.4 Classification by Code

The M350 can assign code names to print data and classify sub/grand total data on thebasis of these code names. Up to 32 code names are available.

4.4.1 Print Samples

Code	Count	Input data
ABCD	1	10.012kg
ABCD	2	10.011kg
ABCD	3	10.009kg
ABCD	4	10.007kg
ABCD	5	10.008kg
EFGH	1	5.006kg
EFGH	2	5.005kg
EFGH	3	5.003kg
IJKL	1	10.010kg
IJKL	2	10.008kg
IJKL	3	10.005kg
IJKL	4	10.008kg
IJKL	5	10.007kg
MNOP	1	2.005kg
MNOP	2	2.006kg
MNOP	3	2.004kg
MNOP	4	2.005kg
QRST	1	5.007kg
QRST	2	5.006kg
QRST	3	5.006kg

GT → ENT


--- GRAND TOTAL Ach ---
DATE 1994/02/04 17:05
CODE ABCD
COUNT 5
GT 50.047kg
Grand total of the code "ABCD"
--- GRAND TOTAL Ach ---
DATE 1994/02/04 17:06
CODE EFGH
COUNT 3
GT 15.014kg
Grand total of the code "EFGH"
--- GRAND TOTAL Ach ---
DATE 1994/02/04 17:06
CODE IJKL
COUNT 5
GT 50.038kg
Grand total of the code "IJKL"
--- GRAND TOTAL Ach ---
DATE 1994/02/04 17:07
CODE MNOP
COUNT 4
GT 8.020kg
Grand total of the code "MNOP"

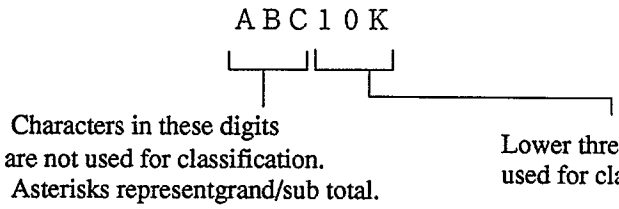
```
--- GRAND TOTAL  Ach ---
DATE     1994/02/04 17:07
CODE              QRST
COUNT                3
GT              15.019kg

--- GRAND TOTAL  Ach ---
DATE     1994/02/04 17:08
COUNT               20
GT             138.138kg
```

Grand total of the code "QRST"

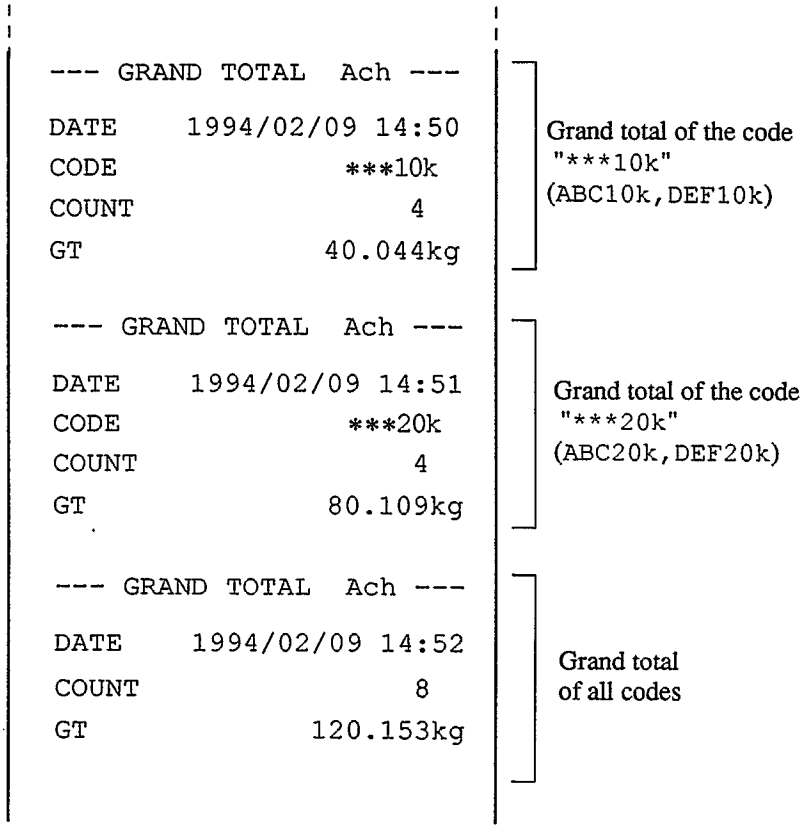
Grand total of all codes

The following classification may be made by specifying the digits of a code:

Ex) When three digits are specified for code classification:



Code	Count	Input data
ABC10k	1	10.011kg
ABC10k	2	10.009kg
ABC20k	1	20.031kg
ABC20k	2	20.025kg
DEF10k	3	10.013kg
DEF10k	4	10.011kg
DEF20k	3	20.029kg
DEF20k	4	20.024kg


--- GRAND TOTAL Ach ---
DATE 1994/02/09 14:50
CODE ***10k
COUNT 4
GT 40.044kg
Grand total of the code "***10k" (ABC10k,DEF10k)
--- GRAND TOTAL Ach ---
DATE 1994/02/09 14:51
CODE ***20k
COUNT 4
GT 80.109kg
Grand total of the code "***20k" (ABC20k,DEF20k)
--- GRAND TOTAL Ach ---
DATE 1994/02/09 14:52
COUNT 8
GT 120.153kg
Grand total of all codes

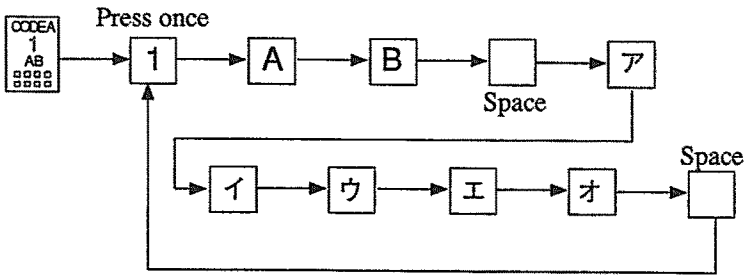
4.4.2 Input of Codes

Use the front panel keyboard, BCD, RS-232C, or SI/FII to enter codes.

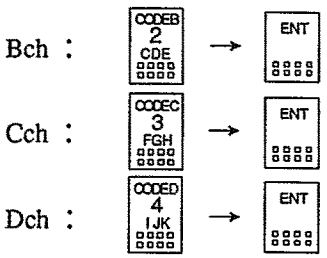
・Input from keyboard

Use the following procedure to enter codes from the keyboard:

1) Press the CODEA key and the ENT key in this order.
2) The current code on Ach is displayed on the LCD.
3) To change codes, press the ENT key.
4) A cursor appears in the highest digit of the code. Enter a code by using the numeric key.

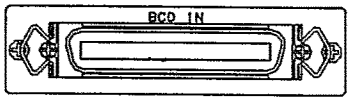


5) Pressing the SEL key moves the cursor to the right by one digit. Enter a numeric or an alphabetic character. Pressing the SEL key while the cursor is in the lowest digit moves the cursor to the highest digit.
6) On completion of entry, validate the setting by using the ENT key.
7) Repeat steps 1) to 6) for Bch to Dch.



・Input via the BCD interface

If an optional BCD interface is available, a digital switch, dip switch, or other BCDparallel output devices may be used to enter codes.



Codes that may be entered via the BCD interface are numerics, a space, and a hyphen.

Hyphen: Hexadecimal D (1101) is entered.

Space: Hexadecimal A to C, E, and F are entered.

Pin No. 22 to 45 are code input terminals. Enter codes according to the BCD parallel data input.

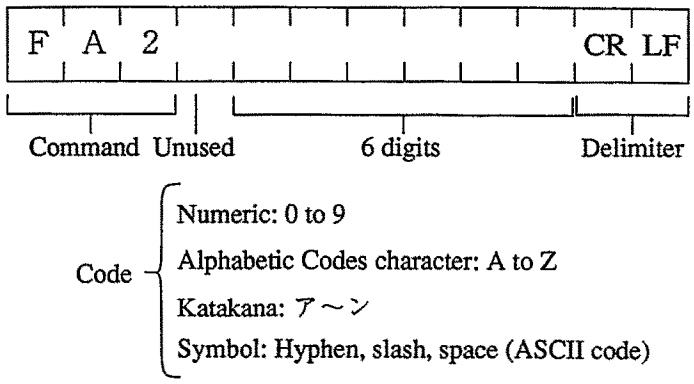
Connector Pin Assignment

1	COM	26	CODE 1 0 input
2	DATA 1 input	27	〃 2 0 〃
3	〃 2 〃	28	〃 4 0 〃
4	〃 4 〃	29	〃 8 0 〃
5	〃 8 〃	30	〃 1 0 0 〃
6	〃 1 0 〃	31	〃 2 0 0 〃
7	〃 2 0 〃	32	〃 4 0 0 〃
8	〃 4 0 〃	33	〃 8 0 0 〃
9	〃 8 0 〃	34	〃 1 0 0 0 〃
10	〃 1 0 0 〃	35	〃 2 0 0 0 〃
11	〃 2 0 0 〃	36	〃 4 0 0 0 〃
12	〃 4 0 0 〃	37	〃 8 0 0 0 〃
13	〃 8 0 0 〃	38	〃 1 0 0 0 0 〃
14	〃 1 0 0 0 〃	39	〃 2 0 0 0 0 〃
15	〃 2 0 0 0 〃	40	〃 4 0 0 0 0 〃
16	〃 4 0 0 0 〃	41	〃 8 0 0 0 0 〃
17	〃 8 0 0 0 〃	42	〃 1 0 0 0 0 0 〃
18	〃 1 0 0 0 0 〃	43	〃 2 0 0 0 0 0 〃
19	〃 2 0 0 0 0 〃	44	〃 4 0 0 0 0 0 〃
20	〃 4 0 0 0 0 〃	45	〃 8 0 0 0 0 0 〃
21	〃 8 0 0 0 0 〃	46	Over input
22	CODE 1 〃	47	Minus (polarity) input
23	〃 2 〃	48	
24	〃 4 〃	49	Read command input
25	〃 8 〃	50	

・Input via RS-232C

If an optional RS-232C interface is available, an external RS-232C device may be usedto enter codes. The ASCII code is used to represent a code.

Command format



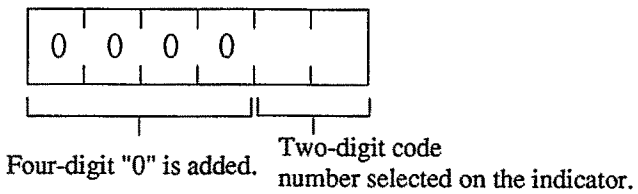
Use the above commands to enter codes according to the use of the RS-232C interface.

Codes that may be entered via the RS-232C interface are numerics, alphabeticcharacters, and symbols (hyphen, slash, space).

・Input via SI/FII

If an optional SI/FII interface is available, codes are input from anSI/FII-compatible indicator. Two-digit code number selected on the indicator is usedas a code.

Code input

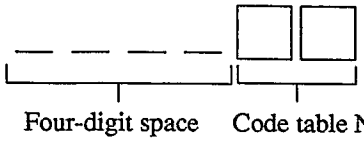


Codes that may be entered via the SI/FII interface is six-digit numerics.

· Input Using the Code Table

When input of code table numbers is used for printing code names, the lowest twodigits are effective.

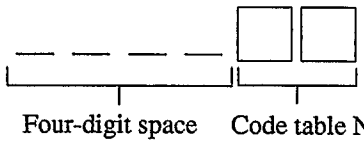
Input from keyboard



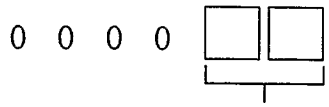
Input via BCD

2 digits from 22nd to 27th pin
(unit digit, tens digit)

Input via RS-232C



Input via SI/FII



Code table refers to the lowest two digits of the entered code table number to print the code name. Therefore, codes that have the same print code name may be recognized as separate codes.

Ex) If registration is Code table No. 01
Code name ABC

Code 1	_ _ _0 0 1	ABC
Code 2	_ _ _1 0 1	ABC
	↑ Input	↑ Printed code name

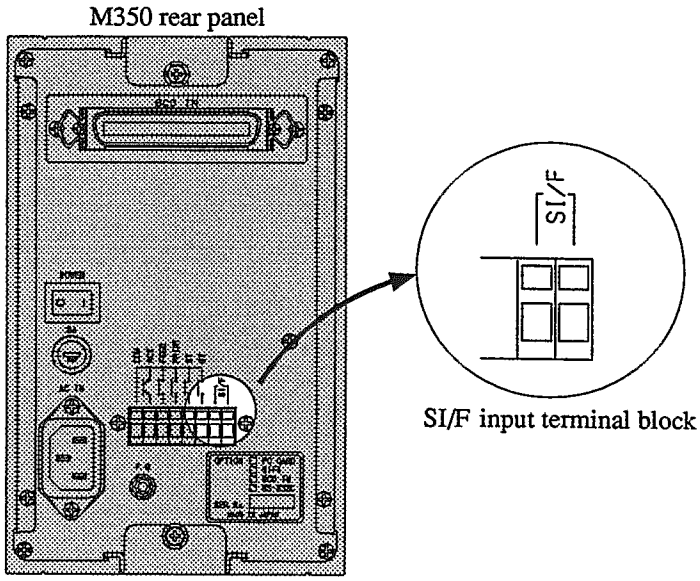
The above Code 1 and Code 2 are treated as separate codes in tabulation such as grand total and sub total. To match printed code names with tabulated code classification, set two digits in the 42: Number of Code Digits menu.

For details of the code table, refer to the pages explaining the 41: Code Selectionmenu and the 59: Code Table (Ach) menu.

4.5 Interface

4.5.1 SI/F Two-wire Serial Interface

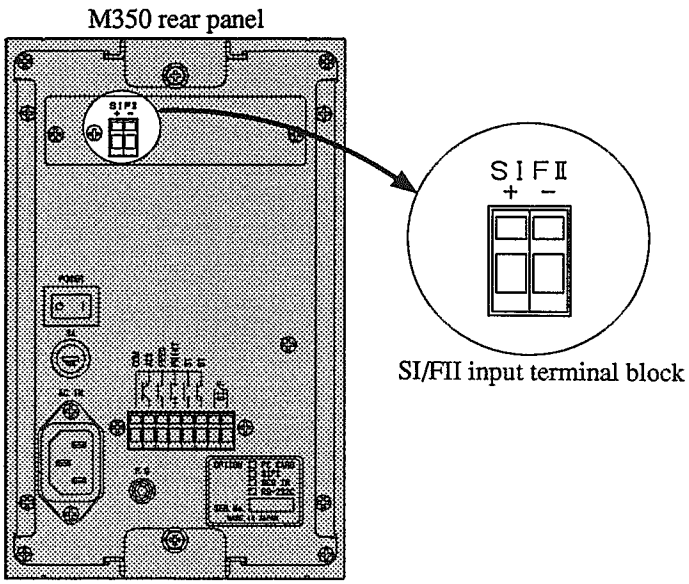
SI/F is a serial interface to connect to an indicator from UNIPULSE.



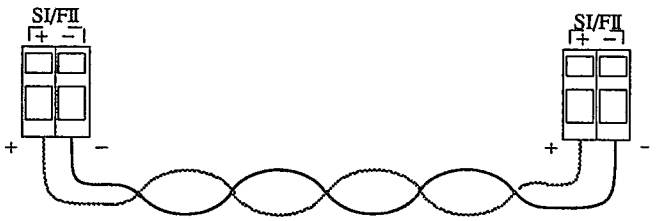
The SI/F is a two-wire, nonpolar interface. Transmission range is approximately 300m and up to three devices may be connected in parallel. Parallel two-core cables or cabtire cables suffice as wires, but must beseparated from an AC line or a high-tension line.

4.5.2 SI/FII Two-wire Serial Interface

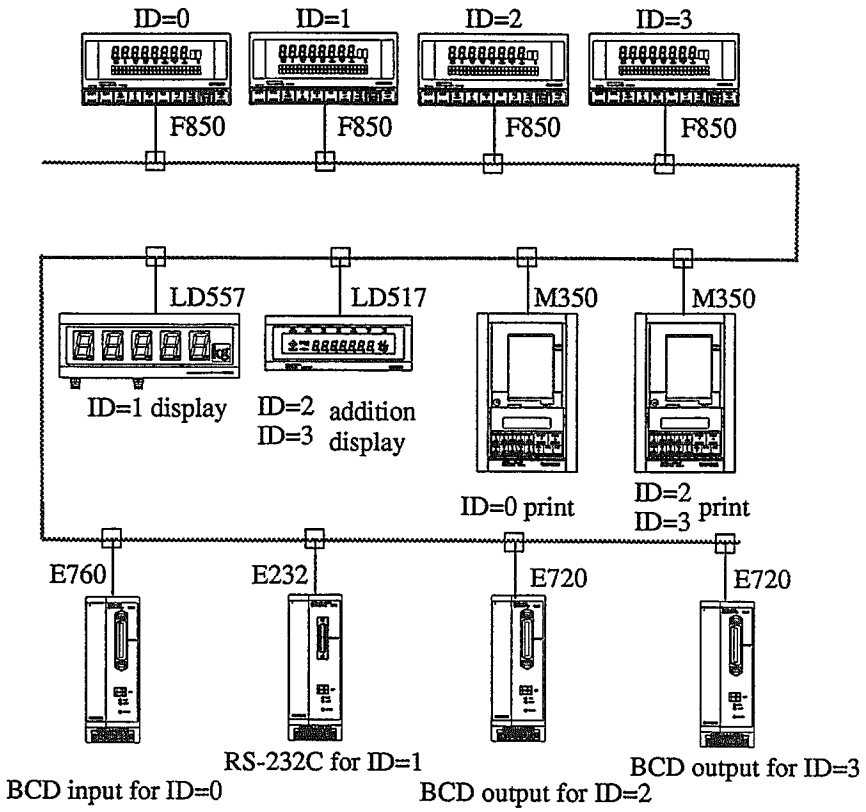
SI/FII is a high-speed bidirectional serial interface to connect to an indicator fromUNIPULSE.



The SI/FII is a two-wire interface whose transmission range is approximately 300m. Up to 20 devices may be connected in the same network. Use of twisted-pair cables is recommended. Because SI/FII has positive and negative polarities, connect the same polarities.



For SI/FII, total four master indicators are connected in the same network, each ofwhich is assigned an ID number. This ID number is used for grouping.



Because devices having separate ID numbers may be wired in the same network, wiring cost is reduced and maintenance is facilitated.

4.5.3 BCD Parallel Input

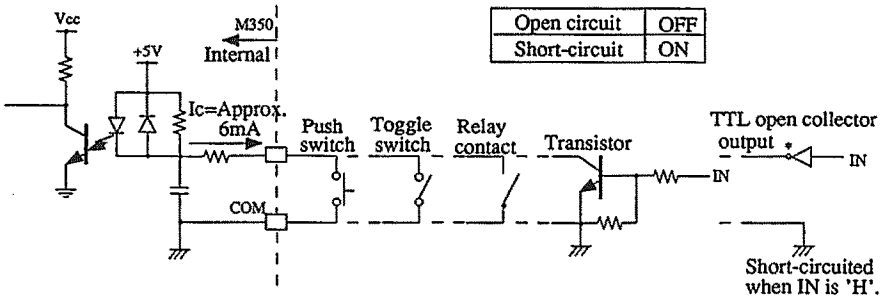
BCD parallel input is an interface to capture BCD-coded data and code numbers intothe M350.

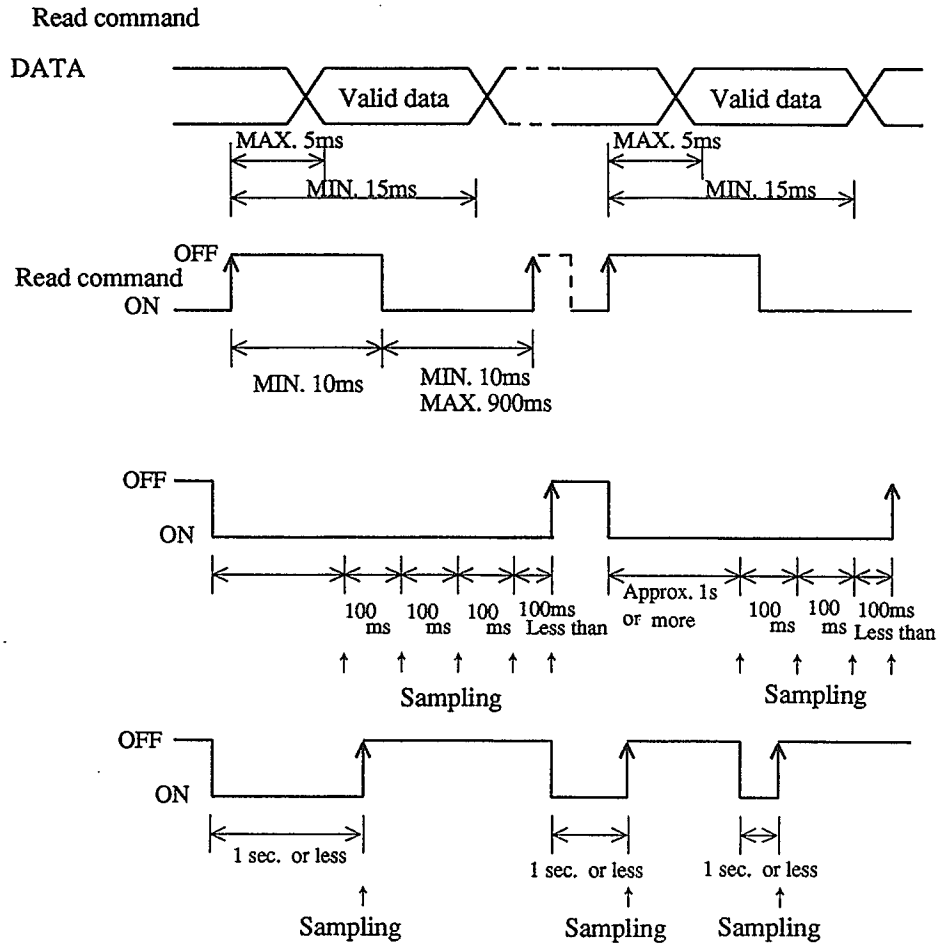
Connector Pin Assignment

Applicable plug: 57-30500 from DDK (attached) or equivalent

1	COM	26	CODE 10 Input
2	DATA 1 Input	27	〃 20 〃
3	〃 2 〃	28	〃 40 〃
4	〃 4 〃	29	〃 80 〃
5	〃 8 〃	30	〃 100 〃
6	〃 10 〃	31	〃 200 〃
7	〃 20 〃	32	〃 400 〃
8	〃 40 〃	33	〃 800 〃
9	〃 80 〃	34	〃 1000 〃
10	〃 100 〃	35	〃 2000 〃
11	〃 200 〃	36	〃 4000 〃
12	〃 400 〃	37	〃 8000 〃
13	〃 800 〃	38	〃 10000 〃
14	〃 1000 〃	39	〃 20000 〃
15	〃 2000 〃	40	〃 40000 〃
16	〃 4000 〃	41	〃 80000 〃
17	〃 8000 〃	42	〃 100000 〃
18	〃 10000 〃	43	〃 200000 〃
19	〃 20000 〃	44	〃 400000 〃
20	〃 40000 〃	45	〃 800000 〃
21	〃 80000 〃	46	Over-input
22	CODE 1 〃	47	Minus (polarity) input
23	〃 2 〃	48	
24	〃 4 〃	49	Read command input
25	〃 8 〃	50	

Input equivalent circuit





If read command is short-circuited for one second or more, data is capturedasynchronously every 100ms.

4.5.4 RS-232C Interface

RS-232C I/F is an interface to capture RS-232C standard data, code, and command signals into the M350.

Specifications

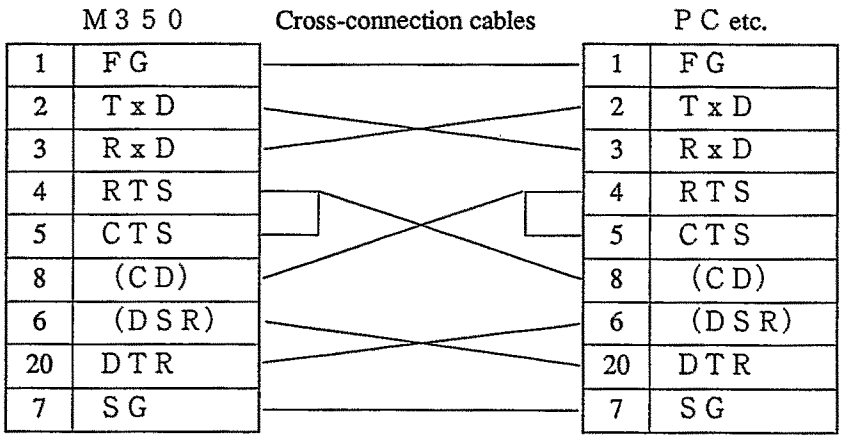
Signal level:	Conforming to RS-232C
Transmission distance:	Around 15m
Data transfer system:	Start-stop, full-duplex
Data transmission speed:	1200, 2400, 4800, 9600bps
Bit configuration:	Start bit: 1 Character length: 7 or 8 bits
	Stop bit: 1 or 2 bit Parity bit: None, Odd, Even
Code:	ASCII

Pin Assignment

Applicable plug: 25-pin D-SUB connector (DB-25P-N from JAE or equivalent)

1	*	FG	14		
2	OUT	TxD	15		
3	IN	RxD	16		
4	OUT	RTS	17		
5	IN	CTS	18		
6		(DSR)	19		
7	*	SG	20	OUT	DTR
8		(CD)	21		
9			22		
10			23		
11			24		
12			25		
13					

Example of cable connection



*This connection diagram represents cable connections used when the PCserves as Data Terminal Equipment (DTE). When connecting to Data Circuit Terminating Equipment (DCE) such as a modem, use straight-connection cables. Check thoroughly the connector shape and signal lines (pin assignment) before making cable connections.

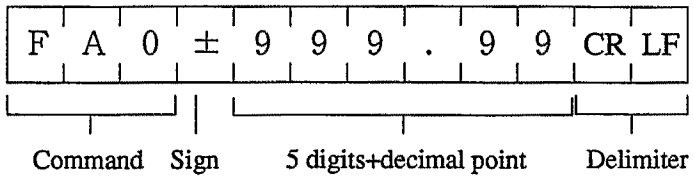
CAUTION:

When printing a katakana code, set the RS-232C character length of the M350 and the PC(setting No. 50) to 8 bits. If set to 7 bits, transmission of katakana data is disabled.

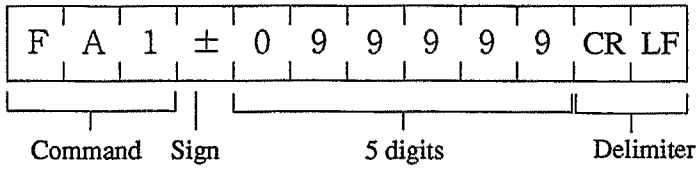
Communication

The M350 receives data from the RS-232C interface as an ASCII character string. Data and command formats are shown below.

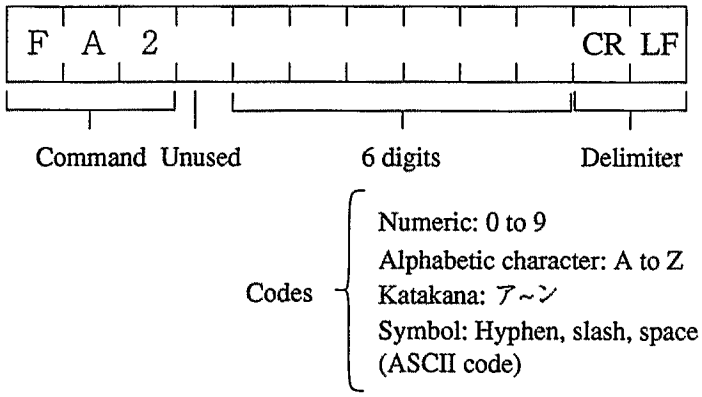
1) Data (no automatic print)



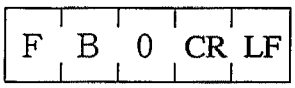
2) Data (automatic print)



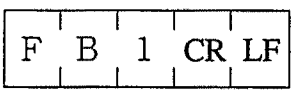
3) Code



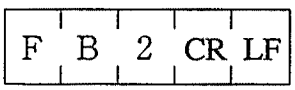
4) Deletion of last data



5) Grand total print



6) Sub total print



7) Data print (latest data print)

F	B	3	CR	LF

8) Paper feed

F	B	9	CR	LF

9) Batch total print

F	B	4	CR	LF

Answerback Mode

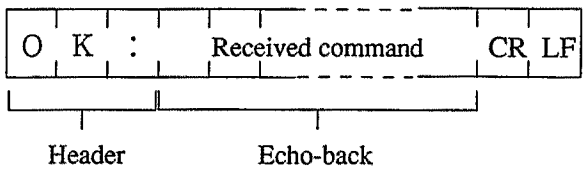
The M350, on receiving data or a command from the RS-232C interface, returns the data orthe command to the host computer. This is called answerback. The two methods ofanswerback are available:

M250 Mode

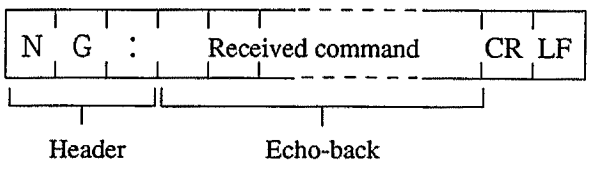
Echoes back every command received.
Echoes back an invalid command also. (For example, a code name is received althoughthe code input method has been set on the front panel keyboard.)

M350 Mode

Returns every command received, with the information on whether the command wasexecuted or not in the header.
When a command was received and executed:



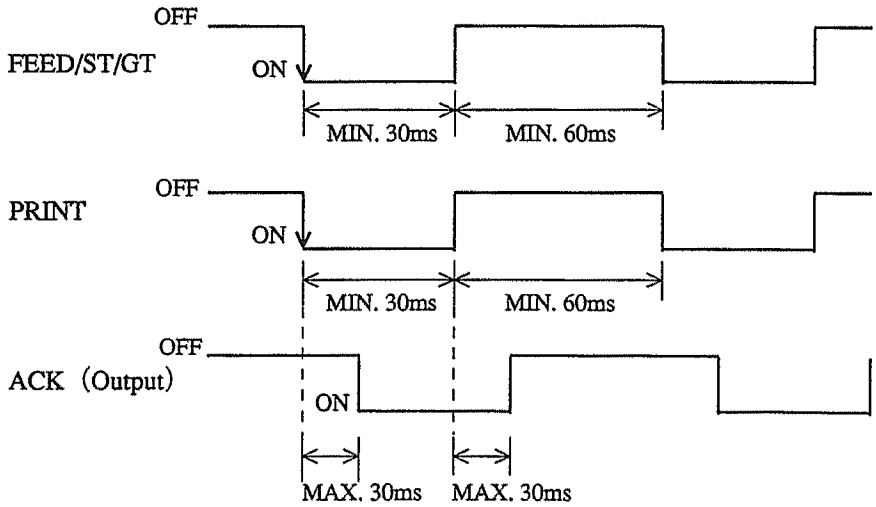
When an invalid command was received:



Select the M250 mode when using in the M350 a software program for the UNIPULSEintelligent printer M250. Normally use of the M350 mode is recommended.

When programming includes multiple commands being sent in succession, make such programming that the next command is not sent until an answerback is not received.

4.5.5 Print Command



Reception of a print command turns on ACK. When the print command isturned off the ACK output is also turned off.

CAUTION:
ACK output logic cannot be changed.

4.5.6 Memory Card Interface

The memory card interface is used to record print data in a memory card.

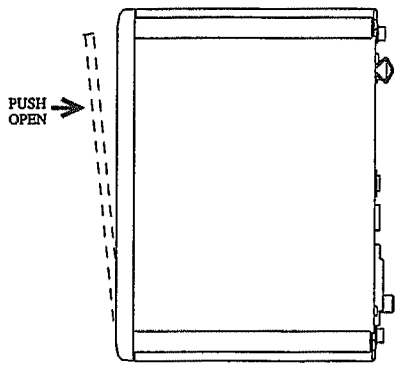
Format: MS-DOS
File format: Text file
Stored data: Year, month, day, time, codes, measurements, commands
Memory card capacity: 64/128/256/512/1024/2048 Kbytes

Memory Card Setting

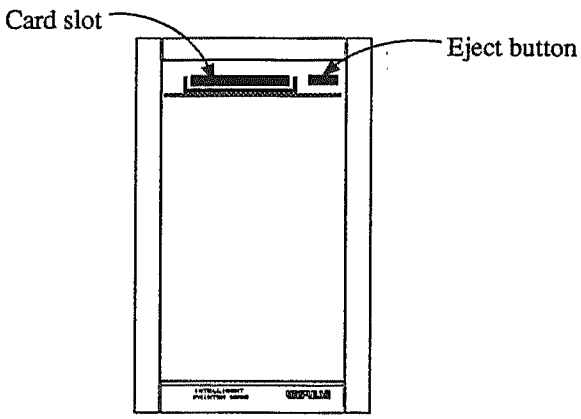
Follow the procedure below to set a memory card:

1) Display "73: CARD FREE OK". (Use the ENT key to display OK.)

2) Press the PUSH OPEN marking to open up the front panel.

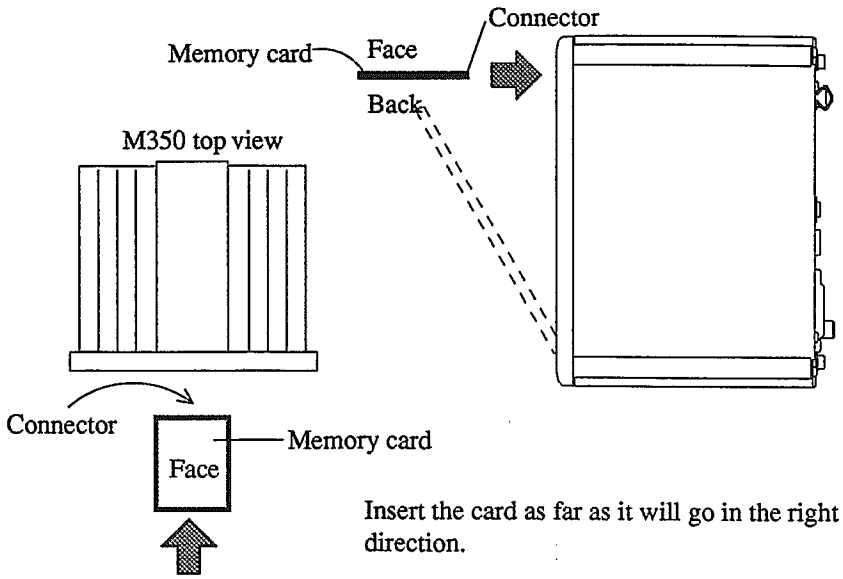


3) Upper area inside the main body incorporates a card slot and an eject button.



M350 front view

4) Insert a memory card into the card slot.



5) Check whether the eject button is flush with the memory card face, then confirmsecure setting.

Storing Data in Memory Card

To sore data in a memory card, proceed as follows:

1) Set a memory card.

2) Format the memory card (71: FORMAT).

CAUTION:
Formatting a memory card erases all the existing data in the card.

3) In the print mode, the memory card records print data according to the setting of the M350.

Perform data print (72: DATA PRINT) when printing data in the memory card by the M350. To copy data to PCs, remove and insert the memory card in the memory card free status (73: CARD FREE).

Recorded Data in Memory Card

A memory card records data, time, codes, commands, and print data. The following is a data recording sample:

Data

Time (5 digits) Code (6 digits) Print data (7 digits)

```
"09:16","CODE12 ",   89.08
"09:17","CODE34 ",   88.92
"09:18","1-2CH ",   89.27
"09:19","2-2CH ","",   72.35
"09:20","1-4CH ",   89.18
"09:21","2-4CH ","",   72.21
"09:22","3-4CH ","","",   61.28
"09:23","4-4CH ","","","",   57.57
```

Normal print

Double print

Quadruple print

Time (5 digits) Command

```
"09:24",,"FEED"
"09:25",,"DATE"
"09:26",,"ST"
"09:27",,"GT"
"09:28",,"BT"
```

Date

Date (14 digits)	Status	
"94/07/07 10:18"	"CARD INSERTED"	Memory card inserted
"94/07/08 08:12"	"POWER ON"	Power on

Special print

Time (5 digits)	Code (6 digits)	Symbol+Data (7 digits)	
"09:29"	"SPEC12"	"D 100.52"	Delete print
"09:30"	"SPEC34"	"R 132.84"	Over print
"09:31"	"SPEC56"	"* 87.01"	non-addition print

Date is recorded when a memory card is inserted or when the M350 is powered

Memory Card File Name

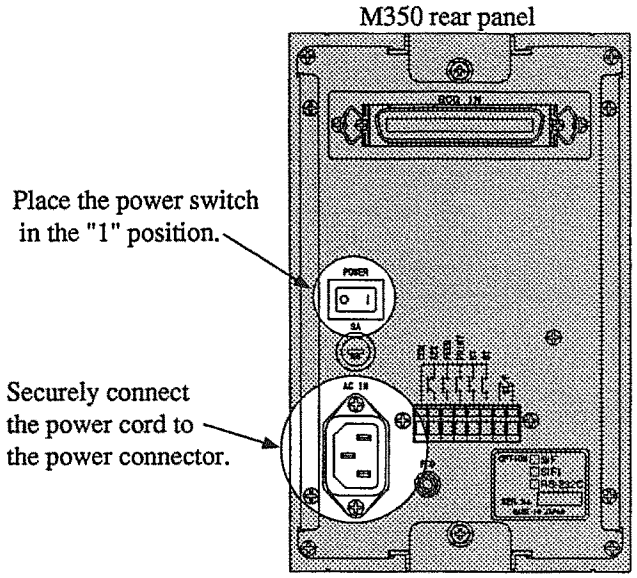
Recorded data is stored in the MS-DOS root directory under the name of "M350. DAT".

5 Troubleshooting

If any trouble has occurred in the M350, refer to the trouble topic and take an action as instructed under each topic.

5.1 M350 Is Not Started

Check whether the power cord is securely connected.

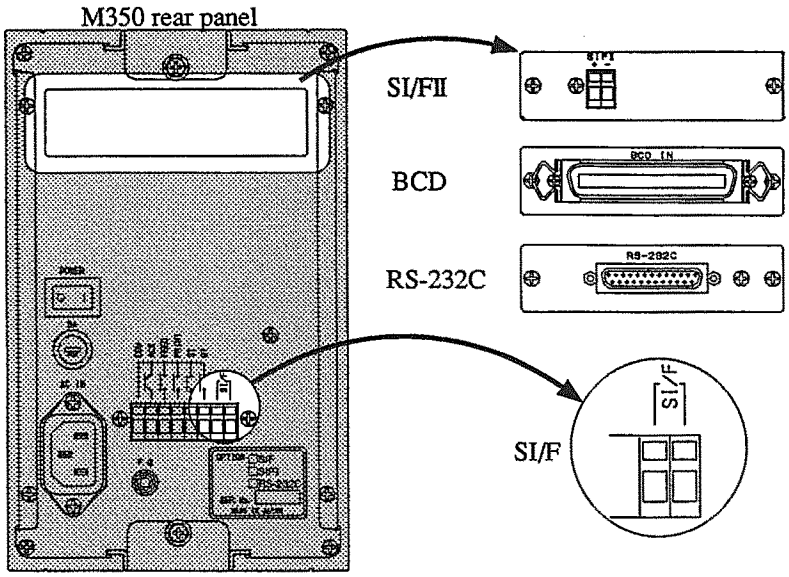


Check whether the power switch is in the ON (1) position.

Check whether the voltage of 90V to 125V AC is present at the AC outlet the power cordis connected to. If the voltage is not within this range, the M350 may not be activated.

5.2 M350 Prints No Data

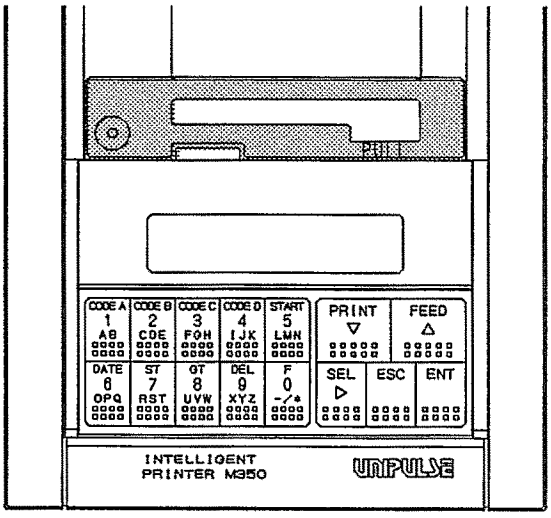
Check whether a data input terminal (SI/F, SI/FII, BCD, RS-232C) is properlyconnected. The M350 prints no data unless it receives data from a data input terminal.



Check for secured connector, breakage of wire, and wiring errors.

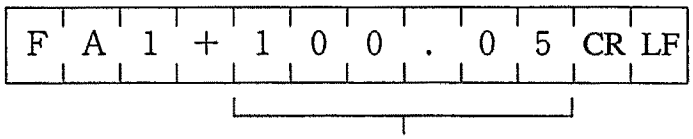
Check whether the devices sending data to the M350 (indicator using SI/F, PC usingRS-232C, etc.) are operating normally. If these devices are not powered or notoperating normally, the M350 is placed in the status where no data input terminals areconnected.

Check the M350 printer mechanism for dust or foreign matters.

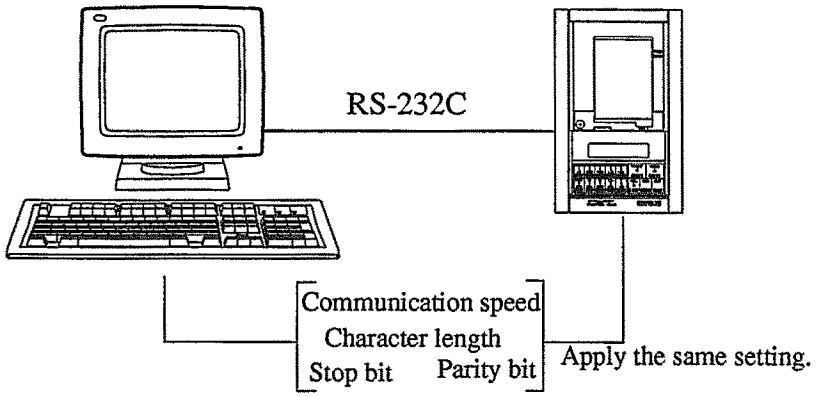


Remove dust or foreign matters, if any.

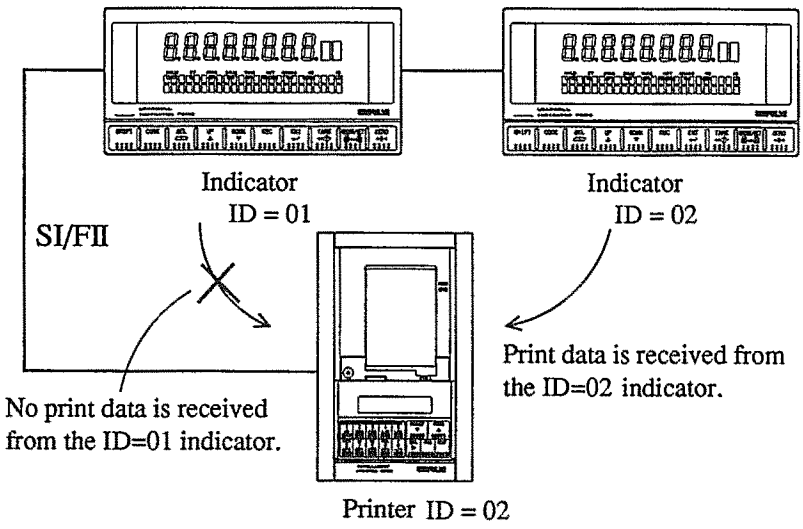
In case the RS-232C interface is used to send print data to the M350, check whether theRS-232C print data storage area contains any ASCII code except numerics. If any, theM350 ignores the code and skips data print.



In case the RS-232C interface is used to send print data to the M350, check whether theRS-232C data transmission conditions of the M350 is identical with that of the datatransmitter. Any disaccord will prevent the M350 from printing data.

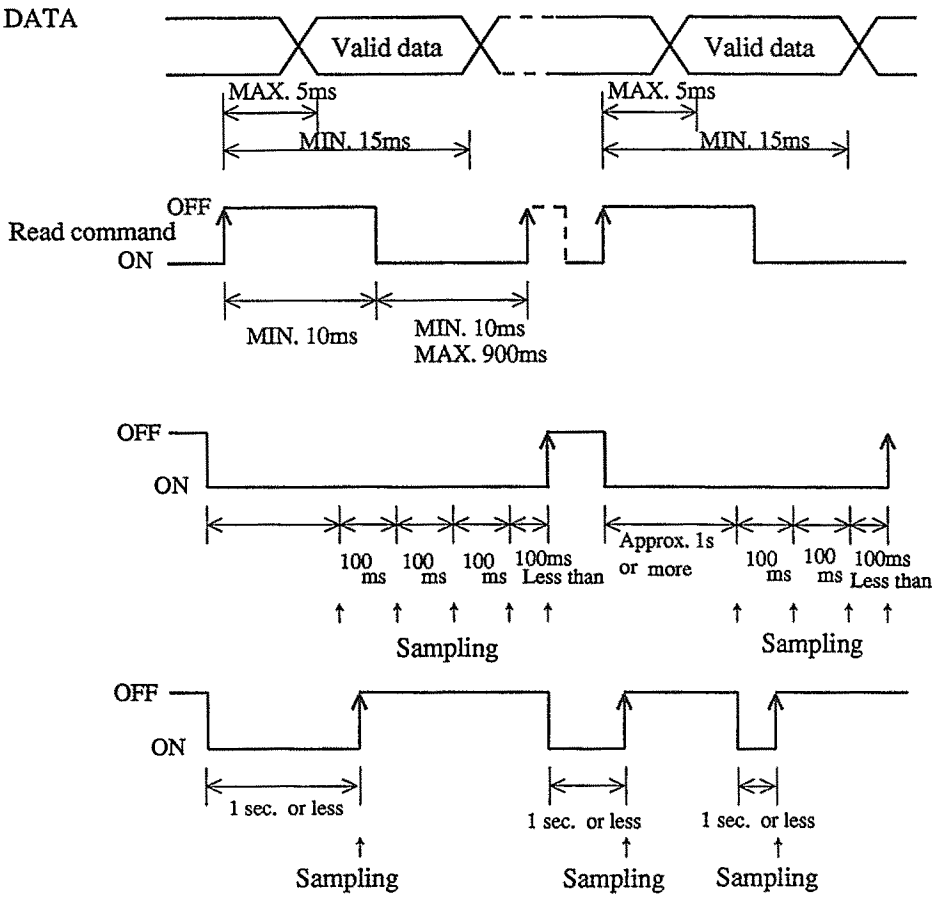


In case the M350 is connected to an indicator via SI/FII, check whether the ID numberof the M350 matches with that of the indicator. The M350 receives no print data from anindicator having an unmatching ID number.



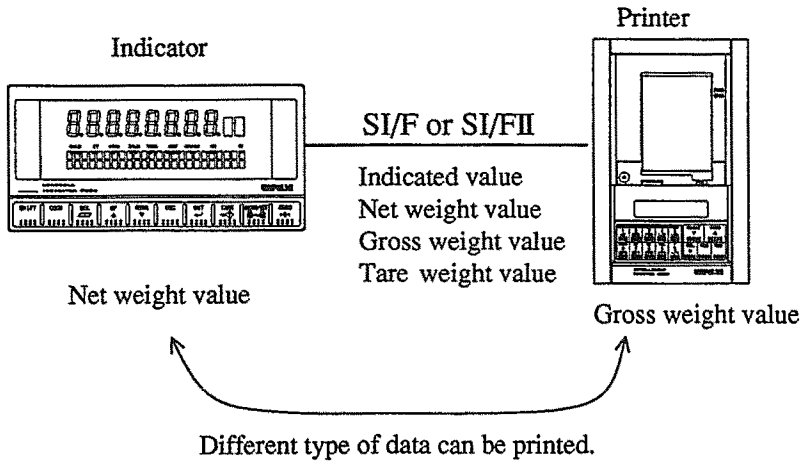
In case print data is sent via BCD to the M350, check whether signals are input to theread command input pin (No. 49). If the result is negative, the M350 neither reads data nor prints data.

Read command



5.3 M350 Printout is Different from Indicator

Check the print data type setting of the M350. The M350 allows its user to select from indicated value, net weight value, gross weight value, or tare weight value. If discrepancy is present between print data type displayed on the indicator and thatset to the M350, the latter prints different numeric value from that displayed on theindicator.



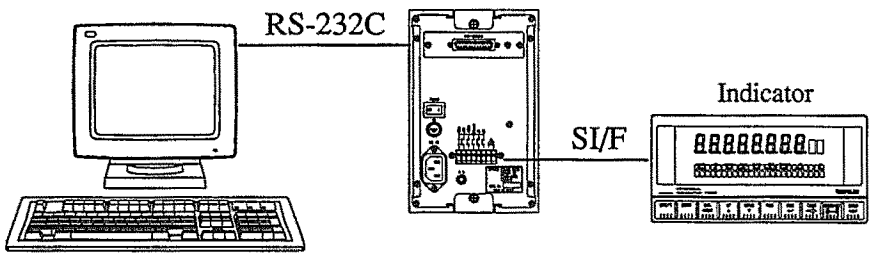
When wishing to print data of the same type as that displayed on the indicator, set thedata type on the indicator to the M350.

Check whether any signal is input to an input terminal other than those used for datacapture on the M350. The M350 captures data based on the following priority order:

1) SI/FII

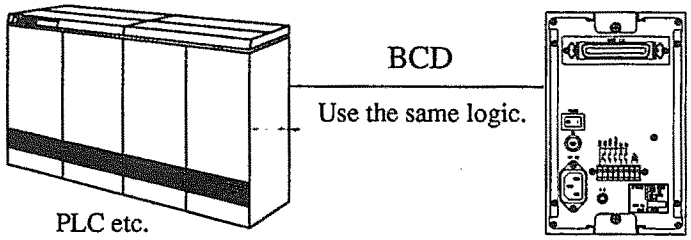
2) SI/F

3) BCD, RS-232C



Even when RS-232C is used for capturing data, the M350 captures data from SI/F if asignal is present at the SI/F input terminal.

In case print data is sent via BCD to the M350, check whether logic of the input BCDdata matches with the logic set to the M350. Unmatch between the two causes the M350 to print meaningless data.



5.4 Grand Total / Sub Total is Incorrect

Check whether the print data is followed by an "R" mark. The M350, on receivingoverflow (oFL), error (Err), or load (LoAd) signal, appends an "R" mark at the tail of the print data and excludes the data from sub total operation.

Data measured on these two occasions is excluded from operation.

Count	Input data
1	100.25kg
2	100.23kg
3	100.27kg
4	100.32kg
4	100.32kg R
4	100.32kg R
5	100.28kg

--- SUB TOTAL Ach ---

DATE 1993/09/02 13:17
COUNT 5
ST 501.35kg

Check whether the position of the decimal point is aligned. If not, normal tabulationwill be disabled.

Count	Input data
1	100.25kg
2	100.16kg
3	10.098kg
4	10.087kg
5	10.086kg

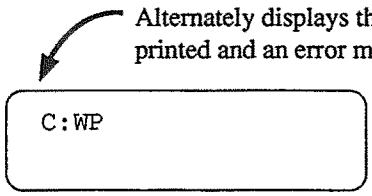
--- GRAND TOTAL Ach ---

DATE 1994/03/25 19:02
COUNT 5
GT 500.312kg

If decimal point is not aligned, incorrect results will beobtained.

5.5 Error Message is Output

On detecting an abnormality inside its main body, the M350 displays an error message on the LCD of the front panel.



Take proper action depending on the contents of each error message.

C:OVR

Memory over in the memory card

This message indicates that no memory space is available in the memory card. Move the data to a PC or print the data on the M350 then format the memory card again.

C:ERR

Memory card error

This message indicates that the memory card has some abnormality. Check the cardbattery for service life. Check the card for surface flaws, scratches, or damage. Check whether the card is formatted.

C:WP

Memory card write protect

This message indicates that the memory card write protect is turned ON. Turn OFF the write protect switch.

P:EMP

Paper empty

This message indicates the Paper Empty (PE) status. The M350, on printing 7500 lines after the panel inside FEED key is pressed, issues a PE error message. To cancel, press the FEED key inside the panel.

II:ERO

SI/FII error

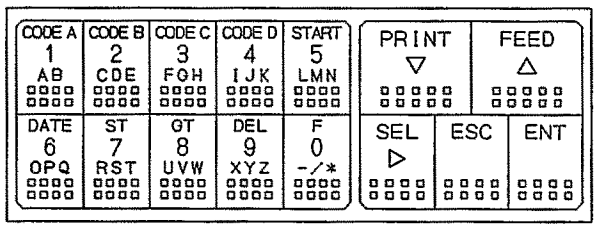
This message indicates that SI/FII has some abnormality. A number that appears in the circle identifies the type of error.
ER1: SI/FII is unavailable. Call for repairs.
ER2: Trouble due to a big noise or hardware fault. Power off then power on again.
ER3: SI/FII line is in bad condition. Check for proper connection, correct ID number,and any interfering device.

6 Specifications

6.1 Printer Unit

Print system	5×7 dot-impact system
Print speed	Approx. 2. 5 lines/second (Around 60cps)
Number of print digits	24
Ink ribbon	Purple ribbon cassette (PR350) Maximum number of characters 250000 characters
Paper	Roll paper PP350 Width 57. 5±0. 5mm Circle diameter 60mm Total 30m Plain paper No. of print digits Approx. 8000 lines/volume Copy paper (P2) is available.
Durability	MCBF Approx. 1,000,000 lines or more (Over 200 volumes of rolls)

6.2 Setting Unit



6.3 Main Functions

Print system	Print through the PRINT key Print through print output command (PRINT terminal) Print through input of automatic print command (SI/F, SI/FII,RS-232C) Automatic print through cycle setting (1 to 9999 sec. For displacement diagram, 2 to 9999 sec.)
Printed data	Date, time, measured value, code (6 digits), Count (1 to 9999), sub total (9 digits), grand total (9 digit), batch total, target value, range, maximum, minimum, average, standard deviation, range (maximum - minimum),displacement diagram, histogram, double print, quadruple print

Grand total print	Print through the GT key or ST key Grand total (Sub total) 9 digits
Batch total	Batch total print through the rear panel FEED command (effective when batch totalm is selected)
Code classification	Max. 32 types (32 types per channelfor quadruple print)
Memory card interface	Interface for recording print data into a memory card Format: MS-DOS File format: Text file Stored data: Year, month, day, time, codes, measurements, commands Memory card capacity: 64/128/256/512/1024/2048 Kbytes4.

6.4 Interface

(1) SI/F two-wire serial interface

(2) SI/FII two-wire high-speed serial interface (option)

(3) BCD parallel input (option)

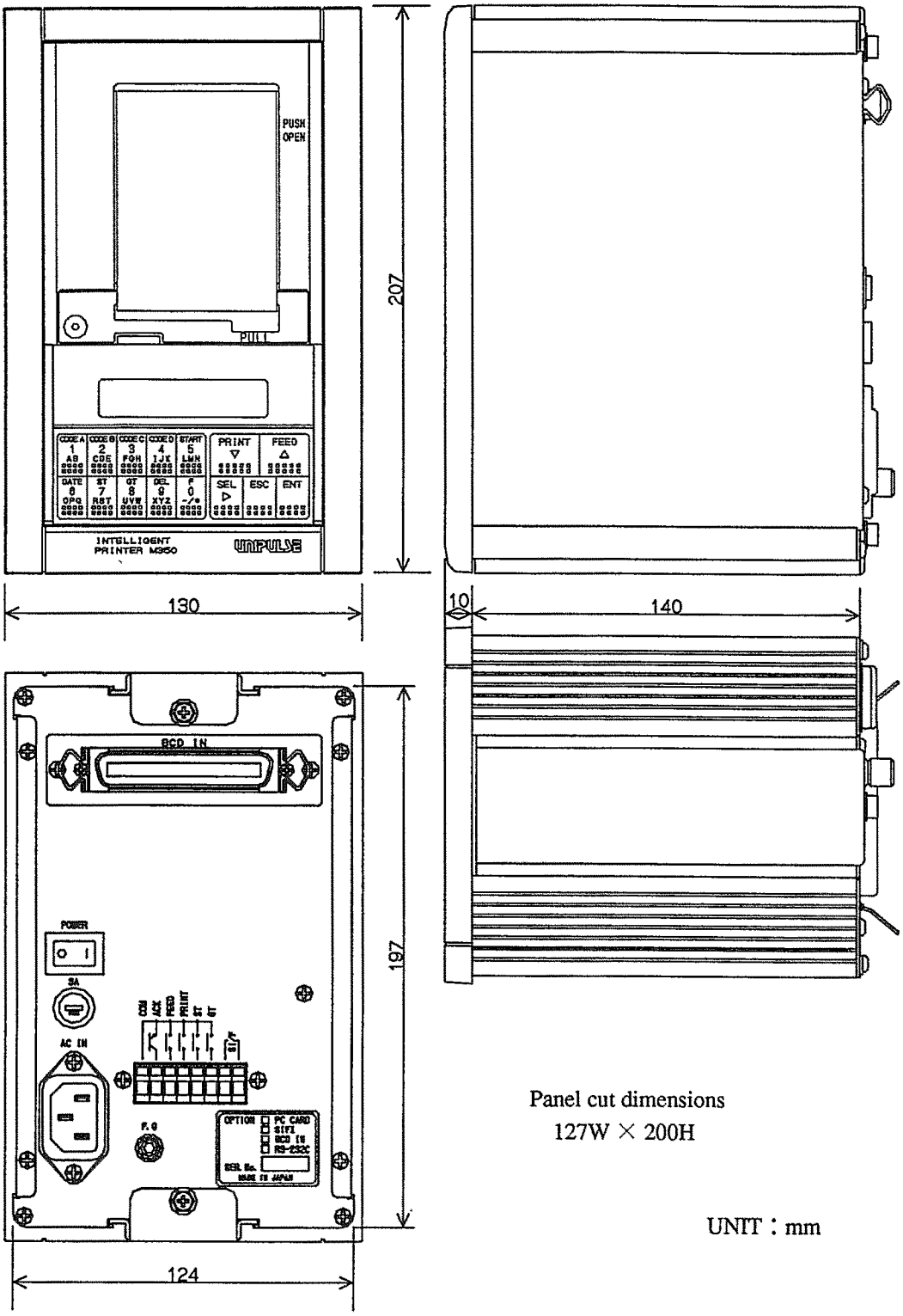
(4) RS-232C interface (option)

(5) Memory card interface (option)

6.5 General performance

Power supply	90 to 125V AC
Power consumption	Approx. 30VA (steady-state)
Operating temperature	0 to 40 ℃
Dimensions	130W×207H×140D (mm)
Panel cut dimensions	127W×200H (mm)
Weight	Approx. 2.3 kg

7 Dimensions

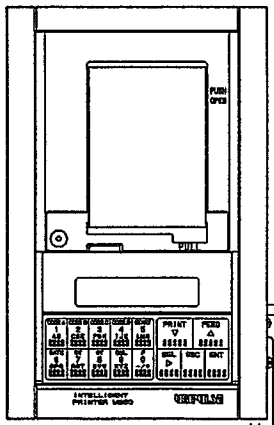


Panel cut dimensions
127W × 200H

UNIT : mm

8 Components

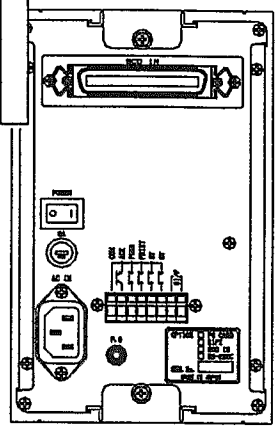
1. Main Body



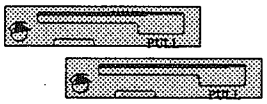
10. Memory card interface (option)

11. Memory card
(extra-cost option)

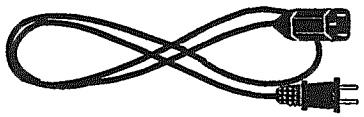
2. Roll paper (PP350)



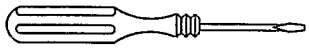
3. Ink Ribbon cassette (PR350)



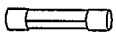
4. AC power cord



5. Mini-screwdriver for terminal block connection

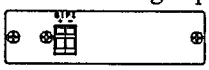


6. Fuse

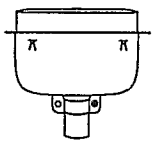


3A

7. SI/FII two-wire high-speed serial interface (option)

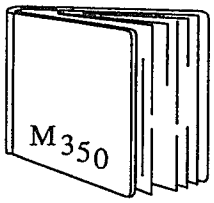


8. BCD parallel data input interface (option)

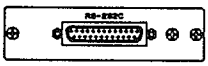


Connector

12. Instruction manual



9. RS-232C interface (option)



(An interface board 7, 8, or 9 may be installed.)

UNIPULSE

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Tel. +81-3-3639-6120 Fax: +81-3-3639-6130