NC DATA RECORDER *DR-Pro S*

OWNER'S MANUAL

Thank you very much for your purchase of our product.
Please read this manual before operation, and use in accordance with following instruction.

CAUTION

Cautions for use of the unit and memory card
For proper treatment of the unit, please observe the following cautions.
Please do not switch off during working.
Never shock this device during power is on, and never eject the card during operation.
Please do not pull out the card during formatting.
Please do not use this in the place where the sun shines directly or near the heater.
Please do not use this in the place of extremely high or low temperature or under the strong vibration or shock.
Avoid using in the place with high humidity, oil, iron and dust.
Please do not use the same outlet connected the appliance that make a noise.
When you fall something in it, please remove them completely.
Please use designated memory card.
Ensure that the card holder or the holes on the side of the card are not stucked by any materials.
Because of not sub-directory, If draw up NC program by PC etc. in them, it can't transmit for NC.
The number of the recordable program decreases when the subdirectory is made on the card with PC etc..
Please format the card with this machine. If the card is formatted with other machine (PC etc.) there might be the inconvenience as the operation speed decrease etc..
Please do not charge built-in battery for over 48 hours. It might influence the battery longevity.

Cleaning of the unit
For proper use on proper condition, please observe the following cautions.
Remove stains from the body with a soft cloth as soon as possible.
When it is hard to remove, wipe off with the cloth containing neutral detergent. (Be careful not to wet inside the body.)
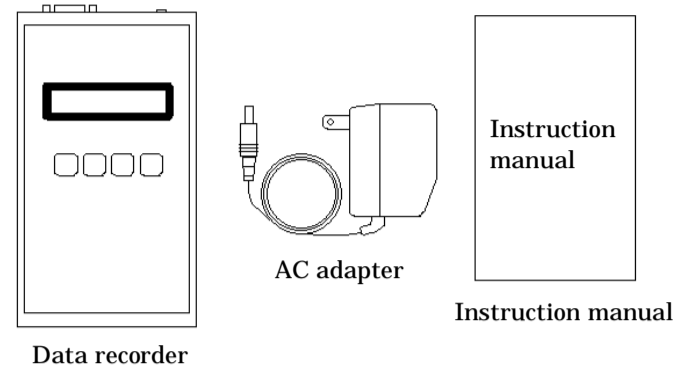If materials enter the card holder, vacuum them carefully.
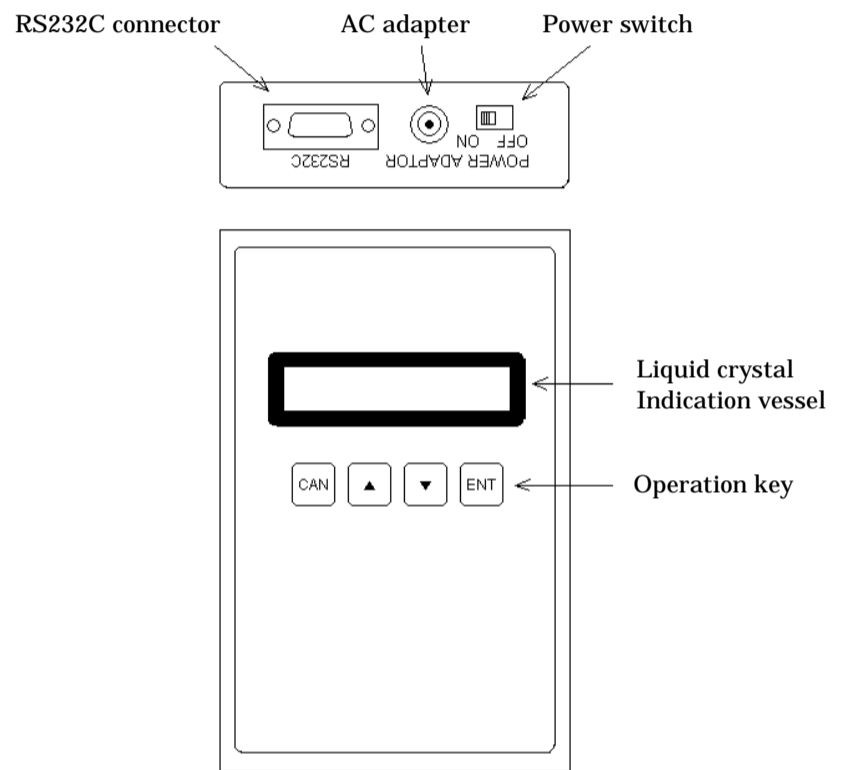(Don't vacuum strongly as they may cause damage of the device).

1-1. PARTS

Check that has all things before using.

Instruction manual

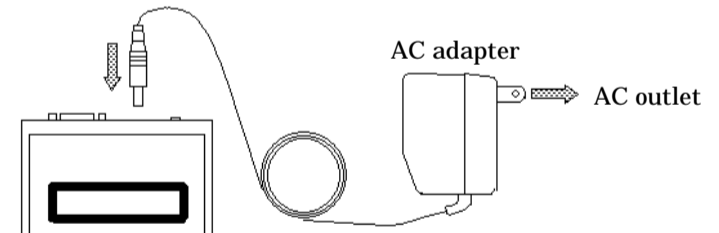AC adapter

Instruction manual

Data recorder

1-2. EACH PARTS NAME

Show each name as under.

RS232C connector   AC adapter   Power switch
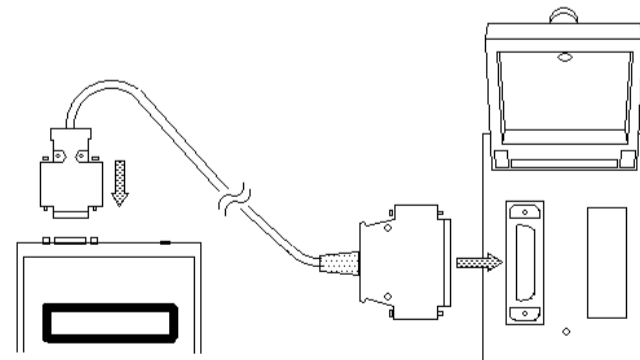
Liquid crystal Indication vessel

Operation key

1-3. CONNECT WITH AC ADAPTER

When you charge battery or want to use AC Adapter by AC plug, install it. It shows how to connect.

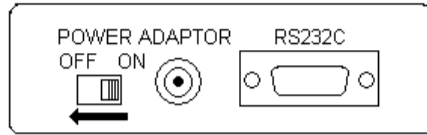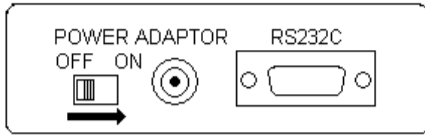AC adapter

AC outlet

1-4. CONNECT RS232C CABLE

Connect with another device before transmitting message. It shows that how to connect RS232C cable as under.

2 HOW TO RUN

2-1. SWITCH IS ON OR OFF

The switch is on as under, it'll run. If it changes to off, it'll be off.
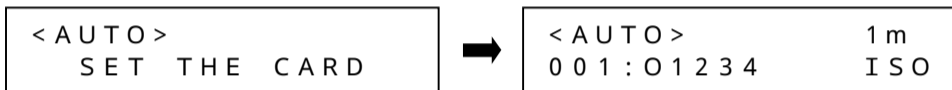Switch should be off in main menu or the auto communication is not being done.

| POWER ADAPTOR | RS232C |
| OFF ON | |

| POWER ADAPTOR | RS232C |
| OFF ON | |

3 OPERATION

After switch is on, check the Parameter information.
For PWON-MENU of parameter, it'll run from auto communi. or main menu.
Select the option by arrow key as long as refusing.
ENT key is decision. CAN key is cancel or return to in front of menu.

3-1. AUTO COMMUNICATION

NC device is transmitted a message automatically.
For main menu, select the auto communi. or PWON-MENU of Parameter automatically. Start running, change the display as under.
If you press CAN key, it'll return to main menu.

For putting the card or have already had the card, it appears on over right display. This function is to transmit a program by outputting control code from other machine. Therefore, to have no them cannot use in this function.
Show the control code as under.

D_C 1(11 Hex)   Start transmitting a message of selecting program.
D_C 2(12 Hex)   Record to program which will be received in the card.
D_C 3(13 Hex)   Suspend transmission.
D_C 4(14 Hex)   Complete recording for the card.

Transmission program name is shown on the display. Select them by arrow key. Then, it needs not to press ENT key. Program used (Enlarge: ISO, EIA, ASC.) can transmit at all. Select the number which is larger than "001", the display is changed as under.

If you transmit code which would Like to use (D_C 1) from other device, all program is transmitted.

This code is transmitted them by the first program code when Parameter code is transmitted. If there is a particular code, it'll be run at all.

3-2. MAIN MENU

Start running PWON-MENU on manual, it shows display as under.

[   ]

There are six functions, select one in the main menu.
Some of them have the Sub-menu, others is not.

CARD ADMINIS.   Show information in the card and formatting.
DATA ADMINIS.   Show the program and delete.
CHNG PARAMETER   Decision communication speed and transmission code…etc.
AUTO COMMUNI.   Transmit and receive a message from NC.
TRANSMIT   Transmit a message to Puncher.
RECEIVE   Receive a message from Reader.
Select the function which would like to use by arrow key, decide by ENT key.

3-3. CARD ADMINISTRATION

For the memory card, show information and formatting.
There is sub-menu, change indication as under.
If you press CAN key, it'll return to main menu.

[   ]

You can select two managements as under.

INFORM.DISPLAY   Display information in the card.
FORMAT CARD   Format the card.
Select the function which would like to use by arrow key, decide it by ENT key.

3-3-1. IMFORMATION DISPLAY

Show the indication of information in the memory card, It changes the display as under. If you press CAN key, it'll return to Card Administ. display.

The following is the content for item.

CARDTYPE   Display capacity of card.
WRITEPROTECT   Display write-protect condition for card.
PROG. USED   Program used in the card is shown that how many it can use in this. They are ISO, EIA, ASC and PRS.
FREE ENTRY   It's remainder capacity in the card. If it have program which can't use in this, it'll become less capacity. Therefore, number used plus the remainder may not be all number.
FREE AREA   It is shown in percent and paper tape of converting.

It'll be shown remaining program name and paper tape of converting since that time. Change them by arrow key.

3-3-2. FORMAT CARD

Format the card. Change the display as under.
Ring buzzer, " FORMAT CARD OK? " appears on the display.
If you press CAN key, it'll return to Card Adminis. display.

Start formatting by pressing ENT key.
Capacity of card is decided an automatically.

After finish formatted return to Card Adminis. display.
Please read section 5 about kind of the card which can use in this.

3-4. DATA ADMINISTRATION

For card used, show and delete.
There is sub-menu in this, change the display as under.
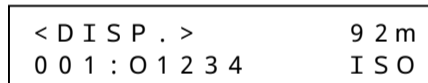If you press CAN key, it'll return to main menu display.

[   ]

There're two managements. You can select and carry on them.

PROG. DISPLAY   Display the program in the card.
DELETE PROGRAM   Delete the program in the card.
Select the function which would like to use, press ENT key.

3-4-1. PROGRAM DISPLAY

Display program in the card, change the display as under.
If you press CAN key, it'll return to Data Administ. display.

Select the program which would like to use by arrow key, press ENT key. And then it appears program content on the display.
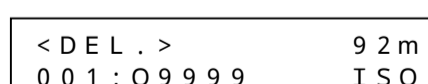For indication of content, how to use key is special in part.

L_F L_F

Display near in front of a line.
Display near in back of a line.
Press ☐ during   Display besides the left on outside display.
Pressing ENT key
Press ☐ during   Display besides the right on outside display.
Pressing ENT key
Press CAN key   Display or clear for line number.
During ENT key
CAN key   Display or clear for line number.
Special letter which is able to use is last line letter 1" L_F , C_R " ,
DC letter is " D_1,D_2,D_3,D_4 " and Null letter is " N_L ". No using letter is "☒".

3-4-2. DELETE PROGRAM

Delete the program in the card, change the display as under.
If you press CAN key, it'll return to Data Adminis. display.

Select the program which would like to delete by arrow key, decide by ENT key. After then, change the display as under.
"DELETE PROG. OK?" appears on the display and ring buzzer.
If you select, it'll press ENT key.
If you don't, please press CAN key.

[   ]

If you select or not, it'll return to Data Adminis. display anytime.

3-5. CHANGE PARAMETER

Change program about communication and movement.
There is sub-menu, change the indication as under.
If you press CAN key, it'll return to main menu.

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[                    ]
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There're eleven Parameters. The
following is each function as under.

COMMUNI. SPEED	Decide communication speed. To be able to use in the value is 300,600,1200,2400,4800,9600,19200 and 38400BPS. Set to same value for another machine.
STOP BIT	Decide the stop bit length. It is 1 or 2. Set to same value for another machine.
TRANSMIT CODE	Decide communication code on transmission of a message from this machine. There are ISO, EIA and ASCII. They are changed each system, transmit a message by transmission of program value.
RECEIVE PARITY	Decide which receive code check the parity or not.
DELAY TIME	Decide that how much delay time. The more you select large number in the parenthesis, the more slow it become.
m/ft DISPLAY	Select the indication by meter or feet on the paper tape equivalent.
BUZZER ON/OFF	Decide that buzzer is on or off. If you don't, it will ring buzzer.
PWON-MENU	When switch is on, decide program which is in Auto Commini. or Main menu.
O-NUM DETECT	Named it under finding out O-number or not.
TRANSMIT TIME	For transmission of a message, decide to watch timer is on or not.
SET LANGUAGE	Switch the display between Japanese and English.

Select menu which would like to use by arrow key, decide by ENT key.
And then, change the display as under.

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[            ]
```
Select menu by arrow key, press ENT
key.

If it's same before, it'll ring buzzer and return to Chng Parameter display.
If it's different before, show the display as under.
"CHANGE PARAM OK?" appears under ringing buzzer.

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[        ]
```
It appears the display as under
pressing ENT key a moment.
Change Parameter, return to Chng
Parameter display.

After pressing CAN key without
changing and return to Chng
Parameter display.

3-6. TRANSMIT

This item is to transmit the program. There is a sub-menu, it changes as
under. If you press CAN key, it'll return to main menu.

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[                ]
```
You can select one of three
transmission ways.

TO NC	Program (ISO,EIA,ASC) is transmitted for NC device.
TO PUNCHER	The head put on blank, Program (ISO,EIA,ASC) is transmitted for Puncher device.
UNFORMAT	Program (ISO,EIA,ASC) is transmitted to other device. You can only use PRS program in this function.

Select menu which would like to use, press ENT key.
Therefore, decide to how to transmit and select transmission program.
It changes display as under.

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After select program name, start
running.

Then, it's different process because of selecting transmission way.
Show the process as under.

1) TO NC
After selecting program, it changes the display as under. Wait for
transmission order (^D_C1) from other device.

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After receiving, start running.
If you press CAN key, it'll stop
running and return to transmit.

After finished transmitting, return to transmit display.

2) TO PUNCHER
After selecting program, it changes the display as under.

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Start transmitting as soon as
after confirm CTS signal from
Puncher.

For the transmission of a message, after transmitting code of starting
(^D_C2), start running. It stop transmitting by CAN key, return to transmit
display. After then, return to transmit display.

3) UNFORMAT
After selecting program, program is transmitted at once.
It's only used PRS code in this program.
Stop running by CAN key, return to transmit display.

PRS code is 8 bit and have no Parity. Therefore, they can only
select in transmission of unformat and receive of Free Format.

3-7. RECEIVE

For this function, receive program.
There is sub-menu, it changes display as under.
If you press CAN key, it'll return to main menu.

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[                ]
```
There are three ways to receive.
You can select them.

FROM NC	Receive the program (ISO,EIA,ASC) from NC.
FROM READER	Receive the program (ISO,EIA,ASC) from READER.
FREE FORMAT	Receive the program (ISO,EIA,ASC) from FREE FORMAT. In this function, only receive PRS program.

Select menu by arrow key, press ENT key. It shows the process as under.

1) FROM NC
If you select this menu, it appears display as under.
Wait for getting program from another machine.

```
```
Start running when it is received
'%'. If you press CAN key, it'll
stop running. Return to receive
display.

After then, program name is appeared on the display and ring buzzer.
After received, return to receive display by ENT key.

2) FROM READER
If you select this menu, it appears display as under.

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```
After confirm CTS signal from
Reader, start transmitting ^D_C1 for
Reader. It needs to transmit
program, start running.

It'll stop receiving by CAN key. Return to receive display.

After then, program name is appeared on the display and ring buzzer.
After press ENT key, return to receive display.

3) FREE FORMAT
If you select this menu, it'll appear the display as under.
Select receive code.

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[        ]
```
Select code (Code Type: ISO, EIA,
ASC, PRS). After then, it appears
the display as below left it.
Start working.

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Finishing is that suspend in more
than five seconds intermittently.
Press CAN key, stop running and
return to receive display.

After then, program name is appeared on the display and ring buzzer.
After press ENT key, return to receive display.

In the preceding way, receive name is found out from program or how to
name in this machine by Parameter O-number detection.
If you know the O-number, it's name which find out the four head numbers
from program.
How to name in this machine is named O9999.
If there are a lot, it'll add back number like _00, V00, W00, X00, Y00 and
Z00.

_ underscore	1	99
V	100	199
W	200	299
X	300	399
Y	400	499
Z	500	511

4 BUILT-IN BATTERY

In the machine, it has a built-in nickel hydride battery (rechargeable battery).
"CHARGE BATTERY!" appears on the display during using, leave this machine as connect with AC Adapter and switch is off. Charge them.
After the 8hour charge, it can run for approx. 2 and a half hours without Connecting with AC adaptor.
Not to connect with AC Adaptor in the 40hours charge, it can run it for approx. 8 hours.

5 MEMORY CARD

The memory card that can be used with this machine is SD card in 8Mbytes ~ 2Gbytes and SDHC card in 4Gbytes ~ 32Gbytes.
It is possible to register up to 511 files in SD card and up to 512 files in SDHC card according to capacity.
Please format it with this machine. There is a possibility that the inconvenience of the operation speed decrease etc. happens when the card is formatted excluding this machine (PC etc.).
When the card with large capacity is formatted, it might take over one minute to complete.

This machine does not use the copyright function of SD card and SDHC card at all.

6 ERROR MESSAGE LIST

MESSAGE	CAUSE	CURE
PROG. NOT FOUND	Program to transmit has not been stored in the card.	Press CAN key or ENT key.
EMPTY FILE!	You has selected the program which has had no content.	Press CAN key or ENT key. Because it's fail, delete it.
SETTING ERROR!	You has put in card by mistake.	Press CAN key or ENT key. Put in the card.
UNUSABLE CARD!	The card has not been formatted. The content is failed. It is a card that cannot be used.	Press CAN key or ENT key. Please initialize the card after saving the content to other devices. The card may not be available or the card might be broken when the same error occurs by formatting. Change the card.
CARD FULL!	It is trying to record exceeding of the card capacity.	Press CAN key or ENT key. Please exchange the card to the one with enough capacity.
WRITE FAILURE!	You can't write in the card.	Press CAN key or ENT key. Please initialize the card after saving the content to other devices. The card may not be available or the card might be broken when the same error occurs by formatting. Change the card.
READ FAILURE!	You can't read from the card.	Press CAN key or ENT key. Please initialize the card after saving the content to other devices. The card may not be available or the card might be broken when the same error occurs by formatting. Change the card.
NUM OF PROG. OVER	Program to store has been over the number of storable programs of the card.	Press CAN key or ENT key. Delete unnecessary program, or memory for another card.
RECEIVING ERROR!	Program transmission from the peripheral equipment has been too early for this device to receive. here has been more than 2 minutes' interval during receiving.	Press CAN key or ENT key. After Data Recorder get receiving ready, start transmitting.
REC. (OR) ERROR!	"over run error" occurred during receiving. The communication parameter of this device and the peripheral equipment has not been coincided.	Press CAN key or ENT key. Check the communication parameters of this device again.
REC. (PR) ERROR!	"parity error" occurred during receiving. The communication parameter of this device and the peripheral equipment has not been coincided.	Press CAN key or ENT key. Check the communication parameters of this device again.
REC. (FR) ERROR!	"parity error" occurred during receiving. The communication parameter of this device and the peripheral equipment has not been coincided.	Press CAN key or ENT key. Check the communication parameters of this device again.
TRANSMIT ERROR!	Because of coming off cable has not been completed more than for 2 minute. It can't get transmit from parameter for more than 2 minutes.	Press CAN key or ENT key. Check RS-232C Cable.
DEVICE SET ERROR	The peripheral equipment Has not transmitted the program during more than 1 minute.	Press CAN key or ENT key. Check the parameter sets. Check the cable.
WRITE PROTECTED!	When you write down in the card, the card mustn't write.	Press CAN key or ENT key. Release the lock of the card.
WRITE PARAM.ERR.	To keep the parameter is failed.	Press CAN key or ENT key. After switch is on again, if it happened, keeping device of parameter may be broken down.
OPEN ERROR!	The file in the card did not open it.	Press CAN key or ENT key. Please initialize the card after saving the content to other devices. The card may not be available or the card might be broken when the same error occurs by formatting. Change the card.

If it happened without preceding error, system may be error.
Please tell us about the content and condition in detail.

7 GENERAL SPECIFICATION

7-1. HARDWARE SPECIFICATION

1	CPU	32BIT CPU
2	MEMORY CONSTRUCTION	ROM : 512KB RAM : 32KB
3	DISPLAY	16× 2 LCD
4	KEY	4 KEY
5	OUTSIDE I/F	BASED ON EIA-RS232C × 1ch
6	POWER SUPPLY	ACADAPTOR OR ATTACED BATTERY
7	CONDITION OF TREATMENT	TEMPERATURE : 5 35 CENT DAGREES HUMIDITY : 20 80 percent (non condensing)

7-2. SET TO PARAMETER

1	COMMUNICATE SPEED	4800BPS
2	STOP BIT	2BIT
3	TRANSMISSION CODE	RECEPTION
4	CHECK THE PARITY	NOT CHECK
5	TRANSMISSION DELAY	YES(1)
6	m/ft	METER
7	BUZZER ON/OFF	ON
8	POWER ON MENU	AUTO
9	O-NUMBER DETECTION	DETECT
10	TRANSMISSION TIME	WATCH
11	LANGUAGE	ENGLISH

CAUTION
We make changes to this manual at anytime without notice.
The information in this manual has been carefully checked.
If it happened something, please call us.
We assumes no responsibility for any inaccuracies that still may be contained in this manual. Please understand.
It is prohibit that they are not reprint by permission of us.

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