ENGLISH

IT-20
INSTRUCTION MANUAL

CONTENTS

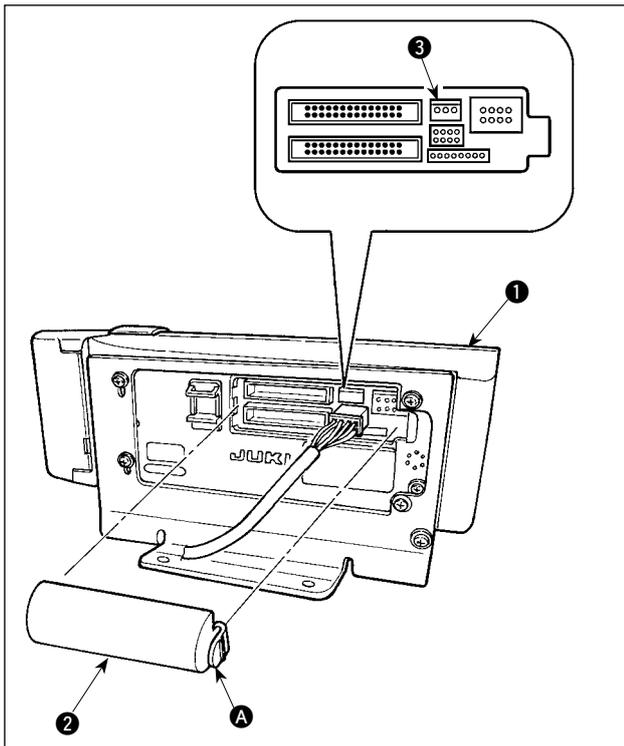## 1. INTRODUCTION

This Instruction Manual covers the panel indication for measuring production support data using IT-20.

⚠ **Caution** **Be careful of handling this product so as not to pour water or oil, shock by dropping, and the like since this product is a precision instrument.**

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2. CONNECTING THE COUNT MANUAL SWITCH

1) Press in the direction of arrow mark the click of section **Ⓐ** of cord outlet cover **❷** assembled in the rear of operation panel **❶** and remove the cover.

2) Connect optional junction cable connector to connector CN105 **❸** of the count manual switch.

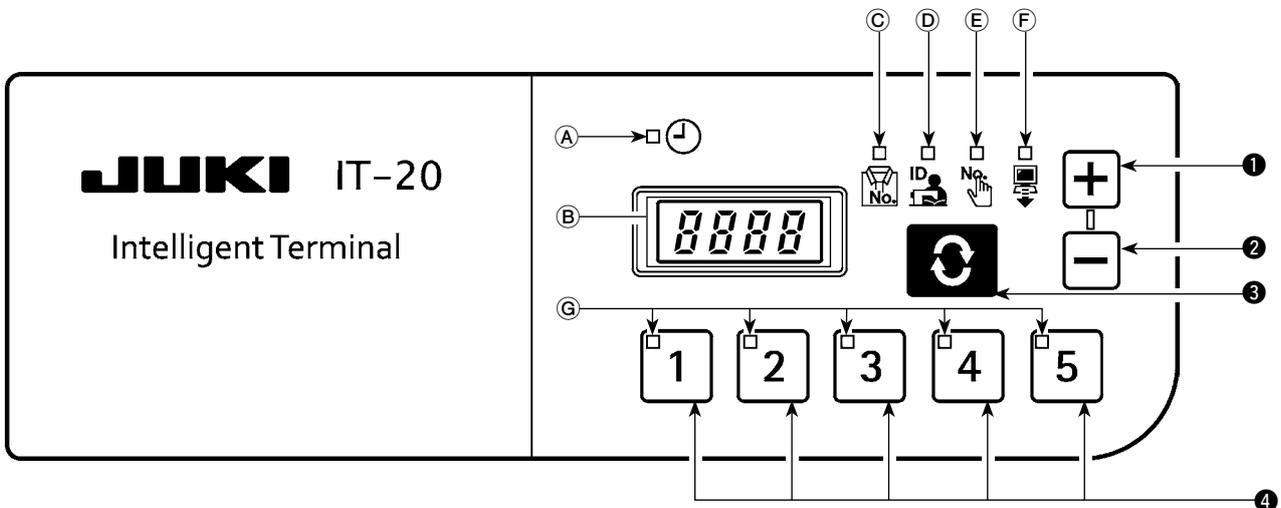**Note) Prepare the switch main unit by the customers or ask JUKI business office about it.**

Optional relay cable A (asm.)
JUKI Part No. 40008168
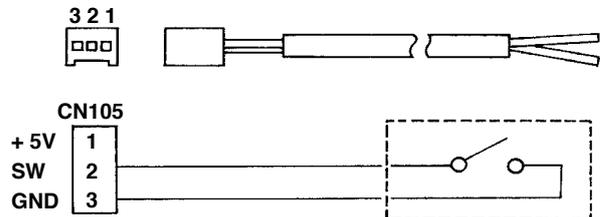
3.　USB PORT

① Precautions to be taken when handling USB devices
- Do not leave the USB device or USB cable connected to the USB port while the sewing machine is in operation. The machine vibration can damage the port section resulting in loss of data stored on the USB device or breakage of the USB device or sewing machine.
- Do not insert/remove a USB device during reading/writing a program or sewing data.
  It may cause data breakage or malfunction.
- When the storage space of a USB device is partitioned, only one partition is accessible.
- Some type of the USB device may not be properly recognized by this sewing machine.
- JUKI does not compensate for loss of data stored on the USB device caused by using it with this sewing machine.

② USB specifications
- Conform to USB 1.1 standard
- Format supported _____FAT 32
- Consumption current ___The rated consumption current of the applicable USB devices is 500 mA at the maximum.

4. CONFIGURATION

No.	Switch/indication	Description
Ⓐ	Clock LED	Lights up when the clock is displayed.
Ⓑ	7-segment indication block	Indicates various ID data and clock information.
Ⓒ	Product No. LED	Lights up when Product No. ID is displayed on Ⓑ. → See **"5-1. (1) Normal startup mode screen"**.
Ⓓ	Operator ID LED	Lights up when Operator ID is displayed on Ⓑ. → See **"5-1. (1) Normal startup mode screen"**.
Ⓔ	Optional ID LED	Lights up when Optional ID is displayed on Ⓑ. → See **"5-1. (1) Normal startup mode screen"**.
Ⓕ	Transmitted data LED	Lights up when Transmitted data is displayed on Ⓑ. → See **"5-1. (1) Normal startup mode screen"**.
Ⓖ	No. LED	The selected No. will light up.
❶	➕ switch	The value to be indicated in Ⓑ is set up here. The value increases when this switch is pressed.
❷	➖ switch	The value to be indicated in Ⓑ is set up here. The value decreases when this switch is pressed.
❸	🔄 switch	The item to be indicated in Ⓑ is changed here. The indicated item changes when this switch is pressed. → See **"5-1. Normal startup mode"**.
❹	No. switch	Setup information (ID) registered for each item is selected here.

5. BASIC OPERATION PROCEDURE
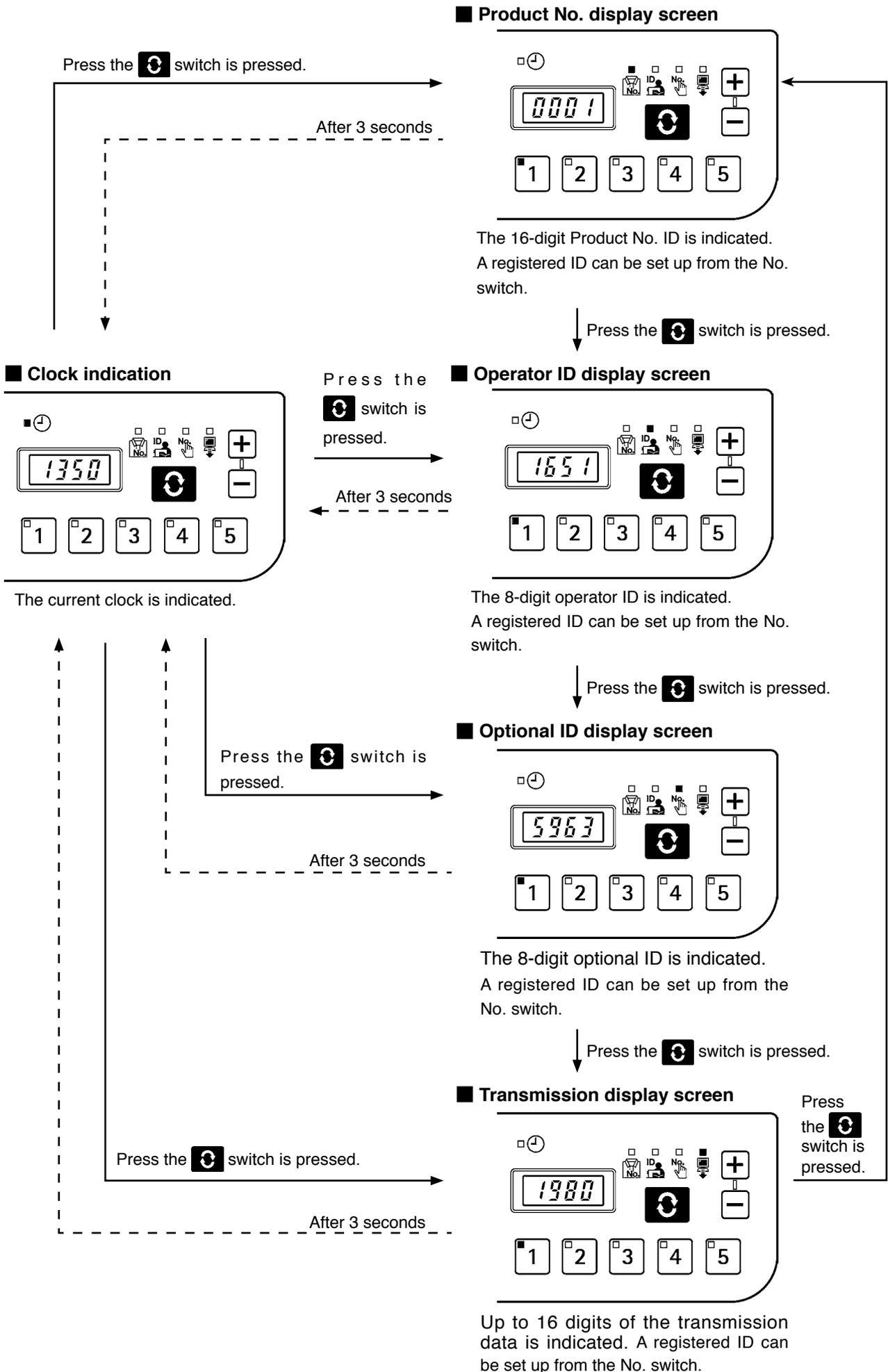
5-1. Normal startup mode
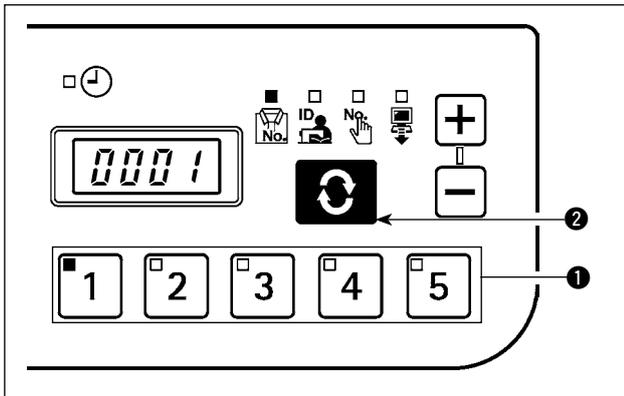
When the power supply is turned on, the item screen and ID data which had been selected before it was turned off in the previous operation.

The selected item and the number for which the ID is registered are indicated in LED.

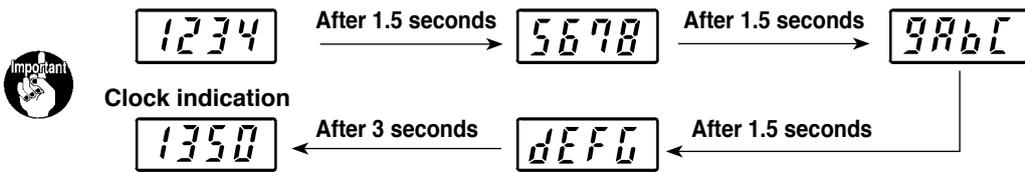When the No. switch ❶ is pressed, the ID data for the selected No. is indicated.

When the ⟳ switch ❷ is pressed the following item screen is displayed.

(1) Normal startup mode screen

■ Product No. display screen

Press the 🔁 switch is pressed.

After 3 seconds

```
 ▫🕐
  ┌──────┐
  │ 0001 │   🔁  ➕
  └──────┘       ➖
  1  2  3  4  5
```

The 16-digit Product No. ID is indicated.
A registered ID can be set up from the No. switch.

Press the 🔁 switch is pressed.

■ Clock indication

Press the 🔁 switch is pressed.

After 3 seconds

```
 ■🕐
  ┌──────┐
  │ 1350 │   🔁  ➕
  └──────┘       ➖
  1  2  3  4  5
```

The current clock is indicated.

■ Operator ID display screen

```
 ▫🕐
  ┌──────┐
  │ 1651 │   🔁  ➕
  └──────┘       ➖
  1  2  3  4  5
```

The 8-digit operator ID is indicated.
A registered ID can be set up from the No. switch.

Press the 🔁 switch is pressed.

■ Optional ID display screen

Press the 🔁 switch is pressed.

After 3 seconds

```
 ▫🕐
  ┌──────┐
  │ 5963 │   🔁  ➕
  └──────┘       ➖
  1  2  3  4  5
```

The 8-digit optional ID is indicated.
A registered ID can be set up from the No. switch.

Press the 🔁 switch is pressed.

■ Transmission display screen

Press the 🔁 switch is pressed.

After 3 seconds

Press the 🔁 switch is pressed.

```
 ▫🕐
  ┌──────┐
  │ 1980 │   🔁  ➕
  └──────┘       ➖
  1  2  3  4  5
```

Up to 16 digits of the transmission data is indicated. A registered ID can be set up from the No. switch.

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(2) No. switch input procedure under normal startup mode

When the 2 out of the 1 to 5 No. switches are pressed successively, ID can be selected from 30 different IDs.

It is considered one-switch operation if one No. switch is pressed and the switch or another switch is not pressed within 1 second and two-switch operation if the next switch is pressed within 1 second.

* For one-switch operation, the corresponding No. LED lights up. For two-switch operation, the first No. LED lights up and the second No. LED blinks.
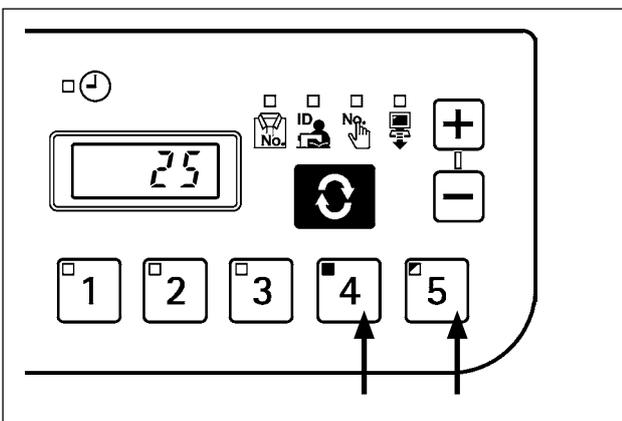
<e.g.> Inputting "3" (one-switch operation)
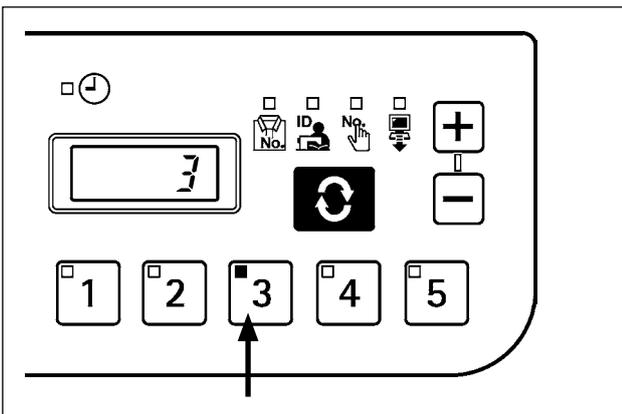
$\boxed{3}$ is pressed. ($\boxed{3}$ lights up).

→ No. switch is input successively for 1 second or longer.

<e.g.> Inputting "25" (two-switch operation)

$\boxed{4}$ is pressed. ($\boxed{4}$ lights up).

→ Then $\boxed{5}$ is pressed successively within 1 second ($\boxed{5}$ blinks).

## (3) List of No. input patterns by switches

[■1] indication: Lights up.   [◪1] indication: Blinks.

No.	First switch input	Second switch input	No.	First switch input	Second switch input
1	[■1]	After 1 second	16	[■3]	[◪1]
2	[■2]	After 1 second	17	[■3]	[◪2]
3	[■3]	After 1 second	18	[■3]	[◪3]
4	[■4]	After 1 second	19	[■3]	[◪4]
5	[■5]	After 1 second	20	[■3]	[◪5]
6	[■1]	[◪1]	21	[■4]	[◪1]
7	[■1]	[◪2]	22	[■4]	[◪2]
8	[■1]	[◪3]	23	[■4]	[◪3]
9	[■1]	[◪4]	24	[■4]	[◪4]
10	[■1]	[◪5]	25	[■4]	[◪5]
11	[■2]	[◪1]	26	[■5]	[◪1]
12	[■2]	[◪2]	27	[■5]	[◪2]
13	[■2]	[◪3]	28	[■5]	[◪3]
14	[■2]	[◪4]	29	[■5]	[◪4]
15	[■2]	[◪5]	30	[■5]	[◪5]

> **Reference** When No.30 (switches [■5] + [◪5]) is input, ID will be unselected.

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(4) Outputting measurement data
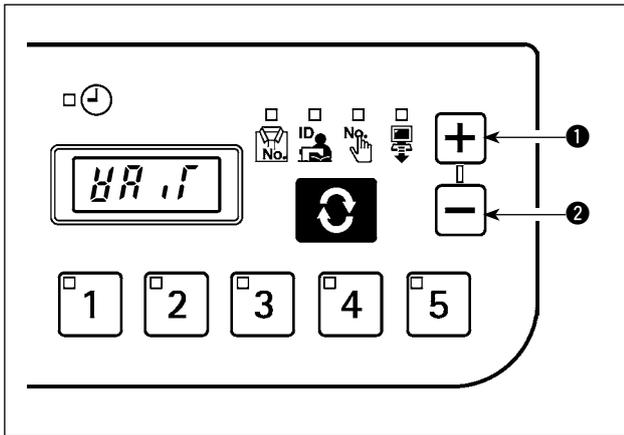
When **+** switch ❶ is pressed for one second or longer under normal mode, USB data writing function is enabled. When **−** switch ❷ is pressed for one second or longer, network data transmission function is enabled.
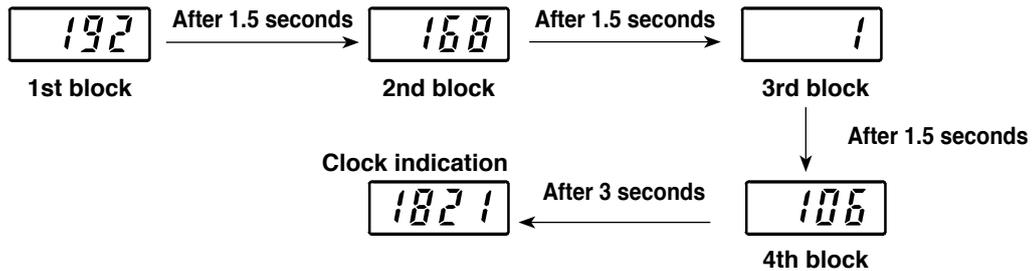
"Wait" blinks on the 7-segment indication block during data output.

In transmission data indication under normal mode, it is possible to indicate 30 different data depending on the No. switch input combination and check the IP address in a similar fashion to other ID data indication.

The sewing machine ID can be checked by No. 29 (switches [5] + [4]) for transmission data, and the IP address by No. 30 (switches [5] + [5]).

e.g. For IP address 192.168.1.106,

192	After 1.5 seconds →	168	After 1.5 seconds →	1
1st block		2nd block		3rd block

After 1.5 seconds ↓

Clock indication

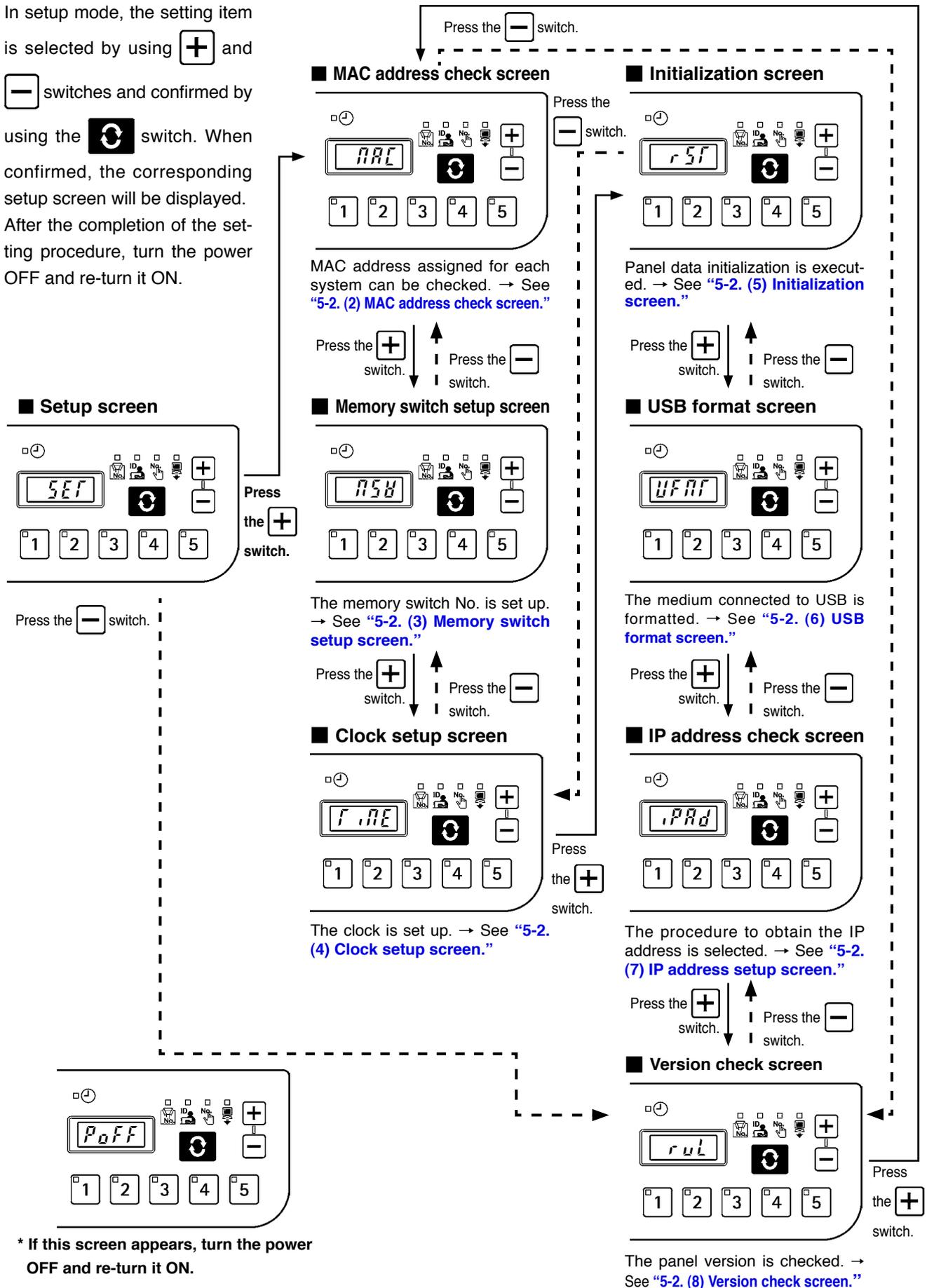| 1821	← After 3 seconds	106
		4th block

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5-2. Setup mode

(1) Setup mode screen

When the power supply is turned on with `1` switch pressed, the system starts up in setup mode.

In setup mode, the setting item is selected by using ➕ and ➖ switches and confirmed by using the ↻ switch. When confirmed, the corresponding setup screen will be displayed. After the completion of the setting procedure, turn the power OFF and re-turn it ON.

Press the ➖ switch.

■ MAC address check screen

MAC address assigned for each system can be checked. → See **"5-2. (2) MAC address check screen."**

Press the ➕ switch.　Press the ➖ switch.

Press the ➖ switch.

■ Initialization screen

Panel data initialization is executed. → See **"5-2. (5) Initialization screen."**

Press the ➕ switch.　Press the ➖ switch.

■ Setup screen

Press the ➕ switch.

■ Memory switch setup screen

The memory switch No. is set up. → See **"5-2. (3) Memory switch setup screen."**

Press the ➕ switch.　Press the ➖ switch.

■ USB format screen

The medium connected to USB is formatted. → See **"5-2. (6) USB format screen."**

Press the ➕ switch.　Press the ➖ switch.

Press the ➖ switch.

■ Clock setup screen

The clock is set up. → See **"5-2. (4) Clock setup screen."**

Press the ➕ switch.

■ IP address check screen

The procedure to obtain the IP address is selected. → See **"5-2. (7) IP address setup screen."**

Press the ➕ switch.　Press the ➖ switch.

■ Version check screen

* **If this screen appears, turn the power OFF and re-turn it ON.**

Press the ➕ switch.

The panel version is checked. → See **"5-2. (8) Version check screen."**

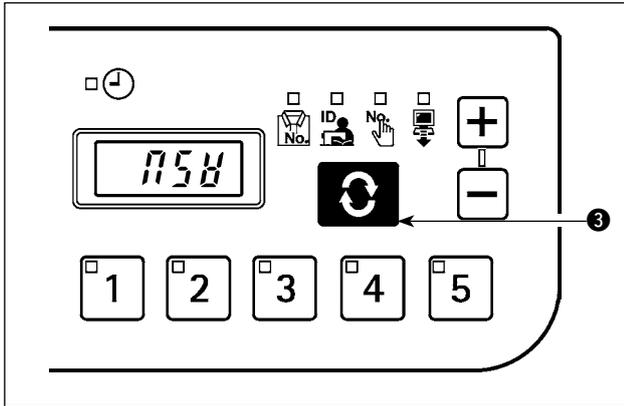## (2) MAC address check screen

Since MAC address is set up for each device, it can only be checked on the IT panel.

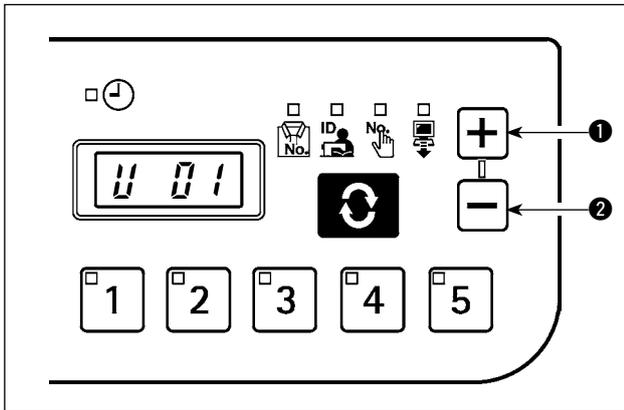Press the ⟳ switch ❸ to switch the block indication for MAC address.
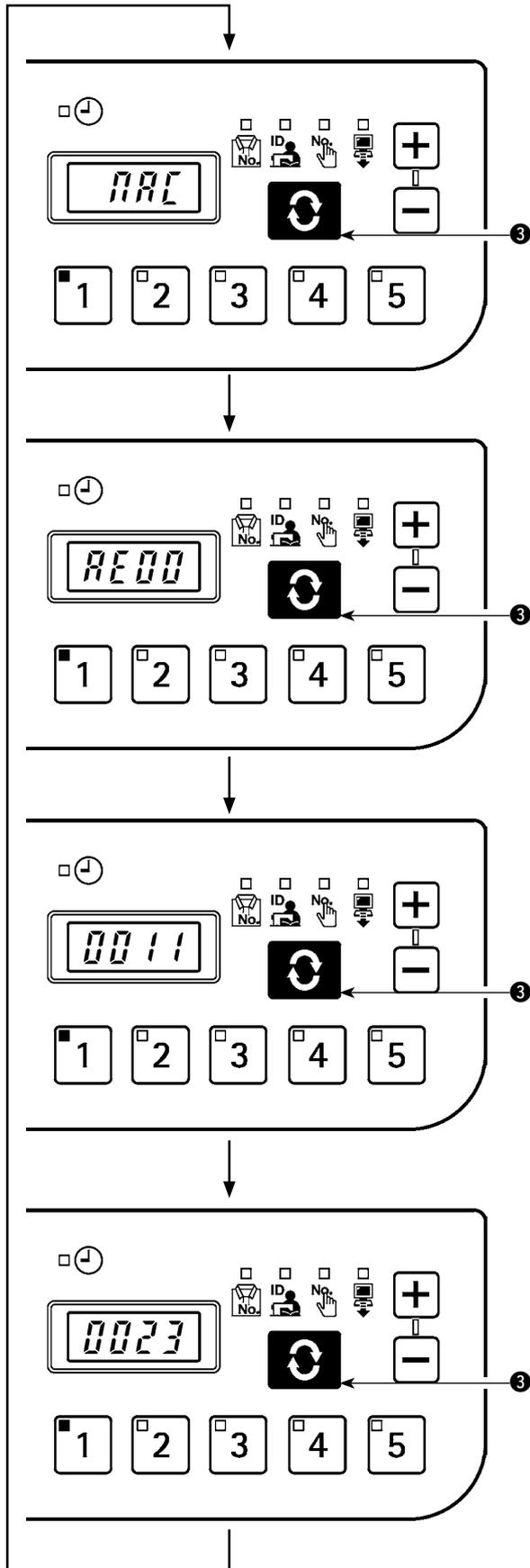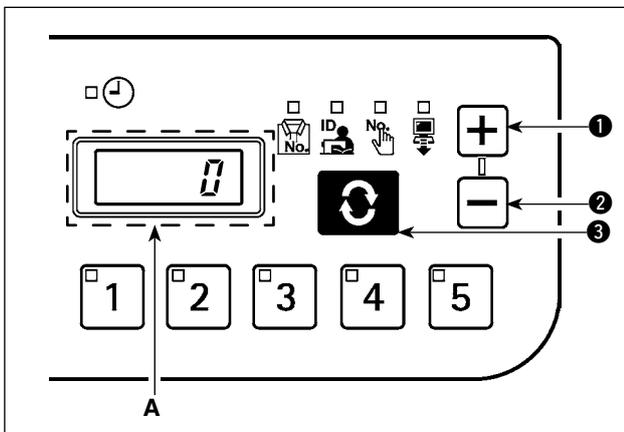
(3) Memory switch setup screen

Panel operation can be varied by changing the memory switch setting.

Press the [🔄] switch ❸ on the memory switch setup screen and display the memory switch No.

The memory switch can be selected by pressing [+] switch ❶ or [—] switch ❷ in this condition.

When the memory switch has been selected, press the [🔄] switch ❸ to indicate the setting value **A** for the selected memory switch. The setting value can be changed by pressing the [+] switch ❶ or [—] switch ❷ here, and the setting value is saved by pressing the [🔄] switch ❸ again.

After the completion of the setting procedure, turn the power OFF.

■ Memory Switch Data List

No.	Description	Initial value

U01	**Network offline setting**
	Network connection validity/invalidity is selected.
	    OFF : Network connection is enabled.
	    ON : Network connection is prohibited.
		OFF

U02	**Clock correction function**
	Clock correction validity/invalidity when there is network connection is set up.
	    OFF : Clock correction is not enabled.
	    ON : The panel clock is corrected in reference to the host PC clock when there is network connection.
		ON

U03	**Indication period for clock indication screen** This item is valid only when the U10 setting is ON. In how many seconds after displaying the entire ID the clock display screen should be displayed is set up (unit: seconds).	3

U05	**Buzzer sound ban setting**
	The buzzer sound from the panel is banned.
	    OFF: Buzzer is not banned (buzzer sounds).
	    ON: Buzzer is banned.
		OFF

U08	**Network communication ban for ISS measurement data ON/OFF**
	Transmission of ISS measurement data from the network to the PC is banned.
	    OFF : Data is transmitted to PC via network.
	    ON : Data is not transmitted to PC via network.
		OFF

U09	**Selection of sewing machine rotation signal logic** Follow the setup manual and set up.	0

U10	**Selection of clock screen indication method**
	Whether the clock display screen is displayed or not after ID indication is selected.
	    OFF: Clock display screen is not automatically displayed. The clock screen is displayed by the scroll switch.
	    ON : The clock screen is automatically displayed after the set period in U03 after ID indication.
		ON

U11	**Indication ID on clock screen**
	This item is valid only when U10 is set to OFF.
	The type of ID indicated by lighting up the LED on the clock display screen is selected.
	    0 : Product number
	    1 : Operator ID
	    2 : Optional ID
	    3 : Transmission data
		0

U12	**Number of stitches neglected by manual switch** The production count-up input is accepted only when the sewing machine is stopped after thread trimming and the number of sewn stitches exceeds the preset number. This setting is used for preventing incorrect input or fraudulent input. Setting range: 0 – 99 (stitches)	0

U13	**Remaining buffer for ISS measurement warning**
	Warning (E205) is generated when the ISS measurement data capacity stored in the panel becomes small.
	    0 : No warning is generated.
	    1 : A warning is generated when the data capacity to output to the network is becoming small (if this warning is generated even when the system is connected to the network, there may be a problem in network connection).
	    2 : A warning is generated when the data capacity to output to USB is becoming small. Insert a USB memory in the panel and output data if this warning is generated.
		1

U14	**Scroll speed** The scroll speed for displaying IDs larger than 4 digits is set up. Unit : 0.1 seconds, setting range: 5 (0.5 seconds) to 50 (5.0 seconds)	15

(4) Clock setup screen

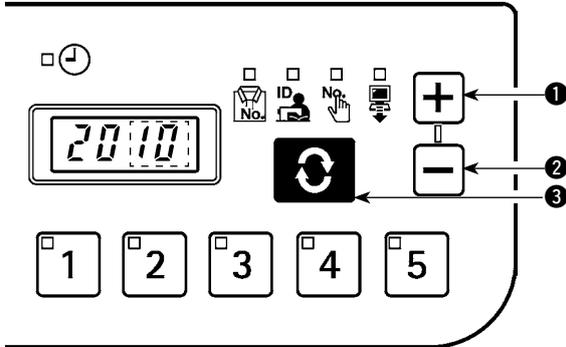The year, month, date, hour, minute and second are set up on the clock setup screen.

Press ╋ switch ❶ or ━ switch ❷ to enter the date and time. Then, confirm the entry by pressing ⟳ switch ❸.
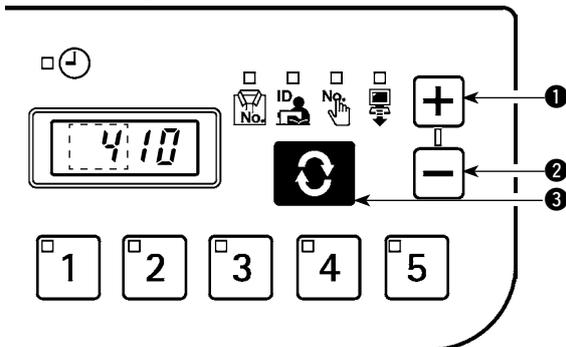
■ **Clock setup screen**
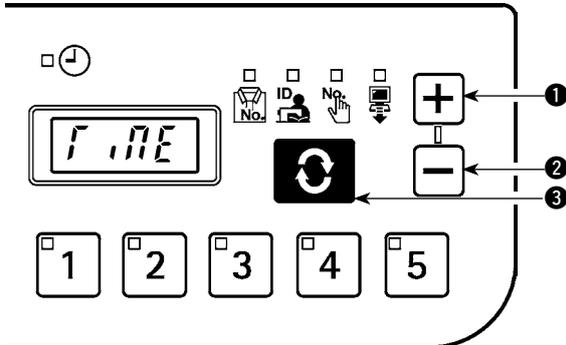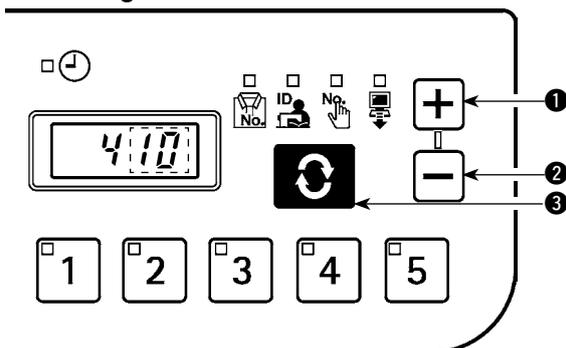

Press the ⟳ switch is pressed.

■ **Year setting**
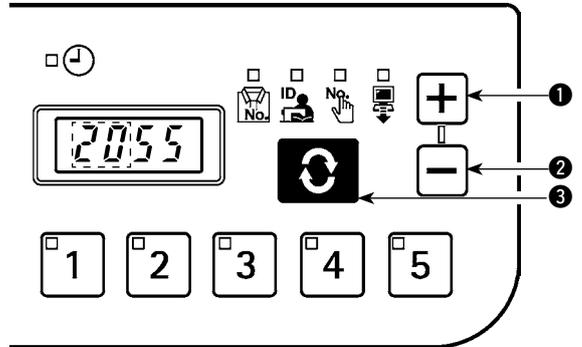

Press the ⟳ switch is pressed.

■ **Month setting**
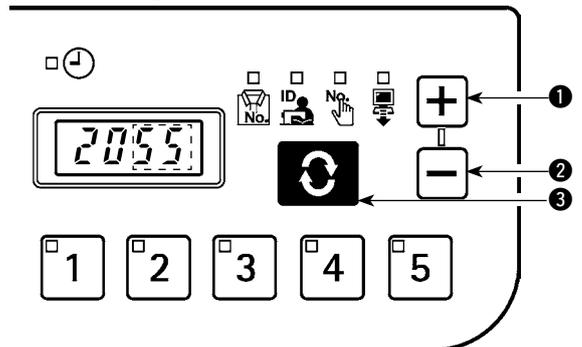

Press the ⟳ switch is pressed.

■ **Date setting**
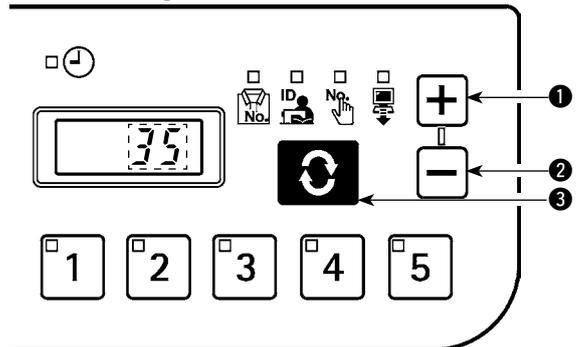

Press the ⟳ switch is pressed.

■ **Hour setting**

Press the ⟳ switch is pressed.

■ **Minute setting**

Press the ⟳ switch is pressed.

■ **Second setting**

Turn OFF the power supply after setting up everything up to second.

> **When it is connected to a network in which IA-1 is connected, time is automatically obtained from IA-1.**

(5) Initialization screen

Panel data is initialized on the initialization screen.
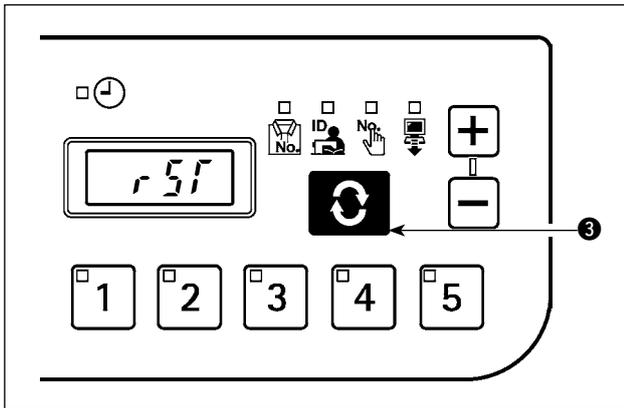
Press the ⟳ switch ❸ on initialization screen and indicate the initialization No.
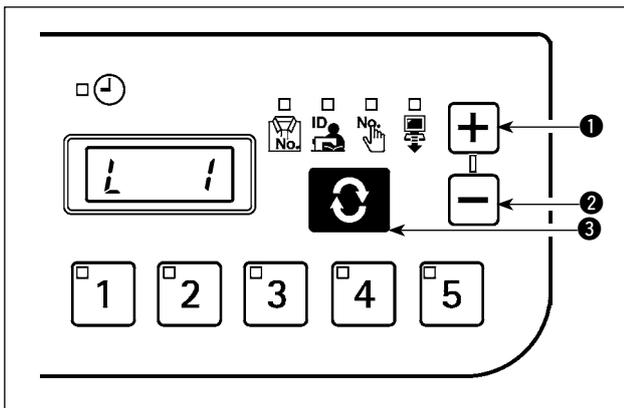
The initialization No. can be selected by pressing the + switch ❶ or – switch ❷ in this condition.

0 : Initialization is not executed.
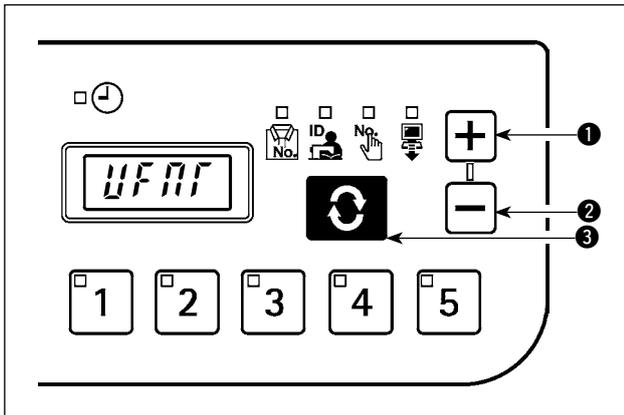1 : Memory switch and so forth are initialized.
2 : Measurement data is initialized.
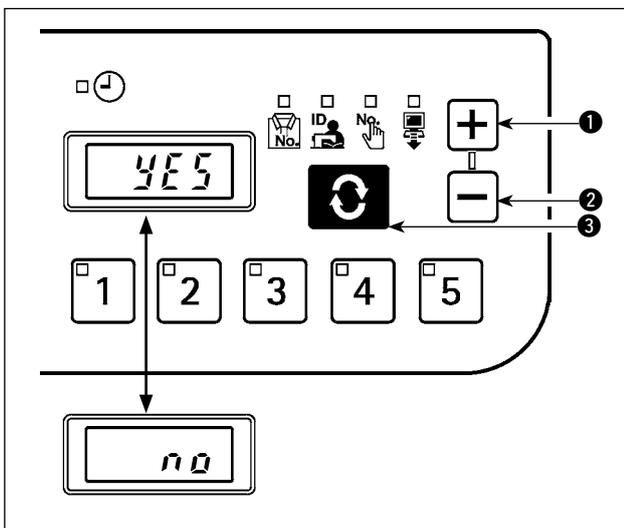3 : Both memory switches and measurement data are initialized.

Then, press ⟳ switch ❸ to confirm the selection and turn the power OFF.

(6) USB format screen

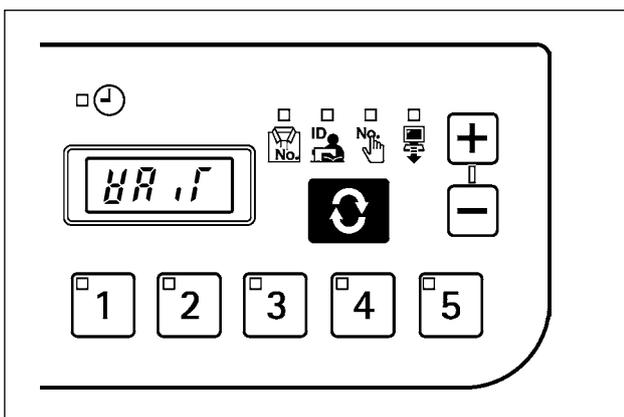The external medium connected at the USB is formatted on the USB format screen.

"YES" is displayed when the ⟳ switch ❸ is pressed on the USB format screen.

"YES" and "NO" are switched by pressing the ➕ switch ❶ or ➖ switch ❷.

Press the ⟳ switch ❸ while "YES" is displayed to start formatting the media connected to USB.
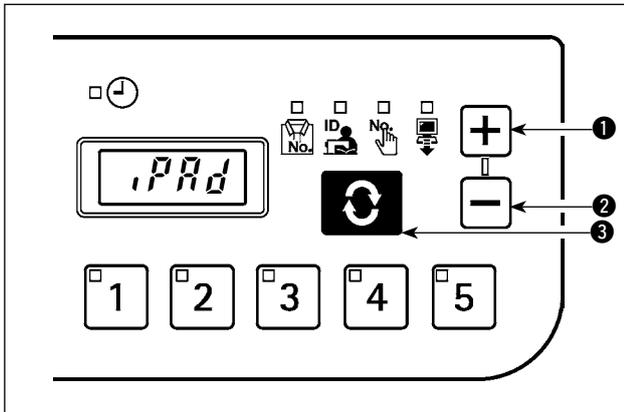
"WAIT" will be displayed during formatting, and it returns to the USB format screen when formatting is completed.
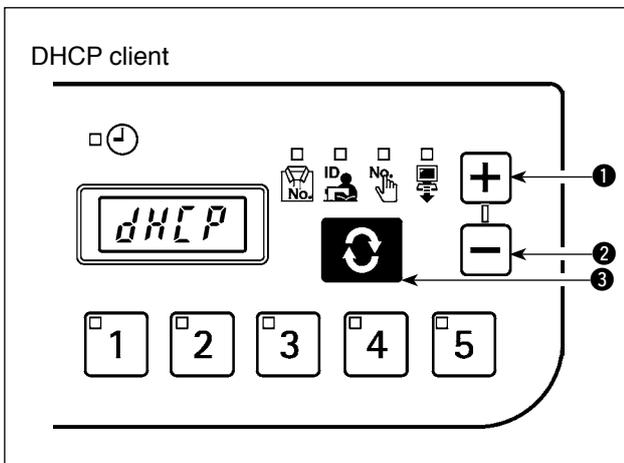
(7) IP address setup screen

The method to obtain the IP address is selected on the IP address setup screen.
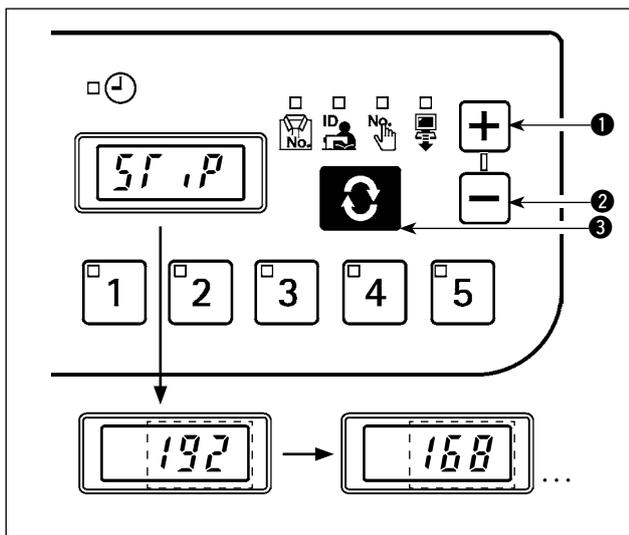
■ IP address mode selection

Select the method by pressing the ＋ switch ❶ or ─ switch ❷ with the IP address mode selected, and confirm the selection by pressing the 🔄 switch ❸.

DHCP client

APIPA

When DHCP or APIPA is selected as the method, the following indication will appear and the screen indication will stay that way.
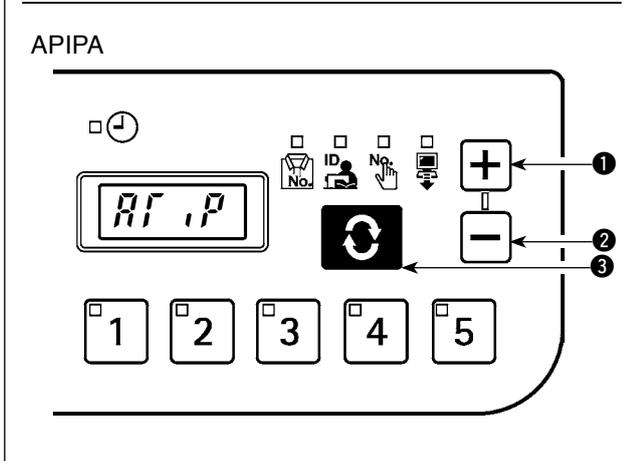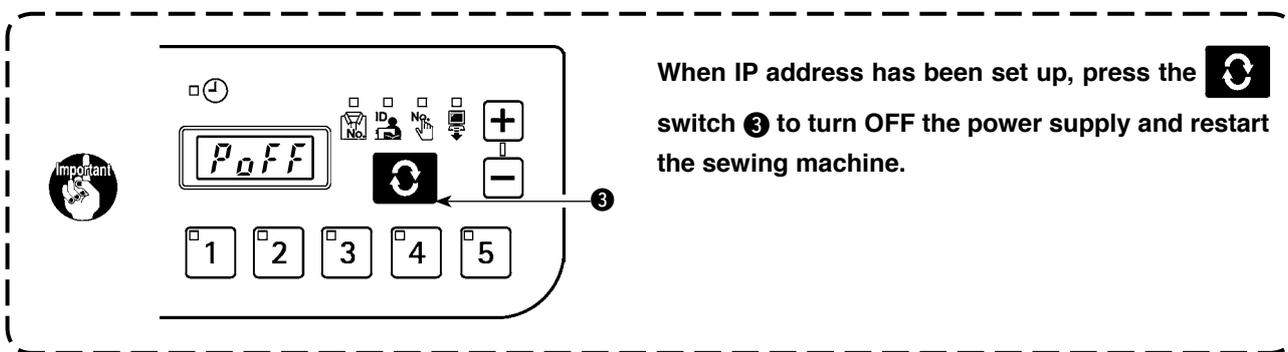
■ **Manual selection of IP address**

When manual input is selected, the IP address input screen will appear. Select the IP address using the ✚ switch ❶ or ━ switch ❷ for each block and then confirm with the ↻ switch ❸.
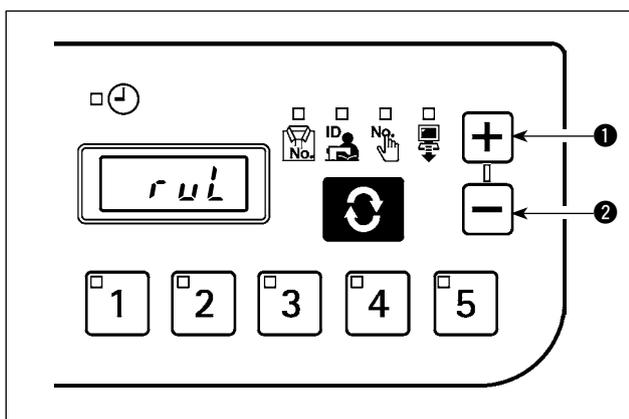
 * The screen will blink during setup.

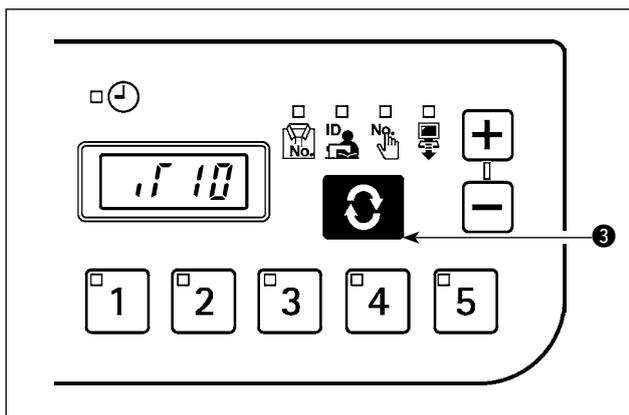**When IP address has been set up, press the ↻ switch ❸ to turn OFF the power supply and restart the sewing machine.**

(8) Version check screen

The version data for the panel can be checked on the version check screen.

Select the subject to check the version by pressing the ✚ switch ❶ or ━ switch ❷ on the version check screen.

Switch the indication in order of R-V-L branch numbers using the ↻ switch ❸.
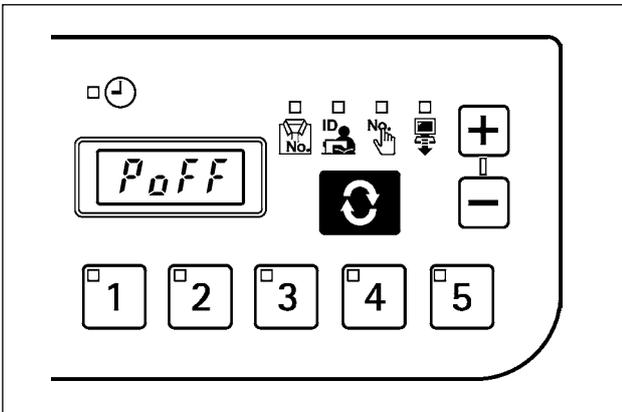
5-3. Software rewrite mode

When the power supply is turned ON with $\boxed{3}$ switch pressed, the system will start up in IT-20 application software rewrite mode.
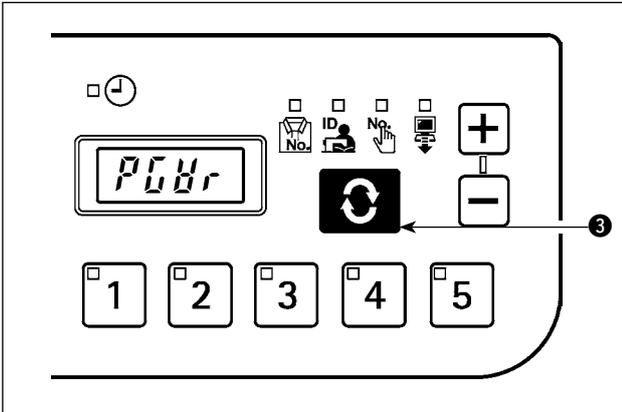
Load the software and press the ↻ switch ❸ while "PGWr" is displayed to start software rewrite.

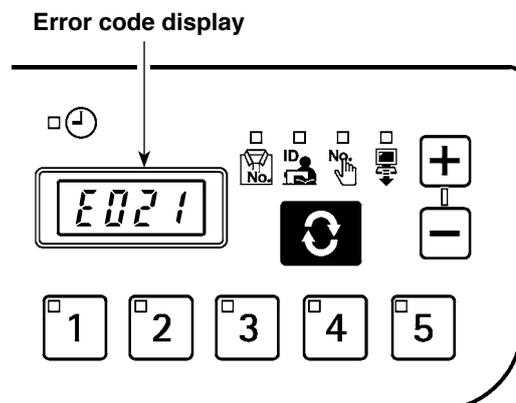> ⚠ Caution **Rewrite cannot be executed if several programs are written in USB.**

Rewrite progress (%) is indicated while data is loaded, and "PoFF" is displayed when it is completed. Turn OFF the power supply and restart the sewing machine.

> ⚠ Caution **Never cut off the power supply or pull out the USB during this process. Neglect may result in main unit failure.**

6. ERROR INDICATION

This system enables interlock (or restriction of functions) to prevent the problem from spreading in case a problem is detected, and contains the following error codes to notify the problems. When requesting for service, please also check the error code.

Error code display

Error code	Error description	Restoration method
E011	**External medium not inserted** No medium is inserted.	Reset (Press the ⟳ switch.)
E012	**Read error** Data cannot be read from the medium.	Reset (Press the ⟳ switch.)
E013	**Write error** Data cannot be written into the medium.	Reset (Press the ⟳ switch.)
E015	**Format error** The medium cannot be formatted.	Reset (Press the ⟳ switch.)
E016	**External medium capacity exceeded** The capacity of the medium is insufficient.	Reset (Press the ⟳ switch.)
E021	**Medium access failure**	Reset (Press the ⟳ switch.)
E065	**Network transmission failure** Data cannot be transmitted to the network.	Reset (Press the ⟳ switch.)
E067	**ID data reading failure** ID data stored in the medium is corrupt.	Reset (Press the ⟳ switch.)
E204	**USB insertion** The sewing machine was started up with USB inserted.	Reset (Press the ⟳ switch.)
E205	**Remaining ISS buffer capacity warning** The buffer for ISS data storage is going to be full soon. When it is full and used, data will be erased from the oldest ones.	Reset (Press the ⟳ switch.)
E206	**Warning about the logic of sewing machine rotation signal** The sewing machine rotation signal cannot be acquired. Check the setting of the memory switch U09 referring to the Setup Manual.	Reset (Press the ⟳ switch.)
E915	**Operation panel ⟺ electrical BOX communication error** Error occurred in data communication.	Turn OFF the power
E938	**Error in program rewriting file**	Turn OFF the power
E949	**No file for program rewriting**	Turn OFF the power
E950	**There are several files for program rewriting.**	Turn OFF the power

> ⚠️ **Caution** **For some models of the sewing machines, errors are not saved as ISS data.**