B E K S

Instruction Manual

Mar 2019 Ver. 2

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MEMO

Chapter 1. Safety Instructions

This chapter contains information on the following.

1. Important Safety Instructions
2. Grounding Instructions
3. Warning Labels
4. Electrical Wiring
5. Trademarks

IMPORTANT SAFETY INSTRUCTIONS

- When using an embroidery machine, basic safety precautions should always be followed, including the following:
- This embroidery machine is intended for commercial use.
- Read all instructions before using this embroidery machine.

Icons

Danger	To reduce the risk of electric shock.
Warning	To reduce the risk of burns, fire, electric shock, or injury to persons.

⚠ Danger

◆ For USA and CANADA installations, the machine must be installed on a branch circuit with UL/CSA listed fuse or breaker protection with a minimum short circuit current rating of 10kA or more.

◆ This embroidery machine should never be left unattended when plugged in.

◆ Always unplug this embroidery machine from the electrical outlet immediately after using and before cleaning.

◆ Always turn off the Automat and Driver box when not in use for long periods of time.

◆ Always unplug before relamping. Replace bulb with same type and rating.

◆ Use this embroidery machine with the recommended power supply voltage indicated on the machine.

⚠ Warning

◆ Do not allow this machine to be used as a toy. Close attention is necessary when this machine is used by or near children.

◆ Use this embroidery machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.

◆ Never operate the machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped or soaked in water. Call your authorized distributor for examination, repair, electrical or mechanical adjustment.

◆ Never operate the machine with any air openings blocked. Keep ventilation openings of the machine free from the accumulation of lint, dust, and loose cloth.

◆ Never drop or insert any object into any opening.

◆ Do not use outdoors.

◆ Do not operate where aerosol (spray) products are being used or where oxygen is being administered.

◆ To disconnect, turn all controls to the off ("0") position, then remove the plug from outlet.

◆ Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
◆ Keep fingers away from all moving parts. Special care is required around the sewing head needles.
◆ Always use the proper needle plate. The wrong plate can cause the needle to break.
◆ Do not use bent needles.
◆ Do not pull or push fabric while stitching. It may deflect the needle causing it to break.
◆ Switch the embroidery machine off (“0”) when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, or changing presser foot, etc.
◆ Always unplug the embroidery machine from the electrical outlet when removing the covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.
◆ Operate the machine from the front. Do not operate from the side, back of the machine and/or on the table.
◆ Keep the control box away from water or chemicals. If any of it enters into the control box, unplug the machine from the electrical outlet, and contact your distributor for repairs.
◆ Do not place any metal goods, clips, safety pins or scissors near the control box. If they enter into the box, the internal circuits can short and cause fire, electric shock, or burn by heat source.
◆ Do not let your hand or face come near the needles, take-up levers, hook, trimming knife, shafts, pulleys, belts, or gears while the machine is running.
◆ The machine should be operated with clothing suitable for the operation. Long hair, necklaces, bracelets or ribbons can cause a serious accident if they are caught and rolled up in the machine.
◆ It is recommended that only one person operate the machine at a time. When multiple people run a machine, it’s possible that one person can start the machine while another one is touching it.
◆ Do not use the machine in a place of high humidity. Too much humidity may cause fire or electric shock.

◆ Do not pull, strongly twist, rollover with heavy object, or apply any heat to the power supply cables and other wiring cables. Doing so will cause damage to the cables and may cause fire or electric shock. If you find exposure of the wire core or other damage to the wiring cables, contact your distributor for repairs.

◆ In case of any foreign matter entered into the control box, unplug the machine from the electrical outlet, and contact your distributer for repairs.

◆ Do not place the machine in direct sunshine or a place where the temperature rises unusually by the heating equipment, etc.

◆ Do not use the machine near a fire. It may cause a fire.

◆ Never open the Driver box covers. If you must, unplug the machine from electrical power and then wait at least 4 minutes before opening the covers. The wait is to allow high voltage power to dissipate and high temperature parts to cool down inside. Failure to wait can result in electrical shock or burns.

◆ Connect this machine to a properly grounded outlet only. See Grounding Instructions.

2. Grounding Instructions

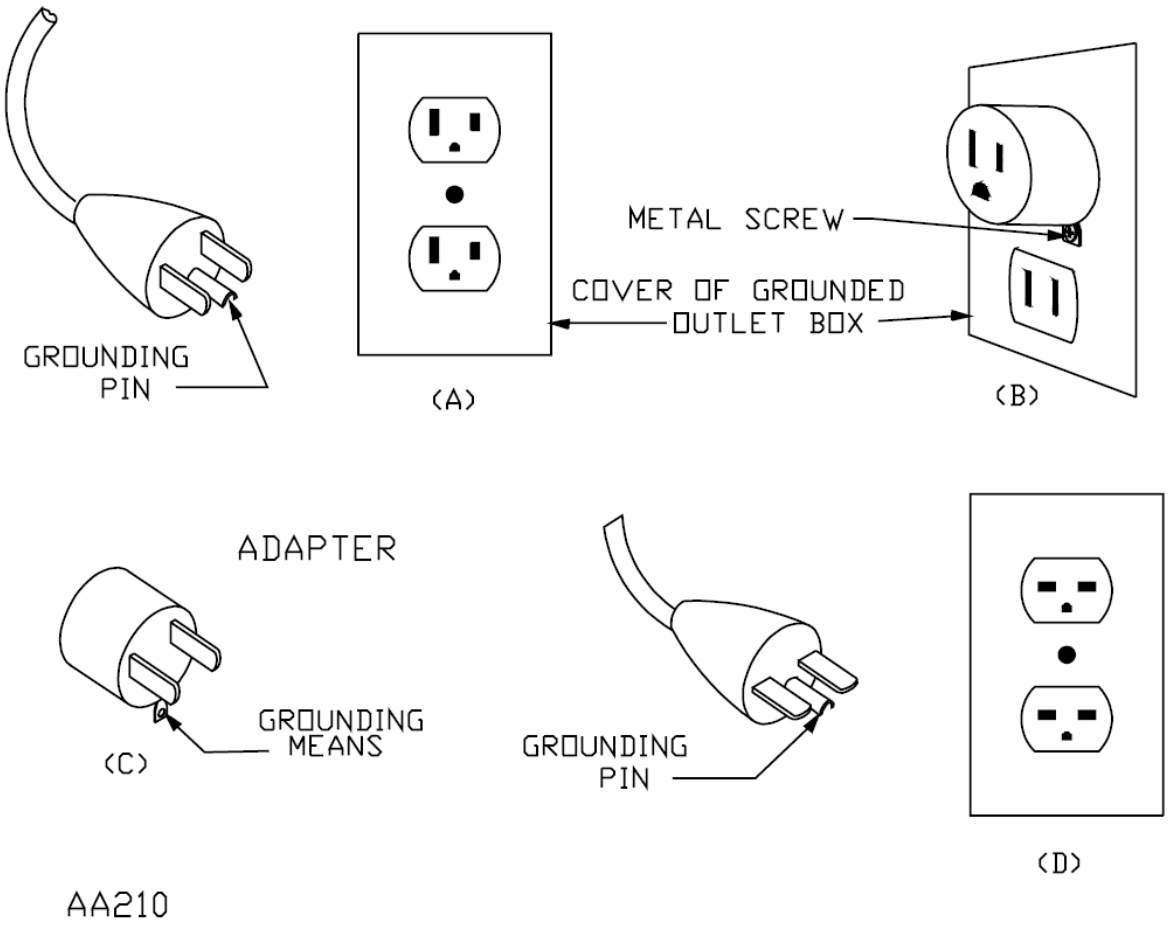
1) This product must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current, to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

   Danger! : Improper connection of the equipment-grounding conductor can result in a risk of electrical shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live connector.

2) Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded.

3) 120V machine models. This product is for use on a nominal 120 V circuit, and has a grounding plug that looks like the plug illustrated in sketch A in Figure 1.1. A temporary adaptor, which looks like the adaptor illustrated in sketch B and C, may be used to connect this plug to a 2-pole receptacle a shown in sketch B if properly grounded outlet is not available. The temporary adaptor should be used only until a properly grounded outlet can be installed by a qualified electrician. The green colored rigid ear, lug, and the like, extending from the adaptor must be connected to a permanent ground such as properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by the metal screw.

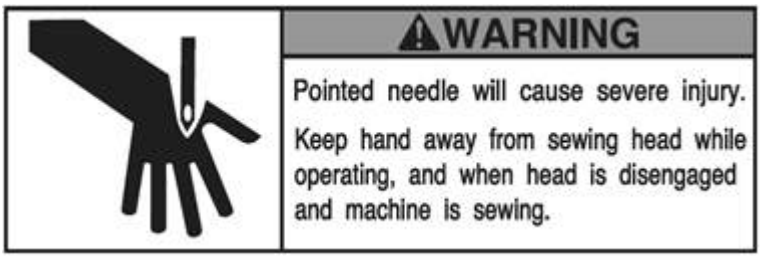
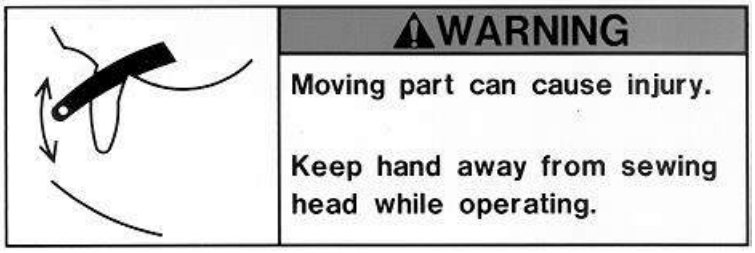
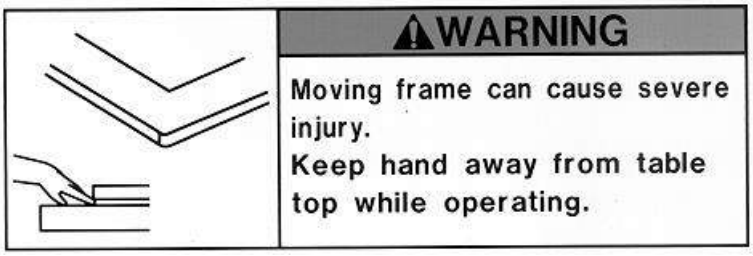
4) 200 V and higher machine models. This product is for use on a circuit having a nominal rating more than 120 V and is factory equipped with a specific electrical cord and plug. No adapter should be used with this product. If the product must be reconnected for use on a different type of electric circuit, the product should comply with all local codes and ordinances.

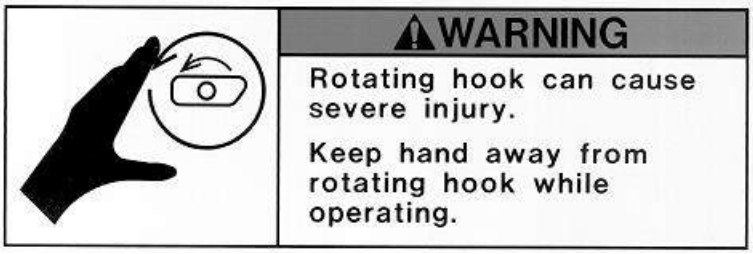
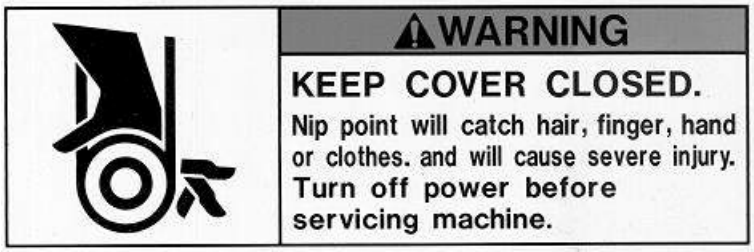

GROUNDING
PIN
(A)
METAL SCREW
COVER OF GROUNDED
OUTLET BOX
(B)
ADAPTER
GROUNDING
MEANS
(C)
GROUNDING
PIN
(D)
AA210

<Fig. 1.1>

3. Warning labels

- **Give attention during operation to the parts labeled.**

Warning Labels	Contents
	Needle Hazard Warning Label
	Hair Warning Label
	Take-Up Lever Warning Label
	Frame Warning Label

Warning Labels	Contents
	Hook Warning Label
	Belt Warning Label

SAVE THESE INSTRUCTIONS

4. Electrical Wiring

For USA and CANADA installations, the machine must be installed on a branch circuit with UL/CSA listed fuse or breaker protection with a minimum short circuit current rating of 10kA or more.

5. Trademarks

- Independent JPEG Group
  (This software is based in part on the work of the Independent JPEG Group.)
- Linux
  (Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.)
- SD-3C, LLC
  (SD logo, SDHC logo, SDXC logo, microSD logo, microSDHC logo)
- Any other trademarks, service marks, collective marks, design rights or similar rights mentioned in this manual, are the property of their respective owners.

Chapter 2 Introduction

This chapter contains information on the following.

1. Specifications
2. Features

1. Specifications

1.	Design Capacity	100 designs
2.	Stitch Capacity	1 design-1million stitches / Total capacity: 70 million stitches
3.	Display	10.4 inch color LCD　800x600 dots (SVGA)　Touch panel
4.	Input Power Supply	Single phase / 3 phases AC100V~AC240V (Each voltage ±10% 50Hz/60Hz) depending on the specifications of each model
5.	Temperature	5 - 45 Degree Centigrade (Active) -20 - 60 Degree Centigrade (Storage)
6.	Humidity	20 - 80 % RH, No condensation allowed
7.	Grounding	D class grounding Grounding resistance to be less than 100 Ohms
8.	Trimmer Compatible	Mark 4, 5, 6, 8
9.	Thread Break Detection	Thread Break Sensor
10.	USB Ports	2 ports (See Chapter 3 1. Panel Appearance and Components)
11.	Network System	100BASE / 10BASE
12.	COM Input/Output	D-sub 9 pin (9600~115200bps)
13.	Emergency Stop Switch	(Some models do not apply)
14.	Borer	1~3 needles
15.	Cap frames (For Cylinder machines)	
16.	Options	Sequin device (SQ), Automatic Lubrication System, Twin Sequin Device, Light Curtain, Laser Marker, Barcode, Automatic Presser Foot Height Adjuster, Wired Jog Controller, USB Keyboard/Mouse Input

2. Features

1) Easy Operation

The KS Automat is easy to operate with its large, high-resolution LCD display and Linux operation system. Icons with descriptions make it quick and easy to understand features and functions of the machine. Icon descriptions can be modified in different languages for operator assistance.

Touch panel enables visual, faster operation.

Prompts and error messages are displayed to show the operator machine status and offer help information if necessary.

- The Automat is the device used to operate the embroidery machine.

2) Multilingual Support (Chapter 11)

Default is English.

Different languages can be selected by loading font and resource files.

3) USB (Chapter 3)

Various USB devices are available.

For example:

USB memory

Memory Card reader

Barcode reader

Keyboard / Mouse

4) Standardized Networking Function (Chapter 10)

Barudan Embroidery machines can be connected to a Network server (computer) by LAN connection and able to send / receive embroidery design data.

Moreover, by using the optional LEM Server Pro Network software, machine production records and status can be viewed and reported from the server computer.

5) Large Memory Capacity

The memory capacity is 70 million stitches, with 100 memory locations.

6) **Shortcut Function** (Chapter 11)

Commonly used functions can be set as shortcuts. Using shortcuts cuts down on keystrokes for functions by making them a one-touch operation to execute them.
12 different groups of shortcut menus can be registered. These groups can be changed easily to match the operator needs or jobs.

7) **High Speed Drive**

The microcomputer automatically chooses the most efficient speed, in 10 rpm increments. The Maximum Speed may vary per model.

8) **Quiet Driving Motor**

Inverter driven main motor allows powerful and quiet drive and also allows accurate speed control and stop positioning.
AC Servo Motor or 5 Phase Pulse Motor drives the pantograph quietly at high speed.

9) **Automatic Speed and Jump Stitch Control** (Chapter 11)

The controller varies the speed of the machine automatically depending on stitch length for better stitch quality. The controller can also automatically convert long stitches to Jump stitches as set by a stitch length parameter for higher quality stitching.

10) **Design Information** (Chapter 6)

Design information such as total stitches, quantity produced, size, and thumbnail of the design can be seen on the screen.

11) **Head Selection System** (Chapter 4)

Sewing Head switches can be turned On/Off individually depending on Design data. They can also be switched On/Off by programming on the Automat.

12) **Pantograph Positioning Registration** (Chapter 4)

A Maximum of 15 points can be registered for pantograph positioning to move the frame to registered points, either manually or automatically.

13) **Start Position Registration** (Chapter 9)

Once you register the start position of a design in memory, the next time you sew it you can start from the same start position.

14) Trace (Chapter 9)

Before starting sewing a design, you can view the design in a pantograph/frame on the display to see if it fits.

There are 2 kinds of Frame trace.

(1) Square trace : Auto-movement of the frame around the 4 corners of design.

(2) Outline trace : Auto-movement of the frame around the Outline of design.

15) Displaying Embroidery Points (Chapter 9)

You can enlarge the display of a design being sewn by touching a key, without interrupting the embroidering operation.

This function allows you to easily confirm embroidery details in a design.

16) Stand-By (Resume) (Chapter 9)

The machine can be turned OFF in the middle of sewing a design. When powered back On, the machine resumes in the same position where the embroidery was stopped, even if the pantograph was moved when the machine was powered off.

17) Help Function (Chapter 11)

Help files can be saved in the Automat's internal memory or USB Flash Drive, and be displayed when needed. Help files can be created and saved.

Help info can be displayed from the Error messages when they occur.

18) Schedule Function (Chapter 11)

Memo messages can be made and scheduled from a calendar form.

When you register a message, it is displayed on the Automat screen at start-up on the day, or days scheduled.

19) Display OFF Function (Chapter 11)

When the Automat is not used for long periods of time, you can turn off the display to save power consumption. In addition to the manual function, you can also set an Automatic Display off function using a timer-setting.

20) Name Drop (Chapter 9, Chapter 11)

When sewing designs with multiple names in it, this feature displays the name currently being sewn, and the next name coming up.

This feature also shows the names in a list, and allows you to select any name in the list and high speed float to it. This is in case you need to resew one of the names in the list.

21) Utility tools (Chapter 3)

Image Display (JPEG) of sewn sample, Message with production info can be saved in the design file, and can be shown on the display using new the B-PASS FDR-3 design format.

22) B-PASS Coordination (Chapter 9, Chapter 10)

Coordination with B-PASS (Barudan Production Assistant System) software and adding Thread and Production information to the designs, improves productivity.

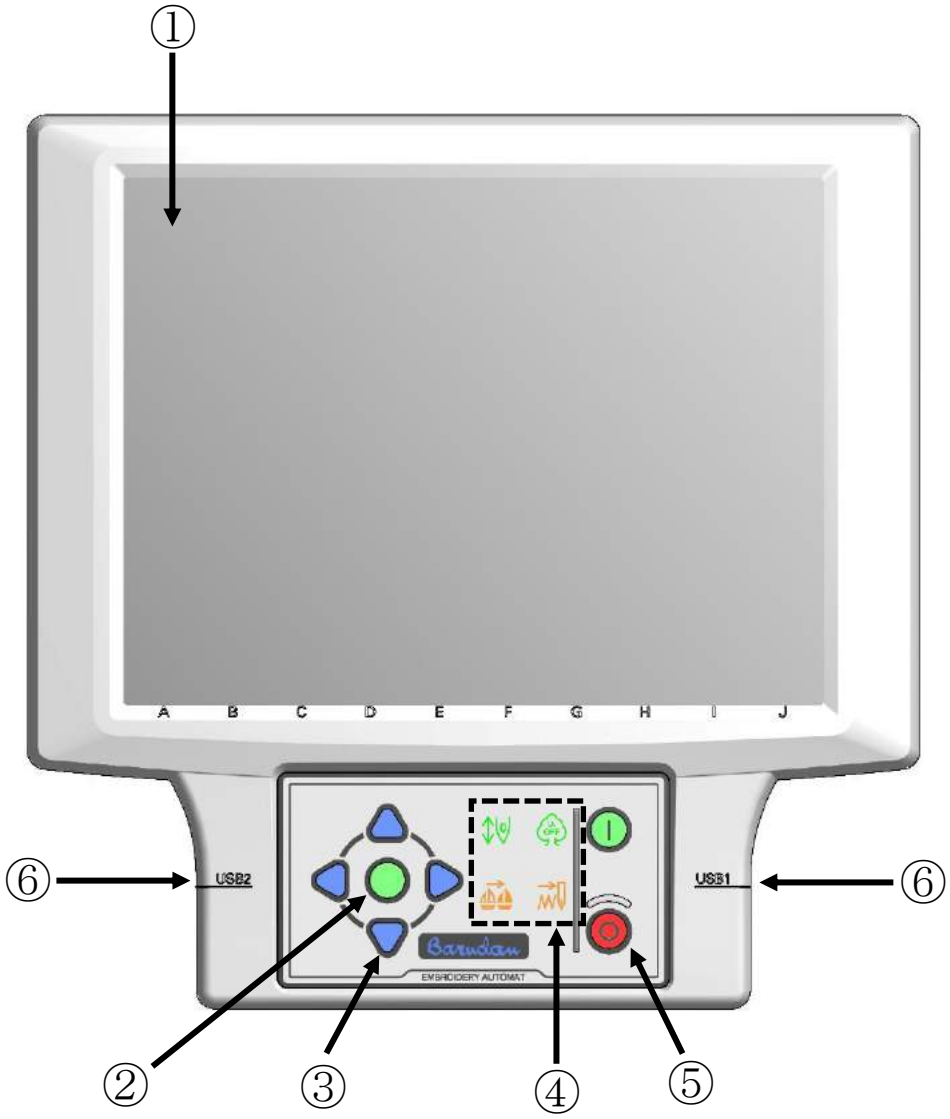
- B-PASS is a system to assist production to improve productivity.
- LEM Server (Design File Server) is needed in addition to B-PASS.

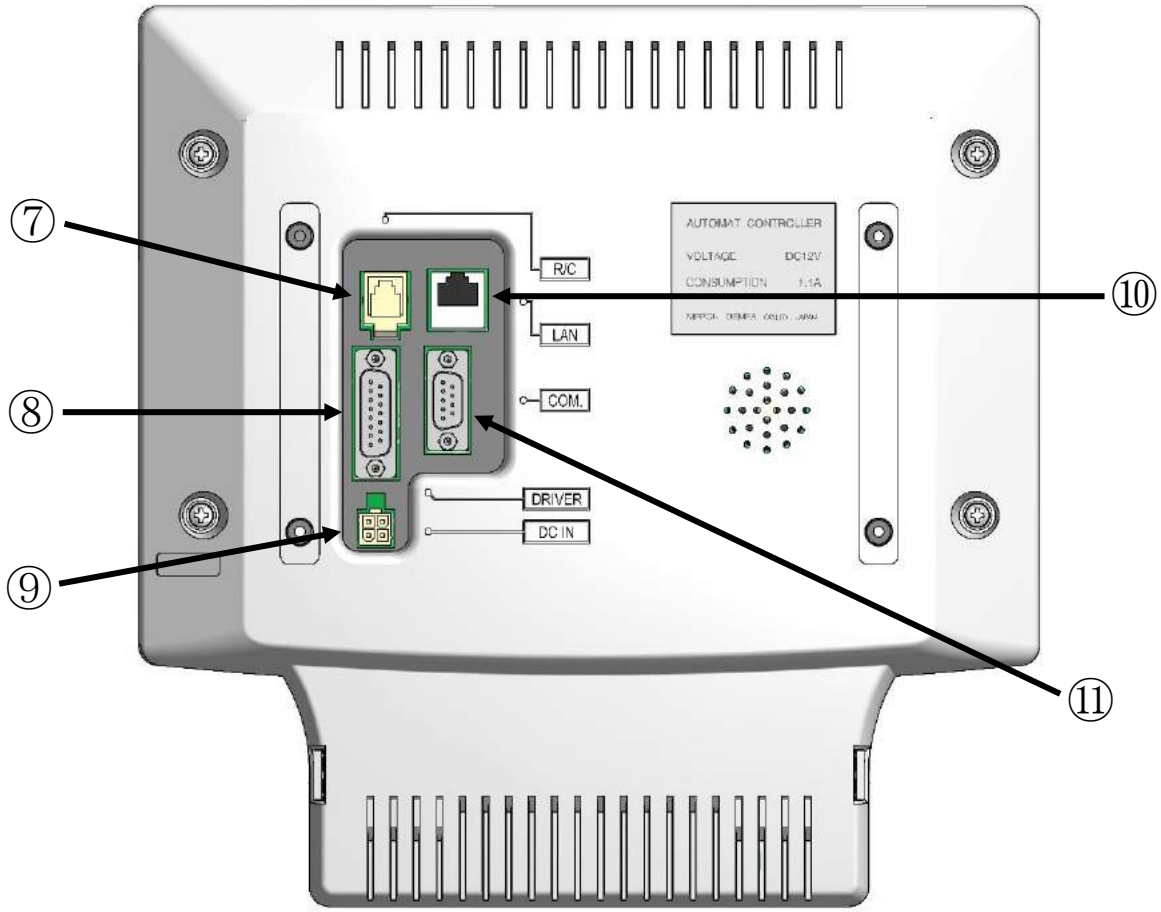
Chapter 3 Before Use

This chapter contains information on the following.

1. Panel Appearance and Components
2. Powering the Machine On / Off
3. Origin Set
4. Standby and Drive Modes
5. Screen Structure
6. Confirmation Screen
7. Error Messages
8. Barcode Operation
9. Keypad
10. Lists
11. Previous Icon
12. Utility Tools
13. Test Precautions

1. Panel Appearance and Components




⑦
⑧
⑨
⑩
⑪
R/C
LAN
COM.
DRIVER
DC IN
AUTOMAT CONTROLLER
VOLTAGE DC12V
CONSUMPTION 1.1A

(1) Touch panel LCD

Shows machine status, icons, and design information. The machine is operated by touching the display.

(2) Origin key

Moves the Pantograph to Origin.

When the pantograph is located at origin, it moves the pantograph to the previous position in Standby mode and to the position of the last stitch in Drive mode.

In the case where the pantograph is at origin (Start position of the design), the key is lit.

In the case where the pantograph is not at origin, the key is not lit.

(3) Jog keys

Moves the Pantograph. Single stroke gives 0.1mm movement. Holding the button gives continuous movement and the speed of the pantograph gradually increases.

If you double tap and hold the button, the pantograph moves slowly.

In the case where the Jog key operation is not available, the keys are not lit.

(4) Status display LED

These LED Icons indicate the embroidery machine's status.

: Standby mode: Blinking

Drive mode is unavailable: Light is off

Drive mode is set: Solid light

: Lights during Display OFF mode

: Lights when in Teaching-in mode

: Lights during Float mode

(5) Power ON/OFF keys

Turns the machine ON and OFF.

(6) USB (2 ports)

These connecters are used to connect USB devices.

Some USB devices may be unavailable. (*1)

These ports can be used to upload and download designs and connect a barcode reader (option). System software can also be updated by USB.

(7) R/C

This is the connector for the optional wired remote jog controller.

(8) DRIVER

This is the connecter used to connect to the K series driver unit.

(9) DC IN

This connecter is used to receive the DC12V input power for the Automat.

(10) LAN

This is for a LAN connection.

(11) COM

This is for a COM connection.

*1 Please use USB memory devices formatted with FAT16 or FAT32 file system.

USB memory devices less than 32GB are generally recommended.

2. Powering the Machine On / Off

Powering ON

1) Lift the Power switch lever on the front of the Driver box to the ON (Upper) position.
2) Press the ON key, on the Automat.

Powering OFF

1) Press the OFF key on the Automat to turn the power OFF.
2) In case you're not using the machine for several hours, turn the Driver box power switch to the OFF (Lower) position.
   - Note: When the Driver box power switch is OFF, the Automat On key will not turn the power ON.

3. Origin Set

After powering the machine on, you will need to set the origin.

1) Power ON the machine, refer to “2. Powering the Machine On / Off”.
2) After showing the title screen, the following Automat screen is displayed.

A B C D E F G H I J

- Use the Icon above “A” if you need to cancel the origin set.

  Press and hold to cancel. When canceling the origin set, the Drive Status LED will be OFF indicating Drive mode is not available.

  Refer to “Chapter 9, 2. Drive Mode” and “Chapter 9, 18. Standby Mode”.

- Use the Icon above “C” to trim before seeking origin.

  Refer to “Chapter 4, 4. Trimmer”

- Use the Icon above “E” to set the date and time before seeking origin.

  Refer to “Chapter 11, 13. Date and Time.”

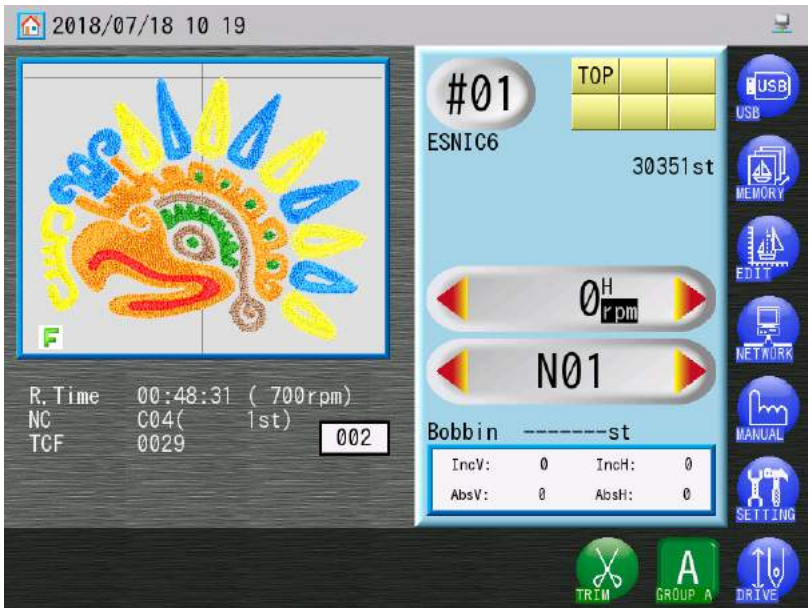
3) Press the Icon above “J” to set the origin of the embroidery frame.

After completion, you can operate the machine.

4. Standby and Drive Modes

The KS Automat has 2 different modes, Standby mode and Drive mode.

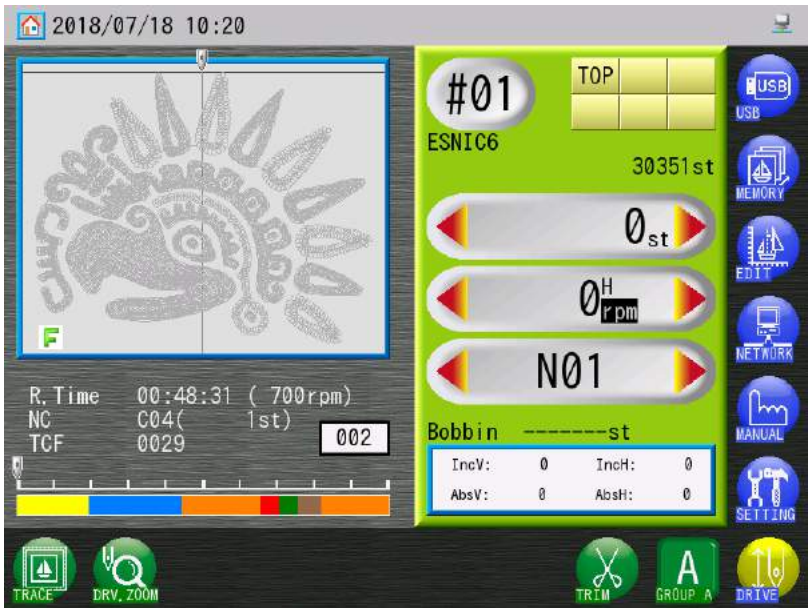
1) Standby mode: The machine is idle and is in preparation mode for embroidery.



2) Drive mode: The machine is in sewing mode.

Set to drive mode when you're ready to start sewing.

Refer to "Chapter 9, 2. Drive Mode"



5. Screen Structure

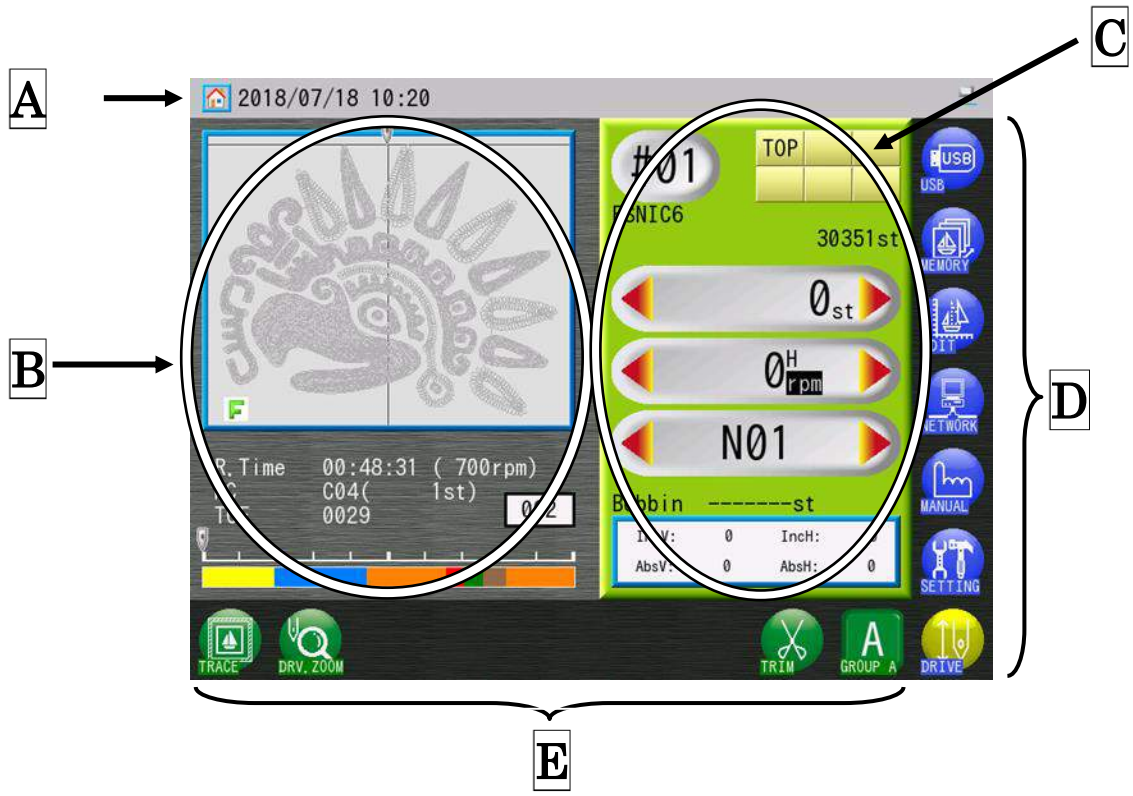
Here is the main screen to operate the embroidery machine after Origin set.

Various operations start from the main screen.

The display and operations of both Standby and Drive main screens are almost the same.

The main screen for Drive mode is used for the explanation below.

5-1. Main Screen Components



A Status Bar: Shows Date and Time, and status icons for the embroidery machine. Refer to “5-2 Status Bar”.

B Design Information Display: Shows the design image and estimated time remaining to embroider. There are 2 displays available. Refer to “5-3 Design Information Displays” for details.

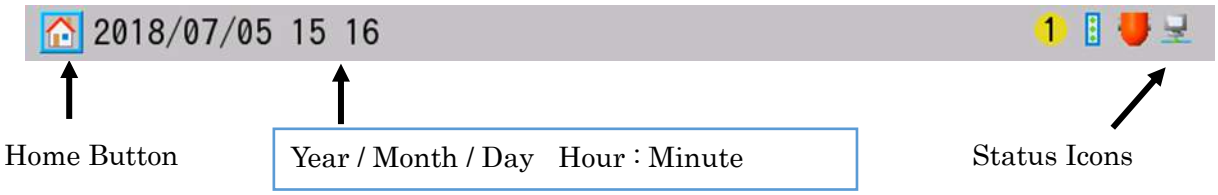
C Machine Information Area: Shows the number of stitches, speed, needle number, and so on. Refer to “5-4 Machine Information Area”.

D Main Menu: Used for various operations, management of designs, and settings. Refer to “5-5 Main Menus”.

E Shortcut Menu: Shows the shortcuts registered and the shortcut group selected. Refer to “5-6 Shortcut Menu”.

5-2. Status Bar

Displays Date and Time, and embroidery machine Status Icons.



Press the Home Button when needed, to return back to the basic screen.

The following Status Icons are shown.

Icon Meanings :

: Shows the networking connection status.
(Left: Connected / Right: Unconnected)
When network setting is turned Off, no icon shows.
When the machine is not connected, a number is shown to the right of this Icon. This number reflects how much event data has been stored for the machine, while disconnected.
When in COM Protocol mode, “ES” (Elite Server) is shown to the right of the Icon. (*1)

: B-PASS mode ON (*2)

: B-PASS control mode IN (*2)

: In Float mode (*3)

: In Teaching In mode (*4)

: Using Head Selection (*5)

: Using Head Manual Switch (*6)

: Name Drop Display (Left: Vertical / Right: Horizontal) (*7)

: Using “Automatic 1st Color Function Insertion” (*8)

: Using “Auto Drive mode” (*9)

: Using “Auto Drive Cancel mode” (*10)

: Active “Security Timer” number

The Icon number is the security timer version.

*1 Refer to “Chapter 10, 18. COM Protocol Mode Download” and “Chapter 11, 12. Network”. Currently Elite Server is included in “Design File Server”.

*2 Refer to “Chapter 10, 16. B-PASS Coordination”.

*3 Refer to “Chapter 9, 8. Float”.

*4 Refer to “Chapter 9, 14. Teaching Color Codes (While sewing)”.

*5 Refer to “Chapter 4, 13. Head Selection”.

*6 Refer to “Chapter 4, 14. Head Manual Switch”.

*7 Refer to “Chapter 11, 23. Name Drop”.

*8 Refer to “Chapter 11, 22. Automatic 1st Color Function Insertion”.

*9 Refer to “Chapter 10, 15. Auto Drive Mode Setting” or “Chapter 5, 7-4. ABC Drive Mode”.

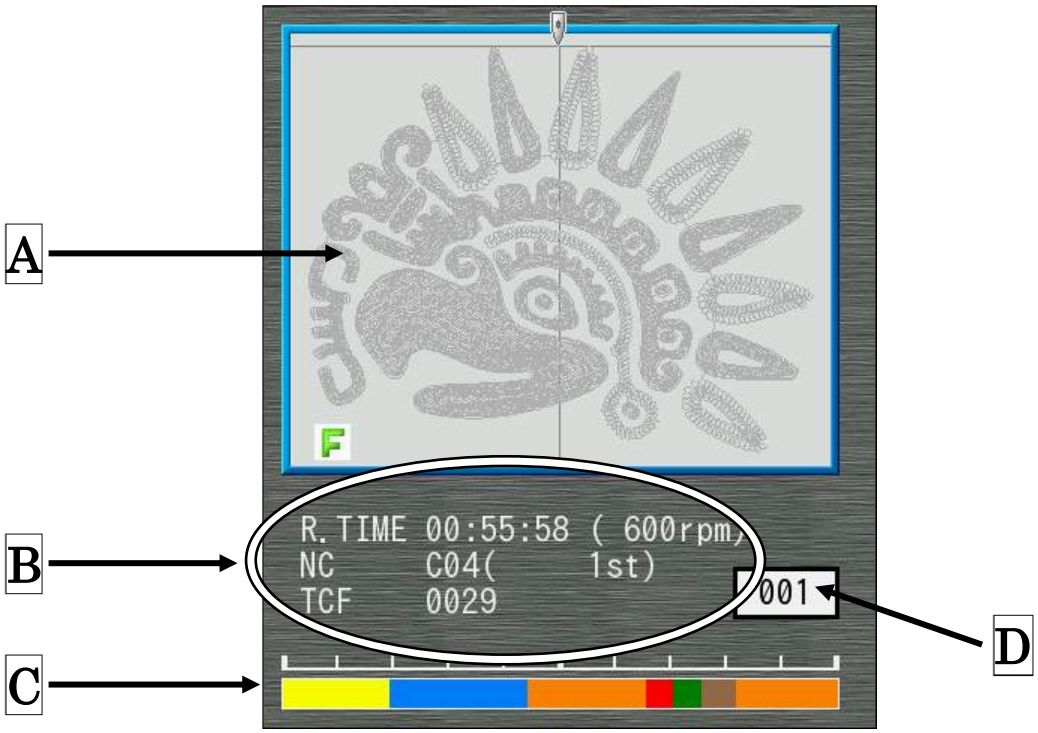
*10 Refer to “Chapter 10, 14. Auto Drive Cancel Setting” or “Chapter 5, 7-5. ABC Drive Cancel Mode”.

5-3 Design Information Displays

There are 2 Design information displays, 1 and 2.

In the Utility area of Design information Display 2, various tools are available.

< Design Information Display 1 >



A Standby mode: Visual display of design

Drive mode: Design is shown. Design in display is colored in when sewn. Unsewn areas are shown in grey.

At the bottom of this display, the design status icons are shown.

Refer to “Design Information Display 2” for Icon details.

Press in A area to change the screen to Design Information Display 2.

B Design Drive Information

R.Time : Estimated sew time remaining to the completion

The number in parentheses is the current speed setting.

Time remaining is calculated by the set speed.

In high efficiency mode, “R. Time” has a highlighted background (*1)

NC : Next color change function

Number in parentheses is the stitch number of the next color change function.

TCF : Total number of color change functions.

C Drive mode: Displays color bar graphs of color change functions
Standby mode : Nothing is shown.

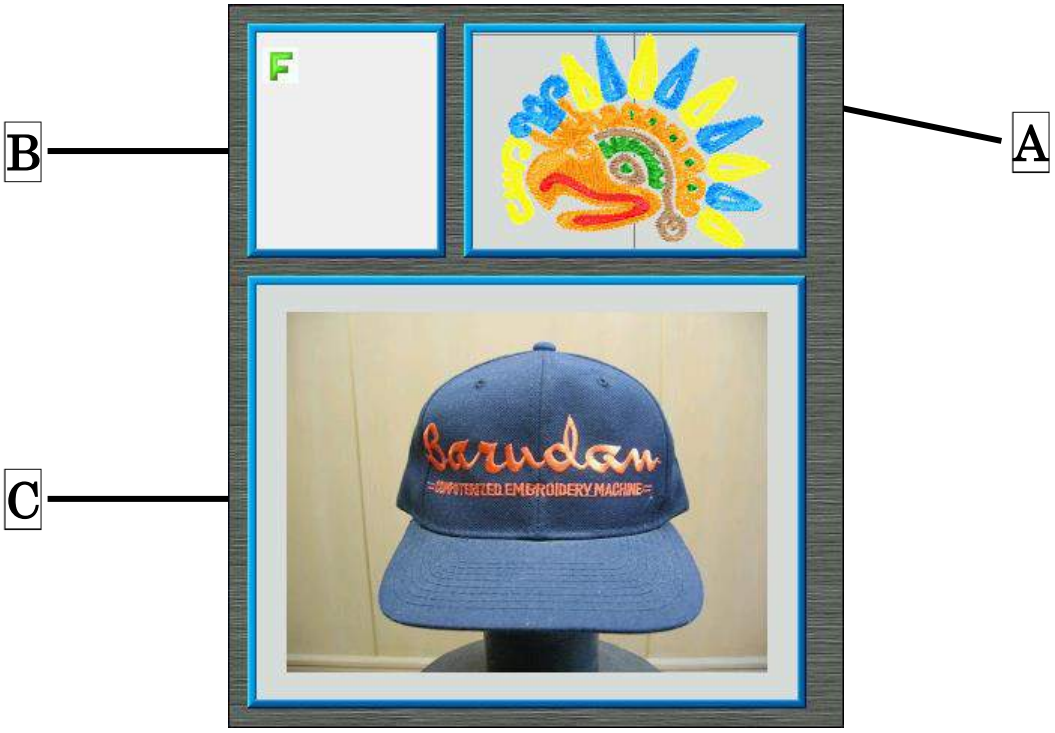
D Standby mode : Shows the number of repeats set for this design (*2)
Drive : Shows the remaining number of repeats left for sewing this design. (*3)

*1 Refer to “Chapter 6, 3. Design Information”

*2 Refer to “Chapter 8, 2. Program List”

*3 Includes the current embroidery being sewn

< Design Information Display 2 >



A: Visual display of design

Press in A area to change back to Design Information Display 1.

B: Design Status Icons

: Design orientation as set by item 3 of Program. (*1)

: Sock mode as set by item 6 of Program. (*1)

: Cap mode as set by item 13 of Program. (*1)

: Design was loaded from network (*2)

: Design was edited and made by DSP (*2)

: Design has thread instructions (*4)

: Design has production instructions (*5)

: Design connected with B-PASS (B-PASS control mode ON and design downloaded during B-PASS control IN) (*6)

: Design protected by B-PASS. (*7)

C: Utility area. Various tools are available.
Refer to “12. Utility Tools”.

*1 Refer to “Chapter 8, 2. Program List”.

*2 Refer to “Chapter 10, 8. Schedule Download”, “Chapter 10, 9. Direct Download”, and “Chapter 10, 10. Free Download”.

*3 Refer to “Chapter 7, 7. DSP (Design Stitch Processor)”.

*4 Refer to “Chapter 6, 10. Thread Instructions”.

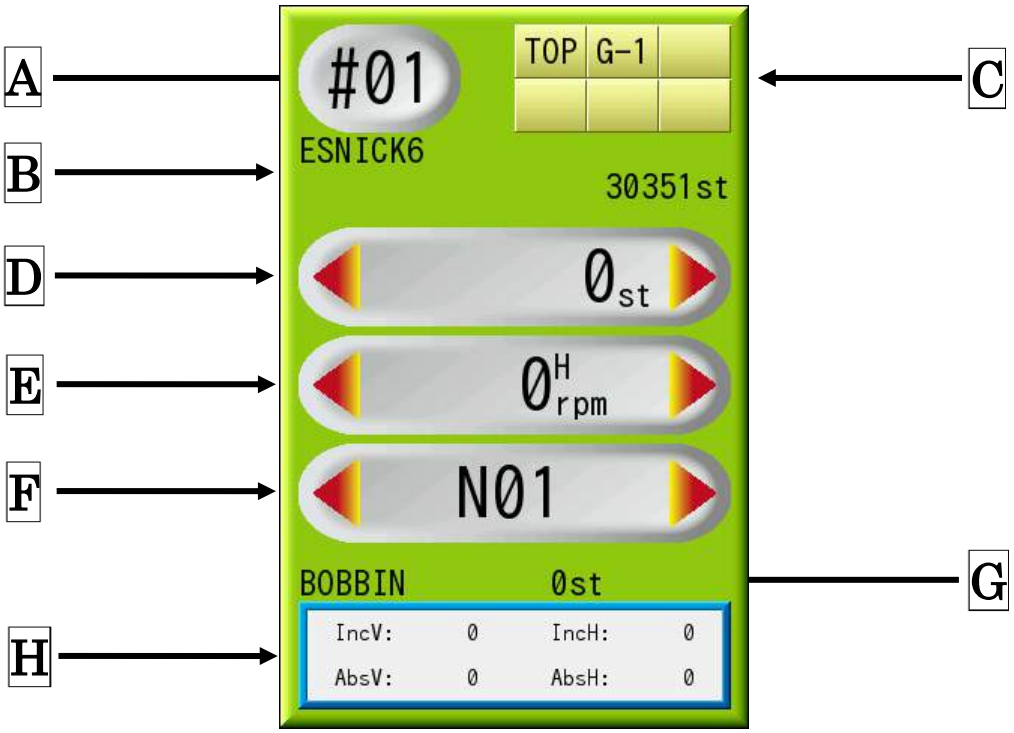
*5 Refer to “Chapter 6, 9. Production Instructions”.

*6 Refer to “Chapter 10, 16. B-PASS Coordination”.

*7 Refer to “Chapter 6, 12. Design Write Protect”.

5-4 Machine Information Area

Shows the number of stitches, speed, and needle number, etc.



A : Design memory number

Black background indicates item 1, 2, 3 or 4 of Program has been changed.

This number blinks when an empty memory location is selected.

B : Design name and total stitches

C : Machine information

TOP : Main shaft is in proper stop positon.

G-* : Group number for WS system. * is a number.

This is information for a special model machine, called WS.

D : Drive mode : Current stitch number

Float mode is available by touching this area.

Standby mode : Nothing is shown.

Refer to “Chapter 9, 8. Float” and “Chapter 9, 9. 1 Stitch Float”.

E : Current sewing speed

Changing the sewing speed is available by touching this area.

H to the right of speed : High speed function

L to the right of speed : Low speed function

Refer to “Chapter 9, 3. Speed”.

- When Unit of Speed “rpm” is shown with a black background, there may be a problem to control the speed correctly. Please contact your distributor.

F : Needle number currently selected. Changing needle numbers is available by touching this area. Please refer to “Chapter 4, 1. Color (Needle) Change”.

G : Bobbin Counter remaining number of stitches.

Please refer to “Chapter 11, 14. Bobbin Counter”.

H : Pantograph Positioning

Inc : The increment moving distance from the last movement or stitch made. (0.1mm)

Abs : The absolute moving distance from the start point to the current point. (0.1mm)

Pantograph centering is available by touching this area.

Please refer to “Chapter 4, 9. Pantograph Centering”.

5-5. Main Menus

Various machine and design functions are executed through these menus.

Press an Icon to open its menu.

An Icon that is Yellow indicates that it's currently open. In this case, press the icon again to close the menu and go back to the main screen.

Main Menu Icons

USB

Inputs and Outputs designs from USB

Memory

Manages designs in memory

Edit

Edits and Copies designs in memory

Network

Downloads designs from the server, along with other network options.

Manual

Access to various manual operations, like Trim, Applique, Frame change, etc.

Settings

Used for various settings for the Automat.

Drive

Used to toggle from Drive to Standby modes.

5-6. Shortcut Menu

Displays the shortcut icons assigned and the current shortcut group selected.

Maximum of 8 shortcuts are allowed per group, per screen.

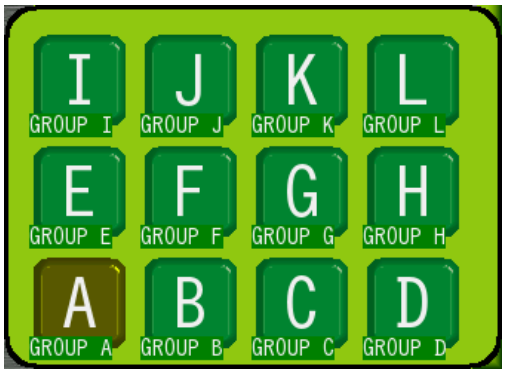
Maximum of 12 Groups can be assigned (A~I).

Refer to “Chapter 11, 9. Shortcuts” for more details.

A B C D E F G H I

1) Press the Icons above “**A~H**” to execute the functions registered.

2) Press the Group Icon above “**I**” to display the shortcut group menu.



3) Select a shortcut group to change groups.

5-7. Display Touch Areas

The following areas are examples of where the Automat can be touched for operations.

- This is common info per the Main screen.
- Each chapter explains the specific operations.

1) You can press the Icons like and/or .

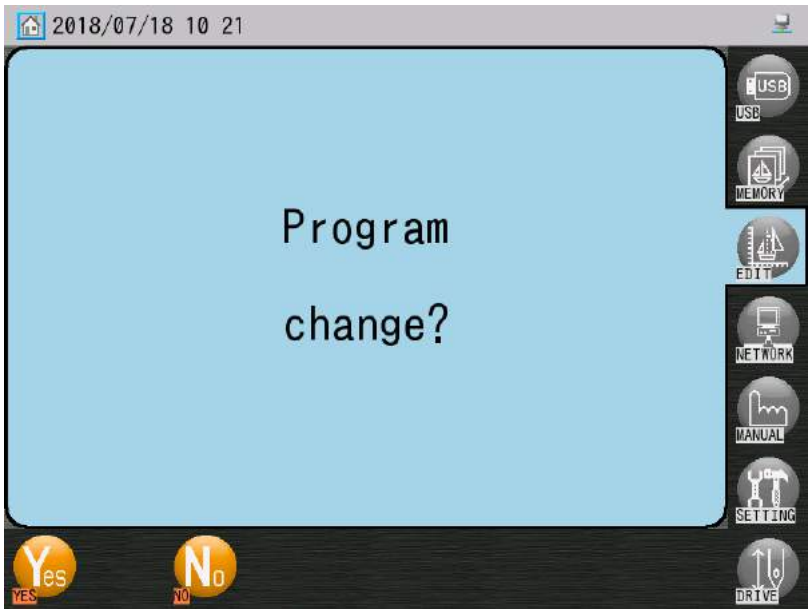
2) You can press oblong areas for example .

3) You can press areas with blue outlines, for example

.

6. Confirmation Screen

When a setting is changed or initialized, a confirmation screen will ask whether or not the operation selected should really be executed.



(The example above is to change a setting in Program.)

Press the Yes Icon above “A” to confirm the change.

Press the No Icon above the “C” to return back to the main screen without change.

7. Error Messages

When an error occurs during Machine or Automat operations, an error message will display.

In the Error message box, the Error number and Icon are shown.

Refer to “Chapter 13, 3. Error Messages” for more details.

1) Press **CLOSE** Icon to close the error message box.

2) Use the **Help Icon** to display help information about the error.

A B C D E F G H I J

Press the **EXIT** Icon above the "J" to return to the error message box.

Refer to "Chapter 11, 15. Help".

8. Barcode Operation

A barcode scanner can be plugged into the BEKS Automat in order to perform specific functions. Scanning Barcodes can save time by shortcutting some key operations and prevents operator keying mistakes.

Compatible Barcode : CODE39

A maximum of 30 characters can be scanned at once, using a Laser type Barcode reader.

Combination Barcode.

Several barcodes can be combined into one barcode.

Example) A single barcode can be scanned to download a design named “DESIGN”

3 barcodes were combined, “$DOWNLOAD$”, “DESIGN”, “OK”.

The barcode supports the following functions.

Chapter 5, 4. USB Flash Drive Search with a barcode

Chapter 8, 3. Program Barcodes

Chapter 10, 4. Registration of Operations by Barcode

Chapter 10, 11. Barcode Scanning

Chapter 11. 17-9, Setting Frame Outline with Barcode.

- See these chapters for details

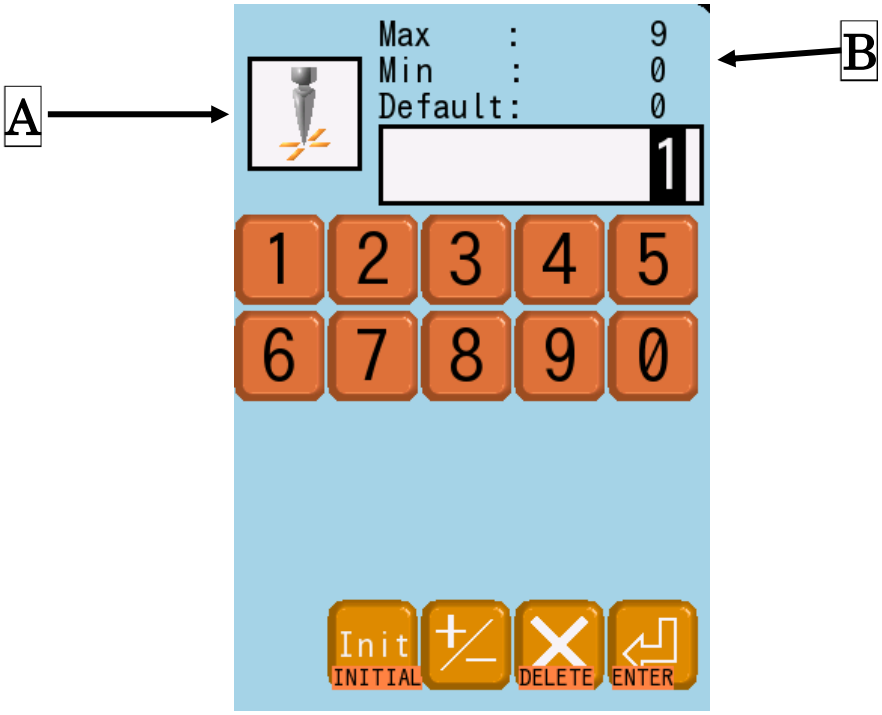
9. Keypad

Some functions use a common keypad.

Instructions for using the keypad are explained below:

9-1. Numeric Input

Some functions use the numeric keypad to input or change numbers.



(MC1 Settings Screen)

A The MC1 screen (for example): Shows Icon that corresponds to the setting you're changing. Other screens : No icon is shown.

B Displays the setting range (Maximum and Minimum values)

1) Press the **Number** 0 ~ 9 **Icons** to input a number.

Press the **Sign Icon** +/− to change the sign.

Press the **Delete Icon** ✕ to delete the last number.

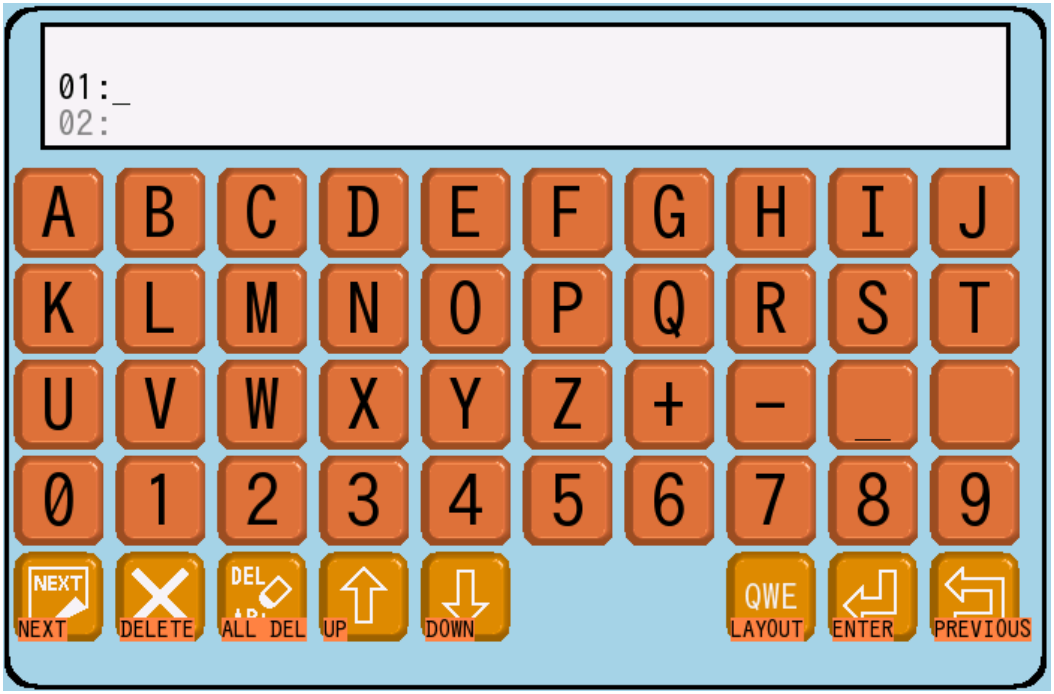
2) Press the **Enter Icon** ↵ to input the number.

※ Use the **Initial Icon**

to reset values to the default.

9-2. Character Input

Some functions use the character keypad to input text.



(The screen above is for the utility tool, for message memo input)

1) Press the **Character Icons** to input text.

Use the **Next Icon** to switch to lower case letters and additional characters.

Use the **Delete Icon** to delete the last character.

Use the **All Delete Icon** to clear all characters.

To edit several lines use the following Icons. These are not displayed for one line operations.

Press the **UP Icon** to move to the upper line.

Press the **DOWN Icon** to move to the lower line.

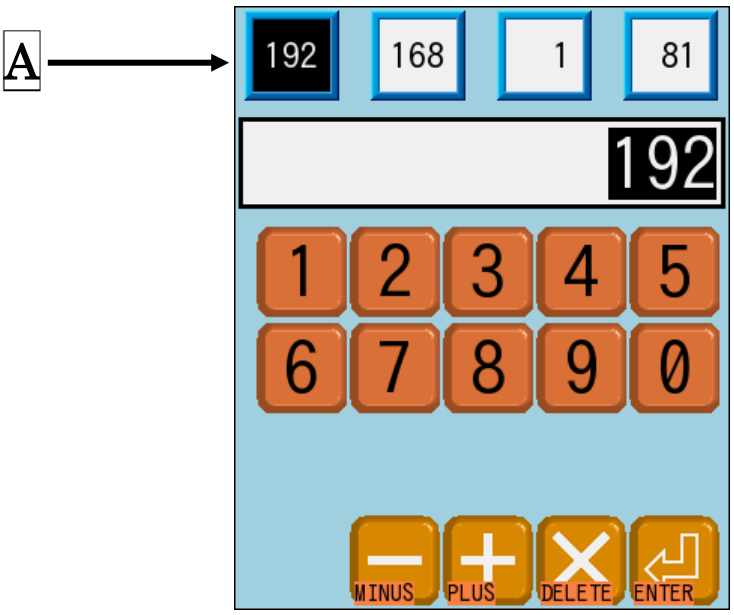
2) Press the **Enter Icon** to save the text and close.

Press the **Return Icon** to close the keypad without saving the text.

Use the **LAYOUT Icon** to change the keyboard to QWERTY layout.

9-3. Input IP address

IP address keypad is used to change IP addresses.



(Networking setting screen)

1) Press a number in area A to select it. The selected number has a black background.

2) Press the **Number Icons** 0 ~ 9 to input numbers.

Use the **Minus Icon** to decrease the number.

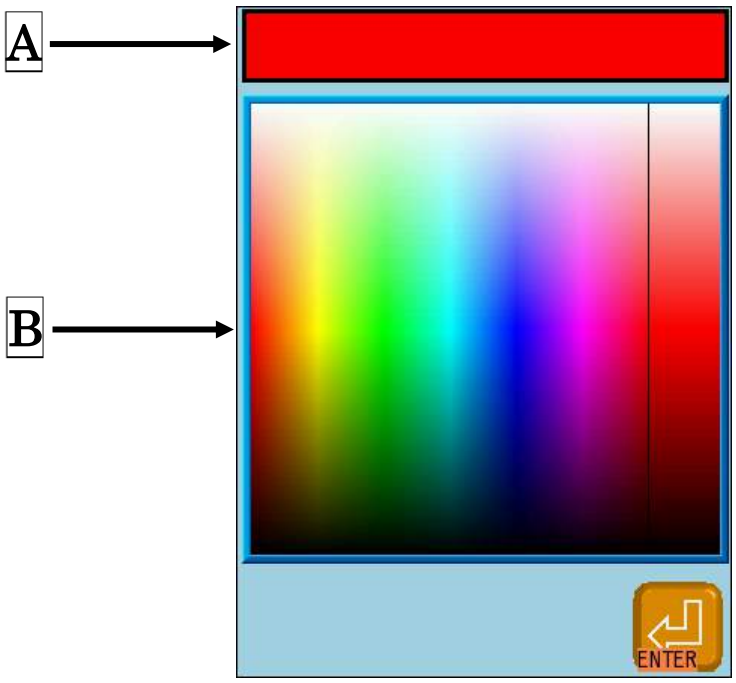
Use the **Plus Icon** to increase the number.

Use the **Delete Icon** to delete the last number.

3) Press the **Enter Icon** to input the number.

9-4. Color Input (Gradation)

The Color input gradation keypad is used to change colors.



(Screen display setting screen)

A : Shows the current color selected.

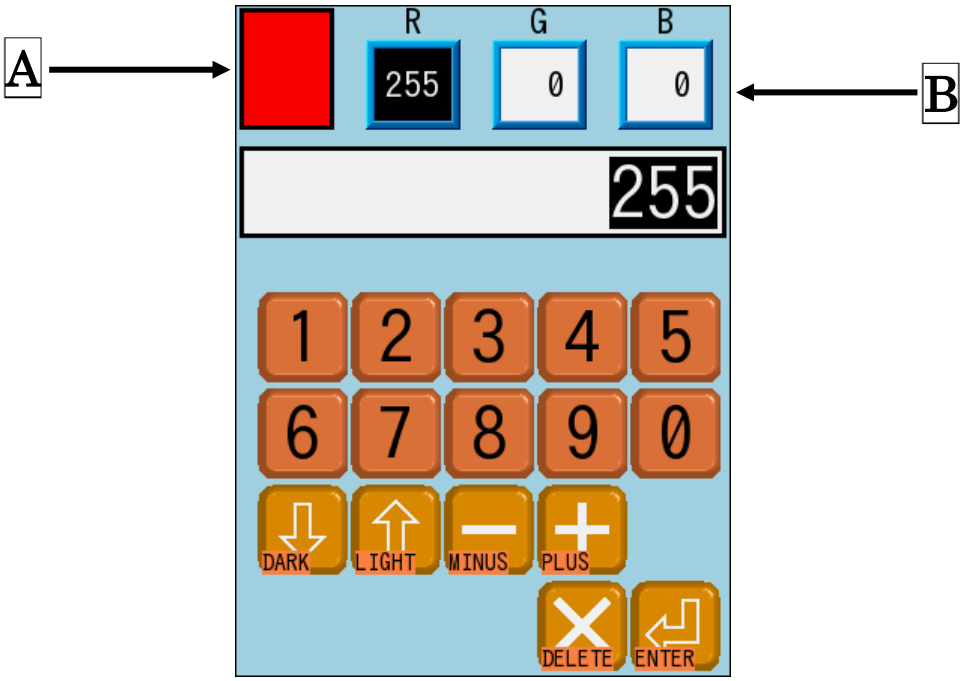
B : Shows the color gradation.

1) Press a color in the B area to select a new color.

2) Press the **Enter Icon** to input the color.

9-5. Color Input (RGB)

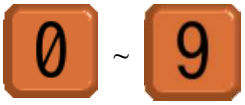
RGB Color input keypad can be used to change colors.



(Display setting screen)

A : Shows the currently selected color.

1) Select a RGB value by touching it in the B area. Selected RGB has a black background.

2) Press the **Number Icons**  to change numbers.

Use the **Minus Icon** to decrease the number.

Use the **Plus Icon** to increase the number.

Use the **Delete Icon** to delete the last number.

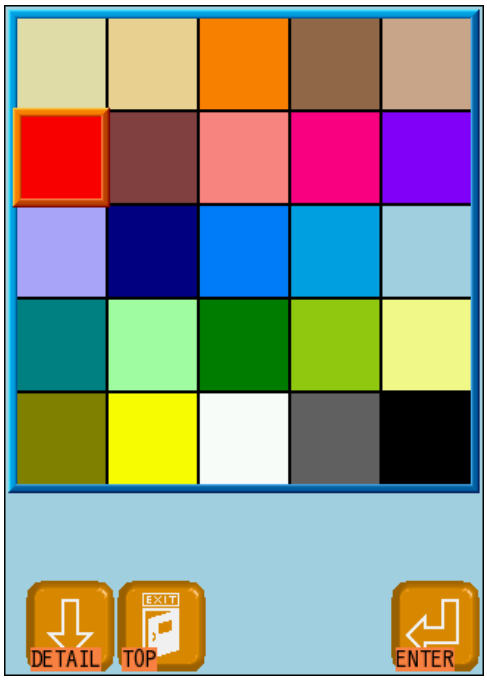
Use the **Dark Icon** to decrease all RGB values by 1.

Use the **Light Icon** to increase all RGB values by 1.

3) Press the **Enter Icon** to input the color.

9-6. Color Input (Palette)

Color input palette keypad can be used to change colors.



(Display setting screen)

1) Press a Color in the Palette to select it.

Use the **Detail Icon** if necessary, to change the shading of the selected color.

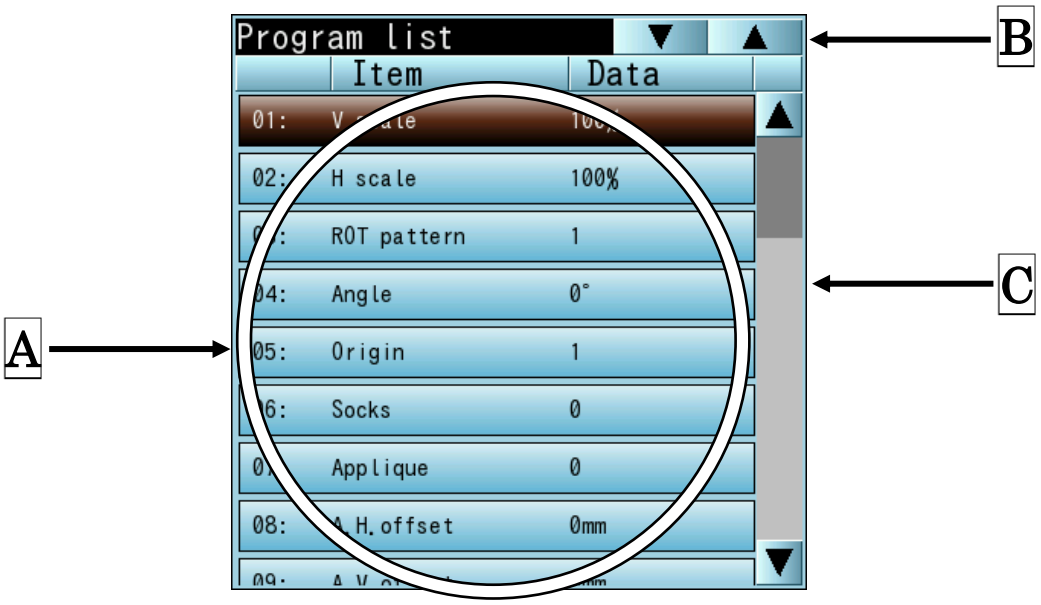
Use the **Top Icon** to return to the initial palette screen.

3) Press the **Enter Icon** to input the color.

10. Lists

Some functions have a “List”.

Here are some common ways to use a list.



(Program settings screen)

1) Slide in A area (Items of the list) to scroll the list.

2) Press the “▼” in the B area to go to the bottom of the list.

Press “▲” of B to scroll to the top of list.

3) Slide the scroll bar tab of C to scroll the list.

Press any place on the scroll bar except the tab to move one page up or down.

Press the “▲” and “▼” on the scroll bar to move up or down by 1 line.

11. Previous Icon

The **Previous Icon** is a common icon on most screens.

Use the **Previous Icon** to exit the function and return to the previous screen.

* There are some screens without a Previous Icon .

12. Utility Tools

In the Utility area of the Design Information Display 2, there are various tools.
Utility tools are available to display an image of the finished product, memos and other details.

12-1. Switching Functions

1) Display Design Information Display 2. Refer to “5. Screen Structure”.

Press the Utility area of A to switch functions.

Switch functions menu opens to the right side of the utility area, as shown below.

- Press the **Action Icon** after selecting a function to operate menu items inside the utility area (Input a memo, or scroll the display in the function, etc.)
- The other functions are grayed out when the **Action Icon** is active.
- Press the **Action Icon** again to cancel and allow other functions to be chosen again.

Functions list for Utility area

Icon	Function	Icon	Function
	Message Memo		Pantograph FMP operations
	Image Display		Head Selection operations
	Production Information		Operations for Utility area

12-2. Image Display

Displays an image of the finished product or other picture assigned to it, in the Utility area.

This is available only with a design that has an image assigned to it.
Refer to “Chapter 10, 16. B-PASS Coordination” for details.

1) Display Design Information Display 2. Refer to “5. Screen Structure”.
2) Press area A to switch function to “Display Image”.

Image is displayed in area A.

12-3. Memo Function

Utility area is able to display messages.

1) Display Design Information Display 2. Refer to “5. Screen Structure”.
2) Press Area A , then press the **MEMO Icon** to switch function to “Display Memo”.

Memo is shown in area A .

3) To make or edit the memo, press the **Action Icon** .

Then press and hold the Utility area A to display the character keypad to edit the memo.

Refer to “9. Keypad” in this chapter for keypad operations.

12-4. Production Information

Information and Instructions about Production are displayed in the Utility area.

This is available only with a design that has production information assigned to it. Refer to “Chapter 10, 16. B-PASS Coordination” for details.

1) Display Design Information Display 2. Refer to “5. Screen Structure”.

2) Press Area A and then press the **PRODUCT Icon** to switch function.

Product Information is displayed in area A.

3) To scroll and view more Production information:

Press the **Action Icon** to activate the Utility area.

This activates the scroll bar in utility area A and allows it to be used to view more production information not shown in the current window.

12-5. Pantograph Positioning

The Pantograph can be moved using the Utility area.

1) Display Design Information Display 2. Refer to “5. Screen Structure”.

2) Press Area A and then press the **MOVE Icon** to switch function to “Pantograph Positioning”.

Pantograph Positioning sceen opens in A.

3) To reposition the pantograph:

Press the **Action Icon** to active this function in the utility area.

The grey square in area A is the Soft limit range of movement.

Press and hold a position inside of this square to move the pantograph to this position.

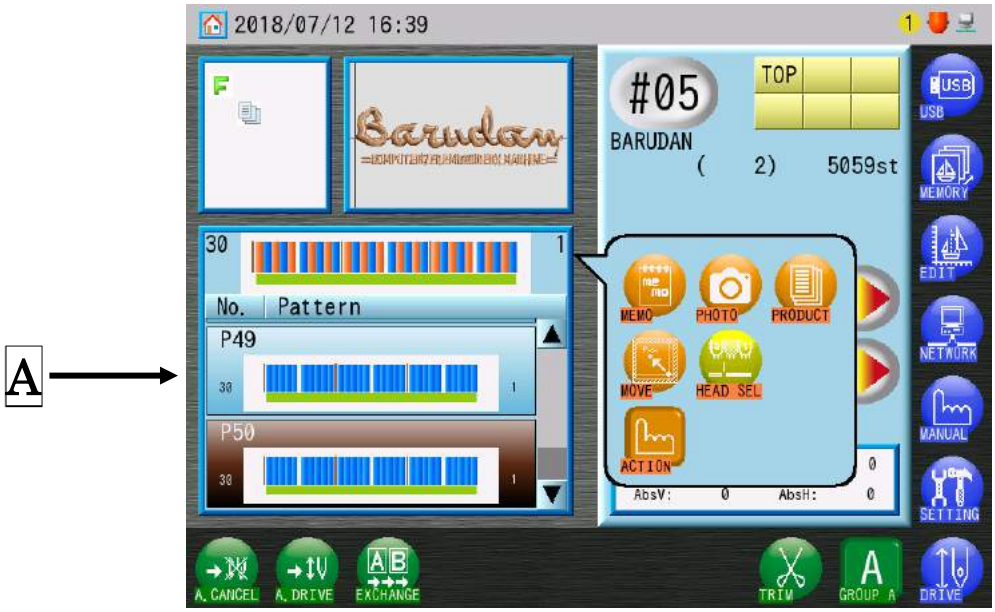
(Make sure it’s safe to move the pantograph prior to using this procedure)

12-6. Head Selection

Head Selection operation is shown in the Utility area.

1) Display Design Information Display 2. Refer to “5. Screen Structure”.

2) Press Area A and then press the **HEAD SEL Icon** to switch function to “Head Selection”.



Head Selection screen opens in A.

3) To scroll the Head Selection screen and pick another pattern:

Press the **Action Icon** to activate the Utility area.

Now it’s possible to scroll the Head Selection list of patterns and pick another pattern if needed.

13. Test Precautions

In Settings screen, there are some test functions for the Automat.

Please don't use these functions unless advised.

If you operate them in error, it may cause the embroidery machine to malfunction.

(For Preferences screen details, refer to "Chapter 11, Preferences)

Test functions :

Key History Icon

CAN Icon

If you enter a Test function in error, please do nothing and press the **PREVIOUS Icon**

to exit its function.

- Please do not operate these functions unless advised by your technician or distributor.

MEMO

Chapter 4 Manual Operations

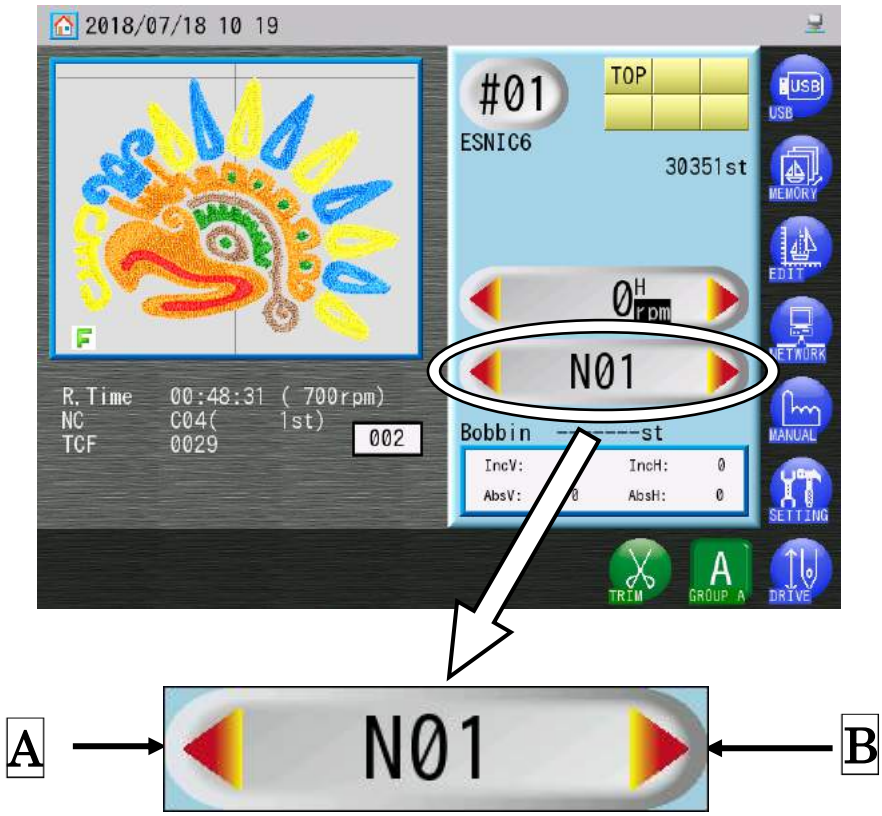
This chapter contains information on the manual operations of the machine.

1. Color (Needle) Change
2. Presser Foot Height Adjustment
3. Manual Operations Menu
4. Trimmer
5. Thread Clamp
6. Appliqué
7. Needle Bar Lowering
8. Change Frame
9. Pantograph Centering
10. Laser Pointer
11. Main Motor Brake
12. Lubrication
13. Head Selection
14. Head Manual Switch
15. Sequin Left / Right Switch
16. Holding the Needle at Lowest Dead Point
17. Manual Roll-to-Roll Feature
18. WS
19. Pick Up

1. Color (Needle) Change

1-1. Changing Needles from the Main Screen

Instructions to change (move) a needle bar (color) from the Main Screen.

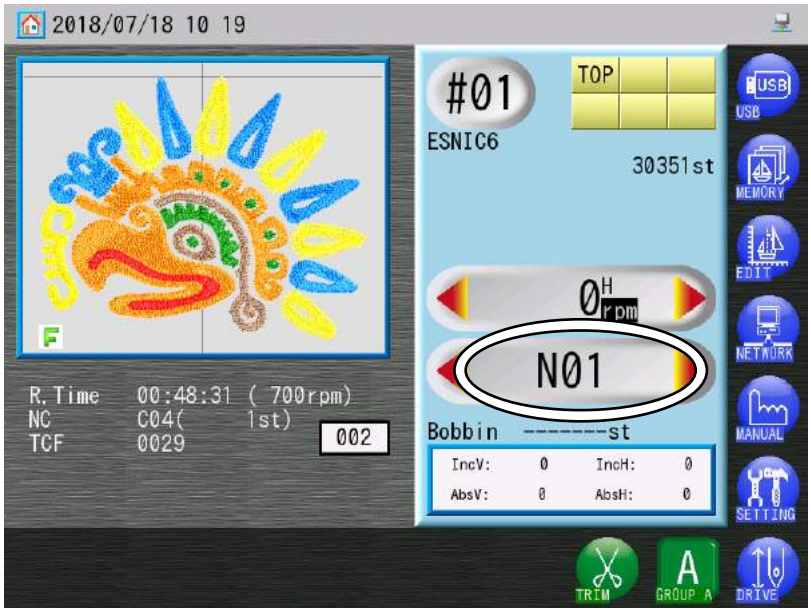


1) Press the **Left Arrow Icon** A to go to the next smaller needle number.
Press the **Right Arrow Icon** B to go to the next larger needle number.

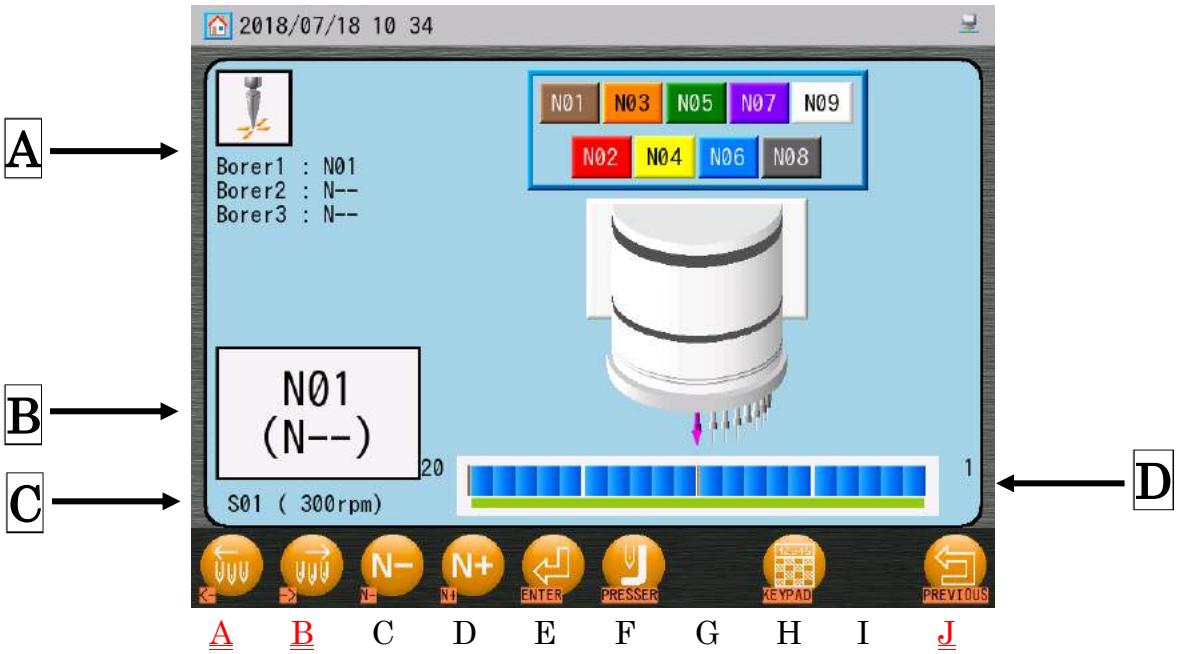
1-2. Manual Color Change

Instructions for changing needle bars (colors) manually

1) Press the center area of the Needle bar display (Anywhere except the Arrow Icons) on this screen.



2) This opens the following Color Change Screen.



A B C D E F G H I J

A : Needle numbers used for Borer settings

Refer to “Chapter 11, 3. MC1 List”.

B : Current needle number. The number inside the brackets is the new needle number you want to change to.

Refer to “1-3. Direct Needle” about the needle number after change.

C : (S01~S10) Speed setting per needle, for the current needle. If “0” no setting is shown.

Refer to “Chapter 9, 4. Speed Setting per Needle”.

D : Head status (Shows what heads are Enabled / Disabled)

This indication reflects the status of the Head Cancel Switches, Head Selection or Head Manual Switch settings.

Refer to “13. Head Selection” and “14. Head Manual Switch”.

3) Changing Needle Numbers one by one.

Press the Icon above “A” to go to the next smaller needle number.

Press the Icon above “B” to go to the next larger needle number.

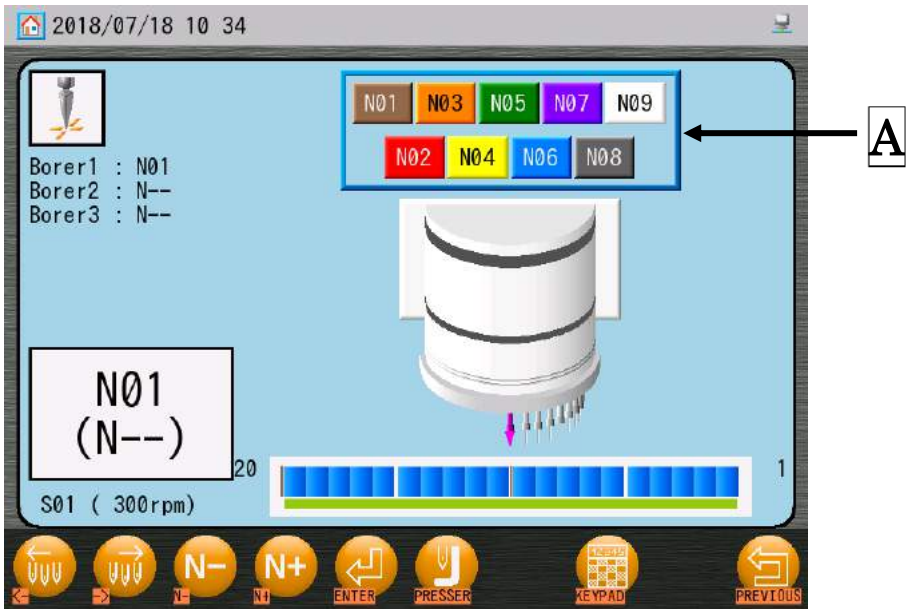
4) Press the **PREVIOUS** Icon above “J” to return to the main screen.

✧ When the machine is first powered on, the machine must be oriented to the correct stop position to make a needle change. In this case, after following the steps above, the D14 message will display, prompting you to press the start switch to execute the needle change.

1-3. Direct Needle

Instructions for selecting a specific needle

1) Display the Color Change Screen. Refer to “1-2. Manual Color Change”.



2) The needle number in the box shown in parenthesis is the new needle number you want to change to directly.

Press the N− Icon above “C” to select the next smaller needle number.

Press the N+ Icon above “D” to select the next larger needle number.

Press the **ENTER** Icon to change needles.

3) The needle number can be changed by selecting the number in area A.

Select a needle number in area A and press the **ENTER** Icon to change needles.

4) The needle number can be changed by using the numeric keypad.

Press the **KEYPAD** Icon above “H” to display the numeric keypad.

Input the needle number. Refer to “Chapter 3, 9. Keypad” for details.

✧ When the machine is first powered on, the machine must be oriented to the correct stop position to make a needle change. In this case, after following the steps above, the D14 message will display, prompting you to press the start switch to execute the needle change.

2. Presser Foot Height Adjustment (Optional Device)

This feature is only for machines that have the Presser Foot Height Adjustment option.

If the shaft stop position is not seen, this feature is unavailable.

1) Display the Color Change Screen. Refer to “1.2 Manual Color Change”.

2) Press the **PRESSER** Icon to display the Automatic Presser Foot Height Adjustment screen.

A B C D E F G H I J

The list on the left side of the screen shows the needle number (Number) and Presser Foot Height (Value).

3) Select a needle number to in the list.

4) Press the **MINUS** Icon above “A” to select the next smaller height value.

Press the **PLUS** Icon to select the next larger height value.

You can also use the numeric keypad on the right side of the screen to select values. Refer to “Chapter 3, 9. Keypad” to input values.

3. Manual Operations Menu

Various manual operations can be done in this menu.

3-1. Displaying Manual Operation Menu

1) Press the **MANUAL** Icon on the Main Screen.

2) The Manual Operations Menu is displayed.

3-2. Manual Operations

Manual operations are accessed from this menu

Trimmer : Cuts the thread manually

Thread Clamp : Opens and Closes the thread clamps manually

Appliqué

: Lowers the presser foot for easier Applique placement

Needle Bar Lowering

: Lowers the needle bar

Frame Change : Moves pantograph frame out manually

Holding Needle at Bottom Dead Center : Lowers presser foot to BDC manually

Pantograph Centering : Moves the pantograph/frame to the center of the pantograph sub-soft limits

Multi-Point : Allows multiple pantograph point positions to be assigned

Pantograph can be moved to assigned point positions.

Laser Pointer : Turns the Laser pointer ON/OFF

Main Shaft Brake : Release and Hold the main shaft brake manually

Lubrication : Automatic Lubrication device settings for lubricating the hooks and sewing heads.

Head Selection : Controls which Sewing Heads are Enabled or Disabled by pattern data function

Head Manual Switch : Controls which Sewing Heads are Enabled or Disabled manually

Sequin Right / Left Change-over: Changes Sequin device from Right or Left on all heads

Roll-to-Roll : Operates Roll-to-Roll fabric clamping manually

Pick up : Picks up the bobbin thread to the top of the fabric (for kinkoma).

Re-Setting Origin : Used to change the sewing position, when in the middle of sewing a design (Repair work)
Refer to “Chapter 9, 13. Re-Setting Origin”.

4. Trimmer

4-1. Trimming Top and Bobbin threads

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **CUT** Icon to display the Trimmer screen.

A B C D E F G H I J

D14 message “Start with Start Bar/Switch” is shown.

3) Press the Start Bar or Switch to activate the trimmers.
Ensure your safety and others before starting.

✧ The Head Cancel Switch can also be used on any head to enable the trimmers.
Toggle a Head Switch ON-OFF-ON within 1.5 seconds. This will cause the LED on all Heads to blink Green for 3 seconds.
During these 3 seconds, Start the machine to activate the trimmers.

4-2. Trimming the Bobbin thread only

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **CUT** Icon to display the Trimmer screen.

A B C D E F G H I J

3) Press the **BOBBIN** Icon above "A" to trim the bobbin thread only.

Use the **CLEAN** Icon above "B" to open the trimmers for cleaning mode.

Press the **CLEAN** Icon again to exit the cleaning mode.

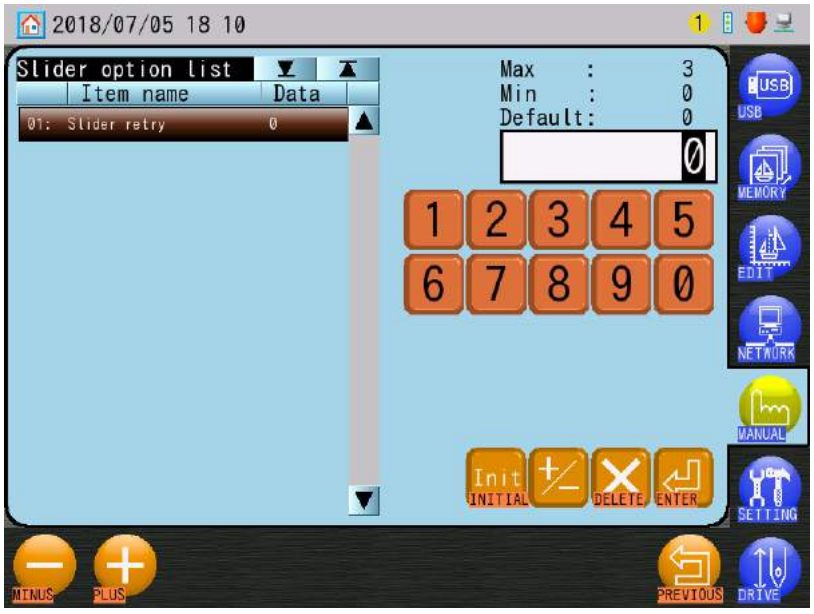
Use the **SLIDER** Icon to open the slider retry menu.

- ✧ If a lot of Automending or Stitch Back action is done without trimming, it may cause the bobbin thread to break. To prevent this, trimming the bobbin beforehand is effective.
- ✧ Cleaning mode is not available on all models, depending on trimmer type.
- ✧ Use Cleaning mode to clean the trimmers.

4-3. Slider Retry setting

Sets the number of times the slider solenoid retries when a slider error occurs.

1) Press the **CUT** Icon and then the **SLIDER** Icon to open the slider retry menu.



A B C D E F G H I J

2) Press the **MINUS** or **PLUS** Icons to change the setting value.

The numeric key pad on the right side of the screen can also be used.

Refer to “Chapter 3, 9. Keypad” for details.

* Set the value to 0 to for default slider movement.

5. Thread Clamp

1) Press the **MANUAL** Icon to display the Manual menu.

2) Every time the **CLAMP** Icon is pressed, the thread clamp opens or closes.

Press this **CLAMP** Icon to close the clamp and hold the thread.

Press this **CLAMP** Icon to open the clamp and release the thread.

6. Appliqué

6-1. Manual Appliqué

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **APPLIQUE** Icon to display the Appliqué screen.

In the case where the **NDL DOWN** Icon is displayed, please see procedure "6-2. Switching Appliqué and Needle Bar Lowering", to change back to Appliqué.

A B C D E F G H I J

The D14 message "Start with Start Bar/Switch" is shown.

3) Press the Start Bar or Switch to activate Appliqué.

Ensure your safety and others before starting.

4) Push the needle bar down manually to lower the needle just above the fabric.

5) Repeat steps 1) ~ 3) again, to return the take-up levers back to the proper stop position.

6-2. Switching Appliqué and Needle Bar Lowering

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **APPLIQUE** Icon to open the Appliqué screen.

A B C D E F G H I J

3) Press the **CHANGE** Icon to switch to Needle Bar Lowering.

Press the **CHANGE** Icon again to return back to Appliqué.

The Manual operations Icons also changed from to .

7. Needle Bar Lowering

This function automatically lowers the needle bar (presser foot) for positioning the fabric. This makes fabric positioning easier.

1) See “6-2. Switching Appliqué and Needle Bar Lowering” to change to Needle Bar Lowering.

2) Press the **NDL DOWN** Icon to open the Needle Bar Lowering screen.

A B C D E F G H I J

2) Press a **HEIGHT** Icon to set height.

When this function is executed, the needle bars lower to the selected height.

There are 5 height settings based on the main shaft stop positioning:

Height 1 : 270 degrees

Height 2 : 275 degrees

Height 3 : 280 degrees

Height 4 : 285 degrees

Height 5 : 290 degrees

3) Press the start bar or switch to lower the needle bars.

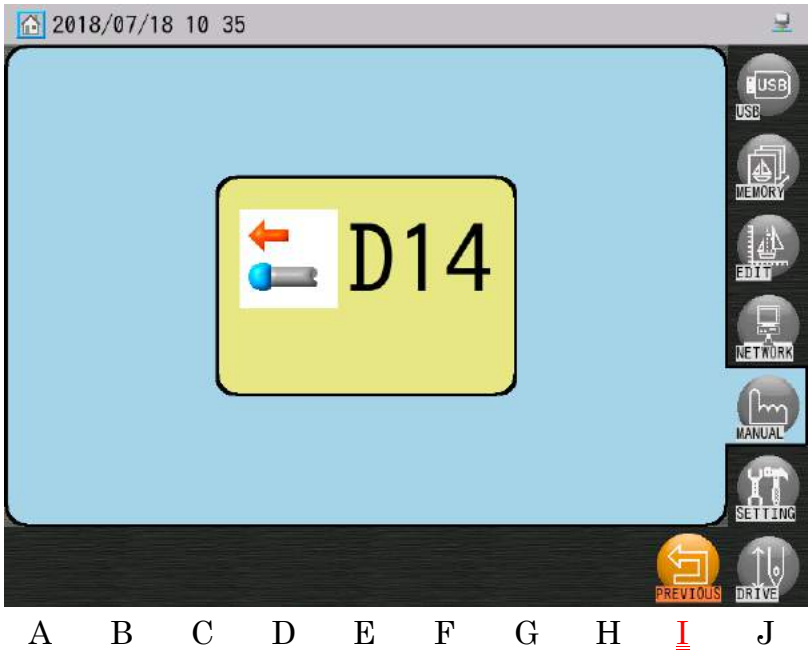
(Please ensure your safety and others before starting)

4) Repeat procedures 1) ~ 3) to return needle bars back to their original height position.

8. Change Frame

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **CHANGE** Icon to display the Change Frame screen.



D14 message “Start with Start Bar/Switch” is shown.

3) Press the Start Bar or Switch to move the pantograph frame out to change frames.
Ensure your safety and others before starting.

4) Restart or press the **PREVIOUS** Icon above “I” to return the frame to the original position.

9. Pantograph Centering

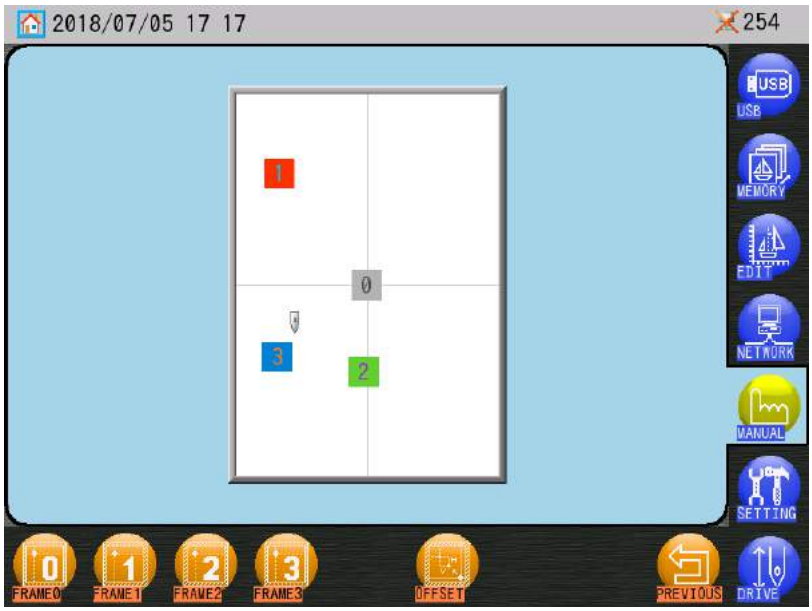
Moves the pantograph/frame to the center of pantograph sub-soft limits.

Refer to “Chapter 8, 4. Sub-Soft Limits”.

9-1. Using the Centering Icon

1) Press the **MANUAL** to display the Manual menu.

2) Press the **CENTER** Icon to display the Pantograph centering screen.



A B C D E F G H I J

3) Press the Icon above “A” to move the pantograph/frame to center of the MC2 Frame Limit parameters (03~06).

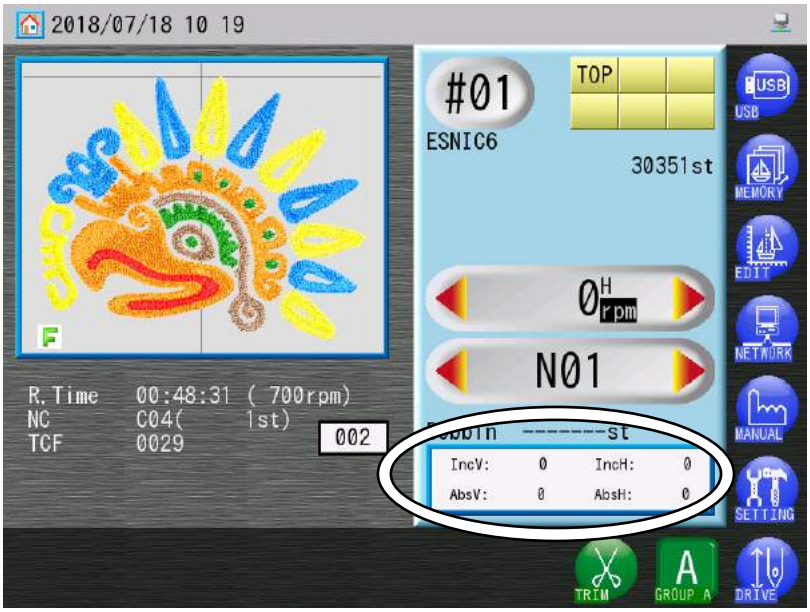
Press the Icon above “B”, Icon above “C”, or Icon above “D” to move the pantograph/frame to the center of Sub-Soft Limits 1, 2, 3.

Use the **OFFSET** Icon to open the Pantograph Centering Offset settings.

- Sub-Soft Limits 1~3 are assigned in Program Item 14 “Frame type”.
- In Standby mode, Icons 0, 1, 2, 3 are shown in this menu. Pressing one of these icons **Centers** the pantograph/frame and **Sets** the frame number for Program Item 14 “Frame type” for the currently selected design.
- In Drive mode, only the Icon number as set by Program Item 14 “Frame type” is available.

9-2. Centering from Machine Information Area

1) Press the Pantograph Moving Distance Area on the Main Screen.



2) The Pantograph Centering screen is displayed.

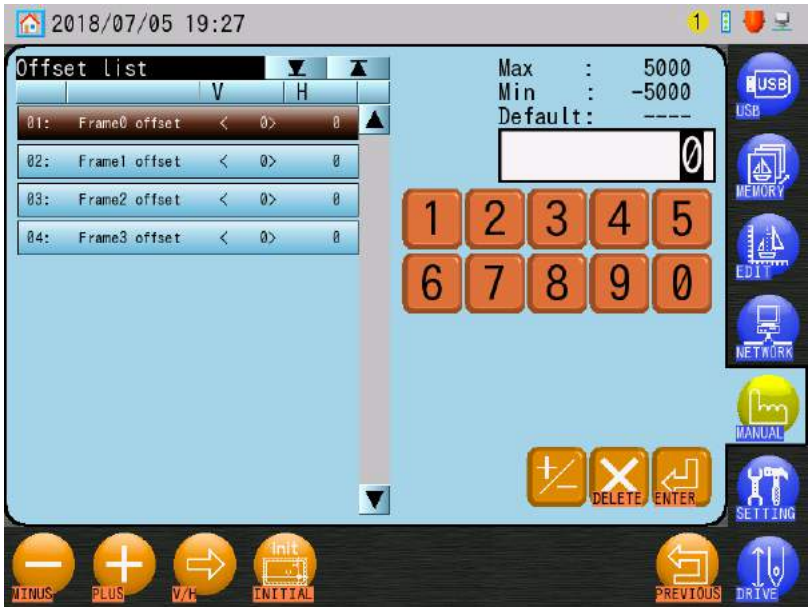
Refer to “9-1. Using the Centering Icon” for details.

9-3. Pantograph Centering Offset Settings

1) Press the **MANUAL** to display the Manual menu.

2) Press the **CENTER** Icon, then the **OFFSET** Icon to display the Pantograph Centering Offset settings.

These settings allow the centering position to be changed to an offset position.



A B C D E F G H I J

3) Select a Frame offset setting in the list.

4) Use the **MINUS** or **PLUS** Icons to change the settings.

The numeric keypad can also be used to change settings.

Refer to “Chapter 3. 9, Keypad” for changing settings.

Press the **V/H** Icon to switch from V and H settings.

To initialize all settings, press and hold the **INIT** Icon.

Afterwards press the **YES** Icon to confirm changes, or **NO** Icon to cancel.

9-4. Pantograph Centering Offset Settings

Item	Function	Setting range	Default
Frame0 offset	Sets the offset distance from centering position for Frame0.	-5000～5000	0
Frame1 offset	Sets the offset distance from centering position for Frame1.	-5000～5000	0
Frame2 offset	Sets the offset distance from centering position for Frame2.	-5000～5000	0
Frame3 offset	Sets the offset distance from centering position for Frame3.	-5000～5000	0

10. Laser Pointer

This function is only available on machines with a laser pointer.

Laser pointer indicates where the needle is going to sew.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **MARKER** Icon to turn the Laser Pointer ON or OFF.

11. Main Motor Brake

This feature is only for machines that have a main motor brake.
The main shaft of the machine can be rotated by hand after releasing the brake.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Pressing the **BRAKE** Icon for the Main motor brake, alternates between releasing and activating the main shaft brake.

Press the Icon to release the brake.

Press the Icon to activate the brake.

12. Lubrication

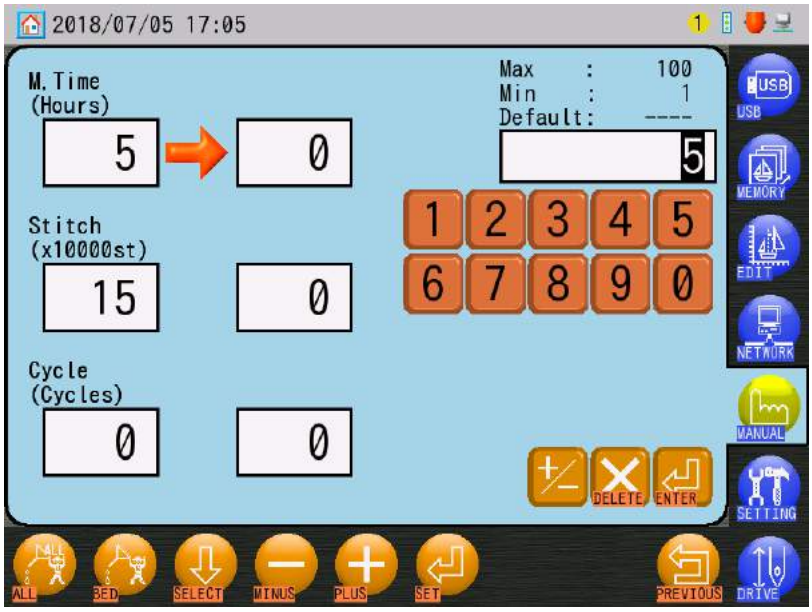
This function is used with embroidery machines with the automatic lubrication system, to manually lubricate the sewing hooks and sewing head.

"12-4. Lubrication Message" is available even if the machine is not equipped with the automatic lubrication system.

12-1. Setting Information Display

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **LUB** Icon to display the Lubrication screen.



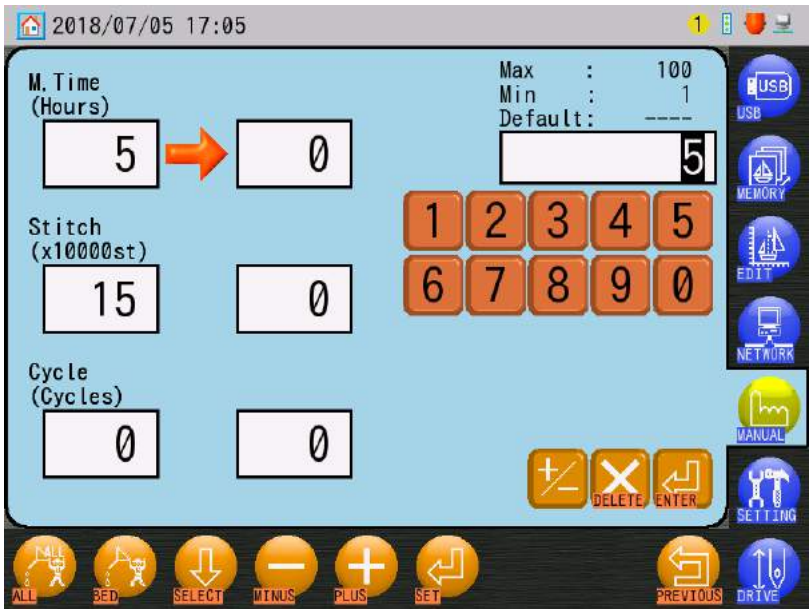
The values in the Right boxes show the current active values.

The values in the Left boxes show the changes when made.

12-2. Manual Operation

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **LUB** Icon to display the Lubrication screen.



A B C D E F G H I J

3) To lubricate the Head and Hook : Press and hold the **ALL** Icon above "A" for about 5 seconds, until the Automat double beeps and the lubrication starts.

To lubricate just the Hook : Press and hold the **BED** Icon above "B" for about 5 seconds until the Automat double beeps and the lubrication starts.

12-3. Automatic Lubrication Settings (Optional Lubrication Device installed)

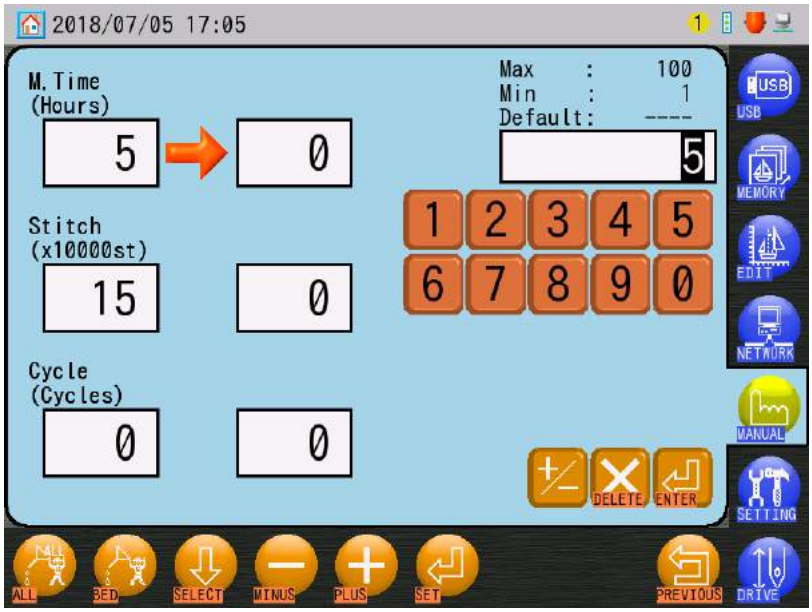
Instructions for setting the automatic lubrication frequency.

The frequency can be set by time and stitch count. When either the time or stitch counter, counts down to 0, causes the lubrication to starts. When the lubrication starts, both the time and stitch counter are automatically reset.

When the Cycle value is set to 0, the automatic lubrication is turned Off.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **LUB** Icon to display the Lubrication screen.



A B C D E F G H I J

3) Use the **SELECT** Icon above “C” to select an item to change.

4) Changing values.

Press the **MINUS** Icon to decrease the value.

Press the **PLUS** Icon to increase the value.

The numeric keypad (on the right side of the screen) can also be used to change values.

Refer to “Chapter 3, 9. Keypad” to input values.

5) Press the **SET** Icon above “F” to save the changed values.

12-4. Lubrication Message

Set a time and number of stitches to display the lubrication message reminder.

The time and number of stitches as set in the lubrication settings will automatically count down when the machine sews.

When either the time or number of stitches counts down to 0, the machine will stop and display the lubrication message to the operator so they can oil manually.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **LUB**

Icon to display the Lubrication screen.

3) Refer to “11-3. Automatic Lubrication Settings” and change the Cycle number to **-1**.

4) Press the **SET** Icon above “F” to save the value.

12-5. Lubrication Settings

Item	Function	Setting range	Default
M. Time (Operation time of the embroidery machine)	Sets the operating time in hours for automatic lubrication	1～100	5
Stitch	Sets the number of stitches for automatic lubrication (set per 10000 stitches)	1～100 [x 10000]	15 [x 10000]
Cycle	Sets the number of hook lubrication cycles needed before lubricating the heads. 0 : Automatic lubrication turned OFF -1 : Displays Lubrication message (Automatic lubrication OFF) 1～10 : Number of Cycles the hook is lubricated before the heads	-1～10	2

* When a manual lubrication is activated, the lubrication setting values are reset as explained below:

When a Head and Hook manual lubrication is performed by pressing the **ALL** Icon above “A”, the time, number of stitches, and cycles are reset.

When a Hook only manual lubrication is performed by pressing the **BED** Icon above the “B”, only the time and number of stitches are reset.

13. Head Selection

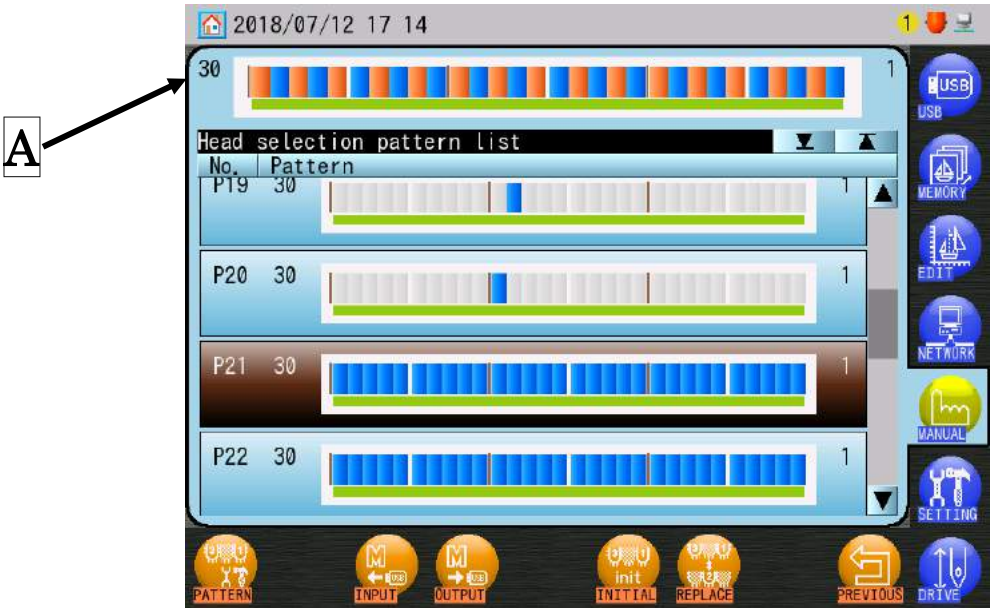
This Automat operation allows the embroidery heads to be turned ON/OFF using a head pattern selection menu.

13-1. Selecting a Head Pattern

Select a Head Pattern that turns the heads ON/OFF according to the pattern.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **HEAD SEL** Icon to display the Head Selection screen.



A : Current ON/OFF head status information is displayed.

Blue : ON

White : OFF (by head pattern data)

Black : OFF (head is not included in pattern)

Red : OFF (Head turned off by cancel switch or manual switch operation)

Example: The head cancel switch is OFF, but the pattern data is set for ON.

3) Select a head pattern in the list.

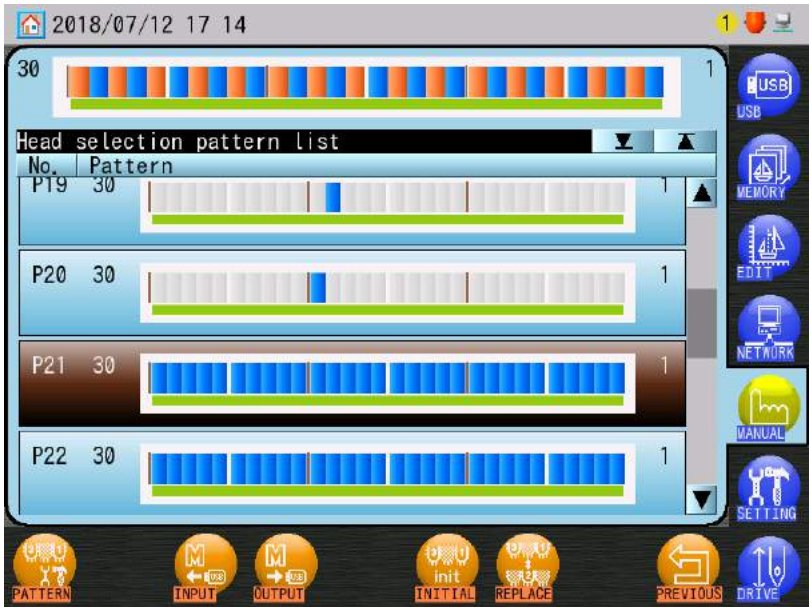
13-2. Create/Edit Head Pattern

The following 3 points can be used to create head pattern data.

- Group setting: Number of heads to form groups of heads in the pattern
- Data setting: Selects the Heads in the group that are on or off.
- Point setting: Sets the point or points where the groups start in the pattern.

1) Press the **MANUAL** Icon to display the Manual menu.

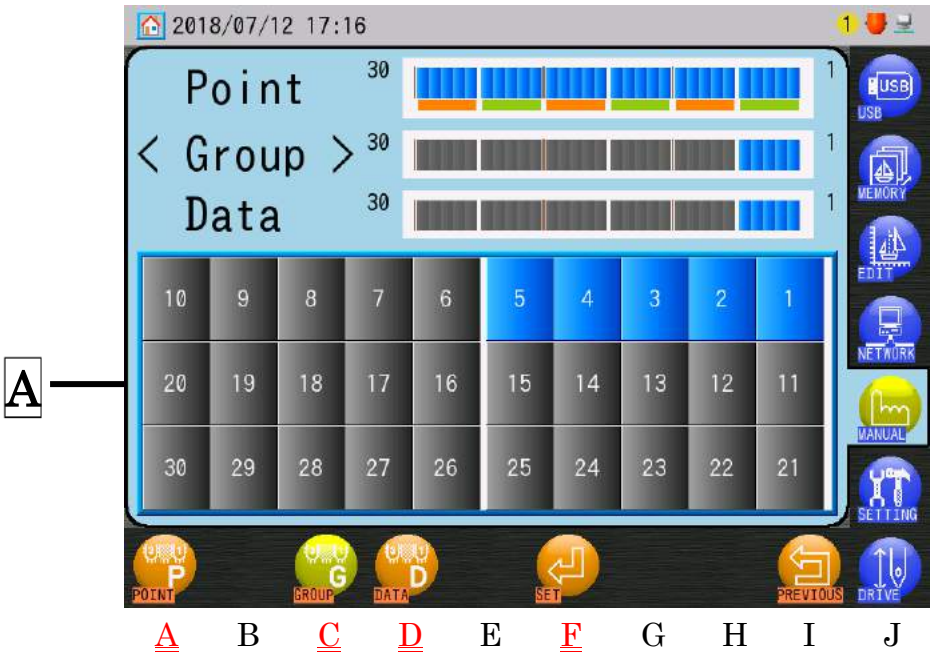
2) Press the **HEAD SEL** Icon to display the Head Selection screen.



A B C D E F G H I J

3) Select a head pattern in the list to edit.

4) Press the **PATTERN** Icon above “A” to display Head Pattern Edit screen.



5) Press the **GROUP** Icon above “C” to change the number of heads in a Group.

6) Select the number of heads in a Group in area A.

* When the number of heads in a group is changed, the information for the Group and Point data is cleared.

7) Press the **DATA** Icon above “D” to change the Data settings.

8) Select the Data numbers in area A to set whether they are OFF or ON.

9) Press and hold the **POINT** Icon above ‘A” to set a start Point position for the Groups.

10) Select the start Point positions for the Groups in area A .

* Setting Point positions are optional.

* By default, the point position for each group interval is set at 0 to allow the maximum amount of heads to be sewn. Setting point positions allows gaps to be inserted between the groups if needed.

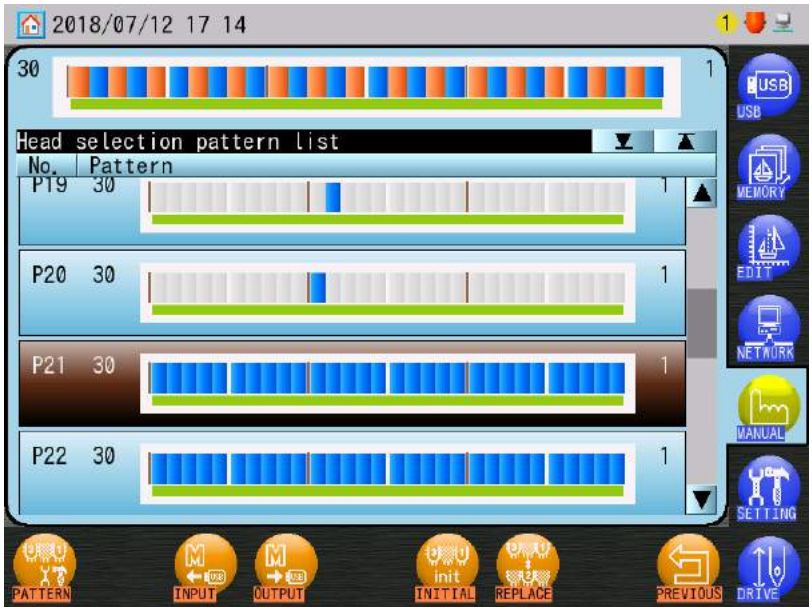
11) Press the **SET** Icon above “F” to save the settings and return to the Head Selection screen.

13-3. Head Pattern Data Output

Head pattern data can be saved to a USB flash drive.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **HEAD SEL** Icon to display the Head Selection screen.



A B C D E F G H I J

3) Press the **SAVE** icon above “D”.

4) A confirmation screen is displayed and the pattern data is saved to USB.
Refer to “Chapter 3, 6. Confirmation Screen”.

* Pattern data is saved as a file name of “PATTERN.HSP”.
If a “PATTERN.HSP” already exists on the USB, it’ll be overwritten.

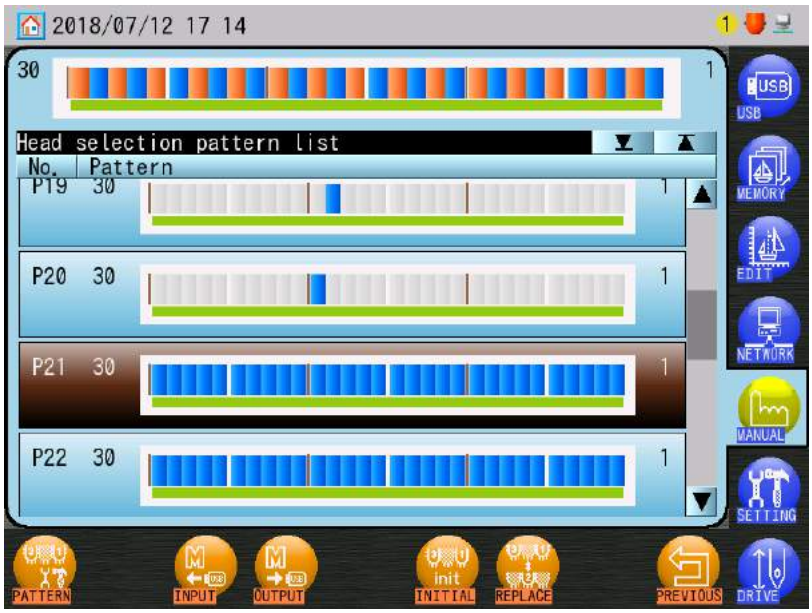
13-4. Head Pattern Data Input

Head pattern data can read in by a USB flash drive.

1) Insert a USB flash drive with a “PATTERN.HSP” data file on it.

2) Press the **MANUAL** Icon to display the Manual menu.

3) Press the **HEAD SEL** Icon to display the Head Selection screen.



A B C D E F G H I J

4) Press the **LOAD** Icon above “C”.

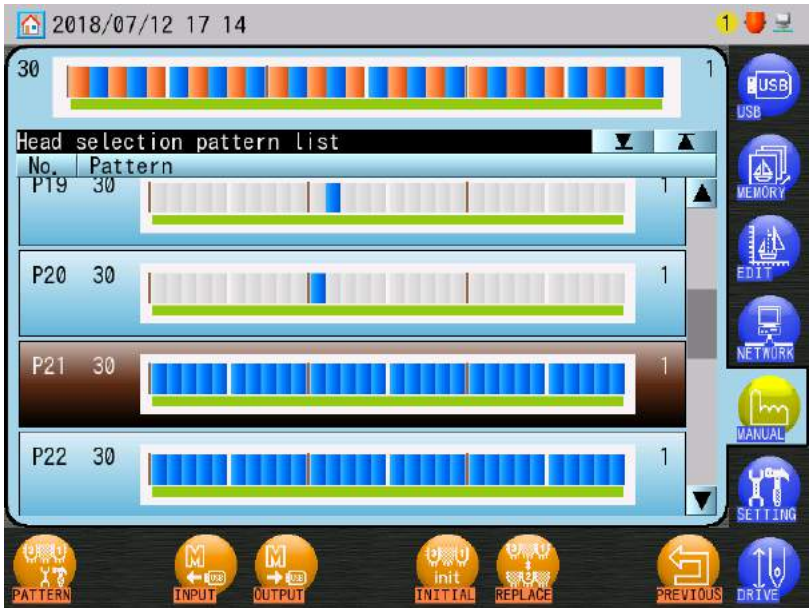
5) A confirmation screen is displayed and the pattern data is read in.

Refer to “Chapter 3, 6. Confirmation Screen” for details.

13-5. Head Selection Pattern Initialization

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **HEAD SEL** Icon to display the Head Selection screen.



A B C D E F G H I J

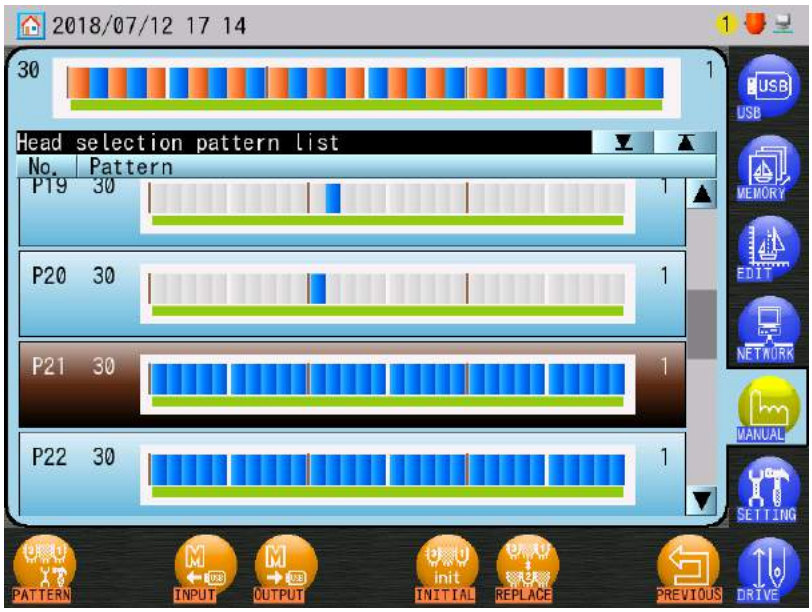
3) Press and hold the **INITIAL** Icon.

4) A confirmation screen opens. Press the **YES** Icon and all the patterns are initialized. Refer to “Chapter 3. 6, Confirmation Screen” for details.

13-6. Exchanging and Copying Head Selection Patterns

1) Press the **MANUAL** Icon to display the Manual menu.

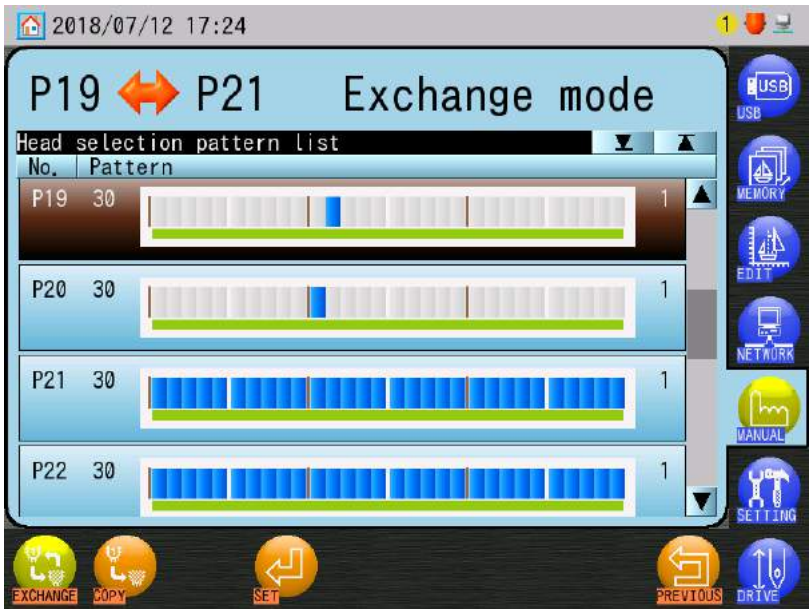
2) Press the **HEAD SEL** Icon to display the Head Selection screen.



A B C D E F G H I J

3) Select a pattern to be changed.

4) Press the **REPLACE** Icon to display the Head Selection Pattern Exchange and Copy screen.



A B C D E F G H I J

Press the **EXCHANGE** Icon to enter Exchange mode.

Press the **COPY** Icon to enter to Copying mode.

5) Select a pattern to exchange with or be copied to.

6) Press the **SET** Icon to make the change.

14. Head Manual Switch

Allows the embroidery heads to be turned ON or OFF using the Automat.

14-1. Manual Change

Manually switches the heads ON or OFF.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **HEAD MAN** Icon to display the Head Manual Switch screen.

Main screen A : Displays ON/OFF head status information.

Synthesis : Displays current ON/OFF head status.

Active Heads : Displays ON/OFF head status as set by the head cancel switches.

Blue : ON

White : OFF (Heads turned off by manual switch operation)

Red : OFF (Head turned off by cancel switch)

Example: Head cancel switch is OFF but head manual switch is set to ON.

3) Select heads in area B to set them ON or OFF with this head manual switch function.

14-2. All Heads ON/OFF

Switch all heads ON or OFF, at once.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **HEAD MAN** Icon to display the Head Manual Switch screen.

A B C D E F G H I J

3) Press the **ALL** Icon to turn all the Heads ON.

Press the **ALL** Icon again to turn all the Heads OFF.

14-3. Heads ON/OFF Using Patterns

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **PATTERN** Icon above “B” to turn the heads ON/OFF according to the following standard patterns. Each time the **PATTERN** Icon is pressed, advances to the next head pattern in the list.

Head	... 13 12 11 10 9 8 7 6 5 4 3 2 1
Pattern 1	● — ● — ● — ● — ● — ● — ●
Pattern 2	— ● — ● — ● — ● — ● — ● —
Pattern 3	● — — ●● — — ●● — — ●●
Pattern 4	— ●● — — ●● — — ●● — —
Pattern 5	● — — — ●●● — — — ●●●
Pattern 6	— ●●● — — — ●●● — — —
Pattern 7	— ●●●● — — — — ●●●●
Pattern 8	● — — — — ●●●● — — — —

● : Head manual switch ON

— : Head manual switch OFF

15. Sequin Left / Right Switch

Switches the Sequin device from Left or Right on all heads.

This function is only available on machines with Sequin devices.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **Sequin Left / Right** Icon to switch the Sequin devices left or right on all heads.

16. Holding the Needle at the Lowest Dead Point

This feature is only available for Roll-to-Roll machines.

Refer to “Chapter 11, 3. MC1 List” for settings.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **BOTTOM** Icon to display the Lowest Dead Point screen.

D14 message “Start with Start Bar/Switch” is shown.

3) Press the Start Bar or Switch to lower the needle into the fabric and stop.
Ensure your safety and others before starting.

4) Repeat Steps 1 to 3 to return the needle back to the normal stop position.

17. Manual Roll-to-Roll Feature

This feature is a manual operation for opening and closing the clamps on Roll-to-Roll machines.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **Roll-to-Roll** Icon to display the Roll-to-Roll screen.

Icons to operate the fabric clamps are displayed below.

A B C D E F G H I J

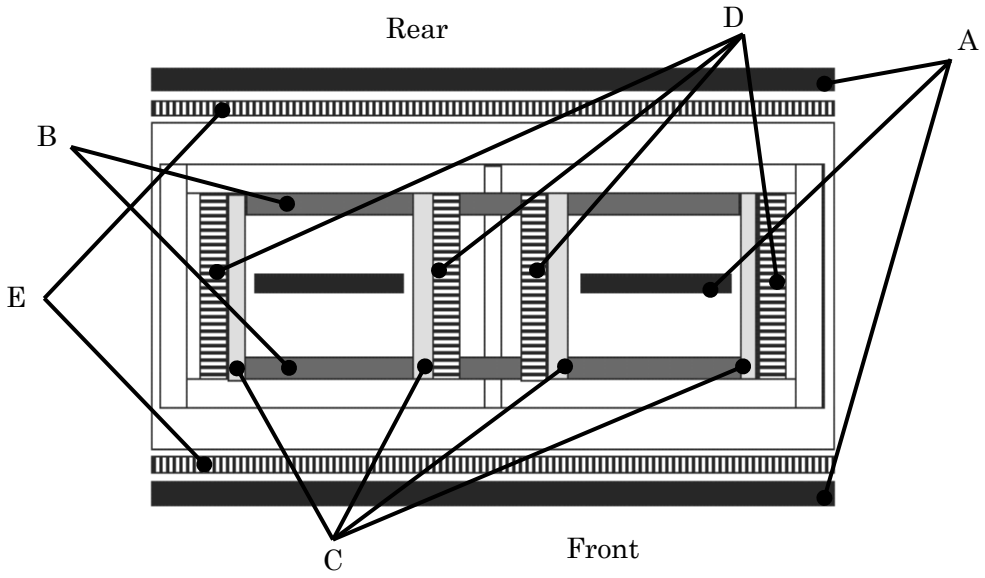
➢ See the frame drawing on the next page for clamp operations

Icon above “A” : A Clamps Close / Open

Icon above “B” : B and E Clamps Close / Open

Icon above “C” : C and D Clamps Close / Open

Icon above “D” : E Clamps Close / Open



A : Clamp by needle

B : Front and Back

C : Right and Left

D : Right and Left

E : Support Clamp

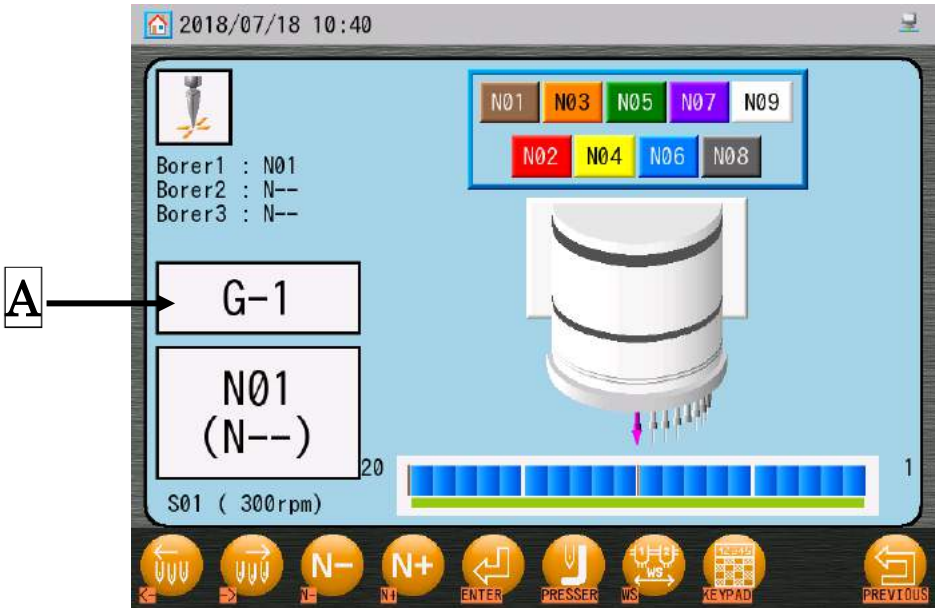
* A to E represents clamps.

18. WS

This function is available when the WS function setting is on.

Refer to “Chapter 11, 3. MC1 list” about setting the WS function.

1) Open the Color Change screen. Refer to “1. Color (Needle) Change”.



A B C D E F G H I J

A shows the current group number for WS.

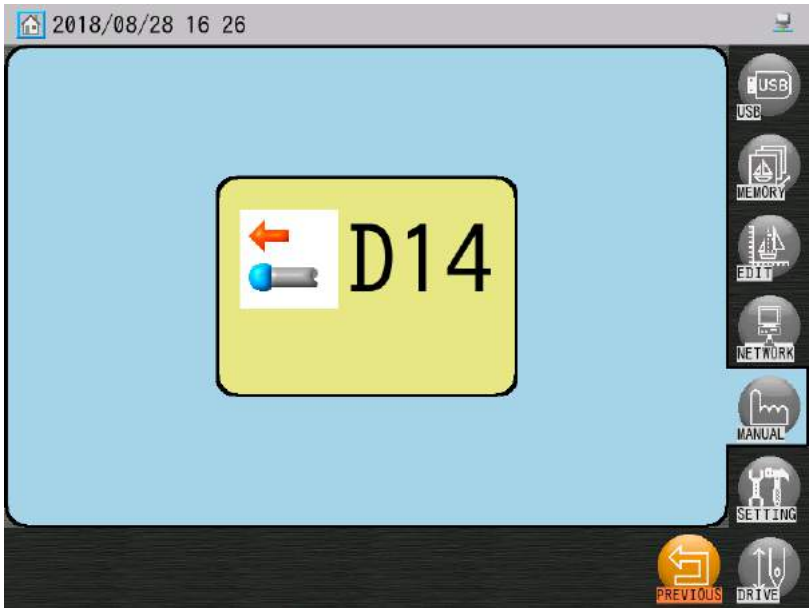
2) Press the **WS** Icon above “G” to change the WS head group number.

19. Pick Up

This function picks up the bobbin thread to the top of the fabric. Used for kinkoma technique of sewing metallic bobbin thread designs.

1) Press the **MANUAL** Icon to display the Manual menu.

2) Press the **PICK UP** Icon to open the Pick Up screen.



D14 message “Start with Start Bar/Switch” is shown.

3) Press the Start Bar or Switch.

Ensure your safety and others before starting.

4) The machine executes the Pick up operation.

Chapter 5 Loading / Saving Designs

This chapter explains how to input designs into machine memory.

1. Before Loading / Saving Designs
2. Before Using a USB Flash Drive
3. Loading Designs from a USB Flash Drive
4. USB Flash Drive Search with a Barcode
5. Saving Designs to a USB Flash Drive
6. USB Administration
7. ABC (COM) Mode
8. Loading through the COM port
9. Saving through the COM port

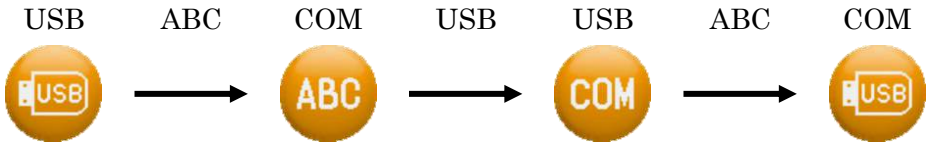
1. Before Loading / Saving Designs

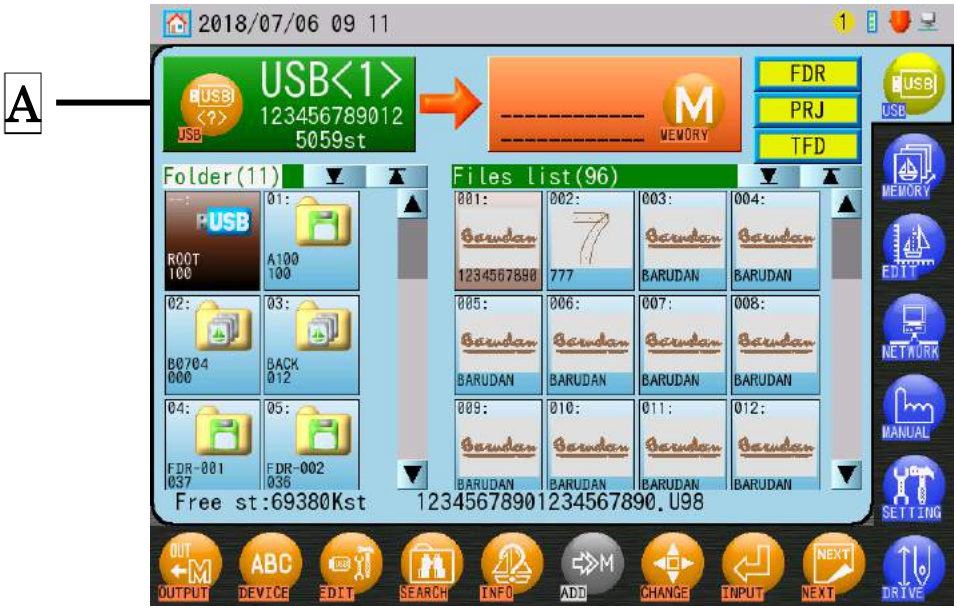
These instructions explain the general operations for using the USB Icon.

1-1. Selecting a device for Loading or Saving designs.

1) Press the **USB** Icon from the Main Menu to display the Loading / Saving Menu.

2) Press the **DEVICE Icon** above "B" to select the device used for Loading / Saving designs.





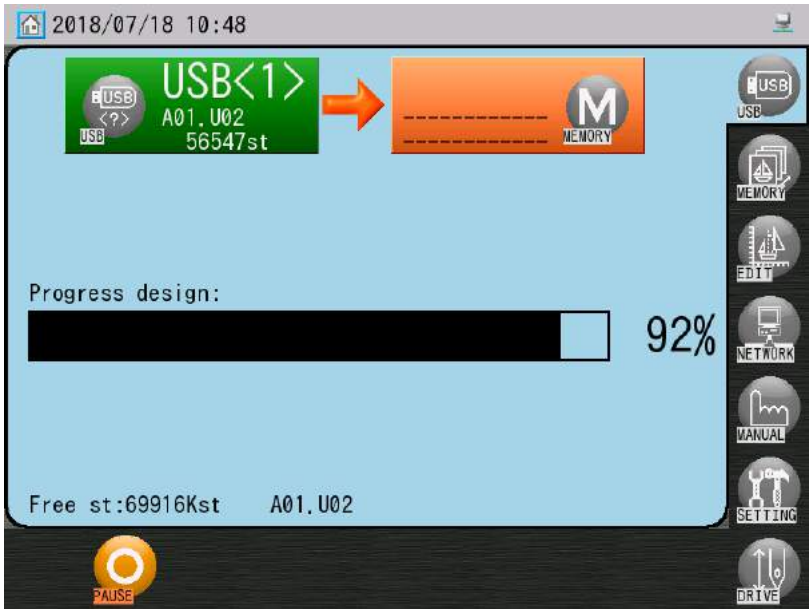
A Shows the current device selected and information about it.

The **Icon** shown above "B" is the next device to be selected.

1-2. Pause / Cancel

Instructions for Pause / Cancel operation during Loading and Saving.

1) Press the **PAUSE** Icon to Pause.



A B C D E F G H I J

2) While pausing, press the **STOP** Icon above "A" to stop the loading/saving.

Press the **RESTART** Icon above "B" to restart the loading/saving.

2. Before Using a USB Flash Drive

1. Outline

The USB Flash Drive can be used for the following:

1) Saving Design Files

-Save / load design files in FDR format (.U01).

-Save / load design files in the Network format (.PRJ). *1

-Save design files in TFD format (.DST and .DSB). *2

-Bitmap image for each design file and image can be viewed on computers.

-Memory Backup of all design files stored in the Automat.

2) System Software Update

Software can be updated using a USB Flash Drive.

3) Editing

The design files on the USB Flash Drive can be edited on computers.

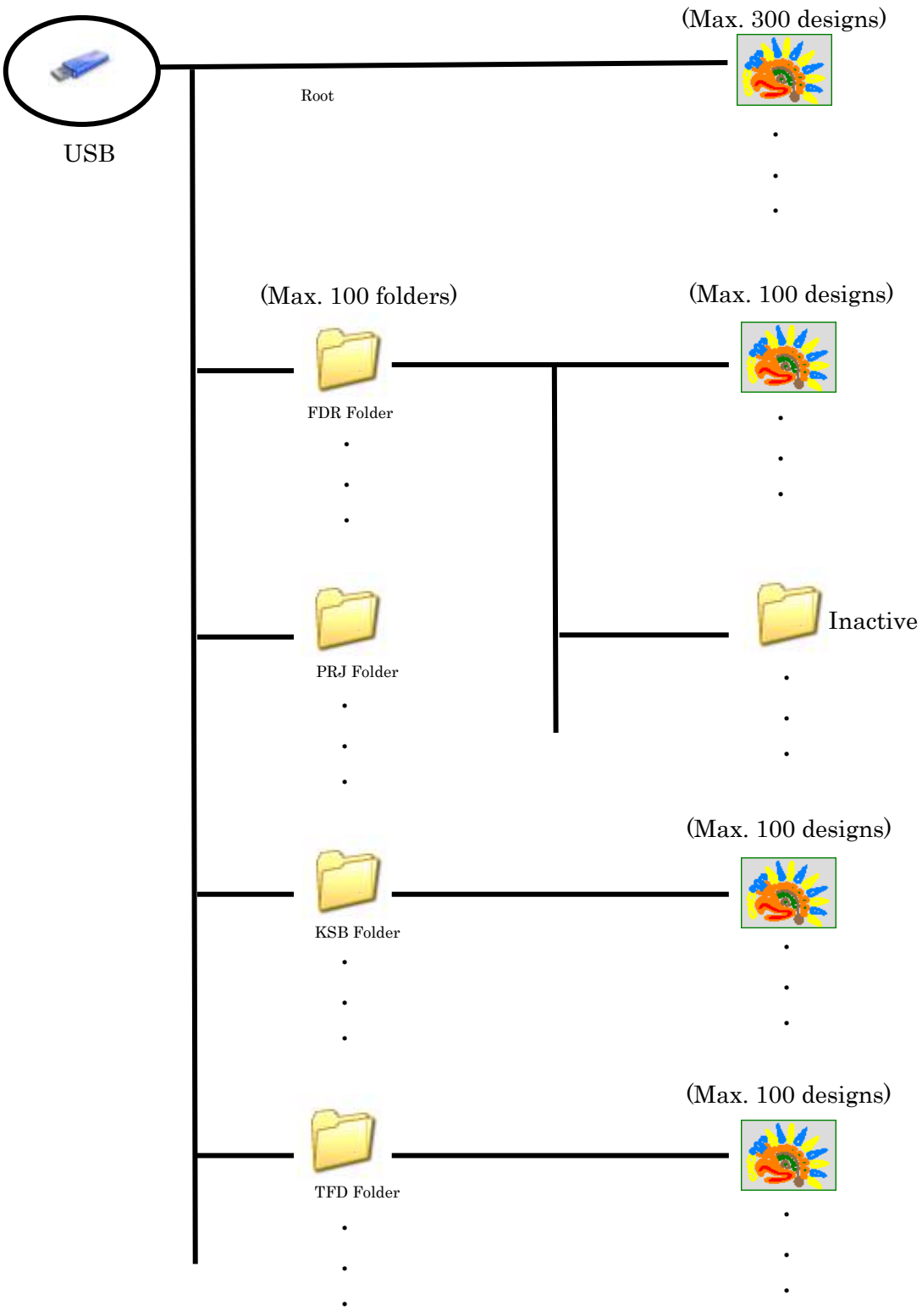
Designs in PRJ format (*1) can be edited using LEM Server software.

*1. PRJ format consists of a design file, Program parameters and a Bitmap Image file.

*2. The Automat cannot output the TFD format file to the USB Flash Drive. Use a computer to output TFD format files to a USB Flash Drive.

2. USB Flash Drive Basics

Designs can be saved directly to the USB root or in specific design folders, as follows:



* Folders within folders are Inactive. You may be able to see these folders on a PC, but they will be unavailable and not shown on the machine Automat.

Folders are divided into the following 5 types.

1) Root

・This icon shown on the Automat indicates the USB root.

・FDR, PRJ and TFD design formats can be saved here.

・A maximum of 300 designs can be saved.

2) FDR Folder

- This folder is shown as on the Automat.

- Only FDR format (.U01) designs can be saved in this folder.

- 100 designs can be saved in a FDR folder.

3) PRJ Folder

- This folder is shown as on the Automat.

- Only Network/ PRJ format designs can be saved in this folder.

- 100 designs can be saved in a PRJ folder.

4) KSB Folder

- This folder is shown as on the Automat.

- This folder is used to Backup all designs in memory in the Automat.

- Merging is not available.

5) TFD Folder

- This folder is shown as on the Automat

- Only TFD format (.DST and .DSB) designs can be saved in this folder.

- This file cannot be created on the Automat.

* When you make a folder on a USB Flash Drive, make sure the folder has one of the following format file extensions:

Example)	ABC. fdr	(FDR folder)
	ABC. prj	(PRJ folder)
	ABC. ksb	(KSB folder)
	ABC. tfd	(TFD folder)

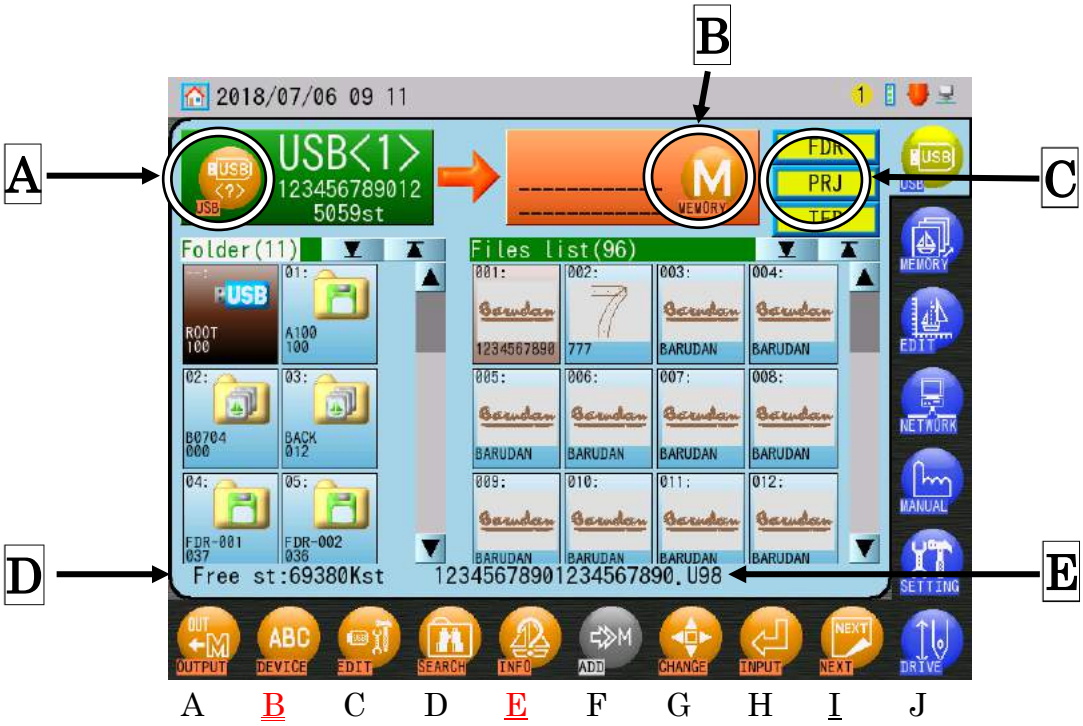
* NOTE: Do not edit the “System” folder on a USB Flash Drive. It may damage the system software.

3. Loading Designs from a USB Flash Drive

Instructions for loading a design from a USB Flash Drive to the KS Automat.

3-1. Loading a New Design

Press the **USB** Icon to display the USB Loading/Saving screen.



The folders are automatically aligned in alphabetical order and per the folder format (in order of FDR folder, PRJ folder, TFD folder).

A : Displays the name of the selected folder and number of designs in the folder.

B : Displays the Memory location number of where the design will be saved.

C : Selects the format type of designs to be displayed in the list (Root designs only).

D : Displays the amount of free Automat memory and selected design name.

E : Displays the designs in the selected folder.

- If the Input device is not USB, press the **Device Icon** above "B" to switchback to the USB Flash drive.

- Use the **USB** Icon in the upper left side of the screen to change USB ports.

1) Select a Design folder, by touching a folder in the list in area A.

2) Select a Design in the folder, by touching it in the file list in area E.

➢ If needing to select multiple designs for loading:

1. Double click a design to tag it with an (*) mark.
2. Choose more designs and double click them to tag them with an (*) mark.
3. Double click a design with an (*) again to untag it.
4. When loading multiple designs into memory, designs are automatically loaded into the next available empty locations. You cannot pick and choose locations.

➢ Use the **INFO** Icon above "E" to display design information for the selected design.

The design information display is the same as Memory design.

Refer to "Chapter 6, 3. Design Information" for more details.

3) If needing to change memory locations for loading the design, press the **MEMORY** Icon in the upper right side of the screen (area B) to choose a another location.

➢ By default, the next available empty memory location is automatically selected when entering the loading/saving screen so this step is usually not necessary.

A B C D E F G H I J

Press the **MEMORY** Icon again to return back to the Loading/Saving screen.

4) Press the **INPUT** Icon above "I" to load the design(s) into memory and exit back to the Main Screen.

3-2. Adding a Design

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Select a Design Folder by touching a folder in the list on the left side of the screen.

3) Select a Design to Add, by touching it in the file list on the right side of the screen.

4) Press the **MEMORY** Icon in upper right side of the screen to display the memory list screen.

A B C D E F G H I J

5) Select a Memory location to Add To, by touching a location in the list.

- If you need to view the selected memory location, press the **INFO** Icon.

  The design information display is the same as Memory design.

  Refer to "Chapter 6, 3. Design Information" for more info.

- When you select a memory location with a design already in it, the **ADD** Icon above "F" is available.

6) Press the **ADD** Icon above “F” to set in ADD mode.

7) Press the **INPUT** Icon above “I” to Add the design into the selected memory location and exit back to the Main Screen.

3-3. Design Search

Search designs on a USB Flash Drive.

1) Press the **USB** Icon to display the USB Loading/Saving screen

2) Press the **SEARCH** Icon above “D” to display the Character input keypad.

3) Type a design name to search and press the **ENTER** Icon.

- ➢ Refer to “Chapter 3, 9. Keypad” to input a design name to search.
- ✧ Wild card searching is supported by this feature.

  “*”:string of character

  “?” : any character

  Ex. If the following designs are on the USB Flash Drive

  ① 01_BARUDAN

  ② 02_BARUDAN

  ③ 03_BARUDAN

  ④ 04_BARUDAN

  ⑤ 05_DESIGN

  If you search: “*_BARUDAN” Designs 1~4 are displayed

  If you search: “??_BARUDAN” Designs1~3 are displayed

4) Designs search results are displayed.

A B C D E F G H I J

5) Choose a design to load from the list.

- If needing to select multiple designs for loading:
    1. Double click a design to tag it with an (*) mark.
    2. Choose more designs and double click them to tag them with an (*) mark.
    3. Double click a design with an (*) again to untag it.
    4. When loading multiple designs into memory, designs are automatically loaded into the next available empty locations. You cannot pick and choose locations.

Press the **ALL**

Icon to select or cancel all the designs listed.

6) Press the **INPUT** Icon to load the designs(s) and exit back to the Main Screen.

3-4. Loading a Memory Backup Folder

This function restores all the designs in memory as they were when the KSB memory backup folder was saved.

Important Notice : When this function is executed, all designs (in memory) will be overwritten by the backup memory.

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Select a KSB Memory backup folder in the list.

A B C D E F G H I J

3) Press the **BACKUP** Icon above “I” to display the backup input screen.

A B C D E F G H I J

4) Press the **YES** Icon to load the memory backup.

Press the **BACKUP** Icon again, to cancel and go back to the previous screen.

4. USB Flash Drive Search with a Barcode

Scan a design name barcode to search the USB Flash Drive.

4-1 Search

Scan the following 3 bar codes, in the order shown, to search for design on a USB Flash drive.

1) Search USB barcode

2) Design name barcode

3) OK barcode

* The example design name barcode above is for a design named “BARUDAN”.
To use this feature, you’ll need a barcode for the design names you want to search for. Refer to “4-2. Barcode List for the USB Flash Drive Search”.

1) Scan the USB search barcode first to open the character input keypad.

* To cancel the search, scan the Cancel barcode.

2) Scan the Design name barcode (example “Barudan”).

* To append a design name, scan the Append barcode. Then scan the design name extension barcode.

3) Scan the OK barcode to start searching.

4) If multiple designs are found, select a design in the list.

5) Scan the OK bar code again, to load the selected design into memory and exit back to the Main Screen.

4-2. Barcode List for USB Flash Drive Search

Use the barcode commands below for searching a USB Flash Drive.

Code	Description	Barcode
1	Sets Automat in USB Flash Drive Search mode	*$SEARCH USB$*
2	Design name to search	Barcode for design name
3	Appends the Design name	*$APPEND$*
4	OK to start the search and load the design	*OK*
5	Cancels the USB Search	*$CANCEL$*

* Refer to “Chapter 3, 8. Barcode Operation” for more info on barcodes.

* Please contact your local distributor about making barcodes.

5. Saving Designs to a USB Flash Drive

Instructions for saving designs from a BEKS Automat to a USB Flash Drive

5-1. Saving Designs

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Press the **OUTPUT** Icon to display the Memory to USB Flash Drive Output screen.

A B C D E F G H I J

3) Select a Design folder in the folder list on the right side of the screen to save the design to.

4) Select a design to save in the memory list on left screen.

Press the **INFO** Icon to display design information for the selected design.

- The design information display info is same as the memory design.
  Refer to “Chapter 6, 3. Design Information”.

- In the case where Program Items “Scale” or “Rotation” settings are changed, these changes will be saved with the design.

- If needing to select multiple designs for loading:
  1. Double click a design to tag it with an (*) mark.
  2. Choose more designs and double click them to tag them with an (*) mark.
  3. Double click a design with an (*) again to untag it.
  4. When loading multiple designs into memory, designs are automatically loaded into the next available empty locations. You cannot pick and choose locations.

5) Press the **OUTPUT** Icon above “I” to save the design to the USB Flash Drive.

5-2. Backup Designs in Memory

Backs up all the designs in memory.

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Press the **OUTPUT** Icon above "A" to display the USB output screen.

3) Select an empty KSB Memory backup folder in the folder list.

A B C D E F G H I J

3) Press the **BACKUP** Icon to display the backup screen.

A B C D E F G H I J

4) Press the **YES** Icon to start the backup.

To cancel the backup, press the **BACKUP** Icon again.

6. USB Administration

Administrative instructions for USB Flash Drives on the BEKS Automat.

6-1. Creating Folders

Instructions for creating folders on a USB Flash Drive

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Press the **EDIT** Icon above “C” to display the USB Administration screen.

A B C D E F G H I J

3) Press the **NEW** Icon “A” to display the character input keypad.

Select a folder type that you want to create from the upper left screen.

: FDR folder

: PRJ folder

: KSB folder

Refer to “Chapter 3, 9. Keypad” for details on keypad operations.

6-2. Deleting Folders

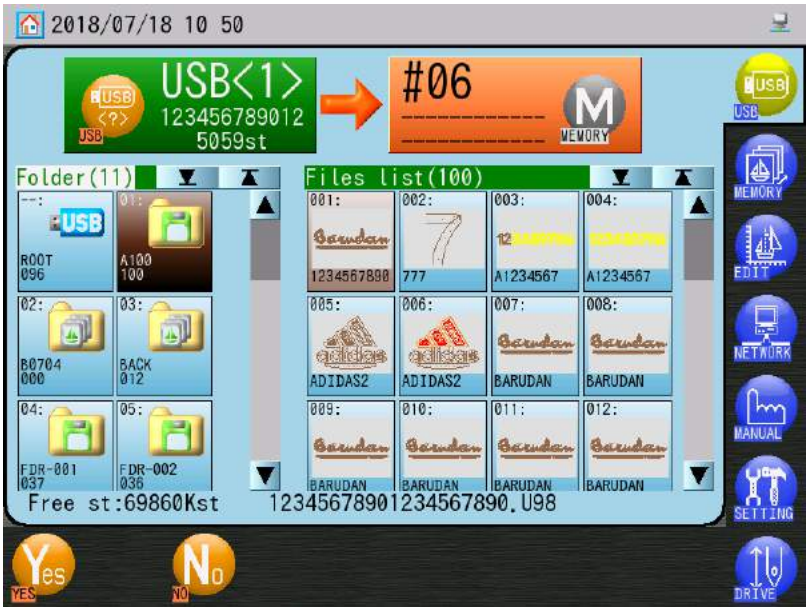
Instructions for deleting folders on the USB Flash Drive

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Select a folder you want to delete in the folder list.

3) Press the **EDIT** Icon above “C” to display the USB Administration screen.

4) Press the **DEL** Icon above “B” to display the deletion screen.



A B C D E F G H I J

5) Press and hold the **YES** Icon above “A” to delete the folder.

To Cancel the deletion, press the **NO** Icon above “C”.

6-3. Deleting Designs on a USB Flash Drive

Instructions for deleting designs in design folders on a USB Flash Drive

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Select the folder in the folder list, that contains the design you want to delete.

3) Press the **EDIT** Icon above “C” to display the USB Administration screen.

4) Press the **DEL** Icon above “E” to display the deletion screen.

5) Select the design you want to delete in the file list.

- If needing to select multiple designs for loading:
  1. Double click a design to tag it with an (*) mark.
  2. Choose more designs and double click them to tag them with an (*) mark.
  3. Double click a design with an (*) again to untag it.
  4. When loading multiple designs into memory, designs are automatically loaded into the next available empty locations. You cannot pick and choose locations.

Press the **X100**

Icon above "B" to select all the designs.

6) Press and hold the **YES**

Icon above "A" to delete the selected design(s).

Press the **NO**

Icon above "D" to cancel the deletion and exit back to the USB Administration screen.

6-4. Changing Folder Names

1) Press the **USB** Icon to display the USB Loading/Saving screen.

2) Select the folder in the folder list, that you want to change the name.

3) Press the **EDIT** Icon above "C" to display the USB Administration screen.

4) Press the **NEW** Icon above "C" to display the character input keypad.

Refer to "Chapter 3, 9. Keypad" to change the folder name.

7. ABC (COM) Mode

ABC (COM) mode is a function to automatically input a design into memory using the COM port.

ABC mode automatically overwrites the last design in memory, with the next design downloaded through the COM port. This action is started when cancelling Drive mode.

Refer to “8. Loading through the COM port” about connections.

✧ ABC mode setting cannot be changed or canceled while the machine is in Drive mode.

7-1. ABC (COM) Mode Setting

1) Prepare the COM device to send.

2) Press the **USB**

Icon to display the ABC Loading screen.

3) If the input device is not set to ABC, press the Icon above “B” to change to ABC mode.

Refer to “1. Before Loading / Saving Designs” for details on changing devices.

4) The ABC mode screen is displayed.

A B C D E F G H I J

5) Select a memory location number to use for loading designs in ABC mode.

* When a memory location with a design is selected, the design is overwritten.

➢ If you need to change the COM speed, press the **SPEED** Icon.

Refer to "8. Loading through the COM port" for details on changing COM speeds.

6) Press the **INPUT** Icon above "I" to set in ABC Drive Mode.

* When ABC mode is set, no other embroidery operations or memory locations are available for use.

7) In ABC Mode, the Automat will automatically download the next design sent and overwrite the previous one, when cancelling Drive Mode.

* ABC mode can only be used with U-code designs.
The design name read into memory will always be displayed as "ABC data".

7-2. Cancelling ABC (COM) Mode

Canceling ABC Mode.

This is only available when ABC mode is active.

1) Press the **USB**

Icon to display the ABC Loading screen.

A B C D E F G H I J

2) Press the **COM**

Icon above “B” to cancel ABC mode.

7-3. ABC Design Skip

Skip the next design being sent from the PC.

This is only available when ABC mode is active.

1) Press the **USB** Icon to display the ABC Loading screen.

A B C D E F G H I J

2) Press and hold the **SKIP** Icon above “C” to skip the next design being sent from the PC.

7-4. ABC Drive Mode

Automatically puts the ABC design in Drive mode after downloading.

This is only available when ABC mode is active.

1) Press the **USB** Icon to display the ABC Loading screen.

A B C D E F G H I J

2) Press the **A.DRIVE** Icon above “E” to toggle ABC Drive ON.

- **A.DRIVE** Icon will be shown in Yellow when turned ON.

- Press the **A.DRIVE** Icon again to toggle ABC Drive OFF.

  When ABC Drive is ON, designs are automatically put in Drive mode after they are downloaded.

7-5. ABC Drive Cancel Mode

ABC Drive Cancel mode automatically cancels Drive mode after a design is sewn one time. This is only available when ABC mode is active.

1) Press the **USB** Icon to display the ABC Loading screen.

A B C D E F G H I J

2) Press the **A.CANCEL** Icon to toggle ABC Drive Cancel ON.

➢ Press the **A.CANCEL** Icon again to toggle this feature OFF.

8. Loading through the COM port

A COM connector is located on the back of the BEKS Automat. Designs can be loaded from a device connected to the COM port. Devices using RS-232C can be connected and used. *Note: Must use a serial cross cable (Null Modem) for the connection.

8-1. Loading Designs through the COM port

1) Prepare a COM device to send designs.

2) Press the **USB** Icon to display the COM Loading/Saving screen.

- If the input device is not set to COM, press the Icon above “B” to change to COM mode. Refer to “1. Before Loading / Saving Designs” for details on changing devices.

- The next available empty memory location is automatically selected. However if you want to select the memory location, select an empty location number in the memory design list.

  * If there are no empty memory locations, you will need to delete some designs from memory. Refer to “Chapter 6, 5. Deleting Designs from Memory” about how to delete.

  * You cannot load a design into a memory location that already has a design, with the exception of memory location #00. Memory location #00 can be used to overwrite designs.

➢ If you need to change the Tape Code, press the **U/F/EL** Icon.

There are 3 kinds of tape codes; U, F, and EL.

The Code changes each time you press the Icon, from U ->F ->EL ->U.

➢ If you need to change the COM Speed, press and hold the **SPEED** Icon to change the **SPEED** Icon to a Icon.

Press the **SPEED** Icon to change the COM speed setting.

The following COM speeds can be set.

Number	Speed（bps）
0	9600
1	19200
2	38400
3	57600
4	115200

3) Press the **INPUT** Icon above “I” to ready the machine for the design download.

4) Send the design from the COM device to download the design to the machine.

8-2. Adding a Design through the COM port

1) Press the **USB** Icon to display the COM Loading/Saving screen.

2) Select a Design in Memory that you want to Add a design to.

3) Press the **ADD** Icon above "F" to set in ADD mode.

A B C D E F G H I J

- If you need to change the Tape Code, press the **U/F/EL** Icon to change codes.

  Refer to "8-1. Loading Designs through the COM port" for changing tape codes.

- If you need to change the COM Speed, press the **SPEED** Icon to change COM speeds.

  Refer to "8-1. Loading Designs through the COM port" for changing COM speeds.

4) Press the **INPUT** Icon above "I" to ready the machine for design download.

5) Send the design from the COM device to ADD it to the design in memory.

9. Saving through the COM port

A COM connector is located on the back of the Automat. Designs can be saved to a device connected to the COM port. Devices using RS-232C can be connected and used.

*Note : Must use a serial cross cable (Null Modem) for the connection.

1) Press the **USB** Icon to display the COM Loading/Saving screen.

2) Press the **OUTPUT** Icon above "A" to display COM Output screen.

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3) Select a design in the memory design list, to output.

- If you need to change the Tape Code, press the **U/F/EL** Icon to change codes.

  Refer to "8-1. Loading Designs through the COM port" to change tape codes.

- If you need to change COM Speed, press the **SPEED** Icon to change speeds.

  Refer to "8-1. Loading Designs through the COM port" to change COM speeds.

4) Prepare the COM device to receive the design.

5) Press the **OUTPUT** Icon above "I" to start outputting the design through COM.

Chapter 6 Memory Designs

This chapter contains information on the followings.

1. Selecting a Design
2. Memory Menu
3. Design Information
4. Design Zoom
5. Deleting Designs from Memory
6. Changing Design Names
7. Product Counts
8. Name Drop
9. Product Instructions
10. Thread Instructions
11. Thread Consumption
12. Design Write Protect

1. Selecting a Design

Instructions for selecting a design to embroider from Machine Design Memory.

*** Designs cannot be edited while in Drive mode.**

1-1. Memory Menu

1) Press the **MEMORY** Icon or **EDIT** Icon on the Main Screen.

2) The Memory Menu or Edit Menu is displayed.

(Memory Menu)

3) Select a design to sew from the design list on the left side of the screen.

Note: If you press and hold the Origin key, the pantograph will move to the start position of the selected design and go back to the Main Screen so you are ready to sew.

1-2. Setting the Design List Type

1) Press the **MEMORY** Icon or **EDIT** Icon.

2) The Memory Menu or Edit Menu is displayed.

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(Memory Menu)

3) Press the **LISTTYPE** Icon above “D” to toggle between Thumbnail and Design Name list views.

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4) Press the **FULLVIEW** Icon above “E”, to toggle between full-screen and half-screen views.

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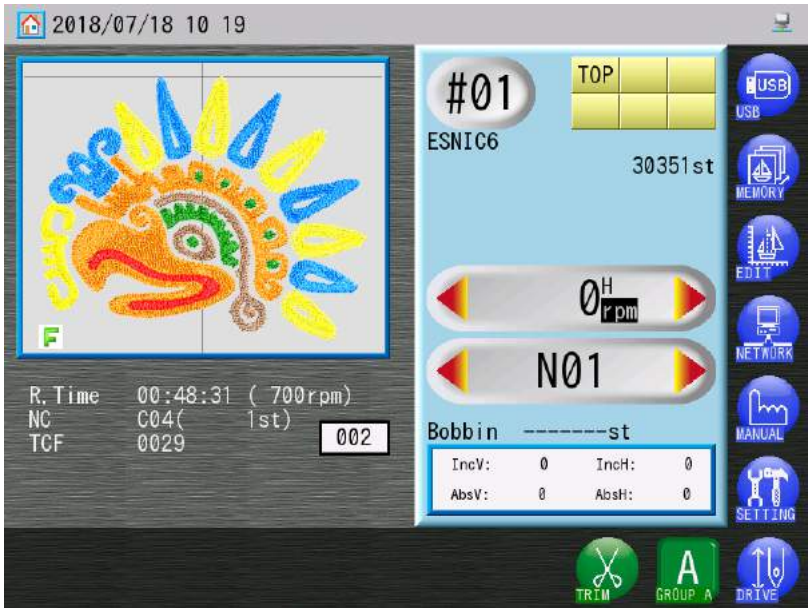
5) In Thumbnail full-screen view, press the **RESIZE** Icon above “G” to change the image size.

1-3. Select Design from Machine Information Area

1) Press the **Design Number** in the upper left corner of the Machine Information Area.



2) This opens the Memory design list in Full screen view.

3) Select a design to sew from the design list.

Note: If you press and hold the Origin key, the pantograph will move to the start position of the selected design and go back to the Main Screen so you are ready to sew.

1-4. Design List Sort

1) Press the **MEMORY** Icon or **EDIT** Icon.

2) The Memory Menu or Edit Menu is displayed.

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(Memory Menu)

3) Press the **A-Z SORT** Icon or the **Z-A SORT** Icon to sort the designs by ascending or descending order.

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When sorting is active, an ascending order (▲) icon or descending order (▼) icon is displayed on the upper part of the design list.

2. Memory Menu

2-1. Memory Menu Display

1) Press the **MEMORY** Icon on the Main Screen.

2) The Memory Menu is displayed.

2-2. Memory Operations

Memory Operations include design deletion, changing design names, etc.

Detailed operations are explained on the following pages.

Design Deletion Icon

Design Name Change Icon

Production Icon

Name Drop Icon

Design Information Icon

Zoom Icon

Product Instructions Icon

Displays design information to added to the design by the B-PASS software, such as design name, product image , production instructions and quantity to produce.

Thread Instructions Icon

Thread Consumption Icon

Write Protect Icon

Indicates design is write protected to prevent it from being deleted.

Drive Zoom Icon

Displays the zoomed embroidery position of the design when the icon was pressed.

Refer to “Chapter 9, 7. Drive Zoom” for details

Frame Trace Icon

Displays the design in Drive mode and allows it to be traced to see if it fits inside the frame.

Refer to “Chapter 9, 5. Trace” for details.

3. Design Information

Instructions for viewing design information

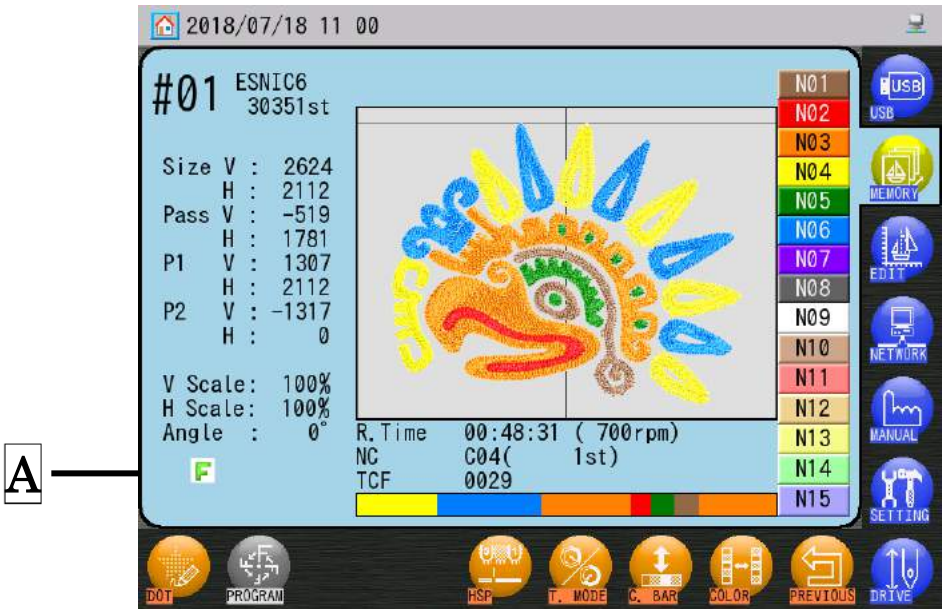
3-1. Display from Memory.

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design from the design list

3) Press the **INFO** Icon to display the Design Information screen.

In the case where design program settings have been changed, the design information displayed will reflect these changes.



Left of screen : Design information 1:

Design No.	:	Memory location of the design
Design Name	:	Name of the design
Stitch Count	:	Total stitch count of the design
SIZE	:	Distance between the overall dimensions of the design measured in tenths of millimeters.

PASS : Distance between the start and end points, shown as horizontal and vertical values, measured in tenths of millimeters.

P1 : Distance from the start point to the bottom left corner of the design, measured in tenths of millimeters.

P2 : Distance between the start point and the top right corner of the design measured in tenths of millimeters.

V scale : "V scale" setting in Program Settings.

H scale : "H scale" setting in Program Settings.

Angle : "Angle" setting in Program Settings.

A : Displays Design conditions icons for the design.
Refer to "Chapter 3, 5. Screen Structure" for icon details.

- Whenever Scale, Rotation, or Angle Program settings are changed from default values, the Design number is shown with a Black background.
  Refer to "Chapter 8, 2. Program List" for details about program settings.

Center of screen : Visual of the design

Bottom Center of screen : Design information 2.

R.Time : Estimated Remaining Time. (Number in parenthesis is the speed of the machine).
The estimated remaining time is calculated by the current machine speed setting.
"R.Time" has a Black background when set to high efficiency mode.
Please refer to the next page for details about high efficiency mode.

NC : Next Color change. This is the next change color function in the design " --- " is displayed if the design doesn't have a change color function.

TCF : Total Color change Functions in the design.

Color Bar : Shows the color change functions in the design by a color bar graph.
Refer to "Chapter 13, 1. Function Codes" about change color functions.
Refer to "Chapter 9, 3. Speed" about changing the speed of the machine.

Right of screen : Thread colors for each needle.

Refer to "Chapter 11, 11. Thread Color Display Settings".

- Use the **DOT** Icon above “A” to show the Needle points of the selected design.

  Press the **DOT** Icon again to go back to the previous display.

- Use the **PROGRAM** Icon above “B” to display the design before and after Program changes.

  * If there are no Program changes, this icon is grayed out.

- Use the **T. MODE** Icon to change the calculation mode for estimated remaining time (R.Time).

  There are 2 calculation modes for R.Time, as follows:

  Standard mode : This mode considers production efficiency like thread cuts, and automatic slowdowns in speed while sewing, when calculating.

  High efficiency mode : This mode doesn’t consider production efficiency, when calculating.

When High efficiency mode is selected, the **T. MODE** Icon is Yellow, and the “R.Time” in Design Information 2 has a Black background.

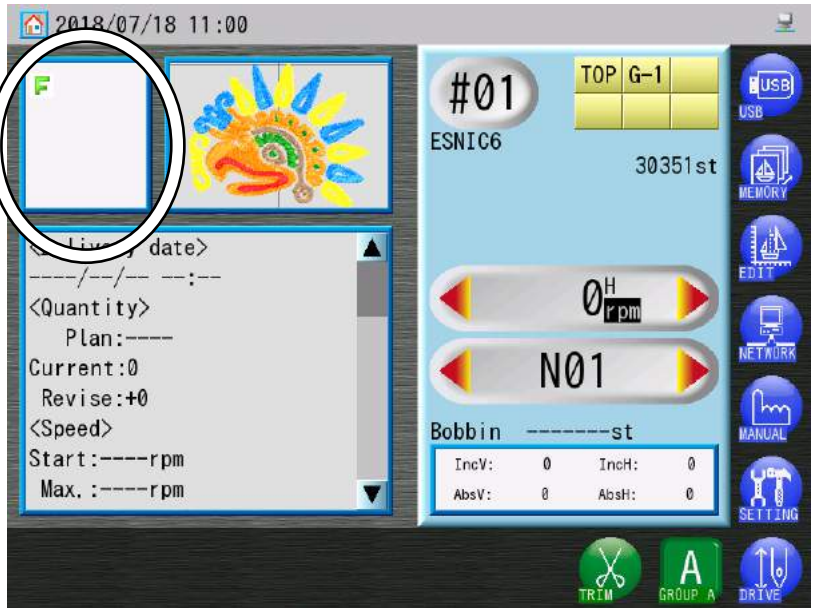
- The calculating mode affects the estimated remaining time for all designs in memory and while embroidering.

- Use the **C.BAR** Icon above “G” to turn the Design information 2 display ON or OFF.

- Use the **COLOR** Icon above “H” to toggle the thread color list from Needles to Sequin, Loopers, and Cording colors.

3-2. Display from Design Information Area 2

1) Press the Design Status Icon Area (Circled below) in the Design Information Area 2.



2) The design information screen is displayed.

Refer to “3-1. Display from Memory”.

3-3. Display of Head Selection Design

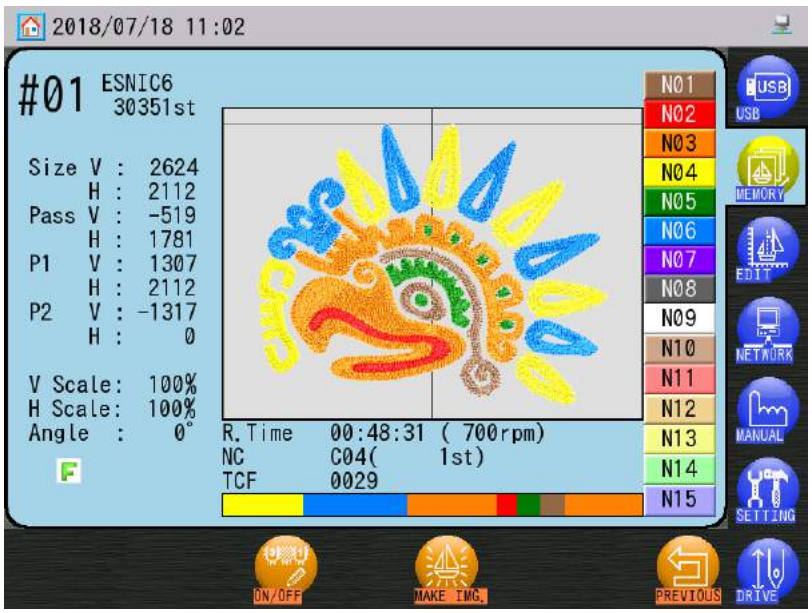
This feature is used to view very large designs that are programed to sew across several sewing heads.

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design from the memory list with Head Selection information.

3) Press the **INFO** Icon to display the Design Information screen.

4) Press the **HSP** Icon above “E” to display the Head Selection display of the design.



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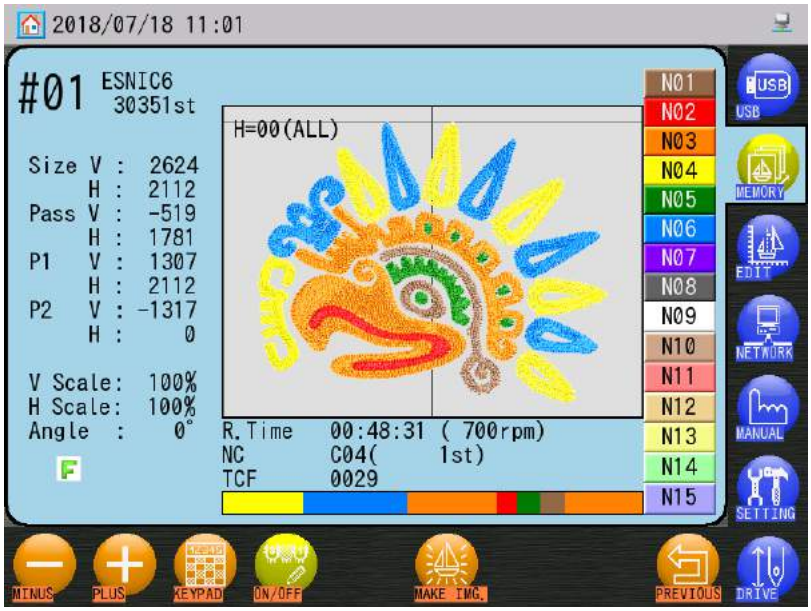
- Use the **ON/OFF** Icon to toggle the head selection view ON and OFF.



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(View by ALL Heads shown above)

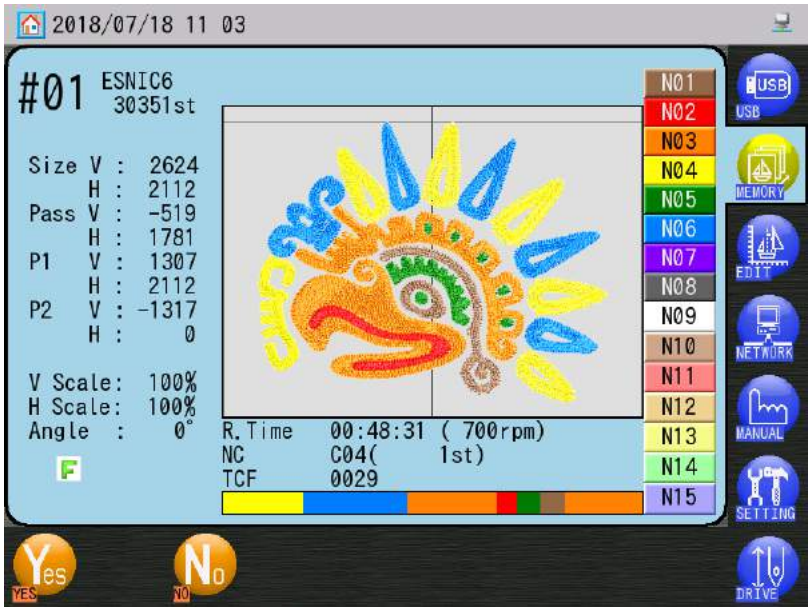
5) When the head selection design display is ON, you can view the display head by head.

Use the **MINUS** Icon or **PLUS** Icon to change the view to head display.

Use the **KEYPAD** Icon to change head views using the numeric keypad.

Refer to “Chapter 3, 9. Keypad” about using the keypad.

6) Use the **MAKE IMG.** Icon to if you want to rewrite the bitmap image of the design so it appears as shown on this screen.



A B C D E F G H I J

(View by ALL Heads shown above)

7) Press the **YES** Icon above “A” to rewrite the design image.

Press the **NO** Icon above “C” to exit and go back to the previous screen.

4. Design Zoom

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design from the memory design list.

3) Press the **ZOOM** Icon to display the design in Zoom mode.

A B C D E F G H I J

4) Enlarge and Reduce the display.

Press the **ZOOM IN** Icon above "B" to zoom in on the design.

Press the **ZOOM OUT** Icon above "A" to zoom out on the design.

(You cannot zoom out smaller than the whole display)

Press the **FIT** Icon to display the whole design.

5) When zoomed in, the display position on the screen can be moved.

5. Deleting Designs from Memory

Note: You cannot delete a design that's currently in Drive mode. You can only delete designs not being sewn.

1) Press the **MEMORY** Icon on the Main Screen.

2) Press the **DELETE** Icon to enter the Design Deleting mode.

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Press the **DELETE** Icon again if you want to cancel the design deleting mode.

3) Select a design to delete from the memory design list.

- If needing to select **Multiple** designs for deleting:
  1. Double click a design to tag it with an (*) mark.
  2. Choose more designs and double click them to tag them with an (*) mark.
  3. Double click a design with an (*) again to untag it.

- Use the **X100**

Icon above “B” to select or cancel all the designs.

4) Press and hold the **YES**

Icon above “A” to delete the selected design(s).

6. Changing Design Names

Note: You cannot change a design name that's currently in Drive mode. You can only change names for designs not being sewn.

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design from the memory design list.

3) Press the **RENAME**

Icon to display the Character keypad.

4) Use the Character keypad to change the design name.
Please refer to "Chapter 3, 9. Keypad" for details on using the keypad.

7. Product Counts

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design from the memory design list.

3) Press the **PRODUCT** counts Icon.

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Production Counts List Displays, in this order:

Design Number, Design Name -> Stitches Sewn per Head (Stitches) ->
Number of Runs Produced (Prod#)

Under the list, The Production number for all the designs, and currently selected design name is displayed.

4) Press and hold the **DELETE** Icon above "A" to reset the production data for a selected design.

5) Press and hold the **ALL DEL** Icon above "B" to reset the production data for all of the designs.

8. Name Drop

Name Drop Mode in Settings must be turned on in order to use this feature. Refer to “Chapter 11, 23 Name Drop” for details turning Name Drop Mode on.

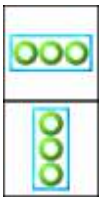
1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design with a Name Drop list from the memory design list.

3) Press the **NAME DROP** Icon to display the Name Drop list screen.

On the left side of the screen, the name drop list is shown.

The following icon shows the split style view of the design information area 1.



: Horizontal split

: Vertical split

Refer to “Chapter 3, 5. Screen Structure” for design information area 1 details.

9. Product Instructions

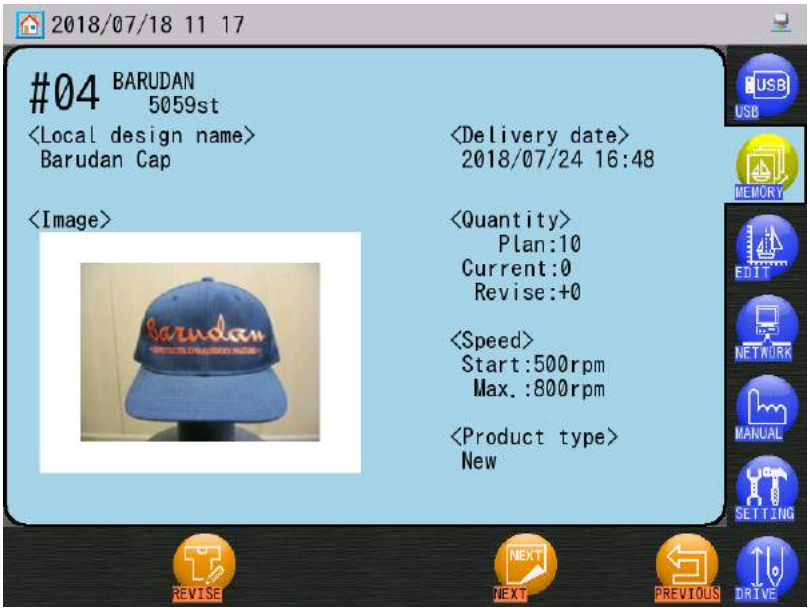
Production instructions can be added to a design using Barudan's B-PASS software. When this design is loaded into Automat, these instructions and image can be viewed to help assist the operator to produce the order.

9-1. Product Instructions Display

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design to view the product instructions from the memory design list.

3) Press the **PRODUCT** instruction Icon to display the product instruction screen.



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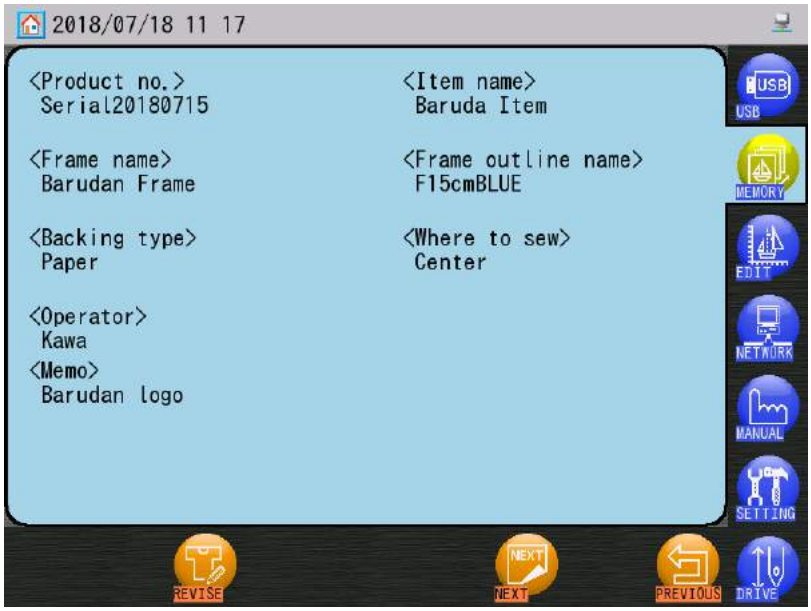
Upper left of screen shows : Design number , Design name, Design total stitches.
Bottom left of screen shows : Local design name and Image
Right of screen shows : Product instruction information

A JPEG image can be attached, such as, a picture of the finished product for reference.

4) Press the **NEXT** Icon above “G” to view additional product instructions.



Screen showing additional product instructions.

9-2. Items of Product Instruction Information

Item	Function
Delivery date	The delivery is shown by “Year/Month/Date Time:Minute”.
Quantity	Shows Planned Production, Current, and Revised Quantities A design that is downloaded with B-PASS coordination will keep track of the Current quantities. During B-PASS coordination, the machine protects and controls the quantity by comparing the Planned and Current quantities and blocking Drive Set for example.
Speed	Start and Max. Speed settings. During B-PASS coordination, when the machine is put in Drive mode the machine speed is automatically set to the Start Speed setting. The Max. speed setting limits how fast the speed can be increased during sewing.
Product type	Product type : New, Addition, Sample, Other
Product no.	Production number
Item name.	Production name
Frame name	Name of the frame used
Frame outline name	Name of the frame outline data used During B-PASS coordination, the frame outline name is controlled when put in Drive mode.
Backing type	Description of Backing to use
Where to sew	Embroidery Position on the product
Operator	Specifies Operator’s name to run this order. During B-PASS coordination, the specific operator most be logged in to the machine, in order to be put in Drive mode.
Memo	Memo

Refer to “Chapter 9, 19. Automatic Control by B-PASS” and “Chapter 10, 16. B-PASS Coordination”.

9-3. Product Counts Revision

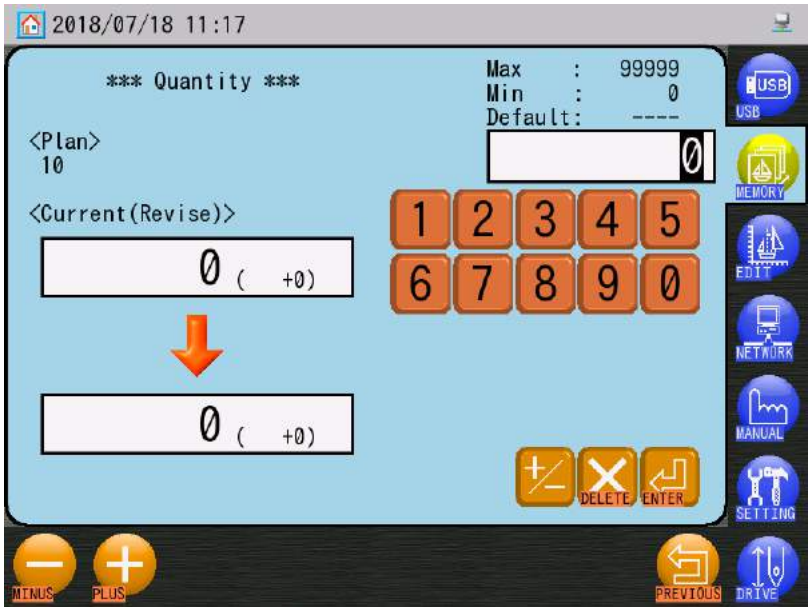
Instructions to revise the current quantity for production.

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design that needs quantity revision from the memory design list.

3) Press the **PRODUCT** instruction Icon to display the product instruction screen.

4) Press the **REVISE** icon above “C” to display the quantity revision screen.



A B C D E F G H I J

Upper left of screen : Current quantity to produce

Bottom left of screen : Quantity to produce after revision

In parenthesis : Corrected quantity (difference)

5) Change the current quantity to produce.

Press the **MINUS** Icon to reduce the quantity.

Press the **PLUS** Icon to increase the quantity.

You can also use the numeric keypad on the right side of the screen to input the quantity.

Refer to “Chapter 3, 9. Keypad” for details on using the keypad.

6) When the quantity is changed, a confirmation message will display when exiting the menu.

Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

10. Thread Instructions

10-1. Display of Thread Instruction Information

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design to view the thread instructions from the memory design list.

3) Press the **THREAD** instructions Icon to display the thread instruction screen.

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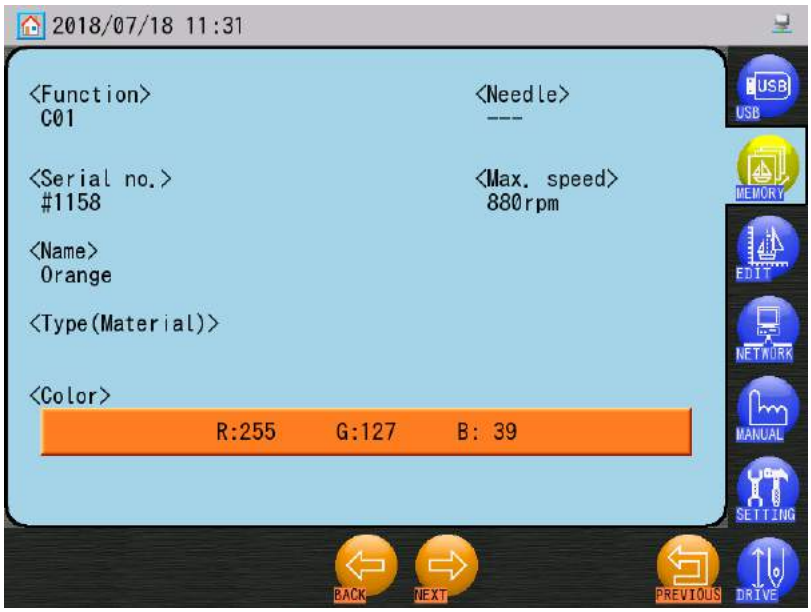
The Thread instruction list is shown as follows:

From the left, Color number (Func), Needle number (Needle), Actual thread Color (Color), Maximum speed for this thread color (Speed) and Thread Color number (Serial no.).

4) Press the **DETAIL** Icon above “A” to display detailed thread instructions.



A B C D E F G H I J

Detailed thread instruction information per Color function is displayed.

5) To view other detailed thread and color functions:

Press the **PREV** Icon above “E” to view the previous function.

Press the **NEXT** Icon to view the next function.

10-2. Thread Instruction Information Items

Item	Function
0st function	Inserts a 0st function into the design. When turned On, 0st function is automatically inserted.
Back color	Background color for the design display.
Color function no.	Color change function number. This number is used for the thread replacement instructions for auto-teaching and controlling the speed.
Needle no.	Needle number. This number is used for thread replacement instructions.
Serial no.	Serial number for the thread. This will commonly be the color code used by the thread manufacturer for identification by the customer. This number is used by B-PASS for thread replacement instructions and auto-teaching.
Max. speed	Thread Maximum sewing speed. When embroidering, this setting controls the maximum sewing speed for this thread.
Name	Color Name for thread. This is displayed on the thread instruction screen and used for proper thread replacement.
Type(Material)	Type of thread, ie polyester, rayon, etc.…. This is displayed on the thread instruction screen and used for proper thread replacement.
Color	Color of thread in RGB values This is used for the thread color display of the design and is displayed on the thread instruction screen and used for proper thread replacement.

Refer to “Chapter 9, 19. Automatic Control by B-PASS” and “Chapter 10, 16. B-PASS Coordination”.

11. Thread Consumption

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design from the memory design list.

3) Press the **THREAD** consumption Icon to display the thread consumption screen.

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This screen displays the thread consumption and the number of stitches, per needle.

Under the list, the total thread length is shown.

4) Use the **M/INCH** Icon above "A" to switch from M (meters) to Inch (inches).

5) Use the **SETTING** Icon above “C” to display the thread consumption setting screen. These settings change the calculations used for thread consumption.

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6) Select an item to change from the list on the left side of the screen.

7) Change the setting value.

Press the **MINUS** Icon above “A” to decrease the value.

Press the **PLUS** Icon above “B” to increase the value.

The numeric keypad on the right side of the screen can also be used to change values. Refer to “Chapter 3, 9. Keypad” for details on using the keypad.

✧ When a value is changed a confirmation screen will appear when exiting the menu. Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

11-1. Thread Consumption Settings List

Item	Function	Setting value	Default
Thickness	Thickness of the fabric measured in millimeters.	0.0～9.9mm	0.0mm
Bobbin thread rate	Ratio of the Bobbin thread to Top thread for Satin stitches.	0～100%	50%
Needle height	Needle height adjustment for chenille machines in millimeters.	0～2.0mm	0mm
Adjusting value	Calibration ratio for thread consumption. This value allows fine tuning of the consumption calculation for better accuracy.	50～200%	100%

12. Design Write Protect

This function sets the write protect for designs to prevent deleting them in error.

1) Press the **MEMORY** Icon on the Main Screen.

2) Select a design in the list on the left side of the screen.

Press the **PROTECT** Icon to set the write protect.

Design cannot be deleted with write protect on.

Write protected designs show this icon in the design information area.

Refer to “Chapter 3.5, Screen Structure” for more details.

Chapter 7 Editing Memory Designs

This chapter contains information about editing designs.

1. Memory Edit Menu
2. Color Change Function List
3. Color Batch Changes
4. Easy Teaching
5. Function pattern (FPAT)
6. Adding Stitches
7. DSP (Design Stitch Processor)
8. Outline Stitching
9. Teaching Color Functions
10. Teaching All Functions

1. Memory Edit Menu

This menu contains various functions for editing designs in memory.

1-1. Displaying the Memory Edit Menu

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) The following Memory Edit Menu is displayed.

1-1. Edit Menu Icons

These Icons open operations for editing designs in memory.

The actual operations are explained in detail in the following pages.

Program Icon

Changing design program settings affects how the design will be sewn.

These settings are explained in “Chapter 8 Programs”.

Sub Soft Limits Icon

Sets frame sub soft limits.

This operation is explained in “Chapter 8 Programs”.

Cap Frame Mode Icon

Turns Cap Frame Mode On or Off.

Cap Frame Mode is explained in “Chapter 8, 8 Cap Frame Mode”.

Color Teach Icon

Search and change Color change functions in the selected design.

All Function Teach Icon

Search and change any function in the selected design.

Color Change Function List (F-List) Icon

Display and change Color Change functions using a list for the selected design.

Color Change Batch Icon

Changes Batches of color change functions for the selected design.

Easy Teach Icon

Displays the Easy Teach list for changing color change functions for the selected design.

Function Pattern Icon

Applies a preprogrammed function pattern to designs for color changes or other functions.

Adding Stitches Icon

Adds running or jump stitches to a design in memory.

DSP Icon

Enlarge or reduce a design without changing the density of the design. Therefore it adds or removes stitches to achieve the best results for scaling. DSP can also be used to process the Maximum stitch length, Satin, and Tatami stitch density, and Running stitch length for the selected design.

Outline Stitch Icon

Make an outline stitch design for a selected design.

2. Color Change Function List

Display and change Color change functions using a list.

Refer to “Chapter 13, 1. Function Codes” for code details.

2-1. Display and Change Color Change Functions using F-List.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design to view color change functions from the memory design list.

3) Press the **FLIST** Icon to display the Color Change Function List (F-List).

The F-List shows the following info in this order:

List Number

Stitch Number

Function before change (Old)

Function after change (New)

Total number of color change functions (Total) is displayed at the top of the list.

➢ The maximum number of color change functions allowed in a design, depends upon the memory location number.

01 ~ 05 : Allows a Maximum of. 9999 functions.

06 ~ 99, 00 : Allows a Maximum of 1200 functions.

3) Select a color change function from the list on the left side of the screen.

4) Press the **MINUS** Icon above "A" or the **PLUS** Icon above "B" to change the color change function.

Selecting a color change function from area A is also available for making a change.
The (New) changed function is displayed with a Black background.

➢ Use the **SUB F** Icon above "C" to display and change Sub-Functions.
Refer to "Chapter 13, 2. Sub-Function Codes" for details.

5) Press the **PREVIEW** above "F" to display the design again.

✧ After color change functions are changed, a confirmation screen is displayed when exiting the menu.
Refer to "Chapter 3, 6. Confirmation Screen" for confirmation details.

2-2. Inserting a Color Code at the Start (0st).

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design.

3) Press the **FLIST** Icon to display the Color Change Function List (F-List).

4) Press and hold the "0000: Start" function at the top of the list to automatically insert a color code at stitch 0 (0st).

5) Press the **MINUS** Icon above "A" or the PLUS Icon above "B" to change the color change function.
Selecting a color change function from area A is also available for making a change.

✧ After color change functions are changed, a confirmation screen is displayed when exiting the menu.
Refer to "Chapter 3, 6. Confirmation Screen" for confirmation details.

2-3. Adding a Stop Code Function

Select a color change function in the F-List and add a stop code on the next stitch number.

This function converts the next “stitch” or “jump” code to a change-color function.

The total stitch number of the design number does not change.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select the design a from the memory design list.

3) Press the **FLIST** Icon to display the Color Change Function List (F-List).

4) Select a color change function in the function list.

5) Press and hold the **ADD F** Icon above “D” to add the stop code function.

➢ When adding a stop code function, if the next stitch number has a function code on it other than a “stitch” or “jump” code, this action will change the next available stitch number.

3. Color Batch Changes

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **F. ALL** Icon to display the Batch Color Change screen.

4) Select a color change function in the function list.

5) Press the **MINUS** Icon or **PLUS** Icon to change a batch of color change function to another color change function.
Selecting a color change function from area A is also available for making a change.

➢ Use the **PREVIEW** Icon above "F" to redisplay the design again to view color changes.

➢ Use the **SUB F1** Icon above “C” or **SUB F2** Icon above “D” to change batches of sub-functions. See instructions on previous page for making changes.

✧ After color change functions are changed, a confirmation screen is displayed when exiting the menu.

Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

4. Easy Teaching

Display and Change color change functions with the Easy list.

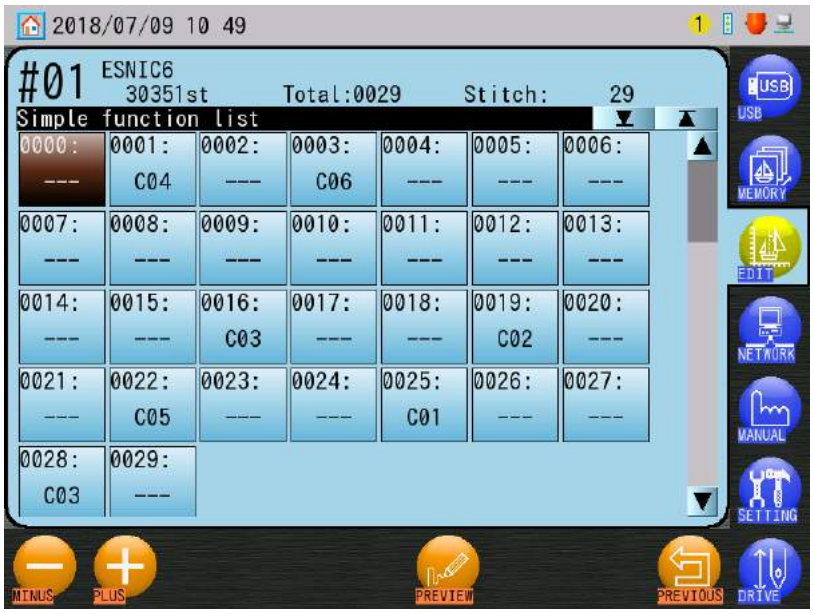
This function can only change color functions.

Refer to “Chapter 13, 1. Function Codes” for details on color functions.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **SIMPLE F** Icon to display the Easy Teaching List.



A B C D E F G H I J

Function codes other than color changes, are displayed by a dotted line (---).

A maximum of 35 function codes can be displayed on the screen at once.

The upper left corner of the screen shows the Memory location number, the Design name, and total stitches for the selected design.

The top middle of the screen shows the total number of color change functions in the design (Total) and the stitch number of the currently selected function (Stitch).

4) Select a color change function in the list.

5) Press the **MINUS** Icon above “A” to decrease the color change function number.

Press the **PLUS** Icon above “B” to increase the color change function number.

The changed function is displayed with a Black background to let you know it’s changed.

6) Press the **PREVIEW** Icon above “F” to redisplay the design again to view color changes.

✧ After color change functions are changed, a confirmation screen is displayed when exiting the menu.

Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

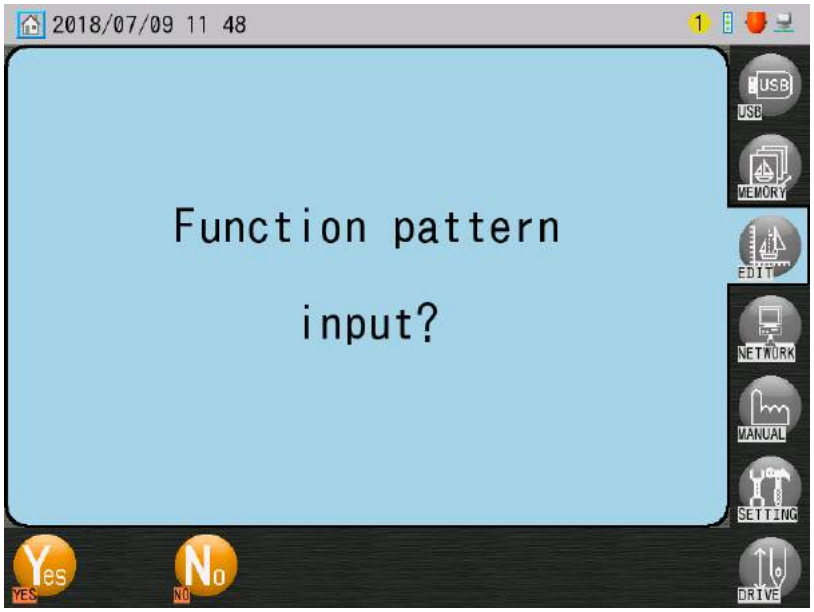
5. Function Pattern (FPAT)

Applies a preprogrammed function pattern to a design for color changes and other functions. How to program the function pattern is explained in “Chapter 11. 21, Function Pattern (PAT) Settings”.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

Press the **PATTERN** Icon to display the confirmation screen.



A B C D E F G H I J

3) Press the **YES** Icon to apply the function pattern and exit this menu.

Press the **NO** Icon to cancel the function and exit this menu.

6. Adding Stitches

Instructions for adding stitches into a design and copying Memory design.

This function is not available during Drive mode.

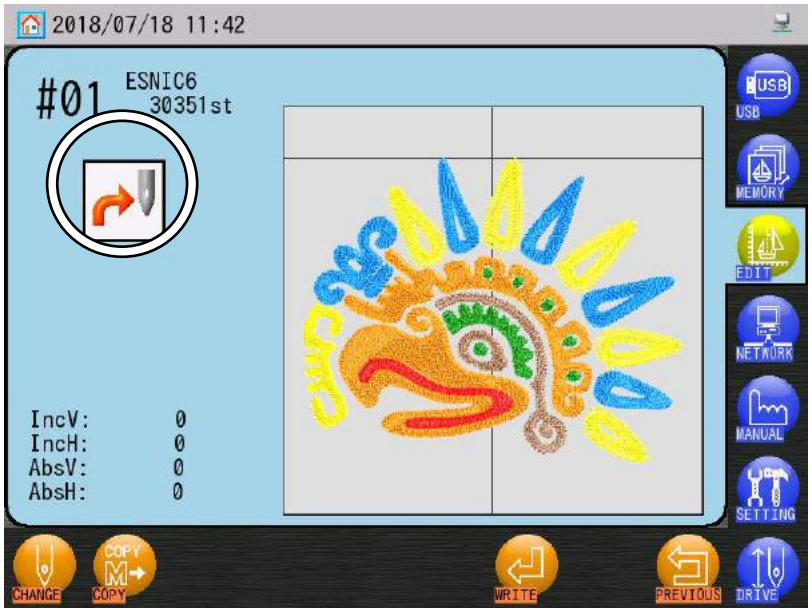
6-1. Adding Running or Jump Stitches using the Jog keys.

This operation moves the pantograph with the **Jog keys** to add stitches into the design.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **JOG** Icon to display the Add Stitches screen.



A B C D E F G H I J

4) Use the **CHANGE** Icon above “A” to select whether to add Jump or Running stitches.

The icon in the upper left of the screen, indicates the currently selected stitch mode.

: Jump Mode adds Jump stitches

: Stitch Mode adds Running Stitches (Needle Penetrations)

5) Use the **Jog keys** to move the pantograph to the distance and direction of the stitches you want add.

6) Press and hold the **WRITE** Icon to save the added stitches to design in memory.

- When the Program settings for a design have been changed, such as Scaling, or Rotation, these changes are reflected when adding stitches.

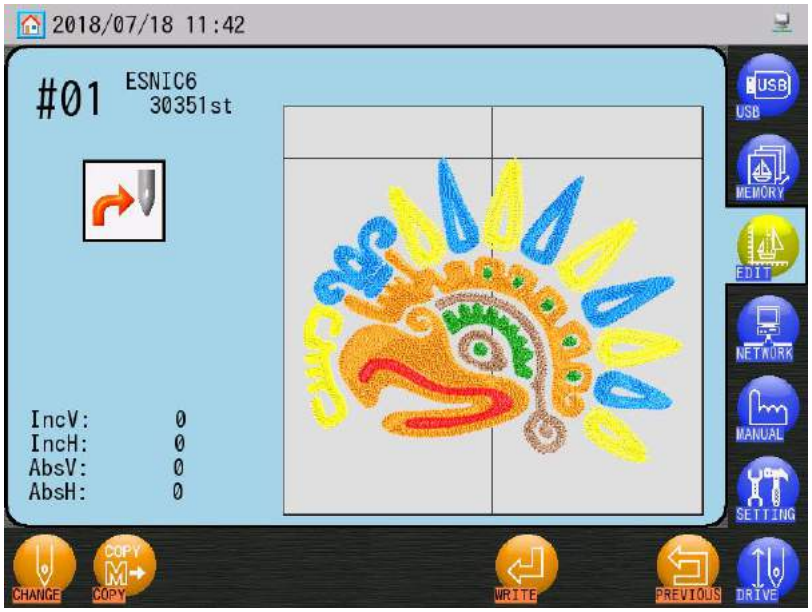
6-2. Merging Designs

Instructions for combining 2 designs together into one memory location. Both designs must be in memory, and you import one of the designs into the other design location.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design to merge from the memory design list.

3) Press the **JOG** Icon to display the Add Stitches screen.



A B C D E F G H I J

4) Press the **COPY**

Icon to display the Design Copy screen. This screen allows you to select another design in the memory, and merge it into the design you previously selected.

- There needs to be more than 1 design in Memory to use this function, or this function is not available.

A B C D E F G H I J

5) Select the design you want to add.

6) Press the **START** Icon above "G" to start merging.

- If the added design has been resized or rotated, it will be reflected in the merged design.
- By Combining Stitch and Design additions, Designs can be combined easily.
- When Stitch and Design additions are added to a design, the additions are added after the last stitch in the design.

7. DSP (Design Stitch Processor)

DSP allows changing the selected design larger or smaller without changing the density of the design. In other words, it adds or removes stitches when scaling to achieve the best results. DSP settings can also be used to set the Maximum stitch length, Satin and Tatami spacing, and Running stitch length.

7-1. Changing DSP

Instructions for changing DSP settings and making a new design.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **DSP** Icon to display the DSP screen.

A B C D E F G H I J

4) Select a DSP setting you want to change.

5) Change the setting value.

Press the **MINUS** Icon above “A” to decrease the value.

Press the **PLUS** Icon above “B” to increase the value.

The numeric keypad on the right side of the screen can also be used to change the value. Refer to “Chapter 3, 9. Keypad” for details using the keypad.

6) Select a memory location to save the new DSP design in.

- By default, the next empty memory location number is selected for saving.

- If you want to choose another memory location, press the **MEMORY** Icon at the top of the screen to display memory design list. Then choose a new location.

A B C D E F G H I J

- If a selected location has a design in it, it will be overwritten.

Press the **MEMORY** Icon to go back to the DSP screen.

7) Press the **START** Icon above "D" to process the new design.

- The DSP icon is displayed on the information screen for designs that have been modified by the DSP function.

  Refer to "Chapter 3, 5. Screen Structure" about the design information area.

7-2. DSP list

No. (Icon)	Item	Function	Range	Default
1	Scale (Size)	Changes the Design Scale larger or smaller.	50～200%	100%
2	Max. length	Sets the Longest stitch length in the design. Use this setting to shorten the Longest stitches in the design.	40～127	127
3	Satin space	Sets the Spacing of Satin and Tatami stitches. Larger number: Stitches are less dense Smaller number: Stitches are denser	50～200%	100%
4	Tatami space			
5	Line pitch	Sets the length of Running stitches. Larger number: Stitch length is longer Smaller number: Stitch length is smaller	50～200%	100%

8. Outline Stitching

Instructions for creating an outline design from a design in memory.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **OUTLINE** Icon to display the Outline Design screen.

A B C D E F G H I J

Memory : Sets the Memory location where the outline design is saved.

Space : Sets the space around the design to make the new outline design.

Pitch : Sets the stitch length for the running stitches used in the outline design.

Start color : Sets the needle number used for sewing the outline design.

Style : Sets the form of the outline.

0 : Outline data is made according to the actual border of the design.

1 : Outline data is made to form the shortest distance around the border of the design.

➢ When the location number in the "Memory" item is displayed with a black background, this indicates the location you selected already has a design in it. In this case, this design will be overwritten by the new outline design.

4) Change the setting value.

Press the **MINUS** Icon above “A” to decrease the value.

Press the **PLUS** Icon above “B” to increase the value.

The numeric keypad on the right side of the screen can also be used to change the value.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

5) Press the **START** Icon above “D” to create the Outline design.

- The new Outline design name will be named “OUT – (Design number) – (Original design name)”.

9. Teaching Color Functions

Instructions for searching and changing color change functions of the memory design selected.

This operation is not available in Drive mode, and it only applies to Color Change function codes.

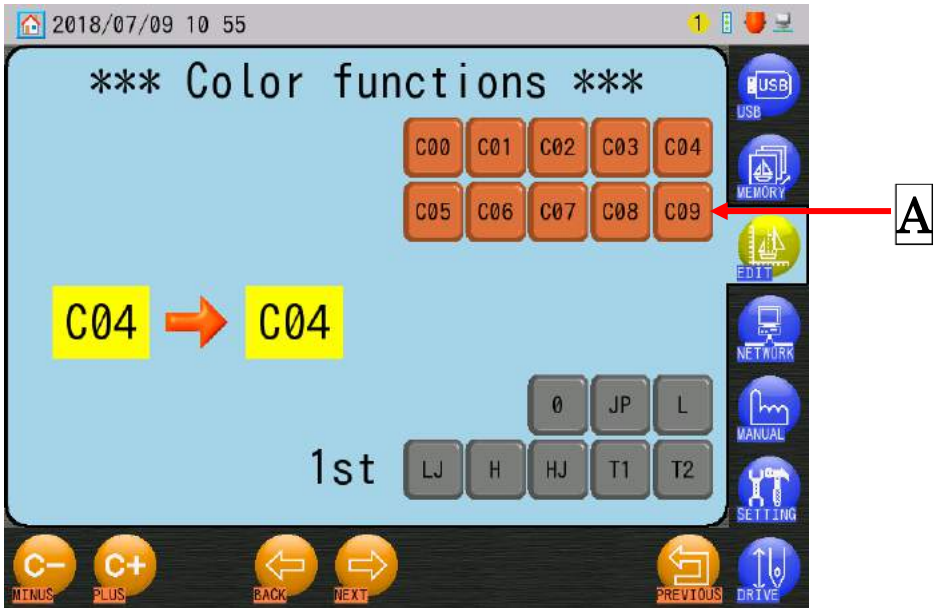
Refer to “Chapter 13, 1. Function Codes” for color change function details.

It can't be changed at an operational status.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **TCH. COL** Icon to display Teach screen.



A B C D E F G H I J

4) Press the **MINUS** or **PLUS** Icon to change the color change function.

Selecting a color change function in area A can also be used.

5) Press the **NEXT** Icon above “D” to update and search for the next function.

Use the **BACK** Icon if needed to update and search for the previous function.

- When there are no more color change functions to find, this screen exits automatically.

10. Teaching All Functions

Instructions for searching and changing All function codes in the memory design selected.

This operation is not available in Drive mode.

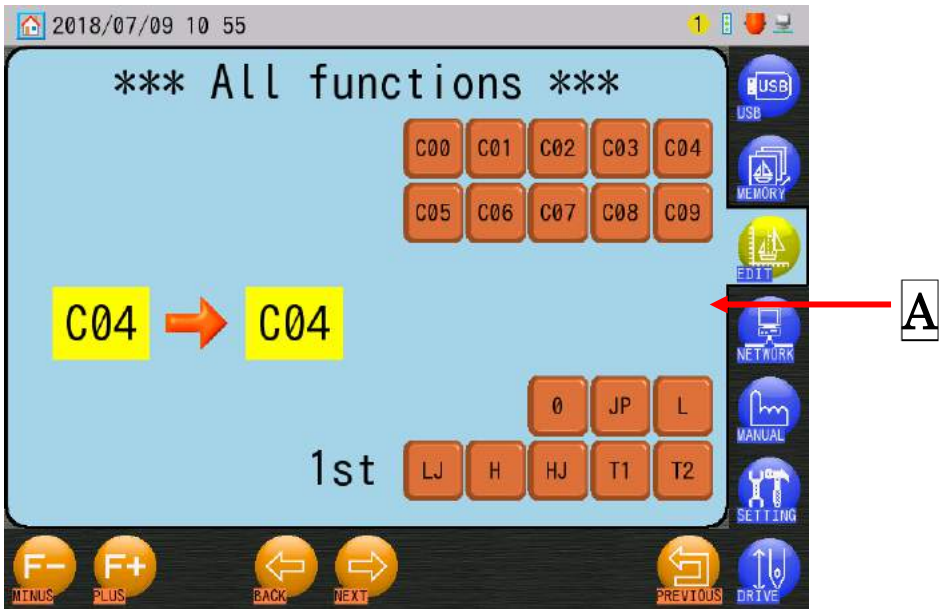
The MC1 Item 12 "Trim jumps" setting affects the search results for Jump functions. Jumps are not included in the search, unless they are used for trimming, per "Trim jumps".

Refer to "Chapter 13, 1. Function codes" for function code details.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **TCH. ALL** Icon to display Teach All screen.



A B C D E F G H I J

4) Press the **MINUS** F− or **PLUS** F+ Icon to change the function code.

Selecting a function code in area A can also be used.

5) Press the **NEXT** Icon to update and search for the next function.

Use the **BACK** Icon if needed to update and search for the previous function.

When there are no more functions to find, this screen exits automatically.

Chapter 8 Programs

This chapter contains instructions for Program parameters.

1. Changing Program Settings
2. Program List
3. Program Barcodes
4. Sub-Soft Limits
5. Matrix Automatic Interval Setting
6. Matrix Automatic Embroidery Area Setting
7. Appliqué / Frame Offsets Using Jog Movements
8. Cap Frame Mode

1. Changing Program Settings

Instructions for changing Program settings for a selected design.

*Program settings cannot be changed while in Drive mode.

1) Press the Memory **EDIT** Icon to display Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **PROGRAM** Icon to display the Program List.

A B C D E F G H I J

The order of display shows: Item Number, Item Name (Item), Current value (Data)

When a value is changed from the default, the new value is displayed with a Black background.

4) Change an Item Value.

Press the **MINUS** Icon above “A” to decrease the value.

Press the **PLUS** Icon above “B” to increase the value.

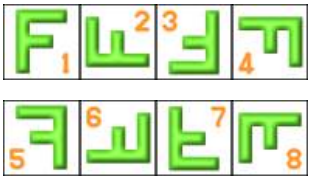
The numeric keypad on the right side of the screen can also be used change values.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

* Use the **PREVIEW** Icon to redisplay the design after a value is changed.

- Items 03 Rotation, 06 Socks, and 13 Cap frame have icons associated with them in the design information area when these values are changed.
  Refer to “Chapter 3, 5. Screen Structure” for design information icon details.
- After program changes are made, a confirmation screen appears when exiting the menu.
  Refer to “Chapter 3, 6. Confirmation screen” for confirmation details.

2. Program List

No. & Icon	Parameter	Function	Range of Values	Default Value
1	V Scale	Scales the design size between 50% and 200% of its original size.	50 ~ 200 %	100%
2	H Scale			
3	ROT pattern	Rotates the Design counterclockwise, in 90 degrees increments. Settings 5-8 adds mirror imaging to the rotation. 	(Normal) 1 : 0° 2 : 90° 3 : 180° 4 : 270° (Mirror) 5 : 0° 6 : 90° 7 : 180° 8 : 270°	1
4	Angle	Rotates the Design counterclockwise, in 1° increments.	0~89°	0°
5	Origin	When On, automatically returns the pantograph to the design origin, even if embroidery start and end points don't match. If Item 6 is turned On, this setting is not available.	0 : OFF 1 : ON	1

No. & Icon	Parameter	Function	Range of Values	Default Value
6	Socks	Used for the sock frame attachment. Automatically sews 2 repetitions of the design by setting 2 origins. How to Set 2 Sock Origins: 1. Move the frame to where the 2nd item is to be sewn. Press the Drive Icon to enter Drive mode to lock in this position. 2. Then move the frame to where the 1st item is to be sewn and press the start switch to sew. When MC1 item 20 (Roll to roll) is turned On, this item is disabled.	0 : Off 1 : Normal setup 2 : Mirror 3 : Rotation	0

7	Appliqué	Moves the frame forward 1-½ times the height of the design for easy placement of applique fabric when the machine stops for a C00 stop code. This operation depends on the machine sewing head. When MC1 item 20 (Roll to roll) is turned On, this item is disabled.	0~8 Refer to the following chart for details.	0

Appliqué Setting values compatibility per sewing head

Head / Setting value	Normal	PH	HL	CL
0	×	×	×	×
1	○	×	×	○
2	○	×	○	×
3	○	×	○	○
4	○	○	×	×
5	○	○	×	○
6	○	○	○	×
7	○	○	○	○
8	○	×	×	×

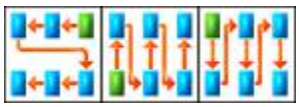
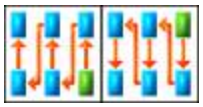
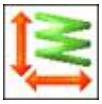
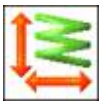
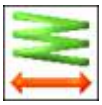
o : ON x : OFF, Frame doesn't move

8	A H Offset (H movement for Appliqué)	When Item 7 Appliqué is On, Sets the exact amount of movement the frame moves in the V and H directions. When both of these setting values are set to 0, the frame moves forward in the H direction only, 1-½ times the height of the design.	-3000mm ~ 3000mm	0 mm
9	A V Offset (V movement for Appliqué)			

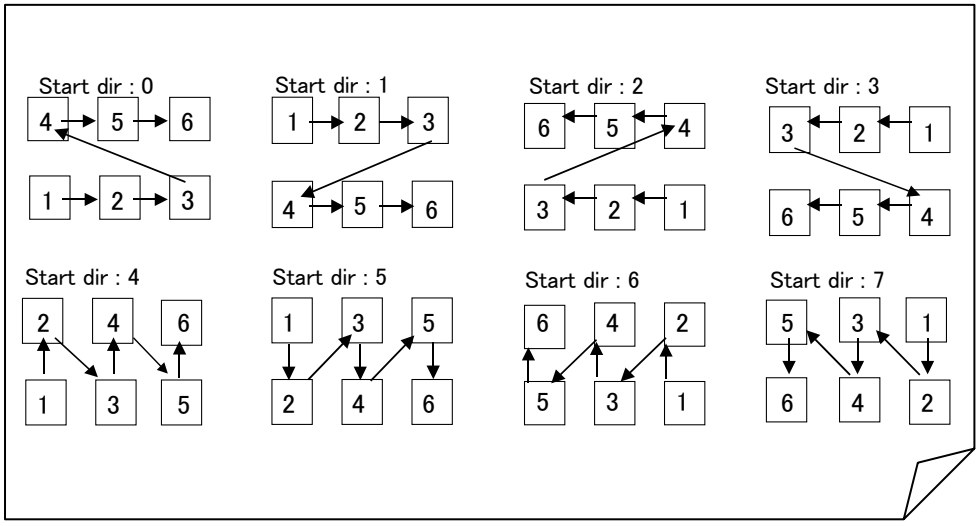
No. & Icon	Parameter	Function	Range of Values	Default Value
10	Frame	Automatically moves the frame by the height of the design after finished sewing. When MC1 item 20 (Roll to roll) is turned On, this item is disabled.	0 : OFF 1 : ON	0
11	F H Offset (H movement for frame change)	When Item 10 Frame is On, Sets the exact amount of movement the frame moves in the V and H directions. When both of these setting values are set to 0, the frame moves forward in the H direction only, the height of the design.	-3000mm ~ 3000mm	0 mm
12	F V Offset (V movement for frame change)			

No. & Icon	Parameter	Function	Range of Values	Default Value
13	Cap Frame	Sets the machine up for special frames, like Cap frames, etc. When Cap frame is turned On, Items (1) V Scale and (3) Rotation are automatically changed depending on the setting value. When item 6 Socks is turned On, this parameter is disabled.	0 : (Off) Flat frame 1 : Cap frame (1) 100 (3) = 3 2 : Long Cylinder frame (Pants) (1) = 105 (3) = 1 3 : Cap Frame (1) 100 (3) = 3 4 : Not used 5 : Not used 6 : Cap Frame (1) = 105 (3) = 3	0
14	Frame Type	Able to set frame preference for the use of sub-soft limits. 0 = Off 1~3 = Can program 3 different size frames to use Sub-soft limits.	0 : Normal frame (Off- No Sub-soft limits) 1 ~ 3 : Special frames with (Sub-soft limits)	0
15	Repeat	Sets the number of times a design will be repeated. When Item 6 Socks is turned On, this setting is automatically set to 201 and cannot be changed.	1 ~ 201 (201 is infinite)	1

No. & Icon	Parameter	Function	Range of Values	Default Value
16	Matrix	Pattern arrangement controlling the number of times a design repeats vertically and horizontally. When item 6 Socks is turned On, this item is disabled.	0 : OFF 1 : ON (Layout by distance between designs) 2 : ON (Layout by design origin)	0
17	V Repeat	When using Matrix, this number determines the amount of designs repeated in the V and H directions.	1 ～400 Total repetitions (V+H) =400	1
18	H Repeat			
19	V Space	When using Matrix, this distance determines the spacing between the designs in the H and V directions.	-1000mm ~ 1000mm	0 mm
20	H Space			

No. & Icon	Parameter	Function	Range of Values	Default Value
21	Start dir.	Sets the direction the matrix will be sewn. See Matrix Start Direction example at the bottom of this list.	0 ～ 7 0 1 2  3 4 5  6 7	0
22 	Swing type	When MC1 #14 Swing parameter is turned On, this Item determines which direction is affected by Swing.	0 : V/H directions  1 : V direction only  2 : H direction only	0

Matrix Start Direction example for design with V=3 x H=2 :



3. Program Barcodes

Change Program settings for design data using Barcode scanning.

Once in Drive mode, the program settings cannot be changed. See the Barcode list for settings that are available.

3-1. Changing program settings

Scan the following 3 Barcodes to change program settings.

- "Program Barcode" to enter Program settings mode

$PROGRAM$

- "Item and Value Barcode" identifies which parameter item to change and the new value

$003/1$

- "OK Barcode" Saves new setting and exits Program mode

OK

* The Barcode examples above would be used to change Item 3 "ROT design" to 1.

Refer to "3-2. Program Settings Barcode List" to select the appropriate barcode.

1) Scan the "Program Barcode" to start the process and display the program settings.

2) Scan "Item and Value Barcode" to change the appropriate program setting.

3) Scan the "OK Barcode" to Finish and save the new program setting and return to the normal operation screen.

3-2. Program Settings Barcode List

Please use the following barcodes to start and finish the change process.

No	Item	Barcode
1	Starts the change process	*$PROGRAM$*
2	Finishes the change process	*OK*
3	Cancels the change process	*$CANCEL$*

- Refer to “Chapter 3, 8. Barcode Operation” for more barcode details.
- Please ask your distributor for details on how to make barcodes.

Please use the following barcodes to change program items and values.

No	Item	Barcode
1	V scale	$001/?????$
2	H scale	$002/?????$
3	ROT pattern	$003/?????$
4	Angle	$004/?????$
5	Origin	$005/?????$
6	Socks	$006/?????$
7	Applique	$007/?????$
8	A.H.offset	$008/?????$
9	A.V.offset	$009/?????$
10	Frame	$010/?????$
11	F.H.offset	$011/?????$
12	F.V.offset	$012/?????$
13	CAP frame	$013/?????$
14	Frame type	$014/?????$
15	Repeat	$015/?????$
16	Matrix	$016/?????$
17	V repeat	$017/?????$
18	H repeat	$018/?????$
19	V space	$019/?????$
20	H space	$020/?????$
21	Start dir	$021/?????$
22	Swing type	$022/?????$

* “?????” Use the appropriate number value needed for this setting, instead of question marks.

This value must be a number within the valid setting range for the selected item.

4. Sub-Soft Limits

Sub-Soft Limits is the function where you can program up to three different size frames using #14 “Frame type” in the Program settings.

Two points, P1 and P2, are set to limit the possible embroidering area.

* The Sub-Soft limits P1 and P2 are set by moving the frame.
* This set range has to be within the limits of the MC2 software limits (#03 “Right limit”, #04 “Left limit”, #05 “Back limit”, #06 “Front limit”).

1) Press the Memory **EDIT** Icon, then the **PROGRAM** Icon to display the Program List.

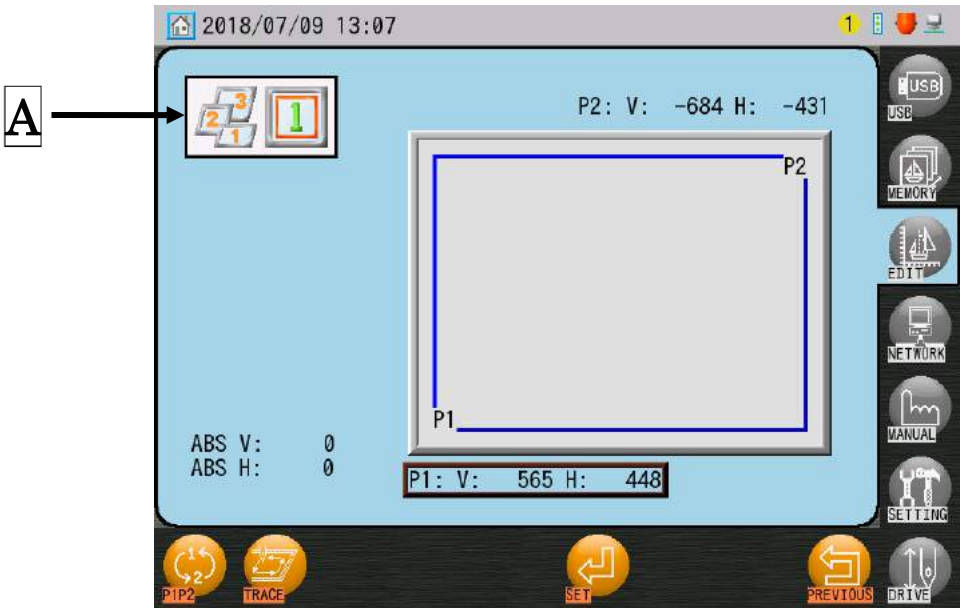
2) Select Item 14 “Frame type” to display the Icon above “E”.

A B C D E F G H I J

3) Set Item 14 “Frame type” to 1, 2, or 3.

➢ The “0” setting is the size of the frame as set by MC1 Frame limits and cannot be used for Sub-Soft limits. Therefore 0 cannot be used for this feature. Setting to 0 will show and confirm the maximum limits, but you cannot change them from this menu.

4) Press the **FRM.TYPE** Icon above “E” to display the Sub-soft limit menu.



A Displays the currently selected sub-soft limits.

* To exit and go back to the Program list, press the Icon again.

5) Set the P1 position.

Use the Jog keys to move the frame to the desired lower left corner position (P1).

* Note : Confirm on the screen that the P1 has been selected.

* Pressing the **P1P2** Icon will toggle between the P1 and P2 positions.

6) Press the **SET** Icon to enter this position for P1.

Afterwards, the display will automatically switch to the P2 position.

7) Set the P2 position

Use the Jog keys to move the frame to the desired upper right corner position (P2).

8) Press the **SET** Icon to enter this position for P2.

9) Press the **TRACE** Icon above “B” to trace the current setting range.

To confirm whether a design will actually fit in a frame type, Refer to instructions in “Chapter 9, 6. Frame Outline Centering”.

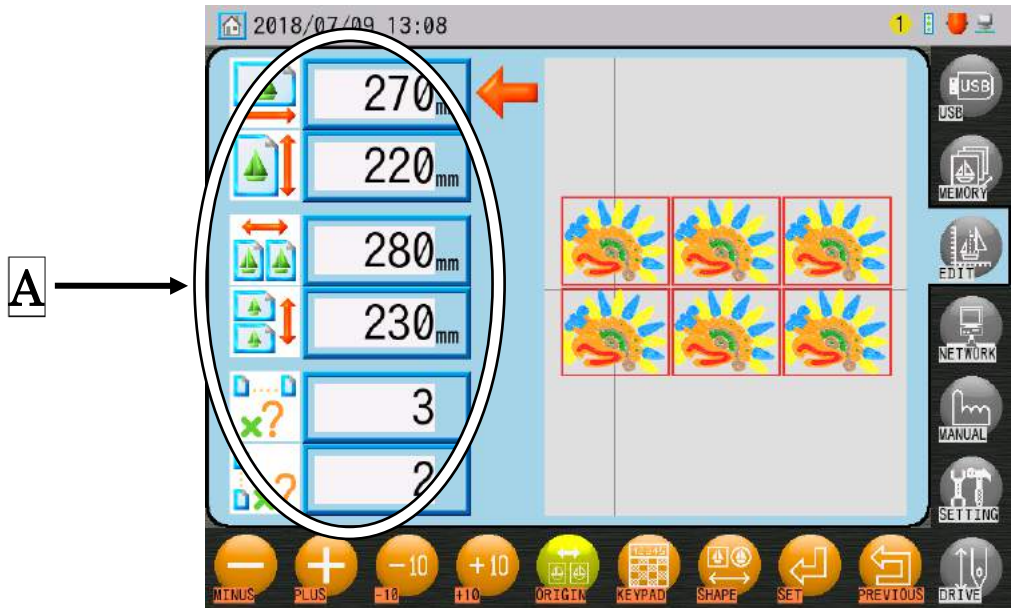
5. Matrix Automatic Interval Setting

This feature automatically lays out designs in the embroidery area, based on the interval (distance) between the center of designs and the repeats entered.

- When using this setting, Item 15 “Repeat” is reset to default.
- Item 06 “Socks” is not available with this function.

1) Press the Memory **EDIT** Icon, then the **PROGRAM** Icon to display the Program List.

2) Press the **MATRIX** Icon above “E” to display Matrix Automatic Interval Settings



A B C D E F G H I J

This screen shows the layout of designs based on the current matrix settings.

* To exit this menu and go back to the Program list, press the Icon again.

3) Select an item to change in area A.

: Sets the border width around the design in millimeters.

: Sets the border height around the design in millimeters.

: Sets the distance between designs in the V(X) direction in millimeters.

*The distance is measured from the center of the designs (start point).

: Sets the distance between designs in the H (Y) direction in millimeters.

* The distance is measured from the center of the designs (start point).

: Sets the design repetition in the V(X) direction.

: Sets the design repetition in the H(Y) direction.

4) Change the setting value.

Press the **MINUS** Icon above “A” to decrease the value.

Press the **PLUS** Icon above “B” to increase the value.

Press the **-10** Icon above “C” to decrease the value by 10.

Press the **+10** Icon above “D” to increase the value by 10.

Press the **ORIGIN** Icon to switch layout based on distance between designs or design’s origin.

Press the **KEYPAD** Icon above “F” to use the numeric keypad.

* Refer to “Chapter 3, 9. Keypad” for details using the keypad.

5) Press the **CHANGE** Icon to set the border shape. (Square or circle).

6) Press the **SET** Icon to set the following items and view the changes made.

#16 : Matrix

#17 : V repeat

#18 : H repeat

#19 : V space

#20 : H space

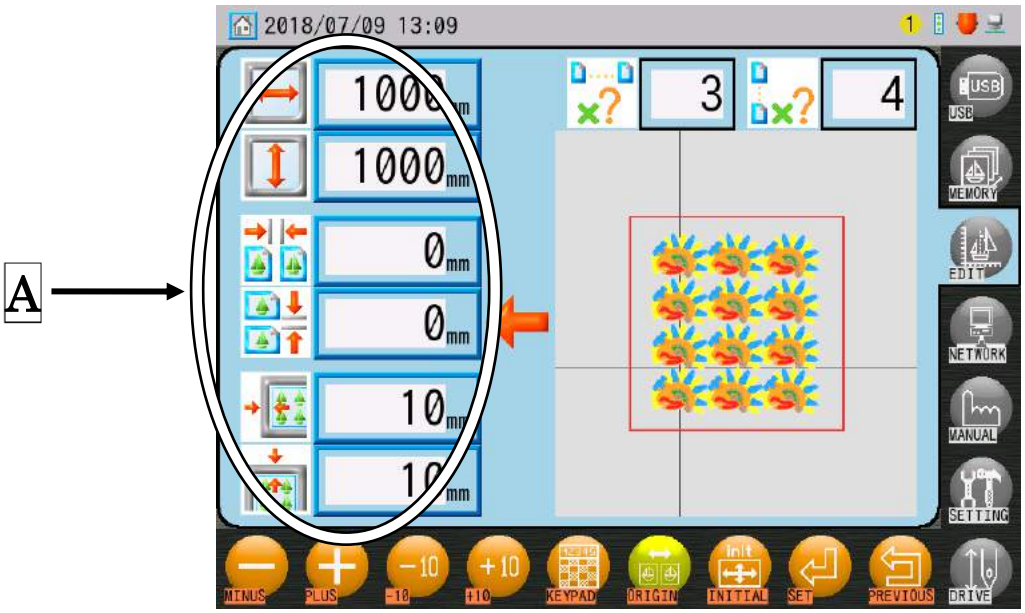
6. Matrix Automatic Embroidery Area Setting

The feature automatically lays out the maximum number of designs in the embroidery area.

- When using this setting, Item 15 “Repeat” is reset to default.
- Item 06 “Socks” is not available with this function.

1) Press the Memory **EDIT** Icon, then the **PROGRAM** Icon to display the Program List.

2) Press the **MATRIX** Icon above “F” to display the Matrix Automatic Embroidery Area Settings.



A B C D E F G H I J

This screen shows the layout of designs based on the current matrix settings.

* To exit this menu and go back to the Program list, press the Icon again.

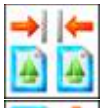
3) Select an item to change in area A .

: Sets the V direction area of the Frame size in millimeters.

* The default value is the frame settings, as set in MC2.

: Sets the H direction area of the Frame size in millimeters.

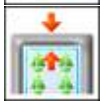
* The default value is the frame settings, as set in MC2.



: Sets the distance between designs in the V(X) direction in millimeters.

: Sets the distance between designs in the H(Y) direction in millimeters.

: Sets the inside margin of the frame in the V(X) direction in millimeters.



: Sets the inside margin of the frame in the H(Y) direction in millimeters.

4) Change the setting value.

Press the **MINUS** Icon above “A” to decrease value.

Press the **PLUS** Icon above “B” to increase the value.

Press the **-10** Icon above “C” to decrease the value by 10.

Press the **+10** Icon above “D” to increase the value by 10.

Press the **KEYPAD** Icon above “E” to use the numeric keypad.

* Refer to “Chapter 3, 9. Keypad” for details using the keypad.

Press the **ORIGIN** Icon to switch layout based on distance between designs or design’s origin.

5) Press the **SET** Icon above “H” to set the following items and view the changes made.

#16 : Matrix

#17 : V repeat

#18 : H repeat

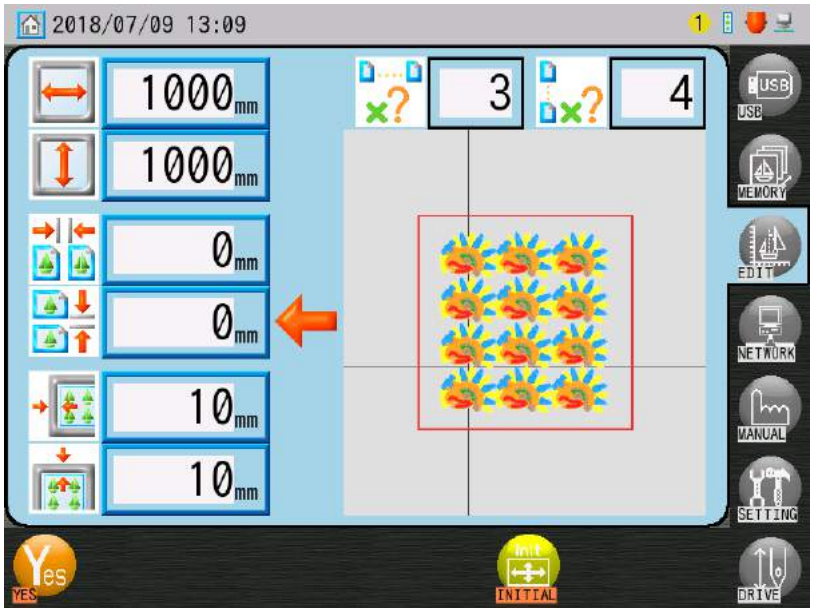
#19 : V space

#20 : H space

- Use the **INIT.**

Icon above “G” if you need to initialize all the matrix setting values.

The following screen will appear to confirm the initialization.



A B C D E F G H I J

Press and hold the **YES**

Icon above “A” to accept.

Press the **INIT.**

Icon again to cancel the initialization.

6) Press the Icon when finished to exit this menu and go back to the Program list.

7. Appliqué / Frame Offsets Using Jog Movements

Sets the “A.H.offset”, “A.V.offset”, “F.H.offset” and “F.V.offset, by moving the pantograph with the jog keys.

A.H.offset, A.V.offset : Offsets for Applique

F.H.offset, F.V.offset : Offsets for Frame

1) Press the Memory **EDIT** Icon, then the **PROGRAM** Icon to display the Program List.

2) Select one of the following items in the list.

Appliqué Offset for H direction movement : Item 8 “A.H.offset”

Appliqué Offset for V direction movement : Item 9 “A.V.offset”

Frame Offset for H direction movement : Item 11 “F.H.offset”

Frame Offset for V direction movement : Item 12 “F.V.offset”

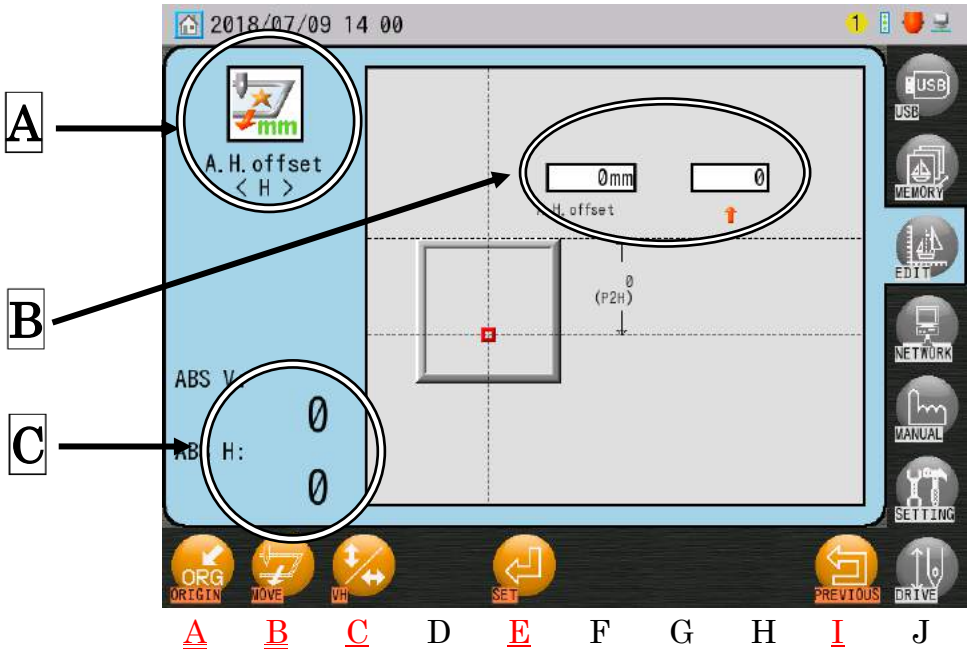
The **OFFSET** Icon is displayed above E when one of these items are selected.

A B C D E F G H I J

(Item 8 “A.H.offset” is selected in the screen above.)

4) Press and hold the **OFFSET** Icon to move the pantograph to the start position of the design and display the offset setting screen.

Ensure your safety and others before pressing this Icon.



(Item 8 “A.H.offset” is selected in the screen above.)

A : Displays the item that is selected.

B : Displays the current offset length (Left : per 1 mm, Right : per 0.1 mm)

C : Displays the current pantograph position (ABS value) (per 0.1 mm)

5) Press the **VH** Icon to switch between H-direction and V-direction Offset settings.

”A.H.offset” ⟷ ”A.V.offset”

”F.H.offset” ⟷ ”F.V.offset”

Press the **PREVIOUS** Icon to return without saving settings.

Use the **MOVE** Icon to move the pantograph to the new offset position.

(Actual icons vary based on item selected)

6) Use the Jog-keys to move the pantograph to a new offset position setting.

Use the Up and Down Jog-keys to set an H-direction offset.

Use the Right and Left Jog-keys to set a V-direction offset.

To initialize setting values, press and hold the **ORIGIN**

Icon to move the pantograph to the design's start position.

(Ensure your safety and others before pressing this Icon)

7) Press the **SET** Icon to save settings.

8) Press the **PREVIOUS** Icon to move to the design's start position and return back to the program list.

(Ensure your safety and others before pressing this Icon)

8. Cap Frame Mode

This feature is used to automatically program a design to sew caps by simply pressing the Cap Mode Icon. This sets Program item 13 “Cap frame” and the Frame Outline Display for caps.

- Refer to “Chapter 8, 2. Program List” for program list details.
- Refer to “Chapter 11, 17. Frame Outline Display” for Frame Outline Display details.
- You must setup this feature before using it for the first time.
  Refer to “Chapter 11, 19. Cap Frame Mode Settings” for details on setup.

1) Press the Memory **EDIT** Icon to display the Memory Edit Menu.

2) Select a design from the memory design list.

3) Press the **CAP** mode Icon to turn Cap Frame Mode On for the selected design.

Pressing **CAP** mode Icon again, turns Cap Frame Mode Off for the selected design.

Cancelling Cap Frame mode also resets the following settings:

- Program item 13 “Cap frame” : Resets to 0
- Frame Outline Display setting: Resets to “None”
- MC2 Item 3 “Right limit” ~ Item 6 “Front limit” : Resets to machine’s original values.

Chapter 9 Embroidery

This chapter contains information on operations for embroidery on the KT Automat.

1. Start Point
2. Drive Mode
3. Speed
4. Speed Setting per Needle
5. Trace
6. Frame Outline Centering
7. Drive Zoom
8. Float
9. 1 Stitch Float
10. High Speed Float (By Stitch Count)
11. High Speed Float (By Color Change)
12. High Speed Float (By Name Drop)
13. Re-Setting Origin
14. Teaching Color Codes (While sewing)
15. Teaching All Function Codes (While sewing)
16. Stitch Back
17. Automending
18. Standby Mode (Resume)
19. Automatic Control by B-PASS

1. Start Point

Instructions for registering the design start point.
Each design can have its own start point.

1) Select a design in Memory. Using the **Jog keys**, move the pantograph to the location where you want to start the design.

2) Press the **DRIVE** Icon to put the machine in Drive mode. The Start point is registered when you start the machine from stitch 0 (0st).

   - Note: After you finish a design, you end up at stitch 0 (0st) again. In this case, if you move the design at (0st) and start, you register a new start point.
     Refer to "2. Drive Mode" for more details.

3) Press and hold the **Origin key** to move the Pantograph to the start point already registered.
   - In Standby mode, the Pantograph moves to the Start point of the selected design in memory when then Origin key is pressed.
   - If the design has never been sewn or put in Drive, pressing the Origin key moves the pantograph to the machine's origin point.

2. Drive Mode

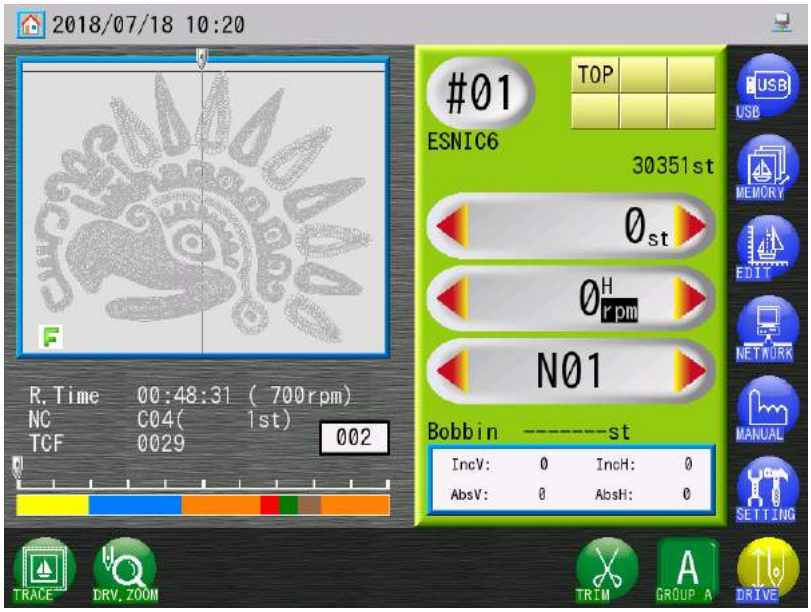
Instructions for putting the machine in Drive mode.

The machine can only sew when the machine is in Drive mode.

1) Press the **DRIVE** Icon.

2) The following Drive mode screen appears.

The screen color changes.



3) Use the Start bar or the Start/Stop switches to start and stop the embroidery machine.

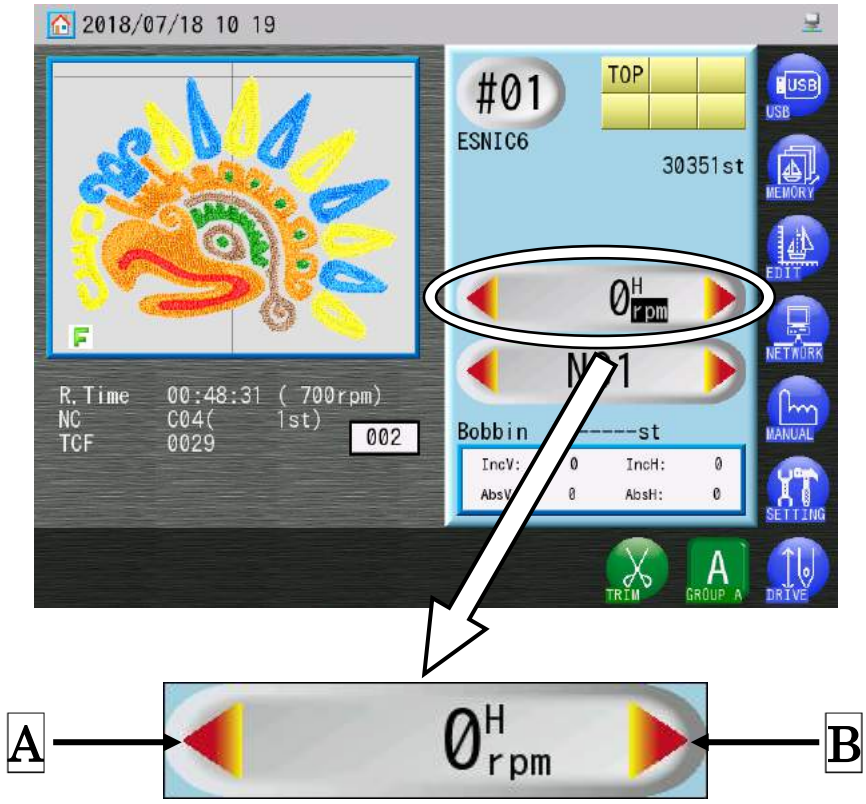
4) In Drive mode, press and hold the **DRIVE** Icon until the beeping sound stops to return to Standby mode.

3. Speed

Instructions for changing the machine speed

The sewing speed can also be changed while the machine is sewing.

3-1. Change Speeds from the Main Screen.

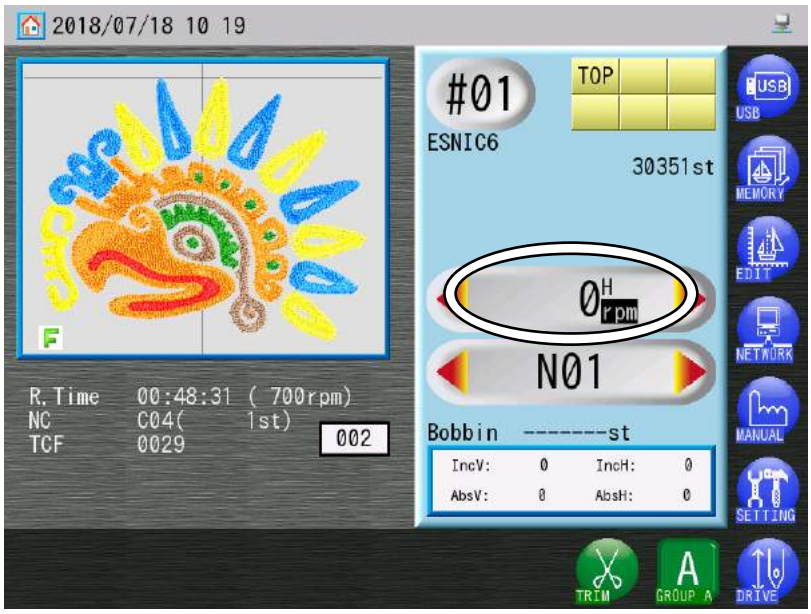


1) Press the **Left Arrow Icon** (A) to reduce the speed by 10 rpm.

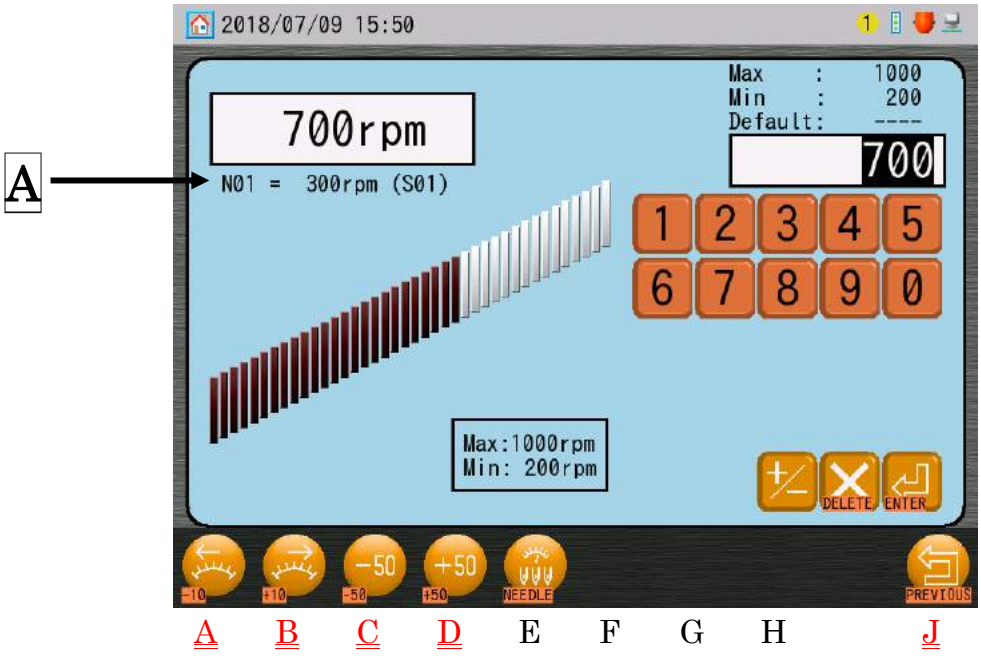
   Press the **Right Arrow Icon** (B) to increase the speed by 10 rpm.

3-2. Change Speeds using the Speed Menu

1) Press the center of the Speed Area on the Main Screen (Except the Arrow Icons).



2) The Speed Menu displays.



A B C D E F G H J

A: Shows speed per each needle if set.

3) Press the **-10** Icon above “A” to decrease the speed by 10rpm.

Press the **+10** Icon above “B” to increase the speed by 10rpm.

Press the **-50** Icon above “C” to decrease the speed by 50rpm.

Press the **+50** Icon to above “D” to increase the speed by 50rpm.

The numeric keypad on the right side of the screen can also be used to set the speed.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

4) Press the **EXIT** Icon to go back to the Main Screen.

4. Speed Setting per Needle

4-1. Setting per Needle

1) Press the center of the Speed Area on the Main Screen (Except the Arrow Icons) to display the Speed Menu. Refer to “Section 3-2.Change Speeds using the Speed Menu” for details.

2) Press the **NEEDLE** Icon above “E” to display the Speed Setting by Needle screen.

A B C D E F G H I J

Display list order: Needle number (Number), Setting value (Value).

Setting values : Speed Number, (Rpm)with exception of 0.

0 : Turned Off, No speed limit applied.

1 ~ 10 : Speed Number to limit speed, (Rpm).

3) Select a needle number in the list that you want to limit the sewing speed.

4) Press the **MINUS** Icon to decrease the Speed Number value.

Press the **PLUS** Icon to increase the Speed Number value.

The numeric keypad on the right side of the screen can also be used to change the value.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

4-2. Changing the Speed Number Setting

1) Press the center of the Speed Area on the Main Screen (Except the Arrow Icons) to display the Speed Menu. Refer to “Section 3-2. Change Speeds using the Speed Menu” for details.

2) Press the **NEEDLE** Icon above “E” to display the Speed Setting by Needle screen.

3) Press and hold the **RPM** Icon above “C” to display the screen to change the setting speed.

Display list order: Speed Number (Number), Rpm setting (Value)

4) Select a speed number in the list that you want to change.

5) Press the **MINUS** Icon above “A” to decrease the value by 10 rpm.

Press the **PLUS** Icon above “B” to increase the value by 10 rpm.

Press the **-50** Icon above “C” to decrease the value by 50 rpm.

Press the **+50** Icon above “D” to increase the value by 50 rpm.

The numeric keypad on the right side of the screen can also be used to change values.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- Press and hold the **INITIAL**

Icon above “F” to initialize all speed number values. This action will display a confirmation screen.

  Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

5. Trace

This feature moves the frame to see if the design will fit in the frame.

* **This operation is only available in Drive mode and should be done before embroidering.**

5-1. Square Trace

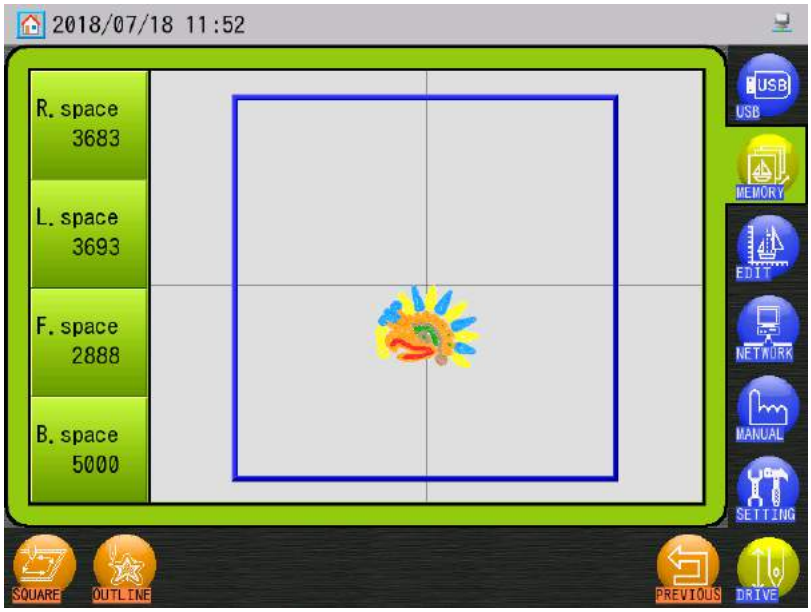
The pantograph makes a square trace around the selected design.

This trace takes into account Program settings like Scale, Rotation, and Matrix, etc.

1) Press the **DRIVE** Icon to display the Drive screen.

2) Press the **MEMORY** Icon to display the Memory Menu.

3) Press the **TRACE** Icon to display the Trace screen.



A B C D E F G H I J

The Frame Border line and selected design are displayed.

The following information is shown on this screen:

R.space: Distance from the design to the right edge of the Border line

L.space: Distance from the design to the left edge of the Border line

F.space: Distance from the design to the front edge of the Border line

B.space: Distance from the design to the back edge of the Border line

4) Use the **Jog keys** to position the design within the frame border.

The borderline is normally shown in Blue. However, as the design gets close to the line, it turns to Yellow. It turns Red when it's outside the border.

5) Press the **SQUARE** Icon to start the square trace.

* If the design is outside of the border line, the machine will beep and stop the trace in that direction. In this case, you should reposition or resize the design so it fits within the border.

5-2. Outline Trace

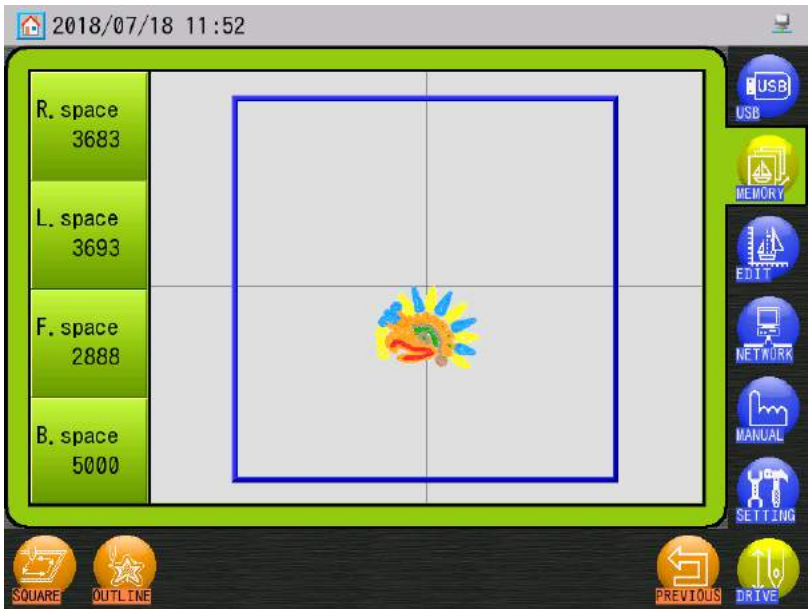
This pantograph traces the outline of the design to be embroidered.

This trace takes into account Program settings like Scale, Rotation, and Matrix, etc.

1) Press the **DRIVE** Icon to display the Drive screen.

2) Press the **MEMORY** Icon to display the Memory Menu.

3) Press the **TRACE** Icon to display the Trace screen.



A B C D E F G H I J

* For more details on this screen, refer to previous section, 5-1. Square Trace.

4) Press the **OUTLINE** Icon to start the outline trace.

* If the design is outside of the border line, the machine will beep and stop the trace in that direction. In this case, you should reposition or resize the design so it fits within the border.

5-3. Mandatory Frame Trace

Frame Trace is required before sewing.

*** This operation is only available on machines where Mandatory Trace parameter has been turned On.**

*** This operation is only available before starting embroidery (0st.).**

1) Press the **Drive** Icon to automatically display the Frame trace screen.

A B C D E F G H I J

2) Press the **SQUARE** or **OUTLINE** Icon to execute a Frame Trace. Afterwards, you can start embroidery.

Use the **CANCEL** Icon to automatically cancel Drive mode and return back to the basic screen.

6. Frame Outline Centering

Automatically move the pantograph to center the design in the frame outline display.

- Before frame outline centering, select and set a frame outline display.

  Refer to “Chapter 11, 17. Frame Outline Display” for details.

- **This operation is only available in Drive mode and should be done before embroidering.**

1) Press the **TRACE** Icon to display the Trace screen.

A B C D E F G H I J

- Press the **NAME** Icon above “D” to display or hide the frame outline name.

2) Press and hold the **CENTER** Icon above “E” to center the design in the frame.

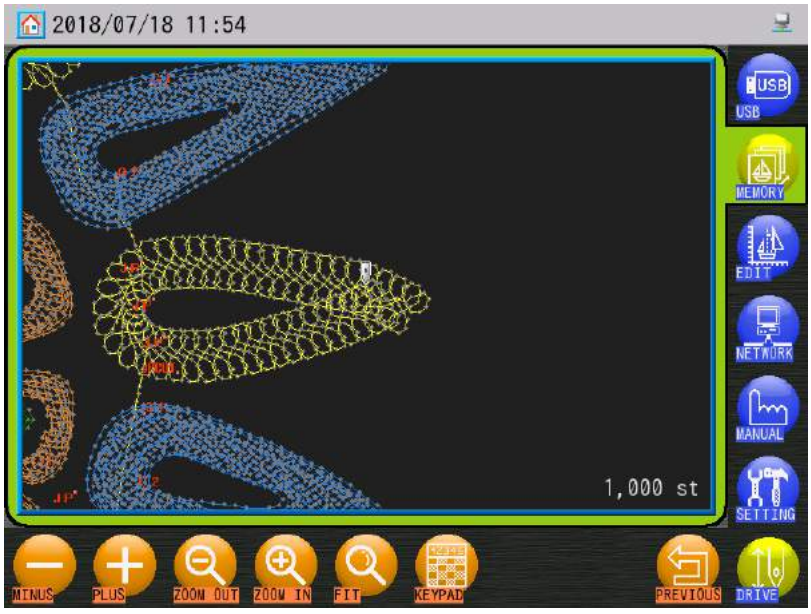
7. Drive Zoom

Press the **DRV. ZOOM** Icon during embroidering to zoom in on the embroidery without stopping the machine.

➢ **This operation is only available in Drive mode.**

1) Press the **MEMORY** Icon to display the Memory Menu.

2) Press the **DRV. ZOOM** Icon to zoom in on the embroidery position.



A B C D E F G H I J

The Display zooms in on the current stitch being sewn the moment the

DRV. ZOOM Icon was pressed.

The bottom-right corner of the screen, displays the stitch number zoomed in on.

3) Scaling of the display.

Press the **ZOOM IN** Icon above “E” to zoom in on the current stitch position.

Press the **ZOOM OUT** Icon above “C” to zoom out on the current stitch position.

(The maximum zoom out is the whole display)

Press the **FIT** Icon above “E” to display the whole design.

4) The display position can be moved by touching and sliding the screen.

5) Change the displayed stitch position.

Press the **PLUS** Icon above “A” to move back 1 stitch in the design.

Press the **MINUS** Icon above “B” to advance forward 1 stitch in the design.

Press the **KEYPAD** Icon above “F” to open the numeric keypad.

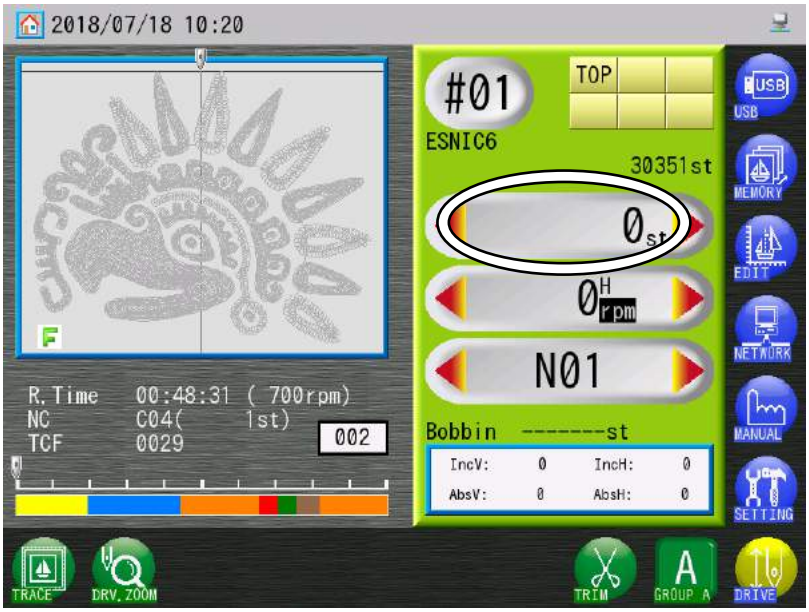
Refer to “Chapter 3, 9. Keypad” for details using the keypad.

8. Float

Float moves the Pantograph through the design without sewing.

*** This function is only available in Drive Mode.**

1) Press the center of the stitch number area on the Main screen (except the arrow icons).



2) The Float screen appears and the screen color changes.

A B C D E F G H I J

A: Displays the Color change function, Stitch number (st), Number of repeats (Repeat).

- Color change function only shows when the currently selected stitch contains one.
- Number of repeats is not displayed in the following cases:

  - Both Program items 15 “Repeat” and 16 “Matrix” are not changed.

- Number of repeats is set to 201 (unlimited).

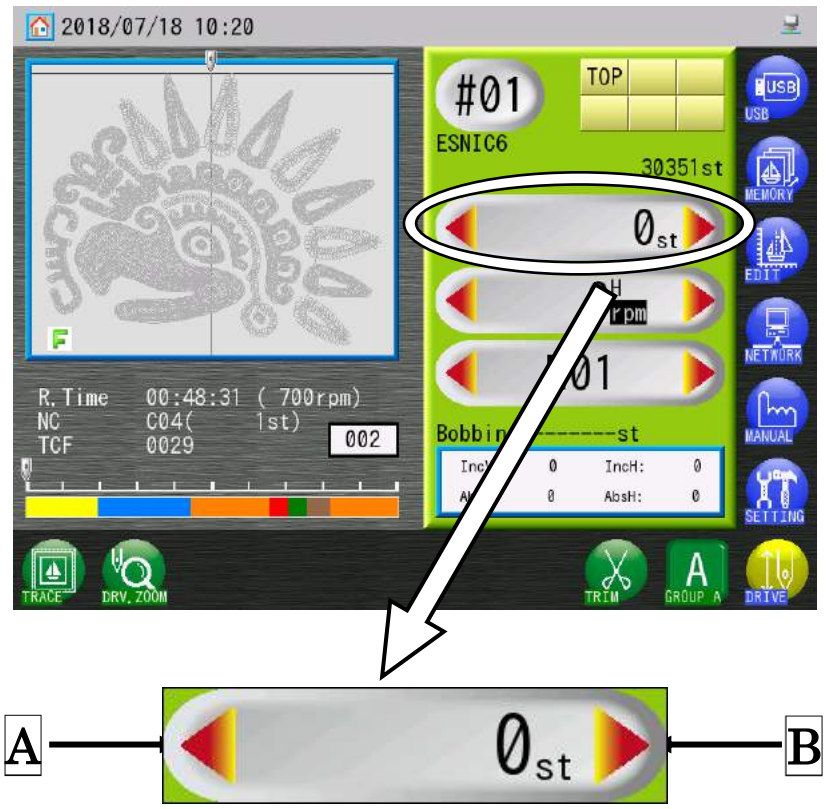
3) Push the Start switch to Float, stitch by stitch without sewing.
   - Before starting, please ensure the safety of you and others around the machine when the pantograph moves.

4) Press the **FLOAT** Icon to return back to the main screen in Float mode.

   Press the **DRIVE** Icon to exit Float mode and return back to the main screen.

9. 1 Stitch Float

Floats the pantograph 1 stitch directly from the Main screen.



1) Press the **Left Arrow Icon** in area A to float backwards 1 stitch.

   Press the **Right Arrow Icon** in area B to float forward 1 stitch.

10. High Speed Float (By Stitch Count)

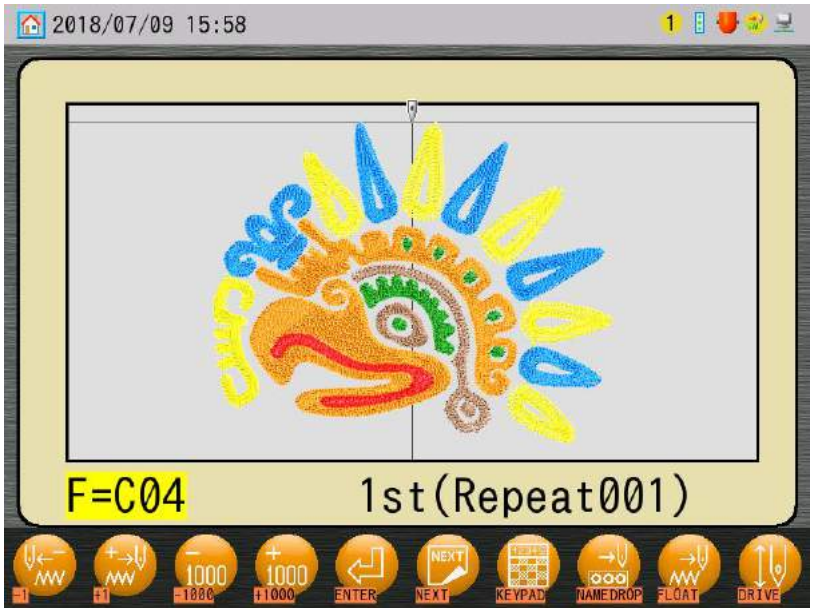
Instructions for floating directly to a specific stitch number.

***This function is only available when operating Float in Drive mode.**

1) Press the center of the stitch number area on the Main screen (except the arrow icons) to display the **High Speed Float** screen. Refer to section "8. Float" for more details.

2) Use the **NEXT**

Icon above "F" to toggle the screen between the High Speed Float and Color Change Float screen.



A B C D E F G H I J

(High Speed Float screen)

3) Press the **-1** Icon above "A" to decrease the stitch number by 1 stitch.

Press the **+1** Icon above "B" to increase the stitch number by 1 stitch.

When you press and hold the or Icon, the stitch number decreases/increases stitches until you release the Icon.

Press the **-1000** Icon to decrease the stitch number by 1000 stitches.

Press the **+1000** Icon to increase the stitch number by 1000 stitches.

Press the **KEYPAD** Icon above “G” to enter a stitch number directly.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- When the stitch number is changed, it will blink to indicate it was changed.
- When a design has Repeats, Pressing the or Icon will go backwards or forwards to the next repeat design under the Following conditions:
  - The current stitch number is near the end of the design to advance to the next repeat design, or near the beginning of the design to back up to the previous repeat design.

4) Press the **ENTER** Icon to move the pantograph to the embroidery position of the selected stitch number.

- Before pressing the Icon, please ensure the safety of you and others around the machine when the pantograph moves.

5) Press the **EXIT** Icon above “J” to cancel Float mode.

- Pressing the **BACK** Icon above “I” goes back to the Main screen while staying in Float mode.

11. High Speed Float (By Color Change)

Instructions for floating to a specific color change in a design.

*** This function is only available when operating Float in Drive mode.**

1) Press the center of the stitch number area on the Main screen (except the arrow icons) to display the **Color Change Float** screen. Refer to section "8. Float" for more details.

2) Use the **NEXT**

Icon above "F" to toggle the screen between the Color Change Float and High Speed Float screens.

A B C D E F G H I J

(Color Change Float screen)

3) Press the **C-**

Icon above "A" to go back to the previous color change.

Press the **C+**

Icon above "B" to advance to the next color change.

- When a design has Repeats, Pressing the

or

Icon will go backwards or forwards to the next repeat design under the Following conditions:
- The current stitch number is near the end of the design to advance to the next repeat design, or near the beginning of the design to back up to the previous repeat design.

4) Press the **ENTER** Icon to move the pantograph to the embroidery position of the selected stitch number.

- Before pressing the Icon, please ensure the safety of you and others around the machine when the pantograph moves.

5) Press the **EXIT** Icon above "J" to cancel Float mode.

- Pressing the **BACK** Icon above "I" goes back to the Main screen while staying in Float mode.

12. High Speed Float (By Name Drop)

The pantograph moves to the embroidery position for a selected name in a Name Drop list.

***This function is only available when the machine is in Name Drop mode.**

Refer to "Chapter 11, 23. Name Drop" for details on using Name Drop.

12-1. Float by Name in List.

1) Press the center of the stitch number area on the Main screen (except the arrow icons) to display the Float screen. Refer to section "8. Float" for more details.

2) Press the **NAMEDROP** Icon to display the Name Drop Float screen.

A B C D E F G H I J

3) Select a name in the list.

Name Drop List Icon meanings below:

▲ : Previous name

● : Current name

▼ : Next name

4) Press the **PREVIOUS** Icon to move the pantograph to the embroidery position for the previous name.

(Ensure your safety and others before pressing this icon)

Press the **NEXT** Icon to move the pantograph to the embroidery position for the next name.

(Ensure your safety and others before pressing this icon)

5) Press the **ENTER** Icon above "E" to move the pantograph to the embroidery position for the selected name.

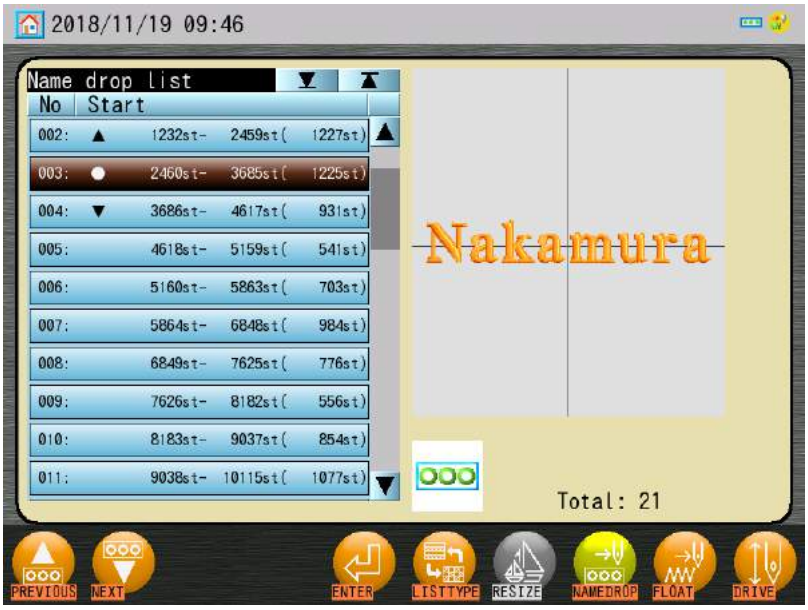
6) Press the **EXIT** Icon above "J" to cancel Float mode.

- Pressing the **BACK** Icon above "I" goes back to the Main screen while staying in Float mode.

12-2. Float by Name in Thumbnail list

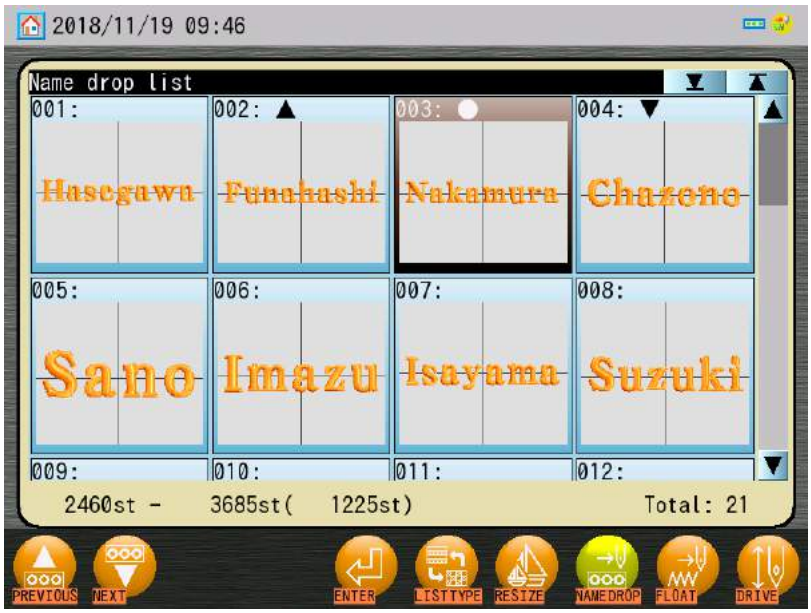
1) Press the center of the stitch number area on the Main screen (except the arrow icons) to display the Float screen. Refer to section “8. Float” for more details.

2) Press the **NAMEDROP** Icon to display the Name Drop Float screen.



A B C D E F G H I J

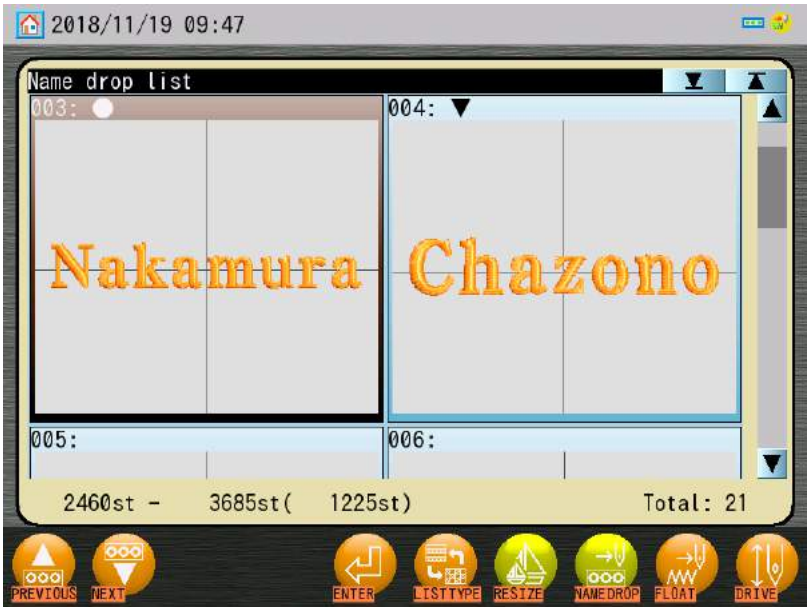
3) Press the **LISTTYPE** Icon to switch over to the Thumbnail Design Name list.



A B C D E F G H I J

4) The Thumbnail display image size is changeable.

Press the RESIZE Icon to change image size.



13. Re-Setting Origin

This is the method of changing the embroidery position, in the middle of sewing. In effect, this resets the origin for the design.

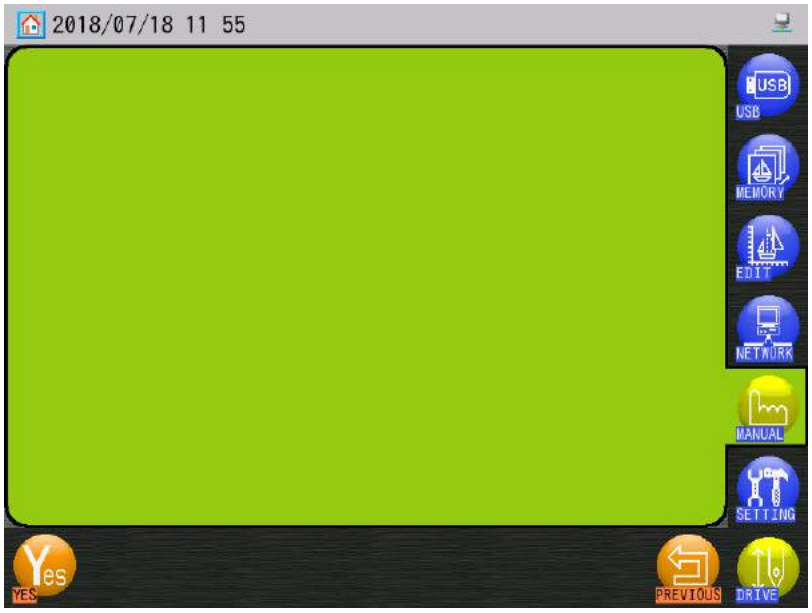
*** This function is only available in Drive mode, with the exception of stitch 0 (0 st).**

1) Start sewing a design like you normally would.

2) Stop sewing and use the **Jog keys** to move the pantograph to a new sewing position.

3) Press the **MANUAL** Icon to display the Manual menu.

4) Press the **RESET SP** Icon to display the Reset Origin screen.



A B C D E F G H I J

Press the **YES** Icon above “A” to change the sewing position for the design.

14. Teaching Color Codes (While sewing)

Instructions for changing the color sequence while embroidering.

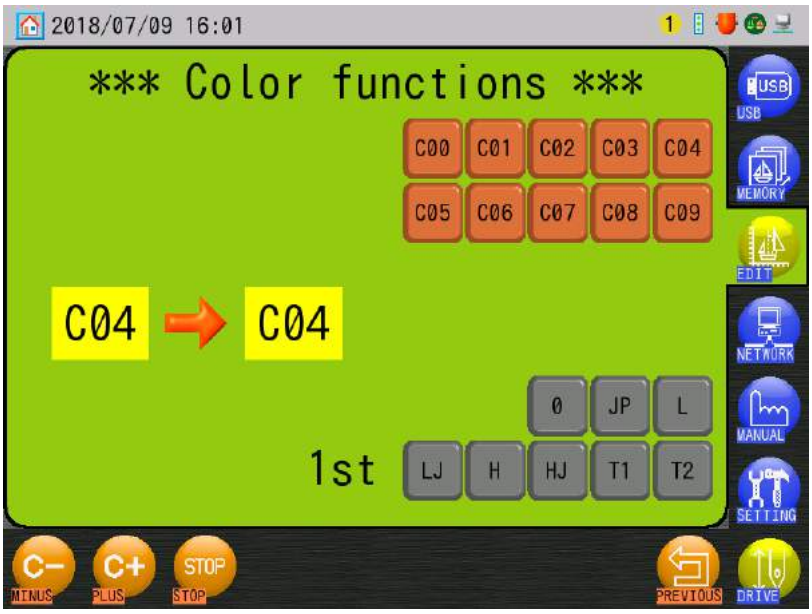
*** This function is only available in Drive mode.**

1) Press the Memory **EDIT** Icon to display the Memory Edit menu.

2) Press the **TCH. IN** Icon.

3) Start the machine with the Start switch.

4) The machine will automatically stop at the next Color change or Stop function and display the Teaching screen as follows.



A B C D E F G H I J

5) Press the **MINUS**

Icon above “A” or the **PLUS**

Icon above “B” to change the Color Change function.

Press the **STOP**

Icon above “C” to change to a Stop function.

6) Press the Start switch to update the function and restart the machine.

15. Teaching All Function Codes (While sewing)

Instructions for changing all function codes while the machine is sewing.
Refer to “Chapter 13, 1. Function Codes” for details about function codes.

* Using High Speed Float allows you select a specific stitch so you can change the function code.

*** This function is only available in Drive mode.**

1) Press the Memory **EDIT** Icon to display Memory Edit menu.

2) Press the **ALL** Icon to display the All Function Teach screen.

A B C D E F G H I J

3) Press the **MINUS** F− Icon above “A” or the **PLUS** F+ Icon above “B” to change the Function code.

4) Press the **SET** Icon above “D” to update the function.

16. Stitch Back

Instructions for backing up the machine to repair missed stitches.

1) If the embroidery machine is running, stop the machine.

2) Push and hold the Stop switch to start the Stitch back. The pantograph will continue to move backwards thru the stitches while holding the Stop switch. Release the Stop switch when you have reached the desired stitch back position.

3) If you Stitch back more than 30 stitches, the machine will continue to stitch back even after you release the Stop switch. In this case, use the Start switch to stop the Stitch back.

4) After Stitching back to the desired position, start the machine with the Start switch to sew over the backed up stitches.

17. Automending

Automending is the Stitch back feature for one or more appointed sewing heads. In other words, not all the sewing heads are involved like the Stitch back feature as described on the previous page. Press and hold the Automending switch on the Tension Box for the appointed head, while the machine is stopped. The pantograph will back up stitch by stitch, until the Automending button is released. The appointed sewing head or heads that have the Automending feature active, will be indicated by the Red LED on the Tension Box.
Use the Start switch to sew over the backed up stitching on the appointed sewing head(s) only.

1) Stop the machine with the Stop switch.

2) Press and hold the Automending switch on the Tension Box on the sewing head or heads that need stitches repaired and sewn over. Release the Automending switch when the pantograph reaches the desired stitch back position.

3) Press the Start switch to start sewing automend stitches on the appointed head(s).

4) MC1 Automending settings:

#08 : Overlap (Overlap stitches after Automending)	Default : 4 stitches
#09 : Auto Start (Automatic start after Automending)	Default : Off

Auto Start settings :

- Auto Start Off: The machine stops at the end of Automending and Stitches back automatically as set by the Overlap parameter.
- Auto Start On: The machine continues sewing and engages all of the sewing heads at the end of Automending.

✧ To Automend back on many stitches or to Automend on more than one head, press the Automend button on the appointed head(s) so the Red LED is lit on those heads. Then press and hold the Stop switch to back up stitch by stitch. Backing up past 30 stitches will continue to back up when the Stop switch is released. Press the Start switch to stop backing up.

18. Standby Mode (Resume)

When the power to the machine is cut while in Drive mode, the machine can resume sewing in the same position where it left off. This is called Standby.

1) Turn the machine ON. Refer to “Chapter 3, 2. Powering the Machine On/Off”.

2) Seek Origin.

3) The Standby screen appears.

A B C D E F G H I J

4) Press the **YES** Yes Icon above “H” to Continue the last stitch of the design it was on before turning the machine OFF.

Press the **NO** No Icon to Cancel.

✧ Press the **CUT** Icon to cut the thread before Standby.

Refer to “Chapter 4, 4. Trimmer” for more details on trimming.

19. Automatic Control by B-PASS

By coordinating with B-PASS, B-PASS automatically controls various production operations on the machine, such as Thread Color changes, Speed, and Production quantities.

Refer to “Chapter 10, 16. B-PASS Coordination” for details on B-PASS.

19-1. Thread Color (list) Instructions

The thread instructions show what threads colors should be for each needle and which ones need to be replaced.

1) Select a design with B-PASS Thread instructions, and Press the **DRIVE** Icon.

2) The Thread Instructions screen appears.

A B C D E F G H I J

Thread information list shows:

Needle : Needle Number.
Before : Thread Color and Color Number before replacement.
After : Thread Color and Color Number after replacement.
Check : Indicates whether thread color needs to be replaced or not.

Check Status:

Blank : Thread Color for this Needle number needs to be replaced.
(- -) : Thread Color is already correct for this needle, no replacement.
Not use : This thread color and needle is not needed for this design.
OK : Thread Color for this Needle number was replaced and Ok’d.

Use the **CANCEL** Icon above “J” to cancel this operation and Drive mode.

3) View the Instruction list, and replace the thread colors as instructed per needle number.

4) After replacing a thread color for a needle, select this needle number in the list.

5) Press the **CHECK** Icon above “A” to “OK” this thread color change.

A B C D E F G H I J

6) Repeat Steps 3) and 4) to replace all the necessary threads color replacements.

Afterwards, the **TEACH** Icon is available for use.

7) Press the **TEACH** Icon above “H” to automatically teach the thread colors for this design and put the machine in Drive mode.

19-2. Thread Color Instructions 2 (Details)

The detailed thread instructions, give more information about thread replacement.

1) Select a design with B-PASS Thread instructions, and Press the **DRIVE** Icon.

2) The Thread Instructions screen appears.

A B C D E F G H I J

3) Press the **LIST** Icon above “C” to display the Detailed Instructions screen for thread replacement.

Top Screen : Needle number

Left of Screen : Before replacement ; Serial no.(Color number), Name, Type, Color

Right of Screen : After replacement ; Serial no.(Color number), Name, Type, Color

A : Displays the Check Status. This indicates whether thread color needs to be replaced or not. Refer to “Section 19-1. Thread Color (list) Instructions” for details on Check Status.

Press the **LIST** Icon again to go back to the thread instructions screen.

4) View the instructions on this screen, and replace the thread color as instructed for this needle number.

5) Press the **CHECK** Icon above “A” to “OK” this thread color replacement.

6) Press the **PREV** Icon above “E” to go back a needle number.

Press the **NEXT** Icon above “F” to go forward a needle number.

7) Repeat Steps 4) ~ 6) to replace all the necessary thread color replacements.

Afterwards, the **TEACH** Icon is available for use.

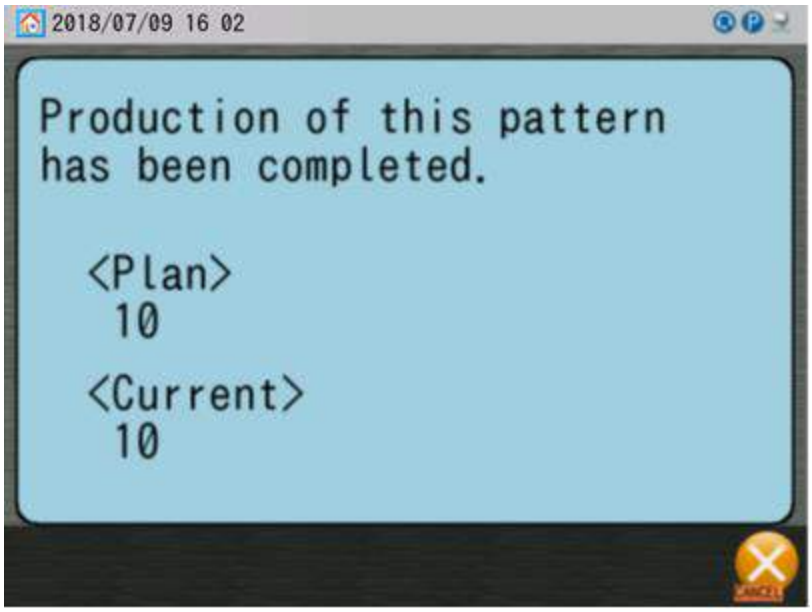
8) Press the **TEACH** Icon above “H” to automatically teach the thread colors for this design and put the machine in Drive mode.

19-3. Quantity Control 1 (Drive Set)

The drive set is prohibited by the production quantity instructions.

1) Select a design with B-PASS Quantity instructions, and Press the **DRIVE** Icon.

2) When the current quantity equals or exceeds the scheduled quantity, the Quantity Caution screen appears. In this case, after exiting Drive mode you cannot set Drive mode again for this design and you'll receive this message again to show production is complete.



A B C D E F G H I J

3) Press the **CANCEL** Icon above "J" to cancel and go back to the Main screen.

✧ If you want to sew the same design again, download the design from the server again or correct the current quantity.

Refer to "Chapter 6, 9. Product Instructions" for details correcting the current quantity.

19-4. Quantity Control 2 (Startup)

Startup is prohibited if production is equal to or exceeds the production quantity instructions.

1) Turn On the proper number of Sewing Heads needed to match the quantity needed to finish the scheduled quantity.

2) When the current quantity equals or exceeds the scheduled quantity, Starting the design again with the Start switch is prohibited.

   ✧ If you want to sew the same design again, download the design from the server again or correct the current quantity.
   Refer to “Chapter 6, 9. Product Instructions” for details correcting the current quantity.

19-5. Quantity Control 3 (Write Protect)

Designs are write protected against deletion or overwriting.

1) Designs with B-PASS production quantity information are write protected against deletion or overwriting.

The following Icon indicates Design with Write protection.

A design with Write protect cannot be deleted or overwritten.

2) When the current quantity of the design is equal to the scheduled quantity, Write protect is cancelled for the design.

19-6. Speed Control 1 (Production Instructions)

The speed is controlled by the speed of the product instructions.

1) Select a design with B-PASS Speed instructions, and Press the **DRIVE** Icon.

2) Designs with Start Speed Instructions, will automatically set this speed setting for the machine when set in Drive mode.

3) If the Design has a Max Speed instruction, the operator will not be able to exceed this speed setting during embroidering for this design.

19-7. Speed Control 2 (Thread Instructions)

The speed is controlled by the speed set in thread instructions.

1) Select a design with B-PASS Thread Speed instructions, and Press the **DRIVE** Icon.

2) If a Thread color has a thread instructions Max Speed setting, the speed will automatically slow down to this speed when sewing this color. Also, the operator cannot exceed this speed while sewing this color.

Chapter 10. Network

This chapter contains information on using the Network program.

1. Before Using the Network System
2. Network Menu
3. Operator Codes
4. Reporting Operators by Barcode
5. Break Call
6. Operator Call
7. Time-Out
8. Schedule Download
9. Direct Download
10. Free Download
11. Barcode Scanning
12. ABC LAN Mode
13. R-N Mode (Restricted Network)
14. Auto Cancel Drive Setting
15. Auto Drive Setting
16. B-PASS Coordination
17. Uploading Designs
18. COM Protocol Mode Download

1. Before Using the Network System

Instructions for using a network connection between the computer and embroidery machine.

* Please refer to the LEM Server Instruction Manual for Server Software operations.

1) Introduction

- The server can send designs to designated machines.
- Operators can download designs from the server.
- The operational status of the embroidery machine can be sent to the server in real time.
- The Network system can automatically recover connections between the embroidery machines (Automat) and the server.

2) Networking Setting:

The network has 2 modes.

LAN mode

COM mode

Refer to “Chapter 11, 12. Network” for setting details.

3) Operations

The network has 2 major functions.

< Logging machine status > : Operational status of each embroidery machine is automatically sent to the server.

< Uploading /Downloading designs > : Upload/download designs between the embroidery machines and the server.

4) File formats for the network system

The files downloaded from the server are converted into PRJ files.

PRJ file = Design with stitch data, operational conditions, and a bitmap image.

5) To use the network system, the following items are required:

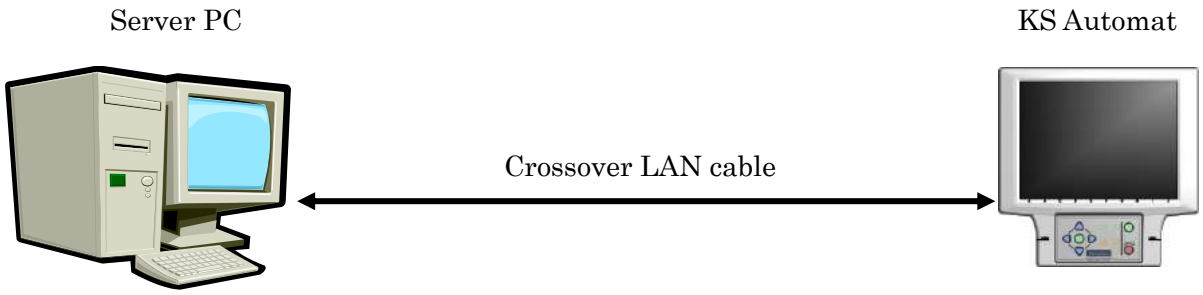
- BEKS Automat
- LEM Server (DFS, LEM4 Pro3, or LEM2 Jr Server software) to be installed on a computer to be networked with the machines.
- Computer

  Windows OS

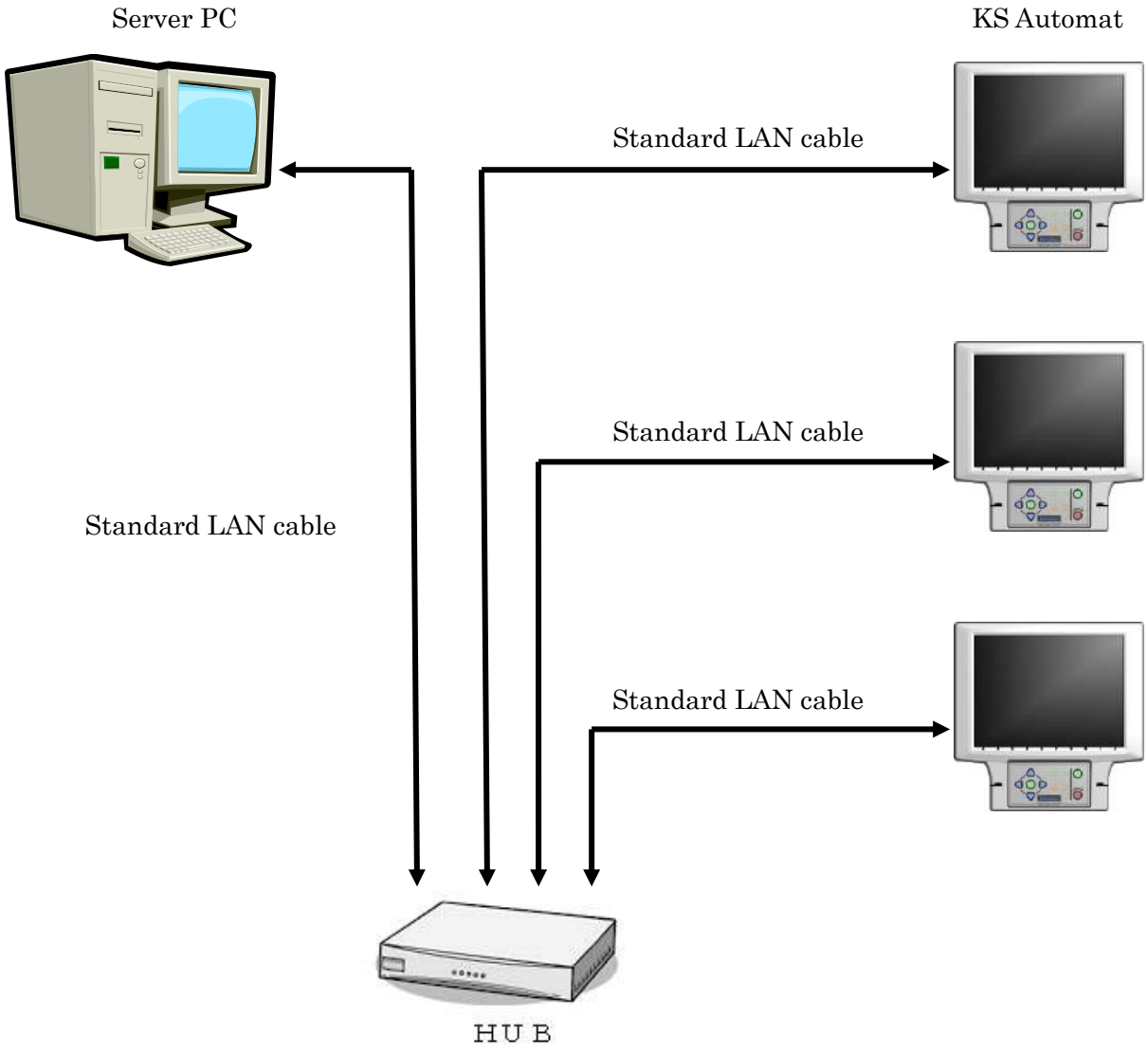
  LAN cables (Suitable cable for connection mode)

  HUB/Switch (For connecting more than 2 embroidery machines)

Example 1： One server PC and one Barudan KS series embroidery machine
(Using one Crossover LAN cable.)



Example 2： One server PC and multiple Barudan KS series embroidery machines
(Using standard LAN cables.)



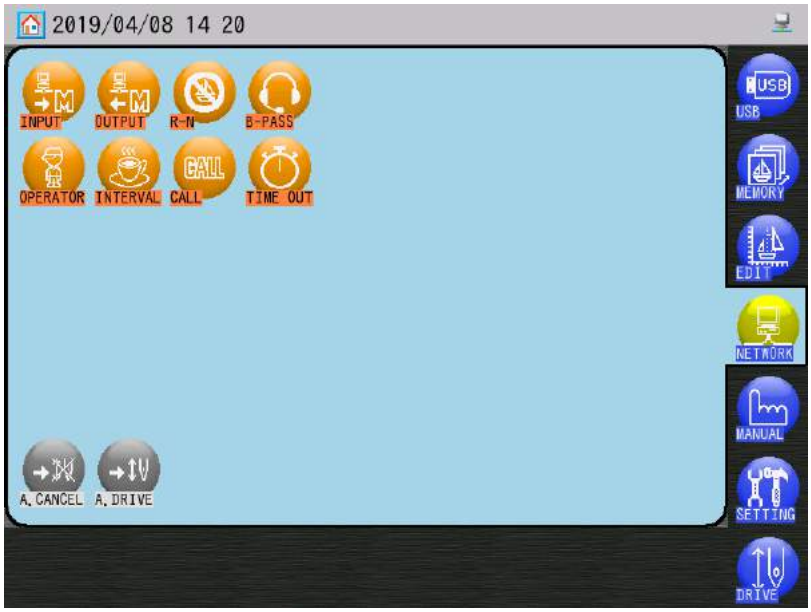
2. Network Menu

Instructions for displaying and using the various Network Operations.

2-1. Displaying the Network Menu

1) Press the **NETWORK** Icon of the Main screen.

2) The Network Menu displays.



2-2. Network Menu Icons

These Icons open operations for downloading designs and other networking functions, such as, changing operators, etc.

The actual operations are explained in detail after this basic information.

Design Download Icon

Menu to Download designs from the server

Design Upload Icon

Menu to Upload designs to the server

ABC Icon

Automates the design download operation for Schedule download mode of LEM Server.

Some operations are restricted, such as Input/Output of Designs and changing Memory locations.

R-N Mode Icon (Restricted-Network)

In the Direct Download mode or the Free Download mode of LEM Server, some operations are restricted, such as Input/Output of Designs and changing *Memory locations.

* In Schedule download mode, the ABC Icon is displayed for Memory number.

* In Direct download mode or the Free Download mode, the R-N Mode Icon is displayed for Memory number.

B-PASS Manage Mode Icon

Turns B-PASS Manage IN or OUT

Automates the design download operation when using Schedule download mode of LEM Server. With B-PASS coordination, B-PASS automatically controls various production operations on the machine, such as, Thread Color changes, Speed, and Production quantities.

Operator Icon

Used for Operators to login to the server. Operator names or numbers can be stored on the machine using this menu for logging in.

Interval (Break) Icon

Sends a Break notice to the server. Indicating the machine has stopped for break.

Call Icon

Sends a Call report to the server.

Exchange (Time-Out) Icon

Sends a Time-Out notice to the server so management knows work other than production is being done (Example design change, test sewing, or other issues, etc.).

3. Operator Codes

Instructions for registering operator codes on the Automat and with the server.
For information about this operation on the PC server, please refer to the LEM Server manual.

3-1. Reporting an Operator Code

Registers and reports the current operator to the server.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **OPERATOR** Icon to display the Operator menu.

A B C D E F G H I J

3) Select an Operator code in the list.

4) Press the **SEND** Icon above “I” to send the Operator code to the server.

3-2. Operator Code Registration / Change

Use this operation to add a new operator, or change a name in the list.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Select an Operator code in the list.

3) Press the **CHANGE**

Icon above “A”.

4) The Character keypad appears.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

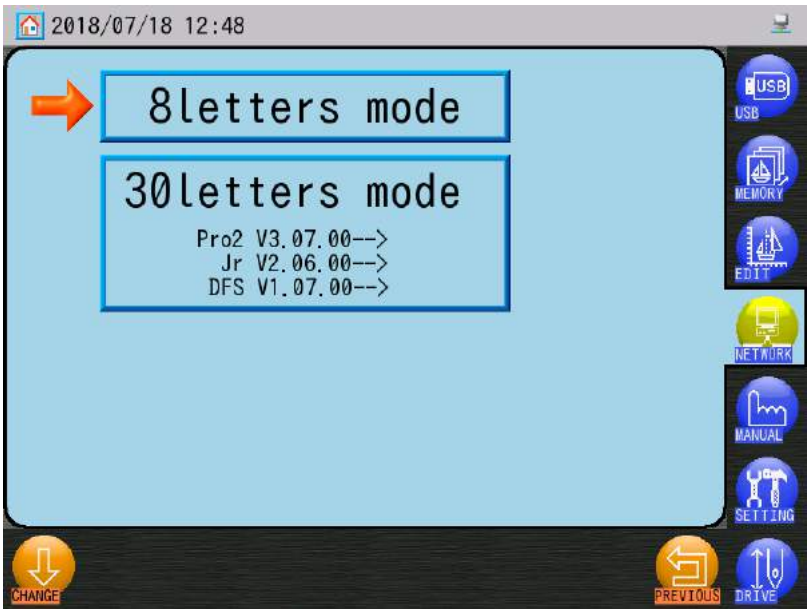
3-3. Operator Letter Mode

Change the maximum number of characters used for the operator code.

For information about this operation on the PC server, please refer to the LEM Server manual.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press and hold the **MODE** Icon above "E" to display the Operator Letter Mode menu.



A B C D E F G H I J

3) Press the **CHANGE** Icon above "A" to Change Letter modes.

- Before changing to 30 letters mode, make sure the LEM Server software version you're using is compatible with the list shown in the box on the screen.

4. Reporting Operators by Barcode

Uses the barcode to report operator codes.

4-1. Registration and/or Reporting Operator Codes

The following 3 barcodes are used to register and report an operator code.

For information about this operation on the PC server, please refer to the LEM Server manual.

Operator Menu barcode

Operator Code barcode

OK and Send barcode

- The “Operator Code” barcode shown above is for an operator named “KURIMOTO”. Please make unique barcodes for each of your operators, to use the function.

1) Scan the “Operator Menu” barcode to display the Operator menu.

A B C D E F G H I J

2) Scan the “Operator Code” barcode to input or select the operator code.

- If the same operator has already been registered, that operator is selected.
- If the operator is not on the list, the operator code is added to the list and selected.

3) Scan the “OK” barcode to send the operator code to the server.

4-2. Operator Barcode List

No.	Item	Barcode
1	Operator Menu	*$WORKER ID$*
2	Operator Code	Operator's Name or Id Number Barcode
3	Appending the Operator Code	*$APPEND$*
4	OK and Send	*OK*
5	Cancel	*$CANCEL$*

- Refer to "Chapter 3, 8. Barcode Operation" for more barcode details.
- Please ask your distributor for details on how to make barcodes.

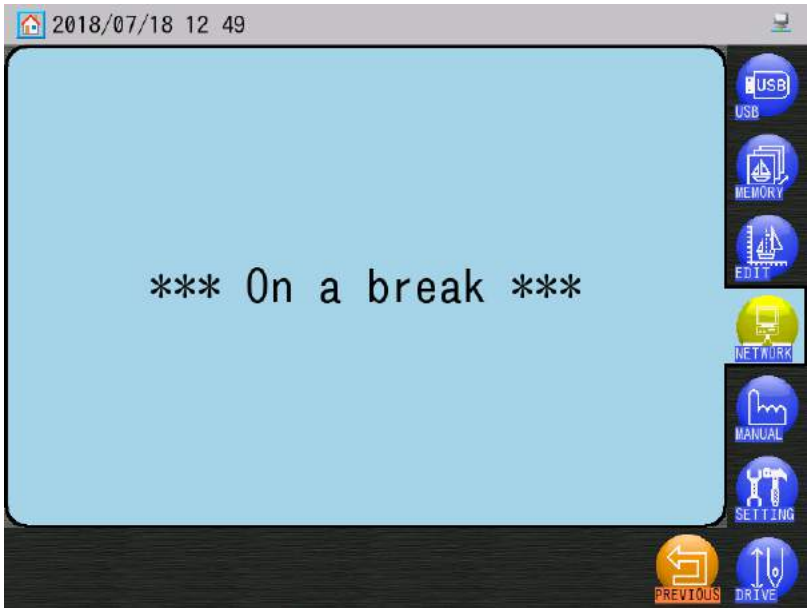
5. Break Call

Instructions on how an operator reports to the server that they are on break and the machine is not sewing.

For information about this operation on the PC server, please refer to the LEM Server manual.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INTERVAL** Icon to report “On a break”.



3) To end the Break, Press the Icon on the screen.

6. Operator Call

Instructions for placing a Call to the server.

For information about this operation on the PC server, please refer to the LEM Server manual.

6-1. Call Notifications

This function allows operators to pick what type of call notification is sent to the server.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **CALL** Icon to display the Call title list.

A B C D E F G H I J

Call title list of notices

➢ The default Call title list of notices are assigned as follows:

No	Title	Contents
00	(Old version call)	Default CALL *1
01	Thread_runs_out	Need thread
02	Complete_sewing_test	Sew test completed
03	Machine_trouble	Machine problem, tech needed
04	Complete_maintenance	Maintenance completed
05	Wait_next_indication	Waiting for supervisor
06	Operator_gets_sick	Operator is hurt or ill
07~19	(None)	Blank (Can be programmed)
20	Other_reason	Other reasons

*1 This is the default call made by older version Automats, such as the D and V-series machines. This is a call only, with no reason included.

3) Select a Call notice in the list.

4) Press the **SEND** Icon above “G”, to send the Call notice to the server.

6-2. Editing Call Notifications

The information in the call notification can be customized.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **CALL** Icon to display the Call title list.

A B C D E F G H I J

3) Select a Call notice to edit in the list.

4) Press the **CHANGE** Icon above “A” to display the character edit keypad and edit the notice.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

* “00 : (Old version call)” cannot be edited.

7. Time-Out

Instructions for reporting that the machine is not in production (Design change, Test sewing, Maintenance, etc.).

For information about this operation on the PC server, please refer to the LEM Server manual.

1) Press the **NETWORK** Icon to display the Network Menu.

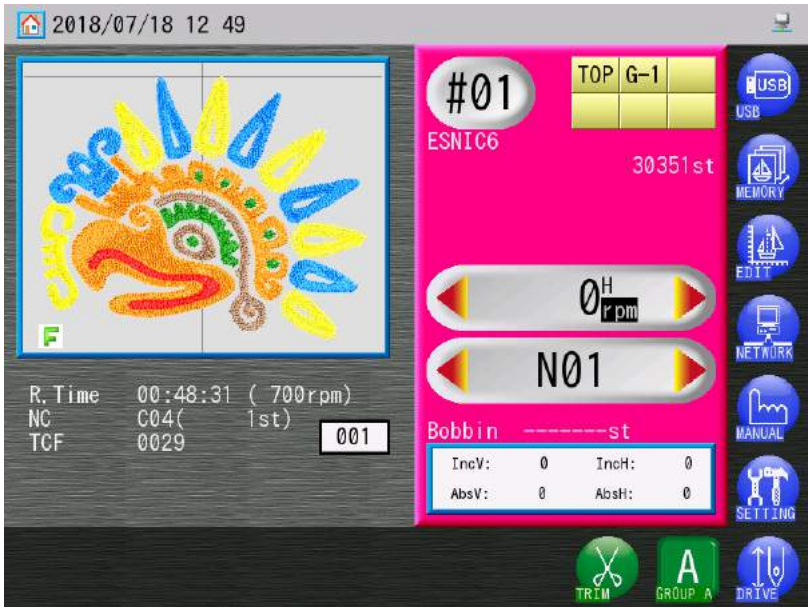
2) Press the **EXCHANGE** Icon to report "Time-out" from production, and the screen color will also change to give indication.

* Note! While in Time-Out mode, you have to press and hold the Start switch on the machine if you want to something in this mode.

3) To Exit, press the **EXCHANGE** Icon to report that the machine is ready for production. After that, the screen color will return back to normal.

4) Press the **YES** Icon to send the "Time-Out" notice.

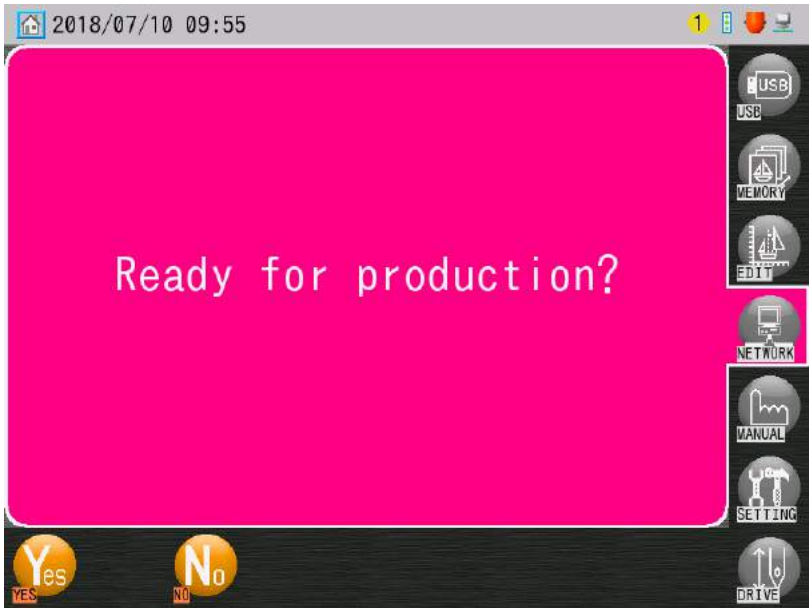
Press the **NO** Icon to return back without sending the notice.



* To sew a design while in Time-Out mode, you have to “Press and Hold” the start bar or switch to start the machine.

Refer to “Chapter 9, 2. Drive Mode”.

5) Press the **EXCHANGE** Icon again to exit Time-Out mode and the Ready for production screen displays.



A B C D E F G H I J

6) Press the **YES** Icon to send the Completion notice for Time-Out and the screen color returns back to normal.

Press the **NO** Icon if needed to cancel the notice.

8. Schedule Download

Download the next design that has been scheduled on the LEM server.

Set the Network server application to **Scheduled Download Mode** beforehand.

For information about this operation on the PC server, please refer to the LEM Server manual.

8-1. Downloading a Design from the Schedule

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INPUT** Icon to display the Schedule Network List.

A B C D E F G H I J

3) Press the **INPUT** Icon above "G" to download the next design in the schedule.

- You can only download the first design in the list. You cannot download the other numbered designs in the list.
- Designs downloaded from the server will have this **Network** icon in the design information area for indication.

  Refer to "Chapter 3, 5. Screen Structure" about design information icons.

4) Options before downloading:

1. To view a design and details, select a design in the list and press the **INFO** Icon above “A”. Refer to “9.1 Searching and Downloading a Design by its Name” for information details.

2. To select a memory location where the downloaded design is saved, press the **MEMORY** Icon above “B” to display the design memory list.

A B C D E F G H I J

3. Select a memory location in the list.

4. Press **INPUT** Icon above “G” to download the next design in the schedule.

   - By default, the next empty memory location is automatically selected, so selection is not necessary.
   - Memory location #00 can be selected and used as a fixed memory location for overwriting the previously downloaded design.

8-2. Multi Schedule Option

This feature allows you to pick and choose which design in the schedule is downloaded. You can also select multiple designs in the list, and download them.

This Multi Schedule option has to be turned on in the LEM Design File Server program's Option menu.

For information about this operation on the PC server, please refer to the LEM Server manual.

- The following software versions or newer are needed for the Multi Schedule option.

LEM Server Pro 3	: V4.01.00
LEM Server Jr	: V2.08.00
Design File Server	: V1.08.00

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INPUT** icon to display the Schedule Network list.

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3) Select design(s) to download in the list.

- If needing to select Multiple designs for downloading:
  1. Double click a design to tag it with an (*) mark.
  2. Choose more designs and double click them to tag them with an (*) mark.
  3. Double click a design with an (*) again to untag it.
- Use the **ALL**

Icon above “D” to select or cancel all designs.

4) Press the **INPUT** Icon above “G” to download the selected design(s).

9. Direct Download

Instructions on downloading designs that are saved on the server.

Designs that will be downloaded need to be stored in the correct folders before downloading.

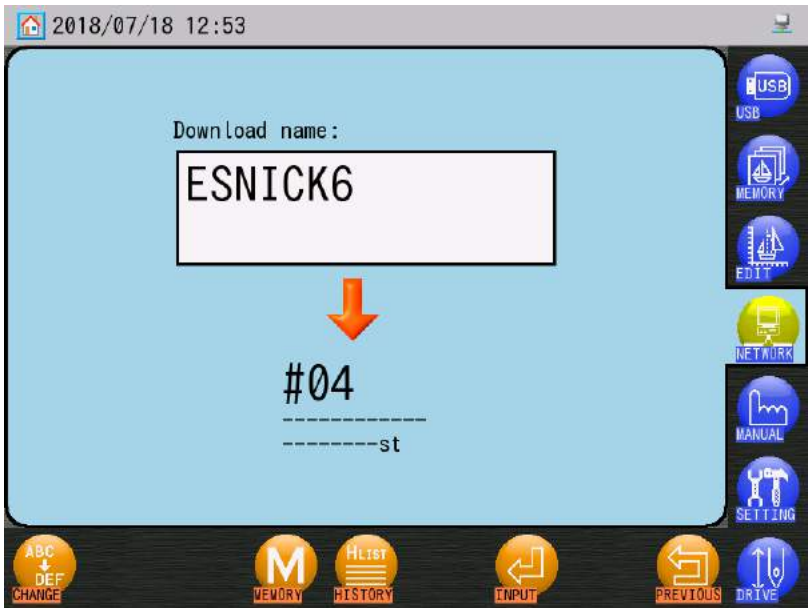
Set the Network server application to **Direct Download Mode** beforehand.

For information about this operation on the PC server, please refer to the LEM Server manual.

9-1. Searching and Downloading a Design by its Name

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INPUT** Icon to display the Direct Download screen.



A B C D E F G H I J

3) Press the **CHANGE** Icon above "A" to display the character keypad.

4) Use the Keypad to type in the exact name of the design to downloaded (minus the file extension).

Refer to "Chapter 3, 9. Keypad" for details using the keypad.

- Use the MEMORY Icon above "D" if you want to select the download memory location. Refer to "8.1 Downloading a Design from the Schedule" for details.

5) Press the MEMORY Icon to display the memory list (optional).

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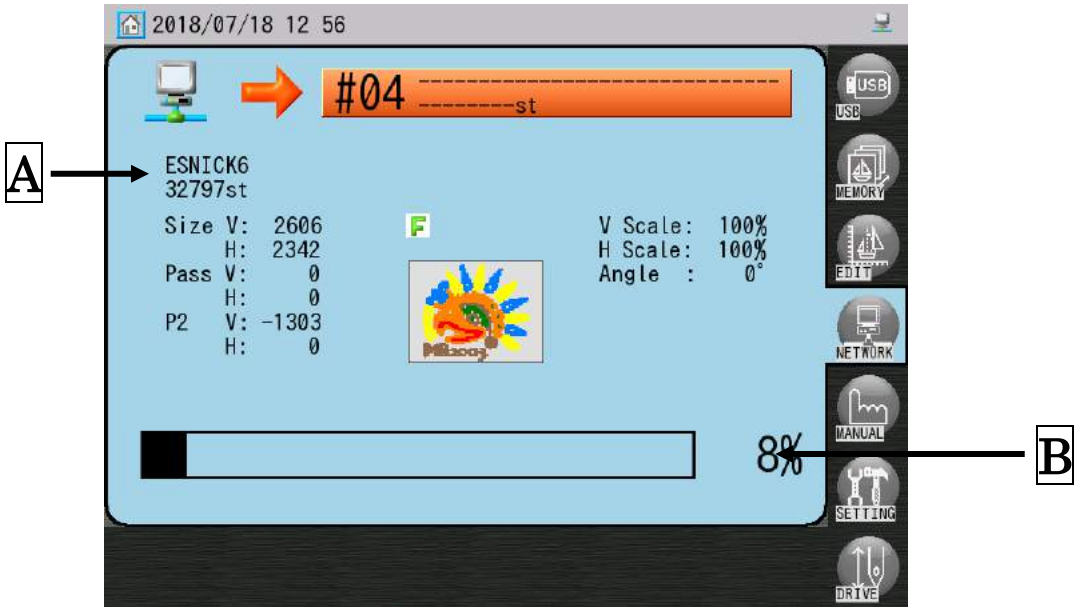
6) Select an empty Memory location in the list (optional).

7) Press the **INPUT** Icon above “G” to start downloading.

8) During downloading the following status screen appears.



A : The name of the design and total stitch number

Size : Design size

Pass : Distance between the start and end points, shown as horizontal and vertical values, measured in tenths of millimeters.

P1 : Distance between the start point and bottom left corner of the design, measured in tenths of millimeters.

P2 : Distance between the start point and top right corner of the design, measured in tenths of millimeters.

B : The status time bar of the design being downloaded

9) When the download finishes, the screen will go back to the main screen with the design selected on the screen.

- Designs downloaded from the server will have this **Network** icon in the design information area for indication.
  Refer to “Chapter 3, 5. Screen Structure” about design information icons.

9-2. Downloading from the Download History

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INPUT** Icon to display the Direct Download screen.

3) Press the **HISTORY** Icon above “E” to display the Download History screen.

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4) Select a design in the list.

5) Press the **SET** Icon above “G” to set the design, and go back to the direct download screen.

6) Press the **INPUT** Icon above “G” again to start downloading.

- Designs downloaded from the server will have this **Network** icon in the design information area for indication.
  Refer to “Chapter 3, 5. Screen Structure” about design information icons.

9-3. Multi Search Option

This option allows you to a search a design name in LEM direct download mode. All designs matching this name are displayed in a list on the machine. From the list, you can pick and choose which design to download. Multiple designs can be selected.
This Multi Search option has to be turned on in the LEM Design File Server program's Option menu.
For information about this operation on the PC server, please refer to the LEM Server manual.

- The following software versions or newer are needed for the Multi-Search option.

LEM Server Pro 3	:	V4.01.00
LEM Server Jr	:	V2.08.00
Design File Server	:	V1.08.00

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INPUT** Icon to display the Direct Download screen.

3) Press the **CHANGE**

Icon to display the character keypad.

Refer to "Chapter 3, 9. Keypad" for details using the keypad.

4) Enter a design name to search.

5) Press the **INPUT** Icon to search for designs that match.

6) A list of matching design names will be displayed.

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- Downloading will start automatically if there is only one design match.

- Use the **INFO** Icon to display information about the selected design.

  Refer to “9.1 Searching and Downloading a Design by its Name” for more details.

7) Select a design in the list.

- If needing to select Multiple designs for downloading:
  1. Double click a design to tag it with an (*) mark.
  2. Choose more designs and double click them to tag them with an (*) mark.
  3. Double click a design with an (*) again to untag it.

- Use the **ALL** Icon above “D” to select or cancel all designs.

8) Press the **INPUT** Icon above “G” to download the selected design(s).

10. Free Download Mode

This mode allows you to select a folder of designs on the network folder using LEM software. All designs in the folder are available at the machine to download. This is similar to the COM protocol mode.

To use this mode, set the Network server application to **Free Download Mode** beforehand. For information about this operation on the PC server, please refer to the LEM Server manual.

* The following software versions or newer are needed for the Free Download mode.

LEM Server Pro 3	:	V4.01.00
LEM Server Jr	:	V2.08.00
Design File Server	:	V1.08.00

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INPUT** Icon to display the Free Download Network list.

A B C D E F G H I J

3) Select a design to download in the list.

- If needing to select Multiple designs for downloading:
  4. Double click a design to tag it with an (*) mark.
  5. Choose more designs and double click them to tag them with an (*) mark.
  6. Double click a design with an (*) again to untag it.
  - Use the **ALL**

Icon above “D” to select or cancel all designs.

4) Press the **INPUT** Icon above “G”, to download the selected design(s).

- Designs downloaded from the server will have this **Network** icon in the design information area for indication.
  Refer to “Chapter 3, 5. Screen Structure” about design information icons.

11. Barcode Scanning

Download designs from the server using the Barcode scanner.

This applies to Direct Download mode only.

11-1. Reading

The following 3 Barcodes are needed to download a design.

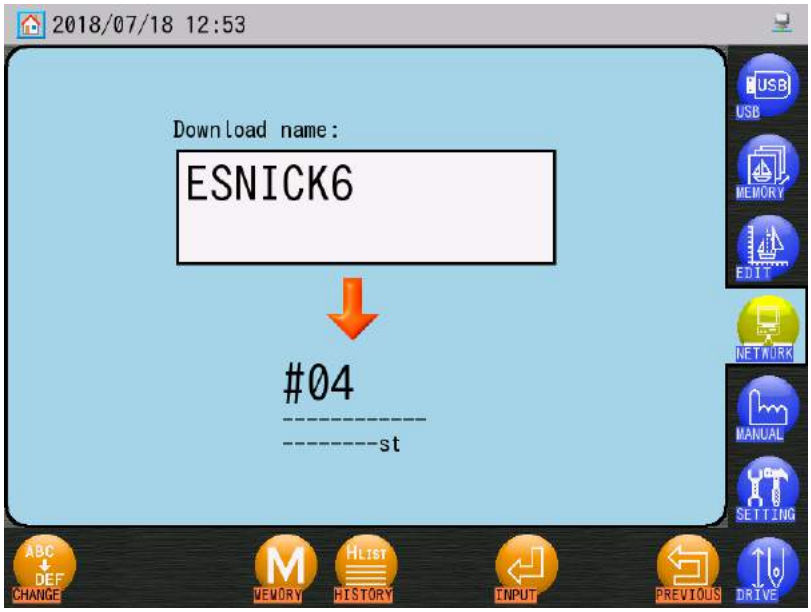
Download Barcode

Design Name Barcode

OK Barcode

- The above Design Name Barcode shown above is for a design named “BARUDAN”.
- A barcode using the design name is needed for downloading and design.
  Refer to “11-2. Download Barcode List” for more details.

1) Scan the “Download Barcode” to display the Direct Download screen.



* To cancel the download process, scan the “Cancel Barcode” (See barcode list).

2) Scan the “Design Name Barcode” to input the design name to download.

* Scan the “Append Barcode” if needed, to add additional characters to the design name to be downloaded.

3) Scan the “OK Barcode” to start downloading.

- Designs downloaded from the server will have this **Network** icon in the design information area for indication.
  Refer to “Chapter 3, 5. Screen Structure” about design information icons.

11-2. Download Barcode List

No.	Item	Barcode
1	Opens the Direct Download screen	*$DOWNLOAD$*
2	Design name to download	Design Name in Barcode format
3	Use to Append the design name	*$APPEND$*
4	Enters and Starts the Download	*OK*
5	Cancel	*$CANCEL$*

- Refer to “Chapter 3, 8. Barcode Operation” about the available barcodes to read.
- Please ask your distributor for details on how to make barcodes.

12. ABC LAN Mode

This function automates the LAN operation download in schedule mode.

In ABC mode, the next design in the schedule is automatically downloaded into memory, overwriting the previous design, when exiting Drive mode. Therefore, when you're finished sewing a design, all that's needed is to exit Drive mode, and the next design is automatically downloaded.

* This function is only available using Schedule download mode.

12-1. Setting and Cancelling ABC mode for LAN

* Note: You cannot set or cancel ABC mode while in Drive mode. You must be in Standby mode.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **ABC** Icon to turn ABC mode on.

When ABC mode is on, press the **ABC** Icon again to cancel ABC mode.

3) When ABC mode is turned on, the next design in the schedule is automatically downloaded when exiting the network menu.

* During ABC mode, you can only download and sew designs using ABC mode. You must cancel ABC mode to sew other designs in memory.

12-2. Design Skip

Skip the next design in the schedule from being downloaded.

* This function is only available when ABC mode for LAN is turned on.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **INPUT** Icon to display the Schedule Network list.

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3) Press and hold the **SKIP** Icon above “F” to skip the next scheduled design to be downloaded.

12-3. Auto Drive Mode

Auto Drive mode automatically sets the downloaded ABC design in Drive mode, after it's downloaded. This automates the ABC mode process even more.

* This function is available only when ABC mode for LAN is turned on.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **AUTO** Icon to turn Auto Drive mode ON.

Press the **AUTO** Icon again to turn Auto Drive mode OFF.

13. R-N Mode (Restricted Network)

This function restricts operations while using Direct download mode and Free download mode with the LEM Server.

The following operations are restricted.

- Memory location number is fixed as “R-N” and the next downloaded design overwrites the previous design.
- Input/Output operations by USB or COM
- Uploading designs to the network
- Design editing operations. (DSP, Outline stitch, Adding Running stitches)

*** R-N corresponds to Direct download mode and Free download mode.**

*** It doesn’t correspond to Schedule download mode.**
Schedule download mode equivalent is LAN ABC mode.

* While in Drive mode, R-N mode cannot be activated or deactivated.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **R-N** Icon to activate R-N Mode.

Pressing the **R-N** Icon again disables R-N mode.

* The Memory location number changes to “R-N” and cannot be changed while in R-N mode.

14. Auto Cancel Drive Setting

This function automatically cancels Drive mode after sewing a design one time.

* This is available only while in R-N mode or ABC LAN mode.

1) Press the **NETWORK** Icon to display the Network Menu.

(This is the sub-menu screen for ABC LAN mode)

2) Press the **A.CANCEL** Icon to activate Auto Cancel Drive. Press the Icon again to cancel it.

When Auto Cancel Drive is active, once a design is sewn, the design is automatically taken out of Drive mode so it can't accidently be sewn again. When this feature is used with Auto Drive, it enhances the automation process of downloading designs.

15. Auto Drive Setting

This function automatically puts a design in Drive mode after it' downloaded from the network.

* This is available only while in R-N mode or ABC LAN mode.

1) Press the **NETWORK** Icon to display the Network Menu.

(This is the sub-menu screen for ABC LAN mode)

2) Press the A.DRIVE Icon to activate Auto Drive. Press the Icon again to cancel it.

When Auto Drive is active, once a design is downloaded from the network, this design is automatically put in Drive mode so it's ready to sew.

16. B-PASS Coordination

Coordination with B-PASS increases production efficiency.

16-1. B-PASS Outline

B-PASS (Barudan Production Assistant SyStem) is a software program made to increase production efficiency. This program allows thread and other production information to be added to the design. Therefore, when this design is downloaded to the machine, the operator can view and read the included instructions, and other information can be used to automatically control the machine.

1) B-PASS requires the following programs in addition to networking hardware (*1).

- Server software

  The following versions or newer are required.

  LEM Server Pro 3 : V4.51.00

  LEM Server Jr : V2.51.00

  Design File Server : V1.51.00

- B-PASS

  This needs to be installed on the LEM/DFS server computer.

  Refer to the B-PASS manual for more details.

*1 : Refer to “1. Before Using the Network System” for details.

2) B-PASS can add the following information to the design.

- Production number
- Thread instructions
- Production instructions
- Image (JPEG)

For more information about each of these items, please refer to the B-PASS manual.

3) Production or order number can be used, in cases where the same design is used for multiple orders. The design name used for the order can be listed for reference.

4) The exact thread information needed for the design can be added in the thread instructions.
These instructions are executed when the design is put in Drive mode. The operator uses these instructions to replace proper threads on the machine. Afterwards, the operator verifies the thread color instructions on the Automat, and the color teaching is automatically executed for the design.

* Refer to “Chapter 6, 10. Thread Instructions” and “Chapter 9, 19. Automatic Control by B-PASS” for details.

5) Other production information can be added in the production instructions that control the machine, such as:

- Production quantity
- Start and Max speed
- Frame
- Operator

* Refer to “Chapter 6, 9. Product Instructions” and “Chapter 9, 19. Automatic Control by B-PASS” for details.

6) Image can be added to show the operator what the completed item should look like.

16-2. B-PASS Mode

Using B-PASS mode on the machine, requires the machine to be connected the network and the B-PASS program is running on the server. In this case, when the machine is powered on, it's automatically set in B-PASS mode.

* For information about this operation on the PC server, please refer to the LEM Server and B-PASS manuals.

1) Start the B-PASS program on the server.

2) Connect the Automat to the Network.

3) When the machine is powered on, automatic recognition turns B-PASS mode ON.

When B-PASS mode is ON, the icon appears in the status bar.

16-3. B-PASS Manage Mode

Instructions for IN/OUT of B-PASS Manage mode.

* Set to OUT when you want to work without B-PASS coordination.

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press **B-PASS** Icon to set B-PASS Manage mode IN.

A Confirmation screen will appear.

Refer to “Chapter 3, 6. Confirmation Screen” about confirmation details.

3) Press the Yes Icon to display the Thread info list.

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The list shows the needle number (Needle), Thread color (Color), and Color Serial no.

Press the **CANCEL** Icon to cancel Manage In mode and return back to the Network menu.

4) To change and correct Needle color numbers, select needle number in the list.

5) Press the **CHANGE**

Icon above “A” to display the character keypad and change the color information.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

6) Verify and change all needle color numbers so they match the colors on the thread stand.

7) Press the **ENTER** Icon above “G”, to send the updated thread information to B-PASS and set Manage mode IN.

* When B-PASS Manage Mode IN is on, the B-PASS Icon is displayed with a Yellow background, and the icon is displayed in the status bar.

* During B-PASS Manage Mode IN, the next design in the schedule is automatically downloaded and overwrites the previous design, when the machine is taking out of Drive mode. However, if the previously downloaded design has a quantity, and it wasn’t completed, then there is no automatic download when taken out of Drive mode.

* This is only available in Schedule download mode.

8) Press **B-PASS** Icon again to set B-PASS Manage mode OUT.

A Confirmation screen will appear.

Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

16-4. B-PASS Automatic Controls

Various automatic controls are available when using B-PASS coordination.

1) In order to use the B-PASS Automatic controls, the following conditions are required.
   (1) B-PASS Manage mode = IN.
   (2) Design made with B-PASS (B-PASS Mode ON + Downloaded during B-PASS Manage mode IN.
   (3) Design includes Thread instructions.

   (1) + (2) = B-PASS Coordination

2) Automatic controls per Production instructions
   - Quantity to produce
   - Operator
   - Frame outline
   - Frame position
   - Start and Max Speed

   Refer to “Chapter 9, 19. Automatic Control by B-PASS” for machine operation details.

3) Automatic controls per Thread instructions
   - Thread colors for the design and what colors need to be replaced on the machine.
   - Speed per thread

   Refer to “Chapter 9, 19. Automatic Control by B-PASS” for machine operation details.

17. Uploading Designs

Instructions sending a design from the Automat to the server.

The following cases are available for uploading designs.

* Using ABC Drive mode with LAN
* During B-PASS Manage mode IN

1) Press the **NETWORK** Icon to display the Network Menu.

2) Press the **OUTPUT** Icon to display the Upload screen.

A B C D E F G H I J

3) Select a design in the list to upload.

4) Press the **UPLOAD** Icon above “G” to start uploading.

* In Drive mode, the design being sewn cannot be uploaded.

5) After completing the upload, the display goes back the main screen.

18. COM Protocol Mode Download

COM Protocol mode is used with Design File Server to download designs.

This mode uses a serial cross cable (null modem) for connection.

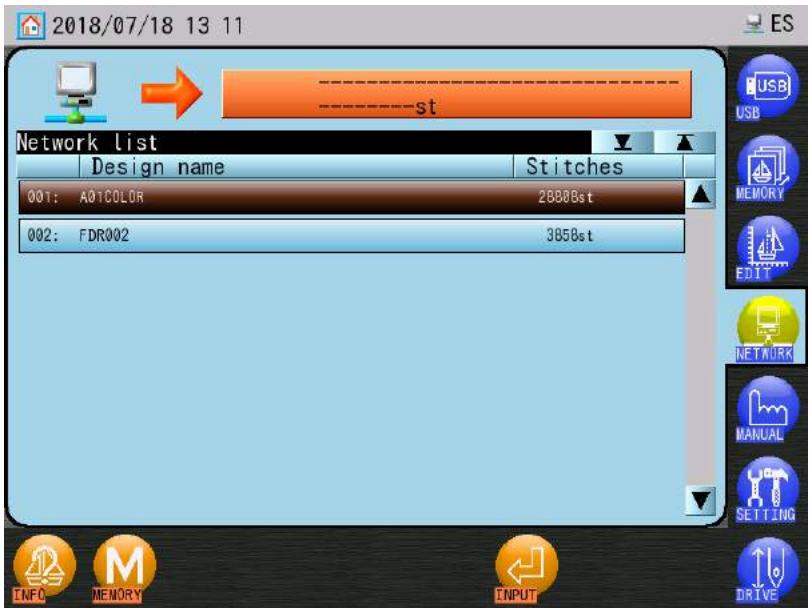
For information about this operation on the PC server, please refer to the DFS Server manual.

1) Set the Network setting to COM Protocol Mode.

   Refer to “Chapter 11, 12. Network” for setting details.

2) Press the **NETWORK** Icon to display the COM Protocol mode screen.

3) Press the **INPUT** Icon to display the Network list of Design names.



A B C D E F G H I J

4) Select a design in the list.

- To view information about this design, you can press the Icon above “A”.

- Refer to “9.1 Searching and Downloading a Design by its Name” for more details.
- Use the **MEMORY** Icon above “D” if you want to select the download memory location. Refer to “8.1 Downloading a Design from the Schedule” for details

5) Press the **G**-icon to start downloading.

* Designs downloaded from the server will have this **Network** icon in the design information area for indication.

Chapter 11 Preferences

This chapter contains the following information.

1. Preferences Menu
2. Machine Conditions (MC1)
3. MC1 List
4. Sequin Adjusting Mode
5. Machine Conditions (MC2)
6. MC2 List
7. Easy Operation Mode
8. Language
9. Shortcuts
10. Screen Colors Settings
11. Thread Color Display Settings
12. Network
13. Date and Time
14. Bobbin Counter
15. Help
16. Schedule
17. Frame Outline Display
18. Frame Outline Limit Settings
19. Cap Frame Mode Settings
20. Production Totals per day
21. Function Pattern (F-PAT) Settings
22. Automatic 1st Color Function Insertion
23. Name Drop
24. 0st Condition Return
25. Software Version

26. Machine Information Display

27. Touch Panel Calibration

28. Display OFF

1. Preferences Menu

This menu contains various preferences and settings for the machine.

1-1. Preferences Menu Display

1) Press the **SETTINGS** Icon on the Main Screen.

2) The following Preferences Menu appears.

1-2. Preferences Menu Icons

These Icons open operations for setting various preferences.

The actual operations are explained in detail on the following pages.

MC1 Icon

Used for Machine Condition 1 settings.

SMC1 Icon

Used for Special Machine Condition 1 settings, such as chenille and sequin model machines.

Language Icon

Used to set the Icon language displayed on the Automat.

Additional languages can be added by loading a font file.

Shortcuts Icon

Used to add shortcuts on the main screen. Shortcuts can be added separately to Standby and Drive mode main screens.

Screen Color Settings Icon

Used to set screen display colors.

Thread Color Display Settings Icon

Used to set the thread colors for the display.

Networking Icon

Used to set network settings.

Date and Time Icon

Used to set the date and time.

Bobbin Counter Icon

Used to set a bobbin counter number to keep track of how many stitches have been sewn for changing the bobbin.

Help Icon

Displays help files.

Schedule Icon

Used to create and schedule memos.

Frame Outline Display Icon

Used to select a frame outline to display.

Frame Limit Setting Icon

Used for setting limits for frame outline and soft limits.

Cap Mode Settings Icon

Used for programming the one touch Cap mode option.

Production Totals Icon

Displays total production quantity per day, for the last 5 productive days.

F-Pat Setting Icon

Used for programming function pattern (F-Pat).

Automatic 1st Color Function Insertion Icon

When loading a design, selects whether or not a stop function is automatically added at the start of the design (0st function).

Name Drop Mode Icon

Turns name drop mode ON/OFF.

Name Drop Display Icon

When name drop mode is ON, this setting determines whether the names are displayed horizontally or vertically while sewing.

Name Drop Buzzer Setting Icon

Sets whether or not the machine beeps when stopping between designs when Name Drop mode is ON.

0st Codition Returning Icon

Sets whether or not the machine returns to the same conditions as it started (0st), when the machine finishes embroidery.

Version Icon

Displays the current software versions installed on the machine.

Machine Information Icon

Displays the model and serial number of the machine, and installation date.

Touch History Icon

This is function is used for testing.

* Please don't use this procedure unless instructed by your authorized technician or distributor.

CAN icon

This is function is used for testing.

* Please don't use this procedure unless instructed by your authorized technician or distributor.

Touch Panel Calibration Icon

Used to recalibrate the touch panel.

Display OFF icon

Turns the display Off to save energy.

2. Machine Conditions (MC1)

Instructions on how to change settings in Machine Conditions 1.

- ✧ In Drive mode, MC1 initialization and some MC1 items are not available to change.
- ✧ If MC2 is set to restrict MC1 changes, then no changes are available.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **MC1** Icon to display the MC1 Setup list.

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3) Select an item to change in the MC1 list.

4) Press the **MINUS** Icon above "A", or the **PLUS** Icon above "B", to change the setting value.

The numeric keypad on right side of the screen can also be used for setting values.

Refer to "Chapter 3, 9. Keypad" for details using the keypad.

5) When an MC1 setting is changed, a confirmation screen will display when exiting the MC1 list. Refer to “Chapter 3, 6. Confirmation Screen” about confirmation details.

- If you want to initialize all the MC1 settings, press and hold the **INIT.**

Icon.

  Afterwards, a confirmation screen will display to finalize the initialization. Refer to “Chapter 3, 6. Confirmation Screen” about confirmation details.

3. MC1 List

Icons	Parameter	Function/Action	Range of Values	Default Value
01	Borer 1	Sets a needle bar number used as a boring device. 0 = Borer not used. This setting turns the thread break sensor and trimmer off for the selected needle number. These settings cannot be changed while in Drive mode.	0 ~ Needle bar number	0
02	Borer 2			
03	Borer 3			
04	T. break count	Sets the number of consecutive stitches with thread break errors needed to trigger a thread break and stop the machine.	1 ~ 9	3
05	T.B. discern	Top and Bobbin Thread break sensor feature. When set on, the thread break sensor LED on sewing head blinks Green when the bobbin runs out. 0 : Not used. Top thread break sense only. 1 : On (top and bottom sense) 2 : On w/low sensitivity (*) 3 : On w/lower sensitivity (*) * These settings help prevent misdetection by lowering the detection sensitivity.	0 ~ 3	0
06	Needle Down	Determines if the needle is lowered after a thread break for easier threading. 0 : Not in use 1 : in use	0 ~ 1	1
07	Stitch Back	Sets the number of stitches to stitch back automatically when stopping for a thread break.	0 ~ 7 st	4 st

Icons	Parameter	Function/Action	Range of Values	Default Value
08	Overlap	Sets the number of stitches to stitch back automatically to overlap when stopped after Automend completion.	0 ~ 7 st	4 st
09	Auto Start (No auto start-up)	Sets the start/stop after an Applique movement or Automend completion. 0 : After Automending "Start" After Applique move : "Stop" 1 : After Automending "Stop" After Applique move : "Stop" 2 : After Automending "Start" After Applique move : "Start" 3 : After Automending "Stop" After Applique move : "Start"	0 ~ 3	1
10	Slow up Count	Sets the number of stitches sewn at low speed during start-up.	3 ~ 15 st	3 st
11	Low Speed	Sets the speed sewn when a low speed function is read in the design data.	200 rpm ~ Max. speed	450 rpm
12	Trim Jumps	Sets the number of consecutive jump stitches needed for the machine to automatically cut thread. 0 : No trimming based on jumps	0 ~ 9	2
13	Jump Divide	Sets the stitch length for Jump divide. Any stitch longer than the set value becomes a Jump stitch.	30 ~ 127	127
14	Swing	Increases or decreases satin stitches for fine adjustment. 1 = 0.01 mm wider on both sides. * Program item #22 Swing Type can be used to set H or V direction only.	-15 ~ 15	0

Icon	Parameter	Function/Action	Range of Value	Default value
23	Sequin size R1 (Right sequin size 1)	Sets the feeding length of sequins on Single Right SQ or Right side of Left Twin SQ devices.	0 ~ 99	0
24	Sequin size L2 (Left sequin size 2)	Sets the feeding length of sequins on the Left side of Right Twin SQ devices.	0 ~ 99	0
25	Sequin size R2 (Right sequin size 2)	Sets the feeding length of sequins on the Right side of Right Twin SQ devices. * More than 100 : Sets the feeding length of large size sequins for the Right TSQ.	0 ~ 199	0
26	TSQ detect L (for Left Sequin reel)	Sets the number of times to check for a “Sequin shortage error”. This is in case the sequin reel runs short of sequins while sewing with the Twin-Sequin device.	0 ~ 10	0
27	TSQ detect R (for Right Sequin reel)			
28	Buzzer type	Not used	N/A	_ _ _ _
29	Buzzer volume	Not used	N/A	_ _ _ _

4. Sequin Adjusting Mode

Instructions for Sequin devices and adjusting mode operations.

SQ = Sequin device

TSQ = Twin Sequin device

- When in Drive mode, the Sequin adjusting mode is not available.
- This function is only available on machines with a Sequin device.

4-1. How to Enter Sequin Adjusting Mode

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the MC1 Icon to display the MC1 List.

3) The following MC1 list items are used for Sequin adjustments.

22 : Sequin sizeL1　　24 : Sequin sizeL2

23 : Sequin sizeR1　　25 : Sequin sizeR2

Select the appropriate MC1 sequin device item needed for adjustment.

Sequin device to adjust	MC item
Left SQ	22
Right SQ	23
Left TSQ	22 or 23
Right TSQ	24 or 25

A B C D E F G H I J

4) Press the **Adjust** Icon above “C” to enter Sequin Adjusting Mode.

4-2. Feed / Back up / Left and Right change

Instructions for Feed, Back up and/or Left and Right change on all heads.

Left and right change is only available with TSQ (Twin sequins).

1) Refer to “4-1. How to Enter Sequin Adjusting Mode”, to enter Sequin Adjusting Mode.

A B C D E F G H I J

2) Press the **SEND** Icon above “C” to feed a sequin forward on all heads.

3) Press the **RETURN** Icon above “D” to feed a sequin backwards on all heads.

4) Press the **TSQ LR** Icon above “F” to change the TSQ device, left or right.

4-3. Adjustments for Each Head

1) Refer to “4-1. How to Enter Sequin Adjusting Mode”, to enter Sequin Adjusting Mode.

2) Press the **EACH**

Icon above “E” to enter Adjusting Mode for Each Head.

A B C D E F G H I J

Press the **EACH**

Icon to return back to Sequin Adjusting Mode for all heads.

3) Use the Head cancelling switch to execute a Feed / Back up.

Switch to On : Feeds a sequin forward.

Switch to Off : Feeds a sequin backwards to the return position.

* This operation works regardless of whether the Sequin is in the up or down position.

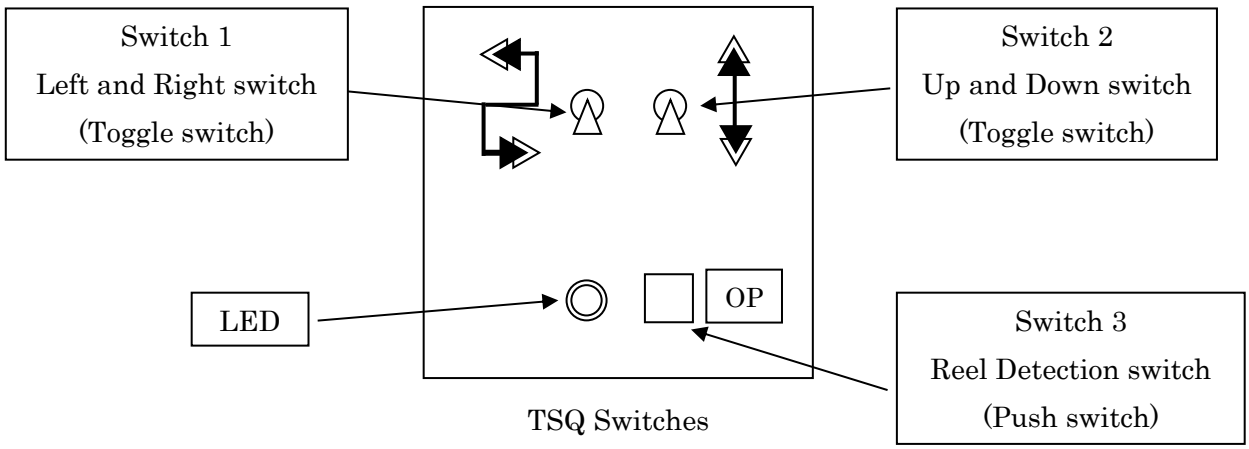
4) Press the Start switch to lower the SQ device.

Press the Stop switch to raise the SQ device.

* The head switch has to be in the up position for this function to operate.

5) TSQ Upper Switch Adjustment for Each Head.

The TSQ device has 2 toggle switches, 1 push switch, and 1 LED.



TSQ Switches

6) Left and Right switch (switch 1) : Changes selection of left and right TSQ device.

7) Up and Down switch (switch 2) : Lowers and Raises TSQ device.

8) Press the Reel Detection switch (switch 3) to show reel detection shortage on the LED.

Red : Detection On

Green : Detection Off

4-4. Sequin Device Feed Origin Setting

The Sequin device feed mechanism seeks origin when the machine is powered ON.

This setting turns this operation ON or OFF.

1) Refer to “4-1. How to Enter to Sequin Adjusting Mode”, to enter Sequin Adjusting Mode.

2) Press the **EACH**

Icon above “E” to enter Adjusting Mode for Each Head.

A B C D E F G H I J

3) Press the **ORIGIN**

Icon to set the Sequin Feed Origin Seek Operation ON or OFF.

Normal Icon : Seek ON

Yellow Icon : Seek OFF (Select this only if there is a special reason)

5. Machine Conditions (MC2)

5-1. Changing MC2 Settings

- In Drive mode, MC2 initialization and some MC2 items are not available to change.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the MC1 Icon to display the MC1 list.

A B C D E F G H I J

3) Press the **MC2**

Icon to display the MC2 Password screen.

* If the MC2 password is 0, the MC2 password screen doesn't display and you enter the MC2 Setup list immediately.

4) Input the MC2 password, using the numeric keypad on the right side of the screen.

Refer to "Chapter 3, 9. Keypad" for details using the keypad.

* Default Password : "1234"

If required, change the password by changing MC2 #01 "MC2 password" setting.

Please keep track of this password to avoid losing or forgetting it after a change.

Refer to "5-2. MC2 Password Table" for documenting changes.

5) Press the Enter Icon to display the following MC2 Enter screen:

A B C D E F G H I J

6) Press the MC2 to display the MC2 Setup list.

A B C D E F G H I J

7) Select an MC2 item in the list to change.

8) Press the **MINUS** Icon above "A" or the **PLUS** Icon above "B" to change the setting value.

The numeric input keypad on the right side of the screen can also be used to input the setting value.

Refer to "Chapter 3, 9. Keypad" for details using the keypad.

9) When an MC2 setting is changed, a confirmation screen will display when exiting the MC2 list. Refer to "Chapter 3, 6. Confirmation screen" for confirmation details.

➢ If you want to initialize all the MC2 settings, press and hold the **INIT.** Icon.

Afterwards a confirmation screen will display to finalize the initialization.

Refer to "Chapter 3, 6. Confirmation Screen" for confirmation details.

5-2. MC2 Password Table

This is used to manage the password to enter into MC2.

Please make a copy of this page before using.

Date = Date the password was changed

Password = New password

Date	Password	Date	Password

5-3. Trim Type Setting per Needle

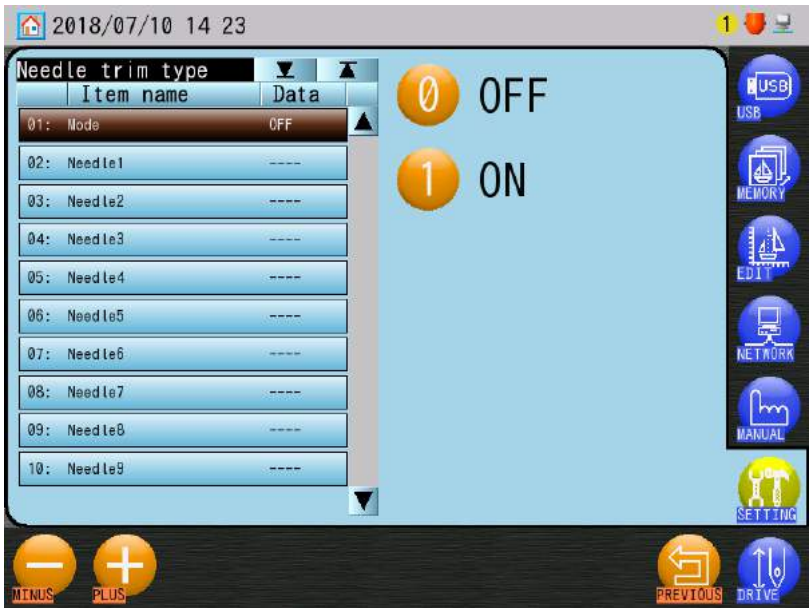
A different Trim Type setting can set for each needle using the follow instructions.

1) Enter the MC2 screen using the “5-1. Changing MC2 Settings” precedure.

2) Select Item 9 “Trim type” to display the Icon above the letter **F**.

A B C D E F G H I J

3) Press the **NDL TRIM** Icon to display the trim type per needle setting screen.



A B C D E F G H I J

4) Change Item 1 Mode to ON.

Use the **PLUS** or **MINUS** Icon to change this value to ON.

Or use the On Icon on the right side of the screen to change it to On.

* Item 1 Mode has to be set to ON, in order to change items 2 and higher.

5) Select a Needle number to change.

A B C D E F G H I J

Use the **MINUS** Icon to decrease the setting value.

Use the **PLUS** Icon to increase the setting value.

The numeric keypad on the right can also be used to change values.

Refer to “Chapter 3. 9, Keypad” for details on how to input values.

* When trim type settings per needle are changed, when exiting the menu a confirmation screen appears.

Refer to “Chapter 3.6, Confirmation screen” for confirming.

6. MC2 List

Icons	Parameter	Function/Action	Range of Values	Default Value
01	MC2 password	Password to enter the MC2 setup list. * Please keep track of the password to avoid losing or forgetting it after a change. Refer to "5-2. MC2 Password Table" for documenting changes.	0 ~ 9999	1234
02	MC1 change	Permission to change MC1 settings 0 : No changes allowed 1 : Changes allowed	0 ~ 1	1
03	Right limit	Sets the frame moving limits for each direction. Right : V – direction Left : V + direction Back : H – direction Front : H + direction * These are factory settings per the model of the machine and shouldn't be changed.	0 ~ 3200 mm	500 mm
04	Left limit			
05	Back limit			
06	Front limit			

Icons	Parameter	Function/Action	Range of Values	Default Value
07	Lock stitch	Sets the kind of Tie-in stitch after trimming. 1,11 = Split stitch – Splits the first stitch into two stitches. 2,12 = Small triangle–Sews a small triangle. 3,13 = Back stitch = Splits the first stitch into two stitches then backs over the same two stitches. 4, 14 = No Tie-In lock stitches. Settings 11 –14 should be used if stitches less than 0.5 mm need to be sewn at the start of sewing. 5 = 1 + Tie-off stitch before trimming. 6 = 2 + Tie-off stitch before trimming. 7 = 3 + Tie-off stitch before trimming. 8 = 4 + Tie-off stitch before trimming. 15 = 11 + Tie-off stitch before trimming. 16 = 12 + Tie-off stitch before trimming. 17 = 13 + Tie-off stitch before trimming. 18 = 14 + Tie-off stitch before trimming.	1 ~ 8 11 ~ 18	3

Icons	Parameter	Function/Action	Range of Values	Default Value
08	Clamp type	Sets the way the clamps hold the thread when starting to sew after trimming. 1 = Double clamp action (recommended for thick fabric: The clamp opens at 295 degrees, (depending on Clamp Off Angle of MSU1) on the first stitch before the needle penetrates garment and closes at 0 degrees. 2 = Single Clamp action (recommended for thin fabric): The clamp opens on the second stitch when sewing starts. 3 = Clamp and Fork action (recommended when a shorter tail is required at the start of sewing): The clamp opens on the first stitch before the needle penetrates the garment. (*) 4 = Same as 1 (*) 5 = Same as 2 (*) (*) = Thread Fork engages.	1 ~ 5	1
09	Trim type	0 = Trimmers OFF 1 = Pantograph moves 0.4 mm to the left before needle penetrates and thread is trimmed. 2 = Pantograph moves backwards on the last stitch sewn, before the needle penetrates and the thread is trimmed. 3 = Same as 1, but the slider pulls thread before trimming for a longer trim tail. 11 = The remnant of upper thread under the fabric (at the start sewing/after trimming) will be shorter than normal length. Setting 11 opens the Thread clamps after the trim cycle to release the top thread tension on the check springs.(*1) 21 = Similar to setting 11, except remaining upper thread after trimming is a little shorter than 11 (*1).	0 ~ 21	1

		*1 : The clamp control between 11 and 21 is different. * 2 : Only the numbers listed above are valid.		
10	Trim dir	Sets the direction the pantograph moves after a thread trim. 0 = Moves in the H direction towards machine origin. 1 = Moves in the V direction towards machine origin. 2 = No movement	0 ~ 2	0
11	Trim vector	Determines the distance in (0.1mm) that the pantograph moves just before a trim.	0 ~ 50	15
Icons	Parameter	Function/Action	Range of Values	Default Value
12	Frame start	Determines when the frame starts to move in relation to the needle height (degree wheel setting). * Parameter changes may improve thread break problems and stitch quality. Refer: When set to 70, the Pantograph starts moving at 70 degrees. Needle clears the throat plate at around 60 degrees.	45- 135 [degree]	70
13	Frame option	Sets the gain parameter automatically 0: Portal Frame 1: Spider Frame 2: One Touch Frame 3: Aluminum frame Note: * This function is only activate with m/c equipped with AC Servo Motors for V/H axis. * Use this parameter if m/c encounters distortion problems while running one of the listed frame types above due to pantograph load. * Set to 1 and press the DRIVE button, automatically rewrites the AC servo	0 ~ 3	0

		motor parameter from G2 to G3. * Set to 2, and press the DRIVE button, automatically rewrites the AC servo motor parameter from G2 to G4.		
14	Applique	Sets the presser foot height when the Manual Appliqué command is executed. Parameter is set in degrees, refers to where the machine rotates and stops on the degree wheel. *This method may be used for verification of the start position.	60 ~ 120 degrees	80
15	Marker type	Laser Marker operation 1: Turns ON when the machine is not sewing. 2: Turns On only in “Drive mode” and not sewing. 3: Same as above item 1 + it resets to ON when the machine is powered ON. 4: Same as above item 2 + it resets to ON when the machine is powered ON.	1 ~ 4	1
16	Presser foot	Activates the Presser Foot Height device. 0 : Not used 1 : Set per needle number 2 : Set per the PR function code in F-List *Cannot change this setting in Drive mode.	0 ~ 2	0
17	Rotary sequin	Rotary Sequin control 0: Only the last needle number is available for the sequin device. 1: All needles are available for the sequin device. 2: 1~8 needles are available (Prohibit 9 only) 3: 1~7 needles are available (Prohibit 8~9) 4: 1~6 needles are available (Prohibit 7~9) 5: 1~5 needles are available (Prohibit 6~9) 6: 1~4 needles are available (Prohibit 5~9) 7: 1~3 needles are available (Prohibit 4~9) 8: 1~2 needles are available (Prohibit 3~9) 9: Only No.1 needle is available (Prohibit 2~9)	0 ~ 9	0

Icons	Parameter	Function/Action	Range of Values	Default Value
18	Clamp frame	Not used	-----	-----
19	Warm up speed	Not used	-----	-----
20	Warm up end	Not used	-----	-----
21	Option port	Option port for wired remote jog controller 0 : Not used 1 : Available for remote jog controller	0-1	0
22	Speed limit	Sets the maximum sewing speed	200 ~ 1500 rpm	1500
23	Trim mode	Sets the type of trimming movement 0 : Usual trimming 1 : Executes the trimming of the bobbin thread before top trimming 2 : Changes the timing of Thread clamping and Slider movement (Like old MK5 movement) 3 : Settings 1 + 2	0 ~ 3	0
24	Function mode	Determines validity of new functions. 1 : LJ・HJ and SPO movements invalid. 2 : TSL・TSR and SPO movements invalid. 3 : Settings 1 + 2 4 : Not used. 5 : LJ・HJ and SPO. 6 : TSL・TSR and SPO movements valid. 7 : Setting 5 + 6	1 ~ 7	1

Icons	Parameter	Function/Action	Range of Values	Default Value
25	HS option	Sets of the number of heads counted and sent for LEM reporting. 0 : Each HS group turned on is sent as 1 head. 1 : Each Head turned on is sent a 1 head.	0 ~ 1	0
~~2~~69	Color motor speed	Not used	N/A	_ _ _ _

7. Easy Operation Mode

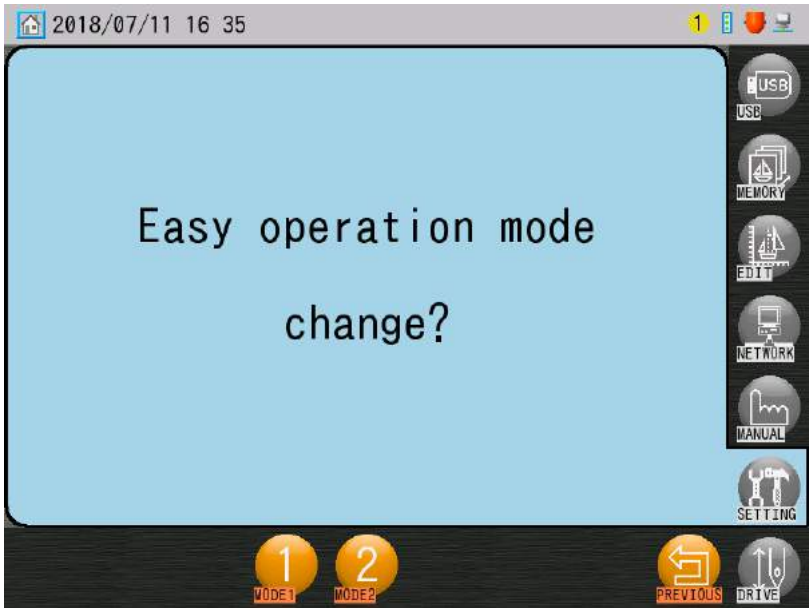
This mode limits the operations of the Automat to only using shortcuts. This limits the functions for operator to use and makes it easier and less confusing.

7-1. Setting Easy Operation 1 and 2

1) Refer to “5-1. Changing MC2 Settings” to display the following MC2 enter screen.

A B C D E F G H I J

2) Press the **EASY** Icon to open the Easy operation mode screen.



A B C D E F G H I J

3) Press the **MODE 1** Icon to use Easy operation Mode 1.

Press the **MODE 2** Icon to use Easy operation Mode 2.

* Mode 1 : Float, Speed changes, and Manual Needle changes are enabled.

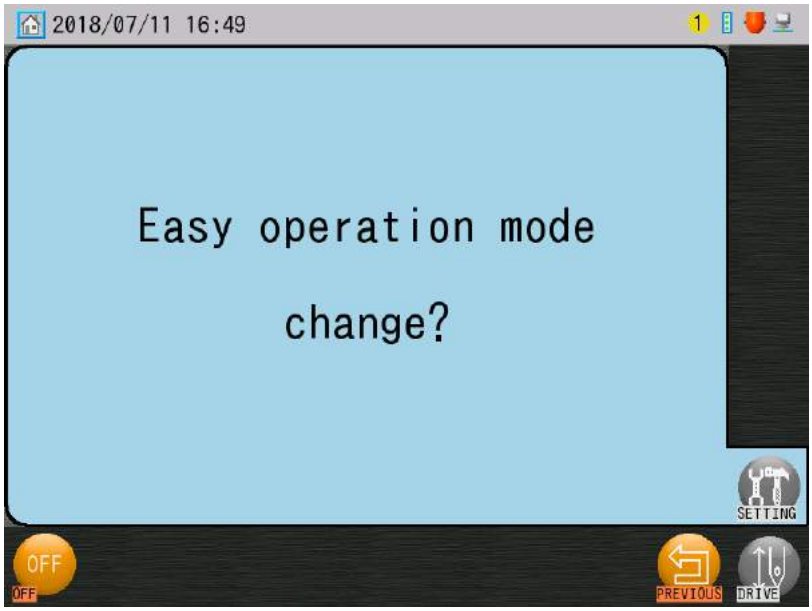
Mode 2 : The operations mentioned above, are disabled.

7-2. Cancelling Easy Operation

1) Refer to “5-1. Changing MC2 Settings” to display the following MC2 enter screen.

A B C D E F G H I J

2) Press the **EASY** Icon to open the Easy operation mode screen.



A B C D E F G H I J

3) Press the **OFF** Icon to cancel Easy operation mode.

8. Language

Sets the language for the Icons displayed on the Automat.

Add different languages by loading a font and resource file to the Automat.

8-1. Setting Language

During setup, the language is displayed in English.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **LANGUAGE** Icon to display the Language list.

A : Sample of Symbols, Numbers, and Alphabet for the selected font.

Check if the selected font file displays correctly.

If it doesn't display correctly, the font file is not available.

3) Select a language in the list.

"---:English" at the top list is written in the internal data and cannot be erased or changed.

When selecting "01" or "04", another language is displayed based on the font and resource file loaded into memory.

When the language is changed, a confirmation screen appears.

Refer to "Chapter 3, 6. Confirmation Screen" for confirmation details.

8-2. Loading a Resource File

Instructions for loading a font and resource file into the Automat.

1) Insert a USB device that contains a font and resource file into the Automat.

* Save the font and resource file on the root of the USB device.

Name the resource file as “KS_res***(any name).txt”.

Example) KS_res.txt, KS_res_Japanese.txt, KS_res_20160510.txt

* Save the font file to use with the resource file as a set.

2) Press the **SETTINGS** Icon to display the Preferences menu.

3) Press the **LANGUAGE**

Icon to display the Language list.

4) Select a loading place in the list.

“--:English” at the top of the list is written in the internal data and cannot be rewritten.

5) Press the **RESRCE** Icon above “A” to display the Resource file list.

6) Use the **USB** Icon in area A of the upper left corner of the screen, if you want to switch USB ports.

7) Select a resource file name in the list.

8) Press the **INPUT** Icon above “G” to load the font and resource files and then return back to the language screen.

9. Shortcuts

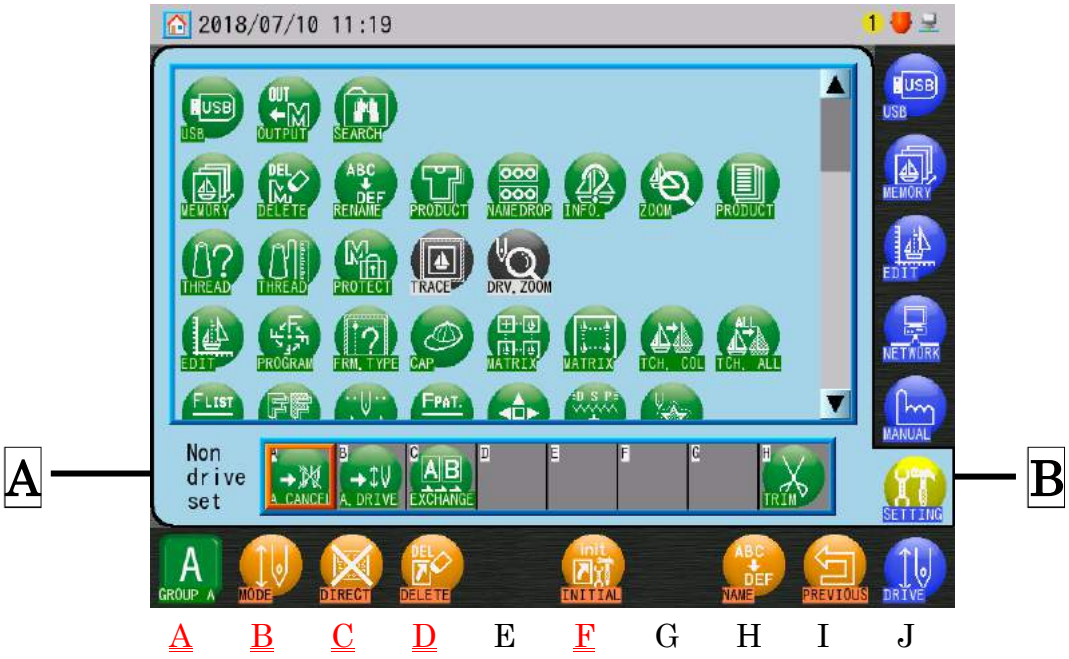
Allows frequently used functions to be added to the main screen as shortcuts.

9-1. Adding a Shortcut

Shortcut functions can be added to the Standby and Drive mode screens.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **SHORTCUT** Icon to display the Shortcut registration screen.



A : Mode Status for assigning shortcuts

Non drive set : Shortcut assignments for the Standby mode screen.

Drive set : Shortcut assignments for the Drive mode screen.

3) Press the **GROUP** Icon above “A” to display the shortcut group list.

4) Select a group in the list.

5) Use the **MODE** Icon above “B” to change shortcut modes.

Normal Icon : Shortcut assignments for Standby mode.

Yellow Icon : Shortcut assignments for Drive mode.

6) Select a Location in area B, where you want to place a shortcut.

7) Select a Shortcut in the list.

Use the **DIRECT** Icon to toggle modes or .

- is On, and the selected shortcut is executed directly without changing menus.
- is Off, and the selected shortcut is executed normally by changing menus as needed.
- The Direct setting depends on the shortcut. When this Icon is grayed out it’s inactive.

Use the **DELETE** Icon above “D” or reselect the presently selected shortcut to cancel the shortcut.

A maximum of 8 shortcuts can be assigned, per mode.

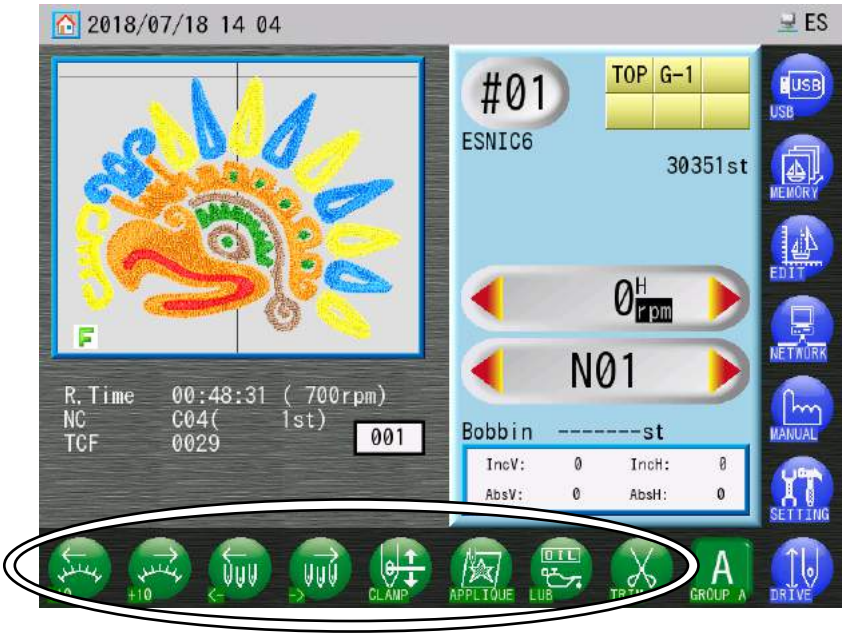
➢ To initialize shortcuts to the default settings, press and hold the INIT. Icon above “F” and a confirmation screen will display.
Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

* The default shortcuts are assigned as follows:

Standby mode : **CUT** .

Drive mode : **TRACE** , **DRV. ZOOM** , **CUT** .

After the shortcuts are properly assigned, they are displayed in the shortcut menu when exiting back to the main screen. As shown below.



8) To use a shortcut, press the shortcut icon to execute the assigned function.

9-2. Shortcuts List

Icon	Function	Icon	Function
	Design Input/Output		Design Program list
	Output to USB		Sub-soft limit setting
	USB Flash Drive search		Cap frame mode
	Memory		Matrix Auto interval setup
	Memory design deletion		Matrix Auto area setup
	Design name change		Change of Color change function (teaching in)
	Production quantity display		Teach for all function codes
	Name drop		F-list for teaching colors
	Design information display		Batch change for Color Change Function
	Zoom		Easy teach
	Production instructions		Applying function pattern (F-Patt)
	Thread instructions		Adding stitches
	Top thread consumption		DSP
	Write protect for Design		Outline stitch
	Outline trace		Download a design from the server (Network function)
	Drive Zoom		Upload a design to the server (Network function)
	Design Editing		
	ABC mode (*1)		Needle bar change

Icon	Function	Icon	Function
	R-N Network mode (*1)		Manual needle bar change (-1)
	B-PASS mode		Manual needle bar change (+1)
	Operator code menu (Network)		Needle bar change by needle number (-1)
	Coffee break (Network report)		Needle bar change by needle number (+1)
	Operator call		WS head change
	Time out (Network report)		Trimming
	Auto Drive mode		Thread Clamp Hold / Release
	Auto Drive Cancel mode		Applique （*2）
	Float		Needle Bar Lowering (*2)
	Float by stitch number (-1)		Frame Change (*3)
	Float by stitch number (+1)		Stop with Needle down (for Roll to Roll machines) (*3)
	High speed float by name drop		Pantograph centering
	Move pantograph to previous name in Name Drop		Multi-Point function
	Move pantograph to next name in Name Drop		Move pantograph to appointed Frame Move Point (FMP).
	Speed change		Laser marker ON / OFF
	Speed change (Reduce 10 rpm)		Right and Left Switch over for TSQ (Sequin device)

Icon	Function	Icon	Function
	Speed change (Increase 10 rpm)		Roll to Roll (for Roll to roll machines)
	Main shaft brake Hold / Release (for machines with brake)		Schedule
	Oiling		Display of frame outlines
	Head selection		Frame Outline limit settings
	Head manual switch		Cap Frame mode settings
	Bobbin Pick Up		Production Totals
	Re-Setting Origin		Function pattern setting
	MC1 settings		Automatic addition of Stop function to the beginning of the design.
	MC2 settings		Name Drop mode
	SMC1 settings		Name Drop display setting
	Language settings		Name Drop Buzzer setting
	Settings of shortcut		Return to 0st condition
	Screen Display settings		Display OFF
	Thread Color Display settings		Bobbin thread counter
	Network Settings		Help Files
	Date and Time settings		

* 1 Depends on LEM Server download mode on which shortcut is active.

* 2 These 2 shortcuts toggle this function between these 2 functions.

* 3 Based on Roll to Roll setting, either one is selectable.

9-3. Changing Shortcut Group Name

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **SHORTCUT** Icon to display the Shortcut registration screen.

3) Press the **NAME** Icon above “H” to display the Shortcut name list.

A B C D E F G H I J

4) Select a shortcut name in the list.

5) Press the **CHANGE** Icon to use the character keypad to change the name.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- When a group name has been changed a confirmation screen is displayed when exiting the list.

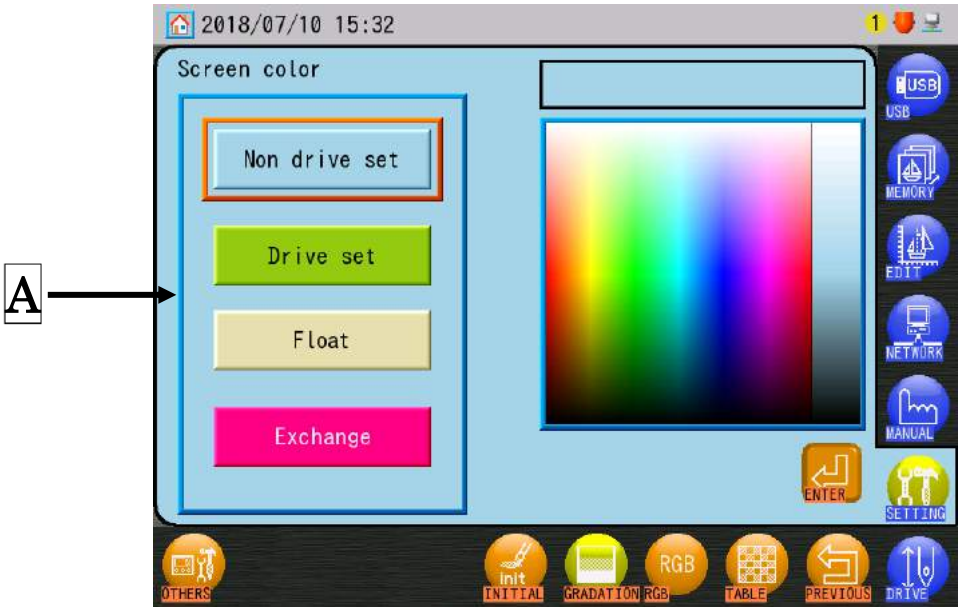
  Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

10. Screen Color Settings

10-1. Display Colors for Each Screen

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **SCREEN** Icon to display the Screen Color menu.



The following screens are available to change:

Non drive set	: Standby mode
Drive Set	: Drive mode
Float	: While in Float mode
Exchange	: During Time Out (While in Network mode)

3) Select a screen in area A on left side of the screen.

4) Select a menu item for changing colors.

GRADATION Icon : Color input by gradation keypad.

RGB

Icon : Color input RGB keypad.

TABLE Icon : Color input color palette keypad.

5) Use the color input keypad on the right side of the screen to change colors.
Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- When a screen color has been changed a confirmation screen is displayed when exiting the menu.
  Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

10-2. Initializing Display Colors

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **SCREEN** Icon to display the Screen Color menu.

3) Press and hold the **INIT.**

Icon above “E” to initialize all display colors and a confirmation screen will display.
Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

10-3. Icon Text Display Settings

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **SCREEN** Icon to display the Screen Color menu.

3) Press the Icon to display the Additional Screen Settings.

Press the **MINUS** Icon to decrease the setting value.

Press the **PLUS** Icon to increase the setting value.

Or use the numeric buttons on the right side of the screen to change values.

* If any changes were made to these functions, a confirmation screen appears when exiting menu.

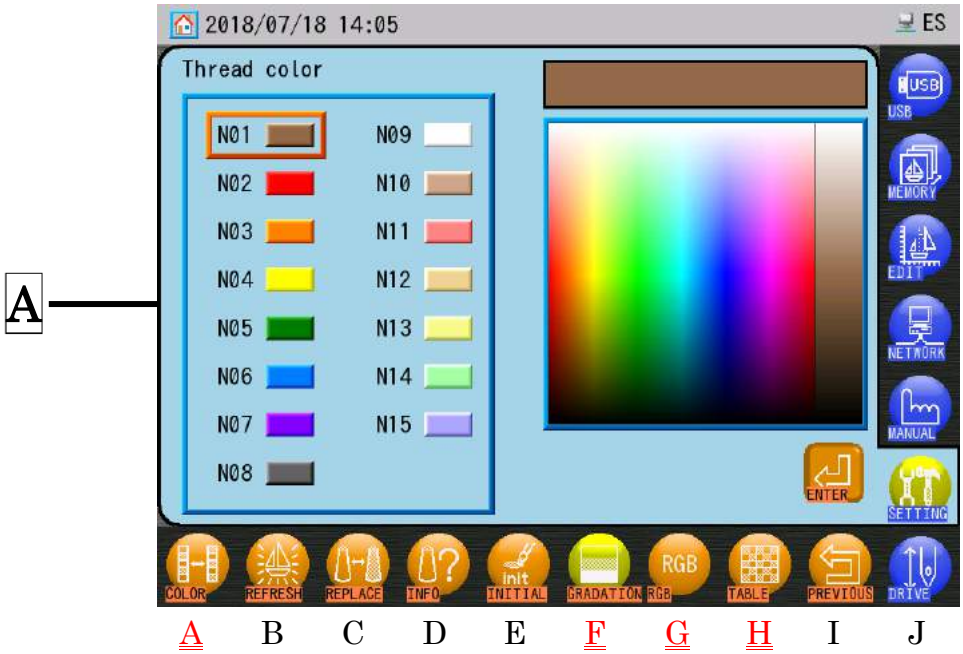
  Refer to “Chapter 3, 6. Confirmation screen” for confirmation details.

11. Thread Color Display Settings

11-1. Setting Thread Colors

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **THREAD** Icon to display the Thread Color menu.



The following thread items are available to change:

* Thread Colors (Needle color)
* Sequins (Sequin)
* Cording for Lock stitch zig-zag machines (Bobbin)
* Thread Colors for Chenille machines (Looper)

3) Use the **COLOR** Icon to switch Thread Color display lists.

4) Select a thread item in area A on the right side of screen.

5) Select a menu item for changing colors.

GRADATION Icon : Color input by gradation keypad.

RGB

Icon : Color input by RGB keypad.

TABLE Icon : Color input by color palette keypad.

6) Use the color input keypad on the right side of the screen to change colors.
Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- When a thread color has been changed, a confirmation screen is displayed when exiting the menu.
  Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

11-2. Initializing Thread Colors

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the THREAD Icon to display the Thread Color menu.

3) Press and hold the **INIT.**

Icon above “E” to initialize all thread colors and a confirmation screen will display.
Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

11-3. Updating the Design Display Images

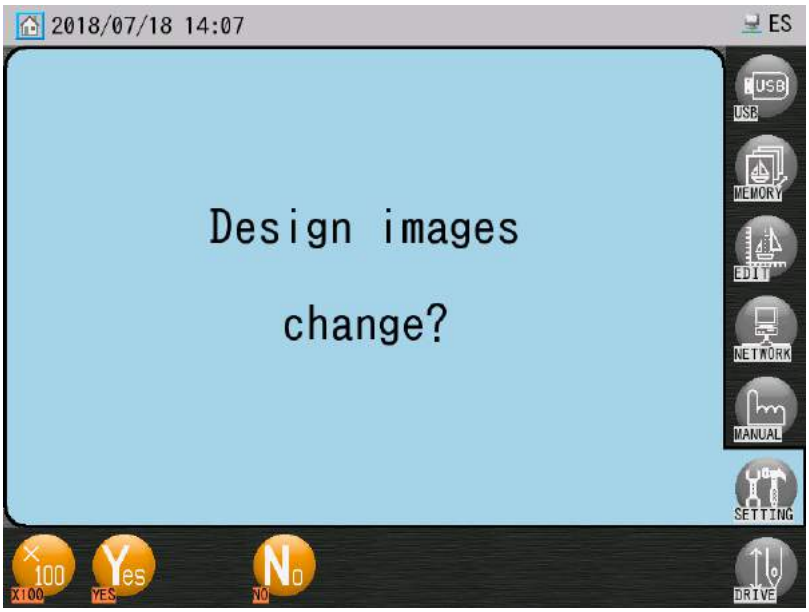
These instructions explain how to update the design display images in memory after making thread color display changes.

* Refer to “Chapter 3, 5. Screen Structure” and “Chapter 6, 1. Selecting a Design” for details about the design image list and design display shown on the information screen.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **THREAD** Icon to display the Thread Color menu.

3) Press the **REFRESH** Icon to display the Design images change screen.



A B C D E F G H I J

- When a thread color has been changed, a confirmation screen is automatically displayed when exiting the menu.
  Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

4) Press the **YES** Icon above “B” to update the currently selected design image.

Press the **X100** Icon above “A” first and then the **YES** Icon above “B” to update all the design images.

When updating all design images, it may take a few minutes to finish.

Press the **NO** Icon above “D” to cancel the update and go back to the thread color menu.

12. Network

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **NET SET** Icon to display the Network Setup list.

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At the top of the network setup list, the IP and MAC addresses for the Automat are displayed.

3) Select a network item in the network setup list.

(1) Network	LAN (1), and COM (2) COM (2) is for DFS COM Protocol connection
(2) ID	Set up desired Automat ID name
(3) DHCP	IP (1) for DHCP, and IP + DNS (2) for DHCP and DNS .
(4) IP Address	Set up IP address for the machine
(5) Subnet mask	Set up desired Subnet mask – default is standard fixed value
(6) DNS	Set to “Enable (1)” to use DNS.
(7) DNS IP	Set up IP address of DNS server.
(8) Host name	Set up LEM Server PC (Host) name for DNS use.
(9) Host IP	Set up IP address of LEM Server PC
(10) Host Port	Change only if port setting for LEM software is changed.

(11) Default gateway	Change only if default gateway setting is needed.
(12) Mode	Set to “1” to use wireless LAN.
(13) SSID	Set up SSID.
(14) Encryption key	Set up Encryption key
(15) Authentication	Set up Authentic method
(16) Encryption	Set up Encryption mode

* Settings (1), (2), (4) and (6) must be set (Unless DHCP is enabled, then omit 4).

4) Change the selected items as follows:

- “Network”, and “DHCP”, and “DNS”
- Press the **MINUS** or **PLUS** Icons to change value.

  The Icons shown on the right side of the screen can also be used for changes.

- “ID” ,and “Host name” and, “SSID” , and “Encryption key”

  Press the **CHANGE** Icon to open the character keypad to name the ID.

  Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- “Host Port” and “Mode”

  Press the **MINUS** or **PLUS** Icons to change values.

  The numeric keypad on the right side of the screen can also be used to change values.

  Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- “IP Address”, “Subnet mask”, and “DNS IP”, and “Host IP”, and “Default gateway”

  Use the IP address input keypad on the right side of the screen to change values.

  Refer to “Chapter 3, 9. Keypad” for details using the keypad.

- “Authentication” or “Encryption”

  Press the **MINUS** or **PLUS** Icons to change values.

- When a network setting has been changed a confirming screen is displayed when exiting the menu.

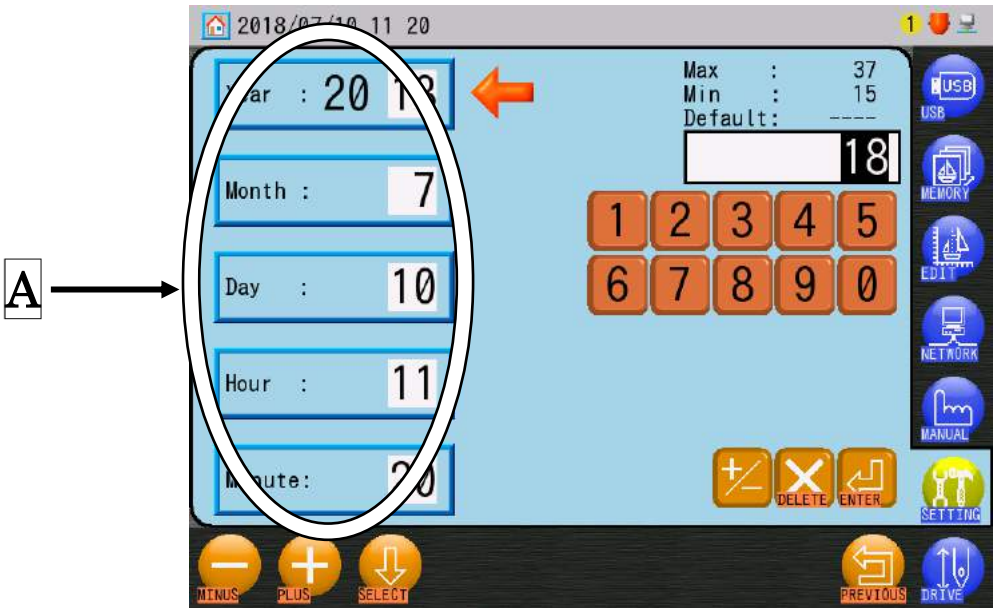
Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

- You must reboot the machine after making any network setting changes in order for the changes to take effect.
  The network connection icon on the status bar is blacked out, when changes have been made and the machine hasn’t been rebooted.
  Refer to “Chapter 3, 5. Screen Structure” about status bar details.

13. Date and Time Setting

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **CLOCK** Icon to display the Date and Time settings.



3) Press the **SELECT** Icon above “C” to select an item.

Selecting an item in area A directly, is also possible.

4) Press the **MINUS** Icon above “A” to reduce the setting by 1.

Press the **PLUS** Icon above “B” to increase the setting by 1.

The numeric keypad on the right side of the screen can also be used to change settings.

Refer to “Chapter 3, 9. Keypad” for details on using the keypad.

14. Bobbin Counter

The Bobbin counter stops the machine and trims the bobbins, when a preset number of stitches are sewn.

When the machine stops for the bobbin counter, it shows the Bobbin counter message and the Green LED on the tension assemblies turns ON.

Afterwards, restarting the machine with the start switch resets the bobbin counter.

Set the bobbin counter to 0 to turn it off.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **COUNTER** Icon to display the Bobbin Counter settings.

Upper left box : Current value and new number being set

Lower left box : Counter value

3) Changing the current value.

Press the **-100** Icon above “A” to reduce the value by 100 stitches.

Press the **+100** Icon above “B” to increase the value by 100 stitches.

Press the **-1000** Icon above “C” to reduce the value by 1000 stitches.

Press the **+1000** Icon above “D” to increase the value by 1000 stitches.

The numeric keypad on the right side of the screen can also be used to input the value.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

4) Press the **ENTER** Icon to input the **Current** value as the **Counter** value.

15. Help

Displays help files

Help files need to be saved to a USB Flash Drive.

15-1. Outline

There are 2 types of Help functions.

(1) Help messages

Select a Help file in the Automat or a Help file from a USB to display it.

(2) Error messages

When an Automat displays an error, the help file displays the contents of the error.

Help file needs to be saved into USB with the following format.

There are 3 types of help files.

(1) Index JPEG file: Displays table of contents information for the help files (in .jpg format).

(2) Index TEXT file: Displays table of contents information for the help files (in .txt format).

(3) Help JPEG file: These are the actual help files that display help information.

15-2. Help File Structure

1) “HELPFILES” folder.
   The “HELPFILES” folder needs to be saved on the root of a USB Flash Drive.

   * “HELPFILES ” name has to be written in half-width characters.
   A help file folder structure sample is listed on “15-4. Help File Folder Structure”.

2) A “HELPBOOKS01” folder has to be made in the “HELPFILES” folder.

   * “HELPBOOKS01” name has to be written in half-width characters.

3) Make a folder with a “.nhb” file extension in the “HELPBOOKS01” folder.
   If a folder has a “nhb” file extension, it’s called a NHB folder in this manual.
   You can use any name you want for a NHB folder.

* Please name the NHB folder, using half-width characters, and a maximum of 20 characters. You can make up to 999 NHB folders in a HELPBOOKSxx folder.

4) Save the “Index JPEG file”, “Index TEXT file”, and “Help JPEG files” in the associated NHB folder.
   * The Index JEPG and TEXT files are not required. However it is recommended that you provide either an Index TEXT or JPEG file, or both, to help the operator find the page number of the specific help file they are looking for. So, if both files are missing, there will be no index pages displayed on the help screen.

5) Use the following rules to name the files:

Index JPEG file: (NHB folder name) _index (page No.1-9).jpg

Index TEXT file: (NHB folder name) _index.txt

Help JPEG file: (NHB folder name) _ (page No. 01-99). jpg

* Help JPEG file names have to be written in half-width characters.

For the Help function display on the machine, they are displayed by the order of page numbers. Please keep this in mind when naming files.

Example: NHB folder with an “ABC” name: ABC.nhb

Index JPEG file: ABC_index1.jpg

Index TEXT file: ABC_index.txt

Help JPEG file: ABC_01.jpg

15-3. Data Structure to Display Error Message Contents

1) “HELPFILES” folder.

The “HELPFILES” folder needs to be saved on the root of a USB Flash Drive.

* “HELPFILES” name has to be written in half-width characters.

A sample of the help file structure is listed on “14-4. Help File Folder Structure”.

2) A “ERRORBOOKS01” folder has to be made in the “HELPFILES” folder.

* “ERRORBOOKS01” name has to be written in half-width characters.

3) Make 2 folders into “ERRORBOOKS01”.

AUTOMAT_MESSAGE.nhb : Folder for “A??” error messages (*1)

DRIVER_MESSAGE.nhb : Folder for “D??” error messages (*1)

*1 Enter the error message number as ??.

- You must use the following names; “AUTOMAT_MESSAGE.nhb” and “DRIVER_MESSAGE.nhb” for ERRORBOOKS01. You cannot use other names for this function. * Names have to be written in half-width characters.

  Refer to “Chapter 13, 3. Error Messages” for error message details.

4) Save the “Index TEXT file”, and “Error JPEG files” into each folder.

The Index TEXT file is required for the error message help function.

5) Use the following rules to name the files:

Index TEXT files: AUTOMAT_MESSAGE_index.txt (for Automat messages)
DRIVER_MESSAGE_index.txt (for Driver messages)

Error JPEG files: AUTOMAT_MESSAGE _ (page No. 01-99) .jpg (for Automat messages)
DRIVER_MESSAGE_ (page No. 01-99) .jpg (for Driver messages)

* Error JPEG file names have to be written in half-width characters.

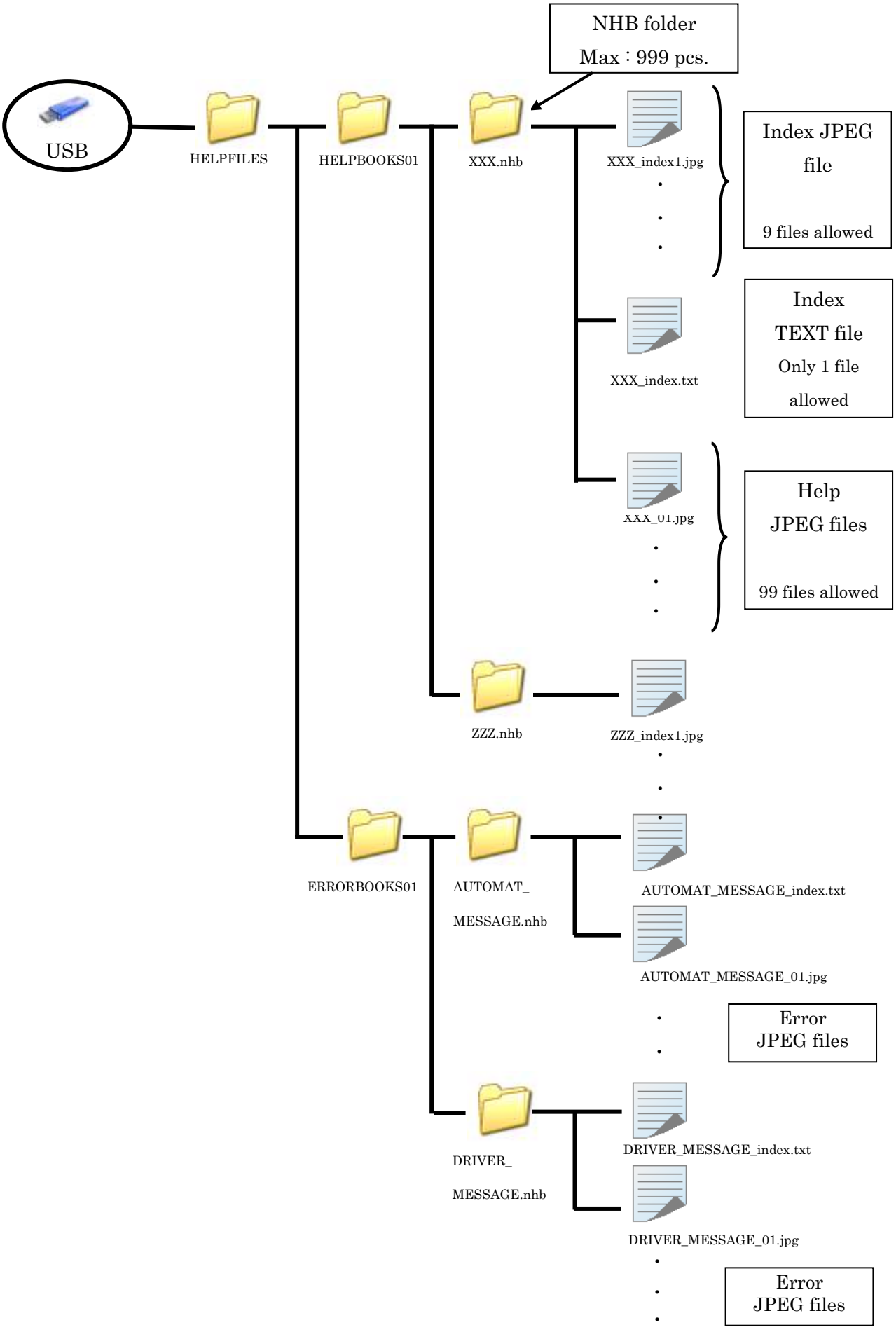
Example : "AUTOMAT_MESSAGE.nhb" folder

Index TEXT file : AUTOMAT_MESSAGE_index.txt

Error JPEG file : AUTOMAT_MESSAGE_01.jpg

* Some Asian fonts use full-width characters. Do not use these font characters for making these folders or file names. Use half-width characters instead.

15-4. Help File Folder Structure



15-5. File Specification

Always use the proper help file structure as previously explained.

1) For JPEG files (Index and Help JPEG files), use only “430 X 360” resolution.

2) Index TEXT file contents:

Write the nhb file version number on the first line.

First line: nhb (version No.)

*The initial nhb version is 100.

See Version 100 specifications below.

Write the page number and index information about that page, starting on the second line.

(Page No 01-99), (Index information, maximum 30 characters)

Options:

Use a “-” at the beginning of the second line or after to display a partition line on the help index screen.

Use a “#” mark at the beginning of a line, to write a comment that will not be displayed on the help index screen.

Example : Index TEXT file

```
nhb100          <-- Version
#Comment1       <-- Comment
01.First        <-- Page number, index information
02.Second
#Comment2
-               <-- The partition line
03.Third
-
04.Fourth
```

15-6. Help File Display

1) Insert a USB Flash Drive that contains Help Files.

2) Press the **SETTINGS** Icon to display the Preferences menu.

3) Press the **HELP** Icon to display the Help Books list.

Number (No), NHB folder name (Book name), Page Number (Page)

4) Select a Help file location in area A .

Press the **MEMORY** Icon to display help files loaded into the Automat memory.

Press the **USB1** Icon to display help files in USB1.

Press the **USB2** Icon to display the help files in USB2.

5) Select an NHB folder in the help book list.

6) Press the **INDEX**

Icon to display the help index.

(TEXT) Index screen

(JPEG) Index screen

The (TEXT) Index screen is a Help file list in the order of Item names (Index), and page numbers (Page).
The (JPEG) Index screen is a JPEG image of index contents.

Press the **CHANGE** Icon to toggle between (TEXT) and (JPEG) Index screens.
When viewing the (TEXT) Index file, you can scroll and select a page in the list.

When viewing the (JPEG) Index file, press the **MINUS** or **PLUS** Icons change index image pages.

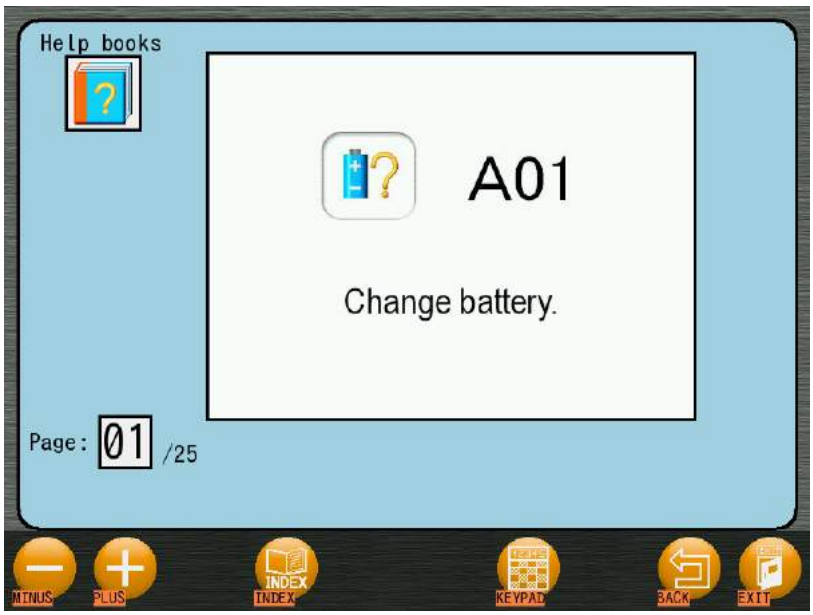
➢ If there are no Index files, the help screen goes straight to step to 7) even if the **INDEX**

Icon is pressed.

7) Press the **VIEW** Icon above “F” to display the selected help screen.

If no page is selected, the first help page in file is displayed.

If a page is selected in the (TEXT) Index screen, that page is displayed.



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8) Press the **MINUS** or **PLUS** Icons to change page numbers.

Use the **KEYPAD** Icon above “G” to input a specific page number to open.

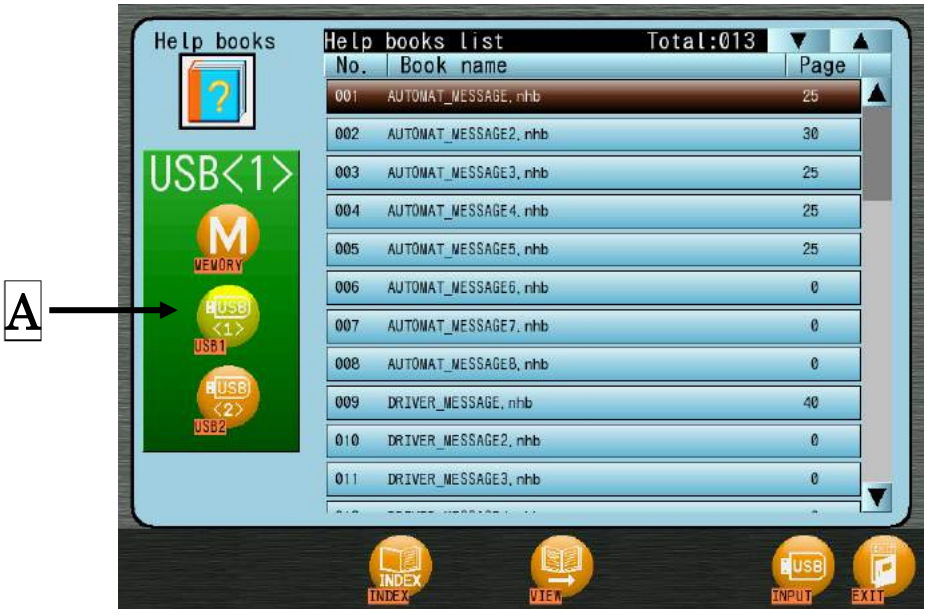
Refer to “Chapter 3, 9. Keypad” for details using the keypad.

15-7. Loading a NHB Folder

1) Insert a USB that has a NHB folder to load.

2) Press the **SETTINGS** Icon to display the Preferences menu.

3) Press the **HELP** Icon to display the Help Books list.



4) Select the USB port that contains the NHB folder in area A.

Press the **USB1** Icon to select USB1 port.

Press the **USB2** Icon to select USB2 port.

5) Press the **INPUT** Icon to display the list of NHB folders available to input.

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6) Select an NHB folder in the list.

➢ If needing to select multiple NHB folders for loading:

1. Double click a folder to tag it with an (*) mark.
2. Choose more folders and double click them to tag them with an (*) mark.
3. Double click a folder with an (*) again to untag it.
4. If the same name folder is already in memory, the folder is overwritten.
5. A maximum of 3 folders can be selected for input.

   To delete folders, Refer to “14-8. Deleting NHB Folders in the Automat” for details.

7) Press the **ENTER** Icon above “G” to load the selected NHB folder(s).

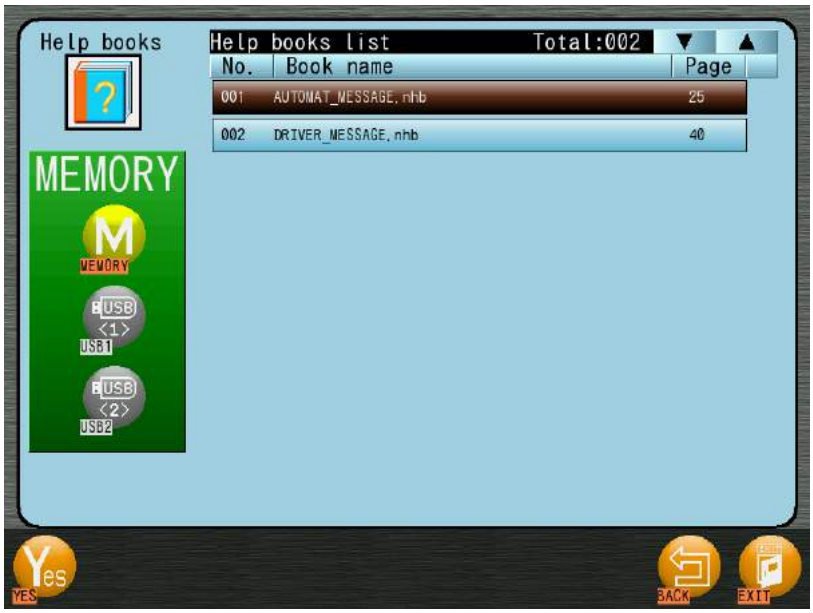
15-8. Deleting NHB Folders in the Automat

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **HELP** Icon to display the Help Books list.

3) Press the **MEMORY** Icon in area A to select the Automat memory.

4) Press the **DELETE** Icon to display the NHB folder delete screen.



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5) Select an NHB folder to delete in the list.

- If needing to delete multiple NHB folders:
  1. Double click a folder to tag it with an (*) mark.
  2. Choose more folders and double click them to tag them with an (*) mark.
  3. Double click a folder with an (*) again to untag it.

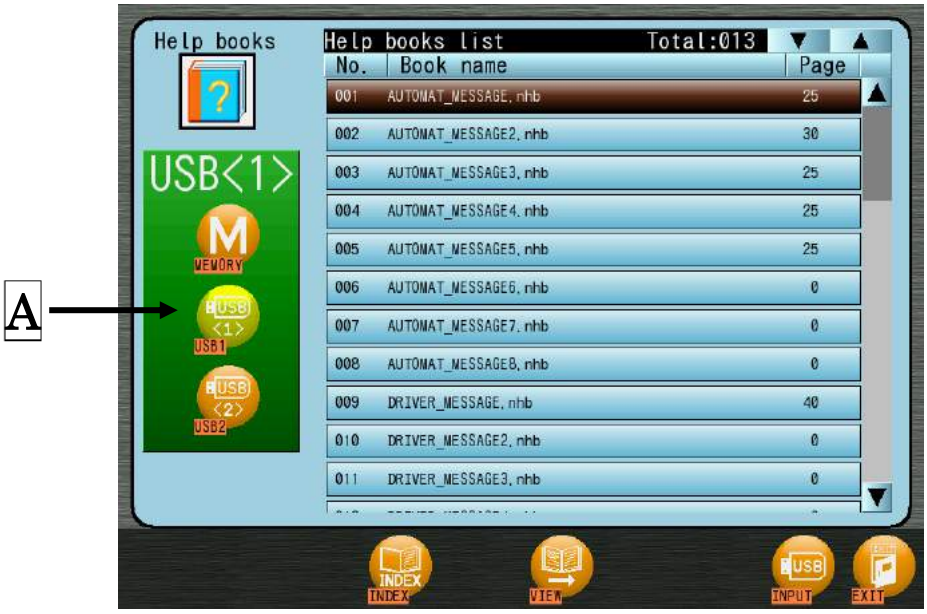
6) Press the **YES** Icon above “A” to delete the selected NHB folder(s).

15-9. Loading a NHB Folder for Error Message Display

1) Insert a USB device that contains NHB folders for Automat Error display.

2) Press the **SETTINGS** Icon to display the Preferences menu.

3) Press the **HELP** Icon to display the Help Books list.



4) Select the USB port with the USB device in area A.

Press the **USB1** Icon to select USB1 port.

Press the **USB2** Icon to select USB2 port.

5) Press the **INPUT**

Icon above “I” to display the list of NHB folders.

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6) Press the **ERROR**

Icon above “A”, and a confirmation screen will display for loading the folders.

Refer to “Chapter 3, 6. Confirmation Screen” for confirmation details.

15-10. Displaying Error Message Help Files

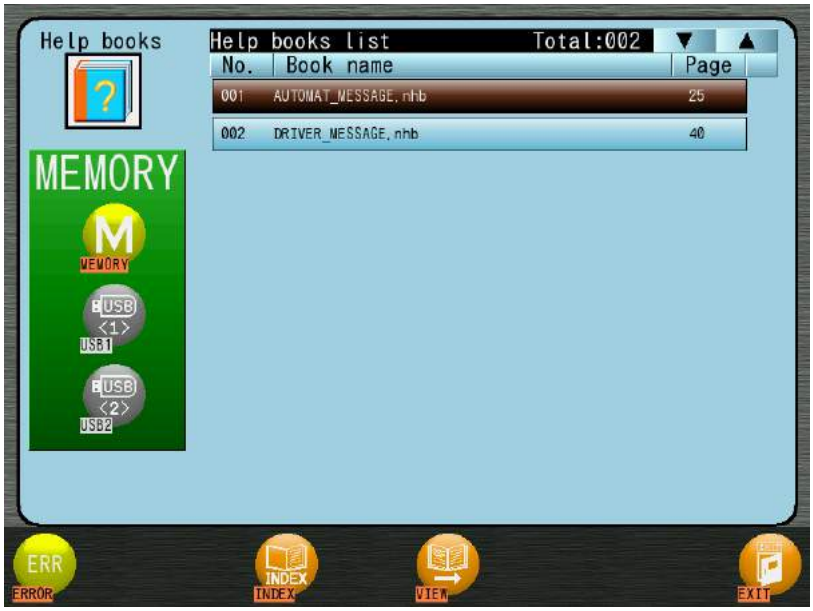
1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **HELP** Icon to display the Help Books list.

3) Press the **MEMORY** Icon in area A to select the Automat memory.

4) Press the **ERROR**

Icon above “A” to display the list of Error Message Help files.



5) Help files can be displayed with the same operation as “15-6. Help File Display”.

16. Schedule

Memos can be written and displayed on a date specified in the schedule calendar.

On the days a memo is scheduled, the memo is displayed when the machine is powered ON.

16-1. Schedule Memo

How to write a memo into the calendar.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **SCHEDULE** Icon.

3) The schedule screen opens.

Area A : Press Icon to display the calendar for the previous year.

Press Icon to display the calendar for the next year.

Area B : Press 1-6 Icon to display the calendar from January to June.

Press 7-12 Icon to display the calendar from July to December.

4) Press the calendar for the month of the new memo.

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5) Press the **MONTH** Icon to open the monthly calendar display.

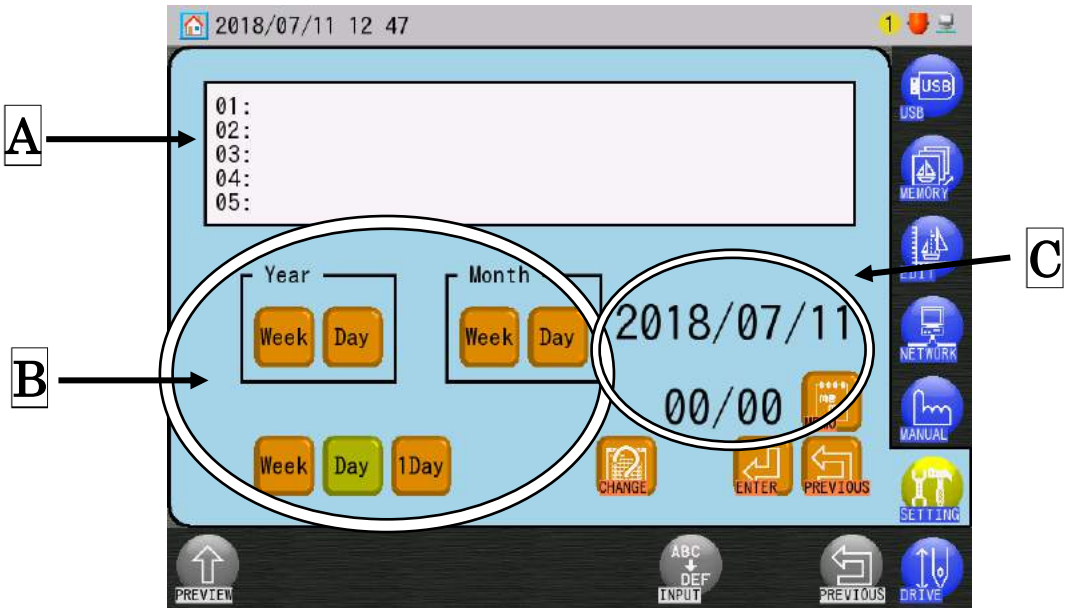
A B C D E F G H I J

Use the **PREVIOUS** Icon if needed, to return to the previous screen.

6) Press the date for the new memo.

7) Press the **INPUT** Icon to open the memo schedule settings.

If a memo has already been schedule for this date, the contents are shown on this screen.



A : Displays the text in the memo.

Available text : 30 characters x 5 lines

B : Sets the date interval of days when to display the memo.

Upper : Interval (per Year or per Month) and display condition.

Lower: Interval (per Week, per Day or 1 Day only)

* Refer to the list on the next page for detailed explanation of each date setting.

C : Displays the currently selected date.

And how many memos there are scheduled for this date.

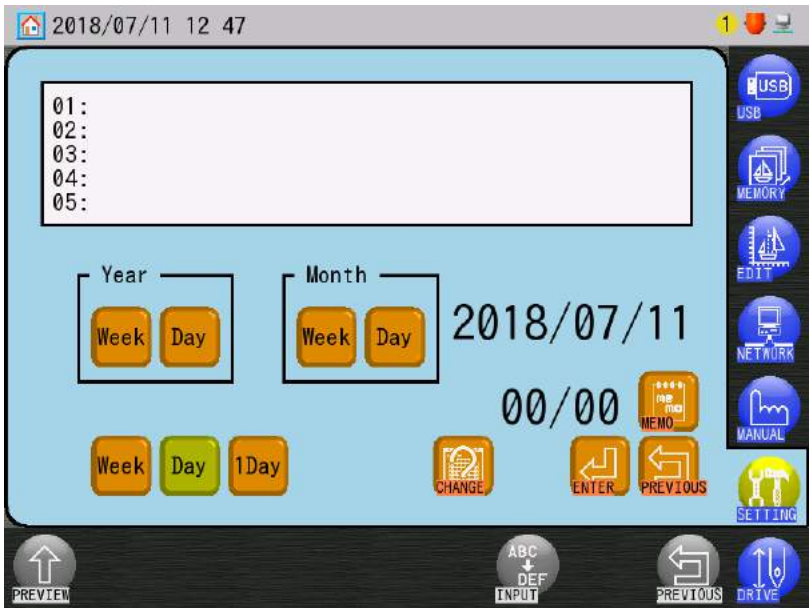
Use the **MEMO** Icon to view next memo, when there are multiple memos.

Press the **PREVIOUS** Icon to return to the monthly calendar.

Interval	Condition	Detailed display conditions per the set date
Year	Week	Displays [Every year] on the same **Day** of the week.
	Day	Displays [Every year] on the same **Date**.
Month	Week	Displays [Every month] on the same **Day** of the week.
	Day	Displays [Every month] on the same **Date**.
Week	———	Displays [Every week] on the same **Day** of the week.
Day	———	Displays [**Everyday**].
1 Day	———	Displays only once on this **Date**.

9) Select the interval and display conditions using the

Icons.



10) Press the **CHANGE** Icon to input or edit a memo.

Refer to “Chapter 3, 9. Keypad” for details using the Character Input menu.

Use the **CHANGE** Icon again if needed, to return to the memo schedule settings.

11) Press the **ENTER** Icon to save the memo.

After saving the memo, the screen goes back to the monthly calendar display.

Once a memo is saved, use this function again to edit the memo and interval.

To delete the memo entirely, use this function again and delete all characters in the memo and save it.

12) Each date with a memo is display with a color.

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Yellow : Indicates multiple Year/Month/Week/Day interval for this memo.

Red : Memo is only for one time on this date.

( ) : Number of memos on this date.

Bottom of Main screen : First line of Memo contents.

If there are 3 or more memos for this date, press the **PREVIEW** Icon to view more first line memo contents.

13) On day a memo is scheduled, the memo is displayed when powering on the Automat as shown below.

Press the **NEXT** Icon in the memo to close and return to the usual start screen.

If there are multiple memos for this date, the memos are displayed in the order they were registered to the Schedule.

16-2. Schedule Input/Output

The memo schedule can be saved to USB memory.

And then read into other Automat using USB memory.

*** Insert a USB memory to input/output schedule.**

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **SCHEDULE** Icon.

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3) Press the **INPUT** Icon to input the schedule into the Automat.

Press the **OUTPUT** Icon to output the schedule from the Automat.

* When Inputting/Outputting the schedule, a confirmation screen appears.

Refer to “Chapter 3, 6. Confirmation screen” for confirmation screen details.

* The schedule input/output file is named “schedule.SMF”.

If a “schedule.SMF” exists on the USB memory when outputting, it is overwritten.

16-3. Schedule Precautions

1) The maximum number of memos is 40.

2) You can only enter one memo per calendar date.

(ex.) 1st memo 2012 / 1 / 1 [Display Interval] for only One day

↓ If you try to use the same date to add another memo.

2nd memo 2012 / 1 / 1 [Display Interval] Every year / same month and day

(In this case, the 1st memo is overwritten by the 2nd memo.)

3) However, multiple memos per day are possible as follows:

(ex.) 1st memo 2012 / 1 / 1 [Display Interval] for only One day

↓ Input the same date (Month and day) of a different year

2nd memo 2013 / 1 / 1 [Display Interval] Every year / same month and day

(On 2012/1/1, both the 1st and 2nd memos are displayed)

17. Frame Outline Display

* This function is only available in Standby mode (not Drive mode).

17-1. Loading Frame Outline Folders

1) Make a “FRAME” folder on a USB flash drive.

- The name of the “FRAME” folder is “FRAME” (half-width characters).
- “FRAME_*** (any name)” is also available.

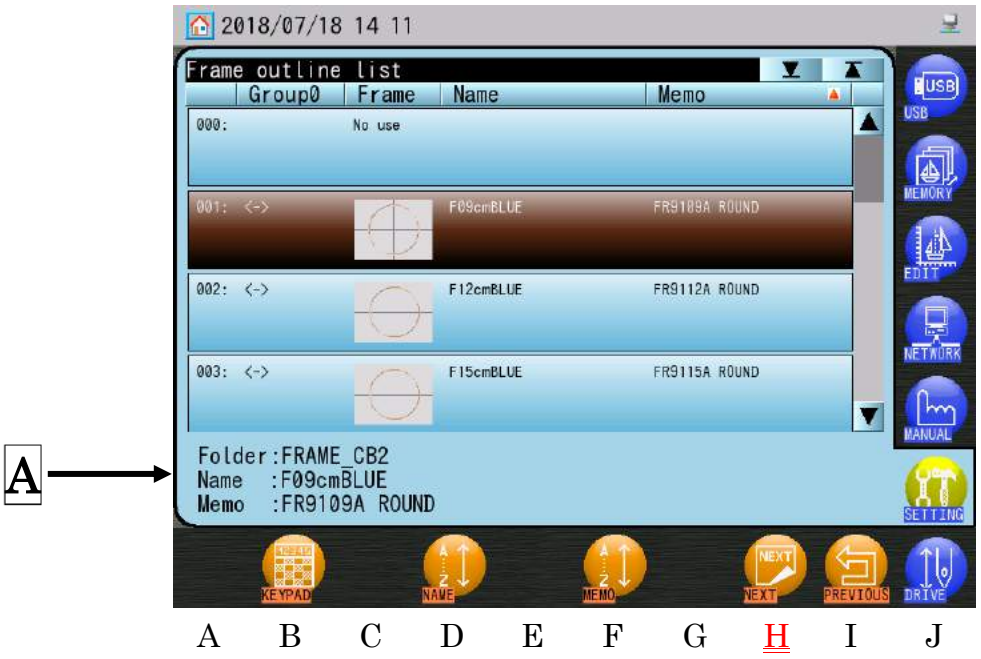
  Ex : FRAME_KS001

2) Copy the frame outline data to the “FRAME” folder.

- Copy “***.FMO” and “***.BMP” files as a set for each frame file.

3) Press the **SETTINGS** Icon to display the Preferences menu.

4) Press the **OUTLINE** Icon to display the Frame Outline list.



The frame outline data files are displayed in a list.

It shows the number, Group, Frame Bitmap (Frame), Name, and Memo.

The list is displayed in ascending order of the Group number.

The following operations are available;

Filtering by Group

Change the order by Name, the ascending order of Memo or the descending order of Memo.

Refer to “17-4. Selecting a Frame Outline” for details.

A : Displays the name and memo of the frame outline data file that is currently selected.

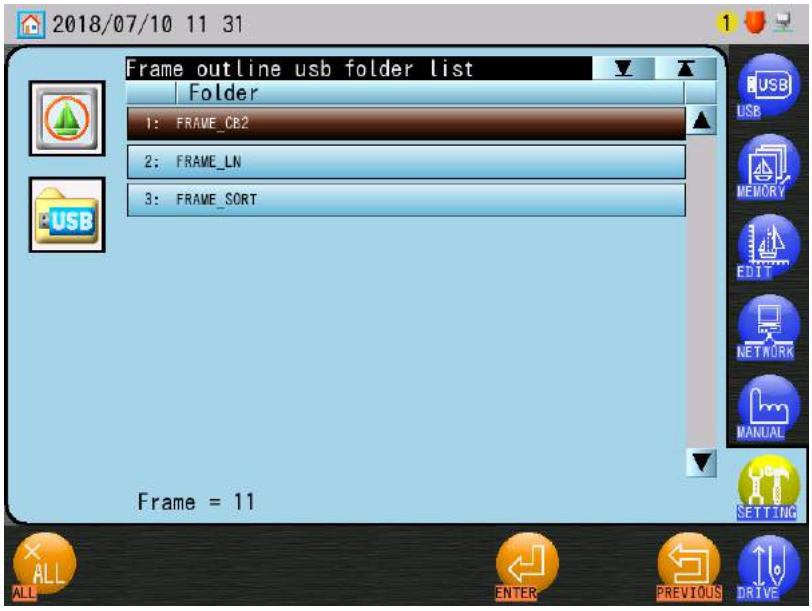
5) Press the **NEXT**

Icon

A B C D E F G H I J

6) Press the **INPUT**

Icon to display the Frame Outline USB Folder list.



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Listed are the frame outline folders on the USB device.

The number of frame outlines in the selected folder is shown at the bottom of the list.

7) Select a frame outline folder in the list.

- If needing to select multiple folders:
  1. Double click a folder to tag it with an (*) mark.
  2. Choose more folders and double click them to tag them with an (*) mark.
  3. Double click a folder with an (*) again to untag it.

  - Use the **ALL**

Icon above “A” to select up to the next 5 folders in the list.

  Press again to cancel all selected folders.

- When same name folder has already been loaded, the frame outline data in the folder is overwritten.

- A maximum of 5 folders can be loaded.

  If 5 folders have already been loaded, delete any folder to load another one.

  Refer to “17-3. Deletion of Frame Outline Folder” for details.

8) Press the **ENTER** Icon above “G” to load the selected folders.

After loading, the frame outline folder list is displayed.

Refer to “17-2. Selection of Frame Outline Folder”.

17-2. Selection of Frame Outline Folder

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **OUTLINE** Icon to display the Frame Outline list.

3) Press the **NEXT** Icon above “H”.

4) Press the **FOLDER** Icon above “D” to display the Frame Outline Folder list.

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The number of frame outline data in the selected folder is shown at the bottom of the list.

5) Select a frame outline folder in the list.

6) Press the **ENTER** Icon above “G” to use the selected frame outline folder.

17-3. Deletion of Frame Outline Folder

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **OUTLINE** Icon to display the Frame Outline list.

3) Press the **NEXT**

Icon above “H”.

4) Press the **FOLDER** Icon above “D” to display the Frame Outline Folder list.

A B C D E F G H I J

5) Press the **DELETE**

Icon to display the delete menu.

A B C D E F G H I J

6) Select a frame outline folder in the list.

- If needing to select multiple folders:
  1. Double click a folder to tag it with an (*) mark.
  2. Choose more folders and double click them to tag them with an (*) mark.
  3. Double click a folder with an (*) again to untag it.

- Use the **ALL**

Icon above "B" to select or cancel all folders.

7) Press the **YES**

Icon above "A" to delete the selected frame outline folder(s).

17-4. Selecting a Frame Outline

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **OUTLINE** Icon to display the Frame Outline list.

A B C D E F G H I J

3) Filtering by Group is available.

Press the **KEYPAD** Icon above "B" to display the numeric keypad.

Refer to "Chapter 3, 9. Keypad" for details using the keypad.

Input a group number to view only the outlines in this group.

Group number <->, shows all frame outlines.

4) Rearranging is available by Name or Memo, in ascending (A-->Z) or descending order (Z-->A) order.

Press the **NAME** Icon above "D" to rearrange by Name.

Press the **MEMO** Icon above "F" to rearrange by Memo.

* After rearranging, (ascending order) or (descending order) arrows appear at the top of the list.

*

5) Select a frame outline in the list.

* Select "000: No Use", if you do not want to display a frame outline.

17-5. Frame Outline Deletion

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **OUTLINE** Icon to display the Frame Outline list.

3) Press the **NEXT** Icon above “H”.

4) Select any frame outline in the list, other than “000: No use”.

5) Press the **Delete** Icon above “A” to display the delete menu.

A B C D E F G H I J

6) Select a frame outline in the list to delete.

- If needing to select multiple outlines:
  4. Double click an outline to tag it with an (*) mark.
  5. Choose more outlines and double click them to tag them with an (*) mark.
  6. Double click an outline with an (*) again to untag it.

- Use the **ALL** Icon above “B” to select or cancel all the frame outlines.

7) Press the **YES** Icon above “A” to delete the selected frame outline(s).

17-6. Changing Frame Outline Group Numbers

* Group numbers can be assigned to frame outlines for viewing and selecting purposes. No group number <-> displays all frame outlines.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **OUTLINE** Icon to display the Frame Outline list.

3) Press the **NEXT** Icon above “H”.

4) Select any frame outline in the list, other than “000: No use”.

5) Press the **GROUP** Icon above “B” to display the change group number menu.

A B C D E F G H I J

6) Select a frame outline in the list to assign or change a group number.

7) Press the **MINUS** Icon above “A” to reduce the group number.

Press the **PLUS** Icon above “B” to increase the group number.

Group numbers <-> (no group), and “1~9” can be assigned.

17-7. Frame Outline Offset

Adjust the Frame offset to center the frame with the machine.

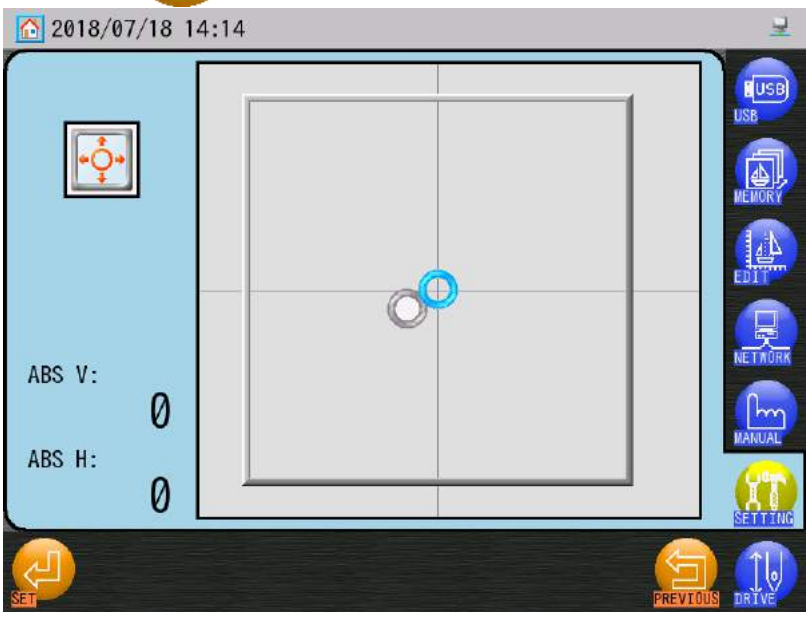
1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **OUTLINE** Icon to display the Frame Outline list.

3) Press the **NEXT** Icon above “H”.

4) Select any frame outline in the list, other than “000: No use”.

5) Press the **OFFSET** Icon above “D” to display the Frame Offset screen.



A B C D E F G H I J

The outside square displayed, is the machine’s frame soft limit settings.

6) Use the **Jog keys** to adjust the frame offset position.

7) Press and hold the **SET** Icon above “A” to save the new offset position.

17-8. Memo Editing

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **OUTLINE** Icon to display the Frame Outline list.

3) Press the **NEXT**

Icon above “H”.

4) Select any frame outline in the list, other than “000: No use”.

5) Press the **MEMO**

Icon above “G” to display the character keypad for editing the selected frame outline.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

17-9. Setting Frame Outline with Barcode.

Barcodes can be used to select and set frame outlines.

There are basically 4 Barcodes for frame outline use:

Starting and opening the Frame outline list

$FRAME$

Name of the Frame outline

F330X438BLUE

Ok and completion of the Frame outline set-up

OK

No Frame outline

$NO USE$

* The example Frame outline Barcode above is for a “F330X430BLUE” frame.
The name of the Barcode needs to match the frame being used.

1) Scan the $FRAME$ Barcode to display Frame outline list.

2) Scan the $Frame Name$ Barcode to select it in the list.

3) Scan the OK Barcode to complete the set-up and return to the basic screen.

17-10. Frame Outline Barcode list

The following barcodes are used to start and complete the setting of Frame outlines

18. Frame Outline Limit Settings

Sets pantograph move limits based on Frame outline margin and soft limits.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **LIMIT** Icon to open the Frame limit list.

A B C D E F G H I J

3) Select an item in the list to change. (See next page for Item list details)

4) Press the **MINUS** Icon to decrease the setting value.

Press the **PLUS** Icon to increase the setting value.

The numeric keypad on the right side of the screen is also available to change values.

Refer to “Chapter 3, 9. Keypad” for details using the keypad.

* If changes were made to the Frame limit list, a confirmation screen appears.

Refer to “Chapter 3, 6. Confirmation screen” for confirmation details.

Frame Outline Item List Details

Outline limit check	Sets the design limits of operation to the inside of the frame outline margin. 0 : No limit to the start of sewing (default) 1 : Prohibits the start of sewing when the design is outside of the margin.
Margin	Sets the margin for the frame outlines 0 ~ 500 (Default : 10) The frame outline Margin determines the Outline limit check.
Soft limit check	Set the design limits of operation to the inside of the Soft limits. 0 : No limit to the start of sewing (default) 1 : Prohibits the start of sewing when the design is outside of the soft limits.

19. Cap Frame Mode Settings

Instructions for programing the automatic Cap Frame Mode Icon. This function sets up Program item 13 “Cap frame” and the Frame Outline used when the Cap Frame Mode Icon is turned on for sewing caps.

・MC2 : Item 3 “Right limit” ~ Item 6 “Front limit”

*** This function cannot be used in Drive mode.**

* Refer to “Chapter 8, 8. Cap Frame Mode” and “17. Frame Outline Display” for details.

* Refer to “Chapter 8, 2. Program List” about Program settings.

* Refer to “6. MC2 List” in this chapter about MC2 settings.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **CAP** Icon to display the Cap Frame Mode setup screen.

A B C D E F G H I J

3) A : Value of Program item #13 “Cap frame” used when Cap Frame Mode is turned On.
B : Frame outline used when Cap Frame Mode is turned On.

4) Change the value of Program item #13 “Cap frame” to be used by the Cap Frame Mode Icon.

Press the **MINUS** Icon in area C to reduce the value.

Press the **PLUS** Icon in area C to increase the value.

5) Select a frame outline in the list to be used by the Cap Frame Mode Icon.

* Select “000: No Use”, if you do not want to display a frame outline.

* For more details on selecting a frame outline, refer to “15-4. Selecting a Frame Outline”.

The frame outline list can be filtered by Group.

Use the **KEYPAD** Icon to use the numeric keypad to select a group number.

* When the group number is 0, all frame outlines are displayed.

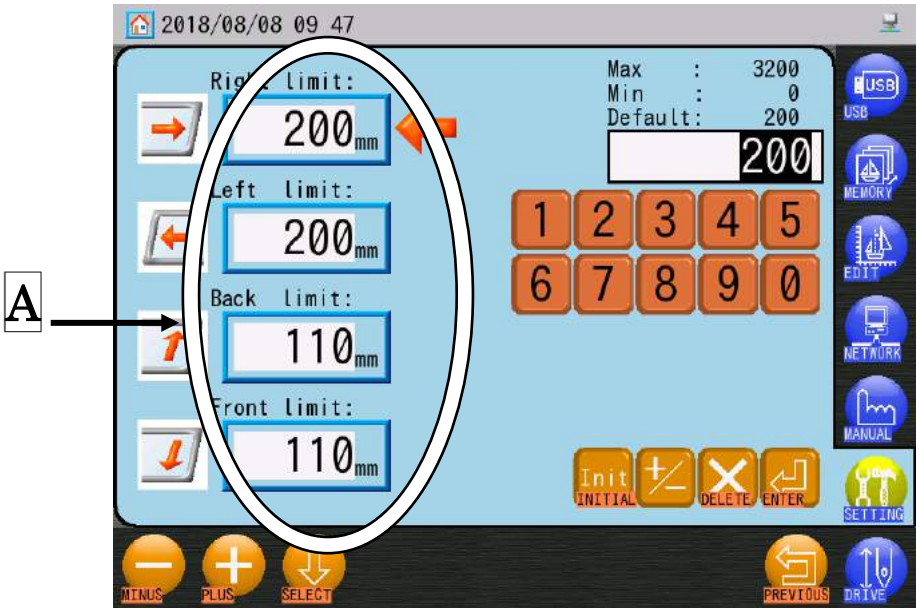
Frame Names or Memos can reordered by ascending (A->Z) or descending order (Z->A).

Use the **NAME** Icon to reorder by names.

Use the **MEMO** Icon to reorder by the memos.

After reordering, the (ascending order) and (descending order) icons are displayed at the top of the list.

6) Press the **LIMIT** Icon or the D area to set the soft limits.



7) Press the **SELECT** Icon to select the next frame limit to set up.

Or select it directly by pressing the Limit in area A .

8) Press the **MINUS** Icon to decrease the number by 1.

Press the **PLUS** Icon to increase the number by 1.

The numeric keypad can also be used for these settings.

Refer to “Chapter 3, 9. Keypad” for more details.

9) Press the **PREVIOUS** Icon to save the Cap frame settings and exit the menu.

20. Production Totals per day

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **PRODUCT** Icon to display the One day product list.

The list shows the last 5 days of total production quantity.

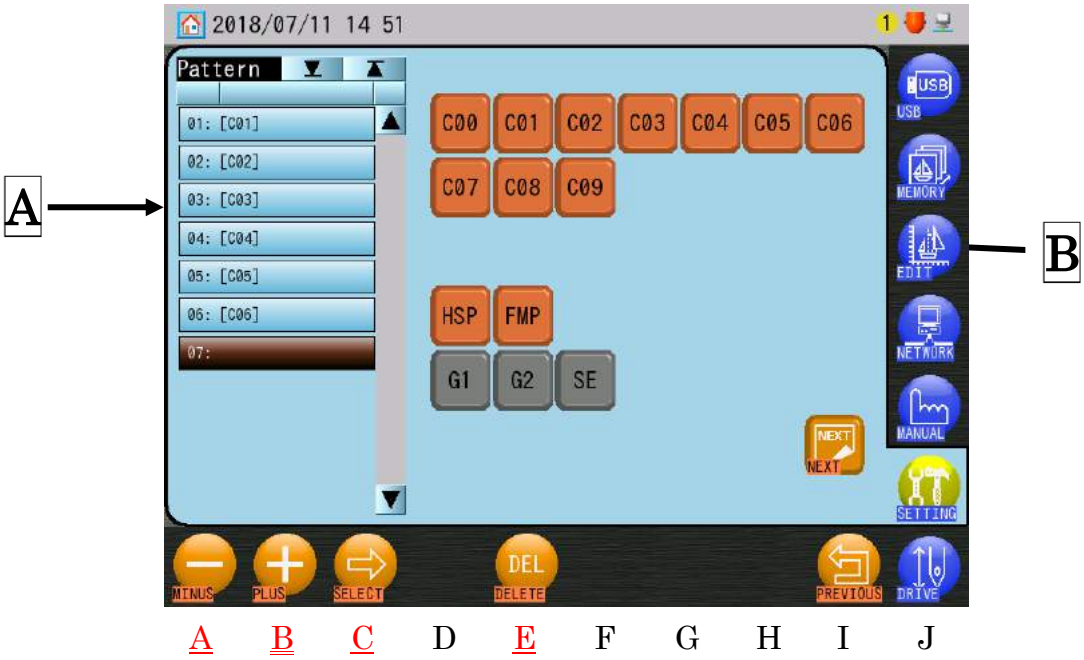
* Days where the Automat wasn't started are not recorded.

21. Function Pattern (FPAT) Settings

* Refer to “Chapter 7, 5. Function pattern” about using the function pattern.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **PATTERN** Icon to open the function pattern settings.



A : Displays the function pattern list.

B : Displays function buttons for input.

3) B : Press a color change function button to add this function to the list.

A : The function is added to the empty item at the bottom of the list.

Pressing the **MINUS** Icon or **PLUS** Icons is also available for changing color change functions.

Use the **SELECT** Icon to change to sub-functions.

Press and hold the **DELETE** Icon to delete a selected function in list A.

* If changes were made to the function pattern, a confirmation message will appear. Refer to “Chapter 3, 6. Confirmation screen” for confirmation details.

22. Automatic 1st Color Function Insertion

Select whether or not to automatically add a stop function at the beginning of a design (start function) when reading a design into memory

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **ADD STOP** Icon to activate this feature. Press the Icon again to cancel.

When the Icon is Yellow, a stop function is automatically added to the 0st function when loading a design into memory.

23. Name Drop

23-1. Name Drop Mode Setting

Sets Name Drop Mode ON/OFF.

* This function cannot be used in Drive mode.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **MODE ON** Icon to toggle Name Drop Mode ON/OFF.

When the Name Drop Mode Icon is Yellow, it is ON.

- When name drop mode is on, a (horizontal split icon) or (vertical split icon) appears on the status bar.
  - High speed float to the beginning names is available when Name Drop mode is on. Refer to “Chapter 9, 12. High Speed Float (By Name Drop)” for details.

23-2. Name Drop Display Setting

Instructions for the way name drop is displayed in design information area 1.

Refer to “Chapter 3, 5. Screen Structure” about design information area 1.

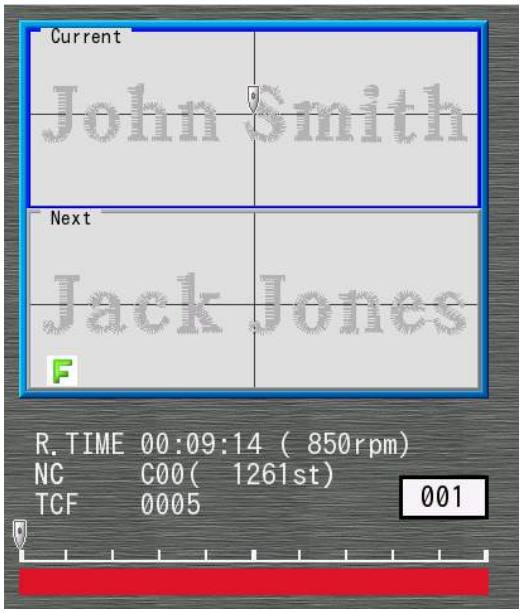
a. **This function is available only in Standby** mode and Name Drop Mode is turned on.

Refer to “19-1. Name Drop Mode Setting” for details setting name drop mode on.

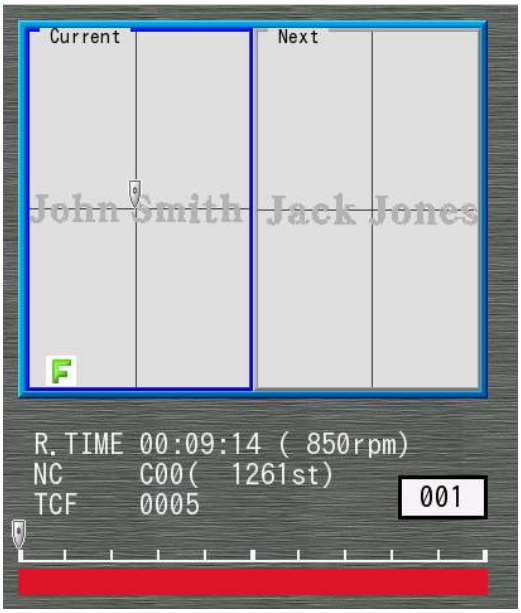
1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **VEIW MODE** Icon to toggle between horizontal or vertical split view modes. This setting determines how the name drop design is displayed while sewing.

Horizontal split :



Vertical split :



Design information area 1

b. The following icons are displayed on the status bar to indicate the currently selected name drop view mode.

(Horizontal split) or (Vertical split)

23-3. Name Drop Buzzer Setting

This function sets whether or not the machine makes a beeping sound when stopping for name drops. This function is only available while the machine is in name drop mode.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Each time the **BUZZER** Icon is pressed, buzzer mode is enable/disabeled.

24. 0st Condition Return

This function returns the condition of the machine to same condition at the start of Embroidery when embroidery is completed.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Each time the **RETURN**

Icon is pressed, the function is enabled / disabled.

There are 6 return conditions:

(1) Needle number

(2) WS group

(3) Presser foot height

(4) Head selection

(5) TSQ Switch over of Right and Left

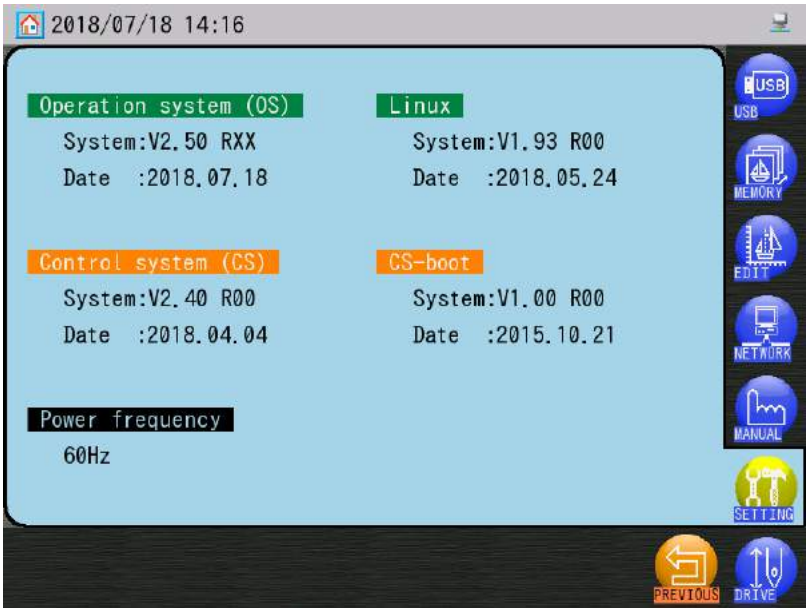
(6) Sewing speed

(5 and 6 varies per MC2 settings)

25. Software Version

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **VERSION** Icon to display the Version screen.

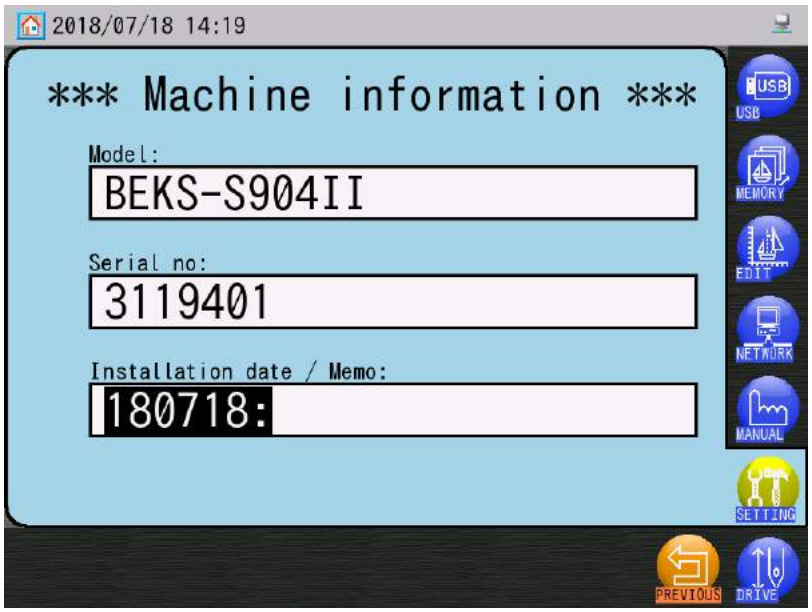


Operation system (OS)	: Operational software version
Control system (CS)	: Control software version for the embroidery machine
Linux	: Linux version
CS-boot	: Boot ROM version
Power frequency	: Power supply frequency in Hz

26. Machine Information Display

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **MA INFO** Icon to display the Machine Information.



Model

Serial number

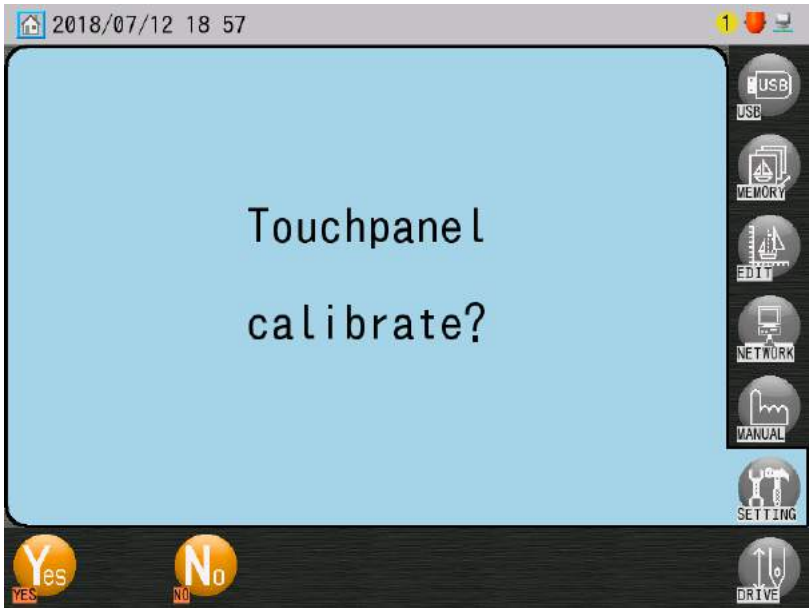
Installation date / Memo

27. Touch Panel Calibration

- Calibration is done at the factory and is generally not needed again.
- However, if there is a problem with the touch panel, do a touch panel calibration.
  Ex) When you touch the panel, and the cursor is not positioning correctly.
- Another calibration method is explained in “Chapter 12, 6. Touch Panel Calibration”. Use this method if the cursor misalignment is so severe that it prevents you from using the Calibrate Icon.

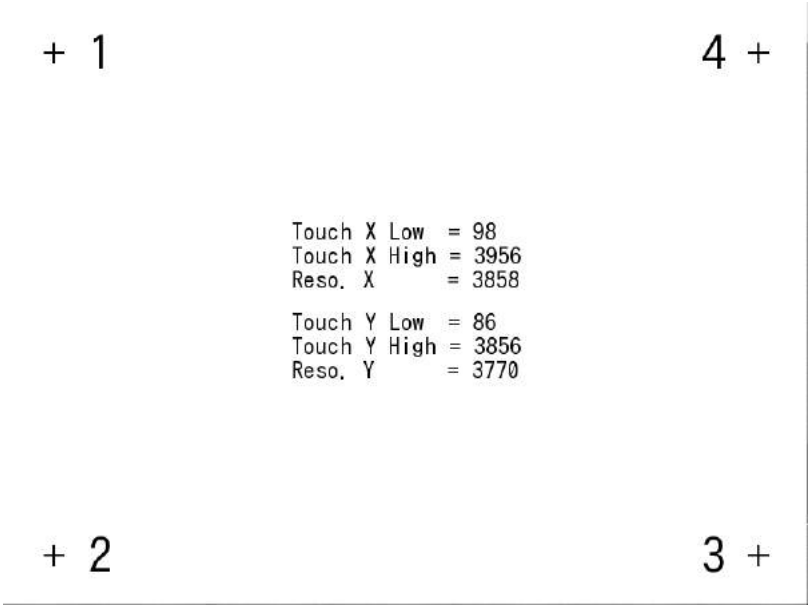
1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **CALIBRAT** Icon to display the Touch Panel Calibration screen.



Use the **NO** Icon if needed, to cancel and return to the Preferences menu.

3) Press the YES Icon to open the Touch Panel Calibration screen.



4) Touch the center of the Red “+” with a soft tipped device, like a touch pen.
(Do not use any sharp device that would damage the panel)
After that, the Red “+” will turn Black, and the next “+” to touch will turn Red.

“+” 1hing Order is : “1” -> “2” -> “3” -> “4”

5) After touching all “+”s, the setting values for the Touch panel are displayed in the center of the Screen.
When an abnormal value is detected, it is indicated by red text.
Touch anywhere on the screen to finish the calibration and the display returns to the Preferences menu.

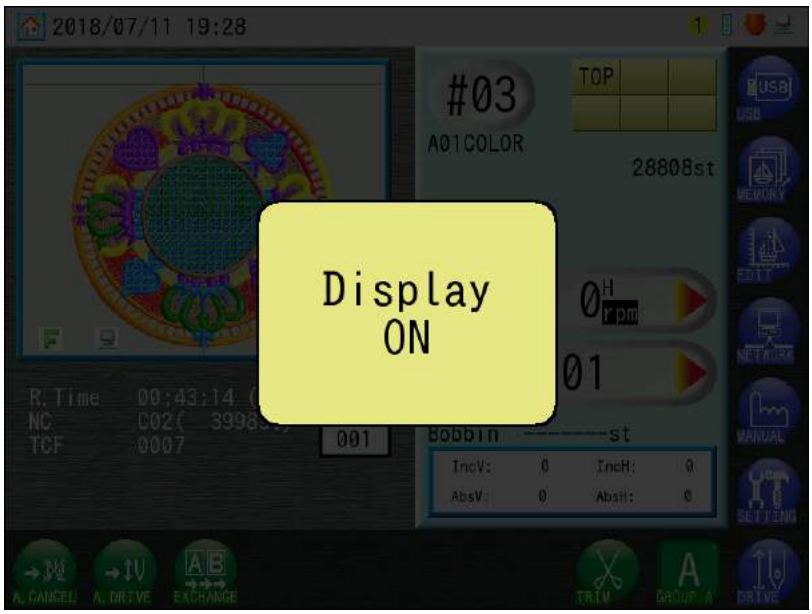
28. Display OFF

Instructions for turning the Automat screen off to reduce power usage.

1) Press the **SETTINGS** Icon to display the Preferences menu.

2) Press the **DISPLAY** Icon to turn the Automat screen off. The "Display OFF" indicator will also light on the Automat panel to indicate the display is in off mode.

3) Press anywhere on the touch panel or a jog key to cancel the Display OFF function.
If an error message is displayed, the function is automatically canceled.
When the screen turns back ON, the following "Display ON" message is briefly displayed.



MEMO

Chapter 12 System

This chapter contains instructions for the KS Automat System programs.

1. System File Structure
2. System Software Update
3. Linux Update
4. Memory Initializing
5. SD Card Formatting
6. Touch Panel Calibration

1. System File Structure

BEKS is composed of 2 system programs, Operation and Control.

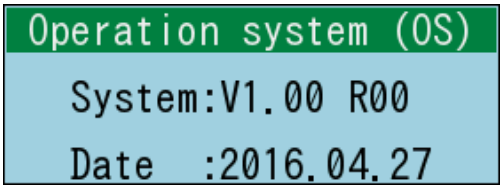
The Operation system is for the (Linux) operation.

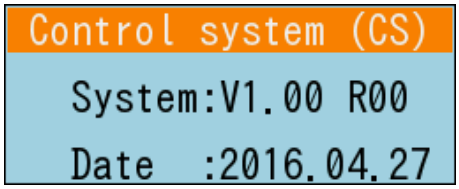
The Control system is for the (MC board) machine control operation.

Basically the software versions of both systems need to be updated together.

To check the software version loaded on the machine, see the Version information screen.

Refer to “Chapter 11, 20. Software Version” for details.





- For Operation and Control system update:

  System Update File: NK.KSC

- For Operation system update only:

  System Update File: NK.KSS

- For Control system update only:

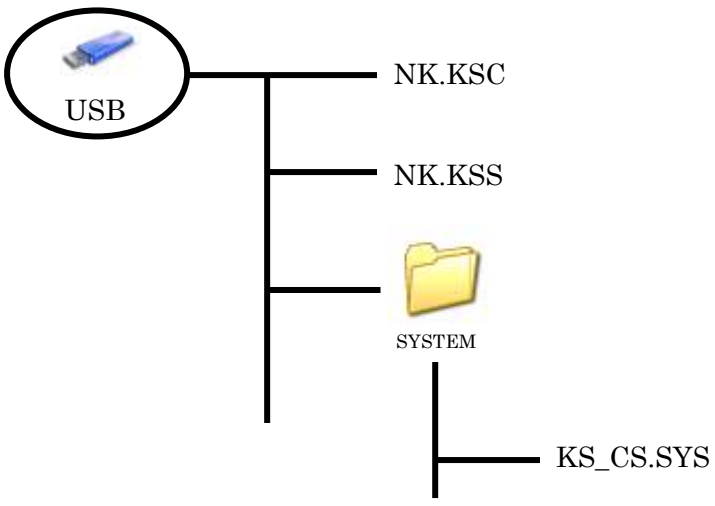
  System Update File: KS_CS.SYS

Save this file in the USB “SYSTEM” folder.

Refer to “2. System Software Update”.

✧ Normally, both systems are updated together.

Save each system file in the appropriate folder on your USB Flash Drive as follows.



2. System Software Update

Instructions for updating the system software on the machine

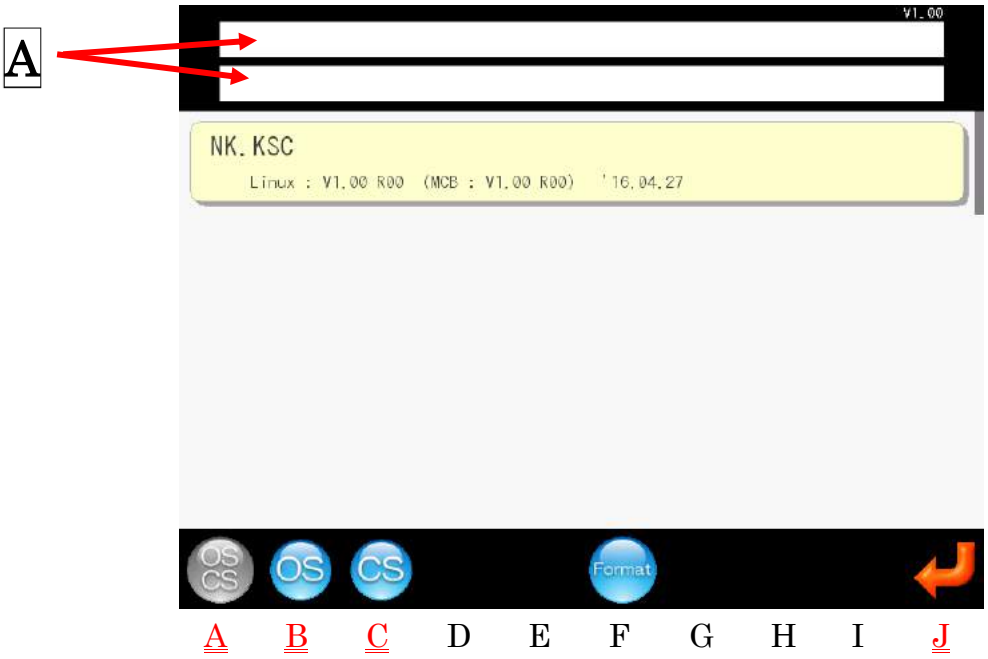
1) Turn the power **OFF** at the Automat.

2) Insert the USB Flash Drive that contains the System update files.

3) While the power is OFF, Press and hold the **Origin key**, and then Power **On**.

4) Keep holding the **Origin key** until you hear an intermittent beeping sound.

5) Afterwards the System Update screen will display.



File names, System software versions, and dates are shown.

Section A displays the system update status.

Upper line (Linux) : Operation system

Lower line (MCB) : Control system

Refer to “1. System File Structure” for details.

6) Select the System to be updated.

Press the **OS/CS** Icon above “A” to update both the Operation and Control system software together.

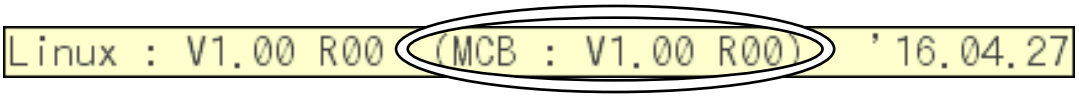
Press the **OS** Icon above “B” to update the Operation system.

Press the **CS** Icon above “C” to update the Control system.

The Operation system version is displayed as follows:

The Control system version shown in parentheses indicates the compatible version for this Operation system version.

The machine may not operate properly if the Operation and Control software versions are not compatible.



7) Select the system version to update from the list.

8) Press and hold the **Enter** Icon above “J” until the update starts.

9) When the process is complete, turn the power OFF at the Automat and restart.

3. Linux Update

Update the Linux System software to a newer version

Refer to “Chapter 11, 20. Software Version” for details.

1) Turn the power **OFF** at the Automat.

2) Insert a USB Flash Drive that contains the Linux system files.

The Linux system file name is “uImage.lzo”.

3) Press and hold the **Upper Half** of the screen, and then Power **ON**.

4) The Linux update screen is displayed.

5) After the completion of the Linux update, the origin set screen is displayed.

4. Memory Initializing

Instructions to initialize the Automat memory.

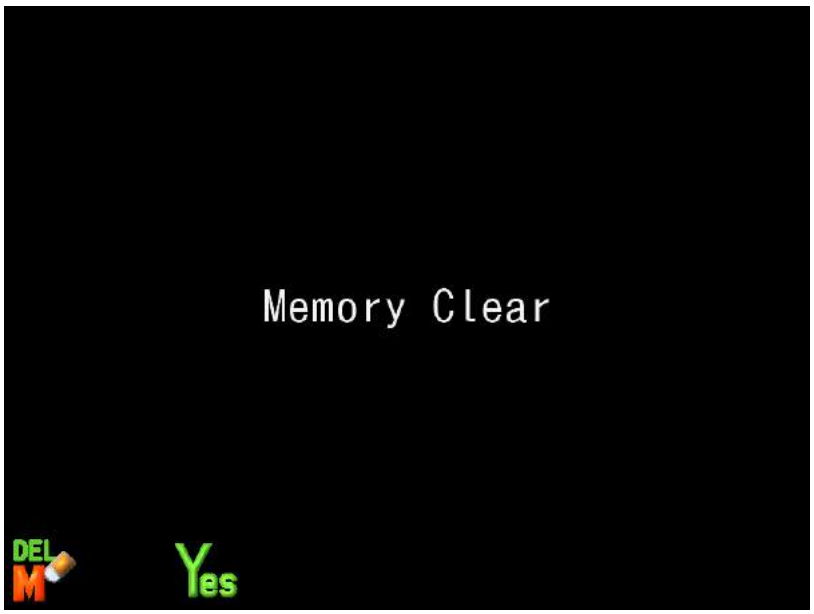
*** Note!** **This function deletes all designs in memory, network settings, and hoop files. Deleted data cannot be recovered.**

1) Turn the power **OFF** at the Automat.

2) While the machine is **OFF**, press and hold the **Origin key** and **Jog Up key** and then Power **ON**.

3) After a moment, the following screen is displayed.

4) Press the **DEL** Icon above “A”.



5) Press and hold the **YES** Icon above "C" to start the initialization.

If you want to cancel the initialization before starting, turn the power off.

6) The following message will be displayed:

"Please Wait for Origin LED to blink."

7) Turn the power off after confirming that the Origin LED is blinking.

Afterwards turn the power back on again to restart the Automat.

5. SD Card Formatting

Formats the internal SD card in BEKS Automat

*** Note! This function deletes all designs in memory, network settings, hoop files, and Operating system.**

✧ Refer to “Chapter 11, 20. Software Version” about checking the version.

1) The following 2 files are required for formatting the SD card.
   - ks_format.kss (format file)
   - NK.KSC or NK.KSS (Operation system)

   Save the format file and operation system file in the root of a USB Flash Drive.

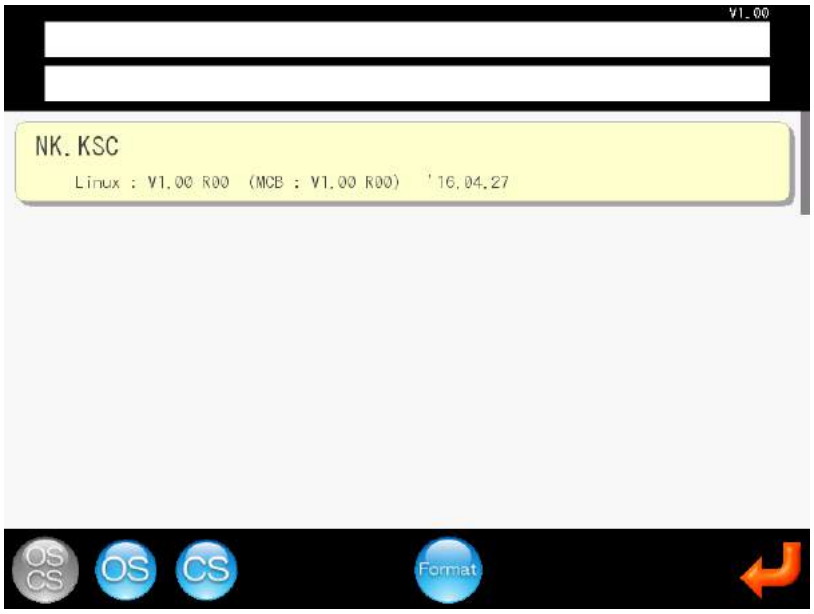
2) Turn the power **OFF** at the Automat.

3) Insert the USB Flash Drive that contains the format files.

4) Press and hold the **Origin key** and then Power **On**.

5) Keep holding the Origin key until you hear an intermittent beeping sound.

6) Afterwards the System Update screen is displayed :



A B C D E F G H I J

7) Press and hold the **FORMAT**

Icon above "F" to start the formatting.

A constant beeping sound will occur to indicate the SD card is being formatted.

✧ The FORMAT

Icon will be grayed out and non-active, if the (ks_format.kss) format file is not present on the USB Flash drive.

8) After the formatting is complete, a final long beep will occur.

9) Afterwards, update the operation system software.

Refer to "1. System File Structure" and "2. System Software Update".

6. Touch Panel Calibration

Calibration is needed when there are problems with cursor misalignment when touching the panel.

1) Turn the power **OFF** at the Automat.
2) Press and hold the **Left** and **Right Jog keys**, and turn the Power **ON**.
3) The following Calibration screen is displayed.

4) Touch the center of the Red "+" with a soft tipped device, like a touch pen.
   (Do not use any sharp device that would damage the panel)
   After that, the Red "+" will turn Black, and the next "+" to touch will turn Red.

   "+" Touching Order is : "Upper left" -> "Lower left" -> "Lower right" -> "Upper right"

5) After touching all "+"s, the message "Please restart" is displayed.

6) Turn the power **OFF** and restart.

Chapter 13. Appendix

This chapter contains the following reference information.

1. Function Codes
2. Sub-Function Codes
3. Error Messages

1. Function Codes

No.	Code	Function
0	0	Normal Stitch
1	JP	Jump Stitch
2	L	Low Speed
3	LJ	Low Speed Jump
4	H	High Speed
5	HJ	High Speed Jump
6	T1	Top Thread Trimming
7	T2	Bobbin Threading
19	G1	Group 1
20	G2	Group 2
23	SE	Sub End
32	C00	Stop
33	C01	Needle Bar 1
34	C02	Needle Bar 2
35	C03	Needle Bar 3
36	C04	Needle Bar 4
37	C05	Needle Bar 5
38	C06	Needle Bar 6
39	C07	Needle Bar 7
40	C08	Needle Bar 8
41	C09	Needle Bar 9
42	C10	Needle Bar 10
43	C11	Needle Bar 11
44	C12	Needle Bar 12
45	C13	Needle Bar 13
46	C14	Needle Bar 14
47	C15	Needle Bar 15

* 1

No.	Code	Function
64	S0	Sequin OFF
65	S1	Sequin ON
67	SJ	Sequin Jump
68	CC	Chain Stitch
69	CL	Loop Stitch
70	PR	Presser foot height
71	SPL	Normal Embroidery
72	ST1	Taping & Cording Embroidery (R)
73	ST2	Taping & Cording Embroidery (L)
74	SZ1	Zigzag Embroidery (L)
75	SZ2	Zigzag Embroidery (R)
76	SC1	Coiling Embroidery (L)
77	SC2	Coiling Embroidery (R)
78	LN	Nipple Movement
79	LZ	Zigzag Movement
80	HSP	Head Selection Pattern
81	FMP	Multi-Point
82	PHC	Punch
83	SPO	Speed setting
84	TSL	Twin Sequin Left
85	TSR	Twin Sequin Right

*1 After G1:Group 1 ~ C15 are the Color Change Function Codes.

2. Sub-Function Codes

No.	Codes	Function		Sub Function Sewing Pattern 1	Sub Function Sewing Pattern 2
68	CC	Chenille	Chain stitch	Looper (L) “－－”, 1～6	Needle Height (H) “－－”, 1～10
69	CL		Loop stitch		
70	PR	Presser foot height		Height adjustment(P) “－－”, 1～10	“－－－”
71	SPL	HL	Normal embroidery	“－－－”	“－－－”
72	ST1		Taping & Cording embroidery(R)	Normal / Blind(P) “－”, 1～2	“－－－”
73	ST2		Taping & Cording embroidery (L)		
74	SZ1		Zigzag embroidery(L)	Pattern(P) “－”, 1～6	“－－－”
75	SZ2		Zigzag embroidery(R)		
76	SC1		Coiling embroidery(L)	4 Levels／(L/R)(P) “－”, 1～8	“－－－”
77	SC2		Coiling embroidery(R)		
78	LN		Nipple Movement	Lower Dead Point(B) “－－”, 1～10	Stroke(S) “－－”, 1～10
79	LZ		Zigzag movement	Width(S) “－－”, 1～15	“－－－”
80	HSP	Head Selection Pattern		Head Selection Pattern	Pattern(P) “－－”, 1～50
81	FMP	Multi-Point		Multi-Point	Frame Move(P) “－－”, 1～15
83	SPO	Speed setting		Speed (S) “－－”, 1~10	“－－－”

* “－” and “－－” Indicates a setting that can be changed.

* “－－－” Indicates “Not in use” (no changes can be made).

3. Error Messages

Message	Description	Trouble shooting
A01:	No or Low Battery Voltage Error	If machine has been powered off for a long period time, or a replacement CPU board was installed, the battery maybe low and need recharged. Leave machine on for 24 hours to recharge battery. If battery doesn't recharge, call tech support for info on replacement.
A05:	Wrong Tape Code or BAUD Rate Error	1. When sending a design via cable from a PC to the machine, the tape code setting on the PC must match the setting set on the machine in "IN COM" mode, otherwise you'll get this error. Barudan = U code Tajima = EL code ZSK = F code Make sure the PC transfer machine setting matches the Machine "In COM" tape setting. 2. Also check that the BAUD rate setting on the machine matches the BAUD output from the PC software program. They must match or you'll get this error. Call tech or software support to help diagnose.
A07:	IC Memory Error	EPROM writing error. Problem with CPU/Control board. Call Tech Support.
A08:	Memory is Full or Design Memory Read Error	1. Check to see if the memory is full first. Delete some designs if full. 2. This could also be a problem reading a design into memory. Try renaming the problem design, or try reading another design that's verified good. 3. If no designs will read into memory, may need to reformat the internal CF memory card. Call tech support.
A11:	No PC or Peripheral Device Connected Error	This error occurs when sending a design to the machine from a PC with a COM/Serial cable, and the cable is disconnected or broken. Check the cable connections first. Next try rebooting the computer and the machine and try again. If the COM connection has never worked before and you're setting this up for the first time, then the PC program settings or cable connections are suspect. Call tech or software support to help diagnose.
A20:	Memory Slot Empty	This is not an error. It's a message that the memory slot you've selected is empty and you cannot make any changes to it.

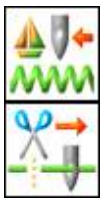
Message	Description	Trouble shooting
A21:	All Memory Slots are Empty	This is not an error. It's a message indicating that all the memory locations are empty. Load at least one design into memory to make this message go away.
A24:	No More Color Change Codes Found	This message occurs when teaching colors in a design and you've reached the last color change in the design, and no more color changes are found.
A26:	Sock Frame Origin Not Set	The sock frame parameter in the "Program" menu requires that you set the first sock frame origin while the machine is out of Drive mode. Then set the machine in Drive mode, and move the pantograph to origin of the second sock frame. If you do not move the panto to the second sock frame after putting into Drive, you'll get this error.
A27:	No more Function Codes Found	This message occurs when searching or programming function codes in a design and you've reached the last function code.
A28:	Calculating Please wait	This is a message that the machine is busy. Wait till the message disappears before pressing any buttons.
A29:	Memory is Full	This is a message that all the memory locations are full. Delete some designs in order to load more in.
A34:	Too Many Color Changes in Design	This is a message displayed when there are more than 1200 color change functions in a design being read into memory. Edit the design and remove some color changes to less than 1200 to correct the problem.
A35:	Spectacle Frame Error	Spectacle Frame is a special parameter in MC1 parameters. When Spectacle Frame is turned On, some machine operations are prohibited to protect the machine. This is the error message given when an operation is prohibited. If a spectacle frame is not being used, turn this feature Off in MC1.

Message	Description	Trouble shooting
A36:	Appliqué Error	When manual Appliqué feature is activated, you cannot use the origin key. This is to prevent bending the presser foot. Turn the manual appliqué feature Off to use the origin key.
A37:	USB Memory Device is Full	Delete some designs off of the USB Memory Device.
A38:	No USB Memory Device Inserted	1. Check that the USB Memory Device is inserted correctly. If inserted OK and still getting error, check the Automat connector and/or try another USB memory device. 2. If still a problem, check the internal CF memory card and/or connection board. Make sure they are not damaged or came loose.
A39:	USB Read/Write Error	Retry using the USB memory or try another USB memory device.
A40:	Network Error	This error occurs when using Barudan's DFS (Design File Server) or LEM Networking Software to connect to the machine. It means the machine is disconnected from the network. Check that the cable from the PC to this machine is connected properly and not damaged. If OK, close the DFS or LEM software and reopen and retry. If still a problem. Reboot the computer and the machine to see if it corrects the network error. If the problem is intermittent with DFS Protocol mode, try re-routing the cable away from other electrical power cables or try a shorter cable.
A41:	Design Data Reading Error	This error occurs when reading design data that is made with a format problem or with wrong design information header. Try reformatting the bad design with digitizing/editing software or read another good design.

Message	Description	Trouble shooting
D01:	Needle Bar Not Locked	Color Change Lock sensor is not engaged or not working properly. Manually rotate the Color change assembly so the sensor plate engages the Lock sensor and retry. If still a problem look to see if the Sensor LED is working. If the Color Change assembly is in a bind or jammed, do not force. See Error D05 for possible binds.
D03:	Color Change Lock Error	Color Change Lock sensor is not engaged or not working properly. Manually rotate the Color change assembly so the sensor plate engages the Lock sensor and retry. If still a problem look to see if the Sensor LED is working. If the Color Change assembly is in a bind or jammed, do not force. See Error D05 for possible binds.
D04:	Color Change Needle Sensor Error	Needle Select Board in Color Change Assembly has a sensor for each needle. One sensor at a time should always be engaged and On. First manually rotate the Color change assembly to see if it clears up the problem. Do not force if color change is in a bind. See Error D05 for possible binds. If no binds and still getting this error, check the Needle select board to see if the sensor plate is bent or if any of the sensors are broken. Replace the Needle select board.
D05:	Color Change Error	Machine had an error trying to make a color change. Manually rotate the color change assembly to see if there are any binds in the color change movement. Possible Binds: 1. One or more of the thread keep solenoids is stuck or out of position causing it to jam a head from moving. 2. One or more of the Jump solenoids is not engaging 3. One or more take up levers are broken. 4. Sewing head side cover is interfering with head movement. 5. The Degree wheel is the wrong position. Correct any of these conditions before continuing. May need to power down and back On to reset the machine, afterwards.
D06:	Main Motor Trip Error	Try to restart the machine. If still getting error, turn Off and try rotating sewing head by hand and check for binds (To rotate the sewing head, remove the main drive pulley cover to get to the degree wheel and turn the degree wheel). See D07 troubleshooting for possible binds.

Message	Description	Trouble shooting
D07:	Main Motor Overload Error	Turn Off machine and rotate sewing head by hand and check for bind (To rotate the sewing head, remove the main drive pulley cover to get to the degree wheel and turn the degree wheel). If binding, take off the throat plate and check for thread wrapped around back of the sewing hook or sewing hook area. Try oiling the machine to see if it's easier to rotate. If you cannot find bind, call tech support for help.
D08:	Frame Limit Error	Message that the pantograph is beyond one of the soft limits as set in the MC2 parameters. Re-center the origin of design so it traces inside the limits without getting this error. Call tech support if soft limits need to be reset or changed in MC2 parameters.
D09:	Start/Stop Switch Error	This error means there is a problem with either the start or stop switch being stuck on. Check switches and wiring.
D10:	Head Switch Error	Head switch is off on tension assembly. Turn head switch On to allow machine to sew.
D11:	Rotary Encoder Error	Problem with encoder. Call tech support.
D12:	Trimmer Slider Error	Trimmer slider is stuck in down position or caught on un-trimmed thread. If caught on un-trimmed thread, break thread by hand and pull about 2 inches (50mm) of thread before letting the trimmer slider pull thread up into the thread catch. If machine continues to have D12 errors because it's not trimming, check and adjust the trimmers. Replace blades and wave washer if necessary. If D12 is happening because slider is sticking, check slider operation by hand and clean or repair as necessary for smooth operation.
D13:	No further Stitch Back or Automending due to 1600 stitch limit	Message that machine cannot stitch back or automend any further due to 1600 Stitch limit. If needing to stitch back/automend further, use float operation, and float back where needed. See operation manual for Float instructions.

Message	Description	Trouble shooting
D14:	Push Start Button	Message that start button needs to be pushed to continue operation.
D16:	Bobbin Break	Message that machine stopped due to bobbin thread break. Fix or replace bobbin thread. (Optional Bobbin detector installed or parameter turned ON)
D19:	Stopped for Stop Code	Message that machine stopped due to stop code in design.
D20:	End of Automending	Message that machine stopped due to Automend operation finished.
D21:	Stopped by Stop Switch	Message that machine was stopped by the stop switch
D22:	Trimmer Motor Error	Trimmer motor is jammed or not stopping in the correct position. You must turn machine Off to reset this error. Check the trimmer blade adjustment. Birdnesting of thread will knock trimmers out of adjustment when trying to trim. Remove any excess thread from under throat plate and reset trimmer blade if needed.
D23:	Stopped for Appliqué	Message that machine stopped due to stop code in design and Appliqué program feature is turned On.
D25:	Stopped for Thread Break	Message that machine stopped due to thread break. Fix thread break and continue. If thread is not broke (false thread break) check that thread is wrapped around the thread detect wheel on the tension assembly. If false thread breaks occur on small stitches try increasing MC1 parameter #04, T-Break to a higher value.

Message	Description	Trouble shooting
D26:	Pulse Motor Circuit Overheat	Message that the machine stopped because the pulse motor drive (pantograph) circuitry has overheated. Power off the machine to let it cool down. Check and clean the fan and fan opening to make sure lint or other debris is not blocking them. Afterwards, power back On, and check that the fan is working. If fan works and still getting D26 error, call tech support.
D27:	Stopped for Temporary Repair Stop	Message that a temporary stop code was inserted in the design on the last run.
D28: 	No further Stitch Back or Automending due to Color Change	This is a message indicating that you cannot back up any further unless you do a manual trim. Do a manual trim.
D29:	Servo Driver Error	Something jammed the pantograph while sewing, or there is a problem with the Servo electronics. Power off machine and make sure pantograph is not jammed by trying to move by hand. Remove any binds before powering on again. If no binds, power back On and see if it's OK. If still a problem, call tech support.
D30:	Head/Duct Board Switch Error	More than 2 switches on the Head/Duct board are ON. Please check and make sure switches are set properly. Check ribbon cable from head switch boards to head duct boards. An unplugged or damaged cable from one board will cause this error.
D31:	Driver Box/Board Communication Error	Problem with Automat recognizing that the Driver board is connected. Check cables from Automat to Driver board. Call tech support.
D32:	Stopped for Sub End Code	Message that Roll to Roll feature is turned On, and machine stopped due to Sub End code in design data.
D33:	Power Interrupt Error	A power interruption to the machine has occurred. Power down the machine, then back On to re-set. If you continue to get this error, check for electrical power problems to machine. Try another known good power outlet, or another circuit that's not being used by other equipment.

Message	Description	Trouble shooting
D34:	Stopped by Light Curtain	Optional light curtain activated. Something is blocking the light beam or light beam is not working properly. Check light curtain.
D35:	Lubrication Error	Machines with Optional Lubrication Device: Check Lubrication device. Machines without Optional Lubrication Device: This message can be used to let the operator know when to lubricate the machine. Refer to “Chapter 4, 11. Lubrication Message” for more details.
D36:	Stopped for Bobbin Counter	When Bobbin counter feature is activated, machine stops, trims the bobbin and gives this message to let you know why it stopped. Change your bobbin, and start machine to reset.
D37:	Sequin Device Error	Check that Sequin Driver box is turned on. Call tech support.
D38:	Chenille Driver Error	Turn off the machine and reboot. Make sure the Chenille Driver box is turned On. If the same error message displays again, check the wiring to the Needle Bar rotation motor. Otherwise motor may be faulty or jammed. Call Tech support.
D39:	Looper Motor Error	Turn off the machine and reboot. If still a problem, turn the Looper motor shaft manually until the (top) shaft sensor turns On and retry. Call Tech support for more help.
D40:	Chenille Thread Clamp Motor Error	Turn off the machine and reboot. If still a problem, turn the tension release motor shaft manually until the shaft sensor turns On and retry. Call Tech support for more help.

Message	Description	Trouble shooting
D41:	Chenille Needle Height Error	This error occurs when the needle bar height or cancel position is wrong. Turn off the machine and reboot. If still a problem, turn off the machine. Then manually rotate the (needle bar) leveling shaft on the problem head and see if the needle bar drive levers inside move smoothly and freely and not in a bind. Fix and correct any binds in the levers before turning the machine on again. Then, rotate the shaft to the lower position and see if the LED for Needle height origin sensor lights when engaged. Call Tech support for further help.
D42:	Chenille Error	This Chenille error occurs when there's a problem other than D38 to D41. Its' most likely a stepper driver board problem in the Chenille Drive box. Call tech support for help.
D43:	Presser Foot Set Error	Call Tech support.
D44:	Lock Stitch Zig-Zag Driver	Call Tech support.
D45:	Lock Stitch Zig-Zag Tension	Call Tech support.
D46:	Lock Stitch Zig-Zag Error	Call Tech support.
D47:	When using B-PASS, indicates the machine was stopped by information in Production instructions.	