

B E X T

Instruction Manual

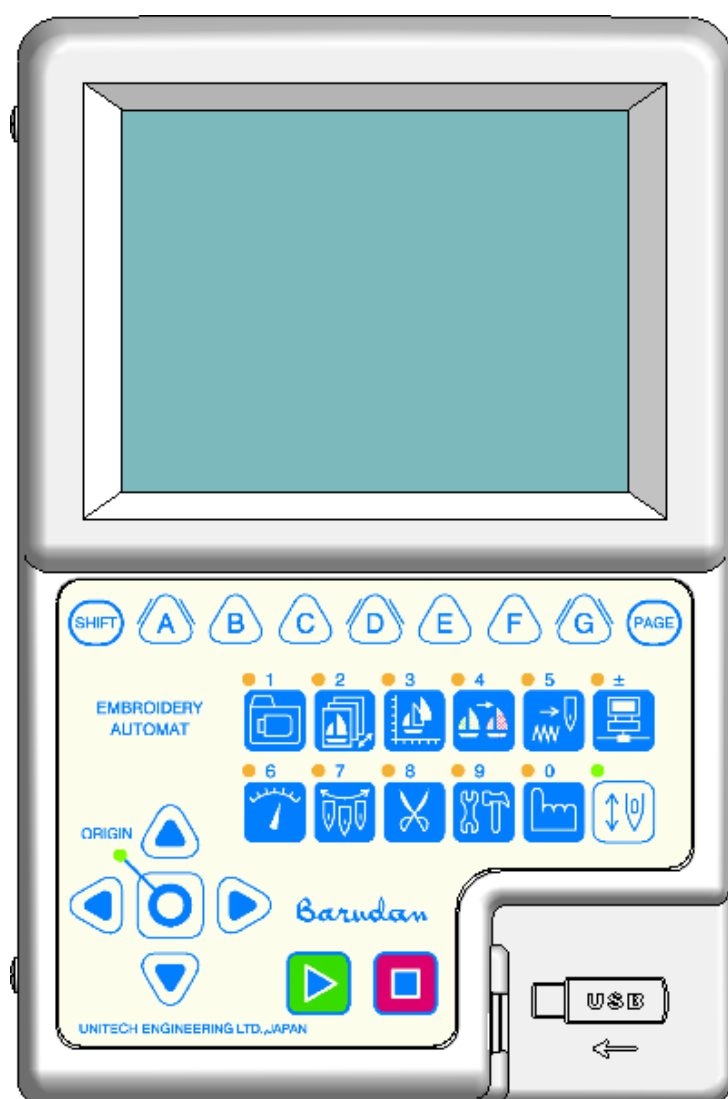


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Chapter 1. Safety Instructions

This chapter contains information on the following.

1. Important Safety Instructions
2. Grounding Instructions
3. Warning Labels

1. Important Safety Instructions

- When using an embroidery machine, basic safety precautions should always be followed. This machine is intended for commercial use.
- The icons in the manual show the importance of the contents.

Acknowledge the following descriptions beforehand.

Read all instructions before using this 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

- ◆ An embroidery machine should never be left unattended when plugged in.
- ◆ Always power off and unplug this embroidery machine from the electric outlet immediately before cleaning.
- ◆ Always turn off the Automat and the Driver Box when not in use for long periods of time.



Warning

- ◆ Do not allow to be used as a toy. Close attention is necessary when this embroidery 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 Barudan, as contained in this manual.
- ◆ Never operate this embroidery machine if it has a damaged cord or plug, if it is not working properly, if it has been damaged or is wet. Contact Barudan America technical support.
- ◆ Never operate the embroidery 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 position, then remove the plug from the outlet.
- ◆ Do not unplug by pulling on the cord. To unplug, grasp the plug, not the cord.
- ◆ Keep fingers away from all moving parts. Special care is required around the sewing machine 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 sewing machine off when making any adjustments in the needle area, such as threading the needle, changing a needle, replacing the bobbin, changing the presser foot, or the like.
- ◆ Always unplug the machine from the electrical outlet when removing covers, lubricating or when making any other user servicing adjustments mentioned in the instruction manual.
- ◆ Connect this embroidery machine to a properly grounded outlet only. See Grounding Instructions.
- ◆ Always unplug before relamping. Replace bulb with same type rated Watts.
- ◆ Keep fingers away from moving parts, especially the area near trimmer blades.
- ◆ Keep Fingers away from disengaged sewing heads while operating.

Save these instructions

2. Grounding instructions

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 electric shock. The conductor with insulation having an outer surface that is green, with or without yellow stripes, is the equipment-grounding conductor. Do not connect the equipment-grounding conductor to a live terminal if the cord needs to be repaired or replaced.

Check with a qualified electrician if grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product, if it will not fit the outlet; have a proper outlet installed by a qualified electrician.

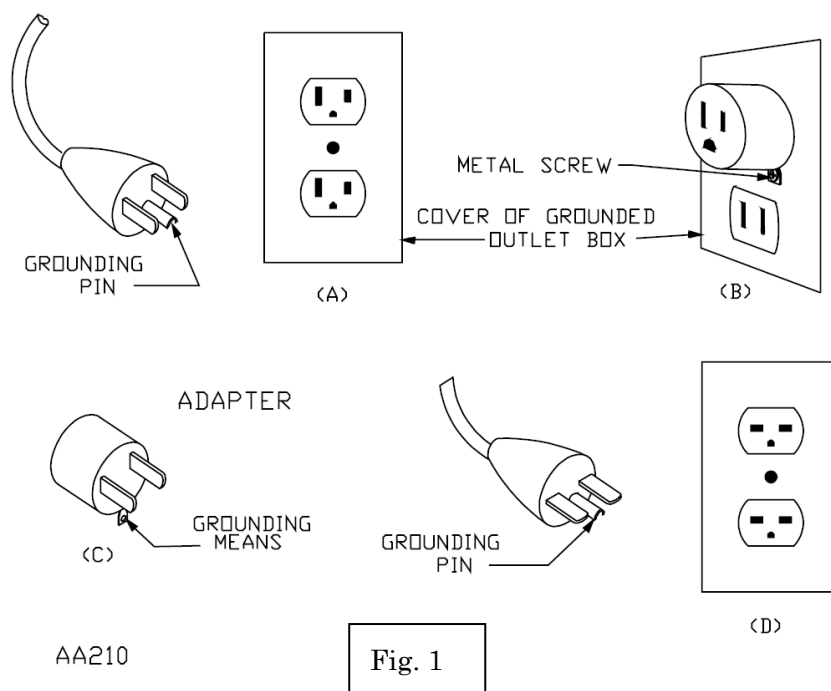
120V machine models

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 Fig 1. A temporary adaptor, which looks like the adaptor illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in sketch B if a 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 a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by a metal screw.

200V and higher machine models


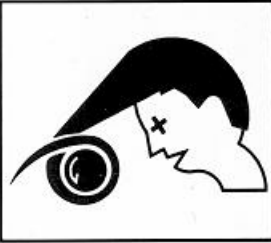
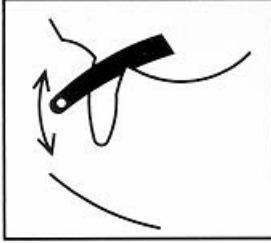
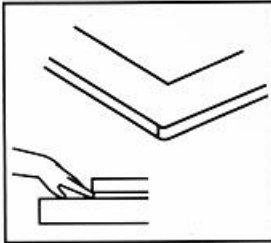
This product is for use on a circuit having a nominal rating more than 120V and is factory-equipped with a specific electric cord and plug. No adapter should be used with this product. If the product must be reconnected for use on a different type of electric circuit, the reconnection should be made by qualified service personnel; and after the reconnection, the product should comply with all local codes and ordinances.

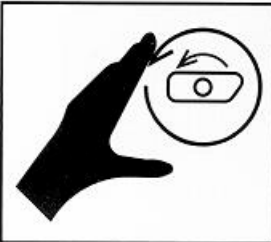

NOTE: If there is doubt as to whether an outlet box is properly grounded, consult a qualified electrician.



3. Warning labels

- Give attention during operation to the parts labeled.

Warning Labels	Contents
 <div data-bbox="486 499 965 741"> <p>⚠ WARNING</p> <p>Pointed needle will cause severe injury. Keep hand away from sewing head while operating, and when head is disengaged and machine is sewing.</p> </div>	Needle Hazard Warning Label
 <div data-bbox="491 853 970 1095"> <p>⚠ WARNING</p> <p>KEEP COVER CLOSED. Moving part can catch hair, finger, hand or clothes and will cause severe injury. Turn off power before servicing machine.</p> </div>	Hair Warning Label
 <div data-bbox="491 1202 970 1444"> <p>⚠ WARNING</p> <p>Moving part can cause injury. Keep hand away from sewing head while operating.</p> </div>	Take-Up Lever Warning Label
 <div data-bbox="491 1554 970 1796"> <p>⚠ WARNING</p> <p>Moving frame can cause severe injury. Keep hand away from table top while operating.</p> </div>	Frame Warning Label

Warning Labels	Contents
 <div data-bbox="496 333 971 573"> <p>⚠ WARNING</p> <p>Rotating hook can cause severe injury.</p> <p>Keep hand away from rotating hook while operating.</p> </div>	Hook Warning Label
 <div data-bbox="496 689 971 929"> <p>⚠ WARNING</p> <p>KEEP COVER CLOSED.</p> <p>Nip point will catch hair, finger, hand or clothes. and will cause severe injury. Turn off power before servicing machine.</p> </div>	Belt Warning Label

Chapter 2 Introduction

This chapter contains information on the following.

1. Specifications
2. Features

1. Specification

1. Design Capacity	100 designs
2. Stitch Capacity	1 design-1million stitches / Total capacity: 10 million stitches
3. Display	5.7 inch Color LCD 640 x 480 dots (VGA)
4. Power Source	AC100VSingle (+/-10%, 50/60Hz) AC200VSingle (+/-10%, 50/60Hz)
5. Power Consumption	1KVA /Varies for each model
6. Temperature	5 – 45 Degree Centigrade (Active) -20 – 60 Degree Centigrade (Storage)
7. Humidity	20 – 80 % RH, No condensation allowed
8. Grounding	Grounding resistance to be less than 100 Ohm (Type 3 grounding)
9. Main Motor	200V AC Servo Motor
10. Trimmer Compatible	Mark 5, 7
11. Thread Break Detection	
12. USB Ports	USB2.0 (Front: 1 port Back: 1 ports)
13. Network system	100BASE / 10BASE
14. COM Port	9600 – 115200bps
15. Emergency Stop Switch (Some models do not apply)	
16. Options	Cap frames, Sequin device, Twin Sequin device, Light Curtain, Barcode, Laser Marker, Borer

2. Features

1. Easy Operation

The XT Automat is specially designed for Barudan embroidery machines. Linux is used for the OS, which allows high quality display and operation system. Graphic User Interface uses icons that are easily recognized for quicker learning of operations.

2. USB

X Series Automat has USB ports. This enables the use of USB Flash Drive and the following optional devices.

-Memory card reader -Barcode scanner

3. Standardized Networking Function

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 Network software, LEM Server, machine production records and status can be viewed and reported from the server computer.

4. Large Memory Capacity

The memory capacity is 10 million stitches, with 100 memory locations.

5. Shortcut function

Commonly used functions can be set as shortcuts. Using shortcuts cuts down on the number of key strokes for selected operations.

6. High Speed Drive

The microcomputer automatically chooses the most efficient speed, in 10 rpm increments

*Max. Speed may vary for each model.

7. Quiet Drive

Inverter driven main motor allows powerful and quiet drive.

It also allows accurate speed control and stop positioning.

AC Servo Motor or 5 Phase Pulse Motor drives the pantograph quietly at high speed.

8. Automatic speed and Jump stitch control

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.

9. Design Information

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

10. Stitch Length Adjuster

Swing parameter allows satin stitches to be automatically sewn slightly wider or narrower depending on the setting. This feature is helpful sewing small lettering when they need to be sewn with a bolder effect.

11. Automatic Appliqué Positioning

This feature moves the pantograph out to a programmed position, when the machine stops for an appliqué to be applied. This allows the operator to easily apply the appliqués to the garments. This can also be used for replacing frames at the end of sewing.

12. Multi-Point

This function allows you to register points where you would like the pantograph to move to. A maximum of 15 points can be registered, as P01 to P15.

The pantograph can then be moved to one of these points using a Manual key operation or programmed in F-list.

13. Socks

Automatic design conversion for socks.

14. Matrix Embroidery

Automatic layout for the Matrix embroidery.

Easy setting can create a repetition of designs.

15. The registration of the start position

The controller automatically saves the last start position of designs in memory. When you go to sew a design a second time, you can start from the last start position.

16. Trace

The controller can show the area to be sewn on the screen and by using a four-point trace or outline trace.

17. Displaying Embroidery points

You can enlarge the display of an embroidering point by touching a key while sewing, without interrupting the embroidering operation.

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

18.Stand-By (Resume)

The machine can be turned OFF in the middle of 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.

19.Help function

The machine can display help files saved on a USB Flash Drive.

You can create and save help files per the specified format.

20.Schedule function

The machine can display messages scheduled by a calendar format.

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

21. Display Off mode

When the Automat isn't being used for a long period of time, the monitor can be turned off to save electricity. It will automatically turn on, when a key is pressed on the Automat.

22. Name Drop function

This function works with design files that have multiple names, separated by stop codes.

The individual names can be selected for viewing and sewing with this function.

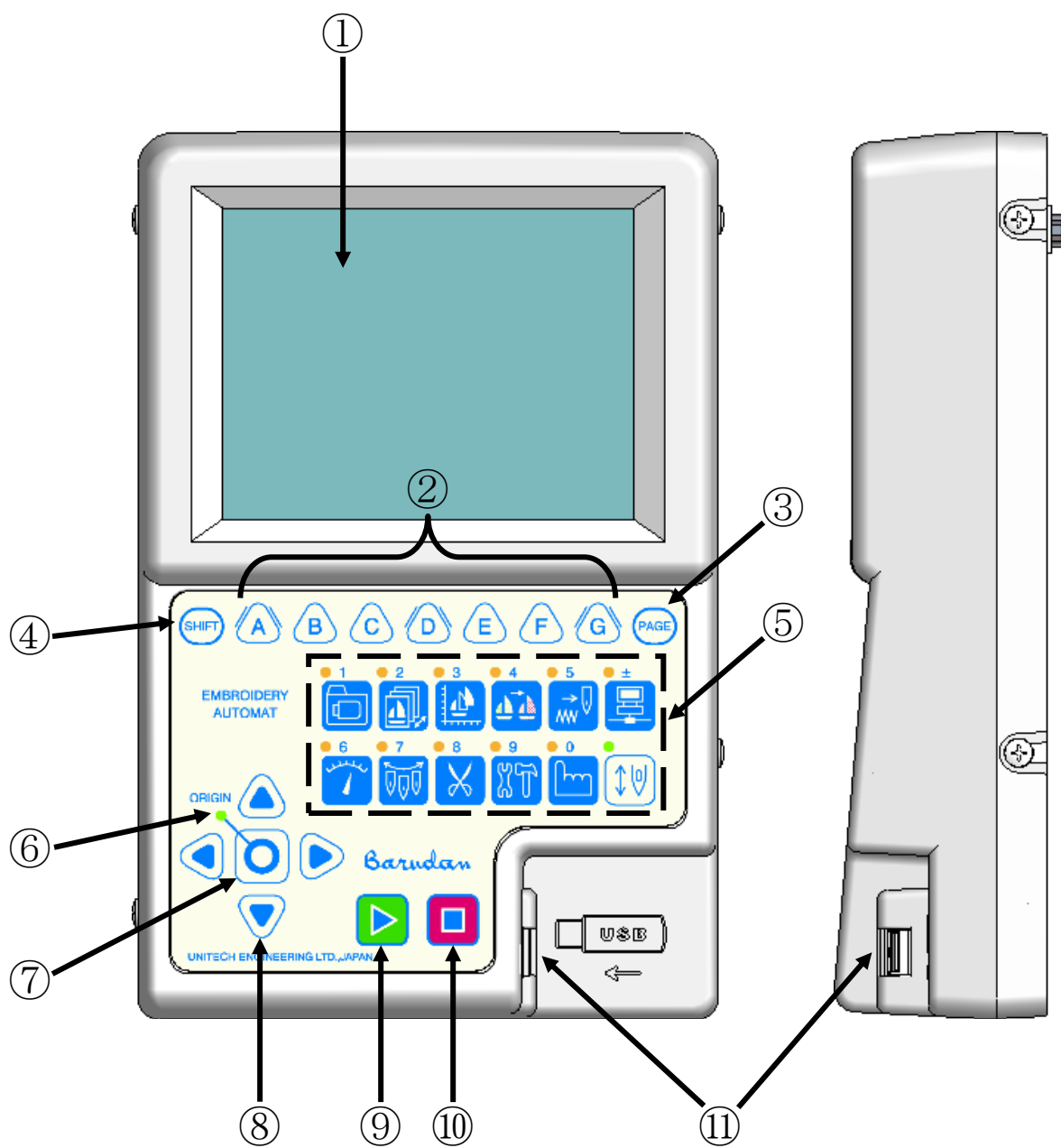
.

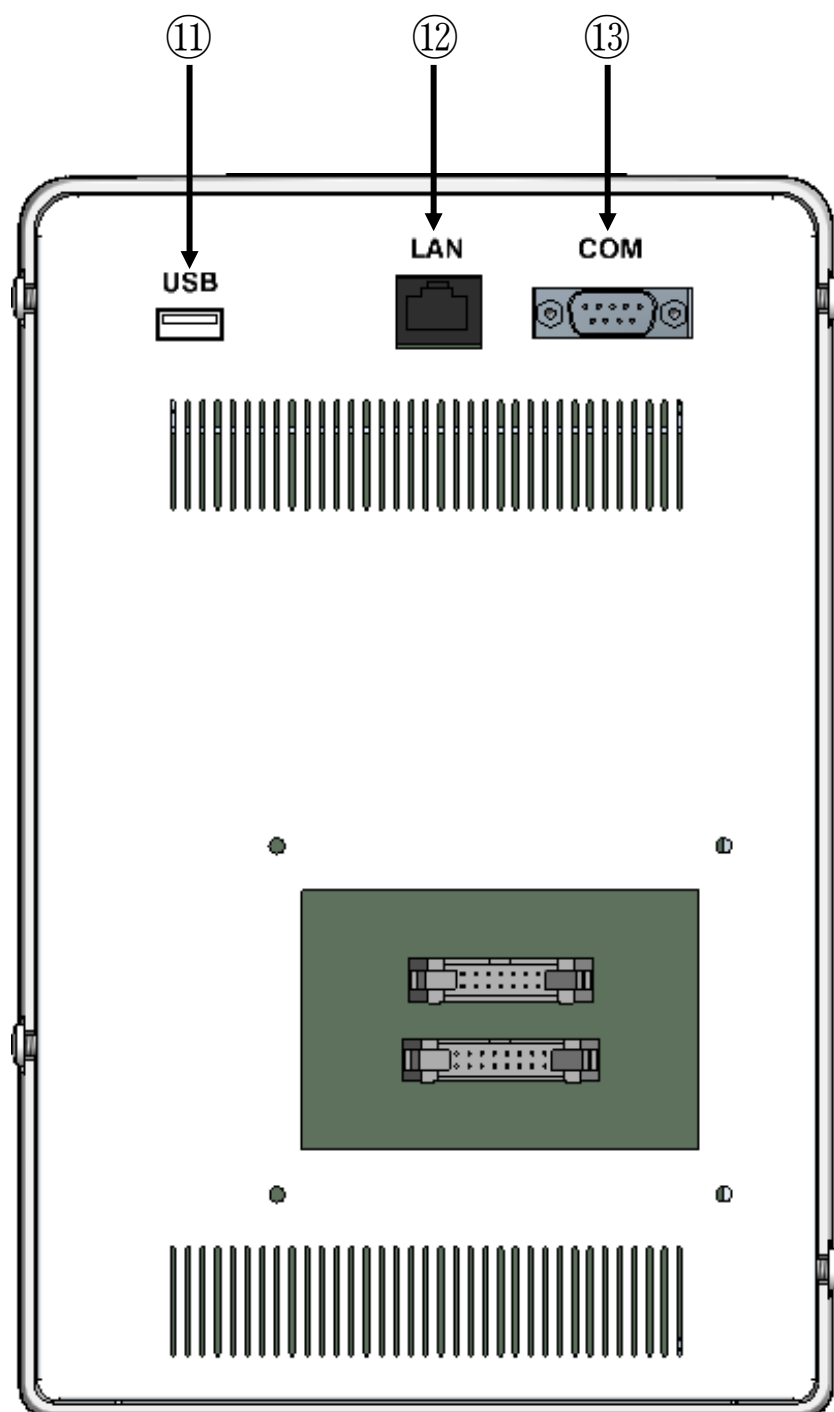
Chapter 3 Before Use

This chapter contains information on the following.

1. Appearance and Components
2. Panel Switches
3. Powering the Machine On / Off
4. Origin Set
5. Stand-By and Drive Modes
6. Screen Structure
7. Information Screen
8. Design List Display Settings
9. Schedule/Maintenance Memos
10. Confirmation Message
11. Error Messages
12. Barcode Operation
13. Numeric Entry Dialogue Box
14. Character Entry Dialogue Box
15. Test Precautions

1. Appearance and Components





1. LCD Display

Shows machine status, icons, and design information.

2. Icon key – A, B, C, D, E, F, and G-keys

Operation buttons assigned to functions displayed on screen above by icons.

3. Page key

Switches display screens.

*Refer to “Section 7-4. *Embroidery Display Screen*” in this chapter for details.

4. Shift Key

Switches screen for more function options

5. Panel Keys

All operations start from selecting one of the Panel Keys.

When entering a number, these keys become a numeric key pad.

*Refer to “Section 2. *Panel Switches*” in this chapter for more details.

6. Origin LED

When lit, the pantograph is located at origin.

Blinks when the **Jog Keys** are assigned to other functions.

7. Origin key

Moves the Pantograph to origin.

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

8. 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. It is also used to move the cursor for selecting items from a list.

9. Start Key

The machine starts sewing.

10. Stop Key

The machine stops sewing.

11. USB (front : 1 port back : 1 port)

These are for USB connections.

They are used for uploading and downloading design data and updating the system software.

As an option, a bar code scanner can also be plugged in.

12. LAN

This is for a LAN connection, for connecting the machine to a machine network. Optional Networking software is required to use this connection.

13. COM

This is for a COM connection for downloading designs from a PC to the machine. This operation requires PC software that can transfer designs by COM connection.

2. Panel Switches



Design Loading/Downloading Key

Loads and downloads designs from the USB port etc.
Numeric Key: **1**



Design Memory Key

Manages designs in memory.
Numeric Key: **2**



Design Edit Key

Edits and copies designs.
Numeric Key: **3**



Color Change Key

Lists the color change codes for designs in memory and allows them to be changed.
Numeric Key: **4**



Float Key

Moves the pantograph without stitching (standard and high speed modes)
Numeric Key: **5**



Network Key

Reads Design data from the server, along with other network options.
Numeric Key: **± (plus or minus)**



Speed Key

Varies the machine speed.
Numeric Key: **6**



Needle Change Key

Manually changes the needle (Color).
Numeric Key: **7**



Trimming Key

Manually trims the thread.
Numeric Key: **8**



Preference Key

Used for preference settings for the Automat.
Numeric Key: **9**



Manual Key

Access to various manual operations for the machine.

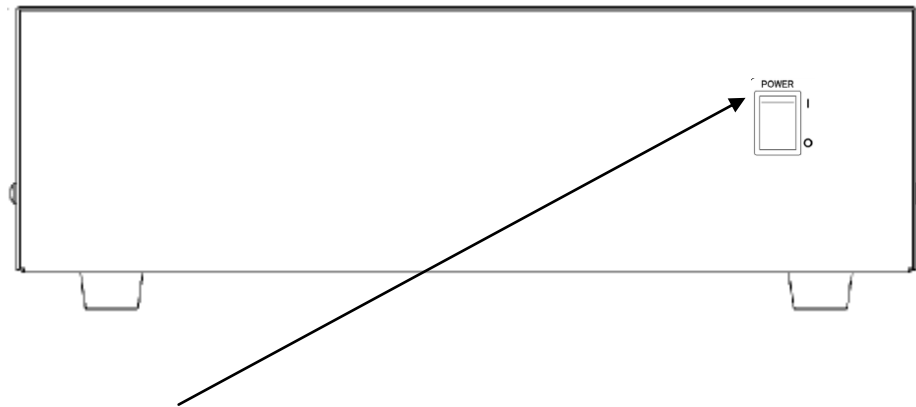
Numeric Key: **0**



Drive Key

Switches to and from Stand-by and Drive modes.

3. Turning the machine ON/OFF



POWER SOURCE Switch

Turning the machine ON

Press the Switch to the POWER ON position.

Turning the machine OFF

Press the Switch to the POWER OFF position.

4. Origin Set


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

1. Refer to “Turning the machine ON/OFF”, to turn ON the machine.

The display shows the screen below after showing BARUDAN logo.

Press the **E-Key** to move back the pantograph to the origin.



- * Press the **B-key**  to trim before seeking origin.

Refer to “Chapter 4, 2. Trimmer” for trimmer operations.

2. Press the **G-key** below the  icon, the machine will seek its origin.

*Once the origin is set, the basic screen displays.

5. Stand-By and Drive Modes

The XT Automat has 2 different modes, Stand-By mode and Drive mode.

1. Stand-By Mode: The machine is turned on and idle but NOT in Drive mode.

This is the mode where sewing preparation takes place.

In this mode, design data can be selected and loaded.

Stand-By Mode screen



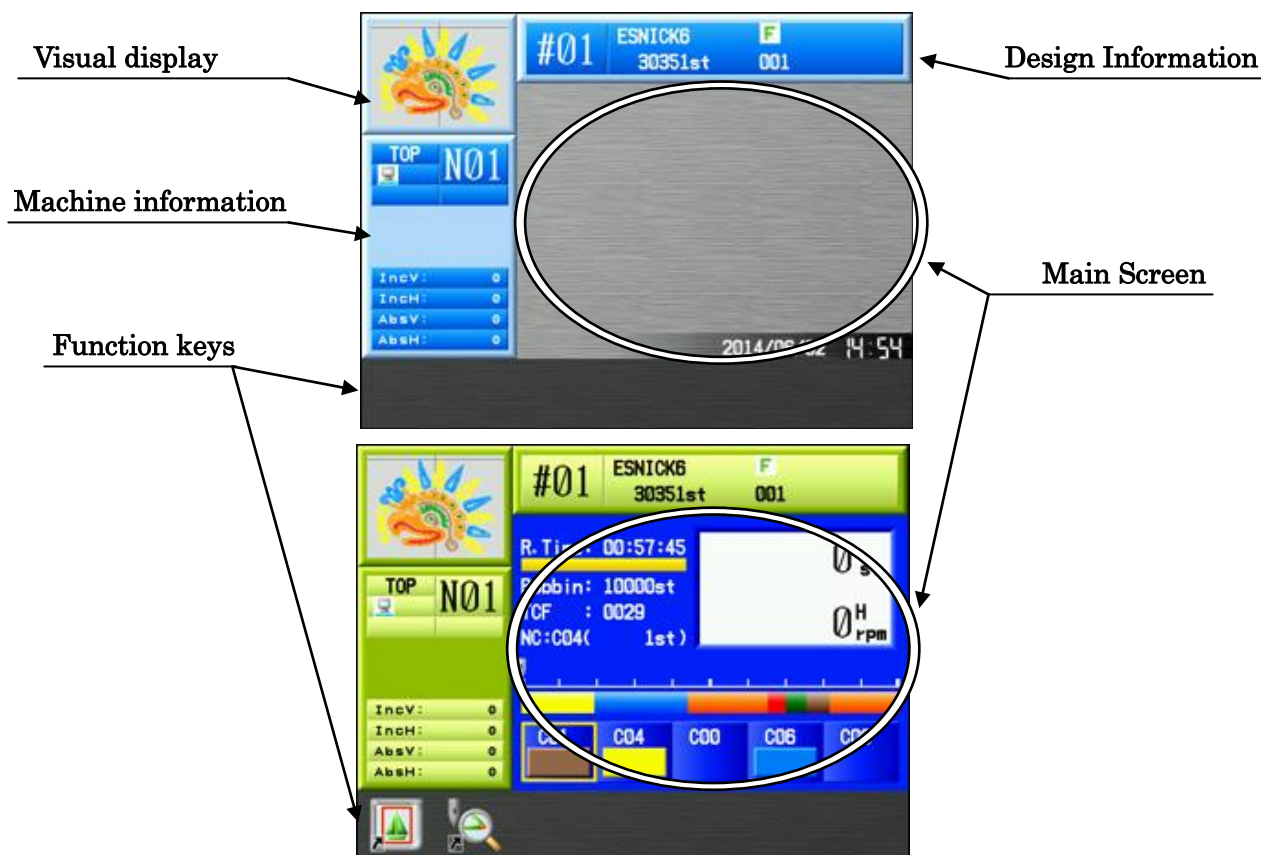
2. Drive mode: A design is chosen and it is ready to sew.

Typical appearance of Drive mode



6. Screen Structure

Here is the basic screen structure of the XS Automat.



Main screen.

Date and time are shown at the bottom right corner.

The Start Screen is blank after first turning on the machine.

Visual display

Shows the selected design.

Design Information screen

Shows the information of the selected design.

Refer to “Section 7. *Information Screen*” in this chapter for more details.

Machine Information screen

Shows the information of machine condition for the selected design.

Refer to “Section 7. *Information Screen*” in this chapter for more details.

Function keys

All the Icon functions for the A to G keys that apply will be shown here.

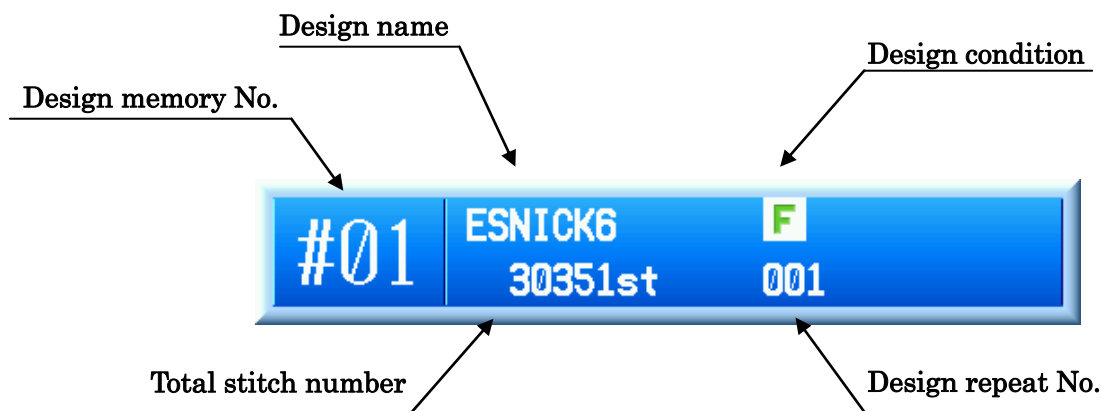
Shortcut Icons can be added to the Stand-by and Drive mode screens.

Refer to “Chapter 11, 10. Shortcuts” for more details.

7. Information Screen

7-1. Design Information screen

Shows the information of the design selected.



Design memory No.

Shows the number of the design memory location.

Design name

Shows the name of the design.

Total stitch number

Shows the total stitch number of the design selected.

Design repeat No.

Shows how many repeats of this design are left to sew when Program #15 "Repeat" is set.

Design condition

The following icons indicate special conditions of the design.



: Displayed when Program #3 "ROT Pattern" is changed. *1



: Displayed when Program #6 "Socks" is changed. *1



: Displayed when Program #13 "Cap Frame" is changed. *1



: Displayed when the design was downloaded from
the network. *2



: Displayed when the design was edited by DSP function. *3



: Displayed when Name Drop is On. *4

*1: Refer to *Chapter 8, 2. Program List*

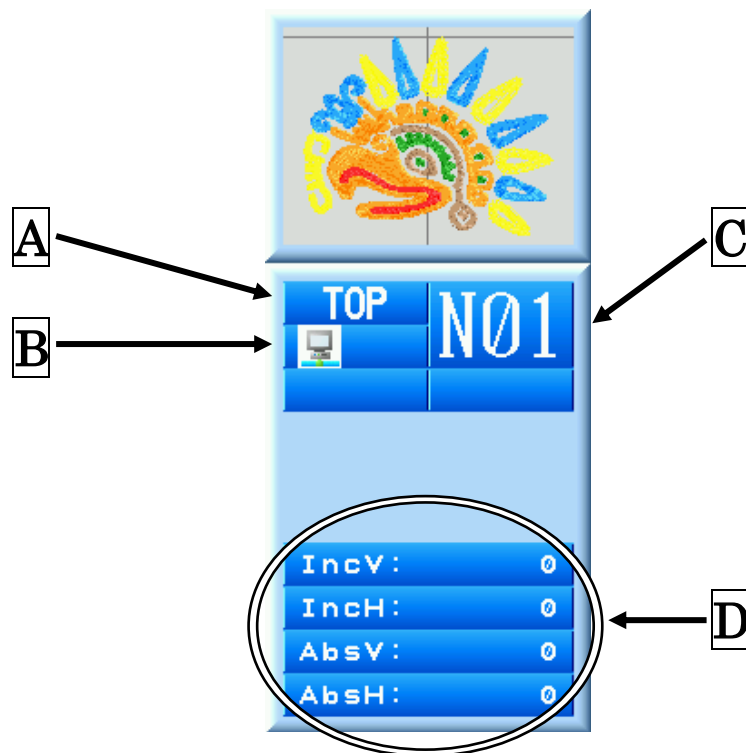
*2: Refer to *Chapter 10, 6. and 7. Downloading.*

*3: Refer to *Chapter 7, 4. DSP. (Design Stitch Processor)*


*4: Please refer to "*Chapter 6, 8. Name Drop*" for details.


7-2. Machine Information screen

Shows the condition of the machine.



A : Shows **TOP** when the main shaft is at the correct stop position.

B : Shows  when the network is connected.

Shows  when the network is disconnected.

C : The current number of the selected needle

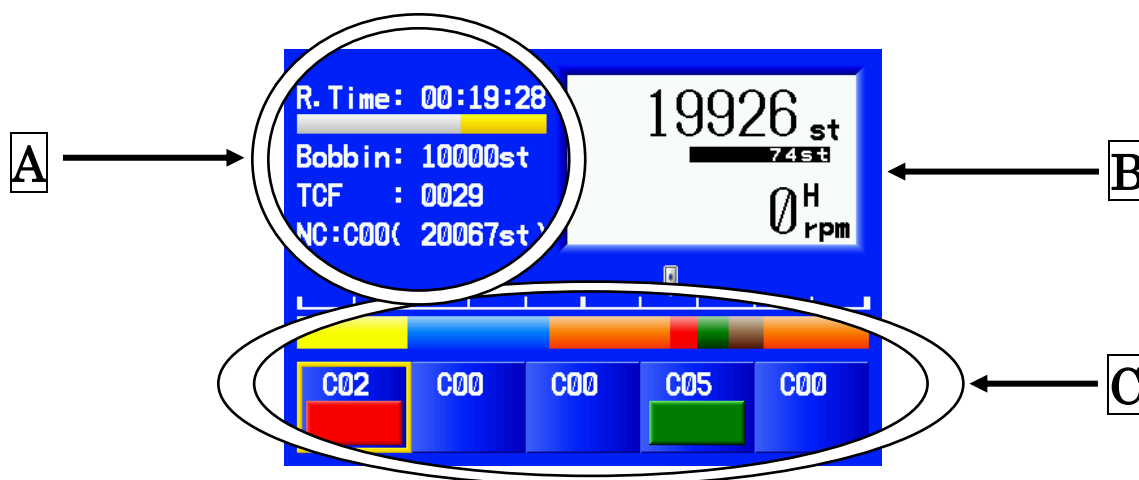
D Shows the traveling distance of the pantograph frame.

Inc : The increment traveling distance from the last movement or stitch made.

Abs : The absolute traveling distance from the Start point to the current point.

7-3. Drive mode information display

When in Drive mode, the necessary information for embroidery operation is displayed on the main screen.



A: Operational information

R.Time : Estimated remaining sewing time for the design being sewn.

Bobbin : Remaining stitches for the bobbin counter.

(Please refer to “Chapter 4, 6. Bobbin Counter”, regarding use of the Bobbin Counter.)

TCF : Total quantity of color change functions in the design.

B: Current stitch being sewn, stitch back stitches, and sewing rpm.

To the right of the rpm an “H” is displayed for high speed function and “L” is shown when the machine is in low speed function. Please refer to the “Chapter 9, 16. Stitch Back”, for stitch back details.

C: Color change functions in design.

7-4. Embroidery Display Screens

By pressing the Page key while sewing, the display alternates between the Basic and Extension screens, as shown below.

Basic screen



Extension screen



The Basic screen shows the operational information.

The Extension screen shows the design being sewn out, stitch by stitch.

A: Current stitch and RPM.

8. Design List Display Settings

Settings for the Design list display.

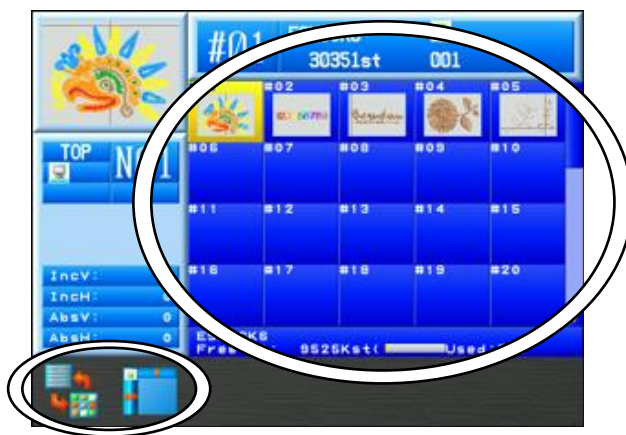
*Memory design list and USB design list are individual settings.

1. Press either one of the **Design Memory** key , **Design Edit** key , or **Design**

Loading/Downloading key



2. Press the **SHIFT** key.



To cancel, press the **Shift** key again to go back to the previous screen.

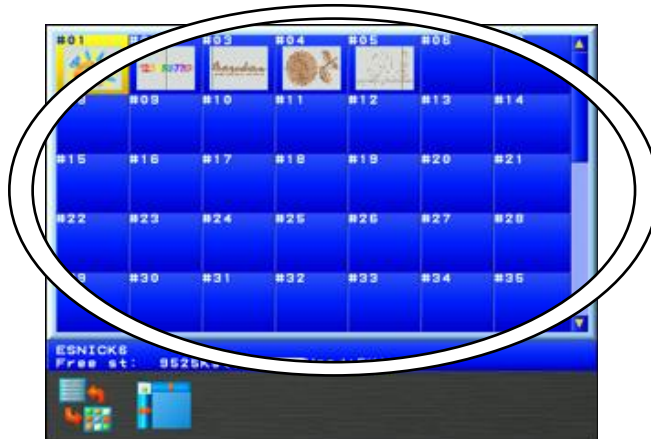
3. Press the **A-key**,  to switch the Design list display to Design name list display.



4. Press the **B-key**,



to show or hide the information screen.



*B-key,



is not shown in the Design Loading/Downloading



menu,

To exit, press the Design Memory key



, Design Edit key



, or Design

Loading/Downloading key



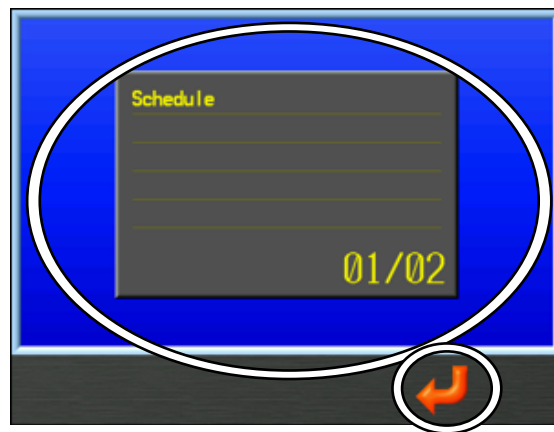
with the LED on, to go back to the Start screen.


9. Schedule / Maintenance Memos

- * Schedule and Maintenance memos are displayed when the machine is powered On.
- * Please refer to “Chapter 11, 14. Schedule” to make a memo.
- * Maintenance memos are information provided by the machine distributor.

Maintenance memos can be checked, but cannot be made or edited.

- 1) Turn the Automat ON.
- 2) After displaying the title screen, the memo is displayed as shown below.
The memo will be displayed on the day or days, as set in the schedule.

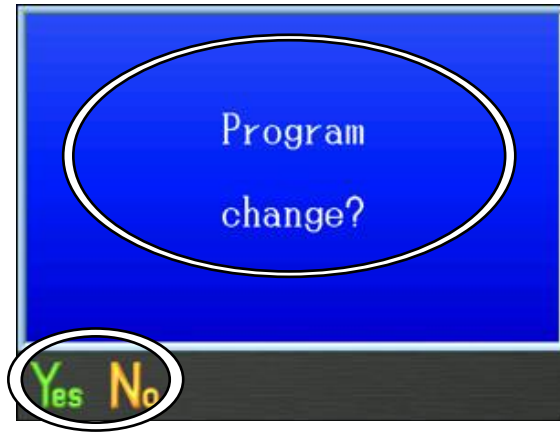


- 3) Press the **F-key**  to close memo and return to the normal start-up screen.

- * In cases where multiple memos are scheduled for the same day, the memos are displayed in the same order they were made in the schedule.



10. Confirmation Message

When changing a setting, or before initializing something, the following confirmation message displays to confirm the change.



The confirmation message shows the setting you're about to change.

* The message above is shown when changing a Machine Drive Condition.

1. Press the **A-key**,  to make changes.
2. Press the **B-key**,  to cancel changes and go back to the Start screen.

11. Error Messages

When errors occur 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 on error numbers.

Press the **G-key**,



to close the error message.

12. Barcode Operation

A bar code scanner can be plugged into the BEXS Automat in order to perform specific functions. Scanning Barcodes can save time by short cutting some key operations and prevents operator keying mistakes.

Compatible Barcode : CODE39

The barcode supports the following functions.

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


Chapter 8, 3. Program Barcodes.

Chapter 10, 9. Barcode Scanning.

*See these chapters for details

13. Numeric Entry Dialogue Box

When changing values, the **Numeric Entry Dialogue Box** displays.

Press the button under the  icon.

By using the panel keys on the Automat as Numeric keys, you can enter a new value.



The Upper box with the value 300 is the current value in the system.

The Lower box with the value 700 is the new value being entered.

*The screen above is the Speed setting screen.

1. Use the Automat Panel keys as Numeric keys to enter values.

For number references, see “*Section 2. Panel Switches*” in this chapter.

2. Press the **A-key**,  to delete the last digit (backspace).

3. Press the **G-key**,  to enter a new value.

4. Press the button under the  icon to close the Numeric Entry Dialogue Box without saving a new value.

14. Character Entry Dialogue Box

When changing design names or needing to type words, press the **C-key** for





The **Character Entry Dialogue Box** displays.



*The screen below is for changing design names.


1. Select a character using the Jog keys.

2. Press the **A-key**,  to delete the last character (backspace).

Press the **B-key**,  or the Origin Key, to enter a character.

Press the **E-key**,  to delete all characters.

3. Press the **G-key**,  to save the name that was entered.

4. Press the **C-key**,  to close the Character Entry Dialogue Box without saving the name.

15. Test Precautions

Some Test functions are displayed in the preferences menu.

These functions are used by technicians to test the BEXS machine. Please do not use these functions under normal use. If you perform one by mistake, it may cause problems to occur with the embroidery machine.

If you need to use these test functions, please follow an authorized technician's instructions.



If you accidentally touch the test or diagnostic function, touch the same key again to exit the function. Please avoid these functions.

Chapter 4 Manual Operations

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

1. Color (Needle) Change
2. Trimmer
3. Thread Clamp
4. Appliqué
5. Change Frame
6. Bobbin Counter
7. Display Off
8. Multi Point
9. Laser Pointer
10. Pantograph Centering

1. Color Change

1-1. Manual Color Change

Instructions for changing a color (needle) manually

1. Press the **Needle Change** key



, and the following Color Change screen will

display.



2. Change the needle number.

Press the **A-key**,



to go to the next smaller needle number.

Press the **B-key**,



to go to the next larger needle number.

Press the **Needle Change** key



again to go back to the Start screen.

Note: 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 key to execute the needle change.


If the D14 message appears, press the start-key



to continue.

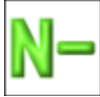
1-2. Direct Needle


Instructions for selecting a specific needle

1. Press the **Needle Change key**  and the following Color Change screen will display.




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

Press the **C-key**  to select the next smaller needle number.

Press the **D-key**  to select the next larger needle number.


Press the **E-key**  to change needle.

3. The needle number can be changed by using the Numeric Entry Dialogue.

Press the **F-key**  to use the Numeric Entry menu.

Please refer to “*Chapter 3, 13. Numeric Entry*”, to input a new value.

Note: 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 key to execute the needle change.

If the D14 message appears, press the start-key  to continue.

2. Trimmer

2-1. Trimming the Top and Bobbin Thread

Instructions for manually trimming the top and bobbin thread.

1. Press the **Trimming key**



2. The D14 Start Switch message appears.

Push the **Start Key**



to execute the trimming operation.



To cancel trimming, press the **Trimming key**





again.

*The On/Off switch on each tension assembly (Head Switch) can also activate trimming. Turn the Head Switch Off then On and the Green LED on the Tension Assembly will blink. Push the Start switch to execute the trimming operation. (The Green LED on the tension assembly must be blinking, when you push start).

2-2. Bobbin Thread Trimming

Instructions for manually trimming the bobbin thread only

1. Press the **Trimming key**  and the D14 Start Switch message appears.

2. Press the **A-key**  to trim the Bobbin thread only

*While Automending or stitch back without trimming, the bobbin thread may break. In order to avoid this, we suggest trimming the Bobbin thread before automending or stitching back.



3. Thread Clamp

Instructions for releasing the thread clamp for easy threading


1. Press the **Manual Key** .

2. Manual Operation screen displays.






3. Press the **A-key**  to open or close the clamp

Press the A-key  again to release


Press the **Manual Key**  again to go back to the Start screen.

4. Appliqué

Appliqué rotates the main motor so the presser foot can be pressed down manually, to accurately position the frame or appliqué.

1. Press the **Manual Key**  to display the Manual operation screen.
2. Press the **B-key**  and the following screen displays, indicating to push the Start Key. Push the **Start Key** .



To cancel, press the **B-key**  again to go back to the Manual operation screen.

3. Manually lower the needle bar closer to the fabric.
*Repeat steps 1 to 3 to reset the needle bar to the normal position

5. Change Frame

Change frame moves the pantograph forward to allow framing or positioning of an appliqué. This movement, called frame offset, is automatically set at the pattern height. A different frame offset distance can be set for each pattern in the Program settings. *See “Chapter 8 Programs” for details.*

1. Press the **Manual Key**



to open the Manual operation screen.

2. Press the **C-key**



3. The following D14 message appears, indicating to use the Start Key.

Push the **Start Key**



and the pantograph will move forward, by the height of

the pattern, unless a different value was set in the Program settings.



To cancel, press the **C-key**



again to go back to the Manual operation screen.

4. Once the frame has been changed or the appliqué fabric placed, press the **Start Key** to return the pantograph to its original position.

6. Bobbin Counter

The Bobbin Counter stops the machine and trims the bobbins, when a preset number of stitches are sewn.


By setting the number of stitches where a particular design normally runs out of bobbin, the bobbins can be replaced, avoiding missed stitches in the final sew out piece.


When the machine stops for the bobbin counter, it shows the Bobbin counter message below and the Green LED on the Tension assembly is turned on. By pushing the Start Key, the counter is automatically reset.

Set the counter to 0 to cancel the Bobbin Counter feature.

**Bobbin Counter setting can only be set by 100 stitch increments.*

(For example, if you try to set a value of 250, the setting changes to 300 stitches.)

1. Press the **Manual Key**  to display the Manual operation screen.

2. Press the **D-key** .

3. The following **Bobbin Counter screen** displays.



The number on top is the current count number.

The number below is the new count number being set.

The current number is the count number previously set.

4. Set the new value using the keys below.

Press the **A-key**



to decrease the new value by 100 stitches.

Press the **B-key**



to increase the new value by 100 stitches.

Press the **C-key**



and the **A or B-key** to decrease or increase the new value by 1,000 stitches.

Press the **D-key**



to use the Numeric Entry Dialogue box.

Refer to “*Chapter 3, 13 Numeric Entry Dialogue Box*” to enter the value.



5. Press the **G-key**,



to enter and apply the new value.

7. Display Off

Switches the monitor off for saving electricity.

- 1) Press the **Manual Key**  to display the Manual operation screen.
- 2) Press the **E-key**  to show the “Display OFF” message to switch-off the monitor.



- 3) Press any key except the **Start** or **Stop-key** to turn the monitor back On.
(We recommend using the **Shift-key** or **Page-key**.)

The following “Display ON” message appears when the monitor switches back on.



8. Multi-Point

This function allows you to register points where you would like the pantograph to move to.

A maximum of 15 points can be registered, as P01 to P15.

The pantograph can then be moved to one of these points using a Manual key operation or programmed in F-list.

8-1. Point Registration.

Enter the Multi-point screen to select codes for moving and setting points.

- 1) Press the **Manual Key**



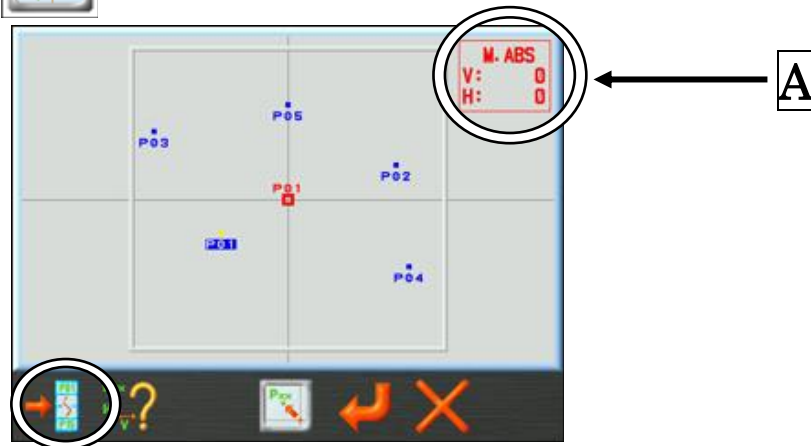
- 2) The Manual operation screen displays.



3) Press the **F-key**



to display the Multi-point screen.



(On this screen, 5 moving point codes have already been registered and are active.)

Blue points : Displays registered moving point number and location.

Blue point (reversed) : This is a registered point and location that has been reselected.

Red point : This is the current pantograph position and point number selected.

A above shows the present pantograph position (from mechanical origin) and is displayed in 0.1 mm units.

The **A** display will move to one of the four corners of the screen, depending on the location of the selected position.

4) Press the **A-key**



to display the Point code selection screen.



This screen shows a list of Point codes, point positions, and current pantograph position

Blue points : Displays (*) active moving point number and location.

Blue point (reversed) : This is an (*) active point and location that has been reselected.

Yellow point (reversed) : This is a selected non-active point (no *) This is the location where this point was last set for reference. If this code was never set before, this location is set to the pantograph origin point.

Red letter : This is the current position of the pantograph and it also displays the currently selected point code to be registered.

The **B** displays the current position of the pantograph, from the machine origin point in 0.1 mm increments.

The **B** display position moves around the four corners of the screen away from the pantograph's positions.

C shows the list of position codes. Selected codes are highlighted. .

Codes with an “*” mean it's an active registered code.

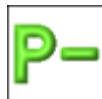
Press the **A-key** again,



to exit and return to the Multi-point screen.

5) Select a Position code to register.

Press the **B-key**




or **C-key**



to select a code.

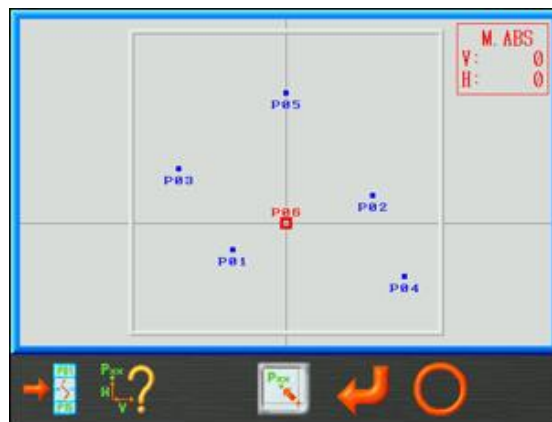
8-2. Point Code Registration using the Jog-keys

Use the Jog-keys to move the pantograph to a desired location for a point code.

- 1) Use the  icon to select a code in the Point code list. Refer to “*Section 10-1. Point Registration*” in this chapter for more details.

- 2) Display the Multi-point or Point code selection screen as follows.

(The following Multi-point screen explains how to register a point code location)



- 3) Move the pantograph with the **Jog-keys** to desired position where you want to set a Point code location.

- 4) Press and hold the **E-key**  to set point code location and activate it.

- 5) Press and hold the **F-key** to activate or de-activate the selected code.



:Activates the point code so it's available for use.



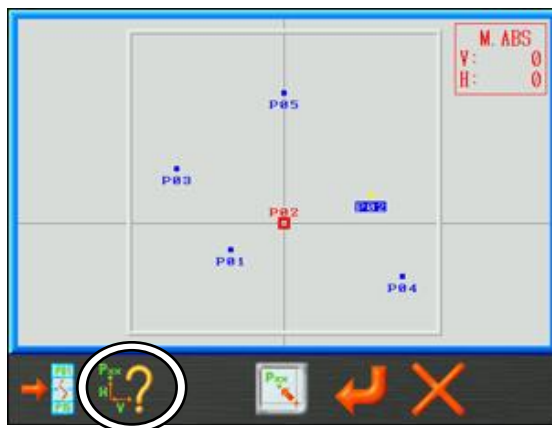
:De-activates the point code. It is not available for use.

* Even if a code is de-activated, the last set position is held in memory.

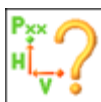
8-3. Point Code Registration by Numeric Input

Use a numeric input to indicate and set the desired point code location.

- 1) Display the Multi-point screen, refer to “*Section 8-1. Point Registration*” in this chapter.



- 2) Press the **B-key**



to display the point position numeric input screen.

No.	V	H
* P01	< 500 >	250
* P02	< -500 >	-250
* P03	< 1000 >	-500
* P04	< -500 >	500
* P05	< 0 >	-700
* P06	< 700 >	-700
P07	< 0 >	0
P08	< 0 >	0
P09	< 0 >	0
P10	< 0 >	0
P11	< 0 >	0
P12	< 0 >	0
P13	< 0 >	0
P14	< 0 >	0
P15	< 0 >	0

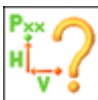
The complete list of points is displayed.

This list shows the V and H-axis setting values for each position code in 0.1mm increments.

The presently selected axis numbers are enclosed by “< >” symbols.


Active position codes that have been previously registered are identified with an “*” mark.


To exit this screen, Press the **B-key** again





3) Select a point code to change, using the **Jog-keys**.

4) Use the **Origin key** to toggle between the V-axis and H-axis settings.

5) Press the **C-key**  to decrease the value setting.

Press the **D-key**  to increase the value setting.

Press the **E-key**  and the **C or D-key** to change the setting by 100.

Press the **F-key**  to display the Numeric Entry menu.

To input a value, refer to “*Chapter 3, 13. Numeric Entry*”

* When a value is changed, the point code is activated automatically.

6) Press the **A-key** to activate or de-activate the selected point.



: Activates the point code. (*) shows in front of code in the list.




: De-activate the point code. The code is not active in the list.


* If a value setting and/or an activation condition is changed, when exiting this function a confirmation message is displayed. Please refer to “*Chapter 3, 10 Confirmation Message*” for details.

8-4 Move to a Point Position


Manually moving the pantograph to active point position.

- 1) Display the Multi-point screen using the  icon in Manual operations.

Refer to “*Section 10-1. Point Registration*” in this chapter for more details.

- 2) Press the **A-key**  to display and select a point code.



- 3) Press the **D-key**  to move the pantograph to the selected point position.

(Please pay attention to the area around the pantograph for safety, before pressing the



button)

8-5. Using F-List to program point positions

This function can move the frame to a registered point for sewing appliques for example. The FMP code is used for this function, and you can use this function to move to points positions (P01 ~P015).

* This function is basically the same as Program setting #7 “Applique”.

However using Program #7 “Applique” only allows one moving position to be set and it’s based from the stop position of the pattern. The FMP codes allow you to have 15 preset move positions and they are absolute positions the pantograph moves to.

(Please refer to “Chapter 8, 2. Program List” for more details on “Applique”)

* Automatic starting as set by MC parameter #13 “Auto start” also applies to this function when used, just like setting Program #7 “Applique” on.

(Please refer “Chapter 11, 2. “MC List” for “Auto start” details.)

- 1) The pantograph can be moved to a position point during sewing by programming a color change to a FMP code in the F-List, as shown below.



F-List screen of color change functions.

* Please refer to “Chapter 7, Editing Memory Designs” for more details on the F-list function.

- 2) When an FMP code is executed, the pantograph moves to the point position and displays a “D23” message, after the machine is stopped.



“D23” message display

* Sub function1 (P --) means the point has not been registered. A sub function of (P01 thru P15) has to be registered in order to activate this function.

- 3) The pantograph will return to the last embroidery point, when you press the start button or bar. (Please be careful when starting the machine after a D23 message for safety.)

9. 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 Key**



2. Press the **G-key**



3. Press the **A-key**



to turn the Laser Pointer ON or OFF.

10. Pantograph Centering

Move the pantograph to the center of the pantograph field size or center of the sub-soft limits.

(Please refer to “*Chapter 7, 6. Setting Sub-Soft limits*” for details.)


1. Press the **Manual Key**

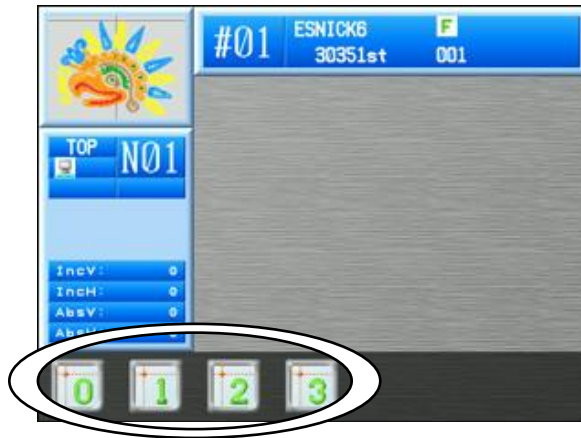



to open the Manual operation screen.




2. Press the **G-key**



3. Press the **F-key**  to display the pantograph centering screen.



4. Press the **A-key**  to move the pantograph to the center of the pantograph field size (As set by MC Frame limit parameters, #22 ~25).

Press the **B-key** , **C-key** , or **D-key**  to move the pantograph to the center of the sub-soft limits for frame types 1, 2, or 3.

* In Stand by mode, when selecting and centering to 1, 2, or 3, Item 14 “Frame type” in Program settings is automatically changed to this soft limit frame type for this design.

* Once in Drive mode, the pantograph can only be centered to the pantograph position as set by Item 14 “Frame type” in Program settings.

Chapter 5 Loading / Saving Designs

This chapter explains how to load designs into machine memory.

1. Before Loading / Downloading 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 Mode
8. Loading through the COM port
9. Saving through the COM port

1. Before Loading / Downloading Designs

These instructions explain how to use the Design Loading Key and are not necessarily repeated over and over again in the following chapters of Loading /Download Designs. So please refer to these instructions for details using this key.

1-1. Selecting a device to load or download designs

- 1) Press the **Design Loading/Downloading Key**



- 2) Press the **B-key** and select the device to load or download designs from the Design Loading / Downloading screen.



*The icon shown above the B-key is the icon for the device that is selected when you press the B-key.

The device that is currently selected is shown at the top left side of the screen in the display window.

- 3) When the USB icon is selected, press the **D-Key**



to cycle through the 2 USB

Ports available on the Automat.

* If no USB device is installed on the selected port, an A38 message displays. In this

case, Press the **G-key**



to clear the A38 message.






The Automat has 2 USB Ports.
(One in the front, and one in the back.)

A: As shown, the 1st (front) USB port is selected.

1-2 Pause / Cancel

The Pause / Cancel function shows up in the following chapters of loading and saving designs. Instructions for this function is not repeated throughout these chapters, so please refer to these instructions for using this feature.

1. Press the **B-key**,  to pause.
 2. While pausing, press the **A-key**,  to stop loading/downloading.
- Press the **B-key**,  to start loading/downloading.



*If the design being downloaded via a USB port has less than 50,000 stitches, the “Pause” to stop or “Abort” while downloading, is not available. Downloading is too quick for pausing.

2. Before Using a USB Flash Drive

2-1. Outline

The USB Flash Drive can be used for not only saving data but also for the following:

1) Storing Design Files

- Save / load design files in FDR format (.U01).
- Save / load design files in the Network format (.PRJ). *1
- Store design files in TFD format (.DST and .DSB). *2
- Bitmap image for each design file and image can be viewed on computers.
- Memory Back-up of all design files stored in the machine.

2) System Software Update

Software can be updated using a USB Flash Drive.

3) Editing

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

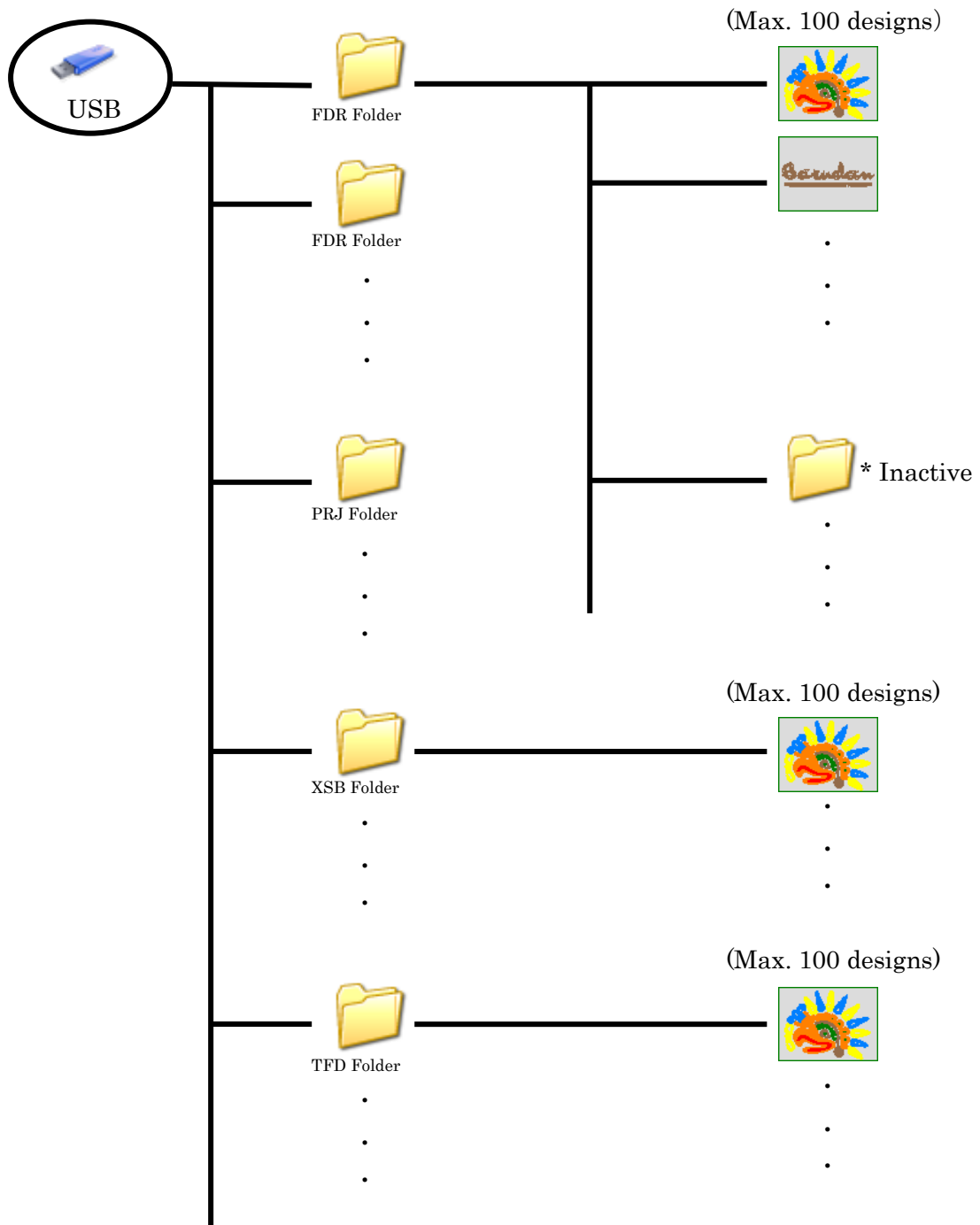
*Designs in PRJ format can be edited using LEM Server software.

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

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

2-2. USB Flash Drive Basics


The USB Flash Drive needs to have specific folders to store files.




* Folders within folders are Inactive. You maybe 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 4 types.


1) FDR Folder

- This folder is shown as  on the Automat.
- Stores design data in FDR format (.U01)
- 100 designs can be saved in a FDR folder.


2) PRJ Folder

- This folder is shown as  on the Automat.
- Stores design data in Network/ PRF format.
- 100 designs can be saved in a PRJ folder.

3) XSB Folder

- This folder is shown as  on the Automat.
- Backs up all the designs in memory in the Automat.
- Merging is not available.

4) TFD Folder

- This folder is shown as  on the Automat
- Stores design data in TFD format (.DST and .DSB)
- 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. xsb	(XSB 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 XS Automat.

3-1. Loading a New Design

- 1) Press the **Design Loading/Downloading Key**



- 2) Check that the USB Flash Drive is selected. Press the **D-key** is to access the other USB ports if necessary (There are 2 USB ports available).

*Refer to “Section 1. Before Loading/Downloading Designs” in this chapter for details

- 3) The Design Loading/Downloading screen will appear.



The list of the folders in USB device is displayed.

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

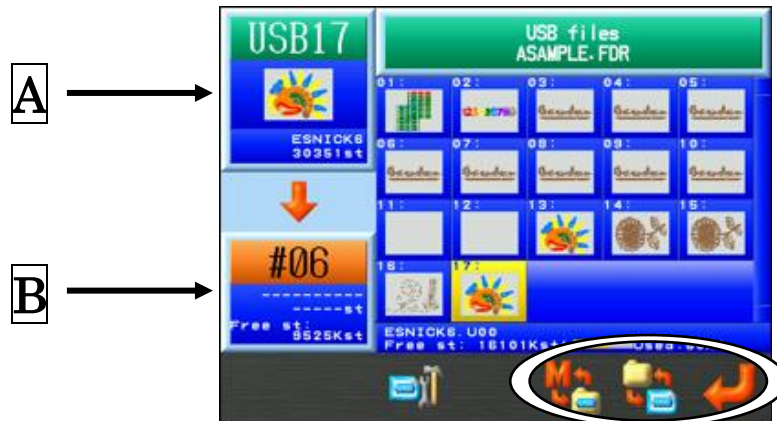
A: Displays the folder name and number of the files in the selected folder.

B: Displays the amount of free Automat memory and location where design will be saved.

C: Displays the amount of free USB memory and the currently selected folder name.


- 4) Select the folder that has the design you want to load into the Automat.

- 5) Press the **Origin key**, or the **F-key**  to display the designs in the folder selected.



A Shows the design information of the selected design on the USB flash drive.

B Shows the design information and data capacity of the selected memory location.

Press the **F-key**,  again to go back to the Design loading/downloading screen.

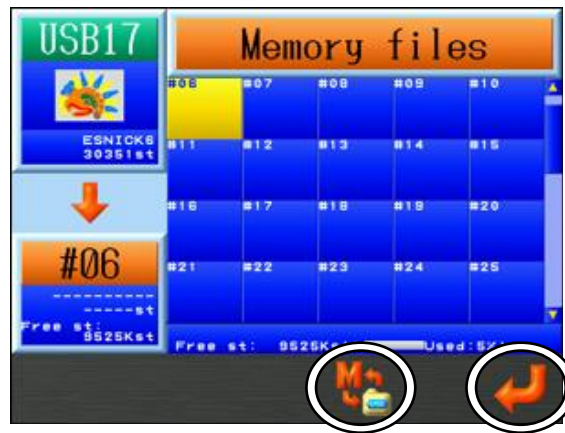
- 6) Use the **Jog Keys** to select the design you want to load.


*If you want to select several designs for downloading, use the following procedure:

1. Select a design and press the **Origin key**. An (*) will be shown beside the design to indicate it has been selected.
2. Choose more designs and press the **Origin key** to mark them.
3. If you want to cancel a chosen design with an (*), select the design again and press the **Origin key** to remove it.

- 7) You can either save the selected design into a specific memory location of your choice.
Or, the next empty memory location will be automatically selected for you. To use the next empty location, please jump to step 10.

- 8) Press the **E-key**,  to display the Memory files list.



*If you need to get back to the Design Folder List, press the **E-key**  again.

- 9) Use the **Jog keys** to select a memory file location to load the design into.

*If several designs have been selected using the **Origin key**, you cannot assign specific memory locations to load into. In this case, the designs will be automatically saved into the next available empty memory locations.

- 10) Press the **G-key**,  to load the Design(s) into memory. The display will go back to the start screen after downloading.

3-2. Adding a Design

- 1) Press the **Design Loading/Downloading Key**



- 2) Use the **Jog keys** and select the folder that has the design you want to load.

- 3) Press the **Origin key** or the **F-key**,



to display the list of designs in the folder.

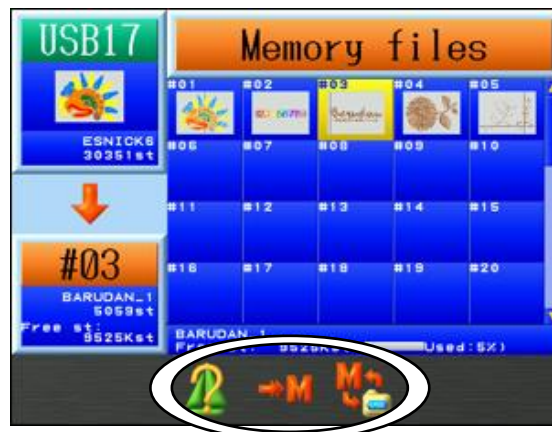


- 4) Use the **Jog keys** and select the Design you want to load.

- 5) Press the **E-key**,



to display the design data list in Memory.






- 6) Using the Jog keys, select the design memory location you want to add to.

To show the design information, press the **C-key**




*The design information shown is the same as what shows for Memory designs. Refer to “Chapter 6, 2. Design Information” for more details.

- 7) If you've selected a memory location with a design already in it, the  icon will be shown above the **D-key**.
- 8) Press the **D-key**,  to confirm adding the new design to the design in memory.
- 9) Press the **G-key**,  to start loading.

3-3 Design Search

Search designs on a USB Flash Drive.


- 1) Display the Design Loading/Downloading screen. See Chapter “3-1. Loading a New Design” for details.

- 2) Press the **E-key**  to display the design search screen.



To Exit, press the **E-key** again



- 3) Press the **C-key**  to input letters for the search name.

Please input a design name to search. Refer to “Chapter 3, 14 Character Entry” for details.

* Wild card searching is supported by this feature.

Search a string of character by using the “*”, and any character by using the “?”

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

- ① 0 1 _BARUDAN
- ② 0 2 _BARUDAN
- ③ 0 3 _BARUDAN
- ④ 0 0 4 _BARUDAN
- ⑤ 0 5 _DESIGN

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

If you search: “??_BARUDAN” Designs 1~3 are displayed

- 4) Press the **G-key**  to search the design.

- 5) The designs search results are displayed.




The top of the display shows the currently selected USB Flash Drive (Port No.), design folder name and design information, for the selected design in the list.

* Please refer to “*Chapter 6, 2. Display Information*” for more details on display.

- 6) Select the design to download by using the **Jog keys**.

* If you would like to select more than one design, press the **Origin key** to tag the selected designs with an (*). If you need to un-tag a design, simply press the **Origin key** again.

- 7) Press the **G-key**  to input the design(s) into memory.

3-4. Loading a Back-up Design Folder

This function restores all the designs in memory as they were when the XSB 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 **Design Loading/Downloading Key**



- 2) Use the Jog keys and select the XSB Back-up folder that you want to restore.



- 3) Press the **G-key**



- 4) Press the **A-key**, **Yes** to start loading the Back-up folder of designs.



Press the **B-key**,



or the **G-key**



to cancel the loading and go back to the

Design Loading screen.

3-5. Batch Folder input


Save all designs in a folder into memory.

- 1) Press the **Design Loading/Downloading Key**



- 2) Select the folder of designs to be read into memory using the jog keys.
- 3) Press the **SHIFT** key.



- 4) Press the **G-key**  to display the confirmation screen and save all designs into memory.

Please refer to “*Chapter 3, 10. Confirmation Message*” for confirmation screen details.

3-6. Displaying Design Information

- 1) Press the **Design Loading/Downloading Key**

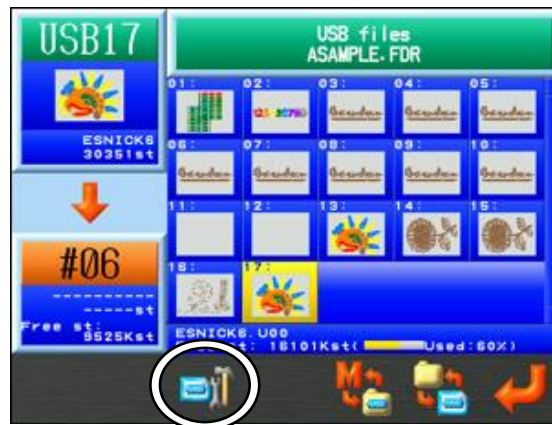


- 2) Use the **Jog keys** and select the folder that has the design you want to display design information.

- 3) Press the **Origin key** or the **F-key**,



to display the list of designs in the folder.



- 4) Using the **Jog keys**, select the design you want to have design information displayed on the screen.

- 5) Press the **C-key**,



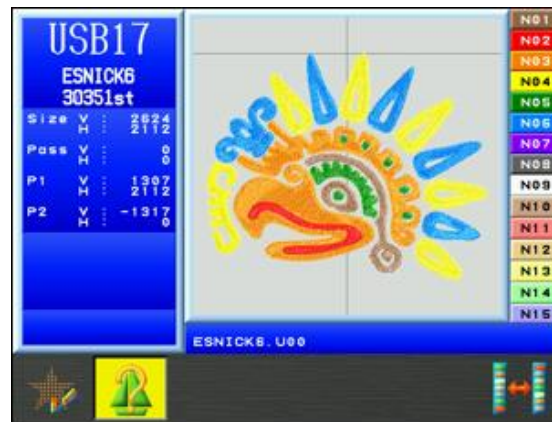
to display the USB Design Administration screen.



6) Press the **B-key**,



to display the design information.



Press the **B-key**,



again to go back to the USB Design Administration screen.

4. USB Flash Drive Search with a barcode

Scan a design name bar code to search a 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 bar code



(2) Design name bar code



(3) OK bar code



* The example design name barcode above is for a design named “BARUDAN”.

To use this feature, you’ll need a bar code for the design names you want to search for.

(Refer to “*Section 4-2. Barcode list for the USB Flash Drive search*” in this chapter)

- 1) Scan the USB search bar code first to open the USB Search menu.
- 2) Scan the Design name bar code (example “Barudan”) and USB Search Display will look as follows:



3) Scan the OK bar code to start searching.

Note: Pressing the **G-Key** in this menu is the same as scanning OK.

4) When the design is found, it will be displayed on the screen.





Note: If more than one design matches the search criteria, all the matching designs will be displayed in a list. In this case, use the **Jog keys** to select the design you want.

5) Scan the OK bar code again, to download the selected design into memory.

Note: Pressing the **G-Key** in this menu is the same as scanning OK.

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	The pattern name of searching	Barcode for design name (Name only, no file extension)
3	OK to start the search (Same as enter key)	 *\$APPEND\$*
4	Allows you to scan additional barcodes to append the design name (optional command)	 *\$OK\$*
5	Cancels the USB Search (optional command)	 *\$CANCEL\$*


5. Saving Designs to a USB Flash Drive

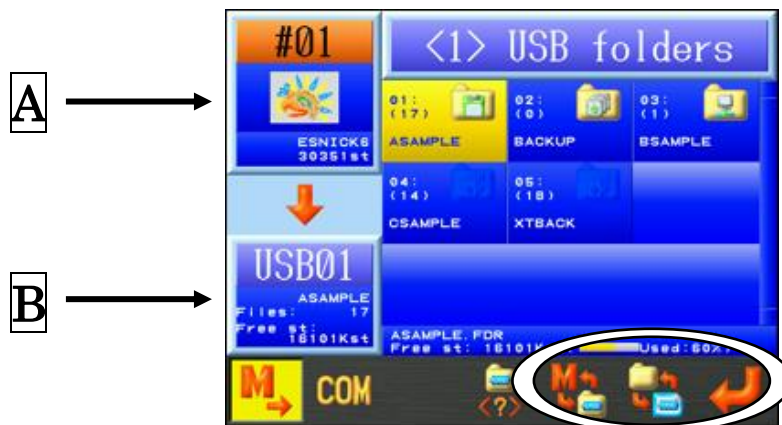
Instructions for storing designs from a BEXS Automat to a USB Flash Drive

4-1. Saving Designs

- 1) Press the **Design Loading/Downloading Key**




- 2) Press the **A-key**,  to display the Memory to USB Flash Drive save screen.




A: Displays the design information for the selected design.

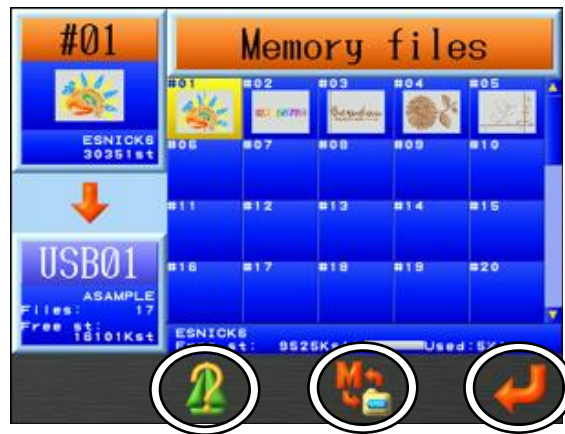
B: Displays the selected USB folder details and the amount USB free space.

To go back to the Design Loading screen, press the **A-key**,  again.

- 3) Using the **Jog keys**, select a folder on the USB Flash Drive you want to save to.

Press the **Origin key** or the **F-key**,  to display the designs in the folder.

- 4) Press the **E-key**,  to show the Memory design list.



To display the design information, press the **C-key**



To go back to the USB save screen, press the **E-key**



- 5) Using the **Jog keys**, select a design in memory to save to the USB Flash Drive.

*If you want to select several designs for saving, use the following procedure:

1. Select a design and press the **Origin key**. After that an (*) is shown beside the design to indicate it's been chosen.
2. Choose more designs and press the **Origin key** to mark them.
3. If you want to cancel a chosen design with an (*), select the design again and press the **Origin key** to remove it

- 6) Press the **G-key**,




to save designs to the USB Flash Drive.

5-2. Back-up Designs in memory

Backs up all the designs in memory.

- 1) Press the **Design Loading/Downloading Key**



- 2) Press the **A-key**,  to display the Memory to USB Flash Drive save screen.

- 3) Using the **Jog keys**, select an empty XSB folder you want to use for a Back-up.



*If there is no XSB folder, create one. See “5-1 Creating a folder” for details



- 4) Press the **G-key**



- 5) Press the **A-key**,  to start the Back-up.

Press the **B-key**,  or the **G-key**  to cancel the Back-up and go back to the USB save screen.

6. USB Administration

Administration instructions for USB Flash Drives on the BEXS Automat

6-1. Creating a Folder

Instructions for creating folders on a USB Flash Drive

- 1) Press the **Design Loading/Downloading Key**



The Design Loading/Downloading screen will display.

- 2) Press the **C-key**



to display the USB Administration screen.



To go back to the Design Loading screen, press the **C-key**,



again.

- 3) Select the folder type that you want to create from the folders icons circled **A**.



(E-key) : for creating a FDR folder.



(F-key) : for creating a PRJ folder.



(G-key) : for creating a XSB folder.

- 4) Press the **A-key**,



to enter a new folder name.

Refer to “Chapter 3, 14. Character Entry” for details entering names.

6-2. Deleting Folders

Instructions for deleting folders on the USB Flash Drive

- 1) Press the **Design Loading/Downloading key**



The Design Loading/Downloading screen will display.

- 2) Using the **Jog keys**, select the folder that you want to delete.

- 3) Press the **C-key**,



to view the USB Flash Drive Administration screen.

- 4) Press the **B-key**,



and the following confirmation screen will appear.



- 5) Press the **F-key**,



to delete folder.

- 6) Press the **B-key**,



or the **G-key**



to cancel and go back to the USB Flash

Drive Administration screen.

6-3. Deleting designs on a USB Flash Drive

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

- 1) Press the **Design Loading/Downloading Key**



The Design Loading/Downloading screen will display.

- 2) Using the **Jog keys**, select the folder that contains the design you want to delete.

- 3) Press the **F-key**,

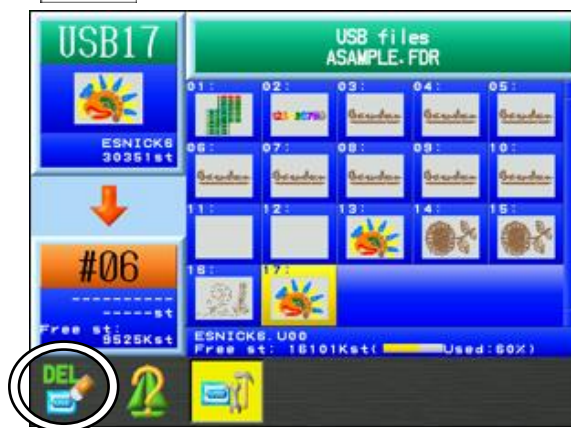


to display the files in the folder.

- 4) Press the **C-key**,



to display the USB Design Administration screen.



To go back to the Design Loading screen, press the **C-key**

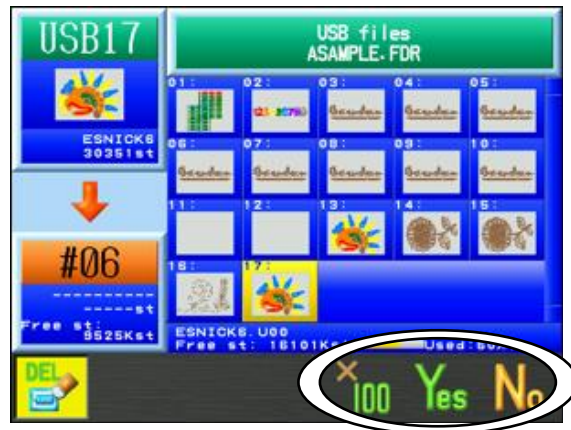


- 5) Using the **Jog keys**, select the design to delete.

*If you want to select several designs for deleting, use the following procedure:



- 1. Select a design and press the **Origin key**. After that an (*) is shown beside the design to indicate it's been chosen.
- 2. Choose more designs and press the **Origin key** to mark them.
- 3. If you want to cancel a chosen design with an (*), select the design again and press the **Origin key** to remove it.

- 6) Press the **A-key**,  and the following confirmation dialogue box will appear.



- 7) Press the **F-key**  to delete the selected design(s).

Press the **E-key**  and the **F-key**,  to delete all the designs in the folder.

Press the **A-key**  or the **G-key**,  to cancel deleting and go back to the USB Design Administration screen.

6-4. Changing a Folder Name

- 1) Press the **Design Loading/Downloading** key



The Design Loading/Downloading screen will display.

- 2) Using the **Jog keys**, select the folder you want to change the name.

- 3) Press the **C-key**,  to display the USB Administration screen.



- 4) Press the **SHIFT** key.



To go back to the USB Administration screen, press the **SHIFT** key again.

- 5) Press the **C-key**,  to change the folder name.

Refer to “Chapter 3. 14. Character Entry” for details on changing name.

7. ABC Mode

ABC Mode is a function to automatically load a design into memory using the COM port.

A memory location is selected for ABC mode. This same memory location is used repeatedly while in ABC mode. After sewing each design in this memory, when you take the machine out of Drive mode, ABC mode automatically downloads the next design from the COM port and overwrites the design in memory with the new one.

Please refer to “*Section 8. Loading through the COM port*” in this chapter for more info on COM settings.

*ABC mode setting cannot be changed while the machine is in Drive mode. You have to get out of Drive mode, to cancel ABC Mode and return back to regular operation.

7-1. ABC Mode Setting

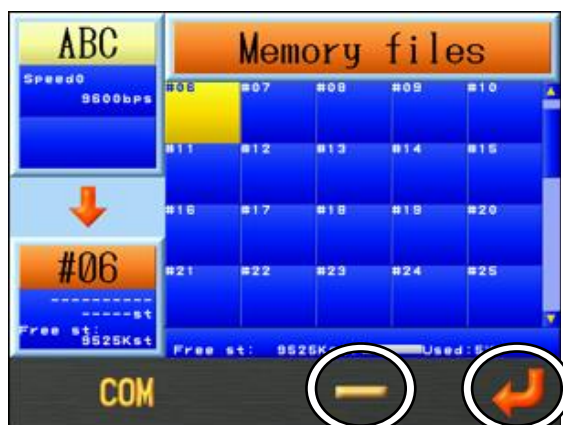
- 1) Press the **Design Loading/Downloading** key



- 2) Press the **B-key** to change the machine to ABC Mode.

*Refer to “*Section 1. Before Loading / Downloading Designs*” in this chapter for details on how to change to ABC mode.

- 3) The Memory Design List will display.



- 4) Use the **Jog keys** to select a memory location to use for ABC mode.

*If you select a memory location that already has a design in it, the design will be overwritten.

The **E-key**



is for changing the COM speed.

* Refer to “*Section 8-1. Loading a New Design through the COM port*” in this chapter for details.

- 5) Press the **G-key**,



to activate ABC mode.

*While in ABC mode, no other sewing operations or memory locations are available for use.

- 6) When the Automat is taken out of Drive mode, the next ABC design from the COM port will be downloaded, and overwrite the current design in memory.

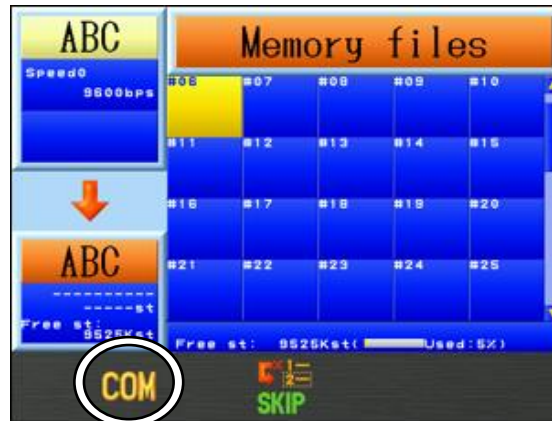
*ABC mode can only be used with U-code designs. The design name read into memory will show “ABC data”.

7-2. ABC Canceling

Cancel the ABC mode for COM.

This is only available when ABC mode is active.

- 1) Press the **Design Loading/Downloading** key



- 2) Press the **B-key**

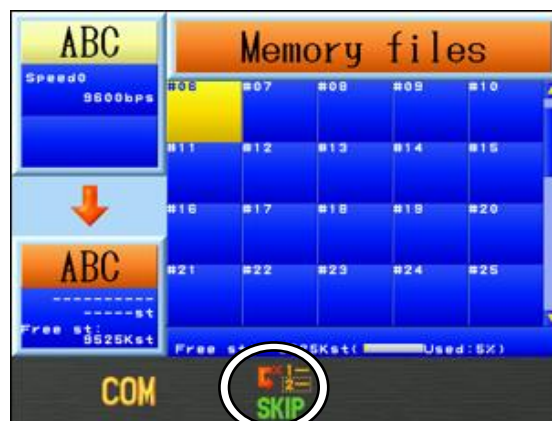


7-3. ABC Design Skip

Skip the next design being sent from the PC.

This is only available when ABC mode is active.

- 1) Press the **Design Loading/Downloading** key



- 2) Press the **D-key**

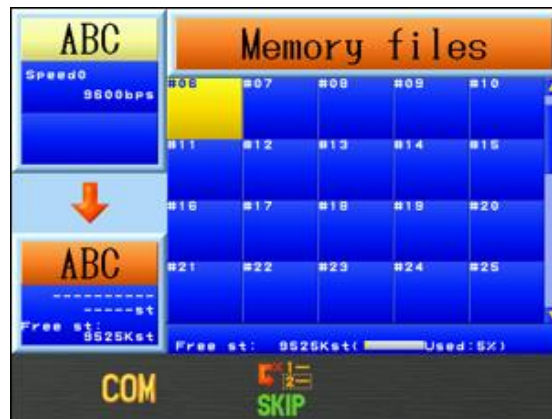


7-4. ABC Drive

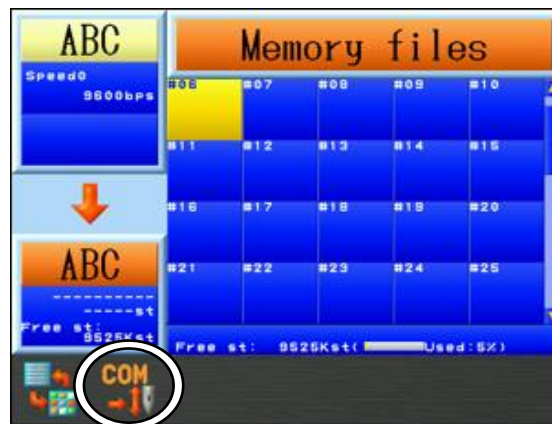
Automatically puts the ABC design in Drive mode after downloading.

This is only available when ABC mode is active.

- 1) Press the **Design Loading/Downloading** key



- 2) Press the **SHIFT** key.



- 3) Press the **B-key**



to toggle ABC Drive On or Off.

When ABC Drive is On, the design downloaded will automatically be put in Drive mode and be ready for sewing.

8. Loading through the COM port

A COM connector is located on the back of the BEXS 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 (null modem) crossover cable for the connection.*

8-1. Loading a New Design through the COM port.

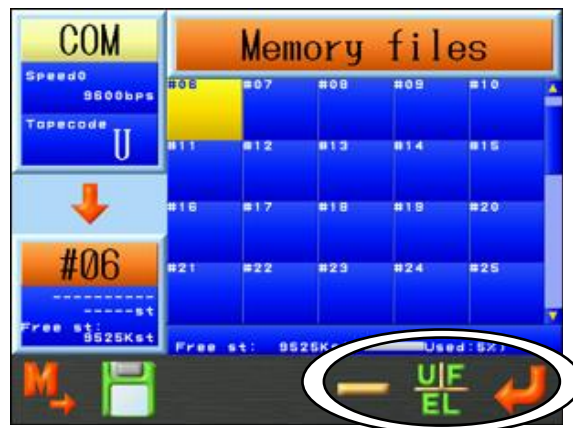
- 1) Press the **Design Loading/Downloading key**



- 2) Press the B-key to change the machine to COM Mode, if not already selected

**Refer to “Section 1. Before Loading/Downloading Designs” in this chapter for details on how to change to COM Mode.*

- 3) The Memory design list will display.



- 4) Use the **Jog keys** to select an empty Memory location.


**If there are no empty memory locations, you will need to delete some designs from memory.*

Refer to “Chapter 6, 4. Deleting Designs from Memory” for details.


**If you select a Memory location that already has a design, the Enter key,*



will not appear.



- 5) Press the **F-key**,  if needed, to change Tape Codes.

**There are 3 types of Tape code: U / F / EL*

The Code changes each time you press the **F-key**,  from U→F→EL→U.

- 6) Changing COM speed (BAUD rate), if needed. Press and hold the **E-key**,  until

the icon changes to a .

- 7) Press the **E-key**,  to change COM speed.
- 8) Press the **G-key**,  to ready the machine for the download.
- 9) Prepare the device or software program that has the design you want to download, and send the design.

*The following COM speeds (BAUD rates) can be set.


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

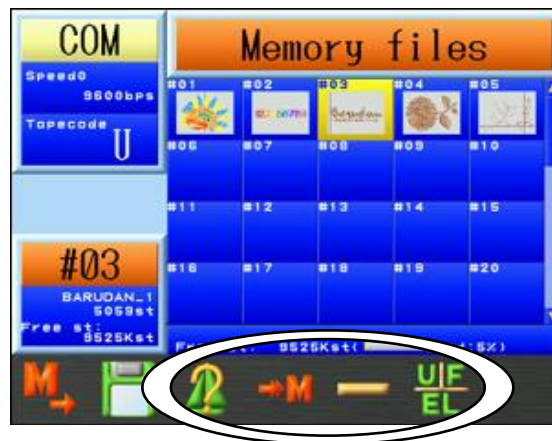
8-2. Adding a Design through the COM port.


- 1) Press the **Design Loading/Downloading** key



- 2) Use the Jog keys to select a design in Memory to add the design to.

- 3) If the selected Memory location has a design loaded in it, the  icon will show above the **D-key**.




- Press the **C-key**,  to show the Design information.

*Refer to “Chapter 6, 2. Design Information” for details.

- 4) Press the **D-key**,  to confirm adding a design.

- 5) Use the **F-key**,  to select a different Tape code, if needed.

*Refer to “Section 8-1. Loading a New Design through the COM port” in this chapter for details.

- The **E-key**  is for changing the COM speed.

*Refer to “Section 8-1. “Loading a New Design through the COM port” in this chapter for details.

- 6) Press the **G-key**,  to ready the machine for the download.

- 7) Have the connected device ready and send the design.

9. Saving through the COM port

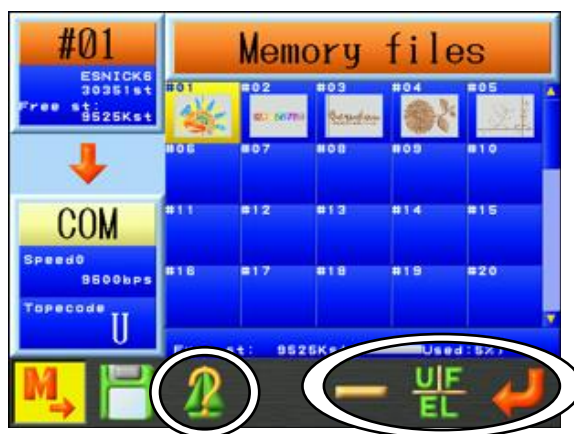
A COM connector is located on the back of the BEXS Automat. Designs can be loaded from a device connected to the COM port. Devices using RS-232C can be connected and used.

**Note: Must use a (null modem) crossover cable for the connection.*

- 1) Press the **Design Loading/Downloading** key



- 2) Press the **A-key**,



- 3) Using the **Jog keys**, select a design in memory you want to save.

Press the **C-key**



to display the design information.

**Refer to “Chapter 6, 2. Design Information” for details.*

- 4) Use the **F-key**



if needed, to change the Tape code.

**Refer to “Section 8-1. Loading a New Design through the COM port” in this chapter for details.*

The **E-key**



is for changing the loading speed.

**Refer to “Section 8-1. Loading a New Design through the COM port” in this chapter for details.*

- 5) Have the connected device ready to receive the design.

- 6) Press the **G-key**,



to start uploading the design to the connected device.

Chapter 6 Memory Designs

This chapter contains information on the followings.

1. Selecting a Design
2. Design Information
3. Design Zoom
4. Deleting Designs from Memory
5. Changing Design Names
6. Production Counts
7. Thread Consumption
8. Name Drop

1. Selecting a Design

Instructions for selecting a design to embroider from Machine Design Memory

* Designs cannot be edited while in Drive mode.



- 1) Press the **Design Memory Key**  or **Design Edit key** .
- 2) Design data for all the memory locations displays.




The lower part of the screen, displays the currently selected design name, amount of free stitch space, and memory % usage.

- 3) Choose a design to embroider from the design data list.

Note: Pressing the Origin key will move the frame to the last sewn start position for the design selected.

Press  or  again to go back to the Start screen.

The design information screen has the following contents.

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 pattern measured in tenths of millimeters.
V scale	: “V scale” of the Program Settings.
H scale	: “H scale” of the Program Settings.
Angle	: “Angle” of the Program Settings.
	: Displays Design conditions icons for the design. *Refer to “Chapter 3, 7. <i>Information Screen</i> ” for details on design conditions icons

The Design image is shown in the center of the screen.

The Secondary Information directly below the Design image shows the following information:

NC	: Next Color change. This is the first 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
R.Time	: Estimated Remaining Time. (Number in parenthesis is the speed of the machine). The estimated remaining time is calculated by the presently set speed of the machine. “R.Time” is highlighted when set to high efficiency mode. Please refer to the next page for details about high efficiency mode.
Color Bar	: Shows the change-color functions in the design by a color bar graph.

* Please refer to “*Chapter 13, 1. Function Codes*” about change-color functions.

* Please refer to “*Chapter 9, 3. Speed*” about changing the speed of the machine.

The left side of the display shows the screen colors for each needle.

* Please refer to “*Chapter 11, 5. Setting Thread Color Display*” about setting the screen colors for each needle.

Press the **A-key**



to show the Needle drop points of the selected design.

Press the **A-key**



again to go back to the previous display.

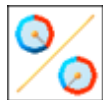
Press the **C-key**



to display the design of before and after Program changes.

* If there are no Program changes, this icon is not displayed.

Press the **E-key**



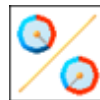
to change the calculation mode for estimated remaining time (R.Time).

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



icon will be highlighted with a yellow

background

* The calculating mode for estimating remaining time affects all designs in memory and while sewing.

Use the **F-key**



to turn the Secondary information display On or Off.

Use the **G-key**



to toggle between Needle colors and Chenille looper colors.

3. Design Zoom

Selected design can be zoomed in to show greater details in the design.

- 1) Press the **Design Memory Key**



- 2) Press the **G-key**



- 3) Press the **C-key**



to display the Zoom screen for the selected design.



To cancel zoom, press the **C-key**



again to return the design data list.

4) Enlarge and Reduce the display

Press the **E-key**



to zoom in on the data.

Press the **F-key**



to zoom out on the data.

(Cannot zoom out smaller than the whole display)

Press the **G-key**



to display the whole design.

5) When zoomed in, the jog keys can be used to change the display position of the screen.

4. Deleting Designs from Memory

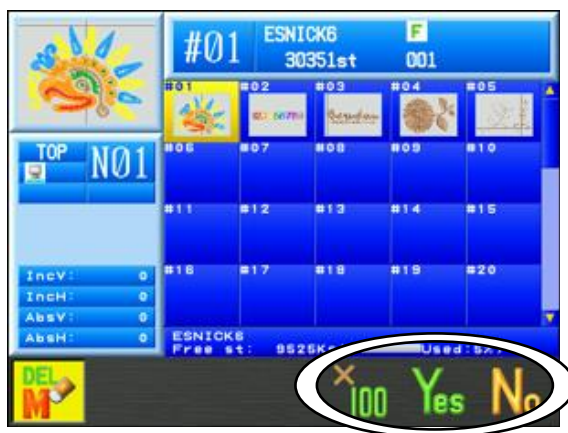
Instructions on how to delete a design from Memory

- 1) Press the **Design Memory Key**



Design data for all the memory locations displays.

- 2) Select a design to delete with the **Jog keys** and press the **A-key**



- 3) Press the **F-key**



to delete the selected design.

Press the **E-key**



and **F-key**



to delete all designs.

Press the **G-key**



or **A-key**



to go back to the design list.

5. Changing Design Names

Instructions for changing design names

1. Press the **Design Memory Key**



Design data for all the memory locations displays.

2. Select the design to change the name and press the **C-key**



3. Change the Design name.

*Refer to “*Chapter 3, 14 Character Entry*” for details on changing the name.

6. Production Counts

Instructions for displaying Production counts for the design selected

- 1) Press the **Design Memory Key**



Design data for all the memory locations displays.

- 2) To view the production counts of all the designs, press the **D-key**



- 3) Design No, Design name, Stitch count, and Production quantities are shown in the list.

	Name	Stitches	Prod#
#01:	ESNICK6	514st	0
#02:	A1234567	0st	0
#03:	BARUDAN_1	0st	0
#04:	COM11	0st	0
#05:	CORDING	0st	0
#06:	-----	-----	-----
#07:	-----	-----	-----
#08:	-----	-----	-----
#09:	-----	-----	-----
#10:	-----	-----	-----
#11:	-----	-----	-----
#12:	-----	-----	-----

ESNICK6
Total prod#: 0

To reset the production data for a selected design, press and hold the **F-key**



To reset the production data of all designs, press and hold the **G-key**



- 4) Press the **D-key** again to go back to the Memory design list.



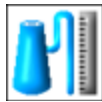
7. Thread Consumption

Instructions for thread consumption simulation

- 1) Press the **Design Memory Key**



- 2) Press the **E-key**



and the Thread consumption screen appears.

Function	Value	Unit
N01	4.05M	1042st
N02	3.27M	1458st
N03	26.78M	12044st
N04	13.51M	5878st
N05	3.59M	1577st
N06	15.15M	7428st
N07	---M	---st
N08	---M	---st
N09	---M	---st
Total	57.45M	

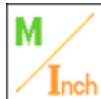
Simulates thread consumption for each needle.

To cancel, press the **E-key**



again to go back to the Memory design data list.

Press the **A-key**



to change the result shown in meters or inches.

- 3) Press the **C-key**



and the Thread consumption settings display.

Function	Value	Default
01: Thickness	0	(0)
02: Bobbin thread rate 50%		(50)
03: Needle height	0	(0)
04: Adjust value	100%	(100)

To cancel, press the **C-key**




again to go back to the Thread consumption screen.

4) Select the item that you want to change the value for.

5) Press the **A-key**  to decrease the value.

Press the **B-key**  to increase the value.

Press the **D-key**  to use the numeric dialogue box to input the value.

When any changes are made, a confirmation screen appears.

*Refer to “*Chapter 3, 10. Confirmation Message*” for details.

Item	Function	Range	Default
Thickness	Thickness of the fabric measured in millimeters.	0.0~9.9mm	0.0mm
Back Thread Rate	Ratio of the Bobbin thread to Top thread in Satin stitches.	0~100%	50%
Needle Height	Needle height adjustment for chenille machines in millimeters.	0~2.0mm	0mm
Adjusting Value	Calibration ratio of thread consumption.	50~200%	100%


8. Name Drop.

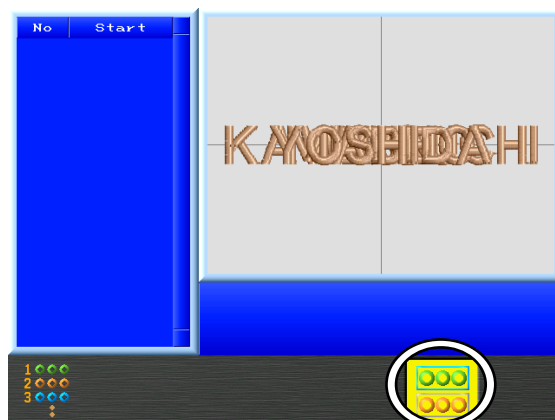
Setting up the Name Drop function.


- ※ When Name Drop is turned On, all designs in memory will be in this mode. So please turn it Off, after you are done using it.
- ※ **This function can only be turned On while in Stand-By mode.**
(You can't be in Drive mode).

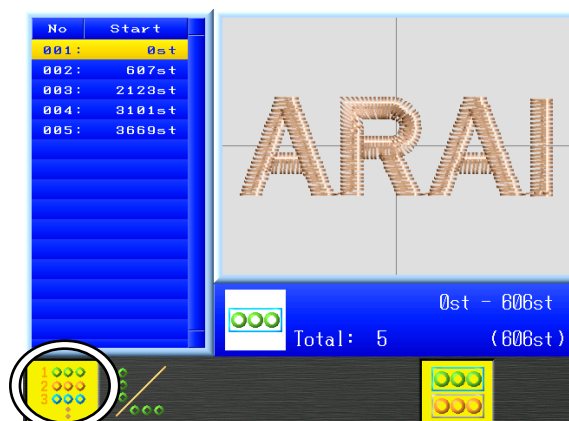
8-1. Setting up Name Drop

- 1) Press the **Design Memory Key**  to display the memory screen.

- 2) Press the **F-key**  to display the Name drop menu.



- 3) Press the **A-key**  to turn the Name Drop function On.



When Name Drop is on, this Icon will have a yellow background (as shown above).

When Off, there is no yellow background.



A Displays the name list by number and starting stitch number.

B Displays the selected name.

C Displays the total number of names in the list, and the range of stitches and total amount of stitches for the selected name.




: This icon indicates that the names will be displayed horizontally.



: This icon indicates that the names will be displayed vertically.

(Please refer to “*Section 8-2. Name direction setting*” in this chapter for more details).

- Use the **Jog keys** to select a name in the name list on the left screen.
- Press the **A-key** again  if necessary to turn the Name Drop function Off.

※ While sewing in Name Drop, you can select any name in the design to start sewing or sew again if needed.

Please refer to “*Chapter 9, 12. High Speed Float (By Name Drop)*” for details.


8-2. Name direction setting


Set the direction the names are displayed when sewing.

※This function can only be turned On while in Stand-By mode
(You can't be in Drive mode).

- 1) Press the **Design Memory Key**  to display the memory screen.

- 2) Press the **F-key**  to display the Name drop function menu.

- 3) Press the **A-key**  to turn the Name Drop function On.

- 4) Press the **B-key**  to change the name display direction.

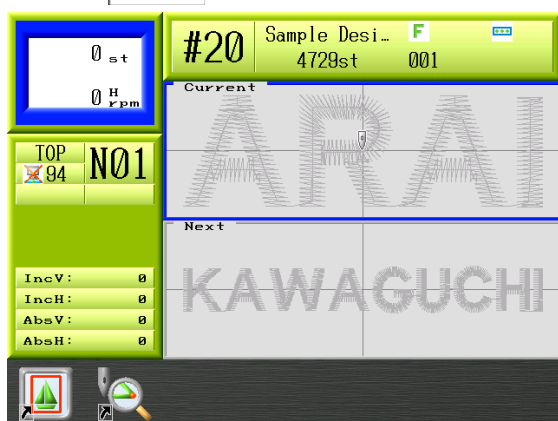
This setting effects how the names are displayed on the screen when sewing.



: Horizontal direction



: Vertical direction



Screen displays of machine sewing

Chapter 7 Editing Memory Designs

This chapter contains information about editing designs.

1. Changing Color Codes of a Design
2. Easy Teaching
3. Adding Stitches
4. DSP (Design Stitch Processor)
5. Outline Stitching
6. Setting Sub-Soft Limits
7. Teaching Color Codes
8. Teaching All Function Codes

1. Changing Color Codes of a Design

Instructions on how to change color codes

1-1. F List display and making changes

- 1) Press the **Design Edit** key



- 2) Select a design that you want to view **Color codes** and press the **C-key**



- 3) A list of Color change function codes for the design will appear as shown below.



This display shows the Code number and corresponding Stitch number, and Before and After color change codes for this code number.

The total number of functions in the design is displayed at the bottom of the list.

* The amount of change-color functions possible depends on the memory location.

Memory locations 01-05 have a maximum of 9999 codes.

Memory locations 06-99 and 00, have a maximum of 1200 codes.

- 4) Use the **Jog keys** to select a code.

*Note: You can insert a code at the start of design, by selecting “0000-Start” in the list, and pressing and holding the **Origin key**. Afterwards, you can program this code.*

- 5) Press the **A-key**  or **B-key**  to change the Color change function code.

The new Changed code will be shown in black.

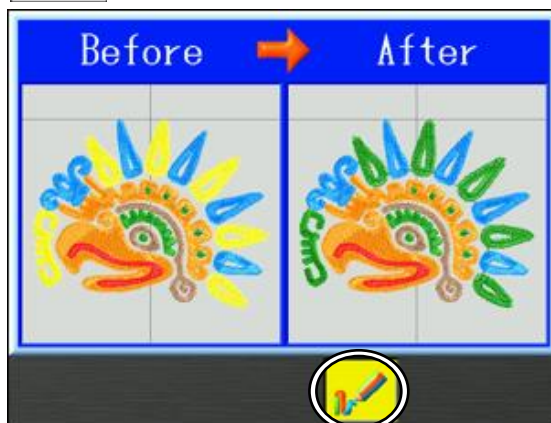
For machines with special devices (Loop/Cord/Sequin etc...)


Press the **C-key**  to display the Sub-functions menu.

Use the **A-key**  or **B-key**  to change these codes.

**Refer to “Chapter 13, 2. Sub-Function Codes” for list of Sub-Functions.*

- 6) Press the **E-key**  to preview the Before and After changes.



Press the **E-key**  again to go back to the Color change function list.

Press the **Design Edit key**  again to go back to the Start screen.

**When any changes are made, a confirmation screen displays to confirm changes.*

**Refer to “Chapter 3, 10. Confirmation Message” for more details.*

1-2. Color Batch changes

Batch changing for Color Change Functions

- 1) Press the **Design Edit** key



- 2) Select a design that you want to view **Color codes** and press the **C-key** to display the Color change function list.



- 3) Press the **D-key** to show the Batch changing screen for Color change functions.



Press the **E-key** to preview the Before and After changes.





- 4) Use the **Jog keys** to select a function code in the list to change.

- 5) Press the **A-key** or **B-key** to change the **after** function code.




Note: All **Before** Codes in design will be changed to the **After** codes when finished.


- 6) To change Sub Color changes, press the **D-key**  or **E-key** .



Press the **E-key**  or **F-key**  again to go back to the batch changing screen for color changes.

Press the **F-key**  to display the design preview of both before and after changing Sub-functions.

- 7) Press the **A-key**  or **B-key**  to change the **After** Sub-function code.

Press the **Design Edit Key**  to go back to the Start screen.

1-3. Inserting a Color Code at the Start

Insert a color change function at the start of a design (0st).

*Note: You can insert a code at the start of design, by selecting “0000-Start” in the list, and pressing and holding the **Origin** key. Afterwards, you can program this code.*

- 1) Press the **Design Edit** key



- 2) Select a design that you want to view **Color codes** and press the **C-key**



to

display the Color change function list.

- 3) Select “Start” using the **Jog** keys.



- 4) Press and hold the **Origin** key to insert a color change function on 0st.



- 5) Press the A-key  or B-key  to change the color change function.

* When the color change functions are finished a confirmation screen is displayed.

*Refer to “Chapter 3, 10. Confirmation Message” for more details.

1-4. Adding a change-color function

Select a change-color function in the F-list and add a change-color function 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 **Design Edit key**



- 2) Select a design that you want to view **Color codes** and press the **C-key** to display the Color change function list.



- 3) Select a change-color function to edit, using the **Jog keys**.

- 4) Press and hold the **F-key** to add the change-color function.



* When adding a change-color function, and 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 that does.

* In the example above, if the next stitch has a Trim code (T1), and the following one after that has low speed jump (LJ), an indication of this will display in the F-list as shown below. In this case, the color code on stitch 5920 has been selected to edit. However the next stitch number 5921 has a T1 code and 5922 has LJ code, so the new color change is added to stitch number 5923.



The circled display is temporary and will disappear, once you press the **Jog keys**.

2. Easy teaching

Display and Change color change functions with the Easy list

- * Please refer to “*Chapter 13, 1. Function list*” regarding the contents of the displayed functions.
- * **This function can only change color functions.**

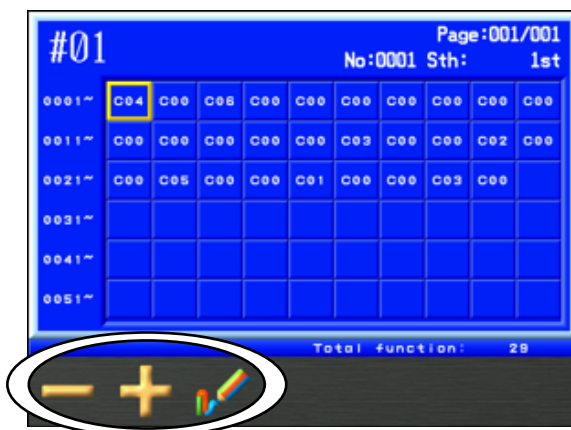
- 1) Press the **Design Edit key**



- 2) Select a design that you want to view **Color codes** and press the **D-key** to display the Easy Color change function list.



- 3) The Easy teaching screen is displayed.



Function codes other than color changes, are displayed by a dotted line.


When a color code has been added to the “Start” position, it is displayed at the top of the list.


A Maximum of 60 codes can be displayed per page in this list.

The selected design number is displayed in the upper left corner of the screen.

The selected function number and page number of the list are displayed in the upper right corner of the screen.

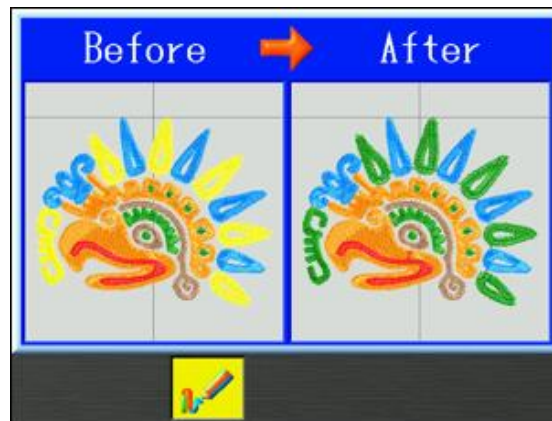
4) Select a color change function to be changed using the **Jog keys**.


5) Press the **A-key**  to decrease the color change function number.

6) Press the **B-key**  to increase the color change function number.

A color function that has been changed is displayed as highlighted in the list.

7) Press the **C-key**  to preview the Before and After color changes in the design.



Press the **C-key**  again to go back to the easy teaching screen.

* After finishing this function, if there were any color changes made, a confirmation screen is displayed to save changes.

*Refer to “*Chapter 3, 10. Confirmation Message*” for more details.

3. Adding Stitches

Instructions for adding stitches in a design

This function is not available during Drive mode.

3-1. 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 **Design Edit key**



- 2) Press the **A-key**



to open the Stitch addition menu.

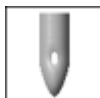


- 3) Press the **C-key** to change the mode of adding Jumps or Running stitches.

You can see what mode you are in by looking at the Icon in the top left corner of the display. The screen above shows the mode to add Jump stitches.



: Mode to add Jump stitches



: Mode to add Running Stitches (Needle Drops)

- 4) Use the **Jog keys** to move the pantograph to the point where you want to add stitches.

- 5) Press the **G-key**



to save the added stitch data to the Memory design data.

- 6) Press the **Design Edit key**



again to go back to the Start Menu.

3-2. 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 **Design Edit key**



and then, press the **A-key**



to open the

Stitch addition menu.

- 2) Press the **B-key**



to import another design into the selected design location.

*There needs to be more than 1 design saved in Memory to use this function.



To cancel, press the **B-key**



to exit back to the Design Addition Menu.

- 3) Use the **Jog keys** to select another design that you want to add to the selected design.

- 4) Press the **G-key**



to start merging the 2 designs together.

*If the importing design has been resized or rotated, it will import with these data changes.

*Stitch additions and Design additions will be saved into memory after the last stitch in the selected design.

4. DSP (Design Stitch Processor)

4-1. Changing DSP

Instructions for making the selected design larger or smaller without changing the density of the design. Also, the Maximum stitch length, Satin and Tatami spacing, and Running stitch length can be changed.

- 1) Press the **Design Edit** key



- 2) Press the **G-key**



- 3) Press the **A-key** and the DSP menu displays.



- 4) Use the **Jog** keys and select an item that you want to change.

The value can be reduced/decreased by using the



or



icons.

Note: Press the **C-key**



to change values using the Numeric Entry menu.

* Refer to “Chapter 3, 13. Numeric Entry” for more details


- 5) Press the **D-key**



to display the Memory design list.

- 6) Use the **Jog Keys** and choose a memory location to save the new DSP design in.

*If the memory location you chose already has a design in it, the old design will be overwritten.

- 7) After changing the values, press the **G-key**  to save the new design.




- 8) If you want to pause saving, press the **B-key** .

To cancel saving: Press the **A-key** .






To continue saving: Press the **B-key** .

* If the saving process was cancelled in the middle of saving, the incomplete design will be saved in Memory.

* The  icon is displayed on the information screen for designs that have been modified by the DSP function. Please refer to “Chapter 3, 7. Information screen” for more info.

Press the **Design Edit Key**  again to go back to the Start screen.

4-2. Stitch Processor 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 the 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%

5. Outline Stitching

Instructions for creating outline stitching data for designs

This feature has 2 useful purposes.

- When used with a boring needle for sewing, the outline stitch can be used to cut a hole in a piece of stable hooped material. Afterwards, a garment can be held to the hooped material by adhesive, and sewn thru the hole.
- The outline stitch can also be used as guideline for cutting out the embroidery with scissors after it's been sewn, such as sewing patches or appliqués.

- 1) Press the **Design Edit Key**



- 2) Press the **G-key**



- 3) Press the **B-key**



and the Outline Stitching menu displays.



Memory : Set the Memory location where the outline design is saved

Space : Sets the space around the design to 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.


4) Use the **Jog keys** to select a value to change.

5) Press the **A-key**  to decrease the value number.

Press the **B-key**  to increase the value number.

Press the **C-key**  to use the numeric entry to input the value.

Please refer to “*Chapter 3, 13. Numeric Entry*” to change values.

6) Press the **G-key**  to create an outline stitching design.

* Outline data is saved under the name of “Out – (Design number) – (Original name)”.

6. Setting Sub-Soft Limits

The machine software allows 3 embroidery areas (frame types) that can be programmed to limit the movement of the Pantograph. This feature is called a Sub-Soft Limit.


Program the lower left corner (P1) and the upper right corner (P2) for each area.

The pantograph movement will be limited to the rectangular area created by these 2 corners.

**Programming the 2 corners is done by moving the pantograph using the Jog keys.*

**The area for the Sub-Soft Limit cannot be larger than the Soft Limit Area set in the Machine Condition Parameters (MC).*

- 1) Press the **Design Edit Key**,  and select a design

- 2) Press the **B-key** .

* Or press the **G-key**



and then the **D-key**

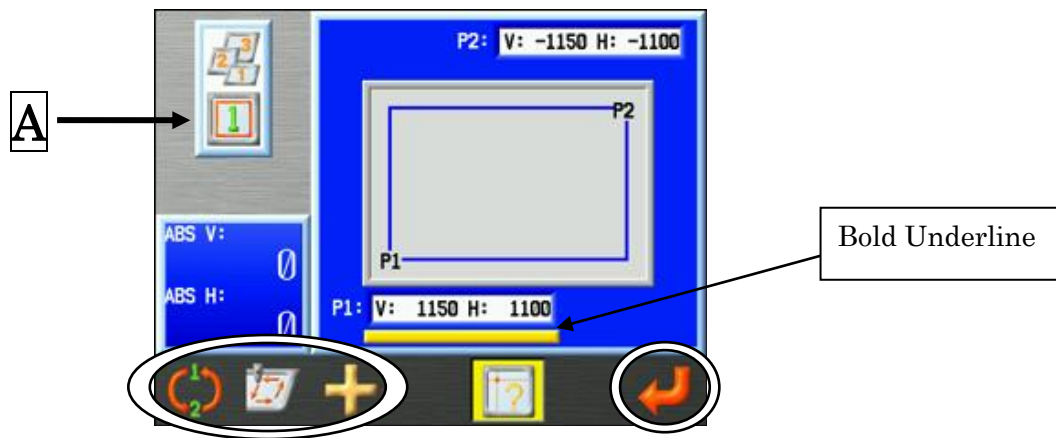


to enter step 5 below


directly for programming Sub-Soft limit settings.



- 3) Use the **Jog keys** to select item **14 Frame Type**.
- 4) This feature is off when set to 0. Change value to 1, 2 or 3 to program a Sub-Soft limit.
- 5) Press the **Origin key** to open the Sub-Soft limit menu.




A : Displays the currently selected frame type (example type 1 shown).

Press the **C-key**  to change frame type number to be programmed.

- * 0 is off and Sub-Soft limits can not be programmed.
- * Changing this value automatically changes Item 14 “Frame type” in the Program list to this value for this design.
- * Once in Drive mode, the frame type can not be changed. You have to exit drive mode to change settings to use another frame type.

- 6) Program P1. Use the **Jog keys** and move the Pantograph to find the lower left corner of the area. * When the P1 (V, H display) value is selected, it will have a Bold Underline under it as shown on previous page.

If P1 is not selected, press  to change it to P1. Press this key to toggle back and forth between the P1 and P2 settings.

- 7) Press the **G-key** below the  icon to enter the position as P1.


The screen automatically toggles to the P2 setting for you to program it.

* P2 (V, H display) should have a Bold Underline under it.

- 8) Program P2.

Move the Pantograph to find the upper right corner of the area (P2).

- 9) Press the **G-key**  to enter position P2.

- 10) Press the **B-key**  to trace the area to see if the settings are correct.

7. Teaching Color Codes

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.

*Please refer to “Chapter 13, 1. Function Codes” for information on color change function codes.


- 1) Press the **Color change key**



- 2) **Color change teach screen** displays.



- 3) Press the **A-key**  or **B-key**  to change the Color change function code.

- 4) Press the **G-key**  to save the change and go to the next color change function code in the design.

*An A24 message appears after the last color code in the design is found.

Press the **G-key**  to save and exit.


Press the **Color Change key**






again to go back to the Start Menu.

8. Teaching All Function Codes

Instructions for searching and changing **All** function codes in the memory design selected. **This operation is not available in Drive mode.** *Please refer to “Chapter 13, 1. Function Codes” for information on function codes.


- 1) Press and hold the **Color Change key**  until it beeps.
- 2) The function code change screen appears for the selected Memory design.



- 3) Press the **A-key**  or **B-key**  to change the function code.
- 4) Press the **G-key**  to save the change and search for the next function code in the design.

* An A24 message appears after the last color code in the design is found.

Press the **G-key**  to save and exit.

Press the **Color Change key**  again to go back to the Start Menu.

Chapter 8 Programs

This chapter contains the instructions on Program parameters.

1. Changing Program Settings
2. Program List
3. Program Barcodes
4. Applique and Frame Offsets using the Jog keys
5. Sub-Soft Limits
6. Matrix Embroidery Set Up (Design Repeats)
7. Automatic Matrix Embroidery Set Up

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 **Design Edit Key**



- 2) Select a design and press the **B-key**



icon.

- 3) Program list of the selected design displays.



- 4) Select the item you want to change with the **Jog keys**.

- 5) Press the **A-key**



to decrease the value setting.

Press the **B-key**



to increase the value setting.

Note: Press the **D-key**



to change values using the Numeric Entry Menu.

*Refer to “Chapter 3, 13. Numeric Entry” for details

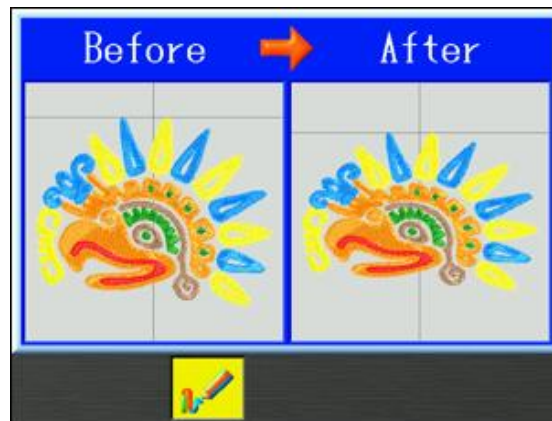
Note: To initialize Program settings, press the **G-key**



- 6) Press the **C-key**



icon to display the design preview of before and after changes.



Press the **C-key**



again to go back to the Program list.

Press the **Design Edit Key**,




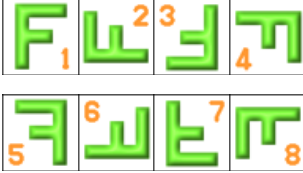














again to go back to the Start screen.









- 7) When there are any changes made, a confirmation screen appears.



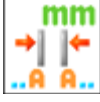




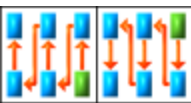
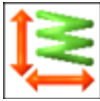



*Please refer to “*Chapter 3, 10. Confirmation Message*” for details

2. Program List

No. & Icon	Parameter	Function	Default Value	Range of Values
1 	V scale Width Scale	Scales the pattern size between 50% and 200% of its original size.	100	50% ~200%
2 	H scale Height Scale			
3 	ROT pattern	<p>Rotates pattern counterclockwise, in 90 degrees increments. Settings 5-8 add mirror imaging to the rotation.</p> 	1	1 : 0° 2 : 90° 3 : 180° 4 : 270° 5 : 0° 6 : 90° 7 : 180° 8 : 270°
4 	Angle	Rotates pattern counterclockwise, in 1° increments.	0	0 ~89°
5 	Origin	When On, automatically returns the pantograph to the pattern origin, when sewing has been completed.	1	1: ON 2: OFF
6 	Socks	<p>Used for the sock frame attachment. Automatically sews two repetitions of a pattern, by manually setting two origin points for the same pattern. To set the 2 origins:</p> <ol style="list-style-type: none"> 1. Move the frame to where the second item is to be sewn, and then Press the Drive key to enter Drive. 2. Then move the frame to where the first item is to be sewn, and press the start bar to sew. <p>0 = Off 1 = On - Normal setup 2 = On - Second repetition mirrored 3 = On - Second repetition rotated 180°</p>	0	0 : Off 1 : Normal setup  2 : Mirror  3 : Rotation 

No. & Icon	Parameter	Function	Default Value	Range of Values
7 	Appliqué	Moves the pantograph forward for easy placement of appliqué fabric. The default movement is 1-1/2 times the height of the pattern. A new value can be programmed in the A. Offset parameter.	0	0: Off 1: On
8 	A H Offset	Sets the amount of distance in the H and V direction that the pantograph will move when Appliqué is on. If set at 0, the pantograph moves forward 1-1/2 times the height of the pattern.	0	-3000mm ~3000mm
9 	A V Offset			
10 	Frame	Automatically moves the pantograph forward at the end of the pattern, by the height of the pattern, unless a new value is programmed in F. Offset parameter.	0	0: Off 1: On
11 	F H Offset	Sets the amount of distance in the H and V direction that the pantograph moves when Frame is on. If set at 0, the pantograph moves forward by the height of the pattern.	0	-3000mm ~3000mm
12 	F V Offset			

No. & Icon	Parameter	Function	Default Value	Range of Values
13 	Cap Frame	<p>Sets the machine up for Cap frame embroidery, by slowing down the maximum sewing speed and speed table settings.</p> <p>* “6 : Cap frame” same as Cap 1 setting except V Scale is also set to 105% (helps with round logos)</p>	0	<p>0 : Flat frame</p> <p>1 : Cap frame</p>  <p>2 : Not used</p> <p>3 : Not used</p> <p>4 : Golf Bag frame</p>  <p>5 : Special large frame</p>  <p>*6 : Cap frame</p> 
14 	Frame Type	Able to set frame preference for the use of sub-soft limits. 0-off. 3 different frames sizes are programmable.	0	0 ~3
15 	Repeat	Sets the number of times a pattern will be repeated. Set at 201, the pattern will sew an infinite number of repeats.	1	1 ~201 (201: infinite)
16 	Matrix	Pattern arrangement controlling the number of times a pattern repeats vertically and horizontally.	0	0 : OFF 1 : ON

No. & Icon	Parameter	Function	Default Value	Range of Values
17 	V Repeat	When using Matrix, the number of patterns in the V and H directions. Maximum number of patterns (V and H repeat) in a Matrix is 400.	1	1 ~400 Total of repetition (V+H) =400
18 	H Repeat			
19 	V Space	Space between patterns in the left to right direction.	0	-1000mm ~1000mm
20 	H Space	Space between patterns in the front to back direction.		
21 	Start Dir	Sets the direction the matrix will be sewn.	0	0~7  0 1 2  3 4 5  6 7
22 	Swing Type	Increases/decreases the width of Satin stitches sewn, according to the value set in Machine Conditions parameter #14 Swing.	0	0 : V and H  1 : V(X) only  2 : H(Y) only 

3. Program Barcodes

Change Program settings for design data using Barcode scanning.

Once in Drive mode, the program settings can not 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



◇ “Item and Value Barcode” Identifies
which parameter item to change and the
new value



◇ “OK Barcode” Saves new setting and exits
Program mode



* The Barcode examples above would be used to change Item 3 “ROT pattern” to 1.

Please refer to “Section 3-2. Barcode list” in this chapter 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. Barcode list for changing Program settings

Please use the following (2) barcodes to start and finish the change process.

No	Item	Barcode
1	Starts the change process	\$PROGRAM\$
2	Finishes the change process	\$OK\$



Please use the following barcodes to change program item and value.

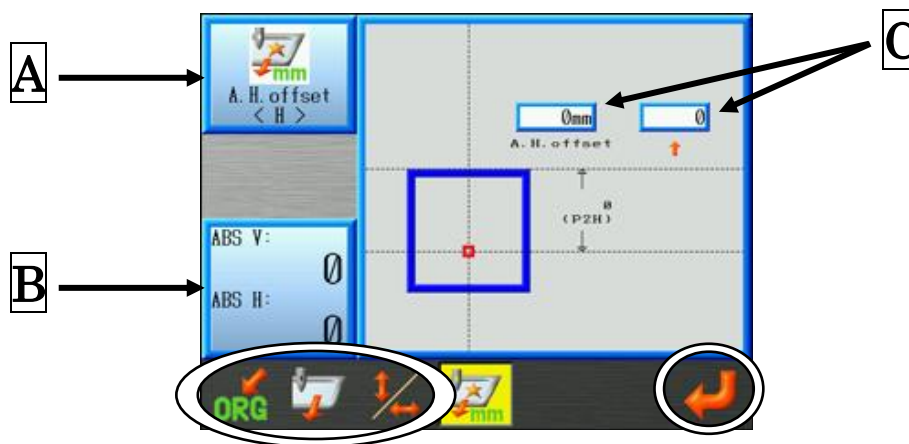
No	Item	Barcode
1	V scale	\$001/?????\$
2	H scale	\$002/?????\$
3	ROT pattern	\$003/?????\$
4	Angle	\$004/?????\$
5	Origin	\$005/?????\$
6	Socks	\$006/?????\$
7	Applique	\$007/?????\$
8	A.H.offset	\$008/?????\$
9	A.V.offset	\$009/?????\$
10	Frame	\$010/?????\$
11	F.H.offset	\$0011/?????\$
12	F.V.offset	\$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. Applique and Frame Offsets using the Jog keys

By moving the frame with the **Jog keys**, you can set the “A.H.offset” and “A.V.offset” for the “Applique” parameter, or set the “F.H.offset” and “F.V.offset” for “Frame” parameter.

- 1) Press the **Design Edit Key** .
- 2) Select a design and press the **B-key**  icon to open the Program list.
- 3) Use **Jog keys** to select one of the following parameters that you want to program.
 - “A.H.offset” → Program setting #8, for Applique offset in the H direction.
 - “A.V.offset” → Program setting #9, for Applique offset in the V direction.
 - “F.H.offset” → Program setting #11, for Frame offset in the H direction.
 - “F.V.offset” → Program setting #12, for Frame offset in the V direction.
- 4) Press and hold the **Origin key** to display the set up screen for the offset.
(Caution! This action moves the frame to the origin set point of the design)




The red square displays the current design position.

The blue square displays the design size.

A Displays the selected offset parameter.


B Displays the current design position. (in 0.1 mm units)


C Displays the current amount of offset. (Left box: 1mm units Right box: 0.1mm units)

Press the **C-key**  to switch H and V direction offset settings if necessary.

「A.H.offset」 ↔ 「A.V.offset」

「F.H.offset」 ↔ 「F.V.offset」


Press the **D-key**  if necessary to exit and return to the Program list without setting the amount of offset. (The actual icon may vary, depending on the selected parameter)

Press the **B-key**  if necessary, to move the frame to the currently set offset position.

5) Use the **Jog keys** to move the frame to the desired offset position.


*Use the up-down **Jog keys** to set an H direction offset.

Use the right-left **Jog keys** to set a V direction offset

Press and hold the **A-key**  if necessary to move the frame back to the design origin.

(Caution! This action moves the frame to the origin set point of the design.)

6) Press the **G-key**  to enter the new offset setting.

7) Press the **D-key**  to save the setting. This action also moves the frame to the origin of the design and returns you back to the Program list.

(Caution! This action moves the frame to the origin set point of the design.)

5. 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 MC software limits (#22 “Right limit”, #23 “Left limit”, #24 “Back limit”, and #25 “Front limit”)
- * This function is the same as “Chapter 7. 6 Setting Sub-Soft limits”, but the operation is a little different.

- 1) Press the **Design Edit Key**



- 2) Select a design and press the **B-key**



icon to open the Program list.

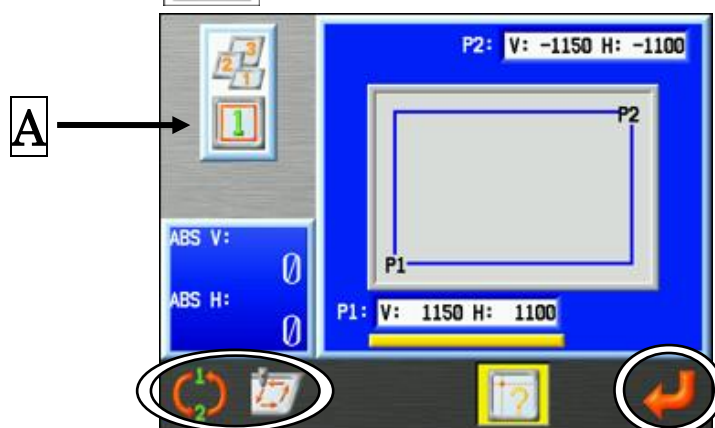
- 3) Use the **Jog keys** to select #14 “Frame type” setting.
- 4) Change the #14 “Frame type” setting to 1, 2, or 3.

The “0” setting is the size of the frame as set by the MC software limits and cannot be used to set the Sub-Soft limits. Selecting “0” will show and confirm the maximum limits, but you cannot change them in this menu.

- 5) Press the **E-key**



to display the Sub-Soft limit menu.



A Displays the currently selected frame type (example type 1 shown).

Use the **E-key**




if necessary, to exit to the Program list.

- 6) Set the P1 position.

Use the **Jog keys** to move the frame to the desired lower left corner position.

* Note! Confirm that the P1 position is underlined on the display.

Pressing the **A-key**  will toggle between the P1 and P2 positions.


- 7) Press the **G-key**  to enter this position for P1.

Afterwards, the display will automatically switch to the P2 position.

- 8) Set the P2 location

Use the **Jog keys** to move the frame to the desired upper right corner position.

- 9) Press the **G-key**  to enter this position for P2.

- 10) You can press the **B-key**  to check and trace the current frame type setting range.

To confirm whether a design while actually fit in the frame type, use the frame trace instructions as explained in “*Chapter 9, 5. Trace*”.

6. Matrix Embroidery Set Up (Design Repeats)

This feature automatically repeats the design in the Embroidery area. The layout is calculated from the distance between the centers of the pattern and the quantity entered.

*This setting resets Program settings, #06: Socks and #15: Repeat.

- 1) Press the **Design Edit Key**



- 2) Select a design and press the **B-key**



- 3) Use the **Jog keys** to select item 16, Matrix.

- 4) Set the value to 1.

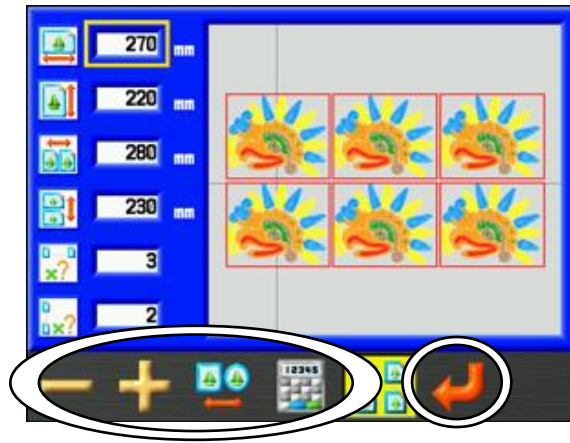
- 5) Press and hold the **Origin key** to display the matrix set-up icons.




- 6) Press the **E-key**



and the Matrix embroidery Design Repeats Set up screen displays.



Press the **E-key**  when finished to go back to the Program list.

7) Use the up and down **Jog keys** to select the item you want to change.



: Sets the border width around the pattern in millimeters.



: Sets the border height around the pattern in millimeters.



: Sets the distance between patterns in the V(X) direction in millimeters.

*The distance is measured from the center of the patterns (start point).



: Sets the distance between patterns in the H (Y) direction in millimeters.

* The distance is measured from the center of the patterns (start point).





: Sets the pattern repetition in the V(X) direction.




: Sets the pattern repetition in the H(Y) direction.

8) Press the **A-key**  to decrease the setting value.

Press the **B-key**  to increase the setting value.

Note: Press the **D-key**  to change values using the Numeric Entry Menu.

*Refer to “Chapter 3, 10. Numeric Entry” for details.

9) Press the **C-key**  to set the border shape. (Square or circle)

10) Press the **F-key**



to set the new values and view the changes made.

Note: The following Program parameters are automatically set with this feature.

#17: V repeat

#18: H repeat

#19: V space

#20: H space

7. Automatic Matrix Embroidery Set Up

The feature automatically lays out the maximum number of patterns in the embroidery area.

*This setting resets Program settings, #06: Socks and #15: Repeat.

- 1) Press the **Design Edit Key**



- 2) Select a design and press the **B-key**



icon.

- 3) Use the **Jog keys** to select item 16, Matrix.

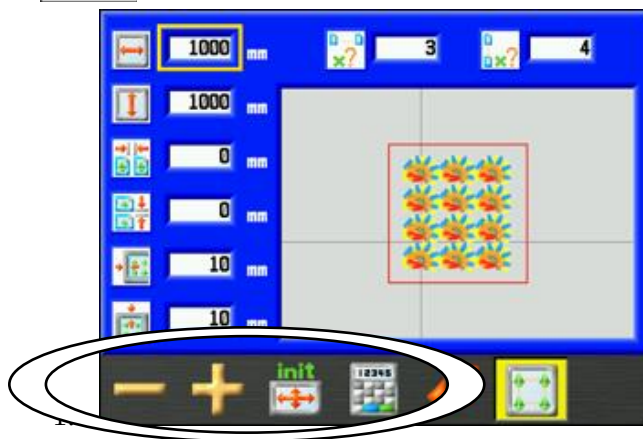
- 4) Set the value to 1.

- 5) Press and hold the **Origin key** to display the matrix set-up icons.

- 6) Press the **F-key**



to display the Automatic Matrix Embroidery Setup screen.



Press the **F-key**



when finished to go back to the Program list.

- 7) Use the up and down **Jog keys** to select an item to change.



: Sets the V direction area of the Frame size in millimeters.

*The default value is the Frame limit settings, as set in MC.



: Sets the H direction area of the Frame size in millimeters.

*The default value is the Frame limit settings, as set in MC.



: 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.

8) Press the **A-key**  to decrease value setting.

Press the **B-key**  to increase value setting.

Note: Press the **D-key**  to change values using the Numeric Entry Menu.


*Refer to “Chapter 3, 13. Numeric Entry” for details.

9) Press the **E-key**  to save the displayed set-up and program the matrix settings.

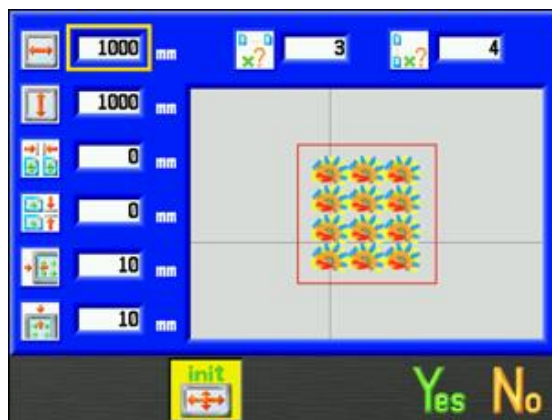
Note: The following Program parameters are automatically set with this feature.

#17: V repeat #18: H repeat

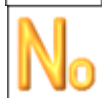

#19: V space #20: H space.

Note: To **Initialize** the embroidery area to MC default settings, press the **C-key** .

The following window appears to confirm the initializing.



Press the **F-key**  to accept.

Press the **G-key**  or **C-key**  to cancel.

Chapter 9 Embroidery

This chapter contains information on sewing patterns in memory.

1. Start Point
2. Drive Mode
3. Speed
4. Speed Setting per Needle
5. Trace
6. Frame Outline Display
7. Frame Outline Centering
8. Drive Zoom
9. 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. Standby Mode (Resume)

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 key** to put the machine in Drive mode. The start point is now registered for the design. Refer to “*Section 2. Drive Mode*” in this chapter for more information.

*Designs just loaded into memory do not have Start Points, until entered in to Drive.

- 3) Press the **Origin Key** to move the Pantograph to the Start Point already registered.

*In Stand-By mode, the Pantograph moves to the Start Point of the selected design in memory, when the **Origin key** is pressed.

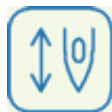
*If a design has just been loaded, and never entered into Drive mode, the Pantograph moves to the machine's origin point when the **Origin key** is pressed.

2. Drive Mode

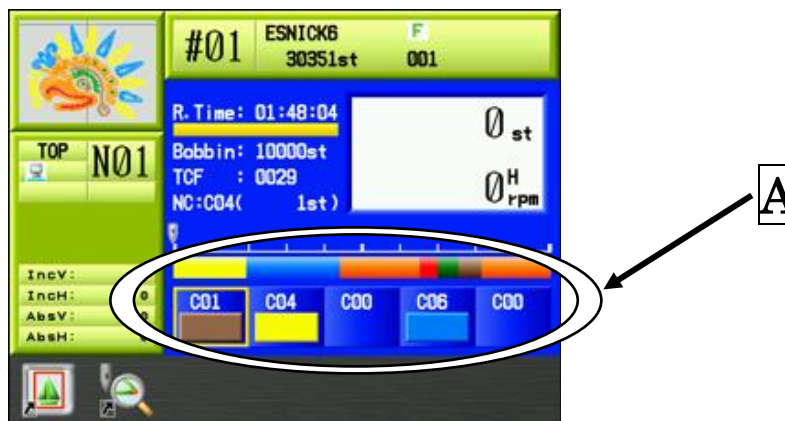
Instructions for putting the machine in Drive mode

The machine can only sew when the machine is in Drive mode.

- 1) Press the **Drive Key**



- 2) The following Drive mode screen appears. *The screen color changes.



R.Time : Estimated remaining time to the end of sewing

Bobbin : Remaining stitch count for the Bobbin counter

A shows the Color Change Function Codes.

- 3) Press the Start key



or Stop key



to Stop/Start sewing.

- 4) To exit this mode, press and hold the Drive key



until the beeping sound stops

and the screen returns to the Stand-by display.

3. Speed

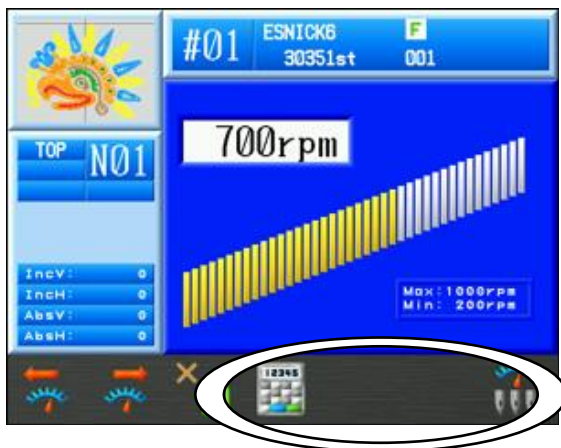
Instructions on changing the machine speed

The sewing speed can also be changed while the machine is sewing.

- 1) Press the **Speed key**



- 2) Speed Menu appears.



- 3) Press the **A-key**



to reduce the speed by 10 rpm.

Press the **B-key**



to increase the speed by 10 rpm.

If you press and hold the **C-key**



and then press the **A** or **B** key, the speed is change by **50 rpm** increments.

Note: Press the **D-key**



to change the speed using the Numeric Entry Menu.

*Refer to “*Chapter 3, 13. Numeric Entry*” to enter the speed.

- 4) Press the **Speed key**



again to go back to the Start Menu.

*The display will automatically go back to the Start Menu if no keys are touched for several seconds.

4. Speed Setting per needle

This limits the max machine speed per the needle being sewn.

4-1. Setting the speed per the needle

Speed setting per needle.

- 1) Press the **Speed key**



- 2) Press the **G-key**



to display the speed setting screen per needle.



“Value” : Displays the speed number for each needle.

0 : Turned Off. No speed limited applied.

1~10 : Speed limited by speed number (Rpm).

- *Press the **G-key**



to return the speed setting screen.

- 3) Use the **Jog keys** to select a needle number to be adjusted.

- 4) Press the **A-key**



to decrease the speed number.

Press the **B-key**



to increase the speed number.

Press the **C-key**



to display the numeric entry menu to input the number.

Please refer to “Chapter 3, 13. Numeric Entry” to input the speed number.

4-2. Changing the speed number setting

Change the setting speed.

- 1) Press the **Speed key**



- 2) Press the **G-key**



to display the speed setting per the needle screen.

- 3) Press and hold the **F-key**



to display the speed number setting screen.



- *Press the **G-key**



again to return to the speed setting per needle screen.

- 4) Select the speed number to be set, using the **Jog keys**.

- 5) Press the **A-key**



to reduce the setting speed by 10rpm.

Press the **B-key**



to increase the setting speed by 10rpm.

Press the **A-key** or **B-key**, while pressing the **C-key**



setting value by 50rpm.

Press the **D-key**



to display the numeric entry menu to set the rpm.

Please refer to “Chapter 3, 13. Numeric Entry” to input the setting speed.

- 6) To initialize a speed setting, select the speed number using the **Jog keys**.

- 7) Press and hold the **E-key**



to **initialize** the selected speed setting.

5. Trace

5-1. Perimeter trace


**Be sure the Frame Limit parameters in the MC (Machine Condition) are correctly set before using this feature.*

**The 4-corner trace takes into consideration any of the Program parameters that may have been altered.*


The Pantograph makes a 4 corner trace of the design to ensure proper placement of the Pantograph. This feature is only available in Drive mode and SHOULD be done before sewing.

- 1) Press the **Drive Key**  to enter Drive Mode.

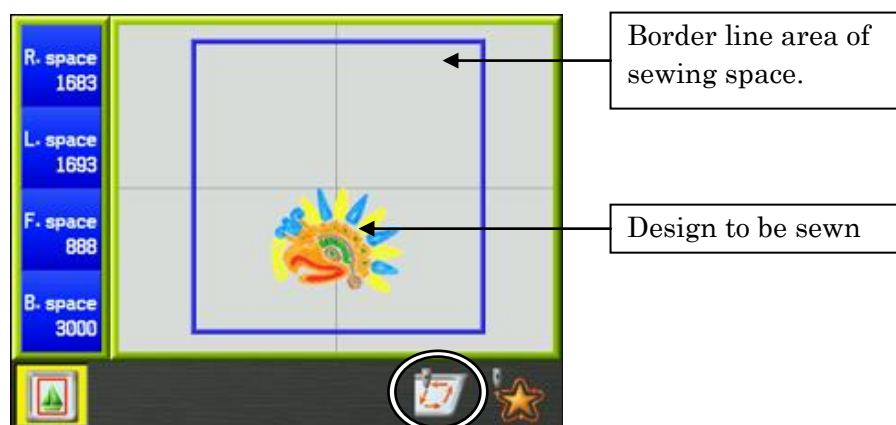
- 2) Press the **Design Edit key** .

- 3) Press the **G-key** .



- 4) Press the **A-key** .

- 5) The Trace screen appears.



The following information is shown on this page:

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

*Press the **A-key**



again to go back to the Drive Mode screen.

- 6) The design moves as the Pantograph moves with the **Jog keys**.

The borderline is normally shown in Blue. However, as the design gets closer to the line, it turns to yellow, then red.

- 7) Press the **F-key**



to start the Perimeter trace.

*If the design interferes with the border line, the machine makes a beep sound and stops the trace in that direction. Relocate or resize the design so it fits within the border.


5-2. Outline Trace

**Be sure the Frame limit parameters in the MC (Machine Condition) are correctly set before using this feature.*

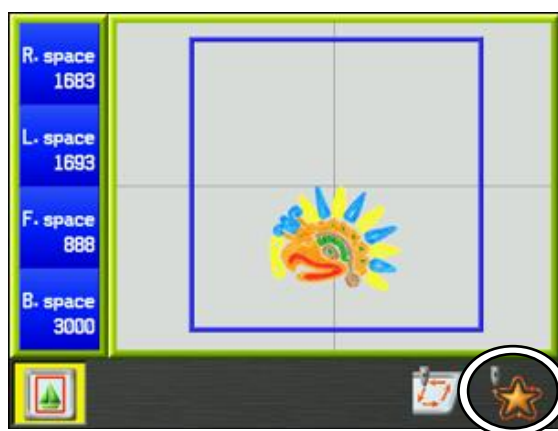
The Pantograph traces the outline of the design to be sewn to see if the machine is sewing at the right position and right size. This feature is only available in Drive mode and BEFORE sewing begins. *The outline reflects the Program parameters that have been changed.

- 1) Press the **Drive Key**  and open the Drive Mode Screen.

- 2) Press the **Design Edit key** .

- 3) Press the **G-key** .

- 4) Press the **A-key** .



- 5) Press the **G-key**  to start the Outline trace.

**If the design does not fit within the border line, the machine makes a beep sound and stops the trace in that direction.*

6. Frame Outline Display

Displays the design and frame outline to check if the design fits in the frame.

Please refer to “*Chapter 11, 11. Frame Outline Display*” to select a frame outline file.

- 1) Open the perimeter trace screen using procedures 1) ~ 5) in “5-1. Perimeter trace”.
- 2) Perimeter trace screen.



Design and selected frame outline are displayed.

Thick Blue outside line : frame outline

Thin Blue Inside line : margin line (margin has to set up or it is not displayed)

If a Sub-soft limit is being used, the sub-soft limit is also displayed.

7. Frame Outline Centering

Moves the design automatically to the center of the frame outline.

Please refer to “*Chapter 11, 11. Frame Outline Display*” to select a frame outline file.

- 1) Open the perimeter trace screen using procedures 1) ~ 5) in “5-1. Perimeter trace”, as shown below.




- 2) Press and hold the **C-key**  to center the design in the frame.



8. Drive Zoom

Drive Zoom is only available in Drive mode.

When the **B-key**  is pressed, the display zooms in on the current stitch position.

If the machine is sewing, the display zooms in on the stitch being sewn the instant the button is pressed, and the machine keeps sewing.

- 1) Select a design and put in Drive mode by pressing the Drive key




- 2) Start sewing using the start bar or start switch.

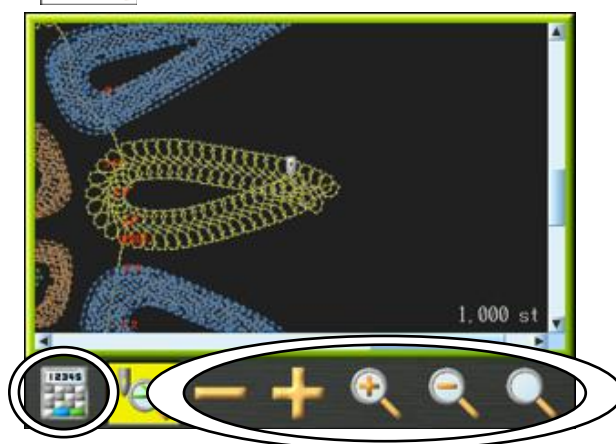
- 3) Press the **Design Memory** key



- 4) Press the **G-key**



- 5) Press the **B-key**  to Zoom in on the stitch being sewn.



The Display zooms in on the current stitch being sewn the moment the **B-key** was pressed.



The current stitch number is displayed in the lower right corner of the screen.

Press the **B-key** again to return to the design memory list.



6) Scaling the display

Press the **E-key** to zoom in on the data for the current stitch position.



Press the **F-key** to zoom out on the data for the current stitch position.



(Maximum zoom out is the whole display)

Press the **G-key** to display the whole design.



7) The **Jog keys** can be used to move the display position when zoomed in.

8) Change the displayed stitch position.

Press the **C-key** to back up 1 stitch in the design.



Press the **D-key** to advance 1 stitch in the design.



Press the **A-key** to use the numeric entry menu to enter a stitch number.



Please refer to “*Chapter 3, 13. Numeric Entry*” to input a number.

9. Float

Float moves the Pantograph through the design without sewing.

*This function is only available in Drive Mode.

- 1) Press the **Float key**



and the Float screen appears.



A: Displays the current stitch number and *repeat number.

* The Repeat number is only displayed when either Item 15 “Repeat” or Item 16 Matrix is activated in Program settings. The exception is Item 15 Repeat being set to 201 for limitless repeats. In this case Repeat number is not shown.

- 2) Push the Start switch to Float, stitch by stitch, thru the design without sewing.
- 3) To exit Float mode, stop the machine with the Stop switch and then press the

Float key



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 **Float key**



and the Float screen appears.



- 2) Press the **A-key**



to decrease the stitch number.

Press the **B-key**



to advance the stitch number.



* If you press and hold the (A or B) keys, the stitch number decreases/increases by 20 stitches.

* If you press and hold the **C-key**  and then press the (A or B)-key, the stitch number decreases/increases by 1000 stitches.

Press the **F-key**



to use the numeric entry menu to input the stitch number.

* Repeat Designs. Use the **A-key**  or the **B-key**  to advance to the next repeated design, as followings.

- The current stitch number needs to be near the end of the design to advance to the next repeat design, or near the beginning of design to back up into the previous repeat design.

* When using the numeric entry menu to advance to a repeat design, please go to step 3. otherwise go to step 6.

- 3) Use the numeric entry menu to input the stitch and/or repeat number for the high speed float.



Stitch : Displays the available range of stitch numbers.

Input the stitch number to float to.

Repeat : Displays the available range of repeat numbers.

Input the design repeat number to float to.

- 4) Press the **B-key**  to change Stitch and Repeat input boxes.

Select **1. Stitch** to input a stitch number.

Select **2. Repeat** to input a design repeat number.

(The box that is selected has a Red outline around it)

* The menu for changing Repeat numbers is only displayed when either Item 15 “Repeat” or Item 16 Matrix is activated in Program settings.

- 5) Input the number of stitches and repeats.

* Please refer to “*Chapter 3, 13. Numeric Entry*” for inputting numbers.

- 6) Press the **G-key**  and the Pantograph will go to the position of the stitch number selected.


11. High Speed Float (By Color Change)


Instructions for floating to a specific color change in the design data



*This function is only available when operating Float in Drive mode.

- 1) Press the **Float key**  and the Float screen appears.



- 2) Press the **D-key**  to go back to the previous color change.

Press the **E-key**  to advance to the next color change.

* Repeat Designs. Press the **D-key**  or the **E-key**  to advance to the next repeated design as followings.

- The current stitch number needs to be near the end of the design to advance to the next repeat design, or near the beginning of design to back up into the previous repeat design.

- 3) Press the **G-key**  to move the Pantograph to the selected color change position.

12. High Speed Float (By Name Drop)


While sewing in Name Drop, you can select any name in the design to start sewing or sew again if needed.

*This function is only available when the machine is Name Drop function mode.

(Please refer to “Chapter 6, 8. Name Drop” for using Name Drop.)


- 1) Press the **Memory key**  to display the memory screen.



- 2) Press the **F-key**  to display the Name Drop menu.



- 3) Use the **Jog keys** to select a name in the name list.

- 4) Press the **G-key**  to enter the name and the frame will move to the start position of the selected name.

(Caution! Make sure the area around the frame is clear, before pressing the **G-key**.)

13. Re-Setting Origin

There is a special icon for re-setting origin for a design in Drive in the 2nd menu of the Design Edit menu.

To move a Design position to another position after it's started sewing, use the Icon shown below circled in Red. Previous machine models used the B + C button to activate this function.

Instructions to use:

- 1) Have a design in Drive mode and stop where you want to reset origin.
- 2) Use the **Jog keys** to move the pantograph to the new position.

- 3) Press the **Manual Key**



- 4) Press the shift key



- 5) Press and hold the **A-Key**




for approximately 5 seconds until the confirmation screen appears.



6) A Yes/No Confirmation Screen will appear.




Press the **F-key**  to make the change.

Or Press the **G-key** , or **A-key**  to cancel and exit the menu.

Press the **Manual Key**  to return back to the normal Drive screen.


14. Teaching Color Codes (While sewing)

Instructions for changing the color sequence while sewing

- 1) Press the **Drive Key**  and the Drive mode screen appears.
- 2) Press the **Color Change key** .
- 3) Press the Start key .
- 4) The sewing stops at the stitch count where the Color Codes or the Stop Codes are set in the pattern.
- 5) The controller shows the current code assigned.



- 6) Press the **A-key** , or **B-key**  to change the Color code.

Press the **C-key**  to convert the code to a Stop code.



- 7) Push the Start switch to resume sewing with the new code.

- 8) Stop the machine and press the **Color Change key**  to exit teaching mode.




15. Teaching All Function Codes (While sewing)

Instructions for changing all function codes while the machine is sewing

Use this feature with the High Speed Float (By Stitch Count) to change the Function code of the desired stitch. *Refer to “Chapter 13, 1. Function Codes” for function code details.

- 1) Press the **Drive Key**  and the Drive mode screen appears.
- 2) Float to the desired stitch number you want to insert or change a function code on.
- 3) Press and hold the **Color Change key**  for 2 short beeps.
- 4) The Function Code screen appears.



- 5) Press the **A-key**  or **B-key**  to change the Function code.
- 6) Press the **G-key**  to update the Memory with the new Function Code.

Press the **Color Change key**  again to finish.

16. Stitch Back

Instructions for backing up the machine to repair a missed stitch

- 1) If sewing, stop the machine with the Stop key



- 2) Push and hold the Stop switch to start the stitch back.

- 3) If you Stitch back past 30 stitches, the machine will continue to stitch back if you release the Stop switch. Use the Start switch in this case, to stop the Stitch back.

- 4) After stitching back to the desired position, push the Start key




to sew over the

backed up stitches.

17. Standby Mode (Resume)


When the power to the machine is cut while in Drive mode, the machine can resume sewing in the position where it had left off. This is called Standby.


- 1) Turn ON the power to the machine.
- 2) Press the **G-key**  to seek Origin.



- 3) The Standby screen appears.



Press the **F-key**  to continue sewing.

Press the **G-key**  to exit Standby.

Chapter 10 Network

This chapter contains information on use the Network program.

1. Before Using the Network System
2. Operator Codes
3. Break Call
4. Operator Call
5. Time-Out
6. Downloading Designs (Direct Downloading)
7. Downloading Designs (Scheduled Downloading)
8. Free Download mode
9. Barcode Scanning
10. ABC mode for LAN
11. Upload Designs (Server)
12. COM protocol mode

1. Before Using the Network System

*Refer to *LEM Server Instruction Manual* for Server software operation.

1) Introduction

- The server can send designs to designated machines.
- Operators can download designs from the server.
- The machine can upload designs to the server.
- The Network system can automatically recover connections between the server and the machines.

2) Operations

The network has 2 major functions.

Logging machine status



Uploading /Downloading designs



3) File formats for the network system

The files downloaded from the server are converted into PRJ file. *1

4) To use the network system, the following things are required:

- BEXS Automat

[Barudan Options]

- Barudan LEM Server software

[Items prepared by User]

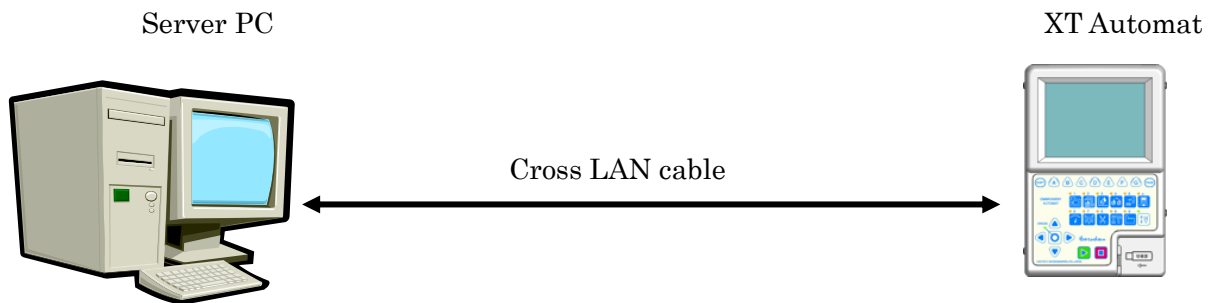
- Personal Computer with Windows 2000, Windows 2003, Windows XP , Windows Vista or Win 7 with a LAN connection. *Refer to *LEM-Server Instruction Manuals* for details.
- LAN cables *2
- HUB/Switch *3

*1: A PRJ file contains the design data file, Program parameters and a bitmap image of the design.

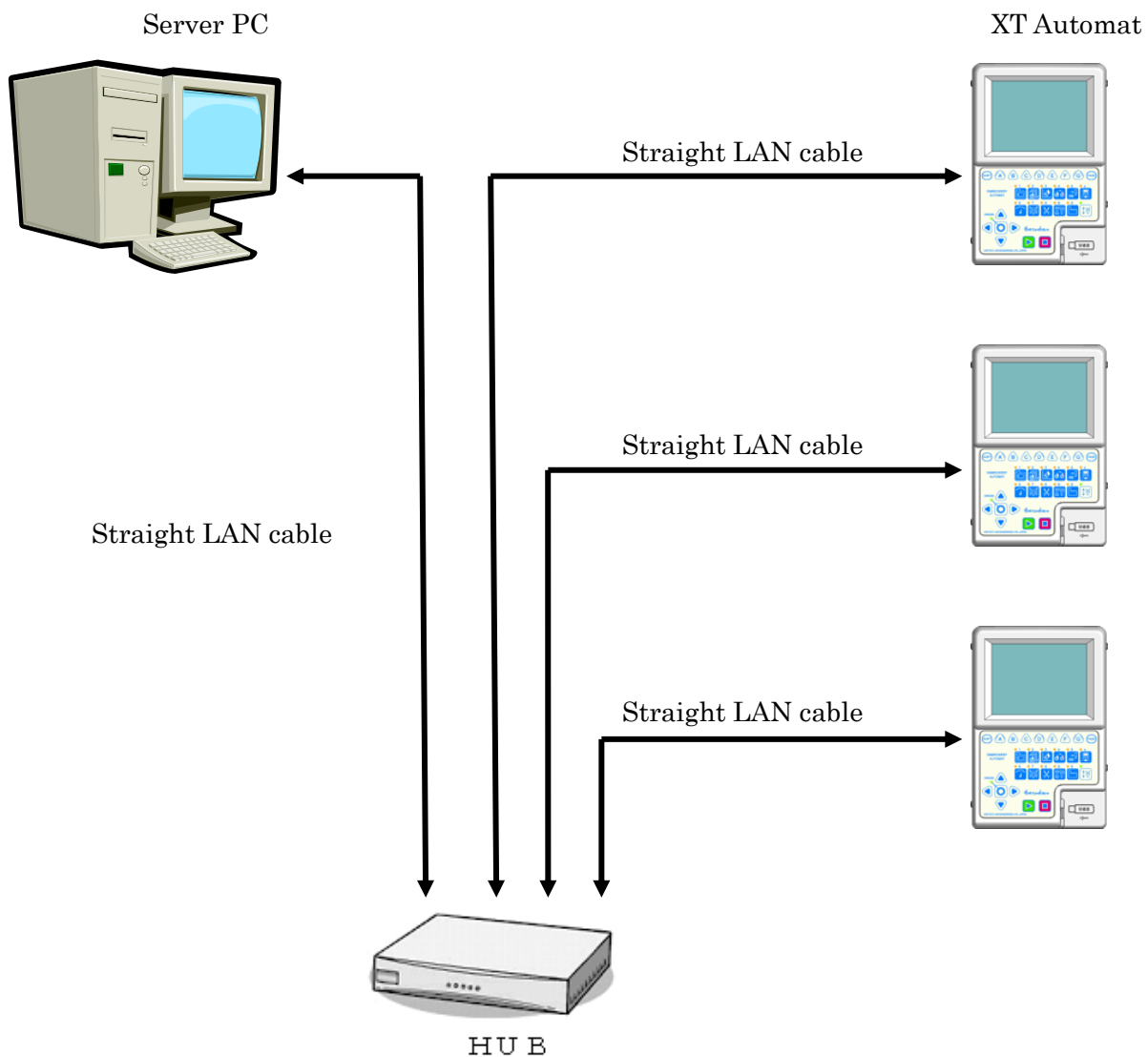
*2: LAN cables may vary due to connection schematic.

*3: A Hub or Switch will be required when connecting more than 2 machines to a server PC.

Example 1: One server PC and one Barudan XS series embroidery machine
(Using one Cross LAN cable.)



Example 2: One server PC and multiple Barudan XS series embroidery machines
(Using straight LAN cables.)



2. Operator Codes

Instructions for registering operator codes with the Automat

*Refer to the *LEM –Server Instruction manuals* for software operation.

2-1. Reporting an Operator Code

Reporting the current operator to the server.

- 1) Press the **Network key**



- 2) Network screen displays.



- 3) Press the **B-key**



to view the Operator Code list.



- 4) Choose an Operator Code.

- 5) Press the **G-key**



to send the operator code to the Server.

- 6) Press the **B-key**



again to go back to the Network screen.

- 7) Press the **Network key**



again to go back to the Start screen.

2-2. Entering a new Operator Code

Instructions for entering a new operator code or changing one with the Automat

- 1) Press the **Network key**



- 2) Press the **B-key**



to view the Operator Code list.

- 3) Use the **Jog keys** and select an operator code to change.

- 4) Press the **D-key**



- 5) Enter an operator code.

*Refer to “*Chapter 3, 14. Character Entry*” for entering a code.

*An operator code can have a maximum of 30 characters.

2-3. Operator Letter mode

Change the maximum number of letters for the operator code.

- 1) Press the **Network key**



- 2) Press the **B-key**



to view the Operator Code list.

- 3) Press and hold the **E-key**



to display the operator letter mode menu.



- 4) Press the **A-key**



to change the letter mode to either 8 or 30 letters.

- 5) Press the **E-key**



to return to the operator code list.

3. Break Call

Instructions on how an operator reports that they are on break and that the machine is not sewing. *Refer to *LEM-Server Instruction Manual* for software operation.

- 1) Press the **Network key**



to open the Network screen.

- 2) Press the **C-key**



to start Break. Break message appears.



- 3) Press the **C-key**



again to quit Break.

4. Operator Call

Instructions for placing a call to the server

*Refer to the *LEM-Server Instruction Manuals* for software operation.

4-1. Call Notifications

This function allows the operator to pick what type of call notification is sent to the server.

- 1) Press the **Network** key  to open the Network screen.



- 2) Press the **D-key**  to call the server.





The list below contains the default notifications. These notifications can be customized and new ones added as shown in the next section of this chapter.

No.	Title	Content
00	(Old version call)	* Default call
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	Worker_gets_sick	Operator is hurt or ill
07~19	(none)	Blank (Can be programmed)
20	Other_reason	Other reasons

* This is the default operation call that was available with the previous software version. This call has no reason associated with it, unlike the rest of the call numbers.

- 1) Use the **Jog keys** to select a notification number in the list.

- 2) Press the **F-key**  to send the notification to the server.

Note: The **F-key**  is not displayed until you select a notification in the list.

4-2. Editing Call Notifications

The information in the call notification can be customized.

- 1) Press the **Network** key



to open the Network screen.



- 2) Press the **D-key**



to display the operator call screen.



List of call notifications

- 3) Use the **Jog** keys to select a notification to edit.

- 4) Press the **D-key**



to open the edit menu for the selected notification.

Edit the notification information. Refer to “*Chapter 3. 14. Character Entry*” for details.

Note: You cannot edit the “00:Old version call” notification.

Press and hold the **E-key**



if necessary to initialize the notification. This will display a confirmation message. Please refer to “*Chapter 3, 10. Confirmation Message*” for more details.

5. Time-Out


Instructions on reporting that the machine is not in production

*Refer to the *LEM-Server Instruction Manuals* for software operation.


- 1) Press the **Network key**  to open the Network screen.

- 2) Press the **G-key** .



- 3) Press the **A-key**  to report the Time-Out. The screen color changes.

Note! While in Time-Out mode, you have to press and hold the Start switch on the machine if you want to sew something in this mode.

- 4) Press the **A-key**  again to report that the machine is ready for production.
(The screen color changes back.)

6. Downloading Designs (Direct Downloading)

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.

*Refer to the *LEM-Server Instruction Manuals* for software operation.

6-1. Searching and Downloading a Design by its Name

- 1) Press the **Network key**

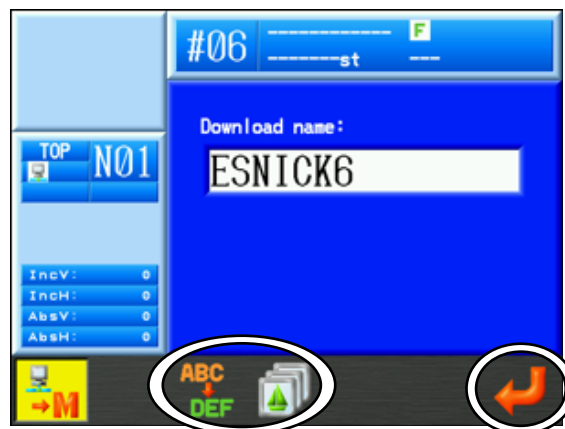


to open the Network screen.

- 2) Press the **A-key**



- 3) The **Direct Download screen** displays.



To cancel, press the **A-key**



again to go back to the **Network screen**.

- 4) Press the **C-key**



to enter the design name to download.

Refer to “Chapter 3, 14. Character Entry” for details entering the name.

- 5) Press the **G-key**



to enter the selected name.

* To select a download memory location, press the **D-key**



to display the list of

designs in memory. Select a memory location to download design in to.

- 6) Press the **G-key**  again to start downloading.

During the download, the following information screen is displayed.



- A** The name of the design and total stitch number
- Width Width of the design
- Height Height length of the design
- 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 pattern, measured in tenths of millimeters.
- P2 Distance between the start point and top right corner of the pattern, measured in tenths of millimeters.
- B** The status time bar of the design being downloaded


- 7) When the download finishes, the screen will go back to the **Start screen** with the design selected on the screen.


- * Designs downloaded from the Server are indicated by  on the screen.

(Please refer to “Chapter 3, 7. Information Screen” for network icon details).

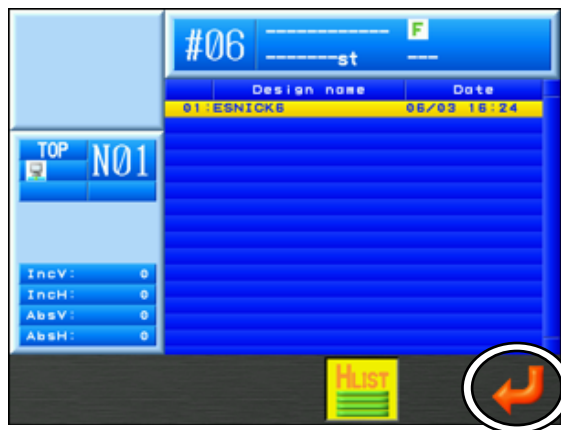
6-2. Downloading from the Download History

- 1) Press the **Network key**  to open the Network screen.

- 2) Press the **A-key** .

- 3) Press the **E-key** .


- 4) **Download History** displays.



- 5) Use the **Jog keys** and select a design from the Download History list.

- 6) Press the **G-key**  to enter the selected design and go back to the previous menu.

- 7) Press the **G-key**  again to start downloading.

*Designs downloaded from the Server are indicated by  on the screen.

(Please refer to “Chapter 3, 7. Information Screen” for network icon details).

6-3. Multi Search Option.

This option allows you to search a design name in LEM direct download mode and 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.

(Please refer to "*The LEM-server manual*" about server operation details)

*The following software versions or newer are needed for the Multi-Search option.





BEXS (OS) : V3.70 R00

LEM Server Pro 3 : V4.01.00

LEM Server Jr. : V2.08.00

Design File Server : V1.08.00

The Multi Search Option is not available on previous software versions.

- 1) Press the **Network key**  to open the Network screen.
- 2) Press the **A-key**  to display the direct download screen.
- 3) Press the **C-key**  to enter the design name to search.
Refer to "*Chapter 3, 14. Character Entry*" for details entering a name.
- 4) Press the **G-key**  to start the search.
- 5) A list of matching designs names will be displayed.





6) Use the **Jog keys** to select a design in the list.

*Downloading will start automatically if there is only one design match.

*If you want to select several designs for downloading, use the following procedure:

- 1. Select a design and press the **Origin key**. An (*) will be shown beside the design to indicate it has been selected.
- 2. Choose more designs and press the **Origin key** to mark them.
- 3. If you want to cancel a chosen design with an (*), select the design again and press the **Origin key** to remove it.

Press the **F-key**  if necessary to select or de-select all the designs.

Press the **C-key**  if necessary to display the selected design information.

Refer to “*Section 6.1 Searching and Downloading a Design by its Name*” in this chapter about the Design Download information details.

7) Press the **G-key**  to download the selected design(s).

7. Downloading Designs (Schedule Downloading)

Instructions on downloading scheduled designs registered on the server.

Set the Network server application to **Scheduled Download Mode** beforehand.

*Refer to the *LEM-Server Instruction Manuals* for software operation.

7-1. Downloading from a schedule

Download the next scheduled design.

- 1) Press the **Network key**  to open the Network screen.

- 2) Press the **A-key**  and the **Schedule Downloading screen** displays.




Options:

- To view a design, use the **Jog keys** to select a design in the list and press the **C-key**



to display the design data information.

*Refer to “Section 6-1. Searching and Downloading a Design by its Name” in this chapter for design data details. Press the **C-key** again to exit.

- To select a download memory location, press the **D-key**  to display the list of designs in memory. Select a memory location to download the design in to

- 3) Press the **G-key**  to start downloading.

*You can only download the first design in the list. You cannot download the other numbered designs in the list.

- 4) When the download finishes, the screen will go back to the **Start screen** with the design selected on the screen

7-2. 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.

(Please refer to "*The LEM-server manual*" about server operation details)

*The following software versions or newer are needed for the Multi Schedule option.

BEXS (OS)	: V3.70 R00
LEM Server Pro 3	: V4.01.00
LEM Server Jr	: V2.08.00
Design File Server	: V1.08.00

The Multi Schedule Option is not available on previous software versions.

- 1) Press the **Network key**



to open the Network screen.

- 2) Press the **A-key**




and the **Schedule Downloading screen** displays:



- 3) Use the **Jog keys** to select a design to download.

*If you want to select several designs for downloading, use the following procedure:

1. Select a design and press the **Origin key**. An (*) will be shown beside the design to indicate it has been selected.
2. Choose more designs and press the **Origin key** to mark them.
3. If you want to cancel a chosen design with an (*), select the design again and press the **Origin key** to remove it.

Press the **F-key**  if necessary to select or de-select all the designs.

4) Press the **G-key**  to download the selected design(s).

8. Free Download mode

This mode allows you to select a folder of designs on the network using the LEM software. All the designs in this folder are available at the machine to download. This is similar to the COM protocol mode.

This Free Download mode has to be turned on in the LEM Design File Server program's Option menu.


(Please refer to “*The LEM-server manual*” about server operation details)

*The following software versions or newer are needed for the Free Download mode.

BEXS (OS)	: V3.70 R00
LEM Server Pro 3	: V4.01.00
LEM Server Jr	: V2.08.00
Design File Server	: V1.08.00

The Free Download mode is not available on previous software versions.

- 1) Press the **Network key**  to open the Network screen.


- 2) Press the **A-key**  to display the Free Download screen.



- 3) Use the **Jog keys** to select a design to download.

*If you want to select several designs for downloading, use the following procedure:

1. Select a design and press the **Origin key**. An (*) will be shown beside the design to indicate it has been selected.
2. Choose more designs and press the **Origin key** to mark them.
3. If you want to cancel a chosen design with an (*), select the design again and press the **Origin key** to remove it.

Press the **F-key**  if necessary to select or de-select all the designs.

4) Press the **G-key**  to download the selected design(s).

9. Barcode Scanning

Download designs from the server using the Barcode scanner.

This applies to Direct Download mode only.

9-1. Reading

The following 3 Barcodes are needed to download a design.

Download Barcode



Design Name Barcode



OK Barcode



- * The actual Design Name Barcode shown above is for design named “BARUDAN”. A barcode using the design name is needed to download a design. Please refer to “*Section 9-2. LEM Server Barcode list*” in this chapter for details.

- 1) Scan the “Download Barcode” to open **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 enter the design name and start downloading.

*Designs downloaded from the Server are indicated by  on the screen.

(Please refer to “*Chapter 3, 7. Information Screen*” for details.

9-2. LEM Server Barcode list and details

Please use the following barcodes for LEM server (Direct download mode only).

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\$

10. ABC mode for LAN

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.

10-1. Setting and Cancelling ABC mode

Set and cancel ABC mode for LAN

You can not set or cancel ABC mode while in Drive mode. You must be in Stand-by mode.

- 1) Press the **Network key**  to open the Network screen.

- 2) Press the **G-key** .



- 3) Press the **F-key**  to turn ABC mode on.

(ABC Icon has Yellow background when On)

When ABC mode is on, press the **F-key**  again to cancel ABC mode.

- 4) 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.

10-2. 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 key**  to open the Network screen.

- 2) Press the **A-key** .

- 3) The schedule list of designs is displayed (schedule download).



- 4) Press and hold the **F-key**  to skip the next scheduled design to be downloaded.

10-3. ABC Drive Mode

ABC 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 key**  to open the Network screen.

- 2) Press the **SHIFT key**.



- 3) Press the **A-key**  to turn ABC Drive On.

(ABC Drive Icon has a Yellow background when On).

Press the **A-key**  again to turn ABC Drive off.

11. Upload designs (Server)

The following instructions are for uploading designs from the automat to the server.

- 1) Press the **Network key** .

- 2) Press the **G-key** .



- 3) Press the **D-key**  to display the upload screen.



* To cancel, press the **D-key** again  to go back to the network view.

- 4) Select a design what you want to transfer to the computer.


- 5) Display information about the design.

* To upload a design without displaying information, please go to step 7).

- 6) Press the **C-key** .



Refer to “*Chapter 6, 2. Design Information*” for screen info.

- *Press the **C-key**  to go back to the upload screen.

- 7) Press the **G-key**  to start uploading.

- 8) After uploading the screen will go back to the main display.

12. COM Protocol Mode

COM Protocol mode is used with Design File Server to download designs.

This mode uses a serial cross cable (null modem) for connection.

*Refer to the Design File Server Instruction Manual for software operation.

- 1) Set the Network setting to COM protocol mode.

Refer to “Chapter 11, 4. Network” for making this setting.

- 2) Press the **Network key**



to show the COM protocol design list.



Options:

- To view a design, use the **Jog keys** to select a design in the list and press the **C-key**



to display the design data information. Press the **C-key** again to exit.

- To select a download memory location, press the **D-key**




to display the list of designs in memory. Select a memory location to download design in to.

- 3) Use the **Jog keys** to select a design in the list to download.

- 4) Press the **G-key**



to start downloading.

*Designs downloaded from the Server are indicated by  on the screen.

(Please refer to “Chapter 3, 7. Information Screen” for network icon details).

Chapter 11 Preferences

This chapter contains the following information.

1. Changing Machine Conditions (MC)
2. MC List
3. Sequin Adjusting Mode
4. Network
5. Setting Screen Colors
6. Setting Thread Color Display
7. Help Files
8. Date Setting
9. Software Version
10. Shortcuts
11. Frame Outline Display
12. Machine Information Display
13. Production Totals per day
14. Schedule
15. Automatic 1st Color function insertion

1. Changing Machine Conditions (MC)

Instructions on how to change Machine Conditions

- 1) Press the **Preference key**



- 2) Preferences setting screen below displays with various options.




- 3) Press the **A-key**





to display the (MC) Machine Conditions list.




- 4) Use the **Jog keys** and select a parameter to change from MC setting list.

5) Press the **A-key**  to decrease the value setting.


Press the **B-key**  to increase the value setting.

Press the **E-key**  to use the Numeric Entry menu.

Refer to “*Chapter 3, 13. Numeric Entry*” for entering value.

6) Press the **G-key**  to initialize settings. A Confirmation message will display.






*Refer to “*Chapter 3, 10. Confirmation Message*” for details.






7) After making changes, press the **Preference key**  again.

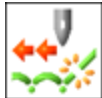


8) If any changes were made, a confirmation message appears.





*Refer to “*Chapter 3, 10. Confirmation Message*” for details.






2. MC List








Icons	Parameter	Function/Action	Range Of Values	Default Value
1 	Borer 1	Switches off the thread break detector for the needle fitted with a boring device. Enter the number of the needle that has the borer. Set to 0 if a boring device is not in use.	0 – 15 [Needles]	0
2 	Trim Jumps	Indicates the number of jump stitches that are needed for the trimmer to automatically cut the thread. If set at 3, when the machine reads three or more consecutive jump stitches, it will stop and trim the thread. If set at 0, the thread will not be trimmed by any jump stitch.	0 – 9 [Stitches]	2
3 	Lock Stitch	<p>After starting up after a trim, the machine sews lock stitches by the following methods:</p> <p>1,11 = Split stitch – splits the first stitch into two stitches.</p> <p>*2,12 = Small triangle–sews a small triangle.</p> <p>*3,13 = Back stitch = splits the first stitch into two stitches then backs over the same two stitches.</p> <p>Settings 11 –13 should be used if stitches less than 0.5 mm need to be sewn at the start of sewing.</p> <p>4 = Automatic lock stitches at start turned off. After a trim, auto jumps to next stitch to sew.</p> <p>14 = Automatic lock stitches at start turned off.</p>	1 - 4 and 11-14	1
4 	Clamp Type	<p>1 = Double clamp action (recommended for thick fabric: The clamp opens at 295 degrees, (depending on Clamp Off Angle of MSU1) on first stitch before the needle penetrates garment and closes at 0 degrees.</p> <p>2 = Single Clamp action (recommended for thin fabric): The clamp opens on the second stitch when sewing starts.</p> <p>3 = Clamp and fork action (recommended when a shorter tail is required at the start of sewing): The clamp opens on first stitch before the needle penetrates the garment.</p>	1 - 5	1
5 	Slow up Count	Controls the machine speed at the start of sewing to 180 RPM for the specified amount of stitches, then ramps up to the normal sewing speed.	3 – 15 [Stitches]	3







Icon	Parameter	Function/Action	Range Of Value	Default Value
6 	Trim Type	<p>0 = Trimmers OFF</p> <p>1 = Pantograph moves 0.4 mm to the left before needle penetrates and thread is trimmed.</p> <p>2 = Pantograph moves backwards on the last stitch sewn, before the needle penetrates and the thread is trimmed.</p> <p>3 = Same as 1, but the slider pulls thread before trimming for a longer trim tail.</p> <p>11 = The remnant of the 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.</p>	0 – 21	1
7 	Trim Dir	<p>Sets the direction the pantograph moves after a thread trim.</p> <p>0 = Moves in the H direction towards machine origin.</p> <p>1 = Moves in the V direction towards machine origin.</p>	0 - 2	0
8 	Trim Vector	Determines the distance in (0.1mm) that the pantograph moves just before a trim.	0 – 50 [0.1 mm]	15
9 	Low Speed	<p>Selects the speed at which the Low Speed function will operate. Used for slow speed sewing for precise stitches such as appliqué embroidery. Low speed function code needs to be inserted into design data in order to activate this parameter. M/C sews at slow speed after m/c reads low speed function code. A high-speed function code needs to be inserted and read to go back to normal sewing speed.</p>	200 to max. speed [rpm]	450
10 	Jump Divide	<p>Selects maximum stitch length that the m/c sews in a single head revolution. A stitch longer than the programmed value is divided into two stitches. Example, if set at 80 (8mm), when the m/c encounters a stitch 10mm long, it will divide it into two stitches.</p> <p>*Move-offs may occur when 15 & 20 head m/c are sewing long stitches with cap frames due to the weight of the frames. In this case, the problem may be corrected by lowering the value (try 40 - 70).</p> <p>*If different m/c /fabric or designs with various stitch lengths cause unexpected speed changes while sewing, this value can be changed to help solve the problem (try 40 - 70).</p> <p>*Needle breaks while sewing hard, overlapping fabric with long stitches may be corrected by lowering the value (try 40 - 70).</p>	30 – 127 [0.1 mm]	127









Icon	Parameter	Function/Action	Range Of Value	Default Value
11 	Stitch Back	<p>Controls the number of stitches the machine will automatically back up after a thread break. If the function is off, m/c will not back up after a thread break. Otherwise, m/c backs up the number of stitches entered in this parameter. E.g. set at 4, the m/c automatically backs up four stitches after a thread break.</p> <p>*This function is ignored for Chenille/Lock stitch machines.</p>	0 – 7 [stitch]	4
12 	Overlap	<p>Designates the number of stitches to overlap when automending. When embroidering towards the point of reversal, the other heads start working a few stitches before the point of reversal. *If beginning of sewing after automending stitches (with trimming) pulls the bobbin thread to the top side, these extra stitches may cover the bobbin. *If the head misses a few stitches after automending stitches (with trimming), these extra stitches may cover the blank spot.</p> <p>*When MC#13 Auto Start value is 0, the m/c does not stop after automending stitches. Therefore, this function will not be activated.</p> <p>*This function is ignored with Chenille/Lock Stitch machines/Sequin Device running (code “S1”)</p>	0 – 7 [stitch]	4
13 	Auto Start	<p>If On, during automend, the m/c automatically starts all heads without the operator using the Start switch when it has sewn the total number of stitches to automend.</p> <p>0 = On, Automatically starts after Automend. 1 = Off</p> <p>2 = Automatically starts after Automend and Appliqué (Appliqué must be turned on in program).</p> <p>3 = Automatically starts after Appliqué only (Appliqué must be turned on in Program).</p> <p>*M/C always stops after automending if manual trimming was done right before automending, regardless of setting.</p>	0 – 3	1






Icon	Parameter	Function/Action	Range Of Value	Default Value
14 	Swing	<p>The distance in tenths of millimeters that is added or subtracted from the length of a stitch. This added or subtracted length is only applied to stitches that have a change in direction from the previous stitch. Therefore, this parameter has the effect of increasing/decreasing the width of a satin stitch, like typical lettering. This parameter also has some effects on the width of a tatami stitch.</p> <p>E.g.3 If set to 1 (0.1mm/for each side), the width of a satin stitch is expanded to 0.2mm wider than before.</p> <p><i>Note: If you want to add/subtract the length of a stitch in one direction only, set “#22 Swing Type” in Program as follows:</i> <i>0 = Increase/decrease width in both directions.</i> <i>1 =Increase/decrease width in the Vertical direction only.</i> <i>2 = Increase/decrease width in the Horizontal direction only.</i></p>	-15 - +15 [0.1mm]	0
15 	Frame Start	<p>Determines when the frame starts to move in relation to the needle (degree wheel setting).</p> <p>*Parameter changes may improve thread break problems and stitch quality.</p> <p>Example: If set to 70, the Pantograph starts moving at 70 degrees. Needle clears the throat plate at around 60 degrees.</p>	45- 135 [degree]	70
16 	SF (Spectacle Frame) (Optional Frame being used in the USA)	<p>Sets the m/c up for a spectacle frame allowing you to execute pantograph movements exactly as programmed in digitizing.</p> <p>0 = Condenses the programmed pantograph movements (Jump stitches).</p> <p>1 = M/C moves per actual programmed pantograph movements. *Perimeter trace, Origin key, Frame (#10 in program), Seeking origin movement when m/c is powered On, are all disabled with setting 1. (DS V1.40 R00 ~)</p> <p>2 = M/C moves per actual programmed pantograph movements.</p> <p>* Set to 1 to avoid hitting the presser foot when using spectacle or sock frames.</p>	0 - 2	0
17 	Needle Down	<p>Determines if the needle is lowered after a thread break for easier threading.</p>	0 - 1	1

Icon	Parameter	Function/Action	Range Of Value	Default Value
18 	Appliqué	Sets presser foot height when the manual Appliqué command is executed. Parameter is set in degrees, referring to the presser foot height as shown on the degree wheel. *This method may be used for verification of start position.	60 – 120 [degree]	80
19 	T - Break	The m/c is designed to stop automatically when the top thread is broken. Normal value is 3, meaning the m/c requires three consecutive thread break detections before stopping. *If the m/c does not stop even though a thread break occurs, changing the value to 2 may correct the problem. *If the m/c stops because of false thread breaks, changing the value to 4 or 5 may correct the problem.	1 – 9 [stitch]	3
20 	0 admit	Determines the number of 0 data stitches allowed when the pattern is read into memory. 0 = deletes all 0 data, letting none into the pattern in memory. Setting at 1 allows one 0 data stitch, etc. up to 8. 9 = Allows all 0 data stitches into memory. *All 0 data stitches will be deleted automatically after a trim code, even if set to 9.	0 - 9	0
21 	Combine Data	Determines the smallest stitch length allowed when a pattern is read into memory. Stitches smaller than the allowed length are combined into larger stitches. 0 = Off. No changes 1 = less than 0.1mm stitches are combined into larger stitches. 2 = less than 0.2mm stitches are combined into larger stitches. 5 = less than 0.5mm stitches are combined into larger stitches. * Less than 0.4mm stitches will be combined into larger stitches automatically after the thread is trimmed.	0 - 9	0
22 	Right Limit	Sets right soft limit – allowable distance the pantograph can move to the right of the mechanical origin.	0 – 3200 [mm]	500

Icon	Parameter	Function/Action	Range Of Value	Default Value
23 	Left Limit	Sets left soft limit – allowable distance the pantograph can move to the left of the mechanical origin.	0 – 3200 [mm]	500
24 	Back Limit	Sets back soft limit – allowable distance the pantograph can move to the front of the mechanical origin	0 – 3200 [mm]	500
25 	Front Limit	Sets front soft limit – allowable distance the pantograph can move to the back of the mechanical origin	0 – 3200 [mm]	500
26 	LCD Mode	Not Used	-----	-----
27 	LCD Bright	Sets the brightness of the LCD screen.	1: dark 2: bright 3: bright 4: bright	4
28 	Roll to Roll	<p>Activates the Roll-to-Roll function. 0 = Roll to Roll not used 1 = Manual Roll to Roll ON/ Roll to Roll m/c</p> <p>* 1: Activated on stitch with a SE function code, the needle will remain down in the fabric (D32 Icon will also be displayed). Panto clips should be released and then press the start bar to move the pantograph back to the start origin. Or move the panto to the position as set by values for F.offset in (Program).</p> <p>* For roll to roll m/c, set to 1 and set Roll to Roll type (MSU2) to 1 (for normal roll fabric) or 2 (for thinner roll fabric).</p>	0 - 1	0
29 	WS System	Sets WS System Active. 0 : OFF 1 : ON	0 - 1	0

Icon	Parameter	Function/Action	Range Of Value	Default Value
30 	Clamp Frame	Pneumatic Clamp Frame option. 0: OFF 1: Pneumatic Clamp Frame installed 51: Use with Madeira AFS (Automatic Frame System)	0 – 99	0
31 	Warm Up Speed	Sets the machine speed for the warm-up function	200 rpm – MAX Speed	800 rpm
32 	Warm Up End	Sets a load factor for main motor warm-up function. ※ When set to 100, the warm-up function is disabled.	50-100 %	100 %
33 	Frame Option	Sets the gain parameter automatically 0: Portal Frame 1: Spider Frame 2: One Touch 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 inner frames above due to pantograph load. *Set to 1 and press the DRIVE button, automatically rewrites the AC servo 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.	0 - 2	0
34 	Sequin size L1	Sets the Sequin Size Change on Left side	0-199	0
35 	Sequin size R1	Sets the Sequin Size Change on Right side	0-99	0

Icon	Parameter	Function/Action	Range Of Value	Default Value
36 	Network Type	Not Used	-----	-----
37 	Marker Type	<p>Laser Marker operation</p> <p>1: Turns ON when the machine is not sewing.</p> <p>2: Turns On only in “Drive mode” and not sewing.</p> <p>3: Same as above item 1 + it resets to ON when the machine is powered ON.</p> <p>4: Same as above item 2 + it resets to ON when the machine is powered ON.</p> <p>This feature is for DT/VT, and all X-Series.</p>	1-4	1
38 	Borer 2	Switches off the thread break detector for a needle fitted with a boring device. Enter the number of the needle that has the borer. Set to 0 if a boring device is not in use.	0 – 15 [Needles]	0
39 	Borer 3	Switches off the thread break detector for a needle fitted with a boring device. Enter the number of the needle that has the borer. Set to 0 if a boring device is not in use.	0 – 15 [Needles]	0
40 	Sequin size L2	Sets the Sequin Size Change on Left side	0-99	0
41 	Sequin size R2	Sets the Sequin Size Change on Right side	0-199	0
42 	Marker Type	Not Used	-----	-----
43 	Rotary Sequin	<p>Rotary sequin control</p> <p>0: Only the last needle number is available for the sequin device.</p> <p>1: All needles are available for the sequin device.</p> <p>2: 1~8 Needles are available (Prohibit only 9)</p> <p>3: 1~7 needles are available (Prohibit 8~9)</p> <p>4: 1~6 needles are available (Prohibit 7~9)</p> <p>5: 1~5 needles are available (Prohibit 6~9)</p> <p>6: 1~4 needles are available (Prohibit 5~9)</p> <p>7: 1~3 needles are available (Prohibit 4~9)</p> <p>8: 1~2 needles are available (Prohibit 3~9)</p> <p>9: Only No.1 needle is available (Prohibit 2~9)</p>	0-9	0

Icon	Parameter	Function/Action	Range Of Value	Default Value
44 	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
45 	TSQ detect R (for Right Sequin reel)			
46 	T.B. discern	<p>Top and Bobbin Thread break sensor feature.</p> <p>When set on, the thread break sensor LED on sewing head blinks Green when bobbin runs out.</p> <p>0 : Not used. Top thread break sense only.</p> <p>1 : On (Standard)</p> <p>2 : On w/low sensitivity (*)</p> <p>3 : On w/lower sensitivity (*)</p> <p>* These settings help prevent misdetection by lowering the detection sensitivity.</p>	0-3	0
47 	Option Port	Not Used	-----	-----
48 	Special MC	Not Used	-----	-----

3. Sequin Adjusting Mode

Instructions for Sequin devices and adjusting mode operations

*Sequin adjustment mode is not available in Drive mode.

*This function is only available on machines with a Sequin device.

3-1. Feed/Back up

Head will do a sequin feed or back up movement for the Sequin device.

- 1) Press the **Preference key**



- 2) Press the **A-key**



icon to display the MC parameter list.



- 3) Use the **Jog keys** and select either 34: Sequin size L1 or 35: Sequin size R1.

Then press and hold the **Origin key** to enter the Sequin Adjusting mode.

(This function is only available for machines with Sequin devices.)

- 4) Press the **C-key**



to feed a sequin forward.

- 5) Press the **D-key**



to back-up the sequin feed to the return position.


- 6) Press the **E-key**




to do adjustments.

3.2 Adjustments

Make Sequin adjustments.

- 1) Press the **Preference key** .

- 2) Press the **A-key**  icon to display the MC parameter list.




- 3) Use the **Jog keys** and select either 34: Sequin size L1 or 35: Sequin size R1.

Then press and hold the **Origin key** to enter the Sequin Adjusting mode.

(This function is only available for machines with a Sequin device.)

- 4) Press the **E-key**  to enter Sequin adjustments.



Press the **E-key** again  if necessary to return to Sequin adjusting mode.

- 5) Feed / back-up the Sequin feed by using the cancel switch on the sewing head.

Switch to On : feeds a sequin

Switch to Off : back-ups the sequin feed to the return position

*This operation works regardless of whether the Sequin is in the up or down position.

- 6) Press the **Start-key**  to lower the Sequin device.

Press the **Stop-key**  to raise the Sequin device.


*The head switch has to be in the up position for this function to operate.

3-3. 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) Press the **Preference key** .

- 2) Press the **A-key**  icon to display the MC parameter list.


- 3) Use the **Jog keys** and select either 34: Sequin size L1 or 35: Sequin size R1.

Then press and hold the **Origin key** to enter the Sequin Adjusting mode.

(This function is only available for machines with Sequin devices.)

- 4) Press the **E-key**  to enter the Sequin adjustments.



- 5) Press the **A-key**  to set the Sequin feed origin seek operation ON or OFF.

Normal Icon  : Seek On. Sequin feed seeks origin at power On, as normal.

Yellow background Icon  : Seek Off. Sequin feed does not seek origin.

(Seek Off setting maybe helpful when using smaller 2 or, 3 mm sequins.)

4. Network

Instructions for setting Network configurations

- 1) Press the **Preference key**



- 2) Press the **E-key**



to display the Network Settings Menu.



- 3) Select an item that you want to change from the Network setting list.

Network : Disable (0), LAN (1)), and COM (2)
COM (2) is for DFS COM Protocol connection

ID : Set up desired Automat ID name

DHCP : Set to “Enable” to use DHCP IP settings

IP Address : Set up IP address of the machine

Subnet mask : Leave as it – standard fixed value

Host IP : Set up IP address of LEM Server PC

Host Port : 8000. Change only if port setting for LEM software is changed.

Default gateway : 0.0.0.0. Change only if default gateway setting is needed.

- 4) Icons for changing the selected setting appear, depending on item selected.

Use the



or



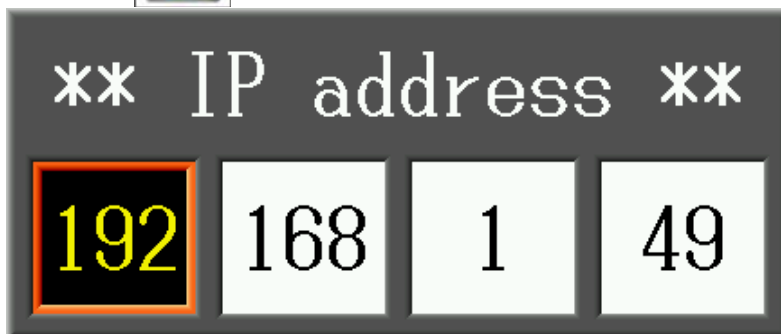
icons to change settings.

- 5) When selecting an “IP Address”, “Subnet mask”, or “Host IP” to change,

Press the **E-key**



and the following menu is displayed



- Use the left and right **Jog keys** to select a number to change in the address.
- Use the top and bottom **Jog keys** to change value.
- Or Refer to “*Chapter 3, 14. Numeric Entry*” to use the numeric entry.

*To cancel, press the **E-key**



again to cancel changes.

Press the **G-key**



to save the setting.

- 6) To **Initialize** settings, press and hold the **F-key**



to set network settings back to default. Please refer to “*Chapter 3, 10. Confirmation Message*” for saving settings.

- 7) Press the **Preference key**



to exit and save settings.

* When a network setting is changed, the confirmation screen is displayed.

Please refer to “*Chapter 3, 10. Confirmation Message*” about the confirmation screen.

* Network setting changes are not active until the machine is rebooted. Please turn the machine OFF after making changes.

If a network setting was changed but is not active, the network connection icon on the information display screen is blacked out. Reboot the machine to activate settings.

Please refer to “*Chapter 3, 7. Information Screen*” for details.

5. Setting Screen Colors

Instructions for setting screen colors

5-1. Setting by RGB Color number

- 1) Press the **Preference key**



- 2) Press the **C-key**




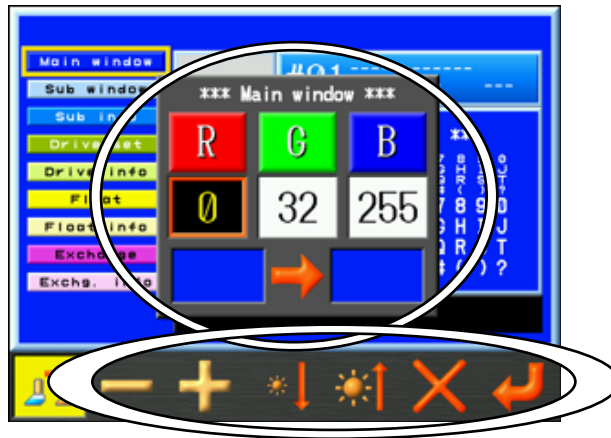
to display the Screen Color menu.



- 3) Use the **Jog keys** to select a window or screen item color to change:

- Main Window : Screen color for the main window
- Sub Window : Screen color for the information window
- Sub Info : Inner window color for the information window
- Drive Set : Screen color during Drive set
- Drive Info : Inner window color of the information window during Drive set
- Float : Screen color during Float
- Float Info : Inner window color of the Information window during Float
- Exchange : Screen color during changing frames
- Exchange Info : Inner window color of the information window during changing frames

- 4) Press the **A-key** , or the **Origin key** and the following menu is displayed.



The color details are shown in RGB values.


The color box on the left shows the color before the change. The right box shows the color after the change.


*To cancel, press the **A-key**  again to close the dialogue box.


- 5) Use the **Jog keys** to select an RGB value to change.

Press the **B-key**  to decrease value.


Press the **C-key**  to increase value.

Press the **D-key**  to reduce all RGB values together (Dimmer).

Press the **E-key**  to increase all RGB values together (Brighter).

Press the **F-key**  to backspace one number at a time from the value.

- 6) Press the **G-key**  to save the changes.

- 7) Press and hold the **F-key**  to change all screen colors back to default.

5-2. Screen Color List

Instructions for selecting screen colors using the color list

- 1) Press the **Preference key**



- 2) Press the **C-key**



- 3) Use the **Jog keys** to select a window or screen item color to change.

- 4) Press the **B-key**



*To cancel, press the **B-key**



again to close the list without saving changes.

- 5) Use the **Jog keys** to select a color.

- 6) Press the **G-key**



to save the new color.

5-3. Font Type and Themes

Change the font letter type and color theme for the display

- 1) Press the **Preference key**



- 2) Press the **C-key**



to display the Screen Color menu.

- 3) Press the **C-key**



to change the font type.

There are 3 font types, and they can be changed in the following order.

- Ming-style
- Standard Gothic-script
- Bold Gothic-script

- 4) Press the **D-key**



to change the color display theme.

5-4. Initialize

Initializes the screen colors and font type.

- 1) Press the **Preference key**



- 2) Press the **C-key**



display the Screen Color menu.

- 3) Press and hold the **F-key**



to initialize all the display settings.


A confirmation screen will appear. Please refer to “*Chapter 3, 10. Confirmation Message*” about confirmation details.

6. Setting Thread Color Display

6-1. Instructions for setting thread color displays for designs

Colors can be changed by changing the values of **R** (red), **G** (green) and **B** (blue).

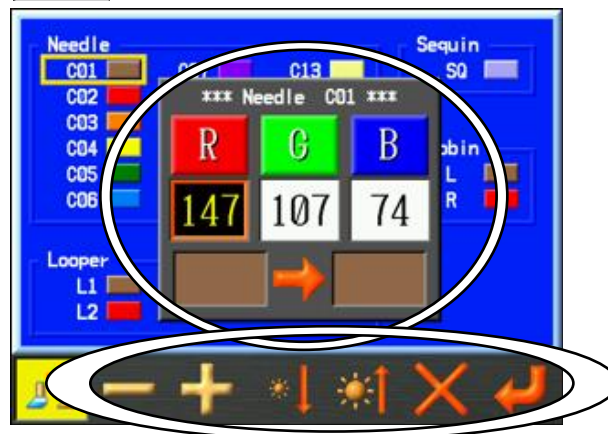
- 1) Press the **Preference key** .

- 2) Press the **D-key**  to display the Thread Color menu.



- 3) Use the **Jog keys** to select a needle number to change.


- 4) Press the **A-key**  or the **Origin key** and the following menu is displayed.



The color details are shown in RGB values.

The color box on the left shows the color before the change.

The right box shows the color after the change.

- *Press the **A-key**  again to cancel changes and close the dialogue box.

5) Use the **Jog keys** to select an RGB value to change.

Press the **B-key**



to decrease the value.

Press the **C-key**



to increase the value.

Press the **D-key**



to decrease all RGB values together (Dimmer).

Press the **E-key**



to increase all RGB values together (Brighter).

Press the **F-key**



to backspace one number at a time from the value.

6) Press the **G-key**



to save the changes.

7) Press and hold the **F-key**



to change all the thread colors back to default.

6-2. Thread Color list

Instructions for changing thread color displays using the color list

- 1) Press the **Preference key**



- 2) Press the **D-key**



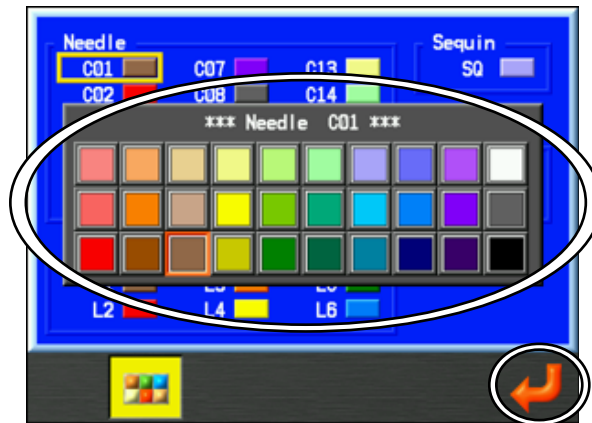
to display the Thread Color menu.

- 3) Use the **Jog keys** to select a needle number to change.

- 4) Press the **B-key**



to display the color list.



*Press the **B-key**



again to close the list without saving changes.

- 5) Use the **Jog keys** to select a color.

- 6) Press the **G-key**



to save the change.

6-3. Thread Color Copy

Instructions for swapping or copying thread color from one needle to another.

- 1) Press the **Preference key**

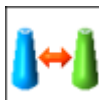


- 2) Press the **D-key**

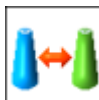


to display the Thread Color menu.

- 3) Use the **Jog keys** to select a needle number to change.



- 4) Press the **D-key**

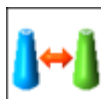


to display the color copy menu.



The  icon indicates the needle color to be copied or swapped.

*Press the **D-key**



again to cancel without making changes.

- 5) Select the swap or copy option.

Press the **A-key**



to swap colors.

Press the **B-key**



to copy color.

- 6) Use the **Jog keys** to select a needle color to copy or swap.

Press the **G-key**



to save the changes.

6-4. Saving Display Colors

Instructions for saving design display colors

※ Please refer to “*Chapter 3, 6. Screen Structure*” and “*Chapter 3, 8. Design List Display Settings*” for details about design information.

- 1) Press the **Preference key**



- 2) Press the **D-key**



to display the Thread Color menu.

- 3) Press the **C-key**



to display the save options.



※When a thread color has been changed, a confirmation screen will be displayed.

Please refer to “*Chapter 3, 10. Confirmation Message*” for details.

- 4) Press the **F-key**



to save change to the current memory location.

Hold the **E-key**



and press the **F-key**



to save thread color changes to all

memory locations. (Please note, this may take a few minutes to save to all designs)

Press the **G-key**



or press the **A-key**



to cancel and go back to the Thread

Color menu.

7. Help Files

Displays help files

Help files need to be saved to a USB Flash Drive.

7-1. Help File Structure

There are 3 types of help files.

Index JPEG file: Displays table of content information for the help files (in .jpg format).

Index TEXT file: Displays table of content information for the help files (in .txt format).

Help JPEG file: These are the actual help files that display help information.

1) “HELPPFILES” folder.

The “HELPPFILES” folder needs to be saved on the root of a USB Flash Drive.

* “HELPPFILES ” name has to be written in half-width characters.

2) A “HELPBOOKS01” folder has to be made in the “HELPPFILES” 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 JPEG and TEXT files are not required. However it’s 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.

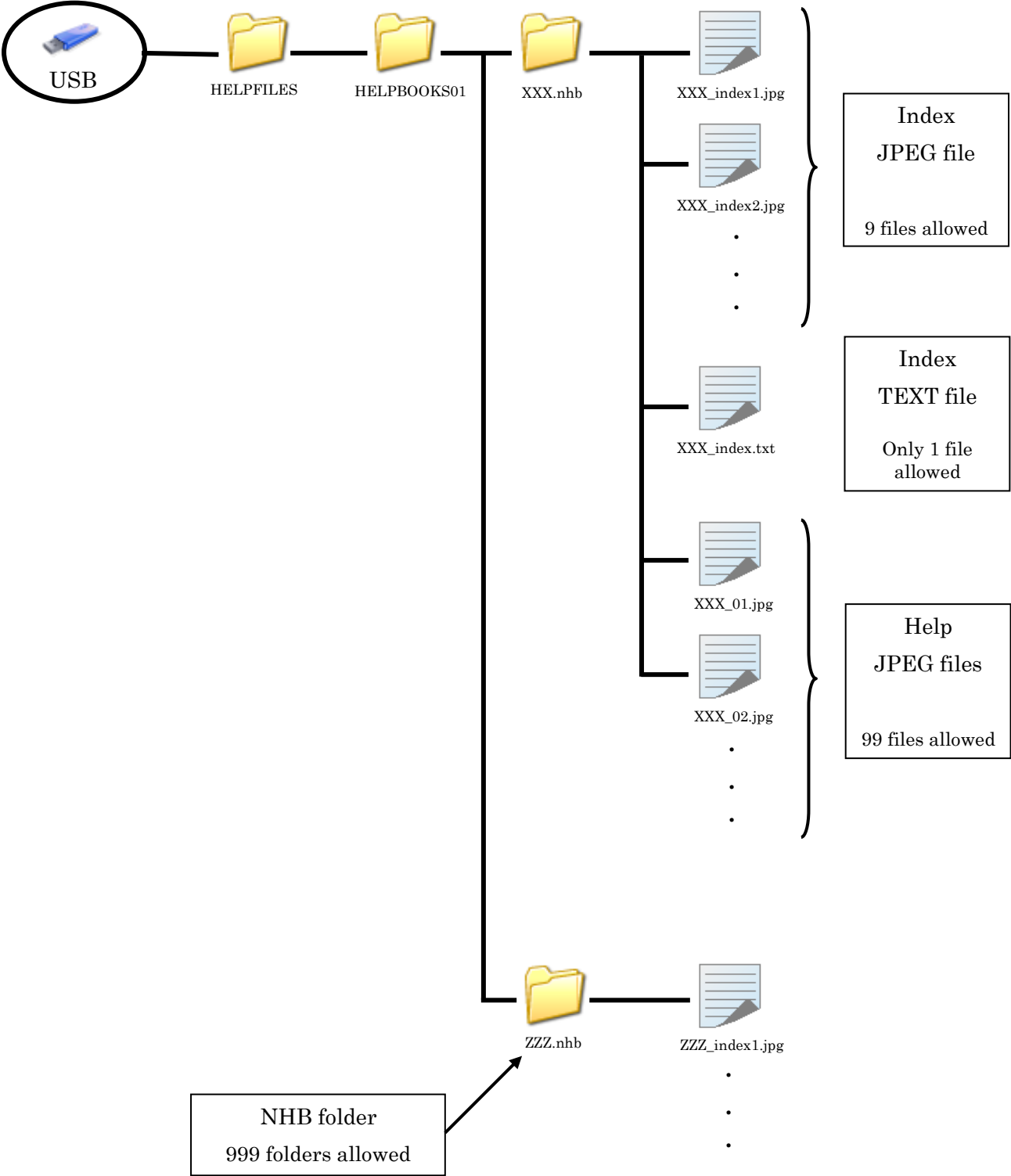
Example: NHB folder with an “ABC” name: ABC.nhb

Index JPEG file: ABC_index1.jpg

Index TEXT file: ABC_index.txt

Help JPEG file: ABC_01.jpg

6). Help File folder structure



7-2. 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
```

7-3. Help File Display

Displays help files


- 1) Insert a USB Flash Drive that contains Help Files.

- 2) Press the **Preference key** .

- 3) Press the **E-key**  to display the list of NHB folders.




The order of display is by the NHB folder number.

Use the **G-key**  if necessary to select the USB port that contains the USB Flash Drive with the Help Files.

(The selected USB Port Number is shown in "<>" on the left side of the screen)

- 4) Use the **Jog keys** to select a NHB folder to view.


- 5) Press the **D-key**  to display the Index (Text) screen.

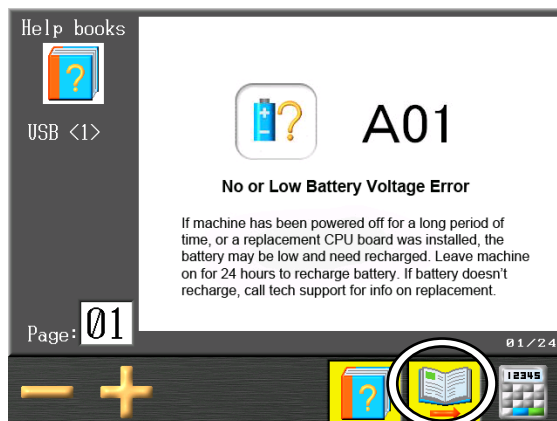


Index (TEXT) screen display

The Index (Text) screen displays a list of Help files in the order of page numbers.

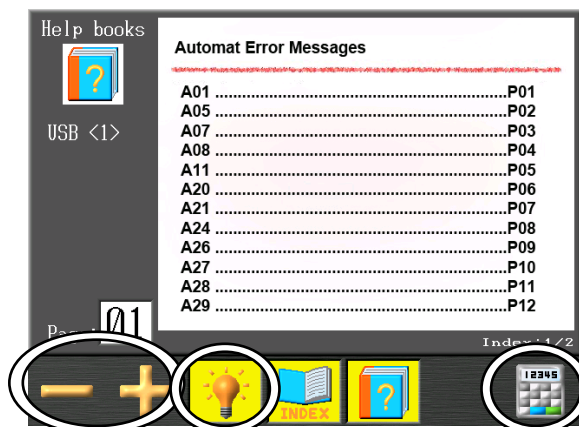
6) Use the **Jog keys** to select a Help file you want to view in the list.

7) Press the **F-key**  to display the selected Help file page.





Example: Page 1 Help file display

In Step 5 of these instructions, If there is not an Index (TEXT) file, the display will automatically show the Index (JPEG) file if it's available, as shown below.



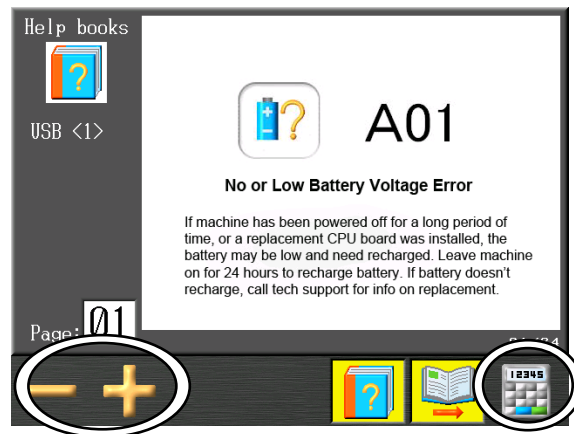
Index (JPEG) screen display


This display only shows a visual display of the index. You must remember what page number you want in the list, and then manually select it using the  icon.

Use the **C-key**  to toggle the Index (JPEG) screen display on or off.


Use the **A-key**  or **B-key**  to change Index page numbers.

* If there are no index files, pressing the **D-key**  automatically displays the first page in the help files.




Pressing the **F-key**  in any other menu than Step 7, will take you to the first page in the help files, as shown above.

Use the **A-key**  or **B-key**  to change Help page numbers.

Use the **G-key**  to display the numeric input screen, to select page numbers.

Refer to “*Chapter 3, 13. Numeric Entry*” to use the numeric entry for selecting pages.

Press the **F-key** again  to return back to the Index screen.

Press the **E-key** again  at any time to exit out of the Help screens.

8. Date Setting

Instructions for setting the Automat date and time

1. Press the **Preference key**



2. Press the **F-key**



3. Use the **Jog keys** to select an item to change: year, month, date, hour, or minutes.

Press the **A-key**



, or **B-key**, to change value.

Press the **F-key**



to backspace one number at a time from the value.

4. Press the **G-key**



to save changes

9. Software Version

Instructions for displaying BEXT software version

- 1) Press the **Preference key**



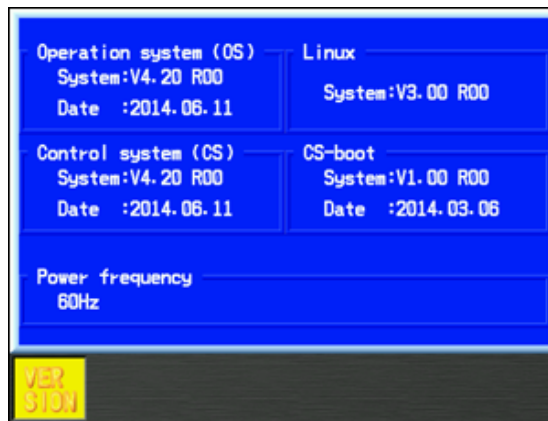
- 2) Press the **G-key**



- 3) Press the **A-key**



to display System software versions.



- Operation system : Shows Operation Version
- Control system : Shows Control Version for MCB machine drive
- Boot : Shows Boot ROM Version
- Power Frequency : Shows power source frequency

Press the **A-key**



to go back to the Preference setting screen.

10. Shortcuts

Allows frequently used functions to be added to the main screen as shortcuts.

Shortcuts can be added to either the Stand-by or Drive menus.

10-1. Adding a Shortcut

Shortcut function can be added to the Stand-by or Drive mode screen.

- 1) Press the **Preference key**



- 2) Press the **G-key**



- 3) Press the **B-key**



to display the shortcut set-up screen.



A : Displays the number of the shortcuts that are currently active / and max number that can be added.

- 4) Select the screen to add the shortcut to.

Press the **A-key**



to assign the shortcut to the Stand-by screen.


Press the **B-key**



to assign the shortcut to the Drive screen.

- 5) Use the **Jog keys** to select a shortcut to add and press the **Origin key** to enter it.
Press the **Origin key** again on an entered shortcut to cancel it.



* A maximum of 7 shortcuts can be assigned to each screen.

- 6) Press and hold the **D-key**  to initialize the shortcuts to default setting.

A confirmation screen will display. Please refer to “*Chapter 3, 10. Confirmation Message*” For details

* The default shortcuts are assigned as follows:

Stand-by screen : No shortcuts

Drive screen : Frame trace  and Embroidery position display 



































- 7) Press the **F-key**  to save the shortcuts.















Added shortcuts are displayed as icons at the bottom of the Stand-by and Drive screens as shown by the example below.



- 8) Press a shortcut key to execute the assigned function.

10-2. List of selectable functions for shortcuts

Icon	Function	Icon	Function
	Memory save to USB		Coffee break (Network report)
	Design information display		Operator call (Network function)
	Embroidery position display		Time out (Network report)
	Production quantity display		Download a design from the server (Network function)
	Memory design deletion		Upload a design to the server (Network function)
	Design name change		Speed change (Reduce 10 rpm)
	Top thread consumption		Speed change (Increase 10 rpm)
	Design Program list		Manual needle bar change (-1)
	F-list for teaching colors		Manual needle bar change (+1)
	Batch change for teaching colors		Needle bar change by needle number (-1)
	Outline stitch		Needle bar change by needle number (+1)
	DSP		WS head Change
	Adding stitches		Setting thread color display
	Frame trace		Thread Clamp Hold / Release
	Easy teach		Applique
	Teach for all function codes		Frame Change
	Operator code menu (Network)		Stop with Needle down (for Roll to Roll machines)
	USB Flash Drive search		Help Files

Icon	Function	Icon	Function
	Main shaft brake Hold / Release (for machines with brake)		
	Bobbin thread counter		
	Oiling		
	Roll to Roll (for Roll to roll machines)		
	Laser marker On / Off		
	Head selection		
	Head manual switch		
	Pantograph centering		
	Re-Setting Origin		
	Hold/Release the main shaft		
	Multi-Point function		
	Production Totals		
	Schedule		
	Name Drop		

11. Frame Outline Display

Set frame outline for hoop display

This function can only be done in Stand-by mode (not Drive mode).

11-1. Input Frame outline data

1) Make a “FRAME” folder on a USB flash drive.

2) Copy the frame outline data files to the “FRAME” folder.

* Copy “***.FMO” and “***.BMP” files for a set for each frame file.

3) Press the **Preference key**



4) Press the **G-key**



5) Press the **C-key**



to display the frame outline menu screen.



The frame outline data files are displayed in a list.

A Displays the name and memo of the frame outline data file that is currently selected.

6) Press the **E-key**



to load the Frame Outline data files. A confirmation screen will display. Please refer to “Chapter 3, 10. Confirmation Message” for details.

11-2. Frame Outline Selection

Select a frame outline to display during frame trace.

- 1) Press the **Preference key**



- 2) Press the **G-key**



- 3) Press the **C-key**







to display the frame outline menu screen




- 4) Use the **Jog keys** to select a frame outline.

* Select "000: No Use", if you do not want to display a frame outline.


11-3. Frame Outline Data Deletion

- 1) Press the **Preference key** .
- 2) Press the **G-key** .
- 3) Press the **C-key**  to display the frame outline menu screen
- 4) Press the **G-key**  to display the frame outline delete screen.




*To cancel, press the **G-key**  again to go back to the frame outline menu.

- 5) Use the **Jog keys** to select a frame to delete.
 - * Use the following procedures to select multiple frame files to be deleted.
 - Select a frame and press the **Origin key** to tag the file with an (*) mark on it.
 - Tag as many frames as you want to delete using the previous step.
 - To un-tag a frame, select the frame again and press the **Origin key** to cancel it.





Press the **C-key**  to select all frames for deletion.

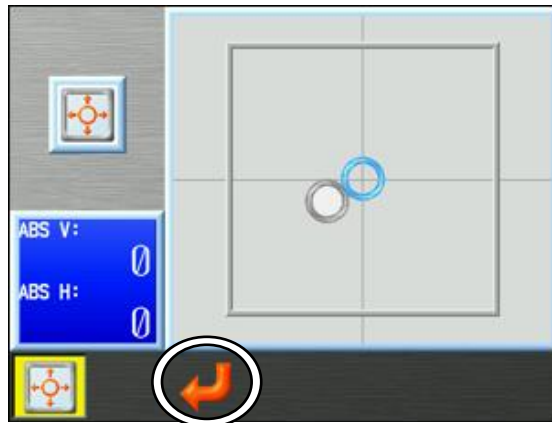
- 6) Press the **A-key**  to delete the selected frames.

Press the **B-key**  to cancel and go back to the frame outline menu.

11-4. Frame Outline Offset

Adjust the Frame offset to center the frame with the machine.

- 1) Press the **Preference key** .
- 2) Press the **G-key** .
- 3) Press the **C-key**  to display the frame outline menu screen.
- 4) Press the **A-key**  to display the frame offset screen.



The outside square displays the machine soft limit settings.





*To cancel, press the **A-key**  to go back to the frame outline menu.

- 5) Use the **Jog keys** to adjust the frame offset position.

- 6) Press and hold the **C-key**  to save the new offset position.




11-5. Frame Outline Margin

Use to set a safety margin outline within the frame display to warn when getting too close to the frame.

- 1) Press the **Preference key** .
- 2) Press the **G-key** .
- 3) Press the **C-key**  to display the frame outline menu screen.
- 4) Press the **C-key**  to display the Frame Outline Margin screen.



*To cancel, press the **C-key**  to go back to frame outline screen.

- 5) Press the **D-key**  to decrease the setting value.
- Press the **E-key**  to increase the setting value.
- Press the **F-key**  to use the numeric entry to enter a value.

Please refer to “*Chapter 3, 13. Numeric Entry*” to enter value.

12. Machine Information Display

1) Press the **Preference key** .

2) Press the **G-key** .


3) Press the **D-key** .

4) Machine Information Display



The image shows a screen titled "Machine information" with a blue background. It contains three input fields: "Model" with the text "TEST", "Serial no" with the text "001", and "Memo" with the text "Message". At the bottom of the screen, there is a yellow button with a red 'D' icon.

“Model” and “Serial No” are displayed.

Press the **D-key**  to go back to the previous screen.

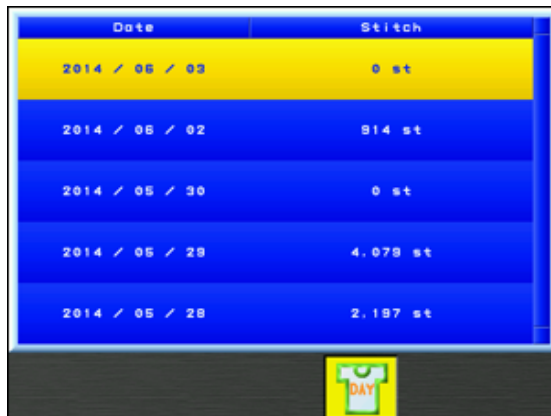
13. Production Totals per day

1) Press the **Preference key** .

2) Press the **G-key** .

3) Press the **E-key** .


4) The Production Totals per day is displayed.



Date	Stitch
2014 / 05 / 03	0 st
2014 / 05 / 02	814 st
2014 / 05 / 30	0 st
2014 / 05 / 29	4.078 st
2014 / 05 / 28	2.197 st

Production Totals for the last 5 days is displayed.

* No record is shown for days when the machine power was not turned on.

Press the **E-key**  to go back to the previous screen.

14. Schedule

Memos can be written and displayed on days specified by calendar schedule.

On the days a memo is scheduled, it will be displayed when the machine is powered on.

14-1. Schedule memo

Write a memo for the calendar.

1) Press the **Preference key**



2) Press the **G-key**



3) Press the **F-key**



4) The Schedule is displayed.



Press the **A-key** to toggle the display from the first half of the year to the second half of the year.



Press the **D-key** to back the calendar by one year.



Press the **E-key** to advance the calendar by one year.




- 5) Use the **Jog keys** to select a month in the calendar.



- 6) Press the **F-key**  to display the calendar month selected.

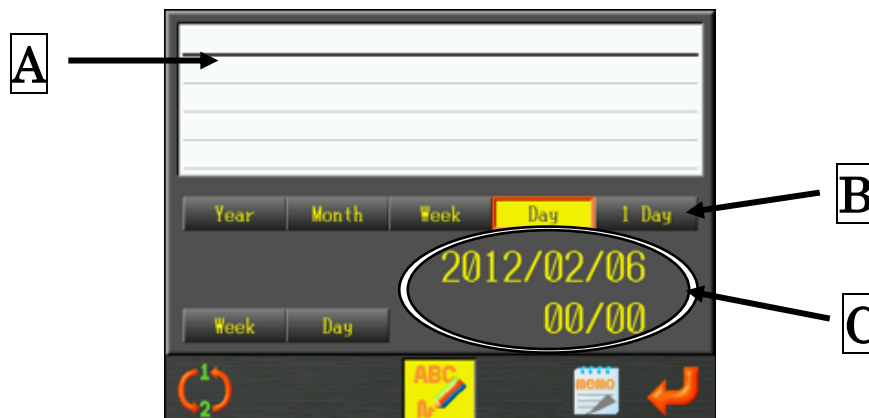


- *Press the **F-key**  to go back to the previous screen.

- 7) Use the **Jog keys** to select a date in the calendar.

- 8) Press the **D-key**  to display the memo entry screen.

If a memo has already been set for this date, the memo is displayed.



A : Displays the text in the memo.

Number of characters : 30 characters x 5 lines


B : Set the date interval of when to display the memo.


Display Interval : Select the interval by Year, Month, Week, Day or 1 Day

Display Condition : If the Year or Month is selected, select Week or Day condition.

* Please refer to the following list for settings.

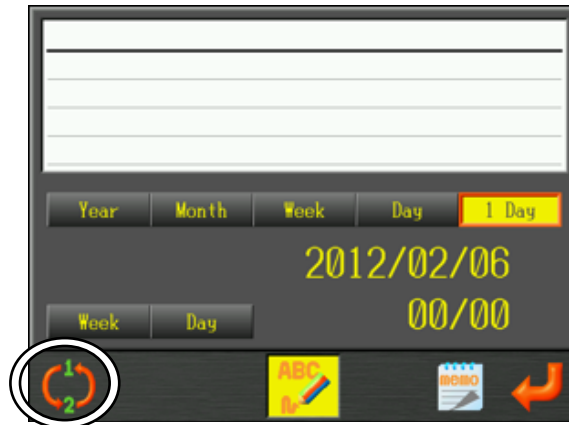
C : Displays the currently selected date and the number of memos for this date.


Press the **F-key**  to view the next memo, when there are multiple memos.

Press the **D-key**  to cancel and go back to the monthly calendar screen.

Display interval	Display condition	Detailed conditions for displaying memo
Year	Week	Displays [Every year] on the same month and same day of the week
	Day	Displays [Every year] on the same month, 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 [Every day] Every day
1 Day	——	Displays the (day) date selected, and everyday afterwards

- 9) Use the **Jog keys** to select the display interval and condition.




- 10) Press the **A-key**  to switch to the memo message.


- 11) The screen for inputting characters into the memo is displayed.




Use the **Jog keys** to select characters.

Press the **C-key**  or the **Origin key** to input the selected character.

Press the **B-key**  to delete the last character.

Press the **E-key**  to move the cursor down to the next line.

Press the **F-key**  to delete the line of text selected.

Press the **A-key**  to toggle back to the interval setting.

12) Input the memo.



13) Press the **G-key**  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.

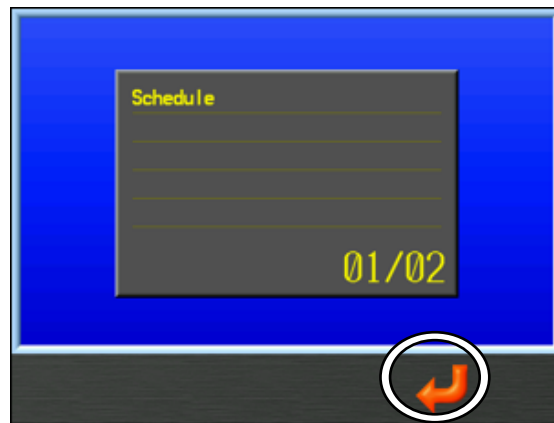
14) Dates with memos are displayed in color in the schedule.




- Display intervals for “Year/Month/Week/Date”, are displayed in Yellow.
- 1 day intervals are displayed in Red.
- The quantity of memos per date is displayed in parenthesis (x) for each date.
- The bottom of the left corner of the screen shows the number of memos and the first line of text for the selected date.

If there are 3 or more memos for this date, press the **A-key**  to change the bottom left view to show all of the memos scheduled for the selected date.

- 15) On the day a memo is scheduled, the Automat displays the memo at start up, as follows.



Press the F-key  to close the memo and proceed with the start up of the machine.

If there are multiple memos scheduled for the same day, the memos are displayed in the order that they were scheduled.

14-2. Saving and Reading Schedules

Save the schedule to a USB flash drive.

Read the schedule from a USB flash drive into the Automat.

*** Insert a USB flash drive to save and read schedules.**

1. Press the **Preference key**



2. Press the **G-key**



3. Press the **F-key**



to display the schedule.



4. Press the **B-key**



to read the schedule from the USB flash drive into the Automat.

Press the **C-key**



to save the schedule to a USB flash drive.

*** When saving or reading the schedule, a confirmation screen is displayed.**

Please refer to “*Chapter 3, 10. Confirmation Message*” for details

*** The schedule is saved and/or read by a file named “schedule.SMF”.**

When saving, if a “schedule.SMF” file already exists on the USB device, it is overwritten.

14-3. Schedule Notices

1. The maximum number of memos is 40.

2. Can only enter 1 memo per calendar date.

(Example) 1st memo 2012/1/1 [display interval] for only 1 day

↓

If you try to use the same date to add another memo

2nd memo 2012/1/1 [display interval] Every year / Same year/month/date

1st memo is overwritten by the 2nd memo

3. However, multiple memos per day are possible as follows:

(Example) 1st memo 2012/1/1 [display interval] only 1 day

↓

Input to the same date but on another year

2nd memo 2013/1/1 [display interval] Every year / Same month/date

On the day of 2012/1/1, the 1st and 2nd memos are displayed.

15. 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 **Preference key**



2. Press the **SHIFT key**.



3. Press the **C-key**



to activate this feature. When active, the icon is highlighted in Yellow.

To cancel, press the **C-key**



again.

Chapter 12 System

This chapter contains instructions on System programs.

1. System File Structure
2. Updating System software
3. Updating Linux
4. Initializing Memory
5. Initializing CF card

1. System File Structure

BEXS is composed of 2 system programs.

Each system needs to be updated when there are updated versions.

To check the software version loaded on the machine, see the Version information screen.

*Refer to “Chapter 11, 9. “Software Version” for details.



Operating system: Linux

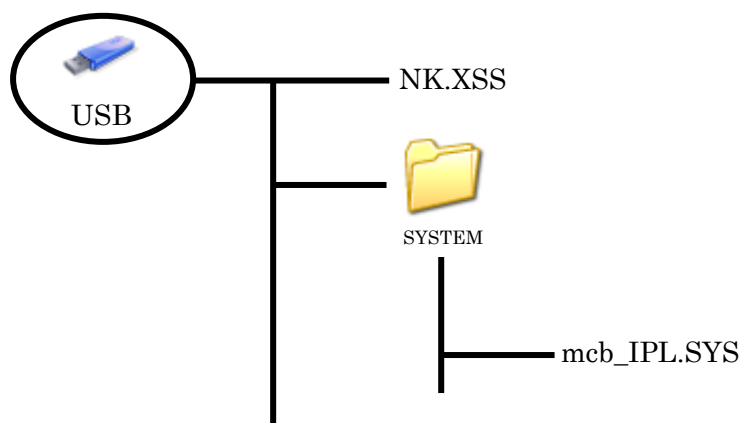
System Update File: NK.XSS

Control System is for Machine operating system (MC board)

System Update File: mcb_IPL.SYS *Save this file in the SYSTEM Folder

*Refer to “2. System Software Update” for System updating.

Save each system file in the appropriate folder on your USB Flash Drive as follows.



2. Updating System software

Instructions for updating the system software on the machine

1. Turn **Off** the power.
2. Insert the USB Flash Drive that contains the Software update.
3. While the machine is **Off**, press and hold the **Origin** key.
4. Press and hold the **Origin** key until it makes an intermittent beeping sound.
5. The Operation System Update screen displays.



File names, System software versions, and dates are shown.

Section **A** displays the system update status.

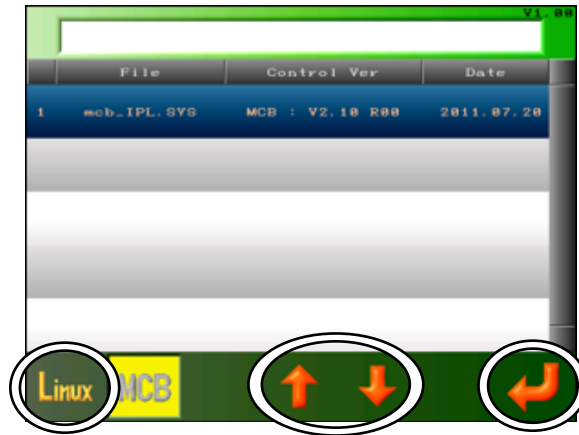
*The display below shows the list of Operation System versions on the USB flash drive.


In parenthesis below the Operation version, shows the compatible Control software version needed for this Operation version.

The machine may not operate properly if the Operation and Control software versions are not compatible. Update both Operation and Control versions so they are compatible.



6. Press the **B-key**  to display the Control System Update screen.



7. Press the **A-key**  to display the Operation System Update screen.

8. Use the **D-key**  or the **E-key**  to select a System version to update.

9. Select the System software that you want to install, and press and hold the **G-key**,



to update the system software. The System starts updating.

10. When the process is complete, turn the power Off at the Automat and restart.

3. Updating Linux

Update the Linux (Version display screen Linux) to a new program

*Please refer to “Chapter11 9.Displaying the version” about the version.

Display the updating the Linux system on the upper right side of title at start-up

“os-boot” is capable after the next version.

os-boot : V 2 . 1 0 R 0 0

* If there is not display on the upper right side of title screen, it is the previous version before “V2.00 R00)

1) Power off the automat

2) Insert the USB FLASH DRIVE which has the system

Linux system is “Linux1” and “Linux2”.

3) Press the edit pattern key



and the change color key



to power on

4) Display the update screen of the Linux system

5) Display the screen for much the origin after updating the system finish.

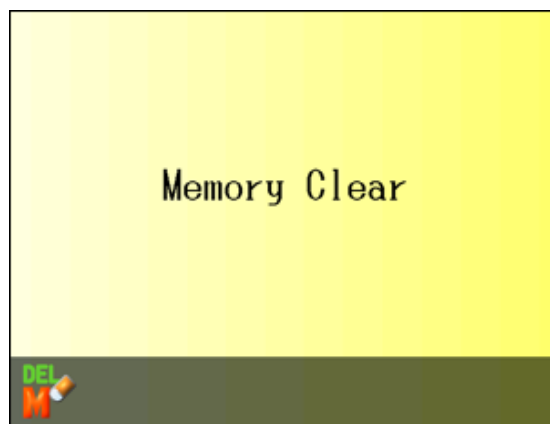




4. Initializing Memory

Instructions to initialize the machines memory.

*Be sure to back up data before initializing.

1. Turn **Off** the power.
2. Press and hold the **Origin key** and **Jog Up key** and turn **ON** the machine.
3. After a moment, the following screen is displayed



4. Press the **A-key**  and a confirmation "Yes" Icon will display.
5. Press and hold the **C-key**  to start the initialization.

If you want to cancel the initialization, turn the power off.

6. The following message is displayed.
"Please Wait for Origin LED to blink."
7. Turn the power off after confirming that the Origin LED blinked. Afterwards turn the power back on again.

5. Initializing CF card

Initializing the CF card of the internal BEXS

*** Please operate carefully because the operation system and all data will be deleted if initializing is run.**

Please need to use the version after the below versions for initializing the CF card.

Linus (Version display screen Linux): V2.30 R00

* Please refer to “Chapter11 9.Display version” about the version.

1) Prepare the file for initializing the CF card

- xs_format.xss (file for initializing)
- NK.XSS (operation system)

*Please save the file for initializing and the operation system in the route of USB FLASH DRIVE.

2) Power off the automat

3) Press the origin key and power on


4) Press the origin key up to call “Pipipipipi”

5) In a moment, display the system updating screen



6) Press the C key  up to call “Pipipipi”

Start initializing the CF card

* Pressing the C key  is not available if the file for initializing (xs_format.xss) is not in the USB FLASH DRIVE.

7) Calling “Pi-” means that initializing is finish.

8) Updating the operation system

* Please refer to “1.Structuring the system” about the structuring system.

* Please refer to “1.updating the system” about the updating system

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	The point of flame moving

*1 After G 1 : 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)	Needle Height (H)
69	CL		Loop stitch	“—”, 1~6	“—”, 1~10
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)	“— — —”
75	SZ2		Zigzag embroidery (R)	“—”, 1~6	
76	SC1		Coiling embroidery (L)	4 Levels / (L/R) (P)	“— — —”
77	SC2		Coiling embroidery (R)	“—”, 1~8	
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		Pattern (P) “— —”, 1~50	“— — —”
81	FMP	Multi-Point		Frame Move (P) “— —”, 1~15	“— — —”








* “—” and “— —” remain the same.





* “— — —” is not in use.








3. Error Messages









Message (Code)	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.








Message (Code)	Description	Trouble shooting
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.
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.










Message (Code)	Description	Trouble shooting
A35 	Spectacle Frame Error	Spectacle Frame is a special parameter in MC 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 MC.
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	<ol style="list-style-type: none"> 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 (Code)	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	<p>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.</p> <p>Possible Binds:</p> <ol style="list-style-type: none"> 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. <p>Correct any of these conditions before continuing. May need to power down and back On to reset the machine, afterwards.</p>

Message (Code)	Description	Trouble shooting
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 trouble shooting for possible binds.
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 MC 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 MC 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.

Message (Code)	Description	Trouble shooting
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.
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.

Message (Code)	Description	Trouble shooting
D25 	Stopped for Thread Break	<p>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.</p> <p>If false thread breaks occur on small stitches try increasing MC parameter #19, T-Break to a higher value.</p>
D26 	Pulse Motor Circuit Overheat	<p>Message that the machine stopped because the pulse motor drive (pantograph) circuitry has over heated. Power off the machine to let it cool down.</p> <p>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.</p>
D27 	Stopped for Temporary Repair Stop	<p>Message that a temporary stop code was inserted in the design on the last run.</p>
D28 	No further Stitch Back or Automending due to Color Change	<p>This is a message indicating that you cannot back up any further unless you do a manual trim. Do a manual trim.</p>
D29 	Servo Driver Error	<p>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.</p>
D30 	Head/Duct Board Switch Error	<p>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.</p>
D31 	Driver Box/Board Communication Error	<p>Problem with Automat recognizing that the Driver board is connected. Check cables from Automat to Driver board. Call tech support.</p>

Message (Code)	Description	Trouble shooting
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.
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	Optional Device. Check Lubrication device.
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 (Code)	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 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.

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