

USER'S MANUAL

TMBR-SC

TMBP-SC

How to perform embroidery

1. To turn ON the power 30
2. Thread passing, fabric setting 32
3. Registration of a design into the machine memory ...36
4. Decision of an embroidery design and the color change sequence.47
5. Decision of the design start position..... 56
6. Check items before embroidering..... 62
7. Embroidery starts 66



Foreword

This user's manual describes about the correct using method and instructions for use of this product. Please use this machine after understanding the contents of the manual.

This manual may contain discrepancies in detailed specifications as compared with the actual production model. If you have any questions about this manual, consult your TAJIMA distributor.

We believe that "BASICS TAJIMA EMBROIDERY MACHINES" and "MACHINE SETUP INSTRUCTIONS" are useful to deepen your knowledge about this product. Please also read those booklets.

Regarding how to handle the products related, refer to the user's manual exclusive for them included in the manual CD.

TISM Co.,Ltd.

SAFETY PRECAUTIONS

To prevent any harm or damage to the person who use this product or other person, we describe items that must be surely followed as below.



Indicates that there is a lot of danger of death or serious injuries [*1] if handled by mistake.




Indicates that there is a likelihood of death or serious injuries [*1] if handled by mistake.





Indicates a potentially hazardous situation which may result in minor or moderate injury [*2] or property damage if handled by mistake.

*1: A condition caused by electric shock, injury, fracture of a bone, etc., that leads to aftereffects, or an injury that necessitates hospitalization or visits to a hospital over a long period.

*2: An injury that does not necessitate hospitalization or visit to a hospital over a long period.

 : Prohibited items

 : Items that may cause electric shock if not observed

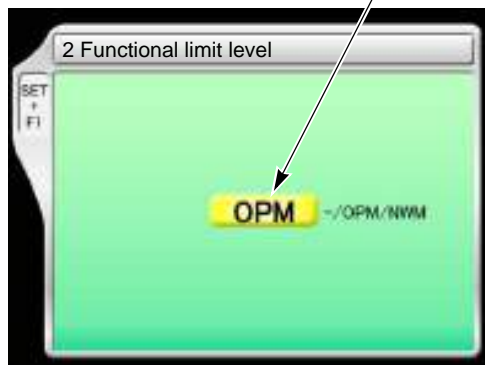
 : Items that must be followed carefully to ensure safe operation

Functional Limit Level

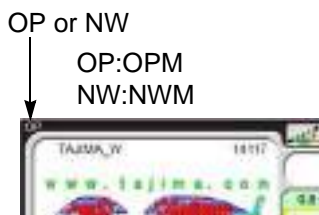
Functional Limit Level

Various types of machine operations are controlled by each functional limit level. This functional limit level will not display some operation and it has the purpose to protect design data from taking out unnecessarily or prevent incorrect parameter setting.

Functional Limit Level(p.143)



When the functional limit level is set, "OP" or "NW" is displayed at the upper left of the main screen.



Functional Limit Level	Application	Detail
—	It is the value at shipment. For some functions, the password is needed.	Refer to "Chart 2".
OPM	The only function relating to production will be displayed.	
NWM	This level will show minimum required function only in the embroidery machine controlled by Network.	

How to see the chart 2

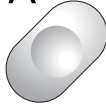
○ : It is possible to use.

Not to display : The function name will not be displayed.

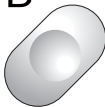
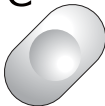
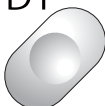

Key is invalid : The key operation is not available.

Password : Input of the password is necessary.







Chart 2

Menu key	Function	Functional Limit Level		
		— (Initial value)	OPM (Operation mode)	NWM (Network mode)
A 	1 Data Input (Memory)47	○	○	○
	4 Data Input (USB).....36	○	○	Not to display
	5 Data Input (LAN)40	○	○	○
	8 Memory Delete.....184	○	○	○
	10 Data Input (name)45	○	○	○




Functional Limit Level

Menu key	Function	Functional Limit Level		
		— (Initial value)	OPM (Operation mode)	NWM (Network mode)
B 	1 Auto Color Change (AC) / Auto Start (AS)..... 54	<input type="radio"/>	Not to display	Key is invalid
	2 Needle Bar Selection 50	<input type="radio"/>	<input type="radio"/>	
	3 Data Conversion 99	<input type="radio"/>	Not to display	
	4 Repeat 105	<input type="radio"/>		
	5 Automatic offset 173	<input type="radio"/>		
	6 Automatic Start after Automatic Data Set 108	<input type="radio"/>		
	7 Design position adjustment..... 101	<input type="radio"/>		
	8 Continuous name..... 127	<input type="radio"/>		
	10 Needle Bar Color 146	<input type="radio"/>		
C 	1 Maximum RPM 62	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	2 Total Stitch Counter / Design Timer..... 145	<input type="radio"/>	<input type="radio"/>	Not to display
	3 Frame Back/Frame Forward..... 156	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	4 Needle position specification FB/FF 159	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	6 Preset Halt 93	<input type="radio"/>	<input type="radio"/>	Not to display
	7 Frame type..... 163	<input type="radio"/>	Not to display	
	9 Design start position 180	<input type="radio"/>	<input type="radio"/>	
	10 Stop at Lower D. Point..... 96	<input type="radio"/>	<input type="radio"/>	
D1 	1 Trace..... 60	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	2 Manual Color Change..... 75	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	3 Manual Thread Trimming..... 77	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	4 Return to the design start position 171	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	5 Manual Offset 165	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	6 Return to the offset origin 177	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	7 Forced Return Stitches 121	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	9 Frame Travel to an arbitrary position..... 178	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D2 	3 Manual return to marker position 76	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	9 Needle base LED light 18	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	10 LED lamp 210	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Functional Limit Level

F1 	1 Jump Convert.....83	<input type="radio"/>	Key is invalid	Key is invalid
	2 Auto Jump112	<input type="radio"/>		
	3 Satin Stitch110	<input type="radio"/>		
	4 Backlash109	<input type="radio"/>		
	5 Jump Code Combination124	<input type="radio"/>		
	6 Software Frame Limit.....94	<input type="radio"/>		
F2 	1 Min. Revolution90	<input type="radio"/>	Key is invalid	Key is invalid
	2 Revolution Limit91	<input type="radio"/>		
	3 Main Shaft Inching122	<input type="radio"/>		
	4 Automatic Origin Return.....172	<input type="radio"/>		
	5 Frame Travel Speed125	<input type="radio"/>		
	6 Thread Detection81	<input type="radio"/>		
	9 ATH.....78	<input type="radio"/>		
	10 Upper thread lock timing119	<input type="radio"/>		
F3 	2 Sequin213	<input type="radio"/>	Key is invalid	Key is invalid
	8 Auto Clamp Frame216	<input type="radio"/>		
	10 Lochrose embroidery device206	<input type="radio"/>		
F4 	1 Presser foot Up/Down153 (TMBR-SC only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	2 Presser Foot63 (TMBR-SC only)	<input type="radio"/>	<input type="radio"/>	Not to display
	4 Setting in units of Needle bar113	<input type="radio"/>	Not to display	
	8 Multi Cording Device 2.....207 (TMBR-SC only)	<input type="radio"/>		
	9 Multi Cording Device209 (TMBR-SC only)	<input type="radio"/>		
 	1 Data Edit129 (Modification)	<input type="radio"/>		Not to display
	1 Data Edit132 (Insertion)	<input type="radio"/>		
	1 Data Edit136 (Deletion)	<input type="radio"/>		
	2 Cleanup.....117	<input type="radio"/>	<input type="radio"/>	
	4 Move a design.....185	<input type="radio"/>	Not to display	
	5 Copy a design186	<input type="radio"/>		
	6 Changing design name188	<input type="radio"/>		
	7 Changing folder name.....190	<input type="radio"/>		

Functional Limit Level

 	6 USB (Save)..... 194	Password	Not to display	Key is invalid
	7 USB (Delete)..... 196	○	○	
SET+A	1 Design sort (in memory) 192	○	○	Key is invalid
	4 Design sort (USB) 198	○	○	
	7 Condition data..... 151	○	Not to display	
	8 Input confirmation of condition file 152	○		
	9 Automatic data set after end of embroidery... 126	○		
SET+B	9 FS mode Lock..... 120	○	○	Key is invalid
	10 Needle Bar Information..... 147	○	○	
SET+C	6 Presser foot/Needle bar Up at tracing 154	○	Not to display	Key is invalid
SET+E	Presser foot Up/Down (TMBR-SC only) 19	○	○	○
SET+F1	1 Password (Functional Limit) 139	Password	Password	Password
	2 Functional limit level 143			
	6 Frame Limit Setting..... 97	○	Not to display	Not to display
	7 Frame origin memory with the power-ON..... 170	○	○	○
SET+F2	1 Max. Revolution Limit 92	Password	Key is invalid	Key is invalid
	2 Frame Start Timing 118			
	4 ATH Start Timing 87	○		
	6 Return the frame after manual frame travel... 166	○		
	7 Arbitrary position 179	○		
	8 Power Resume 167	○		
	9 Frame Origin Memory 168	○		
	15 Inching r.p.m 123	○		
	17 Sensitivity of ATH error detection 88	○		
SET+F3	2 Main shaft brake 150	○	Key is invalid	Key is invalid
	3 Air Pressure Sensor..... 217	○		
	5 Laser Crosshair Marker 211	○		
	6 Sequin device 202	○		
	10 Network..... 205	○		
	14 Seed Beads Device 203	○		
SET+F4	8 Software Version 148	○	○	○
	10 Language..... 149	○	Not to display	Not to display
SET+ 	10 USB button 161	○	Key is invalid	Key is invalid

Chapter 1 Items that must be followed carefully

1. Safety Precautions.....	2
1-1. Warning	2
1-2. Caution	4
2. Important warning items for safe operation (UL and CSA-spec.)	6
3. Warning labels	9
4. Inspection before starting work.....	10

Chapter 2 Name and way to use of each part

1. Name of each part	12
2. How to use each part.....	13
2-1. Operation panel	13
2-2. Emergency stop switch.....	16
2-3. Needle Base LED Lamp	18
2-4. To suspend a head	18
2-5. Presser foot Up/Down (TMBR-SC only)	19
2-6. Laser Crosshair Marker (option)	20

Chapter 3 Screen

1. Screen display	22
1-1. Main screen	22
1-2. List screen	24
1-3. Setting screen.....	24
1-4. Character/numeric value input screen	24
1-5. Design confirmation screen	25
2. Message display	26
2-1. Condition data.....	26
2-2. Start point of design.....	27
2-3. Offset Return	27

Chapter 4 How to perform embroidery

1.	To turn ON the power.....	30
1-1.	Power switch	30
1-2.	To turn ON the power.....	31
2.	Thread passing, fabric setting	32
2-1.	Thread passing.....	32
2-2.	To set fabric to embroidery frame	35
3.	Registration of a design into the machine memory	36
3-1.	To use USB memory (Data Input USB).....	36
3-2.	To use personal computer (Data Input LAN).....	40
3-3.	To use personal computer (Data input "name")	45
4.	Decision of an embroidery design and the color change sequence.....	47
4-1.	To decide embroidery design (Data Setting).....	47
4-2.	To decide color change sequence (Needle Bar Selection)	50
4-3.	To change color automatically / to start operation automatically (Auto Color Change "AC" / Auto Start "AS").....	54
5.	Decision of the design start position.....	56
5-1.	To check design size and setting contents of design (Check of design).....	56
5-2.	To move frame to the design start position (Manual frame travel)	57
5-3.	To check if design fits in embroidery space (Trace).....	60
6.	Check items before embroidering	62
6-1.	Maximum speed (Maximum RPM)	62
6-2.	Presser foot setting (TMBR-SC only)	63
7.	Embroidery starts	66
7-1.	Start and stop	66
7-2.	To return frame/To advance frame (Frame Back/Frame Forward)	67
7-3.	Handling of thread breakage	70
7-4.	Completion of embroidery	72

Chapter 5 Functions concerning embroidery

1.	To change color	74
1-1.	To change color manually (Manual Color Change)	74
1-2.	To light the laser crosshair marker manually (Manual return to marker position).....	76
2.	To trim thread	77
2-1.	To trim thread manually (Thread breakage indicator lamp).....	77
2-2.	To trim thread manually (Manual Thread Trimming)	77
2-3.	To trim thread automatically (ATH).....	78
2-4.	To change thread breakage detecting sensitivity (Thread Detection)	81
2-5.	To trim thread by the number of consecutive jump stitches (Jump Convert).....	83
2-6.	To add thread trimming code to the design and trim thread (Data Edit "Insert")	84
2-7.	To change thread trim timing (ATH Start Timing)	87
2-8.	To set the sensitivity of ATH error detection (Sensitivity of ATH error detection)	88
3.	To set the embroidery speed.....	90
3-1.	To limit embroidery speed by stitch length (Min. Revolution)	90
3-2.	To set embroidery speed within speed limit section (Revolution limit)	91
3-3.	To decide upper limit value of the maximum speed (Max. Revolution Limit).....	92
4.	To stop the machine	93
4-1.	To stop the machine automatically when reaching the set value (Preset Halt)	93
4-2.	To stop the machine before needle bar hits the frame (Software Frame Limit).....	94
4-3.	To stop the machine with needle bar stuck in the material (Stop at Lower D.Point)	96
4-4.	To stop at Frame Limit (Frame Limit setting).....	97
5.	To change the direction and the size of the design	99
5-1.	To perform enlargement, rotation, reversion (Data Conversion)	99
5-2.	Tilt the design, change the placement (Design position adjustment)	101
6.	To embroider the same design repeatedly	105
6-1.	To repeat to horizontal and vertical direction (Repeat).....	105
6-2.	To repeat at the same place (A.S. after Auto Data Set)	108
7.	To adjust finishing of embroidering.....	109
7-1.	To adjust driving error of the frame (Backlash).....	109
7-2.	To adjust stitch length of satin stitch (Satin Stitch)	110

7-3.	To divide a long stitch (Auto Jump)	112
7-4.	To change stitching condition in every needle bar (Setting in units of Needle bar).....	113
7-5.	To delete tiny stitch (Cleanup).....	117
7-6.	To change thread tension (Frame Start Timing)	118
7-7.	Not to stand out the edge of upper thread (Upper thread lock timing)	119
7-8.	To embroider by using badly passing thread or loosely twisted thread (FS mode Lock)	120
7-9.	To perform return stitches at start of sewing (Forced Return Stitches).....	121
8.	To increase embroidering efficiency.....	122
8-1.	To change number of lowering needle bar at slow operation (Main Shaft Inching)	122
8-2.	To set embroidery speed at slow operation (Inching r.p.m)	123
8-3.	To collect up frame moving amount of consecutive jump stitches in a batch to feed the frame all at once (Jump code combination)	124
8-4.	To change moving speed of needle bar case (Color change speed).....	124
8-5.	To change travel speed of the frame (Frame Travel Speed)	125
8-6.	To set data of the design automatically after the embroidery is finished (Automatic Data Set after finishing embroidery).....	126
8-7.	Embroidering multiple name designs (continuous names).....	127
9.	To edit design.....	129
9-1.	To modify the stitch (Data Edit "Modify")	129
9-2.	To insert the stitch (Data Edit "Insert")	132
9-3.	To delete the stitch (Data Edit "Delete").....	136
10.	Setting and resetting of password	139
10-1.	To change password (Functional Limit of Password).....	139
10-2.	To cancel the password	141
10-3.	Not to display some operation (Functional limit level)	143
11.	Various functions.....	145
11-1.	To check the number of total stitches up to now (Total Stitch Counter).....	145
11-2.	To color in every needle bar (Needle Bar Color).....	146
11-3.	To display the setting color when making the design (Needle bar information)	147
11-4.	To check version of current software (Software Version).....	148
11-5.	To switch display language (Language).....	149
11-6.	To release fixing of main shaft motor (Main shaft brake)	150

11-7. To read /Not to read Condition data (Condition data).....	151
11-8. To display/Not to display the screen for reading Condition data (Input confirmation of condition file).....	152
11-9. To lower / raise presser foot (TMBR-SC only).....	153
11-10. To move down/up the presser foot and needle bar before tracing	154

Chapter 6 Functions concerning frame movement

1. To return the frame (Frame Back) / to advance the frame (Frame Forward)	156
1-1. To switch Frame Back / Frame Forward.....	156
1-2. To execute by Stop code, to specify number of stitches to execute.....	157
1-3. To specify the needle position (stitch number) and perform FB/FF (Needle position specification FB/FF).....	159
1-4. To perform frame forward using the USB key (USB button).....	161
1-5. To change a frame feed amount of frame back / frame forward.....	162
2. Necessary works after replacing the frame	163
2-1. Change of frame type, Rotation of design by 180°	163
3. To return the frame to the original position	165
3-1. To return the moved frame to the previous position (Manual Offset)	165
3-2. To return moved frame to original position and start operation (Return the frame after manual frame travel)	166
3-3. To prevent displacement of design when the power is shut off during operation (Power resume)	167
3-4. To memorize frame origin (Frame origin memory)	168
3-5. To perform Frame origin memory when the power is turned ON (Frame origin memory with the power-ON)	169
4. To return the frame to the design start position	171
4-1. To return the frame to the design start position manually (Return to the design start position).....	171
4-2. To return the frame to the design start position automatically (Auto Origin Return).....	172

5.	To move the frame to the position registered.....	173
5-1.	To move the frame automatically at the start and the end of embroidery (Automatic Offset).....	173
5-2.	To move the frame automatically at the start, in the middle and the end of embroidery.....	175
5-3.	To return the frame to the offset start position manually (Return to the offset origin)	177
5-4.	To move frame to registered position (Frame travel to optional position)	178
6.	To register the frame position.....	179
6-1.	To register your desired frame position (arbitrary position).....	179
6-2.	To register the design layout (Design start position)	180

Chapter 7 Function concerning storing and deleting of design

1.	Design stored in the machine memory.....	184
1-1.	To delete a design (Memory Delete)	184
1-2.	To move a design (Movement of design)	185
1-3.	To copy a design (Copy a design).....	186
1-4.	To change the file name of the design (Changing design name).....	188
1-5.	To change a folder name (Changing folder name).....	190
1-6.	To sort a design (Design sort "in memory").....	192
1-7.	To store a design to a USB memory (USB "Save").....	194
2.	Design stored in USB memory	196
2-1.	To delete a design (USB Delete).....	196
2-2.	To sort a design (Design sort "USB")	198

Chapter 8 Setting for optional device

1.	To make optional device available for use.....	202
1-1.	Sequin device IV.....	202
1-2.	Seed Beads Device	203
1-3.	Network.....	205
1-4.	Lochrose embroidery device.....	206
1-5.	Multi cording device 2 (TMBR-SC only).....	207
1-6.	Multi cording device (TMBR-SC only).....	209
1-7.	To turn ON/OFF LED lamp	210
1-8.	Laser Crosshair Marker	211
2.	To set details of optional device	213
2-1.	Sequin device IV.....	213
2-2.	Auto Clamp Frame.....	216
3.	Functions concerning optional device.....	217
3-1.	To make the air compressor available for use (Air Pressure Sensor)	217

Chapter 9 Troubleshooting

1.	What to do when the machine stopped	220
1-1.	Normal stop	220
1-2.	Abnormal stop.....	221
1-3.	Stop due to malfunction.....	223
2.	Trouble examples and Corrective actions	226
2-1.	Thread often breaks.....	226
2-2.	Needle breaks.....	227
2-3.	Embroidery results not good.....	227

Chapter 10 Maintenance and Inspection

1. Items that must be followed carefully	230
2. Cleaning	231
2-1. TMBR-SC, TMBP-SC	231
3. Lubrication	234
3-1. TMBR-SC	235
3-2. TMBP-SC	238
4. Greasing	240
4-1. TMBR-SC	241
4-2. TMBP-SC	243
5. Inspection, Repair	245
6. Adjustment of Snap-fit middle thread guide	246

Chapter 11 Appendix

1. Machine specifications	250
1-1. Electrical specifications	250
1-2. Ambient noise level	250
1-3. Machine weight	250
2. Function Code	251
2-1. Function codes that can be edited by this machine	251
2-2. Function codes that cannot be edited by this machine (display only)	252
3. FS Mode Lock	253
3-1. Sewing comparison	254
3-2. To improve embroidery results further	256
4. How to attach LED Lamp (Option)	257
5. Electrical system diagram	258
6. Terminology	260

Chapter 1

Items that must be followed carefully

1. Safety Precautions.....	2
2. Important warning items for safe operation (UL and CSA-spec.)	6
3. Warning labels	9
4. Inspection before starting work.....	10

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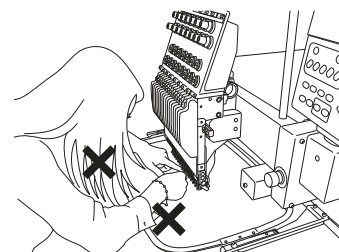
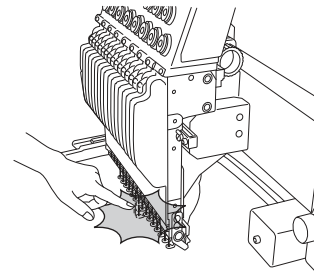
1. Safety Precautions

1-1. Warning

To prevent accidents resulting in injury or death and physical damage, the following items must be observed strictly when operating the machine.

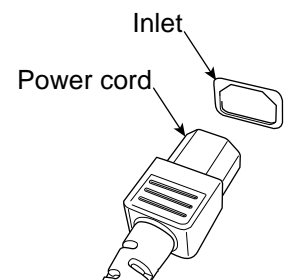
WARNING

-  This machine is designed for industrial use. Use this machine for semi- or finished textile products and similar materials. Using the machine for other purposes must be avoided.
-  Do not stand on the machine.
-  Do not use a device such as a cellular phone that generates microwave near the control circuits of the power supply box, the operation panel box, etc. Microwave may cause malfunctioning of the machine.
-  Do not detach covers for the shaft and the pulley. Also, do not run the machine without the covers.
-  Do not have your hands, etc. access to the vicinity of needle during operation. Otherwise, sticking of needle could injure you.
-  During operation, do not access your hands and/or face to moving sections. Especially, it is dangerous around needle, rotary hook, take-up lever, pulley and speed-reduction box.
-  This machine uses strong magnet. The person, who is mounted with internal implantable medical electronics like a pacemaker, should not use this machine. The person who is mounted with a equipment described above also should not access to magnet inside of this machine. This internal equipment could malfunction.
-  Read this book thoroughly and understand the contents of operation certainly. Then, operate the machine.
-  Wear proper clothes and tidy up yourself so that you can smoothly perform the operation.
-  A single operator should operate the machine in principle. If plural operators are working together, make sure that no one is working near the moving units of the machine before starting the machine.
-  Use the machine under the environment where access can be supervised so that unauthorized person does not operate the machine. Supervise children so that they do not access to the machine.
-  Only the persons who are sufficiently trained for the operation must operate the machine.
-  The rear of the machine is not a working area. If you have to move to the rear of the machine, make sure to turn OFF the main switch.



! WARNING





- !** Stop the machine before threading into the needle and checking the finish of embroidery.
- ⚠** Do not damage, modify or heat the power or other cables. Do not exert undue force to them, either. Otherwise the cables will be damaged causing fire and electric shock.
- ⚠** Insert the power cable plug fully. If a metallic part etc. touches an electrode in the plug, it may cause fire and/or electric shock.
- ⚠** Keep away electrical units from water and chemicals. Entry or splashing of them into electrical units leads to short circuits, causing fire, electric shock and other troubles. If water or other chemicals enter the unit, turn OFF the power switch, shut OFF the primary power of the machine and contact your local distributor.
- ⚠** Before opening the electrical boxes, be sure to turn OFF the power switch of the machine and shut OFF the primary power. If not, it may cause electric shock.
- ⚠** When replacing electrical components, turn OFF the power switch and pull out the power cord from the inlet. Otherwise, it may cause electric shock.



1-2. Caution





When operating the machine, the following items must be observed strictly to prevent accidents resulting in injury or death and property damage.

CAUTION

-  Use the machine with about 70% of the maximum speed as "Operation for total fitting" for about one week after installing this machine. By performing operation for total fitting, life of the machine will become longer, which will be useful to avoid unexpected troubles.
-  Do not use bent needles or needles that are not suitable for the material. Be sure to turn OFF the power switch after working, and turn OFF the primary power supply.
-  Do not put things on the machine table.
-  This machine uses strong magnet. This machine including magnet should not be accessed to a cellular phone, an analogue watch, a floppy disk, a magnetic card, a magnetic tape or a magnetic ticket.

In addition to full-time leak current, leak electric current generated by harmonics and surge flows in the power cable of the machine. For this reason, if selection and installation of breaker of leak current and leak current relay used for the factory are not correct, malfunctioning of the machine may occur.

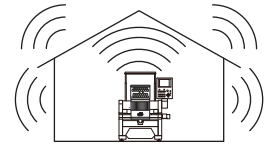
Regarding connection of power cord, observe the following items.

-  Use a breaker of electric current leakage and leak current relay for which measures are taken against harmonics and surge. If you use conventional breaker and relay without such measures, select with sufficient leak current capacity to fill up leak current by harmonics and surge. (In this case, leak current must be controlled constantly satisfactorily.)
-  Regarding capacity of electric current leakage for leakage breaker and leak current relay necessary per machine, consult your local TAJIMA distributor.
-  For actual product names of breaker of electric current leakage and leak current relay for which measures are taken against harmonics and surge, please consult your local TAJIMA distributor or electric engineers.
-  To prevent the machine from property damages (the power decline of the main shaft motor, etc., stop position error and its color change error, design displacement, etc), one embroidery machine should be connected to one no fuse breaker in regard to connecting power harness.

! CAUTION

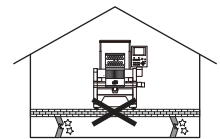
- ! Control the operation noise in the environment.

This machine is designed to reduce noise during operation. To improve the sound insulation performance in a factory still more, use the interior finish materials which show high sound insulating performance for the walls, ceiling, and floor of the factory.



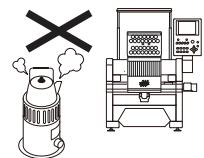
- ! Install the machine on a sturdy floor.

The floor structure must be strong enough to bear the machine weight (indicated on the spec. plate).



- ! Avoid dust and moisture.

Since dust and moisture lead to dirt and rust on the machine, use the machine in an environment of facility of air conditioner, and clean the working place periodically. Use caution not to expose the machine to direct wind from the air conditioner so that embroidery threads do not become disheveled.



Humidity:

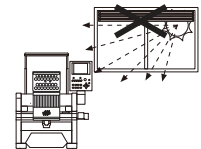
30 to 95% RH (relative humidity) without condensation

Ambient temperature:

5 to 40°C (during operation), -10 to 60°C (during storage)

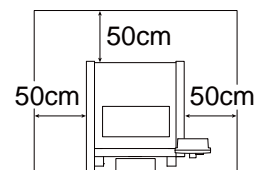
- ! Avoid direct sunlight.

If the machine is exposed to direct sunlight over an extended period of time, the machine body may be discolored or deformed. Put curtains or shades to prevent the machine from direct sunlight.



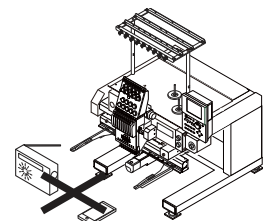
- ! Provide enough space for maintenance.

Taking account of workability when maintaining and inspecting the machine, provide 50 cm or more working area to right, left and rear directions of the machine against obstacles such as walls.



- ! Pay attention to interference of radio wave.

Although the machine is designed not to affect radio wave interference to other equipments, there could be cases where it causes interference depending on operation environment and type of other equipment. If such problems arise, install the equipment with a space from the machine as big as possible.



2. Important warning items for safe operation (UL and CSA-spec.)

The following contents explains about UL, and CSA spec. machines.

IMPORTANT SAFETY INSTRUCTIONS

(applied to UL-spec. and CSA-spec. machines)


UL is safety standard applied to USA and CSA is safety standard applied to Canada.

Read all instructions before using this appliance.

When using an electrical appliance, basic safety precautions should always be followed, including the following:











DANGER

To reduce the risk of electric shock:







-  An appliance should never be left unattended when plugged in. Always unplug this appliance from the electric outlet immediately after using and before cleaning.

WARNING

To reduce the risk of burns, fire, electric shock, or injury to persons:

-  Do not allow to be used as a toy. Close attention is necessary when this appliance is used by or near children.
-  Use this appliance only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.
-  Never operate this appliance if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Please consult the nearest authorized dealer or service center and use this appliance after the examination, repair, electrical or mechanical adjustment has been made.
-  Never operate the appliance with any air openings blocked. Keep ventilation openings of the sewing machine free from the accumulation of lint, dust, and loose cloth.
-  Keep fingers away from all moving parts. Special care is required around the sewing machine needle.
-  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 ("O") when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, or changing presser foot, etc.
-  Always unplug sewing machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.

 **WARNING**

-  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("O") position, then remove plug from outlet.
-  Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
-  Connect this appliance to a properly grounded outlet only. See Grounding Instructions.




SAVE THESE INSTRUCTIONS

GROUNDING INSTRUCTIONS

(applied to UL-spec. and CSA-spec. machines)

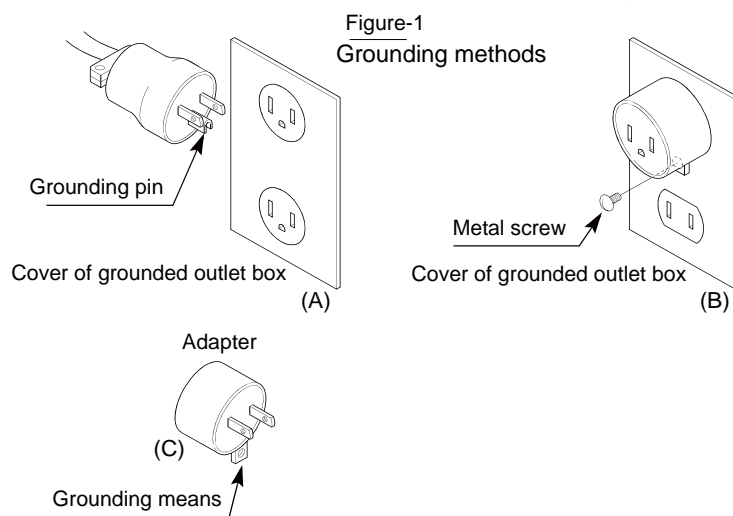
This product must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged 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. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
-  Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded.
-  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.

! DANGER

! This product is for use on a nominal 120V circuit, and has a grounding plug that looks like the plug illustrated in sketch A in Figure-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 the metal screw.



3. Warning labels

The machine has warning labels that bear instructions for safe operation. When using the machine, machine operators must follow the instructions shown on the warning labels.

Do not detach the warning label nor make the printing surface illegible by paint etc. If the warning label is missed or damaged, contact your local distributor.

A Pay attention not to be caught into the machine.

WARNING • AVERTISSEMENT • WARNUNG • ATENCION • AVISO • AVVISO

Moving parts can cause severe injury.
Do not take off the safety covers nor put your hands etc. close to the moving parts during machine operation.

Les parties en mouvement peuvent blesser grièvement.
Ne pas enlever les caches de protection et rester à distance des parties en mouvement.

Sich in Bewegung befindende Teile können schwere Verletzungen verursachen.
Weder Schutzdeckel entfernen, noch Hände etc. in die Nähe von sich bewegenden Teilen bringen, während die Maschine arbeitet.

Las partes en movimiento pueden ocasionar lesión grave.
No retirar las cubiertas de seguridad ni poner las manos, etc., cerca de las piezas en movimiento mientras la máquina esté en funcionamiento.

As peças em movimento podem causar danos graves.
Não retirar as tampas de segurança nem colocar as mãos, etc., junto das peças em movimento durante o funcionamento da máquina.

Le parti in movimento possono causare danni gravi.
Non rimuovere le protezioni di sicurezza, non avvicinare le mani, e.c., vicino alle parti in movimento mentre la macchina è in funzione.

(A1310-EFDSF)

E Pay attention to rotary hook.

CAUTION • PRECAUZIONE VORSICHT • ATTENTION CUIDADO • PRECAUÇÃO

Moving parts
Turn off the switch before accessing to the rotary/shuttle hook.

Parti in movimento
Spegnere l'interruttore di alimentazione prima di toccare il Crochet/Shuttle hook.

Bewegliche Teile
Vor Zugriff auf den Greifer/Pendelgreifer Stromschalter aus.

Pièces mobiles
Arrêtez l'interrupteur avant d'accéder au crochet/à la navette.

Las partes en movimiento
Apague el interruptor eléctrico antes de acceder al Gancho Giratorio/Gancho oscilante.

Peças em movimento
Desligue a chave geral antes de acessar a Lançadeira Rotativa/Lançadeira Oscilante.

(A1010-EDFSP)

B Pay attention around needle.

WARNING • AVERTISSEMENT • WARNUNG • ATENCION • AVISO • AVVISO

Exposed needles can cause severe injury.
Stop the machine before working near the needles.

Les aiguilles sans protection peuvent blesser grièvement.
Arrêter la machine avant d'approcher des aiguilles.

Freistehende Nadeln können schwere Verletzungen verursachen.
Stoppen Sie die Maschine, bevor Sie in Nadelnähe arbeiten.

Las agujas expuestas pueden ocasionar lesión grave.
Detenga la máquina antes de trabajar cerca de las agujas.

As agulhas expostas podem causar danos graves.
Pare a máquina antes de efectuarem qualquer trabalho junto das agulhas.

Avvicinarsi agli aghi può causare danni gravi.
Fermare la macchina prima di lavorare in prossimità degli aghi.

(A1410-EFDSF)

F Pay attention to high voltage.



There could be danger of electric shock, burning, or death. Persons except the service personnel designated by Tajima should not open the covers.

When you open the cover, turn OFF the power switch and wait for four minutes.

C Pay attention not to be clipped into the machine.

WARNING • AVERTISSEMENT • WARNUNG • ATENCION • AVISO • AVVISO

Moving parts can cause severe injury.
Do not take off the safety covers nor insert your hands etc. into the gap during machine operation.

Les parties en mouvement peuvent blesser grièvement.
Ne pas enlever les caches de protection et rester à distance des parties en mouvement.

Sich in Bewegung befindende Teile können schwere Verletzungen verursachen.
Weder Schutzdeckel entfernen, noch geben Sie Ihre Hände etc. in die Lücke, während die Maschine arbeitet.

Las partes en movimiento pueden ocasionar lesión grave.
No retirar las cubiertas de seguridad ni introducir las manos etc. en el vacío mientras la máquina esté en funcionamiento.

As peças em movimento podem causar danos graves.
Não retirar as tampas de segurança nem colocar as mãos etc. na fenda durante o funcionamento da máquina.

Le parti in movimento possono causare danni gravi.
Non rimuovere le protezioni di sicurezza, non inserire le mani ecc. nello spazio vuoto mentre la macchina è in funzione.

(A1510-EFDSF)

D Pay attention to dropping.

WARNING • AVERTISSEMENT • WARNUNG • ATENCION • AVISO

Dropping will cause severe injury.
Appropriate number of persons should lift this machine by holding the indicated spots.

Toute chute peut causer de graves blessures.
Veuillez soulever la machine au niveau des points indiqués avec le nombre de personnes approprié.

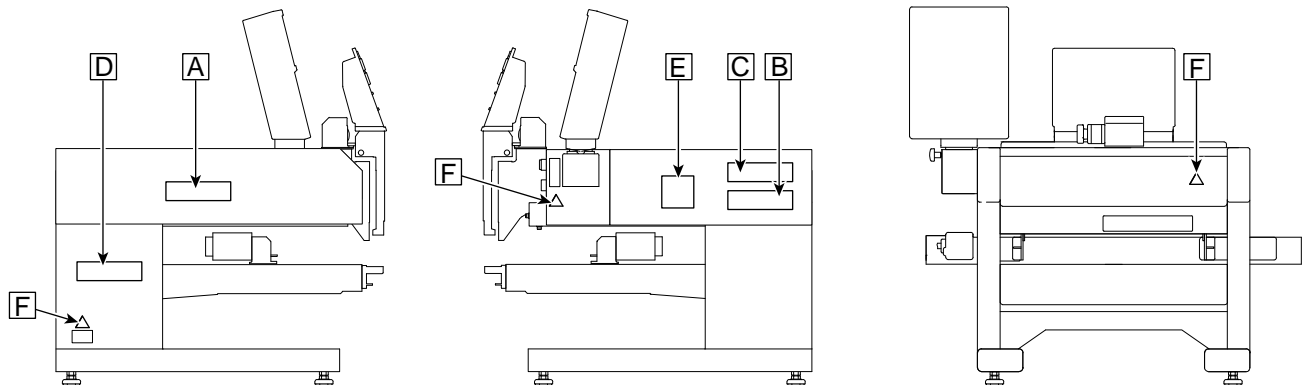
Es kann zu ernsthaften Verletzungen führen, wenn die Maschine auf Ihre Füße fällt.
Eine angemessene Anzahl Personen sollte diese Maschine an den dafür vorgesehenen Stellen anheben.

Puede causar lesión seria si la máquina cae a sus pies.
Número apropiado de personas deben levantar la máquina sujetando los puntos indicados.

Pode causar lesões graves se você deixar a máquina cair em seus pés.
Número adequado de pessoas deve levantar a máquina segurando nos pontos indicados.

Può provocare ferite serie se la macchina cade ai vostri piedi.
Due o più persone possono sollevare la macchina mettendo le mani nei punti indicati.

(A1210-EFDSF)



4. Inspection before starting work

Before starting work, execute inspection (including cleaning, lubrication) of each part.

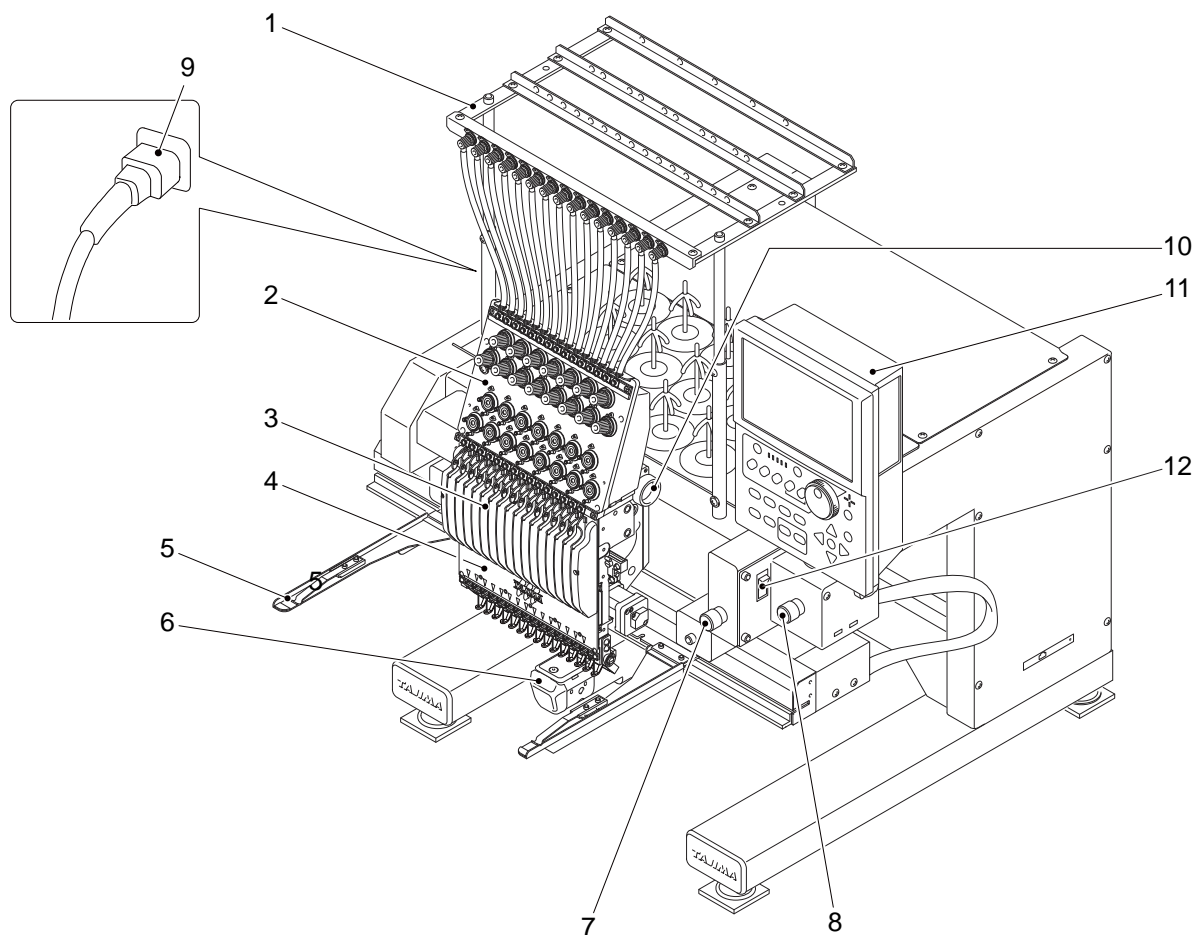
Place	Checking
Covers	Covers might have been attached incorrectly.
Upper thread	The thread might have been passed incorrectly to each part. The tension might have been inadequate. The thread might have been entwined around frame/drive system.
Under thread	The under thread (bobbin case) might have been set to rotary hook incorrectly. The tension might have been inadequate.
Needle	The needle might have bent. The direction of needle might have been wrong. The needle might have been broken.
Rotary hook (p.231)	Cleaning/lubrication might have been performed in inadequate frequency.

Chapter 2

Name and way to use of each part

- 1. Name of each part12
- 2. How to use each part.....13

1. Name of each part

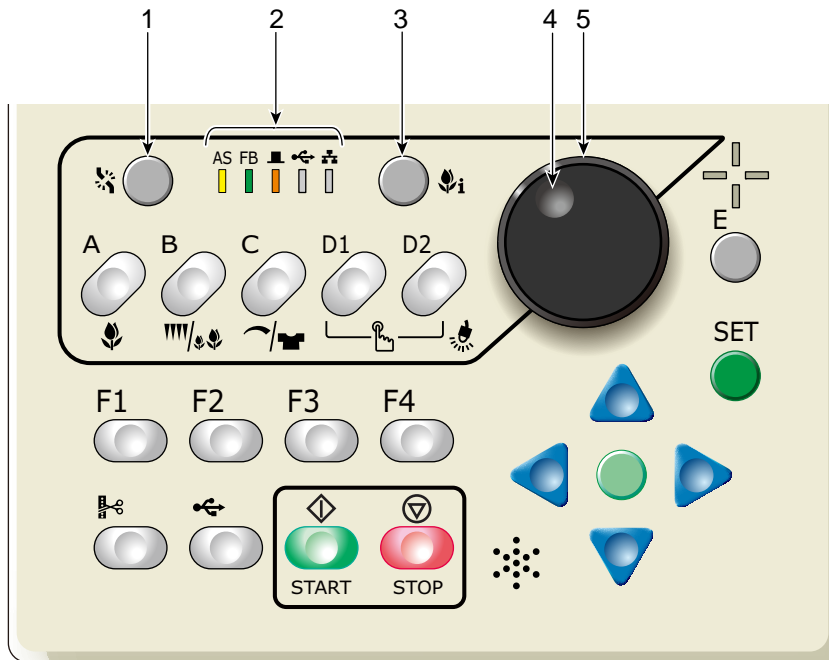


Only main sections are shown here. For details, refer to the separate parts list.

- | | |
|--|---|
| 1. Thread course | 8. Emergency stop switch (18-needle machine only)
(p.16) |
| 2. Tension base | 9. Power cord |
| 3. Snap-fit middle thread guide (p.246) | 10. Color change system |
| 4. Needle Base LED Light (p.18) | 11. Operation panel (p.13) |
| 5. Frame holder | 12. Power switch (p.30) |
| 6. Cylinder bed | |
| 7. Emergency stop switch (except 18-needle machine) (p.16) | |

2. How to use each part

2-1. Operation panel



1. Thread breakage indicator lamp (p.70)
To suspend a head (p.18)
To trim thread (p.77)

2. Condition of the machine
AS (Auto Start)

To perform: Lit

Not to perform: Unlit

- FB/FF (Frame Back / Frame Forward) (p.67)

Frame Back: Lit

Frame Forward: Unlit

- (Main shaft stop position)

Fixed position: Lit (normal)

Other than the fixed position: Unlit
(abnormal)

Lower dead point, or main shaft brake
"NO": Blinking

- 🔌 (USB memory)

Connecting to USB memory: Lit

- 🌐 (LAN)

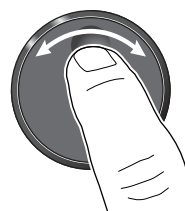
Connecting to LAN: Lit

3. Design confirming mode key (i key in this manual) (p.25)

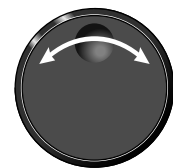
It is possible to check the detail of the design to be embroidered from now.

4. Jog dial

Move the frame at low speed.

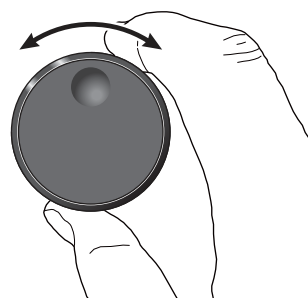


It is illustrated as below in this manual.

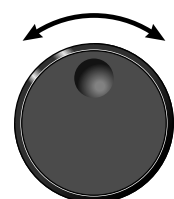


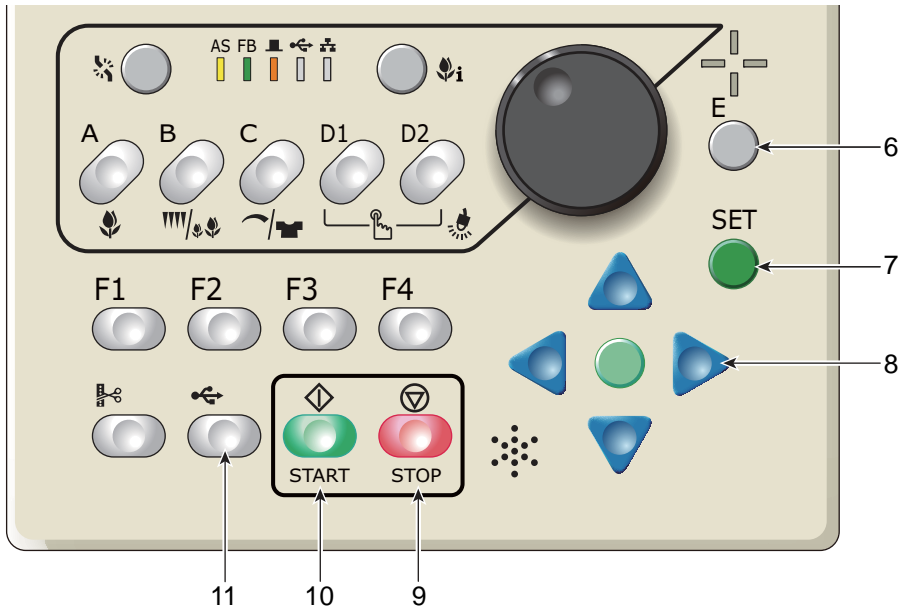
5. Jog shuttle

Move the frame at high speed.



It is illustrated as below in this manual.





6. Escape key (E key in this manual)
 The screen will return to the original screen.
 Release the stop factor.
 Frame travel direction will be selected at Frame Travel by using the the jog dial or the jog shuttle. (p.58)

7. Set key
 Determine the selected value.

8. Frame Travel key (p.58)
 Move the frame manually.

9. Stop key (p.66)
 The red LED will be lit.
 Performs frame back or frame forward. (p.67)

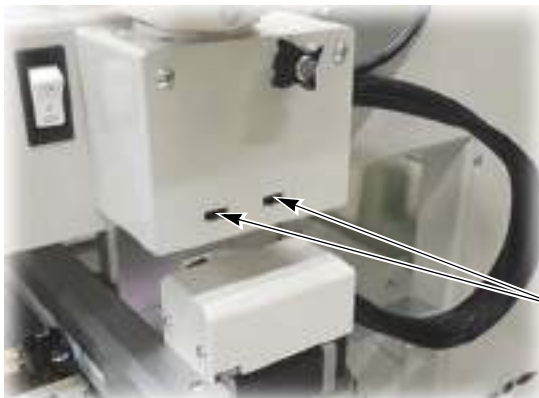
10. Start key (p.66)
 The green LED will be lit.

11. USB key (p.194), or frame foward key (p.161)
 Performs frame forward when frame forward is set (lit in orange).

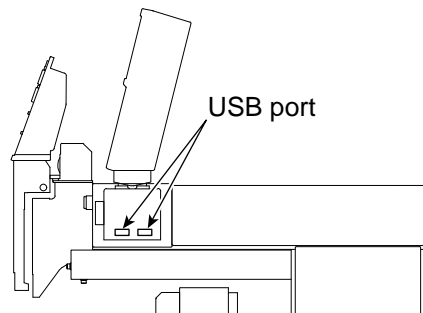
2-1-1. USB port

Two USB ports are located at the side face of the right-side of the machine. Use the USB port for the following purpose.

- When connecting the USB memory
- When connecting the bar code reader (commercial item)



USB port



2-1-2. USB memory

Prepare a commercial item. USB memory is used for the following cases.

- When registering the design (saved in the USB memory) into the machine memory
- When saving the design (saved in the machine memory) into the USB memory
- When installing the software in the machine

Some type and/or capacity of the USB memory could not be used for this machine. In this case, buy the USB memory recommended by Tajima. For details, consult the distributor.

For using the USB memory, observe the items to notice described below.

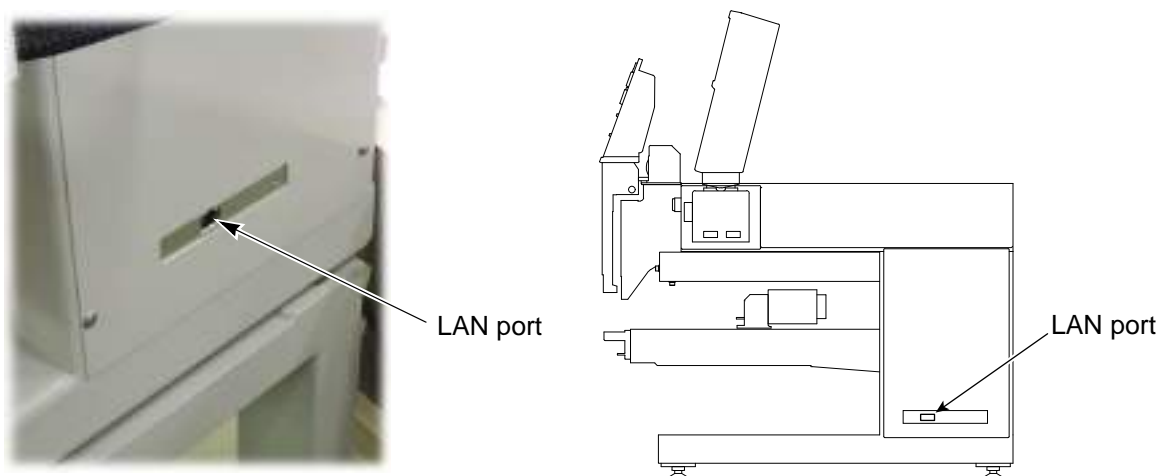
! CAUTION

- !** Do not turn ON the machine power in the state that the USB memory is connected to the operation panel except when installing the software in the machine. The system sometimes may not start up.
- !** Do not insert in or pull out the USB memory during operation (when the main shaft motor and the frame are moving, or in the middle of color change etc.). Inside circuit board could be damaged.
- !** When you insert the USB memory, do not mistake the direction of connector. The USB memory and its inside circuit board could be damaged.
- !** Do not insert the USB memory in the state that dirt and dust are attached to the inside of the connector.
- !** Insert the USB memory slowly and gently.
- !** Insert the USB memory upright against the port (insertion slot). Oblique insertion could damage to inside circuit board due to interference of connector with the circuit board.
- !** Wait for five or more seconds after inserting or taking out the USB memory, and then start the operation. It may take about one minute at a maximum to recognize data.

2-1-3. LAN port

The LAN port is at the side face of the right-side of the machine.

Use the LAN port when connecting the LAN cables.





2-2. Emergency stop switch

The emergency stop switch is equipped as a measure for safety. Pressing this switch will lock the switch and stop the machine.



[Process after pressing emergency stop switch to lock release]

CAUTION

-  Wait for five seconds or more while the power is turned OFF and it is turned ON next. Otherwise, the software may not start up normally.
-  In case of excluding EN-spec. and Japanese domestic use, the machine will be turned ON and be in the state of standby after releasing lock. When performing the maintenance work in this state, pull out the power cord from the inlet. High voltage electric current flows in P.C. board inside the machine, so it could cause electric shock.

Specification of the machine	Condition after stop	How to cancel after pressing emergency stop switch
EN-spec. (European safety spec.)	Power switch OFF (Also main power OFF)	<ol style="list-style-type: none"> 1. The switch will be locked, and the machine will stop due to the power shut OFF. The power switch will be turned OFF. 2. Wait for five seconds or more, and turn the switch clockwise. (Lock release) 3. Set the power switch to "ON". The main power will be turned ON. 4. The screen of "Power Resume" may appear depending on the machine condition. Therefore, execute according to the screen display.

Excluding EN-spec., and Japanese domestic use	Power switch ON (Main power OFF)	<ol style="list-style-type: none">1. The switch will be locked, and the machine will stop due to the power shut OFF. However, the power switch will be kept ON.2. Wait for five seconds or more, and turn the switch clockwise. (Lock release) The power will be turned ON.3. The screen of "Power Resume" may appear depending on the machine condition. Therefore, execute according to the screen display.
---	---	---

2-3. Needle Base LED Lamp

The needle base LED lamp can be lit or unlit by the operation panel.



Needle Base LED Light

How to turn ON or OFF needle base LED lamp

- (1) Press D2 key to select "9 Needle base LED light".



- (2) Select ON/OFF by using the jog dial, and press SET key.

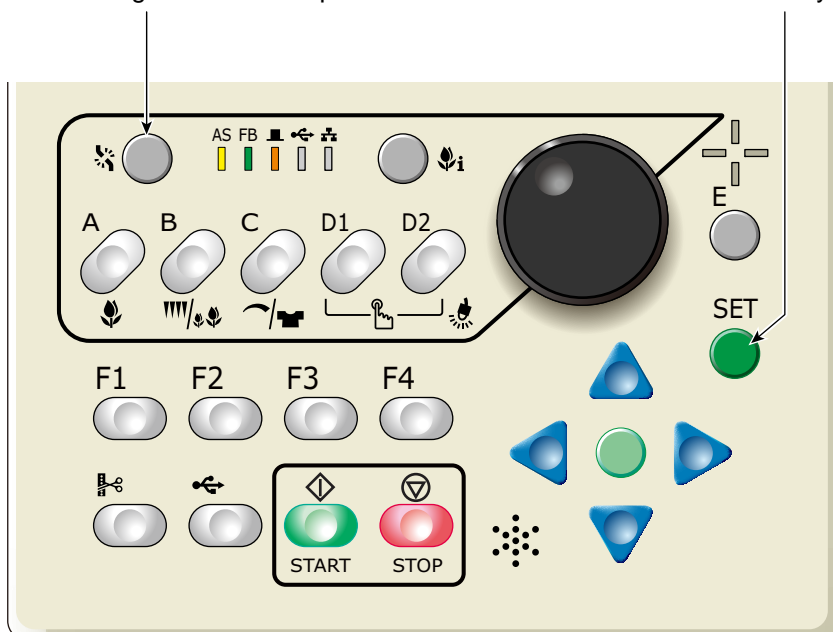
ON: Lit
OFF: Unlit

2-4. To suspend a head

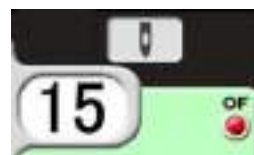
By pressing the thread breakage indicator lamp while pressing SET key in the state of main screen, the state of the head (operation possible/suspended) will be switched. The state after switching can be confirmed on main screen.

Thread breakage indicator lamp

Set key



Operation possible



To suspend



2-5. Presser foot Up/Down (TMBR-SC only)

When the machine stops, the movement of the presser foot can be switched to three steps by the operation panel. It is also possible to start the operation in the state that the presser foot has lowered.

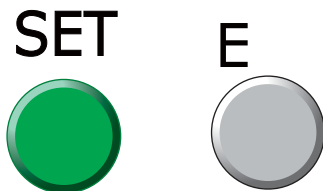
This function can be operated also at "F4-1: Presser foot Up/Down". (p.153)

[Method of Presser foot Up/Down]

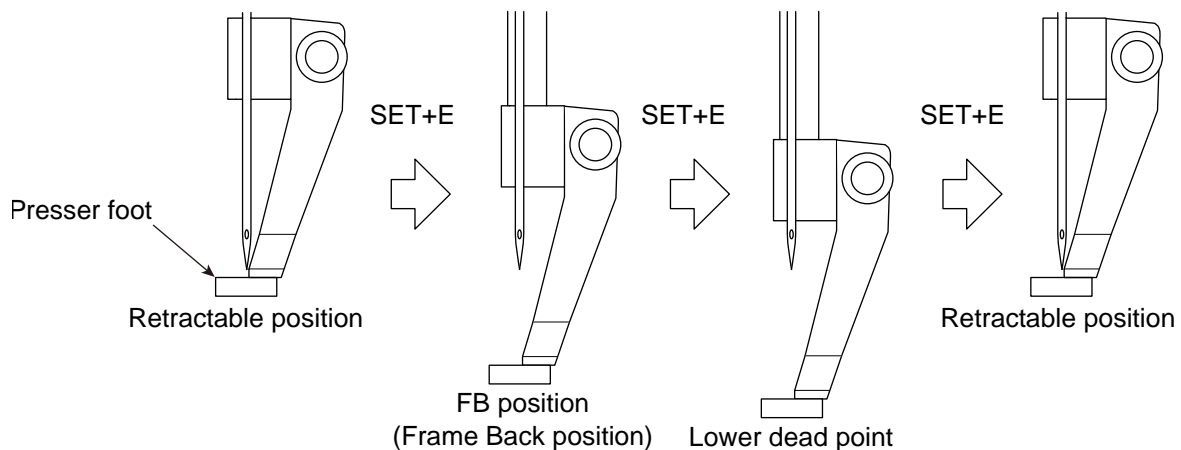
⚠ CAUTION

⊘ When performing this operation, do not put your hands, etc near the needle or on the table. Moving up/down of the presser foot could injure you.

Press E key while pressing SET key.



By repeating this operation, the presser foot will perform the following movements.





The lower dead point and FB position will be applied by values of "F4-2: Presser foot". (p.63)

Retractable position	When the machine stops, the presser foot is at this position.
FB position	The presser foot on the head with thread broken is located to this position when performing Frame Back.
Lower dead point	It means the lower dead point of the presser foot. (The position that lowered most) When you want to check the current selected needle bar No. and thickness of the fabric, set to this position.

2-6. Laser Crosshair Marker (option)

It is possible to irradiate laser beam to fabric and check the position to embroider. (p.211)

 **CAUTION**

 Do not watch irradiation aperture of the laser beam directly or do not interrupt the laser beam with your hand or finger.

Safety standard of Laser Crosshair Marker installed in the machine is the class "1".

It conforms to the standard of regulation in the USA (21CFR1010 and 1040).



Laser Crosshair Marker

It cannot be used together with the position marker at the same time.

The name of the manufacturer, the address and other contact details of Laser Crosshair Marker are as follows.

Lanics Co., Ltd

Room#703, 7F Woolim e-Biz Center

170-5, Guro-dong, Guro-gu, Seoul, 152-050, Korea

TEL: +82-2-2108-2255

FAX: +82-2-2108-2260

E-mail: support@lanics.com

[http:// www.lanics.com](http://www.lanics.com)

Chapter 3

Screen

1. Screen display	22
2. Message display	26

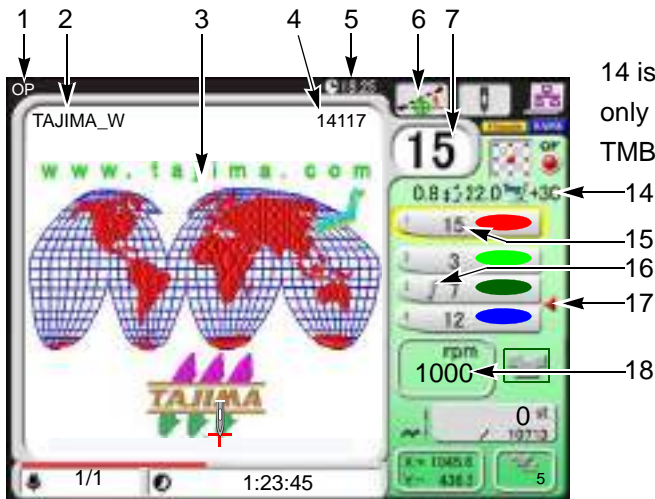


1. Screen display

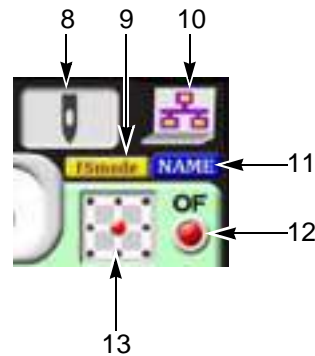
1-1. Main screen

When the power is turned ON, the following screen will appear. From this screen, setting/operation to embroider will start. To return to the main screen from other screen, press E key until the main screen appears.

1-1-1. Explanation on the screen



14 is displayed only in the case of TMBR-SC.



1. Functional Limit Level (p.143)

Without display : -

OP : OPM

NW : NWM

2. File name

3. Design (data set design) to be embroidered from now

4. Total stitch number of design

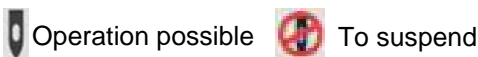
5. Current time

6. Design position adjustment (p.101)



7. Current needle bar No.

8. Condition of head (p.18)



9. FS mode Lock (p.120)



10. Network connected

11. Continuous name mode (p.127)

12. Automatic Offset (p.173)



13. Design start position setting (p.180)

14. The presser foot setting currently set (only TMBR-SC)

The value modified by presser foot step unit setting will be displayed in red.

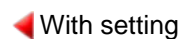
Displayed in red



15. Needle bar No. and the setting color of needle bar being selected at each step (p.50)

16. Displayed if the value is modified by presser foot step unit setting. (p.50)

17. Setting to return the frame to the front in the middle of embroidery



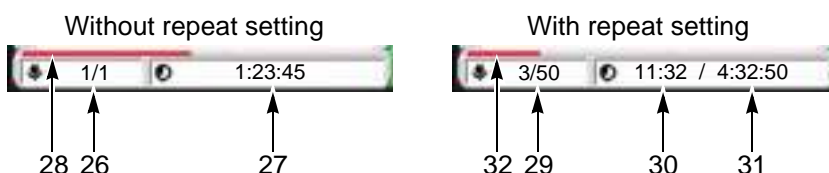
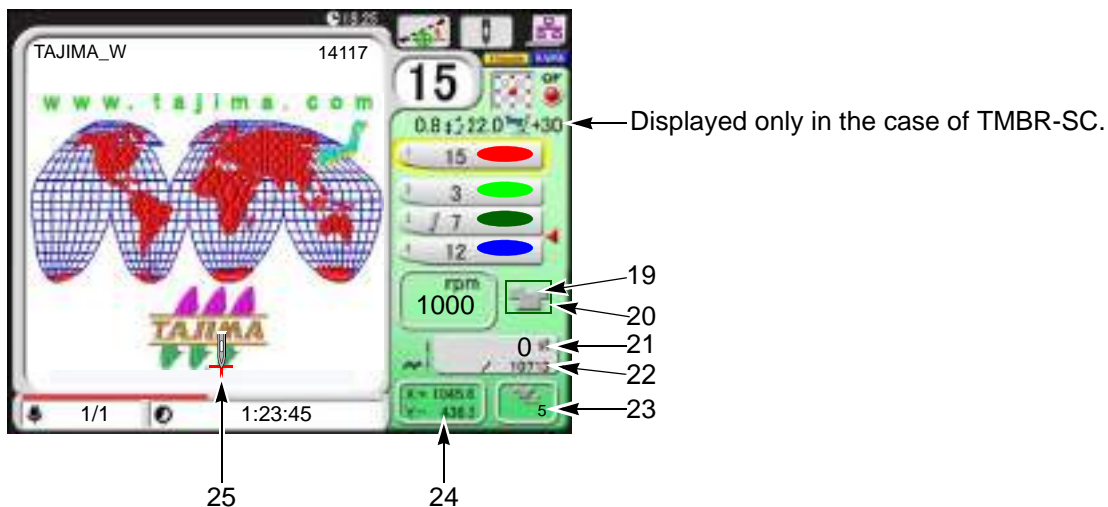
18. Maximum speed (p.62)

During stop

The current set maximum speed will be displayed.

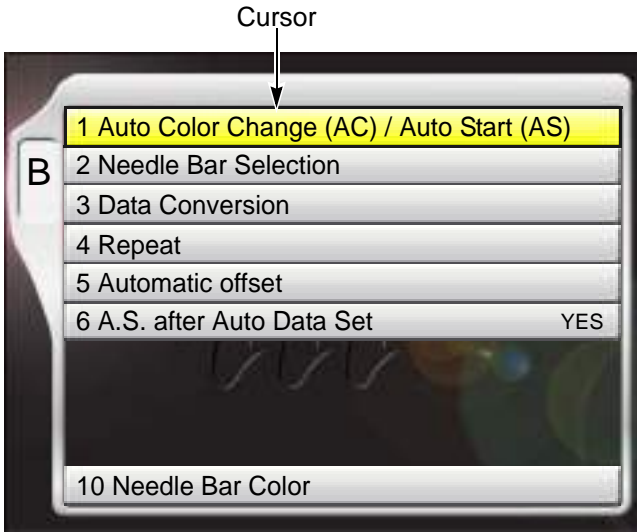
During operation

The actual embroidery speed will be displayed.



- 19. Current set frame
 - Tubular goods frame
 - Border frame
 - Cap frame
 - X-extension unit
 - Tubular goods auto clamp frame
- 20. Software Frame Limit
 - With setting
- 21. Current number of stitches
- 22. Total stitch number of design
- 23. Number of times of embroidering this design
- 24. Current frame position (mm)
A distance from the absolute origin.
- 25. Start point of design
- 26. Without repeat setting
The display shown below will appear if Automatic Start after Automatic Data Set is set to YES.
- 27. Time left until the completion of embroidery (hours, minutes, and seconds)
- 28. Completed ratio of embroidery
- 29. With repeat setting
Repeat count up to the present/Total repeat count
- 30. Time left until the completion of the current embroidery design (hours, minutes, and seconds)
- 31. Time left until the completion of repeat embroidery (hours, minutes, and seconds)
- 32. Ratio of finishing until the completion of repeat embroidery

1-2. List screen



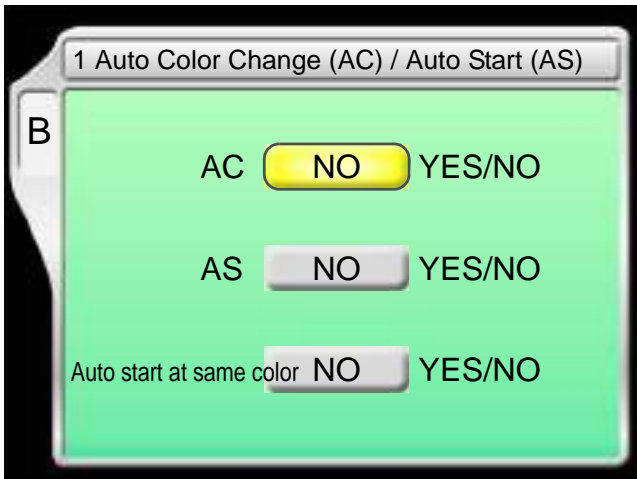
The screen shown left will be displayed if B key is pressed.

Selected item (cursor) will be displayed in yellow.

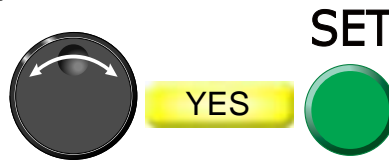
To lower the cursor, press B key or ▼

Pressing the Set key will switch to "Setting screen".

1-3. Setting screen



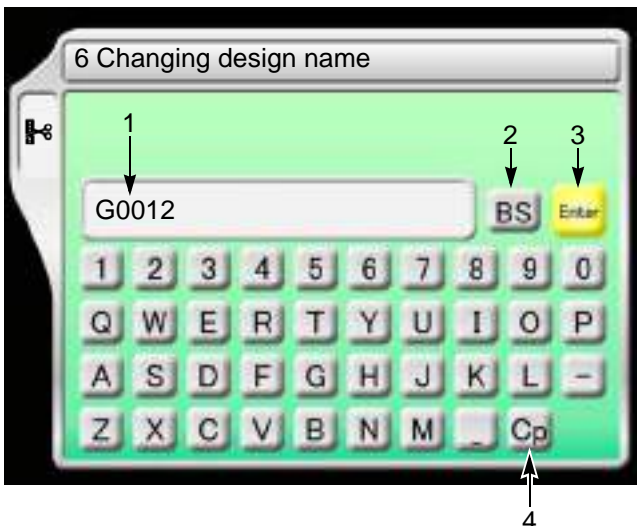
Select YES/NO by using the jog dial and press SET key.



To lower the cursor, press SET key or ▼

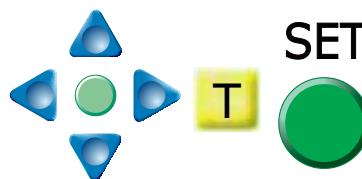
To return the screen, press E key.

1-4. Character/numeric value input screen



1. File name (up to 8 characters)
2. To return the cursor or delete the character.
3. To determine the input character and numeric value.
4. Switching of large letter/small letter

[How to input]



After finishing input, press Enter and SET key.

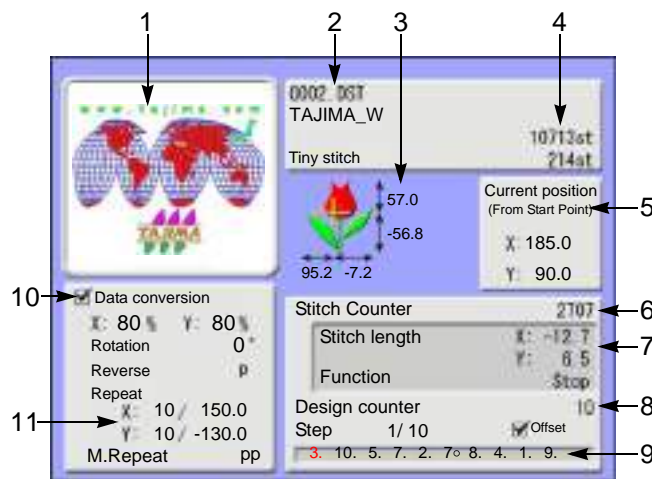
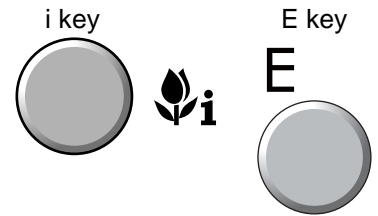
1-5. Design confirmation screen

It is possible to check the setting content of the design to embroider from now and the occurrence record of stop factors (Error Stack).

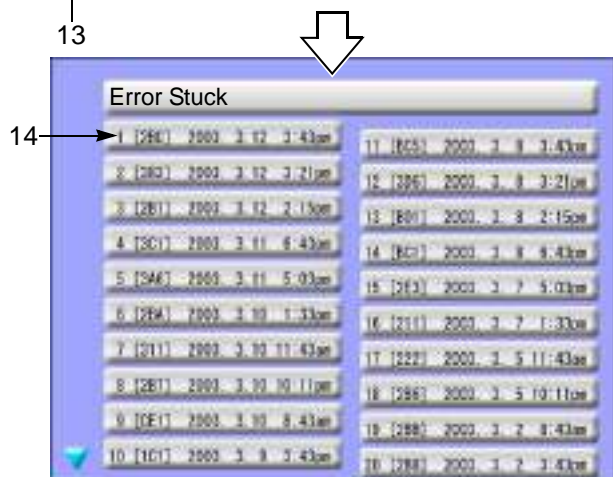
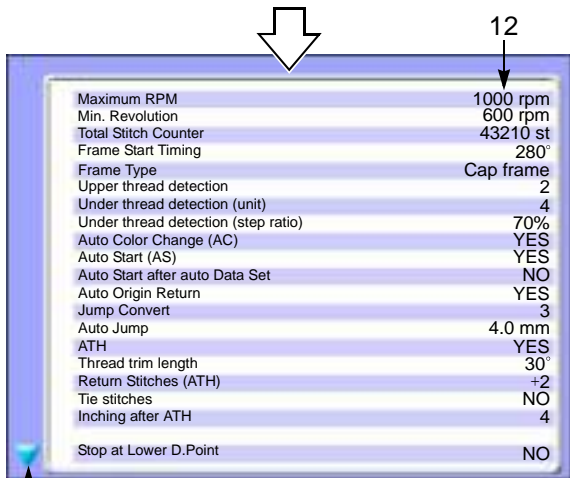
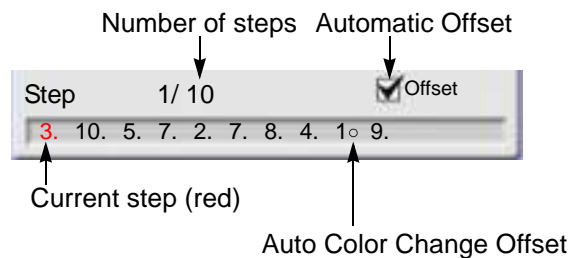
To switch to the design confirmation screen, press i key.

Pressing again i key will switch to the next screen.

To return to the original screen, press E key.



1. Design (data set design) to be embroidered from now
2. File name
3. Design size
+ : Design Start Point (starting position of design)
4. Total stitch number of design
5. Current frame position
Distance from design start point
6. Current number of stitches
7. Current stitch contents
8. Number of embroidered times for this design continuously
9. Step (p.50)

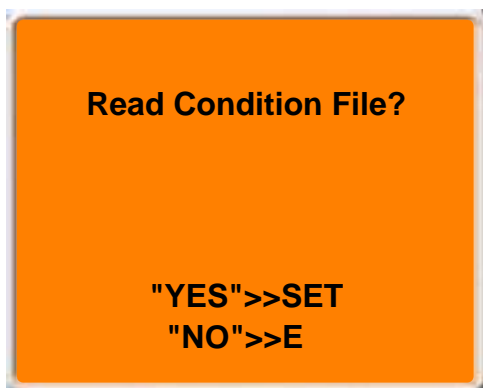


10. Scaling up/down/reversion of design
11. Design repetition
12. Current setting contents
13. It indicates the next page exists.
Pressing key will scroll the page.
14. Stop factor occurred at last

2. Message display

2-1. Condition data

When registering the design (saving format is T3, or T2 design) saved in the USB memory into the machine memory, the following message will appear.



Condition data (file) means the following two items in this case.

- (1) Color change sequence
The whole color change sequence included in the design can be registered into the machine memory. Therefore, it is unnecessary to set it again.
- (2) Start point of design
The frame position where the machine started embroidering last time can be registered in the machine memory. Therefore, it is unnecessary to adjust the position of the frame.

There are following three items of condition data (file) except the one described above. By setting them after data set, each setting contents will be added in a design. Therefore, it is unnecessary to perform setting again when you embroider this design next time.

- (1) Scaling up/down/reversion of design
- (2) Design repetition
- (3) Automatic Offset

2-1-1. When reading the design (Example: TAJIMA_W) saved in the USB memory by a personal computer Indications in a personal computer are different as shown in the chart below depending on the saving format (T3, T2, T) of the design.

Saving format	Indication in personal computer	Use
T3	TAJIMA_W.TCF	Data integrating CT0, DGF and TBF of T2
T2	TAJIMA_W.CT0	Color change sequence, design start point
	TAJIMA_W.DGF	Size-reduced design (Thumbnail)
	TAJIMA_W.TBF	Stitch data of TAJIMA binary format
T	TAJIMA_W.DST	Stitch data of TAJIMA ternary format

[About T2]

One design consists of three types of file (TAJIMA_W.CT0, TAJIMA_W.DGF, TAJIMA_W.TBF).

2-1-2. Saving or reading of condition data (file)

Condition data (file) can be saved or cannot be saved depending on its place to save.

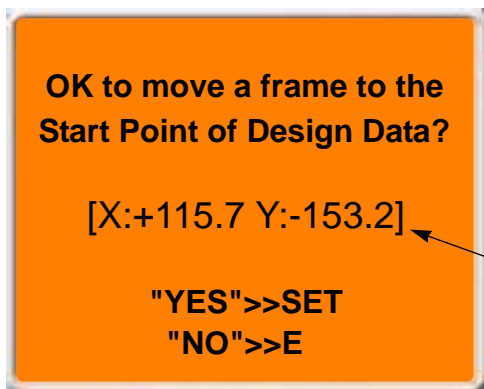
O: Can be saved / X : Unable to save

Condition data	Saving into machine memory	Saving into USB memory		Saving from DG/ML by Pulse into the machine memory
		T3, T2	T	
1. Color change sequence	O	O	X	O
2. Start point of design	O	O ^[*1]	X	X
3. Data Conversion ^[*2]	O	X	X	X
4. Repeat of design	O	X	X	X
5. Automatic Offset	O	X	X	X

*1: When embroidering the design between models with different embroidery spaces, the start position of the design may differ depending on the model.

*2: Scaling up/down/rotation/reversion of design

2-2. Start point of design

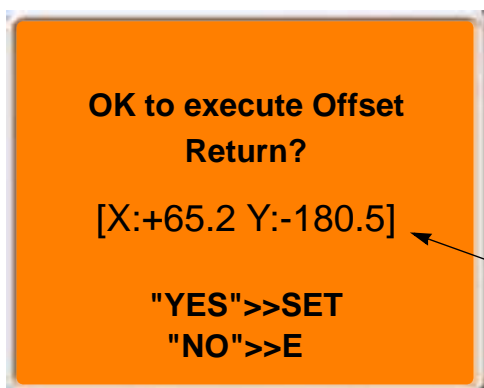


The message shown left will be displayed only when the machine reads condition data (file) at "2-1."

This message is displayed when performing data set. Design start position means the frame position where the embroidery of this design was started last time.

These figures mean the destination of moving the frame. Frame coordinates are shown.

2-3. Offset Return



The message shown left will be displayed only when the machine has the setting of "Automatic offset".

This message is displayed when performing data set. Offset return means the offset start position where this design was embroidered last time.

These figures mean the destination of moving the frame. Frame coordinates are shown.

Chapter 4

How to perform embroidery

1. To turn ON the power.....	30
2. Thread passing, fabric setting.....	32
3. Registration of a design into the machine memory.....	36
4. Decision of an embroidery design and the color change sequence .	47
5. Decision of the design start position	56
6. Check items before embroidering.....	62
7. Embroidery starts.....	66

1

2

3

4

5

6

7

8

9

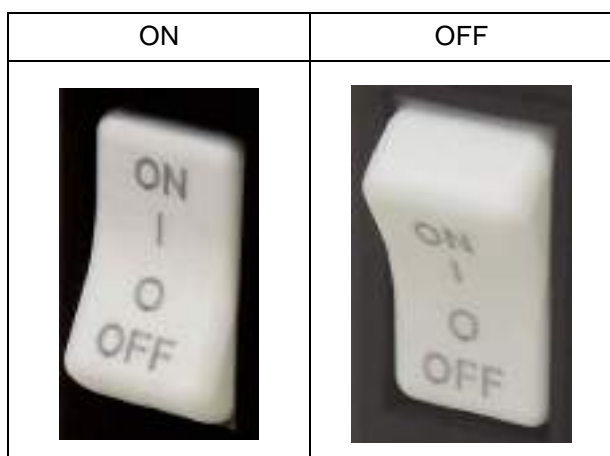
10

11

1. To turn ON the power

 CAUTION	
⊘ Do not turn ON the machine power in the state that the USB memory is connected to the operation panel except when installing the software in the machine. The system sometimes may not start up.	

1-1. Power switch



*About symbol signage

"|" Power switch : ON

"O" Power switch : OFF



Power switch

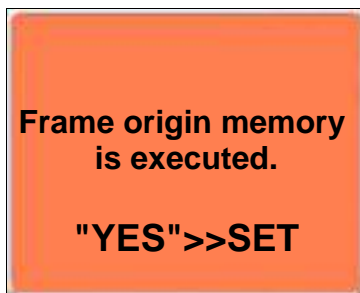
1-2. To turn ON the power

(1) Wait for a while until the power starts up.



← Software version installed in the machine will be displayed.

(2) When the power starts up, the following message will appear. Then, press SET.



This operation is performed to know accurately the frame position and it is displayed when the power is turned ON.

This message will be displayed only when "Frame Origin Memory with the power-ON" is set to "YES".

When you do not want to display this message, set to "NO".

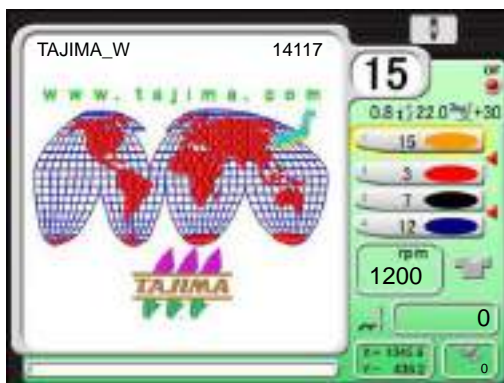


SET

Press SET.



The frame will move and return to the original position.



If the screen (main screen) as shown left is displayed, preparation is completed.

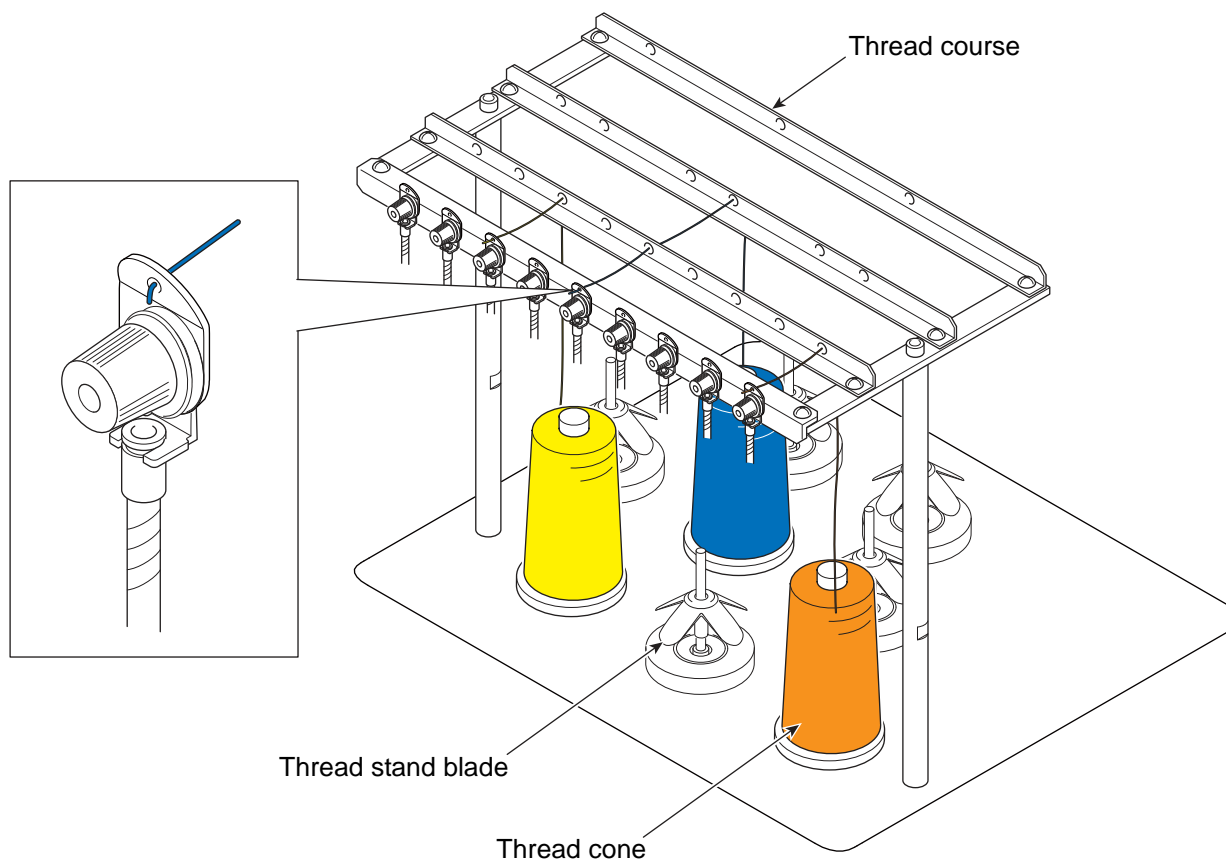
The screen is for TMBR-SC.

2. Thread passing, fabric setting

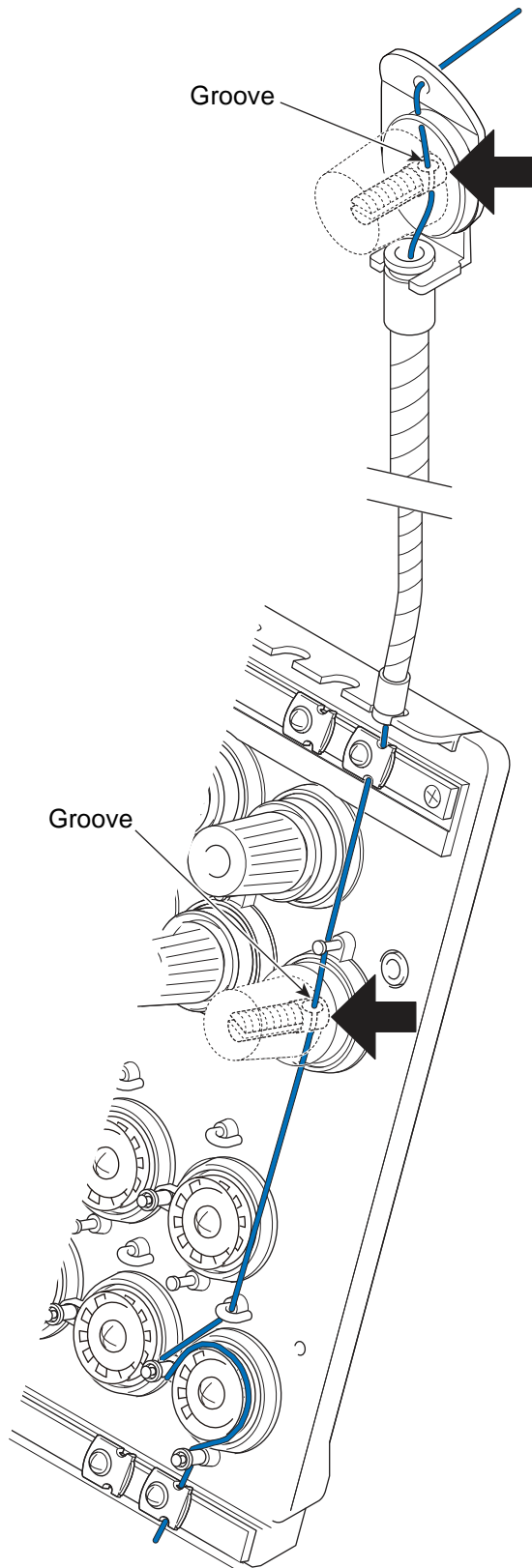
2-1. Thread passing

If the thread does not pass to each section correctly, it could cause trouble such as the deterioration of embroidery or the thread breakage, etc. Pass the thread correctly referring to the figure below.

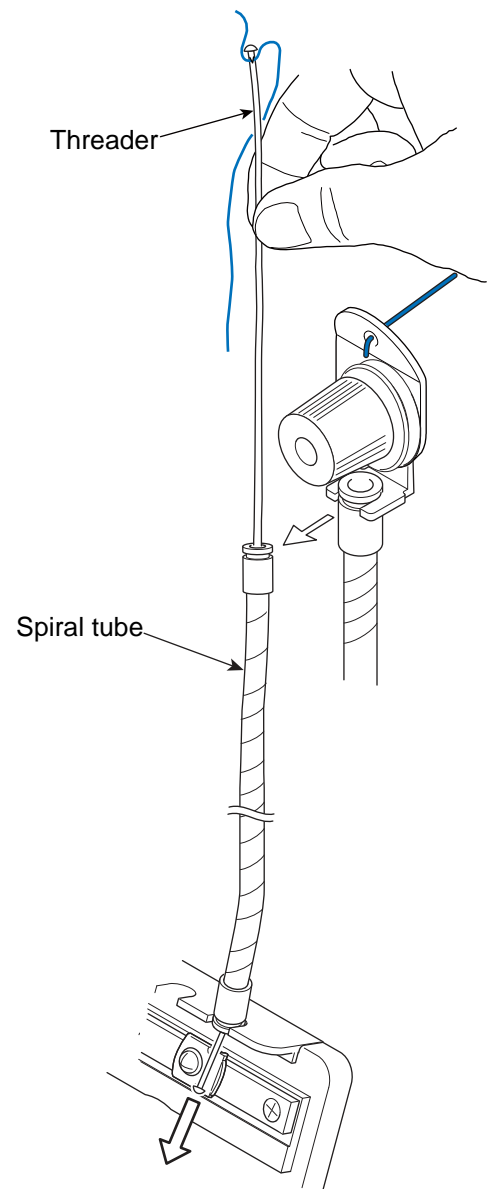
- (1) Place the thread cone on the thread stand blade.
- (2) Pass the thread through the thread course.

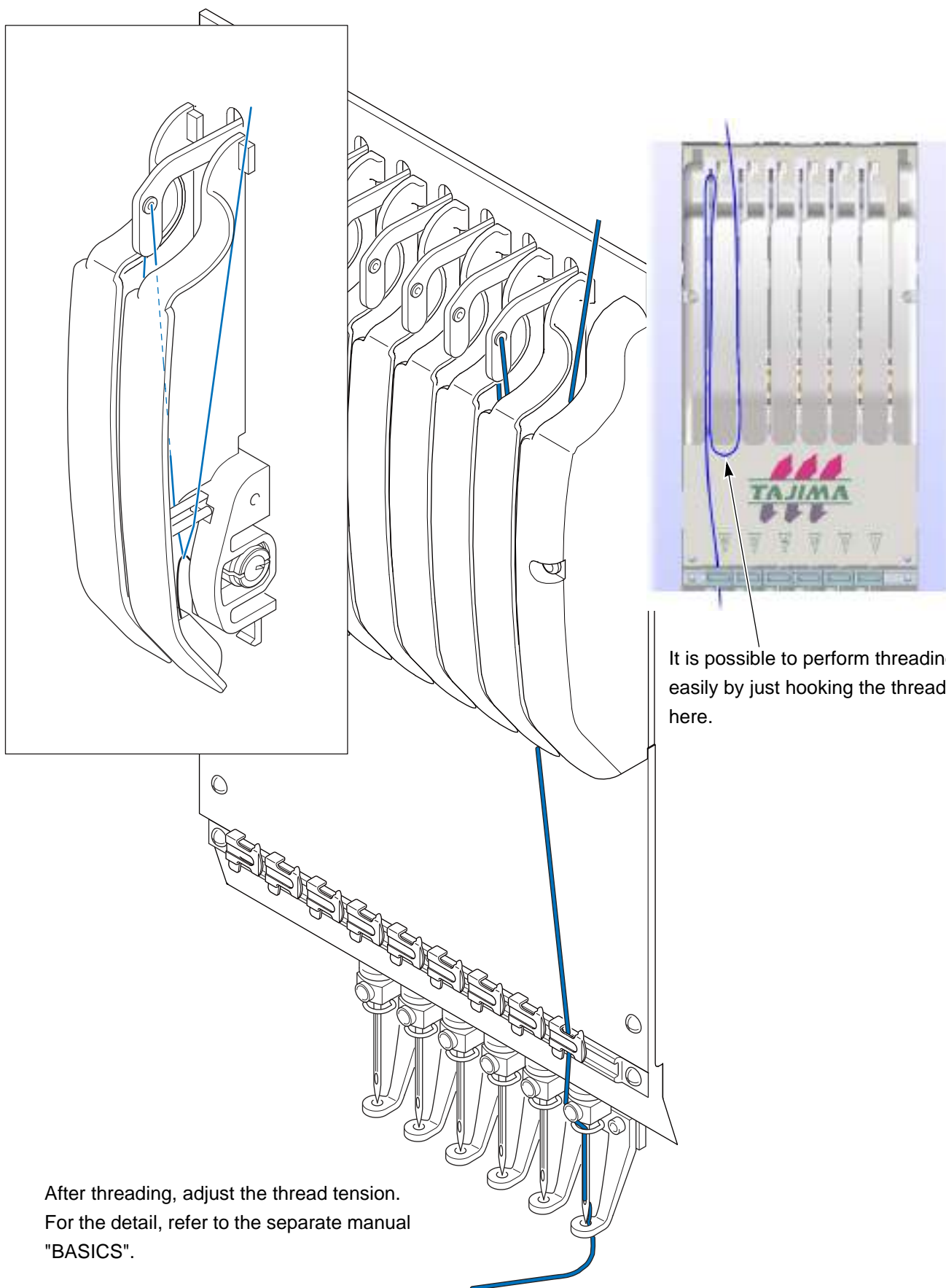


- (3) Put the thread into the groove of the tension stud. (Indicated by an arrow)
- (4) To perform threading through the spiral tube, use the threader (accessory).



Threading through spiral tube





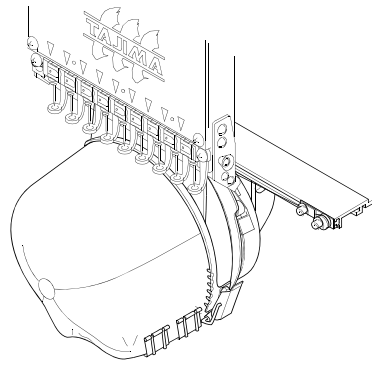
It is possible to perform threading easily by just hooking the thread here.

After threading, adjust the thread tension.
For the detail, refer to the separate manual
"BASICS".

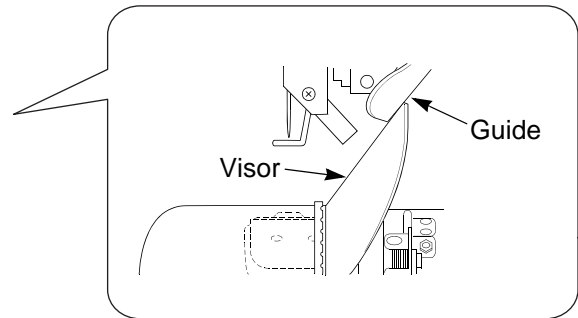
2-2. To set fabric to embroidery frame

To make embroidery results beautiful or to perform efficient works by reducing the thread breakage, it is important to stretch the fabric correctly on the embroidery frame. Fix fully stretched fabric without any wrinkle.

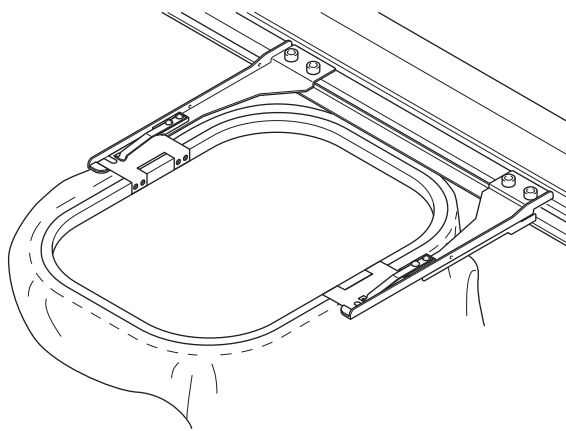
Cap frame



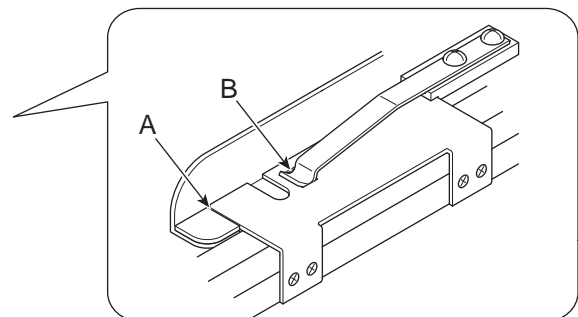
The visor of the cap should be touched to the below guide.



Tubular goods frame



The frame should be fixed at section A and B in the figure below.



3. Registration of a design into the machine memory

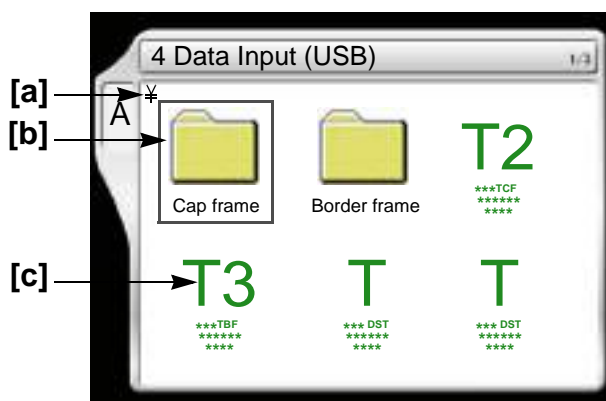
Register designs in the machine memory by the following methods.

- (1) Use USB memory
- (2) Use personal computer (DG/ML by Pulse is necessary)

3-1. To use USB memory (Data Input USB)

Register designs saved in the USB memory into the machine memory. The maximum number of stitches per design is 1,000,000 stitches.

3-1-1. Explanation on the screen



Folders and designs saved in the USB memory will be displayed. The design except the one shown at left will be displayed depending on a saving format of the design.

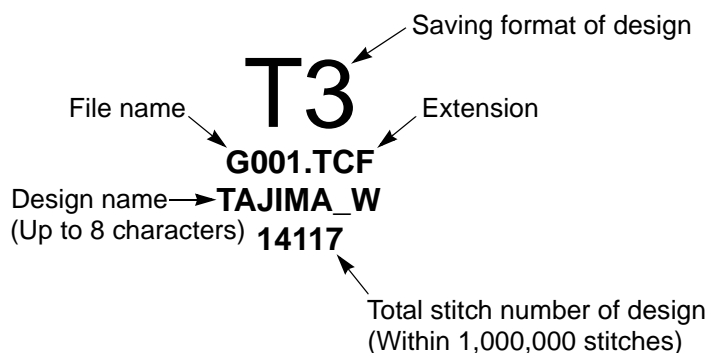
[a] Folder layer

The folder in the USB memory can be read up to three levels. The total of folders and designs that can be read per 1 level is 255 designs.

- ¥ : Root folder
- ¥¥ : Folder (First level)
- ¥¥¥ : Folder (Second level)
- ¥¥¥¥ : Folder (3rd level)

[b] Folder

[c] Design



The extension differs depending on the saving format of the design.

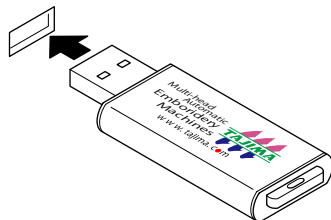
- T3: TCF
- T2: TBF
- T: DST

For saving format of the design, refer to the detail page.(p.26)

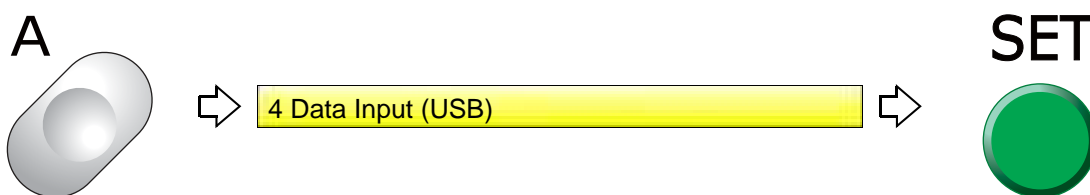
3-1-2. How to operate

The following is an example of registering a design saved in the USB memory into the machine memory.

(1) To set USB memory



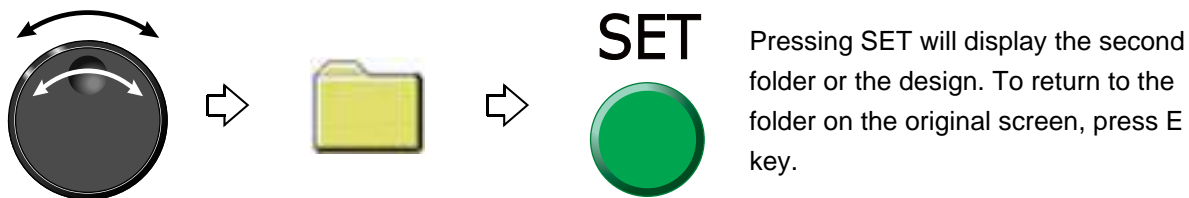
(2) To open screen



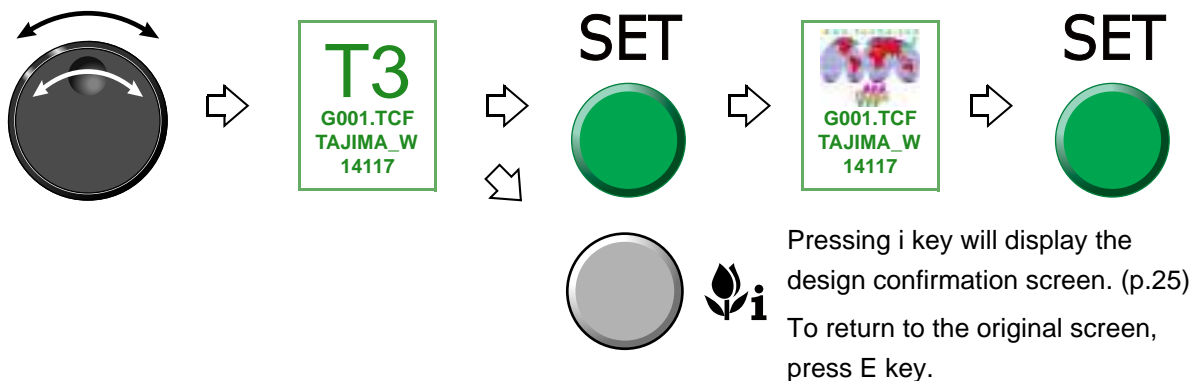
(3) To select a design

The operation differs depending on the storing place of the design.

(a) Design in folder



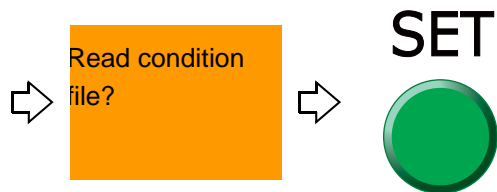
(b) Design on screen



(4) To read condition data (file)

If the saving format of the selected design is T3 or T2, the following message will appear.

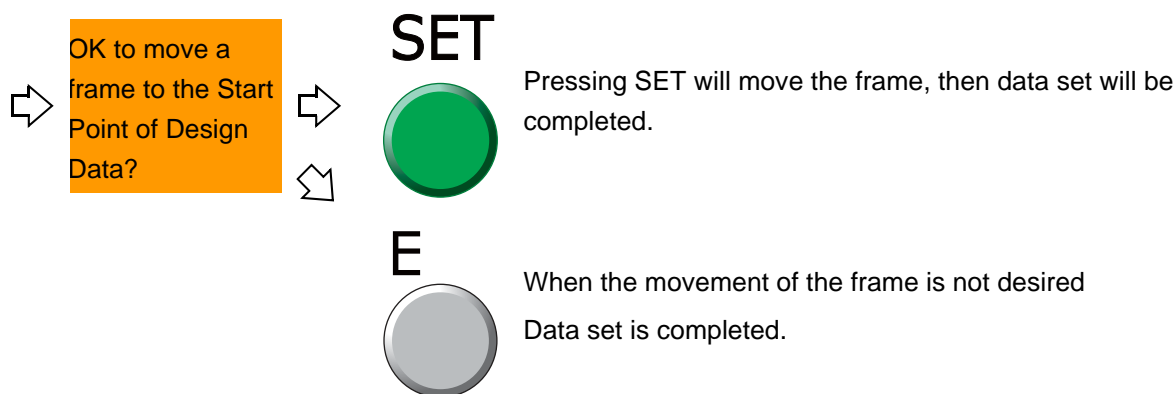
Condition file means Color Change Sequence and Design Start Position.



(5) To move frame to the design start position

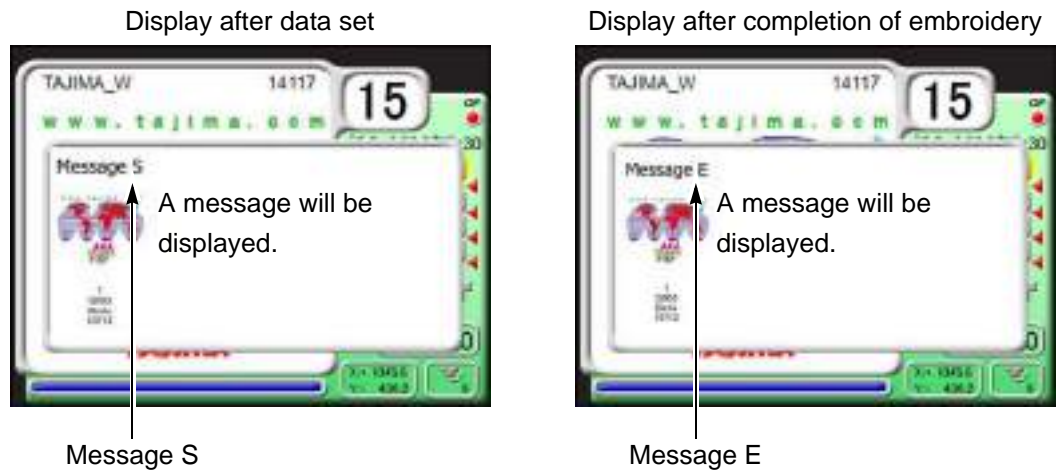
⚠ CAUTION

⊘ When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.



After that, proceed to "To decide color change sequence (Needle Bar Selection) (p.50)".

When some message is written for the design (****.TCF), the below screen will be displayed.
 To write the message into the design data (****.TCF), DG/ML by Pulse is necessary.



Besides, when the data of the design (****.TCF) in which the message is written is set, if i key is pressed, the detail of the message can be checked.



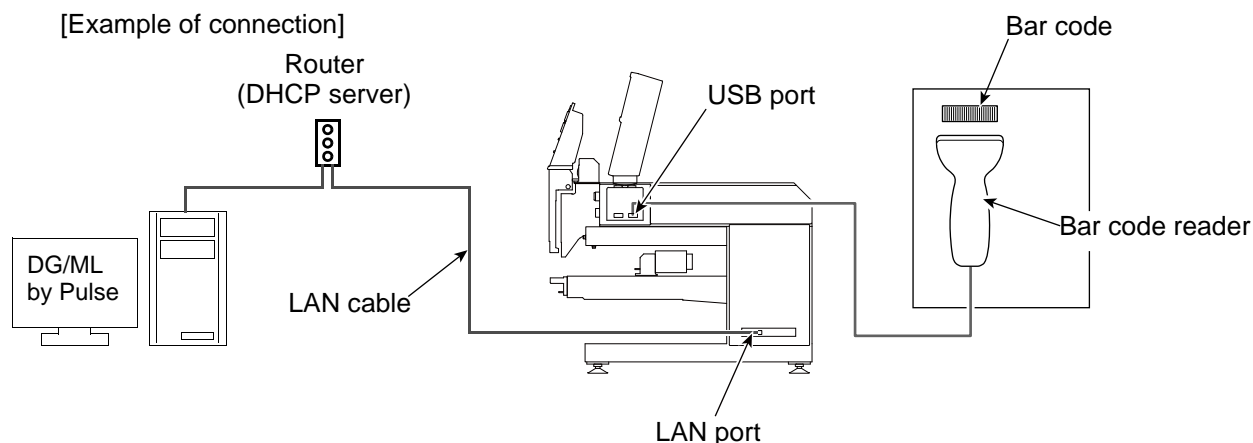
3-2. To use personal computer (Data Input LAN)

Register designs (saved in the personal computer) into the machine memory. Besides, it is possible to more easily register the designs into the machine memory using a commercially available bar code reader (*). The maximum number of stitches per design is 800,000 stitches.

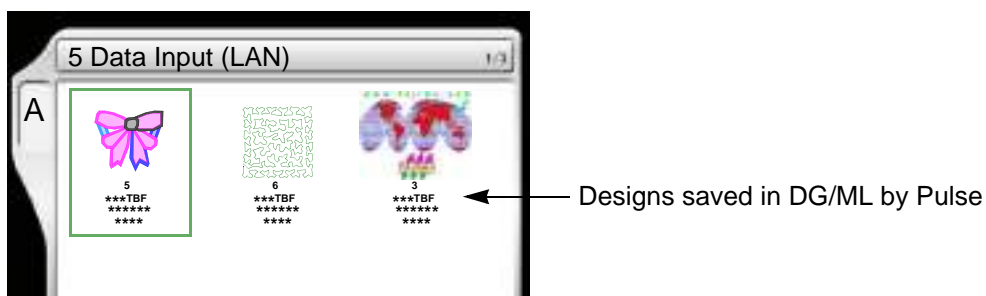
(* It is possible to use only the USB connection bar code reader supporting CODE39.

Software sold separately (DG/ML by Pulse) and setting of IP address are necessary to perform this operation. For details, consult the distributor.

[Example of connection]



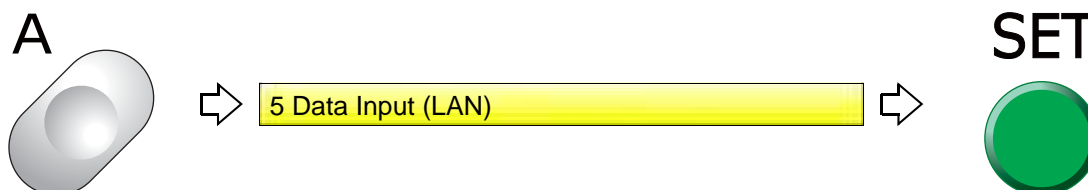
3-2-1. Explanation on the screen



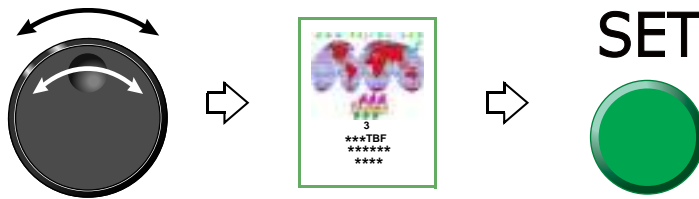
3-2-2. How to operate (not to use bar code reader)

The following is an example of registering a design (saved in a personal computer) into the machine memory.

- (1) After connecting the LAN cable to the LAN port on the right side of machine, start up DG/ML by Pulse first.
- (2) Next, turn ON the machine power and check that the network setting is set to "Normal".
- (3) To open screen



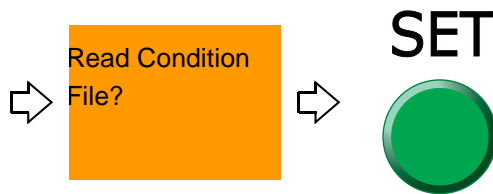
(4) To select a design



(5) To read condition data (file)

If the saving format of the selected design is T3 or T2, the following message will appear.

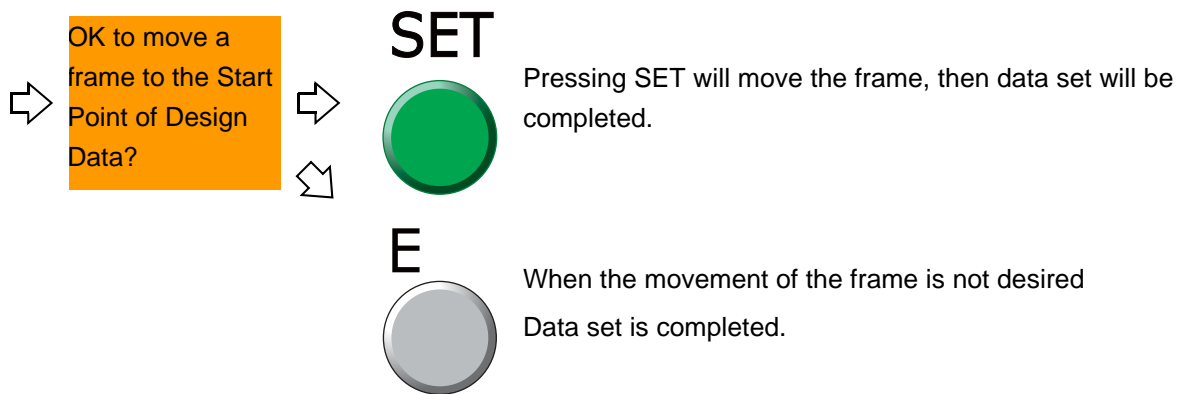
Condition file means Color Change Sequence and Design Start Position.



(6) To move frame to the design start position

⚠ CAUTION

⊘ When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

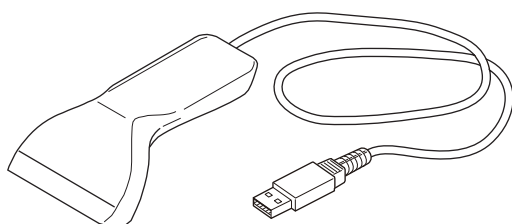


After that, proceed to "To decide color change sequence (Needle Bar Selection) (p.50)".

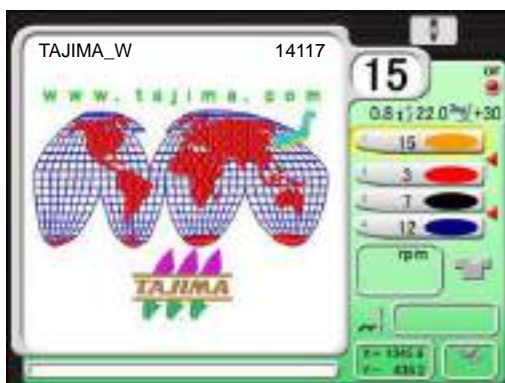
3-2-3. How to operate (to use bar code reader)

The following is an example of registering a design (saved in a personal computer) into the machine memory.

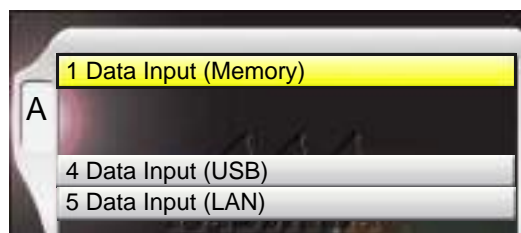
- (1) After connecting the LAN cable to the LAN port at the right side of the machine, start up DG/ML by Pulse first.
- (2) Next, turn ON the machine power and check that the network setting is set to "Normal".
- (3) Connect the bar code reader to the USB port on the right side of machine. (p.14)



- (4) Set to the main screen.

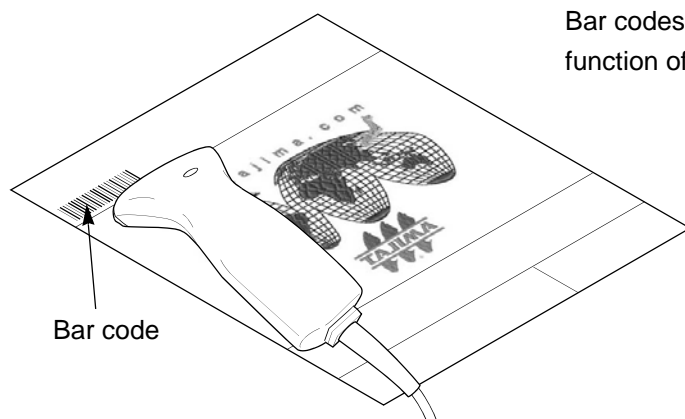


The bar code can be read also from the following screen.



- (5) Read the bar code.

Condition data (Color change sequence) is also read automatically.



Bar codes can be printed by using the print function of DG/ML by Pulse.

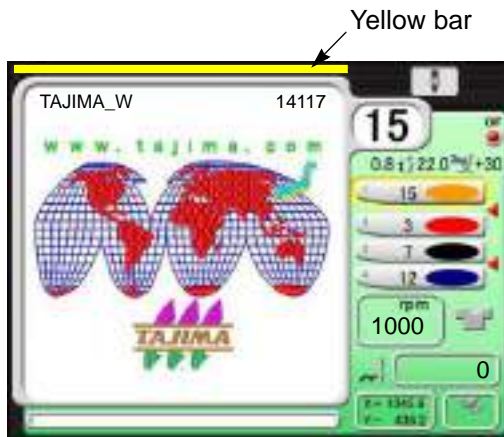
This design is now ready for embroidery. (Data set is completed).

After that, proceed to "To decide color change sequence (Needle Bar Selection) (p.50)".

3-2-4. How to use a bar code reader during machine operation

Read the bar code of the next embroidery design by a bar code reader. (Pre-reading of the next design)

The pre-read design is set right after the current embroidery design is completed, and then a yellow bar will be displayed.



When performing the following operation, the yellow bar will disappear.

- (a) When performing panel operation
- (b) When the machine is started/stopped
- (c) When the power is turned OFF and ON

The pre-read design requires the following conditions.

- (a) The design which can be performed pre-reading is one design only.
- (b) When bar codes are read plural times during operation, the design read latest will be selected.
- (c) When suspending to embroider a design during operation and setting the data of another design, the pre-read design will be deleted.
- (d) To suspend embroidering some design during operation and perform the data setting of the pre-read design, read the bar code again.
- (e) When performing the Frame Forward of the design in the middle of embroidering and outputting the end code, the pre-reading design will not be set the data.

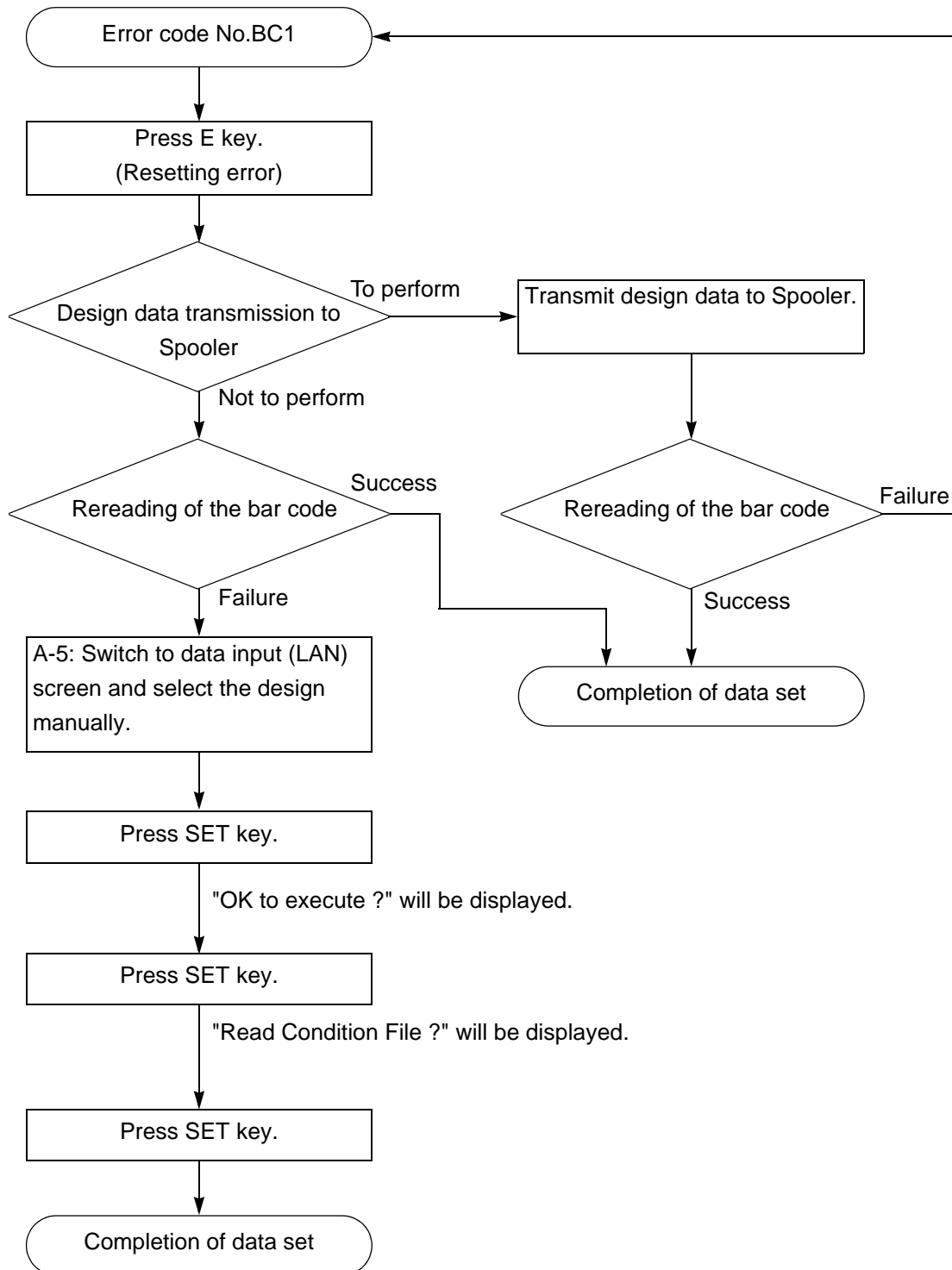
If the bar code cannot be read, error code No.BC1 will be displayed. The following points are given as factors.

(a) Selected design is not stored in Spooler

Spooler: Area to store the design temporarily in a personal computer

(b) Misreading by bar code reader

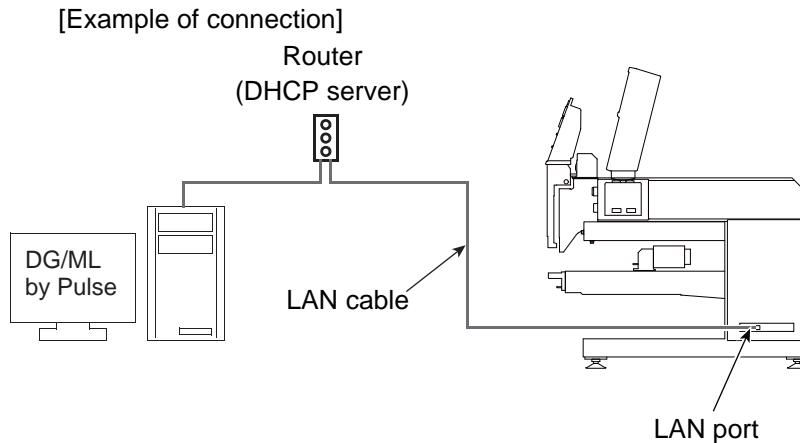
Deal with above troubles with the following procedure. If these troubles are not solved, please consult the distributor.



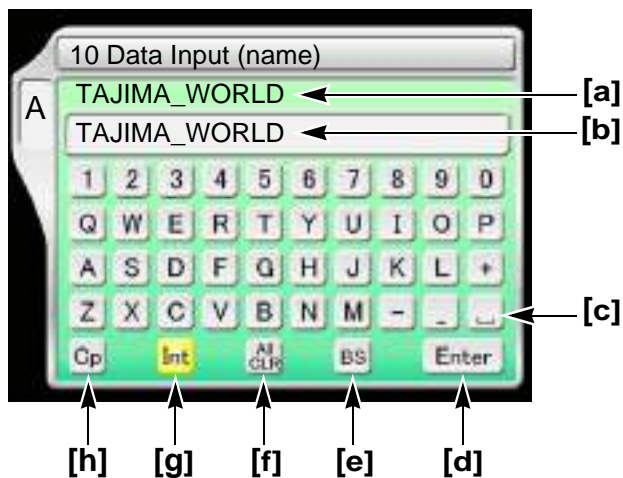
3-3. To use personal computer (Data input "name")

Enter the design file name saved on the personal computer and register the design file in the machine memory.

Software sold separately (DG/ML by Pulse) and setting of IP address are necessary to perform this operation. For details, consult the distributor.



3-3-1. Explanation on the screen



[a] File name of the design of which data was set immediately before

[b] File name (up to 40 characters)

[c] Space

[d] Decision

[e] Delete single character

[f] Delete the entire file name being input

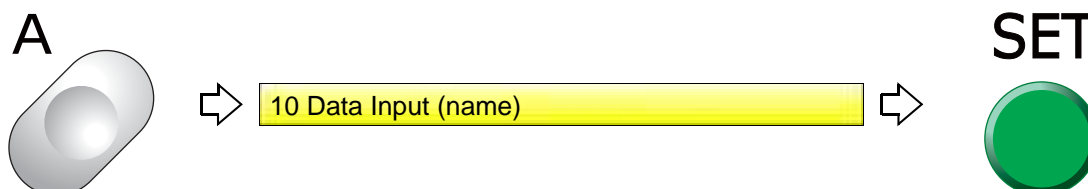
[g] Cancel the name being input and return to the file name of the design of which data was set immediately before.

[h] Switch between uppercase and lowercase

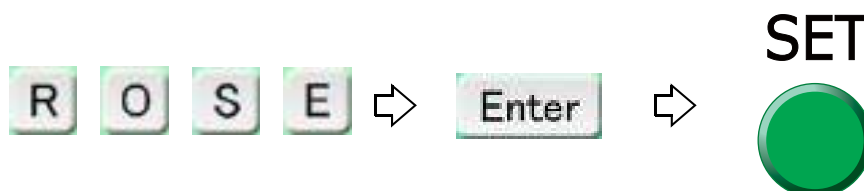
3-3-2. How to operate

The following is an example of registering a design (file name: ROSE) saved on the personal computer in the machine memory.

- (1) After connecting the LAN cable to the LAN port on the right side of machine, start up DG/ML by Pulse first.
- (2) Next, turn ON the machine power and check that the network setting is set to "Normal".
- (3) To open screen



- (4) Input the design file name.



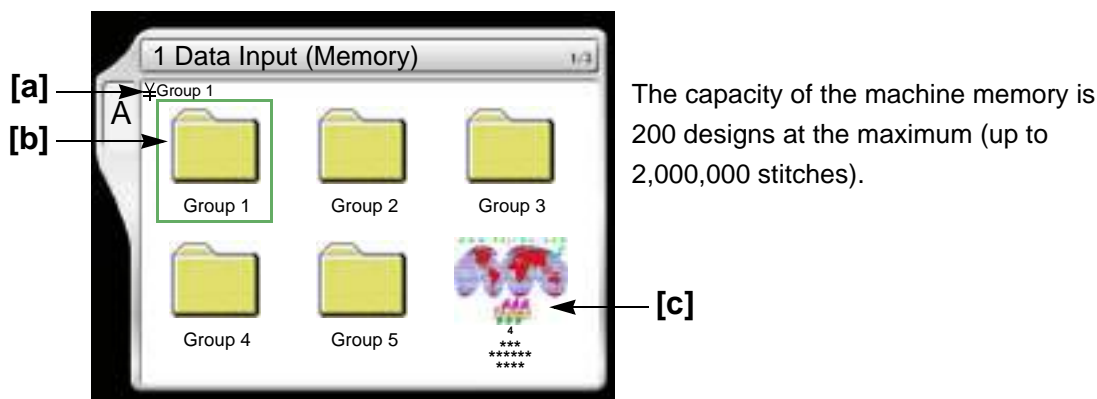
After that, proceed to "To decide color change sequence (Needle Bar Selection) (p.50)".

4. Decision of an embroidery design and the color change sequence

4-1. To decide embroidery design (Data Setting)

Select the design in the machine memory and enable to embroider.

4-1-1. Explanation on the screen



[a] Folder layer

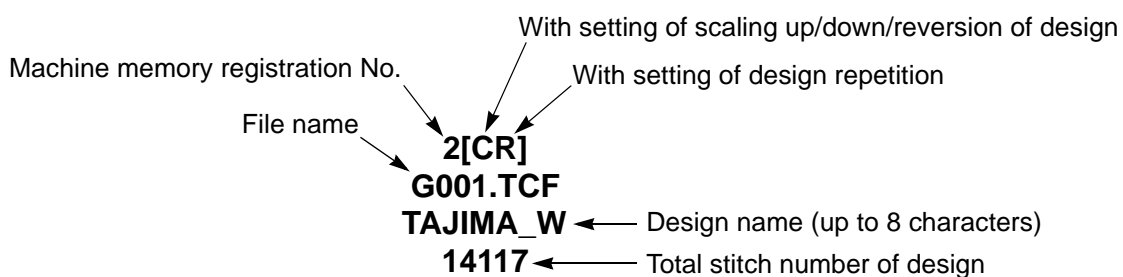
The root folder and folder on the first level of the machine memory can be displayed.

- ¥ : Root folder
- ¥¥ : Folder Group 1 to 5 (First level)

[b] Folder

Folder name can be changed.

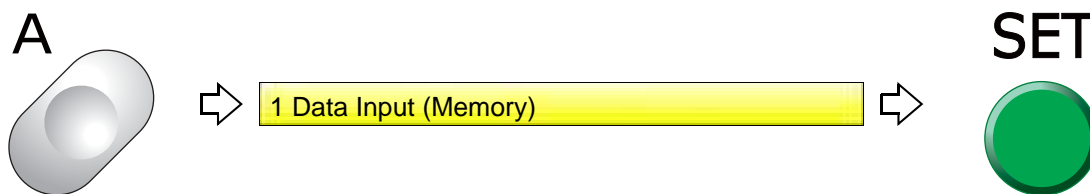
[c] Design registered in the machine memory



4-1-2. How to operate

This is an example of selecting the design in the memory of the machine and enabling to embroider.

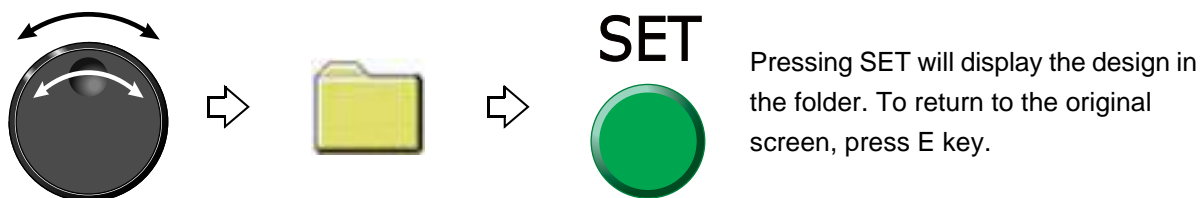
(1) To open screen



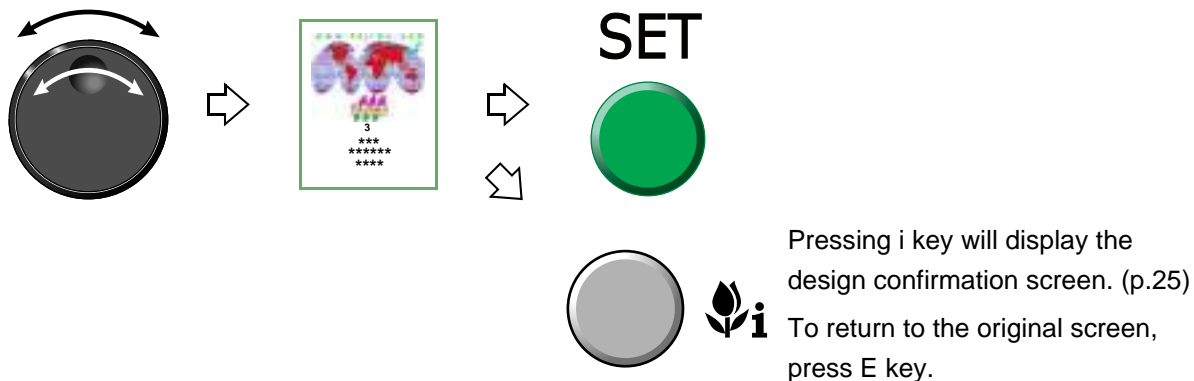
(2) To select a design

The operation differs depending on the storing place of the design.

(a) Design in folder



(b) Design on screen




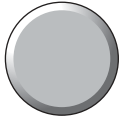
(3) To move frame to the design start position

! CAUTION

⊘ When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

OK to move a frame to the Start Point of Design Data?

SET
 Pressing SET will move the frame, then data set will be completed.

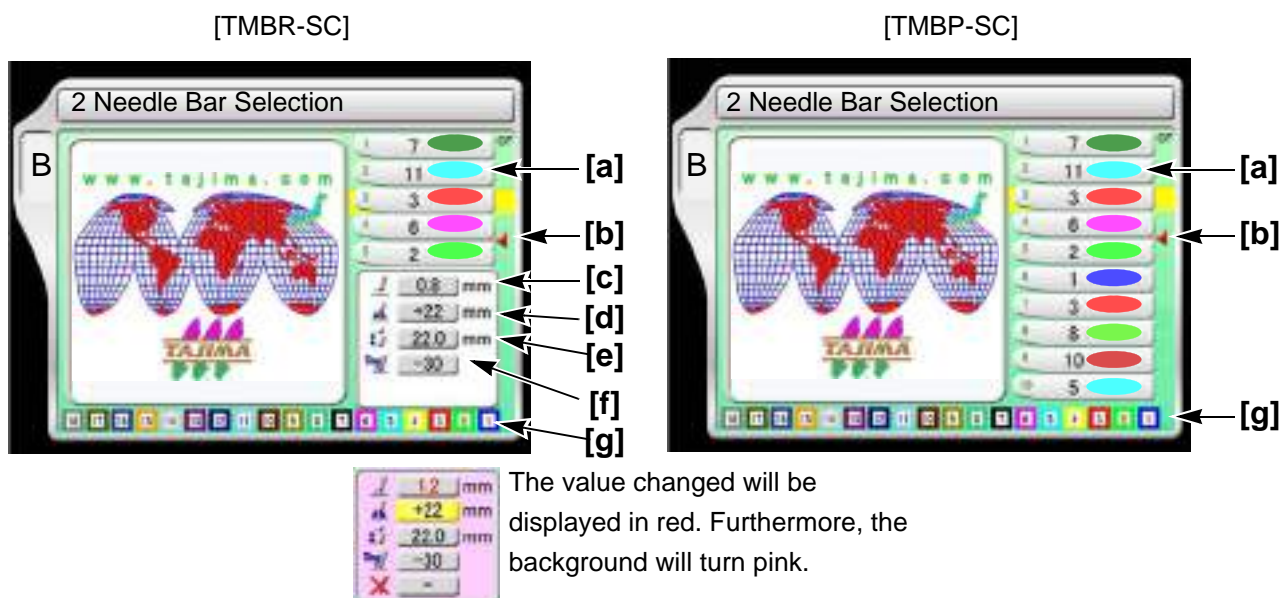
E
 When the movement of the frame is not desired Data set is completed.

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4-2. To decide color change sequence (Needle Bar Selection)

This setting is unnecessary when the color change sequence is already included as the condition data in the design to be embroidered from now.

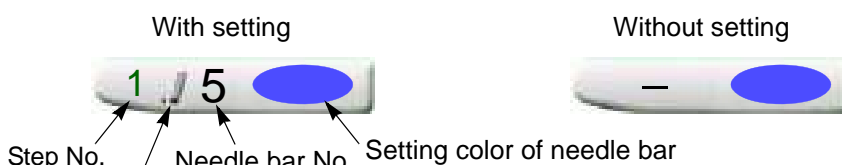
4-2-1. Explanation on the screen



[a] Step

The section divided by a color change code in the design data. The first section is called step 1, and the next section is called step 2.

Step display differs depending on with/without setting of "Auto Color Change (AC)".



The color can be changed per each needle bar.
It is displayed when performing the presser foot step unit setting. (TMBR-SC only) (p.52)

The setting value here is give priority to over "Setting in units of needle bar". Also, the value set here is not reflected in "Setting in units of needle bar".

[b] Offset mark

The illustrated example shows that the frame moves to the front after finishing of step 3. However, to move the frame, the setting of "Automatic Offset" is necessary.

[c] Presser foot lower dead point

Distance between the presser foot and the needle plate when the presser foot moves down to the lower dead point

Setting range: 0.3 to 6.3 (mm)

[d] Presser foot F.B. lower dead point

The distance from the presser foot lower dead point to the presser foot at the time of frame back
 Setting range: +5 to +22 (mm)

[e] Presser foot stroke

Stroke mode of presser foot
 Setting range: Auto, 2.0 to 22.0 (mm)

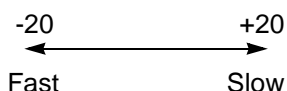
Auto : According to maximum speed of the machine, the presser foot will perform Stroke automatically (usual setting).

2.0 to 22.0 (mm): Stroke amount of presser foot

The maximum speed of the machine is limited depending on stroke amount. (The stroke amount is always fixed.)

[f] Presser foot timing

Timing when presser foot moves down
 Setting range: -20 to +20



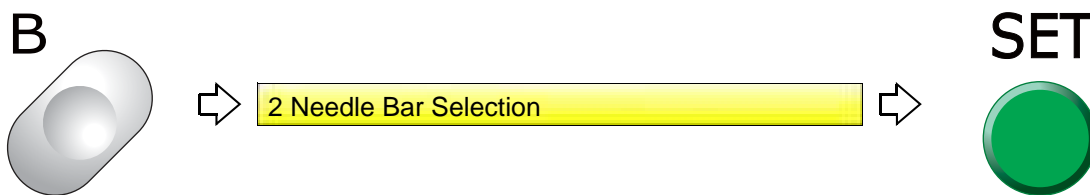
[g] Needle bar color

Display the color being set in "B-10 Needle Bar Color".

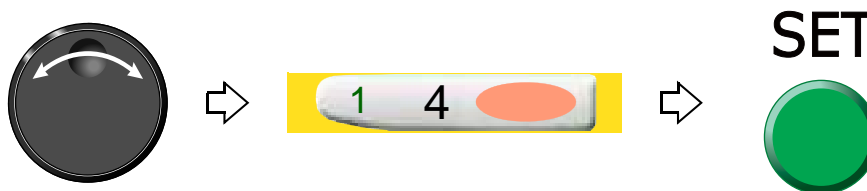
4-2-2. How to operate (not to insert offset mark)

The following is an example of setting step 1 to the needle bar No.4.

(1) To open screen



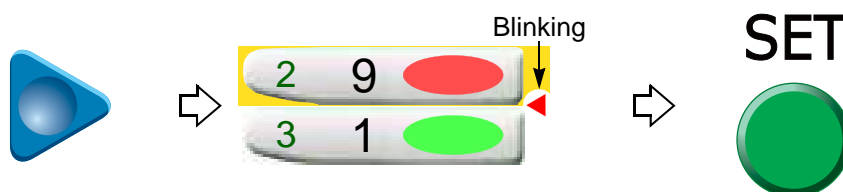
(2) To select needle bar No. to use at step 1



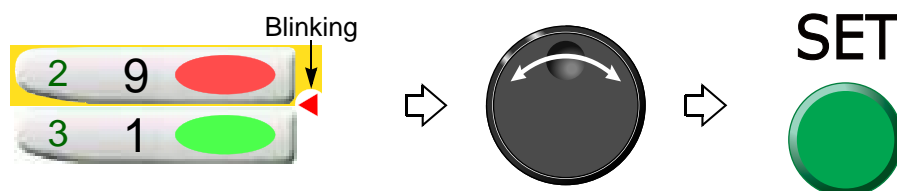
Set also other needle bar No. in the same procedure.

4-2-3. How to operate (to insert offset mark)

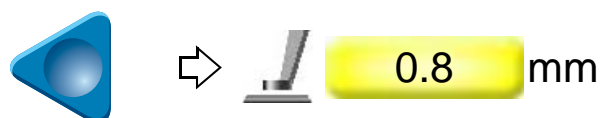
The following is an example of inserting the offset mark between step 2 and step 3.

(1) To select step to insert offset mark**(2)** To insert offset mark

To delete offset mark

**4-2-4.** How to operate (TMBR-SC only)

The following is an example of setting the presser foot FB lower dead point to "+15 mm" in step 2.

(1) To select Step 2**(2)** To move the cursor to the presser foot setting column

To move the cursor to the original needle bar selection column, perform the following operation.



(3) To select the presser foot FB lower dead point



(4) Select +15.

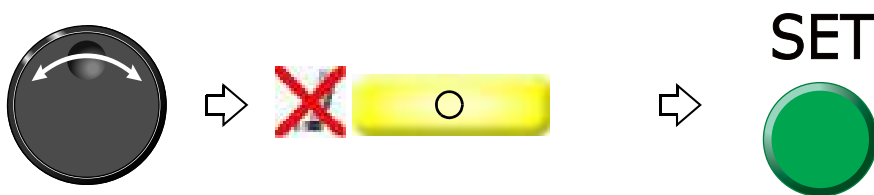


To delete the setting, perform the following operation.

(1) To move the cursor to the setting deletion column

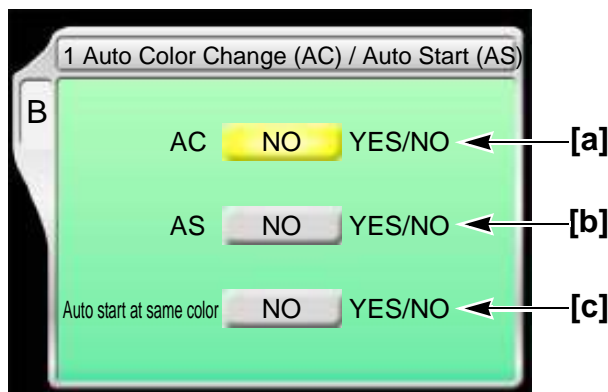


(2) To delete the setting



4-3. To change color automatically / to start operation automatically (Auto Color Change "AC" / Auto Start "AS")

4-3-1. Explanation on the screen



[a] Auto Color Change

Setting to perform color change automatically according to the color change sequence

YES: To perform

NO: Not to perform

When you desire to embroider by single color without color change, select "NO". Selecting "NO" will disable the following settings.

[b] Auto Start

Setting to start operation automatically after color change

YES: To perform

NO: Not to perform

Selecting "NO" will disable the following settings.

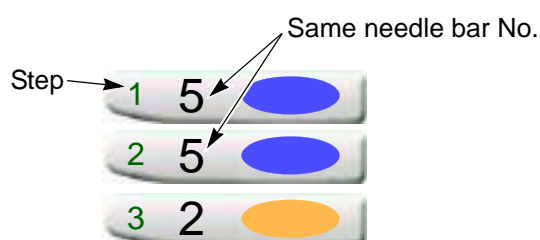
[c] Auto start at same color

Setting to start operation automatically when the same needle bar No. is selected at the previous and the next steps.

YES: To perform

NO: Not to perform

The below example shows that selecting "NO" will stop the operation after step 1 is finished. When you want to stop only the desired step individually, select "NO".



4-3-2. How to operate

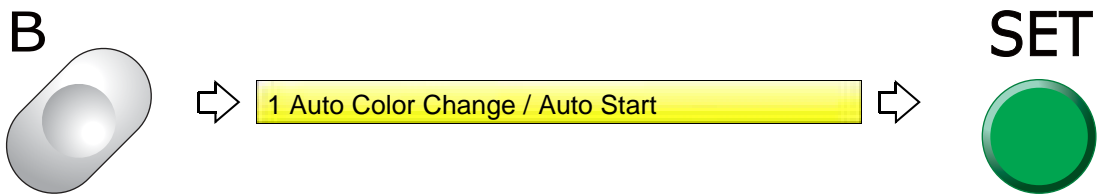
This is an example of setting in the following conditions.

Auto Color Change (AC)

Auto Start (AS)

Automatic Start at the same color

(1) To open screen



(2) Auto Color Change (AC)



(3) Auto Start (AS)



(4) Automatic Start at the same color



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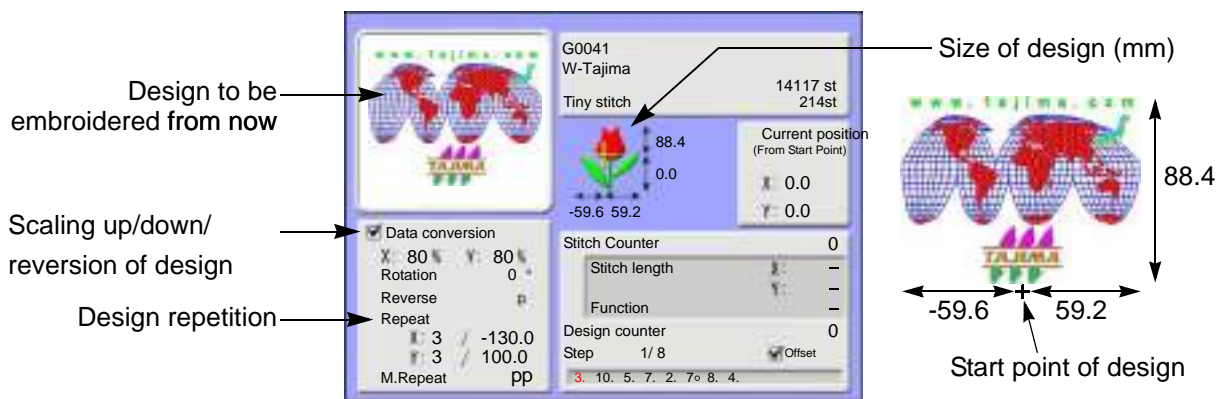
5. Decision of the design start position

5-1. To check design size and setting contents of design (Check of design)

Check setting conditions such as size, scale up/down, repeat, etc of the design to be embroidered from now. Use the checking result as rough standard when deciding the design start position.

This function will be explained in detail on the other page. (p.25)

5-1-1. Explanation on the screen

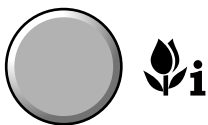


The size after scaling up/down will be displayed with the value based on the design start position. This example shows the size of vertical 88.4 mm and horizontal 118.8 mm.

5-1-2. How to operate

(1) To open screen

Press i key.



After pressing this key again, setting contents in detail and the code No. occurred up to now can be confirmed.

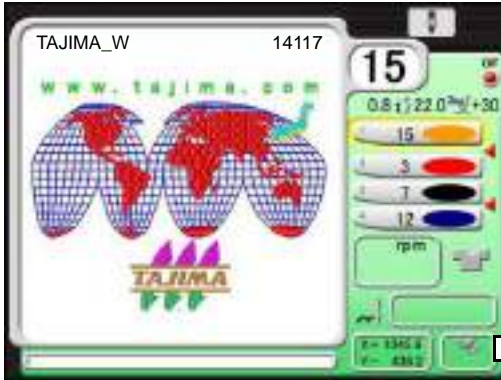
To return to the main screen, press E key.

5-2. To move frame to the design start position (Manual frame travel)

This operation is unnecessary when the frame has already come to the start position of the design by the operation described previously.

5-2-1. Explanation on the screen

Main screen



The screen is for TMBR-SC.

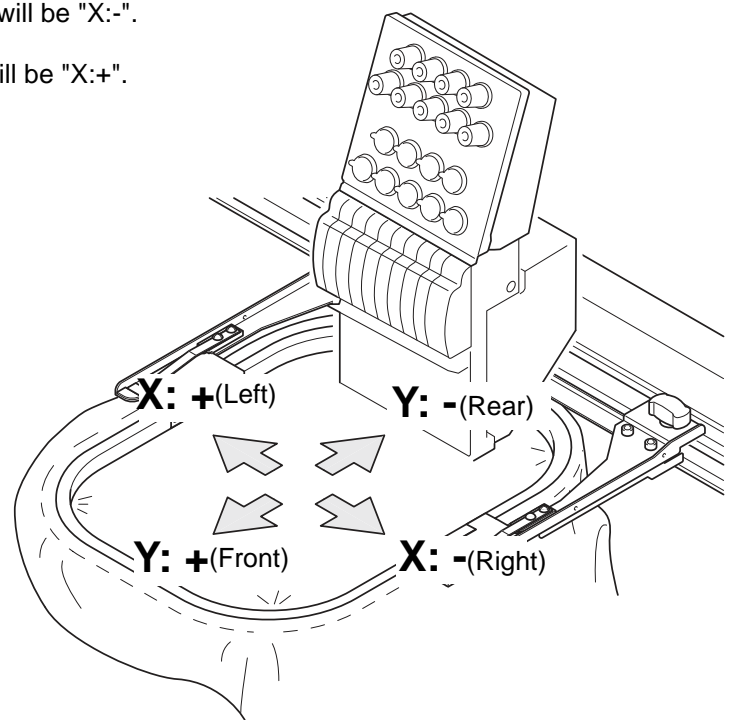
The current frame position is displayed by the numerical value (mm). The frame position is based on the Frame Origin.

X: + 150.0
Y: - 100.0

The code (+/-) means the frame travel direction.

[Relation between frame travel direction and code]

- (1) If the frame moves to the rear, the code will be "Y:-".
- (2) If the frame moves to the front, the code will be "Y:+".
- (3) If the frame moves to the right, the code will be "X:-".
- (4) If the frame moves to the left, the code will be "X:+".



5-2-2. How to operate

There are following two methods.


CAUTION

 When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

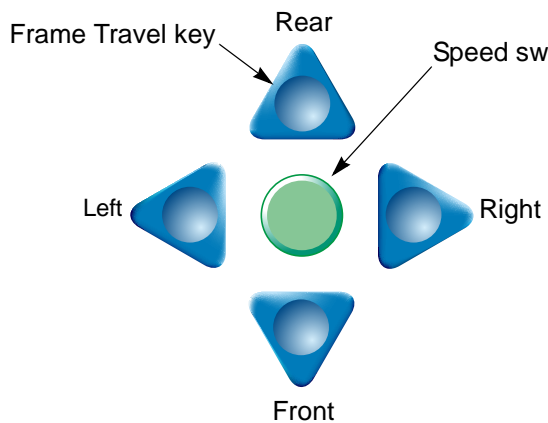
(1) To use Frame Travel key

(a) Switch to the main screen

Press E key plural times to switch to the main screen.

(b) To move frame to the design start position

Press any desired key. The frame will move.



When you want to change the frame travel speed, press the speed switching key. The key will light on/off.

Lit: High speed
Unlit: Low speed

(2) To use Jog dial/Jog shuttle

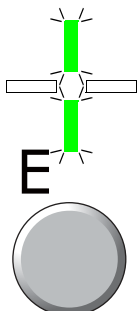
(a) Switch to the main screen

Press E key plural times to switch to the main screen.

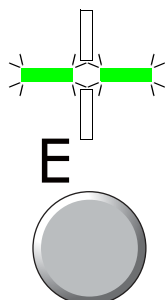
(b) To decide Frame Travel direction

Press E key to decide the frame travel direction.

It moves vertically.

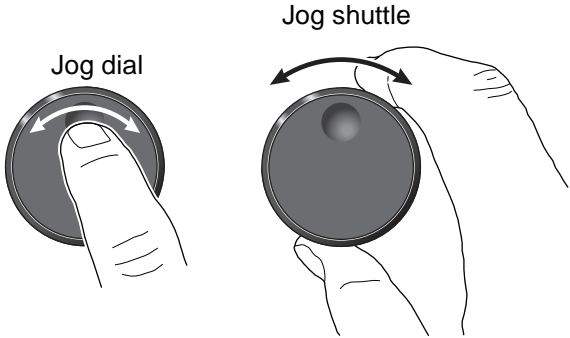


It moves horizontally.



(c) To move frame to the design start position

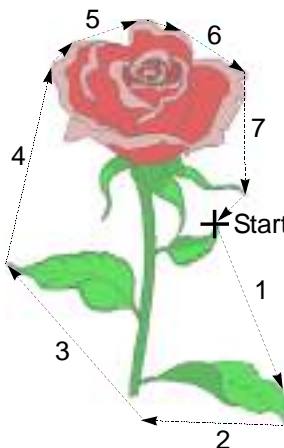
Turn the jog dial (low speed) / the jog shuttle (high speed). The frame will move.



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5-3. To check if design fits in embroidery space (Trace)

Since the frame moves according to the size of the design, you can check whether the design fits in the embroidery space or not.



The number in the left figure indicates the orbit of the frame. After completion of trace, embroidering from that position is possible.

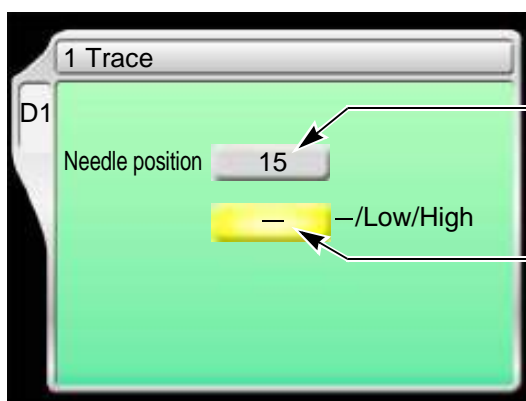
When repeat is set

The machine will trace whole designs after tracing the first design.

When Automatic Offset is set

The machine traces according to the setting.

5-3-1. Explanation on the screen



Current needle bar No.

The frame will move on the basis of this needle bar.

Speed of frame travel

Low: Low speed

High: High speed

-: Not to execute

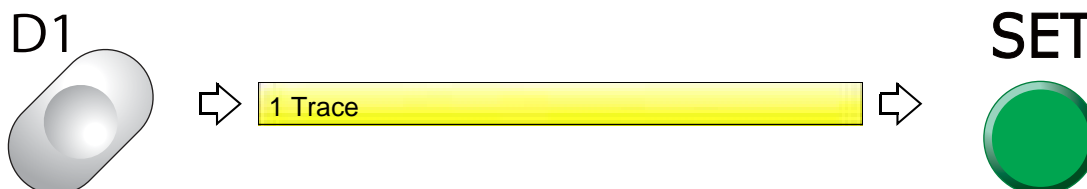
5-3-2. How to operate

CAUTION

When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

The following is an example of executing Trace.

(1) To open screen



(2) To execute

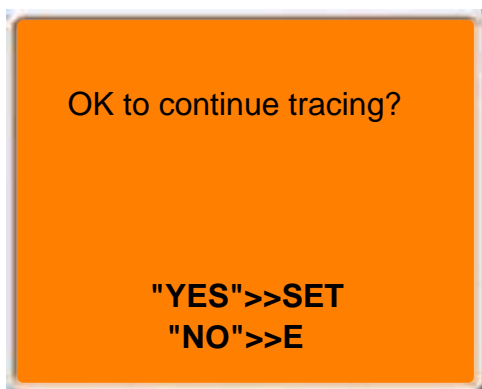


When the tracing is impossible due to the design size exceeding the embroidery space, follow the procedure below after checking the size of the design.

- (a)** The frame will move again after temporary stop.
- (b)** Code No.225 will be displayed.
Press E key.
- (c)** Move the frame to the design start position.
- (d)** Perform tracing again.

To suspend tracing, follow the procedure below.

- (a)** Suspend the operation by the stop switch.
Code No.1C1 will be displayed.
Do not turn OFF the power while the code No.1C1 is displayed.
- (b)** Press E key.
- (c)** After that, follow the message described below.

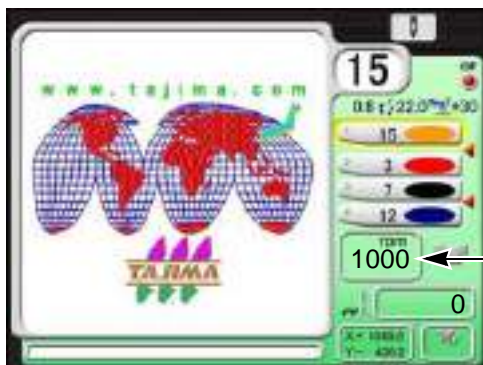


To continue → SET key
To suspend → E key

6. Check items before embroidering

6-1. Maximum speed (Maximum RPM)

The value set here will be the maximum speed of the machine. It is automatically increased/decreased depending on stitch length in the middle of embroidery.

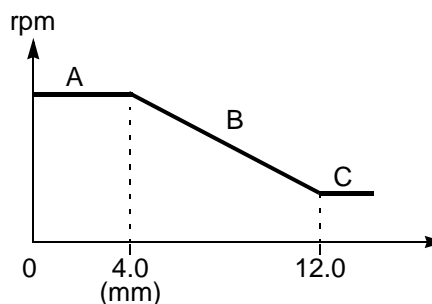


Speed display column

During stop: The maximum speed is displayed.

During operation: Actual operating speed is displayed.

Stitch length	Embroidery speed
Up to 4.0 mm	Maximum speed (A in the right figure)
4.1 mm to 11.9 mm	Automatic change (B in the right figure)
12.0 mm or more	Low speed (C in the right figure)



6-1-1. Explanation on the screen

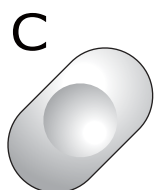


↑
Maximum speed

6-1-2. How to operate

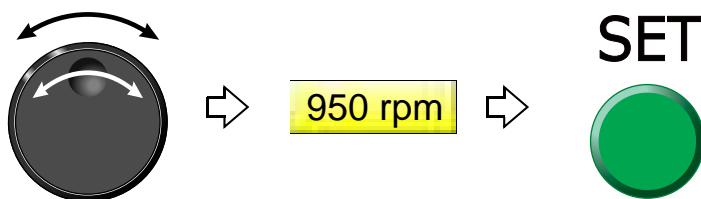
The following is an example when setting the maximum speed to "950".

(1) To open screen

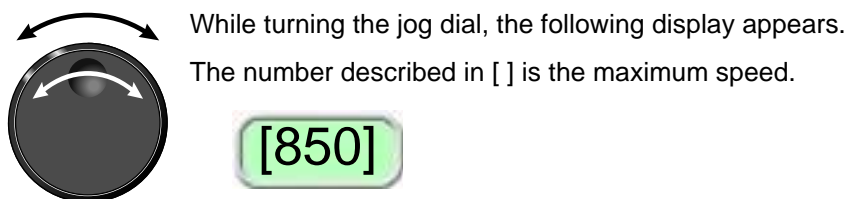


(2) To select maximum speed

Selection of the value exceeding "Max. Revolution Limit" is not possible.



To change the maximum speed during operation of the machine, turn the jog dial / the jog shuttle.

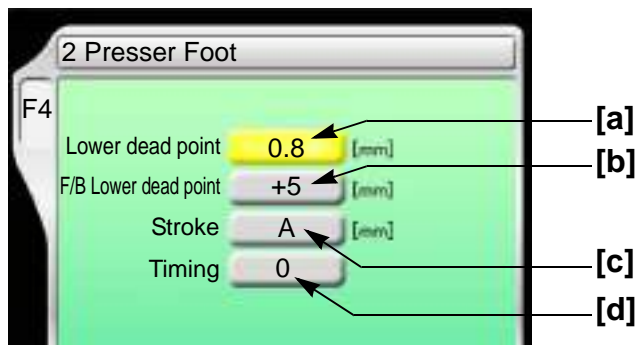


6-2. Presser foot setting (TMBR-SC only)

Adjust the height of the presser foot according to thickness of fabric to use.

"Presser foot step unit setting" is given priority to over the set value here.

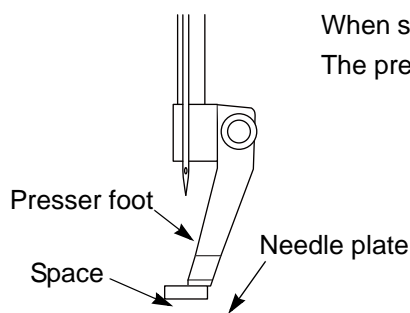
6-2-1. Explanation on the screen



[a] Distance between the presser foot and the needle plate when the presser foot moves down to the lower dead point

Setting range: 0.3 to 6.3 (mm)

When "N" is displayed, the lower dead point differs per needle bar. When "N" is changed to a numerical value, all the needle bar become the same value.



When setting this value, do not press the fabric too strong. The presser foot may leave its pressed mark on the fabric.

[b] The distance from the presser foot lower dead point to the presser foot at the time of frame back
 Setting range: +5 to +22 (mm)

When "N" is displayed, FB lower dead point differs per needle bar. When "N" is changed to a numerical value, all the needle bars become the same value.

[c] Stroke mode of presser foot

Setting range: A, 2.0 to 22.0 (mm)

A: According to maximum speed of the machine, the presser foot will perform Stroke automatically (usual setting).

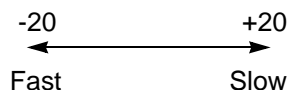
2.0 to 22.0 (mm): Stroke amount of presser foot

The maximum speed of the machine is limited depending on stroke amount. (The stroke amount is always fixed.)

When "N" is displayed, the stroke method differs per needle bar. When "N" is changed to a numerical value, all the needle bar become the same value.

[d] Timing when presser foot moves down

Setting range: -20 to +20

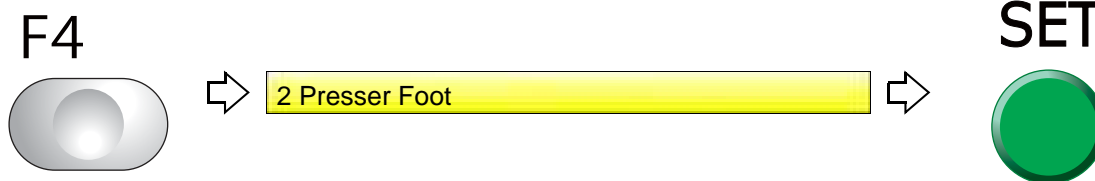


When "N" is displayed, the timing differs per needle bar. When "N" is changed to a numerical value, all the needle bar become the same value.

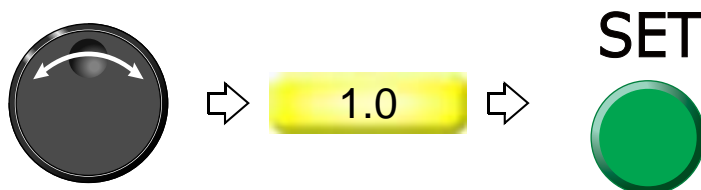
6-2-2. How to operate

The following is an example of setting Presser foot lower dead point to 1.0 (mm) and FB lower dead point to 10.0 (mm).

(1) To open screen



(2) To select presser foot lower dead point



(3) To select FB lower dead point



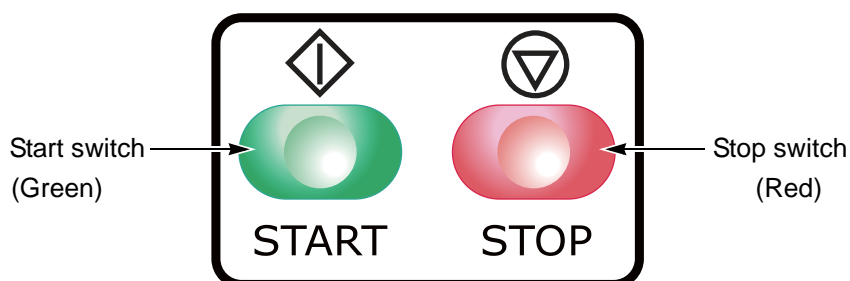
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7. Embroidery starts

7-1. Start and stop

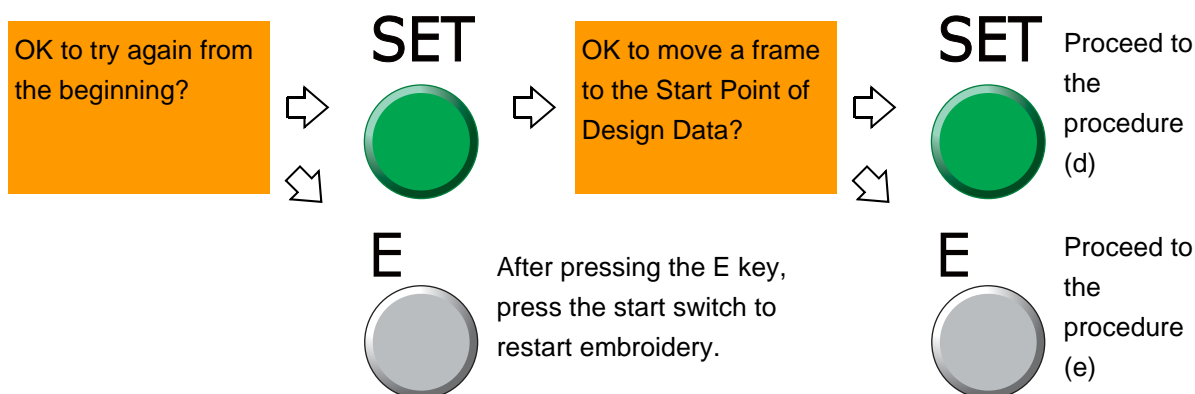


- (1) To start operation, press the start switch for a few seconds.
- (2) To start slow operation, keep on pressing the start switch. Releasing it will start normal operation.
- (3) To stop, press the stop switch.



If you want to start over during the embroidery, follow the procedure below.

- (a) Stop the machine.
- (b) Press A key while pressing SET key.
- (c) Operate the machine according to the screen display shown below.



(d) The frame will return to the start position of design. Press the start switch and start over the embroidery.

(e) The frame will not move. Press the start switch and start over the embroidery.

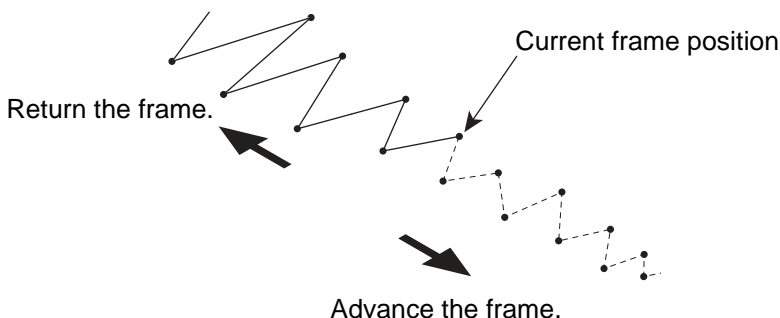
7-2. To return frame/To advance frame (Frame Back/Frame Forward)

[To return frame]

This function will return the frame to the direction of stitches returning in the state that the needle bar is stopped. The frame will be returned when thread breaks, and the repair stitches will be performed from that position.

[To advance frame]

This function will advance the frame to the direction of stitches proceeding in the state that the needle bar is stopped. The frame can be moved immediately to the embroidery start point when you want to start from the middle of embroidery.




CAUTION

 When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

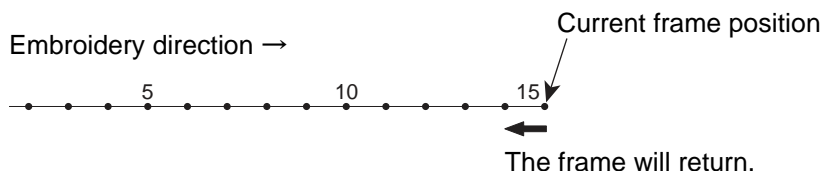
7-2-1. To return frame by using stop switch

Perform setting of Frame Back. (p.156)

The setting of the machine will become Frame Back automatically at thread breakage.

(1) You want to return the frame for 1 stitch.

During stop, press the stop switch one time.

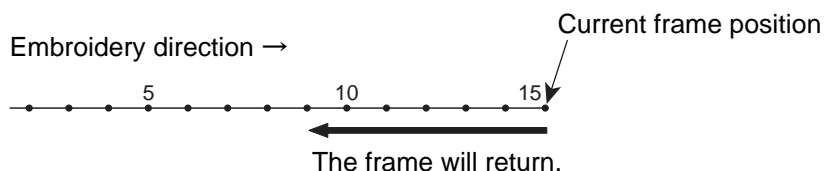


(2) You want to return the frame for several (2 to 10) stitches.

Keep on pressing the stop switch.

The frame will return stitch by stitch up to 10 stitches.

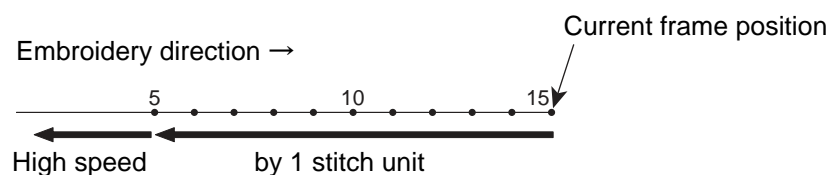
To stop, release stop switch.

**(3)** You want to return the frame for 11 stitches or more.

Keep on pressing the stop switch.

The frame will return by 1 stitch unit up to 10 stitches. For 11 stitches or more, the frame will return at high speed.^[*A]

To stop, press the stop switch again.



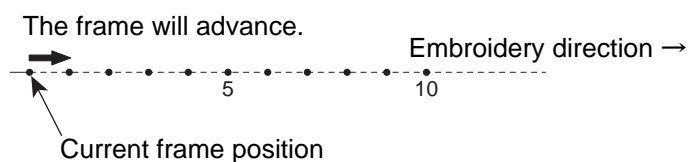
[*A] For 11 stitches or more, the frame will return in units of the number of stitches being set.

7-2-2. To advance frame by using stop switch

Perform setting of Frame Forward. (p.156)

(1) You want to advance the frame for 1 stitch.

During stop, press the stop switch one time.

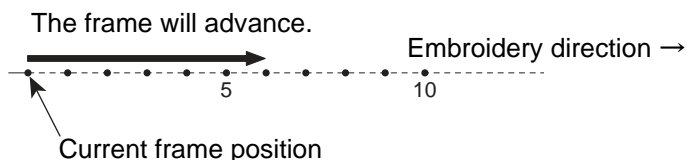


(2) You want to advance the frame for several (2 to 10) stitches.

Keep on pressing the stop switch.

The frame will advance stitch by stitch up to 10 stitches.

To stop, release stop switch.

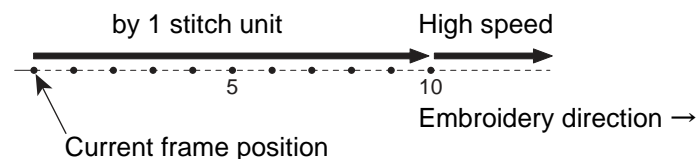


(3) You want to advance the frame for 11 stitches or more.

Keep on pressing the stop switch.

The frame will advance by 1 stitch unit up to 10 stitches. For 11 stitches or more, the frame will advance at high speed.^[*A]

To stop, press the stop switch again.



[*A] For 11 stitches or more, the frame will advance in units of the number of stitches being set.

7-3. Handling of thread breakage

The machine will stop automatically. Besides, the thread breakage indicator lamp will be lit or blinking in red. Code No.291 or No.293 will be also displayed on the operation panel.

Thread breakage indicator lamp

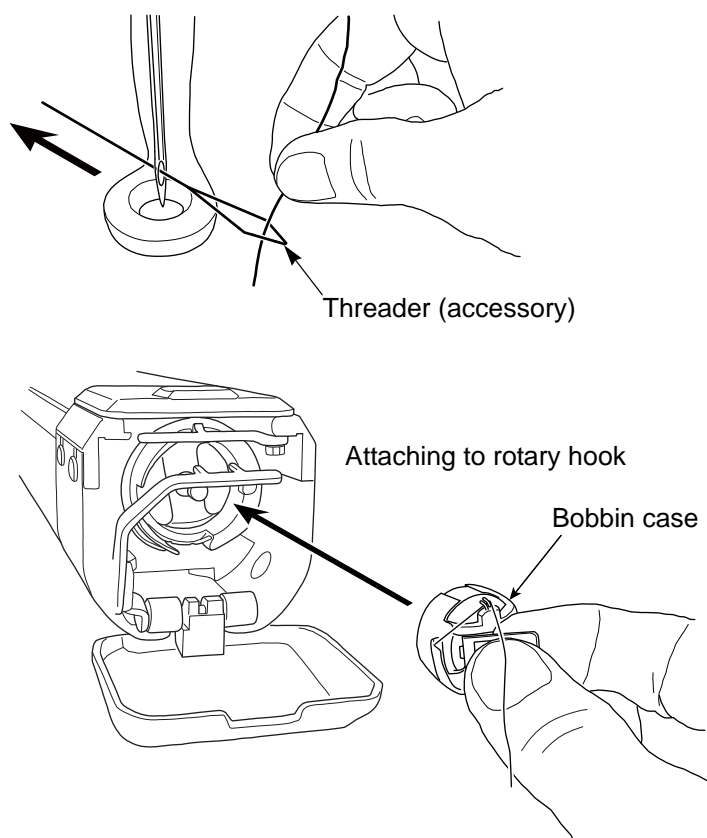


Lit: The upper thread has broken. (No. 291)

Blinking: The under thread has broken. (No. 293)

Restart the embroidery by the following procedure.

- (1) Thread the needle, or change the under thread (bobbin case).

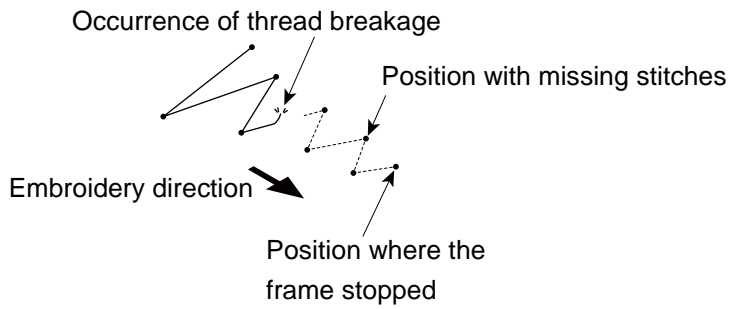


- (2) Perform Frame Back by some stitches for repair stitches.

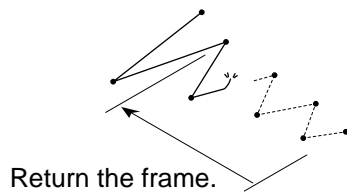
When starting the machine, repair stitches will be performed from the position where Frame Back is stopped.

[Procedure from thread breakage to repair stitches]

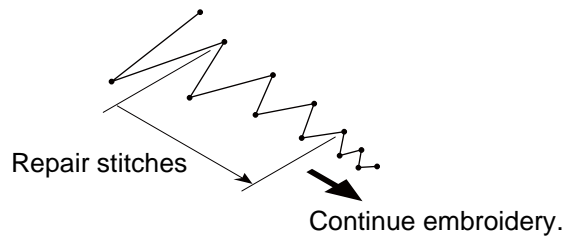
- a. After thread breakage occurs, the frame will move some stitches and then stop.



- b. Return the frame for some stitches.

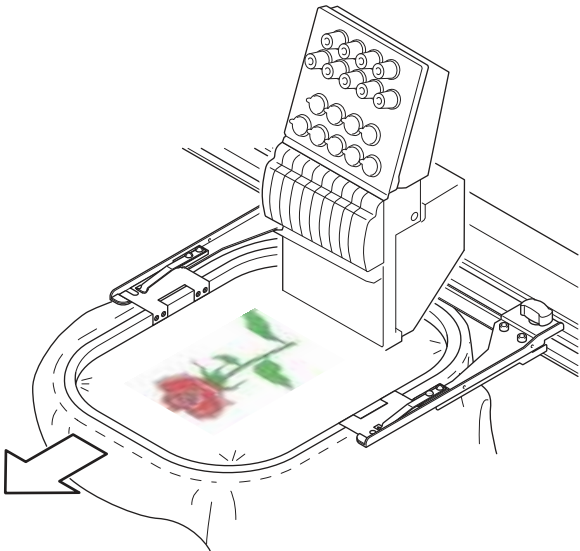
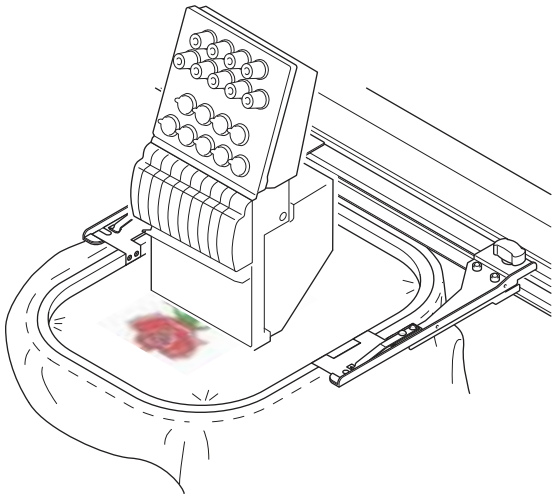


- c. After starting the machine, repair stitches will be performed.



7-4. Completion of embroidery

Destination of the frame movement differs depending on setting of the machine.

Setting of Automatic Offset	
Yes	No
 <p>The frame will move to the offset start position.</p>	 <p>The frame will not move. However, when Automatic Origin Return is set, the frame will move to the design start position.</p>

Chapter 5

Functions concerning embroidery

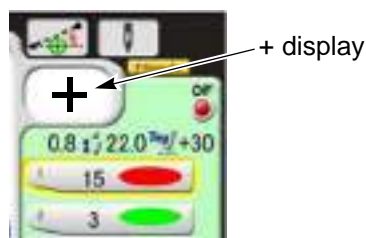
1. To change color	74
2. To trim thread.....	77
3. To set the embroidery speed	90
4. To stop the machine.....	93
5. To change the direction and the size of the design.....	99
6. To embroider the same design repeatedly.....	105
7. To adjust finishing of embroidering	109
8. To increase embroidering efficiency	122
9. To edit design.....	129
10. Setting and resetting of password	139
11. Various functions	145

1. To change color

1-1. To change color manually (Manual Color Change)

[When the laser crosshair marker (option) is equipped]

The needle bar No. becomes as the table below because the laser crosshair marker is equipped on the center of the needle bar case. When selecting "+", the laser crosshair marker is lit, and the "+" is displayed on the main screen.



For 6-needle machine

Laser Crosshair Marker	Needle bar No.					
No	6	5	4	3	2	1
Yes	5	4	3	+	2	1

↑
Laser Crosshair Marker

For 12-needle machine

Laser Crosshair Marker	Needle bar No.											
No	12	11	10	9	8	7	6	5	4	3	2	1
Yes	11	10	9	8	7	6	+	5	4	3	2	1

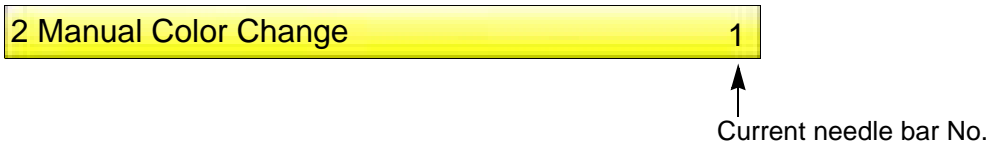
For 15-needle machine

Laser Crosshair Marker	Needle bar No.														
No	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Yes	14	13	12	11	10	9	8	+	7	6	5	4	3	2	1

In case of 18-needle machine

Laser Crosshair Marker	Needle bar No.																
No	18	17	16	15	Omitted	9	8	7	6	5	4	3	2	1	0		
Yes	18	17	16	15	Omitted	9	8	7	6	5	4	3	2	1	+		

1-1-1. Explanation on the screen

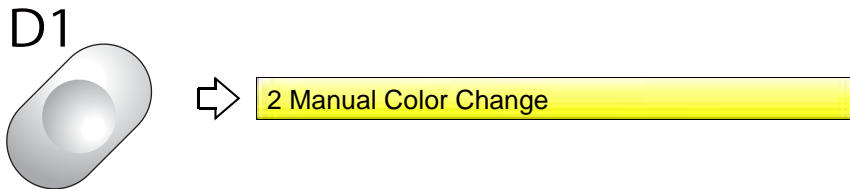


1-1-2. How to operate

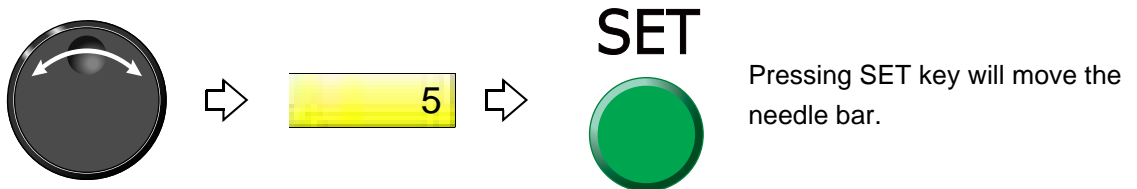


The following is the example of the color change that the needle bar is set to the 5th needle.

(1) To open screen

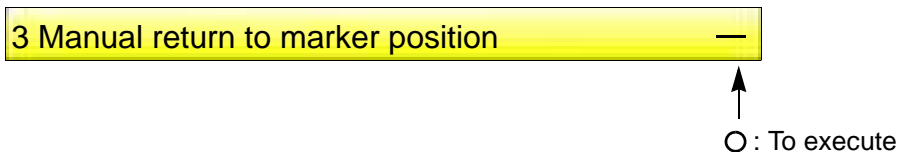


(2) To select needle bar No. and execute color change



1-2. To light the laser crosshair marker manually (Manual return to marker position)

1-2-1. Explanation on the screen

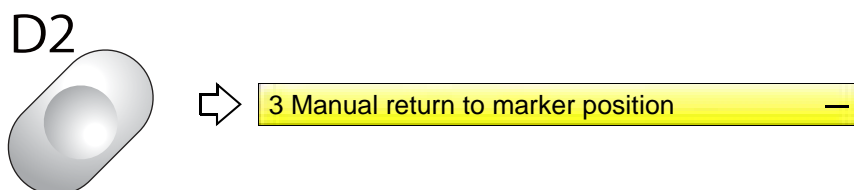


1-2-2. How to operate

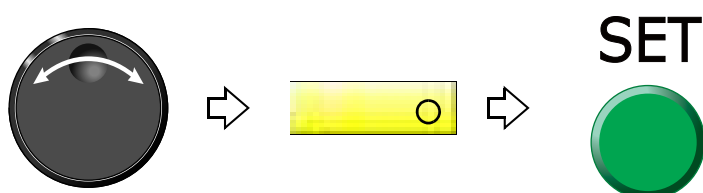


The following is an example of executing the color change to the laser crosshair marker position to light the laser crosshair marker.

(1) To open screen



(2) To execute the color change for lighting the laser crosshair marker.



2. To trim thread

2-1. To trim thread manually (Thread breakage indicator lamp)

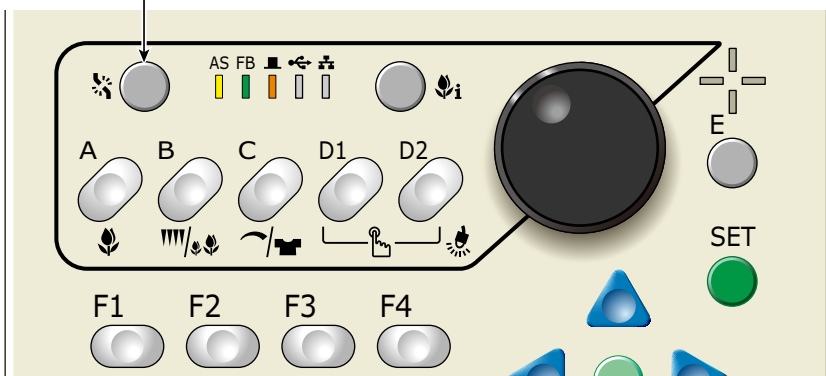
2-1-1. How to operate

! CAUTION

⊘ When performing this operation, do not put your hands etc. near the needle or on the machine table. Moving down of the needle bar could injure you.

In the main screen and in the state of operation possible, press the thread breakage indicator lamp longer and release your finger. The thread cutting will be performed after the stop of the buzzer

Thread breakage indicator lamp



2-2. To trim thread manually (Manual Thread Trimming)

2-2-1. Explanation on the screen



↑
○ : To trim thread

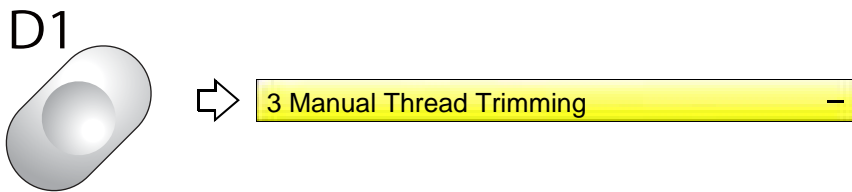
2-2-2. How to operate

! CAUTION

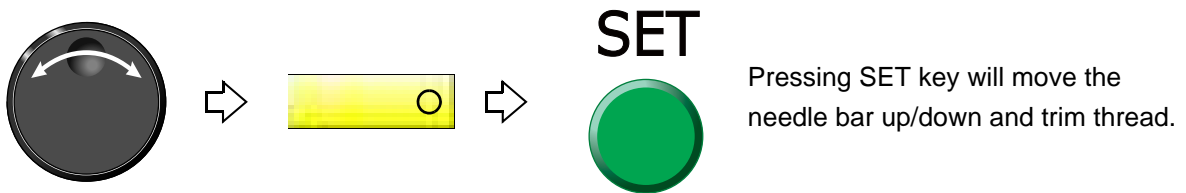
⊘ When performing this operation, do not put your hands etc. near the needle or on the machine table. Moving down of the needle bar could injure you.

The following is the example of executing thread trimming.

(1) To open screen



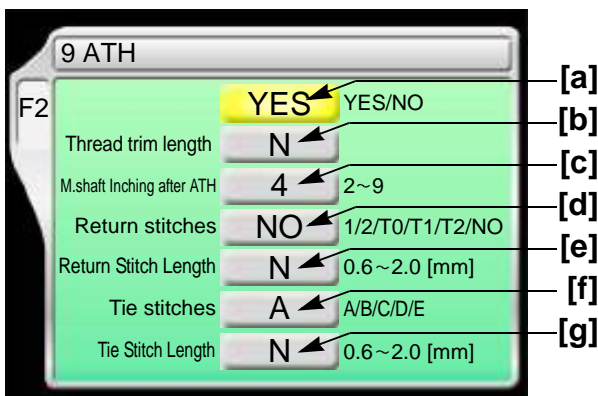
(2) To execute thread trimming



2-3. To trim thread automatically (ATH)

It is the setting to trim thread.

2-3-1. Explanation on the screen

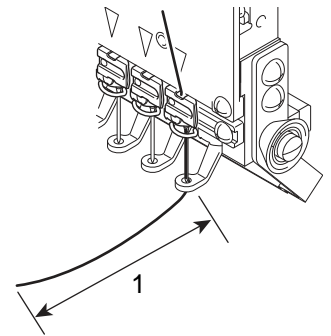
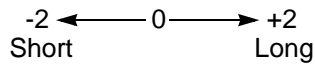


[a] To trim thread automatically

YES: To trim

NO: Not to trim thread

[b] Remaining length of upper thread after thread trimming (1 in the right figure)



When upper thread remains on the fabric, select the value of "-".

If the thread does not link at the start of sewing due to short of remaining length of upper thread, select the value of "+".

When "N" is displayed, the value differs in each needle bar.

Regarding the setting of needle bar unit, refer to detailed page. (p.113)

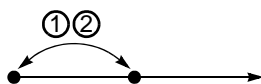
[c] Number of lowering the needle bar by slow operation at start after thread trimming or after data set

[d] The number of return stitches at start of sewing

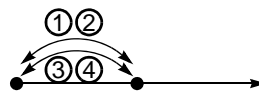
When "N" is displayed, the value differs in each needle bar. (p.113)

The more return stitches are, the less mis-stitching at start decreases.

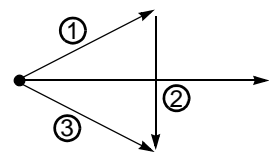
1: One reciprocation



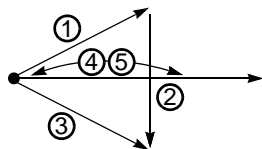
2: Two reciprocations



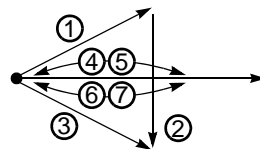
T0: Triangle



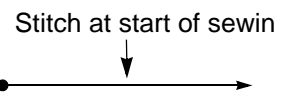
T1: Triangle + one reciprocation



T2: Triangle + two reciprocations



NO: Without Return Stitches



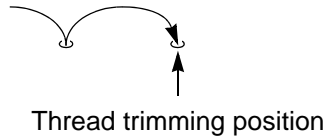
[e] Stitch length of [d] described above

When "N" is displayed, the value differs in each needle bar. (p.113)

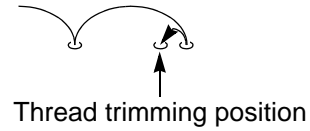
[f] Tie stitching at thread trimming

Setting more tie stitches prevent the thread from pulling out.

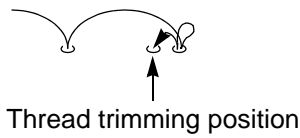
A: Not to perform tie stitching



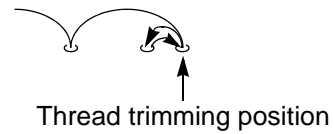
B: To perform tie stitching (once)



C: To perform tie stitching after lowering the needle twice on the same position at the end of the stitch



D: To perform tie stitching (twice)



E: To switch B and D depending on the direction of tie stitching



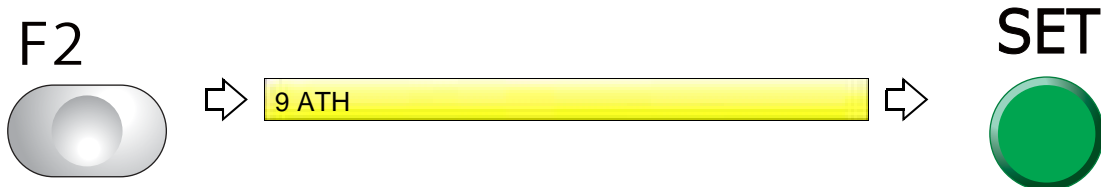
[g] Stitch length of [f] described above

When "N" is displayed, the value differs in each needle bar. (p.113)

2-3-2. How to operate

The following is the example that the thread is trimmed automatically, the thread trim length is set to "+2" and "M.shaft Inching after ATH" is set to "3".

(1) To open screen

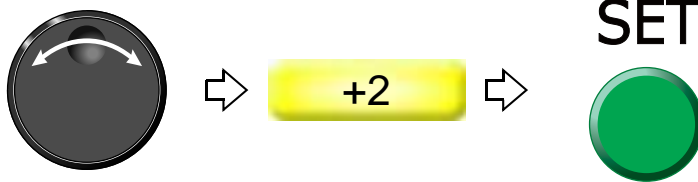


(2) To trim thread automatically

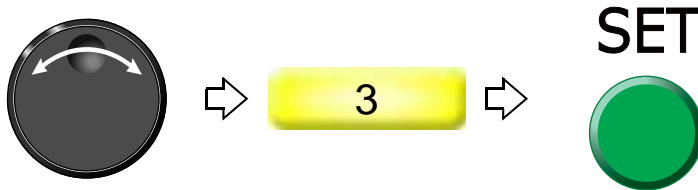


(3) To select thread trim length

When "N" is displayed, changing "N" to a value will set the detecting sensitivity in all needle bars to the same.



(4) To select "M.shaft Inching after ATH".

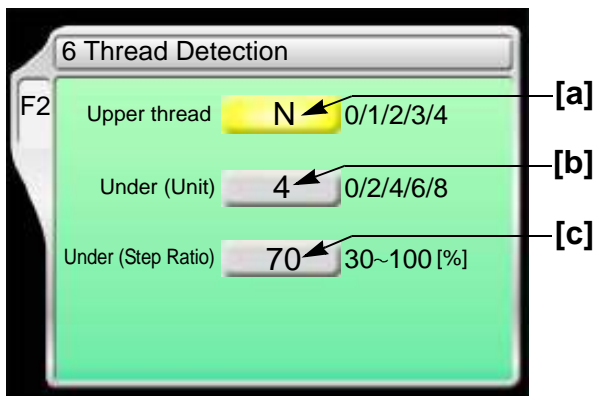


2-4. To change thread breakage detecting sensitivity (Thread Detection)

Use this function in the following cases.

- (1)** Thread breakage is detected even when thread is not broken.
- (2)** Thread breakage detection timing is late.

2-4-1. Explanation on the screen



[a] Setting how many consecutive detections of upper thread breakage are regarded as thread breakage

0: Not to stop even if upper thread breaks

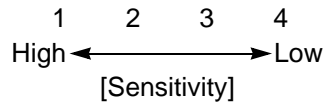
When idling the machine, set "Upper" and "Under (Unit)" to "0".

N: To stop if upper thread is broken (the detecting sensitivity differs in each needle bar) (p.113)

1, 2, 3, 4: To stop if upper thread is broken (Detecting sensitivity is the same in all needle bar)

When selecting "3", the thread breakage will be detected after upper thread breaks three times continuously.

The relationship between the number of detecting times and sensitivity is shown as follows.



[b] Setting how many consecutive times of detection of "Under (Step Ratio)" of [c] are regarded as thread breakage to stop the machine

0: Not to stop even if under thread is broken

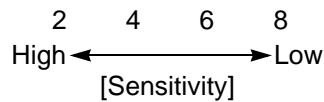
When idling the machine, set "Upper" and "Under (Unit)" to "0".

N: To stop if under thread is broken (the detecting sensitivity differs in each needle bar) (p.113)

2, 4, 6, 8: To stop if under thread is broken (Detecting sensitivity is same in all needle bar)

When selecting "4", the thread breakage will be detected after under thread breaks four times continuously.

The relationship between the number of detecting times and sensitivity is shown as follows.

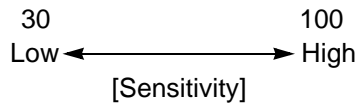


[c] Set sensitivity of [b]. Change this value according to the type of fabric and thread to use. It enables to prevent mis-detection.

N: To stop if under thread is broken (the detecting sensitivity differs in each needle bar) (p.113)

30 to 100: To stop if under thread is broken (Detecting sensitivity is same in all needle bar)

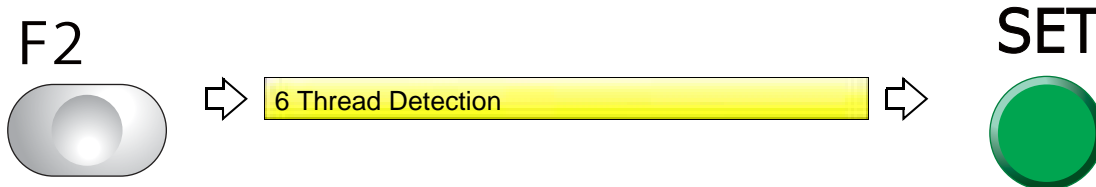
The relationship between detecting ratio and sensitivity is shown as follows.



2-4-2. How to operate

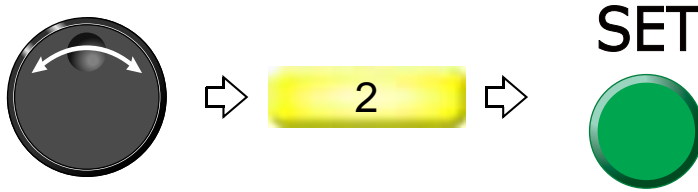
The following is an example that the number of upper thread breakage detecting times is set to "2" and the number of under thread breakage detecting times (unit) is set to "6".

(1) To open screen

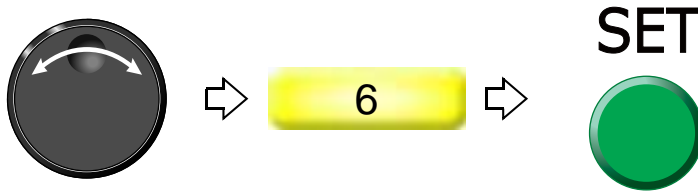


(2) To select the number of upper thread breakage detecting times

When "N" is displayed, changing "N" to a value will set the detecting sensitivity in all needle bars to the same.



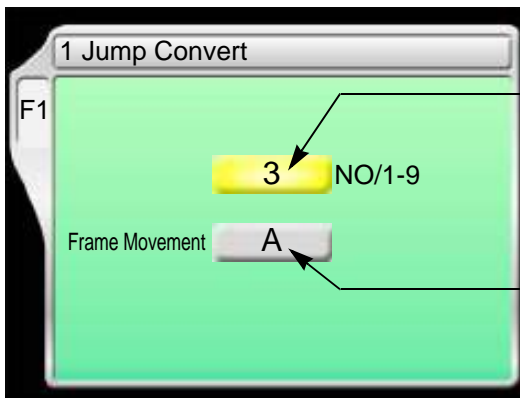
(3) To select number of under thread breakage detecting times (unit)



2-5. To trim thread by the number of consecutive jump stitches (Jump Convert)

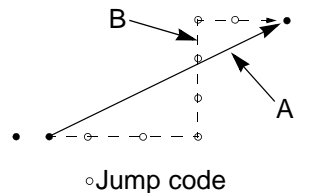
This function can be used to perform thread trimming in the middle of stitching and moving of the frame to the next stitch by specifying the number of jump code without editing the design.

2-5-1. Explanation on the screen



Number of consecutive jump codes
 NO: Not effected
 1 to 9: Number of consecutive jump codes

How to move frame to next stitch
 A: Batch
 B: As data



2-5-2. How to operate

The following is the example of setting the number of consecutive jump code to "4".

(1) To open screen



(2) To select number of consecutive jump codes



2-6. To add thread trimming code to the design and trim thread (Data Edit "Insert")

This function always executes automatic thread trimming at the same position by adding thread trimming code to the design. A stitch will be inserted before the selected stitch No. When this operation is performed in the middle of embroidery, data set will be canceled. If the stitch with a length length is inserted, a design will be displaced hereafter.

2-6-1. Explanation on the screen

Stitch No.	#	X	Y	F
1	0	0		Jump
2	8	4		Stitch
3	8	3		Stitch
4	11	5		Stitch
5	8	8		Stitch
6	1	13		Stitch
7	-11	2		Stitch
8	-12	-3		Stitch
9	-11	7		Stitch
10	-25	15		Stitch

X data (Data to move the frame in X-axis direction)
When the value is 8, the frame travel amount is 0.8 mm.

Y data (Data to move the frame in Y-axis direction)
When the value is 4, the frame travel amount is 0.4 mm.

Function Code (p.251)
It is the code to indicate the role of the stitch.

Buttons: Modify, Insert, Delete

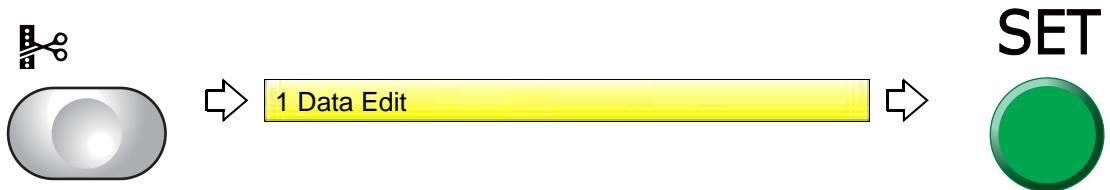
2-6-2. How to operate

! CAUTION

! The original design will be overwritten after editing. Back up design data as necessary.

The following is an example that thread trimming code is added to 20th stitch.

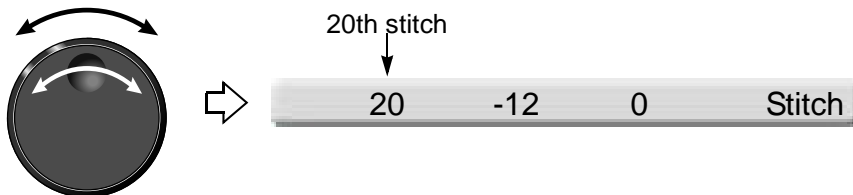
(1) To open screen



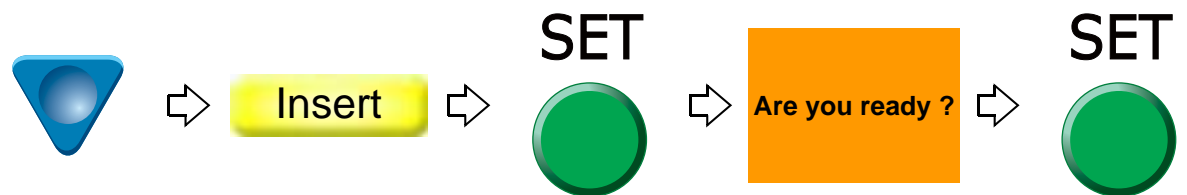
(2) To select a design



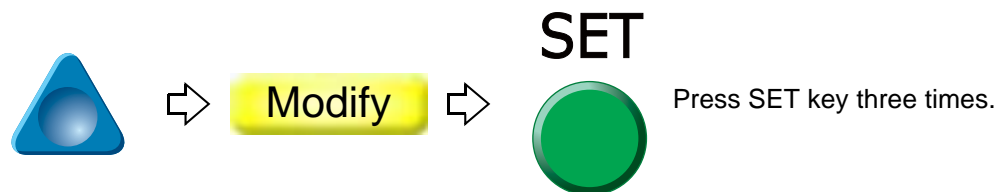
(3) To select stitch No. to perform thread trimming



(4) To select "Insert" and decide



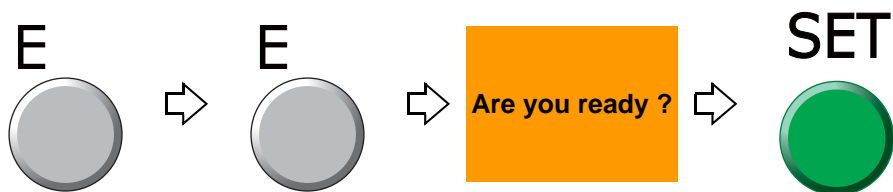
(5) To select "Modify" to move the cursor



(6) To select "ATH"



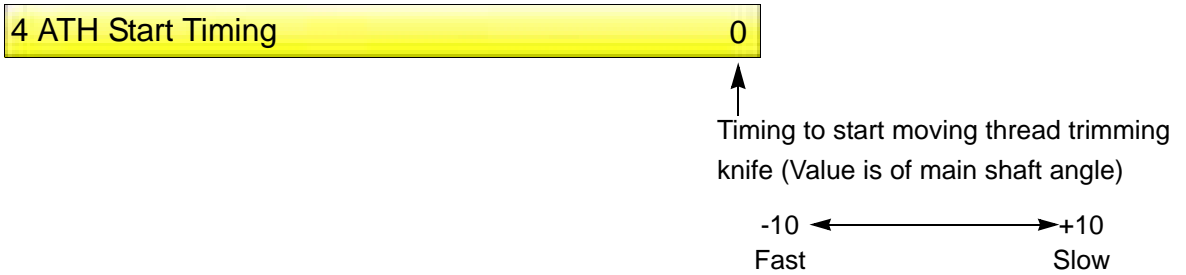
(7) To decide



2-7. To change thread trim timing (ATH Start Timing)

This function is for the purpose to improve thread trimming by changing moving timing of the thread trimming knife.

2-7-1. Explanation on the screen



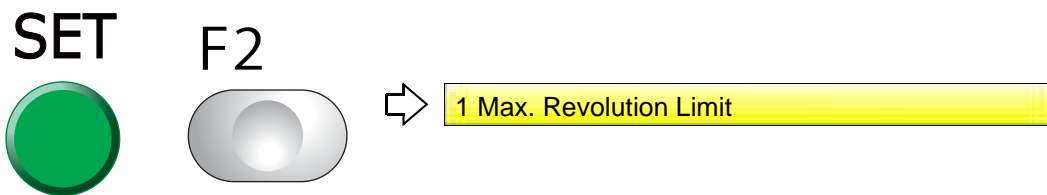
2-7-2. How to operate

⚠ CAUTION

! This machine was shipped after being set to optimum values. To change these values, consult the distributor. Some operating condition could cause occurrence of fault in thread trimming.

The following is an example of setting ATH start timing to "+5"

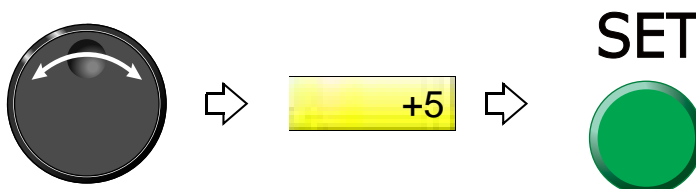
- (1) Set to main screen.
- (2) Press F2 key while pressing SET key.



- (3) Press F2 key.

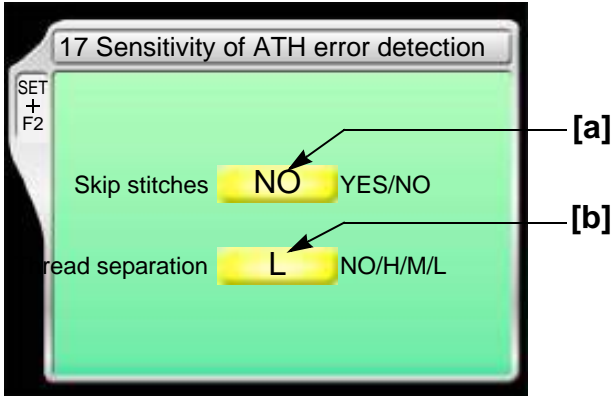


- (4) To select ATH drive start timing



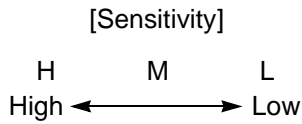
2-8. To set the sensitivity of ATH error detection (Sensitivity of ATH error detection)

2-8-1. Explanation on the screen



[a] The sensitivity of detection of fault in thread trimming occurred due to skip stitches
 YES: To detect
 NO: not to detect
 If the fault in thread trimming by skip stitches is detected, the code No. 3AC is displayed.

[b] The sensitivity of detection of fault in thread trimming occurred due to thread separation
 NO: not to detect
 H、 M、 L : to detect

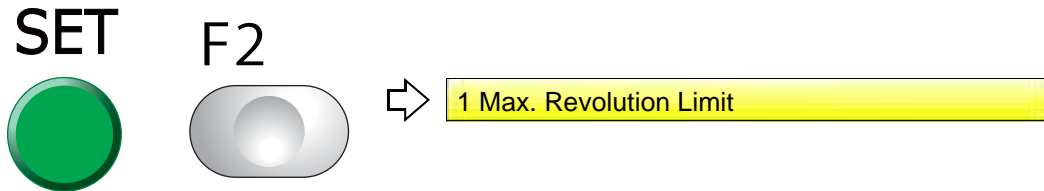


If the fault in thread trimming by thread separation is detected, the code No. 3AB is displayed.

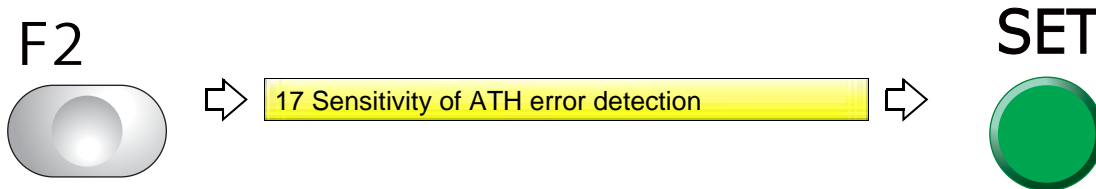
2-8-2. How to operate

The following is an example of setting the fault in thread trimming occurred due to skip stitches "to detect".

- (1) Set to main screen.
- (2) Press F2 key while pressing SET key.



- (3) Press F2 key.



(4) To select "YES"



1

2

3

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11

3. To set the embroidery speed

3-1. To limit embroidery speed by stitch length (Min. Revolution)

3-1-1. Explanation on the screen

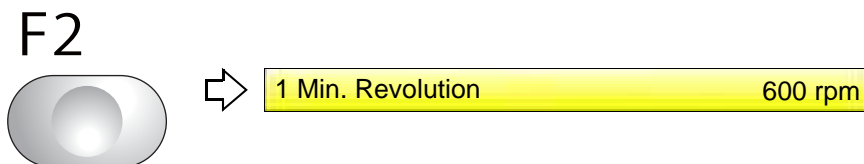


↑
Maximum speed at stitch of which stitch length
12.0 mm or more

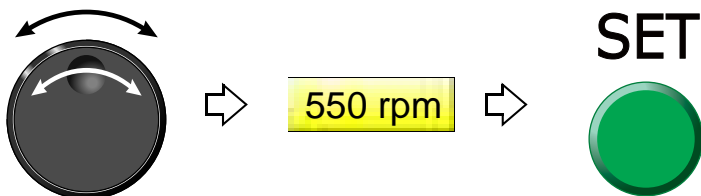
3-1-2. How to operate

The following is an example that Low Speed R.P.M. is set to "550 rpm".

(1) To open screen



(2) To select Low speed R.P.M.

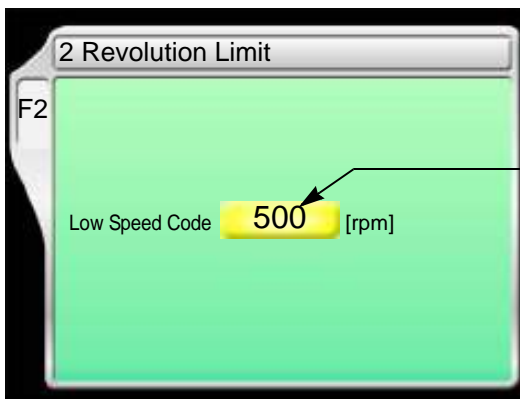


3-2. To set embroidery speed within speed limit section (Revolution limit)

Set the maximum speed of the section where the embroidery speed is restricted. The area where speed was restricted in the design is surrounded by the following function code.

Function Name	Function Code
Low Speed Start Stitch	Low_S
Low Speed End Stitch	Low_E

3-2-1. Explanation on the screen

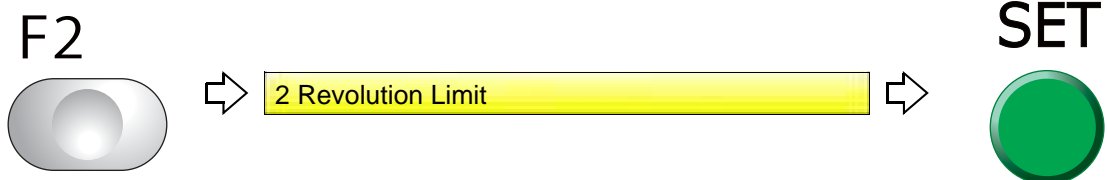


Maximum speed of section between function codes Low_S to Low_E

3-2-2. How to operate

The following is an example that the maximum speed of the section between the function codes Low_S to Low_E is set to "700".

(1) To open screen



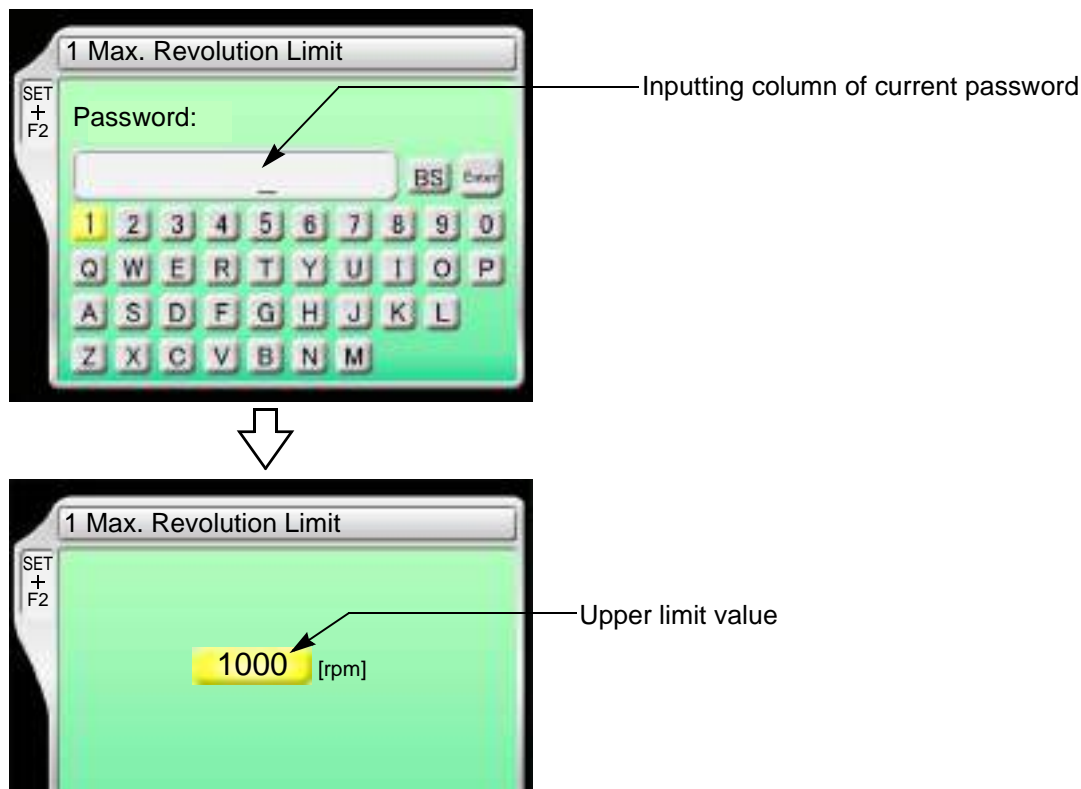
(2) To select maximum speed



3-3. To decide upper limit value of the maximum speed (Max. Revolution Limit)

This operation requires input of the password.

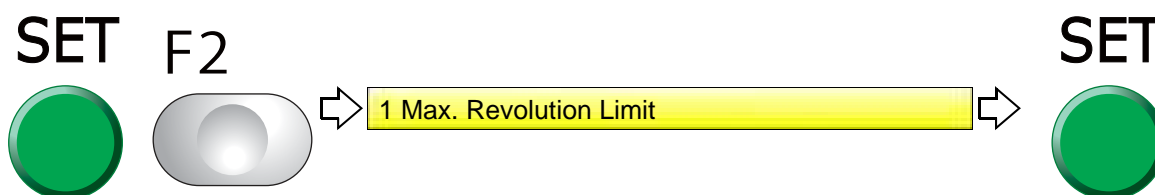
3-3-1. Explanation on the screen



3-3-2. How to operate

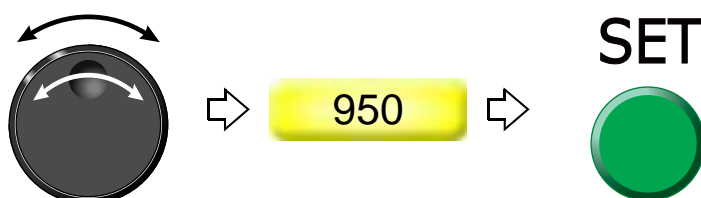
The following is the example that Max. Revolution Limit is set to "950".

- (1) Set to main screen.
- (2) To press F2 key while pressing SET, and press SET further



- (3) To cancel the password
Regarding canceling method, refer to the detail page. (p.141)

- (4) To select limit of max revolution



4. To stop the machine

4-1. To stop the machine automatically when reaching the set value (Preset Halt)

4-1-1. Explanation on the screen

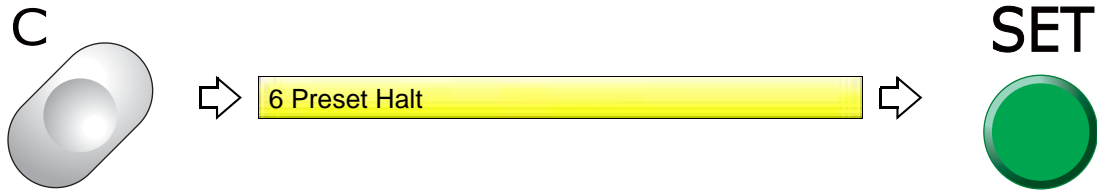


- [a]** The machine will stop when counting reaches the number of the set stitches. (Display of 1D2)
- [b]** The machine will stop when embroidery stitch length reaches the set length (display of 1D2).
- [c]** The machine will stop when the number of designs reaches the set numbers. (Display of 1D2).
- [d]** The machine will stop when counting reaches the number of set stitches. (Display of OIL)
When automatic lubrication system is set to "YES", it will not be displayed.
- [e]** The machine will stop short of the end code by one stitch (display of 1D2).
YES: To stop
Since embroidery is not finished, it is possible to perform frame back.
NO: Not to stop
- [f]** The machine will stop when the number of ATH movement reaches the set numbers. (Display of 1D8).

4-1-2. How to operate

The following is an example that the halt by the number of stitch is set to "15000".

(1) To open screen



(2) To select value of halt by number of stitch



4-2. To stop the machine before needle bar hits the frame (Software Frame Limit)

4-2-1. Explanation on the screen

6 Software Frame Limit

F1 Frame Limit **NO** YES/NO

Frame Type Tubular Previous

P1X	0	[mm]	0
Y	0	[mm]	0
P2X	0	[mm]	0
Y	0	[mm]	0

Annotations:

- Software Frame Limit
- YES: To set / NO: Not to set
- "Frame Type" selected now. It is impossible to change. Software Frame Limit is memorized in every frame type.
- Frame coordinates of Point 1 (p.95)
- Frame coordinates of Point 2 (p.95)

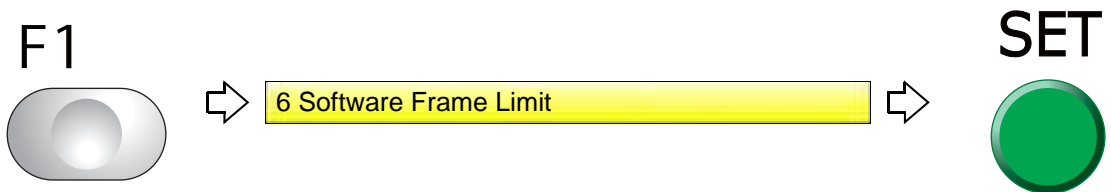
4-2-2. How to operate

! CAUTION

⊘ When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

The following is the example of setting the tubular frame as "Software Frame Limit".

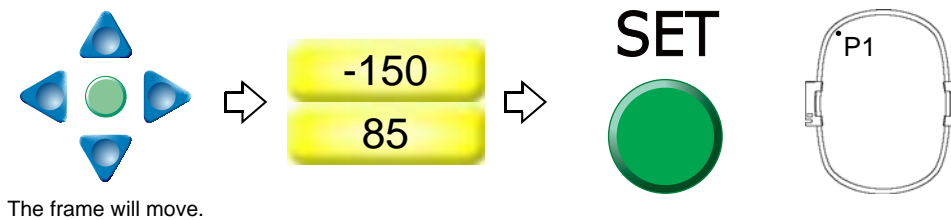
(1) To open screen



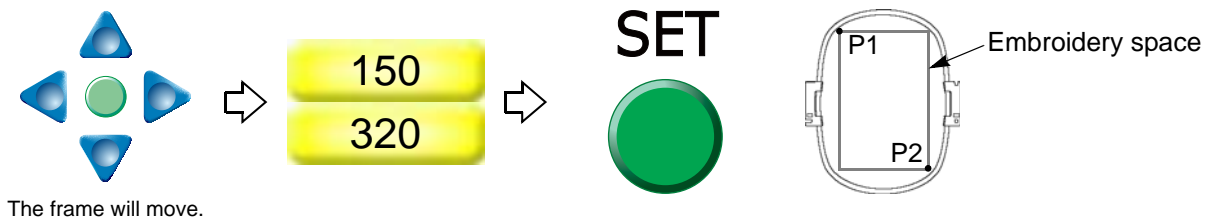
(2) To make software frame limit effective



(3) To decide P1 (Point 1)



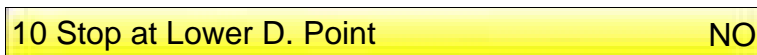
(4) To decide P2 (Point 2)



4-3. To stop the machine with needle bar stuck in the material (Stop at Lower D.Point)

This setting stop the machine with needle stuck in the material at the end of embroidery. This function is effective for embroidering to consecutive design using AFC (option) mainly.

4-3-1. Explanation on the screen

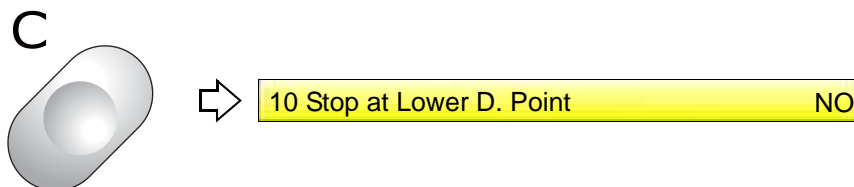


↑
YES: To set
NO: Not to set (usual setting)

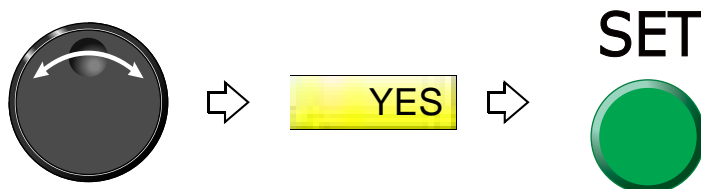
4-3-2. How to operate

The following is the example of setting "Stop at Lower D. Point".

(1) To open screen



(2) To set Stop at Lower D. Point



4-4. To stop at Frame Limit (Frame Limit setting)

This is the setting to stop the frame at Flame Limit (movable limit position). To stop at Frame Limit, it is necessary to memorize the frame origin correctly in the machine. The position where the frame stops differs in every "Frame Type".

4-4-1. Explanation on the screen

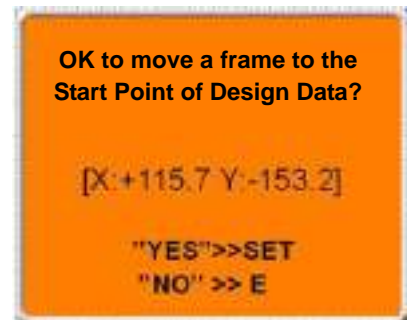


↑
Stop at Frame Limit

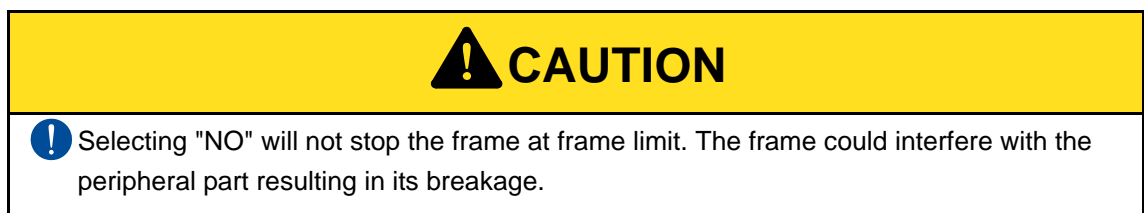
YES: To stop (usual setting)

NO: Not to stop

Selecting "NO" will not display the following message at data input.

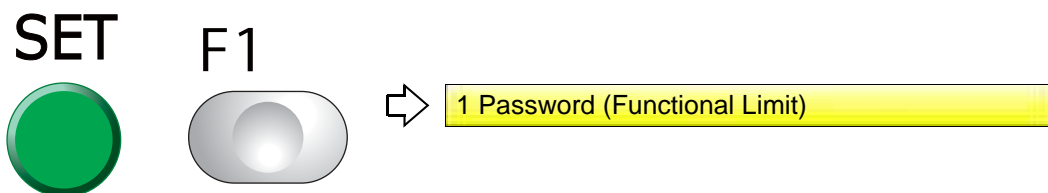


4-4-2. How to operate

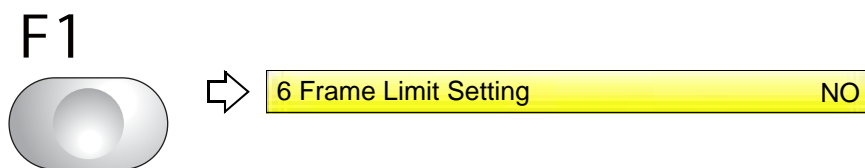


The following is the example that the frame is stopped at Frame Limit.

- (1) Set to main screen.
- (2) To press F1 key while pressing SET



(3) To press F1 key



(4) To make Frame Limit setting effective

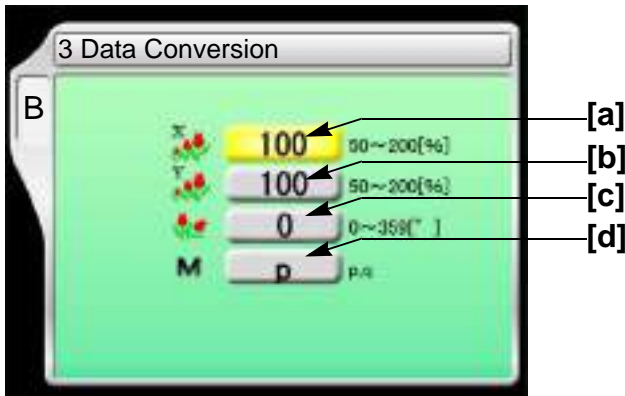


5. To change the direction and the size of the design

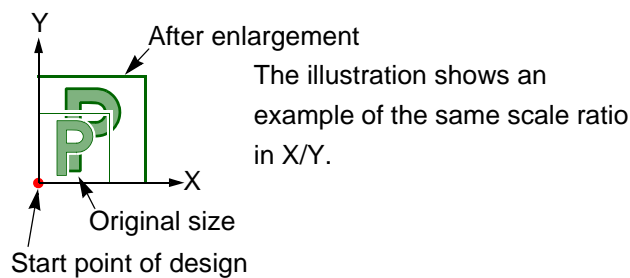
5-1. To perform enlargement, rotation, reversion (Data Conversion)

Set this function after data set. Setting contents here will be added in a design. So, when you embroider this design next time, setting again will be unnecessary.

5-1-1. Explanation on the screen

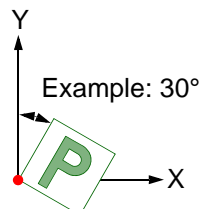


[a] Horizontal (X) scale ratio (%)

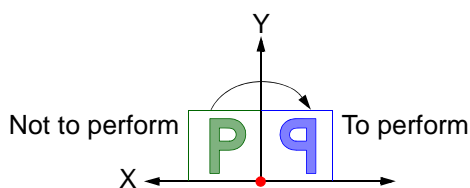


[b] Vertical (Y) scale ratio (%)

[c] Rotating angle (°)



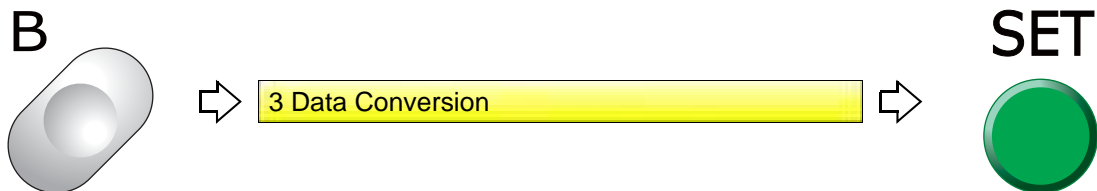
[d] Reverse



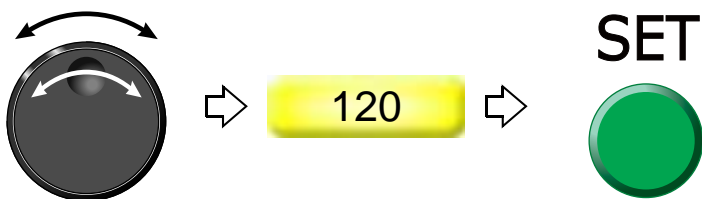
5-1-2. How to operate

The following is the example that horizontal scale ratio and vertical scale ratio are set to "120".

(1) To open screen



(2) To select horizontal scale ratio



(3) To select vertical scale ratio

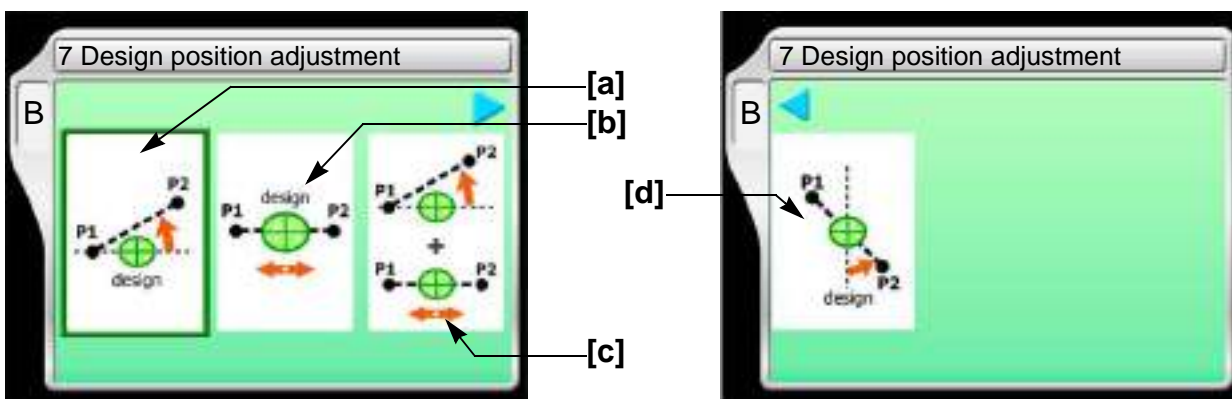


5-2. Tilt the design, change the placement (Design position adjustment)

It is the setting to adjust the position by rotating the design according to the inclination of the fabric.

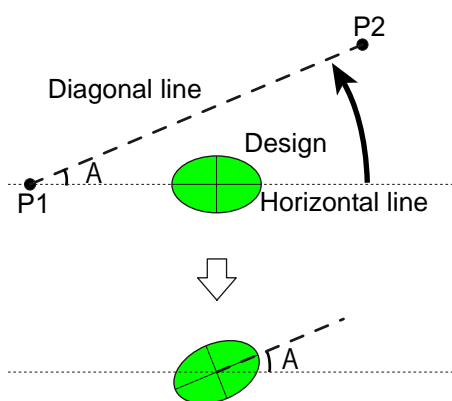
- This function can not be set during embroidery.
- When performing the data set of the other design after setting this function, the setting contents will be canceled. Also, the setting contents are not saved for the design memorized in the machine memory.
- This function can not be set for the designs that "Repeat" or "Auto Offset" is set. It is not possible to set "Repeat" or "Auto Offset" later for the design that this function has been set.
- This function can be set for the designs that "Data conversion" is set. However, "Data conversion" can not be set for the design that this function has already been set.

5-2-1. Explanation on the screen

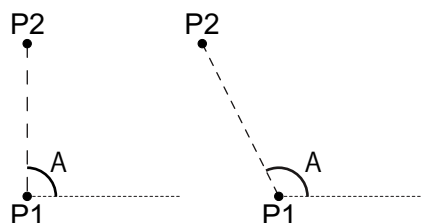


[a] Alignment adjustment

Rotate the design by the angle (A) between a diagonal line(P1 - P2) and a horizontal line. The design is rotated with respect to the embroidery start point.



It cannot be set when the angle (A) is 90 degrees or more.

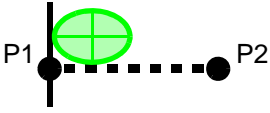
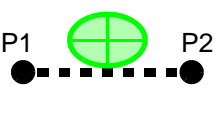
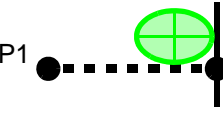
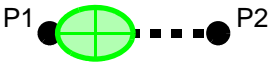
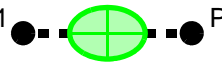

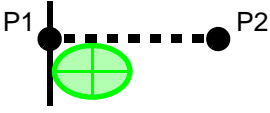
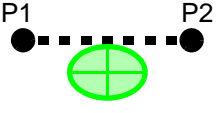
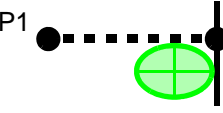


[b] Desing position

Place the design based on the interval of P1 and P2.

If P1 and P2 have a different Y coordinate, the Y coordinate of the design position will be as follows.

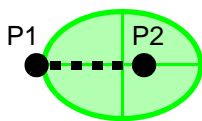
- Between P1 and P2 if the design position is in the center
- Based on P1 if the design position is close to P1
- Based on P2 if the design position is close to P2

Nea P1	Center of P1 and P2	Close to P2
Above the line 	Above the line 	Above the line 
Center of the line 	Center of the line 	Center of the line 
Below the line 	Below the line 	Below the line 

It is possible to set even the design longer than an interval between P1 and P2.

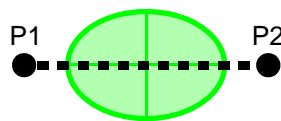
[Example 1]

Close to P1, Center of line



[Example 2]

Center of P1 and P2, Center of the line



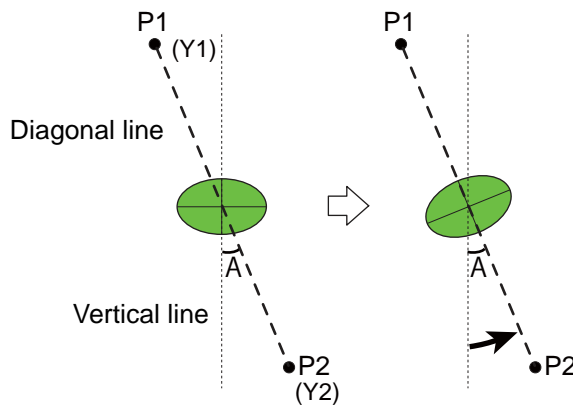
[c] Alignment adjustment, Design placement

After performing the alignment adjustment, execute the design placement continuously.

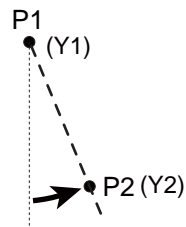
It is the function that the above [a] and [b] are combined.

[d] Alignment adjustment (vertical)

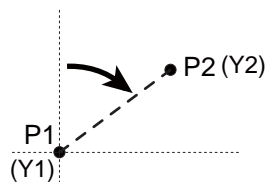
Rotate the design by the angle (A) between the diagonal line (P1 - P2) and the vertical line.
The design is rotated with respect to the center of the design size.



The rotation direction may be reversed depending on the values of coordinates (Y1) and (Y2).



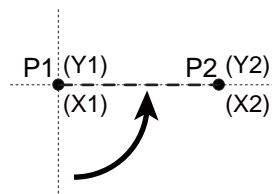
- If the coordinate (Y1) is greater than (Y2)



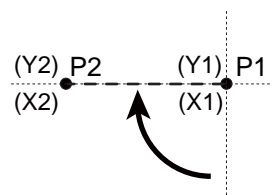
- If the coordinate (Y1) is smaller than (Y2)

If the coordinate value (Y1) is the same as (Y2), the rotation direction is determined by the value of (X1) and (X2).

The design will not be rotated if (X1) is equal to (X2) (i.e., P1 is equal to P2).



- If the coordinate (X2) is greater than (X1)



- If the coordinate (X2) is smaller than (X1)

5-2-2. How to operate

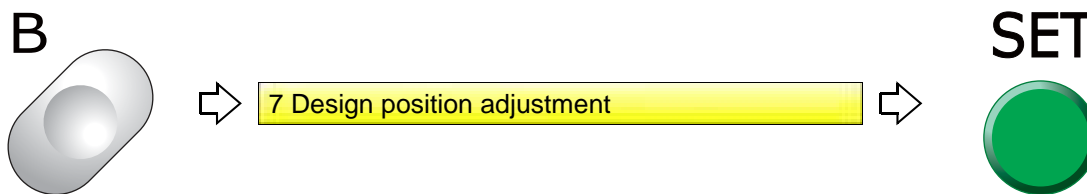
! CAUTION

⊘ When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

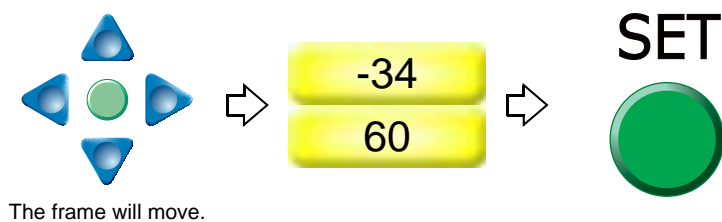
The following is an example of "Alignment adjustment".

To cancel the setting, perform the data set of the design.

(1) To open the screen

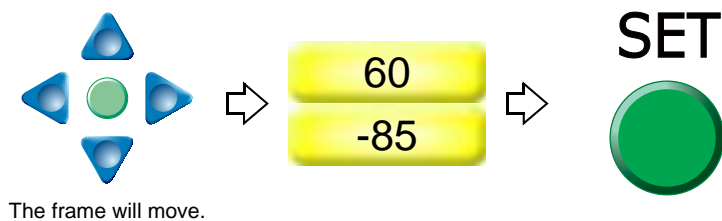


(2) To decide the frame position of P1.



(3) To decide the frame position of P2

Pressing SET key will move the frame.



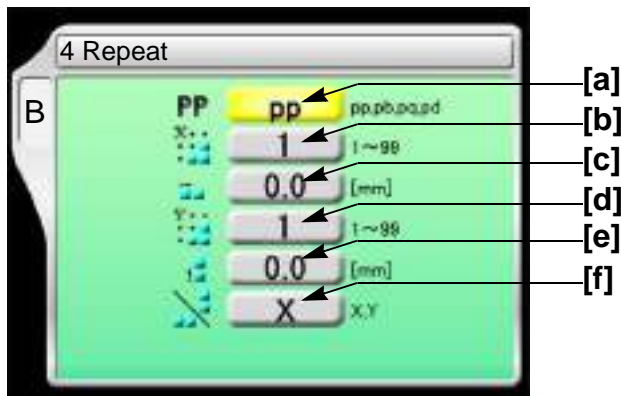
(4) The trace execution screen will be displayed. Execute the trace.

6. To embroider the same design repeatedly

6-1. To repeat to horizontal and vertical direction (Repeat)

Set this function after data set. Setting contents here will be added in a design. So, when you embroider this design next time, setting again will be unnecessary.

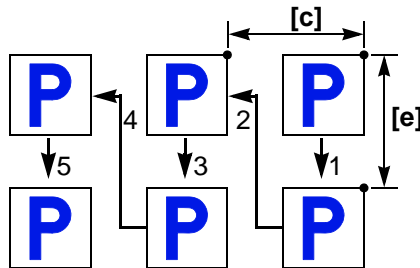
6-1-1. Explanation on the screen



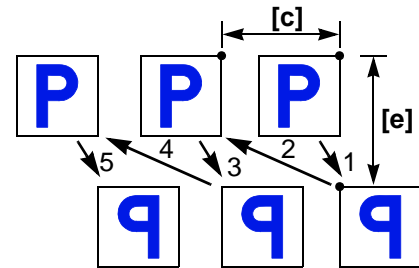
[a] Repeat method

The illustration below is an example that the priority embroidery direction is vertical.

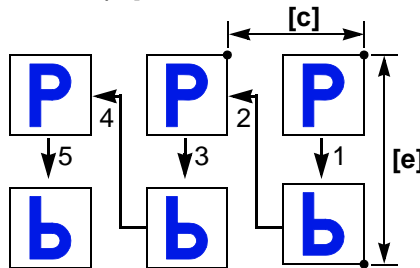
[In case of pp]



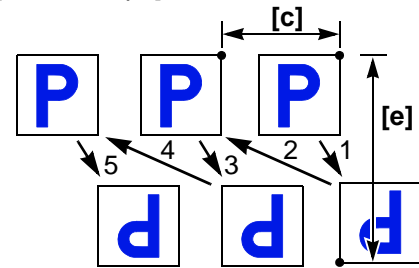
[In case of pq]



[In case of pb]



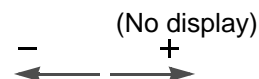
[In case of pd]



[b] Number of repeats in horizontal

[c] Interval in horizontal (mm)

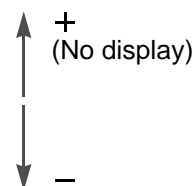
Repeat direction will be decided by code.
 Selecting "-" will perform embroidering at left repeatedly.



[d] Number of repeats in vertical

[e] Interval in vertical (mm)

Repeat direction will be decided by code. Selecting "-" will perform embroidering at front.



[f] Priority embroidering direction (horizontal/vertical)

It is the setting which direction is given priority to embroider, horizontal(X) or vertical(Y).

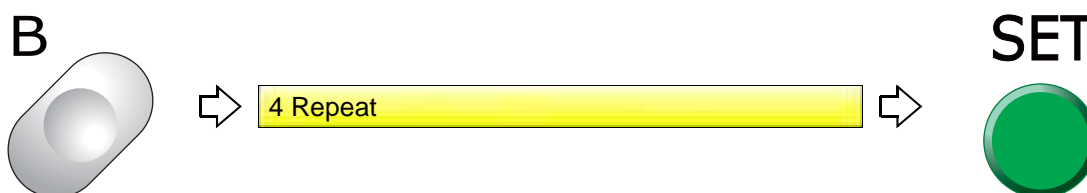
6-1-2. How to operate

! CAUTION

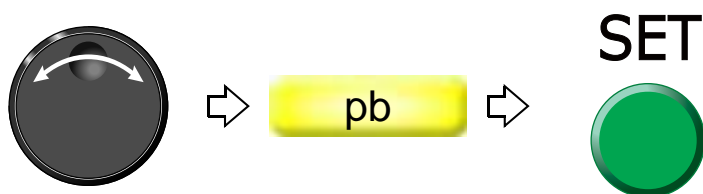
When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

The following is an example that repeat pattern "pb", the number of repeats in horizontal "3", interval in horizontal "-60", the number of repeats in vertical "2", interval in vertical "-50", priority direction "X" are set.

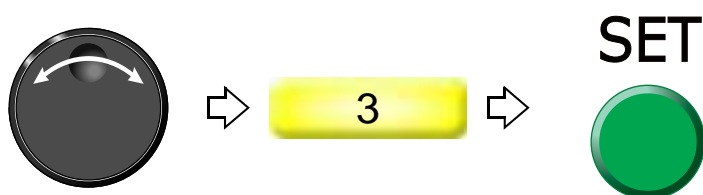
(1) To open screen



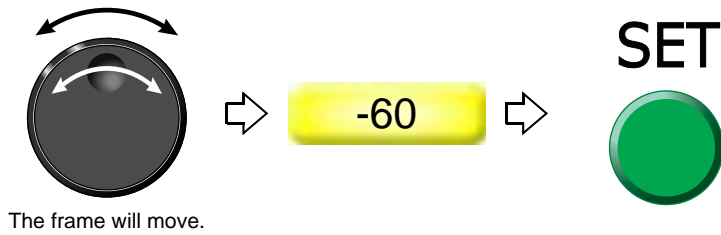
(2) To select repeat pattern



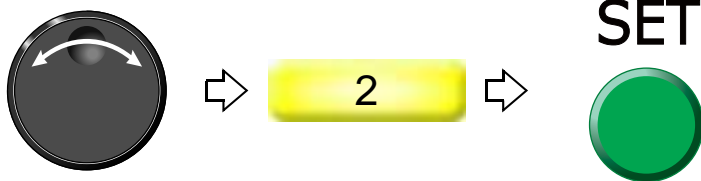
(3) To select number of repeats in horizontal



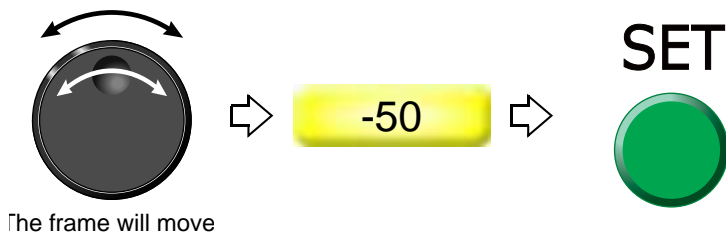
(4) To select interval in horizontal (mm)



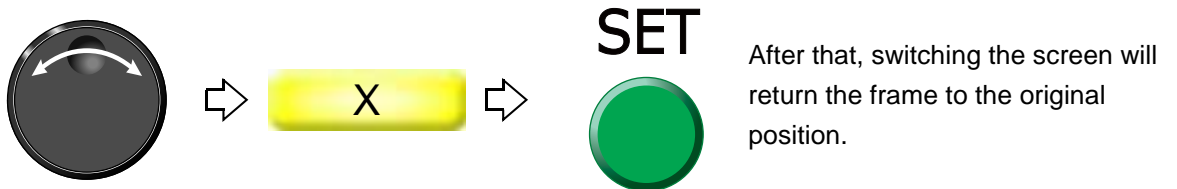
(5) To select number of repeats in vertical



(6) To select interval in vertical (mm)



(7) To select priority embroidering direction



To cancel the setting of repeat, set "the number of repeats in horizontal" and "the number of repeats in vertical" to "1".

6-2. To repeat at the same place (A.S. after Auto Data Set)

This setting makes the machine start automatically after finishing embroidery and embroider the same design repeatedly.

This function is effective only when "Auto Start (AS)" is set to "YES". (p.54)

6-2-1. Explanation on the screen

6 Automatic Start after Automatic Data Set NO

↑
YES: To set

NO: Not to set (usual setting)

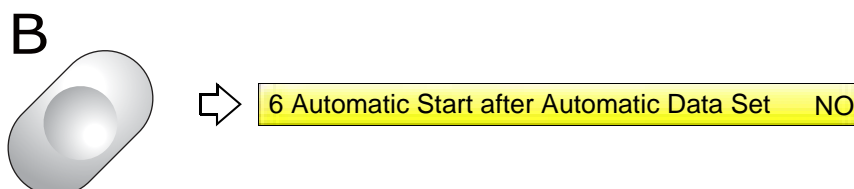
6-2-2. How to operate

⚠ CAUTION

⚠ After the embroidery is finished, do not put your hands etc. on the table. Automatic start operation could injure you.

The following is the example of setting "Auto Start" after setting "Auto Data Set".

(1) To open screen



(2) To set automatic start after automatic data set

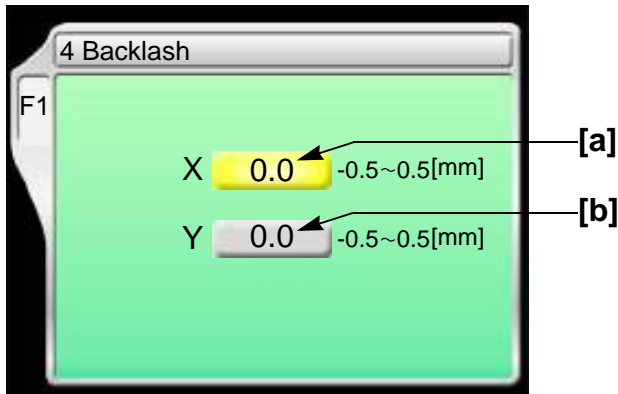


7. To adjust finishing of embroidering

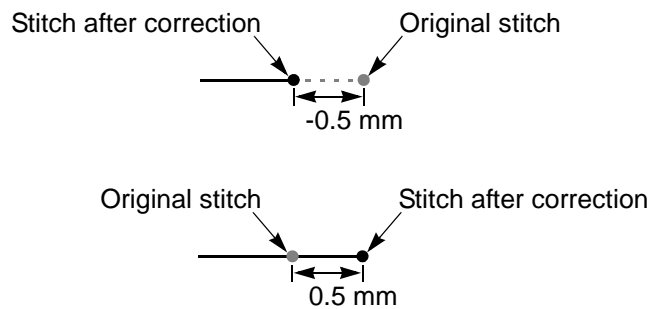
7-1. To adjust driving error of the frame (Backlash)

This function corrects error of finished stitching generated by Backlash. Backlash means the play generated by the shock in the parts at the drive system or around the frame when return stitches are executed.

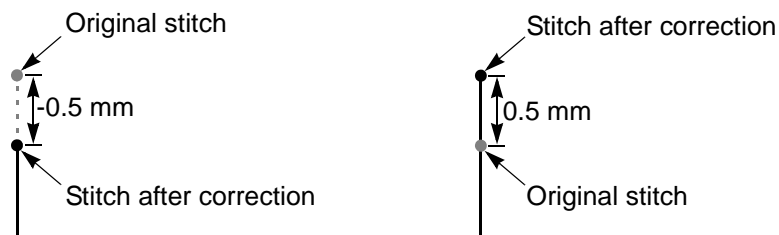
7-1-1. Explanation on the screen



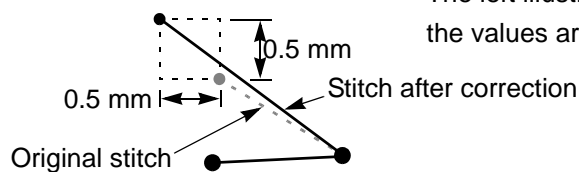
[a] Correcting value in horizontal



[b] Correcting value in vertical



[Example of combination of X/Y correcting value]

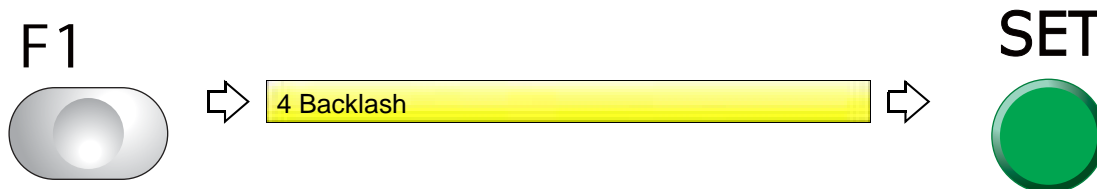


The left illustration shows an example that the values are X:0.5 and Y:0.5.

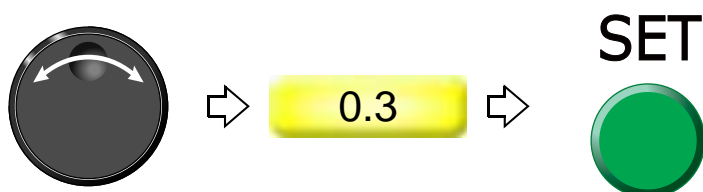
7-1-2. How to operate

The following is an example that correcting value of horizontal direction is set to "0.3".

(1) To open screen

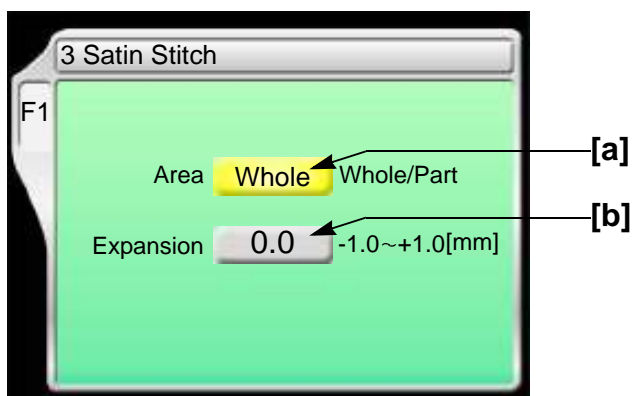


(2) To select correcting value in horizontal



7-2. To adjust stitch length of satin stitch (Satin Stitch)

7-2-1. Explanation on the screen



[a] Applicable range

Whole: All satin stitches in the design are targets.

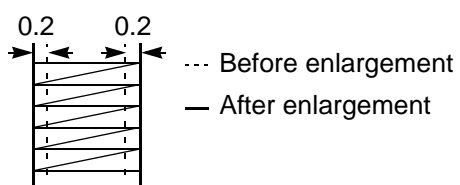
Part:

Satin stitches of the section surrounded by satin stitch codes (Satin_S to Satin_E) are targets. It is necessary to add the satin stitch code if it is not in the design.

[b] Adding amount

1/2 of the value will be added to both sides of stitch length.

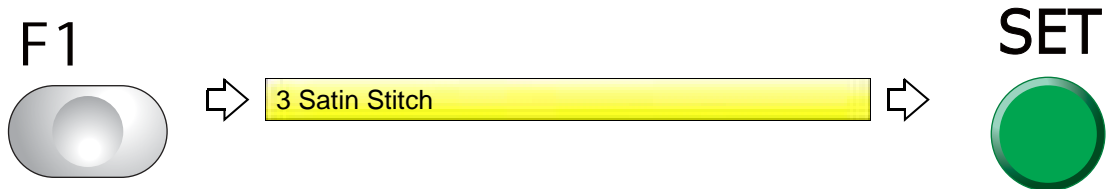
Example of the value in +0.4 mm



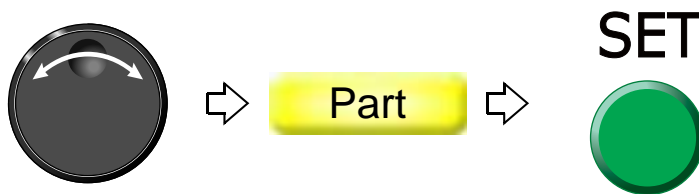
7-2-2. How to operate

The following is the example of that the applicable range is set to "part" and the expansion amount is set to "+0.4".

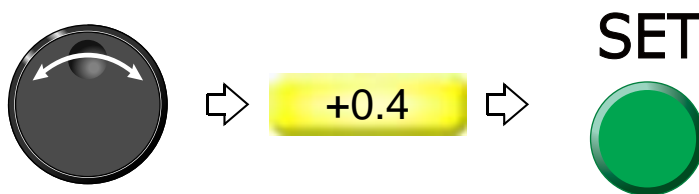
(1) To open screen



(2) To select applicable range



(3) To select adding amount



7-3. To divide a long stitch (Auto Jump)

This function makes the frame movement to divide by jump automatically when a stitch length exceeds a setting value. This function reduces the load generated at the frame drive due to heavy weight of the material to be embroidered. However, dividing by jump will reduce embroidering efficiency.

7-3-1. Explanation on the screen

Setting for auto jump
NO: Not to perform
2.0 to 9.9:
The machine will jump automatically when a stitch exceeding a set value is given. When a value is 4.0, the machine will jump automatically if stitches of 4.1 mm and more are given. When the setting of frame type is set to "Auto Clamp Frame", setting range is 2.0 to 5.0 mm.

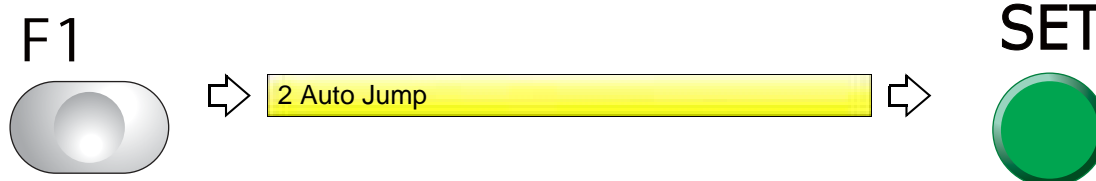
Timing to start moving the frame (p.118)

R.P.M. at auto jump
YES: To keep (remaining in high speed)
NO: Not to keep (speed reduction according to a stitch length)

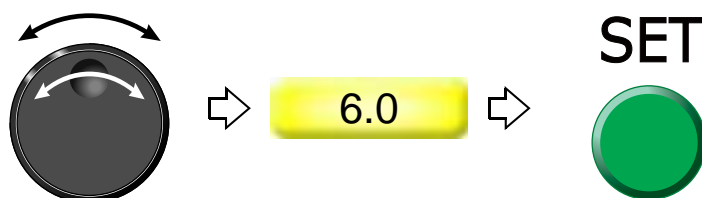
7-3-2. How to operate

The following is an example that stitch length to jump automatically is set to "6.0".

(1) To open screen



(2) To select stitch length to perform automatic jump

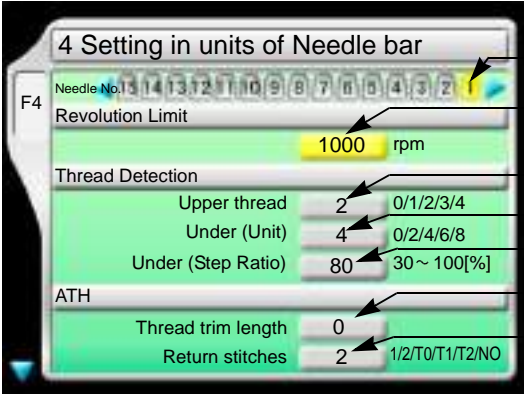


7-4. To change stitching condition in every needle bar (Setting in units of Needle bar)

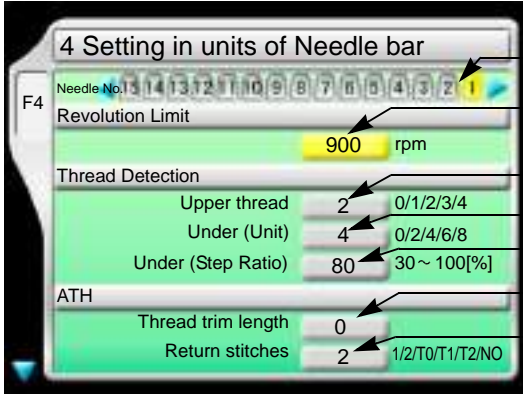
7-4-1. TMBR-SC screen

If the TMBR-SC is equipped with the optional "Multi Cording Device" or "Multi Cording Device 2", the screen display will partially differ. For details, refer to the separate optional device manual.

[TMBR-SC]

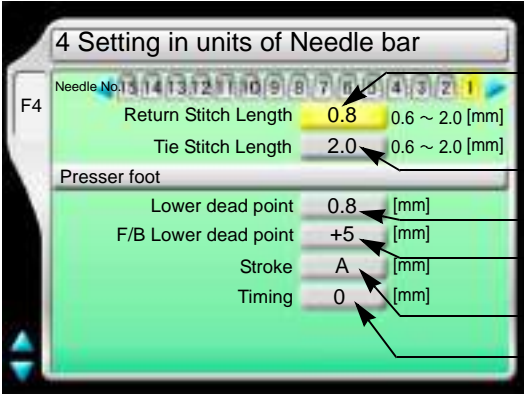


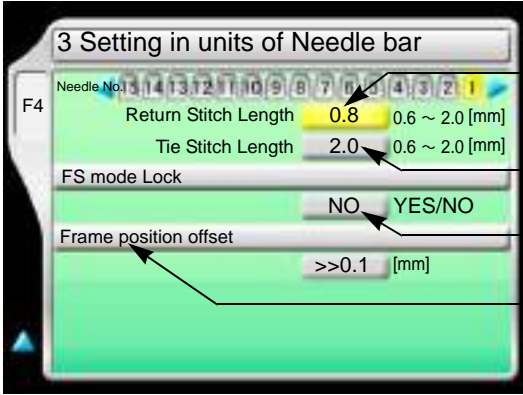
[TMBP-SC]



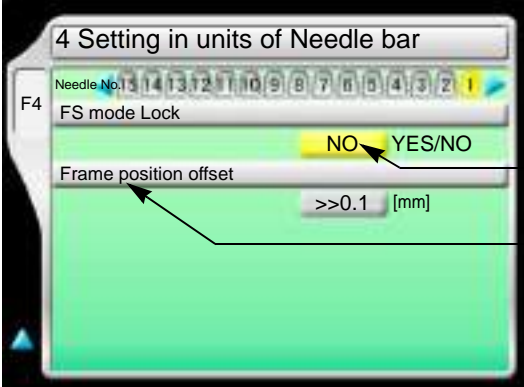
⇩ To the next page

⇩ To the next page





⇩ To the next page



[a] Needle bar No. applied to sewing condition
Perform the following setting for this needle bar.

[b] Maximum speed

[c] Setting how many consecutive detections of upper thread breakage are regarded as thread breakage

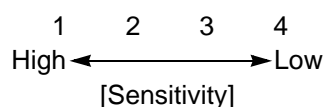
0: Not to stop even if upper thread breaks

When idling the machine, set "Upper" and "Under (Unit)" to "0".

1, 2, 3, 4: To stop if upper thread is broken

When selecting "3", the thread breakage will be detected after upper thread breaks three times continuously.

The relationship between the number of detecting times and sensitivity is shown as follows.



[d] Setting how many consecutive times of detection of "under thread (ratio)" of [e] are regarded as thread breakage to stop the machine

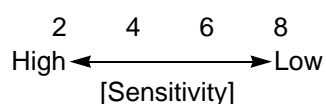
0: Not to stop even if under thread is broken

When idling the machine, set "Upper" and "Under (Unit)" to "0".

2, 4, 6, 8: To stop if under thread is broken

When selecting "4", the thread breakage will be detected after under thread breaks four times continuously.

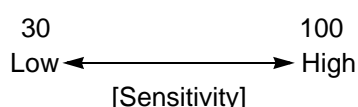
The relationship between the number of detecting times and sensitivity is shown as follows.



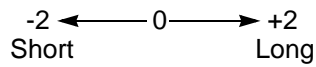
[e] Set sensitivity of [d]. Change this value according to the type of fabric and thread to use. It enables to prevent mis-detection.

30 to 100: To stop if under thread is broken

The relationship between detecting ratio and sensitivity is shown as follows.

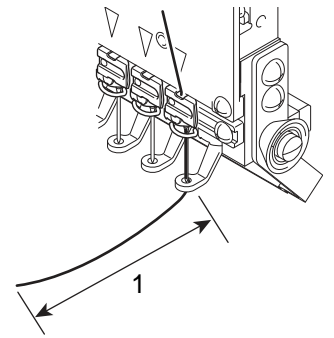


[f] Length of remaining upper thread at thread trimming (1 in the right figure)



When upper thread remains on the fabric, select the value of "-".

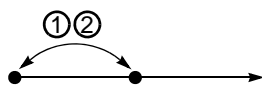
If the thread does not link at the start of sewing due to short of remaining length of upper thread, select the value of "+".



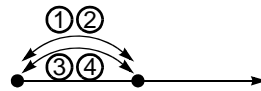
[g] The number of return stitches at start of sewing

The more return stitches are, the less mis-stitching at start decreases.

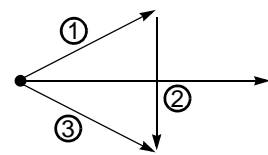
1: One reciprocation



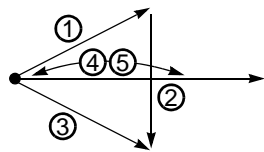
2: Two reciprocations



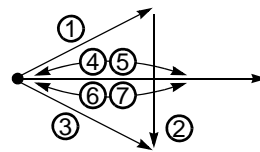
T0: Triangle



T1: Triangle + one reciprocation

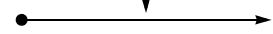


T2: Triangle + two reciprocations



NO: Without Return Stitches

Stitch at start of sewin



[h] Stitch length of return stitch after start of sewing

[i] Tie stitch length at thread trimming

[j] Lowest position of presser foot (p.63)

[k] The distance from the presser foot lower dead point to the presser foot at the time of frame back (p.63)

[l] Presser foot stroke (p.63)

[m] Presser foot timing (p.63)

[n] FS mode Lock (p.120)

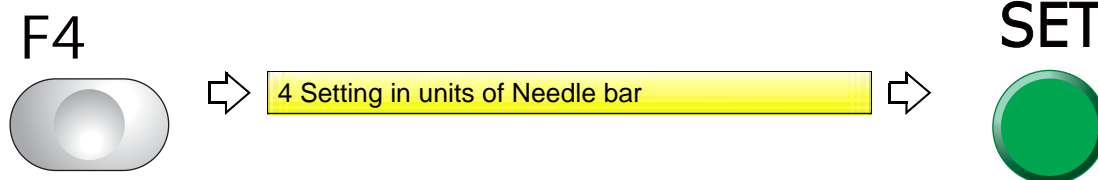
[o] On the basis of the absolute origin of the frame, perform the offset (-0.5 mm to +05 mm) of the frame horizontally.

7-4-2. How to operate

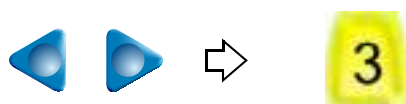
The following is the example that the needle bar No. is set to "3", the maximum speed is set to "950", and the upper thread breakage detecting sensitivity is set to "3".

(1) Set to main screen.

(2) To press F4 key



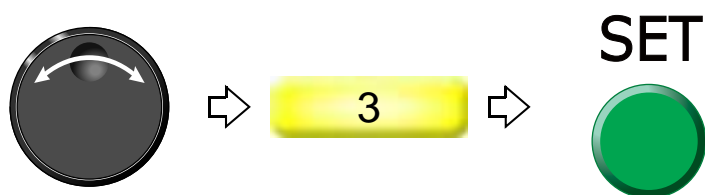
(3) To select the needle bar No.



(4) To select maximum speed



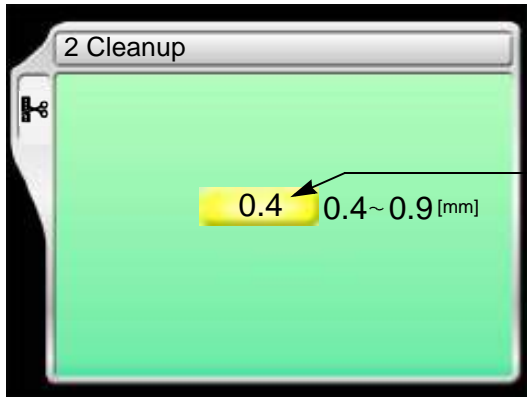
(5) To select the number of upper thread breakage detecting times



7-5. To delete tiny stitch (Cleanup)

This function removes tiny stitch that causes thread breakage and it is added to the next stitch. This function has an effect to decrease thread breakages.

7-5-1. Explanation on the screen



Indicated value or less stitches will be removed.

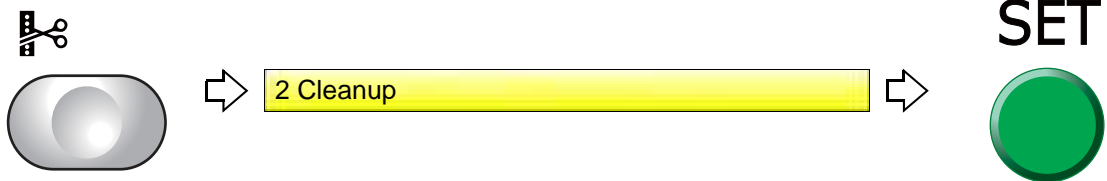
7-5-2. How to operate

! CAUTION

! The previous design will be overwritten after removing tiny stitches. Back up the design according to need.

The following is the example that the stitch length to be removed is set to "0.5".

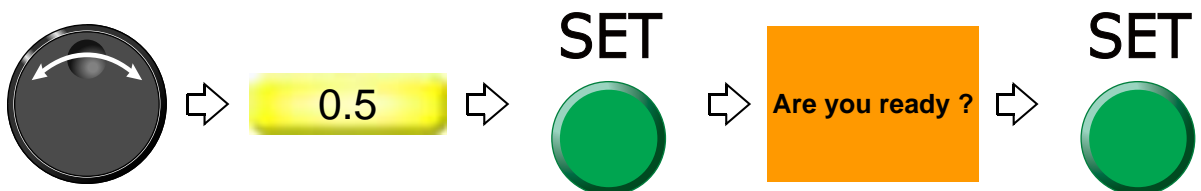
(1) To open screen



(2) To select a design

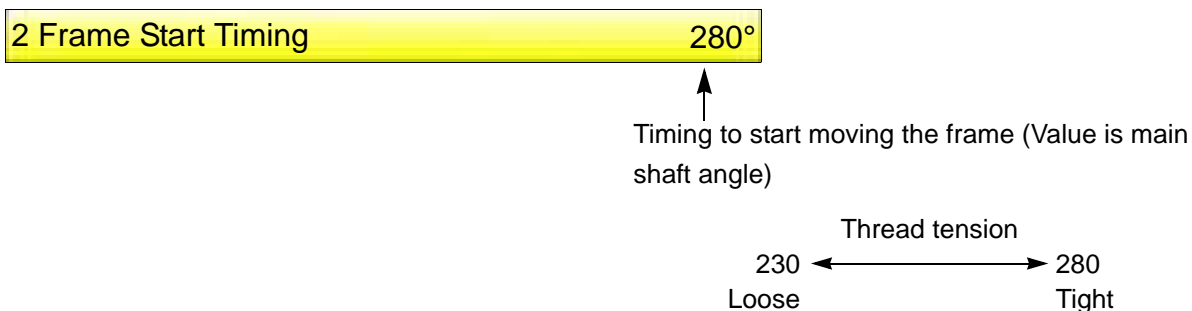


(3) To select stitch length to remove, and execute





7-6. To change thread tension (Frame Start Timing)

7-6-1. Explanation on the screen



7-6-2. How to operate

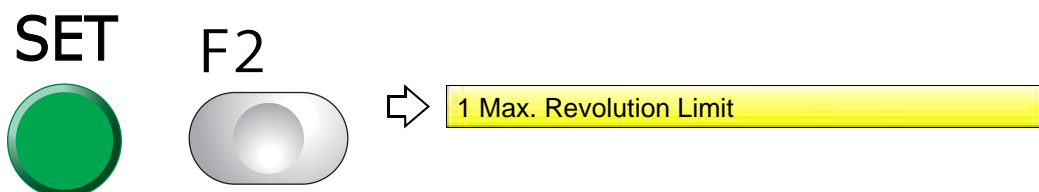

CAUTION

 To change this value, consult the distributor. Some operating condition could cause occurrence of fault in thread trimming and affect sewing.

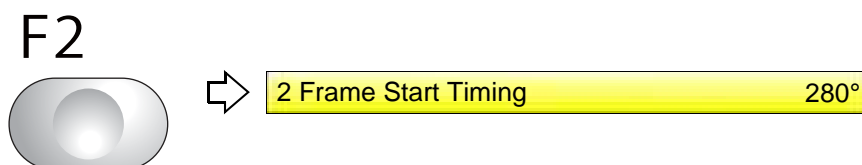
The following is the example that Frame Start Timing is set to "270".

(1) Set to main screen.

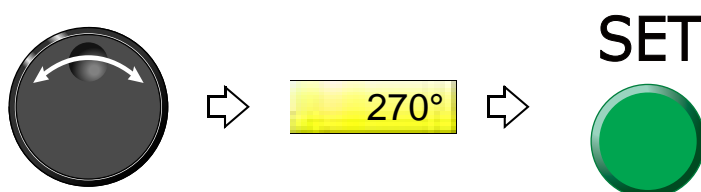
(2) Press F2 key while pressing SET key.



(3) Press F2 key.

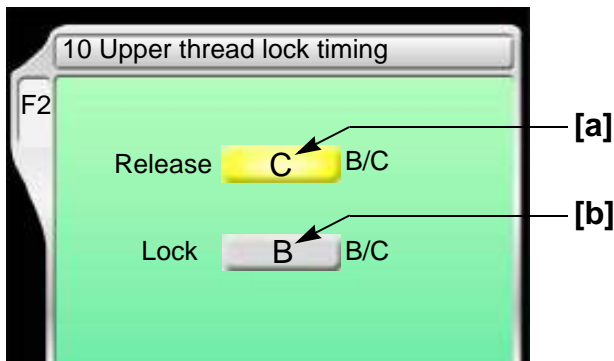


(4) To select Frame Start Timing



7-7. Not to stand out the edge of upper thread (Upper thread lock timing)

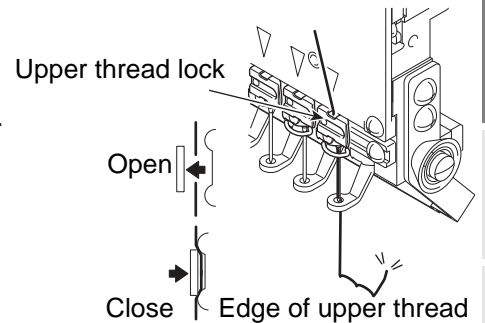
7-7-1. Explanation on the screen



[a] Timing to open upper thread lock

Perform adjustments if the edge of upper thread remains on the fabric after start of sewing. When the edge of upper thread is still highly visible at B, set to C.

- B The edge of upper thread is easy to remain.
- C The edge of upper thread is hard to remain.



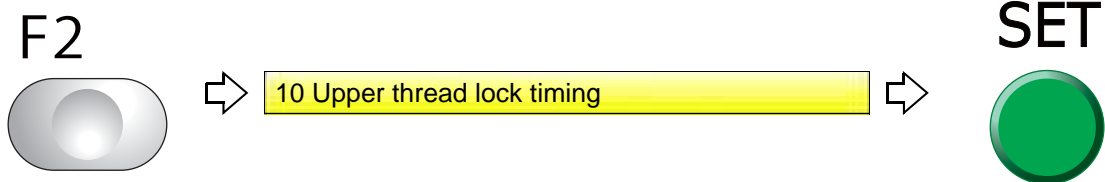
[b] Timing to close upper thread lock

Perform adjustments if the edge of the trimmed upper thread frays after thread trimming. If it frays at B, set to C.

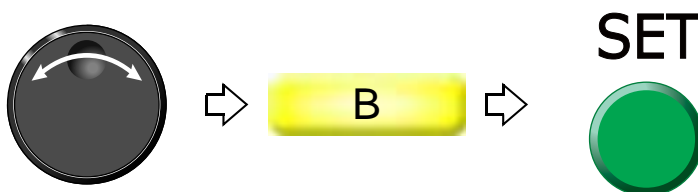
7-7-2. How to operate

The following is the example of setting the remaining length of upper thread to "B" after start sewing.

(1) To open screen



(2) To select remaining length of upper thread after start of sewing



7-8. To embroider by using badly passing thread or loosely twisted thread (FS mode Lock)

This function will improve finish of sewing even in case of using badly passing threads (the tinsel, the thick thread) or loosely twisted thread. (Conventional ratio) (p.253)

7-8-1. Explanation on the screen



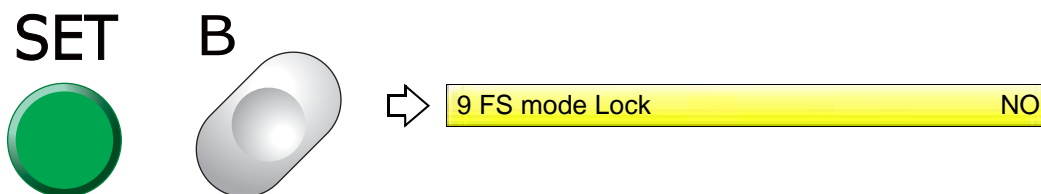
↑
 YES: Make FS mode Lock effective
 NO: Disable FS mode Lock.

7-8-2. How to operate

The following is an example of making FS mode Lock effective.

(1) Set to main screen.

(2) To press B key while pressing SET key



(3) Make FS mode Lock effective



7-9. To perform return stitches at start of sewing (Forced Return Stitches)

The value of "F2-9: ATH" will be applied for the method of return stitches. (p.78)

After start of the machine, the value will return to "NO" (Not to perform return stitches) .

7-9-1. Explanation on the screen



↑
YES: Return stitches is performed.
NO: Return stitches is not performed.

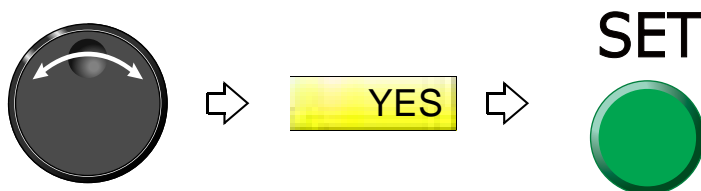
7-9-2. How to operate

The following is the example of performing return stitches at start of sewing.

(1) To open screen



(2) To perform return stitches



8. To increase embroidering efficiency

8-1. To change number of lowering needle bar at slow operation (Main Shaft Inching)

This function targets slow operation when the machine stops in the middle of embroidery and then the machine restarts. Regarding the number of lowering the needle bar by slow operation at start after thread trimming or after data set, refer to the detail page. (p.79)

8-1-1. Explanation on the screen

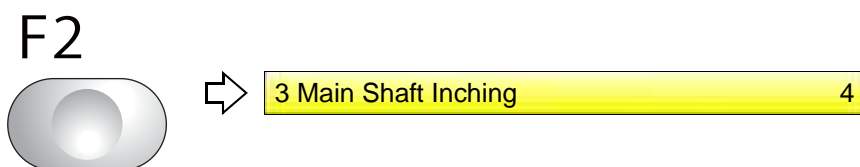


↑
Number of lowering needle bar at slow operation

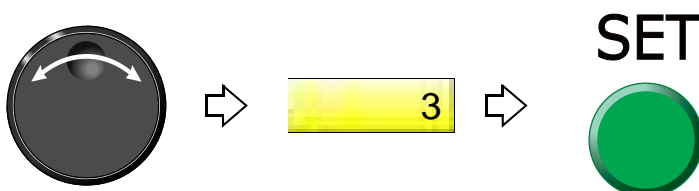
8-1-2. How to operate

The following is the example of setting the number of Start Inching to "3".

(1) To open screen

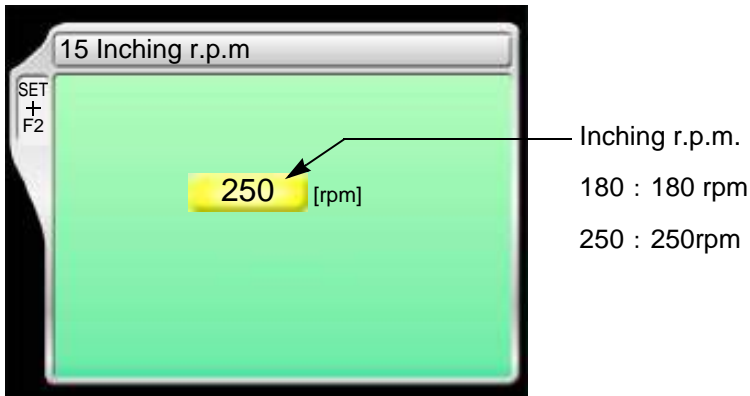


(2) To select number of lowering needle bar at slow operation



8-2. To set embroidery speed at slow operation (Inching r.p.m)

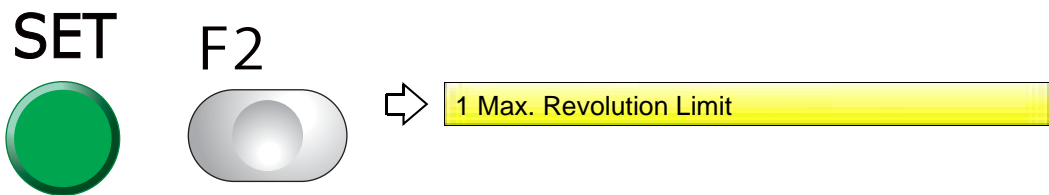
8-2-1. Explanation on the screen



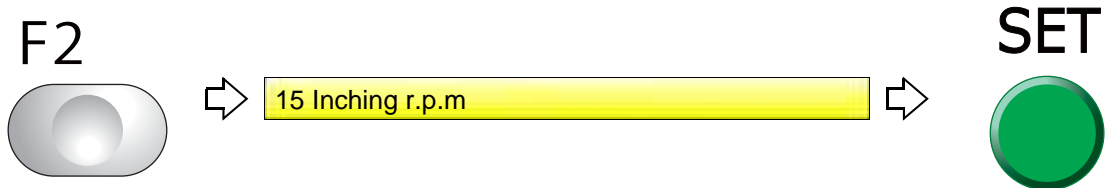
8-2-2. How to operate

The following is an example of setting start inching r.p.m to "180".

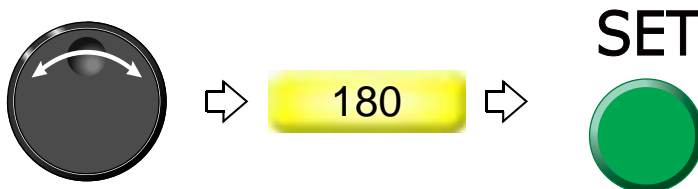
- (1) Set to main screen.
- (2) Press F2 key while pressing SET key.



- (3) Press F2 key.



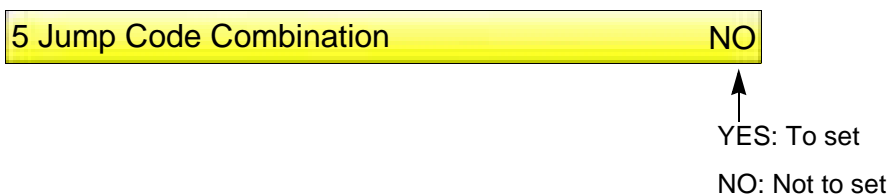
- (4) To select the start inching r.p.m



8-3. To collect up frame moving amount of consecutive jump stitches in a batch to feed the frame all at once (Jump code combination)

This function reduces the number of stitches by combining frame moving amount of consecutive jump stitches (up to 5 stitches) and by feeding the frame all at once.

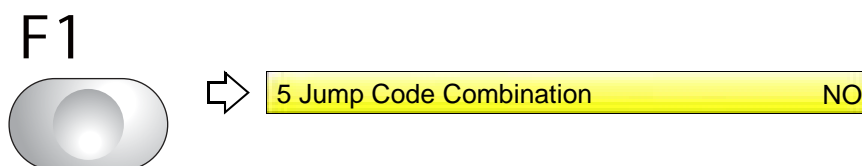
8-3-1. Explanation on the screen



8-3-2. How to operate

The following is an example that Jump Code Combination is set.

(1) To open screen

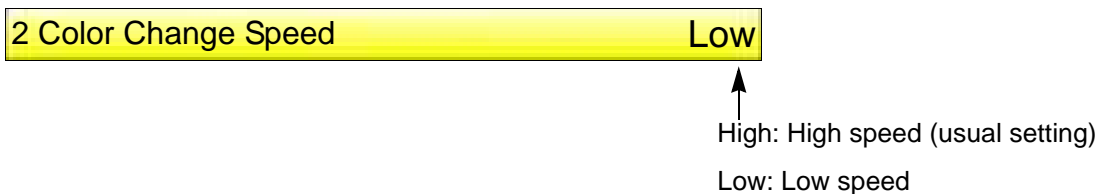


(2) To set Jump Code Combination



8-4. To change moving speed of needle bar case (Color change speed)

8-4-1. Explanation on the screen



8-4-2. How to operate

The following is the example of setting the color change speed to "High".

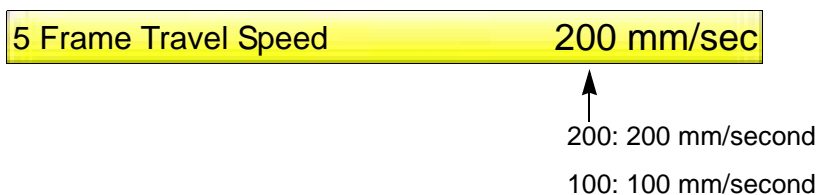
- (1) Press C key within ten seconds after turning ON the power and keep on pressing it. If C+PW screen is displayed, release it.
- (2) To select color change speed



8-5. To change travel speed of the frame (Frame Travel Speed)

This function targets at origin return of the frame and/or offset travel.

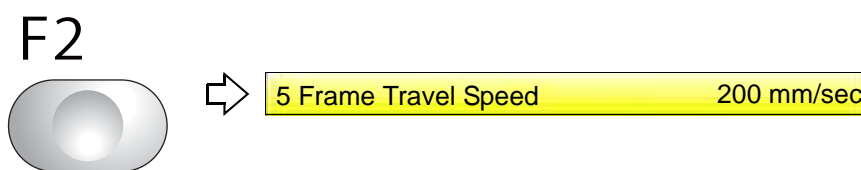
8-5-1. Explanation on the screen



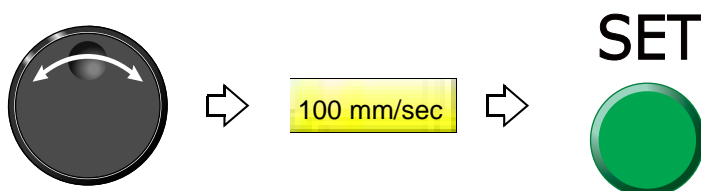
8-5-2. How to operate

The following is the example that Frame Travel Speed is set to "100 mm/sec".

- (1) To open screen

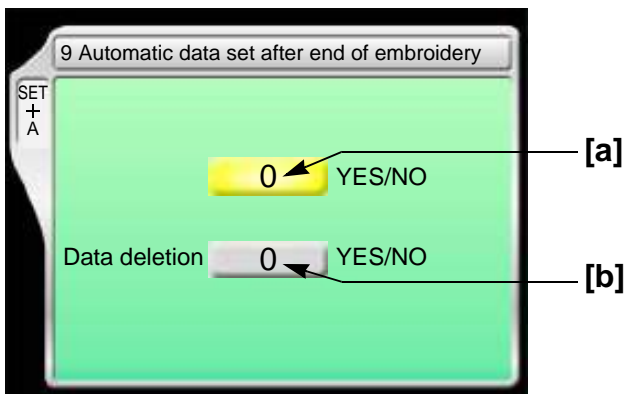


- (2) To select Frame Travel speed



8-6. To set data of the design automatically after the embroidery is finished (Automatic Data Set after finishing embroidery)

8-6-1. Explanation on the screen



[a] Perform Automatic Data Set of the design embroidered after finishing the embroidery.

YES: To perform

NO: Not to perform

[b] Delete the design automatically after finishing the embroidery.

YES: To perform

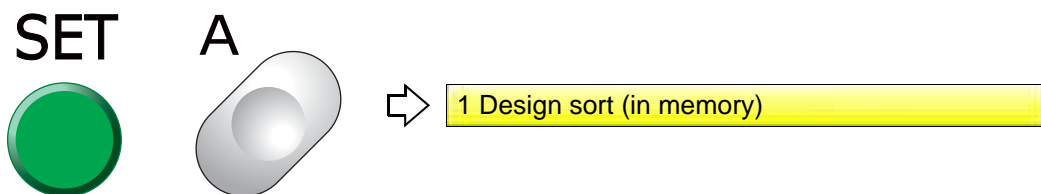
NO: Not to perform

8-6-2. How to operate

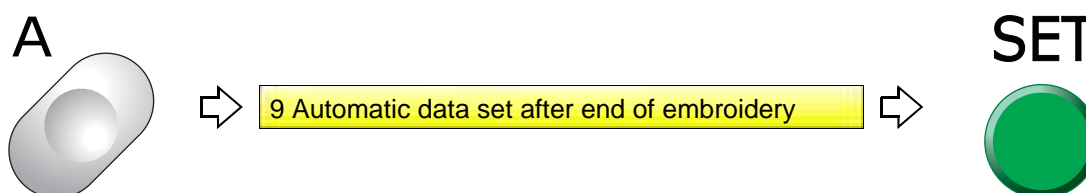
The following is the example of "Not to perform Automatic Data Set of the design" and "Delete the design automatically" after finishing the embroidery.

(1) Set to main screen.

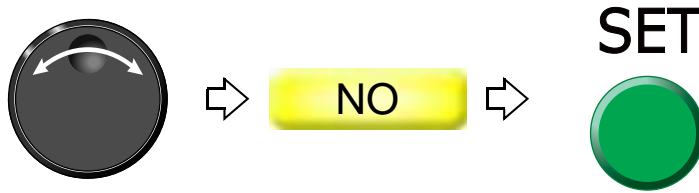
(2) To press A key while pressing SET key



(3) To press A key



(4) To select NO (Not to perform Automatic Data Set of the design)



(5) To select YES (Delete the design automatically)



8-7. Embroidering multiple name designs (continuous names)

This function allows you to embroider multiple names saved in a single design based on the stop code.

- This function can not be set during embroidery.
- Perform thread trimming based on the step-by-step color change code. If a different color change setting is used, the color is changed and the next step is displayed on the main screen.
- Even if "Auto Start (AS)" or "Auto start at same color" is set to YES, auto start will not occur after color change when in continuous name mode.
- If "Auto Color Change (AC)" is set to NO, the machine temporarily stops before color change but the main screen displays the step design before color change. After restart, the machine changes the color to the next step color and temporarily stops and the main screen displays the step design after color change.
- The machine temporarily stops before exceeding the next step during Frame Back/Frame Forward by the Stop switch.

8-7-1. Explanation on the screen

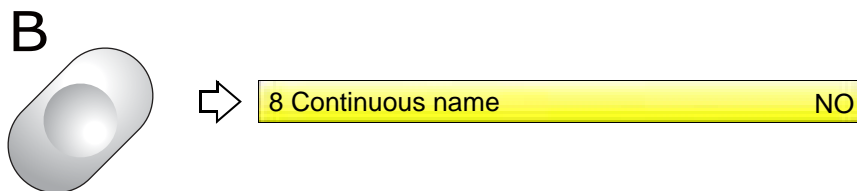


↑
YES: To set (Continuous name mode)
NO: Not to set

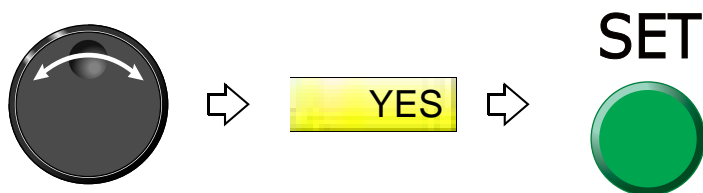
8-7-2. How to operate

The following is an example of setting continuous names.

(1) To open screen



(2) To set continuous names



9. To edit design

9-1. To modify the stitch (Data Edit "Modify")

When this operation is performed in the middle of embroidery, data set will be canceled. If stitch length after change is different from that before change, a design will displace hereafter.

9-1-1. Explanation on the screen

Stitch No.	X	Y	F
1	0	0	Jump
2	8	4	Stitch
3	8	3	Stitch
4	11	5	Stitch
5	8	8	Stitch
6	1	13	Stitch
7	-11	2	Stitch
8	-12	-3	Stitch
9	-11	7	Stitch
10	-25	15	Stitch

X data (Data to move the frame in X-axis direction)
When the value is 8, the frame travel amount is 0.8 mm.

Function Code (p.251)
It is the code to indicate the role of the stitch.

Y data (Data to move the frame in Y-axis direction)
When the value is 4, the frame travel amount is 0.4 mm.

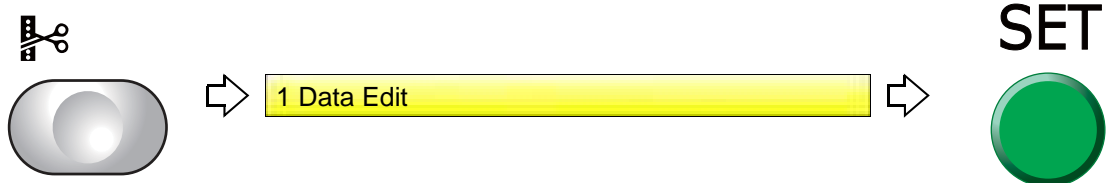
9-1-2. How to operate

CAUTION

The original design will be overwritten after editing. Back up design data as necessary.

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen



(2) To select a design



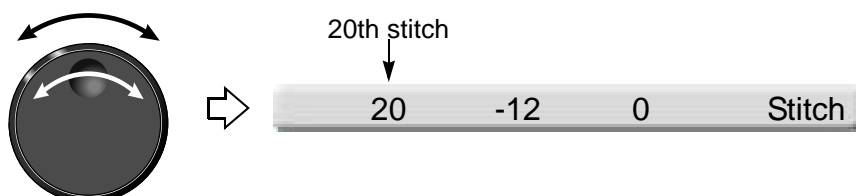
After that, select the stitch No. to change. There are following two types of selecting patterns.

(a) To select stitch No. by using search function, refer to the detail page. (p.131)

(b) To select the stitch No. by the jog dial/jog shuttle, follow the explanation below.

[To select stitch No. by using the jog dial/jog shuttle]

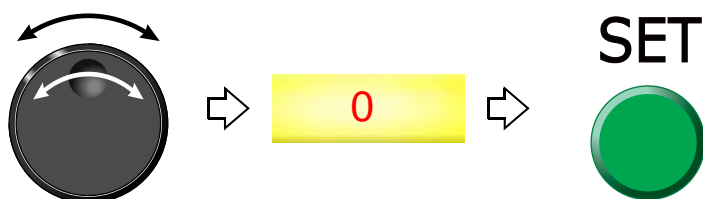
(3) To select stitch No. to change



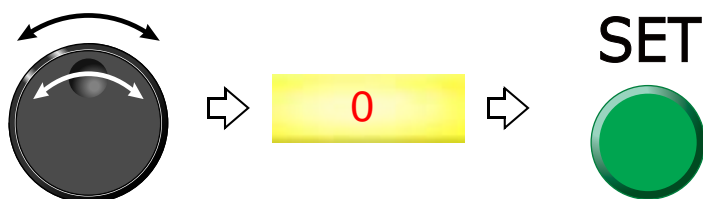
(4) To select "Modify"



(5) To edit X data



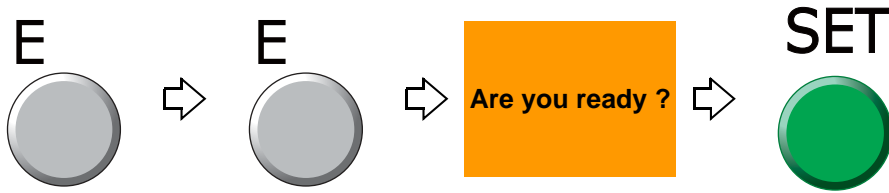
(6) To edit Y data



(7) To modify the function code

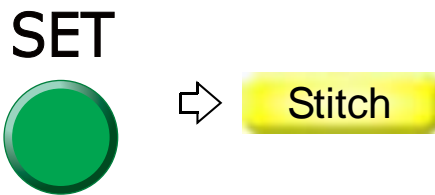


(8) Decide the modification.



[To select stitch No. by using search function]

(3) To make search function effective



(4) To search stitch by function code



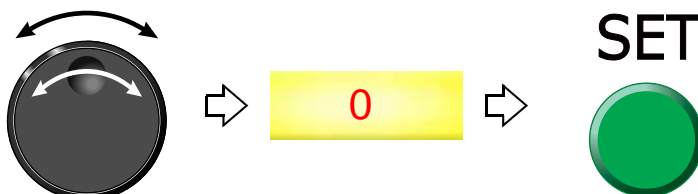
Pressing SET key will search the stitch including a function code "Color". Pressing SET key further will search the next stitch.

When there is no selected function code, display will not change.

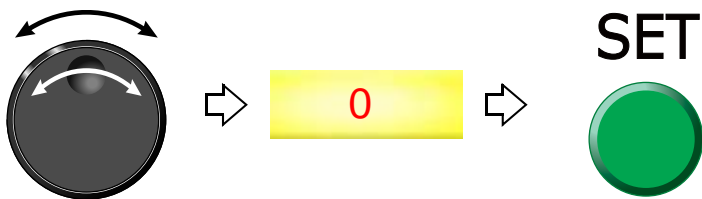
(5) To complete the search and select "Modify"



(6) To edit X data



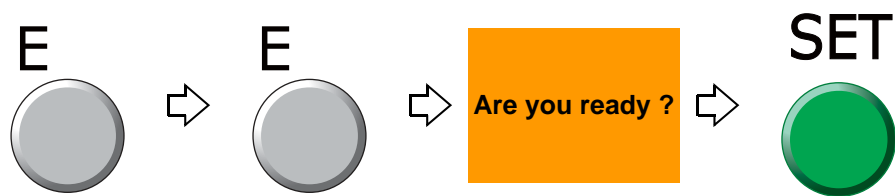
(7) To edit Y data



(8) To modify the function code



(9) Decide the modification.



9-2. To insert the stitch (Data Edit "Insert")

When this operation is performed in the middle of embroidery, data set will be canceled. If the stitch with a length is inserted, a design will be displaced hereafter.

9-2-1. Explanation on the screen

Stitch No.	#	X	Y	F
1	0	0		Jump
2	8	4		Stitch
3	8	3		Stitch
4	11	5		Stitch
5	8	8		Stitch
6	1	13		Stitch
7	-11	2		Stitch
8	-12	-3		Stitch
9	-11	7		Stitch
10	-25	15		Stitch

Annotations:

- X data (Data to move the frame in X-axis direction)**: When the value is 8, the frame travel amount is 0.8 mm.
- Function Code (p.251)**: It is the code to indicate the role of the stitch.
- Y data (Data to move the frame in Y-axis direction)**: When the value is 4, the frame travel amount is 0.4 mm.

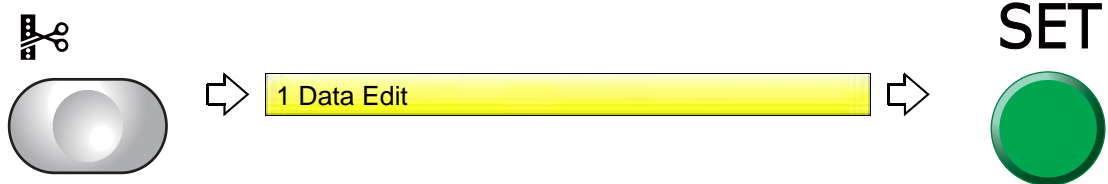
9-2-2. How to operate

! CAUTION

! The original design will be overwritten after editing. Back up design data as necessary.

The following is an example that non-data (X: 0.0, Y:0.0) jump code is added to 120th stitch.

(1) To open screen



(2) To select a design

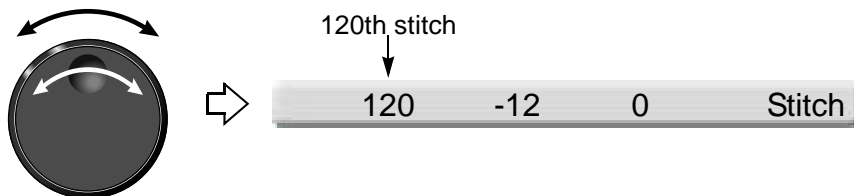


After that, select the stitch No. to insert. There are following two types of selecting patterns.

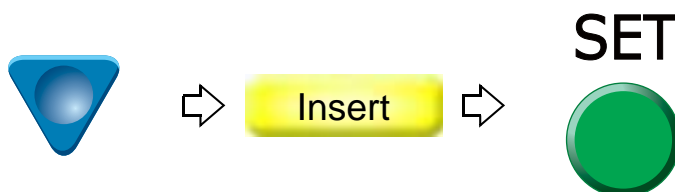
- (a)** To select stitch No. by using search function, refer to the detail page. (p.135)
- (b)** To select the stitch No. by the jog dial/jog shuttle, follow the explanation below.

[To select stitch No. by using the jog dial/jog shuttle]

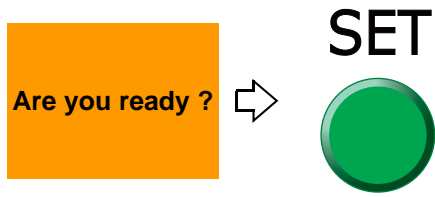
(3) To select stitch No. to insert



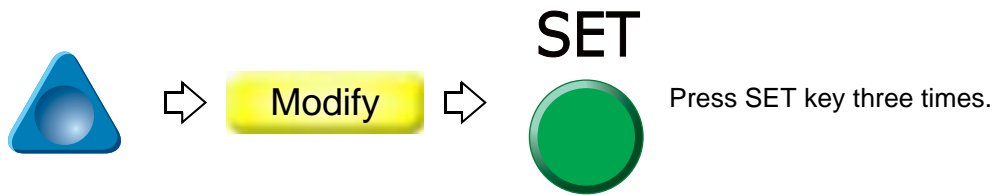
(4) To select "Insert"



(5) To execute insertion



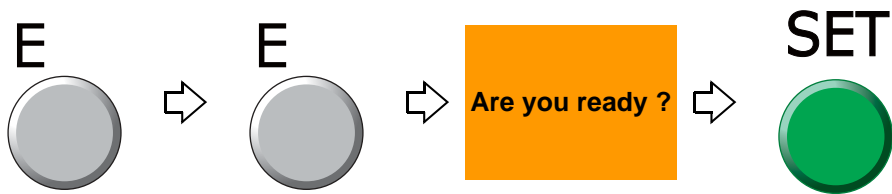
(6) To select "Modify" to move the cursor



(7) To select "Jump".

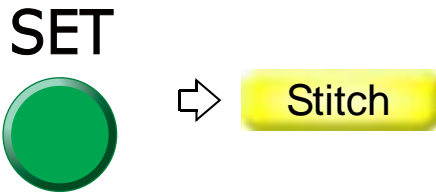


(8) To decide insertion



[To select stitch No. by using search function]

(3) To make search function effective



(4) To search stitch by function code



Pressing SET key will search the stitch including a function code "Color". Pressing SET key further will search the next stitch.

When there is no selected function code, display will not change.

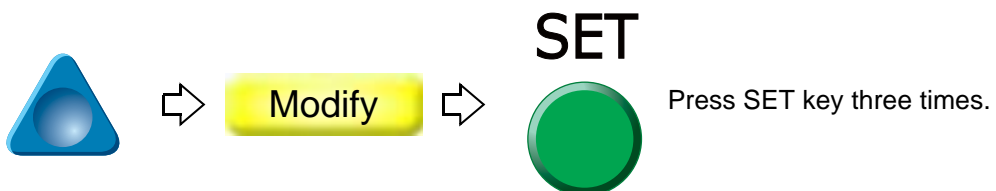
(5) To complete the search and select "Insert"



(6) To execute insertion



(7) To select "Modify" to move the cursor

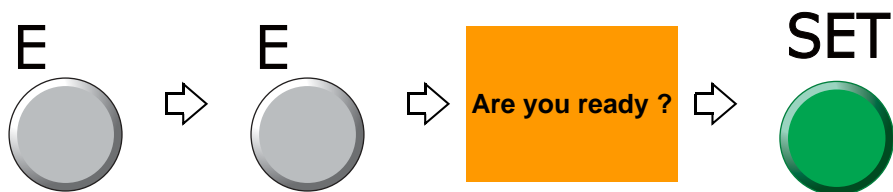


Press SET key three times.

(8) To select "Jump".



(9) To decide insertion



9-3. To delete the stitch (Data Edit "Delete")

When this operation is performed in the middle of embroidery, data set will be canceled. If the stitch having length is deleted, a design will displace hereafter.

9-3-1. Explanation on the screen

Stitch No.	#	X	Y	F
1	0	0	0	Jump
2	8	4	4	Stitch
3	8	3	3	Stitch
4	11	5	5	Stitch
5	8	8	8	Stitch
6	1	13	13	Stitch
7	-11	2	2	Stitch
8	-12	-3	-3	Stitch
9	-11	7	7	Stitch
10	-25	15	15	Stitch

X data (Data to move the frame in X-axis direction)
When the value is 8, the frame travel amount is 0.8 mm.

Function Code (p.251)
It is the code to indicate the role of the stitch.

Y data (Data to move the frame in Y-axis direction)
When the value is 4, the frame travel amount is 0.4 mm.

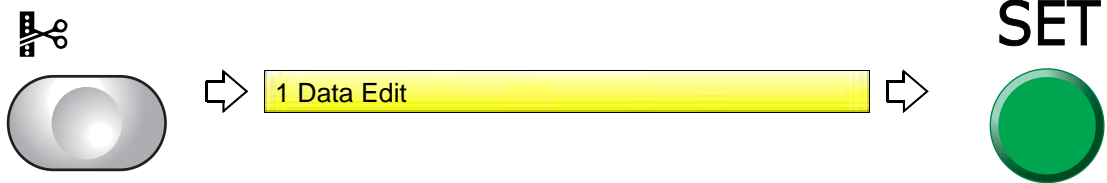
9-3-2. How to operate

! CAUTION

! The original design will be overwritten after editing. Back up design data as necessary.

The following is an example that 20th stitch is deleted.

(1) To open screen



(2) To select a design

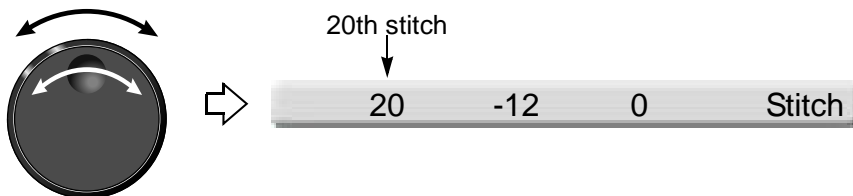


After that, select the stitch No. to delete. There are following two types of selecting patterns.

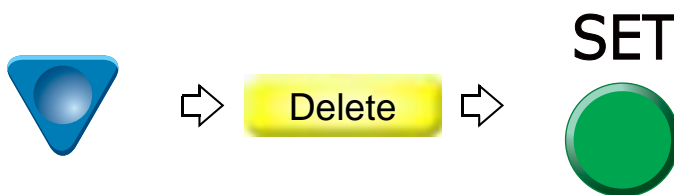
- (a)** To select stitch No. by using search function, refer to the detail page. (p.138)
- (b)** To select the stitch No. by the jog dial/jog shuttle, follow the explanation below.

[To select stitch No. by using the jog dial/jog shuttle]

(3) To select stitch No. to delete



(4) To select "Delete"

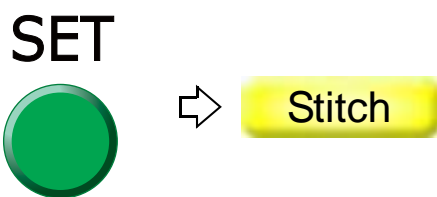


(5) To decide deletion



[To select stitch No. by using search function]

(3) To make search function effective



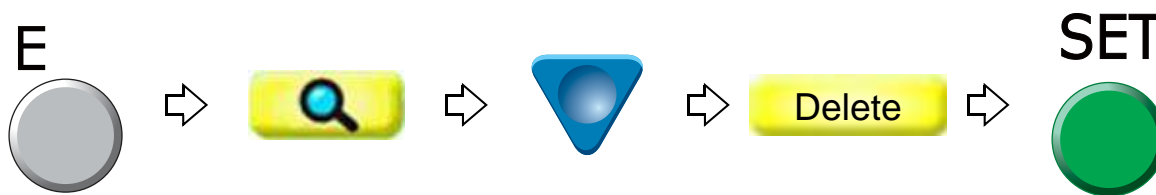
(4) To search stitch by function code



Pressing SET key will search the stitch including a function code "Color". Pressing SET key further will search the next stitch.

When there is no selected function code, display will not change.

(5) To select "Delete"



(6) To decide deletion

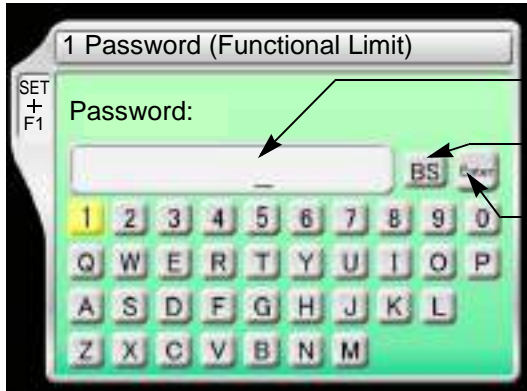


10. Setting and resetting of password

10-1. To change password (Functional Limit of Password)

The password is set to "0000" at shipment of the machine. The password changed at that time will not be changed even after installing the software.

10-1-1. Explanation on the screen



Inputting column of current password (4 to 8 characters)

To return the cursor or delete the character.

To determine the input character and numeric value.



Inputting column of password after change (4 to 8 characters)



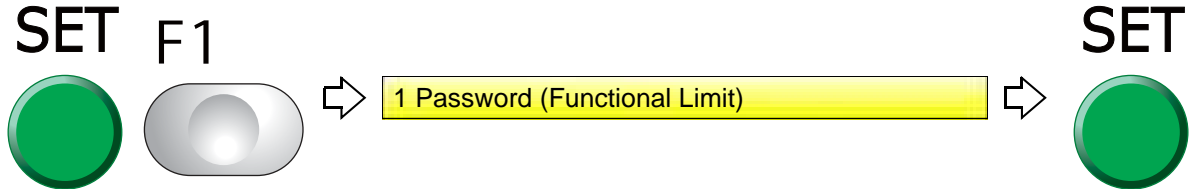
Inputting column of password after change (for the (4 to 8 characters)

10-1-2. How to operate

The following is an example that the password is changed from "0000" to "ZY98".

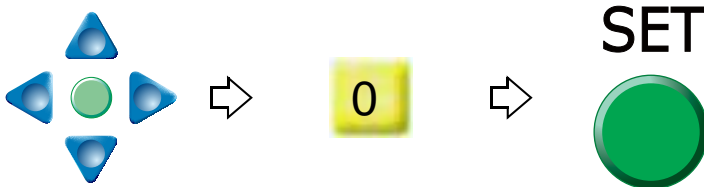
(1) Set to main screen.

(2) Press F1 key while pressing SET key, and press SET key further.



(3) To input the current password

(a) To select "0"



(b) To input the remaining password "0", "0", "0" in the same procedure.

(c) To decide



(4) To input password after change

(a) To select "Z"



(b) To select "Y"



(c) To select the remaining password "9", "8" in the same procedure

(d) To decide



(5) To input password again after change

(a) To input password in the same procedure

(b) To decide

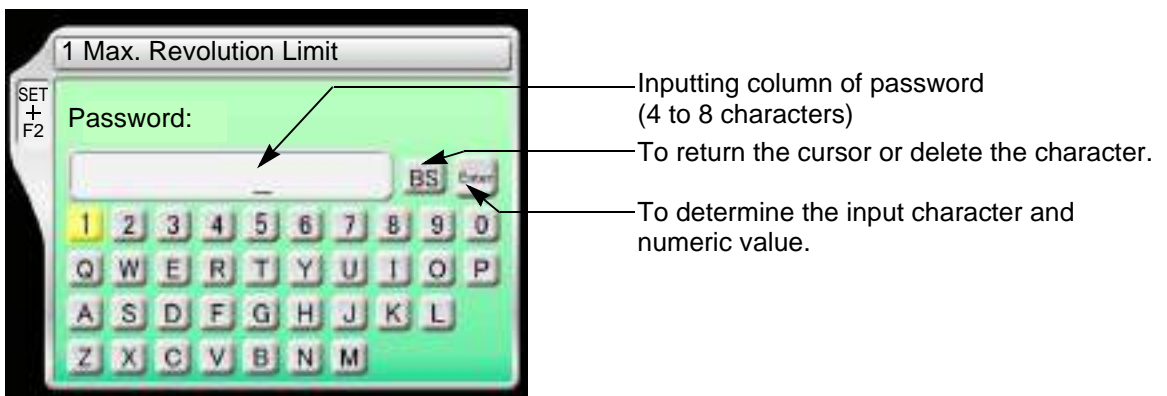


10-2. To cancel the password

If the functional limit level is the initial value, following functions need to input the password.

- (a) To store a design to a USB memory (USB "Save") (p.194)
- (b) To change password (Functional Limit of Password) (p.139)
- (c) Not to display some operation (Functional limit level) (p.143)
- (d) To decide upper limit value of the maximum speed (Max. Revolution Limit) (p.92)

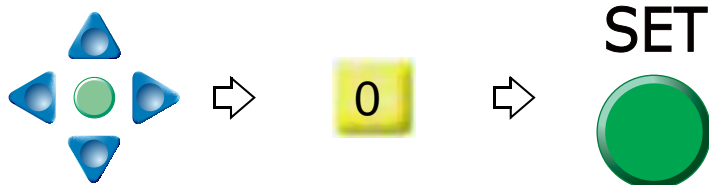
10-2-1. Explanation on the screen



10-2-2. How to operate

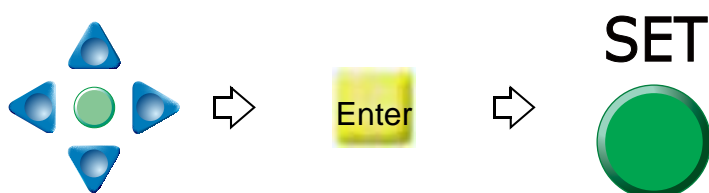
The following is an example that the password "0000" is canceled.

(1) To select the password "0"



(2) To select the remaining password "0", "0", "0" in the same procedure

(3) To decide

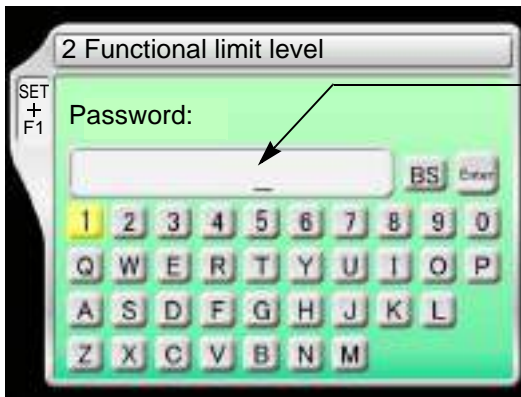


10-3. Not to display some operation (Functional limit level)

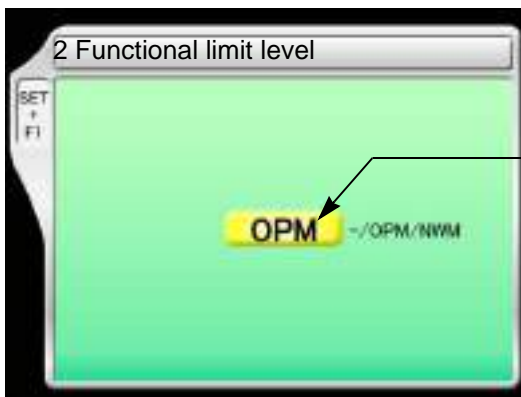
Various types of machine operations are controlled by each functional limit level. This functional limit level will not display some operation and it has the purpose to protect design data from taking out unnecessarily or prevent incorrect parameter setting.

This operation requires input of the password.

10-3-1. Explanation on the screen



Inputting column of password



Functional Limit Level

— : It is the value at shipment. For some functions, the password is needed.

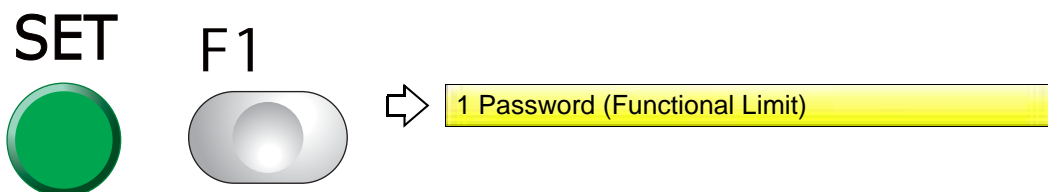
OPM: The only function relating to production will be displayed.

NWM: This level will show minimum required function only in the embroidery machine controlled by Network.

10-3-2. How to operate

The following is the example of setting the functional limit level to "NWM".

- (1) Set to main screen.
- (2) To press F1 key while pressing SET



(3) To press F1 key



(4) To cancel the password

Regarding canceling method, refer to the detail page. (p.141)

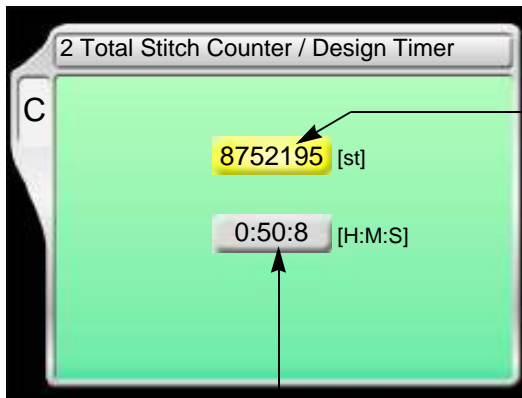
(5) To select "NWM"



11. Various functions

11-1. To check the number of total stitches up to now (Total Stitch Counter)

11-1-1. Explanation on the screen



The number of total stitches embroidered up to now.
When resetting the value, select "0" and press SET key.

Time from start after data set to the present (The screen shows an example of 50 minutes and 8 seconds.)

Counting continues even during sleep mode and turning OFF the power.

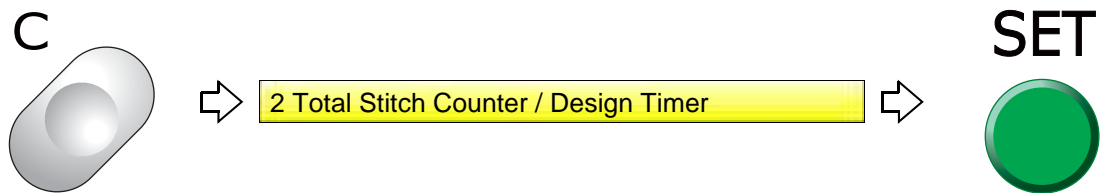
Embroidery time will be reset in the following conditions.

- (1) When the current embroidery is finished and the machine starts next
- (2) When data is set

11-1-2. How to operate

The following is an example that the total stitch counter is checked.

(1) To open screen

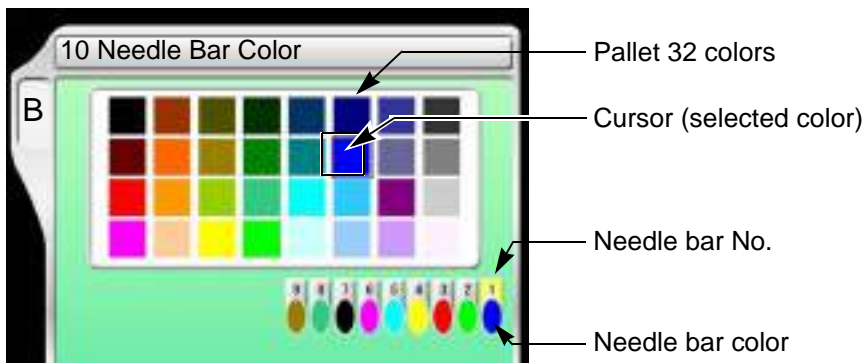


C screen will be displayed. Check the total stitch counter.

11-2. To color in every needle bar (Needle Bar Color)

Matching needle bar color with thread color used actually will display an image similar to the embroidered product.

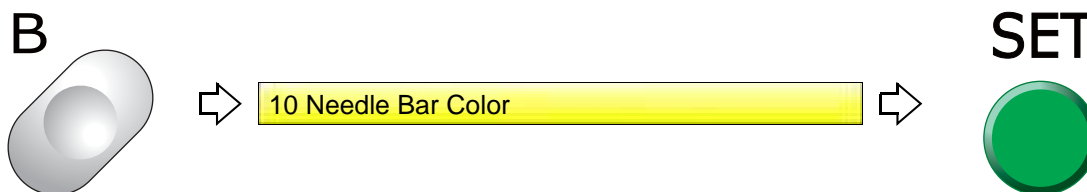
11-2-1. Explanation on the screen



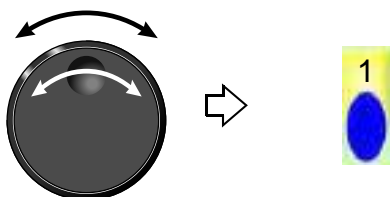
11-2-2. How to operate

The following is the example of setting the needle bar No.1 to "red".

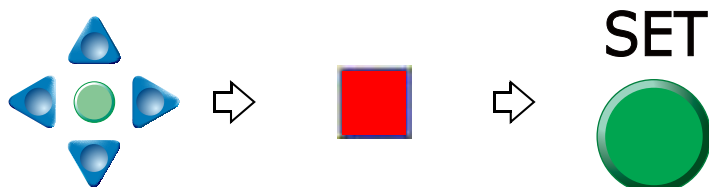
(1) To open screen



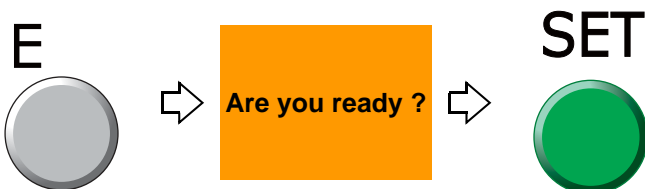
(2) To select the needle bar No.



(3) To select color



(4) To decide



11-3. To display the setting color when making the design (Needle bar information)

11-3-1. Explanation on the screen



YES:

Display the setting color when making the design.

When the information about the setting color is not included in the design data, the setting of "B-10 Needle bar color" will be effective.

NO:

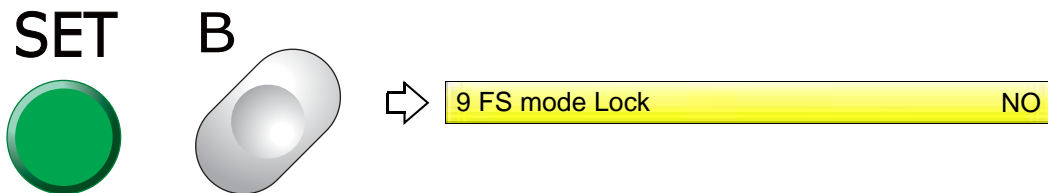
Display the color being set in "B-10Needle Bar Color". (p.146)

11-3-2. How to operate

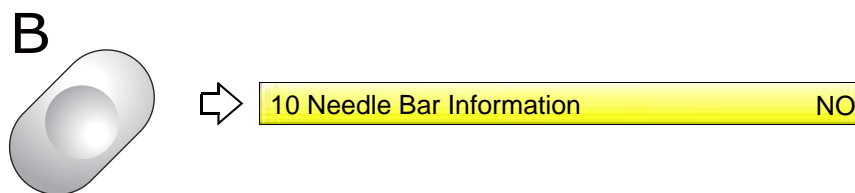
The following is the example of displaying the setting color when making the design.

(1) Set to main screen.

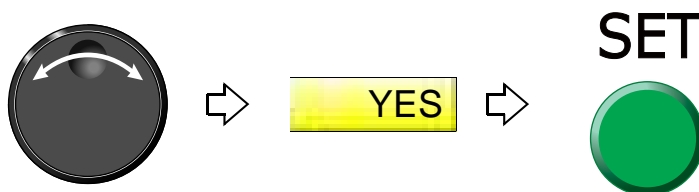
(2) To press B key while pressing SET key



(3) To press B key

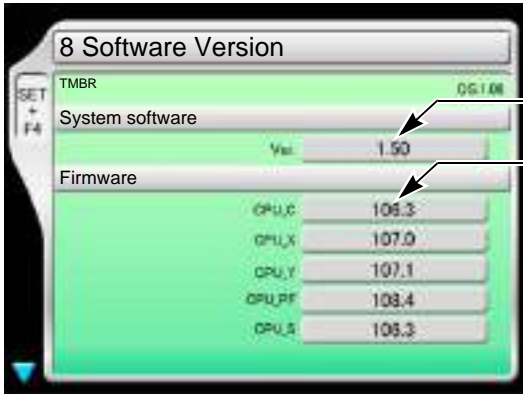


(4) To select Yes



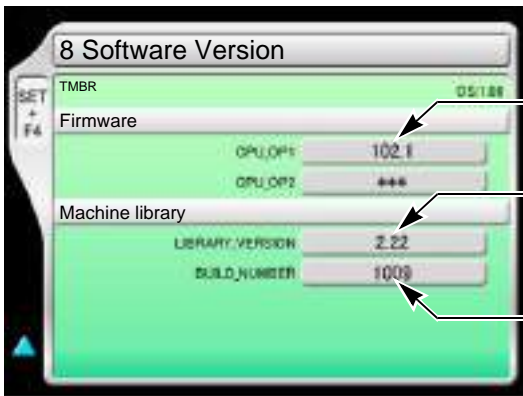
11-4. To check version of current software (Software Version)

11-4-1. Explanation on the screen



Software version of system software

Software version of firmware



Software version of firmware of optional card

Machine library version of the network software

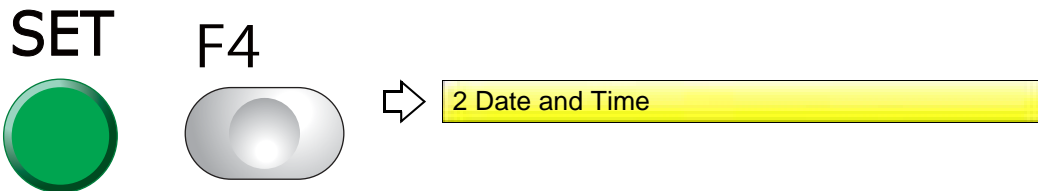
Build number

11-4-2. How to operate

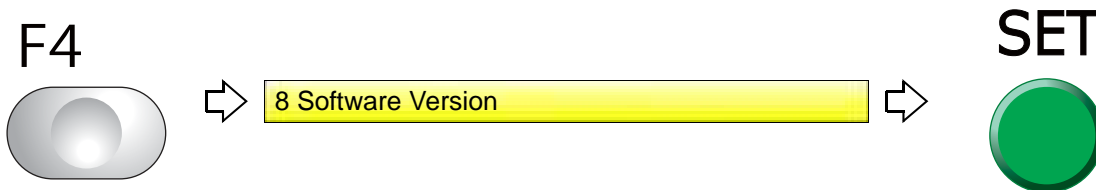
The following is an example that the software version is checked.

(1) Set to main screen.

(2) To press F4 key while pressing SET



(3) To press F4 key



11-5. To switch display language (Language)

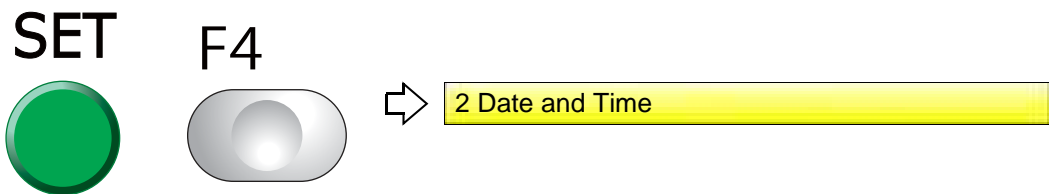
11-5-1. Explanation on the screen



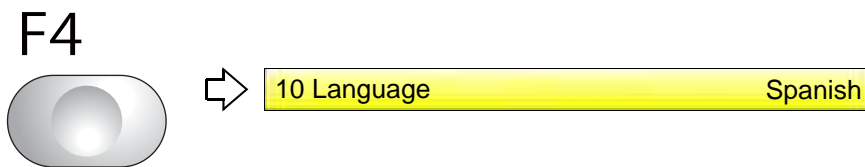
11-5-2. How to operate

The following is the example of changing the language to "English".

- (1) Set to main screen.
- (2) To press F4 key while pressing SET



- (3) To press F4 key



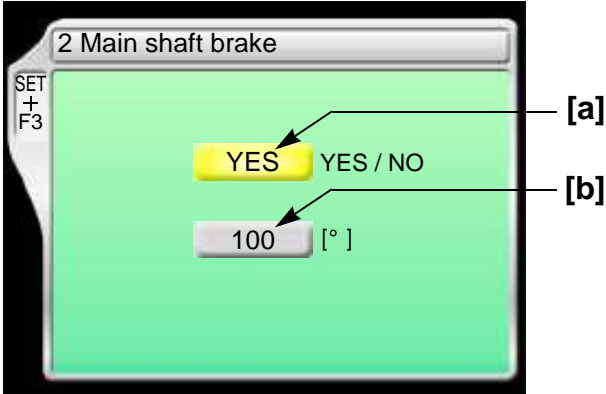
- (4) To select language



11-6. To release fixing of main shaft motor (Main shaft brake)

It is the setting to release the fixing of the main shaft motor temporarily while the main shaft stops. This function is used for the maintenance of the machine mainly.

11-6-1. Explanation on the screen



[a] Fixing of main shaft motor

YES: To fix the main shaft motor while the main shaft stops (usual setting)

NO: Not to fix the main shaft motor while the main shaft stops

Even if "NO" is selected, it will be switched to "YES" after starting the machine.

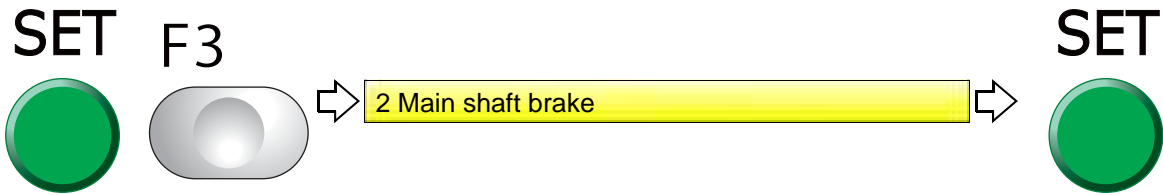
[b] Current main shaft angle

11-6-2. How to operate

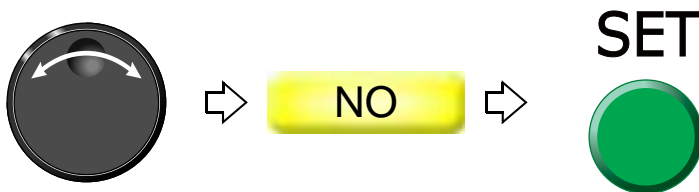
The following is an example that the main shaft motor is set to "not to fix".

(1) Set to main screen.

(2) Press F3 key while pressing SET key, and press SET key further.



(3) To select not to fix



11-7. To read /Not to read Condition data (Condition data)

When performing the data input from USB memory, set to read or not to read the condition data (file).

11-7-1. Explanation on the screen



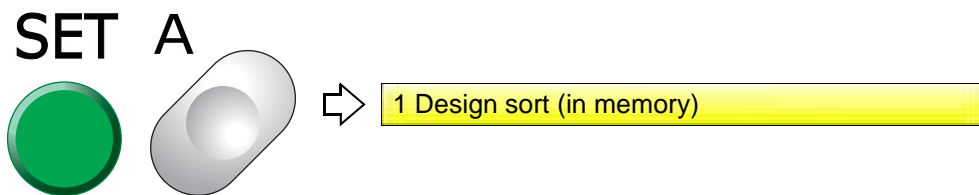
↑
YES: To read
NO: Not to read

Selecting "NO" will not display "8 Input confirmation of condition file".

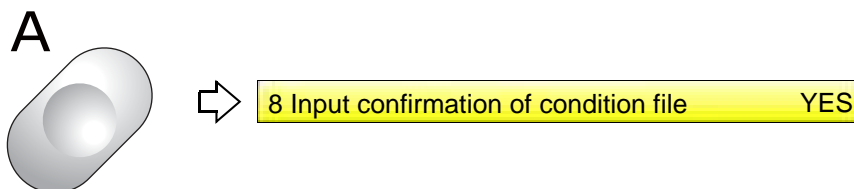
11-7-2. How to operate

The following is an example not reading Condition data (file).

- (1) Set to main screen.
- (2) To press A key while pressing SET key



- (3) To press A key

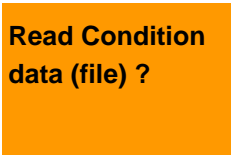


- (4) Not to read Condition data (file)



11-8. To display/Not to display the screen for reading Condition data (Input confirmation of condition file)

When inputting data from USB memory, set to display or not to display the following message.



11-8-1. Explanation on the screen

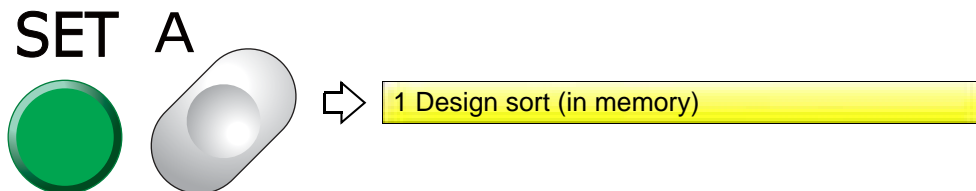


↑
YES: To display
NO: Not to display

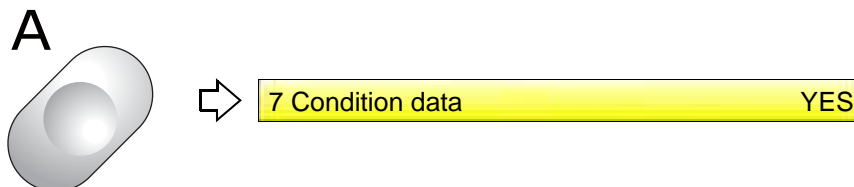
11-8-2. How to operate

The following is an example when the screen of Read Condition data (file) is not displayed.

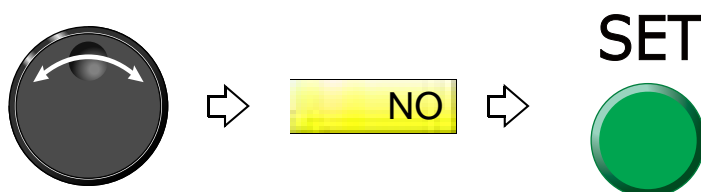
- (1) Set to main screen.
- (2) To press A key while pressing SET key



- (3) To press A key



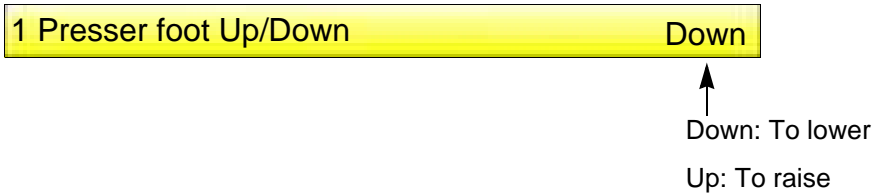
- (4) Not to display the screen of Read Condition File



11-9. To lower / raise presser foot (TMBR-SC only)

When the machine stops, the movement of the presser foot can be switched to three steps by the operation panel. It is also possible to start the operation in the state that the presser foot has lowered.

11-9-1. Explanation on the screen



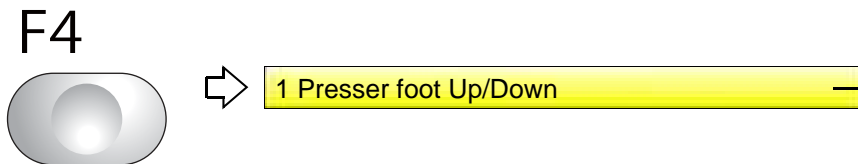
11-9-2. How to operate

! CAUTION

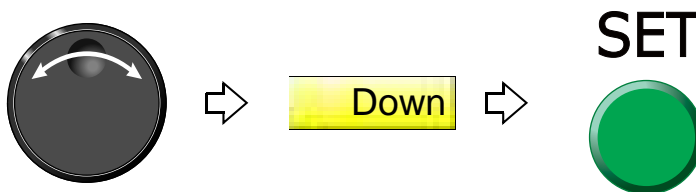
⊘ When performing this operation, do not put your hands, etc near the needle or on the table. Moving up/down of the presser foot could injure you.

The following is the example of moving down the presser foot.

(1) To press F4 key



(2) To lower presser foot



11-10. To move down/up the presser foot and needle bar before tracing

11-10-1. Explanation on the screen



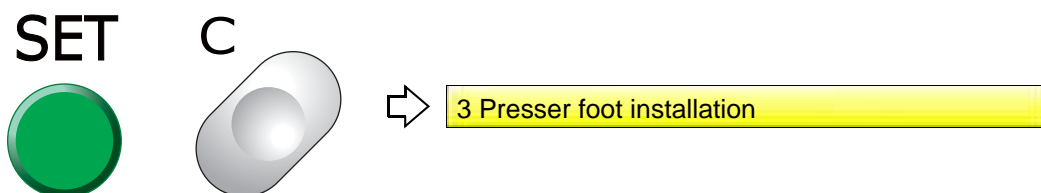
↑
 No: As it is (in the lowered state)
 YES: To move up

11-10-2. How to operate

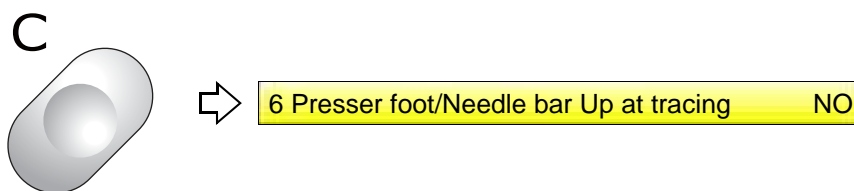


The following is the example of movng up the presser foot.

- (1) Set to main screen.
- (2) To press C key while pressing SET key



- (3) Press C key.



- (4) To move up the presser foot and needle bar before tracing



Chapter 6

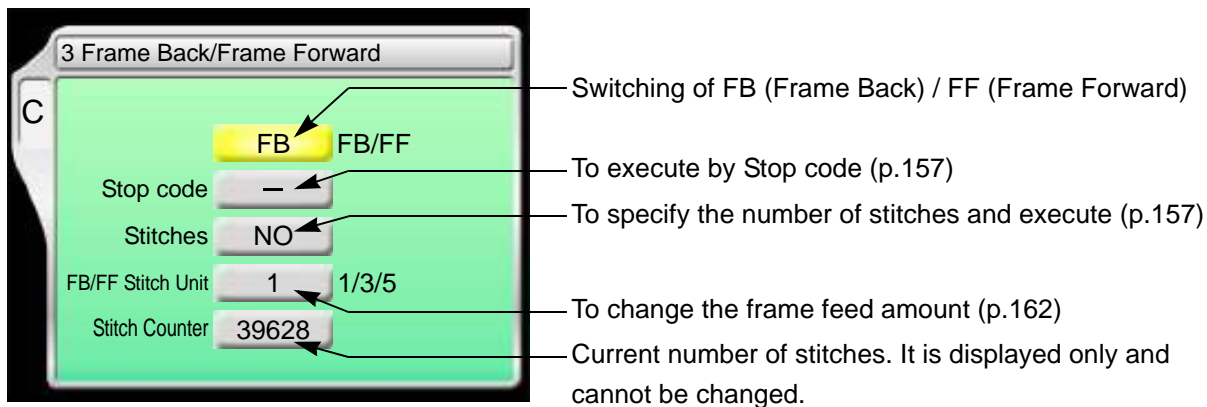
Functions concerning frame movement

1. To return the frame (Frame Back) / to advance the frame (Frame Forward)..156
2. Necessary works after replacing the frame163
3. To return the frame to the original position165
4. To return the frame to the design start position171
5. To move the frame to the position registered.....173
6. To register the frame position179

1. To return the frame (Frame Back) / to advance the frame (Frame Forward)

1-1. To switch Frame Back / Frame Forward

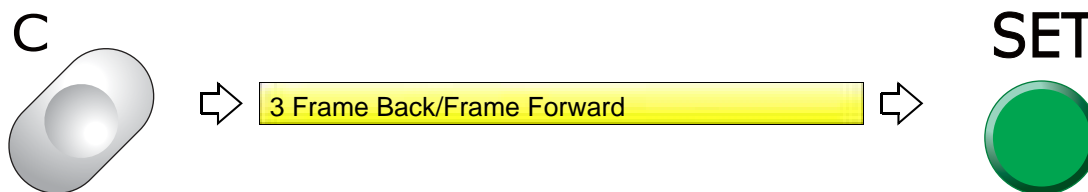
1-1-1. Explanation on the screen



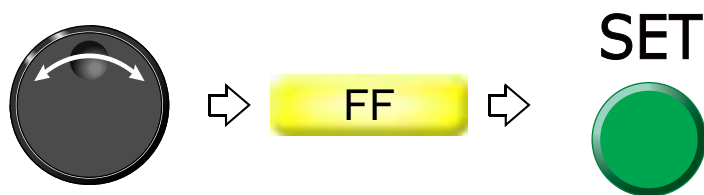
1-1-2. How to operate

The following is an example of setting frame forward.

(1) To open screen

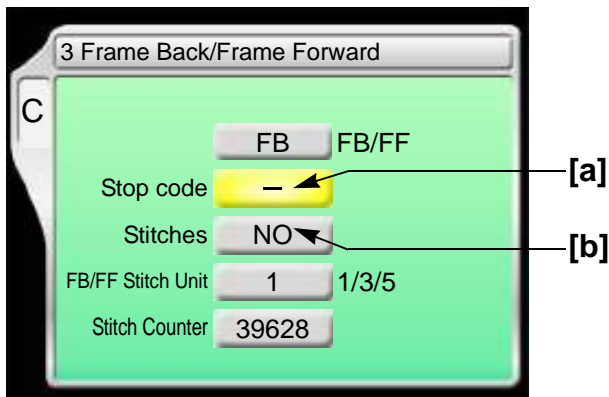


(2) To select FF (Frame Forward)



1-2. To execute by Stop code, to specify number of stitches to execute

1-2-1. Explanation on the screen



[a] To perform Frame Back or Frame Forward in Stop code

– : Not to execute

O : To execute

[b] To perform frame back or frame forward by specifying the number of stitches

NO: Not to perform

1 to end stitch:

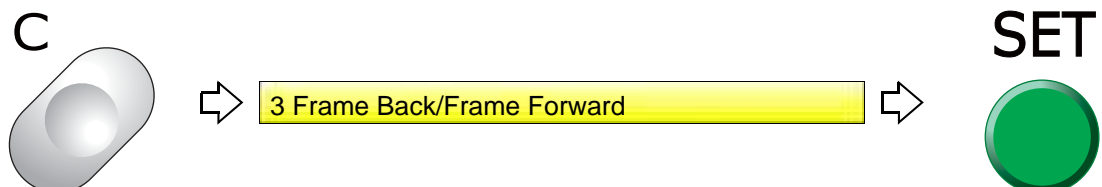
To perform (to perform Frame Back or Frame Forward for the number of stitches)

1-2-2. How to operate



The following is an example of executing frame forward by Stop code.

(1) To open screen



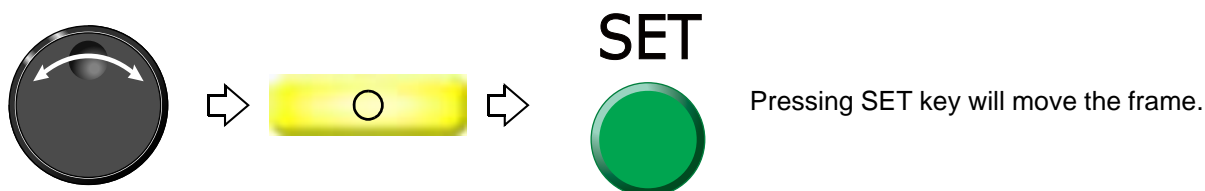
(2) To select FF (Frame Forward)



(3) To move the cursor to "Stop code"



(4) To perform Frame Forward in Stop code

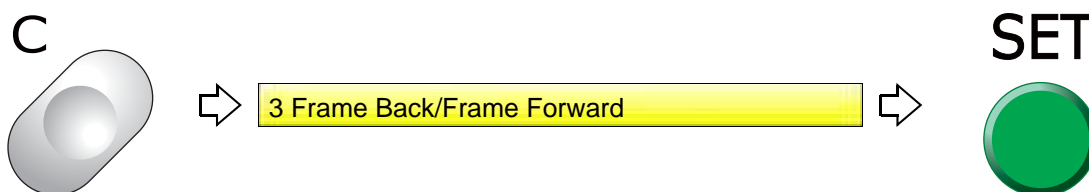


1-2-3. How to operate

 CAUTION
 When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

The following is an example of specifying the number of stitches and executing frame forward.

(1) To open screen



(2) To select FF (Frame Forward)



(3) To move the cursor to "Specification by the number of stitches"



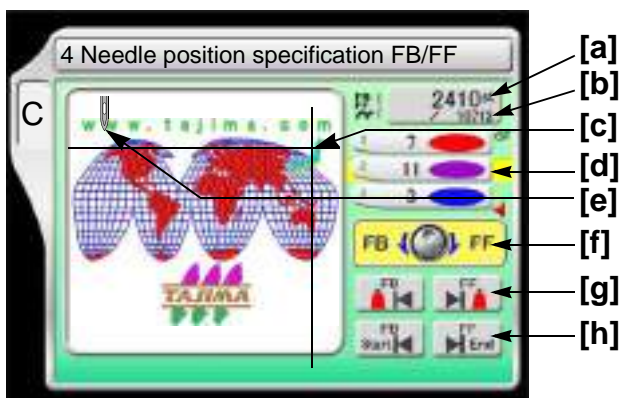
(4) To input the number of stitches and execute



Pressing SET key will move the frame.

1-3. To specify the needle position (stitch number) and perform FB/FF (Needle position specification FB/FF)

1-3-1. Explanation on the screen



[a] Stitch No. after frame back or frame forward

[b] Current stitch No.

[c] Current needle position
The needle position after frame back or frame forward movement is shown.

[d] Current needle bar step

[e] Needle position after frame back or frame forward

[f] Turn the jog dial (1- stitch feed) or jog shuttle (high-speed feed) to select the desired stitch No. after FB (frame back) or FF (frame forward).

[g] FB (frame back) or FF (framed forward) is performed by Stop Code.

[h] FB Start: Perform frame back to the start position of design.
FF End: Perform frame forward before the end point of design.

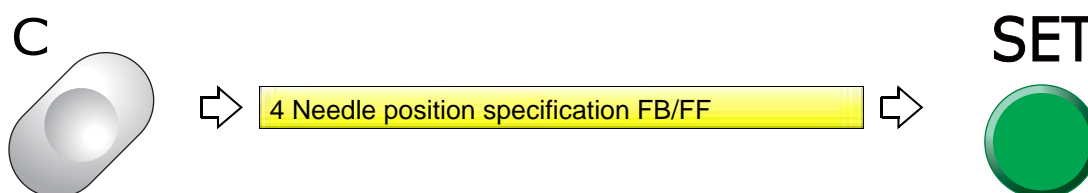
1-3-2. How to operate

! CAUTION

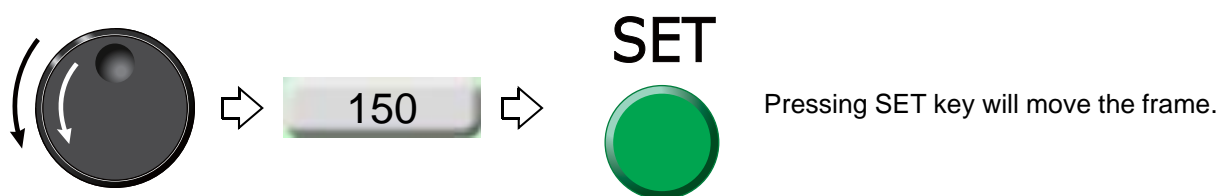
When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

The following is an example of performing frame back to the 150th stitch.

(1) To open screen



(2) Turn the jog dial or jog shuttle to the left.



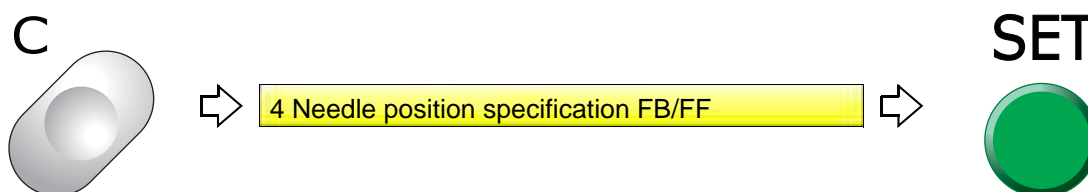
1-3-3. How to operate

! CAUTION

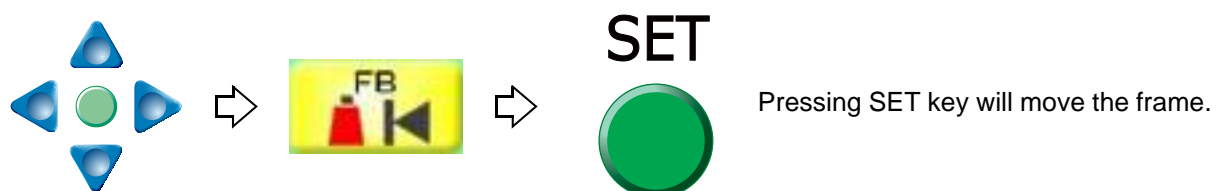
When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

The following is an example of performing frame back by stop code.

(1) To open screen



(2) Move the cursor to "FB".



1-4. To perform frame forward using the USB key (USB button)

1-4-1. Explanation on the screen

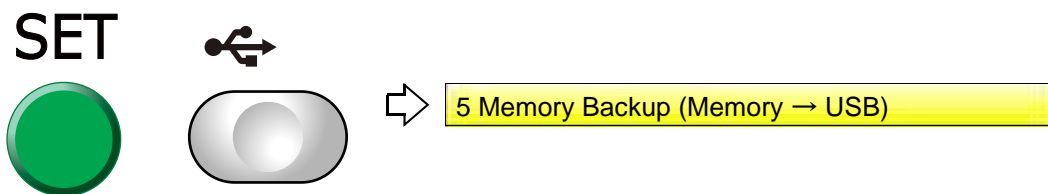


↑
 USB :
 Used as a USB function setting key.
 FF :
 Used as a key dedicated to frame forward.

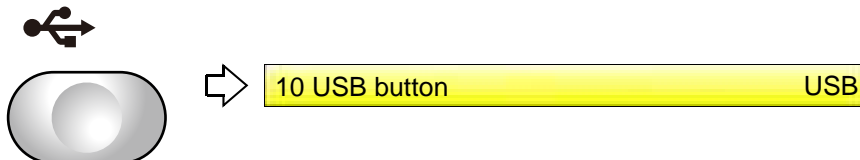
1-4-2. How to operate

The following is an example of using the USB key as a dedicated key for frame forward.

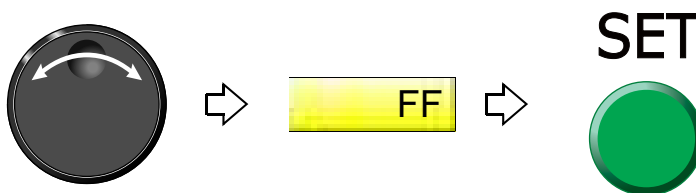
- (1) Set to main screen.
- (2) Press the USB key while pressing SET key.



- (3) Press the USB key.



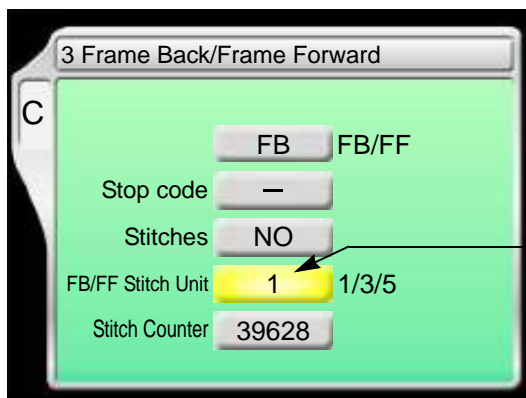
- (4) Use the USB key as a dedicated key for frame forward.



1-5. To change a frame feed amount of frame back / frame forward

Set the frame feed amount when Frame Back/Forward by the stop switch is performed for 11 or more stitches continuously.

1-5-1. Explanation on the screen



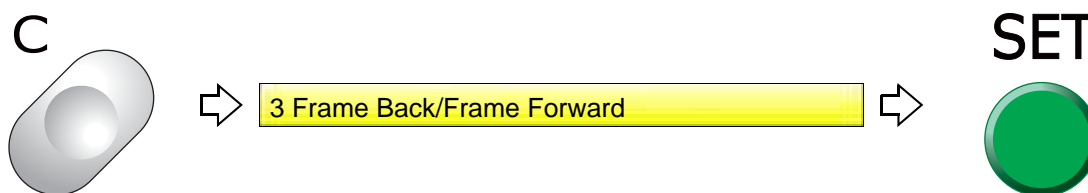
Frame feed amount

- 1: Feed the frame by 1-stitch unit.
- 3: Feed the frame by 3-stitches unit.
- 5: Feed the frame by 5 stitches unit.

1-5-2. How to operate

The following is an example of setting the frame feed amount to "5".

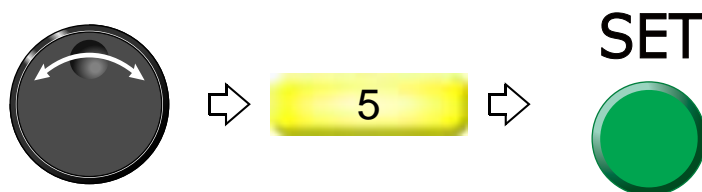
(1) To open screen



(2) To move the cursor to "FB/FF Stitch unit"



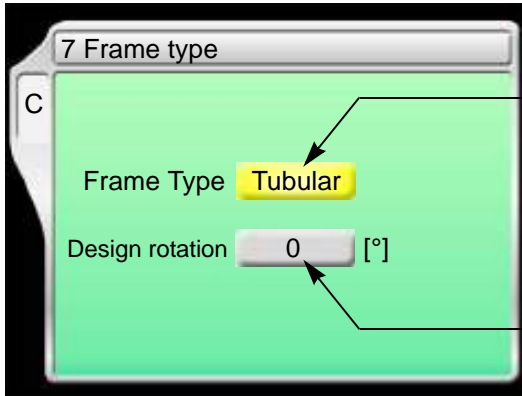
(3) To select frame feed amount



2. Necessary works after replacing the frame

2-1. Change of frame type, Rotation of design by 180°

2-1-1. Explanation on the screen



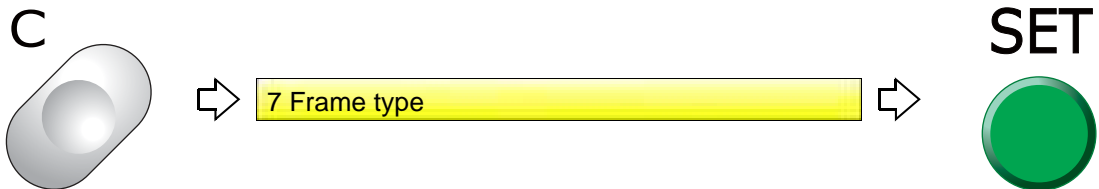
Select the frame type from items below.
 Border, Tubular, Cap, A. Clamp T, X-EXT
 For the pocket frame, select "Tubular".

Rotate the design by 180°.
 0: The design is not rotated.
 180: Rotate the design by 180°.

2-1-2. How to operate

The following is an example of setting the frame type to "Cap" and rotate the design by 180°.

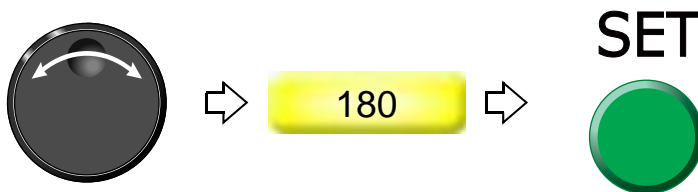
(1) To open screen




(2) To select the frame



(3) To rotate the design by 180°



To set the frame type to "A. clamp T" (Auto Clamp T), follow the procedure below.



CAUTION

! To perform "Frame Origin Memory", follow the procedure below. The frame could hit the machine depending on the position of the frame, and it might cause the damage of the parts.

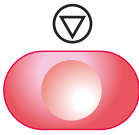
Frame origin memory is executed.

"YES">>SET

SET



Pressing SET key will move the frame.

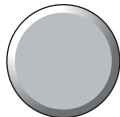


Press the stop switch immediately after moving the frame.

Code No. 5C1 will appear.

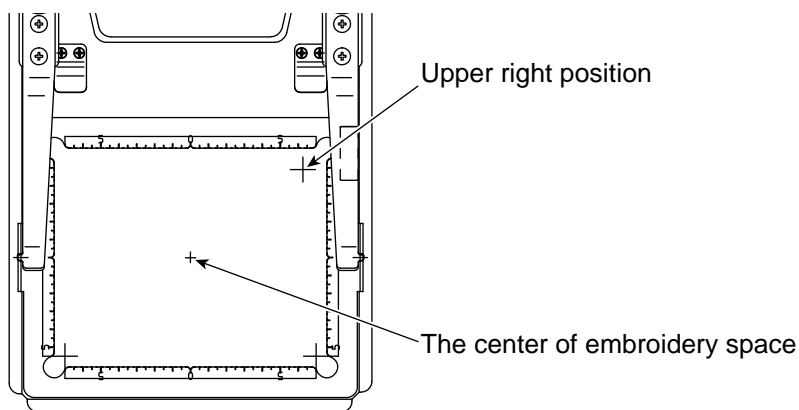
STOP

E



Press E key.

- ➡ Move the frame to the upper right position from the center of the embroidery space by manual frame travel.
- ➡ Perform operation of "Frame Origin Memory". (SET+F2)



3. To return the frame to the original position

3-1. To return the moved frame to the previous position (Manual Offset)

This function is effective only when the frame is moved manually after stopping the machine in the middle of embroidery.

3-1-1. Explanation on the screen

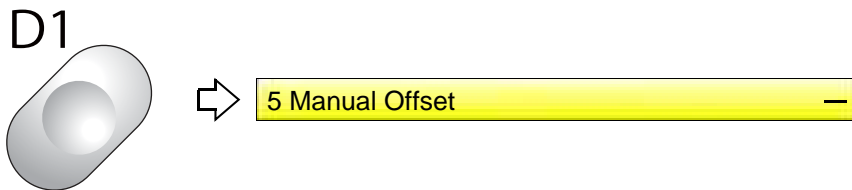


3-1-2. How to operate

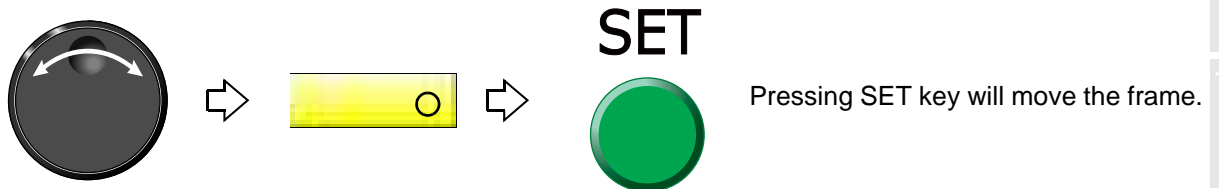


The following is an example of executing manual offset.

(1) To open screen



(2) To perform manual offset



3-2. To return moved frame to original position and start operation (Return the frame after manual frame travel)

This function is effective only when the frame is moved manually after stopping the machine in the middle of embroidery.

3-2-1. Explanation on the screen

6 Return the frame after manual frame travel NO

↑
Setting to return or not to return the frame by operating the start switch

YES:

The frame will return to the original position and the machine will start operation.

NO:

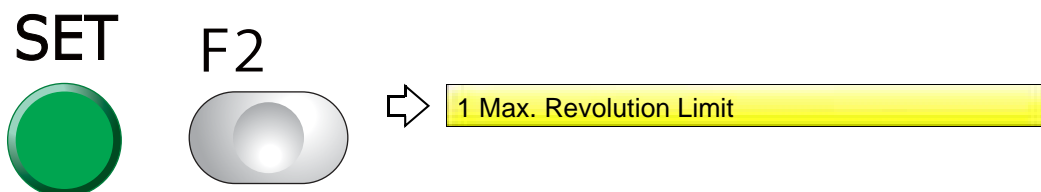
The frame will not return. The operation will start from the position after frame travel.

3-2-2. How to operate

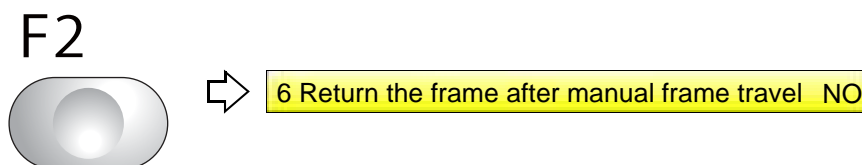
The following is an example of returning the frame to the original position and starting the operation.

(1) Set to main screen.

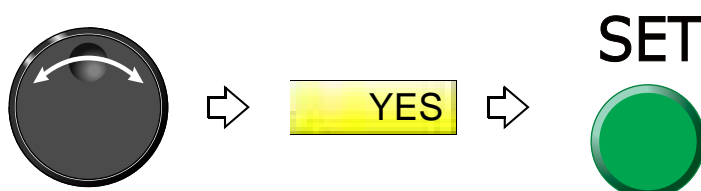
(2) Press F2 key while pressing SET key.



(3) Press F2 key.



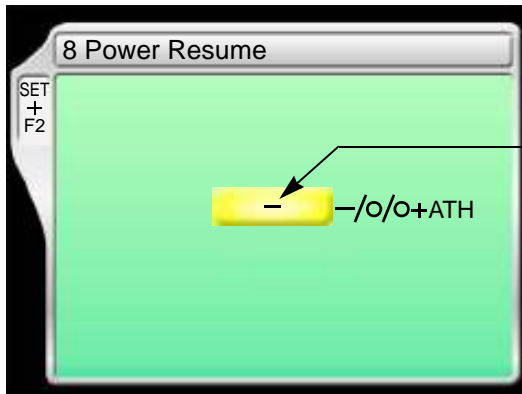
(4) To return the frame by operating the start switch, and start the operation



3-3. To prevent displacement of design when the power is shut off during operation (Power resume)

This function works on condition that the frame origin is memorized correctly. If it is wrong, the frame will not return to the correct position.

3-3-1. Explanation on the screen



To return the frame to several stitches before the position where power was shut off

— : Not to execute

o : To execute

o+ATH : To execute after thread trimming

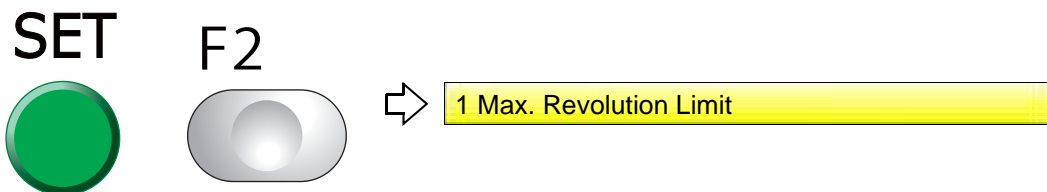
3-3-2. How to operate

! CAUTION

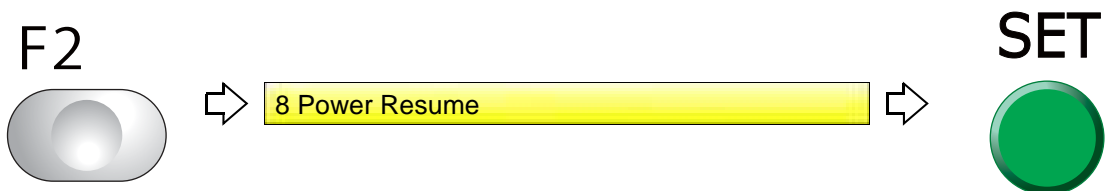
⊘ When performing this operation, do not put your hands etc. near the needle or on the table. Moving needle bar or frame could injure you.

The following is an example of executing Power resume.

- (1) Set to main screen.
- (2) Press F2 key while pressing SET key.



- (3) Press F2 key.

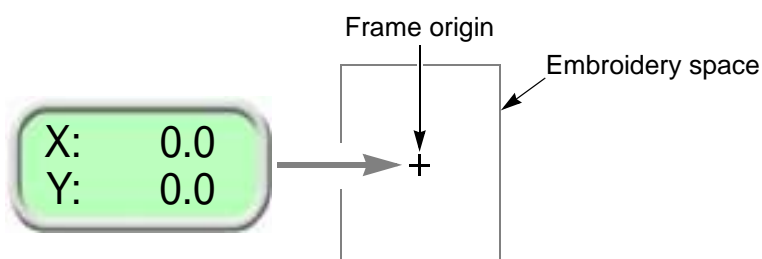


(4) To execute after thread trimming



3-4. To memorize frame origin (Frame origin memory)

Frame origin is an anchoring point (X:0.0, Y:0.0) to calculate the current frame position. Position of frame origin differs depending on model.



Execute this function in case of the following condition.

- (1) There is a possibility that the frame was moved by hand in the state of power OFF or during sleep mode in such a case as changing frame.
- (2) After installation of software
- (3) When frame driver is changed
- (4) When frame type is changed

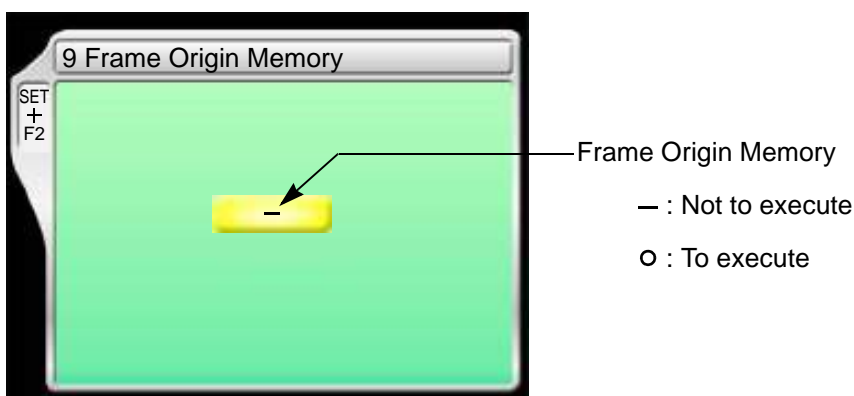
When a frame origin is wrong, the following troubles will occur.

Frame coordinates are not displayed correctly.

The frame does not return to the interrupted position even after performing Power resume.

Position of frame limit gets out of alignment.

3-4-1. Explanation on the screen



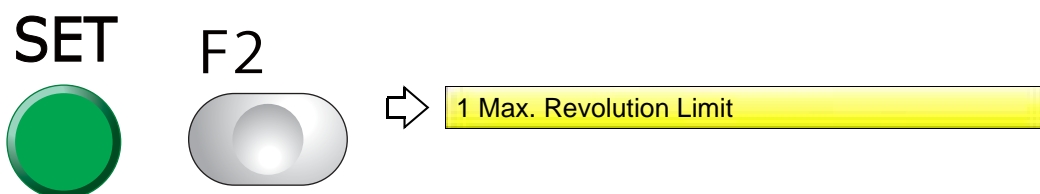
3-4-2. How to operate

! CAUTION

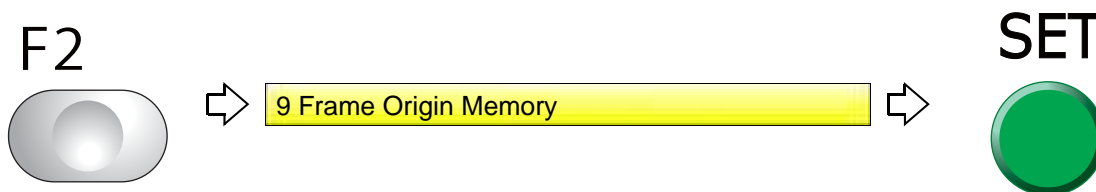
⊘ When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

The following is an example of executing frame origin memory.

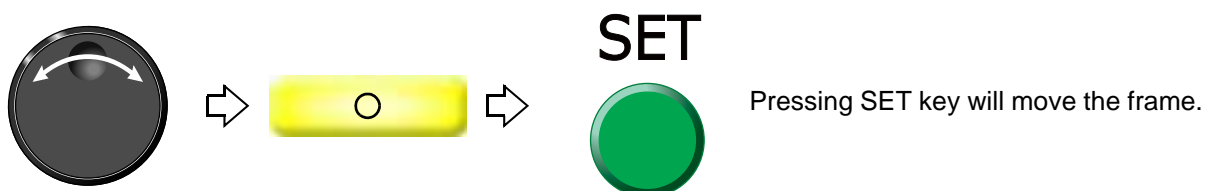
- (1) Set to main screen.
- (2) Press F2 key while pressing SET key.



- (3) Press F2 key.



- (4) Execute Frame Origin Memory.



3-5. To perform Frame origin memory when the power is turned ON (Frame origin memory with the power-ON)

This is the setting to display the message, and perform Frame origin memory when the power is turned ON.

When the embroidery is on the way or the main shaft is out of the fixed position, the message will not be displayed.

Frame origin memory is executed.

"YES">>SET

3-5-1. Explanation on the screen



↑
Display of the message to urge frame origin memory

YES: To display

NO: Not to display

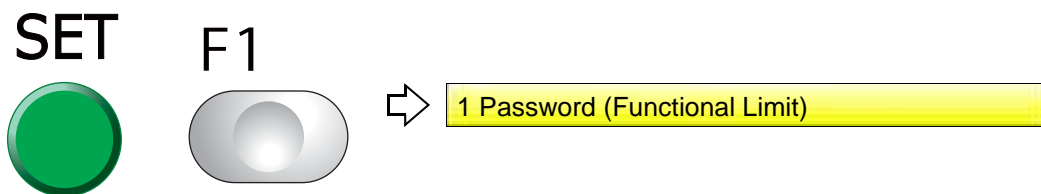
Even if the power is turned ON again in the middle of the embroidery at the setting of "YES", any message will not be displayed.

3-5-2. How to operate

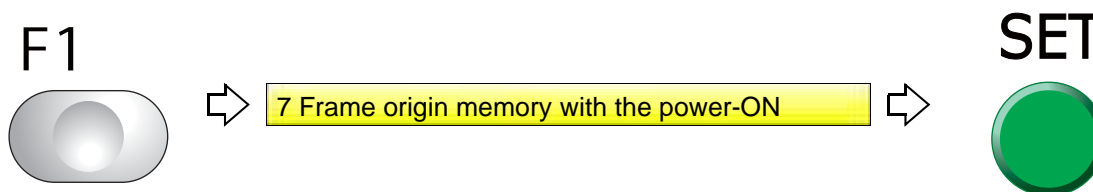
The following is an example of displaying the message to suggest frame origin memory.

(1) Set to main screen.

(2) To press F1 key while pressing SET



(3) To press F1 key



(4) To display the message

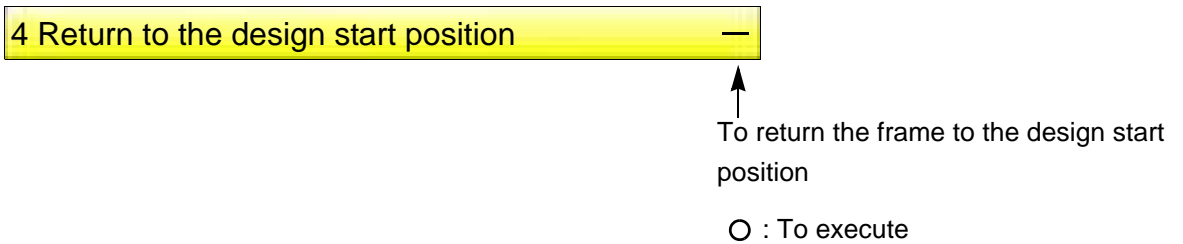


4. To return the frame to the design start position

4-1. To return the frame to the design start position manually (Return to the design start position)

This function makes the frame return to the design start position in the middle of embroidery when you stopped the machine.

4-1-1. Explanation on the screen

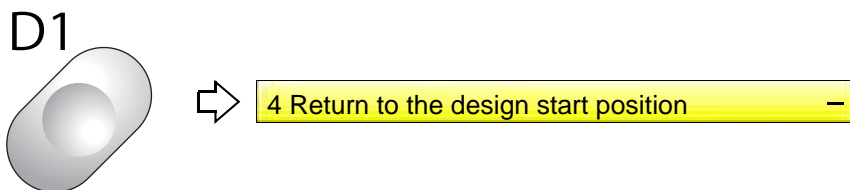


4-1-2. How to operate

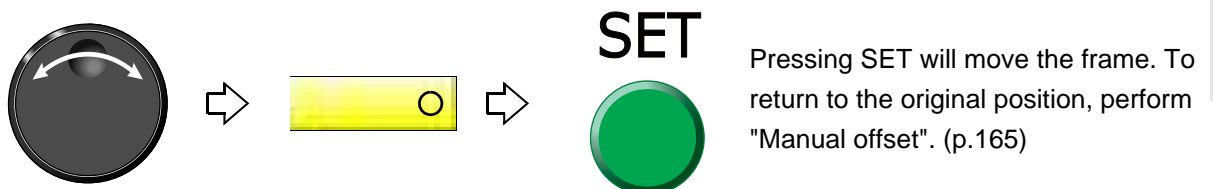


The following is an example of executing design start position return.

(1) To open screen



(2) To execute design start position return



4-2. To return the frame to the design start position automatically (Auto Origin Return)

This is the setting to return the frame to the design start position automatically after embroidery is finished.
 When Automatic offset is set, the frame will return to an offset start position. (p.173)

4-2-1. Explanation on the screen



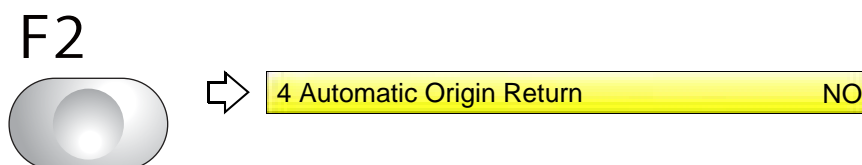
↑
 Auto Origin Return
 YES: To set
 NO: Not to set (usual setting)

4-2-2. How to operate



The following is an example of setting Automatic origin return.

(1) To open screen



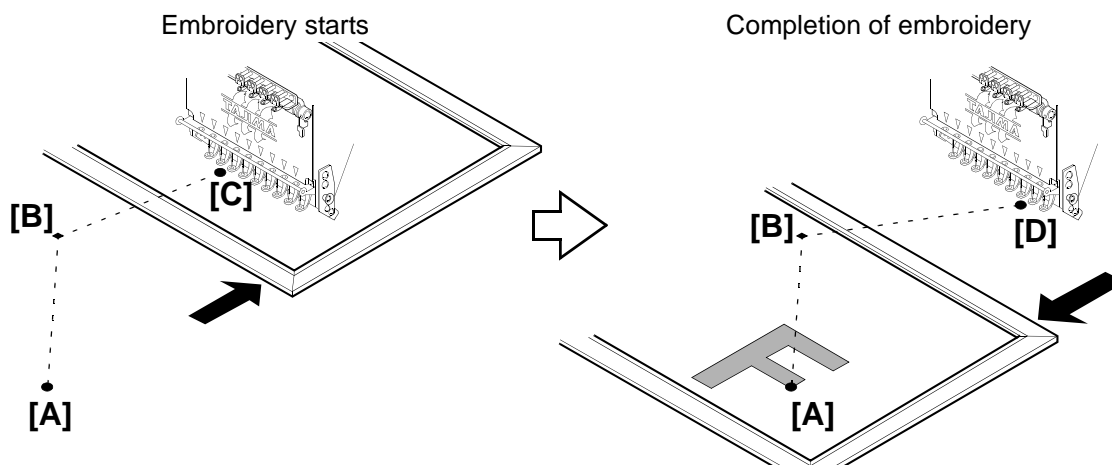
(2) To make auto origin return effective



5. To move the frame to the position registered

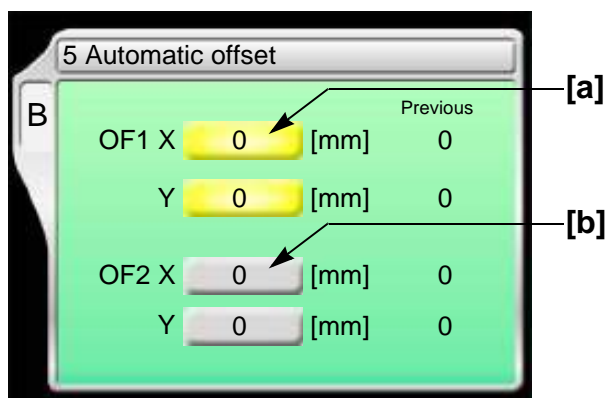
5-1. To move the frame automatically at the start and the end of embroidery (Automatic Offset)

This is the setting to move the frame automatically so that replacement of the frame and the fabric to be stretched can be performed easily. Perform this setting after data set. Setting contents here will be added in a design. So, when you embroider this design next time, setting again will be unnecessary.



- (1) When starting embroidery by operating the start stitch, the frame will move from the offset start position [A] to the design start position [C] through the offset middle position [B].
- (2) When embroidery is finished, the frame will pass from the design end point [D] to the offset start position [A] through the offset middle position [B].

5-1-1. Explanation on the screen



[a] Offset middle position [B in the figure above]

The position where the frame will pass. This position is arbitrarily set. Set it when embroidered material hits the machine during the frame travel.

[b] Offset start position [A in the figure above]

The position where the frame has come to the front. Changing the frame and the fabric to be stretched will be performed here.

5-1-2. How to operate

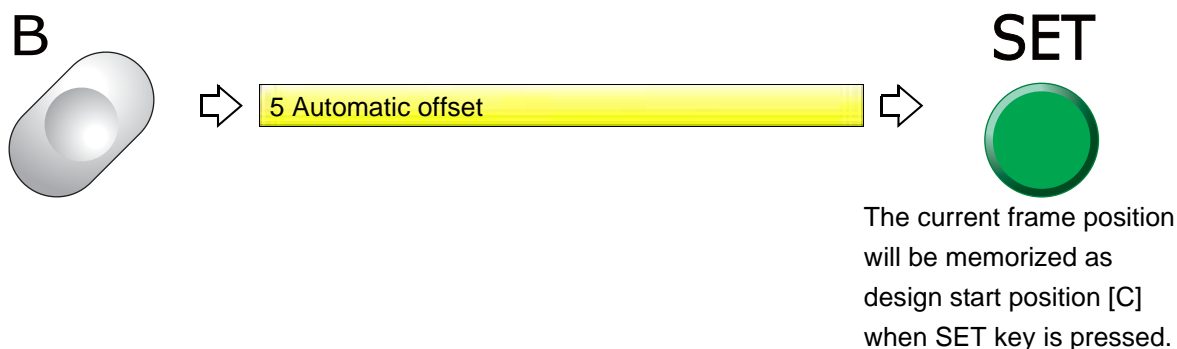
! CAUTION

⊘ When performing this operation, do not put your hands, etc. on the table. Moving the frame could injure you.

⊘ At the start and the end of embroidery, do not put your hands etc. on the table. Moving frame could injure you.

The following is an example of executing Automatic offset.

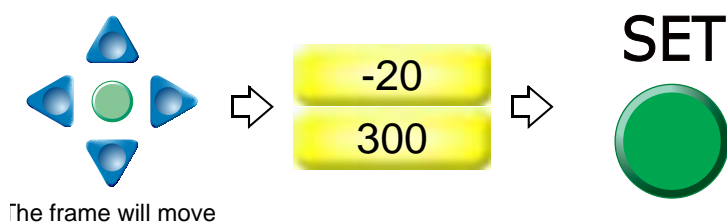
- (1) To decide an embroidery design (to perform data set)
- (2) To move the frame to the design start position [C]
- (3) To open screen



- (4) To decide OF1 (Offset Middle Position [B])



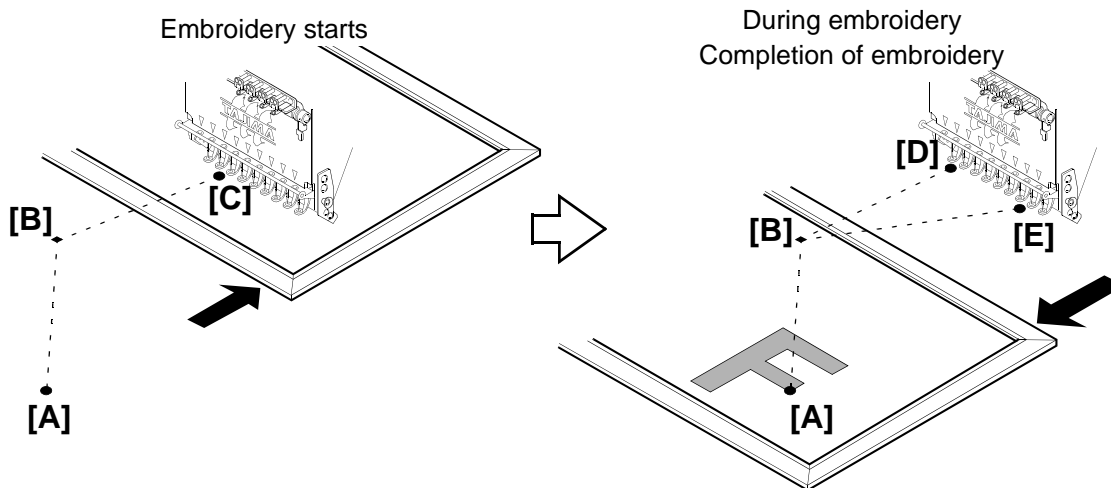
- (5) To decide OF2 (Offset Start position [A])



To cancel setting for Automatic offset, set values of OF1 and OP2 described above to "0".

5-2. To move the frame automatically at the start, in the middle and the end of embroidery

This function is the setting to move the frame automatically so that replacement of the frame, works for applique and change of fabric to be stretched can be performed easily.



- (1) When starting embroidery by operating the start stitch, the frame will move from the offset start position [A] to the design start position [C] through the offset middle position [B].
- (2) During embroidery, the frame will return from the color change point [D] to the offset start position [A] through the offset middle position [B]. After performing works for applique here, the frame will move to the color change point [D] through the offset middle position [B], then start embroidery again by switch operation.
- (3) When embroidery is finished, the frame will pass from the design end point [E] through the offset middle position [B], then move to the offset start position [A].

5-2-1. Explanation on the screen



Offset mark

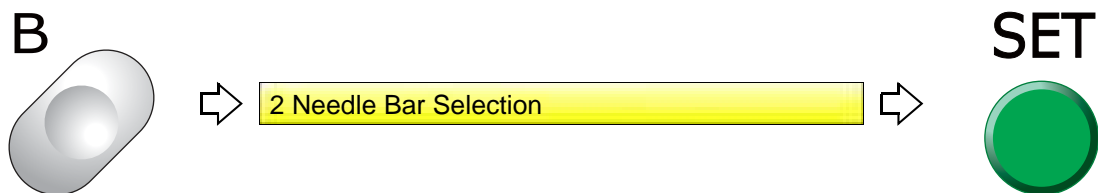
After step 2 is finished, the frame will return to the offset start position [A] automatically. To move the frame, the setting of "Automatic offset" is necessary. (p.173)

If "Automatic Offset" is not set, the frame will move to the design start position [C].

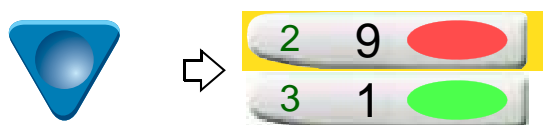
5-2-2. How to operate

The following is an example of inserting the offset mark between step 2 and step 3.

(1) To open screen



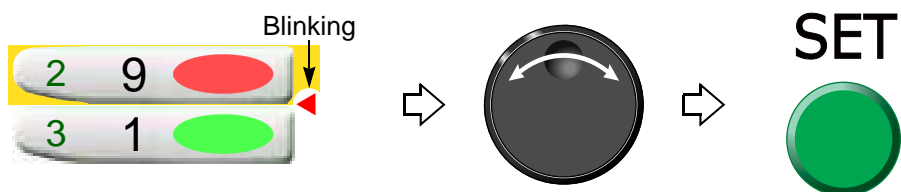
(2) To select step to insert offset mark



(3) To insert offset mark



To delete offset mark



5-3. To return the frame to the offset start position manually (Return to the offset origin)

This function makes the frame return to the offset start position in the middle of embroidery when you stopped the machine. It is possible to operate only when Automatic offset is set. The offset middle position is not passed.

5-3-1. Explanation on the screen



↑
To return the frame to offset start position

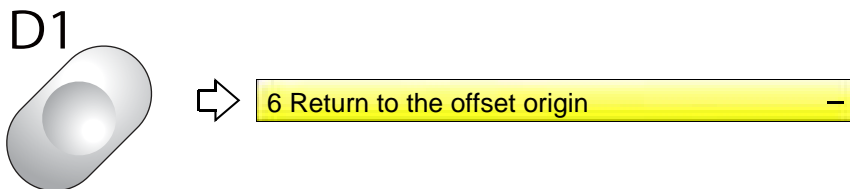
○ : To execute

5-3-2. How to operate

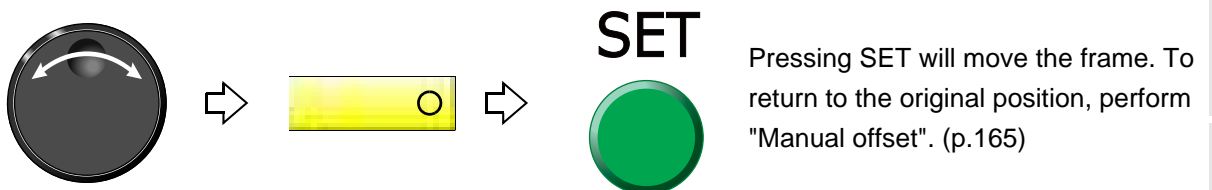


The following is an example of executing offset return.

(1) To open screen



(2) To execute offset return



5-4. To move frame to registered position (Frame travel to optional position)

This function will move the frame to the position registered by "SET+F2-7: Arbitrary position".

5-4-1. Explanation on the screen



↑
To return the frame to the registered position

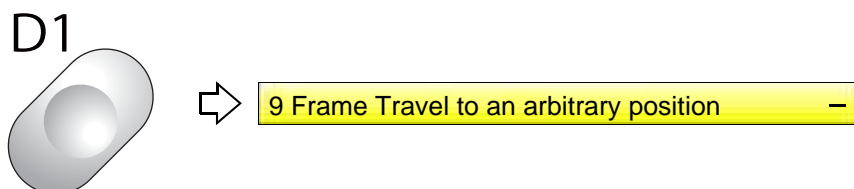
○ : To execute

5-4-2. How to operate

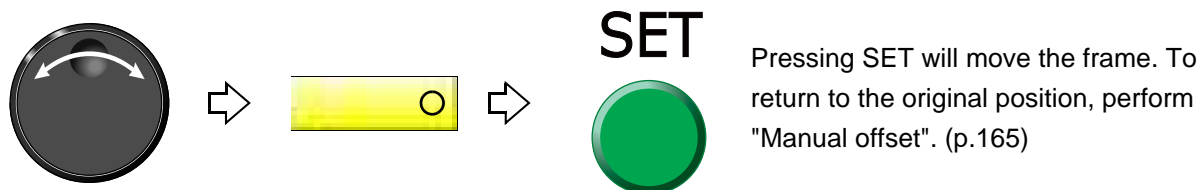


The following is an example of executing "Frame travel to an arbitrary position".

(1) To open screen



(2) To execute "Frame travel to an arbitrary position"

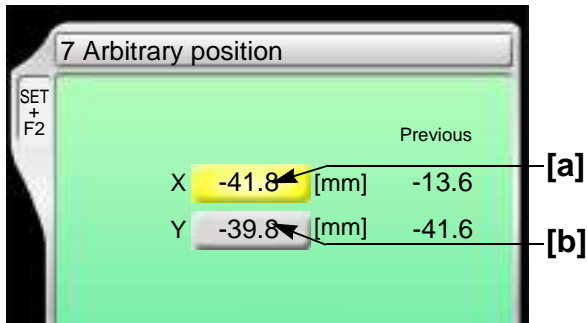


6. To register the frame position

6-1. To register your desired frame position (arbitrary position)

This function is to register the frame position after performing "D1-9 Frame Travel to an arbitrary position".
(p.178)

6-1-1. Explanation on the screen



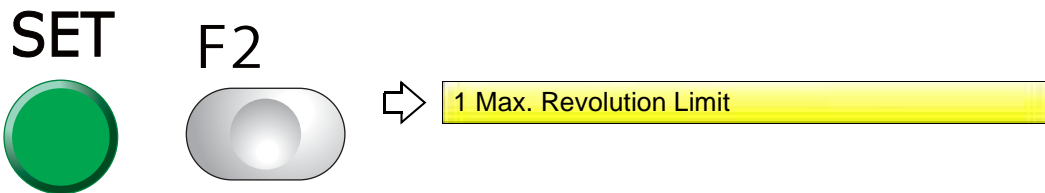
[a] X-axis coordinates

[b] Y-axis coordinates

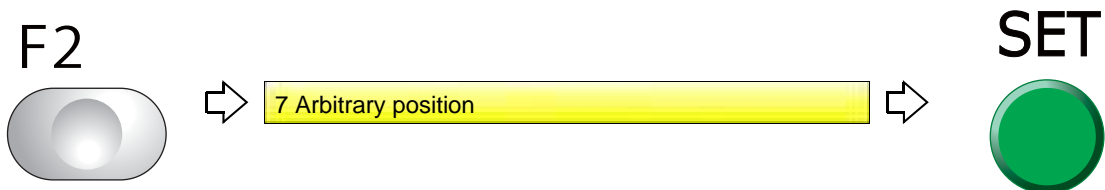
6-1-2. How to operate

The following is an example of registering the frame position to your desired position.

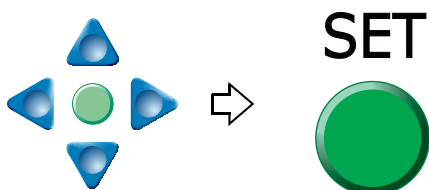
- (1) Set to main screen.
- (2) Press F2 key while pressing SET key.



- (3) Press F2 key.



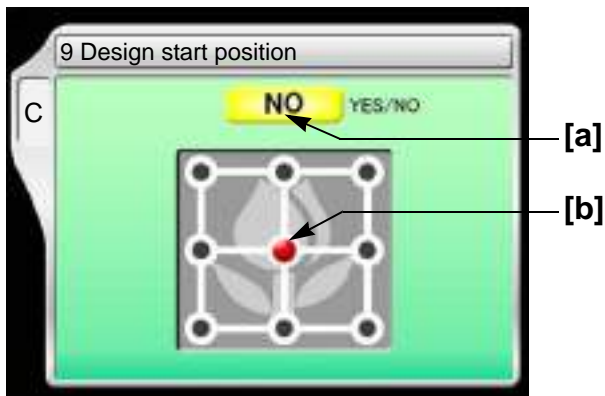
- (4) To move the frame to your desired position



6-2. To register the design layout (Design start position)

The design is placed according to the selected point with reference to the design start point.

6-2-1. Explanation on the screen



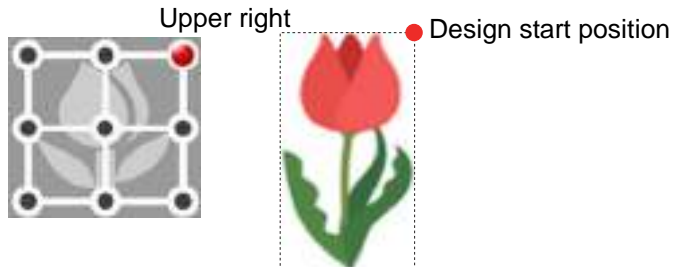
[a] Design start position

YES: To set

NO: Not to set

[b] Standard points (nine points)

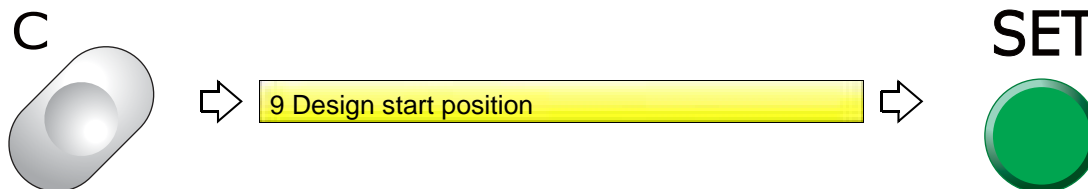
When selecting "Upper right", the design is placed with reference to the design start position.



6-2-2. How to operate

The following is an example of selecting the upper right point.

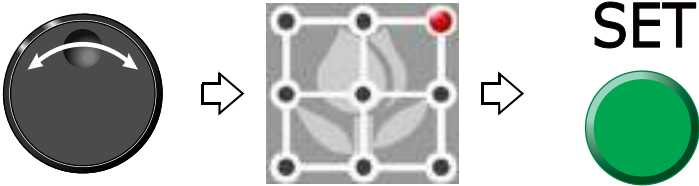
(1) To open screen



(2) To register the design start point



(3) To select the point.



1
2
3
4
5
6
7
8
9
10
11

Chapter 7

Function concerning storing and deleting of design

- 1. Design stored in the machine memory184
- 2. Design stored in USB memory196

1

2

3

4

5

6

7

8

9

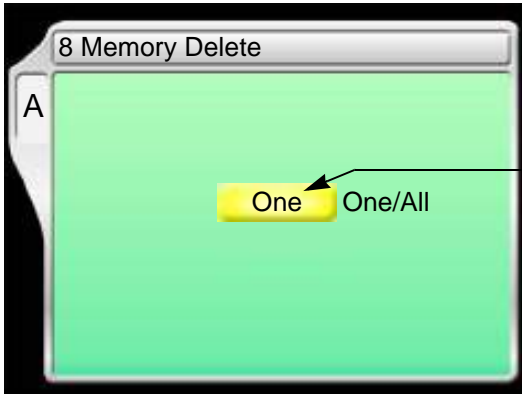
10

11

1. Design stored in the machine memory

1-1. To delete a design (Memory Delete)

1-1-1. Screen



How to delete a design

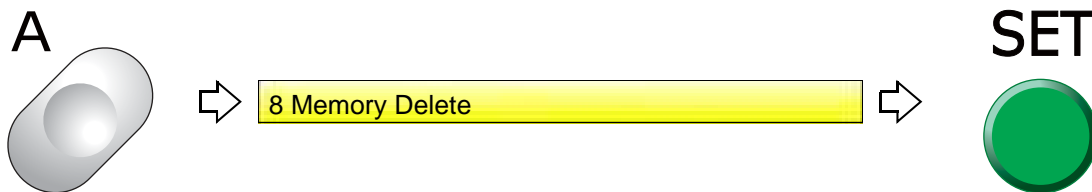
One: The selected design is deleted one by one.

All: All designs are deleted at once.

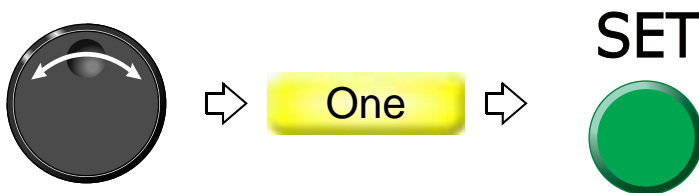
1-1-2. How to operate

The following is an example of deleting a selected design.

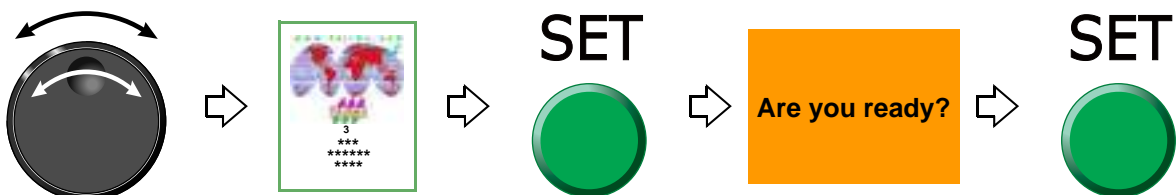
(1) To open screen



(2) Select a deleting method.

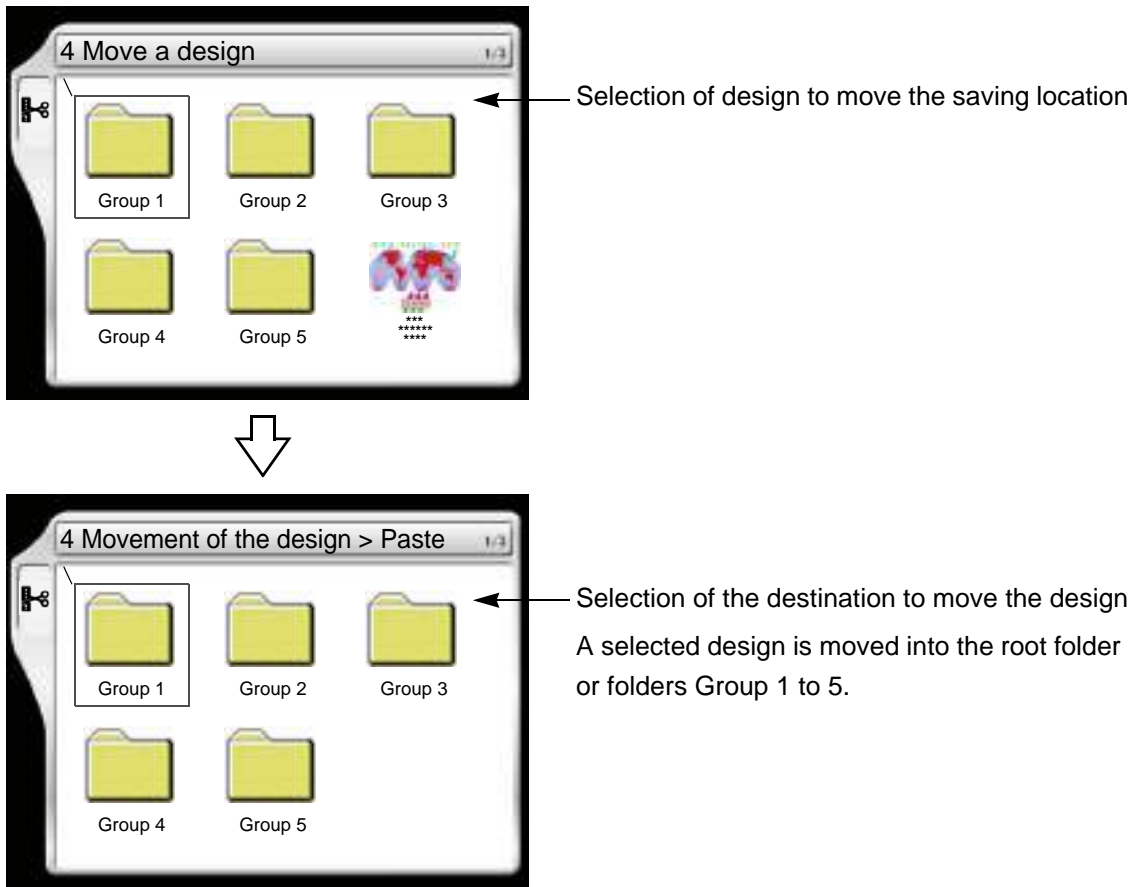


(3) To select and decide a design



1-2. To move a design (Movement of design)

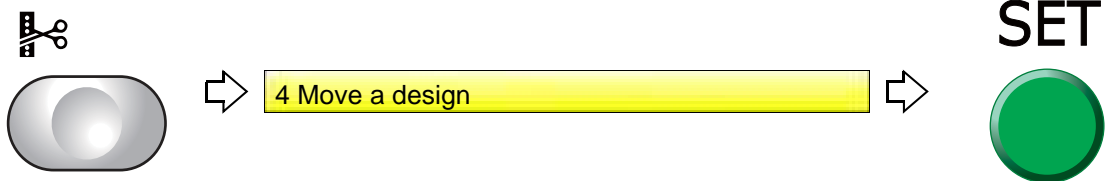
1-2-1. Screen



1-2-2. How to operate

The following is an example of moving a design to the folder (Group 3).

(1) To open screen



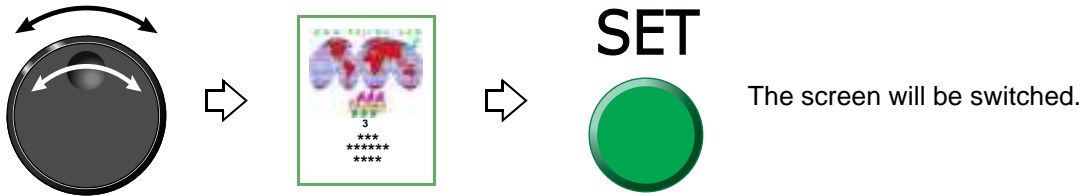
(2) To select a design

The operation differs depending on the storing place of the design.

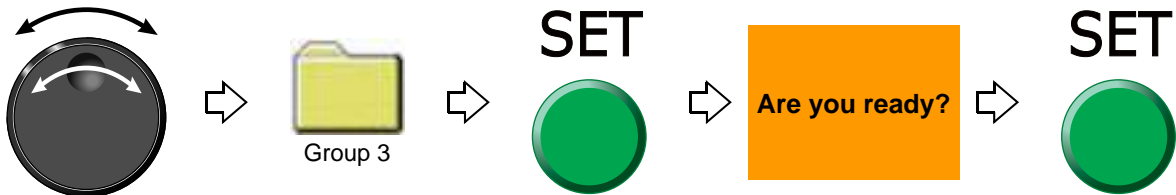
(a) Design in folder



(b) Design on screen

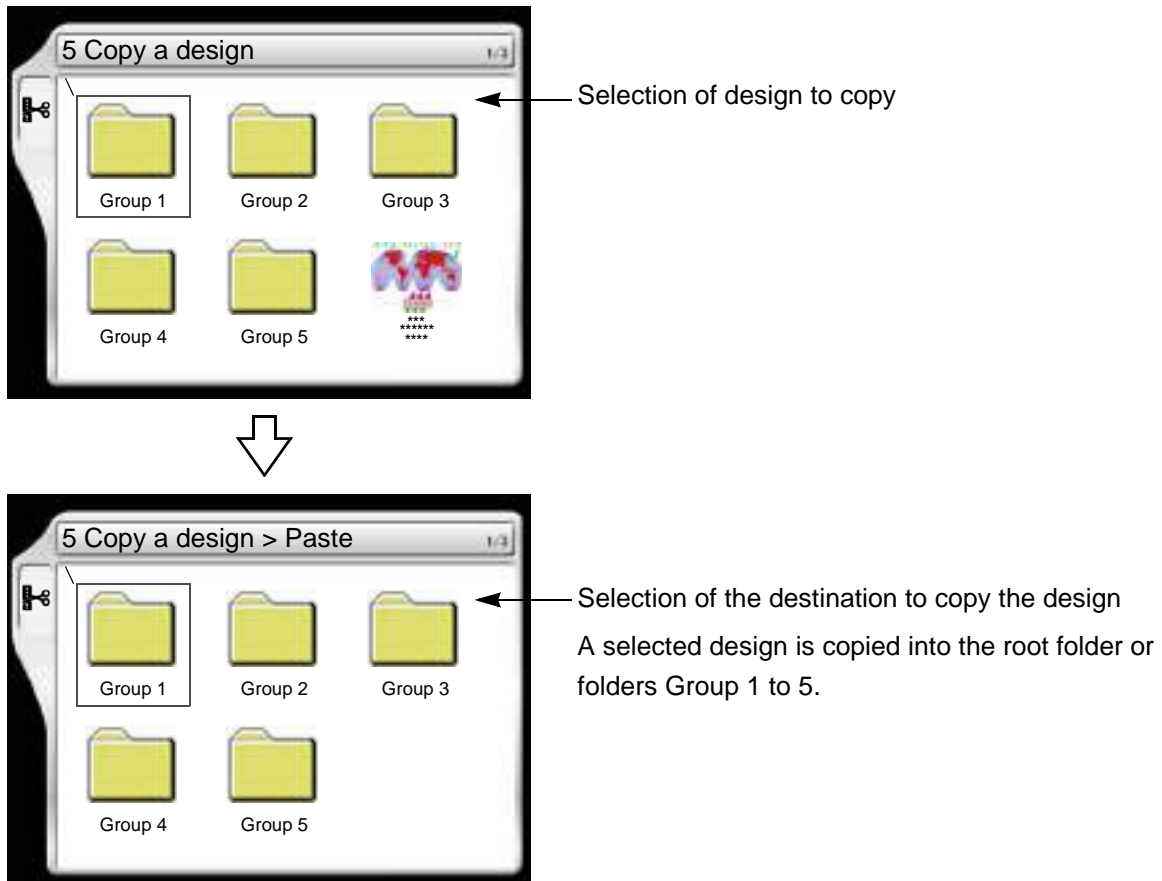


(3) To select destination to move and decide



1-3. To copy a design (Copy a design)

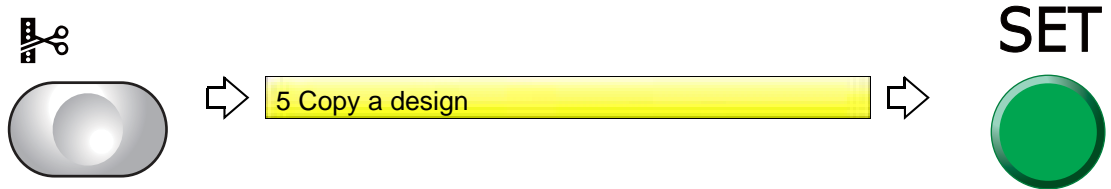
1-3-1. Screen



1-3-2. How to operate

The following is an example of copying a design and storing it in the folder (Group 3).

(1) To open screen



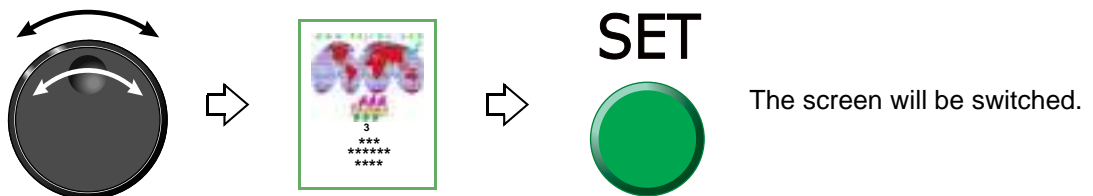
(2) To select a design

The operation differs depending on the storing place of the design.

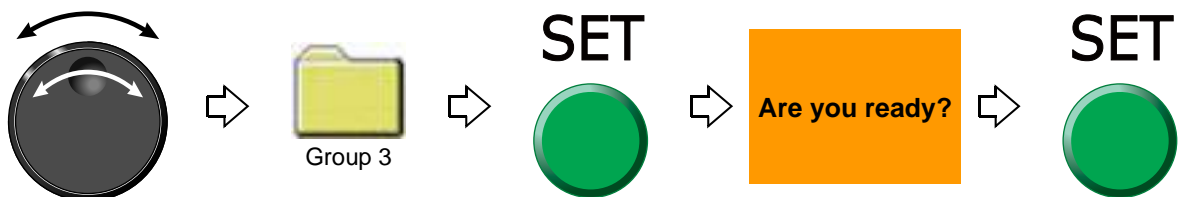
(a) Design in folder



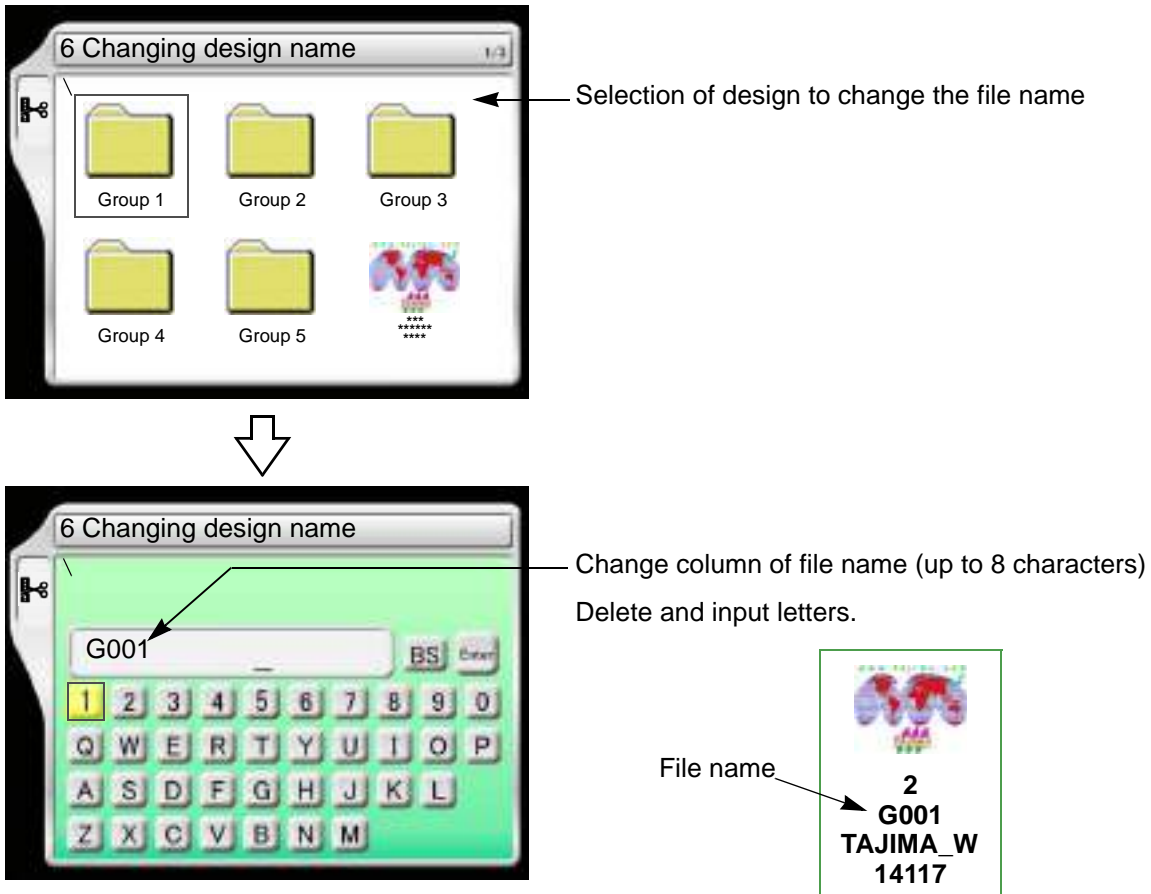
(b) Design on screen



(3) Select a destination to copy, and decide.



1-4. To change the file name of the design (Changing design name)



1-4-1. How to operate

The following is an example of changing the file name from "G001" to "A10".

(1) To open screen



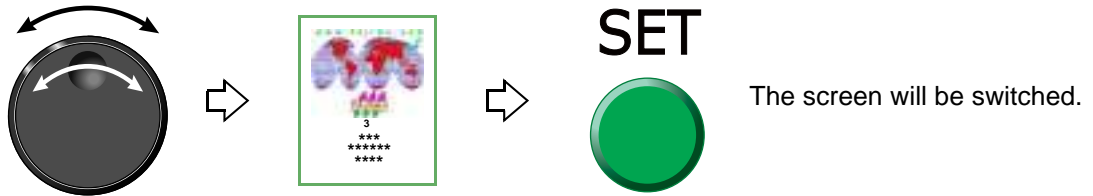
(2) To select a design

The operation differs depending on the storing place of the design.

(a) Design in folder

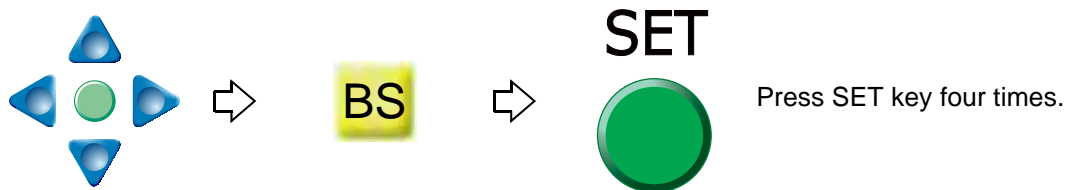


(b) Design on screen



(3) To change file name

(a) To return the cursor to the top of the file name



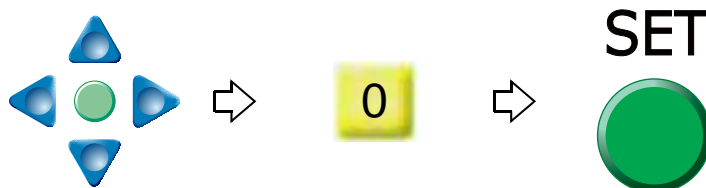
(b) To select "A"



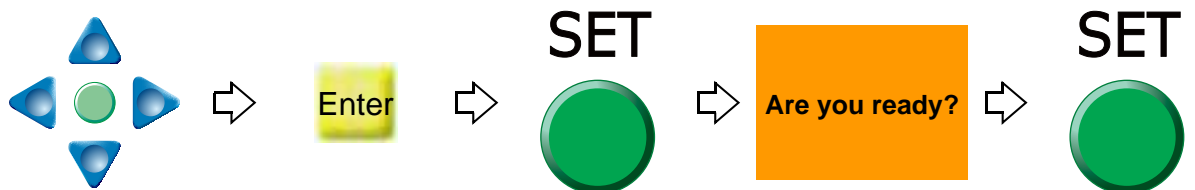
(c) To select "1"



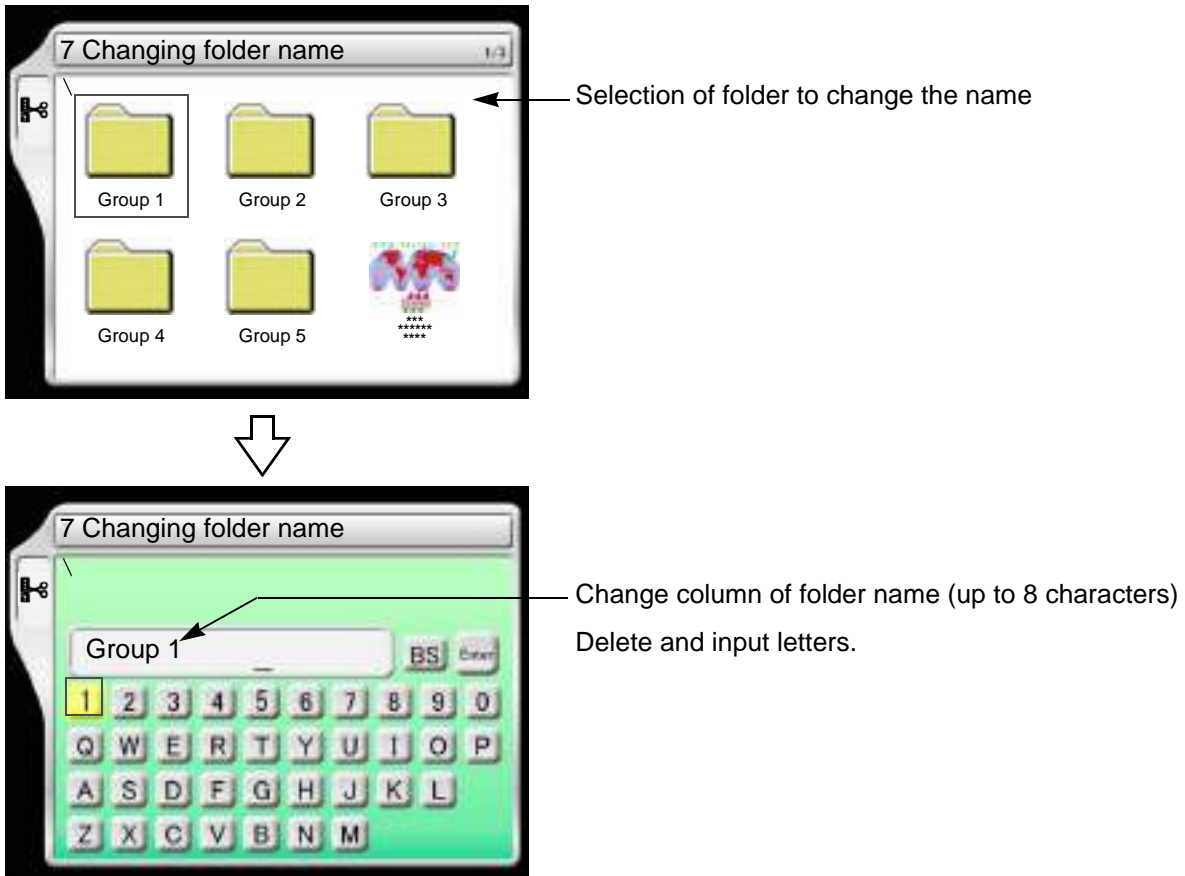
(d) To select "0"



(e) To select "Enter" and decide



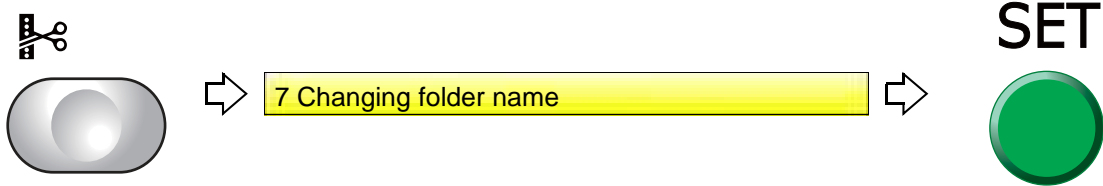
1-5. To change a folder name (Changing folder name)



1-5-1. How to operate

The following is an example of changing the folder name from "Group 1" to "Design1".

(1) To open screen



(2) To select a folder

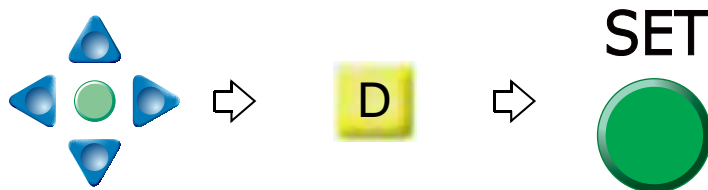


(3) To change a folder name

(a) To return the cursor to the top of the folder name



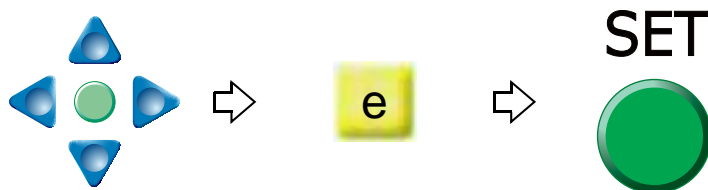
(b) To select "D"



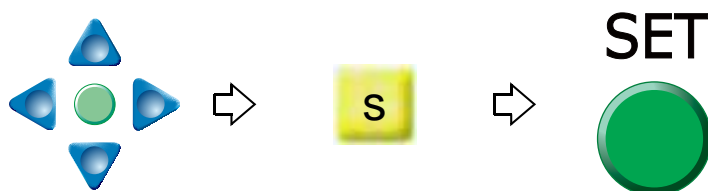
(c) To set to make small letters possible to be input



(d) To select "e"

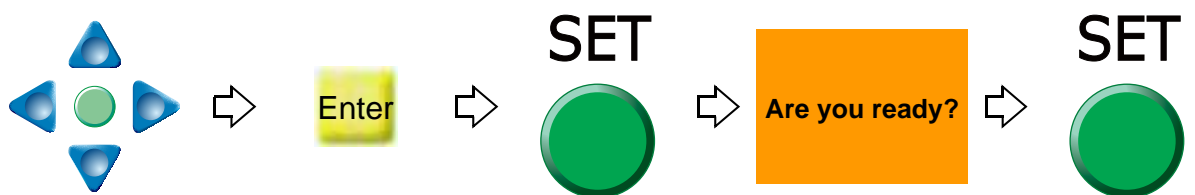


(e) To select "s"



(f) Input remaining characters (ign1).

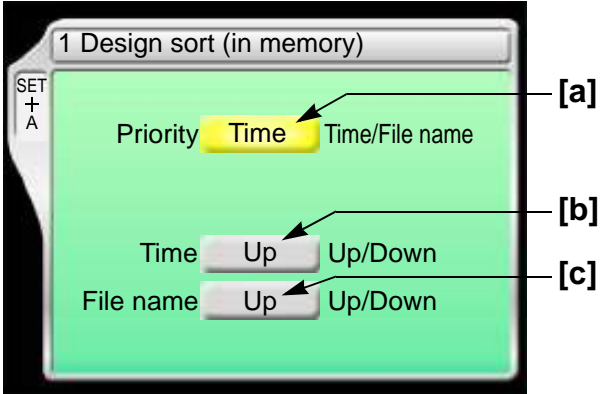
(g) To select "Enter" and decide



1-6. To sort a design (Design sort "in memory")

This function sorts designs in the machine memory by turns from the front. The folder is displayed in advance of design.

1-6-1. Screen



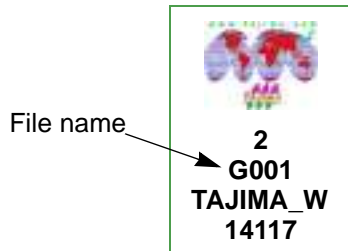
[a] Priority to sort

Time

It gives priority to updated time. When selecting "Time", perform the setting of the following [b].

File name

Give priority to the file name of the design. When selecting "File", perform the following setting [c].



[b] Sorting method in "Time"

Up: Old → New

Down: New → Old

[c] Sorting method in "File Name"

Up: Digit/Symbol → ABC

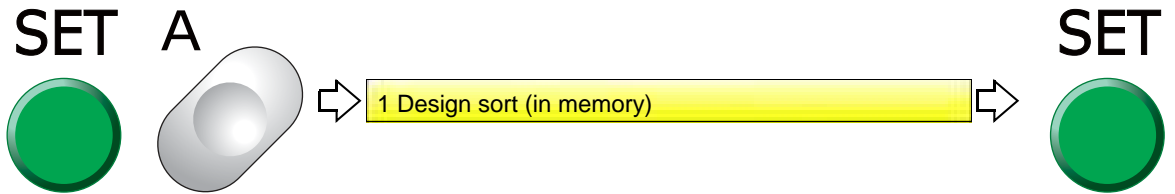
Down: ABC → Digit/Symbol

1-6-2. How to operate

The following is an example of setting sort of the design giving the priority to "Time" and to "New → Old".

(1) Set to main screen.

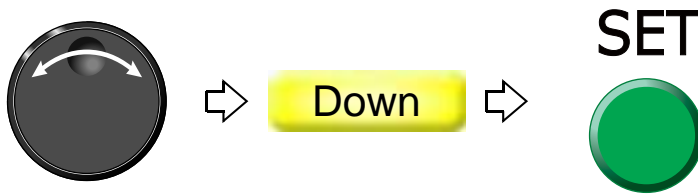
(2) To press A key while pressing SET key, and press SET key further



(3) To select priority to sort



(4) To select sorting method



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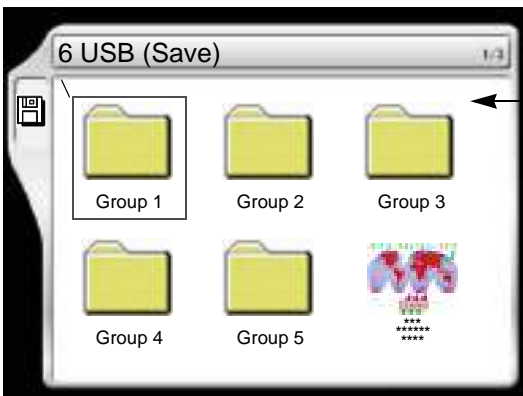
1-7. To store a design to a USB memory (USB "Save")

This operation requires input of the password.

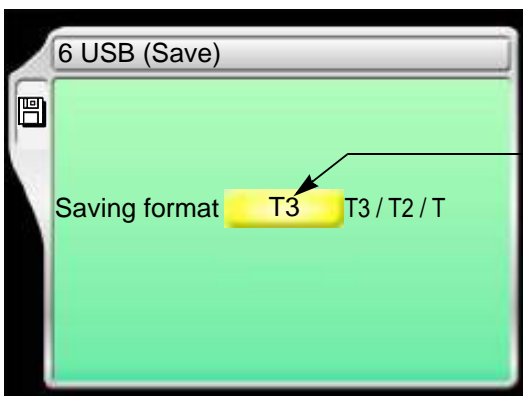
1-7-1. Screen



Inputting column of password



Selection of design to store into the USB memory



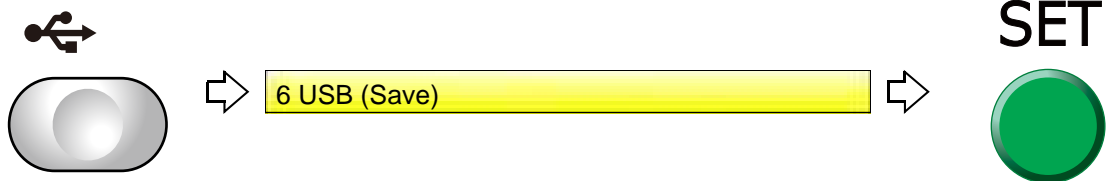
Saving format to USB memory
Usually, select "T3".

1-7-2. How to operate

The following is an example of saving designs into the USB memory.

(1) To set USB memory

(2) To open screen



(3) To cancel the password

Regarding canceling method, refer to the detail page. (p.141)

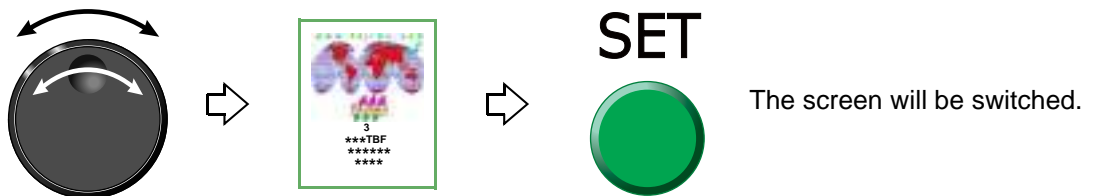
(4) To select a design

The operation differs depending on the storing place of the design.

(a) Design in folder



(b) Design on screen

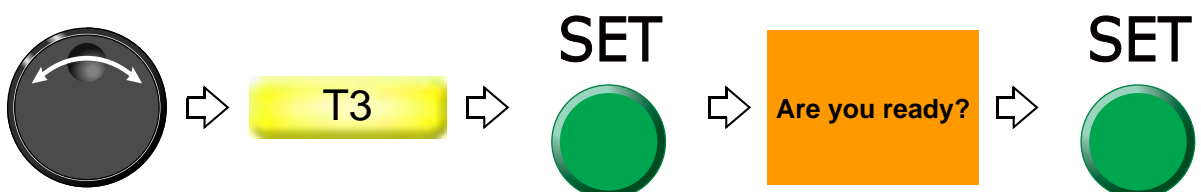


(c) To select "Enter" and decide



When changing the file name, refer to the detail page. (p.188)

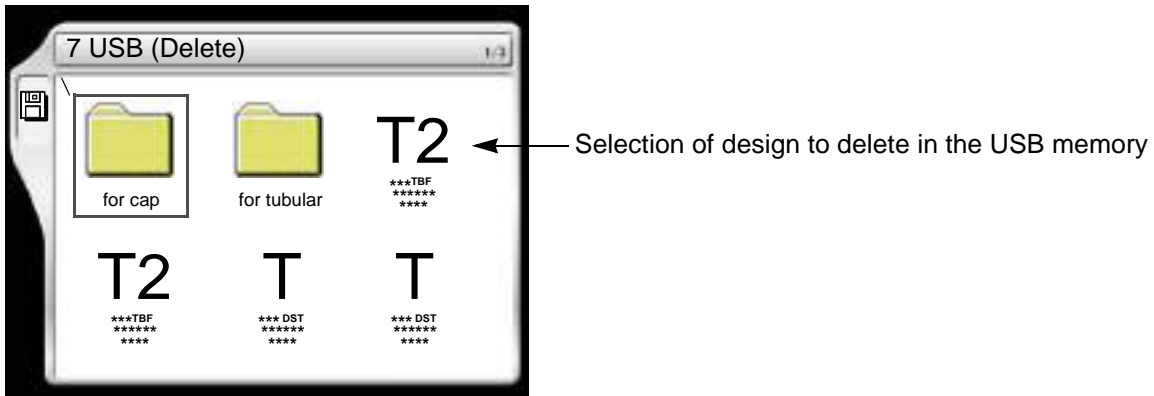
(5) To select saving format to USB memory and decide



2. Design stored in USB memory

2-1. To delete a design (USB Delete)

2-1-1. Screen

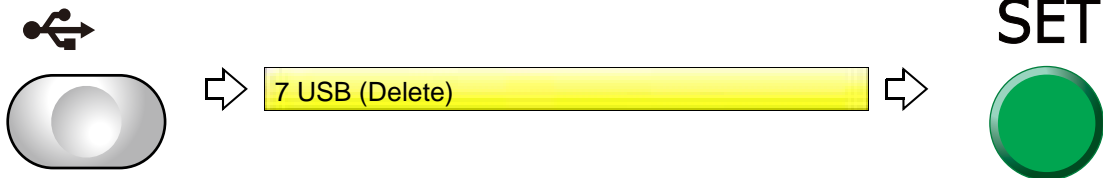


2-1-2. How to operate

The following is an example of deleting a design.

(1) To set USB memory

(2) To open screen



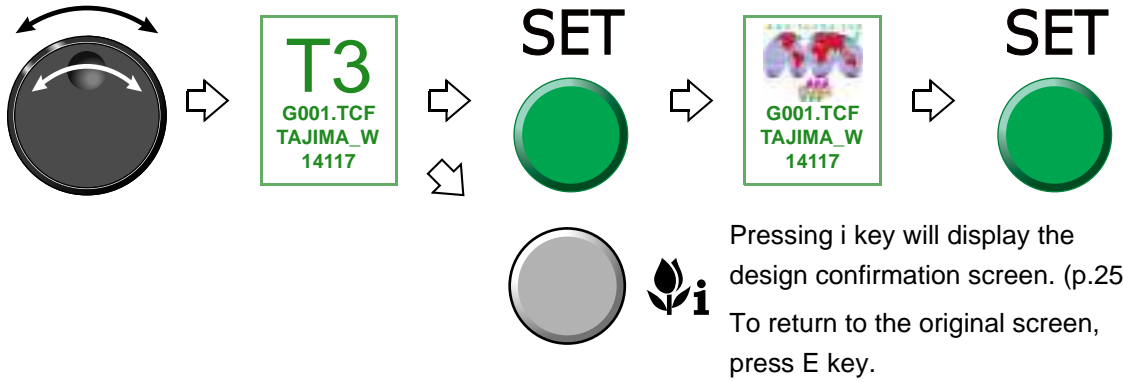
(3) To select a design

The operation differs depending on the storing place of the design.

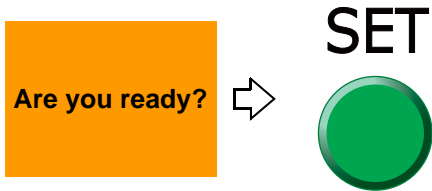
(a) Design in folder



(b) Design on screen



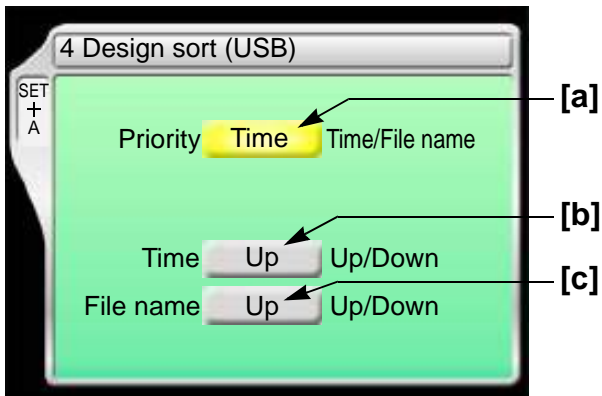
(4) To delete



2-2. To sort a design (Design sort "USB")

This function sorts designs in the USB memory by turns from the front. The folder is displayed in front of the design.

2-2-1. Screen



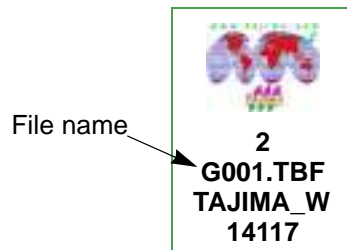
[a] Priority to sort

Time

It gives priority to updated time. When selecting "Time", perform the setting of the following [b].

File name

Give priority to the file name of the design. When selecting "File", perform the following setting [c].



[b] Sorting method in "Time"

Up: Old → New

Down: New → Old

[c] Sorting method in "File Name"

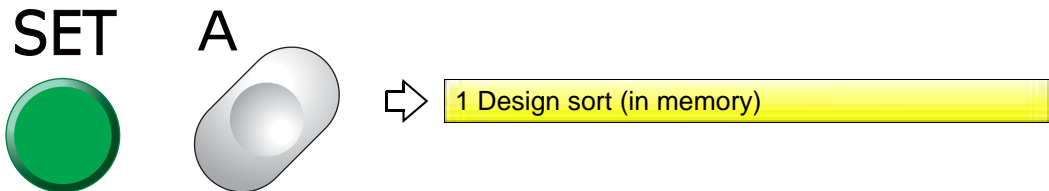
Up: Digit/Symbol → ABC

Down: ABC → Digit/Symbol

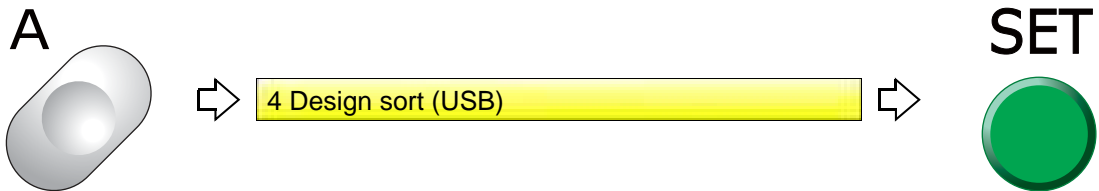
2-2-2. How to operate

The following is an example of setting sort of the design giving the priority to "Time" and to "New → Old".

- (1) To set USB memory
- (2) Set to main screen.
- (3) To press A key while pressing SET key



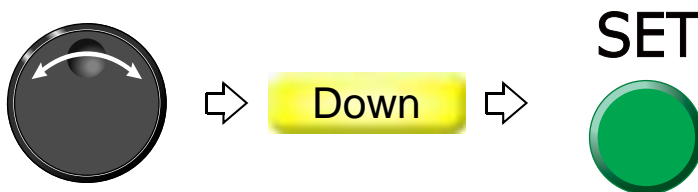
- (4) To press A key



- (5) To select priority to sort



- (6) To select sorting method



Chapter 8

Setting for optional device

1. To make optional device available for use.....	202
2. To set details of optional device.....	213
3. Functions concerning optional device.....	217

1

2

3

4

5

6

7

8

9

10

11

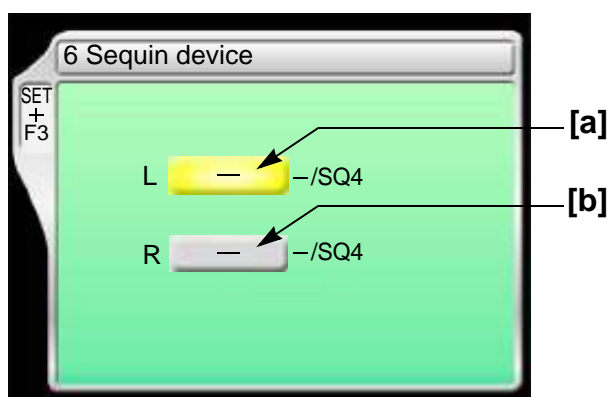
1. To make optional device available for use

Before using optional devices, be sure to check the setting condition for each device.

1-1. Sequin device IV

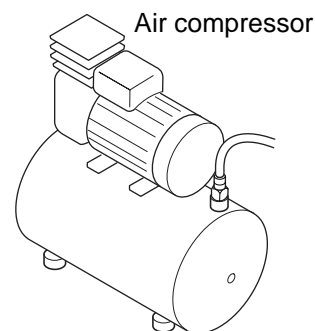
This is the setting to make Sequin device available for use. For details of the device, refer to the separate manual "Sequin device IV".

1-1-1. Explanation on the screen



[a] Type of Sequin device equipped to left side
 —: Not to use the device
 SQ4: Sequin device IV (Up/down-by-air type)
 Air compressor is required.

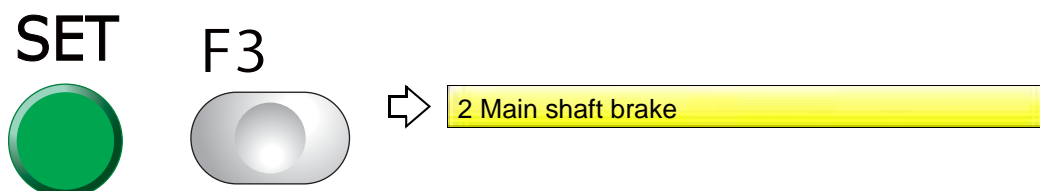
[b] Type of Sequin device equipped to the right side
 The contents of settings are the same as [a].



1-1-2. How to operate

The following is the example of installing Sequin device IV at the left side.

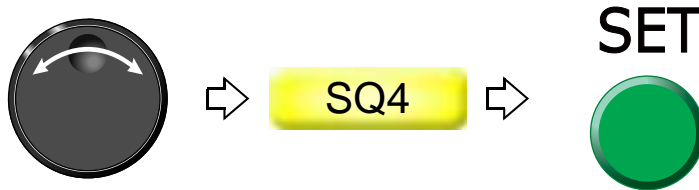
- (1) Set to main screen.
- (2) To press F3 key while pressing SET



(3) To press F3 key



(4) To select type of sequin



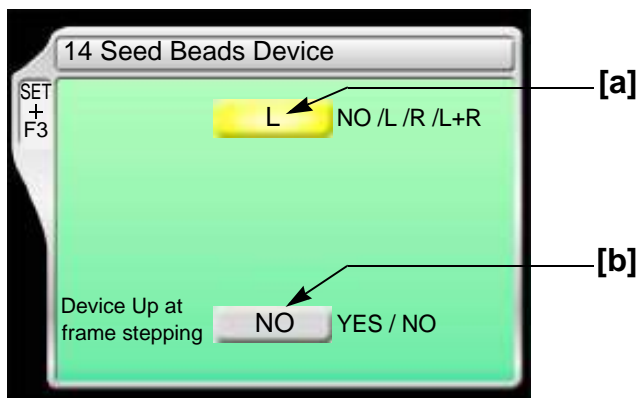
Proceed to the following operation continuously.
 Proceed to "2-1. Sequin device IV" (p.213).

1-2. Seed Beads Device

This is the setting to make Seed beads device available for use. For details of the device, refer to the separate manual "Seed Beads Device".

When you are done, change "Color change speed" to "Low". (p.124)

1-2-1. Explanation on the screen



[a] Type of device

- L: Equipped to left side
- R: Equipped to right side
- L+R: Equipped to left and right side
- NO: Not to equip

[b] Moving up of device at frame stepping

YES: To perform

NO: Not to perform

⚠ CAUTION

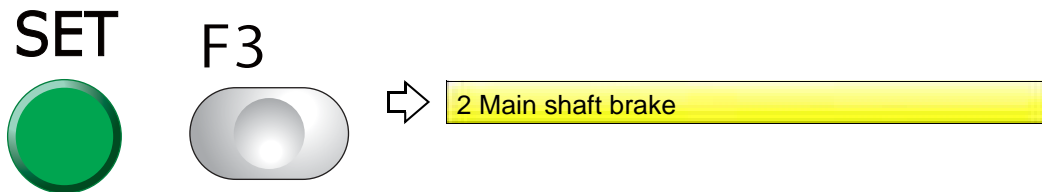
⚠ Selecting "NO" will increase manufacturing efficiency. However, the device could interfere with the frame resulting in its breakage depending on design or frame type to use.

1-2-2. How to operate

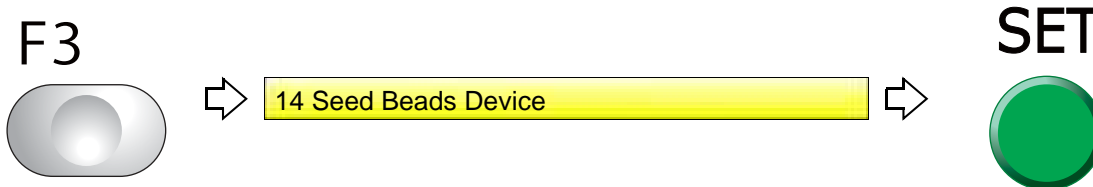
The following is an example of equipping the device to the left side and setting "To move up" the device at frame stepping.

(1) Set to main screen.

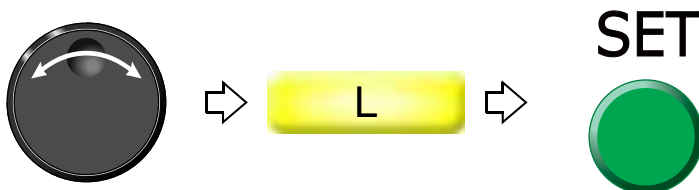
(2) To press F3 key while pressing SET



(3) To press F3 key



(4) To equip to left side



(5) To move up device at frame stepping



Proceed to "To change moving speed of needle bar case (Color change speed)" (p.124) and "To make the air compressor available for use (Air Pressure Sensor)" (p.217).

1-3. Network

This is the setting to make the network available for use by LAN connection.

1-3-1. Explanation on the screen



NO: Not to connect

Normal:

Input the design from DG/ML by Pulse or Autograph.

Auto-Load:

Input the design from DG/ML by Pulse in the order of output stand-by.

Sidekick:

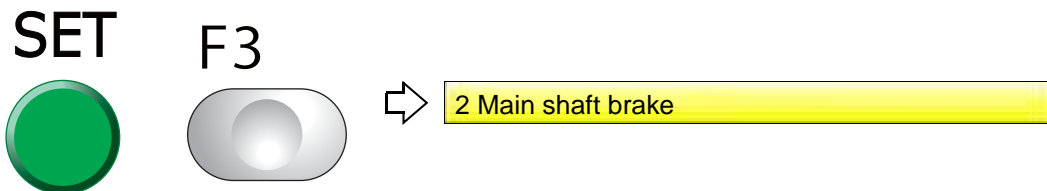
Input the design data from Sidekick.

1-3-2. How to operate

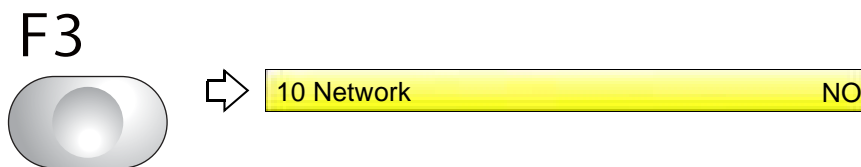
The following is an example of inputting a design from "DG/ML by Pulse" with "Normal".

(1) Set to main screen.

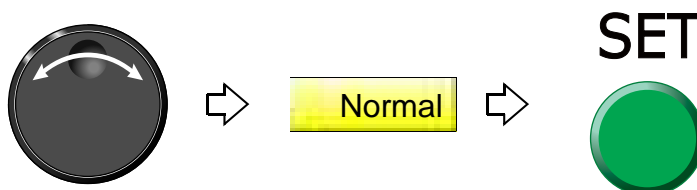
(2) To press F3 key while pressing SET



(3) To press F3 key



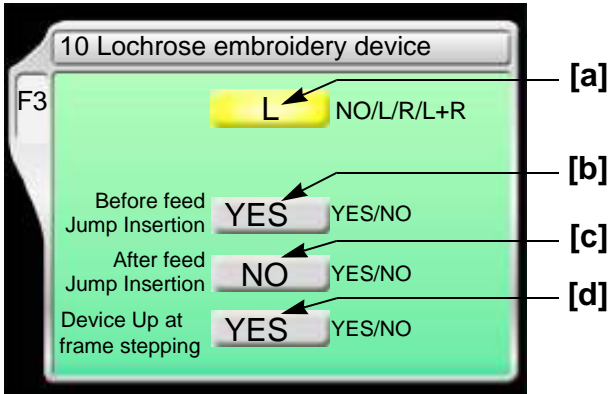
(4) Input a design with "Normal"



1-4. Lochrose embroidery device

This setting makes Lochrose embroidery device available for use. For details of the device, refer to the separate manual "Lochrose embroidery device".

1-4-1. Explanation on the screen



[a] Type of device

L: Equipped to left side

NO: Not to equip

[b] Insert jump before feeding material

Setting whether or not to insert a non-data jump code automatically before feeding out beads

YES: To insert

When beads can not be sewn effectually, select "YES". However, productivity will be decreased.

NO: Not to insert

[c] Insert jump after feeding material

Setting whether or not to insert a non-data jump code automatically after feeding out beads

YES: To insert

When you desire to tighten stitching tension of beads, select "YES". However, productivity will be decreased.

NO: Not to insert

[d] Moving up of device at frame stepping

YES: To perform

NO: Not to perform

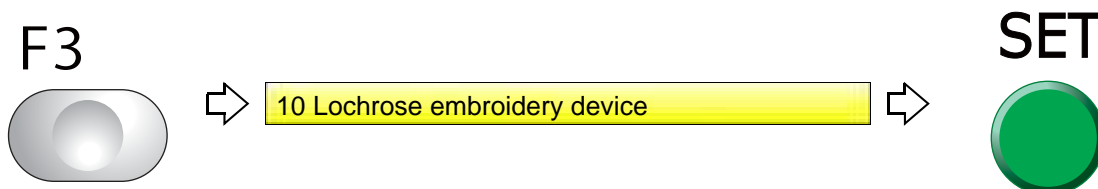
! CAUTION

! Selecting "NO" will increase manufacturing efficiency. However, the device could interfere with the frame resulting in its breakage depending on design or frame type to use.

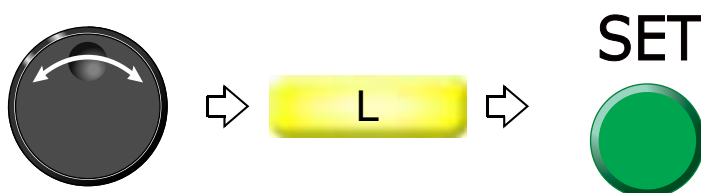
1-4-2. How to operate

The following is an example that the device is equipped to the left side and Jump is set to "To insert" before feeding out beads.

(1) To open screen



(2) To equip to left side



(3) To insert non-data jump code automatically

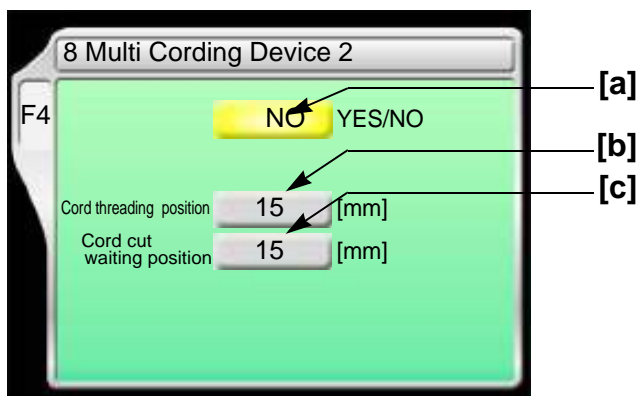


Proceed to "To make the air compressor available for use (Air Pressure Sensor).(p.217)

1-5. Multi cording device 2 (TMBR-SC only)

This is the setting for making Multi cording device 2 available for use. For details of the device, refer to the separate manual "Multi cording device 2"

1-5-1. Explanation on the screen



[a] Multi Cording Device 2

Yes: To set

NO: Not to set

[b] Height of the cord presser when passing through the cord

Setting range: 10 to 22 (mm)

[c] Height of the cord presser after the operation of ATH with cording completed

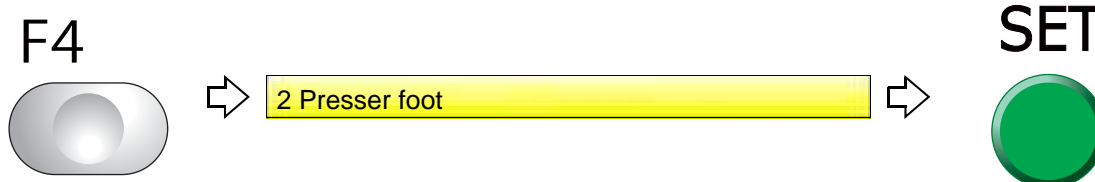
Setting range: 10 to 22 (mm)

Set the cord presser to a height easy to cut the cord.

1-5-2. How to operate

The following is an example of installing the Multi Cording Device 2 and setting the cord presser to a height of 20 (mm).

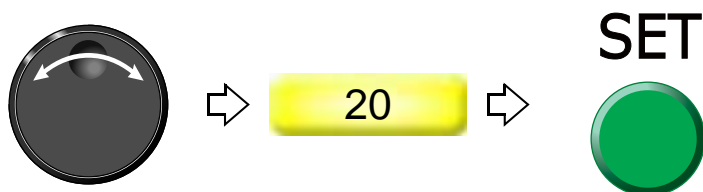
(1) To open screen



(2) To use Multi cording device 2



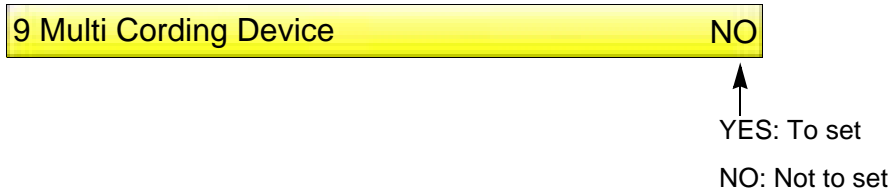
(3) To select the cord presser height



1-6. Multi cording device (TMBR-SC only)

This is the setting for making Multi cording device available for use. For details of the device, refer to the separate manual "Multi cording device"

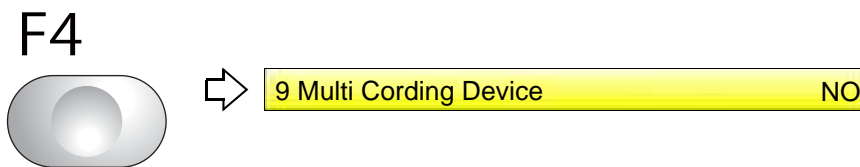
1-6-1. Explanation on the screen



1-6-2. How to operate

The following is an example of equipping Multi cording device.

(1) To open screen

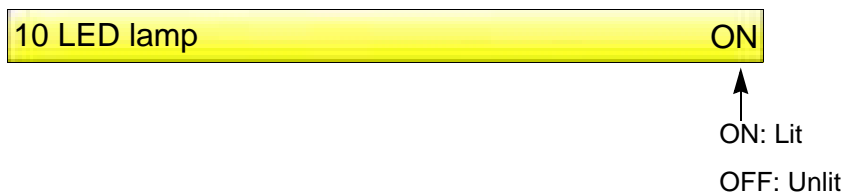


(2) To use Multi cording device



1-7. To turn ON/OFF LED lamp

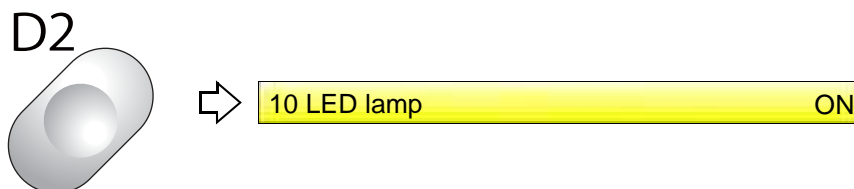
1-7-1. Explanation on the screen



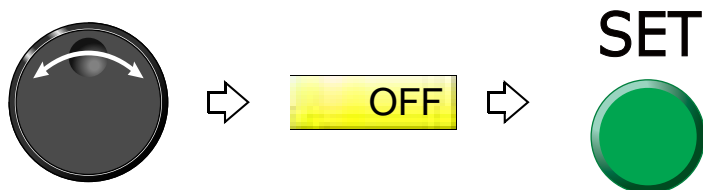
1-7-2. How to operate

The following is an example of turning OFF the LED lamp.

(1) To open screen



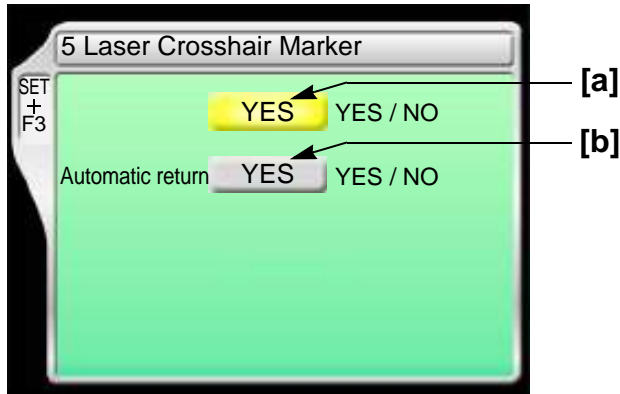
(2) To turn OFF



1-8. Laser Crosshair Marker

This is the setting to make sure that Laser crosshair marker can be used.

1-8-1. Explanation on the screen



[a] Laser Crosshair Marker

YES: To equip

NO: Not to equip

[b] Automatic return

YES: To perform

The need bar case moves to the laser crosshair marker position in the following situations, and the laser crosshair marker is lit.

However, it is the condition that the main shaft is in the fixed position, the design is not in the middle of embroidery, and no error has occurred.

When performing the data set

When the embroidery is finished (Design end by automatic data set)

When turning ON the power

Before executing the trace

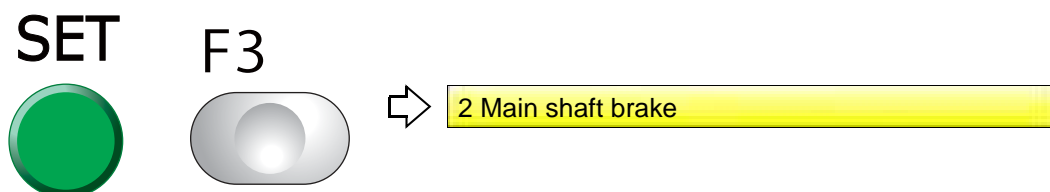
NO: Not to perform

1-8-2. How to operate

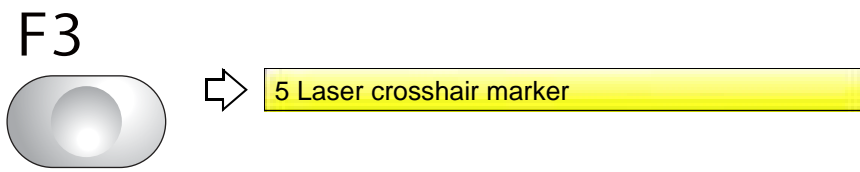
The following is an example of setting Laser crosshair marker to "To equip".

(1) Set to main screen.

(2) To press F3 key while pressing SET



(3) To press F3 key



(4) To equip

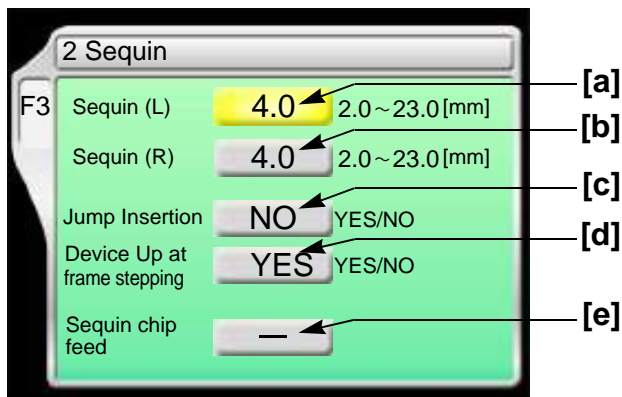


2. To set details of optional device

2-1. Sequin device IV

The detail of the device will be set.

2-1-1. Explanation on the screen



[a] Feed amount of sequin chips of device at left side

Select a value that adds about 1.0 to an external diameter of chip as a rough standard.

[b] Feed amount of sequin chips of the device at the right side

Select a value that adds about 1.0 to an external diameter of chip as a rough standard.

[c] Insertion of jump data when a sequin chip is sewn on

Select "YES" when sequin chips are not sewn effectually. However, productivity will be decreased.

YES: To perform

NO: Not to perform

[d] Moving up of device at frame stepping

YES: To perform

NO: Not to perform

! CAUTION

! Selecting "NO" will increase manufacturing efficiency. However, the device could interfere with the frame resulting in its breakage depending on design or frame type to use.

[e] Feed out the sequin chip one by one manually.(p.215)

The feed amount is the value selected at [a] or [b] described above.

2-1-2. How to operate

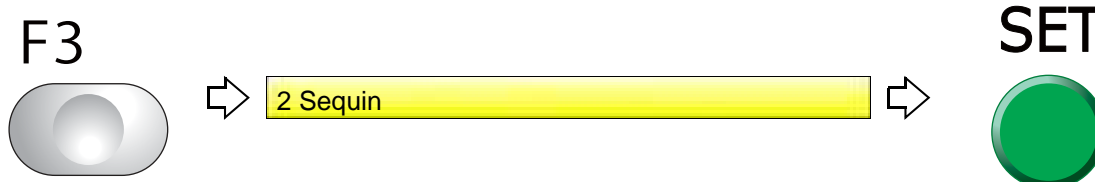
This is an example of setting in the following conditions.

Feed amount of sequin chips of device at left side: 4.0

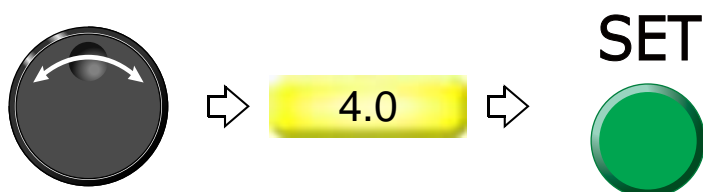
Insertion of jump data: To perform

Moving up of device at frame stepping: To perform

(1) To open screen



(2) To select feed amount of sequin chips of device at left side



(3) To insert jump data



(4) To move up device at frame stepping



Proceed to "To make the air compressor available for use (Air Pressure Sensor).(p.217)

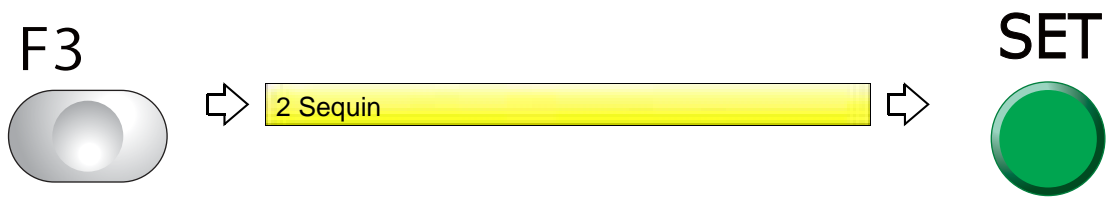
2-1-3. How to operate

! CAUTION

⊘ When performing this operation, do not put your hands etc. near the needle or on the machine table. You could be injured by up/down of the device or moving right and left of the needle bar case.

The following is the example of feeding out sequin chips of the right side Sequin device one by one.

(1) To open screen



(2) To move the cursor to "Sequin chip feed"



(3) To select R (Right-side Sequin device)



(4) To feed sequin chips

Pressing the frame travel key (up-arrow key) each time will feed out a sequin chip one by one.

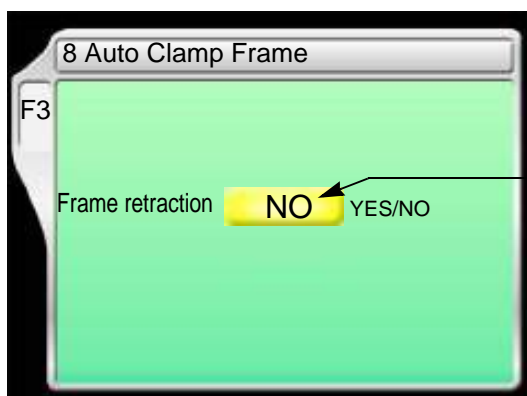


2-2. Auto Clamp Frame

After finishing of the embroidery, move the frame to the position where the frame does not interfere with the needle bar case.

This function can be used only when "C-7: Frame type Auto Clamp Frame T" is set.

2-2-1. Explanation on the screen



Move the frame after finishing of the embroidery.

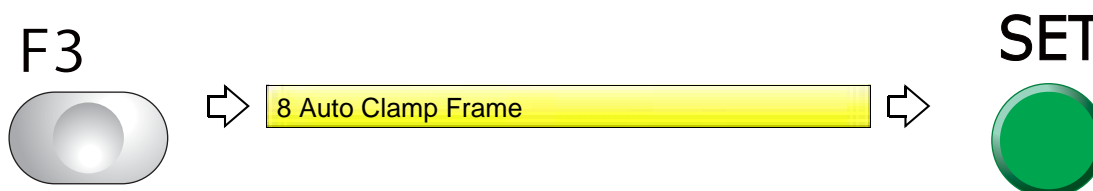
YES: To move

NO: Not to move

2-2-2. How to operate

The following is an example of moving the frame after finishing of the embroidery.

(1) To open screen



(2) To move the frame after finishing of the embroidery



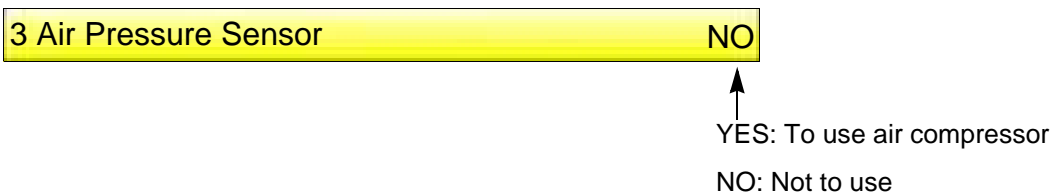
3. Functions concerning optional device

3-1. To make the air compressor available for use (Air Pressure Sensor)

Set this function when the following optional devices are equipped.

- Auto Clamp Frame
- Sequin device IV
- Lochrose embroidery device

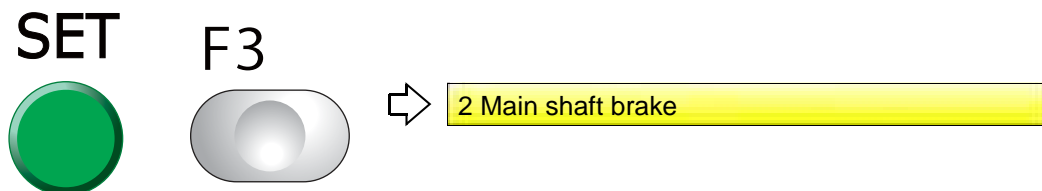
3-1-1. Explanation on the screen



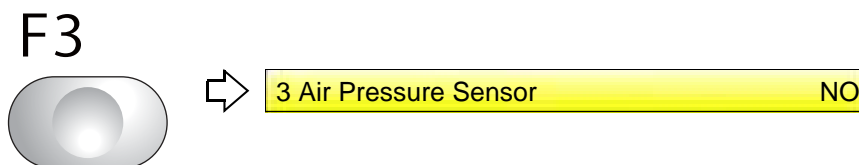
3-1-2. How to operate

The following is the example of making Air compressor available for use.

- (1) Set to main screen.
- (2) To press F3 key while pressing SET



- (3) To press F3 key



- (4) To use the air compressor



Chapter 9

Troubleshooting

1. What to do when the machine stopped	220
2. Trouble examples and Corrective actions	226

1

2

3

4

5

6

7

8

9

10

11

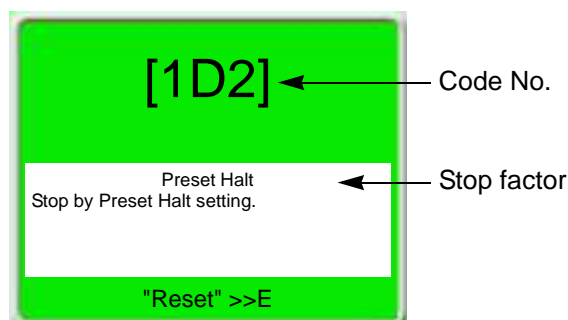
1. What to do when the machine stopped

When the machine stops during embroidery, a code No. indicating stop factor will be displayed on the screen (the illustration below is an example).

Restoring method differs depending on the code Nos. displayed.

1-1. Normal stop

It is displayed in green on the screen. It is not a stop by abnormality of the machine.

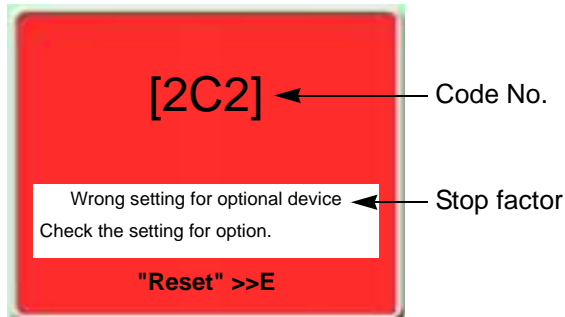


The list below also includes code Nos. which are not displayed. (Common to models)

No.	Stop factor	How to restore
1B1	Stop by frame stepping code	Perform "Start operation" or "Frame Back/Forward operation", or press any operation key (excluding manual frame travel key) to continue operation of the machine.
1B2	Stop by color change code	
1B3	Stop by end code	
1B4	Stop by thread trimming code	
1B6	Stop by automatic color change (free setting) offset code	
1N8	Stop by temporary stop code	
1C1	Stop by stop switch during frame stepping	Start the machine.
	Stop by stop switch during trace	To start the operation again, press SET key. To reset the setting, press E key.
	Do not turn OFF the power during display of 1C1. It may not possible to continue embroidery if the power is turned OFF.	
1D1	Stop at all-head stitching start point after Frame Back	Start the machine and continue embroidery.
1D2	Stop by preset halt (except oil, lochrose)	Press the E key.
1D5	Stop by Preset halt (run out of beads)	
1D8	Stop by Preset halt (ATH cleaning)	
OIL	Preset Halt (Oil)	Lubricate to the necessary spots, and press E key.

1-2. Abnormal stop

It is displayed in red on the screen. The trouble will occur when the movement of the machine comes off from normal position etc.



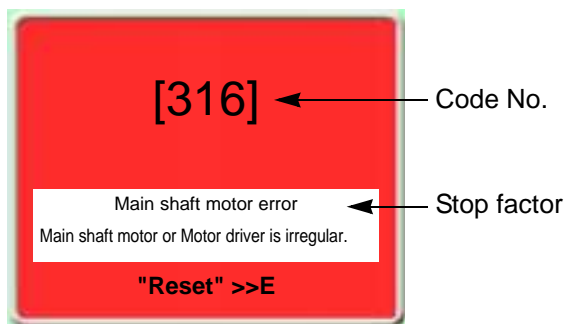
No.	Stop factor	How to restore
211	The main shaft has stopped deviating from the fixed position.	Return the main shaft to the fixed position. Check the main shaft fixed position sensor.
221	The embroidery frame moved to the travel limit position (left) (+X direction).	Move the frame manually so that embroidery can be performed within the set range.
222	The embroidery frame moved to the travel limit position (right) (-X direction).	
223	The embroidery frame moved to the travel limit position (front) (+Y direction).	
224	The embroidery frame moved to the travel limit position (rear) (-Y direction).	
225	The frame move to the limit position during trace.	Press the E key. Check the current frame position.
	The frame moved to the software limit position during trace.	Press the E key. Check setting range of software frame limit.
228	Table up/down operation was performed when the frame was positioned at the front.	Move the frame to the rearmost position.
229	The machine was stopped during Power resume.	Perform Power Resume again.
251	Oil of lubricating pump is lacking.	Lubricate to the lubrication tank.
274	Presser foot error (TMBR-SC)	Turn "OFF/ON" the power. Check or replace the control card.
291	Upper thread breakage is detected.	Check thread.
	TC sensor card error	Replace TC sensor card.
293	Under thread breakage is detected.	Check under thread.
2B1	Network does not work normally.	Check connecting status of cable, setting status of device such as personal computer.
2B3	Data exists in an end code.	Correct design data.
2B4	Function code error	
2B5	Sequin data error	
2B7	Data set is not completed.	Set data.

No.	Stop factor	How to restore
2BA	Memory capacity exceeded	Delete unnecessary design(s) registered in the memory.
2BB	Available range to perform Frame Back was exceeded.	Do not perform Frame Back any more.
2BC	No design is registered in the memory at all.	Register designs in the memory.
	The delete of design in process of embroidery was attempted.	To perform memory delete of design in process of embroidery, perform data input of other data or perform data input of the same design again.
	Data edit was attempted during embroidery.	Do not perform data edit during embroidery.
2BE	Start and End codes are not set as a one pair in satin conversion, sequin, boring and low speed code.	Set again so that start and end codes become as a pair.
2C1	Machine was started during setting of data edit or needle bar selection.	Start the machine after ending the setting.
2C2	Setting of option is incorrect.	Set correctly.
2C7	Wrong password is input.	After pressing E key, input the correct password.
2C8	Sleep mode key was pressed during trace.	Press the E key.
2C9	Time was changed during setting of Password (Time-based Limit).	Press the E key.
2CA	The power is not turned "OFF/ON".	Turn "OFF/ON" the power.
2CE	Stop by safety device	After removing the obstacle, press E key, then press the start switch.
2E2	Air pressure of the regulator has become lower than the rated value.	Check the air compressor. Check the origin of air supply.
2E3	Power supply failed during operation.	Perform power resume operation after turning ON the power.
B01	Abnormality occurred in reading/writing.	Copy design to a new USB memory and use it.
B04	The USB memory is not inserted.	Insert.
BC1	The design which you try to input is not found in design spooler.	Check the condition of the design spooler.
BC2	The same file name exists in the USB memory.	Change the file name.
BC5	Insufficient remaining capacity of the USB memory	Replace with a USB memory with enough remaining capacity.
BF1	When Network connection to host personal computer is performed, IP Address could not be obtained from DNS server	Check IP address of DNS server. Correct "IP Setting.ini" file. Check operating condition of DNS server.
BF2	There was some error in the contents of "IP Setting.ini" file for Network setting.	Correct contents of "IP Setting.ini" file.
5B1	It is not possible to input data due to abnormal contents of configuration in TCF design.	Check the design.

No.	Stop factor	How to restore
5B2	Network does not work normally.	Check connecting status of cable, setting status of device such as personal computer.
5C1	Data set was performed without Frame Origin Memory after installation of software. The machine was stopped during operation of Frame Origin Memory.	Perform Frame Origin Memory.
5C2	Machine was started during moving up/down of Sequin device.	Start the machine after up/down operation of sequin device is completed.
5V6	General external device is operating.	Operate the machine after general external device is stopped.

1-3. Stop due to malfunction

It is displayed in red on the screen. It is caused by card, harnesses or communication error. If the below code numbers are displayed, consult the distributor.



No.	Stop factor	How to restore
311	Encoder A signal status does not change for 5 seconds. Motor or motor belt failure.	Check the connection of encoder signal wire. Check the excitation of the main shaft driver. Check the motor or the motor belt.
312	Fixed position signal (Main shaft Z signal) does not change during operation.	Press the E key. Check the connection of the main shaft motor or the photo-interrupter card. If it is not possible to recover from the trouble, replace the main shaft motor or the photo-interrupter card.
316	Main shaft motor error or main shaft driver error	Turn "OFF/ON" the power, or switch from sleep mode to normal mode. (Each driver setting will be reset.) When it is not possible to recover from the trouble, replace the card.
322-*	Abnormality of X-axis driver *Description of mark differs depending on factor. The same is applied to No.323.	
323-*	Abnormality of Y-axis driver	

No.	Stop factor	How to restore
32A	The machine cannot memorize excitation of X-axis driver.	Turn "OFF/ON" the power. Check connection of each frame driver motor and/or sensor wire.
32B	The machine cannot memorize excitation of Y-axis driver.	Replace the corresponding frame driver or frame motor.
32C	Incompletion of X-axis frame travel	Turn "OFF/ON" the power, or switch from sleep mode to normal mode. (Each driver setting will be reset.) When it is not possible to recover from the trouble, replace the card.
32D	Incompletion of Y-axis frame travel	
32E	The machine cannot complete X-axis origin search within the time.	Check setting for embroidery space at software installation. Check the sensor card.
32F	The machine cannot complete Y-axis origin search within the time.	
354	Sequin motor, color change motor, ATH motor overcurrent	Turn OFF/ON the power. Check and/or replace the head card. Decrease R.P.M.
362	Jump motor overcurrent	
376	Presser foot position error(TM BR-SC)	Turn "OFF/ON" the power. Check or replace the control card.
378	Presser foot driver error(TM BR-SC)	
382	The needle position signal status during color change does not change for 1 second and more.	Check the power supply circuit for the color change motor. Check the potentiometer (needle position sensor).
383	Needle position was abnormal.	Check setting for the number of needles at installation of software.
	There was no needle position signal during rotation of the main shaft.	Check the potentiometer (needle position sensor).
387	Color change motor sensor error	Check encoder signal wire of color change motor.
3A6	ATH movable knife retractable position has become nonuniform.	Check the position of ATH movable knife.
3A9	Upper thread holding motor overcurrent	Turn OFF/ON the power. Check and/or replace head card.
3B5	Communication error (between CPU card USB hub), power supply system error of 280 V or 24 V, abnormality of power supply card	Check harness connection between CPU card and USB hub. Check and/or replace power supply card. Check and/or replace DC power supply.
	Wrong selection of model at installation of software	Install the software again.
3B7	Communication error inside the controller, bad communication (between CPU card and switch card)	Turn "OFF/ON" the power. Check harness connection between CPU card and switch card. Replace CPU card or switch card.
3BF	Remaining number of beads cannot be grasped.	Check and/or replace the head card.

No.	Stop factor	How to restore
3C1	Contact error of the bar switch or start/stop switch, breakage of the switch harness, or bad connection of the connector	Check the connector and the connecting terminal. Replace the limit switch/switch assembly.
3D6	There is abnormality in the program or in the CPU card.	Check the CPU card.
	The software is not installed normally.	Install the software.
3DB	System RAM insufficient capacity	Turn "OFF/ON" the power. Replace CPU card.
3DC	Memory device error	Turn "OFF/ON" the power. Install the software. Replace the DOM or CPU card.
3DD	System installation error	Install the software. Replace DOM or CPU card.
3DE	External memory device error	Turn "OFF/ON" the power. Check/replace the USB memory, or replace the CPU card.
6D1	File error of frame drive parameter	Install the software.
6D2	Disconnection of communication line	Turn "OFF/ON" the power. Check harness connection between CPU card and USB hub. Check and/or replace power supply card. Check and/or replace DC power supply. Install the software again.
6D3	Disconnection of USB communication line in I/O card, communication error	Turn "OFF/ON" the power. Check connection of USB cable Check and/or replace power supply card. Check and/or replace DC power supply. Install the software again.

2. Trouble examples and Corrective actions

2-1. Thread often breaks.

Cause	Troubleshooting
Improper thread tension	Adjust tension. Upper thread: 120 to 140g, under thread: 20 to 30g
Poor thread flow	Use good quality thread. Spray silicone.
Direction of needle is bad or needle bents.	Adjust to face to the front or to the right a bit. Replace.
Applique glue is stuck on needle.	Remove adhered glue.
Lint, run-out of oil of rotary hook	Clean and lubricate the machine.
There are numerous tiny stitches of 0.5 mm or less in design data.	Remove tiny stitch(es).
The fabric is lifted too much against the needle plate. The fabric touches the needle plate too much.	Stretch the fabric again so that it touches needle plate lightly.
Run-out of oil of needle bar	Lubricate.
There is a scratch on the thread course.	Grind a scratch with sandpaper etc. Replace them.
Bad height of the presser foot	Perform adjustment so that height fits to fabric/material.

If the followings seem to cause the trouble, please ask the distributor for information.

- (a) The gap between rotary hook and rotary hook support is narrow. Timing between needle and rotary hook is too early or too late. Scratch, abrasion of rotary hook.
- (b) A clearance between needle and hook point is not suitable. Bad adjustment of lower dead point and/or upper dead point of needle bar.
- (c) The play of rotary hook shaft is big in back and forth direction. There is a play on the fringe of the frame.
- (d) Rotation of the main shaft is not smooth. Abrasion/breakage of neighboring parts of take-up lever drive and/or needle bar drive section.
- (e) Play of needle bar case (in right and left direction) is big.

2-2. Needle breaks

Cause	Troubleshooting
Improper thread tension	Adjust tension.
Density of design data is very high.	Correct data. Delete unnecessary underlay stitching.
The material is too thick or hard.	Use material suitable for embroidery.
Bobbin is deformed and it touches the needle.	Replace the bobbin.
Deterioration of needle, mismatching to embroidery condition	Use good quality needle. Use needle that fits to embroidery condition.
Vibration of the machine is big.	Adjust leveling.

If the followings seem to cause the trouble, please ask the distributor for information.

- (a) Abrasion of needle catcher of rotary hook. A clearance between needle and hook point is not suitable.
- (b) Improper needle location. Play of needle bar case (in right and left direction) is big.
- (c) The floor vibrates. There is a play around the frame.

2-3. Embroidery results not good

Cause	Troubleshooting
Improper thread tension	Adjust tension.
Poor thread flow	Use good quality thread. Spray silicone.
Density of design data does not match with material and/or thread.	Correct data.
Bad frame attaching and fixing of the fabric	Attach the frame correctly. Fix the fabric firmly.
The combination of thread, needle and the size of needle plate is inappropriate to the embroidery condition.	Make combination that fits to design data/material.
R.P.M. is too high.	Decrease R.P.M.

If the followings seem to cause the trouble, please ask the distributor for information.

- (a) There is a play around the frame.
- (b) Abrasion and breakage of neighboring parts of take-up lever drive and needle bar drive.
- (c) Bad take-up lever timing.
- (d) Belt tension of drive system is too strong or too weak.
- (e) Setting for the machine does not match embroidery condition.




Chapter 10

Maintenance and Inspection





1. Items that must be followed carefully.....	220
2. Cleaning.....	221
3. Lubrication	224
4. Greasing	230
5. Inspection, Repair	235
6. Adjustment of Snap-fit middle thread guide	236

1. Items that must be followed carefully

WARNING


-  Daily maintenance (cleaning, lubrication, greasing, inspection) should be performed by personnel who has been trained properly.
-  "Repair" and "Replacement of electrical component" must be done only by the service personnel assigned and trained by Tajima or qualified technician. (Consult your distributor.)
-  When starting operation again, attach all the detached covers as they originally were.

CAUTION

-  Perform daily maintenance (cleaning, lubrication, greasing, inspection). Neglect of daily maintenance could cause troubles. Damage due to neglect of daily maintenance may be judged as "Outside the scope of warranty".
-  If the machine is not used for a long period, turn the power switch ON in regular intervals. Although each circuit board of the machine has a backup battery, data may be lost about a month later because voltage of the battery will come down gradually due to electric discharge when power switch is turned off.
-  Assure enough illumination. Assure 300 lux or more for working areas including underneath part of the machine table when changing under threads or performing daily maintenance.
-  Do not turn ON the power with the main shaft fixed. The machine could be broken.

2. Cleaning

WARNING

 When performing cleaning, be sure to turn OFF the power switch. You could be injured seriously by being entangled in the machine.

Clean each section by using a commercially available cleaning tool or brush (accessory). Using of an Vacuum Cleaner or an Air Compressor will facilitate working.

Main cleaning spots are indicated by an arrow in the figure below. If dirt is highly visible at other spots besides these spots, clean up there accordingly.

2-1. TMBR-SC, TMBP-SC

(1) ATH, rotary hook

Cleaning cycle: Every day

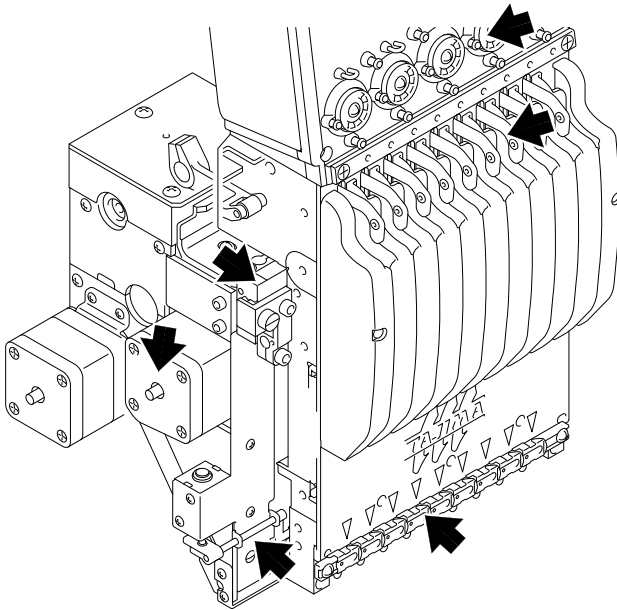
An example when using an air compressor



(2) Head

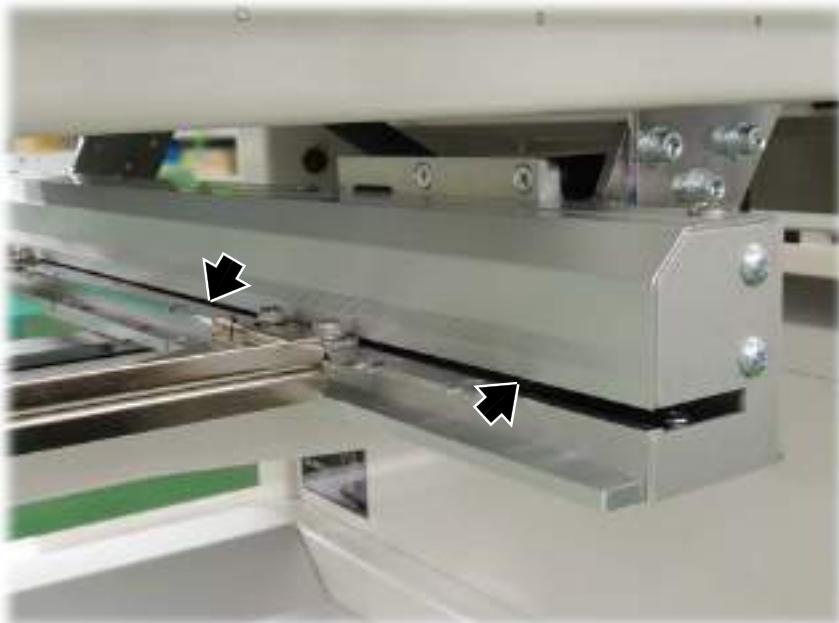
Cleaning cycle: Once/week

An example when using a cleaner



(3) Drive system

Cleaning cycle: Once/week



(4) Presser foot shaft (TMBR-SC)

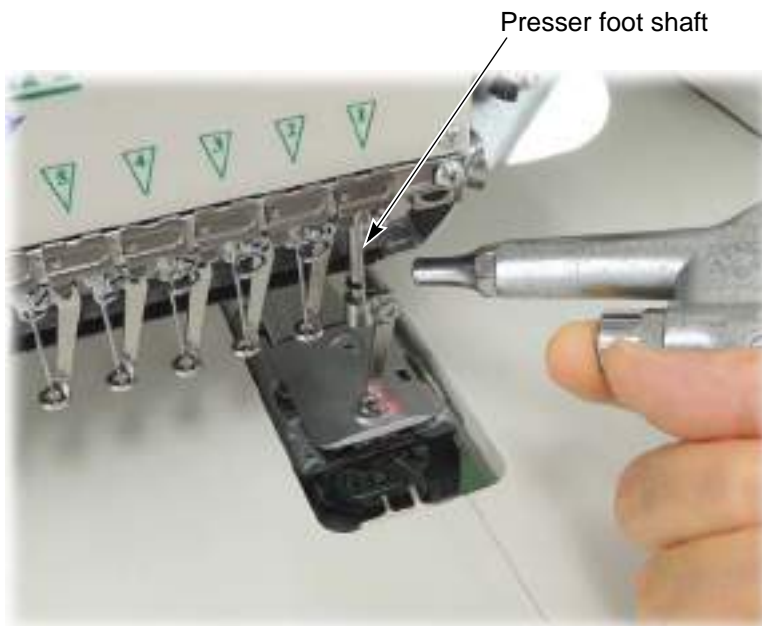
The motion of the presser foot shaft may be getting poor because of adhering thread and dust. Clean the surrounding of the presser foot shaft using an air compressor or an brush periodically.

Cleaning cycle: Twice/week

(a) Lower the presser foot by operating (SET + E) on the operation panel.(p.18)


(b) Clean the presser foot shaft.

An example when using an air compressor



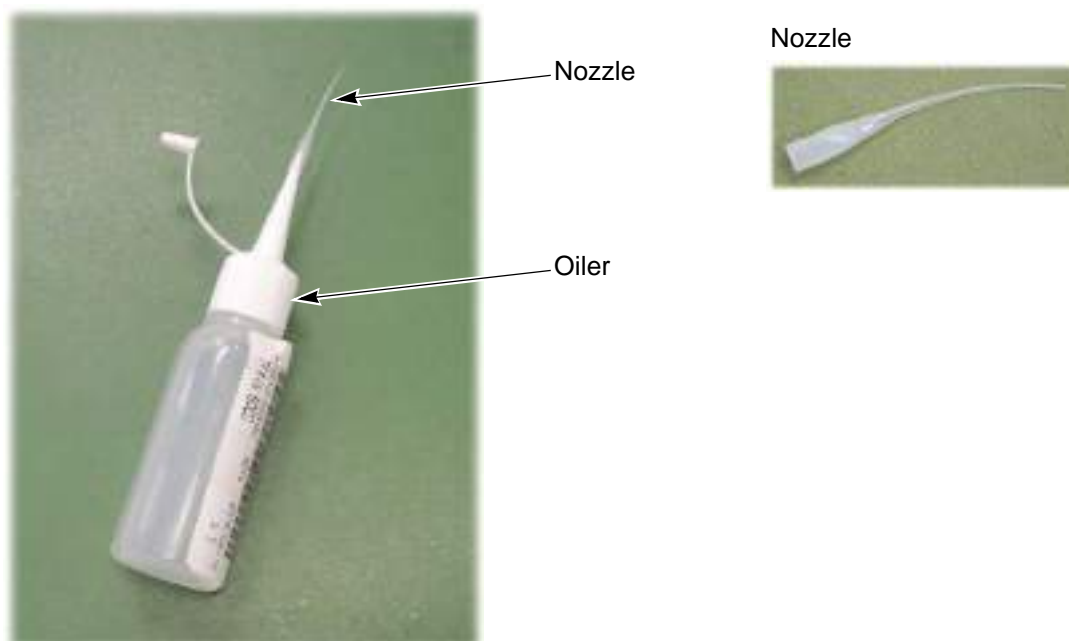
3. Lubrication

WARNING

 To perform lubrication, turn OFF the power switch. You may sustain severe injuries by being caught in the machine.

Select TF oil (packed with the machine), or the equivalent (viscosity grade = equivalent to VG20) to this one for use.

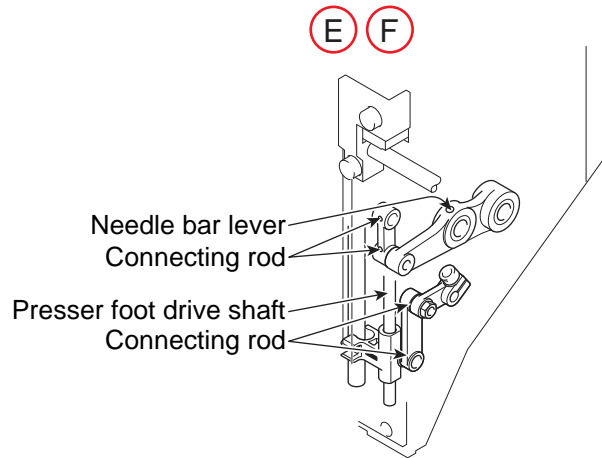
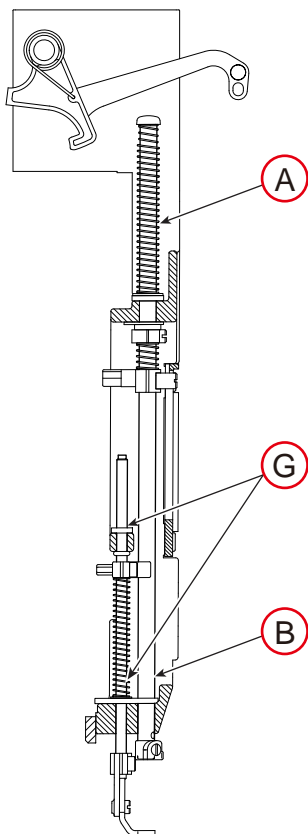
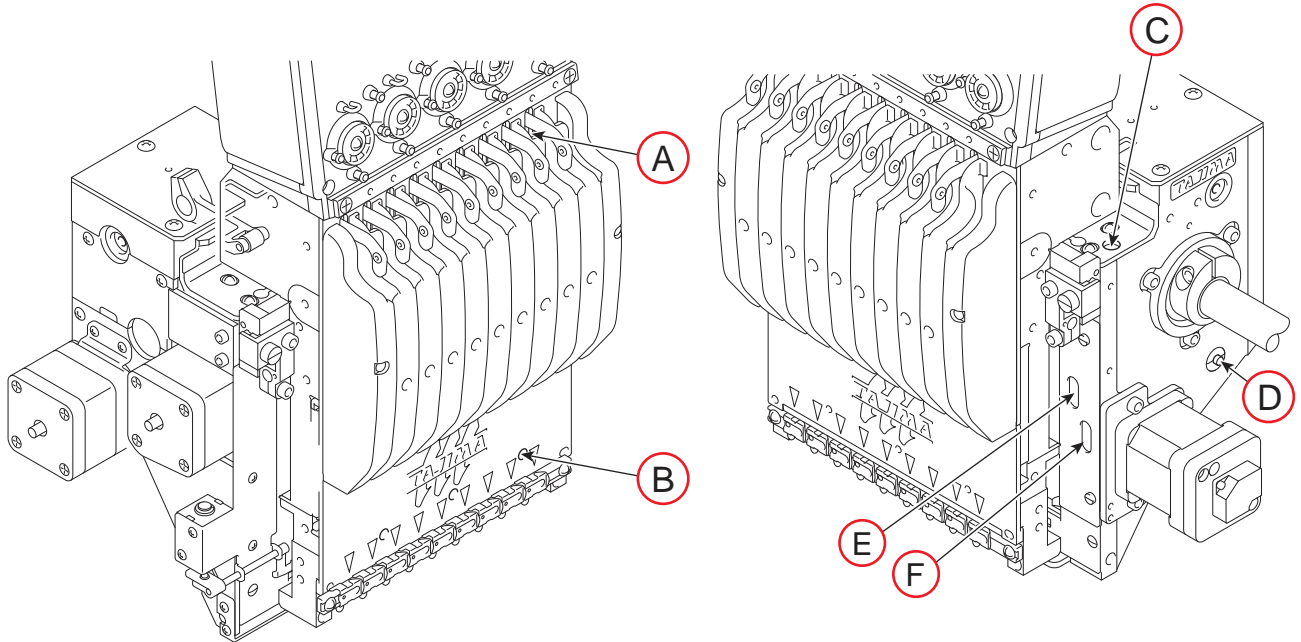
To perform lubrication, use the oiler (accessory) and its nozzle (accessory).



3-1. TMBR-SC

(1) Inside of head

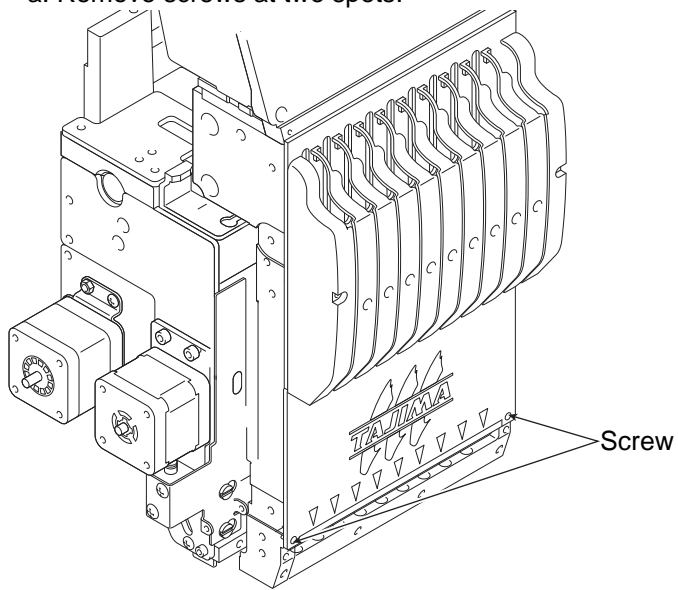
Lubrication cycle: Once/week



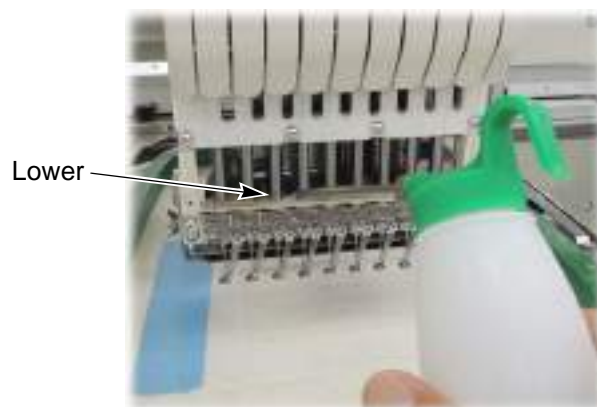
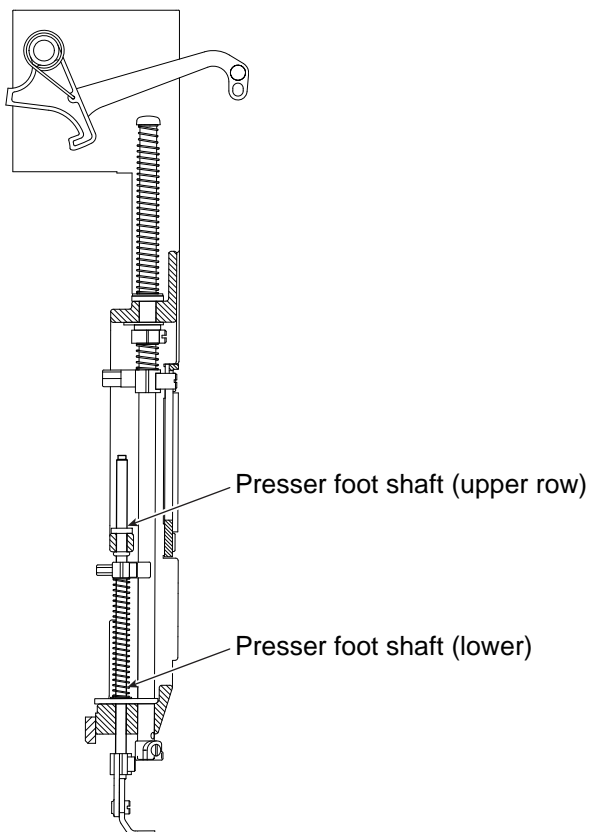
Lubricating spot	
A:	Needle bar
B:	Needle bar
C:	Needle bar drive shaft
D:	Wick of stepped pin
E:	Needle bar lever, presser foot drive shaft, connecting rod
F:	Connecting rod
G:	Presser foot shaft

[How to lubricate presser foot shaft]

a. Remove screws at two spots.



b. Lubricate the presser foot shaft (upper, lower).



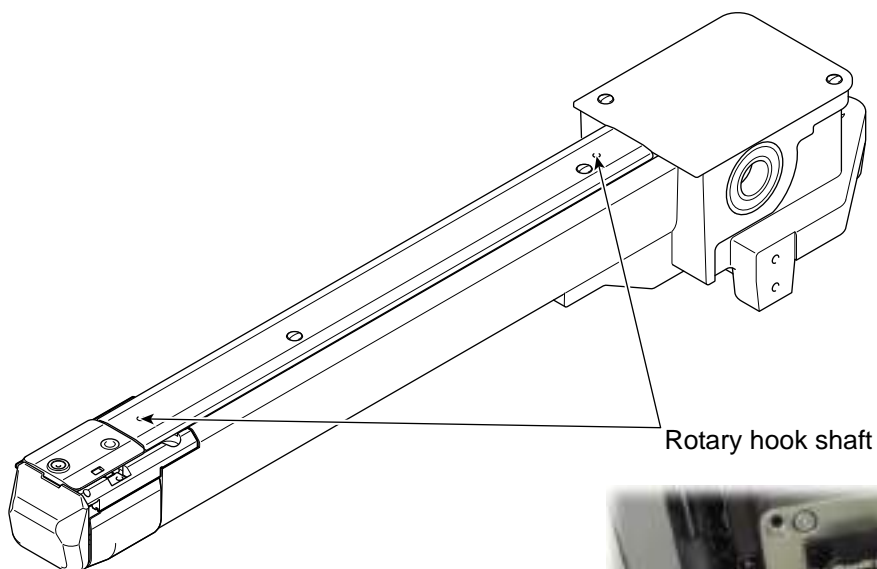
(2) Rotary hook

There are two lubricating spots (lubrication hole and raceway). When lubricating to the lubrication hole, attach the nozzle (accessory) to the tip of the oiler. Cut the tip of the nozzle according to necessary length.

Lubrication cycle: Once/5 to 6 hours

**(3) Cylinder bed**

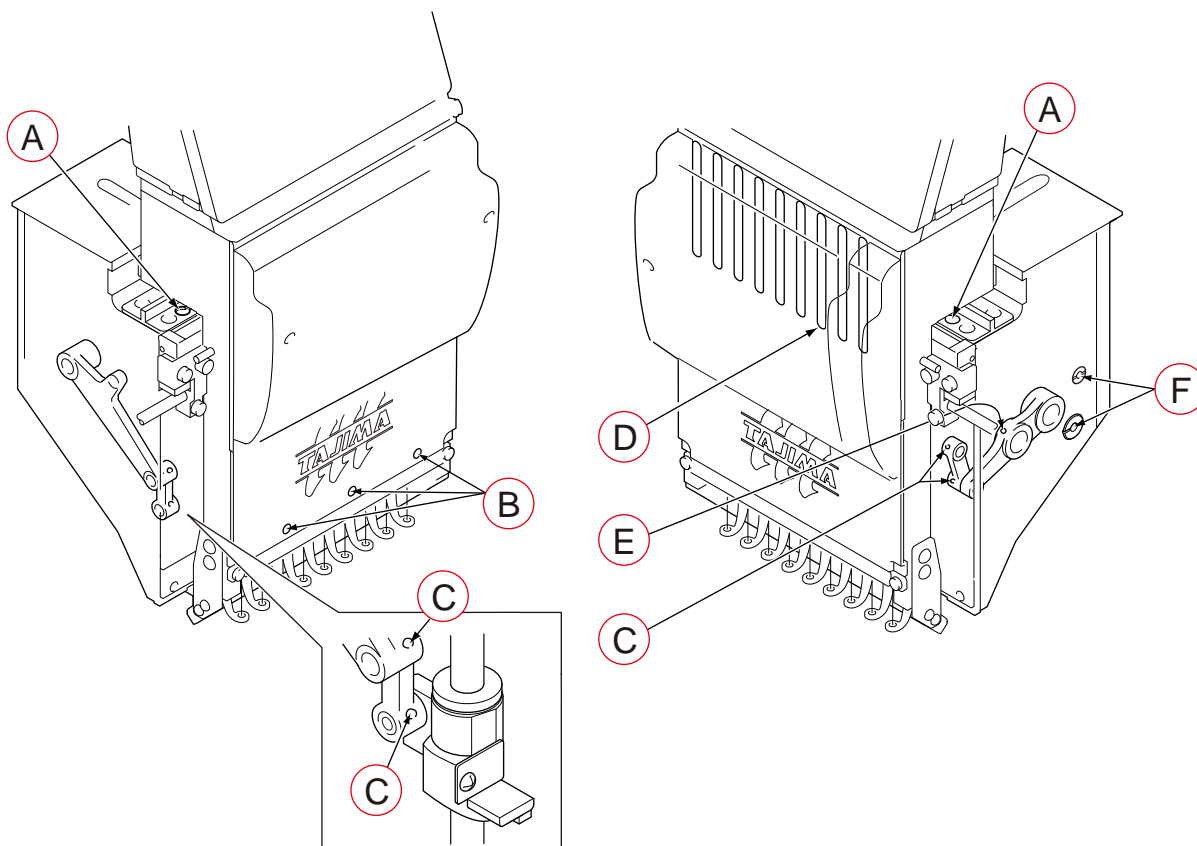
Lubrication cycle: Once/week



3-2. TMBP-SC

(1) Inside of head

Lubrication cycle: Once/week



	Lubricating spot
A	Needle bar drive shaft (Either one spot)
B	Needle bar (spot indicated by red mark)
C	Lubrication hole of connecting part
D	Needle bar (all needles)
E	Lubrication hole of needle bar lever
F	Wick of stepped pin

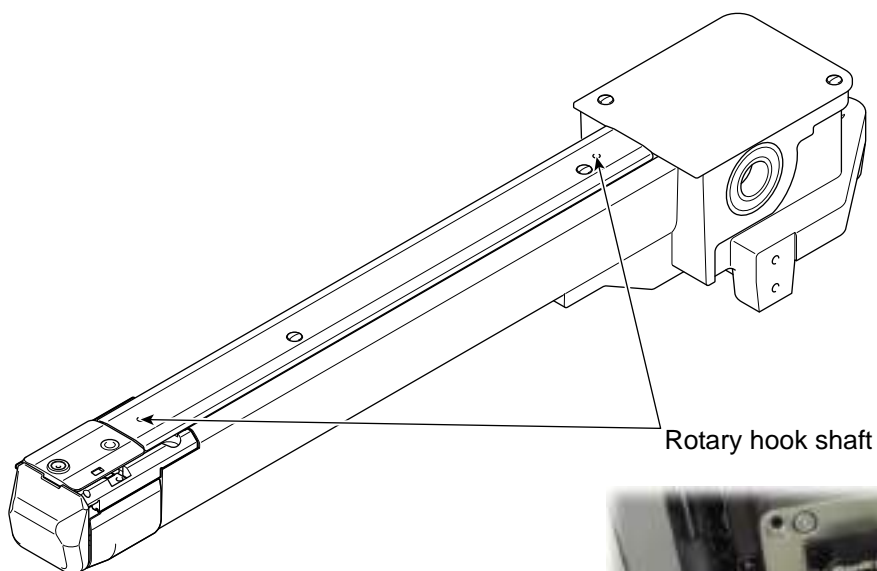
(2) Rotary hook

There are two lubricating spots (lubrication hole and raceway). When lubricating to the lubrication hole, attach the nozzle (accessory) to the tip of the oiler. Cut the tip of the nozzle according to necessary length.

Lubrication cycle: Once/5 to 6 hours

**(3) Cylinder bed**

Lubrication cycle: Once/week



4. Greasing

Before greasing, consult the distributor.

WARNING

- ! During machine greasing, turn OFF the power switch. You may sustain severe injuries due to being entangled by moving machine units.

CAUTION

- ! Use a grease specified(described below) by TAJIMA or equivalent to keep the lubricity inside of the head normally. Use of the grease except these could cause trouble due to deterioration of the lubricity. Regarding how to obtain it, consult the distributor.

[Items specified by TAJIMA]

Part name	Item No.	Base oil	Thickener
KING STAR EP NO.2: 400G	750103004000	Refined mineral oil (about 75%)	Lithium soap (about 15%)
NIG LUBE PG: 300ML	750104001000	Olefinic synthetic oil	Lithium soap

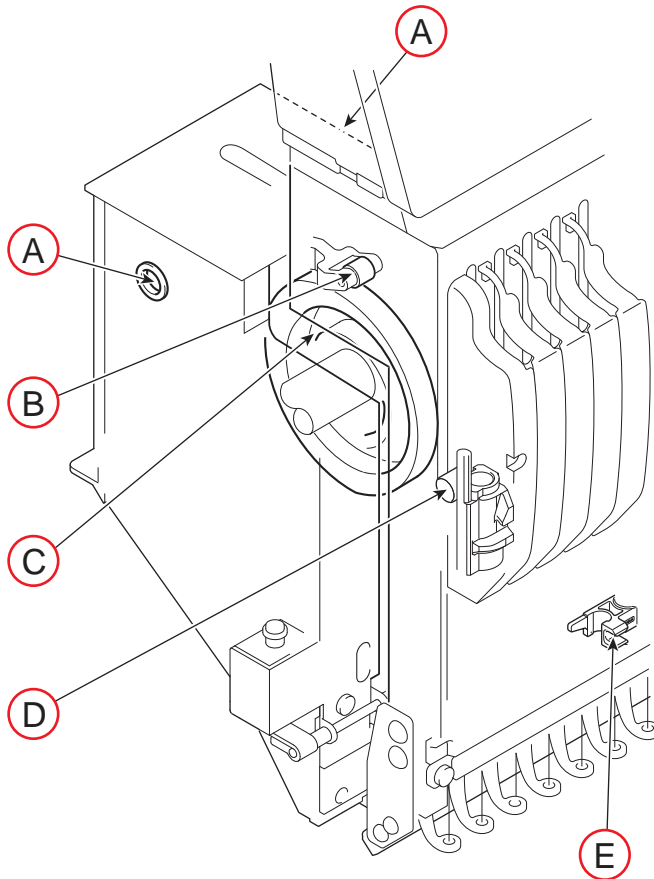
Grease manufacturer: NIPPON GREASE Co.,Ltd.

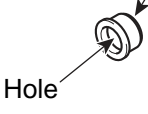
URL: <http://www.nippon-grease.co.jp/>

4-1. TMBR-SC

(1) Inside of head

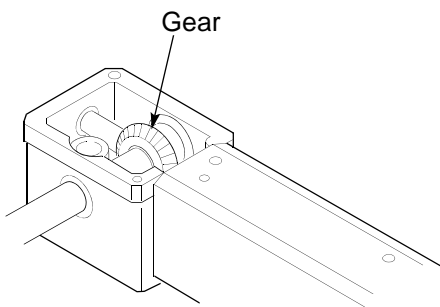
Greasing cycle: Once/3 months



Greasing spot	Grease to use
<p>A: Take-up lever shaft holder</p> <p>Bearing case lid</p>  <p>Hole</p> <p>Inject grease from the hole of the bearing case lid by using the syringe.</p>	<p>NIG LUBE PG: 300ML</p>
<p>B: Take-up lever drive lever roller</p>	
<p>C: Take-up lever cam</p>	
<p>D: Jump lever roller</p>	
<p>E: Presser foot reciprocator</p>	

(2) Cylinder bed

Greasing cycle: Once/3 months



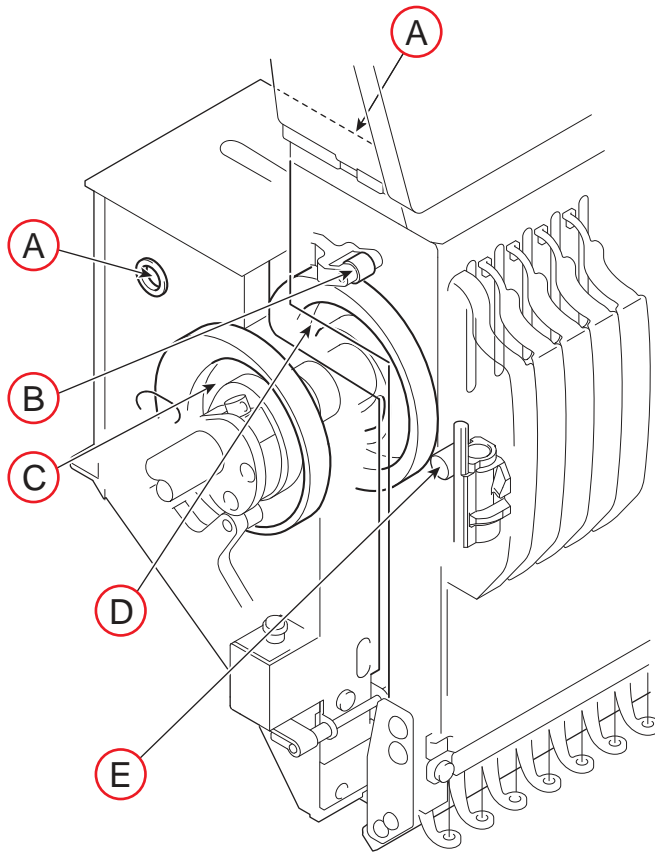
Grease to use

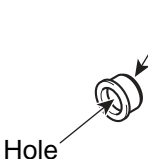
KING STAR EP NO.2: 400G

4-2. TMBP-SC

(1) Inside of head

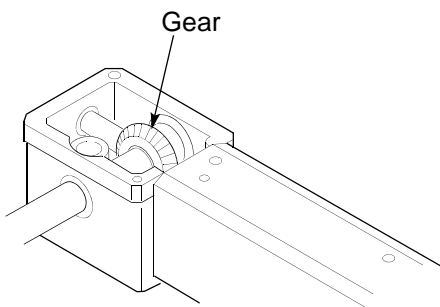
Greasing cycle: Once/3 months



Greasing spot	Grease to use
<p>A: Take-up lever shaft holder</p> <p>Bearing case lid</p>  <p>Hole</p> <p>Inject grease from the hole of the bearing case lid by using the syringe.</p>	<p>NIG LUBE PG: 300ML</p>
B: Take-up lever drive lever roller	
C: Presser foot cam	
D: Take-up lever cam	
E: Jump lever roller	

(2) Cylinder bed

Greasing cycle: Once/3 months



Grease to use

KING STAR EP NO.2: 400G

5. Inspection, Repair

! WARNING

! Before inspection, be sure to turn OFF the original power supply. Some circuits are still applied voltage even if the original power supply was turned OFF. Wait until these circuits are completely out of voltage (4 minutes) and then start working.

Inspection point	Action	Inspection cycle
Attaching of each type of cover	Attach all the covers.	At start of working
Setting condition of embroidery thread	Set it correctly.	
Check breakage and/or bent of needle.	Replace the needle.	
Lubricating condition of each section	Lubricate.	
Belt tension (main shaft, X/Y drive system)	Consult the distributor.	Once/3 months

! WARNING

! Before repairing the machine, be sure to turn OFF the main power supply. Some circuits are still applied voltage even if the main power supply was turned OFF. Wait until these circuits are completely out of voltage (4 minutes) and then start working.

! If the machine needs the repair, the repair must be done only by the service personnel assigned and trained by Tajima or qualified technician. (Consult your distributor.) Do not change the specification nor modify the parts of the machine without due consultation with Tajima. Such modification may have the risk against the operational safety.

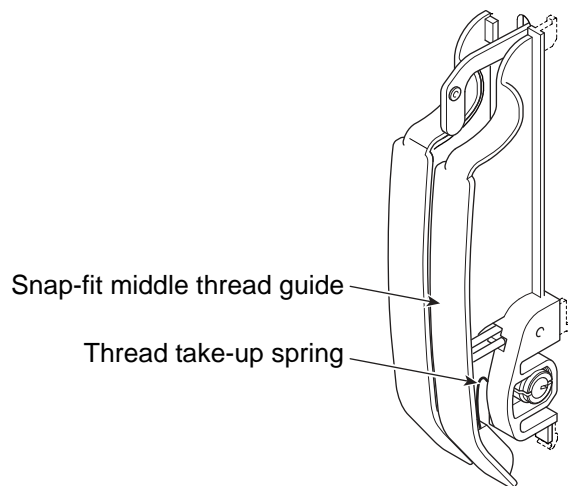
! When restarting the machine after repairs, attach all removed covers etc. as they were.

! CAUTION

! For the repair, use Tajima genuine parts for replacement.

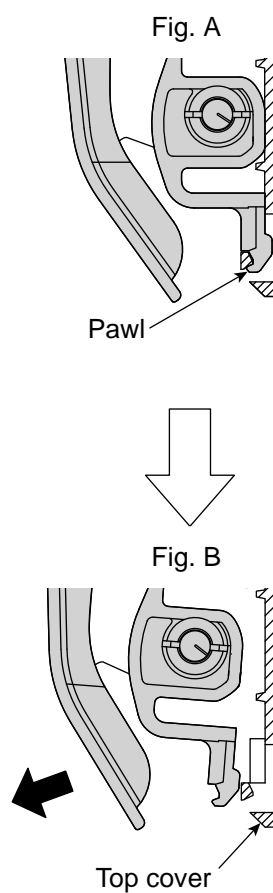
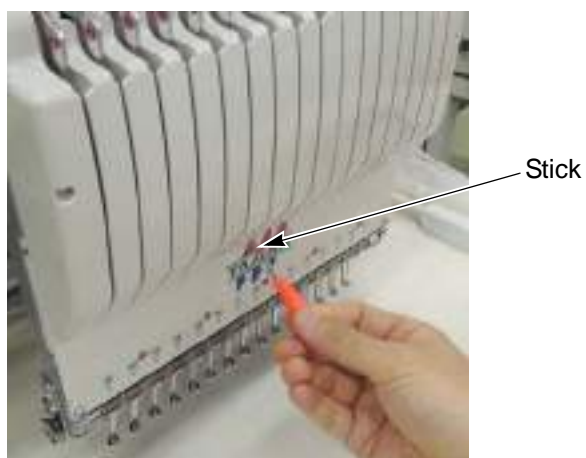
6. Adjustment of Snap-fit middle thread guide

To adjust the stroke amount of the thread take-up spring inside the snap-fit middle thread guide, follow the procedure below.



[How to adjust]

- (1)** Push the pawl with some thin-tipped stick (Fig. A), and release the pawl from the top cover and pull it to the front (Fig. B).



(2) Detach the snap-fit middle thread guide.



Snap-fit middle thread guide

(3) To adjust stroke of the thread take-up spring, put some coin, etc. in the groove of the spring shaft and turn the spring shaft.

Minimum stroke	Standard stroke	Maximum stroke
Click three times in the counterclockwise direction	Position at shipment from the factory	Click twice in the clockwise direction

(4) Put the pawl in the slit (Photo A), push up the locking pawl with your thumb and put it in the hole (Photo B).

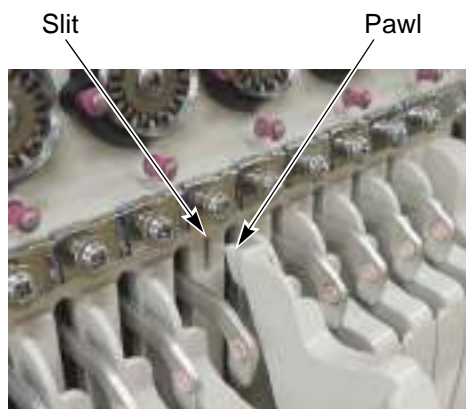


Photo A



Enlarged

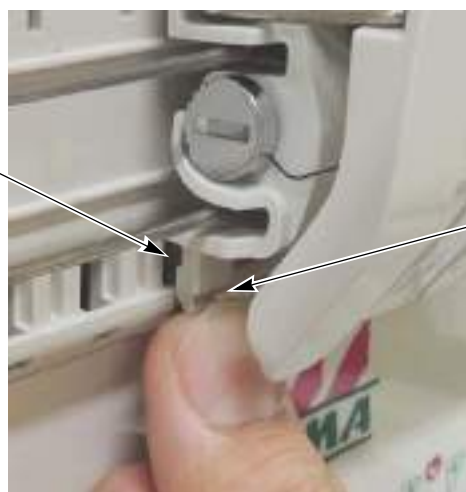
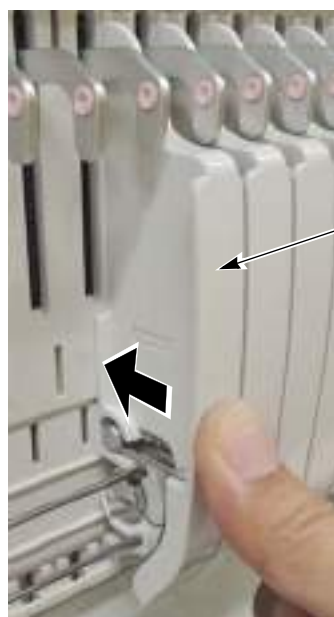


Photo B

(5) Push the snap-fit middle thread guide securely to fit until it clicks into place.



Snap-fit middle thread guide

Chapter 11

Appendix

1. Machine specifications.....	250
2. Function Code	251
3. FS Mode Lock.....	253
4. How to attach LED Lamp (Option).....	257
5. Electrical system diagram.....	258
6. Terminology	260

1. Machine specifications

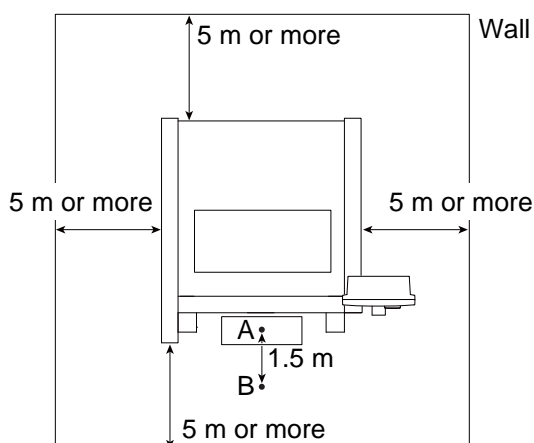
1-1. Electrical specifications

	TMBR-SC	TMBP-SC
Rated current	1.3 A (120 V)	1.6 A (120 V)
Maximum power	160 W	190 W
Apparent power	180 VA	210 VA
Allowable voltage range	Within $\pm 10\%$ of the rated voltage	
Frequency	50/60Hz	
Insulated resistance	10 M ohms or greater (500 megger insulation tester)	

1-2. Ambient noise level

The ambient noise level of the machine is less than 82 dB. Measuring conditions are as follows.

Measuring ambience	Refer to the figure below.
Measuring position	Measured at B of 1.6 m high from the floor. (A is Needle Locating Position)
Working machine condition	Fabric is stretched on the border frame and embroidered with satin stitch which has 4 mm width.
RPM	Maximum number of revolutions of machine
Measuring instrument	Conformity to IEC61672-1: 2002 Class 1



1-3. Machine weight

TMBR-S1501C(360 x 500)S	102 kg (Net weight)
TMBP-S1501C(360 x 500)S	

2. Function Code

2-1. Function codes that can be edited by this machine

Function Code	Function Name	In case of saving designs to the USB memory and selecting "T", data will be converted to the following function codes.
Stitch	Stitch	Stitch
Jump	Jump	Jump
Color	Color Change	Stop
ATH	Upper/Under Thread ATH	Jump
Up_ATH	Upper Thread ATH	
Tmp_Stop	Temporary Stop Stitch	Stop
Tmp_Stop_J	Temporary Stop Jump	
Low_S	Low Speed Start Stitch	Stitch
Low_E	Low Speed End Stitch	
Low_S_J	Low Speed Start Jump	Jump
Low_E_J	Low Speed End Jump	
Satin_S	Satin Stitch Start	Stitch
Satin_E	Satin Stitch End	
Offset	Auto Color Change Offset	
Sequin_S	Sequin Start	Sequin
Sequin_E	Sequin End	
Sequin_O	Sequin Output	Jump
Sequin_O_2	Sequin Output 2	Jump
Boring_S	Boring Start	Stitch
Boring_E	Boring End	
AFC_Feed	AFC Feed	
End	End	End
S_Beads_1	Seed Beads Output 1	Jump
S_Beads_2	Seed Beads Output 2	
S_Beads_S	Seed Beads Start	Sequin
S_Beads_E	Seed Beads End	

2-2. Function codes that cannot be edited by this machine (display only)

Function Code	Function Name	In case of saving designs to the USB memory and selecting "T", data will be converted to the following function codes.
Color_J	Color Change Jump	Stop
ATH_J	Upper/Under Thread ATH Jump	Jump
Up_ATH_J	Upper Thread ATH Jump	
Sequin_E_J	Sequin End Jump	Sequin
Sequin_O_J	Sequin Output Jump	Jump
Boring_1_J	Boring 1 Jump	Stitch
Boring_2_J	Boring 2 Jump	
Boring_3_J	Boring 3 Jump	
Boring_4_J	Boring 4 Jump	
Boring_S_J	Boring Start Jump	
Boring_E_J	Boring End Jump	
Loop	Loop stitches	
Loop_J	Loop Stitch Jump	
Chain	Chain stitches	
Chain_J	Chain Stitch Jump	
Laser_ON	Laser ON	
Laser_OFF	Laser OFF	
Laser_Pow	Laser Power Switching	
Laser_Lens	Laser Lens Switching	
Tape_Head	Tape Rewinding	
End_J	End Jump	

3. FS Mode Lock

Operation of this function will improve finish of sewing even in case of using badly passing thread (the tinsel, the thick thread) or loosely twisted thread. (Conventional ratio)

This function is specially effective for the embroidery using loosely twisted thread that was improper for the embroidery machine.

(1) Improved points in FS Mode Lock

The following points are not applicable to all embroidery conditions. Depending on the embroidery condition, improvement may not be seen.

- (a) Decrease of thread breakage (Tinsel)
- (b) Improvement of thread tension for Satin stitch (Loosely twisted thread, Thick thread)
- (c) Stabilization of Satin stitch (Loosely twisted thread)
- (d) The balance between the upper thread and the under thread is stable on the back of the fabric.
(All thread type)
- (e) Decrease of bad thread tension points of the emblem embroidery (Polyester yarn)

(2) Movement of machine in FS Mode Lock

FS Mode Lock is the function giving priority to the embroidery quality. Therefore, the productivity may lower in the following points.

Use it after understanding the followings.

- (a) Maximum R.P.M. is limited.
- (b) A specified stitch length will perform Auto jump.

3-1. Sewing comparison

(1) Sewing comparison by the difference between standard mode and FS Mode Lock

THREAD TYPE :RAYON 300d/1



Standard mode



FS Mode Lock

(2) Sewing comparison by the difference of threads

Sewing samples (A, B, C) as below are embroidered by FS Mode Lock. It is possible to embroider like samples A, B even if loosely twisted thread is used. If the sample A and B (specially A) are embroidered by standard mode, problems such as fluffing and looping could occur.



Loosely twisted thread
(Rayon 300d/1)



Thread twisted a little looser (Middle level of
twist between A and C) (Polyester 120d/2)



Normal embroidery thread
(Rayon 120d/2)

3-2. To improve embroidery results further

We prepare the following optional parts to improve the embroidery finish further. Select the optional parts according to the embroidery condition such as the thread and the fabric, etc.

The parts below (1) to (2) are not the set parts.

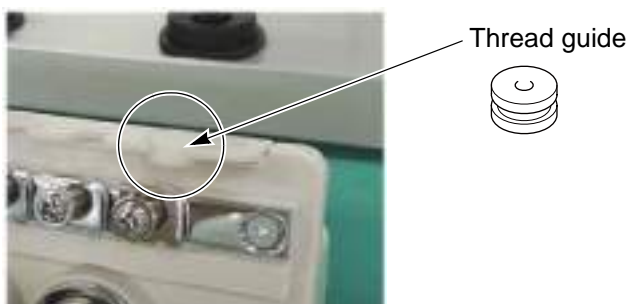
Before using the parts, please understand [Caution], and consult the distributor.

3-2-1. Optional parts

(1) Thread guide

Part name	Part No.
THREAD GUIDE :2.2 MM dia.	516501040000

In case of using badly passing thread, the upper thread tension will be too tight. Therefore, detach the spiral tube, and attach this thread guide.



[Caution]

When the color change having large slide volume is performed, the thread tangle sometimes occurs.

(2) Needle

Part name	Part No.
NEEDLE :DB-K5Z1 FS #11 U	616500570000
NEEDLE :DB-K5Z1 FS #11 Y	616500580000
NEEDLE :DB-K5Z1 FS #14 U	616500590000
NEEDLE :DB-K5Z1 FS #14 Y	616500600000

These needles are developed for FS Mode Lock. It is effective for loosely twisted thread that could not be embroidered so far.

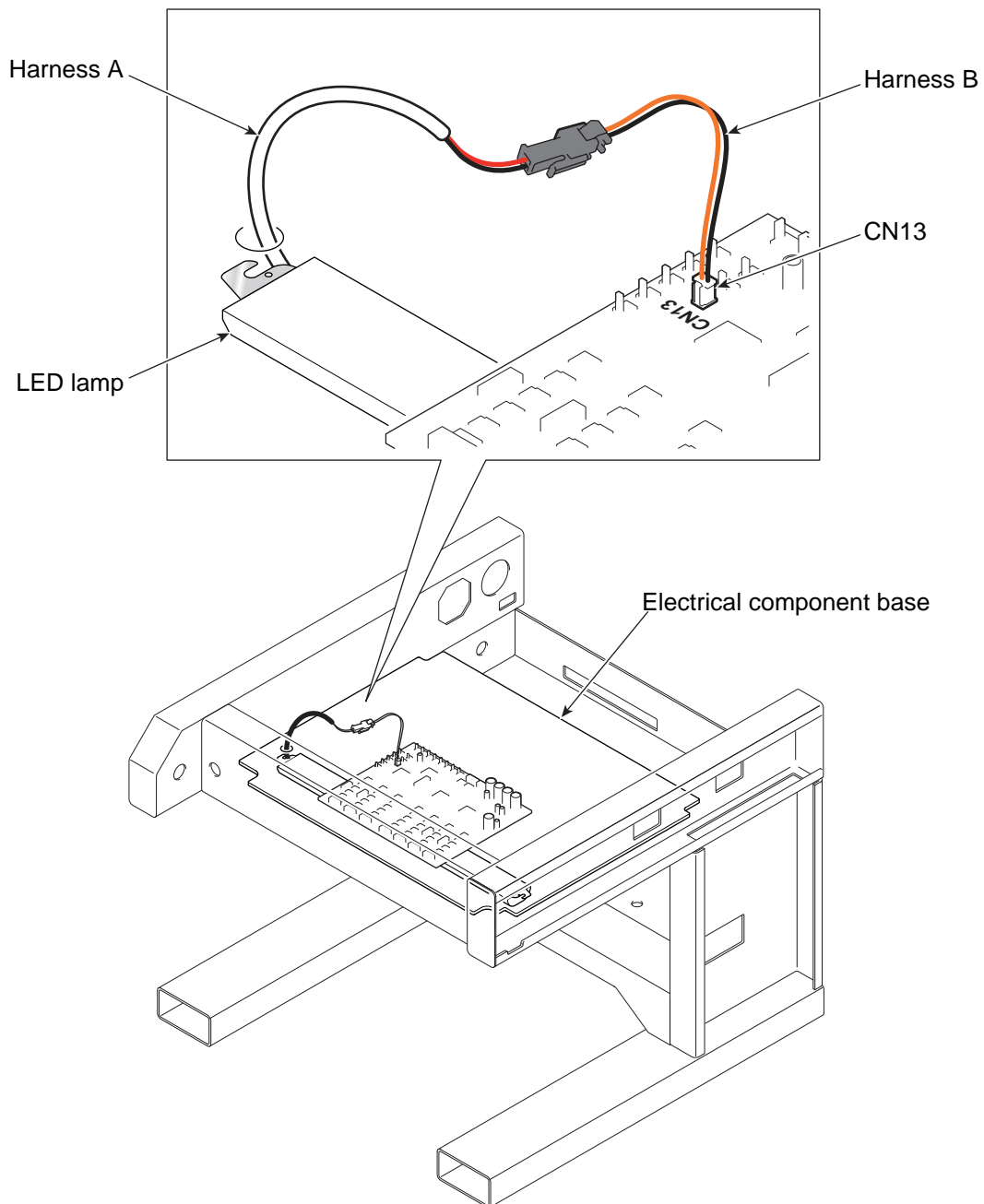
[Caution]

It is not suitable for the fabric that requires the strong force to be embroidered through.

4. How to attach LED Lamp (Option)

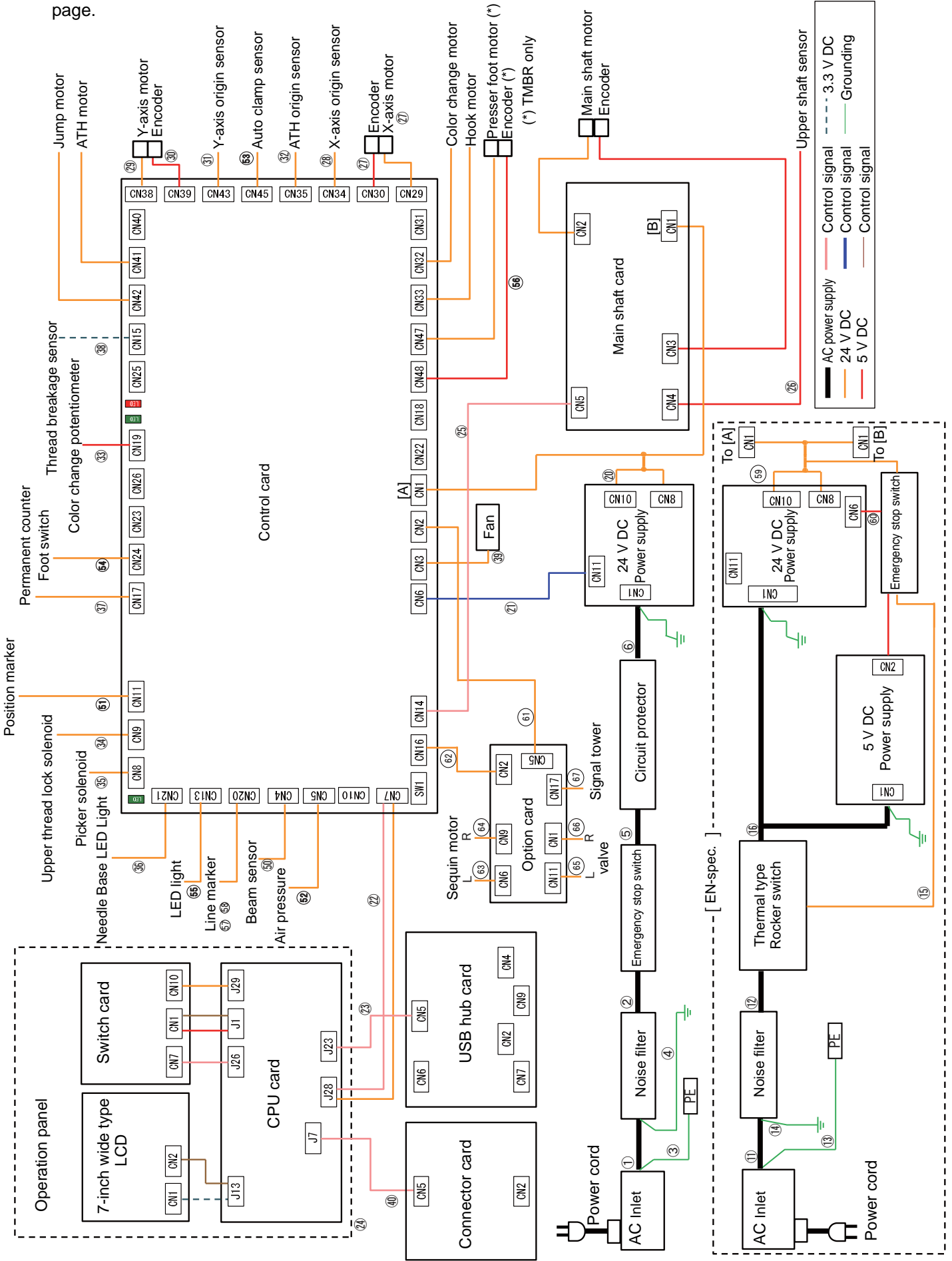
When attaching the LED Lamp (Option) to the machine, follow the procedure below.

- (1) Attach the LED lamp to the bottom of the electrical component base by using screws (hexagon socket head cap screw: M4*10, spring washer, plain washer).
- (2) Pass the harness of the LED lamp upward from the hole of the electrical component base.
- (3) Connect the harness A and the harness B. Connect the harness B to the connector "CN13".



5. Electrical system diagram

The harness number in the figure accords with the table number on the next page.



No.	Part No.	Name
①	H0E100100000	HARNESS :AC INLET-NOISE FILTER :ETL
②	H0E104001000	HARNESS :NOISE FILTER EMERGENCY STOP :ETL
③	H0E100200000	HARNESS :AC INLET GROUNDING :ETL
④	H0E104100001	HARNESS :NOISE FILTER GROUNDING :ETL
⑤	H0E100300000	HARNESS :EMERGENCY STOP-POWER SUPPLY SWITCH :ETL
⑥	H0E300300000	HARNESS :POWER SUPPLY SWITCH-24V POWER SUPPLY OUTPUT
⑪	H0E104200000	HARNESS :AC INLET-NOISE FILTER :CE
⑫	H0E105000000	HARNESS :NOISE FILTER-POWER SUPPLY SWITCH :CE
⑬	H0E104400000	HARNESS :AC INLET GROUNDING :CE
⑭	H0E104500001	HARNESS :NOISE FILTER GROUNDING :CE
⑮	H0E300700001	HARNESS :POWER SUPPLY SWITCH 5V24V POWER SUPPLY :CE
⑯	H0E105300000	HARNESS :EMERGENCY STOP SWITCH-POWER SUPPLY SWITCH :CE
⑳	H0E300400000	HARNESS :24V POWER SUPPLY OUTPUT
㉑	H0E100600001	HARNESS :POWER FAILURE DETECTION
㉒	H0E100700000	HARNESS :CPU CARD-CONTROL CARD
㉓	H0E100800000	HARNESS :CPU CARD-USB HUB CARD
㉔	H0E101700000	HARNESS :CONTROLLER :GROUNDING
㉕	H0E300100000	HARNESS :CONTROL CARD-MAIN SHAFT DRIVER
㉖	H0E101100000	HARNESS :MAIN SHAFT STOP POSITION SENSOR
㉗	H0E101200000	HARNESS :X-AXIS JUNCTION
㉘	H0E101300000	HARNESS :X-AXIS ORIGIN SENSOR
	H0E106100000	HARNESS :X-AXIS FRAME ORIGIN SENSOR
㉙	H0E101400001	HARNESS :Y-AXIS MOTOR
㉚	H0E101500001	HARNESS :Y-AXIS ENCODER
㉛	H0E101600000	HARNESS :Y-AXIS ORIGIN SENSOR
㉜	H0E101900000	HARNESS :ATH KNIFE RETRACTING SENSOR

③③	H0E102000001	HARNESS :COLOR CHANGE POTENTIOMETER
③④	H0E102200001	HARNESS :UPPER THREAD LOCK SOLENOID
③⑤	H0E102300001	HARNESS :PICKER SOLENOID
③⑥	H0E102400000	HARNESS :NEEDLE BASE LED LAMP
③⑦	H0E102500001	HARNESS :PERMANENT COUNTER
③⑧	H0E102100000	HARNESS :THREAD BREAKAGE SENSOR
③⑨	H0E300200000	HARNESS :FAN MOTOR
④⑩	H0E100900000	HARNESS :CPU CARD-CONNECTOR CARD :LAN
⑤⑩	H0E103100000	HARNESS :BEAM SENSOR
⑤①	H0E103200000	HARNESS :POSITION MARKER
⑤②	H0E103300000	HARNESS :AIR PRESSURE SENSOR[*1]
	H0E106000000	HARNESS :AIR PRESSURE
⑤③	H0E103400000	HARNESS :AUTO CLAMP :Y-AXIS FRAME ORIGIN SENSOR
⑤④	H0E103500000	HARNESS :AUTO CLAMP :TWO STEPS TYPE FOOT SWITCH
⑤⑤	H0E103600001	HARNESS :LED LAMP
⑤⑥	H0E101800000	HARNESS :PRESSER FOOT ENCODER
⑤⑦	H0E104800000	HARNESS :LASER :CROSS LINE MARKER
⑤⑧	H0E107400000	HARNESS :LINE MARKER
⑤⑨	H0E300600000	HARNESS :24V POWER SUPPLY OUTPUT :CE
⑥⑩	H0E105200000	HARNESS :24V POWER REMOTE :CE
⑥①	H0E105500001	HARNESS :POWER SUPPLY :OPTION
⑥②	H0E105400001	HARNESS :COMMUNICATION :OPTION
⑥③	H0E105600000	HARNESS :MOTOR OUTPUT :L
⑥④	H0E105700000	HARNESS :MOTOR OUTPUT :R
⑥⑤	H0E105800000	HARNESS :AIR VALVE OUTPUT :L
⑥⑥	H0E105900000	HARNESS :AIR VALVE OUTPUT :R
⑥⑦	H0E103700000	HARNESS :SIGNAL TOWER :LED ROTATING LIGHT

*1: For auto clamp

6. Terminology

The following terms apply to all models in common. There might be a case that it does not correspond depending on model.

<A>

Absolute origin

An anchoring point to calculate the current frame position (X: 0.0, Y:0.0).

ATH

Abbreviation of Automatic Thread Trimming and Holding Device.

Auto Jump

To make a stitch divided into stitches of the setting value or less automatically when its stitch length exceeds the setting value. It is effective to prevent the stepping out of the frame and the displacement of the design.

Backlash

A play (gap) generated by shock at drive system and/or around the frame when a stitch returns (when frame drive is reversed). It may affect embroidery finish.

<C>

Cleanup

To remove a tiny stitch included in design data to make before and after stitches absorb it. It is effective to reduce thread breakage.

Condition data

Embroidery condition included in design data (needle bar selection, data conversion, repeat, design start position, automatic offset).

CT0

File including information of needle bar selection and design start position. It is necessary to handle TBF, CT0 and DGF as a set on a personal computer.

<D>

Data mode

Saving format of design data (T, T2, T3).

Data set

To input design data to the memory of the machine to start the machine.

D-axis

Driving shaft to rotate sewing needle and nipple (TCMX series).

DGF

File that indicates design image. It is necessary to handle TBF, CT0 and DGF as a set on a personal computer.

Driver

Control card to make the frame or main shaft drive. X-axis driver, Y-axis driver, main shaft driver etc. are included.

DST

Stitch data of Tajima ternary format. Data saving format is T.

<E>

Excitation

To keep frame motor drive. It is not possible to move the frame by hand during excitation.

<F>

Fine stitch

Tiny stitch as a factor causing thread breakage. Stitch length is 0.5 mm or less.

Fixed pitch movement

Horizontal frame travel to the neighboring head by head interval.

Fixed position

Main shaft angle at which the main shaft motor stops (stop position).

Frame Back

To move the embroidery frame only to the returning direction of stitches with the needle bar(s) stopped.

Frame coordinates

Frame position in embroidery space. It is indicated such as "X: -153.2, Y: +120.4".

Frame Forward

To move the embroidery frame only to the advancing direction of stitches with the needle bar(s) stopped.

Frame Limit

Limit position that the frame can move (it is indicated by mark-off line on the table).

Frame origin

An anchoring point to calculate the current frame position (X: 0.0, Y:0.0).

Frame stepping

To move the embroidery frame only with the main shaft of the machine kept stopped during embroidery.

Function code

Command code that controls general movements of the machine. All design data consists of function codes (Stitch, Jump, Color, etc.).

<H>

Head group

Function that assumes plural heads as one head by grouping them. This enables large design embroidery or multi-colored embroidery of more colors than the number of needles.

<I>

Inching

Movement to stabilize start of embroidery by moving needle bar slowly before the main shaft starts in regular operation. It is executed before thread trimming to stabilize thread trimming.

<J>

Jump

To make only the frame move in the state that needle bar does not move down during operation. It is possible to make a longer stitch exceeding the maximum stitch length.

<M>

M-axis

Drive shaft to rotate nipple or bobbin (TLMX series).

<O>

Offset start position

A frame travel start position set by operation of automatic offset. A position to make the machine stand-by to facilitate changing of frame and/or fabric by moving the frame to the front automatically in the middle of sewing or at the end of sewing.

<P>

Parameter

Setting item that decides working condition of the machine.

Pseudo-fixed position (stop at the lower dead point)

To stop the machine with needle stuck in cloth at end of embroidery. Moving the frame in this condition will enable consecutive embroidery.

<R>

Return Stitches

Tie stitch to be executed at start of embroidery (stitch to prevent mis-stitching at start).

Running stitch

Decorative stitch of straight line or curved line only.

<S>

Satin stitch

Repeated zigzag stitches. It is mainly used for hem of applique, logo, mark, flower design etc.

Sequin needle

Needle that sews sequins by sequin device. It indicates the first needle or the last needle.

Sidekick

Name of network application software manufactured by Pulse Microsystems Ltd. This software can input the design data into the machine memory by wireless LAN as a main function.

Step

The section divided by color change code in the design data. The first section is called step 1, and the next section is called step 2.

<T>

Table offset

To move the frame to the rear direction temporarily to facilitate threading. It is mainly effective when the frame is positioned at table cut section.

Tatami stitch

Stitch to be filled in a certain amount of area. It is mainly used for big logo, background, underlay etc.

TBF

Stitch data of Tajima binary format. Data saving format is T2. It can support much more function codes compared with DST. It is necessary to handle TBF, CT0 and DGF as a set on a personal computer.

TCF

Data integrating TBF, CT0 and DGF. Integration facilitates handling of design data. Data saving format is T3.

Tie Stitches

Tie stitch to be executed before thread trimming (stitch to prevent fray).

<W>

Weak brake (Main shaft motor brake)

To fix the main shaft by brake of the main shaft motor so that the main shaft does not rotate when it stops.

<X>

X-axis drive system

Drive system to make the embroidery frame move in crosswise (X) direction.

X data

Data to make the embroidery frame move in crosswise (X) direction. It is indicated by moving direction (code: +/-) and value (mm).

<Y>

Y-axis drive system

Drive system to make the embroidery frame move in lengthwise (Y) direction.

Y data

Data to make the embroidery frame move in lengthwise (Y) direction. It is indicated by moving direction (code: +/-) and value (mm).

<Z>

Z-axis

Driving shaft to change needle height (TCMX series).

Zigzag cord needle

Needle that embroiders with the cord by zigzag cording device. It indicates the first needle or the last needle.

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1st Edition December, 2015

12th Edition September, 2020

■ Manufactured by : **TISM Co.,Ltd.**

NO.1800, Ushiyama-cho, Kasugai, Aichi-pref., 486-0901, JAPAN
TEL.81-568-33-1161 FAX.81-568-33-1191

■ Distributed by : **Tajima Industries Ltd.**

19-22, Shirakabe, 3-chome, Higashi-ku, Nagoya, 461-0011, JAPAN
TEL.81-52-932-3444 FAX.81-52-932-2457

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THE TAJIMA GROUP

<http://www.tajima.com>

Tajima Industries Ltd.

19-22, Shirakabe, 3-chome, Higashi-ku, Nagoya, 461-0011, JAPAN
TEL.81-52-932-3444 FAX.81-52-932-2457

TISM Co.,Ltd.

NO.1800, Ushiyama-cho, Kasugai, Aichi-pref., 486-0901, JAPAN
TEL.81-568-33-1161 FAX.81-568-33-1191