USER'S MANUAL & PARTS LIST

DRAWING LINE DEVICE

Original Instructions
M-DRAW01-E
(2012.04)

Foreword

This manual is a guidebook for an option “Drawing Line device”.

Please read this manual thoroughly and operate the device after you understand the contents.

This manual may contain discrepancies in detailed specification as compared with the actual production.

If you have any question about this manual, consult your TAJIMA distributor.

Please keep this manual with care near the machine for quick reference,

Tokai Industrial Sewing Machine Co., Ltd.

Important safety instructions

Items that require your special attention on handling this device are specified below.

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

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

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

*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

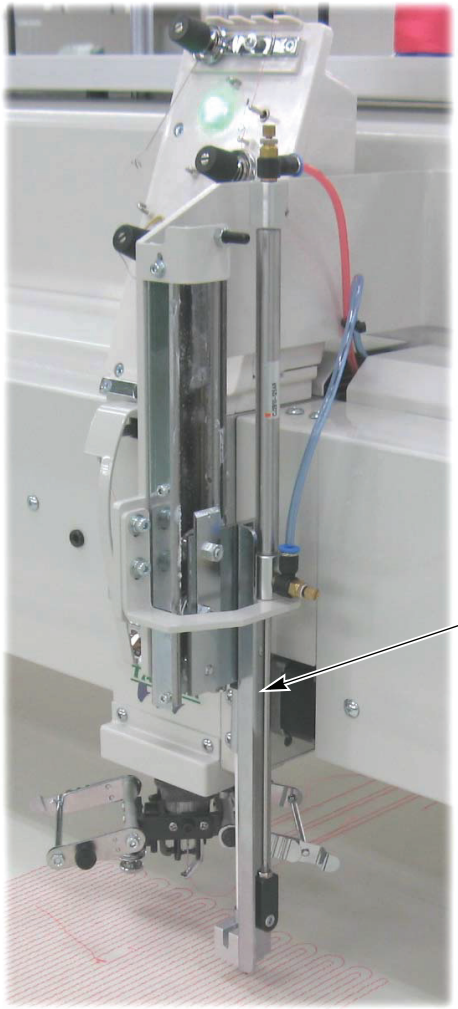

: Items that may cause electric shock


: Items that must be followed carefully to ensure safe operation

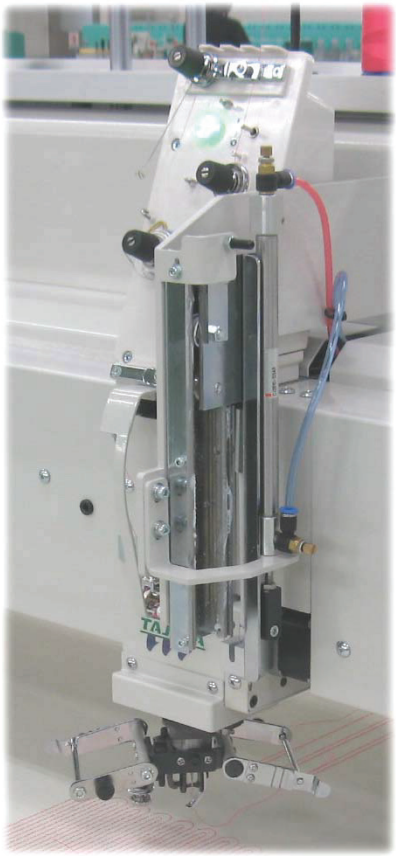
Table of contents

1. Outline of the device

State of the device at the lower position



State of the device at the upper position



The cover is detached for the explanation in above photo.

Use the device after understanding the following items.

(1) The device will move all heads together. It is impossible to suspend the device at each head.

(2) The device does not have protective function against frame movement. Even when the device is at the lower position, manual frame travel is possible. In some cases, the device could touch the frame.

(3) The upper/lower position of the device is not detected electrically. Even when the device stops during working due to some kind of cause, any error message will not be displayed on the operation panel.

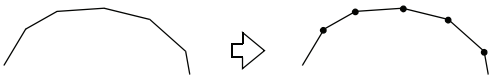
(4) When turning off the power of the embroidery machine, the device will be at the upper position (in case air pressure is normal).

(5) During operation of the embroidery machine or the main shaft is not at fixed position, the device does not work.

(6) When the error code 2E2 (the air compressor pressure sensor error) is detected, the embroidery machine will stop. However, this device will be allowed to move.

(7) Shrinkage may occur after working depending on the fabric to use. For this reason, misalignment between the line drawn by a ballpoint pen and stitching may occur a little.

(8) The frame travel when drawing performs by 1-stitch unit. The drawing may become dot line due to the ink stain etc immediately after frame travel stops.



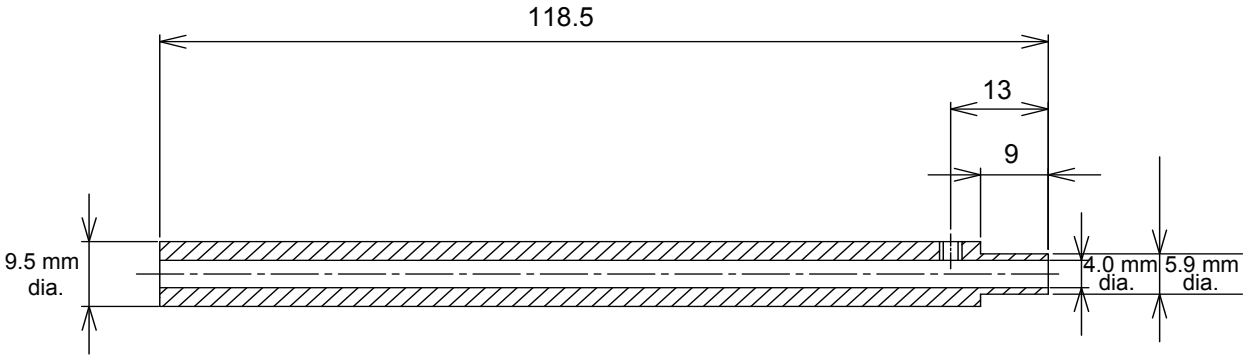
(9) Frame traveling speed can not be changed on the operation panel. The larger the stitch length, the shorter drawing time becomes. However, there is a possibility that precise drawing could not be made due to vibration of the machine. On the contrary, the smaller the stitch length, precise drawing could be made, but the longer drawing time becomes.

2. Handling of device

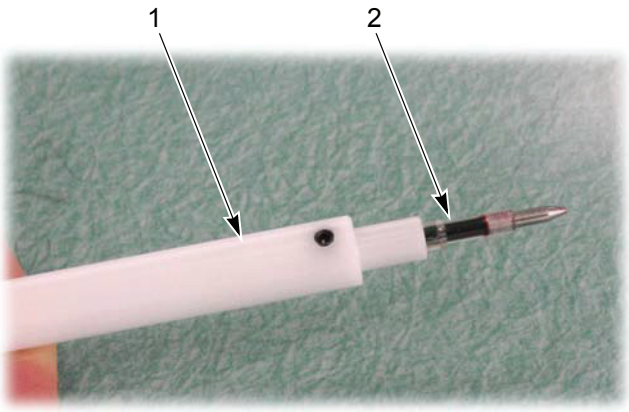
2-1. How to attach a refill of a ballpoint pen

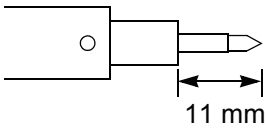
Introduced hereunder is an example of attaching a refill of a ballpoint pen to an accessory ballpoint pen adapter. Please prepare a refill of a ballpoint pen on customer's side.

Size of a ballpoint pen adapter (mm)



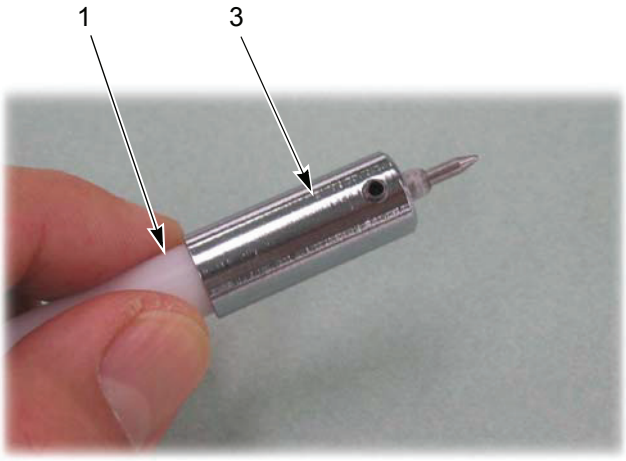
(1) Insert a refill 2 of a ballpoint pen into a ballpoint pen adapter 1 and pull it about 11 mm out.



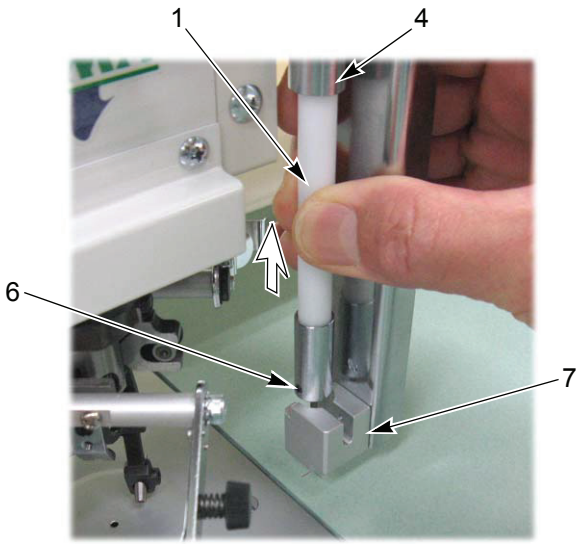


Fix a refill 2 of a ballpoint pen finally. At this moment, inserting only is enough.

(2) Cover a pen adapter 3 on a ballpoint pen adapter 1.

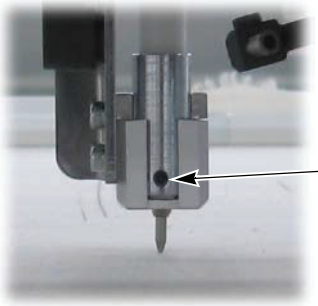


(3) Insert a ballpoint pen adapter 1 into pen holder 4 and set this adapter by pushing up. Face the screw 6 to the rear and set the holder support 7.

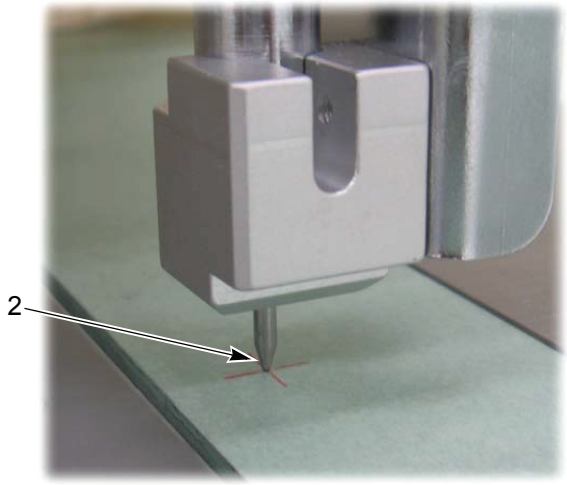


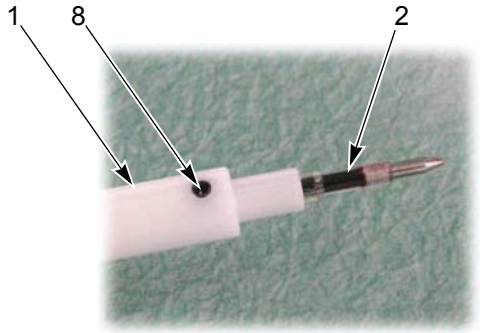
Setting condition

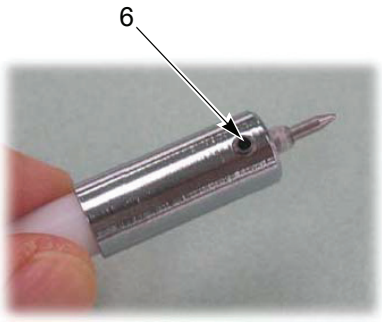
[Viewing from the rear of the table]



(4) Detach a ballpoint pen adapter 1 temporarily to adjust the size of a refill 2 of a ballpoint pen so that a refill 2 of a ballpoint pen touches the table lightly, then tighten the screw 8 and 6. At this moment, do not tighten the screw 8 and 6 too much.







2-2. Up/down of device

When moving up/down the device, press manual switch equipped under the table.

CAUTION

- When moving up/down the device, do not put your hands, etc. around the device. Moving up/down the device could injure you.
- Move up/down the device in the state that the bobbin is positioned at 90° or the device does not touch the bobbin, it could damage the device or the bobbin.

Manual switch

(1) When the device is at the upper position, press the switch, then the device will lower.

(2) When the device is at the lower position, press the switch, then the device will lift up.

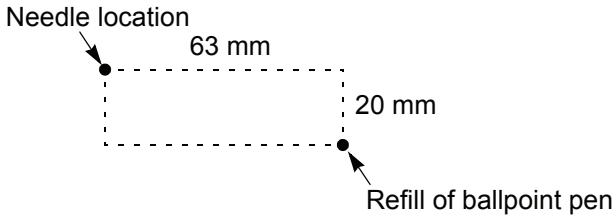
(3) When the device is at the lower position and start or the main shaft departs from the fixed position, the device will lift up.

3. Frame travel data

(1) Change all frame travel data to jump data when drawing by a ballpoint pen.

(2) Offset amounts between needle location of the sewing head and a refill of a ballpoint pen of the device are 63 mm at right, and 20 mm at front. In data, X: -63 mm, Y: +20 mm.

[Viewing from the top]



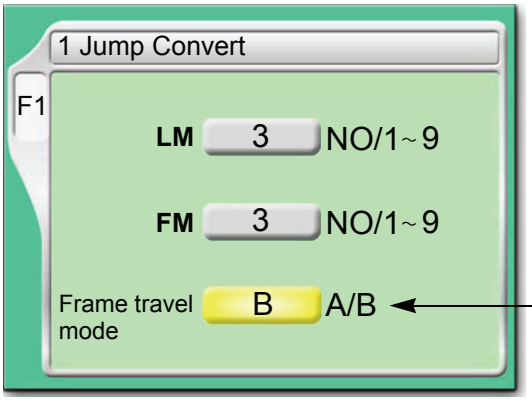
4. Setting on the operation panel

Change the following setting on the operation panel. For details of setting, refer to the user's manual of the machine.

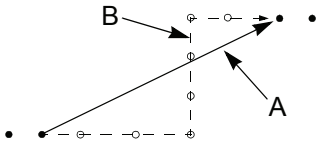
4-1. Jump Convert

(1) Press F1 key to display "1 Jump Convert" screen.

(2) Set the value of "Frame travel mode" to "B".



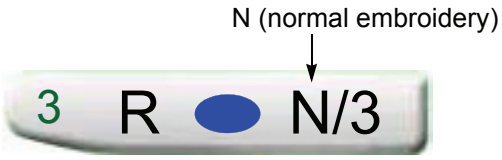
◦Jump code



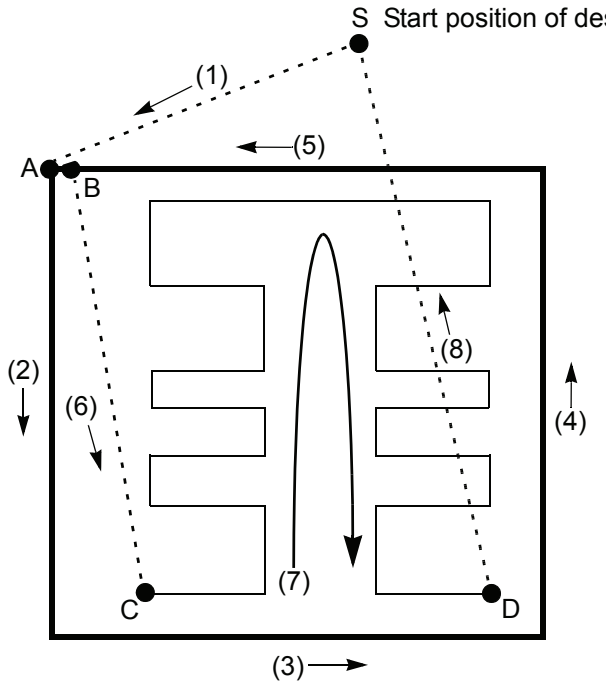
4-2. Automatic Stitch Type Selection

(1) Press B key to display "2 Auto Stitch type Selection" screen.

(2) Select the step to draw by a ballpoint pen, and then select the embroidery mode "N".



5. Example of Usage



Frame stepping

Line drawn by a ballpoint pen

Sewing

The frame stepping in the figure moves by 1-stitch unit.

Regarding frame stepping movement (1) and (6), consider carefully about offset amount between needle location of the sewing head and a refill of a ballpoint pen of the device.

(1) Start the machine by bar switch at design start position S, and perform frame stepping (1) to stop code A, then stop once at stop code A.

(2) Press the manual switch to lower the device. Starting the machine by bar switch will draw the line at the frame travel from (2) => (3) => (4) => (5) in order, and stop by stop code B.

(3) Press the manual switch to lift up the device. Starting the machine by bar switch will perform the frame stepping (6) from B to C, and stop once by stop code C.

(4) Setting the material to sew and starting the machine by bar switch will start sewing (7) and stop once at stop code D.

(5) Processing cut of material and starting the machine by bar switch will perform frame stepping (8) from stop code D to design start position S.

When using the heater wire cutting device, make a margin to cut by this cutting device with jump data on design data before stopping at stop code D.

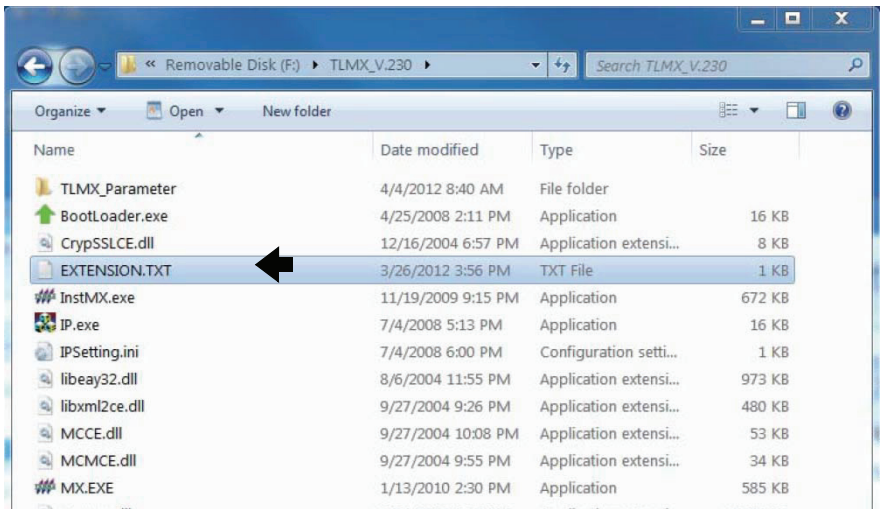
6. Items to notice at installation of software

When installing the software in this machine such as version upgrade of the software, it is necessary to overwrite the contents of “EXTENSION.TXT” file in the software. Overwrite the contents of this file according to the following procedure.

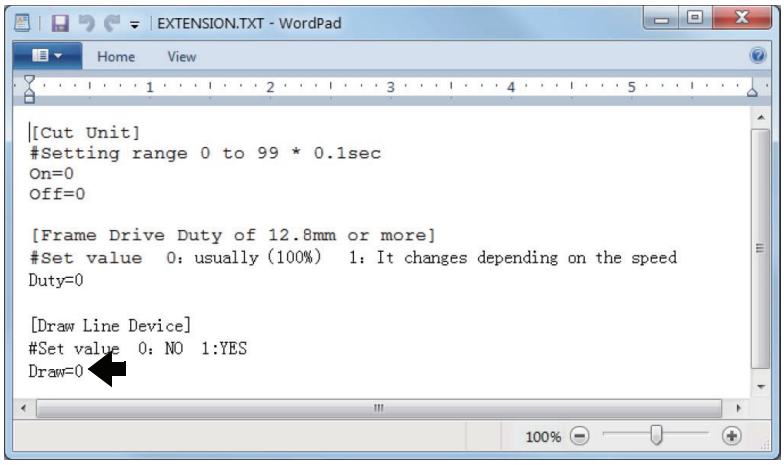
[Procedure]

(1) Extract the software “V***_LN_**.EXE” (*** is version symbol).

(2) Double-click “EXTENSION.TXT” (indicated by the arrow). After double-clicking, the text data will be opened.



(3) Change the value of “Draw” to “1” to overwrite.

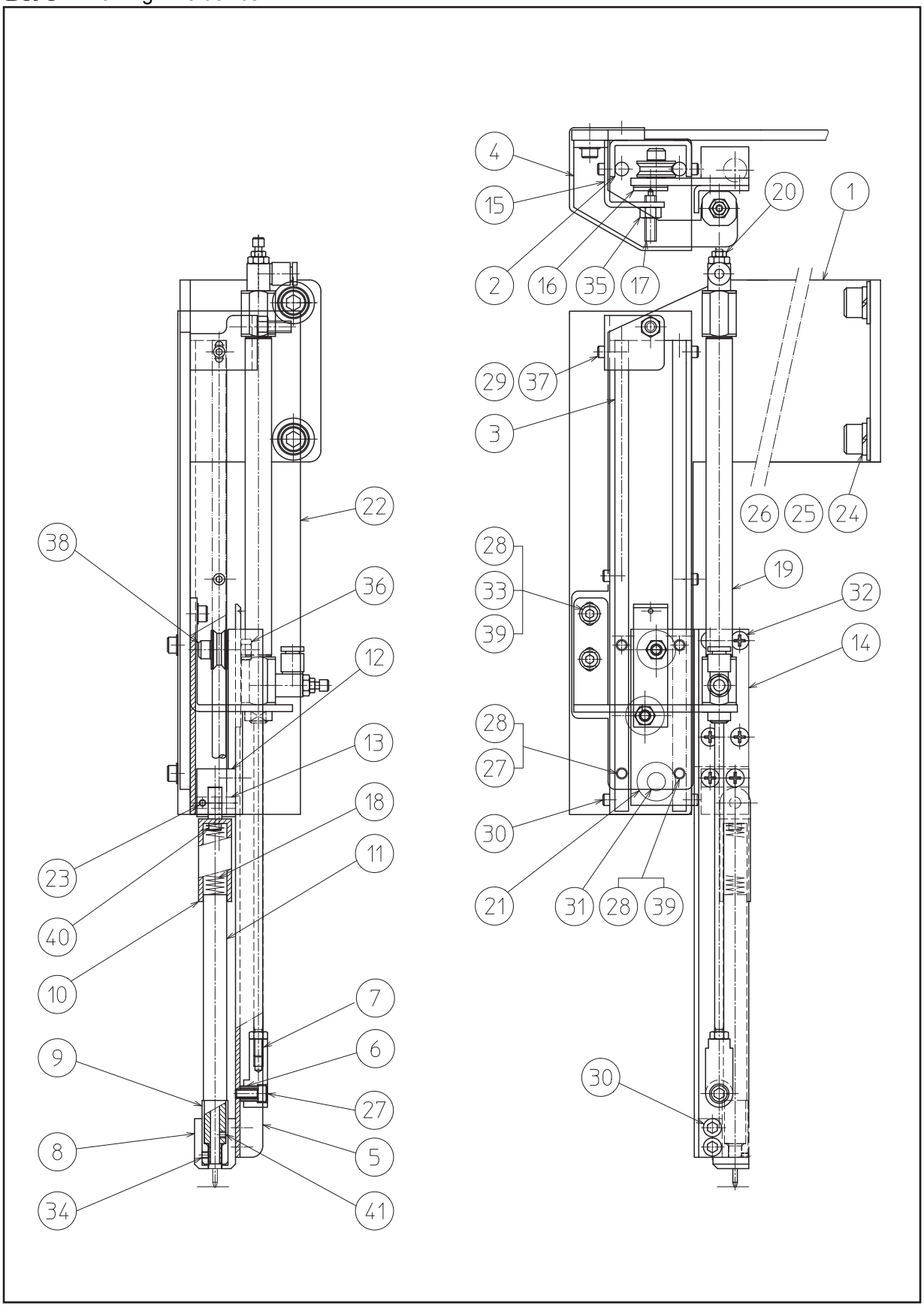


Draw=0: M-axis position 0° at normal embroidery (Bobbin is right from the front view)
Draw=1: M-axis position 270° at normal embroidery (Bobbin is front from the front view)

This completes the working. Proceed to install the software of the machine.

7. Parts list

DR-1 Drawing Line device



DRAW LINE DEVICE

No.	Part Name	Part No.	Remark
1	STAY :MAIN BODY	**0LZ010710010**	
2	BASE :BEARING GUIDE	**0LZ010720000**	
3	ROD :BEARING GUIDE	**0LZ010730000**	
4	STAY :AIR CYLINDER	**0LZ010740000**	
5	BASE :UP/DOWN SECTION	**0LZ010750000**	
6	COLLAR :CYLINDER KNUCKLE	**0LZ010760000**	
7	KNUCKLE :AIR CYLINDER	**0LZ010770000**	
8	HOLDER SUPPORT :LOWER	**0LZ010780000**	
9	ADAPTER :PEN	**0LZ010790000**	
10	HOLDER :PEN	**0LZ010800000**	
11	ADAPTER :BALL-POINT PEN	**0LZ010870000**	
12	HOLDER SUPPORT UPPER	**0LZ010810000**	
13	FULCRUM PIN :HOLDER SUPPORT	**0LZ010820000**	
14	PLATE :UP/DOWN GUIDE	**0LZ010830000**	
15	BASE :POSITIONING	**0LZ010850000**	
16	STAY :POSITIONING PLUNGER	**0LZ010860000**	
17	SPRING PLUNGER :PJL5-3	**615400050000**	
18	COMPRESSION SPRING :8P*40	**619181520000**	
19	AIR CYLINDER :CJ2B10-125AR	**673100460000**	
20	SPEED CONTROLLER :NSE04-M5	**67120016K000**	
21	ROLLER 6 :DE-RL6	**637100060000**	
22	COVER :DRAW LINE DEVICE	**9A2210700000**	
23	HEXAGON SOCKET HEAD SET SCREW :M4*8	**S170040801TN**	
24	HEXAGON SOCKET HEAD CAP SCREW :M8*18	**S120081801TN**	
25	SPRING WASHER :M8	**S402080001KC**	
26	PLAIN WASHER :M8*18*T1.6	**S301081801SC**	
27	HEXAGON SOCKET HEAD CAP SCREW :M4*10	**S120041001TD**	
28	PLAIN WASHER :M4*10*T0.8	**S301041003SD**	
29	SPRING WASHER :M3	**S402030002KD**	
30	HEXAGON SOCKET HEAD CAP SCREW :M3*6	**S120030601TD**	
31	HEXAGON SOCKET HEAD CAP SCREW :M5*12	**S120051201TD**	
32	COUNTERSUNK HEAD SCREW :M3*6	**S150030602SD**	
33	SPRING WASHER :M4	**S402040002KD**	
34	HEXAGON SOCKET HEAD SET SCREW :M3*4	**S170030401TN**	
35	HEXAGON NUT TYPE 3 :M5	**S212050002SD**	
36	HEXAGON NUT TYPE 1 :M5	**S210050002SD**	
37	HEXAGON SOCKET HEAD CAP SCREW :M3*8	**S120030801TD**	
38	HEXAGON SOCKET HEAD CAP SCREW :M5*18	**S120051802TD**	
39	HEXAGON SOCKET HEAD CAP SCREW :M4*8	**S120040801TD**	
40	HEXAGON SOCKET HEAD CAP SCREW :M4*5	**S120040501TD**	
41	HEXAGON SOCKET HEAD SET SCREW :M3*3	**S170030301TN**	
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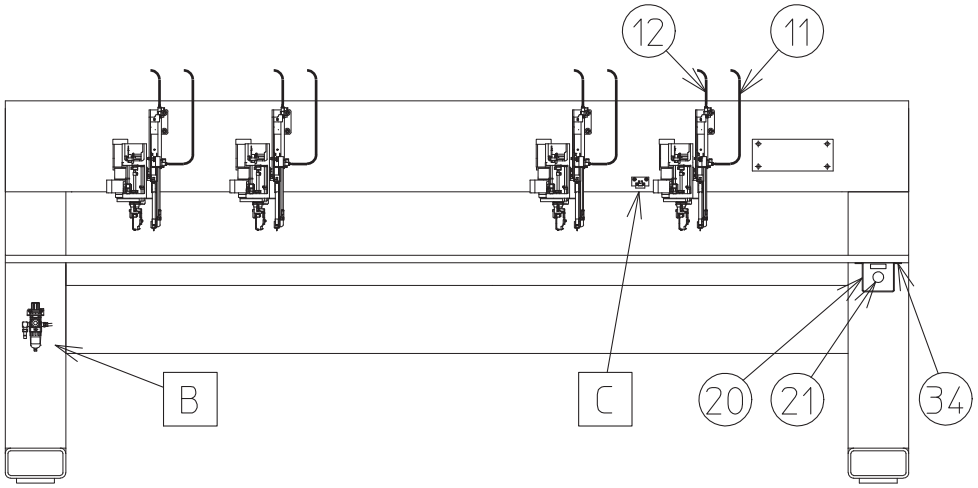
AIR PIPING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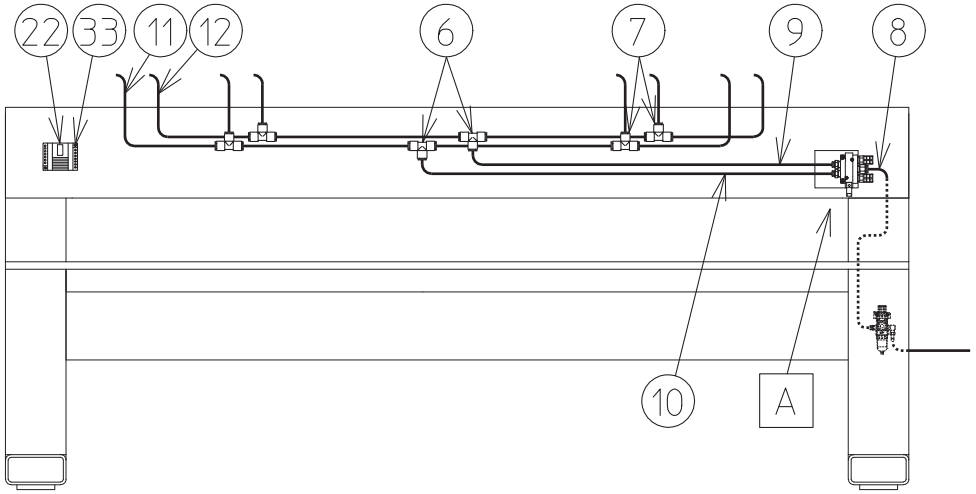
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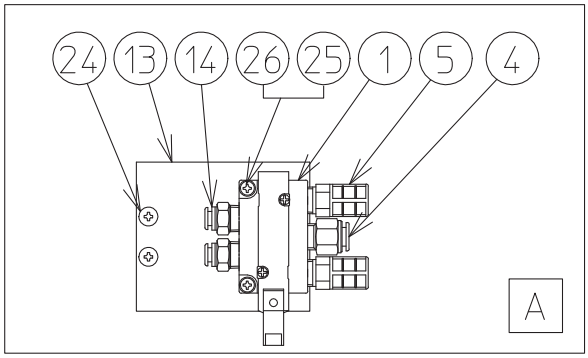
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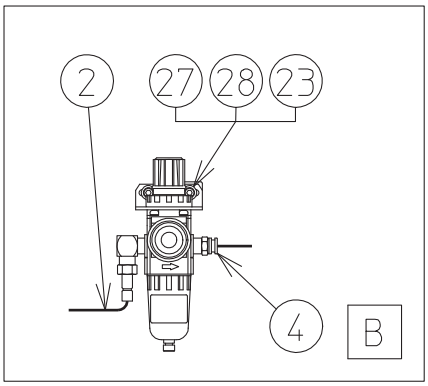
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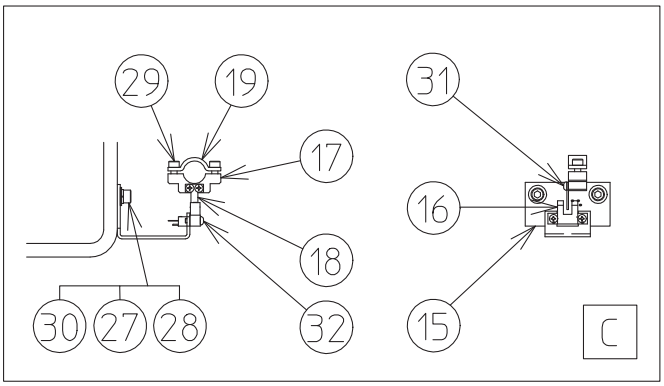
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AIR PIPING

No.	Part Name	Part No.	Remark
1	ELECTRO-MAGNETIC VALVE :SY5140-5M0	**672100240010**	
2	LUCKY HOSE	**67410003K000**	
3	REGULATOR :AW2002-B[A]	**671100100A00**	
4	HALF UNION :KQ2H08-02S	**670100560000**	
5	SILENCER :AN203-02	**670100790000**	
6	REDUCING TEES :KQ2T04-06	**670100660000**	
7	TEES :KJT04-00	**670100770000**	
8	POLYURETHANE TUBE :TU0805B-20	**674100470000**	
9	POLYURETHANE TUBE :TU0604W-20	**674100450000**	
10	POLYURETHANE TUBE :TU0604B-20	**674100370000**	
11	POLYURETHANE TUBE :TU0425BU-20	**674100350000**	
12	POLYURETHANE TUBE :TU0425R-20	**674100340000**	
13	BRACKET :VALVE	**0L0430660010**	
14	HALF UNION :KQ2H06-02S	**670100630000**	
15	BASE :FIXED POSITION SENSOR	**0N0131650000**	
16	SENSOR :PHOTO-INTERRUPTER	**642200090001**	
17	BRACKET :UPPER SHAFT SENSOR PLATE	**0N0130830000**	
18	PLATE :UPPER SHAFT SENSOR	**0N0130840000**	
19	HOLDER :BALANCER	**030730020000**	
20	SWITCH BOX :DRAW LINE[A]	**0N013183BS00**	
21	SWITCH :MANUAL TYPE[A]	**0J0605200A00**	
22	SEQUENCER :ZEN :DRAW LINE DEVICE	**0J3102100000**	
23	HEXAGON SOCKET HEAD CAP SCREW :M5*8	**S120050802TN**	
24	TRUSS HEAD SCREW :M4*10	**S130041001SD**	
25	PAN HEAD SCREW :M4*20	**S160042001SD**	
26	PLAIN WASHER :M4*8*T0.8	**S301040803SD**	
27	PLAIN WASHER :M5*12*T0.8	**S301051202SC**	
28	SPRING WASHER :M5	**S402050001KC**	
29	HEXAGON SOCKET HEAD CAP SCREW :M4*10	**S120041002TN**	
30	HEXAGON SOCKET HEAD CAP SCREW :M5*12	**S120051201TD**	
31	PAN HEAD SCREW :M3*6	**S160030602SD**	
32	PAN HEAD SCREW :M3*10	**S160031002SD**	
33	TRUSS HEAD SCREW :M4*12	**S130041201SD**	
34	PAN HEAD WOOD SCREW :4.5P*25	**S560510251TN**	
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1st Edition April, 2012

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