

mitsubishi

Industrial Sewing Machine Instruction Manual

Single-Needle Lockstitch Compound-feed Automatic undertrimmer

Short Thread Tail Device for LU2-4410

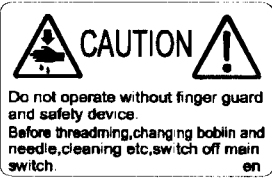

LU-ST KIT

FOR YOUR SAFETY!

If you operate this attachment first time, please make sure to read the following instructions for your safety and proper operation.

- ★ This instruction manual explains the instructions how to operate and maintain the sewing machine.
- ★ All information in this instruction manual are subject to change without notice.
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Explanations for the warning signs

No	Warning sign	Meanings of warning sign
1		Caution for sewing machine operation : Warning to operate the sewing machine without safety guards and to prohibit doing any operation except sewing while the power is turned ON.
2		Caution for the fingers to be caught in the machine : Warning to a possible danger to be caught the fingers in the machine under the specified operation.

1.Features

- 1.This device is designed to effectively shorten the tail lengths after trimming.
- 2.The LU-ST kit attaches to the machine without any machining.
- 3.The elimination of additional hand trimming will increase production.
- 4.Any damage to sewn parts caused by hand trimming will be eliminated.
- 5.The Mitsubishi genuine knife mechanism provides a reliable and durable trim function.

2. Correspondence model

Type	Correspondence	Control box
LU-ST KIT	LU2-4410-B1T LU2-4410-B1T-CS LU2-4410-B1T-BFCS	XC-FMF Y ※ XC-EMF Y

※The control box XC-EMFY can be used under limited function.

3. Specification

- 1.Max. stitch length is limited to 8mm.
- 2.The air inlet diameter is 8mm.
- 3.The air regulator and branch device are not enclosed with this kit and must be prepared by the user.

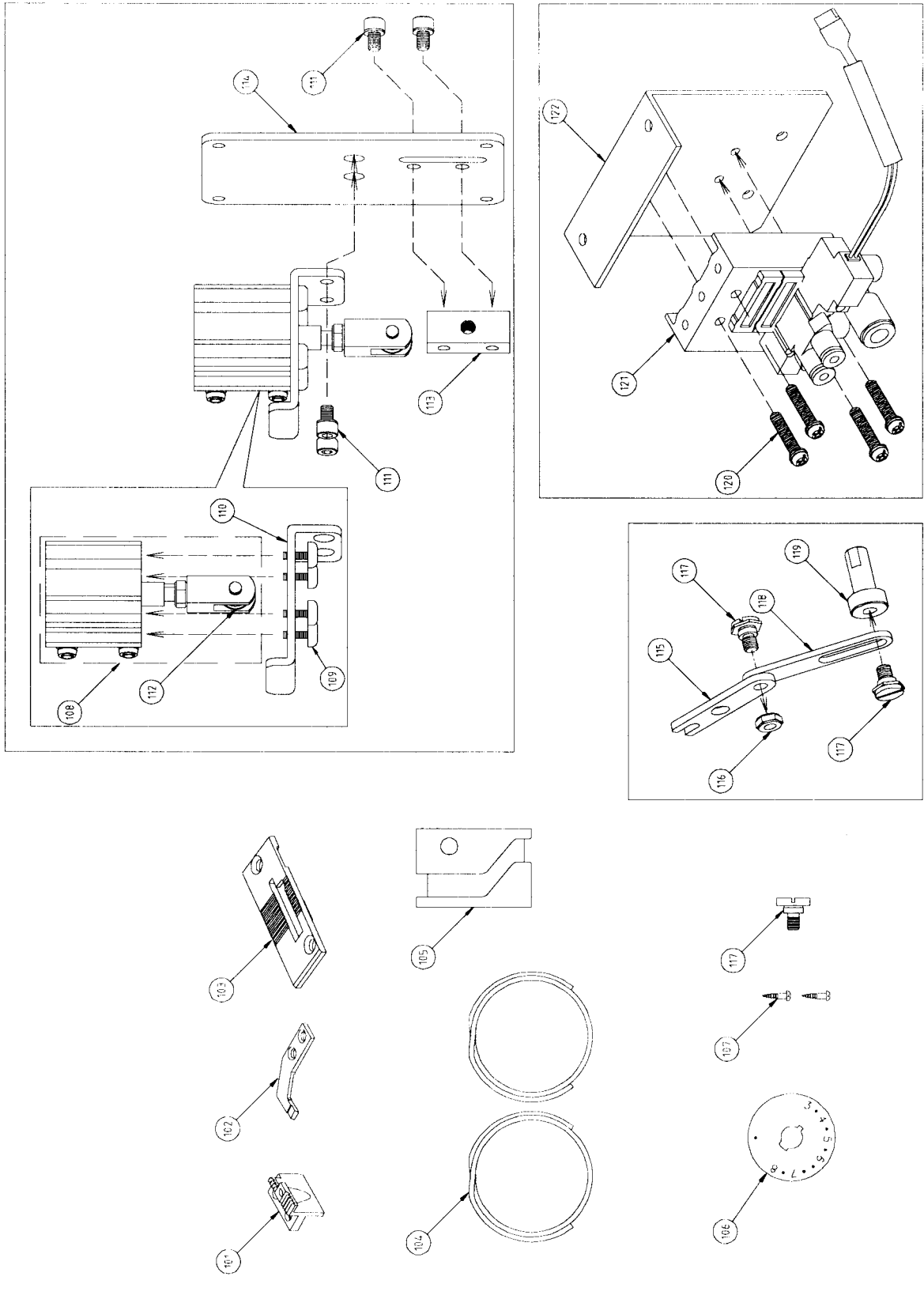
4.Component Parts

LU-ST KIT is composed under mentioned parts. (Fig No. corresponds to following figures.) Please specify (M···) by the part number for a service parts when you order.

Fig No.	Parts No.	Description	Amt. Req.	Ref. No.
101	MP69A0104	Feed dog	1	A134C845H01
102	MP69A0838	Fixed knife	1	A148D328H01
103	MP69A0101	Needle plate	1	A134C846H01
104	MP47A0567	Urethane tube	2	A146D415G02
105	MP69A0350	Thread trimmer cam	1	A122B208H01
106	MP69A0841	Stitch length indicating plate	1	A148D333H01
107	M99040041	Wood screw	2	A190D403P03
108	MP69A0434	Air cylinder assembly	1	A191D566P01
109	M96062021	Screw	4	A190D450P28
110	MP69A0601	Mounting plate	1	A148D331H01
111	M91511056	Bolt	4	A190D418P52
112	M90519050	Nylon washer	2	A147D205H01
113	MP69A0603	Bracket	1	A148D332H01
114	MP69A0237	Back cover	1	A134C847H01
115	MP69A0910	Driving link	1	A148D330H01
116	M91502045	Nut	1	W501883-H01
117	M91503031	Bolt	3	W481459-H01
118	MP69A1910	Link	1	A148D329H01
119	M90910060	Pin	1	A148D334H01
120	M91066004	Screw	4	A190D393P42
121	MP69E0599	Solenoid valve assembly	1	A134C850G01
122	MB61A5601	Solenoid value mounting plate	1	A133C599H01

The parts marked as “D** ” in the drawing can not be used after this kit is installed. However, these must be used when returning to the standard specifications, so store them in a safe place. Moreover, parts of “R** ” have already been installed in the sewing machine head.

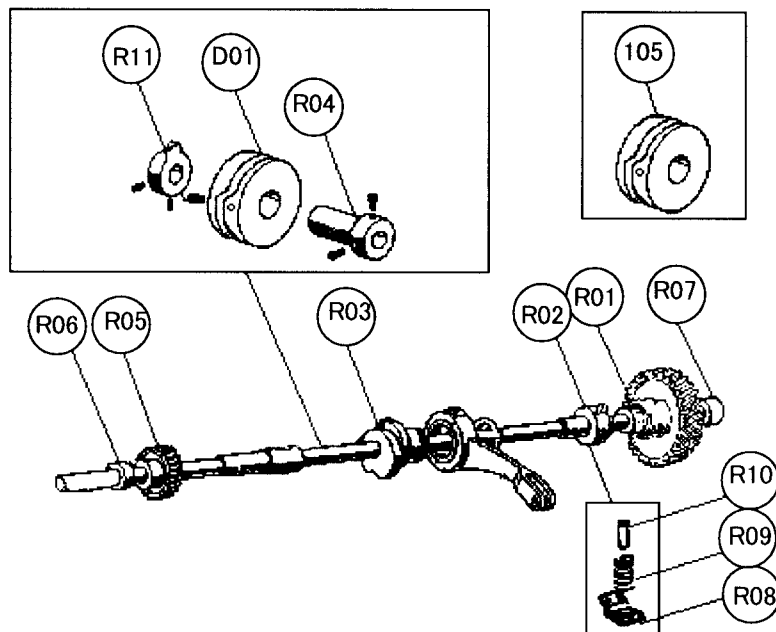
LU-STKIT Component Parts



5. Installation procedure of LU-ST KIT

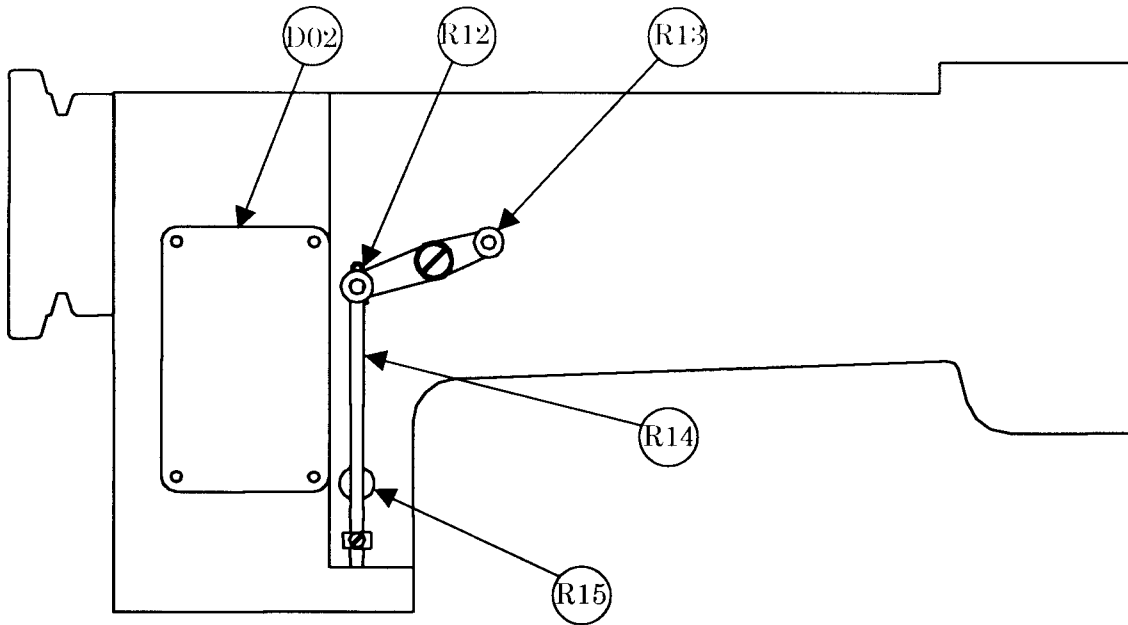
5.1 Exchange of thread trimmer cam.

- (1) Lean the sewing machine backwards.
- (2) Loosen the screw of bush(R01).
- (3) Loosen the screw of bush(R02).
- (4) Loosen the screw of feed cam(R03).
- (5) Loosen the screw of bush(R04).
- (6) Loosen the screw of the large gear(R05).
- (7) Loosen the screw of eccentric cam(R06).
(Lift the sewing machine and loosen the screw from the back side.)
- (8) Loosen the screw of bush(R07).
- (9) Loosen the screw of spring holder(R08). And then detach the coil(R09) spring and Pin(R10), and move the lower shaft right to the place where thread trimmer cam(D01) remove with bush(R04) and thread release cam(R11).
(Remove the eccentric cam(R06) and the large gear(R05).)
- (10) Remove the thread trimmer cam(D01) with bush(R04) and thread release cam(R11).
At that time, if the installation angle of the cam and bush is recorded, re-assembly work become easy.
- (11) Loosen the screw of thread release cam(R11), and then remove the thread release cam(R11) with bush(R04) and thread trimmer cam(D01). Exchange the thread trimmer cam(D01) for the kit one(105). In thread trimmer cam(105) of the kit has mark "2" to the side.
Install bush(R04) in the direction of the figure below. Afterwards, install thread release cam(R11).
- (12) Pass assembled the bush assembly(R04,105,R11) through the lower shaft.
- (13) Move the lower shaft left slowly.
- (14) Fix the large gear(R05). (Install it in the direction of the figure below.)
- (15) Fix the eccentric cam(R06). (Tighten the screw in the groove of the shaft at the right of the feed bar connecting fork beforehand.)
- (16) Move the lower shaft left and return it to former position.
- (17) Put the first screw in the set of lower shaft, and then tighten all of the loosened screw.

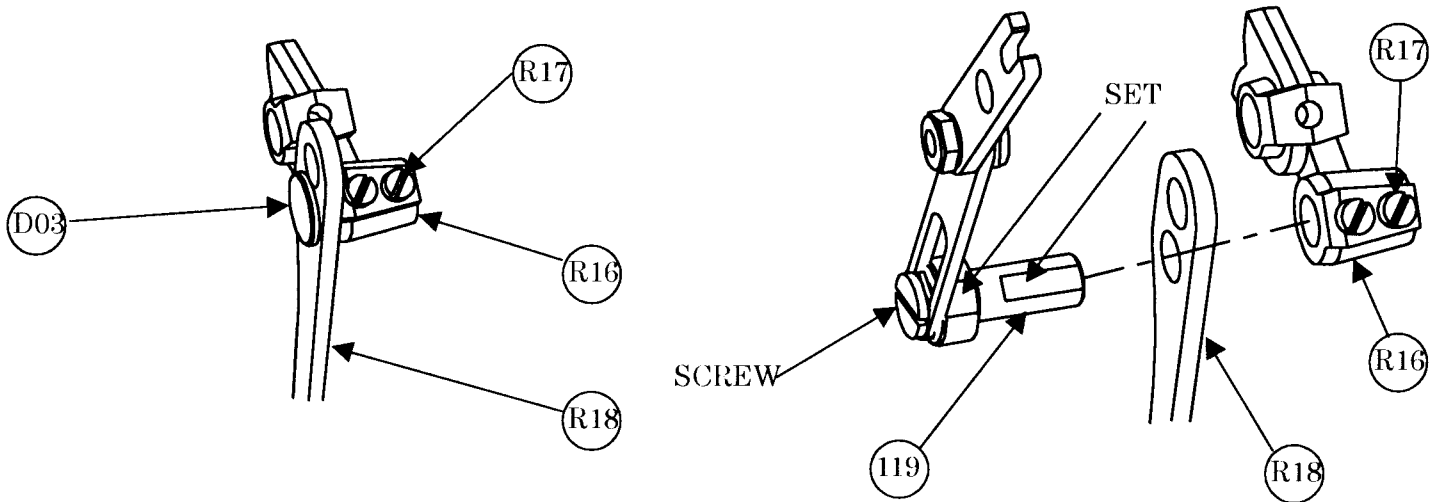


5.2 Installation of air cylinder assembly.

- (1) Remove the snap pin(R12), remove the knee lifter connecting rod(R14) from the knee lifter crank assy(R13).
- (2) Remove the rubber plug(R15).
- (3) Remove the back cover(D02).

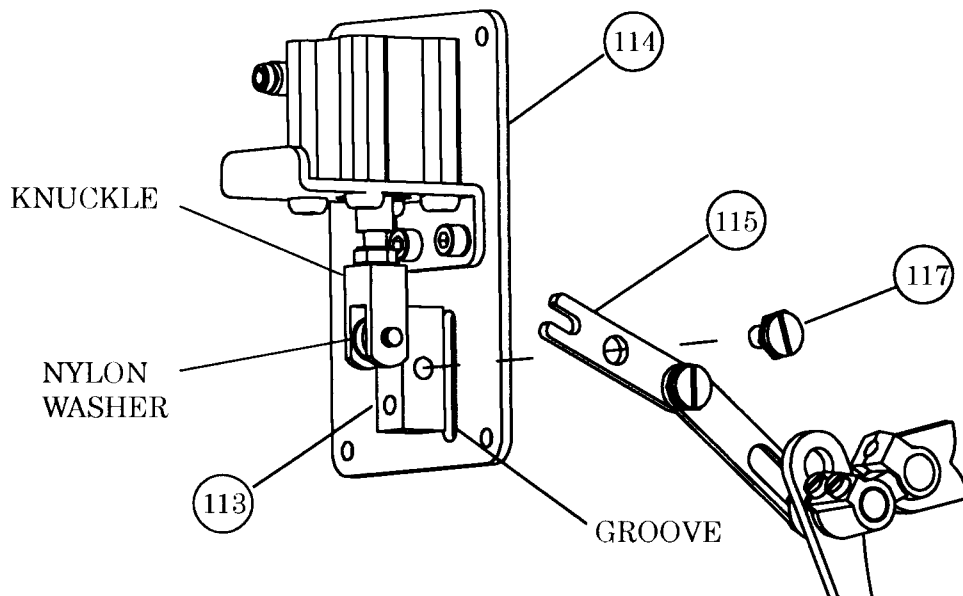


- (4) Loosen the two screw(R17) of the feed regulator cam(R16) seen when the rubber plug(R15) and the back(D02) cover are removed. and, pull out the pin(D03).
Note do not remove screw.



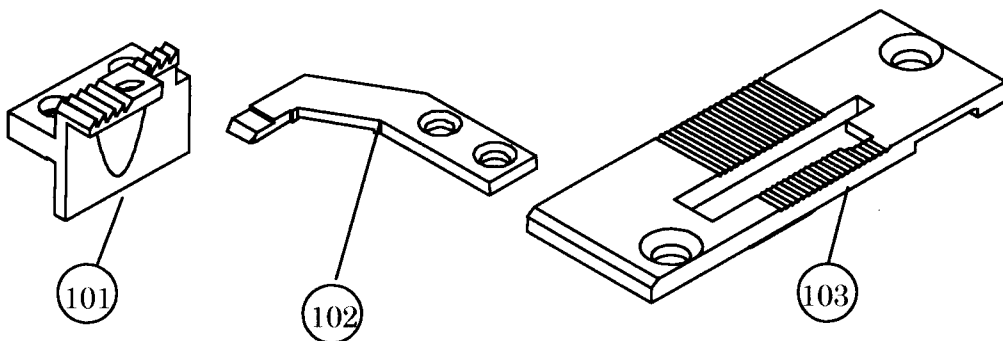
- (5) Match the hole of the driving link(R18) and the hole of feed regulator cam(R16) and fix the pin(119).
(Fit the hole of feed regulator cam(R16) to the hole of driving link(R18) moving driving link up and down and back and forth. Lean arm when driving link(R18) does not move back and forth and rotate the reverse bracket.)
- (6) Match the set of pin(119) and the screw(R17) of the feed regulator cam(R16) and loosen a right screw previously. Tighten the screw after confirming the screw fits in the set.

- (7) Match the back cover(D02) to arm and tighten the screw on the left of the back cover(D02) loosely.
- (8) Take out the driving link(115) from the groove of the back cover(114).
(Pull the knuckle to the point in the under.)
- (9) Fix the groove in the point of the driving(115) link into the pin between nylon washer and nylon washer.
- (10) Match the screw hole of the bracket(113) and the hole of the driving link(115) and tighten the bolt(117).
- (11) Take out the machine head support on the table.
- (12) Tighten all the screws of the back cover(114). and, it is assembly completion.



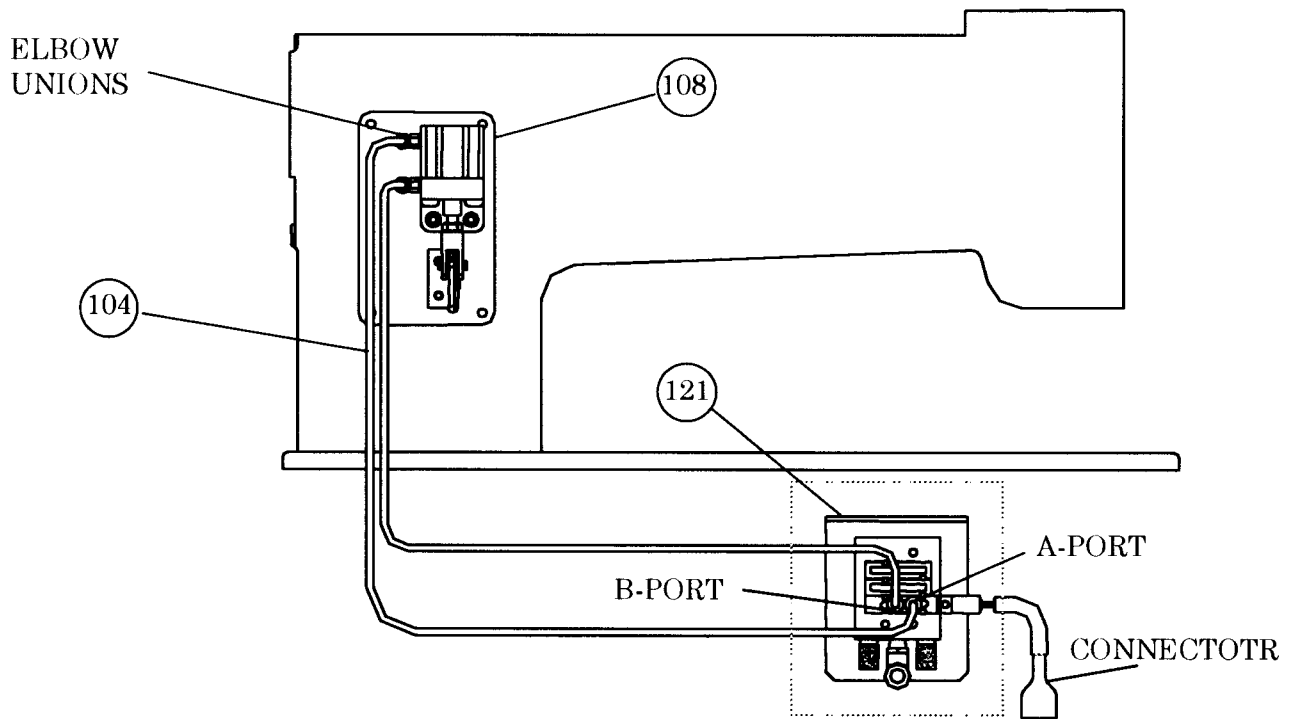
5.3 Exchange of feed dog, fixed knife, and needle plate.

Exchange parts of the figure below which you have for the one(101,102,103) of the accessory.



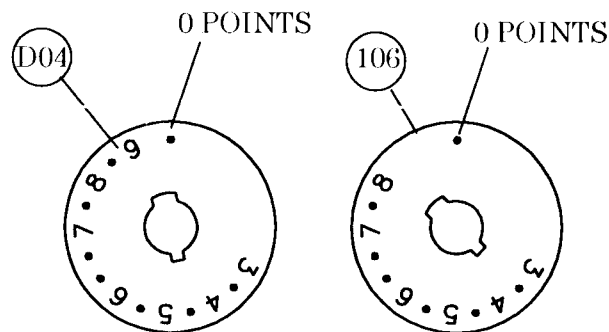
5.4 Installation of solenoid valve

- (1) Connect the urethane tube(104) with elbow unions of air cylinder assembly(108).
- (2) Install solenoid valve assembly(121) on the place where urethane tube(104) and under the table reach.
- (3) Connect the upper part of elbow unions installed on the air cylinder assembly(108) with A port of the solenoid valve assembly(121) by the urethane tube(104). Similarly, connect the lower side of elbow unions and B port of the solenoid valve assembly(121) by the urethane tube(104).
- (4) Connect the connector of solenoid valve assembly(121) with option B of the control board.
- (5) Connect the air supply source to the P port of the solenoid valve.
- (6) Use the regulator and the branch device which you prepared.



5.5 Exchange of stitch length indicating plate.

- (1) Turn the dial left and make the stitch length indicating plate to 0 points.
- (2) Loosen the screw at the center of the dial and remove the dial.
- (3) Remove the stitch length indicating plate(D04) from the dial and fix stitch length indicating plate(106) of this kit into the dial.
- (4) Make 0 points of the dial just above. after that, tighten the screw to install the dial.



6. Adjustment of thread trimmer cam

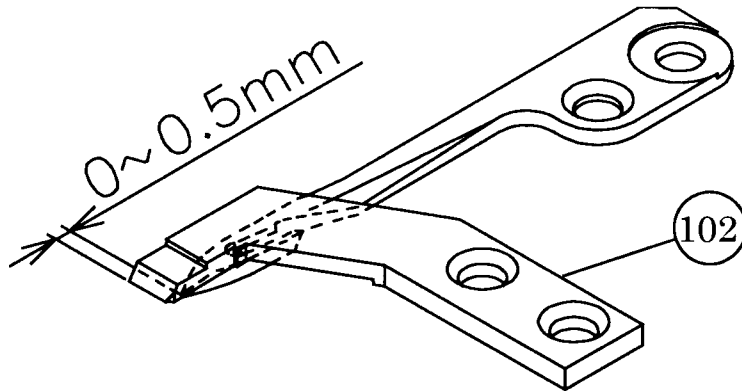
Refer to "Adjusting of thread trimmer cam" of instruction manual for LU2-4410.

7. Timing between rotating hook motion and needle motion

Refer to "Adjusting of timing between rotating hook motion and needle motion" of the instruction manual for LU2-4410.

8. Initial position of movable knife

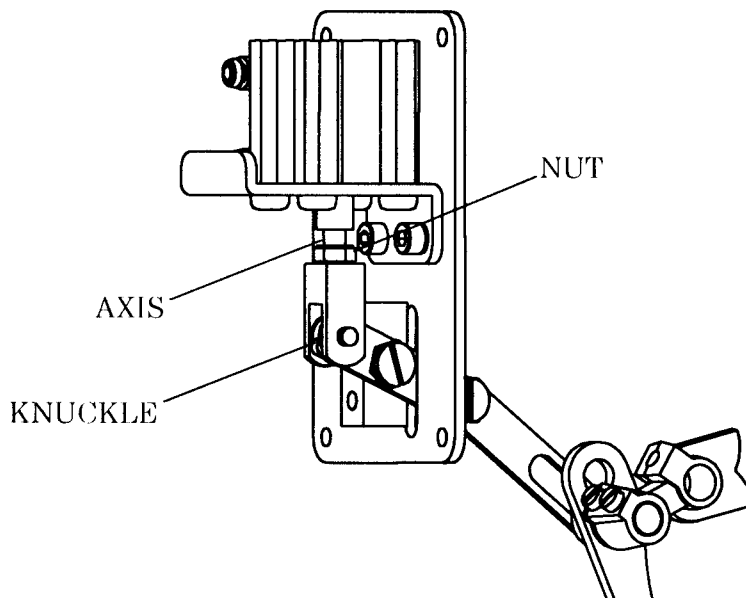
When you install this kit, the position need not be adjusted.
Refer to "install of movable knife" of the manual for the exchange of the movable knife .
However, the adjustment of the movable knife changes because the shape of the movable knife changed.
Adjust to hide the point of the movable knife from the point of the blade of the movable knife by 0-0.5 mm.



9. Adjusting of the stitch length before trimming

The stitch immediately before trimming may not form by sewing condition.
And the tail length after trimming may be long.
For this case, adjust the stitch length immediately before trimming to form the stitch surely.
Standards of the stitch length are 1-2 mm. The adjustment of the stitch length immediately before trimming can be adjusted by moving the position of the knuckle to the axis of the air cylinder up and down. Adjust by the following methods.

- (1) Loosen the nut on the knuckle.
- (2) Rotate the axis of the air cylinder.
And adjust the position of the knuckle to the axis of the air cylinder.
- (3) The stitch immediately before trimming is
forward : Turn the axis right to change reverse stitch.
reverse and too short : Turn the axis right.
reverse and too long : Turn the axis left.
The stitch length changes about 1 mm when the axis is made 1 rotation.



10. Setting up the XC-FMFY control box

Set the control box to machine model LU2-4412 by simple setting function.

If there is not machine model LU2-4412 in simple setting function,

set the control box by the following procedures.

At first, set the control box to machine model LU2-4410 by simple setting function.

The frequency which the key is pressed might change by the software version of the control box.

Table of control box setting for XC-FMFY.

Mode	Change function	Function name	Factory setting	Change setting	LU-ST setting
G Mode ↑ + ↓ + C	—	TR	M1	D 1 times	PRG
	↓ 1 times	TRM	LK	D 5 times	DN
	↓ 2 times	LLM	L1	D 1 times	L2
	↓ 3 times	LS	0	Input	180
	↓ 1 times	LE	90	Input	360
C Mode ↓ + C	↑ 27 times	R2	NO	C 20 times	L
	↑ 2 times	R1	NO	C 18 times	B
	↑ 3 times	OR	NO	C 18 times	IO3
	↑ 15 times	N2L	OF	D 1 times	ON
	↑ 1 times	N2	NO	C 21 times	T
	↑ 2 times	N1	NO	C 11 times	TB
	↑ 3 times	A1	NO	C 19 times	IO2
	↑ 43 times	O3	TF	D 1 times	KS1
	↑ 10 times	O1	OT1	D 1 times	OT2
	↑ 16 times	OC	B	D 21 times	OT3
S Mode ↓ + B + D	↓ 1 times	SQS	NO	D 5 times	TR
	↓ 18 times	K11	7	Input	0
	↓ 1 times	K12	7	Input	17

1. Press [↓], [↑] key to Change function.
2. Press [C], [D] key to Change setting.
3. Press [↓]+[A]+[B] key to enter simple setting mode.
4. Press [↓]+[↑]+[B]+[C] key to enter save mode.
5. Press [D] key when display show "LOAD" in simple setting mode to load setting data.

11. Setting up the XC-EMFY control box

At first, set the control box to machine model LU2-4410 by simple setting function.

The frequency which the key is pressed might change by the software version of the control box.

Table of control box setting for XC-EMFY.

Mode	Change function	Function name	Factory setting	Change setting	LU-ST setting
G mode ↑ + ↓ + C	—	TR	M1	D 1 times	PRG
	↓ 1 times	TRM	LK	D 5 times	DN
	↓ 2 times	LLM	L1	D 1 times	L2
	↓ 3 times	LS	0	Input	180
	↓ 1 times	LE	90	Input	360

C mode ↓ + C	↑ 21 times	R2	NO	C 25 times	L
	↑ 2 times	R1	NO	C 23 times	B
	↑ 3 times	OR	NO	C 22 times	IO3
	↑ 3 times	N2L	OF	D 1 times	ON
	↑ 1 times	N2	Hi	C 25 times	T
	↑ 2 times	N1	Hi	C 16 times	TB
	↑ 3 times	AN	NO	C 23 times	IO2
	↑ 41 times	O3	TF	D 1 times	KS1
	↑ 10 times	O1	OT1	D 1 times	OT2
↑ 16 times	OC	B	D 13 times	OT3	

S mode ↓ + B + D	↓ 1 times	SQS	NO	D 5 times	TR
	↓ 13 times	K11	7	Input	0
	↓ 1 times	K12	7	Input	17

1. Press [↓], [↑] key to Change function.
2. Press [C], [D] key to Change setting.
3. Press [↓]+[A]+[B] key to enter simple setting mode.