

# Section 3.2A

## Electronic-control Take-up Motion (Change gearless type, Option)

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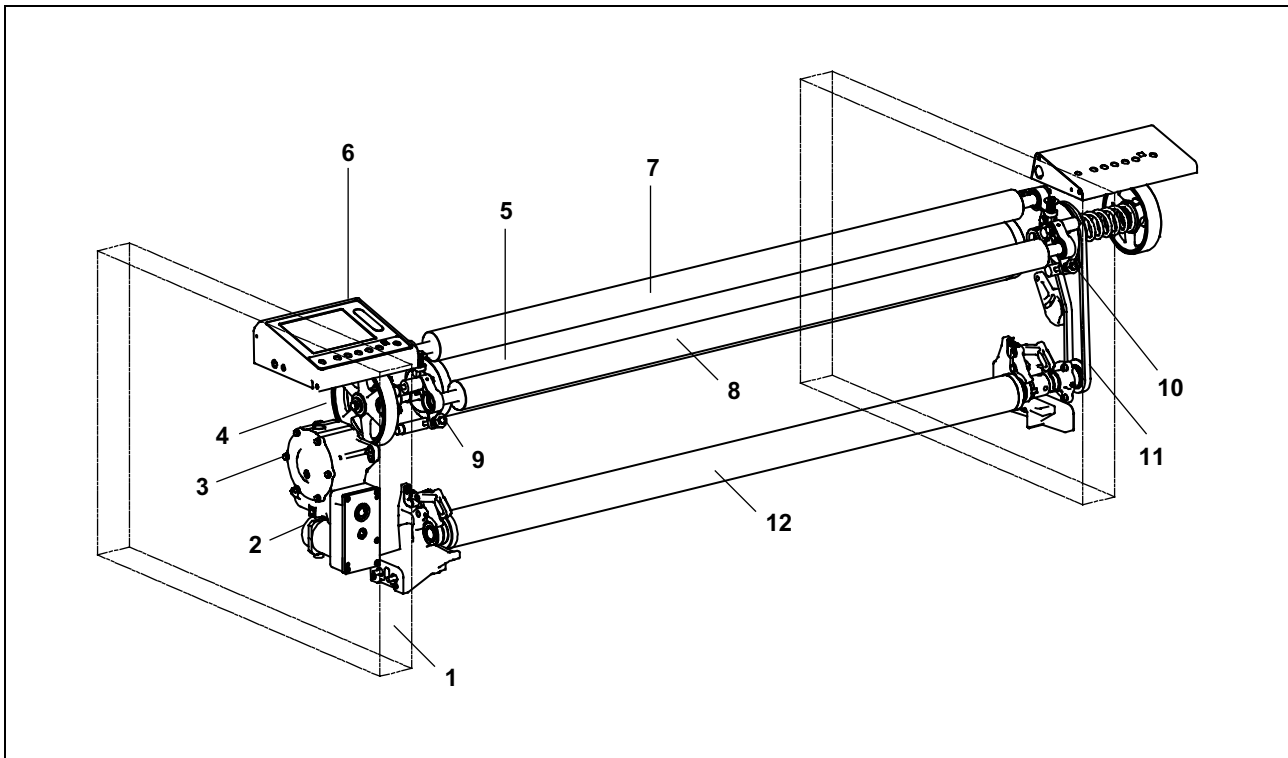
### 3. CLOTH TAKE-UP MOTION

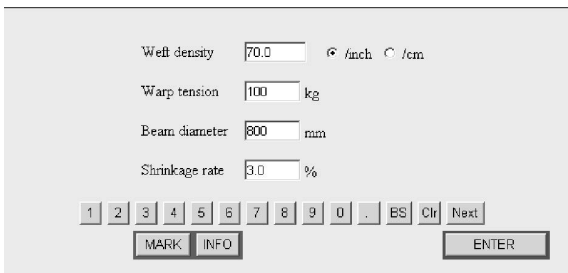
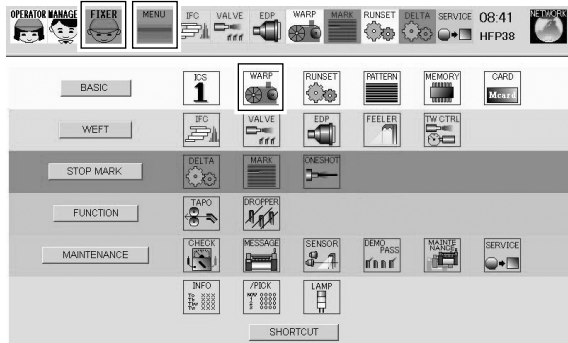
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#### 3.2A Electronic-control Take-up Motion (Change gearless type, Option)

- (1) The rotation of AC servomotor **2** located at the left-hand outside of the weaving machine is transmitted via gear-speed reduction box **3** to gear train **4** which rotates surface roller **5** at the speed (or weft density) previously set on function panel **6**.
- (2) Since press rollers **7** and **8** are pressed against surface roller **5** with spring **9**, woven fabric is held by the contact pressure between those rollers.
- (3) The rotation of surface roller **5** is further transmitted via right-hand coupling **10** and chain **11** to cloth roller **12** which takes up the woven fabric with appropriate tension.
- (4) This motion cannot be used when the weft density is to be modified partially.

**TIP:** For the instrumentation of the electronic control take-up motion, refer to Chapter 9, Section 9.4 "Electronic-control Take-up Motion (Option)."





### 3.2A.1 Setting on the Function Panel

#### [ 1 ] WARP switch

On the screen shown at left top, touch **FIXER–MENU–WARP**(on BASIC menu) to call up the screen shown at left center where you may set the weft density and shrinkage rate.

##### a) Weft density

Unit: inch or cm

Entry range: 24 to 300 wefts/inch  
7 to 120 wefts/cm

The lower limit of the weft density will vary depending upon yarn beam specifications and machine speed (rpm).

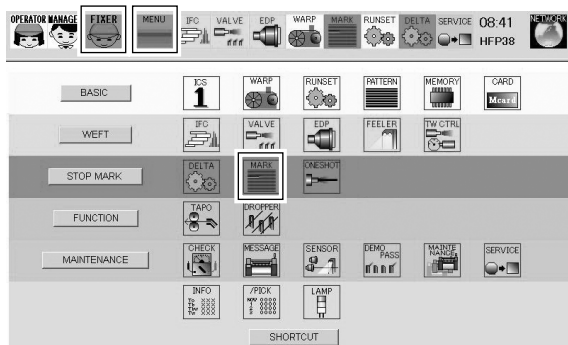
It is also related with the let-off setting. Refer to Chapter 2, Section 2.1.1, [ 1 ], "(2) Weft density setting range."

b) Shrinkage rate = Shrinkage rate in the length-wise direction of cloth

$$= 1 - \frac{\text{Length of cloth unloaded from the machine}}{\text{Length of cloth under tension during weaving}}$$

The typical shrinkage rate is 2 to 3% which will vary depending upon cloth types.

Only when the machine is on halt, you may set or modify the weft density and shrinkage rate.



#### [ 2 ] MARK switch

On the screen shown at left bottom, touch **FIXER–MENU–MARK**(on STOP MARK menu) to call up the screen shown on the next page where you may set the fell forward amount, time correction values and kickback amount.

(For details, refer to Chapter 2, Section 2.3 "Stop Mark Preventions.")

### 3. CLOTH TAKE-UP MOTION

Touch **FELL FORWARD**.

The cloth fell moves forwards or backwards immediately after the machine halts and then returns it to the original position at the time of restart.

Entry range: -9.99 to +9.99 mm

The typical value is  $\pm 0$  mm.

You may set correction values at weft stop and at warp stop individually.

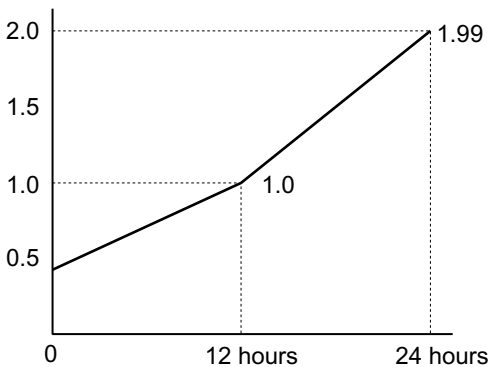
"Travel on" is cloth fell movement made after the machine halts. "Travel on" is movement made at the time of restart. Entry of a positive (+) value will move the cloth fell forwards; entry of a negative (-) value will move it backwards.

When the fell forward is used, the "Travel on stop" + "Travel on start" should be typically 0.

Touch **TIME CORRECTION**.

You may correct the cloth fell amount that will change according to the machine stop time, by setting the correction values of the let-off and take-up motors.

Touching **ENTER** makes items selected with check marks effective.

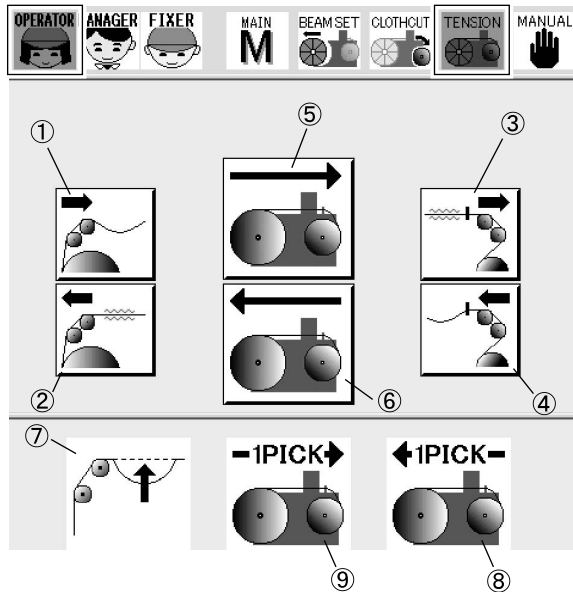


Graph based on the above settings

Touch **KICKBACK**.

You may adjust the let-off amount for the restart by rotating the motor in the forward or reverse direction.

Typical setting: Equal to the value specified for stop time 00 minute at TIME CORRECTION given above. But the sign (+, -) for it should be changed to the opposite.



### [ 3 ] TENSION switch

Touch **OPERATOR–TENSION** to call up the screen shown at left where you may manually operate the take-up motion and let-off motion.

Listed below are switches and their functions.

- ① Runs the let-off motion in the forward direction.
- ② Runs the let-off motion in the backward direction.
- ③ Runs the take-up motion in the forward direction.
- ④ Runs the take-up motion in the backward direction.
- ⑤ Runs both the let-off and take-up motions simultaneously in the forward direction.
- ⑥ Runs both the let-off and take-up motions simultaneously in the backward direction.
- ⑦ Causes the let-off motion to restore the registered warp tension.
- ⑧ Causes the let-off motion to restore the registered warp tension.
- ⑨ Causes the let-off motion to restore the registered warp tension.

\* Holding down any of switches ① to ⑥ for 3 seconds or more will shift to high-speed rotation.

\* Each time any of switches ⑦ to ⑨ is pressed, a single sequence of the corresponding operation takes place.

### 3. CLOTH TAKE-UP MOTION

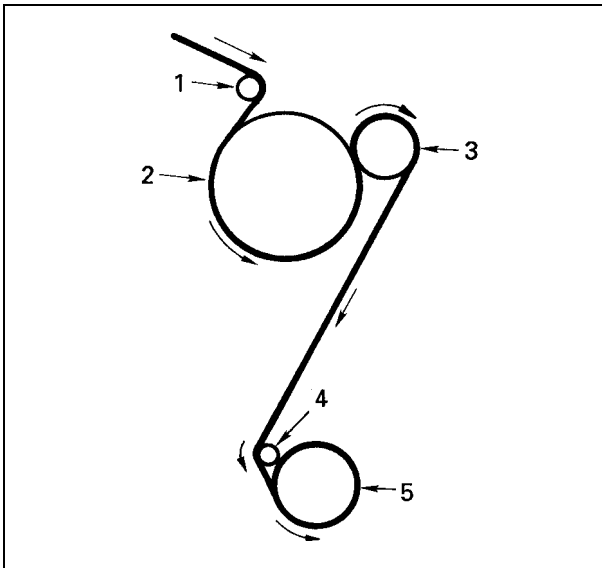
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#### 3.2A.2 Setting Cloth

##### [ 1 ] Cloth path

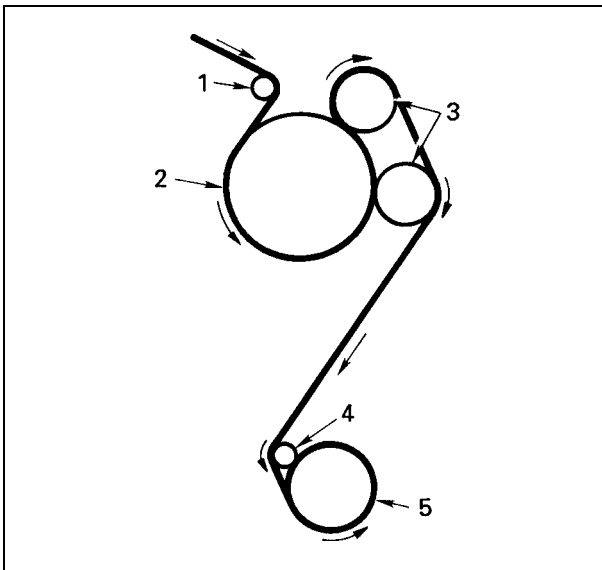
##### [ 1.1 ] For 1-press rollers

Expansion bar 1 → Surface roller 2 → Press roller 3 → Cloth guide 4 → Cloth roller 5



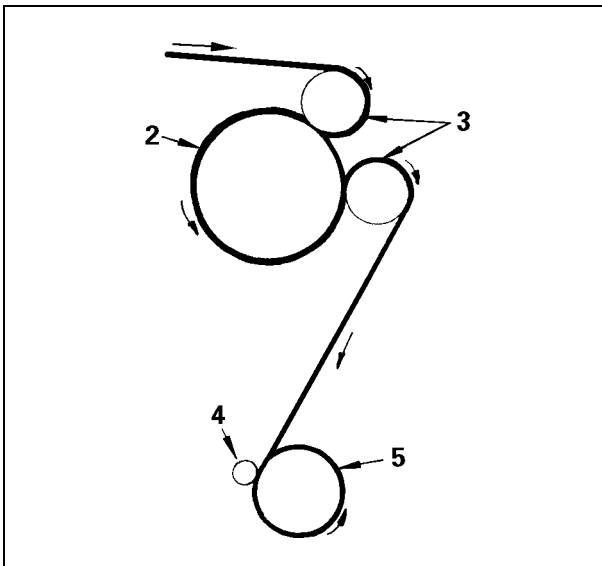
##### [ 1.2 ] For 2-press rollers

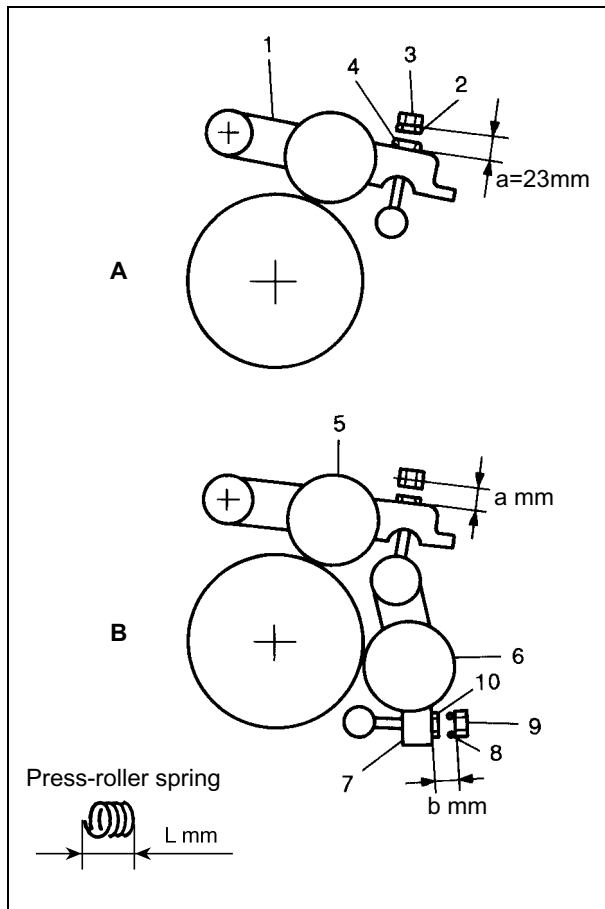
Expansion bar 1 → Surface roller 2 → Upper and lower press rollers 3 → Cloth guide 4 → Cloth roller 5



##### [ 1.3 ] For low-density cloth

Upper press roller 3 → Surface roller 2 → Lower press roller 3 → Cloth guide 4 → Cloth roller 5





**[ 2 ] Adjusting the press-roller springs**

**NOTE:** Do not tighten the press-roller springs excessively; otherwise, they may break.

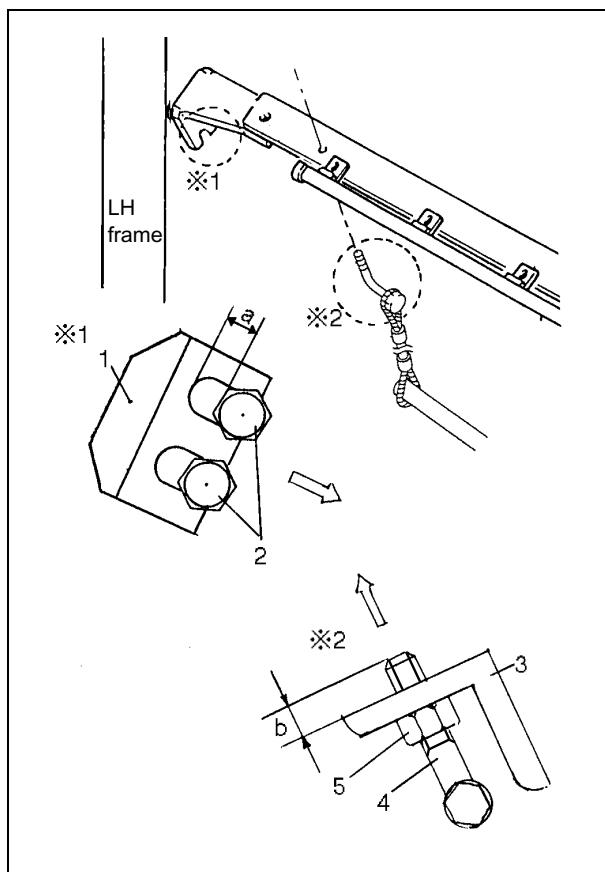
**[ 2.1 ] For 1-press rollers A**

Adjust press-roller spring 4 by turning adjustment bolt 3 so that distance "a" between press-roller lever 1 and the top end of washer 2 comes to 23 mm.

**[ 2.2 ] For 2-press rollers B**

- (1) Upper press roller 5  
Adjust the distance "a" to the value as listed below in the same way as the 1-press rollers above.
- (2) Lower press roller 6  
Adjust press-roller spring 10 by turning adjustment bolt 9 so that distance "b" between press-roller lever 7 and the top end of washer 8 comes to the value as listed below.

Application		Standard version	Glass fiber version
L mm		34	30
Reference distance (mm)	a	23	19
	b	25	21

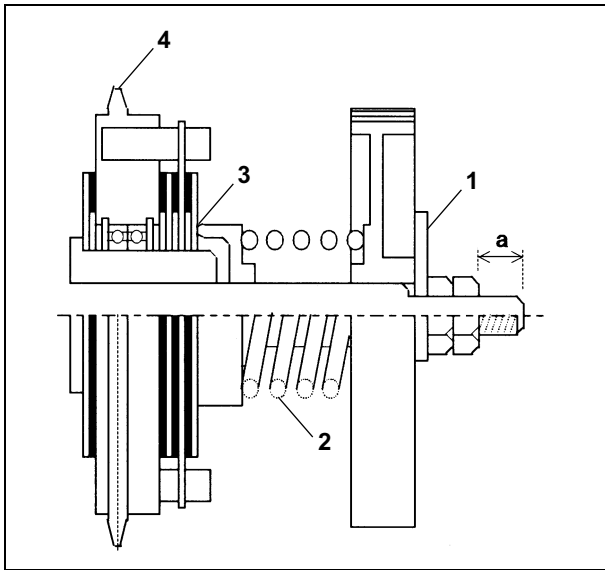


**[ 3 ] Adjusting the length of the cloth guide roller belt**

If any of the following problems occur, adjust the belt length according to the procedure given below:

- The belt is so long that it becomes broken.
  - The belt is so short that the cloth guide roller pops out.
- (1) Loosen nut 5 and adjust special bolt 4.  
(Distance "b" = max. 5 mm)
  - (2) If it is necessary to make adjustment beyond the adjustable range covered by special bolt 4, loosen two nuts 2 and adjust distance "a" of guide bracket 1.  
To shorten the belt, increase the distance "b" or "a."  
To lengthen the belt, decrease the distance "b" or "a."

### 3. CLOTH TAKE-UP MOTION



#### 3.2A.3 Taking up Cloth

##### [ 1 ] Adjusting the take-up tension

The take-up tension can be adjusted by turning handle **1** located on the right-hand side of the weaving machine.

- (1) To tighten the take-up tension, turn knob **1** clockwise. This operation compresses spring **2** and increases the contact pressure between cone disk **3** and sprocket **4**.
- (2) To loosen the take-up tension, turn knob **1** counterclockwise.

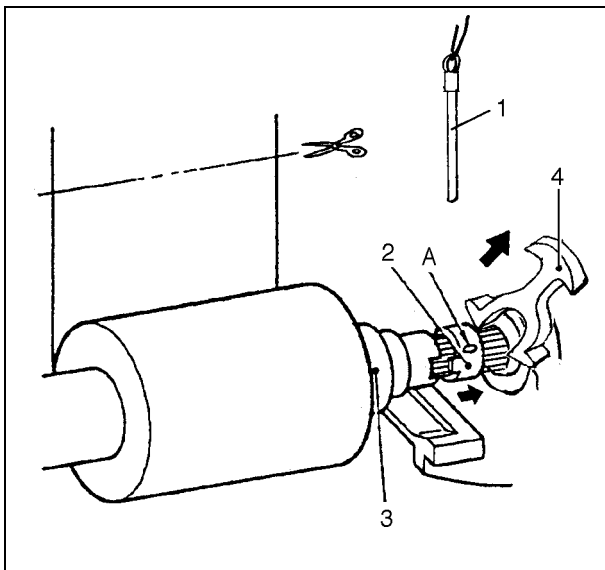
**NOTE:** During the above adjustment, be sure to observe the actual take-up conditions including the actual take-up tension and creases for each type of fabric.

**NOTE:** Spring **2** will come into the standard compression when distance "a" is 20 mm.

##### [ 2 ] Doffing cloth roller

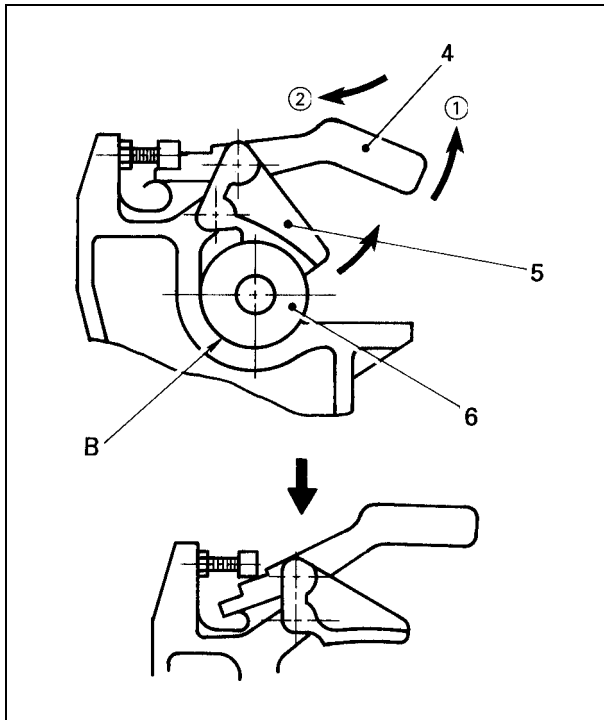
###### [ 2.1 ] Clutch type

- (1) Pull out clutch stopper **4** from the cloth roller shaft located on the right-hand side of the weaving machine.
- (2) Insert handle **1** into hole **A** provided in clutch **2**, then turn it towards you to reduce the cloth tension.
- (3) Shift clutch **2** to the right by hand to disengage it from cloth roller **3**.
- (4) Cut the cloth along the cut mark.

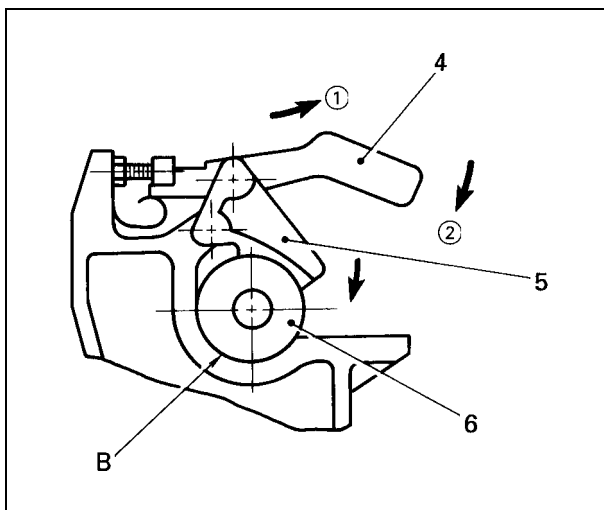




### 3.2A Electronic-control Take-up Motion (Change gearless type, Option)



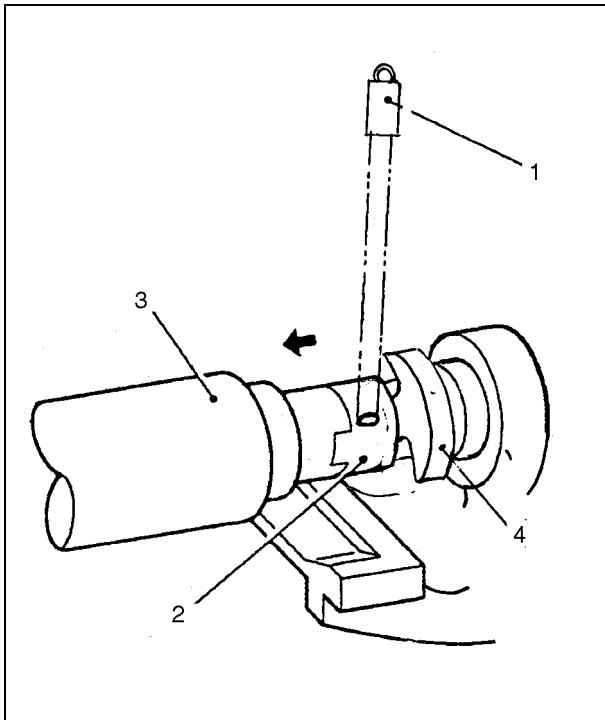
- (5) Lift up handles **4** located at both sides of the weaving machine in the direction of arrow ① and push it in the direction of arrow ②, to separate clammers **5** from cloth roller bearings **6**.
- (6) Doff cloth roller **3** from the weaving machine.
- (7) Put the empty cloth roller into location **B**.



- (8) Pull handles **4** located at both sides of the weaving machine in the direction of arrow ① and lower them, to bring clammers **5** into close contact with cloth roller bearings **6**.
- (9) Wind the end of the cloth previously cut in step (4) around the empty cloth roller **3**.

### 3. CLOTH TAKE-UP MOTION

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- (10) Shift clutch **2** to the left by hand and fit it into the slot of cloth roller **3**.

**NOTE:** It may be necessary to turn the cloth beam in fitting shift clutch **2**. Though this operation loosens the cloth, the looseness disappears right after the weaving machine starts up.

- (11) Fit clutch stopper **4** over the cloth roller shaft.