



OPERATION MANUAL

BAND LOOP CUTTER

MODEL BK - 12

MORIMOTO MFG. CO., LTD.

This manual provides necessary information and instructions for the maintenance and operation of the band loop cutter model BK - 12. Necessary information and instruction for the sewing machine model B2000C are given by the instruction manual of the sewing machine.

Description of Band Loop Cutter

The model BK - 12 is a derivative of our model BK - 10 highly appreciated by customers and has many new features.

- 1) The cutter is installed in a short time.
The model BK - 12 can be installed just by removing the head cover of the sewing machine model B2000C without troublesome jobs such as the assembly of the table and the installation of the motor required by the model BK - 10.
- 2) The cutter is provided with a seam detector.
The seam detector detects a seam and rejects a defective work having a seam.
- 3) The cutter is provided with a turnout counter.
The counter counts the number of works and dis-

plays the number of works to be cut. It does not count the number of defective works with a seam.

- 4) The cutter is provided with a relay which may be used as desired by the user.

The display light flashes and the relay is actuated when the number of works to be cut displayed on the counter reaches zero. The user can use the relay as desired, for instance, to make it signal a buzzer or stop the sewing machine motor.

Specifications

- 1) Input power supply: 100, 115-120, 200, 220-240 v
AC, single phase
(An optional transformer is available for other input power supply voltages.)
- 2) Wattage: About 100 W
- 3) Installation method: Direct mounting on the sewing machine
- 4) Cutting speed: 100 times/min (Interlocked with the sewing speed of the machine)

- 5) Cutting length: 35 mm to 150 mm
 - 6) Maximum width: 40 mm
 - 7) Maximum count display: 9999 works
 - 8) User application relay: The relay is closed when a preset number of works are produced.
- Contact capacity:
- 3 A, 250 V AC
 - 3 A, 30 V DC

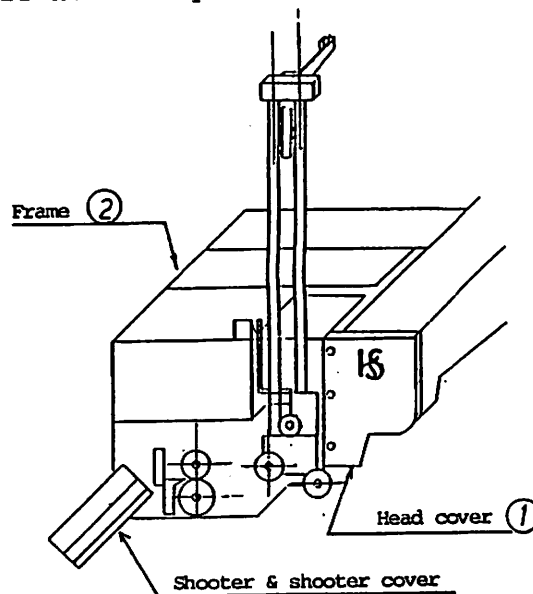
1. Installation

Check the quantities of components received. The following components were packed and shipped from the factory.

- 1) Cutter frame
- 2) Tensioner
- 3) Shooter and shooter cover (Sometimes delivered assembled to the cutter frame)
- 4) Leads for user application relay
- 5) Cutter assembling bolts 3 pc
- 6) Tensioner assembling bolts 2 pc
- 7) Head cover for BK - 12
- 8) Part list
- 9) Instruction manual
- 10) (Shooter assembling screws 2 pc)

Assemble the cutter in the following steps.

- 1) Assemble the head cover ① to the frame ②.
(The item numbers are identical to the numbers shown in the illustrations.)
- 2) Remove the head cover of the sewing machine model B2000C and install the cutter to the sewing machine.
- 3) Assemble the tensioner.
- 4) Assemble the shooter and shooter cover.
- 5) Connect the power supply cable (via the transformer if necessary).



Refer to the part list for the assembling methods.
Must check the power supply voltage label. If necessary, use an optional transformer set.

2. Adjustment and Operational Check

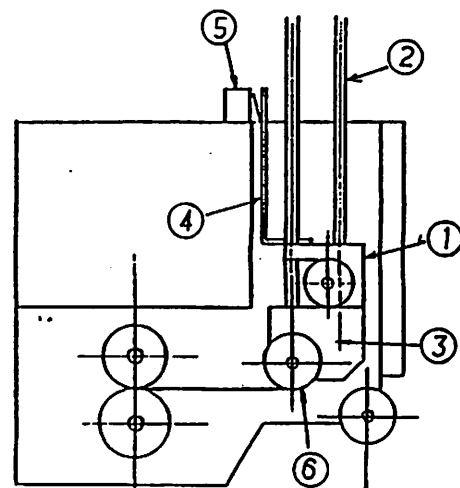
Adjustment and check before turning on power supply

1) Tensioner (Fig. 1)

Assemble the lower tension base (3) so that the tension slider (1) can slide up and down on the slide shaft (2) freely.

- 2) Adjust the lever of the limit switch by bending it with a plier or the like so that the limit switch in the limit switch box (5) shall be positively turned on when the tension slider (1) is driven up and down by the hand and the limit bar (4) comes beside the limit switch box. Adjust the lever so that the limit switch is turned on by any portion of the limit bar. Bend the lever lightly with a long nose plier or the like. If a big force is applied, the switch may be damaged.

- 3) Adjust the installation location of the tape guide roller (6) so that the tape shall be leveled as illustrated.

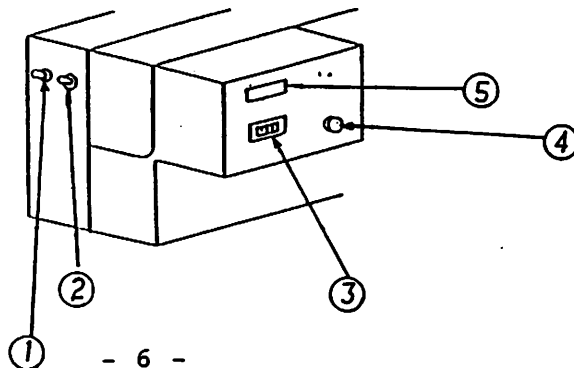


Adjustment and check after turning on power supply

1) Connect the power supply cable to the power supply source after ensuring that the main switch ① and motor switch ② are in the off position.

2) Set the preset switch ③ to about 30 (0030). Turn on the main switch and the motor switch, and press the reset switch ⑤. The turnout display ④ will show the preset number, and the displayed number is decremented one by one each time the knife and the transfer roll are actuated once. When the work number display reaches zero, the three right-most digits of the work number display flash and the actuating sound of the user application relay will be heard.

[Note] The turnout display is not decremented if the one left-most digit of the four digits is not flashing. If so, adjust the seam detector at first. The adjusting method of the seam detector is outlined later.



3) Slowly lower the tension slider. Be sure that the motor is stopped when the limit switch is turned on by the limit bar. Also be sure that the motor remains standing till the slider is slowly lowered to the bottom. If the motor begins to run half-way, readjust the tensioner as outlined previously.

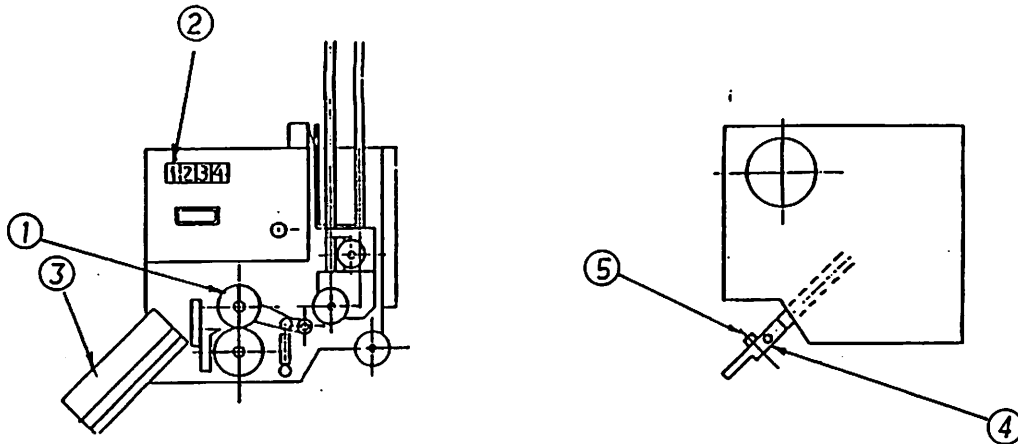
It was so adjusted before shipment that the knife shall be stopped nearly at the up end when the motor is stopped. If deviating, adjust the motor stop position as outlined later.

Adjustment and check of seam detector

A seam is detected because the thickness of the seam is about two times as large as that of normal cloth. If a seam is taken in between the upper and lower feed rollers, the upper roller ① is raised. The raise is detected by an incorporated phototube which actuates the shooter ③. Thus the position of the sensor must be adjusted according to the thickness of the loop material. Stop the motor and adjust the seam detector.

1) The left-most digit ② of the turnout display serves as an indicator of the sensor. When the

digit is lit, the sensor is not detecting a seam. Raise the upper feed roller slowly by the hand. The indicator will be turned off when the upper feed roller is raised several millimeters.



- 2) Loosen the screw (5) of the sensor bar (4) and slowly raise and lower the sensor bar. The indicator is lit and turned off. Adjust the bar position according to the thickness of a detecting object.
- 3) Feed a normal portion of the loop between the upper and lower feed rollers, and temporarily fix the position of the sensor bar so that the indicator shall be lit. Adjust the position of the sensor bar little by little so that the indicator is turned off when a seam is fed between

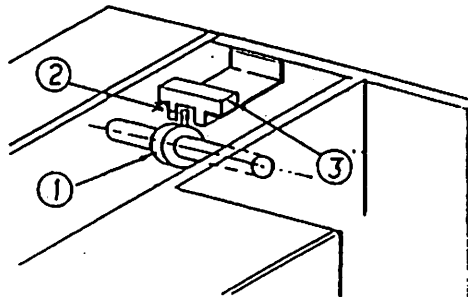
the upper and lower rollers. By repeating the above steps, adjust and fix the position of the sensor bar so that the indicator is off normally and comes on in presence of a seam.

Other adjustments and checks

1) Adjustment of motor stop position

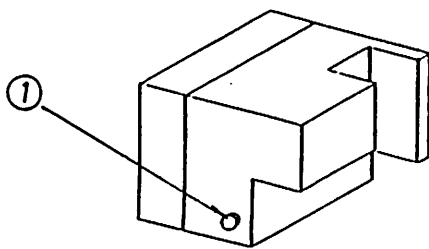
The motor is stopped when the limit switch of the tensioner is turned on by the limit bar. At the time, the knife should stop at around the up end position. Adjust if the position deviates.

The motor runs more or less before it is stopped by the crossing of the spring pin ② across the sensor ③. Make adjustment by considering that. Don't move the collar in the axial direction when the sensor collar ① is loosened. Otherwise, the spring pin may hit and damage the sensor.



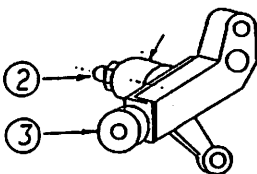
2) Adjustment of upper knife tension

Adjust the screw ① to an optimum position according to the thickness of cloth. It was adjusted according to jeans before shipment.



3) Adjustment of tape length

Loosen the screw ② on the feed rocker ① and turn the knob ③ to an optimum position. Then tighten the screw ② firmly as before. Don't run the motor with the screw ② loosened.

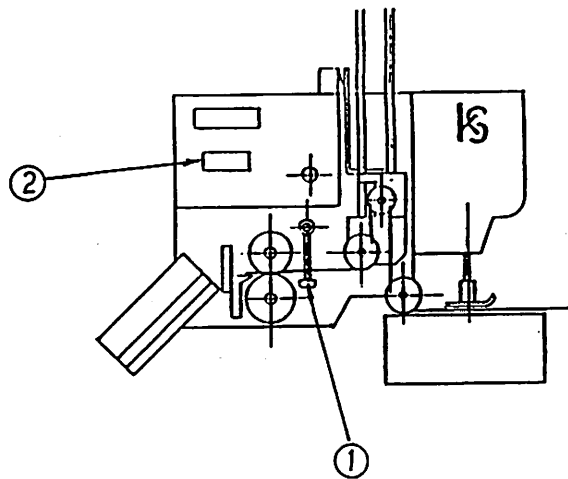


3. Preparation for Sewing

- 1) Make about one meter of tape by sewing on the sewing machine model B2000C with the motor and main

switches of the loop cutter model BK - 12 turned off. Then set the tape as illustrated.

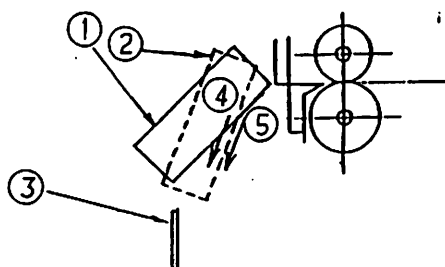
- 2) Set the width and position of the tape with the tape guide pin ①. Set so that the tape shall be centered on the roller and the knife.
- 3) Set a required number of products with the switch ②.



- 4) Turn on the main switch and press the reset switch. The set number of required products will be indicated.
- 5) Turn on the motor switch. The cutter model BK - 12 will start operation and begin to cut the tape. Continue to make the tape by the sewing machine, and the cutter automatically cuts the tape.

6) Rejection of defective tapes

If a defective portion is detected, the shooter turns from the position ① to ②. Place a partition at the position ③. Defective tapes will be rejected in a route ④ or ⑤.

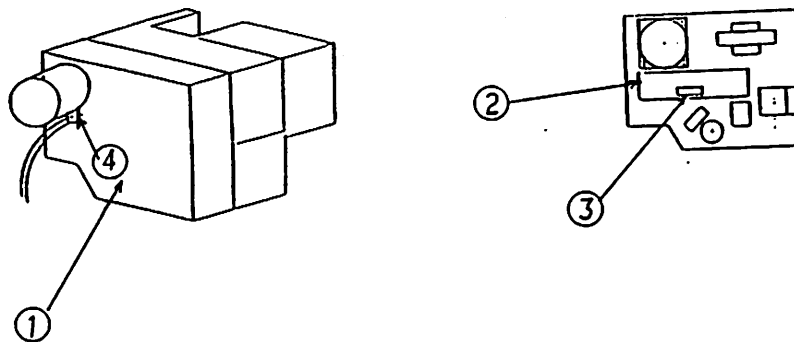


7) If the number of cut pieces reaches the preset level, the three right-most digits of the display flash to warn the operator. At the same time, the user application relay is turned on, enabling to use the signal for sounding the buzzer or turning off the sewing machine.

User application relay

As outlined previously, the band loop cutter is provided with a relay which is turned on when a tape is cut to a preset number of pieces. The user can use the relay via the supplied leads as desired.

- 1) Remove the rear panel ① of the band loop cutter. Couple the connector of the supplied leads to the connector ③ on the PCB ②, and lead the leads out from the power supply cable outlet ④.



- 2) The relay contact circuit is independent from the band loop cutter.

The contact capacity is:

250 V AC, 3 A

30 V DC, 3 A

Insert an adequate arc extinction circuit across the contacts depending on the type of the load. When the contact signal is used for controlling

a large inductive load such as the sewing machine motor or a large lamp load, connect the contacts to the load via a separate relay.

(Examples of applications)

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