



SEIKO

Operating Instructions For **CH Series**

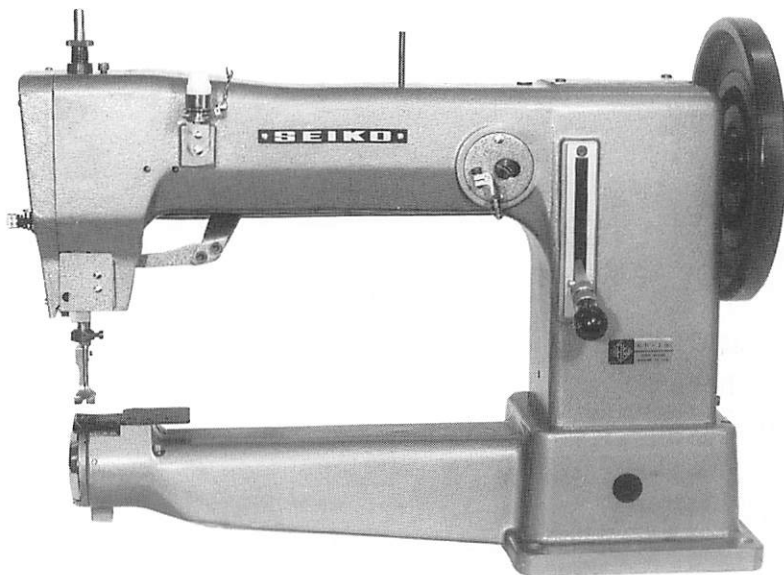
CH-2B CH-2-RF

CH-2B/DF

CH-6B

CH-7B

CH-8B



SEIKO SEWING MACHINE CO., LTD.

TOKYO · JAPAN

Specifications of CH Types

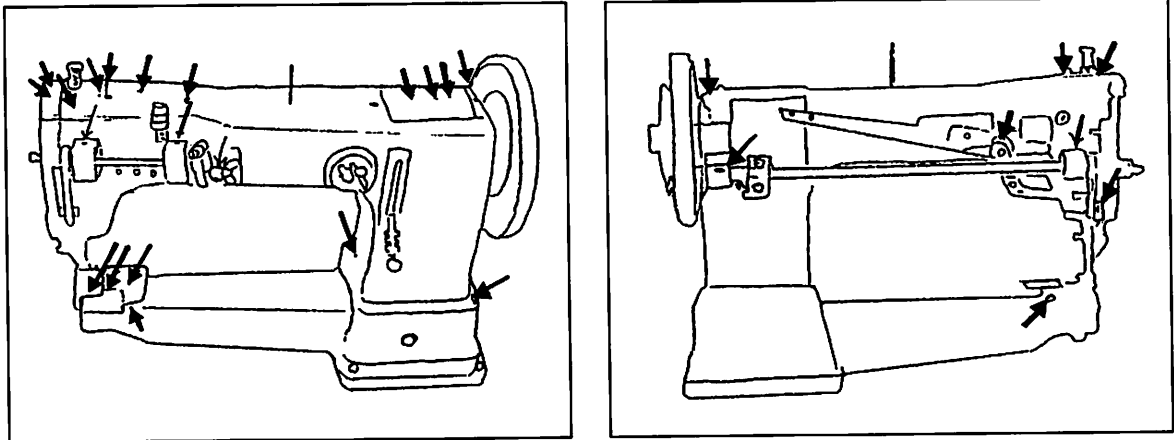
Sewing speed:	Max. 800 s.p.m. (Max. sewing speed will be changed by the models and applications.)
Needle type:	DD x 1 #24-25, standard #24 (Needle type may differ from the above types according to the threads to be used and the materials being sewn.)
Number of needle:	Single needle
Sewing type:	Lockstitch
Hook:	Oscillating large hook
Bobbin:	CH Type (24ø x 30.3 width)
Thread:	Cotton or synthetic fiber
Feed system:	(8B) Needle, upper & lower feed, reverse feed (7B) Needle, Lower feed, reverse feed (6B) Lower feed, reverse feed (2B) Upper & lower feed, reverse feed (2B/DF) Upper & lower feed, reverse feed (Capable of intermediate shirring)
Stitch length:	Max. 10mm
Presser foot:	(8B) Alternating foot (walking foot & presser foot) (7B) Flat foot (6B) Roller foot or flat foot (2B) Alternating foot (walking foot & presser foot) (2B/DF) - ditto -
Presser lift:	20mm by knee lifter (10mm by lever)
Thread take-up:	Cam type
Thread take-up stroke:	90.5mm
Needle bar stroke:	51mm
Bed shape:	Cylinder bed (tubular type 82ø)
Bed size:	82ø x 600mm
Working space:	200mm x 400mm
Net weight (head only)	65Kg
JIS classifications:	LS 3
Motor:	400W. 4P clutch motor
Motor pulley:	60ø (50HZ) 50ø (60HZ)
V Belt:	M62
Applications:	Suitable for sewing of shoes, bags, satchels, sport-goods, luggages, ultra heavy materials.

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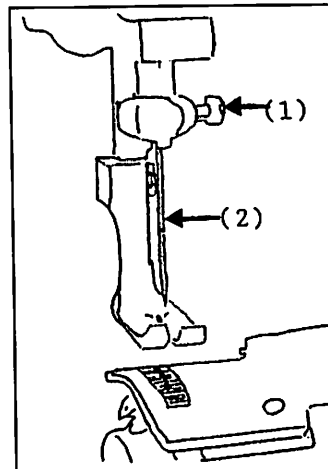
1 Lubrication

Lubricate all points indicated by arrows in figure.



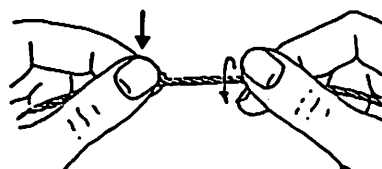
2 Needle

Turn the balance wheel over toward you until the needle bar reaches its highest point. Loosen the needle clamp screw (1). Hold and insert the needle (2) into the needle bar hole up as deeply as it will go, keeping the long groove of the needle to the left and eye of the needle in line with machine arm directly. Securely tighten it with needle clamp screw (1).



3 Thread

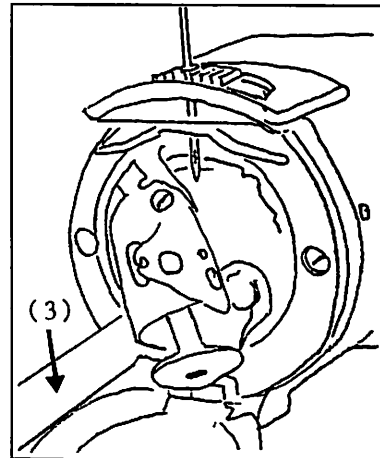
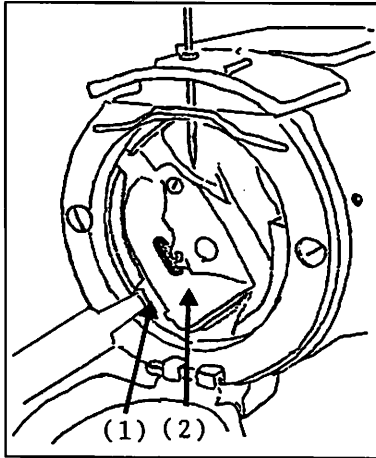
For needle (Upper thread) use left-twisted thread only, and for bobbin (Lower thread) use either left or right twisted thread. To find out thread twist, hold the thread as shown by illustration, and turn the thread over toward you between the thumb and forefinger of right hand, and then left-twisted thread will wind tighter strands, and right-twisted thread will unwind.



4 Insertion and Removal of Bobbin

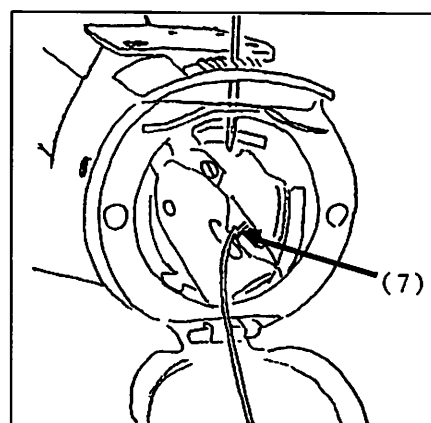
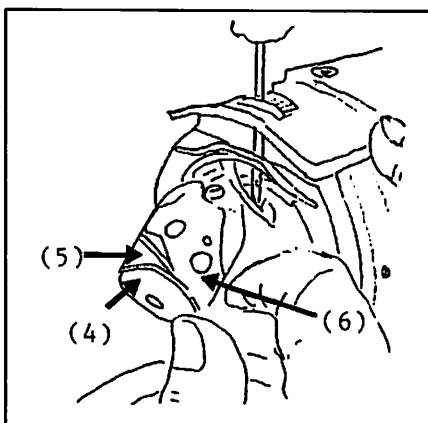
§ Removal of Bobbin

Open the hook cover and drop-down the needle bar at lowest point, then insert the opener (3) between the snap spring (1) and bobbin case (2) and depress the snap spring and pull up the bobbin case outward, then take the bobbin out of the bobbin case.



§ Insertion of Bobbin

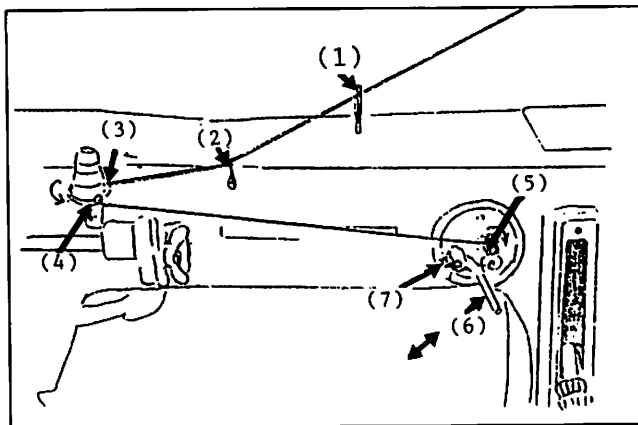
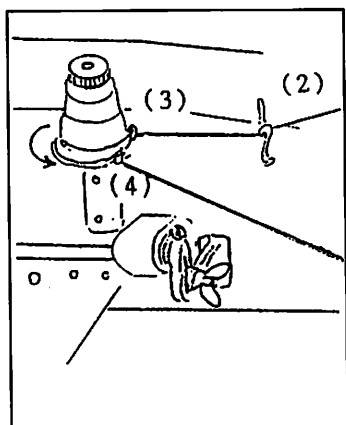
When inserting, pull out the thread and depress it, then insert the bobbin (4) in the bobbin case (5). Pull the thread upward passing through the thread slit (7) of the bobbin case. You can pull out the thread through the thread passing hole through underneath the tension spring (6). Make sure that the snap spring in the shuttle is clicked after pressing bobbin case into the shuttle.



5 Winding the Bobbin Thread

Bobbin winding should be made by the following order.

(1) Spool pin — (2) Thread guide (arm) — (3) Needle thread tension thread guide — passing through the clearance between two tension discs — (4) Needle thread tension thread guide — (5) Bobbin (winding several times) — (6) Move the bobbin winding lever.

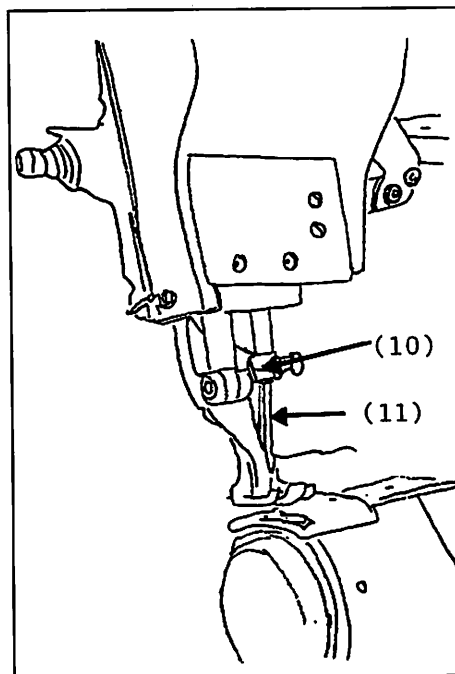
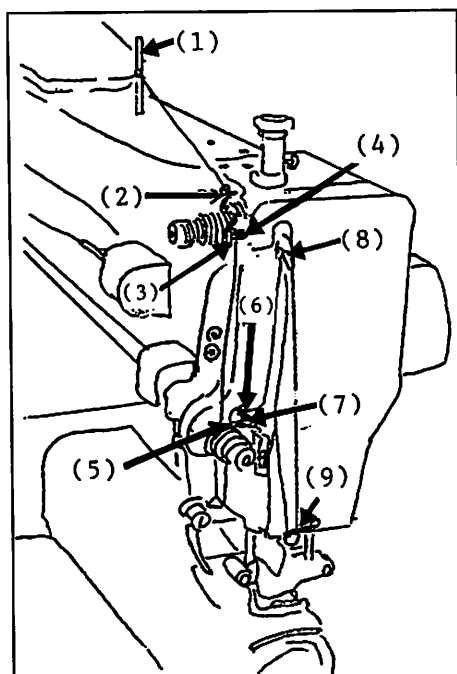


Winding volume should be adjusted by the screw (7) and positioning of the moving lever (6).

6 Upper Threading

Upper threading should be made by the following order.

(1) Spool pin — (2) Thread guide of thread tension — (3) Clearance of two tension discs — (4) thread guide of thread tension — (5) Thread controller — disc wind a time — (6) Thread guide (7) Tension spring — (8) Thread take-up — (9) Thread guide, face plat — (10) Needle cramp (11) Needle



7 Tension of Bobbin Thread and Needle Thread



(A) Balanced tension

(A) When stitch tension is well balanced, the bobbin thread is engaged with the needle thread at the center of given material thickness, as shown by Fig. (A)



(B) Tight needle or loose bobbin thread tension

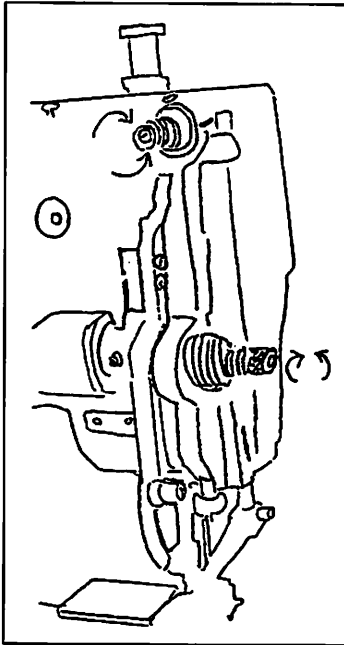
(B) Fig. (B) shows unbalanced tension, tight needle thread or loose bobbin thread.



(C) Loose needle or tight bobbin thread tension

(C) Fig. (C) shows unbalanced tension, loose needle thread or tight bobbin thread.

§ Adjusting Needle Thread Tension



To adjust tension of needle thread, turn Tension Regulating Thumb.

By turning the knurling nut clockwise, needle thread tension increases↷.

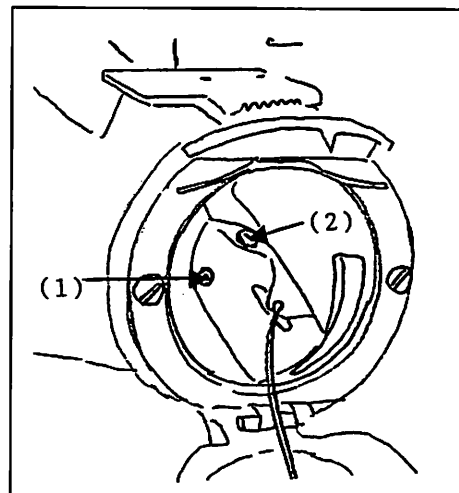
By turning the knurling nut counter-clockwise, needle thread tension decreases↶.

§ Adjusting Bobbin Thread Tension

To adjust tension of the bobbin thread, turn Tension Regulating Screw.

By loosen set screw (1) and adjusting tension regulating screw (2). The set screw (1) should exactly be tightened after tension of the bobbin thread was adjusted.

By turning the set screw clockwise↷, bobbin thread tension increases, and turning the set screw counter-clockwise↶, bobbin thread tension decreases.

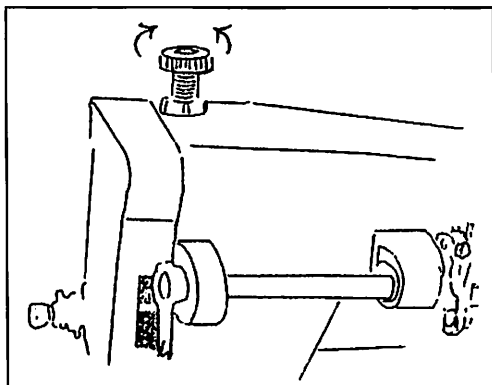


8 Pressure of Presser Foot

By turning the pressure regulating thumb screw clockwise ↻, pressure increase, and turning pressure regulating thumb screw counter-clockwise ↻, pressure decreases.

Tension regulating nut should be tightened after pressure was adjusted.

Adjustment should be made to suit for the materials being sewn.

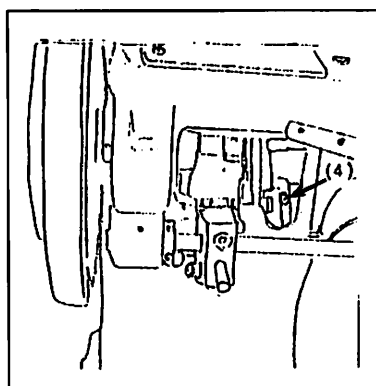
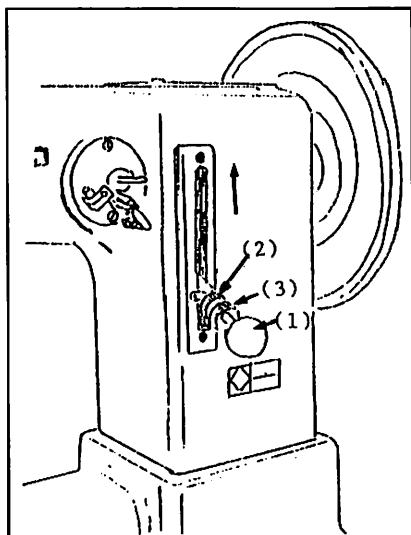


9 Adjustment of Stitch Length

By pull-up ↑ feed regulating lever (1), reverse stitch is performed, and push-down ↓ feed regulating lever (1), forward stitch is performed.

By turning knurling nut (2) & (3) clockwise ↻, feed length decreases, and turning knurling nut (2) & (3) counter-clockwise ↻, feed length increases.

Knurling nut (2) & (3) should be tightened each other after desired stitch length was determined.

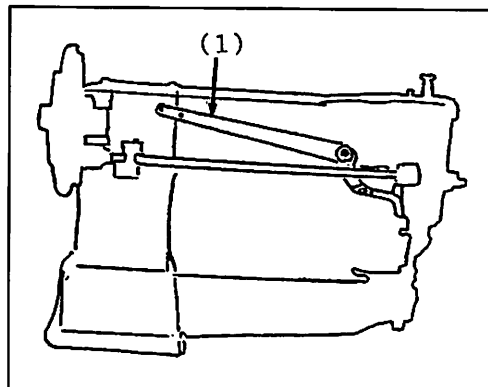


(Note)

When upward & downward moving of the feed regulating lever is loosened, feed adjustin screw (4) should be tightened.

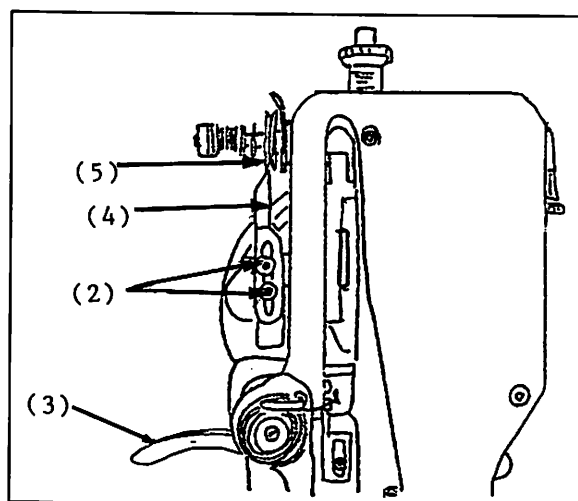
10 Timing of Thread Tension Releasing Mechanism

(a) When moving the lifting lever (1) for knee lifter, upper thread is adjusted to loosen.



(b) Adjustment

Pull-up the presser bar lifter (3), clearance should be made over 1 mm between tip of the tension releasing plate and tension disc, and then tighten the screws (2) on the tension releasing plate.



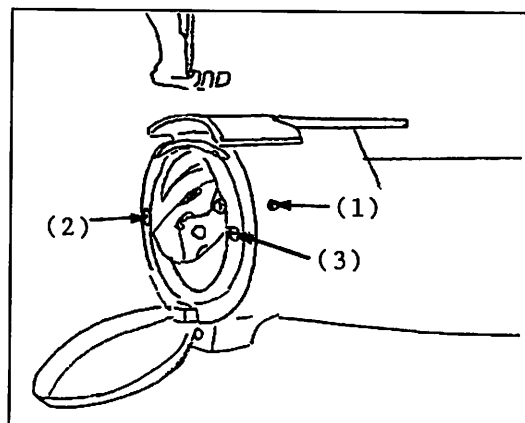
11 Removal of Shuttle Race Body

Tighten the shuttle race back spring screw (1), then loosen and take off the two shuttle race screws (2) and remove the shuttle race body and shuttle hook.

(Note)

In case of the removal of shuttle race body, without tightening of shuttle race back spring screw (1), shuttle race back and shuttle race back spring may run out and/or may difficult to set the shuttle race body.

The shuttle race back spring screw (1) is surely loosened, while the materials are being sewn.



12 Adjusting on the Each Points

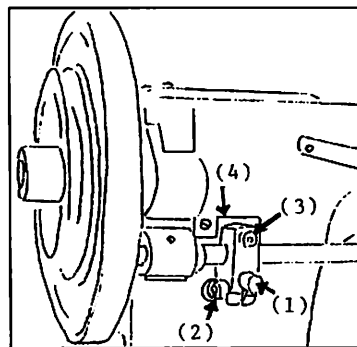
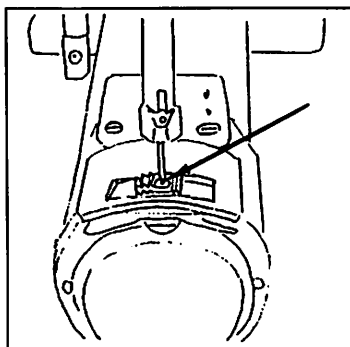
(A) Adjusting Needle Position Against Needle Hole of the Feed Dog. (7B & 8B Types)

Needle should be positioned at the center of needle hole of feed dog and moved together with the feed dog.

(a) Loosen feed (upper) shaft connecting screw (2), upper feed length will differ by the moving (push-in or pull out) of feed (upper) shaft connector (B) (1).

(b) Loosen feed (upper) shaft connector (A) screw (3), and needle set at the center of needle hole of feed dog, then tighten the screw (3).

(Needle dropping point is to be set at the center of needle hole of the feed dog.)



(Note)

Feed (upper) shaft connector (A) (4) is fixed and the screw (3) is tightened for the prevention of the moving of leftward and rightward.

(B) Adjusting of Feed Dog Height

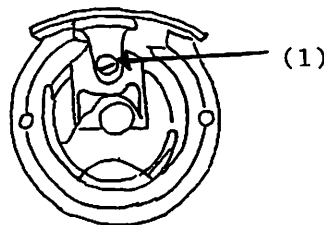
Taking off the needle in 7B and 8B.

The height of feed dog is adjusted 1.3mm - 1.5mm above the surface of the throat plate, at the lowest point of needle bar by feed dog height adjustable screw (1).

In 6B. 2B types;

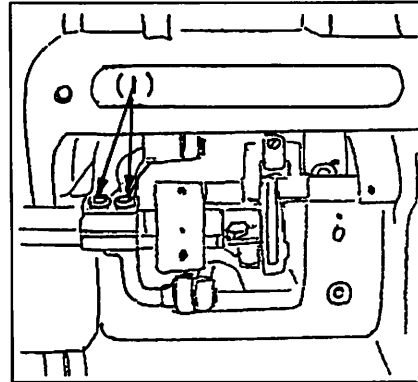
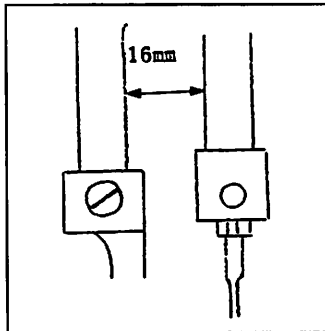
The height of feed dog is adjusted 1.3mm - 1.5mm above the surface of the throat plate at the lowest point of needle bar.

Refer to Removal of Shuttle Race Body



(C) Adjusting the Forward and Backward Position of Needle Bar Frame

Correct position between needle bar frame and presser bar is determined by the distance between presser bar and needle bar being 16mm under the stitch length being "0" mm.

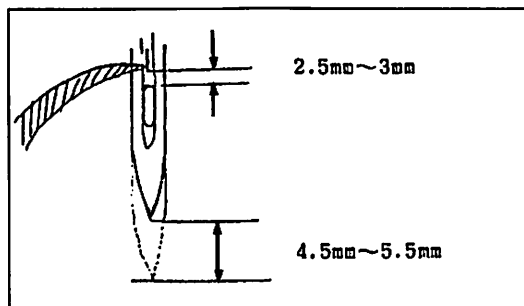


Adjustment of the clearance between presser bar and needle bar is to be made by the screws (1).

(D) Timing of Needle and Hook

Positioning of needle and tip of the hook

When the needle bar has risen 4.5mm - 5.5mm from its lowest position, the tip of the hook should meet the center Line of the needle.



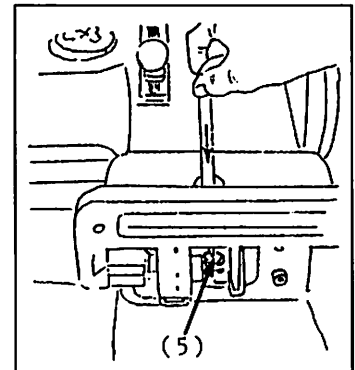
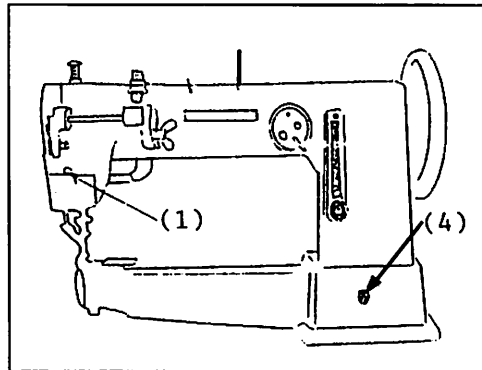
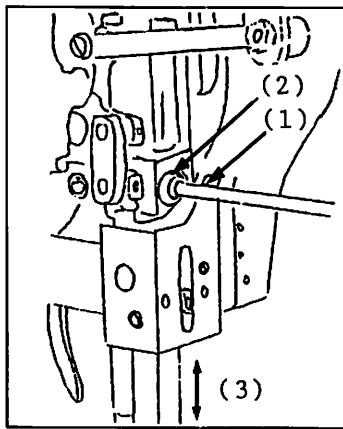
Distance between the upper tip of the needle-eye and the tip of the hook shall be 2.5mm - 3mm.

Adjusting the height of needle bar

Loosen the screw of bar connecting stud (2) by wrench which inserts to the hole (1) of arm and adjust the needle bar (3) ↑ upward and downward.

Adjusting the position of the tip of hook

Loosen the screw (5) of the shaft crank by the spanner which inserts to the hole (4) of the head, then determine the forwardness or backwardness (high speed or low speed) of the tip of hook. Tighten the screw (5) after adjustment.



Clearance between needle and tip of hook; 0.05mm - 0.3mm

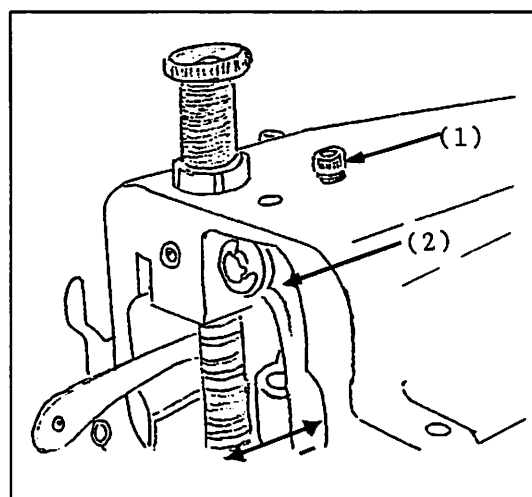
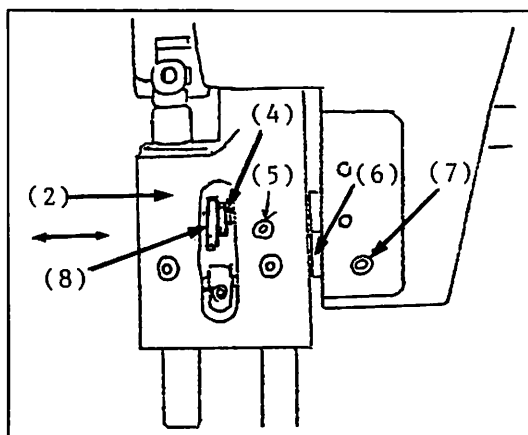
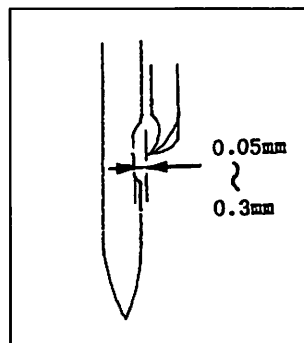
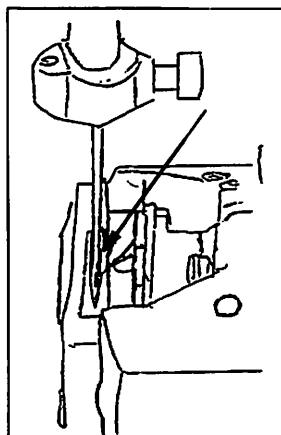
In 7B & 8B types; Determination of the position of needle bar rock frame.

Loosen the set screw (1) of the needle bar rock frame hinge stud, and the set screw (5) of the needle bar rock frame hinge stud (small) (4) positioned lower part of needle bar rock frame (2), and also the set screw (7) of the needle bar rock frame hinge stud (large) (6). Then, moving the needle bar rock frame hinge stud (large) (6) to rightward →, and also moving the needle bar rock frame leftward & rightward ↔, and turn the balance wheel, determines smooth position of the needle bar and adjust the clearance between needle and tip of the hook.

After determination of the clearance, tighten the set screw (2) of the needle bar rock frame hinge stud, and then put the needle bar rock frame hinge stud (small) (4) to slightly the needle bar rock frame position bracket (8).

And, put the needle bar rock frame hinge stud (large) (6) to the side face of the needle bar rock frame (2), and then turn the balance wheel and tighten the each screws exactly.

If the looseness of the leftward & rightward ↔ of the needle bar should happen, it will be resulted in the breaking of needle, stitch skipping.



Each timing for up/down strokes of presser foot (2B & 8B types only)

- a. Timing of walking foot is adjusted walking foot reach to feed dog before needle-eye reaches to feed dog, after downing the lever of presser bar lifter, turning the balance wheel toward you.

Adjustment is made by the two stopper screws of cam (1) (upward & downward).

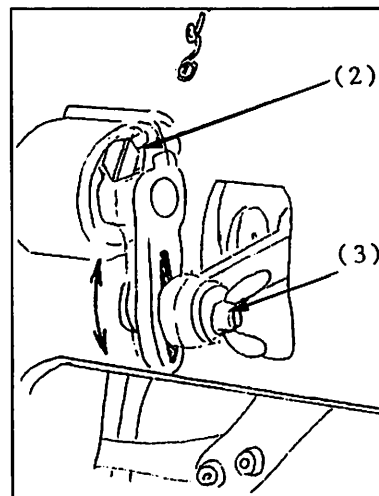
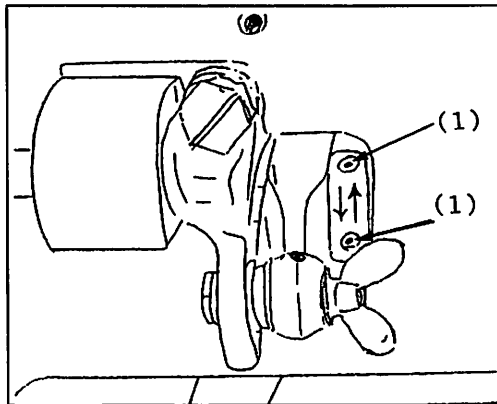
By up & down the presser cam (upward & downward) ↑↓, walking foot against needle is touching to feed dog speedily and slowly.

As for 2B type, adjusting feed dog and presser foot to set equivalent point on the upper face of the throat plate.

- b. For the setting walking foot and presser foot equivalent, the lifting eccentric connection crank pinch screw (2) is to be adjusted.

Adjustment is to be made by the materials being sewn.

- c. Up/down strokes of walking foot and presser foot is loosened by the screw (3) and up ↑ the screw (3), the stroke increases, down ↓ the screw (3), the stroke decreases.



- a. Use of the Differential Feed Mechanism

Pull-down the chain (1), upper feed volume increases by maximum 80% against lower feed volume

Pull-down the chain (1), upper feed length increases by maximum 80% against lower feed length.

(e.g., Lower feed: 10mm, Upper feed: 18mm)

Adjusting Upper Feed Length

Turn the dial (2) clockwise ↻, upper feed length decreases.

Turn the dial (2) counter-clockwise ↻, upper feed length increases.

Fixed position of feed length is adjusted by stopper (3) and stopper nut (4)

b. Adjusting Upper Feed Length Against Lower Feed Length

For adjusting equivalent the upper feed length against lower feed length.

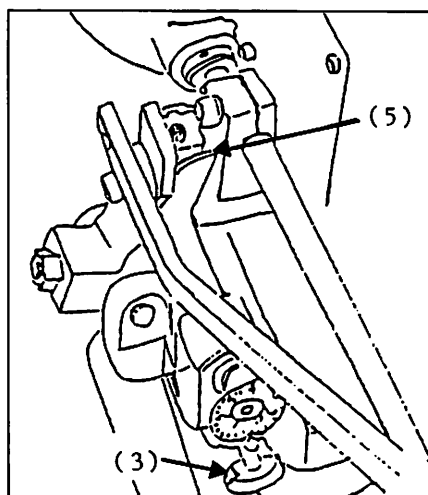
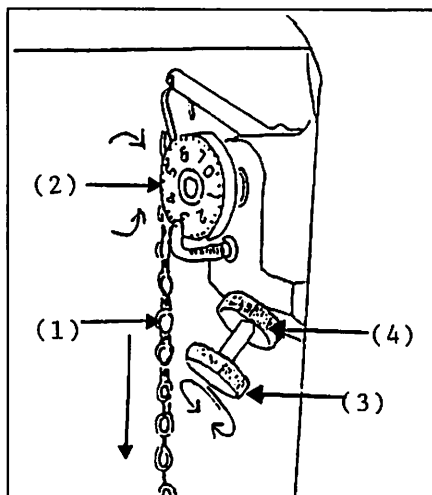
Adjustment is to be made by the stopper screw (3) and stopper nut (4).

Turn the stopper screw (3) clockwise ↻, upper feed length increases.

Turn the stopper screw (3) counter-clockwise ↻, upper feed length decreases.

(Note)

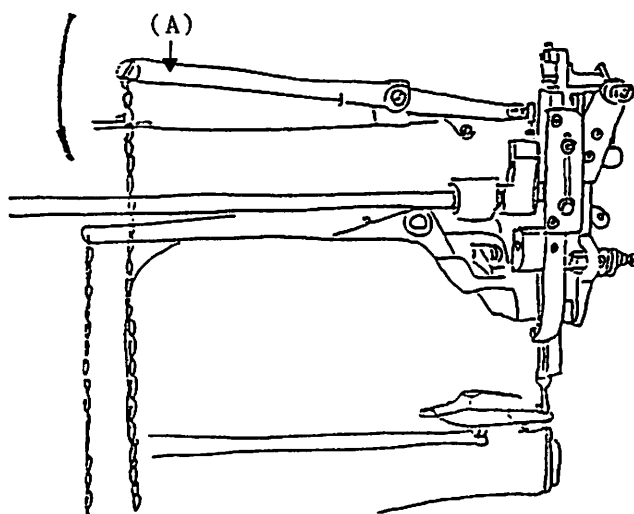
Over turning of stopper screw (3) & stopper nut (4) counter-clockwise will cause the troubles that the top of feed adjusting lever touch with the feed upper shaft connector.



CH-2-DF

© Adjusting Upper Feed Length

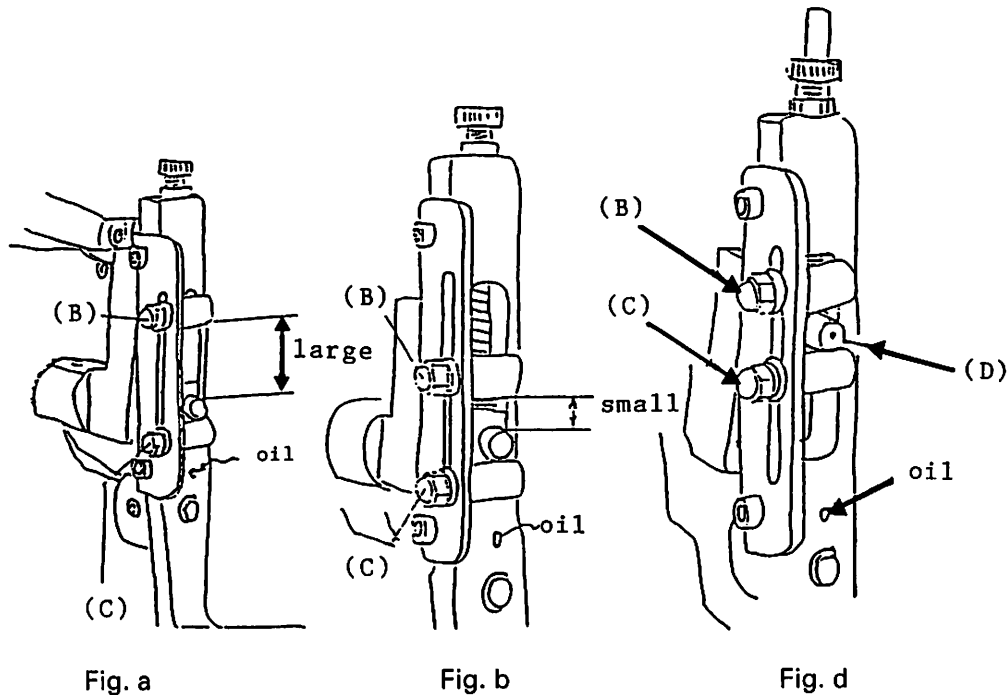
1. Coarse stitch of upper feed length can be performed by pull down the lifting lever (A), regardless of lower feed.



2. Upper feed position can be fixed by (B) & (C).

*(C) position should be set equivalently with lower feed length on the condition that pin (D) comes in contact with (C).

*The position of shirring amount for the materials being sewn can be set by (B). (Fig. a & b)

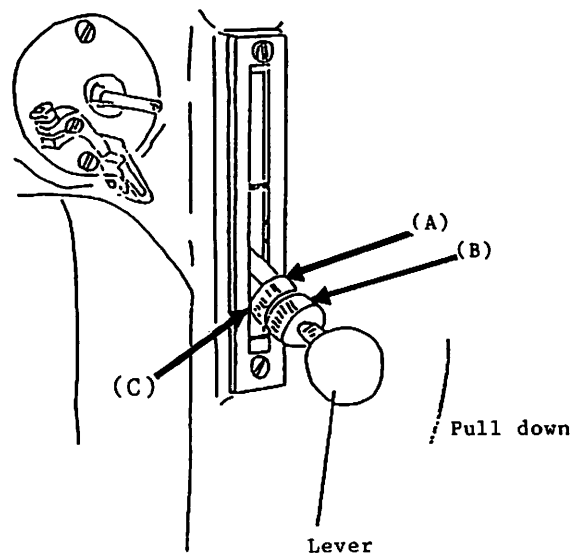


3. In case of unifying of shirring amount and/or general sewing (equivalent with lower feed), pin (D) should be fixed by pinching (B) & (C). (Fig. d)

© Adjusting Lower Feed Length

Loosen the feed adjusting nuts (A) & (B) and turn them clockwise, feed length decrease and turn them counter-clockwise, feed length increase.

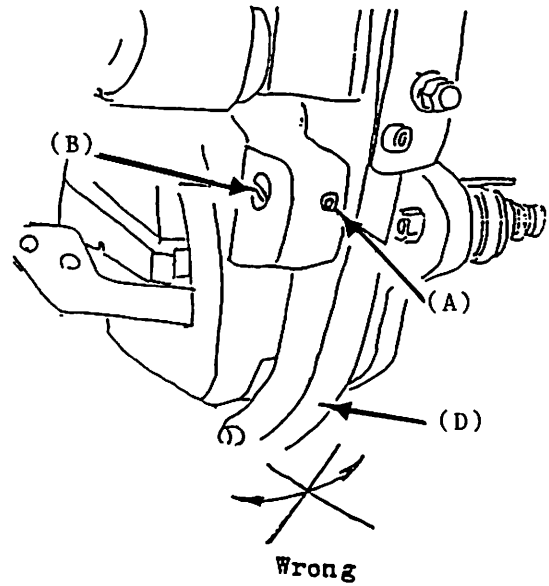
After adjustment, the lever should be pulled down exactly, then operate the machine on the condition that nut (A) touches with plate (C).



◎ Adjustment

Loosen the set screw, adjustment can be made by change (turn) the screw driver groove position (B).

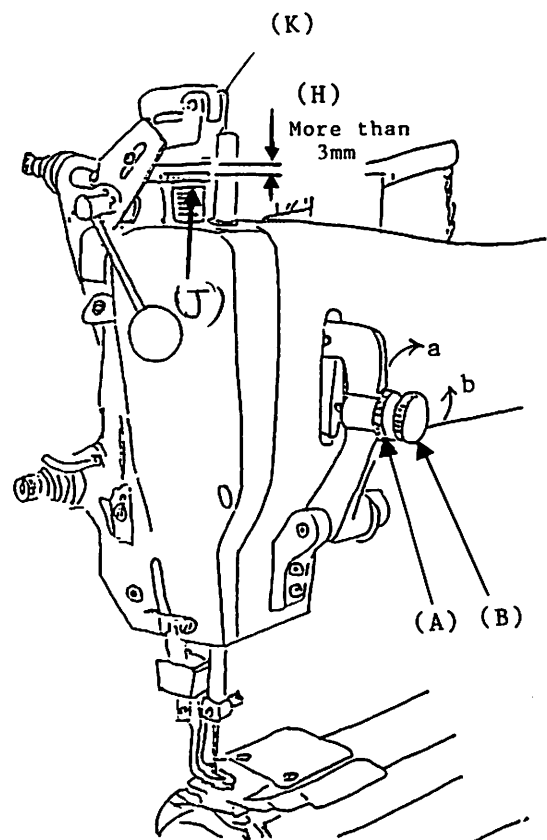
Set screw (A) should be tightened without any rattle or the leftward & rightward of the upper feed arm (C).



◎ Adjusting Up/Down Amount of Upper Feed

Loosen nut (A), turn the adjusting screw (B) ↻ a clockwise, up/down amount decrease, turn it ↻ b counter-clockwise, up/down amount increase.

After adjustment, nut (A) should be tightened exactly.

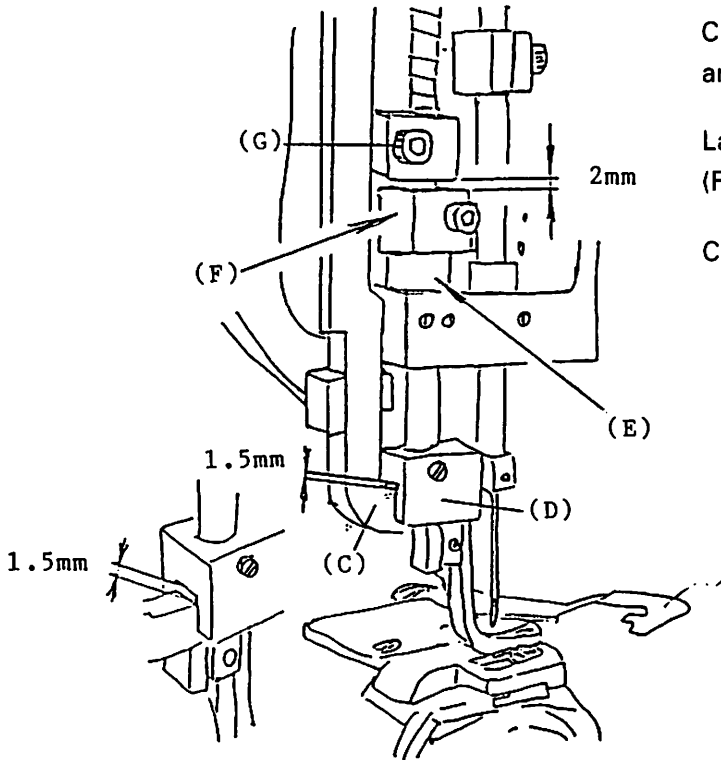


◎ Positioning of Presser Bar

Clearance between upper feed arm (C) and presser bar guide should be 1.5mm.

Lay (E) & (F) on arm, clearance between (F) and (G) should be 2mm.

Clearance (H) should be more than 3mm.





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