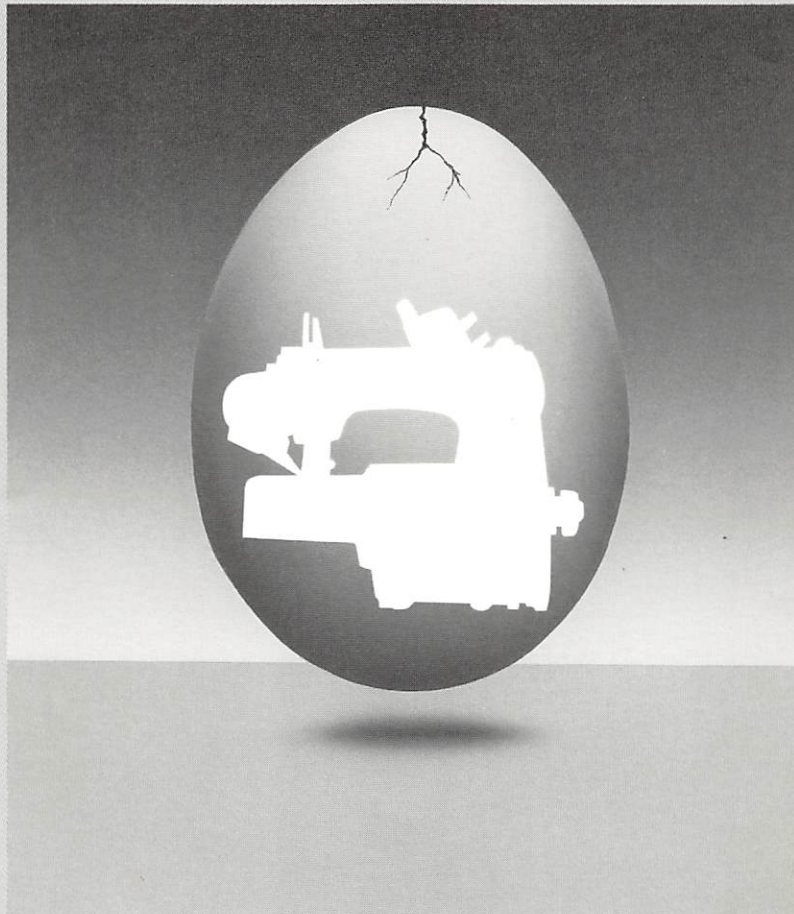


Industrial Sewing Machines

**K**ansai **S**pecial

# RX UTC MANUAL



MORIMOTO MFG. CO., LTD.

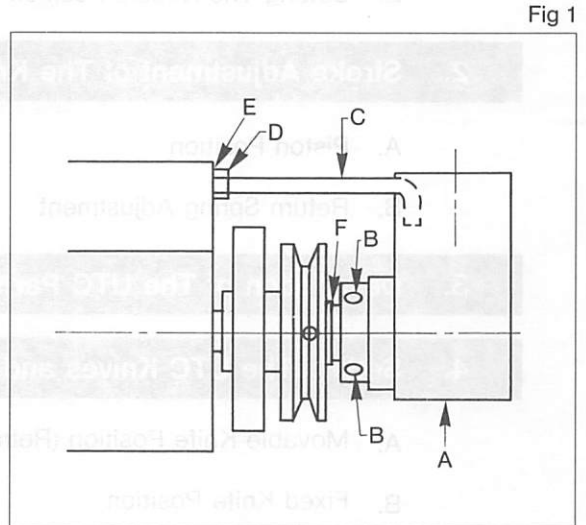
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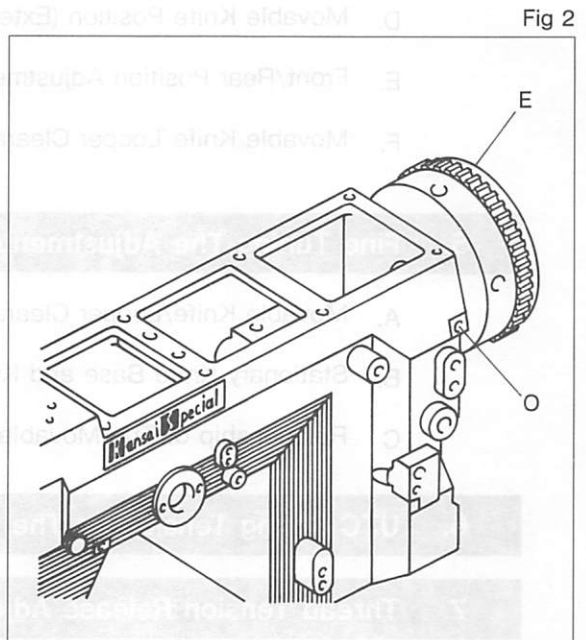
## 1. Setting and Adjusting The Needle Positioner (Refer to Fig 1 & 2)

**[CAUTION]** When setting up the synchronizer make sure all connections for the UTC unit are unplugged to prevent knife activation during the setting procedure. Follow motor manufacturer's instructions for setting needle position.

**Fig 1:** To attach the synchronizer to the machine, secure screws (B) on pulley synchronizer hub (F). To adjust the depth of the synchronizer bar (C) loosen nut (D) and turn synchronizer bar (C).



**Fig 2:** To set "needle up" position, align mark P on machine handwheel (E) with rivet (O) on machine casting. This is the proper timing position.



※With two position motor use needle down then needle up.

## 2. Stroke Adjustment of The Knife Air Cylinder (Refer to Fig 3 & 4)

Fig 3: Depress the knife cylinder piston. Measure the clearance between cushion (D) and collar (A). Clearance should be 15-15.5mm as shown in (C).

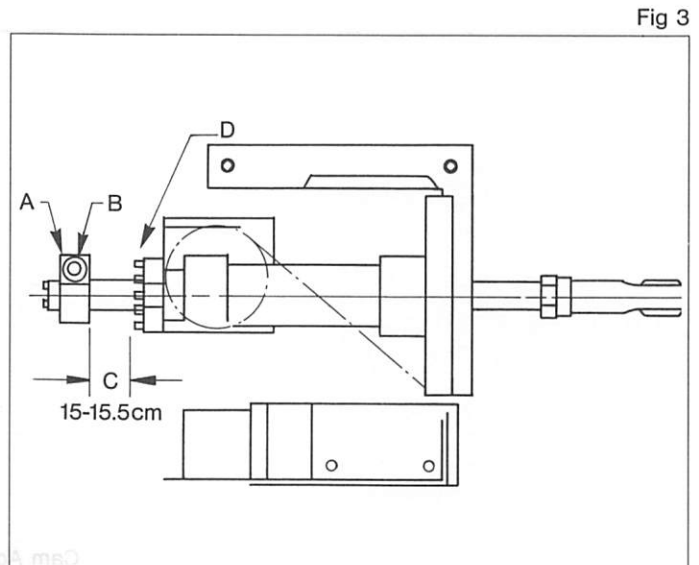
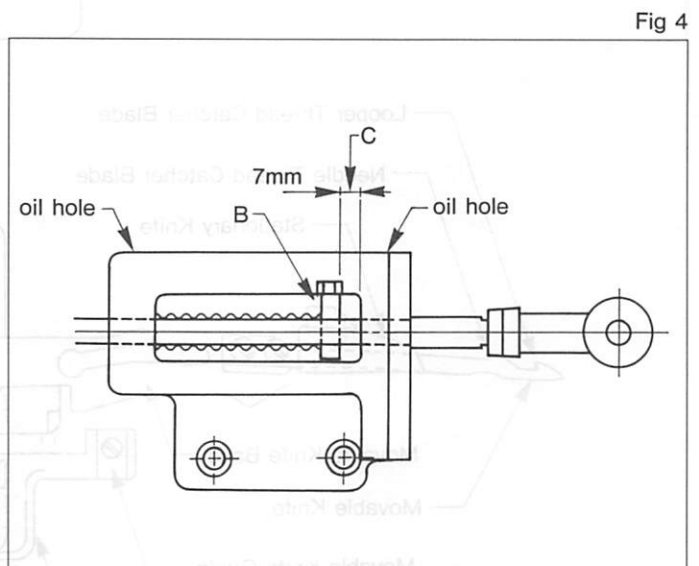
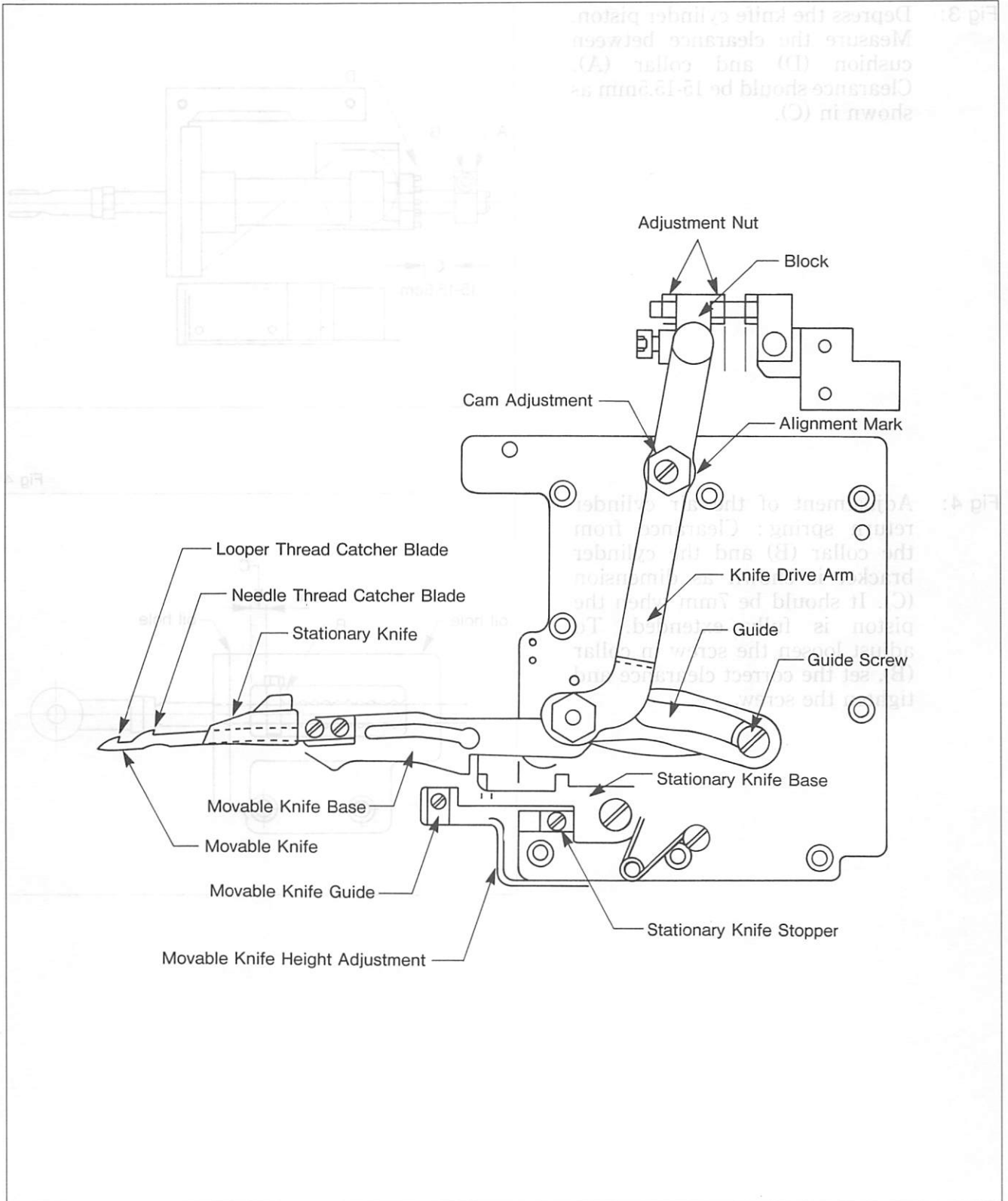


Fig 4: Adjustment of the air cylinder return spring: Clearance from the collar (B) and the cylinder bracket is shown as dimension (C). It should be 7mm when the piston is fully extended. To adjust loosen the screw in collar (B), set the correct clearance and tighten the screw.



### 3. Description of The UTC Parts

Fig 5



#### 4. Setting The UTC Knives and Springs (Refer to Fig 6~16)

Fig 6: Position of the movable knife : As shown in Fig 6 it is critical that movable knife (A) be aligned evenly with movable knife base (B). The edge of the base should be parallel with the knife. To adjust loosen screw (C) and realign properly.

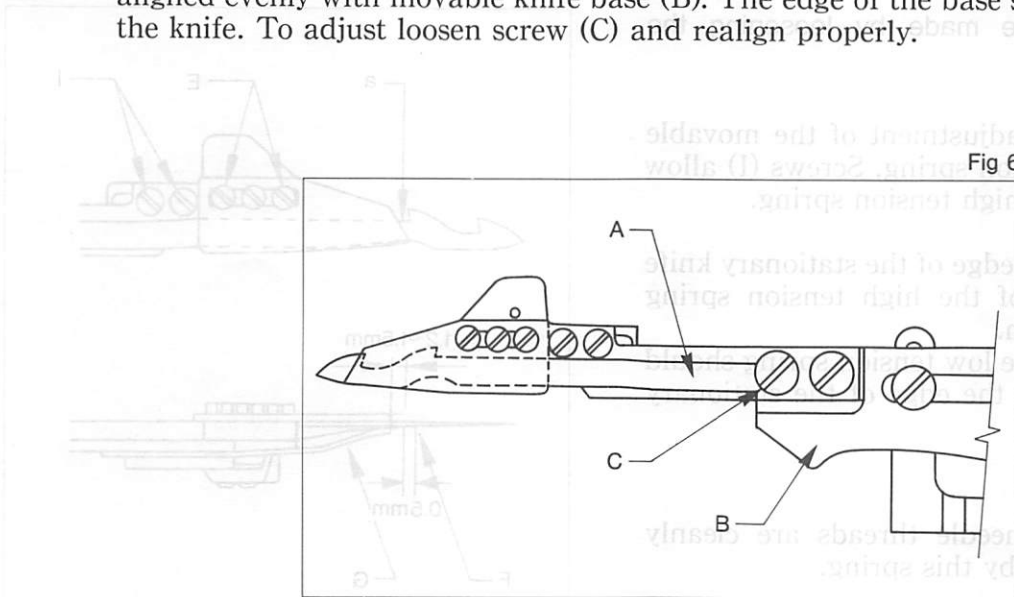
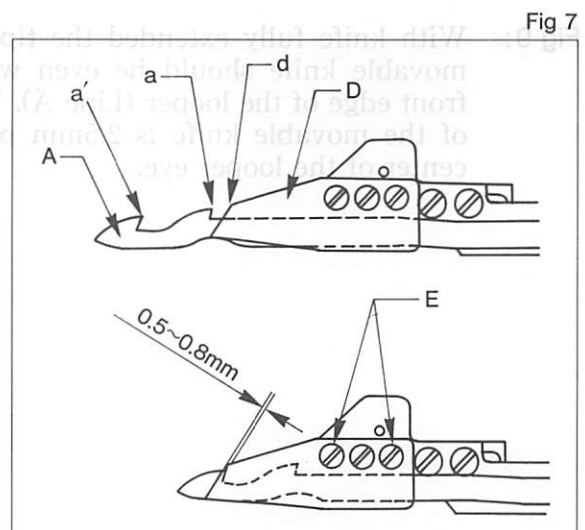


Fig 7: Position of the fixed knife.

##### Description of Parts:

- A - Movable Knife.
- a - Needle Thread Catcher Blade.
- a' - Looper Thread Catcher Blade.
- D - Stationary Knife.
- d - Stationary Knife Cutting Edge.
- E - Screws for Adjusting Stationary Knife.

When fully retracted the looper thread catcher blade (a') should be 0.5-0.8mm behind the stationary knife cutting edge (d). To adjust, loosen screws (E) and set the proper clearance as described above.



**Fig 8:** Adjust the low tension spring (F) so that the needle threads are cut and released cleanly while the looper thread is cut and held in place by the low tension spring (F).

Spring adjustments are made by loosening the following screws :

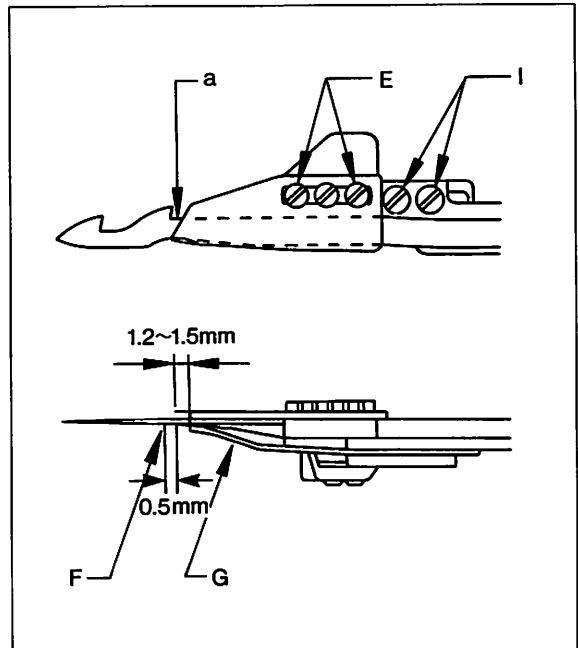
Screws (E) allow for adjustment of the movable knife and the low tension spring. Screws (I) allow for adjustment of the high tension spring.

The distance from the edge of the stationary knife to the leading edge of the high tension spring should be 1.2 to 1.5mm.

The leading edge of the low tension spring should extend 0.5mm beyond the edge of the stationary knife.

**Note :**  
Make sure that the needle threads are cleanly released and not held by this spring.

Fig 8



**Fig 9:** With knife fully extended the tip of the movable knife should be even with the front edge of the looper (Line A). The tip of the movable knife is 2.5mm past the center of the looper eye.

Fig 9

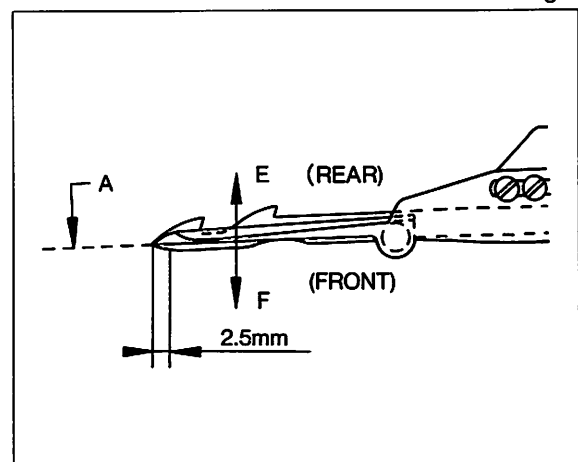


Fig 10: To adjust the front/rear position of the movable knife, loosen screw (C) and adjust cam (D) in direction (A) to move the knife to the rear or direction (B) to move the knife forward.

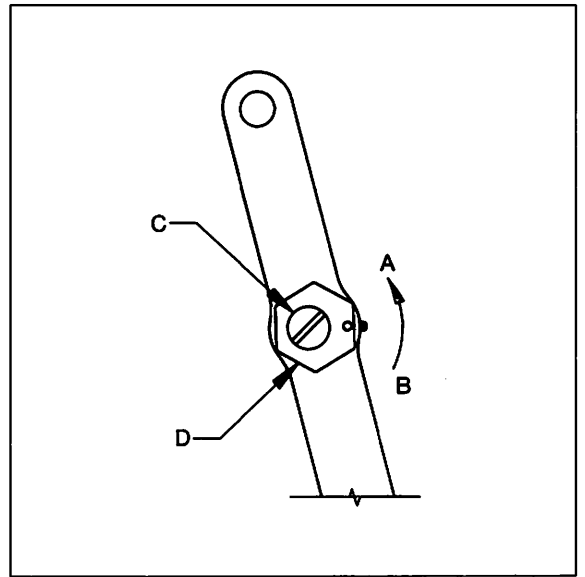
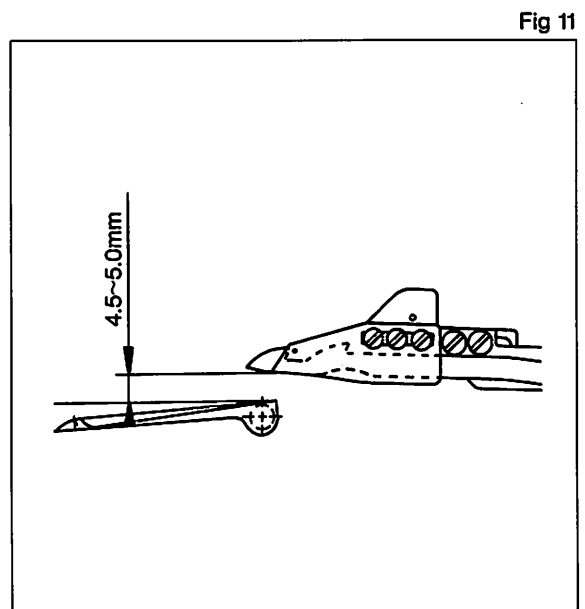


Fig 11: With the knife fully retracted, the clearance between the rear edge of the looper and the front edge of either the movable or stationary knife is 4.5~5.0mm.



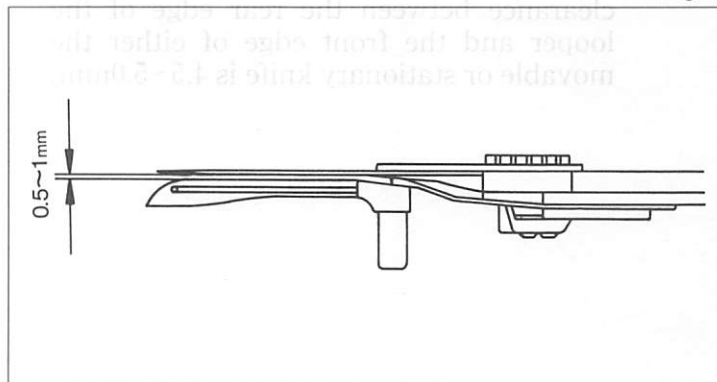


## 5. Fine Tuning The Adjustments (Refer to Fig 3 & 5)

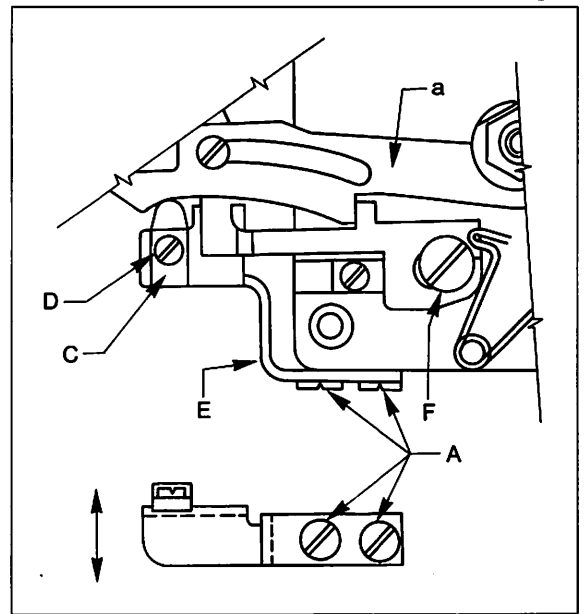
1. To increase the clearance between the looper and the knife refer to Fig 5 and loosen the adjustment nuts. If it is required to bring the knife forward, adjust the nuts so as to reduce dimension (Z). If it is required to bring the knife back, then adjust the nuts so as to increase dimension (Z).
2. An alternative method for increasing or decreasing the clearance between the looper and the knife is to adjust the stroke of the knife cylinder piston as shown in Fig 3. To increase the clearance between the knife and the looper, increase the clearance between cushion (D) and collar (A).

**Note:** When any adjustments are made to the stroke of the knife air cylinder, it is required that the position of the knife be readjusted.

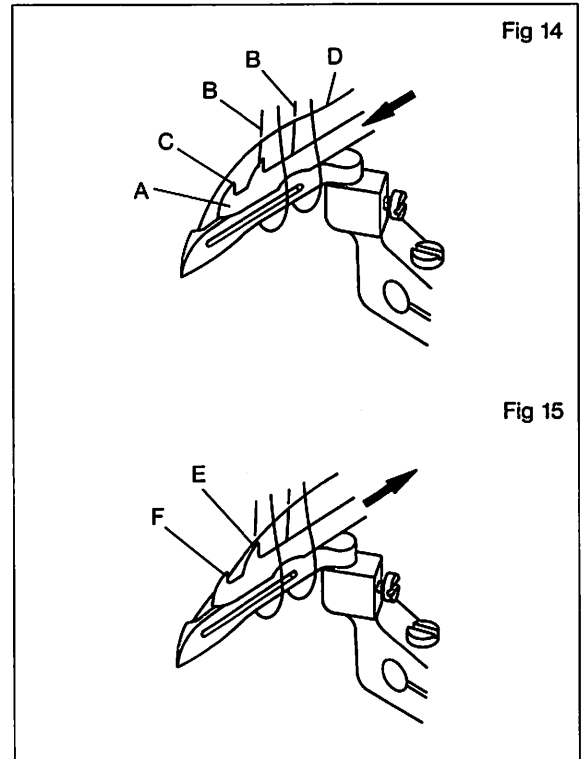
**Fig 12:** The recommended clearance between the top of the looper and the movable knife is 0.5 ~1.0mm as shown in Fig 12. To adjust the height between the looper and the movable knife, refer to Fig 13. Loosen screws (A) and raise or lower the bracket (E) so as to obtain the proper clearance as shown in Fig 12.



**Fig 13:** Clearance between stationary knife base and stationary knife stopper : As the knife is extended it first moves forward over the looper. At this time the stationary knife base contacts the stationary knife stopper. At this time the movable knife guide (C) gently touches the movable knife base so as to stabilize the motion of the knife.



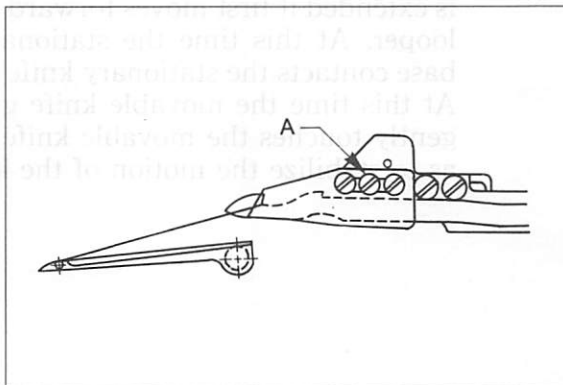
**Fig 14 & 15:** Correct position of movable knife : Fig 14 demonstrates the incorrect stroke of the movable knife resulting in the knife not catching the needle thread (B) and looper thread (D). Fig 15 demonstrates the correct stroke of the movable knife. As this diagram shows, the knife passes through the center of the needle threads and in front of the looper thread thereby enabling the blade to catch and cut the threads properly.



## 6. UTC Spring Tension on The Loper Thread (Refer to Fig 16)

Fig 16: To increase tension on the looper thread, turn screw (A) clockwise. To decrease tension on the looper thread turn screw (A) counter-clockwise.

Fig 16



## 7. Thread Tension Release Adjustments (Refer to Fig 17~19)

Fig 17: Clearance between the tension release block (B) and the cylinder bracket is 3.0 mm. To obtain this clearance loosen screw (C) and adjust.

Fig 17

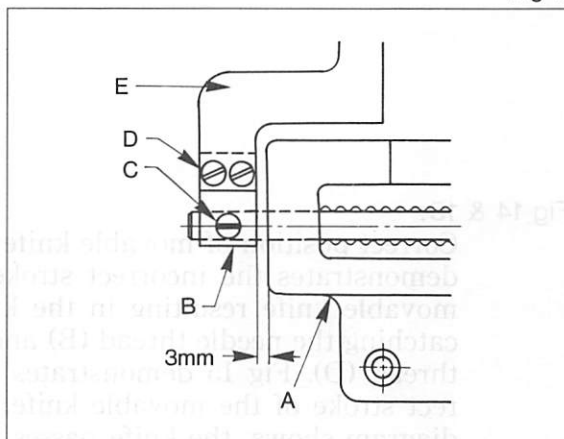


Fig 18: There should be a slight clearance between the tension openers (B) and the tensions. For maximum pulloff, the thread pulloff hooks (A) should lightly touch the threads when the machine is sewing.

Fig 18

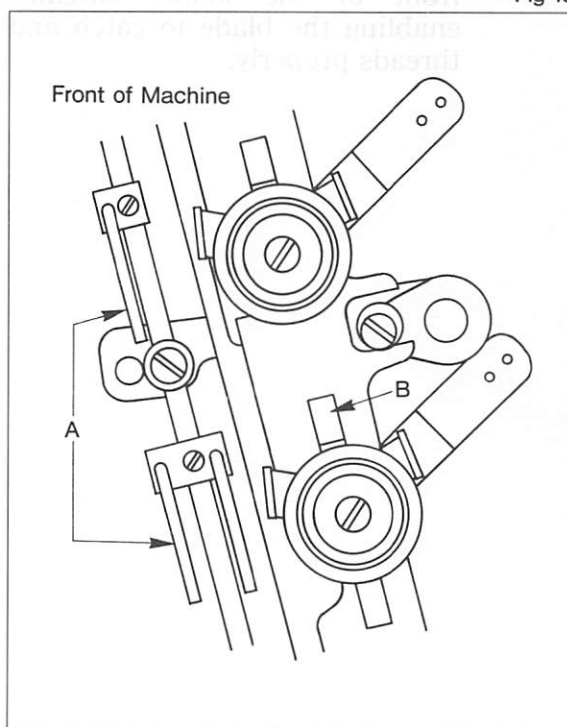
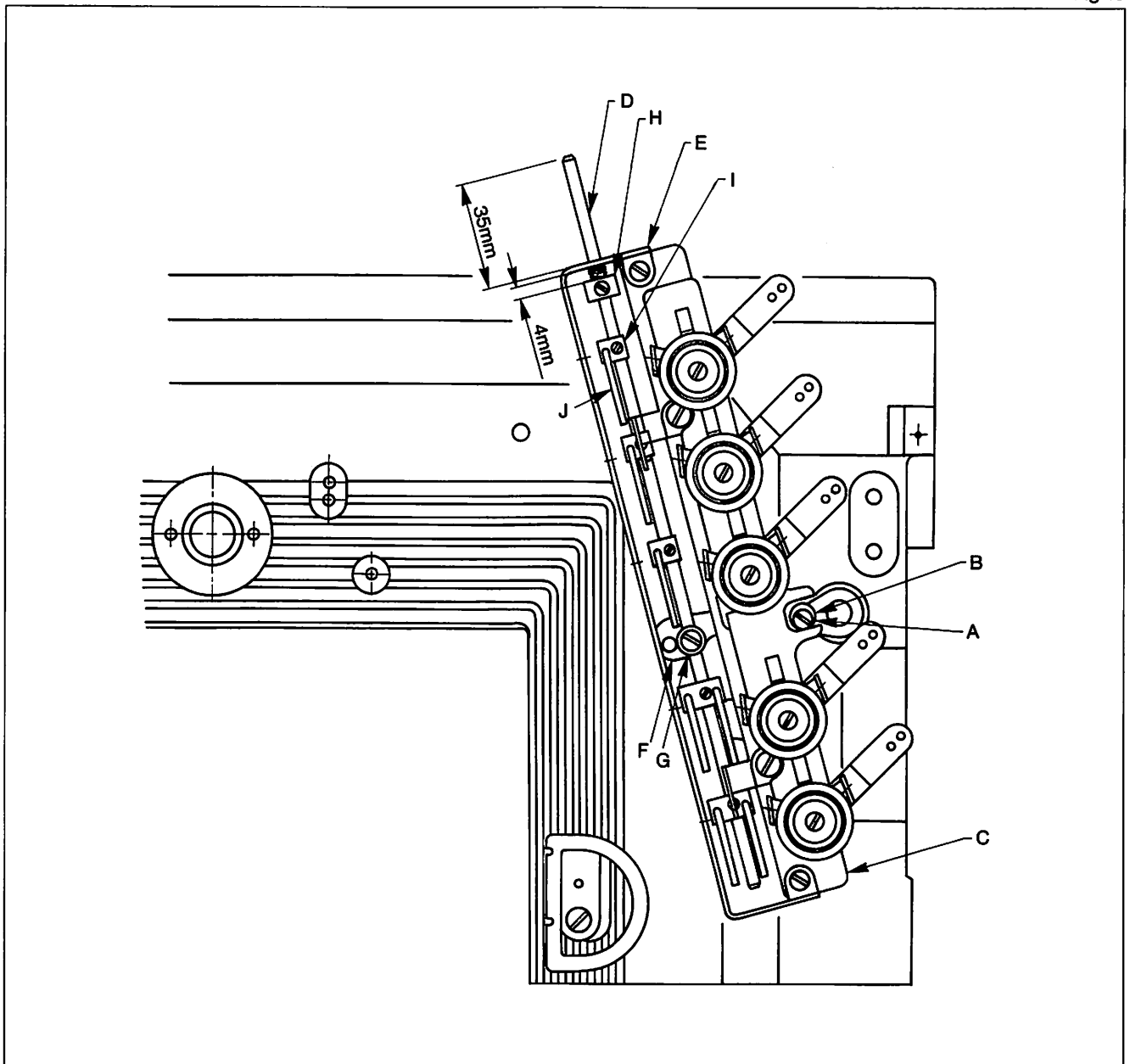


Fig 19: Tension Release Assembly

- A - Screw
- B - Collar
- C - Tension Post Holder
- D - Thread Pulloff Post
- E - Post Guide
- F - Thread Pulloff Lever
- G - Screw (controls adjustment for all of D)
- H - Collar
- I - Screw (sets position of J)
- J - Thread pulloff hook

Fig 19

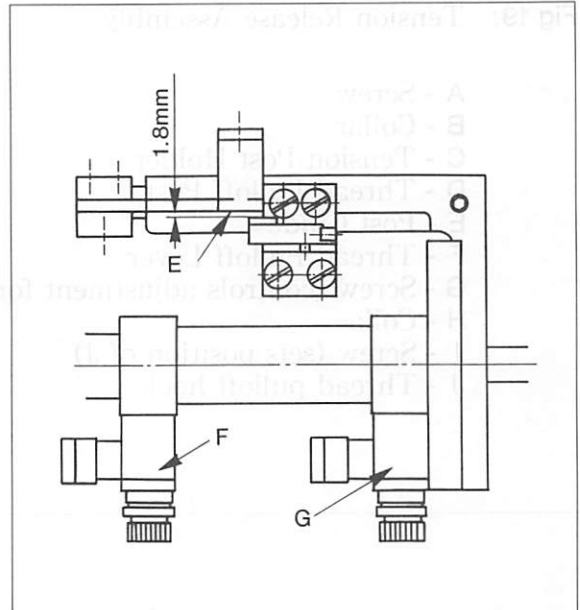


## 8. Knife Position Sensor (Refer to Fig 20)

Fig 20: Adjustment of knife speed in regards to extension and retraction: If the knife is in any position other than the rest position, except during knife activation, the sensor will prevent the motor from operating thereby preventing damage to the knife and gauge parts. (E) shows a clearance of 1.8mm between the sensor and the tension release arm. Flow control valve (F) controls knife extension speed. Flow control valve (G) controls knife retraction speed.

Note: Make sure that both flow control valves are not set too fast so as to prevent damage to the knife unit.

Fig 20

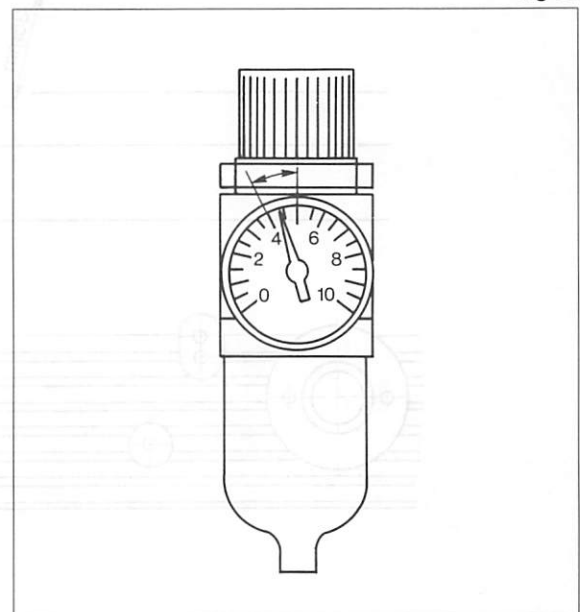


## 9. Pressure Regulator (Refer to Fig 21)

Fig 21: Set the pressure between 4~5 kilograms per centimeter squared.

Note: Operate at the lowest pressure possible for consistent knife operation.

Fig 21



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