

3. ADJUSTMENT

3-1 Timing of needle and rotary hook

1. Needle lift (rotary hook position) and clearance between needle and rotary hook

[Inspection]

- (1) Remove the work table.
- (2) Remove the needle plate and hook cover.
- (3) Rotate the hand wheel forward so that the needle bar comes to the bottom dead center. The upper timing mark of the needle bar must be aligned with the bottom face of the arm jaw (Fig. 1).

Note: If the mark is not aligned with the bottom face of the arm jaw, adjust the mark position (Refer to "3-1-2 Needle bar height" on page 25).

- (4) Rotate the hand wheel forward again to raise the needle bar. The hook tip must be aligned with the needle center when the lower timing mark is aligned with the bottom face of arm jaw or when the needle bar is 1.9 ± 1 mm above the bottom dead center (Fig. 2).
- (5) The clearance between the needle and the hook tip must be $0.03 \sim 0.07$ mm (Fig. 2).

[Adjustment]

- (1) Slightly loosen rotary hook retaining screw (a) closest to the hook tip and loosen the other two retaining screws (Fig. 3).
- (2) Rotate the hand wheel forward so that the needle bar is set to the bottom dead center. Rotate the hand wheel again to align the lower timing mark with the bottom face of the arm jaw (Fig. 2).
- (3) Loosen retaining screw (a) further and rotate the rotary hook in either direction A or B. Align the hook tip with the needle center (Fig. 2) and secure a clearance of $0.03 \sim 0.07$ mm between the needle and hook tip (Fig. 4 on page 27).

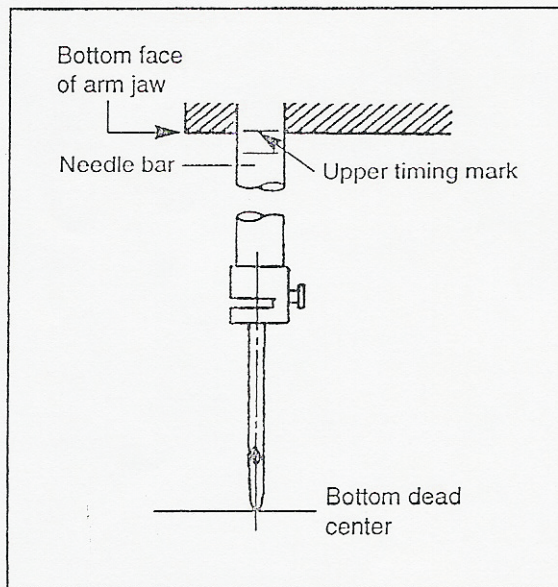


FIG. 1

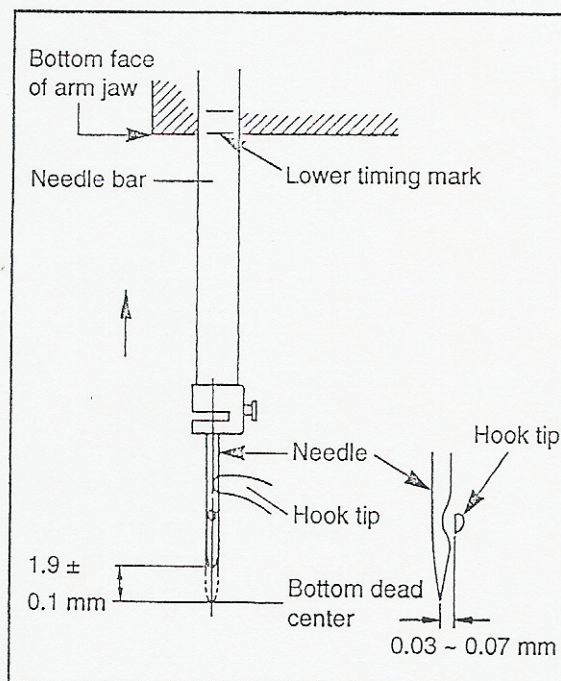


FIG. 2

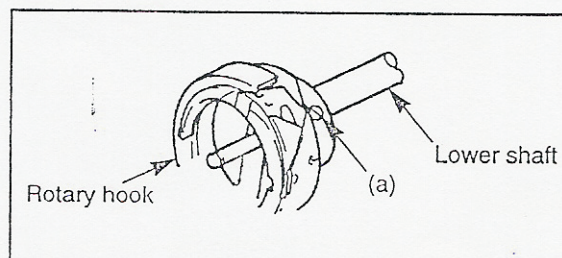


FIG. 3

- (4) Slightly tighten rotary hook retaining screw (a) closest to the hook tip (Fig. 3 on page 26).
- (5) Rotate the hand wheel forward so that the lower timing mark is aligned with the bottom face of the arm jaw. Check the position of the needle and hook tip (Fig. 2 on page 26).
- (6) Firmly tighten three retaining screws (a) (Fig. 3 on page 26).
- (7) Mount the needle plate hook cover and the

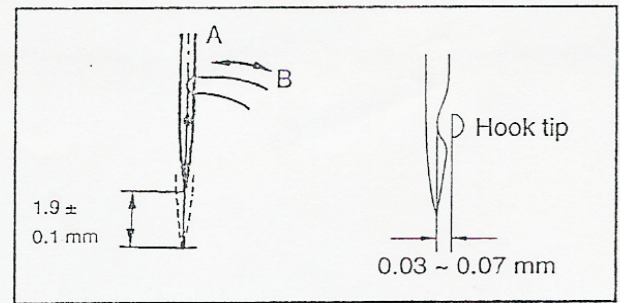
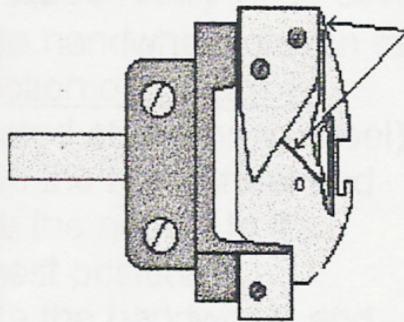


FIG. 4

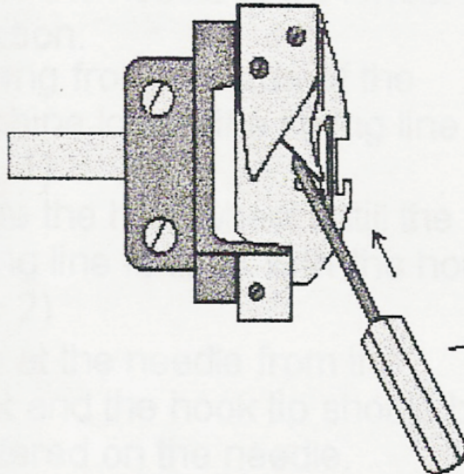
THE ROTARY HOOK

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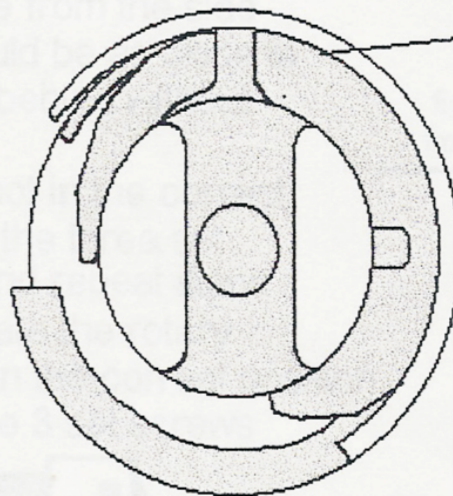


LOOK ON THESE EDGES FOR
SCRATCHES

IF SMALL SCRATCHES ARE FOUND POLISH
OUT WITH 1200 GRIT SANDPAPER OR EMERY
CLOTH. IF SCTACHES ARE DEEP USE 240
GRIT SANDPAPER THEN POLISH WITH 1200
OR EMERY CLOTH.



TAKE A FLAT TIP SCREWDRIVER AND
PUSH ALONG THE EDGES AT AN ANGLE
TO CHECK FOR SCRATCHES



LOOK IN THIS LOCATION
FOR BROKEN OFF
NEEDLES

Timing Instructions for the Toyota AD850

- 1 Install new needle.
remove needle plate and u-shaped rotary hook cover.
- 2 Rotate handwheel only in the direction of the arrow.
(located above handwheel)
- 3 Rotate the handwheel and raise the needle to it's highest position.
- 4 Rotate the handwheel and lower the needle to it's lowest position.
- 5 Looking from the side of the machine locate the timing line.
(fig. 1)
- 6 Rotate the handwheel until the timing line is flush with the housing.
(fig. 2)
- 7 Look at the needle from the front and the hook tip should be centered on the needle.
(fig. 3)
- 8 Look at the needle from the side the hook tip should be as close to the needle from behind without touching.(fig. 4)
- 9 If the hook tip is not in the correct position, loosen the three set screws(fig. 5) and repeat steps 2 thru 8 and rotate the rotary hook by hand. in the correct position then retighten the 3 set screws

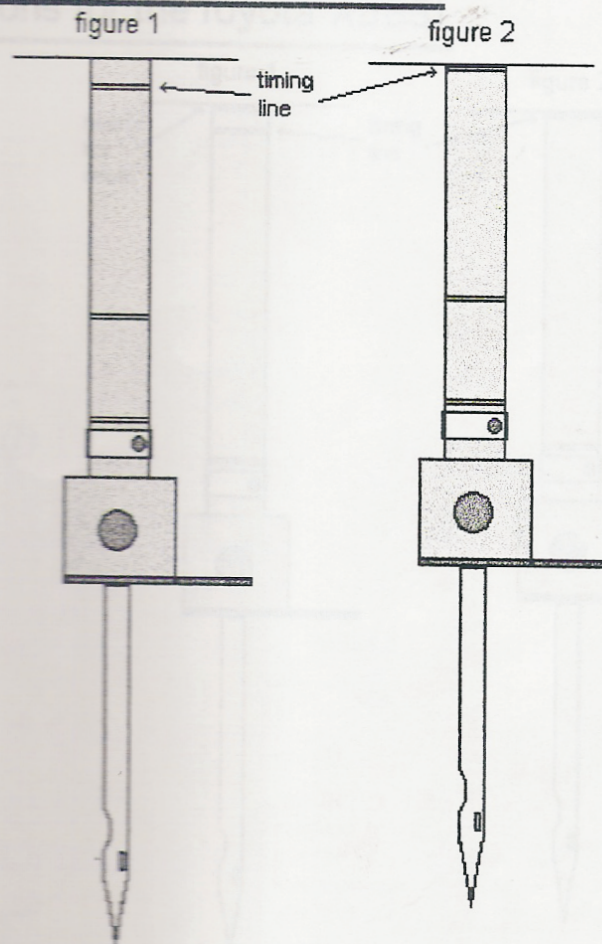
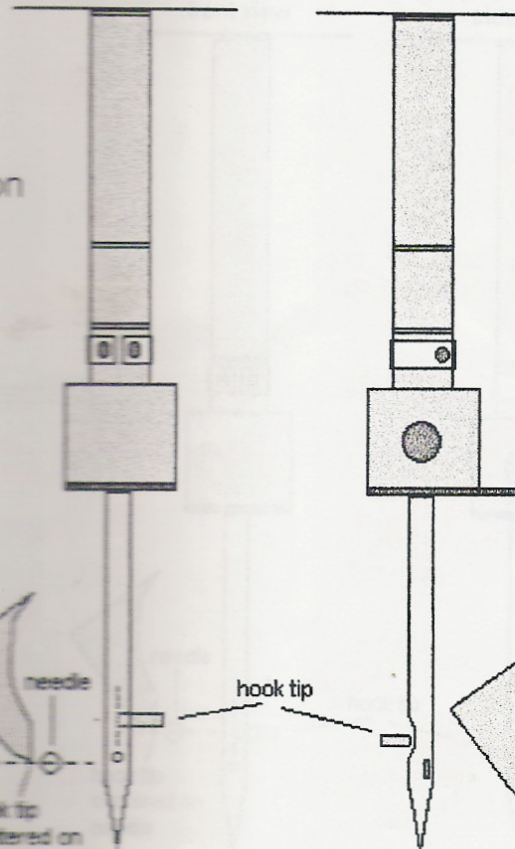


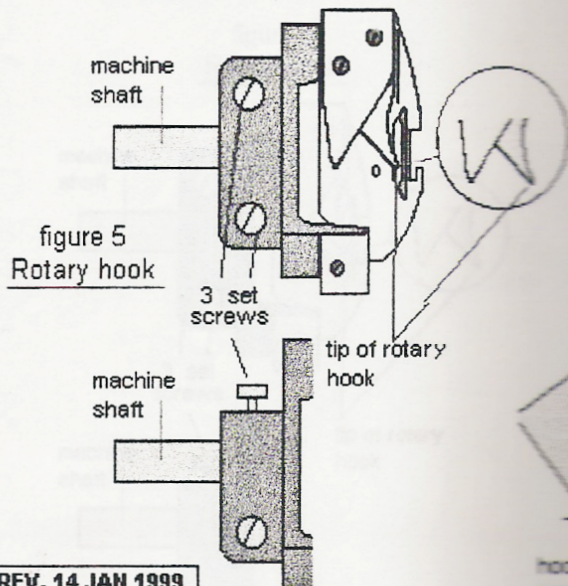
figure 3
front view

figure 4
side view



TIP
turn the needle backwards and make the hook tip touch the needle will give the correct gap

IMPORTANT NOTE
gap between needle and tip of hook as **SMALL** as possible
.03 - .07mm
○ — needle
○ — hook tip



HOOK RETAINER ADJUSTMENT

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