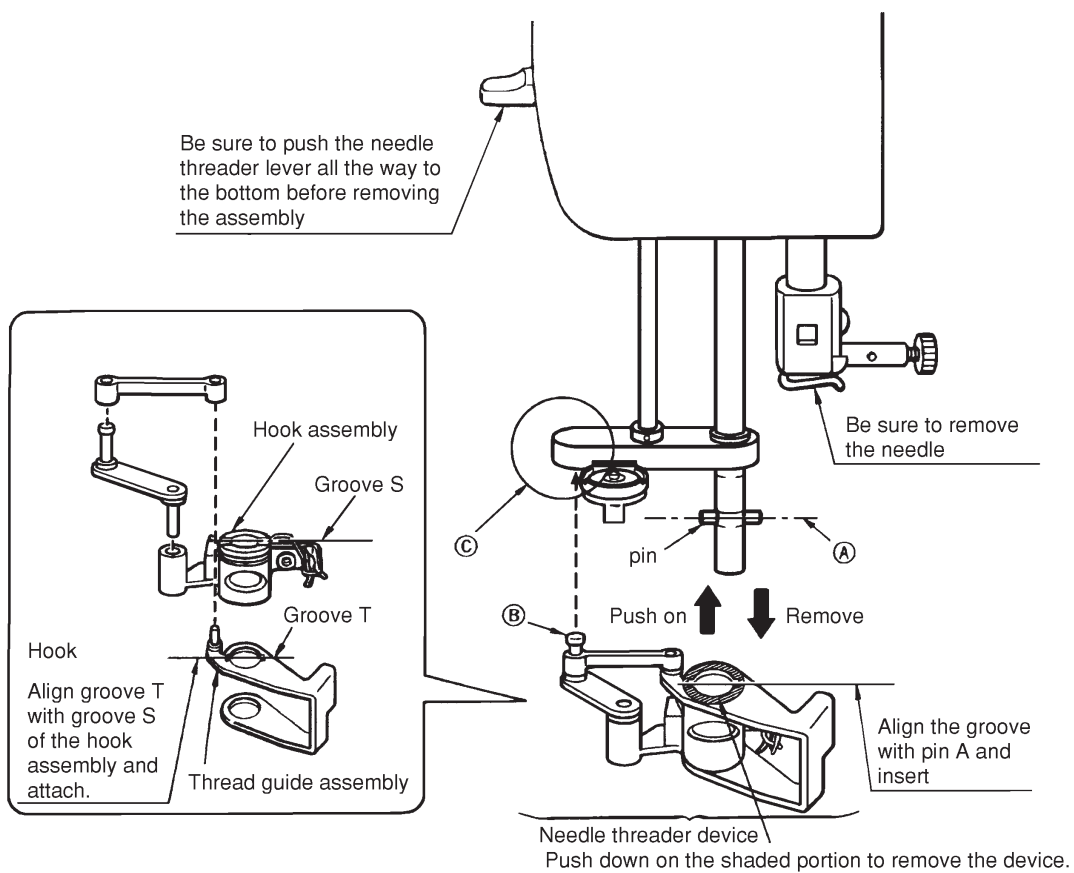


## 23. NEEDLE THREADER (EXCHANGE)

### HOW TO REPLACE NEEDLE THREADER

1. Remove the needle and lower the presser foot lifter.
2. Lower the needle threader lever as far as possible. With the hook rotated, push down on the needle threader device to remove it. (Push down on the portion of the thread guide assembly shaded in the illustration.)
3. Place the new device so that groove S and groove T of the hook assembly and thread guide assembly are aligned with pin A, as shown in the illustration.
4. Push the needle threader device up until pin A is inserted in the grooves. (Be careful that pin B is inserted into the groove in part C.



## 24. NEEDLE THREADER (CHECKING THE HOOK IN STANDARD POSITION)

### STANDARD

1. The clearance between the top of hook and the top of needle eye is 0 mm.
2. Threading is possible when needle is located higher than 8 mm from the needle plate.

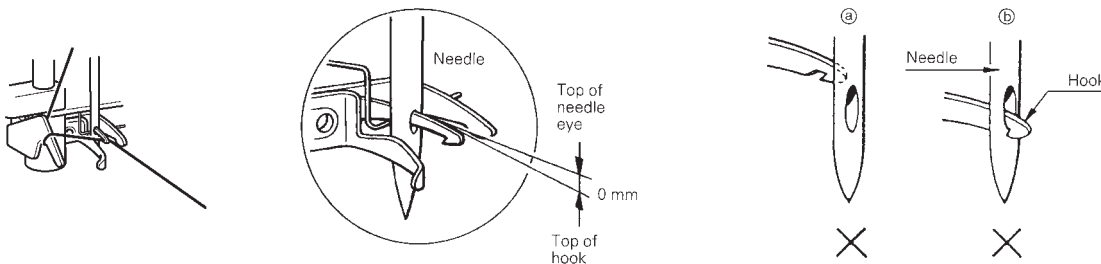
### CHECK (refer to illustration)

#### Case A

Hook position is too high. (Hook hits needle and cannot go through needle eye.)

#### Case B

Hook position is too low. (Hook goes through needle eye but it catches bottom part of needle eye.)



## 25. NEEDLE THREADER (CHECKING THE HOOK POSITION IN VERTICAL DIRECTION)

#### Case A (Hook point is too high)

1. Remove face plate and loosen the screw.
2. Adjust needle threader position setter slightly down and check that the clearance between the top of hook and top of needle eye is 0 mm.
3. Check that the needle threader position setter (a) and the needle bar crank rod assembly (b) is parallel.

#### Case B (Hook point is too low)

Adjust needle threader position setter slightly up and check the clearance between the top of hook and top of needle eye is 0 mm. In case part (a) and part (b) is not parallel or the hook does not work, readjust needle threader by loosening the screw.

If (a) and (b) are not parallel, the needle threader will not be held by the needle threader position setter (refer to Fig. 1), the hook will not enter the eyelet of the needle (hook will not move) and the needle will not be threaded when the needle threader lever is lowered. In this case, loosen the screw securing the needle threader position setter and turn the needle threader position setter slightly to the left to make it parallel.

In addition, if the needle threader position setter is turned too far so that it is still not parallel too left, it may hit other parts, causing damage (refer to Fig. 2). If a part is damaged, it must be replaced. If no part is damaged, loosen the screw securing the needle threader position setter and turn the needle threader position setter slightly to the right to make it parallel.

