



## Knowledge Base > Installation and Maintenance > Needle Depth Adjustment, ZQ/ZN sewing heads

The information in this article applies to the following machine models:

- Barudan N, V and D Series Multi-head Embroidery machines: BENS, BENY, BENR, BENB, BEVS, BEDT, BEDY, BEVT and BEVY

### SUMMARY

Improper needle depth can cause a variety of sewing problems. This procedure details how to check if the needle depth is set properly, and, if not, how to adjust it.

### EXPLANATION:

During each stitch, the needle must rise 2-3 mm from bottom dead center to form a loop behind the needle. As the hook point passes behind the needle, it captures the formed loop. If the needle depth is too high or too low, the hook will be unable to capture the loop. The stitch will not form properly and sewing quality is affected. Note that if the problem only affects a single needle, there may be damage to the red cap on the top of the needle bar. This procedure includes inspection of these caps.

### SYMPTOMS

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- Skipping Stitches
- Looping
- Fraying
- Breaking Thread

### CAUSES:

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- Red Caps worn or broken
- Needle Breaking or Bending
- Sewing into the hoop
- Changing needle brands

### TOOLS NEEDED:

- 3mm Hex Key (Allen Wrench)
- No. 1 Phillips Head Screwdriver
- Flashlight

## PROCEDURE:

1. Using the Automat/ Controller, position sewing head to needle 2.
2. Power down embroidery machine.
3. Remove bobbin case from Hook Assembly.

4. Rotate hand wheel so needle is at its lowest point (Bottom Dead Center). (Zero degrees on the degree wheel is Bottom Dead Center.)
5. Before making any adjustments, see if lower half of needle eye is visible inside hook basket (what the bobbin case snaps into). See figure 1.

- If needle eye looks out of position, proceed to Step 6.
- If needle eye looks correct, no adjustments are necessary. You may have a different problem such as hook timing.

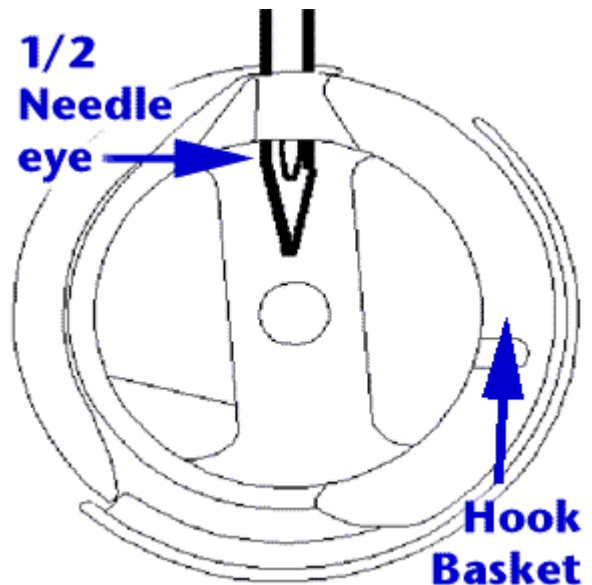


Fig. 1: Needle in Hook basket

6. Using a Philips head screwdriver, remove thread guide and cover from front of sewing head. See figure 2
7. Look behind the needle bars, and inspect the red caps. (see figure 3)  
Make sure that they are all the same height, and show no sign of damage or wear.  
Replace if necessary.

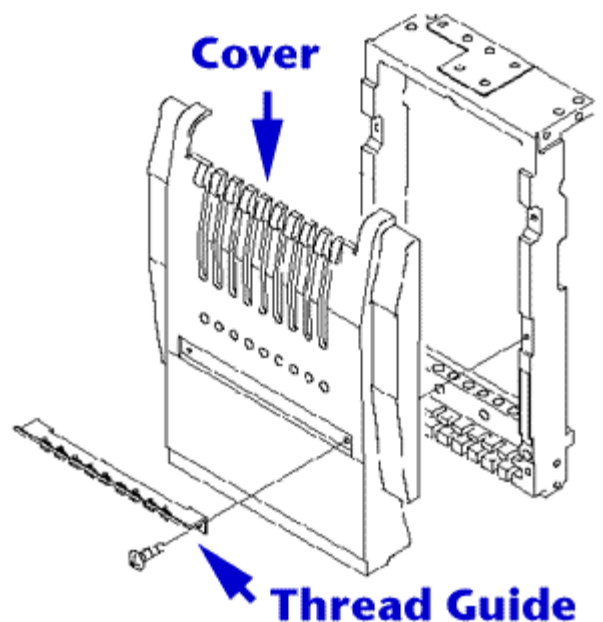


Fig. 2: Remove Cover

8. Using a 3mm hex key (allen wrench), loosen top and bottom hex socket bolts on Needle Bar Driver Fixing Base.  
See figure 3
9. Adjust needle depth by moving the Needle Bar Driver up or down so half of the needle eye is visible in Hook Basket.
10. While holding Needle Bar Driver in place, tighten lower hex socket bolt with 3mm hex key.
11. Recheck needle depth, as it may have slipped while the bolt was tightened.
12. Tighten upper hex socket bolt in the Needle Bar Driver Fixing Base.
13. Reinstall Bobbin case.
14. Replace sewing head cover and thread guide.
15. Perform a sew test using the "HOX" pattern included with this manual.

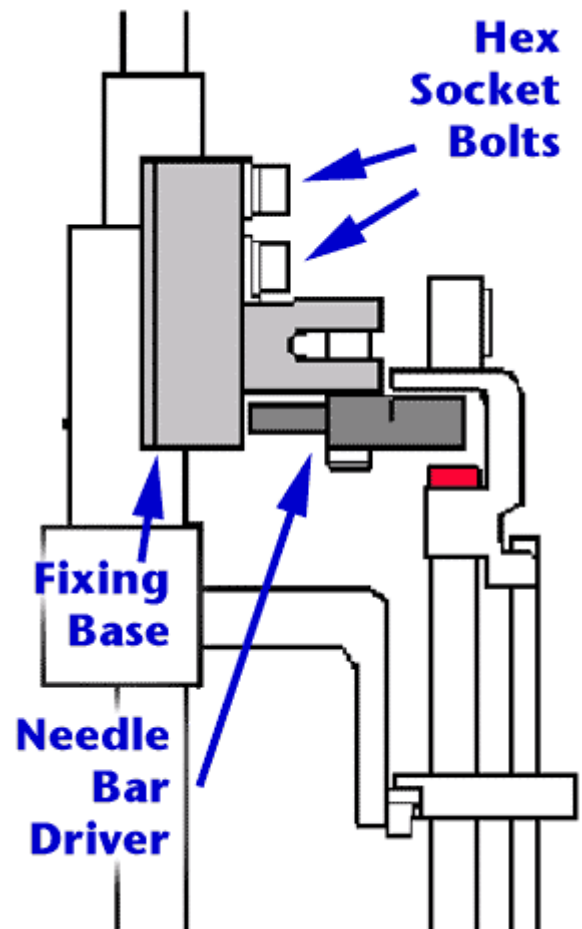


Fig. 3- Side view of needle

If the problem still persists, you may have a different problem such as hook timing. If you suspect the hook is out of time, refer to "Hook Timing".