

HAPPY HCS Voyager: Level-1 Maintenance & Repair

Intermediate-level repair / maintenance procedures

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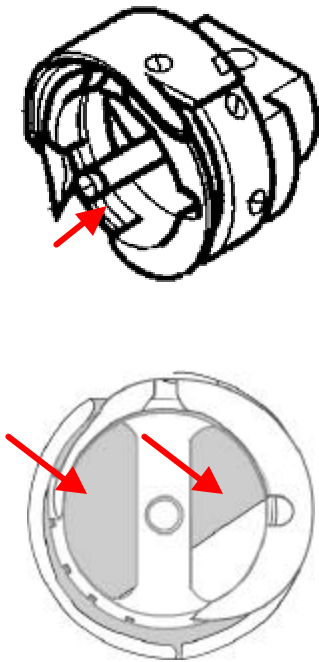
Preventive Maintenance/Cleaning

It is important to keep the rotary hook area clear of lint & debris. Approx. every 40 hours of operation, remove needle plate and blow clear with compressed air, turning the shaft to check all points. Also, ensure the machine is always stored in a climate-controlled area. Temperature and humidity extremes can affect the performance and even cause permanent damage.

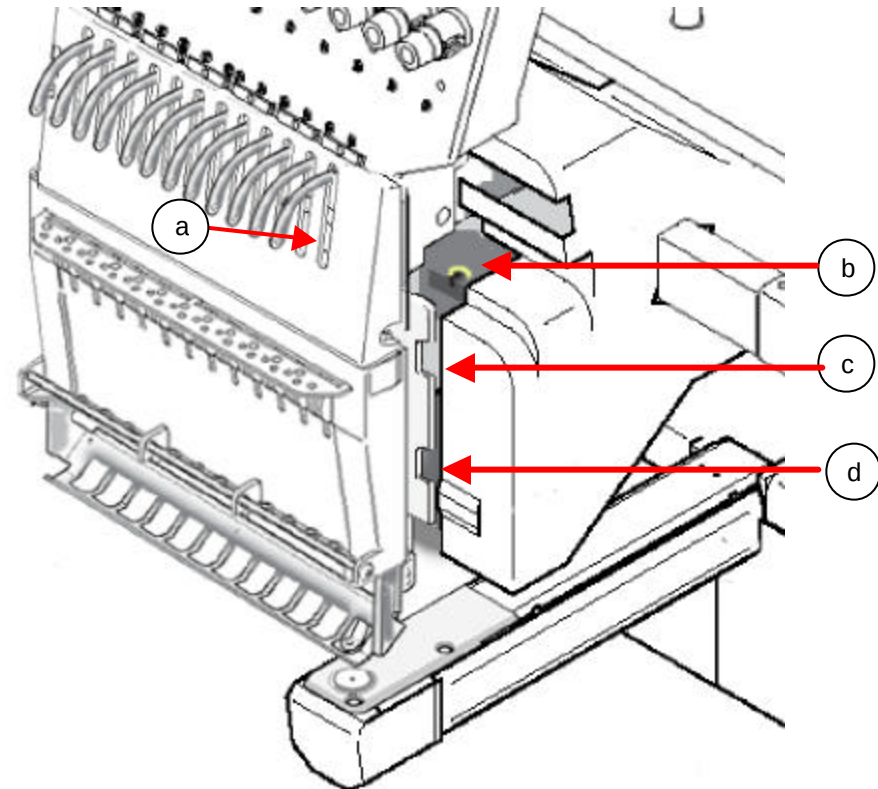


Oiling your Voyager Machine

Daily: (or every 8 hours of operation). Oil along the race of the rotary hook (red arrow)



Weekly: (or every 40 hours of operation). Oil upper & lower portions of reciprocator & pressure foot shaft, and all needle bars through take-up lever slots.

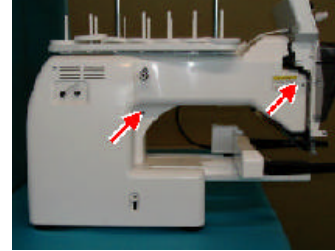


Removing Voyager's Outer Covers

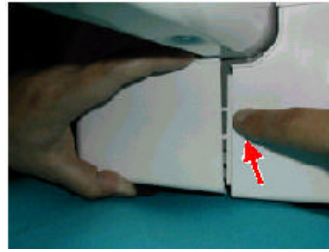
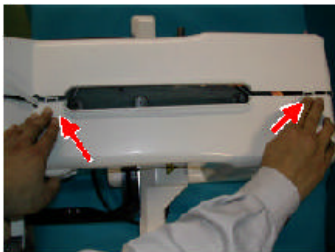
Remove the right-side cover first. (side without control panel). This can be done without removing the other side. Some repairs including moving knife timing can be made by removing only this side cover.



Remove the bobbin winder. Remove both the tensioning knob and switch arm.



Remove these screws. (Indicated by the red arrows).

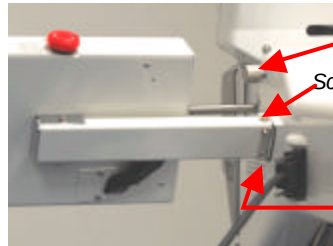


Separate the locking tabs between the covers. As shown in the 4 locations above.

Remove the left-side cover. (control panel side). Note: This cover can be freed enough without removing the control panel to allow some common repairs: CPU board re-set/replace; serial/usb circuit board. Needle change cam repairs, presser foot motor.



Disconnect data cable shown.



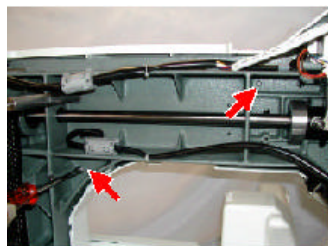
Color change knob

Screws for control panel arm

Remove screws on control panel as shown above, and manual color change knob.



Remove 1 external and 2 internal screws. As shown above.



Disconnect data port cable. (cable for USB/serial/AN jacks).

Starting Voyager in Maintenance Mode

Some operations performed on Voyager require that the machine be started in Maintenance Mode. Follow this short procedure to start Voyager in Maintenance mode.

1. **Power off the machine.** (Wait approx. at least 10 seconds after power-down before re-start)
2. **On the control panel, press and hold MENU while restarting.** Menu button must be held continuously while power switch is pressed.
3. **Machine will appear to start normally.** Standard “HAPPY” screen appears. Press SET to continue.
4. **Go to the Maintenance option.** Press MENU and use the arrow keys to go to “Other”. Then press SET to enter the “Other” sub-menu. Use the arrow key to navigate to “Maintenance” and press SET.
5. **Enter code.** Use arrow keys to change code to 2251 and press SET.

The machine is now in maintenance mode. Additional functions are available from this sub-menu that allow you to re-initialize the machine & perform other adjustments.

Warning: Exiting this “maintenance” sub-menu exits maintenance mode. If so, must re-enter maintenance mode by re-starting the machine and following steps 1-5 above.

Re-Initializing Voyager

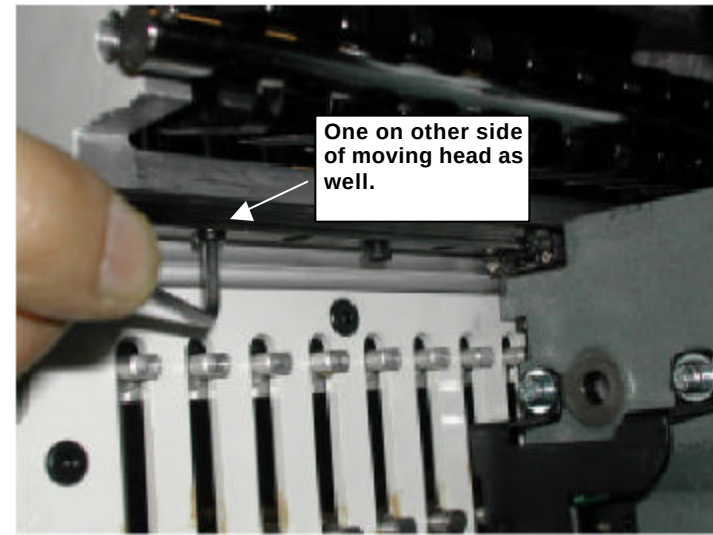
This procedure completely re-sets Voyager’s internal control panel firmware program.

1. **Enter Maintenance Mode.** Follow the procedure above.
2. **Re-set Memory option.** While in Maintenance mode, scroll down to Memory. Press SET, then OK. Machine runs quick self-diagnostic and clears memory.
3. **Exit Maintenance Mode and re-enter “Other” menu and go to “Setup”.** Press MENU until returned to main menu. Enter main menu again and scroll down to Other and press SET. In the “Other” menu, navigate to “Setup” and press ENT.
4. **Perform “System” reset.** In the Setup menu, 2 options will be available: “System” and “Speed”. Choose System and press ENT. Display may flash.
5. **Perform “Speed” reset.** While still in the Setup menu, choose “Speed” and press ENTER. A warning will appear: “Caution! Main shaft turns”. After a few seconds, main shaft will begin turning from its lowest speed, gradually accelerating to its full 1000 spm before stopping. After machine stops, return to main menu and re-start machine.

Removing/Re-Attaching the Moving Head

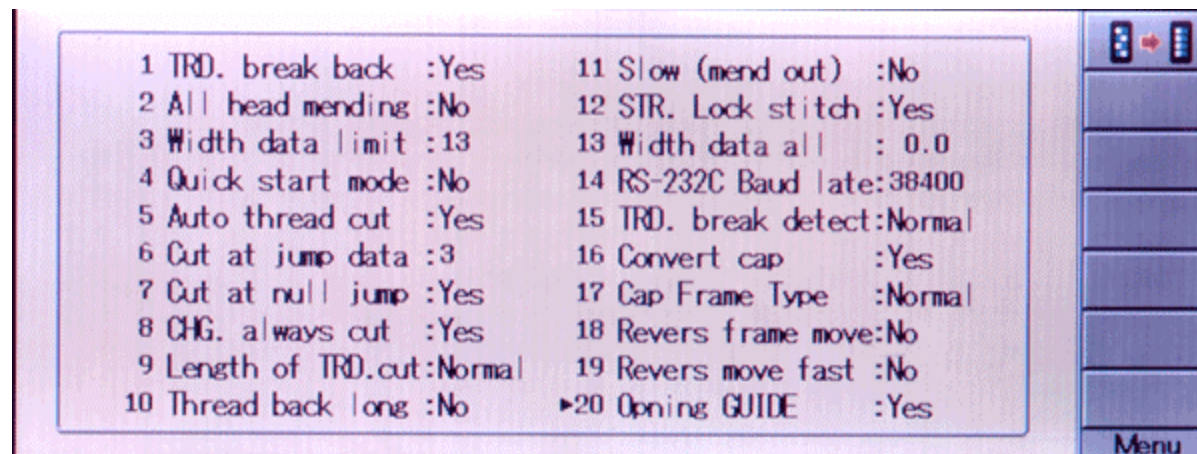
Remove the 2.5 mm hex screws located behind the moving head

As shown in the picture.



Recommended Options Menu Settings

Standard machine settings are located in the Options menu (select Machine icon to see menu below). You can adjust these settings to control the behavior of certain tasks that Voyager performs, such as trims, jumps, thread break detection and more.

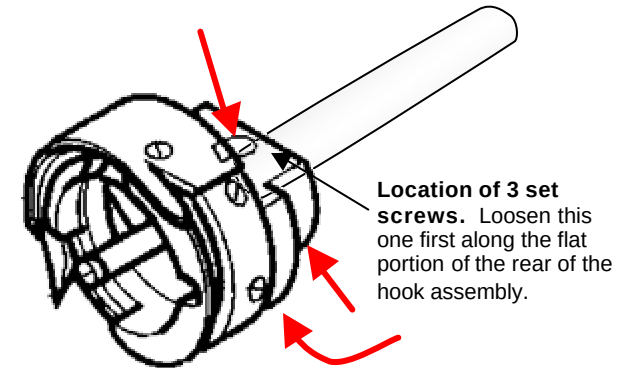
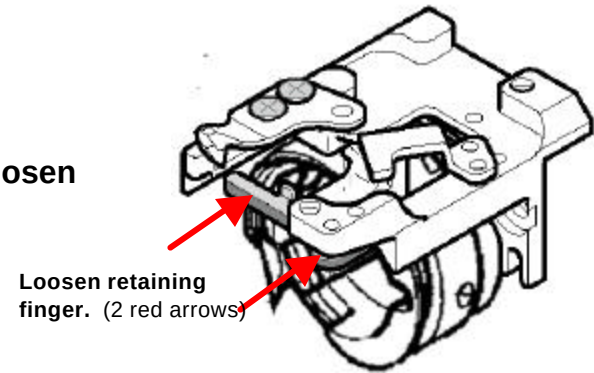


Part 2: Common Maintenance/Adjustment Procedures

Rotary Hook Timing on HCS Voyager

Preparation: Follow these short steps to prepare for Remove needle plate and loosen rotary hook from its shaft.

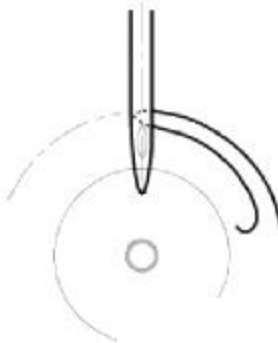
1. **Remove needle plate.** Will allow access to rotary hook.-
2. **Lower presser foot.** With machine powered on, press P.FOOT to lower. (or if powered off, manually turn gear)
3. **Lower needle manually until it engages and locks down.** Do this manually.
4. **Loosen retaining finger.**
5. **Loosen rotary hook on shaft.** There are 3 screws (shown right)



Adjust rotary hook.

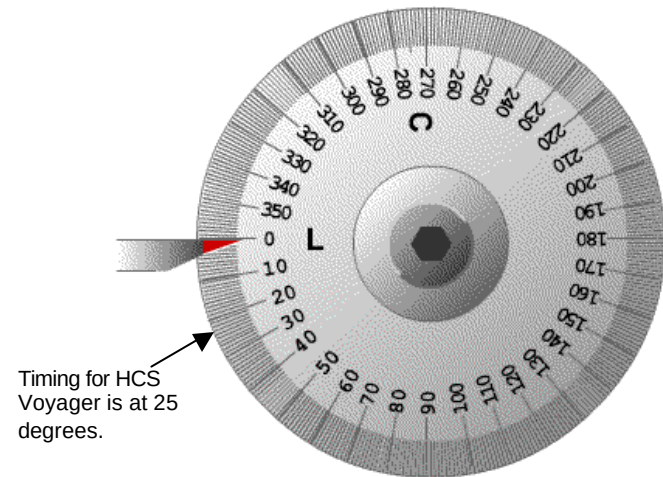
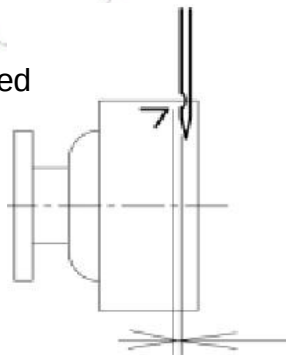
1. **Turn timing wheel to 25 degrees.** You'll find the timing wheel at the rear of the machine.
2. **Adjust rotary hook position as shown.** Rotary hook must be aligned in the following 2 ways:

- a. **Alignment with needle:** Tip of rotary hook must be passing just behind needle.



- b. **Depth alignment:** Hook must be positioned as shown

Back of needle should be 1 business cards' width in front of the point of the hook



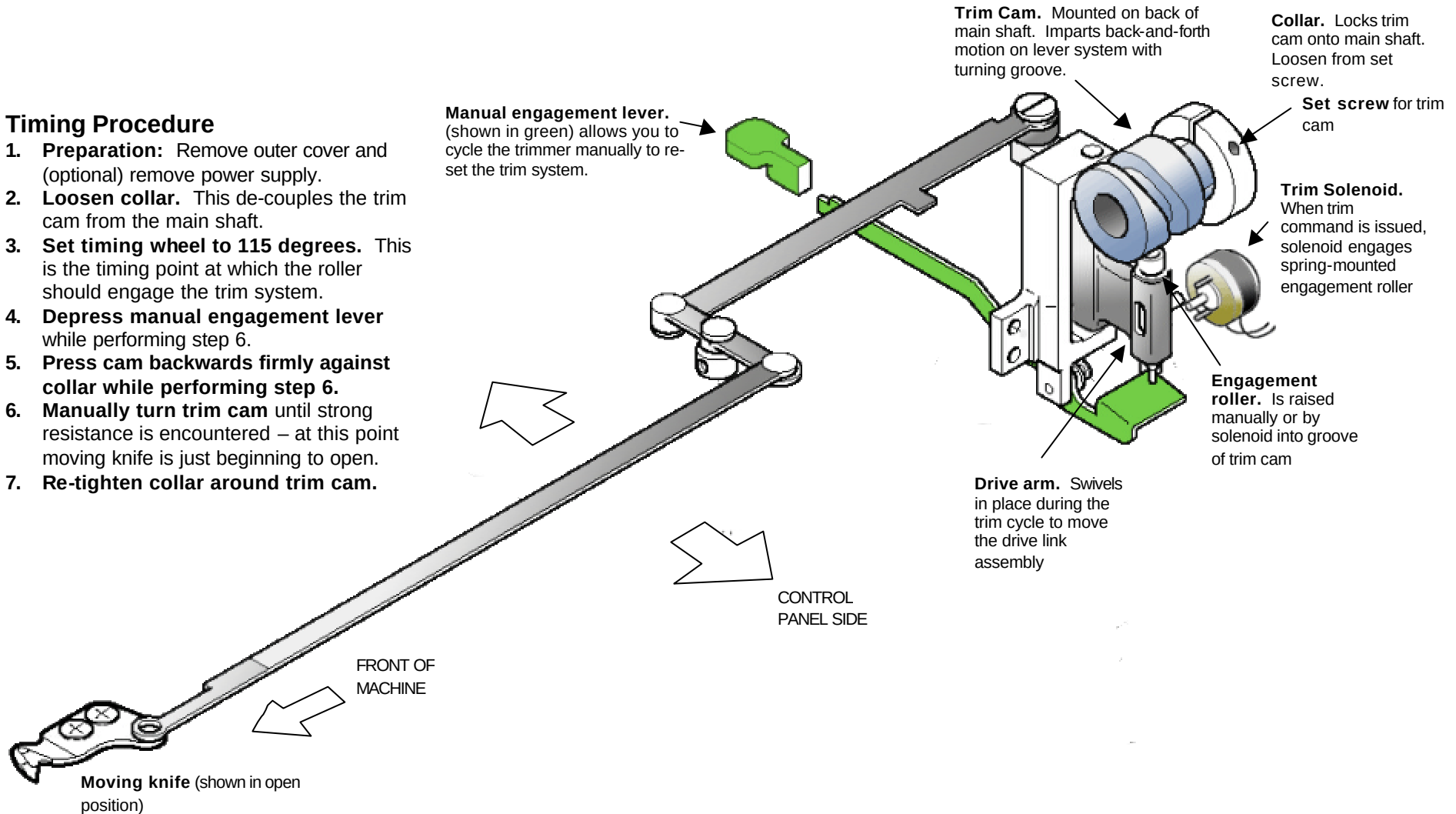
Moving Knife Timing

From time to time, the moving knife can be knocked out of position or time due to jams, buildups (bird nests) or other events. Result is failure to cut thread properly or cleanly. Follow the procedures on this page to time or position the moving knife.

Diagram of thread cut system. Refer to diagram below for the instructions on this page and the following.

Timing Procedure

1. **Preparation:** Remove outer cover and (optional) remove power supply.
2. **Loosen collar.** This de-couples the trim cam from the main shaft.
3. **Set timing wheel to 115 degrees.** This is the timing point at which the roller should engage the trim system.
4. **Depress manual engagement lever** while performing step 6.
5. **Press cam backwards firmly against collar while performing step 6.**
6. **Manually turn trim cam** until strong resistance is encountered – at this point moving knife is just beginning to open.
7. **Re-tighten collar around trim cam.**



Moving Knife Positioning/Adjustment

Sometimes the moving knife can be knocked out of position. Follow this short procedure to re-position the moving knife properly.

Procedure

1. **Remove the right-side outer cover (non-control panel side).** You won't need to remove the other cover to do this.
2. **Loosen set screw.** (see figure 2.6a below). Use 2 mm hex wrench.
3. **Adjust eccentric bolt.** This is the timing point at which the roller should engage the trim system. Adjust until moving knife is positioned as shown in figure 2.6 c.
4. **Re-tighten set screw.**



Figure 2.6a. Loosen this set screw with a 2mm hex wrench.



Figure 2.6b. Turn eccentric bolt until moving knife is positioned as shown in Figure 2.6c.

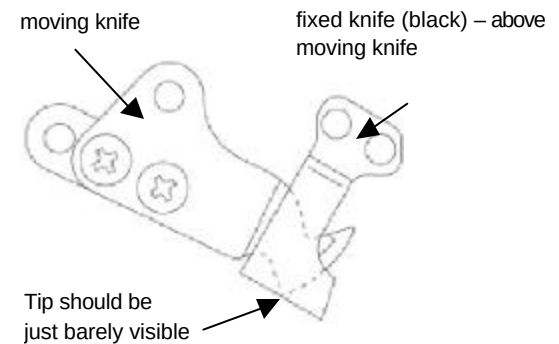
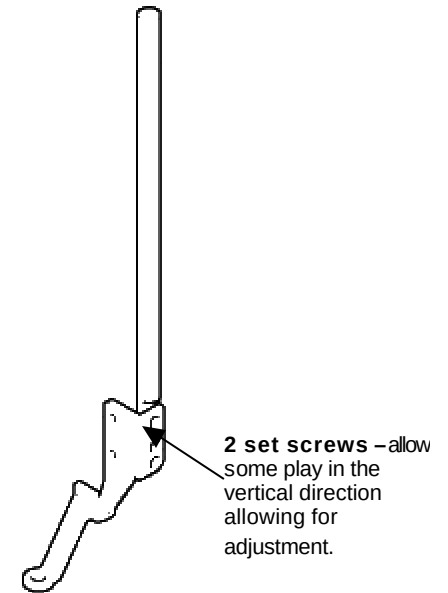


Figure 2.6c. Proper position of moving knife in closed position

Pressure Foot Adjustment

Procedure for checking pressure foot clearance

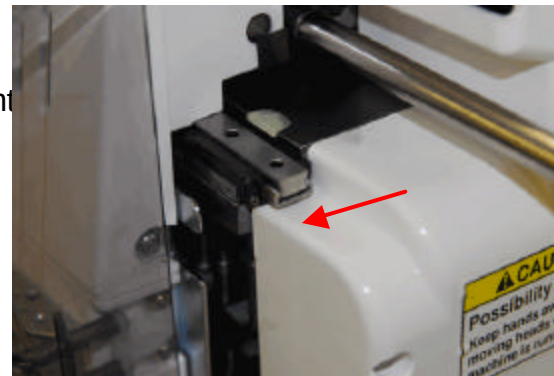
1. **Select Needle 1** from control panel.
2. **Lower presser foot** by pressing P.FOOT
3. **Drop needle** manually until it locks down in place.
4. **Set timing wheel to 0 degrees.**
5. **Loosen set screws** as shown in diagram below.
6. **Adjust pressure foot height** – recommended height approx. 1.5 mm above surface of needle plate (less than a dime's thickness).
7. **Re-tighten pressure foot on shaft.**



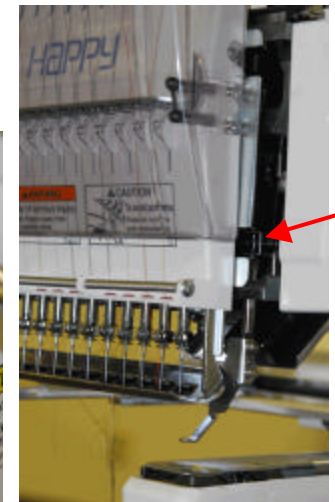
Adjusting Presser Foot Clearance

Follow these steps to adjust presser foot clearance if above measurement

1. Select needle 1 and drop the presser foot with the P.FOOT button.
2. Remove the retaining clip on the end of the bar as shown on the right.
3. Move the head manually to "needle zero" position to expose the set screw for the presser foot as shown.
4. Make adjustments as necessary and re-tighten.



Remove this retaining clip.



Set screw for presser foot is now accessible.

Setting Needle Depth

This procedure can be done with the machine powered on or off.

1. Remove the lower front panel.



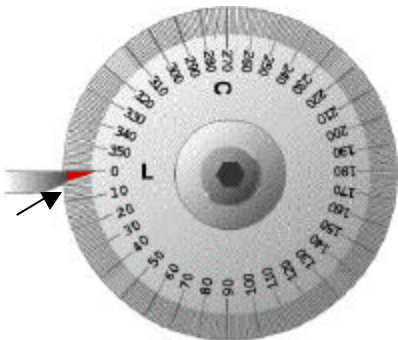
2. Lower the pressure foot with the P.FOOT button or manually as shown below.



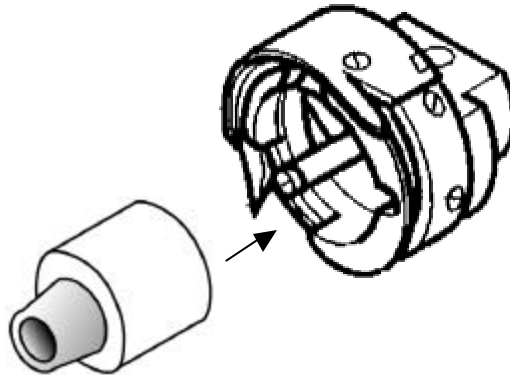
3. Press and lock down needle as shown below.



4. Set timing wheel to L + 5.



5. Insert needle depth gauge



6. Loosen upper needle bar boss (not lower) and adjust so that tip of needle just brushes gauge inside rotary hook.

Ensure that clearance between these bosses is exactly 25mm.

