


## Greasing Caged Needle Bearings

### Back Ground Information:


When servicing HQ long arm machines it is important to fully grease the take-up lever caged needle bearings. The faster the machine the more critical this becomes. Faster machines use up and or throw out the grease more quickly than slower machines. Most machines have two caged needle bearings; however, the 26" Infinity machine has a third caged needle bearing in the counter balance piston assembly. The intent of this document is to aid in greasing these needle bearings.


### Greasing the Caged Needle Bearings on the Take-up Lever Without Removing Them:

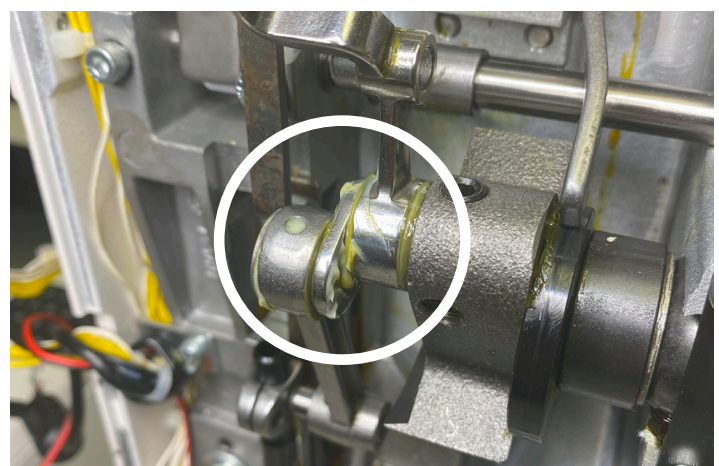
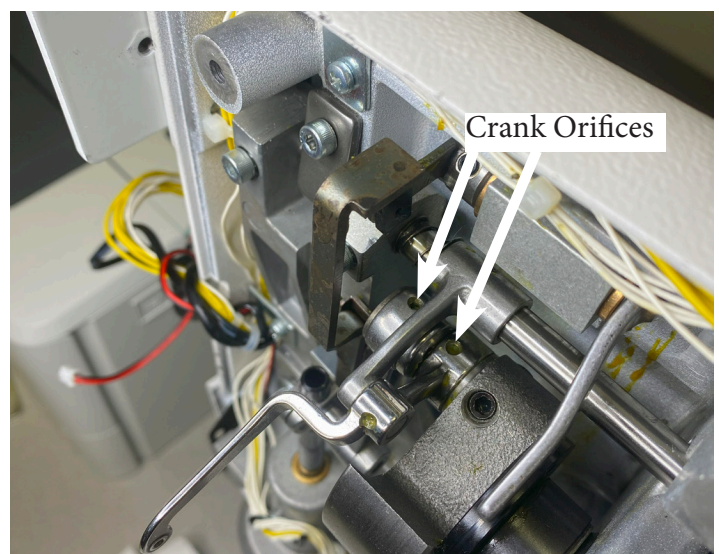
1. Remove the front cover and other parts as shown in the service manual to access the inside of the machine for servicing.

 **Note:** The take-up lever needle bearings can be greased using a syringe part # QM40241. It has a small tip that can be cut to just fit into the take-up lever orifices to grease the bearing. The grease used is Kluber Isoflex NCA 15, Part #QM49304 (Rep Lube #4 Green).

2. Place the tip of the syringe into the orifice on the take-up lever crank and press grease into it until it comes out the sides of the caged needle bearing. Repeat on the other side of the crank for the second caged needle bearing.

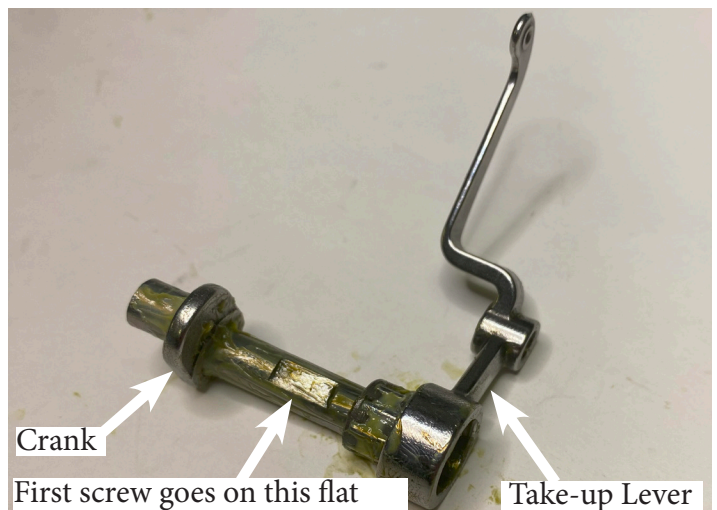
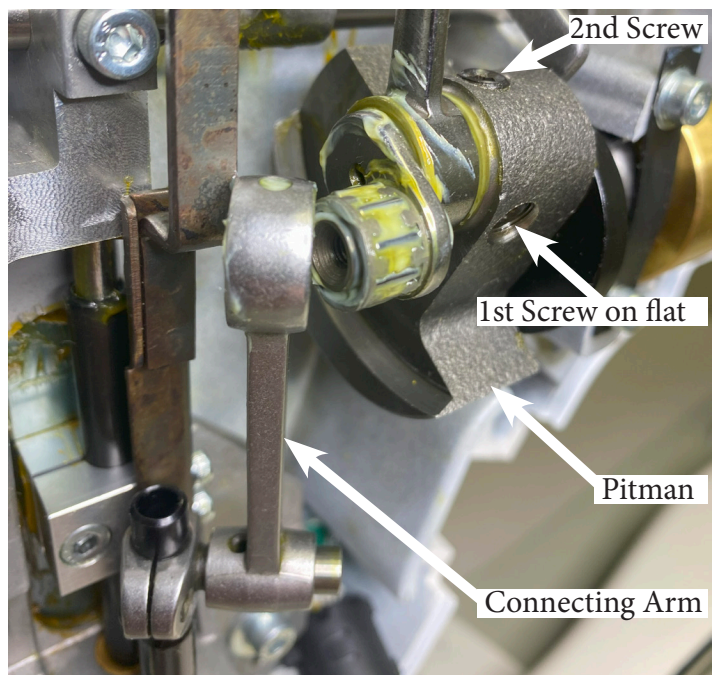
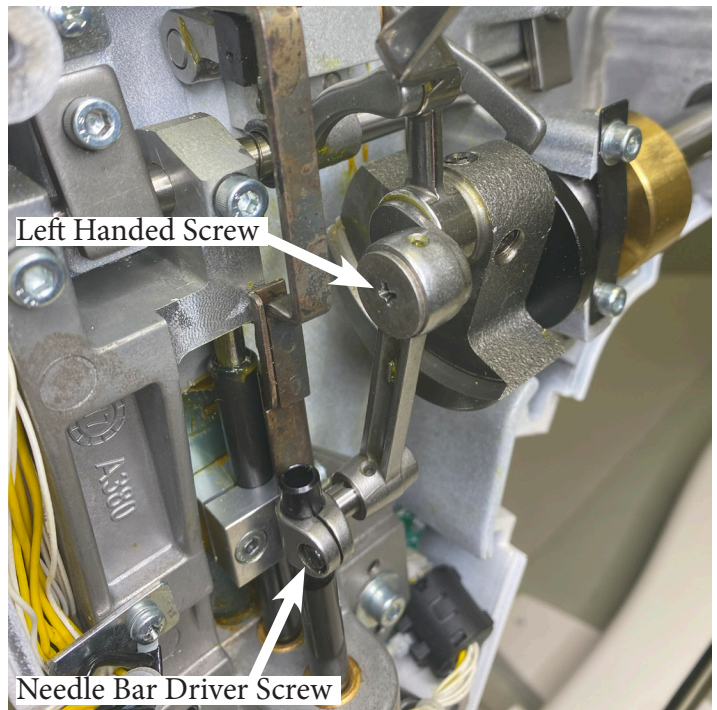
 **Note:** The counter balance in the 26" Infinity machine cannot be greased in this way because there is no orifice. The bearing must be removed to be packed with grease.

 **Note:** It is important to clean the grease out of the syringe and tip after use, or the grease will dry out in the tip and make it hard to press out later.




## Removing the Bearings to Pack Grease

1. Remove the needle.
2. Remove the left hand threaded crank screw (turn clockwise to remove).
  - ✎ **Note:** Some crank screws have a straight slit head and some are Phillips, but they all have left handed threads.
  - ✎ **Note:** On Amara machines you should be able to rotate the hand wheel to where the connecting arm will slide off the crank to access the caged needle bearing. On the Infinity machine you will need to loosen the needle bar driver screw and drop the needle bar out of the driver from the connecting arm to allow removal of the caged needle bearings. You will need to reset needle bar height after you reassemble these parts. See the service manual on setting needle bar height.
3. Gently wiggle and turn the connecting arm until it comes off the crank.
4. Loosen the 2nd screw and then the 1st screw on the flat a couple turns so the screw will allow the crank to be removed from the pitman.
5. Remove the crank from the pitman
6. Pack grease in both caged needle bearings.
7. Reassemble the crank with caged needle bearing through the take-up lever and into the pitman. Ensure that the 1st screw is tightened onto the flat and that there is no bind or tightness of the take-up lever and then tighten the second screw.
8. Place the connecting arm onto the needle bar driver and then carefully onto the caged needle bearing on the crank.
9. Replace the left handed crank screw (tightening it counterclockwise).
10. Turn the hand wheel through a couple rotations ensuring it turns freely.



## Counter Weight Caged Needle Bearing

1. Loosen the screw on the flat with a 2mm hex driver
2. Slide the pin out to the left, out of the eccentric enough to disengage.
3. Bring the counterweight out the top of the cylinder sleeve with the pin and caged needle bearing if possible. If the pin comes off use some needle nose pliers to remove it.
4. Remove the caged needle bearing from the counterweight.
5. Clean the caged needle bearing and pack it with lube #5 (Green)
6. Use a dark marker to mark the pin slotted head on the side with the flat to aid in getting the screw back onto the flat when reassembling.
7. Assemble the pin into the packed caged needle bearing and counterweight with the pin flat to the front.
8. Slide the assembly down into the cylinder keeping the pin flat to the front until it rests on the edge of the eccentric, slide the pin out to the left and carefully rotate the eccentric by turning the hand wheel slightly until the pin can slide to the right into the hole.
9. Ensure the screw tightens down on the flat and that the machine turns freely after assembly.

 **NOTE:** One way to know if the screw tightens onto the flat without removing the screw is that it will rotate slightly when the screw is tightened. If it does not rotate slightly, loosen the screw, rotate the pin head a little, and tighten it again. If it still does not rotate slightly when tightening the screw you are not on the flat.

