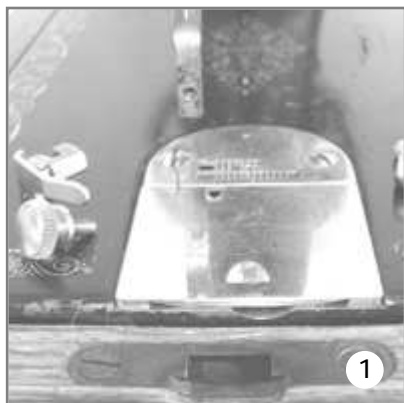


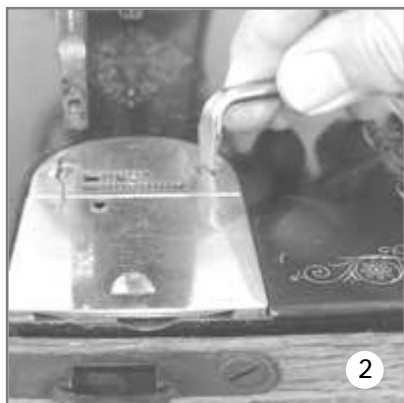
INTRODUCTION

This section covers the mechanisms revealed when the cover plates are removed. This includes removing, cleaning and resetting the feed dog, hook ring and lower bobbin.

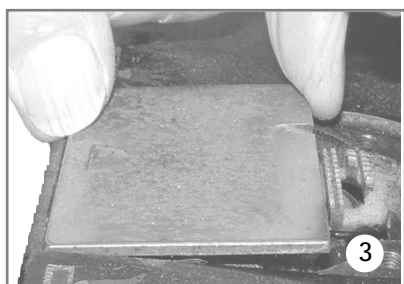


(1) You will find it easier and possibly less painful if you remove the presser foot and the needle before starting work in this area.

COVER PLATES

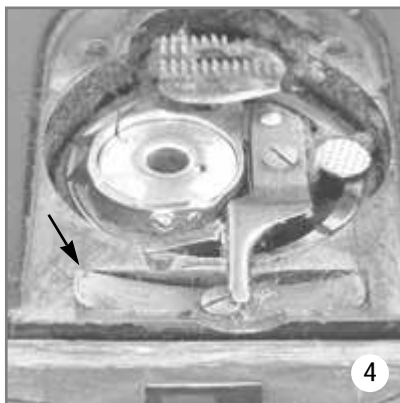


(2) The semi-circular feed plates, while different in size, all attach in the same way with two screws. These are easier to remove by using a long screw-driver, (a) particularly one with the blade cut at an angle of 15° or (b) with a cranked (or angled) screwdriver. Clean and set aside.



(3) Remove the rectangular cover by lifting the inside edge up a little, pushing it over the feed dog and sliding it off.

Before you stow it away, clean out the grooves underneath with a discarded needle or a knife blade and give a single drop of oil to each.

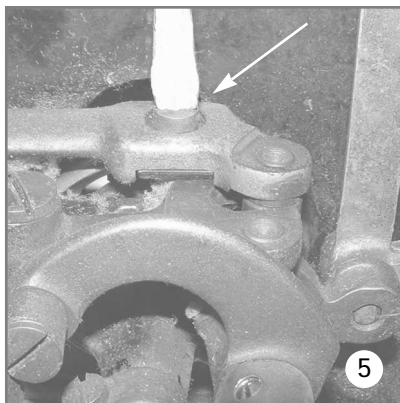


(4) The cover is held in place with a plate spring. Brush out any debris from this area and check that the spring is intact.

The screw holding this spring in place has a very narrow diameter. If you decide to remove it for cleaning, be very careful how much force you use.

FEED DOG

This is held in by a screw under the machine shown here.



(5) Turn the machine up on end, resting on the face plate, if the screw is difficult to turn.

(6) The feed dog can then be lifted out upwards from the machine for cleaning. (This one needed it!)



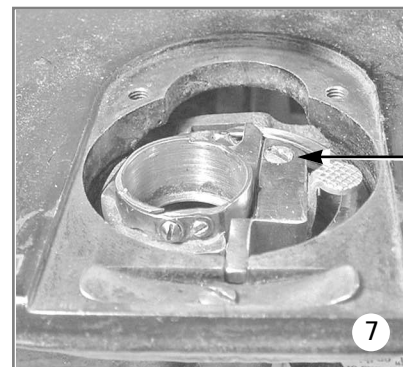
Make sure you remove all fluff from between the teeth of the feed dog as well as giving it a general clean. Put to one side for the moment as it is easier to clean the hook ring area with it out.

HOOK RING AREA

The components are shown in these illustrations. The *early type* had a fixed bobbin holder position bracket.

The *later type* was changed to allow the removal of the bobbin holder without removing the position bracket as well. In both cases remove the bobbin holder and the position bracket to clean the hook ring.

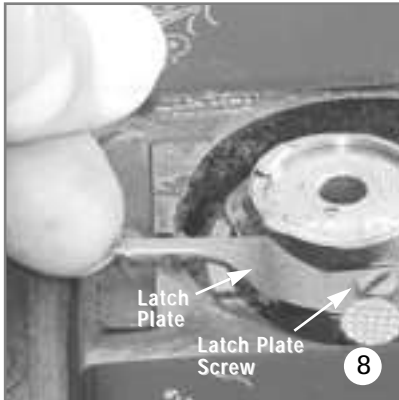
Early type



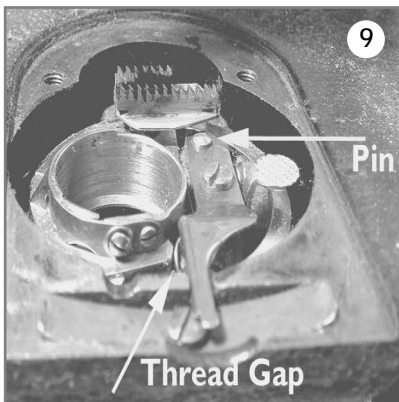
(7) Undo the screw holding the position bracket in place. Take it out and the bobbin holder should also come out easily.

Later type

The position bracket now consists of two parts, the main body and a latch plate, joined by a screw.

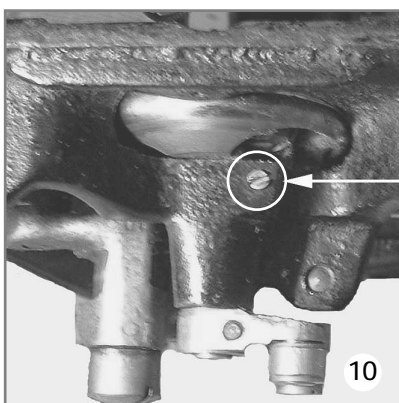


(8) By hooking a fingernail under the latch plate, it can be lifted and moved side-ways, making enough space for the bobbin holder to be re-moved.

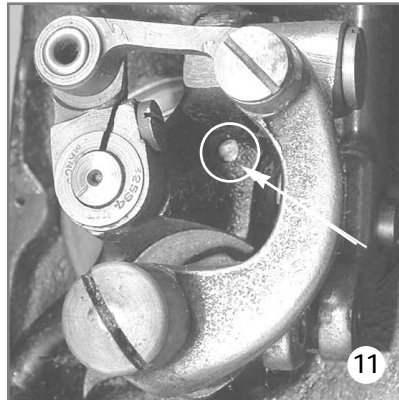


(9) To remove the main body first undo the screw and remove the latch plate.

The screw holding the position bracket in the early type is replaced by a pin (see arrow above).

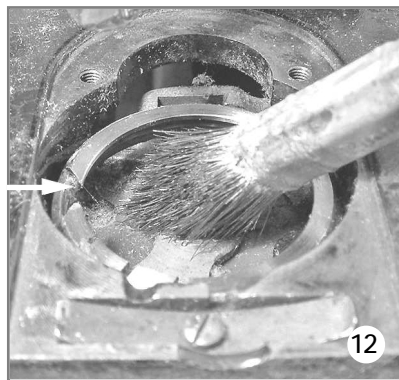


(10) The pin is held in by a grub screw under the base plate. Loosen this screw.



(11) Now locate the underside of the pin. Its position is shown here and can usually be seen as a small shiny circle.

Push on this with a nail punch and it will lift up and can be removed from the top. Hold the position bracket aside for cleaning.



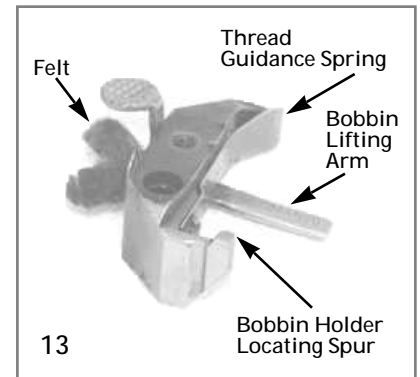
(12) Now clean the hook ring.

If the machine is of any age it will have collected a lot of fluff, which mixed with oil can take a while to remove.

Scrape round the inside of the hook ring as well as the outside, and clean the cuts in its surface. *Do not try to remove the hook ring for cleaning* - it destroys the machine's timing.

Clean out any debris from the hook ring area and check the condition of the actual hook (arrowed). It should have a clean sharp point, free of fluff.

Bobbin Holder Position Bracket

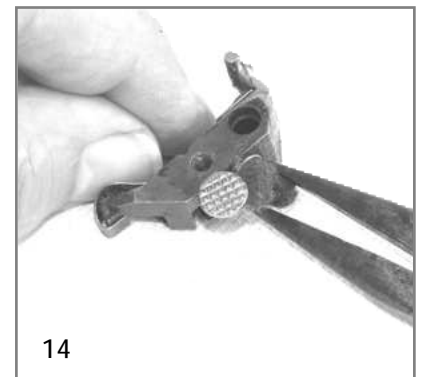


(13) Apart from keeping the bobbin holder in position, this unit has:

a felt wick to keep the hook ring free of fluff

a lever, which when depressed, lifts the bobbin out of the holder for easy removal.

at one side there is a flat spring that provides a smooth path for the upper thread as it goes round the bobbin holder.



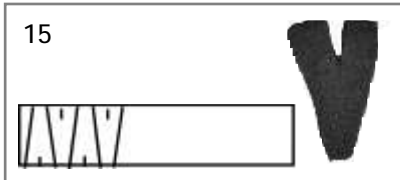
(14) If the felt has been worn, remove it in its spring holder.

The felt can be difficult to remove from its holder. Some-times it yields to snipe-nosed pliers, or driving an old needle through from the side and 'unscrewing' it.

As a last resort, a small drill can be used to bore most of it out and then pick the rest out with a needle.

Clean the rest of the bracket. A stiff toothbrush is ideal for this.

If needed, a new felt can be cut. At present, Netley Marsh has a small stock of this felt, 5 mm thick, which can be supplied in a strip 17 mm wide. From this a trapezium needs to be cut, with a wide end 9 mm and the other end 3 mm.



(15) If these are cut from alternate directions there is virtually no waste. Make a cut 5 mm deep in the wide end to fit over the rim of the hook ring.

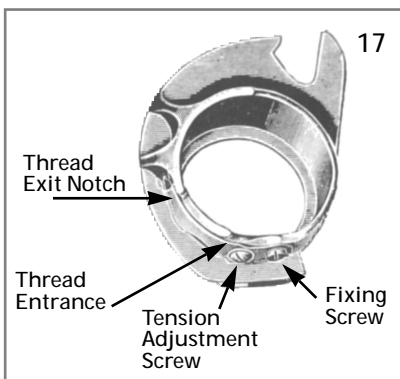


(16) Screw the narrow end of the felt into the spring as far as it will go

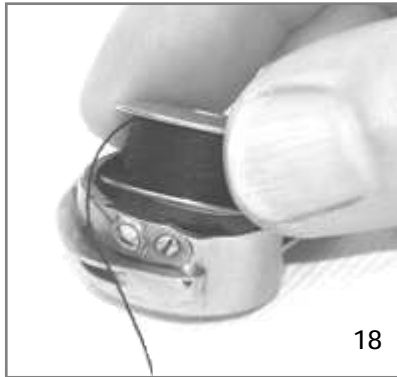
Then screw the spring into the side of the bracket, finishing with the slot horizontal. It is now ready for refitting.

BOBBIN HOLDER

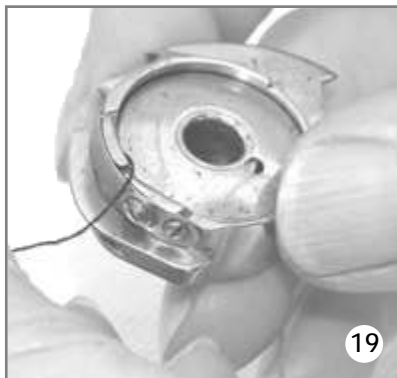
Remove the bobbin and clean the holder. You will see there are two small screws in the side of the holder: the fixing screw and the tension adjustment screw.



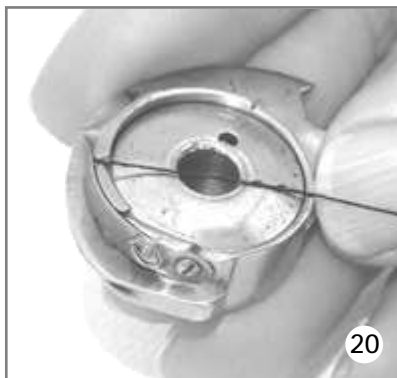
(17) There is a small spring in the side of the holder which controls the lower bobbin thread tension. The fixing screw fastens the spring to the body of the bobbin holder, and the other varies the tension on the spring.



(18) After cleaning, return the bobbin to the holder. Hold the bobbin with the thread leaving it in an anti-clockwise direction.



(19) Draw the thread into the top of the slot in the side of the bobbin holder...



(20) ...then backwards so the thread is drawn into the exit slot.

The thread then feeds from the notch in the bobbin case towards the needle.

Check that there is some resistance when you pull the end of the thread. To be precise, this should be equivalent to 1 oz (28 grams).

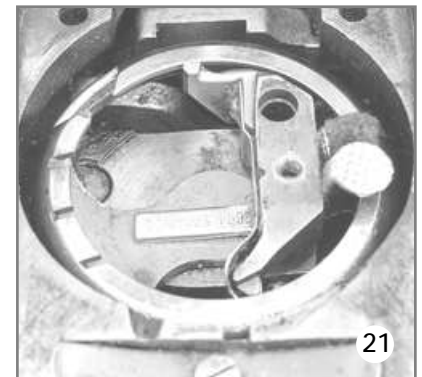
You can test this by hanging a 1 oz weight or equivalent (3 one pound coins) from the thread and turning the bobbin holder nearly vertical. The thread should just about leave the bobbin.

Adjust the tension as required. If you can't get enough tension, it is probably one of two reasons:

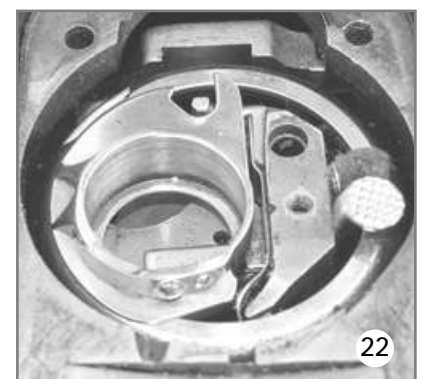
The spring has been damaged. Fit a different one if you have a spare, or note for attention on the checklist.

Fluff has collected under the spring. Remove the spring, clean and refit.

REASSEMBLY



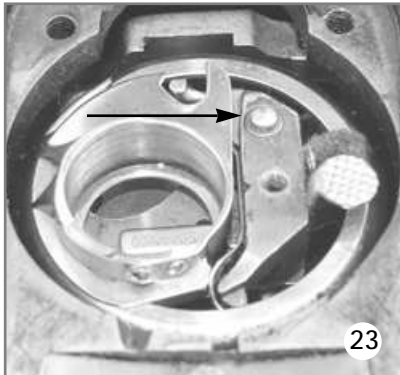
(21) Place the bobbin position bracket in the hook ring in its approximate position.



(22) Now replace the bobbin holder, so that the groove in its side saddles the edge of the hook ring and the notch in its end is located in the spur on the position bracket.

Now wriggle the position bracket into place, with the felt half above and half below the hook ring top edge.

If you have the early model with the screw, make sure the tail of the position bracket is in its notch, then fasten the screw.



(23) If you have the pin type, insert the pin until the shoulders of the pin are completely in the position bracket, then tighten the grub screw holding it in place.

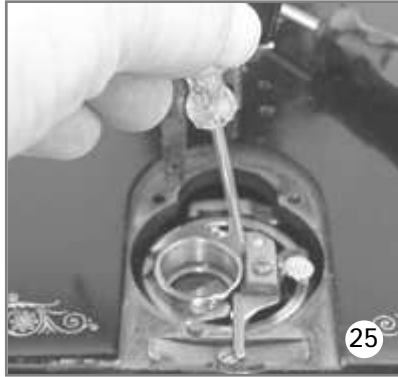


(24) Finally, put the latch plate back on the position bracket, and replace its screw - but not tight at this stage.

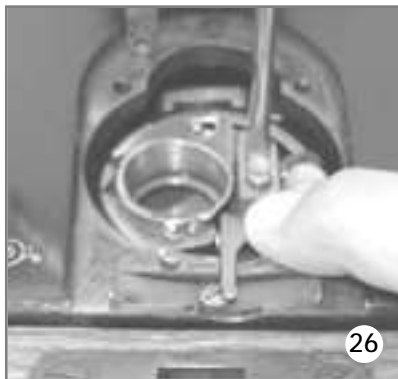
The screw hole in the plate is larger than the screw, so that although the plate is held firmly in the notch, the bracket underneath can be moved from side to side.

It is essential that, when the screw is finally tightened, there is a small gap between the back of the bobbin holder and the position bracket to allow the top thread to slip through unhindered when the stitch is made. See picture (9) on page H - 2.

If a large gap is left, the machine will work, but can be noisy.



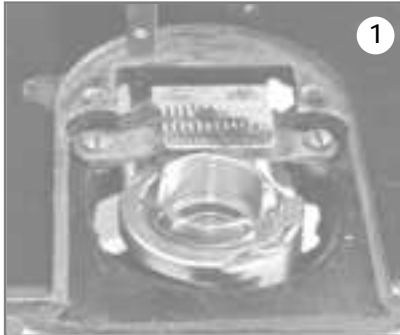
(25) Lever the position bracket across to make this small gap...



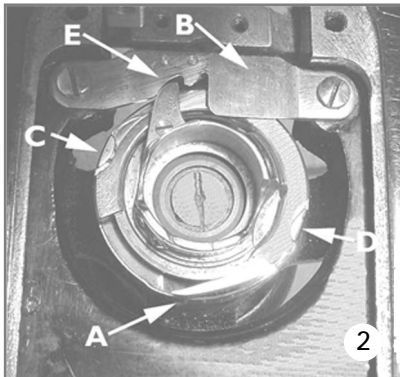
(26) ...then press down firmly on the plate with a finger while tightening the screw.

Give the balance wheel a couple of turns to make sure everything is in the right place.

201



- (1) Remove square cover in the same way as the 15K (see picture and paragraph 11 on page H-6). Remove, presser foot, needle and bobbin.



- (2) The 201 lower bobbin area is shown here. The hook ring and bobbin holder has been condensed into one neat package. The only other component is (B) the bobbin holder latch. The operation is as follows:

The hook (A) turns clockwise and picks up the thread from the needle. It continues to rotate, carrying the thread with it over the top of the lower bobbin.

As the take up arm ascends, the thread is pulled down through the gap (E) between the bobbin holder latch and the bobbin holder.

The thread slips off the hook and the stitch is made while the hook ring makes another complete revolution, i.e. two revolutions per stitch.

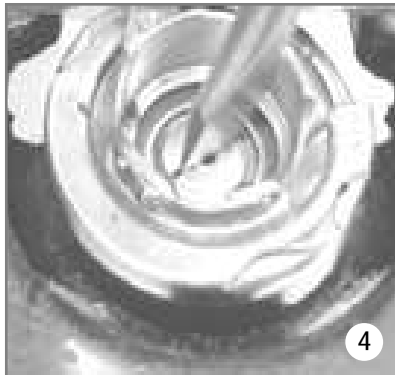
The picture also highlights the two clips, (C) and (D) that hold the hook ring and bobbin holder together as a unit.



- (3) Remove the bobbin holder latch for cleaning.

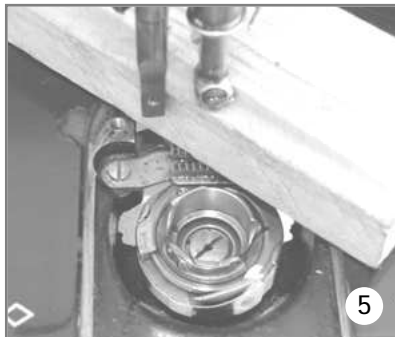
The illustration is of the underside of the part. The spring thread guides tend to collect fluff.

Clean round and under the hook unit with a brush or cleaning rag. Frequently, you will find that you can avoid removing the unit for cleaning. Most of the debris collects inside the bobbin holder and can be removed with a cleaning rag.



- (4) If very dirty however, remove this unit from the machine by undoing the large screw which can be seen in the centre.

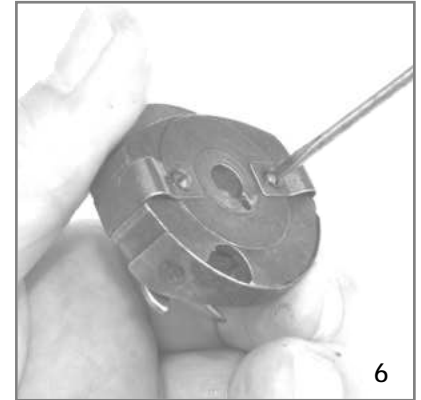
Hold onto the balance wheel while you undo this, as the hook ring will be turned by the screwdriver.



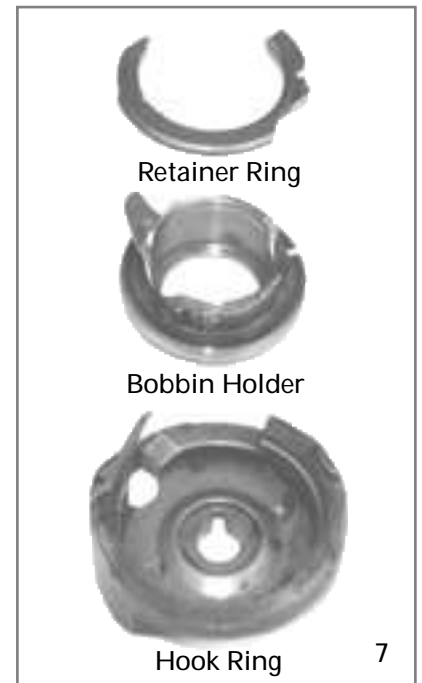
- (5) If this proves difficult, place a block of wood on the base plate underneath the needle holder.

When the needle holder descends, it will stop the machine action. If the screw is really stubborn, do not persist. You are in danger of spoiling the timing of the machine.

Instead, lever back the two clips, (C) & (D) and remove the bobbin holder and its retaining ring, leaving the hook ring in place.



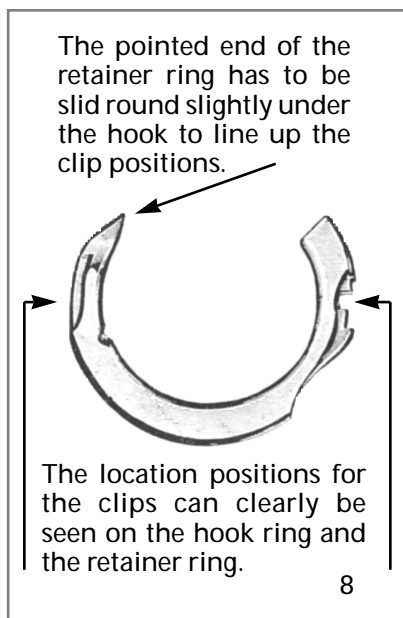
- (6) Otherwise, take out the unit for cleaning. Unscrew the two clips (preferably over a container to prevent losing the screws).



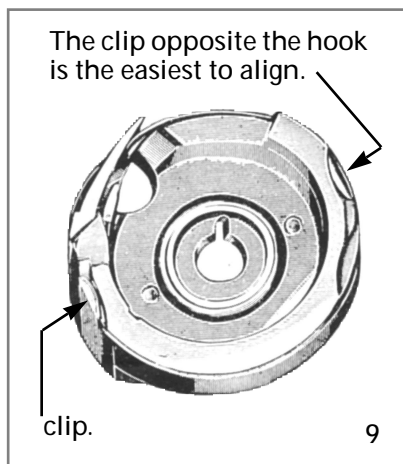
- (7) The unit will then come apart into the three pieces shown.

The bobbin holder is a sliding fit within the hook ring. There is a circular groove in the top of the bobbin holder, and the retainer ring has a circular 'tongue' which corresponds with this to hold it in place.

Clean all the components and reassemble. Put a single spot of oil in the groove on the bobbin holder before replacing the retainer ring.



(8) Replacing the retainer ring.



(9) Hook the end of the clip on to the top, press it in to the side of the hook ring so that the holes for the screw line up underneath and fasten. Repeat for the other clip.

If you did not remove the unit to clean it, lever the clips out from the side of the hook ring slightly with small screwdrivers or slivers of wood. Reassemble the parts, lining up for the clips as above. Then remove the wedges and press the clips into place.

Replace the bobbin holder latch, with the bobbin arm secured as shown in picture 2.

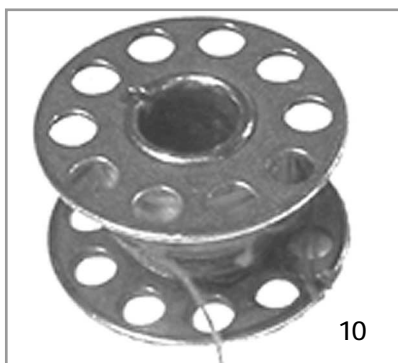
The hole in the centre of the screw holding the bobbin holder in place is an oiling hole. Give it one or two drops of oil before you return the bobbin.

Test that there is some tension on the thread as covered for the 66/99 on page [2] H - 3.

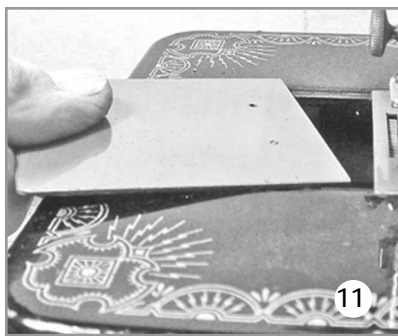
Finally replace the feed dog after cleaning.

15K

This is the earliest of the round bobbin machines we send.



(10) It uses a larger bobbin, not interchangeable with that for the other machines.



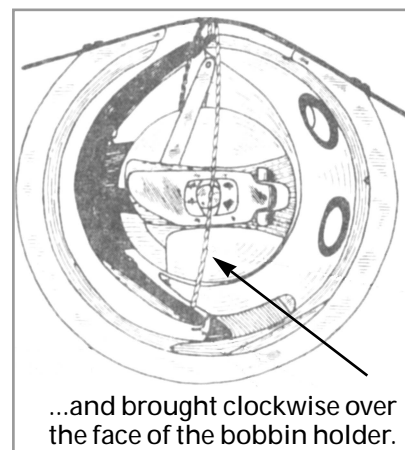
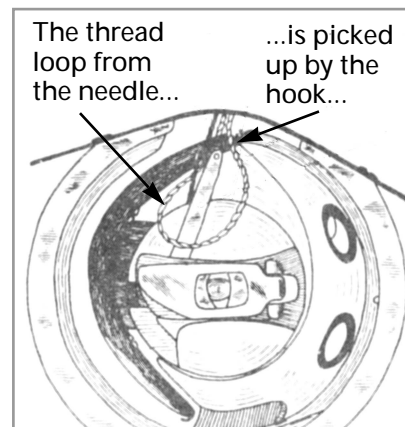
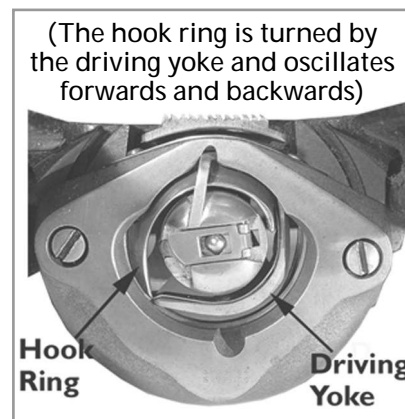
(11) Remove the cover plate by lifting the outside edge very slightly and twisting the plate with a little pressure towards you and upwards.



(12) Remove the rear cover plate, presser foot and needle.

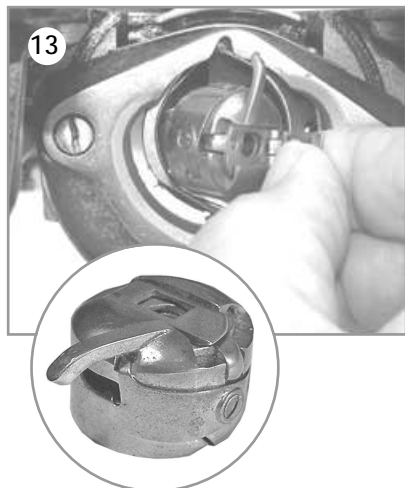
The lower bobbin, hook ring etc is enclosed in a removeable unit - the shuttle race.

Although unfamiliar in appearance, this unit works in exactly the same way as the others.



As the hook reaches the end of its downward travel, the thread slips off the hook. The take up arm is rising and pulls the thread up over the bobbin face, past the bobbin holder arm and the stitch is made.

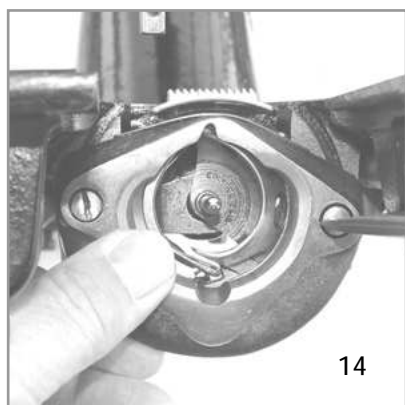
It is easier to work on the shuttle race if you rest the machine on its balance wheel end.



(13) Remove the bobbin holder by lifting the latch on its face.

As the latch is raised, a bar underneath it slides across and grips the edge of the bobbin cheek, holding it inside the bobbin holder.

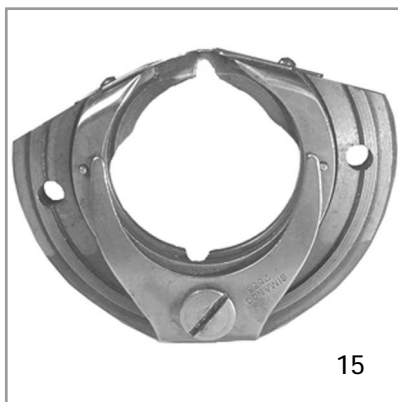
Check that it does so, because otherwise with the vertical operation, it is difficult to return the bobbin holder with its bobbin after changing the thread.



(14) Raise the needle bar to its highest position, undo the two screws on the front of the shuttle race and the unit will lift off.

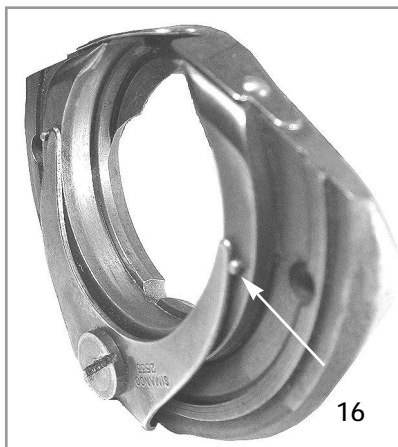
If it is stuck with old oil, lever gently with a screwdriver to release it.

Now is the best time to clean the feed dog and the area surrounding the shuttle race.

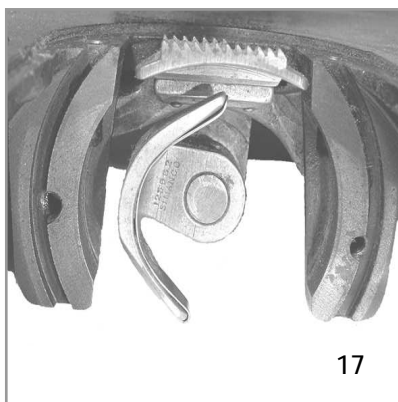


(15) Turn the shuttle race over to take it apart and undo the large screw which releases the spring plate.

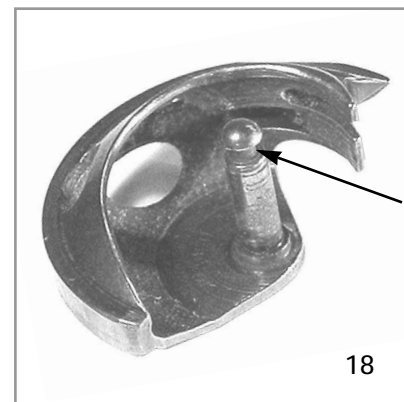
The unit can now be broken down into its three parts; the front and rear parts of the shuttle race and the hook. Clean all three.



(16) The two halves of the shuttle race are located together by pins. When in place they provide a square-edged channel for the hook to slide in, while holding it in place.



(17) The hook is turned by the driving yoke at the end of the main driving rod.

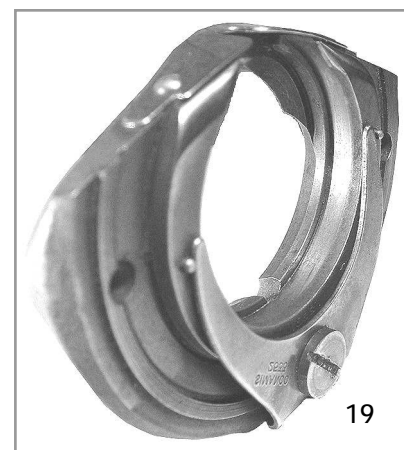


(18) Note that the hook has a spindle to locate the bobbin holder. At the top of this spindle there is a circular groove.

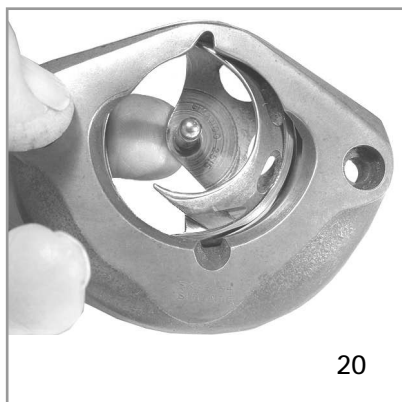
Check that when the bobbin holder latch is closed, the bar underneath it slides across into this groove, preventing the bobbin holder from falling out.

The tension spring on the bobbin holder has only one screw. The tail of the spring is held in a slot, so the screw can combine the functions of holding the bobbin in and vary the tension. It is easier to check the tension before returning the bobbin holder to the machine.

Re-assembly



(19) After cleaning thoroughly, marry the two halves of the shuttle race together. Put the spring plate on, with the two arms just inside the two pin ends and tighten the retaining screw completely.



(20) Next, put the hook into the channel in the shuttle race.

Put the hook vertically into the race from the rear. First locate the point of the hook in the channel just to the left of centre at the bottom with the hook leaning backward. Now bring the hook up vertical.

Push the hook to the right and it will fit into the channel. Hold it there while you fit the whole unit back into the machine.



(21) Tighten the two holding bolts. Refit the bobbin holder, with the arm located in the notch at the top of the shuttle race.

Turn the balance wheel a few turns to make sure everything has gone back into its right place.

