

INTRODUCTION

Your machine was an expensive piece of equipment to purchase, and if you take good care of it there is no reason why it should not remain in perfect working condition for all its life.

All machine knitters should be able to maintain their machines without the help of husbands or friends.

New knitters (and experienced knitters also) should spend time finding out what their machine can do and more important, know how and why it does it. This leads to greater understanding and more intelligent use. It then follows why it is so important to keep your machine clean and oiled with periodic checks on all its parts, and a yearly 'spring clean'.

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MAINTENANCE OF YOUR KNITTING MACHINE

A knitting machine is a beautiful piece of machinery, every single minute part, piece, screw, plastic and metal is precision-built, designed and assembled to give years and years of perfect use.

It stands to reason then, that it must be cared for, cleaned and maintained with an intelligent, knowledgeable and positive approach.

A few minutes attention daily after use, about 5 minutes weekly, and once yearly for a thorough 'spring clean' is all you need to keep your friend in perfect working order.

Not only will it work better, be less prone to minor (and major) 'machine illnesses', but you will feel better using it, and get a great deal more pleasure from this machine, always clean, and giving you excellent work.

PASSAP and TOYOTA 787 OWNERS: before going any further please read the notes at the end of this section and on pages 16 (Toyota 787) and 21 - 23 (Passap).

JONES + BROTHER and KNITMASTER ELECTRONICS: all the following instructions for punchcard machines can be followed - but electronic owners must be especially aware that they must keep their machines dust-free. Be especially diligent in your daily brushing and keeping your machine completely covered when not in use.

DAILY CLEAN:

After daily use, take a little brush, that should always be kept handy, and run it along the top (over the protection strip) to left and right and then brush towards you and the fluff and dust will brush off.

Repeat with the ribber.

Cover your machine when not in use (with a plastic cover or a clean cotton sheet).

Leave your working area tidy.

WEEKLY or after a couple of garments:

Brush from left to right several times.

Bring all needles out to D or E position. Lift a group of them gently upwards from beneath them and you can then brush that area quite clean.

Repeat this going from one end to the other.

If you have a vacuum cleaner with a nozzle attachment, run it across this area also.

A much better method, which does not take any longer, is to remove the retaining bar completely (see your own manual for details) which frees the needles slightly. Now, after removing the protection strip, you can easily brush the area beneath the needles. Clean the protection strip and replace.

Make sure it is in the correct position. For a punchcard machine make sure it is correctly positioned for the 8 needles at each end - then it will be correct for the centre ones. It is not any good trying to get the centre correct first.

The Brother electronic machines have a line at the end to show you where it should be placed.

If you find that the strip is inclined to move, place a tiny piece of blue tack or double-sided sellotape under each end.

Replace the retaining bar when the cleaning is complete (see page 13)

Also, brush all over the machine, the radar, knitleader, plastic area, row counter, etc.

Dust the table.

Repeat this with the ribber needles and bed.

Wipe the back metal rail (on which the cam box slides) with tissue, several times until clean, then with oil on a rag or tissue, oil it.

Run the oily rag over the butts of the needles. Do not of course over-oil this, or you will get oily fingers or work.

Wipe with clean tissue the front part of the bed, on which the front part of the cam box runs, then wipe with oily rag (again, sparingly).

Repeat with ribber.

CAM BOX:

Turn it upside down, and with your second (dirty) brush, thoroughly brush out all the dust and fluff.

Press the patterning buttons or knobs and where they move, put one drop of oil on the joint. Wipe over the clean rag to remove any excess of oil, then wipe with lightly oiled rag.

Clean the long channel at the back thoroughly, then oil with oily rag.

Repeat with ribber carriage.

PASSAP:

The same instructions apply, except your needles will not 'lift' up to brush beneath. Take care to brush out all the channels into which the needles go.

TOYOTA 787:

You can brush your machine as above instructions, but DO NOT OIL. See the notes on page 16 regarding your machine, before you start.

KNITMASTER LACE CARRIAGE:

The cam box of the lace carriage is treated in the same way as the cam box of the main bed.

Sinker plate - remove one white round brush at a time, clean beneath it as with main bed sinker plate.

Hold the sinker plate in one hand, and with your other hand slide the wool feed backwards and forwards. On it you will see three grooved metal rollers, one in front and two behind. Clean the rail on which these rollers run and lightly oil.

Now examine the three metal rollers themselves. They do get very clogged up with yarn and dirt and need regular attention. Pick out the yarn and dirt gently until it is all clean, and lightly oil inside the grooves.

This is a most important task - for you can see the grooves are only very small, and if yarn and dirt are allowed to build up here, it will cause eventual distortion and knitting will become impossible.

Now to the yearly major maintenance that we call

SPRING CLEANING

Find a few hours at a stretch, as it is much better to do the job all in one go, rather than in short bursts.

You need to collect up all the items you will need before you start, nothing is worse than having to run around for things and wasting valuable time.

The first list is really for replacement parts that you must check. Some you will certainly need, others you may not.

All these instructions are general. For special notes on different types of machines, please refer to the notes on pages 15, 16 & 21. **TOYOTA 787**, please see notes before you start.

SPECIAL LIST OF ITEMS you may need for replacement

Needle protection strip - main bed

- ribber

Replacement needles (you should always keep spares - they cannot be taken from the ends of the bed indefinitely!)

Round brushes (under sinker plate)

Plastic fabric gears (under sinker plate)

Plastic discs (Knitmaster, under sinker plate)

Screws for round brushes

Tension wires

Nylon cord

GENERAL LIST - items to be gathered together for the Spring Cleaning.

Apron for you to wear

Newspaper or dust sheet to go under machine and around the area you are working (you do not want oil and dirty fluff on your carpet)

Plenty of toilet tissue

White spirit or surgical spirit - see notes on spirit, page 15

Bowl of hot soapy water

Bowl of clean hot water

Two receptacles for soaking the needles, one marked 'inside' (for the needles from the centre part of the bed) and the other marked 'outside' (for the needles from the ends of the bed)

Rags

Large bag for rubbish

A needle with a broken-off latch

Sewing machine oil (in a proper can, not in the little bottles that came with your machine, that should have been used up years ago. See notes on oil, page 15

Vaseline (Knitmaster only)

2 small cleaning brushes - good quality paint brushes are ideal, one marked 'clean' and the other marked 'dirty'

Vacuum cleaner with nozzle attachment (if available)

Posi-drive screwdriver

Ordinary screwdriver

Scissors

Tweezers

Pliers (Passap)

Your own instruction manual

and, most important of all,

TIME AND PATIENCE

PASSAP - see separate instructions first, p.21.

1. Work on main bed first

Cover ribber up completely - you do not want extra dust, etc, dropping on it.

Completely remove the retaining bar (see your instruction manual)

Remove ALL THE NEEDLES

(Don't forget - latch closed to remove needle and latch open to return it)

Put approximately 80 needles from the centre into the spirit-filled container marked 'inside' and the rest from either end into the one marked 'outside'. Do not throw them in all higgledy-piggledy - if they are all put in the same way round, it is easier to remove them later.

Take a look at each needle as you remove it.

If it looks slightly bent or, more likely, if the latch is stiff, too loose or bent, throw it right away. Do not try and repair it, this usually causes all sorts of problems and is false economy.

2. Remove and throw away, unless it is nearly new, your needle protection strip.

3. Put into the soapy water, all washable plastic accessories, i.e. the transfer tools, rulers, yarn separators, punch card clips, nylon cord, in fact anything that is loose and washable. NOT, please, the entire cam box, sinker plate, point cams, etc.

Don't forget the lid and clean it both inside and outside.

4. With the brush marked 'clean', thoroughly brush the area where the needles were.

If you have a vacuum cleaner with attachment, now is the time to get as much fluff out from this area as you can.

5. With plenty of toilet tissue, wipe the metal runner at the back of the bed, thoroughly, again and again, until the tissues are no longer getting dirty. Also, with spirit rags, rub all over the metal part of the bed, until it is really clean.

Now, look from one end of your machine to the other through the long channel where you took out the retaining bar.

It is best to look towards the end where the brightest light is.

It is doubtful if you can see straight through, and this blockage is caused by dirty, oily fluff being trapped there.

Take your needle with the broken latch, and put it through the gaps of the channels on the top of the bed, and hook out, piece by piece, all this jammed-in fluff.

This job can take a long time, and you must go on, until you can see daylight through this long channel, and no signs of fluff at all.

Sometimes, the fluff is so tightly packed in, you have to lever it out, bit by bit. I have known of machines, where this pressed-in dirt was so bad, we could not even remove the needles from the bed.

When you are quite happy that it is completely clean and only then, is this job done - no half measures now - perseverance is needed.

Every now and again, whilst working, give the needles in the containers a good shake, this helps to dislodge the dirt.

With a hot soapy rag, clean all the plastic parts of the bed. If you are a smoker, the plastic goes a bit yellow - give it an extra hard rub. Rinse with wet rag, dry and buff up.

Don't forget to clean the row counter.

Rinse and dry the tools soaking in the soapy water.

With an oily rag, wipe the metal bar at the back of the bed, also wipe with oily rag the flat bed on which the runners of the cam box go.

PLEASE NOTE: I did say with an oily rag - and NOT by tipping the oil from the can, straight onto the machine.

6. SINKER PLATE

All makes and models of the Japanese machines have different brushes, gears etc for their sinker plates. Instructions here are general.

Examine your sinker plate and see the types of brushes, gears, etc, needed for your make.

Spin the round brushes around, and they should rotate freely and easily.

Look at the thickness and even-ness of their bristles.

Look to see what type of screws are in these brushes and gears.

If brushes do not spin freely it probably means there is yarn or fluff under them.

Look again to see what type of screw is holding the brush, and use the appropriate screw driver.

If you have removed these brushes frequently (as you should have done), you will have no problems, but if they have never been removed before, they can be very stiff.

Always work on one brush, one side at a time, being very careful to keep the order of the washers, etc. correct, and to return the brush the correct way up. To remove screws, rest the sinker plate on a firm flat surface, e.g. the corner of a strong table, and with the driver, loosen with a firm clicking, pressing down action.

If disaster occurs and you gnarl up the screws, don't panic, new ones can always be obtained, and that is why it is a good plan to get these spares before you start the cleaning.

One of the reasons these screws become so difficult to remove, is that bits of yarn and fluff accumulate beneath the screw, causing pressure and it becomes more and more difficult to undo them. It is amazing the amount of yarn and fluff that gets trapped beneath these brushes. Regular removing and checking is essential.

Damaged brushes, gears and discs cause many problems with looping at the side of the knitting and causing dropped stitches, split wool, etc.

Examine the round brushes and if bits of bristle stick out, it might be possible to trim them with sharp scissors. If the bristle is bent or

coming out, replace with a new brush and do not try first aid, it's not worth it. Never pull the bristles.

When the brush is off, clean away all the wool and gunge, and clean the area under the brush thoroughly, and wipe with oily rag.

Again, to repeat, when returning the brushes, do be careful they are the correct way up, one way is concave and one is convex, and do remember, always, one side at a time, then you cannot get into a muddle and replace the washers, etc in the wrong order.

Knitmaster_discs should be replaced at least yearly, more often if the machine is used a great deal. They should always be flat and smooth - not curled at the edges and torn.

The gears are round plastic and have little teeth. If any of these are broken, replace with a new gear.

Weaving brushes - these may also be removed to check for wool, etc, that may have become caught beneath them. Support the brush by putting your fingers beneath the brush, with your thumb on top of the sinker plate as you undo the screw. They are quite fiddly to replace.

For Jones weaving brushes, be careful, some models have a tiny washer that is easily lost. Clean thoroughly beneath the brush and replace, being careful to replace the brush the correct way up.

There are various other brushes in the sinker plate, that rarely need replacing. It is not advisable to remove these, as you need special tools and special knowledge. Just clean them thoroughly.

Should they need replacing, then take the complete sinker plate to your dealer for advice.

n.b. When ordering round brushes, plastic gears, etc, always quote the make of your machine and its model number, e.g. Jones 881, Knitmaster 700 etc.

Make sure you clean the sinker plate, all over.

Also check that there is no 'roughness' at the edge of the sinker plate, i.e. the edge that goes along in front of the sinker posts. This can cause

all sorts of problems with loops, catching the yarn, damaging it, etc. If it does feel rough, rub with the finest emery cloth you can get.

7. CAM BOX

Take your 'dirty' brush, and in a good light, brush all over the underside, brushing off and extracting all particles of dust and fluff.

Knitmaster 321 upwards: you have 4 cogs, 2 on each side. These must also spin freely. If they do not, it usually means they are caught up by pieces of yarn or even a fine hair. Look at the actual cogs in strong light, and you will see the offending hair or yarn.

It must be extracted carefully and slowly to prevent damaging the cogs.

Take the tweezers and gently, gently, millimetre by millimetre, remove the offender. If the cogs still do not spin freely, and you are sure that there is nothing obstructing them, you must take the cam box to a knitting machine mechanic, and let him fix it for you - else you will not be able to do the patterning, and probably make the problem worse.

On some cam boxes, if you lift the handle, part of the cam box lifts up, and you can get a thin brush inside and clean off the fluff and dust.

Look at the underside of the cam box again, and by pressing the buttons and levers on the top side, you can note which metal parts move, and where the 'joints' are. These are the parts that need oiling.

Use one drop of oil on each movable part, then wipe the whole of the bottom of the cam box with a clean rag, wiping off any excess. Please note, this is the only time you are permitted to oil straight from the can, at all other times, it must be done with a oily rag.

8. BACK TO THE NEEDLES:

Remove each needle from the spirit-filled containers, and individually wipe each needle with a clean rag.

You must not be tempted to do clumps of needles together, they must each have your attention.

SPECIAL NOTES

CLEANING FLUIDS

We have used ordinary white spirit on machines for many years, and without any problems. Some people prefer to use surgical spirit, and Passap recommend nine parts surgical spirit and one part oil for cleaning their machines.

OIL

Any SEWING MACHINE OIL is satisfactory. We do not advise the use of any other type nor do we recommend the 'spray' oils at all.

Baby oil is sometimes used, but we do not use it ourselves.

Grease should never be used.

KNITMASTER

On the back of the machine, above the rail, is the 'card rotating' trip.

Look at it and press it up.

Look at the cam box at the back and note the metal part which moves this trip.

Put a little vaseline on the part of the trip that comes into contact with the metal part of the cam box.

Knitmaster 323 and machines manufactured after this number:

At either end of your main bed, is a 'rubber end'.

These are used in conjunction with the patterning cogs.

If they have become distorted or damaged, they must be replaced, or you will get incorrect patterning.

321 and some early 323 models, have 'metal ends' instead of rubber ones and these must be replaced, if necessary, by a knitting machine mechanic.

JONES + BROTHER punch card machines

Note the belt at the back that slides backwards and forwards when you are patterning (using the change knob on KC).

Take a single transfer tool and insert it in one of the oblong holes, and bring the belt forward about one and a half inches.

Take a small piece of clean rag, wrap it around the belt and gently pull the belt to the right, and it will slide through the cloth.

Do this, gently pulling the belt, gently, all the way round.

Repeat until clean.

Repeat with an oily rag.

Remember - be gentle with the belt.

TOYOTA 787

The basic instructions for cleaning your machine, i.e. the needles, getting out the fluff from under the retaining bar, cleaning all the plastic parts, apply to your machine, but the instruction for the oiling DO NOT APPLY.

Read your manual and carefully follow the instructions.

THIS IS MOST IMPORTANT as beneath your main bed are many, many patterning plates. If you allow oil to drip onto these, the plates become stuck together and the patterning will malfunction and you are in trouble.

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Lay them on a clean rag or tissue (keeping the inside and outside ones separate).

Then take an oily rag, and again, individually, wipe each needle, from butt and down the stem to the bottom end (not the latch end).

Return them to the machine putting the 'inside' needles to the outsides of the machine and the 'outside' needles to the centre. Leave in D or E position, then gently press the butt downwards and backwards to return to A position.

9. **RETAINING BAR**

Clean metal part, then wipe with oily rag.

Return it into the machine.

This is very easy to do, and it goes over the needles.

Sometimes it is necessary to hold down, with your hand as the bar slides over them.

10. **SINKER POSTS**

These should all be standing in army straight line fashion.

If you note one leans over a bit it must be straightened.

Wrap the sinker post around with a piece of rag to protect it, and with the pliers, gently straighten it.

11. **THE BED**

This should be absolutely flat.

Sometimes it can become dented, by dropping something on it, or forcing the carriage across when jammed.

If it is badly dented, it should really be repaired by a knitting machine mechanic, but it is possible for you to improve the situation if it is not too bad.

Gently raise the dented part with a rag covered screw driver and try and straighten out the dent. This must be done with extreme care.

Then, with very fine emery paper, gently smooth out any rough edges.

Bad dents usually mean careless and rough use of the machine - dents can be avoided.

12. **TENSION ARM ASSEMBLY**

Remove, clean with spirit rag the metal parts.

Look around the movable tension discs and see if they are completely free of dust, fluff, bits of yarn and built-up wax that becomes stuck on the disc, or the opposite side.

Extract gently if any yarn is there, tweezers are best for this and then rub away any built-up wax.

If your discs have metal surfaces rubbing on each other, sparingly wipe with oily rag. Not of course where the yarn goes through.

13. **TENSION WIRES**

These do need replacing after a while, and if your machine is a few years old, they probably do need changing.

Jones, Toyota and Passap are easy.

Knitmaster has a tiny screw that has to be removed and replaced.

14. **EXTENSION RAILS**

Don't forget to give them a clean, and then wipe sparingly with an oily rag.

15. **Note for Knitmaster and Jones ELECTRONIC MACHINES (July 1985)**

The electrical parts for these machines are beneath the plastic casing at the back of the machines. On no account should you attempt to open this, or try any electrical 'repairs' yourself.

There are no electrical parts beneath the front part of the machine near the retaining bar. The Jones 910 does have a long strip of foam going from one end to the other beneath the bed.

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Date of machine's spring clean:

CLEANING THE RIBBER

All the instructions for the main bed apply for the cleaning of the ribber. Cover up your now lovely clean, main bed.

Remove the retaining bar of the ribber and continue in exactly the same way as for the main bed.

Give yourself about a quarter of the time needed for the main bed.

Whilst examining the wool feed (ribber sinker plate) look beneath it and check to make sure there are no rough edges or 'burrs' on the metal edges. These can cause dropped sts at the beginning of a row, and also looping. Take a very fine rubbing down paper or emery board, and very gently, file the 'burr' smooth.

When this job is done, now is the time to look at the adjustment of your ribber. I'm sure you will appreciate it is impossible to list the individual instructions for each make and model machine, so the instructions here are general.

The Meeting of the Sinker Posts

Put your half pitch lever (P and H) onto P.

Look at the sinker posts of the main bed and the ribber.

They should be directly opposite one another.

You could put the H.P. lever to 'H', then the sinker posts should be evenly alternating.

If these posts meet on 'P' or alternate evenly on 'H' your ribber adjustment is correct, but if it is slightly irregular, adjustment is needed.

Release the side cams or reinforcing arms.

Release the two screws (for fixing ribber to main bed) slightly. Now, holding the ribber with both hands at the bottom, slightly move the ribber to get the sinker posts correctly lined up, at the same time, press the ribber in towards the main bed.

Tighten up the screws gradually (i.e. tighten the left slightly, then the

right, come back to the left and tighten, then the right).

Replace the side push-up cam or reinforcing arm. Check again. If not happy, repeat the process.

This is nearly always all that is necessary to be done. Occasionally, the ribber can be so out of alignment, that a little more adjustment is necessary. Should this be so, you are really best advised to contact your nearest knitting machine mechanic who specialises in your make of machine.

Height of Ribber

This is important to give correct ribbing, and in particular, tuck rib.

Again, each model is slightly different, and these instructions are general.

Bring about 10 needles at left side of main bed out to holding position.

Knitmaster: make sure your pile levers are up.

Bring ribber bed up.

Insert a punch card beneath the needles and move the card from side to side.

You should feel slight 'pressure' of the underside of the main bed needles and ribber sinker posts on your punch card.

If you do not feel this 'pressure', then the gap is too wide.

If the punch card cannot move easily between needles and sinker posts, then the gap is too narrow.

In either case, the ribber height needs adjustment.

Knitmaster SRP and SRP20 - I have not included these adjustments in this booklet, as clear and illustrated instructions are on P282 of Mary Weaver's book called 'The Ribbing Attachment, Part II' and are very easy to follow. Mary Weaver has kindly given me permission to tell you of these instructions, and I cannot let this opportunity pass without thanking her for the excellence of her books on the ribber. If you do not own them I would heartily recommend them. They are the 'Bible' of the ribber knitter.

Knitmaster SRP50

Before you start, make sure

- a) the (blue) pile levers are up
- b) the main bed is sitting correctly in the ribber clamps. These clamps can become displaced in use, and must be fully back.
- c) if adjustment is needed, you need a 7 mm spanner
- d) make sure the close knit bar is not in the machine.

Look at the reverse side of the ribber from the back (you have to get right down on the floor, under the machine).

Work on one end at a time.

You will see two nuts, one above the other on the arm bracket.

Loosen off the lower nut slightly.

By the side of these nuts is an adjusting lever.

This lever goes up to heighten the ribber, and lower to lower the ribber.

Adjust as required.

Tighten up the nut (do not over-tighten, or you will 'strip' them).

Check height again with the card, to ensure the adjustment is correct.

Repeat the process on the other end of the ribber bed.

As another check, hold the swing handle, and move the ribber backwards and forwards a few times to make sure the ribber is not now too high.

If it is, the needles out in D position will hit the sinker posts of the ribber. If this is happening, re-adjust.

Jones KR 830 & KR 850

Again these instructions are general.

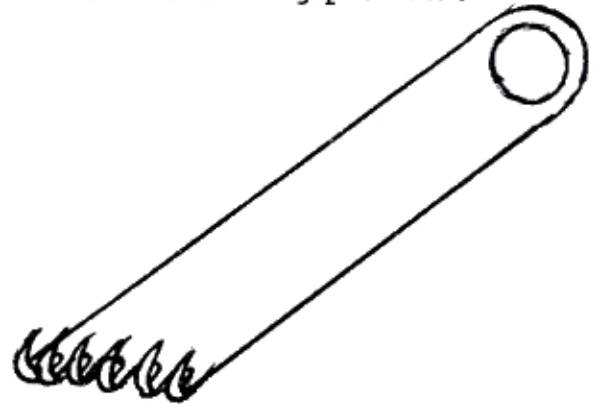
The 'meeting of the sinker posts' instructions are the same as for the Knitmaster.

Height of Ribber Bed - KR 830

This is important to give correct ribbing, and in particular for the tuck ribs. Again, each model is slightly different, and these instructions are general.

Bring about 10 needles at either side of main bed out to holding position. Insert the depth of a ribber claw-type weight hanger beneath them and move it from side to side.

You should feel slight 'pressure' of the underside of the main bed needles and ribber sinker posts on the claw-type weight.



If you do not feel this pressure, then the gap is too wide.

If the claw-type weight cannot move easily between needles and sinker posts, then the gap is too narrow.

Either way is incorrect, and the height needs adjustment.

Make sure the main bed is sitting correctly in its clamps.

Let down the ribber one step.

Look down between the beds, at the back of the ribber, and by the side of a little bar called the 'height adjustor', is a nut.

Loosen the nuts slightly, with the Jones spanner, supplied with the ribber.

Put up the ribber.

By moving up or down the height adjustors, you can get the correct height.

Let down the ribber one step. Tighten the nuts. Lift the ribber up again, and check the adjustment. If incorrect, adjust again.

KR850

The instructions for the adjustment of the height is the same as for the KR830, except use the depth of 2 claw-type weights.

These ribber adjustment instructions should be sufficient to give you accurate knitting. However, if further detailed instructions are required, they may be obtained from Jones + Brother.

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SPRING CLEANING FOR THE PASSAP - special instructions

The procedure for this task is similar to the instructions already given for the Japanese machines.

There are special precautions you must take in connection with the removal of the needles.

The items starred in the general list are not needed for you.

Extra items needed:-

Strong pliers;

Passap needles and pushers;

Black, pink or orange strippers and blades might be needed;

Passap oil or sewing machine oil.

Work on one bed at a time, covering up the one you are not cleaning.

Remove the 2 or 4 colour changer from the back bed.

Most colour changers have little white cardboard 'spacers' between them and the machine, which have been placed to ensure the correct fitting. Do be very careful that you return these. Later model colour changers have adhesive backing to these spacers, so this problem of losing them does not arise.

The front colour changer rail need not be removed.

Remove retaining bar completely.

When you come to removing the needles, you must be VERY, VERY careful.

Examine each needle before you remove it.

If the hook or latch are damaged in any way, the top (head) of the needle must be chopped off, before attempting to remove it from the bed.

Sometimes the latch is slightly bent, sometimes it can be bent so that it curls right under the hook.

If, when you examine the head of the needle, you cannot feel the hook at

all, then all is well. If you feel the hook, that means the latch is damaged, and the needle head must be removed.

To remove the head of a needle, take the strong pliers, and snap off the head firmly. Be careful the snapped off piece does not fly in your eye, or fall into the machine. See notes "How to remove and replace needles", p.26.

When all the needles are removed, you can now give the channels a good brush out, using the vacuum cleaner attachment, and your clean brush.

This dust, fluff, etc has to go somewhere if it is not cleaned and brushed away regularly, and the main place it goes, is into the coiled spring mentioned above. Therefore you can see why it is so very important for you to brush these channels always after every use.

THE LOCKS

For the 'Spring-clean' take real care to get into all the crevices and do not skimp. Then take an oily rag, and wipe the lock all over. This sounds easy, but to do the job properly, it takes time.

PUSHERS

Remove them all, and treat as needles.

Pushers should not be over-oiled, but they must not become dry.

Please remember, pushers are supposed to be 'bent' - do not try and straighten them.

Look at the channels on either side where the needle goes in, and you will probably see that there is congealed dirt on all of them. Take a spirit-soaked rag, or pipe cleaner, and rub until the dirt is removed.

Don't forget the deco, colour changer and any other accessory you have.

FORMA

See instructions for Knitmaster radar.

STRIPPERS

These can become rough and even have a nick out of the movable 'blade'. It is sometimes possible to smooth these down with fine glass paper, but replace if very bad.

The black strippers can have their removable blades replaced if necessary.

REGULAR MAINTENANCE

The instructions on page 3 apply to you - follow them carefully.

It is absolutely essential that after every use, you brush the beds to remove all the dust and fluff. As described above, failure to do this results in the coiled spring becoming completely jammed up with this dirt, and before long, your machine will be in trouble.

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Passap have kindly given permission for us to reprint from their Newsletter No.4 this excellent article below, for which we thank them.

REPLACING A DAMAGED BRAKE SPRING

The Passap Duomatic has a long spring, running the length of each bed, to retain the needles in position while you are knitting. It is hidden under the main rail (the upper rail) which can only be removed after you have loosed a series of nuts under the bed. The spring normally becomes damaged only if you fail to follow the manufacturer's instructions for EXCHANGING NEEDLES.

METHOD (from Serial Nos. 634001 onwards - for earlier models consult your stockist)

You will need the following tools and parts:-

- 1 Brake spring 0925212
- 1 Special Box (or Socket) spanner - 5.5 mm for Duomatic 80 (green and white lock) or 6.0 mm for Duomatic 5 (pink and grey lock)
- 1 pair of pliers.

1. Remove the masts, tension arms, tension wires, or other attachments such as form Computer, etc.
2. Remove Deco and Colour changer extension plates.
3. Remove the edge springs and both locks (carriages)
4. Turn the racking handle to transport position (this is when both beds are lined up)
5. Remove the racking handle
6. Remove the needle rail (sometimes called retaining bar)

Remove the G clamps under the bed and remove the machine from its stand. Turn the machine upside down and place it on table, bench or a couple of chairs. You will now be able to see the nuts securing the main rail (the upper rail as you look at the bed normally) through a line of large holes cut into a plate on the underside of each bed. There are 9 holes with a nut visible through each. These are the ones you will have to loosen before you can slide off the main rail BUT there are 2 more nuts, one each located in line with the others but on the side plates, which you must also loosen. If you have a four colour changer fitted, the nut will have been replaced by a round threaded barrel. This has to be removed and, if you should find a small nut under the barrel you should also remove this and DISCARD IT.

Now, loosen all the nuts previously referred to, using the long handled box spanner, by one to one and a half turns - BUT DO NOT REMOVE THEM ENTIRELY.

You can now turn the machine right way up and slide off the main rail, revealing the damaged spring lying in its channel. Remove the damaged spring and discard it. Clean out any dirt in the empty channel.

INSERTING THE NEW SPRING

You will see that one end of the spring has a small eyelet. Put this end into the slot in the recess on the right hand side plate as you look at the bed and hold it in place while you lay more of the spring into the channel. Still holding the eyelet, start to slide on the main rail until it has just covered the eyelet end by about 1". You will see some dark metal lugs at intervals (these are the studs on which you have already loosened the nuts under the bed) and you may have to ease them towards you so that they slot into the main rail while you continue to push the main rail right along the bed. You will almost certainly find that this slightly stretches the spring but you can easily cut off the surplus (with the pliers) but first make sure that there are a few coils of the spring in the remaining channel in the side plate.

In order to make sure that the main rail has been slid exactly into position you can use the 4 colour changer extension plates as a guide. Push the appropriate plate, depending on whether you are exchanging a spring on the back bed or the front bed, so that it butts up to the machine and then push the main rail along until it fits closely to the extension plate. Now you can re-tighten all the nuts on the bed, remembering to replace the round barrel for the colour changer fitting. The barrel has a screw slot at one end. Tighten the barrel with a screwdriver. Replace the needle rail (retaining bar). Replace the machine on the stand and refix the clamps.

HOW TO REMOVE AND REPLACE NEEDLES

The needles are very easy to change on the Passap Duomatic but you must follow the correct procedure or you may damage your brake spring, involving yourself in some quite unnecessary work.

The needles are kept in position by this long coiled spring, as described above. Practically the only way this spring can be damaged is if either the needle latch or the hooked end of a broken needle is allowed to snag in it - and this can only happen when a needle is being removed or replaced. However, if the latch is pointing away from the spring when removed or replaced, (i.e. latch closed for removing and latch open for replacing) the brake spring will be undamaged.

METHOD OF REMOVAL AND REPLACEMENT.

1. If the needle is damaged it is always safer to break off the latch end well below the latch itself. If the needle is undamaged make sure the latch is CLOSED so that it points away from the brake spring as you withdraw the needle from the bed.
2. Check that the end of the needle where you have broken off the latch is not 'hooked'. If it is, press it in with a pair of pliers.
3. Slide out the needle rail (retaining bar) until it is past the needle to be replaced but you need not withdraw it completely.
4. Remove the needle, by lifting the butt end and sliding it towards you.

5. Insert the new needle with the latch OPEN, that is, pointing away from the brake spring. Put the needle first into the channel and slide it upwards.

6. Replace the needle bar (retaining bar),

Tip. Wind a rubber band around one end of the needle rail (retaining bar) so that you have something to grip next time.

When removing the needle bar (retaining bar) for the first time, you will have to push the squared end with the tip of a tool until enough shows at the other end to be able to grasp it. But to do this you may have first to remove the appropriate extension plate at the colour changer end - hence our tip about the rubber band.

When replacing the colour changer extension plate - do be careful that if 'spacers' have been used, they are replaced in the same place.

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ACCESSORIES

Knitmaster Radar and Passap Forma

Do not oil the radar paper holding wheel, as that would cause the paper to 'slip'.

Jones + Brother Knitleader 113 & 116

Beneath the actual knitleader, you will see the screw that holds the arm that trips the sheet. This has to be checked regularly, as it does come loose in wear, which then cause the arm to cease tripping.

Transfer carriages, cast-off linkers and intarsia carriages

To use these it is most important to check on the main bed that:-

1. no needles are damaged. If they are, change them and do not do first aid on them;
 2. sinker posts are correctly upright and undamaged;
 3. needle protection strip is flat and undamaged;
- and for the transfer carriage, also check that the ribber is correctly adjusted.

All these accessories must be free of dust and dirt and occasionally oiled. The cast-off linkers, and Knitmaster transfer carriage must not have damaged needles.

When you take possession of these accessories, they will be in perfect condition.

The needles becomes damaged because you have not obeyed the instructions exactly or rushed ahead, using difficult yarns before learning how to use it on the easy ones first.

These needles can be replaced but it is a job best for a machine mechanic.

Colour changers

There is little to do on these, except to ensure they keep free of dirt.

Any place where metal moves on metal, then a little drop of oil occasionally is necessary.

Wires for cast on combs

These poor things do get badly mutilated. Once they become bent, they are difficult to use, and replacement saves time and temper!!

Knitmaster weaving attachment

These, like the sinker plate on the main carriage, must be kept free of dirt, and checked regularly.

The four round plastic gears beneath this plate do need removing as yarn soon gets entwined around them.

Treat the brushes and gears the same as those on the main sinker plate (see page 9, number 6).

The actual weaving brushes are difficult to remove. It is best, one at a time, to unscrew them, and with a fine hook or tweezers, hook out the yarn, etc, that has become trapped beneath them. Re-tighten when the job is complete.

Lace carriages

The channels need cleaning, and metal parts wiped over with an oily rag. See "Spring Cleaning" for special notes.

Knitmaster 260/360 & 270/370

These machines have an additional sinker plate - treat it as the main one.

The table

Don't forget this needs a thorough dust and clean.

It is quite a good idea to turn your table around, and put your machine on the other side at this time.

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THE MISUNDERSTOOD MACHINE

I want you to come with me, upon a flight of fancy, into a fairy story, and pretend with me, that I am going to become a knitting machine.

My story begins in a country, far across the sea and I've just been born, or should I say, manufactured. Put together with the finest of materials - with precision, tested, and I'm a gleaming new knitting machine.

Then I'm crated up and off on a long, long journey - eventually, after many stops and starts, I arrive in a house - address - Anyhouse (your house?) - Anytown. I'm carried in, put onto a table, and my big moment comes - my lid is removed and I catch a first glimpse of my new owner. She looks nice - she and her tutor unpack all my bits and pieces and they sit down, thread me up, and away we go.

My new owner - Mrs. Quick - was a bit clumsy at first, but she soon got used to me and we got on very well. I was a bit concerned that she never brushed or cleaned me after we had finished a day's session, nor did she cover me up when I was not in use. I used to watch with anxiety those little bits of dust come drifting down, landing on my carriage, but never mind, she was new, so was I, and perhaps the tutor would remind her about this.

She did, the next time she came, and for a little while, Mrs. Quick cleaned and fed me with lovely oil each time she used me, and brushed under my can box quite often.

IT DID NOT LAST!!!

The days and weeks and months went by. I worked very hard. I used fancy yarns, fluffy yarns, mohairs (ugh, how they tickled), lots of

shetlands - backwards and forwards, to and fro. I began to get stiff, so she came along with the oil can - splodge, splodge - she poured it on. Across I went, oil mixing up with dust, dirt and fluff. Ugh, what a mess!

She got the horrid black dirty oil on her fingers, then on her knitting, and then she blamed me. With the combination of all this muck I got stiff again. Then, out would come the.....guess what? "No, no," I wanted to scream, "not like that. Please CLEAN ME FIRST." But no, splodge, splodge with the oil. As for my poor old cam box... I was mortified. All the accumulated fluff and dust was beginning to irritate me. I pushed it into all the little crevices as best as I could, just to keep me going.

Then - horrors of horrors, Mrs. Quick decided to do some patterned knitting. Help! I thought, all the fluff had been jammed into my memory box, so the cogs could not press down and it would be impossible for me to select the correct needles to knit in two colours.

Mrs. Quick began to get cross - she swore at me. "Stupid machine" she said "It can't even pattern properly - the fairisle's all over the place." "Stupid yourself", I would love to have sworn back, "CLEAN ME". Well, I'd teach her. I'd not pattern at all. That foxed her. So, I was put in a corner. Then my lid went on and I was put under a bed - and there I stayed. I pined to get back to work. I'm only young. If only I could talk.

Months and months went by. Then one day, I was brought out and off came my lid. Oh, that lovely fresh air! Then - oh help! oh no! - splodge, splodge - the woman was drowning me in oil again. Wait for it, I thought, wait till she tries to knit me; but she didn't.

Another lady came and looked at me. They talked, money changed hands,

on went my lid and I was off somewhere. I wasn't really bothered. No-one, it seemed, cared or understood me. Bump, bump and into another house, onto a table again, off with the lid - and I sat there, dejected, dirty, unloved and misunderstood.

"Tut, tut", I heard, "tut, tut, what a mess!" I looked up. Could I believe it? Could it be true? What was she saying? "What a mess, what a mess, what a dirty nasty woman and she looked so nice too".

Away she went and put on her apron and then she got to work. Off came my cam box. Out came my retaining bar. Out came all my needles and into a bowl of white spirit they went. She removed and threw away my filthy, torn needle protection strip, got out her vacuum cleaner and with the suction attachment, removed all the loose dirt and fluff she could from my needle bed.

She then got a machine needle, broke off the latch and picked out, piece by piece, all the fluff under where the retaining bar had been. From under my cam box, she very carefully picked out all the accumulated bits of wool, hairs and clumps of dirt, being especially careful of my fragile cogs. Out came the tissues and all the filthy black oil was wiped away.

All the time this darling lady was tutting. Then - joy of joys, she fed me with oil, and not a splodge in sight, but lovely oil on a rag, wiping all my metal parts, just as I like it. She then dried and oiled the bottom end of my needles and put them back. She also wiped, with the oily rag, the metal part of my retaining bar. Back that went and she even gave me a new needle protection strip.

I WAS AS NEW -

shining and ready to go - I was so happy I could have knitted all by myself. I'd show my new owner what I could do.

"Beautiful machine", she now was muttering.

So, nearly ends my story. Every time this dear lady uses me, she brushes away all the fluff and dust, she cleans me before she sparingly oils me, and also she cleans my cam box regularly. When I'm put to bed, I'm covered up with a nice clean cotton sheet.

What more could any machine want?

I know I'll last for this dear lady's life-time, and I will never let her down.

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Dear Auntie Pat,

I am a Toyota 787 with ribber. I had a really nice owner who used me carefully and brushed me out and wiped me with spirit and thought that she was looking after me really well. After a couple of years she sold me to her daughter-in-law and I received similar treatment for another couple of years.

My new owner decided to try pattern stitches and here we fell out I'm afraid. We have always had a good relationship but I had no way of explaining the importance of proper annual maintenance and despite her efforts I had become progressively more stuffed with nasty black balls of fluff and my poor patterning mechanism simply could not do the tasks asked of it and it jammed solid!

Distraught my owner carefully released the jammed needle and begging me to "just finish this piece please" she put in a new needle and knitted very cautiously. We managed to finish the piece and then true, as a real friend should be, she began.....

To my enormous relief out came all my needles and I felt the soothing blast of cool air begin to jiggle the fluff about - it was blowing - not sucking as I'd expected, her gasps of horror and amazement as the bits of fluff exploded out into the room were music to my ears. Then her husband came into the room and he said, "Lean over the machine again - look - you can see the fluff through the needle retaining bar tunnel." She carefully covered the needle grooves and looked through, "brilliant" she said, and began to carefully ease out the fluff with the 'ribber hook-up tool'. She was endlessly patient and sat for hours until every last piece was gone, and then she blew the grooves out again and checked the tunnel, picked out the new bits that had appeared and kept repeating this process till my bed

felt smooth again. In the meantime my needles were 'wriggling and giggling' in soothing baths of Surgical Spirit.

After the seemingly endless blowing and hooking then came a lovely soothing wash in Surgical Spirit and then all my little needles were scrubbed and polished with lovely clean tissue and carefully replaced - my carriages were all scrubbed with spirit and wiped clean and every accessory was cleaned and oiled according to it's needs. The instruction book was consulted and oil was sparingly and correctly applied, even my lid was washed out with cream cleaner and everything was polished - even my table. Finally the room I am privileged to live in (on my own) was dusted and polished and hoovered, and there I was - restored - well almost. I have to say that during the jamming one of my pattern switches had snapped off and I did have to go and get a new one but after that everything was fine again.

I'm happy to say that my owner now possesses a copy of your book on maintenance (purchased from the Chelteneham Convention in June), and is a confirmed Maintenance Buff, and is spreading the word to the extent that three members of her little club have spring-cleaned theirs and two others have offered to pay to have it done for them.

Needless to say our relationship is even better than it was before and we are contentedly knitting away.

Love from one Toyota 787,
and one newly converted maintenance fanatic

Mrs L D Kelly

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