

**TOYOTA**  
postal  
tuition course

**Toyota 901**  
**Knitting Machine**

# LESSON ONE

Hello, this is Peggy Rhodes of the Toyota Academy, At Aisin (U.K.) Ltd., Toyota Sewing and Knitting Machines, Head Office at Bromley, Kent.

I would like to help you learn your Toyota 901 Knitting Machine. I am going to presume that you have studied your Instruction Manual, especially the first part giving the names of each part of the machine. It will help us both if I can refer to the parts by the technical names, because this is a description of the job it does.

Now have you got your machine securely clamped to a table, with a chair which is a convenient height for you to sit and knit comfortably?

Before we actually start knitting I think you should learn how a stitch is formed on your knitting machine. Remember, this is a machine which is programmed to do set movements, so your job really, is to learn this programme. It isn't much good grumbling because the machine has dropped stitches, when it is really your fault, because, you didn't put the yarn in properly, or had the needle in the wrong place.

Look at the side of your machine, and see the needle positions A. B. C. & E. At the moment your needle butts are all in "NON WORKING" position.

With the Needle Selector, push about 60 needle butts forward to "B WORKING" position. Slide the carriage across the needle bed. Now you didn't really see what happened to the needles did you? So, undo the white knobs and remove the FABRIC PRESSER. Again, slide the carriage across the needle bed. This time I am sure you noticed how the needles are each pushed forward and pulled back again. So, now shall we see what would have happened to the stitch on the needle. Make a slip knot and put it in the hook of one of these needles. With your thumb hold the imaginary stitch back against the *sinker posts*, as the FABRIC PRESSER would do and push the butt forward. You will notice that our stitch has gone behind the little *latch* on the needle. The carriage would have been carrying the yarn, which it would have laid in front of the latch, before pulling the needle back. Therefore, you do just that, with your imaginary stitch. Lay the yarn in front of the latch and pull the needle butt back to "B". You saw how the original stitch went under the latch and shut it so that the new yarn was trapped in the hook, and the original stitch slipped off the end of the needle, but because you had the yarn trapped you have made a new stitch. For shaping, you will require to move a stitch on to an adjoining needle so that you can either increase, or decrease. This is done by using the single eyelet TRANSFER TOOL. Instead of using the BUTT to move the needle, pull the needle forward by the tool, so that the stitch goes behind the latch, then push the needle back, but this time the stitch will slip onto the transfer tool, where it can be transported to another needle.

Please remember, once the stitch is behind the latch, if you push the needle butt back, the stitch will drop off the needle.

Before you re-assemble the Fabric Presser, have a close look at it. The round brushes underneath MUST be kept free running at all times. NEVER leave any yarn trapped around them. Their job, as they roll across the Fabric which you are knitting, is to press the previous row *down*, so that each needle can be pushed cleanly through the top stitch.

Check that, your carriage is set to do *plain knitting*.

The CARD LEVERS on "O"

PARTIAL KNITTING LEVER also on "O"

WEAVING LEVERS DOWN

T/L PLATES OUT.

TENSION DIAL set according to the thickness of the yarn.

If you are using 4 ply it would be approximately tension 7. This dial is numbered from 1 to 10 with two dots between each number, so you have about 34 tensions, or needle sizes if you relate it to hand knitting. Make sure the carriage is sitting on the needle bed properly.

You have one more tension to watch. Have you got the TENSION ROD the right way up? The small bend at the bottom, so that the rod is angled back, away from the machine? The TENSION WIRES facing forward, on *top* of the rod. Before you thread up with the yarn, set the needles you require. If you still have 60 needles in "B" position, use the toothed side of the SELECTOR COMB to push alternate needles back to "A" position. If you have put them all back, use the COMB to put alternate needles to "B". Please make sure these BUTTS are in a straight line in "B", and that all other BUTTS are right back in "A".

We are going to start with a MOCK RIB, that is why we only need alternate needles. You will notice in the Instruction Manual, several different ways to cast on, and in fact alternate ways to do a variety of stitches. We are going to start with what I have found to be the easiest method, but I hope that when you have perfected these, that you will try out the others and use which ever you decide is better for your yarn, and finished garment.

So now at last we are ready to commence.

Your yarn must have free flow to the carriage and must be wound to ensure this free flow.

Take the yarn up through the YARN GUIDE, to the TENSION DISCS. Bring yarn in front of REAR PIN and between DISCS, making sure that it is trapped under the disc pin between the discs. Now forward to the FRONT GUIDE and then through TENSION WIRE, and finally, down to the carriage. DO NOT release the yarn yet. You can either tie the end to the clamp, or at least put your thumb on it, securing it well back away from the BRUSHES of the FABRIC PRESSER. You have noticed that the TENSION WIRES are now pulled forward and the eyelet on the wire should be level with the eyelet of the FRONT GUIDE. If this is not so, rectify it with the plus or minus of your top tension dial. If later at any time, you find that your end stitches are pulling tight, or that you are getting loops at the end of the row, this is the part you need to check again, because it is caused probably because *you* have not set these eyelets level.

Now gently slide the carriage across the needle bed. As you expected the needles have come forward, collected the yarn and pulled it back to "B". Do not bring the carriage back yet, because once again the needles would come forward and the yarn would revert to a straight line. Instead, hang the CAST-ON-COMB into the loops between each needle. Notice that the yarn is now on top of the needles, but held under the cast on comb hooks.

The comb can be shortened for 60 stitches, but please do ensure that the comb is balanced evenly, and that every loop is hooked down. The machine is now set to function the way you first learnt. Each time you slide the carriage across, the needles will come forward, collect a new stitch, and throw the old one off, and one row of "plain" is knitted by the machine, but with your knowledge of how to set it.

Knit approximately 8 rows. There are a few points you should take notice of. The carriage does *not* need pressure downwards, so just hold the handle at the side and gently "stroke" the carriage across the needles. You will hear a little "click" at the end, denoting that the yarn has passed the last needle. DO NOT come back *before* that click. Take the end of your carriage just to the end of your needle selection. If you do go to the end of the needle bed each time, you will simply be wasting your own energy and also give the Tension Wires extra yarn to pull back.

These 8 rows are what we term WASTE knitting, so they could in fact be knitted in another yarn of the same ply. The aim is to get a good stitch on the required needles first.

Thread up the NYLON CORD now, the same way you have learnt, and knit one row with this.

Now, thread up with the yarn you intend to use for your knitting.

As we are starting with MOCK RIB we must use a smaller tension, because rib is meant to pull the knitting narrower where necessary.

I would suggest 3 whole numbers smaller for 4 ply, so turn your TENSION DIAL down from "7" to "4".

Set the row COUNTER to zero "000" and the row counter lever back, so that it trips the counter at each row. Knit 30 rows. Remove the cast on comb, because you now have to lift the first of these 30 rows up close to the SINKER POSTS, so that with the SINGLE EYED TRANSFER TOOL, you can lift the 1st loop of the 1st row above the Nylon Cord row, on to the 1st needle which you left back in position "A".

To do this, put the Transfer Tool Eyelet under the 1st loop, put the eyelet on to the hook of the first needle in "A", pull this needle forward so that the hook is slightly in front of the SINKER POST and tip the loop on to the needle, then remove transfer tool. Work right across the row in this fashion. You *will* have the same number of loops as empty needles.

*PLEASE NOTE.* Keep the tool in a nice straight line with the needle, until you have the eyelet on the new hook, then tilt the tool and gently brush the fabric downwards so that the loop will slip down off the tool on to the needle. DO NOT LIFT the fabric, or you will lift the stitches off as fast as you put them on. All correct? Good! It is not necessary to remove the waste yarn yet, but re-hang the cast-on-comb into it, to keep it away from the brushes. Turn your TENSION DIAL back to main tension – in our case with 4 ply back to "7" and continue to knit. Remember all the points we have noted. You should have a nice easy glide of the carriage across the needles, just a wrist movement really.

Before we go on shaping I think you should learn more about the TENSION DIAL. You have knitted enough to get the feel of the machine on Tension 7, which in my view is about right (7 sts and 10 rows) to the inch or 2.5 cm in the 4 ply I use.

Turn your Tension Dial down to "2" and knit a few rows to see what happens. Yes, that's right, you have a much smaller stitch, because the BUTTS are not being pulled back as far. I hope you also noticed that the carriage did not move as easily either.

Now try your Tension Dial at "10". That's right, you have a bigger stitch, and once again the carriage is not moving as easily.

I realise we have gone to extreme tensions to prove the point, but you know how to make a larger or smaller stitch. Probably only by one DOT size, to get the correct number of stitches and rows per inch.

Take the trouble to feel the thickness of various makes of 4 ply (or 3 ply), you can feel that even though they are classed as 4 ply, they vary in each case. So it is all up to you to make the decision of "what tension to use". If you are knitting to a pattern, you must of course have the correct number of rows and stitches to the inch (or 2.5cm) to get the right sized garment.

If, as I hope you are using your KNIT TRACER, simply make the texture of the knitting just right to please *you*.

Now try SHAPING – again there are several methods, but we will try the easiest ways.

*TO INCREASE.* Put another needle from "A" to "B". The machine will do the rest, as you knit the row. You can of course increase or decrease at both ends of the rows.

KNIT a few rows, now increase both ends of alternate rows. Now for the harder FULLY FASHIONED INCREASE. You need a TRIPLE TRANSFER TOOL for this. You know how to do this don't you? Put the 3 eyelets on to the end 3 needles. Pull the tool forward so that the stitches go behind the latches, then push the tool back into the machine so that the stitches slip *off* the needles *on* to the tool. Move the tool along one needle space and tip the stitches on to the correct needles.

*PLEASE NOTE.* Use the thumb of your other hand to act as a FABRIC PRESSER, pressing the fabric you have already knitted back against the sinker posts as you pull the transfer tool forward. Keep the tool straight until you are ready to tip the stitches on to the new needles. Do not remove the tool until you are sure the stitches are actually on those needles. Line up the needle butts. You find that the 4th needle is empty (for increase). Knit 2 rows. The 4th needle has picked up the loop and knitted, but has left a hole.

So, you have learnt that if you transfer a stitch but leave the empty needle in working position, you can make a hole. We will deal with this knowledge later in BUTTONHOLES, but now unless you want to use the hole as a feature of a fancy Fully Fashioned increase, let us learn how to camouflage this hole. Transfer another set of 3 stitches leaving the 4th needle in working position. Pull the BUTT of the 5th Needle back to elongate the stitch. Put your Single Transfer Tool into the row below, and bring it up through the elongated stitch. You have got what is known as the HEEL of the stitch, which you carefully transport to the empty 4th needle, line up the needle butts again before knitting.

Now try DECREASING, one end stitch first. Lift the stitch off on to your tool and tip it on to the next needle. The machine will knit both stitches together.

Now try Fully Fashioned Decrease, with the Triple Transfer Tool. Pull the needles forward with the tool till the stitches go behind the latches. Push the needles back, so that the stitches slip off the needles on to the tool. Before removing the tool, leave the needles in "B" line, and lift the tool off, so that the latches are left open ready to move the tool along one space to decrease. You now have 2 stitches on the 3rd needle from the end, but you can move the tool in 2 or 3 places if you wish. DO NOT FORGET to put the empty needles back to "A".

I do not know how many stitches that you have left in working position by now, but you can try a CLOSED-EDGE-CAST-ON. If your carriage is at the Right, bring all of the needles which are in "A" from between your last Right hand needle in "B" up to needle 40. Push these empty needles right forward to "E" position. Pick up the yarn between the last knitted stitch and the carriage. Take the yarn under, up and back over the first needle in "E". This will make an anti-clockwise circle around the stem of the needle. Cast on this way on each empty needle, until you reach number 40. Take care not to make this loop too tight, because the hook of the needle has to go through it. Use the thumb of your other hand to hold the yarn back at each stitch. This method of casting on can be used to start knitting, but it is particularly useful when a few stitches are needed at the end of the row, as we are now doing. Knit to the Left and do the same that end up to needle 40. This time, under up and back over the needle will give a clockwise movement. Knit 1 row. You will find that the needles from "E" have knitted back to "B".

As there is not yet enough fabric for the brushes to brush into, use your thumb to brush the new stitches down, and push these needles forward to "E" for a couple of rows. You should now have 80 stitches on your machine.

We will need to build up a few rows on these new stitches before we try casting-off, so shall we try a couple of the most popular BUTTONHOLES?

You have proved that one empty needle left in "B" position will pick up and make a stitch, but it leaves a small hole, which would be suitable for small buttonholes. Try now transferring two adjacent stitches to their next needles, so that you now have two empty

needles in "B". Knit 2 rows. You will find that in the 1st row the needles collected the yarn as you knew they would, but because they were not hooked down into 2 loops, when the needles came forward on the 2nd row, the yarn became one long loop, and the machine could not cope with this, so it just collected the yarn of the 2nd row and left the first loop laying in front of the needles. All you need to do is, slip your single transfer tool under this 1st row loop, and lift it on to one of those 2 needles. This will make a lock across the loop which the machine can cope with.

Another easy buttonhole is to knit 3 or 4 stitches in a contrast colour. Push the needles forward so that the stitches go behind the latches. Lay the contrast yarn in front of these latches, and pull the BUTTS back to "B" in turn. The contrast yarn can later be removed and you can buttonhole stitch around to prevent the open stitches laddering.

During this lesson, because you have your tension correct, especially the Top Tension, you should *not* have jammed your machine. However, you must learn what to do should this ever happen. Take your carriage halfway across your needle bed and stop. Now, remembering how the needles are in the process of coming forward and back, hold forward the CARRIAGE RELEASE lever on the RIGHT HAND SIDE of the carriage and *gently* lift the carriage from the needle bed. Replace it back at the beginning of the row, making *quite sure* that you locate the channel in the black bar onto the front ridge of your machine. Hold the CARRIAGE RELEASE LEVER forward and notice that this also locates at the back of your needle bed. Release the carriage lever.

You now have to undo the partly knitted row. Take hold of the yarn just past the last knitted stitch, and gently pull to the side and very slightly forward. Now with a little lift see how the previous row of stitches are flicked back up into the hooks. You can now understand why your yarn coming to your carriage **MUST** have a free flow. It is because if it is suddenly pulled tight, it would of course undo the previous stitches. Your needles are now in a most uneven line **DO NOT PUT THEM BACK TO "B"**. Many of the stitches are behind the latches and *you* know that they would drop off if you put them back to "B". Instead put these needles to "E", and as long as you still have your **PARTIAL KNITTING LEVER ON "O"** the machine will knit them back to "B" for you.

Do not forget to pull back the slack yarn, to behind the YARN GUIDE *before* taking the carriage across.

Shall we now try an easy way to pick up dropped stitches? If you have been following the lesson closely, I am sure that you have not found this necessary, so far. You must by now have realised that the machine is simply doing what *you* are setting it to do. That *you* are the one responsible for setting the needles in either A, B, D or E position, and are also responsible to see that the yarn is flowing at the correct tension. So, drop any 4 stitches together off their needles by pushing the BUTTS forward to "E" and then back to "B".

*Do not* attempt to pick up the top row of stitches, because you will probably twist or split them. Instead put the transfer tool into the row below. You will notice that the top row is simply a loop pulled through, and the 2 lower threads of this loop both go into the row you are picking up. As you put the transfer tool in, come up behind the top loop, and you can put them both back on the needle. Use your thumb to hold the fabric down, unpick that top row and you have enough yarn free to re-knit your 4 stitches. Yes, I thought you would know what to do next. Push the needles forward so that the stitches go behind the latches, lay this yarn in front of the latches and in turn pull each needle back to "B".

Have you got enough rows knitted over your closed edge cast-on? About 10 rows? Then let us now try **CASTING-OFF**. Take the end stitch on to the Single Transfer tool in the usual manner. Put the tool on to the adjoining hook. Tip the tool up slightly and, making sure that your thumb is holding the fabric back against the Sinker Posts. Pull the needle forward until both stitches are just behind the latch. Remove the tool. You now lay the yarn in front

of the latch in the direction the carriage would have gone, and pull the butt back to "B". The two stitches have both slipped off and you have made a new stitch. Continue casting off in this method until you have reached needle 30. Do make sure that you make each of the new stitches the same size as the rest of the row.

Pull back any slack yarn behind the yarn guide and knit one row, and cast off at the other end to needle 30. This will leave 60 sts on which we can now shape a Vee neck with raglan sleeve. Carriage at right hand side. For a Vee neck you knit only half of the stitches and of course you must knit from the side the yarn is.

Pull all 30 sts left of the "O" to "E" position. To hold these needles in "E" put the PARTIAL KNITTING LEVER to "1". You have now isolated the 30 needles on the Right, on which you can follow your pattern for shaping. May I suggest that you use the Triple Transfer Tool to shape the Vee neck, as well as the armhole shaping, because when you pick the stitches up for the band, you will find it much easier to pick up, than trying to pick up where two stitches are knitted together. You will have noticed that the yarn travels on top of the "E" needles, and that the Tensions Wires pull up the excess yarn on the return row.

DO NOT accidentally knock any of these "E" needles back, because the machine will not understand that *you* were not watching what you were doing, and it will of course knit that needle if it has gone to "D".

When you have finished shaping the right side, take your carriage to the Left of the machine. Put the yarn back into FEEDER 1. Hold the end well back away from the brushes. Put the PARTIAL KNITTING LEVER back to "O" and you will find that the machine will knit the left hand "E" needles back to "B" and you are ready to shape as you did the other front.

Your work is now off the machine. Pull the NYLON CORD out and the waste yarn will drop off.

I think you will agree that your hem does *not really* look like a Rib yet. Slide a ruler through the hem, and gently but firmly pull the stitches against the straight edge. Do you remember that we used alternate needles for the hem? You therefore have a piece of yarn in between each stitch. The object of pulling (or BLOCKING as it is called) is to pull this yarn into the stitches, thus making the stitch slightly larger, but much more presentable as a RIB. Work your fingers across the hem, pulling a few stitches at a time. That looks better doesn't it?

Now, how about having one more run through, only this time when you get to the neck, we can try a round neck, and shoulder shaping, for when you do "set in sleeves".

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Have you got that far?  
Did you remember most of it?  
Very good!

You should once again have 60 stitches on your needles. Many patterns will tell you to cast-off a number of stitches for the base of the neck shaping, then to decrease at the neck edge gradually, so that the neck has a nice round shape.

First though; I would like you to have another look at the "casting off" which you did in your test piece. Try stretching this sideways. You will find that the casting off does *not* have as much "give" in it, as the rest of the knitting does. We are going to try another way, without actually casting off.

So, back to your machine, but I want to show you something first. Carriage at the RIGHT hand side. Put about 10 needles out to "E" at Left (you did use your thumb to hold the

fabric back against the Sinker Posts of course). PARTIAL KNITTING LEVER on “1” to hold the needles in “E” knit 2 rows. Now put your PARTIAL LEVER back to “O” and knit 4 rows.

Can you see the hole in the row where you held the needles in “E”? This was caused because you had two extra rows on the stitch one side of the hole. I will show you how to camouflage this hole as we do the neck.

We will make 10 stitches as the base of your neckline. That is 5 stitches each side of the centre “O”. Because the carriage is on the right, put the centre 10 needles and all needles in use, *left of them*, out to “E” position. Put your PARTIAL KNITTING LEVER on to “1”, knit 1 row. To camouflage the hole, lift the yarn which is travelling over the needles in “E” and tuck it *UNDER* the first needle only, then bring it back up, to travel on top of the other “E” needles as before. Knit back to the Right. Now put 3 more needles at neck edge to “E”. Knit one row, camouflage the hole and knit back. Now put 2 more needles to “E”, knit 1 row, camouflage and knit back. Shape this way until neckline is wide enough.

Remember that the camouflage will only cover 2 rows, so try to arrange the shaping in this manner. If it is more spaced out, you will have to do the normal decrease. Now, keeping the neck edge straight whilst you knit up to the shoulder shaping. Put the Claw Weight into the knitting to hold it down. Do the shoulder shaping by the same HOLDING method. With your carriage on the neck side, put approximately 5 needles at the armhole side of the knitting into hold. Knit 1 row, camouflage, and knit back. Continue this way, but do NOT put the last few stitches to “E”. Instead, with the Selector Comb, push the Shoulder needles in “E” back to “D” and knit 1 row. Break the main yarn, knit 6 rows with waste yarn. Break waste yarn and remove its end from the Feeder. Return the carriage to the Left and Shoulder stitches will drop off. Put these needles back to “A”. You now have to reverse this shaping for the Left Side of neck Making sure that you leave the neck base 5 stitches left of “O” out at “E”, use your Selector Comb to push the rest of the Left needle butts back to “D”. The machine will knit the “D” (upper working position) Needles back to “B”.

Keep Partial Knitting Lever on “1” until you have finished Left shoulder shaping, and removed it from the machine on waste yarn. Put these empty needles back to “A”.

Put the Waste Yarn into the Feeder again. Put your Partial Knitting Lever to “O”, and knit 6 rows in waste yarn. Break the waste yarn and remove it from the feeder. Run the carriage across, and all the stitches will slip off.

When you have to pick up around the neck to put a band on, you will find it much easier to pick up the last row of stitches from the waste knitting.

Well, I think you are now ready to make your first jumper. Try working from your Knit Tracer, but if you do not yet feel ready to cope with that, the Toyota Basic Book is easy to follow. Do a RAGLAN sleeve because this will give you practice in shaping. Remember that the stitches at the back of the neck, and the top of the sleeves, if you have any, can also be run onto waste yarn, instead of casting them off. Choose whichever neckline you prefer, and then we can do the band.

Take great care when you sew up your garment. Pin the seams first then mattress stitch them together. If you have knitted a Vee neck, sew up all the seams first.

A Vee neck band is usually knitted in two pieces, and is *not* knitted in Mock Rib. Knit from the Centre Vee at the front, to the centre of the back neck, for the first side. Hold the work close to the needlebed with the wrong side facing you. Now with your Single Transfer Tool, pick up the edge stitches and put them onto your needles. Please be careful not to stretch your fabric or gather it at all. If necessary pick up an extra stitch, or miss one out, as long as it means that the side of your Vee *will* lay flat.



Knit one row on your Main Tension, then take *Tension down* one whole number for the next row.

You now have to MITRE the front of the band, by decreasing 1 st. Fully Fashioned with the Triple Tool, on every row at the Vee side. To make your neck band set nicely, also take your tension Dial down one dot on every row until the band has reached the required width. Now reverse the process by increasing at the Vee side, and take your TENSION *UP* one dot on each row. For the final row, turn up one whole Tension. Then knit about 8 rows in Waste Yarn, and remove your work from the machine. You may have found it rather tricky to increase 1 stitch on every row. You will find this easier if you put the needle you wish to increase on, out to "E" position with the Partial Knitting Lever on "O" this will knit back. You will still have to watch to see that these stitches knit in each row, because the brushes cannot quite reach them at first. Use your thumb to brush them down before knitting. Knit the second side of neckband. Don't forget to Mitre at Vee side.

Fold the band in half and sew down. If you turn the waste yarn back, you will find this much easier. You can now remove the waste yarn.

If you have knitted a round neck, do NOT sew up all your garment before you put the band on, because then you can knit the band in one piece. If you have shoulder seams, graft or sew up only one shoulder seam. If raglan shaping, leave one back raglan seam open.

You now have your neckline in one long piece, from where, with the wrong side facing you, you must pick up the stitches. Where you have the stitches on Waste yarn at the Front, do be *very* careful where you camouflaged the hole, that you pick up both the stitch and the wool round the needle. Pick up on every needle and knit one row on your Main Tension. Now transfer every other stitch on to its adjacent needle ready to do mock rib. Put the empty needles back to "A" position. Turn your Tension Dial down 2 whole numbers smaller. Knit 2 rows. Take your Tension down one dot. Knit another 2 rows and take your Tension down another dot. Continue this way until band is wide enough. Now reverse the process until you get the same number of rows. Bring the needles from "A" back up to "B" and knit 3 rows on the Main Tension. Break the main yarn leaving enough to sew down your band. Remove main yarn from the Feeder and knit 8 rows in waste yarn. Break waste yarn and remove it from the feeder. Take empty carriage across, and the stitches will drop off the needles.

Block the rib stitches by pulling lengthways, and remove the waste yarn at *Front neck* shaping. Fold the band back to the wrong side and with the length of yarn you left, stitch the last row of stitches of the main yarn down along the neck line. Fold the waste yarn back to make this easier. Make sure that you catch each stitch. Remove the Waste Yarn.

Are you pleased with your first effort? You can see now, why you were reducing your tension on your neck bands. The edge rows are tighter stitches, which makes the band set much neater.

Study your first jumper with pride, but also with a critical eye. Could you have improved it in any way? For instance, the tension, the size or the shape? Bear this in mind when you make your next garment. I am sure that your family and friends will all want you to knit for them now.

## LESSON TWO

For this next lesson, because we have to get some more stitches on to our needles, we are once again going to start with a hem. NOT a mock rib. The type of hem you would use for the bottom of a skirt, a long jacket or a coat.

We will be starting with PLAIN knitting, so please set your machine for PLAIN. Now that you know how to find which tension you need for the thickness of the yarn which you are going to use, I will simply refer to this Tension as the "MAIN" tension.

Because we are going to do a practice piece, we can still use 60 stitches.

Put alternate needles to "B" position, knit 1 row in waste yarn, and hang on the Cast-On-Comb into the loops. Knit 7 rows. Knit 1 row with Nylon cord.

Change to the Main Yarn and set your Tension Dial one DOT smaller than the MAIN tension. Knit one row, then with the Selector comb, bring up to "B" position, the alternate needles which you left in "A". Knit 9 rows.

Now, turn the Tension Dial to your Main tension.

Shall we try a Picot edge on part of our hem? Transfer alternate stitches on to the next needle, but *leave the empty needles in "B" position.*

Don't go right along the 60 stitches, just half way along. Knit 10 rows. Let me explain what you have done, and why you did it. The waste yarn, which is coming off anyway was simply to get the stitches on the needles quickly.

The first row of Main yarn was on alternate needles, because this means you will only have alternate loops to pick up when you turn up your hem. This first row, plus the next 9 rows are the back of your hem, so that is why you did them one dot smaller than the front, to make your hem lay flat. Where you transferred your stitches for the picot, the empty needles in "B" have picked up, leaving a hole. The next 10 rows on Main Tension are the front of your hem.

Now turn up your hem. Put your single transfer tool into the first loop of your First row, and hook it on to your *second* needle. Continue this all along the row, you will end on the next to end needle.

You now have 2 stitches on every other needle, and one stitch on the alternate needles. Because of the two stitches together, this makes the yarn twice as thick, so therefore you are going to need a larger Tension to knit this row. You must make the decision yourself but I would suggest 2-3 whole numbers larger. Knit only one row, then turn back to your Main tension. I think it would help you, if we worked an explanation of this. First, knit a few rows on the main tension. Now do *one row only* on a tension 2 to 3 tensions bigger. Knit a few more rows on the Main tension. Now, one row only on a much smaller tension. KNIT a few more rows MAIN tension. You can take off the waste yarn if you like so that you can examine your hem more closely. Be careful to keep the fabric back against the Sinker Posts as you pull the nylon cord out though.

First, look at the row with the larger Tension. Notice how the fabric *FOLDS BACKWARDS* at this point. Now compare it with the fold of your hem (that is the part of the row you did NOT transfer for the PICOT edge). The bigger row looks neater doesn't it? Remember this when you are making a plain hem.

Now look at the one row in the smaller tension. This is folding *FORWARD*. That is why we had to increase the tension to knit the row which had double the thickness of yarn on every other needle, otherwise your hem would have permanently folded forward.

I think that you have now reached the really exciting stage in Machine Knitting. Where your Toyota Machine is going to show *you* what it can really do.

So far, your lesson has been *Learn and Practice, Learn and Practice*. You should, by this stage, be feeling quite competent on your machine and have successfully made several PLAIN garments.

From now on, you must *WATCH* closely and *LEARN* from your machine.

I am going to point out the things you should be learning from this.

You still have 60 stitches on your machine I hope, so you are now going to do FAIRISLE or

COLOUR KNITTING, as it is called on your Toyota. For this you need a PUNCH CARD inserted into the CARD SLOT.

I am going to suggest that we use CARD No. 11. This is *not* the card suggested in your Instruction Manual, but I have a special reason for starting with this card. I want you to learn how to read your card and how the machine reads it. This will make your machine knitting much more interesting for you. Look down into the *CARD SLOT*. Did you notice the two wheels with the small points on? These points pick up the small holes either side of your card and turn the card on to the next row.

Now look at your card. At the bottom, you have two thin green lines, followed by a heavier line just before row 1. Slide the card into the *SLOT* until you get to the first of the thin lines. The small points have now located on the guide holes on your card. Make sure that you feed the card in straight. Now depress the Feeder Dial and turn it in the direction of the arrow. Keep turning until halfway through the card. Overlap the ends of the card, watching *very* carefully that you do this the right way. Put your card clips into the *back* of holes at the *BACK* of the card, then into the *FRONT* holes. Fasten the clips together securely and make sure the row numbers run consecutively. Now, turn the card again until Row 1 is just showing above the *CARD* slot.

Knit to the Left of the machine. Make sure that your *CARD STOP LEVER* is on Stop (the square), now still with your *PATTERN DIAL* on *PLAIN* set your *CARD LEVERS* (A and B) both back to "C" denoting "CARD ON". Knit 1 row to bring your carriage back to the right.

Look at your needles and you will notice that some have been left in "B" position and some in "D" position. This is known as "Selecting the needles". The machine has selected them from the punched card which you inserted. Take another look at your card. You will notice that *ROW 1* is still *above* your *CARD SLOT*, so it is *not actually that row* which you have selected, because as you can see, it is not even down in to your machine yet. By having the "1" there, you have turned the real row 1 into the right place for the machine to operate properly. This is 7 rows down into the machine. (Take a look at *CARD 6* where I am sure you will see where Row 1 is related to that start of the card.)

By comparing the card and the needle selection, I am sure you have already seen that your machine has selected the *HOLES* on your card to "D" position, leaving the *UNPUNCHED* blanks back in "B".

Look at the needles again. You have alternate needles selected in parts, then groups of 3 needles selected, leaving only one needle back in "B".

Relate this to your card. Where you have alternate selection you will see on your card, 2 rows of holes, followed by 2 rows of blanks (unpunched).

Where you have 3 needles selected with only 1 blank in between you will notice this part is 4 rows deep on your card.

Very good! You are learning the Machine Language. Try to remember it, and *how* you got the machine to select for you. This will be a great help to you when you are deciding which card to use in future.

Having successfully selected your needles, you now have to set the carriage to do the type of stitch you have chosen. We are going to do *COLOUR* knitting first, that is Fairisle. So you now thread up your other Tension Wire with your Second yarn, and bring the end of it into your *YARN FEEDER 2* on the *LEFT* side. **DO NOT MOVE** the gate holding the first colour. Make sure the second yarn is behind the Spring Clip which you can see. Either tie the end onto the clamp underneath, or hold it well back away from the brushes as before. Now turn the *PATTERN DIAL* to *COLOUR*, and turn the *CARD STOP LEVER* to the small *ARROW*. Knit one row, now take a look at your work.

Did you notice that the needles in "B" were knitted in the yarn in Feeder 1, and that the needles in "D" were knitted in the yarn in Feeder 2?

Did you also notice that your card moved on to Row 2 **AT THE BEGINNING** of the row, so that whilst it was actually *knitting* the *first* row, the machine **SELECTED** ready for the second row? Continue to knit watching these points carefully. When you have done enough to turn the work up to see it, try to relate it to your card again.

Now we are going to work out what each knob does. First put the Feeder Dial back to stop (square) and knit several rows. Notice that the card has not moved on, so you knitted the same pattern row each time. Now move the Feeder Dial on to the *longer arrow*, and watch what happened. Yes, the

card only moved forward when you knitted Right to Left, but did not move when you came Left to Right. This means that each row is repeated.

You need to remember that. Put your Feeder Dial on to the small arrow now and knit a few more rows. We will now learn the other knobs. First try your CARD LEVERS (A and B) on the "O" and knit for a few rows. Right, so now you know that they are the levers which select the needles, and because they were not put to CARD you did not get a *selection*. Therefore, because all of the needles were still in "B" position, the machine did the correct thing of knitting the yarn in Feeder 1. The tension wires were capable of taking up the slack yarn from Feeder 2. From this you should have learnt that it is essential for you to Select the needles before setting the machine to do a stitch pattern.

To continue, make sure that when you set for CARD to re-set, that your carriage is at the opposite side to where you left the yarn in FEEDER 2. Do not forget to pull back the slack yarn to behind the YARN GUIDE. Knit a few rows in pattern now.

This time switch the PATTERN DIAL to PLAIN, instead of COLOUR, and knit a few rows.

From this you learn that even though you select the needles, and have two colours in your Feeders, your machine will only knit the selected needles in the 2nd colour, when you set it to do this. By setting the PATTERN DIAL to COLOUR.

Watch which side the carriage is when you set it back to COLOUR. Because your needles are already selected, it MUST be the side you left your 2nd colour. DO NOT FORGET to pull back the slack yarn behind your Yarn Guide before knitting.

I do hope you are remembering all of this. If you do not feel sure, run through it again, because *you must* know what you are setting your machine to do.

Now we are going to do MOTIF MAGIC. I am not going to say whether it is *you* or your TOYOTA which is the Magician. Shall we say it is a Partnership.

I am sure that you know that your Punched Card is 24 needles wide. Have a look on your needlebed and you will see arrows denoting where these 24 needles start and end. Look at the Left to see Set 1 situated next to set 2 and so on to set 5. The end sets are marked off, but *not* numbered.

Have another look at what you have knitted. There is no break in your pattern at these points are there? This is because in designing a card, the pattern must follow on in pattern with the first stitch following the 24th stitch.

So far you have had your MOTIF MAGIC CONTROL set on the big dot. This means that, had you set the full 200 needles to B (working position), the machine would have selected right across the needlebed.

As you are only learning on 60 stitches, we will have to confine ourselves to sets 2, 3 and 4, but I am sure that you will enjoy this type of designing, once you start on it.

There are one or two points I would like to remind you of, but first look at the MAGIC MOTIF CONTROL. You will see that you can set it to do *one single*, or *two* or *three* motifs.

Please think back to how your machine operates. *Remember* that as you knit a row, you are going to *select the next row*.

If you are going to select a MOTIF you are not going to want to leave your 2nd colour yarn at the far end of your work, because this would give you a length of yarn FLOATING when you knit the first stitch in "D" position on the Motif row. Therefore *do* think ahead when you select Motifs, especially if it is to follow an "All over Fairisle". As this is what you have been working on, let us start with the carriage at the LEFT, and the needles all programmed to Fairisle right across the row. You know that when you knit that row, both yarns will end at the RIGHT of your needlebed. Therefore, as you knit from Left to Right, you should select the Motif on the RIGHT. Set 4 in our case. Knit a few rows. When you do this you will need to hook the SHORT TENSION WIRE on to the Tension Wire holding the 2nd coloured yarn, and possibly tighten the Tension Discs also. This is because colour 2 is only knitting the selected stitches in SET 4.

Let us now select on set 3 and 4.

Try to work it out for yourself. Did you get it right? You should have turned the Motif Dial when your carriage was at the Left of your needle bed. Knit a few rows, then turn your CONTROL to

select on set 2, 3 and 4. Did you alter the CONTROL when your carriage was at the LEFT again? Good, you are learning fast.

I would like you to examine your work again now. Have you got a little gap in your fabric where your Motif ended? This was caused because you had to take the carriage to the end of the row, to knit the stitches in "B" position but there were no needles selected to help pull the yarn down to Feeder 2.

Therefore, the last stitch which you knitted from Feeder 2 has pulled tight. This will be more noticeable in some yarns than in others, and can easily be cured.

If it is hardly noticeable, put the small claw weight into the knitting directly under this stitch and under the end of your Motif. If this does not solve the problem, take a piece of your Main yarn and hook it over the end selected needle, and its adjoining needle in "B". Keep this yarn in front of the stitch, and it will not show on the right side of your work.

Work this piece of yarn up the side of your Motif, and your trouble is solved.

Before we finish Fairisle I would like you to try a little test. You should have full needle selection first. Now I would like you to see if you can do just a few rows of Fairisle on Set 2 *only* first, then on set 3 *only*, and then set 4 *only* and complete it by selecting all across your 60 needles again.

How did you manage? If you got Floats after selecting set 3 from the Left, this was because the 2nd yarn was still on the last "D" needle of set 2, but the 1st "D" needle you knitted was on the right of set 3. You could have eliminated this by switching your PATTERN DIAL from COLOUR to plain. Do you remember when we found that the selected needles will only knit from Feeder 2 if you DIAL COLOUR. You need only to reverse this situation to solve your problem.

I am now going on to another type of stitch pattern, but do please make sure that you understand what we have already achieved, by continually practising until you know exactly what you are setting your machine to do.

Watch your needles at each row.

Note that they are selecting correctly.

Note that all stitches have knitted.

Note that the end needles are not pulled tight.

Note that you are not leaving loops at the end.

You will find this easier than it sounds, because any irregularity will stand out, and is much easier to put right *now* than later.

Keep card 11 in your card slot, but take out the yarn in Feeder 2. Put your Pattern Dial back to *plain* and knit a few rows.

Now select your needles by putting CARD LEVERS (A and B) to "C" and make sure the Motif Control is on the large DOT. Slide the carriage over the needles.

Now turn your Pattern Dial to TUCK, push in both T/L Spring Plates, start your card moving and knit several rows.

I expect that you have noticed what has happened, but let us check it together.

The selected needles have knitted, but the needles left in "B" position simply have the yarn tucked over the needle hooks. Remembering that it is the holes which have selected, you know from Fairisle selection that the pattern will change every 2nd row where you have alternate selection, and every 4th row where you have three needles selected. Watch the needles to see where your pattern selection changes, and how the tucked needles come forward to this new knitting position, so that your machine can knit the stitch with its collected loops altogether into a single stitch.

You realise of course that you are Tucking on the BLANKS of your cards (the needles NOT selected) so naturally you would NOT attempt a MOTIF or a card with a lot of BLANKS together. Your machine would simply tuck over all the needles left in "B" position, and when the needles came forward on the following row, the yarn would revert to a straight line again and catch up over the sinker posts.

Look through your cards to see if *you* can find which you can TUCK over (you are looking for single BLANKS). The answers are on page 28 of the Instruction Manual.

Try them out to see. Even if you were wrong, it is worth trying them to find out *why*, because it is helping you to read your card.

At the moment we are only learning the stitch, but when you actually make a garment you would need to watch the end needle. Make sure this needle is in knitting position ("D" in this stitch pattern) because you are Tucking on needles in B. Just push the butt forward to "D" for this. You can of course use either side of TUCK as the front when sewing up, but generally the side facing you on the machine is the most popular. Tuck is a very versatile stitch as you will see from your Manual. If you look at page 40, you will see four very distinct patterns all using Card 3. When you have perfected the basic, I do hope that you will try all of these variations.

Let us now try Card 11 on EMPTY shall we?

Do remember that you must make your needle selection first in PLAIN before you turn the PATTERN DIAL to EMPTY. Knit several rows and watch what your needles are doing. The selected needles are knitting as they did in Tuck, but instead of the yarn tucking over the needles in "B", it is now slipping past them leaving these needles EMPTY. They do of course still hold the stitch which was already on the needle previously. Watch how the yarn slipping past these needles builds up into a nice pattern.

Remember it is the BLANKS on your card which you are slipping past. Look through your cards and try to make up your mind which cards you can use. You can of course SLIP past several needles, but do not have too many needles in line, or the threads will catch up when wearing your garment. I find Card 4 is an excellent card to learn what you are doing. Try it! It's Knit 3 Slip 3 but the selection is moving sideways on each row, so the "Slips" are forming into line across your fabric.

You would NOT do a Motif in this stitch pattern either, but EMPTY does have another valuable use. If at any time you have to undo a row, so that your carriage is at the opposite side to your yarn, remember that EMPTY will slip past all needles in "B" position. Make sure that none of the stitches are behind the latches before you push the butts back to "B" position.

Shall we now see what you would do if your carriage gets stuck in the middle of a row when you are working a stitch pattern?

First, remove the carriage as you did in plain knitting, by holding forward the CARRIAGE RELEASE knob and very gently lift the carriage off the needles. Place the carriage back on to the needle bed at the beginning of the row. You should be able to unpick the row back to the beginning. Both yarns if you have been knitting Fairisle. Now you have to get your needles into the right place. I have found that the easiest way is to put all of the needles forward to "E" position. Set your carriage to PLAIN, switch Card Feeder Off. Make sure that the PARTIAL KNITTING LEVER is also on "O" then knit one row. This knits all the needles back to "B" position and you will find it is simple to undo that row because the stitches are all in the hooks in front of the latches. You now have your carriage the opposite side to your yarn and you must programme the right row. Turn the card *BACK ONE ROW*. You remember that it moved on at the beginning of the row you were knitting ready to programme the next row. Set the CARD FEEDER DIAL on STOP (square) but put the CARD LEVERS (A and B) to "C" (card). Make sure that *all* the needles are in "B" position, and set the PATTERN DIAL to EMPTY in the direction you are going and take the carriage to the other side of knitting. You have now reselected the right row of pattern which you were working on. Reset the FEEDER DIAL, PATTERN DIAL and the row counter, and you will remember to pull back the yarn behind the YARN GUIDE of course.

That was not too hard to do was it? You may have thought it rather time wasting to knit the PLAIN row and then have to unpick it immediately. We did that because some of your stitches were behind the latches in the process of knitting, and it would have meant putting each of these stitches back in front of the latch, so that when you pulled the yarn to undo the wrong row the row before jumped back into the hook. (The Right part of your needle.)

Shall we now try WEAVING?

Turn to page 35 in your Instruction Manual. You can use Card 3 as suggested, or you can stay with our present Card 11. Isn't it nice to know that *one* card can be used for such a variety of stitches? Perhaps it is not as pretty as some of your other cards in Fairisle, but I am sure that when looking at it, you could relate it to the punched card, and it helped you to understand the needle selection.

Of course you cannot use all of your 20 cards for all the types of stitches, but there are quite a number of them as versatile as Card 11.

For Weaving you are now going to need a thicker yarn to weave on to the thinner yarn. Let us try it first, so that you can understand better.

If you are going to continue with the 60 stitches on your machine do a few **PLAIN** rows.

If you have taken the knitting off the machine, set up again with **PLAIN** knitting. Still set for **PLAIN** select your needles by putting the **CARD LEVERS (A and B)** to "C". Whilst the carriage is at the **LEFT** set **WEAVING LEVERS UP**, so that the brushes run along the sinker posts. Thread the weaving yarn through all the **RIGHT HAND YARN GUIDES** as usual, but do not put it into the Feeder. You will probably need to adjust your **TOP TENSION**, because you are using a thicker yarn. Either tie the end on to the clamp, or hold it well back from the brushes under the fabric presser. Knit one row. Notice how the Weaving yarn slips into the Weaving Guides at the front of the carriage, which lays it over the selected needles, whilst the Weaving brushes push it up close against the Sinker Posts. When you reach the left of your knitting, you must place the weaving yarn to the Right hand side of your carriage before you return on the next row. You are going to find that this yarn is travelling on *top* of the brushes under the Fabric Presser, so do take care how you remove it. Once past the last needle, hold this yarn down slightly under the carriage and continue to push the carriage along. You will find that the brush wheels roll over the yarn and thus free it. Please be careful that you do not pull too much yarn down through the yarn guide, or you will leave loops.

Knit a few rows to see how you get on. Remember that the Weaving yarn must always be in front of the carriage in the direction you are going. Take note also of what is happening at your needles. The selected needles knit **PLAIN** inside the weaving yarn leaving the length of weaving yarn to form into your pattern. The needles not selected – that is the **BLANKS** on your card which leave the needles in "B" position, will knit under and up, **OVER** the weaving yarn giving you a very pretty little criss cross over the weaving yarn.


Because the side facing you is usually used as the outside of your garment, please make sure that the weaving yarn is taken right up to the edge of your fabric. To do this, put the **FIRST** needle forward to "D" position. I am sure that you have noticed that the weaving yarn is not actually knitted on your needles, so the stitch tension is governed more by the ply of the main backing yarn. Where you have formed a "block" or "line" in the weaving yarn, you should not be able to see the main yarn showing through this pattern.

If you are finding it difficult to release the weaving yarn from the brushes, try leaving the weaving yarn cone in front of your machine instead of feeding it through the Top Tension unit. You can then lay it by hand over the selected needles. Remember to take it ahead of the carriage in the direction the carriage is going, and remember also, that your hand is acting as the Tension so that you must not hold the yarn too tight or too loose.

With practice I think you may find this way easier. Try both methods to see which you like best.

When you feel confident look at page 38 in your Instruction Manual to see how you can hook up the weaving threads, giving you a completely different stitch pattern.

I wonder if you are going right through this book, learning all the stitches first, or if you are taking your practice piece off the machine and making a garment of each stitch before going on to the next pattern.

Well, we are now going to start on **LACE**. This can be a lovely delicate fabric if knitted in a fine yarn. I would like you to learn how to do lace on Card 17. This is a special card with arrows marked on it to help you learn which carriage to use, and what that carriage does to your stitches. Briefly the heavy arrow tells you to use the **LACE CARRIAGE**, and the bent arrow  tells you to use the **KNITTING CARRIAGE** for two rows.

Let us set the machine first. In the lid of your machine you will find two extension rails. These are inserted into the sides of your machine, because you will at times have both carriages at the same side. They are marked with an R or L for Right or Left of course, so please fit them in as shown on page 46 of your Instruction Manual. Push them fully in, so that they lay flat.

Take a closer look at the Lace Carriage. You notice the channel in the black bar, which, as on your Knitting Carriage has to fit snugly on to the front edge of the needle bed. You will see also that it has its own connections at the back, to slot into the **PATTERN ROLLER** to select your needles. Therefore, you will not need to select needles with your knitting carriage, so switch the **CARD LEVERS TO "O"**.

Set up stitches on your 60 needles again. A quick way is to take the carriage over alternate needles, hand your cast-on comb on the loops, then bring the alternate needles in "A" forward to "E", knit one row with **PARTIAL LEVER** on "O". Do a few rows of **PLAIN** knitting keeping your **CAST-ON COMB** in, and leave the **CARRIAGE** at the **RIGHT HAND SIDE**.

Put Card 17 into the CARD SLOT and leave it at STOP (square). Push in T/L Springs. Bring the LACE CARRIAGE from LEFT to RIGHT. Yes you were right. The arrow was pointing Right to Left, but remember that we are just starting here. That row would have been programmed as you worked the previous row if we had been following through the pattern card. So now you start your card moving by putting the CARD STOP LEVER to the small arrow, and start to read the arrows to see which carriage you are to use.

As you take the Lace Carriage back to the left, watch what is happening to the needles. The selected needle is being pushed upwards, elongating its stitch, whilst the previous needle is being guided under this needle and actually goes into the elongated stitch. The selected needle stays forward as the rest are taken back. The latch on the selected needle is closed by the magnets, so that the stitch slips off as the needle in turn is pushed back into place. Look at your needles, you have two stitches on some needles with an empty selected needle next to it. When knitting lace take the trouble to look at your needles here. You will soon notice if the adjoining needle has not taken the stitch. It is better to pick it up now than later. The machine will do its job properly, providing you do your part properly.

**PLEASE NOTE:**

1. Take the carriage across with a nice smooth movement.
2. Keep the cast on comb just below the needles so that the carriage *can* elongate the stitch to receive the adjoining needle.
3. Make absolutely sure that you are *not* using bent needles.
4. Never select two needles side by side.

The arrows on the card are telling you which carriage to use and the direction, but I would like you to watch your needle also, and try to understand for yourself.

You will see that whenever a needle is selected, it is designed to be transferred by the Lace Carriage, backwards to the previous needle. When you have reset all the stitches on to the the right needles to form your stitch pattern *no* needles will be selected. This is the indication that you use the knitting carriage to complete the top of the lace hole. The first row lays a loop onto the empty needles, the second row knits each loop into a stitch. You now have a stitch on every needle and are ready to use the lace carriage again to select and transfer stitches.

Occasionally the lace carriage will end on the wrong side of the needle-bed. The arrow will direct you to slide it over the needles to the other side. Note also that the stitches are always transferred from the selected needles, so make sure that if an end needle is selected that you push the butt back to knitting position.

I have picked Card 17 because it is *not* a regular repetition of so many rows with the Lace Carriage followed by two rows with the Knitting Carriage. Watch the arrows carefully with this card, and learn from your needle selection.

If you will now try Card 20 for me, you will find that there are either ten or twelve movements of the Lace Carriage before you use the knitting carriage. See if you can pick the right place by watching the needles. You will find it a great help if you understand how the pattern is formed. Do remember to select your needles on Row 1 with the card *stopped* won't you?

If unfortunately you jam your lace carriage, pull forward the two release levers and very gently lift the back of the carriage first, and then remove it from the needles. You now have to get your needles back to "B" position, but do remember that stitches must be in front of the latches or they will drop off when you do this. Either use the transfer tool, or, as before push the needles to "E" and knit one row which you can easily unpick. At the beginning of the row the selected stitches may have already been transferred, and will only need to be dropped off. Lift off the transferred stitches by tool, and replace onto the correct needles, until you get to the last knitted row as indicated by the bent arrow. Reset your card and start from there.

Find out why your carriage jammed. Were you pressing too hard? Is your cast-on comb holding the fabric down? Are you using a bent needle? Put this right and make sure that your needle butts are in a nice straight line in "B" position before you continue.

Well, we only have PLAITING to do now. Are you enjoying your TOYOTA 901? I am sure you are.

For Plaiting you will have to remove the Feeder Unit on the Fabric Presser and replace it with the Plaiting Unit. You will find this easier to do if you just remove the Fabric Presser from the machine. There are excellent pictures of how to do this on page 43 of your Instruction Manual.



Did you see the two holes in the case of the feeder? This means that you are going to knit two yarns together on each needle. You decided which yarn is facing by turning the white feeder to either the circle ○ or the square □. Some very interesting fabric can be knitted by varying the yarns in this, but let us try first with two 3 plys.

Thread up each yarn separately through the yarn guides and Tension Wires and one into each of the two holes in the unit. Hold them well back from the brushes or tie them to the clamps. Set your machine for PLAIN knitting. Because you are knitting 2×3 plys together, you will need a larger tension of course, so adjust this as necessary.

Try a few rows with the square facing front, then turn the white dial in the direction you are going until you hear a small click and the circle is facing forward. This way you will get strips.

Now try changing the colours in the middle of a row. You are helped in this by the small arrows on the back of your carriage, which you line up with the stitch numbers along the front edge of the panel board. Match the arrow pointing in the direction in which you are taking the carriage. When it reaches the stitch number where you wish to change colours, turn the white dial in the direction you are going. Test this first so that you can change on the exact needle.

Depending on the stitch tension you are using you may need to adjust this setting.

With the 2×3 plys which you probably are knitting at a tension between 7 and 8, you will need to turn 1½ stitches prior to the exact needle when going to the left, but only ½ stitch before, when going to the right.

Remember, this setting may alter when you use a smaller tension, so please test it in your yarn before you make your garment. Now try making a pattern by colour changing. If you draw a design on the Knit Tracer sheet, you will know where to turn the white dial.

If you set the machine to COLOUR, you can knit in one colour only for stripes, but be sure to change colour at the same side each time.

Plaiting can also be knitted in TUCK stitch, be careful not to over fill your needles with too much yarn tucked on them. Try card 1. Select your needles first, then turn the dial to Tuck and try it out.

Well we have now gone right through it all. I do hope that you have enjoyed your TOYOTA and that this course has been helpful to you.

Shall we have a quick summary of things to particularly remember?

1. Make sure the yarn can flow smoothly to the needles. If it pulls tight it will pull your stitches undone. If it is too loose it will leave loops and catch over your sinker posts.
2. See that you do not knock needle butts out of set position.
3. If you intend to do a stitch pattern ALWAYS select your needles first before knitting last PLAIN row, by putting your CARD LEVERS on to C for card. Once the needles are selected then set your machine for whichever type of stitch you intend to knit.
4. Always knit a Tension Swatch first to ensure that you are using the right tension to suit your yarn and the stitch pattern, and also that the texture feels nice when knitted.
5. Do not take the carriage too far past the end needle.
6. Do not press down too hard on the carriage.
7. Do not try to knit too fast. A nice smooth glide across the needles is best.
8. Watch your needles so that you can see what they do.

Remember, it all comes easier with practice. Good luck and may you spend many happy hours with your TOYOTA 901.

PEGGY RHODES

# LESSON THREE

## KNIT TRACER

The Knit Tracer is a very valuable part of machine knitting because by using it, your garment will come the size you want it to, and it is all based on your own measurements of your tension swatch.

First of all, you must draw the shape you wish to knit on to your tracer sheet. To help you do this Toyota produce pattern graphs which you can actually trace direct on to your sheet.

The graphs are drawn in Standard sizes; and though we all like to think we have model sized figures, we usually know that perhaps we need a little more ease across the shoulders, or possibly a little longer for the body. All of these minor alterations can be made as you trace your graph on to the sheet. Usually you will find that the body part for front and back are the same until you reach the necklines, so you can draw them both on the same sheet, together with the sleeves.

I hardly think you are likely to knit two backs or two fronts by following the wrong line!

Take the trouble to double check that your graph is drawn to the right size for you.

Now knit about 10 rows PLAIN in waste yarn on 60 needles. On the last row of waste yarn, select your needles if you intend to do a stitch pattern.

Set your row counter to 000 and knit 30 rows in correct yarn and stitch pattern you have chosen for your garment.

You now have to mark off 40 stitches to measure, so push the 21st needle on each side of the centre 0 forward so that the stitch goes behind the latch, lay a piece of contrast coloured yarn in the hook in front of the latch, then pull the needle butt back to "B" position, and replace it to its correct position for your pattern. Needle 20 is marked on your needle bed, and I am sure that you can see that if you put your contrast coloured tag on the 21st needle each side of the centre 0 you will have 40 stitches between these tags. Now continue in pattern until your row counter shows row 60. Change back to waste yarn and knit a further 10 rows PLAIN.

Break the yarn, remove it from the feeder then take the carriage over the needles and the stitches will drop off.

You have now to let this swatch settle, and I cannot say one hour, or two hours, because obviously different yarns take different times. You can help by gently pulling the swatch lengthways and try to knit your swatch the day before, so that it has 24 hours to really settle to its own natural state.

Make sure that you are happy with the texture and stitch pattern because it is easier to decide now and try another swatch if necessary, than it is to knit up your garment and then find the texture is too loose, or too tight.

Shall we presume that you are happy with it, and continue with our Knit Tracer?

Feed your tracer sheet into the Tracer, making sure that the small points on the rollers each side pick up the holes on the sides of the sheet and feed it in straight. The lines across your graph paper will help you check this.

Now back to your tension swatch, to get the measurements to set your Tracer. First measure the 40 stitches between the two coloured tags. Lay your swatch on a flat surface, and be careful that you do not stretch it as you measure. Remember that the number of stitches for your garment will depend on your accuracy. You haven't got to work anything out. You simply lay your METRIC measure between the tags and read the figure you require from your measure. Shall we presume it is 12.9cm?

Good! Now all you have to do is pick the correct stitch scale. Look at the STITCH SCALE TABLE on your box. GREEN number 8 covers 129/132 doesn't it? Therefore, open your box, look for the

GREEN tipped scales and select number 8. Insert this with 129 uppermost in the slot in the front of your Tracer sheet. Make sure that you line up the heavy dotted line which represents the 0 on the scale, to the centre line of your Traced pattern.

Can you now see where the line you traced, meets your stitch scale, and indicates how many stitches to cast on either side of your centre "0"?

You now have to measure the 60 rows on your swatch. This measurement is set into the dial on the Right hand side of your Tracer. Again we are going to have to assume a measurement because I do not know exactly what measurement you have got on your swatch. Shall we say 14.3cm?

You must first push up the CLUTCH LEVER. Look at page 6 in your TRACER Instruction Book to see excellent pictures.

By turning the DIAL which indicates the 10 mm, you will move the cm indicator along. Turn this dial until your indicator has reached 14 cm. Note that a complete turn of the 10 mm will move your cm indicator up or down 1 cm according to which way you are turning your dial.

For exactly 14 cm your dial would read 0, but you want 14.3 cm don't you? So turn the mm dial round to 3.

You now have the cm indicator slightly past the 14 and the mm dial on 3, which will be correct for our assumed figure of 14.3 cm.

Put the CLUTCH down again. You will need to move it slightly to the right to do this.

You will now find that the Row Counter Tripper on the carriage will flick the FEED LEVER on your Tracer every row, and thus move your Graph down, past your STITCH SCALE, indicating at all times how many stitches you should have on the knitting. You must then increase or decrease accordingly.

Let me run through a few interesting points for you to remember.

You have obviously noticed that TUCK knitting knits wider and shorter than PLAIN knitting. As long as you still measure 40 TUCK stitches for your stitch scale and 60 TUCK rows for your ROW DIAL your graph will move down at a slower pace because you have set your ROW DIAL to suit.

Of course, you must knit your swatch in the stitch pattern you have chosen. If you intend to change the stitch pattern during your garment, you must take measurements of each pattern.

Presuming the graph is for yourself, remember neither you, nor your graph will change shape simply because you want to make a TUCK garment rather than a PLAIN garment.

The measurement of 40 stitches and 60 rows *WILL* change though, and therefore your garment must come to *your* size, providing you measure Tuck swatch accurately and set up properly.

Try it out, and I am quite sure that you will NOT go back to following a written pattern after.

You will quickly learn to adapt your traced pattern to suit the latest fashion styles. Be very observant when you pass fashion shops or are looking in magazines. Look out for styles which you like, and then adjust your Tracer graph to that style.

Please note that the squares on the graph paper do NOT represent rows or stitches. They are there to help you draw your graph straight.

It is where *your traced line* crosses your selected stitch scale which you are watching. Follow this point with great care and your finished shape will match your graph.

PEGGY RHODES