Science and Technology of Weft and Warp Knitting
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Module - 3
Lecture - 14
Weft Knitting - V-Bed Machine

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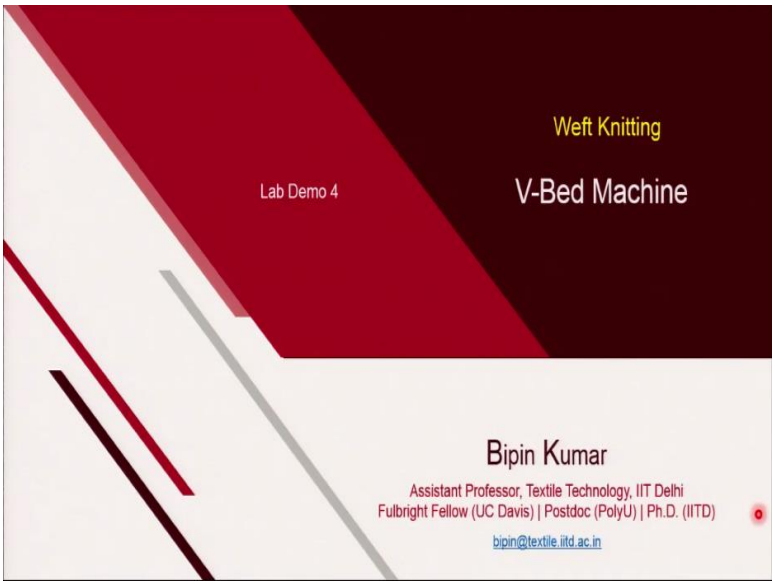

Welcome participants. Now we are going to move in lab demo 4. So, in this, I am going to introduce you V-bed machine technologies; how we operate this machine and make fabric on this particular V-bed machine. So, in this particular week, you have already learned about double bed knitting machines. And V-bed is one of double bed knitting technologies, where we use 2 sets of flat bed.

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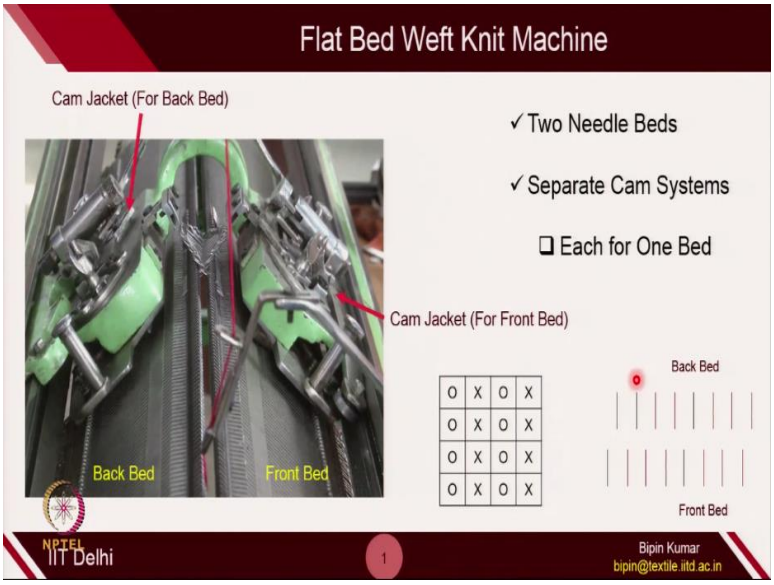

Just the basic introductions; what is actually a flat bed weft knitting machine, especially the V-bed. You have 2 needle beds and you have 2 needle cam for each of these beds. So, 1 cam jacket for back bed and another cam jacket for front bed. And we create technical back and front loops on the same course with the help of 2 sets of needles. And these needles moves in opposite directions at a certain point of knitting. So, let's see how we operate this machines.

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So, the first thing. In front of the machines, you have to supply yarn. So, the first part, we are going to see how yarn is being thread in this particular machine. **(Video Starts: 01:35)** So, let's see how the yarn is being thread. So, this is the yarn. Similar to the single bed machines, here in V-bed machine also, the yarn has to pass through guide and tensioner system. So, it has first passed to the first guide.

Then, second guide, then the first set of tensioner. Then again, the second set of tensioner. All this is done to make sure we have uniform tension during knitting process. So, another guide. After that, it is being supplied to the feeder zone. So, this is the feeder zone. So, the first guide; and this is actually the feeder hole. So, we supply the yarn to the feeder hole. Once the yarn is being passed to all the position, then the yarn is then passed from the center of these 2 beds.

And then, it is hold from the bottom side. Now, the feeder is having the yarn and this feeder will supply the yarn to **(Video Ends: 02:46)** the needles on these 2 beds. After the yarn threading is done, the next part is needle selection.

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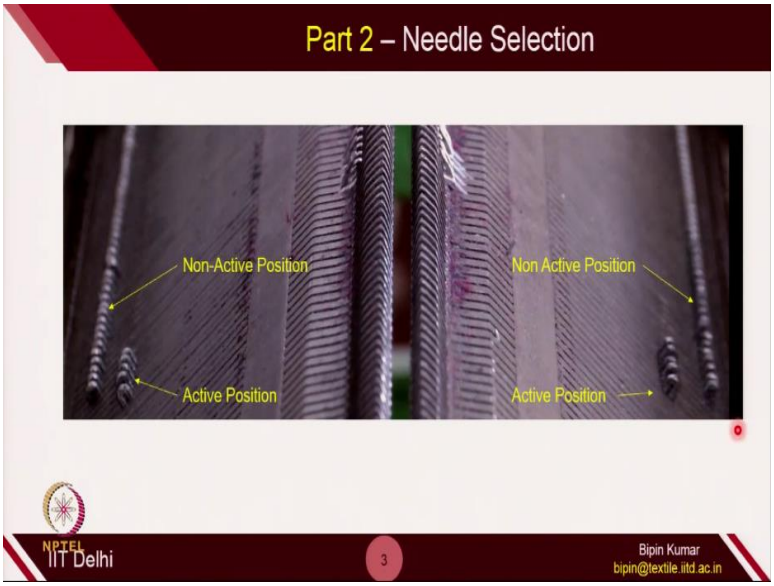

So, we need to ensure how many needles we want to operate on each of these bed. So, to select the needles obviously, we have already introduced you the active position of butt and non-active position. So, in active position, the cam jacket actually select the needles. And in non-active positions, the needles remain stationary. So, depending on what is the width of the fabrics you want to create, you need to select number of needles on each of these beds accordingly.

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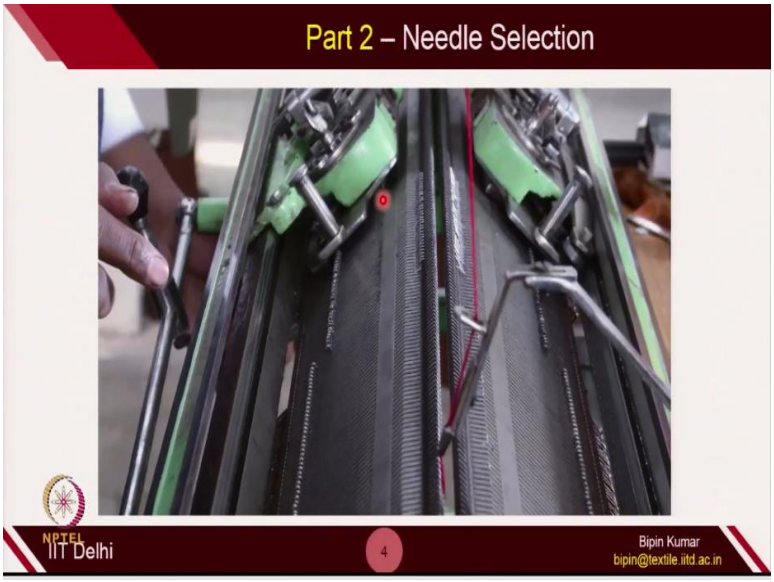

For the selections, let's see. So here, **(Video Starts: 03:25)** how you can select the number of needles on each of these beds. So, this is the front bed. So, you can simply push the jack from the back side and it will push all the needles on the top side. So, in this way, the position of the butt; so, each of these projected part is actually one of the needle butt. So, in this way, you can place all the needle butt in one that particular location.

From the back bed also, you can do the exactly same thing. You can push the jack and you can select the number of needles depending on what fabric width you want to create. You will check whether the cam jacket is actually selecting all the butts; yes or no. If any particular butt is not exactly in the same locations, then it may create problems. So, now you can see, active position of all the selected needles.

(Video Ends: 04:26) So, these are the active positions of front bed needles, and these are the active position of back bed needles depending on the position of cam jacket. So, the butt the position it will depend on the positioning through which it will actually strike the raising cam of each of these particular cam jacket. So, once needle selection is done, once yarn trading is done, then we can supply the yarn in this zone, so that the needles can catch the yarn.

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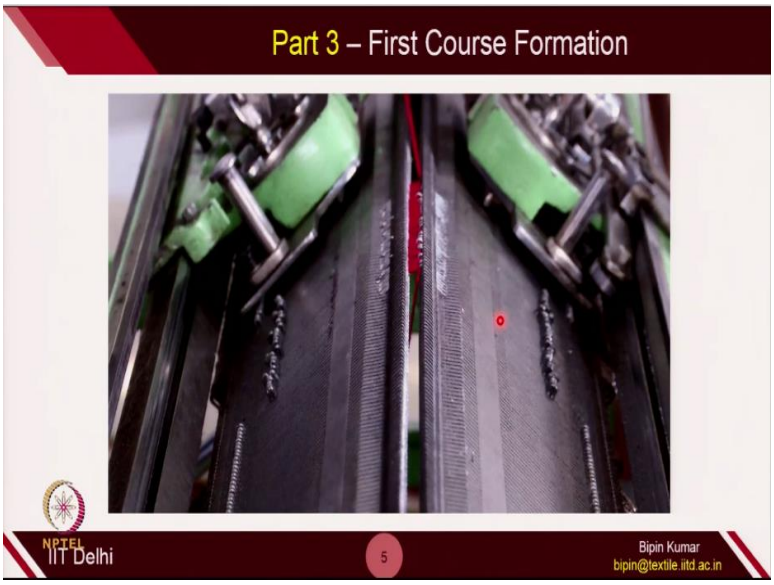

So, this is the supplying yarn; actually, the first course formation. **(Video Starts: 05:04)** So, we are now catching the feeder. And feeder is also moving along with the cam jacket. So, here you can see, now it is being feed to each of these needles. So now, each needles on front bed as well as back bed has now holded the yarn. So, the first loop is being pulled by each of the needles on front bed and back bed.

(Video Ends: 05:33) So, this needle is making technical front and this needle is making technical back, because I am standing this side. So, once this is done, then we need to create a mechanism to pull the fabric on the downward directions.

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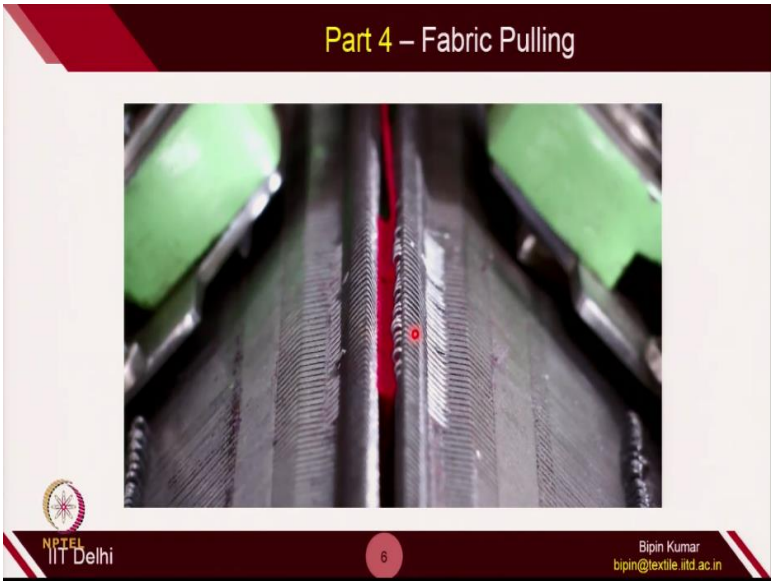

So, for pulling the fabric, we need to make certain arrangements. So, for that, we need a metallic bar and that has to be pulled by dead weight. So, let's see here, **(Video Starts:**

05:58) what exactly you mean by fabric pulling. Because so far, nothing is pulling the loops in the downward direction. So, to create, to do so, we provide first needle bar here. This is some kind of metallic bar.

And in this metallic bar, we can fix the dead weight. So, you can see here, this dead weight is pulling this metallic bar downward. And because of that, all the loops which is being formed is actually pulled in downward direction. This was also done in case of single bed with the help of comb. If you remember, if you see the demo number 2, you will realize the functioning of comb.

So, once this is done, then we create, we run only the front bed to create additional loops. After that, we run only back bed to create additional loops, so that the metallic bar can go inside, so that it should not create hindrance when the needle is moving simultaneously. So, if you run this metallic bar and run both the needles without making sure that the needle bar go downward or the fabric being; that metallic bar go downward, then there may be chances that it can hit with the needle.

So, after we put the dead weight, we need to make sure we create single jersey fabric on one side and then single jersey fabric on the other bed side, so that the metallic bar can go inside. So, once this is done, now loop is being formed in a very smooth fashion. And you can still **(Video Ends: 07:38)** make the fabric depending on whatever length you want to create.

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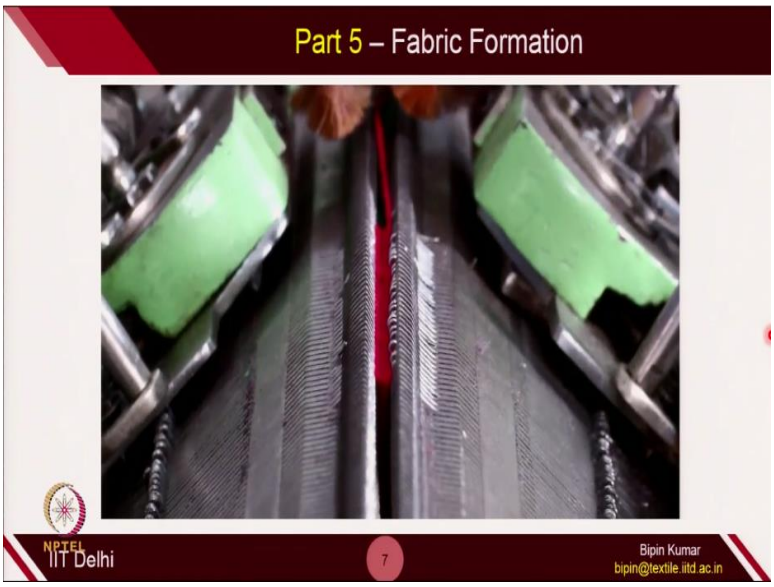

So, this is the **(Video Starts: 07:44)** process you can keep taking the cam jacket from left to right, right to left, depending on how many courses you want to create. So, each traverse will create 1 course. This is how we make the fabric in a V-bed machines. And V-bed machine, as I told, this is one of the most popular machines, because this gives you lot of flexibility. You can any time close one bed and operate on a single bed machine.

So, anytime you can create single jersey **(Video Ends: 08:15)** as well as double jersey depending on the design of the fabric. So, once we will move in week number 4, we will see how we can utilize the potential of both the beds and 2 cam jacket to create different designs of the fabrics. So, this is the end of this particular demo about functioning of V-bed machines. Thank you. Thank you very much.