

Reducing Lead Times by adopting Knit and Wear Technology and More

Increasing market competition forces apparel companies to become more efficient in managing their supply chain and reduce the lead time to minimum. The four major steps in the supply chain of apparel like any other product are: product development, marketing, manufacturing and delivery to the end user. The key issue in the fashion business is to respond quickly to the rapidly changing demands of fashion. Garments should pass through the supply chain from the design stage to the delivery as quickly as possible. Shorter lead time would result in making the purchase decision more precise, as it will enable it the buyers to take decisions closer to the season and in accordance with the customer's demand at a moment closer to the point of sale. The retail sector which is delivering the goods to the end user is always looking for shorter lead times as with this it can start with a low initial order and get quicker replenishment in the season when needed, thus minimising the risk of stock-outs as well as unsold stocks.

There are mainly four ways a flat knitted garment is made:

- Cut and Sew
- Fully Fashion
- Integral Knitting
- Knit and Wear

The cut and sew method comprises of knitting of fabric and cutting and stitching the cut panels using sewing machines, over lock machines, etc. In the fully fashion knitting the cutting is reduced to a minimum and in a few styles to zero. The panels are knitted to shape and are joined together using linking machines giving an excellent finish to the garment. In Integral knitting two or more parts, and or trims are knitted together and the rest of the panels are joined using linking machines. However these styles still use the traditional ways of joining the panels together which is a time consuming and a slow process. One process follows the other and the waiting time between the processes though can be minimised by reducing the bundle size and other production enhancement methods but cannot be avoided altogether.

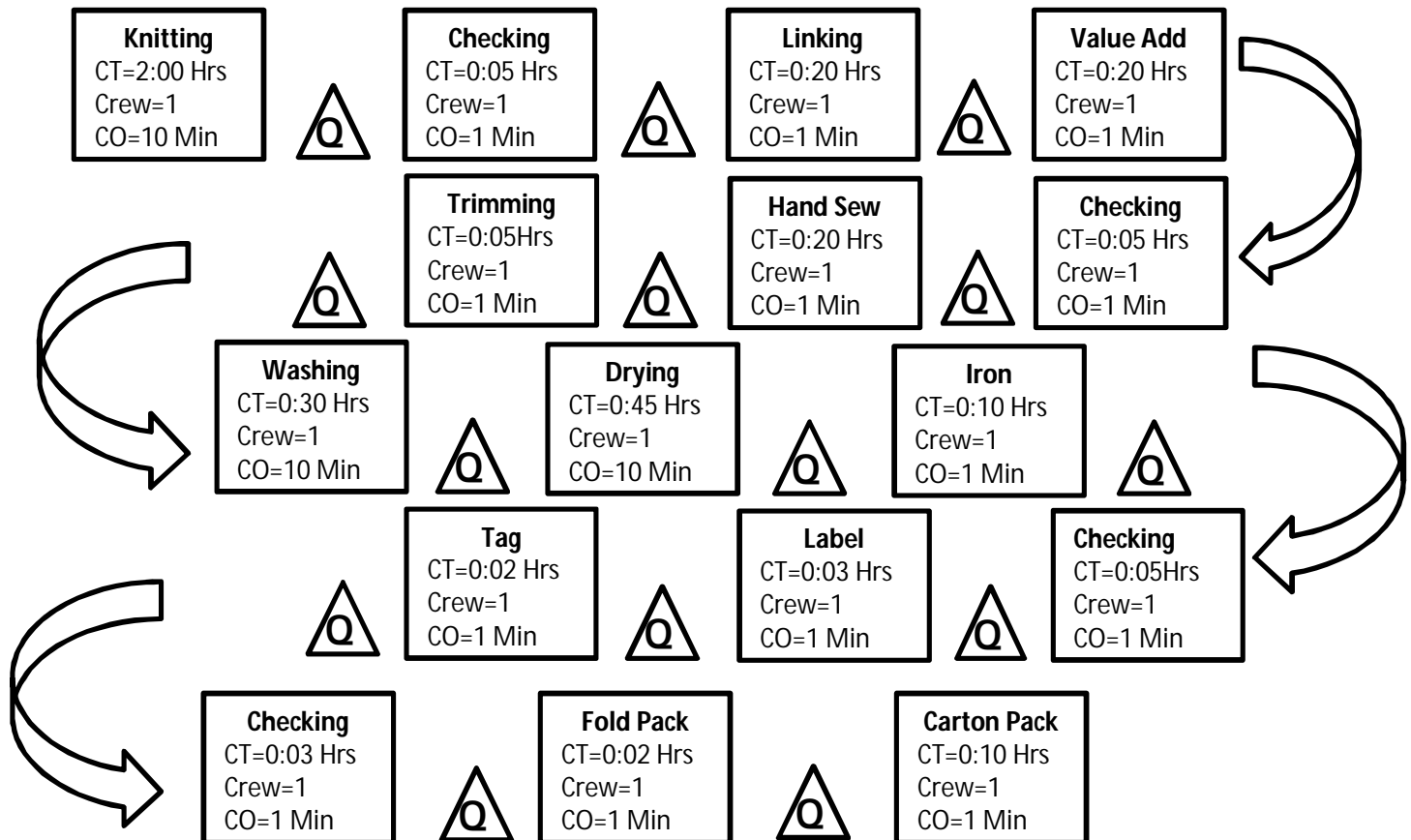


Figure I

CT: Cycle Time CO: Change Over Time Crew: Man Power Q Waiting / Queuing

In the traditional way the production from yarn to a ready garment involves many processes, it starts with knitting of panels which are finished and steamed for cutting, sewing, linking, hand sewing of trim ends, final finishing, pressing, labelling, tagging, folding, packing and forwarding. The traditional production of flat knitted garments thus consists of several time consuming processes. There is unavoidable waiting time in between processes that increases the time to complete a garment as shown in the figure I given above.

The Knit and Wear method or the Whole Garment method knits the whole garment on the machine itself. The garment knitted on The Knit and Wear Machine or on The Whole Garment Machine is almost a ready to wear garment and does not need any stitching. The garment is knitted in tubular form, three tubes one for front and back and two for sleeves are knitted simultaneously. These tubes are joined together to form an arm hole joint. A mock seam is created with fashioning marks and the body reduces to the desired neck width. Neck is formed as desired and is closed by casting off. There are no side seams, armhole seams or shoulder seams. The finished garment looks good. As there is too little human element involved in the making of the garment, there is amazing similarity in the finished product lot which at times can be difficult to achieve by other production methods.

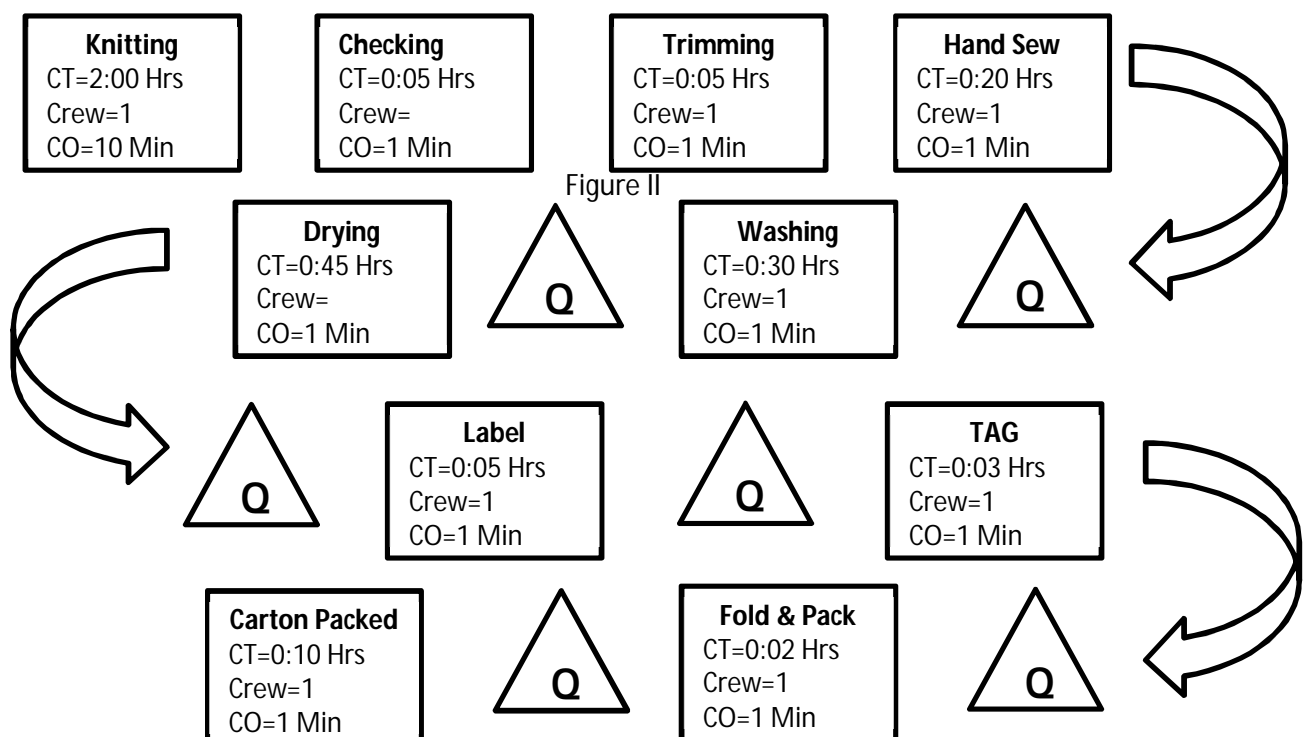
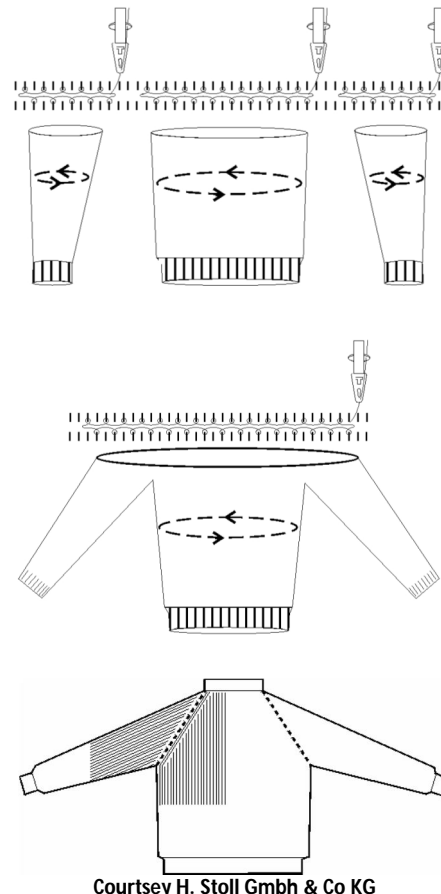










Figure II

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The garment that comes out of the machine has a few loose yarn ends that need trimming, the garment may be washed if needed and ironed, labeled, tagged and packed right away. The value stream gets smaller as shown in figure above. Garments made with cotton or Lamb's wool or other such material where shrinkage has to be taken care of or a milling process is needed undergo washing and a drying process. In garments made with other materials it may not be necessary to carry out the washing and drying process. This can significantly reduce the lead times.

Using Knit and wear technique a knitter can knit many different styles as shown in the table below.

			
The Raglan Sleeve	Raglan Sleeve with Neck	Round Neck Set In Sleeve	V Neck Set In Sleeve
			
Set In Sleeve Jacket	Saddle Shoulder	Saddle Shoulder V Neck	Vest with V Neck

Courtesy H. Stoll GmbH & Co KG

Knit and Wear technology has also opened up a new era in Apparel Industry. Delivery of the product in digital form as close as possible to the point of sale can revolutionize the way in which the supply chain is operated. The music industry is a great example of this. Rather than manufacture a device that contains music and ship it to a customer, the music is being shipped in digital form through internet and converted by the customer at his end on media of his choice. The apparel industry should also look at such industries and look for ways to be as close as possible to this concept of keeping the designs in digital shape as long as possible. Knitwear companies can do this, by adopting the Knit and Wear Technology. They bring their lead times down as the garment can be packed and shipped within a few hours after the yarn was put to knit on the knitting machine as compared to several days in case of traditional manufacturing methods and they can keep their designs digitized to a stage very close to the point of sale. This Technology brings down the lead times considerably as compared to the traditional way to produce garments.

Knit and Wear Technology has made it possible to keep the product digitized up to the point of actual sale. Virtual knitwear showroom can operate by using this technology. One can go there and select from range of digitized designs, suggest/make significant modifications and see how the finished garment will actually look on him or her, choose the neck lines length and width of the garment, placement of pockets and surface applications digitally. Once satisfied by the shape, style, the yarn thickness, the gauge of knitting and color. The customer can actually make a purchase. The whole garment thus selected by the buyer can be transformed from digital to finished products in a few hours while the customer waits or strolls through the mall or goes for a movie, to pick the purchased garment on way back home. This manufacturing process can be the best example of converting an idea to a product on demand closest to the point of sale. All four major steps of the supply chain management are taken care under one roof and in a single instance.