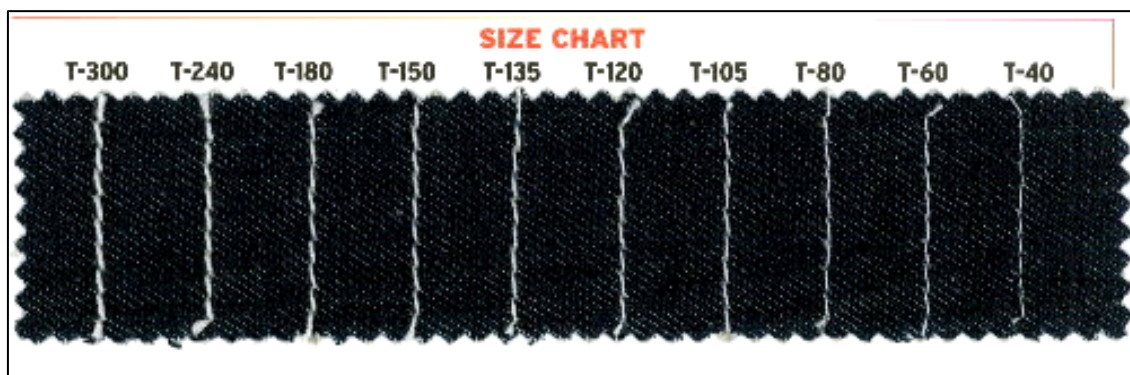


Denim – How to Sew X-Heavy Thread Sizes

Retail designers are always looking for a way to make their products unique and this definitely applies to sewing denim garments. From a thread perspective, this can include:

- Using contrast color threads
 - For all topstitching operations
 - For different operations
 - For different needles of the same operation
- Using threads that will maintain their color regardless of the wash process.
 - Using a 100% polyester thread dyed with disperse dyes
- Using threads that will wash-down depending on the severity of the finishing process.
 - Using a cotton wrapped core thread
 - Using an true indigo dyed cotton wrapped core thread
- Using a thread that looks different that regular stitching thread.
 - Shiny thread like *Signature Plus*[®] or *J Metallic*[®]
 - Two-color thread like *Design-A-Core*[®]
- Using different thread sizes that give a bolder stitch appearance.

LARGER THREAD SIZES THAT GIVE A BOLDER TOPSTITCH APPEARANCE



Tex Size = Gram Weight Per 1000 meters of undyed yarn. See the World Wide Size Comparison Chart for yarn size conversion.

Years ago the most common size of thread used for topstitching denim was a Tex 60 or 80 or possibly Tex 105 size threads.

Recently many manufacturers have graduated to a Tex 120 size thread to give a slightly bolder stitch appearance. Today, many denim designers are looking at much heavier thread sizes including Tex 150, Tex 180, Tex 240 and even Tex 300.

This has created problems for many denim garment manufacturers because their normal denim sewing machines were not designed for these heavier threads.

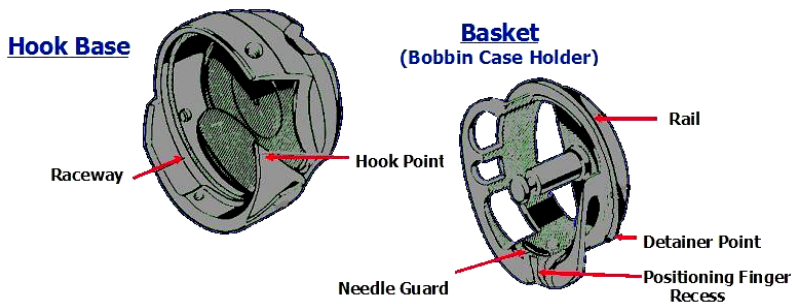


WHAT DETERMINES THE THREAD SIZE THAT CAN BE SEWN ON A SEWING MACHINE?

On 301 lockstitch machines, the maximum needle thread size that can be sewn is usually determined by the capacity of the hook or shuttle in the machine, and the size of the needle being used. There must be enough clearance between the bobbin case holder and the hook base to allow the thread to move freely around the hook during the stitch formation. Sometimes an older hook will work better on larger threads because it has more play in the raceway allowing for more clearance for the thread.



Regular Single Needle Lockstitch Machine



The hook must also accommodate the use of larger than normal needles. In some cases, the retainer or gib of the hook is shaped differently to allow the thread to pull out of the hook with less resistance. Note that the hook must be properly lubricated.

Many sewing machine companies do make higher capacity Hooks that will allow larger threads to be sewn, but these are generally very expensive.

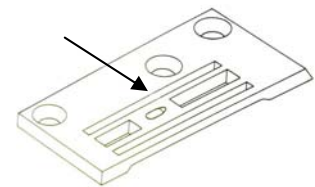


Heavy Duty Single Needle Lockstitch Machine

There are also machines designed for sewing very heavy threads used for sewing upholstered furniture and leather goods. Some manufacturers are purchasing these types of machines so they can sew extra large thread sizes up to Tex 500 or Tex 600 thread sizes.

Another option for sewing heavy threads on 301 lockstitch machines is to sew the heavy thread in the bobbin and using a regular size thread in the needle. This means that the seam is inverted when it is sewn. This is a common practice when setting front pockets or outlining the fly on a 5-pocket jean.

It is easier to use heavier thread sizes in the needle position of chainstitch machines, however, even these machine sometimes must be modified to allow the thread to be pulled up from under the needle plate with the least amount of resistance. This may include increasing the size of the needle hole in the needle plate.



RECOMMENDED NEEDLE SIZES FOR HEAVY THREADS

Most manufacturers who are sewing heavy denim are using a size 140 needle. When sewing heavier thread sizes, larger needle sizes must be used. Note: many times using a larger needle size will increase the occurrence of fabric damage and broken stitches due to needle-cutting.

Thread Tex Size	Minimum Needle Size (metric)
T-105 – T-135	140
T-150	150
T-180	160
T-240	200

A simple test to determine if the needle and thread are compatible is to thread the needle with about 12 inches of thread. Hold the thread fairly taught, at a 45-degree angle, and with a circular motion make the needle twirl around the thread. As the twirling motion of the needle slows down, the needle should slide freely from the top to the bottom of the suspended thread. If the needle does not slide easily, then sewing problems



will probably result.

THREAD TENSIONS REQUIRED FOR HEAVY THREAD SIZES

Generally a heavier thread size will require more thread tension to properly set the stitch on denim fabric. The heavier the sewing thread being used, the more needle thread machine tension that will be required. Lockstitch machines will also require heavier take-up spring pressure.

Also, all of the thread guides and eyelets may need to be used to help control the thread during the sewing cycle. This will also help to keep “French” knots from forming in the thread path that can restrict the proper flow of thread to the needle.

A&E has trained professionals who can help you make the right choice to optimize your quality and costs. If you have any questions, please contact your local A&E Sales or GRS Representative or A&E’s Technical Solutions Department.