

As is known, at manufacturing of sewing products three methods join of materials are used: thread method, welding method and glue method.

It is known that the thread method join materials more widely applied at manufacturing of various sewing products than, without thread methods join of materials, as thread method join materials is a universal method, i.e., with the help of the thread seam is possible to join any materials.

However, the currently used thread method join materials with the one line thread seam, has a lot of disadvantages.

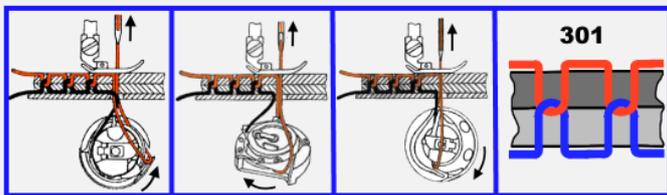
As know, at the present time mostly for join materials, the one line thread seam is used the lockstitch type 301 and double thread chain stitch type 401.

It is known that the technology of lockstitch type 301 and the existing technology of double thread chain stitch of type 401 were invented in the 19th century and having many disadvantages, which is not possible to eliminate through improvements, as they are connected with technology of formation of a stitch.

As know, what with the one line thread seems to have to join various materials through the thickness, rigidity and elasticity, to sew through a cross seams, joining several layers of material, one type of material or different types of materials. When sewing various materials use different types and numbers of sewing threads and use different types and numbers of needles depending on thickness, rigidity and elasticity of a sewed material.

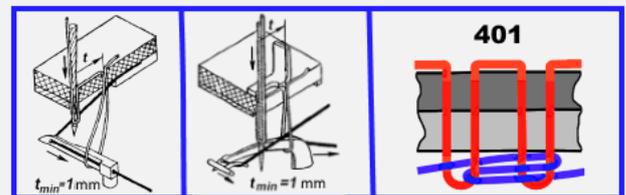
DISADVANTAGES OF LOCKSTITCH TECHNOLOGIES AND EXISTING DOUBLE THREAD CHAIN STITCH TECHNOLOGIES

DISADVANTAGES OF TECHNOLOGIES LOCKSTITCH TYPE 301:



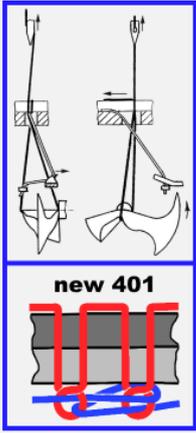
1. Used hooks (shuttles) with complex design.
2. Due to the limited amount of bobbin thread of the hook (shuttle), often have to refilling the bottom thread.
3. It is necessary lubricate of hook, oil-free hooks limit the speed of the sewing machine to 4000 stitches/min.
4. Depending on the thickness of the material need to use different types of thread take-up, i.e. no universal type thread take-up for all materials.
5. All thread take-up is forced to tighten the top thread is not evenly.
6. It is necessary to adjust the tension on the threads when changing the thickness and rigidity of the sewing material.
7. It is necessary to adjust thread-tension devices when changing the type and numbers of sewing threads.
8. It is necessary to increase the stroke the needle bar for sewing heavy materials.
9. It is necessary to adjust the height of lifting of a needle from extreme bottom position depending on the thickness of the material, to improve the reliability of the gripping through point of the hook (shuttle) the loop-overlap of the top thread formed by the needle.
10. It is necessary to adjust the hook relative to the needle at transition to other numbers of needle in the range from Nm.130/21 to Nm.60/8, as the maximum allowable clearance between point of hook and needle is 0,1 mm.
11. In the process of sewing may occur skip stitch, threads breakage and needle breakage.
12. In the sewing process, the mechanical strength of the top thread is reduced, due to the large number of repeated movements of the top thread through the material and the eye of a needle, thus, reducing the strength of the top thread increases with increase in the thickness and rigidity of the sewn material, and also with the increase of sewing speed.
13. The lockstitch seam is a little elastic and therefore not recommended for sewing elastic materials.
14. It is necessary to clean the hook from mud, and in the case of contact of the threads in the hook, can occur sudden stop of the sewing machine.

DISADVANTAGES OF EXISTING TECHNOLOGIES DOUBLE THREAD CHAIN STITCH TYPE 401:



1. Looper performing a complicated spatial movement is a complex mechanism and the looper performing oscillating movement must be paired with spreading the bottom thread.
2. A two-step process of tightening the threads of a stitch, i.e. in the first stage, a preliminary tightening of the loop of the top thread using needle and in the second stage of the final simultaneous tightening of the threads stitch using looper and feed the material, do not allow to obtain high-quality tightening of a stitch, if change the thickness and rigidity of the sewing material.
3. A two-step process of tightening the threads of a stitch are forced to use a special needle with two long grooves.
4. A two-step process of tightening the threads of a stitch not allows to dense (tight) join of materials with the help double thread chain stitch.
5. The lower side of a chain seam has a relatively thicker and very similar to a chain.
6. It is necessary to adjust the tension on the threads when changing the thickness and rigidity of the sewing material.
7. It is necessary to adjust thread-tension devices when changing the type and numbers of sewing threads.
8. It is necessary to increase the stroke the needle bar for sewing heavy materials.
9. It is necessary to adjust the height of lifting of a needle from extreme bottom position depending on the thickness of the material, to improve the reliability of the gripping through point of the looper the loop-overlap of the top thread formed by the needle.
10. It is necessary to adjust the looper relative to the needle at transition to other numbers of needle in the range from Nm.130/21 to Nm.60/8, as the maximum allowable clearance between point of looper and needle is 0,1 mm.
11. In the process of sewing may occur skip stitch, threads breakage and needle breakage.
12. Minimum stitch length is set at 1 mm, it is impossible to reduce the length of the double thread chain stitch to 0.5 mm for a more secure fastening end of the seam from unraveling.
13. It is impossible to obtain a highly elastic chain seam, when sewing highly elastic materials.
14. It is necessary to apply guards of needle to increase the reliability of the stitch formation.
15. When moving the needle down a small deflection of the needle may lead to collision of needle with looper.

We invented the ideal new «ZARIF» double thread chain stitch technology for high-quality joints various materials, using a rotating looper, needle with one long groove, pusher bottom thread, two independently working rotating take-ups for the top thread and bottom thread, as well as the material feed system.



We invented our ideal new «ZARIF» double thread chain stitch technology by making improvements to our old «ZARIF» double thread chain stitch technology from 1994, which in 2000, we received U.S. Patent No.6095069 (Patent US6095069): <https://www.google.com/patents/US6095069>).

In 1994 we were the first in the world in our old «ZARIF» double thread chain stitch technology used rotating looper for obtaining a double thread chain stitch. As is known, a rotating looper was invented in 1857 by the American inventor James E. A. Gibbs for obtaining the single thread chain stitch type 101 (Patent US17427: <https://www.google.com/patents/US17427>).

It is also known that rotating looper extends and resets loops threads by turning them 180 degrees, using his tail. Therefore, the use of a rotating looper in our sewing technology has allowed us to obtain a new type of double thread chain stitch, where the loop of the top thread and loop the bottom thread is rotated by 180 degrees.

The underside of our new double chain seam is very similar to a thick thread is laid along the seam, as loops threads in stitch is rotated by 180 degrees. As know, the existing double chain seam, the underside is very similar to a chain.

Our ideal new «ZARIF» double thread chain stitch technology is a world leader in join of various materials and combinations of various materials using the one line chain seam, because:

1. Qualitatively tightened the threads of the stitch, regardless of the thickness and rigidity of the sewing material, with thickness of material up to 8 mm when the needle bar stroke of 32 mm, without adjustment of the threads tension, if threads have a normal tension.
2. Dense (tightly) and very dense (tightly) join the various materials and combinations of various materials using the one line double thread chain seam, and a very dense (tightly) join the various materials is sufficient to increase only the tension of the top thread.
3. When a dense (tightly) and very dense (tightly) join of materials with the new normal double thread chain stitch, the thickness of the seam underside is significantly reduced.
4. It allows to very easily transition from a normal stitch to elastic stitch using the know-how, without adjusting tension the threads to improve the smoothness of the seam on lightweight materials and the elasticity of the seam on the stretch fabrics, without adjustment of the threads tension.
5. Use the needle with one long groove, i.e. the needle used in the technology of lockstitch.
6. High reliability of stitch formation is provided without the use of guards on the needle.
7. It allows sewing longer without cleaning muds from under the needle plate.
8. Height of lifting of a needle from extreme bottom position has a constant value for all materials, i.e. no adjustment needle bar when changing the thickness of the material.
9. In the sewing process there is no needle breakage as, the needle at movement downwards will not collision with a looper and a needle plate.
10. Thanks to the smooth tightening of threads by means of the rotating take-ups, in the sewing process does not occur breakage of the threads, if use a quality sewing thread, without knots and thick places.
11. In the process of sewing does not skip stitch, when sewing various materials and when sewing through thick seams.
12. Reduce the stitch length to 0,5 mm for improving the quality of fastening end of the seam with the condensation stitches.
13. Can get up to 5 stitches at the stitch length to 0, for fastening the end seam by means of the thread chain in the middle of the material.
14. For replacement needles from Nm.130/21 needle to Nm.60/8, no need to adjust the looper relative to the needle, as the maximum allowable clearance between point of looper and needle is 0,5 mm.
15. Working unites are of very simple construction and have long service life.
16. It allows obtaining new special non-raveling, high breaking strength and highly elastic double thread chain seams at high speed sewing, using sewing machine electronic feed material.

We on the basis of our new «ZARIF» double thread chain stitch technology have developed and have made the world's first pre-production model of a universal «ZARIF» double thread chain stitch sewing machine with a flat platform on the bottom feed of material and a needle bar stroke of 32 mm.

WORKING UNITS



- Needle with one long groove.
- Rotating looper.
- Pusher of the bottom thread.
- Take-up of the top thread.
- Take-up of the bottom thread.
- Bottom feed.

SPECIFICATIONS

- Application:** For all materials.
- Platform type:** Flat.
- The maximum speed of sewing:** 5000 s.p.m.
- Length of a stitch:** From 5 mm to 0,5 mm.
- Needle bar stroke:** 32 mm.
- Lift of the presser foot:** 9 mm.
- Maximum thickness of sewing material:** 8 mm.
- Type and number of needles:** DPx5, from Nm.60/8 to Nm.130/21.

ORDINARY NEW NORMAL AND ELASTIC DOUBLE THREAD CHAIN STITCHES



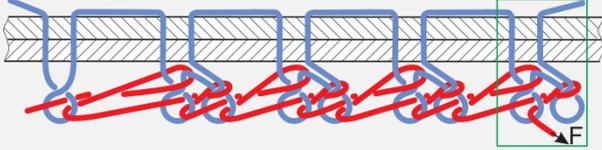
New normal double thread chain stitch type 401, for dense and very dense join of materials.

New elastic double thread chain stitch type 401, for improve the smoothness of the seam on light materials and elasticity of a seam on stretchy materials.

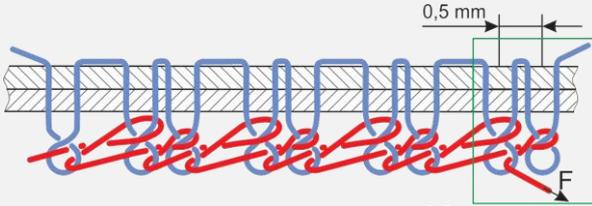
Please watch our full VIDEO paid only 1\$ in our Website (WWW.ZARIF.UZ), where we demonstrated all the advantages of our ideal new ZARIF sewing technology, before the existing sewing technologies.

SPECIALS NEW NON-RAVELING, HIGH BREAKING STRENGTH AND HIGHLY ELASTIC DOUBLE THREAD CHAIN SEAMS

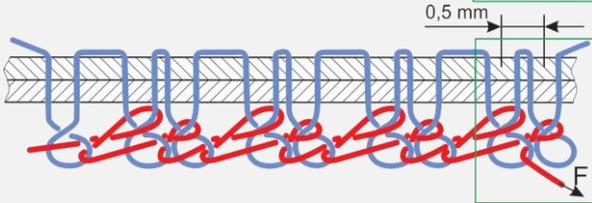
(To obtain the specials new double thread chain seams, at high speed sewing, the sewing machine should have electronic control of the feed materials, as in the sewing machine BROTHER S-7300A «NEXIO», VIDEO: <https://youtu.be/zqqD9Sa4oNY>).



Special new non-raveling chain seam, where every normal chain stitch has one thread chain, as bar-tack.



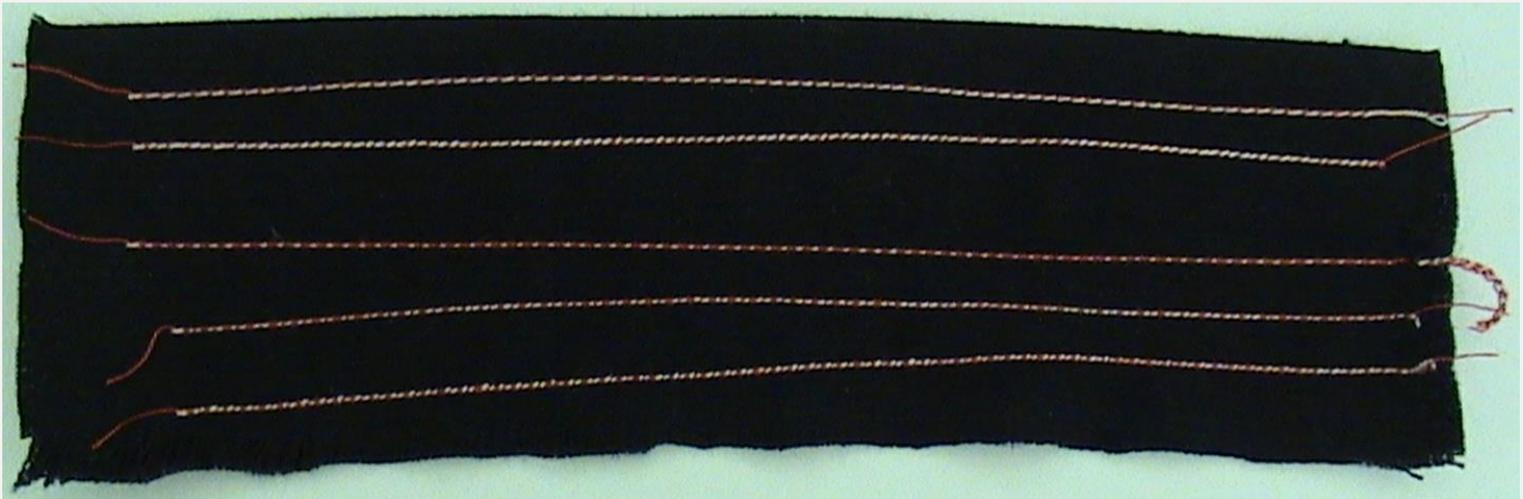
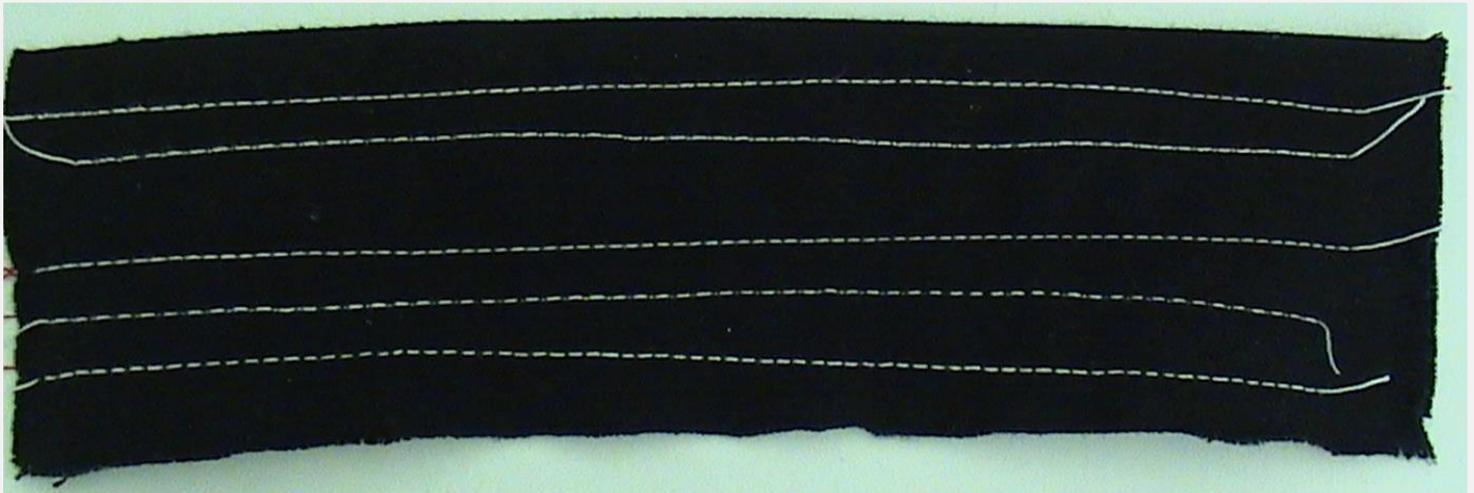
Special new non-raveling, high breaking strength chain seam, where every normal chain stitch has one normal chain stitch with a length of 0,5 mm, as bar-tack.



Special new non-raveling, high breaking strength and highly elastic chain seam, where every elastic chain stitch has one elastic chain stitch with a length of 0,5 mm, as bar-tack.

Our new special chain seams can be widely applied at manufacturing of military and special clothes, in those places of clothes where it is required high-strength and highly elastic seams, and also non-raveling seams, in case breakage and wear of threads in stitches.

SAMPLES SPECIAL NEW DOUBLE THREAD CHAIN SEAMS



Types and numbers of sewing threads: Top thread No. **40 S/2** and bottom thread No. **40 S/2**, Polyester-100 % («MING LONG» China).

1- seam: New elastic double thread chain stitch type 401, **stitch length 3 mm**.

2-seam: Special new non-raveling, high breaking strength and highly elastic chain seam, where every elastic chain stitch has one elastic chain stitch with a length of 0,5 mm, as bar-tack, **stitches length 3-0,5-3-0,5-3-0,5...mm**.

3-seam: New normal double thread chain stitch type 401, **stitch length 3 mm**.

4-seam: Special new non-raveling, high breaking strength chain seam, where every normal chain stitch has one normal chain stitch with a length of 0,5 mm, as bar-tack, **stitches length 3-0,5-3-0,5-3-0,5...mm**.

5-seam: Special new non-raveling chain seam, where every normal chain stitch has one thread chain, as bar-tack, **stitches length 3-0-3-0-3-0... mm**.

SAMPLES SEAMS ON VARIOUS MATERIALS, STITCHED WITHOUT ADJUSTMENT OF THE THREADS TENSION



Stitches length:

- 1- seam, stitch length 3 mm.
- 2- seam, stitch length 5 mm.

Types of materials:

1. Denim (12 layers);
2. Textile strap (2 layers);
3. Thick soft imitation leather (2 layers);
4. Thick hard genuine leather (2 layers);
5. Hard genuine leather (2 layers);
6. Thick soft genuine leather (2 layers);
7. Fine soft genuine leather (2 layers);
8. Light weight textile material (2 layers).

Types and numbers of sewing threads:

1. Top thread white color «YUYUE» No.210 D/4 Nylon -100% (China).
2. Bottom thread black color «DOUBLE A» No.150 D/3 Nylon -100% (China).

Type and number of needle:

System 134 (R), DPx5, Nm. 100/16 («SCHMETZ» Germany).

Tension of the threads:

Before sewing of various materials was set a normal tension for the top and bottom threads.

Type of stitch:

New normal double thread chain stitch type 401, for dense and very dense join of materials.

Please note:

1. High quality tightened threads in the stitch on various materials, regardless of the thickness and rigidity of the joined materials.
2. Bottom side new chain seam has a smaller thickness and is very similar to a thick thread is laid along the seam.

