

Sweater Stitch & Terminology Glossary

Global Technical Design
Sweater Training
Updated 04-20-18

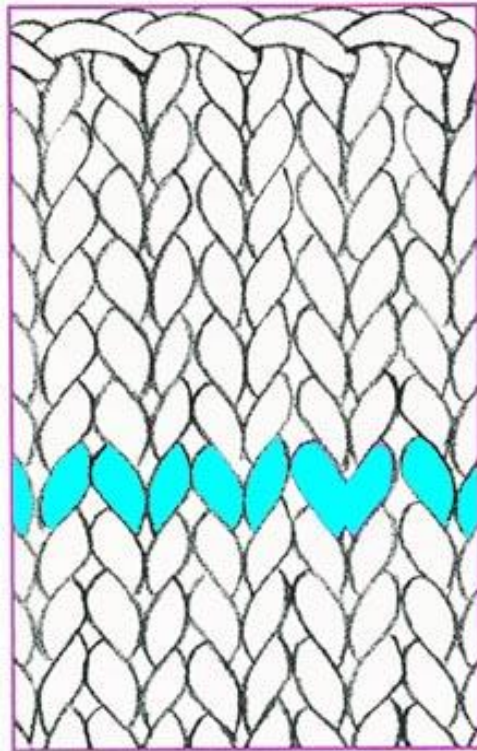
KOHL'S

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Course vs. Wales

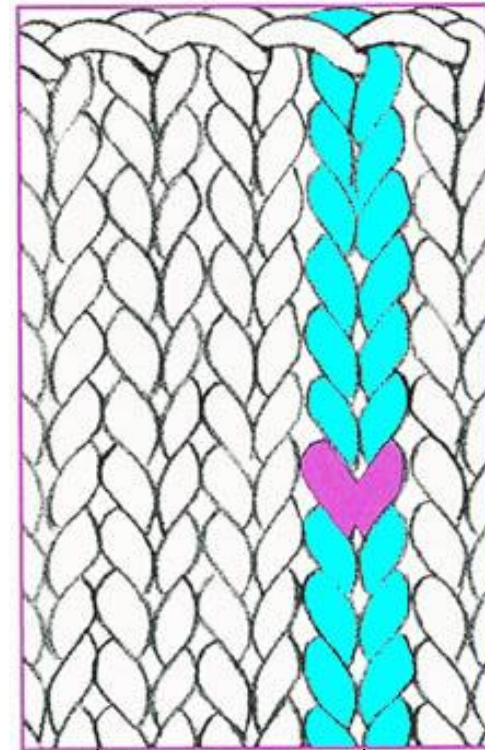
- Courses: Row of stitches (Horizontal)



1"

CPI: Courses per inch counted vertically

- Wales: Column of stitches (Vertical)



1"

SPI: Stitches per inch counted horizontally

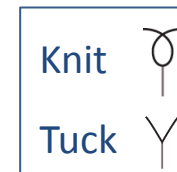
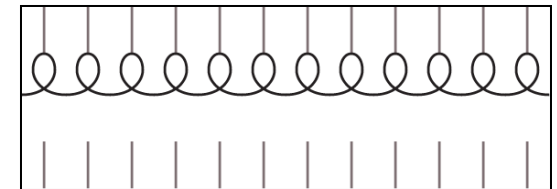
Stitches

GLOBAL TECHNICAL DESIGN
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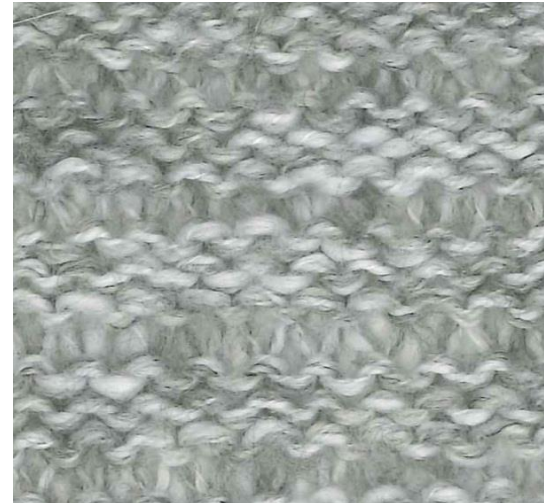
Jersey/ Reverse Jersey

- Single bed knitting.
 - Technical Face = Jersey/ Technical Back = Reverse Jersey.
 - Extensibility in width direction approximately twice length extensibility.
 - Curls (vertically toward face side, horizontally toward reverse side)
 - Jersey roll best practice: Cast-on with e-wrap or chain stitch method, and use DTM nylon unless otherwise noted in TP.
- Technical Face
 - Technical Back
 - Needle Arrangement



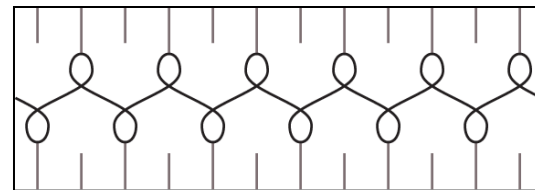
Slack Row

- Single bed knitting
- Same needle arrangement as jersey, but different rows knitted in different tensions.
- Curls (vertically toward face side, horizontally toward reverse side)
- Other name: Jersey/Reverse jersey with Tight Loose Tension
 - Technical Face
 - Technical Back



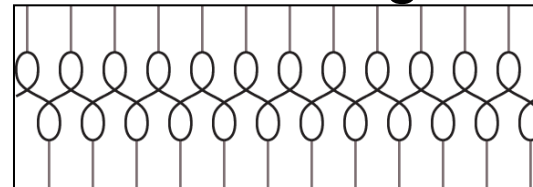
1x1 Rib

- Double bed knitting. Does not curl. Fabric becomes narrower.
- Repeat of one wale of face needle, another wale of reverse needle. Same appearance front and back.
- Very high degree of elasticity in the crosswise direction: Extensibility in width direction twice that of jersey.
- Transfers to jersey 1:1 ratio.
- Technical Face/Back
- Needle Arrangement



Full Needle Rib

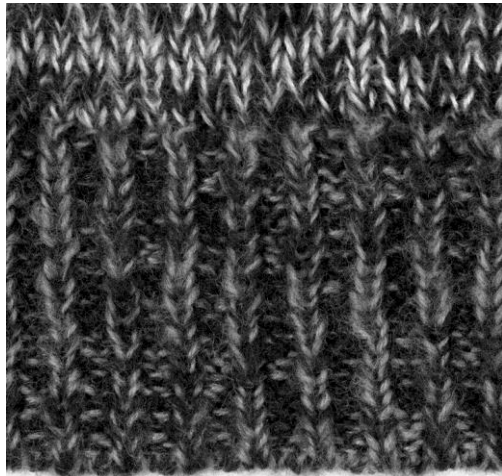
- Double bed knitting. Does not curl. Fabric becomes narrower.
 - Knitted on half pitch bed setting (Needles from each bed are between each other.)
 - Looks same on front and back and looks like a compacted 1x1 ribs.
 - Transfers to jersey 2:1 ratio
 - Has a very high degree of elasticity in the crosswise direction.
 - Abbreviation: FNR
- **Technical Face/Back**
 - **Needle Arrangement**



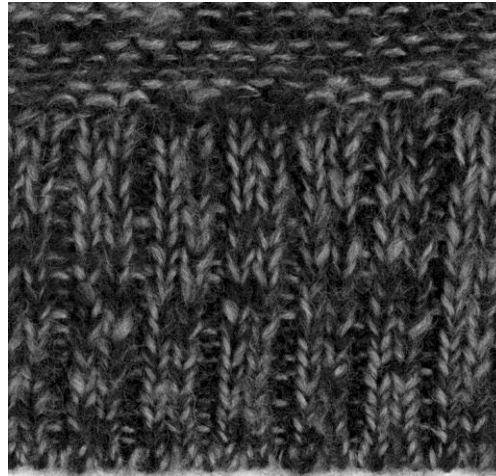
1x1 Flat Back Rib

- Double bed knitting. Does not curl.
- Repeat of one wale of face needle, two wales of reverse needles.
- Knitted on half pitch bed setting (Needles from each bed are between each other.)
- Transfers to jersey 3:2 ratio.
- Other name: 1x2 Rib.

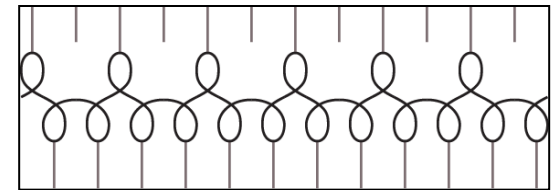
- Technical Face



- Technical Back

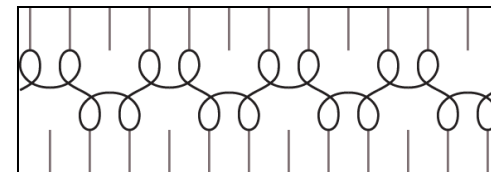
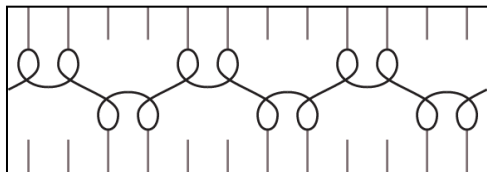


- Needle Arrangement



Ribs with 2x2 Visual

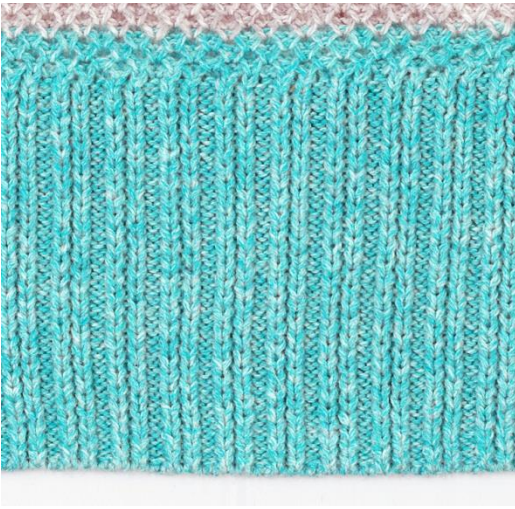
- Double bed knitting. Does not curl. Fabric becomes narrower.
 - Repeat of two wales of face needle, next two wales of reverse needle. Same appearance front and back.
 - Has a very high degree of elasticity in the crosswise direction.
 - These two stitches can be used interchangeably, depending on the required specs or visuals.
- **True 2x2 Rib**
 - Transfers to jersey 1:1 ratio
 - Knitted on full pitch bed setting
 - Ribs are flatter than technical 2x1 rib
 - **Technical 2x1 Rib**
 - Transfers to jersey 4:3 ratio
 - Knitted on half pitch bed setting (Needles from each bed are between each other.)
 - Ribs are more compacted than true 2x2 rib
- Technical Face/Back



2x2 Flat Back Rib

- Double bed knitting. Does not curl.
- Knitted on half pitch bed setting (Needles from each bed are between each other.)
- Fabric becomes wider than 2x2 or technical 2x1.
- Transfers to jersey 5:3 ratio.

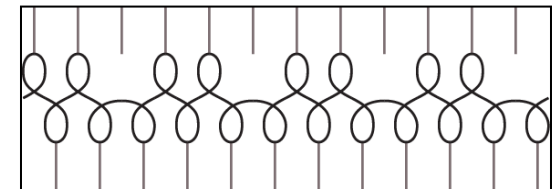
- Technical Face



- Technical Back



- Needle Arrangement

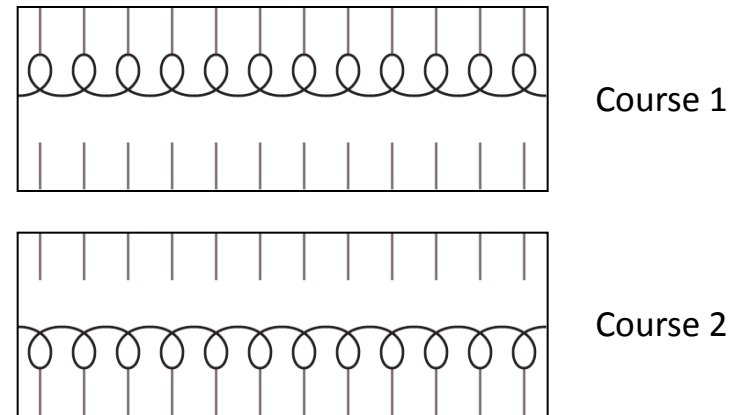


Links Links

- Double bed knitting.
- Same stitches on a course. Mix of jersey and reverse jersey in one wale.
- Has greater vertical extensibility.
- Does not curl. Fabric becomes thicker.
- Other name: Garter stitch.
- Technical Face/Back



- Needle Arrangement



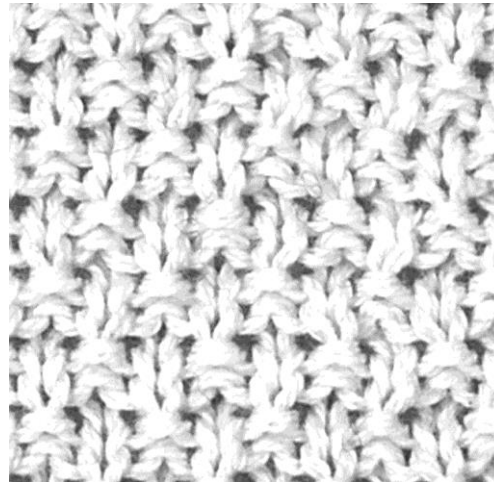
Seed Stitch

- Double bed knitting.
- Looks same on front and back.
- Does not curl. Fabric becomes thicker.
- Other name: Moss stitch

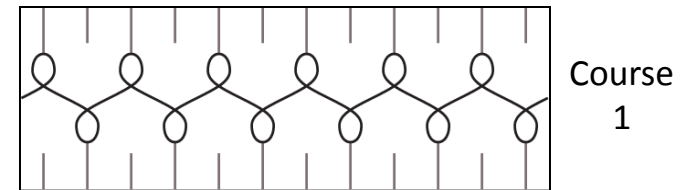
- Technical Face/Back (1x1 seed stitch)



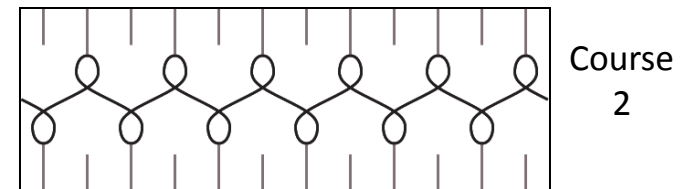
- Technical Face/Back (2x2 seed stitch)



- Needle Arrangement (shown in 1x1 seed stitch)



Course 1



Course 2

Tuck Stitch

- Various stitches with additional bar of yarn (= tucked stitch) behind the stitch loop.
- The resulting stitch produces an elongated wale (lengthwise ridge) on the front of the fabric, while on the back of the fabric the tuck is more visible.
- Fabric becomes thicker, wider and slightly less extensible.
- Examples of Tuck Stitches



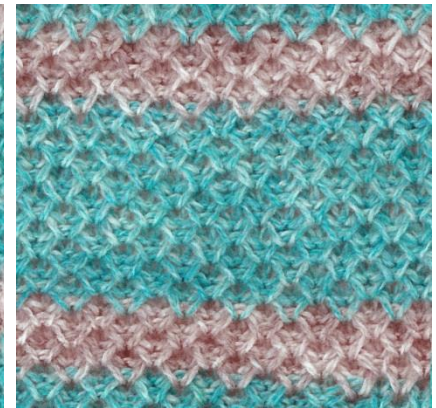
Face



Back



Face



Back

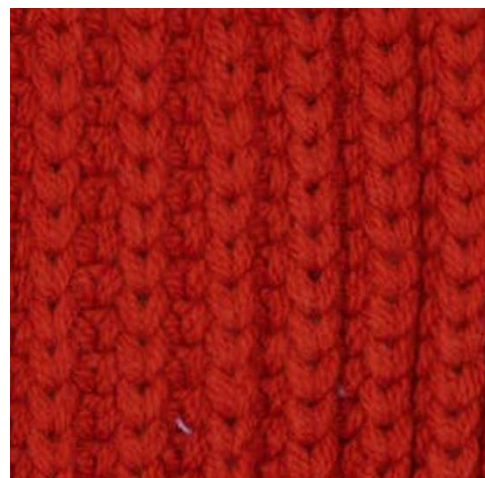
Half Cardigan Stitch

- A tucked rib stitch. Every other stitch is tucked on every other row.
- Looks different from front to back of the fabric.
- Fabric becomes wider than 1x1 ribs & narrower than full cardigan stitches.
- Knitting speed becomes slower, and yarn consumption becomes higher than jersey.
- Other name – Shaker stitch

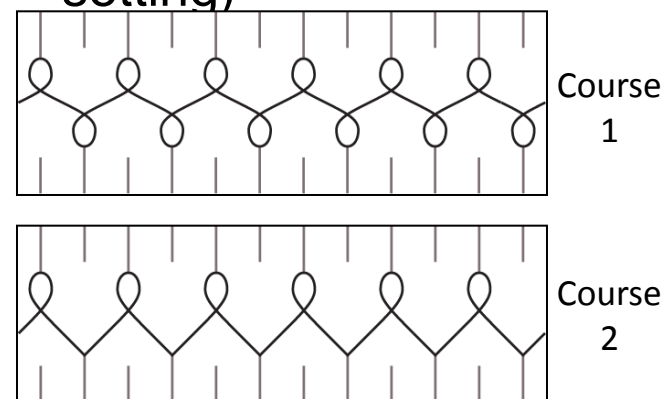
- Technical Face



- Technical Back



- Needle Arrangement
(shown in full pitch setting)

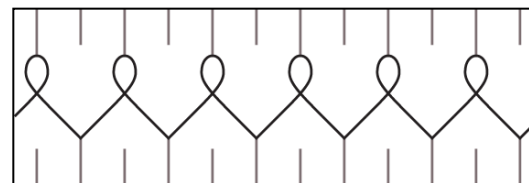


Full Cardigan Stitch

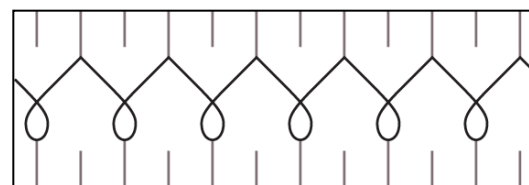
- A tucked rib knit stitch. Every other stitch is tucked on every row.
- Looks same on both front and back of the fabric.
- Fabric becomes wider and bulkier than half cardigan stitches.
- Knitting speed becomes slower and yarn consumption become higher than half cardigan stitch.
- Technical Face/Back



- Needle Arrangement
(shown in full pitch setting)



Course
1



Course
2

Half Milano

- Double knit fabric.
- Made up of 1 rib course and 1 plain course; with plain course on the face side of the fabric.
- Looks different from front to back of the fabric.
- Often used vertically at the edge of a panel to prevent rolling.

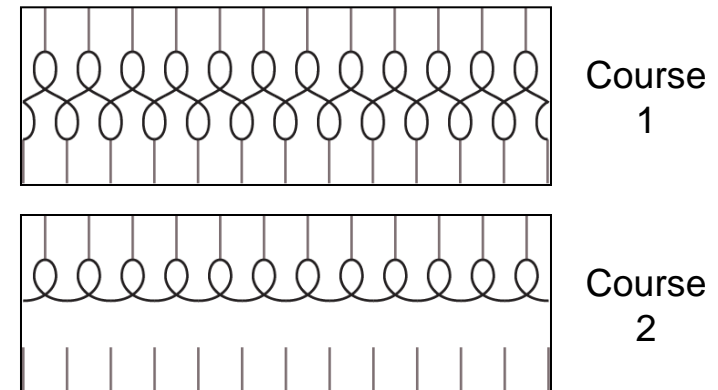
- Technical Face



- Technical Back



- Needle Arrangement



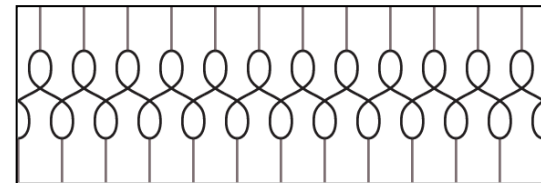
Full Milano

- Double knit fabric.
- Similar to half milano, but made up of 1 rib course and 2 plain courses; with plain course both on the face and reverse side of the fabric.
- Both sides of fabric are identical.
- Creates a dense and less extensible fabric.

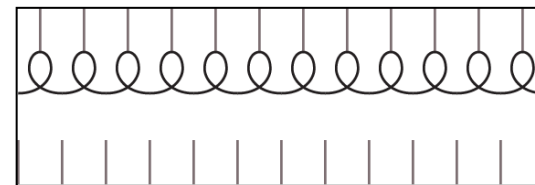
- Technical Face/Back



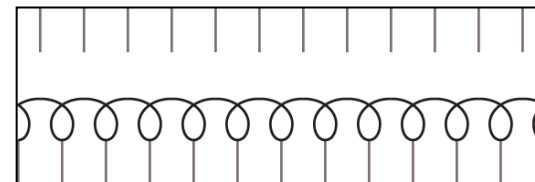
- Needle Arrangement



Course
1



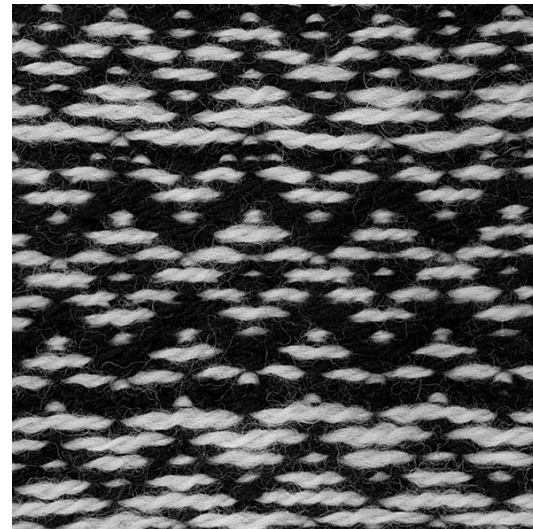
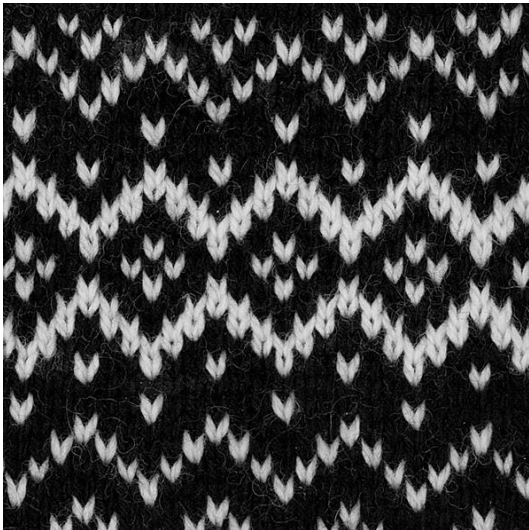
Course
2



Course
3

Float Back Jacquard

- Knitting with two or more colors of yarn in a row on a single bed.
 - Looks like jersey fabric with multiple colors on the front side.
 - The yarn that is not being worked is carried along the back side, creating strands or floats.
 - Tension and length of the floats can affect horizontal extensibility of sweaters.
- Technical Face
 - Technical Back



Ladder Back Jacquard

- Knitting with two or more colors of yarn in a row on double beds.
 - Floats on the back side of the jacquard are knitted to form a ladder shape.
 - Often used to reduce float length or to create an intarsia look with cheaper cost.
 - Fabric becomes thicker and heavier than float back jacquard.
- Technical Face
 - Technical Back



Double Knit Jacquard

- Knitting with two colors of yarn in a row on double beds.
- A jersey like fabric knitted on a machine equipped with two sets of needles
- Has double thickness of jersey.
- The two sides of the fabric are interlocked.
- Patterns on front/back side are inverted.

- Technical Face



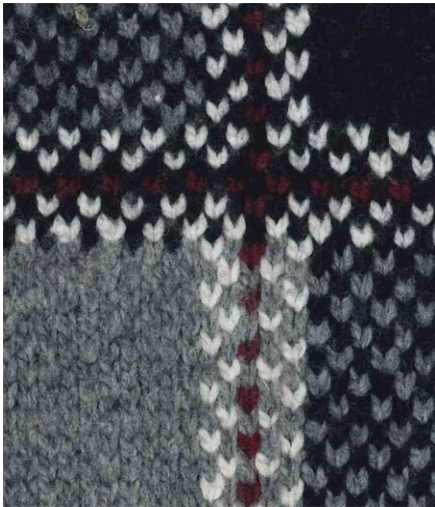
- Technical Back



Birdseye Jacquard

- Knitting with two or more colors of yarn in a row on double beds.
- The back side of the jacquard is knit in a birdseye pattern using all colors in the jacquard pattern.
- The pattern on the back side is irrelevant to the jacquard pattern on the face side.
- Fabric becomes thicker and heavier than float back jacquard.

- **Technical Face**



- **Technical Back**



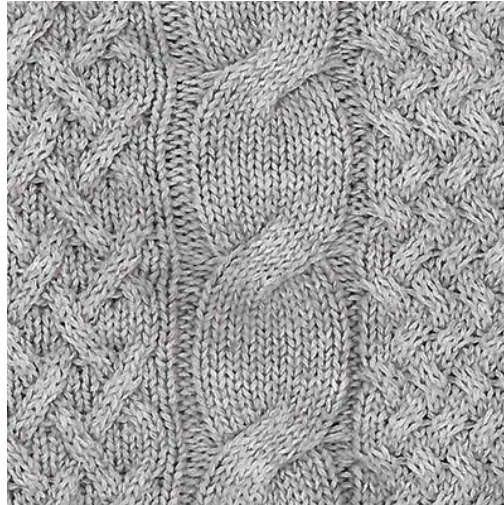
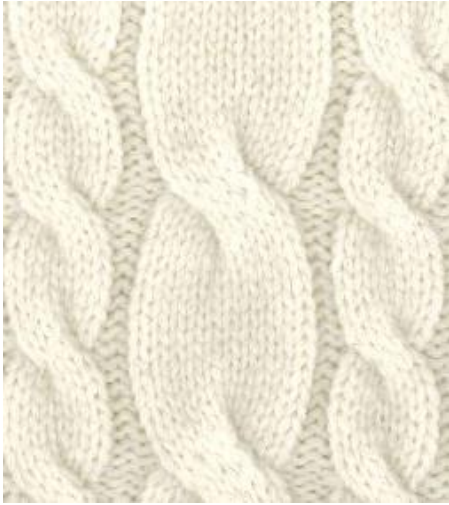
Intarsia

- Single bed knitting with blocks of color.
 - Unlike Jacquard, there is only one "active" color on any given stitch, and yarn is not carried across the back of the work.
 - When a color changes on a given row, the old yarn is left hanging and knotted off.
- **Technical Face**
 - **Technical Back**



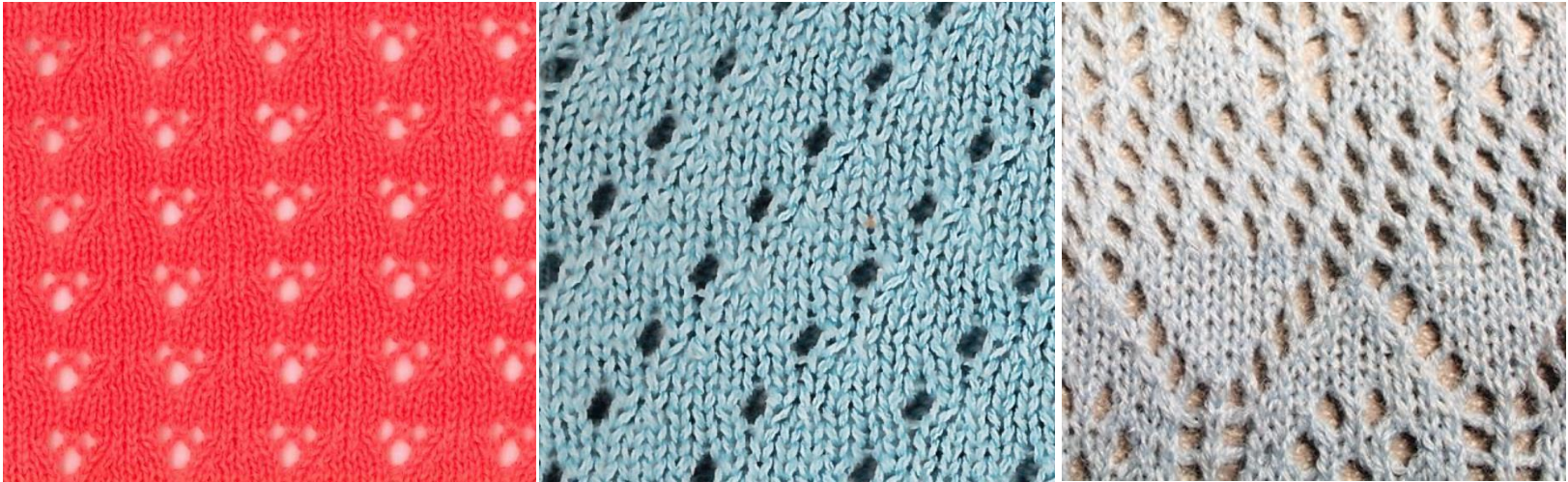
Cable

- Technique of creating various texture using crossed stitches.
- Fabric becomes narrower than jersey.
- Examples of various cable stitches



Pointelle

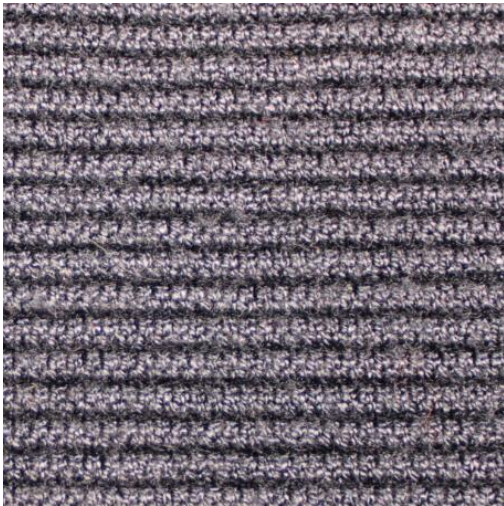
- Various openwork patterns.
- Has lacy appearance and light weight.
- Examples of various pointelle stitches



Ottoman Stitch

- Raised rib knit with horizontally linear texture looking like pintucks.
- Created by knitting extra rows only on the face side of the fabric.
- Fabric becomes thicker and horizontally less extensible than full needle rib.
- Double bed knitting.
- Other names: Pintuck stitch

- **Technical Face**



- **Technical Back**



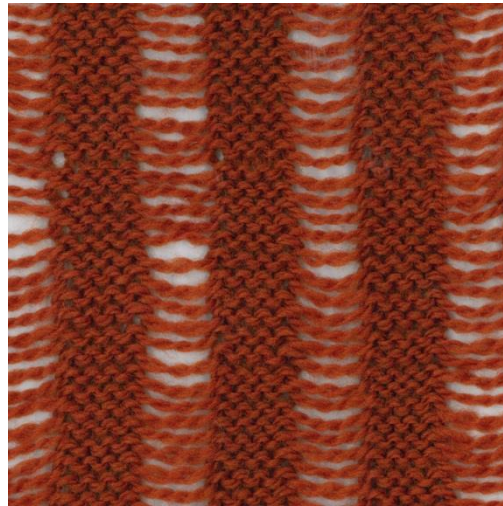
Drop Stitch

- Open stitch with vertically linear patterns
- Created by leaving a few needles in middle of row in idle position.

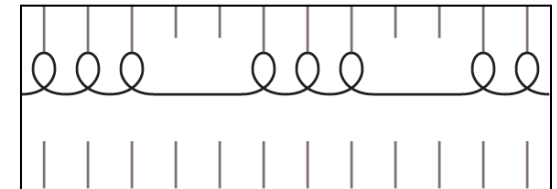
- Technical Face



- Technical Back



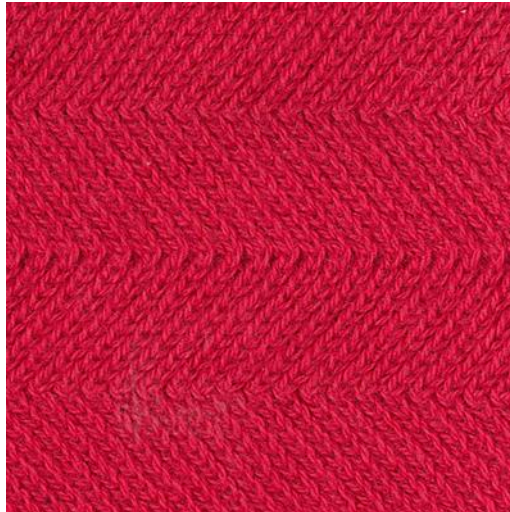
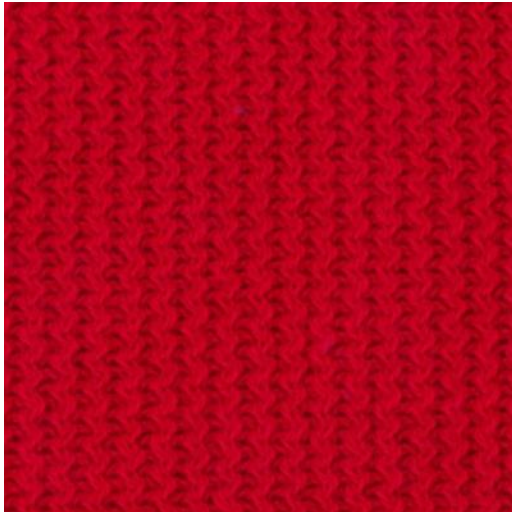
- Needle arrangement



** Depending on the stitch layout, the number of stitches in working or idle position can vary.

Rack Stitch

- Created by changing the pitch of one knitting bed in relation to the other bed, resulting in various zigzag shaped ribs
- Double bed knitting.
- Other name: Racked stitch, racking stitch
- Examples of various rack stitch



Techniques

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Plaiting

- Knitting technique of adding a second yarn on the back side of a stitch.
- The first yarn /color appears on the face side of the fabric, and the second yarn/color appears on the back side.
- Often used with nylon or lurex yarns.

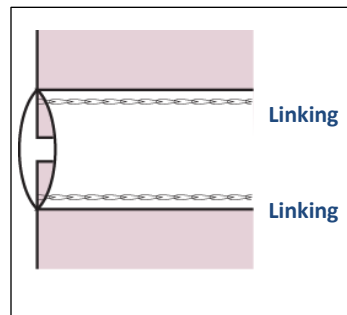
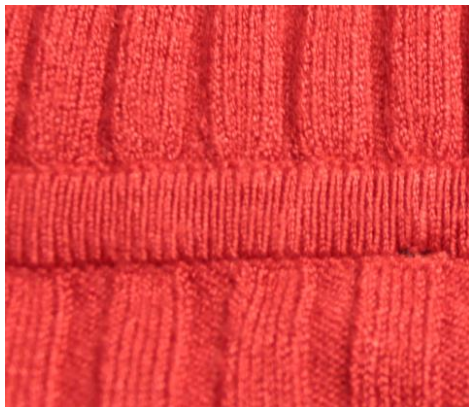
- Examples of Plaiting



Two Types of Tubular Join

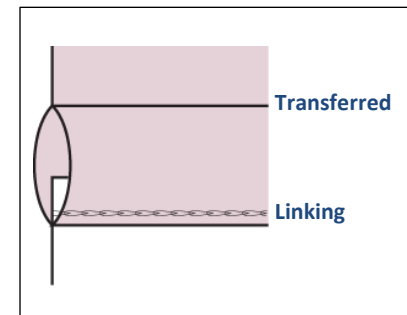
- Tubular Join with Two Strips of Jersey using linking

- Two panels are sandwiched between two jersey strips, and linked at both top and bottom edges.
- Two panels on either side of the seam can be eased on in different ratio from each other.
- Panel edges can be straight or curved



- Tubular Join with Tubular Base using linking

- Tubular base (tubular clamp) is knitted on at the end of one panel. The other panel is sandwiched between the tubular base and linked on (Linking seam only at one side)
- There's a restriction on the ratio of the number of stitches that can be linked on



Partial Knitting

- Shaping technique by knitting only part of the needles of the row, while leaving the rest of the needles in holding position.
 - Often used to shape shoulder slopes, darts, cleaner back necklines, heels of socks, or other 3-dimensional effects.
 - Other name: Short rows, short-rowing
-
- Example of Partial Knitting



Sweater Defects

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Barré Effect

- Unintentional appearance of horizontal streaks, caused by defective yarn with uneven size, irregular yarn feeding tension or bad needles.
- When caused by defective yarn:
 - Reduce defect by knitting self color “stripes” (or invisible stripes) by alternating yarns from multiple cones between rows.
- When caused by irregular feeding tension:
 - Correct by keeping yarn feeding tension regular and keeping the feeder clear of any obstacles.
 - Reduce knitting speed.
- When caused by bad needles:
 - Replace old or misaligned needles.



Dropped Stitch Vs. Broken Needle

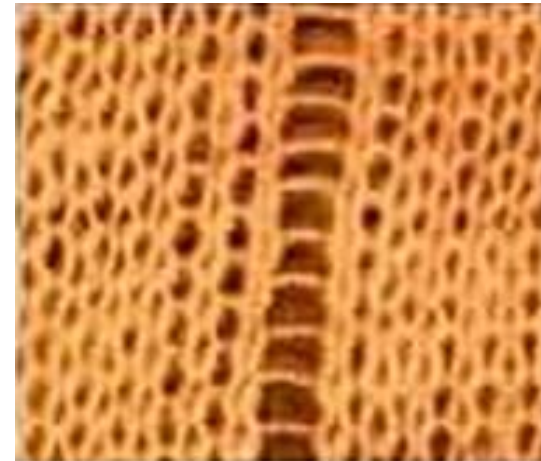
- Dropped Stitch

- A defect with an unknitted stitch caused by improper yarn feeder settings, insufficient yarn tension, or other mechanical malfunction on a knitting machine.



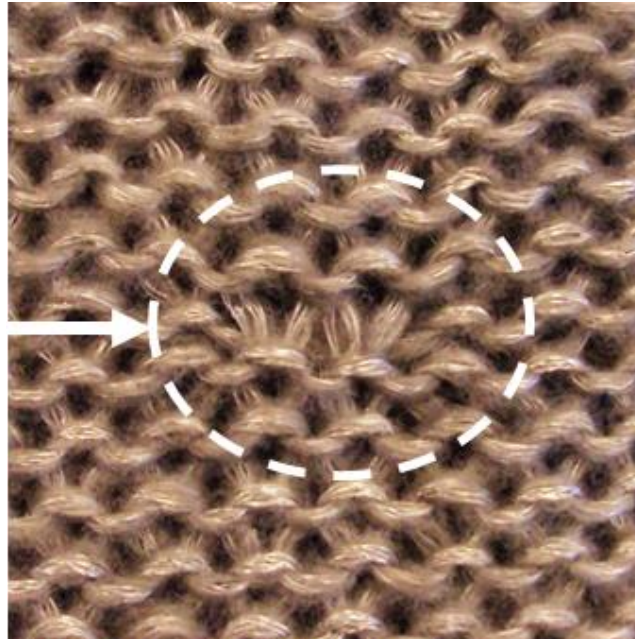
- Broken Needle

- Visually similar to dropped stitch, but the stitch never forms at a certain wale, caused by a broken needle.



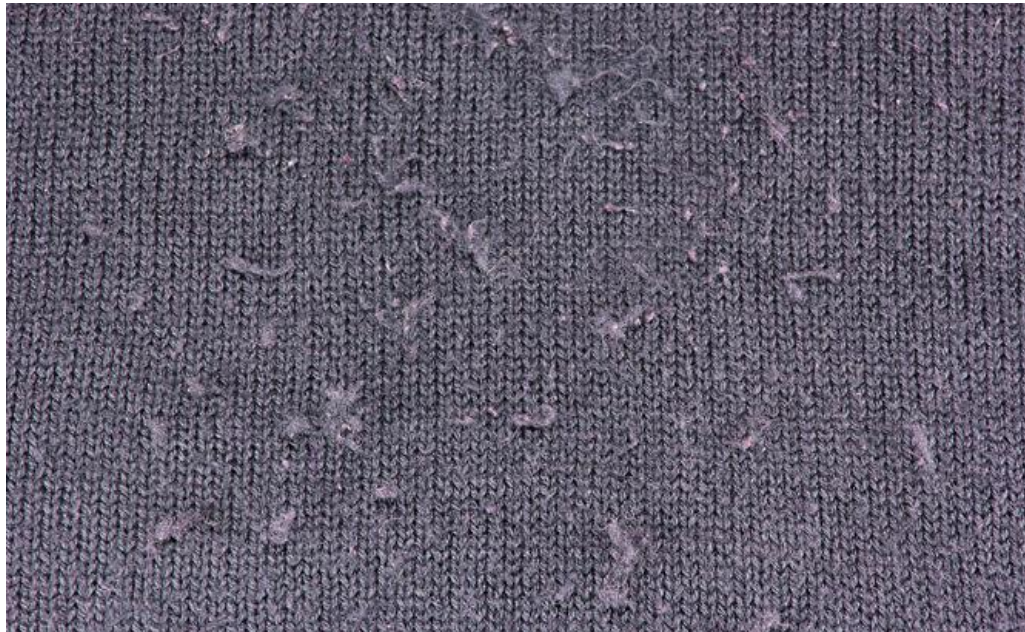
Skipped Stitches

- Stitches are unintentionally not knitted for one or more rows.



Pilling

- Loose fibers matted on the surface of knitted fabrics.
- Most fabrics pill to some extent after wear, but sweaters should not have pills before they are worn.



Contamination or Fly Yarns

- Foreign fibers spun into the yarn or knit into the fabric.
- To prevent contamination or fly yarns:
 - Yarn should be spun and knit in an environment free from other fibers and colors.
 - Yarn should be stored in a clean environment and adequately protected from debris.
 - Blow fibers out of the knitting beds after changing yarn for next color or style.

