

# Anatomy of Dropped Ribber Stitches

## Alignment

The cylinder slots and the ribber slots need to be lined up exactly to do even ribbing. Often the slots are not lined up on a Gearhart, due to changes in the thickness of the ribbed fabric and the Gearhart is not adjustable. Also, sometimes the slots are offset intentionally and not lined up with a slot at all, as in the 90 needles on a 60 slot cylinder. If the slots are not lined up, the machine will create uneven ribbing, but not necessarily drop stitches.

**Solution:** Use the adjustment screw (see your manual) to align the ribber needles up an equal distance from the adjacent cylinder needles. This usually places a ribber slot directly opposite a cylinder slot, but advanced knitters will have several times when this will not be true.

## Crank

Examine the flywheel attached to the crank of your machine. If the large weight on crank is lined up directly underneath the yarn carrier, and the built-in weight happens to tap the yarn carrier while being turned, this can jar the yarn carrier and drop stitches.

**Solution:** The crank should be rotated so that the big weighted side does not line up with the yarn carrier.

## Drive Pin

**BENT:** If the drive pin is bent, the timing may be different depending on which way the bent drive pin is leaning.

**Solution:** Take a hammer to the drive pin and straighten it if this happens.

**MOVEMENT:** The crescent-shaped plate that seats the drive pin may not be tightened down and this slippage or rotation will change the timing.

**Solution:** Check the washer under the tightening screw occasionally to make sure it stays tight. You may need to use a locking washer. Also, scoring the machine with an etch mark will help to get the timing back in place in case the crescent slips; you won't have to fiddle with it a bunch to figure out the right adjustment if you mark the machine while it is working properly. (Good insurance!)

## Heel Spring

If using the heel spring with the ribber, the tension may be too tight.

**Solution:** Either adjust the tension of the heel spring by rotating it slightly forward, or do not use the heel spring.

Check for a build-up of yarn on tension spring, mast or yarn carrier.

**Solution:** Clean the buildup of yarn or fuzz. With fuzzy yarns, you might want to use a yarn spray or wax to help prevent this buildup.

## Fin and Lug

Stitches may hang up where the fin on the bottom of the ribber dial meets the lug inside the cylinder (used to align cylinder/ribber slots.) When this happens, the stitches "bunch up" and eventually drop if not corrected.

**Solution:** Keep weight downward and watch for stitches hanging up around that area. If necessary, bend the lug inside the cylinder so it is in contact with the cylinder and won't allow the yarn to hang up.

## Needle

Poorly maintained needles can cause dropped stitches.

**Solution:** Check for any bent needles and replace them. Check for sticky latches caused either by being bent, corroded, or too much thick oil. If these cannot be repaired or cleaned, then discard and replace with new ribber needles. It may help to keep unused needles in a light oil solution to keep them moving freely and to prevent corrosion.

Needle latches close prematurely because of static electricity, especially during dry weather.

**Solution:** Add more oil to the ribber needles and dial.

## Ribber Dial

**DIRTY:** Sometimes lint and gunk are trapped under the tappet plate and do not allow the needles to glide smoothly.

**Solution:** Remove the tappet plate from dial and thoroughly clean the grooves and oil. This should be done as routine maintenance every 20-30 socks.

**WARPED:** Check to make sure the ribber dial is not warped.

**Solution:** Get a new ribber dial.

**CORROSION:** Check the ribber slots for corrosion. If the slots are irregular, they may cause uneven needle movement contributing to dropped stitches.

**Solution:** Attempt to clean the slots and repair where necessary. An ignition point file is good for this and is only about \$1.00 to \$1.50 at the Dollar Store. You may also find point files at auto supply stores.

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## Ribber Dial (continued)

**HULA:** Some dials may exhibit a "hula motion", usually around the 11:00 and 3:00 positions. If the plate has a "hula", it will force stitches off the rear quarter of the cylinder if the plate contacts the needles. The needle goes downward with the plate against it preventing the mesh from going down between the plate and cylinder. With no tension on the stitches, they come off.

**Solution 1:** The solution for a bad hula is sometimes to Dremel off the edge of the plate so it does not contact the needles when it drifts toward the rear quarter. Mark it with a felt pen and experiment until enough is shaved off so that the stitches can pass and don't drop. It looks a little weird being lopsided, but it works just fine. It also helps to keep a ribber plate like this slightly higher than the normal adjustment.

**Solution 2:** Sometimes the hula is also caused by a worn cam shell or cam ring. It's just something that you need to check out all over. The ribber arms are pretty strong and not apt to bend. The pin has a tendency to bend or be bent by people that can't get it to stop hula-ing.

**TILTED:** Sometimes the plate is tilted. This is usually a result of dropping the ribber and bending the drive pin or arm.

**Solution:** This may mean completely replacing the ribber arm. A bent or missing pin can be replaced with an appropriately sized bolt. Either the drive pin or the center pin can be replaced with a bolt if needed.

**CHIPPED:** Sometimes there is a chip in the plate which will interfere with the fold over of yarn.

**Solution:** Fill in the area with JB Weld or other filler and shape smoothly with a Dremel tool.

**HEIGHT -** The dial may be either too high or too low, relative to the cylinder and yarn carrier. The stitches form in both cases, but the direction of the pull on the mesh does not keep tension where it is needed.

**Solution:** Adjust the height of the ribber dial. If the ribber dial is too low, the pull is outward (rather than downward) on the ribber yarn. If the ribber dial is too high, it pulls the cylinder stitches up away from the top edge of the cylinder.

**TAPPET MOVEMENT:** While making a heel or toe, if the tappet plate continues to move about after the drive pin is out, repositioning the tappet plate to accept the drive pin can prompt dropped ribber stitches.

**Solution 1:** Move the ribber IN/OUT lever to OUT while the drive pin is also out. When the drive pin is back in, return the ribber IN/OUT lever to IN.

**Solution 2:** Allow sufficient space (minimal) between the tappet plate and the ribber arm pieces so that the tappet plate stays in place. Oiling the center pin may also help soothe plate doesn't "creep" when you do heels and toes.

**Solution 3:** On a Gearhart, remove the ribber completely to do the heels and toes.

## Tension

If the tension of the yarn on the ribber needles is too loose, the stitches will not hold.

**Solution 1:** Increase the tension so that the stitch is snug (as if when transferring to cylinder needles) but not too tight.

**Solution 2:** Increase your pull-down of the sock while knitting ribbing.

## Timing

The movement of the ribber needles must be timed with the placement of yarn in the loop of the ribber needle.

**Solution:** Get down at eye level with the top of your cylinder and watch the action of your needles as you make stitch. Slowly tap the crank. The yarn should catch in the ribber needle as it is on its way back into the tappet plate. If the yarn falls behind the ribber latch, the yarn will not catch and it will close the needle. If the needle is too far inward, the yarn will miss the needle entirely.

Sometimes the stitch will drop and sometimes it will just have skipped a row. Stitches will build up on needles and not come off if the timing adjustment screw loosens. Be sure to keep it tightened.

Stitches will not come off the ribber needles if the stitch is too small. This is especially true with large-eye needles. Be sure the stitch size is set as large as possible when using large-eye needles. Thin yarns will not come off the large-eye needles very well. Be sure there is no extra tension of any kind on the yarn when using the large-eye ribber needles especially.

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## Weights

If the location of pull-down device is too close to knitting row, this can cause dropped stitches.

**Solution 1:** Move your weights downward to get a more even pull on the yarn fabric. Lower pull is also a wider pull. If you are dropping edge stitches (the stitches at either side of your heel/toe rows or when not knitting in the round), your weights are probably too high. You may be pulling too hard or not hard enough. Experimentation is the key to success here.

**Solution 2:** Extra weight helps with the large eye needles and a thin yarn.

**Solution 3:** Some manuals recommends using just enough weight so you don't have to pull down at all except for the heel. The reason for this is that the machine makes the sock go around.

**Solution 4:** Some manuals tell you not to use your hand to pull down at all.

## Yarn

**STIFF:** Some yarns are too stiff to rib well.

**Solution:** Choose a softer more pliable and stretchy yarn.

**FUZZY:** Fuzzy or loopy yarns can get caught and not knit easily/cleanly.

**Solution 1:** Sometimes it is best to double the fuzzy/loop yarn with another thin yarn. Fuzzy or loopy yarns can knit in a loop rather than in an actual stitch. The secondary yarn will catch. After completing a sock in one of these difficult yarns, check it over carefully and pull hard in the lengthwise direction to make sure no stitches were missed. Sometimes the missing stitches don't show up until after one or two washings.

**Solution 2:** Add more weight and crank slower.

**ELASTICITY:** Some yarns are not elastic enough to knit good rib.

**Solution:** If a synthetic yarn is causing the problem, switch to another yarn and try again. You may also use a different yarn for the ribbed section and the synthetic for the foot or heels and toes. You might try running a strand of wool along with the synthetic to improve the elasticity.

**KNUBBY:** Some yarns may have knots or thick spots in the yarn.

**Solution:** Watch for knots and be aware if the yarn is going to have nubs. You may want to change yarns. You may avoid knitting knots by overlapping yarns for 3 to 4 stitches, then work the ends in later if there is a chance it might come apart. That is really only necessary on synthetics. Wool and most natural fibers will stay with a 3-stitch overlap.

## Yarn Carrier

**LOOSE:** If the yarn carrier is loose, it may be vibrating and letting the yarn slip improperly over the needles.

The yarn carrier may be loose because the base of the carrier is thinner than the slot it fits into, so it may lean to the left or right without you noticing it. That is what would cause you to have to knit faster on an Auto Knitter (the yarn carrier leaning a bit to the left).

**Solution:** Adjust the yarn carrier at the proper height and secure tightly. Add a lock washer if necessary. If the yarn carrier drops, you may run into your ribber needles or the yarn carrier can hang up on the latches. Be sure to keep the yarn carrier at the proper height. Keep a marking of some sort to indicate the proper level in case it has to be moved for some reason such as changing cylinders, cleaning, or removing a lodged or broken needle.

## Yarn Flow

The path of yarn may be obstructed or pinched.

**Solution:** Carefully check EVERYTHING along the path of the flow of yarn.

**CONES:** If the yarn is cone fed and on the floor, is the cone touching a table leg? Is your foot touching the cone? Is the yarn caught on the bottom of the cone? Is the yarn catching on the stand or table?

If the yarn is on the table, is it bumping into something else there (e.g. cone too close to yarn mast, etc.)? Is the cone lined up properly so that it feeds the same from both sides of the cone?

**Solution 1:** Either move the yarn source or the obstruction.

**Solution 2:** Too large of a cone will cause the stitches to catch underneath. The best size to use is a 1 pound or lighter cone.

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## Yarn Flow (Continued)

**SPEED:** The speed with which you turn the crank may cause jumping or swish-swashing of yarn as it is pulled from it's source. This will cause uneven tension ... sometime loose and then sometimes tight. Although this problem is more common when knitting from cones, the speed and evenness of cranking can be a problem with any type of yarn feed.

**Solution:** Learn to turn the crank in a steady even pace, watching the yarn flow to make sure that the ENTIRE yarn path is moving at the same pace. Auto Knitters drop off especially fast, so the cranking speed needs to be slightly faster than some other machines.

**BURRS:** There may be a rough spot along the path.

**Solution:** Check for burrs alongside and inside the holes of the yarn topper or the yarn carrier.

**PAINT ROLLER:** Sudden starts and stops or uneven crank turning may cause a backlash of yarn on the paint roller. This will cause irregular tensions.

**Solution:** As with the cone or balls or skeins, make sure that your knitting is steady and not too fast or too slow. It may help to unwind a small section of yarn so it begins to enter with no tension. Be sure to undo any of the backlash spin so you only have one irregular pull on the yarn (the initial start rather than when the yarn would be required to change direction).

This file can be found online at [www.sockknittingmachines.com/juana/directory/](http://www.sockknittingmachines.com/juana/directory/) .