# SAILRITE" ULTRAFEED" LS-1 & LSZ-1 GUDEBOOK

USE • MAINTENANCE • TROUBLESHOOTING • SCHEMATICS

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# Sew like a pro with Sailrite®

For in-depth information on setup, use and maintenance of your new Ultrafeed Sewing Machine, please reference our free video at Sailrite.com/Ultrafeed-Setup or search #300179XHT at Sailrite.com.



"I'm here to help! Give these videos a watch for seamless setup and use." - Eric Grant

# Ultrafeed<sup>®</sup> Video Chapters

- **1.** Introduction
- **2.** Machine Assembly
- 3. Start Sewing
- Tension Adjustments 4.
- **5.** Bobbin Winding
- Thread & Needle Combinations
- 7. Needle Replacement
- 8. Home Sewing
- **9.** Piping Installation

- **10.** Popular Accessories
- **11.** Maintenance & Lubrication
- **12.** Needle Bar Height
- **13.** Needle Strike (Cap Spring & Hook Maintenance)
- **14.** Driver Rotation
- 15. Timing
- **16.** Closing Remarks

# Table of Contents

Ultrafeed Safety

Preparing to Sew	2
Thread	2
Needles	3
Winding Bobbins	5
Threading the Machine	7
Removing & Installing Bobbin Case	9
Installing Bobbin in Bobbin Case	10
Picking Up Bobbin Thread	11

#### Using the Ultrafeed 12 Starting to Sew 12 Regulating Stitch Length 13 Sewing in Reverse 13 **Turning Corners** 13 Switching From Straight to Zigzag Stitch (LSZ-1 Only) 14 Straight Stitch Needle Positioning (LSZ-1 Only) 14 Thread Tension Adjustment 15 Advanced Thread Tension Adjustment 16 Adjusting Presser Foot Tension 17 Removing Material from Under the Presser Foot 17 Home Sewing 18

Welting & Cording Application	19
Ultrafeed Maintenance	21
Lubrication	21
Marine Use & Potential for Rust	21
LS-1 Lubrication Points	22
LSZ-1 Lubrication Points	25
Troubleshooting the Ultrafeed	28
Proper Needle Orientation & Installation	28
Replacing Take-Up Spring	29
Clutch Will Not Disengage	30
Removing the Hook to Clean the Shuttle Race Guide Shaft & Free Thread Jams _	30
Skipped Stitches	31
Thread Issues	33
Needle Issues	37
Bobbin Winding Issues	38
Ultrafeed Timing	39
Schematics	49
Specifications	63
Warranty	64

# **Ultrafeed Safety**

### Please observe the following when using your Sailrite® sewing machine:

- Do not operate in conditions where you or the machine are or may become wet.
- Operate the machine on a firm, level surface with adequate room for safe operation.
- Observe caution when placing your hands, other body parts or clothing near any moving parts including but not limited to the walking foot, needle, balance wheel and belts.
- Do not run the machine without its covers in place.
- Do not stop the movement of the balance wheel with your hands.
- Always use the proper voltage required for the motor.
- Do not drop the machine.
- Wear protective eyewear when sewing.



**WARNING:** This product can expose you to chemicals including Nickel (Metallic), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

**WARNING: CHOKING HAZARD:** Small parts. Not for children under 3 years. CONTAINS FUNCTIONAL SHARP POINT. Adult supervision recommended.

# Wear shoes when operating the foot pedal.

- Provide supervision when allowing others to use the machine, particularly children and those who are unfamiliar with the machine's operation.
- Do not use the machine around flammable materials.
- Do not use a plug adapter or extension cord that bypasses the ground pin.
- When plugging the foot control wiring into the machine, be cautious to connect the receptacles correctly to avoid electric shock.
- Always rotate the balance wheel by grabbing the top of the wheel and rotating toward the front of the machine.

# Preparing to Sew

# Thread

Ultrafeed Sewing Machines can handle any polyester, nylon, cotton, Sailrite<sup>®</sup> Lifetime Thread or monofilament thread from general purpose to heavy-duty V-92.

THREAD SIZE	GOV. SIZE	TEXTILE SIZE	TENSILE Strength	NEEDLE SIZE	FABRIC WEIGHT RECOMMENDED
Gen. Purpose	N/A	N/A	N/A	#10 or 12	< 6 oz.
V-30	AA	30	4.5 lb.	#12 or 14	< 1.5 oz.
V-46	В	45	7.1 lb.	#14 or 16	< 3 oz.
V-69	Е	70	10.6 lb.	#16 or 18	3-6 oz. & Sunbrella®
V-92	F	90	14.2 lb.	#18 or 20	6-20 oz. & Sunbrella
Sailrite® Lifetime	N/A	90	6.7 - 7.9 lb.	#14 or 16 (Mesh Fabric) #18 or 20 (Dense Fabric)	3-20 oz. & Sunbrella

Needle and thread recommendations for sewing specialty fabrics are available online in our Thread & Needle Recommendation Guide, downloadable from every fabric detail page or by searching part #300032XHT at Sailrite.com.

# Needles

Ultrafeed Sewing Machines require 135x17 needles sizes #10 to #22 or 135x16 (DI) leather needles, all available at Sailrite<sup>®</sup>. A size #20 needle is used for most medium to heavy sewing.

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## **Needle Types**



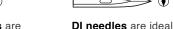
Round Point

**Bound Point needles** are used for most standard sewing. Serv7 needles are modified Round Point needles that have a humped scarf to prevent skipped stitches and reduce needle breakage.

### with knit or stretchy materials. $\bigcirc$ > (•)

for sewing heavy, dense assemblies.

## Needle Installation



Ball Point needles are specifically designed for use

SD1 needles are optimized

for working with dry, heavy or hard leather.

> 🚯

Ultrafeed needles are round on top, unlike home sewing machine needles. As a result, proper installation must be exercised carefully. Improperly installed needles are the main reason users call for help.

The needles have two distinct sides. One side has a long channel or groove running the length of the needle, and the other side has a short scarf (A) (i.e., a carved-out area) just above the needle eye.

When installed, the scarf (A) should face toward the right as you face the front of the machine. Ensure the needle is pushed all the way up into the needle bar (B) before tightening screw (C).

**CAUTION:** If the needle is inserted the wrong way, the machine will skip stitches and break thread.

A Scarf B Needle bar C Needle screw





Ultrafeed<sup>®</sup> LS-1 & LSZ-1 Guidebook



### **Disengage the Clutch**

To disengage the machine (for bobbin winding), pull the Posi-Pin<sup>®</sup> (F) out of the balance wheel. The balance wheel will now rotate without operating the machine. Push the pin into the hole at the center of the Posi-Pin nut to store (E).

#### To continue sewing, re-engage the clutch:

Push the Posi-Pin (F) through one of the holes in the balance wheel (G) (any will work). While maintaining pressure on the Posi-Pin, rotate the balance wheel (H) until the Posi-Pin locks into one of the balance wheel bushing holes. Rotation of the balance wheel will now cause the machine to function.



# Thread the Bobbin on the Machine:

- Thread comes off top of cone to Thread Stand arm (A).
- 2. Pass through thread post (B).
- 3. Wrap around bobbin tensioner (C).
- 4. Run under and up through a hole in top of bobbin (D). Place bobbin on post and push to the right. Hold onto thread tail briefly and power machine with the clutch disengaged to wind bobbin. Stop after several rotations and cut the thread tail off flush with the bobbin side.
- Continue winding until the bobbin is full. Then remove the bobbin from the winder post by pushing the post to the left and pulling the bobbin off. Cut the thread.

**CAUTION:** Do not overfill bobbin and force into bobbin case or the Ultrafeed<sup>®</sup> will not function correctly.

#### It's faster to wind while you sew!

Run thread to the bobbin winder from an extra cone of thread. Simply place the second cone beside the primary cone and lead the thread up through the same guides. Follow normal bobbin winding instructions but do not disengage the clutch.

# Threading the Machine

- Thread comes off top of cone to Thread Stand arm (A).
- Pass the thread through one hole in the thread post (most direct route to bobbin tensioner) (B). For home sewing, use the post to hold the thread spool.
- Pass through pig tail of bobbin tensioner (C).
- Loop through ear holes going down through the rightmost hole, skipping middle hole, and bringing thread around front and down again through the leftmost hole (D).
- Thread through upper tension (shown without cover knob) (E). Make sure lift lever (F) is raised up to release tension plates so thread can pass through. Be sure to catch the hooked spring end with the thread last.
- Pass through take-up arm (right to left)
   (G) and then under end cover (H).
- Pass through the needle bar thread guide hole (I) and then down through the needle eye from left to right (J).





NOTE: Machine tilted back in case/base.

# Removing & Installing Bobbin Case

The bobbin case (**B**) is located on the underside of the machine beneath the presser foot (**5**).

**Removing** — Lift the spring-loaded lever (**E**) and pull the bobbin case out. With the lever held open, the bobbin is captive in the bobbin case. Release the lever and the bobbin will fall out.

**Installing** — Pull and hold the spring-loaded lever outward to keep the bobbin from falling out and push the case onto the axle of the gib hook. The finger of the bobbin case (**F**) should point upward.

If the lever (E) is held up until the bobbin case is completely installed, the lever, when released, will lock onto the axle and there will be no clicking sound. If the lever is released before the bobbin case is pushed completely in place, there is a clicking sound when the case is pushed all the way on. The finger of the bobbin case will drop into the notch in the hook's retaining ring (G). Bobbin thread should loosely dangle.

# Installing Bobbin in Bobbin Case

- Insert a threaded bobbin (A) into the bobbin case (B) as shown in image (6).
- 2. Hold the tail of the thread while pushing the bobbin into the bobbin case.
- **3.** Pull the thread through the slit (C) in the edge of the bobbin case.
- Continue pulling the thread under the tension plate (D).
- Snap thread into position under tension plate and pull out about 12 to 18 inches of thread, checking for consistent tension.
- Holding the case with a view of the bobbin, the bobbin should turn clockwise when pulling on the thread tail (7). If it is not, take the bobbin out and flip it over.

E

F Finger

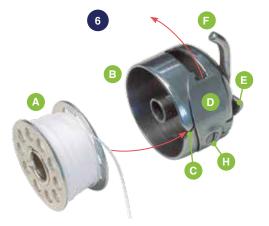
G

Spring-Loaded Lever

H Tension Adjustment Screw

Retaining Ring

- A Bobbin
- B Bobbin Case
- C Slit
  - · ·
- D Tension Plate



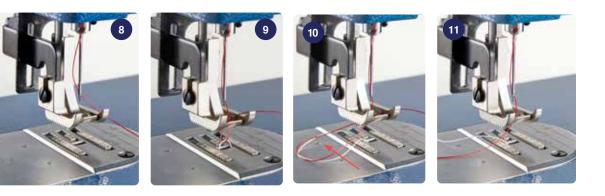


# Picking Up Bobbin Thread

- Hold the needle thread loosely to the right (8). Grab the top of the balance wheel and rotate toward the front of the machine (13) until the needle moves down and then back up.
- **2.** As the needle nears its highest point, pull the needle thread gently. The bobbin thread should come up through the needle hole, with the needle thread, in the form of a loop (9).
- **3.** Pass a small instrument (pen, seam ripper, screwdriver, etc.) under the presser foot from right to left to pull the thread out away from the machine (**10**).

**NOTE:** If the bobbin thread does not appear when the needle is lowered and raised, check to make sure 5 to 6 inches of bobbin thread is hanging loosely from the bobbin case and repeat steps 1-3 again.

4. Completed setup should look similar to (11). Now you're ready to sew!

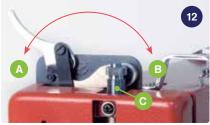


# Using the Ultrafeed

Ultrafeed Sewing Machines arrive tuned and optimized for sewing heavy materials like sailcloth and marine canvas. If you want to sew lighter, home fabrics you will need to make adjustments. Refer to "Home Sewing" section (p. 18).

## Starting to Sew

- 1. Plug the machine into an outlet.
- **2.** Use the lift lever (**12**) to raise and lower the presser foot onto the material.
- **3.** The thread ends from the needle and the bobbin should be behind the foot as you start to sew. Hold them down with your finger for the first few stitches to prevent a rat's nest.
- 4. To mark your starting position, you may want to rotate the balance wheel toward you until the needle is buried in the fabric. NOTE: Always rotate the balance wheel by grabbing the top of the wheel and rotating down toward you (13).
- Press the foot control pedal to begin sewing and release the trapped threads after the first few stitches.



A Raise B Lower

C Pressure Regulating Thumb Screw

**DO NOT** operate the machine when threaded without material under the presser foot (and foot lowered). The machine will most likely "lock up" and be inoperable until the thread jam is cleared.







## **Regulating Stitch Length**

The EZ Set<sup>™</sup> Stitch Length Plate (14) sets both forward and reverse stitch length. To set the stitch length, loosen the two thumb screws (A), slide the posts up or down, and tighten the screws. The thumb screw stops (B) restrict the movement of the Feed Regulator Lever (C), which is spring loaded to always rest against the upper stop.

## Sewing in Reverse

Position the needle fully up or fully down and push the stitch length lever all the way down. Hold the lever down until reverse sewing is completed. The lever is spring loaded and will return to its forward position when you release it. When the machine is operating at 1/4 speed or faster, reverse can be engaged on the fly.

**DO NOT** rotate the balance wheel in the wrong direction. Always rotate the balance wheel by grabbing the top of the wheel and rotating down toward you.

## **Turning Corners**

First, turn the balance wheel toward you until the needle is at its lowest point and then rises about 1/8 inch. Then, lift the presser foot, rotate the material to the new direction (the needle acts as an axis), drop the foot, and start sewing in the new direction.

**DO NOT** attempt to change sewing directions when the machine is at rest with the needle positioned mid-stroke. This will cause a skipped stitch or needle deflection.

Rotating the fabric while the machine is at rest with the presser foot down may bend the needle.

#### LSZ-1 Only

# Switching From Straight to Zigzag Stitch

The stitch width adjustment lever controls the stitch type as well as the width of your zigzag stitch (**15**). When the lever is on "0" the machine is in straight stitch. Moving the lever left toward 5 produces zigzag stitches of varying widths. The farther left, the wider the zigzag stitch.

**DO NOT** change the position of the stitch width lever when the needle is in the fabric or the needle may bend.

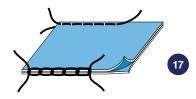


# Straight Stitch Needle Positioning

In straight stitch mode (stitch width adjustment lever at "0"), the needle can be moved left, right or center (**16**). This is very helpful when installing zippers where it is best to have the needle as close to the zipper teeth as possible. Gently push down on the lever before moving it left, right or center.

**DO NOT** change needle positioning when the needle is in the fabric or the needle will bend.





Knots centered — PERFECT STITCH





NOTE: Decorative cap removed.

# Thread Tension Adjustment

The correct combination of thread tension (**17**) results in a stitch that looks identical on both sides of the material (i.e., the knots of the stitches are pulled into the fabric and are no more visible on the top than on the bottom).

The upper tension knob (**18**) can be loosened or tightened up to five revolutions to compress a spring that squeezes two disks together.

When the presser foot is lifted, the upper tension disks are pushed apart. This releases the top thread tension so fabric can be removed from under the machine foot without fighting thread tension.

**DO NOT** lift the presser foot when the upper tension knob is less than a 1/2 turn from maximum (turned snugly clockwise) (**19**).

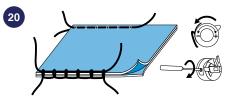
If upper tension is tightened all the way down, raising the presser foot may bend the lever inside the machine that separates the disks, preventing the disks from opening correctly.

# Advanced Thread Tension Adjustment

If you are still experiencing tension issues after having adjusted the upper tension knob, see below.

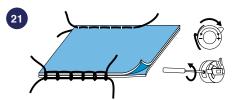
Tension changes to the bobbin thread should only be made when upper tension changes alone do not solve stitch tension. In general, bobbin tension requires just about a 2 ounce drag on the thread (similar to what you feel when pulling dental floss off a spool).

**NOTE:** For bobbin case adjustment, tighten or loosen the screw gradually in 1/4 rotation increments.



#### Knots pulled to top:

- 1. Decrease upper tension
- 2. Increase bobbin case tension



#### Knots visible on bottom:

- 1. Increase upper tension
- 2. Decrease bobbin case tension



## Adjusting Presser Foot Tension

The amount of downward pressure put on the fabric by the presser foot is controlled by the Pressure Regulating Thumb Screw (A). This screw compresses a long coil spring above the presser foot.

For sewing heavy, hard-to-feed materials, it is best to have very high pressure on the foot for optimum feeding. For these materials, tighten the screw until only 1/2 inch or less of the screw's threads are showing (**22**).

When sewing delicate or spongy materials, reduce the foot pressure. Turn the thumb screw until it comes free of the machine, and then rethread it about three complete rotations for the lightest spring setting (**23**).



# Removing Material From Under the Presser Foot

- 1. Stop the machine with the take-up arm (B) at its uppermost position.
- 2. Raise the feet with the lift lever (C).
- Pull the material straight back to remove it from under the foot (24). It may be helpful to rock the balance wheel forward and back to free the thread.
- Cut the two threads to free the material, leaving at least an 8-inch length of thread coming out of the machine.

# Home Sewing

Several of the same characteristics that make the Ultrafeed great for sail and canvaswork also make the machine suitable for upholstery fabrics and most home fabrics. However, as a heavyduty machine, the Ultrafeed is not ideal for sewing very light and delicate fabrics like silk, light sheers or chiffon.

#### Use this simple checklist before sewing light- to moderate-weight fabrics:

#### 1. Use an appropriate thread.

Home sewing machine thread should be used in clothing or general home sewing. Nylon thread is often preferred for interior upholstery.

2. Select an appropriately sized needle. Match the fabric and thread weight to the needle size (p. 2). New machines ship with a #20 needle installed.

#### 3. Decrease pressure on the foot.

Too much pressure when sewing lighter fabrics can scuff the material.

Adjust the foot pressure by loosening the pressure regulating thumb screw (**23**). If it comes out, just screw it back in a few turns. See "Adjusting Presser Foot Tension" (p. 17).

4. Decrease the upper thread tension and, if necessary, increase the bobbin tension (p. 16, 20).

Too much upper thread tension will cause the fabric to pucker. When using lightweight thread, it may also be necessary to increase the bobbin tension if the spring is not clamping down like it does on heavier thread.

# 5. Check for clockwise rotation of the thread spool.

When placing home sewing machine spools on the thread post, be sure the thread spool is turning in a clockwise manner to ensure the post it rides on is tightened, not loosened.

# Welting & Cording Application

The standard presser foot on the LSZ-1 includes a 5/32-inch welting tunnel. The LS-1 machine's standard presser foot includes a 1/4-inch welting tunnel.

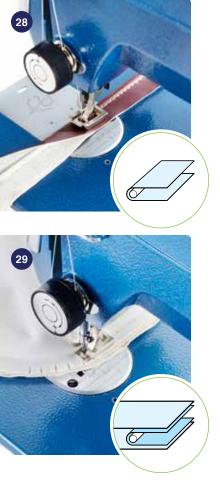
If looking from the back of the machine at the presser foot, there is a groove (tunnel) under the foot just to the right of the needle (**26** and **27**).



> LS-1 welting tunnel in presser foot (back view)



> LSZ-1 welting tunnel in presser foot (back view)



**NOTE:** If using the LSZ-1, first put the machine in straight stitch and center the needle.

Put the welting assembly under the groove (28). The groove under the foot works to keep the bulk of the material outside the arm of the machine.

When sewing welting on an assembly, work clockwise to ensure the bulk of the assembly stays clear of the machine (i.e., out from under the sewing machine arm) (**29**).

#### Make Your Own Welting, Cording & Piping

For how-to instructions, tips and advice on making and sewing with welting, cording and piping visit **Sailrite.com**.

# Ultrafeed® Maintenance

## Lubrication

The machine was thoroughly oiled prior to shipment. Oil all metal-to-metal working parts frequently!

### Use only sewing machine oil.

After oiling, briefly sew with scrap material to prevent soiling your work.

For good maintenance of your machine, you should oil it approximately every 8 hours of use, before it is put in storage, or anytime the machine sounds like it is running roughly.

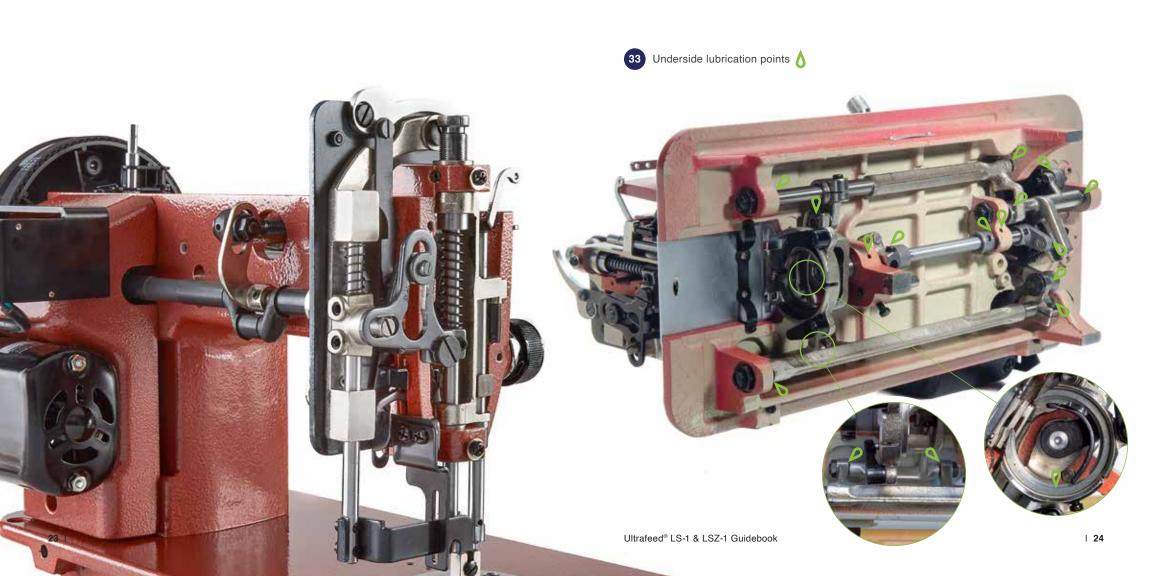
## Marine Use & Potential for Rust

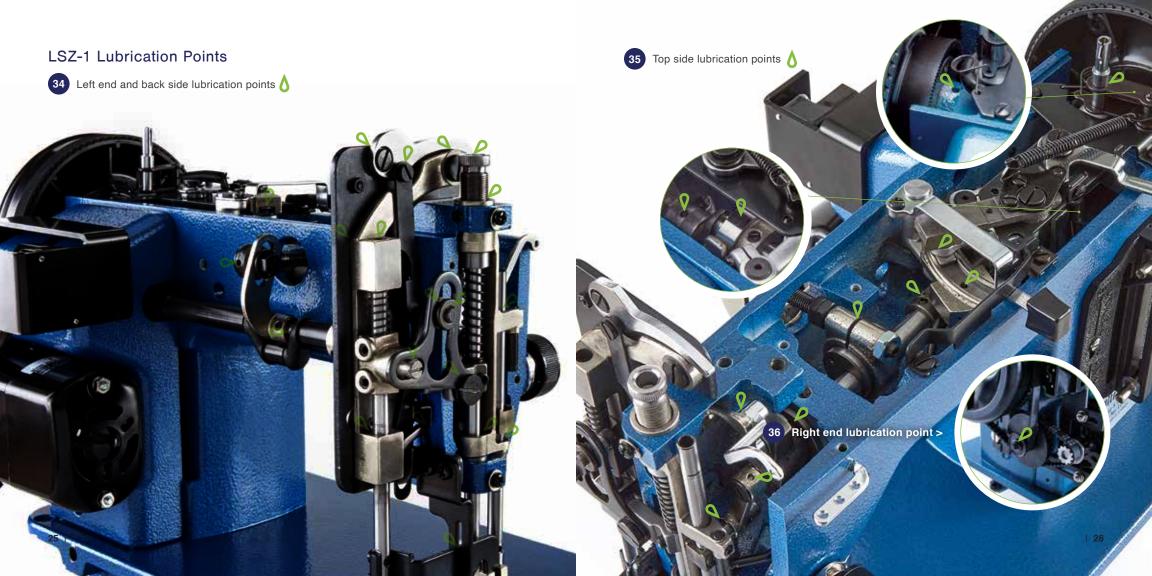
If the machine will be used or stored in a harsh environment, lubricate the working parts of the machine with regular sewing machine oil prior to storage and before each use.

We also recommend using Boeshield<sup>®</sup> T-9, a paraffin-based protectant, to protect metal surfaces and control knobs. Use even on the painted surfaces, metal parts, needle plates and presser feet.

Boeshield T-9 leaves a thin protective layer of wax. Use sparingly as a lubricant as wax buildup can create gumming friction over time.







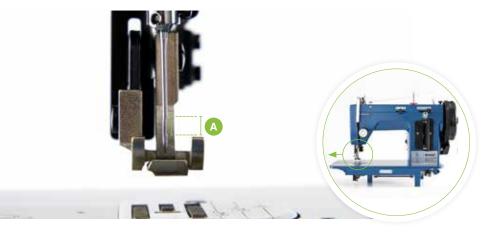


# Troubleshooting the Ultrafeed

Use this next section as a guide to better understand your Ultrafeed and to help fine-tune and resolve common sewing machine problems.

### **Proper Needle Orientation & Installation**

When installing a new needle, make sure the needle is inserted in the correct direction. With the front of the machine facing you, the scarf or carved-out area (A) of the needle should face to the right. Push the needle all the way up into the needle bar, then tighten the needle screw. The needle is now properly oriented and installed.



# 

# Replacing Take-Up Spring

If you are getting inconsistent stitch tension or if your thread looks loose and sloppy near the tension assembly under operation, check your take-up spring (H). If the wire hook has broken off, you'll need to replace the take-up spring. To do this, disassemble the upper tension assembly. Keep track of how the parts are removed as they will be replaced in the same manner (**38**).

- Pull the cover knob (A) straight off (wiggle a bit if needed).
- Unscrew and remove the threaded knob (B).
- Remove the big spring (C), the spring holder (D), the two tension disks (E) and F), and the keyway washer with pip (G).
- Remove the old take-up spring (H) by pulling it straight out.
- Slide the new take-up spring over the core post (I) so that the pip on the back faces in toward the machine and the straight arm of the spring faces down (approximately at a 6 o'clock position). Push the spring in all the way.

- **6.** Spin the arm of the spring clockwise past the slot in the core.
- While holding the spring arm in place, slide the keyway washer (G) back onto the core with the pip facing in, so the take-up spring arm rests on the metal pip of the washer.
- Replace the first tension disk (F) with the convex side facing out. Add the second tension disk (E) with the concave side facing out.
- 9. Replace the spring holder (D) with the concave side facing out and the spring (C). Screw the threaded knob (B) back on the post and add the cover knob (A).

# Clutch Will Not Disengage

If the clutch will not disengage, first remove the reverse threaded Posi-Pin<sup>®</sup> nut (p. 61, 2) from the balance wheel (p. 61, 6). Remove the balance wheel. Polish and lubricate the Posi-Pin bushing shaft (p. 61, 4). Slide the balance wheel back on and screw the reverse threaded Posi-Pin nut (p. 61, 2) down.

# Removing the Hook to Clean the Shuttle Race Guide Shaft & Free Thread Jams

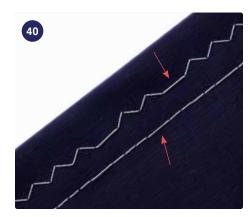
#### Perform these steps with care:

- **1.** Move the needle to its highest point by turning the balance wheel toward you.
- 2. Remove the bobbin case/bobbin.
- **3.** Turn each lever (K) one half turn away from the retaining ring (L).
- Pull the axle of the hook to remove retaining ring (L) and hook (M).
- Gently remove the accumulated lint and thread from the retaining ring (L), hook (M) and driver (N). Use a small brush to clean the parts or blow out the debris.
- Replace hook (M) opposite driver (N). The hook just rests in place. Be sure the axle is facing out.
- 7. Replace retaining ring (L) so that both

pins are under the black levers (K) when turned. The polished side of the retaining ring should be facing out.

8. Replace the bobbin and bobbin case before beginning to sew.





# **Skipped Stitches**

If your machine is skipping stitches, zigzag stitches will look like a straight stitch on either the right or left side with proper zigzag stitches being formed only occasionally. Straight stitches will have stitch lengths that look exceptionally long at times.

There are a number of causes for skipped stitches. Start with step 1 and stop as soon as the issue is resolved.

#### 1. Incorrectly Installed, Bent or Dirty Needle

Make sure your needle is installed correctly (p. 4), is not bent or damaged, and is free of any residue from sewing adhesive material. Fouled needles may be cleaned with rubbing alcohol. Bent or damaged needles must be replaced.

#### 2. Turning Corners Correctly

You can turn gentle corners while sewing at slow, consistent speeds. If motion is stopped and a change of direction is desired. Bury the needle going to the bottom position of the needle bar stroke and continue until the needle comes up 1/8 inch. Stop and lift the foot to twist the sewn assembly and make a direction change. Drop the presser foot and continue sewing.

Follow these directions to avoid badly tensioned corner stitches and to reduce the chance of a skipped stitch.

#### 3. Not Enough Foot Pressure

Heavy, closely woven materials like sailcloth and canvas can make the withdrawal of the needle from the fabric difficult.

If the presser foot is being lifted as the

needle comes out of the cloth, then the loop that the needle forms will be too small.

Increase the downward pressure on the presser foot by tightening the pressure regulating thumb screw (p. 17, A).

#### 4. Burred Gib Hook or Retaining Ring Cap Spring (41)

A needle strike to the gib hook (A) or the edge of the retaining ring cap spring's "triangular" opening (B) may result in a burr which can cause the thread to snag as it pulls through.

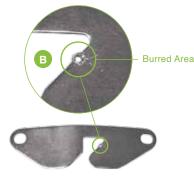
Remove any burrs by polishing them with emery paper or a fine file. If badly damaged, replace with a new retaining ring cap spring (#1603). One spare cap spring is included with your machine.

#### 5. Machine Has Gone Out of Timing

If skipped stitches continue, the machine has probably gone out of timing. The timing is checked by determining the relationship of the needle to the gib hook point.

To reset the timing on your machine, follow the steps outlined in "Ultrafeed Timing" (p. 39).





> Gib Hook

> Retaining Ring Cap Spring



# **Thread Issues**

## Thread is shredding, balling or breaking:

There are a number of causes for breaking thread. Start with Step 1 and stop as soon as the problem is resolved.

1. Make sure thread is not snagging anywhere from the cone/spool to the needle.

#### 2. Incorrectly Installed or Damaged Needle

Make sure your needle is installed correctly (p. 4). Carefully inspect the needle for burrs, warping or damage to the point that may be causing needle deflection and shredding the thread. Bent or damaged needles must be replaced.

#### 3. Incompatible Needle Size & Thread Weight

If the thread is too thick for the needle, it will not pass through the needle eye and form a loop and will instead ball at the needle. Check the compatibility of the needle size and thread weight (p. 2).

#### 4. Burred Gib Hook or Retaining Ring Cap Spring

A needle strike to the gib hook or the edge of the retaining ring cap spring's "triangular" opening may result in a burr, which can cause the thread to snag as it pulls through (**43** A and **B**). Remove any burrs by polishing them with emery paper or a fine file. If badly damaged, replace with a new retaining ring cap spring (#1603) and/or new gib hook (#9601).

#### 5. Machine Has Gone Out of Timing

If the machine is out of timing, it may cause the gib hook point to cut or shred the thread. To reset the timing on your machine, follow the steps outlined in "Ultrafeed Timing" (p. 39).



# There are thread loops on the underside of the fabric:

A tangle on the bottom side of the fabric means there is not enough upper tension. More than likely, the thread is not being pulled snugly between the tension disks (p. 29, **38**  $\in$  and F) on the upper tension assembly or is not between them at all.

- **1.** Lift the presser foot to push the two upper tension disks apart.
- 2. Firmly pull the thread against the center shaft between the disks.
- **3.** Drop the presser foot. The disks should close on the thread creating plenty of tension. Gently pull on the thread to feel the tension.
- **4.** If this did not solve the problem, pull the cover knob off the upper tension assembly and turn the knob found underneath to the point where its outer surface has three threads of the tension post showing. Then repeat steps 1-3.

Thread loops could also be caused by a burr on the retaining ring cap spring (p. 34, **43 B**). Remove any burrs by polishing them with emery paper or a fine file. If badly damaged, replace with a new retaining ring cap spring (#1603).

# Thread pulls out of the needle eye when starting to sew:

Confirm that the needle eye is threaded from left to right (p. 7, **4** J). Then pull out a longer thread tail and trap it with your finger. Release the thread tail after the first few stitches.

# A rat's nest forms in the first few inches of sewing and then clears up:

Eliminate this issue by trapping the thread tails from the needle and the bobbin as you start to sew.







# When stopping to turn a corner, the machine skips a stitch:

At the corner, bury the needle to the bottom of its travel and allow it to rise 1/8 inch. In this spot, raise the presser foot and then pivot the work on the needle to change sewing direction. Drop the foot to continue sewing. Follow this process to achieve the best quality corner stitch and minimize the skipping of stitches at turns.

## When removing fabric from under the machine it pulls hard and three strands of thread come up through the throat plate:

This usually happens when fabric is being removed during the middle of a stitch cycle. The hook under the machine still has a loop of thread around it.

Before removing fabric from under the machine, manually turn the machine forward until the take-up arm (p. 7, **4** G) has just passed the top of its travel. This allows the hook to release the thread loop and proper upper tension to be applied to finish the stitch (see p. 17).

## **Needle Issues**

#### The needle is breaking:

Needles often break if left in the fabric while toggling the stitch width or alternating between left, center and right positions (LSZ-1 only). Raise the needle out of the fabric before making these changes.

Needles will also snap if there are jams or tangles in the bobbin. Before installing your bobbin, make sure it is wound correctly and unwinds smoothly.

#### The needle hits the needle throat plate when reversing sewing directions:

This is most likely caused by a bent needle. To avoid bending needles when changing sewing direction, stop the machine with the needle positioned either at the top or bottom of its stroke. When the needle is completely up, the foot can move the material but cannot bend the needle. When the needle is completely down, the outer portion of the walking presser foot is up and cannot move the fabric, which also would bend the needle.

#### The balance wheel rotates, but the needle does not penetrate the fabric:

The Posi-Pin<sup>®</sup> clutch may slip if the pin is not pushed all the way into the bushing hole that locks the bushing to the balance wheel or if the bushing itself is loose.

- 1. Make sure the spring-pin is properly inserted.
- 2. If slipping still occurs, remove the Posi-Pin and Posi-Pin nut (p. 61, 2) and slide the balance wheel off the bushing.

Use a 2.5mm hex key to tighten the two set screws (p. 61, **33**) that fasten the bushing to the machine's upper shaft, then reinstall the balance wheel and check for proper operation.

# **Bobbin Winding Issues**

# The bobbin is not filling evenly, either too much thread on the top or bottom:

Refer to the section on "Winding Bobbins" (p. 5). Locate the bobbin tensioner (p. 5, 2 C) and loosen the screw just under the tensioner on the front of the machine. Move the tensioner down if the bobbin is filling with too much thread on the top. Move the tensioner up if there is too much thread on the bottom. Tighten the screw after correct positioning.

# The bobbin winder stops before the bobbin is full or after the bobbin has too much thread:

There is a bobbin stop (p. 49, 3) right next to the bobbin winder. It stops the bobbin winder when a certain thread level is reached. Simply loosen the screw found on top of the black lobe and turn the stop to change the thread level. Turning it will either stop the bobbin earlier or later. Tighten the screw once the correct position is found.

# **Ultrafeed Timing**

# Check the Needle Bar Height

- Check that the needle is installed properly (p. 4).
- 2. Remove the left end cover of the sewing machine as shown (47).
- Manually lower the needle bar to its lowest position by turning the balance wheel toward you.
- 4. We mark the proper height of the needle bar for your machine by putting a small scratch on the needle bar. Check to see if the mark is level with the top surface of the upper needle bar guide (A).

If aligned properly, the needle bar is set correctly. If not, continue to adjust the needle bar height.

## Adjust the Needle Bar Height

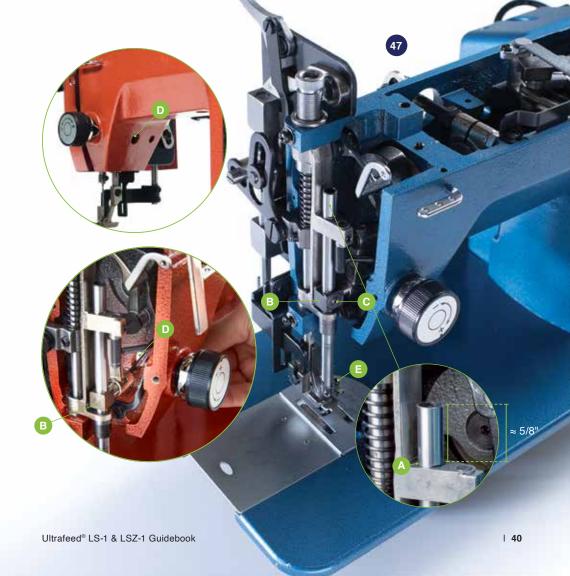
 Manually operate the machine to move the needle bar to the bottom of its stroke (all the way down).

LSZ-1 Only: Unlock the needle bar from the drive collar (B) by loosening the set screw (C). Use a 2.5mm hex key to loosen.

**LS-1** Only: Unlock the needle bar from the drive collar (B) by loosening the set screw that can be accessed through a hole in the machine casting (D). Use a 2.5mm hex key to loosen.

 With the needle bar at the bottom of its stroke, reposition the needle bar so the mark lines up with the top surface of the upper needle bar guide (A). Gently twist the needle bar up or down to position the mark, making sure the screw that secures the needle is facing the inside of the sewing machine arm (E). Tighten the drive collar set screw very tightly.

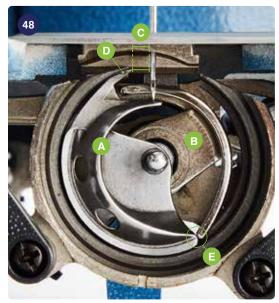
If your Ultrafeed<sup>®</sup> is still not performing properly after adjusting the needle bar height, proceed to check the rotational timing (p. 41).



### Hook/Driver Gap

Oscillating hook sewing machines have loose tolerances between the Shuttle Gib Hook and the Shuttle Driver. This play between the parts is intentional and allows the Ultrafeed® to sew heavier denier threads than many larger rotary hook machines. The typical play between parts is 0.04 inch.

### Check the Rotational Timing of the Shuttle Gib Hook



The shuttle gib hook (A) is driven by the shuttle driver (B). To change the rotation of the hook, the driver must be repositioned.

1. Turn the balance wheel so the gib hook point (D) is at its furthest position counterclockwise (48).

 Further hold the Gib Hook counterclockwise to remove any play at (E).

**3.** Measure the distance between the gib hook point and the needle. The driver is correctly positioned when the point is between 1/8 inch and 3/16 inch counterclockwise of the needle (C).

If spaced properly, the driver is set correctly. If not, continue to adjust the driver (p. 42).



## Adjust the Driver

4. The driver is secured to the lower shaft with two set screws (F). Loosen the screws and gently twist the shuttle driver to match (48, C). Keep the driver from sliding left or right on the shaft. If the fit is tight, carefully use a screwdriver as leverage.

After adjusting the driver you may need to adjust the rotational positioning of the shuttle race guide shaft (p. 43).

# Check the Rotational Positioning of the Shuttle Race Guide Shaft

- 1. Remove the needle plate (p. 49, 18) and feed dog (p. 57, 17 or 19).
- 2. Remove the bobbin case and hook; reinstall the retaining ring.
- **3.** Rotate the balance wheel until the needle enters the shuttle (**50**).

If positioned properly, the needle is centered in the "triangular" opening of the retaining ring cap spring from front to back (A).

 Minor adjustments can be made by loosening the two screws (B) to slide the cap spring forward or back.

If more movement is required, you'll need to adjust the rotational positioning of the shuttle race guide shaft (p. 44).



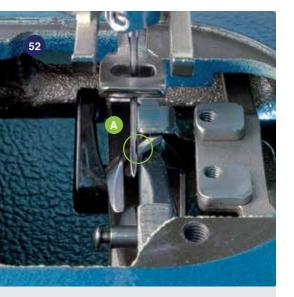
## Adjust the Rotational Positioning of the Shuttle Race Guide Shaft

- Loosen the compressible timing clamp screw (C) just a little.
- Twist the shuttle race guide shaft (D) carefully without moving it left or right. If it will not move, loosen the compressible timing clamp screw a little more.
- Verify that the needle is now positioned correctly within the retaining ring cap spring (50).

**4.** Tighten the compressible timing clamp screw.

After adjusting the rotational positioning of the shuttle race guide shaft, you may need to check the leftright positioning of the shuttle gib hook (p. 45).





> For the sake of clarity (52) shows the machine without the retaining ring installed. While this makes it easier to see the timing, the hook must be held in place with light finger pressure to keep it from falling out of the shuttle assembly when rotating the balance wheel.

# Check the Left-Right Positioning of the Shuttle Gib Hook

If the shuttle assembly and lower shaft have slipped left or right of the factory setting, the gib hook will not be in position to catch the loop.

- 1. Reinstall the gib hook (p. 30).
- 2. Make sure you have a #20 needle installed.
- **3.** Set the machine in straight stitch, center the needle (LSZ-1 only), and grab a flashlight.
- 4. Remove the needle plate and feed dog.
- Looking from the top down into the machine (52), slowly rotate the balance wheel. As the gib hook swings past the needle, the hook should be as close as possible to the right side of the needle without deflecting it (A).

If the gap between the needle and the hook is too large, the hook must be moved to the left to close the gap.

If the needle is being deflected by the hook, then the hook must be moved to the right.

**LSZ-1** p. 46 **LS-1** p. 47

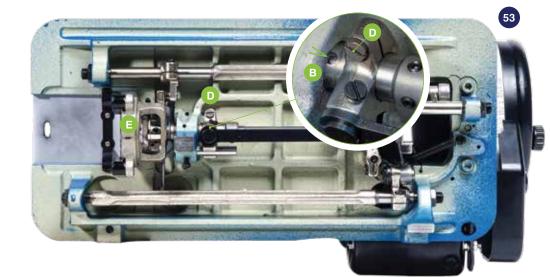
# Adjusting the Left-Right Positioning of the Shuttle Gib Hook

1. Set the machine to straight stitch.

LSZ-1 Only

- Make a mark on the cast iron bearing surface next to the large oil hole
   (B) in the shuttle race guide shaft. If the shaft should accidentally rotate, realign the mark with the oil hole.
- Incrementally loosen screw (D) until light taps will move the shuttle assembly (E) in either direction.

- Carefully move the assembly to position the hook as close to the needle as possible without deflecting (52).
- With the mark on the bearing surface and oil hole aligned (B), tighten screw (D).



## Adjusting the Left-Right Positioning of the Shuttle Gib Hook

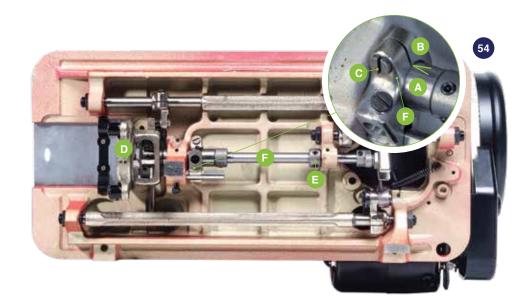
 Make a mark on the shuttle race guide shaft (A) where the halves of the compressible clamp meet (B). If the shaft should accidentally rotate, realign the mark with the clamp gap.

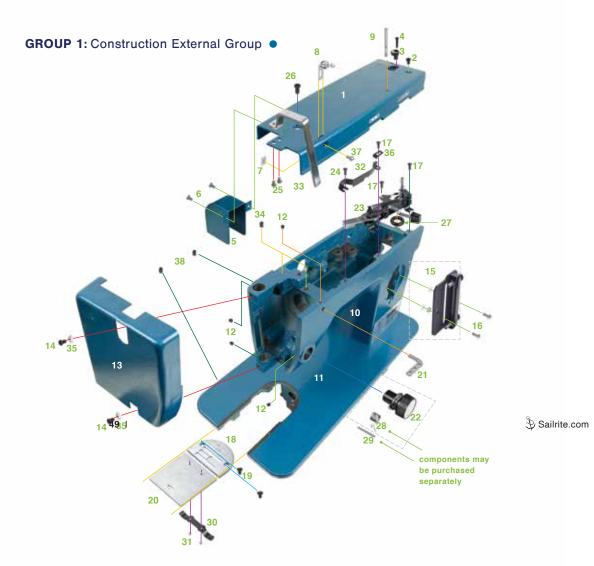
#### To move the hook to the left

- To move the hook to the right
- Incrementally loosen screw (C) until light taps will move the shuttle assembly. Carefully move the shuttle assembly (D) to the left.
- Move the assembly to position the hook as close to the needle as possible without deflecting (p. 45, 52).
- With the clamp gap (B) and reference mark (A) aligned, hold the clamp (F) to the far left firmly against the cast iron foot and tighten its screw (C).
- Holding the shuttle assembly (D) in place, loosen the right collar (E) and move it as far right as possible just resting on the frame.
- Tighten the two collar screws. There should be practically no side-to-side play in the center shaft (F).

- Loosen the two screws in the right collar

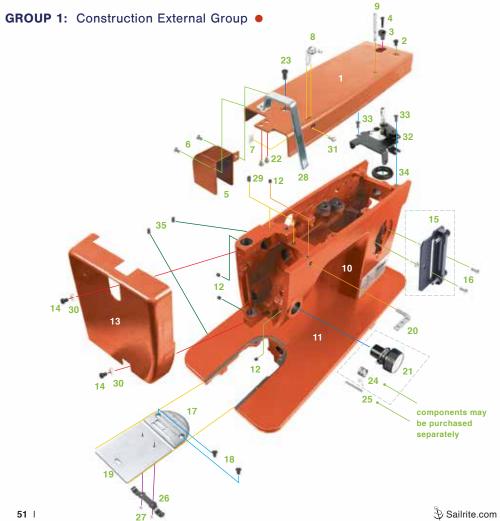
   (E) and move it to the left on its shaft and move the shuttle assembly (D) to the right.
- **3.** Move the assembly to position the hook as close to the needle as possible without deflecting (p. 45, **52**).
- Holding the correct position of the shaft, move the right collar (E) as far right as possible just resting on the frame and tighten its screws.
- Holding the shuttle assembly (D) in place, loosen screw (C) and move the clamp (F) all the way to the left against the cast iron foot.
- With the clamp gap (B) and reference mark (A) aligned, tighten the clamp screw (C). There should be practically no sideto-side play in the shaft (F).





#### • Applies to LSZ-1 Model Only

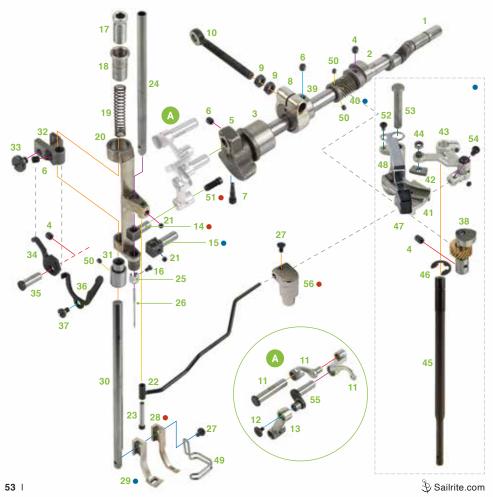
KEY	PART NAME	PART #	KEY	PART NAME	PART #
1	Top Plate	W047Z	25	Thread Guard Screw	10325
2	Top Plate Screw	B071	26	Top Plate Set Screw	E072
3	Bobbin Winder Stopper	E066	27	Bobbin Winder Ring	12018
4	Bobbin Winder Stopper Screw	E066-2	28	Thread Take-Up Spring	
5	Small Plate Cover	W047-1Z		(included in 22)	533
6	Screw	100577	29	Tension Release Pin	W184-
7	Bobbin Winder Assembly Nut	E070-1	30	Shuttle Race Slide Spring	A049
8	Bobbin Winder Assembly	E070	31	Shuttle Race Slide Spring Screw	v A050
9	Spool Pin	149	32	Straight Stitch Position Guide	W0012
10	Arm Body	N/A	33	Take-Up Arm Guard	10262
11	Bed	N/A	34	Set Screw	A01
12	Set Screw	103640	35	Left End Plate Washer	10325
13	Left End Plate	W048Z	36	L, R, C Lever Stop	10325
14	Screw	C097	37	Bobbin Winder Assembly	
15	EZ Set™ Stitch Length Plate _	105511		Screw	10325
16	Stitch Length Plate Screw	103263	38	Hinge Pin Set Screw	12006
17	Bobbin Winder Set Screw	B010			
18	Needle Plate (5mm)	W032Z			
19	Needle Plate Screw	A052			
20	Shuttle Race Slide	A048-B			
<b>U</b> ltra	feed LS-10 & LSZ-1 Guidehaek	W029			5
22	Upper Tension Assembly				
	(includes 28)	8511			
23	Bobbin Winder	W030Z			
24	Screw 1005	76 or <b>A036</b>			



• Applies to LS-1 Model Only

KEY	PART NAME	PART #	KE	PART NAME	PART
1	Top Plate		24		
2	Top Plate Screw	B071		(included in 21)	
3	Bobbin Winder Stopper	E066	25	Tension Release Pin	
4	Bobbin Winder Stopper Screw _	E066-2	26		A0
5	Small Plate Cover	W047-1	27		
6	Screw	100577		Screw	
7	Bobbin Winder Assembly Nut	E070-1		Take-Up Arm Guard	
8	Bobbin Winder Assembly	E070	29	Set Screw	
9	Spool Pin	149	30	Left End Plate Washer	1032
10	Arm Body	N/A	31	Bobbin Winder Assembly	
11	Bed	N/A		Screw	
12	Set Screw	103640	32		
13	Left End Plate		33	Bobbin Winder Set Screw	
14	Screw		34	Bobbin Winder Ring	
15	EZ Set™ Stitch Length Plate		35	Hinge Pin Set Screw	1200
16	Stitch Length Plate Screw	103263			
17	Needle Plate (5mm)	W032			
18	Needle Plate Screw	A052			
19	Shuttle Race Slide	120346			
20	Three Hole Thread Guide	W029			
21	Upper Tension Assembly				
	(includes 24)	8511			
22	Thread Guard Screw	103253			
23	Top Plate Set Screw	E072			

### **GROUP 2:** Sewing Transmission Group

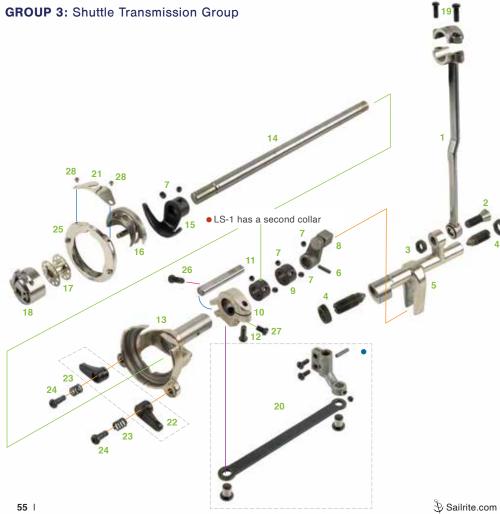


Applies to LSZ-1 Model Only
 Applies to LS-1 Model Only

KEY	PART NAME	PART #	KEY	PART NAME	PART #
1	Arm Shaft	E053	29	Inside Presser Foot	W012Z
2	Feed Cam	B007	30	Presser Bar	A035-1
3	Arm Shaft Bushing	B051	31	Presser Bar Lower Bushing	B028
4	Set Screw	A012	32	Presser Bar Bracket	W039
5	Thread Take-Up Lever Cam	B048	33	Presser Bar Feed Actuator Pivot	
6	Thread Take-Up Assembly Set Screw	A029		Screw	103257
7	Thread Take-Up Lever Cam Screw	103256	34	Tension Release Lever Drag Link	W043
8	Crank Rod Lever Cam Follower	W028-4	35	Tension Release Lever Drag Link Set	
9	Crank Rod Lever Cam Follower			Pin	D020
	Adjust Nut	W028-2	36	Tension Release Lever	
10	Crank Rod Lever Cam Follower Bolt	W028-1	37	Tension Release Lever Set Screw	
11	Thread Take-Up Assembly	E020	38	Zigzag Drive Gear Cam •	
12	Needle Bar Connecting Rod Set		39	Presser Bar Actuator Cam	
	Screw - Reverse Thread	E020-2	40	Helical Gear •	W000Z
13	Needle Bar Connecting Rod	B018	41	Needle Displacement Regulator	W003Z
14	Needle Bar Connecting Stud	A042S	42	Assembly  Block Slide	
15	Needle Bar Connecting Stud •	A042	42	Zigzag Connecting Link and Screws	
16	Needle Screw	A092	43	Collar for Zigzag Connecting Link	
17	Presser Regulating Thumb Screw	A031	45	Zigzag Vertical Shaft •	
18	Presser Regulating Thumb Screw		40	Snap Ring for Zigzag Vertical Shaft	
	Socket	W010	40	L, R, C Lever Cap	
19	Presser Bar Spring	A032	48	L, R, C Lever	W00320
20	Needle Bar Support		49	Needle Guard	W0032L
21	Needle Bar Set Screw	D097	45	(220-240 Volt Ultrafeed <sup>®</sup> Only)	102627
22	Zigzag Connecting Rod	W015	50	Set Screw	
23	Needle Bar Connecting Joint Pin		51	Pillow Block Screw	103258
24	Needle Bar	W066	52	Screw	B103US
25	Needle Thread Guide	W067	53	L, R, C Lever Pin	
26	Needle #20 (135X17)	7010	54	Screw	
27	Presser Foot Screw		55	Needle Crank Arm	
28	Inside Presser Foot		56	Connecting Rod Set Base •	

Ultrafeed<sup>®</sup> LS-1 & LSZ-1 Guidebook

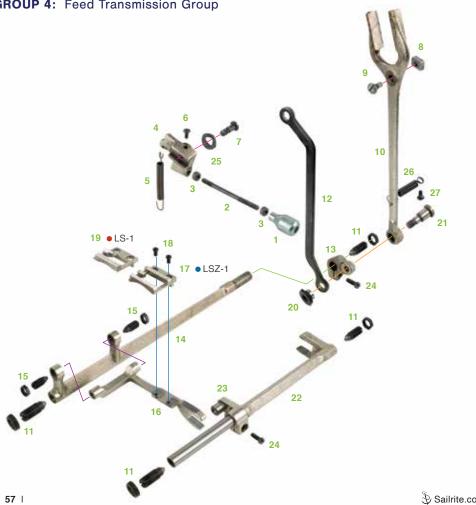
| 54



Applies to LSZ-1 Model Only
 Applies to LS-1 Model Only

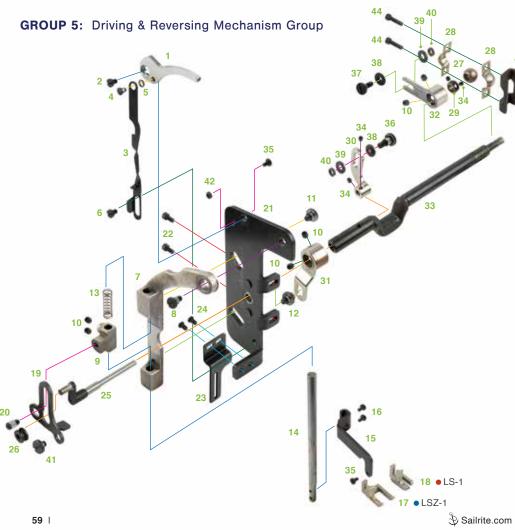
KEY	PART NAME	PART #	KEY	PART NAME	PART
1	Crank Connecting Rod	B139	21	Retaining Ring Cap Spring	16
2	Crank Connecting Rod		22	Retaining Ring Clip Set	1230
	Set Screw	A027A	23	Retaining Ring Clip Spring	1032
3	Crank Connecting Rod		24	Retaining Ring Clip Screw	1032
	Set Nut	A027B	25	Retaining Ring	1022
4	Oscillating Shaft Set		26	Timing Clamp Pin Screw	1032
	Screw & Nut		27	Screw •	1032
5	Oscillating Shaft		28	Retaining Ring Screw	1024
6	Oscillating Shaft Crank Set Pin _				
7	Set Screw	103640			
8	Oscillating Shaft Crank With Slide Block	<b>B</b> 170			
9	Lower Shaft Collar				
10	Compressible Timing Clamp				
11	Compressible Timing Clamp Pin				
12	1 0 1				
	Clamp Screw	B153			
13					
14					
15	Shuttle Driver				
16	Shuttle Gib Hook	9601			
17	Bobbin				
18	Bobbin Case Assembly				
19					
20	Zigzag Shuttle Drive				
	Assembly •	W002Z			

## **GROUP 4:** Feed Transmission Group



Applies to LSZ-1 Model Only
 Applies to LS-1 Model Only

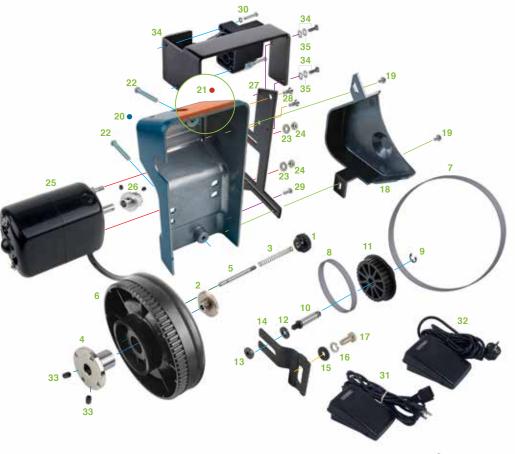
KEY	PART NAME	PART #	KEY	PART NAME	PART
1	Feed Regulator Thumb Nut	W109	24	Screw	B139
2	Feed Regulator Lever	W105	25	Feed Regulator Wavy Washer	A0
3	Feed Regulator Lever Nut	A053B-2	26	Forked Rod Support Spring	B103
4	Feed Regulator	W107	27	Forked Rod Support	
5	Feed Regulator Spring	W106		Spring Screw	B103l
6	Feed Regulator Screw	B010			
7	Feed Regulator Pivot Screw	W108			
8	Feed Connection Slide Block	A069B			
9	Feed Connection Slide				
	Block Stud	A069A			
10	Forked Rod	B103			
11	Oscillating Shaft Set Screw				
	and Nut				
12	Driving Crank	W046			
13	Feed Rock Shaft Crank	A071B			
14	Feed Rock Shaft	A071A			
15	Feed Bar Center Screw & Nut	A076			
16	Feed Bar	A075			
17	Feed Dog •	W011Z			
18	Feed Dog Screw	A078			
19	Feed Dog •	W011			
20	Driving Crank Guide Nut	W046-1			
21	Driving Crank Guide Screw	A061			
22	Feed Lifting Rock Shaft	A072			
23	Feed Lifting Rock Shaft Crank	A073			



• Applies to LSZ-1 Model Only • Applies to LS-1 Model Only

KEY	PART NAME	PART #	KEY	PART NAME	PART #
1	Presser Foot Lift Lever	W042	24	Screw	C097
2	Presser Foot Lift Lever Hinge		25	Presser Bar Feed Rod	W036
	Screw		26	Presser Bar Actuator Spacer	W024-1
3	Lift Bar		27	Bearing Bracket Bushing	W021
4	Upper Lift Bar Screw	W042-2	28	Lift Crank Rod Bearing Plate	W023
5	Spacer	W042-1	29	Rocker End Set Ring	W052
6	Lift Bar Guide Screw	W026-1	30	Presser Bar Actuator Rocker	W033
7	Presser Bar Track	W018	31	Presser Bar Actuator	
B	Presser Bar Track Hinge Screw	W018-1		Feed Rocker	W034
9	Rear Presser Bar Bracket	W020	32	Crank Rod Rocker	W035
10	Set Screw	A029	33	Crank Rod	W053
11	Presser Bar Track Guide Screw	W018-2	34	Set Screw	103640
12	Presser Bar Track Feed Stud	W018-3	35	Screw A036 o	r <b>100576</b>
13	Presser Bar Load Spring (Rear)	W019-1	36	Presser Bar Actuator Rocker	
14	Rear Presser Bar	W019		Screw	103272
15	Outside Presser Foot Bracket	W017	37	Guide Screw	W046-2
16	Screw	B010	38	Lock Spacer	W046-3
17	Outside Presser Foot	W013Z	39	Washer	W046-4
18	Outside Presser Foot	W013	40	Lock Nut	A061-E
19	Presser Bar Actuator	W024	41	Presser Bar Actuator Pivot	
20	Presser Bar Actuator			Screw	103257
	Feed Screw	W020-1	42	Presser Foot Lift Lever Stop Nut	103267
21	End Plate	W041	43	Crank Rod Bearing Set Base	W025
22	End Plate Set Screw	W041-1	44	Crank Rod Bearing Set Base	
23	Presser Foot Bracket Limiter	W014		Screw	W025-1

# **GROUP 6:** Electric Power & Dynamic Transmission



Applies to LSZ-1 Model Only
 Applies to LS-1 Model Only

KEY	PART NAME	PART #	KEY	PART NAME	PART #
1	Posi-Pin <sup>®</sup> Knob for Shaft	100540	23	Motor Bracket Washer	103266
2	Posi-Pin Nut - Reverse Thread	100536	24	Motor Bracket Nut	103268
3	Posi-Pin Spring	100539	25	Motor 10263	<b>80</b> (110V)
4	Posi-Pin Wheel Bushing	100537		<b>102731</b> (22	20-240V)
5	Posi-Pin Quick Release		26	Motor Pulley with Set Screws	W062-2
	Shaft 3/16"	100538	27	Bracket	102712
6	Power Plus® Flywheel	100181	28	Top Bracket Mount Screw	103260
7	Cogged Sewing Machine		29	Bottom Bracket Mount Screw	103261
	Timing Belt 18.6"	56535	30	Motor Plug Screw & Washer	103262
8	Cogged Sewing Machine Timing Belt 8"	56539	31	Foot Control 110V with Grounded Wiring	102594
9	E5 Ring	D116	32	Foot Control 220-240V with	10200
10	Idler Pulley Shaft		02	Grounded Wiring	102730
11	Idler Pulley	W061-A	33	Set Screw	
12	Idler Pulley Washer	W061-6	34	Bracket and Attachment Screws	
13	Idler Pulley Set Nut	W061-2	35	Lock Washer	919800
14	Pulley Bracket	W059			
15	Motor Bracket Washer	LT-2M-4			
16	Motor Bracket Lock Washer	LT-2M-3			
17	Motor Bracket Bolt	LT-2M-2			
18	Belt Cover	W050BL			
19	Belt Cover Screw	100576			
20	Motor Base •	W049Z			
21	Motor Base •	W049			
22	Motor Base Screw	W049-1			

# **Specifications**

POWER	1/10th Hp, 110V US/220-240V EU, AC Motor, 1.5 Amp US/0.7 Amp EU, 50/60 Hz
MAX. SEWING SPEED	455 (Stitches/Minute)
SHUTTLE	Oscillating (Cam/Rocker Arm Driven)
MAX. STRAIGHT STITCH LENGTH	6mm
MIN/MAX ZIGZAG STITCH WIDTH	0-5mm (LSZ-1 Only)
NEEDLE BAR STROKE	34mm
NEEDLE SYSTEM	135 x 17, 135 x 16
BED SIZE	14.5" x 7"
UNDERARM SPACE	7" x 4.5"
PRESSER FOOT LIFT	3/8"
BOBBIN SIZE	Class 15 / Style A (20.5mm Dia. x 10.8mm H)
NEEDLE SIZE RANGE	#10-#22
THREAD RANGE	Home Sizes to V-92
HEAD WEIGHT	35 lbs.



The Ultrafeed<sup>®</sup> five-year limited warranty, to the original purchaser, covers labor and replacement parts (excluding consumable items like needles, gib hook and retaining ring cap spring) for machine purchases starting January 1, 2019. Sailrite<sup>®</sup> support comes in several forms, including:

- 1. Creating a support case.
- 2. Email communication with support videos for resolution.
- 3. Phone support with a qualified technician.
- 4. Shipment of warranty parts for user installation.
- 5. Repair or service of the product at our Indiana facility, if necessary.

The customer is responsible for shipping costs of replacement parts. If sending the Ultrafeed back to Sailrite headquarters for repair, the customer is responsible for all shipping costs to and from Sailrite. Please insure the machine in transit. The machine should be shipped in the original packaging to ensure safe transport.

The Ultrafeed limited warranty does not cover any damage that results from improper installation, accident, abuse, misuse, natural disaster, insufficient/excessive electrical supply, normal wear and tear, abnormal mechanical or environmental conditions, or any unauthorized disassembly, repair or modification. It does not cover any rust, corrosion or cosmetic damages that may appear over the lifetime of the machine. This limited warranty does not apply with respect to products that have been altered or which are missing serial numbers, or for products not purchased directly from Sailrite. Maximum liability is limited to the amount paid by the original purchaser.

l Sailrite.com



# Ultrafeed<sup>®</sup> Service & Support

We are proud to provide you with everything you need to successfully maintain and repair your Ultrafeed. Your purchase comes with personalized support for the lifetime of your machine. We will do our best to satisfy every support request accurately, completely and in a timely manner.

#### **Customer Service Questions or Concerns**

To start a support case, go to **Sailrite.com/support** and fill out the online form. One of our support staff members will review your case and contact you.

#### Sailrite.com

Equipping you to sew

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Guidebook for Sailrite® Ultrafeed LS-1 & LSZ-1

Qty: 1

Version 2-20 Original manual in English

Ultrafeed® PATENTED TECHNOLOGY Patents #6499415 • #7438009

Serial #:

Date of Purchase: \_\_\_\_\_