# Juki Walking Foot DNU 1541s

Industrial Sewing Clearance or Class Equivalent Required Before Use

This machine is intended for use on heavy materials like vinyl, leather and heavy layers of upholstery. The stepping feeding motion promises the consistent feeding of multiple layers or heavy duty materials without stitch gathering or layer unevenness. Maximum sewing speed is 3,000 stitches per minute!
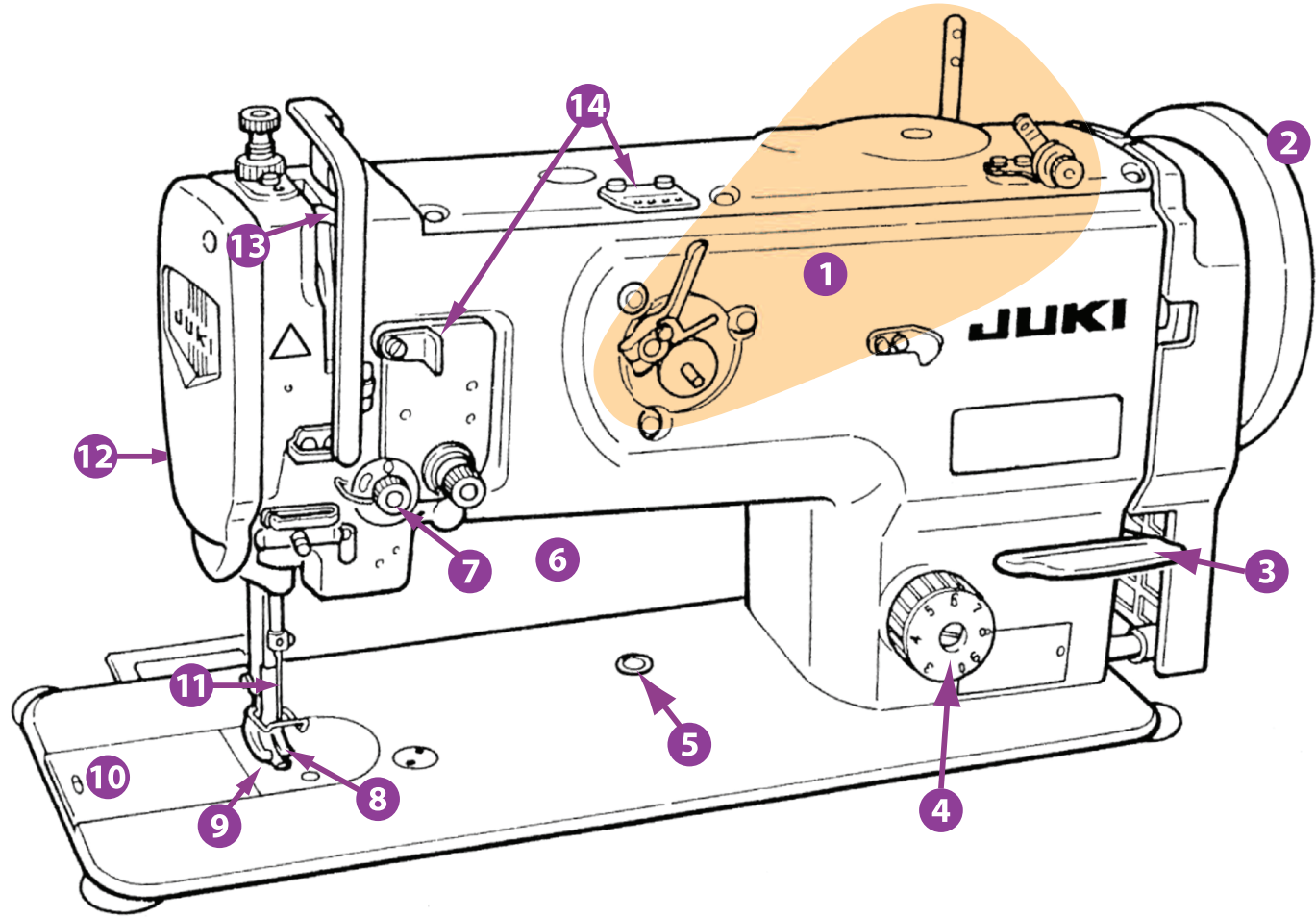
MACHINE ANATOMY

1. Bobbin Winding parts
2. Hand Wheel - Manually advances the machine (turns downwards only)
3. Reverse Lever - to allow back-stitching at the end of seams
4. Stitch Length Selector - Adjusts size of stitch
5. Safety Clutch - Release button for safety lock out mechanism
6. Tensioner - keeps stitches even
7. Check Spring - Keeps the thread taught as the take-up lever moves. **(Do Not Adjust!)**
8. Walking Presser Foot - Holds material down to the bed while sewing
9. Feed Dog Mechanism - Moves with presser foot to feed material
10. Bobbin Hatch Cover
11. Needle
12. Manual Presser Foot Lifter (back of machine head)
13. Thread Take-up lever - part of the thread feeding mechanism that pulls thread off the spool
14. Flat 4-hole Thread Guide and 2-hole Thread Guide

WIND THE BOBBIN

(Size M available in the Protohaven store)

Caution: Be sure all object are off the table! The needle *does not dis-engage* like a consumer machine. It is preferable to remove the needle to avoid injury.
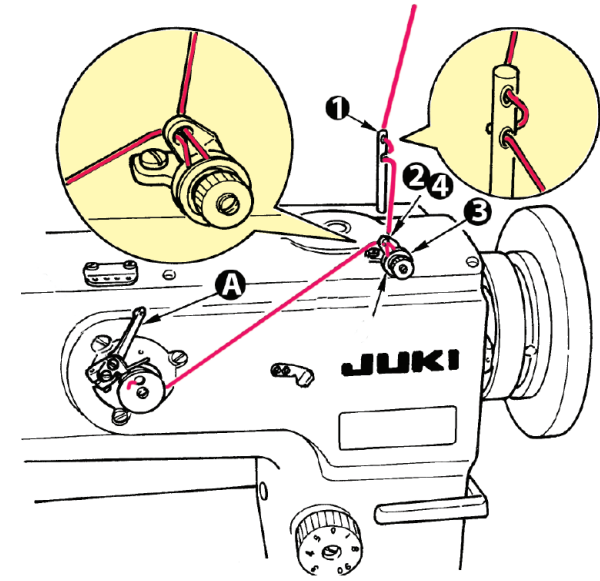
1. Unthread the machine back to the tensioner
2. Lift the manual presser foot lever (12) to raise the presser foot.
3. Pass the thread in order of (1) through (4)
3. Run the thread through a hole in the side of the bobbin, and place the bobbin on the spindle, and drop lever "A". Gently hold the thread (don't pull) until there are several passes on the bobbin, then cut.
4. Gently push the foot pedal until the bobbin is full—it shuts off automatically.

Please Note: If the thread in the bobbin is lop-sided, it can be used with caution, although it can affect tension.

Winding the bobbin while sewing

For large projects, a second bobbin can be wound while sewing.
- An identical second spool of thread is required.
- The needle and presser foot remain in place
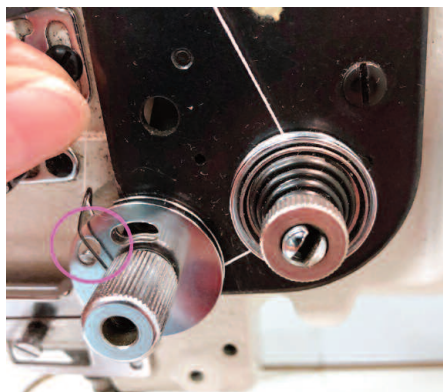- Follow all other instructions in "Bobbin Winding" above

ATTACH BOBBIN CASE

Check the bobbin housing for lint, brush it out if necessary.

- Set the bobbin into the bobbin case, the thread running clockwise. (looks like a "q")
- Pass the thread around the thread slit (1), and pass it under the tension spring (2)
- The bobbin rotates in direction B when thread is pulled in direction A
- Orient the lower knob (1) of the bobbin case to the indented part (2) of the bobbin housing's inner hook.
- Push the bobbin into the case until it clicks.

INSERT NEEDLE

Turn the handwheel (down) until the needle bar is at the highest position

1. Loosen the needle clamp screw and hold the needle so that scarf is to the right and the long groove in the needle is exactly to the left.
2. Insert the needle (1) into the clamp hole until it will go no further.
3. Tighten the needle clamp screw firmly but not excessively tight

Long groove

Scarf

THREAD THE MACHINE

Thread the machine following the order of (A) through (L) as shown.
Move the handwheel towards you, *never away* to get the top thread to take up the bobbin thread.

CRITICAL THREADING DETAILS

Ensure the presser foot is **UP**.
While holding the thread taught on either side, pass the thread between the tension discs, between the spring guide, and above the spring.

You will hear a light click as the thread crosses over a small hook on the inside of the disc. *(just visible through the hole next to the spring)*

Please Note: Do not adjust the check spring knob (F)!
Its function is to keep the thread taught while the take up arm moves to the highest position. Loosening the nut will disable the spring, causing the machine to come unthreaded or tangle while sewing. This spring should always have enough tension to pull down.

ADJUSTING THE TENSION

To increase the tension, turn the tension nut (1) clockwise (A). To reduce the tension, turn the tension nut (1) to the counterclockwise (B).

BACK STITCH/REVERSE SEWING

Press down the reverse feed control lever (3). Release the lever and the machine will run in the normal feed direction.

SAFETY RESET (#5)

The safety clutch functions when an excessive load is applied to the hook (usually a thread jam, or user rotating the hand wheel in the wrong direction). The hook will not rotate even if using the hand wheel. The *safety has functioned correctly* to avoid damage to the hook. **Turn off the power!**

1. Cut away the knot near the needle and under the feed dogs, remove the fabric
2. Open the bobbin housing and remove any stray thread, be sure the bobbin is not stuck.
3. Press in the safety button (#5 in the anatomy illustration above) and turn the hand wheel away from you till it clicks, and the button pops up.
4. Turn the wheel towards you. You may hear another click. Continue turning till the take-up lever is at its highest position.
5. Re-thread and continue sewing.

SETUP CHECKLIST

- ❏ Fabric, needle, thread, bobbin, notions, hem gauge, chalk, fabric clips (no pins)
- ❏ It is recommended to bring your own scissors.
- ❏ Check oil level, report if low
- ❏ Wind the bobbin
- ❏ Thread the machine
- ❏ Use scraps of fabric to test tension and stitch length, adjust as necessary.

SIGNIFICANT and COMMON HAZARDS

The most *significant* hazard is injury.
- ☞ Tie back long hair and remove scarves
- ☞ Tuck sleeves behind elbows
- ☞ Keep fingers 3" away from the needle and avoid pulling/pushing fabric
  Power off the motor before: Threading• Replacing needles • Removing jams
- ☞ Ensure the needle and thread are removed before winding a bobbin, unless winding a 2nd bobbin while sewing.

The most *common* hazards are thread jams and broken needles.
Watch for binds and jams —stop immediately if they occur.

PROHIBITED MATERIALS

- ☞ *Pins in the fabric* - Industrial machines will *not* "step over" pins in the fabric. Hitting one will break the needle and send broken parts into the hook below.
- ☞ Abrasives
- ☞ Paper and cardboard products
- ☞ Rigid Material (non-fabric, metallic)

CONSUMABLES

Members are responsible for bringing their own thread and fabric.

Bobbins: Size "M", standardized metal bobbin available in the store
Thread: • Must be in a Cone or Vicone to accommodate high speed
  • Always use the same thread in the upper tension and in the bobbin

Fabric: light to heavy weight fabrics including leather and upholstery

Needle: • Size Range for machine: 135 x 17, 135 x 16 (Nm160) Nm125∼Nm180 +
  • Point Type: appropriate to fabric
  • Weight: appropriate to the thread and fabric
  • Eye: must be 40% larger than the thickness of the thread.

CLEANUP CHECKLIST

- ❏ Power off the Machine.
- ❏ Reset any modified stitch sizes to default. (average).
- ❏ Use a brush and tweezers to remove lint around the bobbin housing.
- ❏ Note any maintenance needs or concerns on the tag and at protohaven.org/maintenance.
- ❏ Discard all scrap fabric.
- ❏ *Sweep the floor* around the table and machine.

MAINTENANCE REQUESTS

Update the physical Maintenance Tag at the machine *and* submit a Tool Report at protohaven.org/equipment. (scroll down to "Details") This notifies our staff and volunteer maintenance crew of any issues. The volunteer on duty can aid in reporting the issue.

▯ Yellow can be used with caution

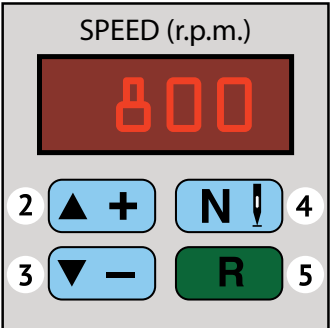▮ Red cannot be used without hazard to either the user or the equipment

SPEED (r.p.m.)

1. **ON/OFF Switch -** Main Power to the machine
2. **Increase Speed -** Increase RPM
3. **Decrease Speed -** Decrease RPM
4. **Needle Position -** Set the needle to up/down ending position
5. **Rotation -** For Maintenance only
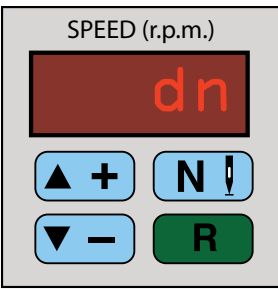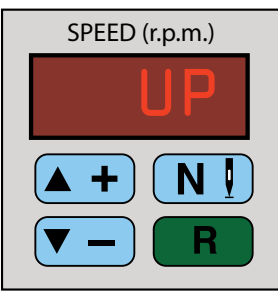
SETTING THE NEEDLE POSITION

Setting the needle position allows you to control whether the needle will finish a stitch engaged in your fabric or not. A light press and release of the foot pedal will move the needle exactly one stitch forward, ending the needle in the desired position setting.

- Click **N** for one quick second to see the current setting (up or down). *Do not hold the button for more than 1 second to avoid restoring to factory settings*
- The current setting (up or down) will flash across the screen
- To change the setting, click **N** again. The opposite setting should flash across the screen.