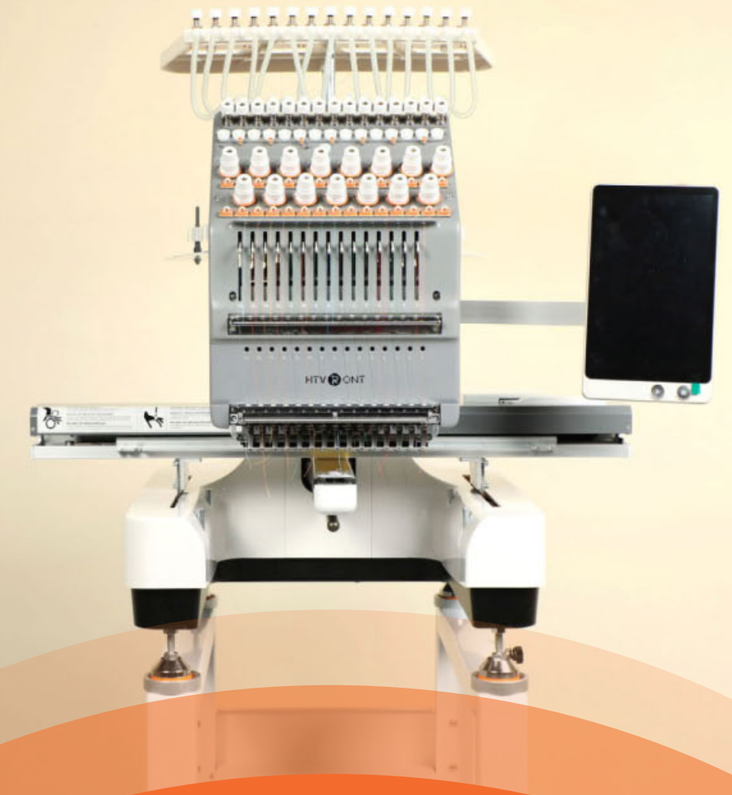
HTVRONT



User Manual of HTVRONT E15 15-Needle Embroidery Machine

Thank you for choosing HTVRONT!
Before first use, please read all accompanying materials carefully to ensure proper and effective operation. HTVRONT is not responsible for any loss resulting from failure to follow the instructions or from misuse due to misunderstanding.

While we strive for accuracy and clarity, this Manual may still contain errors or omissions. We are continuously improving our products and services, and reserve the right to update the product, software, and Manual content without prior notice.

For the latest information and updates, please visit our official website: **https://www.htvront.com**.

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The included USB drive contains first-use video tutorials for garment embroidery and cap embroidery to help you get started quickly.

User Manual

https://bit.ly/4yBQffY

Video Guide

https://www.htvront.com/blogs/e15-embroidery-machine-guide

Community

https://bit.ly/4kuAJL3

Safety Instructions

To ensure the safe and proper use of the HTVRONT E15 15-Needle Embroidery Machine, read this manual carefully before installation, powering on, operation, or maintenance.
This machine is an electromechanical device. Improper installation, operation, or unauthorized repairs may result in electric shock, fire, personal injury, or damage to the machine.
Do not operate the machine until you have fully read and understood the applicable instructions and safety requirements.

Operation Safety Risks

	Electrical Shock Hazard	Always disconnect the power before cleaning, changing needles or inspecting the machine. Do not continue using the machine if the power supply is abnormal.
	Needle Injury Hazard	Never place your hands near the needle area while the machine is running or the needle bar is still moving. If a needle breaks, remove all broken pieces before resuming operation.
	Hoop Collision Hazard	Always confirm that the correct hoop type, machine origin, and movement path are selected before starting embroidery. Do not start embroidery before running a Pattern Trace to verify the design area.
	Cap Driver Interference and Damage Hazard	After installing the cap driver, reconfirm the driver status and Frame Select settings. Do not select flat embroidery hoop type for origin finding, tracing, or frame movement when the cap driver is installed.
	Pinch Hazard from Moving Parts	Never touch the needle bar, presser foot, hoop driver, or other moving parts while the machine is running.

Safety Warnings

Power and Electrical Safety	• Connect the machine only to a suitable, stable power supply. Do not modify the wiring or use an unstable power source. • Before first use, make sure the external power supply matches the machine requirements. • After a power interruption, wait at least 30 seconds before turning the machine on again. • Allow the system to initialize and wait until the main interface appears before operating the machine. • Stop the machine and disconnect the power immediately if you notice an unusual odor, smoke, excessive heat, suspected electrical leakage, or abnormal screen behavior. • Only qualified personnel may open the electrical control components or repair electrical parts.
Handling and Installation	• Due to its weight, the machine must not be moved, dragged, or lifted by one person. • When moving the machine, support it from the bottom. Do not lift or carry it by the touchscreen, thread stand, or machine head. • Place the machine on a level, stable surface, stand, or floor that can safely support its weight. • Do not place the machine on soft, suspended, unstable, or insufficiently supported surfaces. • After installation, make sure the machine, stand, table, and accessories are securely fixed.
Operating Environment	• Keep the area around the machine clean and free of objects that could enter the moving parts. • Do not use the machine in damp, excessively hot, highly vibrating, dusty, oily, or corrosive environments, or near open flames. • Do not install or operate the machine in areas with flammable or explosive gases. • Keep water, oil, metal debris, and thread lint away from the electrical control box, screen connectors, and inside of the machine.
Prohibitions During Operation	• Never touch the needle bar, presser foot, hoop, or other moving parts while the machine is running. • Never thread the machine, change needles, install hoops, remove thread, change the bobbin, or pull the fabric while the machine is running.
Parameters and Accessories	• Do not use bent, damaged, loose, or incorrectly installed needles. • Do not turn on the machine unless the embroidery hoop, cap driver, and accessories are securely installed. • Only qualified personnel may modify advanced or service parameters or factory-set parameters.
Child and Surrounding Area Safety	• This machine is not a toy. Children must not use or operate it without supervision. • Keep needles, scissors, broken needle pieces, small parts, packaging bags, and power cords away from children. • Keep children, bystanders, and pets away from the moving area while the machine is running.
Maintenance and Repairs	• Stop the machine and disconnect the power before cleaning, lubricating, or troubleshooting. • Clean, inspect, and lubricate the machine regularly. • Do not resume production until any abnormal condition has been resolved. Do not disassemble the machine, modify its wiring, or adjust critical mechanical components without authorization.
Cooling and Ventilation	• Keep all cooling vents, exhaust openings, and ventilation areas clear. • Do not cover the cooling system or place objects around ventilation openings. • Regularly remove thread lint, dust, and debris to help prevent overheating or electrical faults.

FCC Compliance Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.
-- This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

RF Exposure Warning:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

Unpacking & Assembly

Packing List



HTVRONT E15 15-Needle Embroidery Machine ×1



Machine Stand ×1



Starter Kit ×1



Garment Hoop Kit ×2



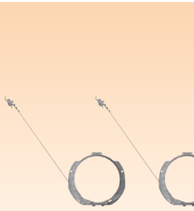
Bobbin Winder ×1



Tool Kit ×1



Cap Hooping Station ×1



Cap Embroidery Hoop ×2



Aluminum Flat Embroidery Hoop ×1



Extension Table ×1



User Manual ×1

Note:
The Machine Stand is packed in separate components for safe transportation and requires assembly before use.

Tool Kit Contents

Before you begin, make sure all the main accessories are included. The appearance of some accessories may vary slightly between production batches. Please refer to the actual product. If any items are missing or damaged, please contact official customer support.



Power Cord (US Plug) ×1



12–14 mm Open-End Wrench ×1



17–19 mm Open-End Wrench ×1



8–10 mm Open-End Wrench ×1



6–7 mm Open-End Wrench ×1



Flat-End Hex Key Set ×1



Combination Phillips / Slotted Screwdriver ×1



150 mm Needle-Nose Pliers ×1



Phillips Screwdriver (#1 × 100 mm) ×1



Flathead Screwdriver (3.2 × 75 mm) ×1



Flathead Screwdriver (5.5 × 100 mm) ×1



L-Shaped Phillips Screwdriver (5 mm) ×1

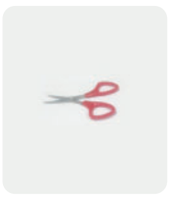


L-Shaped Flathead Screwdriver (5 mm) ×1



1 in Cleaning Brush ×1

Tweezers (B-102, 85 × 9 mm) ×1



Small Scissors ×1

Oiler (Filled with Sewing Machine Oil) ×1

Threading Wire ×1



Groz-Beckert Needle #11 (DB×K5 RG) ×2



Groz-Beckert Needle #14 (DB×K5 RG) ×1



HE Drive Frame Mounting Knobs(M4 × 12) ×6



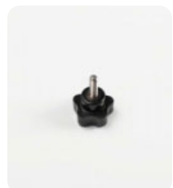
Flat Head Hex Socket Screws (M6 × 14) ×4



Hex Flange Lock Nut (M6) ×4



Button Head Hex Socket Screw (M4 × 8) ×2



Star Knob Screw (M5 × 16) ×2



Custom Washer (Ø18-M5) ×2



Needle Plate Screws ×2



Phillips Pan Head Screws (M3 × 5) ×4



Flat Washers (Ø3) ×4

Thread Guide Tube ×2



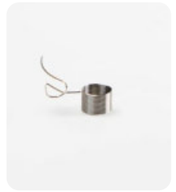
Plastic Ratchet Ring ×1



Bobbin Case ×1



Aluminum Bobbins ×5



Thread Tension Check Spring (Ø0.5 mm) ×1



Thread Tension Disc ×1

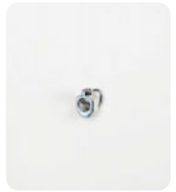


Deep Groove Ball Bearing (Ø7.24 × Ø17 × 4 mm) ×1

Presser Foot Spring ×1



Needle Clamp Screws ×4



Needle Clamp Assembly ×1



Thread Take-Up Lever Gear Assembly ×2



Small Conical Spring ×3



Plastic Knurled thumb Nut ×1



HP Three-Hole Connecting Rod Assembly ×1



HP Thread Take-Up Lever A Assembly (Bearing-9) ×1



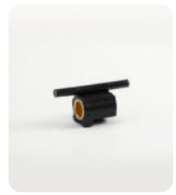
HP Presser Foot (Ø7.8) ×1



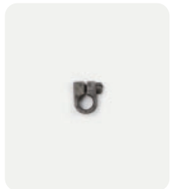
HP Presser Foot Holder ×1



HP 15-Needle Bar Guide Plate ×1



HP Needle Selection Drive Block ×1



Head Shaft Positioning Collar ×1



HS Thread Take-Up Lever B Assembly ×1

HS Needle Bar Spring ×1



HS Needle Bar Connecting Pin ×1

HP Needle Bar ×1



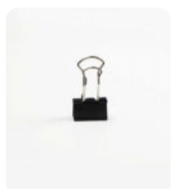
HP Needle Bar Driver Assembly (Motor) ×1



O-Ring ×1



Large Conical Compression Spring ×1



Binder Clip ×4

Unpacking the Crate

Before You Begin

- Place the wooden crate on a flat, stable surface.
- We recommend that at least two people wear protective gloves when unboxing the machine.
- Keep all removed parts and packaging materials together.
- Do not power on the machine until all shipping brackets have been removed.
- If any parts are missing or damaged, contact customer support.
- Keep the wooden crate for at least one month for future storage or transportation.

Unboxing Steps



1. Prepare the required tools and inspect the wooden crate.



2. Locate the screws and latches.



3. Open the top latches.



4. Remove the top cover.



5. Remove the screws, pry open the retaining clips, and remove the side panels.



6. Remove the foam, protective film, and other packaging materials.



7. Remove the accessories and tool kit.



8. Remove the shipping brackets from the machine.

Machine Assembly

• Before You Begin

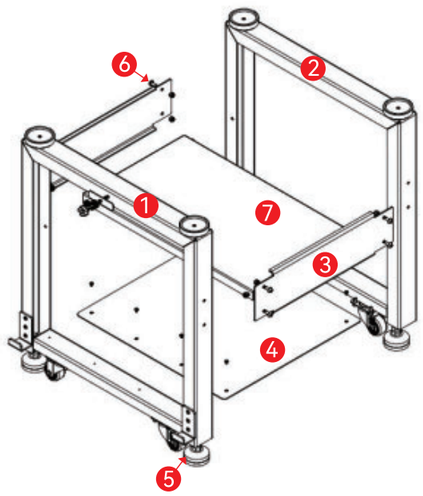
- Make sure all accessories have been removed from the wooden crate.
- Make sure all shipping brackets have been removed from the machine.
- Assemble the machine on a flat, stable surface.
- We recommend that at least two people work together when assembling and moving the machine.

• Machine Stand Parts

The numbered parts shown in the illustration are:

① Left Stand Upright ×1
② Right Stand Upright ×1
③ Crossbars ×2
④ Stand Base Plate ×1
⑤ Leveling Feet ×4
⑥ Pre-installed Screws
⑦ Stand Shelf ×1

Note: The pre-installed screws are already installed in their original mounting positions.

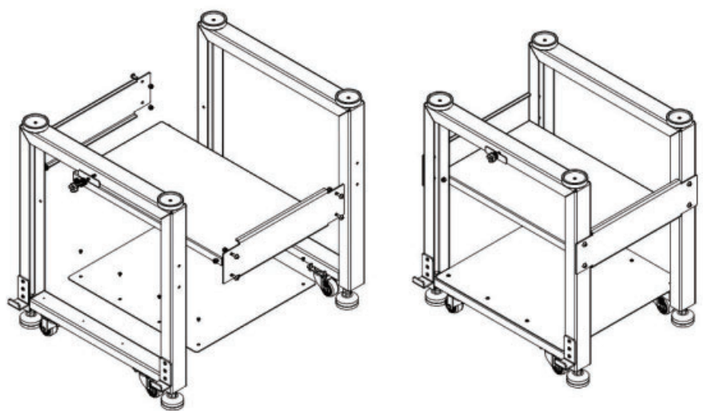


• Assemble the Machine Stand

1. Position the left and right stand uprights. Make sure the round machine support pads on top are facing upward.
2. Install the stand base plate. Insert the screws into the mounting holes, but do not fully tighten them.
3. Install the front and rear crossbars.
4. Install the stand shelf.
5. Align all parts, then fully tighten all screws.
6. Adjust the four leveling feet until the stand is stable and does not wobble.

• Place the Machine on the Stand

1. Clear the path before moving the machine.
2. With at least two people, lift the machine from the bottom.
3. Align the four machine feet with the four round support pads on top of the stand.
4. Slowly lower the machine into place, making sure all four machine feet are fully seated on the support pads.



• Installation Checklist

Before using the machine, make sure the following checks have been completed:

- All four leveling feet are firmly in contact with the floor.
- The machine stand is stable and does not wobble.
- All screws on the stand uprights, crossbars, and stand base plate are fully tightened.
- All four machine feet are properly seated on the support pads of the machine stand.
- Gently push the machine to make sure it remains stable and does not wobble.
- The touchscreen bracket is securely tightened and remains in position after adjustment.
- Leave enough space in front of and on both sides of the machine to allow the embroidery hoop to move freely without contacting walls, tables, the wooden crate, tools, or other objects.

⚠ **WARNING!!**

The machine is heavy. Do not lift, move, or drag the machine by yourself. Always lift the machine from the designated lifting points underneath the base. Never lift or carry the machine by the touchscreen, thread stand, machine head, covers, or embroidery arm. Place the machine on a flat, stable surface that is strong enough to support its weight.

Adjust the Touchscreen

The touchscreen angle can be adjusted for comfortable viewing.

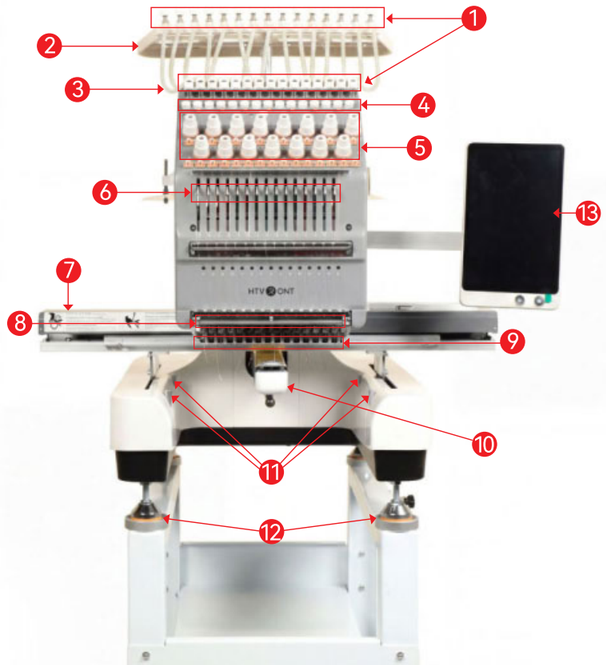
1. Loosen the three locking nuts on the screen bracket to adjust the screen position.
2. Adjust the screen to the desired angle, then tighten the locking nuts securely.







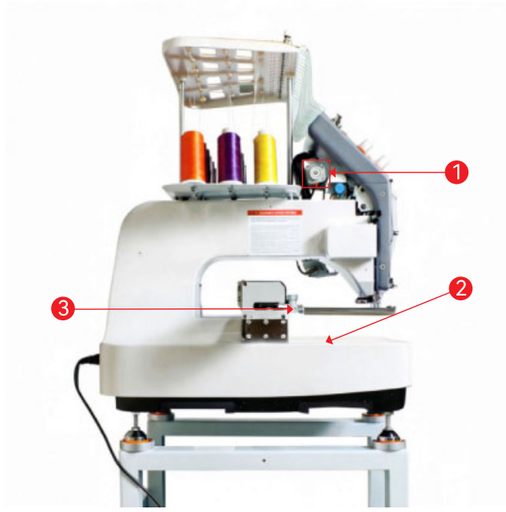
Machine Overview



Machine Parts

Front View

1. Thread Guide Tension Discs
2. Thread Stand
3. Thread Guide Tube
4. Thread Break Detection Wheel
5. Check Spring
6. Thread Take-Up Lever
7. X-axis
8. Thread Holder Spring
9. Presser Foot
10. Rotary Hook Cover
11. Extension Table Mounting Knobs
12. Leveling Feet
13. Touchscreen



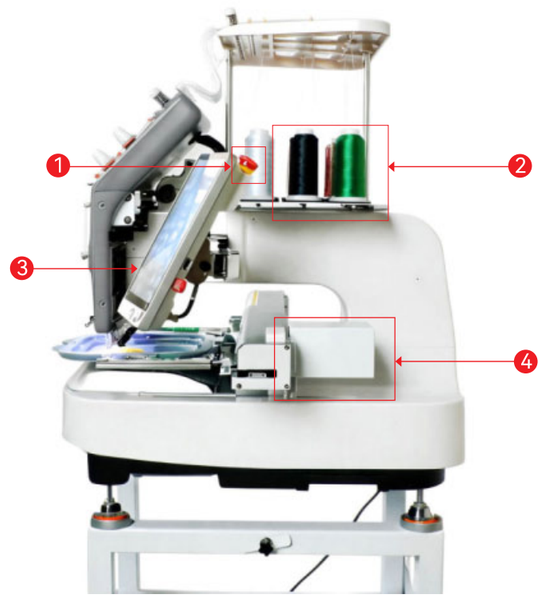
Left View

1. Manual Color Change Knob
2. Y-axis Drive System
3. X-axis Drive System



Rear View

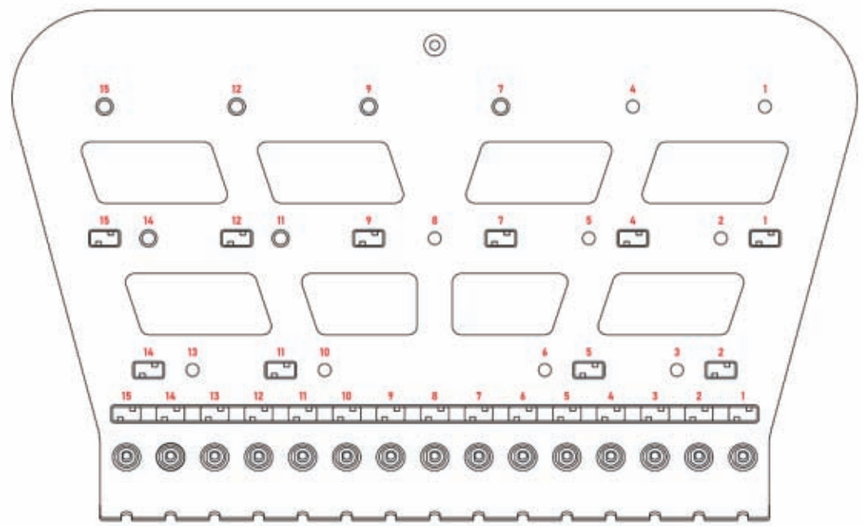
1. Power Switch
2. Power Inlet



Right View

1. Emergency Stop Button
2. Thread Stand Tray
3. Main Shaft Angle Indicator
4. X-axis Motor Cover

Top View



Thread Stand

Touchscreen Components



Front View

1. Touchscreen

2. Start Button

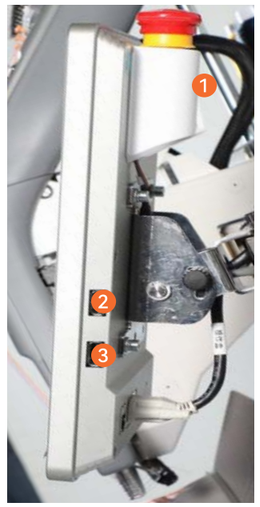
① Press to start embroidery after confirming the design.

② Press to resume embroidery after the machine has stopped.

3. Pause Button

① Press to pause embroidery while the machine is running.

② When embroidery is paused, press to move backward. Press and hold to continue moving backward.



Side View

1. Emergency Stop Button

Press to stop the machine immediately.

Use this button to stop the machine immediately in an emergency or hazardous situation, or whenever the operation must be interrupted. After the issue has been resolved and it is safe to continue, turn the button clockwise to release it, then resume operation.

2. USB Port

3. USB Port

Two USB ports are provided for quick design transfer, data storage, and file import/export using a USB flash drive.



Rear View

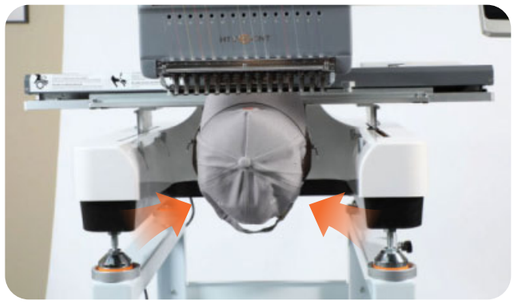
1. Data Transfer Port
2. Ethernet Port

Basic Operations

Removing the Cap Frame & Cap Driver

- **Before You Begin**

The cap driver is pre-installed on the machine for shipping. For your first embroidery project, we recommend using the garment hoops with a piece of test fabric. They are easier to install and provide a safer way to verify that the upper thread, bobbin thread, thread tension, and embroidery quality are all functioning properly.



Cap Driver Installed (As Shown)

- **Remove the Cap Hoop**

1. Locate the release latches on both sides of the cap hoop. Press both latches at the same time to release the cap hoop from its locked position.



Press Both Release Latches Simultaneously to Release the Cap Hoop

2. Once released, gently rotate the cap hoop and cap to the right. Turn the cap brim until it is parallel to the X-axis. Hold the cap hoop and cap with both hands, then pull them straight outward to remove them together.



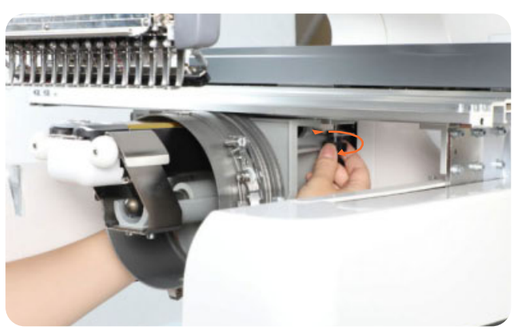
Rotate the Cap and Hoop to the Right

- **Remove the Cap Driver**

1. Locate the retaining screw at the top of the cap driver and loosen it by turning it counterclockwise.



2. Locate the two retaining screws at the bottom on both sides of the cap driver, then loosen them by turning them clockwise.



3. Support the cap driver with both hands and pull it straight outward to remove it.



4. Check that there are no obstructions in front of the machine or along the X-axis before proceeding.



X-Axis Travel Is Clear

Powering On & Off

Before powering on the machine, make sure the cap driver has been removed and the area in front of the machine is clear of obstructions.

- **Connect the Power Cord**



1. Take the power cord from the tool kit. Locate the power switch on the back of the machine and make sure it is in the OFF ("O") position.



2. Locate the power inlet on the back of the machine. Connect the power cord, then plug the other end into a power outlet.

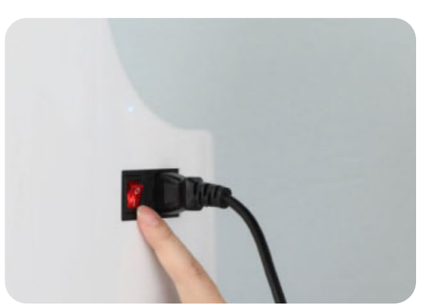
- **Initial Startup**

1. Make sure the embroidery arm is centered.



X-Axis at Center Position

2. Turn on the machine using the power switch on the back. Set the switch to the ON ("I") position.



3. Two confirmation messages will appear on the touchscreen during startup. Tap the orange confirm button 'OK' on each screen to continue.



4. The machine will automatically move the embroidery arm to its home position. Initial startup is complete once the movement stops.



X-Axis Automatically Moves to the Mechanical Home Position

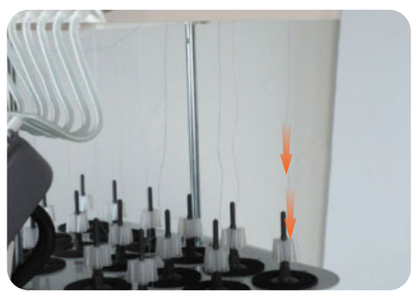
WARNING!
Do not move the X- or Y-axis by hand while the machine is powered off. (The X- and Y-axis cannot be moved by hand when the machine is powered on.)
If the X-axis has been moved toward the right, manually return it to the center before powering on the machine. After startup, tap Find Mechanical Home.

Upper Threading

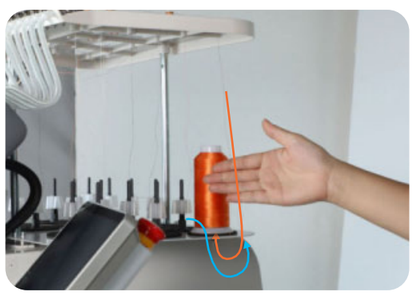
- **Before You Begin**

• The machine is pre-threaded through all thread guides at the factory. Use the 15 embroidery threads included in the Starter Kit for quick and easy threading.
• Always follow the complete threading path: Thread Guide → Tension System → Take-Up Lever → Needle Bar Thread Guide → Needle Eye. Skipping any part of the threading path may cause thread breaks or skipped stitches.

- **Method 1: Quick Threading (Using the Existing Thread)**

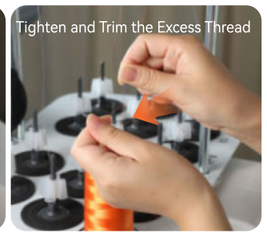


1. Remove the old thread spool, leaving enough of the old thread in the machine.

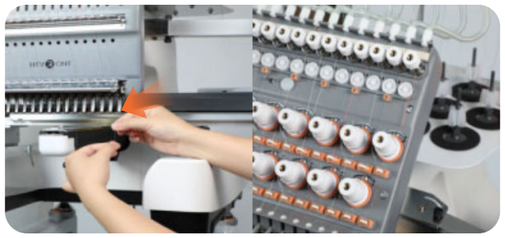


2. Place the new thread spool and pull out a short length of thread.





3. Tie the end of the old thread to the new thread using a small, secure knot. Trim the excess thread, leaving about 4–5 cm (1.6–2.0 in) beyond the knot.



4. Gently pull the old thread from the needle end (do not pull it through the needle eye) to draw the new thread through the threading path.



5. As the knot reaches the thread retainer above the presser foot, gently lift the thread retainer by hand to allow the knot to pass through smoothly.

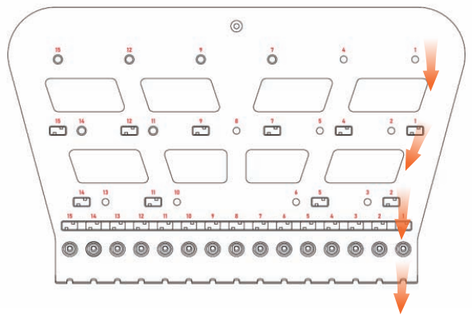


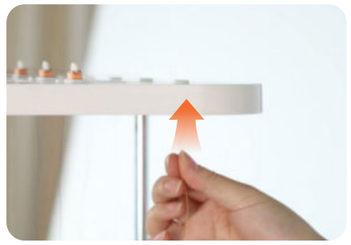
6. Cut off the knotted section, rethread the needle, and leave a short thread tail secured in the thread holder spring above the needle.

• Method 2: Full Threading (When the Thread Has Been Removed)

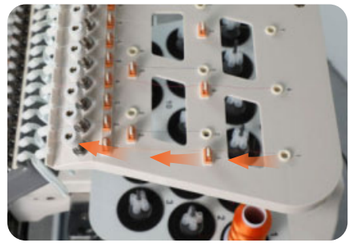
Refer to the threading diagram on the machine and follow the threading path below.







1. Place the thread spool on the spool holder. Pass the thread through Thread Guide ①.



2. Continue threading by following the numbered guides on the thread stand.



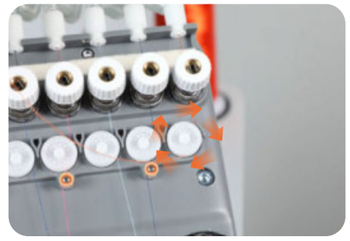
3. Snap the thread into the first thread retainer slot from the left.



4. Use the threading wire (included in the tool kit) to guide the thread through the thread guide tube.



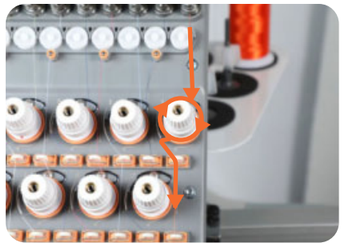
5. Snap the thread into the second thread retainer slot from the left.



6. From the right side, wrap the thread clockwise around the thread break detection wheel once.



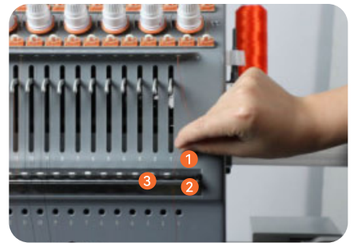
7. From the right side, wrap the thread clockwise around the thread tension knob once. Then hook the thread onto the check spring and pull it downward.



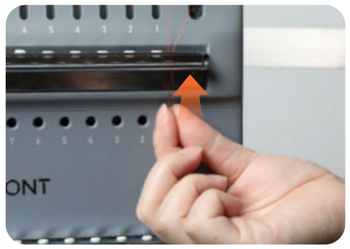
8. Pass the thread through the two thread guide holes.



9. Pass the thread downward through the guide hole.



10. Pass the thread through Hole ①, then between the red guide rod and the metal guide rod.



11. Pass the thread back through Hole ②.



12. From the right side, pass the thread through the take-up lever.



13. Pass the thread downward through Hole ③.



14. Gently lift the last thread retainer and guide the thread into the thread retainer slot.



15. Thread the needle, then leave a 3–4 cm (1.2–1.6 in) thread tail and secure it in the thread holder spring.

IMPORTANT!

- Do not allow the thread to wrap around the thread spool while threading.
- Do not skip any thread retainers or thread guides.

Final Check

Regardless of which threading method you use, verify that the thread follows the correct path for the selected needle position before embroidering.

Check the following:

- The thread pulls smoothly with consistent tension.
- The machine runs at low speed without frequent thread breaks.
- The thread tail is not caught by the presser foot or the embroidery hoop.

Installing the Bobbin

Turn off the machine or make sure it is completely stopped before installing the bobbin.

• Load the Bobbin



1. Open the bobbin cover in the direction shown.



2. Hold the latch open and remove the bobbin case.



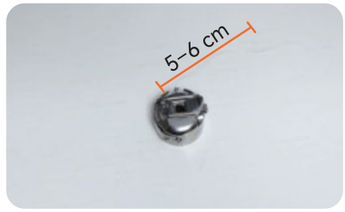
3. Remove the empty bobbin from the bobbin case.



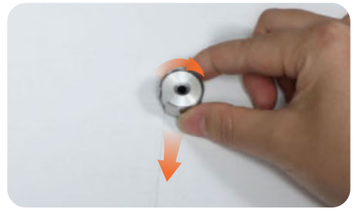
4. Insert a pre-wound bobbin from the Starter Kit into the bobbin case, with the thread tail extending to the right as shown.



5. Pull the thread under the bobbin case tension spring.



6. Wrap the thread around the notch on the bobbin case twice, leaving a 5–6 cm (2–2.4 in) thread tail.



7. Check that the bobbin is installed correctly. When pulling the thread, the bobbin should rotate clockwise when viewed from the back of the bobbin case.



8. Hold the bobbin case with the center post facing upward. Insert it smoothly into the machine until it clicks into place.



9. Close the bobbin cover in the direction shown, leaving the thread tail outside.

Installing & Hooping the Garment Hoop

For your first embroidery project, we recommend using the garment hoop, test fabric, and stabilizer.

• Assemble the Garment Hoop Brackets

1. Prepare the garment hoop brackets, adapter blocks, and the 3 mm hex key.

1. Adapter Block
2. 3 mm Hex Key
3. Garment Hoop Bracket



2. Loosen the pre-installed screws on each garment hoop bracket using the 3 mm hex key. Install an adapter block onto each bracket, then re-tighten the screws.

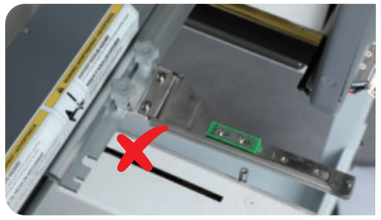




3. Align the garment hoop brackets with the mounting holes on the X-axis (see the illustration).



4. Hand-tighten the mounting knobs on both sides to secure the brackets.





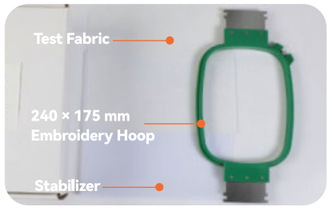
Check

Make sure both garment hoop brackets are fully seated against the X-axis drive, with no gaps or misalignment.

• Hooping Garment Hoop

For your first embroidery project, use the test fabric, stabilizer, and the 240 × 175 mm embroidery hoop included in the Starter Kit. Make sure the stabilizer completely covers the embroidery hoop.

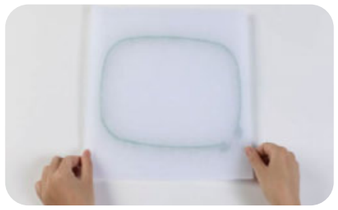
• Hoop the Fabric



1. Prepare one 30 × 30 cm piece of test fabric, one 30 × 30 cm sheet of stabilizer, and one 240 × 175 mm embroidery hoop from the Start Kit.



2. Turn the adjustment knob counter-clockwise to loosen the outer hoop.



3. Place the stabilizer over the outer hoop.



4. Place the fabric on top of the stabilizer.



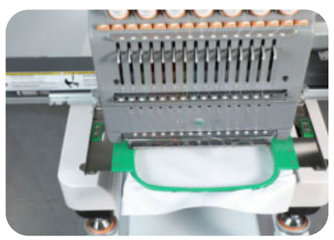
5. Make sure the inner hoop is oriented correctly. The side flush with the handles should face up, and the recessed side should face down. Then press the inner hoop firmly into the outer hoop.



6. Hold the inner hoop in place with one hand. Gently pull the fabric evenly in all directions until it is smooth and wrinkle-free.



7. Turn the adjustment knob clockwise to tighten the outer hoop.



8. Place the hooped fabric onto the garment hoop brackets. The magnetic mounts will hold it in place. Make sure the grooves on both sides are fully seated in the mounting slots.

Setting Needle Colors



1. Tap Color Setup on the touchscreen.



2. Select Set Needle Color.





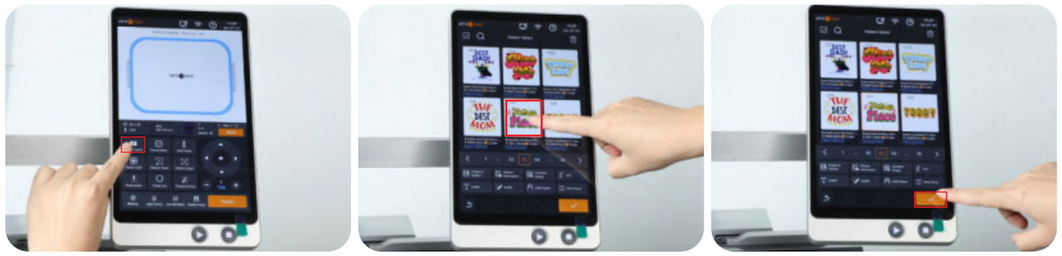
3. Match the display colors to the thread colors installed on the thread stand. Tap a needle number on the screen to change its display color.

IMPORTANT

The displayed needle colors are for on-screen identification only and do not indicate the actual threading status. Whenever you change the thread color on the machine, make sure to check or update the corresponding display color.

Starting Embroidery

For your first embroidery project, we recommend selecting one of the built-in test patterns.



1. Select a Pattern: On the Home screen, tap Pattern Select. Choose the desired pattern, then tap the orange √ button to confirm. The machine will automatically open the Pattern Edit screen.

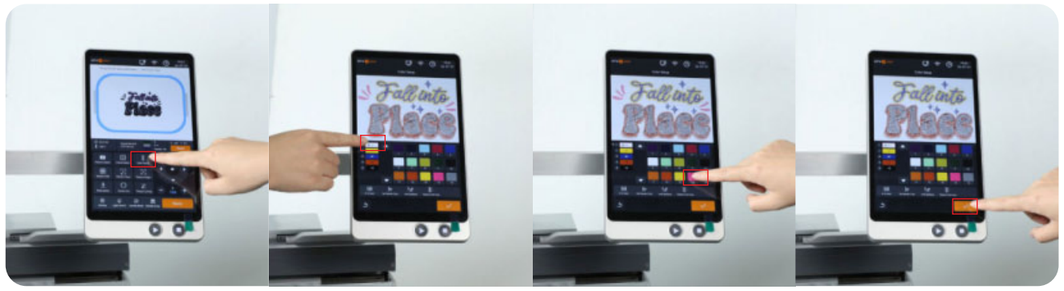


2. Edit the Pattern: Scale, rotate, flip, move, or make other adjustments. When finished, tap the orange √ button to confirm.



3. Select the Frame: Tap Frame Select, then choose the frame type that matches the frame currently installed on the machine. If a confirmation message appears, tap √ to confirm.

IMPORTANT!
The selected frame type on the touchscreen must match the frame installed on the machine.
When the cap driver is installed, do not select a flat frame and perform Pattern Origin, Pattern Trace, or Frame Move operations. An incorrect frame selection may result in frame collisions, needle breakage, or damage to the machine or accessories.



4. Set the Needle Colors: Tap Color Setup. Assign each color in the pattern to the corresponding needle, then tap √ to confirm.



5. Trace the Pattern: Tap Pattern Trace, then select Perimeter Trace to check that the pattern fits within the embroidery frame before stitching. This helps prevent frame collisions and needle breakage.

6. Start Embroidery
After confirming the pattern, frame type, color sequence, position, and embroidery area, tap the orange Ready button on the touchscreen to enter embroidery standby mode. The Ready button will turn into a green Start Embroidery button.
For your first embroidery project, we recommend setting the speed to 600 spm or below.
Before starting, make sure there is no risk of interference around the machine. Then press the Start button (▶) below the touchscreen to begin embroidering.



Touchscreen Operation Instructions

This machine features a 10.1-inch touchscreen control panel for design management, hoop selection, thread color settings, design editing, position confirmation, data transfer, and embroidery confirmation.
To ensure proper operation of the touchscreen, electrical control system, and embroidery data, make sure the machine has completed its startup initialization before operation. Follow the instructions in this section when using the touchscreen, USB flash drive, and related functions.

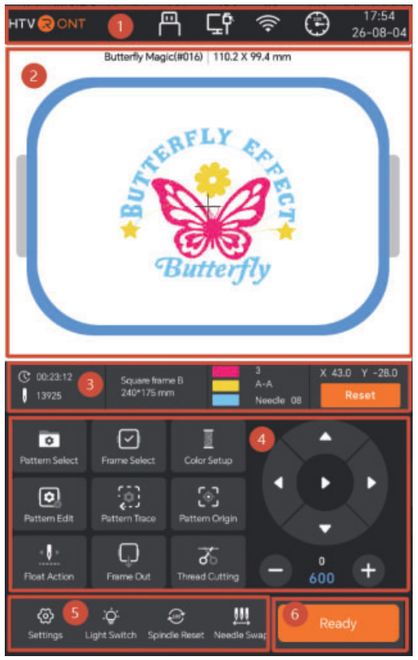
Precautions

- The touchscreen is a precision component. Do not use needles, scissors, screwdrivers, or other sharp or hard objects to operate it.
- Keep the screen clean and dry. Avoid oil, dust, or moisture that may affect touch sensitivity.
- When inserting a USB flash drive, make sure it is oriented correctly. Do not force it into the port.
- Do not remove the USB flash drive while it is reading, writing, importing, exporting, or updating, as this may cause data loss or damage to the drive.
- After transferring embroidery files via a network or USB flash drive, confirm on the machine that the files have been read correctly.
- Do not modify advanced, service, or factory parameters unless you are a qualified professional.



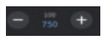
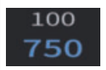
Main Interface Overview

After startup is complete, the system enters the main interface.



Area	Icon	Function	Description
Design Preview		Control cable connected	The control cable is connected properly.
		Control cable disconnected / connection error	The control cable is not connected or the connection is abnormal.
		Network connected	The network connection is active.
		Network not connected	The machine is not connected to a network.
		Main shaft at home position	The main shaft is currently at the home position.
		Main shaft not at home position	The main shaft is not currently at the home position.
	2025-01-09 12:40 :12	System Time	Displays the current system time. Tap the time to adjust it, or go to System Management > Clock Calibration to calibrate the system time.
		USB drive connected	A USB drive is inserted and detected.
	/	No icon displayed	No USB drive is detected.

Area	Icon	Function	Description
Design Information		Current Embroidery Design (Ready state)	Displays the position relationship between the design and the currently selected hoop.
		During embroidery	Displays the real-time stitching trace of the current embroidery design.
	Butterfly Magic(#016)	Design Name	Displays the file name of the current embroidery design.
	110.2 X 99.4 mm	Design Size	Displays the size of the current embroidery design.
Function Controls	00:18:34	Estimated Remaining Time	Displays the estimated time remaining to complete the current embroidery design.
	13925	Stitch Count	Displays the number of stitches already embroidered and the total number of stitches in the design. For example, 10,273 / 32,093 means that 10,273 stitches have been completed out of a total of 32,093 stitches.
	Square frame B 240*175 mm	Hoop Information	Displays the name and size of the currently selected hoop. Before starting embroidery, make sure the hoop shown on the screen matches the hoop or cap driver actually installed on the machine.
		Current Color Sequence	Displays the color sequence of the current design, allowing you to view the previous, current, and next embroidery colors. Tap it to open Color Setup.
	1/3	Color Change Count	Displays the current color change progress and the total number of color changes. For example, 2/15 means the machine is currently on the second color change out of 15.
	A-A	Color Change Mode	Displays the current color change and start mode.
		A/A — Auto Color Change & Auto Start	The machine automatically changes to the required needle position and resumes embroidery.
		A/M — Auto Color Change & Manual Start	The machine automatically changes to the required needle position and then stops. Press Start to resume embroidery.
		M/M — Manual Color Change & Manual Start	Manually select the needle position, then press Start to resume embroidery.
	Needle 04	Current Needle Position	Displays the needle position currently being used by the machine. If the machine cannot correctly detect the needle position, “?” is displayed.
	X -11.2 Y 6.5 Reset	X/Y Coordinates & Reset	The X and Y values show the hoop's offset from the reference origin in millimeters (mm). Tap Reset to set the current position as a new reference point and reset the X/Y values to zero. Note: Reset only resets the X/Y coordinate reference point. It does not move the hoop, change the design position, or reset the machine's mechanical origin.
		Pattern Select	Tap this icon to open the Pattern Selection screen, where you can select, import, or manage embroidery designs.
		Frame Select	Tap this icon to open Frame Select. Select the hoop or cap driver that matches the one actually installed on the machine.
		Color Setup	Tap this icon to open Color Setup, where you can set the color sequence and the needle position assigned to each color.
		Pattern Edit	Tap this icon to open Pattern Edit, where you can adjust the design position, angle, direction, size, and repeat settings.
		Pattern Trace	Tap this icon to open Pattern Trace. Trace around the design or its outline to confirm the embroidery position and check whether the design exceeds the embroidery area.

Area	Icon	Function	Description
Function Controls		Pattern Origin	Tap this icon to open Pattern Origin, where you can return to the origin, save or restore the design origin, or find the machine origin.
		Float Action	Tap this icon to open Float Action. The machine can move without stitching to check the hoop movement path or adjust the position.
		Frame Out	Tap this icon to move the hoop to a convenient position for hoop removal, hoop installation, or material changes. Make sure there are no obstacles along the movement path before using this function.
		Thread Cutting	Tap this icon to open the Thread Cutting menu.
		Frame Movement	Use the arrow keys to move the hoop up, down, left, or right to adjust the design position or check the embroidery area. The center button switches the hoop movement speed.
		Maximum Embroidery Speed	Tap + or − to adjust the machine's maximum embroidery speed. During embroidery, the actual speed will not exceed this setting.
		Embroidery Speed Display	The upper number shows the current actual embroidery speed. The lower number shows the set maximum embroidery speed, in SPM. The machine automatically adjusts the actual speed according to the stitch length and embroidery conditions, but it will not exceed the set maximum speed.
System & Auxiliary Controls		Settings	Tap this icon to open the system settings screen, where you can configure the language, network, time, commonly used parameters, and other system functions.
		Light Switch	Tap this icon to turn the machine's work light on or off.
		Spindle Reset	When the main shaft is not in position or its status is abnormal, tap this function to reset the main shaft angle and return it to the correct stop position.
		Needle Swap	Tap this icon to open the needle position interface, where you can view or select the current needle position for color changes, needle position checks, or maintenance operations.
Embroidery Confirmation		Embroidery Status	Tap Ready to switch the machine to embroidery confirmation mode. Confirm that the design, hoop, colors, position, and embroidery area are correct, then press the Start button to begin embroidery.

Machine Operating Modes

The machine supports the following three color change modes:

Mode 1: M/M — Manual Color Change & Manual Start

Before starting embroidery, manually select the needle position to be used.

The machine will not change needles automatically. Each time a color change is required, the operator must manually switch to the target needle position and then press Start to resume embroidery.

This mode is suitable for sample testing, special techniques, or applications that require manual confirmation at each stage.

Mode 2: A/M — Auto Color Change & Manual Start

The machine automatically changes needles according to the preset color sequence.

When embroidery starts, the machine first changes to the needle position specified in the color sequence and then begins embroidering.

When a color change is required during embroidery, the machine automatically changes to the next specified needle position but stops and waits for the operator to press Start again.

This mode is suitable when the operator needs to monitor each section of the embroidery while still allowing the machine to change needles automatically.

Mode 3: A/A — Auto Color Change & Auto Start

The machine automatically changes needles according to the preset color sequence and automatically resumes embroidery after each color change.

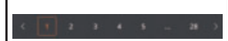
When embroidery starts, the machine automatically changes to the target needle position according to the preset color sequence. During embroidery, it also automatically changes to the next needle position and resumes operation when a color change is required.

This mode is suitable for continuous production with stable processes and clearly defined color sequences.

Standard Workflow Before Starting Embroidery

Pattern Select

This function is used to select, view, and manage embroidery designs stored in the machine's memory. The interface allows you to select the design to be embroidered and provides functions for searching, deleting, sorting, combining designs, lettering embroidery, doodle embroidery, USB import/export, and other design management functions.

Icon	Function	Description
	Selection Mode	Tap to switch between selection modes.
	Single Selection Mode	Selects only one design at a time. Commonly used to select the current embroidery design.
	Multiple Selection Mode	Allows multiple designs to be selected at once. Commonly used for batch deletion, batch processing, or batch export.
	Search	Search for a design by its name or number.
	Delete	Deletes the selected design from machine memory.
	Design Preview	1. Displays a design thumbnail for quick identification. 2. Displays the current design file name or the design name stored in the system. 3. Displays the total stitch count. 4. Displays the number of color changes in the design. 5. Displays the design dimensions.
	More Design Options	Double-tap the design preview to access additional design settings: 1. Copy Design in Memory: Copies the selected design and creates a new design number or name. 2. Delete Design in Memory: Deletes the selected design from memory. 3. Combine Designs: Combines the current design with other designs. 4. Edit Color Sequence: Edits the color sequence and corresponding needle positions for the current design. 5. Set Embroidery Parameters: Sets embroidery parameters such as size, direction, rotation, and repeat. 6. Appliqué: Sets appliqué steps or stop points. 7. Export Design: Exports the current design to a USB flash drive or specified storage location.
	Page Navigation	When the number of designs exceeds one page, tap the arrows or page numbers at either end to navigate between pages.
	Design Information	After selecting a design, tap this icon to view detailed information. You can zoom in or out, move the design left or right, and play the stitching path.
	Combine Designs	Opens the design combination functions.
	Sort	Select Ascending or Descending, then sort designs in memory by design number, design name, number of colors, total stitch count, X width, or Y width.

Icon	Function	Description
	Letter	Opens the lettering embroidery function.
	Graffiti embroidery	Opens the graffiti embroidery function.
	USB Drive	Opens USB flash drive functions.
	More	Opens additional design management and processing functions: 1. Edit Design in Memory 2. Split Design in Memory 3. Edit Combined Design 4. Clear All Designs in Memory 5. Generate High-Speed Design 6. Generate Basic Design from Combined Design 7. Generate Basic Design from Embroidery Parameters 8. Generate Outline Design from Basic Design 9. Generate Design Along the Design Perimeter 10. Generate Design by Moving the Hoop 11. Add Satin Stitch Compensation to Design in Memory 12. Export Design in Memory to USB Drive (with Parameters) 13. Install Lettering Fonts 14. Download Designs from Cloud Storage 15. Upload Designs to Cloud Storage
	Back	Returns to the previous level.
	Confirm	Confirms the current selection or operation.

Instructions

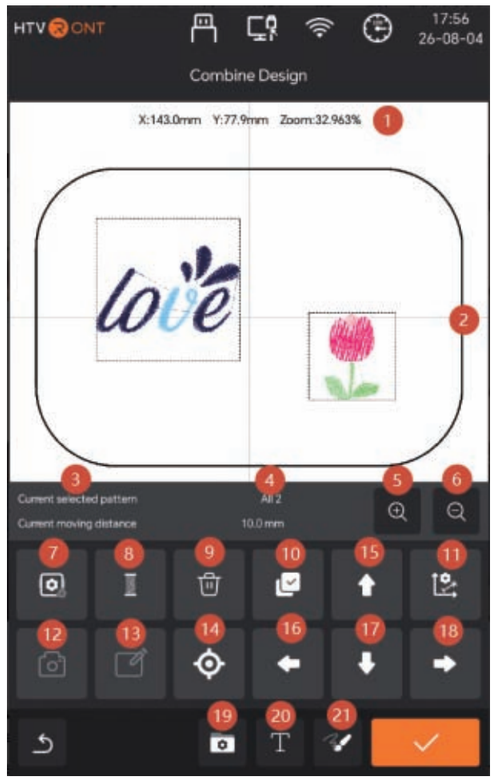
1. Tap Pattern Select on the main interface to open the Pattern Selection screen.
2. Check the design preview, design name, stitch count, number of color changes, and design size.
3. To select a single design, make sure Single Selection Mode is active, then tap the desired design.
4. To process multiple designs, tap Multiple Selection Mode, then select the desired designs one by one.
5. If there are many designs, use Search in the top bar to find a design by name, number, or keyword.
6. After selecting the desired design, you can continue using the Design Expansion, page navigation, or bottom function buttons.

Combine Designs

Select two or more designs, then tap Combine Designs to open the related functions. This function combines multiple designs in memory into a single embroidery task in the specified order and positions.

After combining the designs, recheck the overall design size, color sequence, hoop area, and design origin.

The Combine Designs screen typically consists of a preview area, selected design information area, and function button area. You can view the relative positions of multiple designs in the preview area, move the currently selected sub-design using the arrow buttons, and complete the combined design using functions such as zoom, delete, edit, and confirm.



1.Coordinates & Zoom: Displays the X/Y coordinates and zoom ratio of the current view, such as X: 0.00 mm, Y: 0.00 mm, Zoom: 100%.

2.Combined Design Preview Area: Displays the arrangement of the combined designs. The red outline indicates the currently selected design or combined design area.

3.Selected Design / Sub-design Indicator: Indicates whether the overall design or a sub-design is currently being edited.

4.Current Design Information: Displays the number, name, sequence, movement step, and other information of the currently selected design.

5.Zoom Out: Reduces the preview scale to make it easier to view the overall combined design area.

6.Zoom In: Enlarges the preview scale to make it easier to view local positions and overlapping areas.

7.Add / Select Design: Opens design selection or combined design settings to add designs from memory to the combination.

8.Design Sequence / Stitch Settings: Adjusts the sequence or related embroidery settings of the combined designs.

9.Delete: Deletes the currently selected sub-design or combined item.

10.Select / Copy / Confirm Sub-item: Performs selection, copying, or confirmation operations for the currently selected design.

11.Position / Parameter Settings: Opens settings related to the position, movement, or parameters of the selected sub-design.

12.Preview / View: Views the combined result or opens related preview functions.

13.Edit: Edits the parameters of the currently selected design or sub-design.

14.Position / Center: Positions the selected design at a specified reference point or performs a centering operation.

15.Move Up: Moves the selected sub-design upward.

16.Move Left: Moves the selected sub-design to the left.

17.Move Down: Moves the selected sub-design downward.

18.Move Right: Moves the selected sub-design to the right.

19.Settings: Opens settings related to the combined design.

20.Lettering Embroidery: Opens the lettering embroidery function to add or edit lettering designs.

21.Graffiti Embroidery: Opens the graffiti embroidery function to add or edit drawn designs.

Instructions

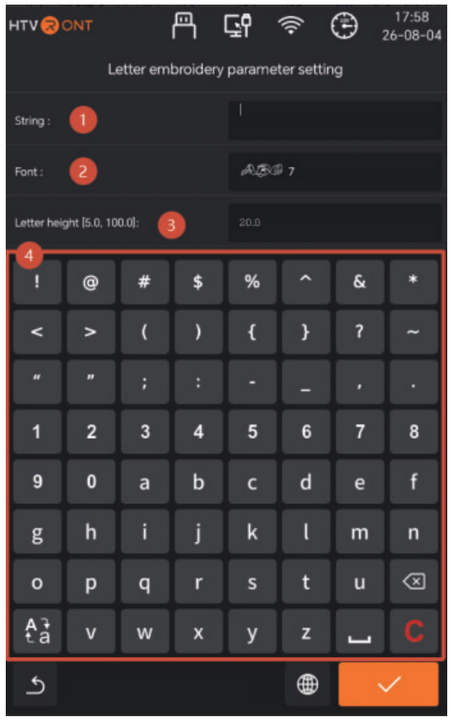
1.Open the Combine Designs screen.
2.Add or select the designs to be combined from memory.
3.Select the sub-design to be adjusted in the preview area.
4.Use the arrow buttons to adjust the sub-design position. For fine adjustments, set the movement step as needed.
5.Use Zoom In / Zoom Out to check the overall area and local overlapping areas.
6.To delete a sub-design, select it and tap Delete.
7.To edit the size, direction, rotation, sequence, or other parameters, select the sub-design and open Edit or Settings.
8.After confirming the combined result, tap Confirm to save it.

Note:

After saving a combined design, recheck the overall design size to make sure it does not exceed the current hoop area.
If multiple designs overlap, check the embroidery sequence and stitch overlap to avoid unexpected results.
After adjusting the position of a sub-design, run Pattern Trace again.
If lettering or doodle embroidery is added, also check the color sequence, stitch count, design size, and embroidery boundaries following the standard design workflow.

Letter Embroidery

Tap "Letter Embroidery" to access the letter embroidery function. This function allows you to input the characters you want to embroider, which are then converted into embroiderable patterns using the system's built-in embroidery font files. The system also provides character layout functions, allowing you to adjust parameters such as text arrangement, font, size, spacing, curves, rotation, mirroring, and flat stitch density.



1. String: English words, characters, or numbers that need to be embroidered.
2. Font: The font of the text to be embroidered. The font used in this interface applies to all input text; to modify the font of a single character, you can select and modify it in the "Character Layout" interface.
3. Letter Height: Sets the height of the characters corresponding to the selected font, in mm.
4. Character Spacing: Sets the spacing between the centers of characters, in mm.

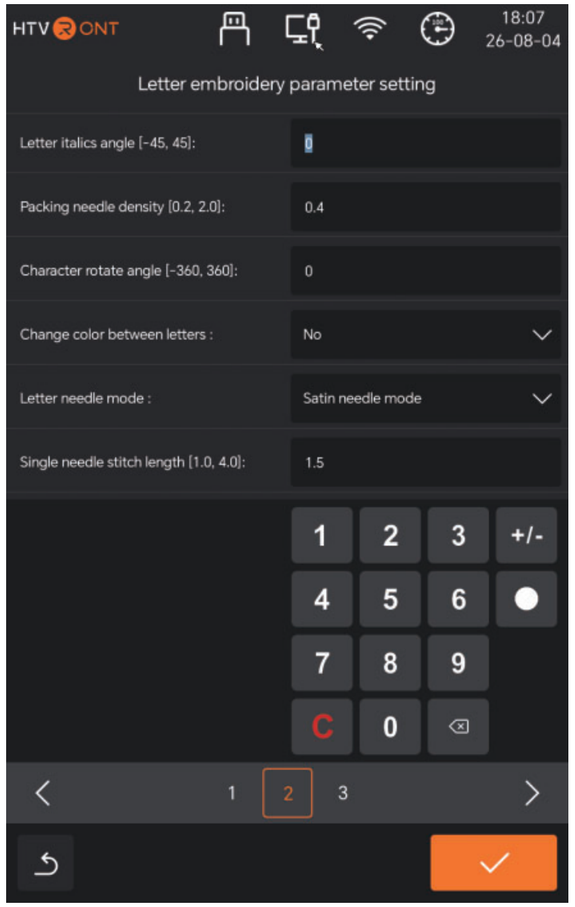
Letter Page



Icon	Description	Note
	1. Coordinates and zoom display: Displays the coordinates and zoom level of the current letter embroidery preview interface. 2. Letter Embroidery Preview and Boundary Display Area: Displays the generated letter embroidery pattern effect. Blue dotted lines/stitch lines represent the stitches or outline of the letter embroidery, red "+" marks indicate the center point of the character or the current character positioning point, and red rectangles represent the overall outer range of the current letter embroidery pattern, used to determine the pattern size, position, and whether it may exceed the embroidery frame range.	
	All input strings are rotated counterclockwise around the center of the string.	Applies to all characters.
	All input strings are rotated clockwise around their center.	Applies to all characters.
	Increase the width of the selected character.	Applies to the selected character.
	Reduce the width of the selected characters.	Applies to the selected character.
	Increase the spacing between each character in the string.	Applies to all characters.
	Reduce the spacing between each character in the string.	Applies to the selected character.
	The selected character rotates counterclockwise around its center.	Applies to the selected character.
	The selected character rotates clockwise around its center.	Applies to the selected character.

Icon	Description	Note
	Increase the height of the selected character.	Applies to the selected character.
	Reduce the height of the selected character.	Applies to the selected character.
	Shrink the display to show all entered characters.	Applies to all characters.
	Zoom in on all the input characters to observe their details.	Applies to all characters.
	The selected characters are mirrored horizontally along their respective centers.	Applies to the selected character.
	The selected characters are mirrored vertically along their respective centers.	Applies to the selected character.
	Increase the stitch density of all characters.	Applies to all characters.
	Reduce the stitch density of all characters.	Applies to all characters.
	Display all entered characters in full-screen proportion.	Applies to all characters.
1:1	All entered characters are displayed at a 1:1 ratio.	Applies to all characters.
	When strings are arranged in an arc, increase the arc size of the string arrangement.	Applies to all characters.
	When strings are arranged in an arc, reduce the curvature of the arcs.	Applies to all characters.
ABC ABC	Switch between character display modes: 1. Display the character's outline; 2. Display the character's stitch pattern.	Applies to all characters.
ABC	Whether the selected character is displayed with an independent color in the embroidery.	Applies to all characters.
AB AB	A character or all characters must be selected before layout editing can be performed. A red "+" at the center of a character indicates that the character is selected. By default, all characters are selected. Tap this button to select the first character. Tap it again to select the second character, and continue in sequence. After the last character is selected, tap the button again to select all characters.	A character or all characters must be selected before layout editing can be performed. A red "+" at the center of a character indicates that the character is selected.
	Switch between horizontal and vertical arrangement of all input characters.	Applies to all characters.
	All entered characters are arranged in an upward/downward curved arc, which can be toggled by Taping.	Applies to all characters.
	When the string is arranged in an arc, the angle of the character follows/does not follow the position of the arc it is on (i.e., the angle of the character is perpendicular to the arc/horizontal line). Tap to switch.	Applies to all characters.
	Move the selected character upwards.	Applies to the selected character.
	Move the selected character down.	Applies to the selected character.
	Move the selected character to the left.	Applies to the selected character.

Icon	Description	Note
	Enter the "Character Input Editing" interface to modify the English words, characters, and numbers that need to be embroidered.	
	Change the font of the selected characters.	Applies to the selected character.
A	Enter the "Letter Embroidery Parameter Settings" interface.	



Letter Embroidery Settings

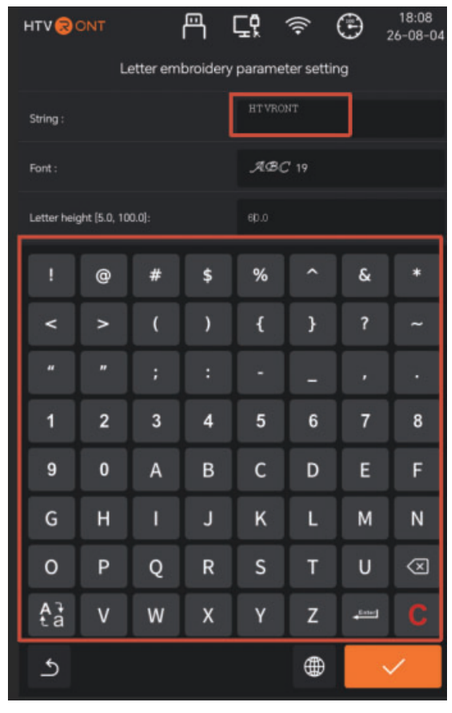
Parameter	Description	Default Value
Arrangement	There are four ways to arrange them: 1. horizontal arrangement; 2. vertical arrangement; 3. upward curved arc; 4. downward curved arc.	Horizontal Arrangement
Letter height	This refers to the height of the character corresponding to the selected font, in mm.	20 mm
Character spacing	This refers to the spacing between the centers of the characters, measured in mm.	0 mm
Character angle	This refers to whether the angle of each character changes according to the position of the arc it is on when the input characters are arranged in arcs.	No
String rotation angle	This refers to the angle at which the input string rotates around its center.	0
Letter tilt angle	This refers to the tilt angle of the input character relative to its vertical center line.	0
Satin stitch density	This refers to the distance between adjacent stitches in the generated letter embroidery pattern. The smaller the value, the higher the stitch density.	0.4 mm
Letter rotation angle	This refers to the angle at which each input character rotates around its own center point.	0
Color changing between letters	This refers to the input characters and whether each character is displayed with an independent color.	No
Letter stitch pattern	This refers to the type of stitch used when creating letter embroidery.	Satin Stitch

Instructions:

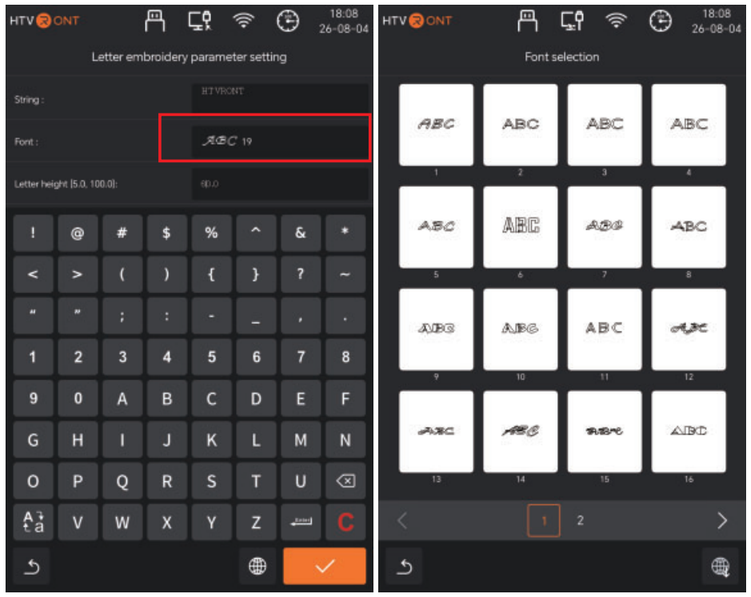
1. Tap "Letter" on the Pattern Select screen to open the letter embroidery editing page.



2. Enter the word, character, or number you want to embroider in the "String" input box.



3. Tap the "Font" box and select the desired embroidery font.



4. Set the letter height and other character parameters as needed.
5. After confirmation, the system will enter the character layout interface.

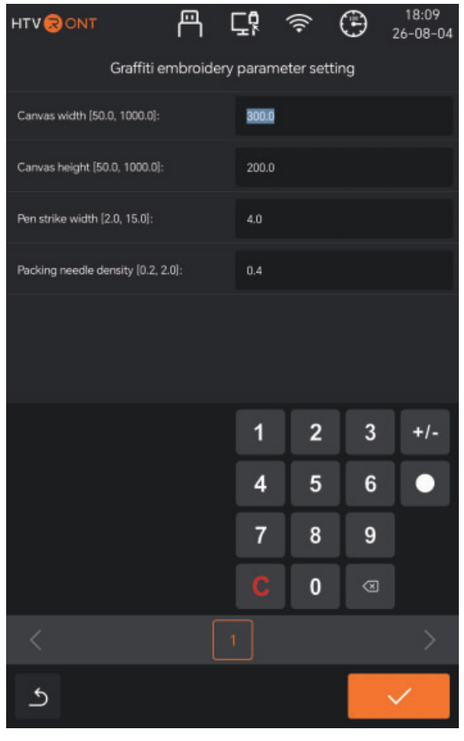


6. In the layout interface, use the function keys below to adjust the character arrangement as needed.
7. After the layout is complete, tap "√". The system will pop up a pattern storage dialog box and automatically provide the minimum available pattern number and pattern name.
8. After confirming and saving, you can view the generated letter embroidery pattern in the pattern memory.

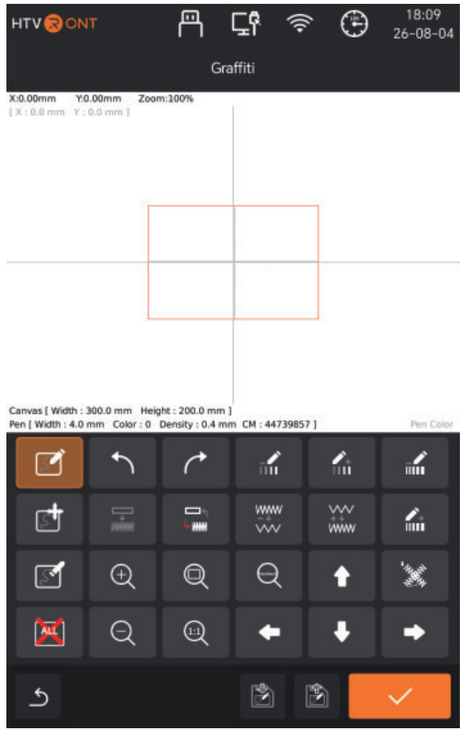
Note:
After a lettering embroidery design is generated, it will be saved as a design in the machine's memory. Subsequent steps, such as hoop selection, color setup, design origin setting, and pattern tracing, must still be completed following the standard embroidery workflow.
Before modifying a single character, use the toggle selected character function to select the target character. When a “+” mark appears at the center of the character, it indicates that the character is selected.
The smaller the satin stitch density value, the denser the stitches will be. After adjustment, test embroidery is recommended to confirm the result. Parameters such as arc arrangement, rotation, mirroring, and character spacing will affect the design size. Before saving, check that the design does not exceed the hoop area.

Graffiti Embroidery

Graffiti embroidery allows users to manually draw lines or patterns on a touchscreen and set attributes such as line thickness, color, and stitch density. Once drawn, the system can convert the pattern into an embroiderable design and save it to the machine's memory.

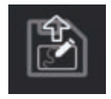


Parameter Settings Page



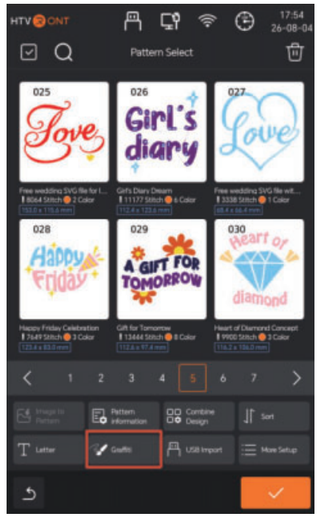
Editing Page

Icon	Description	Note
	1. Coordinates and zoom display: Displays the coordinates and zoom level of the current letter embroidery preview interface. 2. Current location coordinates display: Displays the coordinates of the current location point or cursor position. 3. Canvas/Drawing Area: The red rectangle indicates the current graffiti embroidery canvas area. Users can draw lines or patterns within this area. The drawings can eventually be converted into embroiderable stitch patterns. 4. Center reference lines: The horizontal and vertical light-colored lines are the center reference lines of the canvas, used to help users determine the position, alignment, and center point of the pattern. 5. Canvas size information: Displays the current canvas width and height. 6. Brush parameter information: Displays the relevant parameters of the current brush.	
	Tap this icon to enter the graffiti embroidery drawing mode, where you can draw patterns on the touchscreen.	This icon is active when the icon background is red.
	Tap this icon to enter the move edit mode of graffiti embroidery. In this mode, you can move and arrange the drawn pattern, or change its color, line thickness, line density, and other related editing operations.	This icon is active when the icon background is red.
	Tap this icon to undo the previous action.	When this icon appears gray, the function is unavailable.
	Tap this icon to repeat the previous step.	When this icon appears gray, the function is unavailable.
	Tap this icon to change the color of the currently drawn or selected line.	1. In drawing mode, this function applies before the drawn line is converted into stitches. 2. In move edit mode, this function applies to the currently selected stitches.
	Tap this icon to change the color of the currently drawn or selected line.	
	Tap this icon will reduce the thickness of the currently drawn or selected line.	
	Tap this icon will increase the thickness of the currently drawn or selected line.	
	Tap this icon will decrease the spacing between the currently drawn or selected lines.	
	Tap this icon will increase the spacing between the currently drawn or selected lines.	
	Tap this icon to convert the currently drawn line into a stitch.	When this icon appears gray, the function is unavailable.
	Tap this icon to toggle the display of all currently formed stitches as outlines or stitches.	This function does not apply to non-stitch lines.
	Tap this icon to enter the "Erase Edit" mode of the graffiti embroidery, where you can erase the drawn pattern.	This icon is active when the icon background is red.
	Tap this icon to zoom out and display the drawn pattern.	

Icon	Description	Note
	Tap this icon to zoom in on the drawn pattern so you can observe the details of the pattern or stitches.	
	Tap this icon to display all drawn patterns at a 1:1 scale.	
	Tap this icon to display all drawn patterns in full-screen proportions.	
	Tap this icon to show or hide the rulers on the canvas.	
	In "Move Edit" mode, Taping this icon will apply "Stitch Overlap," "Lower Stitch Avoidance," or "Upper Stitch Avoidance" to the selected overlay stitches. Taping will toggle between these options.	
	Tap the left icon to move the entire canvas to the left, and Tap the right icon to move the entire canvas to the right. Tap the top icon to move the entire canvas up, and Tap the bottom icon to move the entire canvas down.	
	Taping this icon will delete all currently drawn patterns.	Caution: This operation will affect the current design. Deleted content cannot be recovered. Please proceed with caution.
	Tap this icon to save the currently drawn pattern (not a design) for later import and editing.	
	Tap this icon to import the last saved drawing for further editing.	

Instructions:

1. On the pattern selection screen, tap the "Graffiti" icon to enter the graffiti embroidery settings screen.
2. After setting the canvas size, pen strike width, and density, tap "√" to enter the drawing interface.



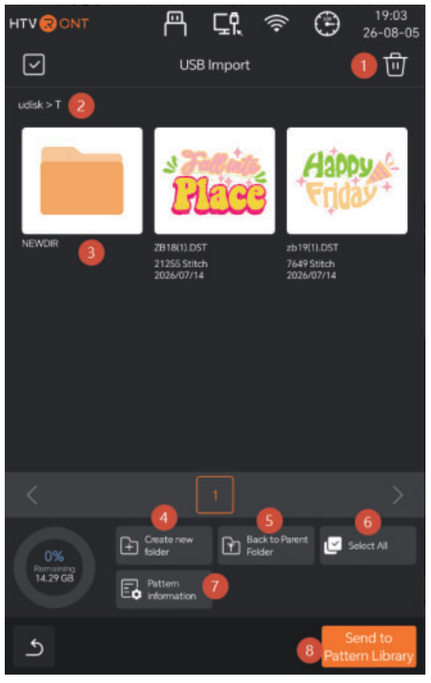
3. In the drawing interface, you can zoom the canvas, switch brush colors, and draw using a capacitive stylus or your finger.
4. After completing a section, convert the current line segment into a stitch before continuing to draw other colors or shapes.
5. If you need to adjust the position, you can enter the move editing mode, select the graphic, and drag it to the appropriate position.
6. To modify the attributes, select the graphic and adjust the stitch density or line thickness.
7. To delete a graphic, enter the erase editing mode and Tap on the line segment or graphic you want to delete; if you accidentally delete it, you can use the undo function to restore it.
8. After editing, save the pattern. The system will automatically assign the minimum available pattern number and name it P-DOODLING by default.
9. After saving, return to the memory pattern management interface to confirm the embroidery and start embroidery.

Note:

- Before switching between different colored line segments, the stitch conversion of the current line segment must be completed first.
- Before saving, please confirm that the graphic position, color, and stitch attributes are correct.
- This feature is suitable for simple hand-drawn patterns. For complex graphics, it is recommended to complete the design in drawing software first before importing.

USB Import

Tap the USB Drive icon at the top of the screen to access USB drive-related operations, including browsing USB drive directories, importing patterns, exporting patterns, or managing files.
Do not remove the USB drive while it is being read or recognized, as this may damage the design files.

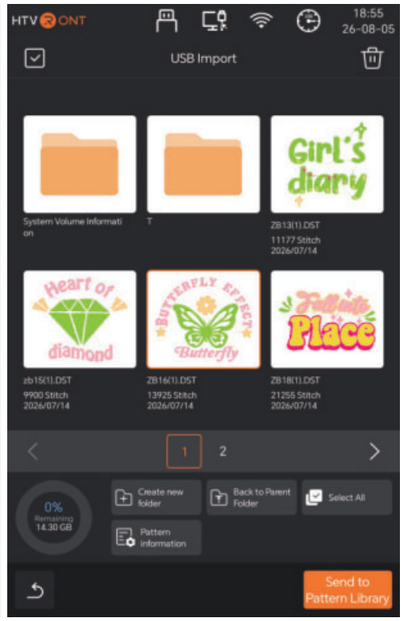


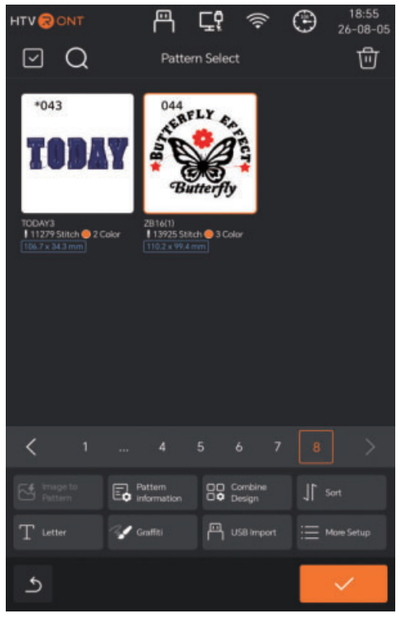
1. **Delete:** Delete the currently selected folder or pattern file.
2. **Path:** Displays the current directory path of the USB drive.
3. **File or pattern preview image.**
4. **Create new folder:** Create a new folder in the current USB drive directory.
5. **Return to parent folder:** Returns to the parent directory of the current directory.
6. **Select All:** Select all patterns/folders on the current page at once.
7. **Pattern Information:** View detailed information about the selected pattern.
8. **Send to Pattern Library:** Send/import the selected USB flash drive pattern to the machine's pattern library.

Instructions:

1. Insert the USB flash drive containing the pattern files into the USB port on the right side of the control box.
2. Tap the USB drive icon in the status bar or go to the "Pattern Select" page and tap the "USB drive" icon. The system will read the folders and pattern information in the root directory of the USB drive.
3. After selecting the pattern you want to input, tap the "Send to Pattern Library" icon.
4. The system will display the "Enter Pattern Number" interface and automatically assign a minimum available pattern number.
5. If you do not need to modify the pattern number, simply tap the "√" icon, and the system will input the default pattern number.
6. If you need to change the pattern number, use the number keys to enter the new pattern number and then Tap the "√" icon.
7. Wait for the pattern input to complete. Once input is complete, the screen will remain in the USB drive operation window.
8. To enter other patterns, repeat the above steps.



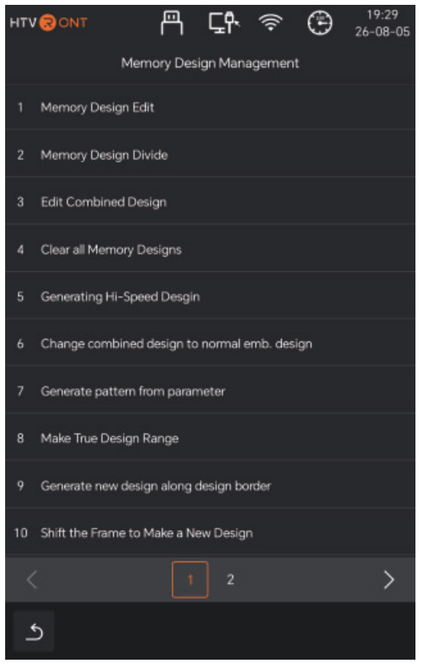


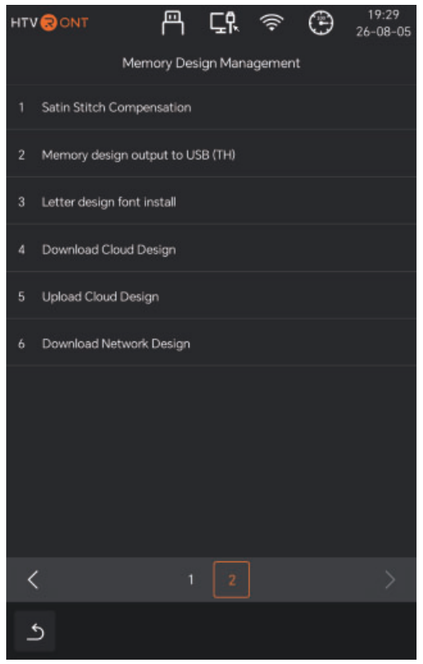


Note:
Do not remove the USB drive while it is being read or recognized, as this may damage the design files.
If the USB drive remains plugged in for an extended period, unplug and reinsert it after restarting the machine. Otherwise, a "Read Error" pop-up message may appear.

Memory Design Management

"Memory Design Management" is used to view, select, copy, delete, edit, split, output, and process embroidery patterns in the machine's memory. Patterns in the machine's memory can be used as the current embroidery pattern, or they can be combined, used to generate new patterns, or exported to a USB drive.

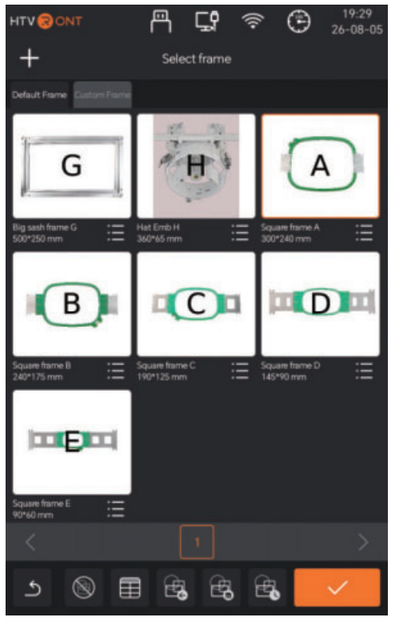




Frame Select

"Frame Select" is used to set the type of embroidery frame and the embroidery range used for the current embroidery. After selecting an embroidery frame, the system will determine the pattern position, pattern size, and frame movement boundary according to the effective embroidery range of the frame to prevent the pattern from exceeding the embroidery frame range. HTVRONT E15 provides 7 commonly used embroidery frames by default, including 5 flat embroidery frames, 1 hat embroidery frame, and 1 large flat frame. Users can also add or edit embroidery frame sizes in "Custom Frame" to suit their specific needs.

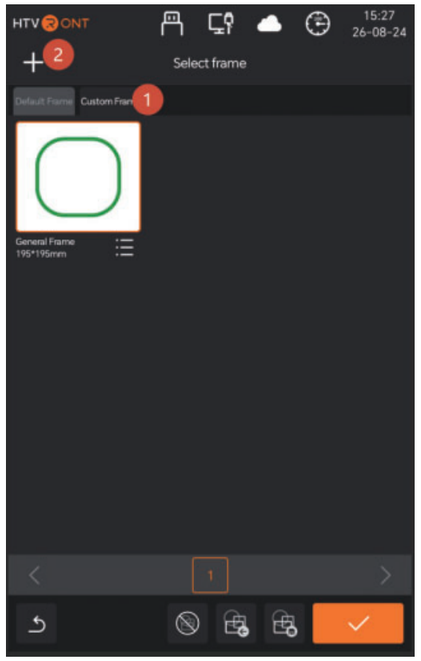
WARNING!
The embroidery frame selected on the screen must match the embroidery frame actually installed on the machine. Incorrect selection may result in inaccurate design positioning and, in severe cases, may cause the needle bar, presser foot, embroidery frame, or cap frame drive mechanism to collide.



Icon	Description
	Default embroidery frame Taping will display the system's preset embroidery frames. The default embroidery frames are the commonly used embroidery frame parameters built into the factory, suitable for randomly matched or regularly used flat embroidery frames and hat embroidery frames.
	Custom embroidery frame This page is used to add, edit, or select user-defined embroidery frames. When using non-default embroidery frames, special fixtures, or custom frames, you can create the corresponding embroidery frame parameters.
	Frameless option
	Embroidery frame settings Tap this icon to enter the embroidery frame settings interface.
	Add embroidery frame type: Tap this icon to add an embroidery frame type.
	Save embroidery frame type: Tap this icon to save the newly created embroidery frame type to memory.
	Import embroidery frame type from USB drive: Tap this icon to import a new embroidery frame type from USB drive.
	Embroidery frame parameter table.
	Restore Default Embroidery Frame Type: Tap this icon to restore the selected embroidery frame type to its default value.

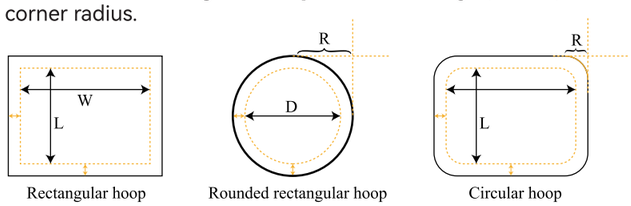
Intructions

1. Tap the "Frame Select" icon on the main interface to enter the select embroidery frame page.
2. Tap the "Default Frame" tab.
3. Select the corresponding embroidery frame card according to the actual embroidery frame installed on the machine.
4. Tap the "√" button in the lower right corner to save.
5. After returning to the main interface, check if the pattern is within the selected embroidery frame area.
6. Before starting the embroidery, it is recommended to perform the Pattern Trace to ensure that the pattern does not exceed the embroidery frame area.

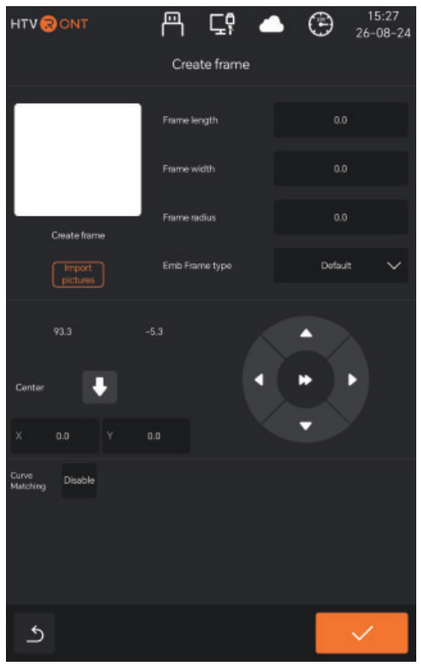


Add a Custom Frame:

1. Prepare the new hoop and determine the center point of the effective embroidery area.
2. On the Hoop Select page, tap the Custom tab, then tap + to add a custom hoop.
3. Measure the effective embroidery area of the hoop and enter the dimensions according to the hoop shape:
   - **Rectangular hoop:** Enter the length and width.
   - **Circular hoop:** Enter the diameter.
   - **Rounded rectangular hoop:** Enter the length, width, and corner radius.



Corner Radius: A larger R value creates a more rounded corner. Set the value according to the actual corner radius of the hoop.



Note:
Custom hoops do not automatically reserve a safety distance for the presser foot. When setting the inner hoop length and width, it is recommended to reserve at least 15 mm of clearance. For example, if the actual inner hoop size is 30 cm × 20 cm, enter 28.5 cm × 18.5 cm as the embroidery area size.

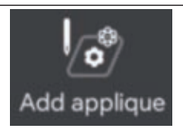
4. Select the hoop type that matches the actual hoop, such as General, Circular, or Magnetic Hoop.
5. Install the corresponding hoop onto the machine, then tap Hoop Movement. Use the arrow buttons to move the hoop until the red positioning point aligns with the center point of the hoop's effective embroidery area.
6. After confirming the center position, tap Center. The system will save the center position of the hoop.
7. Tap √ to complete adding the custom hoop.

Color Setup

Tap "Color Setup" on the main interface to enter. This page offers the following functions:
1. Specify which needle bar to use for each color segment of the pattern.
2. Set or view the current thread color of each needle bar to facilitate the operator in threading the needle according to the on-screen prompts.
3. Select one of the three color-changing modes: A/A, A/M, or M/M.
4. Change the default display color of the 15 needle bars.
5. Manually add appliqué points.

Note:
The colors displayed on the screen are for display and management purposes only. The actual embroidery color is determined by the thread installed on each needle bar. After setting the color sequence, make sure the needle bar numbers match the actual thread colors.



Icon	Description
	Overall pattern preview After selecting a color segment from the color sequence table on the left, the corresponding embroidery area will be highlighted in the preview image. After modifying the color or stitch correspondence, you can check the pattern color display effect through the preview area.
	Color sequence table Displays the color-changing order of the current pattern and the needle bar number corresponding to each color segment. Taping on a color swatch allows you to change the specified needle bar.
	The current needle bar display color.
	Tap to switch the color change mode. A/A: Automatic switching, automatic startup The machine automatically switches to the next needle position and continues embroidery. A/M: Automatic color switching, manual start. The machine automatically switches to the next needle position and stops, waiting for the user to start the embroidery again. M/M: Manual color change, manual start Users manually select the needle position and manually start continuing the embroidery.
	This setting determines the default thread color displayed on the screen for each needle bar. This setting helps the operator confirm the threading position and does not automatically change the actual thread installed on the machine.
	This function is used to set the color sequence or stop point for appliqué embroidery. It can be used to set up appliqué materials, positioning lines, or topstitching when the pattern requires the placement of appliqué materials.
	Copy the stitch bar settings of the current color sequence to the stitch bar settings of the previous color sequence. This is useful when multiple consecutive color segments are embroidered using the same stitch bar, reducing the need for repeated selections.

Color Sequence Setup Instructions

1. After entering the main interface, tap the "Color Setup" icon.
2. In the color sequence list on the left, tap the color segment you want to modify.
3. In the needle bar color area on the right, tap the needle bar number you want to use.
4. The selected color segment will be updated to the selected needle bar number.
5. To modify the other color segments, repeat Steps 2–4.
6. If there are multiple color sequence pages, tap the up and down arrows to navigate through them.
7. Once you're finished, tap the "√" button in the lower-right corner to save.

Needle Bar Color Setup Instructions

1. Tap "Set Needle Color."
2. Select the needle bar whose display color you want to change.
3. Select the corresponding thread color from the color library or color list.
4. After confirmation, the color block for that needle bar will be updated on the Color Setup page.
5. Set the colors of the commonly used needle bars according to the actual thread setup.

Pattern Edit

"Pattern Edit" is used to adjust the size, orientation, rotation angle, mirroring, repeat stitch arrangement, flat stitch compensation, and pattern position of the current pattern before embroidery. After setting, the system will associate these parameters with the current pattern for subsequent embroidery preparation.

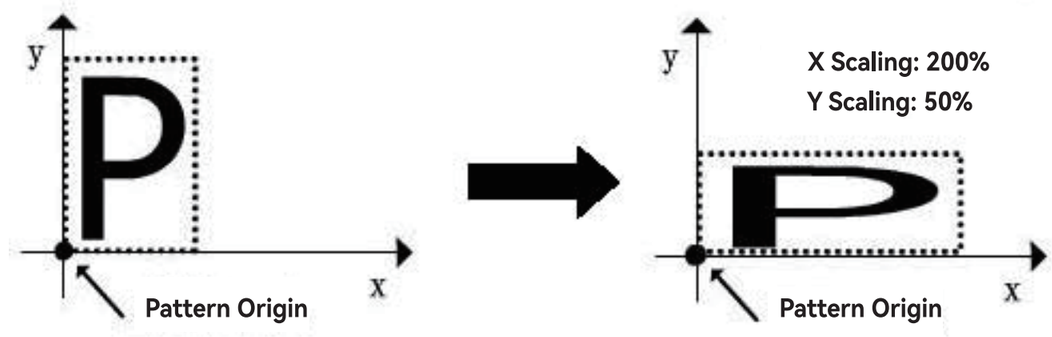


1. Size Settings W/H

Used to adjust the width and height of the pattern.

W represents the scaling ratio in the width direction, and H represents the scaling ratio in the height direction, in %.

The current setting range is 50%–200%. For example, W 100% / H 100% means the design remains at its original size.



2. Proportion Lock

When enabled, adjusting W or H will automatically change the other dimension by the same proportion, helping prevent pattern distortion.

When disabled, the width and height can be adjusted independently, which may stretch or flatten the pattern.

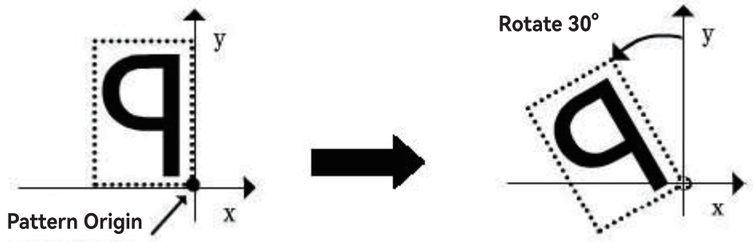
3. Rotation Direction

This parameter sets the embroidery direction of the pattern. The letter "P" below illustrates the relationship between the pattern and its embroidery direction.

Pattern Orientation	F	F	ⅎ	ⅎ	ⅎ	F	F	ⅎ	F
Embroidery Result	p	p	d	d	q	q	b	b	p

4. Rotation Angle

This parameter sets the rotation angle of the pattern. After entering the angle value, the pattern will rotate according to the selected rotation direction, and the result will be displayed in the preview area.



5. Horizontal Flip

Flips the pattern horizontally along its vertical centerline. The preview area will display the flipped result in real time.

6. Vertical Flip

Flips the pattern vertically along its horizontal centerline. The preview area will display the flipped result in real time.

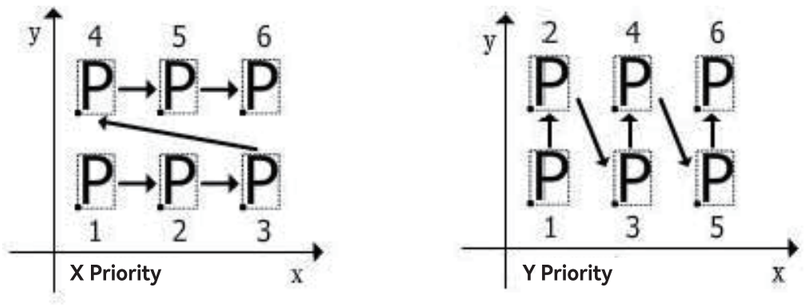
Tip:

The Flip function creates a mirrored pattern by flipping it horizontally or vertically. After flipping, the pattern orientation will update in the preview area. This function is suitable for symmetrical designs, reversed placement, or special fabric positioning requirements.

7. Repeat

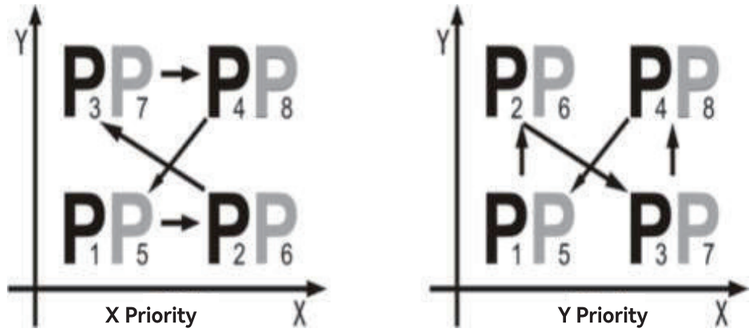
Regular repetition: This refers to embroidery where, after completing one full pattern, the embroidery frame is moved to the next designated position to continue embroidering the same pattern.

This means repeating the embroidery on the basis of the entire pattern.



Partial Repetition: In repeated embroidery, after the stitches of a specific color are completed for one pattern, the embroidery frame moves to the corresponding position of the next repeated pattern to stitch the same color again. This process continues until all repetitions for that color are completed.

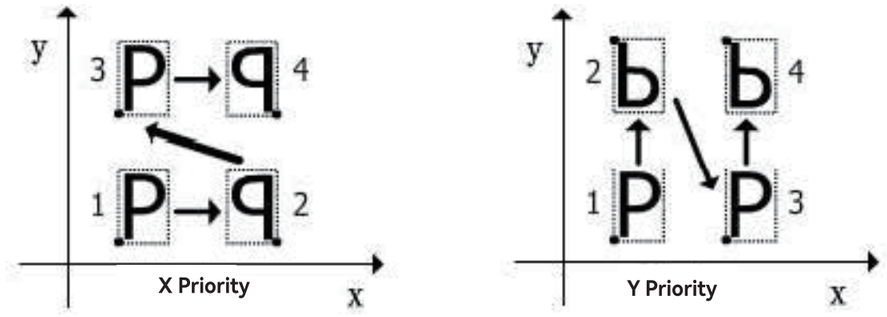
The machine then switches to the next color and repeats the process until all colors have been stitched for all repetitions.



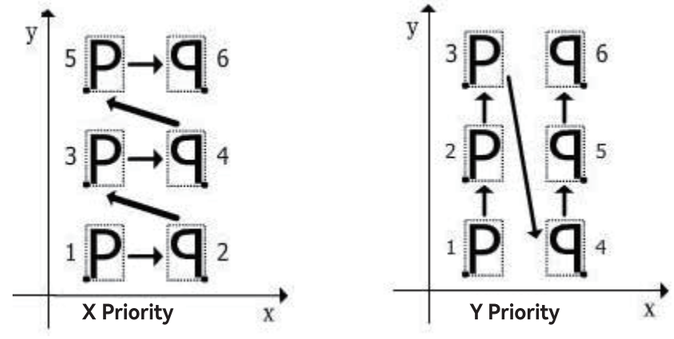
Mirror Repetition: Mirror repetition is only performed when the number of repetitions in either the X or Y direction is even.

If the number is even, then the direction set in the repetition sequence takes precedence. (Mirror repetition has the following four cases.)

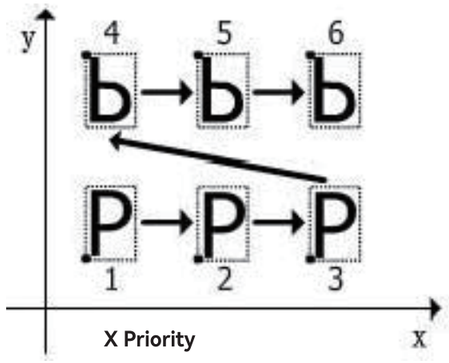
① When both the number of repetitions X and Y are even, mirror repetition is performed according to the priority direction set in the repetition sequence;

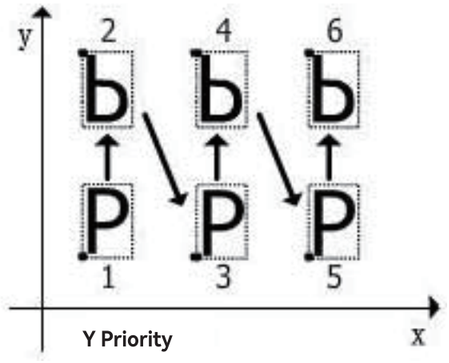


② When the number of repetitions X is even and Y is odd, then perform mirror repetitions upwards from X;

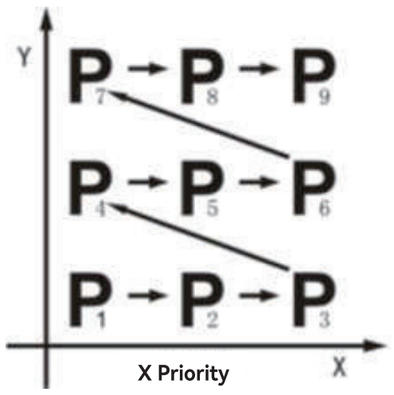


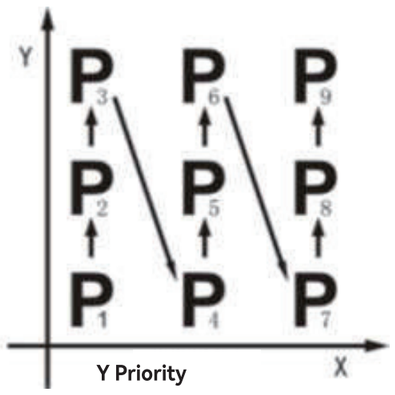
③ When the number of repetitions X is odd and Y is even, then perform mirror repetitions upwards in Y:





④ When both the number of repetitions X and Y are odd, mirror repetition is not performed; regular repetition is performed instead.





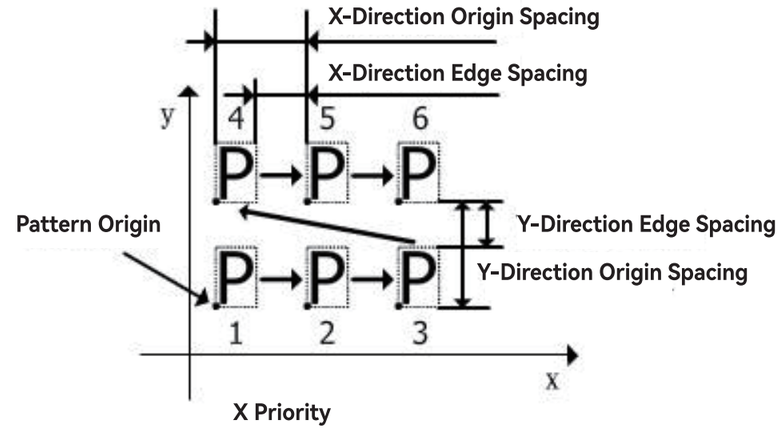
Partial + Mirror: This refers to a technique used in repeated embroidery where, after stitching a certain color of stitch in one repeat of a pattern, the embroidery frame is moved to the corresponding position in the next repeating pattern before stitching that same color again.
Continue embroidering with each color repeatedly until all stitches of that color have been used. Then switch to the next color and repeat, until all stitches of each color have been used. Only when the pattern is...
Mirror iteration is performed only if the number of iterations in one direction (X or Y) is even. If the number of iterations in both directions is even, then the iteration order is followed.
The direction is prioritized in the settings. That is, the pattern repeats according to the color blocks, and the repetition order is executed according to the four mirror scenarios mentioned above.

8. X Repeat Count
Sets the number of times the design is repeated in the X direction. A value of 1 means that only one design is embroidered in the X direction, with no horizontal repetition.

9. X Repeat Interval
Sets the spacing between adjacent designs in the X direction, in mm. The value can be adjusted using + / – or by tapping the value field and entering a value.

10. Y Repeat Count
Sets the number of times the design is repeated in the Y direction. A value of 1 means that only one design is embroidered in the Y direction, with no vertical repetition.

11. Y Repeat Interval
Sets the spacing between adjacent designs in the Y direction, in mm. The value can be adjusted using + / – or by tapping the value field and entering a value.



12. Satin Stitch Compensation X/Y
Used to adjust the width of satin stitches in the horizontal (X) or vertical (Y) direction.
X represents horizontal compensation, and Y represents vertical compensation. A positive value widens the stitch, while a negative value narrows it. The current range is –6 to 6, allowing fine adjustments in system units.

13. Frame-Movement Arrow Keys
Used to move the design position. Tap the up, down, left, or right arrow to move the design to the desired position within the embroidery frame.

14. Center/Quick Move Key
Located in the center of the arrow keys, this key is used for quick movement or positioning. The specific function depends on the on-screen prompts.

15. Location
Used to enter the design positioning function. Use the arrow keys to adjust the actual position of the design within the embroidery frame.

16. Back Button
Return to the previous page. Unconfirmed changes may not be saved.

17. Confirm Button
Saves the current design editing parameters and returns to the previous page or the main interface.

Instructions

1. After selecting a pattern, enter the "Pattern Editing" page.
2. Confirm the current pattern direction and size in the preview area.
3. If you need to adjust the size, enter or modify the W/H ratio.
4. To maintain the original proportions, turn on the proportion lock key before adjusting the size.
5. To adjust the orientation, set the rotation angle or Tap the mirror button.
6. If repeated embroidery is required, set the repeat order, pattern, X/Y count, and interval.
7. To fine-tune the stitch width, set the flat stitch compensation X/Y.
8. Use the arrow keys to adjust the position of the pattern.
9. Tap “√” to save.
10. After returning to the main interface, perform pattern tracking and confirm that there is no risk of exceeding the frame before starting the embroidery.

Location Function

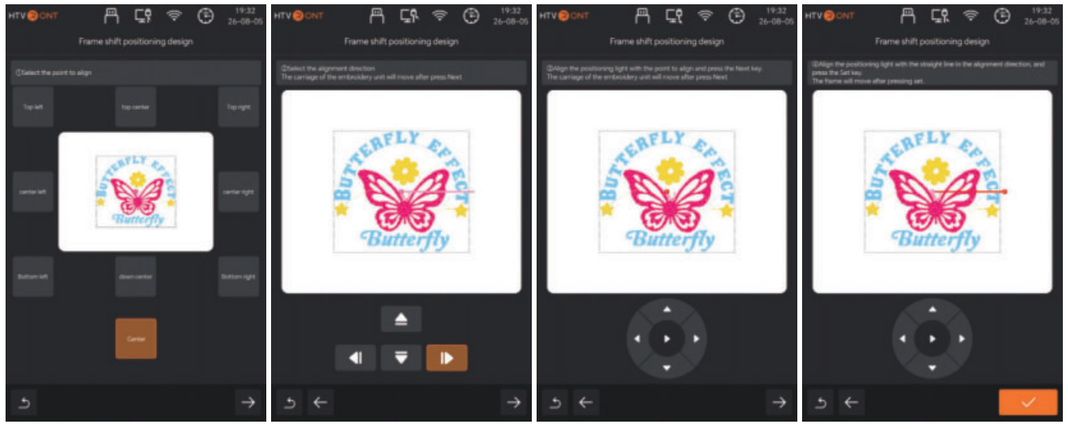
Used to access the pattern positioning page, aligning the pattern with the center point, crosshairs, or positioning lines on the fabric.

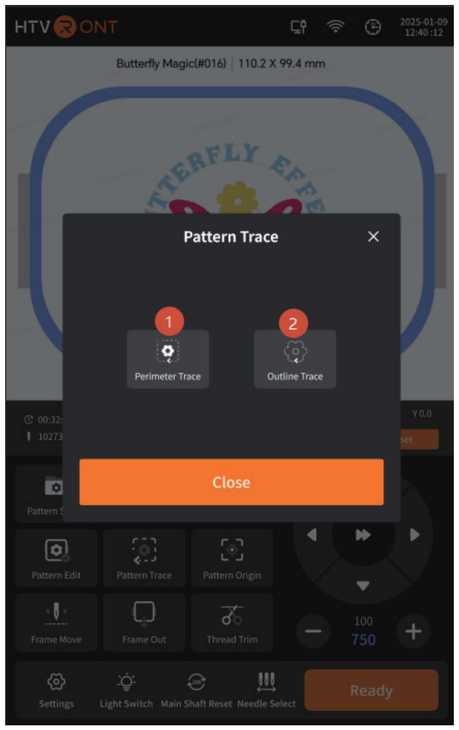
This function can be used when precise embroidery is required on areas such as chest badges, pockets, sleeves, and the front of hats, or when the pattern placement needs to be reconfirmed after reframing.

Once this function is activated, you can select the alignment point of the pattern, such as Center, Top left, Top right, Bottom left, Bottom right, etc.; then, by using the positioning light/needle position light point in conjunction with the positioning marks on the fabric, you can adjust the position and direction of the pattern.

After positioning is complete, a pattern tracking should be performed to confirm that the pattern will not exceed the embroidery frame area or collide with the embroidery frame.

For detailed instructions, please refer to: Aligning the Design with Positioning.





Pattern Trace

"Pattern Trace" is used to check the actual running range of the pattern within the embroidery frame before the actual embroidery begins. During tracking, the machine moves the embroidery frame in the selected manner to simulate the position of the pattern boundary, confirming whether the pattern exceeds the embroidery frame or encounters clamps, cap frames, presser feet, or other components.

1. Perimeter Trace

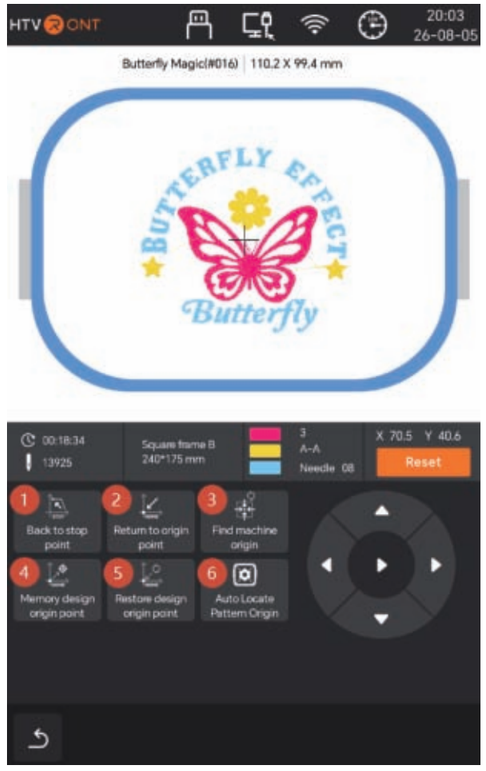
The machine tracks the actual outline of the pattern. It moves along the vicinity of the outer outline to check if the actual shape of the pattern exceeds the embroidery frame or hits the clamps. This is suitable for irregularly shaped patterns, patterns with irregular outlines, or situations where precise determination of the outer boundary of the pattern is required.

2. Outline Trace

The machine tracks the edges of the pattern along its circumscribed rectangle. It sequentially checks the top, bottom, left, and right boundaries of the pattern. This is useful for quickly confirming the overall width and height of the pattern and whether it falls within the effective range of the embroidery frame.

Pattern Origin

The "Pattern Origin" page is used to handle operations related to the starting point, stopping point, and machine origin of the embroidery pattern. This page is commonly used for positioning before embroidery, returning to the stopping position after embroidery is interrupted, and restoring the saved starting point when repeating the same pattern.



1. Back to stop point

Tap this icon to automatically return the embroidery frame to the stopped embroidery point of the pattern. When embroidery is paused, and the frame is manually moved for fabric changes, appliqués, inspections, or other operations, this function can be used to return to the stopped embroidery point for easy continuation of embroidery.

2. Return to origin point

Tap this icon to automatically return the embroidery frame to the starting point of the pattern. If the embroidery frame has been manually moved during the embroidery process, or if the embroidery frame has not returned to the pattern's origin after the embroidery is finished, you can tap this button to return the embroidery frame to the current starting position of the pattern.

3. Find machine origin

Used to perform the machine's machine origin location operation. The system's "Find Machine Origin" function is used to re-establish the coordinate reference of the machine's X/Y frame shifting system. After performing this operation, the frame will move automatically, and the machine's zero point will be confirmed based on the machine's limit detection position.

The HTVRONT E15 X-axis limit sensor is located on the right side of the X-axis, and the Y-axis limit sensor is located on the front side of the Y-axis. Therefore, before performing this operation, you must ensure that the embroidery frame is centered or does not exceed the sensor position.

If the embroidery frame is too far to the right, or the X-axis limit plate has passed the right-side sensor, the system may not be able to correctly identify the limit position when finding the origin, which may result in a collision with the frame.

4. Memory design origin point

Save the current embroidery frame position as the starting point of the current embroidery pattern.

5. Restore design origin point

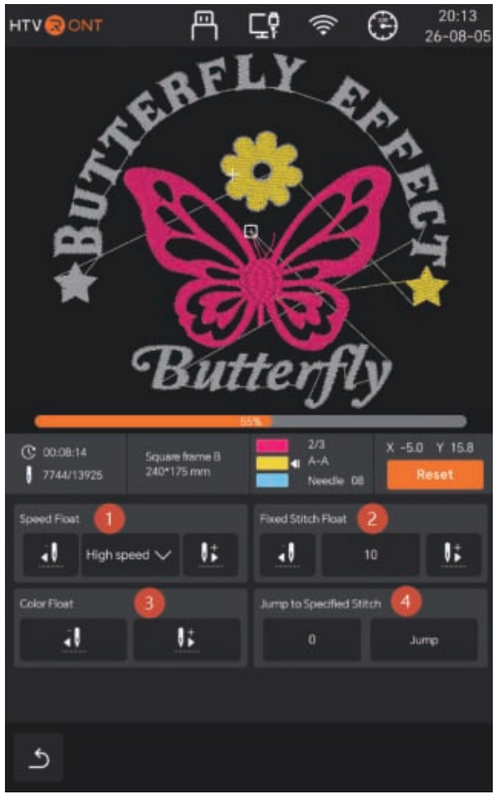
If the starting point of the frame corresponding to the current embroidery pattern was saved before, taping this icon will automatically return the embroidery frame to the previously saved starting point position, which makes it convenient to align the origin point of the embroidery frame when embroidering the same pattern again.

6. Auto locate pattern origin

Tap this icon to automatically find a suitable starting point for the embroidery pattern to be embroidered, so that the embroidery pattern is arranged in the center of the area that can be embroidered in the embroidery frame.

Float Action

"Float Action" is used to allow the needle to enter, exit, or jump to a designated position without embroidering. During dry run, the machine does not embroider with the needle, and it is mainly used for re-embroidering after a thread breakage, checking the position of the stitches, jumping to a designated number of stitches, or quickly positioning to a color change section.



1. Speed Float

Moves the needle forward or backward continuously at the set speed. The idle speed can be selected via the middle drop-down menu, for example, "slow". Tap the left button to move backward, and tap the right button to move forward.

2. Fixed Stitch Float

Move forward or backward by the set number of stitches. The value in the middle indicates the number of stitches moved in each operation; for example, 1 means moving forward or backward by 1 stitch each time. Tap the left button to move backward by the specified number of stitches, and Tap the right button to move forward by the specified number of stitches.

3. Color Float

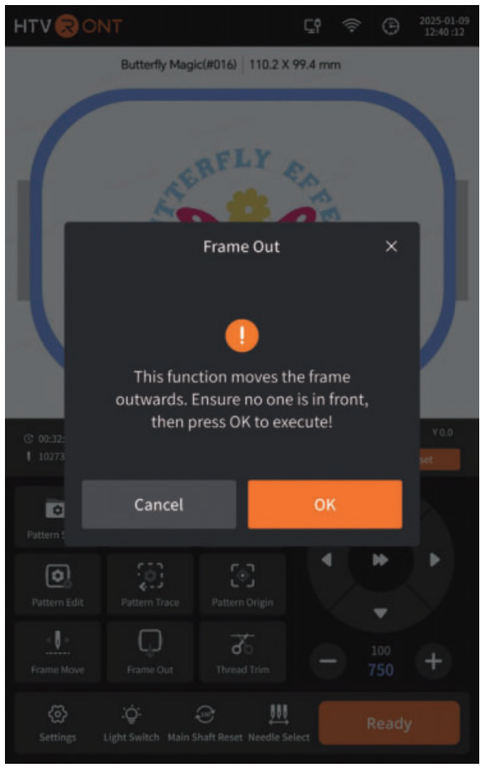
Jump to the previous or next color change position according to the color sequence. The left button is used to jump to the previous color change position, and the right button is used to jump to the next color change position.

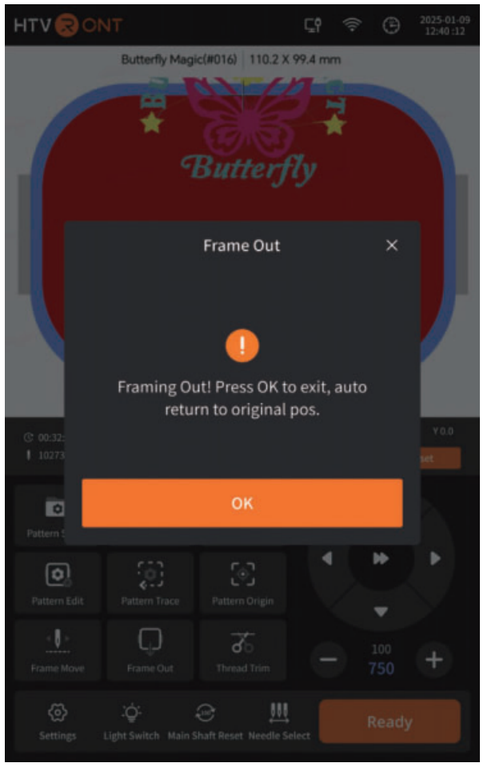
4. Jump to Specified Stitch

This option allows you to jump directly to the target number of stitches. Enter the target number of stitches in the input box on the left, and then Tap "Jump." The system will then navigate to the position corresponding to that number of stitches.

Frame Out

"Frame Out" automatically moves the embroidery frame to a convenient position when the machine is stopped. This function is commonly used for placing appliqué materials, inspecting embroidery, trimming thread ends, and processing fabric.





1. If no out-of-bounds point is set, the bounding box will move forward by default; if an out-of-bounds point is set, the bounding box will move to the set out-of-bounds point.
2. Path to set the out-of-frame point: Settings → User Parameters → Auxiliary Embroidery Functions → Out-of-Frame Point Settings

Thread Cutting

1. Trim Upper & Bobbin

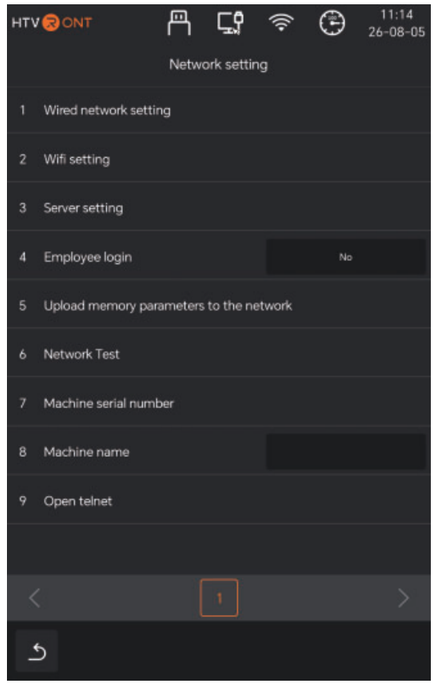
After the machine stops, tap this icon to cut both the upper thread and bobbin thread at the current needle position.

2. Trim Bobbin Thread Only

After the machine stops, tap this icon to cut only the bobbin thread at the current needle position. The upper thread remains uncut.

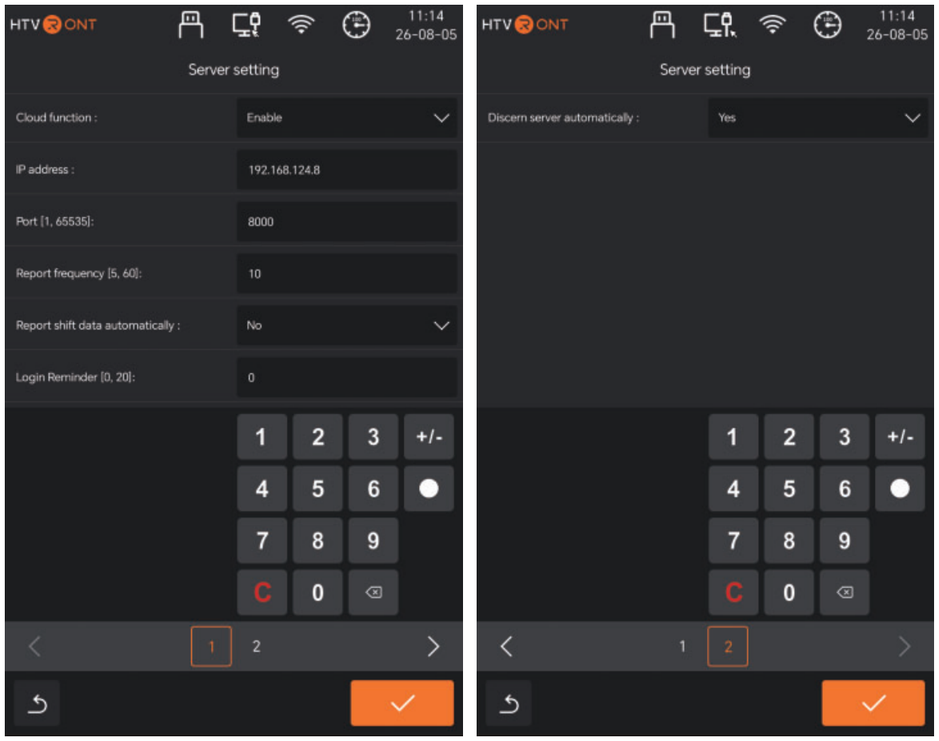
WiFi

Network Setting Page



Parameter	Description
Wired network setting	Used to configure the machine's wired network connection parameters.
Wifi setting	Used to set up a Wi-Fi connection. It can search for and connect to available wireless networks.
Server setting	Server settings are used to enable the machine's networking service and configure the connection parameters between the machine and the IS software or server. By default, networking and automatic server identification are enabled. When enabled, the IS software can search for and connect to the machine within the same network environment.
Employee login	/
Upload memory parameters to the network	Used to upload internal machine parameters to a network or server. Typically used for parameter backup, after-sales diagnostics, or equipment management.
Network Test	Used to test the current network connection status and confirm whether the machine can connect to the local area network or server normally.
Machine serial number	Display or set the machine serial number.
Machine name	Used to set the name that the machine displays on the network, identifying the device.
Open telnet	/

Server Setting Page



Parameter	Description
Cloud function	Used to enable or disable the machine's network connectivity service. When enabled, the machine can connect to IS software or a server via a network.
IP address	Displays or sets the server/IP address currently used by the machine. When automatic server identification is enabled, manual modification is generally unnecessary.
Port number	This setting specifies the port used by the machine to communicate with the IS software or server. Generally, the default value is sufficient.
Report frequency	This setting determines the time interval at which the machine reports data to the server or IS software. A smaller value indicates more frequent reporting.
Report shift data automatically	This setting determines whether to automatically upload or report shift-related data. Regular users generally keep the default settings.
Login Reminder	/
Discern server automatically	This setting determines whether the machine automatically identifies servers or IS software within the same network. When "Yes" is selected, the machine will automatically search for and match servers, usually without needing to manually enter IP addresses.

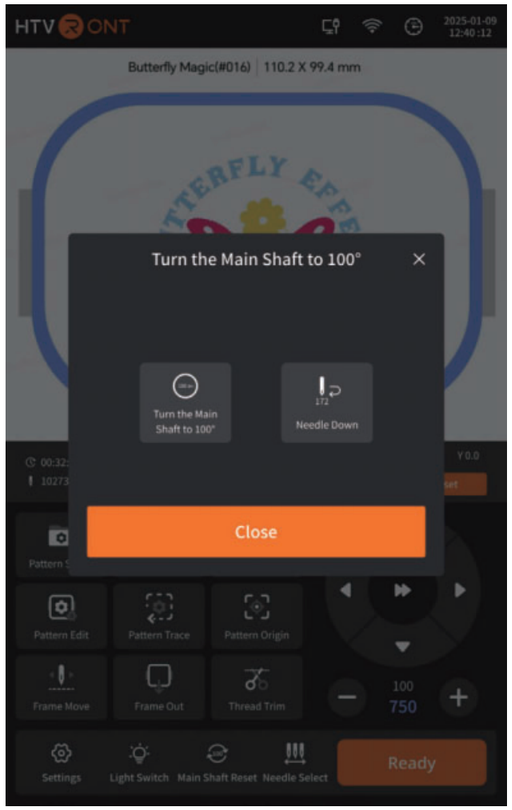
Instructions

1. Go to Network Settings > Server Settings.
2. Confirm that the Cloud function is "enabled".
3. Turn to page 2 and confirm that the discern server automatically is "Yes".
4. Ensure that the HTVRONT E15 and the computer/device running the HTVRONT IdeaStudio (IS) are connected to the same network environment.
5. Open the IS, search for and connect to the machine.

If IS cannot recognize the machine, check the Wi-Fi/wired network connection, IP address, port number, and firewall settings.

Spindle Reset

Used to control the spindle to rotate slowly when the machine is stopped, so that the spindle returns to the standard 100-degree stopping angle, or to stop the needle bar in the lower position.



1. Turn the Main Shaft to 100°

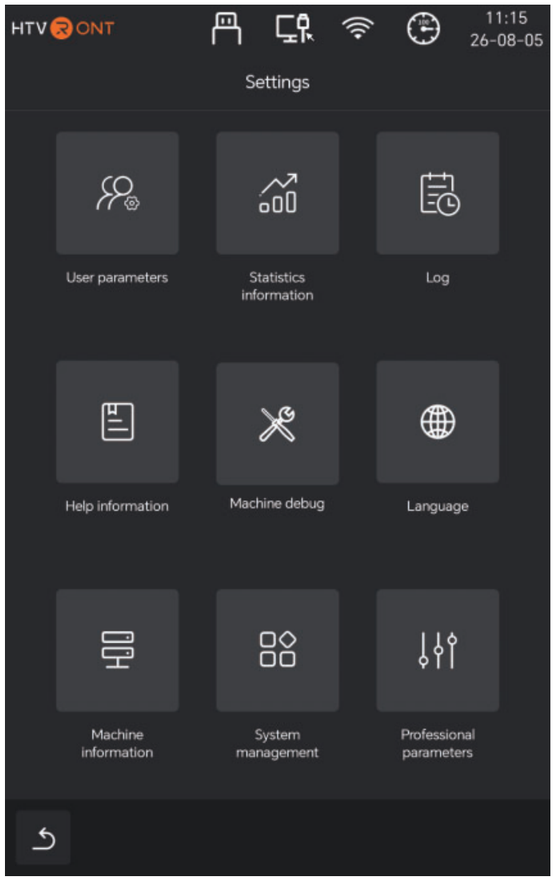
After Taping, the spindle will rotate at a low speed and stop at the standard stopping angle. The icon on the page will show 100°, indicating that the spindle will return to the machine's standard stopping position.

2. Needle Down

After Taping, the spindle rotates at low speed, causing the needle bar to descend and stop at the lower position. This function is used in special scenarios where the current embroidery point needs to be temporarily fixed, such as changing fabric or re-fixing fabric in large-format embroidery. After the operation is completed, the spindle should be rotated 100° back to restore the machine to its standard standby angle. Do not pull the fabric or move the embroidery frame when the needle is stopped at the lower position.

Settings

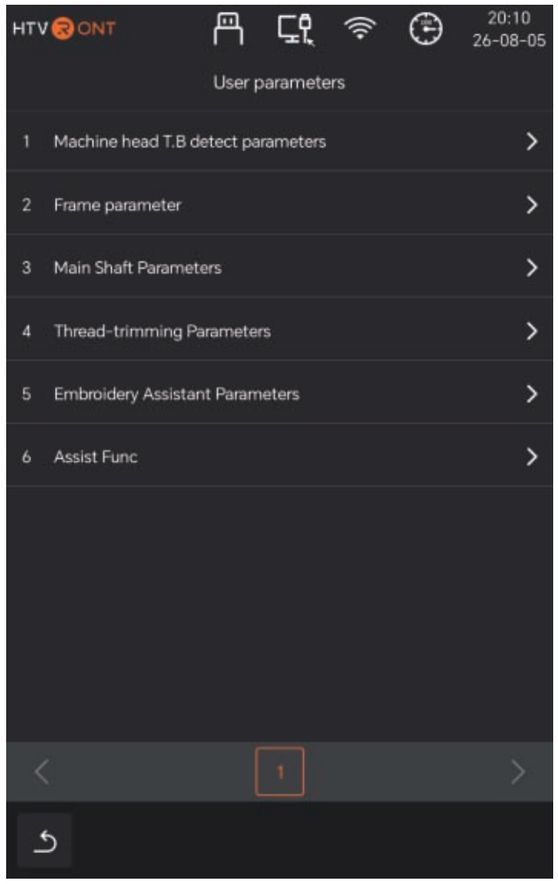
The "Settings" interface is used to view machine status, adjust common parameters, switch languages, view logs, perform maintenance and debugging, and access advanced parameter pages.



Icon	Description
	User parameters This is used to set embroidery auxiliary parameters and operation habits parameters commonly used by ordinary users.
	Statistical information This page is used to view machine operating statistics. It helps users understand machine usage, output data, and operating status.
	Logs Used to view recorded information during machine operation, including alarms, anomalies, operation logs, or system events.
	Help information Scan or visit the website to view the machine's detailed instruction manual or contact customer service for assistance.
	Machine debug Used for performing machine testing, component inspection, or maintenance and debugging.
	Language Used to switch the screen display language.
	Machine information Used to view basic machine information and system version information.
	System management Used for system maintenance, software upgrades, data management, or recovery operations.
	Professional parameters Used to set the core operating parameters of the machine.

User parameters

The user parameters page is used to view and adjust commonly used machine operating parameters.
These parameters affect the machine's performance, including detection, embroidery frame recognition, spindle operation, thread trimming, and embroidery auxiliary functions. Generally, it is recommended to use the default parameters; if adjustments are necessary, they should be made by personnel familiar with machine operation based on actual usage.



Parameter	Description
Machine head T.B detect parameters	These parameters are used to set the parameters related to the detection of broken wires in the machine head. These parameters affect the machine's sensitivity in detecting broken wires, broken needles, or abnormal wire routing.
Embroidery parameters	This is used to set parameters related to the embroidery frame, including settings for frame recognition, frame range, and frame movement. Improper parameter settings may lead to inaccurate pattern range judgment or the risk of overlapping with the same frame.
Main Shaft Parameters	These parameters are used to set spindle operation parameters. These parameters affect the machine's start-up, stop, speed control, and spindle positioning.
Thread-trimming Parameters	This is used to set parameters related to automatic wire trimming. These parameters affect the trimming length, trimming action, and trimming stability.
Embroidery Assistant Parameters	Used to set auxiliary function parameters during the embroidery process, such as positioning, color changing, patching, and undoing.
Assist Func.	Used to set up or enable embroidery assistance features to help complete specific embroidery operations or special use cases.

Instructions

1. On the user parameters page, Tap the parameter category that needs to be adjusted.
2. After entering the corresponding category, view or modify the specific parameters.
3. After making the changes, Tap "√" or "Save" as prompted on the screen.
4. After modifying the parameters, it is recommended to perform a low-speed test embroidery first to confirm that the machine is running normally.

Note

User parameters can affect the machine's operating status. It is not recommended to modify them unnecessarily. Incorrect parameter settings may lead to abnormal thread breakage detection, unstable thread cutting, incorrect embroidery frame range judgment, or abnormal machine operation.
If you are unsure of the meaning of the parameters, please keep the default values or contact after-sales personnel for confirmation before making any adjustments.

Machine head inspection parameters

1	Disconnection detection	When set to "Yes", the system will automatically determine whether there is a thread breakage at the embroidery head. If so, the thread breakage indicator light will illuminate and the machine will stop automatically.	yes
2	Face line detection sensitivity [0, 15]	This parameter adjusts the sensitivity of the line breakage detection; a higher value results in more sensitive detection. Parameter range: 1–15.	4
3	Bottom-line detection sensitivity [1, 15]	This parameter adjusts the sensitivity of the bottom line breakage detection; a higher value results in more sensitive detection. Parameter range: 1–15.	4
4	Thread count for anti-shake detection [1, 9]	The larger this value is set, the less sensitive the disconnection detection will be, and the smaller the false alarm rate will be. The smaller the value is set, the more sensitive the disconnection detection will be, but the more likely it is to be a false alarm rate.	6
5	Bottom-line detection de-jitter pin count [1, 9]	The larger this value is set, the less sensitive the disconnection detection will be, and the smaller the false alarm rate will be. The smaller the value is set, the more sensitive the disconnection detection will be, but the more likely it is to be a false alarm rate.	6
6	Number of stitches for repairing a broken thread [0, 15]	The number of stitches for normal stitch repair when the thread breaks. Range: 0–15 stitches. If the automatic stitch return number is set to 3 and the stitch repair number is set to 1, then after returning 3 stitches, the thread-breaking machine head will repair 2 stitches, and all machine heads will repair 1 stitch. If the stitch repair number is greater than the automatic stitch return number, then all machine heads will repair.	1
7	The number of broken stitches is not checked when starting embroidery [0, 15].	When starting the embroidery process by pulling the lever, set the machine to not detect thread breakage during the first few stitches. This parameter is generally set to 3, but if the machine is prone to misjudgment at the start of a stitch, this parameter should be increased appropriately.	5
8	If the thread breaks after a jump, the number of stitches is not detected [0, 10].	This parameter sets the number of stitches the system will not detect as broken after a jump. Because the thread is typically stretched considerably after a jump, the first few stitches are prone to false breakage detection. The system default is 3 stitches. If false breakage is likely after a jump, the number of stitches not detected can be increased. Parameter range: 1–10.	3
9	Does the jump detect disconnection	This setting determines whether to perform thread break detection during skip stitches. Selecting "Yes" will detect thread breaks during skip stitches; selecting "No" will not detect thread breaks during skip stitches, only during normal embroidery stitches. It is generally recommended to keep the default value "No" to reduce false alarms during skip stitches.	no

Embroidery frame parameters

1	Speed during high-speed frame movement [1, 30]	Range: 1 to 30. Default is 16. This sets the speed for high-speed frame movement. The larger this value is, the faster the high-speed frame movement will be.	20
2	Speed during low-speed frame movement [1, 30]	Range: 1 to 30. Default is 12, which sets the speed for low-speed frame movement. The larger this value is, the faster the low-speed frame movement will be.	12
3	Cross-border speed [1, 100]	This refers to the speed at which the frame is moved when skipped stitches occur during the embroidery process, when the frame is moved to change colors, or when the frame is moved back to the original point after the embroidery is completed. It is generally set to the default value. Setting the value too high may cause some frame drivers to lose synchronization during frame movement.	30
4	Is it a step-by-step skipping sequence	When encountering long skipped stitches, should the skipped stitches be moved step by step? The default is "No", meaning the skipped stitches are moved to the desired position in one step.	no

Spindle related parameters

1	Maximum speed [700, 1200]	Set the highest speed for machine embroidery.	1200
2	Minimum engine speed [250, 700]	Set the minimum rotation speed for machine embroidery.	500
3	Starting speed [60, 150]	The spindle speed at startup when embroidery begins is 100 rpm by default, with a range of 60 to 150 rpm.	100
4	Jump speed limit [300, 1500]	Limits the maximum spindle speed when skipping needles. Default is 500 RPM, range: 300~1500 RPM.	500
5	High-speed idle speed [1,64]	The higher this value, the faster the speed during high-speed idle driving. The default value is 50, and the range is 1 to 64.	64
6	Low-speed idle travel speed [1,64]	The larger this value, the faster the speed during low-speed idle travel. The default value is 20, and the range is 1 to 64.	20
7	Is the spindle locked when parking?	In some models with low spindle resistance, a spindle locking operation is required to ensure the spindle stops stably in the parking position after a high-speed stop, unaffected by inertia. In this case, the spindle locking function should be enabled. When the spindle jams due to mechanical failure, the spindle locking function must be disabled for maintenance purposes, allowing for manual rotation of the spindle.	yes
8	Slowly count [0, 6] stitches when starting.	The default number of slow-motion stitches when starting embroidery is 1 stitch. Adjusting the number of slow-motion stitches appropriately, depending on the elasticity of the embroidery thread and the different thread cutting lengths, can prevent the thread from easily slipping off during the initial stitch.	2
9	High-speed pattern switching needle length [1.0, 9.0]	Range: 2.0 ~ 9.0. When the needle length exceeds this value, the machine will automatically reduce its operating speed. This also affects the machine's maximum speed. At the default setting of 5.0, when embroidering, if the needle length is shorter than 5.0, the machine will embroider at the set speed; if it exceeds 5.0, the machine will automatically reduce its speed. The maximum permissible speed is 950 rpm (even if the system is set to 1100 rpm, the actual maximum speed reached during embroidery is only 950 rpm).	3.0
10	Spindle speed at slow speed: [80, 800]	This refers to the spindle speed when the "Start" icon is pressed and held, which is 200 RPM by default and ranges from 80 to 800 RPM.	400
11	Maximum speed for hat embroidery: [700, 1200]	Limit the maximum spindle speed during hat embroidery.	850
12	Spindle deceleration gradient [10,30]	The higher the value, the faster the spindle decelerates.	15
13	Speed modification method	Set the speed adjustment method on the main interface: modify each speed independently, modify uniformly, or disable. Revise.	Unified modification
14	Custom needle length and rotation speed control	Set the operating speed for different needle lengths. This function requires the mechanism type to be enabled.	

Cutting parameters

1	Cutting method	The system offers three modes: "cut the upper thread", "cut the bobbin thread", and "no action". Users can also set the thread cutting method independently for different needle positions.	Cut the Upper
2	Jump stitch trim count	Parameter range: 1–12. Users can select “do not trim jump stitches” to disable thread trimming when jump stitches occur. Alternatively, set the number of consecutive jump stitches required to trigger thread trimming, helping reduce the number of “jump threads” on the fabric. Different parameters can also be set for different needle positions.	Thread Trim after 3 jump stitches
3	Cutting length [1, 50]	The parameter range is 1-50. The higher the value, the longer the cutting length.	35
4	Number of lock stitches before cutting thread	The parameter range (0-5) indicates the number of stitches to lock before cutting the thread. The default is to lock 1 stitch to prevent the thread end from coming loose. Setting it to "0" will not lock the thread before cutting.	2
5	Length of lock pin before thread cutting	Parameter range (0.3-2.0mm): When the "whether to lock the needle when cutting thread" setting is set to "yes", the length of the lock needle is set to 0.8mm by default.	0.8
6	Number of lock stitches after cutting thread	The parameter range (0-4) determines the number of stitches to lock when restarting embroidery after cutting the thread. The default is 2 stitches to prevent the starting thread from coming loose. Setting it to "0" will not perform a lock-in operation when Taping the "Start" icon again after cutting the thread.	2
7	After thread trimming, the length of the lockstitch is [0.3, 3.0].	The parameter range (0.3-3.0mm) is the lock stitch length when restarting embroidery after cutting the thread. The default lock stitch length is 0.7mm to prevent the starting thread from coming loose. The higher the value, the longer the lock stitch length.	0.8
8	After manually cutting the thread, should the needle be stitched in the same spot?	After manually cutting the thread, can the embroidery be stitched in the same place?	no

Embroidery auxiliary parameters

1	After finishing the embroidery, should we return to the starting point?	After the embroidery pattern is completed, will the embroidery frame automatically return to the starting point of the pattern?	Yes
2	Is it a circular embroidery?	Configure whether to perform cyclical embroidery.	No
3	Does it preview the embroidery pattern?	When confirming the embroidery, is the embroidery pattern previewed?	Yes
4	3D display of embroidery patterns	3D view display of embroidery patterns	Yes
5	Surrounding operation speed [1, 100]	This parameter sets the frame movement speed during pattern-related operations. Parameter range: 1–16. Higher values result in faster frame movement.	8
6	Same color processing method	When the same color-changing needle appears in the color sequence, should we ignore it and continue embroidering without cutting the thread, or should we cut the thread first and then continue embroidering?	Neglect
7	Automatically start when the same color is used	When the same color-changing needle appears in the color sequence, set whether to automatically start embroidery. If set to "No", the system will automatically stop when the same color-changing needle is encountered, wait for processing, or pull the lever again to start embroidery.	Es
8	Does manual color change remember?	"Yes": Manually record the color change value in the color change order and save it; "No": Manual color change values are not counted in the color change order. When set to "Yes", the color will automatically change after completing one pattern. "no".	No
9	Is the filter needle empty	When setting the pattern input to memory, decide whether to filter out empty stitches in the pattern. Empty stitches generally refer to empty plain stitches (3, 0, 0) and empty skipped stitches (4, 0, 0). Empty plain stitches following skipped stitches are not filtered. Empty plain stitches at the beginning of the pattern are all filtered.	Yes
10	Does the color change when reading the fancy parking pattern	When setting the pattern input to memory, stop codes are converted to color change codes. This parameter is "Yes" by default. When inputting a pattern, all stop codes (8, 0, 0) are converted to color change codes, including the stop code of the last needle. However, the end code is not converted to a color change code.	Yes
11	The logo is displayed in the upper right corner.	Set whether the background frame of the trademark is displayed.	Open
12	Trademark background	This setting determines whether the trademark background effect is displayed. Selecting "On" displays the background; selecting "Off" displays only the trademark or no background effect. The specific display style may vary depending on the actual screen.	Open
13	Embroidery needle position for perforated holes [0, 15]	/	0
14	Embroidery needle position 2 [0, 15]	/	0
15	Embroidery needle position 2 [0, 15]	/	0
16	The displacement of the perforated embroidery is [0.0, 100.0].	/	0.0
17	Flat needle compensation	Whether to enable flat stitch compensation when setting up pattern embroidery.	No
18	Right compatibility mode [0, 9]	/	0
19	Left-compatible mode [0, 9]	/	1
20	After the embroidery is completed, change the stitch position to [0, 15].	Set the needle position for changing colors after the embroidery is finished.	8
21	Does the long needle jump automatically	This setting determines whether to enable the automatic skipping function for long needles.	Yes
22	Automatic skip stitch length for long stitches [1.0, 12.8]	When the needle length exceeds the set value, the system uses a jump-based frame movement. Parameter range: 0 ~ 12.8	6.0
23	Short needle automatic filter needle length [0.0, 1.5]	When encountering stitches shorter than the set value, the system will automatically filter out those stitches. Parameter range: 0 ~ 2mm. Please use this function with caution, as improper settings may cause the embroidered pattern to be distorted due to the filtering out of stitches.	0.3
24	Machine thickness compensation [0, 8]	Configure as needed.	0
25	Return to the starting point midway to clean the needle	If you return to the starting point midway through embroidery, can you clear the needle outline on the main interface?	Open
26	End and return to the starting point to clean the needle.	When the embroidery is finished, return to the starting point. Check if the main interface is clearing the needlework.	Closure
27	The number of beeps for a broken wire is [0, 10].	The number of beeps from the operating head when the wire is disconnected.	2
28	Select pattern to display color	Used to set the color display mode of the needle bar when previewing the pattern.	/
29	Does the computer prompt you to restore the embroidery frame position upon startup?	Configure whether to prompt for restoration of the embroidery frame position upon startup.	Open
30	Startup prompts the embroidery confirmation process.	Configure whether to initiate the embroidery confirmation process upon startup.	Open
31	After selecting a pattern, will the embroidery be automatically confirmed	Configure whether to automatically prompt for confirmation of embroidery after selecting a pattern.	No

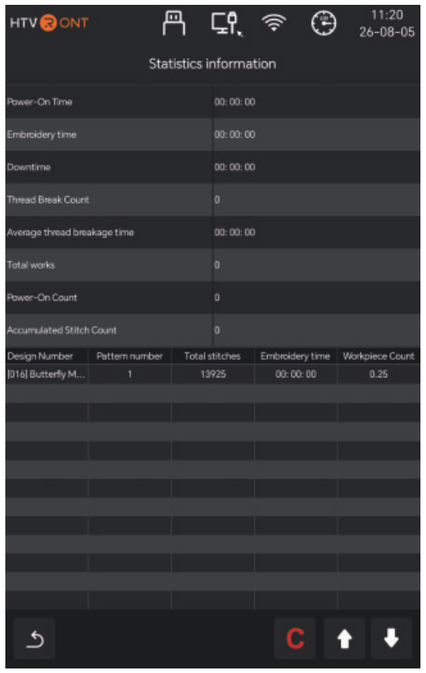
32	After confirming the embroidery, follow the embroidery frame around the pattern.	After confirming the embroidery, you can choose whether to prompt the user to follow the embroidery frame around the pattern.	No
33	Combination head alarm display modes [1, 8]	/	1
34	Automatic calibration color change is inadequate	The setting determines whether automatic color replacement is inadequate.	Open
35	Soft limit follow combination embroidery head distance translation	After activation, the software limits the movement of the combined embroidery head distance.	Closure
36	Lighting control modes	Set the lighting control mode: manual or automatic.	Automatic

Auxiliary Embroidery Function

1	Additionally, the starting point setting...	Not set
2	Noodle clamping action	/
3	Open or close the machine head	/
4	Special embroidery operation	/
5	Set whether to repair embroidery on all machine heads.	Open
6	Is it a circular embroidery?	Closure
7	Is it permissible to allow machine head combination embroidery settings?	Closure
8	Rotary shuttle changing angle	/
9	Out-of-frame settings	Not set

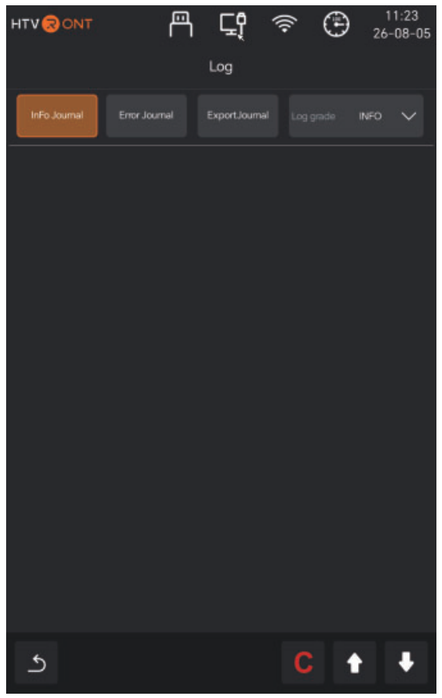
Statistical Information

Displays various machine operation statistics: machine start-up time, embroidery time, thread breakage rate, number of workpieces, cumulative number of stitches, number of pattern stitches, etc.

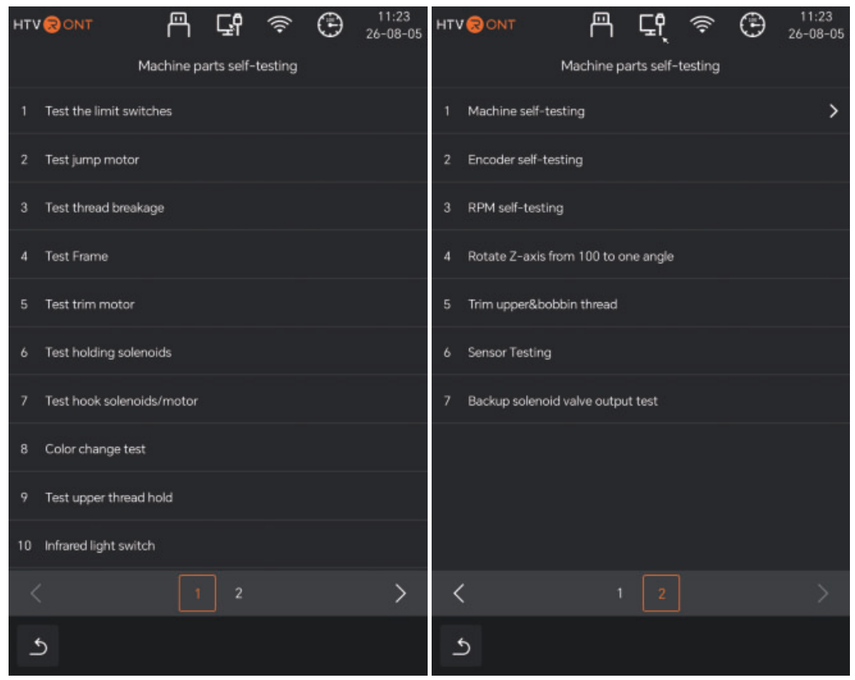


Logs

Display exportable logs: InFO log, Error log, Export log.



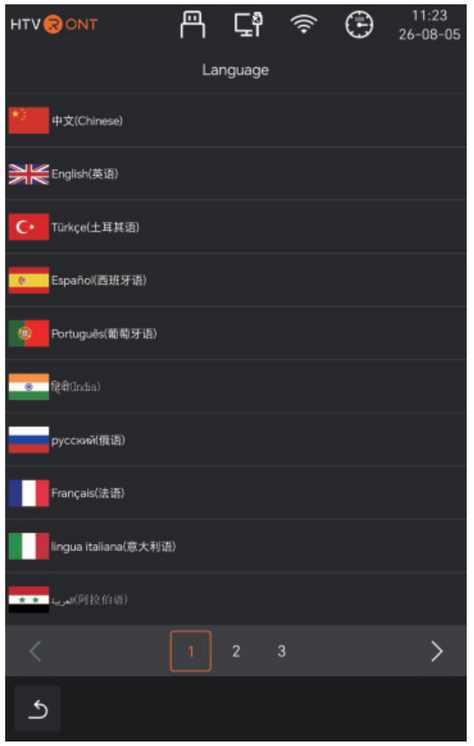
Machine debug



Parameter	Description
Test the limit switches	Follow the on-screen instructions to test: You can simulate pressing a limit switch and check the on-screen prompts.
Test jump motor	Follow the instructions in the image and text to perform the test: You can press the external start/stop button to check the operation of the components.
Test thread breakage	Follow the on-screen instructions to perform the test: After selecting the needle size, check the on-screen prompts.
Test frame	Follow the instructions in the image and text to conduct the test: After setting the position and speed, check the movement of the components.
Test trim motor	Follow the instructions in the image and text to perform the test: You can press the external start/stop button to check the operation of the components.
Test holding solenoids	Follow the instructions in the image and text to perform the test: You can press the external start/stop button to check the operation of the components.
Test hook solenoids/motor	Follow the instructions in the image and text to perform the test: You can press the external start/stop button to check the operation of the components.
Color change test	Follow the instructions in the image and text to make the adjustment: Check the displayed current color needle number.
Test upper thread hold	Follow the on-screen instructions to perform the test: Press the external start/stop button and check the on-screen prompts.
Infrared light switch	Follow the instructions in the image and text to perform the test.
Machine self-testing	Follow the on-screen instructions to perform the machine self-test. You can select from the following options: monitor self-test, clock calibration, and backlight self-test.
Encoder self-test	Brightness, AD information, encoder zeroing position, screen saver settings Follow the on-screen instructions to perform a self-test: Check the component movements and on-screen prompts.
RPM self-check	Follow the on-screen instructions to perform a self-test: Press the ↑ button to increase speed or the ↓ button to decrease speed to check the component's operation.
Rotate Z-axis from 100 to one angle	Follow the on-screen instructions to perform the test: After entering the angle, you can check the component's movement.
Trim upper & bobbin thread	Follow the instructions in the image and text to perform the test: You can press the external start/stop button to check the operation of the components.
Sensor testing	Follow the instructions in the image and text to perform the test.
Backup solenoid valve output test	Follow the instructions in the image and text to perform the test.

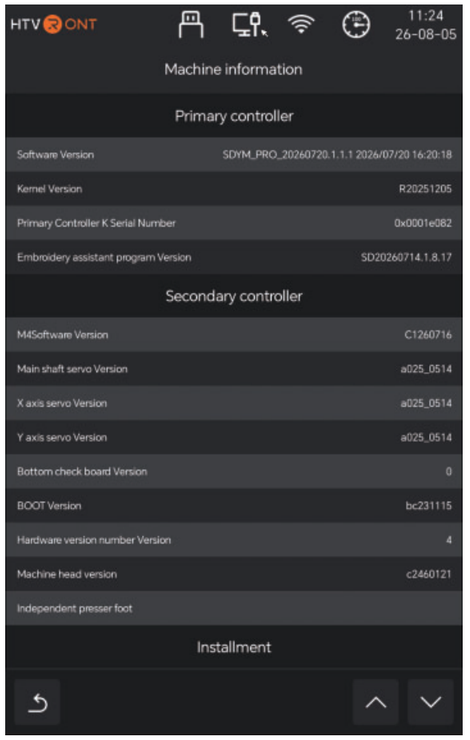
Language

Select a display language for the text and image entries: Chinese, English, etc.



Machine Information

Displays: Main/secondary controller software version number, system clock, encryption date, etc.



System Management

This page is used for machine system-level setup, maintenance, debugging, or calibration. It is password protected and should only be used by official support personnel. Regular users are advised against modifying it themselves.

Professional parameters

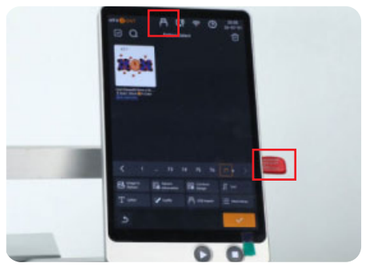
This page is used to set advanced machine operating parameters. It is password protected; improper parameter settings may affect machine operation and embroidery results. Please do not modify these settings yourself. For adjustments, please contact official after-sales personnel.

Importing Embroidery Designs

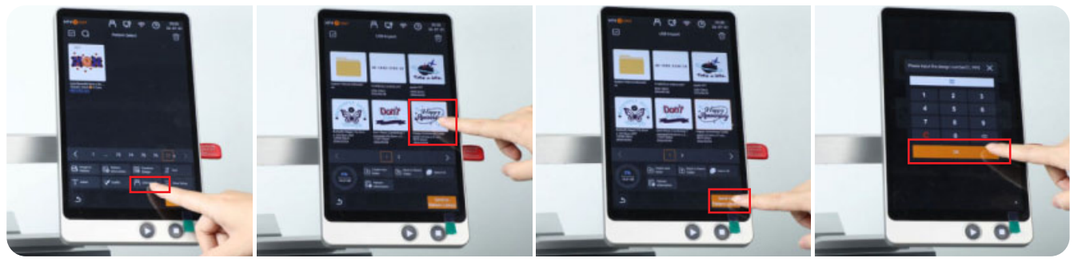
- **Method 1: Import from a USB Flash Drive**



1. Copy the embroidery pattern to a USB flash drive.



2. Insert the USB flash drive into the USB port on the underside of the touchscreen.



3. After the USB drive is recognized, a USB icon will appear at the top of the screen. Tap the USB icon (or USB Import) to open the USB folder.

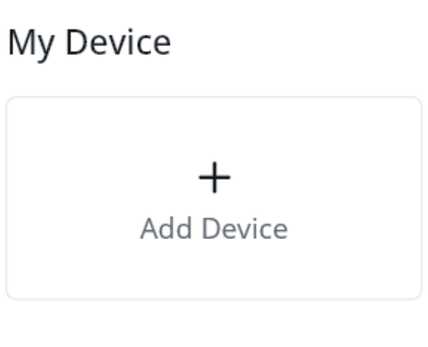


4. Select the desired pattern, tap Send to Pattern, then tap Confirm. Return to the Pattern Select screen and verify that the pattern has been imported.

- **Method 2: Import with HTVRONT IdeaStudio**

Connect the Machine for the First Time

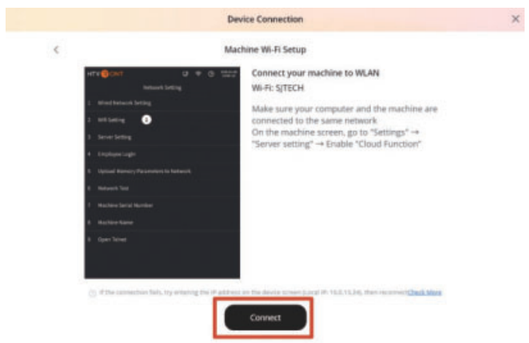
1. Download and install HTVRONT IdeaStudio.
Download link: https://www.htvront.com/blogs/htvront-app-guide
2. Open HTVRONT IdeaStudio, click Add Device, then select 15-Needle Embroidery Machine.





3. Click Next, then click Connect

NOTE: When connecting for the first time, follow the prompts to download and install the required driver.





4. On the machine, tap the Wi-Fi icon and connect the machine and computer to the same Wi-Fi network.

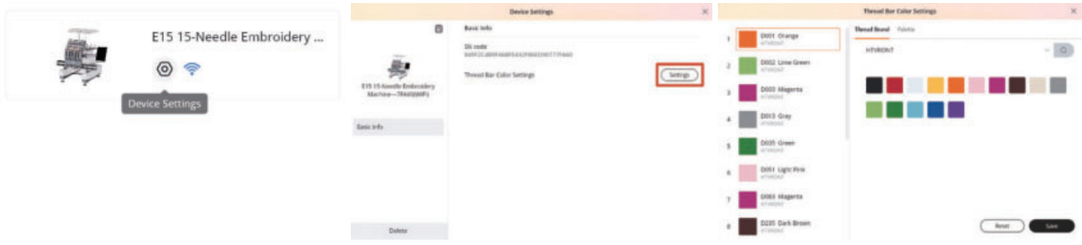


5. Return to HTVRONT IdeaStudio. Wait while the software connects to the machine automatically. After the connection is established, click Complete Connection.

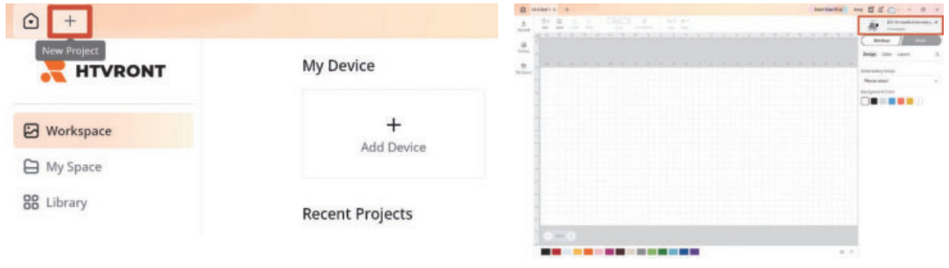


• Import a Pattern

1. Click Device Settings and set the needle colors to match the threads installed on the thread stand. If no changes are needed, you can keep the default settings.



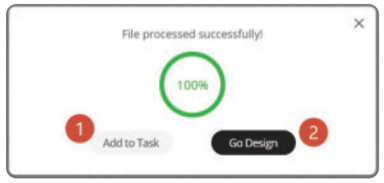
2. Click + to create a New Project, then select E15 15-Needle Embroidery Machine.



3. Click Upload and select the embroidery pattern. （Supported formats: DST, DSB）



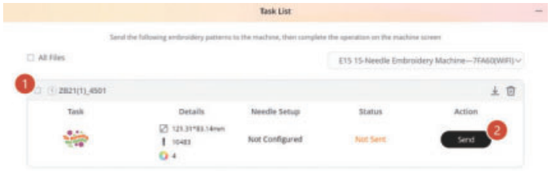
4. After the pattern is loaded, choose one of the following options:
• Add to Task – Send the pattern directly to the machine without editing.
• Go Design – Edit colors, check the pattern size, combine patterns, preview the result, and then send it to the machine.



• Send the Pattern to the Machine

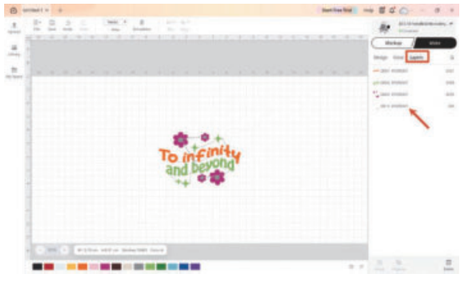
Option 1: Send Without Editing

1. Select Add Task.
2. Open production tasks, then click Send.
3. Once the machine receives the pattern, continue the embroidery process on the machine.

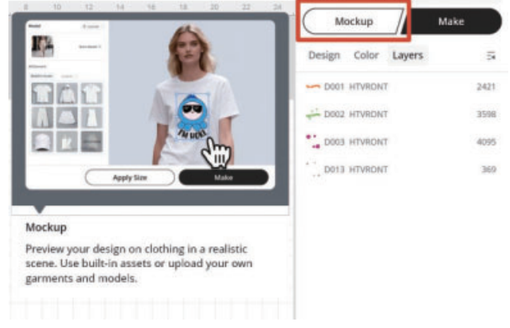


Option 2: Edit Before Sending

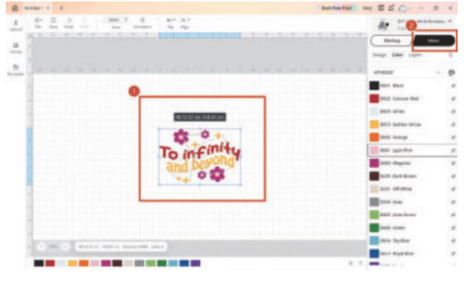
1. Select the embroidery pattern to enter the canvas. To change colors, select Layer and edit the colors.



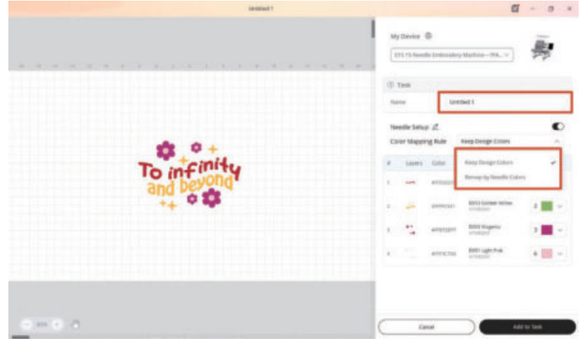
2. To preview the finished result, click Mockup.



3. After editing, click Make to continue.



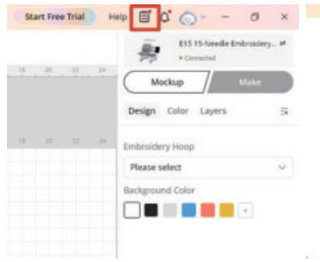
4. Enter a task name and choose a color assignment method:
• Keep Design Colors – Uses the needle colors already configured.
• Remap by Needle Colors – Preserves the original pattern colors.
Replace the machine threads to match the pattern colors.



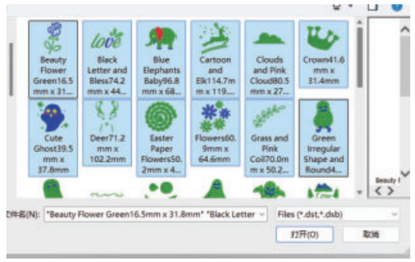
5. Click Add to Task, then click Send.

Import Multiple Patterns

To send multiple patterns at once, open the Task List ( ), click Import Stitch File, select multiple pattern files, choose All Files, and click Send to Machine.









Quick Bobbin Tension Check

1. Hold the end of the bobbin thread and gently shake the bobbin case to check the bobbin thread tension.

- The bobbin case lowers slowly and evenly: The bobbin thread tension is correct.
- The bobbin case drops quickly: The bobbin thread tension is too loose. Turn the tension screw clockwise to increase the tension.
- The bobbin case does not drop or stick: The bobbin thread tension is too tight. Turn the tension screw counterclockwise to reduce the tension.

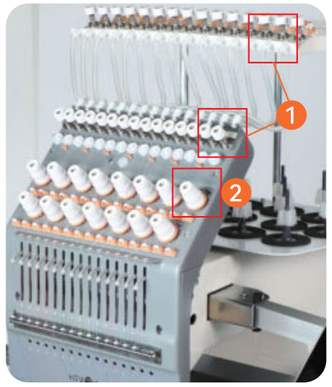




5. Evaluate the stitch balance. A correct stitch should show approximately 1/3 bobbin thread in the center and 1/3 upper thread on each side.

- If the bobbin thread in the center is too wide, the upper thread tension is too tight.
- If the bobbin thread in the center is too narrow, the upper thread tension is too loose.





6. Adjust the three tension controls as needed. Make only small adjustments each time. After each adjustment, embroider the test pattern again until the stitches are balanced.

1 Thread Guide Tension Discs
Turn Clockwise to Increase Tension

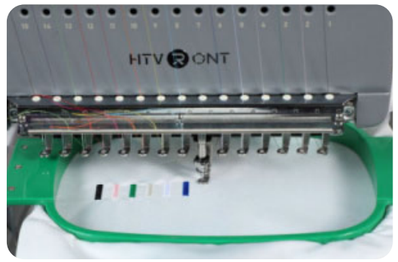
2 Check Spring
Turn Clockwise to Increase Tension

Quick Upper Thread Tension Check

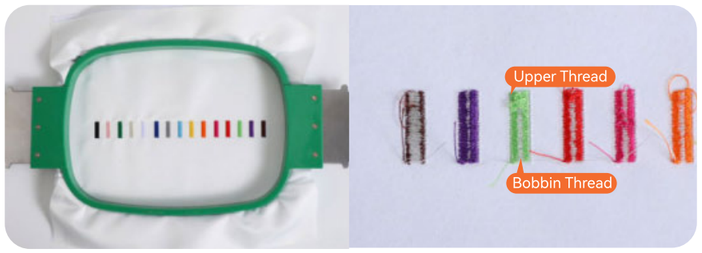


1. Hoop the test fabric with stabilizer, then select the built-in Thread Tension Test pattern.

2. Select the correct frame, complete Color Setup, run Pattern Trace, tap Ready, then press the Start button to begin embroidering.



3. Stitch the test pattern at a low speed.



4. Turn the fabric over and check the stitches on the back.

Advanced Embroidery Operations

Aligning the Design with Positioning

When to Use

Use the positioning function in the following situations:
- The fabric already has a center mark, cross mark, or positioning line.
- The center of the fabric is not aligned with the center of the embroidery frame after hooping.
- The pattern must be accurately positioned, such as on chest logos, pockets, sleeves, or cap fronts.
- The pattern needs to remain parallel or perpendicular to a reference line.
- The fabric has been re-hooped and the pattern position needs to be confirmed again.

When It Is Not Required

The positioning function is not necessary when:
- Embroidering a simple test pattern.
- The pattern is already centered in the frame and precise alignment is not required.

Position Instructions



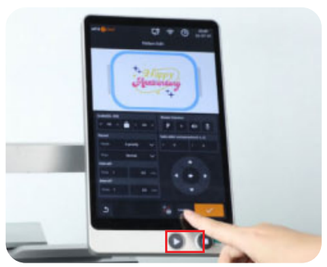
1. Mark the Fabric: Draw a center mark, cross mark, or positioning line at the desired embroidery location.



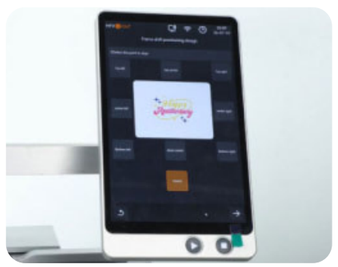
2. Hoop the Fabric: Hoop the fabric securely and make sure the positioning mark is within the embroidery area. Tap Frame Select and choose the frame type that matches the frame installed on the machine.



3. Pattern Edit: Select the desired pattern, then open the Pattern Edit screen.

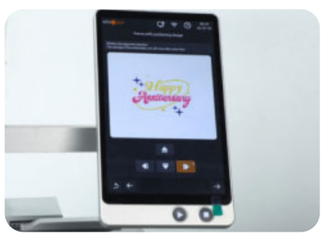


4. Open the Positioning Function: Tap Location to open the positioning screen.



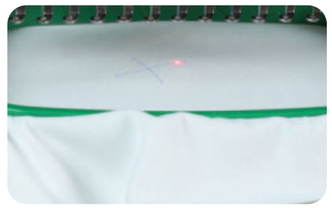
5. Select the Alignment Point
Choose the reference point that matches your positioning needs.
- Select Center to align the center of the pattern with the center mark on the fabric.
- Select Top Left, Top Right, Bottom Left, or Bottom Right to align a corner of the pattern with a specific location.

6. Select the Alignment Direction: Choose the alignment direction based on the positioning line on the fabric.
For most applications, use the horizontal reference line to align the pattern.





7. Align the First Reference Point: Use the on-screen arrow keys to move the embroidery frame until the positioning light (or needle position) is aligned with the center mark on the fabric.



8. Align the Second Reference Point: Use the arrow keys again to move the positioning light to a point on the horizontal or vertical reference line. This point is used to determine the orientation of the pattern.

9. Confirm the Position: Tap Set to confirm. The machine will automatically position and orient the pattern according to the selected alignment point and reference line.
10. Run Pattern Trace: Tap Pattern Trace to make sure the pattern stays within the embroidery area and will not contact the frame.
If everything is correct, tap Ready, then press the Start button to begin embroidering.

IMPORTANT

During positioning, the embroidery frame will move automatically. Keep your hands, tools, clothing, and other objects away from the needle area, embroidery frame, and all moving parts.
Always complete Pattern Trace before starting embroidery.

Cap Embroidery

• Before You Begin

- Before embroidering a cap, remove the garment hoop brackets and select Cap Frame on the touchscreen.
- After confirming the correct frame type is selected, install the cap driver and cap frame.
- Do not install the cap driver or move the embroidery frame while Garment Hoop or Large Flat Frame is still selected on the touchscreen.

• Remove the Garment Hoop Brackets

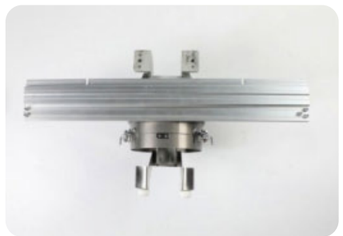
1. Stop the machine.
2. Support the garment hoop brackets with both hands. Remove both garment hoop brackets from the machine.

• Select the Cap Frame

1. Open Frame Select.
2. Select Cap Frame. Tap ✓ to confirm.

• Install the Cap Driver

Identify the Parts



Upper X-Axis Mounting Hole



Lower Rotary Hook Arm Mounting Knobs

Install the Cap Driver



1. Slide the cap driver into the rotary hook arm until it is fully seated in the mounting slot.



2. Tighten the two lower mounting knobs counter-clockwise.



3. Align the mounting holes with the X-axis, then secure the cap driver using the two hand-tightened mounting knobs.

• Hoop the Cap

1. Prepare the following items: Cap, Cap stabilizer, Cap frame, Cap hooping station.



2. Secure the cap hooping station to the work surface.



3. Install the cap frame onto the hooping station until both side latches engage.



4. Place the stabilizer inside the cap.



5. Install the cap onto the cap frame, making sure the sweatband is folded outward.



6. Align the center of the cap with the center mark on the hooping station.



7. Position the metal retaining strip of the cap frame along the seam between the cap brim and the front panel.



8. Close the locking latch to secure the cap in the frame.
9. Press both side latches simultaneously and remove the hooped cap from the hooping station.



10. Install the hooped cap onto the machine with the brim in a horizontal position.



11. Rotate the cap into the operating position, align it with the locating grooves, and press it into place until both side latches click.

• Final Check Before Embroidering

Before starting, make sure:

- The garment hoop brackets have been removed.
- Cap Frame is selected on the touchscreen.
- The cap driver is securely installed.
- The cap frame is fully locked into both side latches.
- The front panel of the cap is smooth, and the brim will not interfere with machine movement.
- The pattern fits within the embroidery area of the cap frame.

Then complete the embroidery process:

Pattern Select → Color Setup → Pattern Trace → Ready → Press the Start button

Large Flat Frame Embroidery

The Large Flat Frame is designed for embroidering large fabric pieces. Before installation, remove the current embroidery frame and select the Large Flat Frame on the touchscreen.

• Remove the Current Frame

1. Stop the machine.
2. Remove the installed embroidery frame and its brackets.

• Select the Large Flat Frame

1. Open Frame Select.
2. Select Large Flat Frame. Tap Confirm.

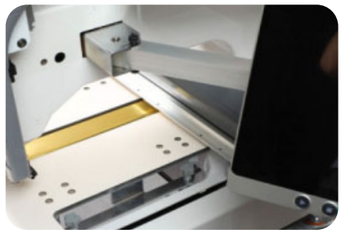
• Install the Extension Table



1. Remove the four hand-tightened mounting knobs from the machine.



2. Position the support plate and align the four mounting holes.



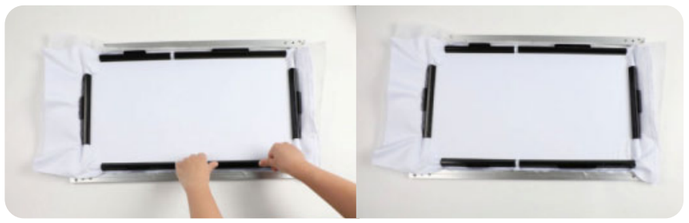
3. Install the four hand-tightened mounting knobs, then tighten them securely.

• Hoop the Fabric

1. Prepare the following items: Large Flat Frame, Stabilizer (large enough to cover the entire frame), Fabric (large enough to cover the entire frame).



2. Place the stabilizer on the frame, then place the fabric on top.



3. Install the locking clips with the raised tabs facing outward, as the tabs serve as handles for easier removal later. Press each locking clip down one by one to secure the fabric, then fasten the remaining clips in the order shown.



4. To remove the fabric, release the locking clips in the reverse order.

Tip for Easier Removal

1. Push the raised tab inward to release each locking clip.
2. For longer locking clips, first remove a short clip and place it over the raised tab of the longer clip to create a longer handle for better leverage.

• Install the Large Flat Frame

1. Support the Large Flat Frame with both hands and align it with the mounting points on both sides of the machine.
2. Lower the frame into position and tighten the mounting knobs securely.
3. Make sure the Large Flat Frame is securely fastened on both sides.



• Final Check Before Embroidering

Before starting, make sure:

- The previous embroidery frame has been removed.
- Large Flat Frame is selected on the touchscreen.
- The support plate is installed securely.
- The Large Flat Frame is locked firmly in place.
- The fabric and stabilizer are hooped smoothly and evenly.
- The pattern fits within the embroidery area of the Large Flat Frame.

Then complete the embroidery process:
Pattern Select → Color Setup → Pattern Trace → Ready → Press the Start button

Appliqué Embroidery

Appliqué embroidery is a type of embroidery that uses fabric, heat transfer vinyl, felt, twill, metallic materials, or other appliqué materials to replace dense stitch fills in large areas of a design.
An appliqué embroidery design typically includes the following types of stitches:

Stitch Type	Illumination	Function
Placement Stitch		Stitches the outline of the appliqué onto the base fabric to indicate where to place the appliqué material.
Tack-down Stitch		Secures the appliqué material to the base fabric to prevent it from shifting during subsequent embroidery.
Satin Border Stitch		Covers the edges of the appliqué with satin stitches, zigzag stitches, or blanket stitches for a secure and finished edge.

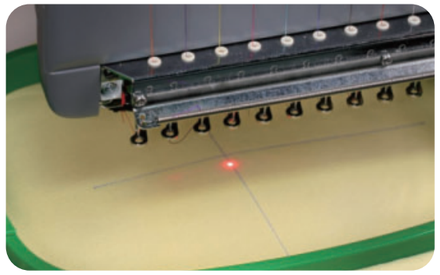
Instructions

1. Prepare the Appliqué Material
Prepare the appliqué material according to the size of the design.
You can use a pre-cut appliqué piece or prepare a piece of material slightly larger than the placement outline and trim the excess after the tack-down stitch is complete.
Materials and Tools:
Substrates, appliqué material, embroidery hoop, stabilizer, tape, and small scissors.

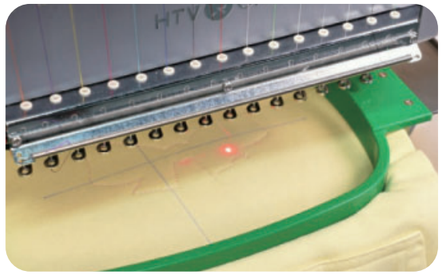


2. Select the Appliqué Design and Set the Stop Codes
Select a design file that has been specifically created for the appliqué embroidery process. In Color Setup, enable the appliqué settings and add stop codes after the placement and tack-down stitches.
The design should include a placement stitch, tack-down stitch, and satin border stitch. Regular embroidery designs cannot be used directly for appliqué embroidery.
Note: If stop codes have already been added to the design in the digitizing software, there's no need to add them again in Color Setup.

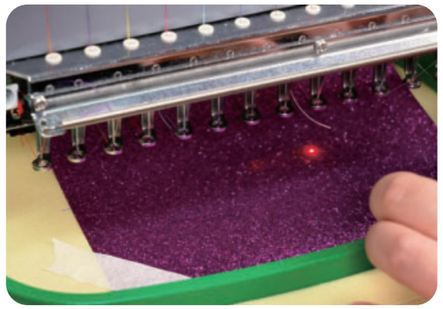




3. Hooping & Hoop Installation
Hoop the substrate and stabilizer together, keeping the fabric smooth and wrinkle-free.
On the machine, select the hoop type that matches the embroidery hoop actually installed on the machine. Then use Pattern Trace to make sure the design stays within the embroidery area.



4. Start the Placement Stitch
Tap Ready, then press the Start button to begin embroidery.
The machine will first stitch the placement outline for the appliqué.



5. Place the Appliqué Material
Once the placement stitch is complete, the machine will stop automatically.
Place the appliqué material within the placement outline and make sure it fully covers the placement stitch.
Note: If you're using heat transfer vinyl, peel off the protective layer before placing it on the substrate.



6. Stitch the Tack-down Stitch
Make sure the appliqué material is positioned correctly and keeps your hands and tools away from the needle area. Then press the Start button to continue embroidery.
The machine will stitch the tack-down stitch to secure the appliqué material to the substrate.



7. Trim the Appliqué Edges
After the tack-down stitch is complete, make sure the machine is paused.
Tap Frame Out to move the embroidery hoop to the preset offset position for trimming.
Using small scissors or appliqué scissors, carefully trim away the excess appliqué material along the outside of the tack-down stitch.
Do not cut the base fabric, stabilizer, or existing stitches.
Note: If you're using heat transfer vinyl, we recommend using a mini heat press after trimming to help the film adhere to the fabric and prevent the edges from lifting during the satin border stitching.



8. Stitch the Satin Border
After trimming, make sure the needle area is clear of tools and fabric scraps. Then press the Start button to continue embroidery.
The machine will stitch the satin border to cover the appliqué edges and complete the design.



9. Check the Finished Embroidery
After embroidery is complete, remove the embroidery hoop and check that the appliqué edges are secure.
Check for lifting, gaps in the border stitching, or misaligned stitches.
Note: If you're using heat transfer vinyl, follow the material instructions for the recommended heat press settings.

Needle, Thread, and Stabilizer Selection

Changing & Selecting Needles

Replace the needle immediately if it is: Bent, Burred, Broken

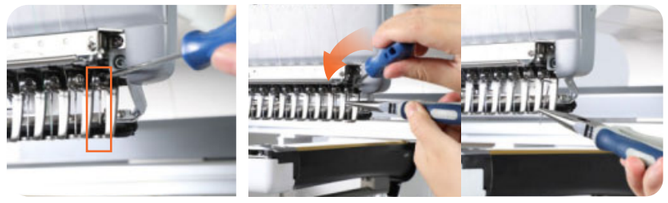


1. Prepare a flat-head screwdriver and needle-nose pliers.



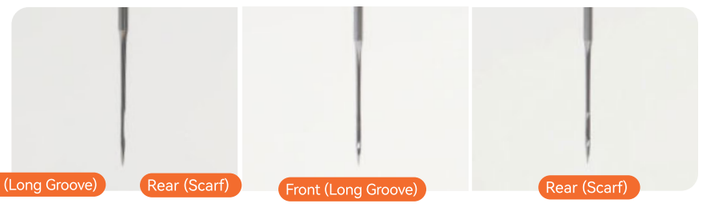
2. Always disconnect the power before replacing a needle.

3. Identify the needle to be replaced. Support the needle with one hand, then turn the needle clamp screw counterclockwise about one turn to loosen it. Carefully remove the old needle.



4. Check the Needle Orientation. Make sure the needle is installed in the correct direction.

- The long groove must face the front of the machine.
- The scarf (recessed groove) must face the rear of the machine.







5. Insert the new needle fully into the needle clamp until it stops.



6. Hold the needle straight and tighten the needle clamp screw clockwise approximately one turn.

7. Gently pull the needle to make sure it is securely installed. Run a low-speed embroidery test before normal operation.

Choose the Right Needle

Choosing the right needle directly affects thread breakage, skipped stitches, stitch quality, and fabric damage. A needle that is too fine may bend, break, or fail to pick up the thread smoothly. A needle that is too thick may leave visible needle holes or damage the fabric.

This machine is primarily compatible with DB×K5 series commercial embroidery needles and can support special needles such as DB×1KN for specific applications. For general embroidery, the DB×K5 series is recommended.

For fine embroidery, use the internationally standardized DB×K5-YORI 75/11S high-quality embroidery needle. Note: The eye of a DB×K5 75/11 needle is approximately twice as large as that of a DB×1 needle commonly used for general sewing. The DB×K5 75/11 is recommended for general embroidery.

The following table lists common needle types and their recommended applications for reference:

Needle Illustration	Needle Type	Recommended Application
	DB×K5Z1-NY #11–#14	Designed for thick materials; features a shorter blade above the eye.
	DB×K5 75/11	Standard needle commonly used for embroidery.
	DB×K5-Z2	Suitable for shoe uppers, genuine leather, and similar materials; features a smaller needle eye.
	DB×K5 SIZE 65/9	Ultra-fine, sharp-point needle for very lightweight silk and other fine materials.
	DB×K5 #11PD	PD needle for garments, TC fabrics, handbags, coarse-textured fabrics, and embroidered patches.
	DB×K5-YPR1 #11S	S-point needle with a small round tip, suitable for knit fabrics, stretch synthetic fabrics, and silk fabrics.
	PH×C70 #14–#18	Hook needle for 600D brushed/fleece materials.
	Embroidery Punch Needle	Used for embroidery punching applications.

Recommended Needle and Thread Combination

For everyday embroidery, the most commonly recommended combination is:

- Needle: DB×K5 75/11
- Upper Thread: 40 wt polyester embroidery thread or 40 wt rayon embroidery thread

(Common specification: approximately 120D/2)

- Bobbin Thread: 60 wt or 90 wt embroidery bobbin thread / pre-wound bobbins

Bobbin thread is typically finer than upper thread. Select the specific weight based on the bobbin type, fabric, and test embroidery results.

This combination is suitable for most standard garments, fabrics, and embroidery designs. For thick materials, stretch fabrics, metallic thread, or high-density designs, adjust the needle size, thread type, and embroidery speed according to the specific application.

Choose the Right Embroidery Thread

Choose the Right Stabilizer

Choose the Right Embroidery Thread

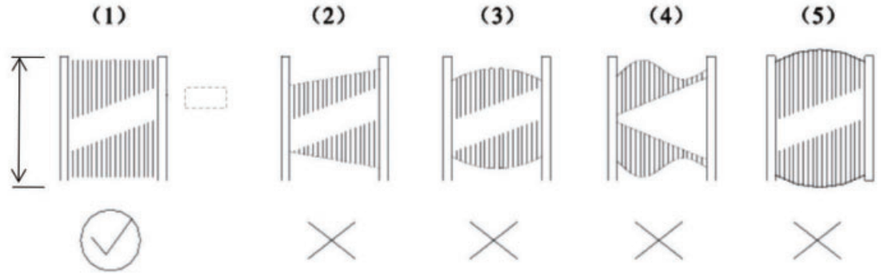
The quality and type of embroidery thread directly affect thread breakage, fraying, stitch sheen, and embroidery efficiency. Using the wrong thread may cause thread breakage, color fading, uneven stitches, or poor embroidery results.
When selecting embroidery thread, choose machine embroidery thread with consistent tension, uniform thickness, a smooth surface, and suitable strength and flexibility.
This machine supports polyester embroidery thread, rayon embroidery thread, metallic thread, cotton thread, and other specialty threads. For general embroidery, 40 wt polyester or 40 wt rayon embroidery thread is recommended. For bobbin thread, use 60 wt or 90 wt embroidery bobbin thread or pre-wound bobbins. Regular sewing thread is not recommended as a substitute for machine embroidery upper or bobbin thread.

Common Upper Thread Types & Applications

Thread Type	Recommended Applications	Usage Recommendations
Polyester Embroidery Thread	Everyday embroidery, garments, hats, bags, and home textiles	Durable, strong, and versatile. Recommended as the primary upper thread for general embroidery.
Rayon Embroidery Thread	Decorative embroidery and designs where a high sheen is desired	Offers excellent sheen and color appearance, but is generally less strong than polyester. Pay attention to thread tension and embroidery speed.
Metallic Thread	Special decorative effects, holiday designs, and logo accents	More prone to breakage. Reduce the embroidery speed, slightly loosen the thread tension, and use a suitable needle.
Cotton Thread	Vintage effects, special textures, or specific embroidery techniques	More prone to lint and may increase thread breakage and dust buildup. Test at low speed before use.
PP / Specialty Thread	Special techniques or specific designs	Confirm that the thread is compatible with the needle and design density before use.
Bobbin Thread	Bobbin stitches	Use 60 wt or 90 wt embroidery bobbin thread, pre-wound bobbin thread, or pre-wound bobbins.

Bobbin Thread Selection

Bobbin Thread Winding Amount: Approximately Full



1. The bobbin thread should be wound according to Illustration (1) above. Wind the thread evenly from left to right, keeping the thread layers flat and evenly distributed.
2. Winding the bobbin using Illustrations (2)–(5) may result in uneven tension, knots, thread jams, or irregular thread feeding, which can cause thread breakage, bobbin thread showing on the front, or poor stitch quality.
3. The recommended winding amount is approximately 90% of the bobbin's capacity. Overfilling the bobbin may cause it to rotate unevenly, resulting in unstable thread feeding or thread jams.
4. After winding, make sure the bobbin surface is smooth and free of loose thread, bulges, uneven winding, or crossed thread layers. If the thread is wound unevenly, rewind the bobbin before use.
5. Use embroidery-specific bobbin thread whenever possible. For general embroidery, 60 wt or 90 wt embroidery bobbin thread is recommended. For batch embroidery, pre-wound bobbins may also be used, depending on the bobbin type.
6. When changing to a different bobbin thread weight or material, test embroider first to confirm smooth thread feeding, proper bobbin tension, and that the bobbin thread does not show on the front before starting production.

Choose the Right Stabilizer

A stabilizer provides essential support for the fabric, helping reduce fabric distortion, puckering, stitch pull-in, and design sinking during embroidery. The right stabilizer is important for achieving clean embroidery and a high-quality finished result. Using the wrong stabilizer may cause design distortion, puckered edges, exposed bobbin thread, overly stiff embroidery, or fabric distortion after embroidery.
When selecting a stabilizer, consider the fabric type, weight, stretch, surface texture, hooping method, and design density.
For general embroidery, choose the stabilizer based primarily on the stability of the fabric:

- Stretchy or knit fabrics: Use a cut-away stabilizer.
- Stable woven or low-stretch fabrics: A tear-away stabilizer is generally suitable.
- Terry, fleece, or textured fabrics: Add a water-soluble topping.
- High-density designs, heavy designs, or fabrics prone to distortion: Use a heavier stabilizer or multiple layers of stabilizer.

Recommended Combinations
For everyday embroidery, the following fabric and stabilizer combinations are commonly recommended:

Fabric / Application	Recommended Stabilizer
T-shirts / Sweatshirts / Knit Polos	Medium-weight cut-away stabilizer (1.8–2.5 oz)
Aprons / Stable Woven Fabrics	Lightweight or medium-weight tear-away stabilizer (1–2.5 oz)
Sweaters / Terry / Textured Fabrics	Medium-weight cut-away stabilizer + water-soluble topping
Caps	Cap tear-away stabilizer (2.8–3.5 oz); use two layers or a self-adhesive stabilizer if needed

These combinations are suitable for most standard garments, caps, and general embroidery designs. For high-density designs, thick fabrics, stretchy fabrics, difficult-to-hoop areas, or fabrics with pronounced surface textures, adjust the stabilizer type, weight, and number of layers as needed.
Stabilizer Selection Tips
1. The softer, lighter, or more stretchy the fabric, the more you should consider using a cut-away stabilizer or adding additional stabilizer support.
2. The higher the stitch count and density, the stronger the stabilizer support should be. Use multiple layers if necessary.
3. For terry, fleece, or fabrics with pronounced surface textures, use a water-soluble topping.
4. When changing the fabric, design, or stabilizer type, test embroider first to confirm the embroidery result and fabric hand before starting production.
The following table provides recommended stabilizer options for common fabrics and applications as a reference when selecting a stabilizer.

Category	Substrate	Common Materials	Stretch	Recommended Stabilizer	Topping
Garments	Sweatshirt	Cotton, blends, French terry or fleece lining	Medium Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	No
	Polo Shirt – Knit	Polyester, spandex, and other soft, stretchy fabrics	Medium Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	No
	Polo Shirt – Piqué	Cotton, polyester blends; classic structured fabric	Low Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	No
	Denim Jacket	Denim, polyester	Low Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	T-Shirt	Cotton, polyester	Medium Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	No
	Apron	Cotton, polyester	Low Stretch	Lightweight Tear-Away Stabilizer (1–1.5 oz)	No
	Children's Pajamas	Cotton, modal	Medium Stretch	Lightweight Cut-Away Stabilizer (1–1.5 oz)	No
	Sweater	Wool, cotton, blends	High Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
Hats	Trucker Cap	Cotton, polyester	No Stretch	Cap Tear-Away Stabilizer (2.8–3.5 oz)	No
	Bucket Hat	Cotton, polyester	No Stretch	Cap Tear-Away Stabilizer (2.8–3.5 oz)	No
	Baseball Cap – Soft Crown	Cotton, polyester	Low Stretch	Cap Tear-Away Stabilizer (2.8–3.5 oz)	No
	Baseball Cap – Structured Crown	Cotton, polyester	No Stretch	Cap Tear-Away Stabilizer (2.8–3.5 oz)	No
	Foam Trucker Cap	Cotton, polyester	Low Stretch	Cap Tear-Away Stabilizer (2.8–3.5 oz)	No
	Dad Hat	Cotton, polyester	Low Stretch	Cap Tear-Away Stabilizer (2.8–3.5 oz)	No
	Fisherman Hat	Canvas, cotton	No Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	No
	Knit Beanie	Acrylic, cotton, polyester, blends	High Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping

Category	Substrate	Common Materials	Stretch	Recommended Stabilizer	Topping
Bags	Canvas Tote Bag	Canvas	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Felt Bag	Felt	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
Home Décor	Pillowcase / Bedsheet	100% Cotton	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Terry Towel	Cotton, polyester	No Stretch	Water-Soluble Stabilizer	Yes – Water-Soluble Topping
	Tablecloth / Kitchen Cloth	Cotton, polyester	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
Fabrics	Burlap	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
	Canvas	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Cardstock	–	No Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	No
	Chiffon	–	No Stretch	Water-Soluble Stabilizer	No
	Corduroy	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
	Cotton Fabric	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Denim	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Flannel	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
	Fleece	–	Medium Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
	Faux Fur	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
	Lace	–	No Stretch	Water-Soluble Stabilizer	No
	Knit / Stretch Fabric	–	High Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
	Leather	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Linen	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Silk	–	No Stretch	Water-Soluble Stabilizer	No
	Tulle / Mesh	–	No Stretch	Water-Soluble Stabilizer	No
	Velvet	–	Medium Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	Yes – Water-Soluble Topping
	Vinyl	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No
	Coated / Waterproof Fabric	–	No Stretch	Medium-weight Cut-Away Stabilizer (1.8–2.5 oz)	No
	Suede	–	No Stretch	Medium-weight Tear-Away Stabilizer (1.8–2.5 oz)	No

Maintenance and Care

Proper cleaning, lubrication, and routine inspections help keep the machine running reliably and reduce the risk of thread breakage, skipped stitches, thread jams, thread trimming issues, design misalignment, and unexpected stops.
Any work involving the electrical control system, main shaft synchronization, color change mechanism, hook timing, or other internal mechanism adjustments must be performed by authorized service personnel or qualified technicians. Do not disassemble or repair these components yourself.

Before Cleaning

Before cleaning, inspecting, or lubricating the machine, follow these precautions:

- Turn off the machine and unplug the power cord.
- Make sure the needle bar, main shaft, embroidery hoop, and thread trimming mechanism have come to a complete stop.
- Use non-metallic tools such as a soft brush or lint-free cloth for cleaning.
- Do not use sharp tools, compressed air, or corrosive cleaning agents.
- Do not spray water or apply lubricant directly to electrical components, connectors, or inside the machine.
- After cleaning, make sure all components are correctly reinstalled.

Note:
Even if the machine is operating normally, clean and maintain it according to the recommended schedule. Regular maintenance is preventive care and should not be delayed until a problem occurs.

Machine Cleaning & Maintenance Schedule

Maintenance Item	Recommended Frequency	Instructions
Screen Surface Cleaning	As needed	Gently wipe the screen with a soft, dry cloth. Do not use alcohol, corrosive cleaners, or spray water directly onto the screen.
Machine Exterior Cleaning	As needed	Wipe the exterior with a soft, dry cloth. For heavier stains, use a small amount of mild detergent, then wipe dry with a clean cloth.
Needle Inspection	Before each use	Check the needle for bending, wear, looseness, or burrs. Replace the needle promptly if any abnormalities are found.
Embroidery Hoop Locking & Fabric Tension Check	After each hooping, before embroidery	Make sure the embroidery hoop is securely installed and the fabric and stabilizer are smooth and evenly tensioned. Avoid shifting or misalignment during embroidery.
Bobbin Case Tension Spring & Thread Outlet Cleaning	Each time the bobbin is replaced	Remove lint and thread debris from inside the bobbin case, around the tension spring, and at the thread outlet to ensure smooth bobbin thread feeding.
Bobbin Case & Bobbin Inspection	Each time the bobbin is replaced	Check that the bobbin case is installed correctly and the bobbin thread feeds smoothly. Make sure there is no obvious wear or damage.
Rotary Hook & Hook Area Cleaning	After each day of use, or every 4–6 hours of continuous operation	Remove lint and thread debris from the rotary hook, hook area, and surrounding areas. Increase the cleaning frequency when performing continuous or high-density embroidery or using fabrics that shed easily.
Rotary Hook Lubrication	Every 4–6 hours of continuous operation	Remove the bobbin case from the rotary hook, then apply oil to the inner wall of the rotary hook.
Rotary Hook Shaft Lubrication (if applicable)	Once a day	Apply the specified amount of dedicated sewing machine oil only to the designated lubrication point.
Needle Plate & Thread Trimming Area Cleaning	Once a week; clean immediately if thread trimming problems occur	Remove lint and thread debris from underneath the needle plate and around the moving and fixed knives. Do not adjust or grind the thread trimming mechanism yourself.
Upper Thread Path, Thread Guides & Tension Components Inspection	Once a week; inspect immediately if thread breaks increase significantly	Check the thread guides, tension discs, and threading path for lint, tangled thread, burrs, or abnormal wear.
Ventilation Openings & Exposed Fasteners Inspection	Every 3 months	Remove dust from the ventilation openings and check exposed fasteners and screws for looseness. Do not disassemble internal mechanisms.
Professional Inspection & Maintenance	When persistent abnormal noises, misalignment, or jamming occurs, or when recommended by after-sales support	Have the machine inspected, lubricated, adjusted, and calibrated by authorized after-sales service or qualified technicians. Do not disassemble the machine yourself.

Note:
Increase the cleaning frequency when performing continuous or high-density embroidery, or when using fabrics that shed lint or debris easily, such as terry cloth, fleece, or heat transfer vinyl.

Basic Daily Maintenance

It is recommended to perform the following maintenance after each use:

- Remove thread ends and fabric lint from the needle plate, presser foot, needle bar, and work surface.
- Check the hook and bobbin area for tangled thread.
- Check the upper and bobbin threads for fraying, knots, or uneven feeding.
- Wipe the machine body and touchscreen to keep them clean and dry.
- After extended continuous operation, lubricate the hook as instructed.

Long-Term Storage and Maintenance

If the machine will not be used for an extended period:
- Clean the hook, needle plate, and thread trimming area.
- Remove the embroidery hoop and store it properly.
- Reapply lubricant as instructed.
- Cover the machine with a dust cover.
- Store the machine in a dry, well-ventilated area away from corrosive gases.

Before using the machine again, clean and lubricate it as required. Run a test embroidery on scrap fabric to confirm that the machine operates normally before starting regular embroidery.

Screen Cleaning

- Turn off the machine.
- Gently wipe the screen with a soft, dry, lint-free cloth.
- Do not spray water or cleaning agents directly onto the screen.
- Do not use organic solvents, corrosive liquids, or abrasive cleaning products.
- Unless specifically approved by the manufacturer, avoid using high-concentration alcohol-based cleaners on the screen.

Machine Surface Cleaning

- For light dust and stains, wipe the surface with a soft, dry cloth.
- For heavier stains, use a slightly damp, well-wrung cloth.
- If a cleaning agent is needed, use a small amount of mild, neutral cleaner and keep liquids away from gaps, connectors, and ventilation openings.
- Wipe the surface dry with a clean cloth after cleaning.

Hook & Bobbin Case Cleaning

Clean the hook and bobbin area after each day of use or after 4–6 hours of continuous operation.
- Turn off the machine.
- Remove the bobbin case and bobbin.
- Use a soft brush to remove thread lint and dust from the hook, bobbin area, and bobbin case.
- Check the hook and bobbin case for burrs, scratches, or abnormal wear.
- Reinstall the bobbin case and bobbin in the correct direction.

Note:
- Do not use sharp tools for cleaning.
- Do not polish the hook or adjust the bobbin case tension yourself.
- If you find any visible damage, contact HTVRONT Support.



Needle Plate & Thread Trimming Area Cleaning

Clean the needle plate and thread trimming area once a week. If thread trimming problems occur, inspect these areas immediately.
- Turn off the machine.
- Remove the needle plate.
- Use a soft brush to remove thread lint and dust from underneath the needle plate and around the movable and fixed blades.
- Check for tangled thread, nicks, or abnormal wear.
- Reinstall the needle plate and make sure it is securely fastened.

Note: Do not adjust or sharpen the thread trimming mechanism yourself.

Lubrication

Always turn off the power before lubricating the machine to prevent personal injury. Use high-quality lubricant to help prevent premature wear and aging. Follow the specified lubrication points, intervals, and amounts to ensure proper machine operation.

Caution:
- Clean the lubrication point before applying oil.
- Apply oil only to the specified points.
- Apply only a small amount of oil. Excessive oil may contaminate the thread and embroidery materials and may cause thread trimming or thread breakage issues.
- After lubricating, run the machine without embroidery for 2–3 minutes.
- Do not apply oil to the tensioner, motor, electrical control components, or other non-designated areas.

Lubricant Requirements

Use qualified sewing machine oil (white mineral oil) or ISO VG 18 lubricant.

Recommended Lubrication Points & Intervals

Lubrication Point	Oil Quantity	Lubrication Interval
Rotary Hook: Remove the bobbin case, then apply oil to the inner wall of the rotary hook.	1 spray	Once every 4–6 hours of operation
Rotary Hook Shaft	1–2 sprays	Once a day

Upper Thread Path & Tensioner Cleaning

Dust and thread lint can accumulate along the upper thread path, under thread guides, or inside the tensioner, which may cause frequent thread breakage during embroidery.

Key Areas to Clean

1. Upper thread guide
2. Middle thread guide
3. Tensioner and surrounding area
4. Thread guide plates and thread clamp areas along the thread path

Instructions

1. Use a small brush to remove dust from underneath the thread guides and around the thread guide plates.
2. If a specific needle position frequently breaks thread, carefully inspect the thread guide and tensioner for that needle position.
3. If significant dust has accumulated inside the tensioner, is difficult to remove, or requires disassembly, have it serviced by authorized service personnel or a qualified technician.

Contact Support

Stop using the machine and contact authorized service personnel if any of the following occur:

- Thread breakage, skipped stitches, thread jams, or thread trimming failures continue after cleaning.
- The machine continues to make unusual noises, vibrate, run irregularly, or produce misaligned embroidery.
- The hook, bobbin case, needle plate, or blades show visible damage.
- The color change mechanism, needle bar, or hoop driver operates abnormally.
- The power cord, plug, or internal components become unusually hot, emit an unusual odor, or come into contact with water.
- The machine housing needs to be removed, internal mechanisms need adjustment, or the machine requires calibration.

Common Troubleshooting

Fault	Possible Cause	Solution
Machine does not start	No power	Check the power circuit and whether the fuse is blown.
	Incorrect stop position	Jog the main shaft to the 100° stop position.
	Thread trimming mechanism is not in the home position	Return the thread trimming mechanism to its home position until the indicator light comes on.
	Needle position or rotation signal cannot be detected	Turn the color change cam handwheel to restore the correct needle position.
	Embroidery confirmation not completed	Complete the embroidery preparation and confirm the embroidery settings.
Main shaft timeout	Main shaft motor damaged	Repair or replace the main shaft motor.
	Servo drive failure	Repair or replace the servo drive.
	Excessive resistance in shaft transmission	Check and eliminate the cause of the resistance.
	Poor contact of power or signal wires	Check the power cord, wiring terminals, and signal wires.
Frequent thread breakage	Upper thread does not feed smoothly or has uneven tension	Replace with higher-quality embroidery thread.
	Burrs on the spool or thread path	Smooth the spool and thread path areas.
	Incorrect or non-standard embroidery needle	Replace with a standard embroidery needle.
	Glue or sticky residue on the needle	Clean the needle with white mineral oil and remove any adhesive residue from the material.
	Damaged hook	Repair the damaged area with 1200-grit sandpaper.
	Incorrect hook timing	Readjust the needle-to-hook timing.
	Upper or bobbin thread tension is too high	Adjust the upper and bobbin thread tension to an appropriate level.
	Needle incorrectly installed or damaged	Reinstall the needle correctly or replace it with a new one.
	Thread and needle sizes do not match	Use thread suitable for the needle size.
	Stitches are too short or too dense	Revise the pattern tape or embroidery design.
	Check spring tension is too high	Adjust the check spring tension and movement to an appropriate level.
	Right-twist thread (S-twist) used incorrectly	Use left-twist thread (Z-twist).
	Hook support is too close to the groove	Adjust the hook support position in the front/back and left/right directions.
	Insufficient hook lubrication	Lubricate the hook.
	Fabric is not securely fixed and moves easily	Secure the fabric firmly.
	Presser foot height is incorrect	Adjust the presser foot height.
Color change timeout	Color change mechanism is jammed	Adjust the mechanism.
	Color change motor damaged	Replace the color change motor.
	Color change driver board damaged	Replace the driver board.
	Color change potentiometer damaged	Replace the potentiometer.
Design shifting / design shrinkage	Upper and bobbin thread tension is too high	Adjust the upper and bobbin thread tension to an appropriate level or replace with smoother thread.
	Paper stabilizer is too thin or brittle	Replace the paper stabilizer.
	Stepper driver abnormal	Repair or replace the stepper driver.
	Stepper motor abnormal	Repair or replace the stepper motor.
	Poor contact of control signal wires	Check the wiring.
	Fabric is not securely fixed or has excessive shrinkage	Secure the fabric more firmly or use a thicker stabilizer.
	Hoop fastening screws are loose	Retighten the screws.
	Cap driver wire is too loose	Adjust the tension.
	Hoop is too heavy or embroidery speed is too high	Check the hoop for problems or reduce the embroidery speed.
	Main control board failure or software incompatibility	Replace the software and initialize the system parameters, or service the main control board.
	Poorly designed pattern tape	Revise the pattern tape.
	X/Y-axis belt tension is too high or the belt is deformed	Adjust the belt tension or replace the belt.
	Hoop drive guide rail damaged	Repair or replace the drive guide rail.
Presser foot drops	Jump motor pin position is incorrect	Readjust the position.
	Motor damaged	Replace the motor.
	Motor driver board damaged	Replace the driver board.
Skipped stitches	Needle is bent/deformed or the needle and thread do not match	Replace the needle and thread with suitable ones.
	Needle installed incorrectly	Install the needle correctly as required.
	Incorrect needle-to-hook clearance	Readjust the clearance.
	Improper upper thread	Replace the upper thread.
	Presser foot position is incorrect	Readjust the presser foot position.
	Thread tension is too high	Adjust the thread tension.
Needle breakage	Incorrect needle-to-hook clearance	Adjust the clearance.
	Needle tip is worn or deformed	Replace the needle.
	Needle size does not match the fabric or thread	Replace with a suitable needle or thread.
	Needle rubs against the needle plate hole	Readjust the needle bar holder position.
	Needle bar holder is loose	Secure the needle bar holder.
Needle does not move down	Jump motor is manually locked	Release the lock.
	Drive block damaged	Replace the drive block.
	Top dead center position is incorrect	Readjust the position.
Thread cutter fails to cut	Cutter tension is incorrect	Adjust the cutter tension.
	Thread trimming motor damaged	Replace the thread trimming motor.
	Excessive thread trimming resistance	Check and adjust the mechanism.
	Movable or fixed blade damaged	Replace the blade.

Specifications

Product Name: HTVRONT E15 15-Needle Embroidery Machine
Model: EMB03
Color: White and Grey
Needle Count: 15 needles
Input Power: 0.4kW
Input Voltage: 110-220V Freq: 50/60Hz
Embroidery Speed: 500–1200 SPM
Cap Embroidery Speed: Up to 850 SPM
Embroidery Accuracy: ±0.1 mm
Stitch Length Range: 0.1–12.7 mm
Flat Embroidery Area (X/Y): 19.68 × 9.84 in / 500 × 250 mm
Cap Embroidery Area (X/Y): 14.57 × 2.56 in / 370 × 65 mm
Cap Frame Rotation Angle: 270°
Touchscreen Size: 10.1-inch
Connectivity: Wi-Fi, USB Drive
Software System: Integrated with IdeaStudio
Supported File Formats: DST, DSB
Noise Level: ≤85 dB(A)
Power Requirements: 110–220V, 50Hz, 200W
Machine Dimensions: 27.56 × 25 × 32.67 in / 700 × 635 × 830 mm
Machine Dimensions with Flat Table: 36.22 × 36.22 × 32.67 in / 920 × 920 × 830 mm
Package Dimensions: 43.3 × 31.5 × 39.37 in / 1100 × 800 × 1000 mm
Maximum Flat Hoop Size: 19.68 × 9.84 in / 500 × 250 mm
Maximum Garment Hoop Size: 11.8 × 9.37 in / 300 × 238 mm
Maximum Cap Hoop Size: 14.17 × 2.56 in / 360 × 65 mm
Net Weight: 255.74 lb / 116 kg
Gross Weight: 374.79 lb / 170 kg

System Updates

The machine supports system updates via a USB flash drive to add or improve functions, enhance the user experience, or resolve specific software issues. Because system updates affect the machine's control system, have the update performed by the authorized service personnel. Do not perform system updates on your own. Before an update, make sure the update file is compatible with your machine model and current software version. Do not use update files from unknown sources or files intended for a different machine model.

Update Precautions

- Do not turn off the machine during an update.
- Do not remove the USB flash drive during an update.
- Do not operate the machine or touch any moving parts during an update.
- Before updating, make sure the machine is stopped, and the embroidery hoop and needle bar are stationary.
- If the update fails or an error message appears, stop the operation and contact authorized service personnel.
- After the update is complete, restart the machine to apply the new software version.