INKCLAW

SUBCORE SERIES

Direct Drive Wireless Tattoo Pen Machine

Decoupled Voltage-Frequency Control System

SUBCORE-S | SUBCORE-L



USER MANUAL

PRODUCT OVERVIEW

INKCLAW SUBCORE Series is a direct drive wireless tattoo pen machine featuring a Decoupled Voltage-Frequency Control System, enabling independent control of speed and power. Unlike conventional machines, frequency remains stable while voltage adjusts impact.

At lower voltages, frequency is limited (e.g. 5V up to 86Hz ≈5160 RPM). The key advantage is the ability to maintain a constant frequency while scaling hit strength - for example, running at 86Hz across 6V-12V to achieve different levels of impact without changing needle speed.

The system includes Auto Mode with preset profiles - Soft (6V), Medium (9V), Hard (12V) - and Pro Mode, offering full control from 5-12V and 3-150Hz. Frequency ceilings increase with voltage, with the full range unlocked above 9V (up to 150Hz ≈9000 RPM).

By separating frequency (speed) from voltage (power), SUBCORE delivers consistent rhythm with precise control over impact and energy output.



1. Display screen
2. Replaceable Battery Unit Twisted-Lock System
3. Comfort Ergonomic Grip

4 . USB-C Port

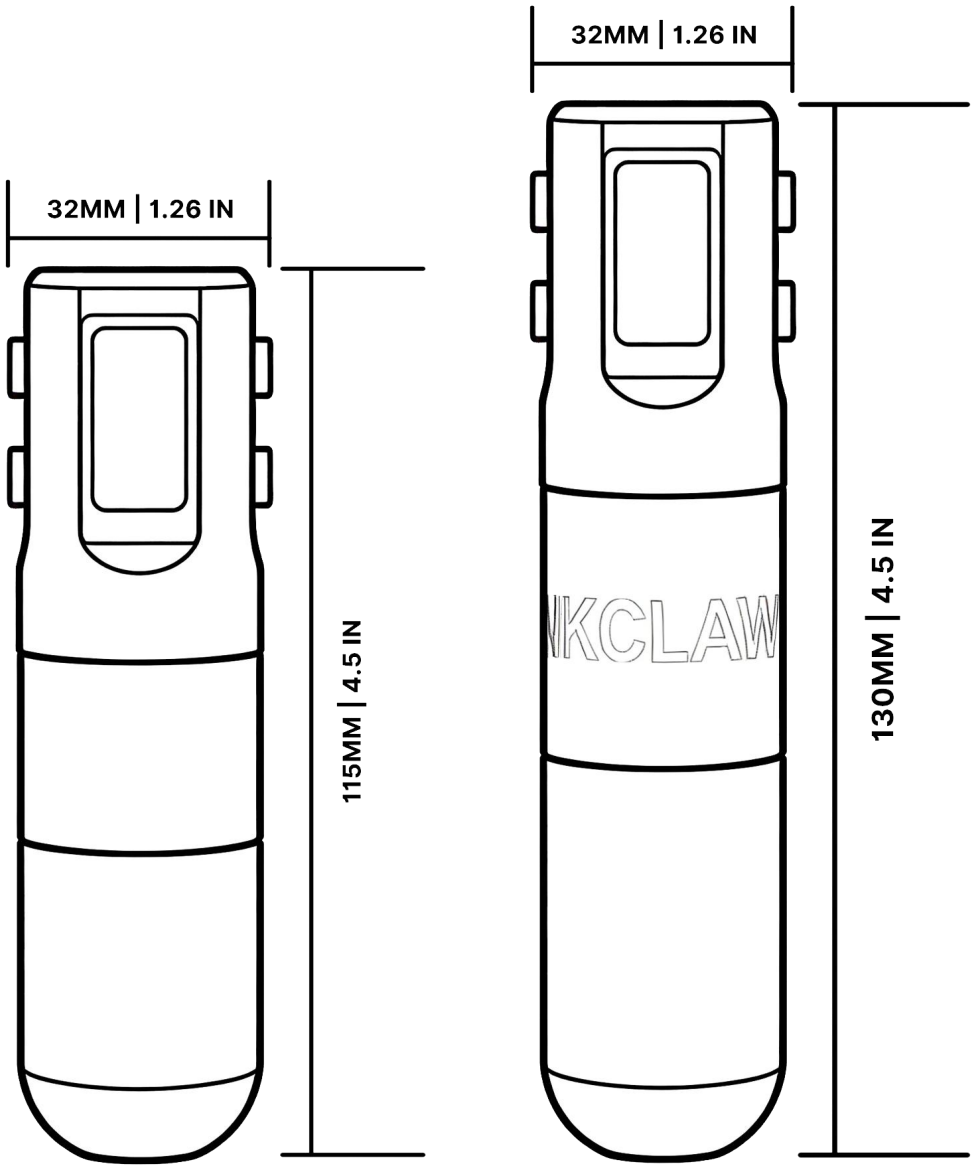
5 .Control Buttons

6 . Max 12-Watt Brushless Motor

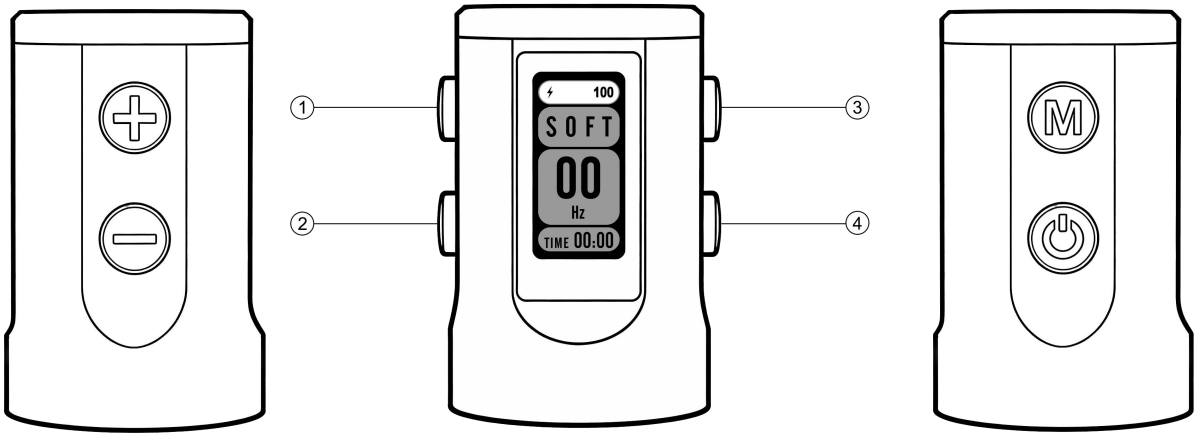
7 . Adjustable Needle Depth System

SPECIFICATIONS

Item	Specification
Control System	Decoupled Voltage-Frequency Control System
Output Voltage	5-12V
Operation Frequency	3Hz-150Hz (180RPM-9000RPM)
Maximum Output Current	1A
Charger Input	USB Type-C 5V-1A
Size	Subcore-S H 115mm x W 32mm Subcore-L H 130mm x W 32mm
Weight	Both around 160g (5.6oz)
Battery Life	3-5 hours per battery unit (based on operating parameters)



FEATURES



1.Voltage/Frequency Increase Button 2. Voltage/Frequency Decrease Button

3.Mode Button 4.Power Button

1. Controls & Layout

- Front-facing display
- Left side buttons: “+ / -” (parameter adjustment)
- Right side buttons: “M” (Mode) / Power button

2. Mode Structure

- The device features two modes:
  - Auto Mode (Soft / Medium / Hard)
  - Pro Mode (Frequency & Voltage Control)
- Press and hold M for 3 seconds to switch between Auto Mode and Pro Mode
- The device remembers the last active mode after power-off
- Default mode order: Auto Mode → Pro Mode

3. Auto Mode (Preset Modes)

- Short press M to cycle: Soft → Medium → Hard
- Use “+ / -” buttons to adjust frequency

Parameters:

- Soft: 6V, 3-100Hz
- Medium: 9V, 3-150Hz
- Hard: 12V, 3-150Hz

Operation Logic:

- Switching modes during operation will stop the machine
- Press the Power button to resume
- Holding M (3 seconds) during operation to enter Pro Mode

Display Logic:

- Paused state: Hz value displayed in white
- Running state: Hz value displayed in black

4. Pro Mode (Frequency & Voltage Control)

- Default cursor starts on frequency
- Short press M to toggle between:
  - Frequency adjustment
  - Voltage adjustment
- Use “+ / -” buttons to adjust values

Display Logic:

- Paused state: values displayed in white
- Running state: values displayed in black

5. Timer Function

- Timer does not reset automatically when powered off
- Press and hold “+” + “-” for 3 seconds to reset the timer

6. Display Switching

- Press M + “+” simultaneously to switch between:
  - Timer display
  - Current (Amp) display

7. Screen Dimming

- After 30 seconds of inactivity, screen brightness dims automatically

8. Standby Mode

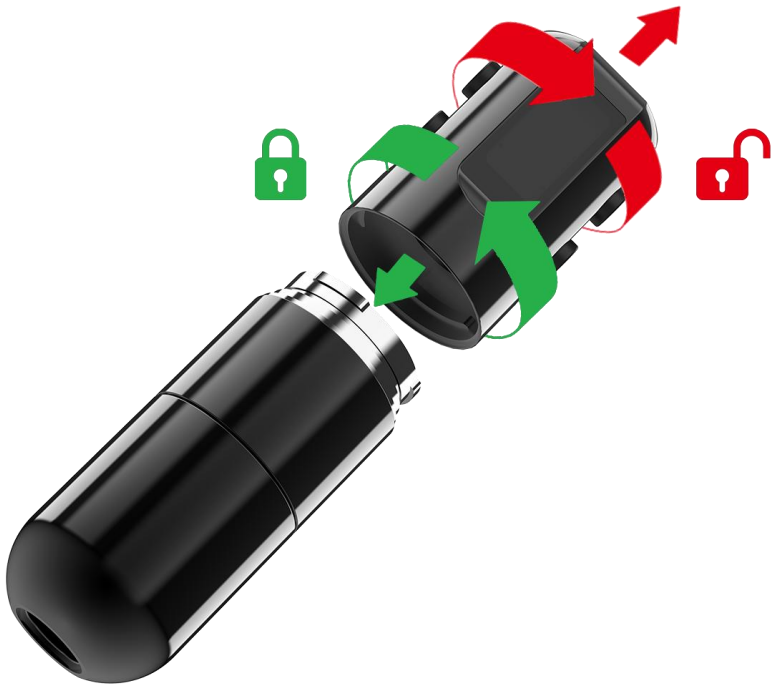
- After 5 minutes of inactivity, the device enters Standby mode
- Press the Power button (single click) to return to the previous state

9. Auto Shutdown

- After 15 minutes of inactivity, the device powers off automatically

DETACHING THE SUBCORE BATTERY UNIT

To detach your battery unit, ensure you have a firm grip on the body of the Subcore tattoo pen. Turn the battery unit counterclockwise and pull out. To attach the battery unit, push in while twisting clockwise. Ensure the lock mechanism moves freely. The battery unit must sit correctly to ensure power electrical leads align correctly. Avoid contact with battery unit leads while recharging or servicing. Turn the power off before removing the battery from the machine.



ADJUSTING NEEDLE DEPTH

Hold the machine ring securely. Turn the grip to adjust needle depth:

- Clockwise = increase depth for more needle hang
- Counterclockwise = decrease depth for less needle hang

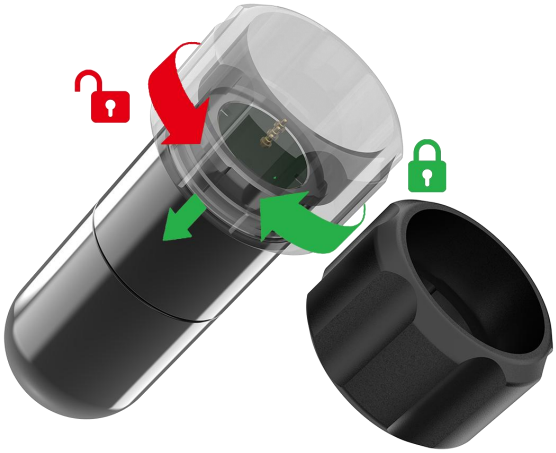
CHANGING THE STROKE CAM WHEEL

1. Detach Battery Unit

- Remove the battery unit from the machine before operation

2. Remove Motor Housing

- Hold the machine ring securely
- Use the included opener tool, align it with the grooves and press it down
- Rotate counterclockwise to unscrew and remove the motor housing



3. Loosen the Stroke Cam Screw

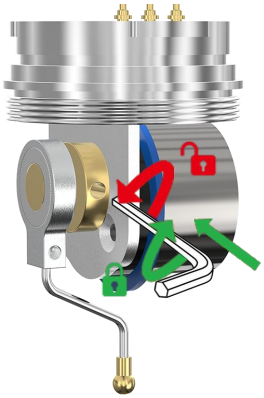
- Carefully hold the upper part of the motor housing
- Use a 1.27mm hex key to loosen the eccentric cam screw by turning counterclockwise
- Do not fully remove the screw

4. Replace the Stroke Cam

- Remove the cam by pulling it out horizontally
- Install the desired cam
- Ensure the counterweight orientation is facing inward

5. Secure the Stroke Cam

- Use the 1.27mm hex key to tighten the screw clockwise
- Ensure the cam is firmly secured to the motor shaft bar
- Do not overtighten to avoid damaging the motor shaft bar



6. Reinstall Motor Housing into Drive Housing

- Keep the push rod vertically aligned downward
- Align it with the center hole of the black push rod sleeve
- Ensure the push rod ball is properly seated into the socket
- Do not force insertion to avoid component damage

7. Reassemble and Tighten

- Screw the motor housing back in clockwise
- Use the opener tool to firmly tighten the housing
- Ensure it is fully secured to prevent loosening during battery replacement



LUBRICATION

The machine requires lubrication using the included oil or any suitable professional lubricant available on the market, approximately every 3 months under daily use. For less frequent use, adjust the lubrication interval accordingly.

Apply one drop of oil to the tip of the push rod. Always perform lubrication with the machine powered off.

ADDITIONAL INFORMATION & TROUBLESHOOTING

Warning: This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Barrier Protecting Your Machine

We strongly suggest the use of barrier products to protect your machine.

Voltage Parameters

The SUBCORE Pro Mode operates safely between 5V (minimum) and 12V (maximum).

Voltage may vary based on your preferred needle configuration or brand. Adjust the voltage to achieve your desired performance within the recommended range.

Handy Tips

- Depending on your needle cartridge brand, you may need to loosen the grip slightly to enable proper motor function.
- Do not exceed the maximum voltage.
- Use only FDA-approved cold sterilization solutions for cleaning.
- Not autoclavable - do not autoclave.

WARRANTY

INKCLAW warrants that this product will be free from defects in materials and workmanship under normal use for a period of one (1) year from the date of original purchase. During this period, INKCLAW will, at its sole discretion, repair or replace any defective product at no charge.

The battery unit is considered a consumable component and is covered by a limited warranty of six (6) months from the date of purchase.

This warranty does not cover damage caused by misuse, abuse, improper handling, unauthorized modification, or failure to follow operating and maintenance instructions. This warranty will be void if the device shows signs of having been tampered with, disassembled, handled roughly, dropped, overexposed to moisture, used with cartridges without a membrane, or otherwise damaged in a way that compromises functionality.

To maintain proper battery performance, the battery should be kept in a charged state. Prolonged storage in a fully discharged condition may result in over-discharge, which can permanently damage the battery cell and render it non-rechargeable. Damage caused by improper battery maintenance is not covered under warranty.