

Training:

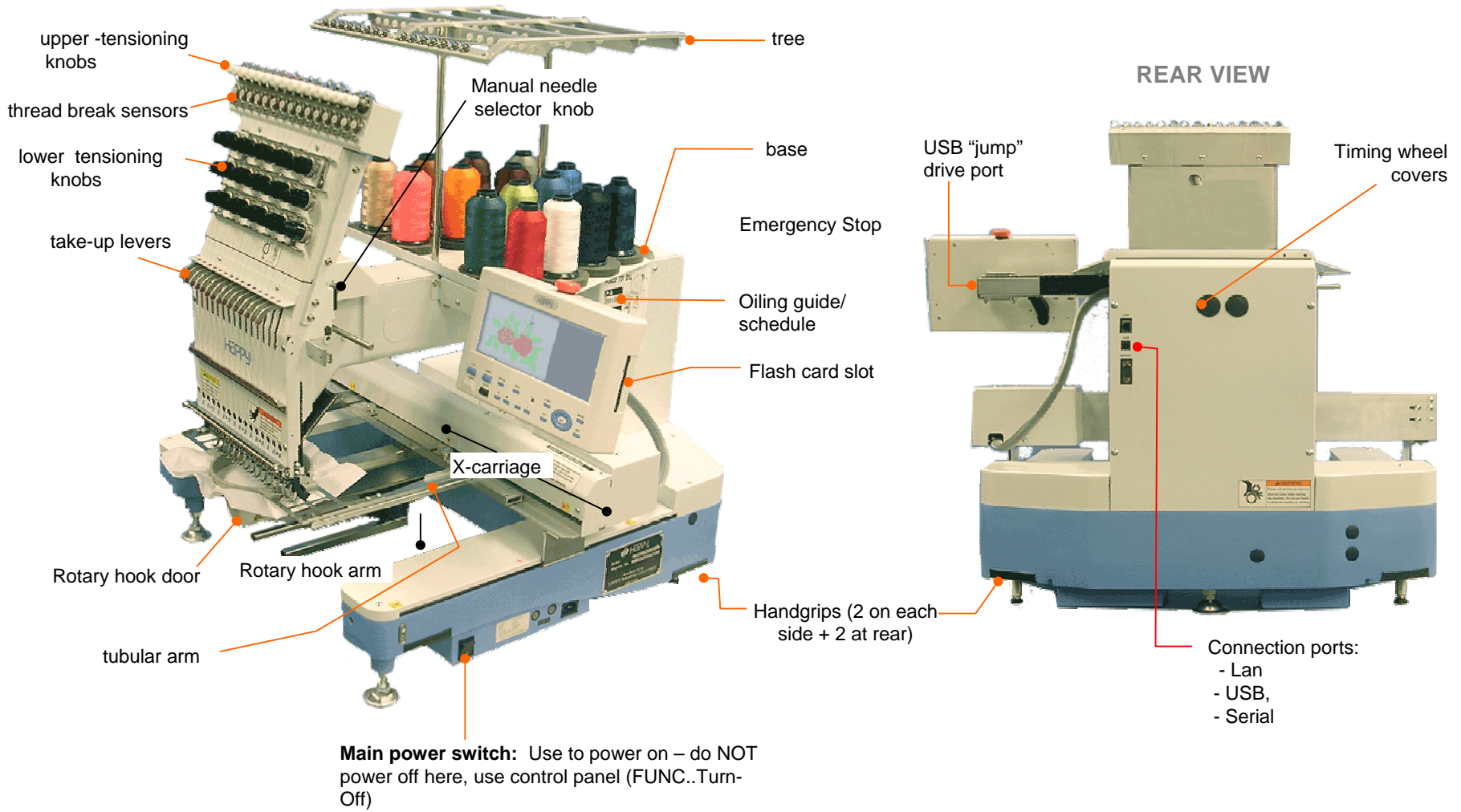
HAPPY HCD-1501

Operations & Maintenance

Chapter 1: Introduction & Embroidery Theory

- **Overview of your HCD Machine p.2**
 - Diagram of major parts
- **Overview of major mechanical systems p.3**
 - Color change system, sewing system, X-Y pantograph
- **Control Panel Introduction & Orientation p.4**
 - Adjustment / emergency stop
 - Power-on & navigating to the main sewing screen
 - Shutting down
- **Other Important Screens: A brief introduction p.8**
 - Function menu
 - Main menu, pages 1 and 2
- **Embroidery basics & theory p.12**
 - About stitches, sewing quality, stitch file formats, the embroidery needle

Overview: A Quick Tour of the Machine

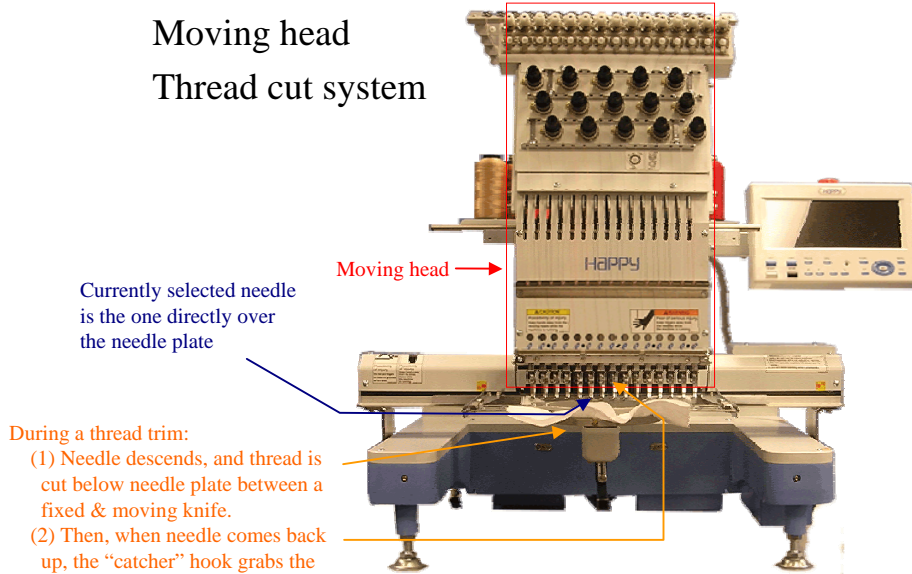


Main power switch: Use to power on – do NOT power off here, use control panel (FUNC..Turn-Off)

Overview: 3 key mechanical systems

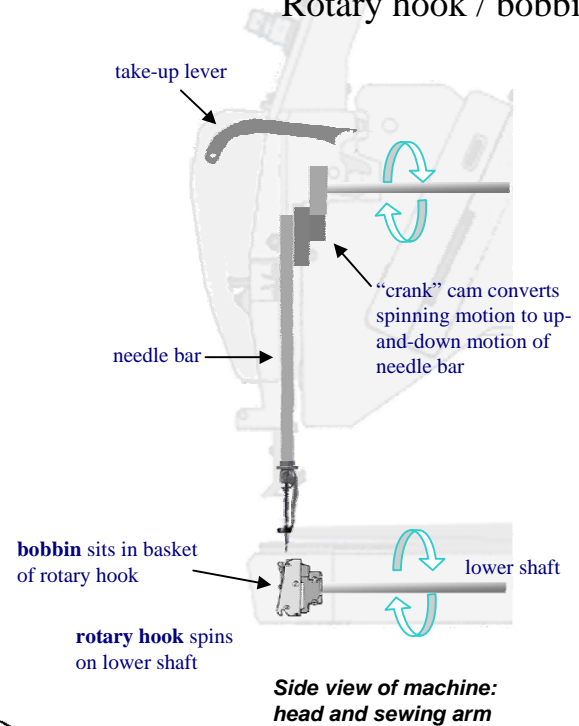
1. Color Change System

Moving head
Thread cut system

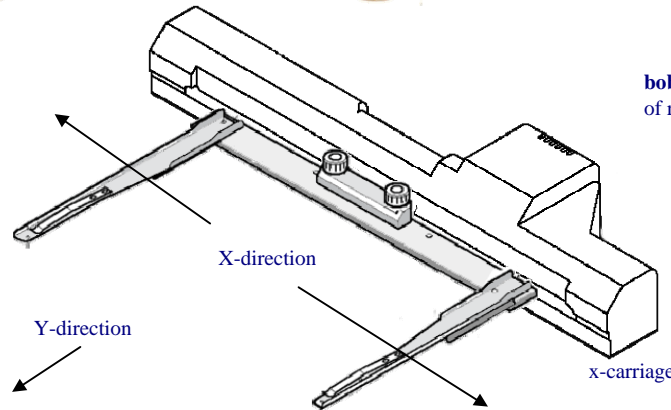


2. Sewing System

Take-Up Lever
Needle bar
Rotary hook / bobbin



3. X-Y Pantograph

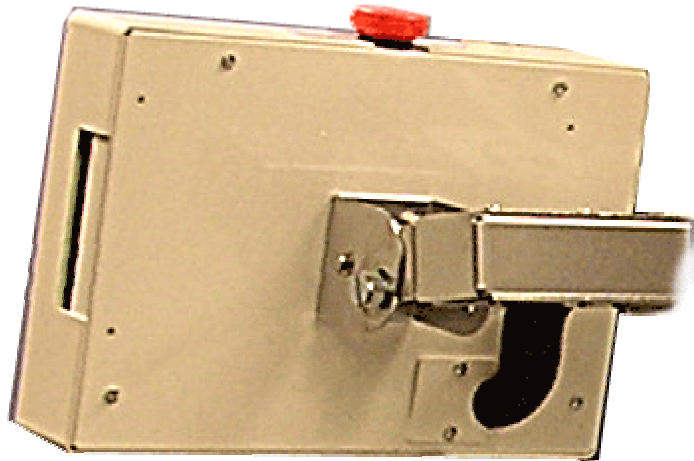


Timing wheel covers

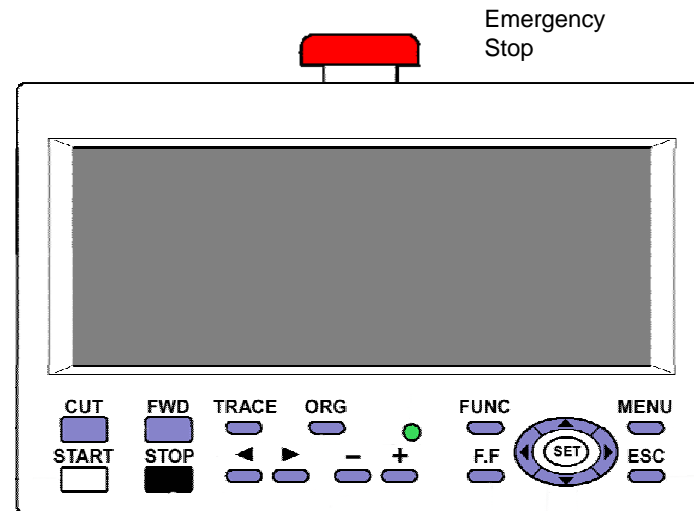
Control Panel Intro: Quick Orientation

Adjusting the Display Angle

Adjust display angle using knob behind control panel. Set to match a comfortable viewing height



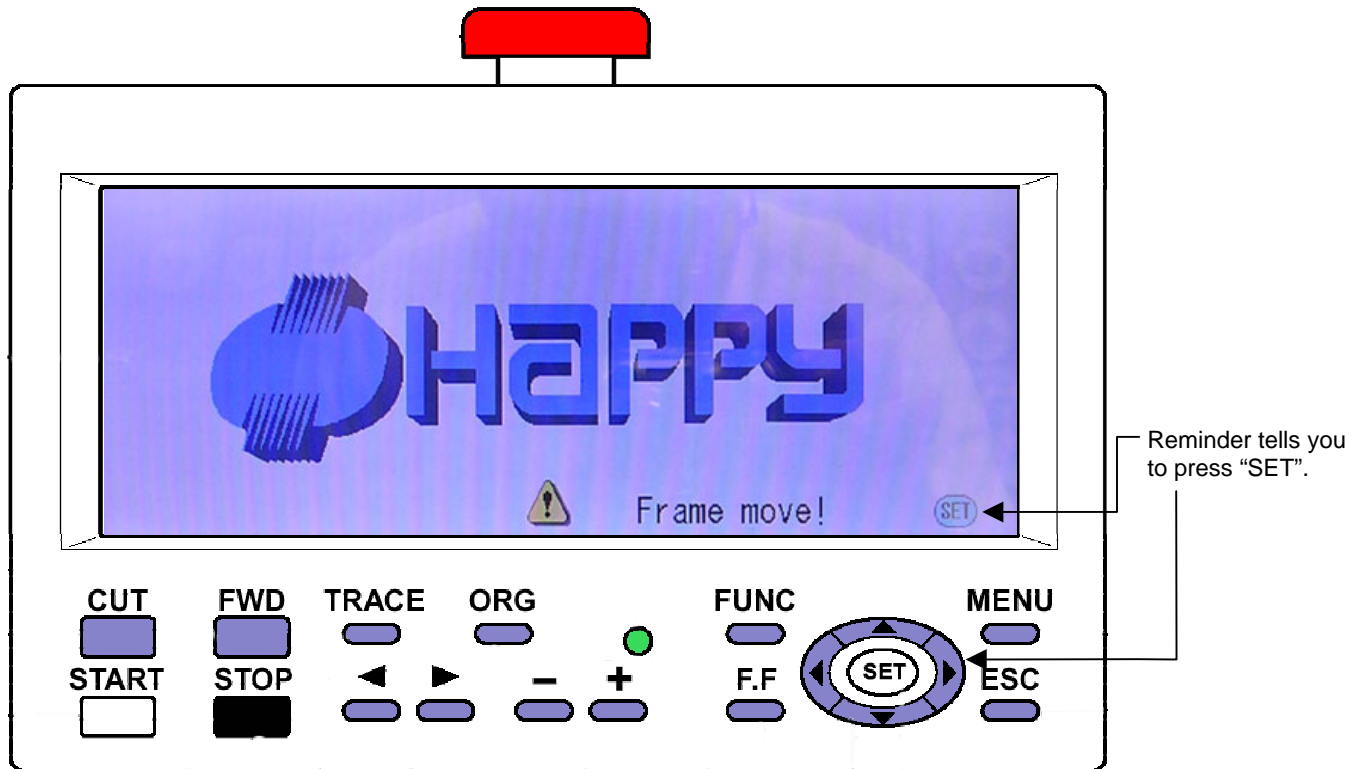
Emergency Stop



Control Panel Intro: Power On to the Main (Drive) Screen

Initial Power-On

This startup screen appears at power-on.

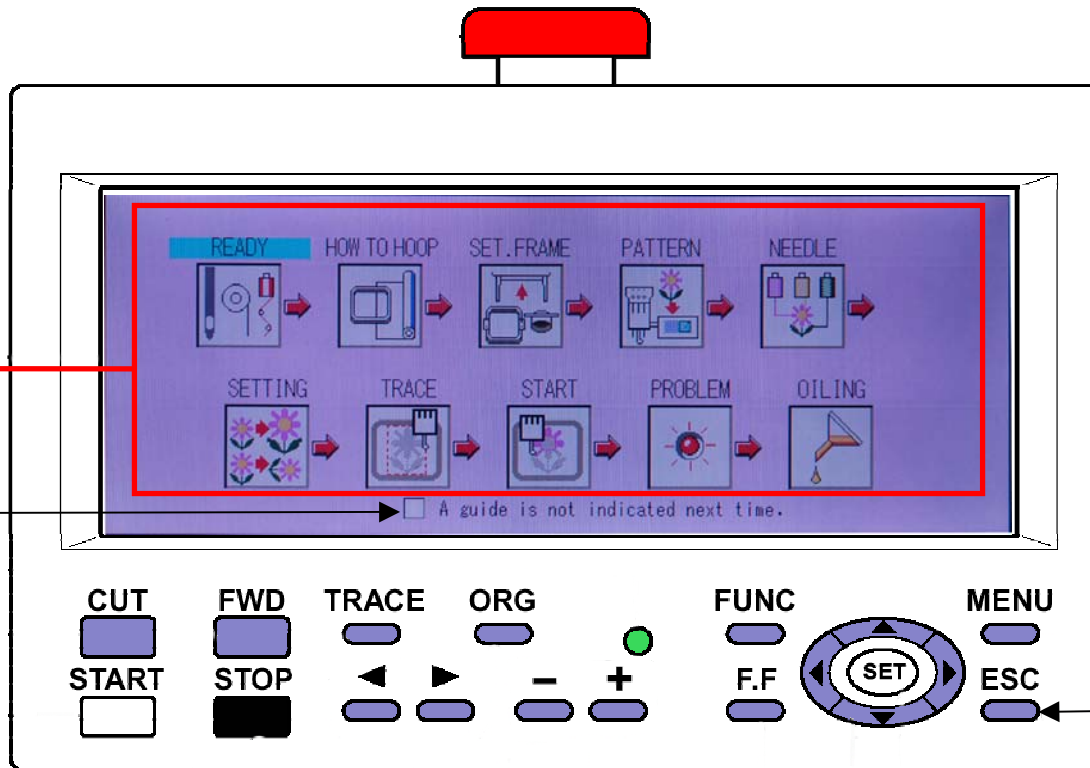


Control Panel Intro: Power On to the Main (Drive) Screen

Getting to the Main Screen

The "guide", or on-board help screen appears by default.

Check here if you don't need to view the guide next time you start the machine.

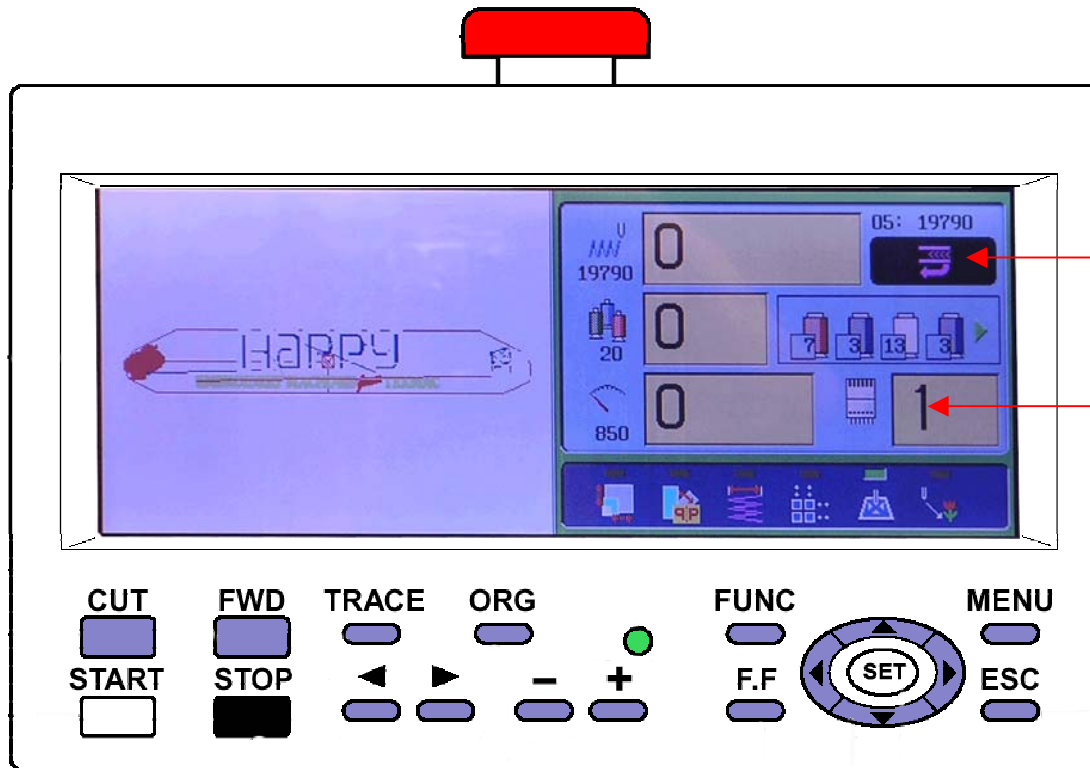


Press ESC from here to get to the main "drive" screen.

Control Panel Intro: Power On to the Main (Drive) Screen

Getting to the Main Screen

This is the main "drive" screen.



Origin Symbol:
shows that the current design is at the origin and ready to begin.

Active needle:
current needle

Control Panel Intro: Other Important Screens

The FUNC menu and shut-down

This is the main FUNC screen.

Turn off the machine with this option. This helps protect the machine.

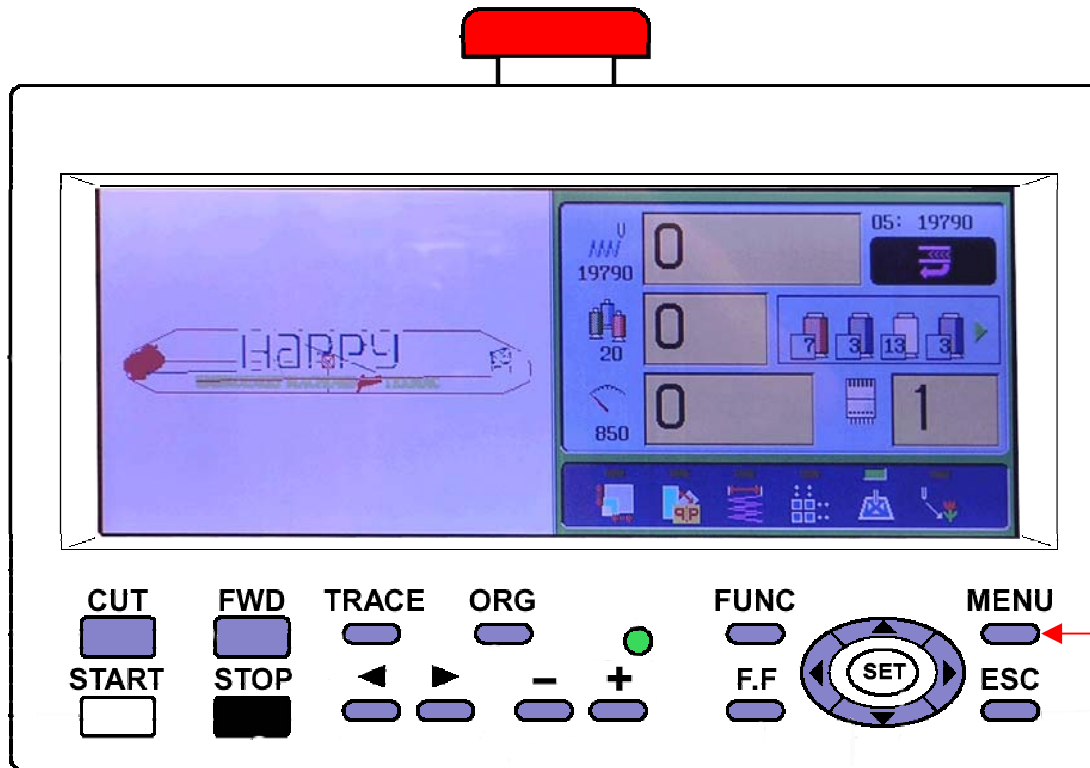
The functions of this menu are used during sewing and will be discussed later.

The diagram shows a control panel with a red emergency stop button at the top. Below it is a large LCD screen displaying the 'FUNC' menu. The menu options are: Top, Center, Origin, Position, 0 Set, Log-in, and Turn-off. The 'Turn-off' option is highlighted with a red arrow. To the right of the menu is a digital display showing '09:FP933' and several numerical readouts (0, 0, 0, 8, 11) with icons for thread, needle, and foot. Below the screen is a row of physical buttons: CUT, FWD, TRACE, ORG, FUNC, and MENU. Below these are START, STOP, left and right arrow buttons, minus and plus buttons, F.F, a central SET button with a circular arrow, and ESC.

Control Panel Intro: Other Important Screens

The Main Menu

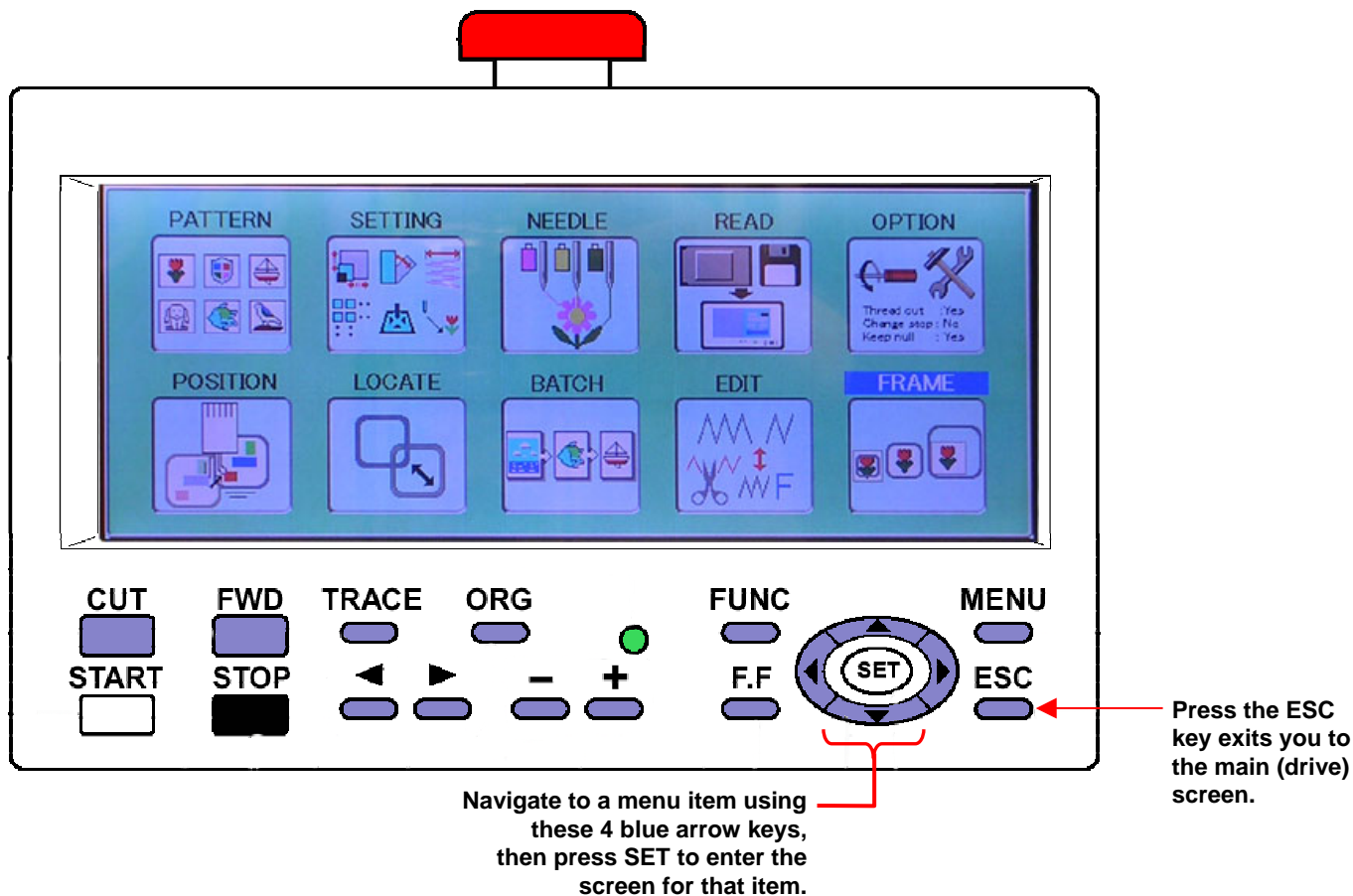
- Reach the main menu by pressing the MENU key.



Control Panel Intro: Other Important Screens

The Main Menu

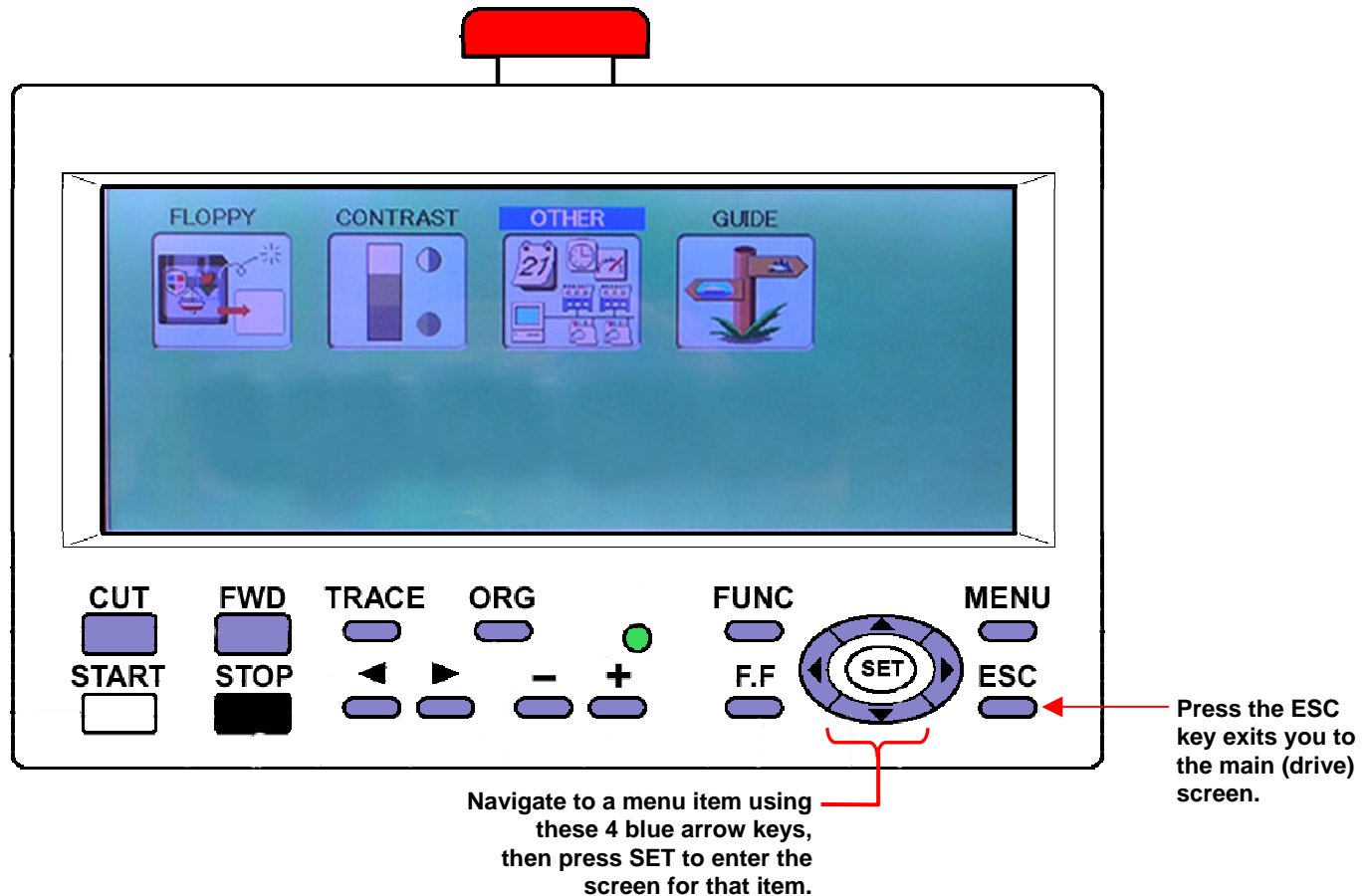
- This is page 1 of the main menu.



Control Panel Intro: Other Important Screens

The Main Menu

- This is page 2 of the main menu.



Key Embroidery Basics / Theory

- **About Stitches :**
 - **All stitches are formed** by a ½ loop of colored thread looped with ½ loop of bobbin thread.
 - **Max and minimum length:** Must be between 1mm (.04 inch) and 12.7mm (1/2 inch). Too short causes thread breaks. Too long, stitches are too loose.
- **3 Major Factors Affecting Sewing Quality that you can control:**
 - **Tension** – once properly set, should rarely require re-adjustment. We will cover this in class.
 - **Hooping** – proper hooping is a must. Not too tight, not too loose. We will cover this in class.
 - **Digitizing** – hire a digitizing service and/or learn how to digitize in digitizing classes.
- **Sewing file format used in embroidery: DST**
 - All commercial machines read this format
 - Does not have color information – must load the design into the machine AND tell it which colors to sew.
 - Limited in editability – the design must be sewn at the size it was digitized.
- **About Embroidery Thread**
 - Upper (colored) thread
 - **Can be polyester or rayon, usually polyester. Standard is 40 weight**
 - **Comes in several sizes: 5,000 meter cones to 1,000 meter cones.**
 - **Handle carefully: physical contact, oil/dirt, moisture can prevent it from unspooling smoothly and catch**
 - Bobbin thread
 - **L-type, approximately 350 yards per spool. Bobbin thread will have to be changed more frequently than upper thread**
 - **Lasts approximately 25,000 to 60,000 stitches**

Key Embroidery Basics (continued)

• Embroidery Needles:

- **Type DB-K5, standard size is 75/11 ballpoint for most applications.** Alternate needle for sewing caps and other tightly-woven goods (heavy canvas) is 80/12 sharp point for better penetration.
- **The width of the shaft of an embroidery needle** limits the the finest possible detail (the smallest possible stitch). Standard size (75/11) needles are .75 mm across, so stitches must be at least a little wider than the hole that the needle punches in the fabric (minimum distance 1mm)
- **Needles are subject to wear!** Over time, burred surfaces and other wear can cause problems. Be prepared to change needles frequently especially with heavy use.

