

A15 Photo Embroidery Function Instructions

I. A15 Introduction

A15 computerized embroidery control system is the first integrated control system especially designed for domestic single-head machine according to its mechanical characteristics.

It adopts custom-made CPU “Dahao Core” as the base for hardware and software design. The operation panel uses 10.1-inch HD TFT touch screen with resolution ratio of 1280*800. The man-machine interaction interface is designed based on LINUX operation system and supports WIFI network connection function. The integrated control box realizes breakthrough and comprehensive integration of main control system, drive and power supply.

II. A15 Photo Embroidery Function Introduction

A15 photo embroidery technology is based on four channel color printing principle. The whole photo embroidery process is divided into four stages, complete the embroidery of four color layers make up the photo respectively. During each embroidery stage, there is no need to cut thread or change color, embroidery color order is yellow (Y), red (M), blue (C), black (K).

The true color and gray value of the image can be successfully matched by using the embroidery thread of the above four colors, which is combined with appropriate quantity and proportion in each pixel unit, so don't need to use other colors' thread to embroidery it any more. The photo embroidery product has realistic and rich artistic effect as oil painting.

III. Operation Steps

1. Authorization

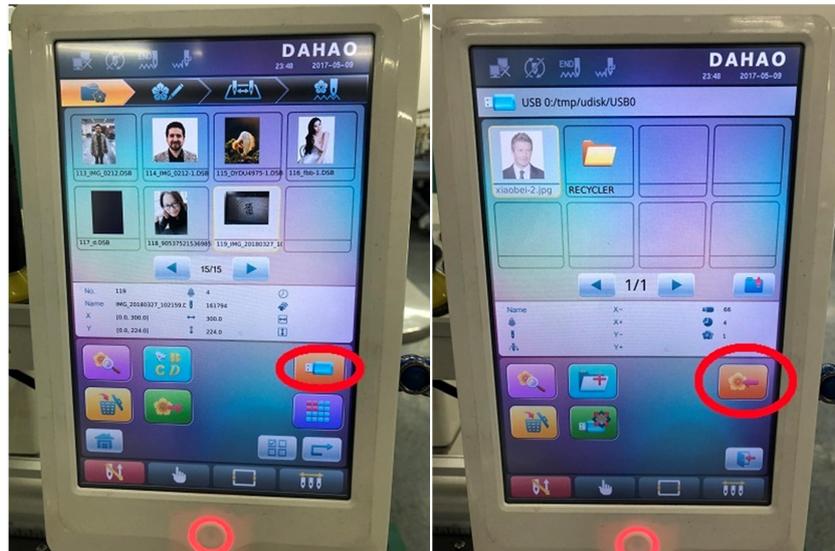
Before using A15 photo embroidery function, it needs to acquire authorization code of Dahao. When user clicks input pattern process button, there is a code enter interface, user need enter Dahao code to turn to next step. If user does not have authorization, he can't operate the photo embroidery function on this machine.



2. Operation Procedure

The following is A15 photo embroidery diagram and operation flow chart.

Step 1. After inserting USB into USB interface, press the "enter USB button", and then click the photo that you want to convert and press the "transform button" to start the pattern file generating process.



Step 2. After photo is converted to pattern, user can choose color conversion or black and white conversion. In this example, the transformation mode is color conversion.



Step 3. After entering the photo editing page, users can choose image size and sharpening process according to their own needs, and then click the "preview button" in the bottom left corner to see the final embroidery effect of pattern.

Tips: In A15, the length and width of photo will remain consistent with the original photograph, to prevent image distortion, it only keeps operation for enlarge and shrink of equal proportion.

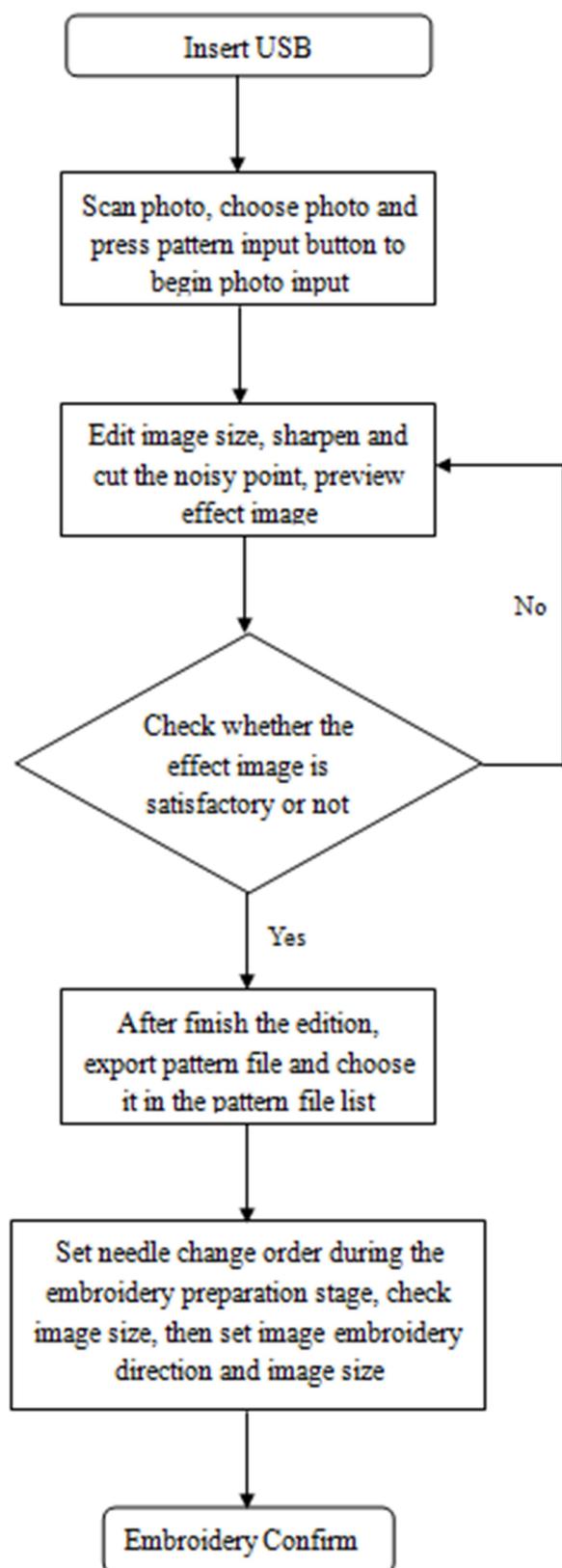


Step 4. In effect preview interface, users can see stitch number of the pattern file, and vary pattern size according to this pattern stitch number. If satisfied with the effect, users can exit the preview interface, export and save the pattern file.



Step 5. When export the pattern file, users can modify the file name and pattern file number according to their preference.





3. Color Change Setting

In the process of photos embroidery, it has four layers embroidery. Must pay attention to the layers embroidery order, accordance with the yellow (Y), red (M), blue (C), black (K) order strictly. If change the color order, finished product's color will be serious distortion. The correct color order setting is as follows:



IV. Tips

1. Photo Quality

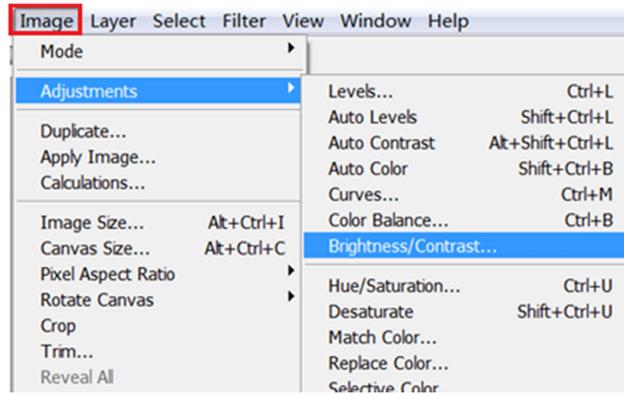
When choose embroidery photo, please choose photos with simple background and high resolution. If the background is complex, then need to use image processing tool to delete the background. Of course, users till can choose photo without deleting the complex background, but it will take more time to finish the embroidery. In the interface of photo and pattern file transformation, users can preview the pattern file embroidery effect. If satisfied with the effect, users can go to the next step.

The following is a reference process for deleting background by Photoshop:

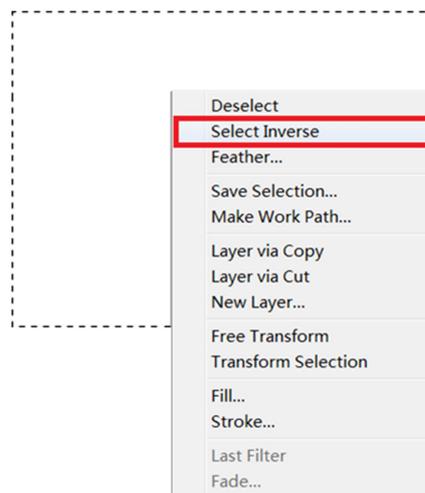
- ① Choose a photo (jpg format);
- ② Use "Polygonal lasso tool" to choose head area;



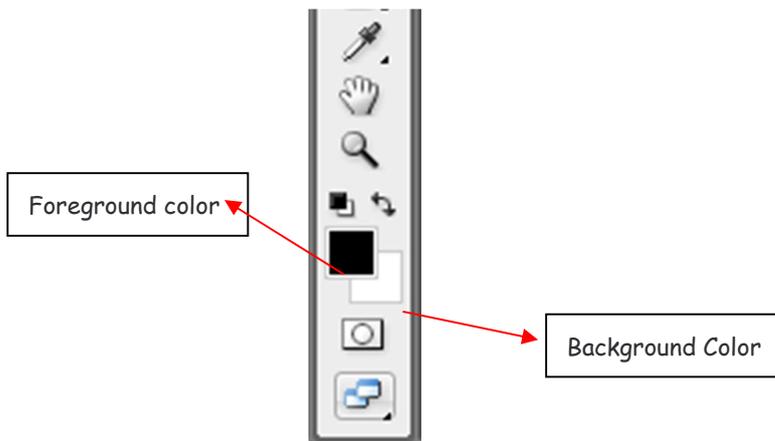
- ③ After choosing head area and forming a closed selected area, click top menu "Image"—"Adjust"—" Brightness/Contrast" to adjust the brightness and contrast of selected head area, shown in the picture (If no need to adjust brightness and contrast, then this step can be omitted):



④ Click the right-hand button on selected area and choose "Select Invert";

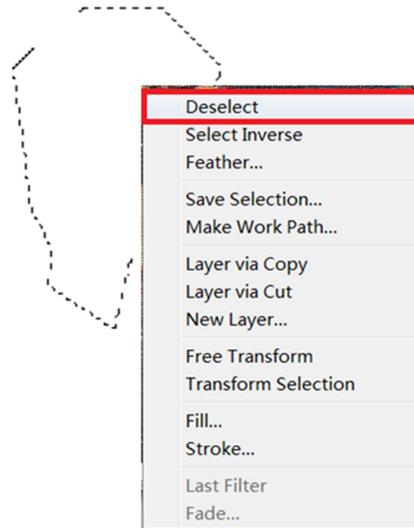


⑤ Choose "Background color", and set the background color as white.



⑥ Click "Delete" button on the keyboard, delete the unwanted background, then the background of image will be replaced by white.

⑦ Click the right-hand button on the image and choose "Deselect", save the image in JPG format after completing above procedures.



2. Image Size

During the conversion from image to pattern file (DSB), need to edit image size firstly. When edit the image size, there will be an option that is generated on the proportion of image length and wideness by default. After image input, users can check pattern and pattern size. The smallest processing unit is a small square of 2mm*2mm during the photo embroidery. So the larger the image size, the more pixels in the frame, and the image becomes more vivid. When users reduce image size, the number of pixels will decrease, which causes some parts of the embroidery is not clear.

Due to the limited embroidery frame area of the single head machines, when need a larger image size, such as a landscape painting, a photo of several persons and a full-length photo, users can set the pattern file size slightly larger than the size of embroidery frame, then reduce the pattern size by using size zoom function of single head machine system. The effect is same as reducing the size of each pixel cell. If the pixel unit size is 1.8mm*1.8mm, embroidery quality can be increased to a certain extent.

It is forbidden to reduce the embroidery pattern area to less than 70%, otherwise a single pixel unit size will be too small and there is no enough space for needles, the distance among the four embroidery threads is so short that needle stitches are too densely distributed, which results in thread stacked, cloth deformation, cloth broken or other bad consequences.

If users want a final embroidery with 400mm*400mm size, according to the basic principle that a pixel unit size is 2mm*2mm, the length-to-width ratio of original photo should be 1:1, meanwhile the pixels number of original photo should be more than or equal to 200*200. Then users can input photo in size modification interface. In the process of image input, there may be some small

calculation errors of length-to-width ratio, which can be ignored. If there is a large calculation error, please contact the relevant personnel in time.

3. Pretreatment (sharpen)

Sharpen tool in photo editing interface can quickly focus on the fuzzy edge in the photo, improve clearness or focal length degree for parts of image which makes color more vivid in a particular area. It is recommended to use sharpen tool only once at most, otherwise the image will be partially distorted. In the process of editing the image, users can check the embroidery preview several times to repeatedly compare the changes of different sharpening degree to the photos, so as to select the version which is the most satisfying. The following is photo editing interface.



4. The Choice and Purchase of Embroidery Thread and Cloth

A15 photo embroidery function has higher requirement for embroidery thread color, need yellow, red, blue and black. Red is positive red, the brighter the color, the better the embroidery effect. Yellow should be golden yellow, then the color of embroidery will be more bright and beautiful. The choice of blue color is wide, and the embroidery of similar colors has slightly difference, the most ideal choice is a shiny sapphire blue, which is shown in the following picture; Black thread is relatively simple in color choice, only need to choose pure black.

The following figure shows the selection of four embroidery threads color, if need physical object, please go to Dahao photo embroidery official Taobao online shop to consult and buy them. The

cloth is made of 1mm thick white non-woven felt cloth, which works well in the experiment. The samples can also be bought from Dahao Taobao shop.



4. Others

① During the embroidery, it is necessary to keep the cloth surface fixed in the original position and to check the embroidery status on a regular basis in case of error or pattern deviation. Because the embroidery unit is small, 2mm*2mm, and each embroidery unit will be covered with 4 colors thread to turn out different colors, once the cloth position is changed, it will be difficult to recover to the correct state.

② During the embroidery, it is recommended to record the stitches number which the bobbin thread can be embroidered. This can improve embroidery efficiency and prevent machine from stopping work because of exhausted bobbin thread.