Research on the Application of Digital Printing Pattern in Custom Clothing Design

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Abstract

Based on the analysis of the technical characteristics and production process of digital printing, in view of the particularity of the design and production of digital printing patterns, the application research and exploration of introducing digital printing patterns into the design of advanced custom women’s clothing is proposed. Digital printing patterns offer the personalized custom design and service characteristics of design and custom clothing design are the common points that can be integrated between the two. The research of the paper not only provides an effective method for custom clothing design in the pattern realization process, but also provides guidance on how to promote digital Printing technology provides application reference in the custom design of apparel fabrics and the personalized design of apparel fabrics.

Keywords

Digital printing; Pattern design; Custom clothing design.

1. Introduction

With the development of people’s living standards and clothing consumption concepts, the demand for personalized clothing consumption is getting higher and higher, requiring clothing to have many characteristics such as fit, comfort, unique personality, and taste. It is difficult to meet the clothing needs of most consumers, using standardized size series, industrial flow production, and a multi-size and multi-color ready-to-wear garment that meets the clothing needs of most consumers. The personalized design and high-quality service experience of customized clothing can well meet the clothing needs of these consumers. In the customization business, personalized fabric pattern design is an important design point that reflects the unique personality of the customized clothing. The birth of digital printing technology has opened up a new era of fabric design and application. Digital printing is increasingly being valued by consumers for its characteristics of individualization, small batch, multiple varieties, high precision, fast delivery, low pollution, and unique design. With the continuous development and maturity of its technology, its application in customized clothing will inevitably become more and more extensive, and it will inevitably bring many new ideas to customized clothing design.

2. Design and Production Characteristics of Digital Printing Patterns

For a long time, due to the limitations of traditional craftsmanship, the production of printed products must have a certain scale effect for enterprises to be profitable. With the development of the economy, the market demand is becoming more and more diversified and individualized. Products with digital printing patterns get rid of the form and decoration of a thousand people, showing a unique appearance. The number of printing orders in small and medium batches is increasing rapidly, while large orders are gradually shrinking. At the same time, the
requirements for pattern, fineness, and quality are improved, and the delivery cycle is shortened. The emergence of digital printing technology has solved this long-standing problem that has plagued enterprises. Its technical characteristics mainly have the following three points:

2.1. Quick Response and Lean Production

With the development of the industry, digital printing technology is gradually accepted by the industry, and its working principle is to pass patterns through

The digital form is input to the computer, edited and processed by the computer printing color separation drawing system (CAD), and then the computer controls the micro piezoelectric inkjet nozzle to spray the special dye solution directly onto the textile to form the desired pattern. Under the traditional printing method, it takes several days or even tens of days for the product to be delivered from design to delivery. Under the digital printing technology, the customer selects the pattern and fabric, and the finished product can be sampled within 1 to 2 hours, which can respond quickly. Customer orders. The production process has got rid of the traditional printing process of color separation, drawing, film making, and screen making in the production process, thereby greatly shortening the production time, reducing the cost, and achieving lean production.

2.2. Personalized Design and Small Batch Production

For the majority of textile designers, digital printing technology is the best way to give full play to personal creativity, and can quickly complete proofing of their designs. The digital printing pattern is rich in color, using four colors plus spot colors, and 16.7 million colors can be printed. For the majority of consumers, there is more room for personalized design and choice. The fabric pattern processing technology is similar to the color printing method, which is very suitable for small batch fabric pattern design and processing. The pattern design can better show the effect that the designer wants to express. The parent-child clothing series "Fable Fairy Tales" shown in Figure 1 below, the inspiration for the work is based on the common intellectual toy for children-Tangram. The color and partial shape of the Tangram are meticulously integrated into the series design as design elements, and the clothing design, The colors and patterns of the tangram toy are subtly integrated into the design theme. The digital printing patterns in this series are decorated with cute zebra and bird patterns. There are also irregular geometric shapes of tangrams arranged inadvertently on the clothing. It seems unintentional but it is intentional. The use of colors and shapes of the patterns are the same as those of parent-child clothing. The overall design requirements echo well.

![Figure 1. "Fables and Fairy Tales" Parent-child Clothing Series](image-url)
In addition, because digital printing is to directly install the dye solution in a special ink cartridge and spray it on the fabric as needed, it is neither waste nor waste water pollution. It eliminates the dye solution discharged by the slurry printing machine and achieves pollution-free printing process. It also saves the consumption of film, silk screen, silver tube and other materials. It not only reduces the burden on enterprises, but also fulfills the requirements of environmental protection. Digital printing technology has greatly promoted the development of "green textiles" and "green manufacturing".

3. Design and Process Characteristics of Customized Clothing

With the continuous development of social economy, people have higher and higher requirements for clothing. Clothing is not only a basic function of sheltering the body from the cold, but also requires more fashion and personality. It can be said that customized clothing has become a trend or a regression due to its unique particularity and privateness. Custom clothing has certain differences compared with ready-made clothing in terms of design, materials, and production methods. This difference determines the particularity of the design and production of customized clothing, as well as the special aesthetic standards and aesthetic value resulting from it.

3.1. Design Features

Controlled by the top clothing designer or design team of the brand, it represents the highest level of design. According to the customer’s customization requirements, the designer combines its body shape, personality, temperament and other information, and customized design belongs to the customer’s exclusive plan. The characteristics are: the design object is specific, the designer and the customer face to face direct communication, especially the need to understand the customer’s request for customized clothing, the customer’s personal
preferences and temperament characteristics and other different levels of needs, which greatly meets the various needs of customers. Customization requirements enable the design of customized clothing to meet customer preferences, increase customer participation, realize effective interaction between customized clothing and customers, and strive to make the clothing fit perfectly with the human body, and fully reflect the spiritual temperament of customers.

3.2. Material Characteristics
Custom clothing products are oriented to high-end customers. Most of the materials required are high-end surface accessories designated by customers, especially high-level custom clothing materials. Most of them are customized fabrics or redesigned materials, emphasizing the individuality of the materials, regardless of cost. In the perfect expression of customized design intent, highlight the identity of customers, and satisfy customers' customized psychology. In the process of making clothing, even if the clothing styles are the same, the fabrics selected are different, the effect of the texture of the fabrics will be very different, and the effect of the ready-made clothes will also be very different. Therefore, in custom clothing, the choice of fabric is often the first consideration for designers. In many cases, in order to emphasize personalized fabric and pattern design, limited hand-made custom pattern design, fixed weaving, fixed dyeing or buying out materials are often used to prevent custom clothing from being cloned, so as to ensure that customers' customized clothing is unique.

3.3. Production Characteristics
Organize production according to the characteristics of each customer’s customized clothing, adopt single-quantity, single-cut, and single-made production forms, and pursue the accuracy and punctuality of clothing production. After the design plan is confirmed by the customer, according to the characteristics of different human body curves, the customer’s body shape data is accurately measured, and then the pattern is made, the false sewing blank sample, the customer sample and many other links. During the production, the customer will be invited to communicate and communicate repeatedly. Sample modification. And in strict accordance with the time node, to ensure the punctuality of each link, and to serve customers in time. Different from the mass production and flow production of ready-to-wear products, it blurs the differences in individual forms. The production characteristics of customized clothing greatly meets the production and processing needs of different styles of customized designs.

4. Application of Digital Printing Patterns in Custom Clothing Design
As people’s requirements for personalized clothing are increasing, the fashion cycle of clothing is getting shorter and shorter, the pattern of clothing fabrics is changing faster and faster, The design requirements for patterns are becoming higher and higher. For the custom clothing design industry, it is more necessary to grasp these two problems, and use the personalization and convenience of digital printing pattern design in the development of customized clothing fabrics, so as to ensure the individualization of the customized clothing And uniqueness.

4.1. The Advantages of Combining the Two
4.1.1. Meet the Needs of Personalized Custom Design
From the aspect of digital printing pattern design, digital printing technology breaks the limitation of traditional production of color and pattern length, and can realize the printing effect of high-end printing on textile fabrics, which greatly expands the space of textile pattern design and improves The product’s personalized design space can better meet customers' individual and diversified needs for the development of customized clothing patterns.
Digital printing pattern design technology is used in the development and design of customized clothing fabrics. It is a personalized fabric pattern design driven by customer needs, and personalized styles, suitable size requirements, through the personalized design and production characteristics of digital printing patterns, And Dadi satisfies customers' special needs and differentiated designs in fabric customization, style customization, size customization, etc., to enhance the design point and sales point of customized clothing, and the production and processing methods of customized clothing in single quantity, single cut, and single production It matches with the individual pattern design process of digital printing.

4.1.2. Quick Response to Customer Customized Orders
The production process of digital printing has got rid of the process of color separation, drawing, film making, and screen making in the production process of traditional printing, thus greatly shortening the production time. The production process of small batches and rapid response to customer design requirements is truly realized, and the production batch is not restricted. The entire production process realizes computerized digital production, which greatly improves the flexibility of production. Some products can even be delivered on the same day, which is immediately desirable.

At the same time, due to the application of computer technology, printing a series of patterns with different tones of the same pattern, as well as the designer's continuous modification of the colors during the production process, has become a major technical advantage of digital printing production that is different from traditional printing production. What you see is what you get, which can quickly print out the personalized fabric design effect that customers need, and make it finished through the design and production of customized clothing. The ready-to-wear is displayed in front of the customer, and you can try it on immediately and experience your design effect immediately.

4.2. Technical Requirements for the Combination of the Two
The technical requirement of digital printing pattern design is to input the computer through various digital means such as scanning, digital photos, images or various digital patterns produced and processed by the computer, and then processed by the computer color separation printing system, and then passed by the dedicated RIP software. Its spray printing system sprays various special dyes (such as reactive, disperse, acid main paint, etc.) directly onto various fabrics or other media, and then after processing, obtain the required various dyes on various textile fabrics. A high-precision printing product.

For customized clothing, the design of customized fabrics can be sprayed all over the floor, and then use the template to select a suitable pattern position for garment piece cutting; it can also be in the form of positioning printing, and the pattern application position can be set at the beginning of printing, Print the pattern directly on the garment piece, and then sew the piece. In application, the specific method to be adopted depends on the requirements of the design and production links.

The key technology of the combination of the two is to design a single quantity and a single cut based on the customer’s human body data, and then obtain a clothing cutting model that is highly consistent with the customer’s human body data and suitable for individual customers, and then position the digital printing pattern with the 1:1 clothing cutting model. Matching, positioning and cutting.

4.3. The Combined Operation Mode of the Two
The application of digital printing pattern design to the design of customized clothing is a strong combination of two advantages of personalized fabric design and personalized style design in the customization business, from fabric pattern design to customized style design, to Custom
size and styling design greatly reflect the extraordinary aspects of the customization business, and strive to reflect the customer-oriented design and service of customized clothing design. Starting from the custom design of fabrics, and integrating personalized design requirements into custom clothing design and business, the differences in custom clothing design have been reflected from the source of clothing production materials. Its operation mode can be roughly divided into: user customization needs, body shape data collection, fabric customization design, style customization design, printing pattern proofing, surface accessories cutting, wool sample sewing, customer try-on, fine craftsmanship, and customer delivery of customized clothing.

5. Conclusion

Digital printing pattern design and clothing fabric pattern production have more advantages than traditional printing pattern technology. As a customized service model for personalized clothing, it has a strong application prospect. With the demands of consumer demand and industrial upgrading, the application of digital printing patterns combined with customized clothing design will continue to increase pattern printing speed, reduce printing costs, improve color accuracy, and gradually improve the technical level. Get better development. Based on the analysis of the technical characteristics of digital printing patterns and the design and process characteristics of customized clothing, this paper proposes to introduce digital printing pattern design into the personalized design of customized clothing fabrics, and analyzes the operating mode and competitive advantages. It has a certain reference effect on how to strengthen the personalized design and service of customized clothing, and how customized clothing companies change their business thinking mode, actively expand the market, and enhance the competitiveness of the industry.

References