

# Analysis on the Common Quality Problems and Production Methods of Jeans Belt Loop Knot

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**Abstract:** The belt loop is an important part of a standard five-pocket jeans, integrating functionality and aesthetics. Because of common problems such as skewed belt loop, unequal lengths, improper slackness, double lines at the front pocket of the belt loop cover, exposed bottom of the belt loop, asymmetry, too low or too high position of the belt loop, and no light in the back, we tracked the sewing of the belt loop in the jeans production line, analyzed the causes of the problems, and came out with targeted solutions. We analyzed the operation steps of knotting jeans belt loops and then develop daily maintenance measures for knotting machines, provide technical guidance for seamstresses/seamsters and team leaders to enhance the maintenance ability to knot machines, enhance the ability of knotting machines to run well, ensure the stability of jeans belt loops quality, and provide technical reference for quality control of belt loops in the same type of jeans production lines.

**Keywords:** Belt loops; Jeans; Knotting machine; Routine maintenance

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## 1. Introduction

The jeans production industry is currently in a crucial period of transformation and upgrading. In the face of the new pattern of industry development, continuous improvement of the knot method of the belt loop, the improvement is the quality of jeans is imperative. Lv and Zhang concluded that the most classic denim clothing is workwear jeans, which have continuously evolved into various trouser types, such as suspender jeans, flared jeans, and hot pants<sup>[1]</sup>. Liang et al. pointed out that the production of denim clothing presents a development pattern of multiple types in small batches<sup>[2]</sup>. Liu and Zhu concluded that China is both a significant consumer and producer of denim garments<sup>[3]</sup>. Ge pointed out that the latest report from the China Business Industry Research Institute states that the global market size of ready-made denim garments is expected to exceed the threshold of 2 billion pieces by 2023<sup>[4]</sup>. Belt loops are small loops that hold the belt on jeans and are sewn into 1.2 cm wide, 4 cm long strips of cloth, also known as trouser lugs, tabs, trouser noses, or belt tabs, which play the role of fixing and decorating the belt. The belt loop knotting is an essential part of the finished jeans and is also prone to quality problems. The equipment used in the knotting process is the knotting machine, which is the most widely used machine in the jeans production line. The knotting machine is one of the most commonly used special equipment in garment production, which is used for stitch reinforcement and decoration. Ding and Chang found that exploring the common quality problems and process operation points when knotting waistband loops in jeans can help improve quality control and efficiency of the production line<sup>[5]</sup>.