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**Two types of 2-needle sewing machines are now digitalized.
New semi-dry head, 2-needle, needle-feed,
lockstitch sewing system "LH-4500C Series" is launched.**



JUKI is going to launch the new semi-dry head, 2-needle, needle-feed, lockstitch sewing system for overseas markets from November, 2019. This sewing system is based on the 2-needle lockstitch machine and comes with digitalized "sewing" adjustment functions. Thanks to the digitalization, not only improved seam quality and shorter setup changing time are achieved, but also production management is enabled by interlocking JUKI exclusive application and the sewing machine.

This sewing system is utilized for sewing decorative stitches on jeans pockets, collars and sleeve cuffs of blousons, and attaching tape to cups of brassieres. Higher seam quality is required since finished seams are exposed on the top surface of product.

Now, two types of sewing machines are launched, one is the "sewing machine for jeans and heavy-weight materials" and the other is the "sewing machine for foundation".

In the case of sewing corners of pockets with the sewing machine for jeans and heavy-weight materials, the sewing machine automatically controls the number of outer and inner stitches and produces beautifully-finished parallel stitches while requiring the operator only to turn the material at the corner portions of pockets, provided that the operator inputs corner stitching information such as the needle gauge and stitching angle through the operation panel in prior. In addition, the sewing machine is provided with the multi-layered part detection device. As a result, the sewing machine is able to produce equally-tensed seams of consistent stitch length even at the multi-layered parts of the material.

The sewing machine for foundation is the world's first sewing machine of the kind that allows the use of large hooks. Since the amount of bobbin thread that is wound on a bobbin increases by 80 %, the frequency of bobbin thread changing is reduced by approximately 40 % (19 times / day -> 11 times/day). This contributes to the reduced setup changing time and reduced workload on the operator.

Furthermore, the sewing machine is environmentally friendly since the power consumption during standby time (the sewing machine is at rest) is reduced by approximately 50 %, and that during operation is reduced by approximately 30 %.

JUKI is going not only to expand sales of the "LH-4500C Series" that improves the seam quality, reduces the setup changing time and enables production management by interlocking the sewing machine and JUKI application but also help our customers to establish smart factories through the pursuit of potential of IoT-utilizing solutions.

* 1 Approximately 40 % (19 times/day -> 11 times/day) in the case of operating the sewing machine for eight hours a day.

◆Features

1. Improvement of seam quality by digitalization

① Thread tension control mechanism (active tension) is adopted

- Right and left independent needle thread tension control mechanisms, i.e., active tension, are adopted. The needle thread tension that has conventionally been likely to vary due to sewing speed and remaining bobbin thread amount is automatically corrected to achieve stabilization of thread tension.
- The presser foot pressure is digitally controlled. Under the automatic mode, the multi-layered part detection function allows the sewing machine to automatically increase/decrease the presser foot pressure. Under the manual mode, the presser foot pressure can be controlled by assigning the active tension function to the hand switch. (Active presser foot pressure control mechanism)
- When only a small amount of bobbin thread remains on the bobbin, the machine gives a replacement signal to warn the operator. (Bobbin thread remaining amount correction function)

② Multi-layered part detection device is installed (only for the sewing machine for jeans and heavy-weight materials)

The sewing machine is provided with the multi-layered part detection device. With this device, sewing data can be respectively set for the flat part and multi-layered part of the material. Sewing problems that are likely to occur when sewing multi-layered parts of material such as stitch gathering and poorly-tensed seam can be, therefore, prevented.

③ Improved corner stitching function (only for the sewing machine for jeans and heavy-weight materials/corner stitching function)

Semi-automatic changeover of sewing direction at corner stitching is achieved. This function is controlled by the lever, as with the conventional models to maintain ease of operation. Semi-automatic control is achieved by entering information on the needle gauge and sewing angle through the operation panel in prior. The operator is then able to change over the sewing direction only by operating the lever. As a result, even an inexperienced operator is able to achieve increased productivity and consistent seam quality.

④ Sewing machine for foundation is provided as standard with a large hook (1.8-fold capacity hook)

In consideration of tape attaching process for sewing brassieres which consumes a large amount of thread, the world's first sewing machine for foundation provided with a large hook has been developed. As a result of the adoption of the large hook, frequency of bobbin thread changing is reduced by approximately 40 % (19 times/day in the case of the regular hook -> 11 times a day in the case of the large hook), thereby helping reduce the work hours and the operator's fatigue. The large hook, in combination with the bobbin thread remaining amount correction function, helps ensure consistent sewing performance.

2. Full-color operation panel

① Control of sewing and management of sewing machine utilizing IoT

Sewing adjustment data can be sent/received between the sewing machine and the commercially-available Android device through non-contact bidirectional communication. This enables easy and uniform setting of sewing machines installed on the sewing line. The operation panel is provided as standard with the USB port to enable easy data management between devices and software updating.

② Various information can be sent/acknowledged by means of JUKI Smart APP

The JUKI Smart APP is provided with data items such as the management setting (registration of devices), sewing machine data (sewing data) and the problem solution charts. On the problem solution chart, output chart, operation rate chart, etc. are created using the data acquired from the respective sewing machines on the production line. They can be utilized for checking the current-state of sewing machines and analysis.

3. Improvement of the working environment

① Reduction of the time required for adjusting the hook timing

Time required for the hook timing adjustment that is carried out after changing the needle gauge is substantially reduced by selecting the hook timing adjustment mode on the operation panel. In addition, the adoption of screw-type needle guard of the hook facilitates adjustment work.

② Reduction of noise and vibration

For the new LH4500-C sewing machine, the operating noise is reduced by 35 % and the vibration is reduced by 40 % as compared with the conventional models by the adoption of the 1/2 opener system, etc. The sewing machine achieves the working environment that helps reduce stress of the operator.

③ LED light

The LED light is provided at the undersurface of the arm jaw. In addition to the conventional dimming, color shade can be changed (as white < -- > intermediate color (initial value) < -- > incandescent-lamp color). The brightness of the LED light is, therefore, adjustable to allow the operator to operate the sewing machine comfortably, helping reduce the eye fatigue of the operator and improve operating efficiency.

④ 2-gang hand switch

The 2-gang type hand switch is adopted. This switch can be used for many different purposes such as needle up/down correction and multi-layered part correction.

⑤ Automatic OFF function for the backlight of operation panel

In the case the operation panel is not operated for a certain period of time, the backlight of operation panel can be automatically turned OFF (setting time: One to 20 minutes).

⑥ Sleep mode (automatic power OFF function)

In the case the sewing machine is not operated for a certain period of time, the power sources for the motor, etc. can be turned OFF (setting time: One to 50 minutes).