JUKI

AMS-221F Series
Computer-controlled Cycle Machine with Input Function

DIGITALLY
Smart Solution

Inspire the Knowledge in Sewing Adjustment

Epoch-making Sewing Systems in history

AMS-221F

JUKI

JUKI CORPORATION
SEWING MACHINERY & SYSTEMS BUSINESS UNIT

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Computer-controlled Cycle Machine with Input Function
AMS-221F Series

Digital sewing system proposes the production process added with a computerized new value to all the people who engage in production.

Computer-controlled Cycle Machine with Input Function

AMS-221F Series

Computer-controlled cycle machine AMS-221F has achieved increased productivity with its maximum sewing speed of 2,800 sti/min and beautifully finished seams with its new feed control system.

Improvement of seam quality

Industry's most accurate needle entry point is ensured

Increased rigidity and JUKI's unique high-performance feed control system contribute to increased feed accuracy, thereby reducing uneven material feed during outward/inward sewing. Uneven material feed during outward/inward sewing is reduced. In addition, for the feed system of the feeding frame, either the intermittent feed or the continuous feed can be selected.

High-quality seams that respond to heavy-weight materials and light-weight materials

The thread clamp mechanism and the feed mechanism that succeeded JUKI's unique technologies have been reviewed for improvement. As a result, more beautifully-finished seams are now produced. In addition, the main-shaft retry function can be selected with the memory switch. This improves the penetration force of the needle when sewing heavy-weight materials.

Beautifully-finished seams without bird's nests (bird's nest reducing function) are produced

Since thread trimming is performed at the beginning of sewing, so-called bird's nest (thread tangling in at the beginning of sewing) is reduced, thereby producing more beautiful seams.

AMS-221EN

AMS-221F(Bird's nest reduction function)

Shorter thread remaining function *

Since the counter knife position has been changed, length of needle thread and bobbin thread remaining on the material after thread trimming is reduced to 5 mm or less. As a result, securing of thread at the end of sewing is no longer required.
* The bird's nest reduction function and shorter-thread remaining function cannot be used simultaneously.

Newly-developed active tension

Highly-evaluated active tension that is used for setting the needle thread tension is now added with new functions. The output can be changed over with the memory switch between the low-tension side output and the high-tension side output to enable fine adjustment of the thread tension in the actual area of use. Not only the thread tension during sewing can be changed at a pin point but also it can be set in accordance with the material thickness. In addition, the needle thread tension that is likely to vary with the sewing direction can also be corrected. All of these adjustments can be done on a stitch-by-stitch basis through the operation panel with ease. Since the needle thread tensions adjusted in accordance with various sewing conditions are reproducible, setup changing time is reduced at the time of changeover of processes.

Two different types of feeding frames

The feeding frame comes in two types; one is the monolithic feeding frame and the other is the separately-driven feeding frame (consisting of separate right and left parts). Since the right and left parts of separately-driven feeding frame can be operated independently, easier placement of the material under the feeding frame is promised. The amount of lift and lifting/lowering speed of the feeding frame can be set separately for its right and left parts.

Separately-driven feeding frame (consisting of separate right and left parts) (for 2516 size only)

Monolithic feeding frame

Intermediate presser

Height of the lower dead point of intermediate presser can be changed steplessly in order to respond to sewing of multi-layered sections of material.
(Standard: 0 - 3.5 mm; Maximum: 0 - 7.0 mm)
The intermediate presser stably holds the sewing material, thereby preventing sewing troubles such as stitch skipping and thread breakage. In addition, the intermediate presser can be held at a desired height according to the material thickness, thereby preventing the sewing product from being damaged. Since intermediate presser lifting amount is increased from the conventional 20 mm to 25 mm, ease of placement of the material on the sewing machine is increased.
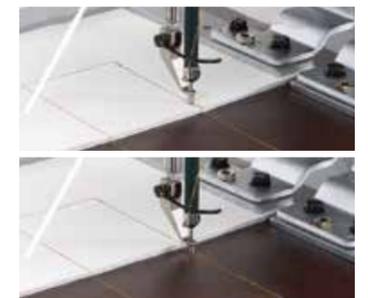
The AMS-221F Series comes in two different models which differ in sewing area.

2516 (X 250mm × Y 160mm)	3020 (X 300mm × Y 200mm)
AMS-221F-SS2516·HS2516 **AMS-221F-SL2516·HL2516**	**AMS-221F-HS3020·GS3020**
This model of sewing machine is best-suited to sewing topstitching / shape-tacking of apparel products in general such as labels and emblems, and bags and shoes. It is widely applicable to sewing of various kinds of sewing materials and processes.	The sewing machine is applicable to sewing products which require a wider sewing area than that of the "AMS-221F-2516." This model of sewing machine is best-suited to sewing car interior parts, attaching handles to bags, and topstitching/shape-tacking boots and shoes. This model of sewing machine responds to the sewing that requires medium-size sewing area.

160mm
250mm

200mm
300mm
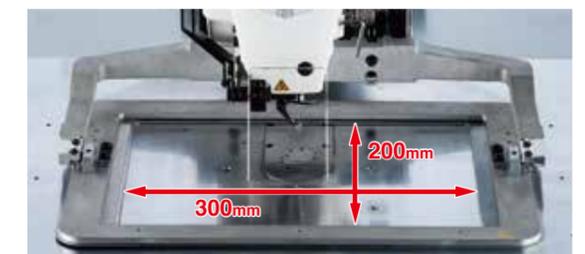
Double-stepped stroke feeding frame (for separately - driving feeding frame)

The feeding frame can be lowered in two steps. It is very convenient for finely positioning the material on the sewing machine. The stopping height of the feeding frame can be set as desired with ease.

Non-magnetic throat plate auxiliary cover

Non-magnetic material is adopted to the throat plate auxiliary cover. As a result, the presser foot pressure or sewing performance is not affected by a magnetic resistance even when a magnet throat plate is used.

Input / output port for expansion

The number of input/output ports of the electrical box for the AMS-221EN Series has been 16 respectively. For the AMS-221F, the number of import/output ports is respectively increased to 20.

Bobbin winder

This bobbin winder does not require the operator to wind the thread on the bobbin at the beginning of bobbin winding procedure. The bobbin winder starts winding a bobbin only by placing the bobbin on it.

LED light

The illuminance-adjustable LED light is provided as standard to allow the operator to check the needle entry points with ease. This LED light can be adjusted in illuminance to such a level that the operator carries out sewing work with ease, thereby contributing to enhanced work efficiency.

Reduction in the power consumption

The AMS-221F has adopted the direct-drive system by means of a compact AC servomotor. Thanks to the capabilities enabled by the direct-drive system such as the panel screen display OFF feature and motor-excitation OFF feature, the power consumption is reduced by 12.2 % as compared with the AMS-221EN.

Reduction in noise/vibration

Reduced noise/vibration helps provide the operator-friendly work environment

● Comparison in noise

Comparison with the conventional models
Reduction by
3.0 db

EN series   F series
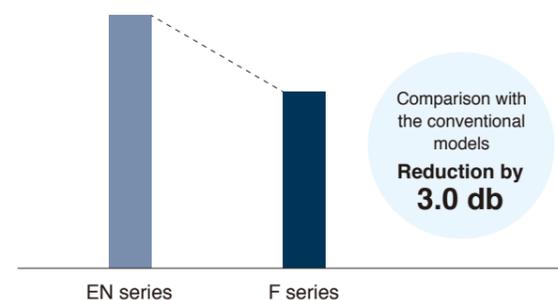
● Comparison in vibration

Comparison with the conventional models
Reduction by
3.6 db

EN series   F series
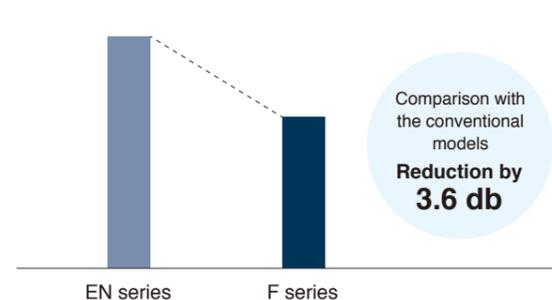
Condition: 2,800 sti/min, pitch 3.5 mm

Operation panel provided with programmable functions IP-500 (provided as standard)

The IP-500 is the newly-developed operation panel that comes with a high-resolution touch-panel screen. The speed of response to the operation is increased. The operator is able to input/edit data while visually observing the needle entry points. A file name consisting of 12 alphanumeric characters can be set to a piece of pattern data. As a result, It is possible to manage the sewing pattern using the file name. In addition, since the corrective measure is additionally displayed to the error message, easy resetting of the error is enabled.

The memory storage capability of the main body of the sewing machine has been dramatically enhanced.

Sewing data created with the IP-500 can be stored in the memory of the main body of the sewing machine. The memory storage capacity is 50,000,000 stitches and 999 patterns (max. 50,000 stitches per pattern) at the maximum.

Management of sewing performance and sewing machine by the utilization of IoT (Internet of Things)
Various digitalized functions Management, browsing and editing of data can be carried out on the application software

Data on sewing machine adjustments made according to the product to be sewn can be transferred to a commercially-available Android tablet in contactless mode. This enables quick check for uniform settings as well as confirmation of conditions of sewing machines in a sewing line, thereby facilitating setup changes. The operation panel is also provided as standard with a USB port. Data management and software update can be carried out with ease using a USB thumb drive.

Data items of sewing can be numerically managed to ensure "stable quality" and reduction in time required for setup changes. Quantified sewing data can be externally taken from the sewing machine using an Android tablet or USB thumb drive.

USB port

JUKI Smart APP allows you to send and confirm various data.

In the application, there are items of management setting (terminal registration), sewing machine data (sewing data), problem-solution chart. In the problem-solution chart, we can generate production graphs,the availability chart, etc. for each acquired sewing machine data so it can be used for checking the current situation and analyzing it.

*Android OS Version 6.0 is recommended to use JUKI Smart APP. (Operation is confirmed with respect to Versions 5.0 and later.) Contact JUKI distributor in your area for how to use the application software.

The sewing machine can be paired with equipment which supports NFC (Near Field Communication) only by holding the equipment over the sewing machine.

▌Programming software for computer-controlled sewing machines PM-1

This software is to input and edit sewing data of JUKI's latest sewing machines. Its versatile input functions allow to input sewing data of each electronic sewing machine model easily, accurately, and quickly. It supports high quality production with high added value by utilizing and creating original data for specific designs and applications. Data editing is supported not only in the DXF format of CAD data but also in PTL format (from PM-1 Ver. 3.31).
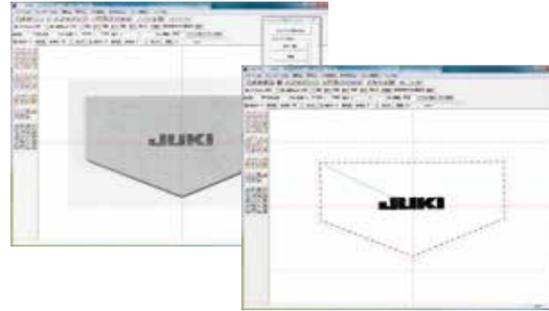
■ Device / Parts

Description	Part No.	Feature
Side wiper asm.	40211854	A side wiping type is also available depending on the sewing products or sewing conditions.
Relay cable asm. for the side wiper	40036668	
Needle cooler asm.	40218933	It blows air on the needle to prevent thread breakage due to heat.
Cassette holder asm. for 2516	B25822210A0	The next material to be sewn can be placed between the top and bottom plates of the cassette holder while the machine is still engaged in the sewing of the currently set material.
Cassette holder fixing base asm. for 2516	40052328	
Cassette holder asm. for 3020	40053777	
Cassette holder fixing base asm. for 3020	40053782	
Bar-code reader	40218934	So as to prevent any accidents that may be caused when the feeding frame does not match a program, a program which matches the feeding frame can be invoked by reading the bar-code.

■ Needle / Needle hole guide / Intermediate presser corresponding table

Application	Needle	Needle hole guide		Intermediate presser	
	Number	Part No.	Needle hole diameter	Part No.	Dimensions (φA×φB×H×L)
Knit and knitting fabric (option)	#9~#11	40207153	φ1.6	B1601210D0E(Option)	φ1.6×φ2.6×5.7×37.0
Light- to medium-weight (S type)	#11~#14 *1	40196061	φ1.6	40023632(Standard)	φ2.2×φ3.6×5.7×38.5
Medium- to heavy-weight (H type)	#14~#18 *2	40196067	φ2.0	B1601210D0FA(Option)	φ2.2×φ3.6×8.7×41.5
Heavy-weight (option)	#18~#25	40196071	φ2.4	B1601210D0BA(Option)	φ2.7×φ4.1×5.7×38.5
Heavy-weight (standard)		40196074	φ3.0	14433601	
Extra heavy-weight (option)		40207154	φ3.0 (with counterbore)	B1601210D0CA	φ3.5×φ5.5×5.7×38.5
For the prevention of stitch skipping on heavy-weight materials (option)		40213021	φ3.0 (with eccentric)		

S type: Fitting thread numbers #80~#20, H type: Fitting thread numbers #50~#2
*1 The needle equipped as standard (DP×5 #14)
*2 The needle equipped as standard (DP×17 #18)
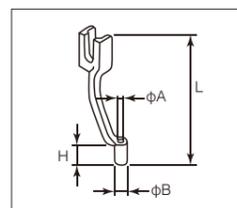
Intermediate presser

■ SPECIFICATIONS

Model name	AMS-221F-SS2516 AMS-221F-SL2516	AMS-221F-HS2516 AMS-221F-HL2516	AMS-221F-HS3020	AMS-221F-GS3020
Application	Light- to medium-weight	Medium- to heavy-weight	Medium- to heavy-weight	Heavy- to extra heavy-weight
Feeding frame type	Monolithic feeding frame(AMS221F-*S) Separately-driven feeding frame(AMS221F-*L)		Monolithic feeding frame	
Sewing area	X: 250mm × Y: 160mm		X: 300mm × Y: 200mm	
Max. sewing speed	2,800sti/min*			
Stitch length	0.1~12.7mm (0.05mm step)			
Needle bar stroke	45.7mm			
Lift / Stroke of the intermediate presser	Lifting amount: 25mm / Stroke: Standard 4mm (0~10mm)			
Variable lower position of the intermediate presser	Standard 0~3.5mm (max. 0~7.0mm)			
	Active tension (with an output cure changeover function)			
Needle	DP×5 (#14)	DP×17 (#18)	DP×17 (#18)	DP×17 (#23)
Thread	#80~#20	#50~#2	#50~#2	
Hook	Double-capacity shuttle hook			
Storage of pattern data in the memory	Main-body memory: Max. 50,000,000 stitches, 999 patterns (max. 50,000 stitches / pattern) External media: Max. 50,000,000 stitches, 999 patterns (max. 50,000 stitches / pattern)			
Enlarging / Reducing facility	1~400% (0.1% step), Pattern enlargement / reduction can be done by increasing / decreasing either stitch length or the number of stitches			
Bobbin thread / Product counter	Up / Down system (0~9,999)			
Lubrication	Semi-dry / hook section, Lower shaft gear section: minute-quantity lubrication (tank system)			
Lubricating oil	JUKI New Defrix Oil No.2 (equivalent to ISO VG32)			
Sewing machine motor	AC servomotor 550W (direct-drive system)			
Power requirement / Power consumption	3-phase 200V/400VA			
Compressed air / Air consumption	0.5~0.55 (max. 0.55) MPa, 1.8dm³/min (ANR)			
Dimensions	1,200mm(W)×1,150mm(D)×1,150mm(H) (thread stand is not included)			
Weight	245kg		252kg	

※ "sti/min" stands for "Stitches per Minute."

■ WHEN YOU PLACE ORDERS

Please note when placing orders, that the model name should be written as follows:

Machine head / Control box

Feeding frame type	Code	Applicable model
Monolithic feeding frame	S	AMS-221F-2516·3020
Separately-driven feeding frame <with double-stepped stroke>	L	AMS-221F2516

Pedal switch	Code	Applicable model
PK 3-pedal unit (PK47)	D	AMS-221F-*L2516·GS3020
PK 2-pedal unit (with a mechanical valve pedal)	F	AMS-221F-*S2516·HS3020

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Application	Code
Light- to medium-weight (AMS-221F2516)	S
Medium- to heavy-weight (AMS-221F2516·3020)	H
Heavy- to extra heavy-weight (AMS-221F3020)	G

Sewing area	Code
X:250mm Y:160mm	2516
X:300mm Y:200mm	3020

Subclass	Code
Standard	5000
Subclass	5001~

Power supply(MC-702)	Code
Single-phase 220V	E
Single-phase 230V (CE)	P
3-phase 200V	G
3-phase 220V	H

● To order, please contact your nearest JUKI distributor.