AMS-210EN Series AMS-221EN Series

Computer-controlled Cycle Machine with Input Function



JUKI FCO PRODUCTS



AMS-210EN Series

Lineup of our cutting-edge sewing machines



AMS-210EN Series AMS-221EN Series

Computer-controlled Cycle Machine with Input Function

AMS series

The AMS Series is newly reborn. New technologies have helped the AMS Series increase "productivity," achieve "energy conservation" in consideration of the global environment, and further improve "quality."





Small sewing area

Computer-controlled Cycle Machine with Input Function

•AMS-210EN-HS1510

ANS-210EN Series

The AMS-210EN Series comes in three different models which differ in sewing area.







The sewing machine flexibly supports the sewing of small articles such as labels and emblems. The sewing machine's small sewing area promises ease of use when handling small articles, thereby enabling smooth sewing operation.





The 1510 model is well received in the market due to its moderate-sized sewing area. Responding to market demand, the 1510 area model with a motor-driven feeding frame has been newly developed. This model can be used in a plant which is not provided with pneumatic equipment.



AMS-210EN- SL2210

This model has a sewing area that is best-suited to the sewing of large parts, including the shape-tacking of jean pockets. With this model, you may recognize the higher productivity of the cycle machine.

Productivity

The sewing machine achieves the highest sewing speed,

2,800sti/min*, in the industrial sewing machine industry. Energysaving

The new AMS Series models substantially decrease power consumption when compared with the conventional ones. They have been designed to achieve eco-friendliness.

Quality

The feed accuracy is substantially improved due to the adoption of the encoder control system.

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

Medium sewing area



●AMS-221EN-HL2516 ★ The picture shows the sewing machine with a separately-driven feeding frame.

RS

R

The AMS-221EN Series comes in two different models which differ in sewing area.

- 221F

2516 (X: 250mm × Y: 160mm)

AMS-221EN- S2516 Monolithic feeding frame Pneumatic feeding fram

AMS-221EN- Separately-driven feeding frame Pneumatic feeding frame

The sewing machine is best-suited to the sewing of large labels and emblems, the sewing of two or more pieces of small labels and emblems at one time, and the shape-tacking of bags and shoes. The sewing machine is applicable to a broad range of materials and processes, while leading the industrial sewing machine industry in terms of improvement in quality and the promotion of production that does not require sewing-machine operators to have special skills.



AMS-221EN-**HS3020** Monolithic feeding frame Pneumatic feeding

The sewing machine is applicable to sewing products which require a wider sewing area than that of the "AMS-221EN-2516." It is best-suited to the attaching of handles to bags and the shape-tacking of boots and shoes. The sewing machine is flexibly applicable to sewing requiring a medium sewing area.

Productivity

The sewing speed has been increased to **2,800sti/min** which is the highest sewing speed in the industrial sewing machine manufacturing industry. Various functions contribute to increased productivity!

Cycle time is shortened.

Cycle time

Series

210

Series

221

AMS-210E

AMS-210EN

AMS-221E

AMS-221EN

- •The sewing machine has achieved the industry's highest sewing speed of 2,800sti/min. The maximum sewing speed is reached by the 2nd stitch from the beginning of sewing. Since the sewing machine maintains its highest sewing speed immediately before the end of sewing and instantaneously decreases its speed, cycle time can be substantially decreased.
- •JUKI's unique stepping-motor controlled thread trimming mechanism is adopted to enable speedy and consistent thread trimming performance.
- •The machine demonstrates enhanced responsiveness due to the adoption of a main-shaft direct-drive system.

Sewing condition Pitch 4mm, 200 stitches AMS-210EN: 2,800sti/min AMS-210E : The maximum sewing speed when the stitching pitch is 4mm

Sewing condition Pitch 3.5mm, 486 stitches AMS-221EN : 2,800sti/min AMS-221E : The maximum sewing speed when the stitching pitch is 3.5mm

Comparison of cycle time

Machine time -

Machine time -

The maximum sewing speed per stitching-pitch (stitch length) is increased.

Sewing at the maximum sewing speed of 2,800sti/min is possible up to stitching pitch of 4mm for the AMS-210EN or 3.5mm for the AMS-221EN (the highest sewing speed and stitching pitch in the industrial sewing machine industry). Even for the larger pitches, the sewing speed is increased by 90% for the AMS-210EN and by 60% for the AMS-221EN at the maximum when compared with the conventional models, thereby reducing the cycle time.

★The sewing speed is automatically controlled according to the stitching pitch.



Comparison between stitching pitch and sewing speed

Max. sewing speed
The machine achieves the highest sewing speed of 2,800sti/min for a computer-controlled cycle machine.
Instantaneous acceleration
The maximum sewing speed is reached by the 2nd stitch from the beginning of sewing.
Instantaneous deceleration: The machine remains at the maximum sewing speed until just before the end of sewing and decelerates instantaneously.
Thread trimming
A stepping-motor controlled thread trimming mechanism is employed to perform high-speed thread trimming without fail.

Energysaving

A remarkable degree of energy conservation is achieved by the adoption of the encodercontrol system.

The sewing machine has been designed with additional consideration for the environment.

Power consumption is substantially decreased.

The AMS Series are an economically-efficient model which has been designed to reduce power consumption.

The AMS-210EN is an economically-efficient model which has been designed to reduce power consumption. The sewing machine has adopted a direct-drive system by means of a compact AC servomotor that is excellent in energy transmission to drive the main shaft, and has adopted an encoder-control system which drives the stepping motor with a minimum of power in accordance with the material thickness and stitch length to control the X-Y drive mechanism. Power consumption of the new AMS Series is reduced by 30% when compared with JUKI's conventional AMS-210E or by 45% when compared with the conventional AMS-221E.



Comparison of power consumption

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





Quality

In order to produce beautiful seams, new functions have been added.

Improvement of seam quality

The position of the feed can be checked during sewing by means of the encoder-controlled X-Y drive stepping motor. This remarkably improves accuracy of the feed. As a result, deformation of a sewing pattern which is likely to occur when sewing at a high speed or sewing a heavy-weight material is significantly reduced.



Semi-dry head

The frame (needle bar unit and thread take-up unit) is lubricated with grease, and the hook is fed with a minute quantity of oil from the oil tank. JUKI's advanced dry technology, which is utilized in a number of our sewing machine models, protects your products from being stained with oil.



Programmable intermediate presser

To support the sewing of multi-layered parts of materials, the lower dead point height of the intermediate presser can be changed steplessly during sewing (standard: 0~3.5mm; maximum: 0~7.0mm). The intermediate presser will now be able to clamp the material without fail, thereby preventing troubles in sewing, such as stitch skipping and thread breakage. Furthermore, flaws on the sewing product are prevented by maintaining the intermediate height as desired according to the material thickness. (The intermediate presser stroke is adjustable between 0 and 10mm.)



The intermediate presser goes up and comes down according to the material thickness.



Feeding frame

◯Two different types of feeding frames

The feeding frame comes in two different types; the monolithic feeding frame and the separately-driven feeding frame. The separately-driven feeding frame enables easy placement of the sewing material on the machine since its right and left frame parts can be operated separately. Both the amount of lift and the ascending/descending speed of the feeding frame can be adjusted differently for the right and left parts of the frame.



★The picture shows the sewing machine with a separately-driven feeding frame. The separately-driven feeding frame can be selected only for the AMS-210EN/L1306 and AMS-221EN/L2516.

○ Double-stepped stroke 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.



★The double-stepped stroke feeding frame is provided as standard for all models under the AMS-210EN Series and the AMS-221EN/L Series.

Active tension

Market-proven active tension has been introduced to the needle thread tension controller. With the active tension, pinpoint changes in the needle thread tension during sewing are enabled. The needle thread tension, therefore, can be set in conjunction with the material thickness and can be corrected according to the direction of sewing on a stitch-by-stitch basis through the operation panel. Since the needle thread tension is reproducible, supporting a broader range of sewing conditions, the time required for setup changing upon process changeover can be reduced.





The machine supports a broader range of materials and various sewing specifications.

The machine can be used for free pattern stitching, parts sewing, reinforcement stitching, etc.

Examples of applications include the attaching of labels, emblems and name labels, the attaching of Velcro, various shape-tacking, and special bartacking.





AMS-210EN-HS1306 Sewing emblems AMS-221EN-HS2516 Shape-tacking of a toe box



Shape-tacking of a quarter

Slide-type thread take-up lever

AMS-210EN-HL1306/7300

The machine with a slide-type thread take-up lever is designed for improved stitching with heavy threads tension. JUKI's unique active tension mechanism which has been re-designed specifically for heavy-weight materials, as well as the slide-type thread take-up lever which is suited for sewing heavy-weight materials, increase the maximum tension by 50% more compared to that of the standard models of the JUKI AMS Series machines. The new model improves seam quality (thread tension) for sewing seat belts and general heavy-weight materials such as container belts and bags.



Example application: Reinforcing the stitching of seatbelts *The feeding frame is special order item.

Max. sewing speed	2,000sti/min st (when stitch length is 4.5mm or less		
Thread take-up	Slide-type thread take-up lever (dry frame)		
Needle thread tension	Active tension for heavy-weight materials (tension increased by 50% more compared to that of the standard model		
Hook	Double-capacity shuttle hook		
Wiper	Side wiping type		
Thread trimming	Stepping motor drive		
_			

Model name	AMS-210EN-HL1306 / 7300		
Sewing area	X: 130mm × Y: 60mm		
Feeding frame type	Pneumatic feeding frame (lifting amount: 30mm)		
Needle	DP×17 #25 (max. #26)		
Thread	#2 \sim #8 (nylon, Tetron)		
Dimensions / Weight	In conformance with the standard model		

Operation panel provided with programmable functions IP-420 (provided as standard)

The large-sized liquid crystal touch panel, which has been developed to ensure ease of operation, dramatically increases efficiency in edit work.

The IP-420 touch panel offers market-proven ease of operation. It is provided with a wide screen and programmable functions. Data can be input/edited while visually checking the needle movement.

The color LCD unit displays sewing data such as stitch shape, needle thread tension, enlargement/reduction ratio, sewing speed and the number of stitches at a glance. The IP-420 is provided as standard with 14 different display languages.

○Key-lock customization function

The key-lock state can be set as desired. It is therefore possible to hide items which should not be handled by the operators.

OSimplified operation mode

Simplification of set items and screen transition of the IP-420 increases ease of use and helps reduce operator fatigue.

The memory storage capability of the main body of the sewing machine has been dramatically enhanced. Now the USB-ready main body of the sewing machine uses many different kinds of media.

Sewing data created with the IP-420 can be stored in the memory of the main body of the sewing machine. The memory storage capacity is 500,000 stitches and 999 patterns (max. 50,000 stitches per pattern) at the maximum. In addition to the CompactFlash 33 card, the main body of the sewing machine is provided as standard with a USB connector. Now, data can be input/output to/from various kinds of media (FD (floppy disks), SM (SmartMedia), CF (CompactFlash), SD (Secure Digital Card) etc.) by means of a USB thumb device and a card reader. The maximum number of stitches that can be stored in the memory for each medium is approximately 50,000,000.





OPTION

Programming software for computer-controlled sewing machines

PM-1 Ver.3

On the PM-1 programming software, a sewing data shape can be checked more precisely as compared with the IP-420

With the PM-1 programming software, frequent trial stitching can be directly done in repetition when editing complicated and minute data, thereby allowing the operator to create a sewing pattern design as desired free from stress during editing work.





Device/Parts

OAMS-210EN Series

Description	Part No.	Feature
Pneumatic inverted clamp device	40092951*	The model is best-suited to circular sewing, for attaching small patches such as labels and emblems. ★For the S type (motor-driven feeding frame), the AMS-210EN pneumatic set is required.
Needle cooler asm.	40092717 (40035692)	It blows air on the needle to prevent thread breakage due to heat. ★For the S type (motor-driven feeding frame), the AMS-210EN pneumatic set is required. (To use the side-sweeping wiper, part number 40035692 should be ordered.)
AMS-210EN pneumatic set	40089848	The pneumatic set is required when the S type (motor-driven feeding frame) uses pneumatic inverted clamp device and needle cooler.
Side wiper asm.	40035867	A side wiping type is also available depending on the sewing products or
Relay cable asm. for the side wiper	B4150210DA0	sewing conditions.
One-touch utility clamp Exclusive to the monolithic feeding frame	40089692	The feeding frame and the feed plate can be guickly changed without any
One-touch utility clamp Exclusive to the separately-driven feeding frame	40089695	tools.
Cassette holder asm.	B2953210DA0*	The next material to be sewn can be placed between the top and bottom
Cassette holder fixing base asm.	B2594210DA0*	plates of the cassette holder while the machine is still engaged in the sewing of the currently set material.
Mechanical valve unit	40042352	It is possible to make up and down movements same as manual pedal. \bigstar Not available to S type machine head.
Bar-code reader	40089238	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.
Transformer for the single-phase high-voltage power supply	40005422	The transformer is required when the sewing machine is used in a high-voltage area (380V/400V/415V).

*Exclusive part for sewing area code 1306(X:1306mm-Y:60mm) Parts for any area other than the above are available on special order.

OAMS-221EN Series

40035867 Side wiper asm. A side wiping type is also available depending on the sewing products or sewing conditions. Relay cable asm. for the side wiper 40036668 It blows air on the needle to prevent thread breakage due to heat. 40092717 (To use the side-sweeping wiper, part number 40035692 should be Needle cooler asm. (40035692) ordered.) 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 Cassette holder fixing base asm. for 2516 40052328 40053777 Cassette holder asm. for 3020 sewing of the currently set material. Cassette holder fixing base asm. for 3020 40053782 The feeding frame and the feed plate can be quickly changed without any The one-touch utility clamp has been specifically designed for Area Code One-touch utility clamp 40052330 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. Bar-code reader 40089238 The transformer is required when the sewing machine is used in a high-voltage area (380V/400V/415V). Transformer for the single-phase high-voltage 40005422 power supply





One-touch utility clamp



Bar-code reader

Needle / Needle hole guide / Intermediate presser corresponding table

Application	Needle	Needle hole guide		Intermediate presser	
Application	Number	Part No.	Needle hole diameter	Part No.	Dimensions ($\phi A \times \phi B \times H \times L$)
Knit and knitting fabric (option)	#09~#11	B242621000C	φ1.6	B1601210D0E (option)	φ1.6×φ2.6×5.7×37.0
Light- to medium-weight (S type)	#11~#14 * ¹	B242621000A	φ1.6	40023632 (standard)	φ2.2×φ3.6×5.7×38.5
Medium- to heavy-weight (H type)	#14~#18 * ²	B242621000B	φ2.0	B1601210D0FA (option)	φ2.2×φ3.6×8.7×41.5
Heavy-weight (option)		B242621000D	φ2.4	B1601210D0BA (option)	
Heavy-weight (slide-type thread take-up lever: standard)	#18~#25	B242621000F	φ3.0	14433601	φ2.7×φ4.1×5.7×38.5
Extra heavy-weight (option)	#10. *#25	B242621000G	ϕ 3.0 (with counterbore)	B1601210D0CA	10 5
For the prevention of stitch skipping on heavy-weight materials (option)		B242621000H	ϕ 3.0 (with eccentric)	BIOUIZIUDUCA	φ3.5×φ5.5×5.7×38.5

S type: Fitting thread numbers #80~#20

*1 The needle equipped as standard (DP×5 #14)

H type: Fitting thread numbers #50~#2

*2 The needle equipped as standard (DP×17 #18)



Intermediate presser

SPECIFICATIONS

OSpecification common to all models

(The machine with a slide-type thread take-up lever AMS-210EN-HL1306/7300 is excluded.)

Max. sewing speed	2,800sti/min*			
Stitch length	0.1~12.7mm (0.05mm step)			
Needle bar stroke	41.2mm			
Lift / Stroke of the intermediate presser	Lifting amount: 20mm / Stroke: Standard 4mm (0~10mm)			
Variable lower position of the intermediate presser	Standard 0~3.5mm (max. 0~7.0mm)			
Needle thread tension	Active tension (electronic thread tension control mechanism)			
Hook	Double-capacity shuttle hook			
Other and a state we detail in the memory	Main-body memory: Max. 500,000 stitches, 999 patterns (max. 50,000 stitches / pattern)			
Storage of pattern data in the memory	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: 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	Single-phase, 3-phase 200~240V/450VA			

*Stitch length is 4mm or less for the AMS-210EN and 3.5mm or less for the AMS-221EN. *"sti/min" stands for "Stitches per Minute."

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OAMS-210EN Series

Model name	AMS-210EN-SS1306	AMS-210EN-HS1306	AMS-210EN-SL1306	AMS-210EN-HL1306	
Sewing area	X: 130mm × Y: 60mm				
Fooding from two	Monolithic feeding frame		Separately-driven feeding frame		
reeding frame type	Motor-driven feeding frame (lifting amount: 25mm)		Pneumatic feeding frame (lifting amount: 30mm)		
Application	Light- to medium-weight Medium- to heavy-weight		Light- to medium-weight	Medium- to heavy-weight	
Needle	DP×5(#14)	DP×17(#18)	DP×5(#14)	DP×17(#18)	
Thread	#80~#30	#50~#2	#80~#30	#50~#2	
Compressed air / Air consumption	-	_	0.35~0.4(max. 0.55)MPa, 1.8dm³/min(ANR)		
Dimensions / Weight	1,200mm(W)×710mm(D)×1,200mm(H) (thread stand is not included), Machine head: 69kg, Control box: 16.5kg				

Model name	AMS-210EN-SS1510	AMS-210EN-HS1510	AMS-210EN-SL1510	AMS-210EN-HL1510	
Sewing area	X: 150mm × Y: 100mm				
Fooding from a type	Monolithic feeding frame Motor-driven feeding frame (lifting amount: 25mm) Pneumatic feeding frame (lifting amount: 30mm)				
Feeding frame type					
Application	Light- to medium-weight Medium- to heavy-weight		Light- to medium-weight	Medium- to heavy-weight	
Needle	DP×5(#14) DP×17(#18)		DP×5(#14)	DP×17(#18)	
Thread	#80~#30	#50~#2	#80~#30	#50~#2	
Compressed air / Air consumption	— 0.35~0.4(max. 0.55)MPa, 1.8dm³/min(A			IPa, 1.8dm³/min(ANR)	
Dimensions / Weight	1,200mm(W)×770mm(D)×1,200mm(H) (thread stand is not included), Machine head: 73kg, Control box: 16.5kg				

Model name	AMS-210EN-SL2210	AMS-210EN-HL2210		
Sewing area	X: 220mm × Y: 100mm			
Fooding from two	Monolithic feeding frame			
Feeding frame type	Pneumatic feeding frame	e (lifting amount: 30mm)		
Application	Light- to medium-weight	Medium- to heavy-weight		
Needle	DP×5(#14)	DP×17(#18)		
Thread	#80~#30 #50~#2			
Compressed air / Air consumption	0.35~0.4 (max. 0.55) MPa / 1.8dm³/min(ANR)			
Dimensions / Weight	1,200mm(W)×770mm(D)×1,200mm(H) (thread stand is not included), Machine head: 77kg, Control box: 16.5kg			

OAMS-221EN Series

Model name	AMS-221EN-SS2516	AMS-221EN-HS2516	AMS-221EN-SL2516	AMS-221EN-HL2516		
Sewing area	X: 250mm × Y: 160mm					
The strength of the strength o	Monolithic feeding frame Separately-driven feeding frame			n feeding frame		
Feeding frame type	Pneumatic feeding frame (lifting amount: 30mm)					
Application	Light- to medium-weight	Medium- to heavy-weight	Light- to medium-weight	Medium- to heavy-weight		
Needle	DP×5(#14)	DP×17(#18)	DP×5(#14)	DP×17(#18)		
Thread	#80~#20	#50~#2	#80~#20	#50~#2		
Compressed air / Air consumption	0.5~0.55(max. 0.55)MPa, 1.8dm³/min(ANR)					
Dimensions / Weight	1,200mm(W)×1,000mm(D)×1,200mm(H) (thread stand is not included), 197kg					

Model name	AMS-221EN-HS3020			
Sewing area	X: 300mm × Y: 200mm			
Fooding from two	Monolithic feeding frame			
Feeding frame type	Pneumatic feeding frame (lifting amount: 30mm)			
Application	Medium- to heavy-weight			
Needle	DP×17(#18)			
Thread	#50~#2			
Compressed air / Air consumption	0.35~0.4(max. 0.55)MPa, 1.8dm³/min(ANR)			
Dimensions / Weight	1,200mm(W)×1,000mm(D)×1,200mm(H) (thread stand is not included), 207kg			

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WHEN YOU PLACE ORDERS

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



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OAMS-	221	EN	Series
			001100

Single-phase

200~240V (for CE)

200~240V (for China)

Machine head



To order, please contact your nearest JUKI distributor.

Pneumatic work clamp

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JVB ISO14001 CM001 JSAE389 089

JUKI CORPORATION HEAD OFFICE An environmental management system to promote and

An environmental management system to promote and conduct the following: (1) Eco-friendly development of products and technologies (2) Green procurement and green purchasing (3) Energy conservation (reduction in carbon-dioxide emissions) (4) Resource saving (reduction of papers purchased, etc.) (5) Reduction and recycling of waste in the activities of research, development, design, sales, distribution, and maintenance services of industrial sewing machines and industrial robots, etc., including sales and maintenance services of data entry systems.



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* Specifications and appearance are subject to change without prior notice for improvement. * Read the instruction manual before putting the machine into service to ensure safety.

* This catalogue prints with environment-friendly soyink on recycle paper.