

## SPECIFICATIONS

# JUKI



## AMS-224EN Series

Computer-controlled Cycle Machine with Input Function

Model name	AMS-224EN-HS4530	AMS-224EN-GB4530	AMS-224EN-HS6030	AMS-224EN-GB6030
Application	Medium- to heavy-weight	Extra heavy-weight	Medium- to heavy-weight	Extra heavy-weight
Feeding frame type	Monolithic feeding frame: (Pneumatic work clamp)	Double-stepped stroke feeding frame: (Pneumatic work clamp)	Monolithic feeding frame: (Pneumatic work clamp)	Double-stepped stroke feeding frame: (Pneumatic work clamp)
Max. sewing speed	2,500sti/min* (stitch length 3mm or less)			
Sewing area	450mm (X) x300mm (Y)		600mm (X) x300mm (Y)	
Settable stitch length	0.1~12.7mm (0.05mm step)			
Needle bar stroke	41.2mm			
Lift of the feeding frame	Max. 30mm			
Lift / Stroke of 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)			
Change in height of the intermediate presser	Stepless control by programming (controlled by a stepping motor)			
Needle thread tension	Active tension (electronic thread tension control mechanism)			
Needle thread breakage detecting device	Provided as standard			
Needle thread clamp	Stepping-motor driven clamping on the underside of the throat plate			
Prevention of the slip-off of thread at the beginning of sewing	Prevented by the needle thread clamp and active tension			
Thread trimming device	High-speed thread trimming mechanism driven by a stepping motor			
Needle (at the time of delivery)	DPx17 (#18) (135x17 Nm110)	DPx17 (#23) (135x17 Nm260)	DPx17 (#18) (135x17 Nm110)	DPx17 (#23) (135x17 Nm260)
Thread	#50~#2	#20~#2	#50~#2	#20~#2
Hook	Double-capacity shuttle hook			
Storage of pattern data in the memory	Main-body memory: Max. 500,000 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	Pattern can be enlarged / reduced independently in the X and Y directions 1%~400% (0.1% step)			
Enlarging / Reducing system	Pattern enlargement / reduction can be done by increasing / decreasing either stitch length or the number of stitches (At the time of pattern selection, only the stitch length can be increased/decreased.)			
Bobbin thread counter Product counter	Up / Down system (0~9,999)			
Lubrication	The frame is lubricated with grease / The hook and hook driving shaft gear box are lubricated from a tank			
Lubricating oil	Hook: JUKI New Defrix Oil No.2 (equivalent to ISO VG32)			
Sewing machine motor	Compact AC servomotor (direct-drive system)			
Power requirement Power consumption	Single-phase, 3-phase 200~240V / 550VA			
Compressed air / Air consumption	0.5~0.55MPa (Max. 0.55MPa) / 1.8dm <sup>3</sup> / min (ANR)			
Total weight	401kg		410kg	
Dimensions	1,703mm (W) x1,370mm (D) x1,200mm (H) (without thread stand)		1,923mm (W) x1,370mm (D) x1,200mm (H) (without thread stand)	

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

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- ★CompactFlash™ is a registered trademark of SanDisk Corporation, U.S.A.
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JUKI ECO PRODUCTS The AMS-224EN Series is an eco-friendly product which complies with JUKI ECO PRODUCTS standards for protecting the environment.

● The sewing machine complies with the "Juki Group Green Procurement Guidelines" on the use of hazardous substances, which is stricter than other restrictions, such as those of the RoHS Directive.

For details of JUKI ECO PRODUCTS, refer to: [http://www.juki.co.jp/eco\\_e/index.html](http://www.juki.co.jp/eco_e/index.html)

\*The RoHS Directive is an EU Directive limiting the use of 6 hazardous substances (lead, hexavalent chromium, mercury, cadmium, PBB and PBDE) in electrical and electronic equipment.  
\*The Juki Green Procurement Guideline is the voluntarily established criteria to eliminate not only the aforementioned six substances, but also other ones which also adversely affect the environment.



Registered Organization : JUKI CORPORATION Head Office  
The Scope of the Registration : The activities of research, development, design, sales, distribution, and maintenance services of industrial sewing machines, household 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.
- \* Paper from responsible sources FSC™ C001712

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# AMS-224EN Series

The machine speedily finishes a wider sewing area. It substantially reduces the cycle time.

The machine achieves the highest sewing speed of 2,500sti/min among those with a similar sewing area. With its higher productivity, the machine is applicable to various materials and stitching types.



●AMS-224EN-HS6030

**AMS-224EN-4530/IP420** [450mm(X)×300mm(Y)]  
**AMS-224EN-6030/IP420** [600mm(X)×300mm(Y)]

The cycle machine, which has a wider sewing area, achieves an improved seam quality, increased productivity and easier operation.

The machine not only achieves higher productivity due to instantaneous increases/decreases in sewing speed at the beginning /end of sewing and increased speed of thread trimming, but also achieves a flexible responsiveness to materials to promise enhanced seam quality due to JUKI's unique active tension and programmable intermediate presser.

The AMS-EN Series has been favorably received in the market because of its ease of use, achieved by the smooth setting of sewing material and the large-sized color liquid crystal touch panel.

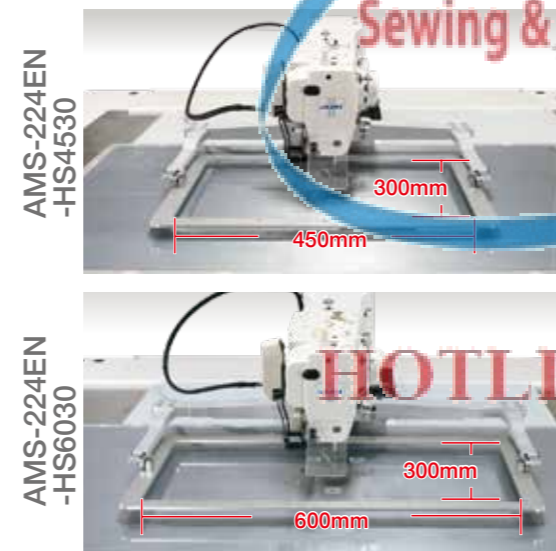
The following two additional models are now added to the Series:

**The AMS-224EN-4530 [450mm(X)×300mm(Y)]**  
**The AMS-224EN-6030 [600mm(X)×300mm(Y)]**

A newly developed encoder-controlled stepping motor system has been adopted for the X-Y feed mechanism. This contributes to more accurate sewing performance and increased productivity.

**Sewing areas of the 4530 and 6030 models**

The two models offer different sewing areas which differ in size.



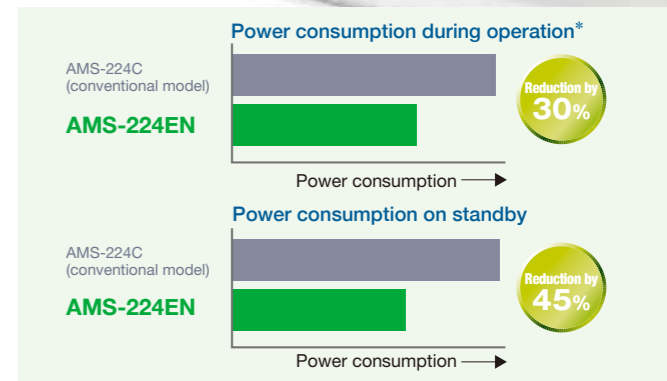
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**Power consumption is substantially reduced**



The AMS-224EN has been designed laying importance on electrical power saving for increased economization. The machine has adopted the direct-drive system utilizing a compact-sized AC servomotor to drive the machine head. It has also adopted an encoder control system which drives the stepping motor with a minimum electrical power according to the weight of the material and stitch length for the material-feeding X-Y drive. With these two systems, the average power consumption of the machine is reduced by 30% during operation and 45% during standby as compared with our conventional model (AMS-224C) which does not incorporate the encoder control system.

\* The graph provides a comparison between the AMS-224EN and AMS-224C when sewing shape tacking (approximately 1,000 stitches) of the upper parts of right and left shoes under the continuous sewing mode.



**Applications**

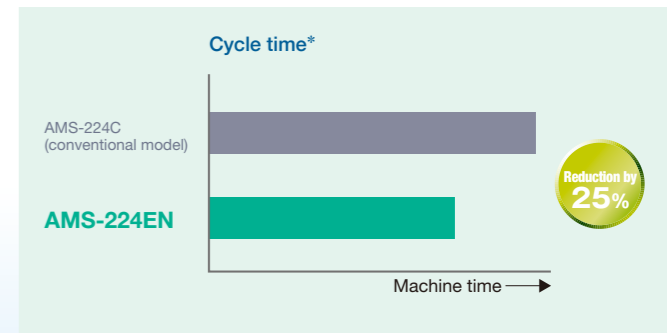


The machine performs various kinds of stitching, making the most out of its wider sewing area in various sewing applications such as attaching handles to bags and pouches, attaching belts, sewing many small parts at a time, attaching parts to shoes and sports shoes (one pair of shoes) and sewing air bags.



**Higher productivity**

- The machine achieves the highest sewing speed of 2,500sti/min among those with a similar sewing area. The maximum sewing speed is reached by the 2nd stitch from the beginning of sewing. The machine remains at the maximum sewing speed until just before the end of sewing and decelerates instantaneously.
- JUKI's unique stepping-motor controlled thread trimming mechanism is adopted to enable speedy and consistent thread trimming performance, substantially reducing the total cycle time.
- The machine demonstrates enhanced responsiveness due to the adoption of a main-shaft direct-drive system.



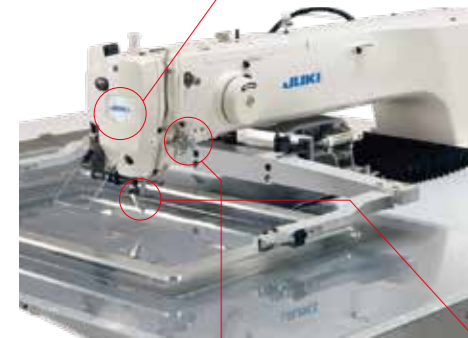


The machine comes with various features for achieving beautiful seams. With these features, the machine dramatically improves seam quality.

The machine has been designed to achieve operator-friendliness. Its large-sized liquid crystal touch panel that supports USB substantially improves workability.

## 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.



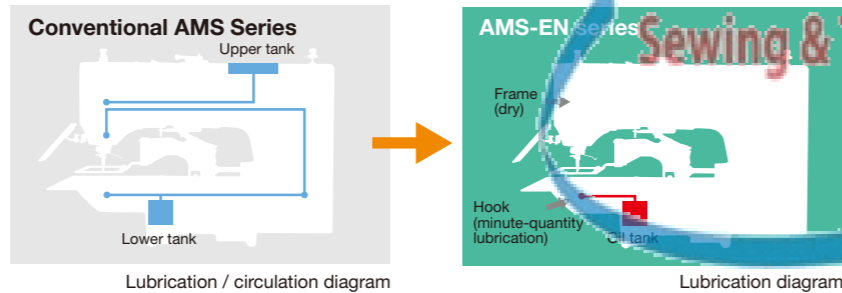
## Active tension

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.



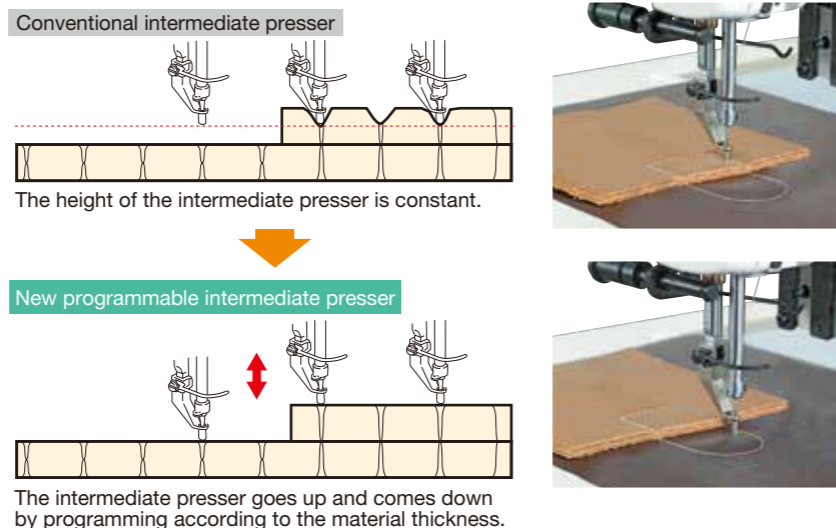
## Semi-dry head

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

With the programmable intermediate presser, the height of the lower dead point of the intermediate presser can be set according to the material thickness, thereby not only preventing troubles in sewing such as stitch skipping and thread breakage, but also protecting the sewing product from being damaged by the presser. The height setting can be changed with ease even during sewing. The machine finishes beautiful uniform seams free from stitch skipping even on multiple parts of the material by the ideal combination of the active tension and programmable intermediate presser.



## Operability

### Hand pulley

With the hand pulley which is laid out on the machine arm, not only the height of the needle bar or intermediate presser but also the needle entry point at the time of data programming can be adjusted with ease



### IP-420

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

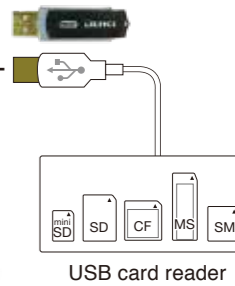
The key-lock state can be set as desired. It is therefore possible to hide items which should not be handled by the operators.

### Simplified 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.



### Feeding frame

The feeding frame lift is 30mm at the maximum. This enables easy setting of a heavy-weight material on the machine.



### PK 2-pedal unit (with a mechanical valve pedal)

The mechanical valve goes up and comes down corresponding to the depressed depth of the pedal. This enables easy positioning of a part to be sewn.



### Hook driving shaft pulley

A pulley is also provided on the lower part of the machine. This enables easy adjustment of the hook.

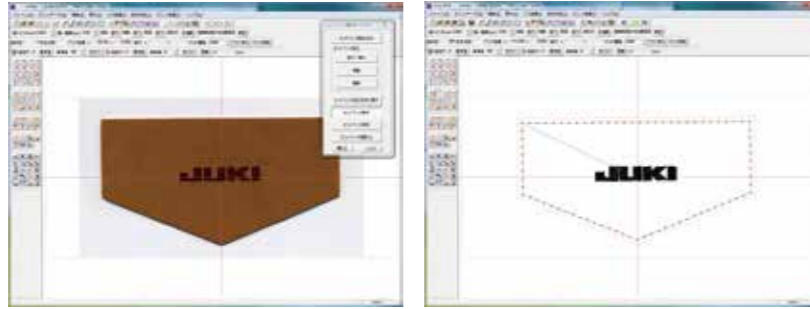


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### Programming software for computer-controlled sewing machines 「PM-1」Ver.3

On the PM-1 programming software, a sewing data shape can be checked more precisely as compared with the IP-420.  
As a result, frequent trial stitching can be directly done in repetition when editing complicated and fine sewing shape data, thereby allowing the operator to create a sewing shape as desired free from stress possibly caused by editing.



### Devices / Parts

Description	Part No.	Feature
Needle cooler (asm.)*1	40092717	It blows air on the needle to prevent thread breakage due to heat.
Side wiper (asm.)	40035867	A side wiping type is also available depending on the sewing products or sewing conditions.
Wiper relay cable asm.	40080837	
Cassette holder (asm.) for 4530	40072202	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 4530	40072197	
Cassette holder (asm.) for 6030	40072204	
Cassette holder fixing base (asm.) for 6030	40072215	
Lower plate blank for 4530	40072149	Metallic feed plate blank for machining
Lower plate blank for 6030	40072150	
Tension controller No. 3 asm.	40072310	It reduces the load applied to thick thread by being used in combination with the active tension.
Milling unit*2	MU11 / X70358	The unit can be mounted on the main body of the sewing machine to carry out the milling operations of work clamps or feed plates.
Bar-code reader	40165218	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.



Cassette holder

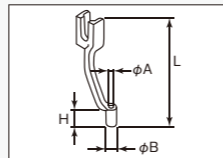
Needle cooler

Bar-code reader

\*1 To install the needle cooler asm. and the tension controller No. 3 asm. on the sewing machine with double-stepped stroke feed frame, the following parts are required.

No.	Description	Part No.	Quantity
1	Solenoid valve installing base	PV915005000	1
2	Screw M4 L=8	SL4040891SC	2
3	Reducer	J301060003	1
4	φ6 Tube	BT0600401EB	1

\*2 Milling unit is available on special order.



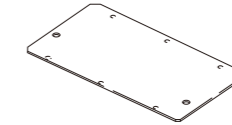
Needle / Needle hole guide

### Needle / Needle hole guide / Intermediate presser corresponding table

Needle Number	Thread Number	Needle hole guide			Intermediate presser	
		Part No.	Needle hole diameter	Application	Part No.	Dimension (φA×φB×H×L)
#14~#18	#50 ~#20	B242621000B(H type)	φ2.0	Medium-to heavy-weight	40023632(H type)	φ2.2×φ3.6×5.7×38.5
					B1601210D0FA(option)	
#18~#21	#20~#08	B242621000D(option)	φ2.4	Heavy-weight	B1601210D0BA(G type)	φ2.7×φ4.1×5.7×38.5
		B242621000F(G type)				
#22~#25	#08~#02	B242621000H(option)	φ3.0(with eccentric)	For the prevention of stitch skipping on heavy-weight materials	B1601210D0CA(option)	φ3.5×φ5.5×5.7×38.5
		B242621000G(option)				

### Work clamp blank for machining

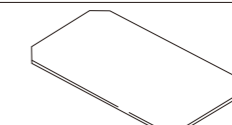
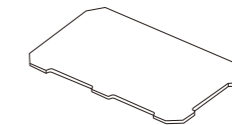
Part No.	Description
40072301	Aluminum blank plate for the 4530
40072305	Aluminum blank plate for the 6030



\*The blank plate is to be fixed onto the monolithic feeding frame from the underside.

### Feed plate blank for machining

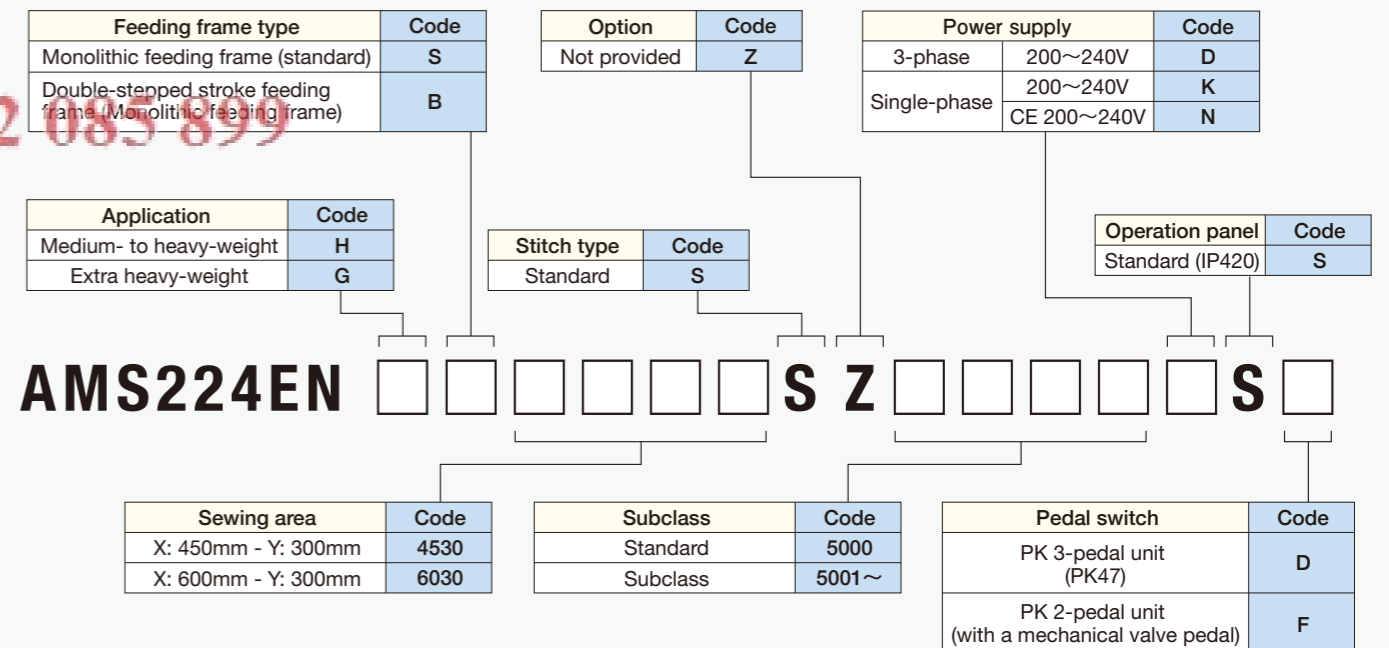
Part No.	Description
40072300	Feed plate inner plate sheet (with adhesive tape) for the 4530
40072302	Feed plate aluminum inner plate for the 4530
40072303	Feed plate plastic inner plate for the 4530
40072304	Feed plate inner plate sheet (with adhesive tape) for the 6030
40072306	Feed plate aluminum inner plate for the 6030
40072307	Feed plate plastic inner plate for the 6030



\*Fit the inner plate in the feed plate and fix by adhering the inner plate sheet onto the plate from the underside.

### When you place orders

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



\*"D" (PK 3-pedal unit) should be selected for the feeding frame type with the double-stepped stroke feeding frame (B).  
"F" (PK 2-pedal unit) should be selected for the feeding frame type with the monolithic feeding frame (S).

●To order, please contact your nearest JUKI distributor.