MACH2XS

WHOLEGARMENT® Computerized Flat Knitting Machine
MACH2®XS103 | MACH2®XS123 | MACH2®XS153

your choice SHIMA SEIKI

SHIMA SEIKI's Flagship WHOLEGARMENT® Machine Has Evolved Even Further.

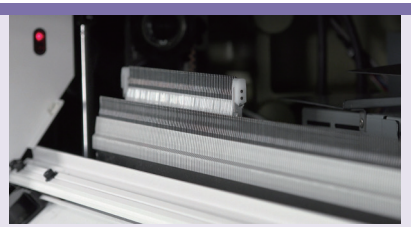
The flagship MACH2®XS WHOLEGARMENT® specialty machine features 4 needle beds and SHIMA SEIKI's original SlideNeedle™, the combination of which is considered ideal for producing WHOLEGARMENT® knitwear in all needles. MACH2®XS furthermore features the world's first application of SHIMA SEIKI's patented spring-type sinkers on a 4-needlebed machine, permitting high quality knitting of complex fabrics such as dimensional structures. Flechage is especially easier to knit, expanding the capable range of knits. MACH2®XS achieves a maximum knitting speed of 1.6 meters per second. The R2CARRIAGE® system furthermore permits quick carriage returns for high efficiency per knitted course. High quality is assured with i-DSCS+DTC® Digital Stitch Control System with Intelligence and Dynamic Tension Control. Taking advantage of virtual sampling capability on our SDS®-ONE APEX series design system, factory automation and IoT-integrated digitalization becomes possible. Mass customization is realized, contributing to waste-free, sustainable manufacturing.
The combination of MACH2®XS and APEX series brings about revolutionary changes in the traditionally labor-intensive, mass-consumption textile value chain.

4-Bed Configuration

MACH2®XS presents a technological breakthrough in modern computerized flat knitting, in its 4-needlebed configuration, featuring 2 extra beds on top of a conventional V-bed. This setup allows unprecedented capabilities in knit and transfer, significantly expanding design and patterning capability in WHOLEGARMENT® production. As a result, only SHIMA SEIKI 4-bed WHOLEGARMENT® machines are capable of true WHOLEGARMENT® knitting in all needles.

Spring-Type Sinker System

MACH2®XS features for the first time in a 4-needlebed machine, a spring-type sinker system. Conventional forced-operation type sinkers are only activated upon carriage traverse in each course, and tend to subject fabrics to unnecessary stress and cause compressed loops and even yarn breakage. In sharp contrast, SHIMA SEIKI's spring-type mechanism can work full-time regardless of carriage position, and provides gentle holddown movement. Consequently, significant improvement in fabric quality for complicated patterns is achieved.



Dual Takedown (optional)

Until now, short-sleeve WHOLEGARMENT® items required mock "sleeves" in order to maintain stable knitting. Referred to also as "waste knitting," these mock sleeves are eventually scrapped. With the dual takedown system it is possible to knit a short sleeve WHOLEGARMENT® item with no wastage, saving time, cost and materials.

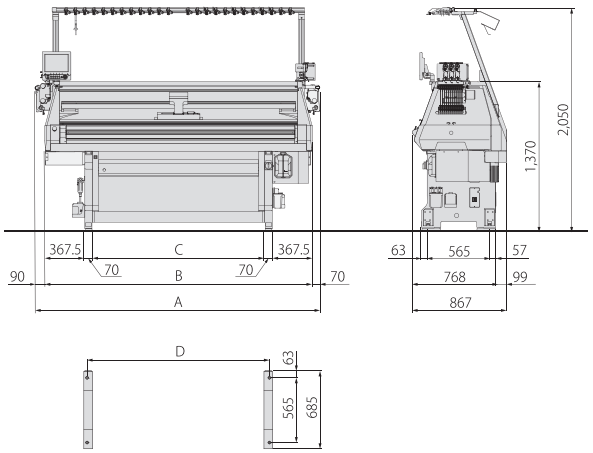
The Original SlideNeedle™

SHIMA SEIKI's original SlideNeedle™ differs from the conventional latch needles significantly. The latch is replaced with a flexible two-piece slider mechanism that offers knitting possibilities never imagined before. In addition, using the slider mechanism for transfer effectively eliminates the need for the transfer clip. This allows the SlideNeedle™ to be mounted in the center of the needle groove, thereby achieving perfectly symmetrical loop formation for knitting the highest possible quality fabrics.

A User-Friendlier Knitting Machine

MACH2®XS features an all-new full-color LCD touch-sensitive control panel with a larger screen that greatly improves on the previous monochromatic display. Still at eye-level, the new control panel maintains established ergonomic benefits by carrying over function buttons for simultaneous use of both hands. Easily accessible USB interface and network connection continue to provide improved access in data transfer. For those moments when power suddenly becomes unavailable, a backup power supply allows work to resume after power failures. This offers peace of mind that an entire garment will not be lost due to blackouts.

MACH2®XS DIMENSIONS



	A	B	C	D
MACH2®XS103	2,360	2,200	1,325	1,415
MACH2®XS123	2,610	2,450	1,575	1,665
MACH2®XS153	2,860	2,700	1,825	1,915

All dimensions in millimeters.

Average Weight

MACH2®XS103	1,000kg (2,200 lbs.)
MACH2®XS123	1,100kg (2,420 lbs.)
MACH2®XS153	1,212kg (2,666 lbs.)

Actual weight is dependent upon gauge and optional equipment.

SPECIFICATIONS			
Type	M103XS	M123XS	M153XS
Gauge	8L・12S・15L・18L (S: Standard hook, L: Large hook)	8L・12S・15S・15L・18L (S: Standard hook L: Large hook)	
Knitting width	Variable stroke, max 40" (100cm)	Variable stroke, max 50" (125cm)	Variable stroke, max 60" (150cm)
Knitting speed	Max 1.6m/sec. (8L: Max 1.4m/sec.) Knitting speed varies according to yarn, gauge and other knitting conditions. Speed can be programmed for 16 separate categories.		
Stitch density	120 levels, electronically controlled		
Second stitch	Motor-controlled second stitch cam allows individual adjustment of loose/tight stitches. Lower carriage only.		
Racking	Motor-driven. Max 1.5-inch racking to each side (3 inches total) for rear needlebeds and loop presser bed. Racking of upper and lower rear beds and loop presser bed are performed as one.		
Knitting system	Ultra compact 3-system (1 knitting system + 2 transfer systems), single carriage (R2CARRIAGE® system)		
SlideNeedle™	Two-piece slider mechanism enables complex transfers. Mounted in the center of needle groove to yield perfectly symmetrical loop formation for knitting the highest possible quality fabrics.		
Transfer	Lower needlebeds: Simultaneous transfer, front and back, independent of carriage direction. Split stitch possible without exchanging yarn carriers. Upper needlebeds: Simultaneous transfer between either upper bed to opposite lower bed, independent of carriage direction.		
Sinker system	Fixed sinker system + spring-type moveable sinker (lower needlebeds only). Spring-type moveable sinker provides gentle holddown instead of forcibly pressing down yarn.		
Stitch presser	Special motor-drive. On/off adjustment. Press-down amount can also be set according to knit, transfer, etc.		
Loop presser	Individual selection and independent control. Loop presser bed positioned above upper rear needlebed.		
Needle selection	Electromagnetic direct selection		
Setup device	Takedown comb with special setup needles. Dual takedown [1] eliminates waste knitting regardless of sleeve length (M103XS, M123XS only).		
Pulldown device	Special pulldown mechanism with independent operation of front and rear. Precise control over entire garment width in 1.5-inch increments.		
Exit rollers	Special rollers for fabric pulldown and release. Consists of two rollers.		
Yarn cutter	Single-unit system includes 1 yarn cutter and 2 yarn grippers. Both sides standard. Lint remover.		
Air Splicer [2]	Instant color changes using pressurized air. 2 units on left side; 1 unit on right side. 8 colors per unit.		
DSCS®	Digital Stitch Control System. Consistent loop length by digital control method. 8 lightweight, compact encoders. Left side standard.		
i-DSCS+DTC®	DSCS® with Intelligence+Dynamic Tension Control. Actively controls yarn feed in both feed and retrieval directions. Electronic control of yarn-feed tension permits high-speed knitting. 3 units. Right side standard [3].		
Yarn feed roller	8 positions on each side. Left side double roller standard. 8 positions on left side yarn stopper device.		
Side tensions	12 on each side. Brake disk with multi-step adjustable dials.		
Yarn carriers	12 normal carriers [4] [5]		
Top tension	24 units. One-touch easy threading. Large knots cause machine stop. Small knots cause 0-9 courses at specified knot detection speed, then automatically resume at set speed.		
Stop motion	Yarn break, large knot, fabric pileup, shock detection, piece count, over-torque, program error, etc.		
Drive system	Belt drive. AC servo motor. No lubrication necessary.		
Cleaner	Special blower-operated cleaner. Automatic operation available upon knitting a set number of pieces. Manual operation also available. Optional needle bed cleaner can be connected to the carriage.		
Safety devices	Full safety cover for noise-suppression and dust-proofing with stop motion sensor and interlock mechanism. Emergency stop switch. Emergency power off device. Ultra-low speed "crawl" setting. CE Mark. Operation lamp (see below).		
Operation lamp	Green/normal operation. Flashing green/normal stop. Flashing amber/abnormal stop.		
CONTROLLER			
Data input	USB memory interface. Ethernet 10/100 BASE-T network interface.		
Pattern memory	50,331,648 bits (1,024 wales x 16,384 addresses)		
Control unit	Built-in controller. Stored program for flat knitting machine.		
Control display	10.4-inch color LCD touch panel (800 x 600 pixels). Editing possible via display panel operation. Help/Message function. Available in English, French, Italian, Spanish, Portuguese, Turkish, Vietnamese, Chinese, Korean and Japanese.		
Back-up power	Power supply for resuming knitting after power failure.		
Power	Single phase AC220V/230V (200V-250V)		
	3.2kVA (1.5-2.2kW: Power consumption varies according to gauge and knitting condition)		

OPTION： (1) Dual takedown (factory option, M103XS, M123XS only) (2) Air Splicer (3) i-DSCS+DTC® 4 units on each side (4) Plating Carrier supported (5) Inlay carrier

your choice SHIMA SEIKI

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Website

Global network

Fully Fashioned High Speed Knitting Machine

ISO14001 Certification: SHIMA SEIKI Headquarters is certified as an ISO14001 accredited company.

SAFETY NOTICE In order to ensure safe operation of the equipment, please review all operation manuals carefully before use.

Featured cover sample: Y4601W009、Y4589W009、Y4433W009、Y4596W009、Y4349W009