

SWG-XR

WHOLEGARMENT® Computerized Flat Knitting Machine
SWG-XR®124 / SWG-XR®154



your choice
SHIMA SEIKI

THE NEXT STANDARD IN WHOLEGARMENT® KNITTING MACHINE TECHNOLOGY

As pioneer of complete garment knitting, SHIMA SEIKI has been setting the standard exclusively in seam-free WHOLEGARMENT® technology. Now that benchmark has been raised once again. Announcing SHIMA SEIKI's new flagship SWG-XR® WHOLEGARMENT® knitting machine. As the name suggests, SWG-XR® pays homage to the very first SWG®-X model, highlighting its commitment to 4-needlebed technology for all-needle knitting of high quality WHOLEGARMENT® products. Adopting SHIMA SEIKI's original SlideNeedle™, 4-bed WHOLEGARMENT® knitting has steadily evolved with significant increases in productivity on MACH2®X and expanded knitting range with the spring-type sinker system on MACH2®XS. Now SWG-XR® features a renewed sinker system and a compact, light-weight carriage featuring 4 systems as well as auto yarn carriers. All contribute to higher efficiency of 25% or more, increased product and yarn variety for supporting knits for all seasons, and higher quality for knitting beautiful fabrics and silhouettes; even items that were impossible to knit with the MACH2® series. SWG-XR® sets new standards for the next generation of waste-free, sustainable WHOLEGARMENT® knitting.



4-Bed Configuration

SWG-XR®'s 4-needlebed configuration features 2 extra needle beds on top of a conventional V-bed. Combined with the equally remarkable SlideNeedle™, this setup allows for unprecedented capabilities in knit and transfer, significantly expanding design and patterning capability in WHOLEGARMENT® production. Only SHIMA SEIKI has over 25 years of know-how and field experience in 4-bed WHOLEGARMENT® knitting technology.

The Original SlideNeedle™

SHIMA SEIKI's original SlideNeedle™ is fundamentally different from the conventional latch needle. The latch is replaced with a flexible two-piece slider mechanism that doubles the number of possible knitting techniques. 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.



Auto Yarn Carriers

SWG-XR® is equipped with motorized auto yarn carriers that move individually. Conventionally when knitting intarsia patterns, the carriage is used to move the carrier to its knitting position and back out of that position. Since the carriage spends an extra course for each of these movements without actually knitting, they perform "empty courses". With auto yarn carriers, each yarn carrier moves independently of carriage movement, eliminating the need for empty courses and improving productivity and efficiency. The new 4-system carriage also enables double knitting, which significantly shortens the time required for intarsia knitting.



Double Setup Device (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 double setup device it is possible to knit short sleeve WHOLEGARMENT® products with no wastage, further contributing to sustainable manufacturing.

Spring-Type Sinker System

SWG-XR® features an improved version of SHIMA SEIKI's spring-type sinker system. SHIMA SEIKI's spring-type mechanism can work full-time regardless of carriage position and provides gentle holddown movement. Fabric quality is significantly improved even for complex patterns such as three-dimensional patterns, greatly expanding design variations.



Three-dimensional structures with movable sinkers

Textured fabric with pin tuck and missed stitches



Pattern using variable stitch cam

Variable Stitch Cam

The variable stitch cam makes it possible to change loop size freely within a single course. This allows for asymmetrical designs and silhouettes never before possible, expanding the range of design possibilities.

Punch Lace Pattern

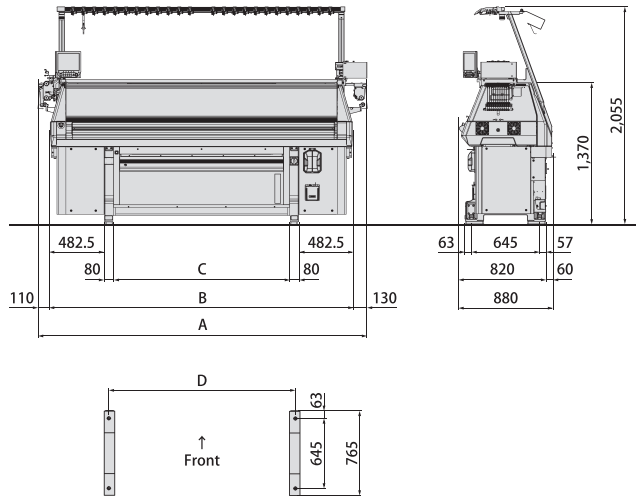
Taking advantage of the unique capabilities of SHIMA SEIKI's original SlideNeedle™, punch lace patterns can be produced without the need to change to a special cam. Auto yarn carriers eliminate the need to change carriers as well. Unparalleled fine and delicate design expression is now possible, allowing for diverse all-season knit product development.



Elegant see-through punch lace design



SWG-XR® DIMENSIONS



	A	B	C	D
SWG-XR®124	2,940	2,700	1,575	1,675
SWG-XR®154	3,190	2,950	1,825	1,925

All dimensions in millimeters.
D indicates distance between balance bolts.

Average Weight

SWG-XR®124	1,300kg (2,860 lbs.)
SWG-XR®154	1,400kg (3,080 lbs.)

Actual weight is dependent upon gauge and optional equipment.

SPECIFICATIONS

Type	SWG124-XR	SWG154-XR
Gauge	15L · 18L (L: Large hook)	
Knitting width	Variable stroke, max 50" (125cm)	Variable stroke, max 60" (150cm)
Knitting speed	Max 1.3m/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 4-system (2 knitting systems + 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	Motor-drive. On/off adjustment. Press-down amount can also be set according to knit, 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. Double setup device ¹ eliminates waste knitting regardless of sleeve length (SWG-XR®124 only).	
Pulldown device	Special pulldown mechanism with independent operation of front and rear. Precise control over entire garment.	
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.	
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 ² .	
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	16 auto yarn carriers. Independent motorized yarn carriers eliminate the need for empty carriage courses.	
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 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, Vietnam, Chinese, Korean and Japanese.	
Back-up power	Power supply for resuming knitting after power failure.	
Power	Single phase AC220V/230V (200V-250V) 2.8kVA (1.5-2.0kW; Power consumption varies according to gauge and knitting condition), leakage current 18mA	

OPTIONS: (1) Double setup device (factory option, SWG-XR®124 only) (2) i-DSCS+DTC® 4 units on each side



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Fully Fashioned High Speed Knitting Machine

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

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SAFETY NOTICE

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