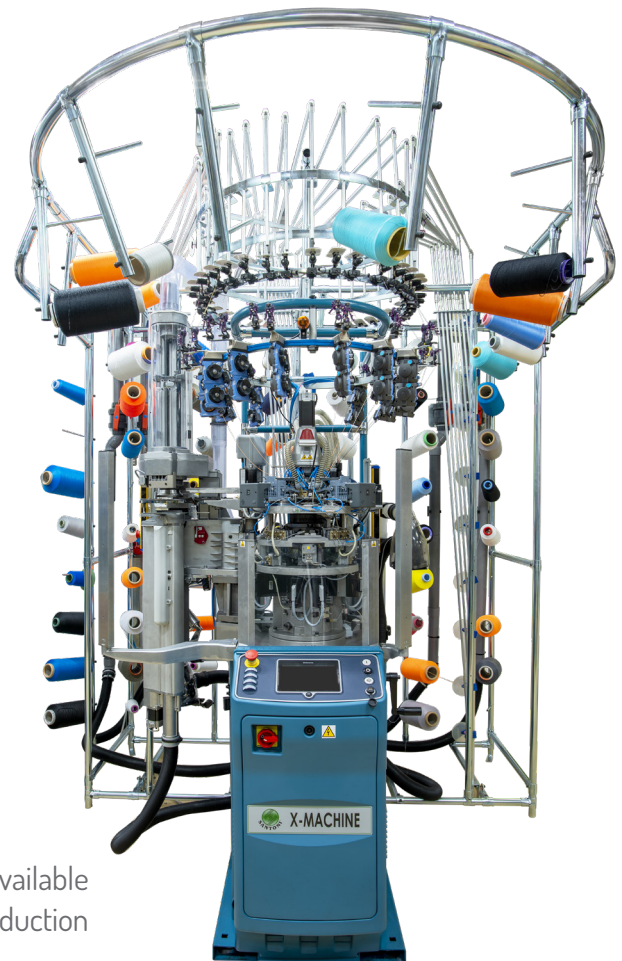


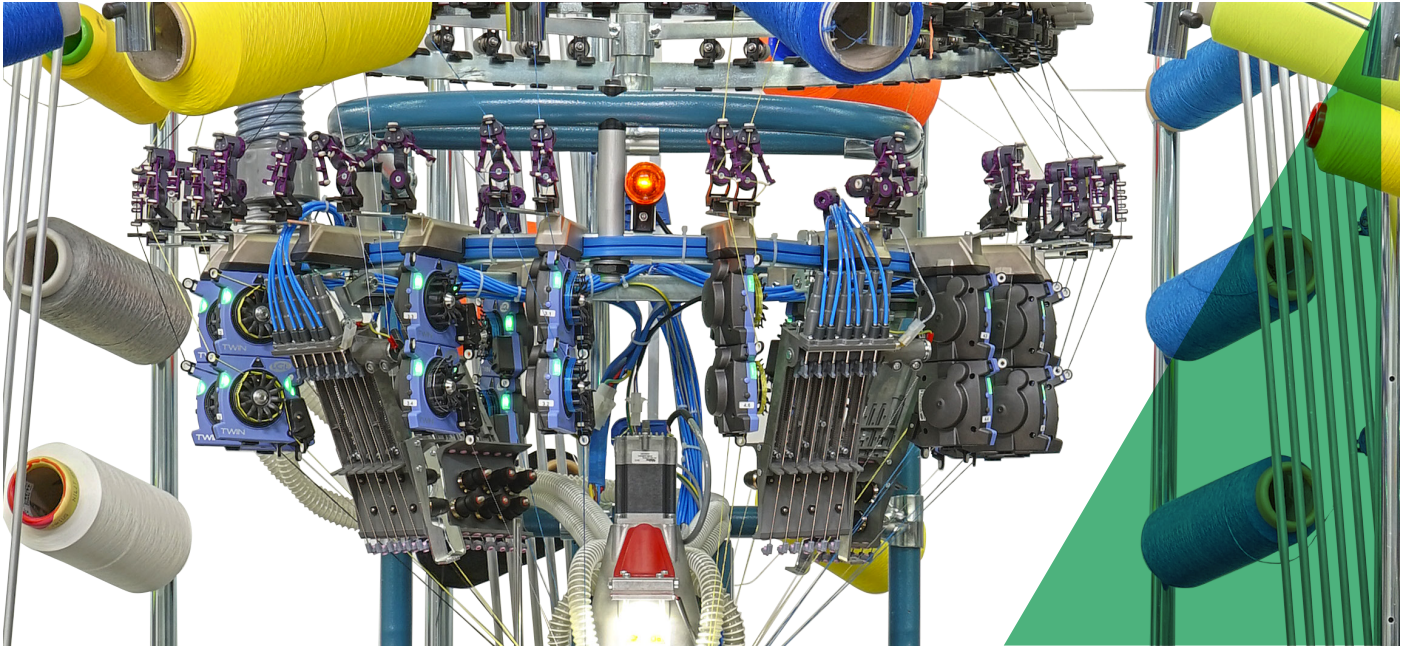
# FOOTWEAR AND SOCKS

SINGLE CYLINDER ARGYLE MACHINE  
X-MACHINE

# X-MACHINE



Optional stitch by stitch version available for 4" diameter and socks production only.



## X-MACHINE

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Single-cylinder INTARSIA electronic knitting machine with 4 reciprocating feeds and 2 selection points (3 technical ways) per feed and per rotating sense, for the production of intarsia products with cushioning areas knitted in sculpted terry.

The machine knitting head is equipped with cams as well as a special-patented chain linking system which allows only preselected needles to be driven to the stitch cam for knitting.

Santoni has applied for a series of new machine patents in order to be able to knit 4-feed high-definition colored logo patterns as well as 3D patterns on the same course as both intarsia and sculpted terry areas. Closed toe is an optional on this machine.

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# X-MACHINE

| Cylinder diameter     | 4" |     |     |      |      |      |     |     | 4" 1/2 |     |     |      |      |      |     |     |
|-----------------------|----|-----|-----|------|------|------|-----|-----|--------|-----|-----|------|------|------|-----|-----|
| Needle counts         | 96 | 108 | 120 | 120  | 132  | 144  | 156 | 168 | 108    | 120 | 132 | 132  | 144  | 168  | 180 | 192 |
| Needle gauge (GG)     | 18 | 18  | 18  | 24   | 24   | 24   | 36  | 36  | 18     | 18  | 18  | 24   | 24   | 24   | 36  | 36  |
| Needle counts         | 8  | 9   | 10  | 10   | 11   | 12   | 13  | 14  | 7      | 8   | 9   | 9    | 10   | 12   | 13  | 14  |
| Needle thickness (mm) | 1  | 1   | 1   | 0,85 | 0,85 | 0,85 | 0,7 | 0,7 | 1      | 1   | 1   | 0,85 | 0,85 | 0,85 | 0,7 | 0,7 |

- **MAXIMUM SPEED**  
180 rpm in unidirectional motion.
- **CYLINDER SELECTION**  
Selection on the cylinder through actuators with 12 levels (8 in total: two for each feeder for both rotation senses).
- **SINKER CAP SELECTION**  
Actuators with 6 levels (4 in total per sinker selection).
- **STRIPPING YARNFINGERS**  
6 multi-position yarnfingers per feed.
- **TRAPPER FOR BARE AND COVERED ELASTIC YARN**  
3 trappers per feed.
- **DIAL JACKS AND YARN CUTTER**  
Yarn cutter saw release with up and down dial movement, driven by step motor to reposition the saw blade height whose rotation speed can be modified by program.
- **SUCTION SYSTEM**  
Take-down aspiration by 2 suction fans or a central suction system.  
Items suction tube Ø 60 mm.  
Items transfer tube Ø 60 mm.  
Air limiting valve with electronic incremental programming
- **STITCH CAMS**  
Stitch formation adjustment by step motors, independent on each feed.  
Possibility of loop widening, tightening and shading on the same area and/or course.  
Step motor to reposition cylinder height.  
On board items sizing, adjustable in both cm. and inches.
- **MAIN KNITTING POSSIBILITIES**  
Single or double welt carried out by dial jacks, in several selections, with knitted and laid-in elastic yarn.  
With 4 feeds on the same course: patterns and/or supports placed with Intarsia technology, eliminating cut yarns inside the item.  
Every knitted pattern has up to 3 technical ways and retractable but.  
4 feed selectable terry in both rotational senses.

● **SINKER CAP**

Step-motor controlled sinker cap with angular positioning and a closed cam track equipped with step-motor driven cam presses. An actuator on each feed and for each rotating direction for knitting sculpted terry.

● **YARN FEEDERS**

6 yarn take-up mechanisms per feed and 4 LGL Twin feeders for electronic yarn take-up.

Optional LGL: Twin feeders with electronic yarn take-up (2 or 6 per feed or 8 per feed but these disable the mechanical yarn take-ups).

Optional Memminger: EFS920 feeders with electronic yarn take-up (1-2-3 per feed).

Optional BTR: MXF2 feeders with electronic yarn take-up (2 or 4 per feed + 6 mechanical yarn take-ups; as an alternative, 6 or 8 per feed, but without mechanical yarn take-ups).

● **YARN SENSORS**

Latest generation of optical yarn sensors.

● **CREEL**

With rear yarn rack.

● **LUBRICATION**

Pneumatic pump with oil recycling.

● **MACHINE MOVEMENT**

Torque Motor.

● **ELECTRONIC CONTROLLER**

Integrated 'quad core' from Dinema for the serial checking of all electronic systems. Latest generation of graphic display with a colour touch screen.

● **PROGRAMMING**

Software Santoni SIS Plus with totally graphical integrated programming.

**DISCLAIMER:**

Technical data given in this brochure are for information only. Santoni S.p.A. reserves the right to modify the machine features without forewarning and without the obligation to apply any modification to the machines already installed. Pictures are exemplifying and have not to be regarded as a reference.

# X-MACHINE

## GRAPHICS PROGRAMMING: SANTONI SIS PLUS - THE SMARTEST PATTERNING TOOL

The Santoni SIS Plus software is used to programming the X-MACHINE.

This fast, multi-window graphical environment is upgraded with new easy-to-use functions. The graphic tools are designed specifically for use in the hosiery industry and the creation of technical drawings.

The programming has been conceived to speed up and improve the creation of uppers, socks and fabrics in general, using the Argyle and Jacquard technique.

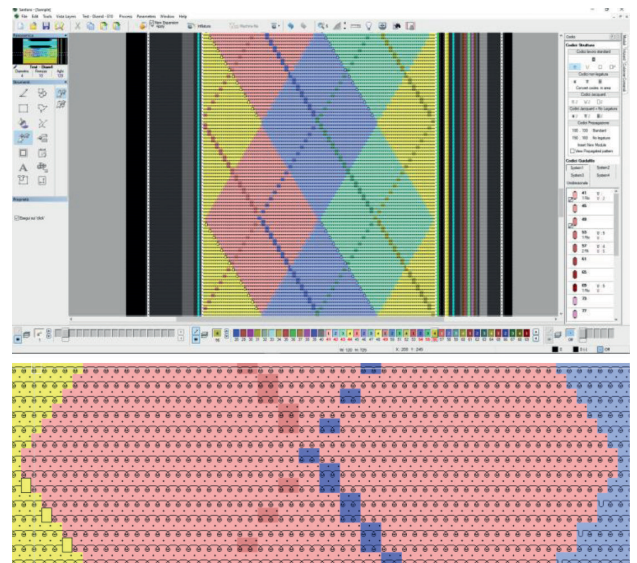
## PATTERN

For a simpler and more versatile programming, three different pattern levels are provided to manage knitting stitches, yarn feed, terry and transfer stitch. Each pixel has three items of information and several layers can also be added, if users need to design additional projects on the same stitch parameter.

The pattern is created using a library of colours. Each colour is associated with a yarn feed and stitch, and automatically completes the operation selected.

All machine parameters, including stitch thickness, yarn tension, speed etc., are managed graphically in the pattern using lateral command columns. The same programme can be used for all machine diameters and gauges, by simply selecting machine characteristics from a list.

It is possible to import different kind of pattern format. The programme processes the new information and prepares the pattern automatically, enabling quick and reliable data imports/exports.



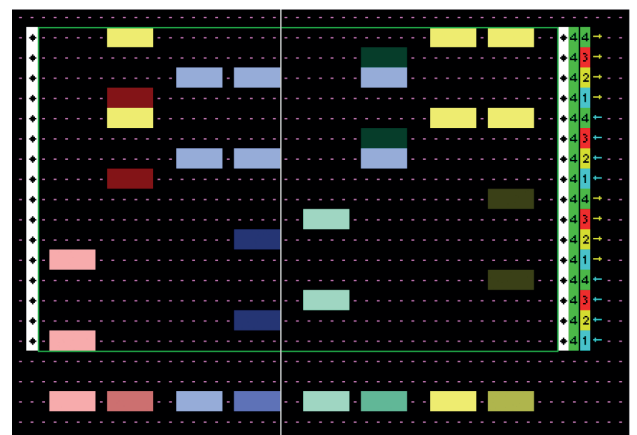
## MODULES

The software library has various types of modules to simplify the programming phase.

Sequence modules: if used in the pattern, these enable complex knitting stitches automatically. These modules change the pattern by adapting it to user requirements, making programming easy even for the most complex articles.

Starting/Ending modules: users can select pre-installed starting/ending modules, customise them, and set their own as the default to automatically manage the start and end phase for each sample with all the automated features required.

Propagation modules: these modules enable the propagation of mesh structures graphically. They can be used to facilitate pattern changes in samples and production of new sizes.



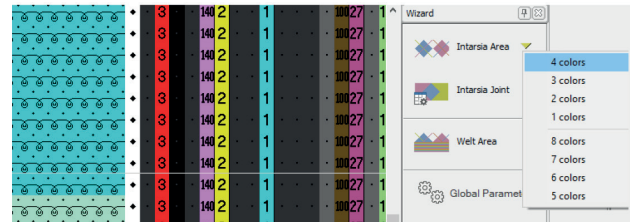
### PROCESS

Specifically designed for Argyle machines and the automation of important phases such as joint, yarn finger intakes, thread cutting, trapping and management of pattern steps, etc.

Users have the following available:

Wizard to create double-welt and Argyle area.

Parameters to adapt these automated features to own requirements. No need to intervene in the command chain, as this is managed internally by the software.

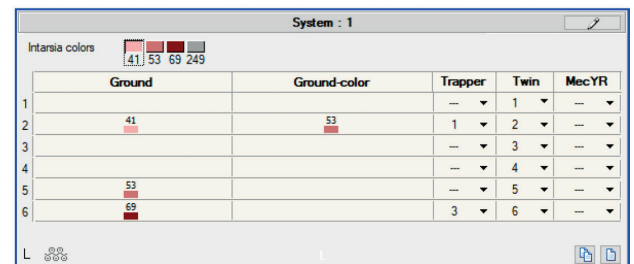


### THREADING

The threading window makes it possible to associate one or more yarn fingers to each colour in the pattern.

Simple visual management of yarn feeds and association of trappers and feeders to yarn fingers.

The possibility of setting the position of plaited yarn fingers, elastomeric threads and other parameters to customise samples.



### FABRIC TESTING

For an in-depth analysis of the final result of the process, a fabric profile test is provided to display all the various machine steps (needles selection, yarn finger movements, work sequences, etc.).

You can move the cursor to display the information and values of all the machine devices at a set point (e.g. mesh motors, yarn tension, yarn finger in operation and machine direction).

Any errors founded are highlighted, which prevents the creation of the machine disc.





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