Mosaic™ yarn
COLORFUL spinning

MOSAIC is a trademark of TOYOTA INDUSTRIES CORPORATION

Find your way, better together
The mosaic yarn is a new revolutionary yarn. The yarn is colored striped following a prefixed pattern. The yarn suddenly changes color, not by dyeing or printing but by a change of the fed roving, we can program different lengths to get a striped yarn. The transition from one color to the next is extremely short, less than 1 cm, so the change is clean and precise, no tails of the previous color are dragged behind.

Besides striped yarn, the system can make moulinés (chain yarn), and regular slubs. All these can be combined at the same time. Multiple variables are precisely controlled such as length, thickness and randomness.

Different combinations for amazing fabric effects.
PinterCaipo Mosaic offers a wide range of products thanks to the perfect control of roving feeding. Combine different colors or fibres, maintaining same thickness to get a printed yarn, or just us produce an exclusive siro yarn with controlled thickness of each strand. With Mosaic, your creative will have the right tool for innovating your yarn portfolio.

**Possibilities**

**Unlimited combinations**

Plain Mosaic Yarn
Color combination with constant yarn thickness.

Slub + Mosaic Yarn
Adding slubs to Mosaic base yarn

Color Slub
Adding slubs to Mosaic effect

Injected Slub
Addition of color fibre over the base yarn

| 50% - 50% | 25% - 75% | 75% - 25% |

Vario - Siro
Siro yarn with adjustable percentage of each fibre

Siro Ramp
Control of end of one fibre and starting of the second one to get color ramps
In Detail

The keys of Mosaic Yarn

Creel
Ring frame’s creel has to be modified in order to allow the placement of both types of roving (base and effect).

PinterCaipo can carry on this modification and supply all necessary components, including creel bars and bobbin hangers (optional under request), as well as the design of the new optimised creel.

Driving Unit.
— High precision brushless servomotors of low inertia and constant pair, with very direct transmission to machine drafting rollers for a faster reaction.
— Precise mechanical adaptation according to ring frame’s drafting system.
— In case of upgrade of existing Pinter or Caipo slub system, adaptation of the driving unit to do injected slub.

Compact Yarn required
In order to join the end of one roving with the beginning of the other, a compact system is necessary to make the splicing of both yarns.

In case the ring frame is already equipped with a compact spinning system, it can be used with this purpose.
SERPICO control board
Smart Embedded Ring Frame Programmable
Industrial Controller.

This is the new electronic control board which incorporates a full range of new features:

—Increased speed response.
—Internet connectivity through Ethernet cable, allowing remote diagnosis, parameter setting and program transfer PC - machine.

—Scalable technology: it allows to upgrade the system easily to other types of slub attachments such as CIS or Mosaic yarn.
—Retrofitting: possible for old Pinter or Caipo slub systems either if servomotors are handled by pulses or by CANopen.
—Tropicalized board: it has higher tolerance to extreme temperatures and humid environments.
—It allows to program directly on the User Interface.

MOSAIC YARN WORKING PRINCIPLE

The different color (or material) rovings are fed in the drafting system. One is fed at the 3rd roller and the second roving is fed at the second roller. The first roving is not affected by the speed of the second roller and the second roving is not affected by the third roller.

The two roving are thus drafted without any break draft. When one roving is stopped the other has to start immediately after, otherwise the yarn would break. In order to join the end of one roving with the beginning of the other, a compact system is necessary to make the splicing of both yarns.

We can control the speed and timing of the second and third roller independently so we can feed any of the two roving at will.
Support
We want to be your partners for development

In any industrial sector, innovation requires big efforts to transform original idea to a product acceptable by market. It is not only to create something new but also to get end customer’s acceptance. Our aim and policy is to be beside our clients in the entire development process, not only selling the machine but supporting till end product is established. Implementing the process and adjusting on market’s needs.

Our success is based on these principles. We are experts on innovative solutions and we want to add this background to your market knowledge so that we can get the exit in new products.

And we will put all our organization at your disposal to achieve it:

“In Mill” Technical Service
During installation or in a assistance, our engineers will take care not only about the machines but also about the human team. Because qualified personnel is the base for enjoying PinterCaipo products.

Our global technical service, with worldwide stations, is prepared to provide a fast and efficient answer to your needs.

“On Line” Technical Service
Our technology has remote connection facilities through Internet to analyse problems, solve them or guide for the resolution.

Our technical team connects to any installation to check performances and to detect troubles on real time, suggesting ideas for a better use and providing on line training to mill staff.

Custom Training & Maintenance Programs
We have different available solutions to transfer you our knowledge about PinterCaipo systems, according to each customer’s needs.

PinterCaipo Spinning Advanced Lab
We put at our customer’s hands the spinning advanced lab where you will be able to work with our team of experts and develop new products and special yarns.

We have a fully equipped working area with state of the art machines and PinterCaipo technologies prepared for your R&D team:

—Core Spun systems, including elastic, hard, DuoCore and 3Dcore.
—Fancy yarn equipment, to create slub, multycount, fibre anjection and Mosaic.
—PinterFani monitoring systems.
Mosaic® Yarn
Technical Specifications

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<tr>
<th>General Features</th>
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<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Mosaic attachment.</td>
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<tr>
<td><strong>Adaptation to</strong></td>
<td>Any type of ring frame up to 1.840 spindles.</td>
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<tr>
<td><strong>Yarn type</strong></td>
<td>Mosaic plain yarn, Slub + Mosaic, color slub, injected slub, vario siro and siro ramp.</td>
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<tr>
<td><strong>Basic yarn count</strong></td>
<td>From Ne4 (148 TEX) to Ne 120 (5 TEX).</td>
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<tr>
<td><strong>Slubs per meter</strong></td>
<td>Up to 20, depending on the fibre length.</td>
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<td><strong>Yarn application</strong></td>
<td>Any type of yarns for plain fabric or knitting.</td>
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<th>Driving Unit</th>
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<tr>
<td><strong>Type</strong></td>
<td>High performances servomotors of constant torque, low inertia and direct transmission to the mechanical group.</td>
</tr>
<tr>
<td><strong>Drive units</strong></td>
<td>Up to 12 drivers synchronized among them.</td>
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<tr>
<td><strong>Machine speed control</strong></td>
<td>With high precision encoder, to read machine speeds and process it to adjust the slub operation.</td>
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<th>Control Unit</th>
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<td><strong>Description</strong></td>
<td>Cabinet with cool technology containing drivers, main control board and in-built UPS. Designed for extremely high temperatures.</td>
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<td><strong>Control board</strong></td>
<td>SERPICO control board.</td>
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<th>User Interface</th>
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<td><strong>Screen</strong></td>
<td>Color 7” touch screen.</td>
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<tr>
<td><strong>Programming</strong></td>
<td>Multiple programming possibilities: random, sequential. Programming wizard.</td>
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<td><strong>In - Built UPS</strong></td>
<td>Integrated in the system and managed by main control board. It avoids the breakage of the yarn in case of power failure.</td>
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<tr>
<td><strong>Alarms</strong></td>
<td>Complete alarm system preventing yarn without slub, mechanical or electrical problems, over speed, over temperature, among others. Alarm log storage.</td>
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<td><strong>Others</strong></td>
<td>Different systems preventing weak places, security codes are also available.</td>
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