eco-SpinTwist

MACART

eco-SpinTwist

The eco-SpinTwist machine is the low cost method for spinning and twisting on one machine 2 fold hosiery yarns for sweater, cardigans, jumpers, gloves and hats.

- **Production delivery speed 230 metres per minute**
- **Count range 2/14 Nm to 2/42 Nm**
- **Spinning and twisting on one machine**

eco-SpinTwist Factory

Spinners of acrylic HB yarn use less operations when spinning and twisting on the eco-SpinTwist.

eco-SpinTwist	Ring Spinning
Stretch Breaker	**Stretch Breaker**
Integrator	**Integrator**
Gill Box	**Gill Box**
Gill Box	**Gill Box**
Roving	**Roving**
eco-SpinTwist	**Ring Spinning**
Bulking/winding	**Autowinding**
	Two for one twisting
	Bulking/winding

The preparation of the rovings sliver used for the eco-SpinTwist are the same as used for the traditional ring spinning machine.

Customers can use coloured fibre/tops or ecru fibre/tops. For coloured fibre the yarn will be processed on the Bulking/Winding and be ready for knitting.

For ecru fibre the yarns can be package dyed after bulking/winding.

Save energy, workers and floorspace in a 300Kg per hour factory unit!

Each 4 spindle eco-SpinTwist delivers 4 packages ready for onward processing on the yarn bulking machine.

As an example to manufacture 300Kg per hour of 2/30Nm HB acrylic yarn it is necessary to spin a 2/36Nm yarn before yarn bulking (shrinking).

One eco-SpinTwist produces

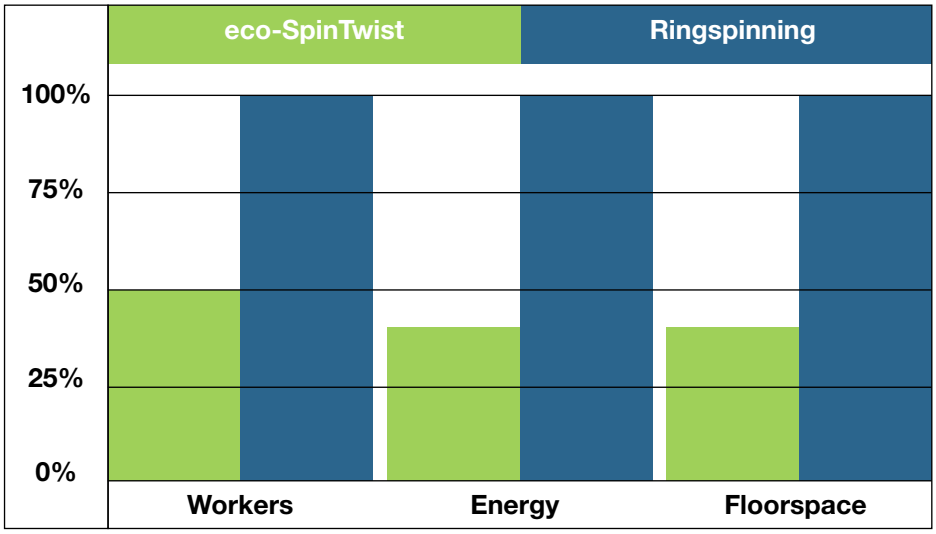
- 2/36Nm x 4 x 230m/min x 60 min x 95% = 2.9Kg per hour.
- One worker operates 22 machines.
- One eco-SpinTwist utilises 1.7Kw per hour of energy.
- One eco-SpinTwist has a working space of 1.3 sq.m.

For 300Kg/hour the labour, energy and floor space are

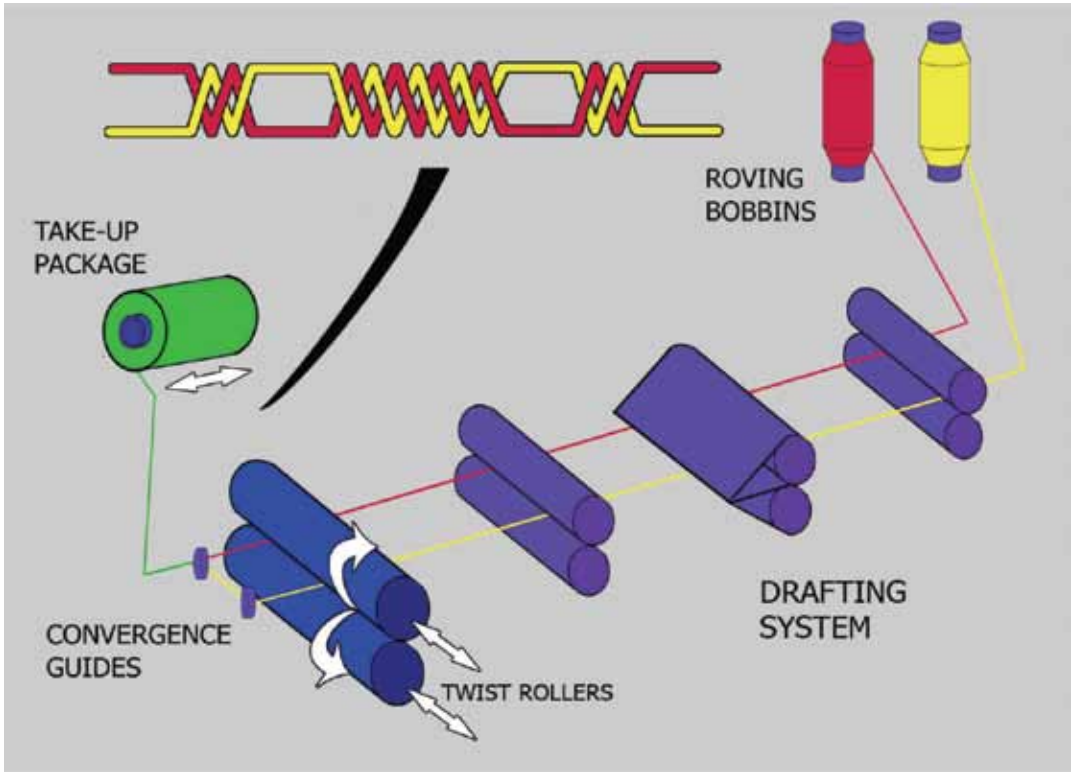
- 110 machines produce 320 Kg per hour.
- 110 machines require 5 workers.
- 110 machines utilises 187 Kw per hour.

Comparison with a 300Kg per hour ring spinning unit are:

300kg per hour	eco-SpinTwist	Ring Spinning
Labour	5	10
Energy	187kw	541kw
Floorspace	660sq.m	1380sq.m



eco-SpinTwist Technology



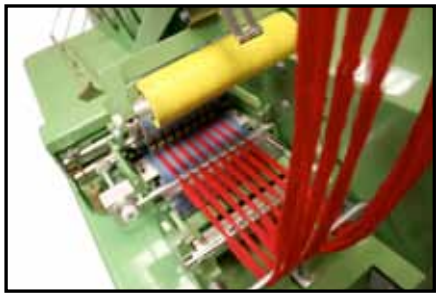
The eco-SpinTwist offers spinning and twisting on one machine.

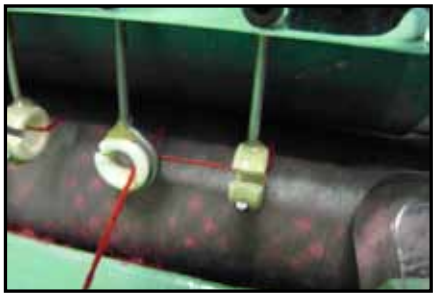
Spinning - 2 rovings are processed through the standard double apron worsted drafting system to make 2 singles yarns.

Twisting - twist is inserted into the singles yarn by the twist rollers which reciprocate along their axes and rotate at the same time. Alternating ‘S’ and ‘Z’ twist is inserted in each single yarn.

The 2 single twisted yarns are combined together by the convergence guides and allowed to twist around each other to form a two fold twisted balanced yarn.

The twisted yarn proceeds to the take up package and is parallel wound on a 180mm traverse package with up to 254 mm diameter.





Specifications

Creel

Rovings between 1.25g/m and 0.5g/m are used for feeding the drafting.
The creel is suitable for 8 single end bobbins from flyer roving frame or for 4 off double mesh bobbins from finisher roving frame.

Can feed is available using 8 sliver rovings from the horizontal finisher with delivery into cans.
Roving break detector fitted.

Drafting

Worsted double apron drafting with pneumatic weighting.

The draft ratio of range 10 to 40 in steps of 0.1 is adjusted electronically on the key pad.

Adjustable ratch for fibres 60mm to 130mm.

3 to 5 denier acrylic fibre with normal worsted fibre diagram.

Twist Rollers

The twist rollers are two lateral reciprocating rollers rotating on air bearings.

The delivery speed is 230m/min and they reciprocate at 1000 oscillations per minute.

A complete cycle of S and Z twist yarn occurs every 220mm.

Winding

Four 180mm (6 inch) parallel packages are wound on grooved drums mounted on a common drive.

Package diameters can be up to 254mm.

Yarn break detection fitted.

Suction

An individual inbuilt suction is used to clear fly from the drafting zone and broken end waste from the twist rollers.

Compressed air

113 litres per minute at 5 bar—utilised 0.7Kw per machine.

Electrics

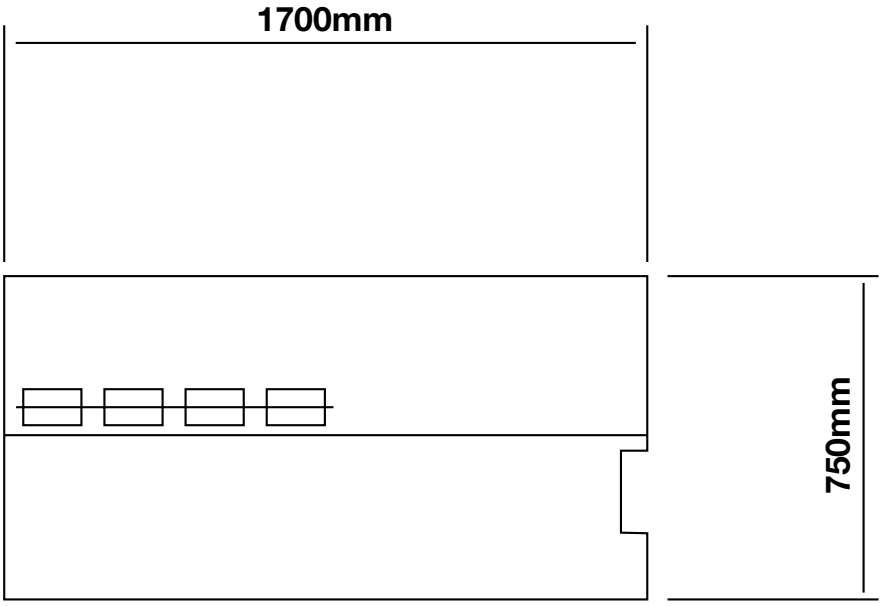
PLC and Inverter drives with touch screen panel for all machine functions of speed,draft and diagnostic fault finding.

AC motors—utilised power 1Kw per machine.

Production and Space

Twisted Yarn Count Nm	Kg per hour for 1 machine	No of machines for 1 worker	Kg per hour for 1 worker
2/42	2.5	22	55
2/36	2.9	22	63
2/32	3.3	20	66
2/28	3.7	18	66
2/24	4.7	16	75
2/20	5.2	15	78
2/16	6.6	14	92

1 machine



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