

The high lights of some of the new process are given below:

➤ **Electrostatic Spinning.**

The fibre separation and alignment after 3 roller drafting takes place under a high voltage Electrostatic field. A spinning head rotating at 65000 to 70,000 rpm impart twist to the yarn. The system is suitable for count range of 10s to 40s.

➤ **Pavena Process Spinning.**

In the Pavena system developed by Rieters of Switzerland the drawing sliver preferably from an autoleveller draw frame is doubled and drafted and then impregnated with a Liquid containing bonding substances. After squeezing off the superfluous liquid, roving or sliver is converted into a flat ribbon by the application of very high pressure. The roving is then dried and wound on a spool which is fed to the ring frame. The impregnation process can be combined with dyeing. The twistless roving is spun into yarn on a weighted rollers set 3 “ apart for all fibres upto 2.3/8”. The production rate in spinning is comparable to the modern high speed ring frame. The main advantages of the system appeared to be (1) Simpler construction of ring frame with possible reduction in capital and maintenance cost, (2) High draft on ring frame resulting possibly in a smaller investment on preparatory machines, (3) Somewhat better yarn quality and (4) Elimination of two or three processes for dyed yarn.

- **Break Spinning.** The input sliver is fed to a lickerin type of opening and drafting roller rotating at about 6000 to 8000 rpm. The opened and drafted fibres are further drafted and separated pneumatically and fed tangentially to a rotor revolving at a very high speed from 70,000 rpm to 1,60,000 rpm depending upon the count spun. Due to centrifugal forces created by the high speed rotation of the rotor the separate fibers are deposited on the inside surface of the rotor. Fibres are straightened out on the rotor surface where doubling effect also take place. A seed yarn introduced from outside insucked is to the side of the rotor and begins to rotate. As it is withdrawn it picks up the fibres and simultaneously impart twist to the forming yarn. The rotor spinning is suitable for coarser counts i.e. suitable up to 20s/28s counts. The yarn so produced is hairy, more uniform, greater elongation at break and greater dyeing affinity.



Zhe Jiang Rifa Textile Machinery Co. Ltd., China.

RFS 30



➤ **Self Twist Spinning.**

The basic principle involved is to twist short region of yarn in one direction and the next region in the opposite direction and so on. Two strands of this kind are brought in contact with each other along their length, the built-up torque causes the strands to twist around each other to form a two-ply stable yarn.

The Rapco system has been developed by the C.S.I.R.O., Australia and is now manufactured by Platts International and is suitable for spinning worsted yarns or yarns from long staple synthetic fibres. The strand emerging from a conventional drafting system is given alternating S & Z twists by passing it between two rollers which reciprocate at a high speed along their axes as they rotate to deliver the strand, a complete cycle of S & Z twists occurring every 22 cms. Untwisting of this is prevented by bringing two such strands (S&Z) side by side in contact with each other. The individual yarns untwist and in doing so ply themselves together forming a self-twist yarn. The self-twisted yarn is wound on a cheese and then given a normal twisting operation to strengthen the yarn and to eliminate twist variations. The yarn delivery speed is very high (about 220 metres per minute). The obvious advantages of the Rapco system are very high production elimination of spindles, rings, etc. simpler maintenance, reduction in power costs, doffing costs and floor space and elimination of doubler winding.

➤ **DREF SPINNING:**

DREF Spinning is designed to produce high-tenacity yarns for flame-resistant protective apparel, upholstery, fibre composites, filters and other technical fabrics. The DREF 3000 friction spinning machine is the latest model for the purpose of DREF Spun Yarn. The machine achieves production speeds of upto 250 meters per minute, as well as reduced costs for yarn preparation and maintenance. Touch-screen operation facilities handling of yarn parameters, PLC control and links to other computers. In addition, DREF 3000 can be used to manufacture elastomeric core yarns.

➤ **Compact Spinning**

The compact spinning is the latest development in Ring Spinning. The general impact of compact spinning is reduction in yarn hairiness to a very much extent in fibre up to 2 mm and almost total reduction in fibre longer than 4 mm. The fabric woven/ from this yarn has much of soft. and workability in both of looms and knitting improves significantly. There is an improvement of yarn strength, elongation of the yarn. There is a lot of scope of exploitation of this new

introduction. The elimination of sort fibre and dust is possible due to design of compact spinning and atmosphere in the ring spinning is free from fluff and dust particles.

- **Rieter**



- **K 44 – Compact spinning competency**

When it comes to compact spinning, the ComforSpin® machine K 44 is number one in terms of both technology and market placement. Mechanically, it is based on the G 33 ring spinning machine, of which more than 1,500 are in operation all over the world. Optimal compacting is ensured by the compacting zone integrated into the drawframe and comprising the direct-drive, abrasion-proof perforated drum with stationary suction device, plus the air-conducting element that produces a high level of compacting efficiency. The result of the ComforSpin® process is the patent-protected COM4® yarn, noted for its extremely low hairiness and high strength. Optimal exploitation of the fibre substance means improved running behaviour and measurable cost reductions in the subsequent processing stages.

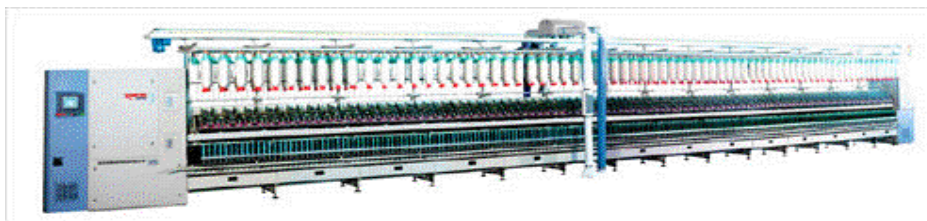
- **Suessen** – elite spinning system
- **Zinser** – Compact Spinning G – Model Zinser 351C3 with cowemat 395 –V linked system – Bobbin tray

➤ **Other International Textile Machinery (Compact spinning)**

Zhe Jiang Rifa Textile Machinery Co. Ltd., China. www.rifa.com.cn

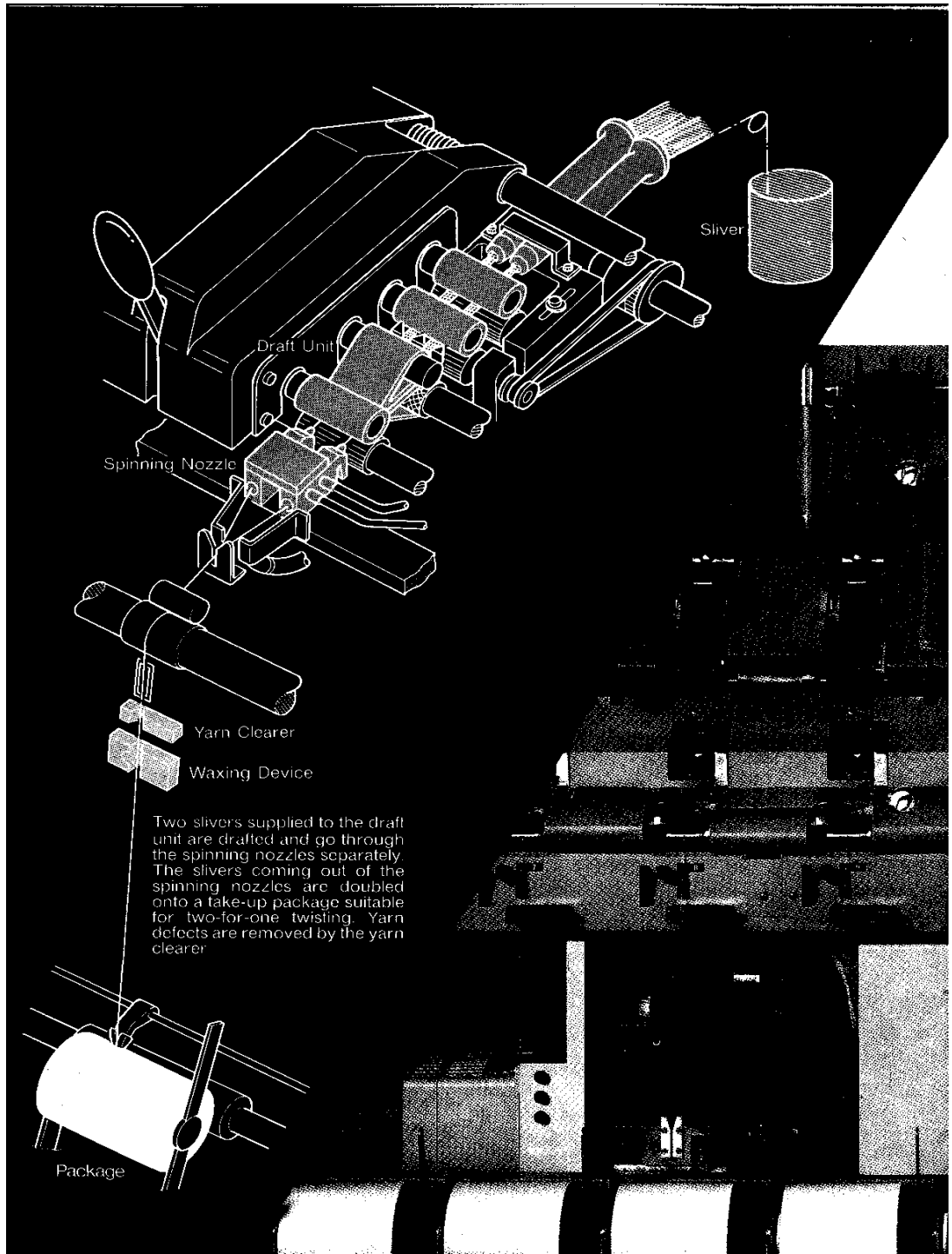
RFCS510 Compact spinning

RFCS510 used to produce yarn with higher quality, which means higher yarn strength, less hairiness and better evenness. Feed with single sliver of cotton, chemical fiber of cotton like or their blends, and then get relevant high quality yarn for the use of downstream process such as weaving or knitting.



➤ Air-jet Spinning

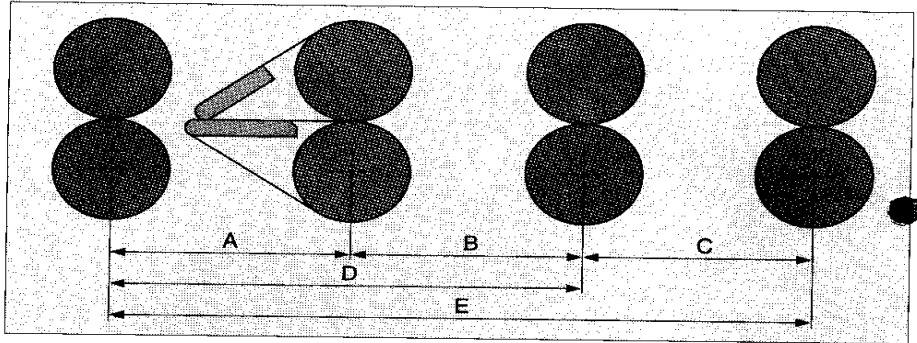
MURATA TWIN SPINNER



MURATA TWIN SPINNER

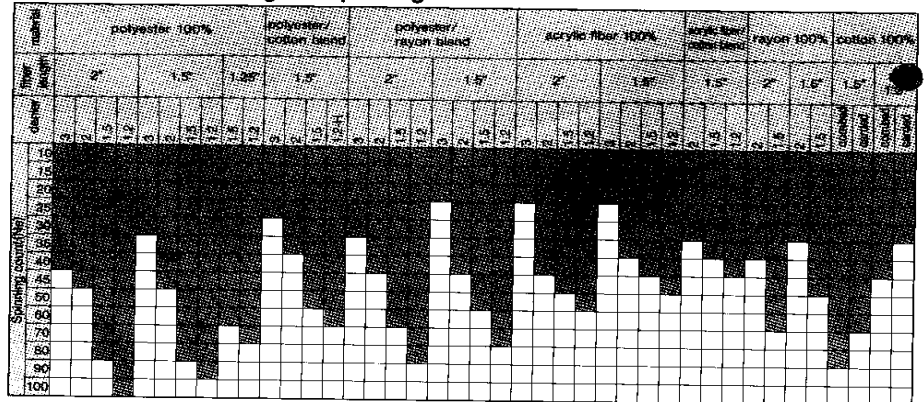
TO MEET THE DIVERSIFICATION OF RAW MATERIALS

New draft system, which makes it possible to spin all kinds of fibers, from 100% cotton to 2"-long fiber.



A	B	C	D	E	Raw material
37mm	34 ~ 36mm	34 ~ 36mm	71 ~ 73mm	105 ~ 109mm	100% Cotton
44mm	39 ~ 43mm	39 ~ 43mm	83 ~ 87mm	122 ~ 130mm	1½" 100% Synthetic fiber, Synthetic fiber + Cotton Blend
56mm	52 ~ 54mm		108 ~ 110mm		2" 100% Synthetic fiber

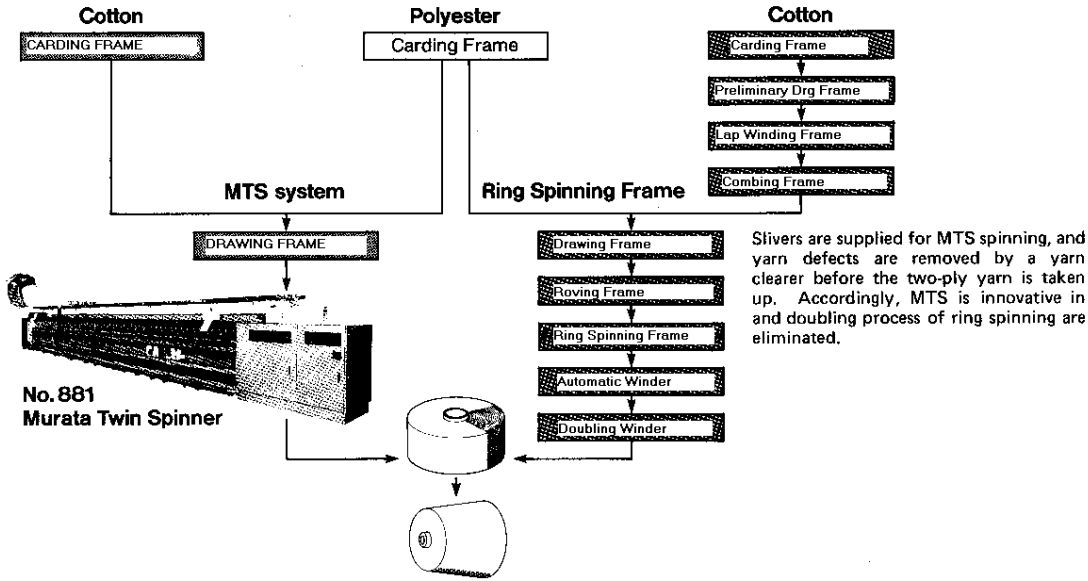
Raw material and range of spinning count



No.881 MTS

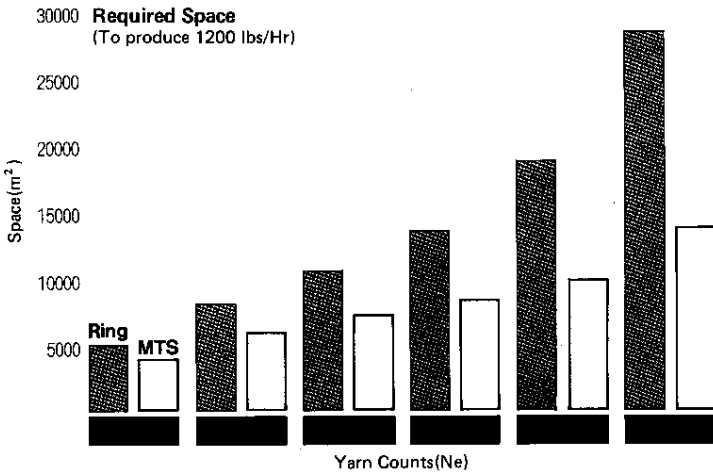
MURATA TWIN SPINNER

Elimination of Processes



Significant Floor Space Saving

Due to process elimination, the MTS system can significantly save on floor space.



MURATA TWIN SPINNER NO. 881 MTS

SPECIFICATION

Material and Yarn count :

Range of yarn count	: Ne20~Ne100/2
Type of material	: 100% cotton, synthetic fiber/cotton blended, 100% synthetic fiber, etc.

Fiber length	: 2"(51mm)max.
Sliver weight	: 60~15 grain/yard
Sliver cans	: Standed 16"×45"(410ø×1200)

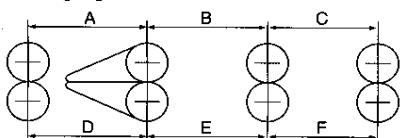
Specifications of main frame :

Number of units	: 16,24,32,40,48,56,(60),64,72 units/machine
Unit pitch	: 215mm
Twist direction	: S.Z. S,Z assembled yarn
Motor	: Main Drive 3.7kW Suction blower 7.5kW (Used Fisherman knoter, 72 spindles) 5.5kW (Others) Blower for splicer 2.2kW (Useless when used Fisherman knoter) AD, knoter 4.0kW Others 2.6kW

Draft system :

Type	: 4-line double apron system with pendulum weighting arm.
-------------	---

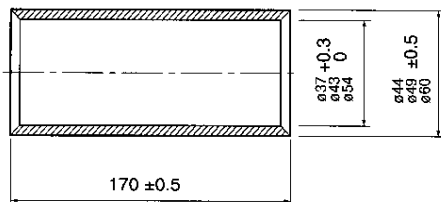
Roller gauge :



A	B	C	D	E	F
41	34.36	36	37	34~36	34~36
48	39.41	42	44	39~42	39~42
60	54	56	56	51~55	52~56

Take-up system :

Traverse	: 6" (150mm)
Max. package diameter	: 300mm
Max. package weight	: 4kg
Take-up tube	: Material polypropylene



Gearing :

Spinning speed	: 130~210m/min. (Changeable by pulley)
Total draft ratio	: 50~200 (Changeable by gear)
Brake draft ratio	: 2.0~5.0 (Changeable by gear)
Feed ratio	: 0.960~0.900 (Changeable by gear)
Take-up ratio	: 0.980~1.00 (Changeable by gear)

Automatic knotter :

Type of knotting	: Fisherman or Splicer
Travelling speed	: 17m/min.
Knottng cycle	: 15sec.
Exhaust	: Upper or lower

Standard equipment :

Dest box with Cycle indicator lamp
Spinning speed meter (Digital Indication)
Ribbon breaker
Control panel for Air pressure
Draft roller cleaner
Yarn clearer
Yarn length measuring device
Package shelf

Required Compressed Air :

Source air pressure	: 6kgf/cm ² min. for Spinning 7kgf/cm ² min. for Splicer
Dew point	: 25°C max. (at 6kgf/cm ²)
Max. oil contents	: 0.07gr/cm ³ max.
Required volume of air	: 45Nℓ/min. /nozzle on average for Spinning 40Nℓ/min. /machine for Splicer

Option :

Blow cleaner
Super Spectron (S.S.)
Intelligence Analyzer (I.A.)
Yarn clearer with coarse & thin yarn detector
Auto Doffer (A.D.)
Waxing device
Package conveyor
Auto cleaner
Positive rotary creel

Murata reserves the right to change specifications and dimensions in this catalog without notice.

Murata have modified Airjet Spinning machine for single yarn for 100% cotton where final structure of the yarn is near to ring yarn. Their claim is 400 mtrs. per minute and low power consumption.

- **Vortex Spinner:**

Murata Machinery will always be at the forefront of textile machinery technology. At ITMA 2003, they presented Murata Vortex Spinner, Air-jet spinning machine, and No. 21C Process Coner, high quality automatic winder. These machines with much advanced features and functional devices and equipment are reported to offer added new value.

- **Murata Vortex Spinner:**

The Murata Vortex Spinner (MVS) 861 from Murata Machinery offer compact and more user friendly machine as compared to its predecessor in addition to low energy consumption. This new machine with the fastest spinning of 450 m/min produces fashionable “Vortex Yarns”. The machine productivity for MVS is 20 times higher as in case of ring spinning. And as compared to OE and Rotor Spinning technology Murata offers 3 times more efficiency.

Another feature that stands out is the so-called “Tension Ruler”, which functions like a yarn accumulator between the take-up roller and winding unit. This unit not only enables higher speeds and the potential of 5 degree 57 cones, but it also does so with reduced energy than compared to earlier machines.



A new global trend has emerged in the retail form of textile products, with the appearance of "regular-wear casual" brands that feature consistent quality, cohesive product image and, above all, curbing of price. This new trend offers good quality at low price. How to create new value is a crucial issue. Here lies the demand for yarn with even greater functionality. VORTEX yarns are created with Muratec VORTEX spinning machines. VORTEX are quality yarns with high performance and fashion applicability. They are ideal material for regular-wear casual fashions.