

· , , (Vortex)
가

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1.

19

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가

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/

150km

50,000km

,

0.015

가

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.

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1.1.

가

.

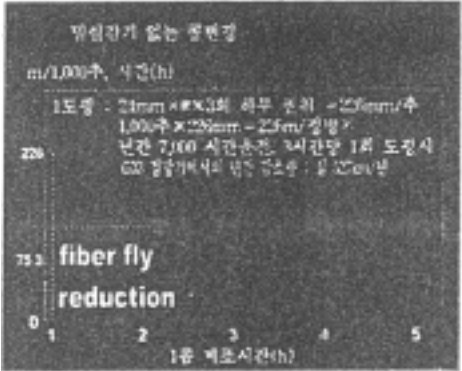
1.2.

가

< 1> 가 1,000

2 250m

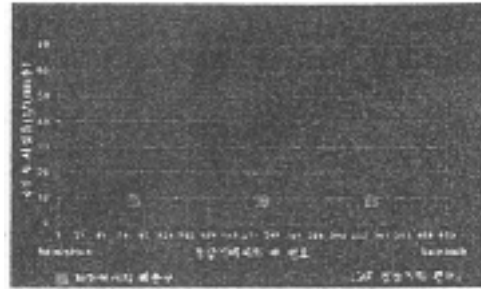
. G33 "SERVOgrip"



< 1> “SERVOgrip”

가 . < 2>

가 가 , .



< 2>

가 . .

2.

. < 3>

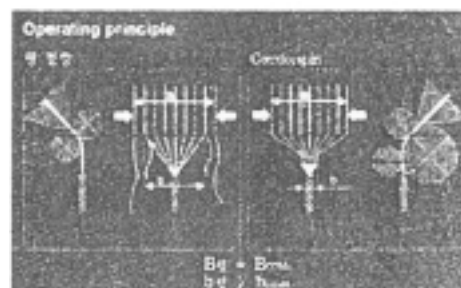
B , b

2.1.

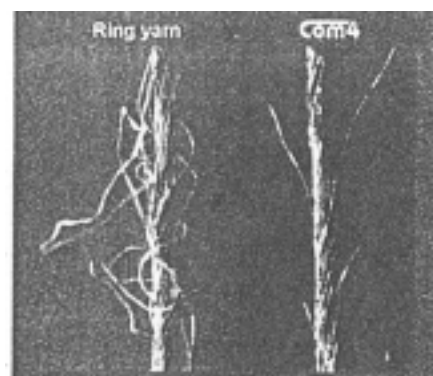
Rieter “Comforspin”

< 3>

. < 4>



< 3> () ()

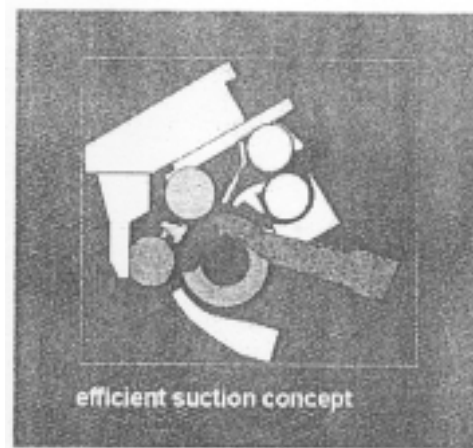


< 4> () ()

2.2.

K44 "Comforspin"

< 5>



< 5> K44 "Comforspin"

(
)

2.3.

. "Com4"

가

가

가

, 3mm

2.4.

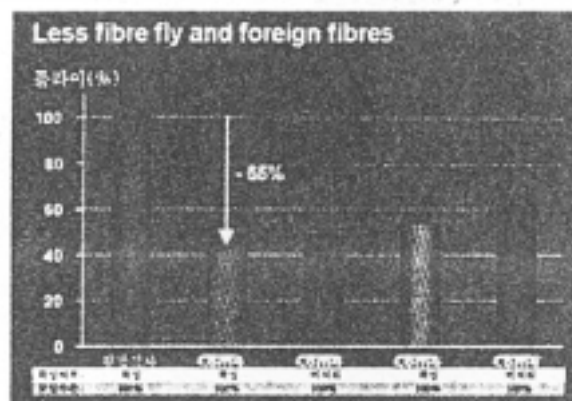
“Com4”

가

가

2.5.

. < 6>



< 6>

가

2.6. 가

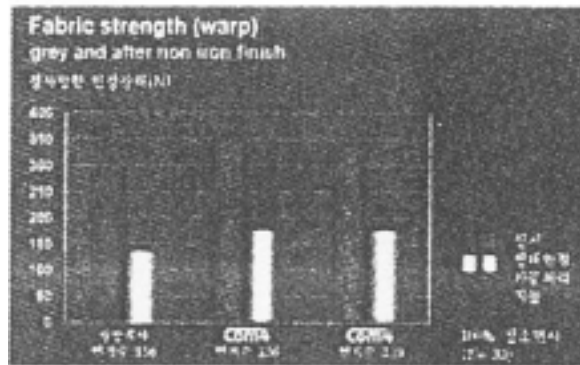
가 (50%) .
가 .
가 가 . ,

.
.
“Com4”
. < 7> "Com4"
.

.
(8).

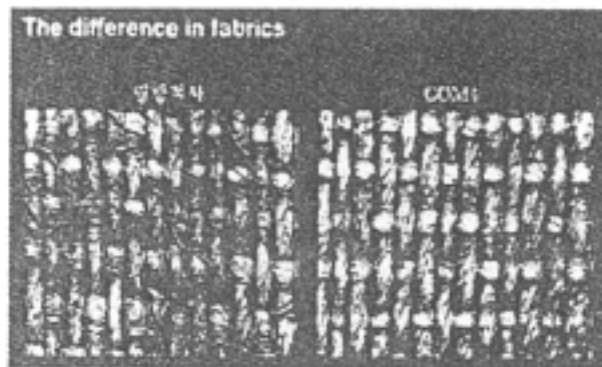
-
- 가
-
-

. 가
가 "Comforspin" .
40 K44
가 가 .



■ : , □ : 가

< 7> 가 (Non-Iron)



< 8> () ()

3.

가 30

가

3 , ,

3.1.

• $\mu_{\text{M8300}} = 1.0$

< 1> (2001 50% Uster)

(Ne)	(H)		CV(%)	
6	10.2	7.7	6.7	6.2
20	7.3	5.0	8.8	8.4
30	6.7	4.4	9.5	9.0

가

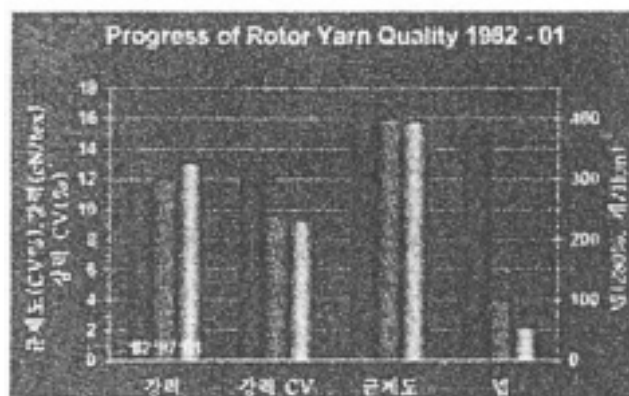
3.2.

가

가

가

1982 , 1997 2001 Uster 50% < 9>



< 9> 1982, 1997 2001 Uster 50%

1997 2001

Rieter R40

가 Suessen

3.3.

가

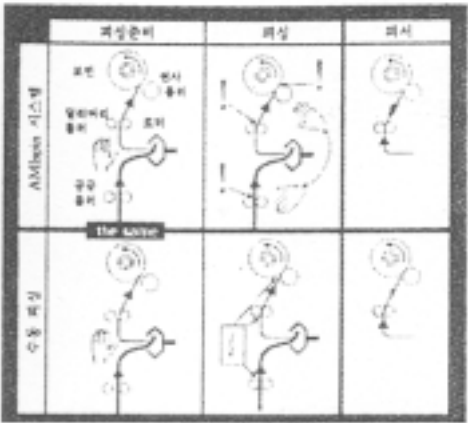
1kg

가

가

Rieter BT 903

“AMIs핀” (10)



< 10> BT 903 “AMIs핀”

가

가

4.

(sheath)

가

. 1979

Murata

2-

(MJS)

2-

/

가

가

10%

. MJS

. 100%

(11) 2-

Murata

90

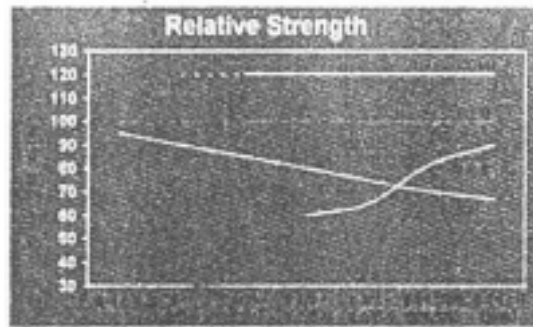
“

”(MVS)

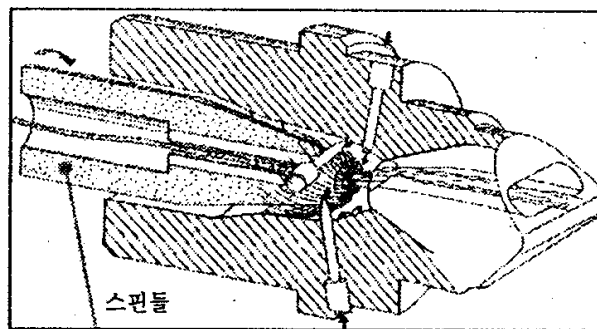
. 2-

가

(12).



< 11> 가



< 12> (MVS)

20 30% 가

가 .

(11).

100%

가 가

Nm30 Nm80
가 .

3 가

.

. 2 8%

.

가 .

.

.

300m , 2-

.

5.

, , 가

, , ,

가

.

5.1.

.

가 , .

.

5.2. .

가

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.♣

(Current spinning processes and visions of future : ITB 1/2003)