

1.

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(take-down element)

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(turntable tube)가

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(, , (take-down force))

2.

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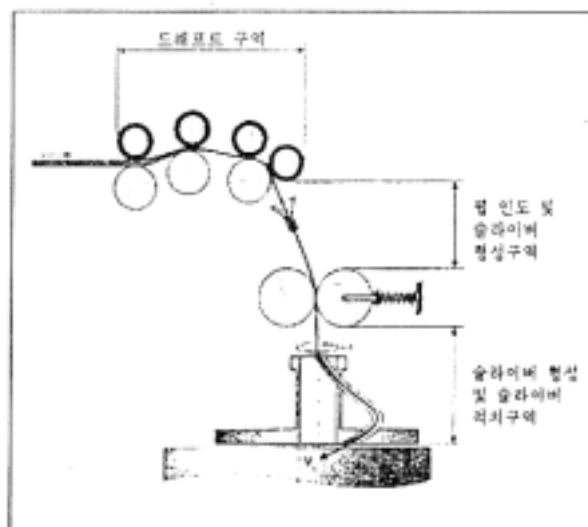
. Zellweger社

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(1).



< 1 >

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3.

3.1 가 (HSV)

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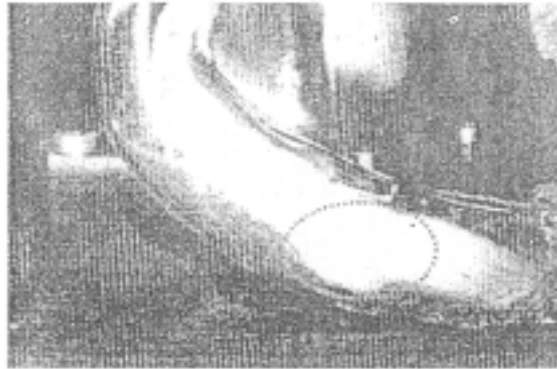
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(2).



< 2>

3.2

(Laser Doppler Anemometry, LDA)

Institute of Technology(ITA)

LDA

. RWTH

(back scatter)

. < 3>

1

800m/

LDA

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v

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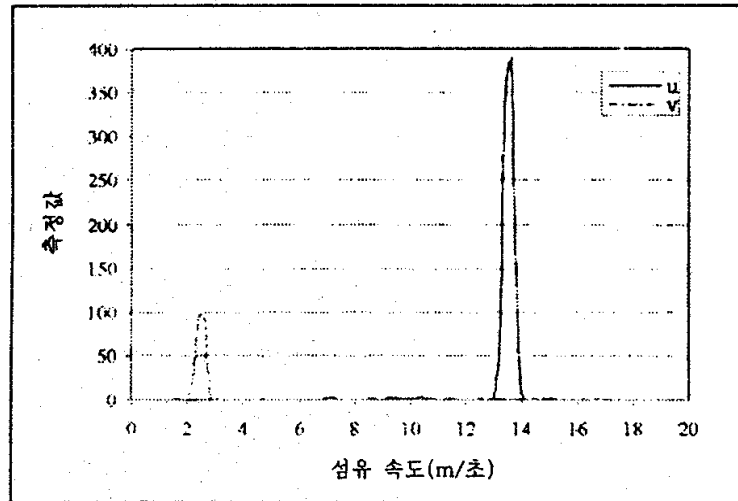
가

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1

2



< 3>

(u)

(v)

LDA

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3.3

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Zellweger

Technology社

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4>

450m/

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5>

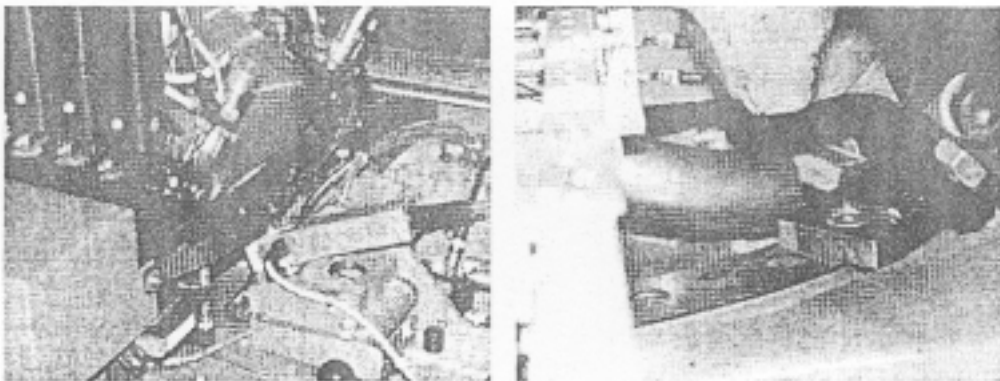
CV%가

3.77% 4.7%

.

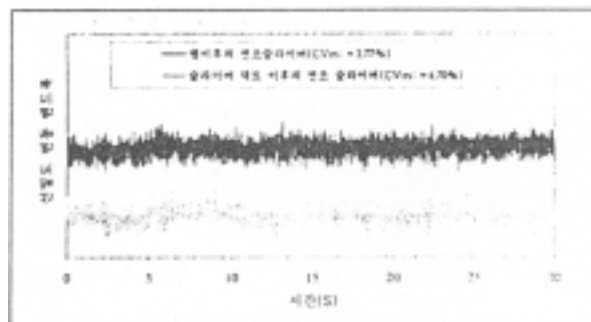
가 0.93%

.



< 4>

Mini-Uster sensor



< 5>

가 ,

(ideal spectrogram) . < 6>

가 ,

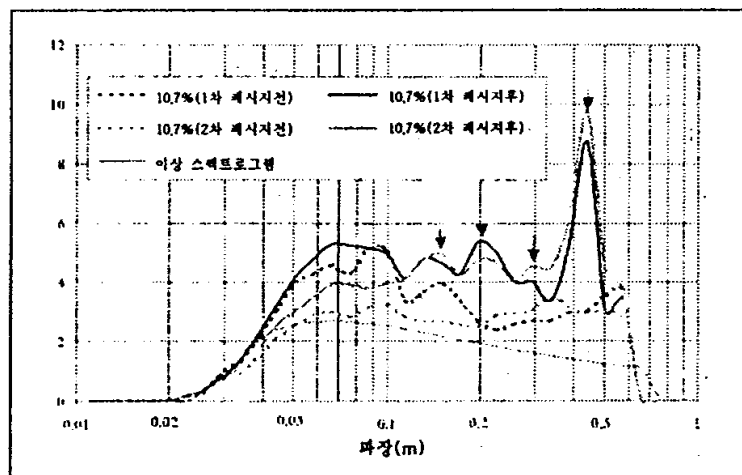
()

() 가 .

0.2, 0.3, 0.43m 가

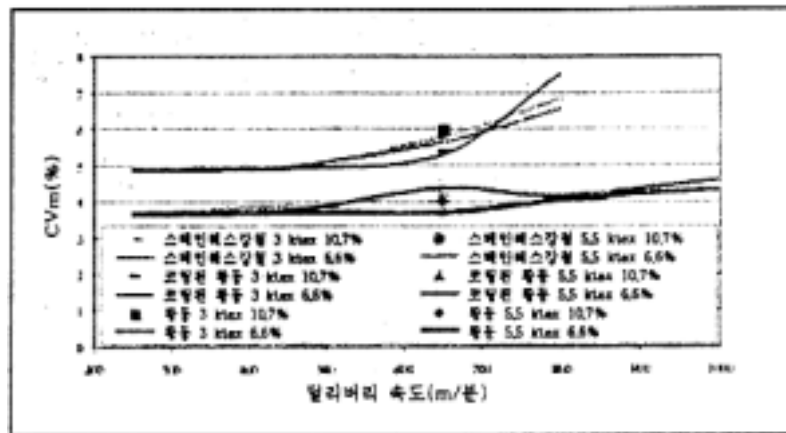
0.13m

가 ,



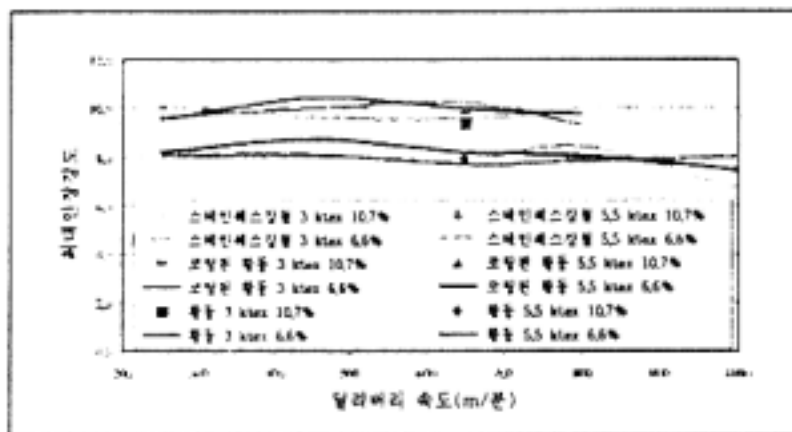
< 6>

(= 10.7%)



< 7>

(CVm)



< 8>

(cN/tex)

3.4

가

(

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가

가 650m/

가 (3 5.5 ktex)

(30 tex) , Uster Statimat

. < 7>

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4% 가 3 ktex

5.5 ktex (CVm)가 ,

가 가 가 . <

8> Statimat 3 ktex

5.5 ktex

가 .

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가 가

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3.5

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가 .

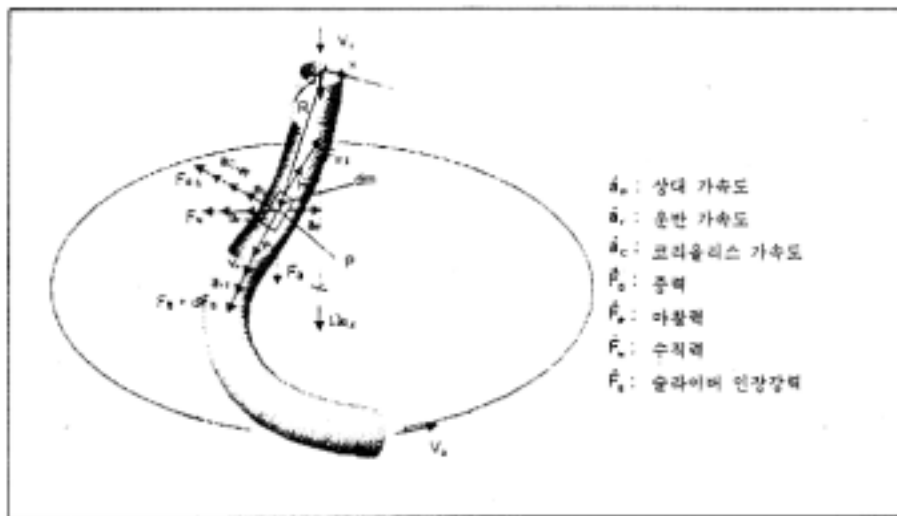
가

(take-down force)

< 9>

(Coriolis force)

$$dm \cdot (\vec{a}_R + \vec{a}_F + \vec{a}_c) = \vec{F}_G + \vec{F}_R + \vec{F}_N + \vec{F}_B$$



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4.

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LDA

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(Sliver lay behaviour on high performance drawframes : Melliand English 4/2003)