

Autocoro

260 () Autocoro

가 가 Schlafhrost社 1

가

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Schlafhrost社 Autocoro

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Schlafhrost社 Autocoro

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1.

1,900 -2,000 ．

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가

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- (1) 가 ·
- (2) ,
- , ·
- (3) 가 ·
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- 가 · ,
- Autocoro (Corobox SE 11)
- 가 가 ·

2.

· , ,

, (1

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가 (25m/

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가

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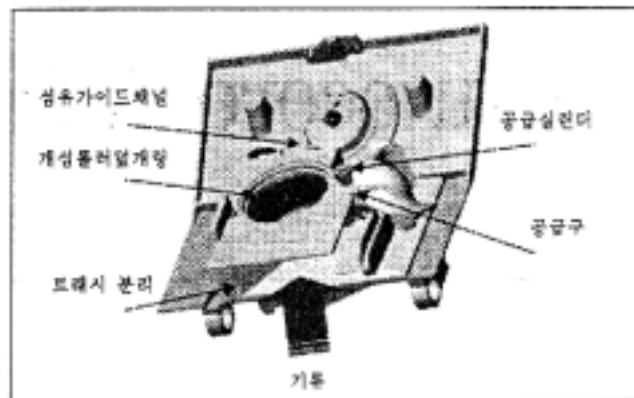
,

가

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가

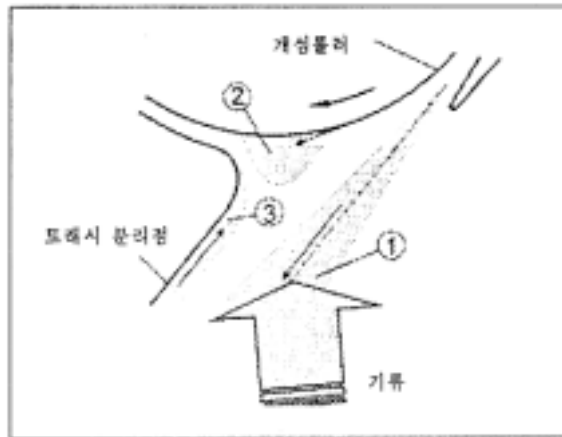
(3).



< 1> Corobox SE11



< 2>



< 3>

3.

Schlafhrost社

Corobox SE 11

. Schlafhrost社

- High Speed Video Analyses(HSV)
- Digital Image Processing(DIP)
- Laser Doppler Anemometry(LDA)
- Particle Image Velocimetry(PIV)

가 .

4. 가

High Speed Video (40,500 /)

가 가 가 (3).

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, 가

. (fiber

separating edge) 가 가 가

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(1).

(1) , (trash

separating edge) 가 (1)

(2) (2)

< 1>

($V_{\text{particle}} \leq V_{\text{OR}}$),

. , ($E_{\text{kin}} = f_i \cdot m \cdot v^2$)

($E_{\text{rot}} = f_i \cdot J \cdot \omega^2$) ($E_{\text{total}} =$

$E_{\text{kin}} + E_{\text{rot}}$)가 .

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< 2>

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($F_z = m_{\text{fibre}} \cdot r \cdot \omega^2$)

가 .

< 3>

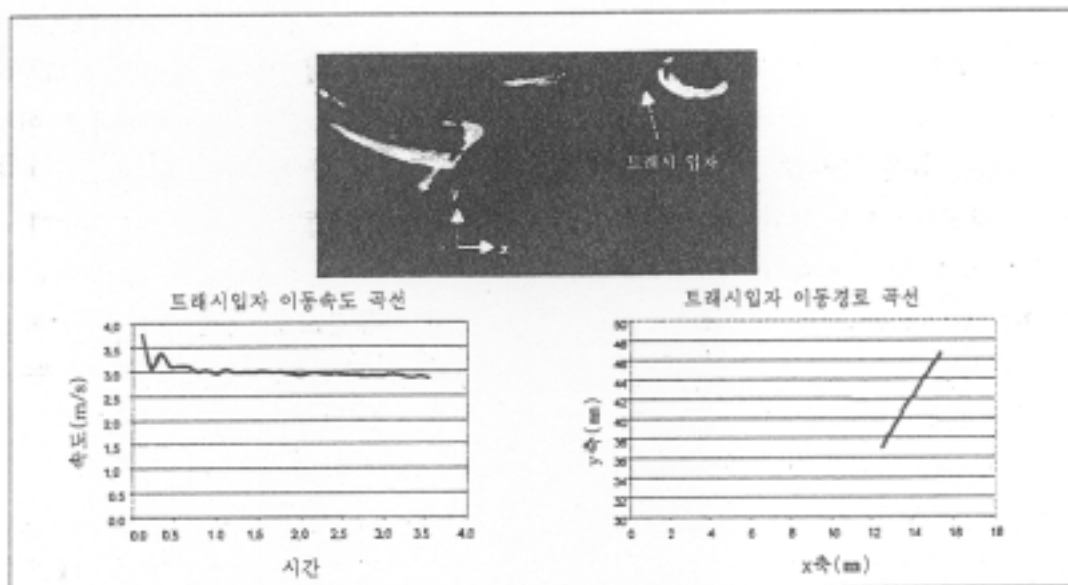
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(digital image processing) .

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가

(4).



< 4>

가

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가

(,)

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5.

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Laser Doppler Anemometry(LDA)

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(5).

(,)

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, < 5>

(8,000rpm)

,

-60, -75, -90mbar

가

가

가 .

가 .

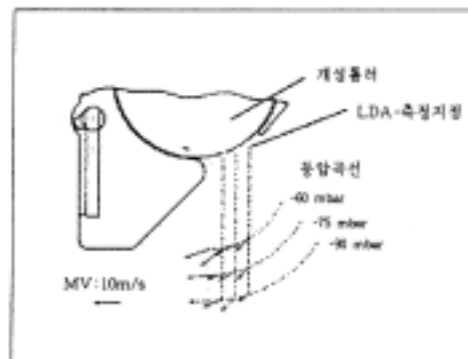
가 , 가

가

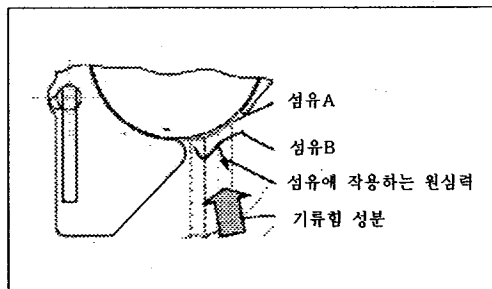
가 가 , 가 가 ,

가 가 가

(6, B).



< 5>



< 6>

가 .

가 . Corobox SE 11

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, (7,9).

(7),

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가

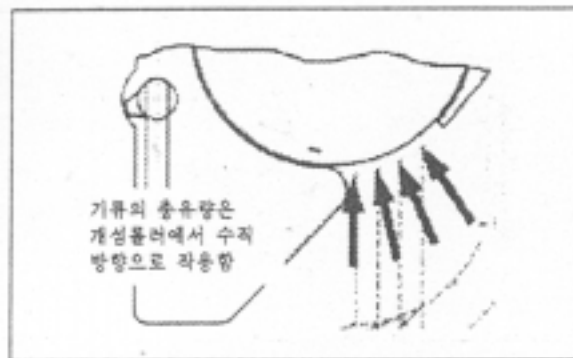
가 ,

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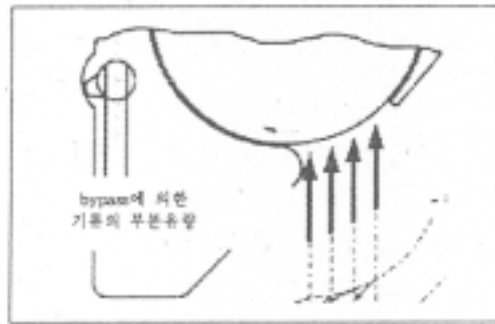
“bypass”가

(8

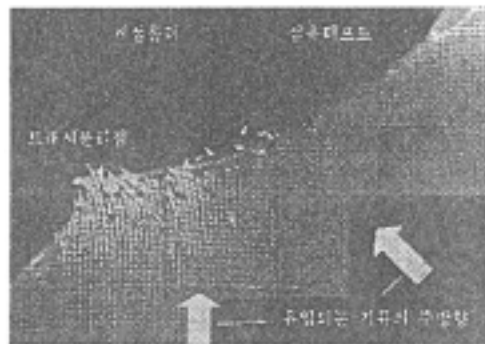
).



< 7> Corobox SE 11



< 8>



< 9>

6.

Partial Image Velocimerty(PIV)

PIV

Transformation)

FFT(Fast Fourier

가

< 9>

.
 (Airflow profile image) (

10, 11). < 10>

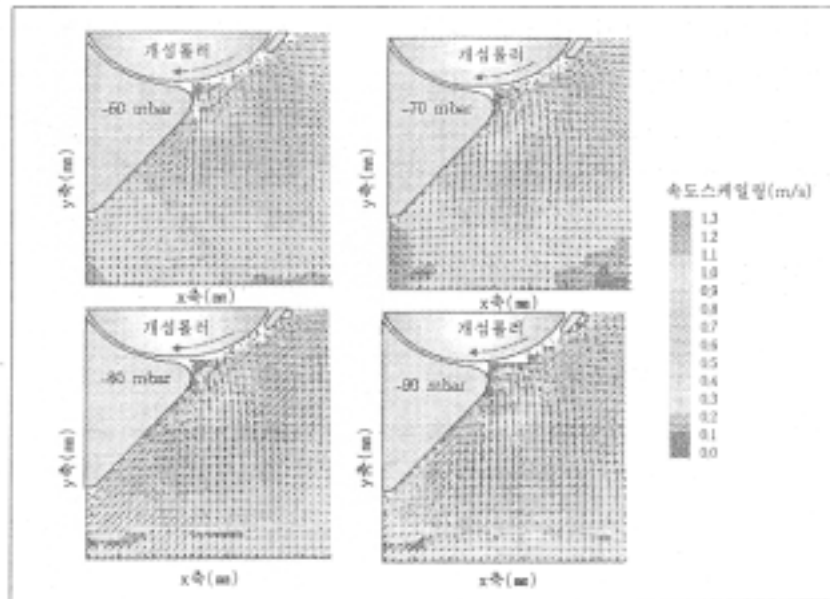
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 < 11> ,
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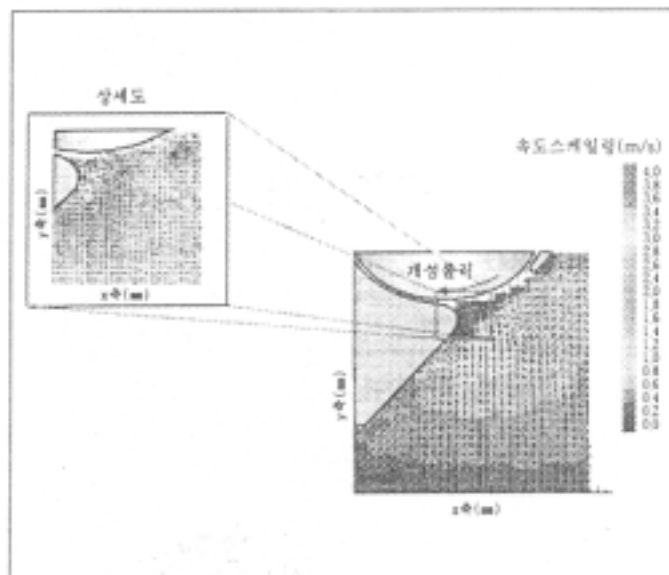
.
 < 6, 7> .
 < 12> 가 ,
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 가

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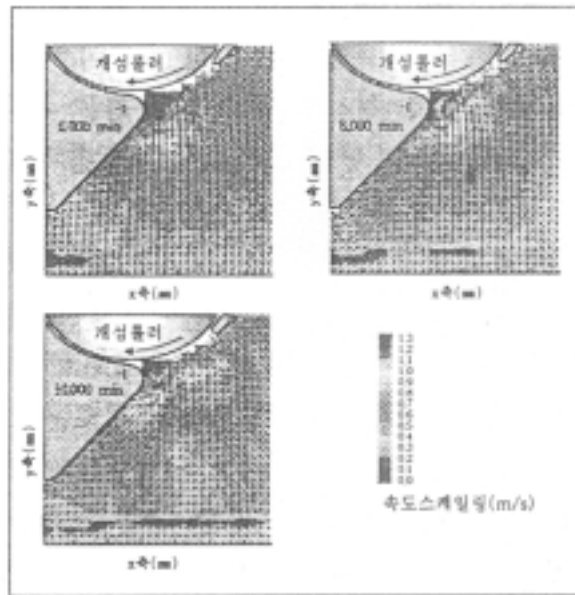
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 PIV
 . (, ,
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< 10>



< 11>



< 12> 가

7.

가 가

가 , < 13>

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(13). ,

Corobox SE 11

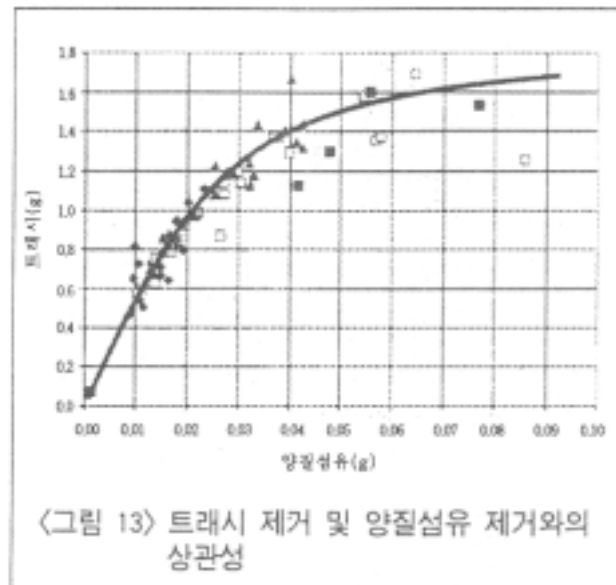
Spinbox

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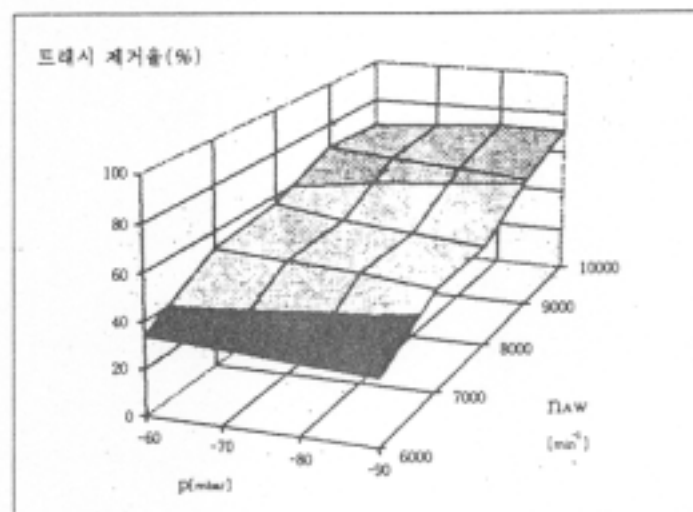
(

) .

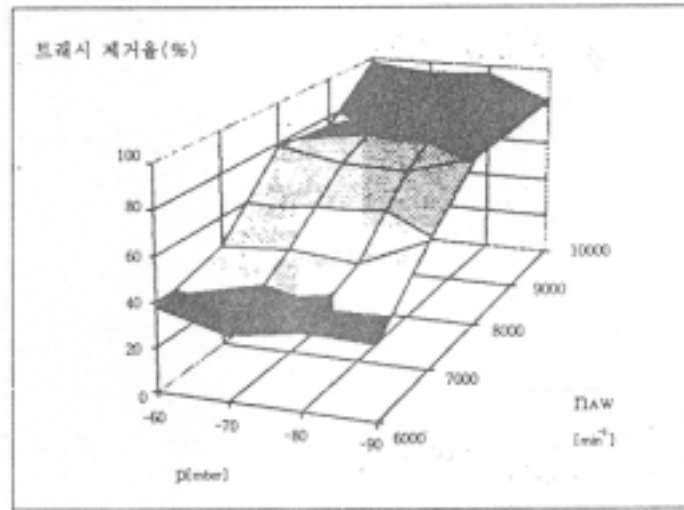
가 Spinbox . Spinbox SE 10
 , CoroBox SE 11 ,
 70% 90% (14, 15).



< 13>



< 14> Spinbox SE 10



< 15> Corobox SE 11

SA Grad = , $n_{AW} = n_{OR}$

Corobox SE 11

. Corobox SE 11

가
95% (前紡工
程)

Corobox SE11

USTER Tester UT4

가 . UT4

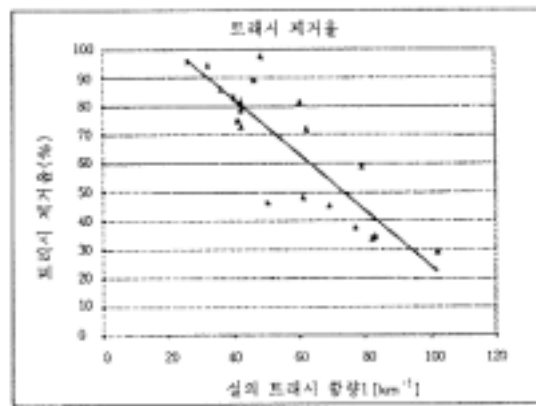
IPI

, (/km) .

< 16>

가

Corobox SE 11



< 16>

8.

가 가

가

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. Corobox SE 11

, Autocoro

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(Requirements of rotor spinning on the Autocoro: Melliand English 9/2002)