

## Compact Wet-end System

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## 지료 도입부의 기능

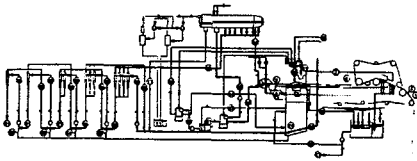
- 지료의 계량,공급
- 백수 혼합, 농도 조정
- 精選, 除塵
- 탈기
- 섬유 분산
- 整流
- 약품 첨가
- 온도 조절

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## 지료 도입부의 공정도



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## 지료 도입부의 설계 요점

1. 안정성(stability) : Q, P
2. 균일성(uniformity) : Cs
3. 청결성 : deposit, slime, string..
4. 섬유 손실 : screen, cleaner, rejects
5. 에너지 소비 : pumping, cleaner...
6. 기동성 : response, grade change

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## 지료도입부의 구성 요소(설비)

- |                       |                      |
|-----------------------|----------------------|
| 1. Machine chest pump | 7. Deaerator         |
| 2. Jordan refiner     | 8. Headbox feed pump |
| 3. Stuff box          | 9. Machine screen    |
| 4. Basis weight valve | 10. White water silo |
| 5. Fan pump           | 11. Seal pit         |
| 6. Centri-cleaner     | 12. Piping           |

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## 지료 도입부의 문제점

- 공정 용량 과다 : 응답 속도 지연  
지중 교체 손실
- 공정 안정성 : 관리 미흡  
계장, 제어 부적
- 에너지 소비 과다: 정선 설비 저효율  
overflow과용
- 설비비 과다 : 설비 용량  
설치 공간

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### 설비의 문제점

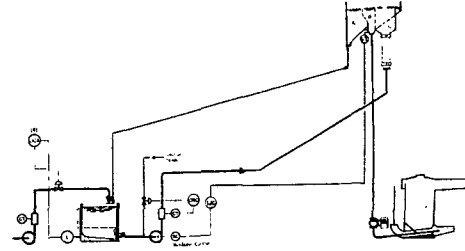
No.	설비	문제점
1	Mixing, machine chest	과용적, 혼합 불충분, 동력(교반, 펌핑)소요
2	Stock feeding	overflow 폐단, control time lag, CRC 회색
3	Stock dilution, Chemical dosing	mixing 불량, 영향 변동
4	Cascade cleaners	저효율, 동력 소비, 최적 작업 근란
5	Screens	저효율, 동력 소비
6	Deaeration tank	과용적, 설치공간, 동력 소비, overflow
7	W.W. silo	과용적, 혼합 불량, turbulence
8	Seal pit	과용적, 오염, 탈수 계량 난

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### Stock feeding system(1)

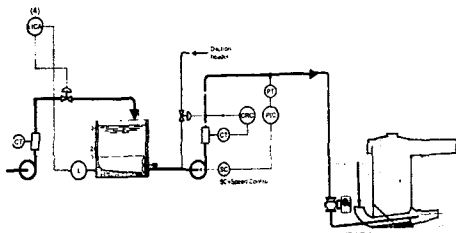


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### Stock feeding system(2)

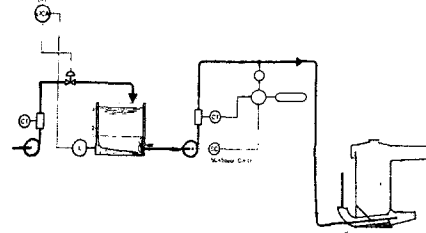


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### Stock feeding system(3)

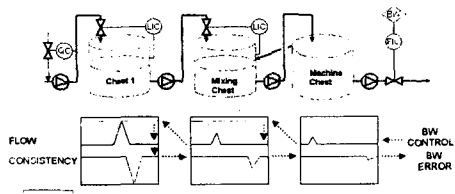


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### Disturbance chain



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### Valmet Opti Feed System

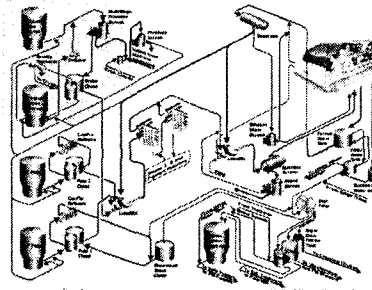
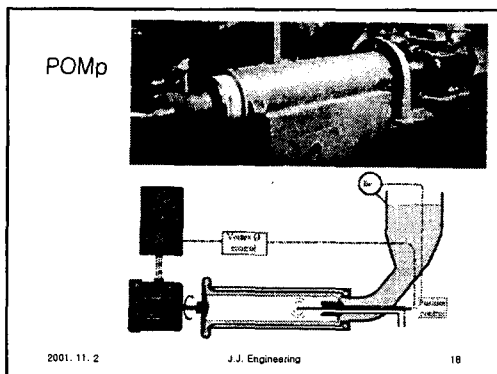
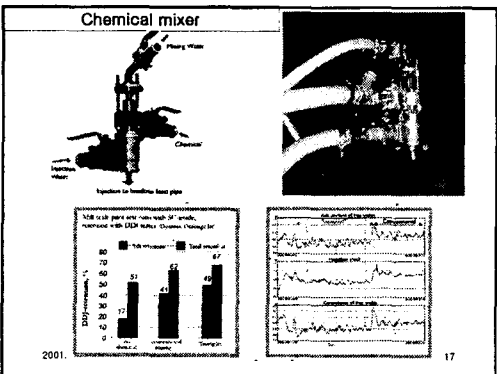
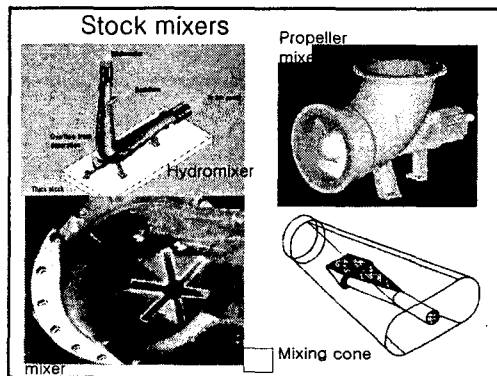
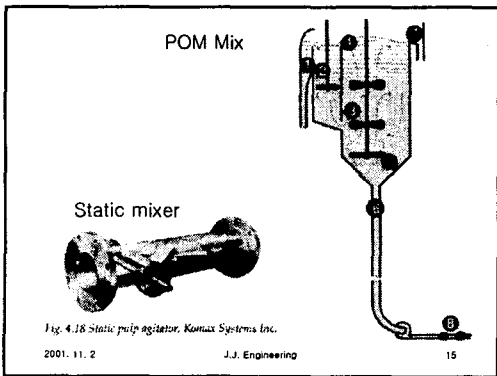
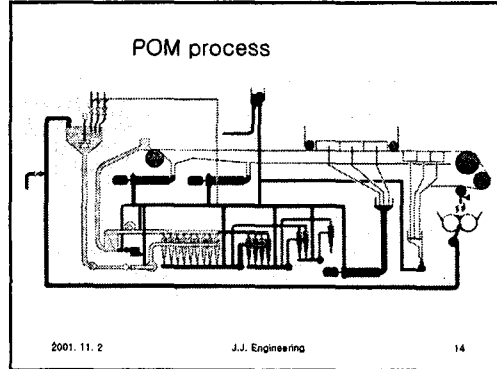
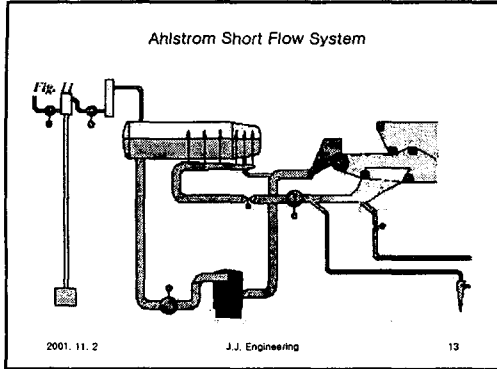


Figure 3. Opti-feed's modular unit and control the pumped flow pump.

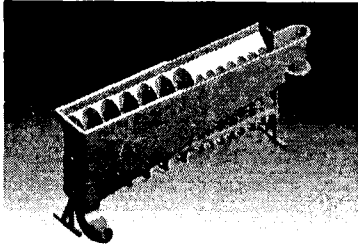
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### POMlock M



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### Wet-end/SC 공정의 합리화 방안(1)

#### 1. 공정 용량의 축소:

- 1) mixing/machine chest: bone dry feed forward control of stock feeding + high intensity in-line mixer
- 2) W.W. silo: real time deaeration + white water distribution header
- 3) seal pit: new open design

#### 2. 에너지 절약:

- 1) 공정 축소
- 2) counter current cascade cleaner → open cascade system / dual dilution system
- 3) 유량 축소 : overflow 제거  
백수의 합리적 분배  
진한 지료 농도 상승

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### Wet-end/SC 공정의 합리화 방안(2)

#### 3. 공정 안정화:

- 1) 원질 회분 원천 관리(파지, 묶은 지료)
- 2) BD feed forward control
- 3) W.W. silo 철폐
- 4) 지료, 약품 혼합 개선
- 5) process monitoring/ auto control (charge, retention)

#### 4. 정선 효율 향상

- 1) Deaeration: real-time deaeration(POMp)
- 2) 미결 과제
  - a. cleaner: 원류 cleaning
  - b. screen: thick stock screening

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