

산업차량용 용접구조물의 가속수명시험 사례

2001. 6. 22

대우종합기계(주) 신뢰성평가센터

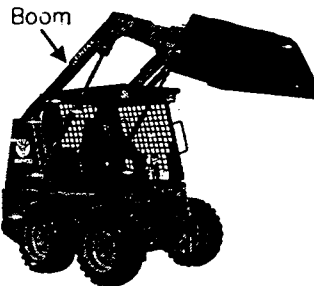
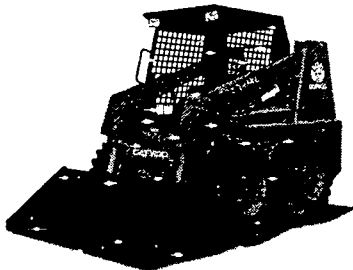
■ 시험목적

Skid Steer Loader

소규모 도로공사

축산/과수 작업

야산 지반정리



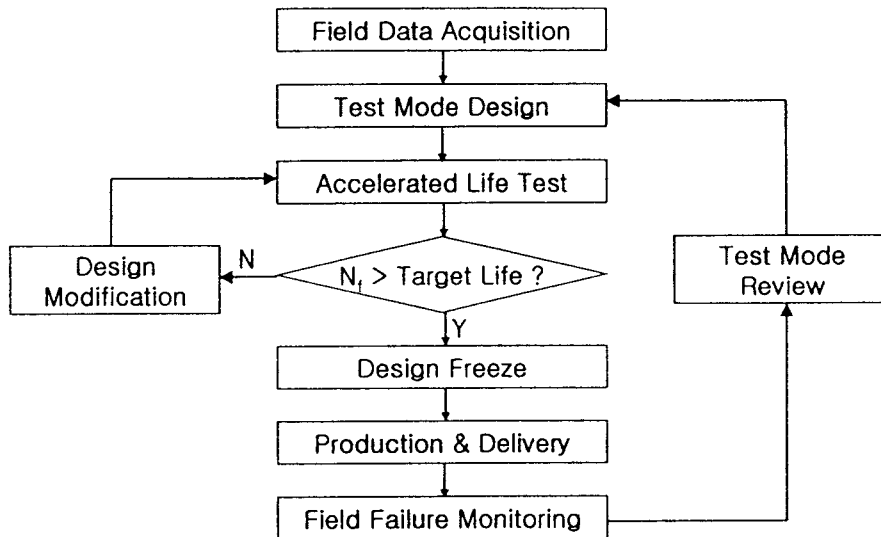
Boom

가장 가혹한 부하를 받는 구조물
이전 기종에서 다수의 하자 발생
신기종 구조물의 보증수명 확보

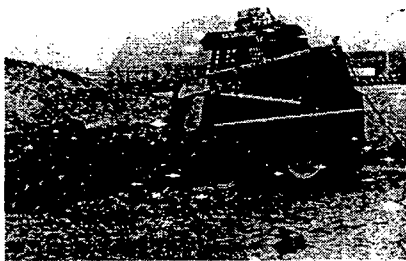


개발기간단축을 위한 가속수명시험

수평평가 Flow

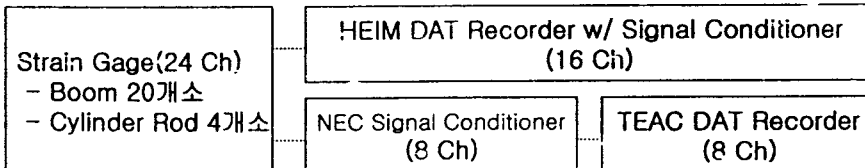


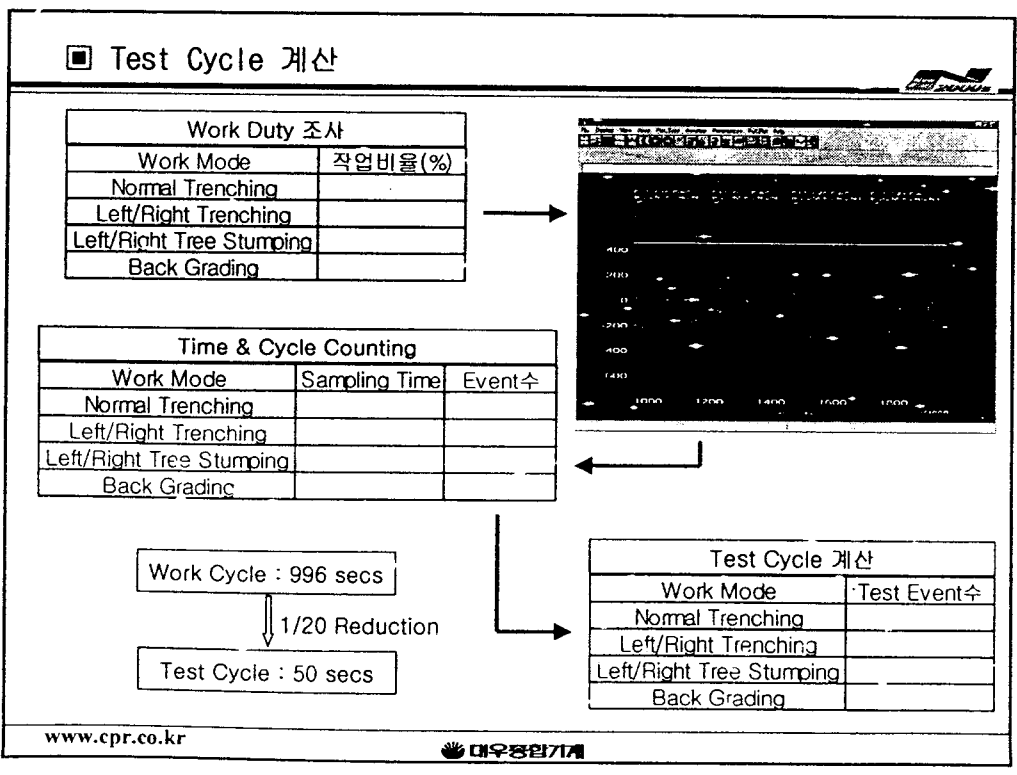
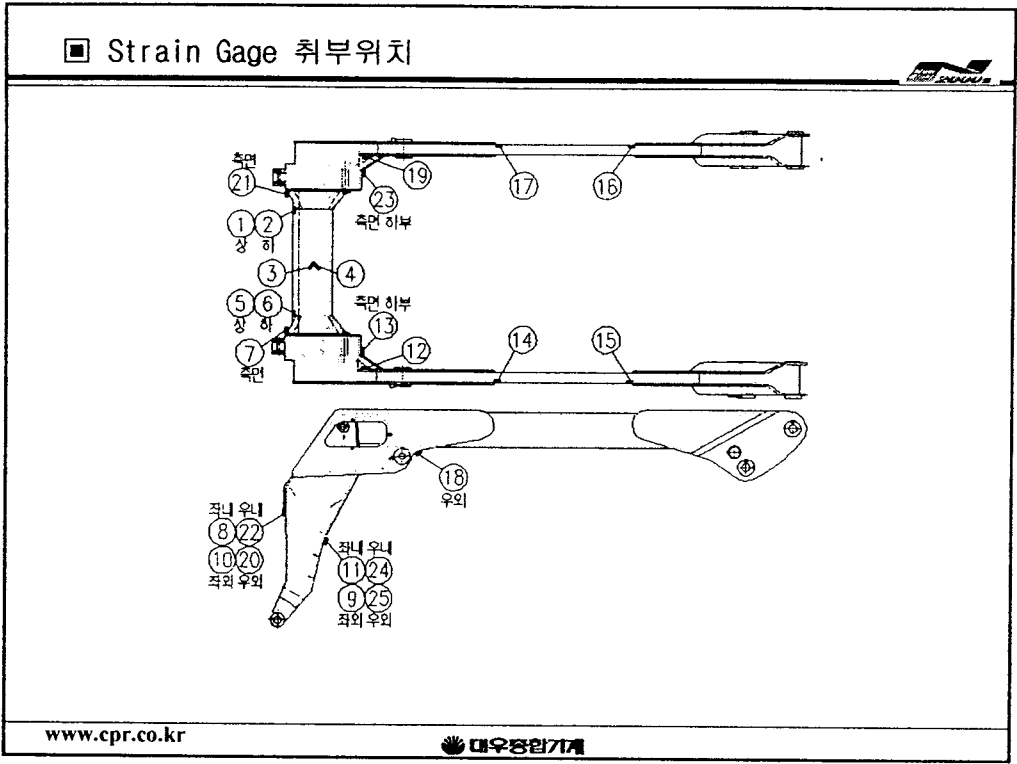
Field Data Acquisition



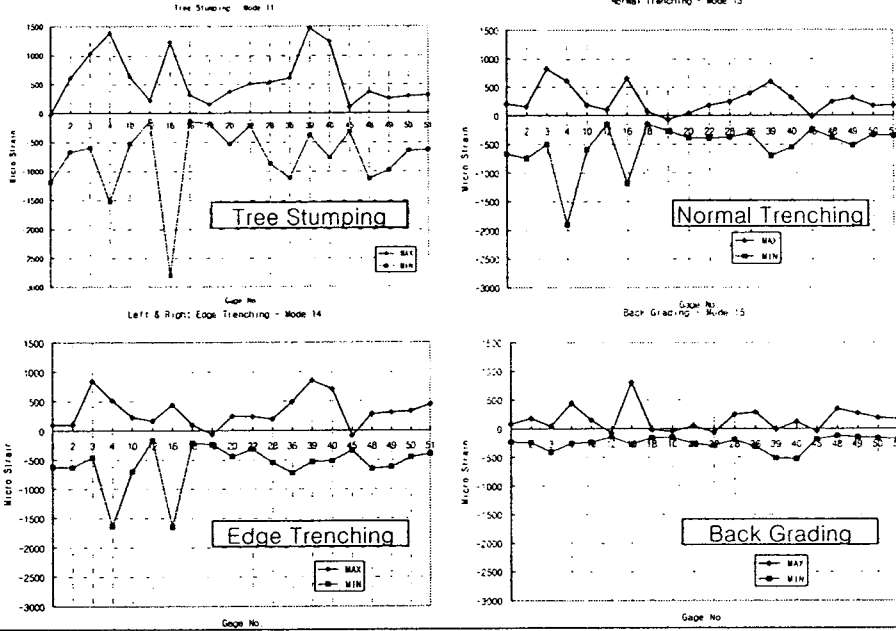
Typical Work Modes

- Normal Trenching
- Left/Right Edge Trenching
- Left/Right Tree Stumping
- Back Grading





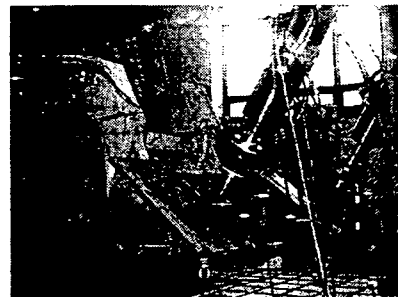
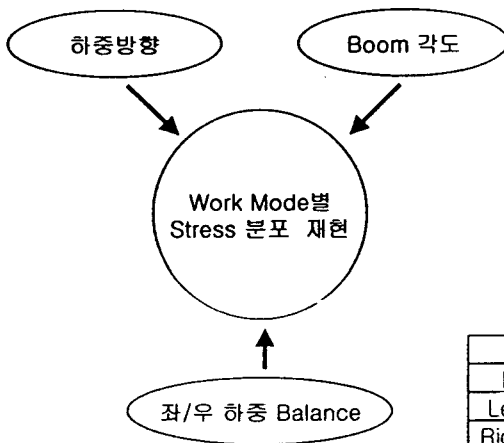
Work Mode별 Max.-Min. Stress



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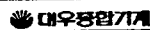


Test Mode Design



Work Mode	Test Force(kgf)	
	Left Cyl.	Right Cyl.
Normal Trenching		
Left Edge Trenching		
Right Edge Trenching		
Left Tree Stumping		
Right Tree Stumping		
Back Grading		

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■ 시험결과



3 Places below Target Life of 6,000 Hrs



Test Life	246 Hrs	273 Hrs	290 Hrs
Est. Field Life	4,920 Hrs	5,460 Hrs	5,800 Hrs



Design Modification

■ 결론



- 1) 300 hours of ALT was required to verify 6,000 hours of field life.
- 2) Target life was not achieved at 3 places, needed design modifications.