

Stevin: 6-98-15

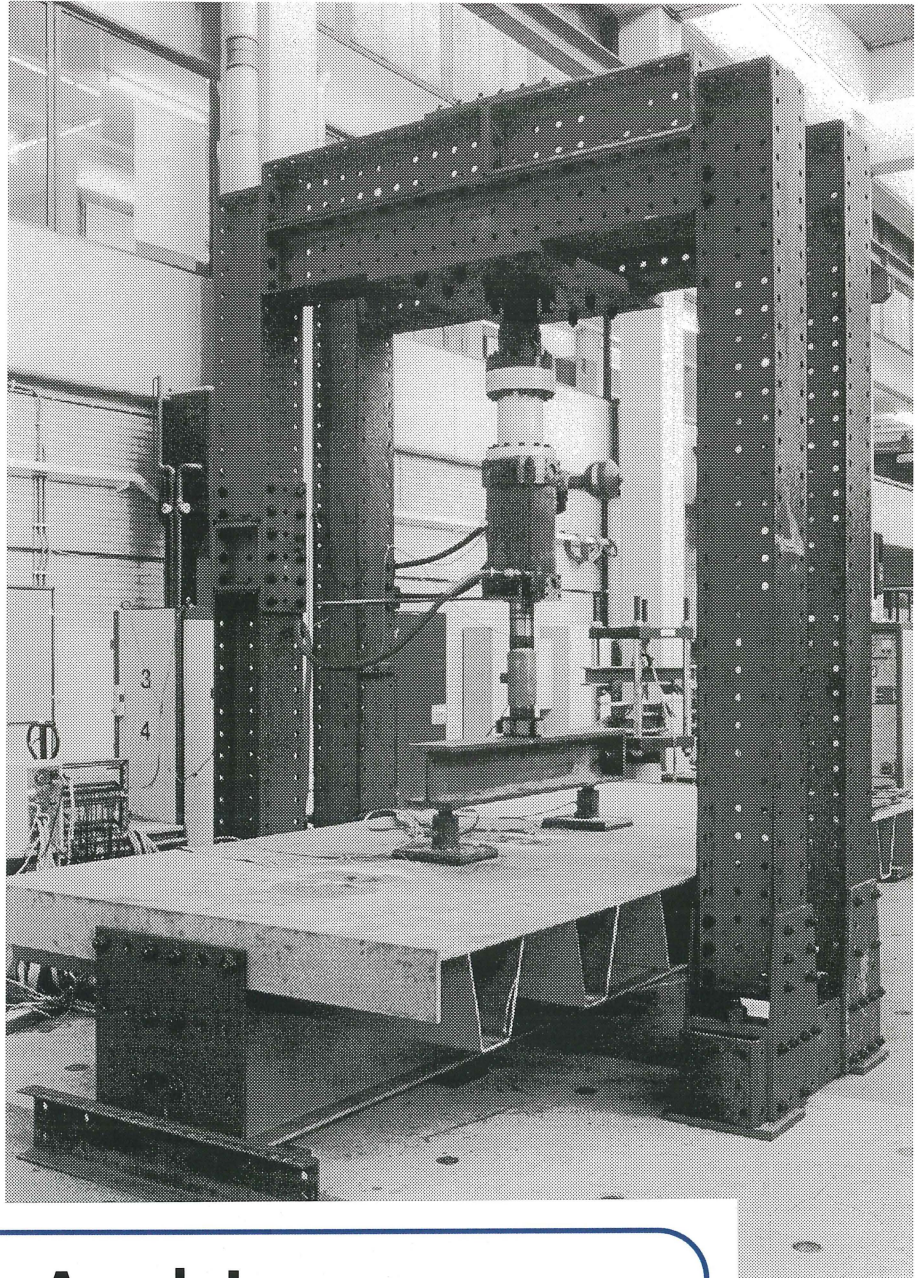
CONCEPT

July 1998

**LABORATORY TESTS ORTHOTROPIC DECK
BASCULE BRIDGE VAN BRIENENOORD**

Appendices

M.H. Kolstein



Archives

Steel Structures

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Status: Concept

**LABORATORY TESTS ORTHOTROPIC DECK
BASCULEBRIDGE VAN BRIENENOORD**

Appendices

July 1998

M.H. Kolstein

PRINCIPAL:

Ministerie van Verkeer en Waterstaat - Bouwdienst Rijkswaterstaat
Nr.: BDN-3324
Projectcode: 3146
Datum: 19-12-97

KEYWORDS:

Steel bridges, orthotropic decks, fatigue

TU-Delft

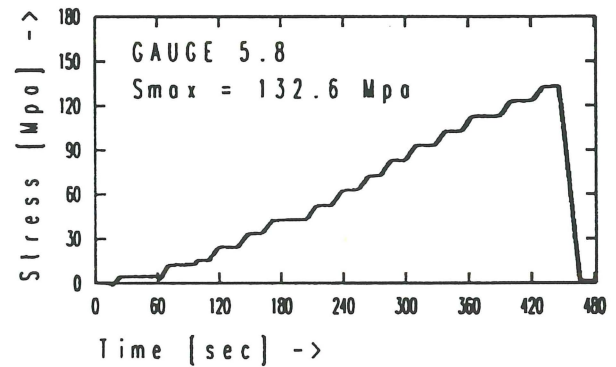
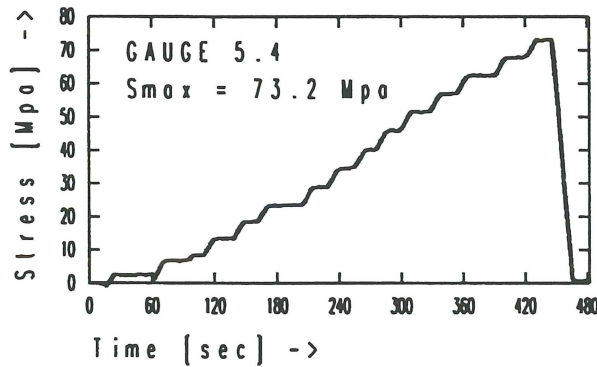
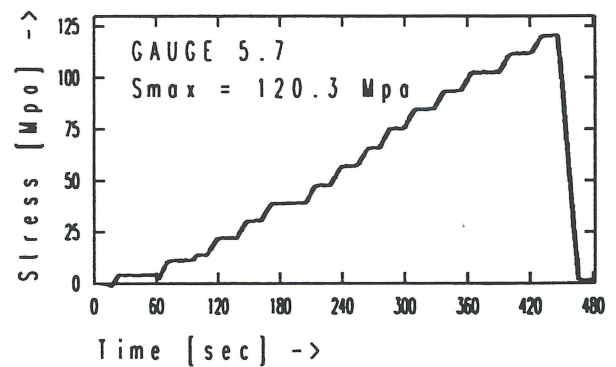
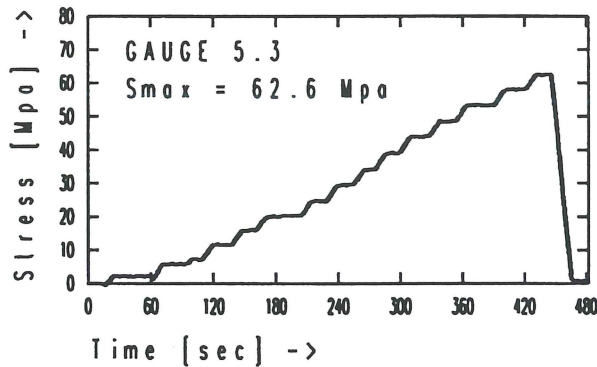
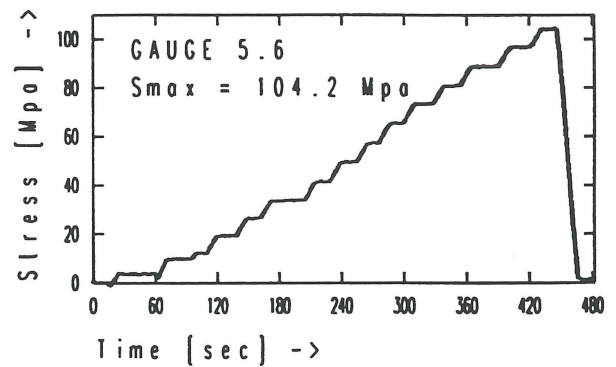
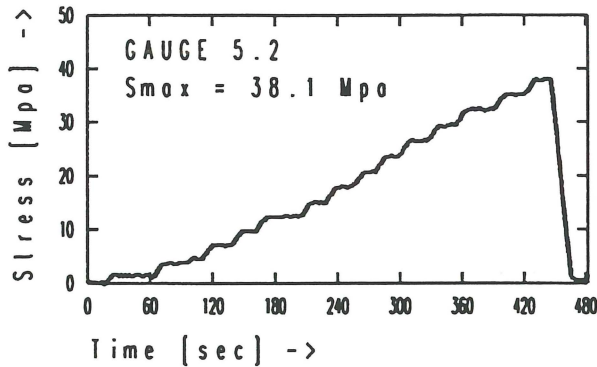
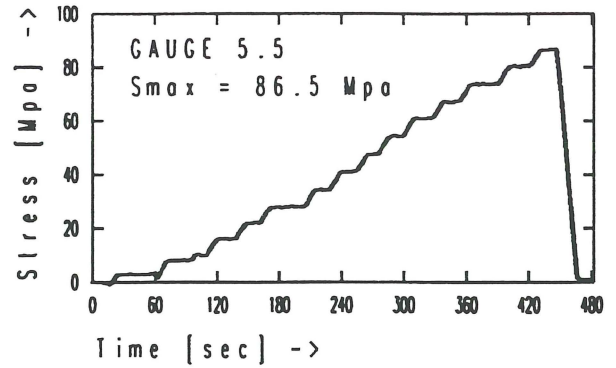
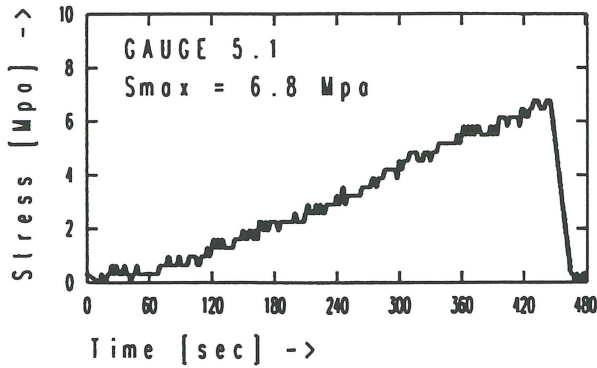
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APPENDICES

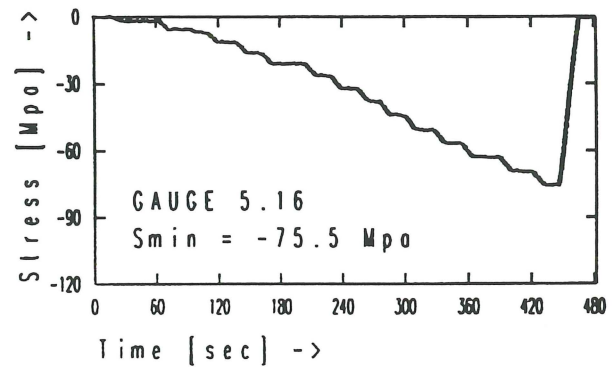
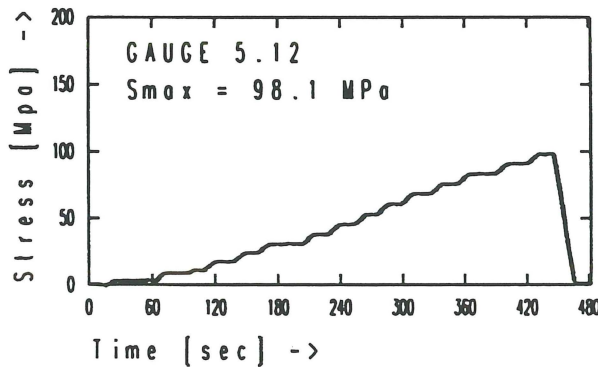
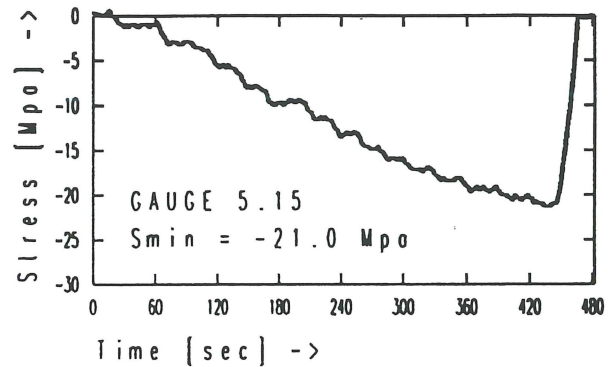
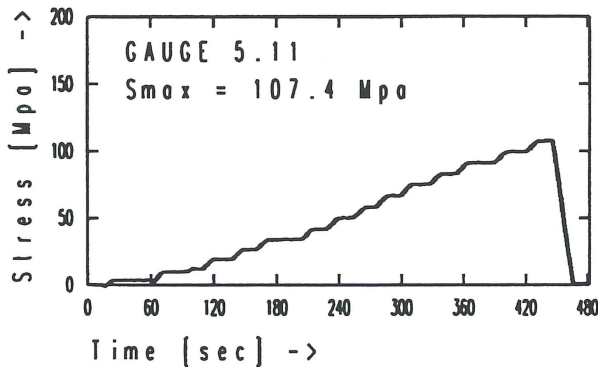
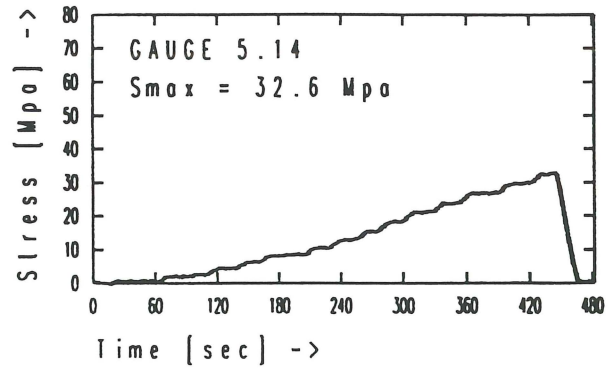
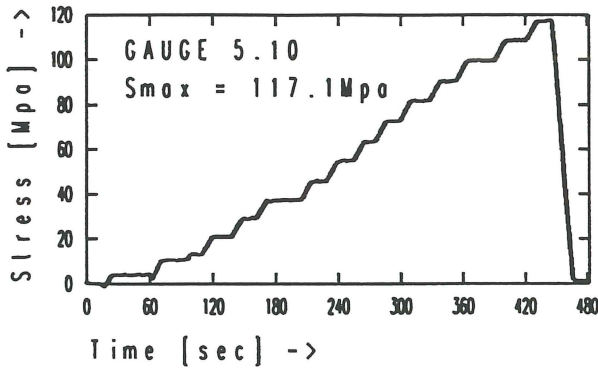
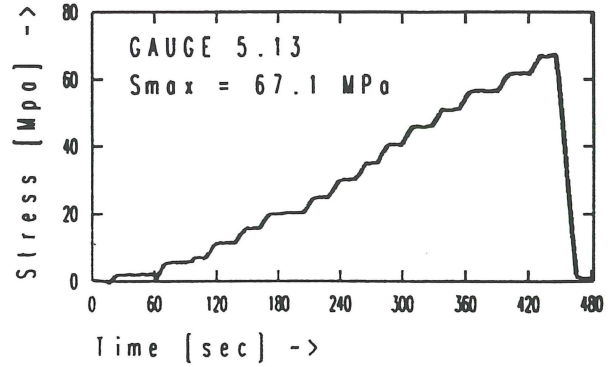
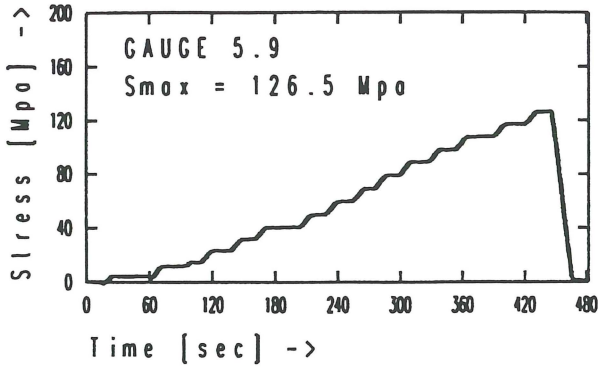
BIRKHOFF PANEL									
Appendix	Test nr	Static Tests Trough 5 & 7							
		Different Tyres Trough 5				Different Tyres Trough 7			
		Fmax kN	Width mm	Length mm	Stress N/mm ²	Fmax kN	Width mm	Length mm	Stress N/mm ²
A	1	- 35.4	270	320	0.410	- 35.7	270	320	0.413
B	2	- 14.1	250	160	0.353	- 14.3	250	160	0.358
C	3	- 32.8	290	250	0.452	- 31.7	290	250	0.437
D	4	- 24.3	250	250	0.389	- 24.4	250	250	0.390
E	5	- 24.1	225	250	0.428	- 25.6	225	250	0.455
Overloading Trough 5									
F	6	- 113.7	270	320	1.32				
Fatigue Tests (Width 270 mm, Length 320 mm)									
Trough 5					Trough 7				
		Fmax kN	Fmin kN	ΔF kN		Fmax kN	Fmin kN	ΔF kN	
G	7	- 85.0	- 4.8	80.2		- 87.8	- 7.0	80.9	
Trough 4					Trough 6				
		Fmax kN	Fmin kN	ΔF kN		Fmax kN	Fmin kN	ΔF kN	
H	8	- 61.5	- 3.7	57.8		- 62.7	- 4.1	58.6	

HOLLANDIA PANEL									
Appendix	Test nr	Static Tests Trough 5 & 7							
		Overloading Trough 5				Overloading Trough 7			
		Fmax kN	Width mm	Length mm	Stress N/mm ²	Fmax kN	Width mm	Length mm	Stress N/mm ²
-	9	- 200 ?	270	320		- 200 ?	270	320	
		Different Tyres Trough 5				Different Tyres Trough 7			
I	10	- 70.4	270	320	0.815	- 69.2	270	320	0.801
J	11	- 30.2	250	160	0.755	- 29.4	250	160	0.735
K	12	- 65.9	290	250	0.9	- 64.9	290	250	0.895
L	13	- 50.2	250	250	0.8	- 49.0	250	250	0.784
M	14	- 50.4	225	250	0.896	- 49.2	225	250	0.875
Fatigue Tests (Width 270 mm, Length 320 mm)									
Trough 5					Trough 7				
		Fmax kN	Fmin kN	ΔF kN		Fmax kN	Fmin kN	ΔF kN	
N	15	- 88.0	- 8.0	80.0		- 86.25	- 7.75	78.5	
Trough 4					Trough 6				
		Fmax kN	Fmin kN	ΔF kN		Fmax kN	Fmin kN	ΔF kN	
P	17	-	-	-				80.0	

1st BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 35.4 kN
LOADED AREA: Width 270mm Length 320mm
SURFACE STRESS: 0.410 N/mm²



1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 35.4 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 0.410 N/mm²

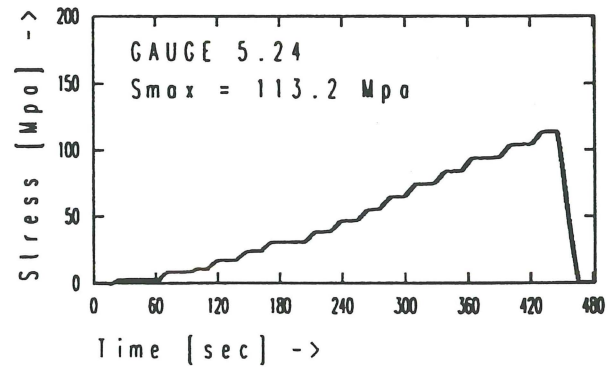
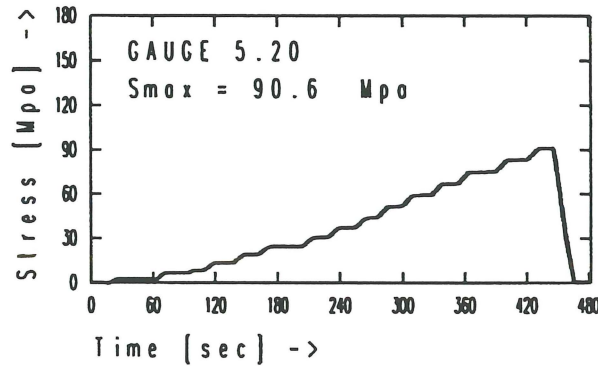
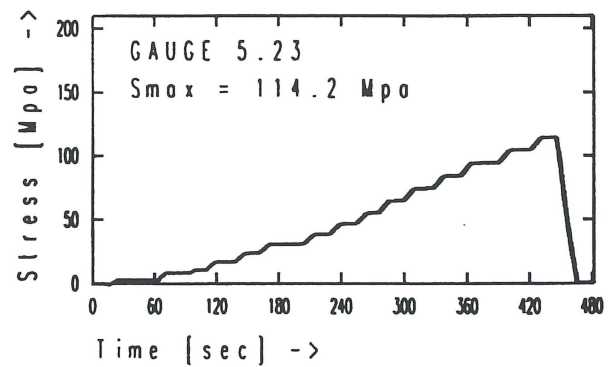
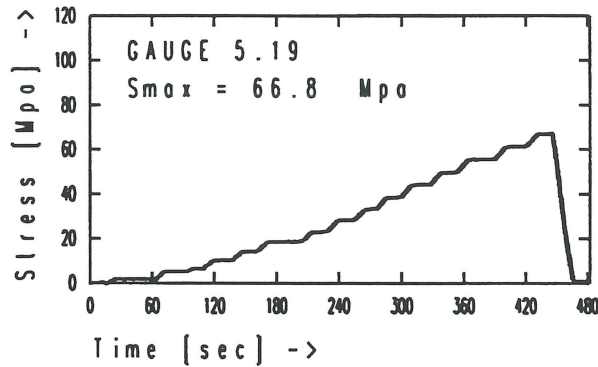
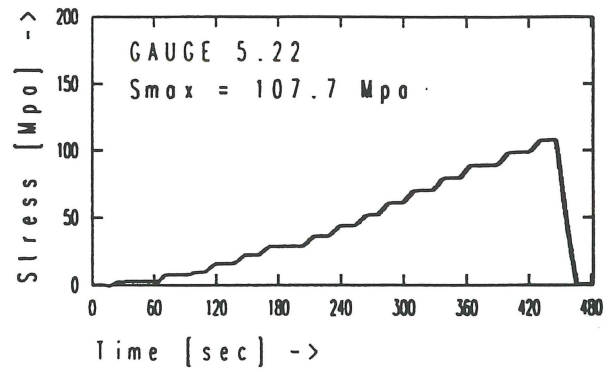
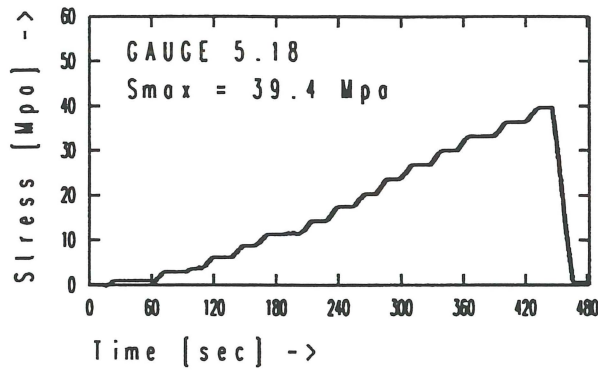
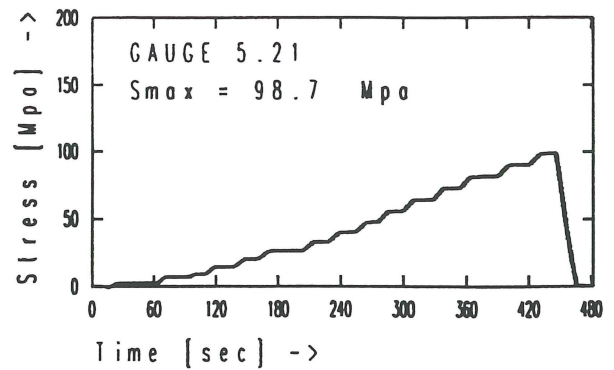
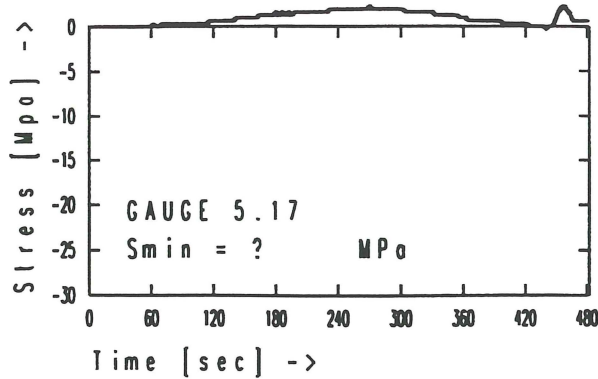


1st BRIDGEPANEL -VAN BRIENENOORD-

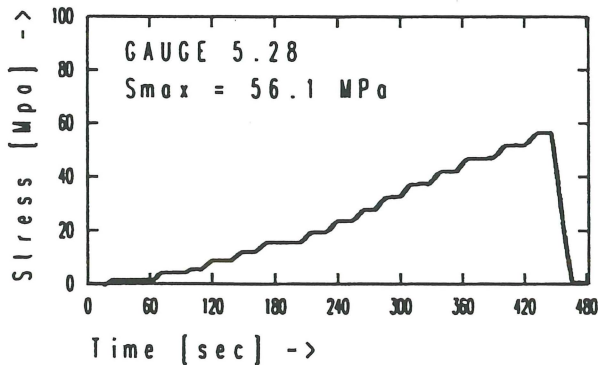
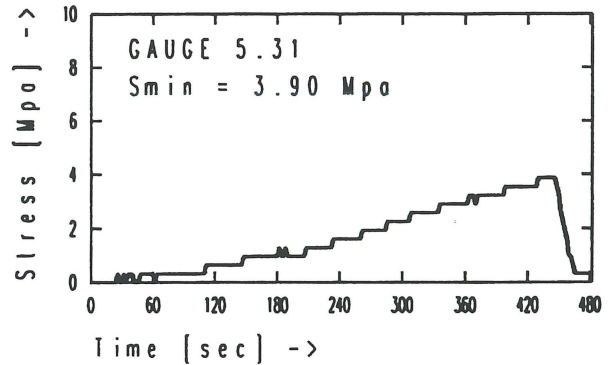
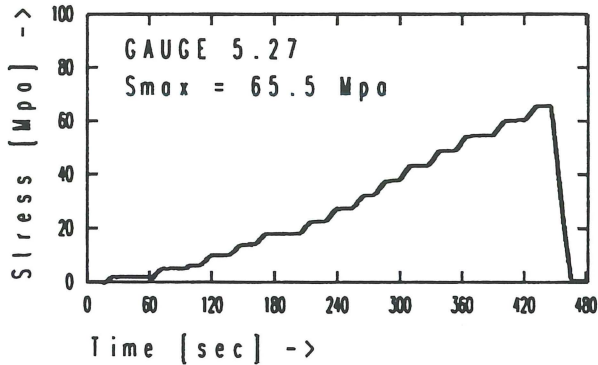
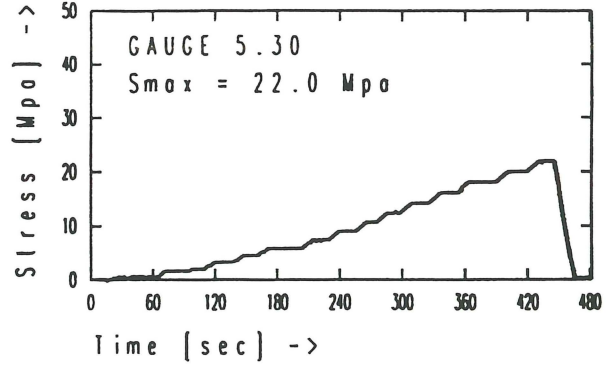
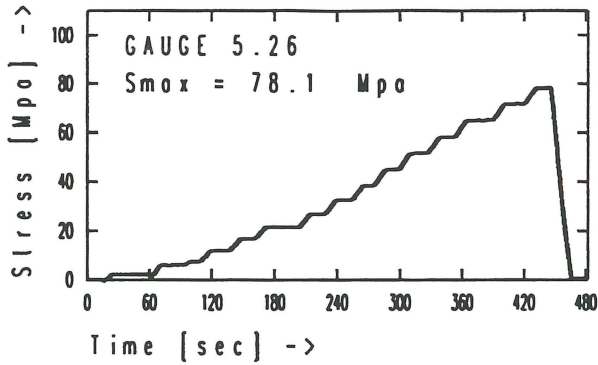
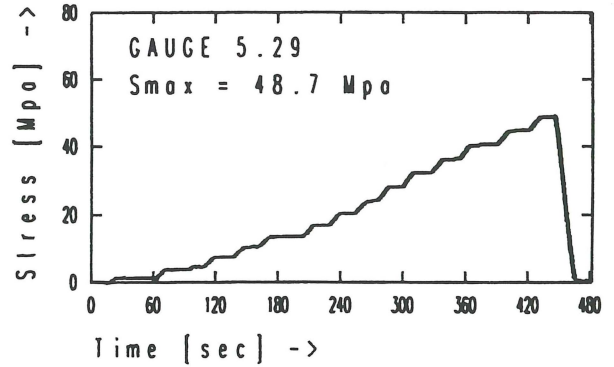
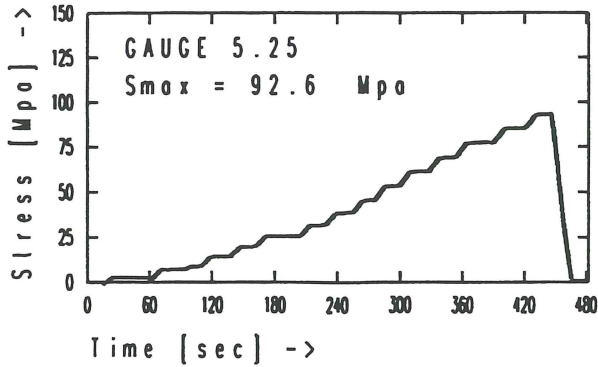
STATIC LOADING: F_{max} 35.4 kN

LOADED AREA: Width 270mm Length 320mm

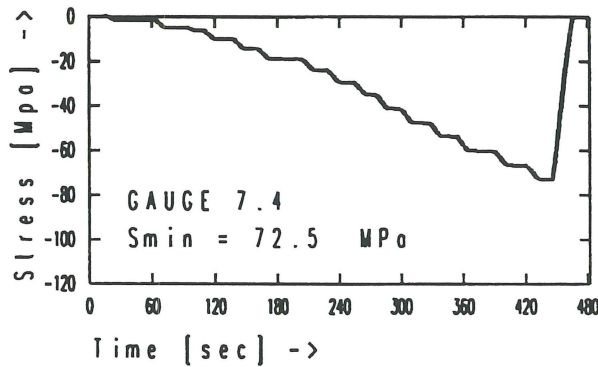
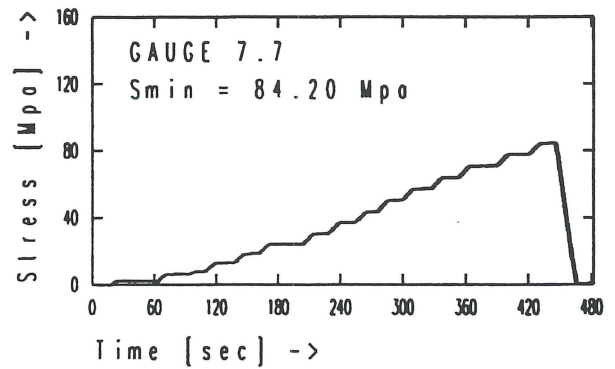
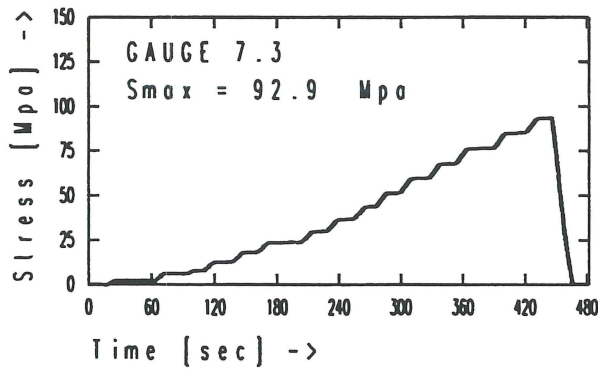
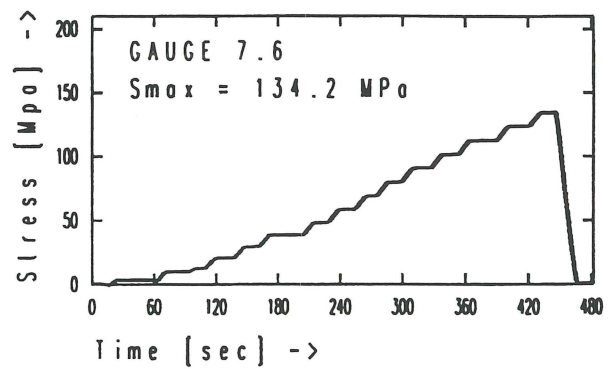
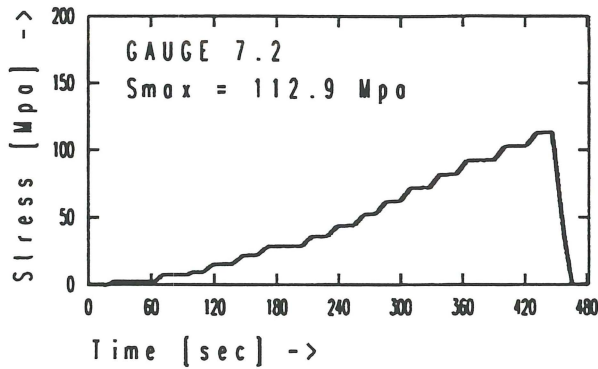
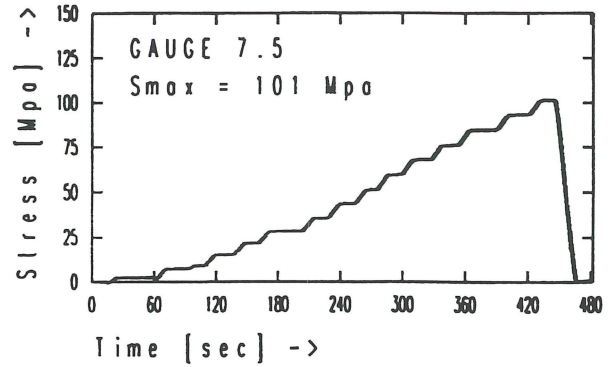
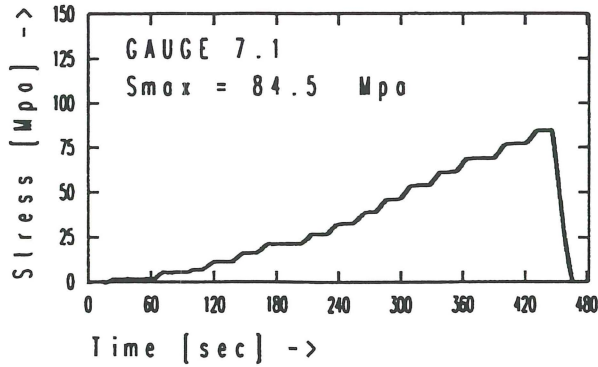
SURFACE STRESS: 0.410 N/mm²



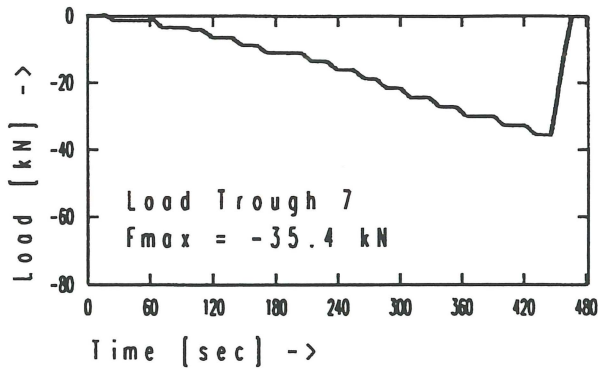
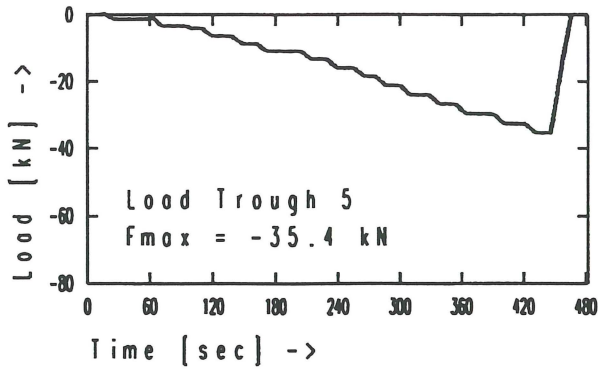
1st BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 35.4 kN
LOADED AREA: Width 270mm Length 320mm
SURFACE STRESS: 0.410 N/mm²



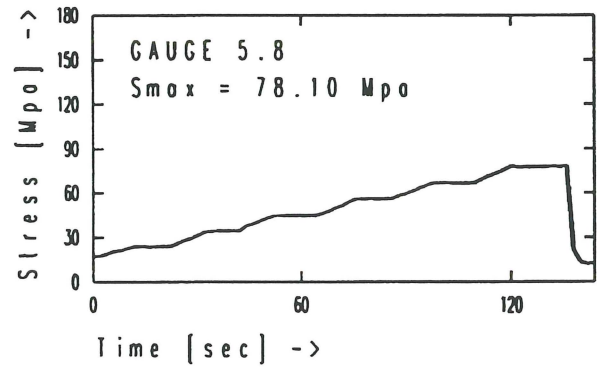
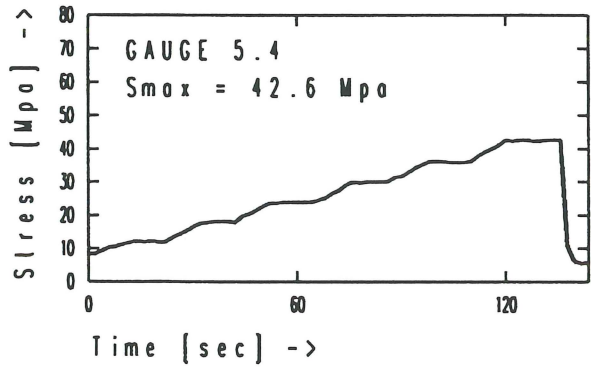
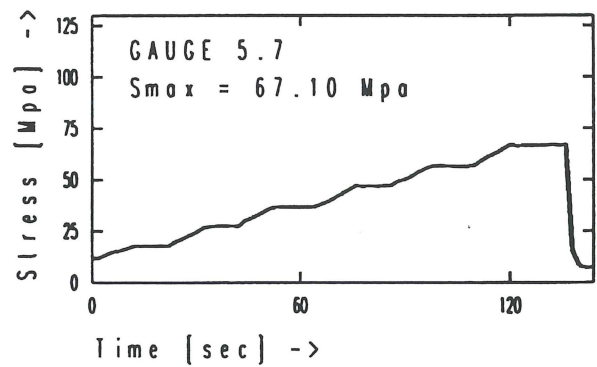
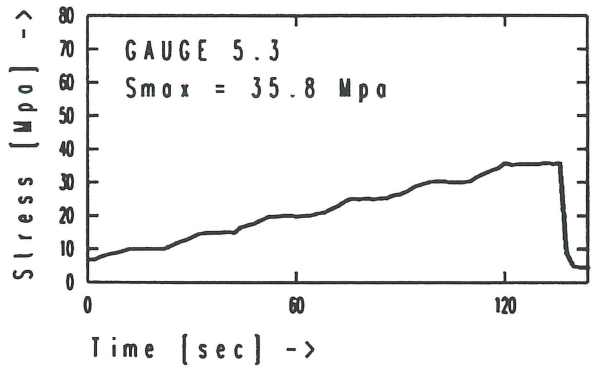
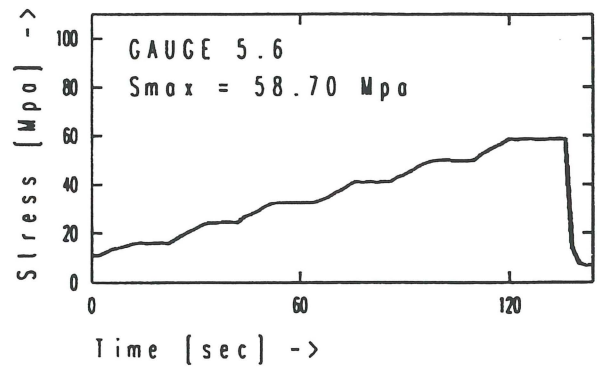
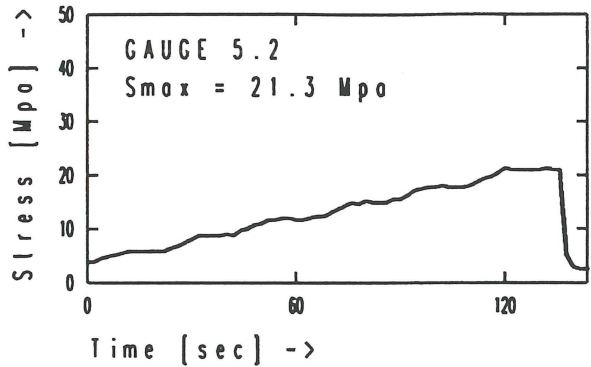
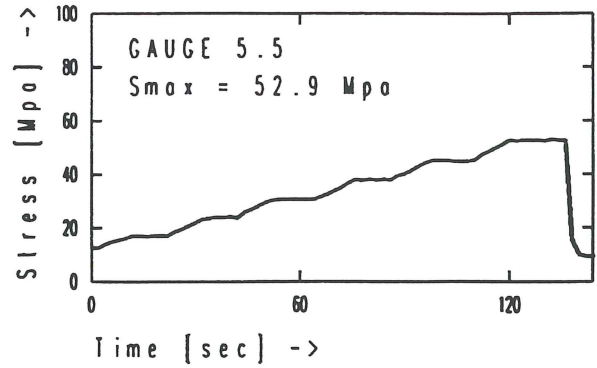
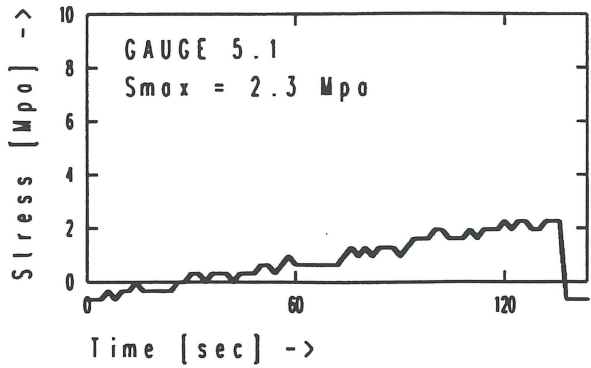
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STATIC LOADING: F_{max} 35.4 kN
LOADED AREA: Width 270mm Length 320mm
SURFACE STRESS: 0.410 N/mm²



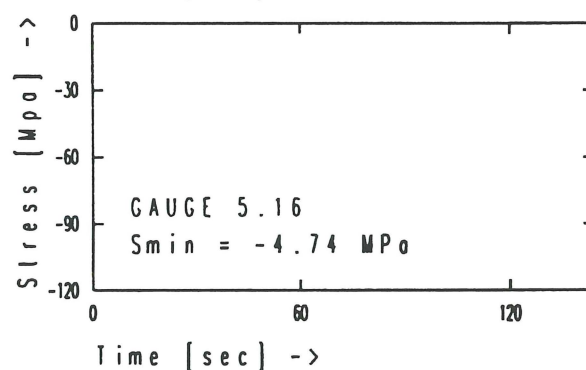
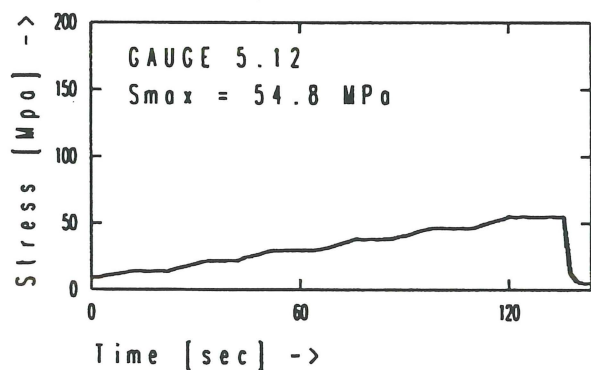
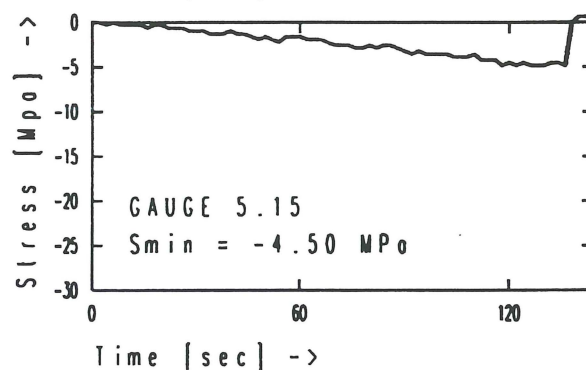
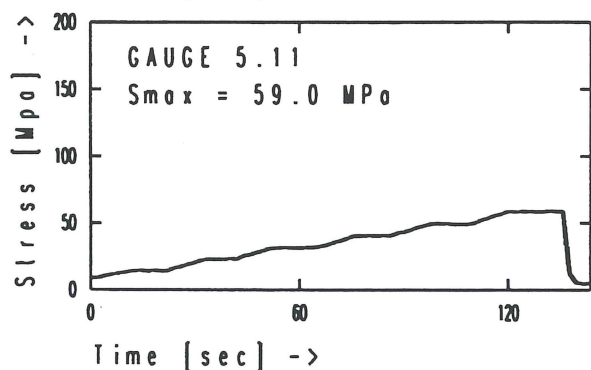
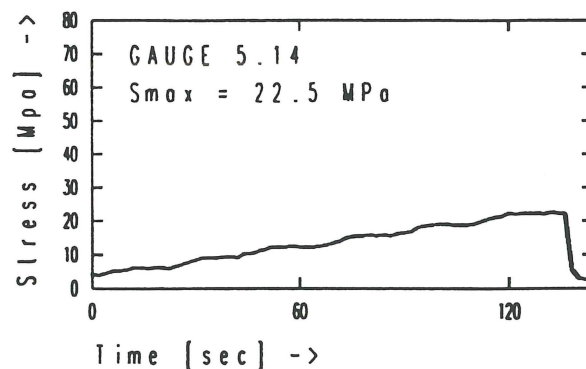
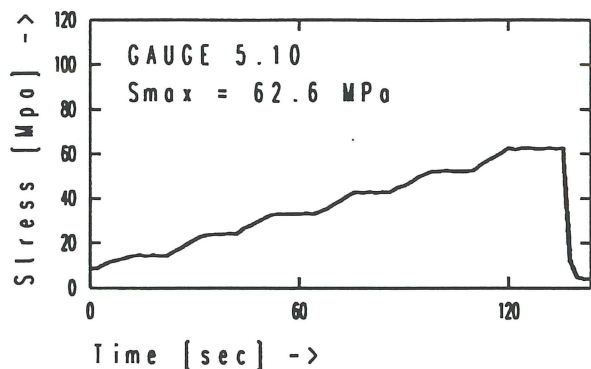
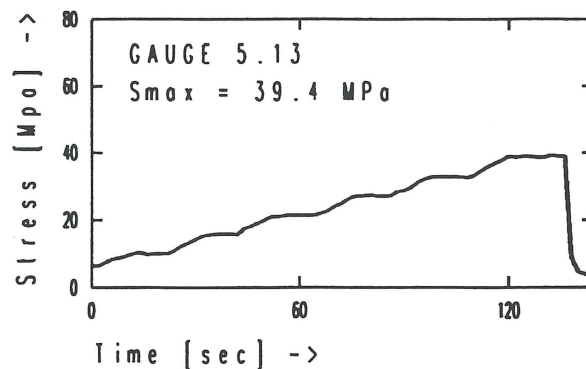
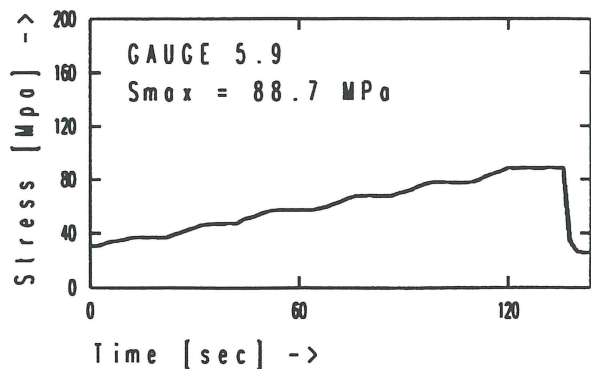
1st BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 35.4 kN / 35.4 kN
LOADED AREA: Width 270mm Length 320mm
SURFACE STRESS: 0.410 N/mm² / 0.410 N/mm²



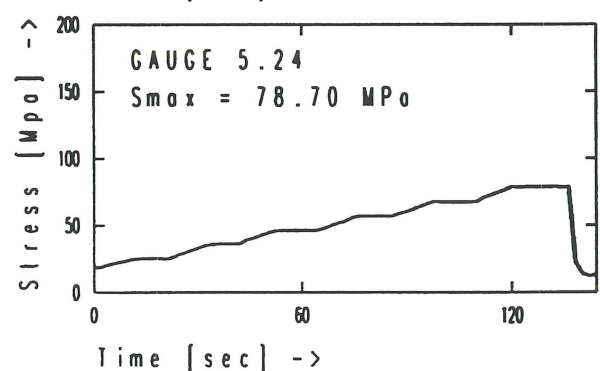
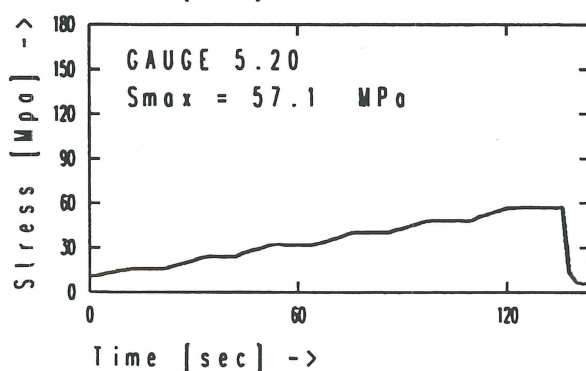
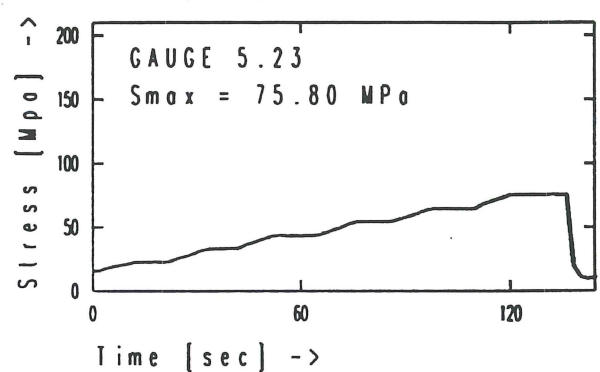
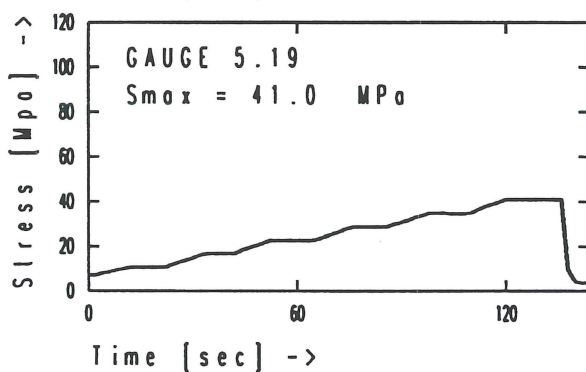
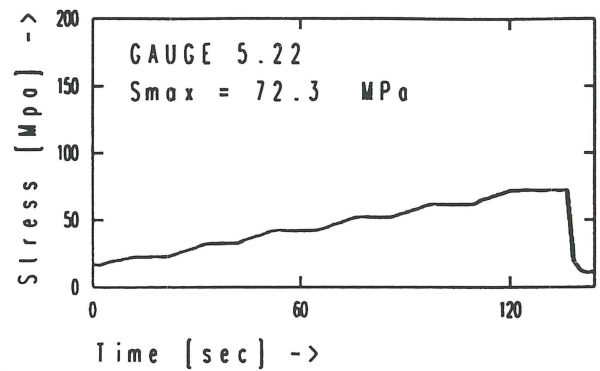
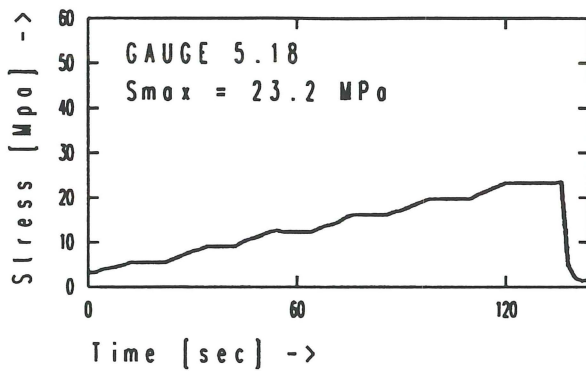
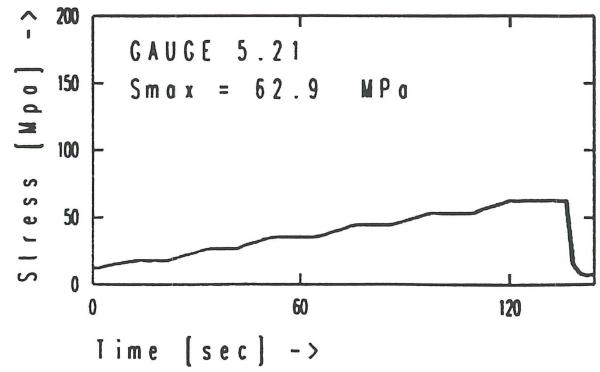
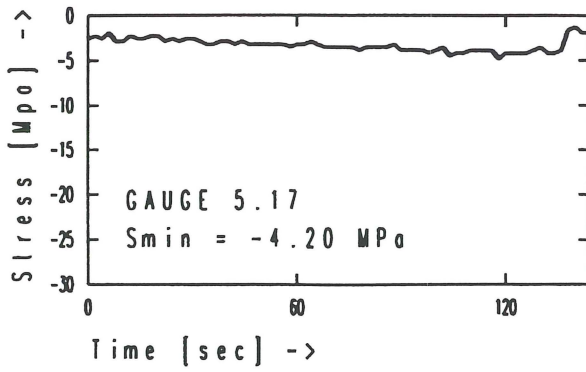
1st BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 14.1 kN
LOADED AREA: Width 270mm Length 160mm
SURFACE STRESS: 0.353 N/mm²



1st BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 14.1 kN
LOADED AREA: Width 250mm Length 160mm
SURFACE STRESS: 0.353 N/mm²



1st BRIDGE PANEL -VAN BRIENENOORD-
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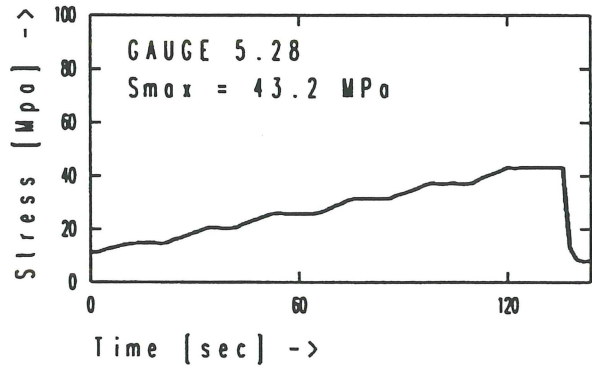
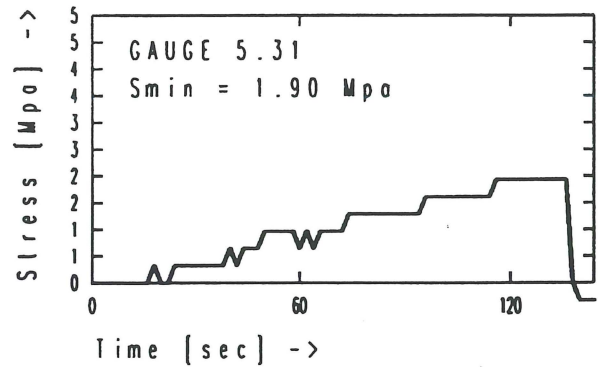
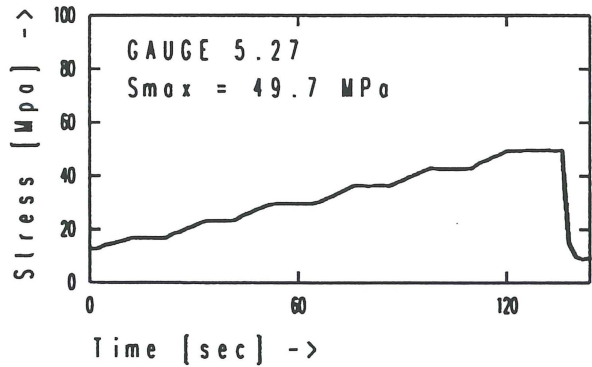
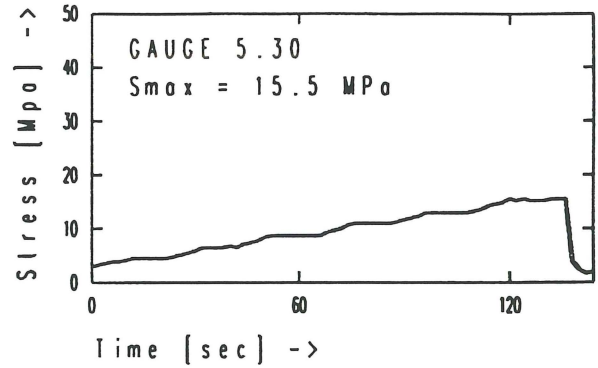
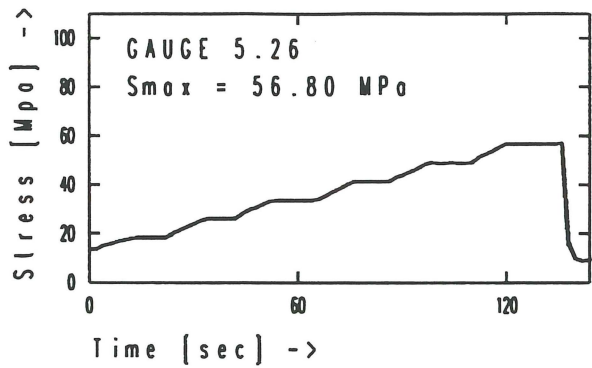
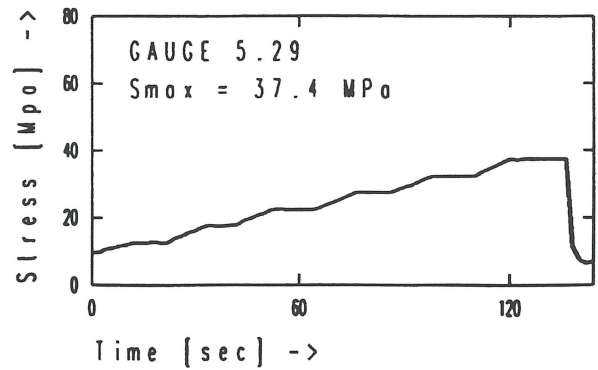
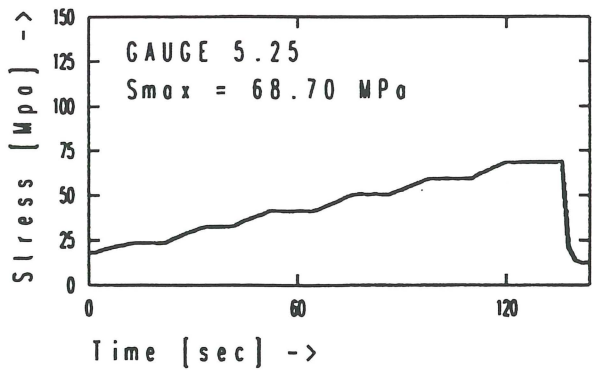


1st BRIDGEPANEL -VAN BRIENENOORD-

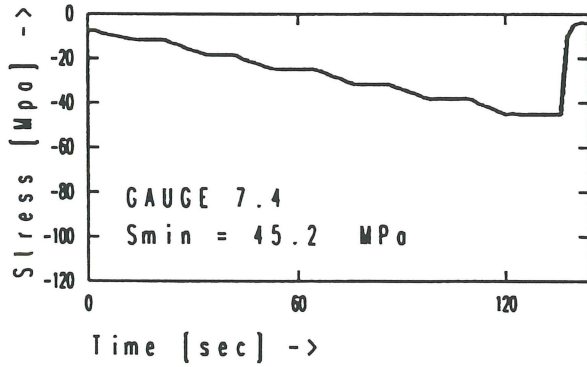
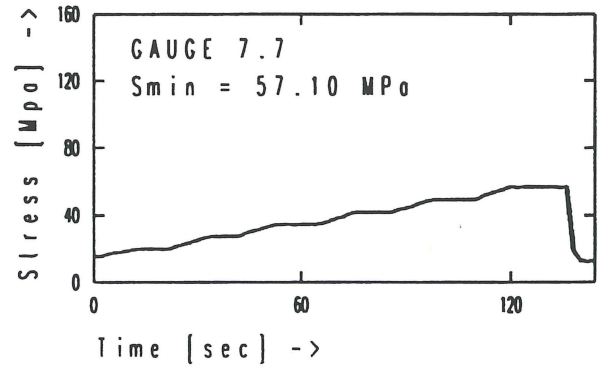
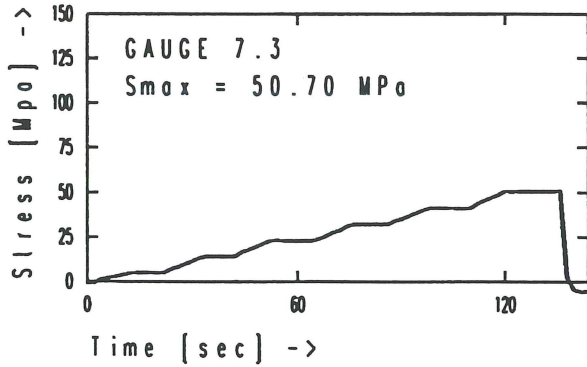
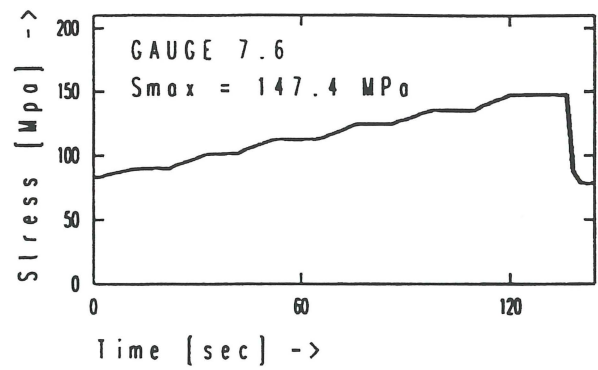
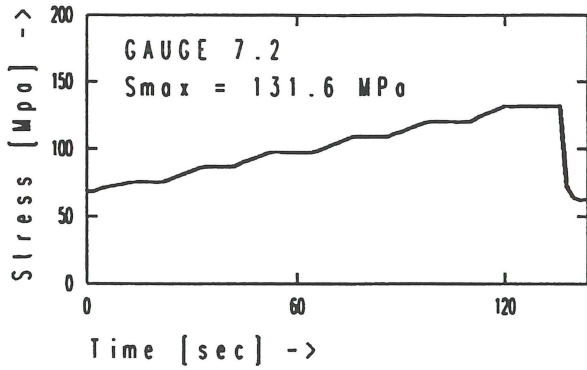
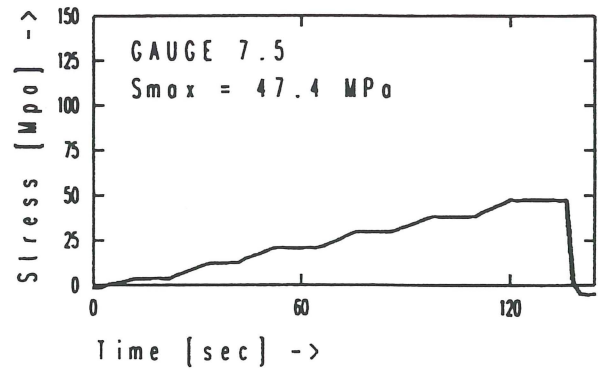
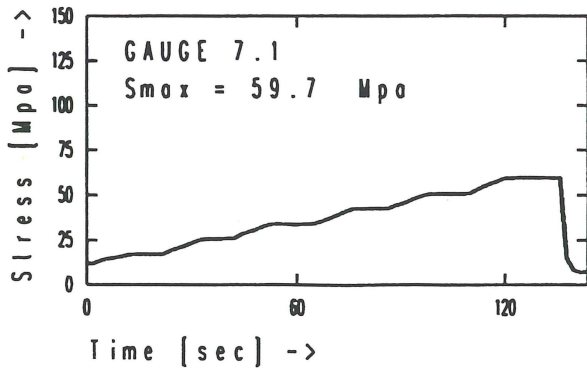
STATIC LOADING: F_{max} 14.1 kN

LOADED AREA: Width 250mm Length 160mm

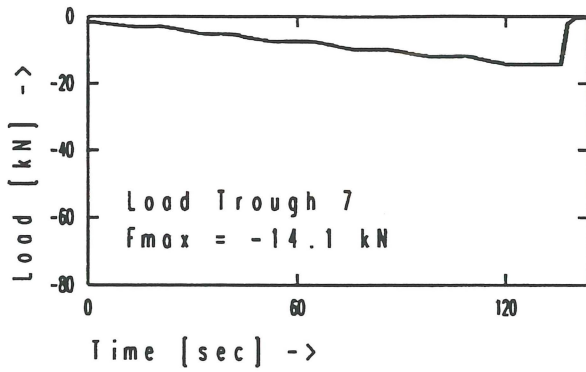
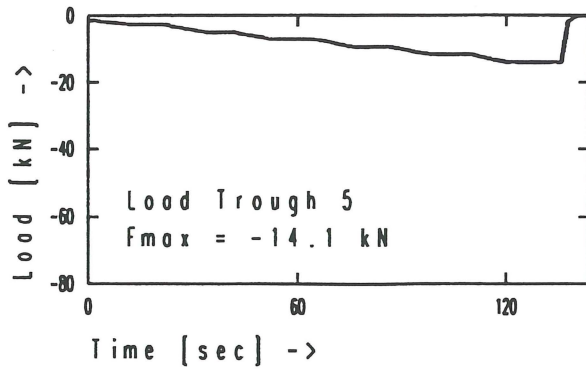
SURFACE STRESS: 0.353 N/mm²



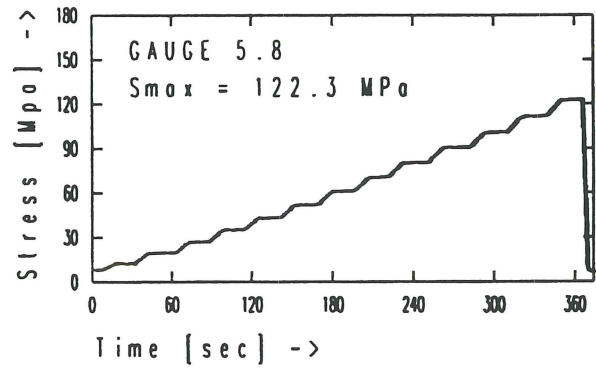
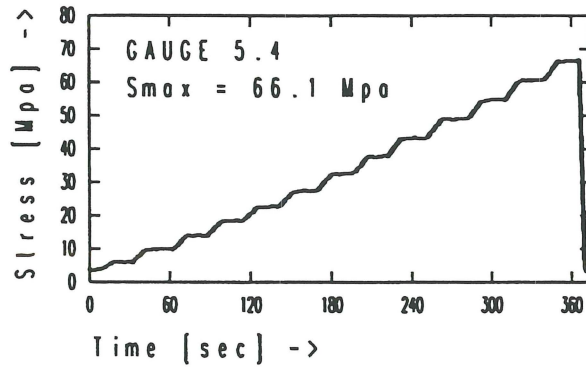
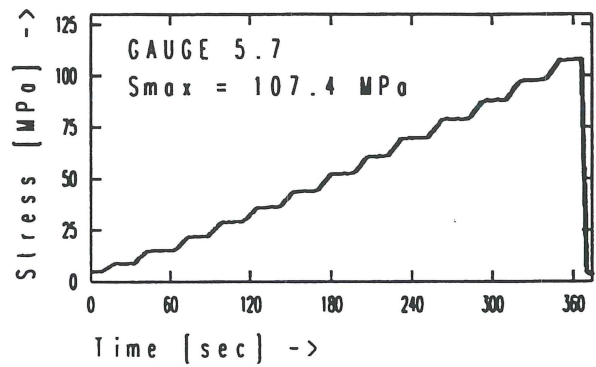
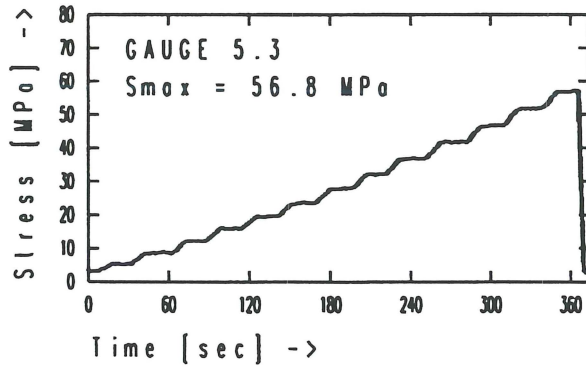
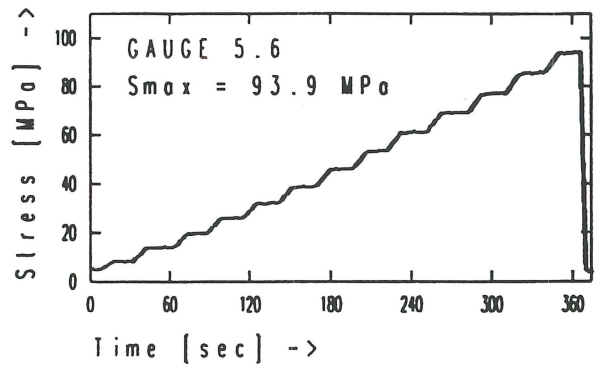
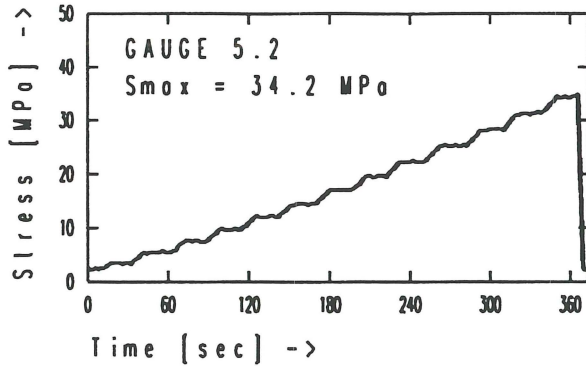
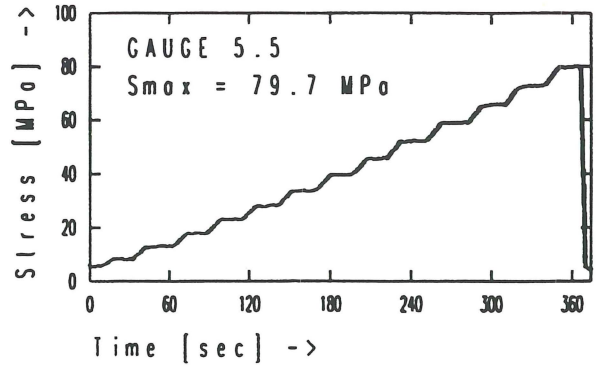
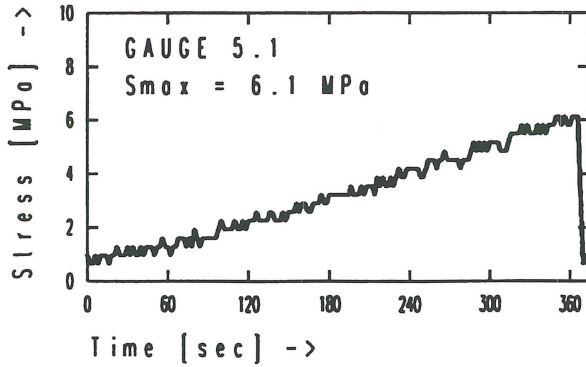
1st BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 14.1 kN
 LOADED AREA: Width 250mm Length 160mm
 SURFACE STRESS: 0.353 N/mm²



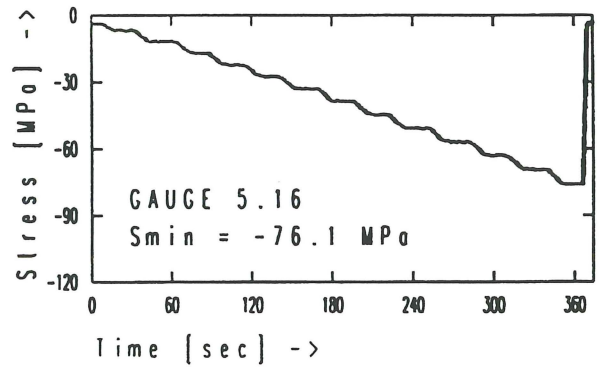
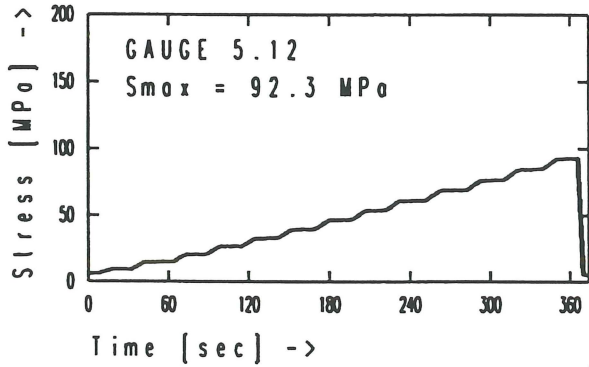
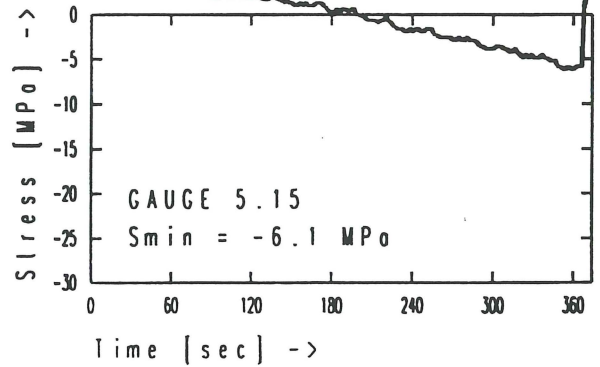
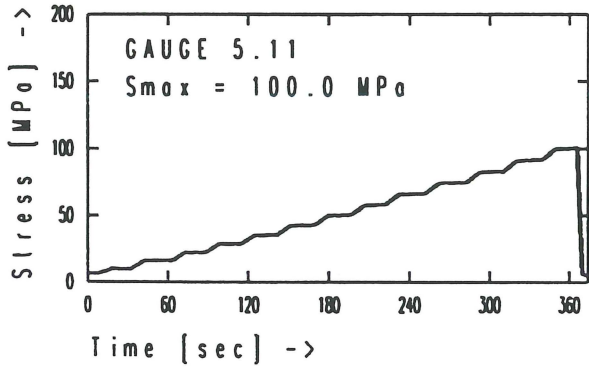
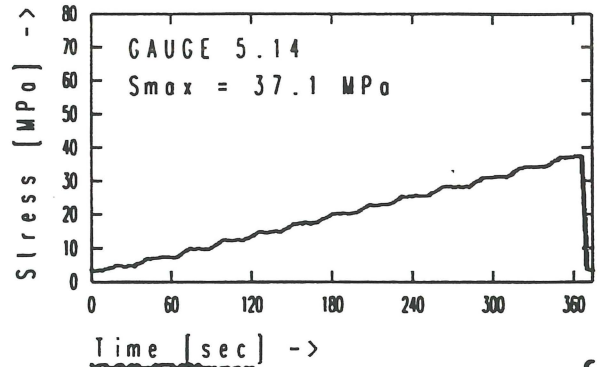
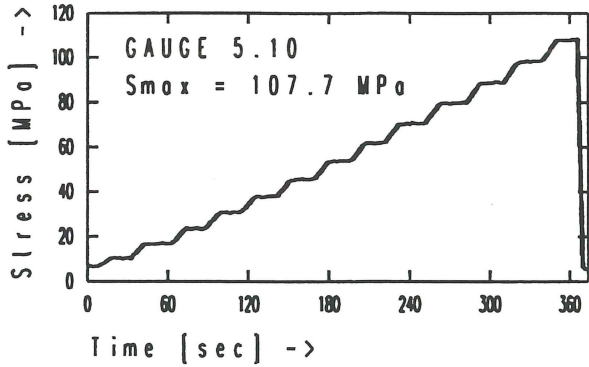
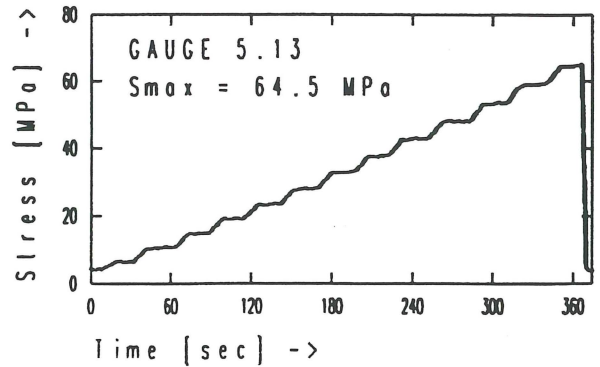
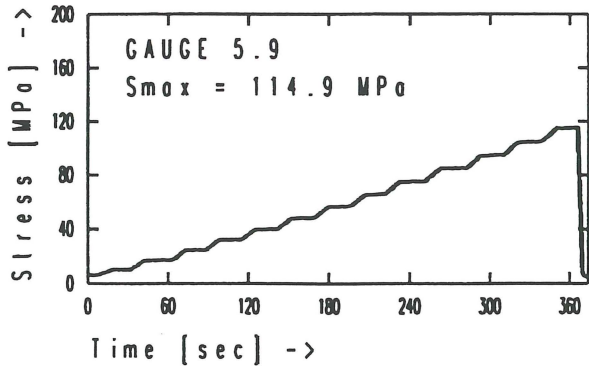
1st BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING: Fmax 14.1 kN / 14.1 kN
LOADED AREA: Width 250mm Length 160mm
SURFACE STRESS: 0.353 N/mm² / 0.353 N/mm²



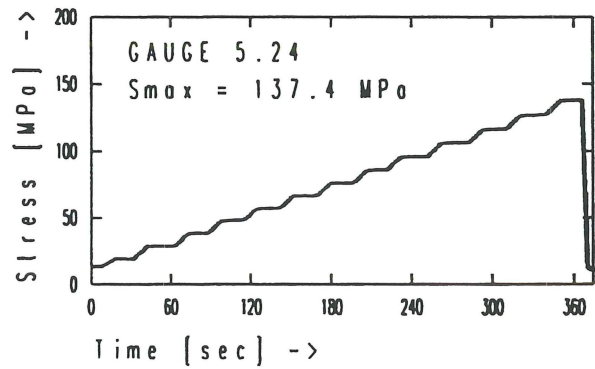
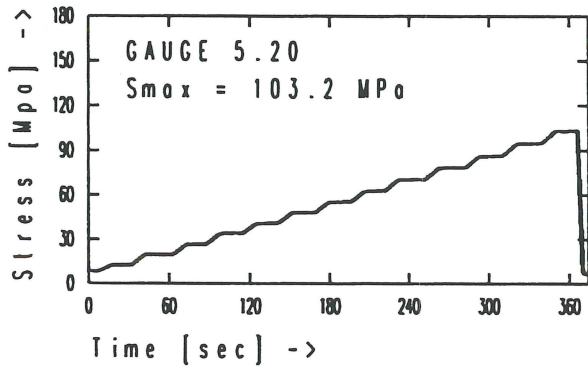
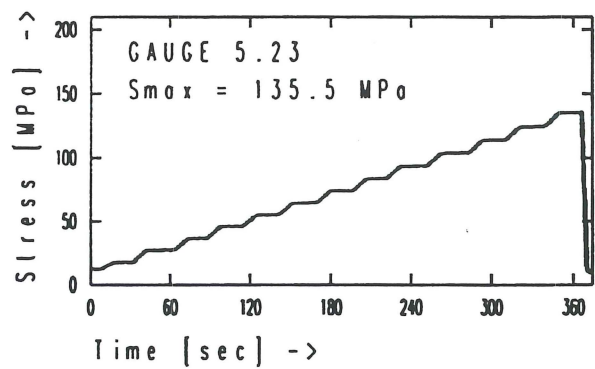
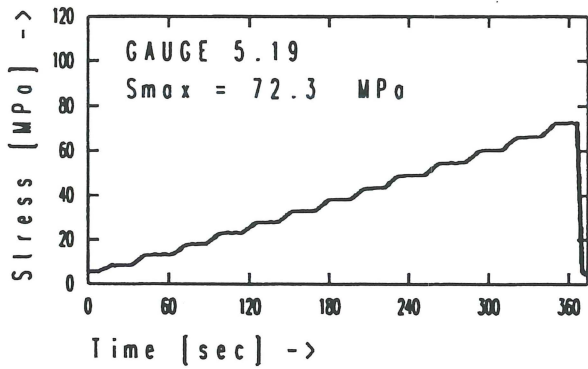
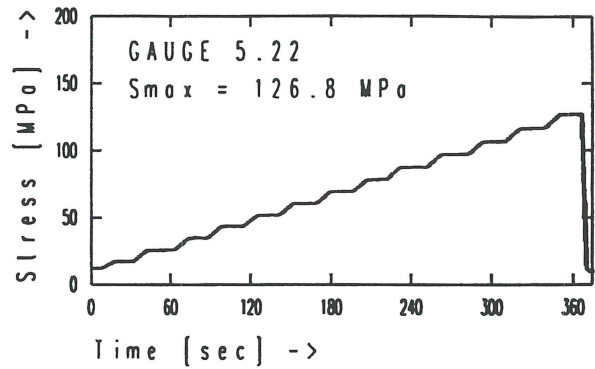
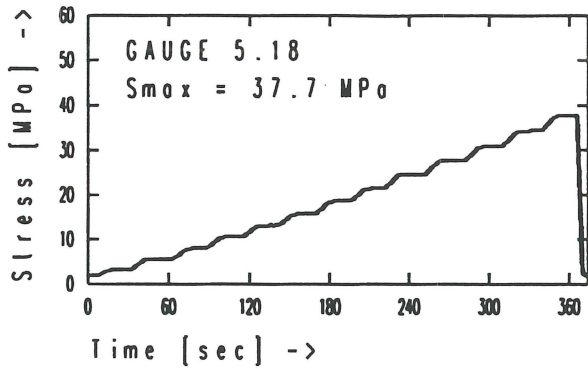
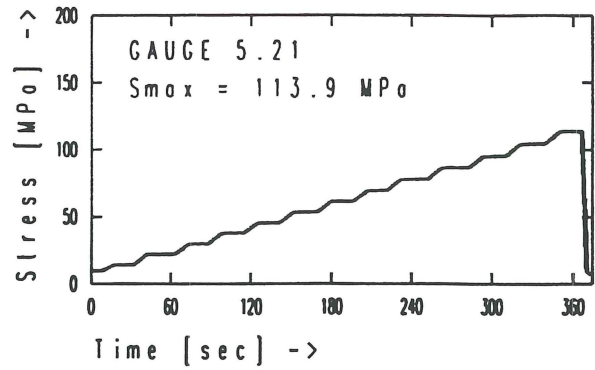
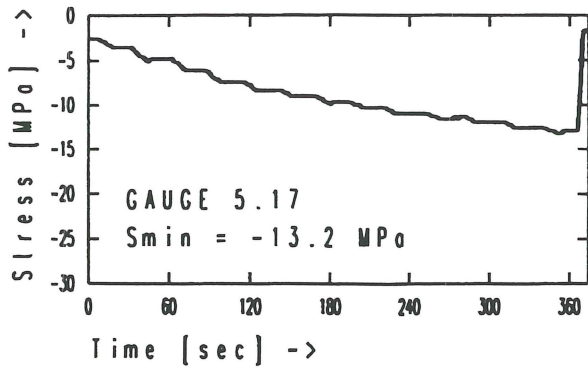
1st BRIDGE PANEL - VAN BRIENENOORD -
 STATIC LOADING: F_{max} 32.8 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.452 N/mm²



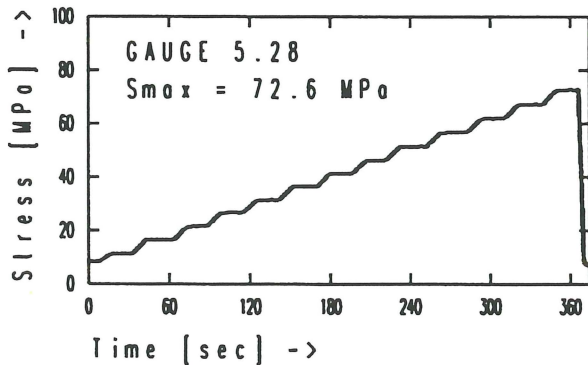
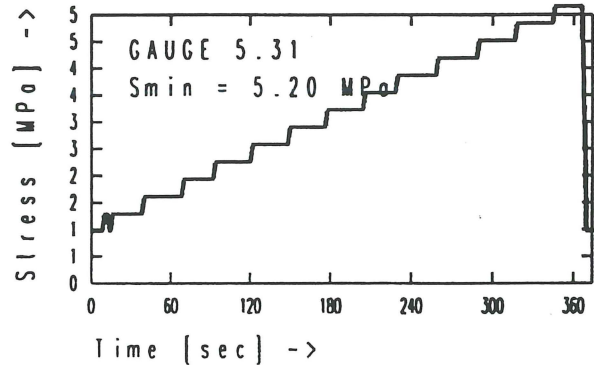
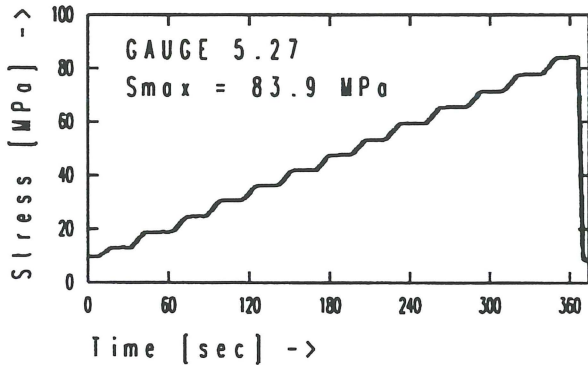
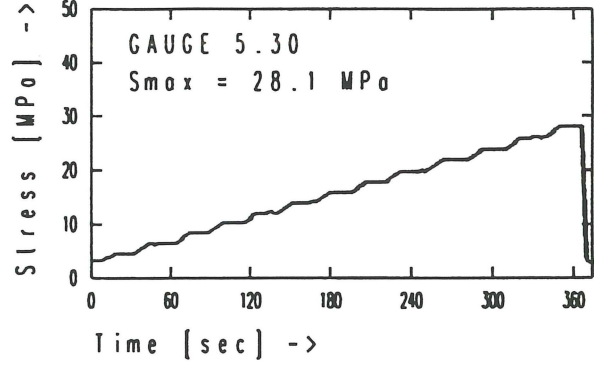
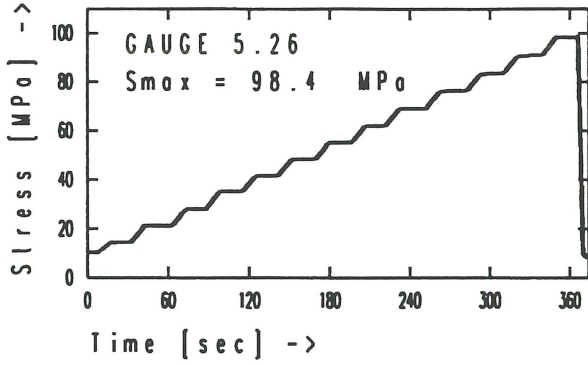
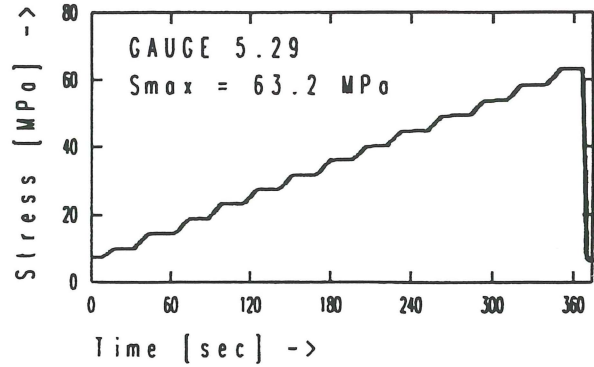
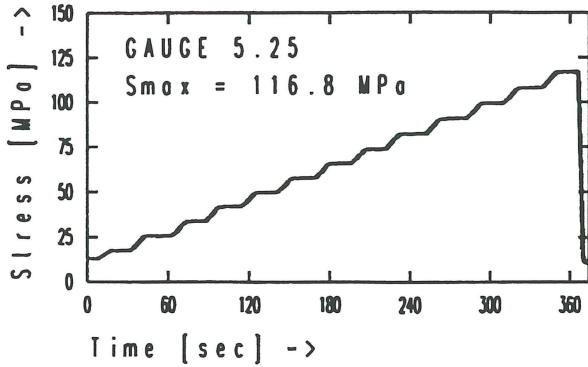
1st BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 32.8 kN
LOADED AREA: Width 290mm Length 250mm
SURFACE STRESS: 0.452 N/mm²



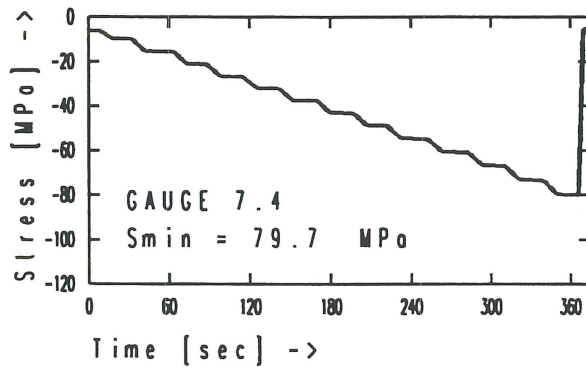
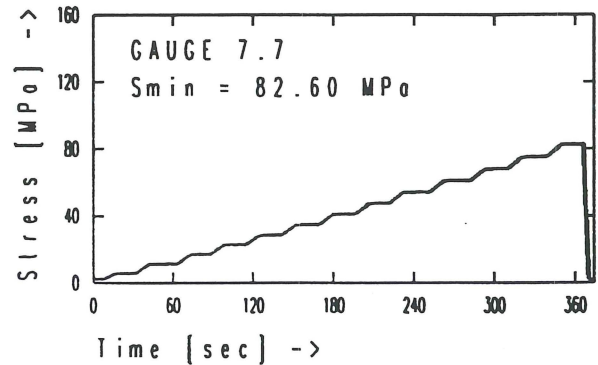
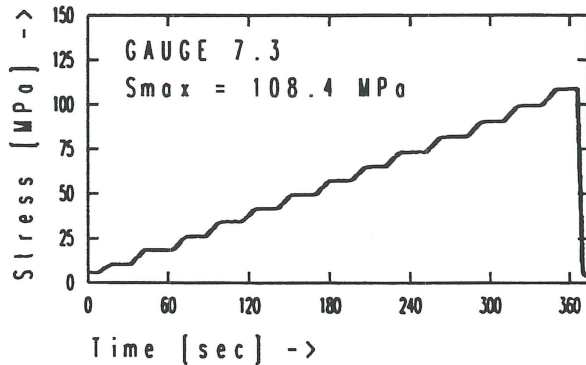
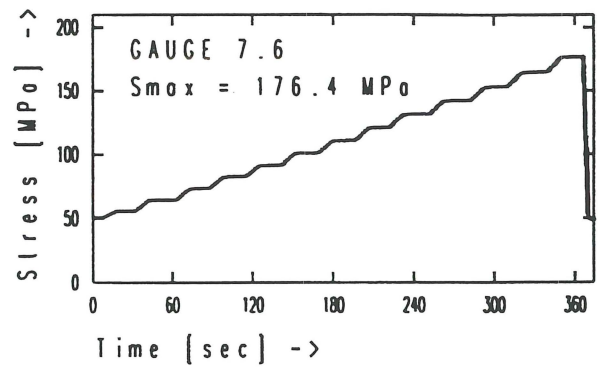
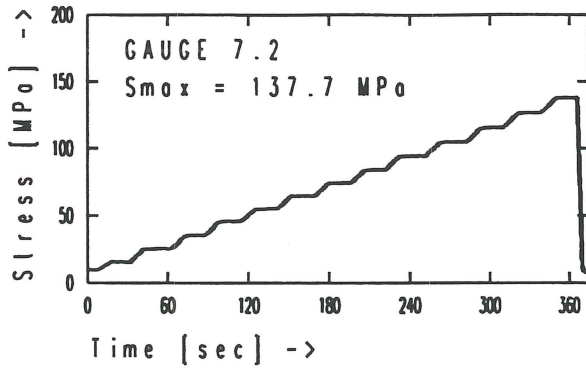
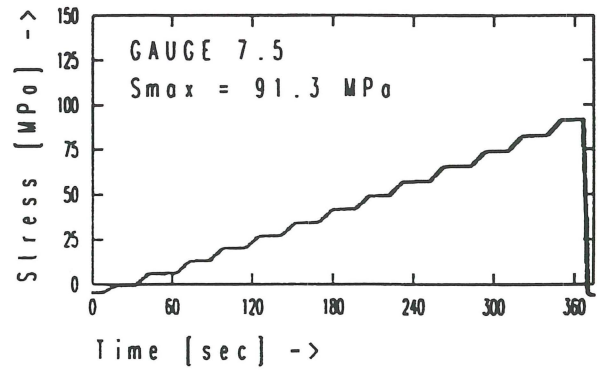
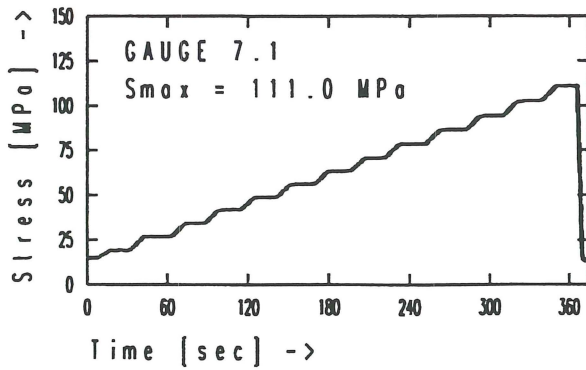
1st BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 32.8 kN
LOADED AREA: Width 290mm Length 250mm
SURFACE STRESS: 0.452 N/mm²



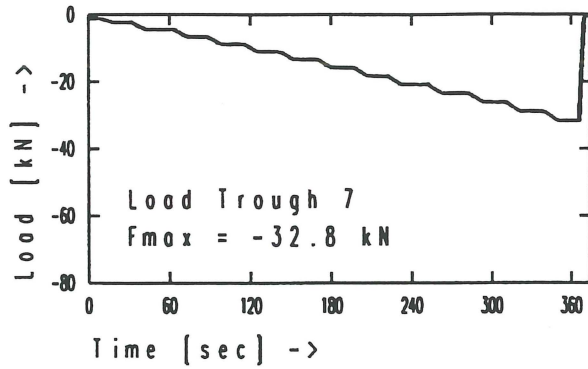
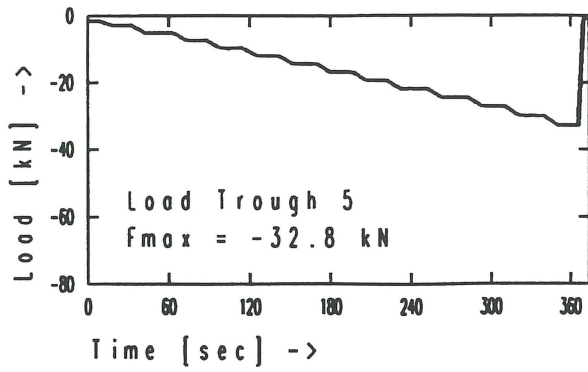
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 32.8 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.452 N/mm²



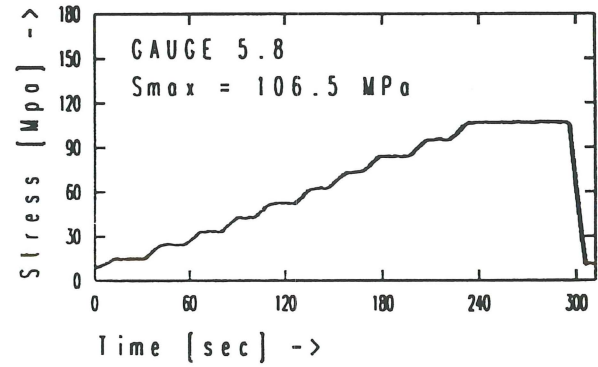
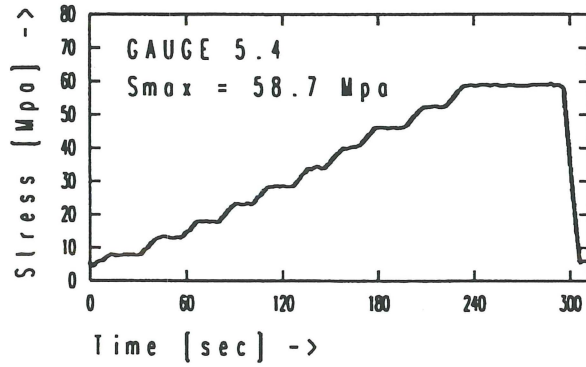
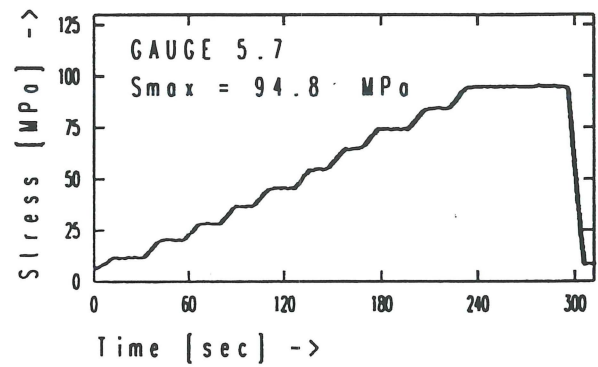
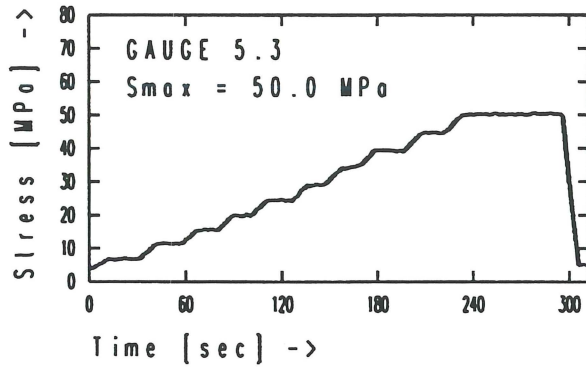
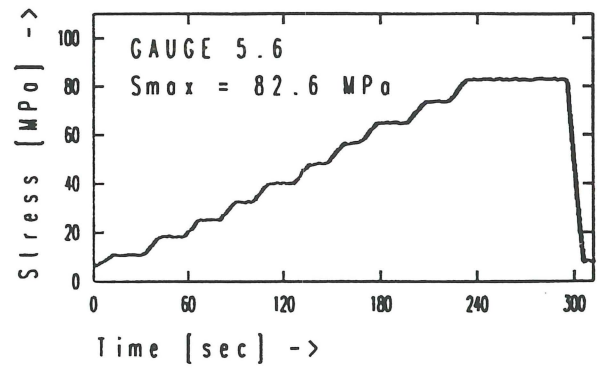
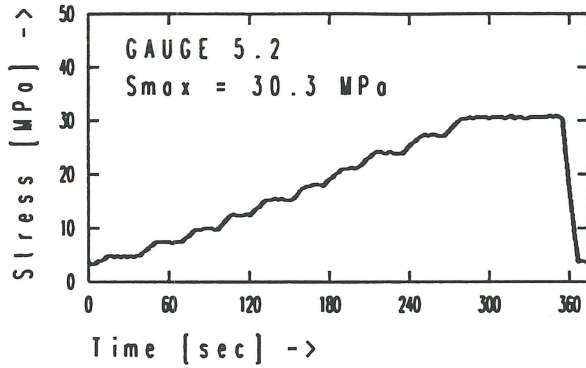
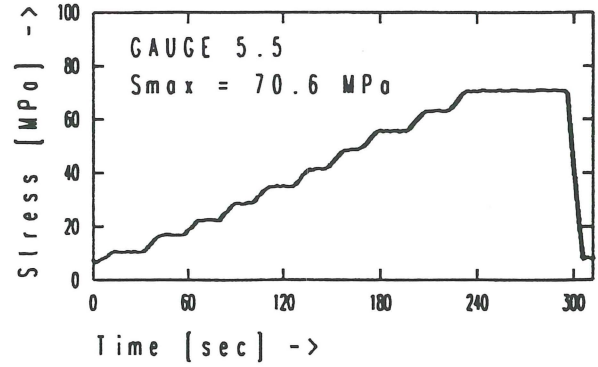
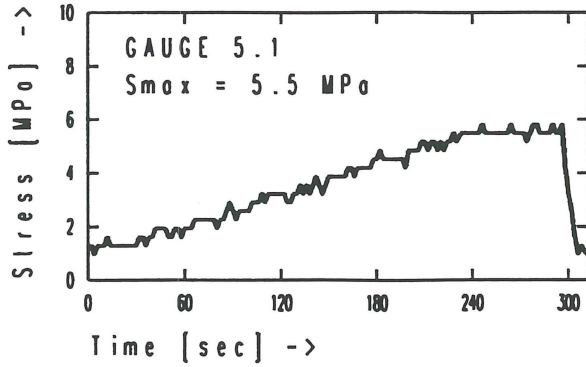
1st BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 32.8 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.452 N/mm²



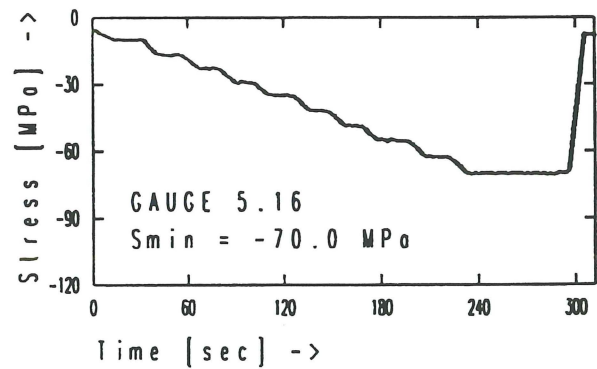
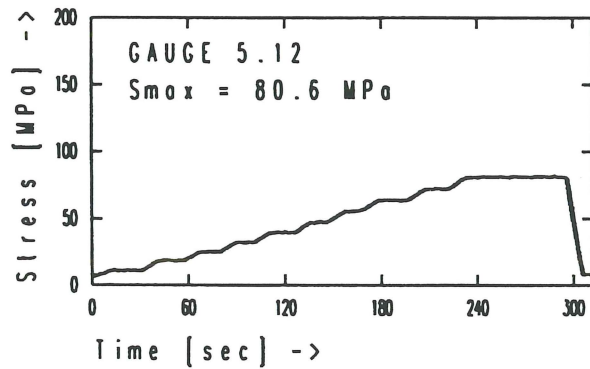
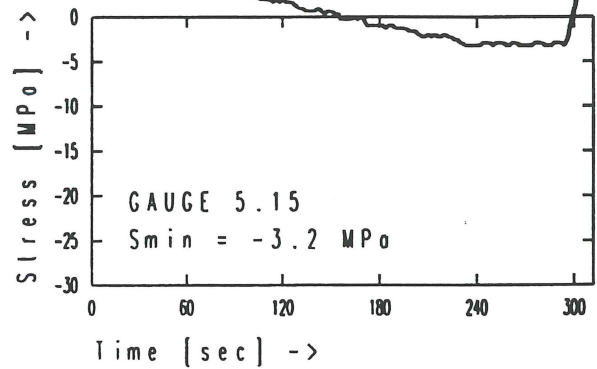
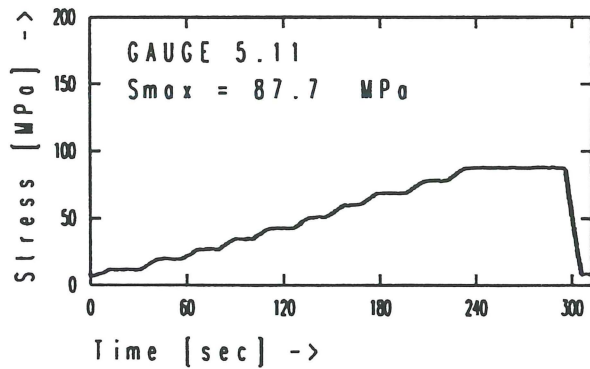
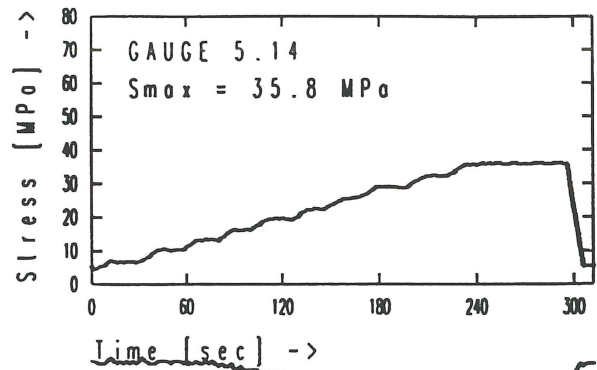
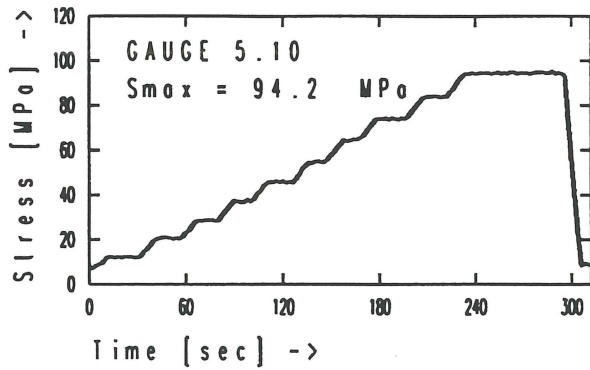
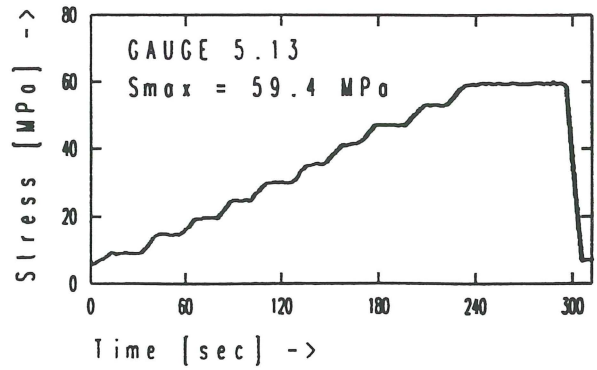
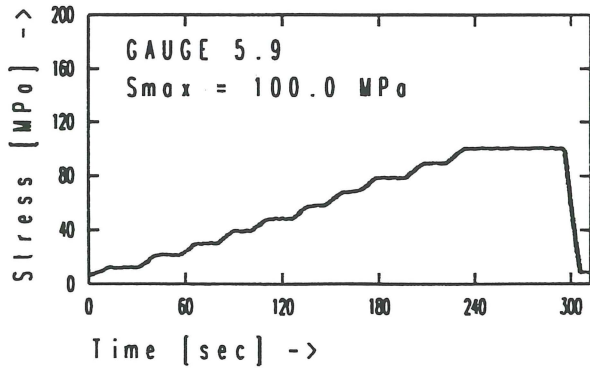
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 32.8 kN / 32.8 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.452 N/mm² / 0.452 N/mm²



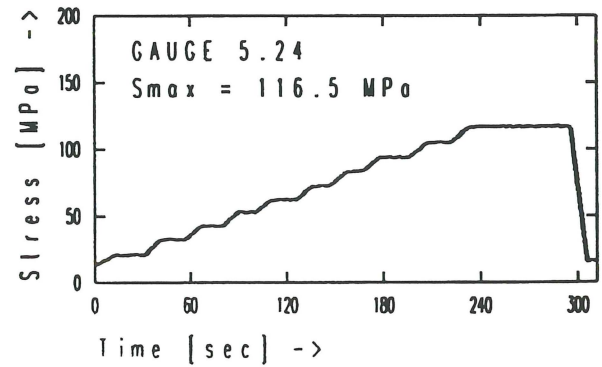
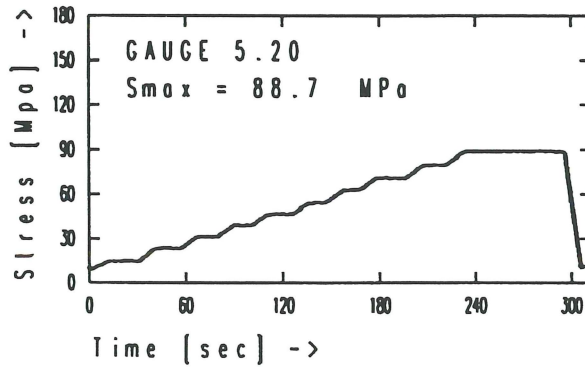
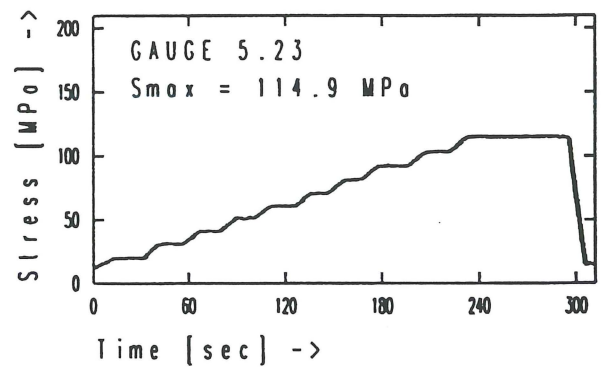
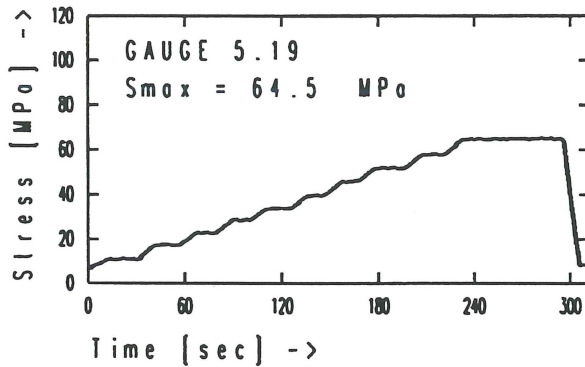
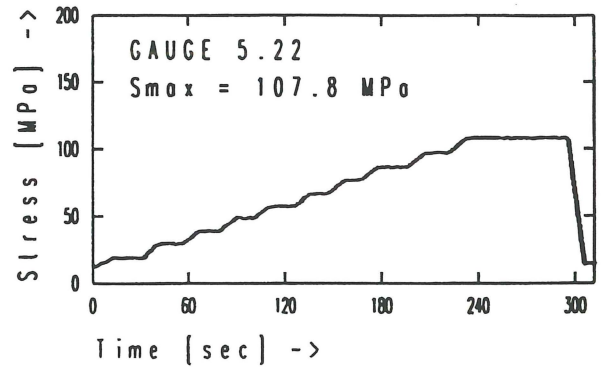
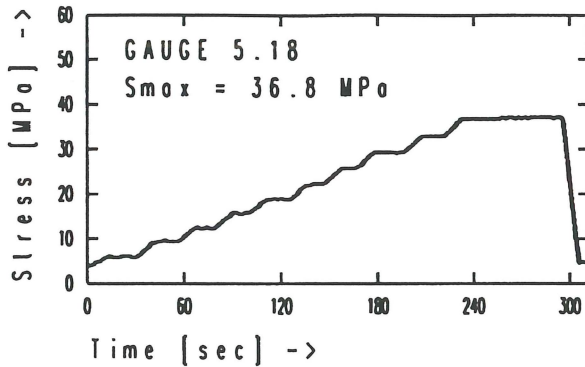
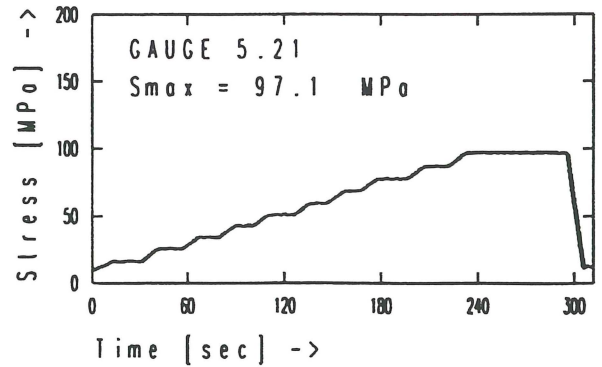
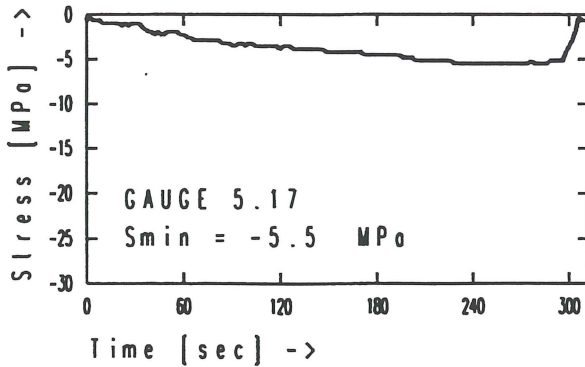
1st BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 24.0 kN
LOADED AREA: Width 250mm Length 250mm
SURFACE STRESS: 0.384 N/mm²



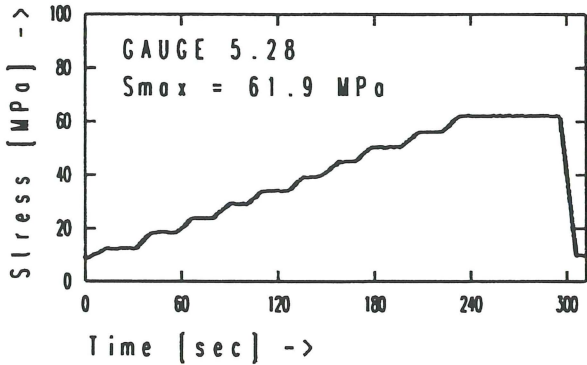
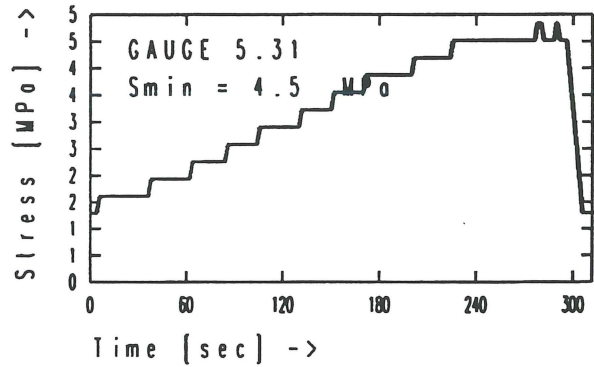
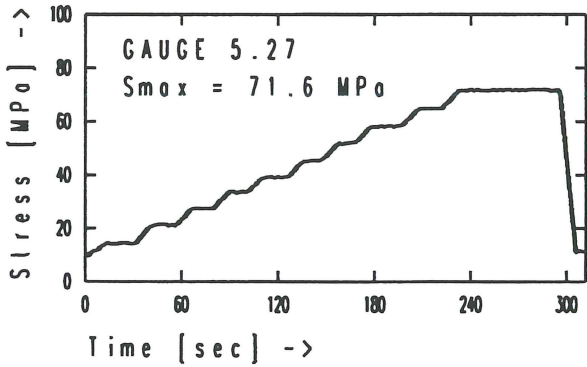
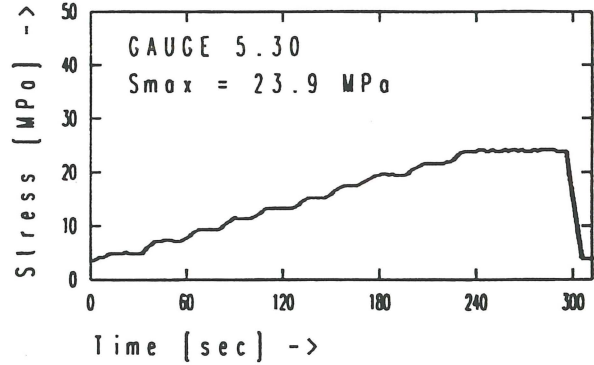
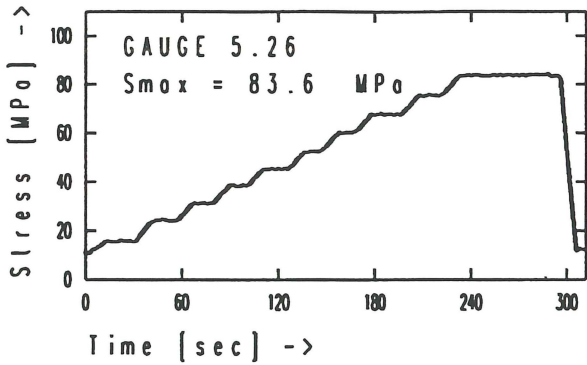
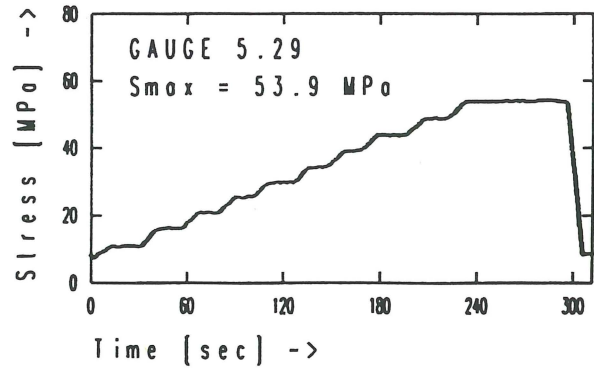
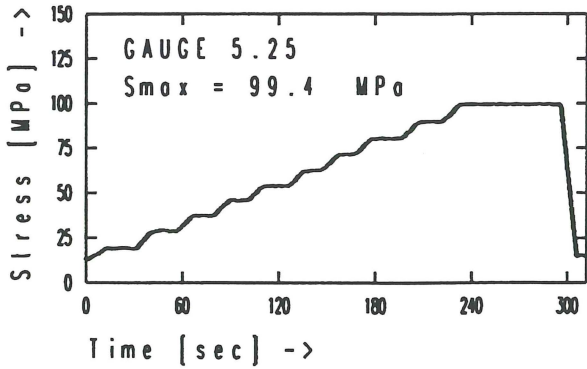
1st BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 24.0 kN
LOADED AREA: Width 250mm Length 250mm
SURFACE STRESS: 0.384 N/mm²



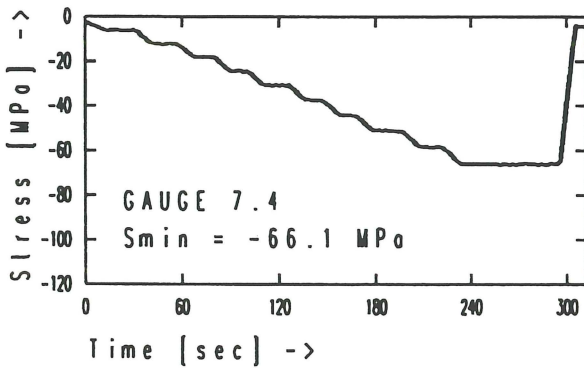
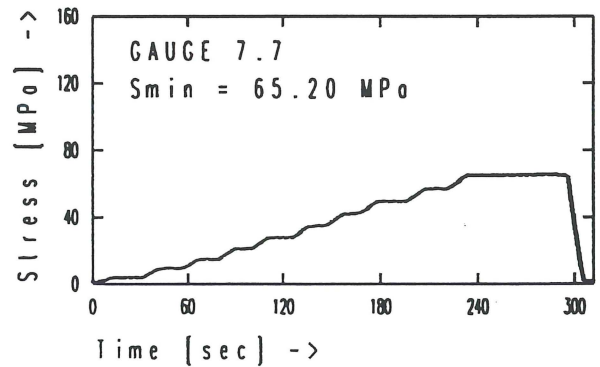
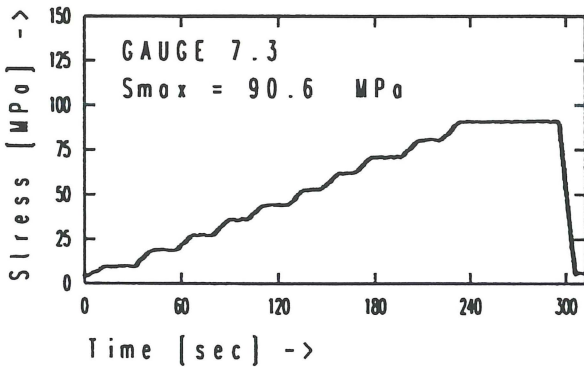
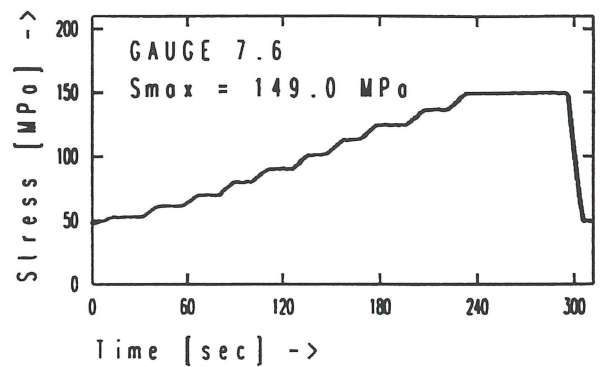
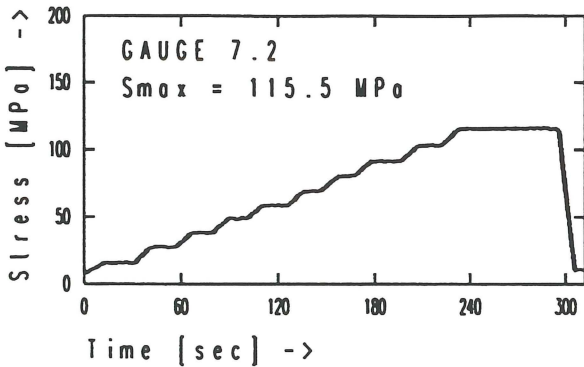
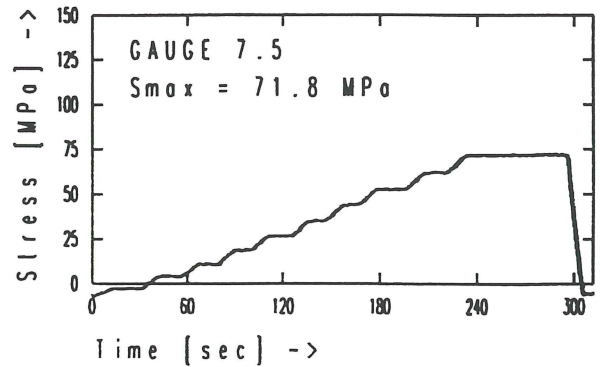
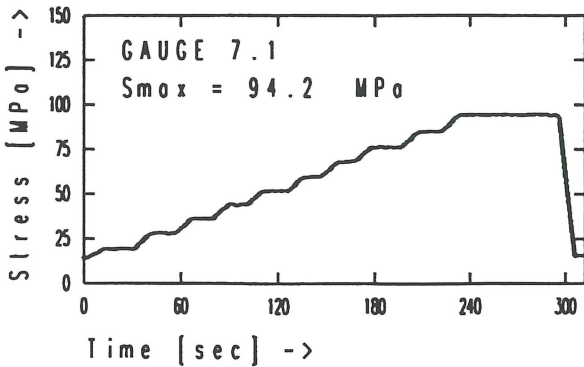
1st BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 24.0 kN
 LOADED AREA: Width 250mm Length 250mm
 SURFACE STRESS: 0.384 N/mm²



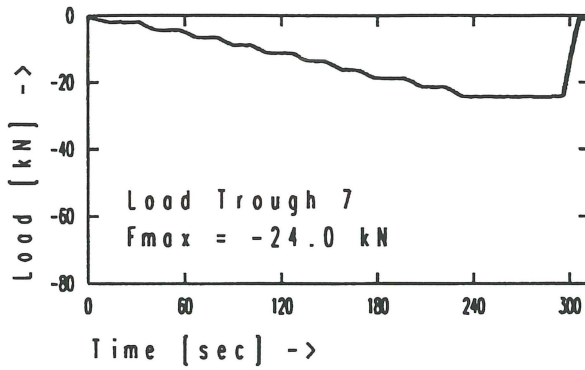
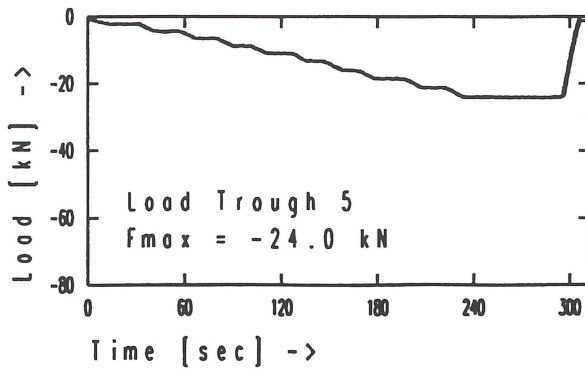
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 24.0 kN
 LOADED AREA: Width 250mm Length 250mm
 SURFACE STRESS: 0.384 N/mm²



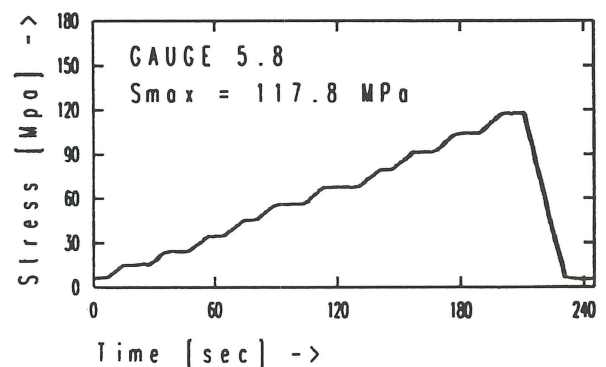
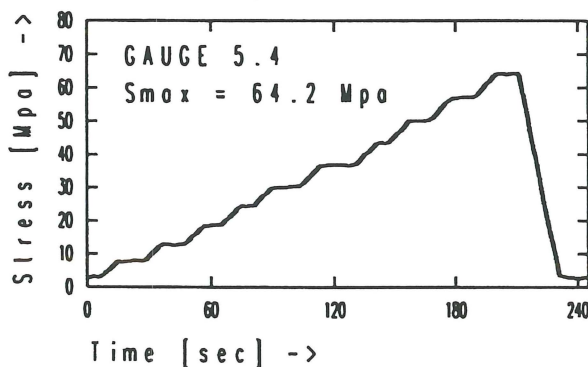
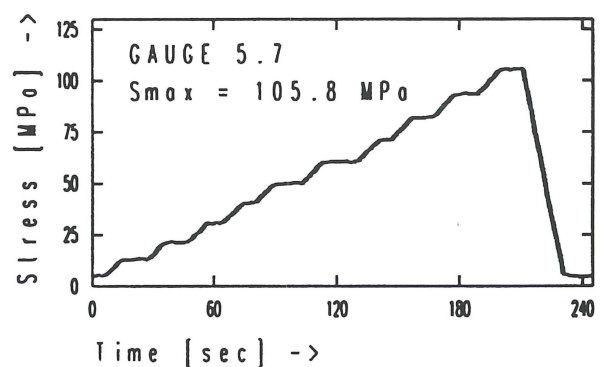
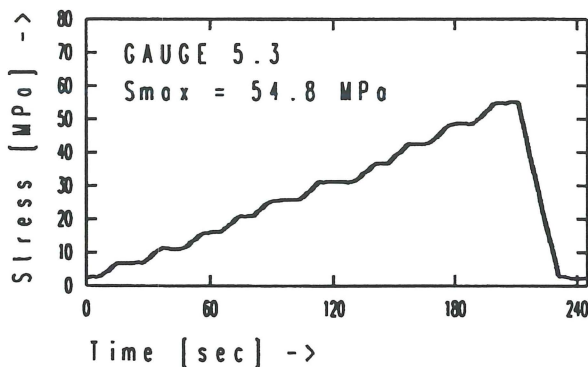
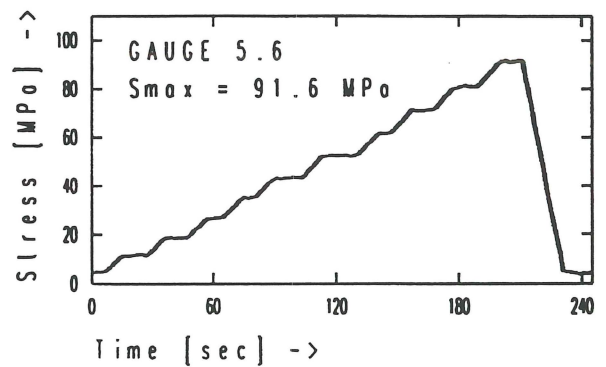
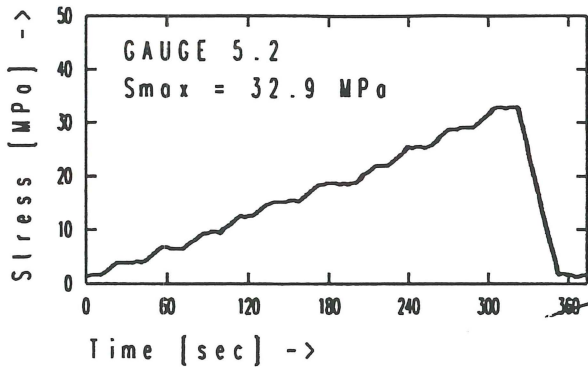
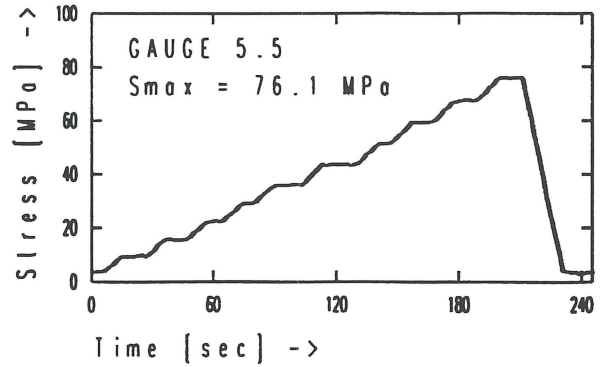
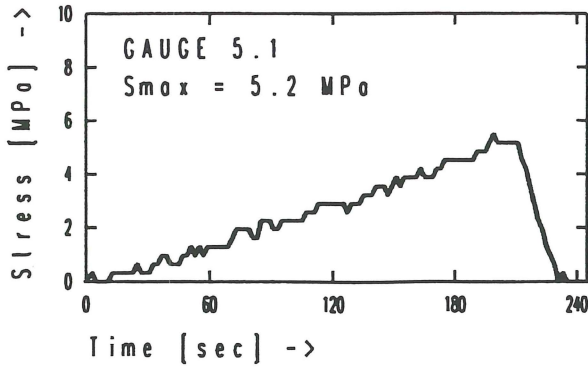
1st BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 24.0 kN
LOADED AREA: Width 250mm Length 250mm
SURFACE STRESS: 0.384 N/mm²



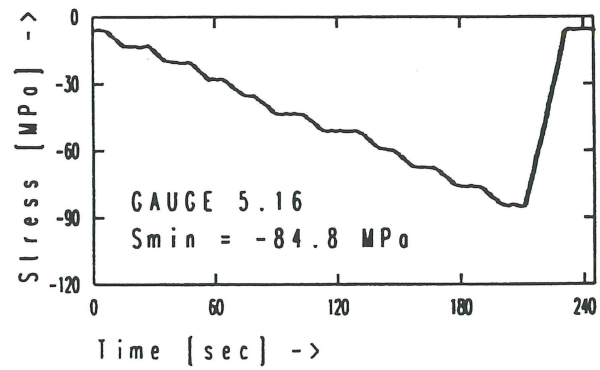
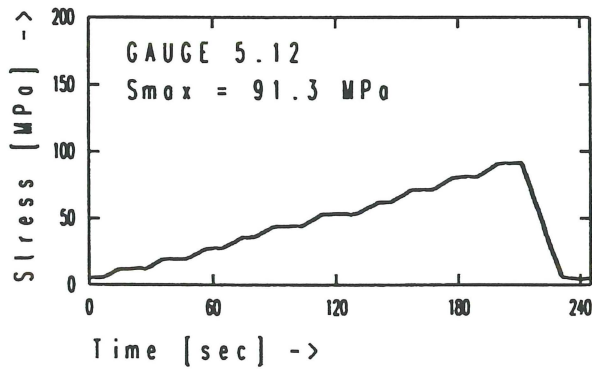
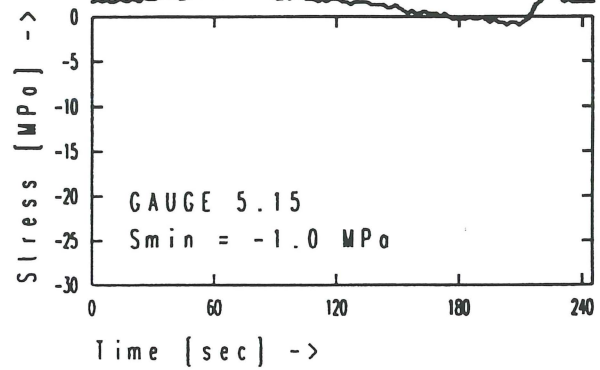
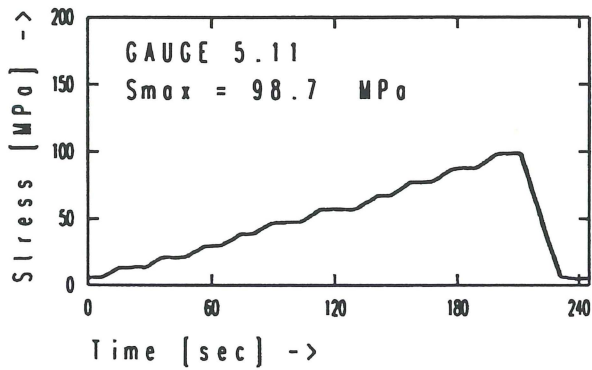
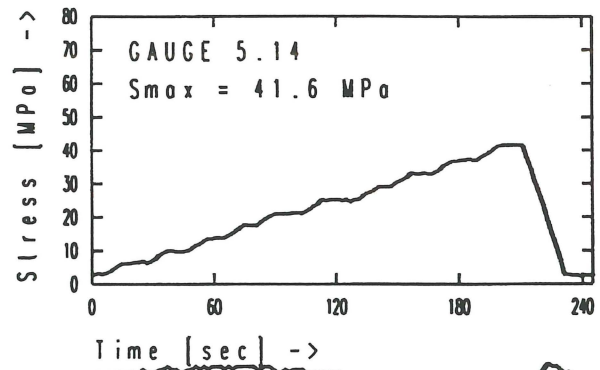
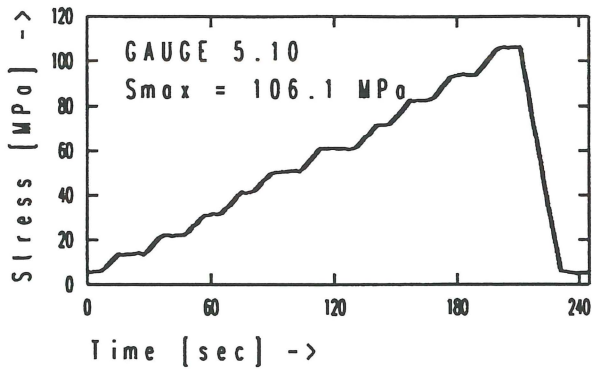
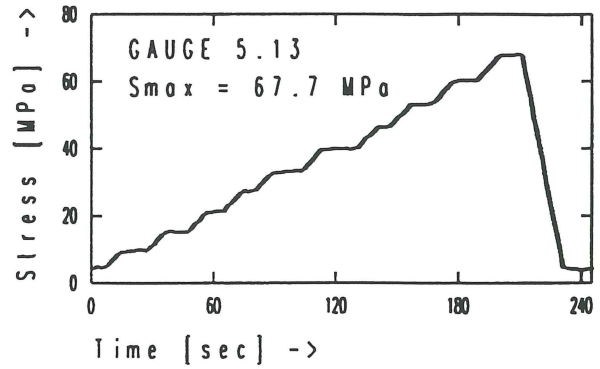
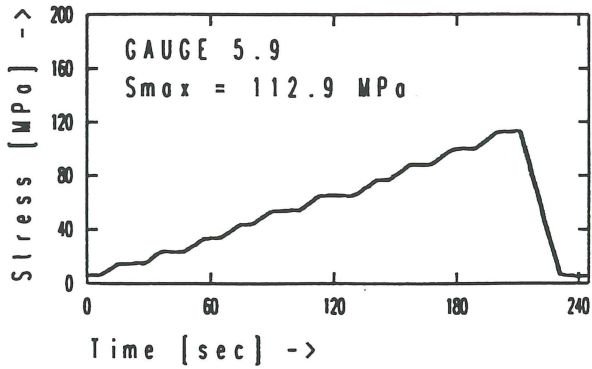
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 32.8 kN / 32.8 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.452 N/mm² / 0.452 N/mm²



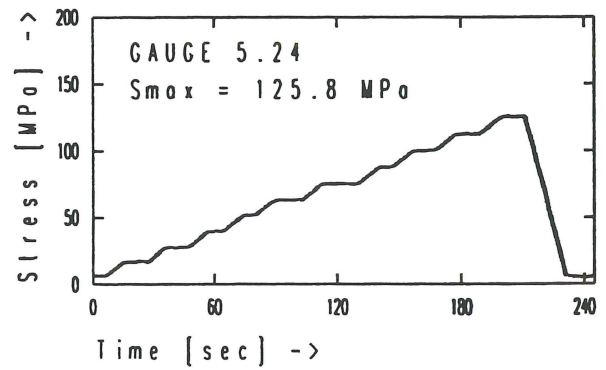
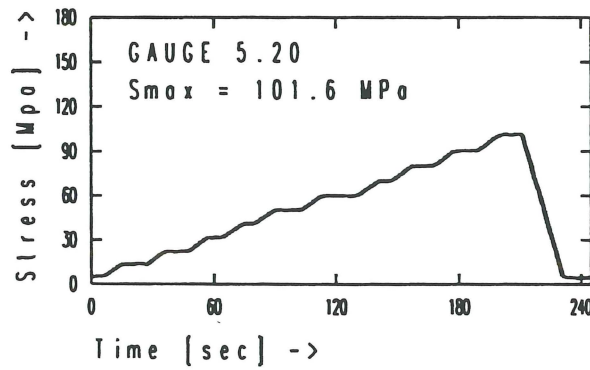
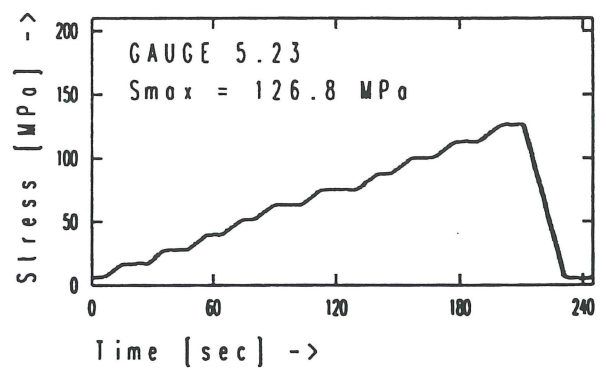
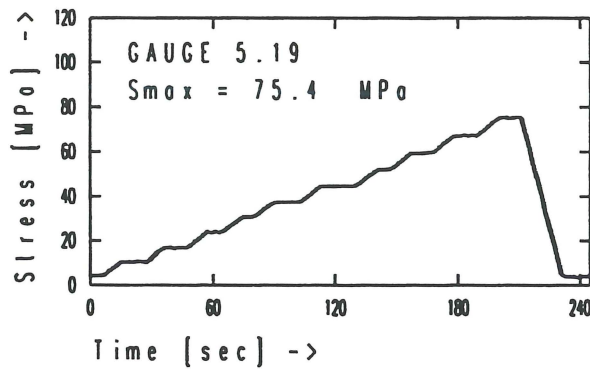
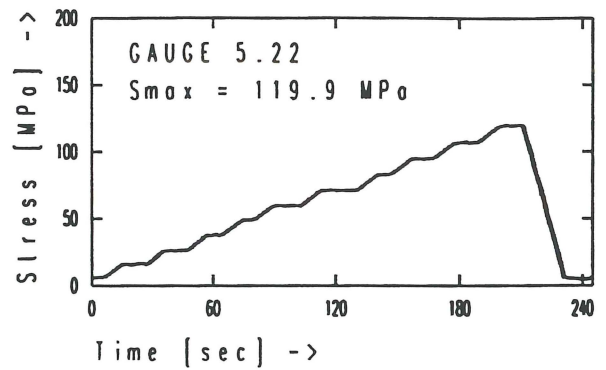
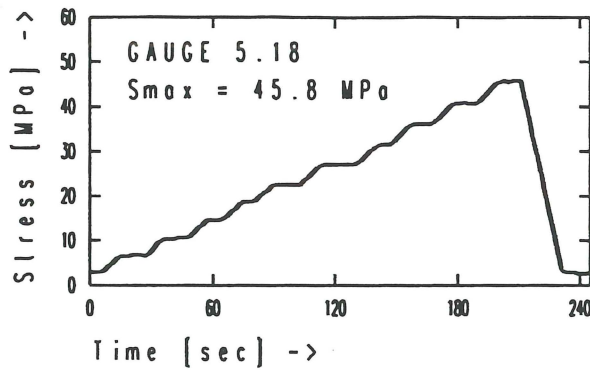
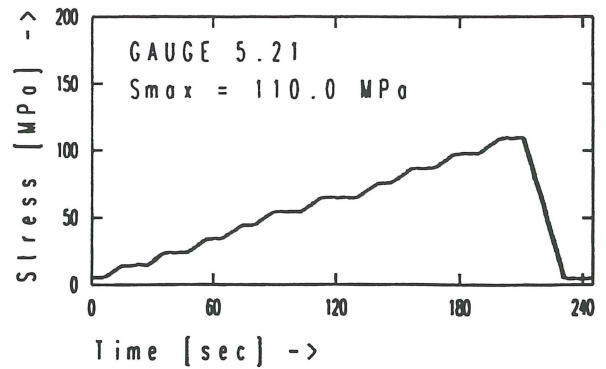
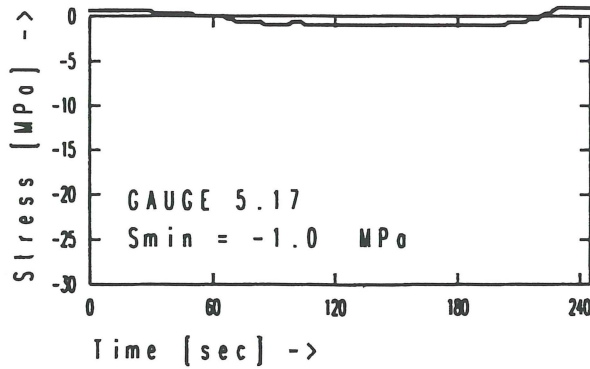
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 24.1 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.428 N/mm²



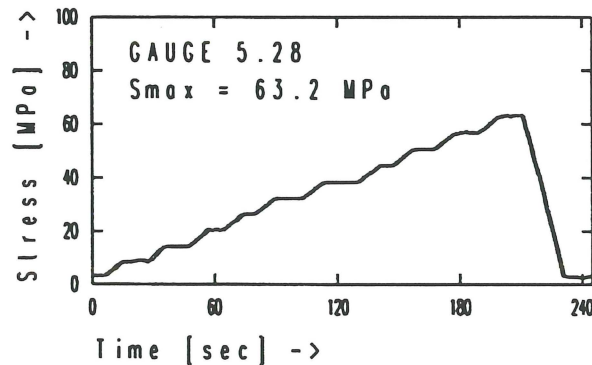
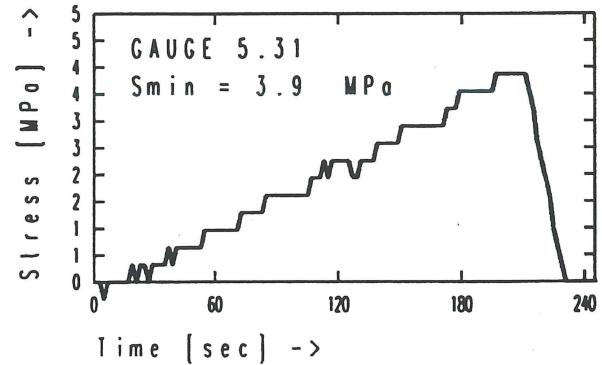
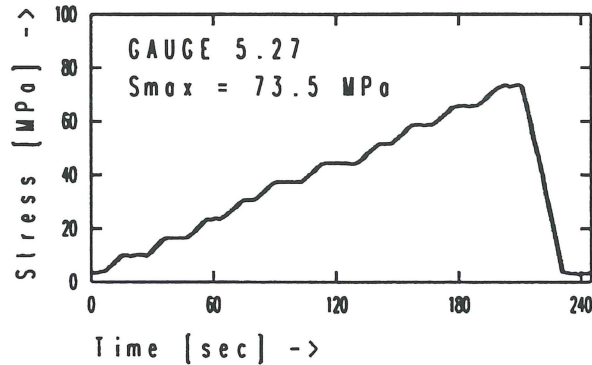
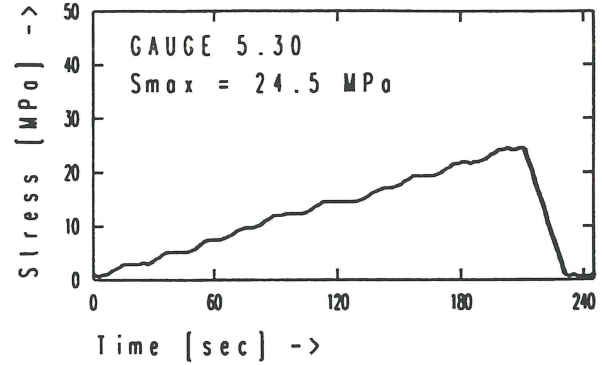
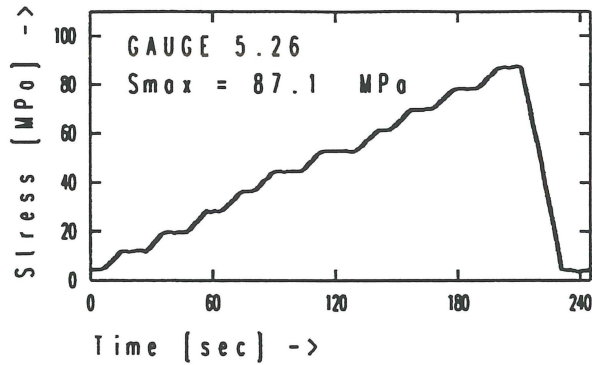
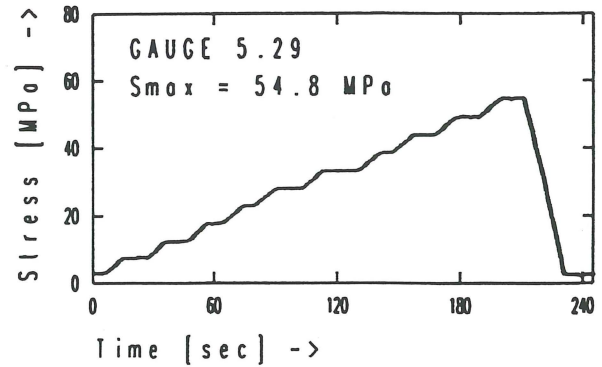
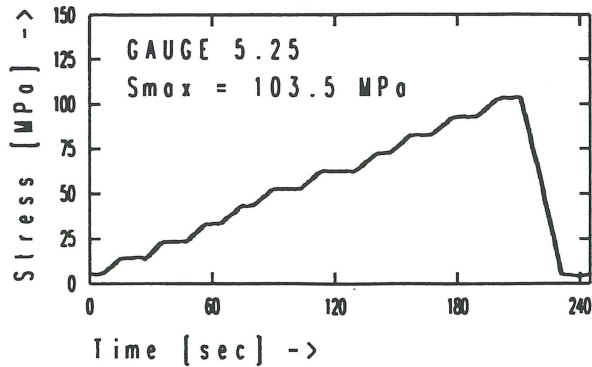
1st BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 24.1 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.428 N/mm²



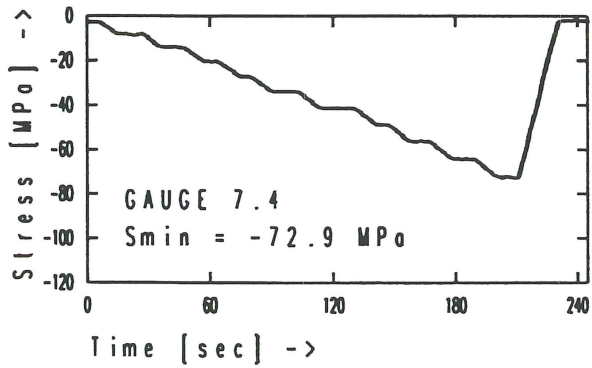
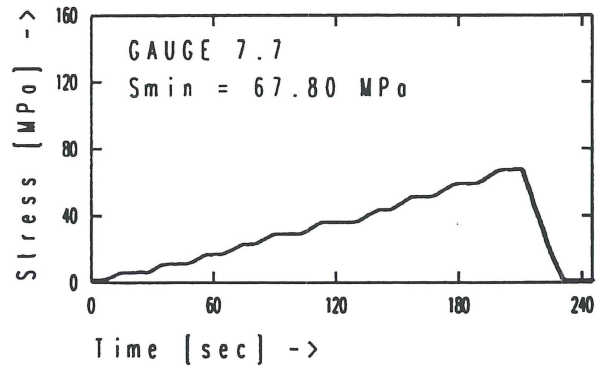
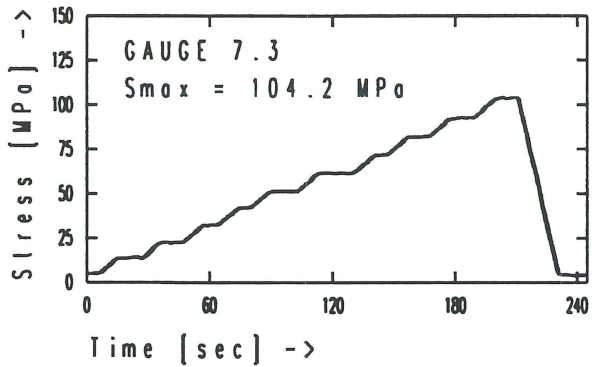
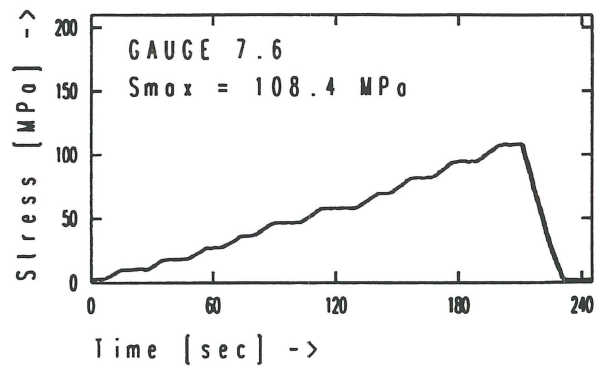
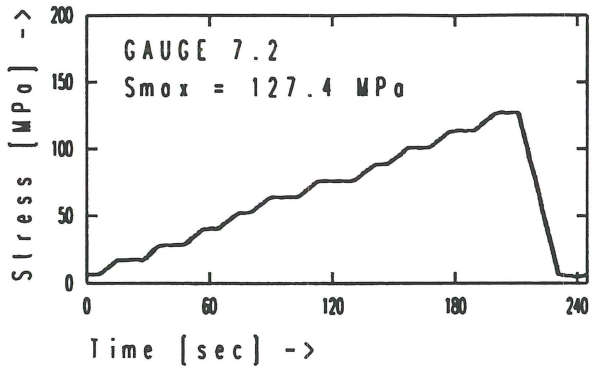
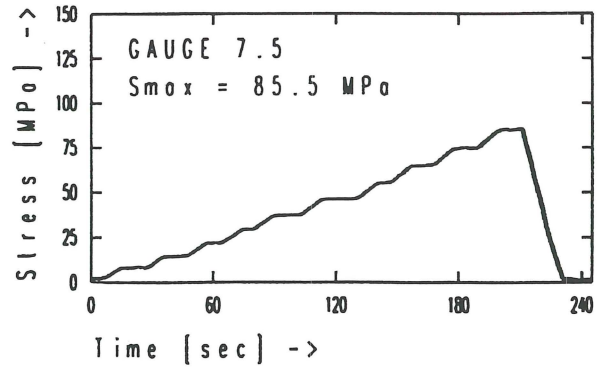
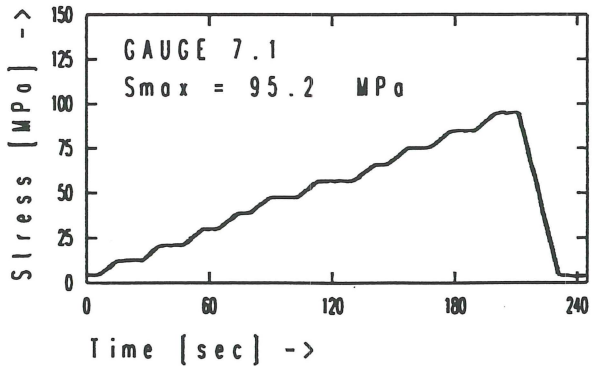
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 24.1 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.428 N/mm²



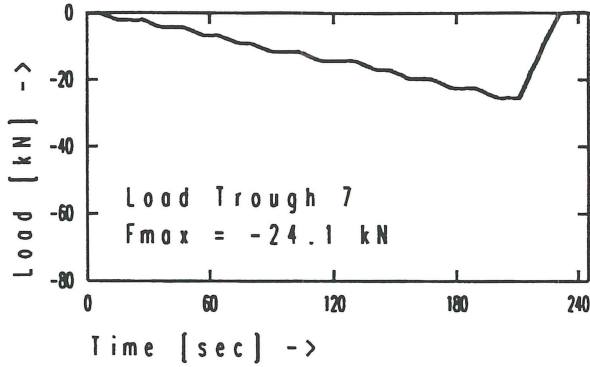
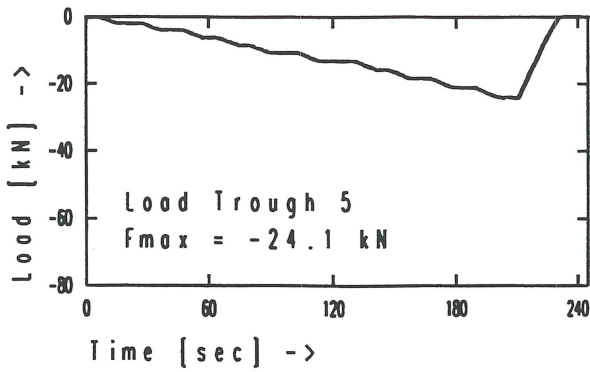
1st BRIDGE PANEL - VAN BRIENENOORD -
 STATIC LOADING: F_{max} 24.1 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.428 N/mm²



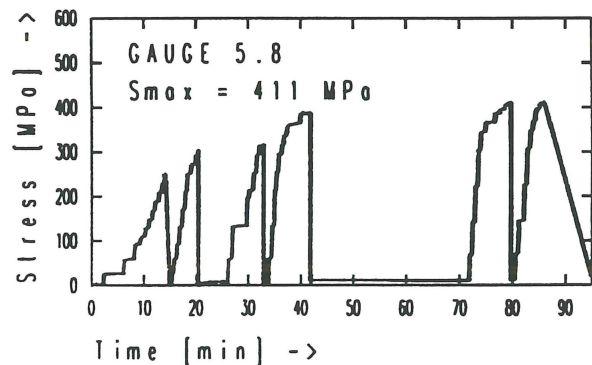
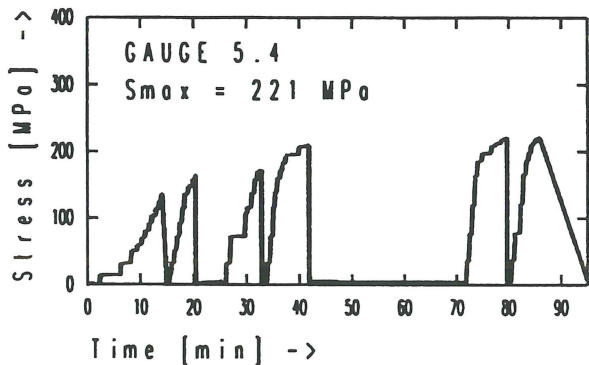
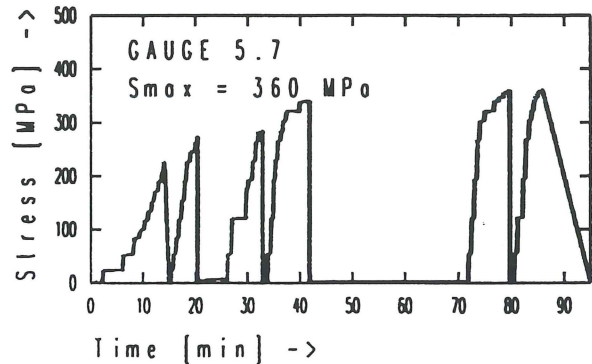
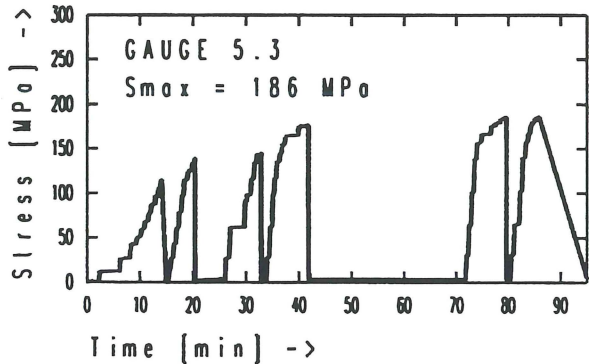
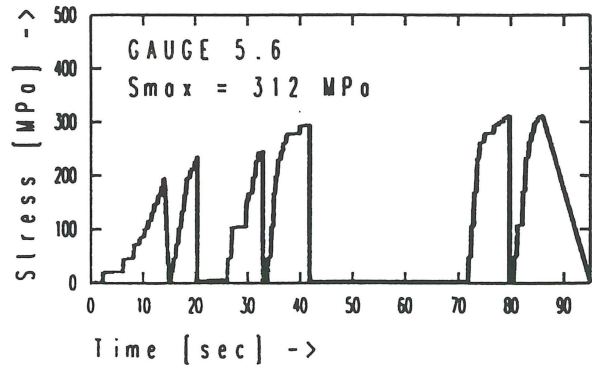
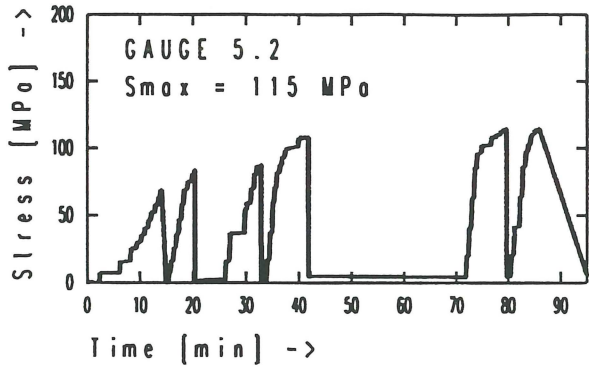
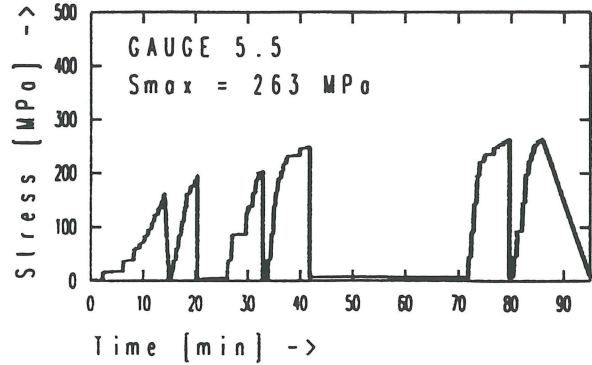
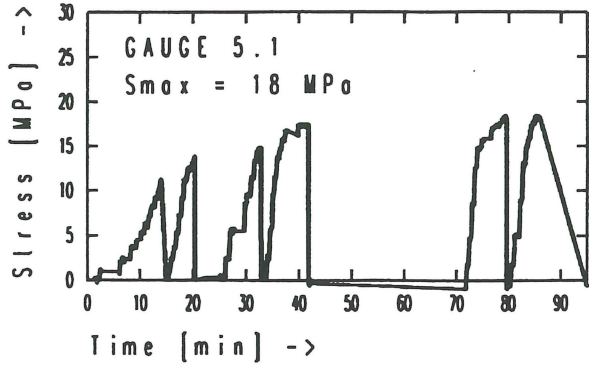
1st BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 24.1 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.428 N/mm²



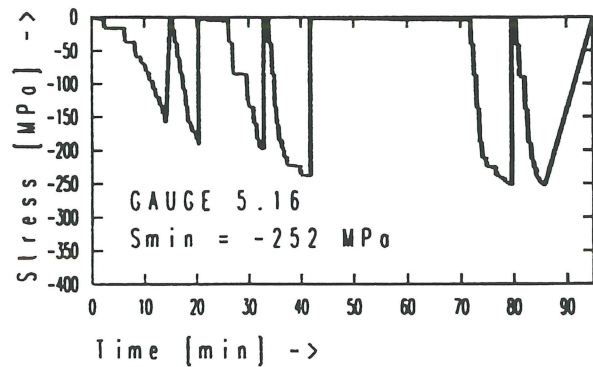
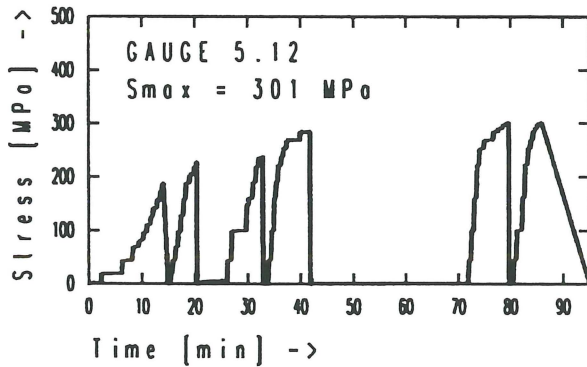
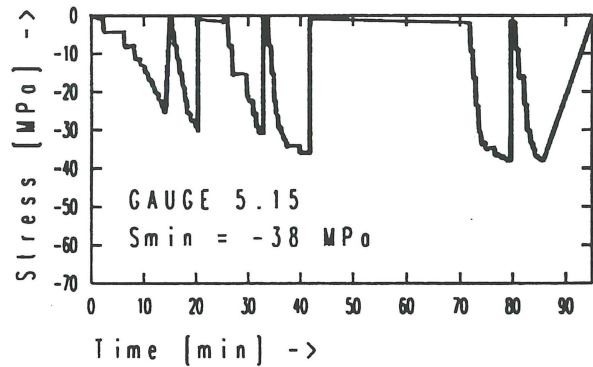
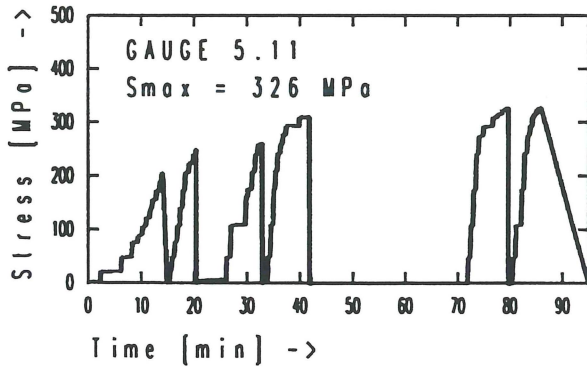
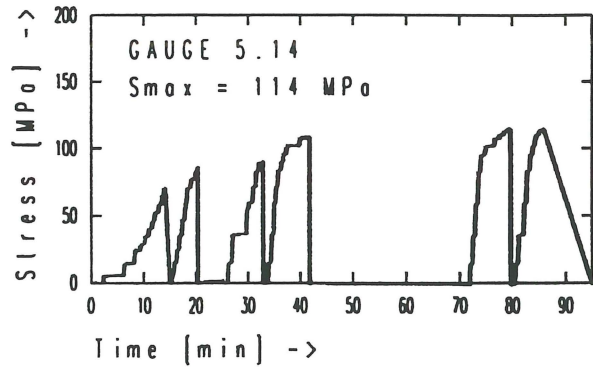
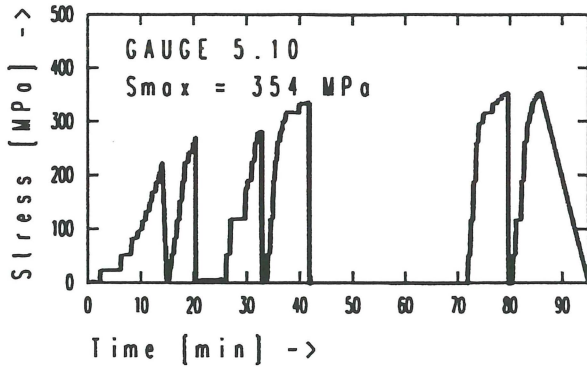
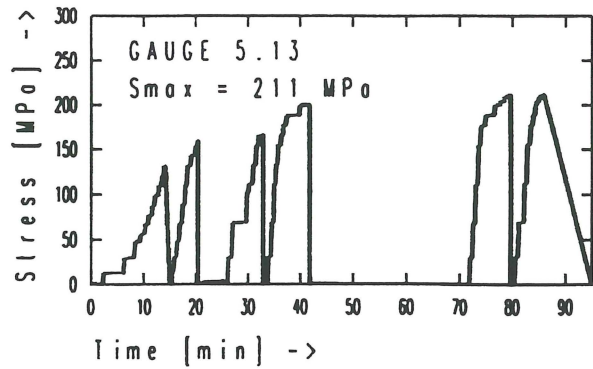
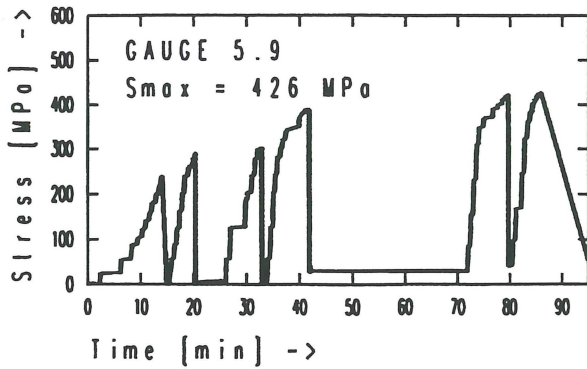
1st BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 24.1 kN / 24.1 kN
LOADED AREA: Width 225mm Length 250mm
SURFACE STRESS: 0.428 N/mm² / 0.428 N/mm²



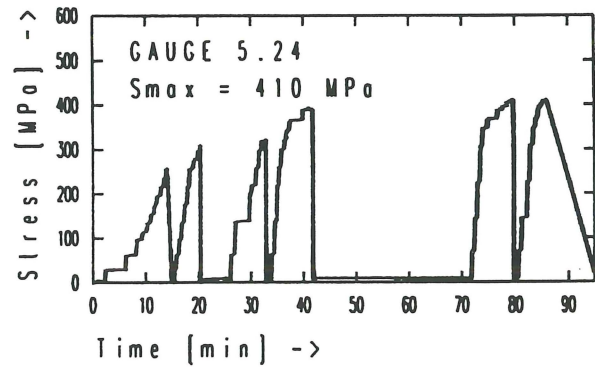
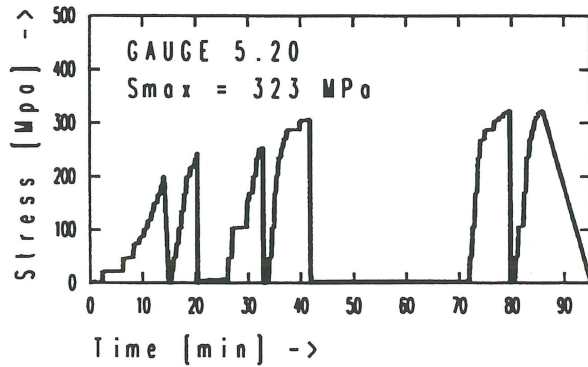
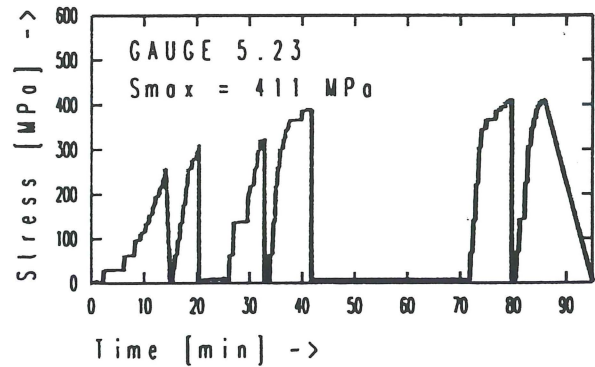
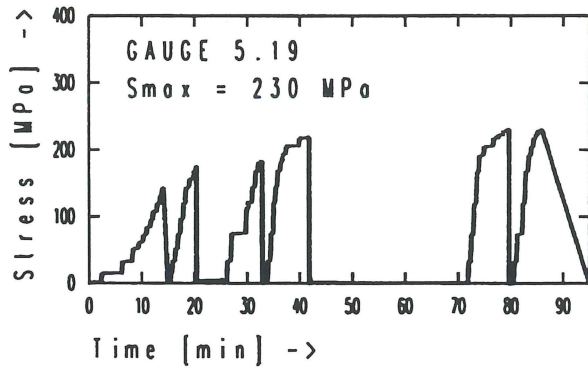
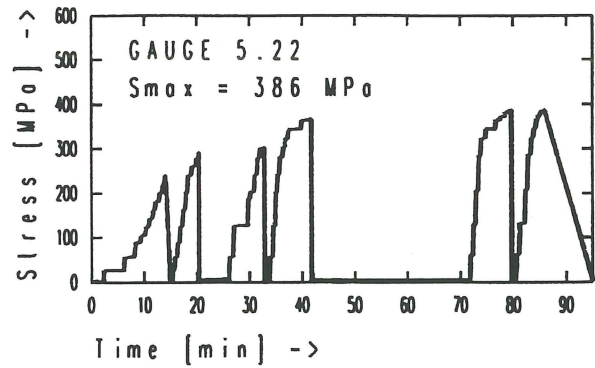
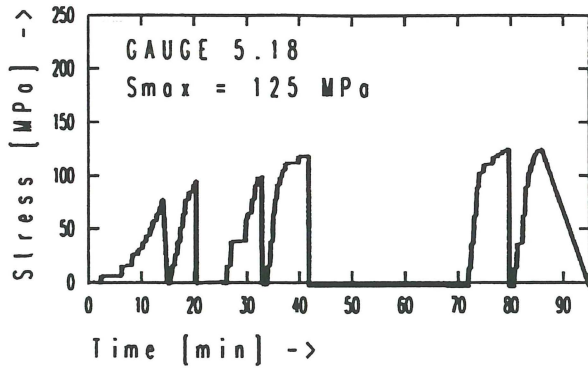
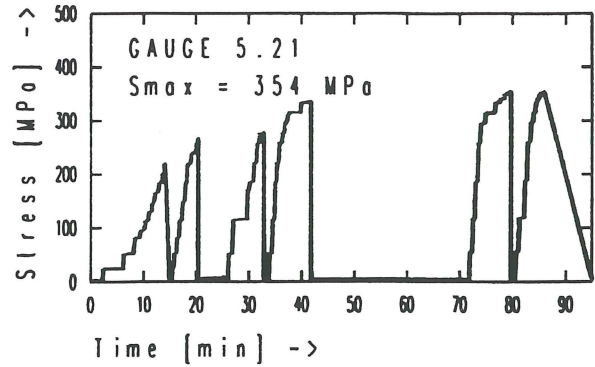
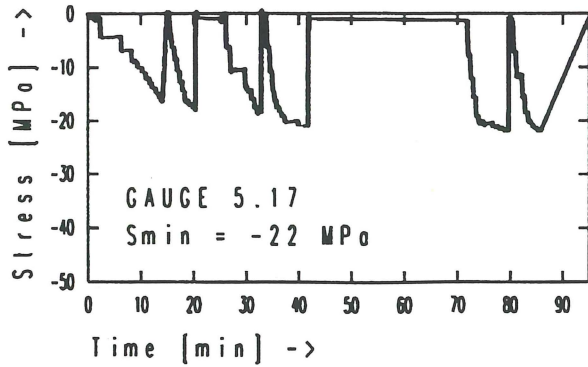
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING TROUGH 5: F_{max} 113.7 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 1.32 N/mm²



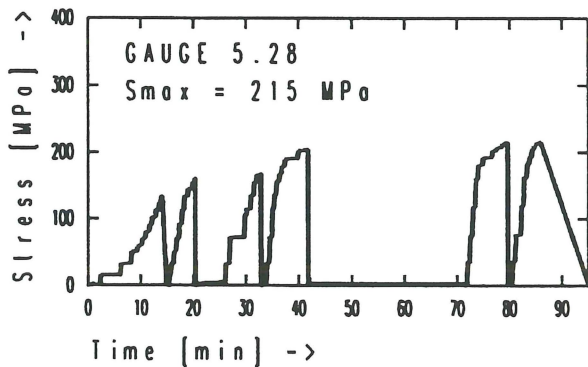
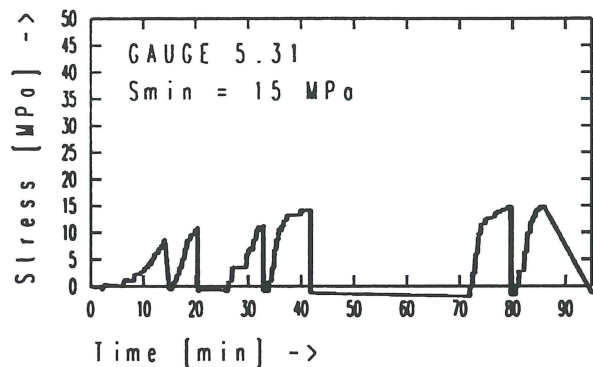
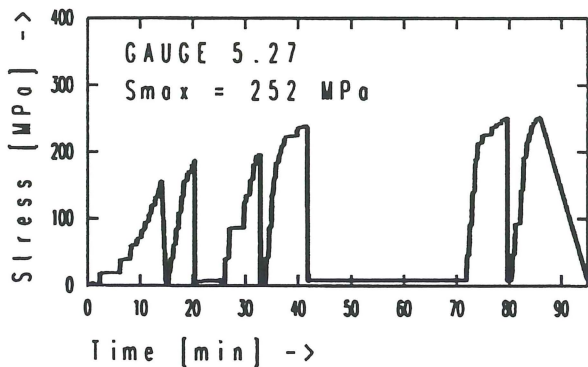
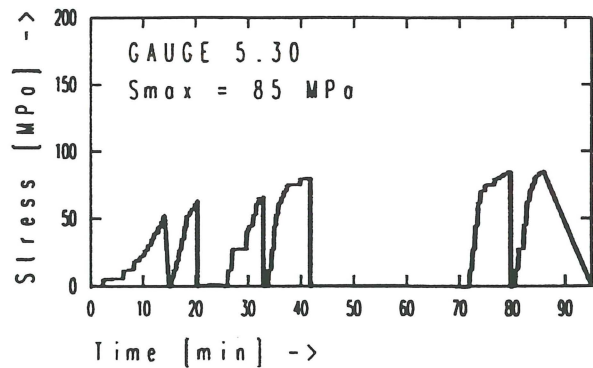
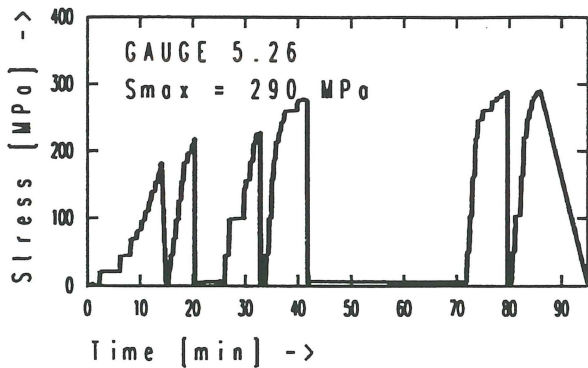
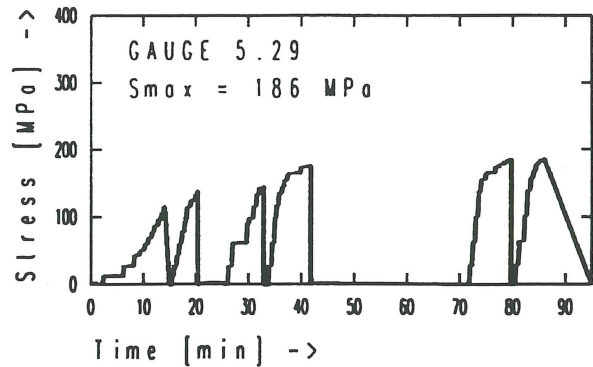
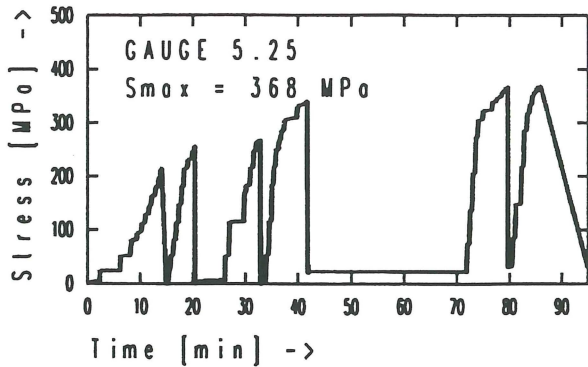
1st BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING TROUGH 5: F_{max} 113.7 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 1.32 N/mm²



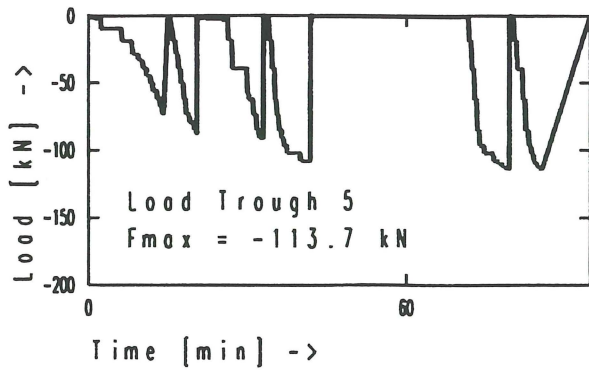
1st BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING TROUGH 5: Fmax 113.7 kN
LOADED AREA: Width 270mm Length 320mm
SURFACE STRESS: 1.32 N/mm2



1st BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING TROUGH 5: F_{max} 113.7 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 1.32 N/mm²



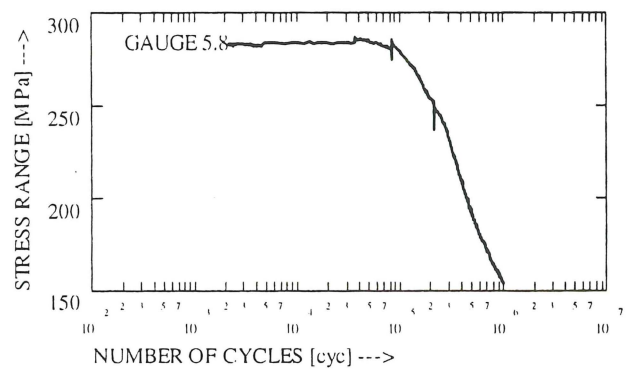
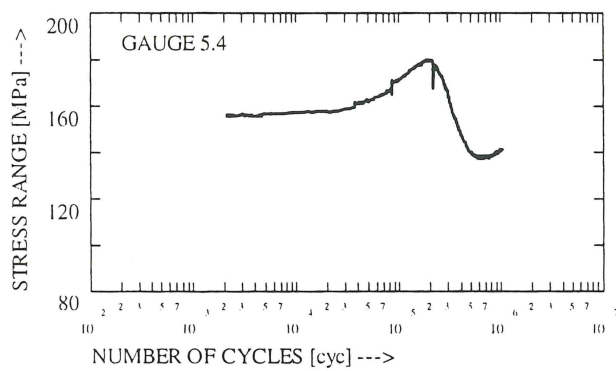
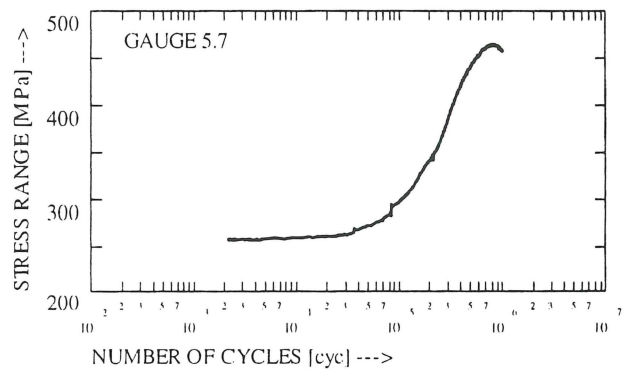
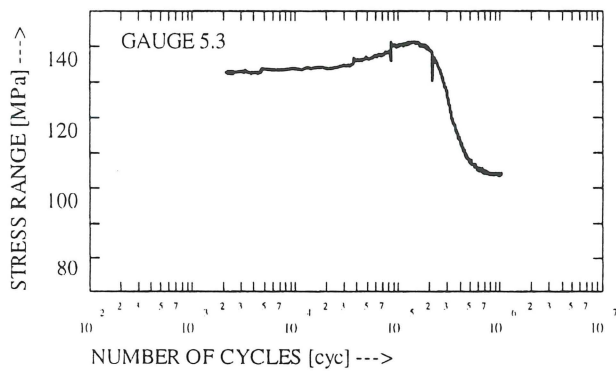
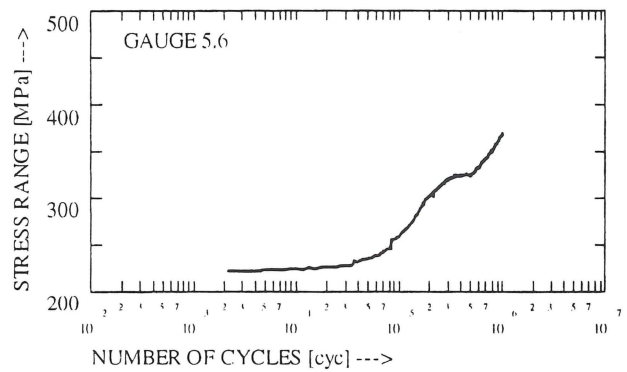
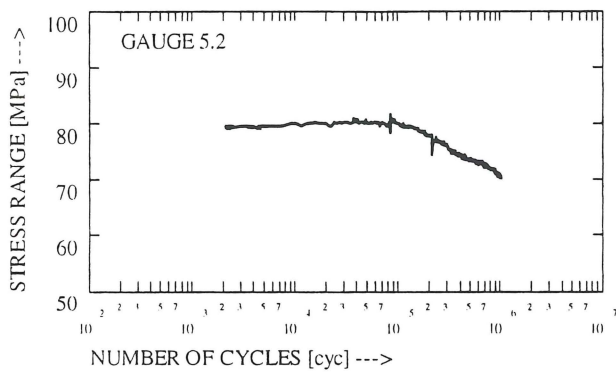
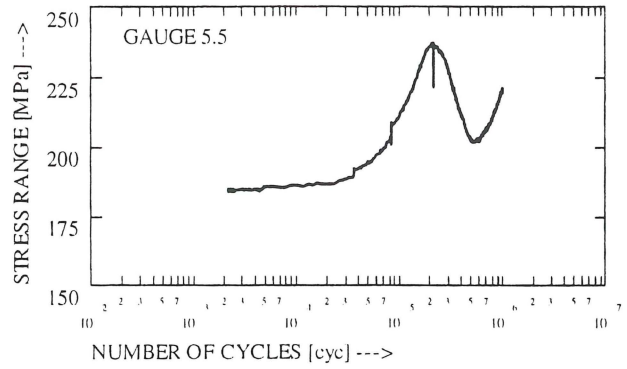
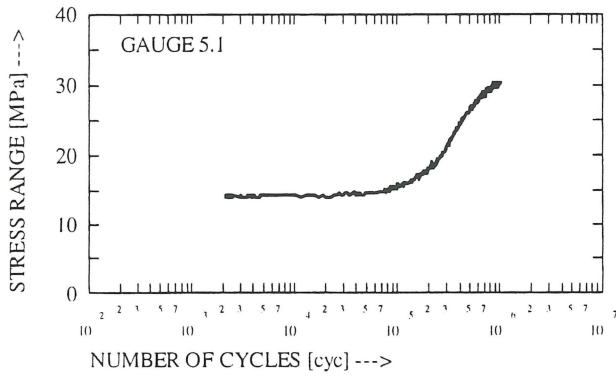
1st BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING TROUGH 5: Fmax 113.7 kN
LOADED AREA: Width 270mm Length 320mm
SURFACE STRESS: 1.32 N/mm2



BIRKHOFF PANEL -VAN BRIENENOORD-

FATIGUE DATA TROUGH 5

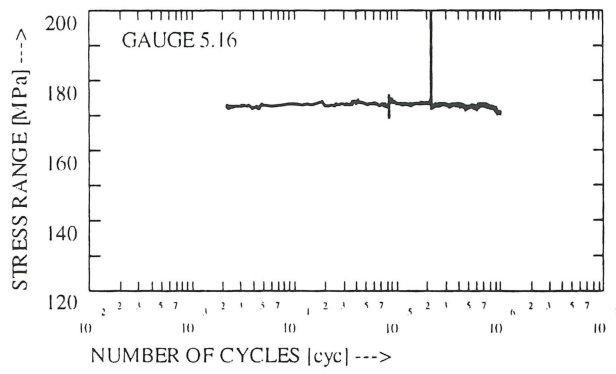
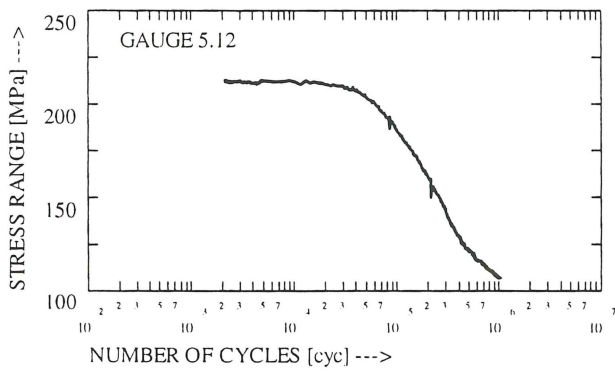
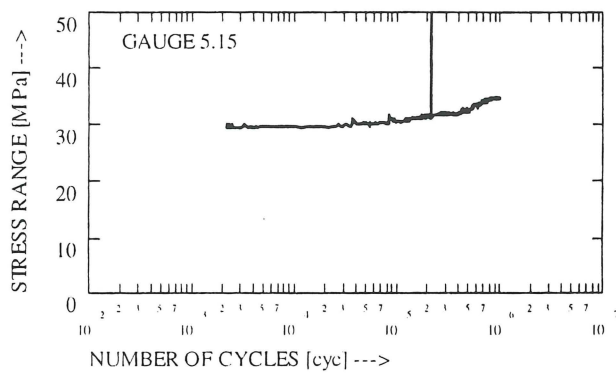
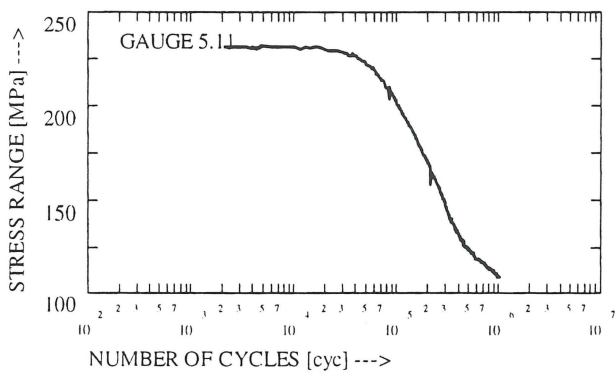
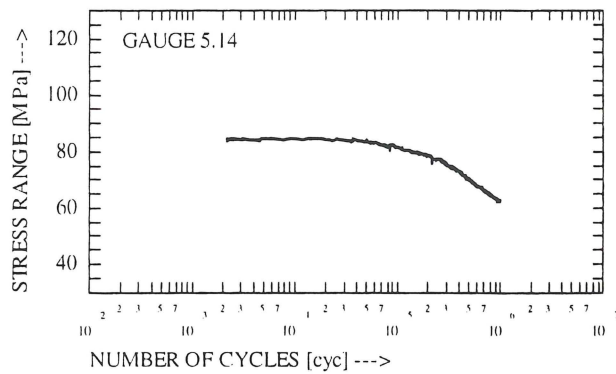
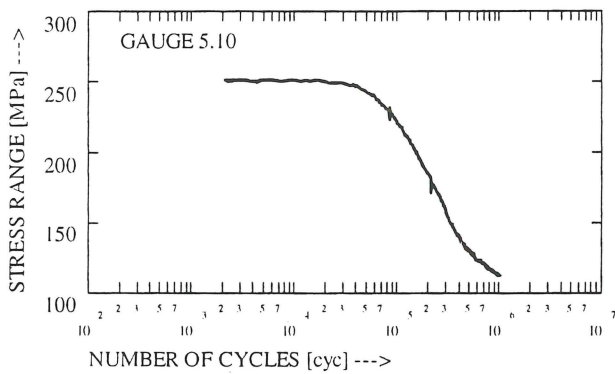
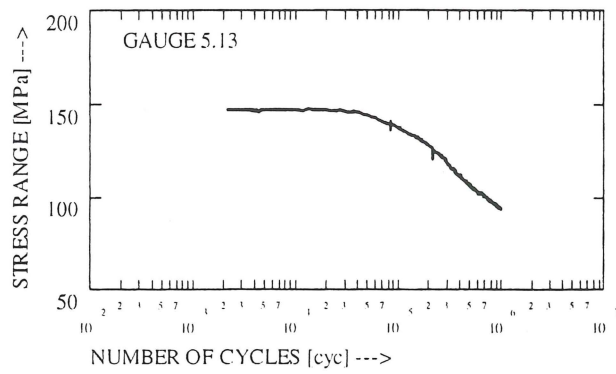
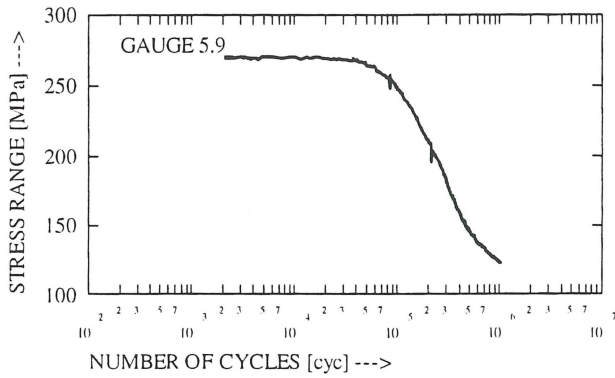
Ntot=1.007.228 CYCLES



OVB-2.DFX

BIRKHOFF PANEL - VAN BRIENENOORD-
Ntot=1.007.228 CYCLES

FATIGUE DATA TROUGH 5

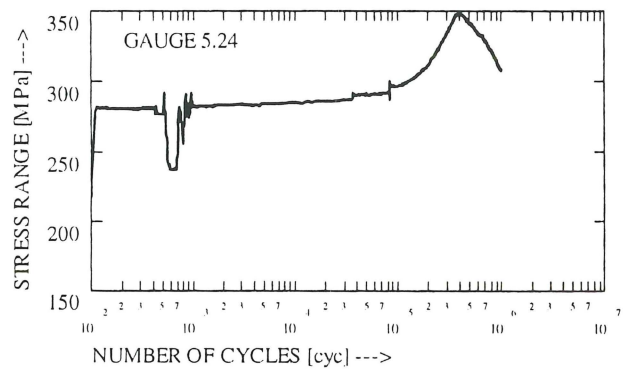
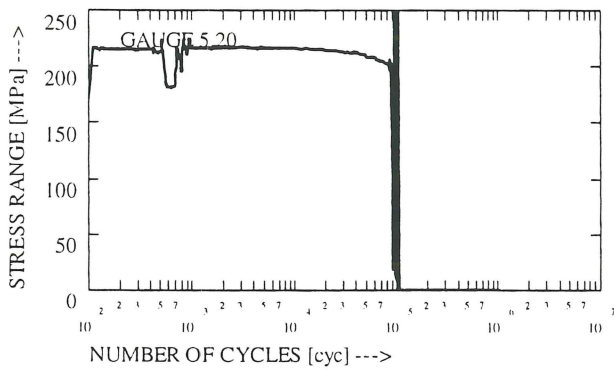
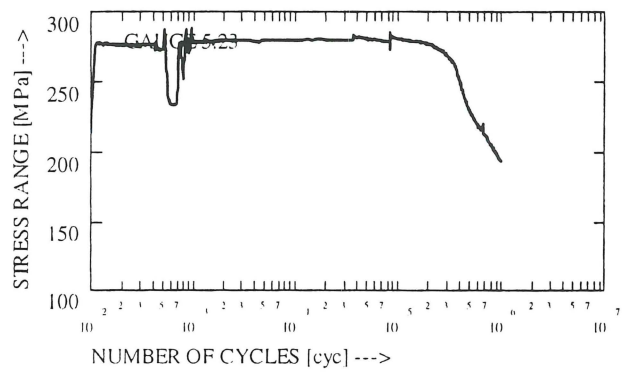
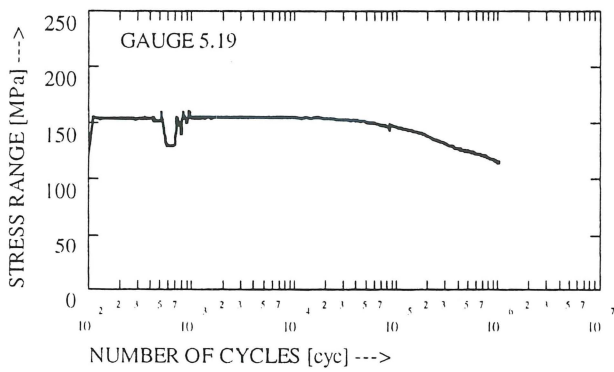
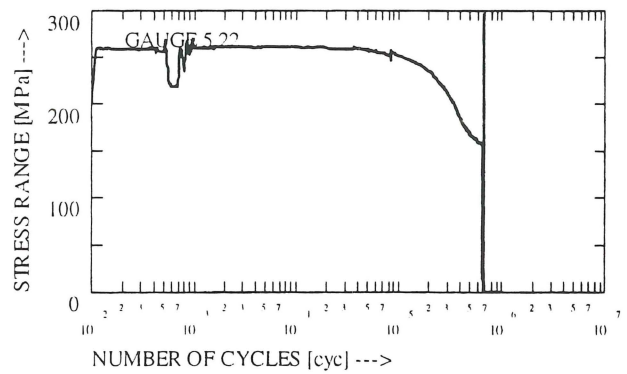
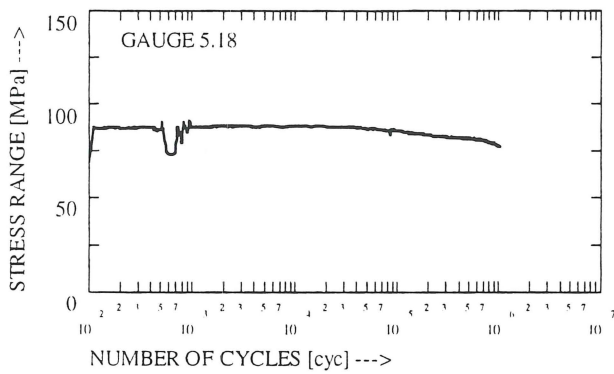
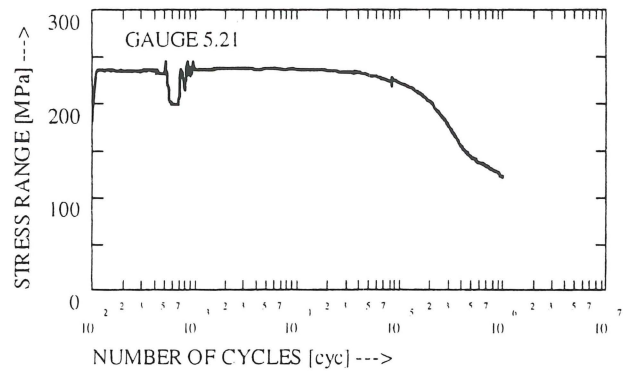
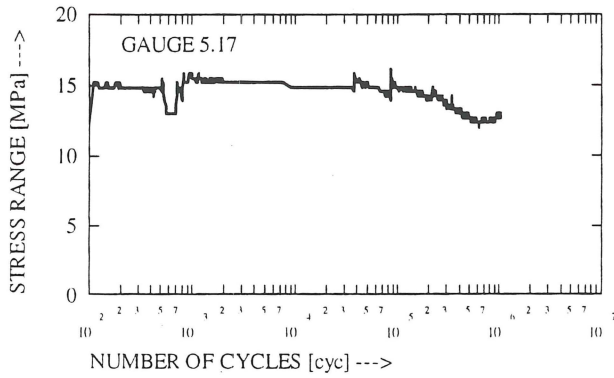


OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD-

FATIGUE DATA TROUGH 5

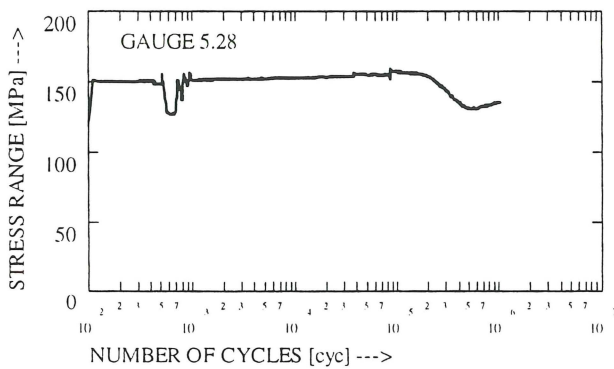
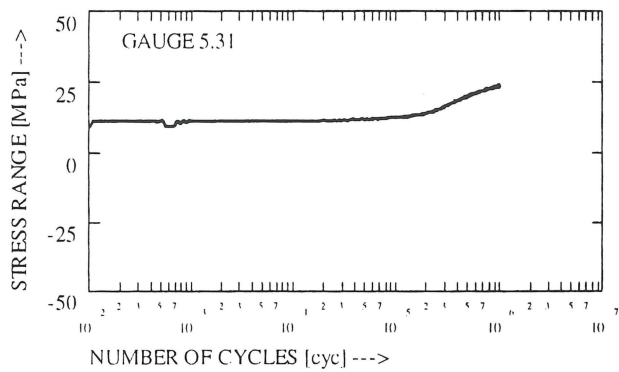
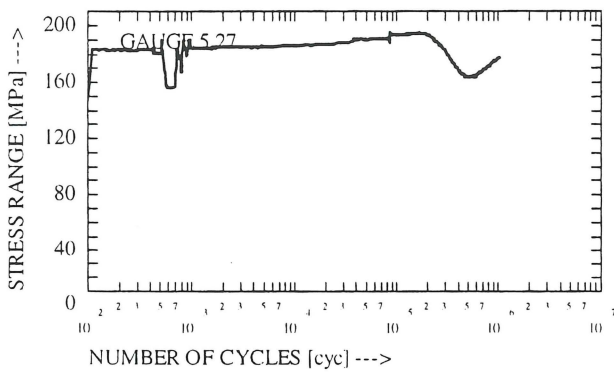
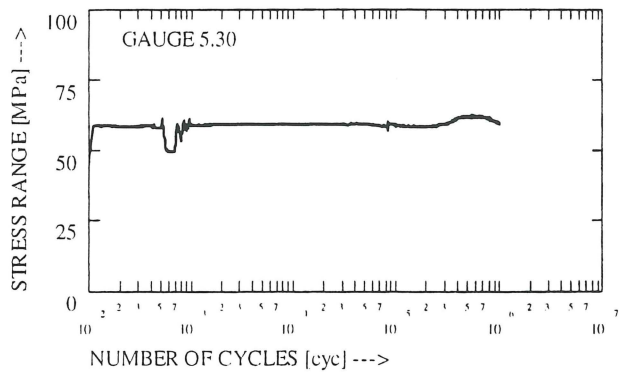
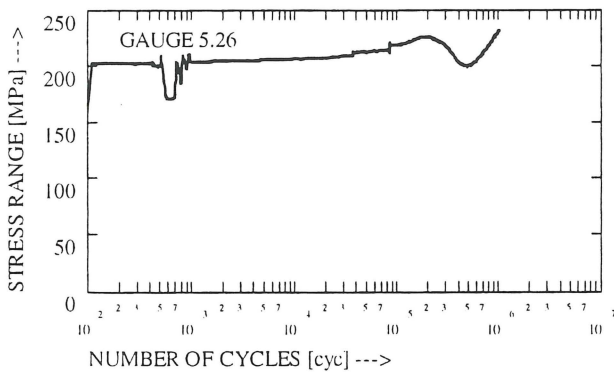
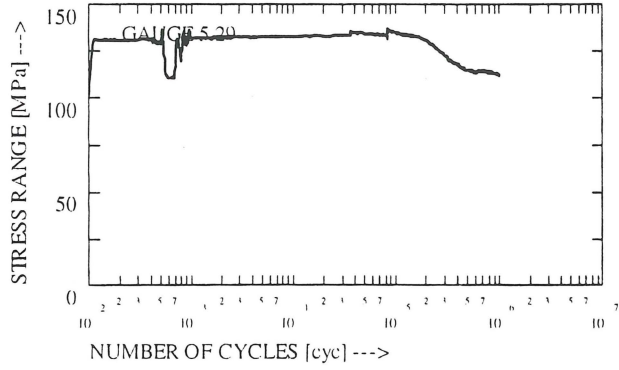
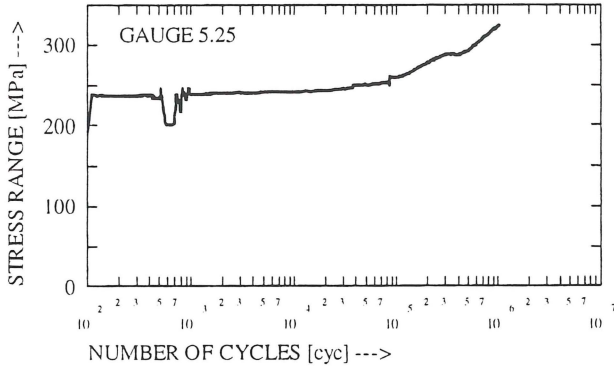
Ntot=1.007.228 CYCLES



OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD-
Ntot=1.007.228 CYCLES

FATIGUE DATA TROUGH 5

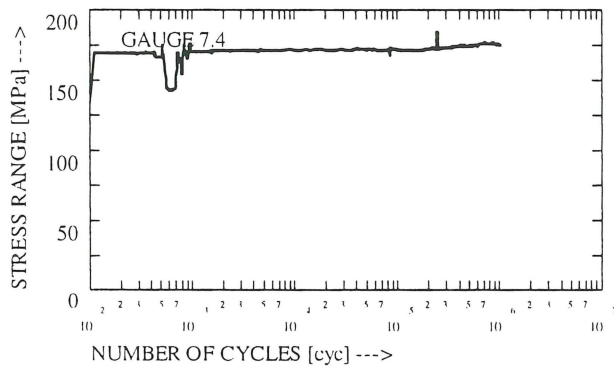
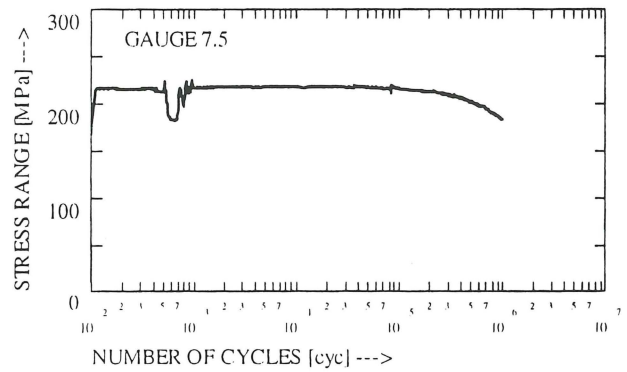
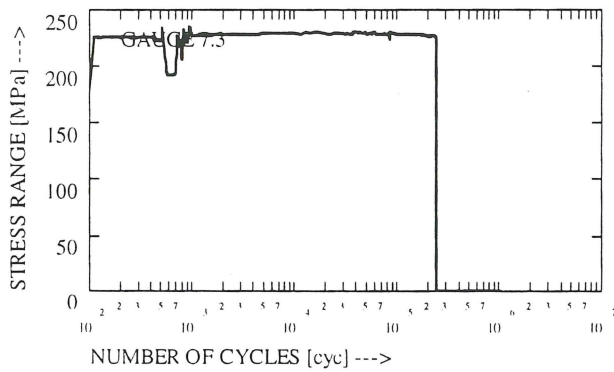
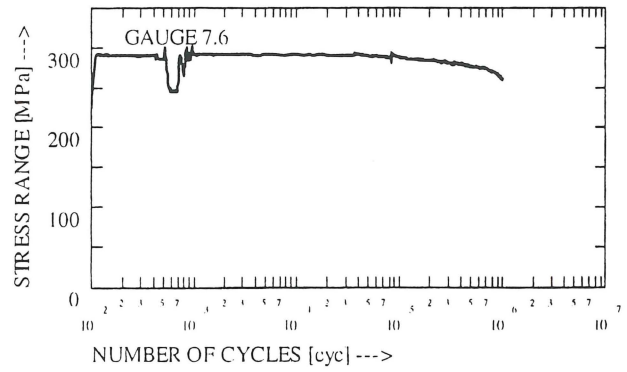
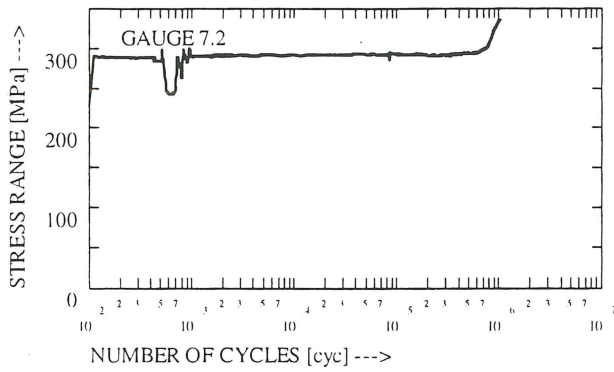
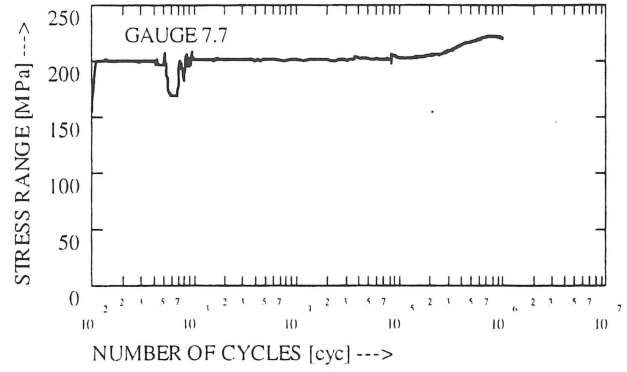
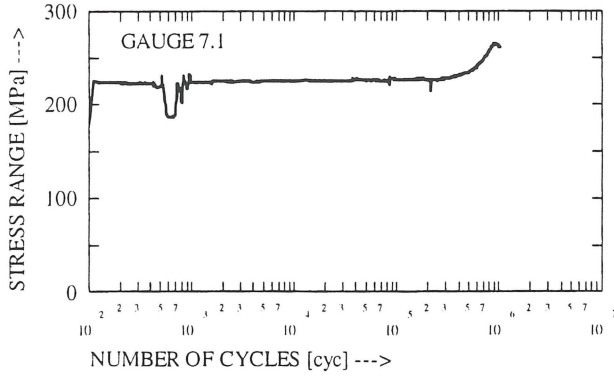


OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD-

FATIGUE DATA TROUGH 7

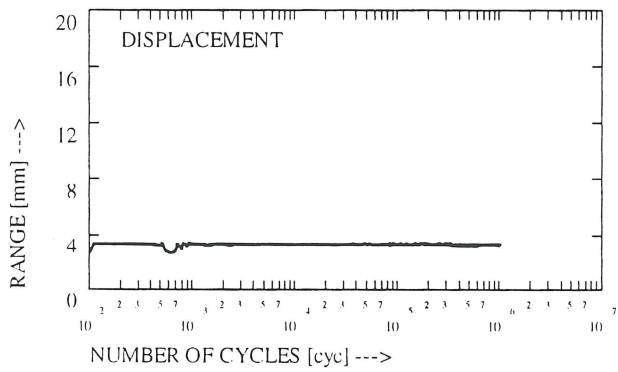
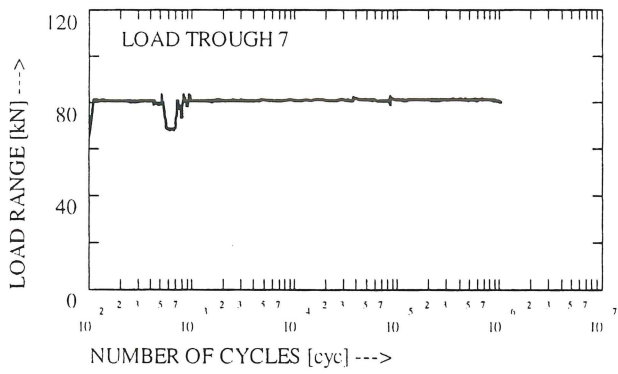
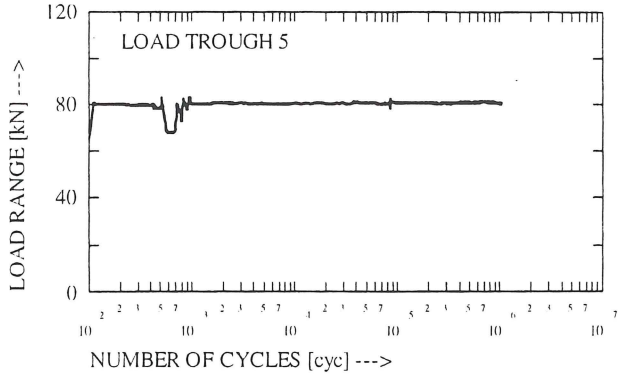
Ntot=1.007.228 CYCLES



OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5 & 7

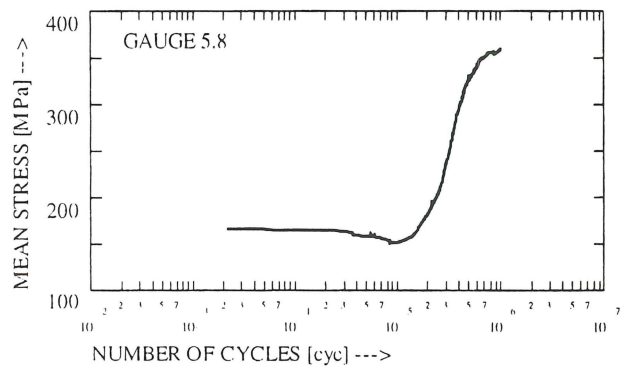
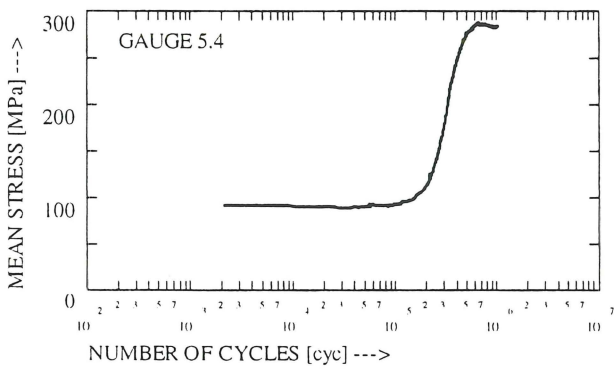
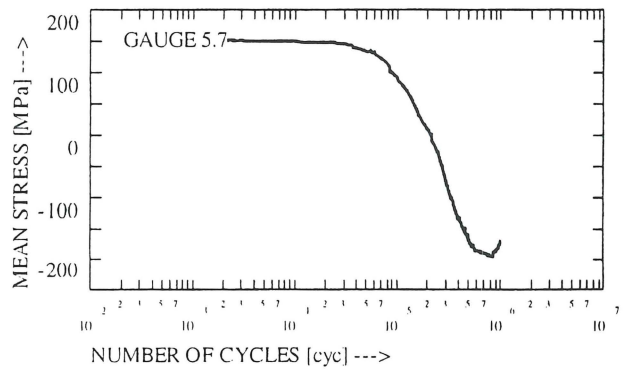
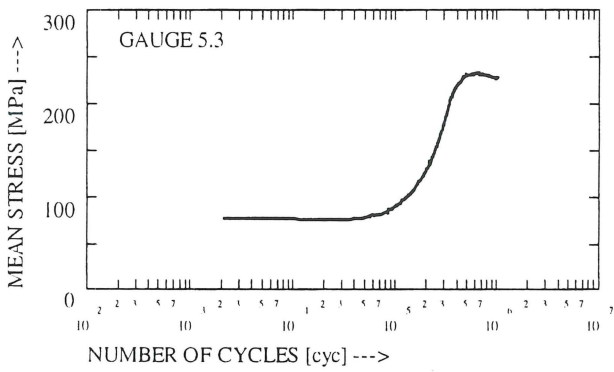
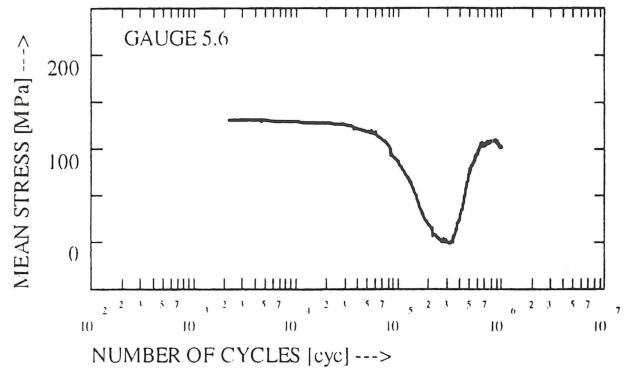
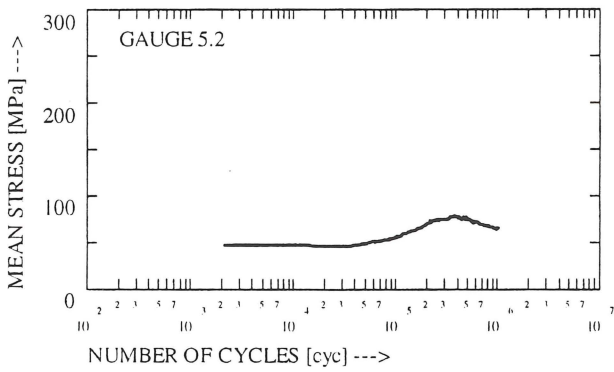
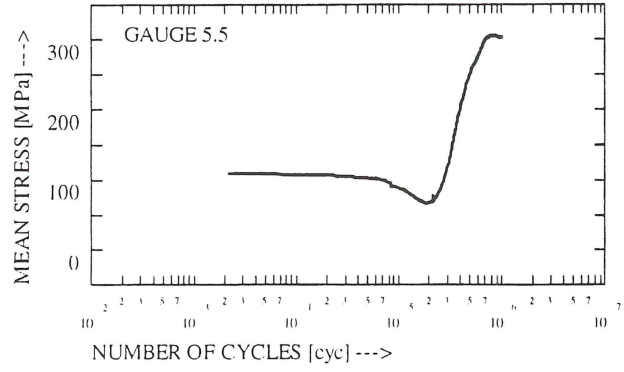
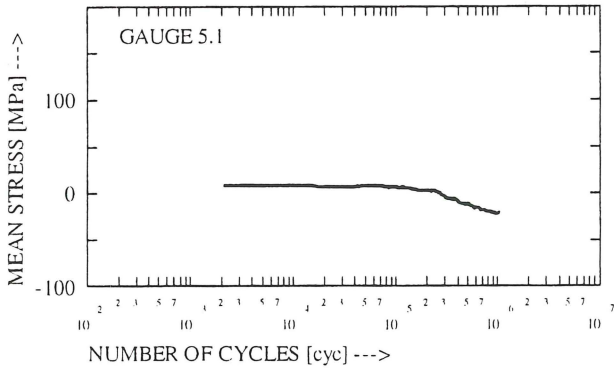
Ntot=1.007.228 CYCLES



OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD-
N_{tot}=1.007.228 CYCLES

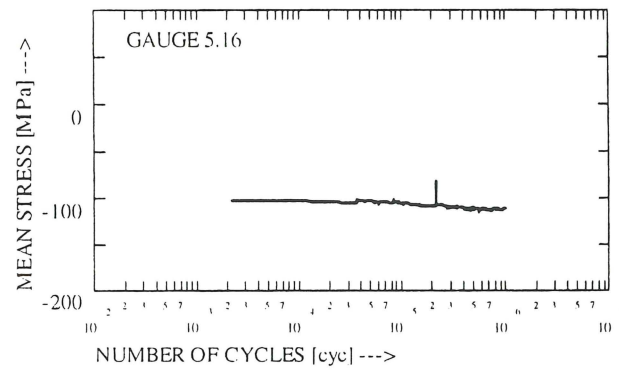
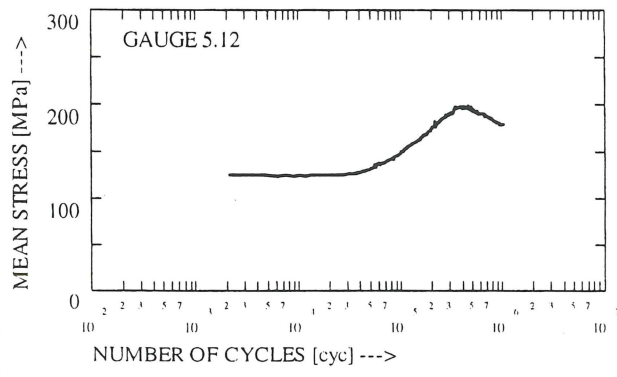
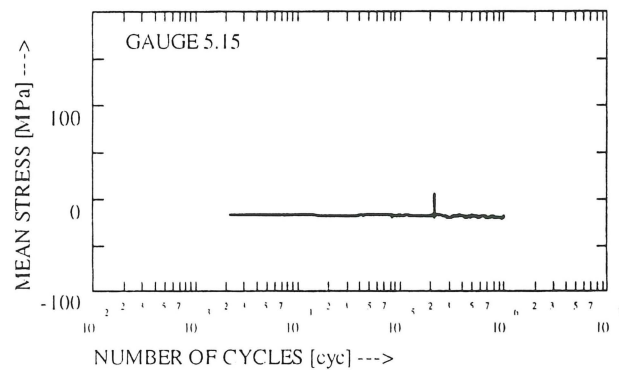
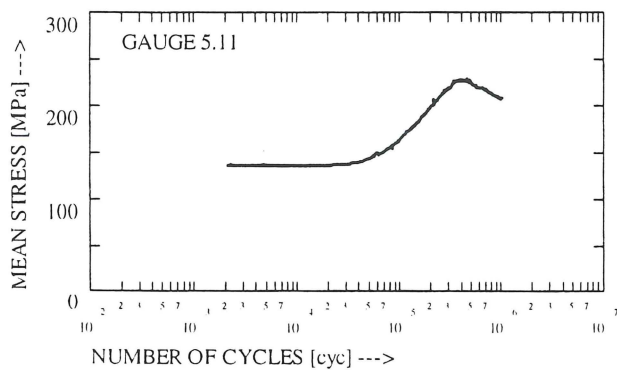
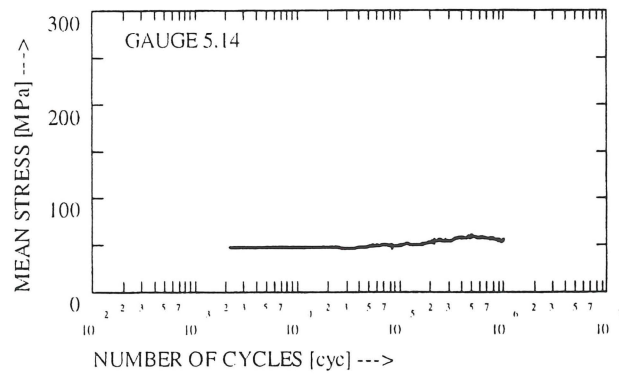
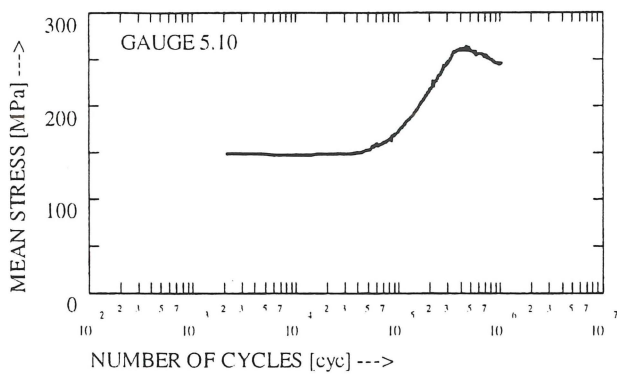
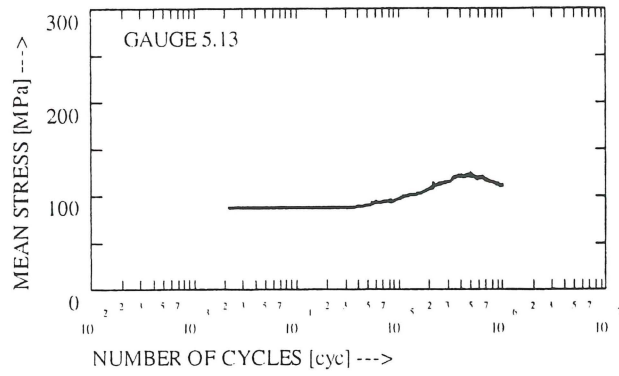
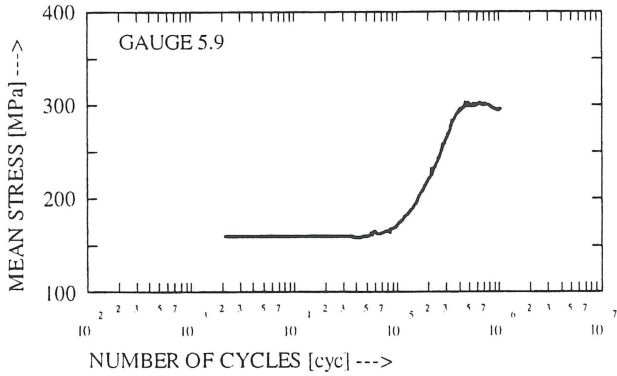
FATIGUE DATA TROUGH 5



OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

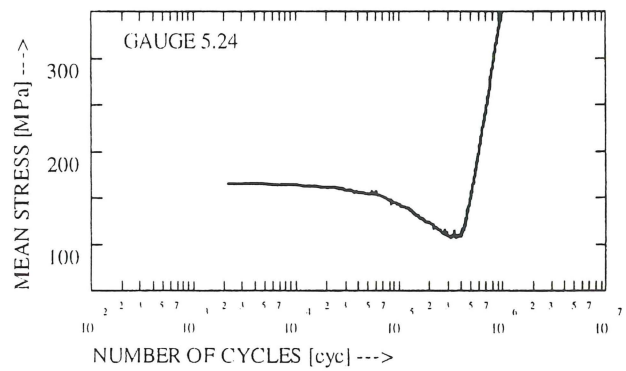
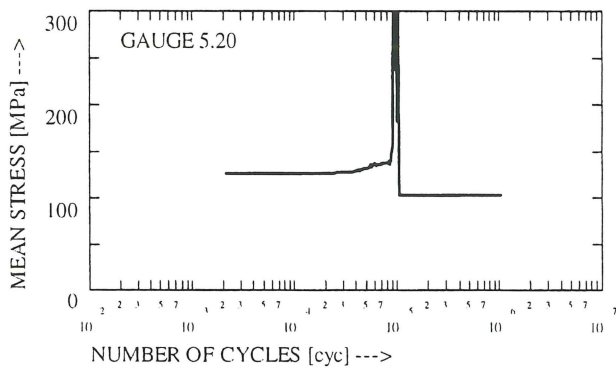
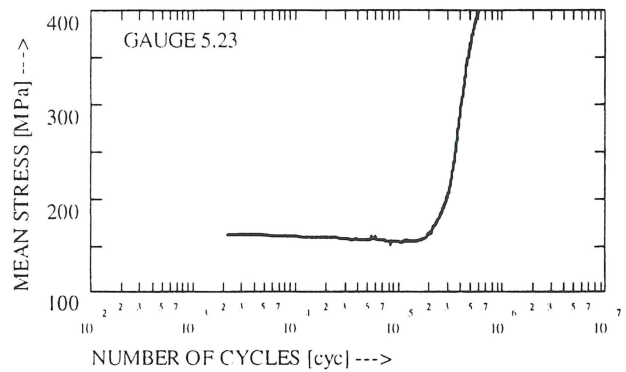
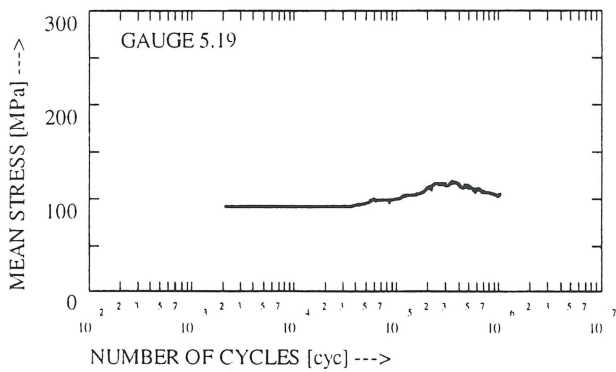
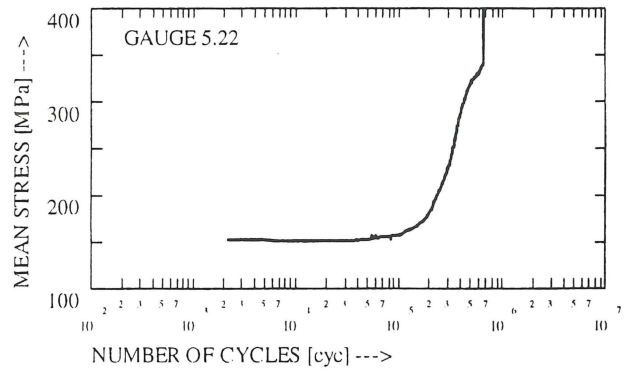
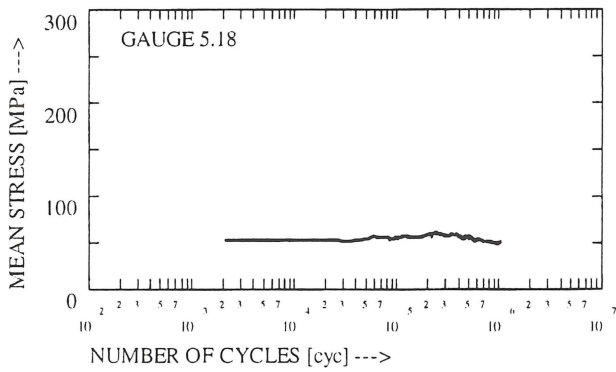
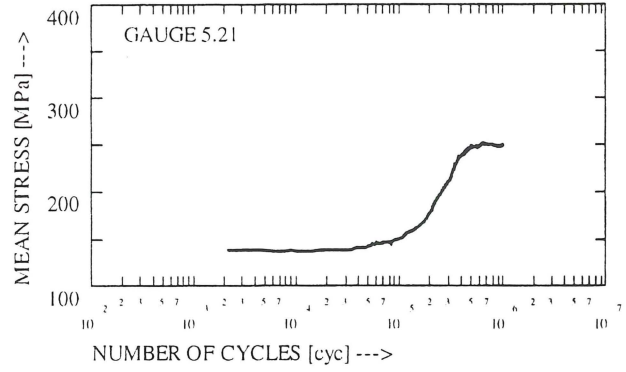
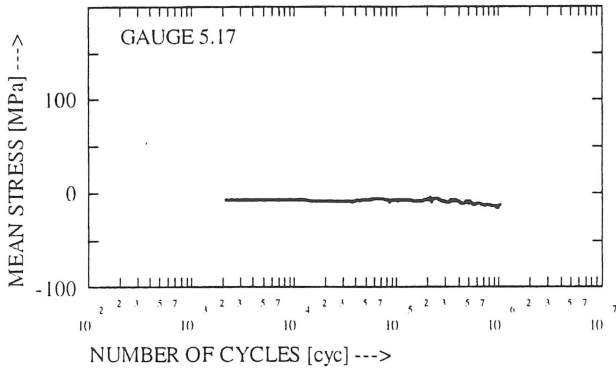
Ntot=1.007.228 CYCLES



OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

Ntot=1.007.228 CYCLES

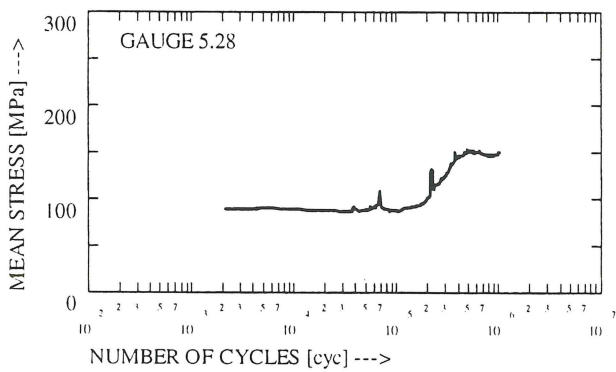
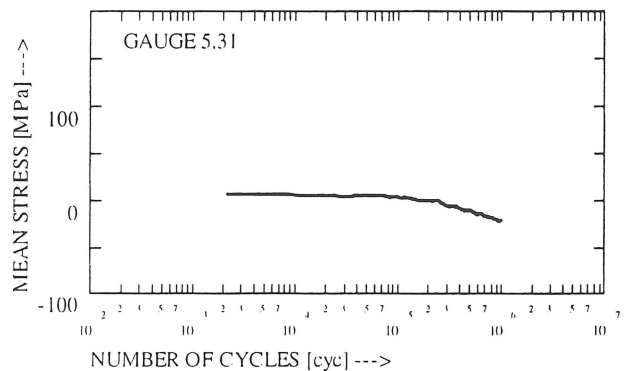
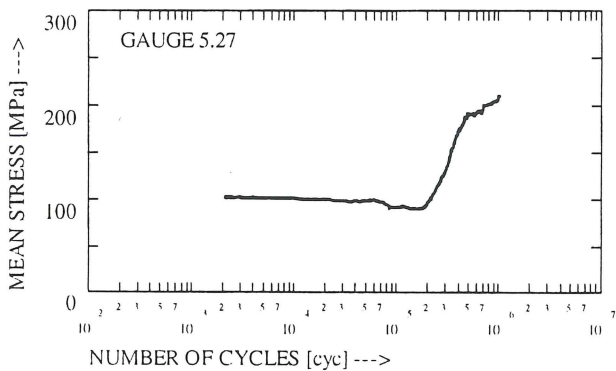
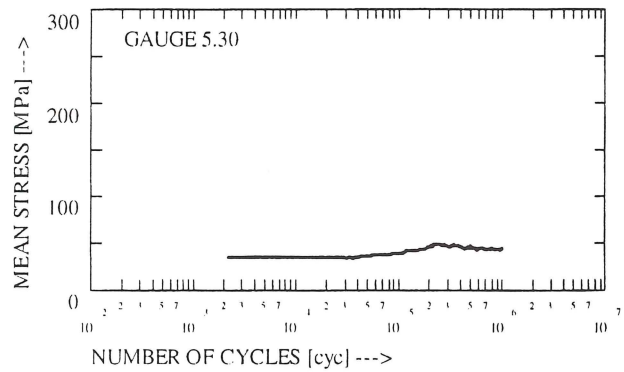
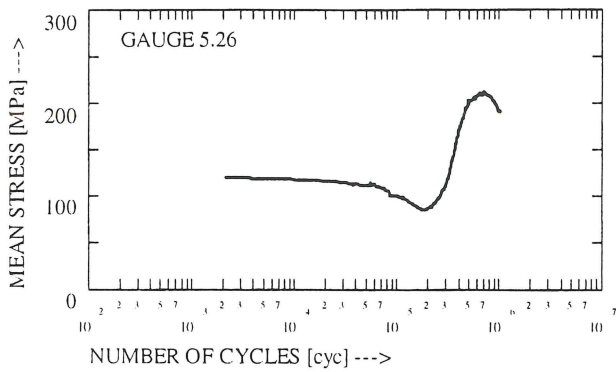
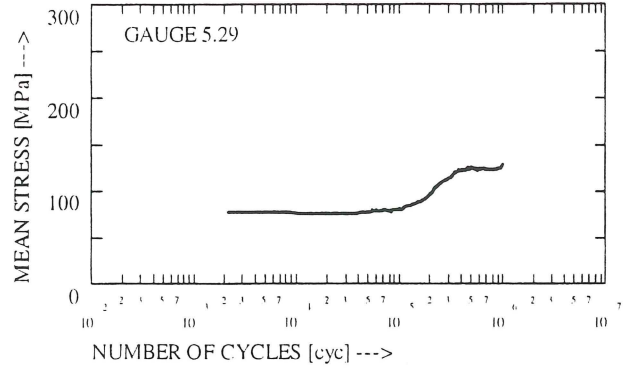
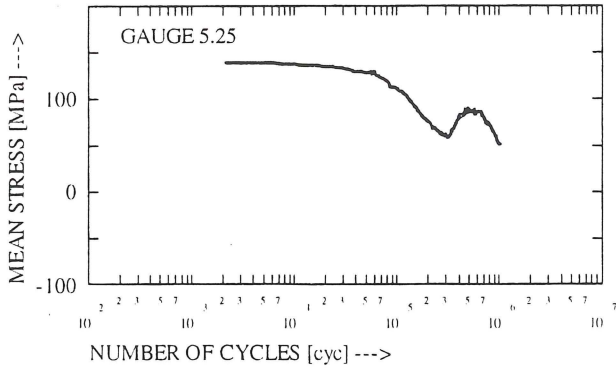


OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD-

FATIGUE DATA TROUGH 5

Ntot=1.007.228 CYCLES

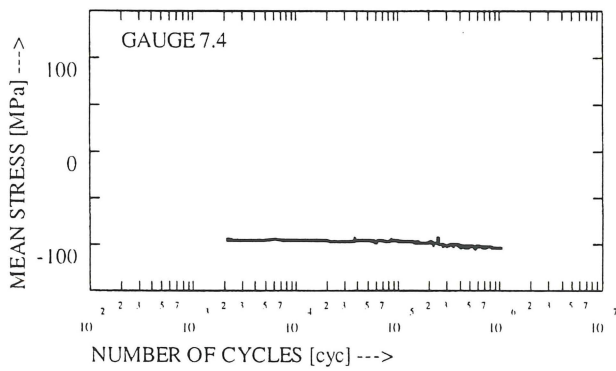
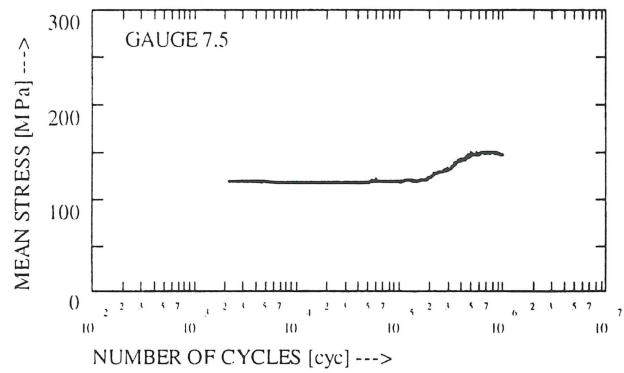
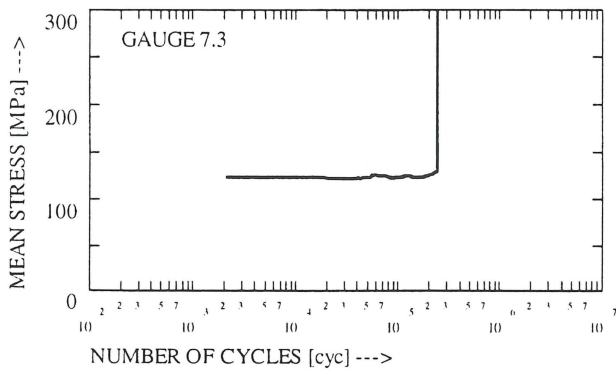
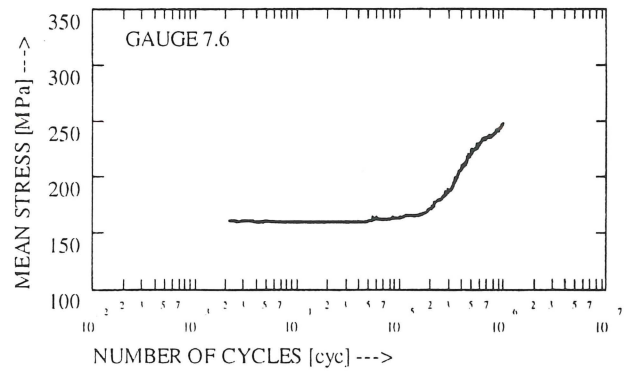
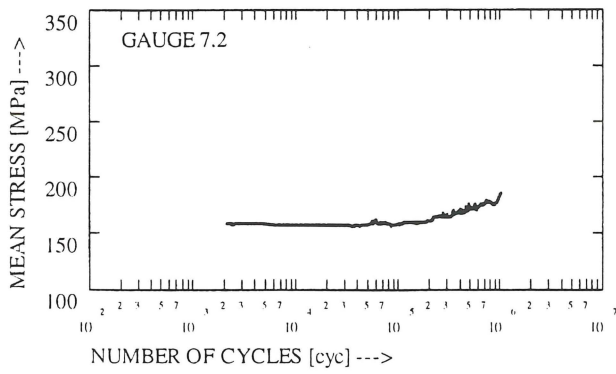
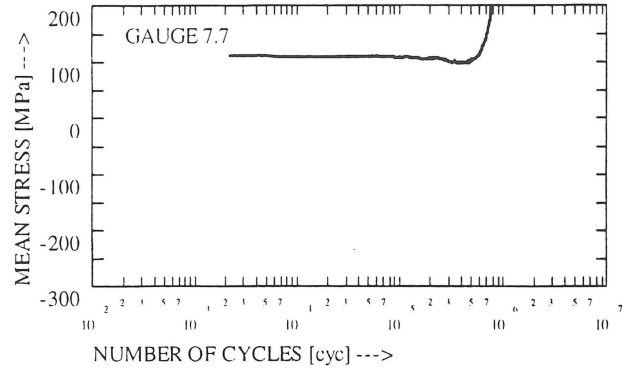
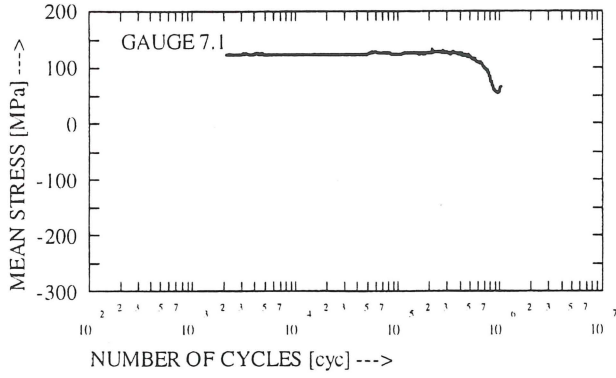


OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD-

FATIGUE DATA TROUGH 7

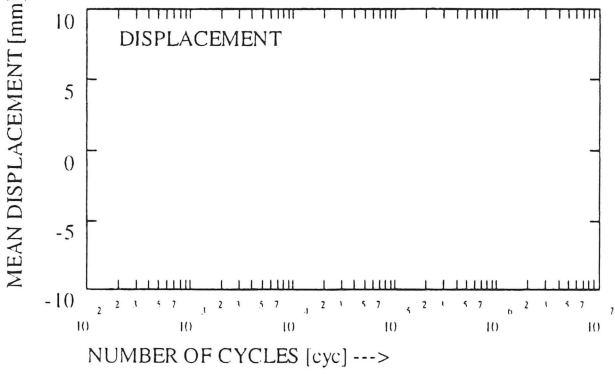
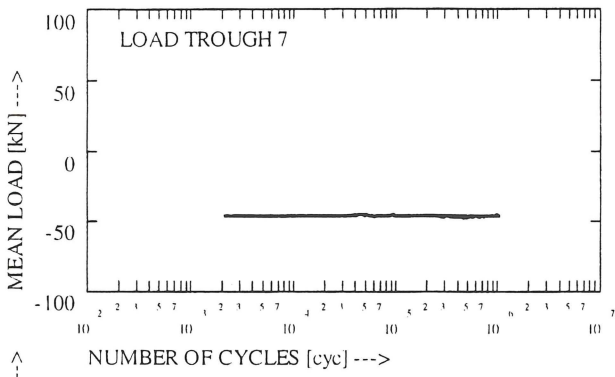
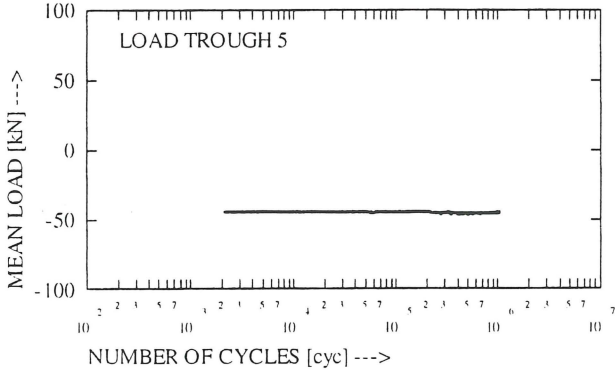
Ntot=1.007.228 CYCLES



OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5 & 7

Ntot=1.007.228 CYCLES

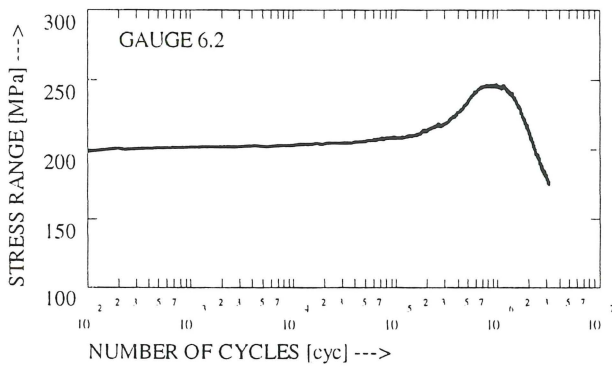
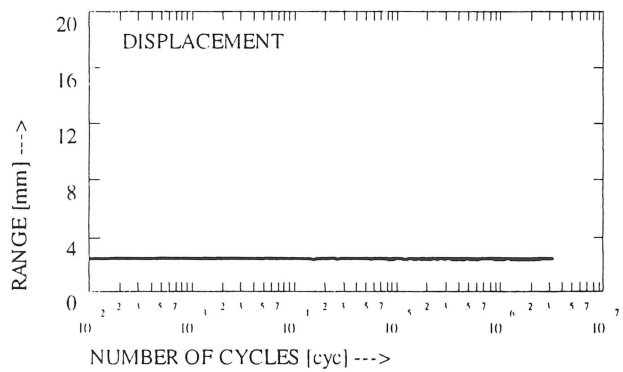
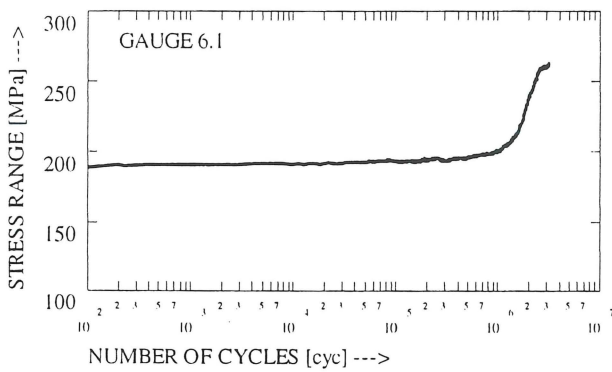
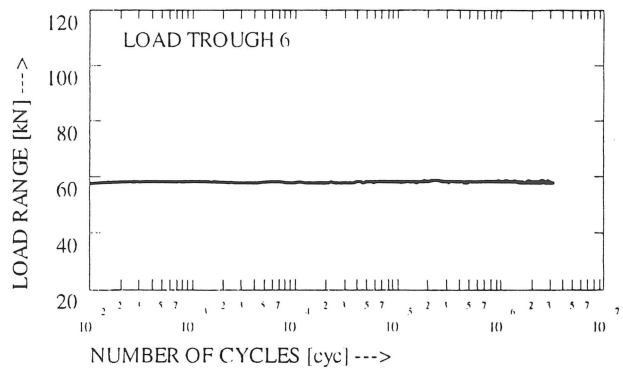
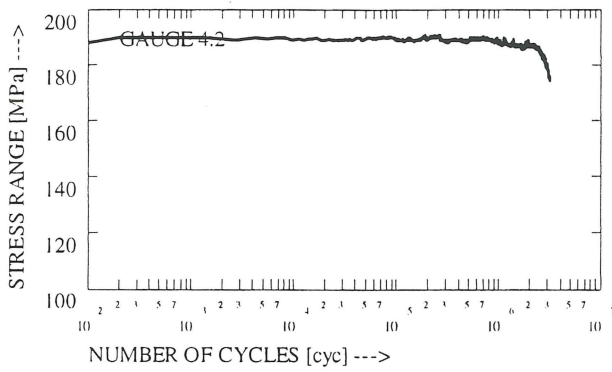
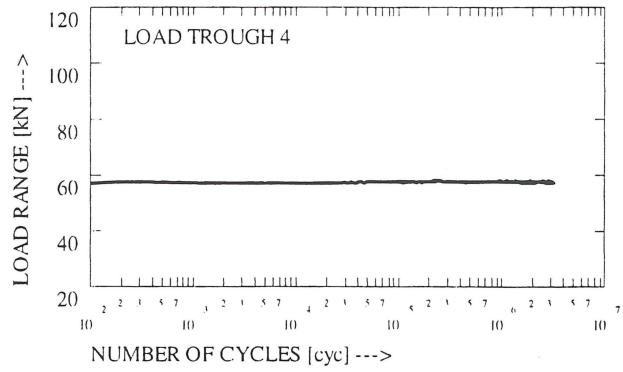
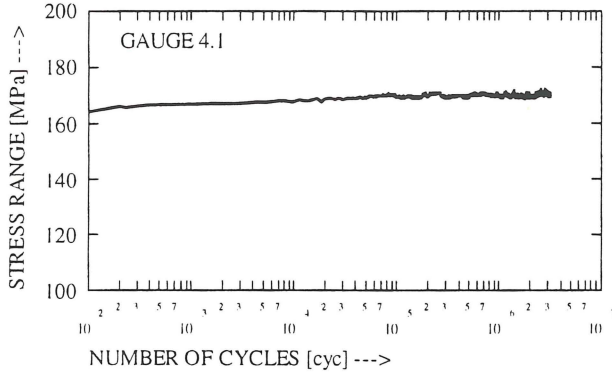


OVB-2.DFX

BIRKHOFF PANEL -VAN BRIENENOORD-

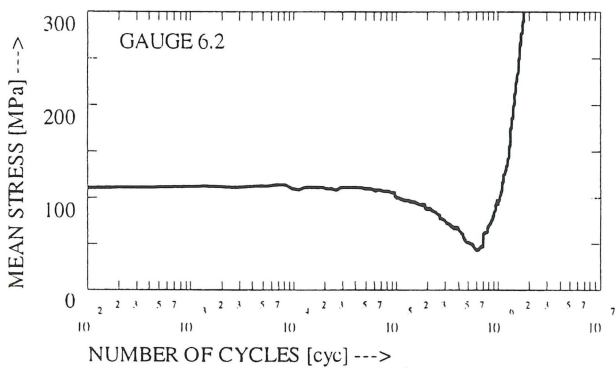
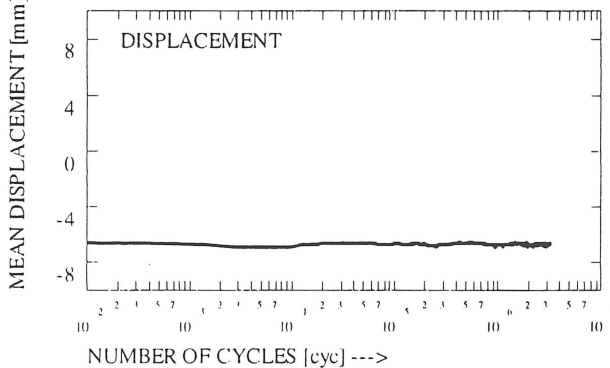
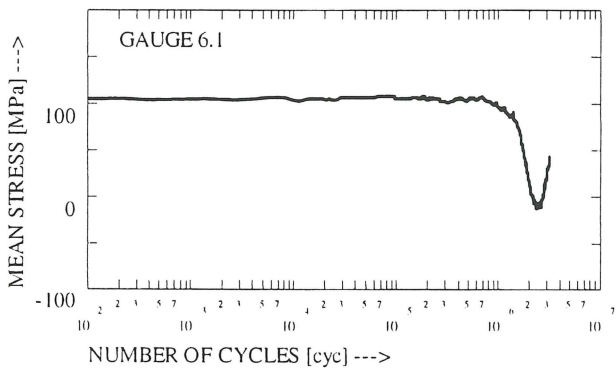
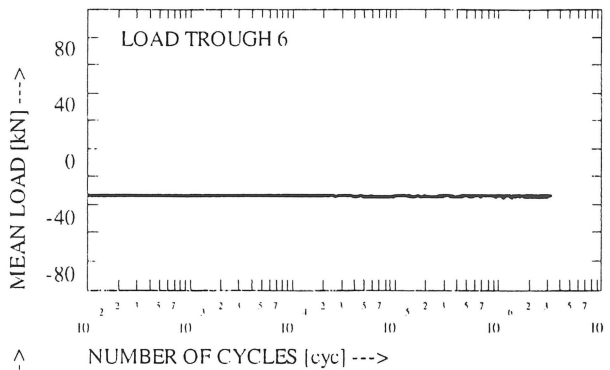
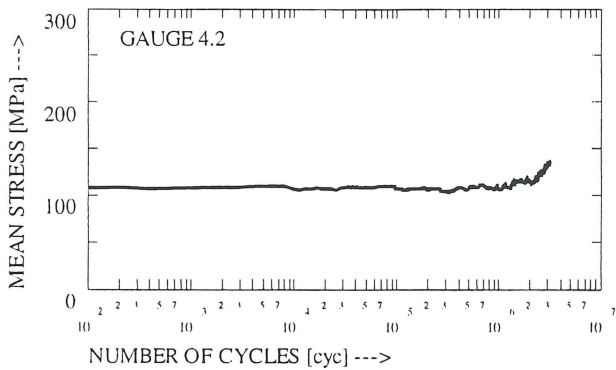
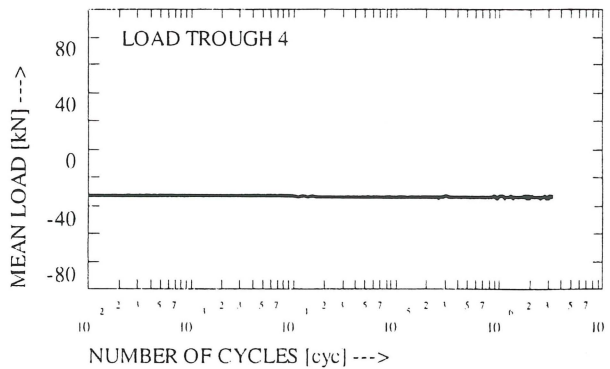
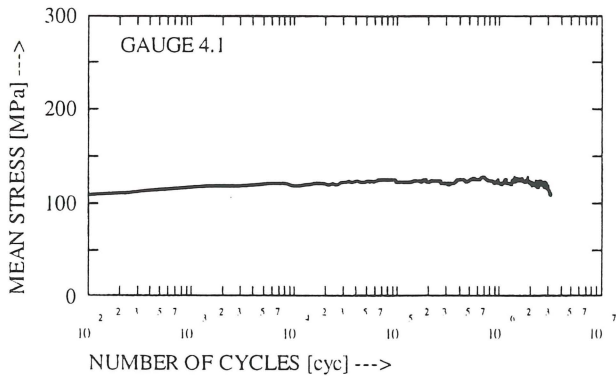
FATIGUE DATA TROUGH 4 & 6

Ntot=2.397.612 CYCLES



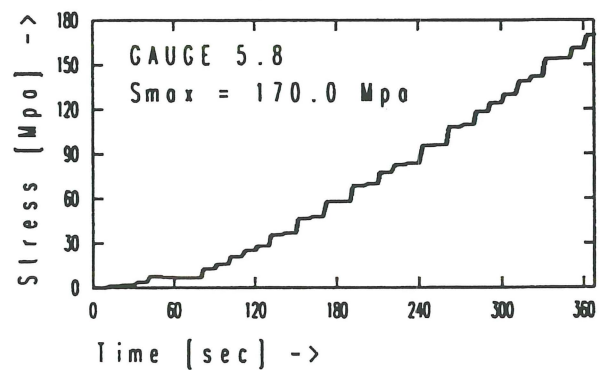
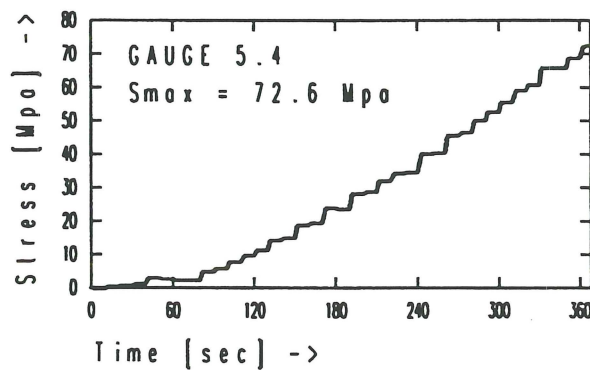
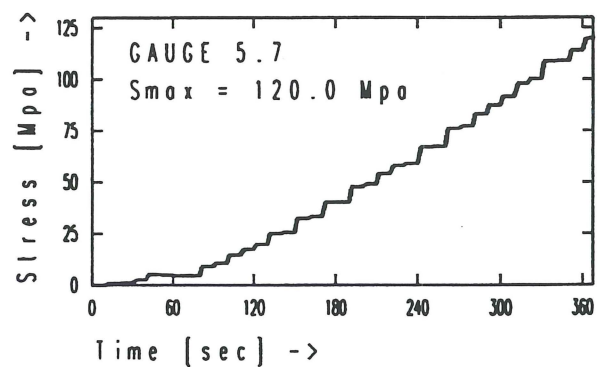
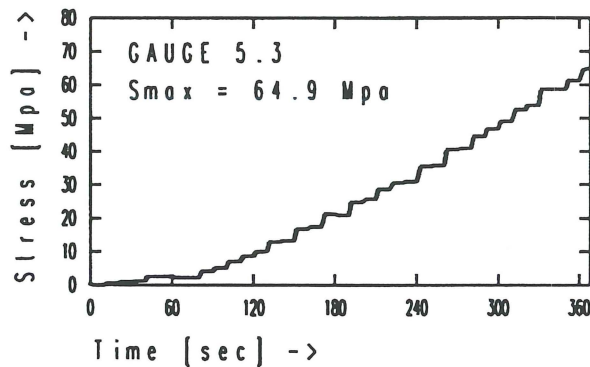
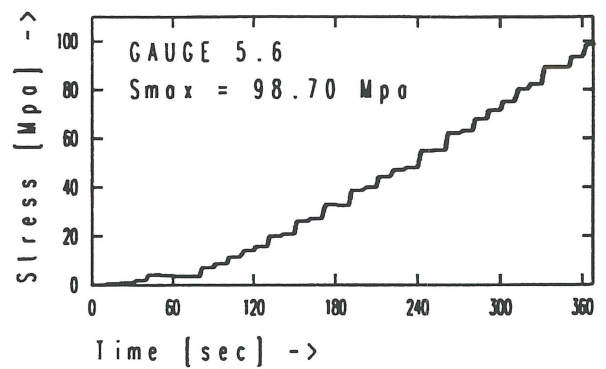
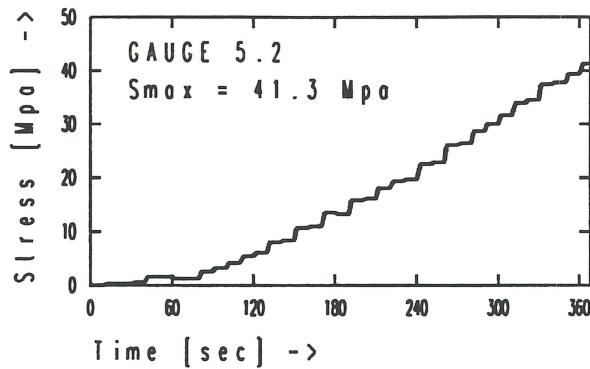
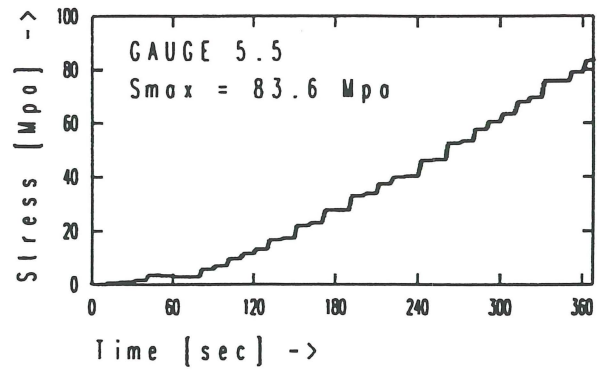
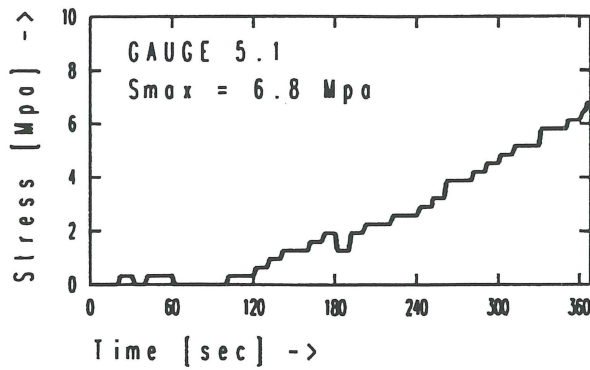
0VB-3.DFX

BIRKHOFF PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 4 & 6
Ntot=2.397.612 CYCLES

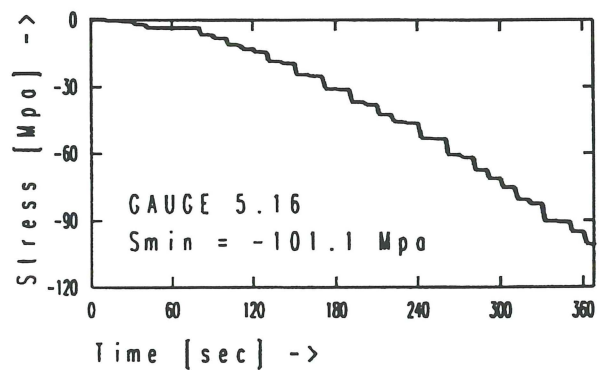
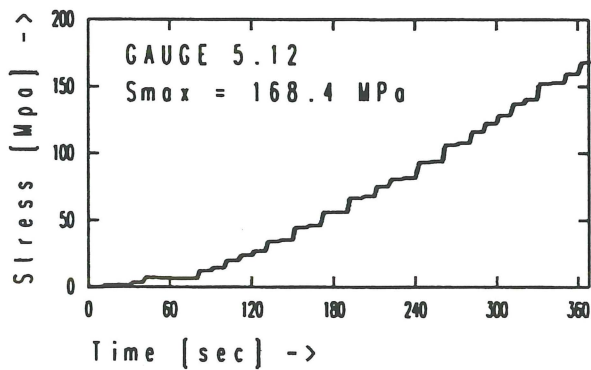
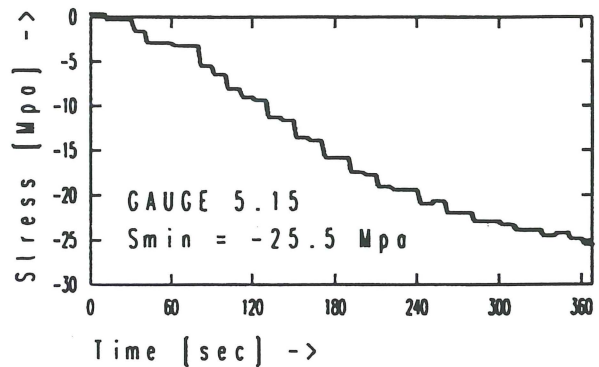
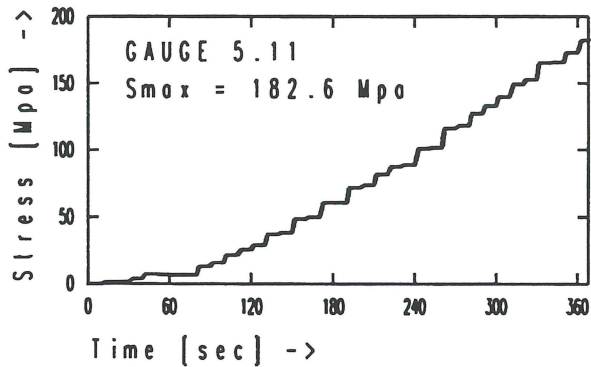
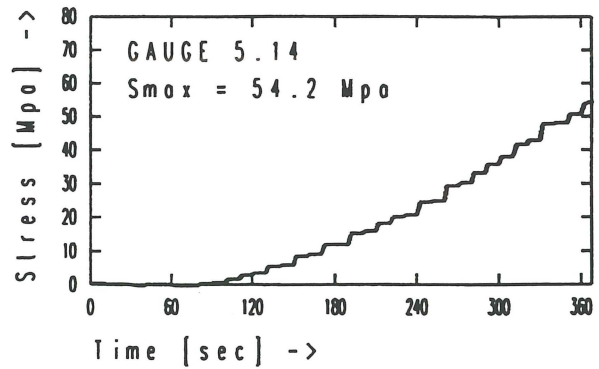
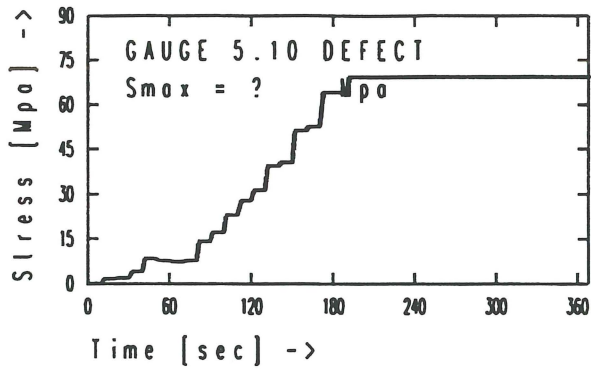
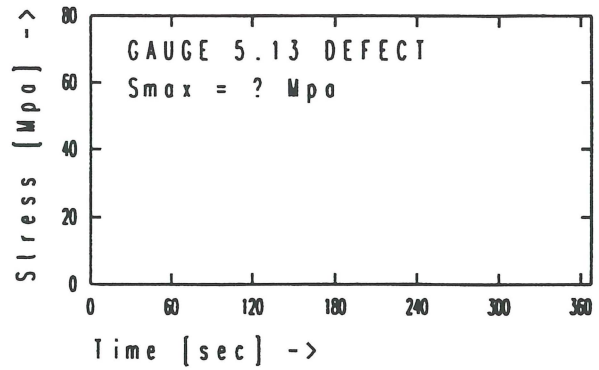
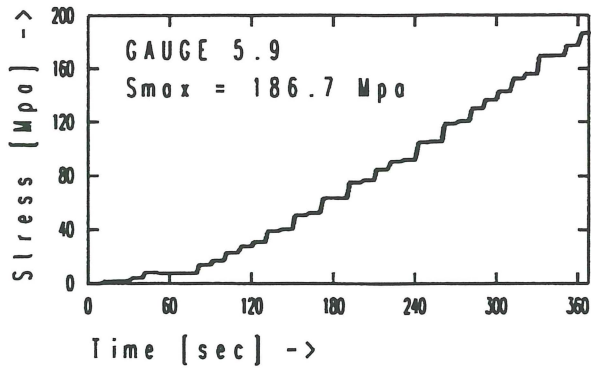


0VB4-1.DFX

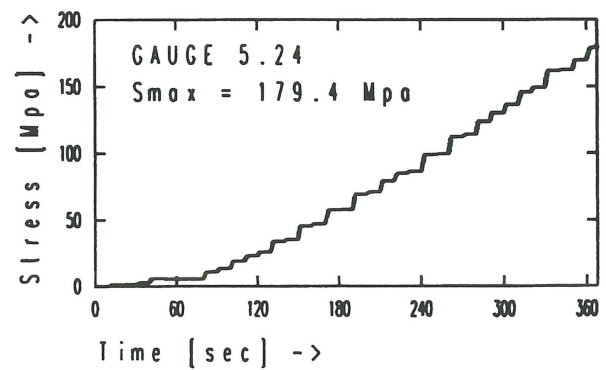
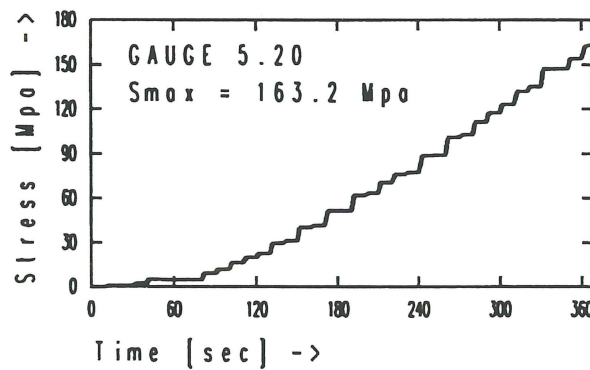
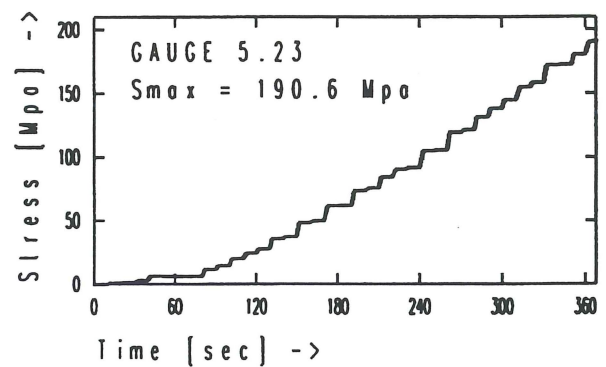
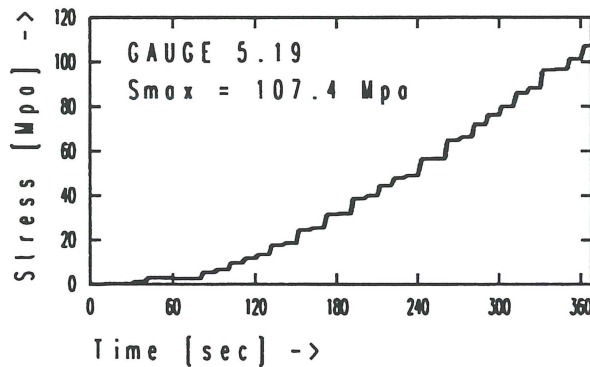
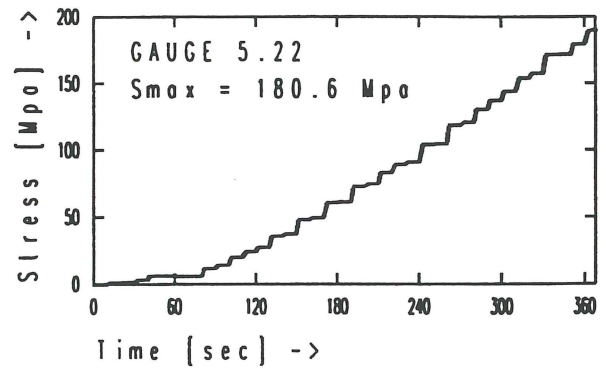
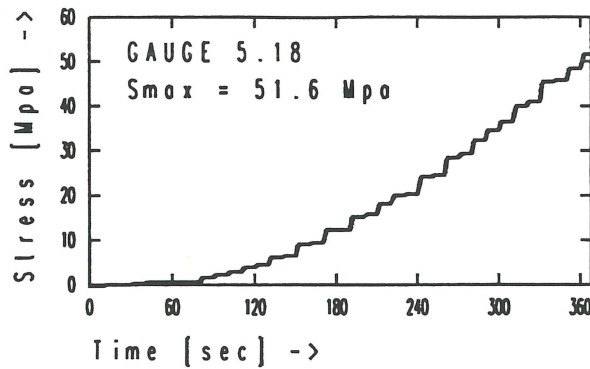
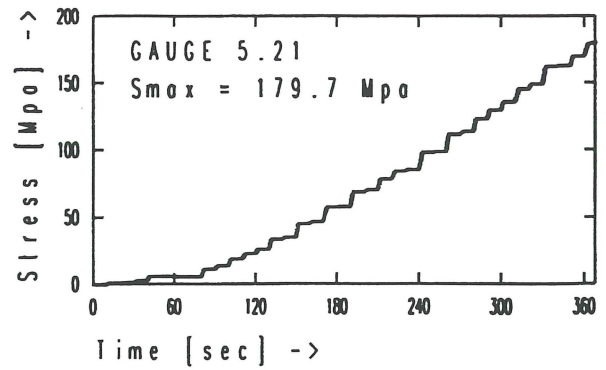
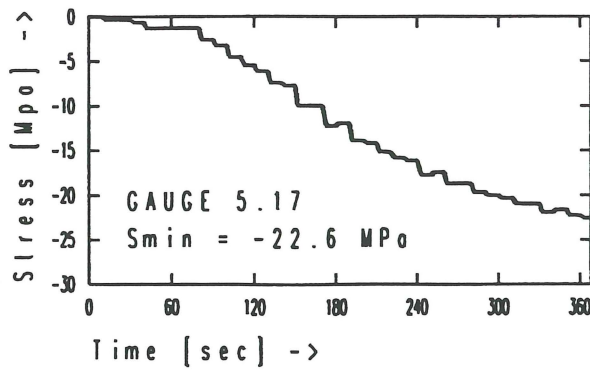
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 70.4 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 0.815 N/mm²



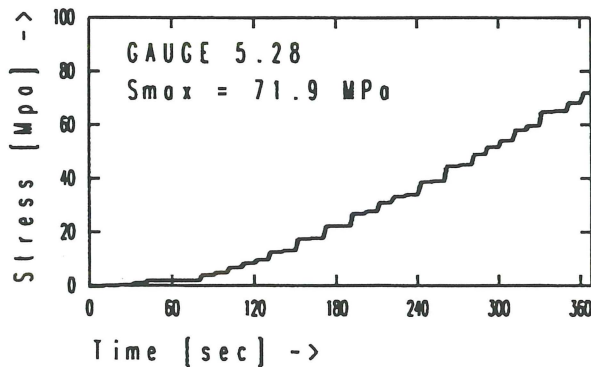
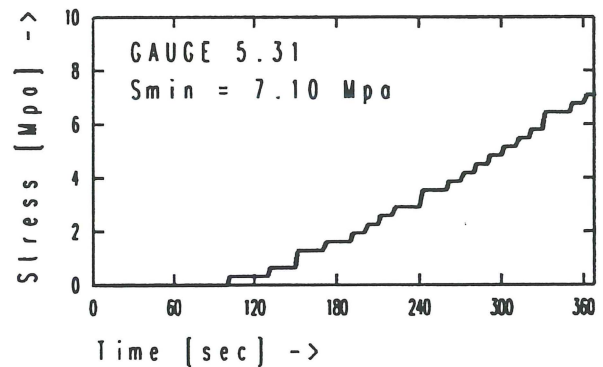
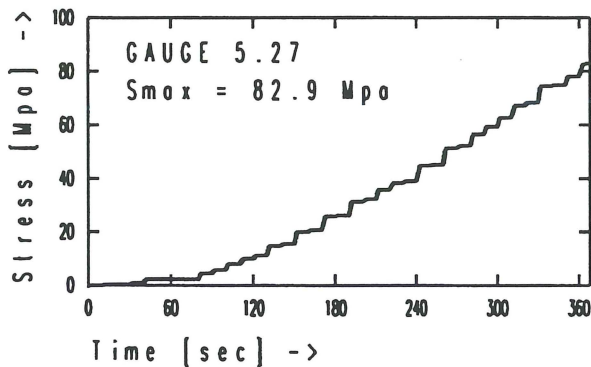
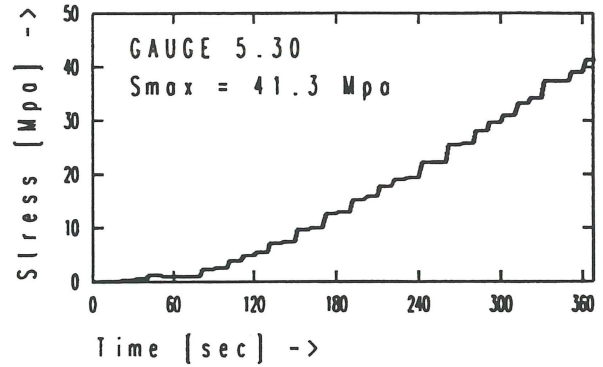
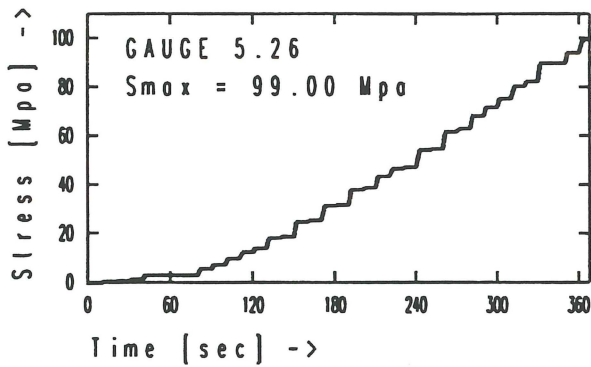
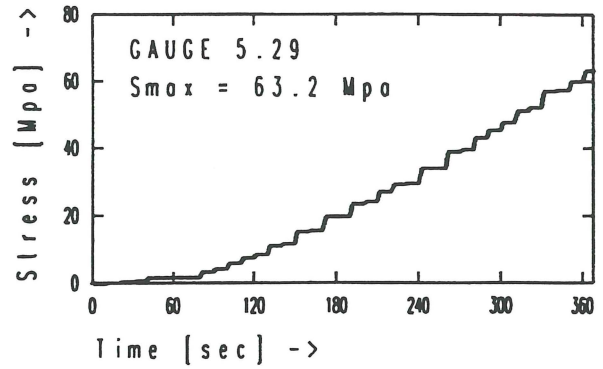
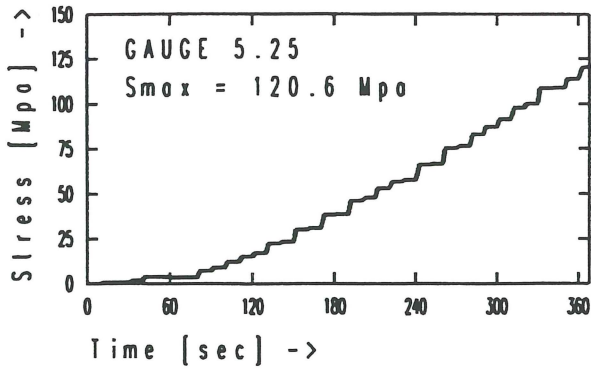
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 70.4 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 0.815 N/mm²



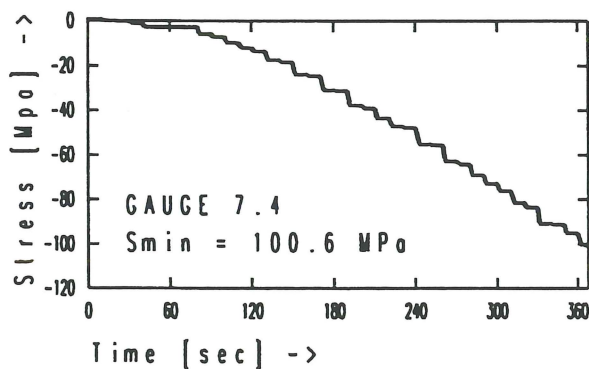
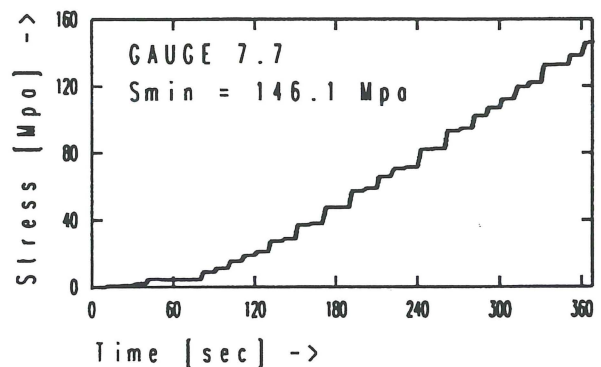
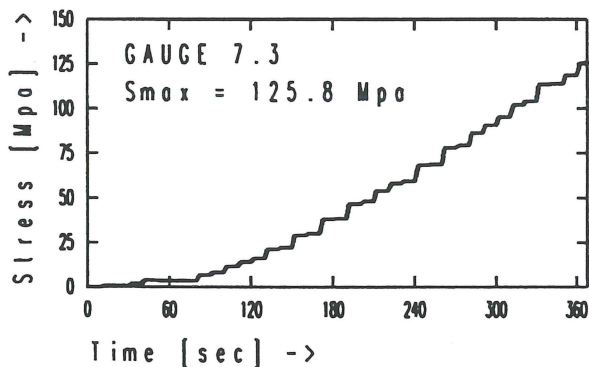
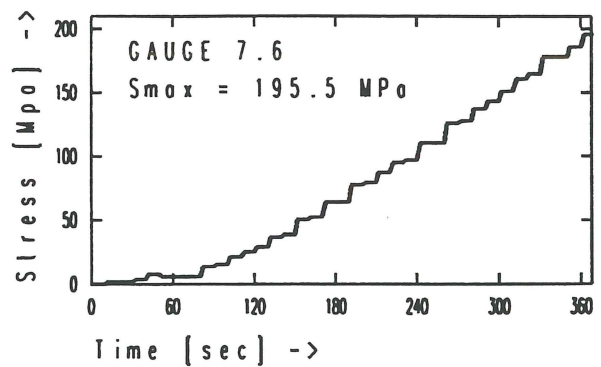
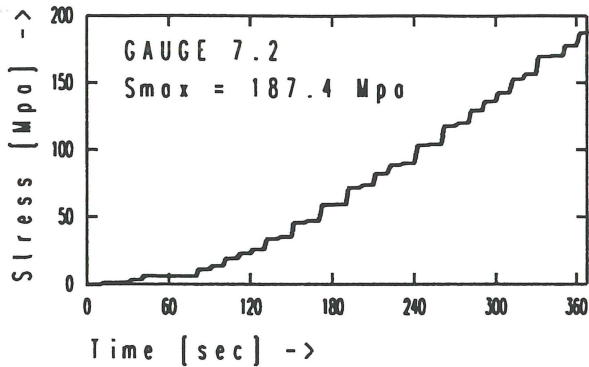
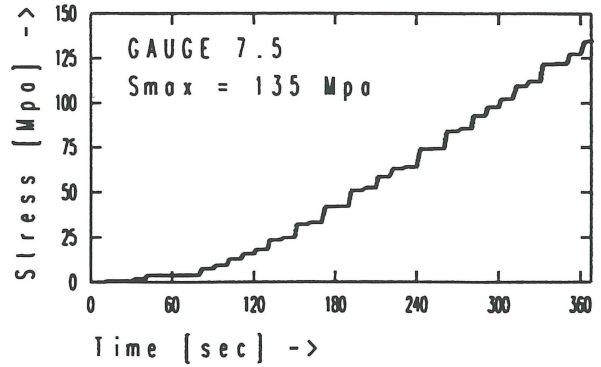
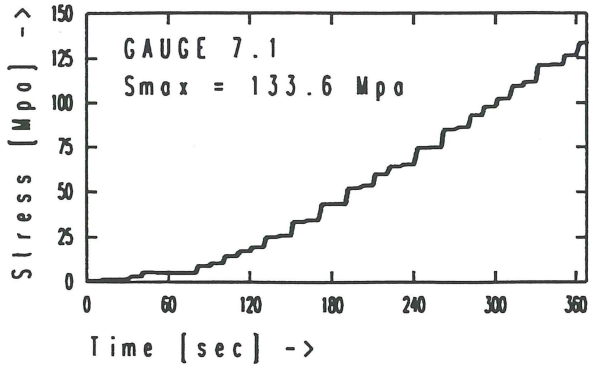
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 70.4 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 0.815 N/mm²



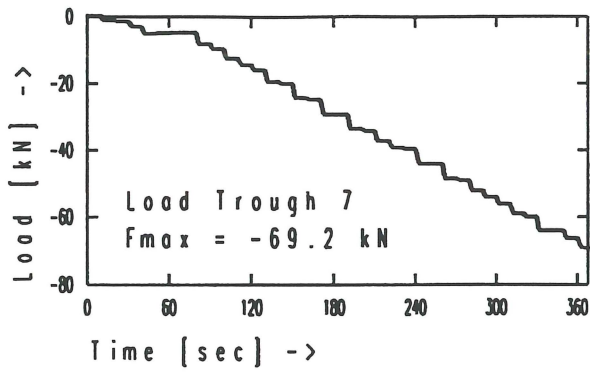
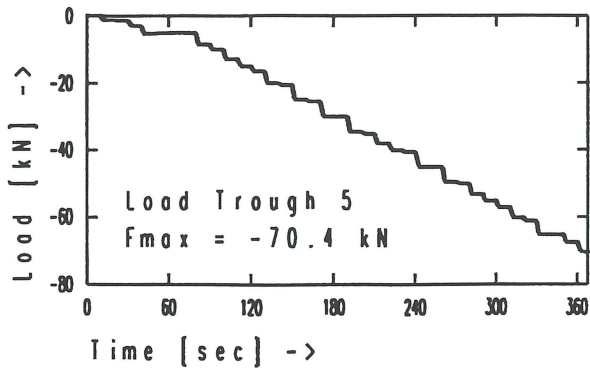
2nd BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 70.4 kN
LOADED AREA: Width 270mm Length 320mm
SURFACE STRESS: 0.815 N/mm²



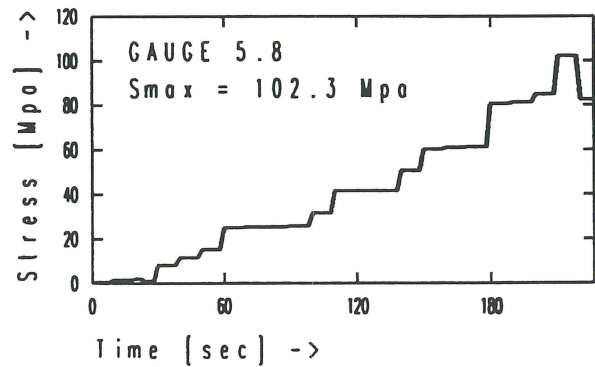
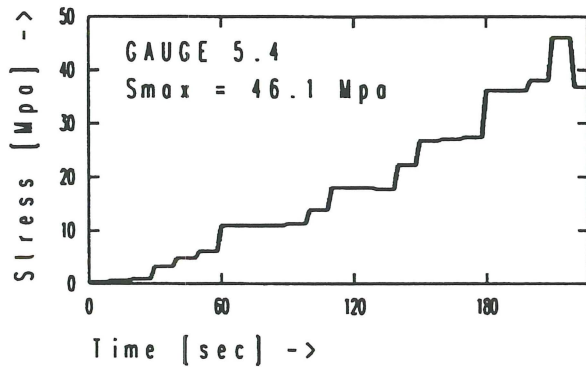
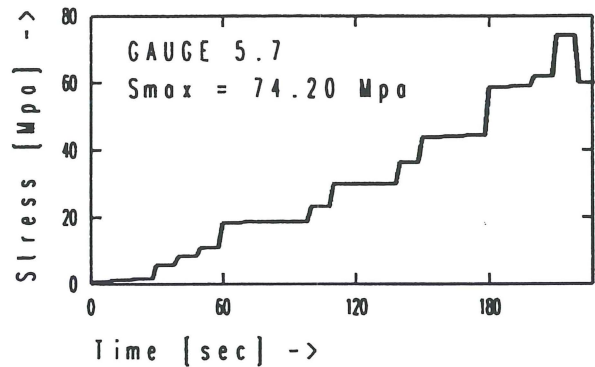
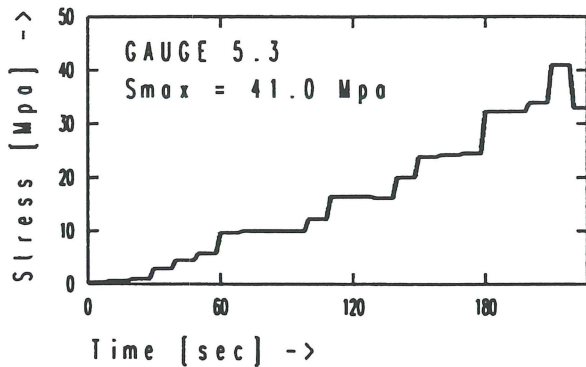
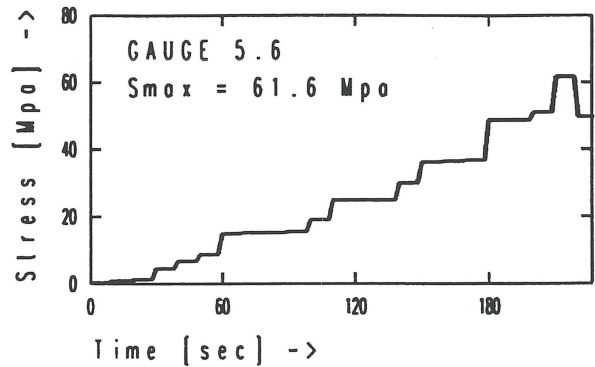
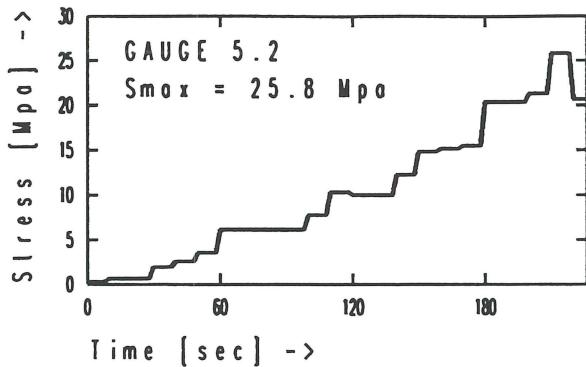
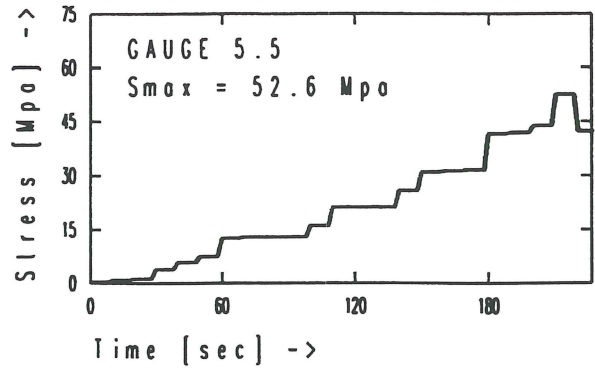
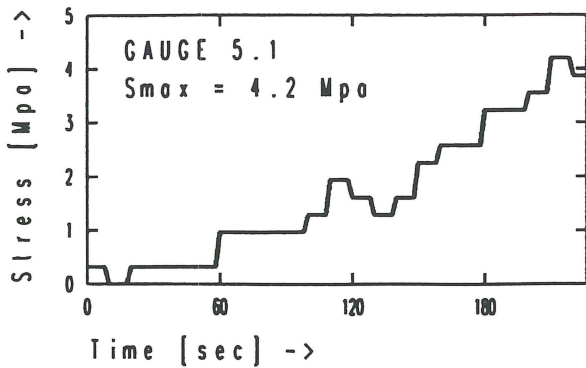
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 69.2 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 0.801 N/mm²



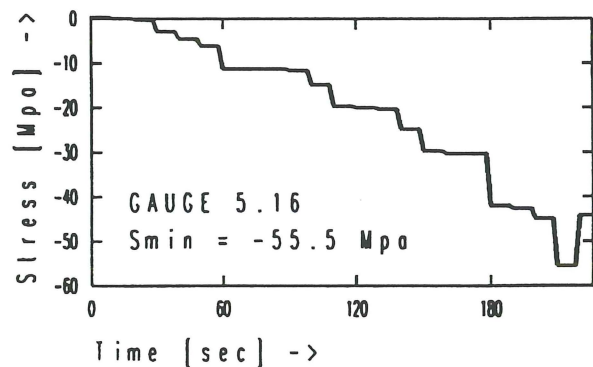
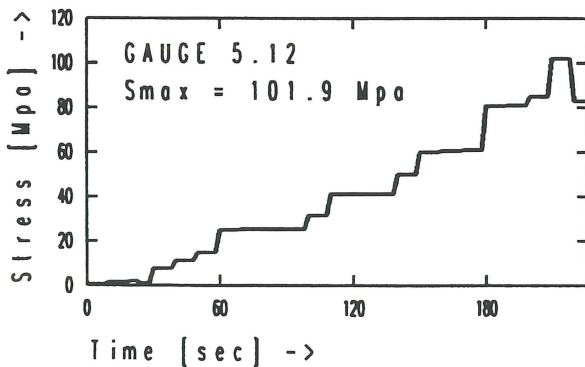
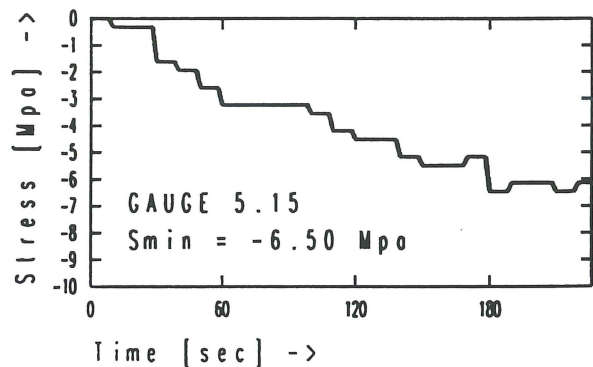
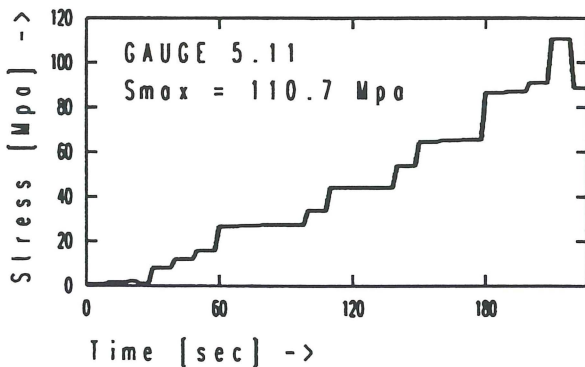
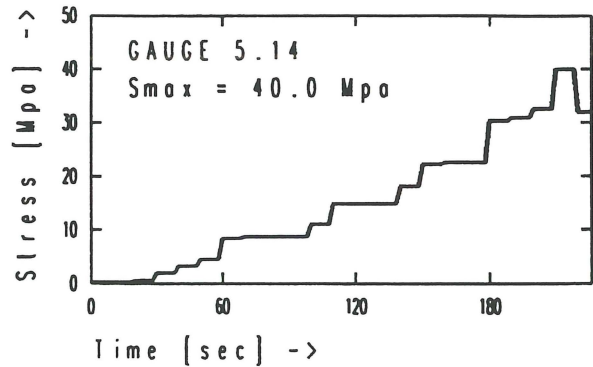
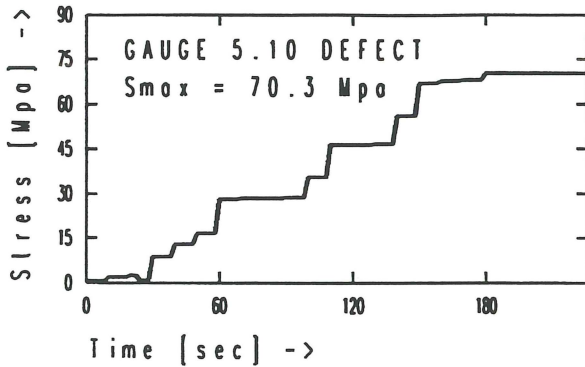
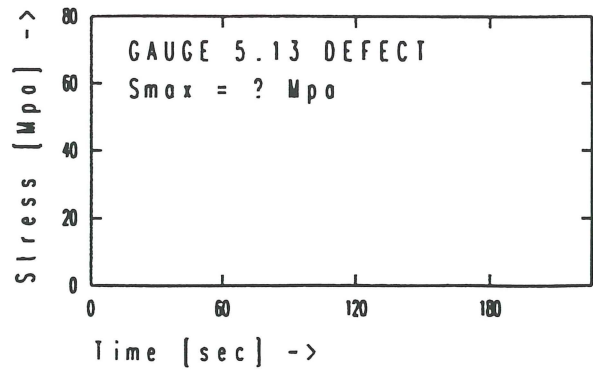
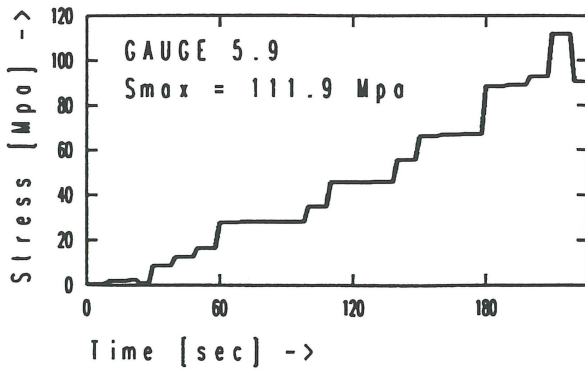
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 70.4 kN / 69.2 kN
 LOADED AREA: Width 270mm Length 320mm
 SURFACE STRESS: 0.815 N/mm² / 0.801 N/mm²



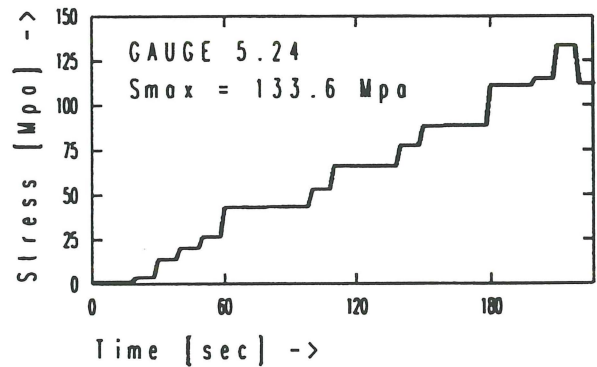
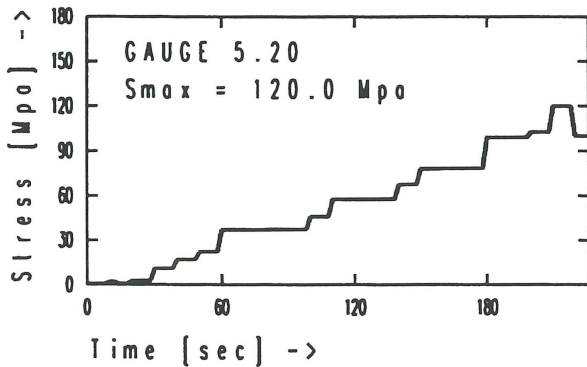
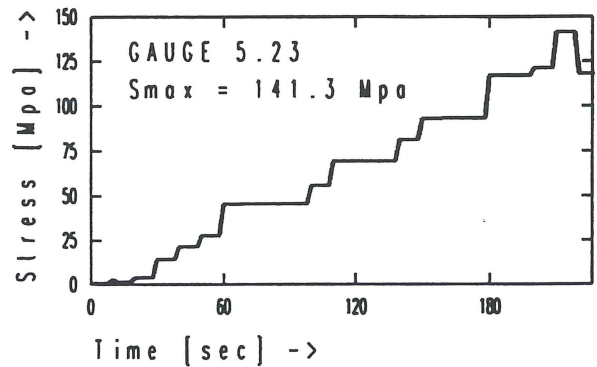
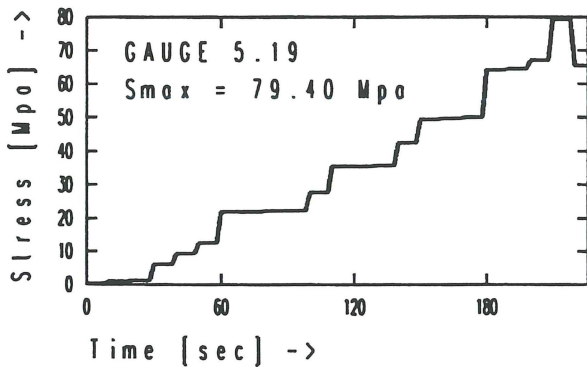
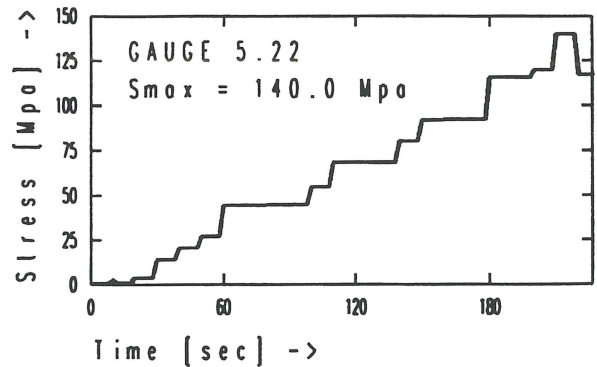
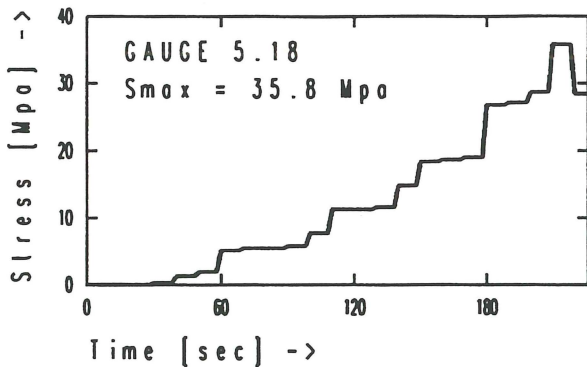
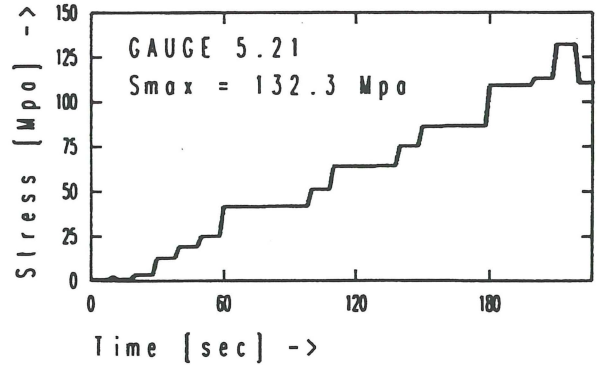
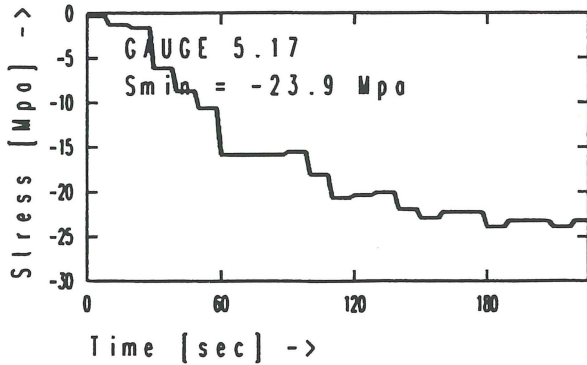
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 30.2 kN
 LOADED AREA: Width 250mm Length 160mm
 SURFACE STRESS: 0.755 N/mm²



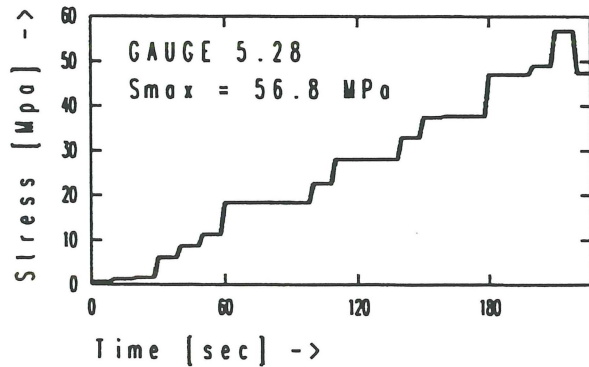
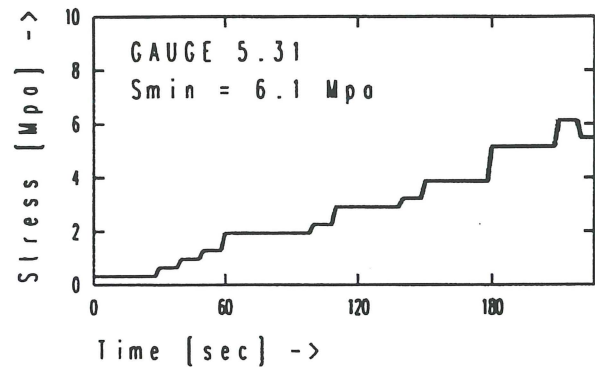
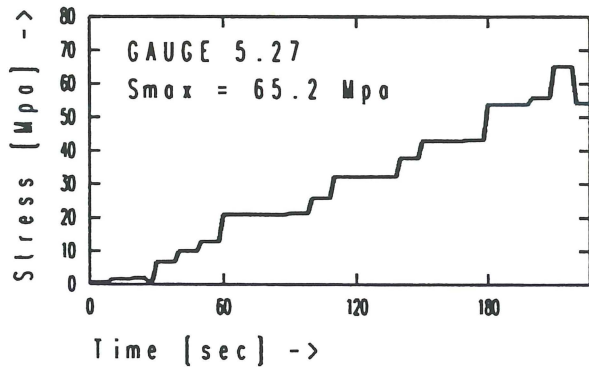
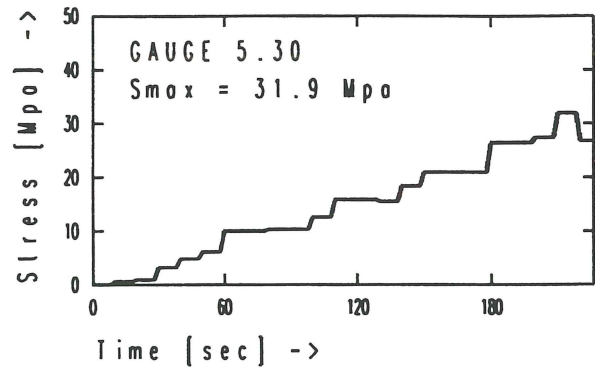
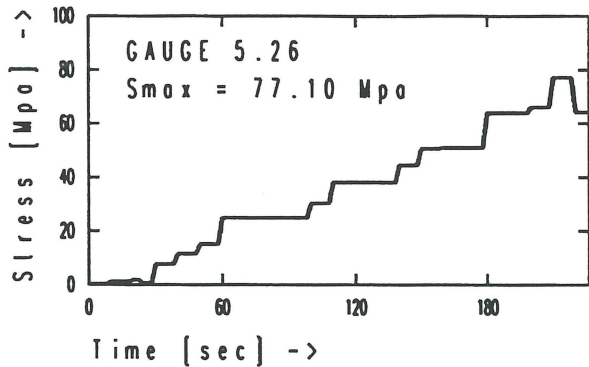
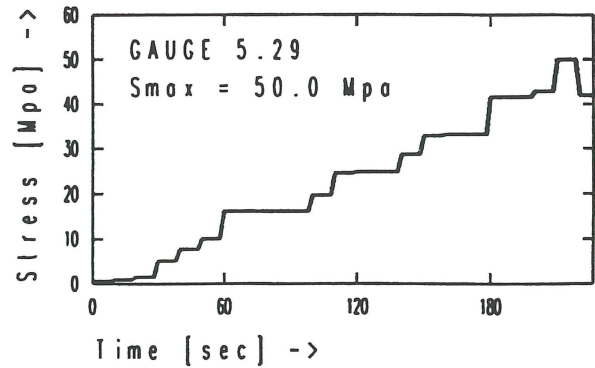
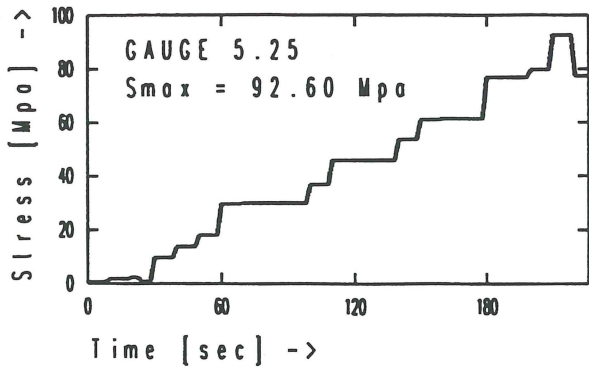
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 30.2 kN
 LOADED AREA: Width 250mm Length 160mm
 SURFACE STRESS: 0.755 N/mm²



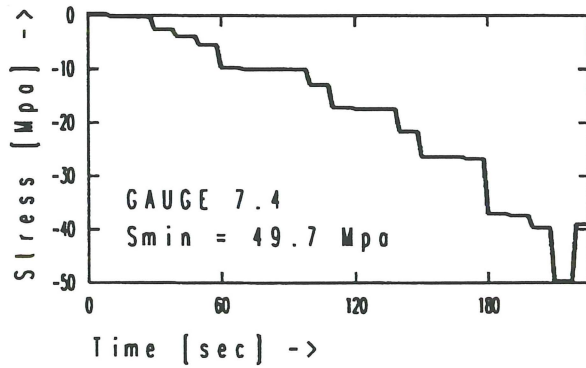
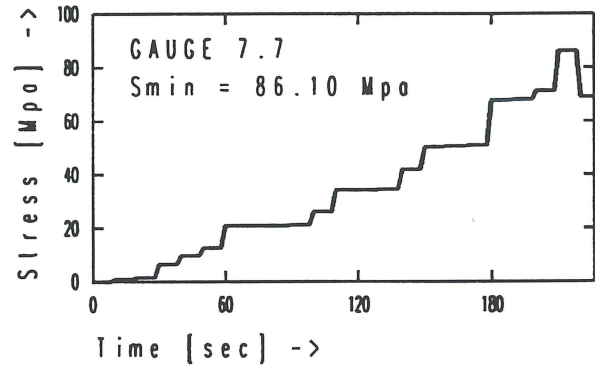
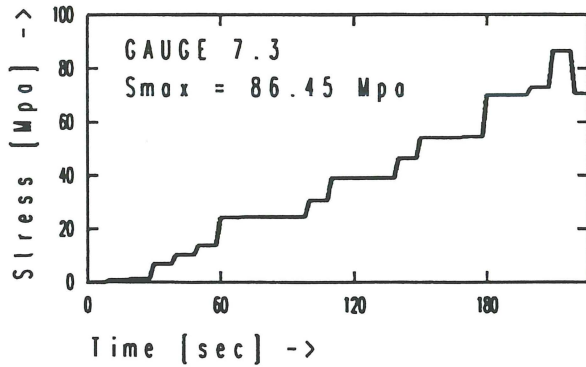
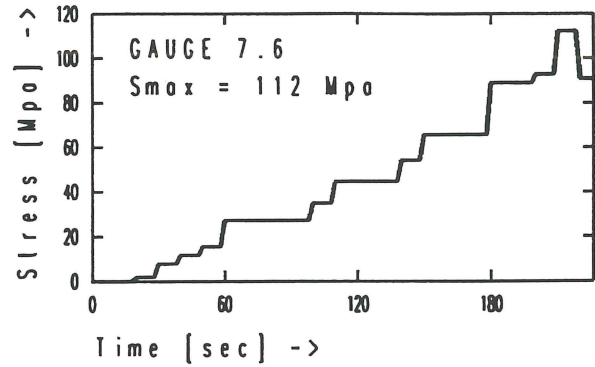
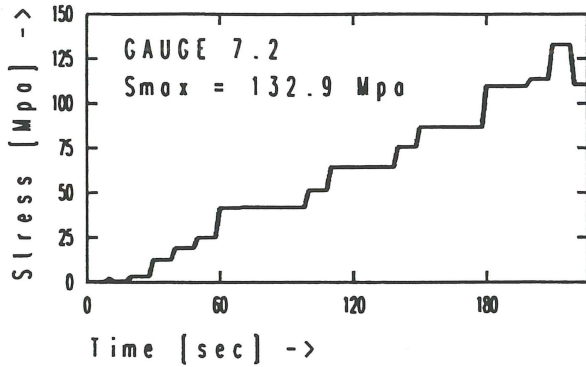
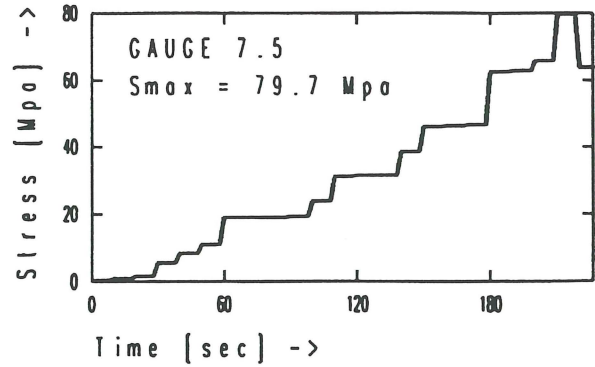
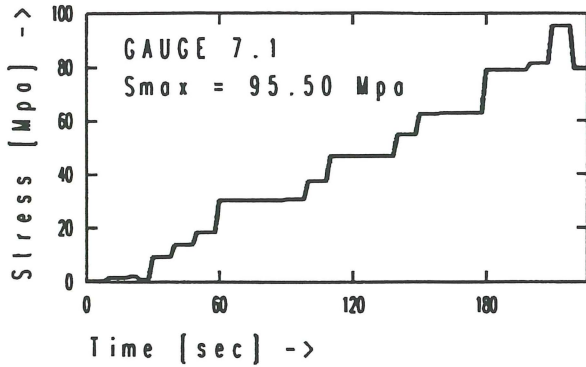
2nd BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 30.2 kN
LOADED AREA: Width 250mm Length 160mm
SURFACE STRESS: 0.755 N/mm²



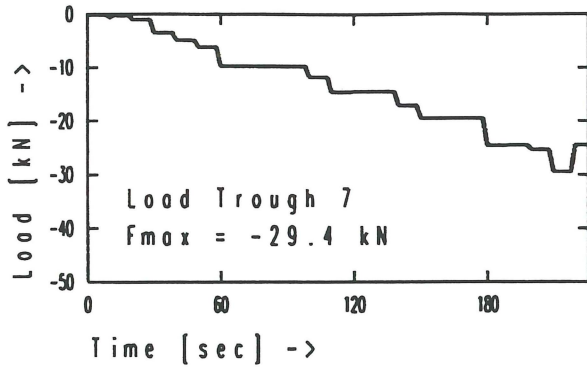
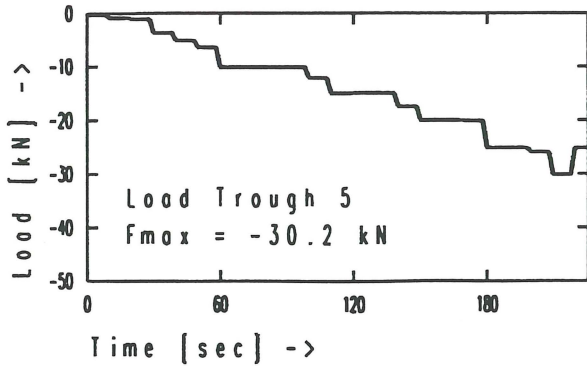
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 30.2 kN
 LOADED AREA: Width 250mm Length 160mm
 SURFACE STRESS: 0.755 N/mm²



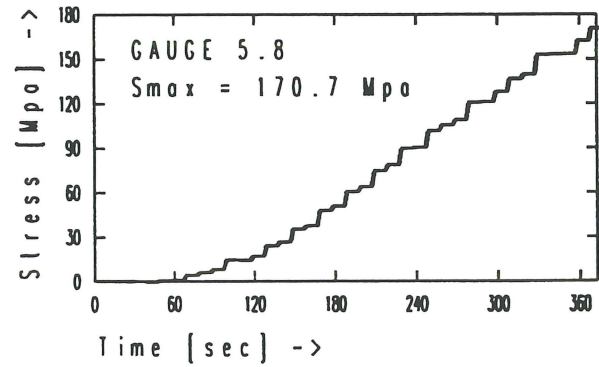
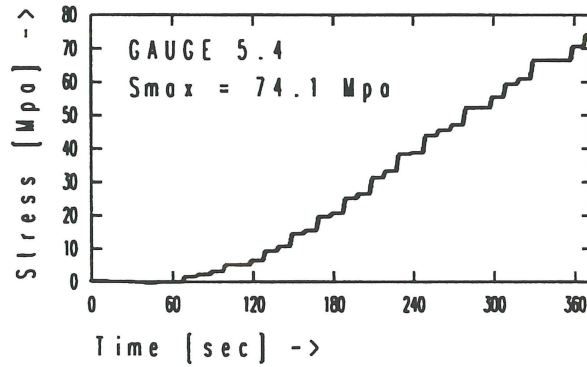
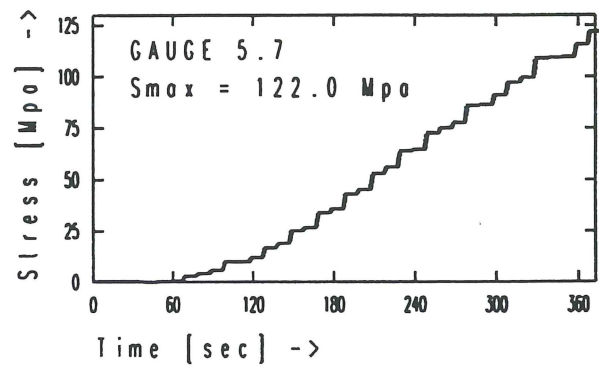
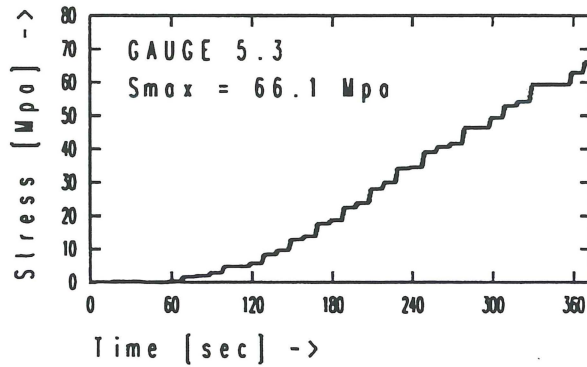
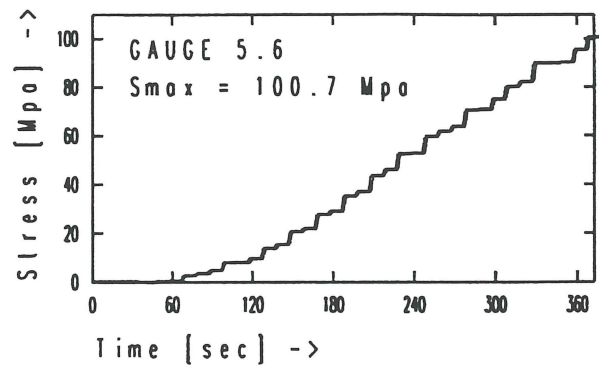
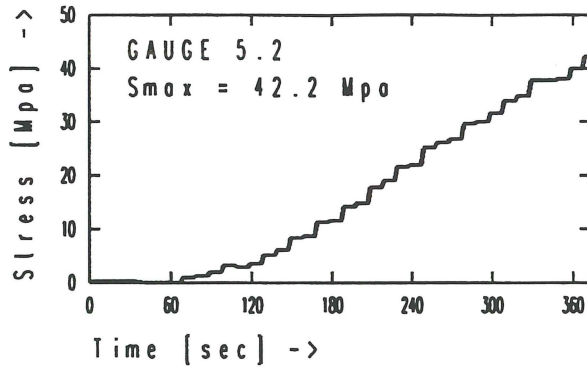
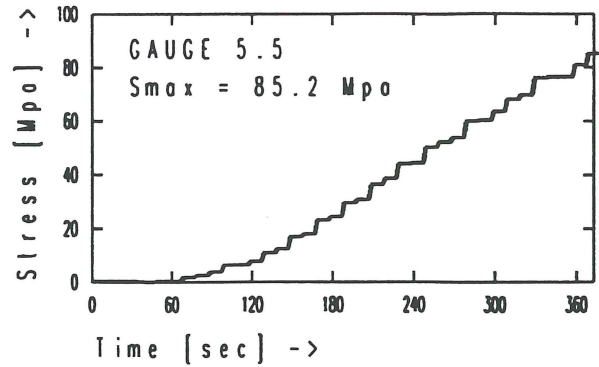
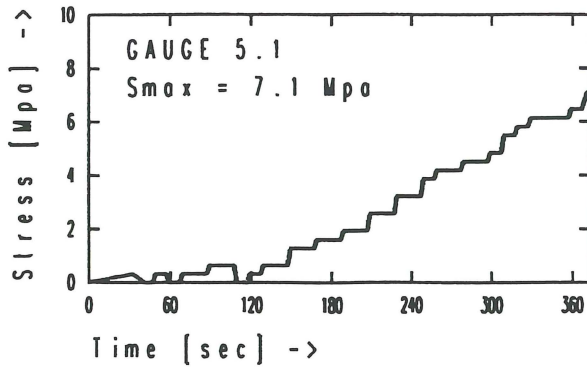
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 29.4 kN
 LOADED AREA: Width 250mm Length 160mm
 SURFACE STRESS: 0.735 N/mm²



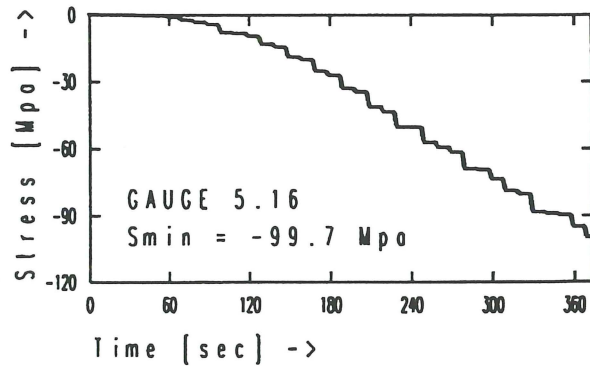
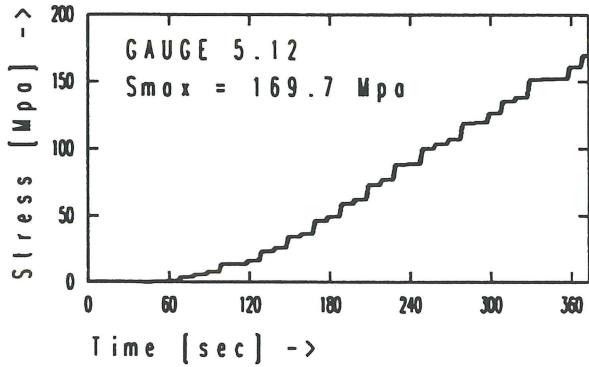
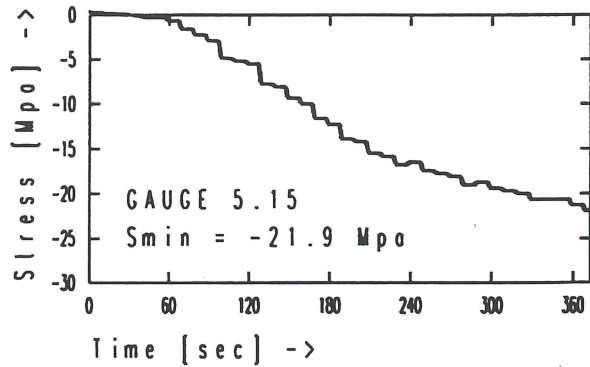
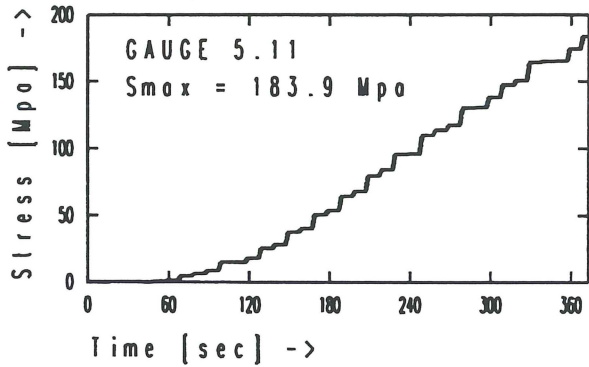
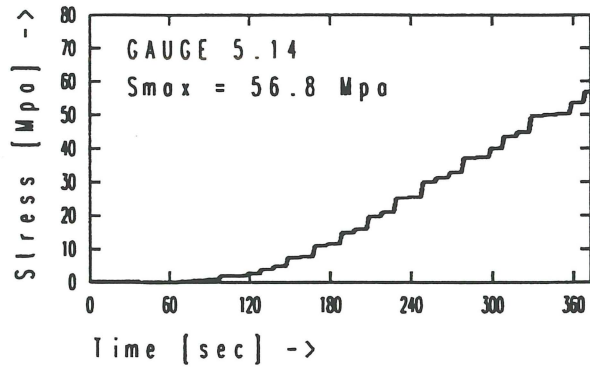
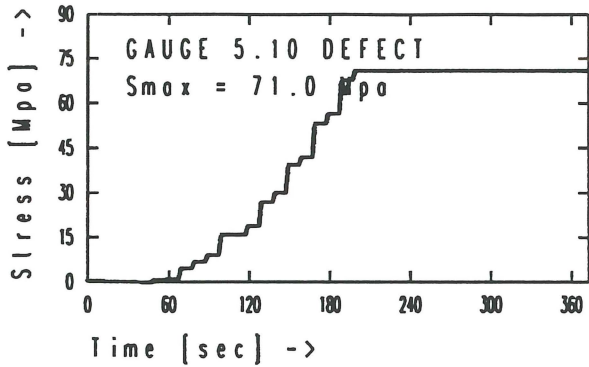
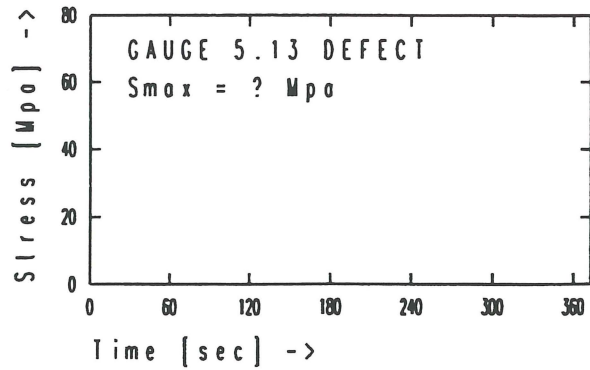
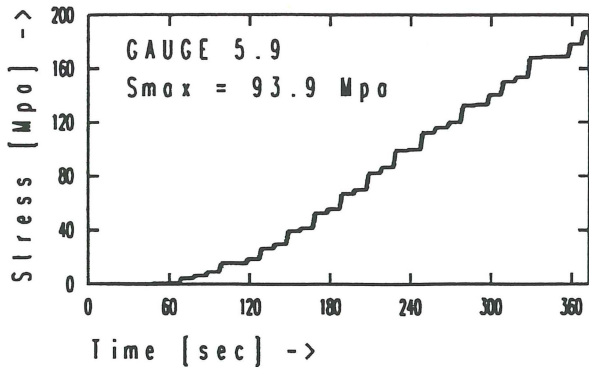
2nd BRIDGEPANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 30.2 kN / 29.4 kN
LOADED AREA: Width 250mm Length 160mm
SURFACE STRESS: 0.755 N/mm² / 0.735 N/mm²



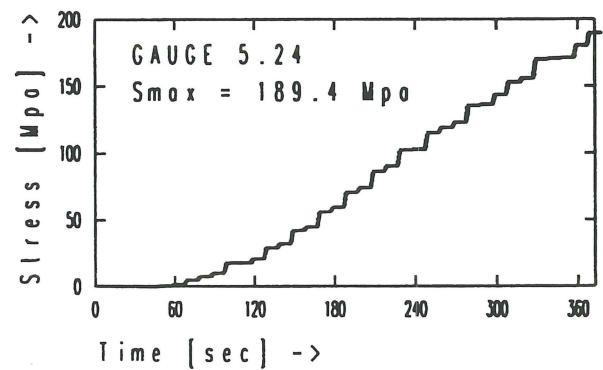
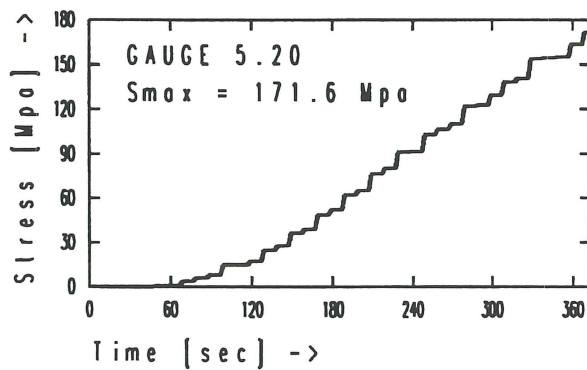
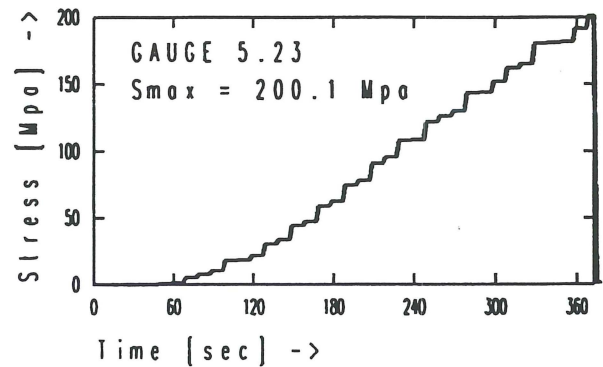
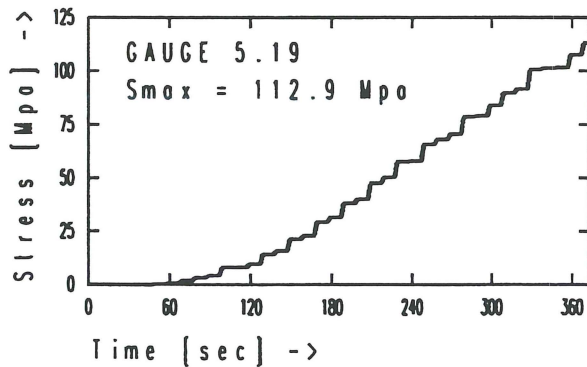
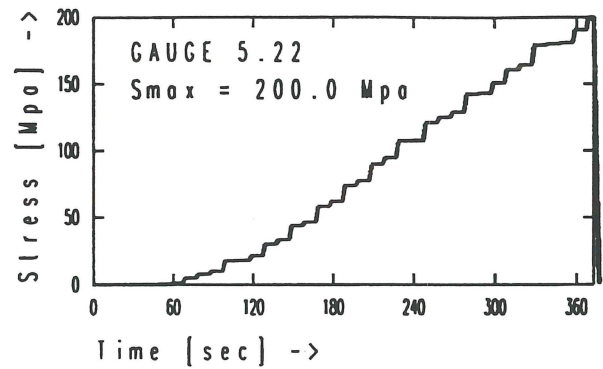
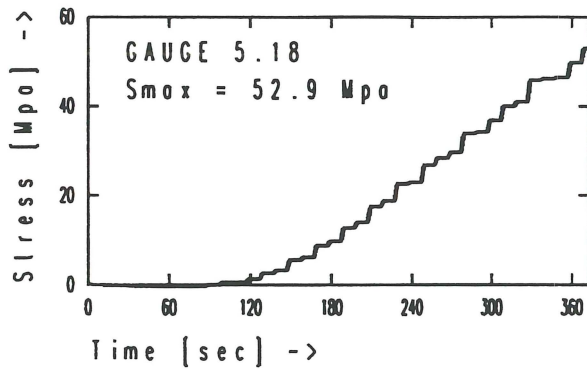
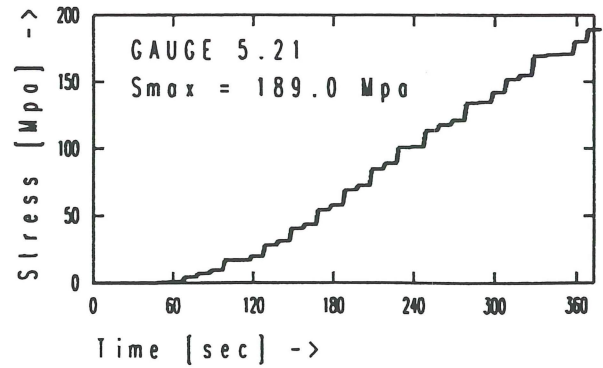
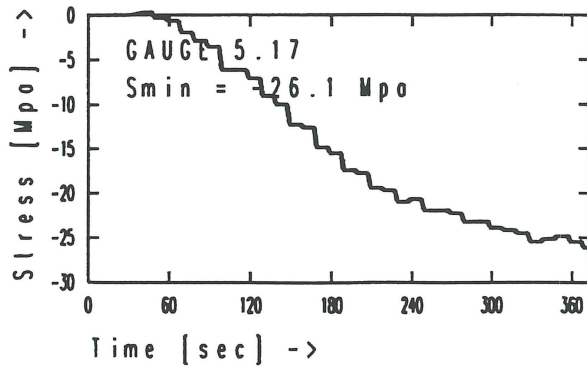
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 65.9 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.9 N/mm²



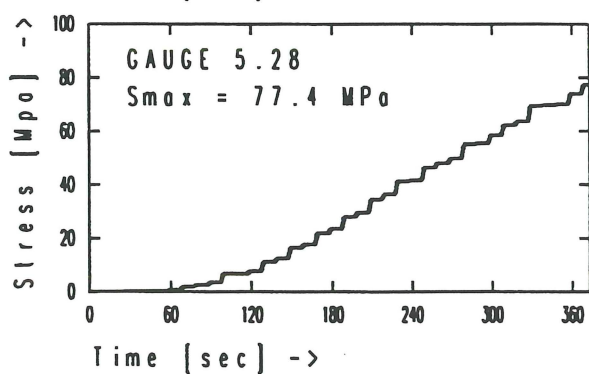
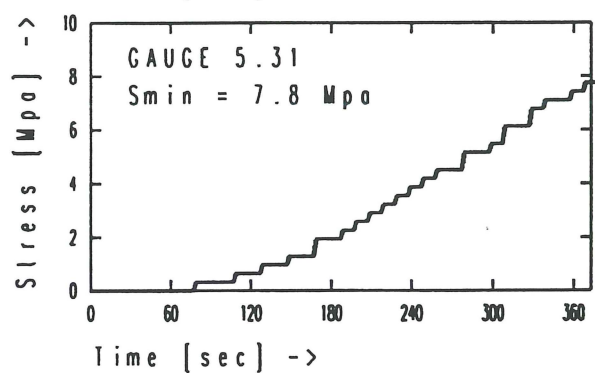
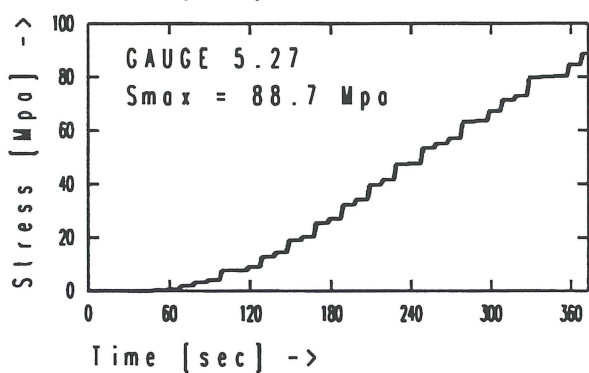
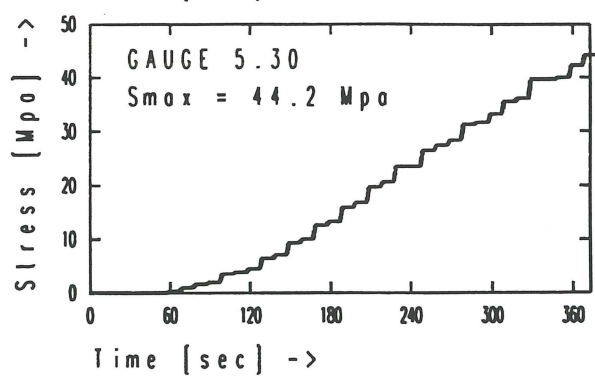
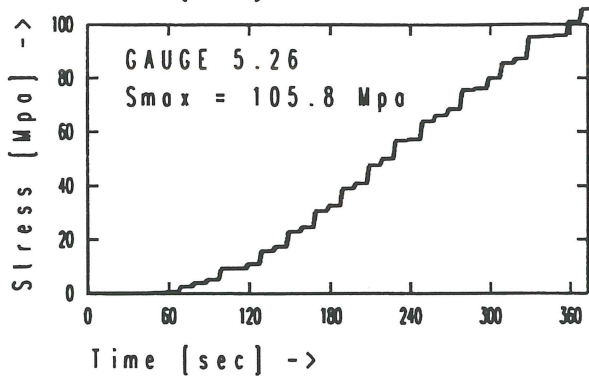
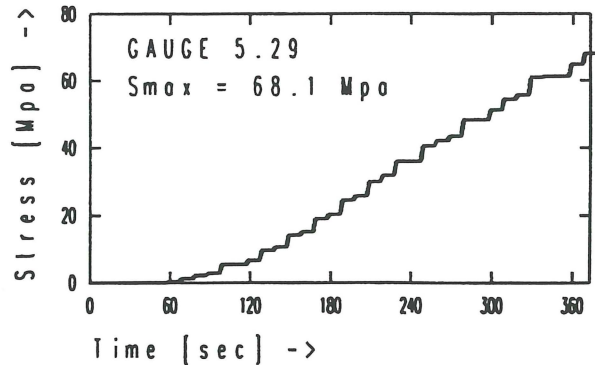
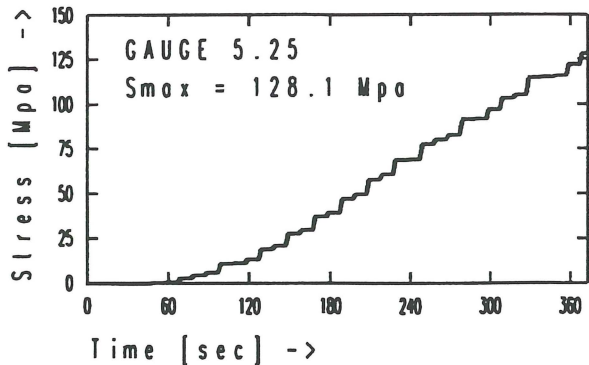
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 65.9 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.9 N/mm²



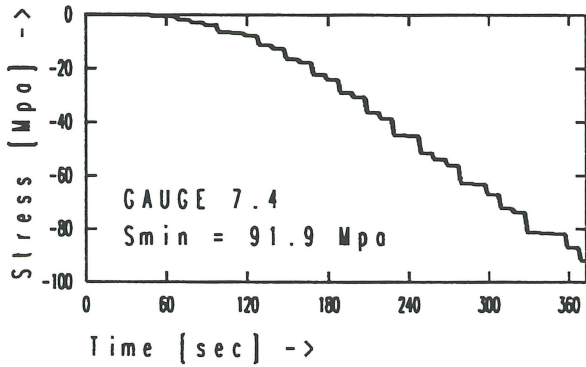
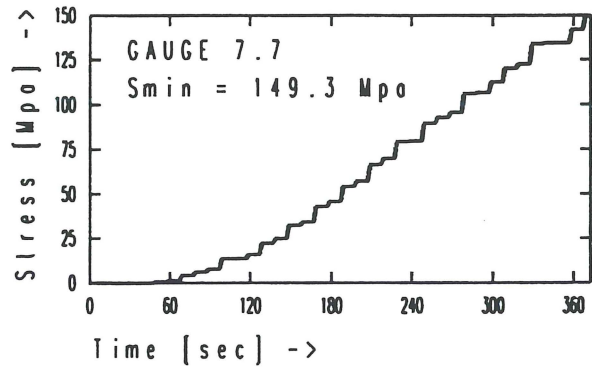
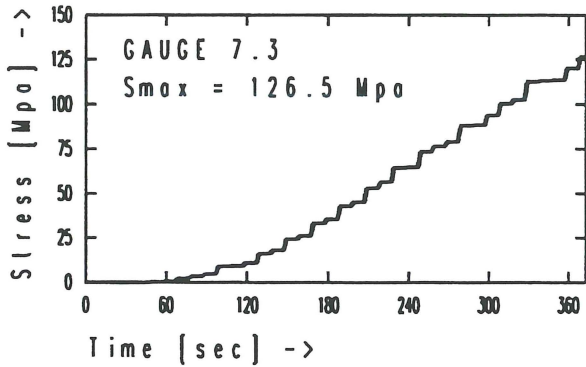
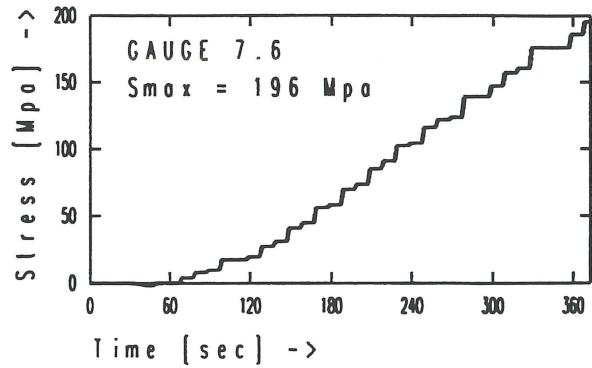
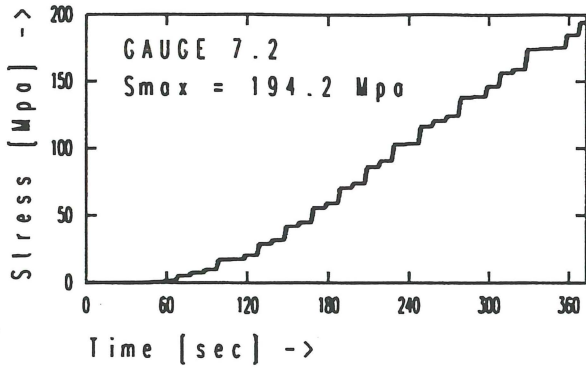
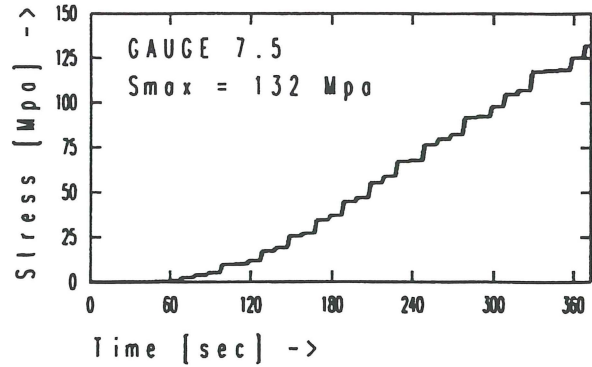
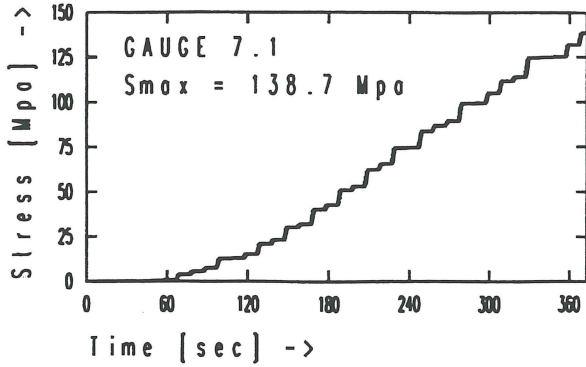
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 65.9 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.9 N/mm²



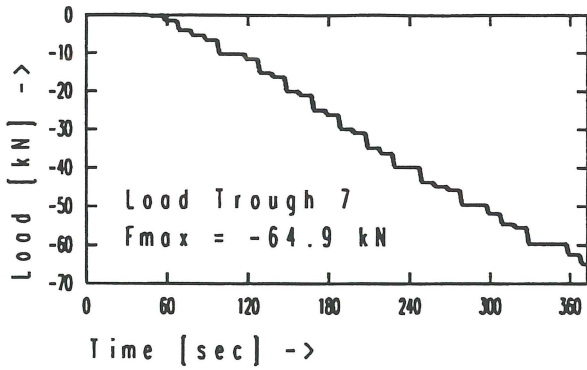
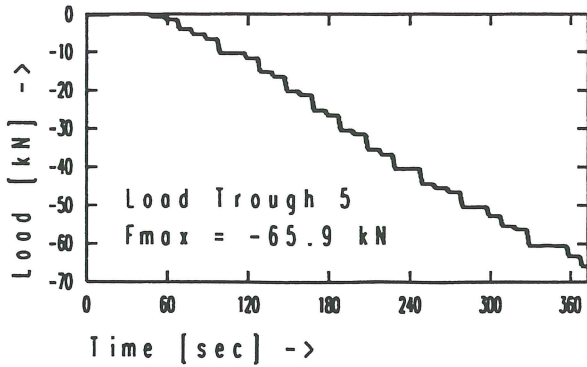
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 65.9 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.9 N/mm²



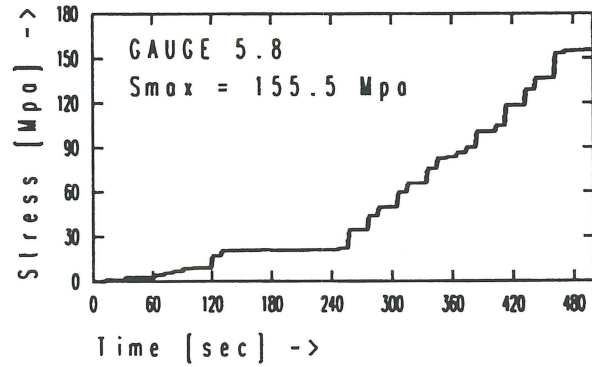
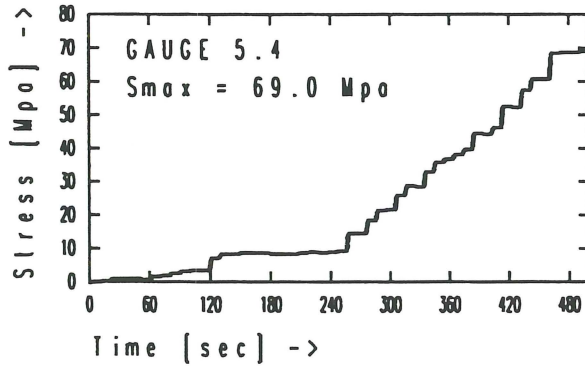
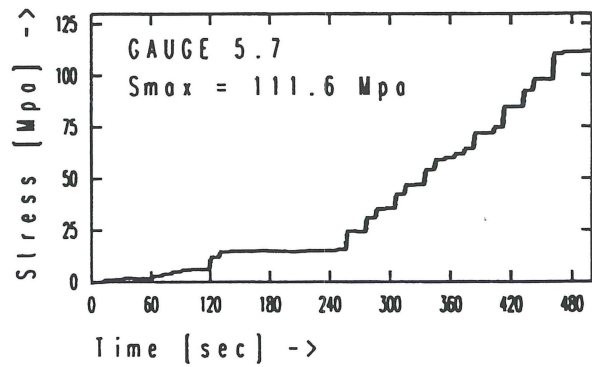
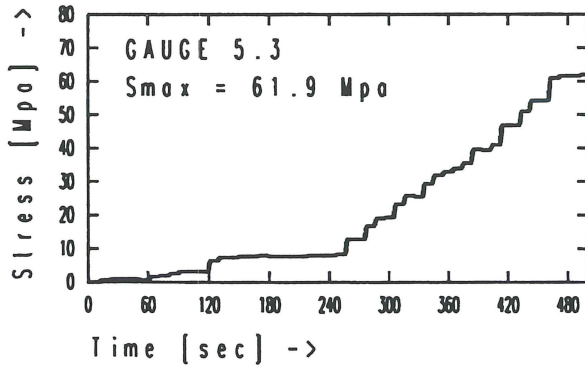
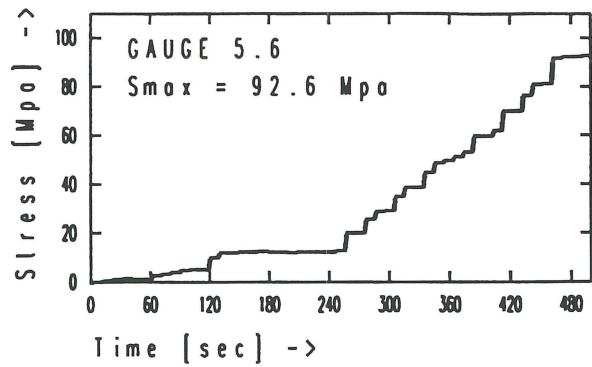
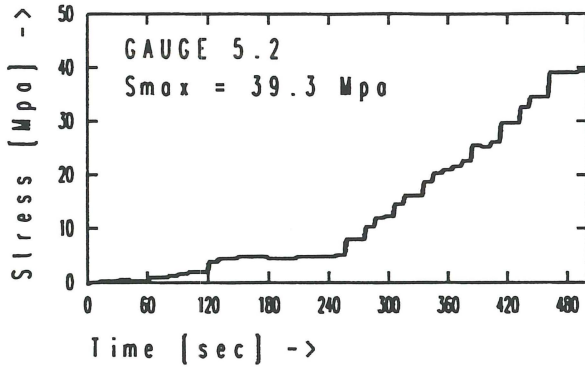
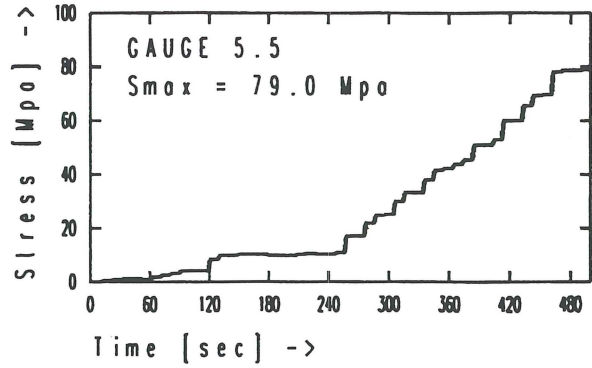
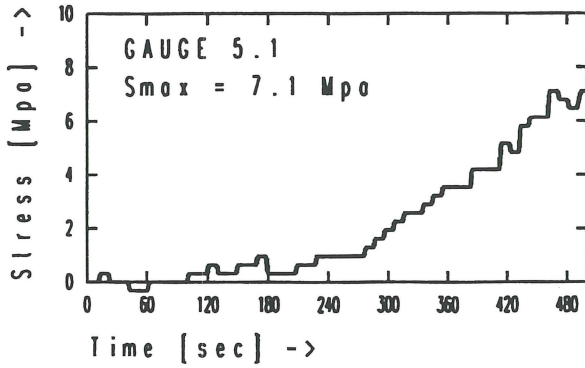
2nd BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 64.9 kN
LOADED AREA: Width 290mm Length 250mm
SURFACE STRESS: 0.895 N/mm²



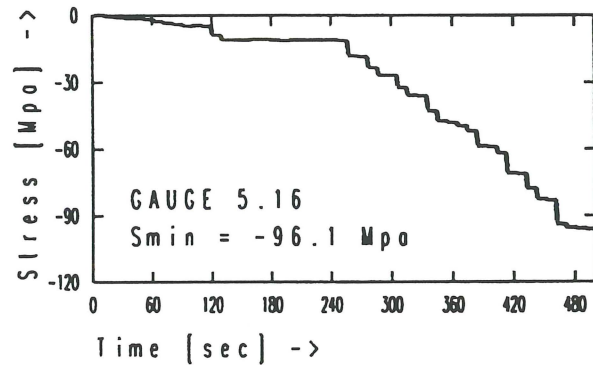
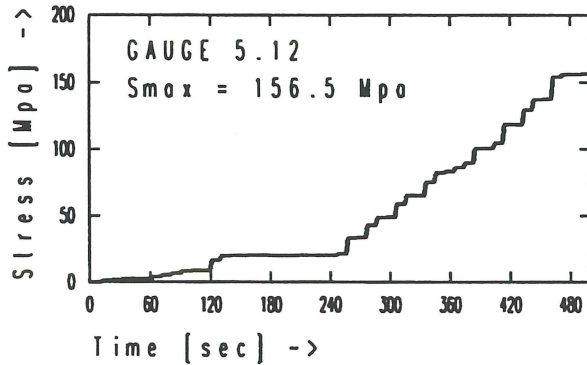
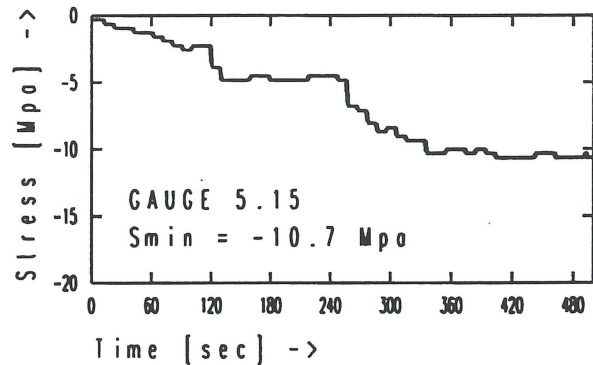
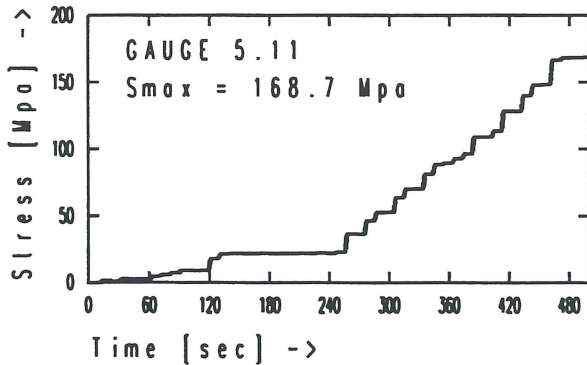
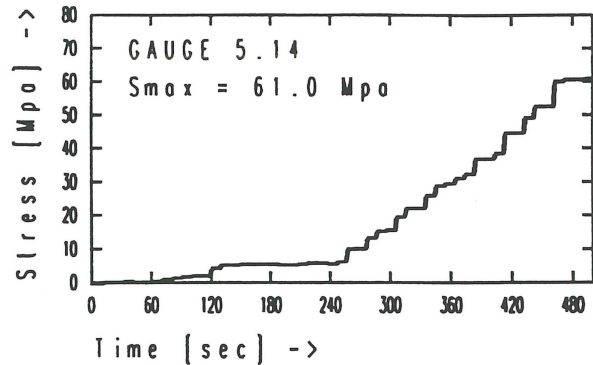
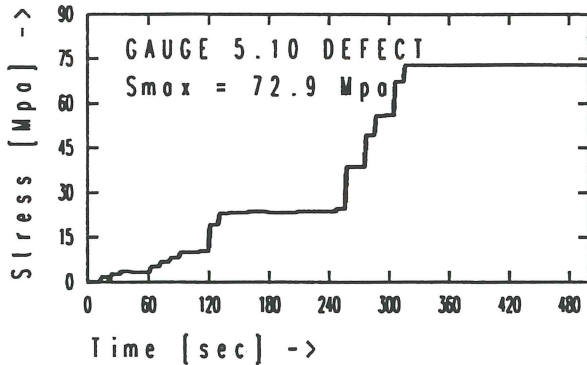
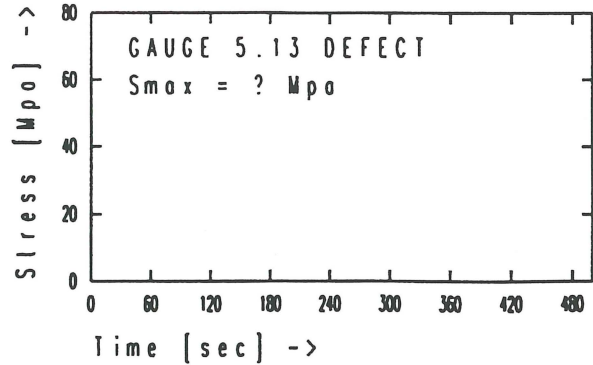
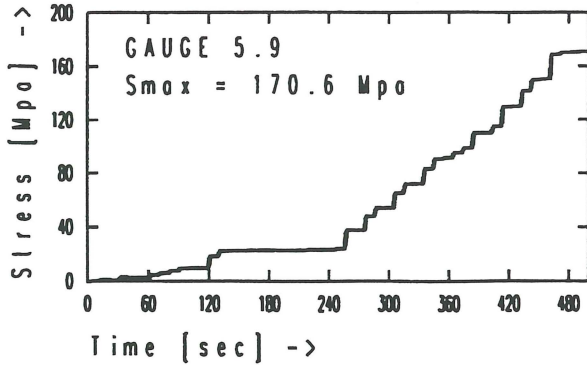
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 65.9 kN / 64.9 kN
 LOADED AREA: Width 290mm Length 250mm
 SURFACE STRESS: 0.9 N/mm² / 0.895 N/mm²



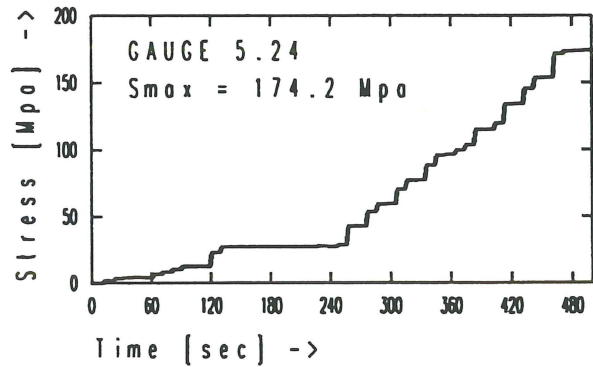
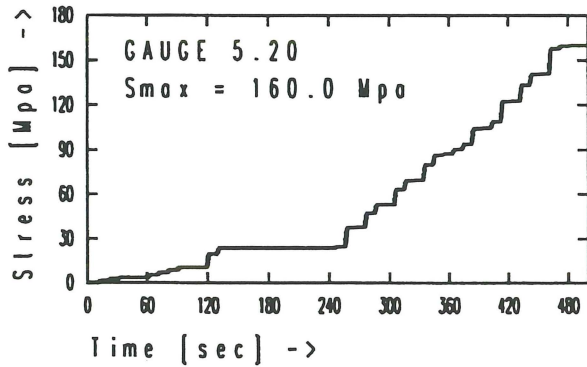
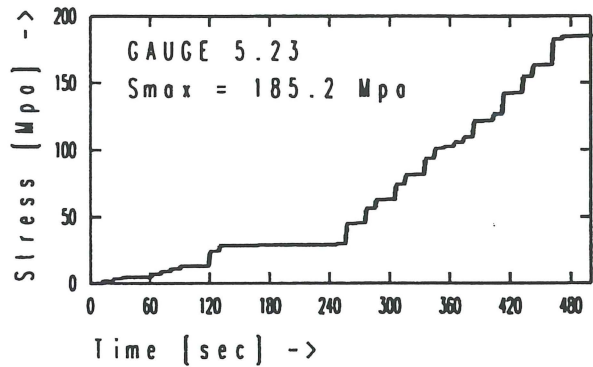
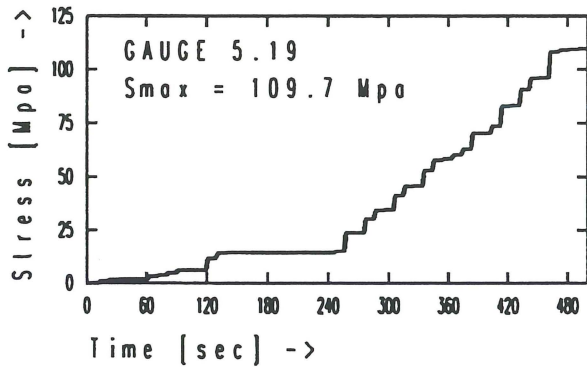
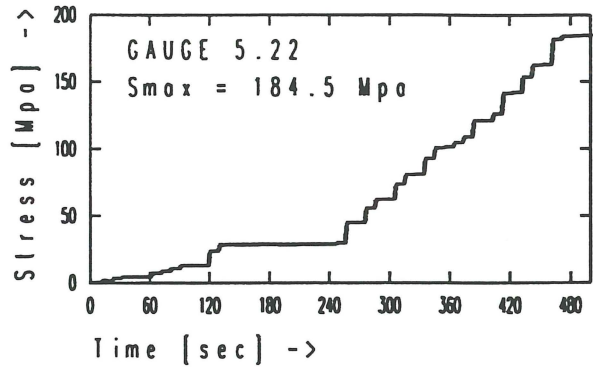
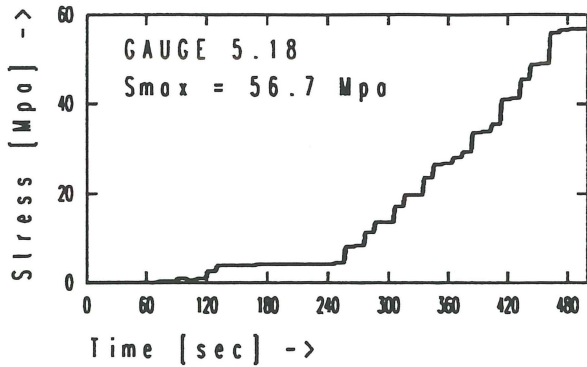
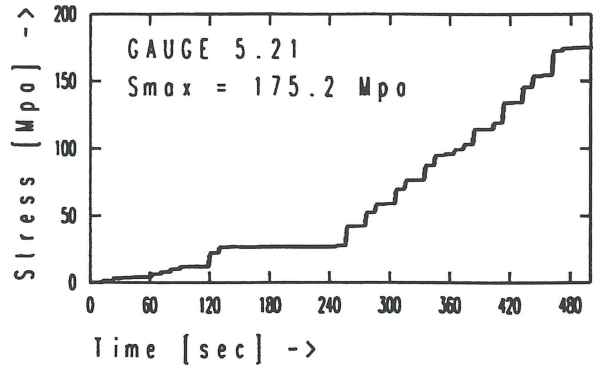
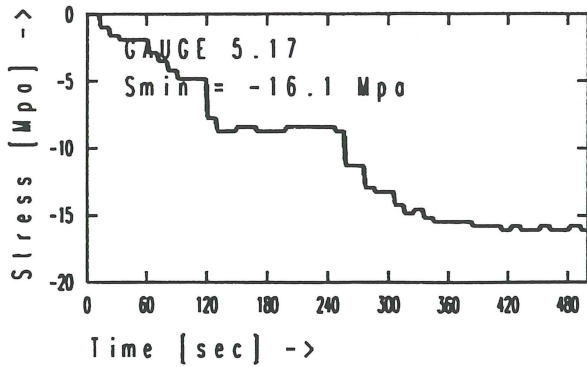
2nd BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 50.2 kN
LOADED AREA: Width 250mm Length 250mm
SURFACE STRESS: 0.8 N/mm²



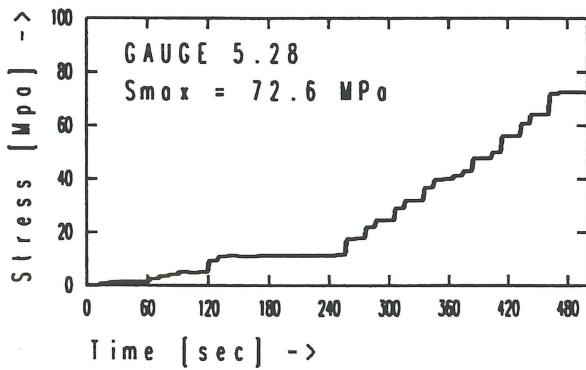
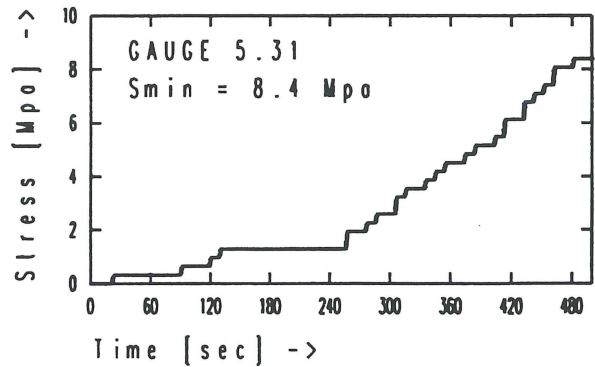
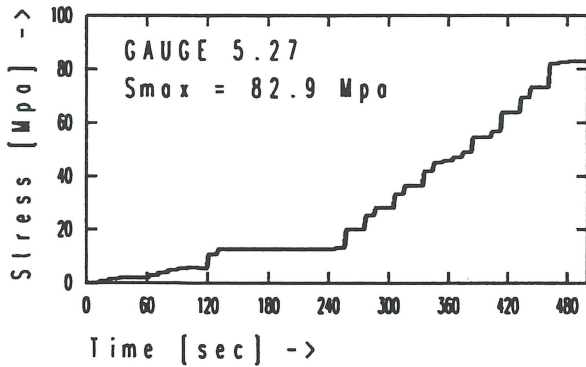
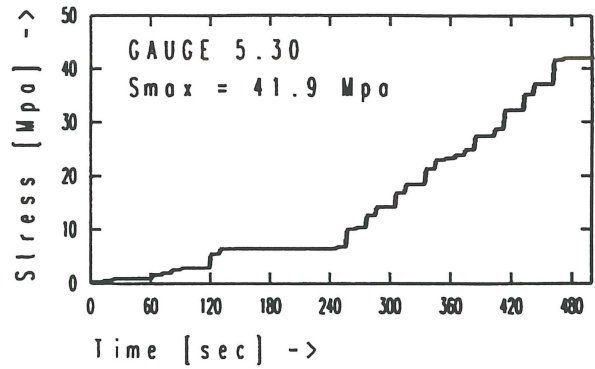
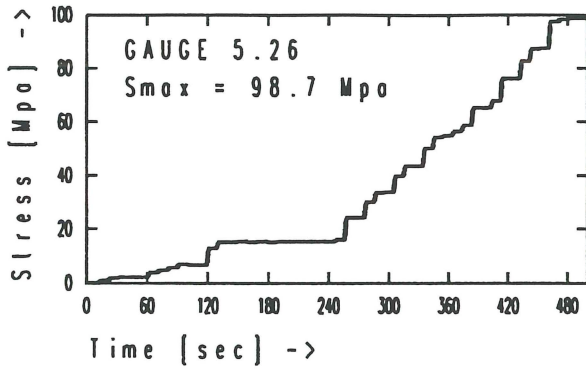
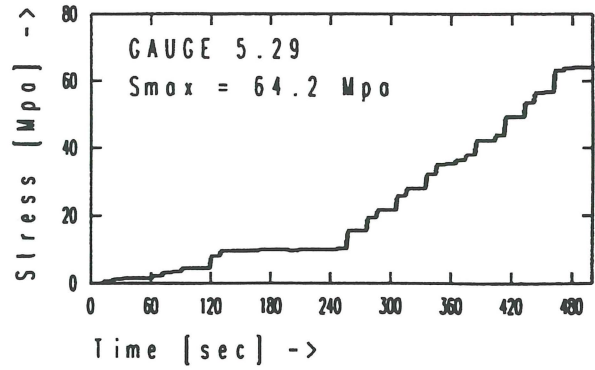
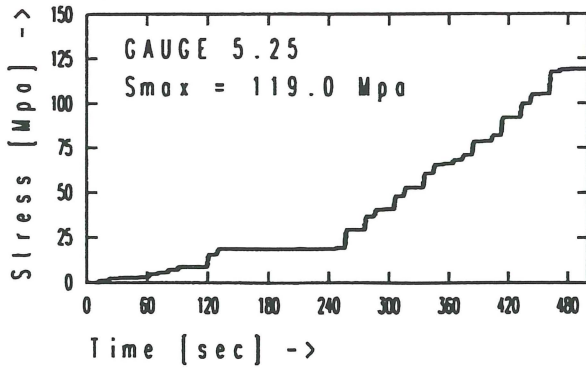
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 50.2 kN
 LOADED AREA: Width 250mm Length 250mm
 SURFACE STRESS: 0.8 N/mm²



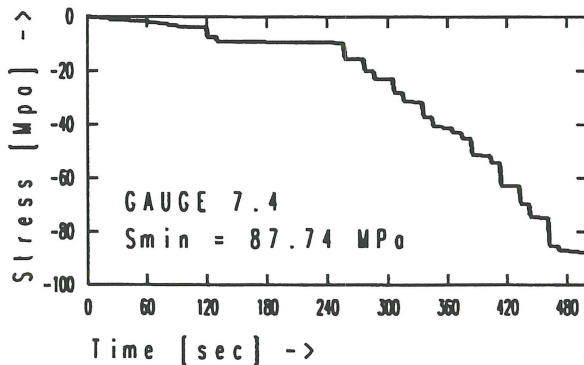
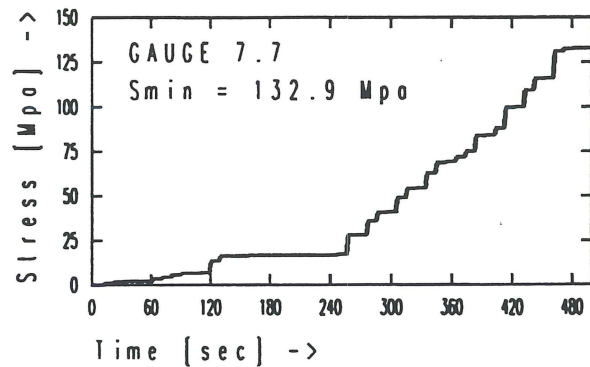
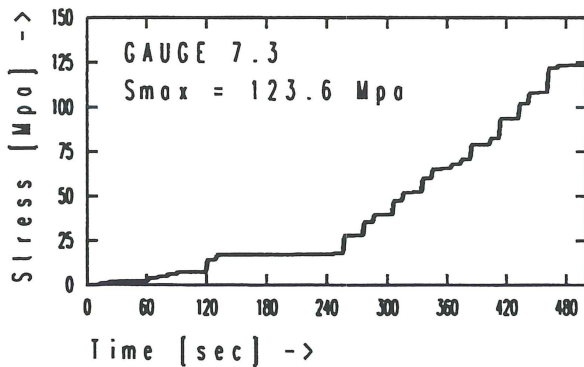
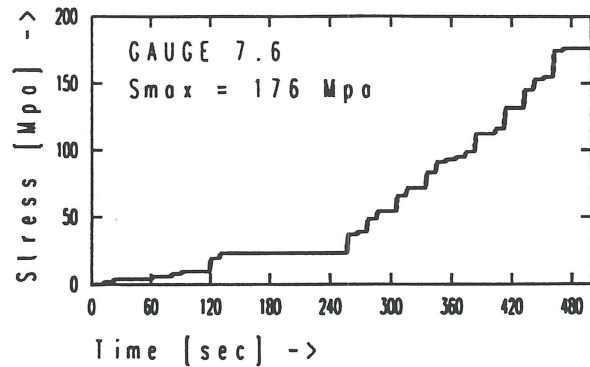
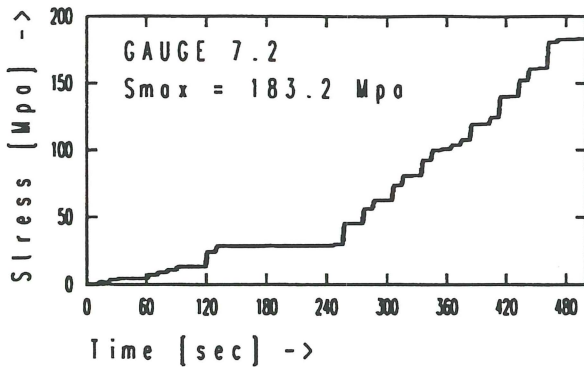
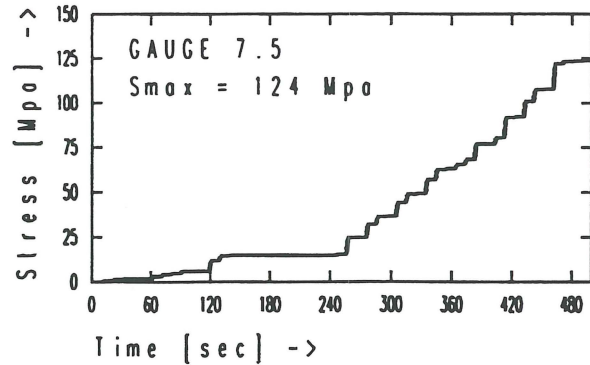
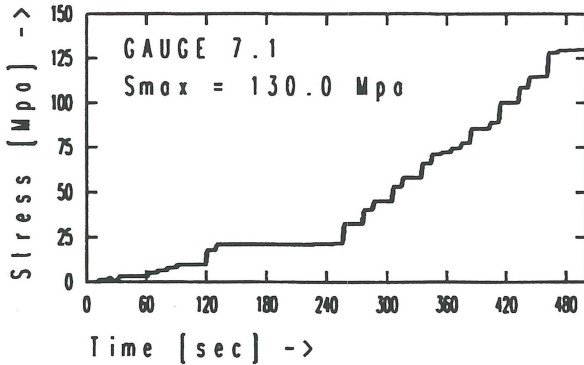
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 50.2 kN
 LOADED AREA: Width 250mm Length 250mm
 SURFACE STRESS: 0.8 N/mm²



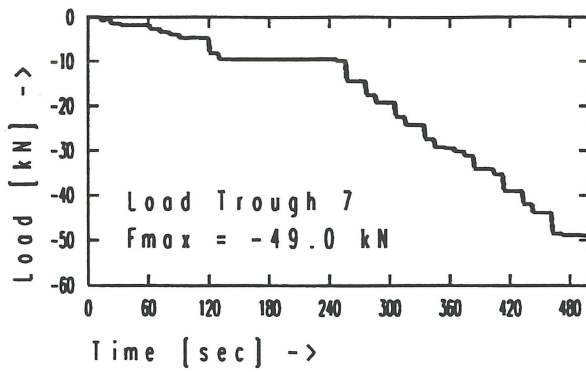
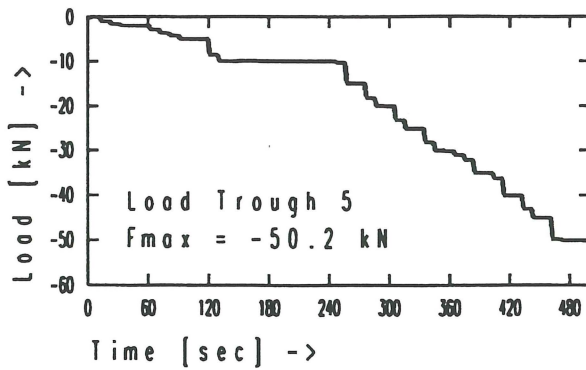
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 50.2 kN
 LOADED AREA: Width 250mm Length 250mm
 SURFACE STRESS: 0.8 N/mm²



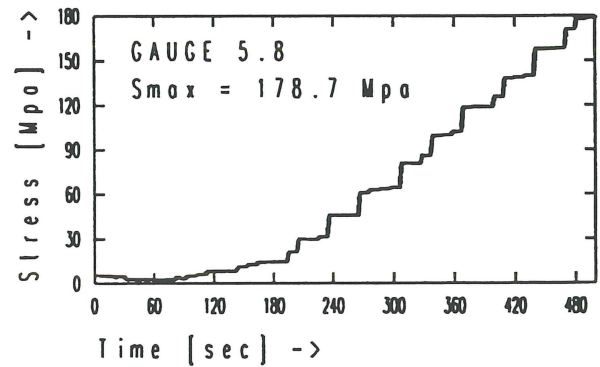
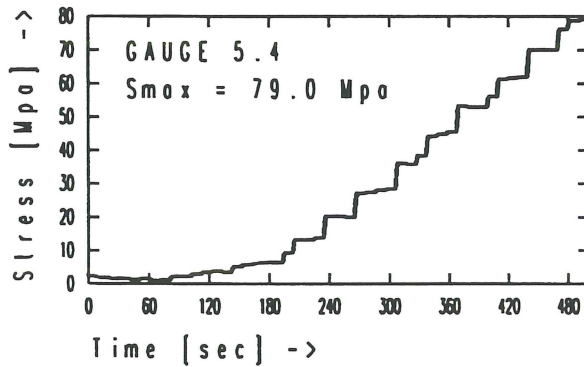
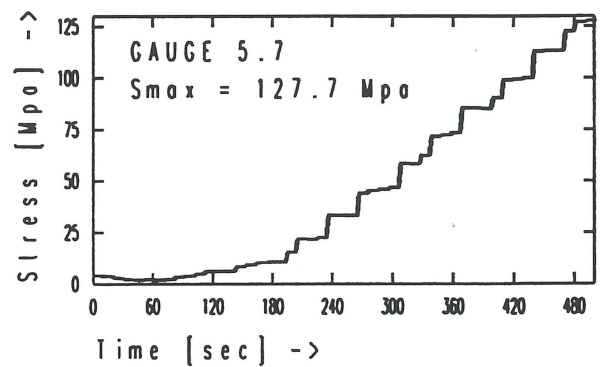
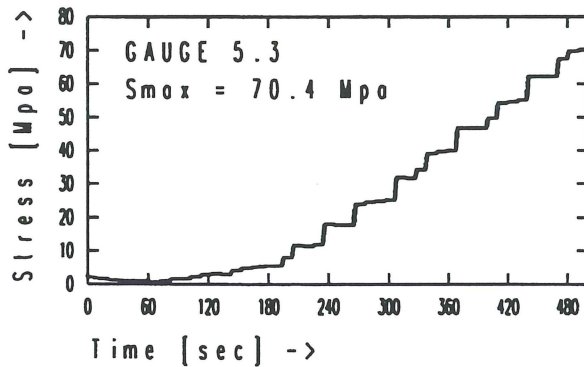
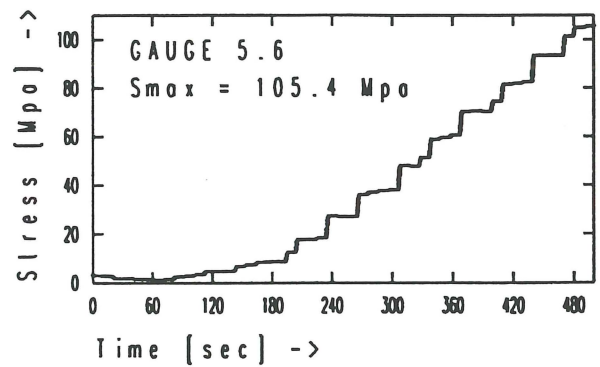
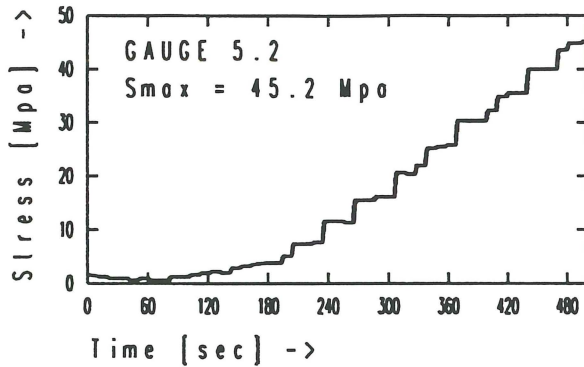
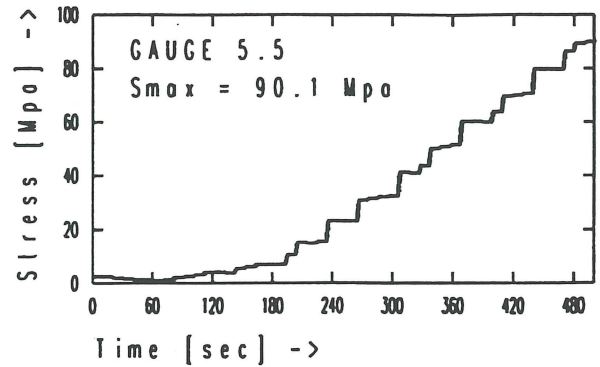
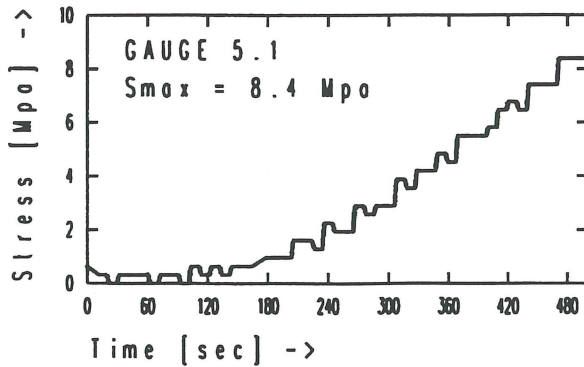
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 49.0 kN
 LOADED AREA: Width 250mm Length 250mm
 SURFACE STRESS: 0.784 N/mm²



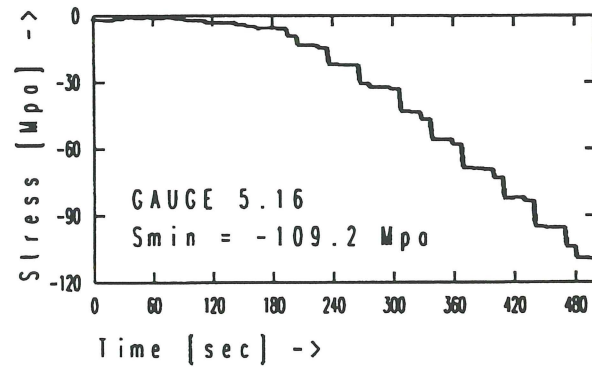
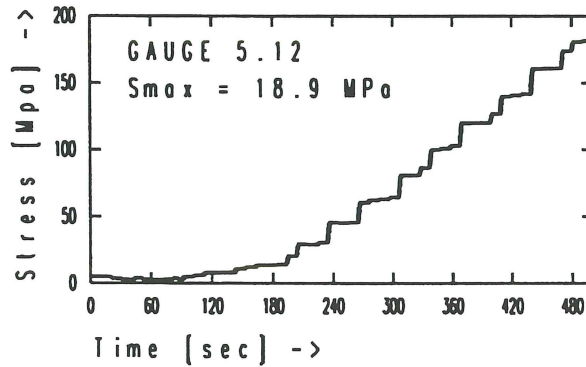
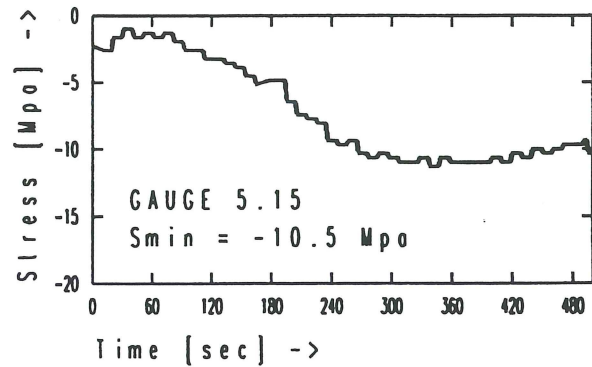
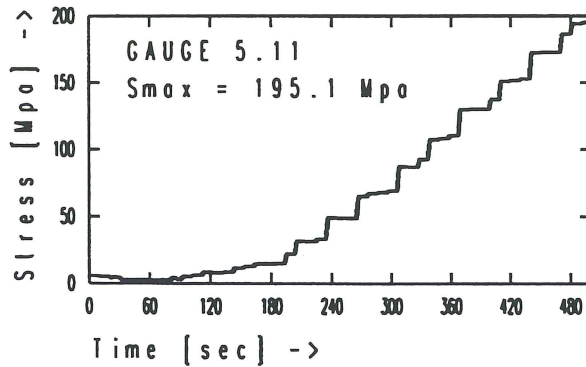
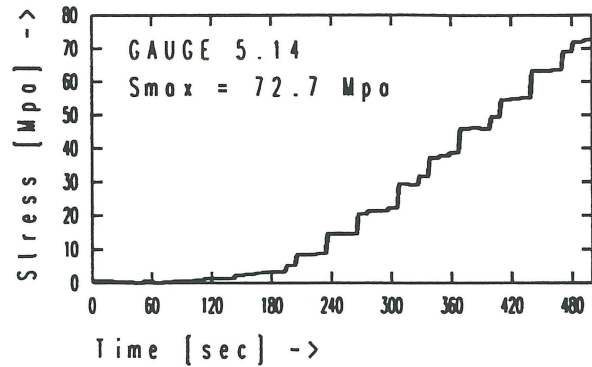
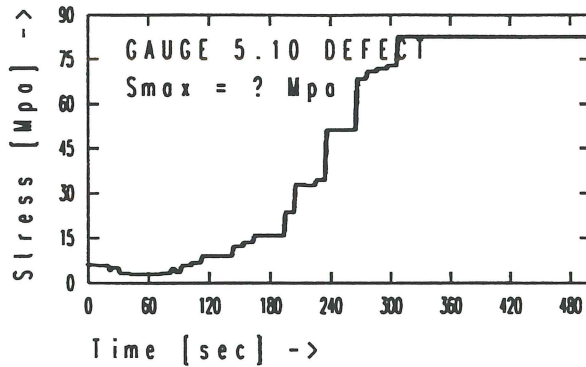
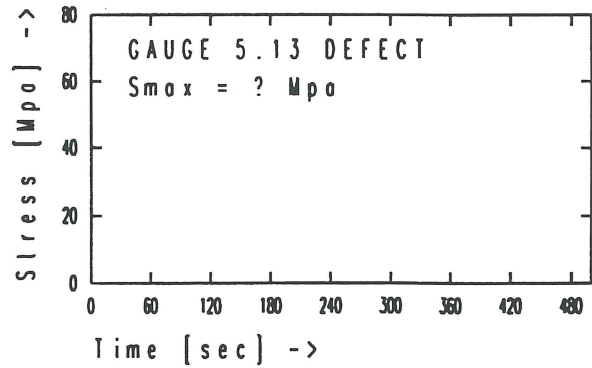
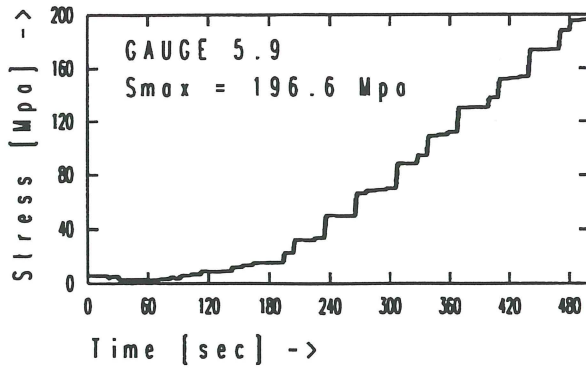
2nd BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 50.4 kN / 49.0 kN
LOADED AREA: Width 250mm Length 250mm
SURFACE STRESS: 0.896 N/mm² / 0.784 N/mm²



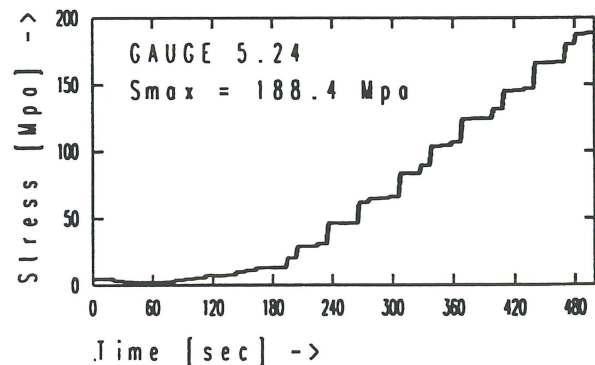
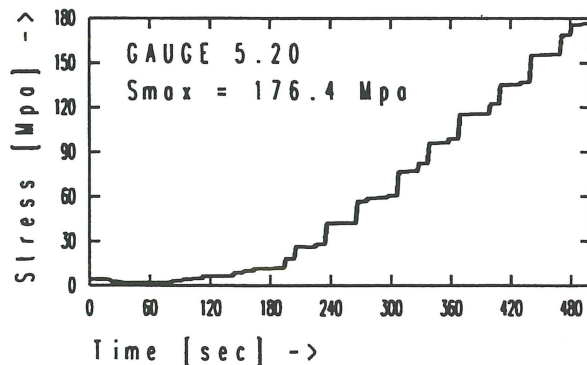
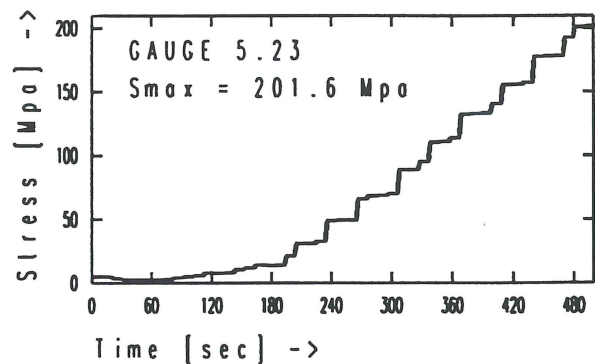
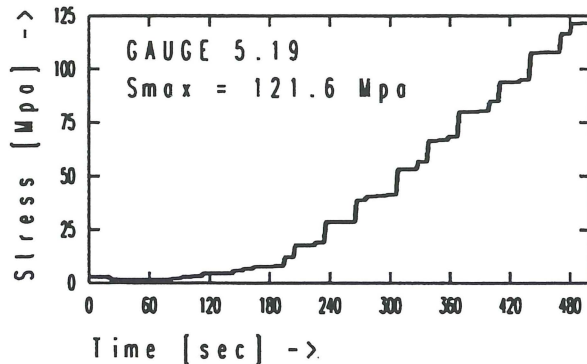
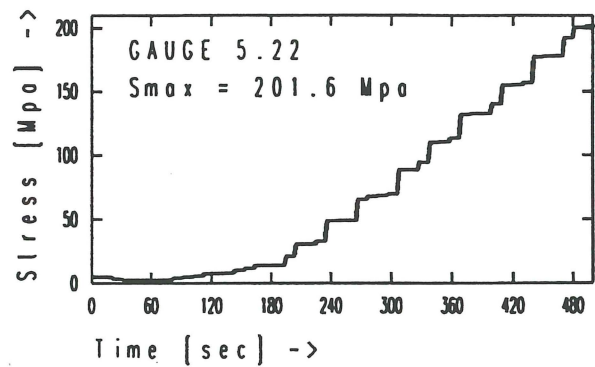
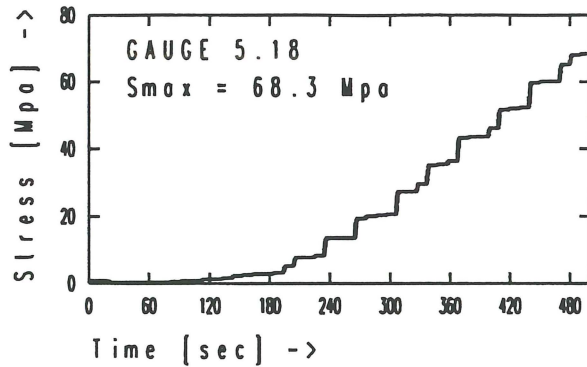
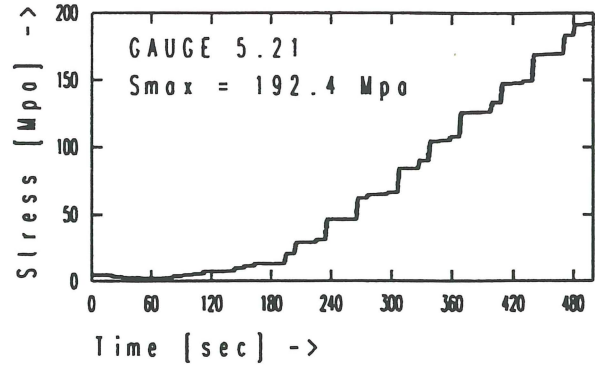
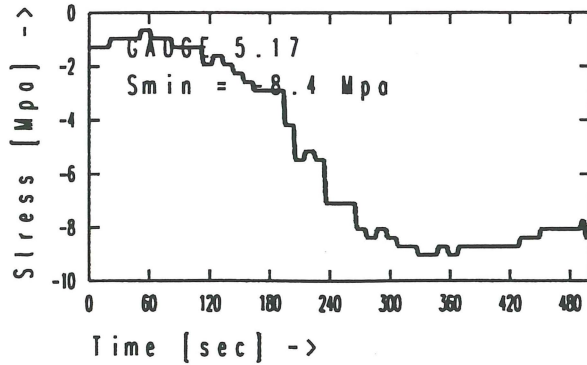
2nd BRIDGEPANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 50.4 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.896 N/mm²



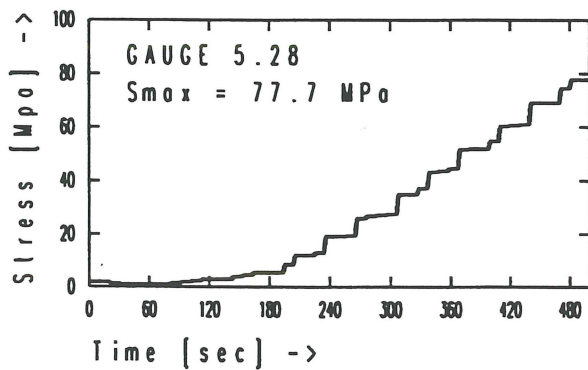
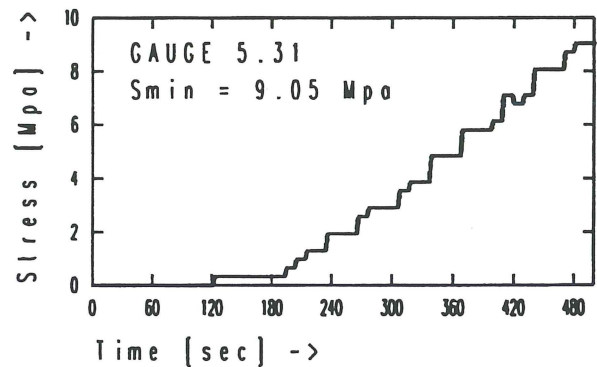
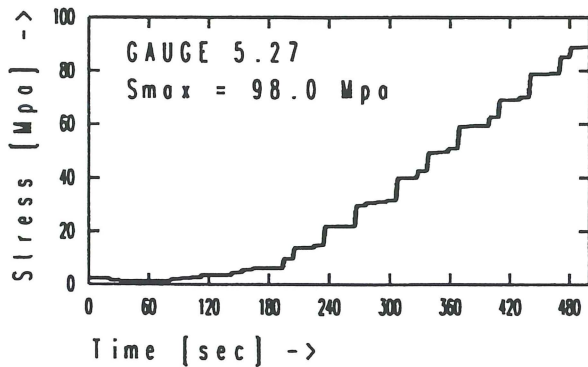
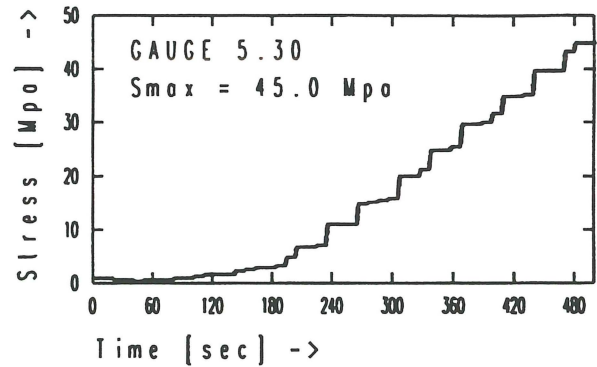
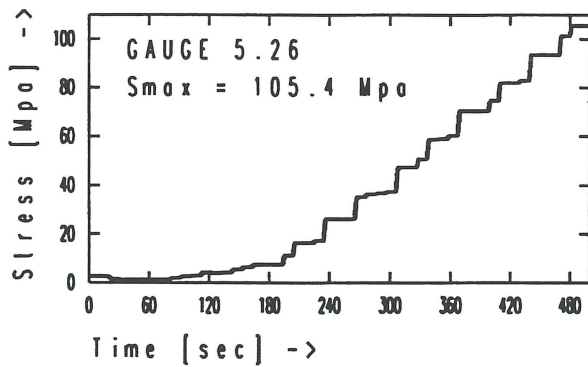
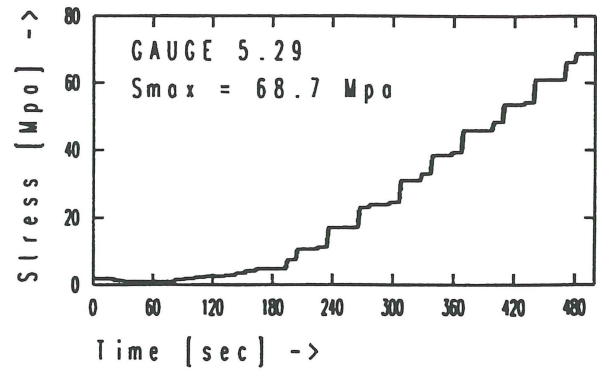
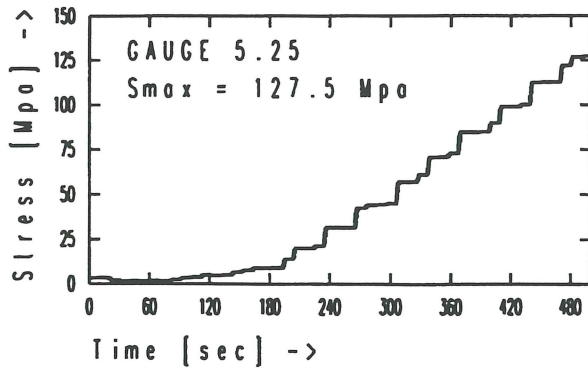
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 50.4 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.896 N/mm²



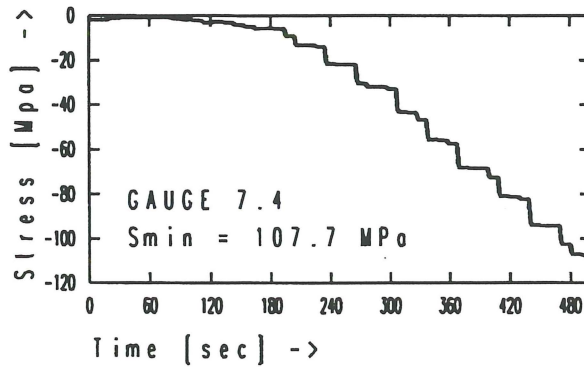
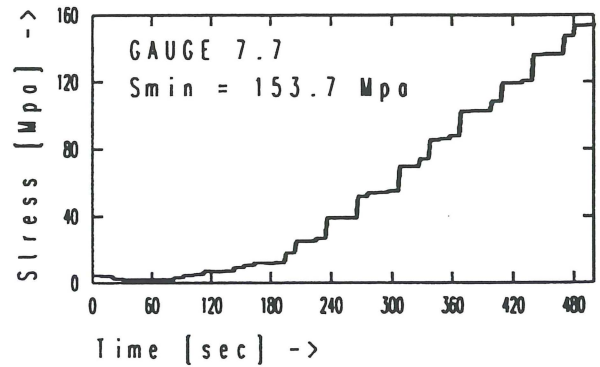
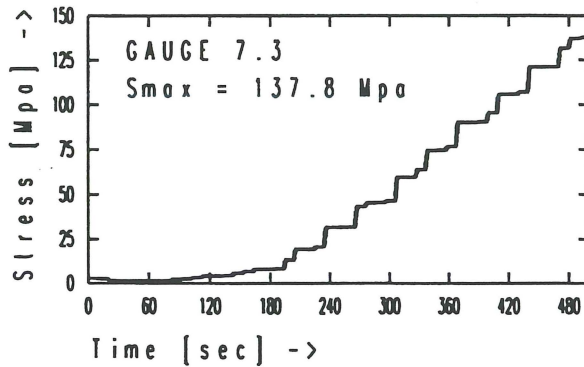
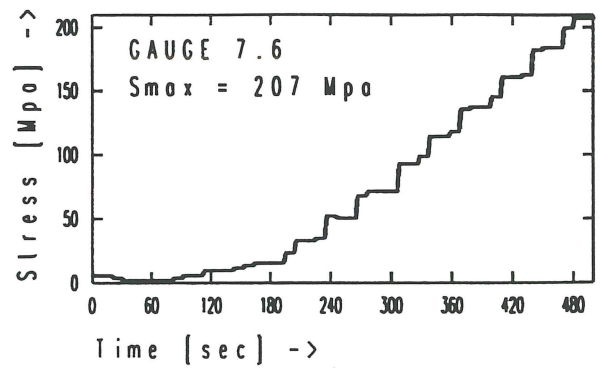
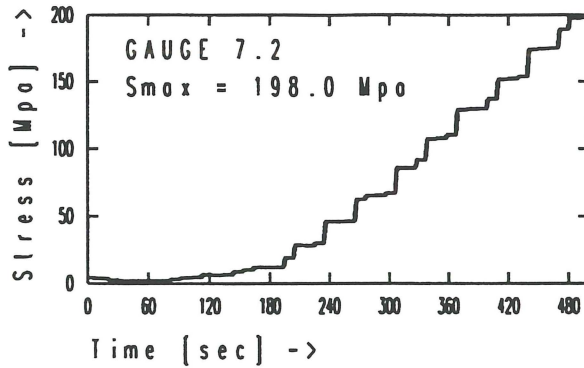
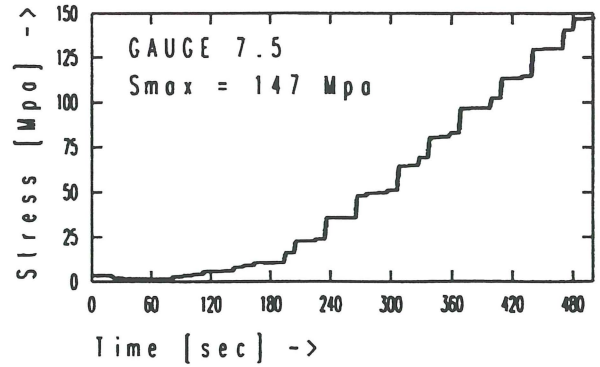
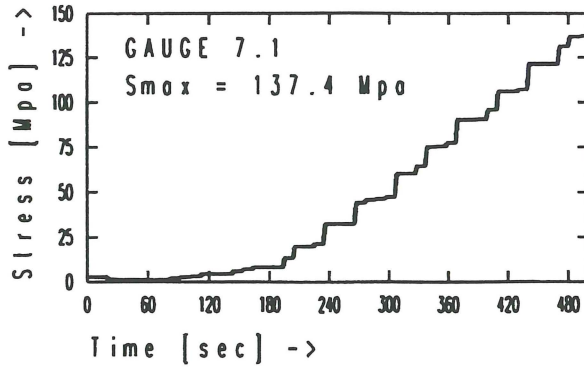
2nd BRIDGE PANEL -VAN BRIENENOORD-
 STATIC LOADING: F_{max} 50.4 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.896 N/mm²



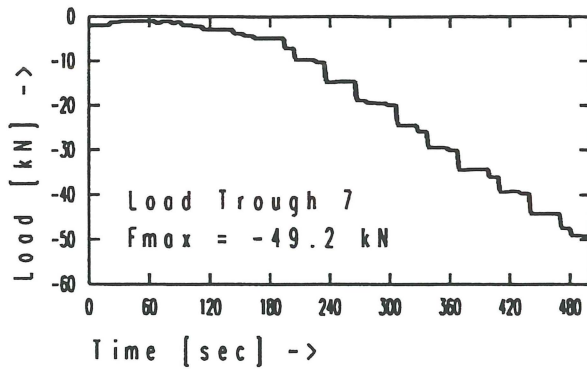
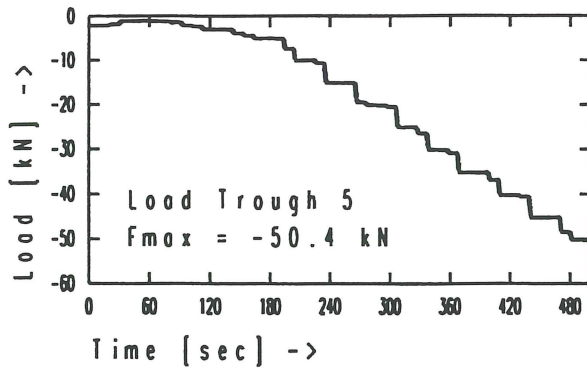
2nd BRIDGE PANEL - VAN BRIENENOORD -
 STATIC LOADING: F_{max} 50.4 kN
 LOADED AREA: Width 225mm Length 250mm
 SURFACE STRESS: 0.896 N/mm²



2nd BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 50.4 kN
LOADED AREA: Width 225mm Length 250mm
SURFACE STRESS: 0.896 N/mm²

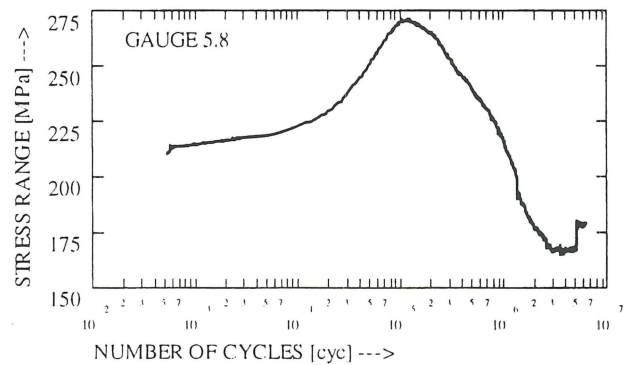
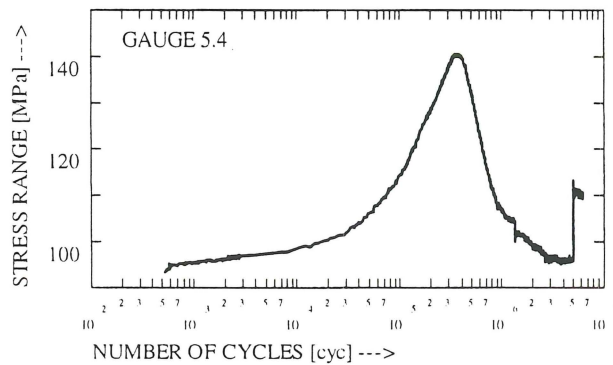
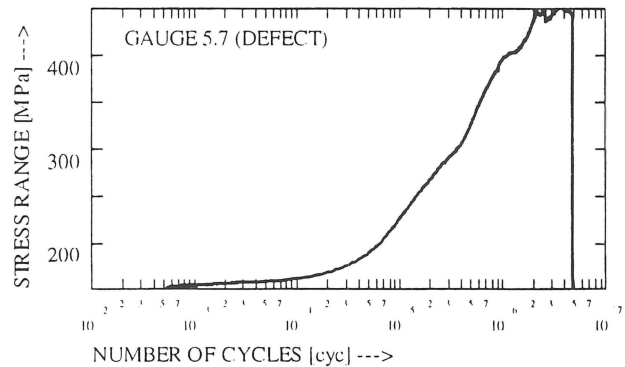
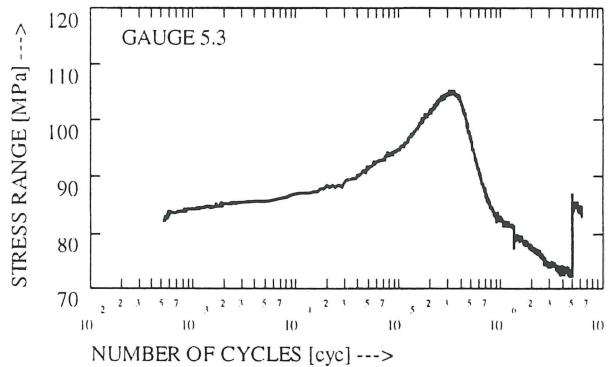
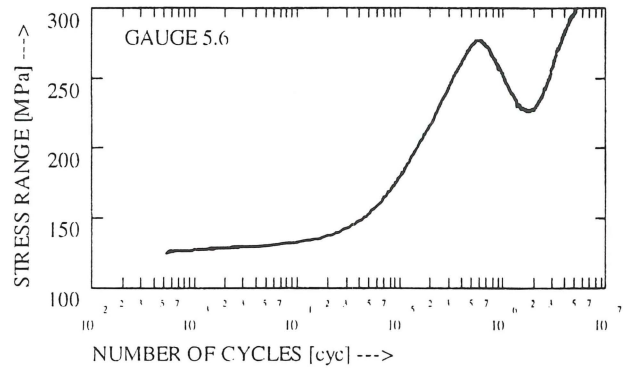
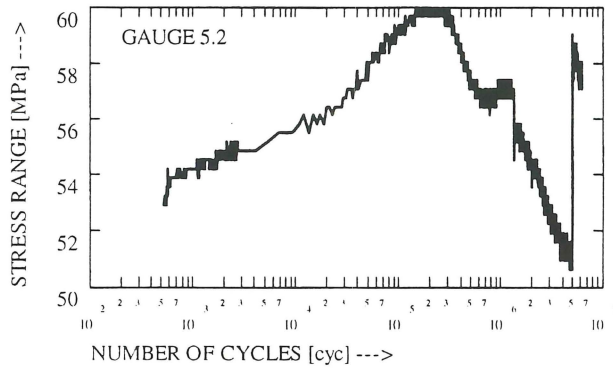
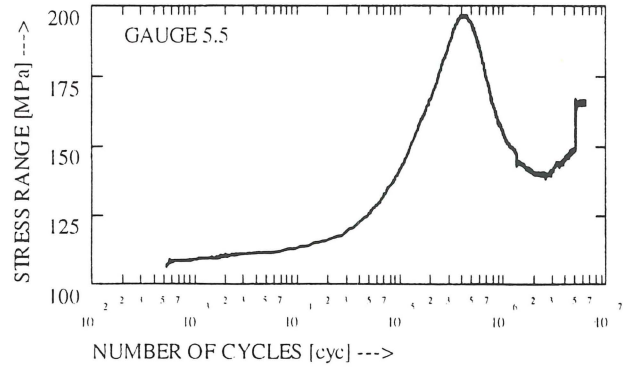
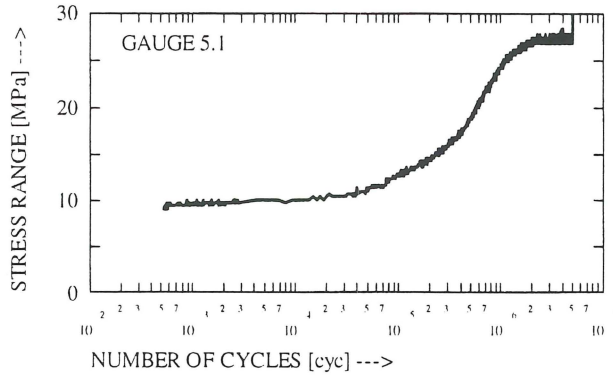


2nd BRIDGE PANEL -VAN BRIENENOORD-
STATIC LOADING: F_{max} 50.4 kN
LOADED AREA: Width 225mm Length 250mm
SURFACE STRESS: 0.896 N/mm²



HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

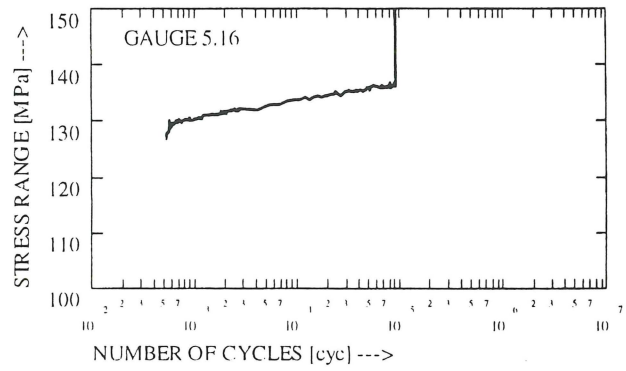
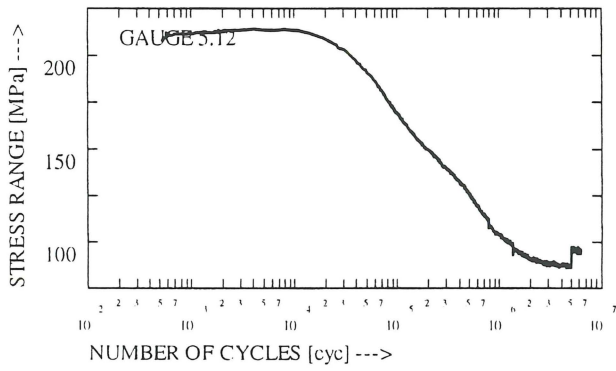
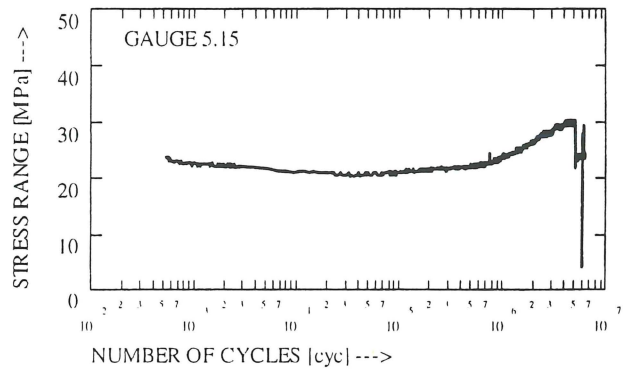
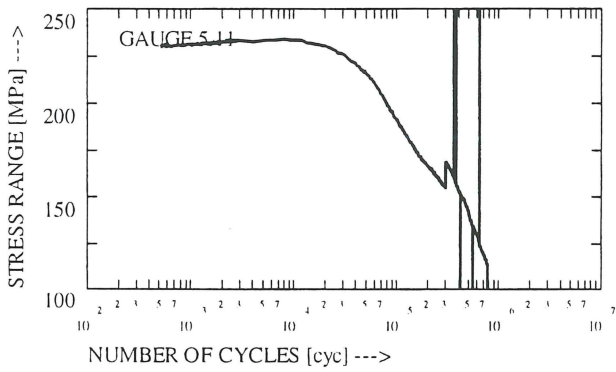
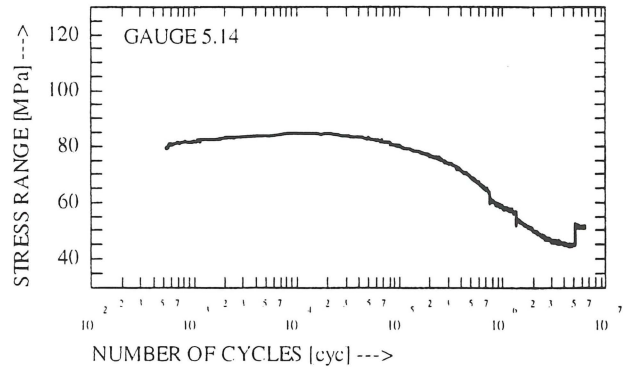
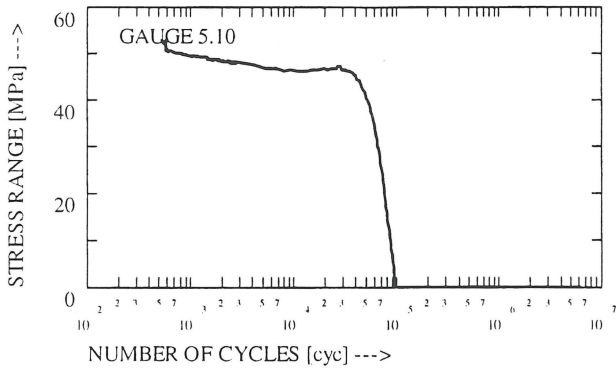
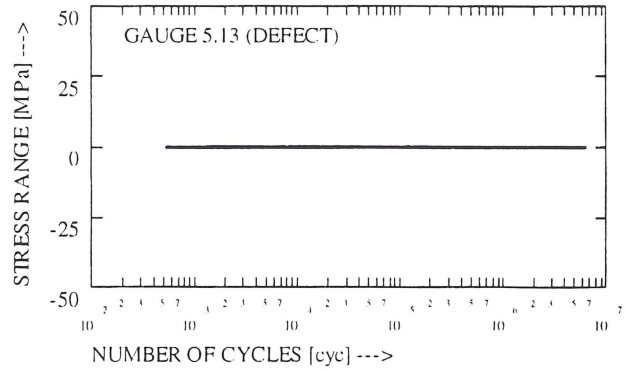
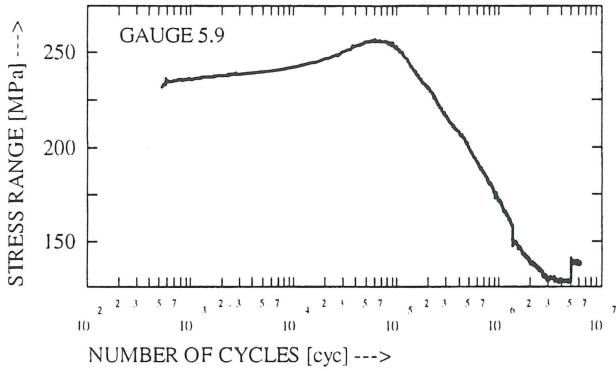
Ntot=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

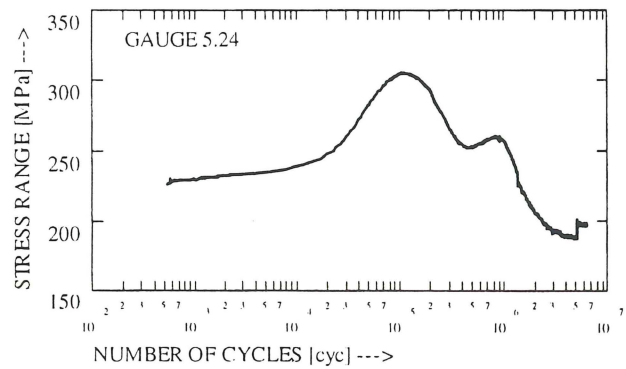
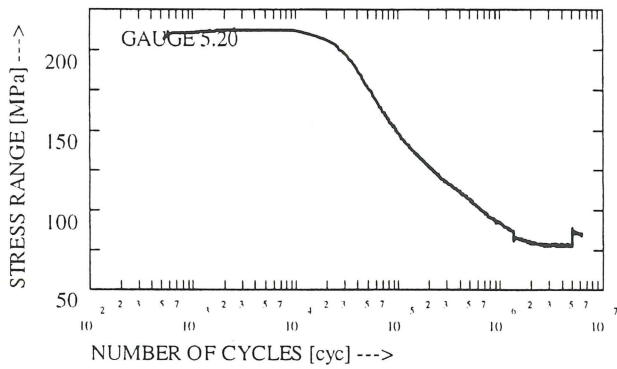
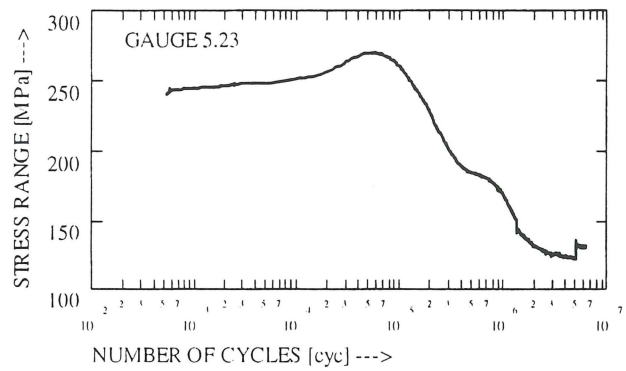
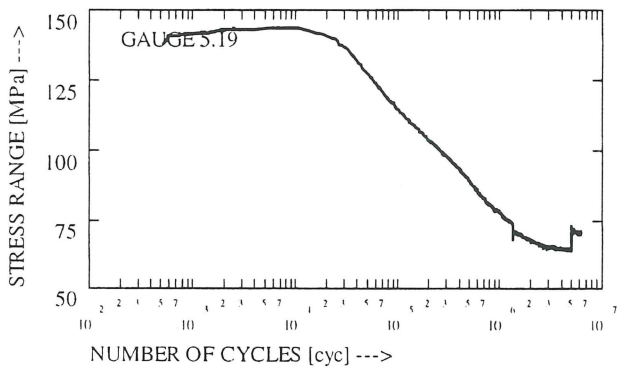
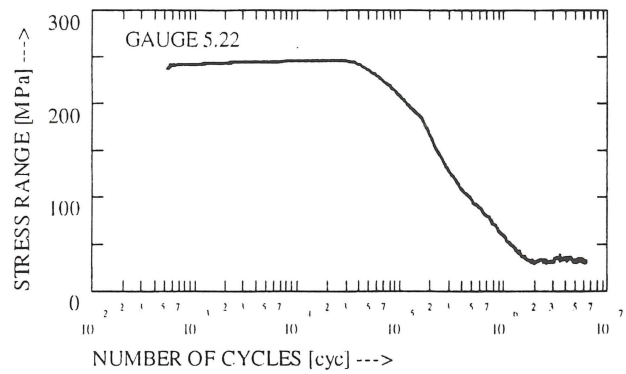
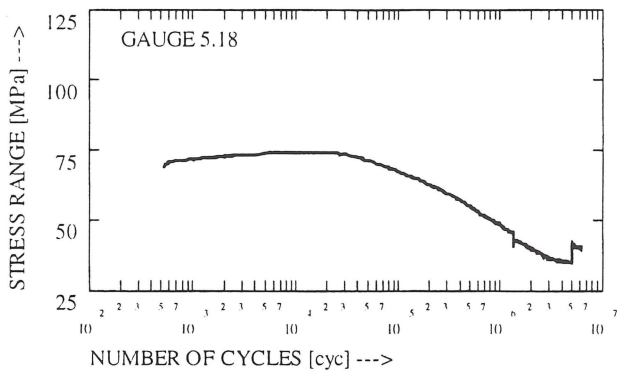
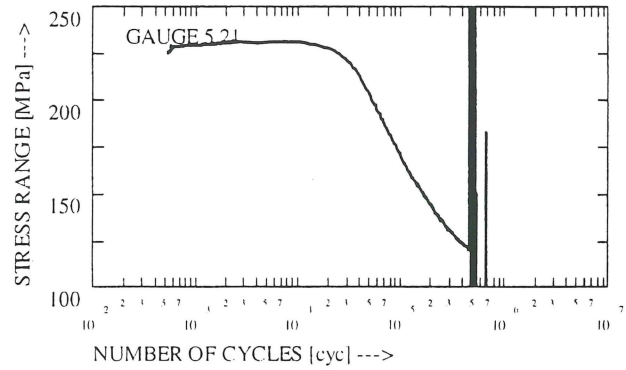
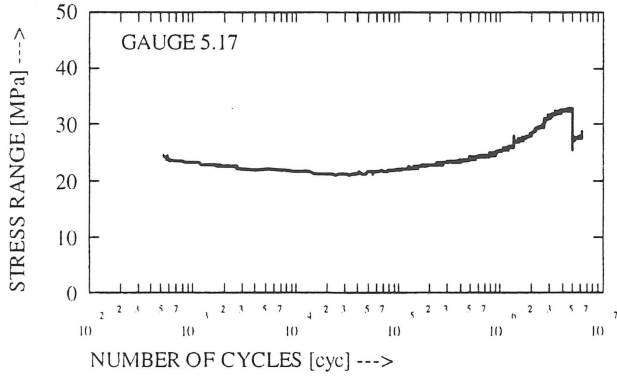
Ntot=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

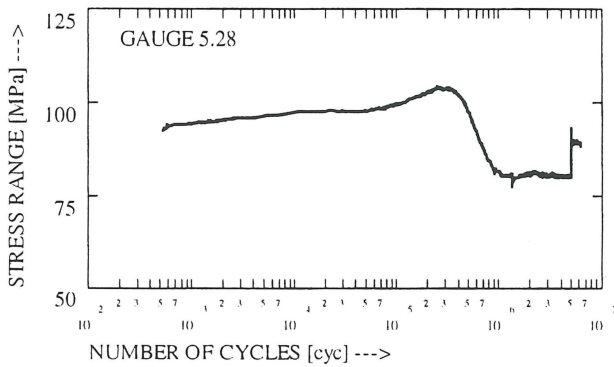
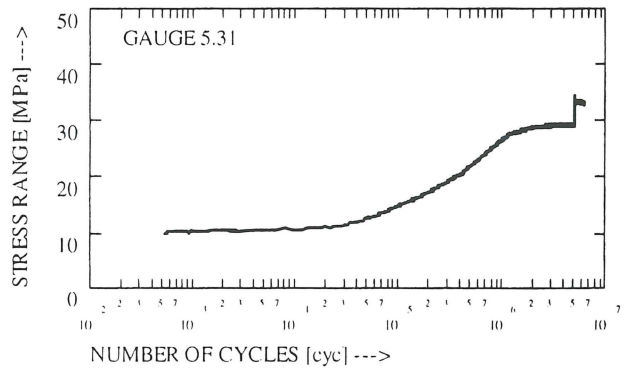
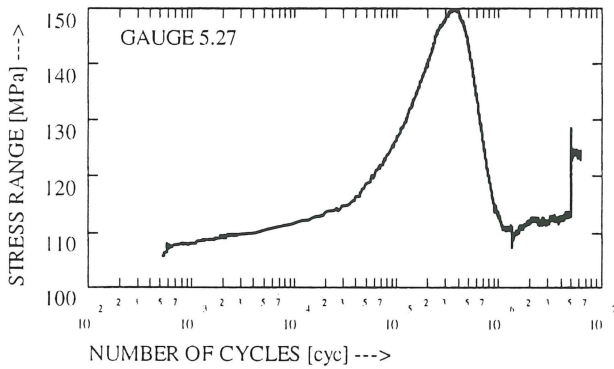
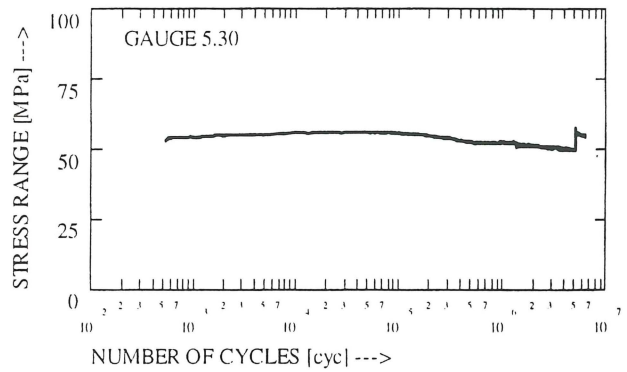
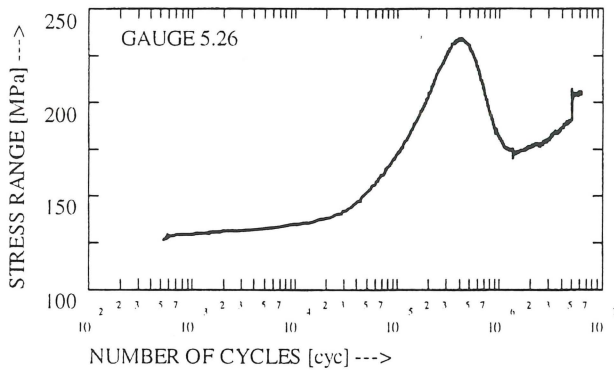
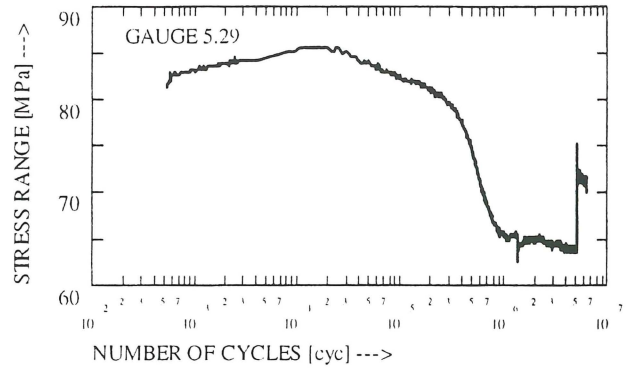
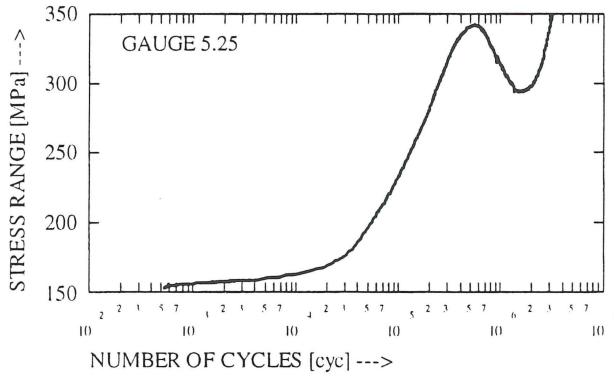
Ntot=6.260.379 CYCLES



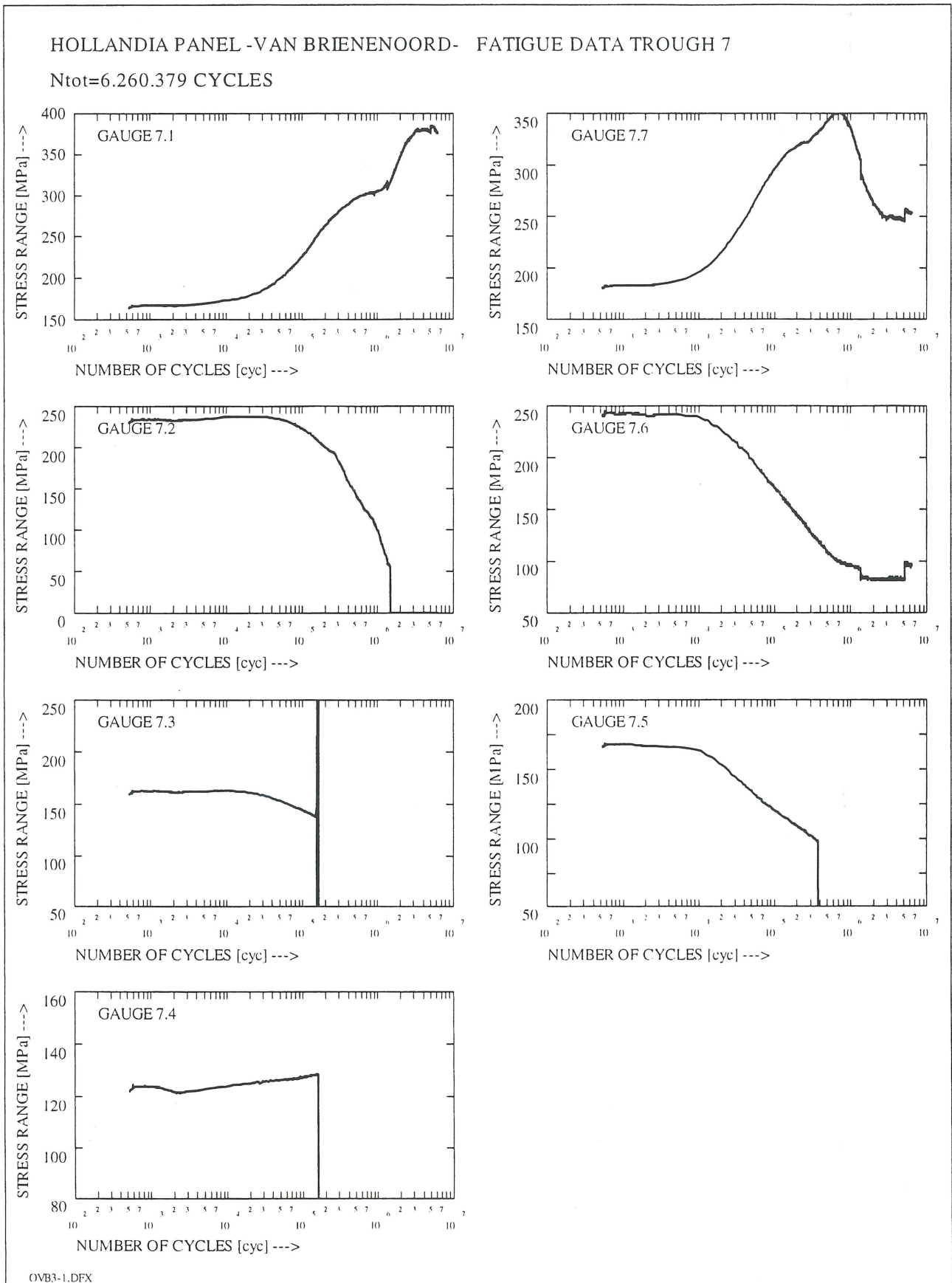
OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

Ntot=6.260.379 CYCLES

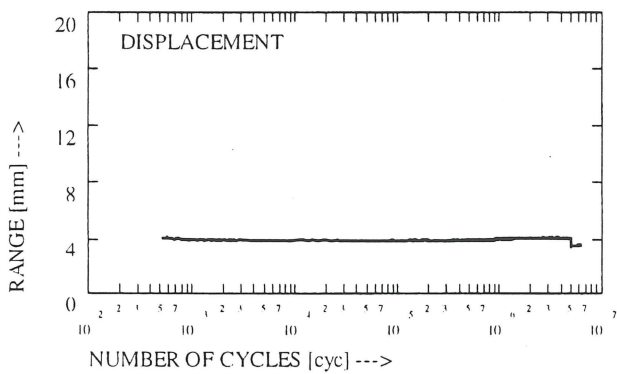
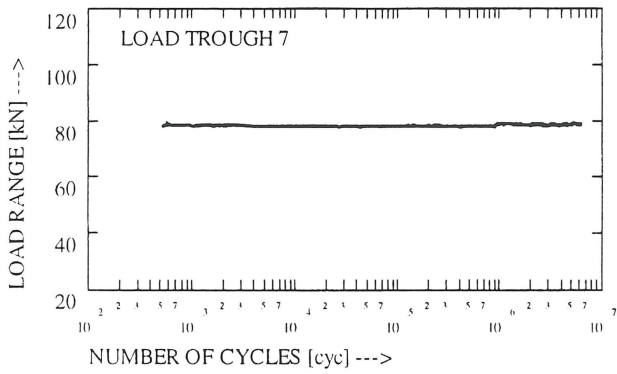
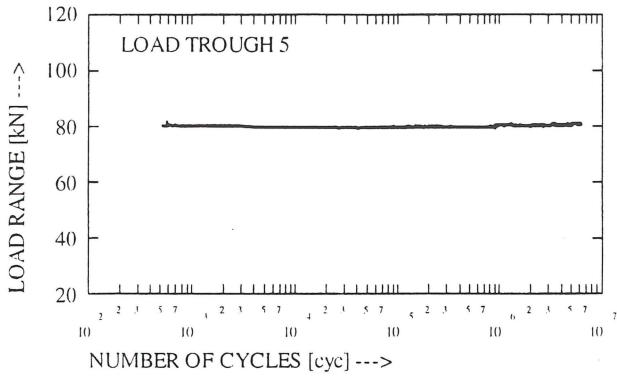


OVB3-1.DFX



HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5 & 7

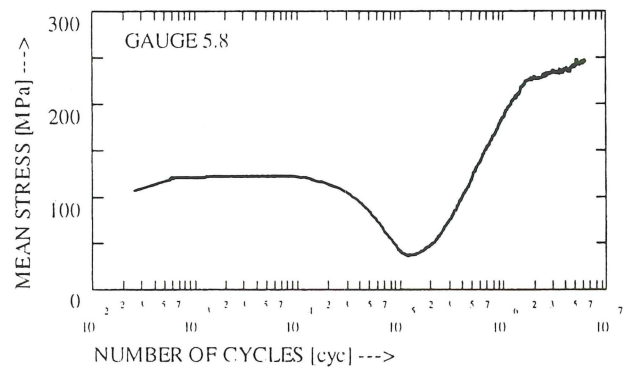
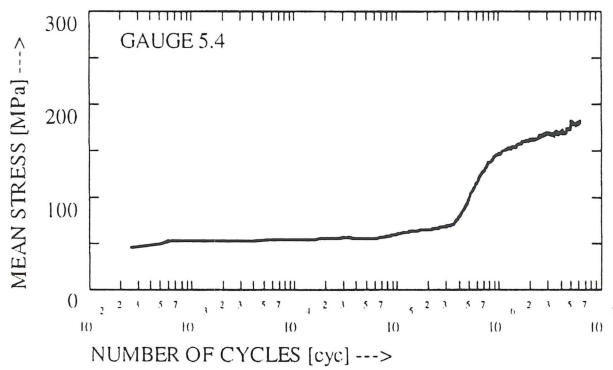
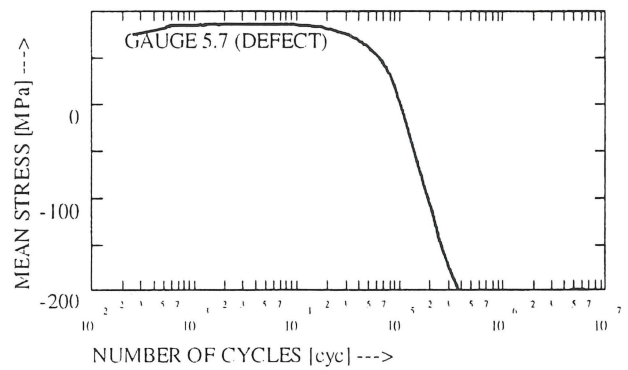
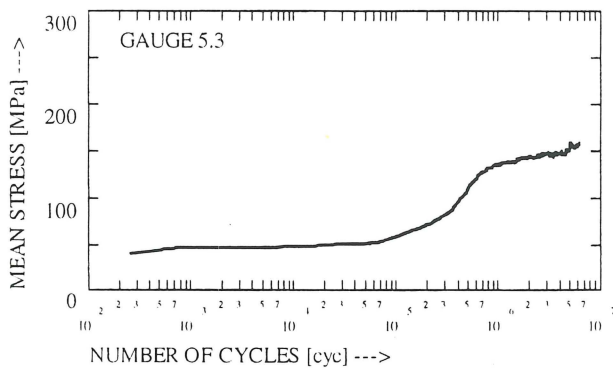
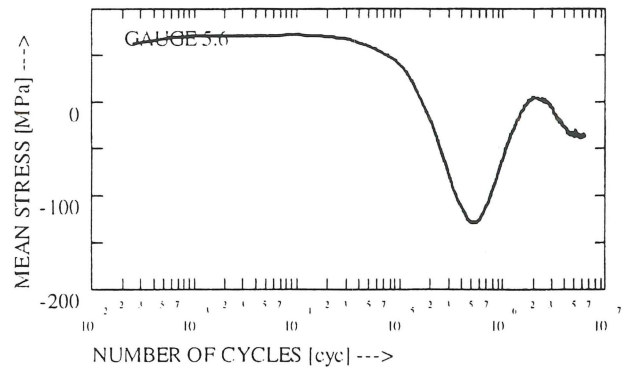
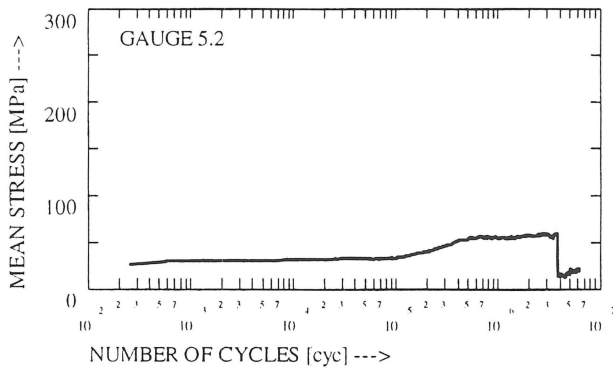
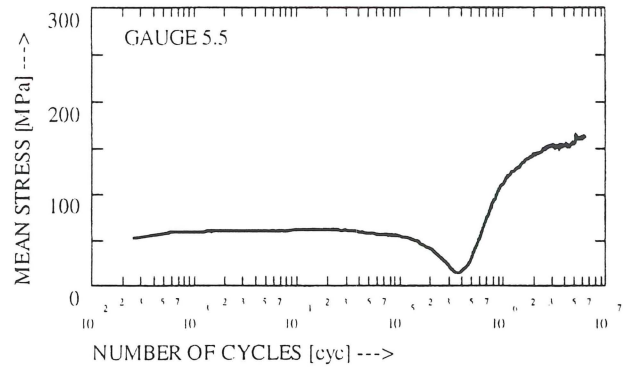
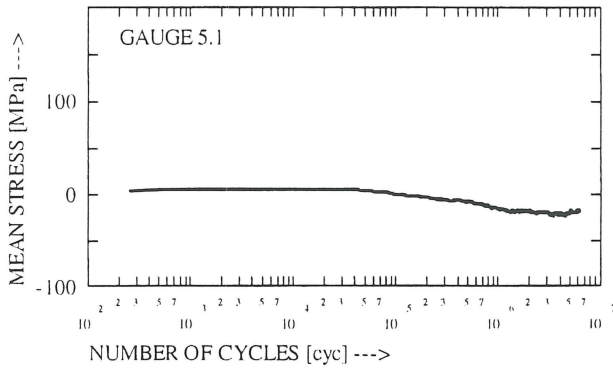
Ntot=6,260,379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

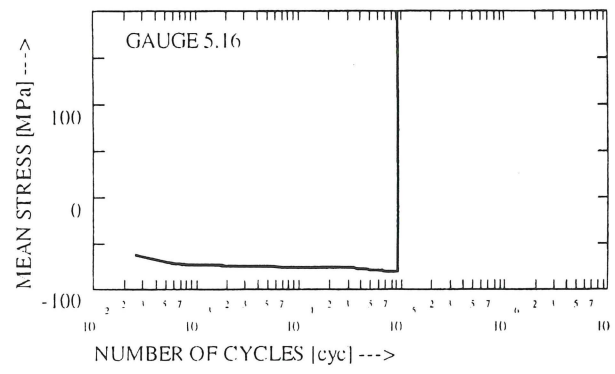
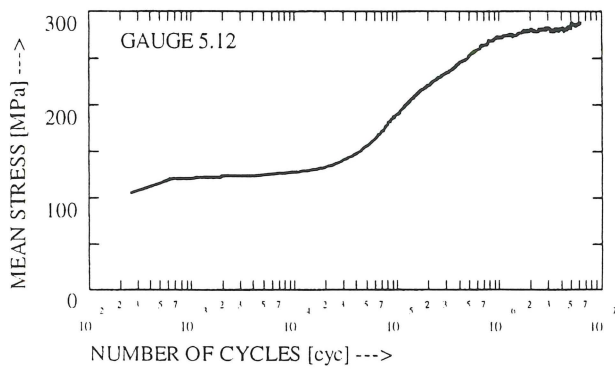
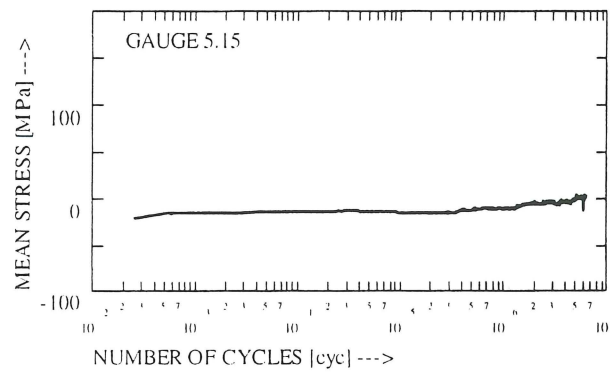
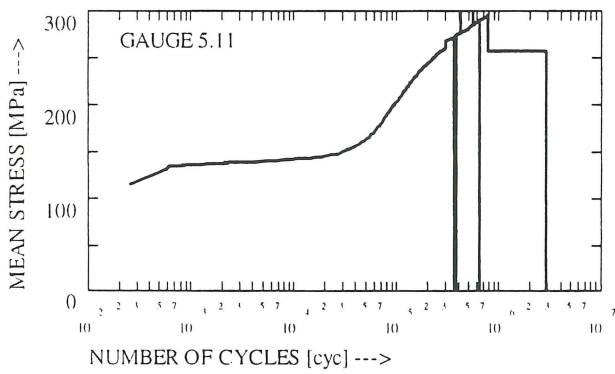
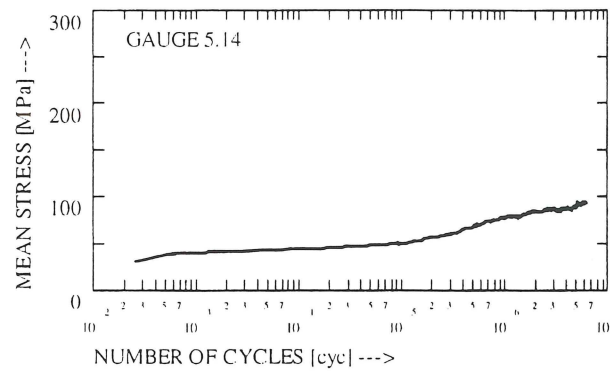
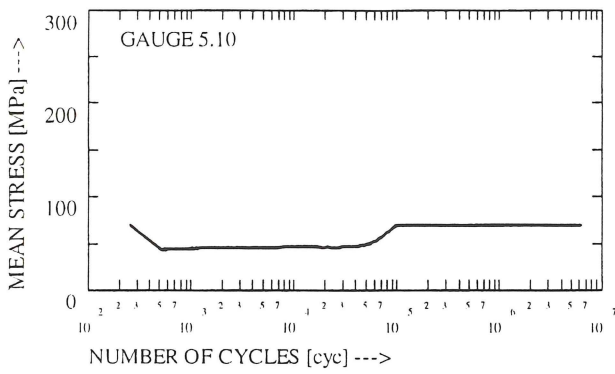
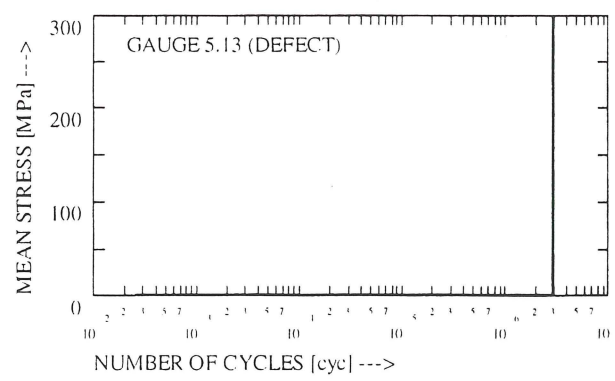
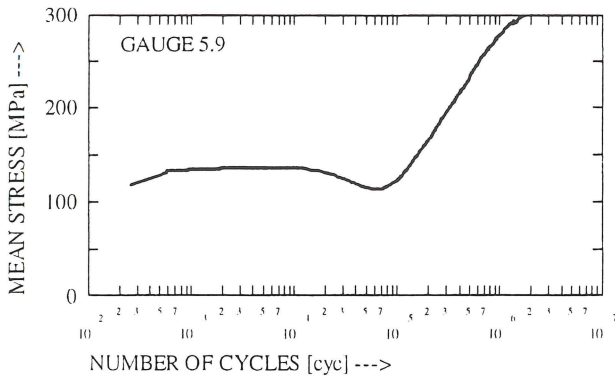
Ntot=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

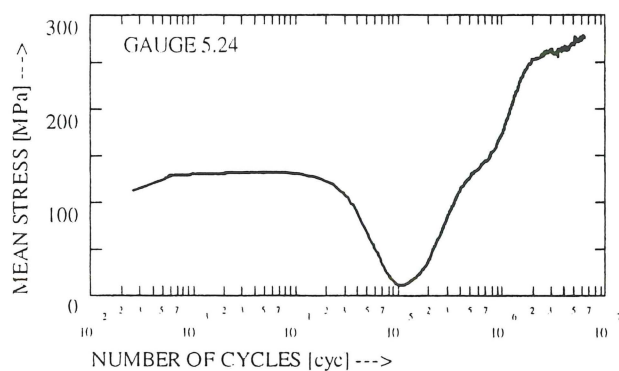
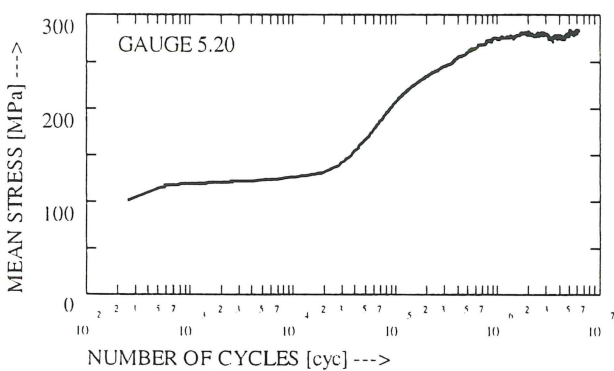
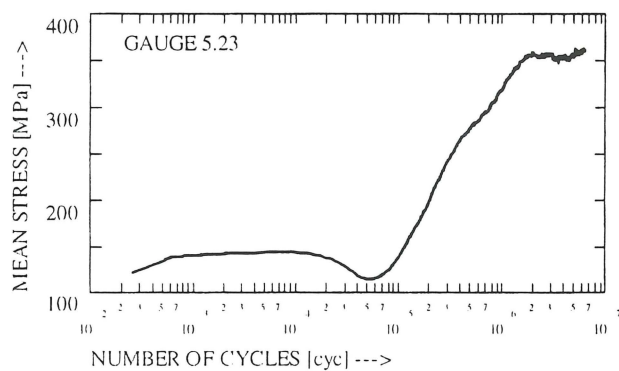
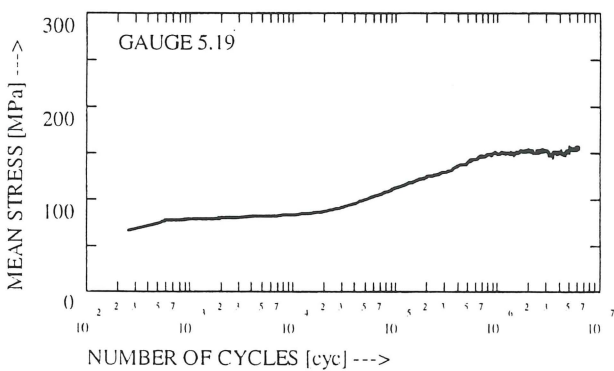
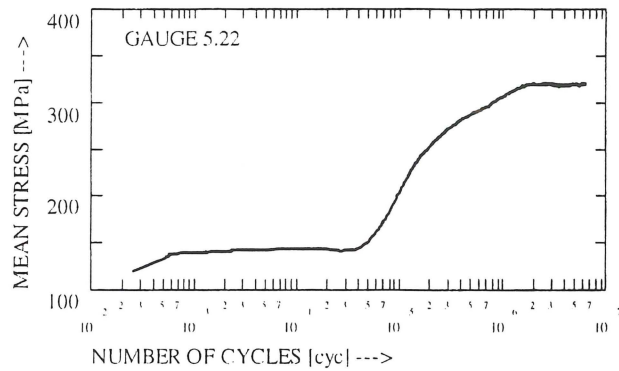
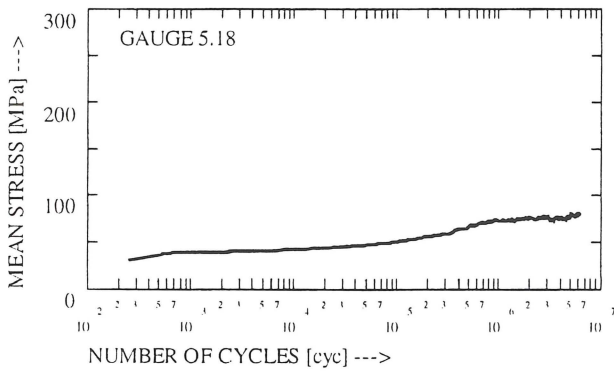
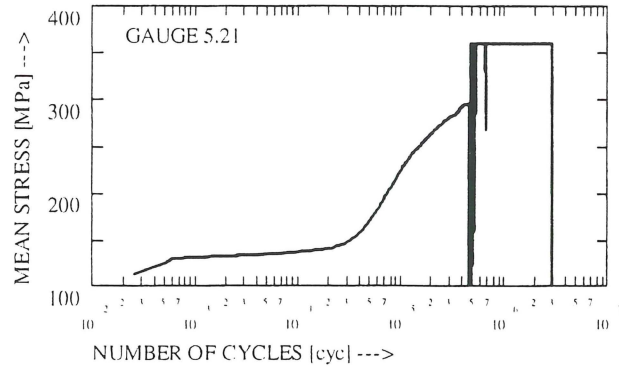
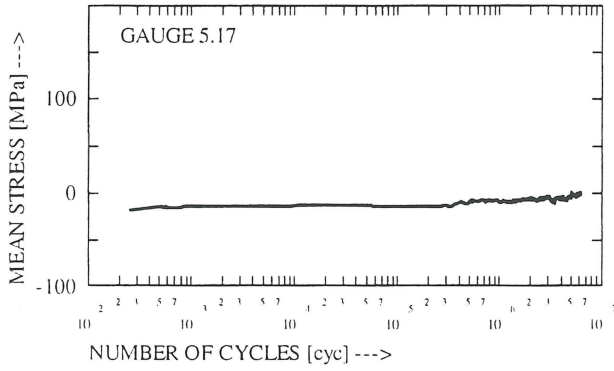
Ntot=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

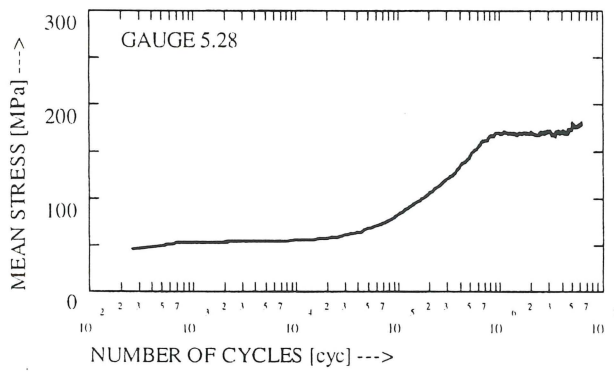
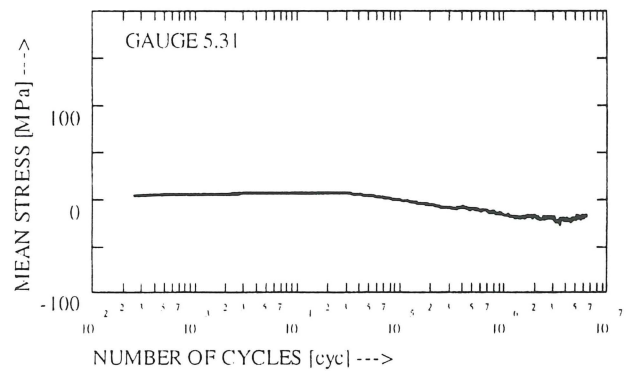
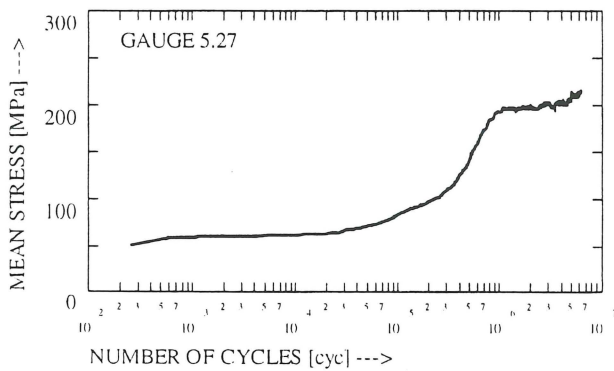
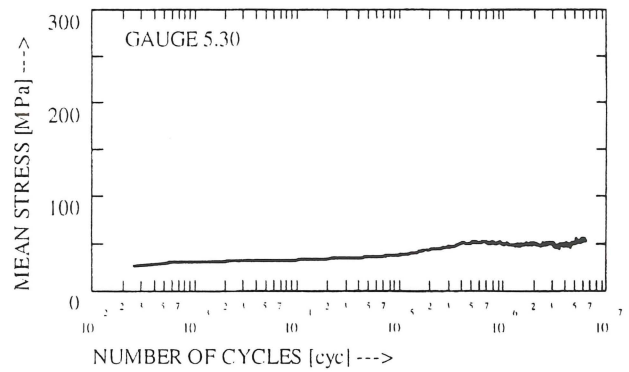
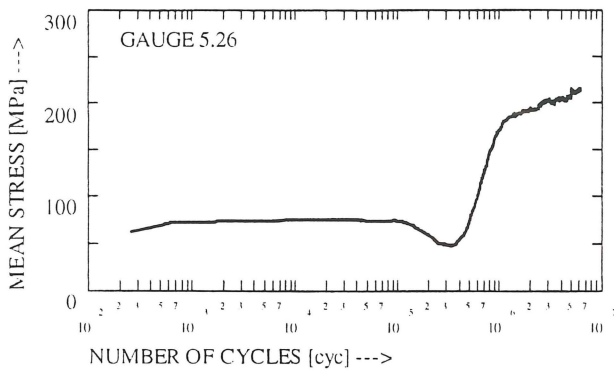
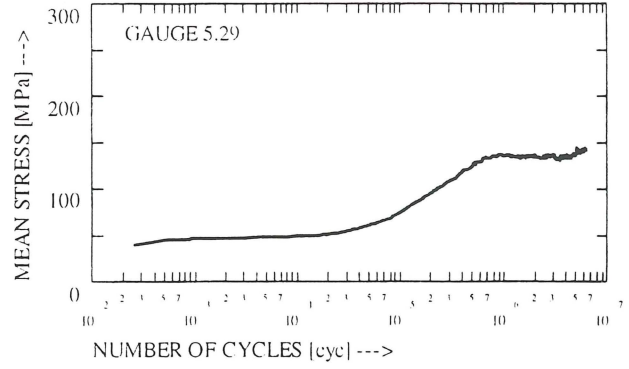
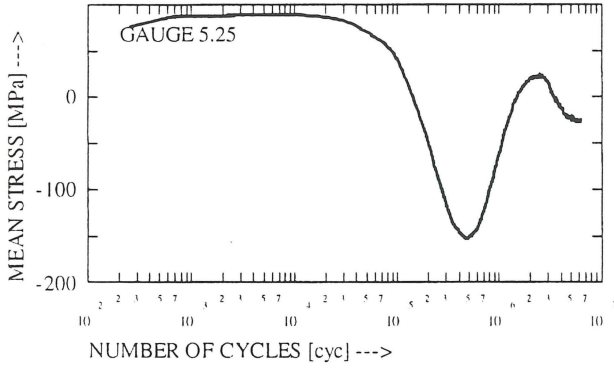
Ntot=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5

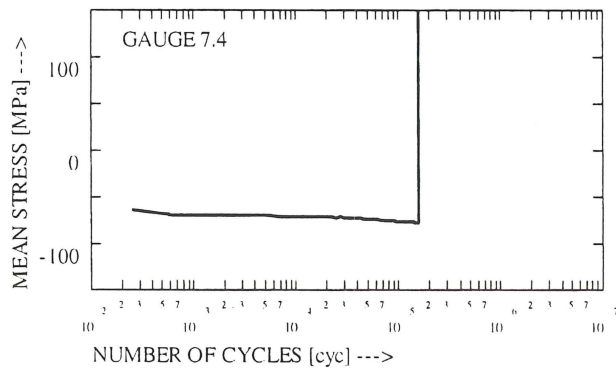
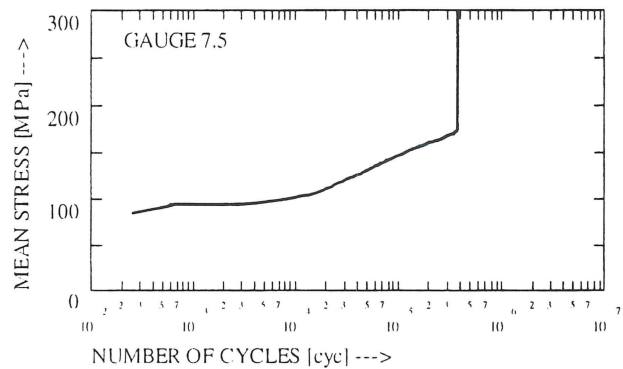
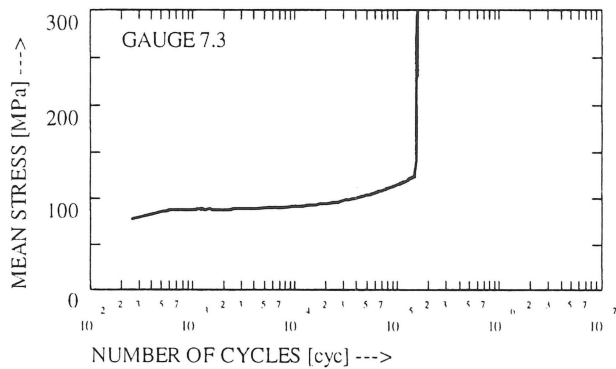
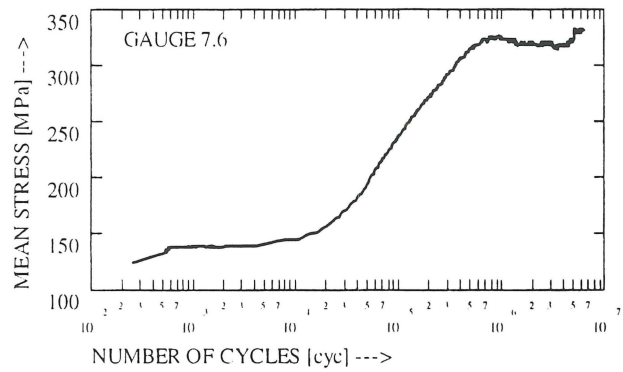
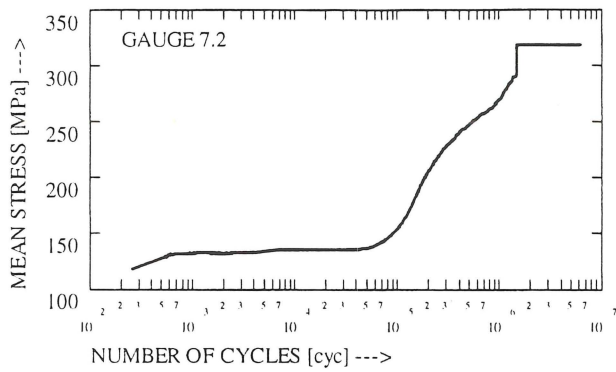
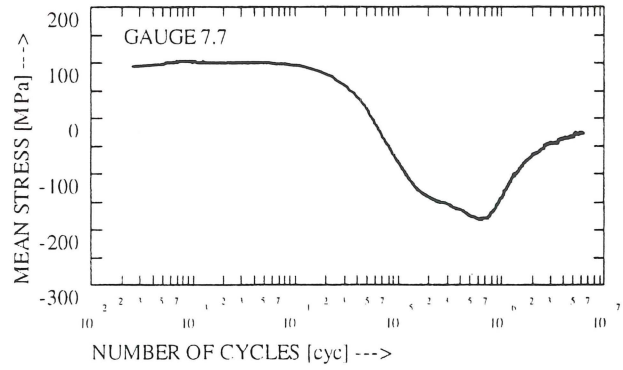
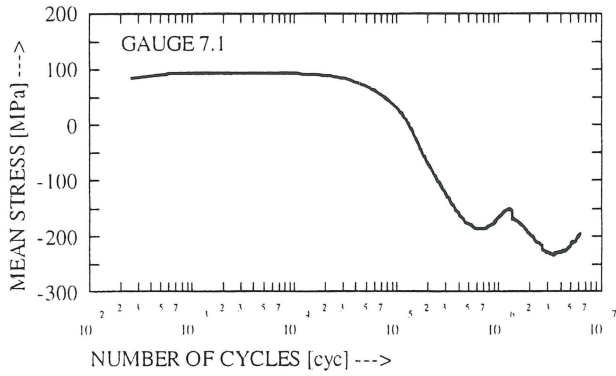
Ntot=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 7

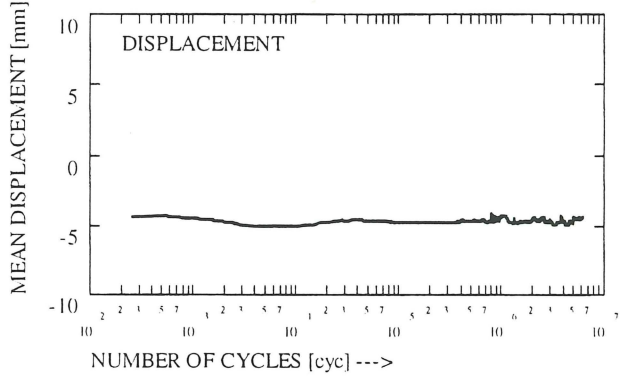
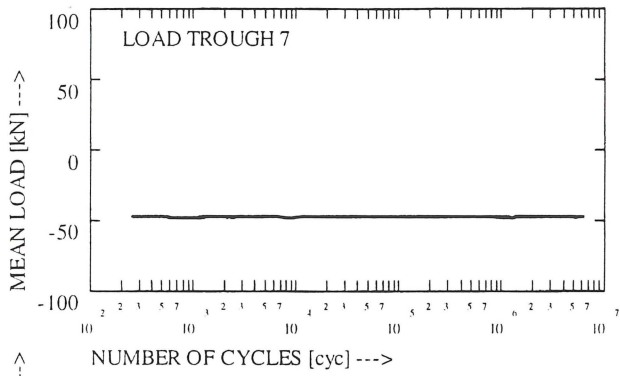
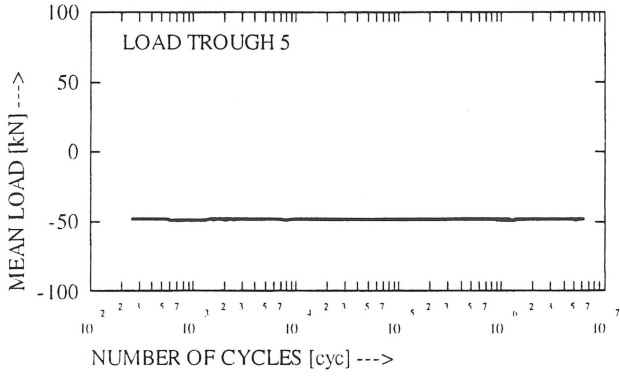
Ntot=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 5 & 7

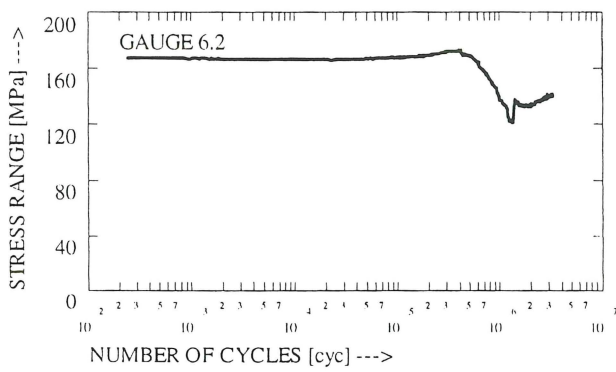
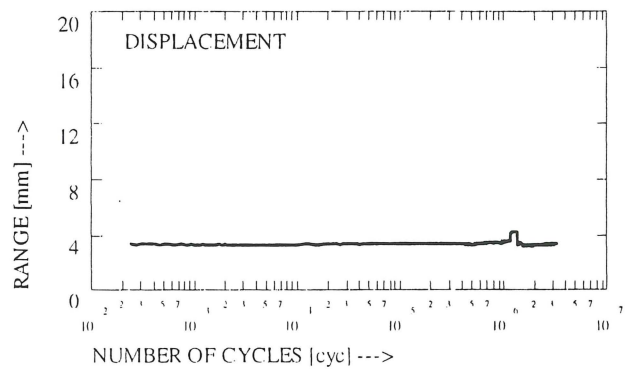
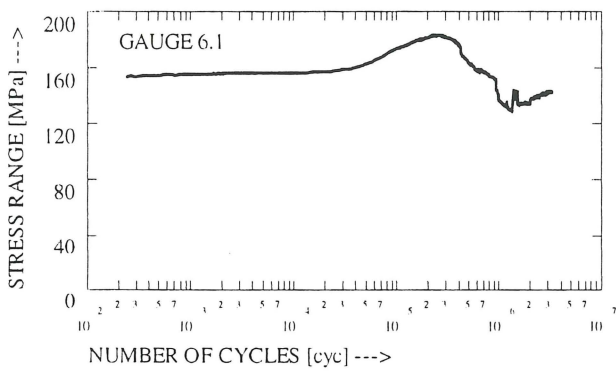
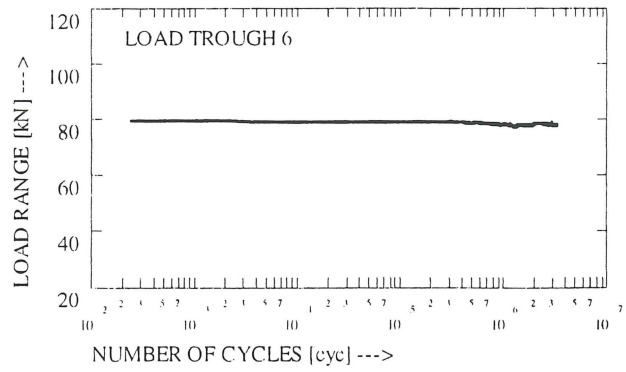
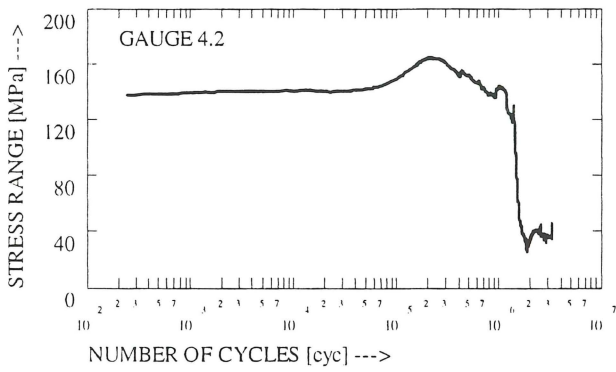
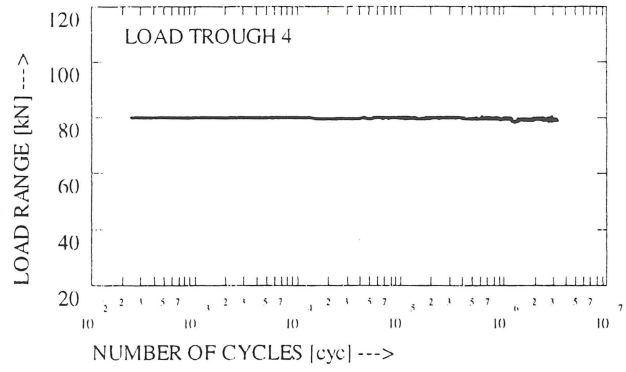
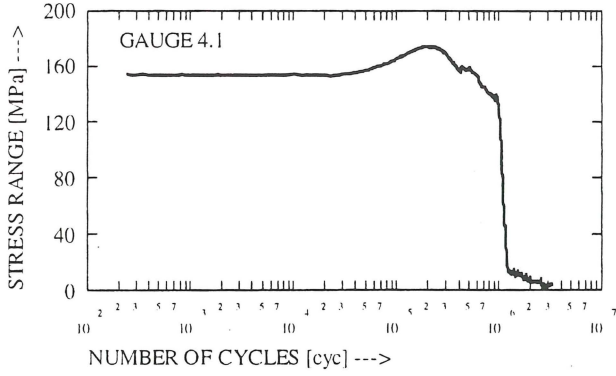
N_{tot}=6.260.379 CYCLES



OVB3-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 4 & 6

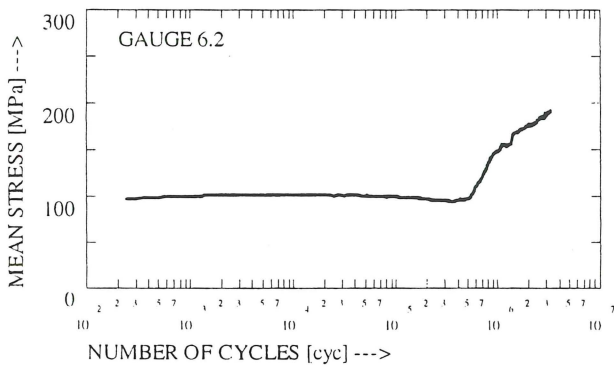
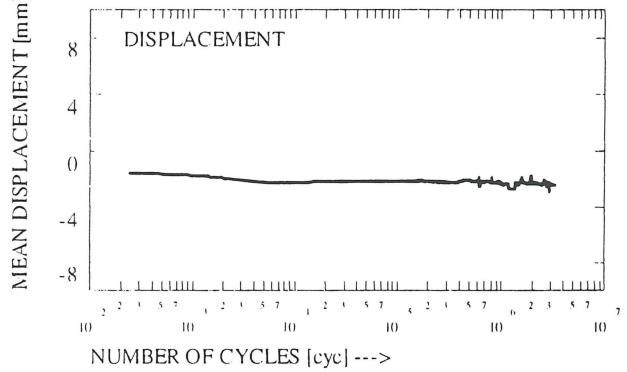
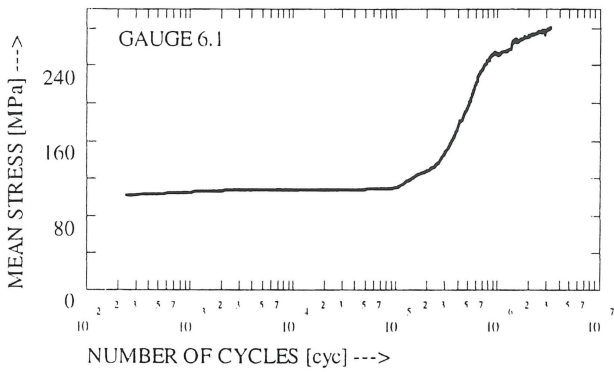
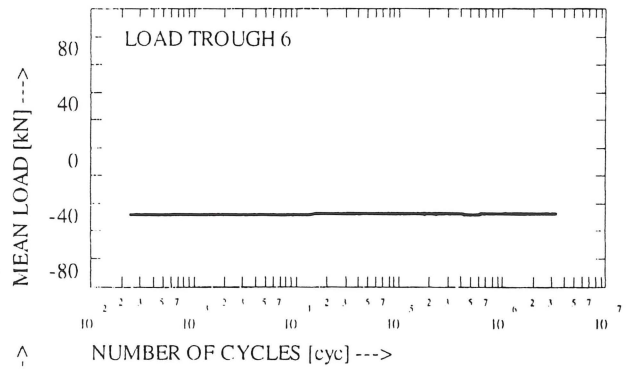
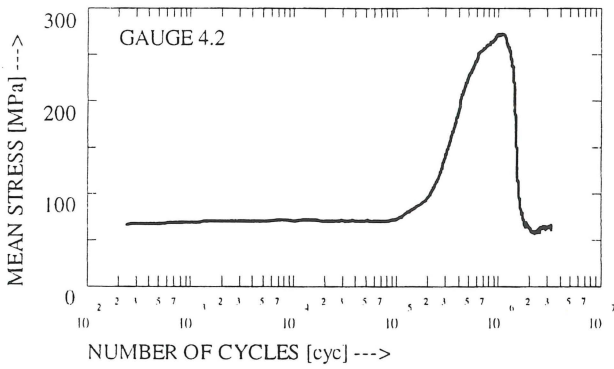
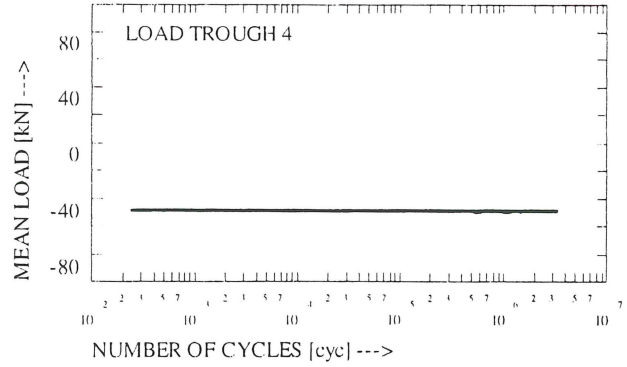
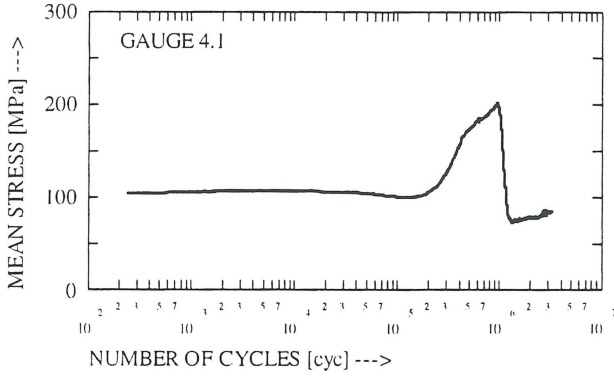
Ntot=3.263.450 CYCLES



0VB4-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 4 & 6

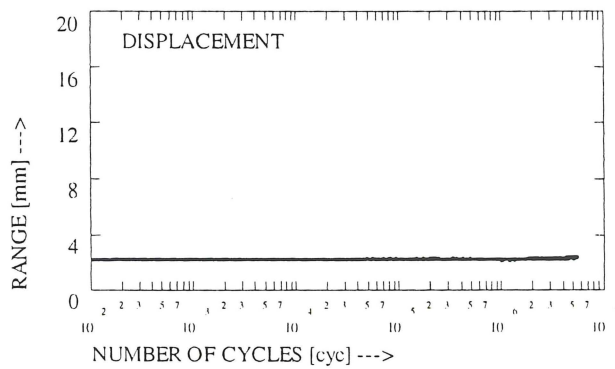
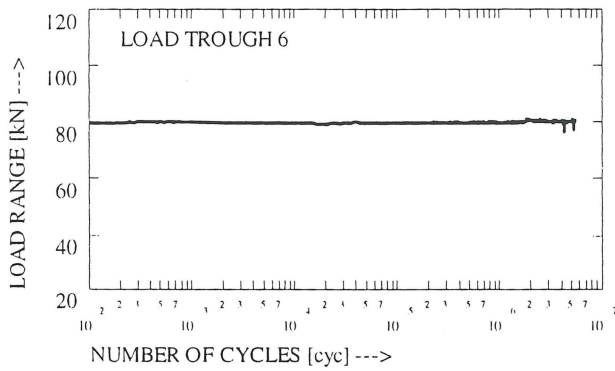
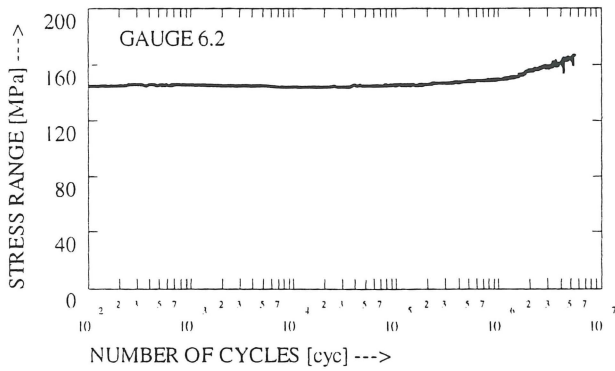
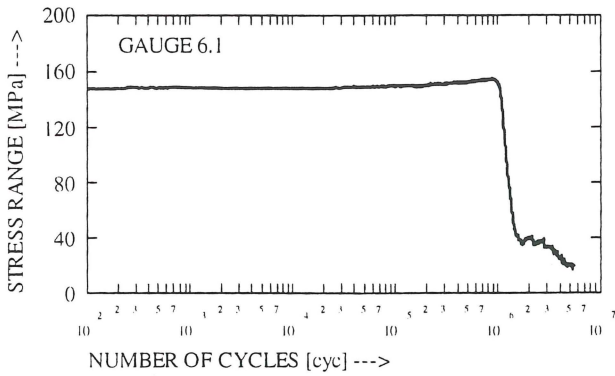
Ntot=3.263.450 CYCLES



0VB4-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 6

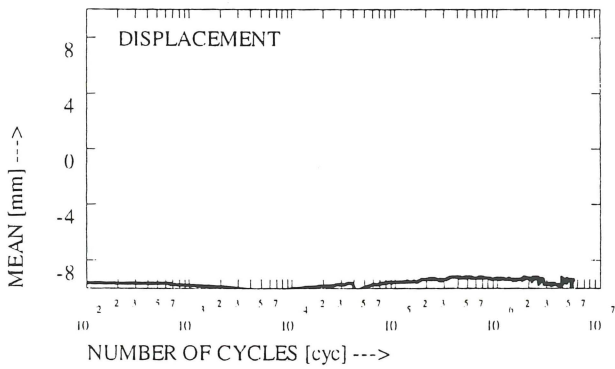
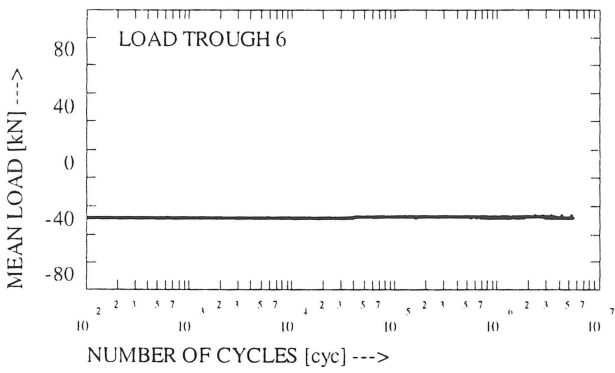
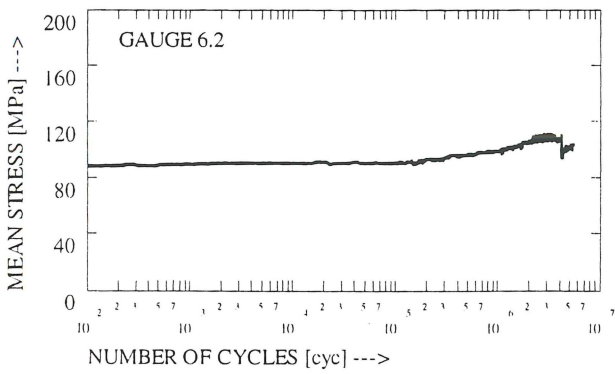
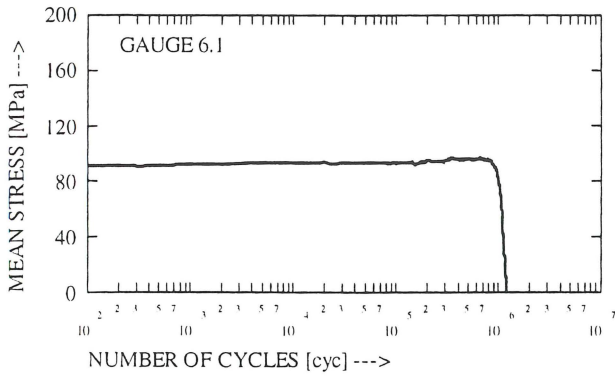
N=5.412.392 CYC (1st TEST 3.263.450 CYC)



0VB5-1.DFX

HOLLANDIA PANEL -VAN BRIENENOORD- FATIGUE DATA TROUGH 6

N=5.412.392 CYC (1st TEST 3.263.450 CYC)



0VB5-1.DFX

