V2908

TTD #1 TESTING

37.8 KPH INSTRUMENTED BARRIER (MDB) TO STATIONARY BARRIER IMPACT TEST

TEST NO. 2

MDB IMPACT ANGLE: 60°
MDB WHEEL CRAB ANGLE: 19°

CONTRACT NO. DTRS-57-95-C-00010

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: February 27, 1997

Report Date: April 27, 1998

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
VOLPE NATIONAL TRANSPORTATION SYSTEMS CENTER
55 BROADWAY, KENDALL SQUARE
CAMBRIDGE, MA 02142

This Final Report was prepared for the U.S. Department of Transportation, Volpe National Transportation Systems Center under Contract No. DTRS-57-95-C-00010.

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Approved By: David Winkelbauer
David Winkelbauer, Deputy Facility Director

Approval Date: 6/26/98

FINAL REPORT ACCEPTED BY (OVSC):

Accepted By: _____

Acceptance Date: _____

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SECTION 1

INTRODUCTION

The purpose of this report is to document the results of a dynamic impact test performed with an instrumented moving barrier. This testing was part of a series of full scale tests as outlined in contract DTRS-57-95-C-00010, TTD #1 (see table below). The test results reported here are for Test No. 2 of a series of four tests, utilizing various impact velocities and angles, that were conducted for this project. Previously, two demonstration tests were conducted that are referred to as Demonstration Test No. 1 and 2. Test No. 1 was also conducted. The objective of this testing was to determine the feasibility of using an instrumented barrier face to determine local forces induced on an impacted vehicle during a side impact event. Additionally, it is to determine the dynamic force and displacement characteristics of the aluminum deformable barrier face used for FMVSS 214 D testing. Due to the volume of data generated with this test, Appendix A (data and still photographs) is presented as an entirely separate document in a three-ring binder. Data plots from load cells that experienced less than 667.2 Newtons and data plots from displacement transducers that measured less than 2 mm were omitted from this report.

Test	MDB Towing Velocity	MDB Impact Angle	MDB Crab Angle
Demonstration 1	41.5 kph	90°	26°
Demonstration 2	32.2 kph	60°	19°
Test No. 1	20.9 kph	60°	19°
Test No. 2	37.8 kph	60°	19°
Test No. 3	47.95 kph	75°	23°
Test No. 4	54.7 kph	90°	27°

SECTION 2

TEST SUMMARY

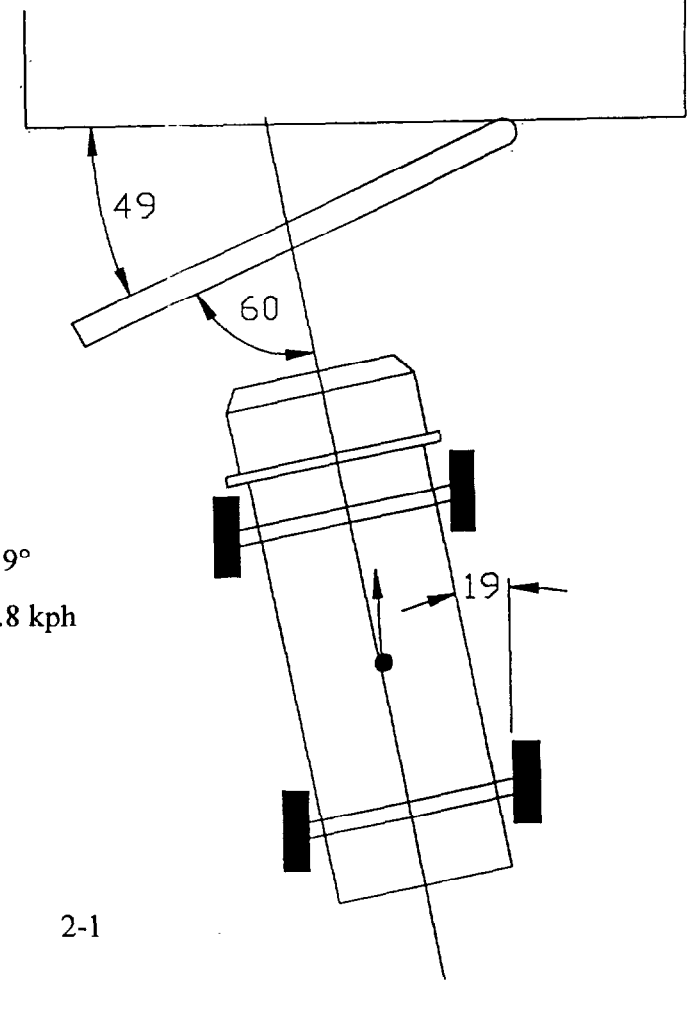
The modified FMVSS 214 D moving barrier with a Plascore FMVSS 214 D deformable barrier face was crabbed 19° to the left. It was towed at 37.8 kph into a rigid barrier situated 49° from perpendicular to the moving barriers longitudinal direction of travel that is 30° from perpendicular (left barrier face to contact rigid barrier first) to the front surface of the deformable barrier face. The test was conducted February 27, 1997 at the MGA Research Corporation Proving Grounds and Crash Test Center in Burlington, Wisconsin. 182 channels of data were recorded during the impact event, 44 deformable barrier face displacements, forces from 44 triaxial barrier face load cells (X, Y, and Z axis), 5 moving barrier accelerations and barrier contact. The test was documented with seven high speed cameras.

The parameters for this dynamic test into a stationary barrier were as follows:

MDB Impact Angle: 60°

MDB Wheel Crab Angle: 19°

MDB Towing Velocity: 37.8 kph



SECTION 3

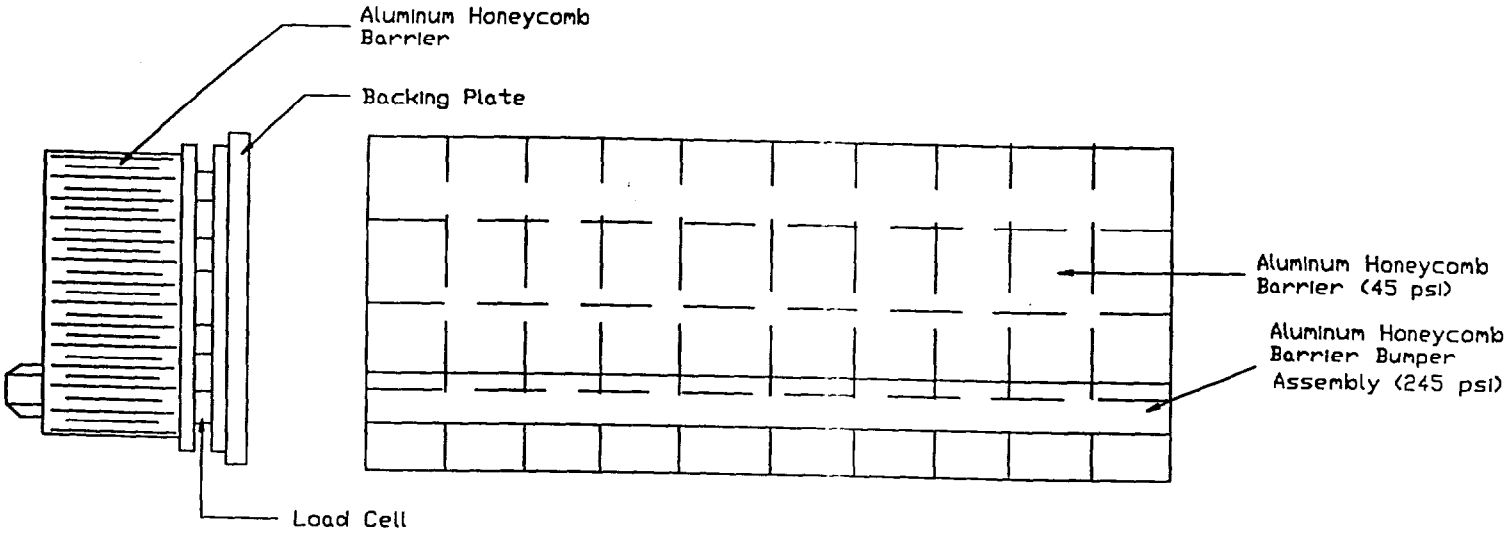
BARRIER INFORMATION

The instrumented moving deformable barrier (MDB) is an extension of the FMVSS 214 Dynamic Barrier used for crash testing. The barrier has been modified to include an array of 44 triaxial load cells located behind the honeycomb front face. The barrier also includes 44 string potentiometers to measure the displacements of the front face of the honey comb structure. A report detailing the design of the moving deformable barrier has been submitted for this project.

Previous to this test, the MDB was modified to meet the center of gravity requirements specified by FMVSS 214D. For completeness, the properties of the MDB, as well as the FMVSS 214D requirements are listed in the following table:

Moving Deformable Barrier		
Specification	FMVSS 214D Requirements	MDB
CGx (mm)	1098 - 1148	1102
CGy (mm)	-32.8 - 17.4	-1.8
CGz (mm)	475 - 525	515
Ix ($kgm^{2)}$	482.6 - 533.4	537.6
Iy (kgm^2)	2149.9 - 2376.2	3159.1
Iz (kgm^2)	2443.4 - 2700.6	3518.4
Total Weight (kg)	1356.5 - 1365.5	1358.9

LOAD CELL AND DISPLACEMENT MEASUREMENT DESIGNATION AND CONFIGURATION



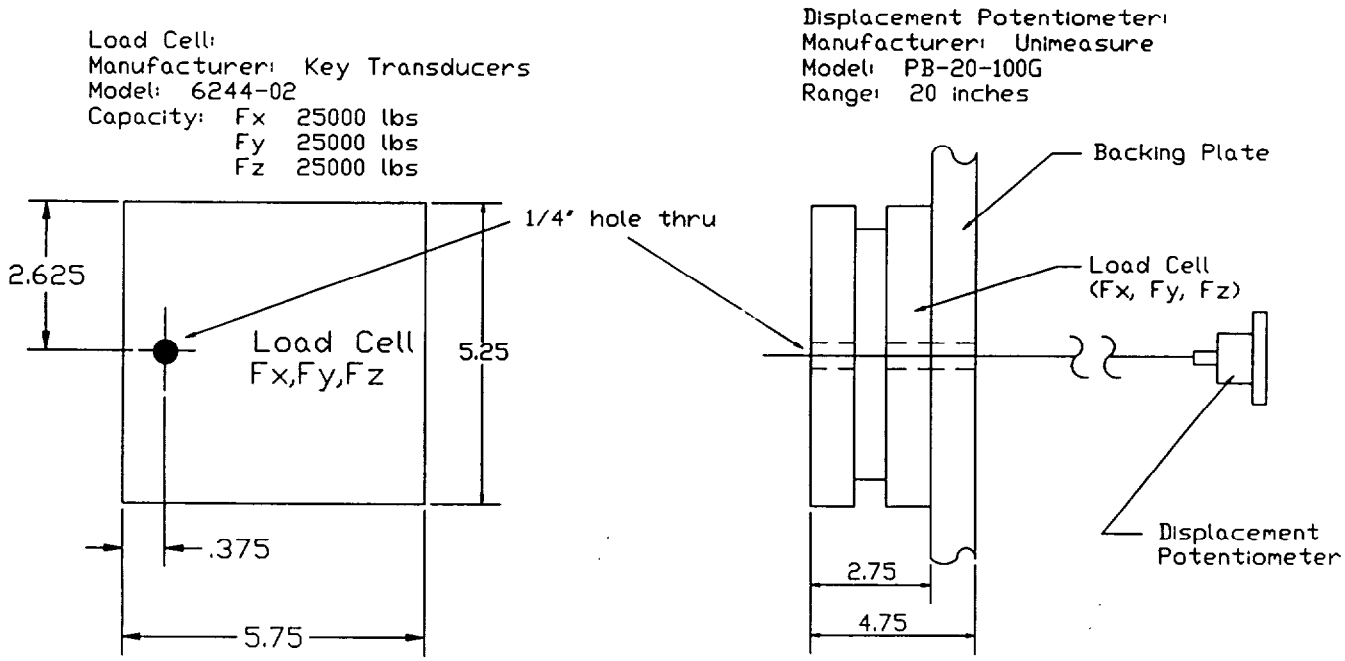
Aluminum Honeycomb Barrier Mounted on Load Cell Backing Plate

Load Cell and Displacement Measurement Designation

1	5	9	13	17	21	25	29	33	37	41
2	6	10	14	18	22	26	30	34	38	42
3	7	11	15	19	23	27	31	35	39	43
4	8	12	16	20	24	28	32	36	40	44

As viewed from front of barrier face

LOAD CELL AND DISPLACEMENT MEASUREMENT DESIGNATION AND CONFIGURATION



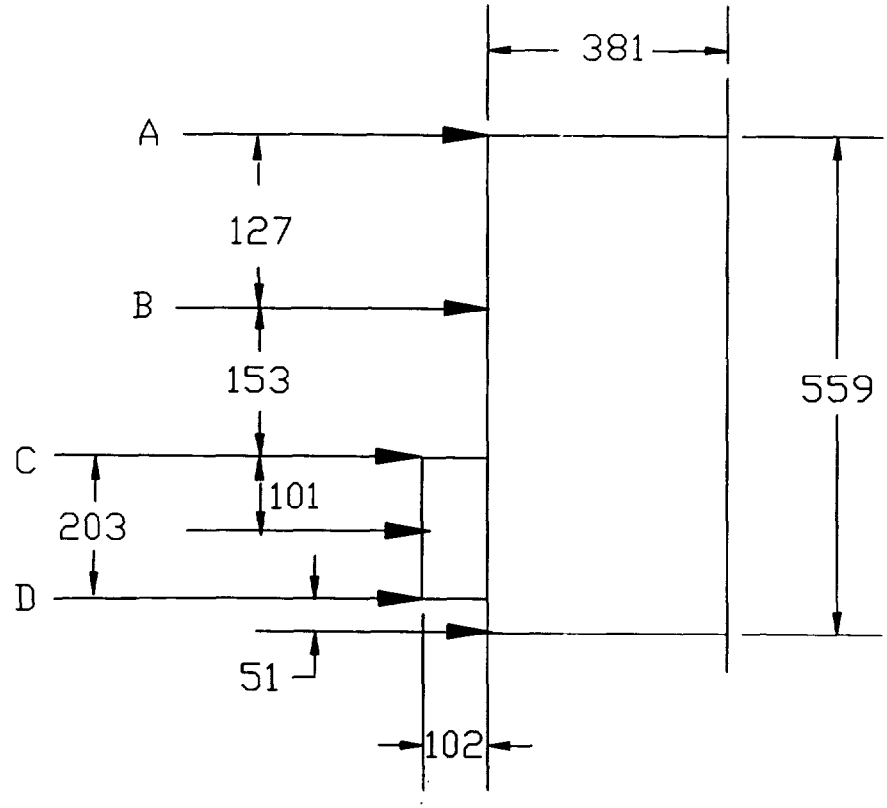
Typical Load Cell

SECTION 4

TEST NO. 2 DATA

The load cell triaxial forces and dynamic displacements recorded during this test are presented in this section along with static barrier face crush measurements.

POST-TEST STATIC DEFORMATION (MM)



POST-TEST STATIC DEFORMATION (mm)

	-800	-700	-600	-500	-400	-300	-200	-100	0	100	200	300	400	500	600	700	800
A	-2	1	5	7	14	22	7	4	4	4	4	13	51	102	145	199	245
B	-9	-6	-3	-1	11	20	5	0	-1	-2	-1	12	53	102	152	199	249
C	-16	1	8	27	49	59	66	63	49	40	26	38	101	155	201	263	301
D	-19	1	27	81	119	107	106	85	71	55	70	138	187	188	241	295	335

RIGHT LEFT

BARRIER FACE LOAD CELL MAXIMUM VALUES

Load Cell	Negative Maximum (N)						Positive Maximum (N)					
	X	Time (msec.)	Y	Time (msec.)	Z	Time (msec.)	X	Time (msec.)	Y	Time (msec.)	Z	Time (msec.)
LC #1	-817	40	-615	81	-841	37	1340	112	1928	15	142	156
LC #2	-195	20	-158	199	-247	31	142	92	112	90	67	111
LC #3	-712	138	-102	98	-2155	23	221	95	93	178	17	152
LC #4	-2103	69	-672	114	-337	193	958	99	828	69	293	167
LC #5	-2529	85	-1705	85	-1445	34	2304	144	114	112	353	115
LC #6	-7472	69	-3788	69	-1331	47	355	101	560	115	669	118
LC #7	-2400	71	-658	70	-1638	28	65	196	386	194	39	117
LC #8	-2596	76	-1521	25	-214	53	675	94	642	196	175	145
LC #9	-812	55	-314	54	-1107	192	717	193	226	147	851	199
LC #10	-2239	73	-1287	74	-189	187	869	197	181	146	123	133
LC #11	-1014	70	-257	73	-1300	85	403	193	230	198	1190	198
LC #12	-628	138	-862	23	-154	136	182	95	378	194	179	194
LC #13	-306	187	-235	170	-427	25	368	100	920	26	187	89
LC #14	-325	49	-325	153	-558	19	170	107	148	79	212	112
LC #15	-495	136	-148	136	-291	186	437	195	211	28	80	111
LC #16	-447	200	-409	47	-416	81	198	177	245	195	207	178
LC #17	-439	170	-259	103	-593	86	544	80	288	77	316	140

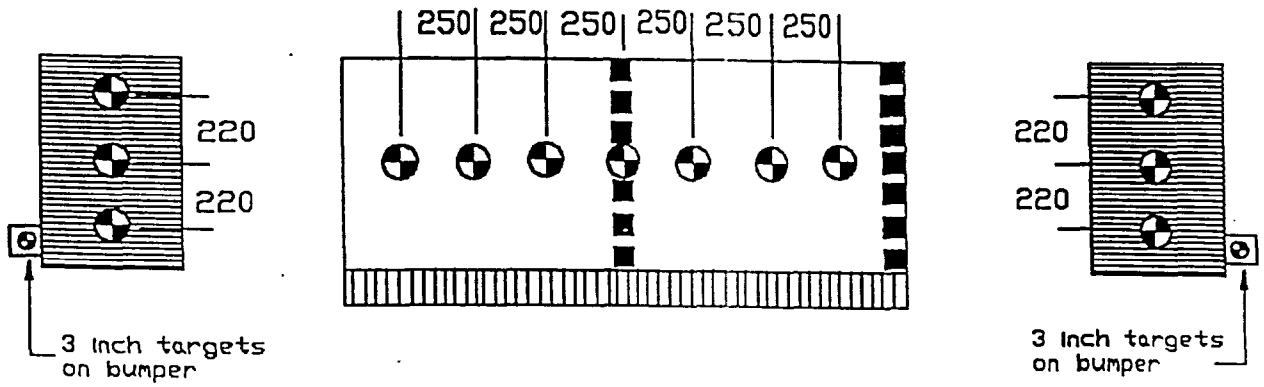
BARRIER FACE LOAD CELL MAXIMUM VALUES

Load Cell	Negative Maximum (N)						Positive Maximum (N)					
	X	Time (msec.)	Y	Time (msec.)	Z	Time (msec.)	X	Time (msec.)	Y	Time (msec.)	Z	Time (msec.)
LC #18	-506	170	-358	170	-247	198	107	58	155	128	413	95
LC #19	-102	153	-458	37	-221	51	247	50	104	123	314	77
LC #20	-1291	71	-647	69	-160	153	64	179	103	150	925	67
LC #21	-508	189	-418	104	-638	69	348	82	152	82	72	149
LC #22	-3876	78	-1268	73	-430	41	1233	109	488	14	330	124
LC #23	-190	53	-595	188	-1234	187	212	176	335	152	886	154
LC #24	-3726	67	-1166	82	-148	103	385	142	159	8	425	86
LC #25	-237	35	-238	70	-809	126	362	194	250	194	518	131
LC #26	-1533	85	-513	82	-265	37	129	58	371	91	230	107
LC #27	-3754	84	-912	92	-1967	101	261	177	787	74	1399	94
LC #28	-378	181	-1091	95	-606	196	410	112	1458	77	826	93
LC #29	-2683	86	-659	78	-2274	79	324	50	660	103	848	128
LC #30	-12487	80	-2052	60	-764	64	2495	131	852	112	468	193
LC #31	-10801	55	-2792	51	-317	28	-6	1	611	104	713	100
LC #32	-6337	55	-1369	47	-962	199	38	126	173	8	8285	86
LC #33	-6761	87	-1865	92	-1460	106	126	7	433	126	214	91
LC #34	-8320	49	-1716	89	-484	51	158	128	25	6	713	73

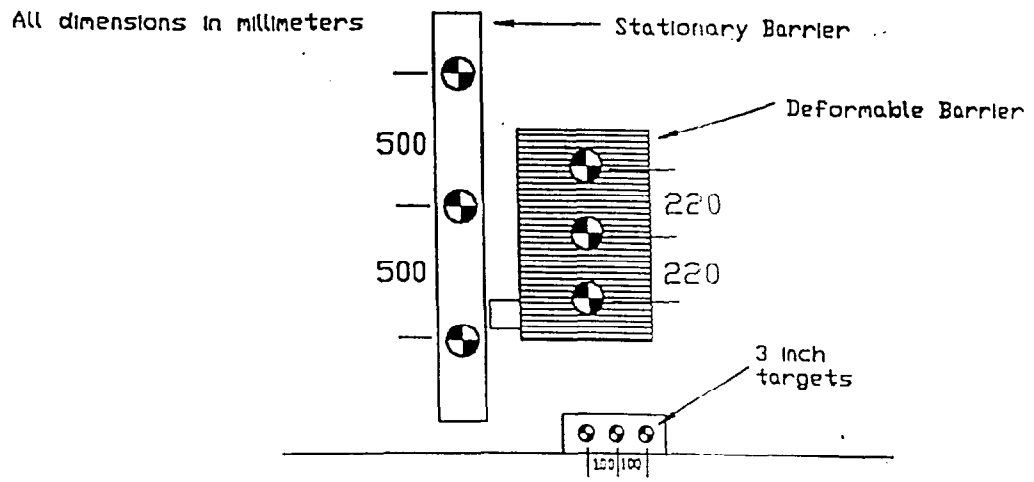
BARRIER FACE LOAD CELL MAXIMUM VALUES

Load Cell	Negative Maximum (N)						Positive Maximum (N)					
	X	Time (msec.)	Y	Time (msec.)	Z	Time (msec.)	X	Time (msec.)	Y	Time (msec.)	Z	Time (msec.)
LC #35	-7707	50	-913	92	-146	110	279	176	356	53	414	48
LC #36	-6249	65	-1085	96	-217	28	80	177	1224	84	1040	51
LC #37	-7435	75	-2121	93	-807	99	310	177	44	147	628	58
LC #38	-10218	37	-2213	97	-285	22	331	190	266	171	802	85
LC #39	-9487	76	-1938	98	-644	78	500	176	130	1	567	96
LC #40	-8689	52	-1497	98	-193	11	332	176	51	80	1589	48
LC #41	-8507	39	-2287	40	-693	41	172	3	138	148	603	66
LC #42	-8189	71	-2283	57	-591	111	224	183	118	119	1075	85
LC #43	-8855	17	-1961	55	-916	111	438	178	196	172	742	67
LC #44	-7425	47	-1408	71	-1010	98	621	147	103	114	367	20

PHOTOGRAPHIC TARGET LOCATIONS



All Targets 5' unless otherwise noted



PHOTOGRAPHIC COVERAGE

Location	Coordinates			Angle	Lens (mm)	Speed (fps)
	X	Y	Z			
Left Barrier Impact Low	-2710	-2340	730	90°	25	1020
Left Barrier Impact High	-1290	-940	1840	90°	13	1005
Right Front Close-up	4710	6730	790	90°	35	1015
Right Overall	-700	9500	1155	90°	13	1010
Top Wide	-190	1360	5200	N/A	8	885
Top Front Half	710	1360	5050	N/A	13	1015
Pit	920	1360	-3155	N/A	13	995

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APPENDIX A

DATA AND STILL PHOTOGRAPHS

TTD #1 TESTING

TEST NO. 2

TEST DATE: FEBRUARY 27, 1997

TEST DATA

* Value is very high - data may not be reliable

* Value is very high - data may not be reliable

DATA NOT INCLUDED IN REPORT

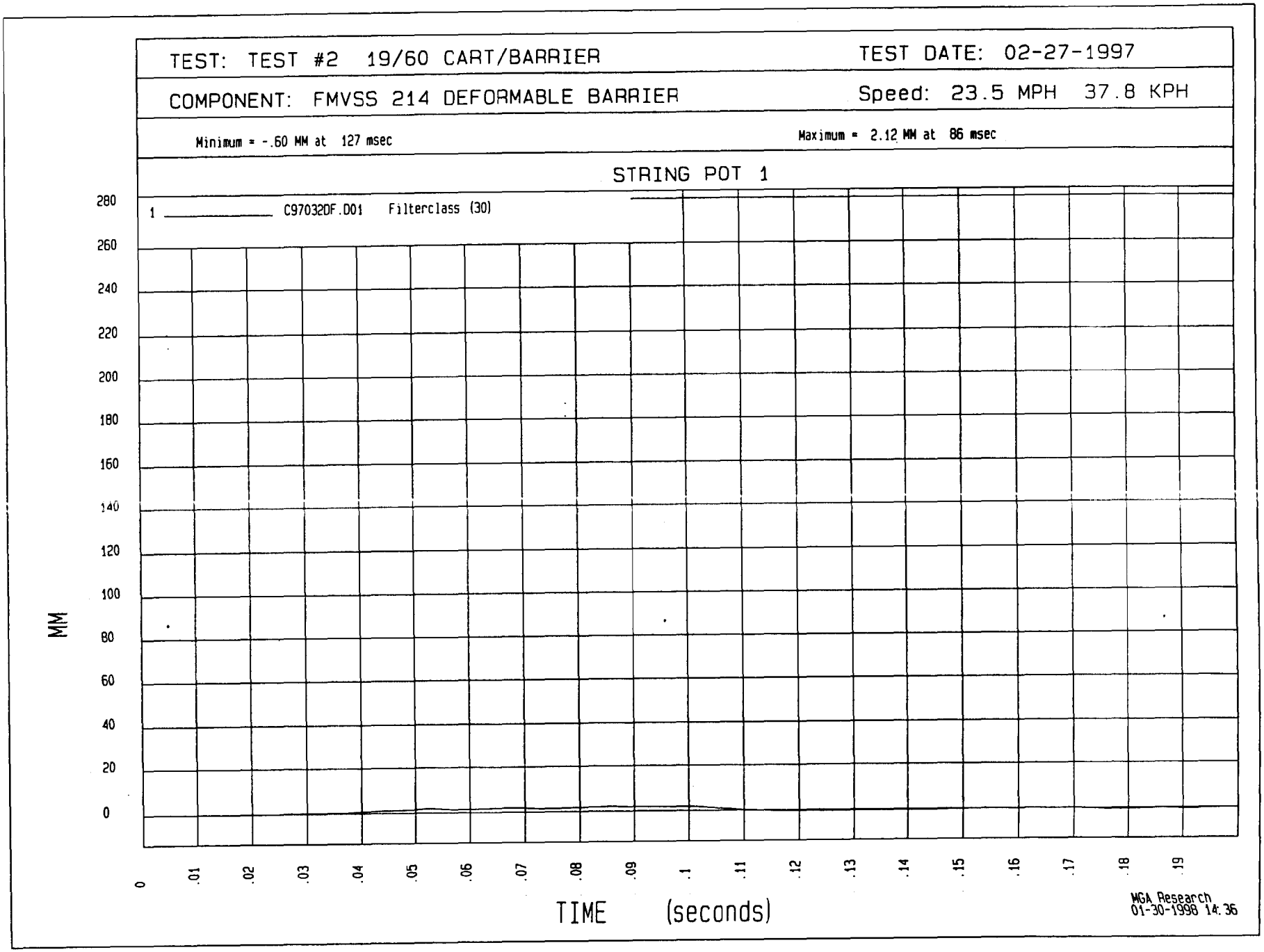
String Potentiometers With a Value Less Than 2 mm		
Data Plot	**Negative Peak Displacement (mm)**	**Positive Peak Displacement (mm)**
String Pot 2	-1	1
String Pot 3	-2	0
String Pot 5	-2	1
String Pot 7	-1	1
String Pot 8	-1	1
String Pot 9	-2	1
String Pot 10	-1	1
String Pot 11	0	1
String Pot 12	0	1
String Pot 15	0	2
String Pot 16	-2	1
String Pot 18	-1	1
String Pot 19	0	1
String Pot 20	-2	2
String Pot 21	-1	2
String Pot 22	0	1
String Pot 23	0	1
String Pot 24	-1	2
String Pot 25	-1	2
Load Cells With A Force Value Less Than 667.2 Newtons (150 lbs.)		
Data Plot	**Maximum Negative Value (N)**	**Maximum Positive Value(N)**
LC #2 FX	-195	142
LC #12 FX	-628	182
LC #13 FX	-306	368

DATA NOT INCLUDED IN REPORT

Data Plot	Maximum Negative Value (N)	Maximum Positive Value (N)
LC #14 FX	-325	170
LC #15 FX	-495	437
LC #16 FX	-447	198
LC #17 FX	-434	544
LC #18 FX	-506	192
LC #19 FX	-102	247
LC #21 FX	-508	348
LC #23 FX	-190	213
LC #25 FX	-237	362
LC #28 FX	-378	410
LC #2 FY	-158	112
LC #3 FY	-102	93
LC #7 FY	-658	386
LC #9 FY	-314	226
LC #11 FY	-257	230
LC #14 FY	-325	148
LC #15 FY	-148	211
LC #16 FY	-409	245
LC #17 FY	-259	288
LC #18 FY	-356	155
LC #19 FY	-458	104
LC #20 FY	-647	154
LC #21 FY	-418	169

DATA NOT INCLUDED IN REPORT

Data Plot	Maximum Negative Value (N)	Maximum Positive Value (N)
LC #23 FY	-595	335
LC #25 FY	-238	250
LC #26 FY	-513	371
LC #29 FY	-659	660
LC #2 FZ	-247	67
LC #4 FZ	-337	293
LC #8 FZ	-214	175
LC #10 FZ	-189	123
LC #12 FZ	-154	179
LC #13 FZ	-427	187
LC #14 FZ	-558	280
LC #15 FZ	-291	80
LC #16 FZ	-416	207
LC #17 FZ	-593	493
LC #18 FZ	-247	413
LC #19 FZ	-221	314
LC #21 FZ	-638	185
LC #22 FZ	-430	330
LC #24 FZ	-148	425
LC #26 FZ	-265	230
LC #35 FZ	-146	414
LC #39 FZ	-644	567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COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.60 MM at 127 msec
Maximum = 2.12 MM at 86 msec
STRING POT 1
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MM
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260
240
220
200
180
160
140
120
100
80
60
40
20
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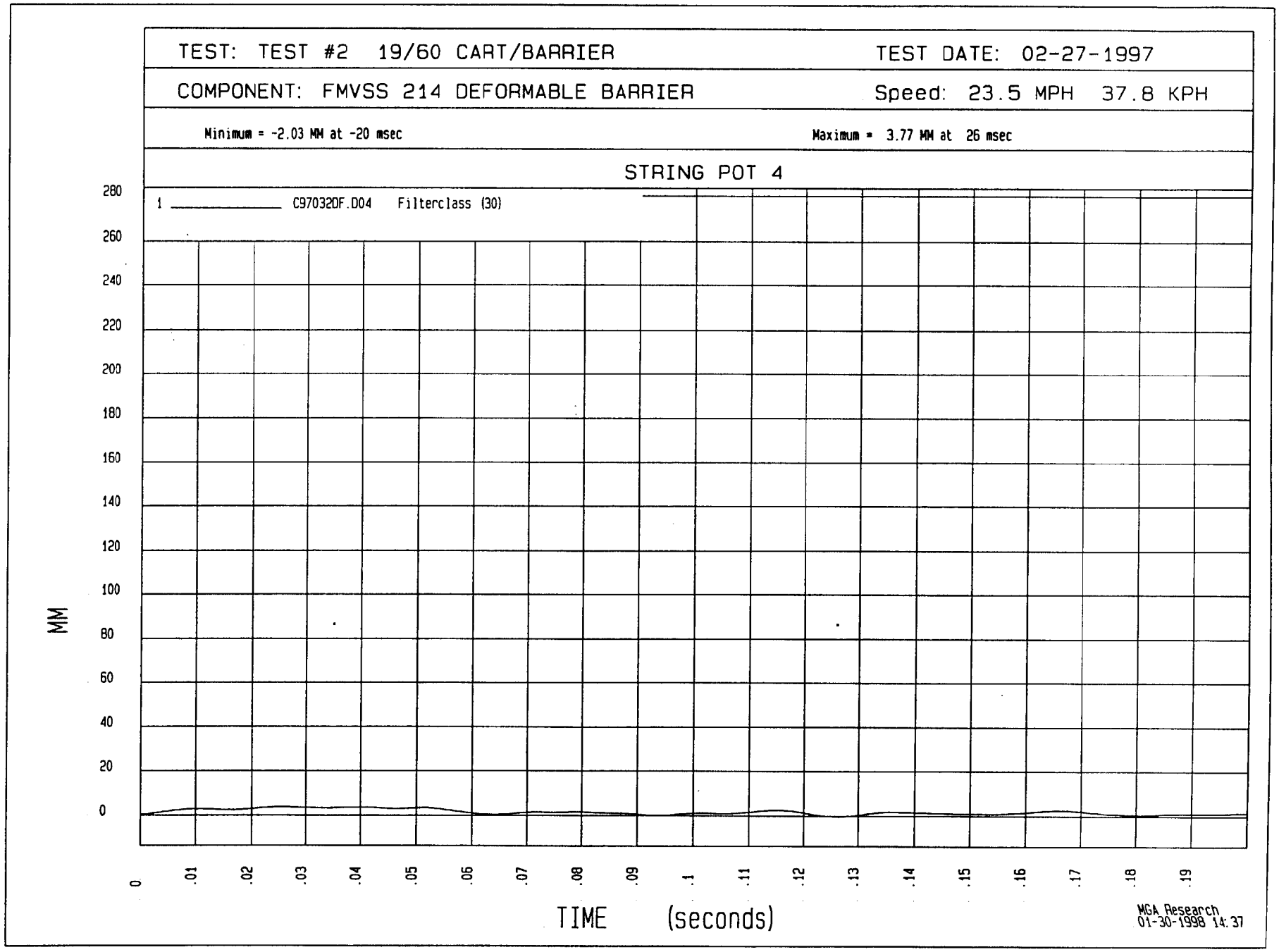
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Maximum = 3.77 MM at 26 msec
STRING POT 4
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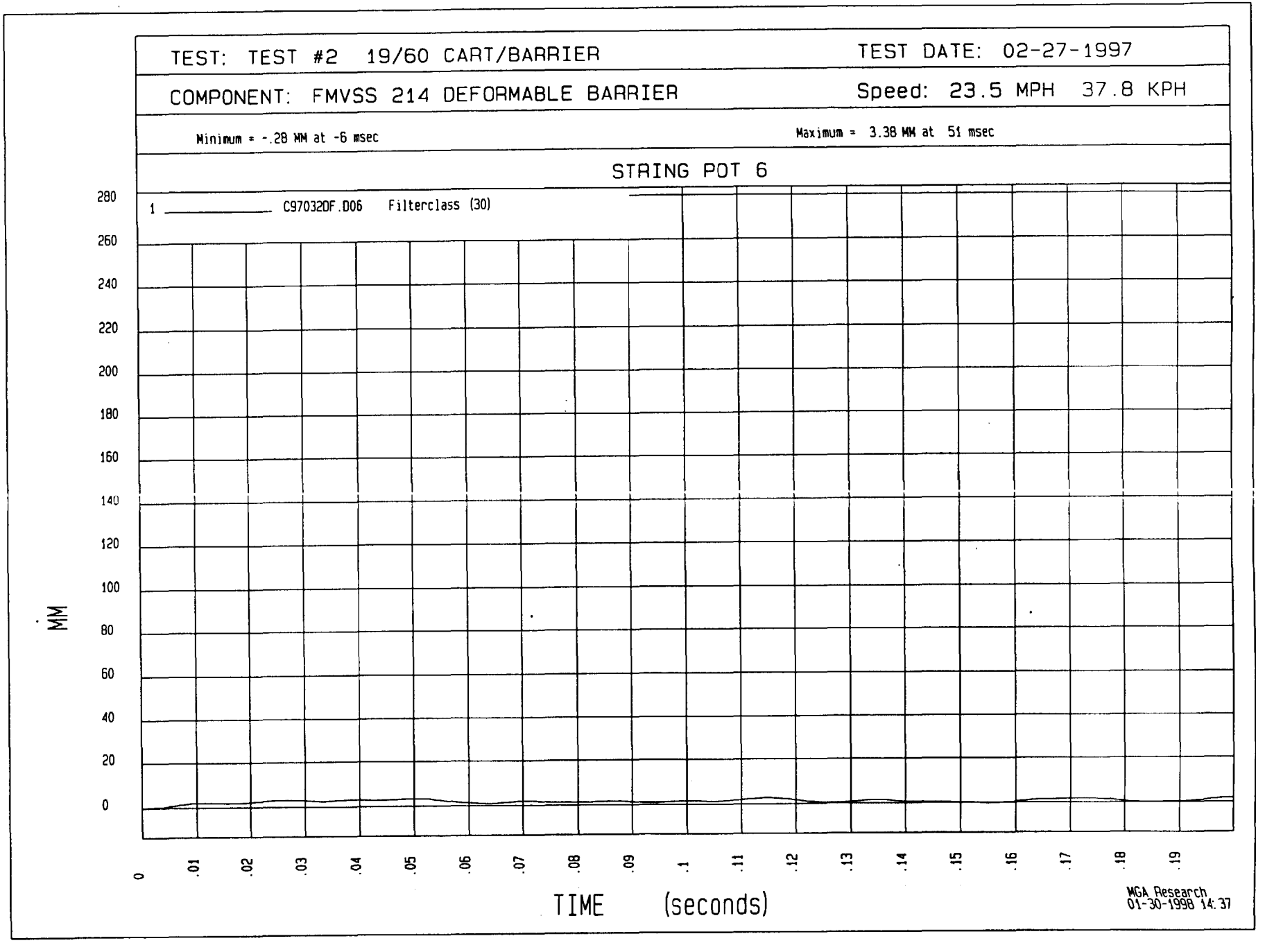
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Speed: 23.5 MPH 37.8 KPH
Minimum = -.28 MM at -6 msec
Maximum = 3.38 MM at 51 msec
STRING POT 6
1 C970320F.D06 Filterclass (30)
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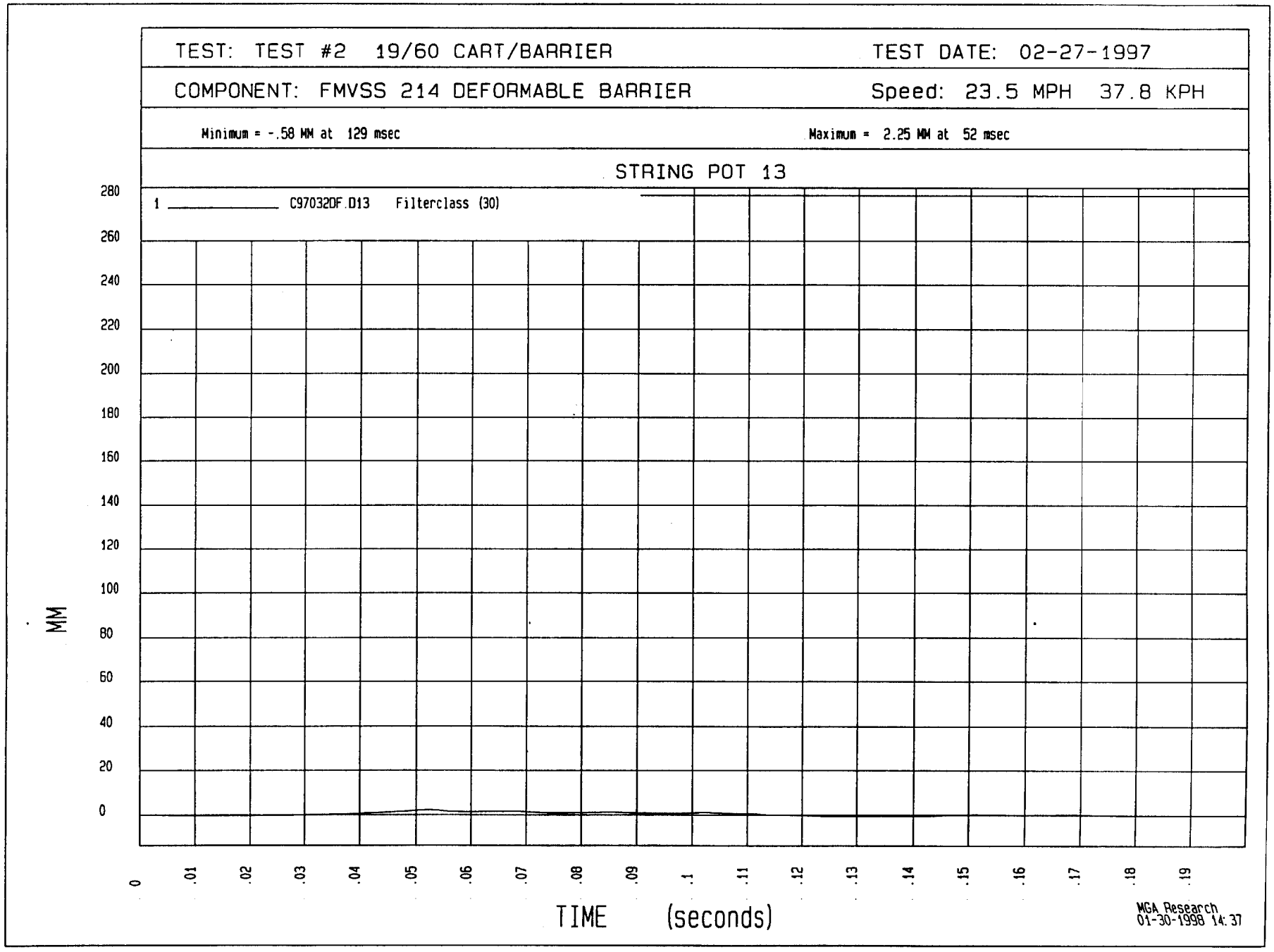
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Speed: 23.5 MPH 37.8 KPH
Minimum = -.58 MM at 129 msec
Maximum = 2.25 MM at 52 msec
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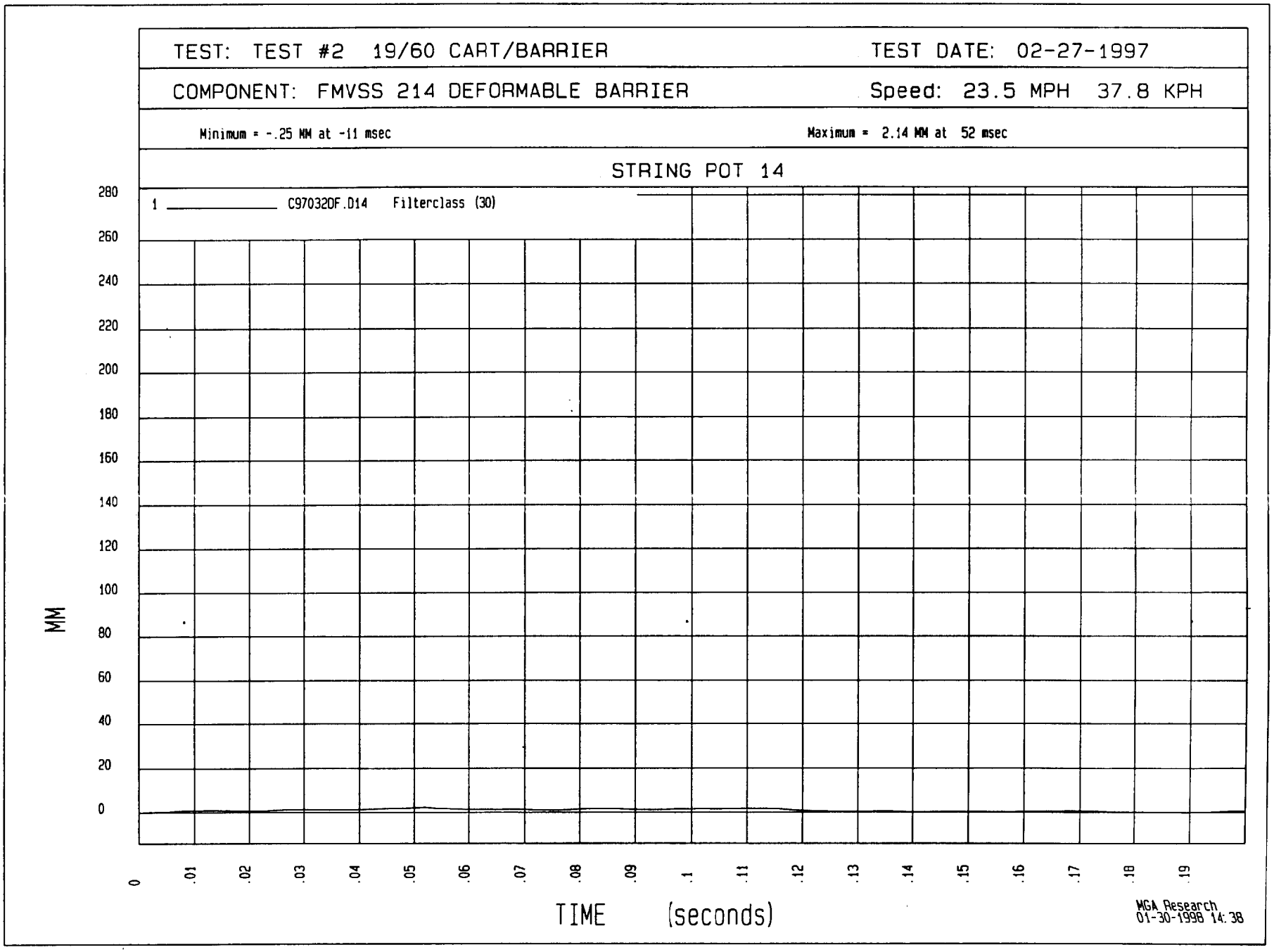
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Maximum = 2.14 MM at 52 msec
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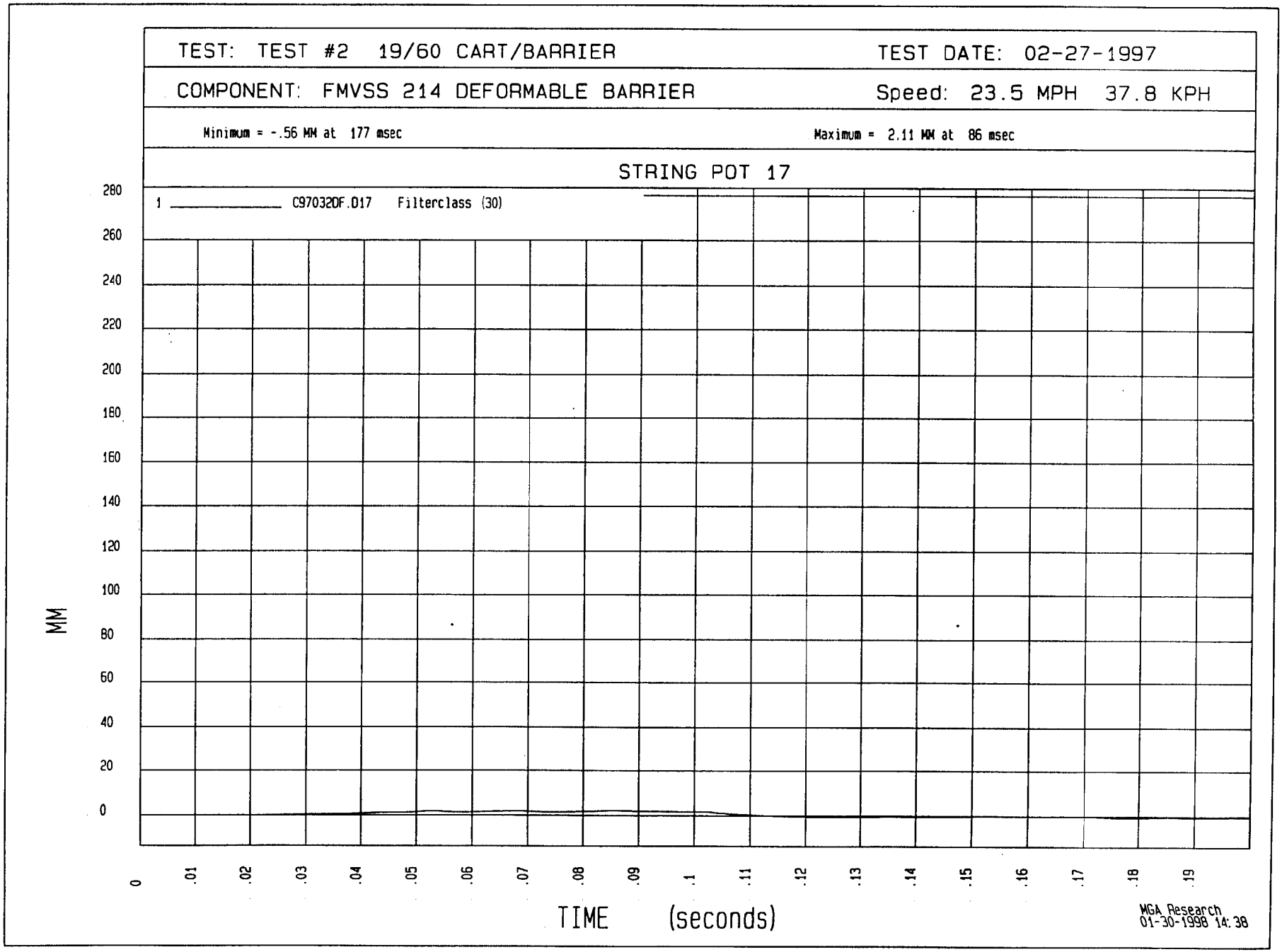
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Minimum = -.56 MM at 177 msec
Maximum = 2.11 MM at 86 msec
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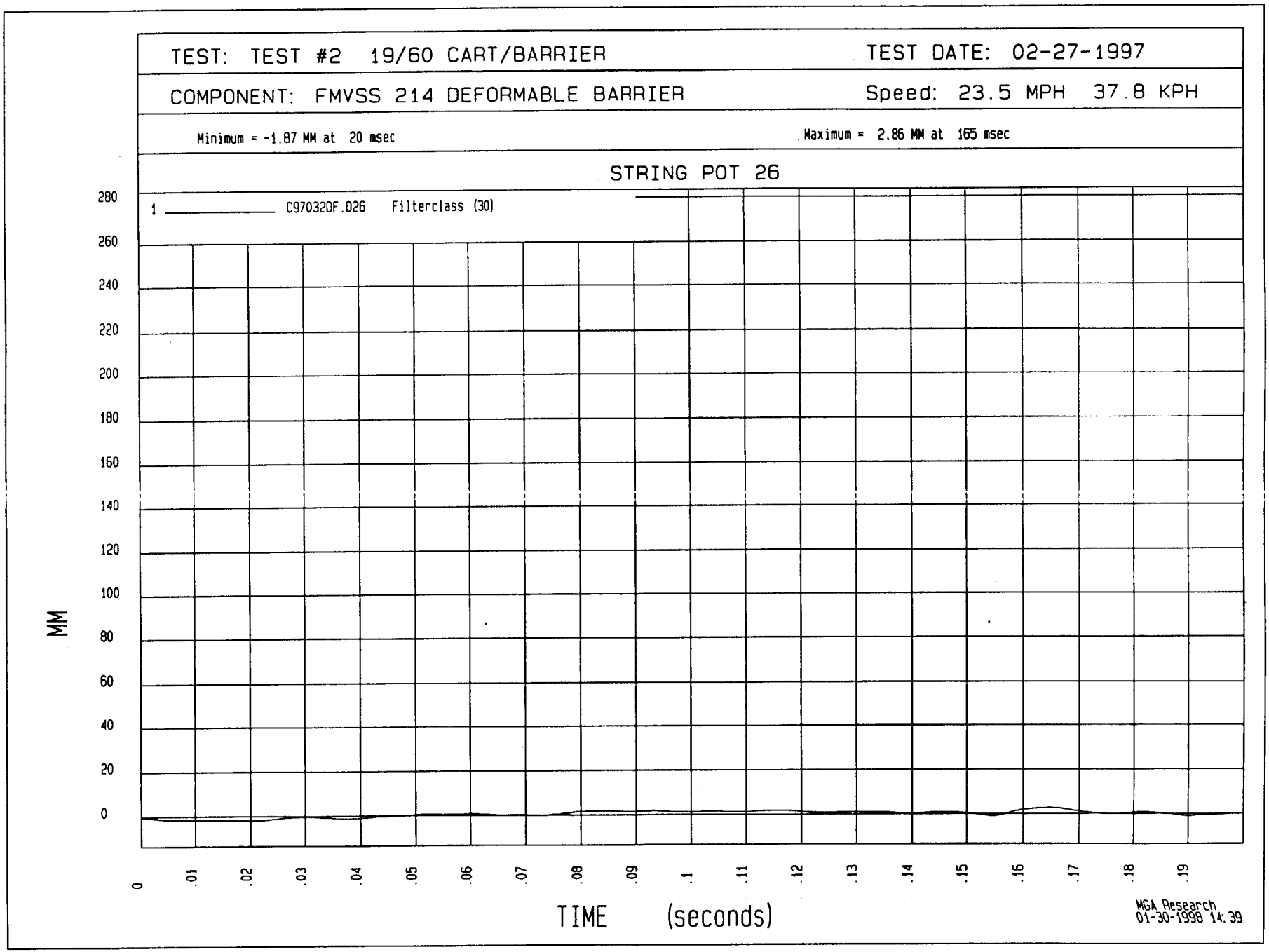
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COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.87 MM at 20 msec
Maximum = 2.86 MM at 165 msec
STRING POT 26
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260
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220
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180
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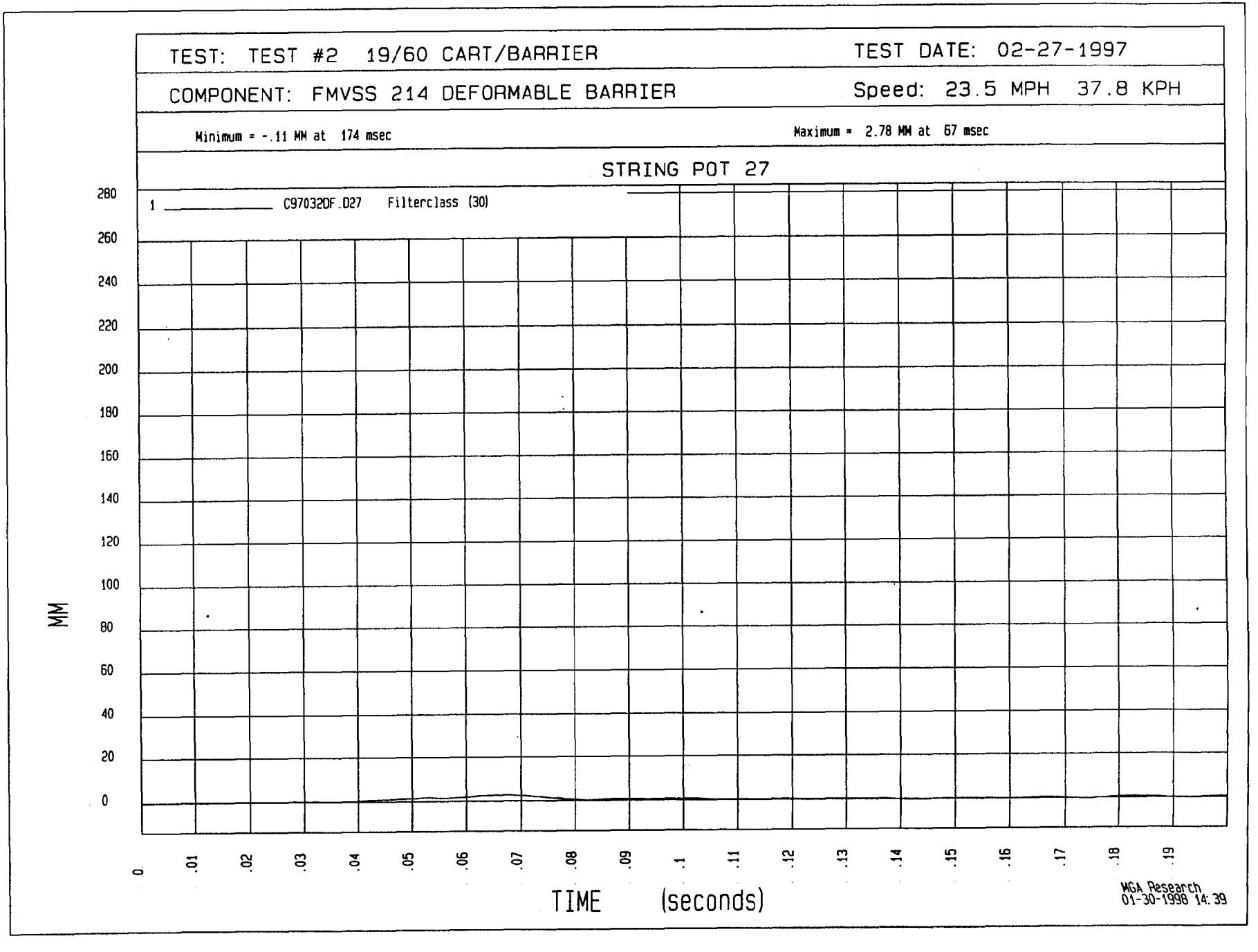
MGA Research
01-30-1998 14:39


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.11 MM at 174 msec
Maximum = 2.78 MM at 67 msec
STRING POT 27
1 C970320F.027 Filterclass (30)
MM
280
260
240
220
200
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TIME (seconds)
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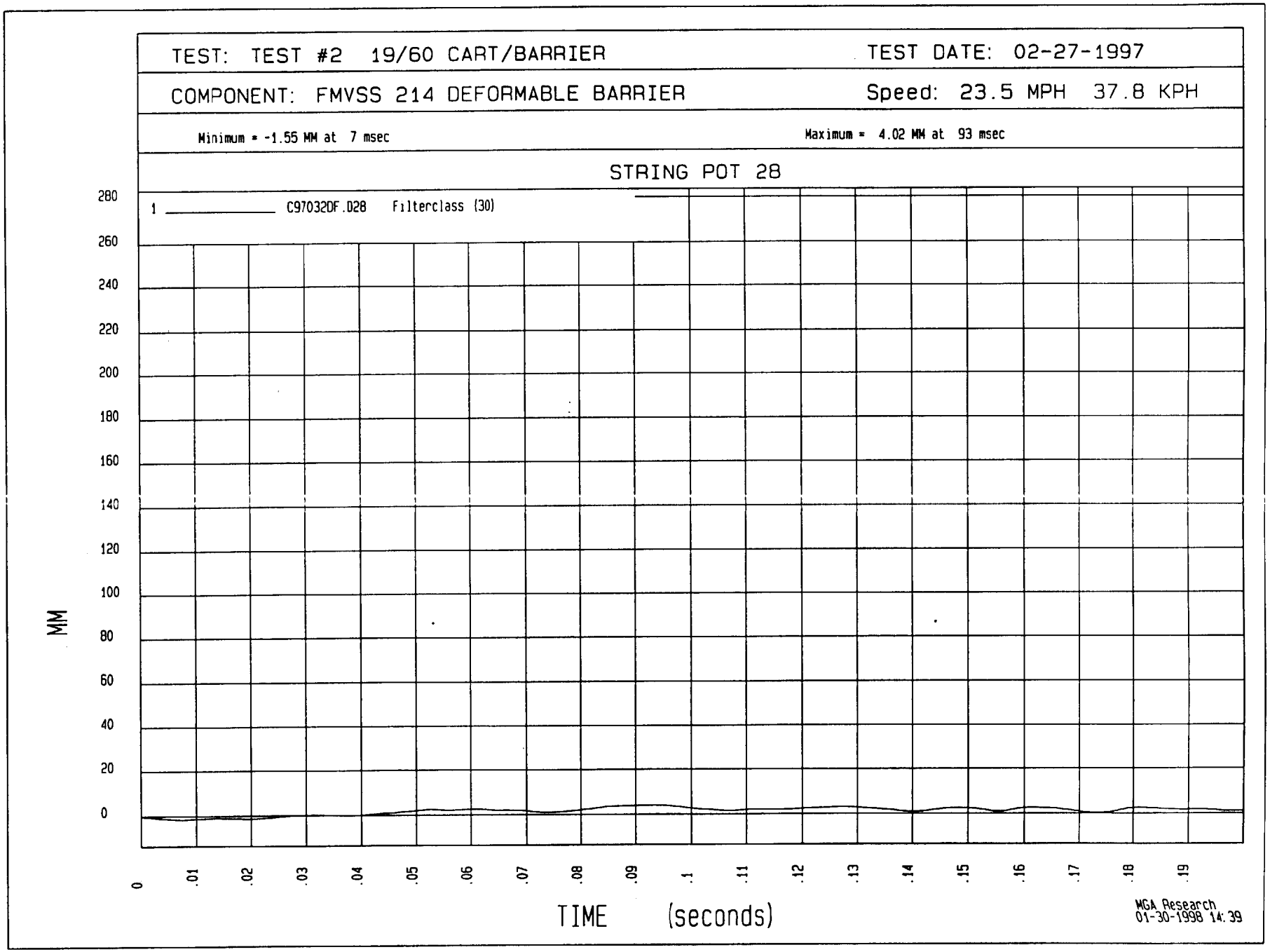
TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.55 MM at 7 msec
Maximum = 4.02 MM at 93 msec
STRING POT 28
1 C970320F.028 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
80
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TIME (seconds)
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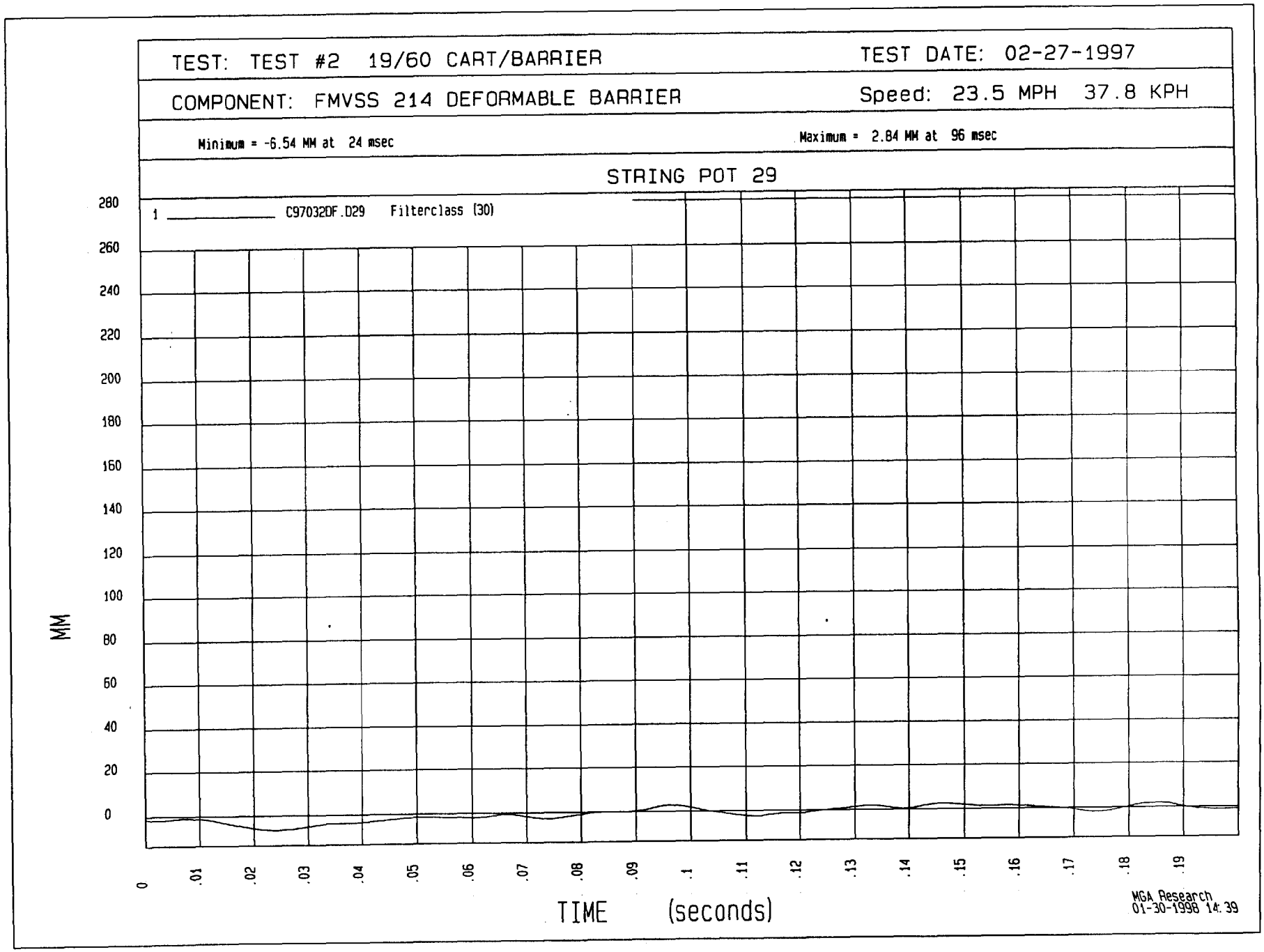
TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6.54 MM at 24 msec
Maximum = 2.84 MM at 96 msec
STRING POT 29
1 C970320F.D29 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
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TIME (seconds)
MGA Research
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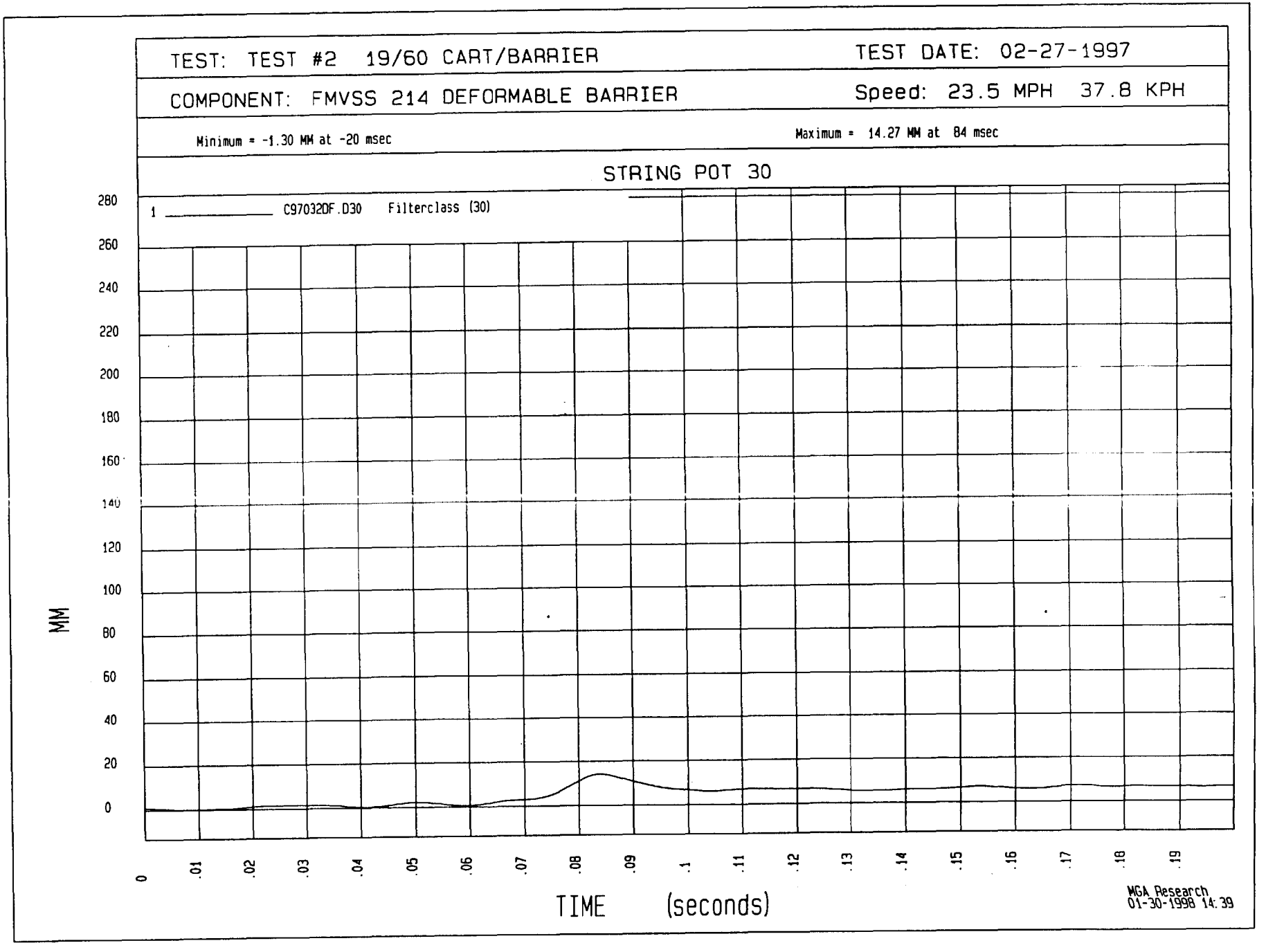
TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.30 MM at -20 msec
Maximum = 14.27 MM at 84 msec
STRING POT 30
1 C970320F.D30 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
80
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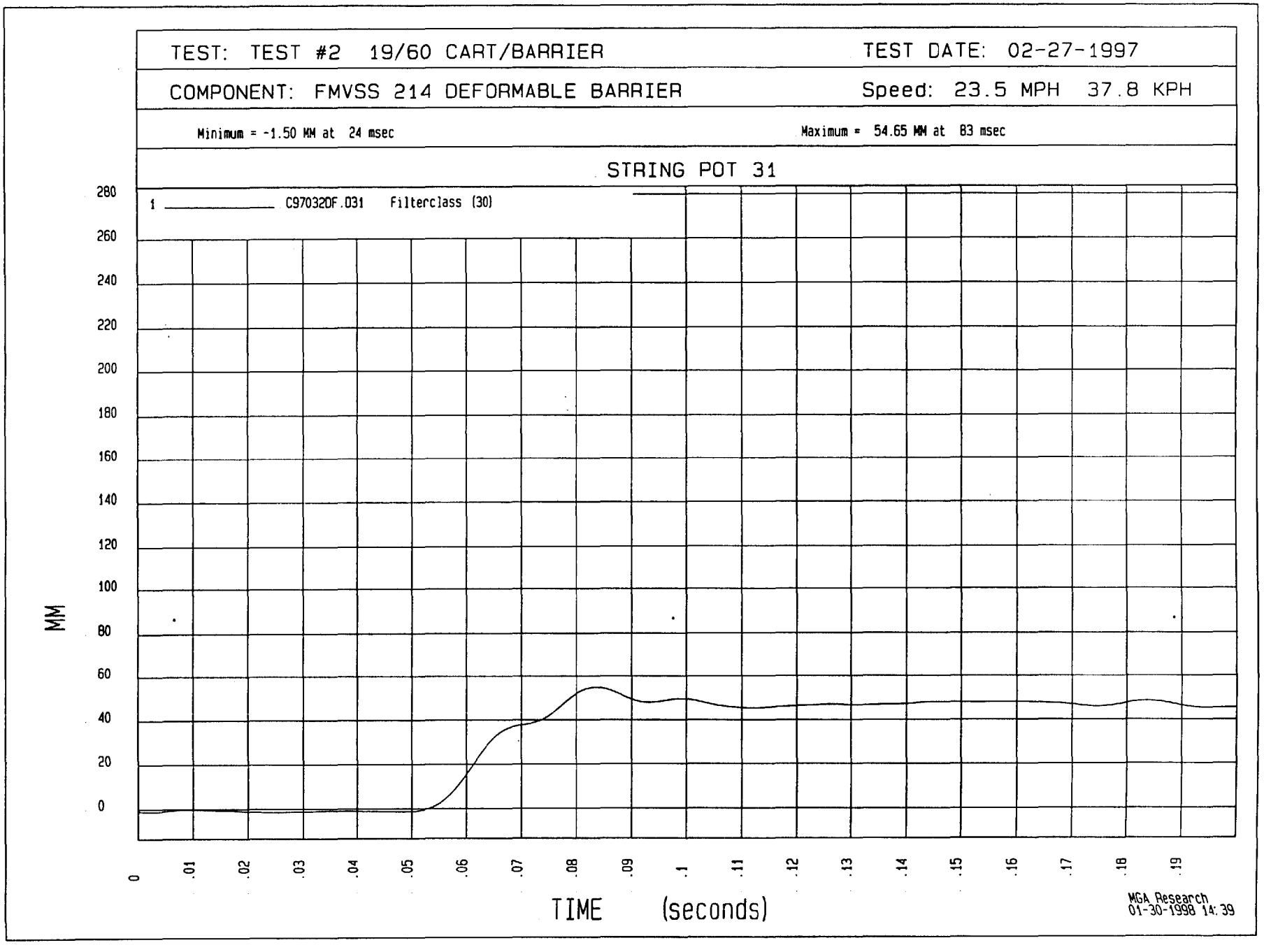
TIME (seconds)
MGA Research
01-30-1998 14:39


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.50 MM at 24 msec
Maximum = 54.65 MM at 83 msec
STRING POT 31
1 C970320F.031 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
80
60
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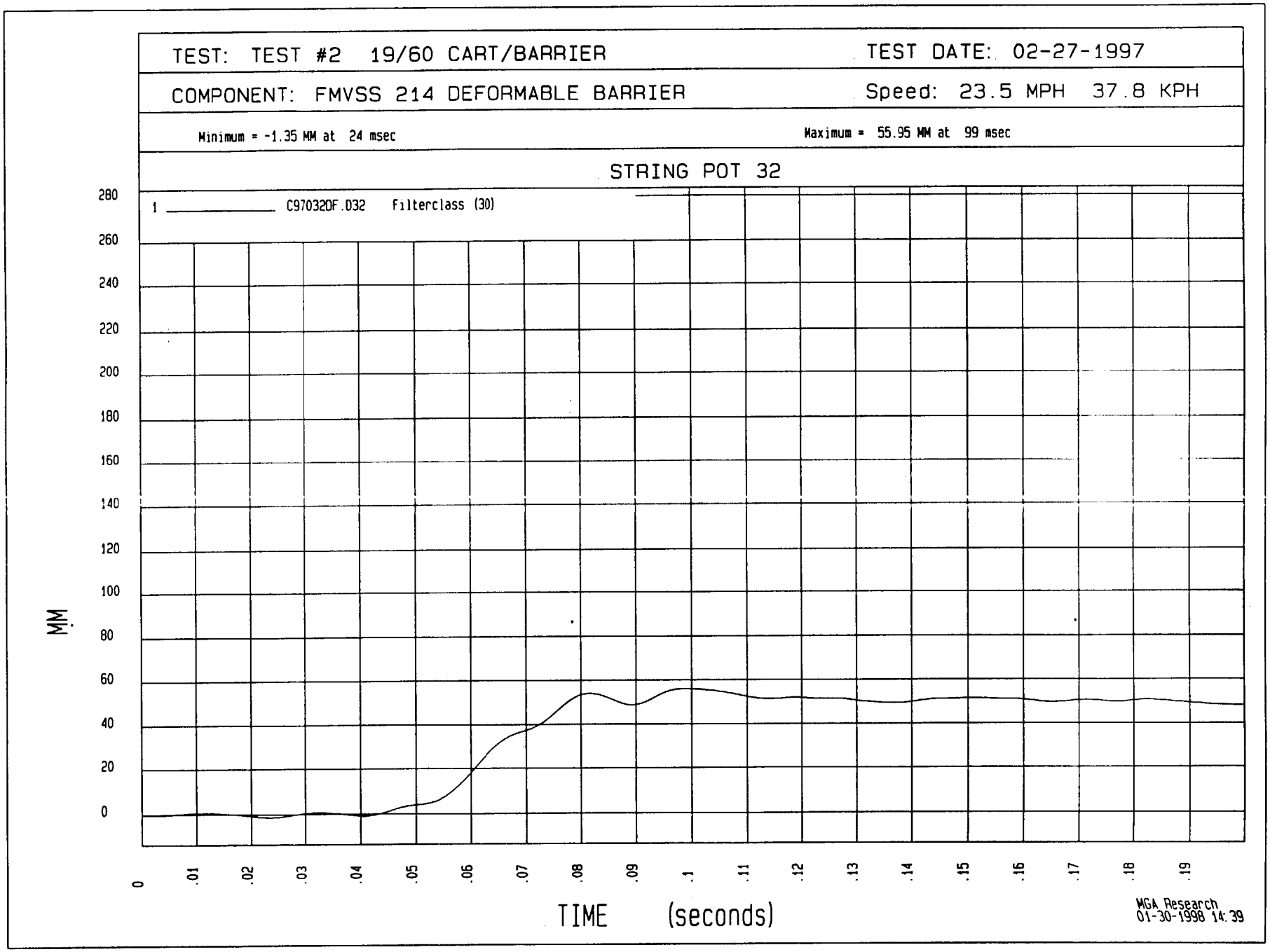
TIME (seconds)
MGA Research
01-30-1998 14:39


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.35 MM at 24 msec
Maximum = 55.95 MM at 99 msec
STRING POT 32
1 C970320F.032 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
80
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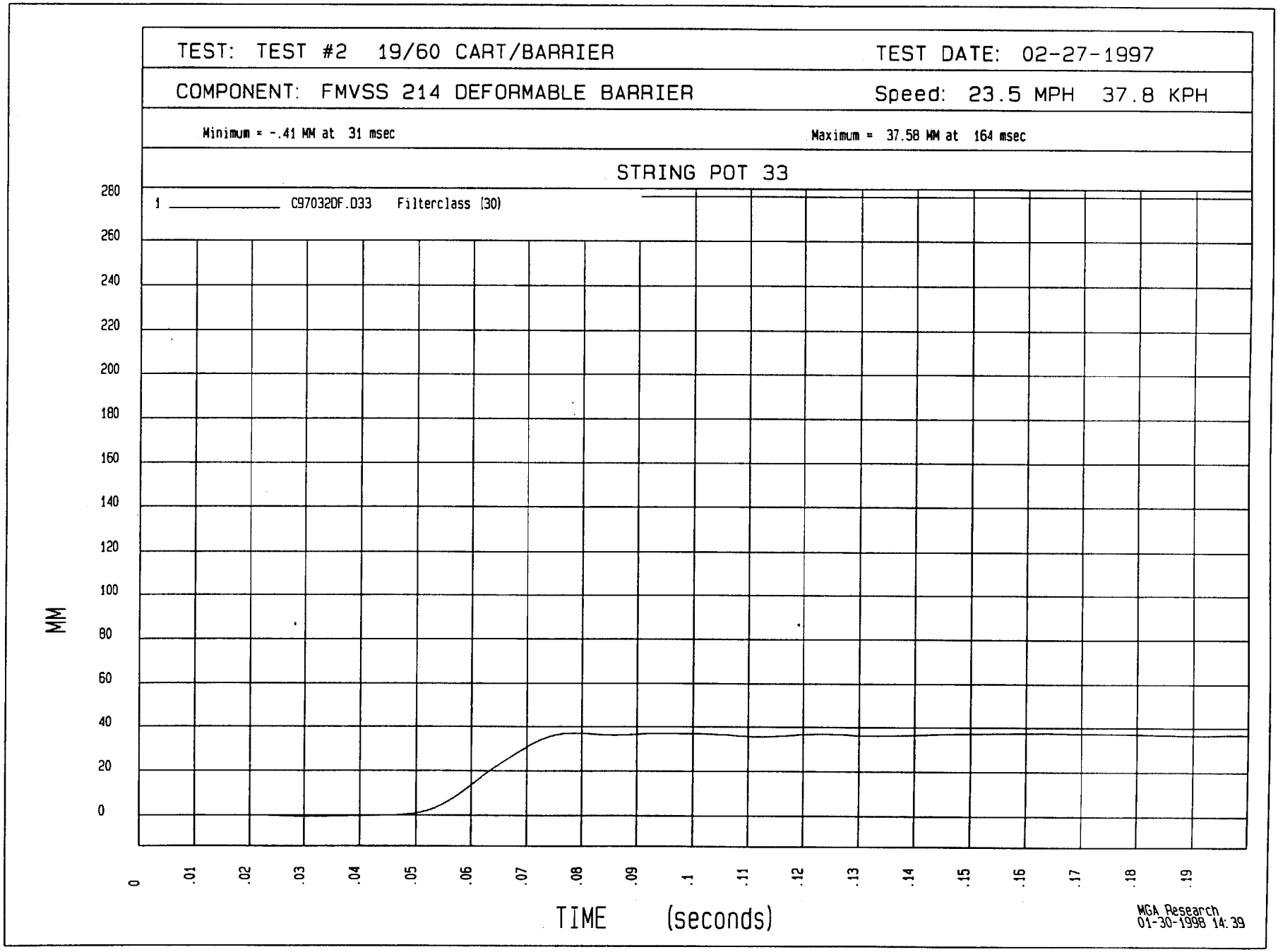
TIME (seconds)
MGA Research
01-30-1998 14:39


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.41 MM at 31 msec
Maximum = 37.58 MM at 164 msec
STRING POT 33
1 C97032DF.D33 Filterclass (30)
MM
280
260
240
220
200
180
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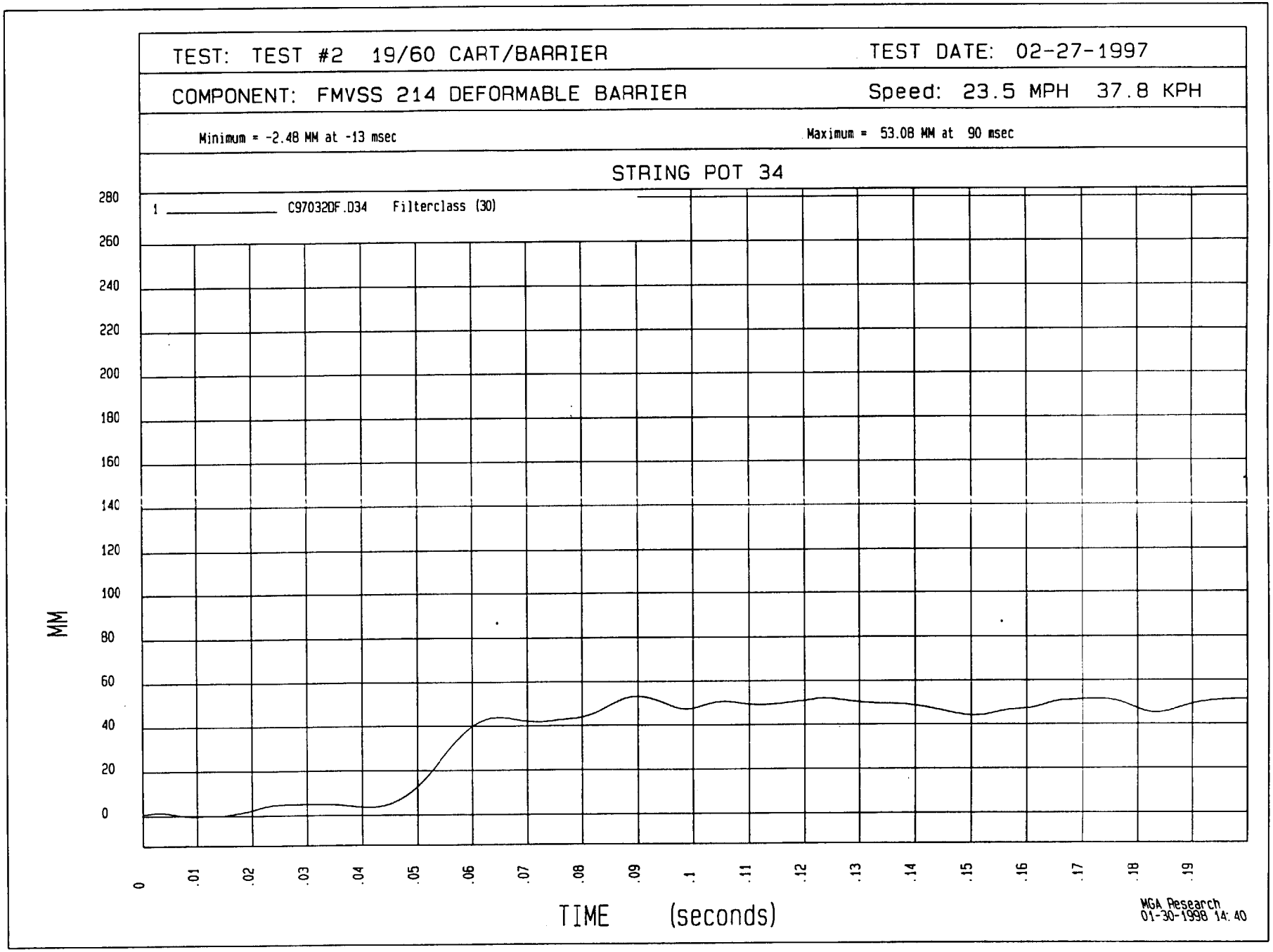
TIME (seconds)
MGA Research
01-30-1998 14:39


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2.48 MM at -13 msec
Maximum = 53.08 MM at 90 msec
STRING POT 34
1 C970320F.D34 Filterclass (30)
MM
280
260
240
220
200
180
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140
120
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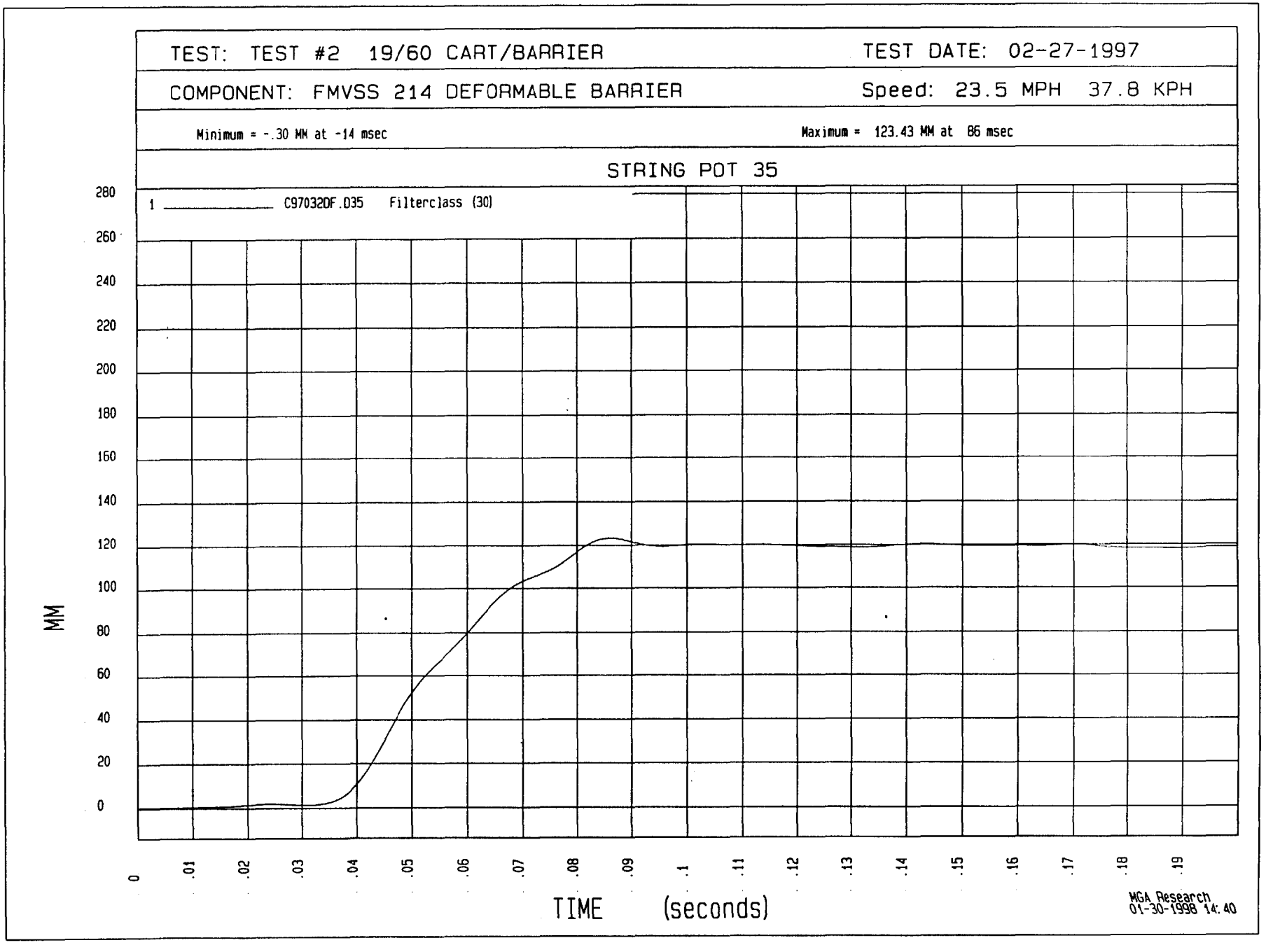
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.30 MM at -14 msec
Maximum = 123.43 MM at 86 msec
STRING POT 35
1 C97032DF.D35 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
80
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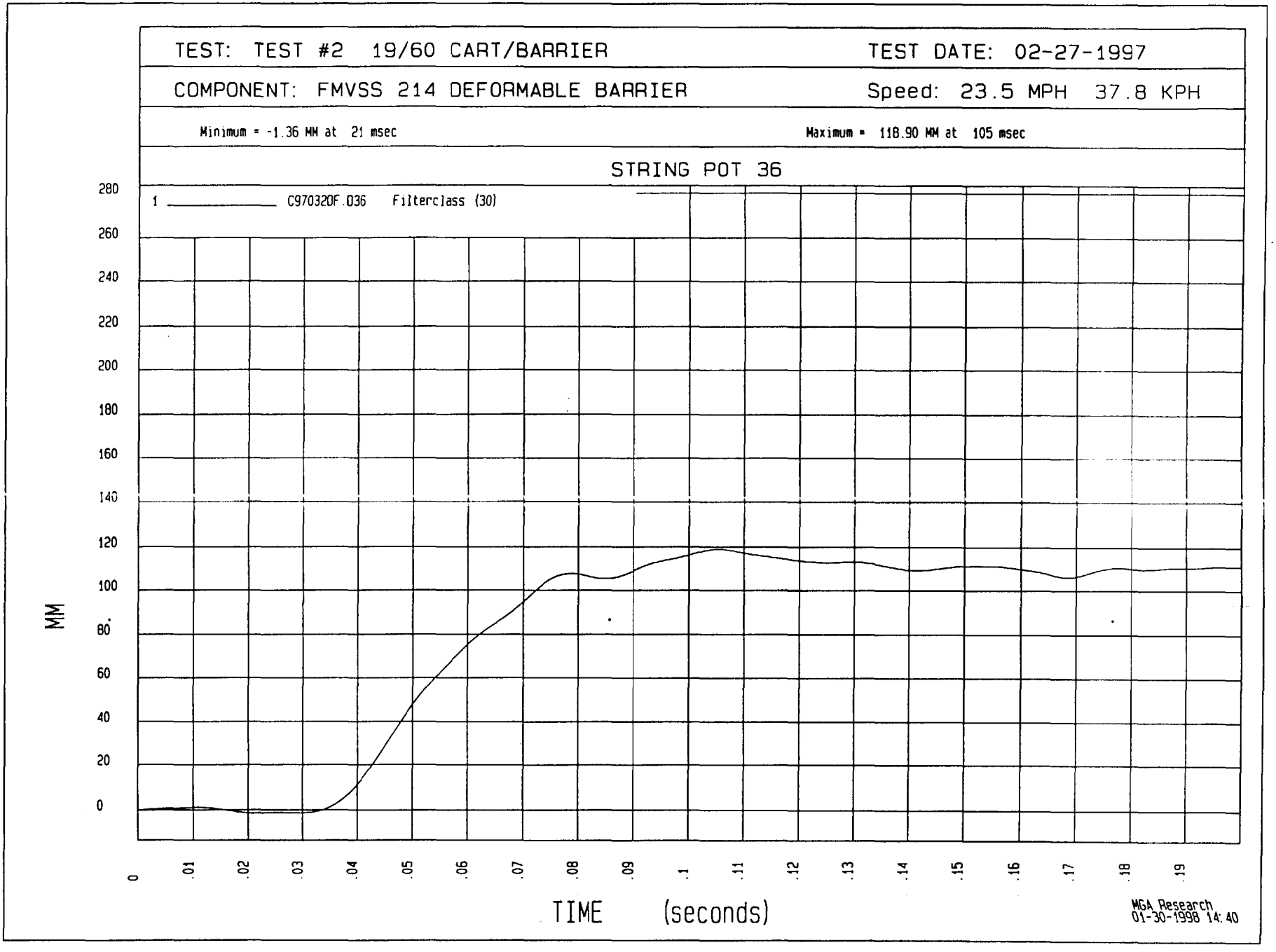
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.36 MM at 21 msec
Maximum = 118.90 MM at 105 msec
STRING POT 36
1 C970320F.036 Filterclass (30)
MM
280
260
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220
200
180
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140
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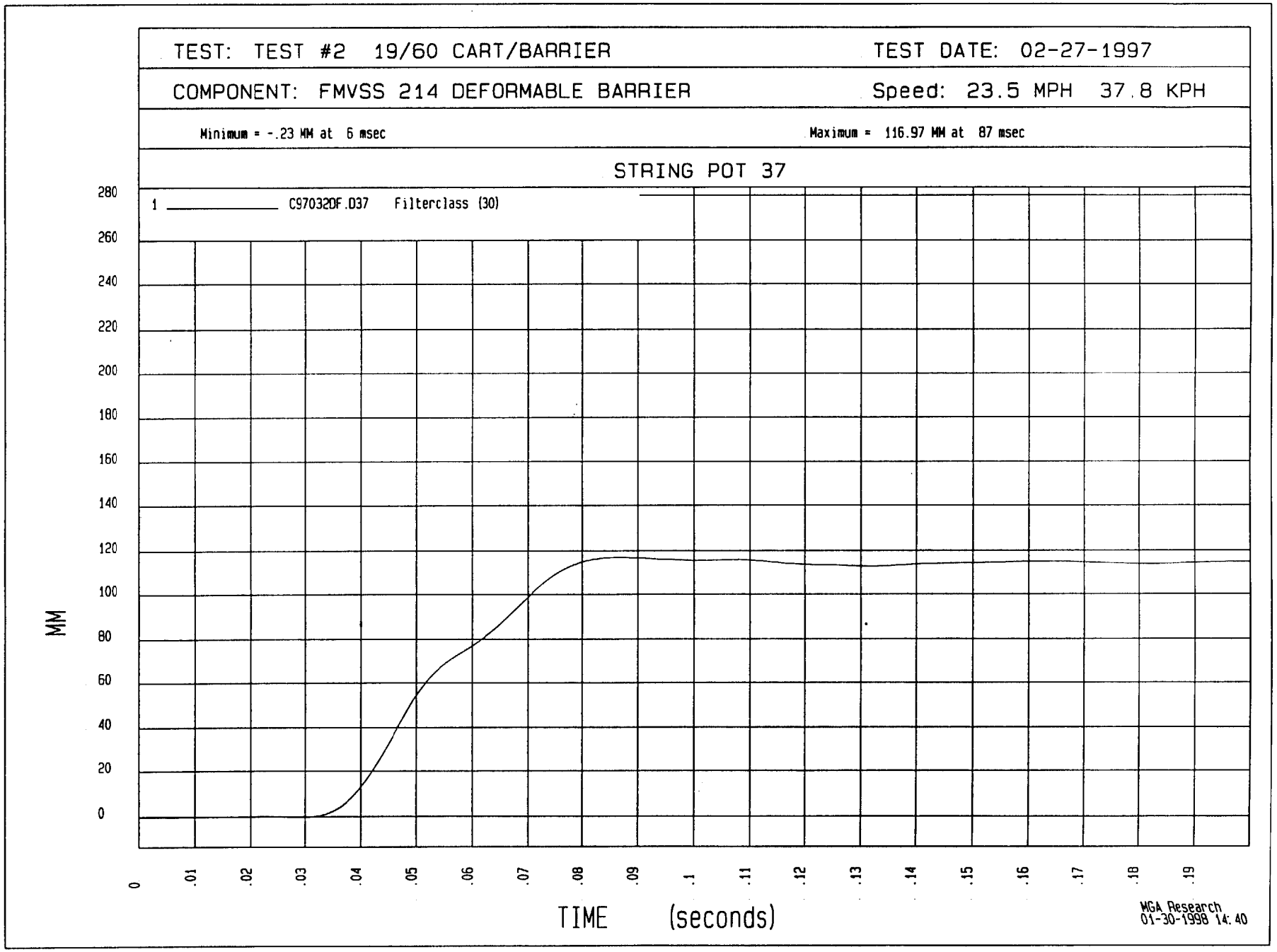
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.23 MM at 6 msec
Maximum = 116.97 MM at 87 msec
STRING POT 37
1 C97032DF.D37 Filterclass (30)
MM
280
260
240
220
200
180
160
140
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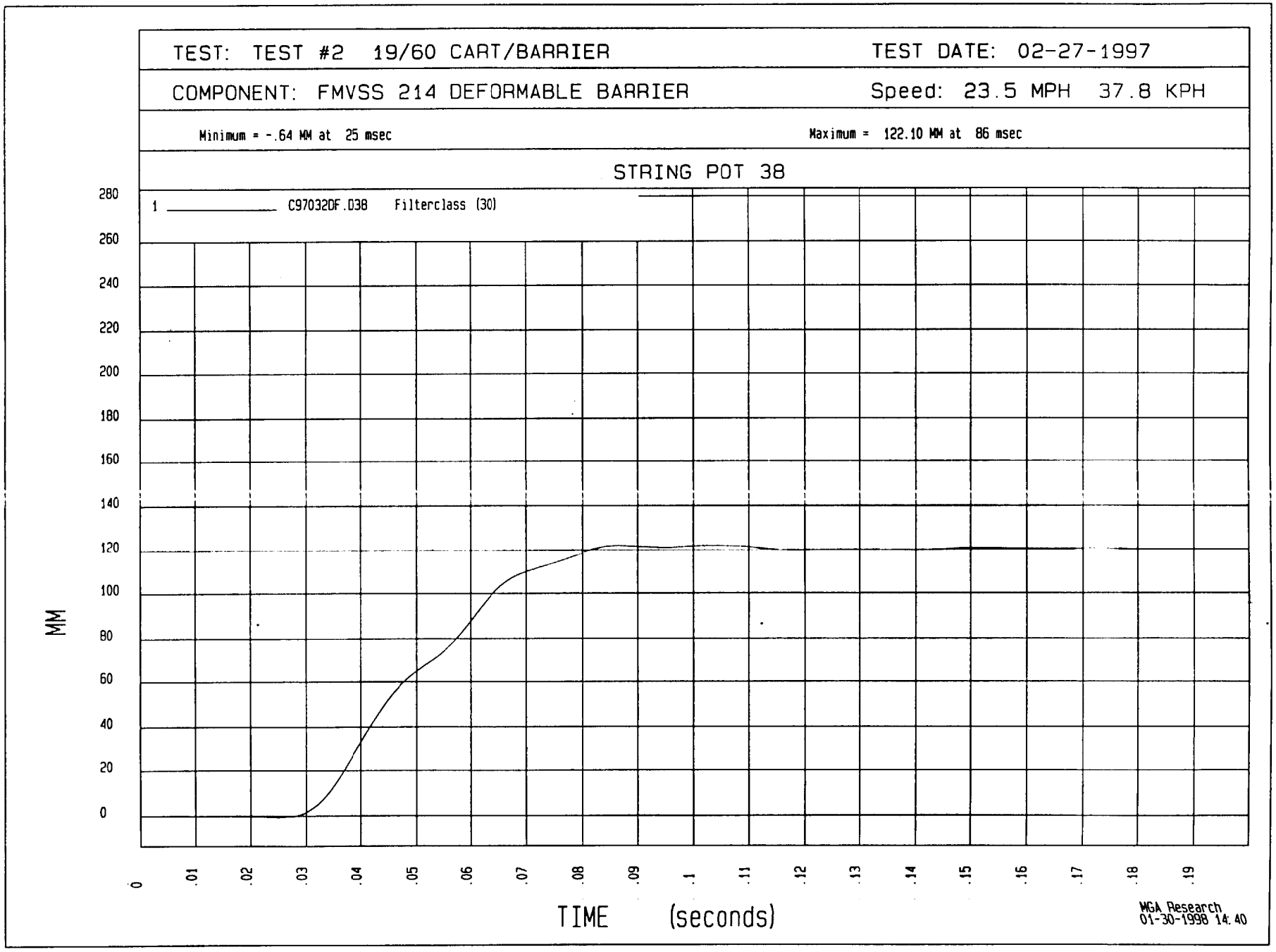
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.64 MM at 25 msec
Maximum = 122.10 MM at 86 msec
STRING POT 38
1 C97032DF.038 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
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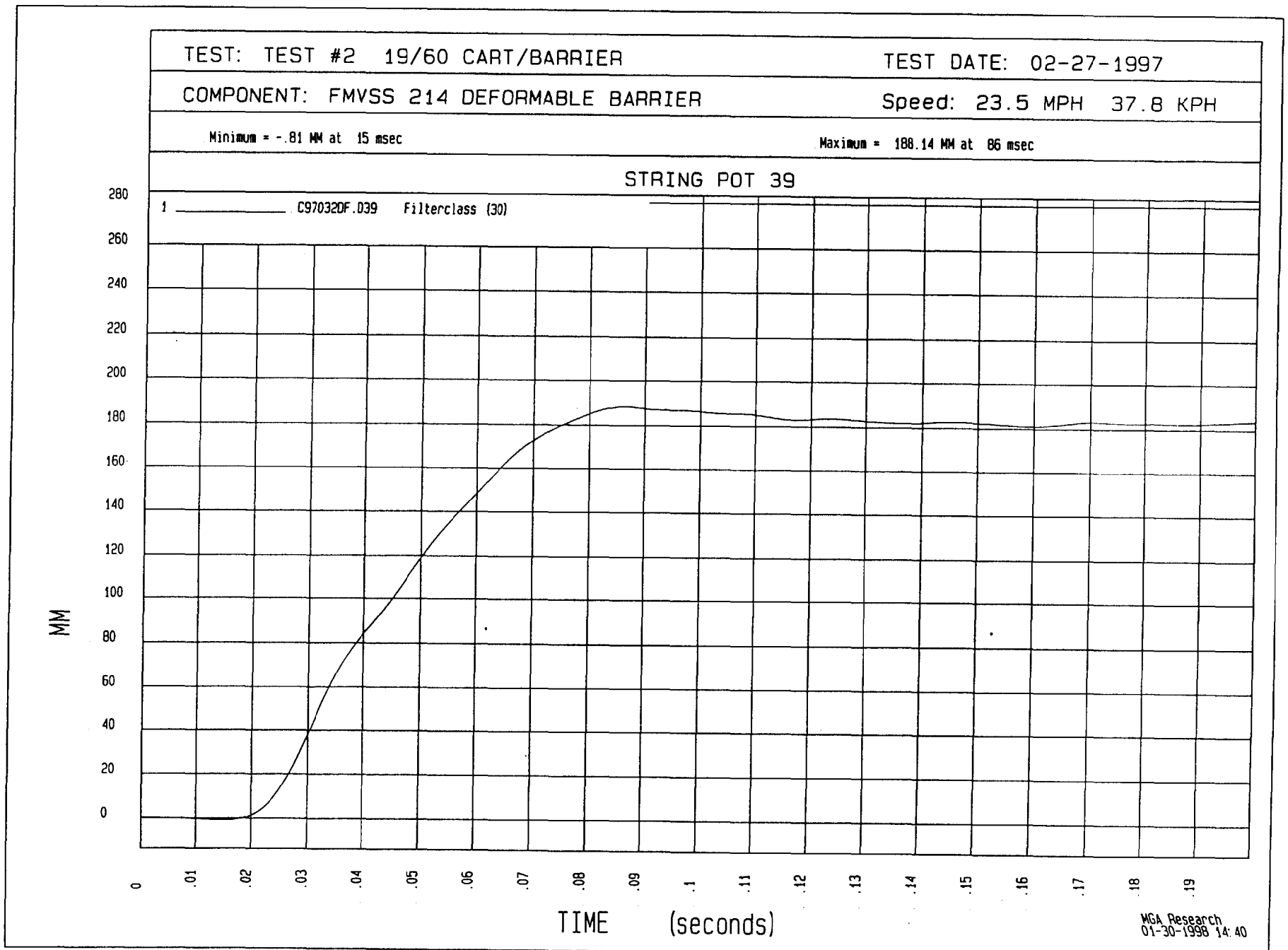
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.81 MM at 15 msec
Maximum = 188.14 MM at 86 msec
STRING POT 39
1 C97032DF.D39 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
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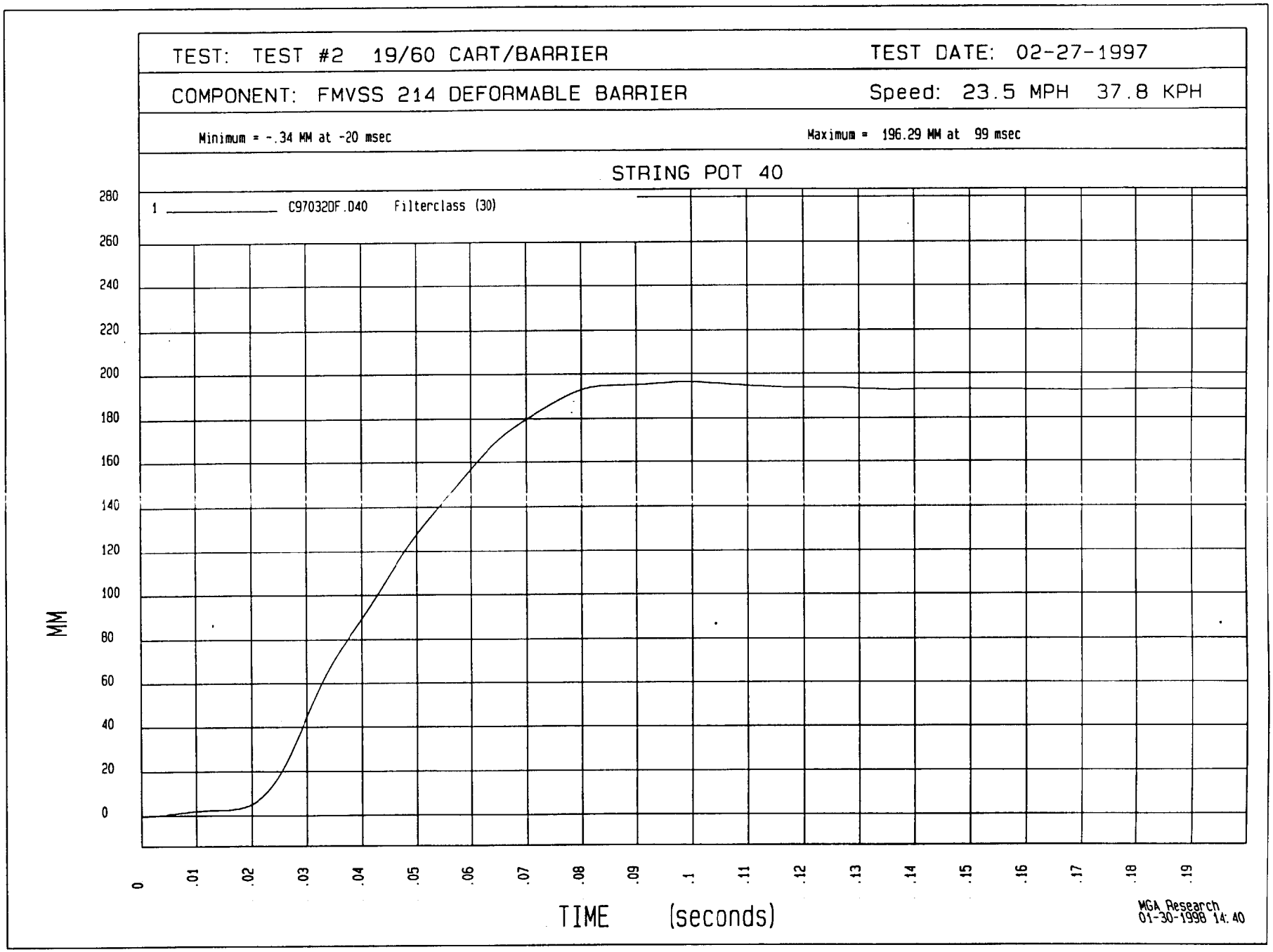
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.34 MM at -20 msec
Maximum = 196.29 MM at 99 msec
STRING POT 40
1 C97032DF.D40 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
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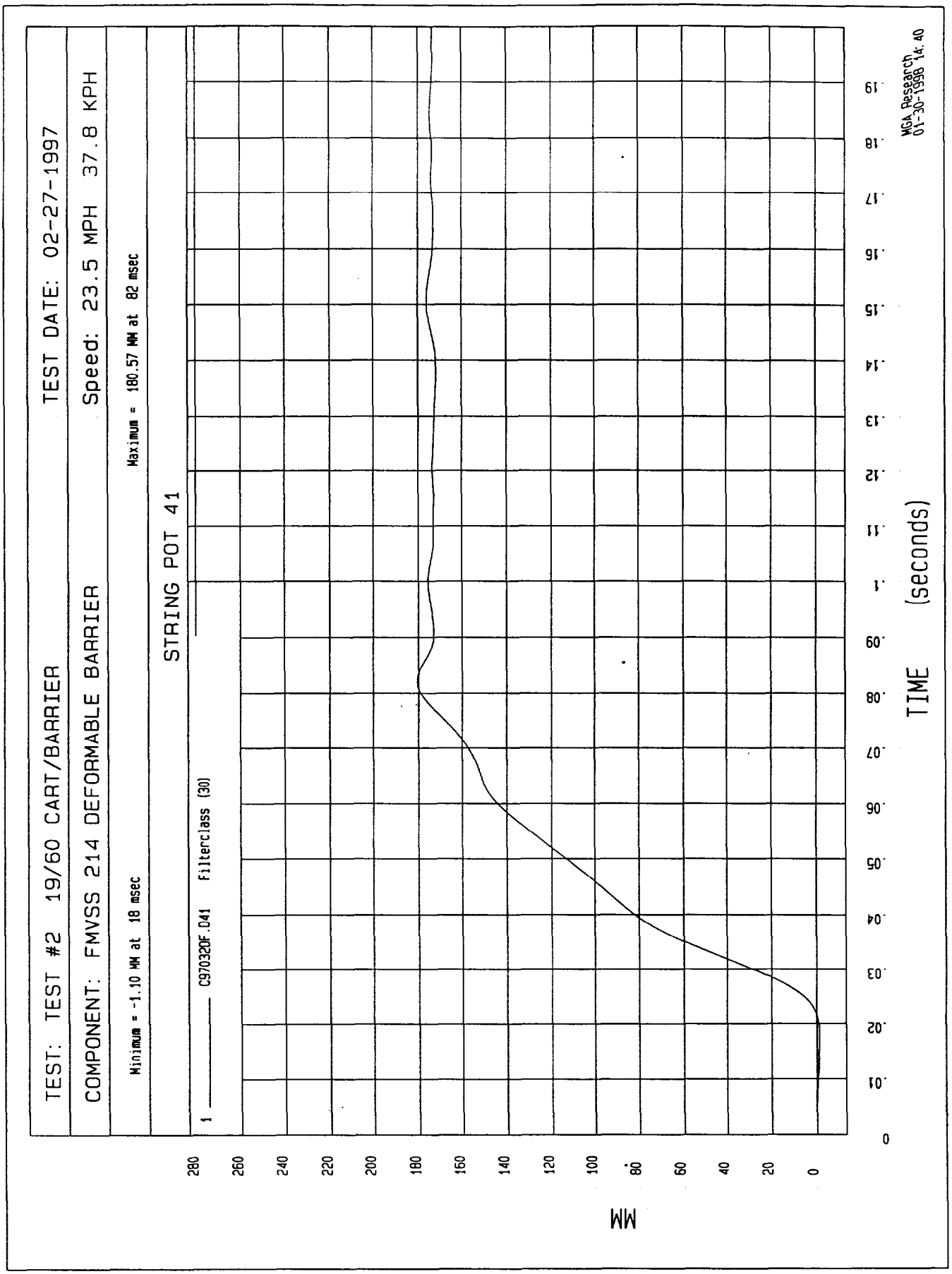
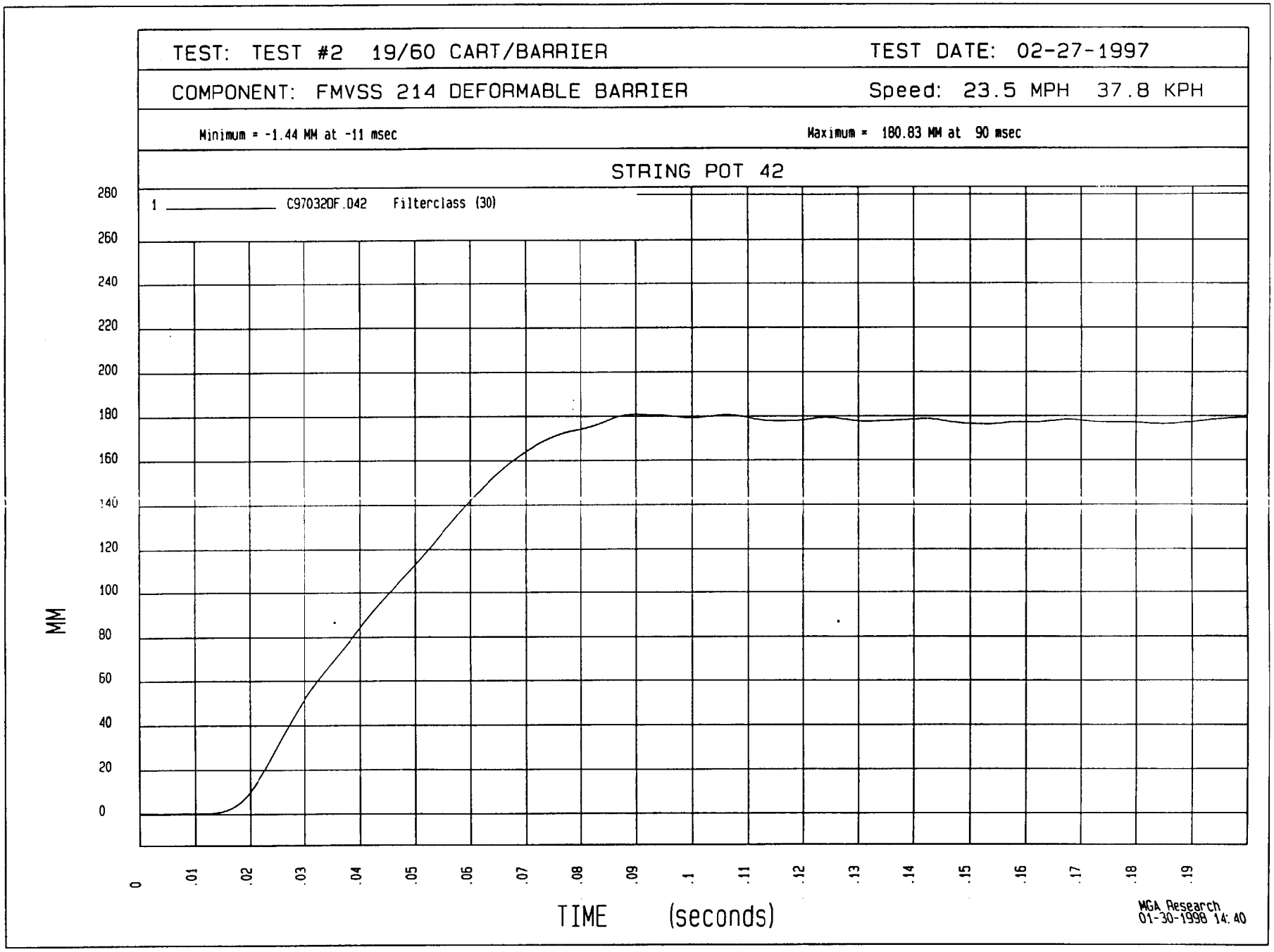
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.10 MM at 18 msec
Maximum = 180.57 MM at 82 msec
STRING POT 41
1 C97032DF.041 Filterclass (30)
MM
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.44 MM at -11 msec
Maximum = 180.83 MM at 90 msec
STRING POT 42
1 C97032DF.042 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
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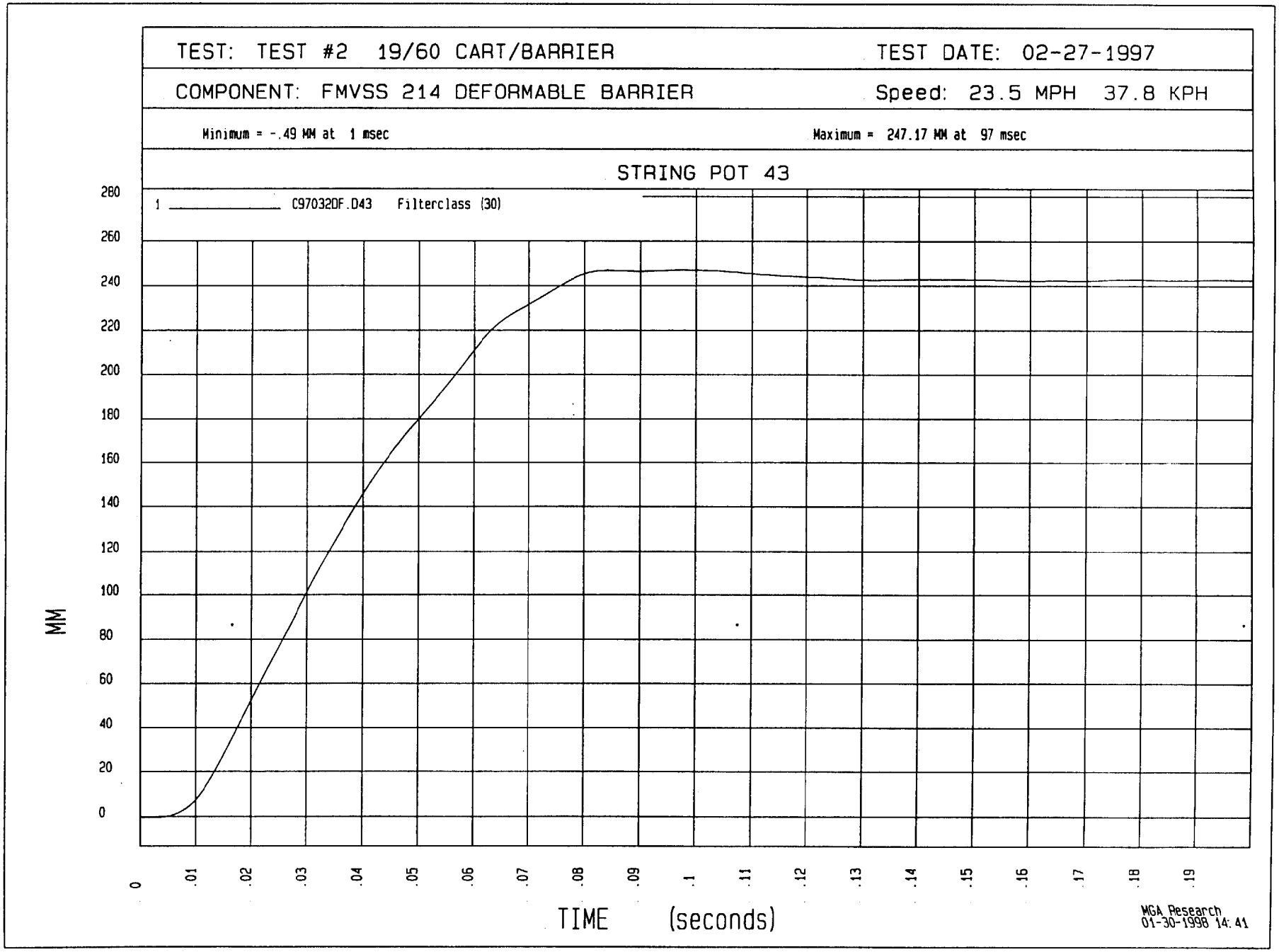
TIME (seconds)
MGA Research
01-30-1998 14:40


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.49 MM at 1 msec
Maximum = 247.17 MM at 97 msec
STRING POT 43
1 C97032DF.D43 Filterclass (30)
MM
280
260
240
220
200
180
160
140
120
100
80
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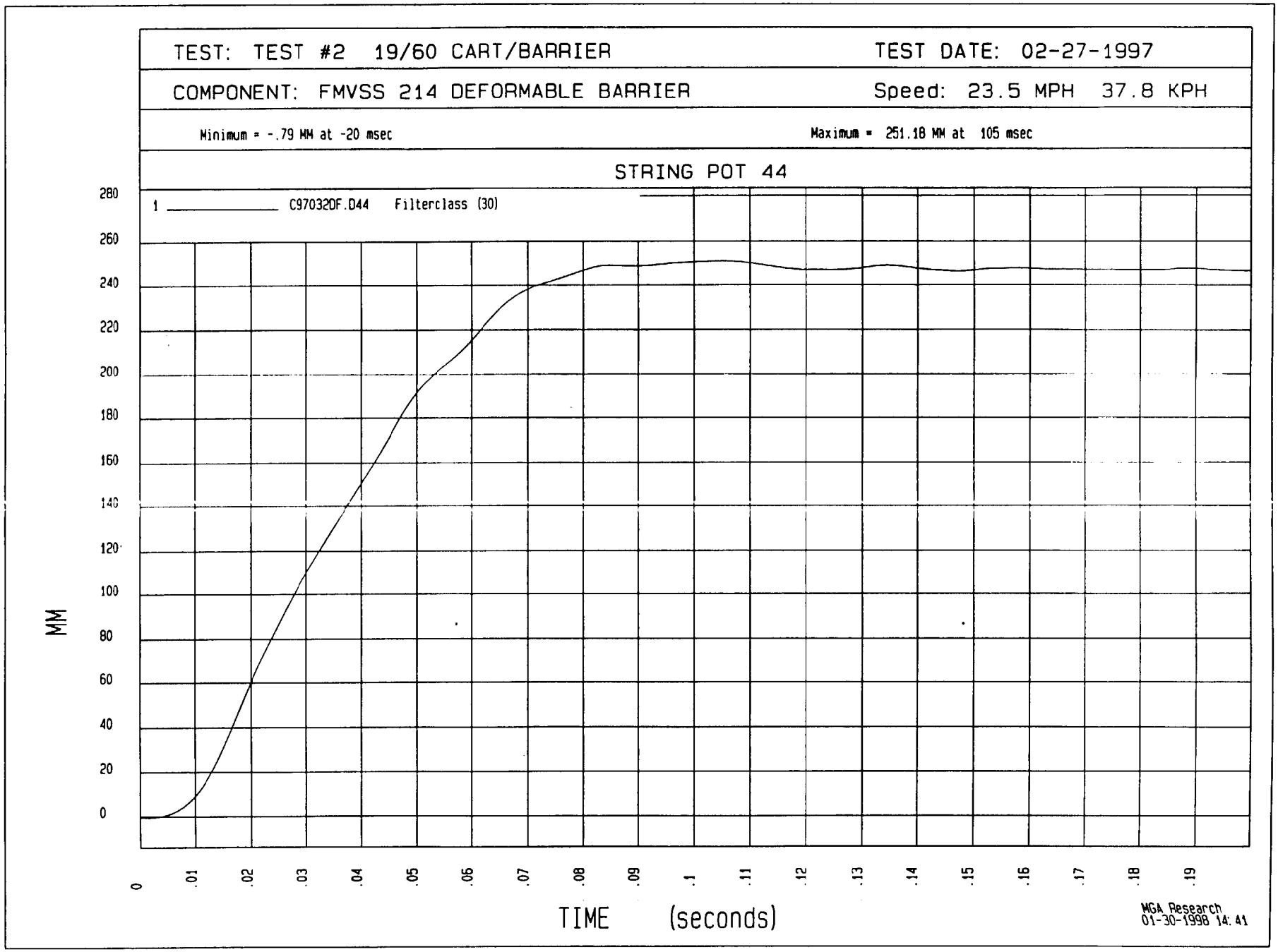
TIME (seconds)
MGA Research
01-30-1998 14:41


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -.79 MM at -20 msec
Maximum = 251.18 MM at 105 msec
STRING POT 44
1 C970320F.D44 Filterclass (30)
MM
280
260
240
220
200
180
160
140
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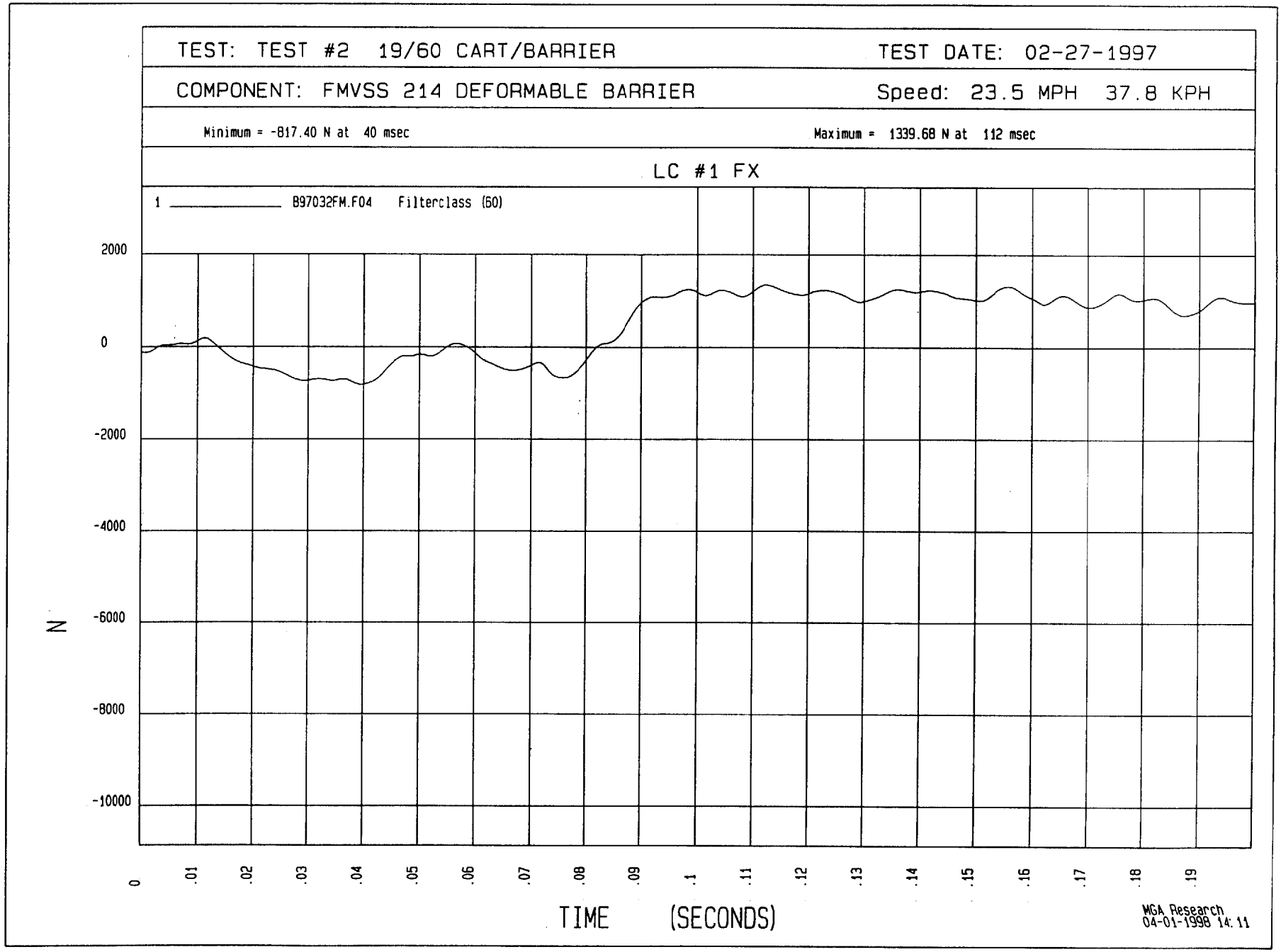
TIME (seconds)
MGA Research
01-30-1998 14:41


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -817.40 N at 40 msec
Maximum = 1339.68 N at 112 msec
LC #1 FX
1 B97032FM.F04 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
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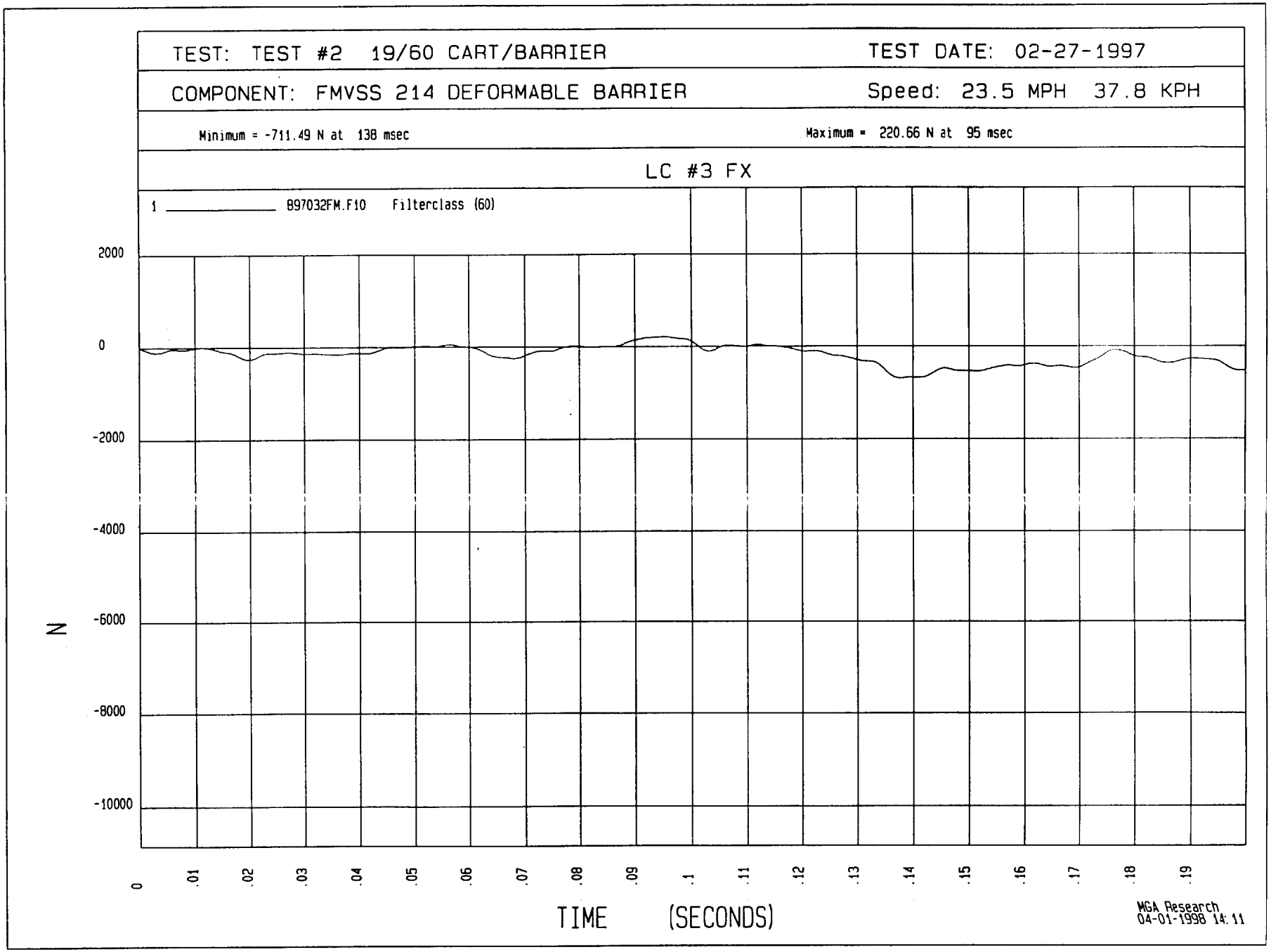
TIME (SECONDS)
MGA Research
04-01-1998 14:11


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -711.49 N at 138 msec
Maximum = 220.66 N at 95 msec
LC #3 FX
1 B97032FM.F10 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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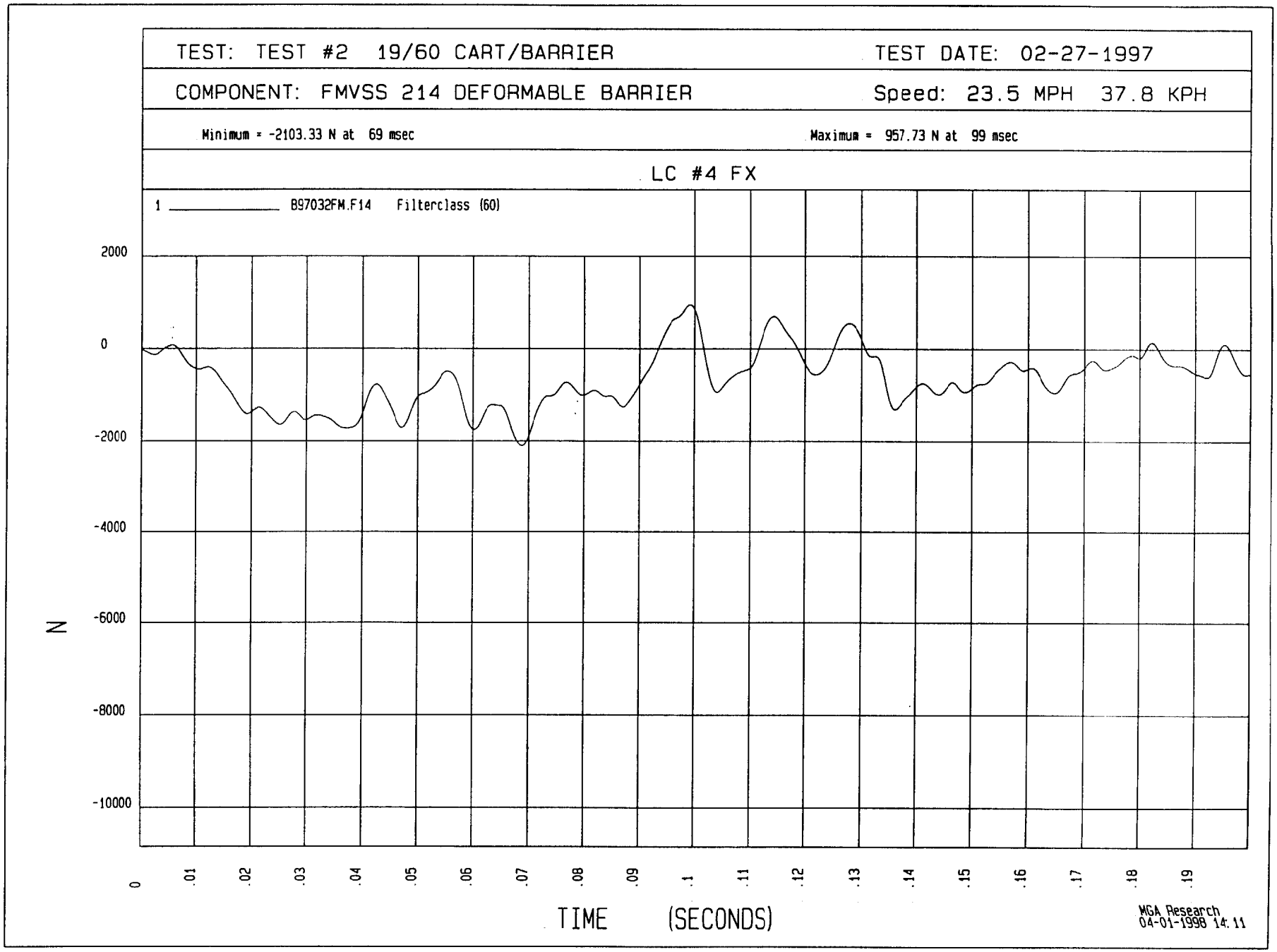
TIME (SECONDS)
MGA Research
04-01-1998 14:11


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2103.33 N at 69 msec
Maximum = 957.73 N at 99 msec
LC #4 FX
1 B97032FM.F14 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
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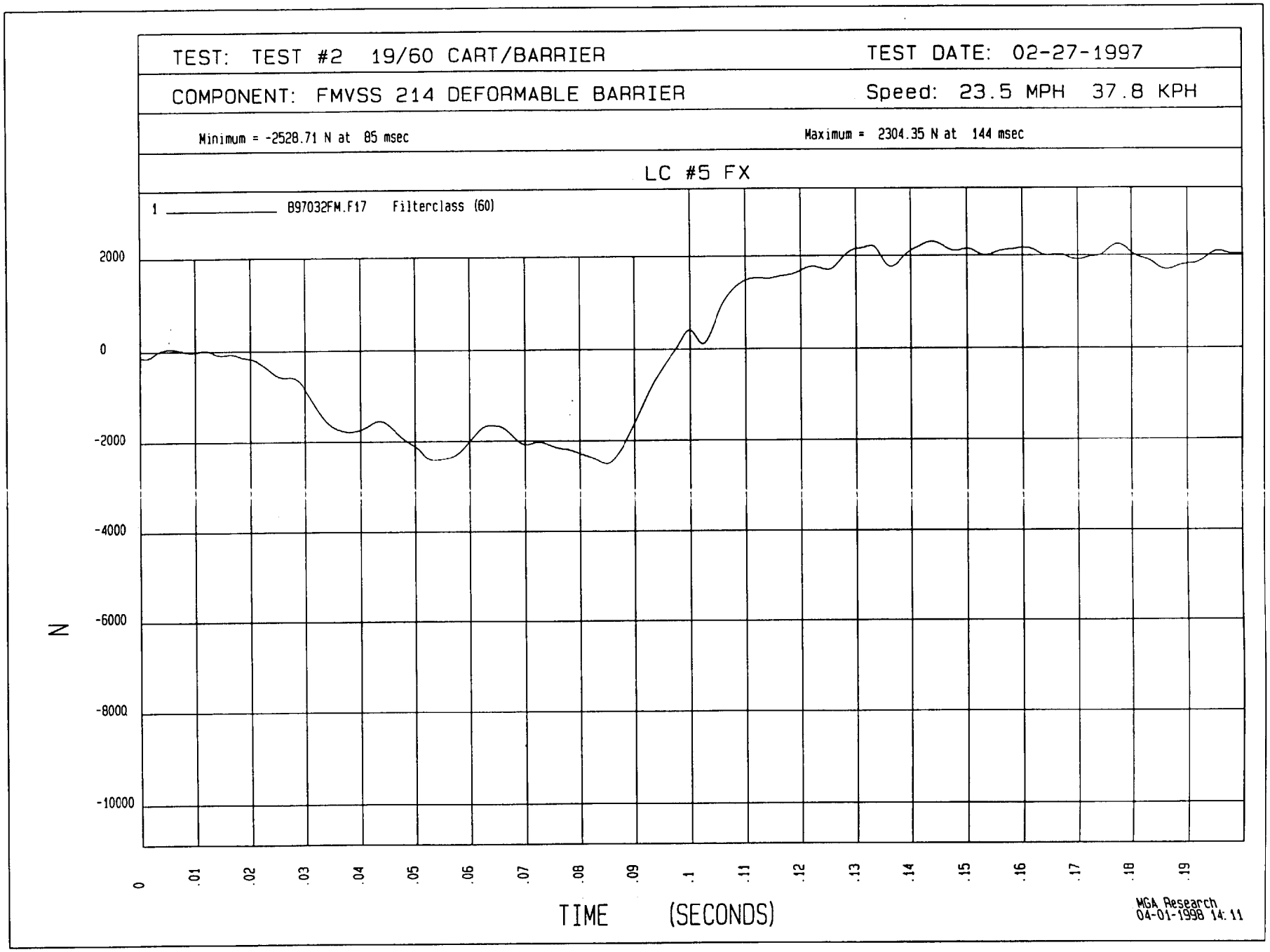
TIME (SECONDS)
MGA Research
04-01-1998 14:11


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2528.71 N at 85 msec
Maximum = 2304.35 N at 144 msec
LC #5 FX
1 B97032FM.F17 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
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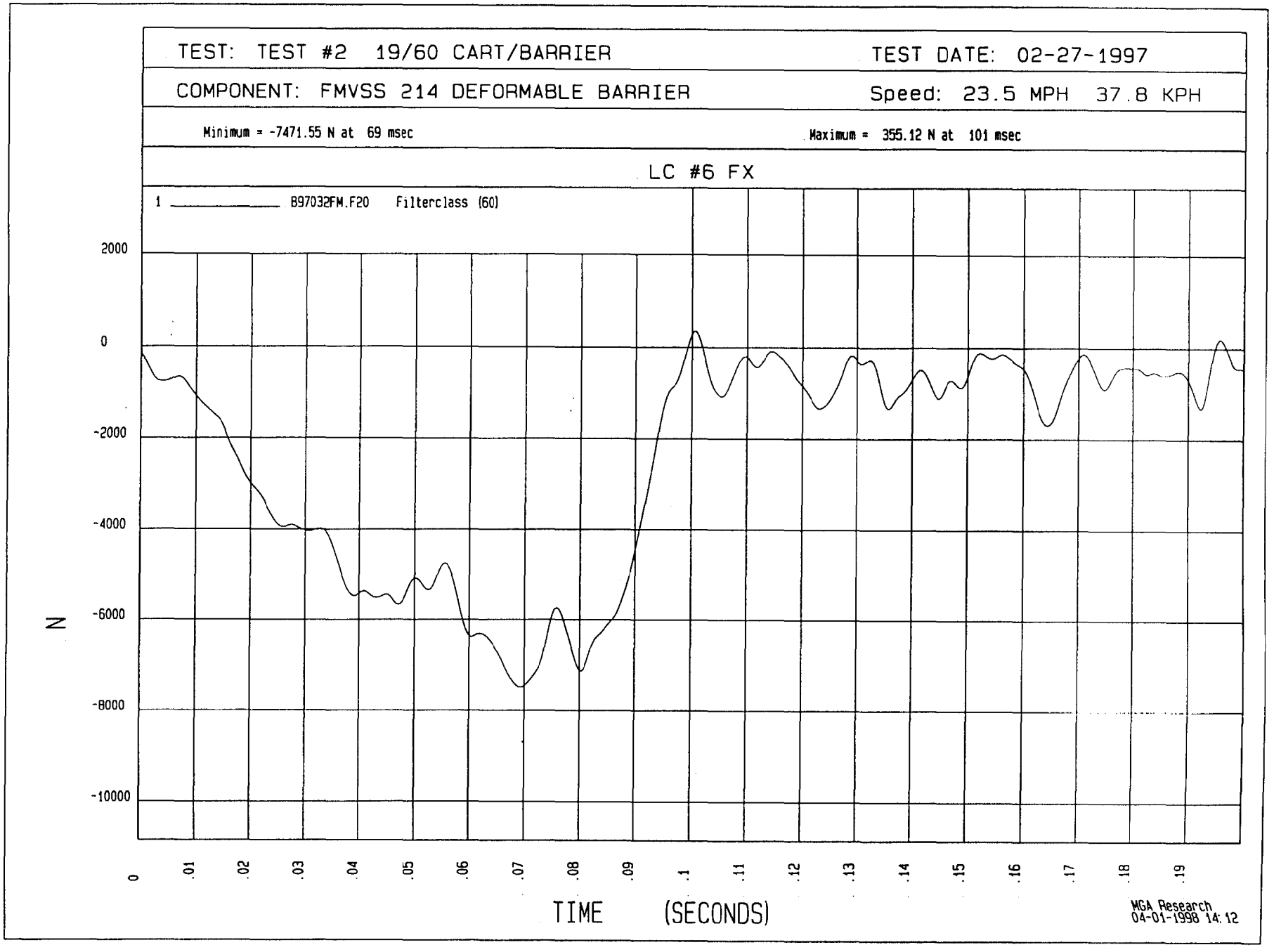
TIME (SECONDS)
MGA Research
04-01-1998 14:11


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7471.55 N at 69 msec
Maximum = 355.12 N at 101 msec
LC #6 FX
1 B97032FM.F20 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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.05
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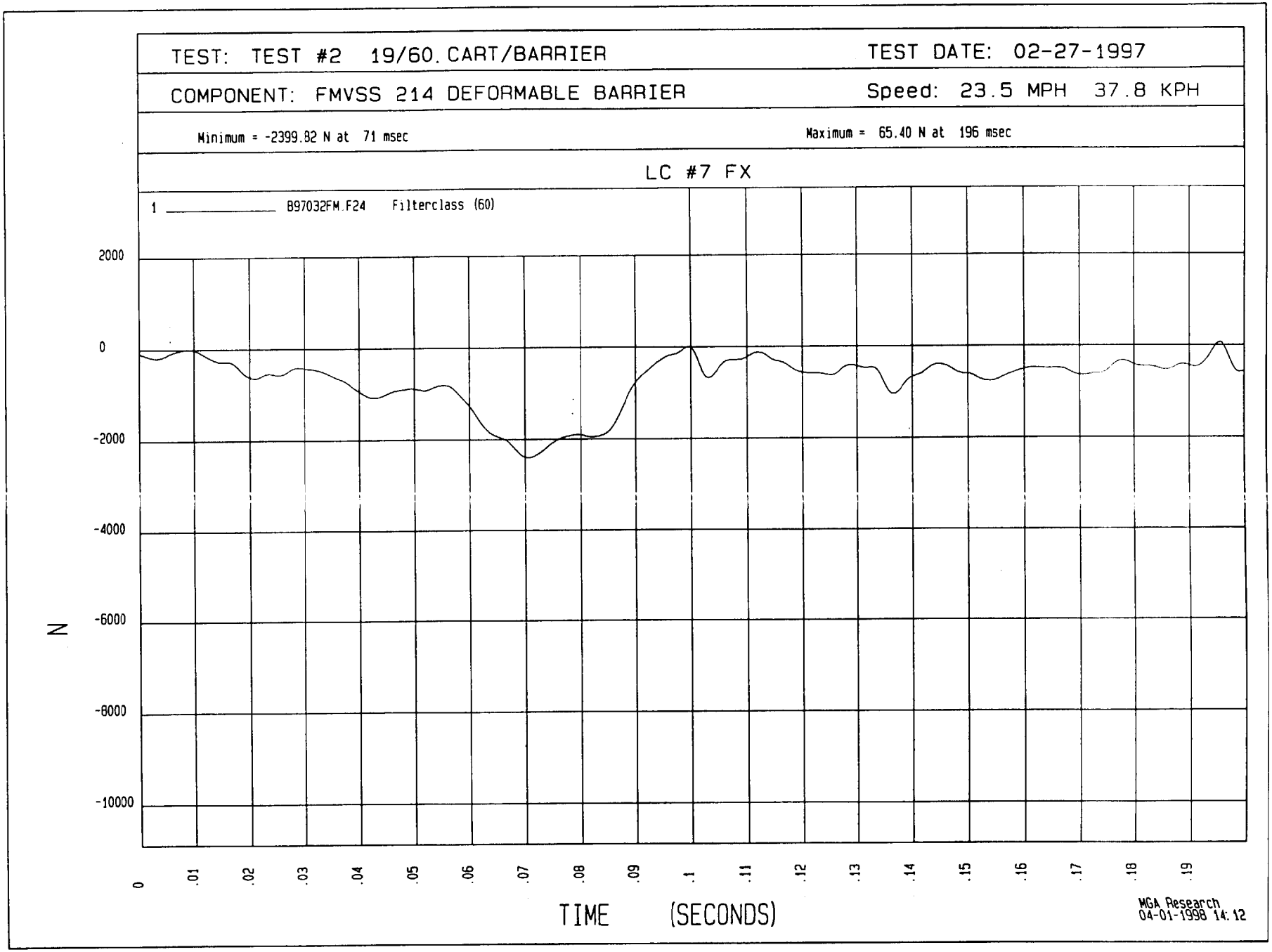
TIME (SECONDS)
MGA Research
04-01-1998 14:12


TEST: TEST #2 19/60. CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2399.82 N at 71 msec
Maximum = 65.40 N at 196 msec
LC #7 FX
1 B97032FM.F24 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
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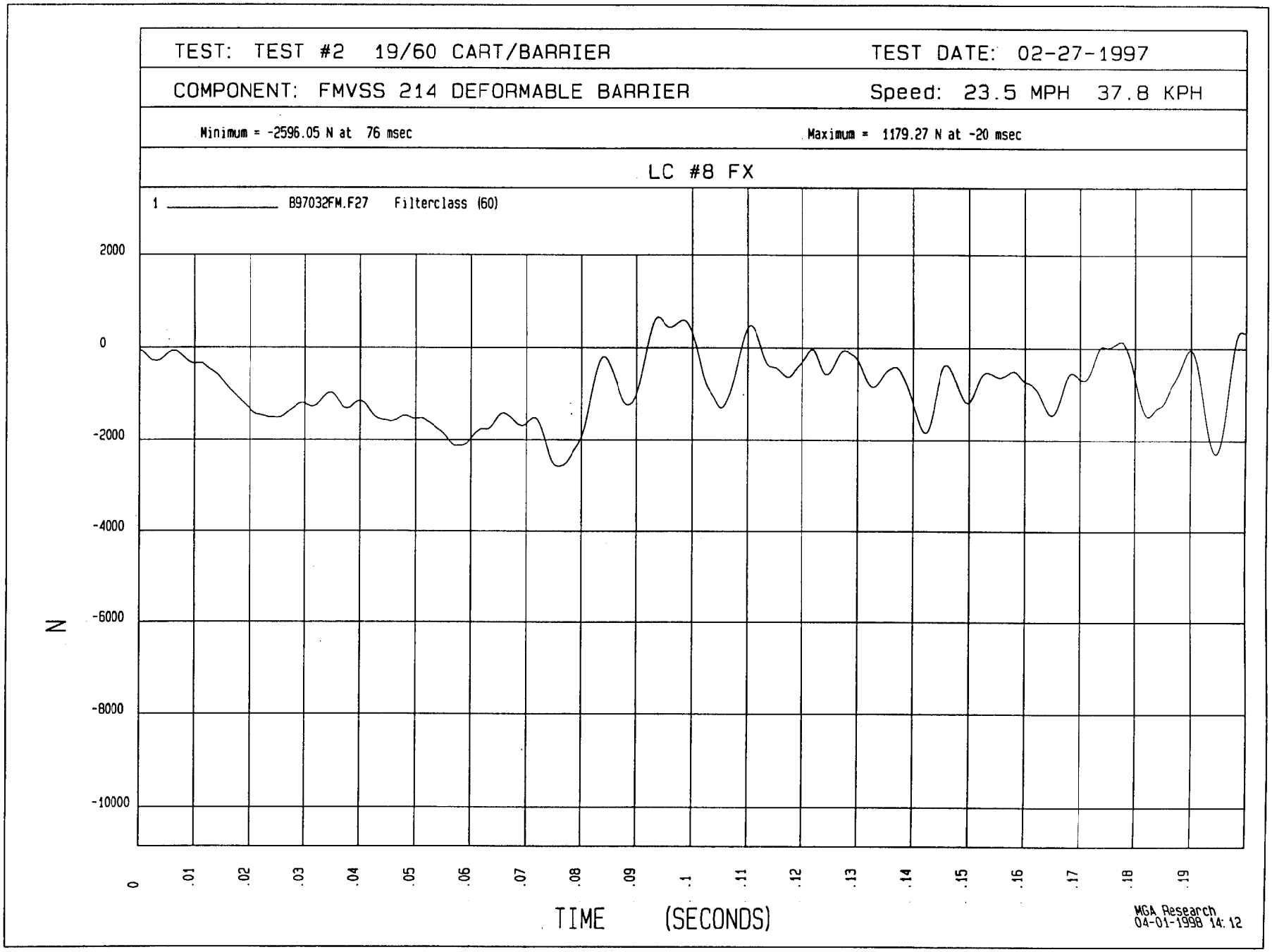
TIME (SECONDS)
MGA Research
04-01-1998 14:12


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2596.05 N at 76 msec
Maximum = 1179.27 N at -20 msec
LC #8 FX
1 B97032FM.F27 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
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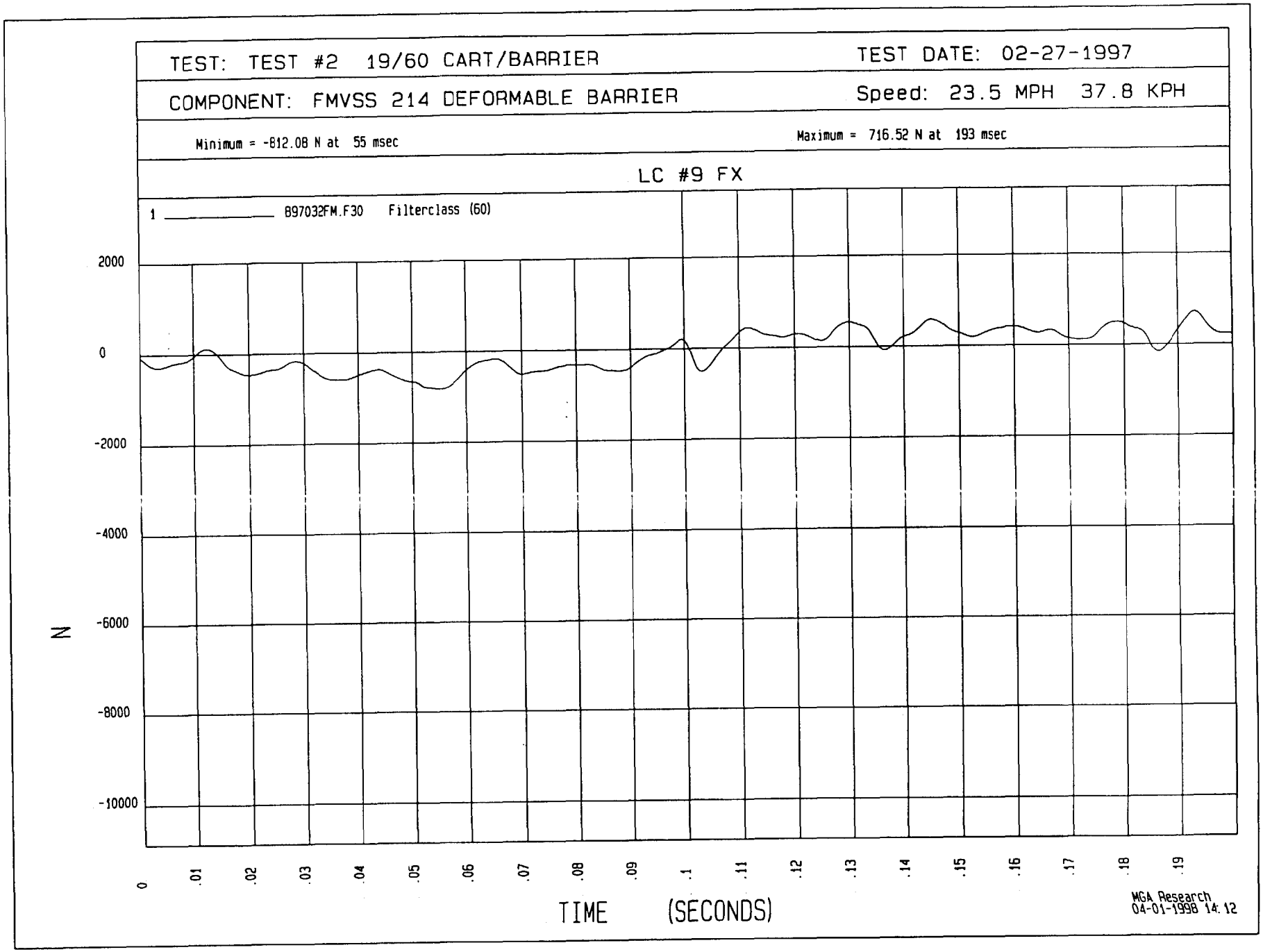
TIME (SECONDS)
MGA Research
04-01-1998 14:12


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -812.08 N at 55 msec
Maximum = 716.52 N at 193 msec
LC #9 FX
1 B97032FM.F30 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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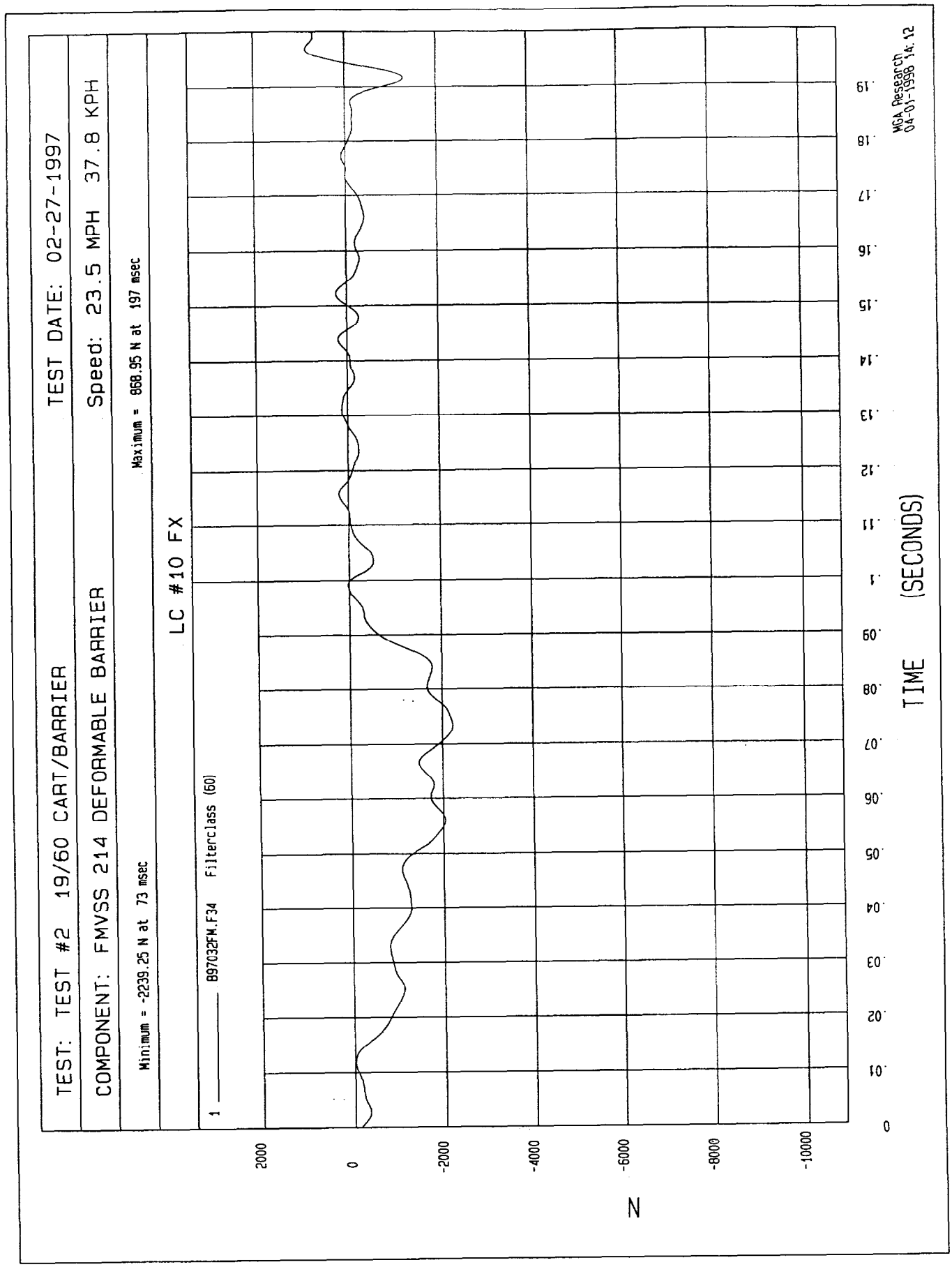
TIME (SECONDS)
MGA Research
04-01-1998 14:12


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2239.25 N at 73 msec
Maximum = 868.95 N at 197 msec
LC #10 FX
1 B97032FM.F34 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
01
02
03
04
05
06
07
08
09
1
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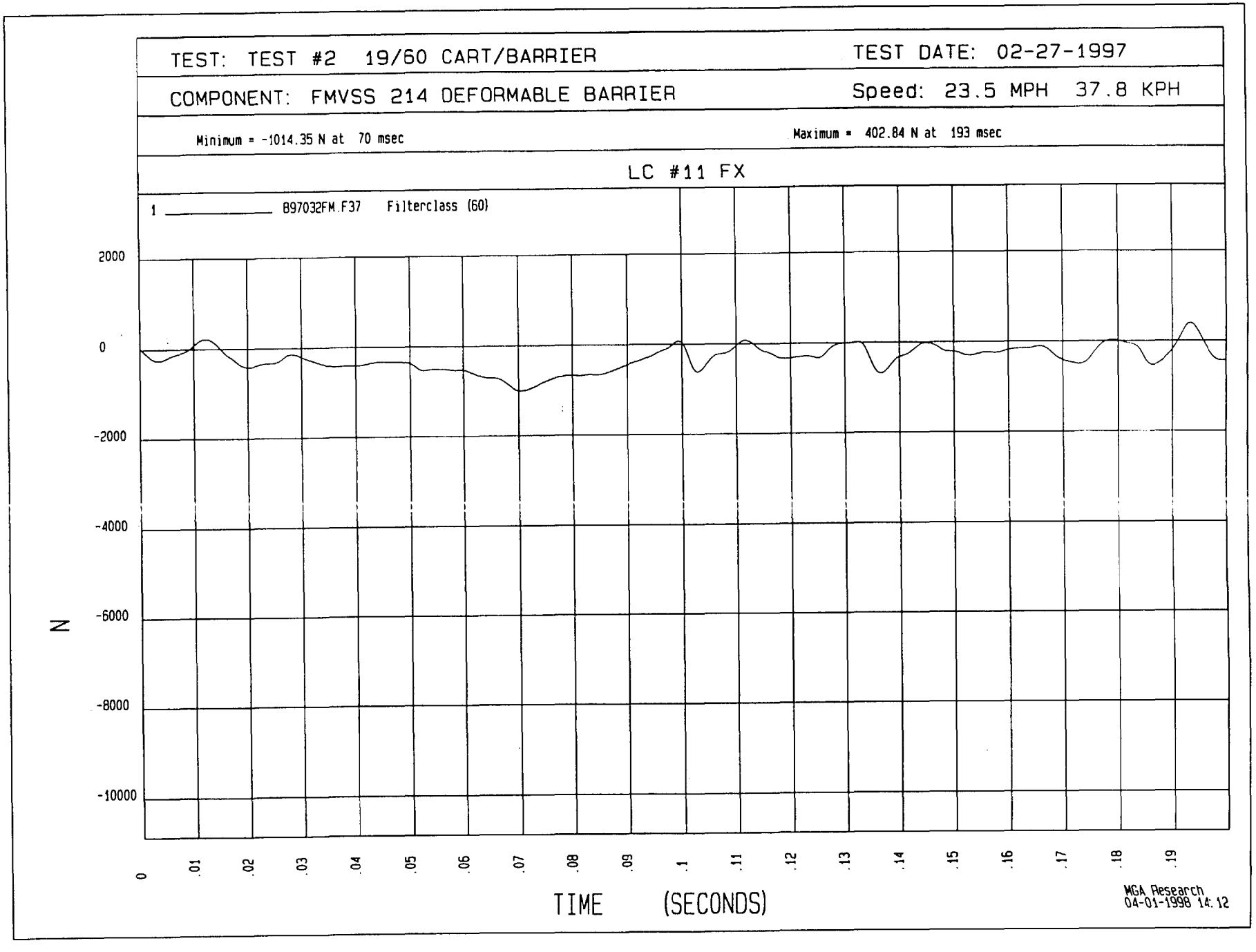
TIME (SECONDS)
MGA Research
04-01-1998 14:12


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1014.35 N at 70 msec
Maximum = 402.84 N at 193 msec
LC #11 FX
1 B97032FM.F37 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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.05
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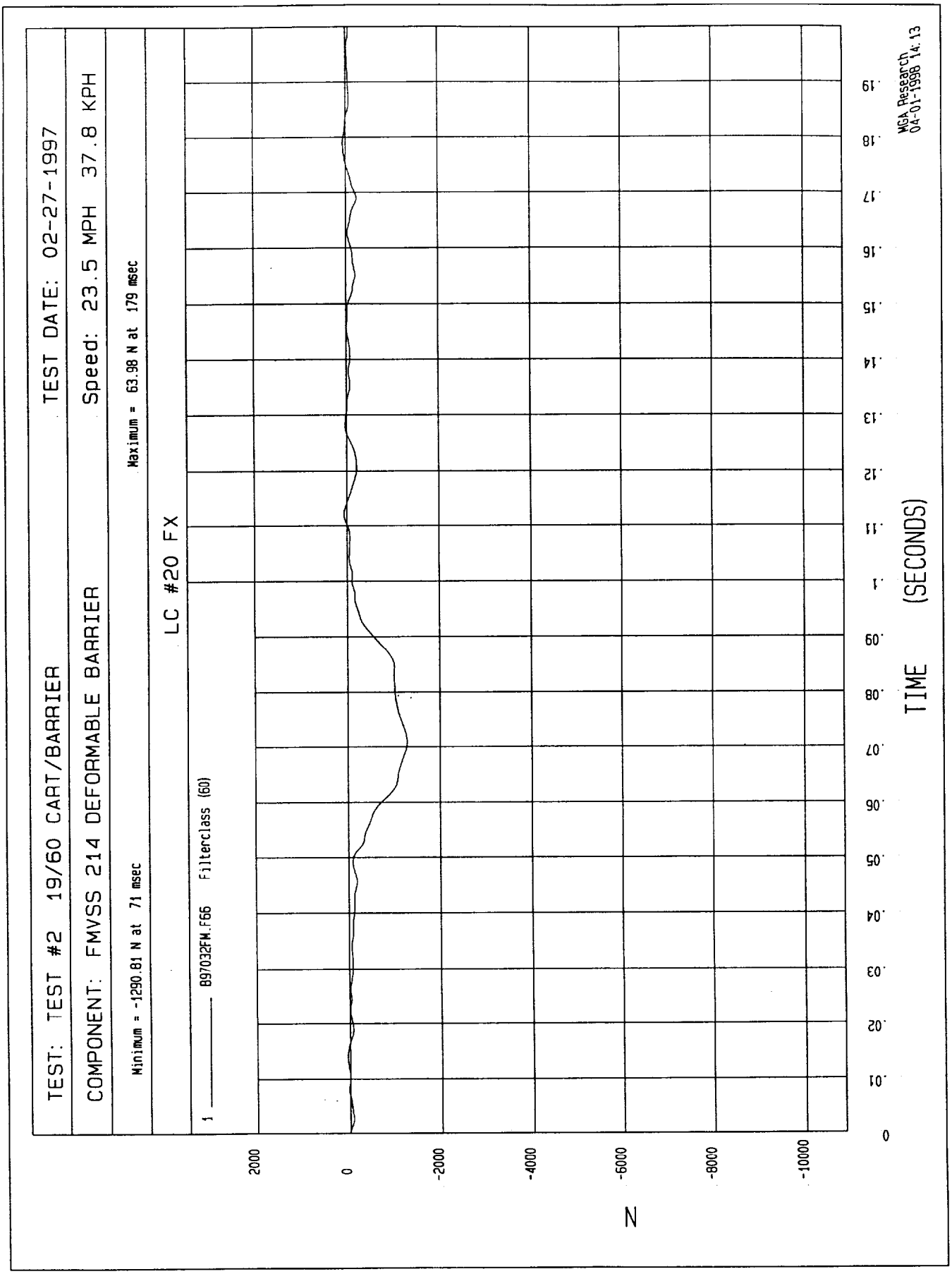
TIME (SECONDS)
MGA Research
04-01-1998 14:12


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1290.81 N at 71 msec
Maximum = 63.98 N at 179 msec
LC #20 FX
1 B97032FM.F66 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
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.05
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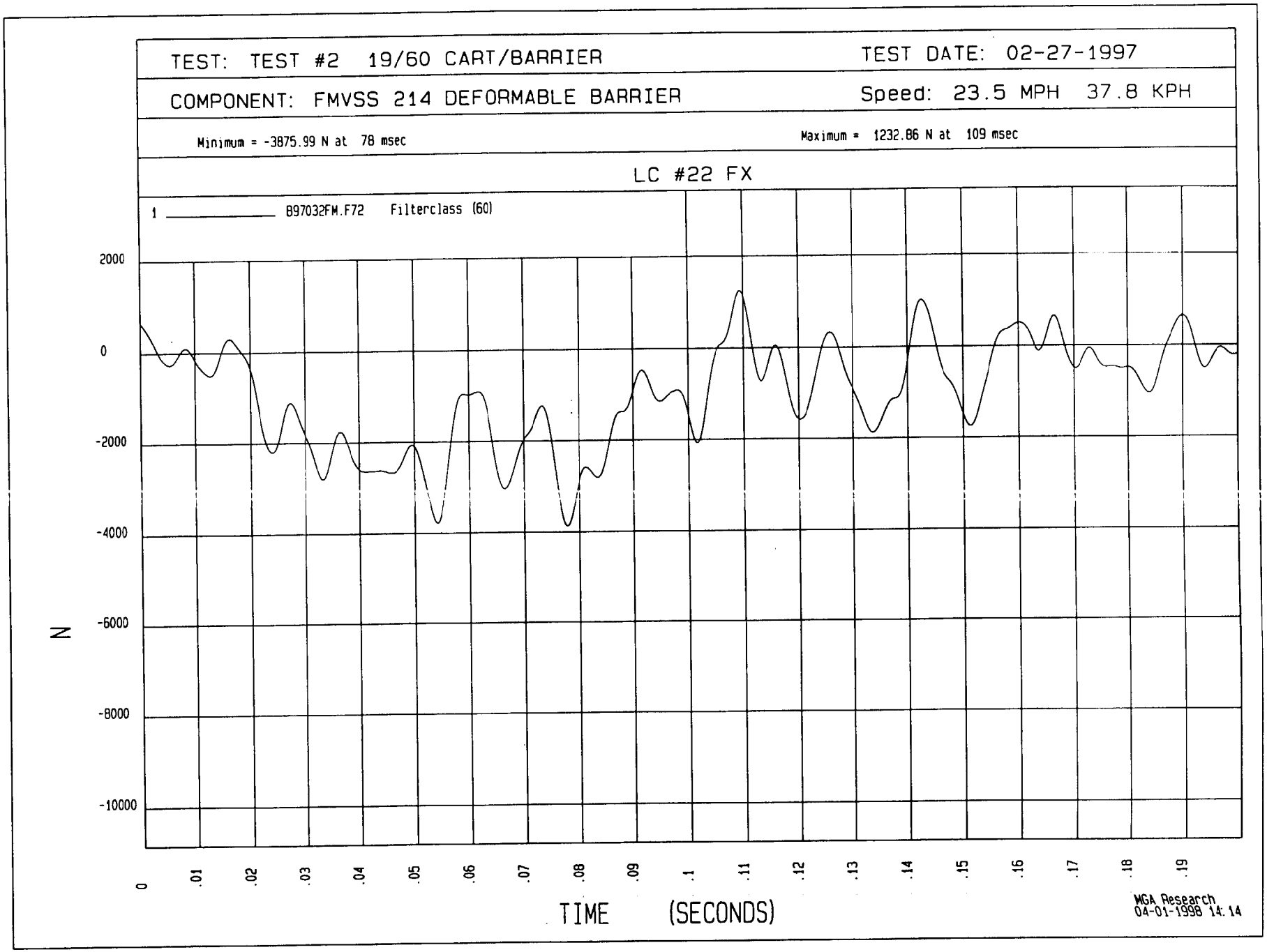
TIME (SECONDS)
MGA Research
04-01-1998 14:13


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -3875.99 N at 78 msec
Maximum = 1232.86 N at 109 msec
LC #22 FX
1 B97032FM.F72 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
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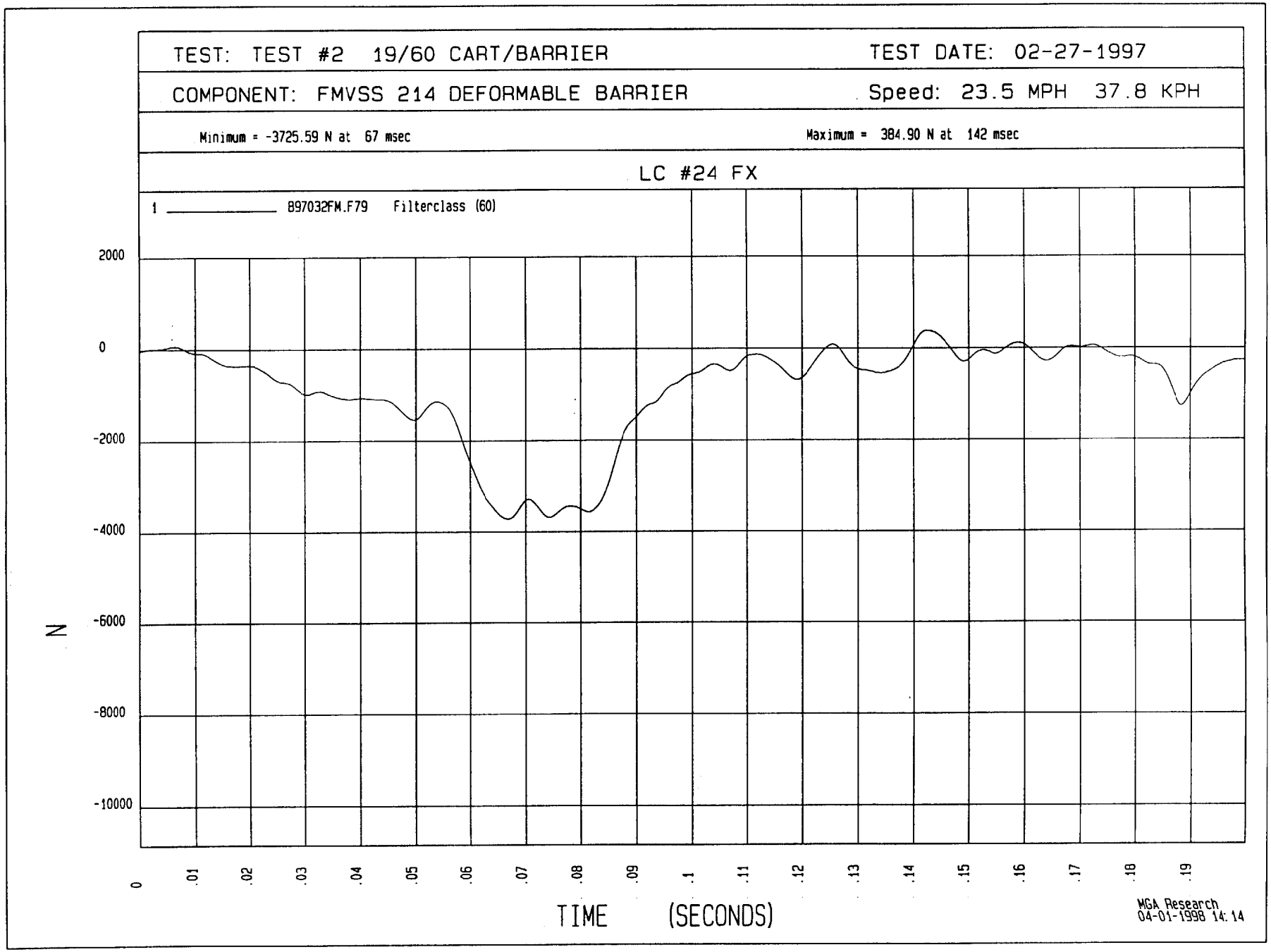
TIME (SECONDS)
MGA Research
04-01-1998 14:14


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -3725.59 N at 67 msec
Maximum = 384.90 N at 142 msec
LC #24 FX
1 897032FM.F79 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
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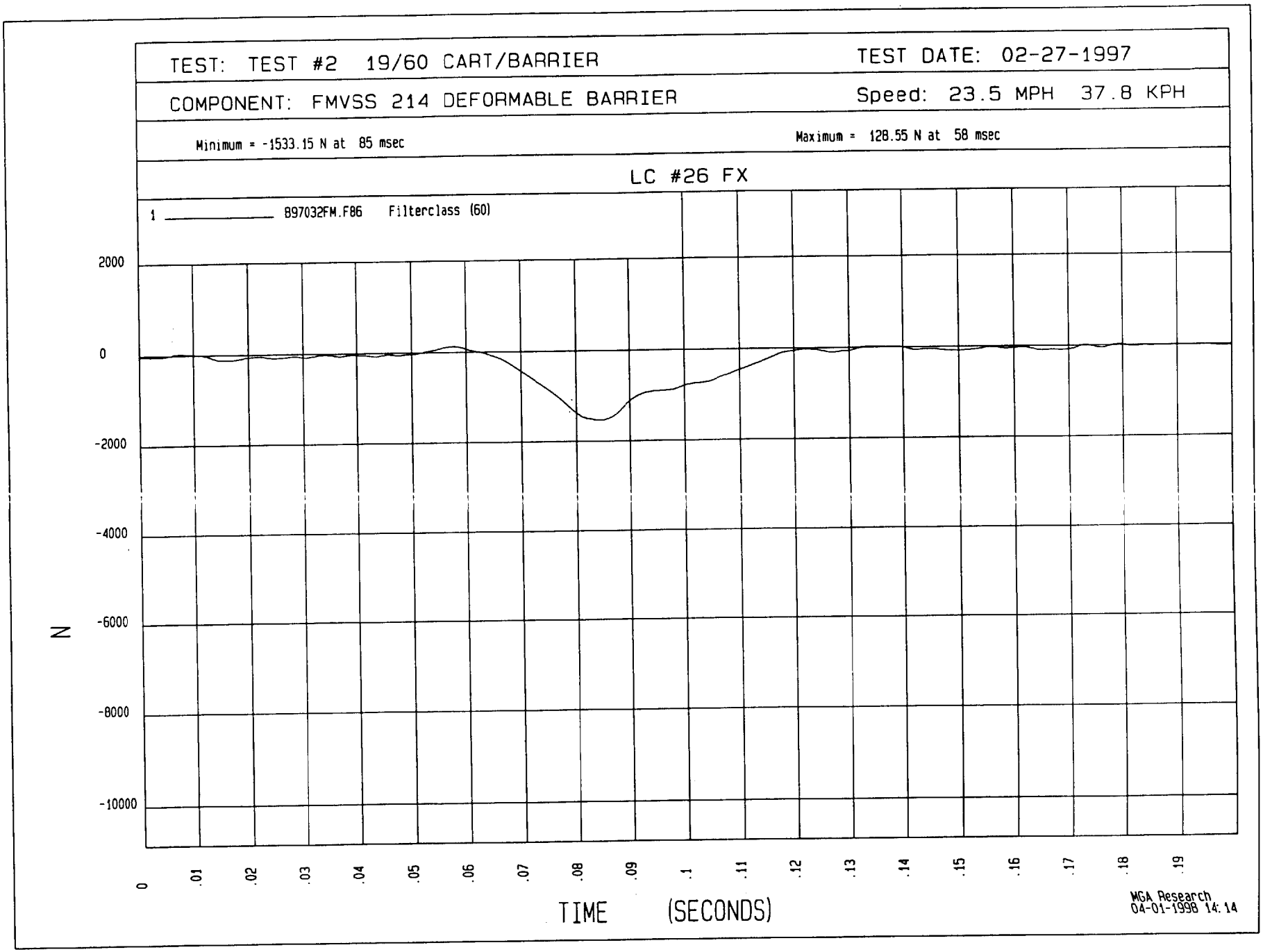
TIME (SECONDS)
MGA Research
04-01-1998 14:14


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1533.15 N at 85 msec
Maximum = 128.55 N at 58 msec
LC #26 FX
1 897032FM.F86 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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.04
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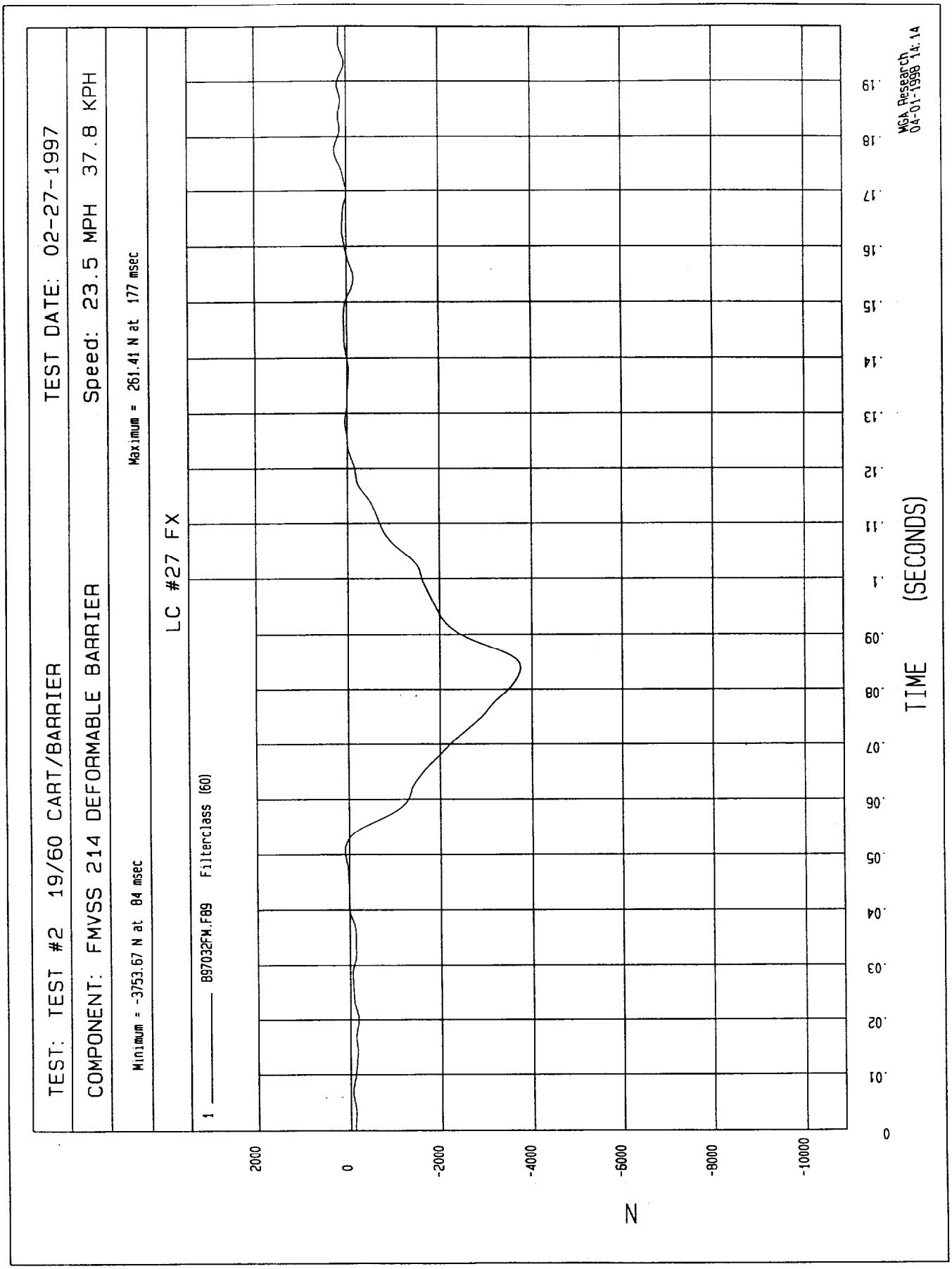
TIME (SECONDS)
MGA Research
04-01-1998 14:14


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -3753.67 N at 84 msec
Maximum = 261.41 N at 177 msec
LC #27 FX
1 B97032FM.F89 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
01
02
03
04
05
06
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1
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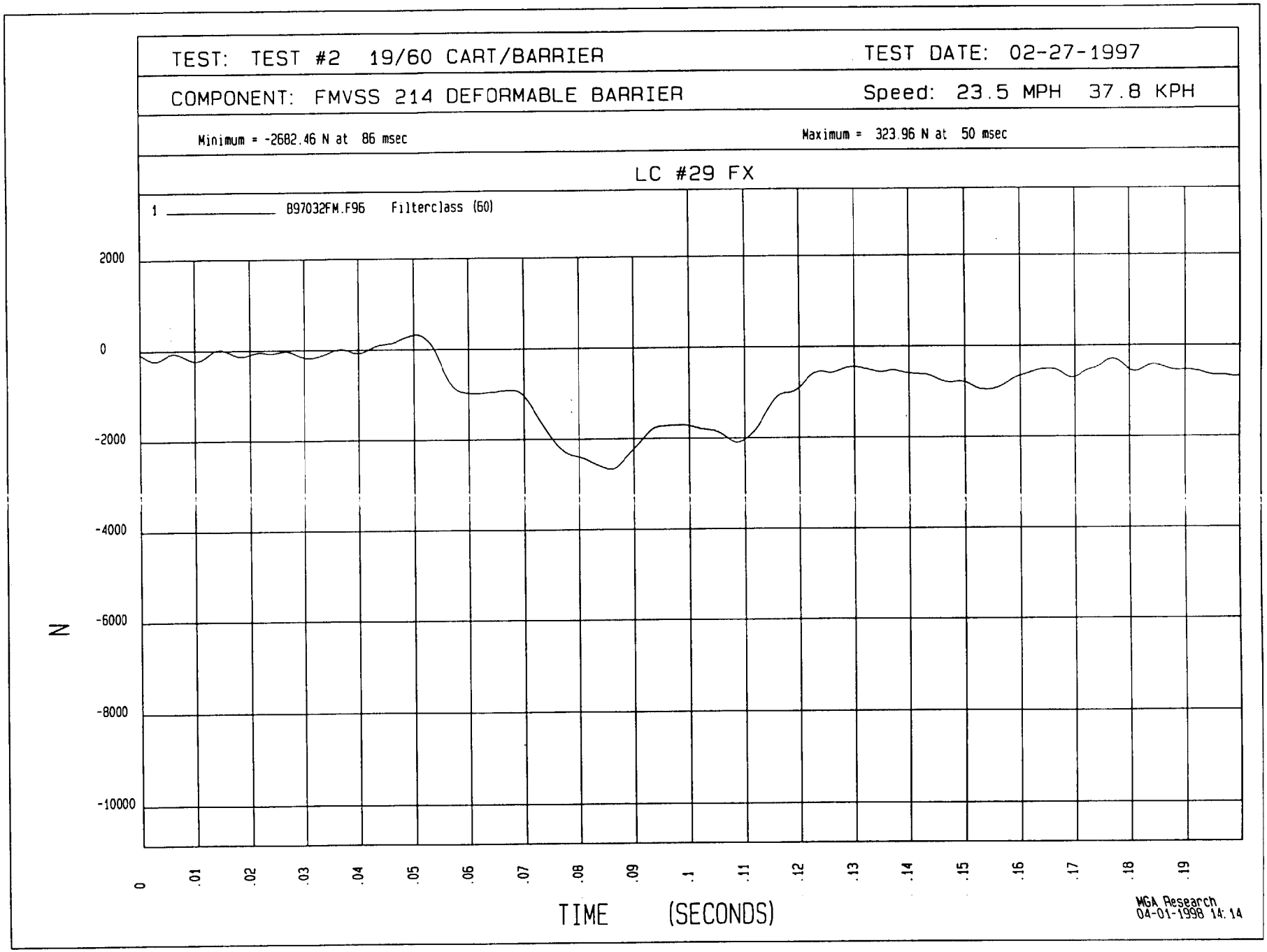
TIME (SECONDS)
MGA Research
04-01-1998 14:14


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2682.46 N at 86 msec
Maximum = 323.96 N at 50 msec
LC #29 FX
1 B97032FM.F96 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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.04
.05
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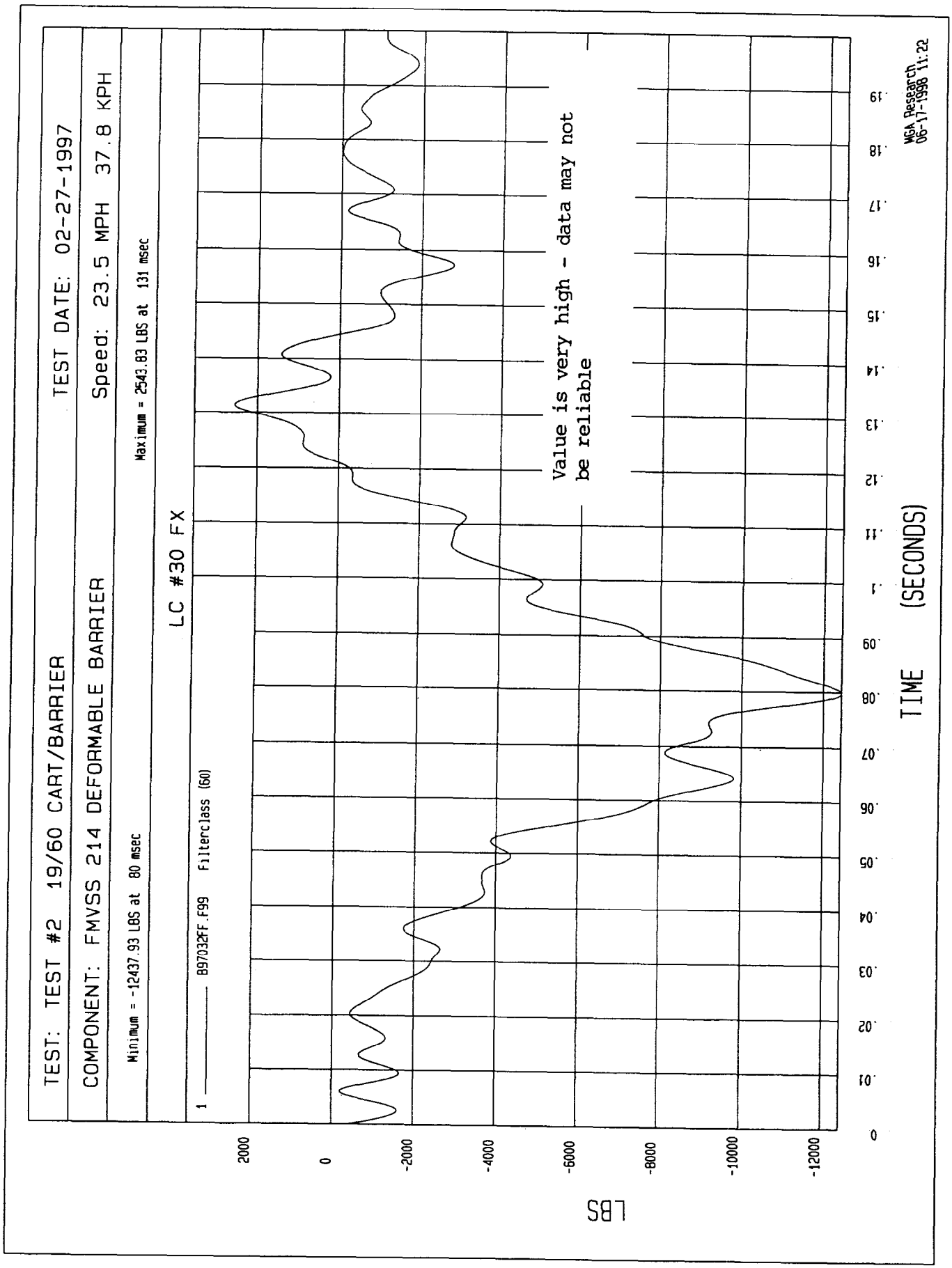
TIME (SECONDS)
MGA Research
04-01-1998 14:14


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -12437.93 LBS at 80 msec
Maximum = 2543.83 LBS at 131 msec
LC #30 FX
1 B97032FF.F99 Filterclass (60)
Value is very high - data may not be reliable
LBS
2000
0
-2000
-4000
-6000
-8000
-10000
-12000
0
.01
.02
.03
.04
.05
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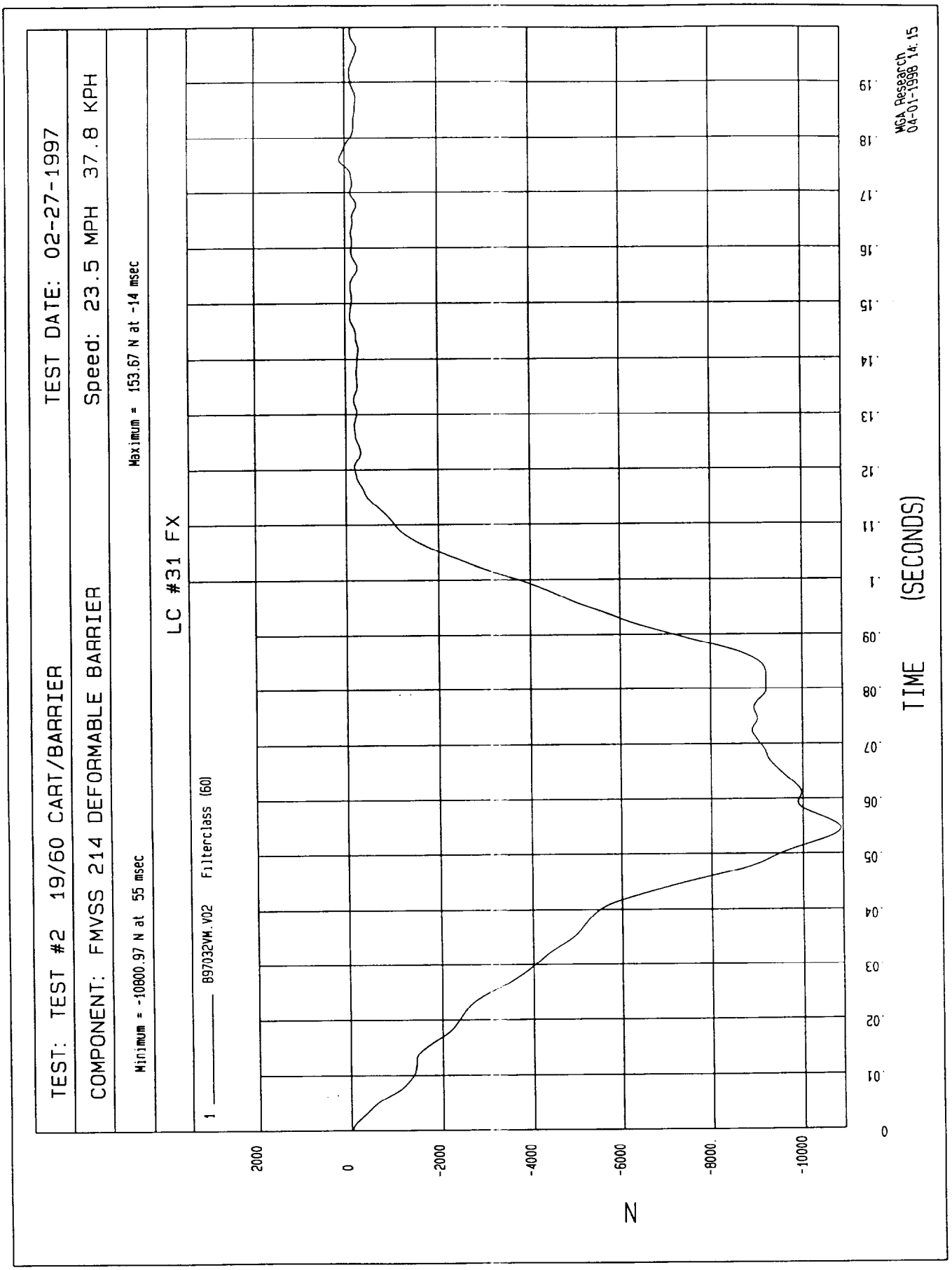
TIME (SECONDS)
MGA Research
06-17-1998 11:22


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -10800.97 N at 55 msec
Maximum = 153.67 N at -14 msec
LC #31 FX
1 B97032VM.V02 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
01
02
03
04
05
06
07
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09
1
11
12
13
14
15
16
17
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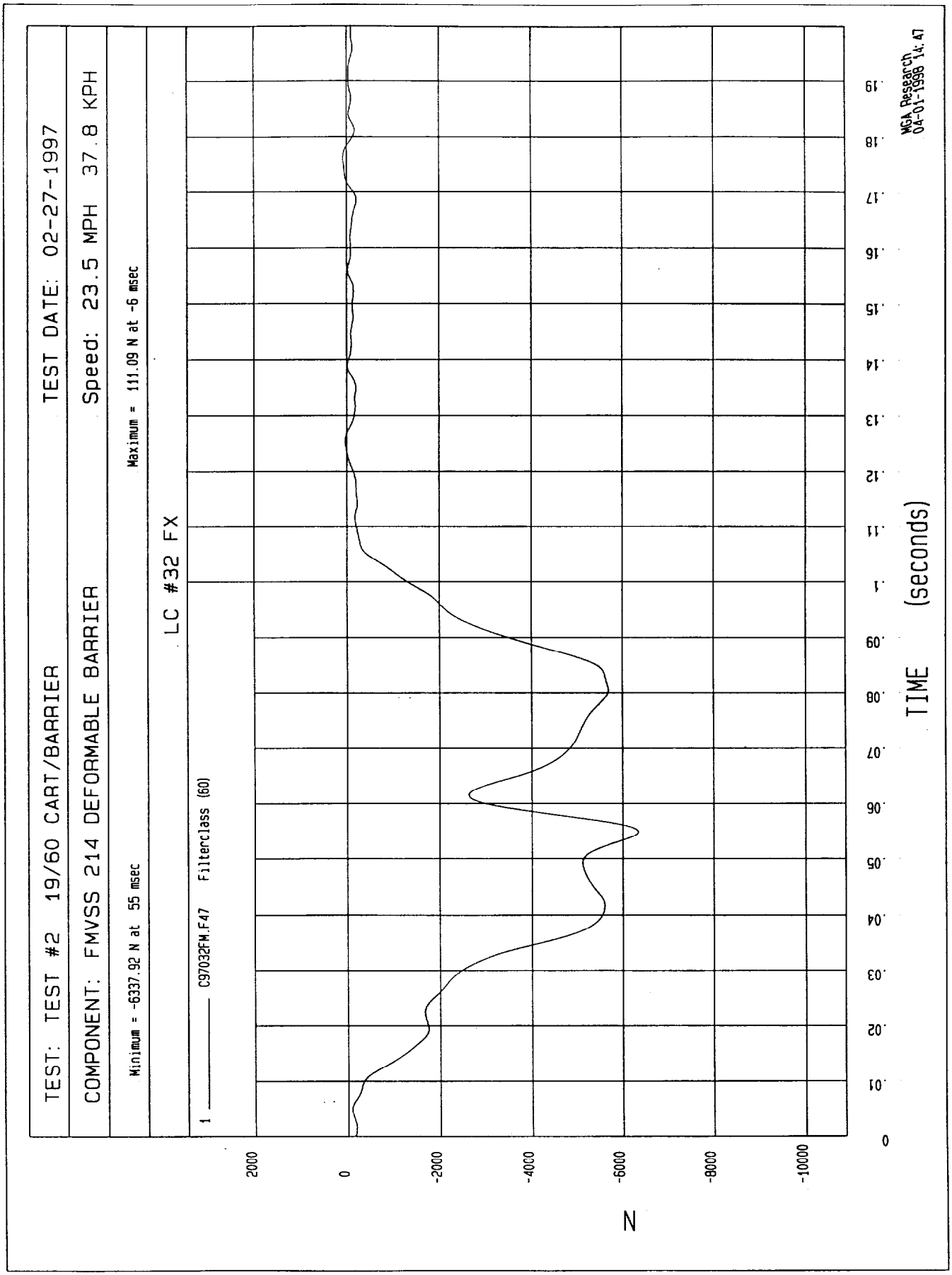
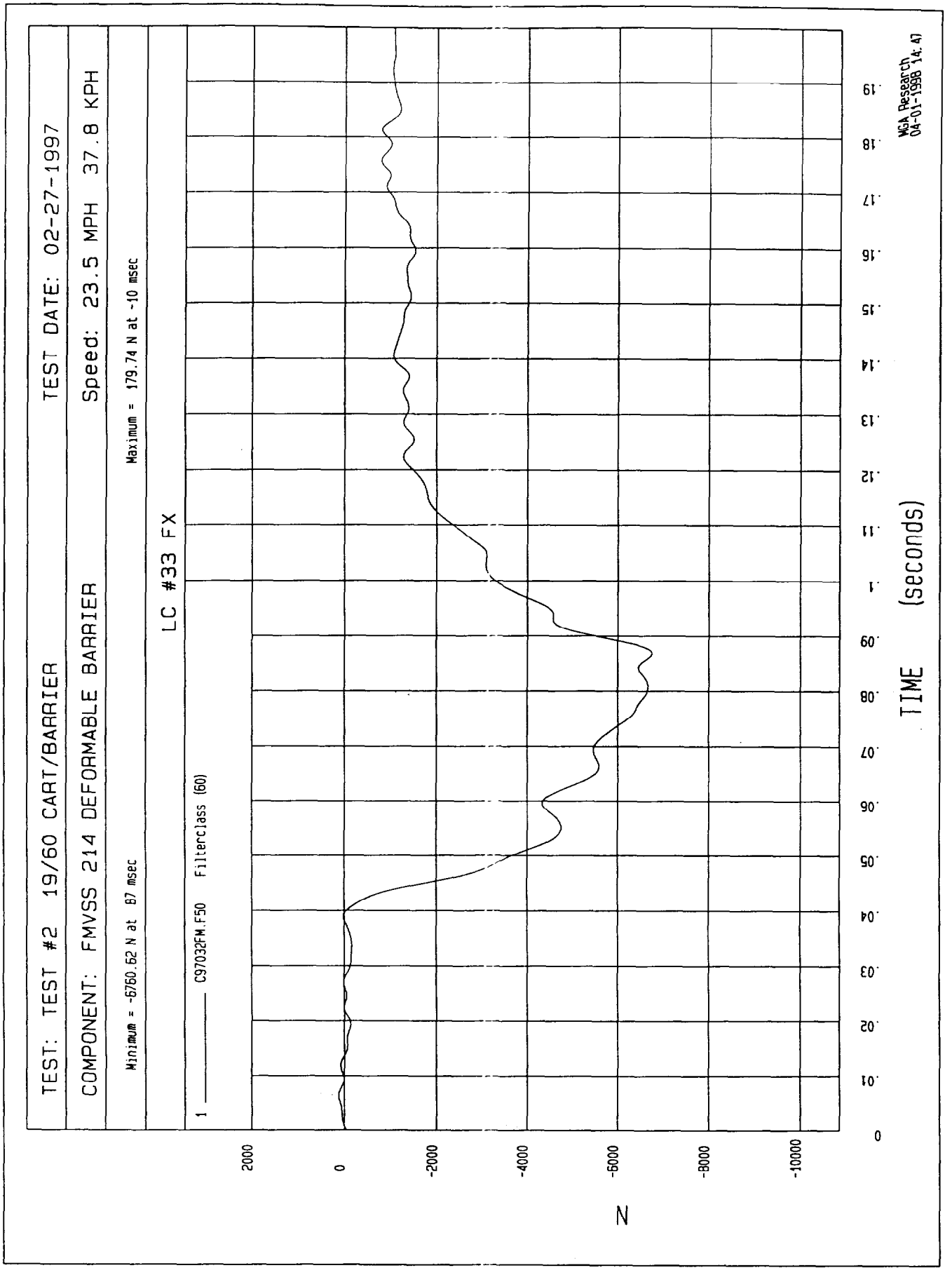
19
TIME (SECONDS)
MGA Research
04-01-1998 14:15


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6337.92 N at 55 msec
Maximum = 111.09 N at -6 msec
LC #32 FX
1 C97032FM.F47 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (seconds)
MGA Research
04-01-1998 14:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6760.62 N at 87 msec
Maximum = 179.74 N at -10 msec
LC #33 FX
1 _____ C97032FM.F50 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
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15
16
17
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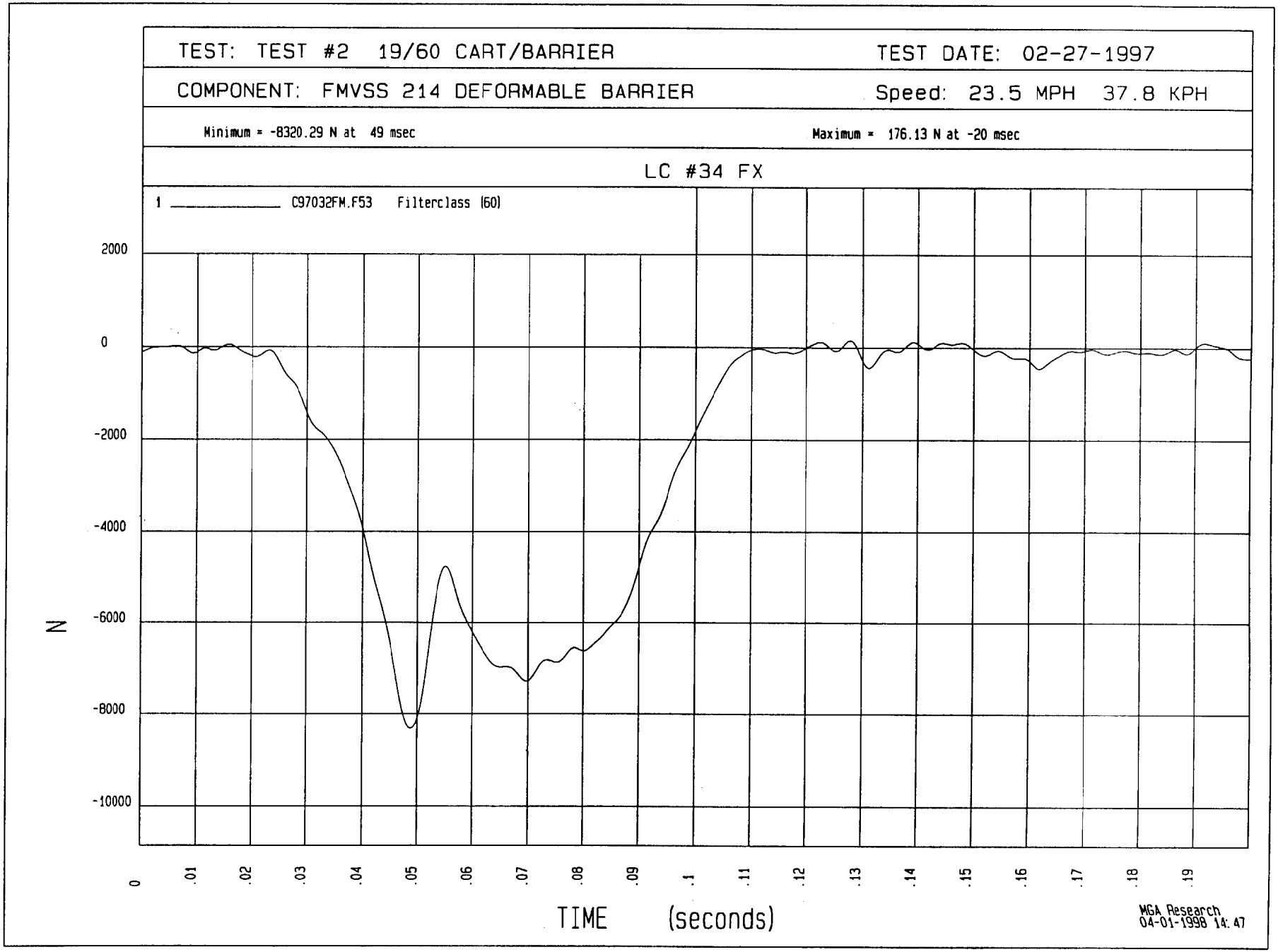
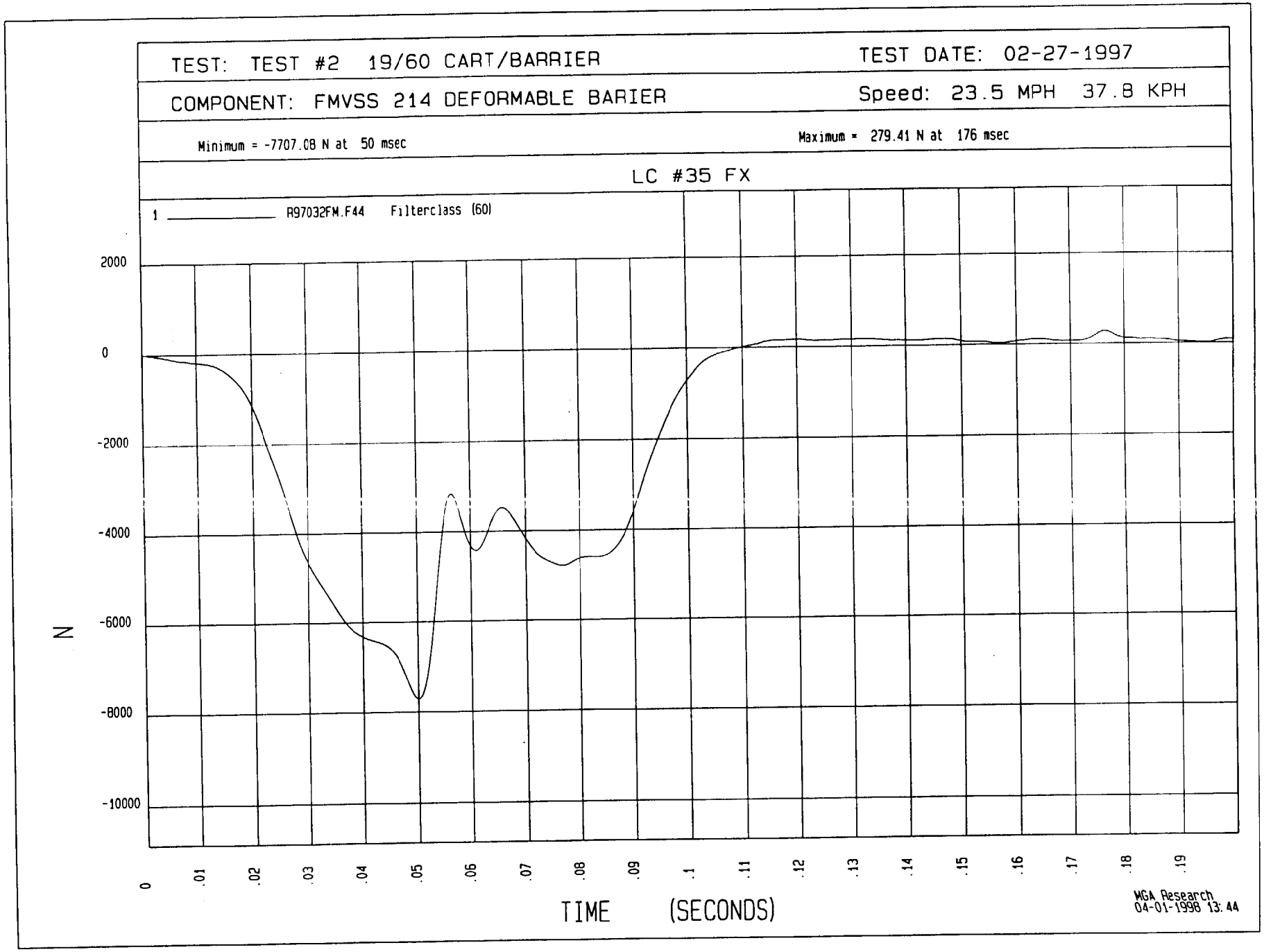
19
TIME (seconds)
MGA Research
04-01-1998 14:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8320.29 N at 49 msec
Maximum = 176.13 N at -20 msec
LC #34 FX
1 C97032FM.F53 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1998 14:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7707.08 N at 50 msec
Maximum = 279.41 N at 176 msec
LC #35 FX
1 R97032FM.F44 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
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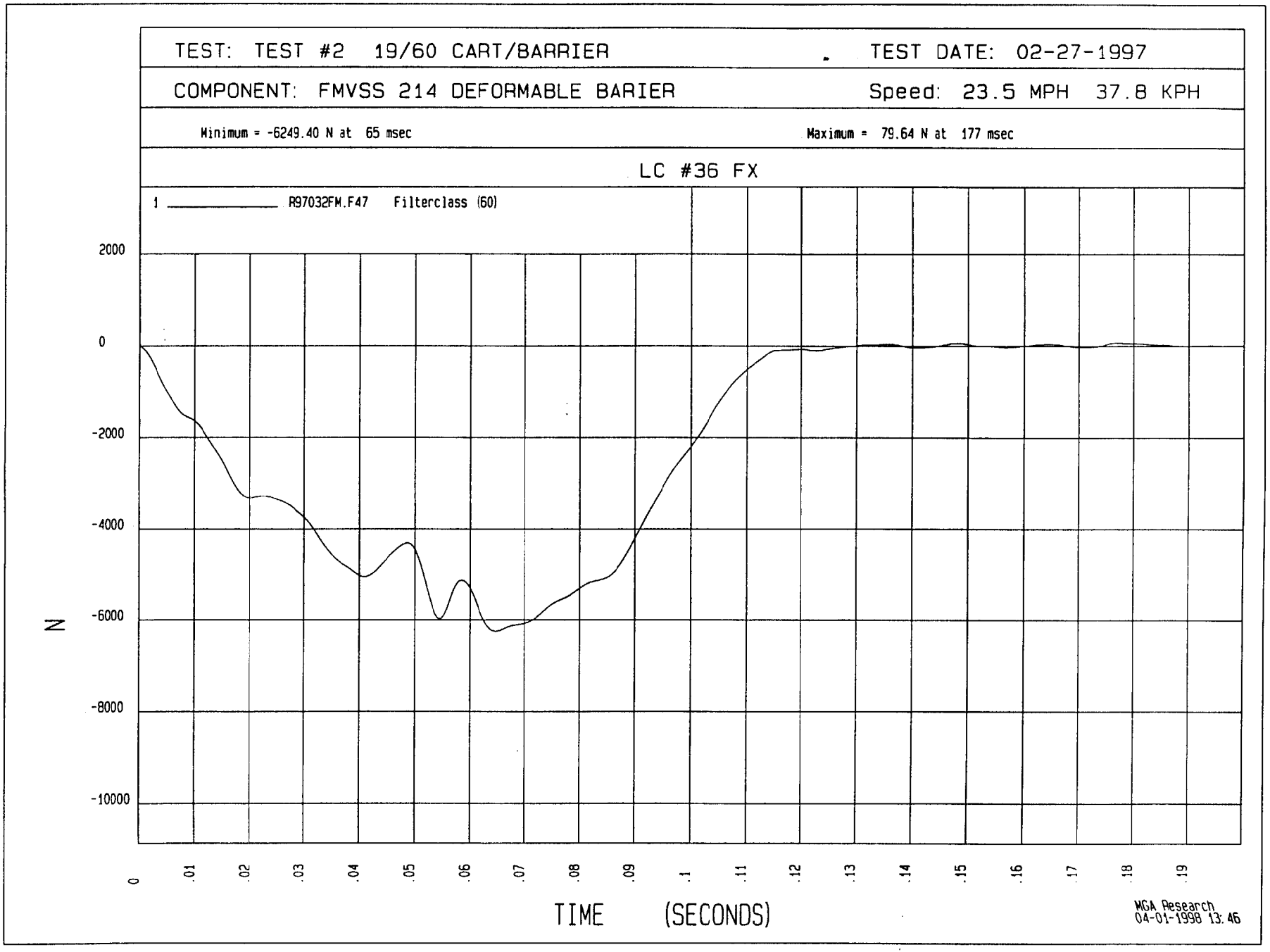
TIME (SECONDS)
MGA Research
04-01-1998 13:44


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6249.40 N at 65 msec
Maximum = 79.64 N at 177 msec
LC #36 FX
1 R97032FM.F47 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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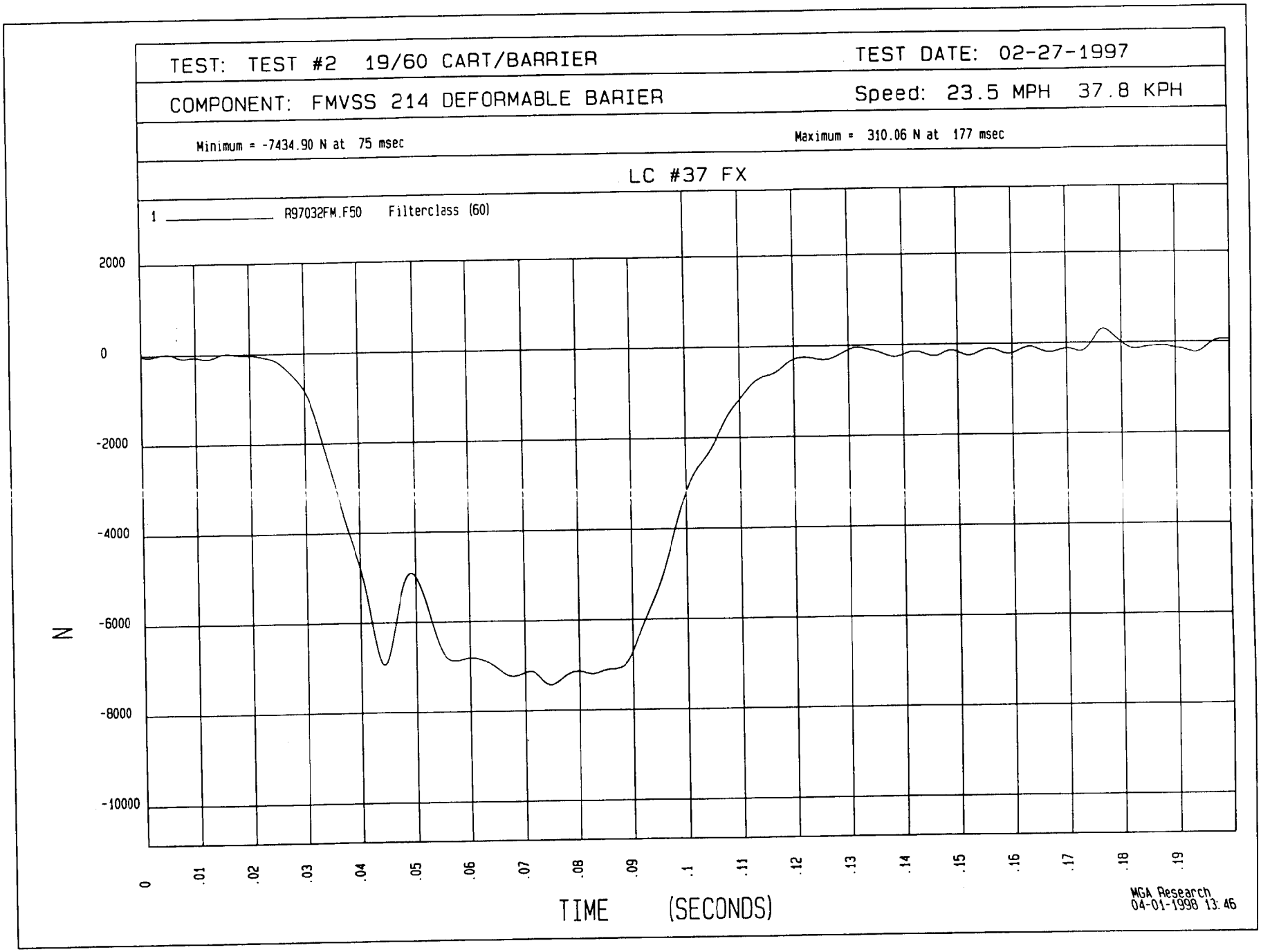
TIME (SECONDS)
MGA Research
04-01-1998 13:46


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7434.90 N at 75 msec
Maximum = 310.06 N at 177 msec
LC #37 FX
1 R97032FM.F50 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
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.08
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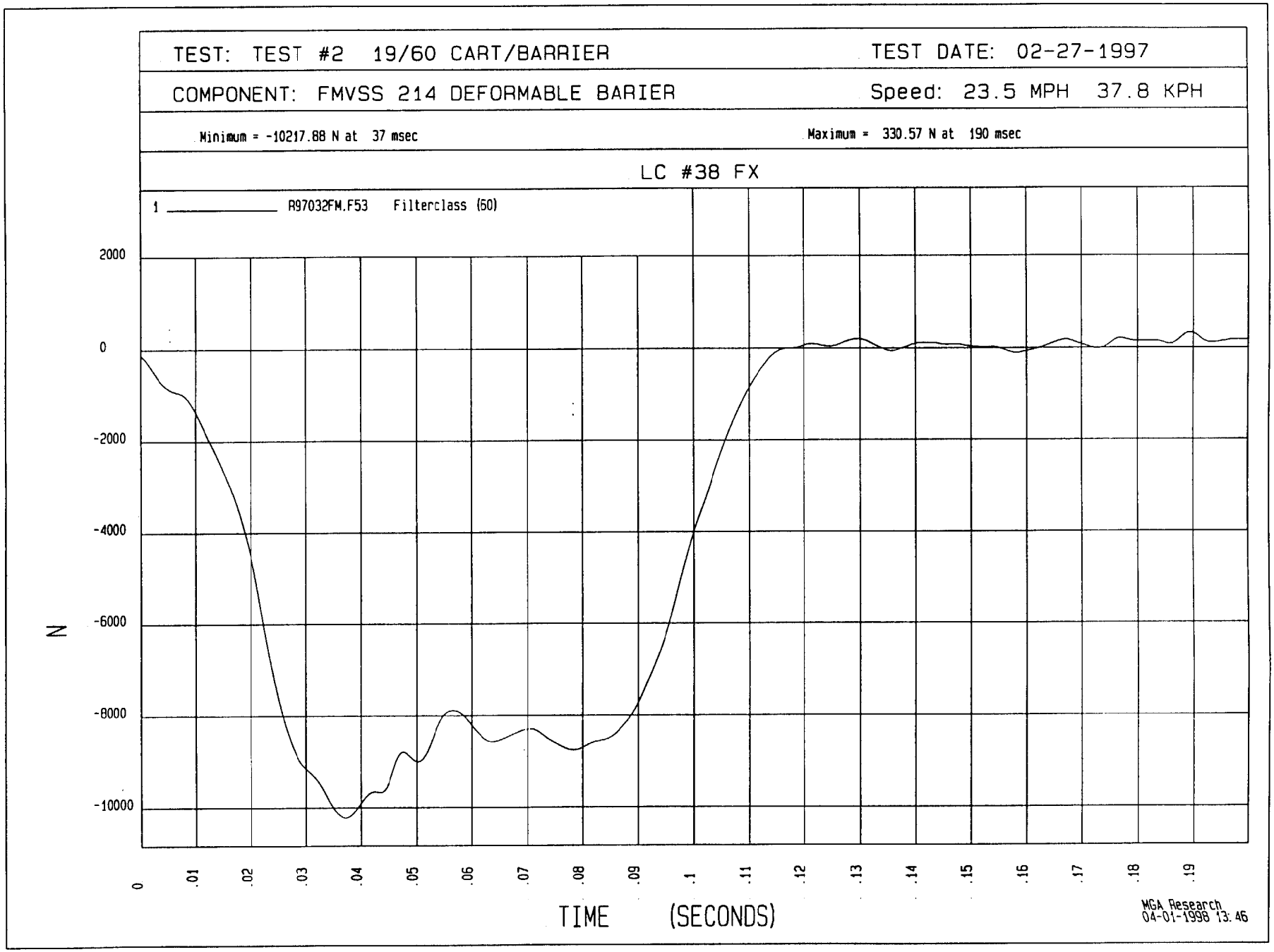
TIME (SECONDS)
MGA Research
04-01-1998 13:46


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -10217.88 N at 37 msec
Maximum = 330.57 N at 190 msec
LC #38 FX
1 R97032FM.F53 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
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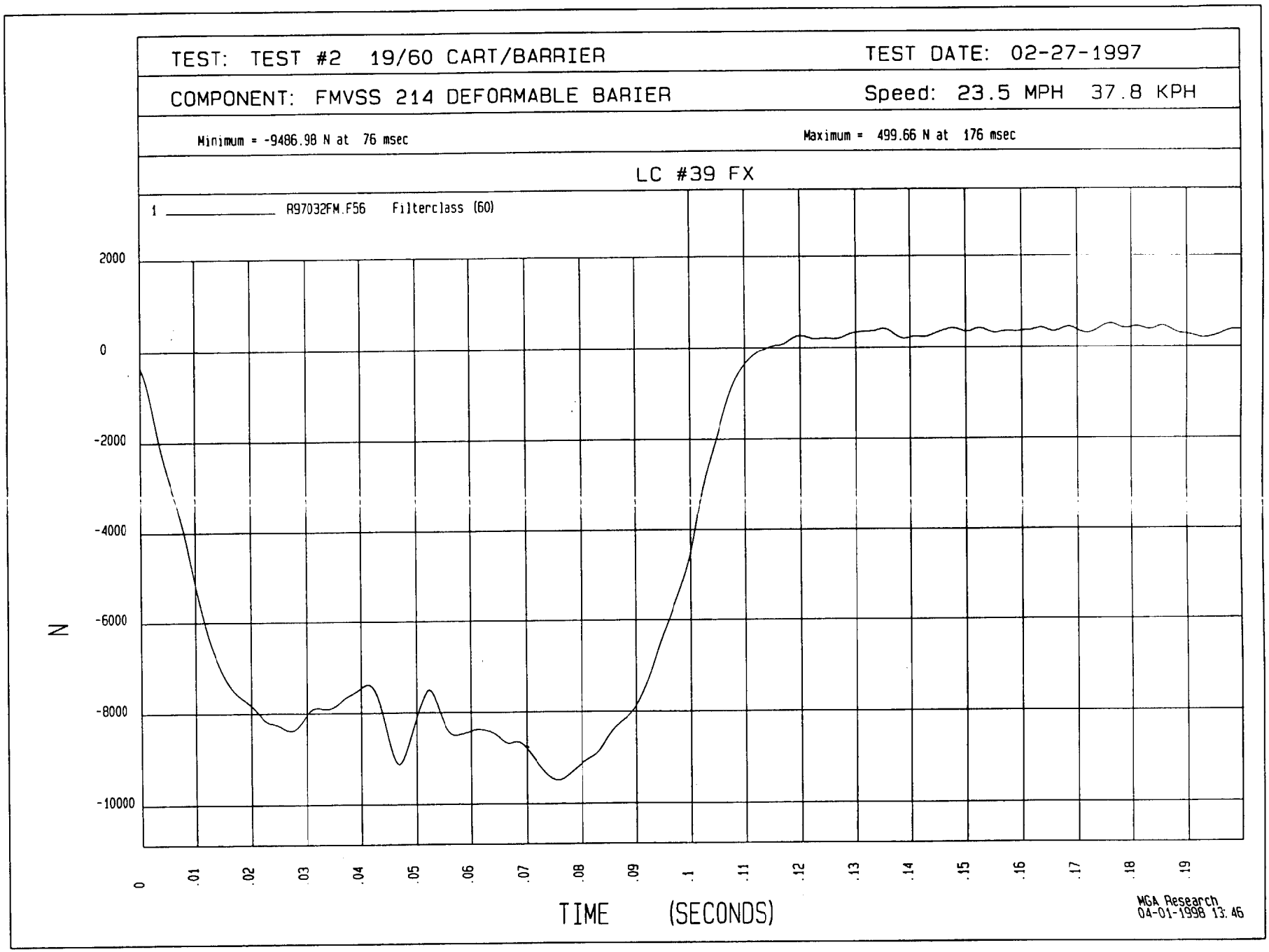
TIME (SECONDS)
MGA Research
04-01-1998 13:46


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -9486.98 N at 76 msec
Maximum = 499.66 N at 176 msec
LC #39 FX
1 R97032FM.F56 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
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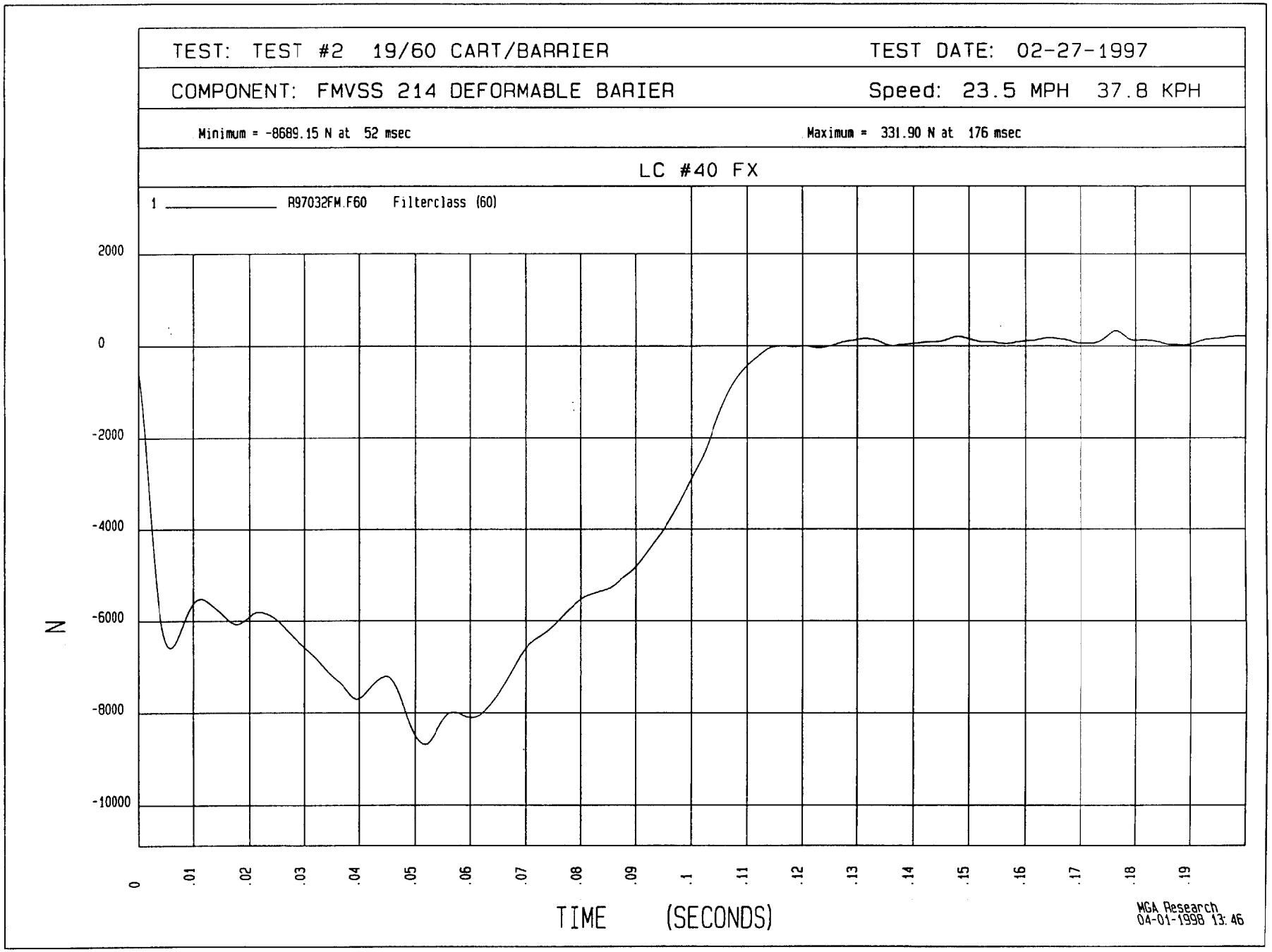
TIME (SECONDS)
MGA Research
04-01-1998 13:46


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8689.15 N at 52 msec
Maximum = 331.90 N at 176 msec
LC #40 FX
1 R97032FM.F60 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
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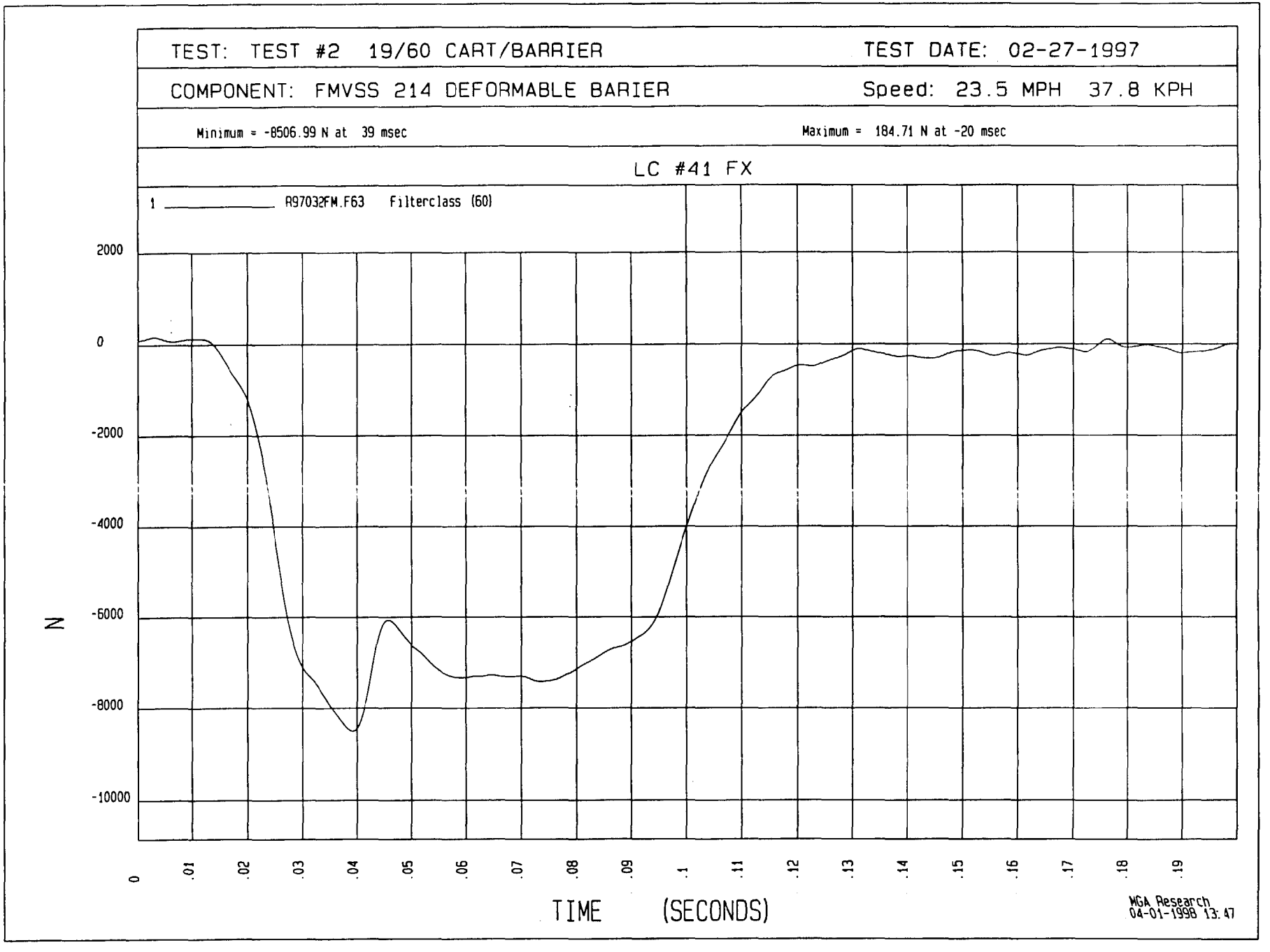
TIME (SECONDS)
MGA Research
04-01-1998 13:46


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8506.99 N at 39 msec
Maximum = 184.71 N at -20 msec
LC #41 FX
1 R97032FM.F63 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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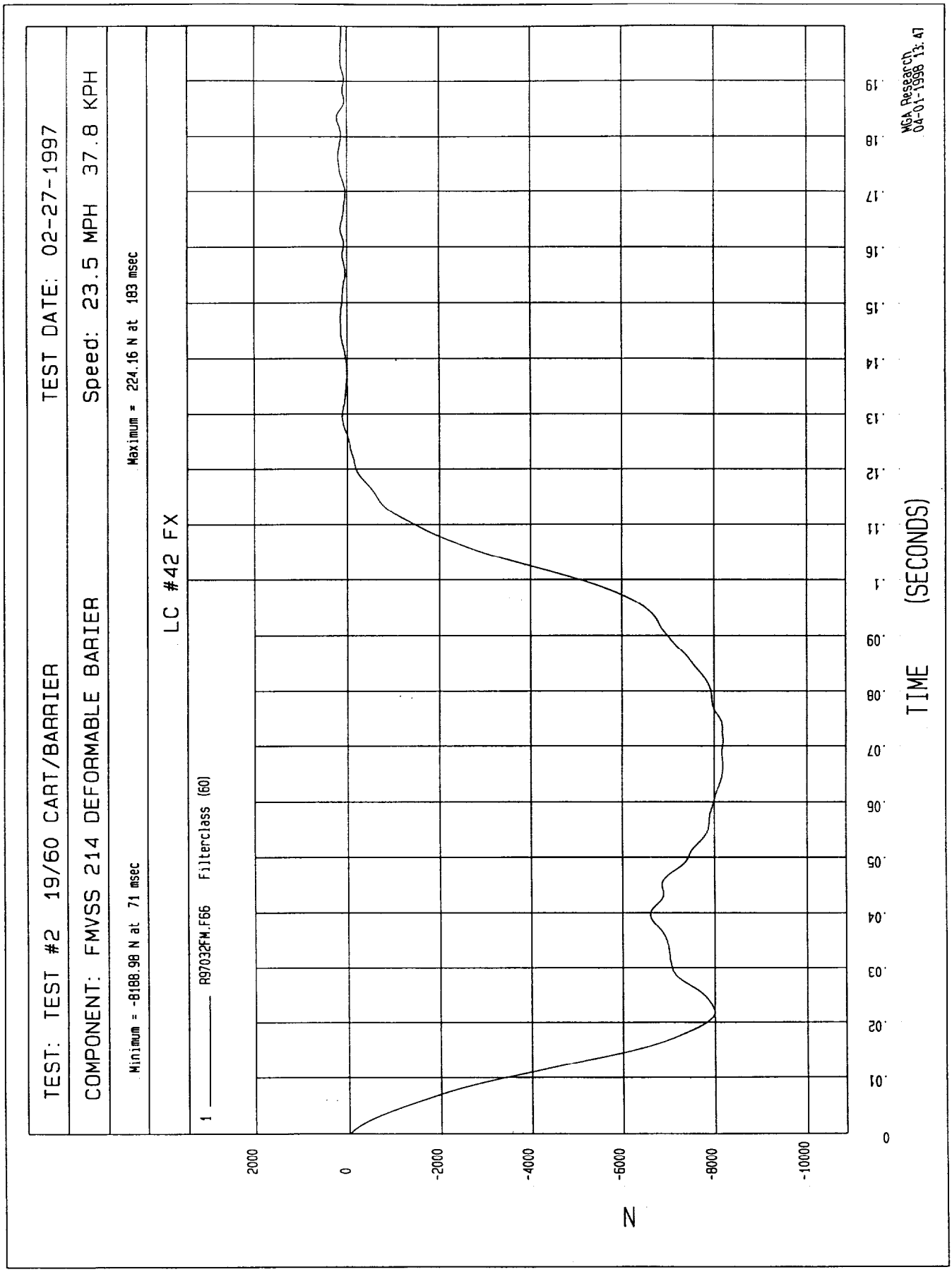
TIME (SECONDS)
MGA Research
04-01-1998 13:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8188.98 N at 71 msec
Maximum = 224.16 N at 183 msec
LC #42 FX
1 R97032FM.F66 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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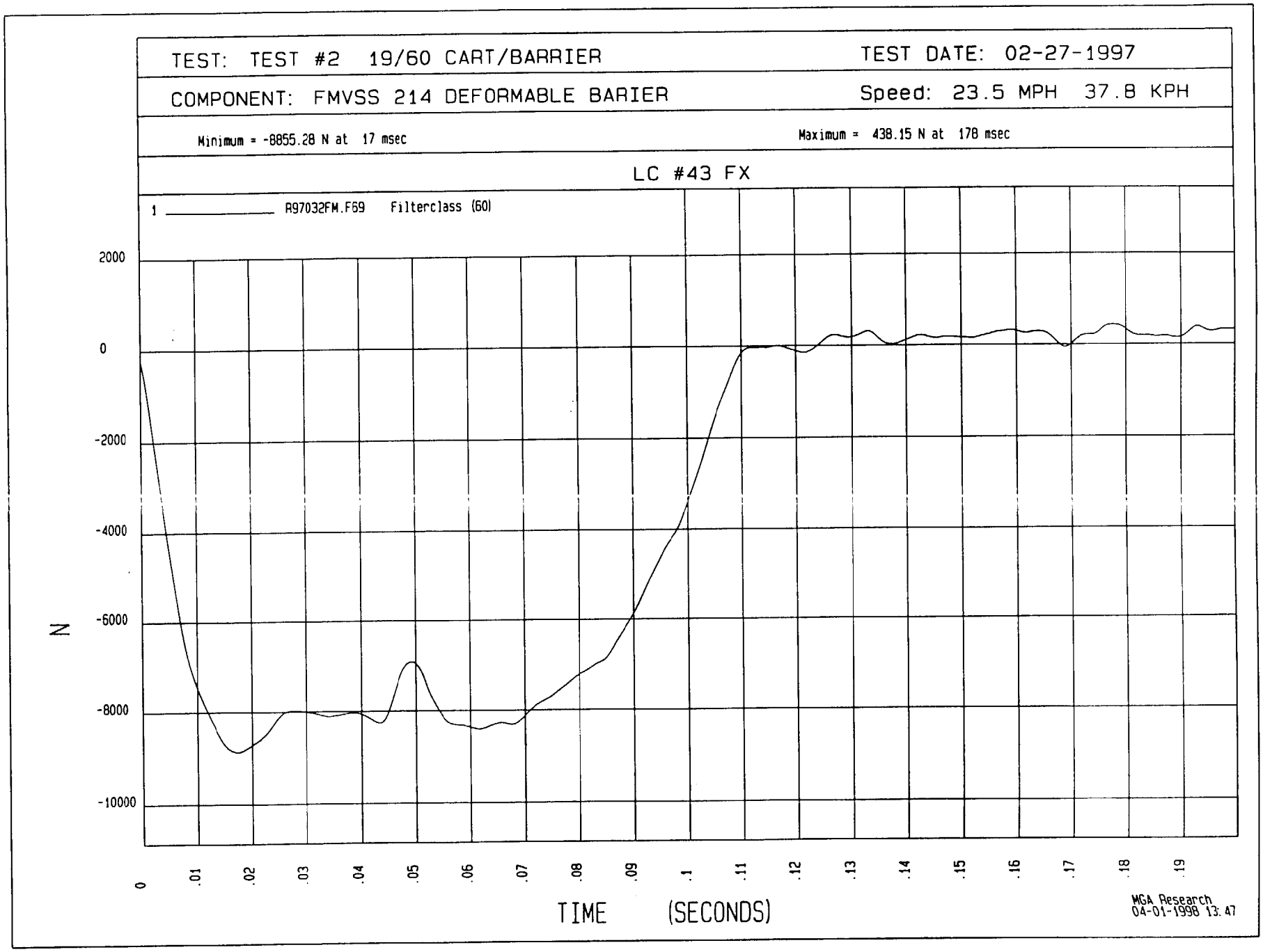
TIME (SECONDS)
MGA Research
04-01-1998 13:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8855.28 N at 17 msec
Maximum = 438.15 N at 178 msec
LC #43 FX
1 R97032FM.F69 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
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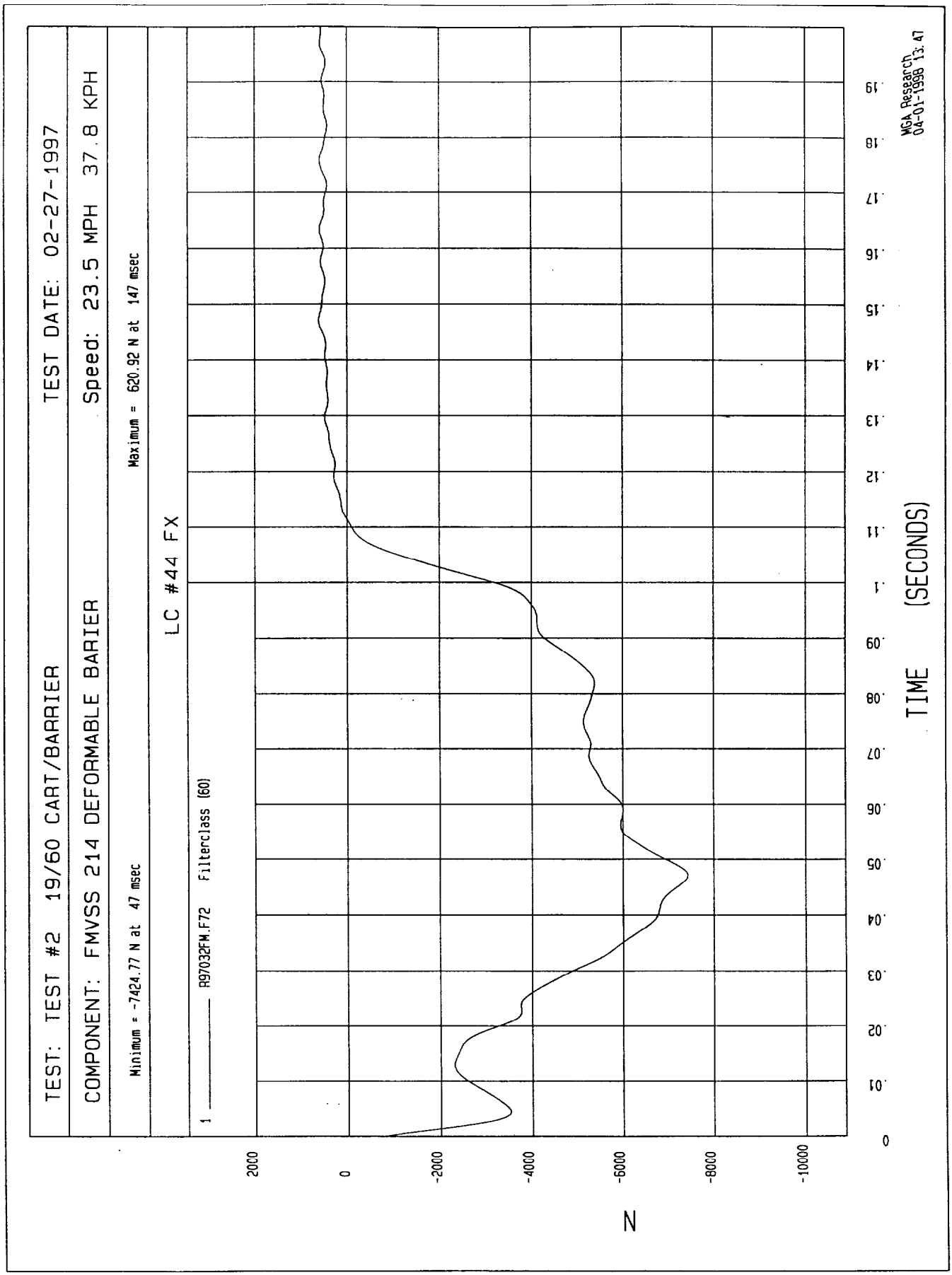
TIME (SECONDS)
MGA Research
04-01-1998 13:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7424.77 N at 47 msec
Maximum = 620.92 N at 147 msec
LC #44 FX
1 R97032FM.F72 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
01
02
03
04
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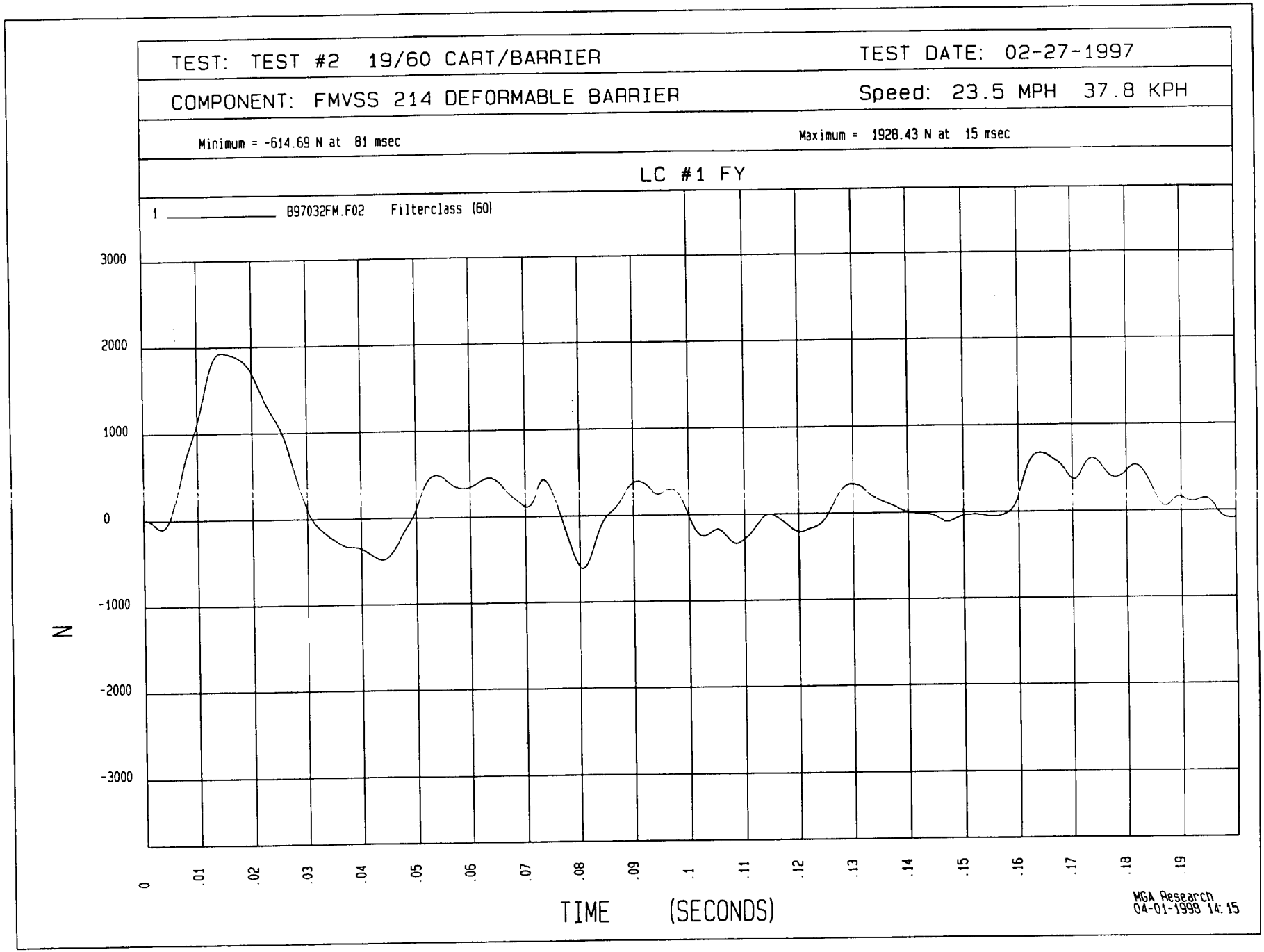
TIME (SECONDS)
MGA Research
04-01-1998 13:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -614.69 N at 81 msec
Maximum = 1928.43 N at 15 msec
LC #1 FY
1 B97032FM.F02 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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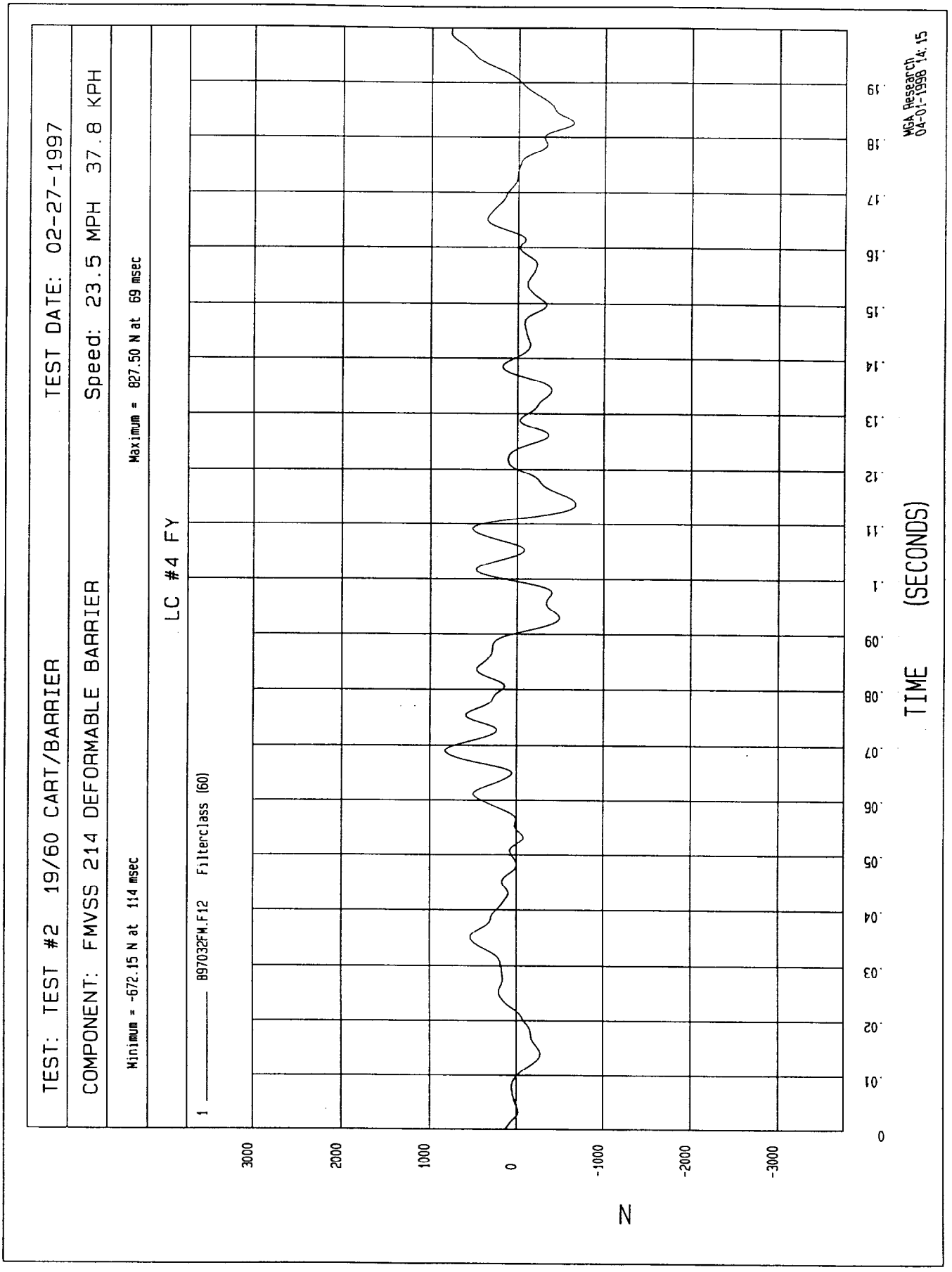
TIME (SECONDS)
MGA Research
04-01-1998 14:15


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -672.15 N at 114 msec
Maximum = 827.50 N at 69 msec
LC #4 FY
1 B97032FM.F12 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
01
02
03
04
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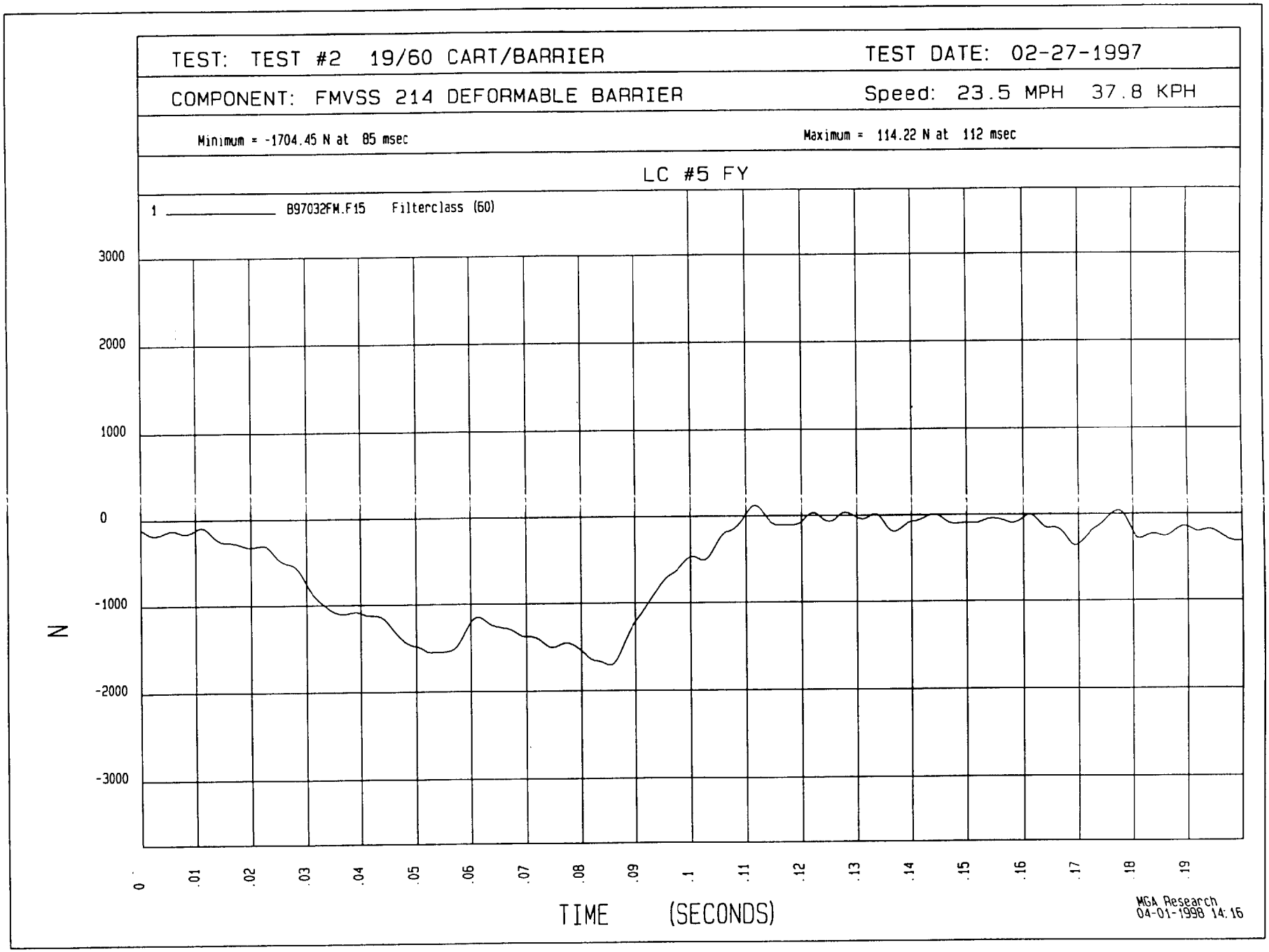
TIME (SECONDS)
MGA Research
04-01-1998 14:15


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1704.45 N at 85 msec
Maximum = 114.22 N at 112 msec
LC #5 FY
1 B97032FM.F15 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
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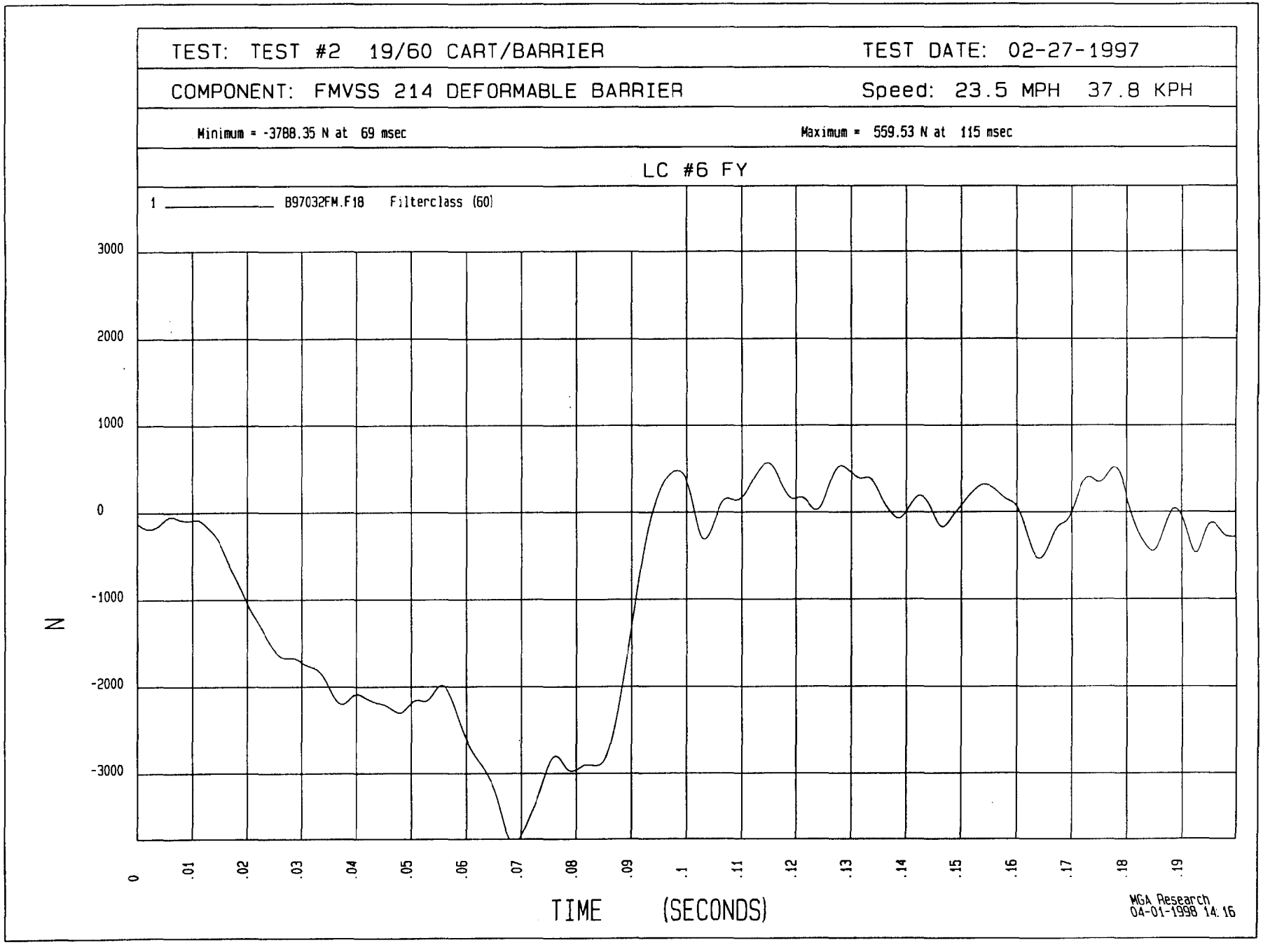
TIME (SECONDS)
MGA Research
04-01-1998 14:16


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -3788.35 N at 69 msec
Maximum = 559.53 N at 115 msec
LC #6 FY
1 B97032FM.F18 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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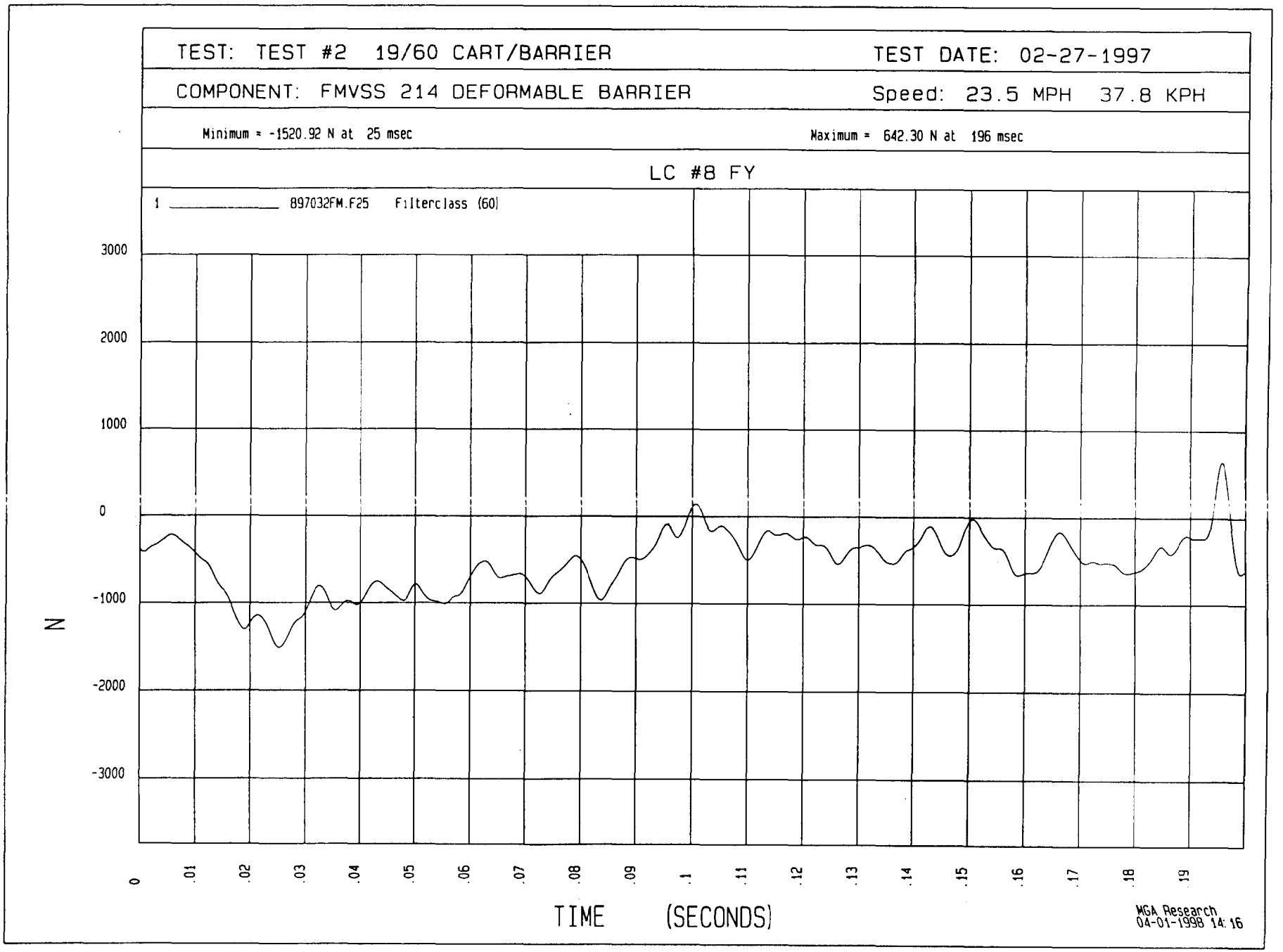
TIME (SECONDS)
MGA Research
04-01-1998 14:16


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1520.92 N at 25 msec
Maximum = 642.30 N at 196 msec
LC #8 FY
1 897032FM.F25 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
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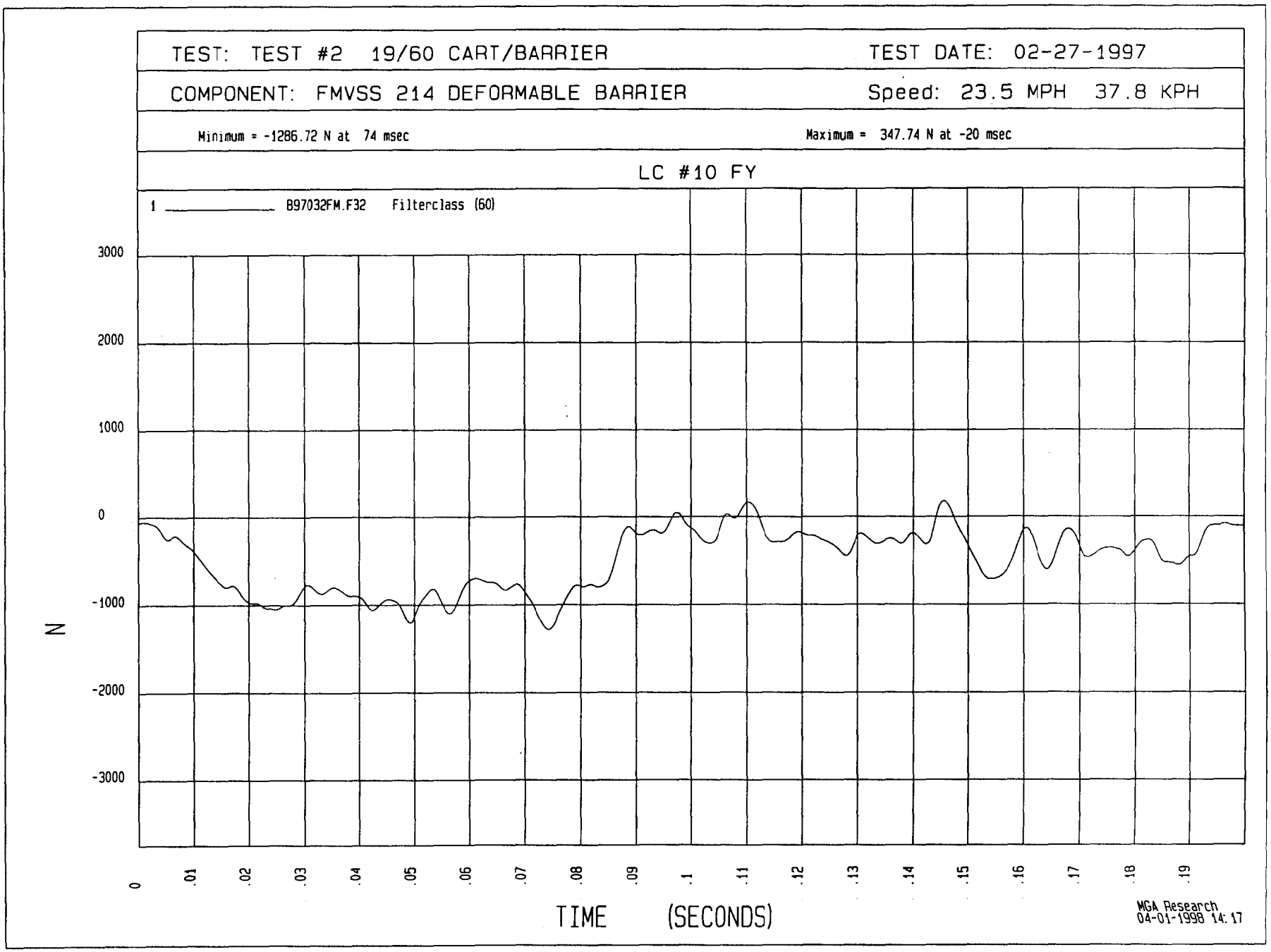
TIME (SECONDS)
MGA Research
04-01-1998 14:16


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1286.72 N at 74 msec
Maximum = 347.74 N at -20 msec
LC #10 FY
1 B97032FM.F32 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
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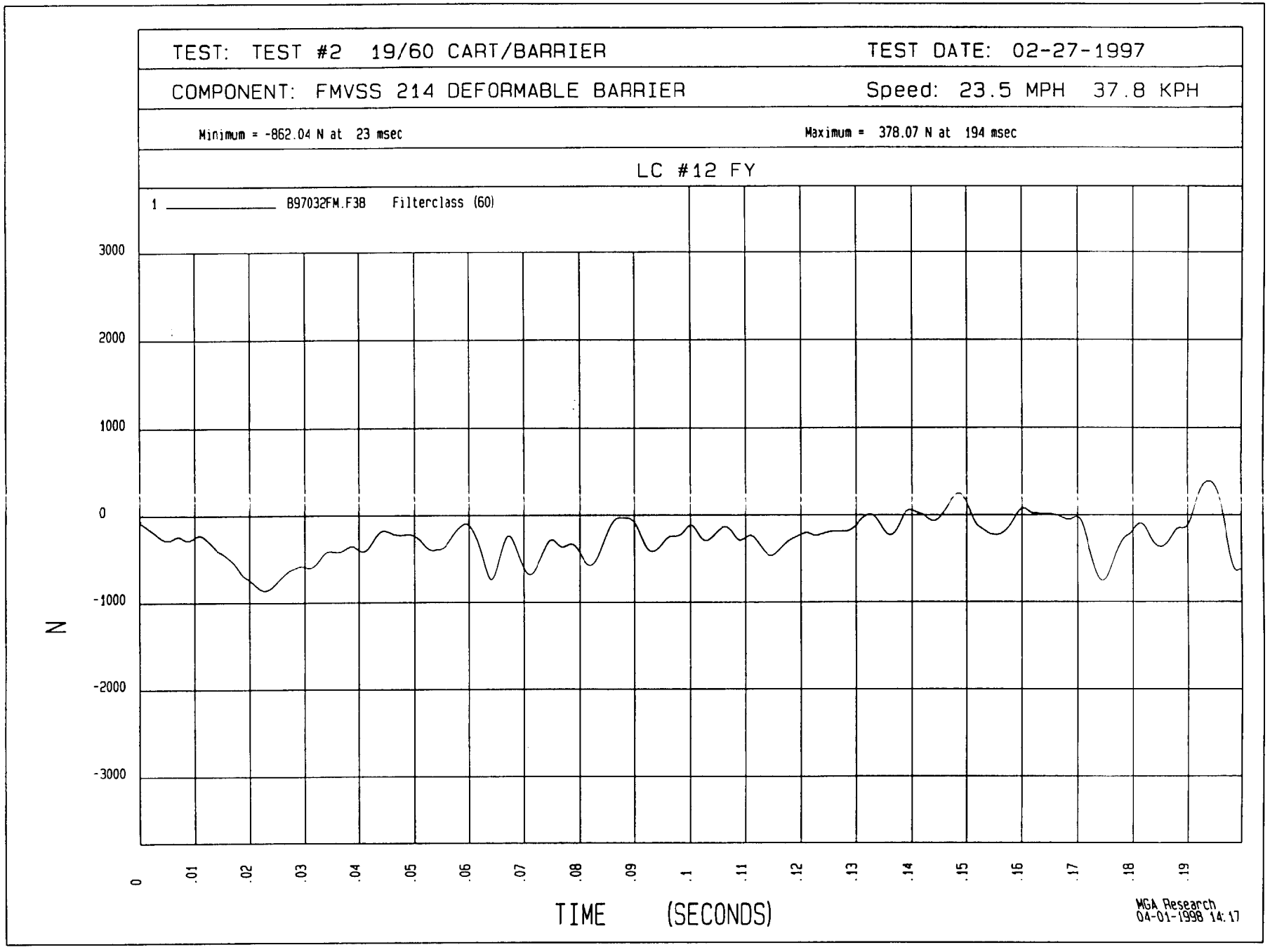
TIME (SECONDS)
MGA Research
04-01-1998 14:17


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -862.04 N at 23 msec
Maximum = 378.07 N at 194 msec
LC #12 FY
1 B97032FM.F38 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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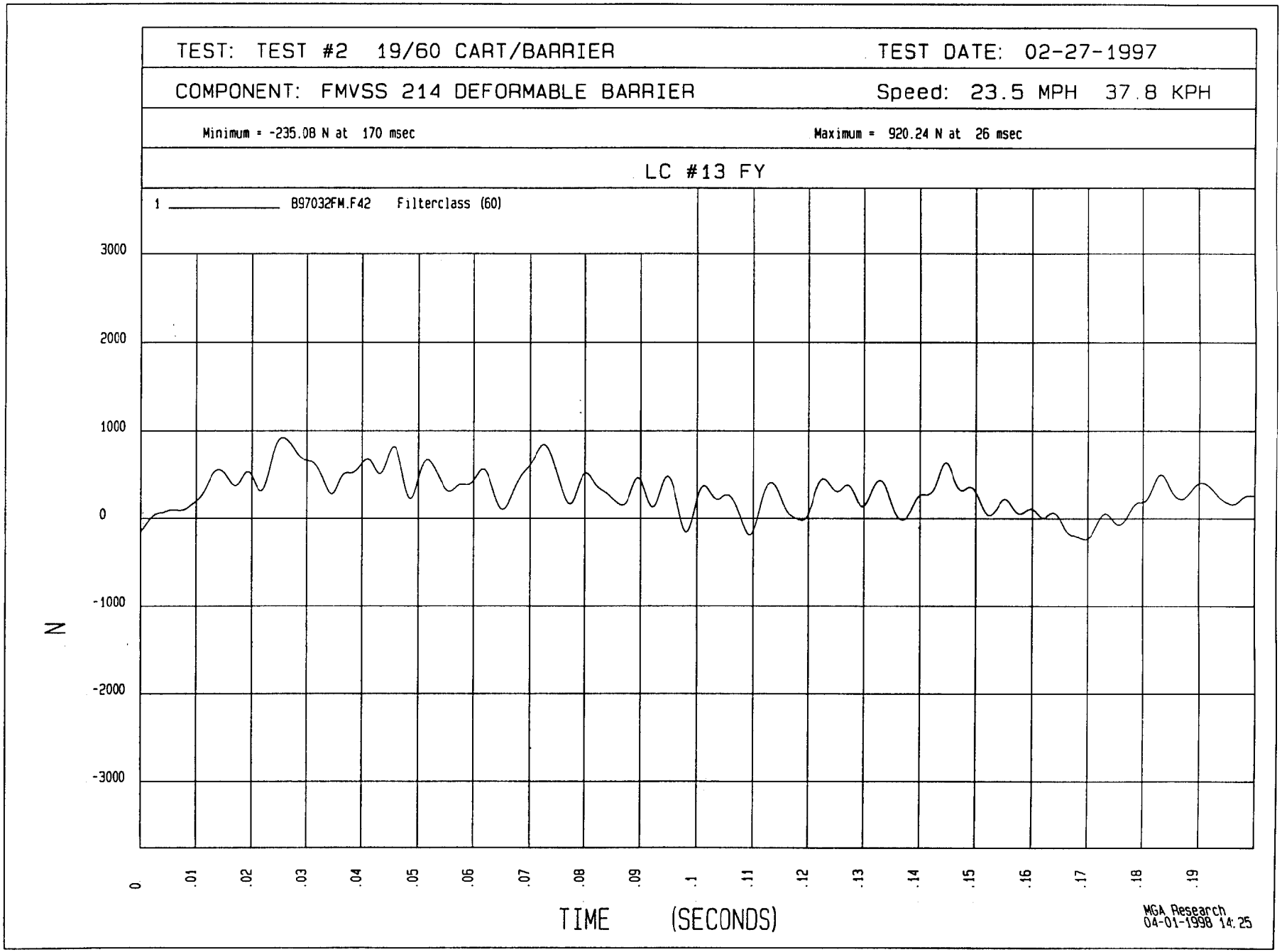
TIME (SECONDS)
MGA Research
04-01-1998 14:17


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -235.08 N at 170 msec
Maximum = 920.24 N at 26 msec
LC #13 FY
1 B97032FM.F42 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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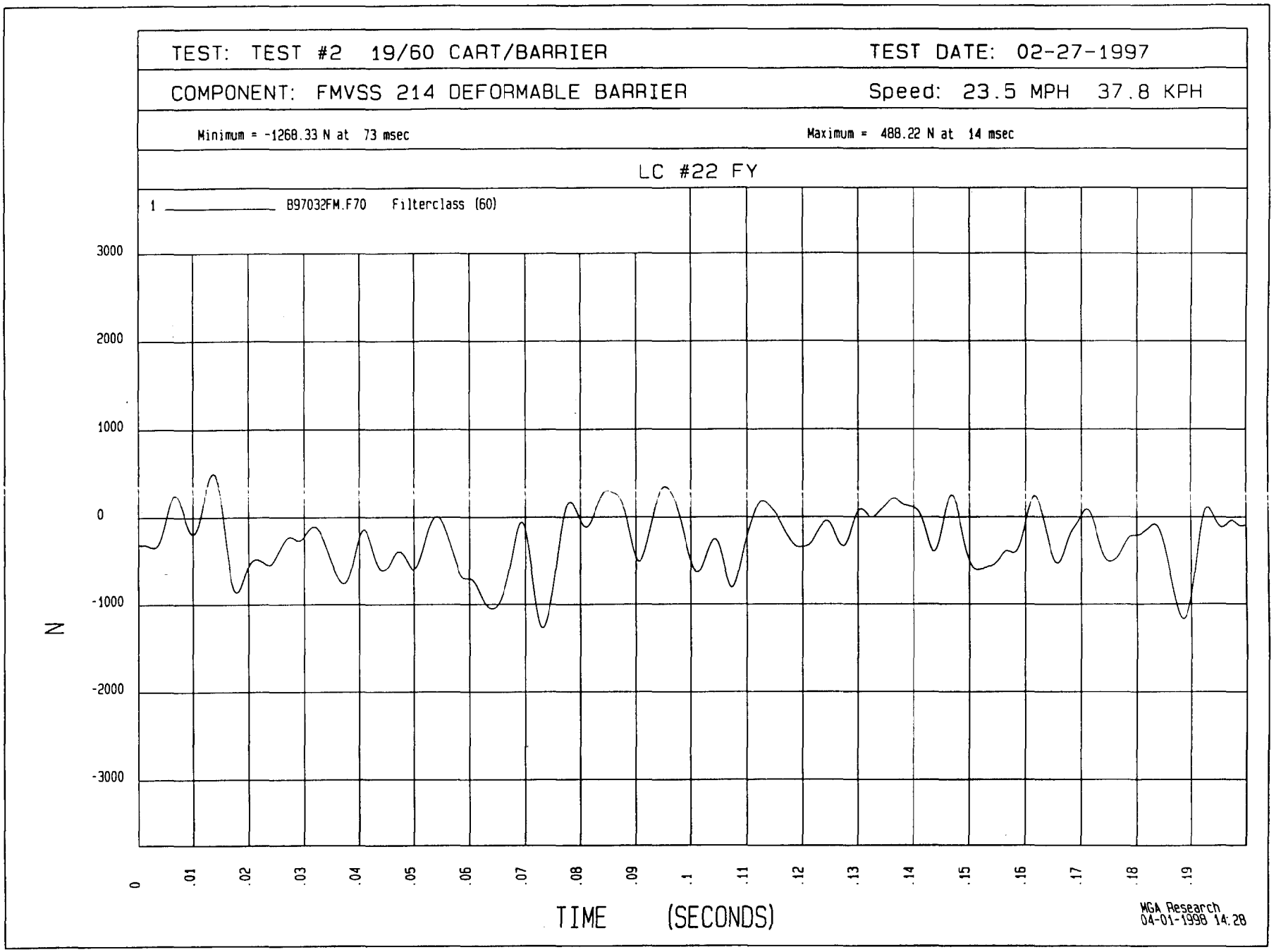
TIME (SECONDS)
MGA Research
04-01-1998 14:25


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1268.33 N at 73 msec
Maximum = 488.22 N at 14 msec
LC #22 FY
1 B97032FM.F70 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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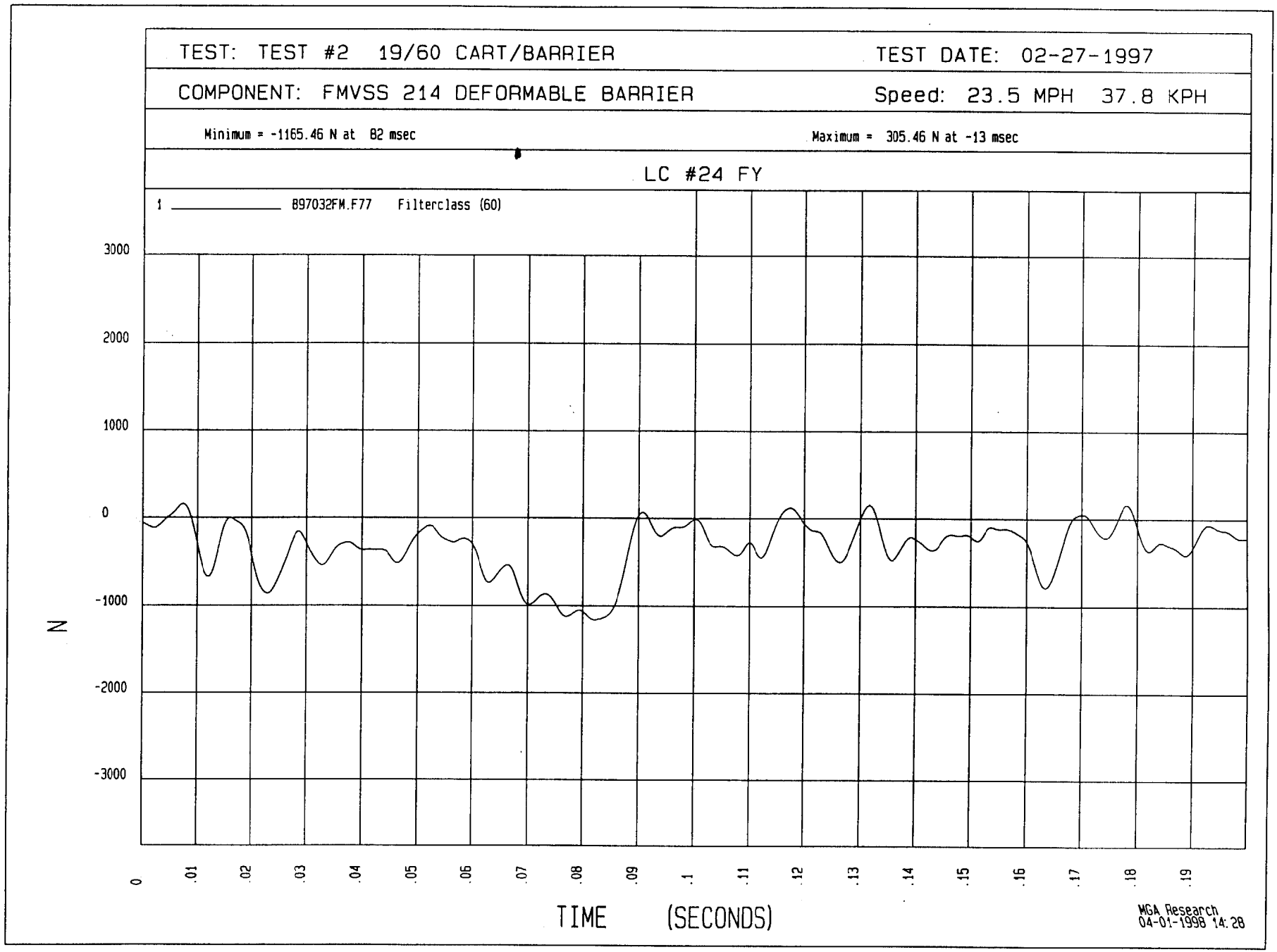
TIME (SECONDS)
MGA Research
04-01-1998 14:28


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1165.46 N at 82 msec
Maximum = 305.46 N at -13 msec
LC #24 FY
1 B97032FM.F77 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
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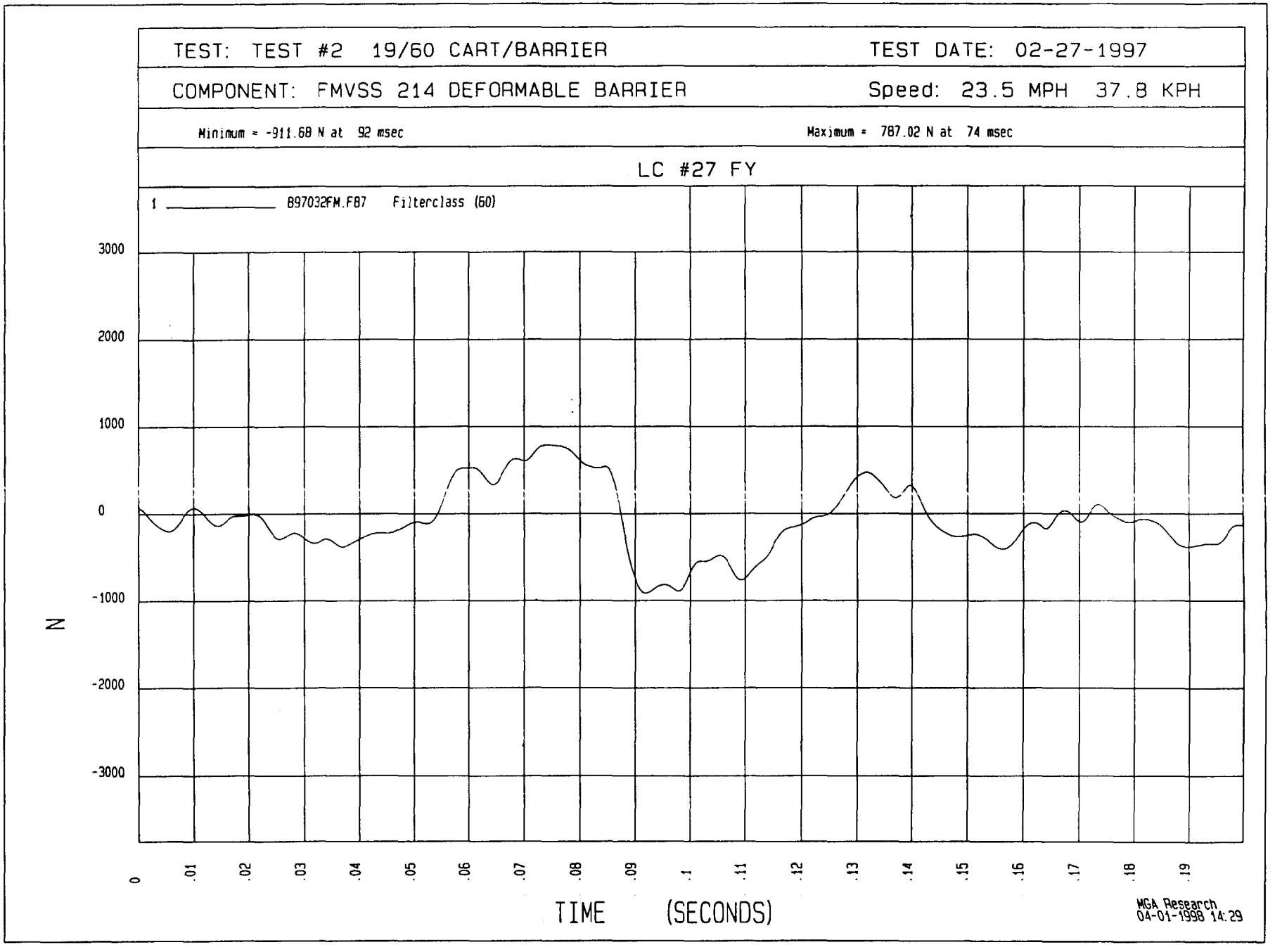
TIME (SECONDS)
MGA Research
04-01-1998 14:28


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -911.68 N at 92 msec
Maximum = 787.02 N at 74 msec
LC #27 FY
1 B97032FM.F87 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
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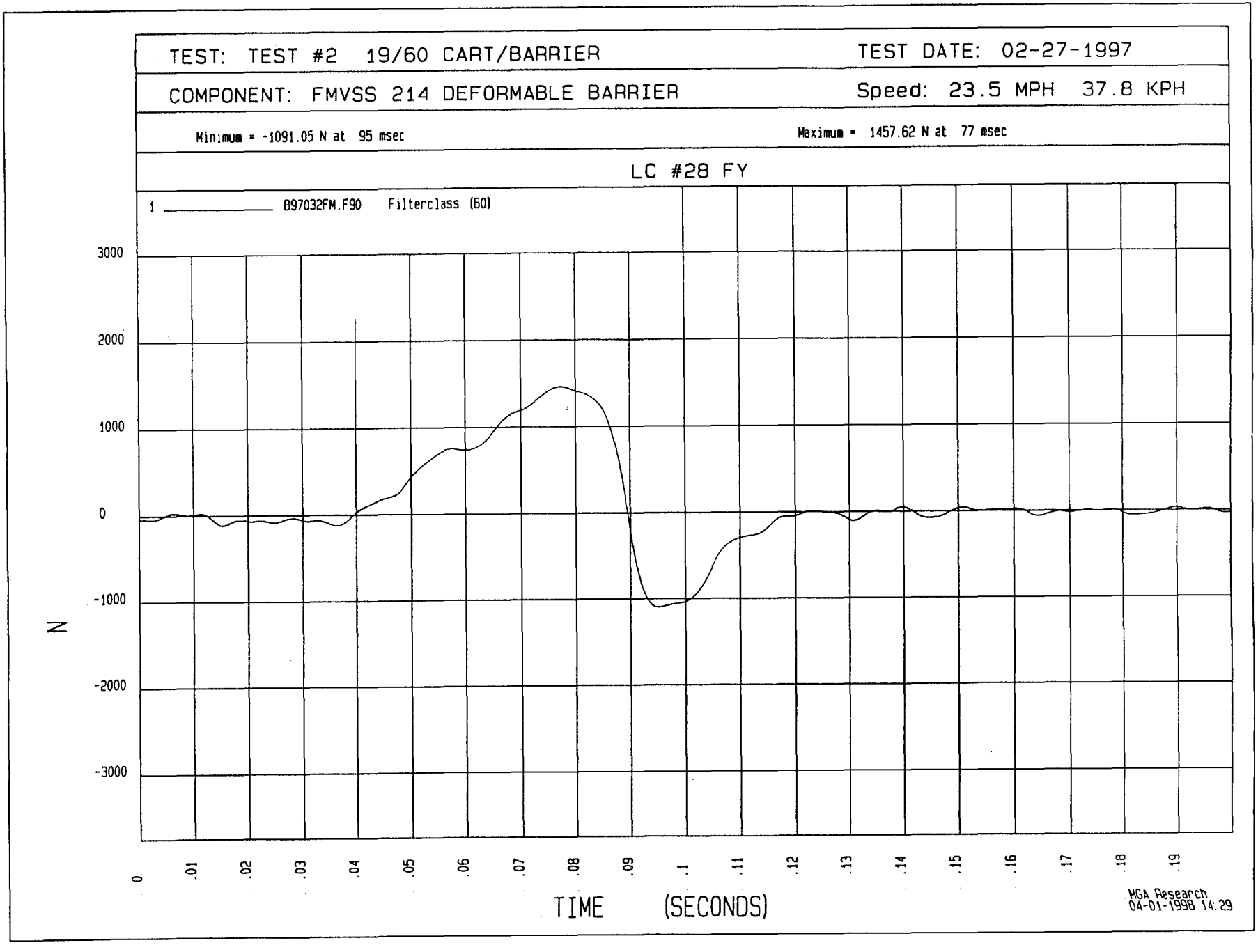
TIME (SECONDS)
MGA Research
04-01-1998 14:29


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1091.05 N at 95 msec
Maximum = 1457.62 N at 77 msec
LC #28 FY
1 B97032FM.F90 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
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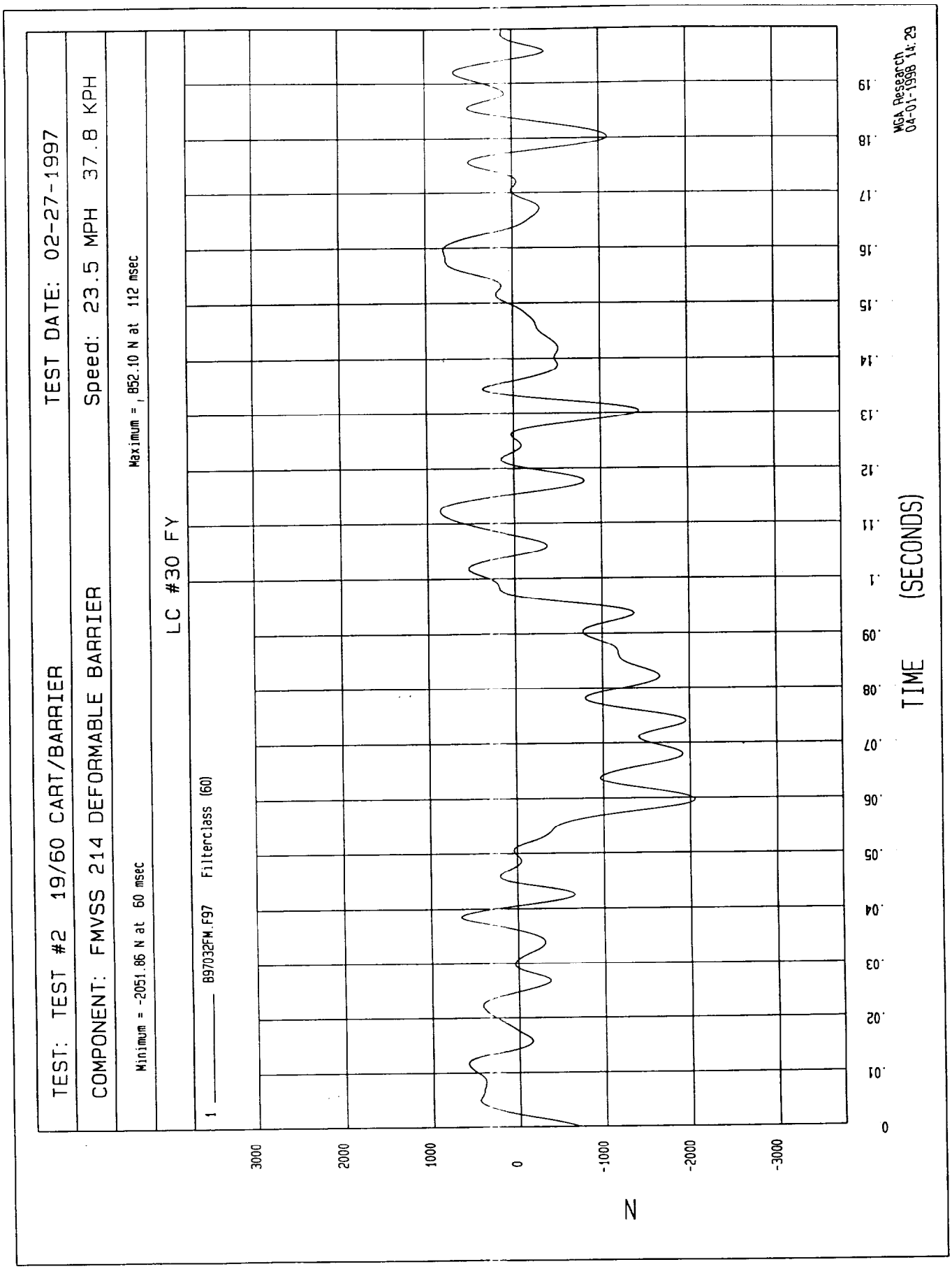
TIME (SECONDS)
MGA Research
04-01-1998 14:29


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2051.86 N at 60 msec
Maximum = 852.10 N at 112 msec
LC #30 FY
1 B97032FM.F97 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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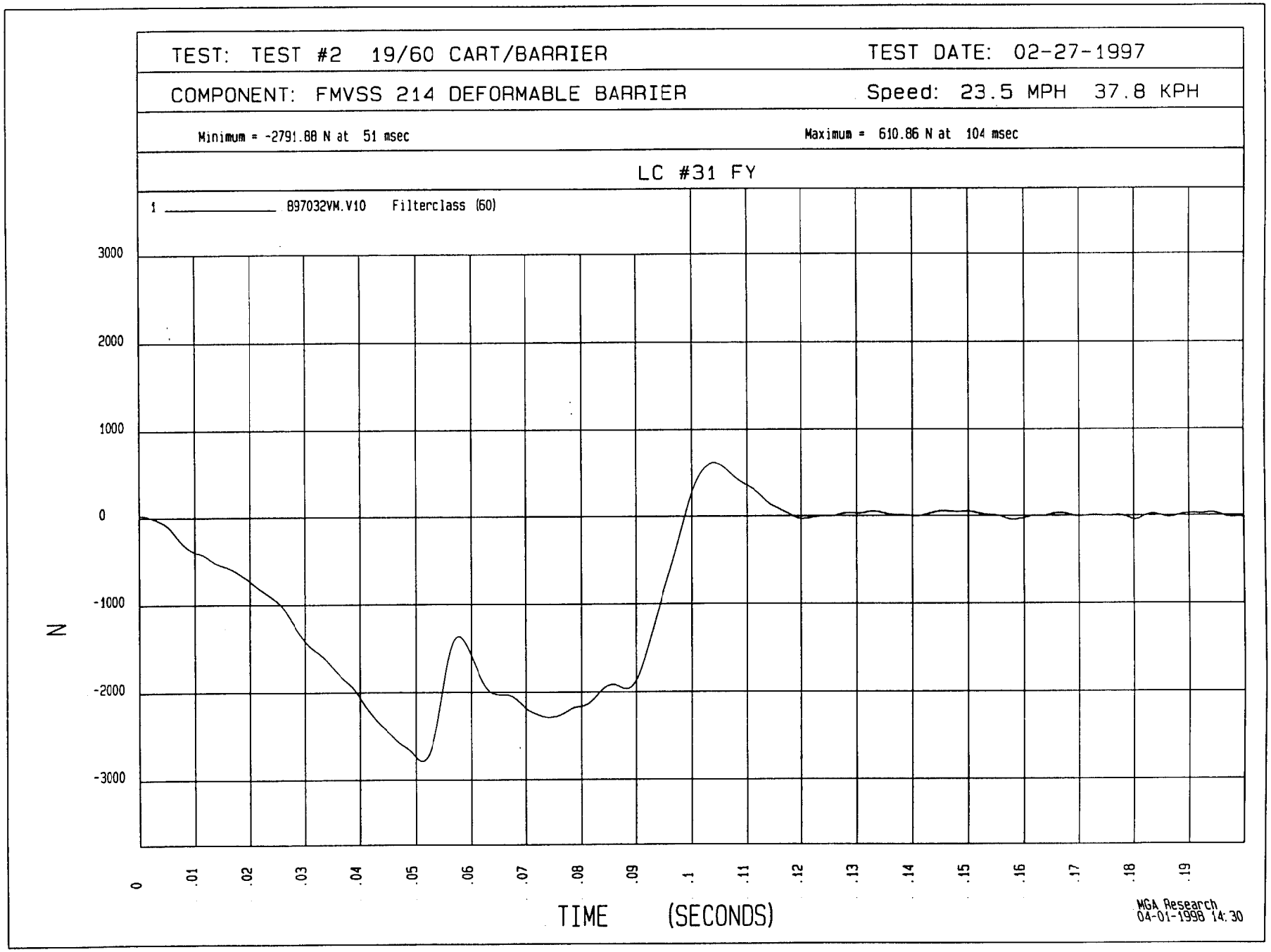
TIME (SECONDS)
MGA Research
04-01-1998 14:29


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2791.88 N at 51 msec
Maximum = 610.86 N at 104 msec
LC #31 FY
1 B97032VM.V10 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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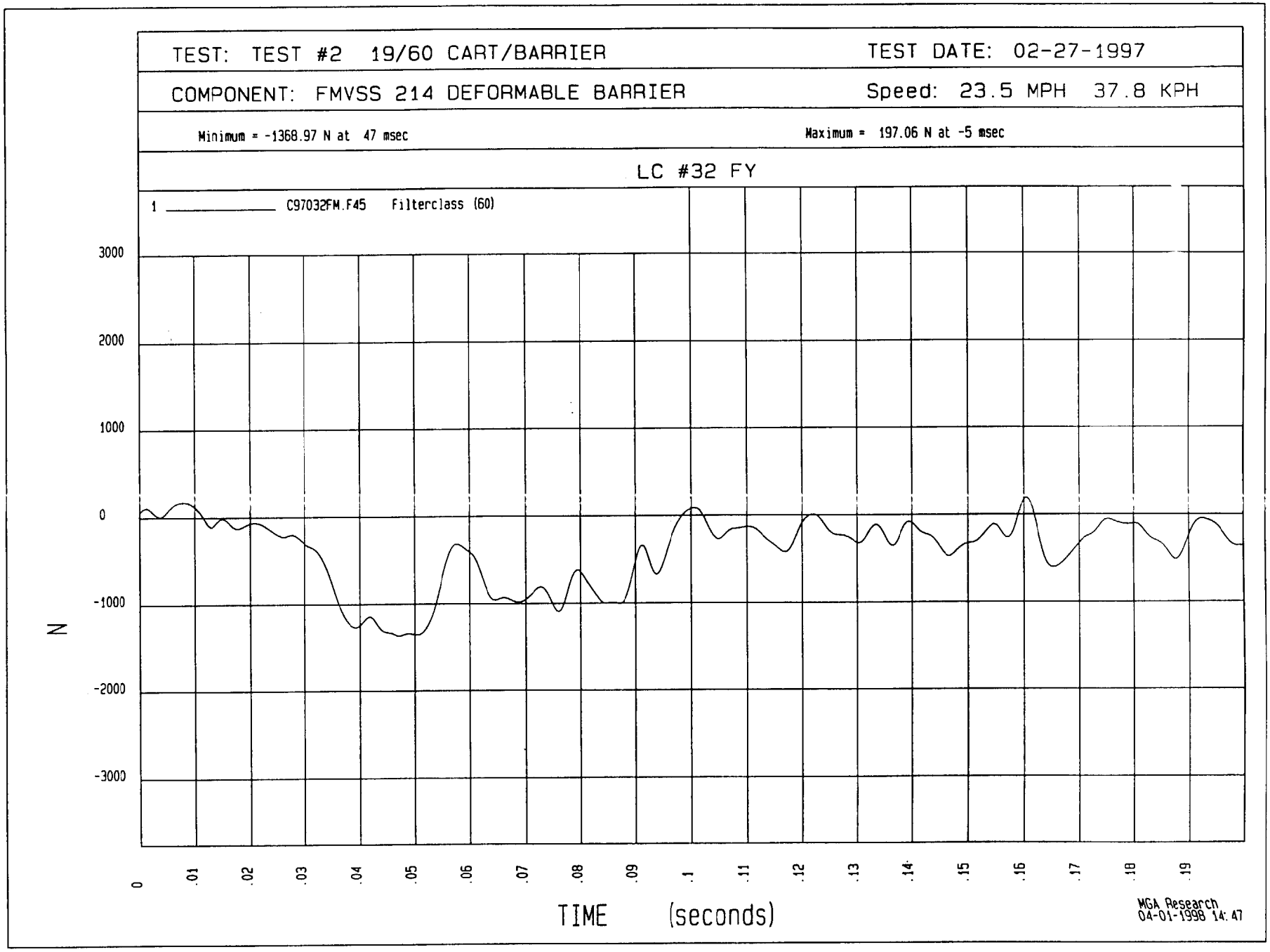
TIME (SECONDS)
MGA Research
04-01-1998 14:30


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1368.97 N at 47 msec
Maximum = 197.06 N at -5 msec
LC #32 FY
1 C97032FM.F45 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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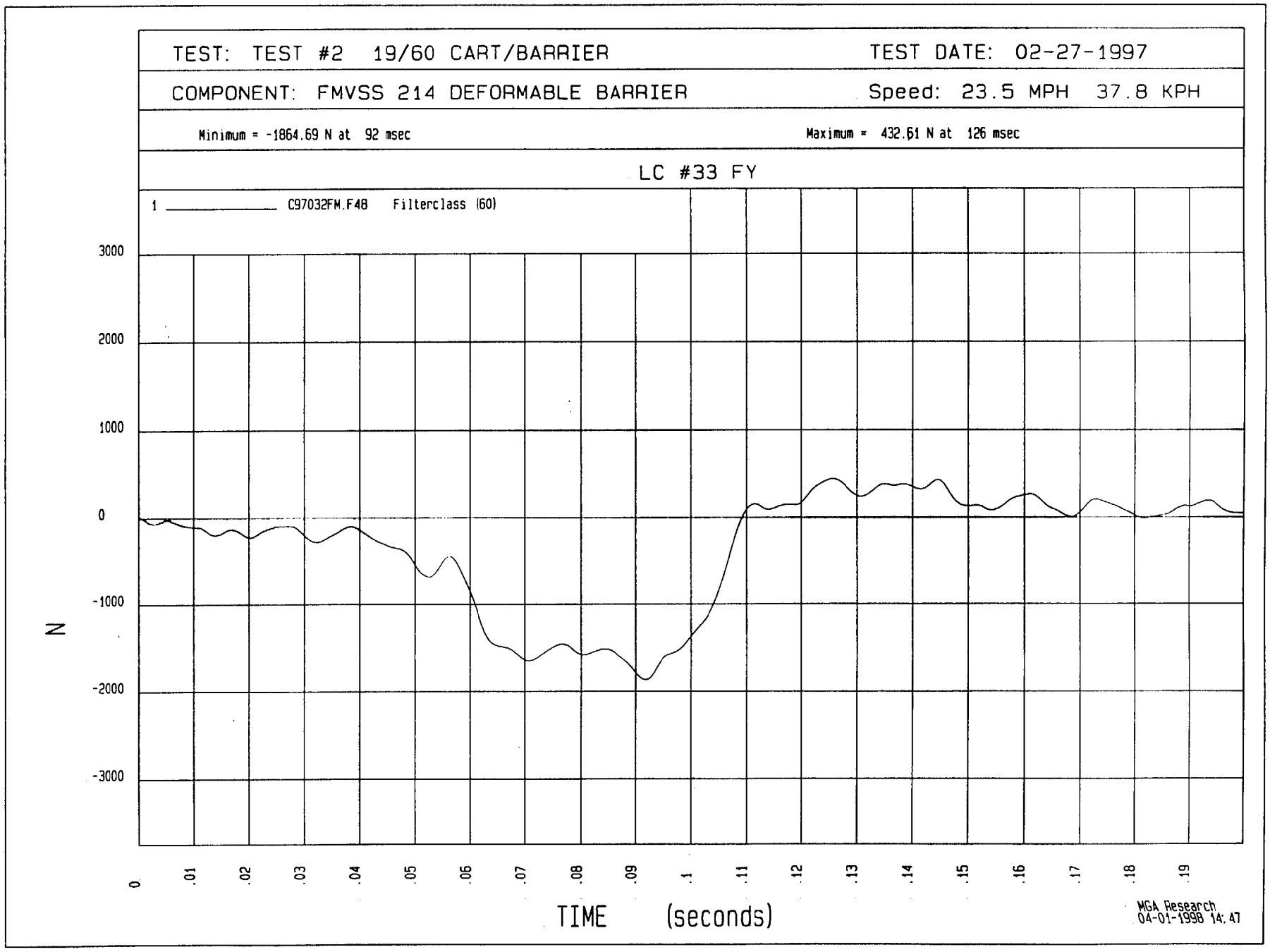
TIME (seconds)
MGA Research
04-01-1998 14:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1864.69 N at 92 msec
Maximum = 432.61 N at 126 msec
LC #33 FY
1 C97032FM.F48 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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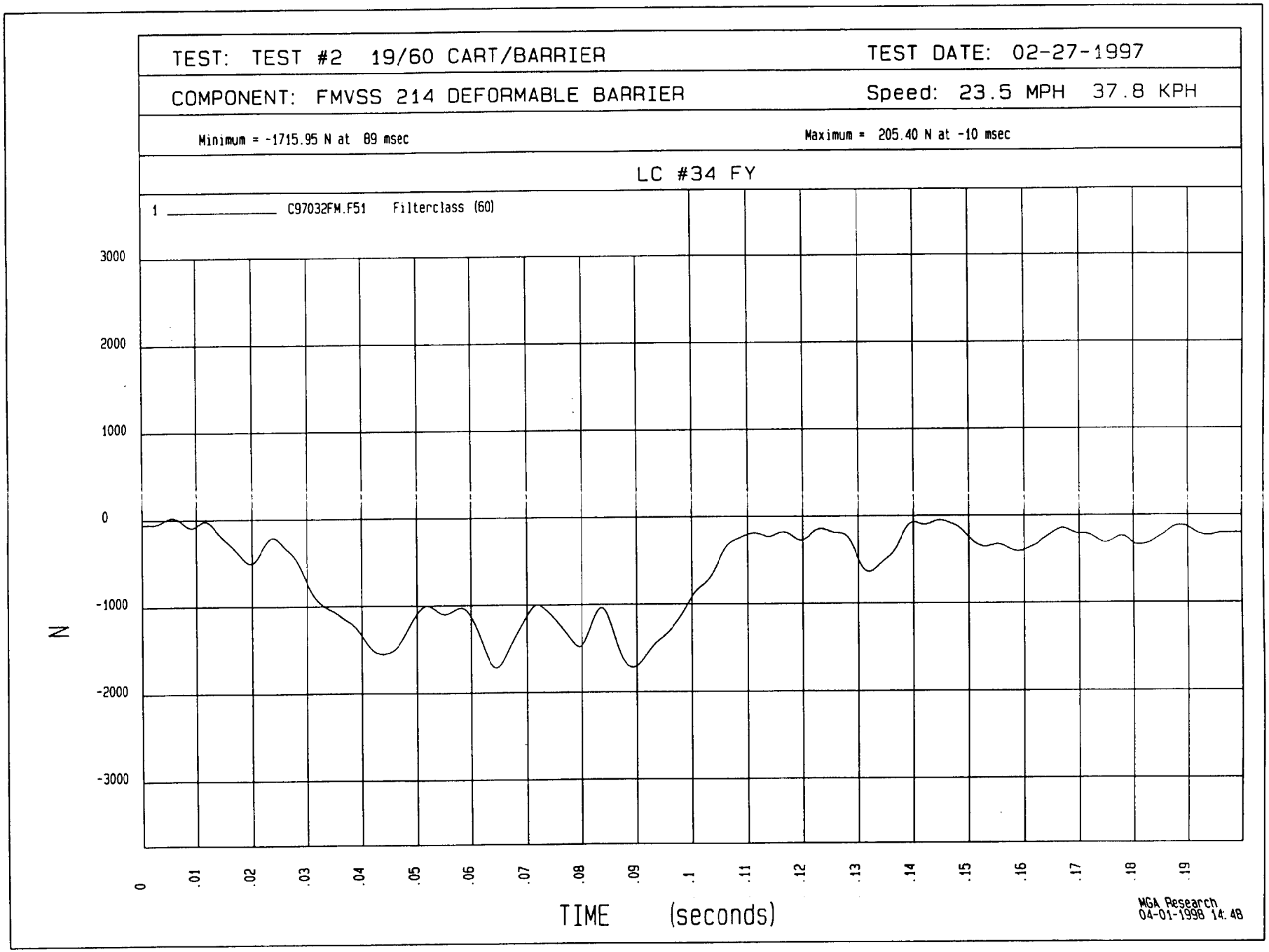
TIME (seconds)
MGA Research
04-01-1998 14:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1715.95 N at 89 msec
Maximum = 205.40 N at -10 msec
LC #34 FY
1 C97032FM.F51 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
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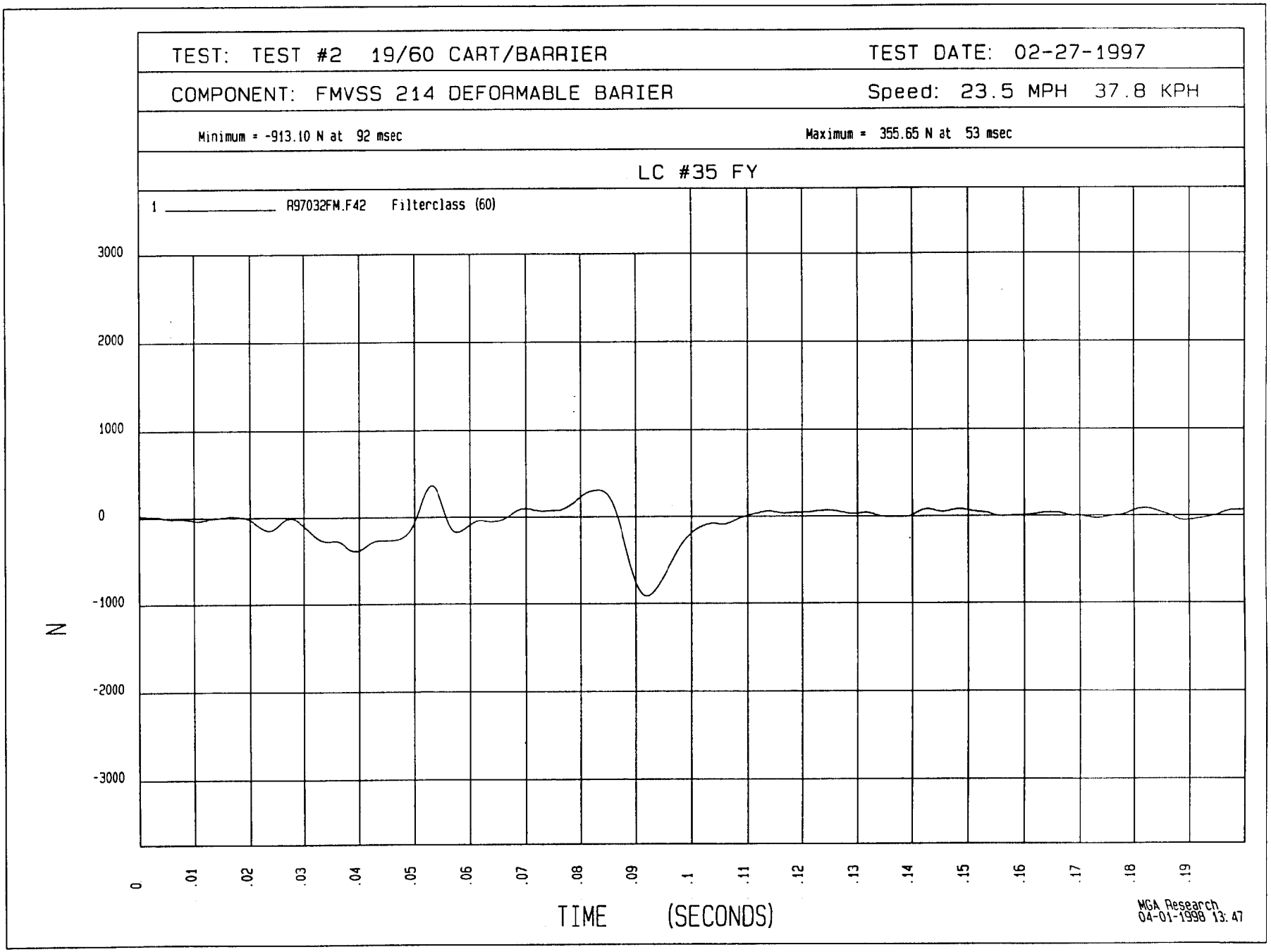
TIME (seconds)
MGA Research
04-01-1998 14:48


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -913.10 N at 92 msec
Maximum = 355.65 N at 53 msec
LC #35 FY
1 R97032FM.F42 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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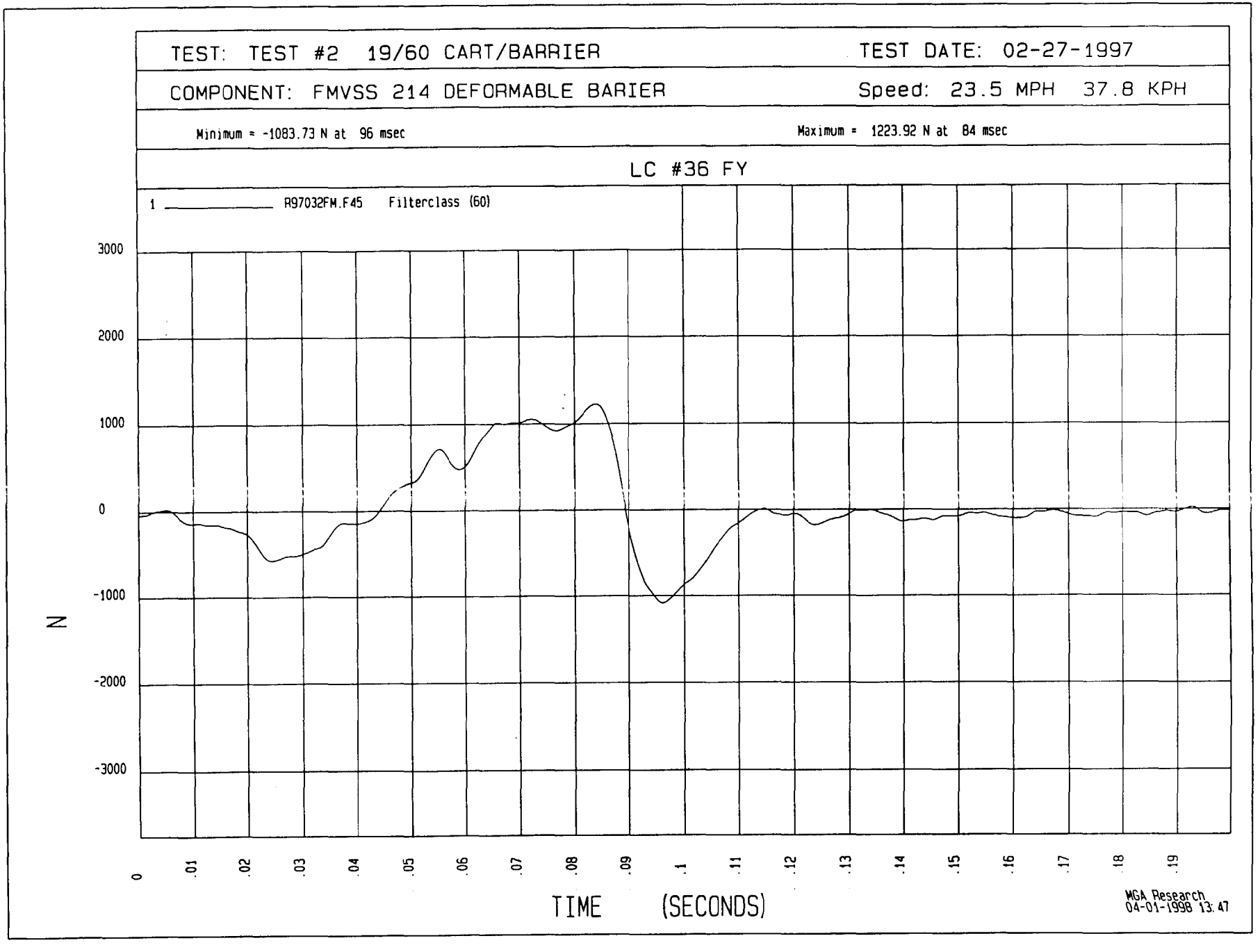
TIME (SECONDS)
MGA Research
04-01-1998 13:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1083.73 N at 96 msec
Maximum = 1223.92 N at 84 msec
LC #36 FY
1 R97032FM.F45 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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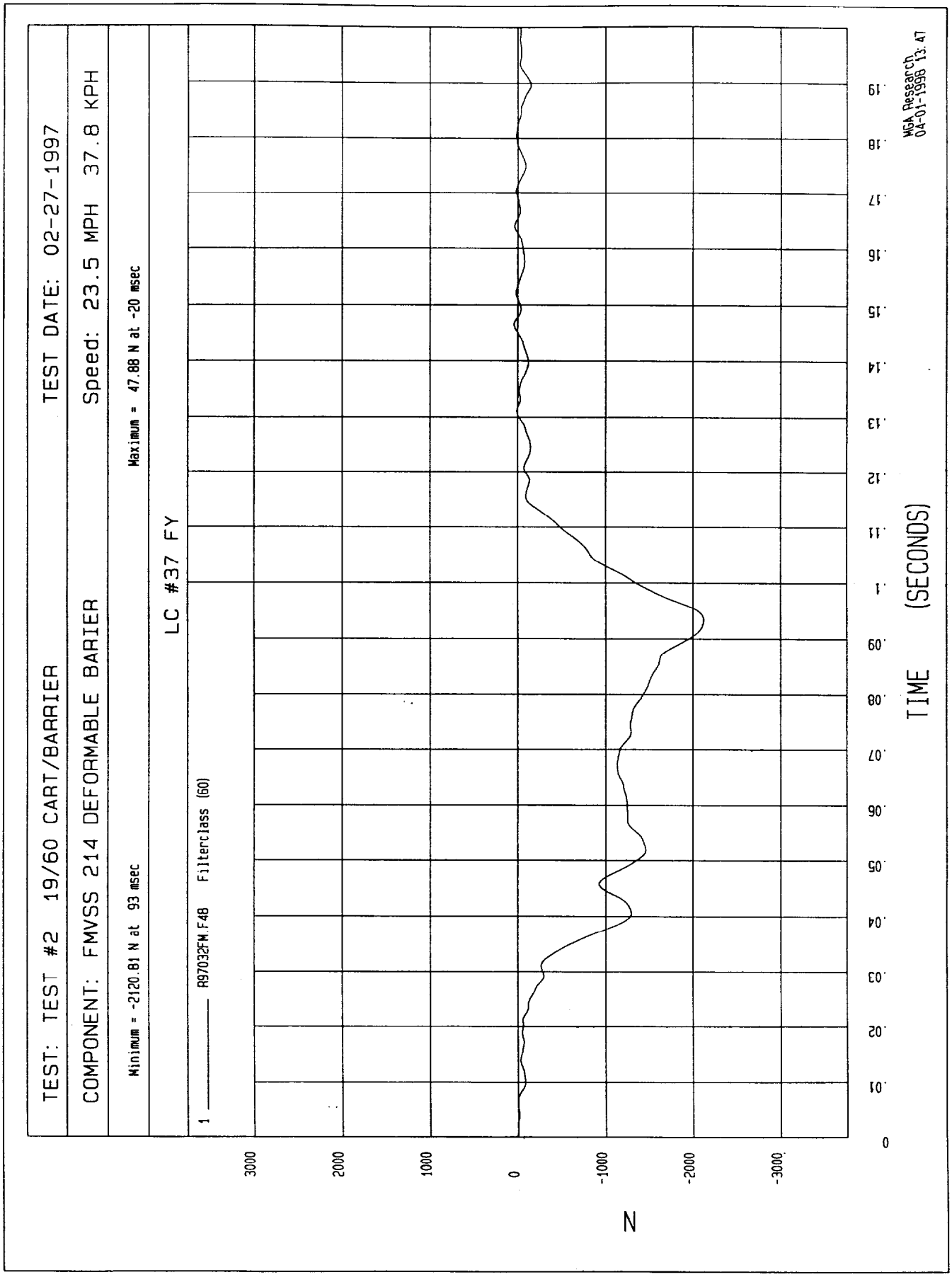
TIME (SECONDS)
MGA Research
04-01-1998 13:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2120.81 N at 93 msec
Maximum = 47.88 N at -20 msec
LC #37 FY
1 A97032FM.F48 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
01
02
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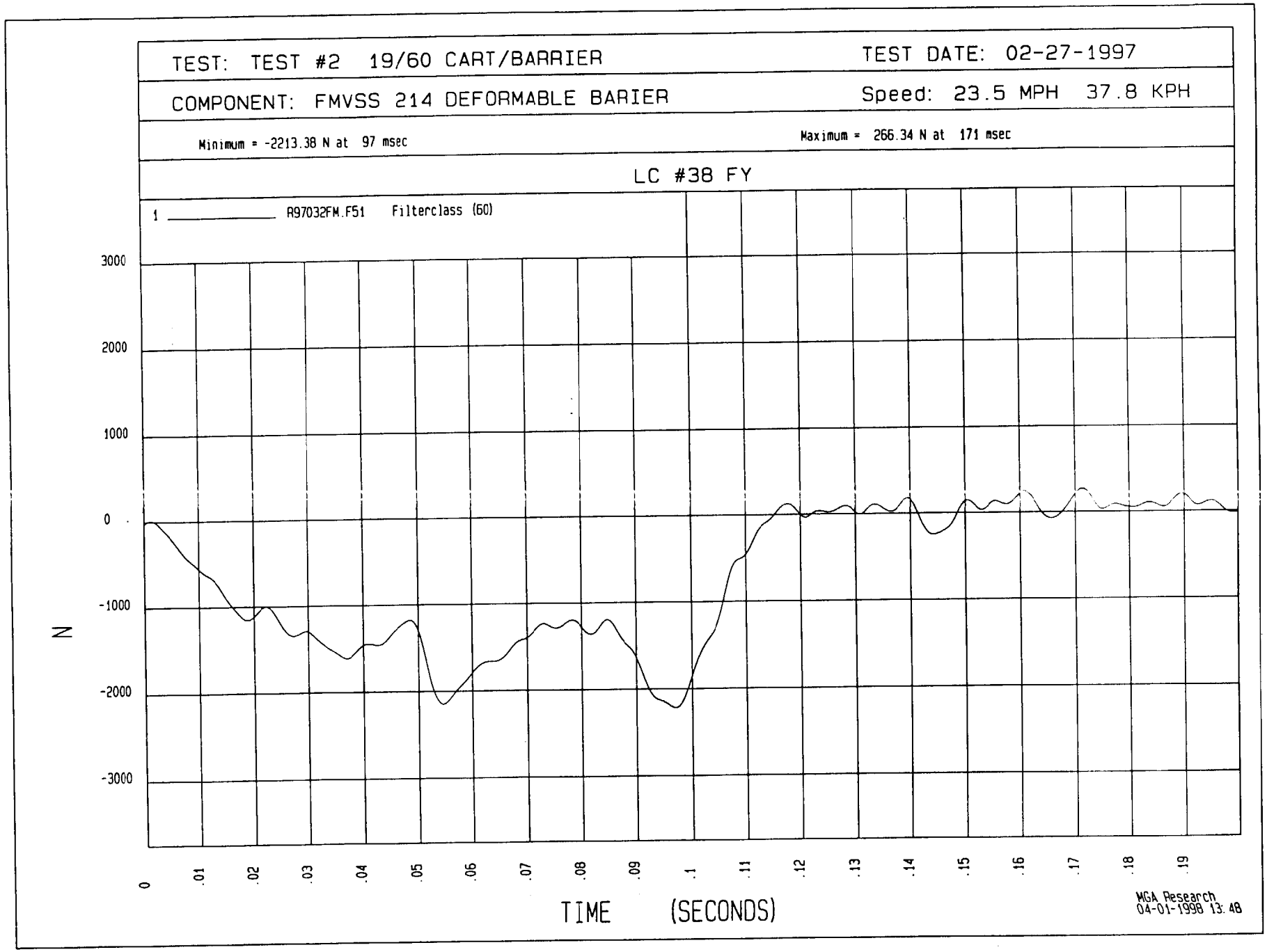
TIME (SECONDS)
MGA Research
04-01-1998 13:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2213.38 N at 97 msec
Maximum = 266.34 N at 171 msec
LC #38 FY
1 R97032FM.F51 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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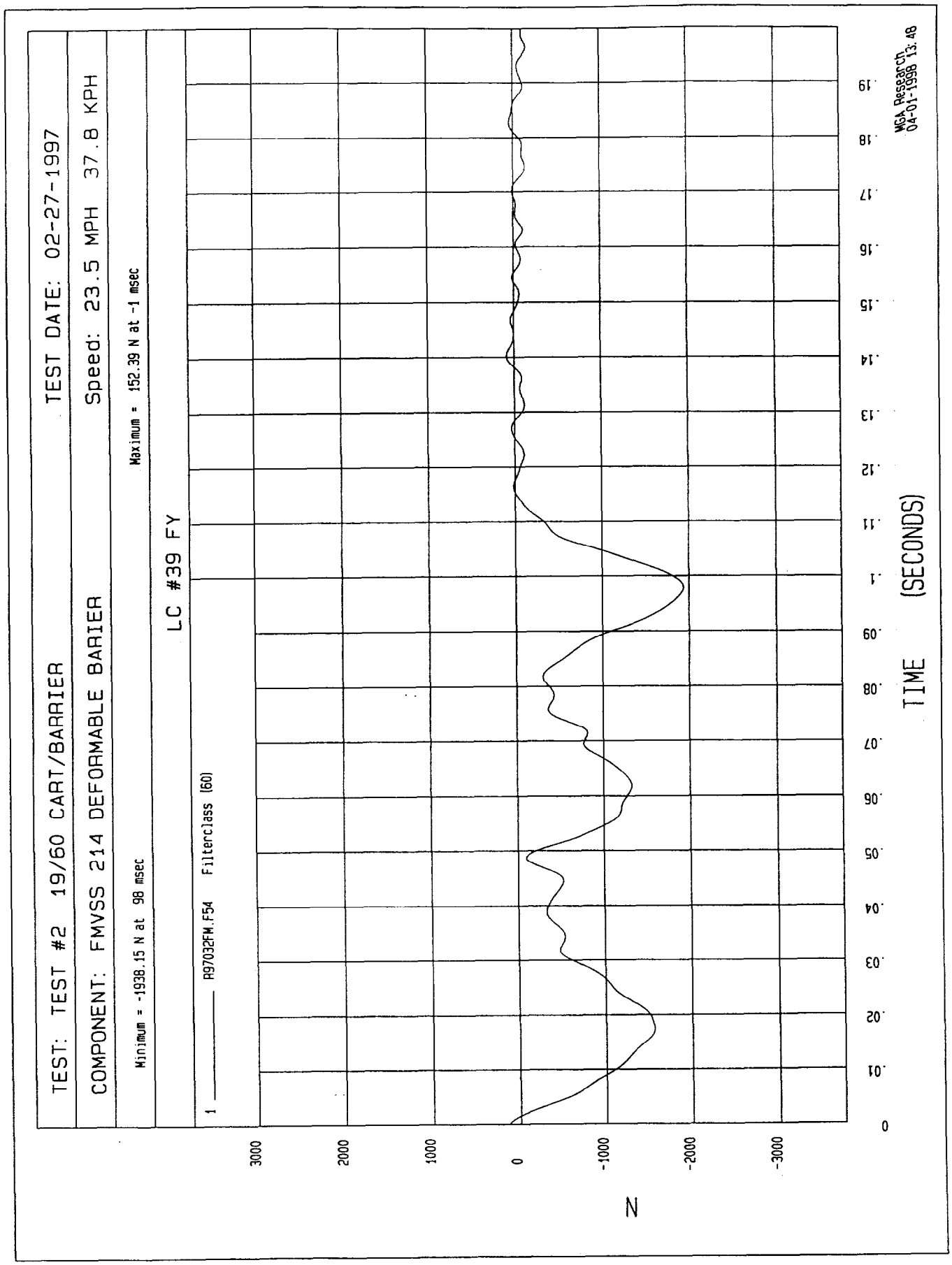
TIME (SECONDS)
MGA Research
04-01-1998 13:48


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1938.15 N at 98 msec
Maximum = 152.39 N at -1 msec
LC #39 FY
1 _____ R97032FM.F54 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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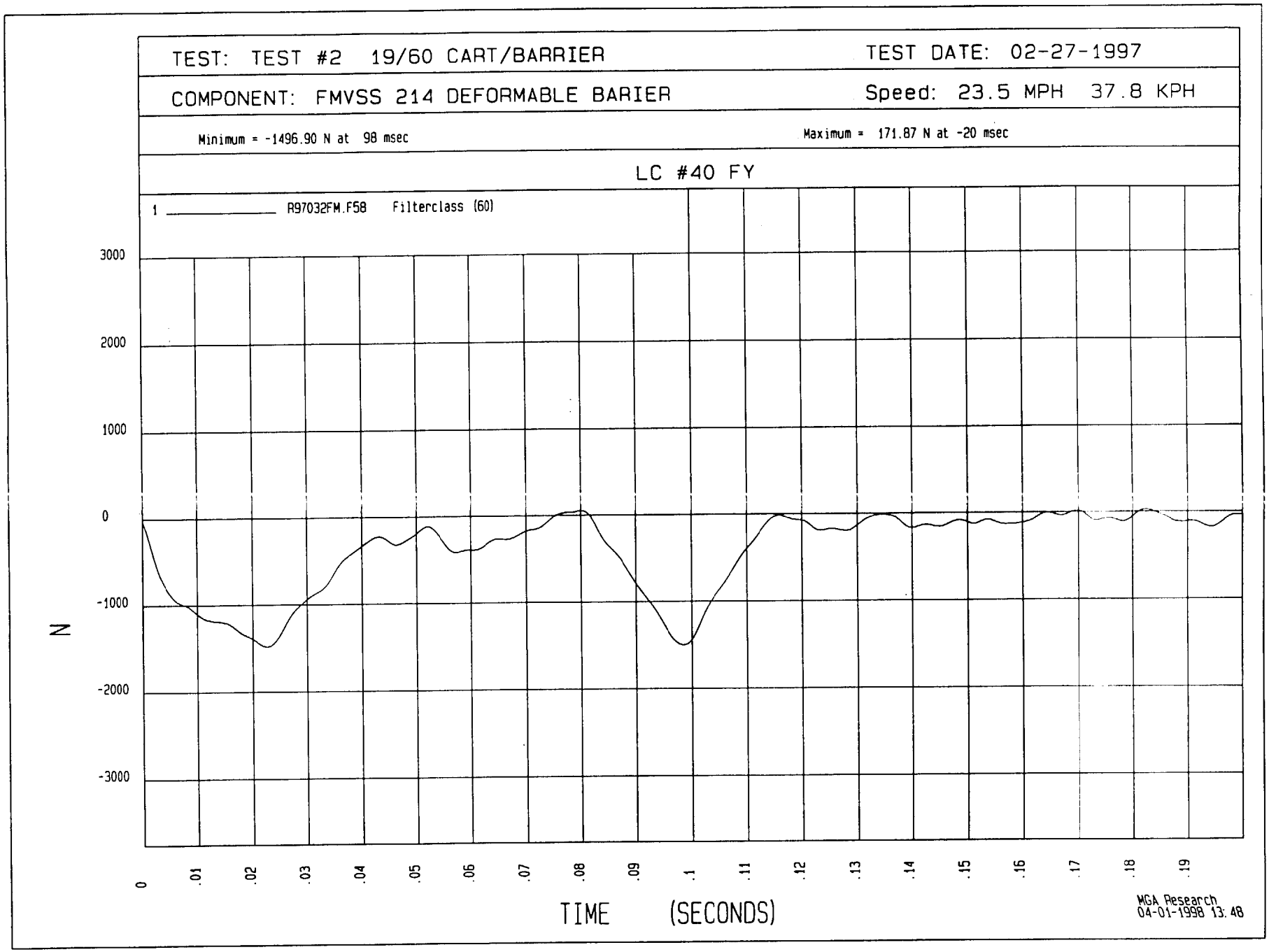
TIME (SECONDS)
MGA Research
04-01-1998 13:48


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1496.90 N at 98 msec
Maximum = 171.87 N at -20 msec
LC #40 FY
1 R97032FM.F58 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
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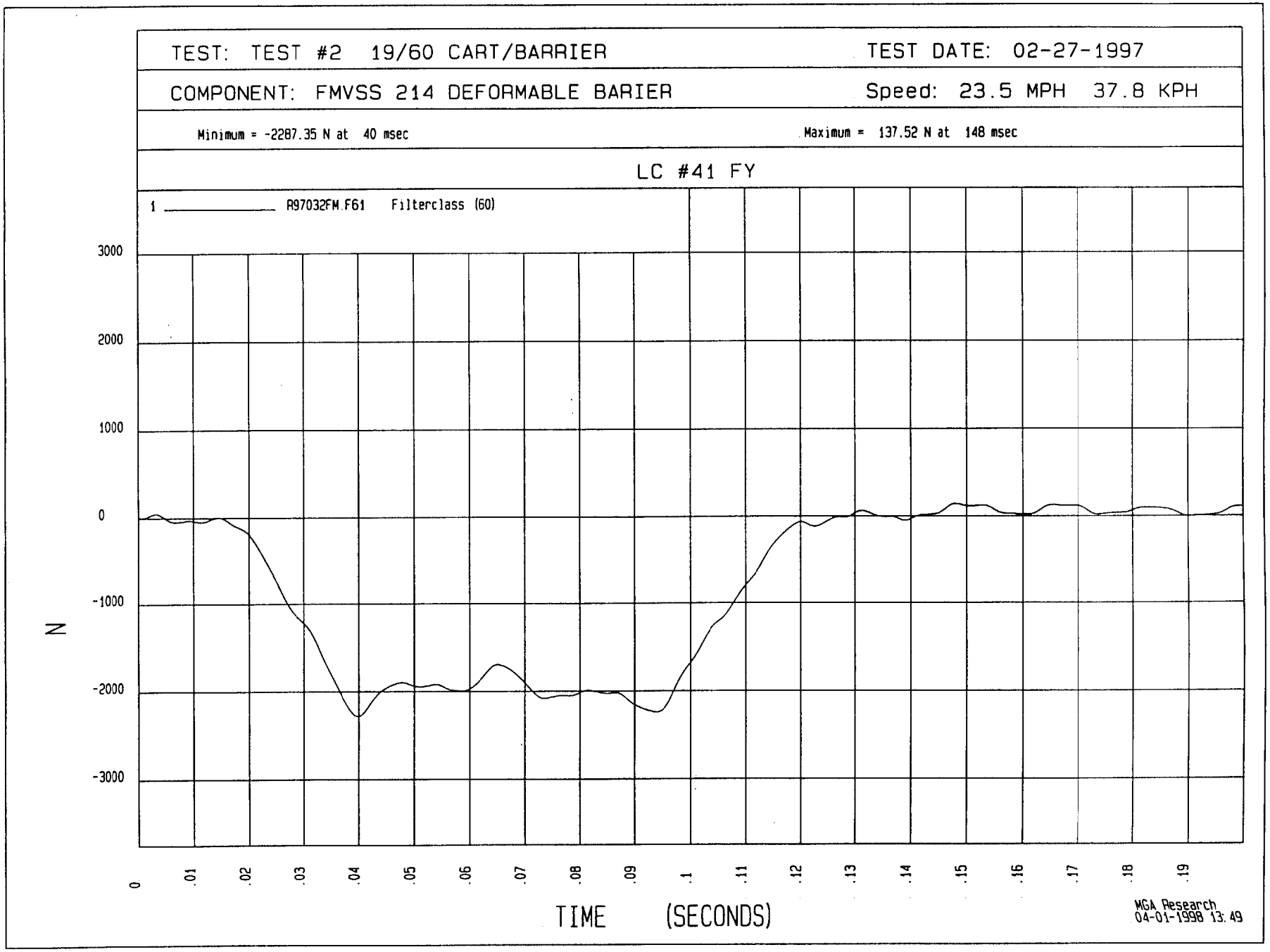
TIME (SECONDS)
MGA Research
04-01-1998 13:48


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2287.35 N at 40 msec
Maximum = 137.52 N at 148 msec
LC #41 FY
1 R97032FM.F61 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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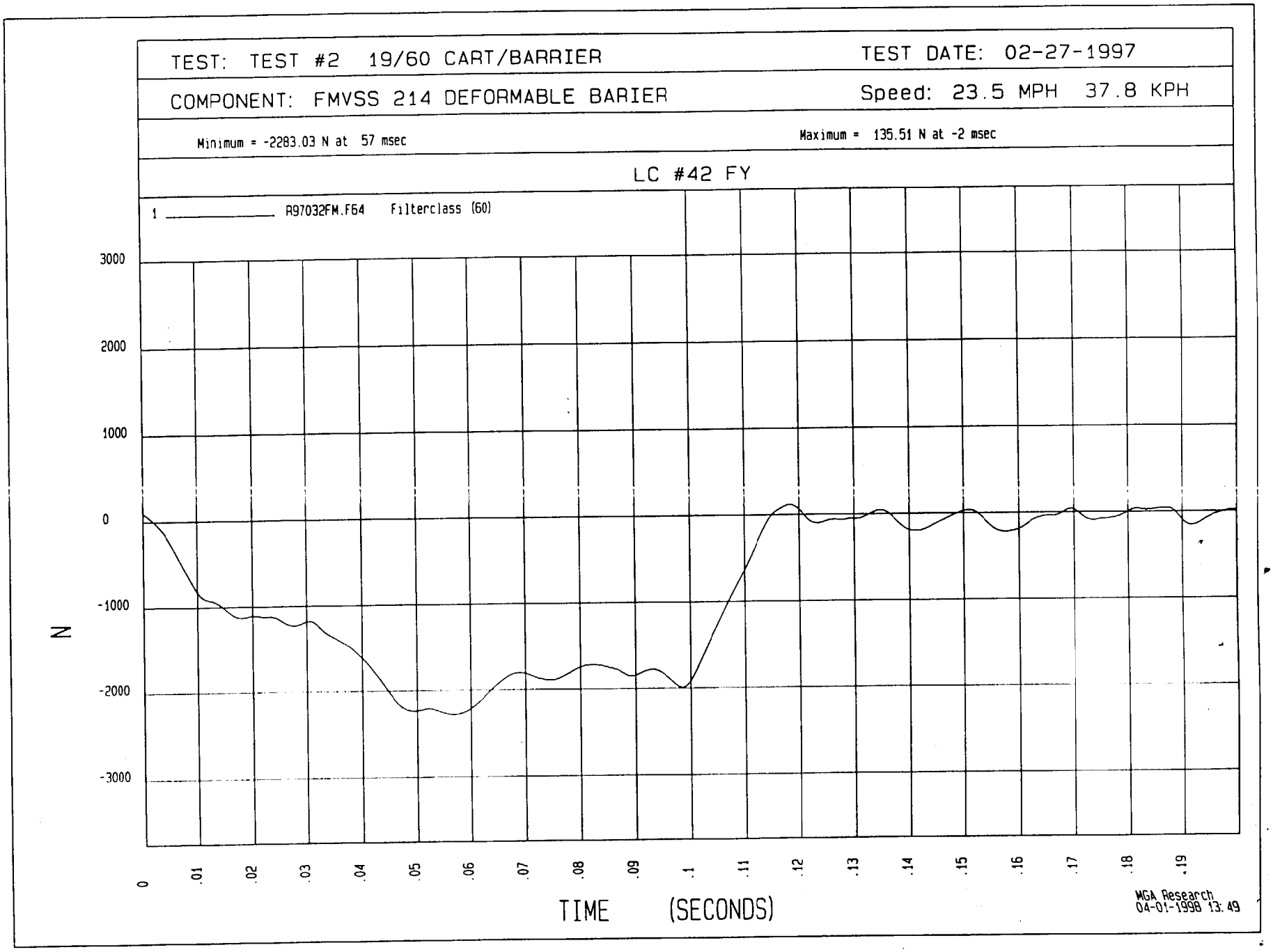
TIME (SECONDS)
MGA Research
04-01-1998 13:49


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2283.03 N at 57 msec
Maximum = 135.51 N at -2 msec
LC #42 FY
1 R97032FM.F64 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
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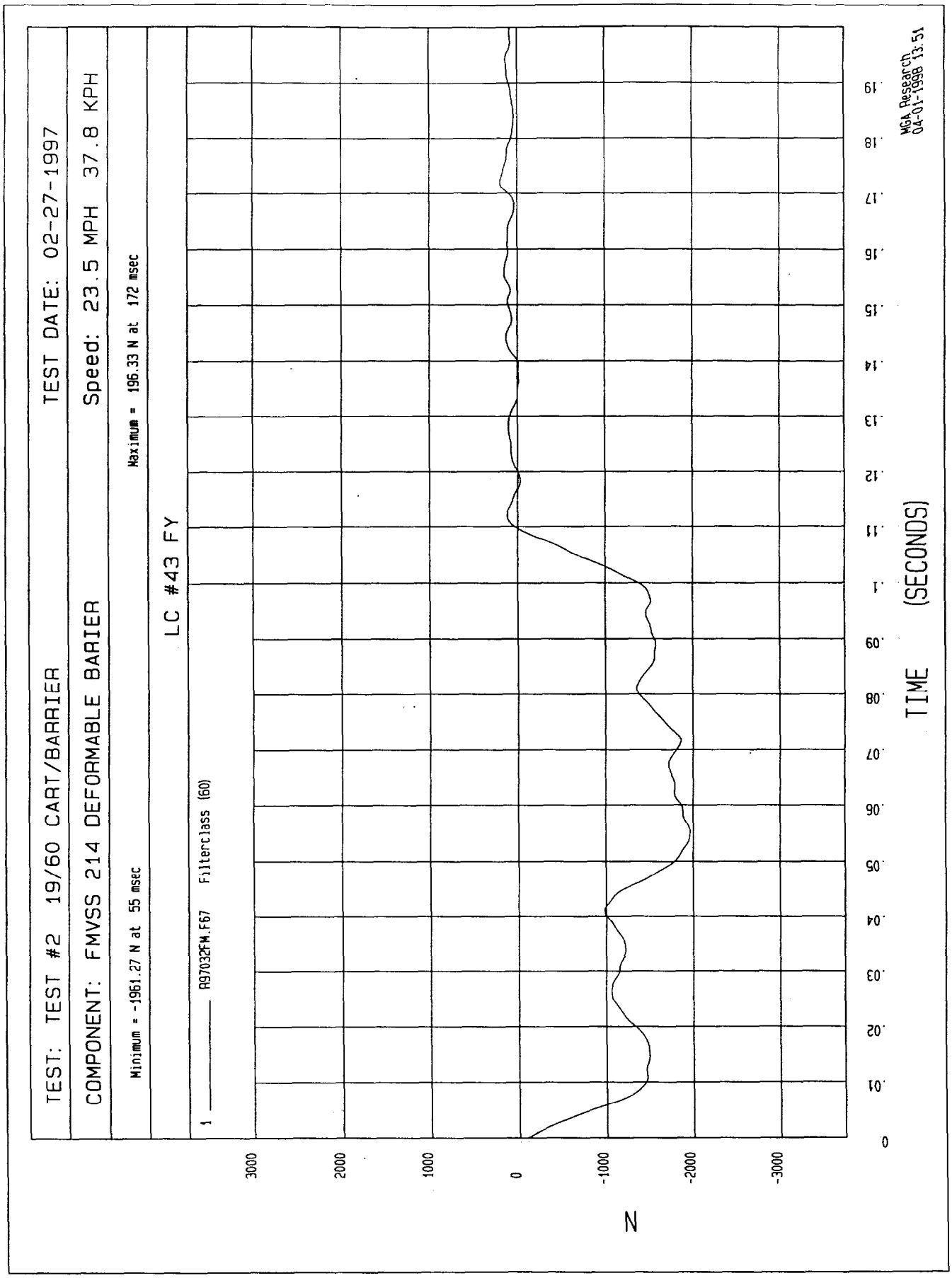
TIME (SECONDS)
MGA Research
04-01-1998 13:49


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1961.27 N at 55 msec
Maximum = 196.33 N at 172 msec
LC #43 FY
1 A97032FM.F67 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
01
02
03
04
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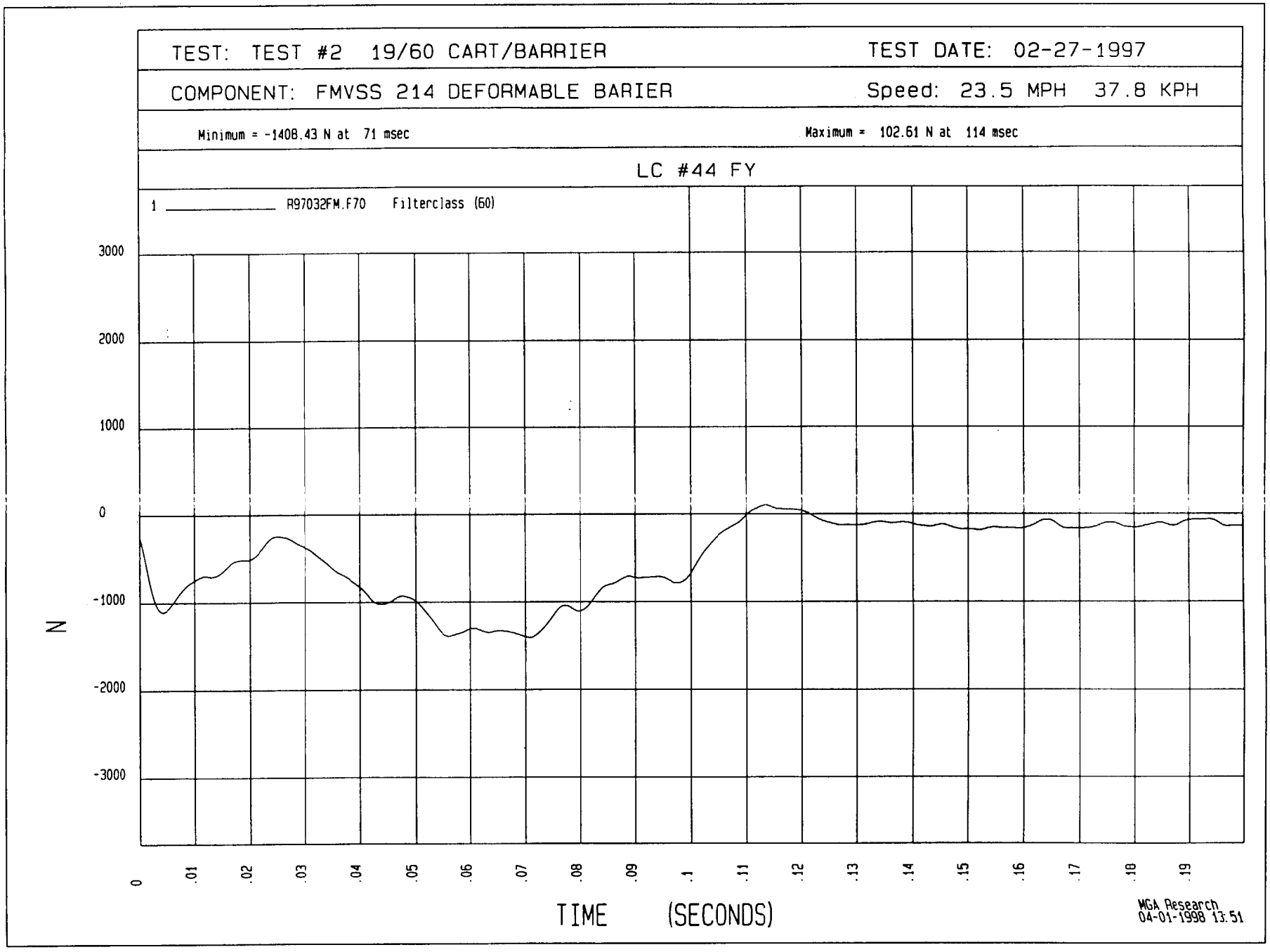
TIME (SECONDS)
MGA Research
04-01-1998 13:51


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1408.43 N at 71 msec
Maximum = 102.61 N at 114 msec
LC #44 FY
1 R97032FM.F70 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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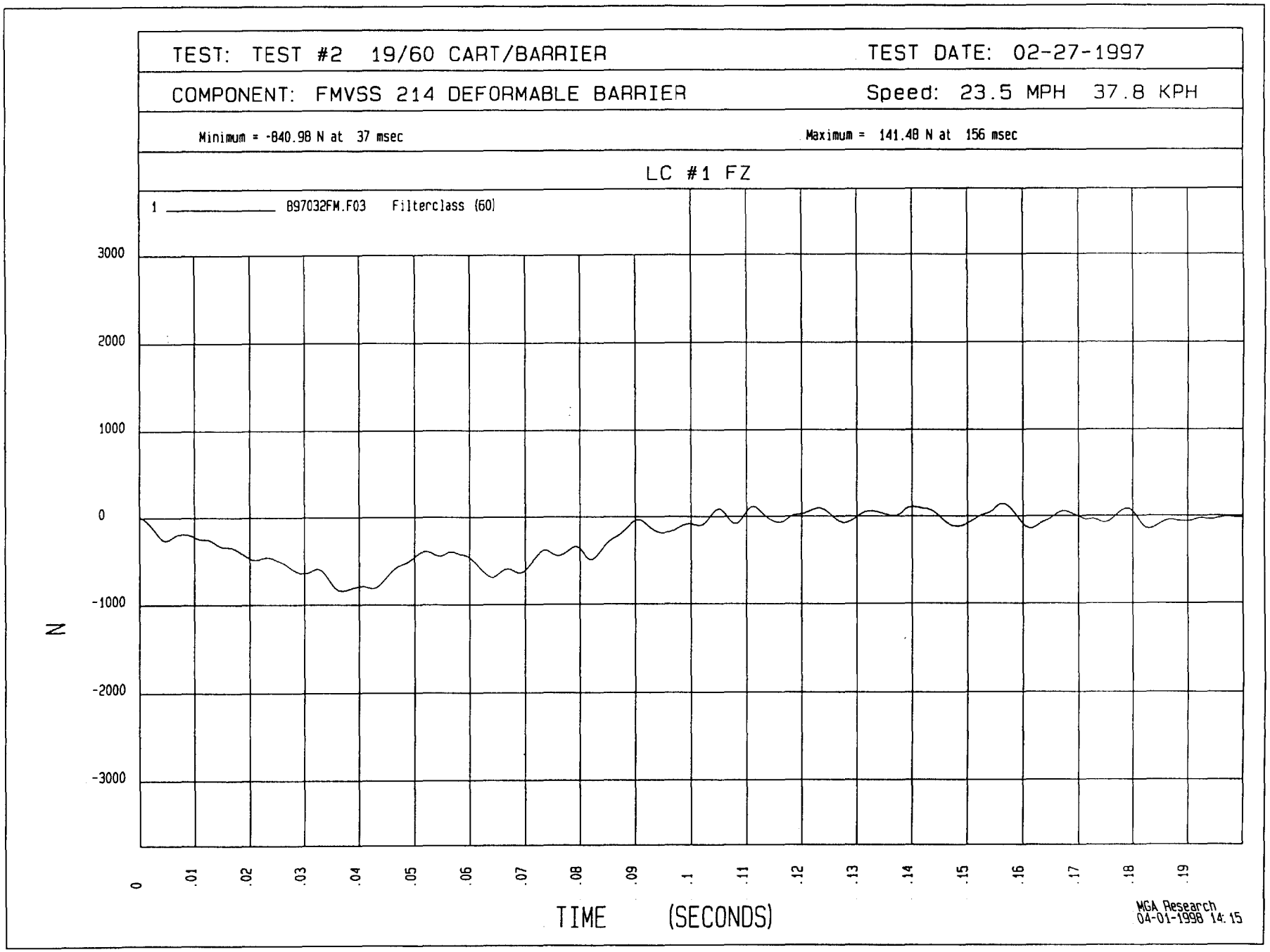
TIME (SECONDS)
MGA Research
04-01-1998 13:51


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -840.98 N at 37 msec
Maximum = 141.48 N at 156 msec
LC #1 FZ
1 B97032FM.F03 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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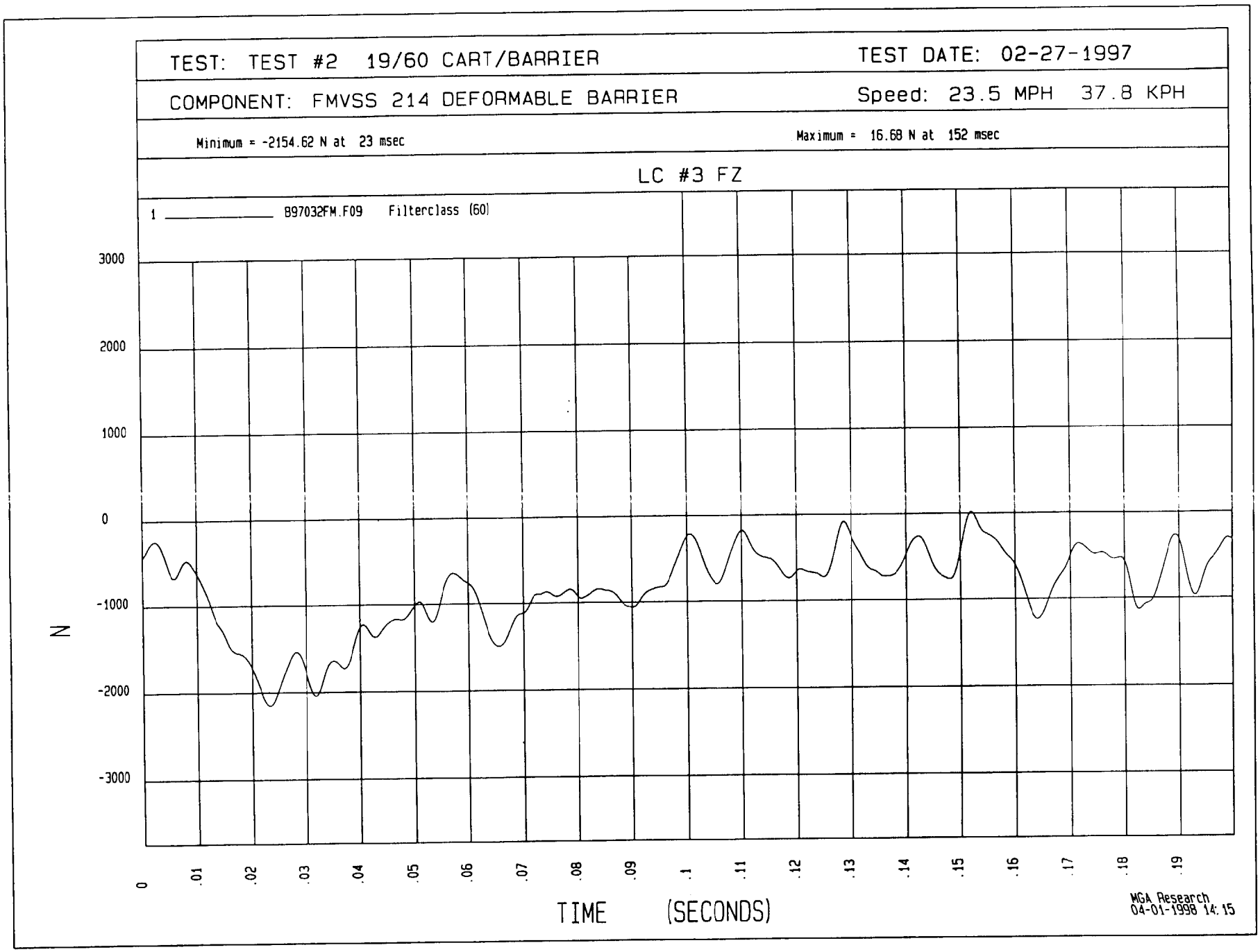
TIME (SECONDS)
MGA Research
04-01-1998 14:15


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2154.62 N at 23 msec
Maximum = 16.68 N at 152 msec
LC #3 FZ
1 B97032FM.F09 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
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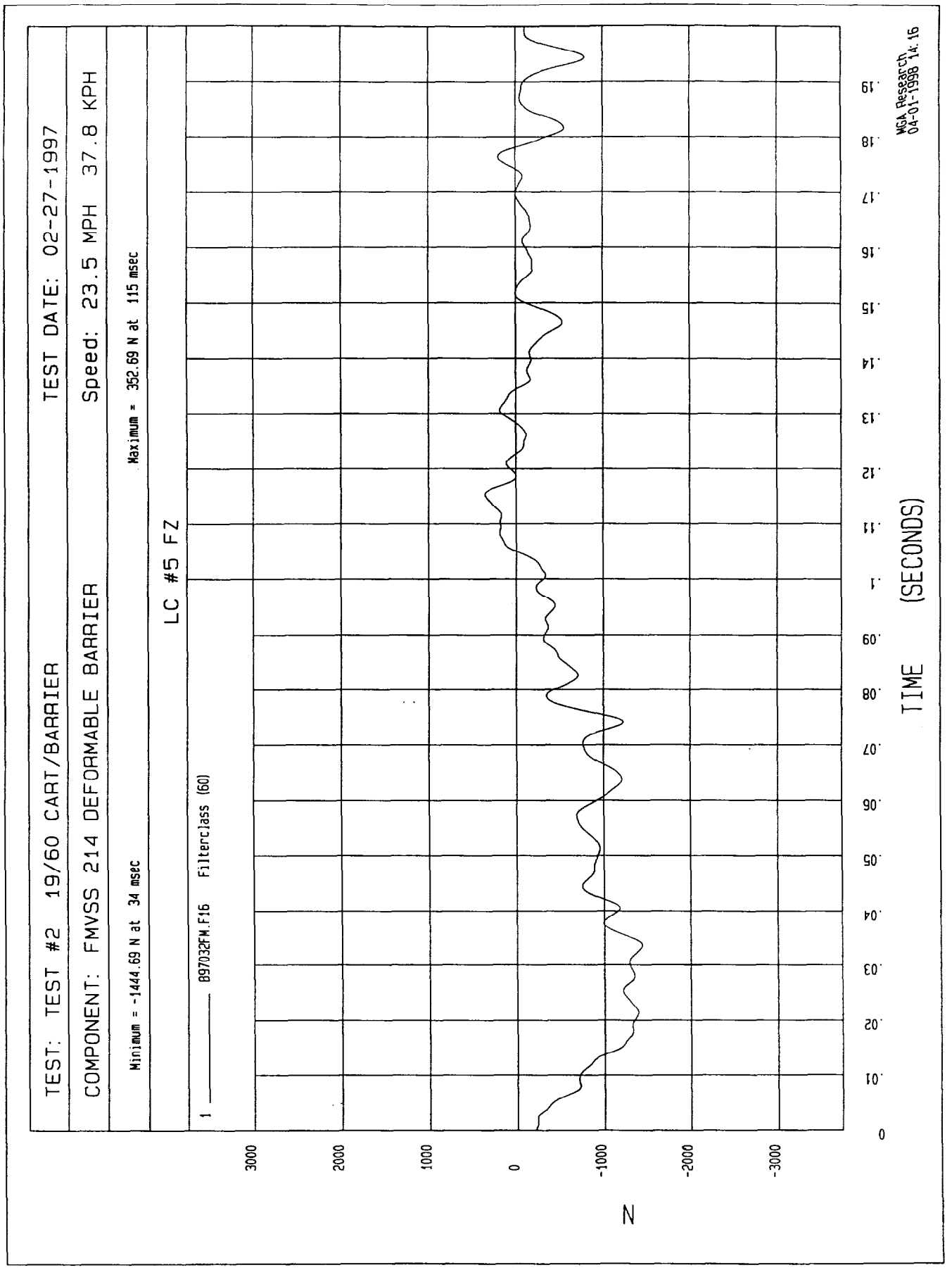
TIME (SECONDS)
MGA Research
04-01-1998 14:15


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1444.69 N at 34 msec
Maximum = 352.69 N at 115 msec
LC #5 FZ
1 B97032FM.F16 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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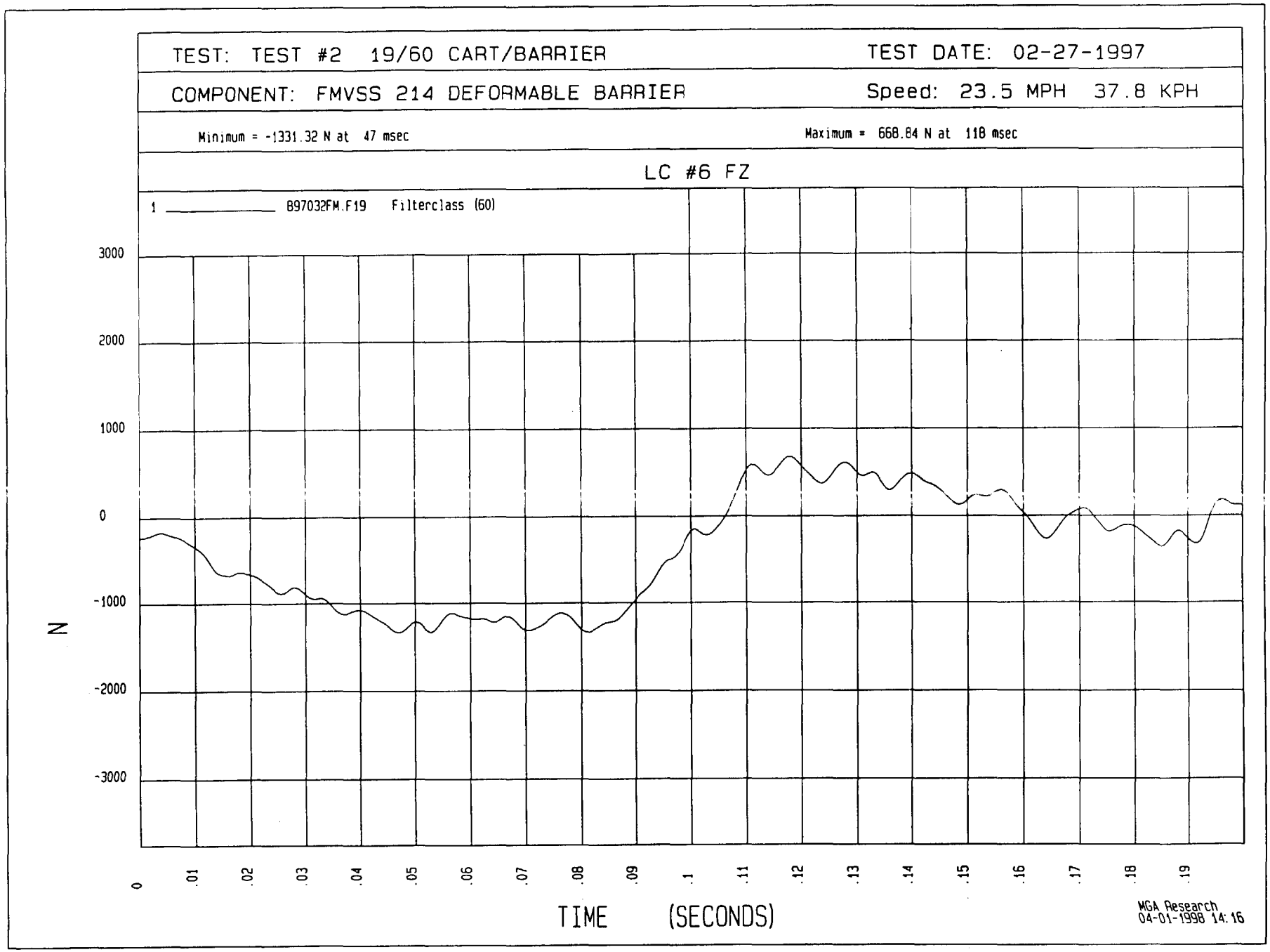
TIME (SECONDS)
MGA Research
04-01-1998 14:16


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1331.32 N at 47 msec
Maximum = 668.84 N at 118 msec
LC #6 FZ
1 B97032FM.F19 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
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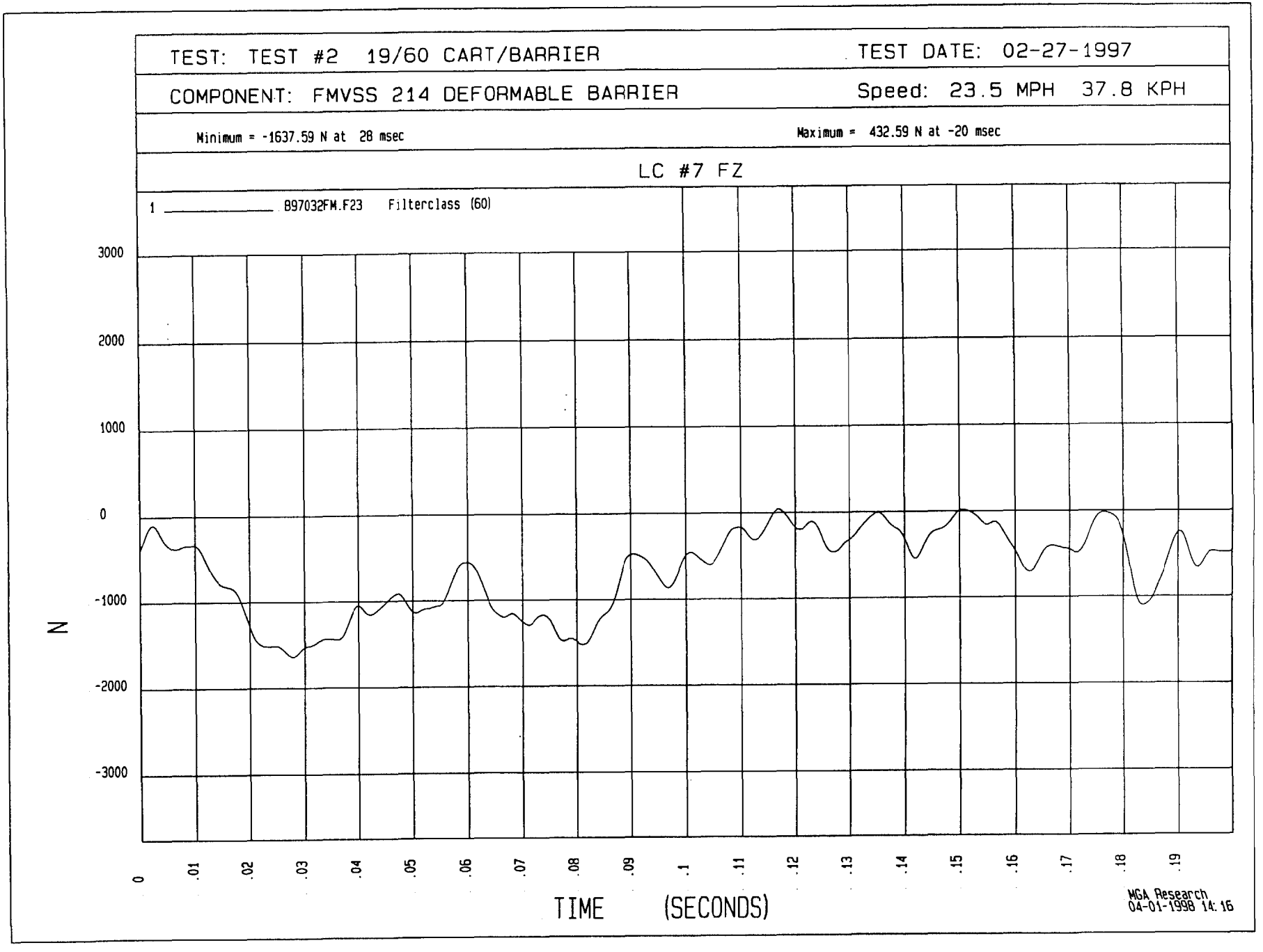
TIME (SECONDS)
MGA Research
04-01-1998 14:16


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1637.59 N at 28 msec
Maximum = 432.59 N at -20 msec
LC #7 FZ
1 B97032FM.F23 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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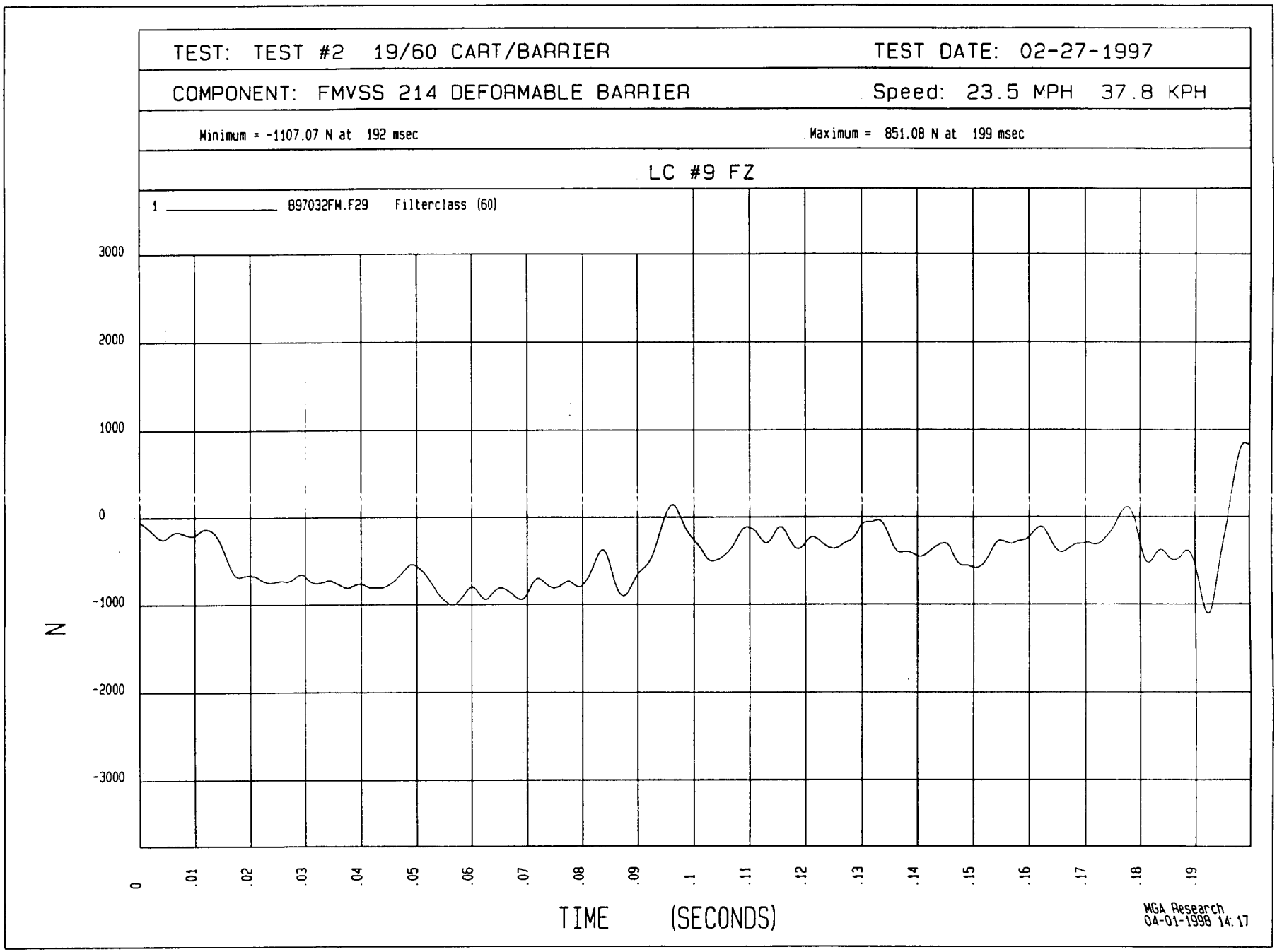
TIME (SECONDS)
MGA Research
04-01-1998 14:16


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1107.07 N at 192 msec
Maximum = 851.08 N at 199 msec
LC #9 FZ
1 B97032FM.F29 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
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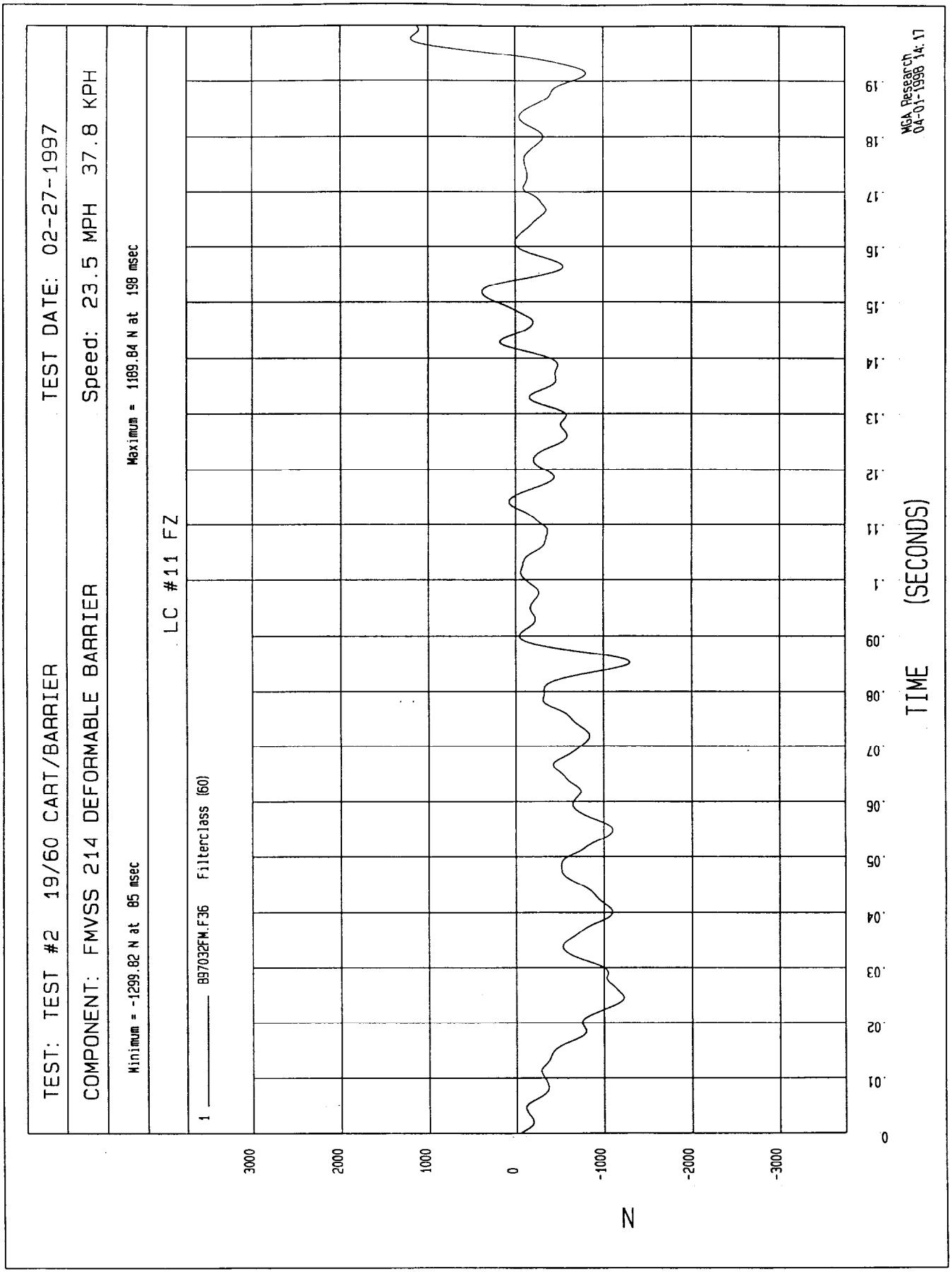
TIME (SECONDS)
MGA Research
04-01-1998 14:17


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1299.82 N at 85 msec
Maximum = 1189.84 N at 198 msec
LC #11 FZ
1 _____ B97032FM.F36 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
01
02
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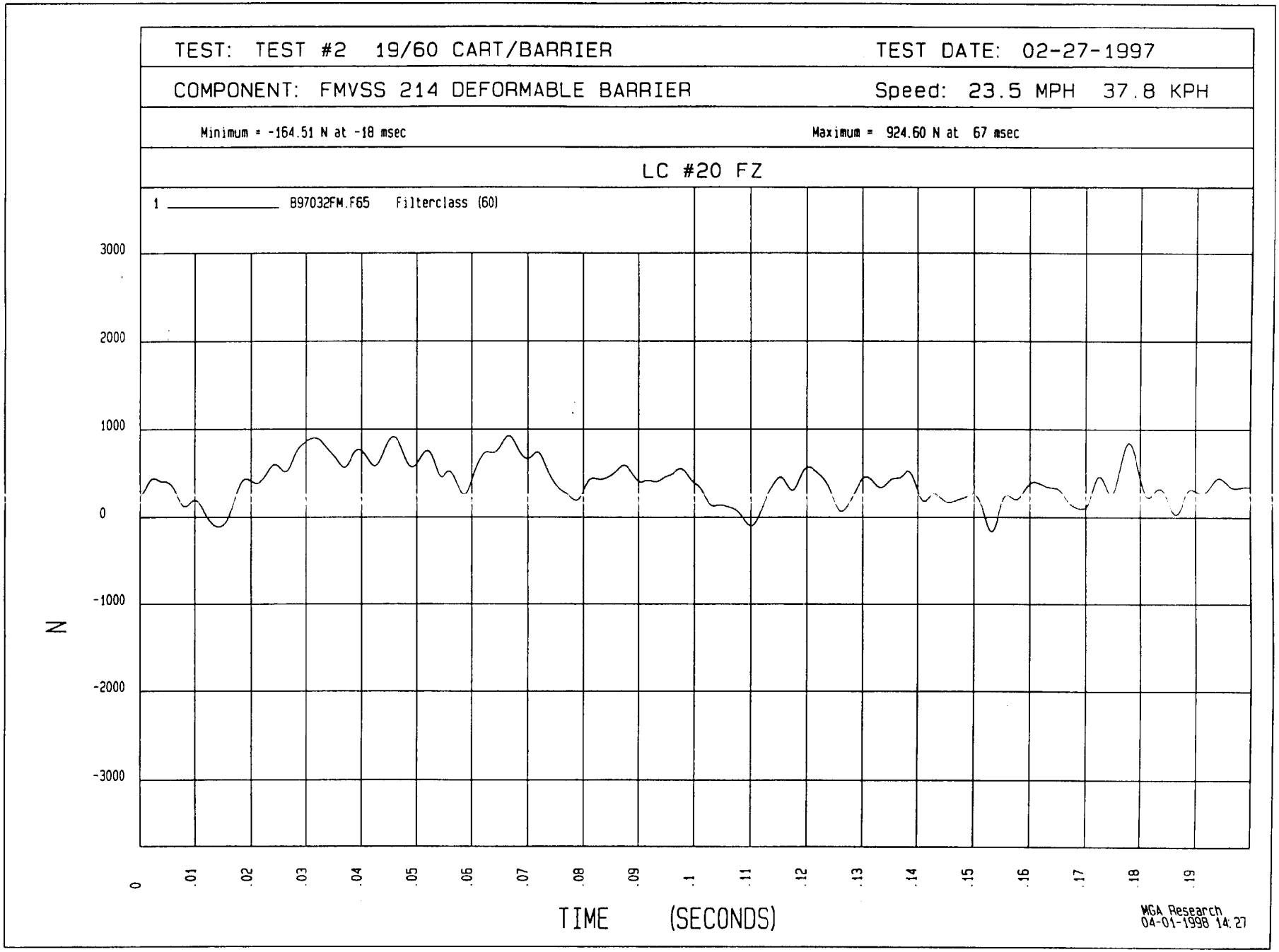
TIME (SECONDS)
MGA Research
04-01-1998 14:17


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -164.51 N at -18 msec
Maximum = 924.60 N at 67 msec
LC #20 FZ
1 B97032FM.F65 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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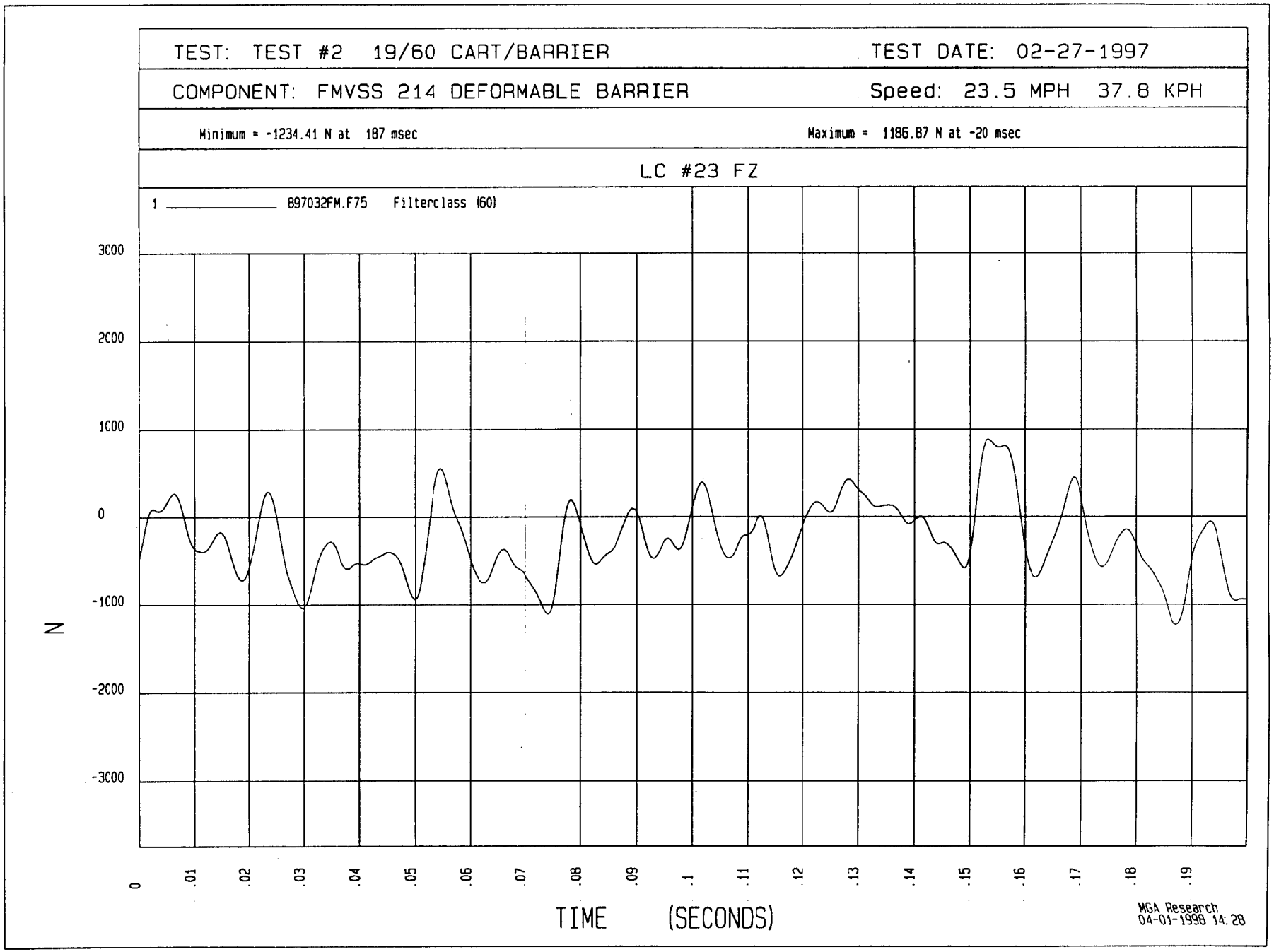
TIME (SECONDS)
MGA Research
04-01-1998 14:27


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1234.41 N at 187 msec
Maximum = 1186.87 N at -20 msec
LC #23 FZ
1 B97032FM.F75 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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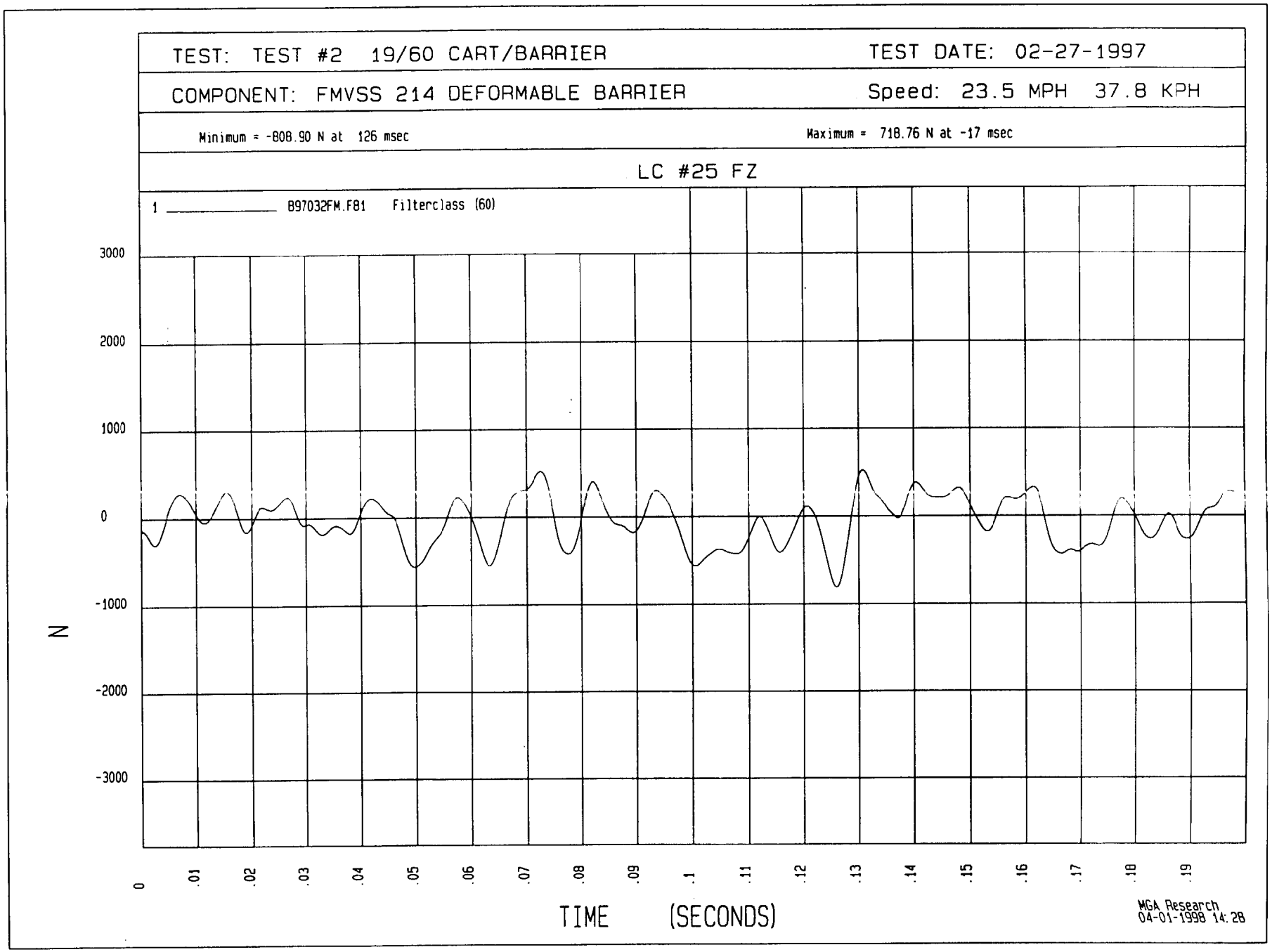
TIME (SECONDS)
MGA Research
04-01-1998 14:28


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -808.90 N at 126 msec
Maximum = 718.76 N at -17 msec
LC #25 FZ
1 B97032FM.F81 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
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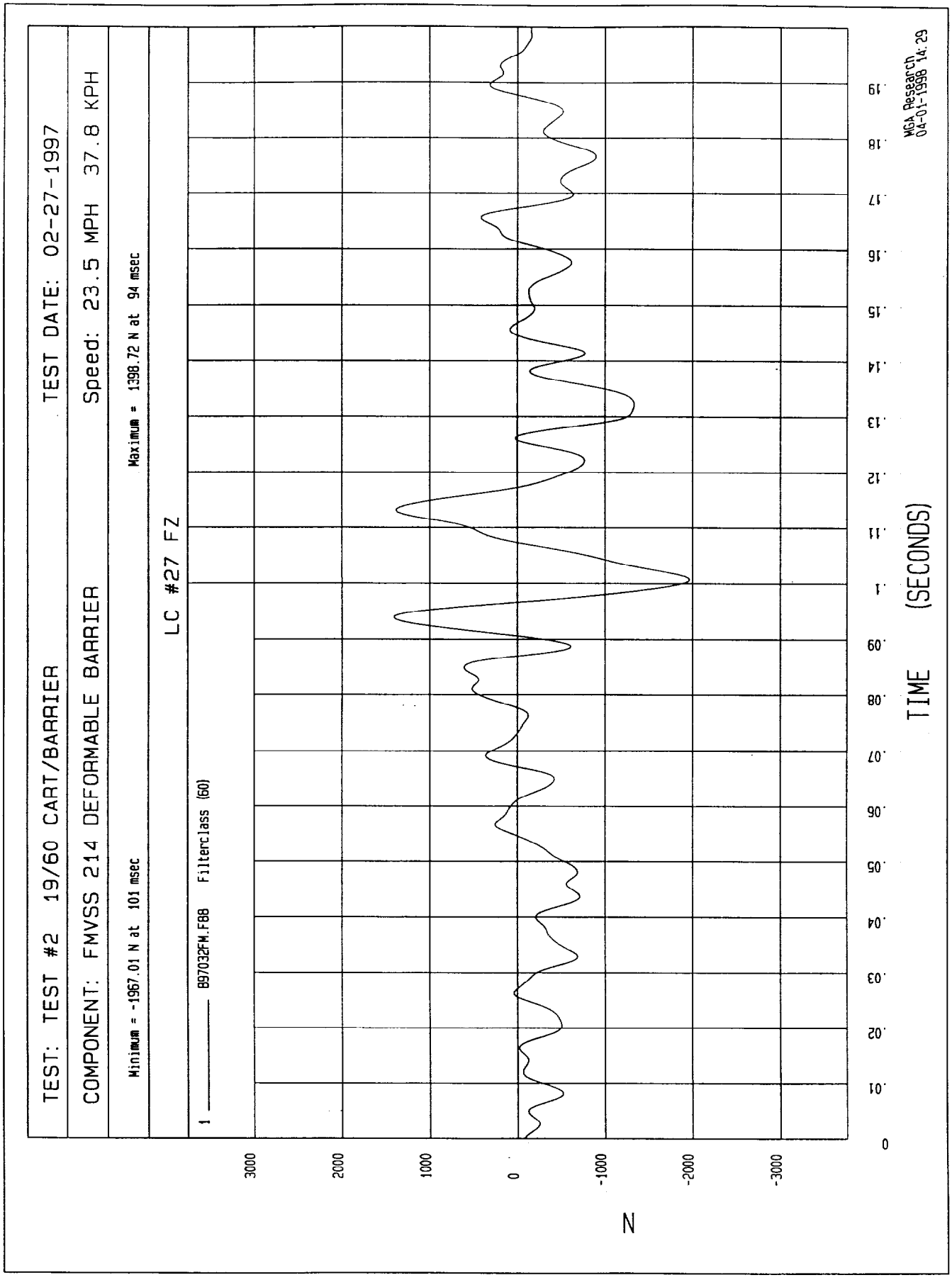
TIME (SECONDS)
MGA Research
04-01-1998 14:28


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1967.01 N at 101 msec
Maximum = 1398.72 N at 94 msec
LC #27 FZ
1 _____ 897032FM.F88 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
01
02
03
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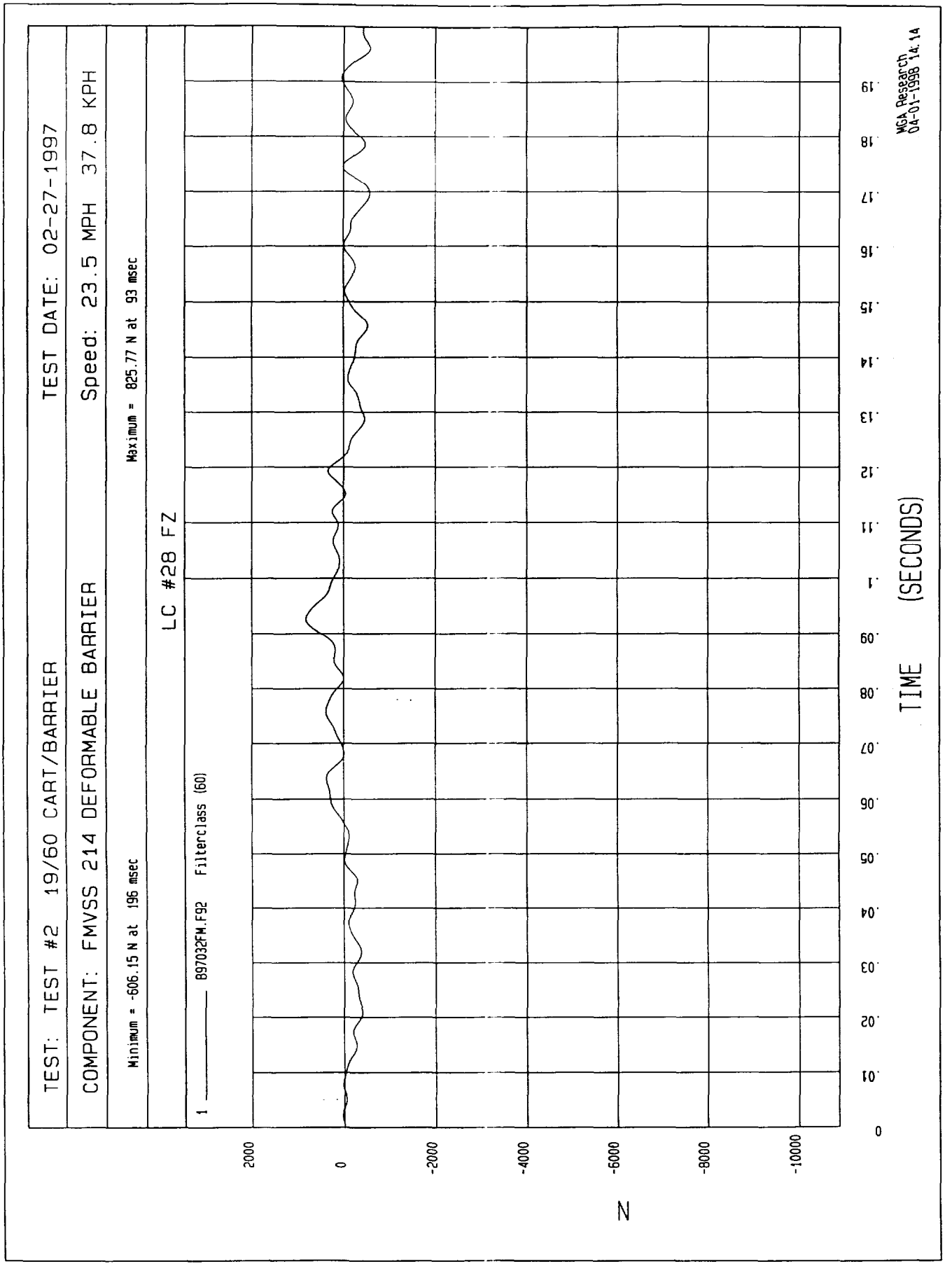
TIME (SECONDS)
MGA Research
04-01-1998 14:29


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -606.15 N at 196 msec
Maximum = 825.77 N at 93 msec
LC #28 FZ
1 B97032FM.F92 Filterclass (60)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
01
02
03
04
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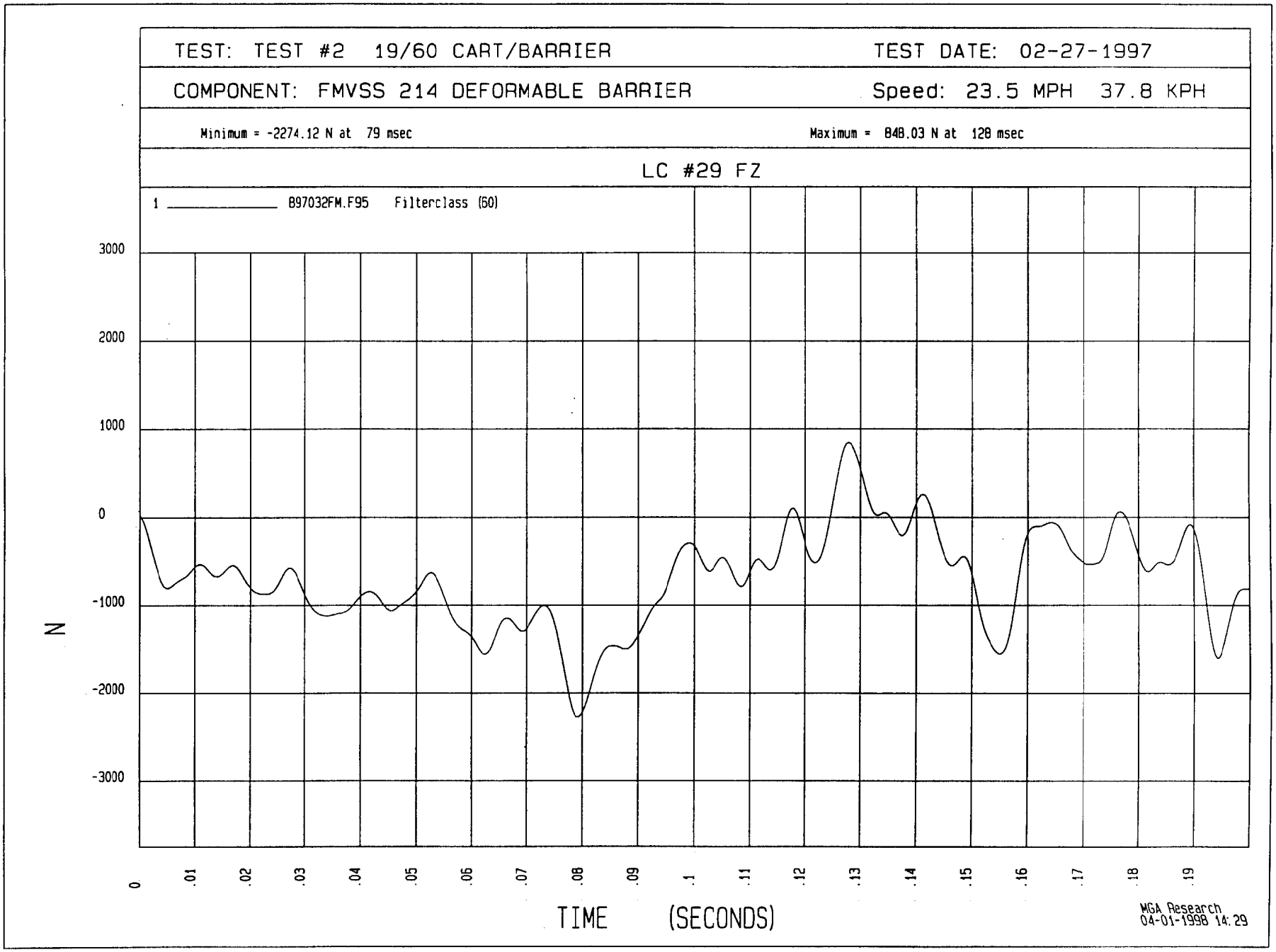
TIME (SECONDS)
MGA Research
04-01-1998 14:14


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2274.12 N at 79 msec
Maximum = 848.03 N at 128 msec
LC #29 FZ
1 B97032FM.F95 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
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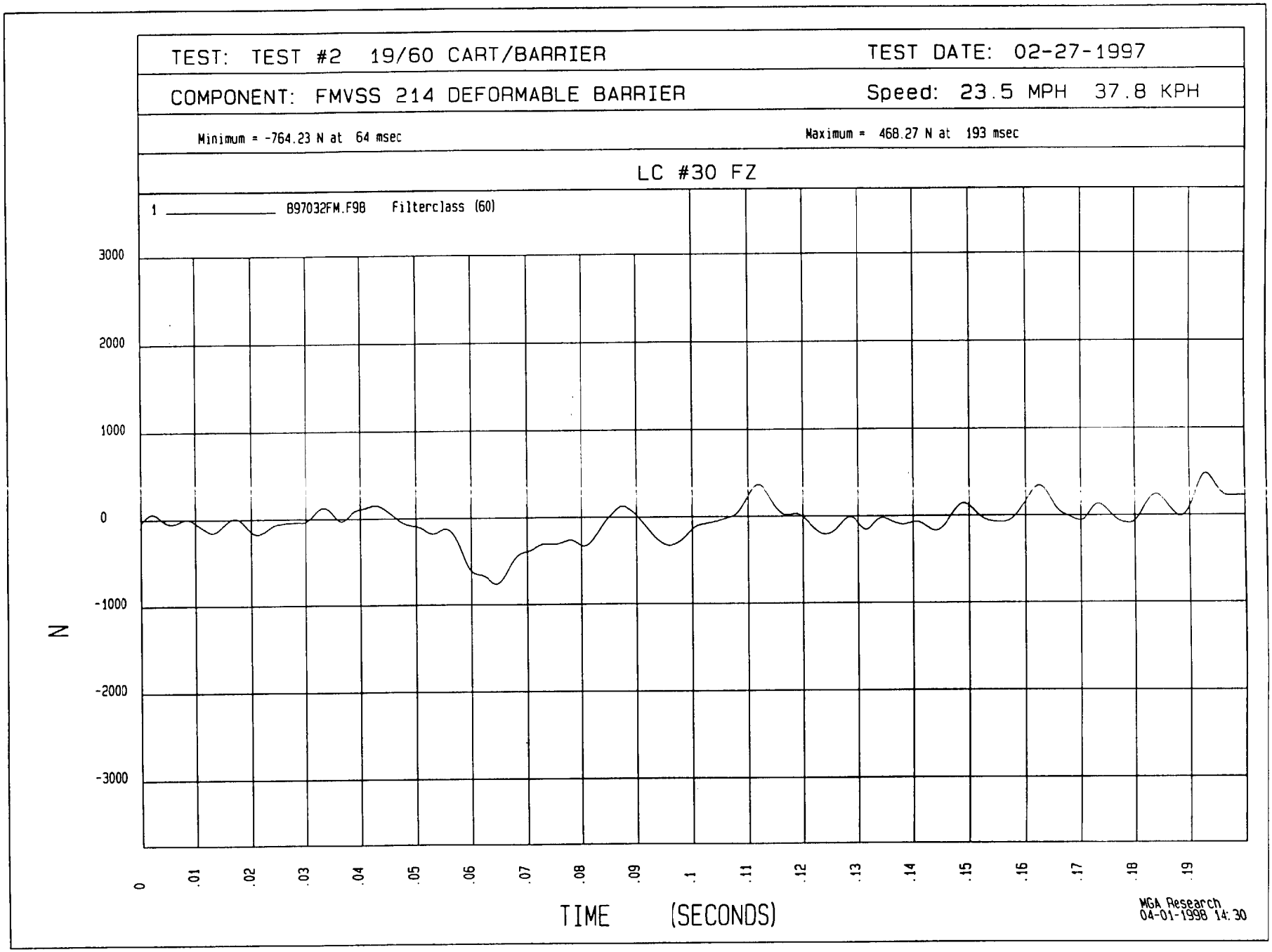
TIME (SECONDS)
MGA Research
04-01-1998 14:29


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -764.23 N at 64 msec
Maximum = 468.27 N at 193 msec
LC #30 FZ
1 B97032FM.F98 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
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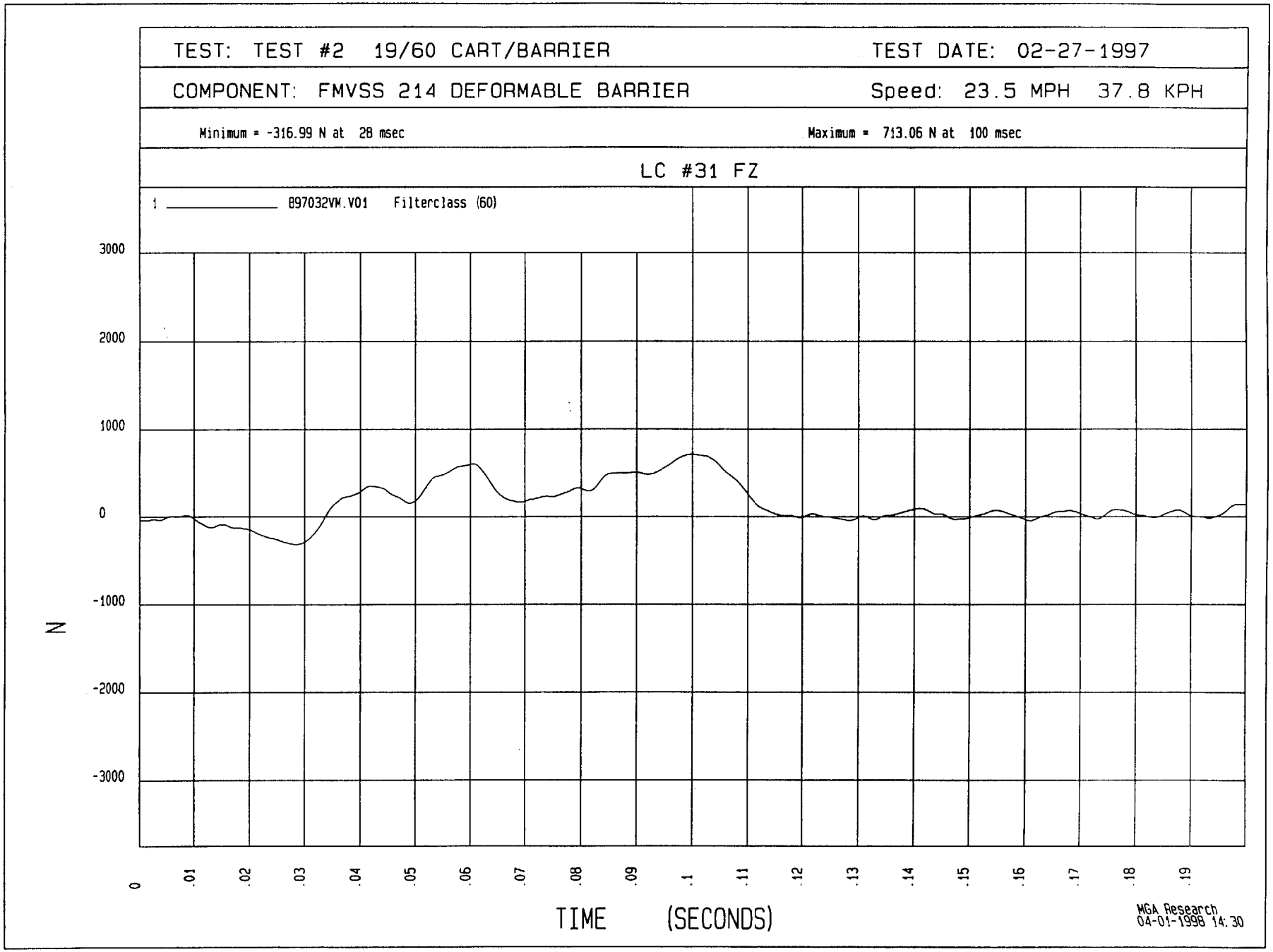
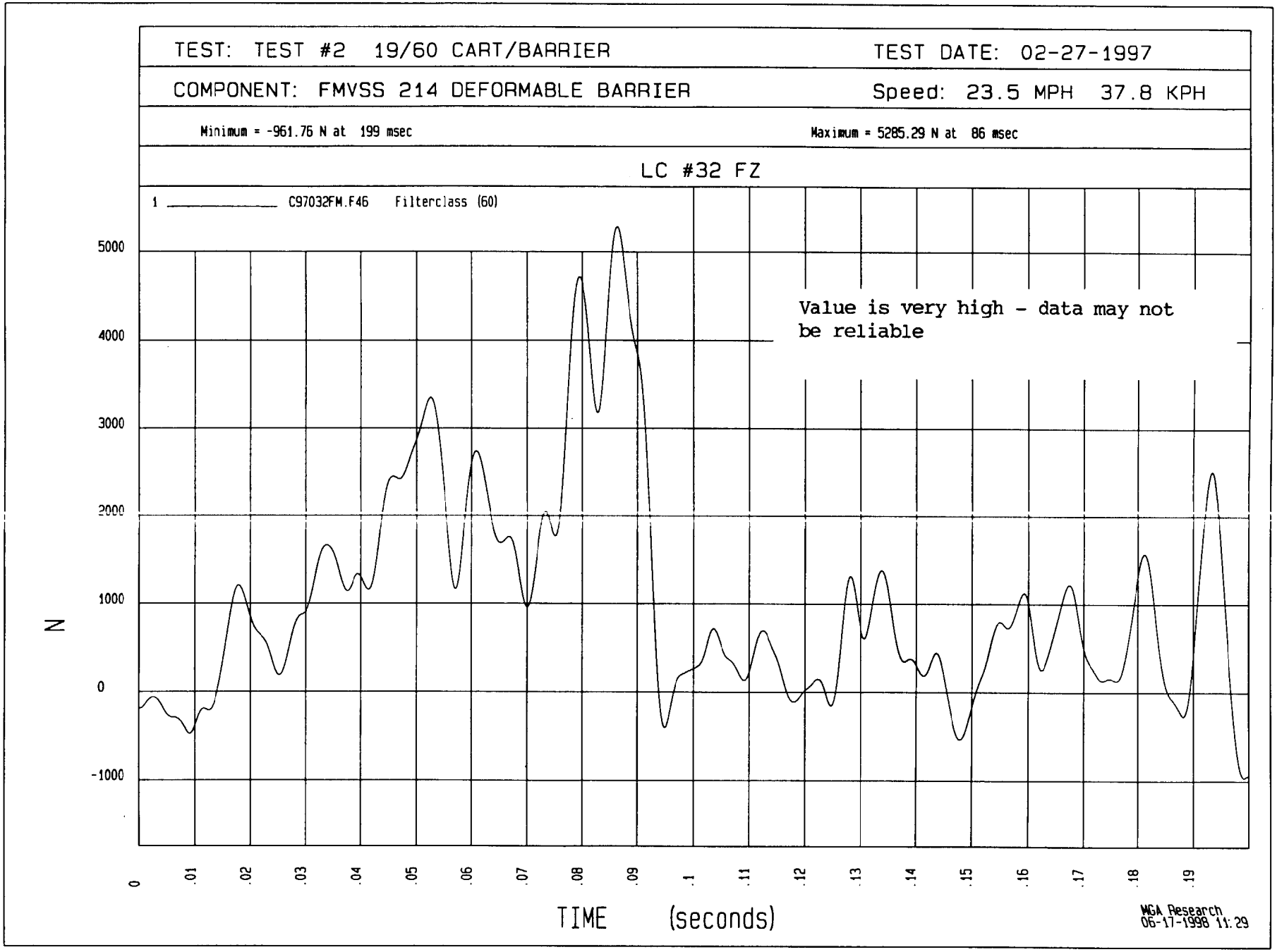
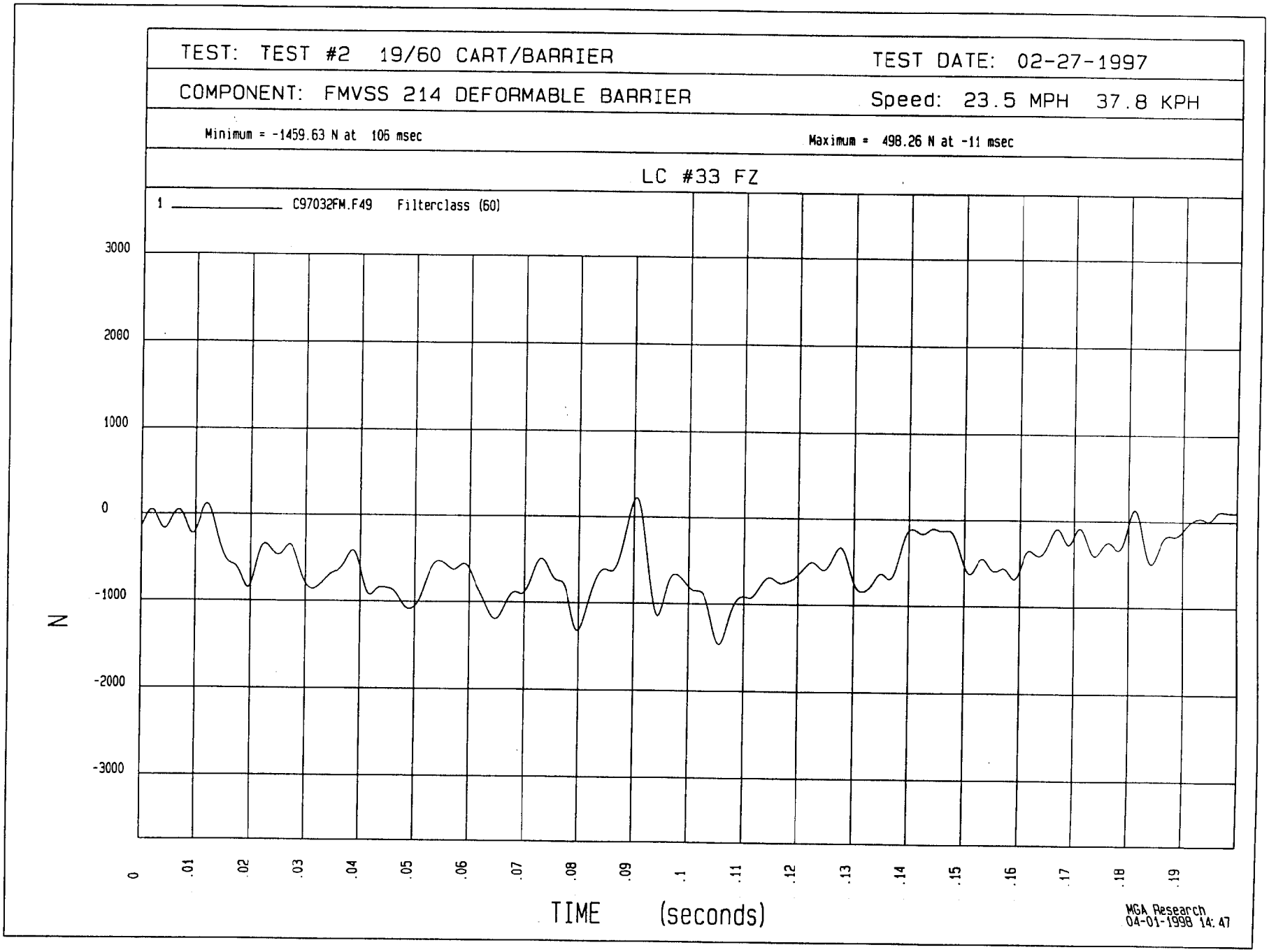
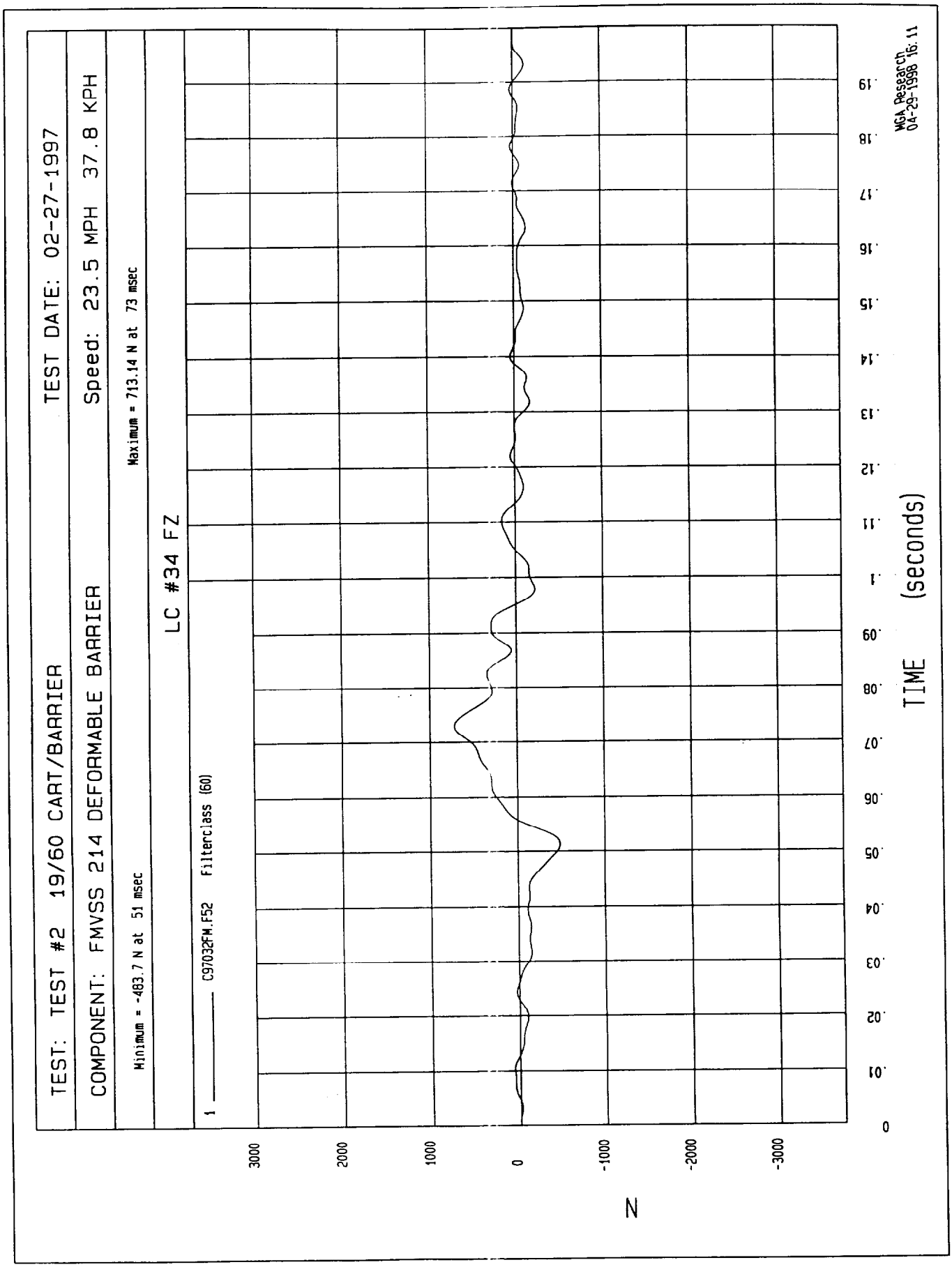
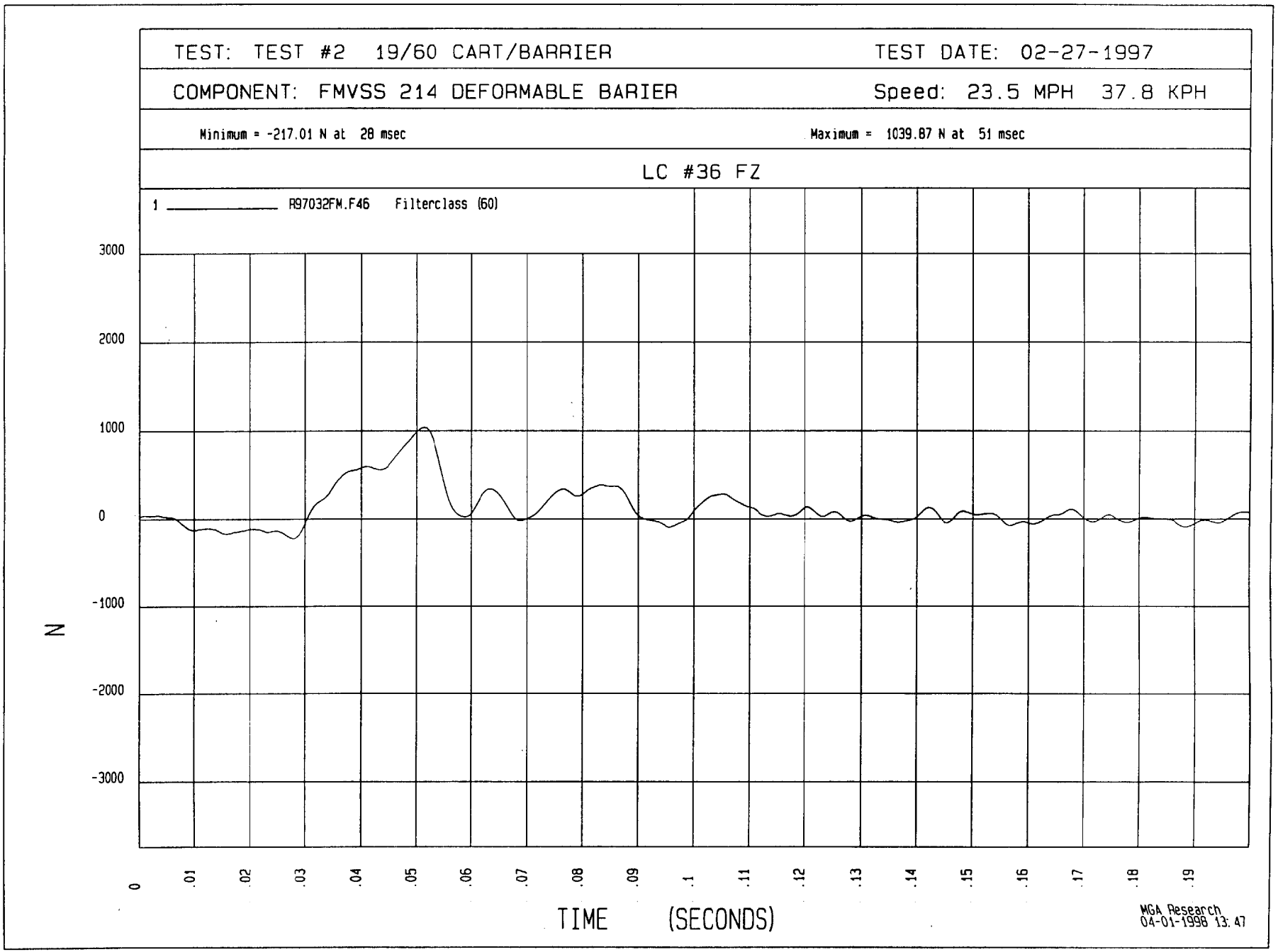
TIME (SECONDS)
MGA Research
04-01-1998 14:30

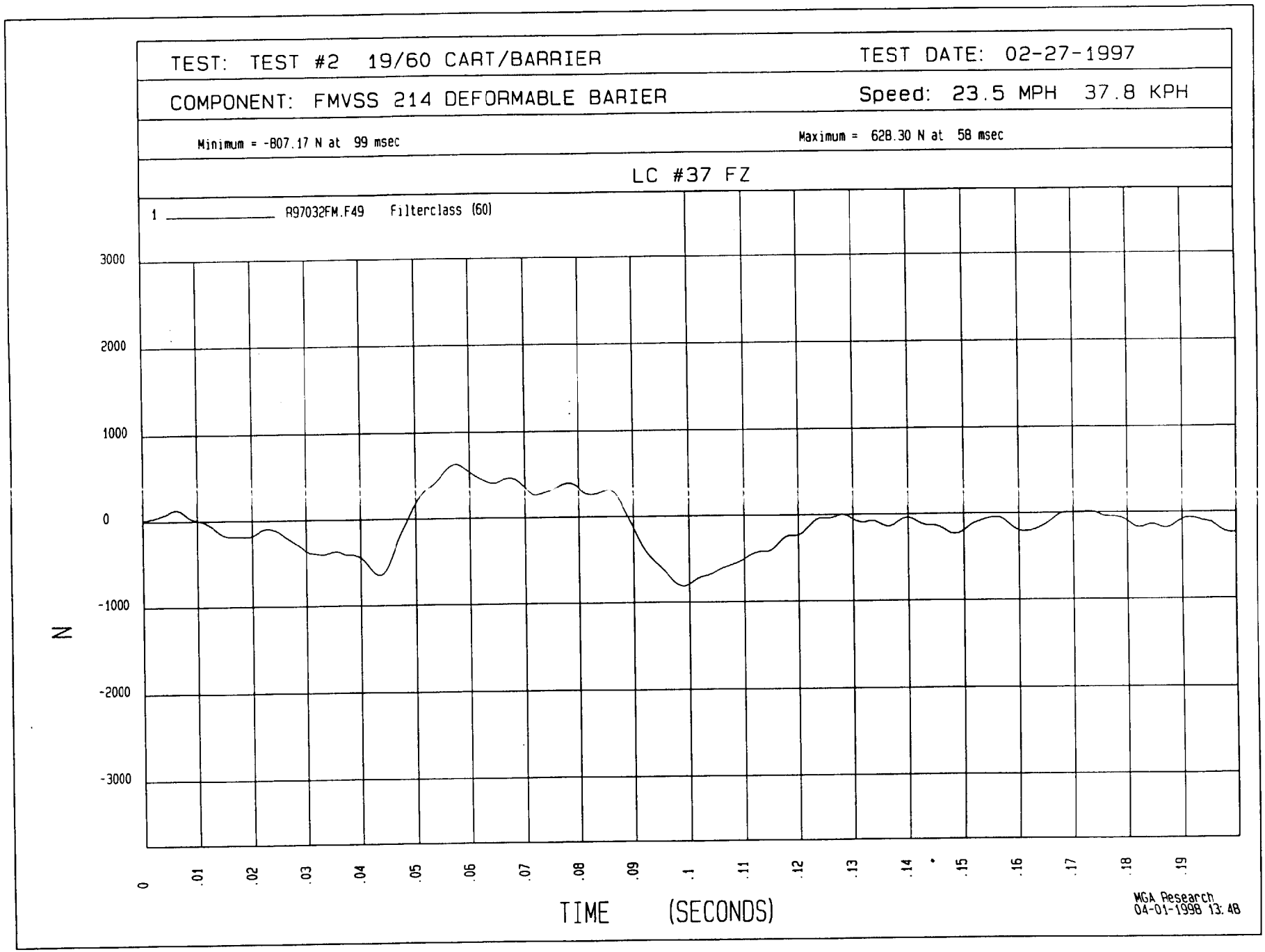

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -316.99 N at 28 msec
Maximum = 713.06 N at 100 msec
LC #31 FZ
1 897032VM.V01 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 14:30

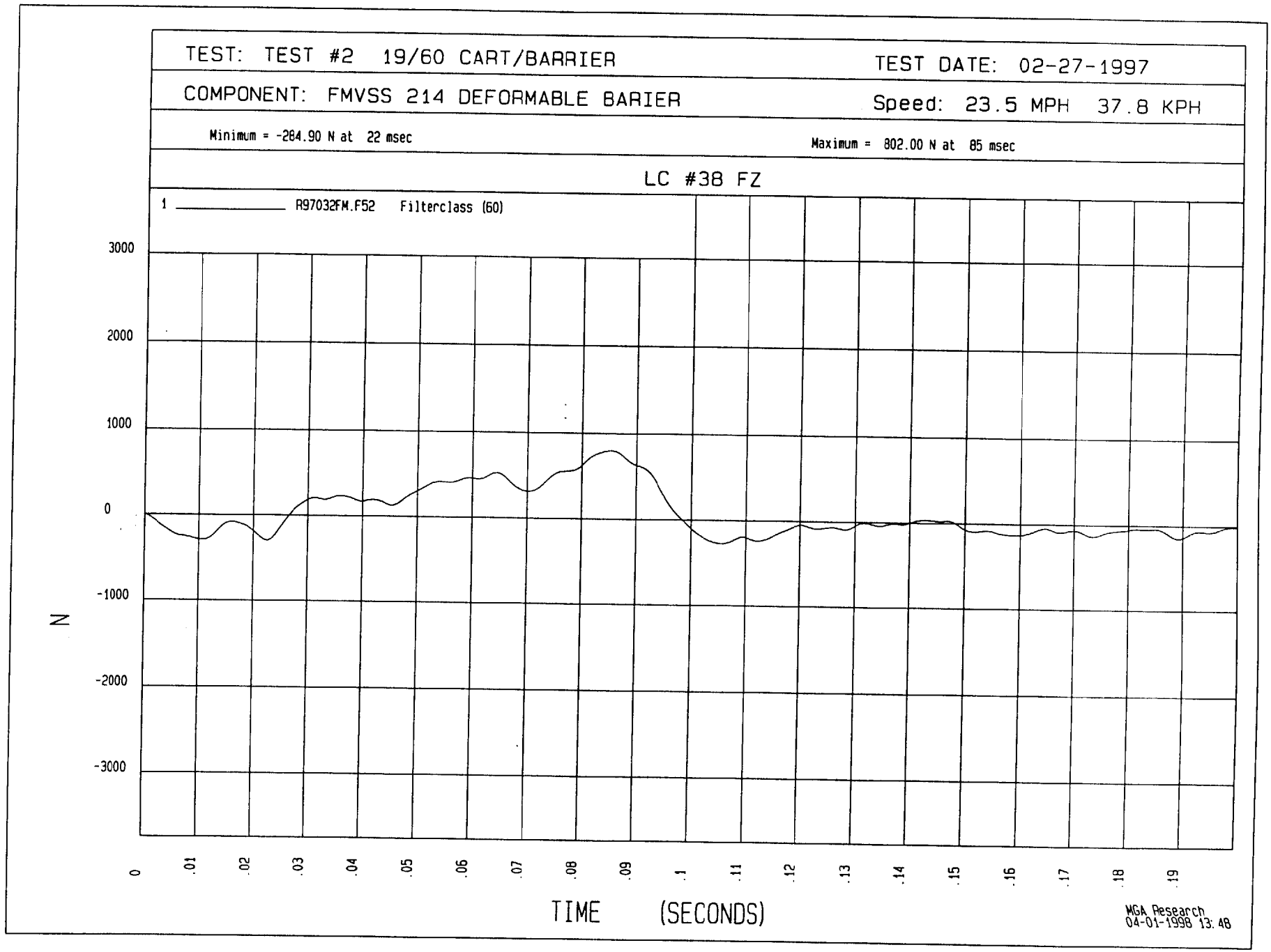

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -961.76 N at 199 msec
Maximum = 5285.29 N at 86 msec
LC #32 FZ
1 C97032FM.F46 Filterclass (60)
Value is very high - data may not be reliable
5000
4000
3000
2000
1000
0
-1000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
06-17-1998 11:29

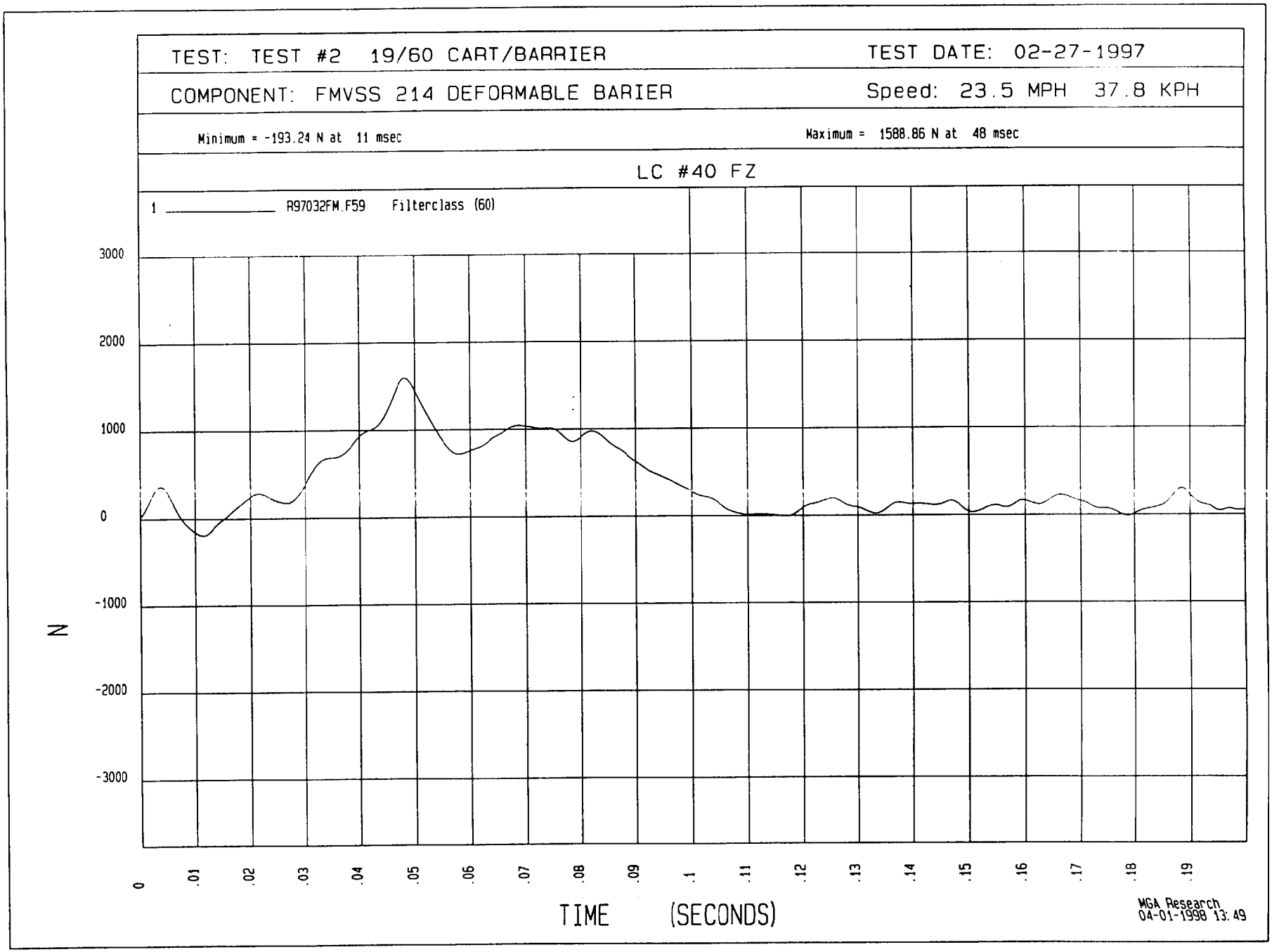

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1459.63 N at 106 msec
Maximum = 498.26 N at -11 msec
LC #33 FZ
1 C97032FM.F49 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1998 14:47

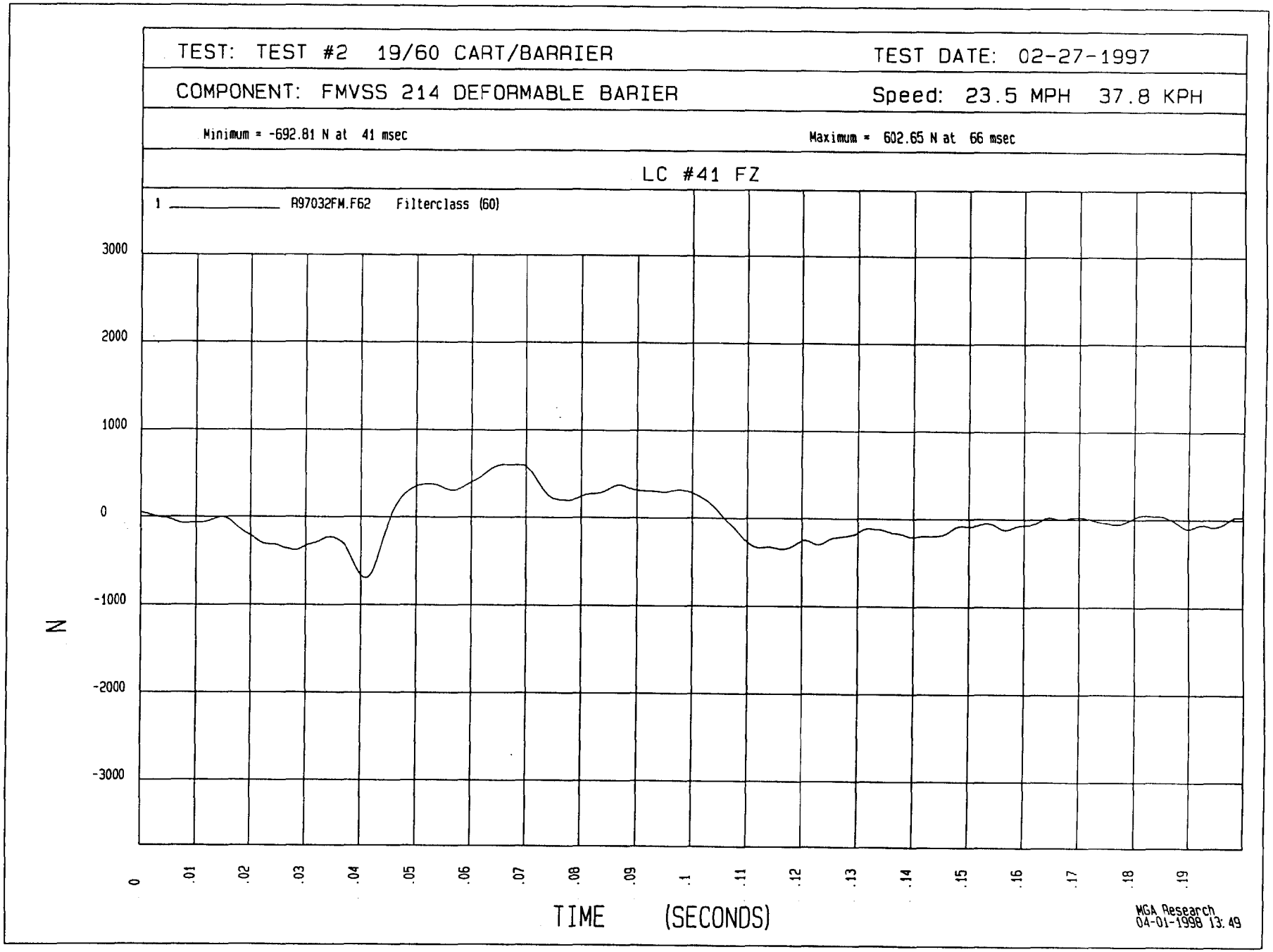

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -483.7 N at 51 msec
Maximum = 713.14 N at 73 msec
LC #34 FZ
1 C97032FM.F52 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (seconds)
MGA Research
04-29-1998 16:11

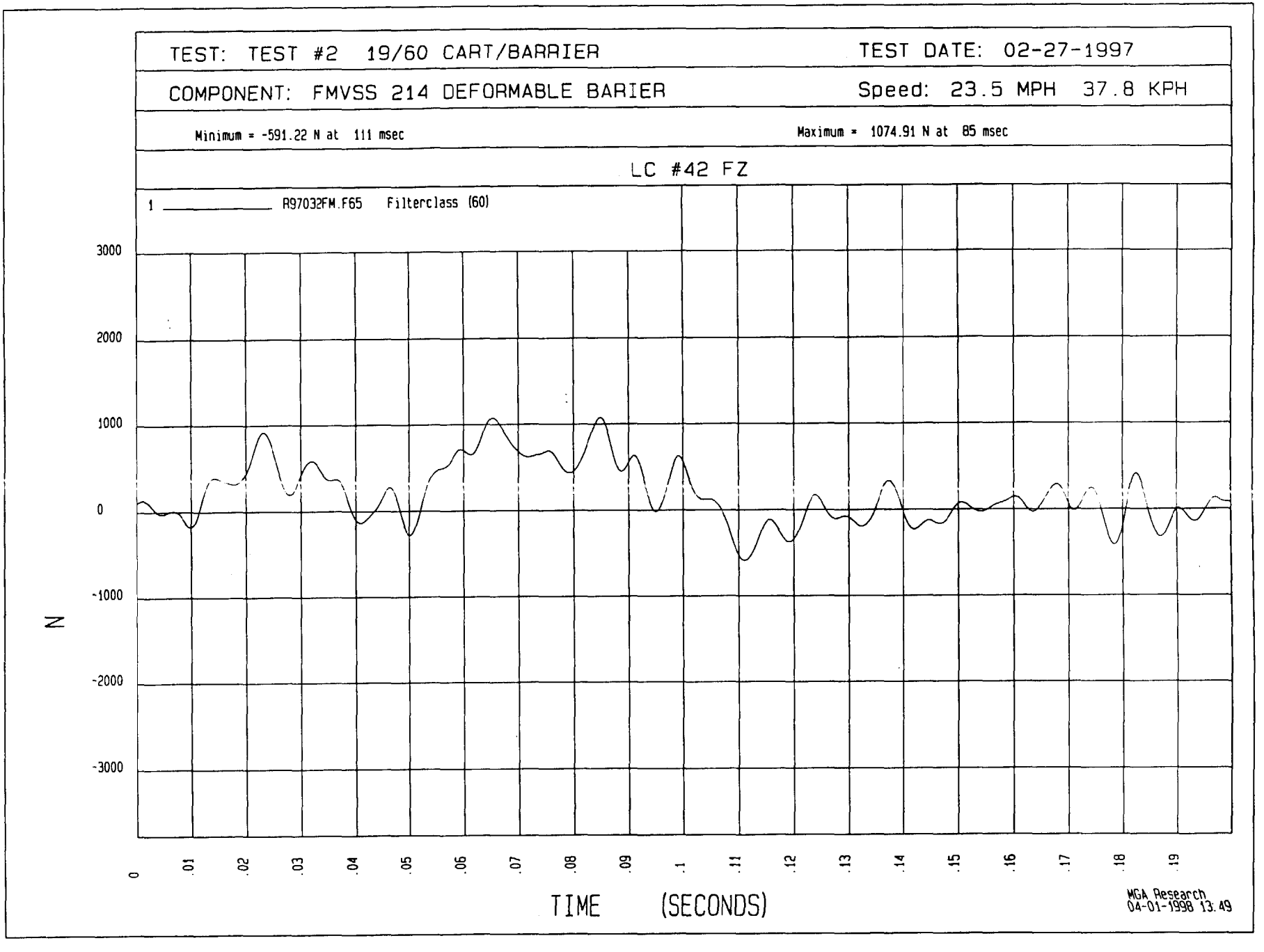

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -217.01 N at 28 msec
Maximum = 1039.87 N at 51 msec
LC #36 FZ
1 R97032FM.F46 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 13:47

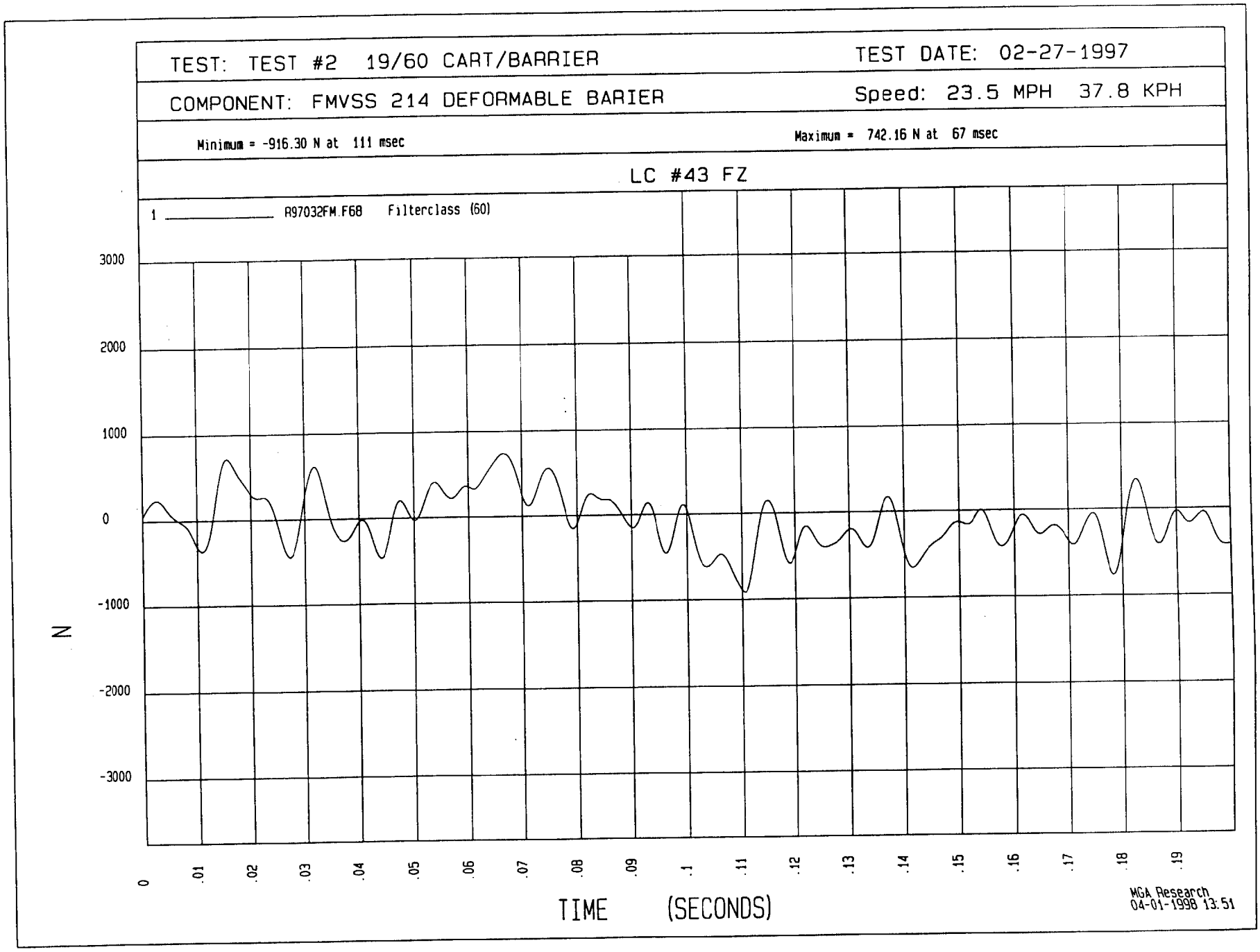

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -807.17 N at 99 msec
Maximum = 628.30 N at 58 msec
LC #37 FZ
1 R97032FM.F49 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 13:48

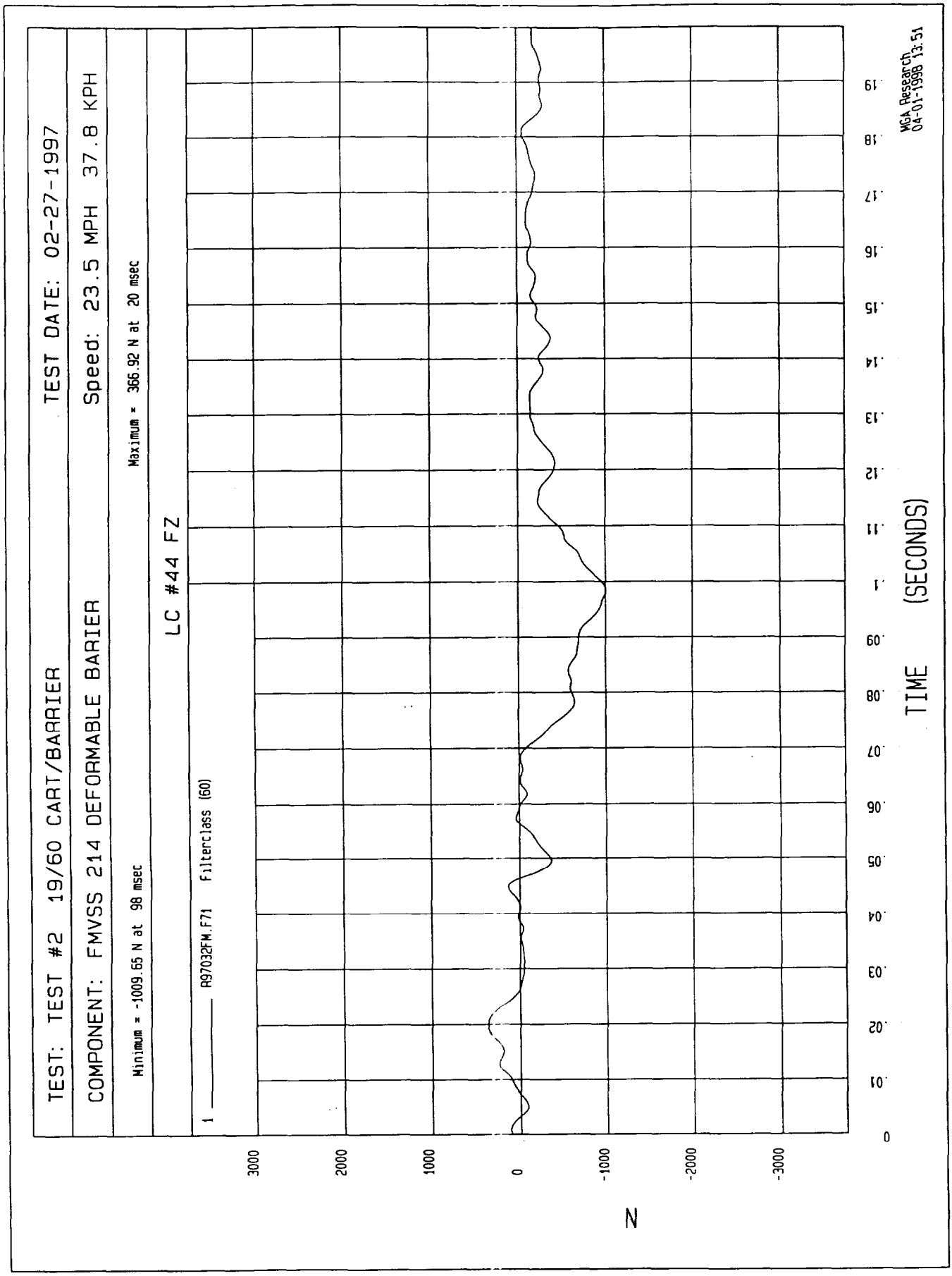

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -284.90 N at 22 msec
Maximum = 802.00 N at 85 msec
LC #38 FZ
1 R97032FM.F52 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 13:48

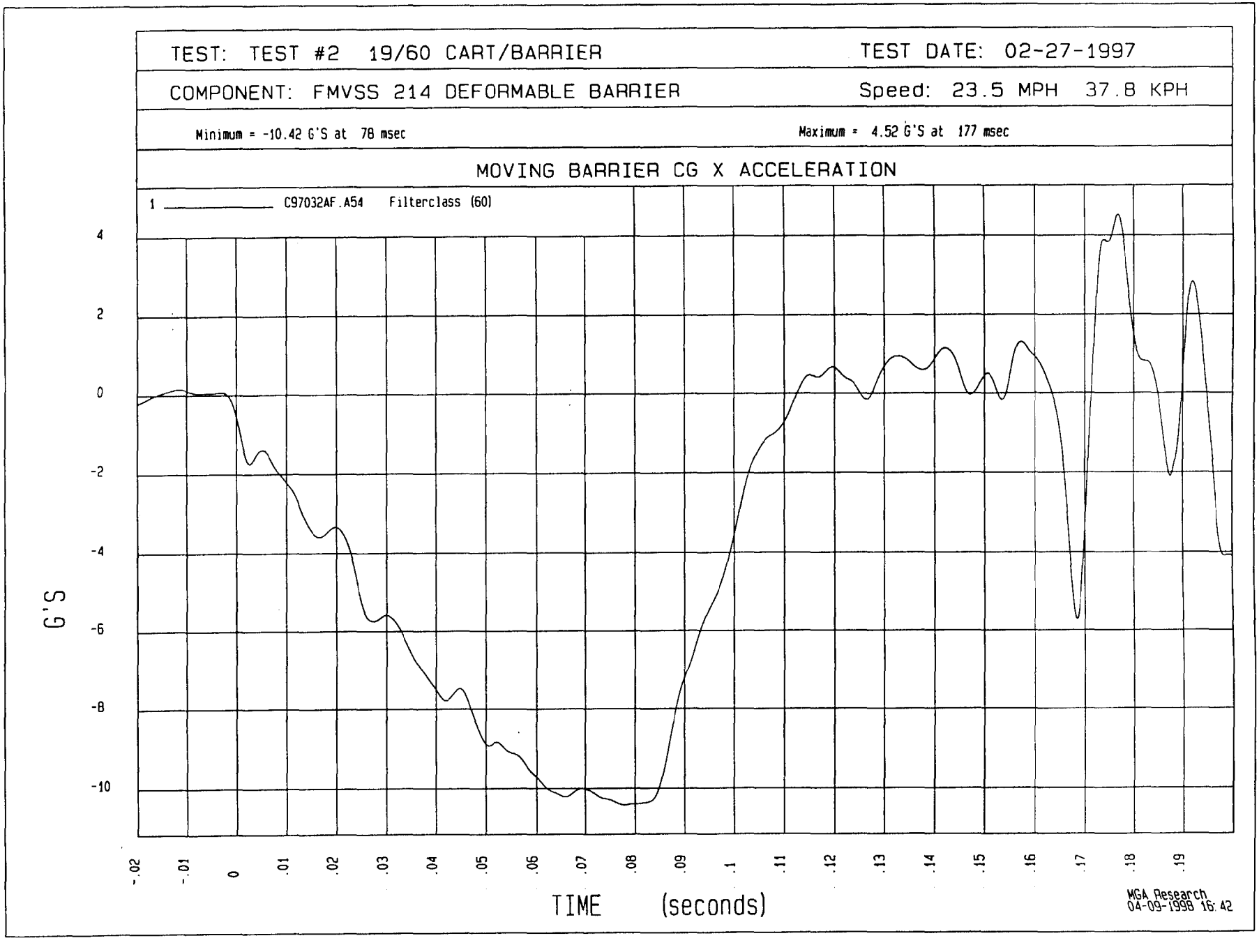

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -193.24 N at 11 msec
Maximum = 1588.86 N at 48 msec
LC #40 FZ
1 R97032FM.F59 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 13:49

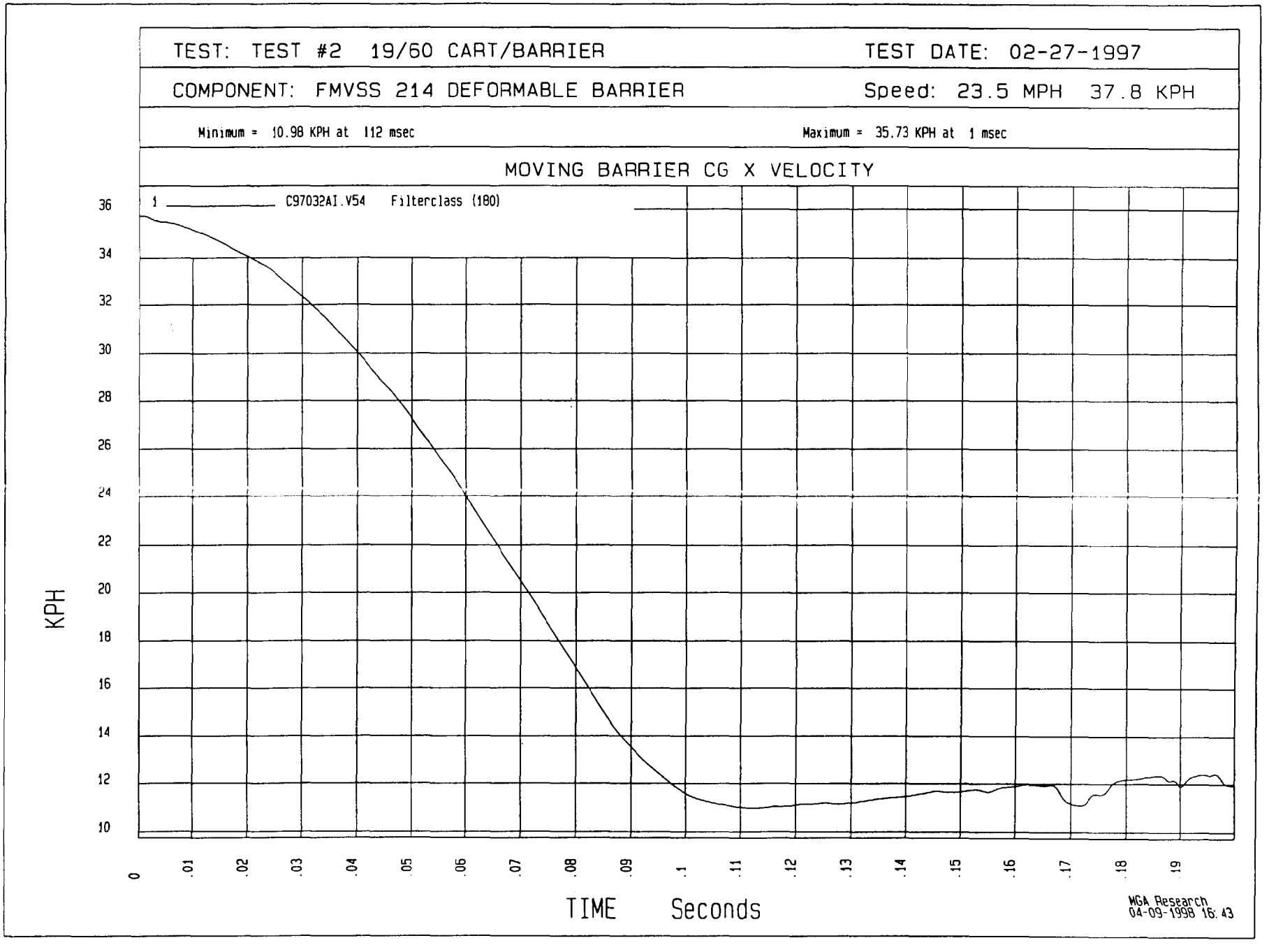

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -692.81 N at 41 msec
Maximum = 602.65 N at 66 msec
LC #41 FZ
1 R97032FM.F62 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 13:49

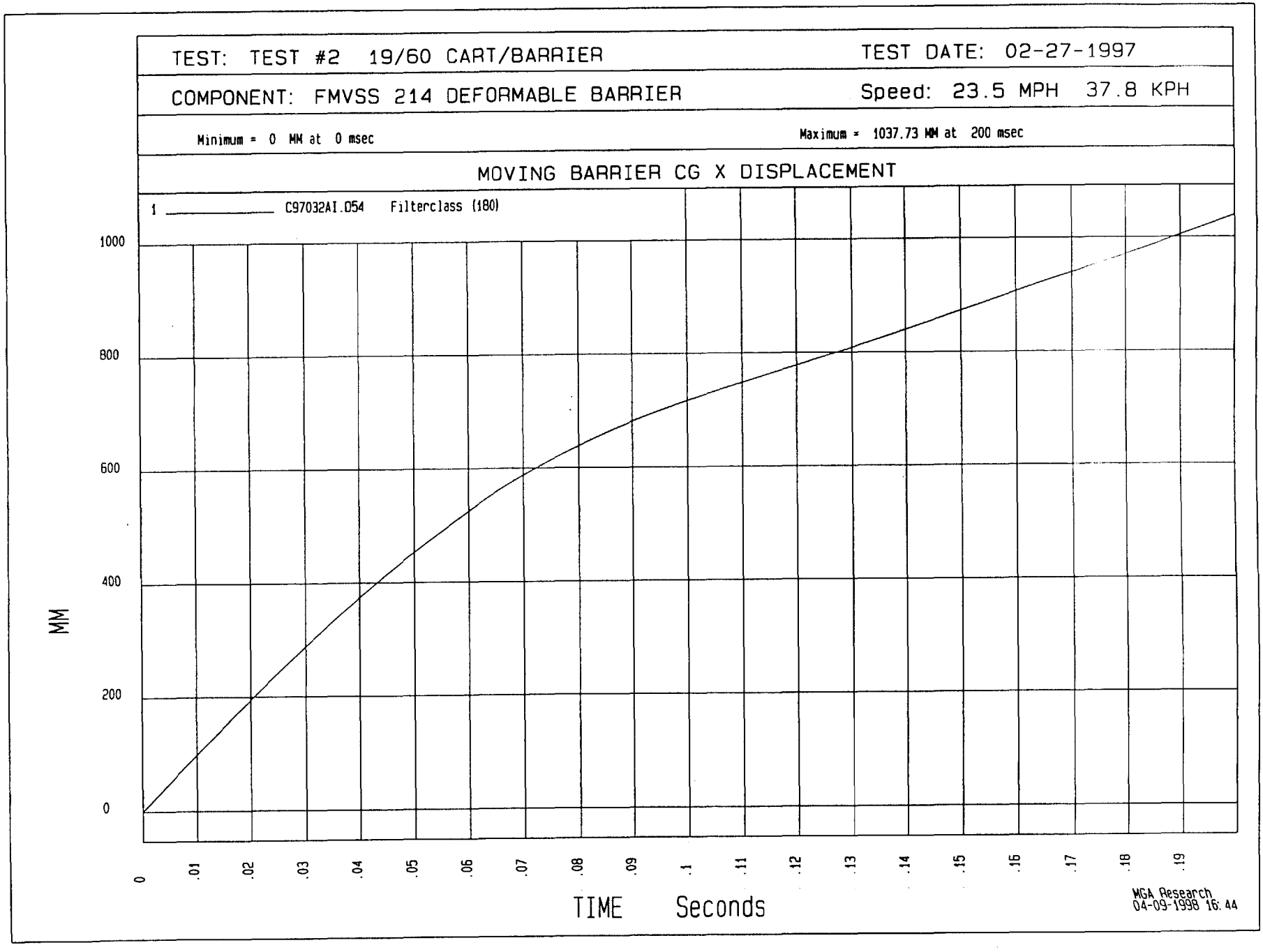

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -591.22 N at 111 msec
Maximum = 1074.91 N at 85 msec
LC #42 FZ
1 R97032FM.F65 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 13:49

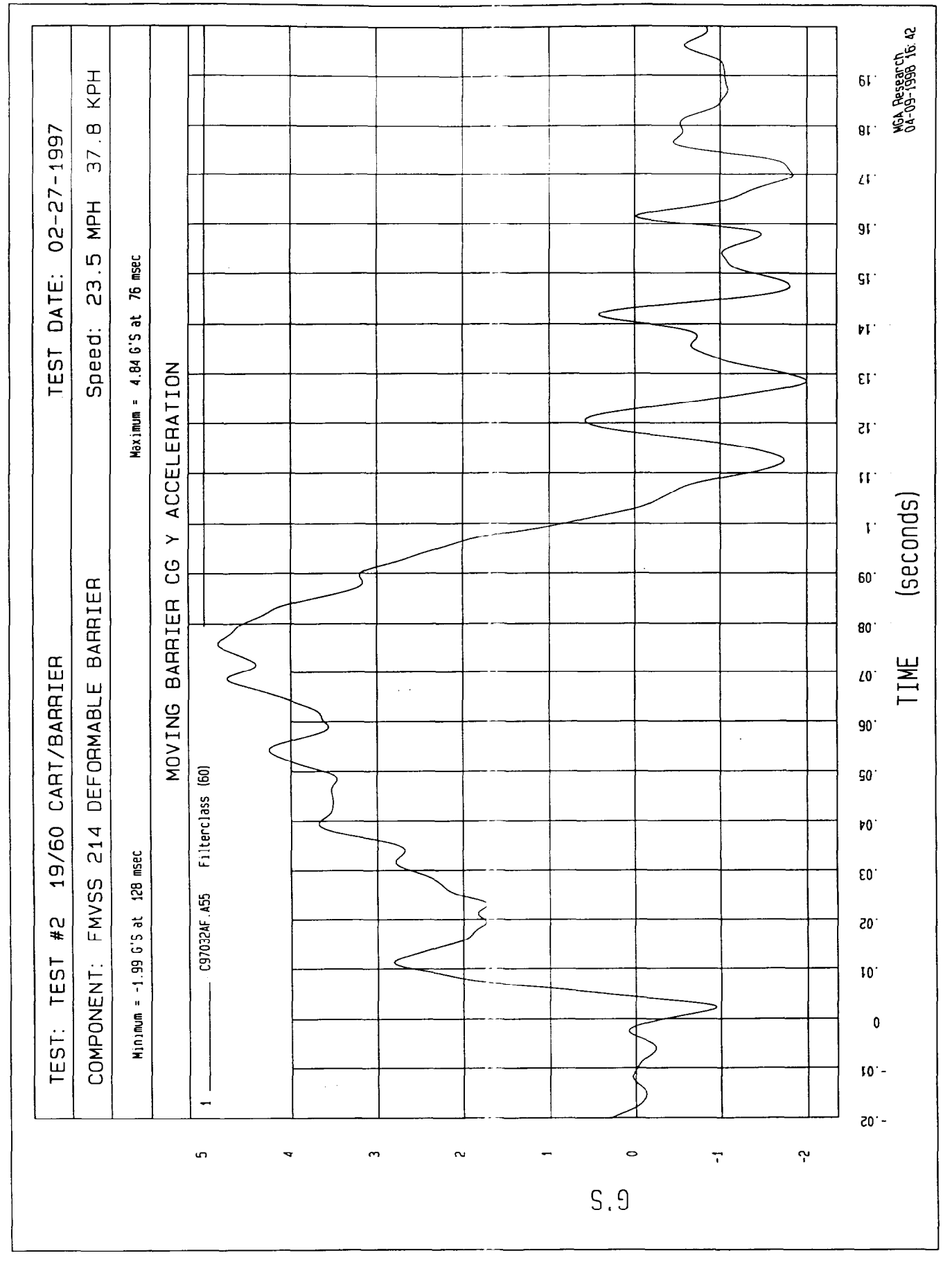

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -916.30 N at 111 msec
Maximum = 742.16 N at 67 msec
LC #43 FZ
1 R97032FM.F68 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1998 13:51

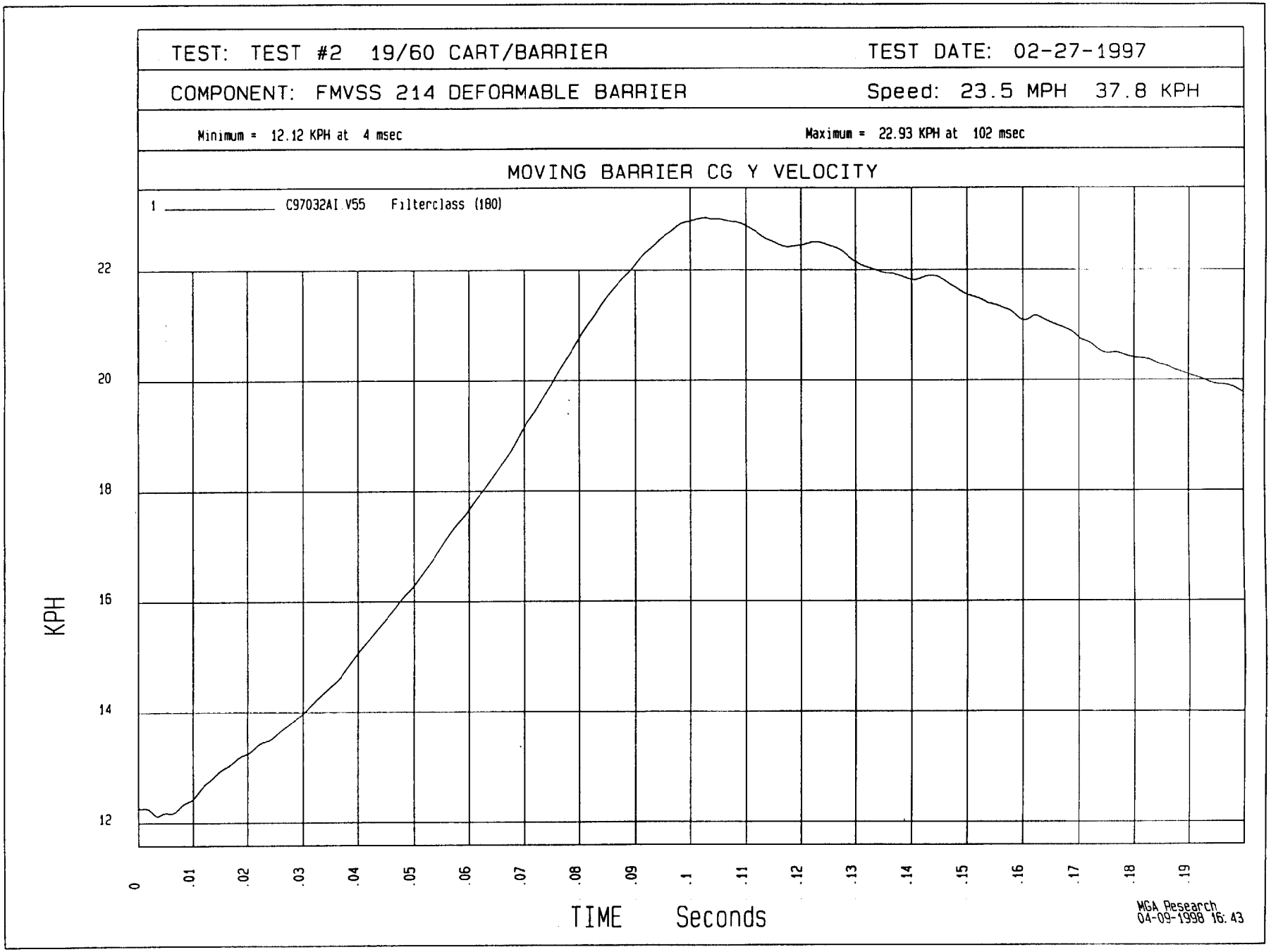

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1009.65 N at 98 msec
Maximum = 366.92 N at 20 msec
LC #44 FZ
1 R97032FM.F71 Filterclass (60)
3000
2000
1000
0
-1000
-2000
-3000
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-01-1998 13:51

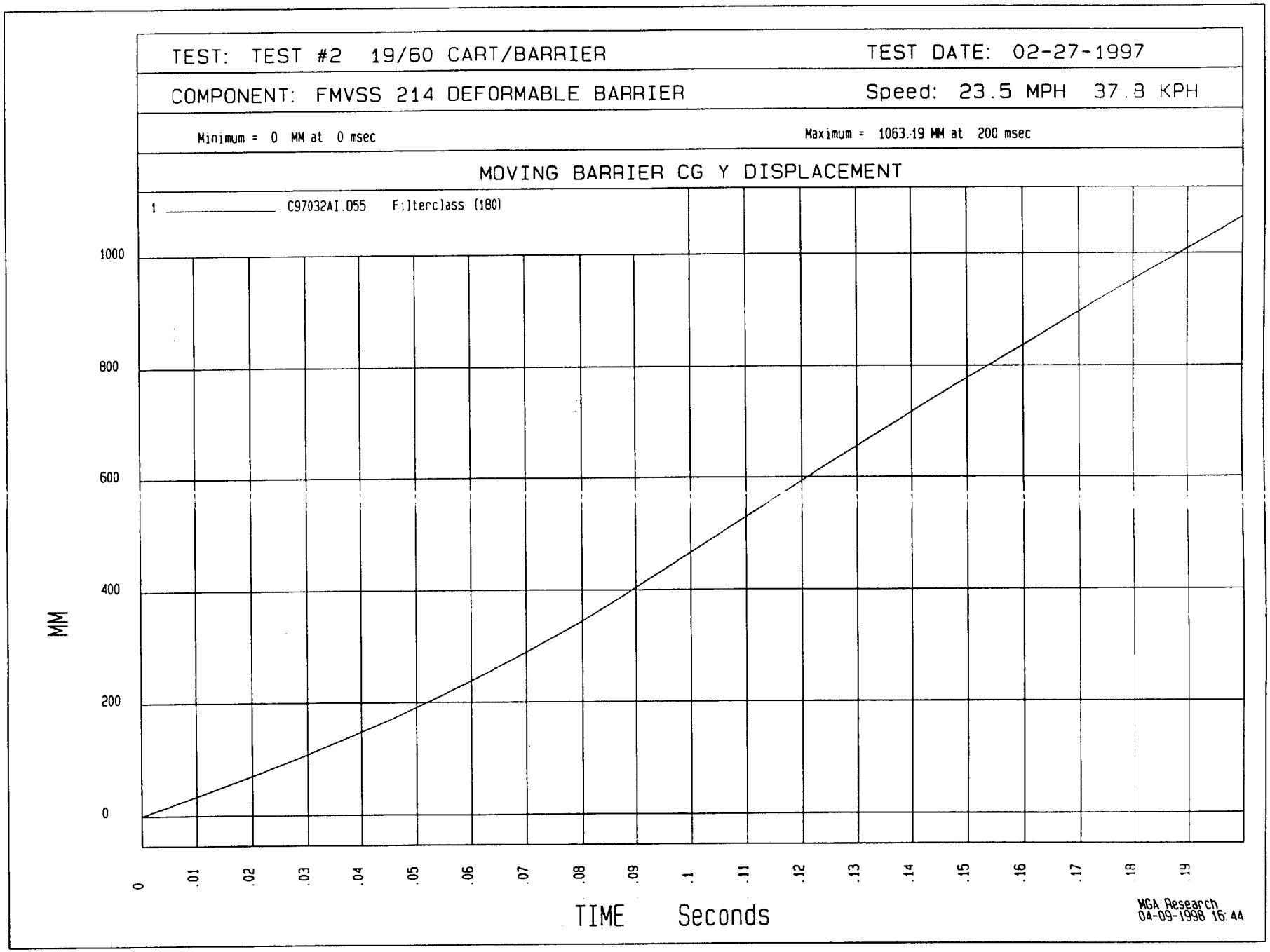

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -10.42 G'S at 78 msec
Maximum = 4.52 G'S at 177 msec
MOVING BARRIER CG X ACCELERATION
1 C97032AF.A54 Filterclass (60)
4
2
0
-2
-4
-6
-8
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-09-1998 16:42

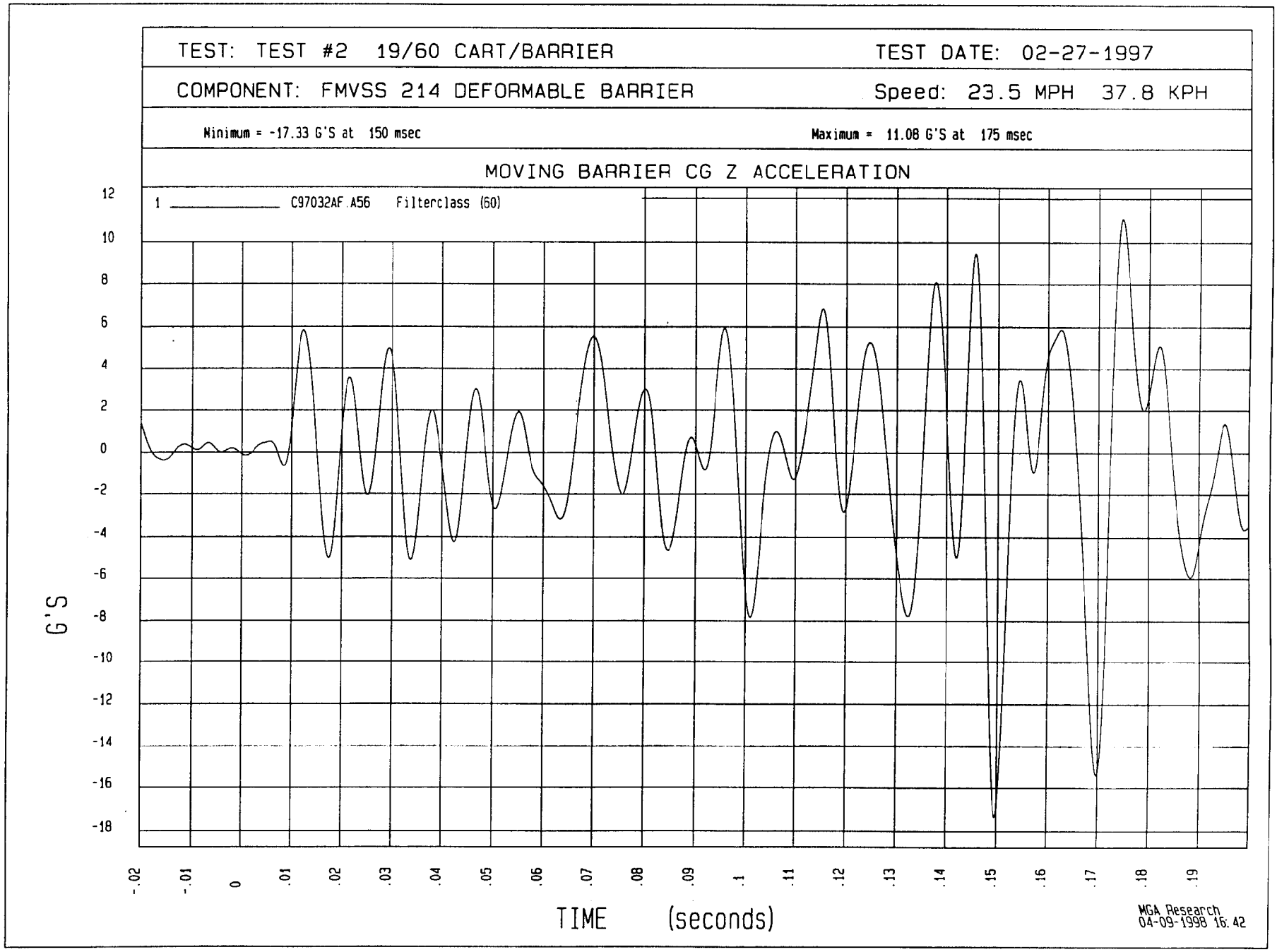

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 10.98 KPH at 112 msec
Maximum = 35.73 KPH at 1 msec
MOVING BARRIER CG X VELOCITY
1 C97032AI.V54 Filterclass (180)
KPH
36
34
32
30
28
26
24
22
20
18
16
14
12
10
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:43

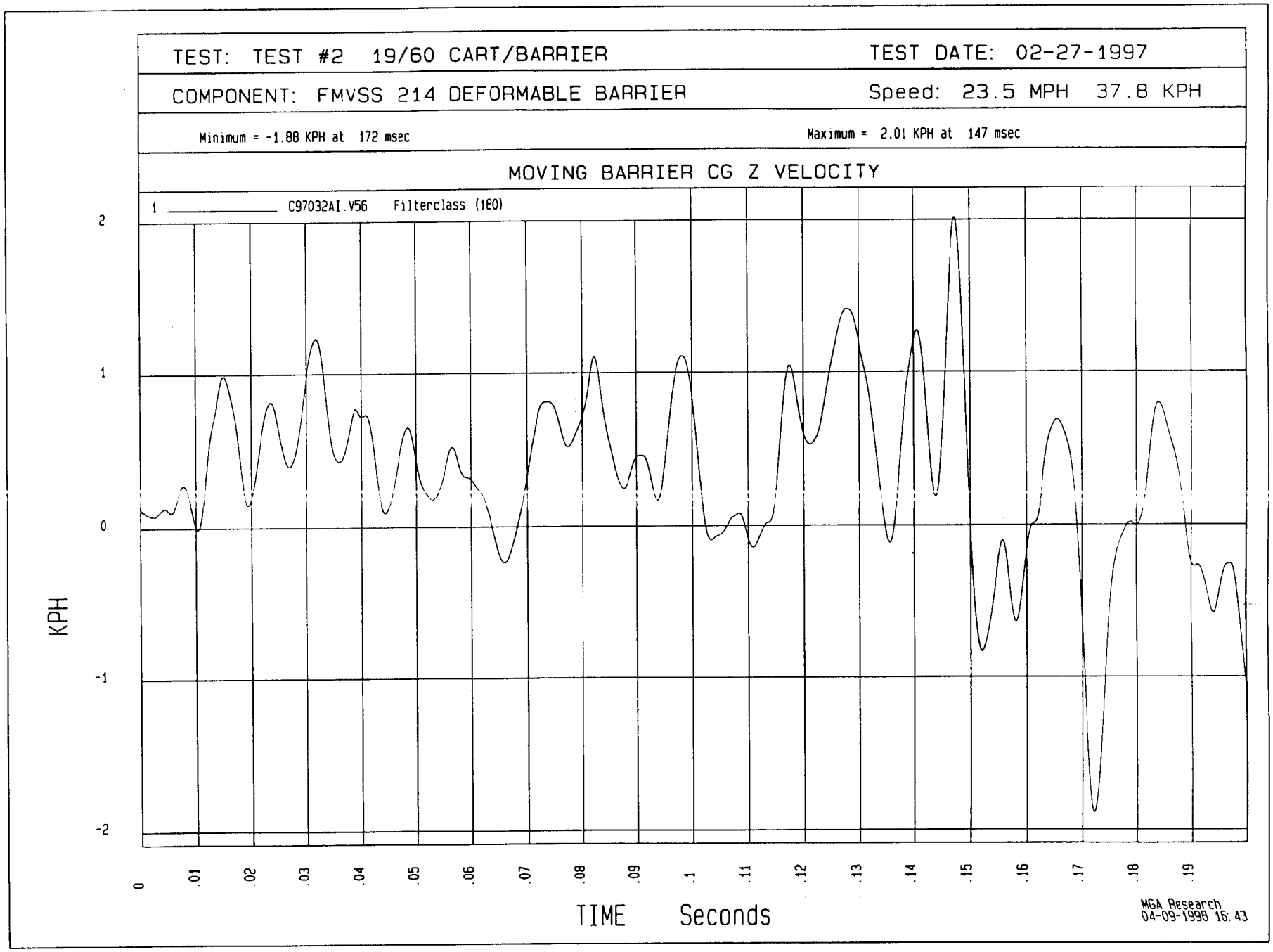

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 0 MM at 0 msec
Maximum = 1037.73 MM at 200 msec
MOVING BARRIER CG X DISPLACEMENT
1 C97032AI.D54 Filterclass (180)
MM
1000
800
600
400
200
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:44

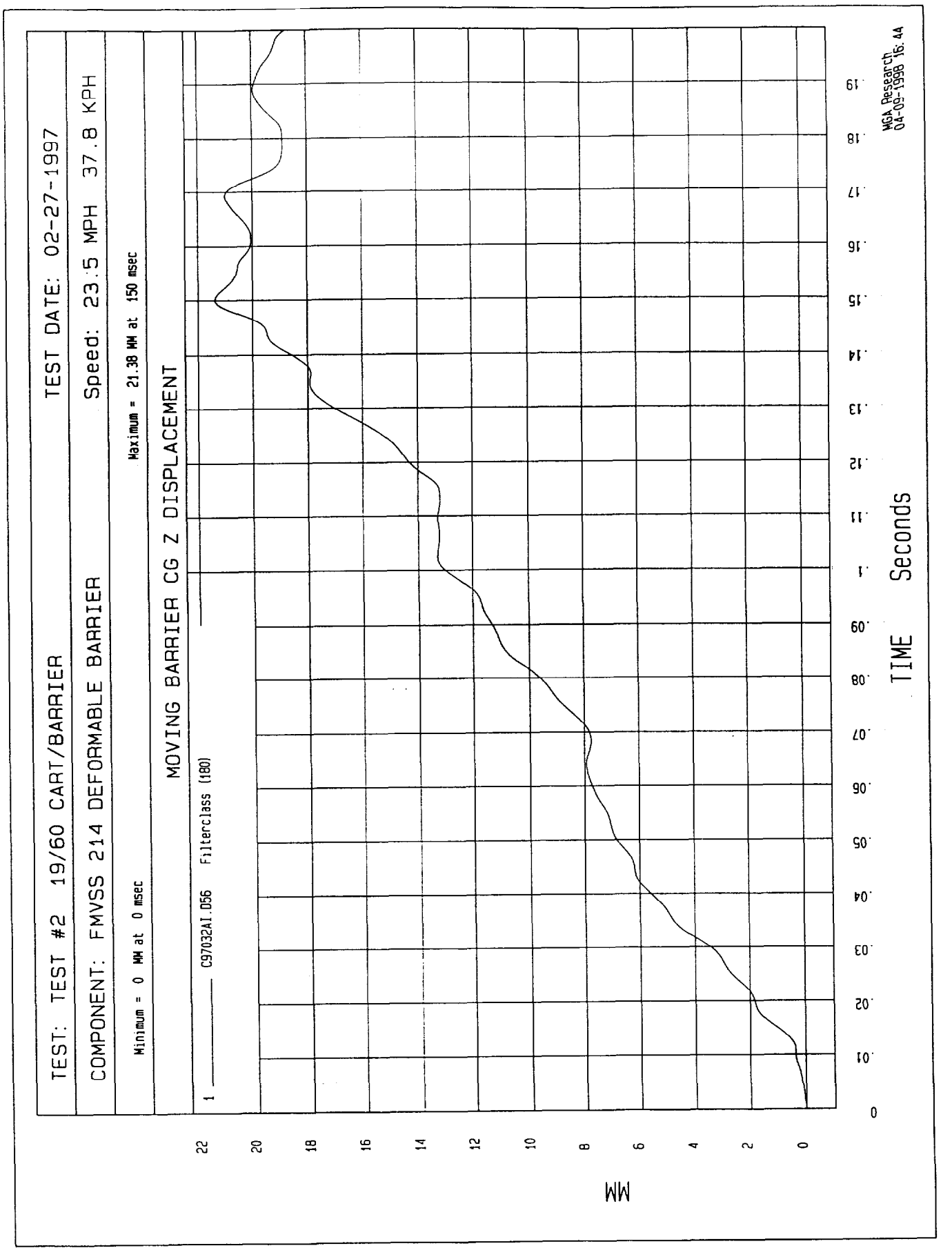

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.99 G'S at 128 msec
Maximum = 4.84 G'S at 76 msec
MOVING BARRIER CG Y ACCELERATION
1 C97032AF.A55 Filterclass (60)
MGA Research
04-09-1998 16:42
G'S
TIME (seconds)

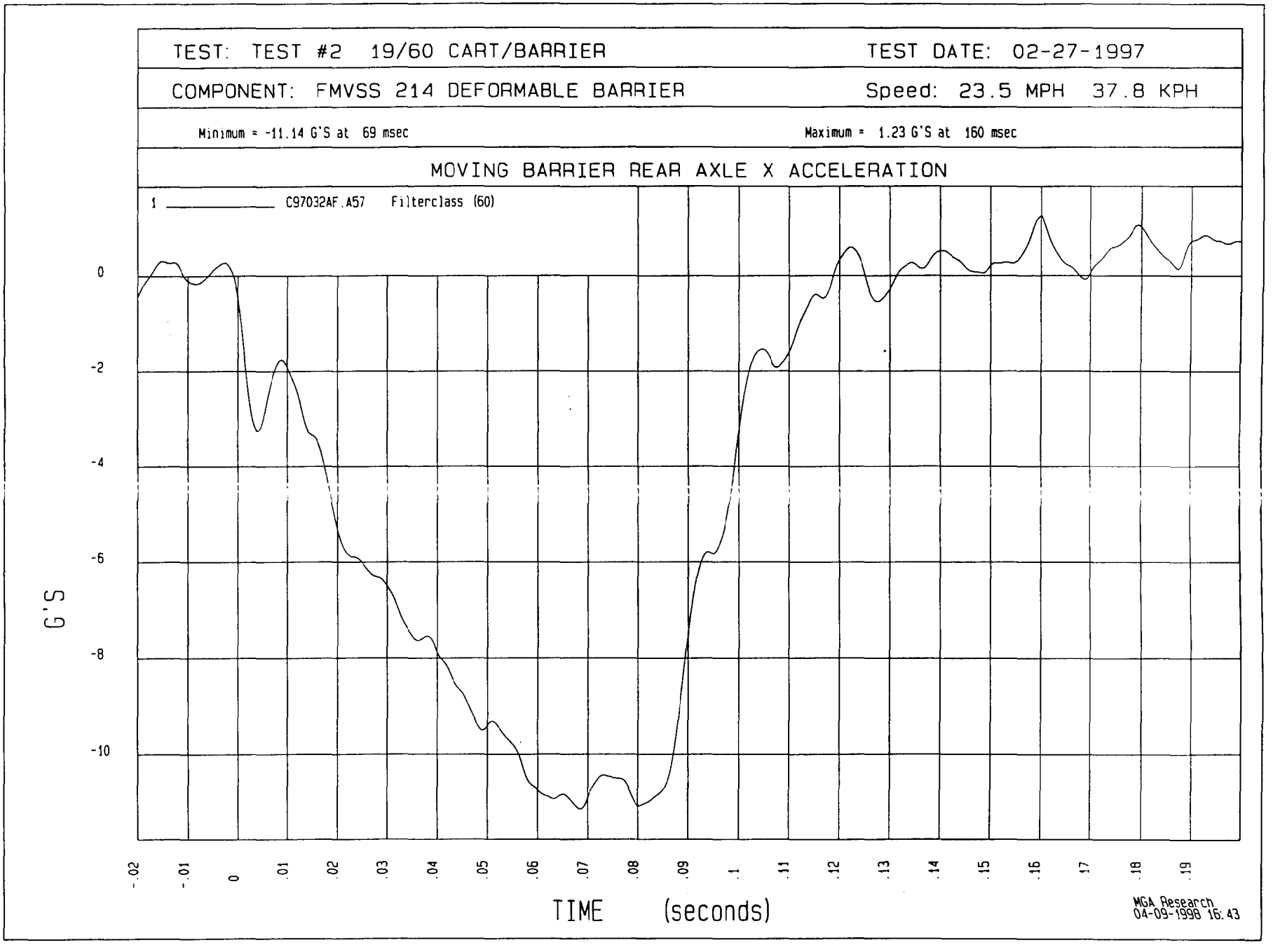

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 12.12 KPH at 4 msec
Maximum = 22.93 KPH at 102 msec
MOVING BARRIER CG Y VELOCITY
1 C97032AI V55 Filterclass (180)
KPH
22
20
18
16
14
12
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:43

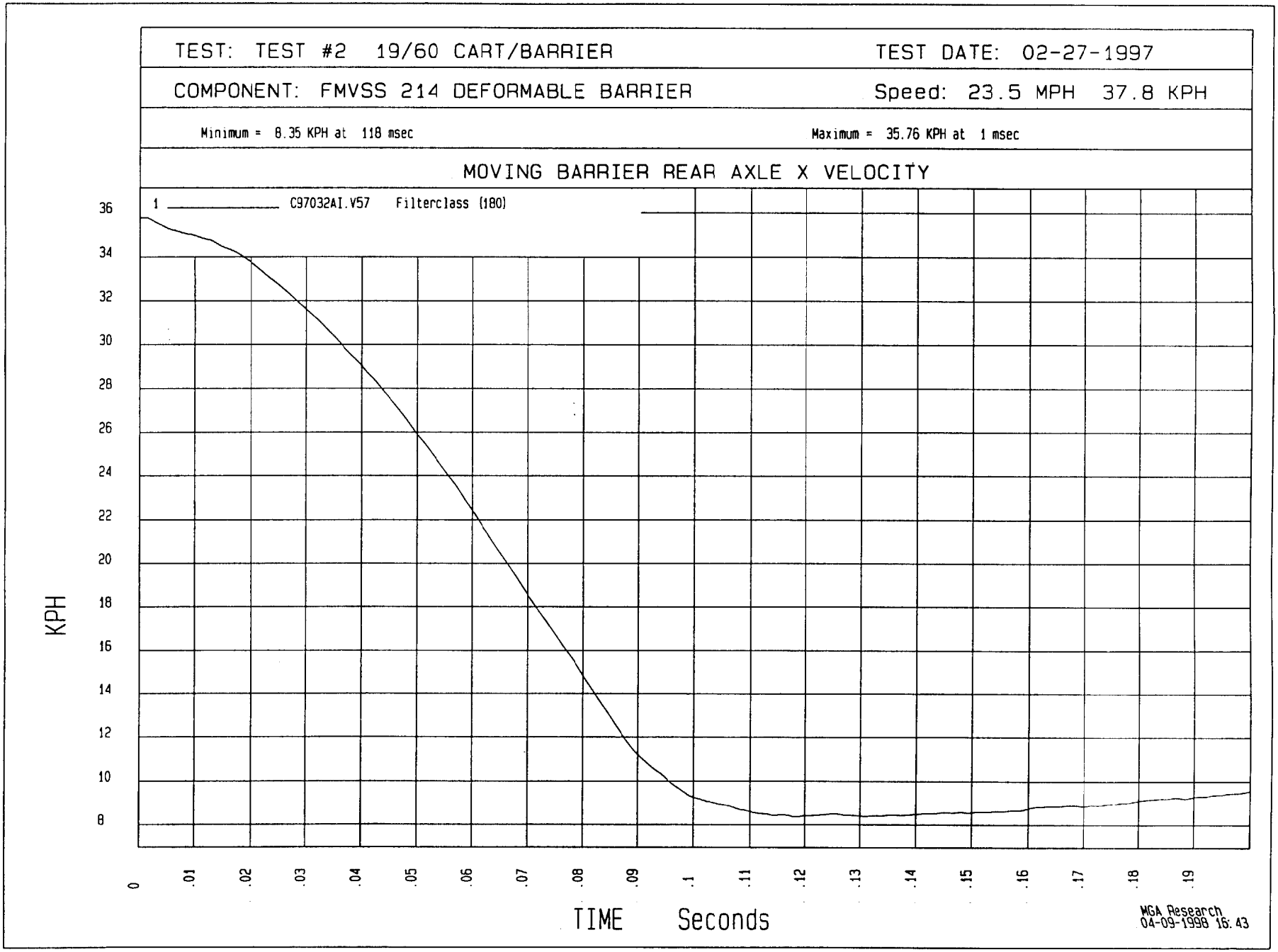

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 0 MM at 0 msec
Maximum = 1063.19 MM at 200 msec
MOVING BARRIER CG Y DISPLACEMENT
1 C97032AI.D55 Filterclass (180)
MM
1000
800
600
400
200
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:44

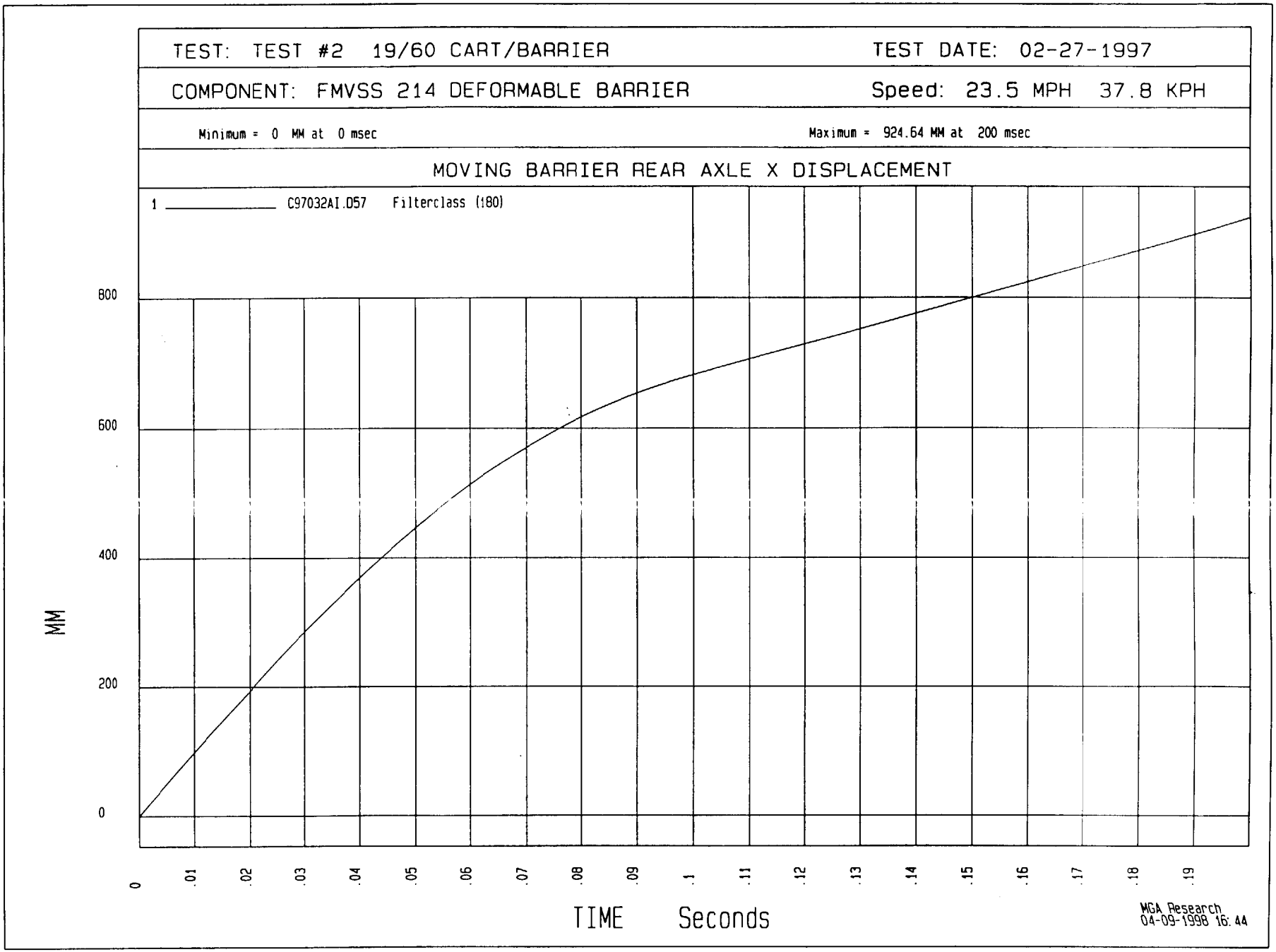

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -17.33 G'S at 150 msec
Maximum = 11.08 G'S at 175 msec
MOVING BARRIER CG Z ACCELERATION
1 C97032AF.A56 Filterclass (60)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-09-1998 16:42

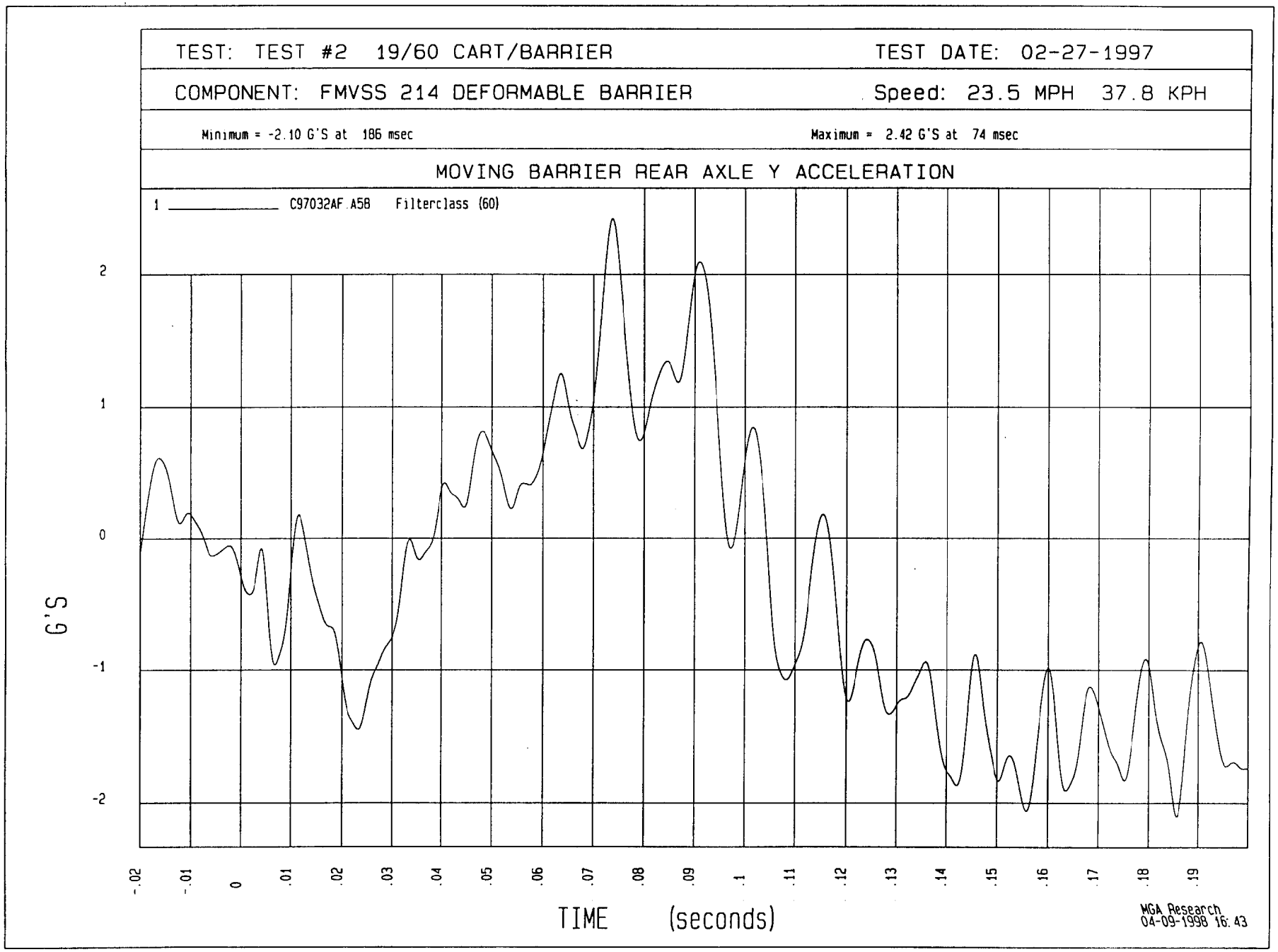

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1.88 KPH at 172 msec
Maximum = 2.01 KPH at 147 msec
MOVING BARRIER CG Z VELOCITY
1 C97032A1.V56 Filterclass (180)
KPH
2
1
0
-1
-2
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:43

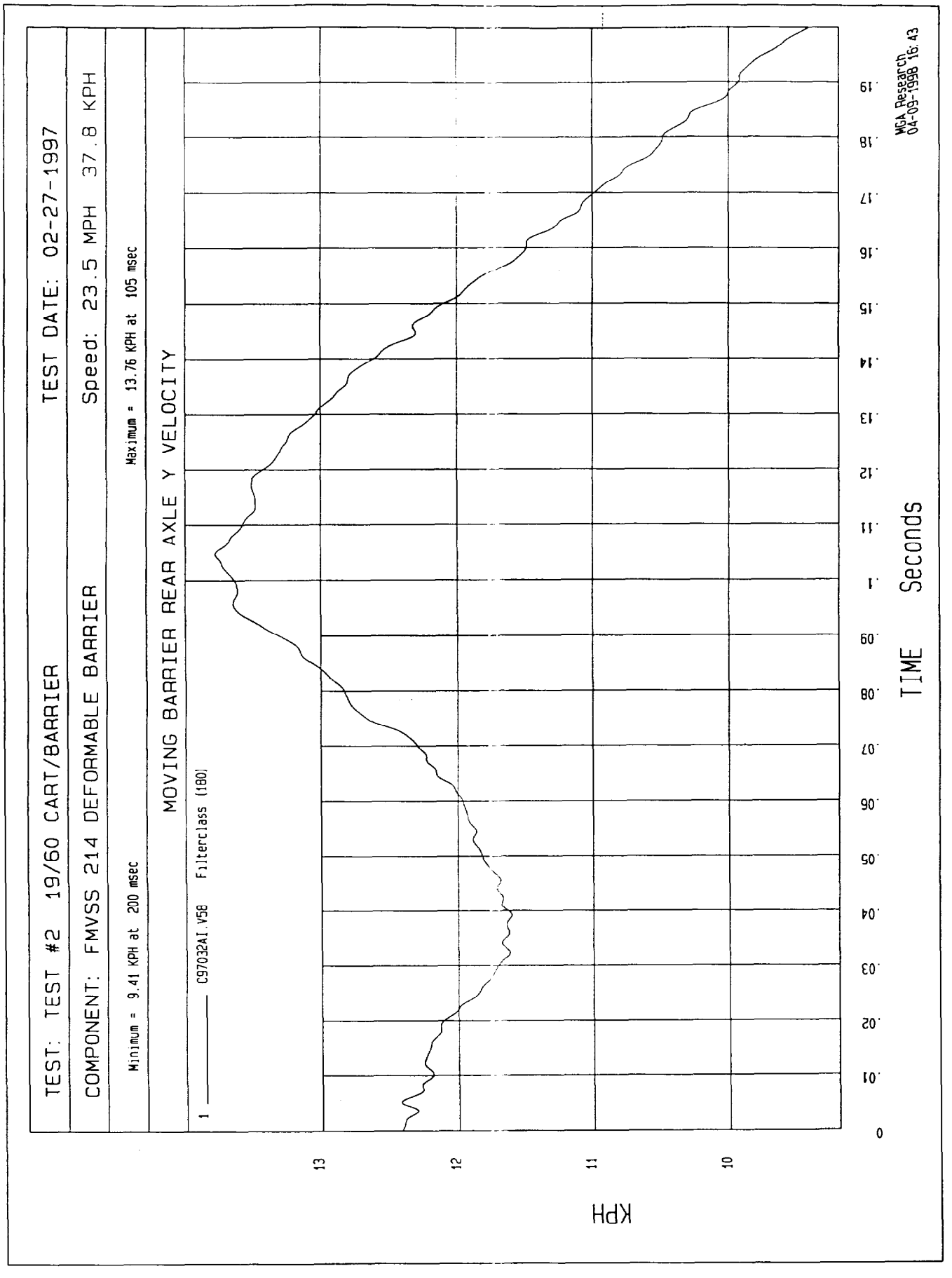

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 0 MM at 0 msec
Maximum = 21.38 MM at 150 msec
MOVING BARRIER CG Z DISPLACEMENT
1 C97032AI.D56 Filterclass (180)
MM
TIME Seconds
MGA Research
04-09-1998 16:44

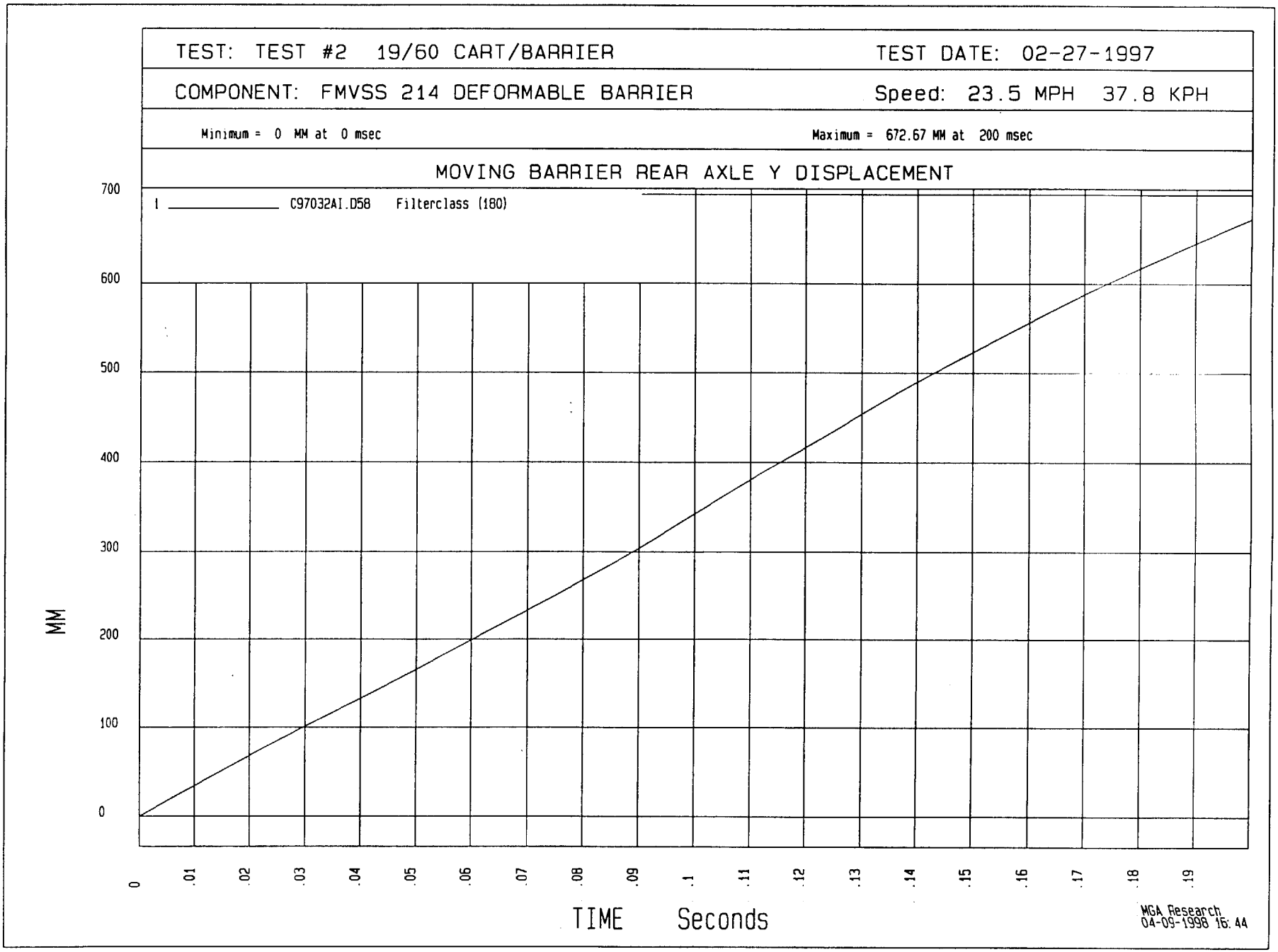

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -11.14 G'S at 69 msec
Maximum = 1.23 G'S at 160 msec
MOVING BARRIER REAR AXLE X ACCELERATION
1 C97032AF.A57 Filterclass (60)
0
-2
-4
-6
-8
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-09-1998 16:43

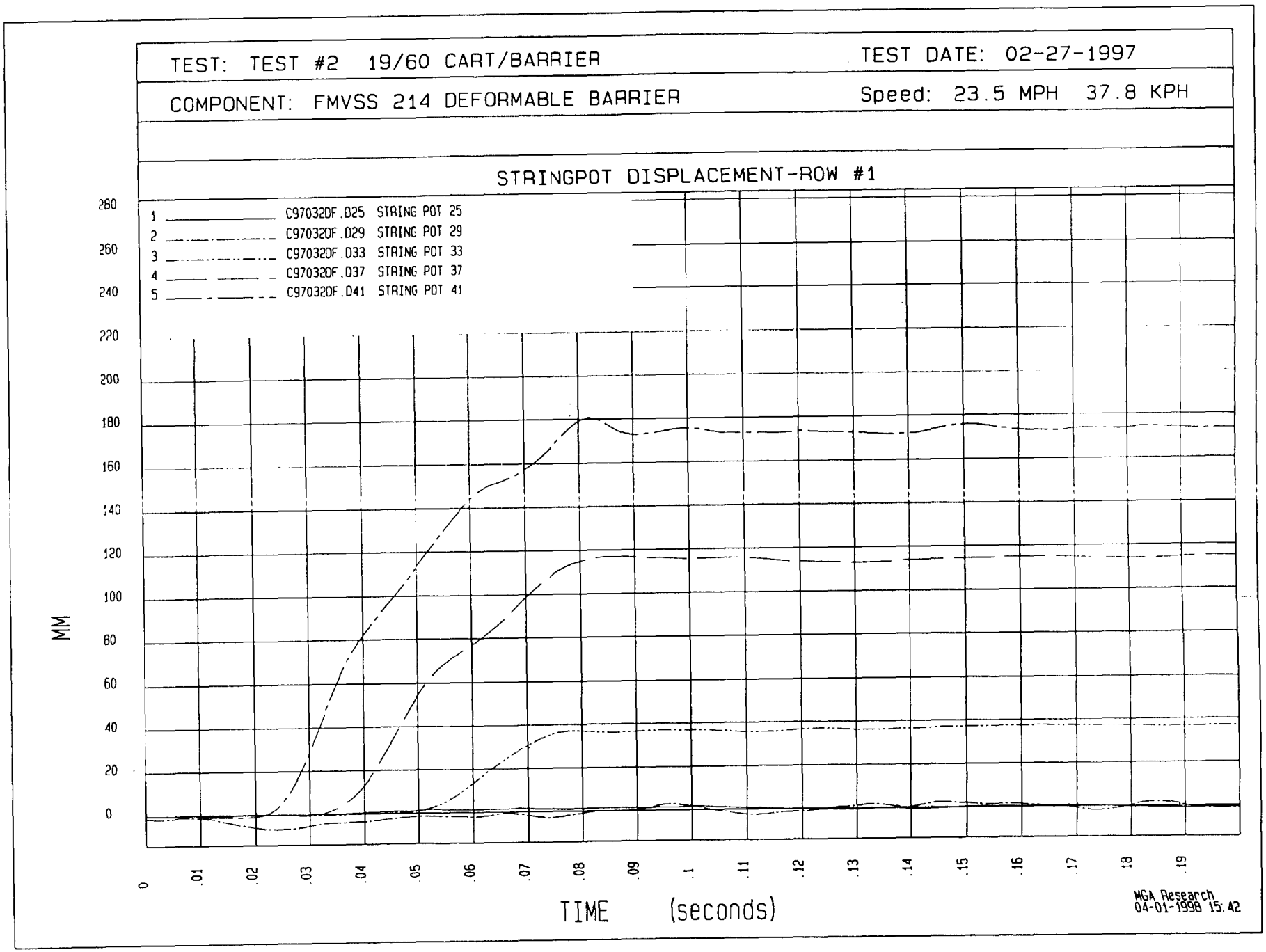

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 8.35 KPH at 118 msec
Maximum = 35.76 KPH at 1 msec
MOVING BARRIER REAR AXLE X VELOCITY
1 C97032AI.V57 Filterclass (180)
KPH
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:43

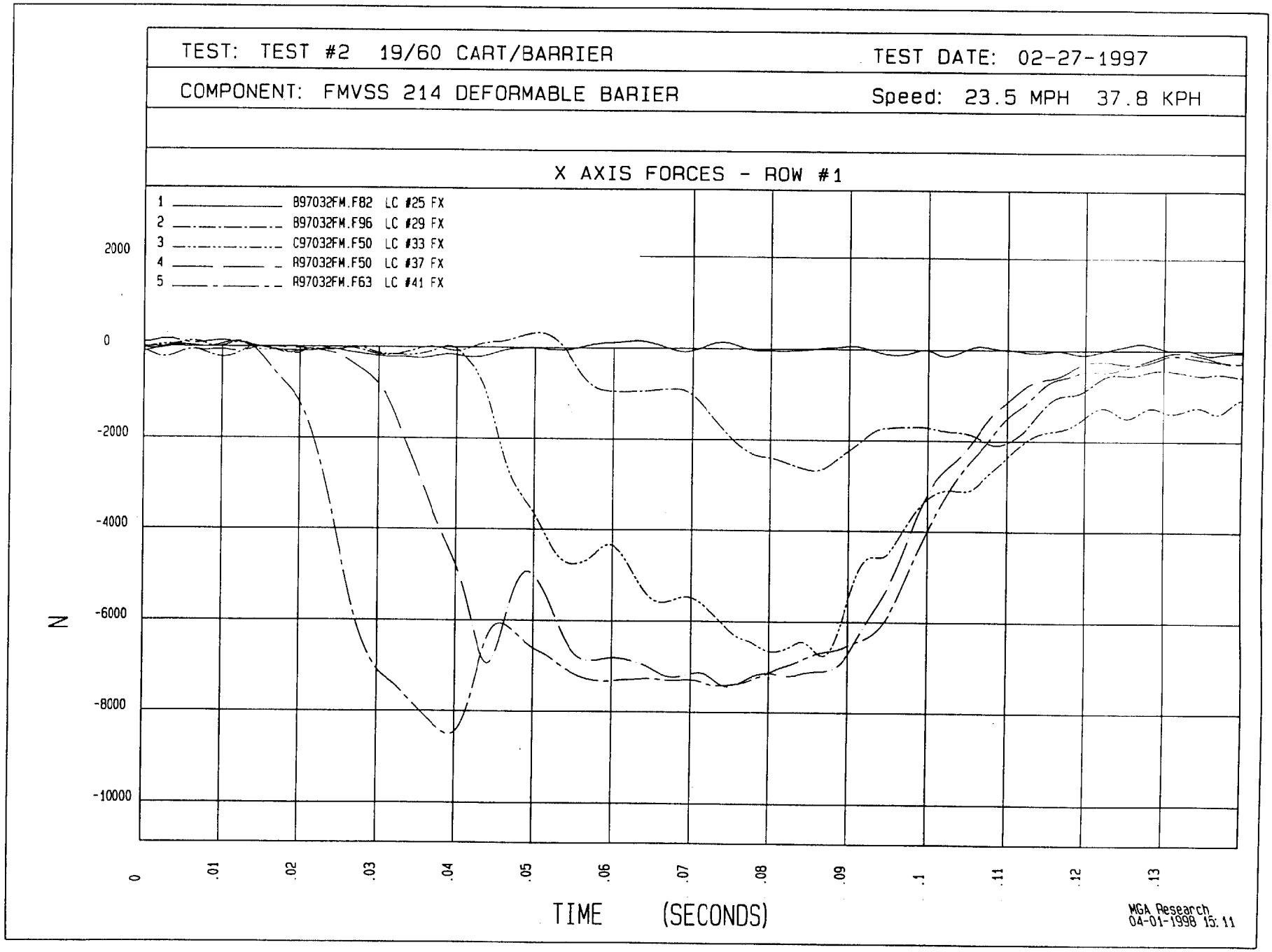

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 0 MM at 0 msec
Maximum = 924.64 MM at 200 msec
MOVING BARRIER REAR AXLE X DISPLACEMENT
1 C97032AI.D57 Filterclass (180)
MM
800
600
400
200
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:44

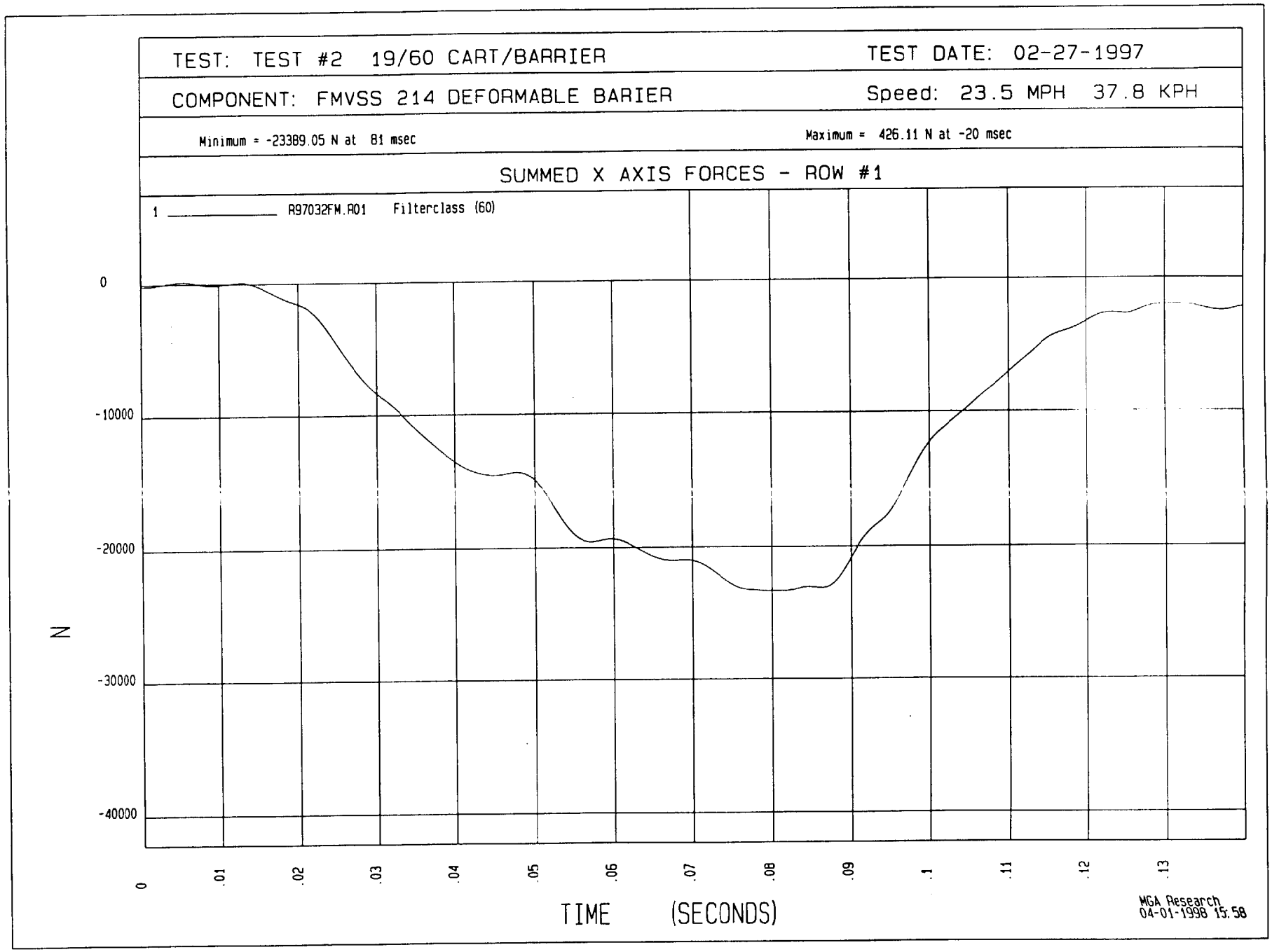

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -2.10 G'S at 186 msec
Maximum = 2.42 G'S at 74 msec
MOVING BARRIER REAR AXLE Y ACCELERATION
1 C97032AF.A58 Filterclass (60)
2
1
0
-1
-2
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-09-1998 16:43

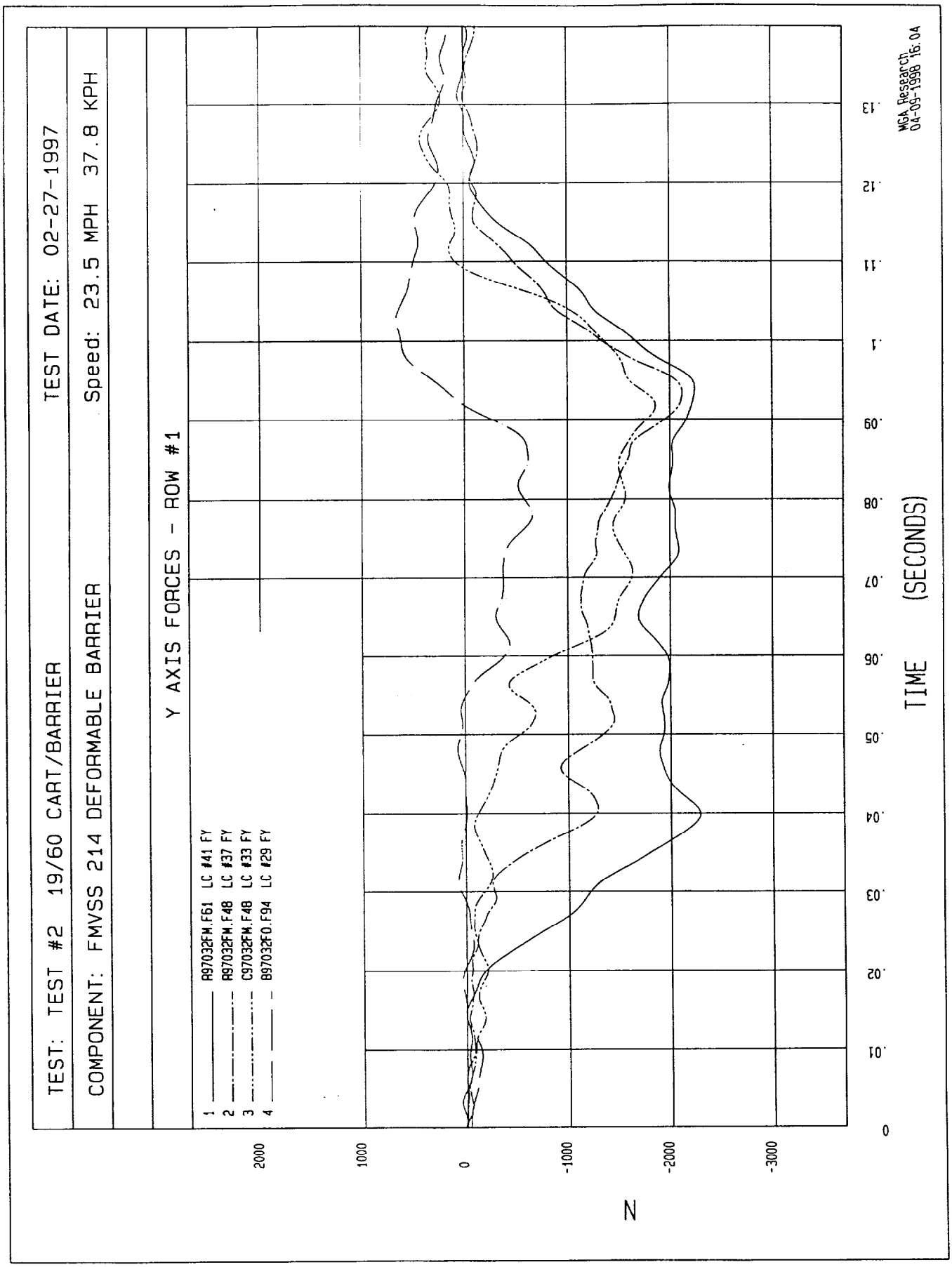

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 9.41 KPH at 200 msec
Maximum = 13.76 KPH at 105 msec
MOVING BARRIER REAR AXLE Y VELOCITY
1 C97032AI.V58 Filterclass (180)
KPH
13
12
11
10
TIME Seconds
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
MGA Research
04-09-1998 16:43

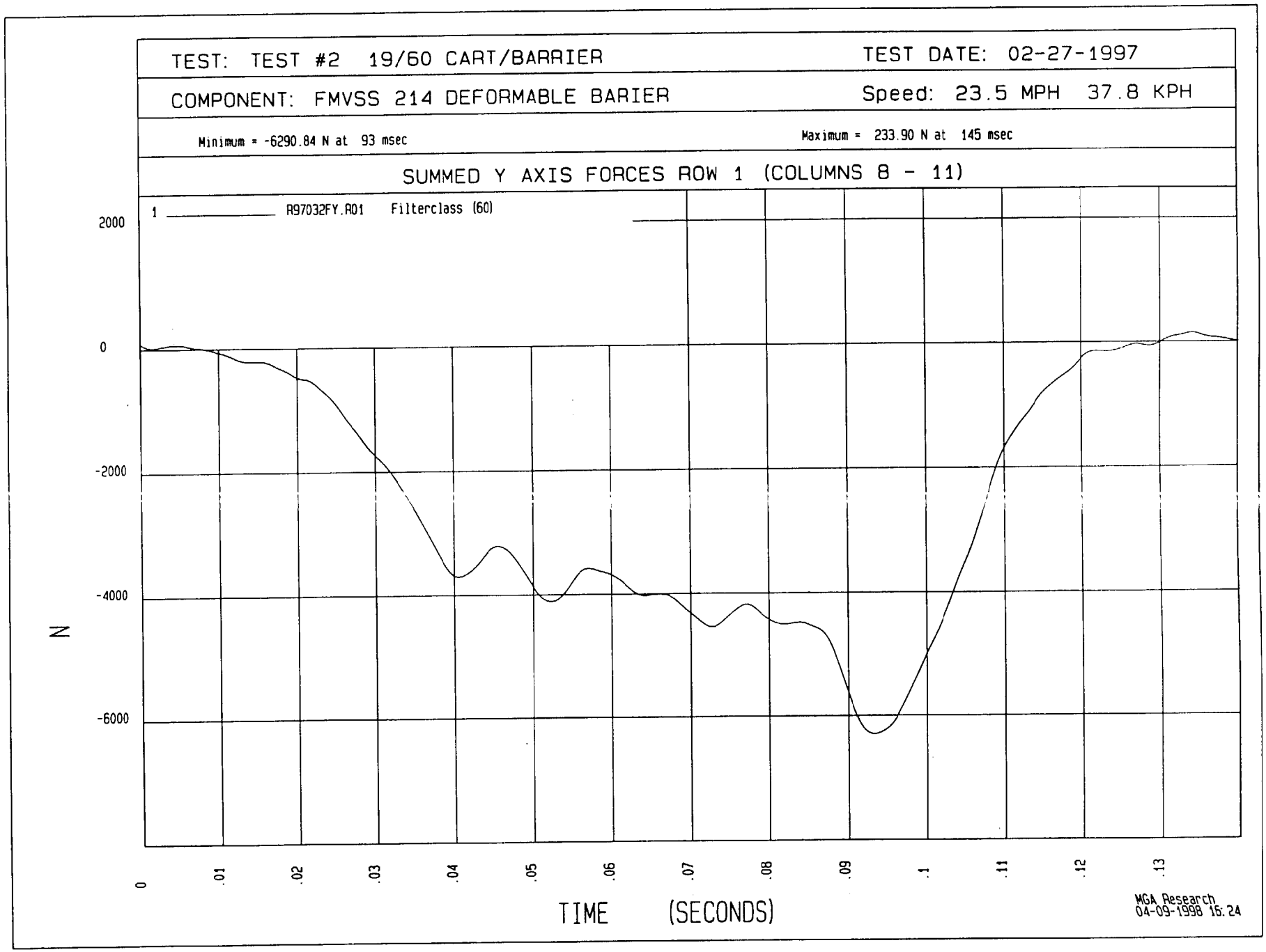

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = 0 MM at 0 msec
Maximum = 672.67 MM at 200 msec
MOVING BARRIER REAR AXLE Y DISPLACEMENT
C97032AI.D58 Filterclass (180)
MM
700
600
500
400
300
200
100
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-09-1998 16:44

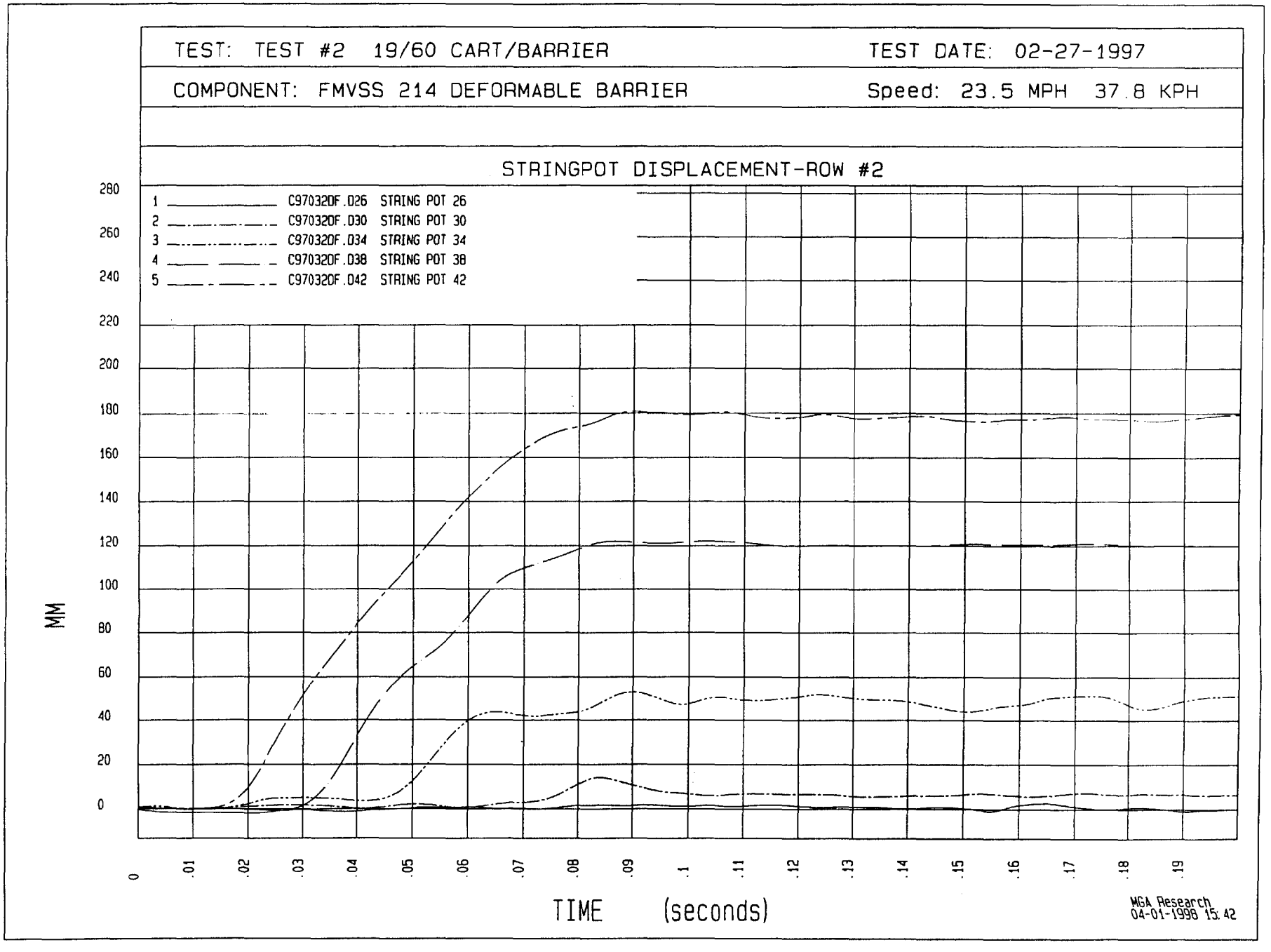

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-ROW #1
1 C970320F.025 STRING POT 25
2 C970320F.029 STRING POT 29
3 C970320F.033 STRING POT 33
4 C970320F.037 STRING POT 37
5 C970320F.041 STRING POT 41
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1998 15:42

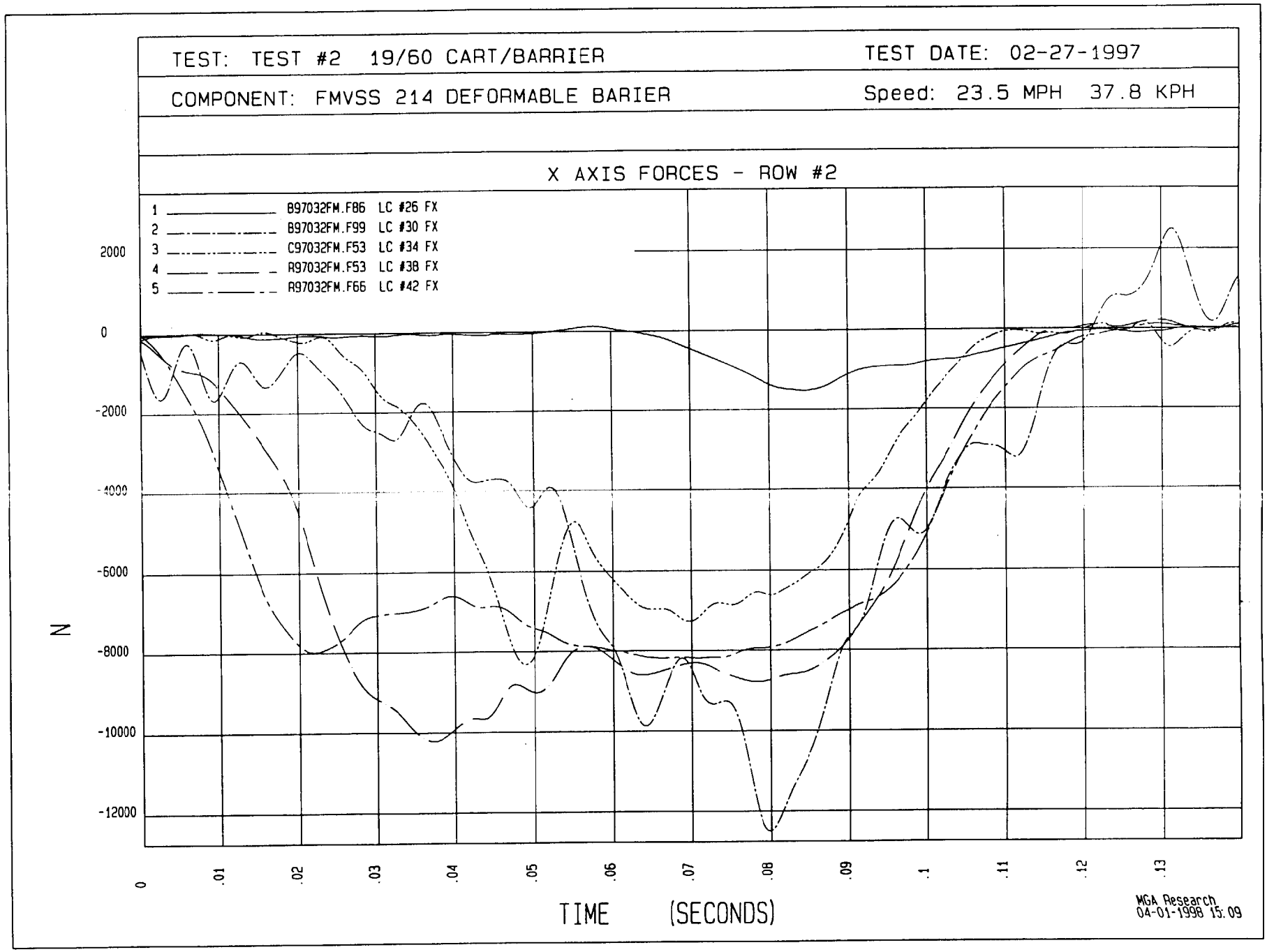

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - ROW #1
1 B97032FM.F82 LC #25 FX
2 B97032FM.F96 LC #29 FX
3 C97032FM.F50 LC #33 FX
4 R97032FM.F50 LC #37 FX
5 R97032FM.F63 LC #41 FX
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:11

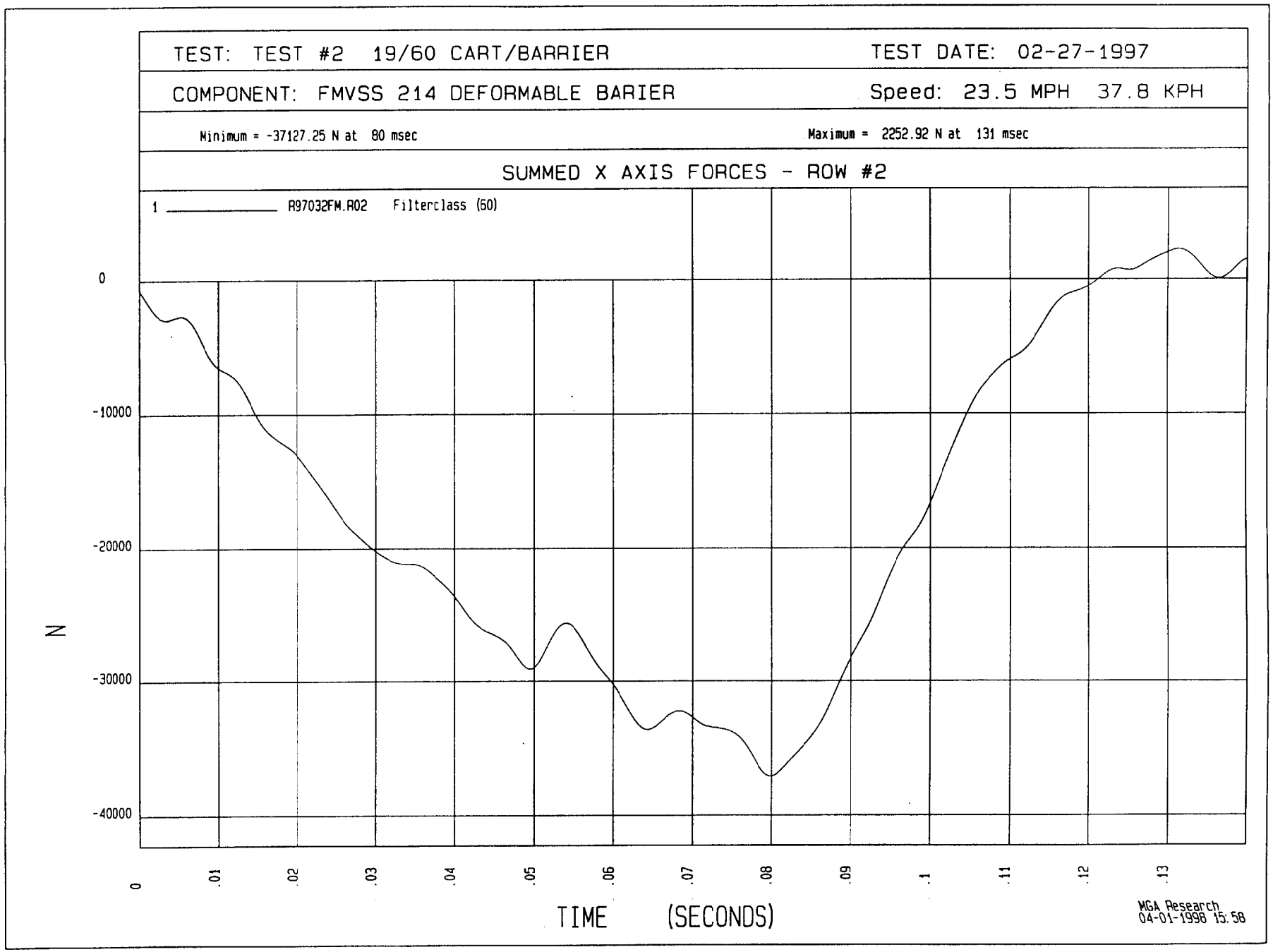

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -23389.05 N at 81 msec
Maximum = 426.11 N at -20 msec
SUMMED X AXIS FORCES - ROW #1
1 R97032FM.R01 Filterclass (60)
0
-10000
-20000
-30000
-40000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:58

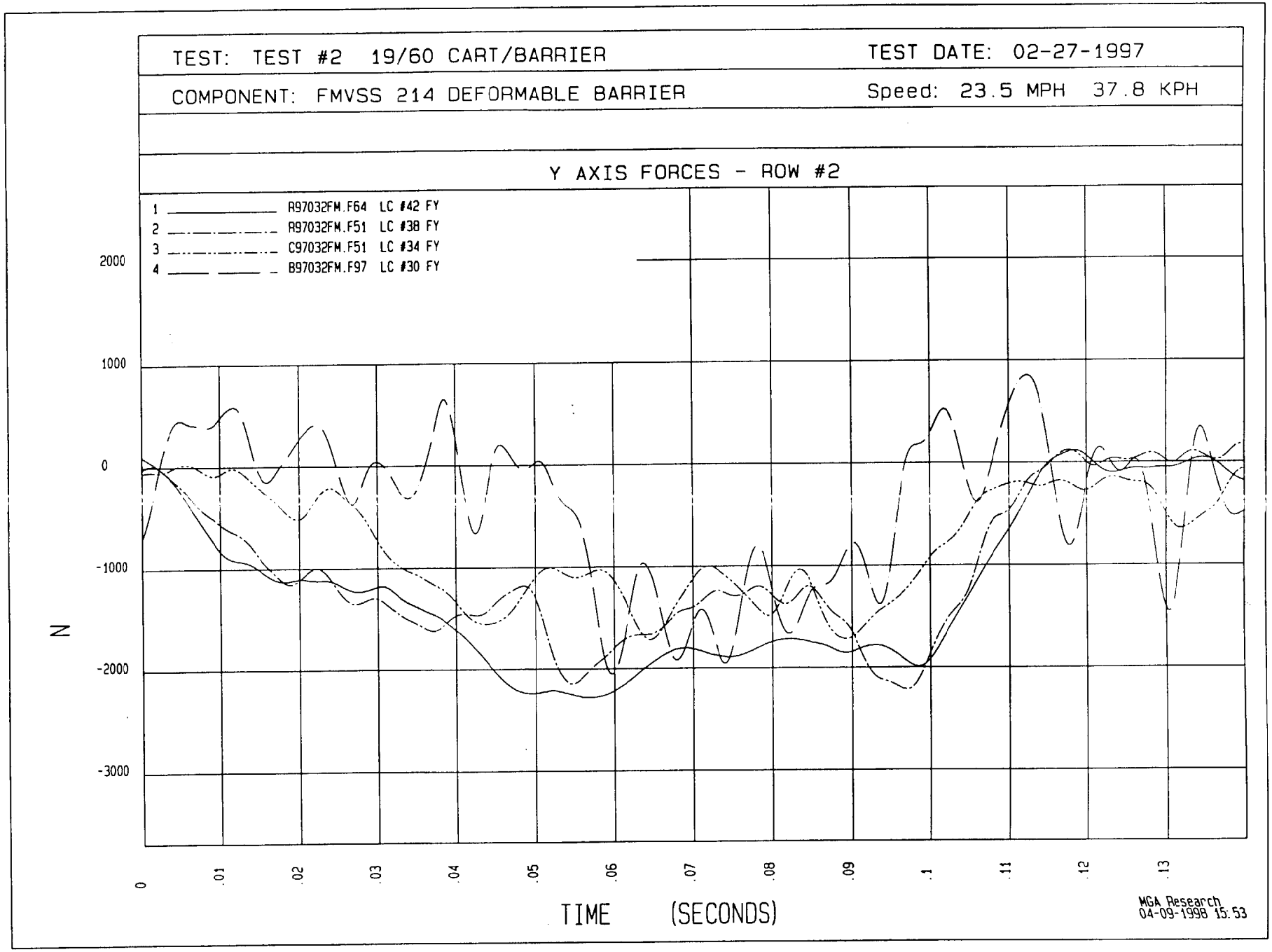

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - ROW #1
1 A97032FM.F61 LC #41 FY
2 A97032FM.F48 LC #37 FY
3 C97032FM.F48 LC #33 FY
4 B97032FO.F94 LC #29 FY
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 16:04

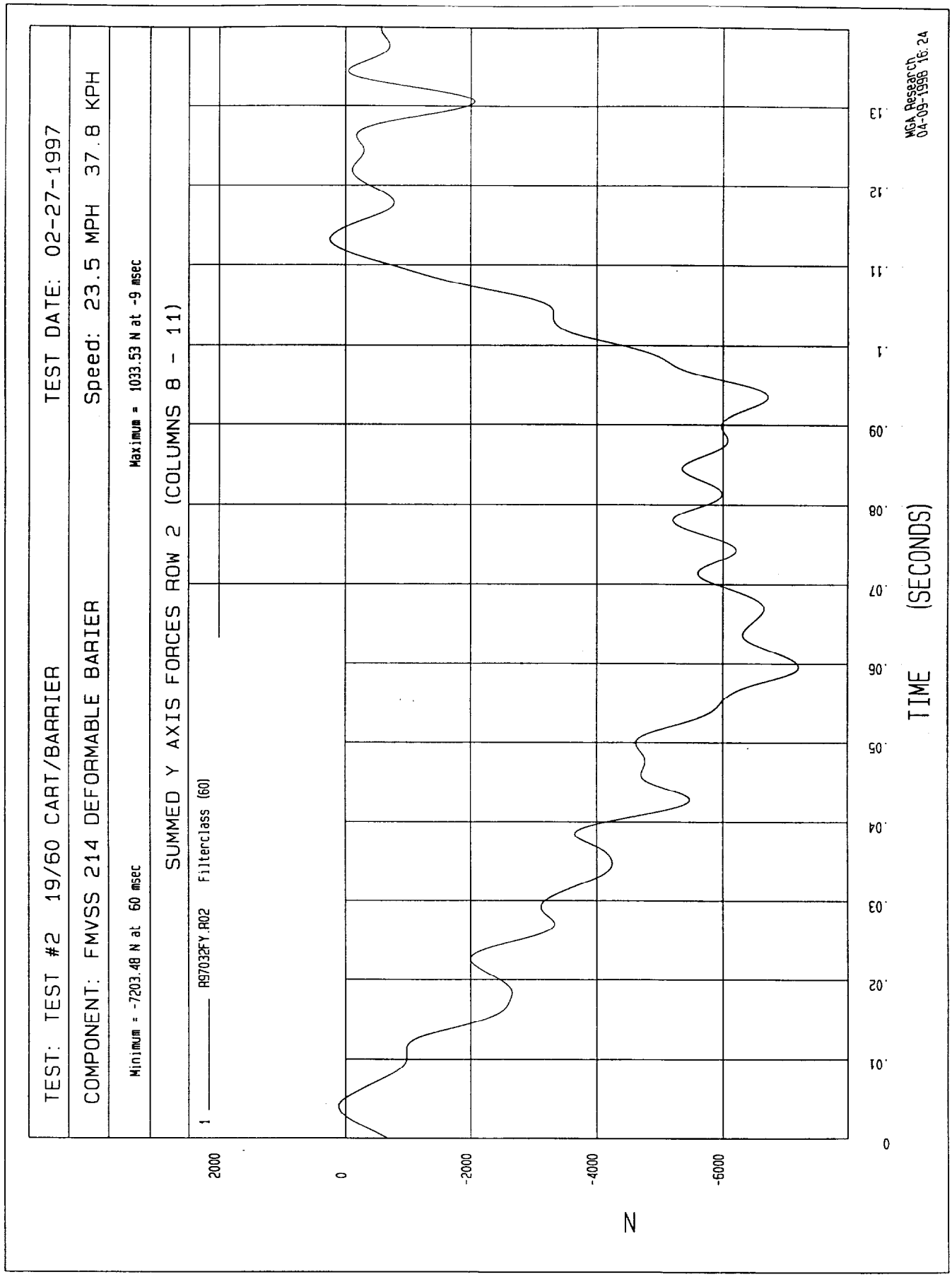

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6290.84 N at 93 msec
Maximum = 233.90 N at 145 msec
SUMMED Y AXIS FORCES ROW 1 (COLUMNS 8 - 11)
1 R97032FY.R01 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 16:24

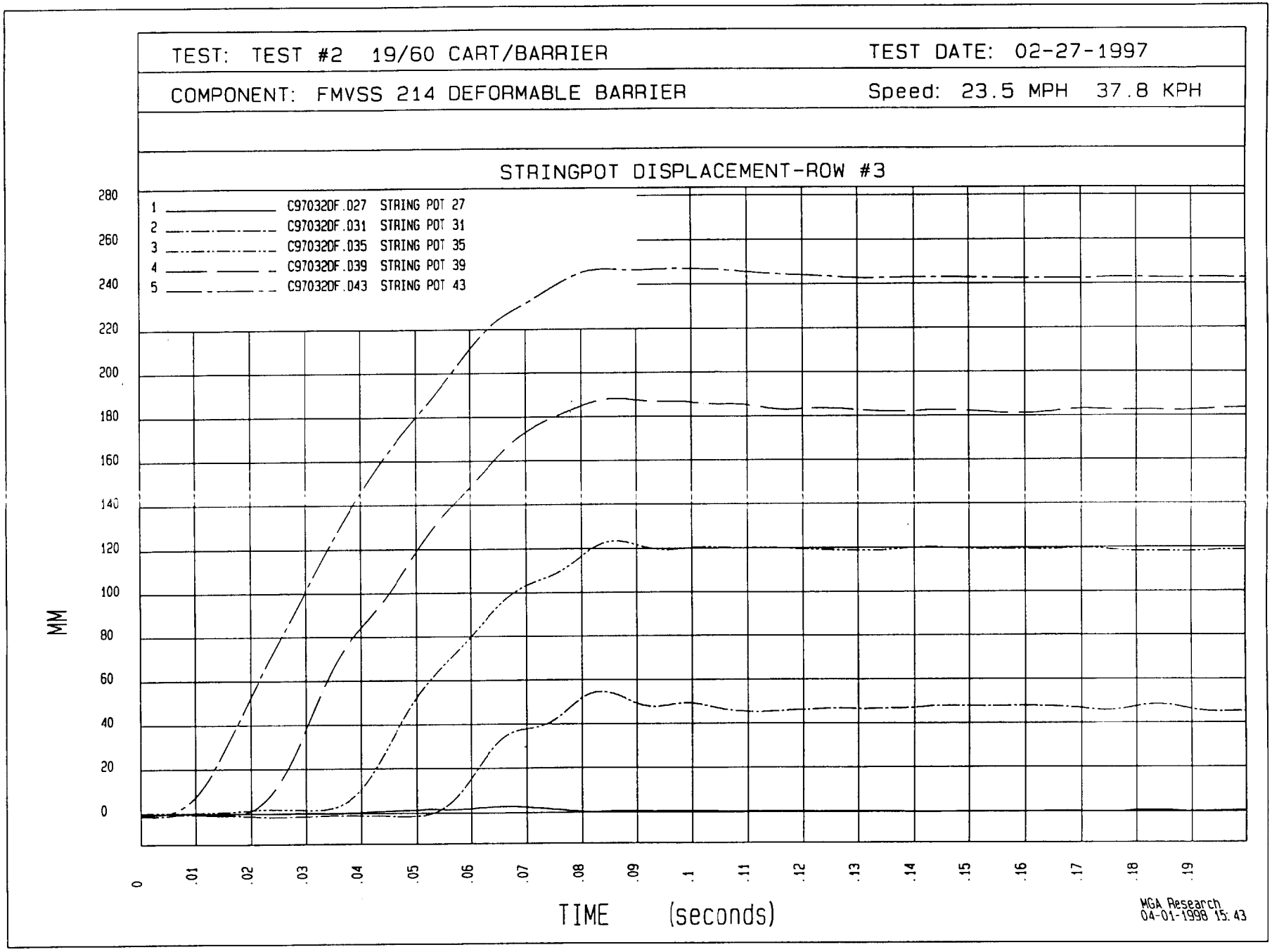

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-ROW #2
1 C970320F.D26 STRING POT 26
2 C970320F.D30 STRING POT 30
3 C970320F.D34 STRING POT 34
4 C970320F.D38 STRING POT 38
5 C970320F.D42 STRING POT 42
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1998 15:42

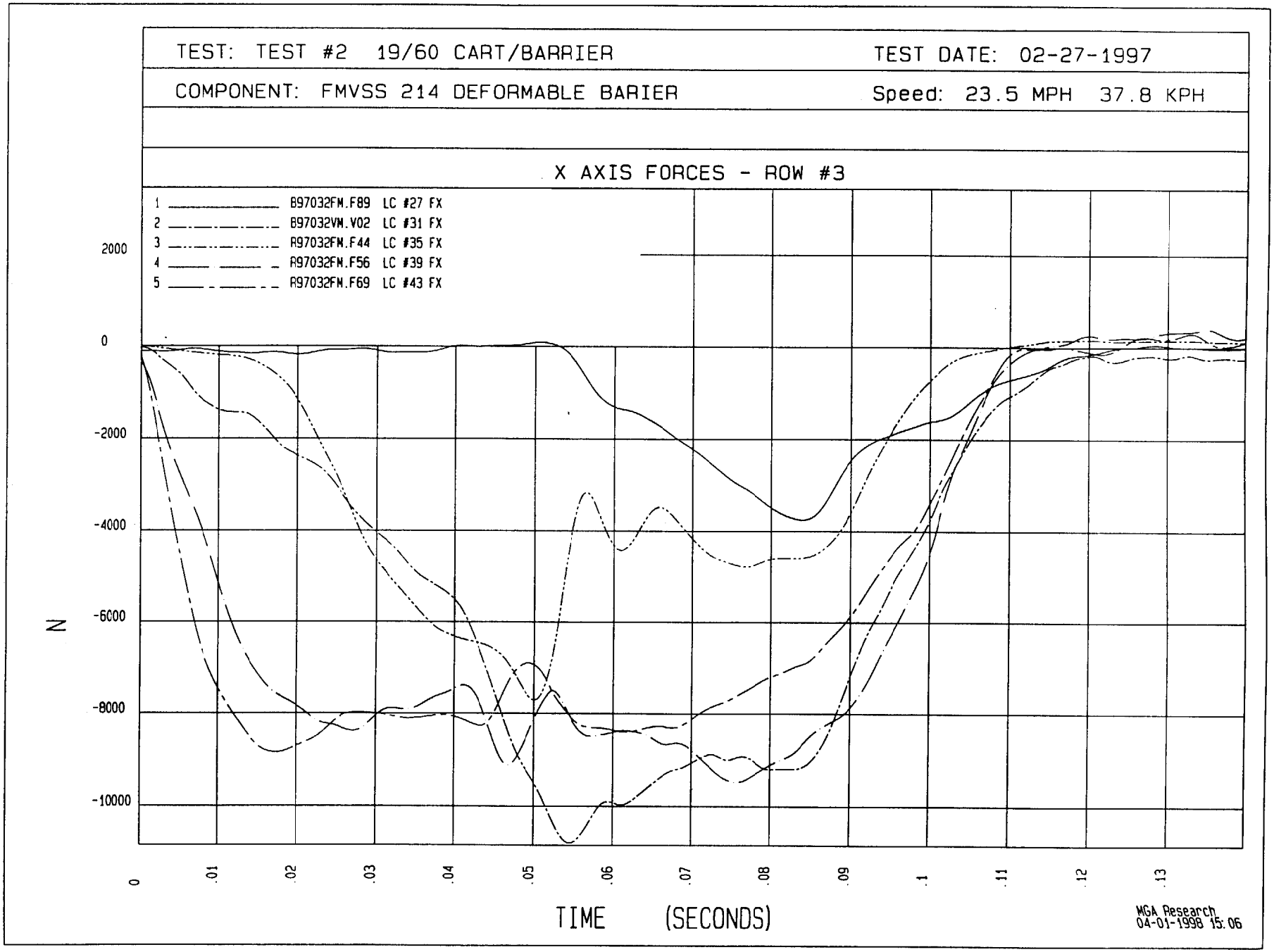

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - ROW #2
1 B97032FM.F86 LC #26 FX
2 B97032FM.F99 LC #30 FX
3 C97032FM.F53 LC #34 FX
4 R97032FM.F53 LC #38 FX
5 R97032FM.F66 LC #42 FX
2000
0
-2000
-4000
-6000
-8000
-10000
-12000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:09

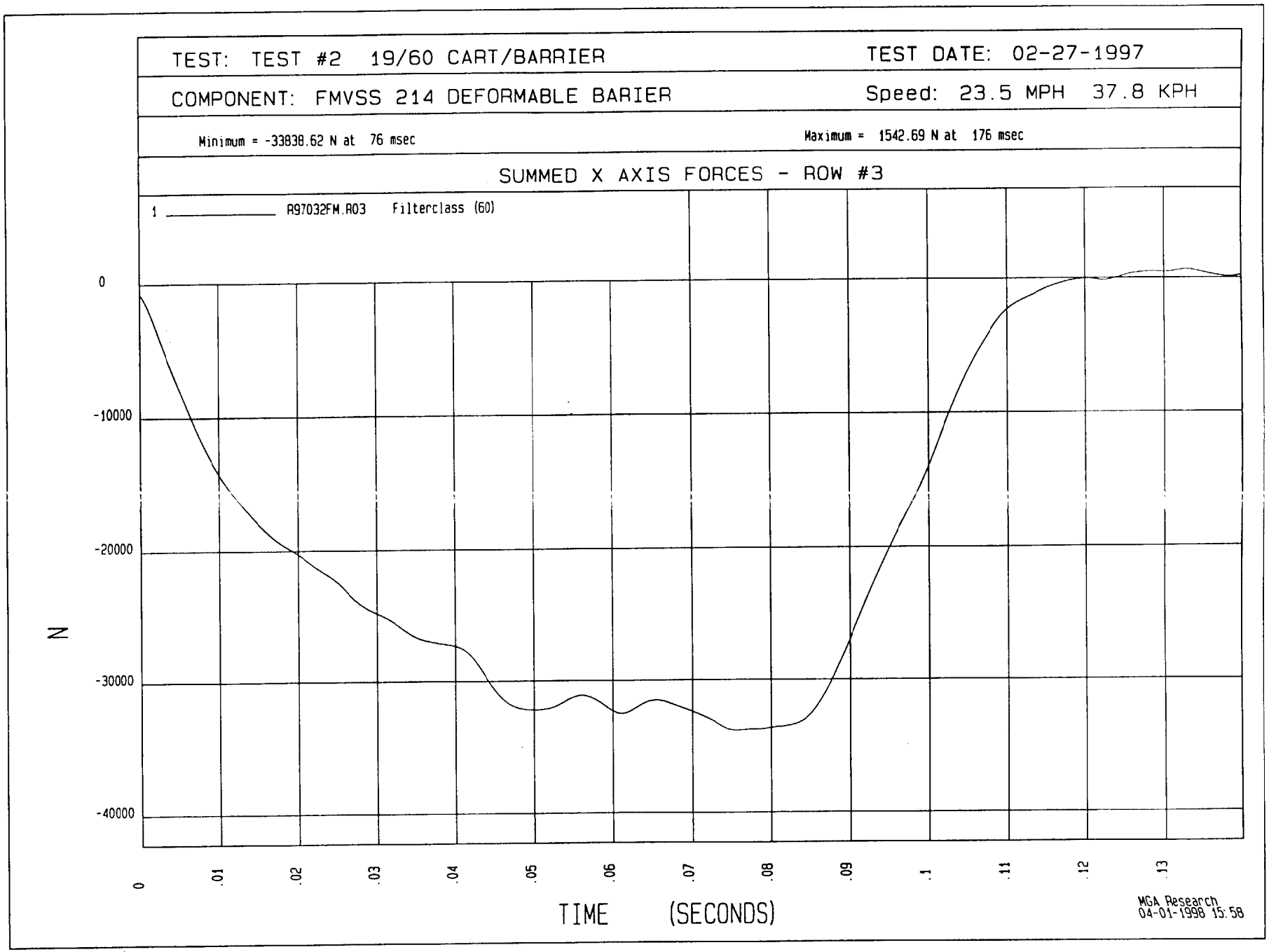

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -37127.25 N at 80 msec
Maximum = 2252.92 N at 131 msec
SUMMED X AXIS FORCES - ROW #2
1 R97032FM.R02 Filterclass (60)
0
-10000
-20000
-30000
-40000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:58

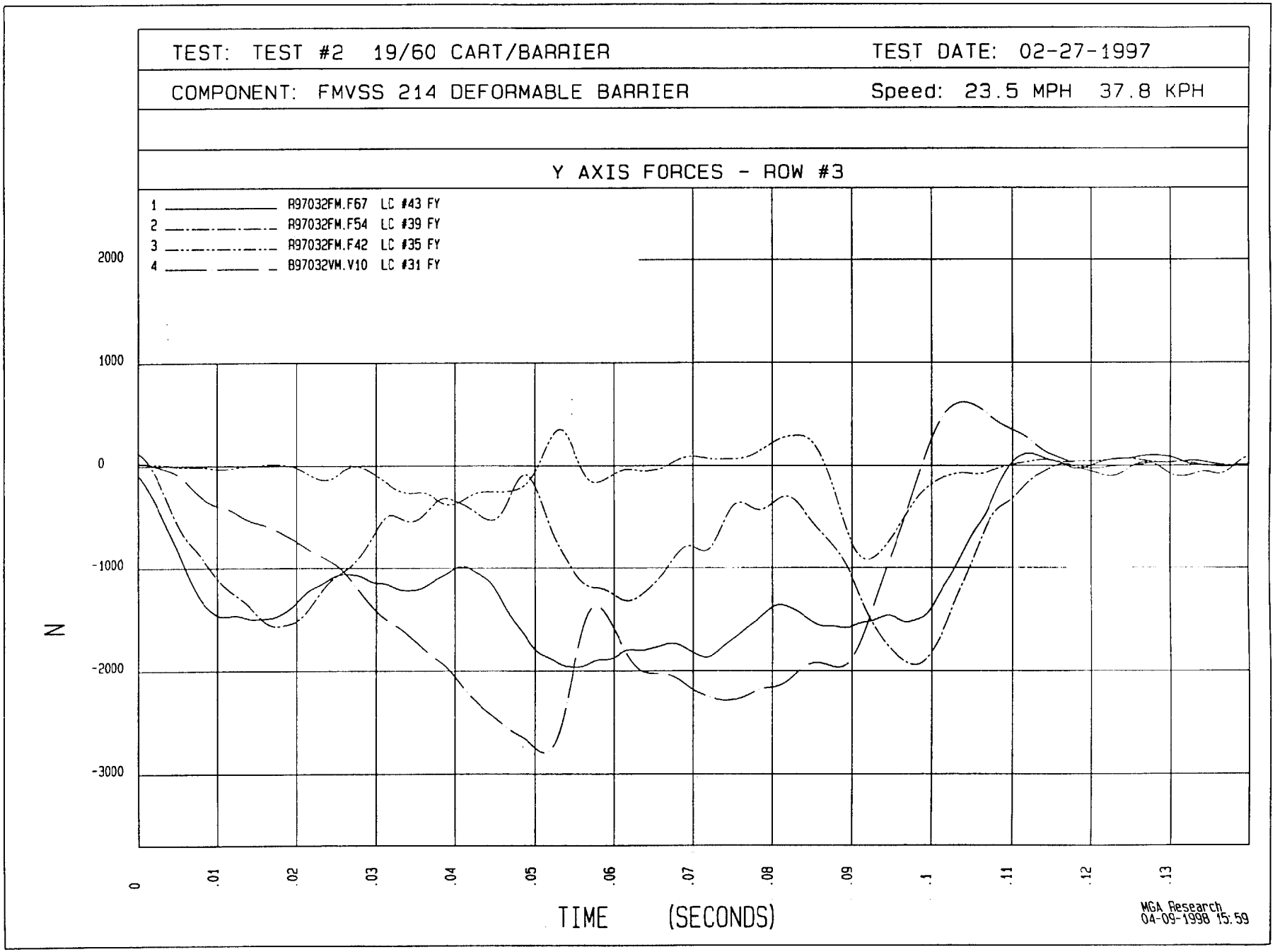

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - ROW #2
1 R97032FM.F64 LC #42 FY
2 R97032FM.F51 LC #38 FY
3 C97032FM.F51 LC #34 FY
4 B97032FM.F97 LC #30 FY
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 15:53

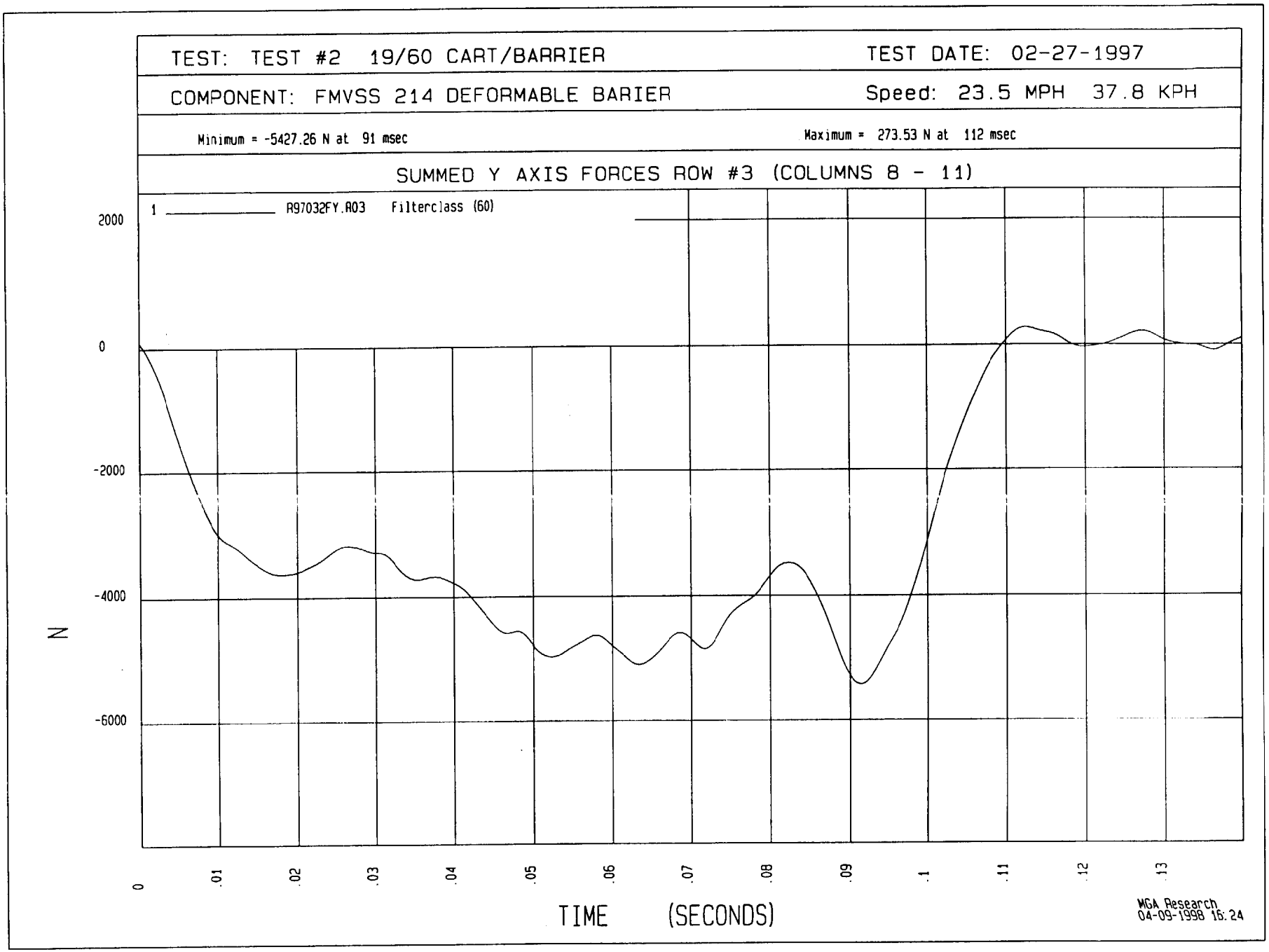

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7203.48 N at 60 msec
Maximum = 1033.53 N at -9 msec
SUMMED Y AXIS FORCES ROW 2 (COLUMNS 8 - 11)
1 R97032FY.R02 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
1
11
12
13
TIME (SECONDS)
MGA Research
04-09-1998 16:24

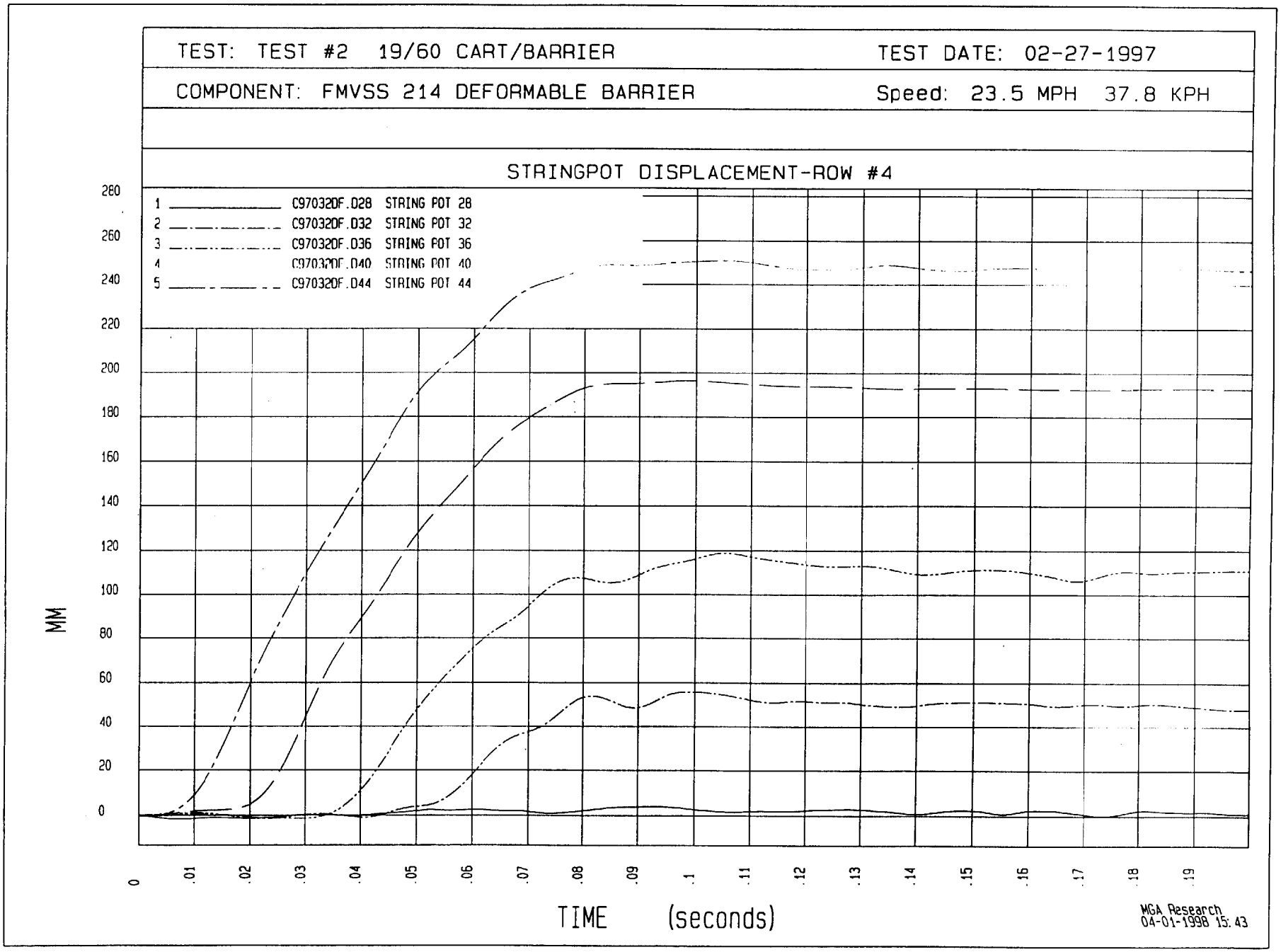

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-ROW #3
1 C970320F.027 STRING POT 27
2 C970320F.031 STRING POT 31
3 C970320F.035 STRING POT 35
4 C970320F.039 STRING POT 39
5 C970320F.043 STRING POT 43
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1998 15:43

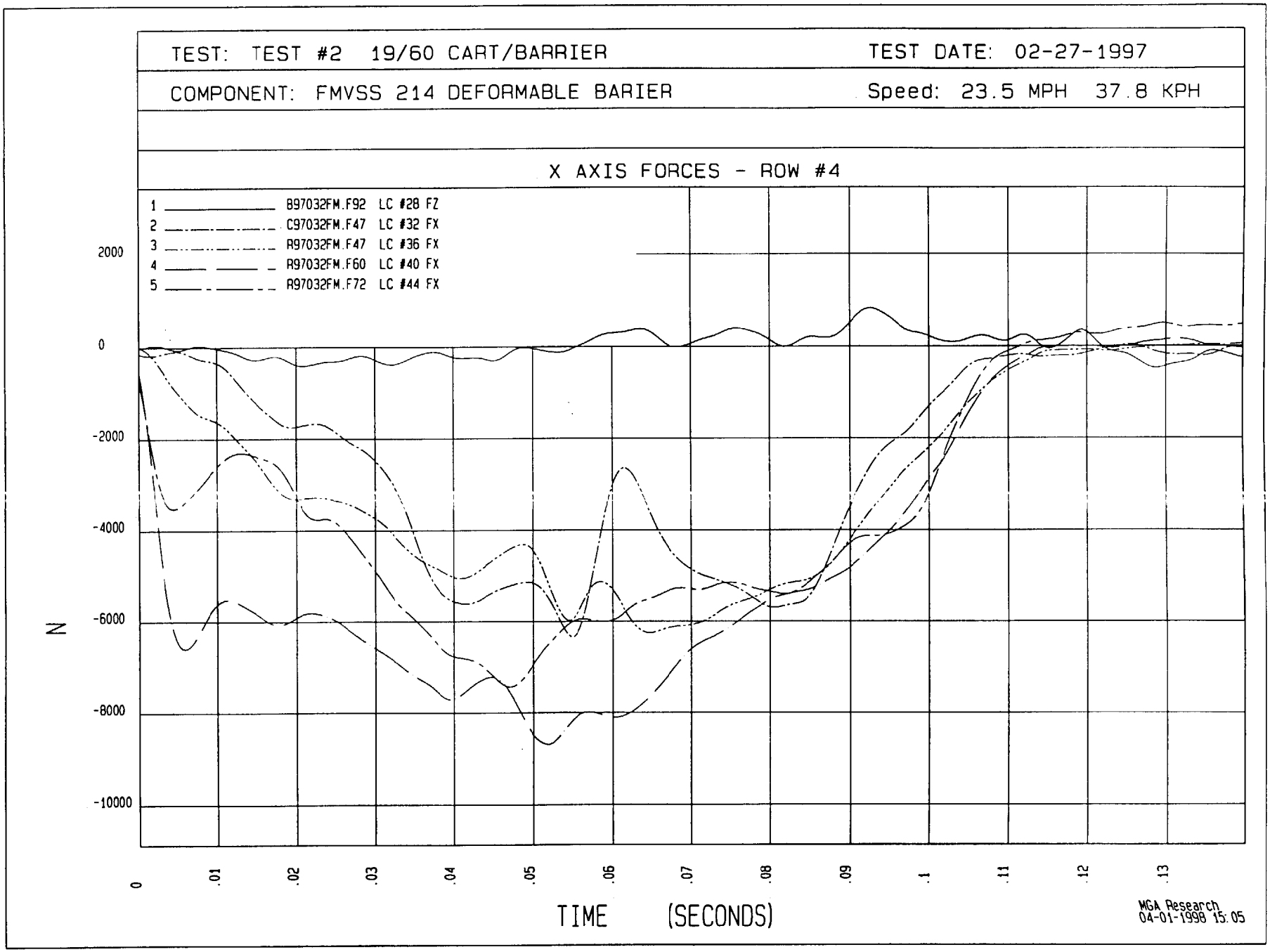

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - ROW #3
1 B97032FM.F89 LC #27 FX
2 B97032VM.V02 LC #31 FX
3 R97032FM.F44 LC #35 FX
4 R97032FM.F56 LC #39 FX
5 R97032FM.F69 LC #43 FX
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:06

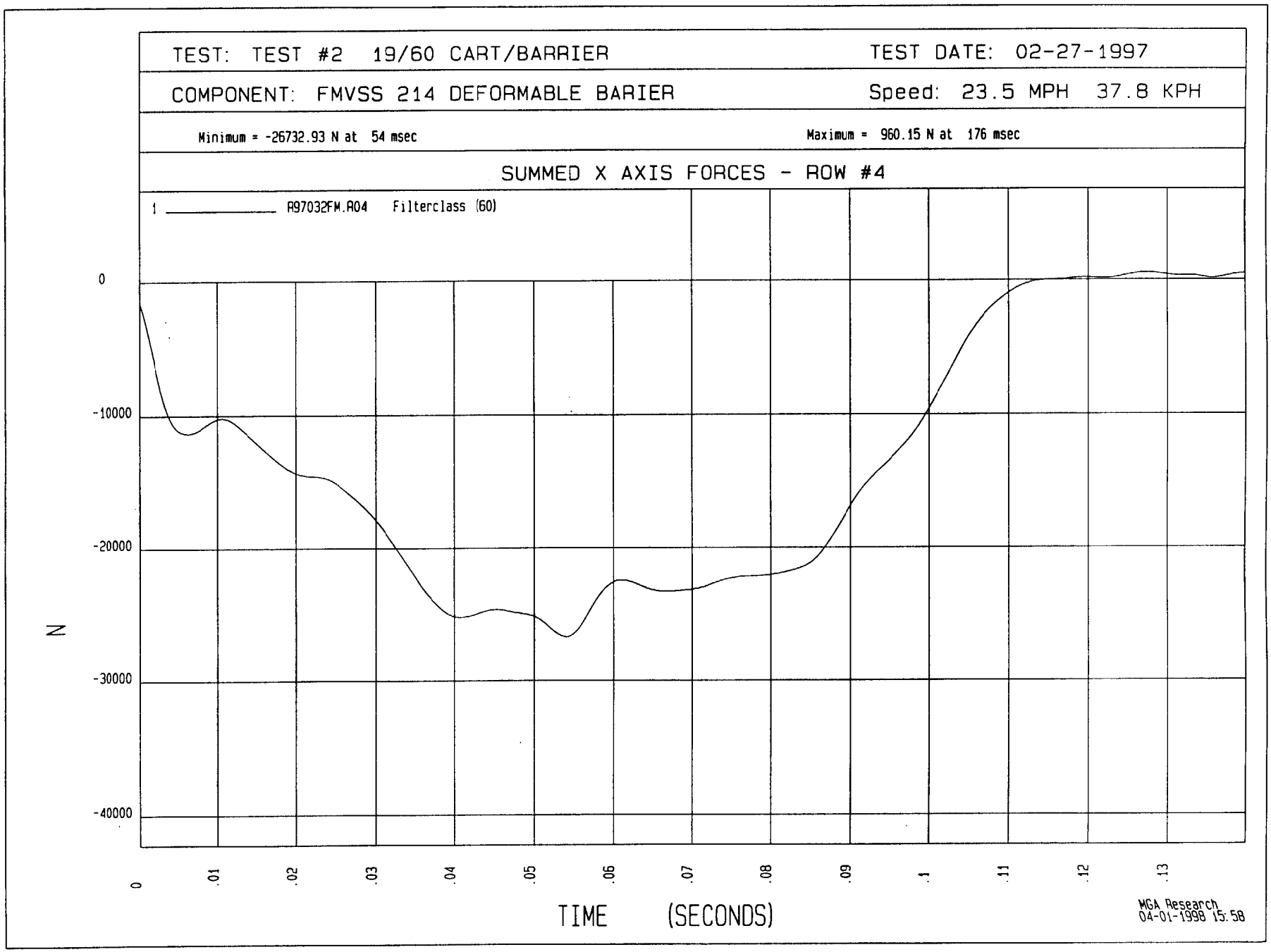

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -33838.62 N at 76 msec
Maximum = 1542.69 N at 176 msec
SUMMED X AXIS FORCES - ROW #3
1 R97032FM.A03 Filterclass (60)
0
-10000
-20000
-30000
-40000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:58

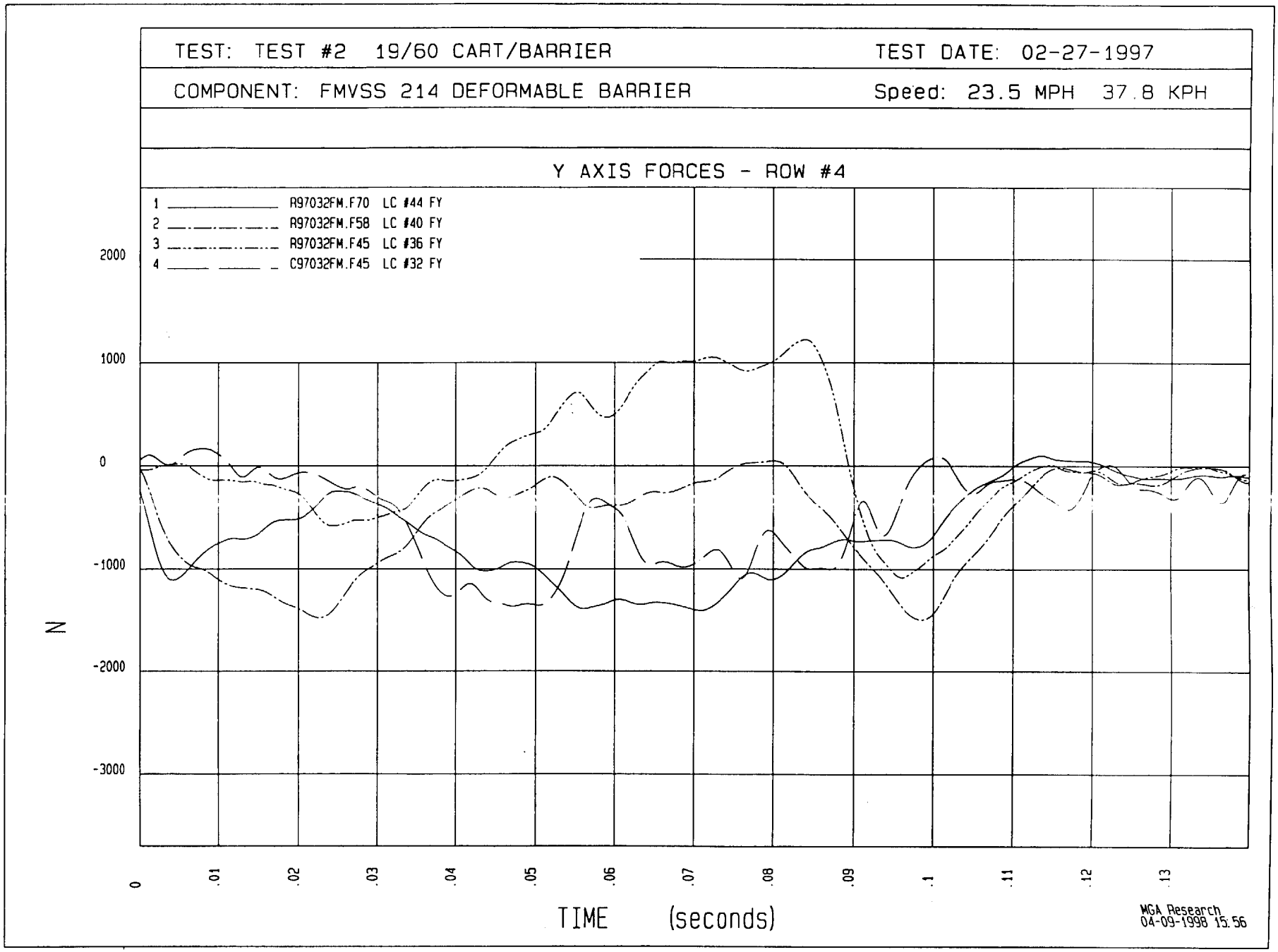

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - ROW #3
1 R97032FM.F67 LC #43 FY
2 R97032FM.F54 LC #39 FY
3 R97032FM.F42 LC #35 FY
4 B97032VM.V10 LC #31 FY
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 15:59

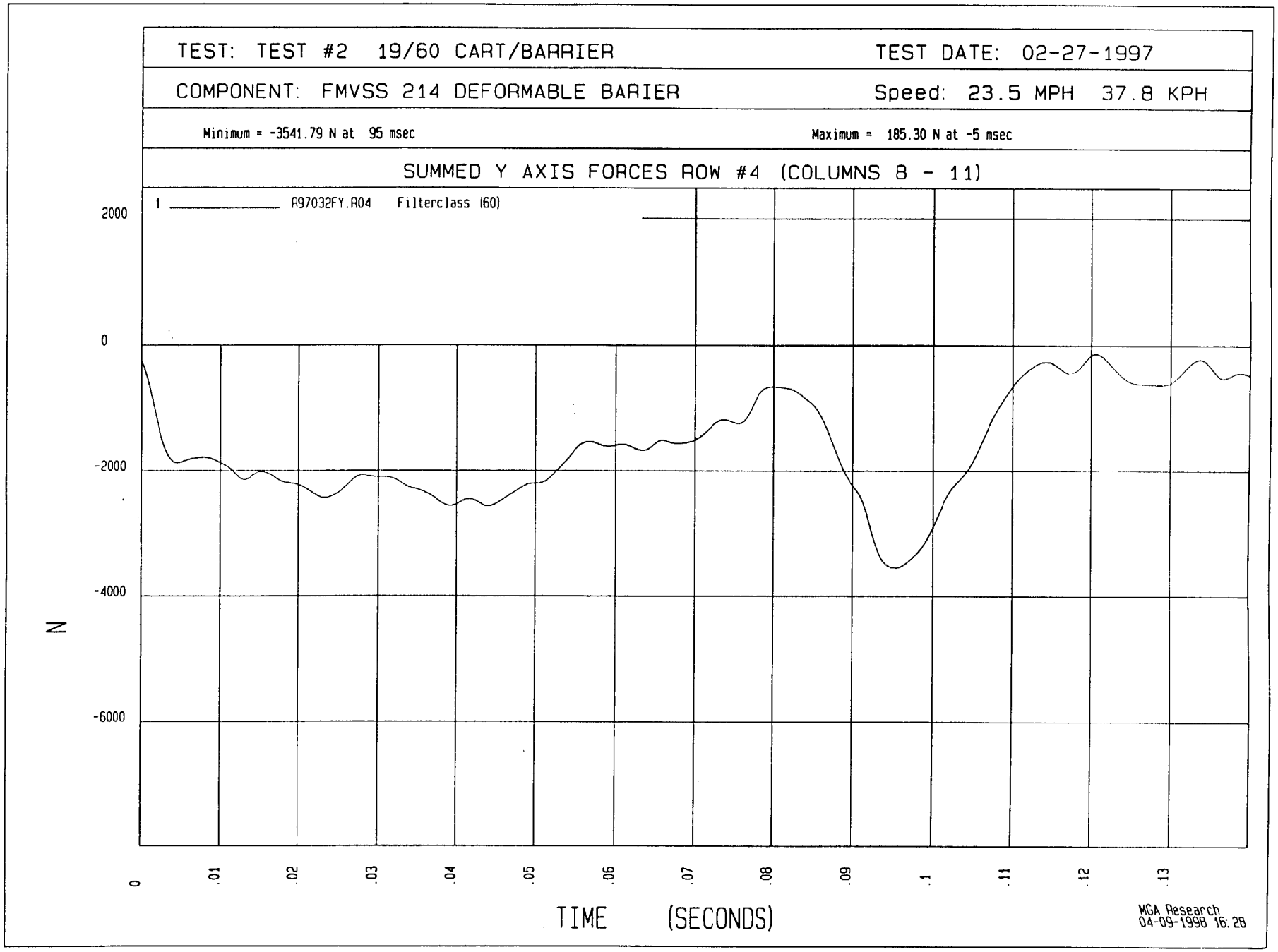

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -5427.26 N at 91 msec
Maximum = 273.53 N at 112 msec
SUMMED Y AXIS FORCES ROW #3 (COLUMNS 8 - 11)
1 R97032FY.R03 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 16:24

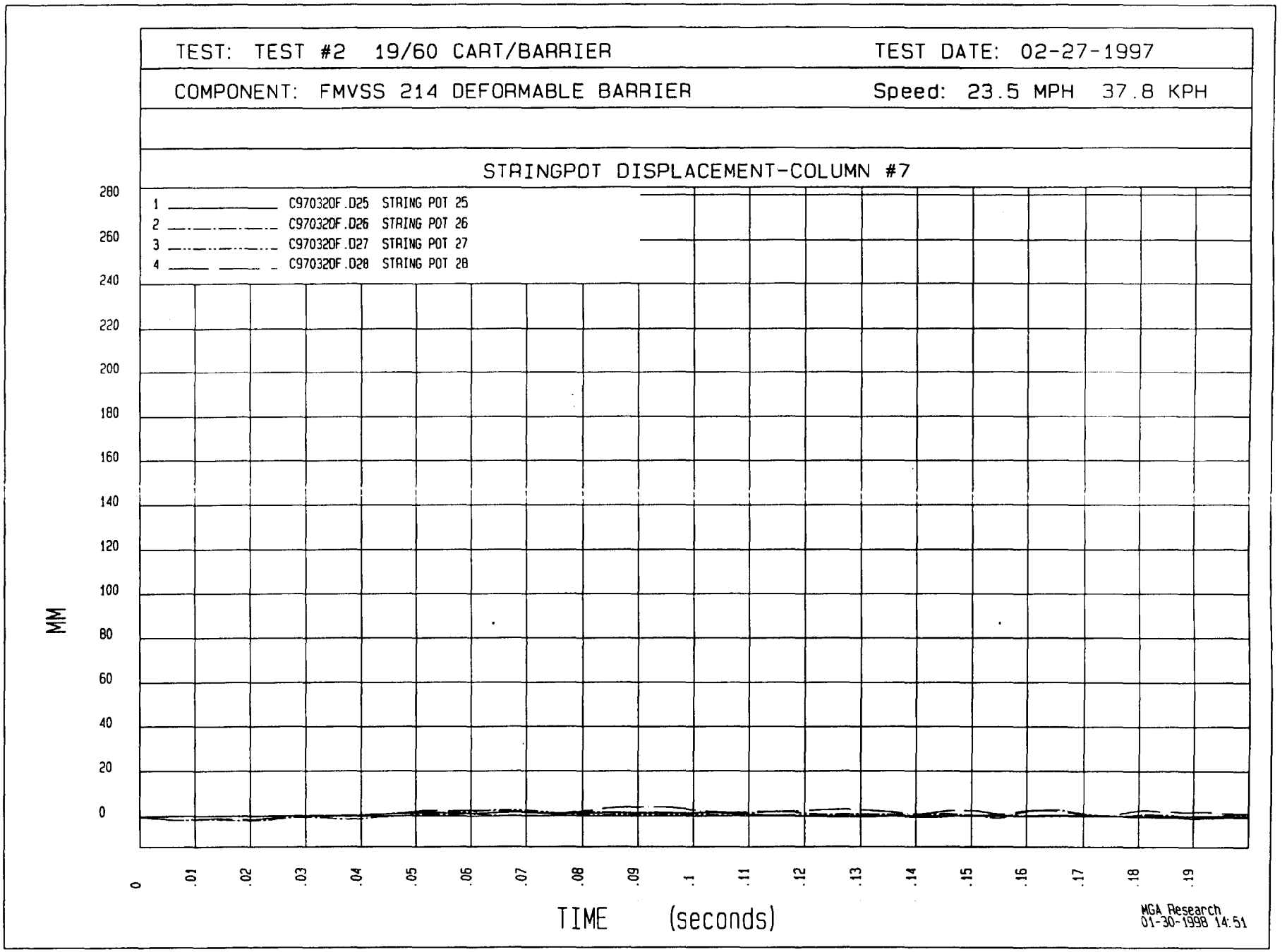

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-ROW #4
1 C970320F.D28 STRING POT 28
2 C970320F.D32 STRING POT 32
3 C970320F.D36 STRING POT 36
4 C970320F.D40 STRING POT 40
5 C970320F.D44 STRING POT 44
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1998 15:43

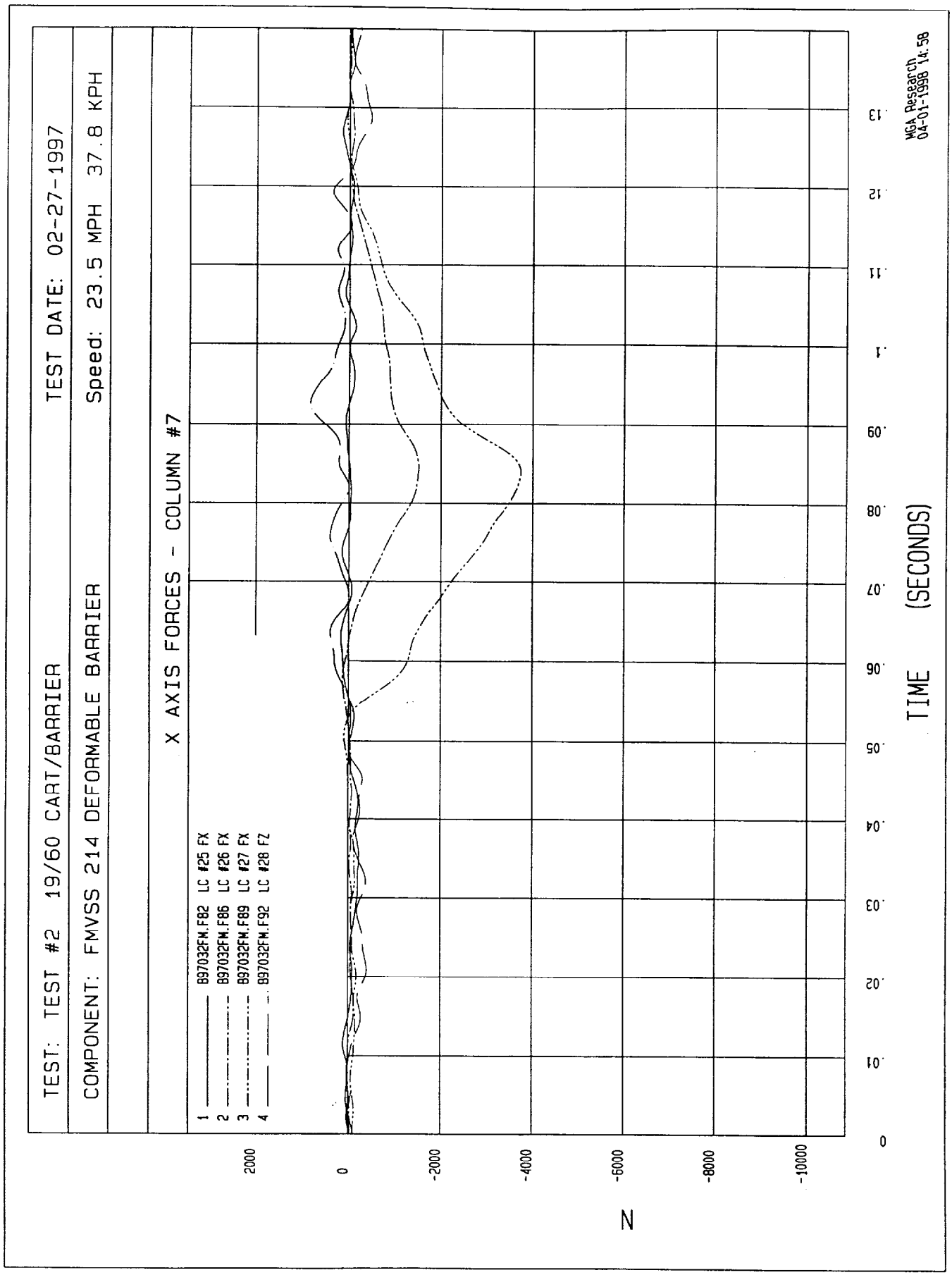

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - ROW #4
1 B97032FM.F92 LC #28 FZ
2 C97032FM.F47 LC #32 FX
3 R97032FM.F47 LC #36 FX
4 R97032FM.F60 LC #40 FX
5 R97032FM.F72 LC #44 FX
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:05

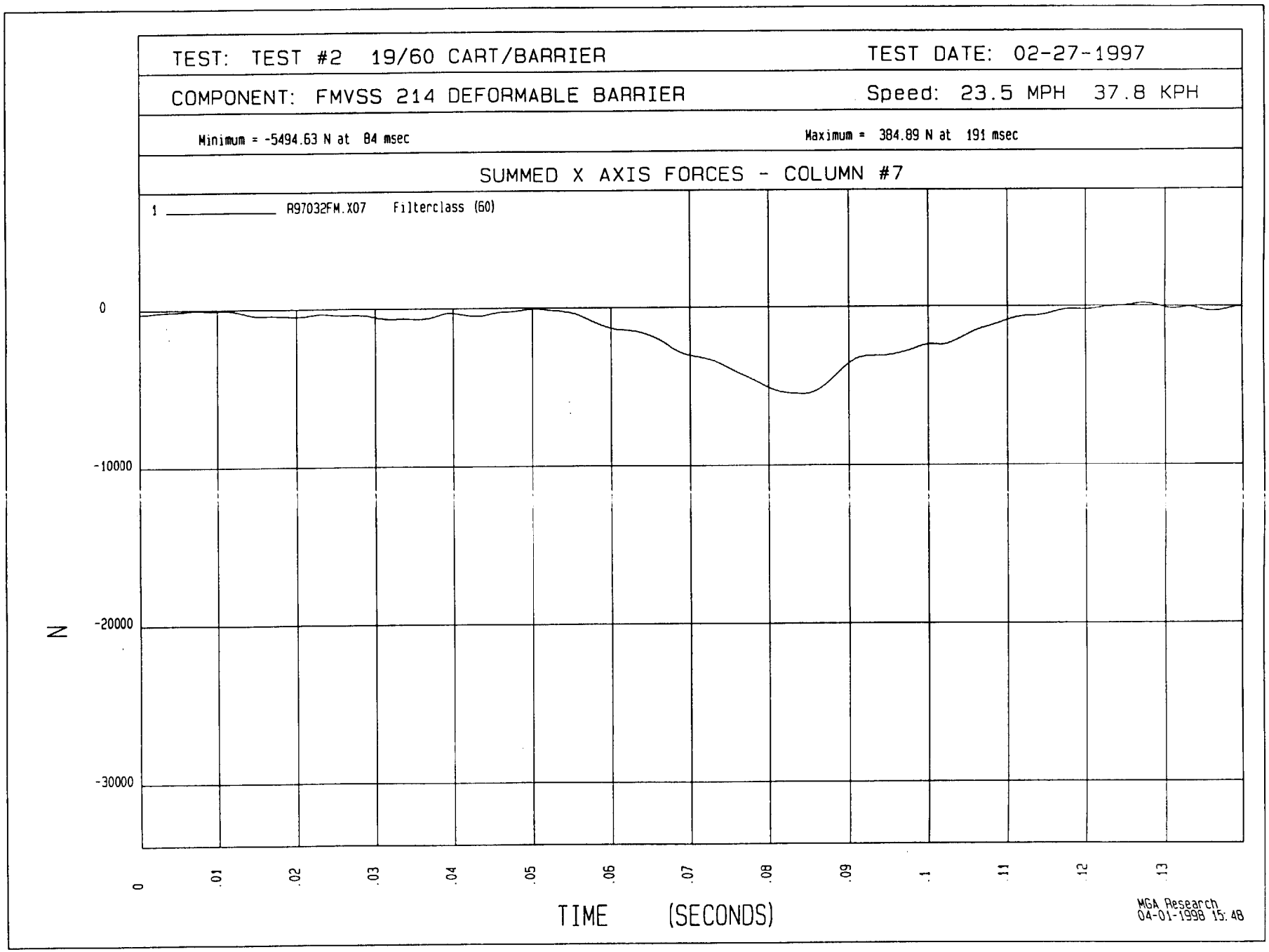

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -26732.93 N at 54 msec
Maximum = 960.15 N at 176 msec
SUMMED X AXIS FORCES - ROW #4
1 R97032FM.A04 Filterclass (60)
0
-10000
-20000
-30000
-40000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:58

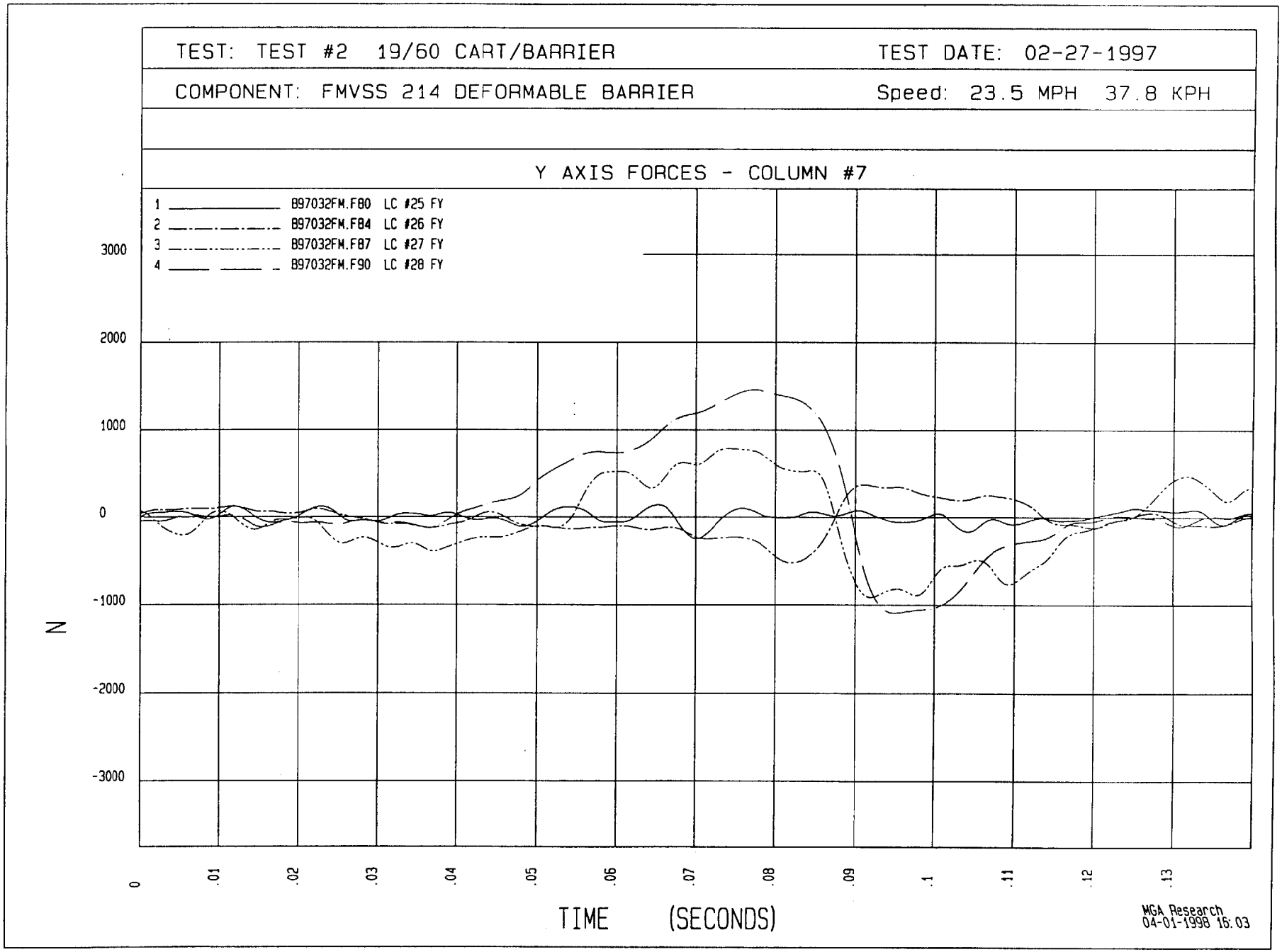

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - ROW #4
1 R97032FM.F70 LC #44 FY
2 R97032FM.F58 LC #40 FY
3 R97032FM.F45 LC #36 FY
4 C97032FM.F45 LC #32 FY
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (seconds)
MGA Research
04-09-1998 15:56

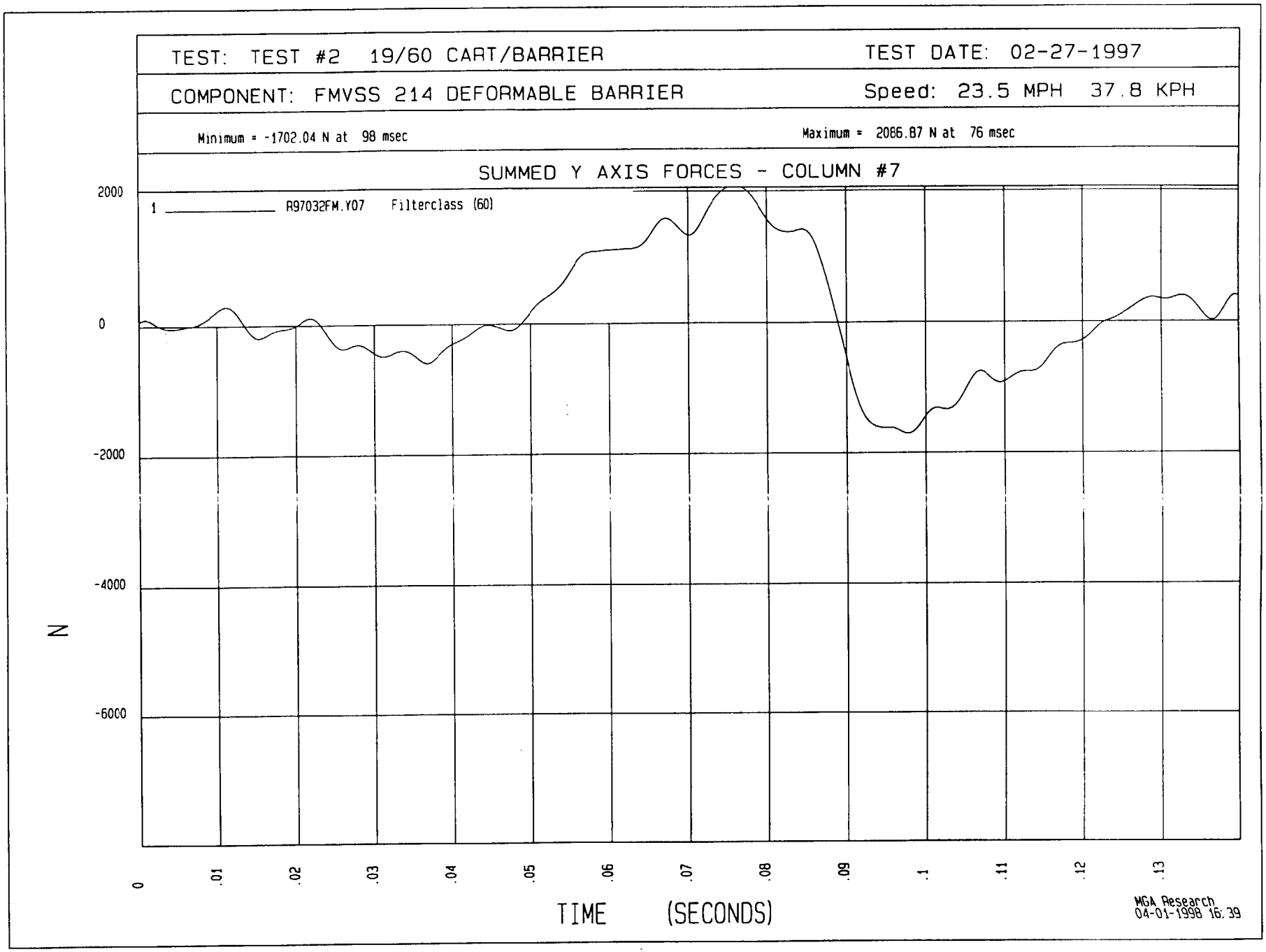

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -3541.79 N at 95 msec
Maximum = 185.30 N at -5 msec
SUMMED Y AXIS FORCES ROW #4 (COLUMNS 8 - 11)
1 A97032FY.R04 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 16:28

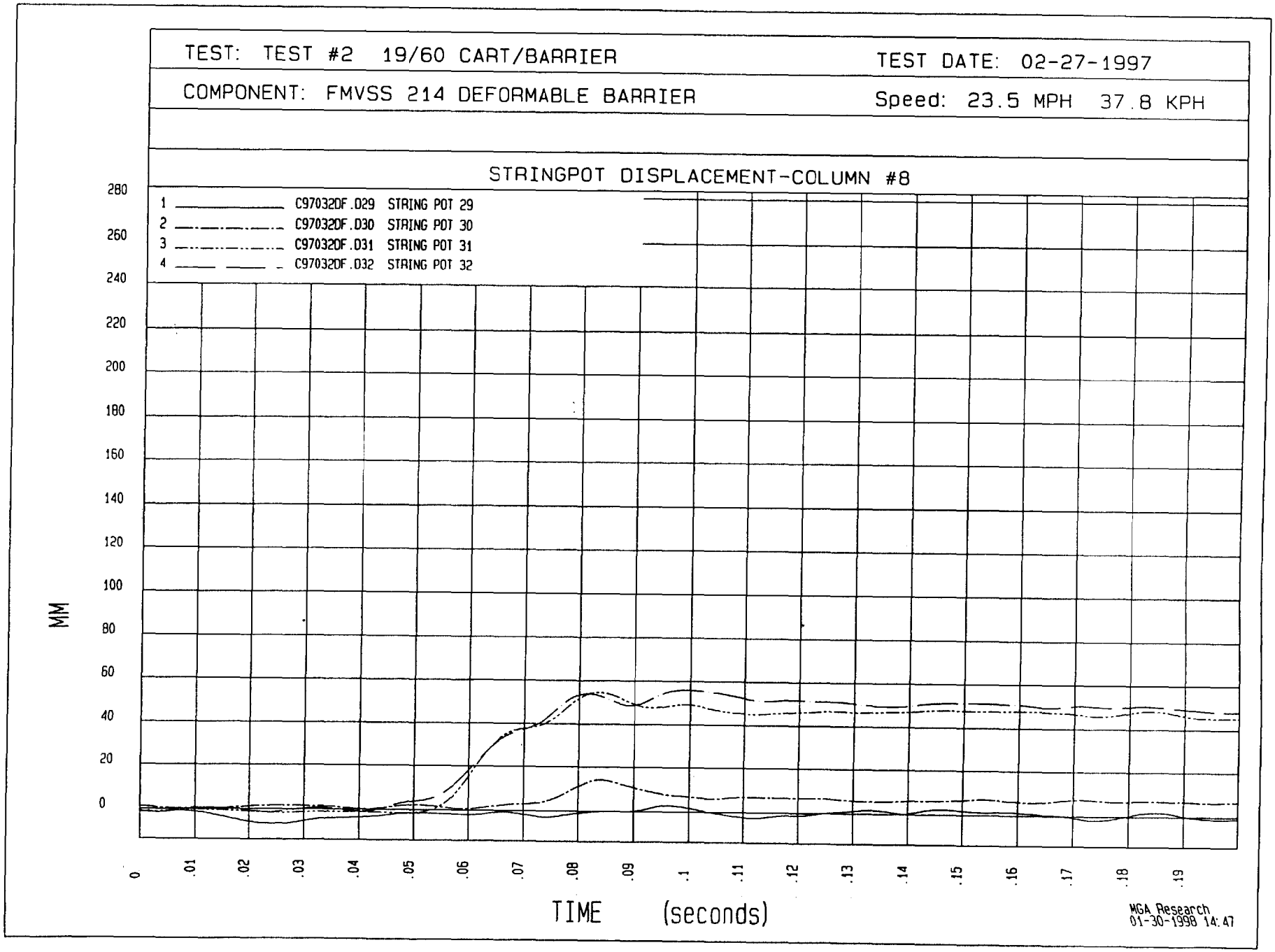

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-COLUMN #7
1 C970320F.D25 STRING POT 25
2 C970320F.D26 STRING POT 26
3 C970320F.D27 STRING POT 27
4 C970320F.D28 STRING POT 28
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
01-30-1998 14:51

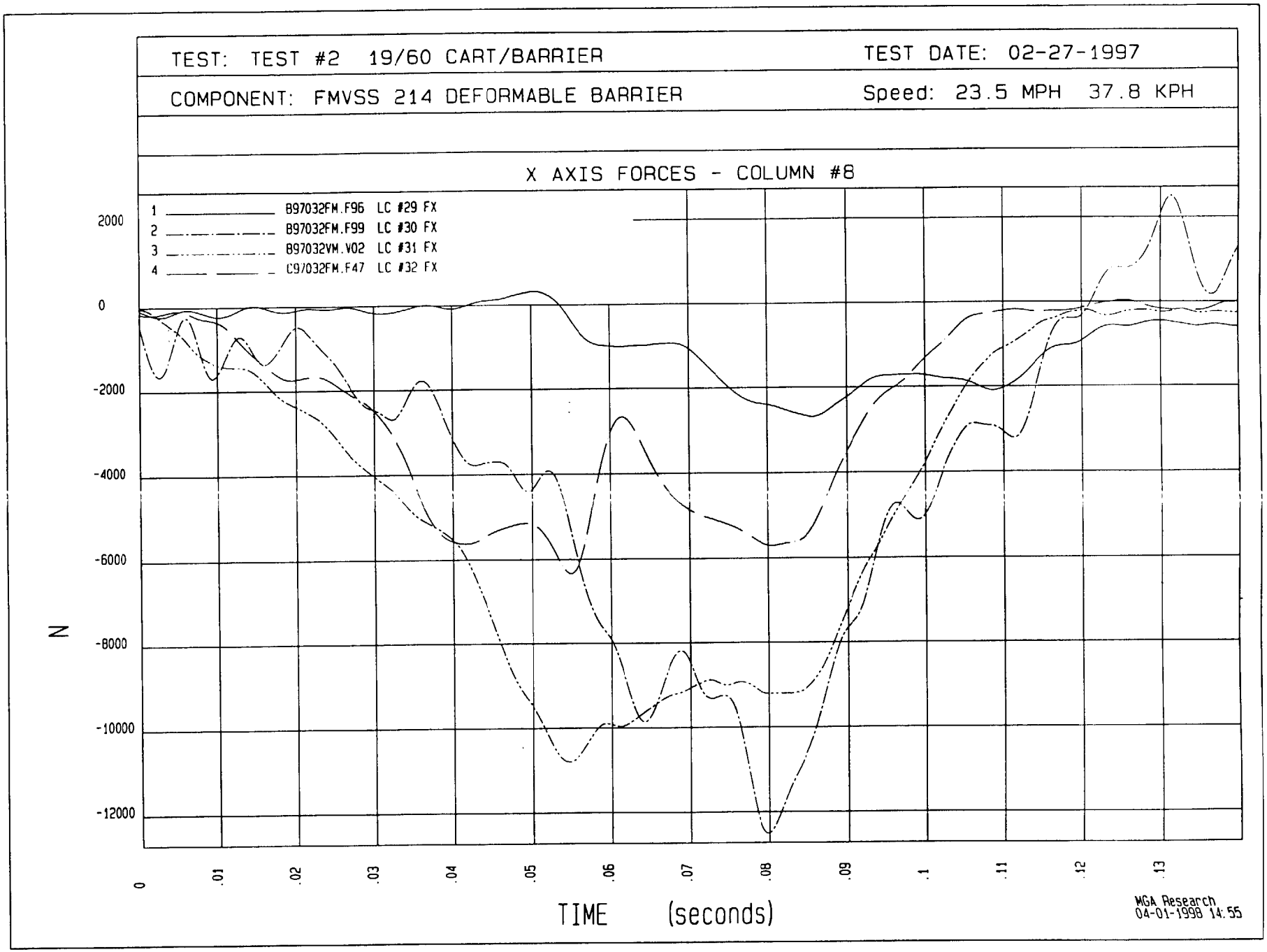

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - COLUMN #7
1 B97032FM.F82 LC #25 FX
2 B97032FM.F86 LC #26 FX
3 B97032FM.F89 LC #27 FX
4 B97032FM.F92 LC #28 FZ
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 14:58

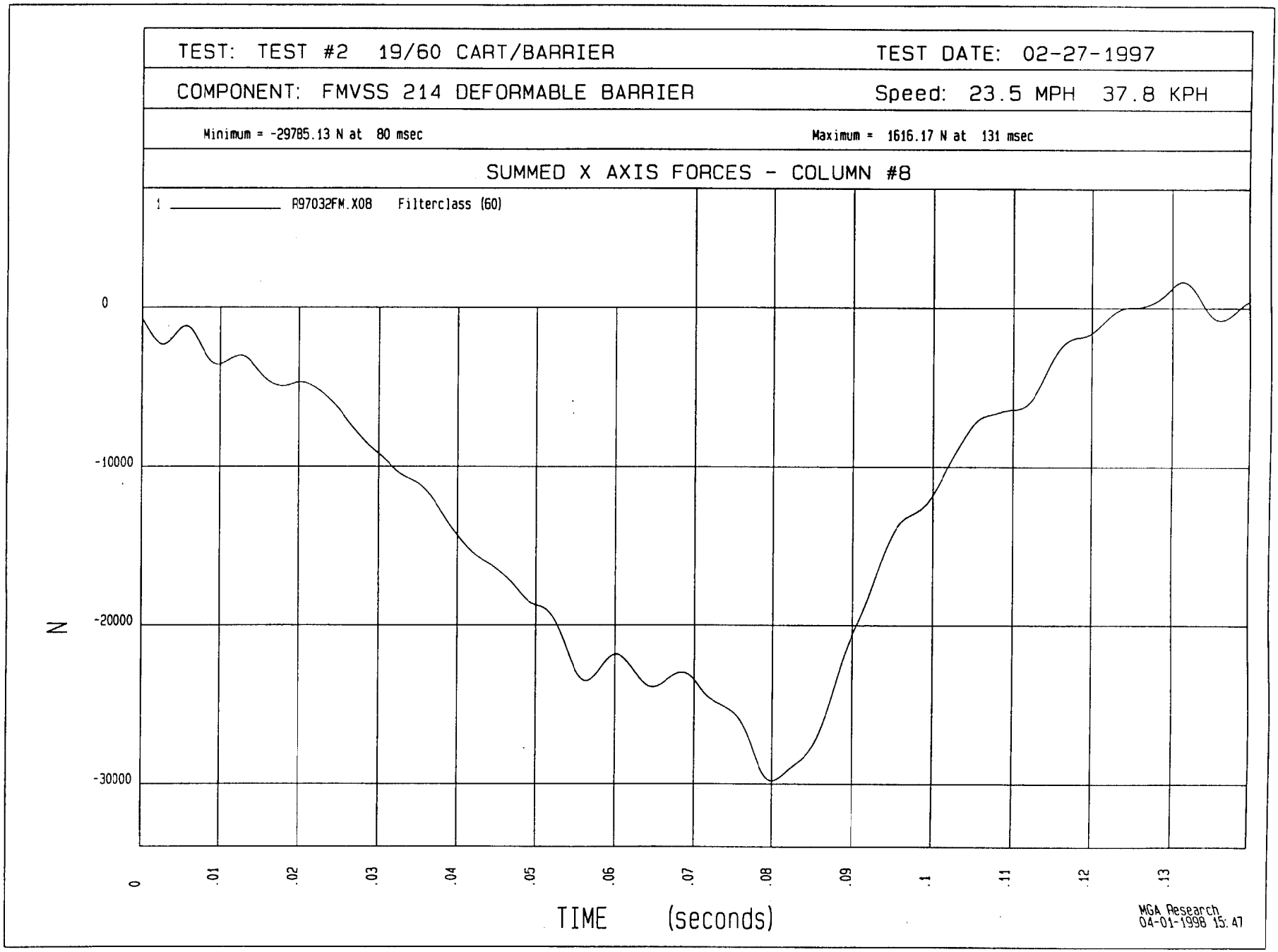

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -5494.63 N at 84 msec
Maximum = 384.89 N at 191 msec
SUMMED X AXIS FORCES - COLUMN #7
1 R97032FM.X07 Filterclass (60)
0
-10000
-20000
-30000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:48

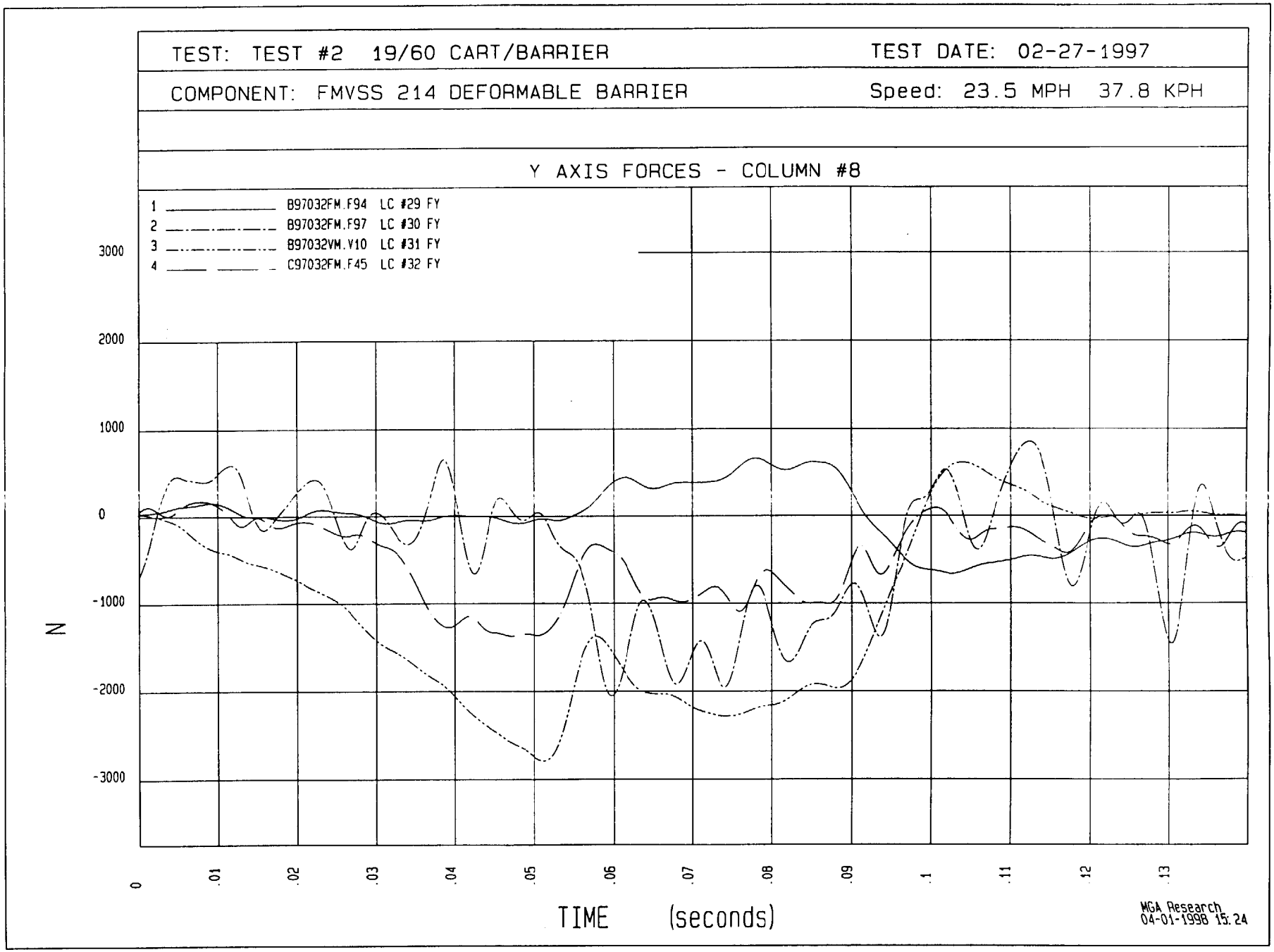

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - COLUMN #7
1 B97032FM.F80 LC #25 FY
2 B97032FM.F84 LC #26 FY
3 B97032FM.F87 LC #27 FY
4 B97032FM.F90 LC #28 FY
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 16:03

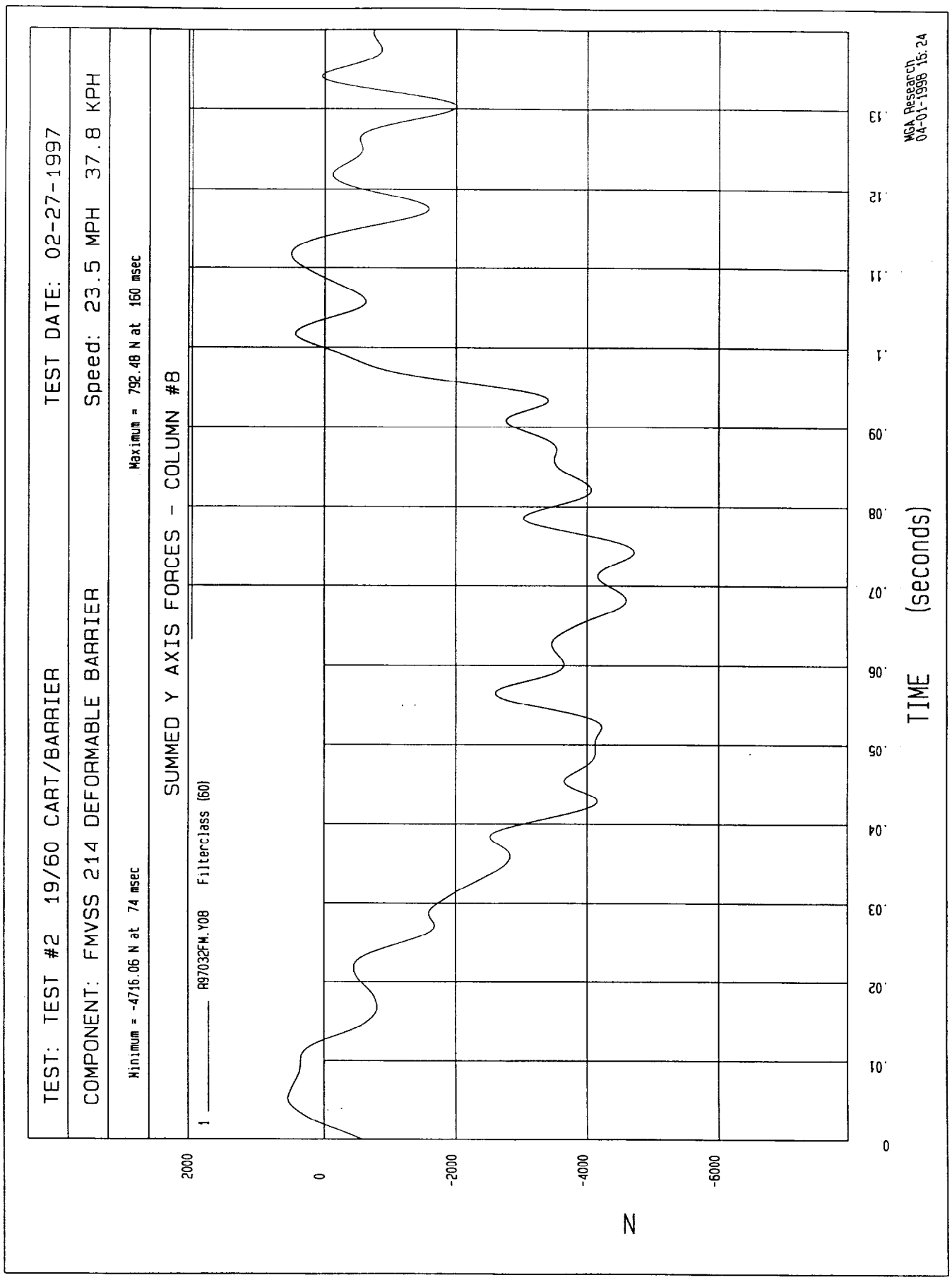

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -1702.04 N at 98 msec
Maximum = 2086.87 N at 76 msec
SUMMED Y AXIS FORCES - COLUMN #7
1 R97032FM.Y07 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 16:39

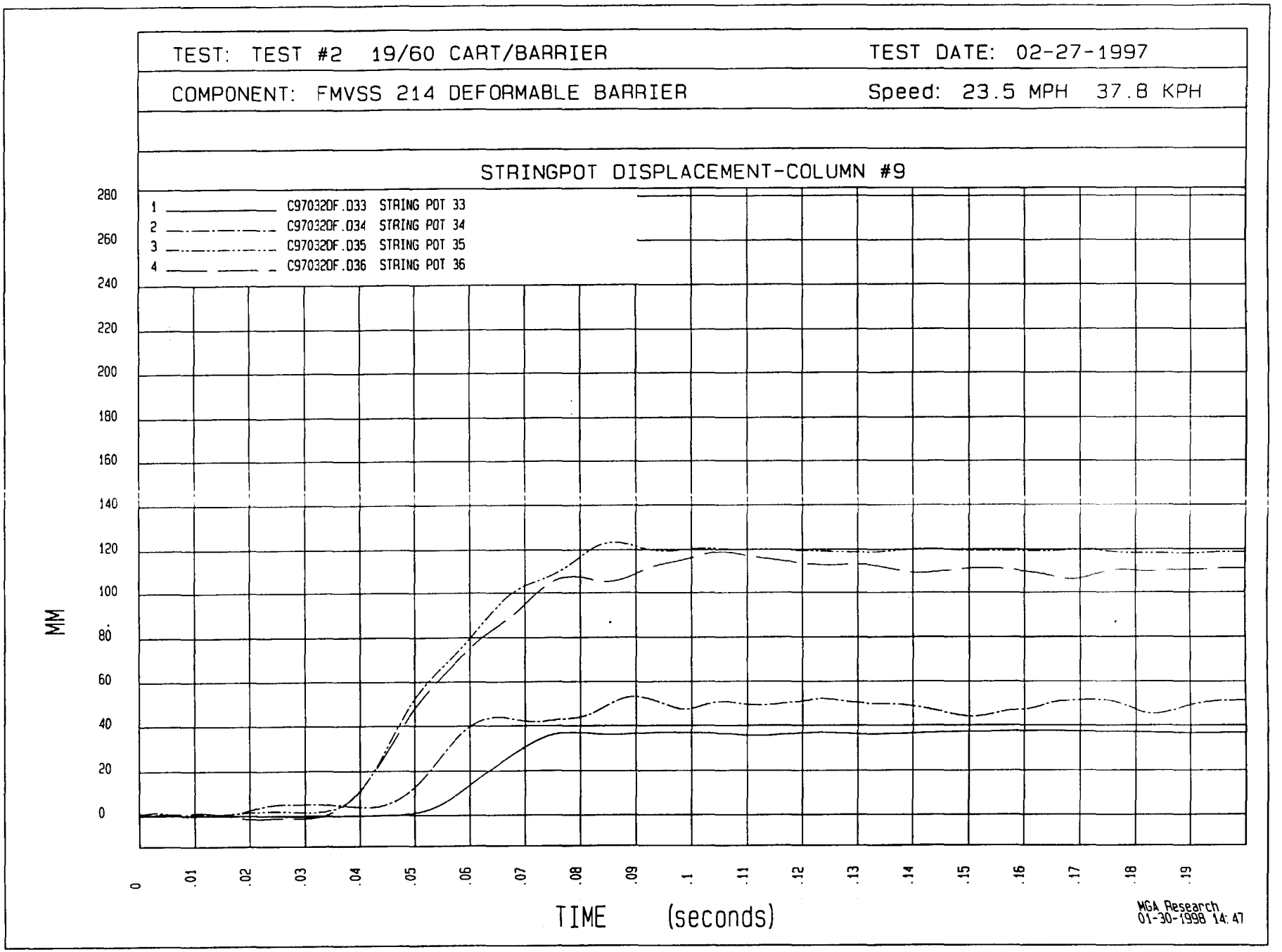

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-COLUMN #8
1 C970320F.D29 STRING POT 29
2 C970320F.D30 STRING POT 30
3 C970320F.D31 STRING POT 31
4 C970320F.D32 STRING POT 32
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
01-30-1998 14:47

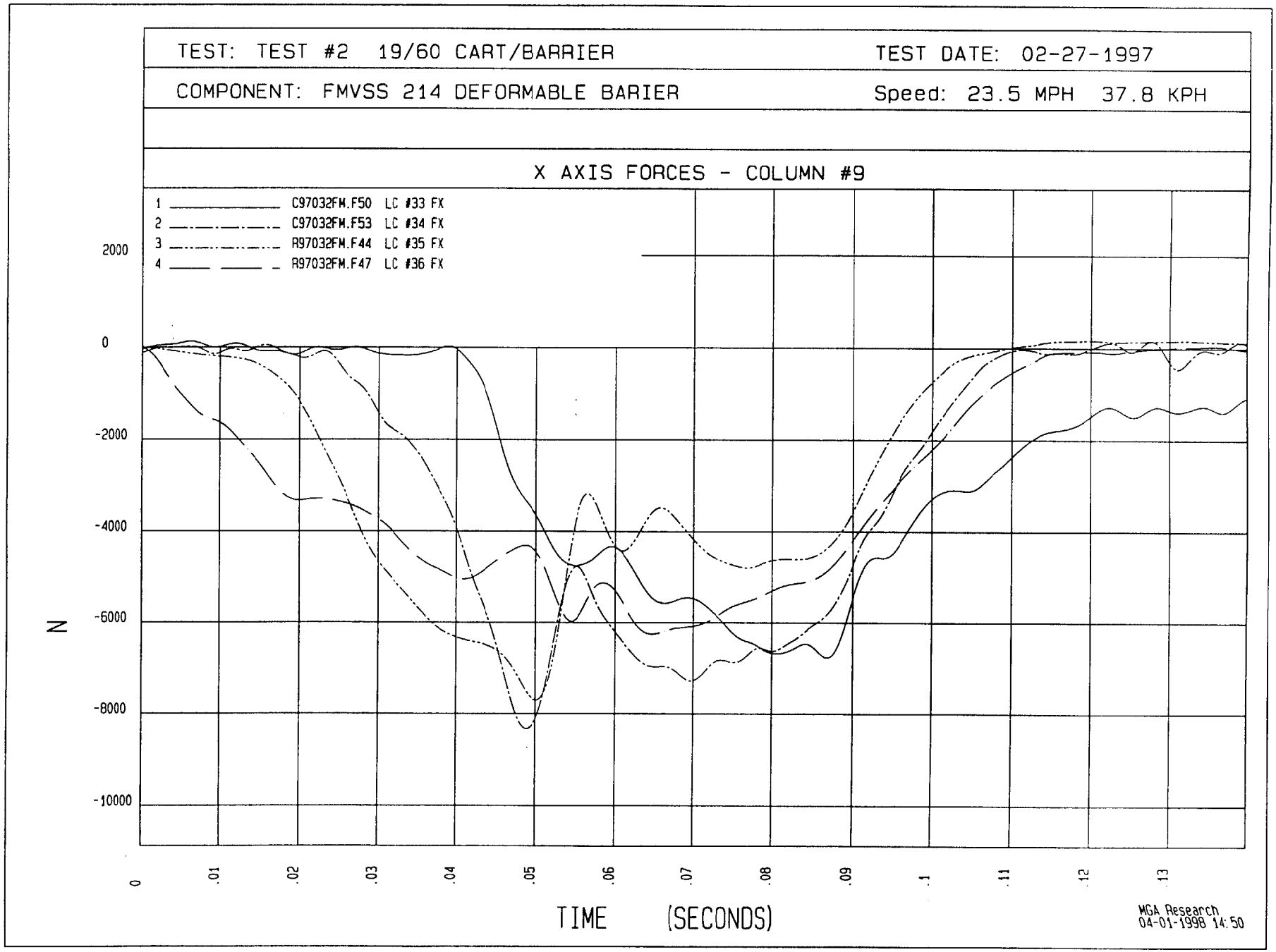

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - COLUMN #8
1 B97032FM.F96 LC #29 FX
2 B97032FM.F99 LC #30 FX
3 B97032VM.V02 LC #31 FX
4 C97032FM.F47 LC #32 FX
2000
0
-2000
-4000
-6000
-8000
-10000
-12000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (seconds)
MGA Research
04-01-1998 14:55

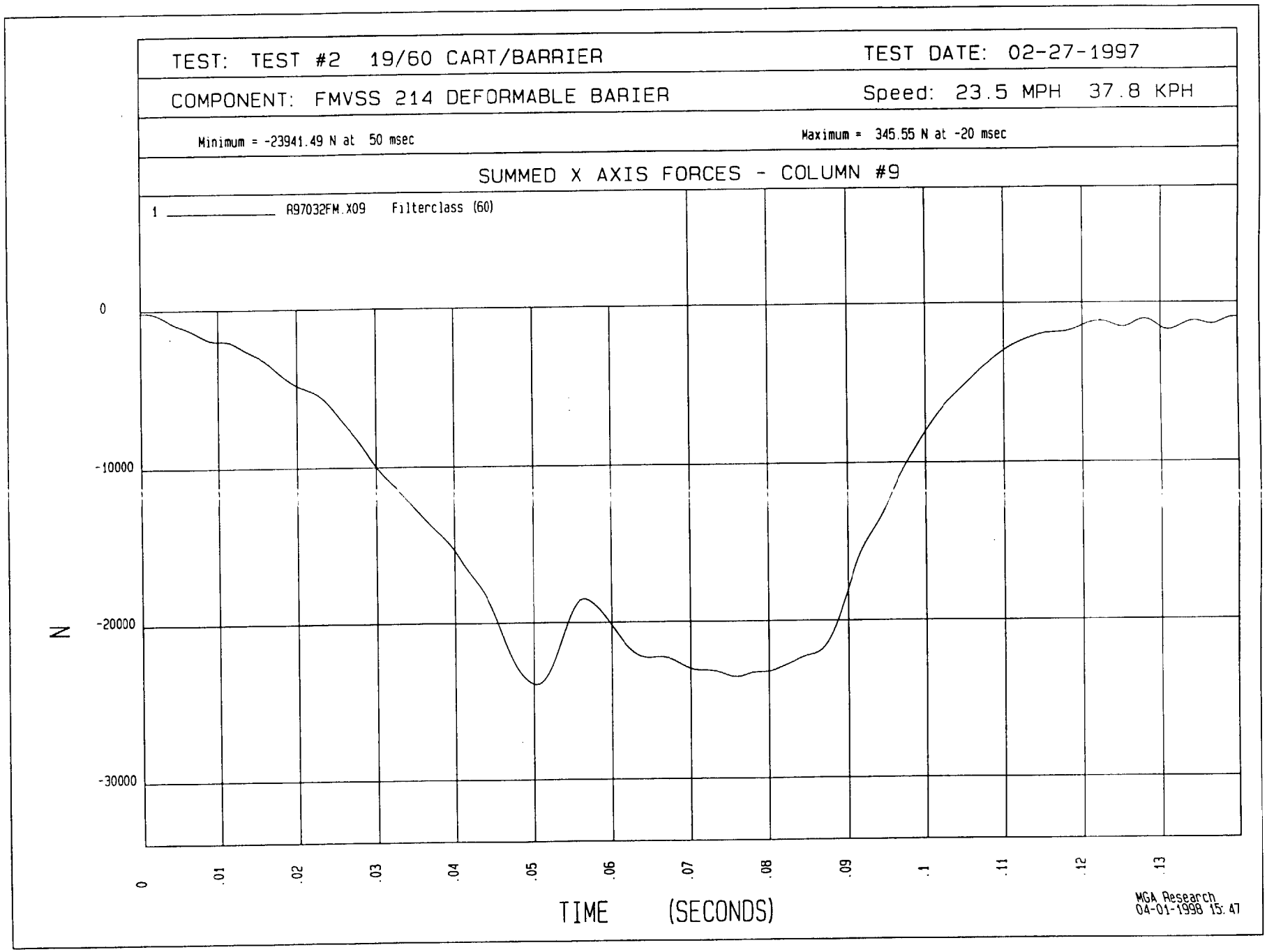

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -29785.13 N at 80 msec
Maximum = 1616.17 N at 131 msec
SUMMED X AXIS FORCES - COLUMN #8
1 R97032FM.X08 Filterclass (60)
0
-10000
-20000
-30000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (seconds)
MGA Research
04-01-1998 15:47

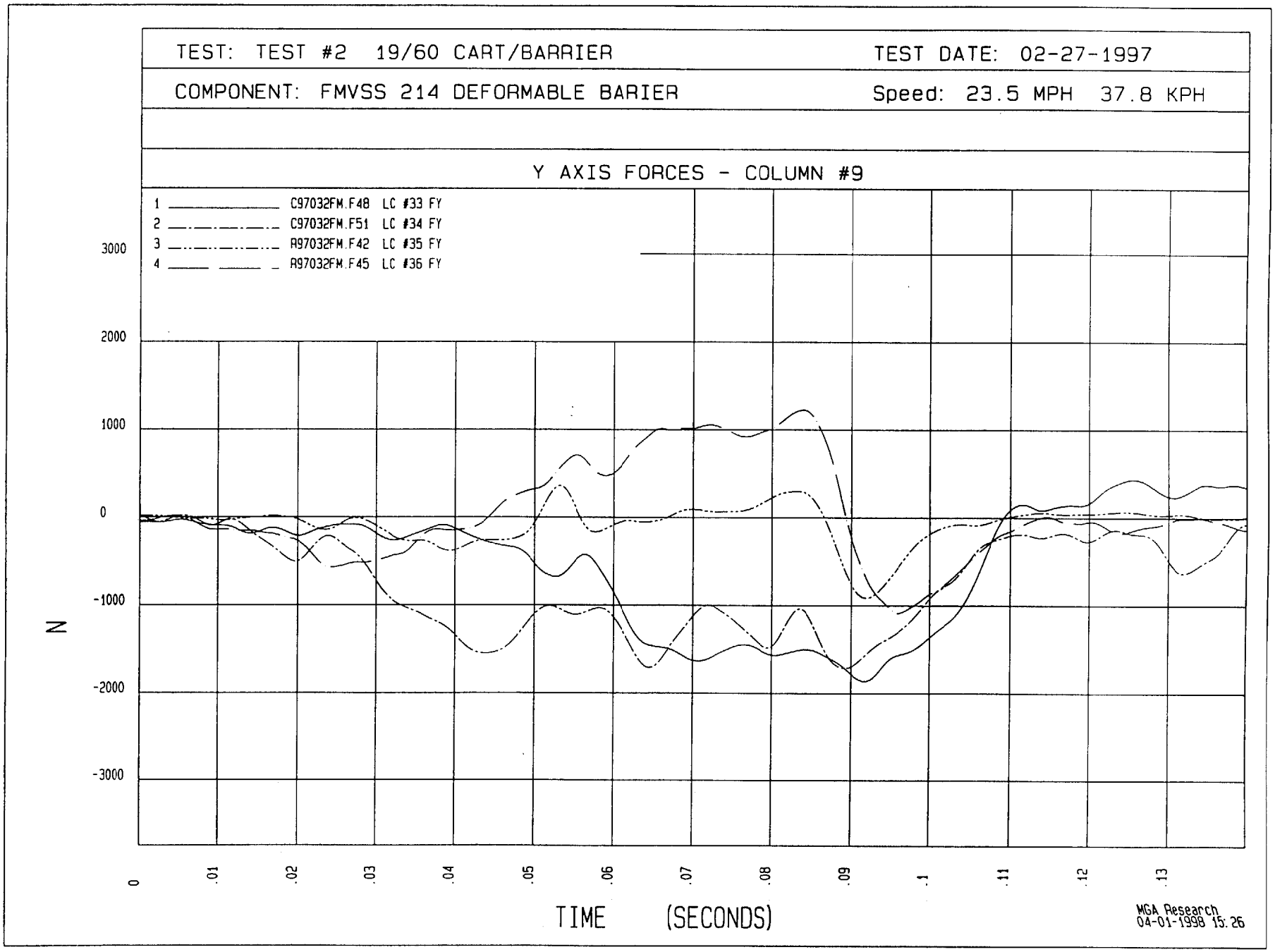

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - COLUMN #8
1 B97032FM.F94 LC #29 FY
2 B97032FM.F97 LC #30 FY
3 B97032VM.V10 LC #31 FY
4 C97032FM.F45 LC #32 FY
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (seconds)
MGA Research
04-01-1998 15:24

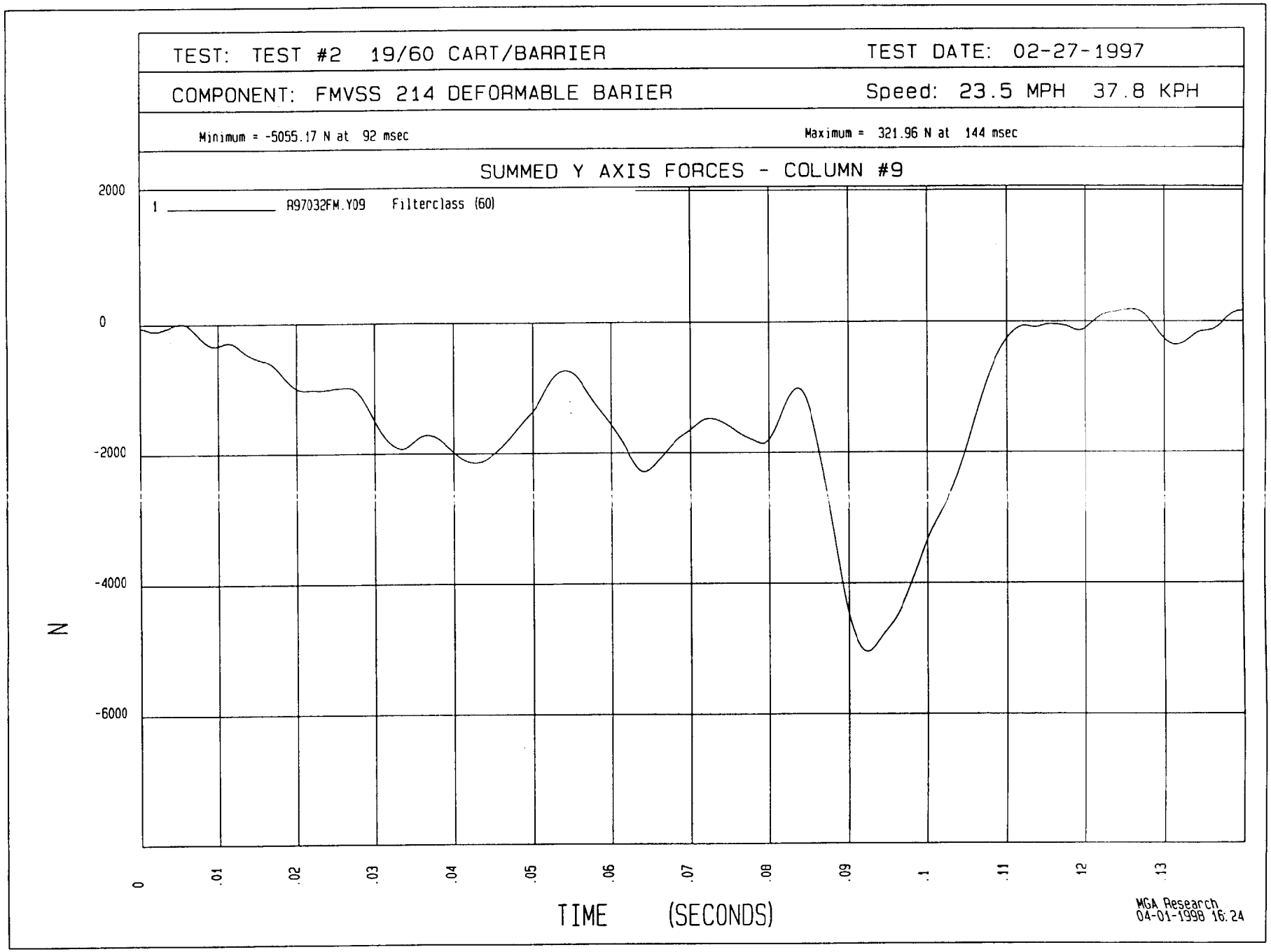

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -4716.06 N at 74 msec
Maximum = 792.48 N at 160 msec
SUMMED Y AXIS FORCES - COLUMN #8
1 A97032FM.Y08 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
TIME (seconds)
MGA Research
04-01-1998 15:24

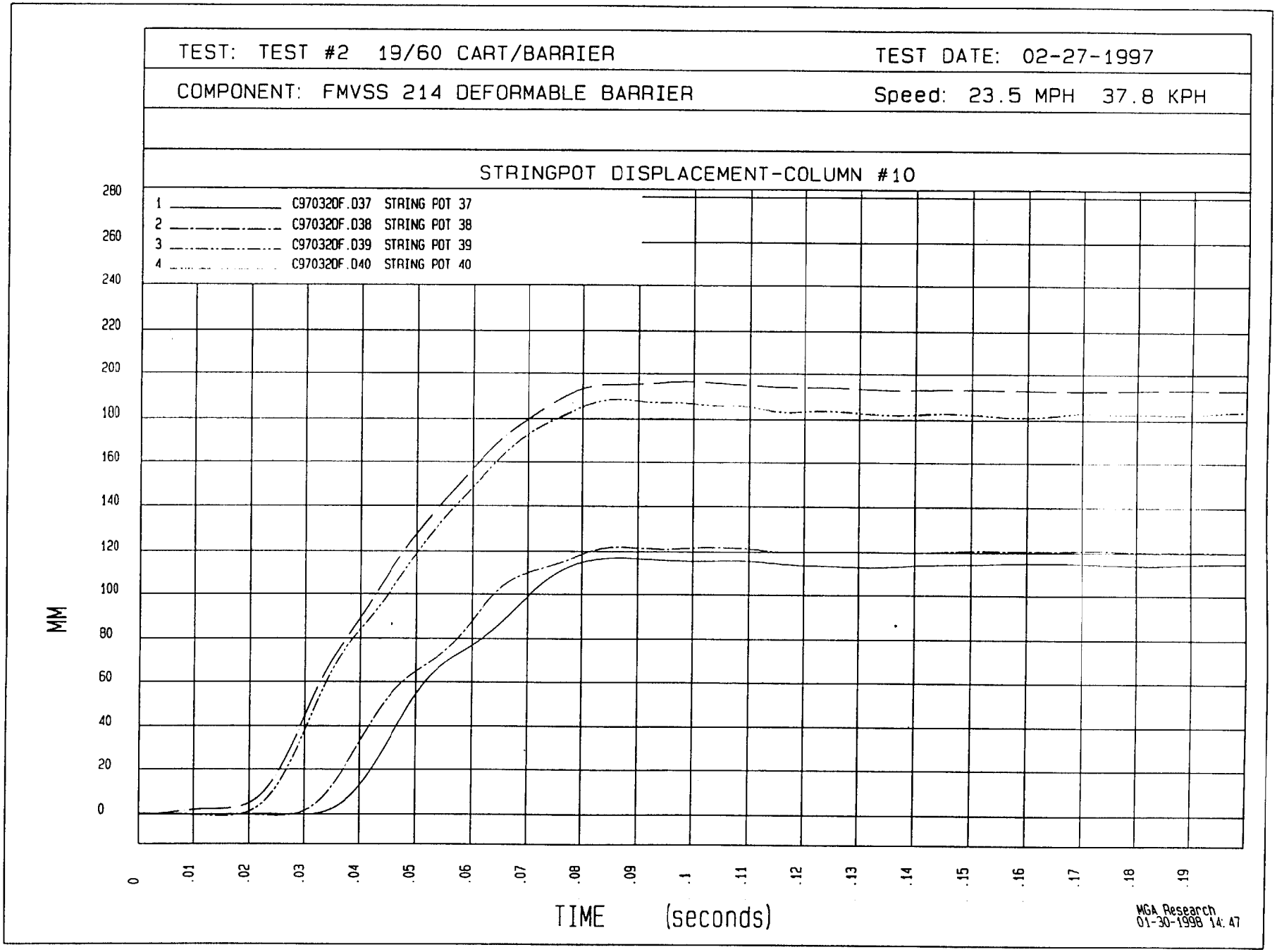

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-COLUMN #9
1 C970320F.033 STRING POT 33
2 C970320F.034 STRING POT 34
3 C970320F.035 STRING POT 35
4 C970320F.036 STRING POT 36
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
01-30-1998 14:47

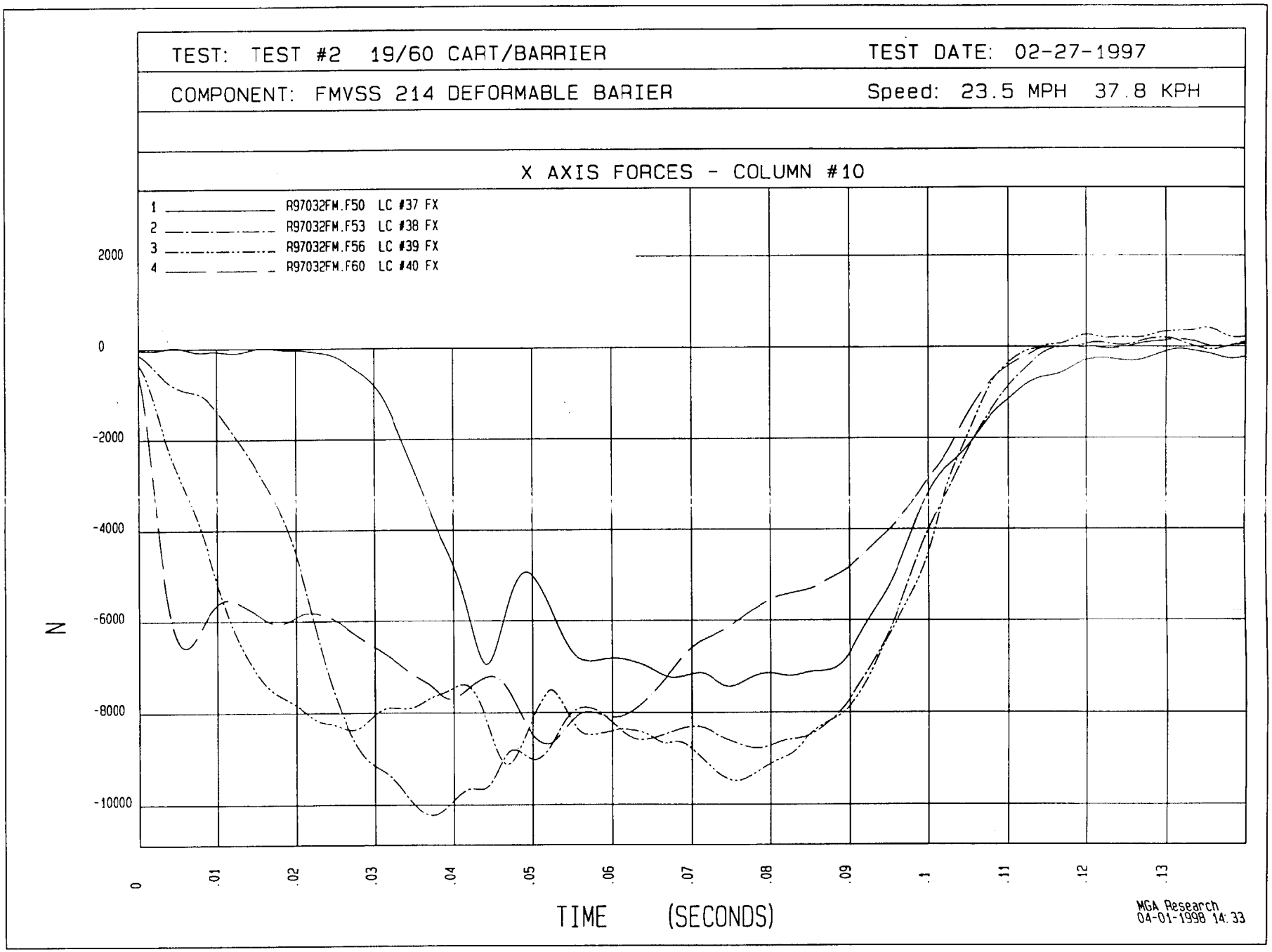

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - COLUMN #9
1 C97032FM.F50 LC #33 FX
2 C97032FM.F53 LC #34 FX
3 R97032FM.F44 LC #35 FX
4 R97032FM.F47 LC #36 FX
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 14:50

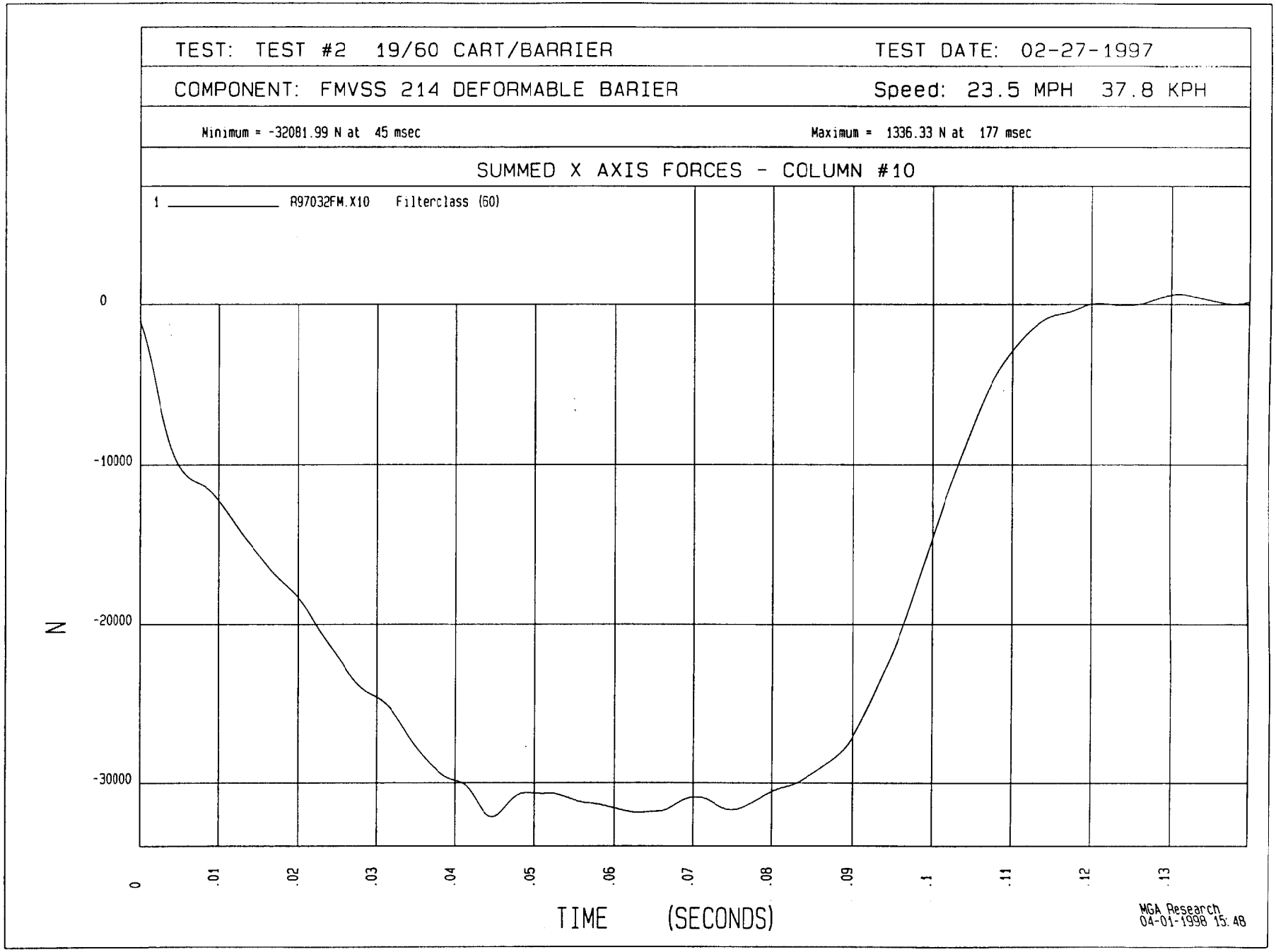

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -23941.49 N at 50 msec
Maximum = 345.55 N at -20 msec
SUMMED X AXIS FORCES - COLUMN #9
1 _____ R97032FM.X09 Filterclass (60)
0
-10000
-20000
-30000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:47

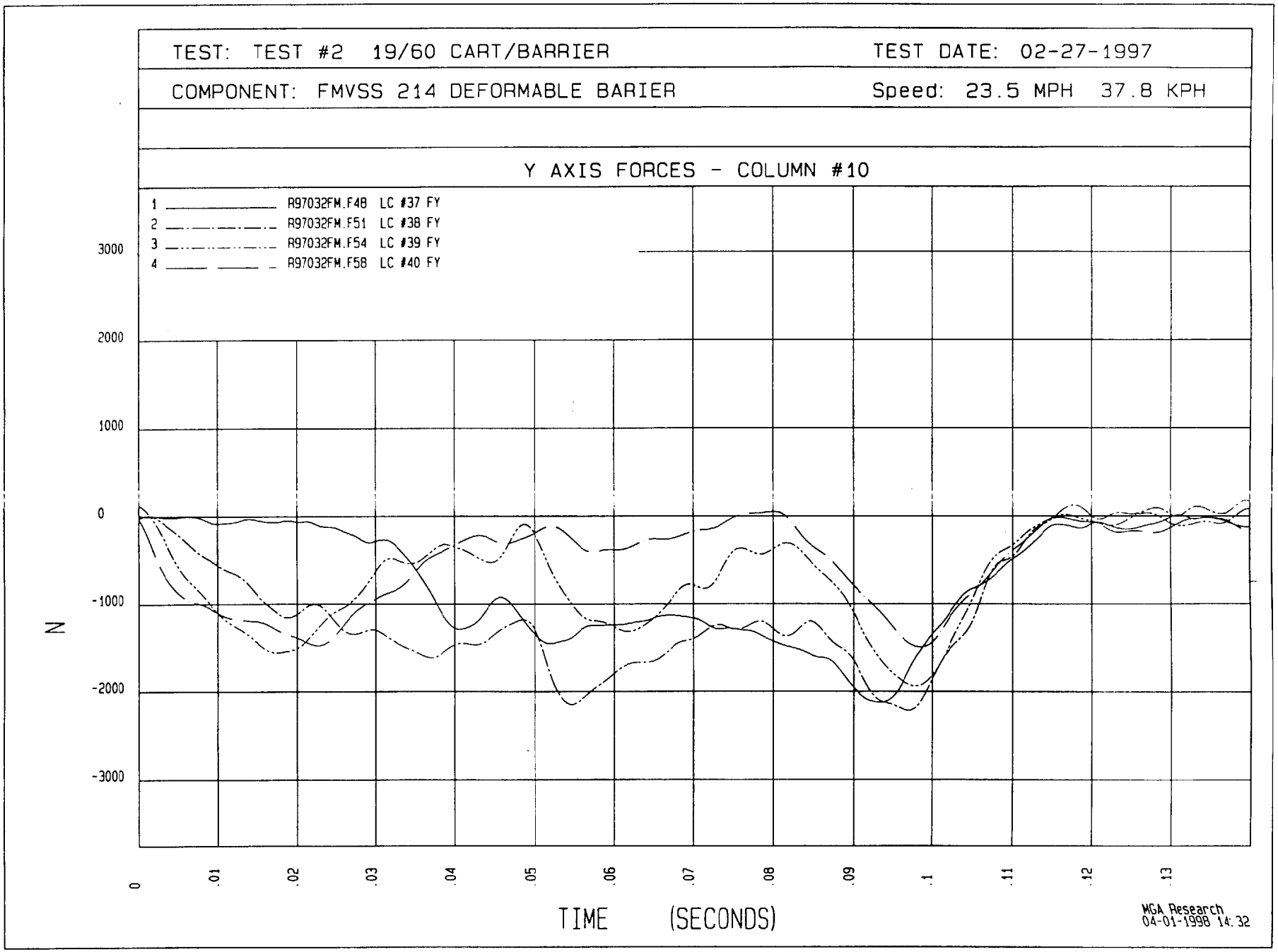

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - COLUMN #9
1 C97032FM.F48 LC #33 FY
2 C97032FM.F51 LC #34 FY
3 R97032FM.F42 LC #35 FY
4 R97032FM.F45 LC #36 FY
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:26

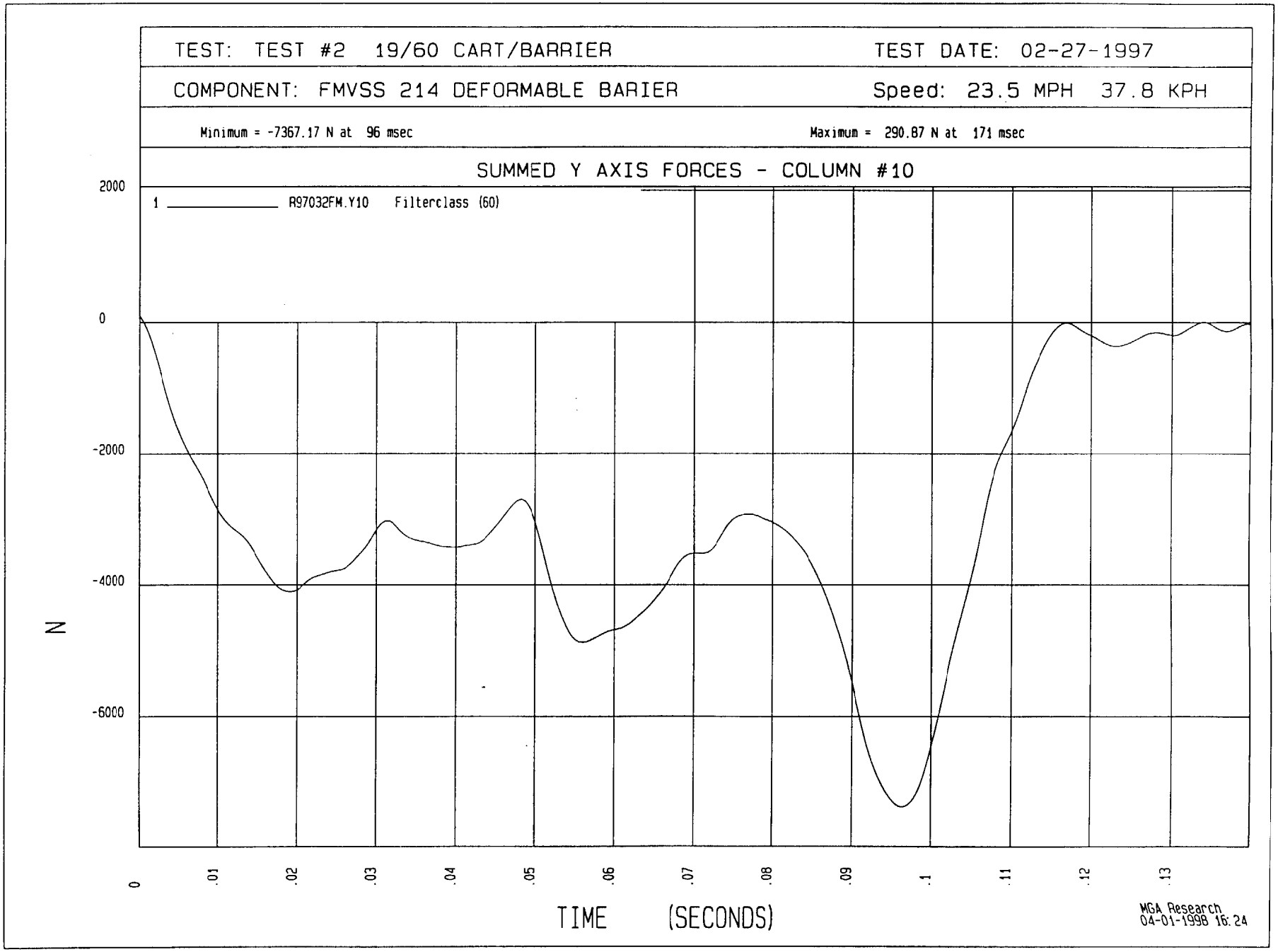

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -5055.17 N at 92 msec
Maximum = 321.96 N at 144 msec
SUMMED Y AXIS FORCES - COLUMN #9
1 R97032FM.Y09 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 16:24

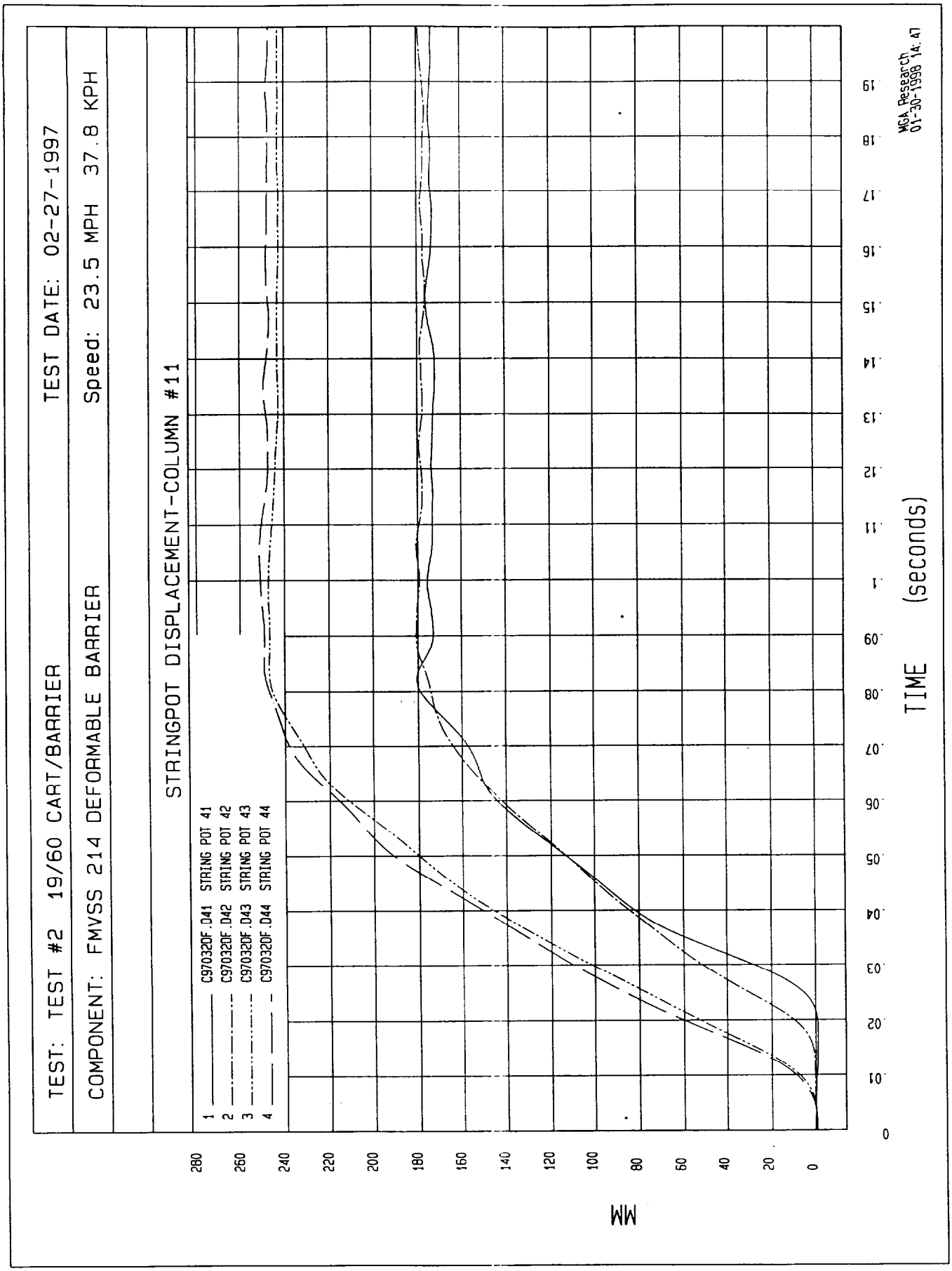

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-COLUMN #10
1 C970320F.037 STRING POT 37
2 C970320F.038 STRING POT 38
3 C970320F.039 STRING POT 39
4 C970320F.040 STRING POT 40
MM
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
01-30-1998 14:47

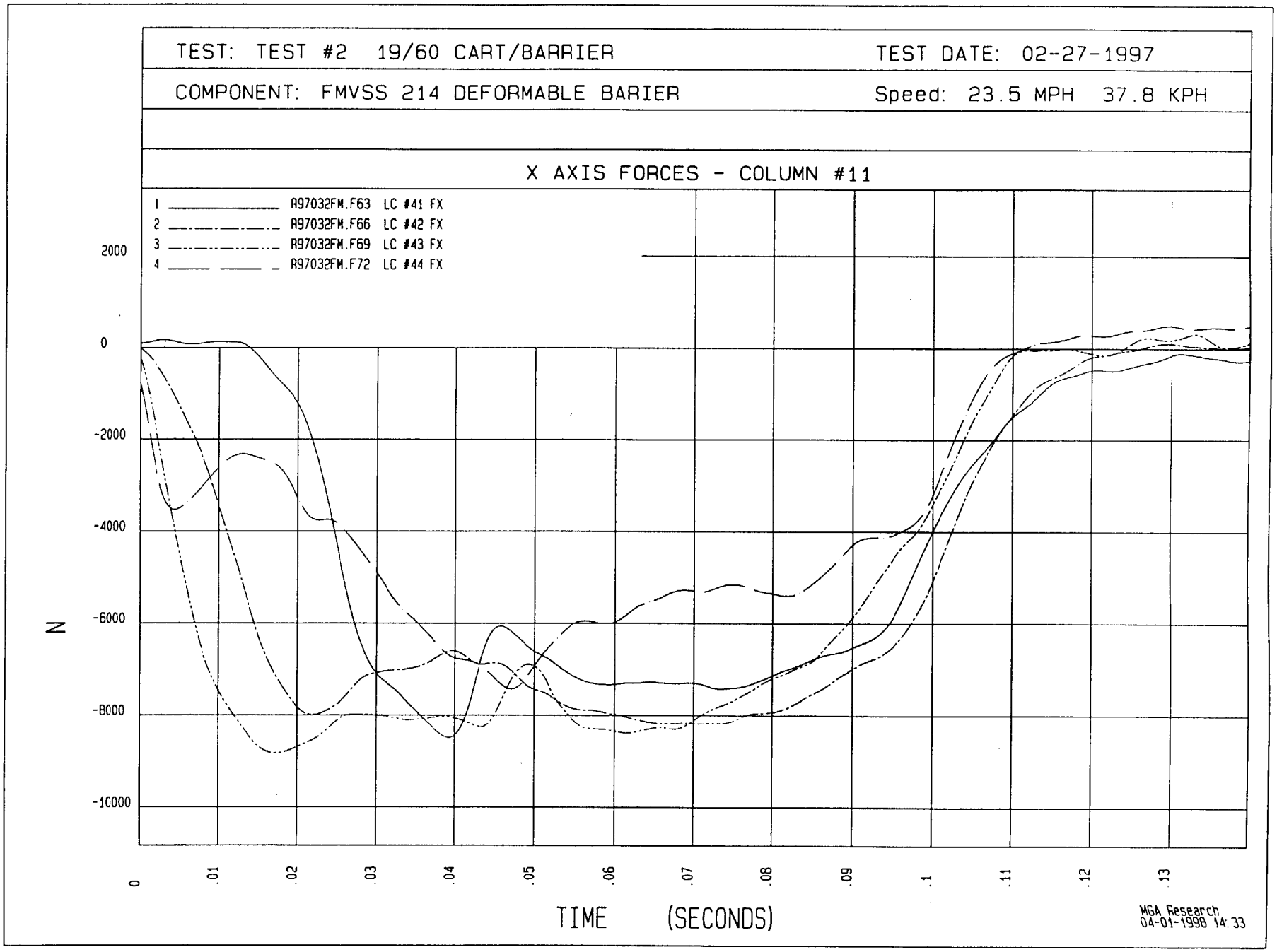

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - COLUMN #10
1 R97032FM.F50 LC #37 FX
2 R97032FM.F53 LC #38 FX
3 R97032FM.F56 LC #39 FX
4 R97032FM.F60 LC #40 FX
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 14:33

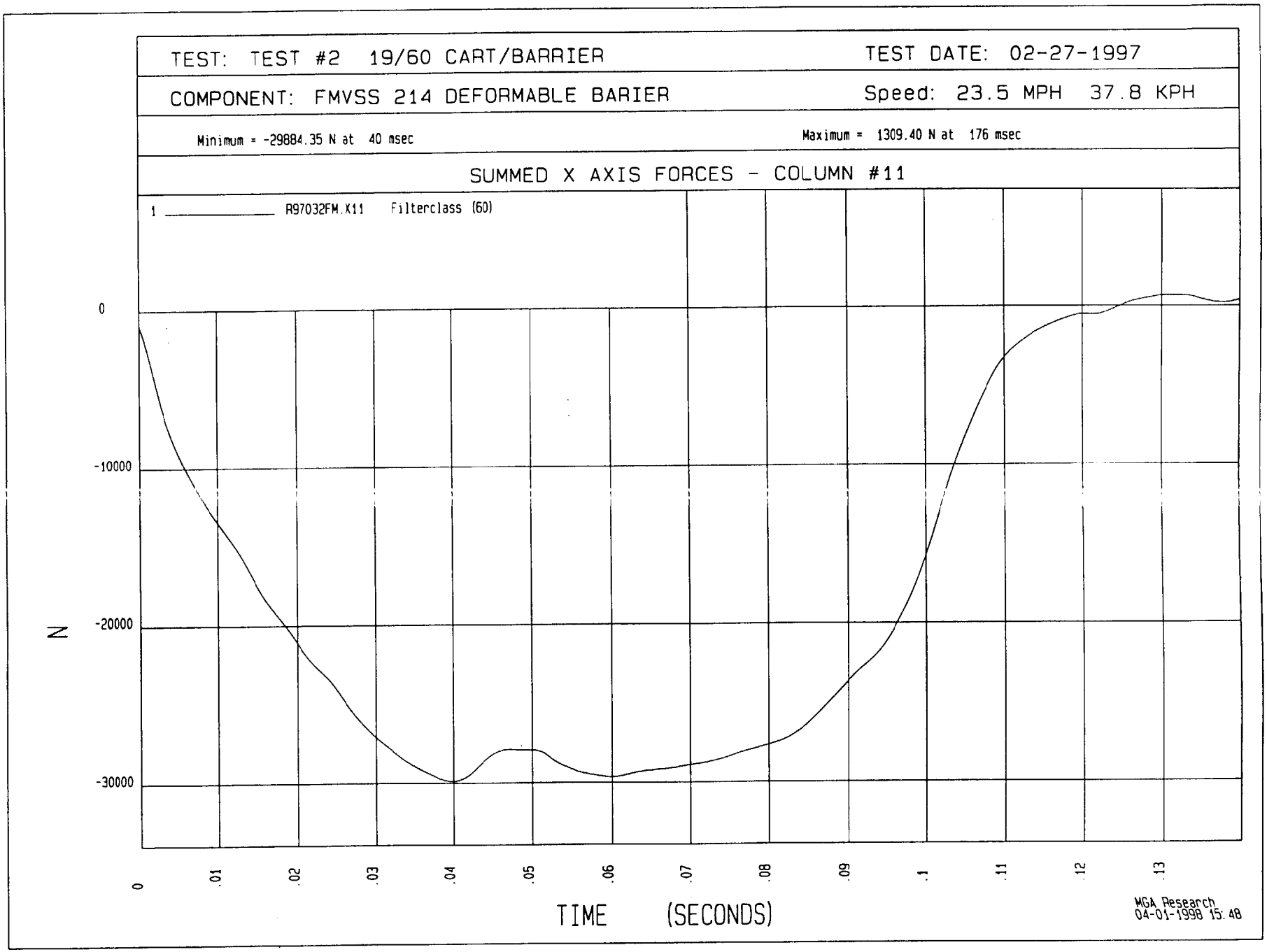

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -32081.99 N at 45 msec
Maximum = 1336.33 N at 177 msec
SUMMED X AXIS FORCES - COLUMN #10
1 R97032FM.X10 Filterclass (60)
0
-10000
-20000
-30000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:48

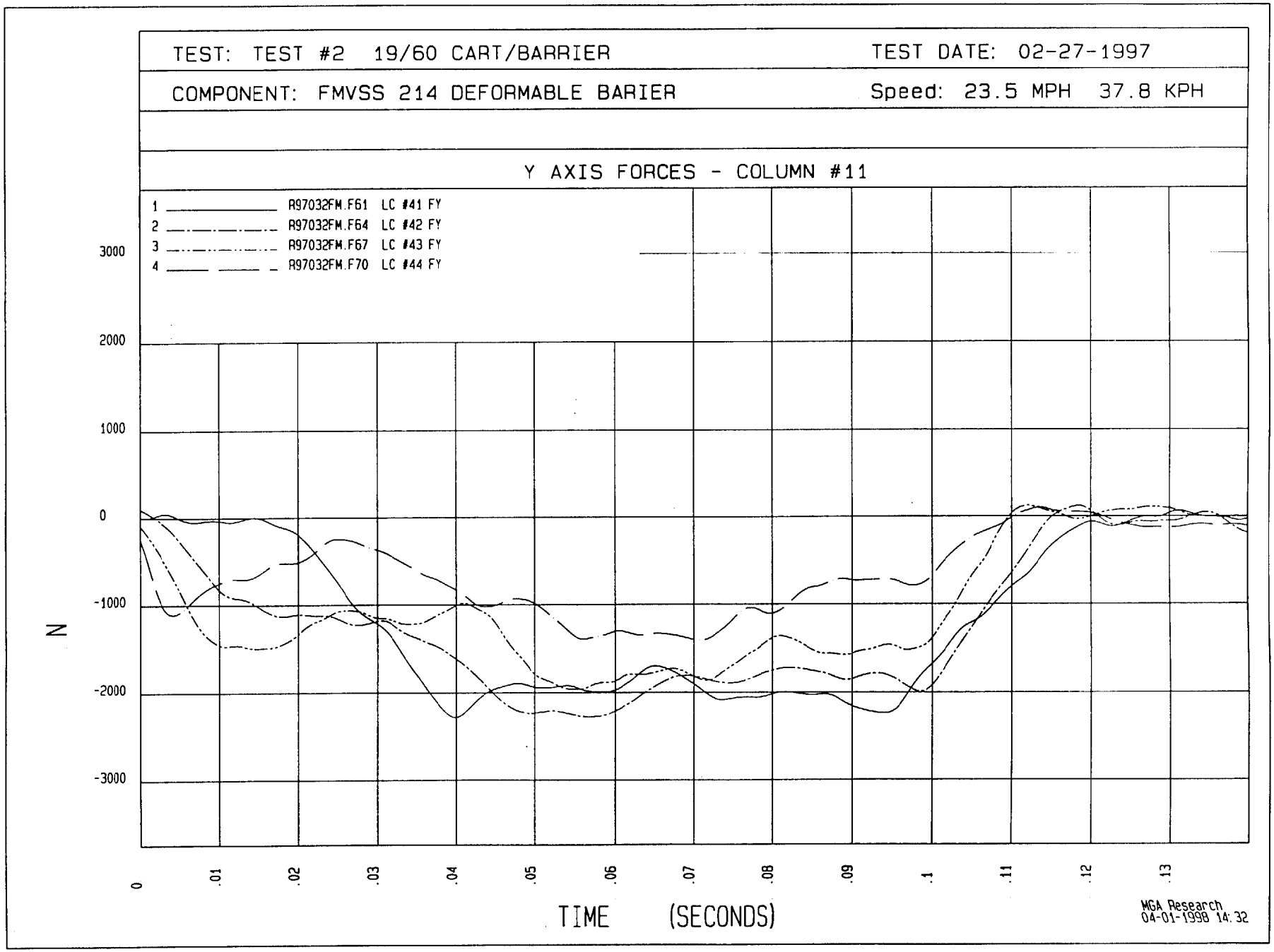

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - COLUMN #10
1 R97032FM.F48 LC #37 FY
2 R97032FM.F51 LC #38 FY
3 R97032FM.F54 LC #39 FY
4 R97032FM.F58 LC #40 FY
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 14:32

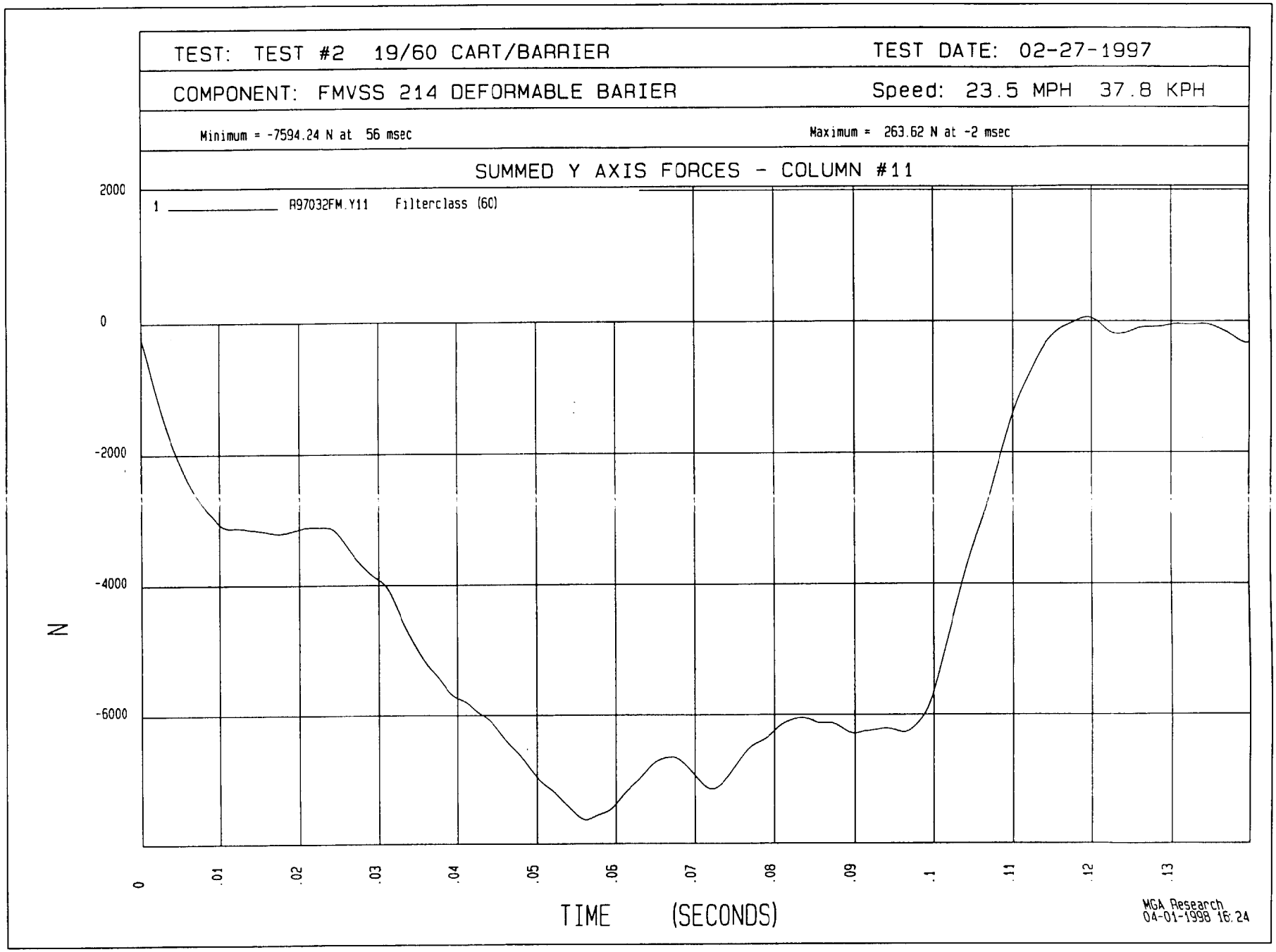

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7367.17 N at 96 msec
Maximum = 290.87 N at 171 msec
SUMMED Y AXIS FORCES - COLUMN #10
1 R97032FM.Y10 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 16:24

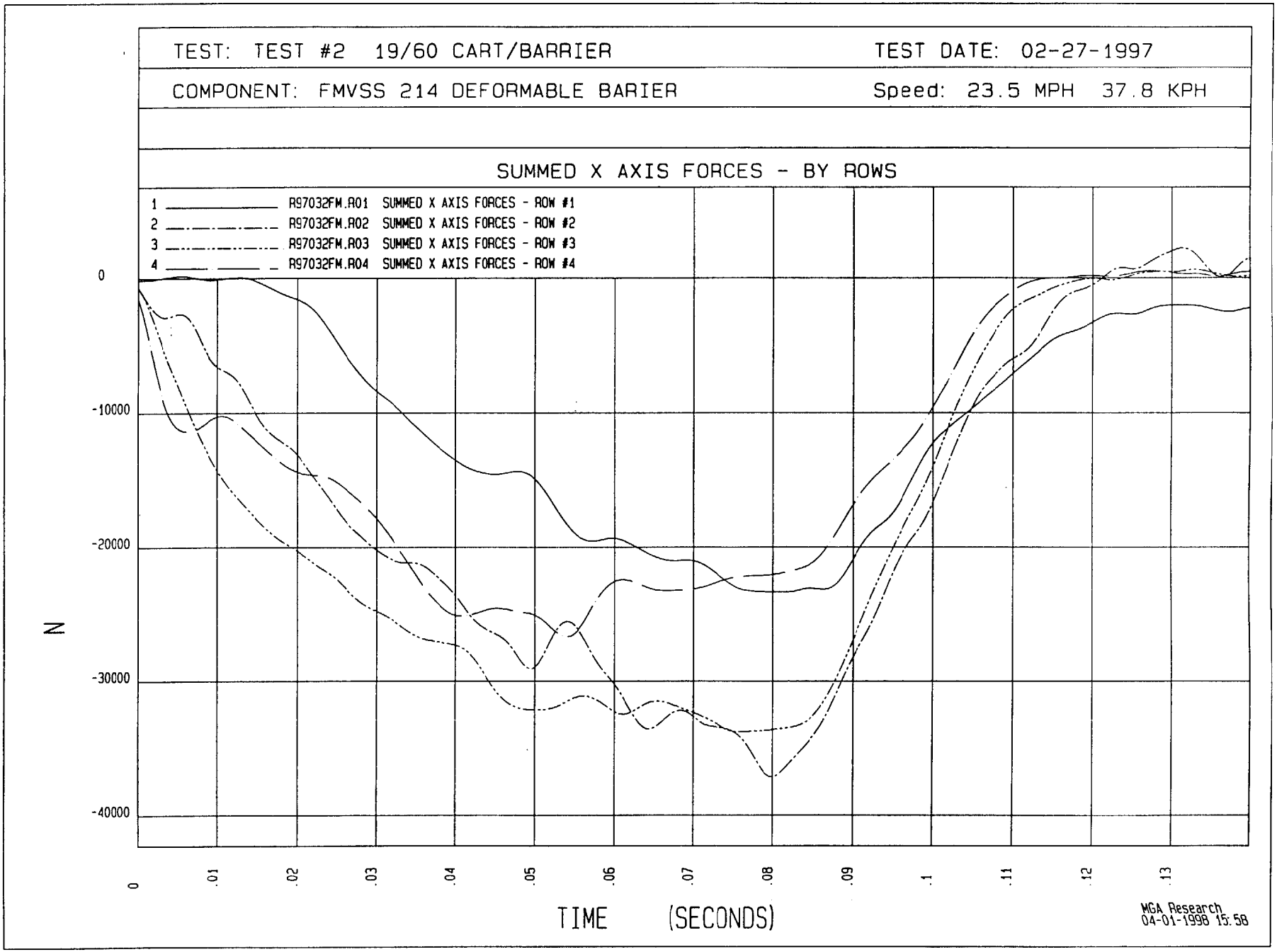

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
STRINGPOT DISPLACEMENT-COLUMN #11
1 C970320F.D41 STRING POT 41
2 C970320F.D42 STRING POT 42
3 C970320F.D43 STRING POT 43
4 C970320F.D44 STRING POT 44
MM
TIME (seconds)
MGA Research
01-30-1998 14:47

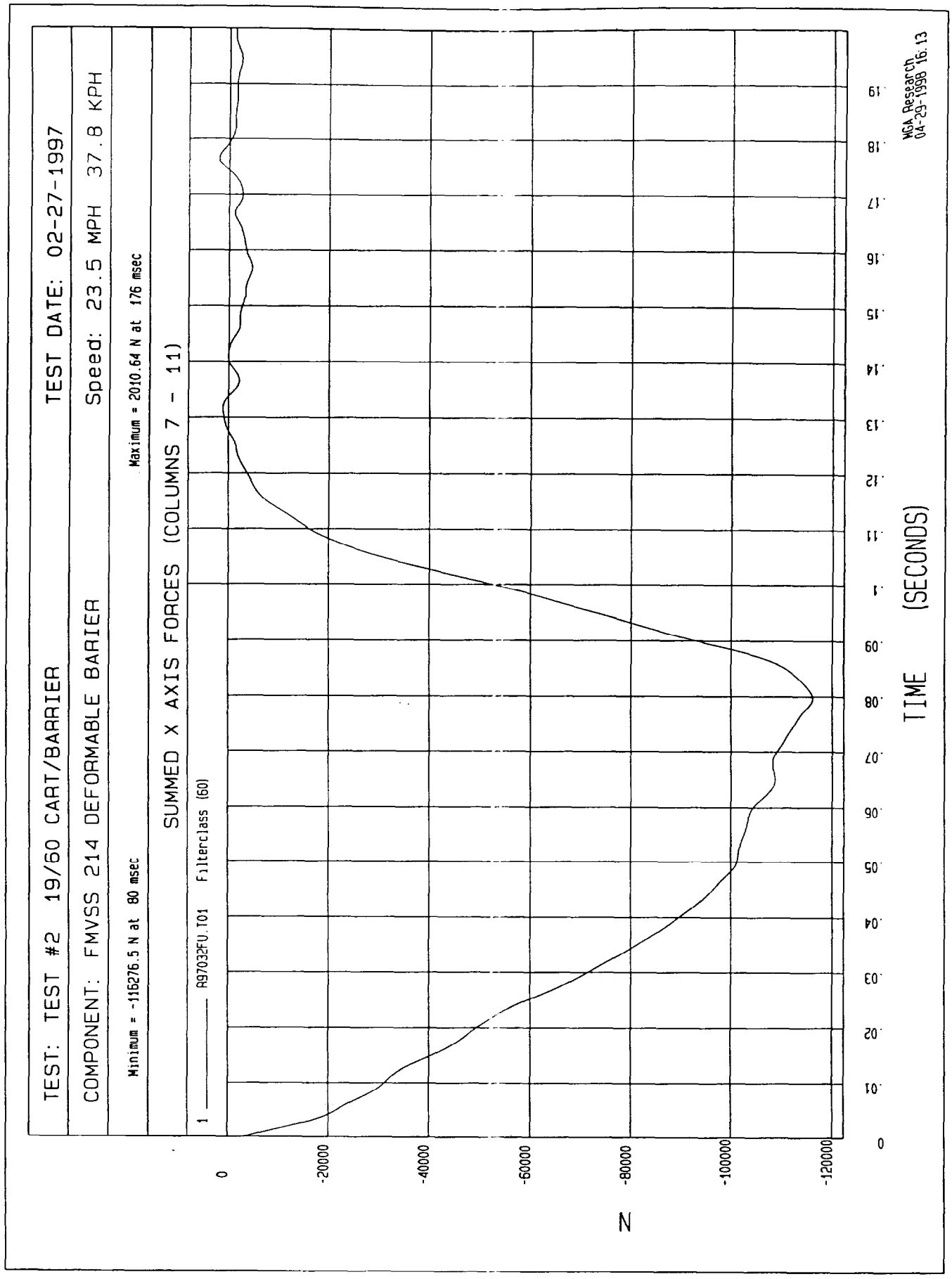

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
X AXIS FORCES - COLUMN #11
1 A97032FM.F63 LC #41 FX
2 A97032FM.F66 LC #42 FX
3 A97032FM.F69 LC #43 FX
4 A97032FM.F72 LC #44 FX
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 14:33

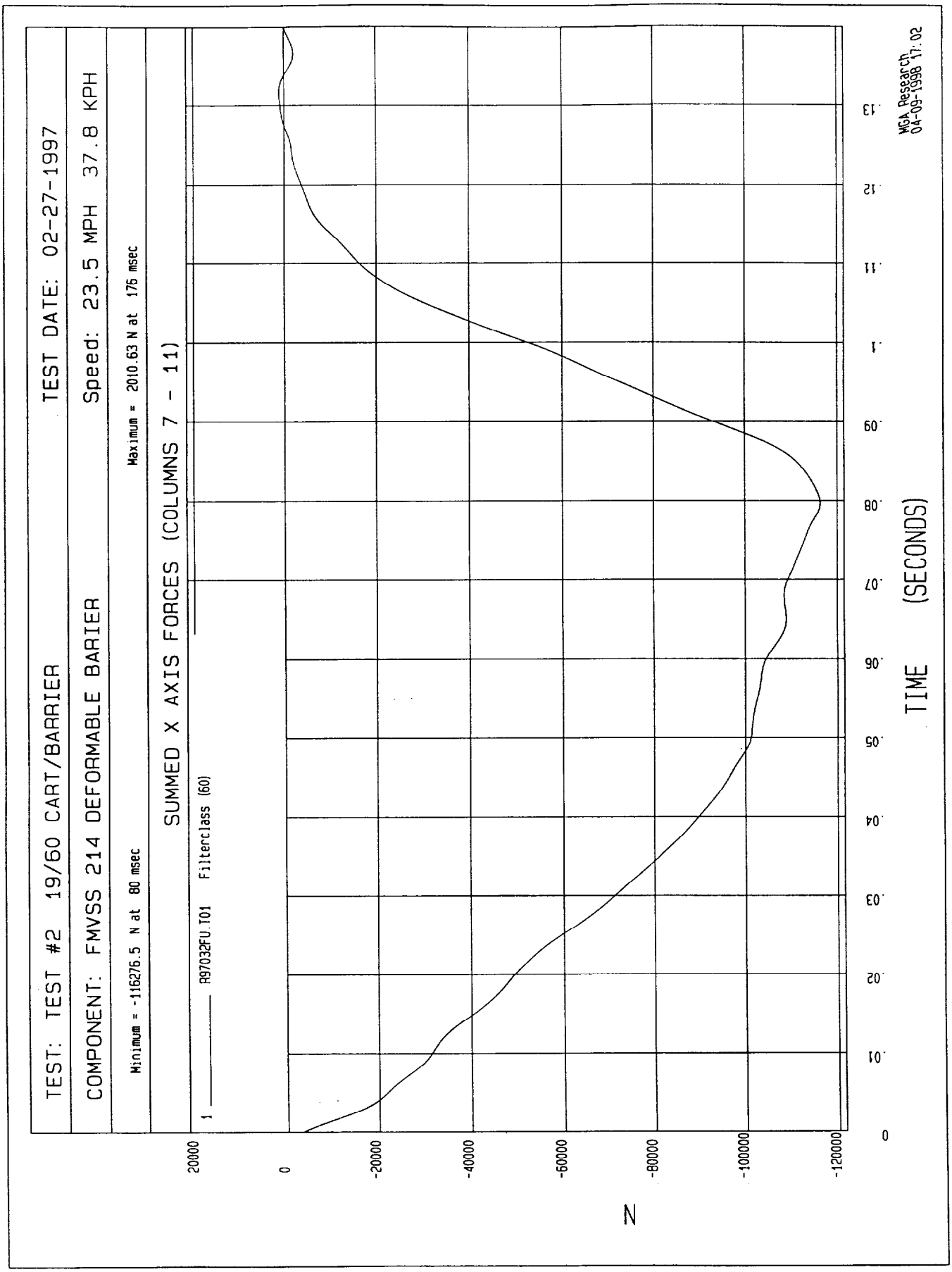

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -29884.35 N at 40 msec
Maximum = 1309.40 N at 176 msec
SUMMED X AXIS FORCES - COLUMN #11
1 R97032FM.X11 Filterclass (60)
0
-10000
-20000
-30000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:48

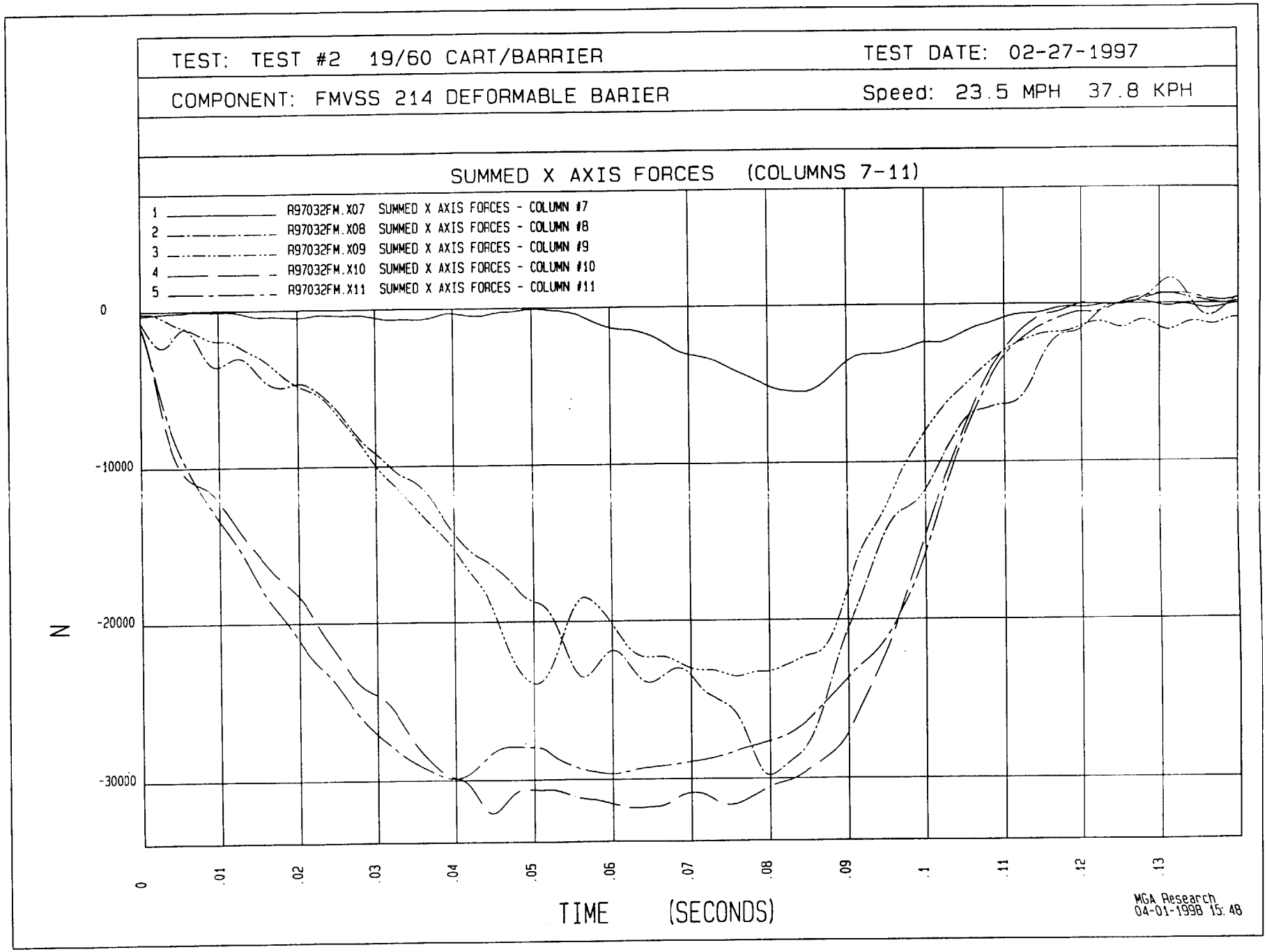

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Y AXIS FORCES - COLUMN #11
1 R97032FM.F61 LC #41 FY
2 R97032FM.F64 LC #42 FY
3 R97032FM.F67 LC #43 FY
4 R97032FM.F70 LC #44 FY
3000
2000
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 14:32

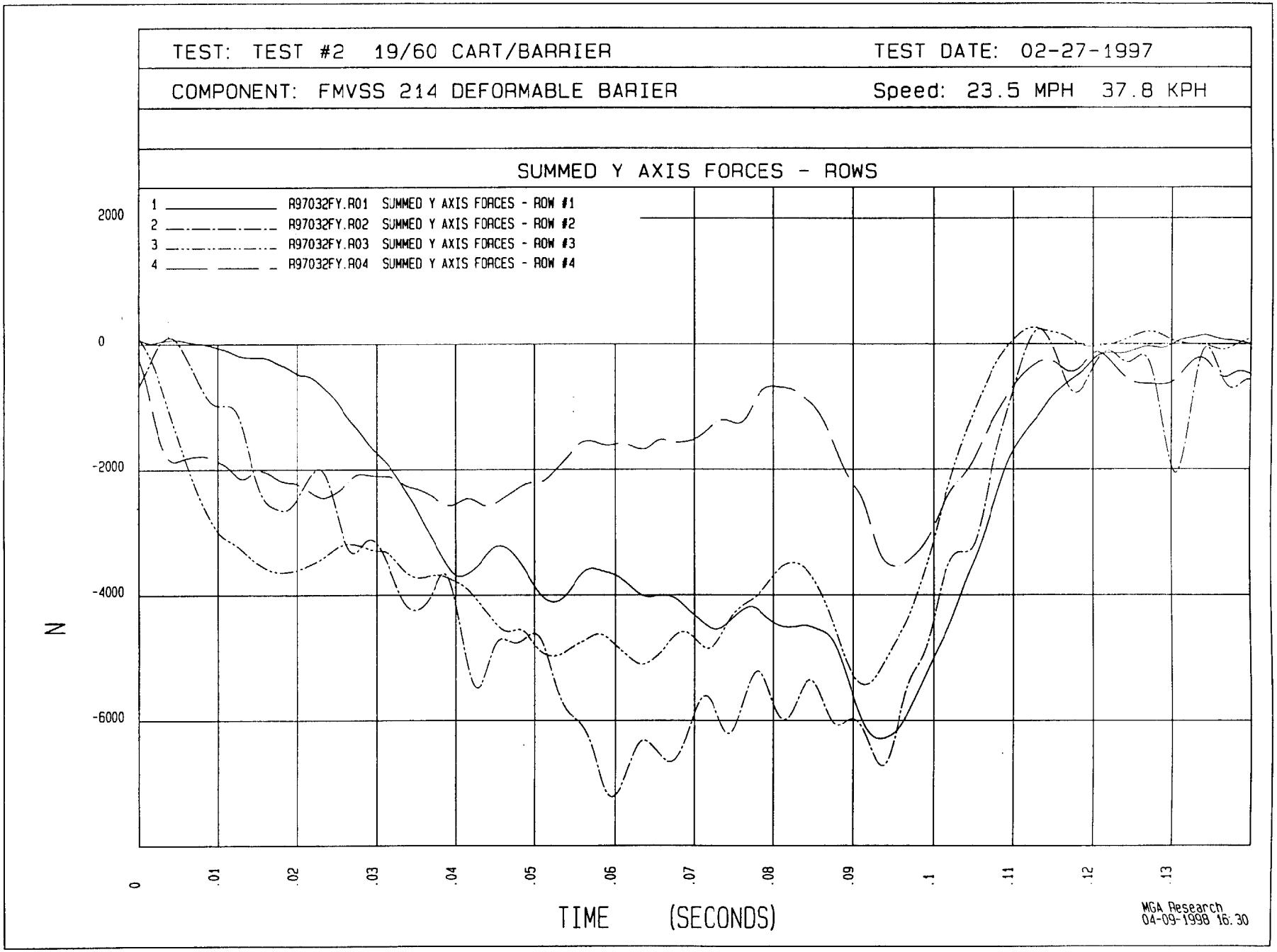

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7594.24 N at 56 msec
Maximum = 263.62 N at -2 msec
SUMMED Y AXIS FORCES - COLUMN #11
1 R97032FM.Y11 Filterclass (60)
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 16:24

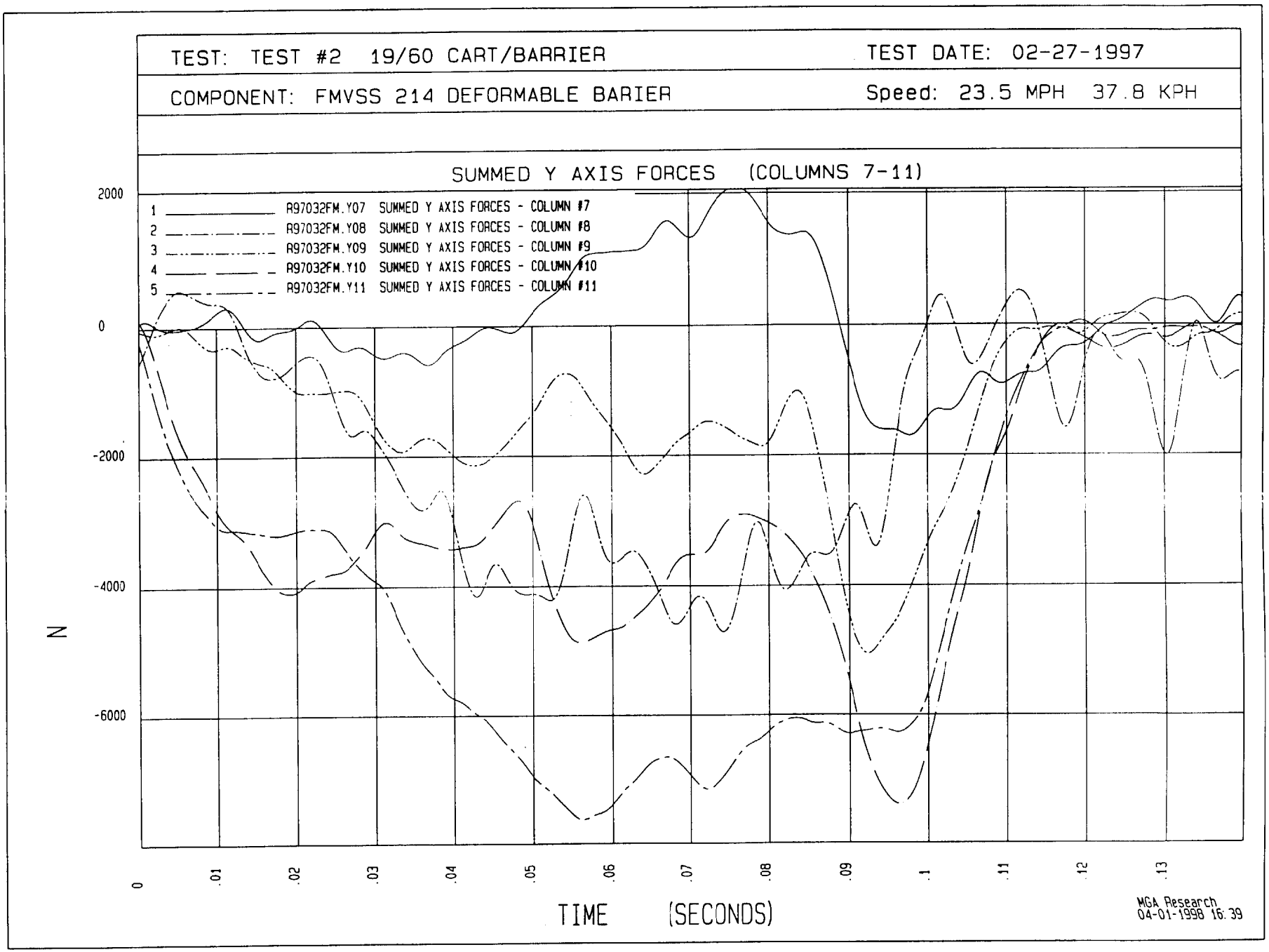

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
SUMMED X AXIS FORCES - BY ROWS
1 R97032FM.R01 SUMMED X AXIS FORCES - ROW #1
2 R97032FM.R02 SUMMED X AXIS FORCES - ROW #2
3 R97032FM.R03 SUMMED X AXIS FORCES - ROW #3
4 R97032FM.R04 SUMMED X AXIS FORCES - ROW #4
0
-10000
-20000
-30000
-40000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:58

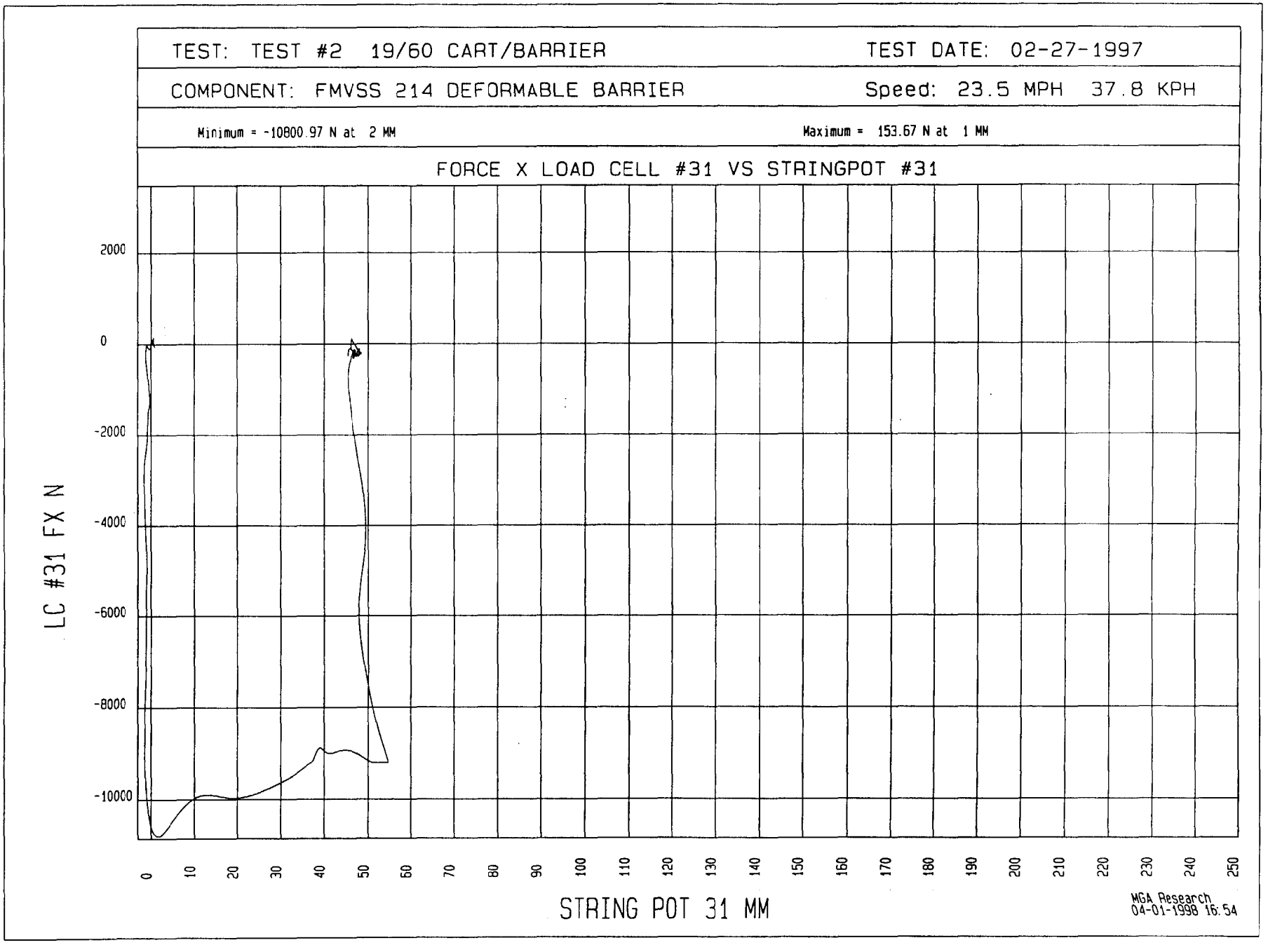

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -116276.5 N at 80 msec
Maximum = 2010.64 N at 176 msec
SUMMED X AXIS FORCES (COLUMNS 7 - 11)
1 R97032FU.T01 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
N
01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-29-1998 16:13

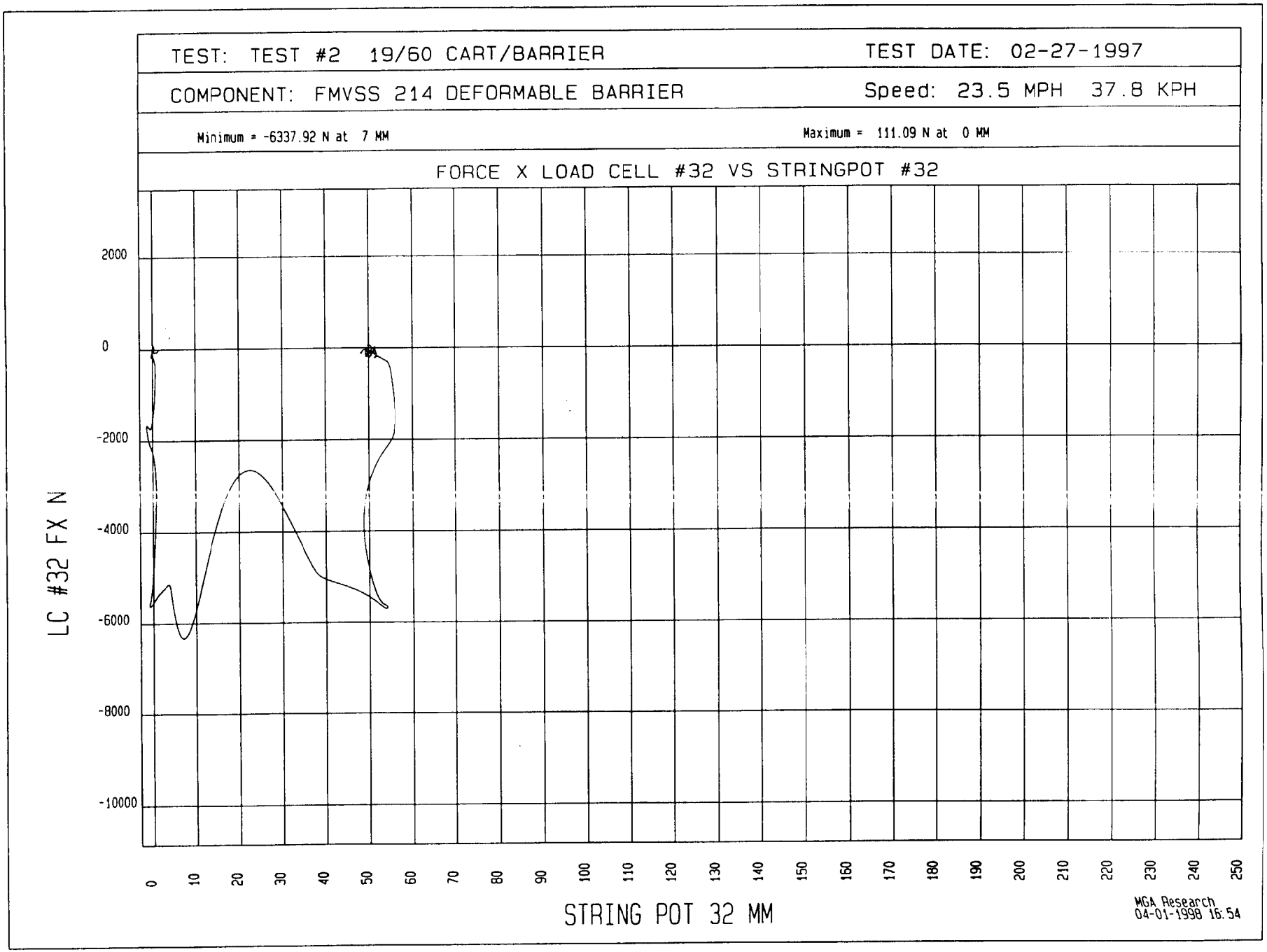

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -116276.5 N at 80 msec
Maximum = 2010.63 N at 175 msec
SUMMED X AXIS FORCES (COLUMNS 7 - 11)
1 A97032FU.T01 Filterclass (60)
20000
0
-20000
-40000
-60000
-80000
-100000
-120000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 17:02

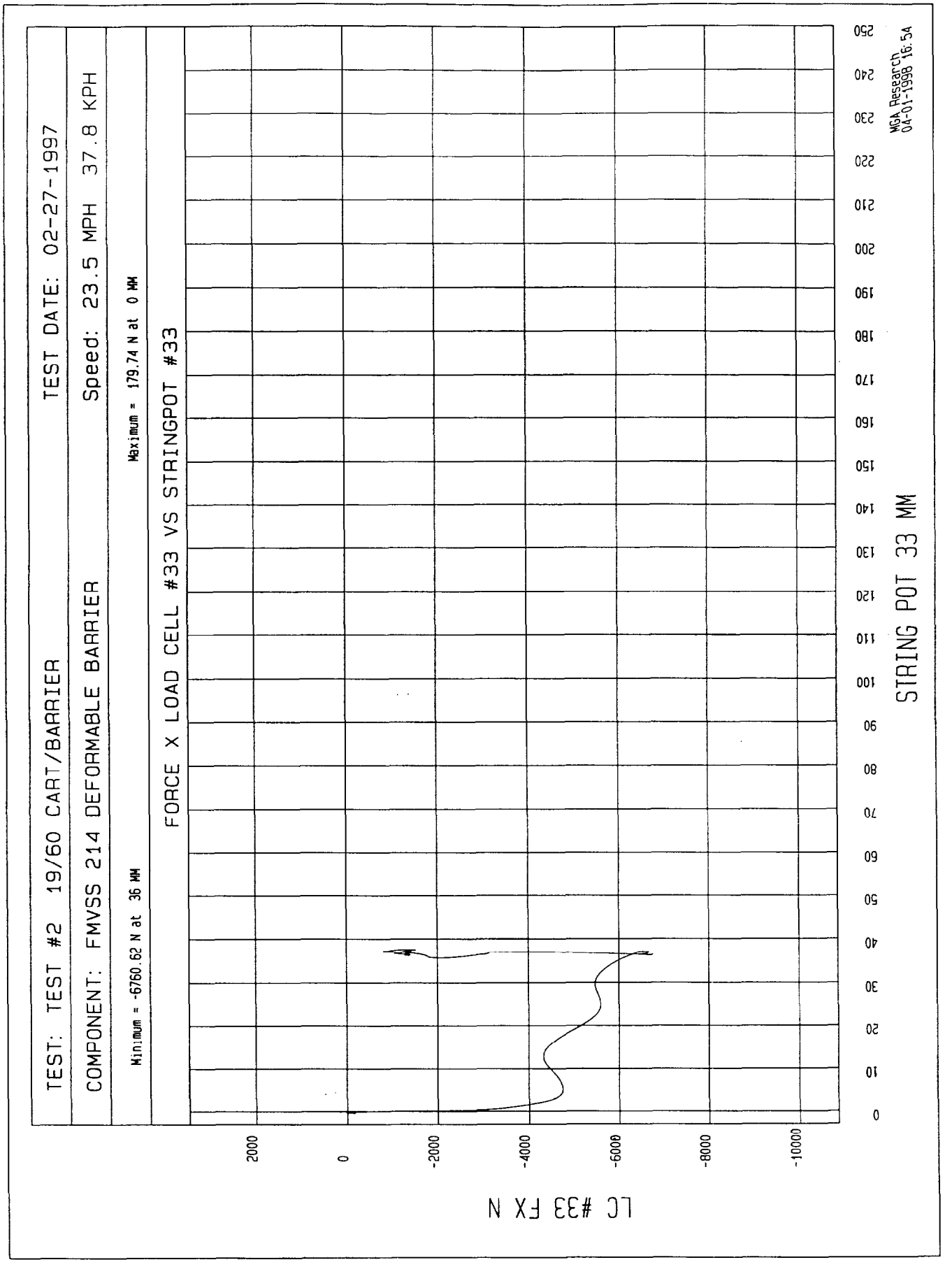

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
SUMMED X AXIS FORCES (COLUMNS 7-11)
1 R97032FM.X07 SUMMED X AXIS FORCES - COLUMN #7
2 R97032FM.X08 SUMMED X AXIS FORCES - COLUMN #8
3 R97032FM.X09 SUMMED X AXIS FORCES - COLUMN #9
4 R97032FM.X10 SUMMED X AXIS FORCES - COLUMN #10
5 R97032FM.X11 SUMMED X AXIS FORCES - COLUMN #11
0
-10000
-20000
-30000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 15:48

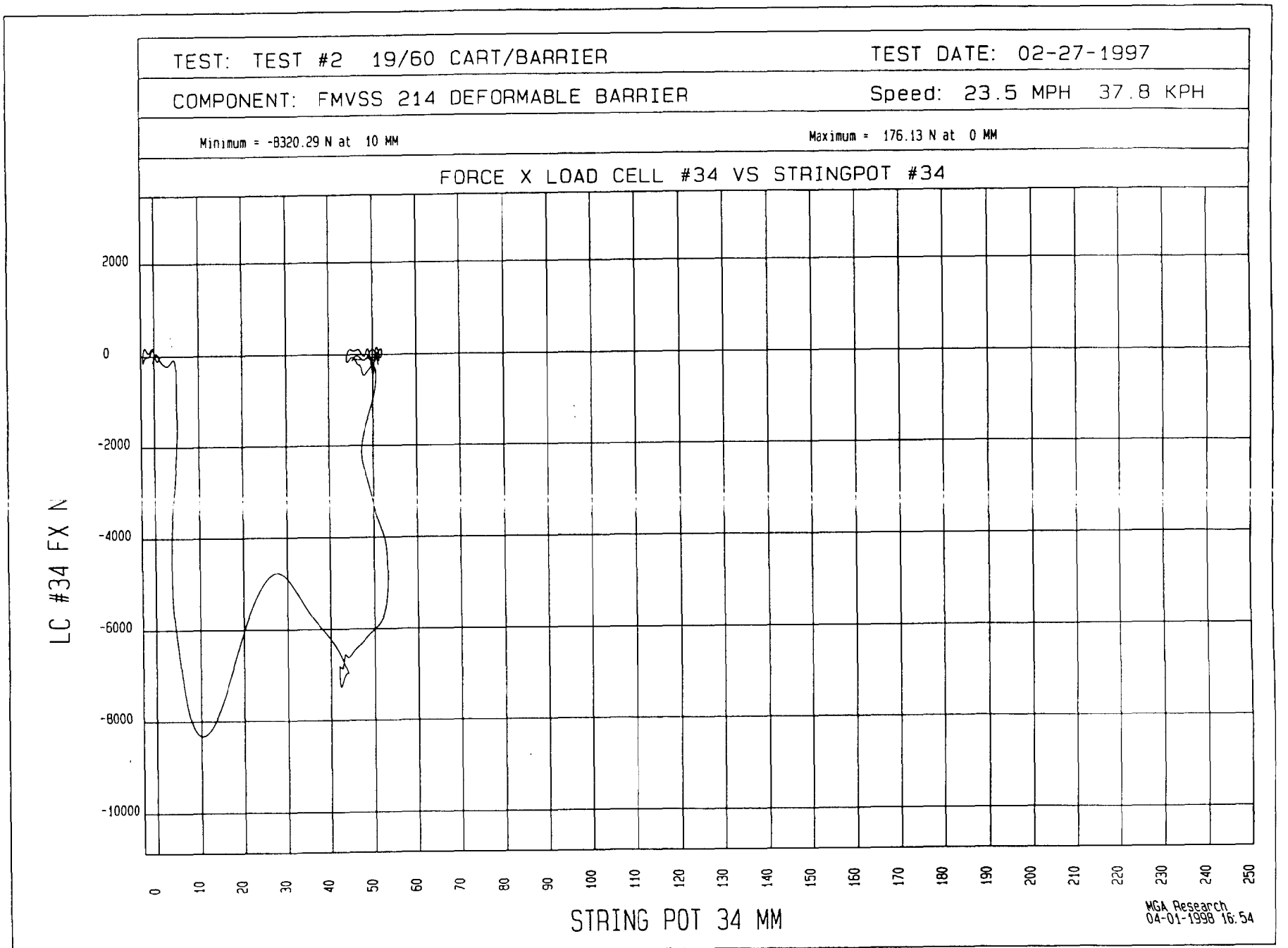

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
SUMMED Y AXIS FORCES - ROWS
1 R97032FY.A01 SUMMED Y AXIS FORCES - ROW #1
2 R97032FY.A02 SUMMED Y AXIS FORCES - ROW #2
3 R97032FY.A03 SUMMED Y AXIS FORCES - ROW #3
4 R97032FY.A04 SUMMED Y AXIS FORCES - ROW #4
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-09-1998 16:30

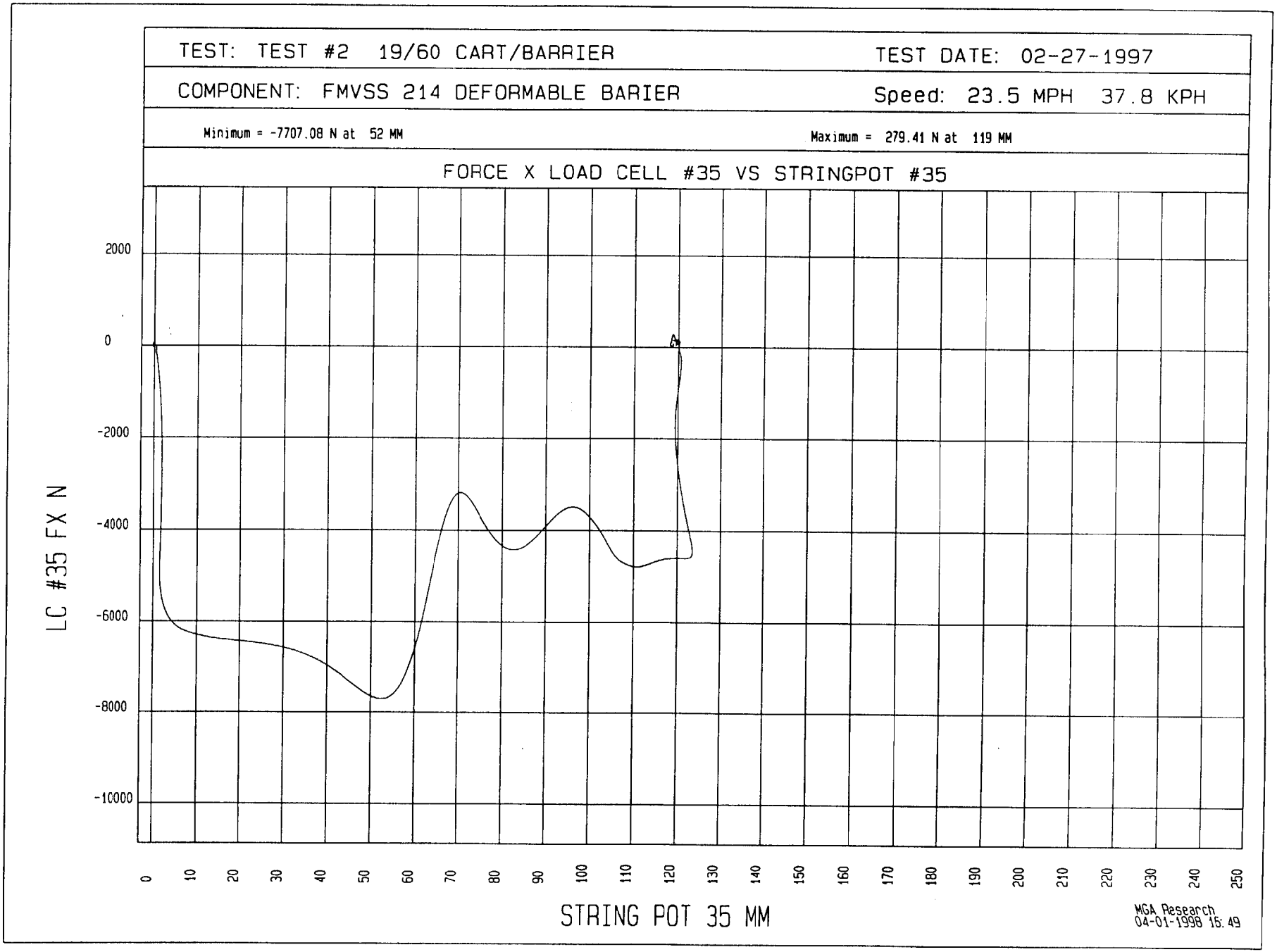

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
SUMMED Y AXIS FORCES (COLUMNS 7-11)
1 R97032FM.Y07 SUMMED Y AXIS FORCES - COLUMN #7
2 R97032FM.Y08 SUMMED Y AXIS FORCES - COLUMN #8
3 R97032FM.Y09 SUMMED Y AXIS FORCES - COLUMN #9
4 R97032FM.Y10 SUMMED Y AXIS FORCES - COLUMN #10
5 R97032FM.Y11 SUMMED Y AXIS FORCES - COLUMN #11
2000
0
-2000
-4000
-6000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
TIME (SECONDS)
MGA Research
04-01-1998 16:39

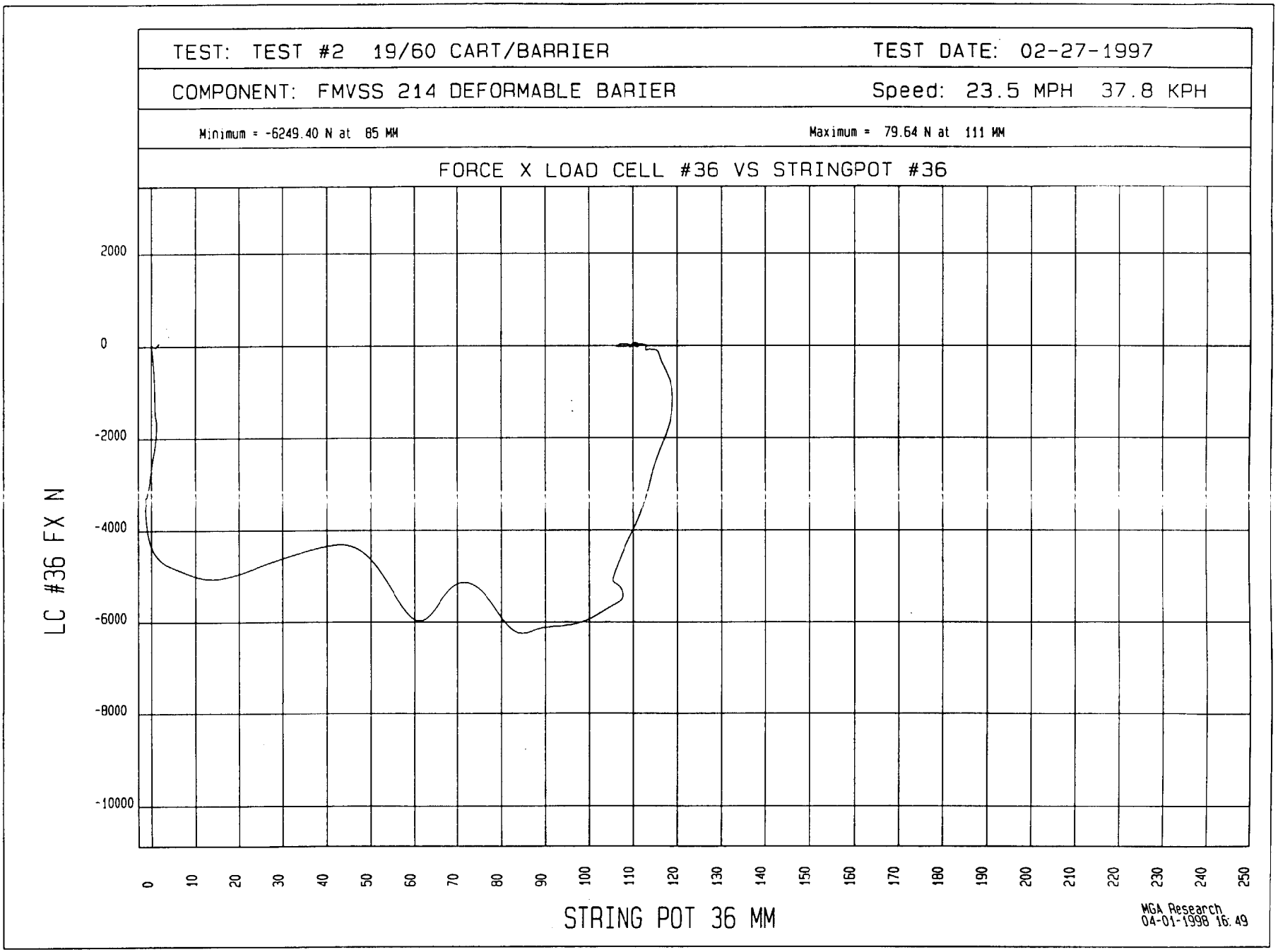

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -10800.97 N at 2 MM
Maximum = 153.67 N at 1 MM
FORCE X LOAD CELL #31 VS STRINGPOT #31
LC #31 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 31 MM
MGA Research
04-01-1998 16:54

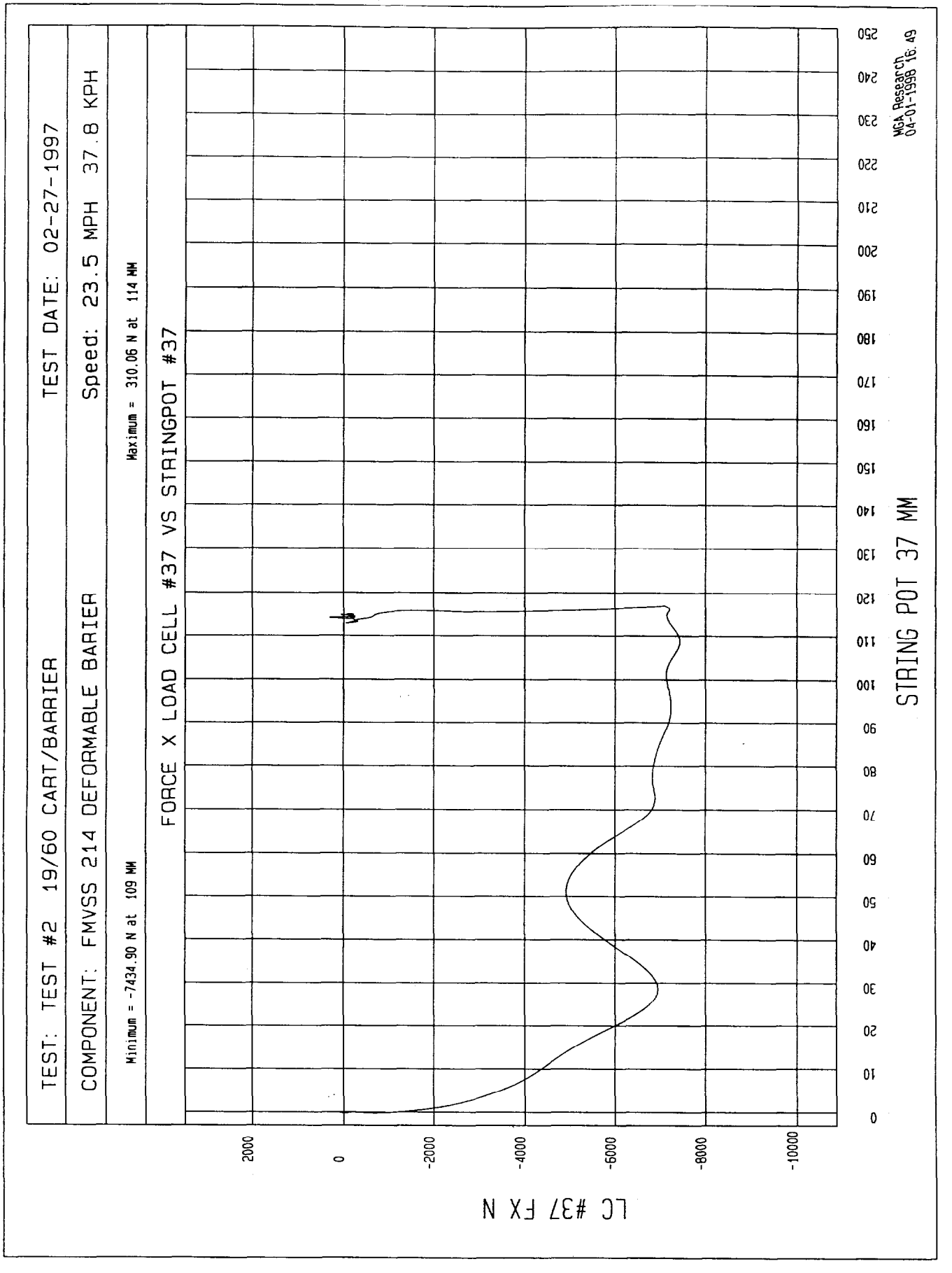

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6337.92 N at 7 MM
Maximum = 111.09 N at 0 MM
FORCE X LOAD CELL #32 VS STRINGPOT #32
LC #32 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
STRING POT 32 MM
MGA Research
04-01-1998 16:54

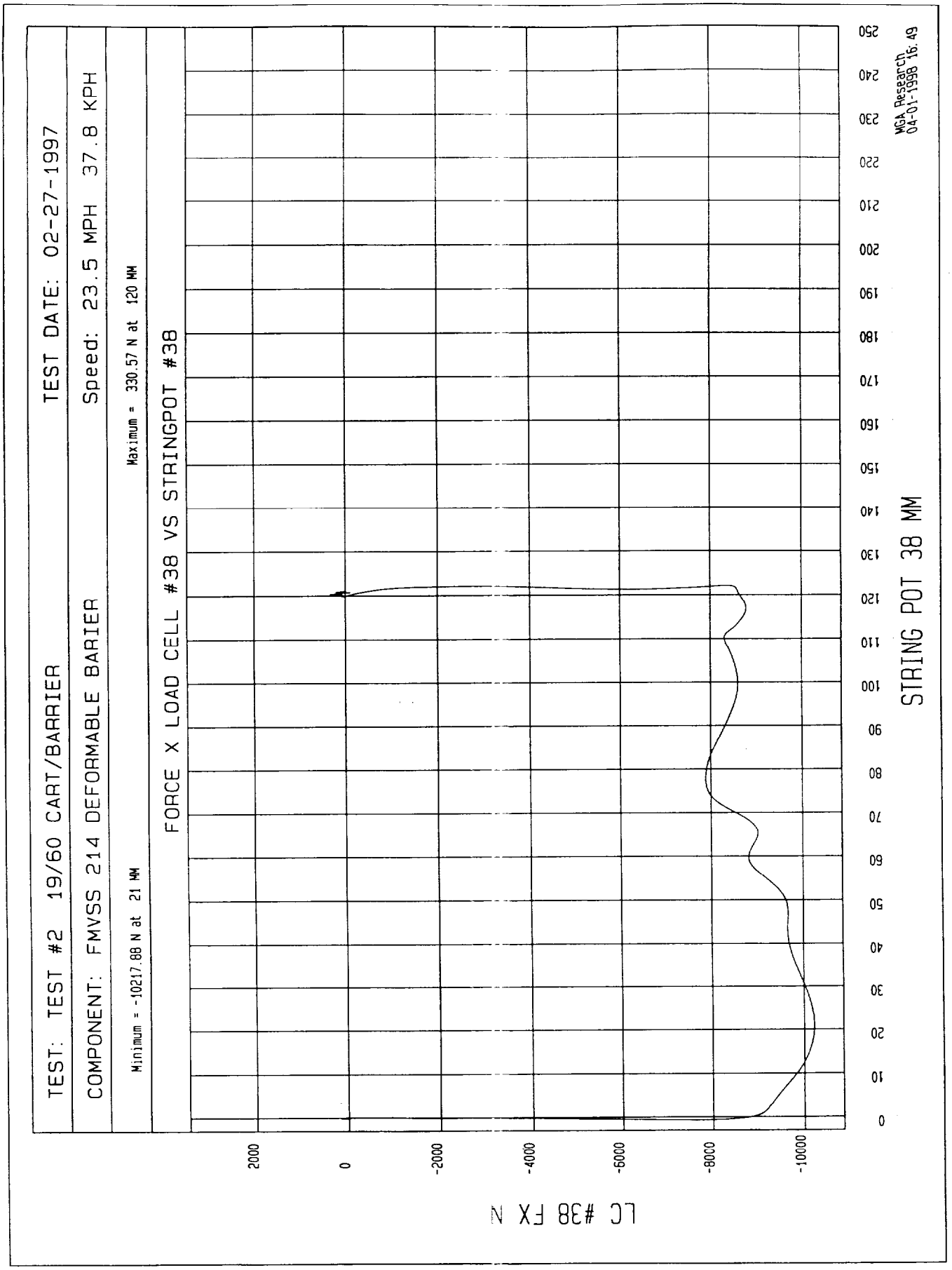

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6760.62 N at 36 MM
Maximum = 179.74 N at 0 MM
FORCE X LOAD CELL #33 VS STRINGPOT #33
LC #33 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 33 MM
MGA Research
04-01-1998 16:54

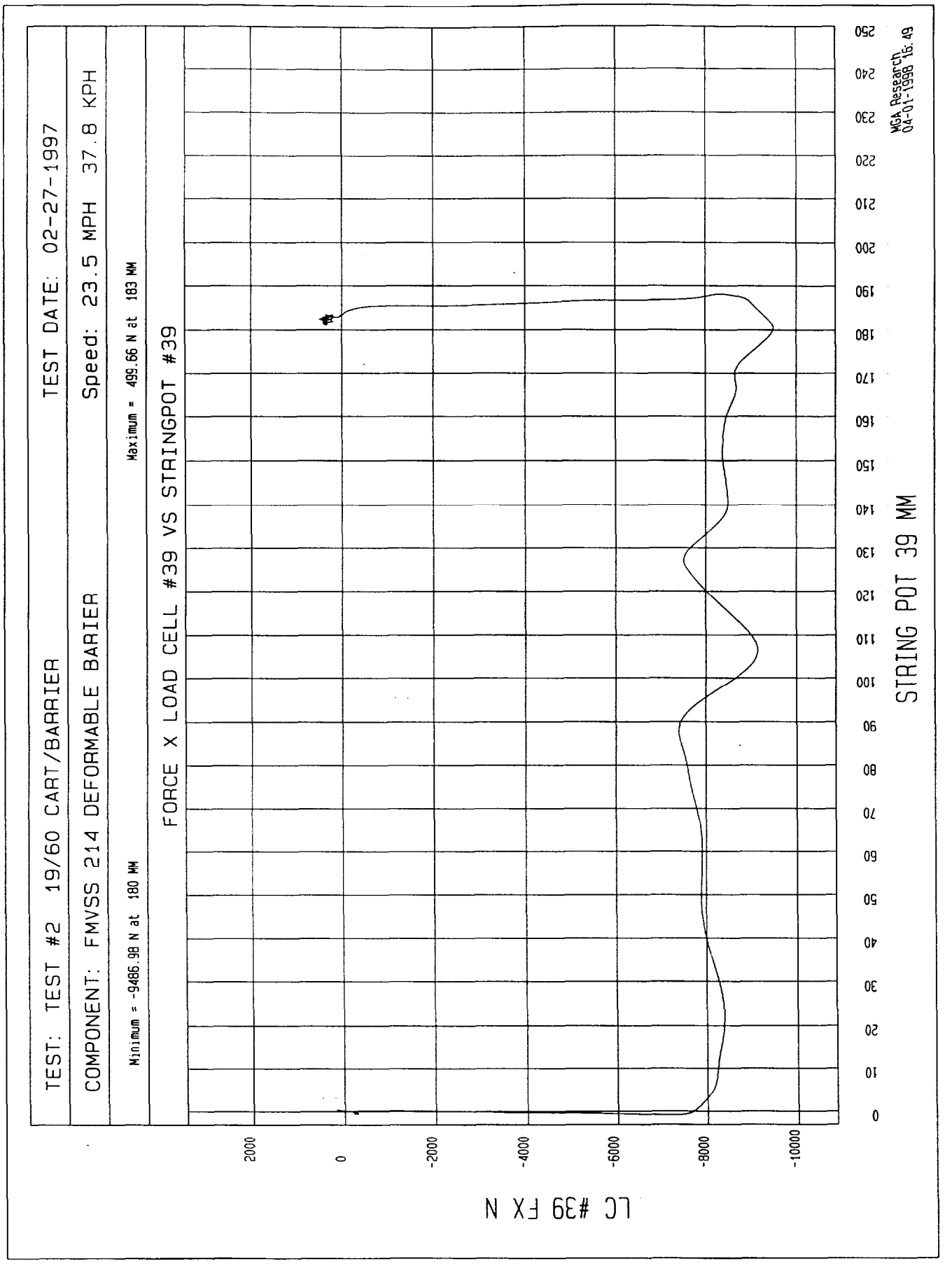

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8320.29 N at 10 MM
Maximum = 176.13 N at 0 MM
FORCE X LOAD CELL #34 VS STRINGPOT #34
LC #34 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 34 MM
MGA Research
04-01-1998 16:54

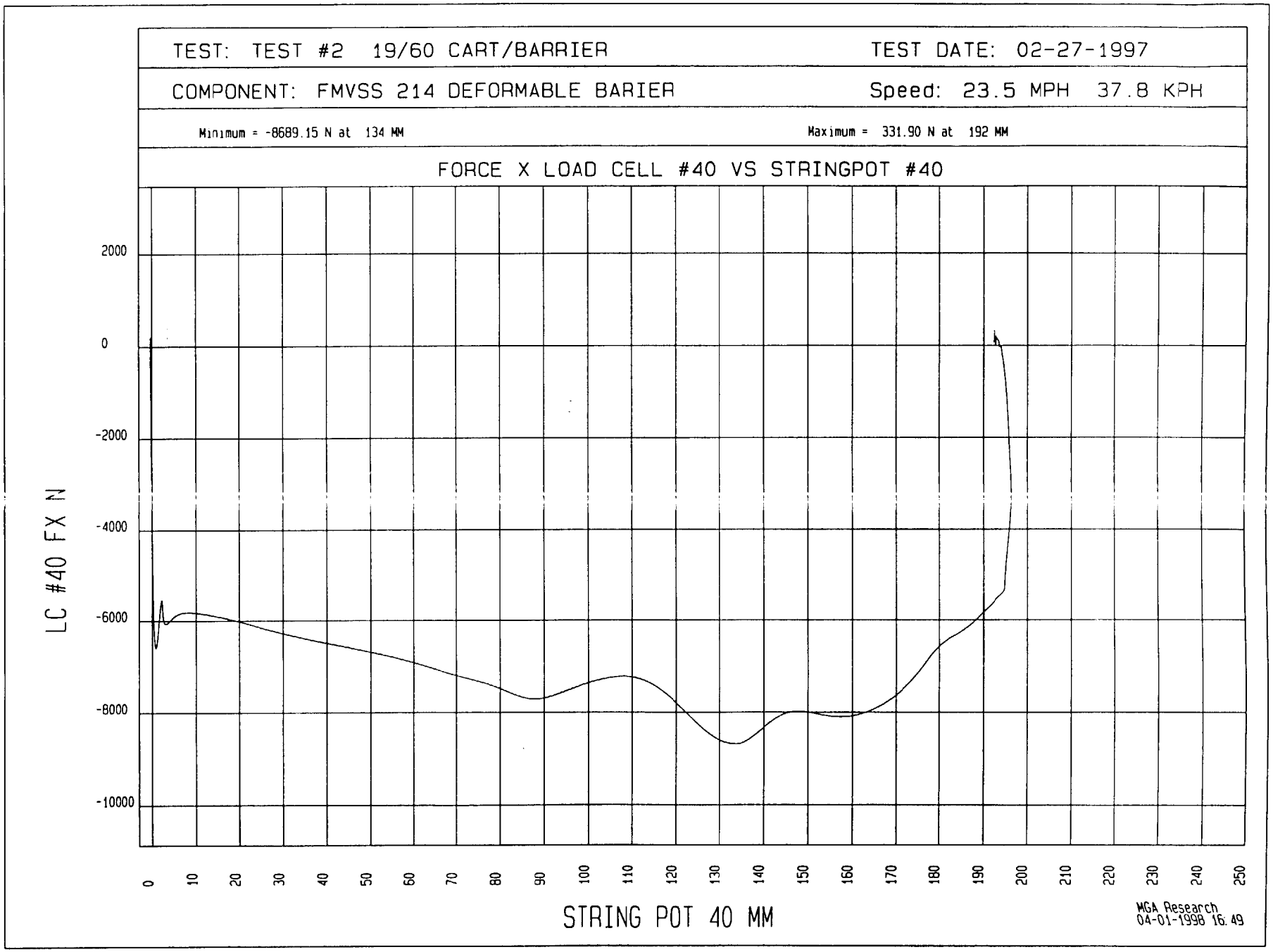

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7707.08 N at 52 MM
Maximum = 279.41 N at 119 MM
FORCE X LOAD CELL #35 VS STRINGPOT #35
LC #35 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 35 MM
MGA Research
04-01-1998 16:49

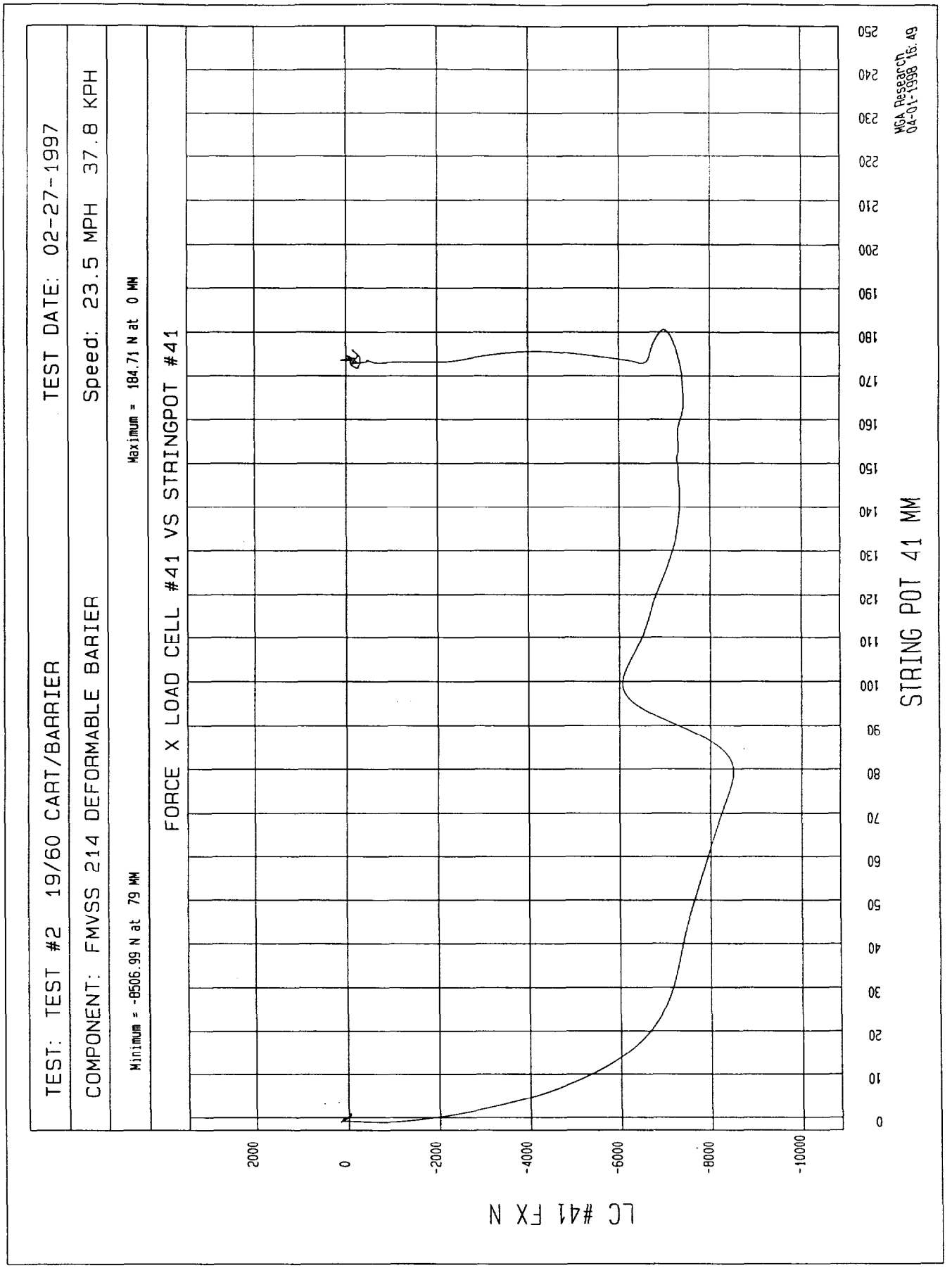

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6249.40 N at 85 MM
Maximum = 79.64 N at 111 MM
FORCE X LOAD CELL #36 VS STRINGPOT #36
LC #36 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 36 MM
MGA Research
04-01-1998 16:49

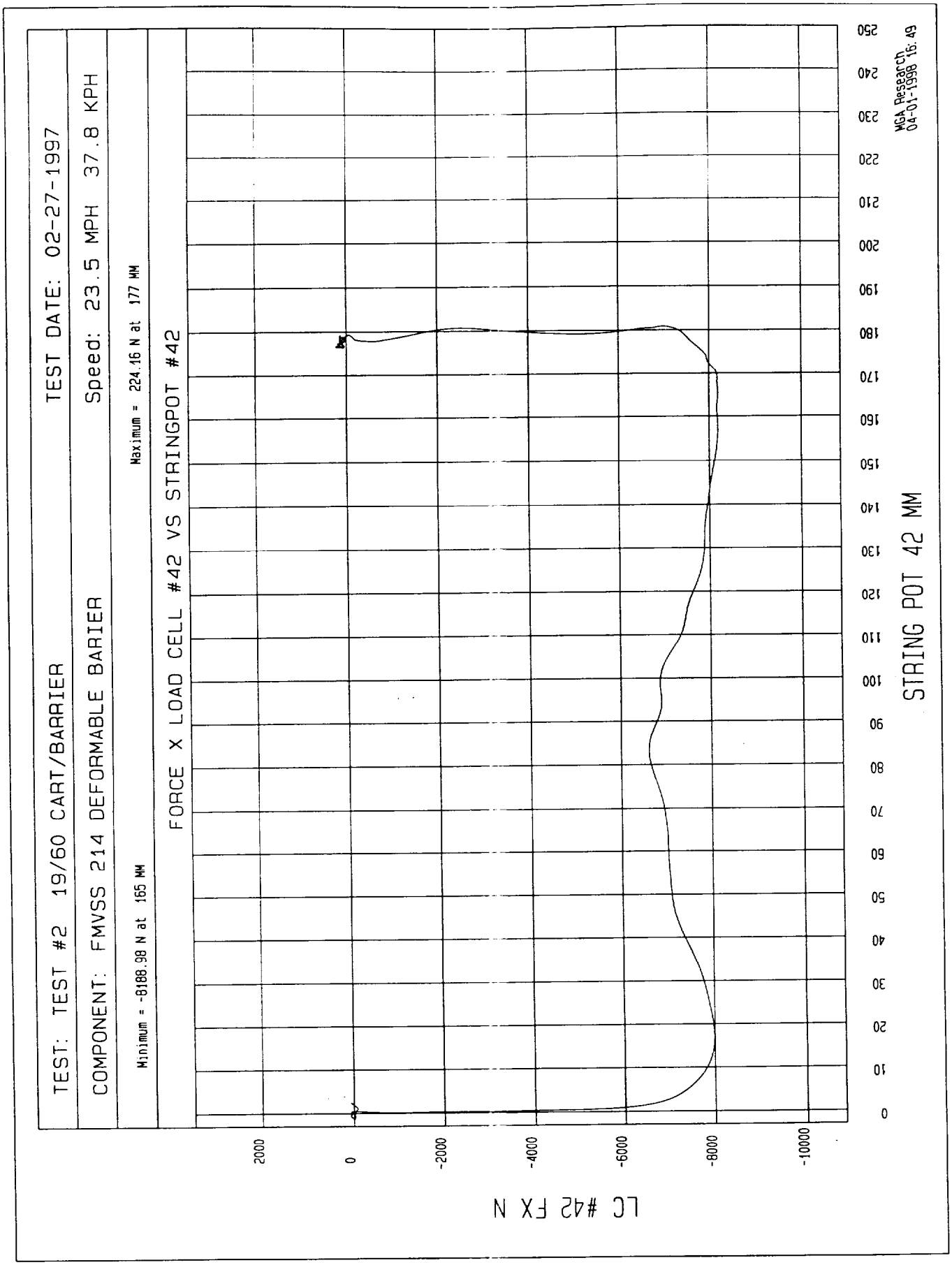

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7434.90 N at 109 MM
Maximum = 310.06 N at 114 MM
FORCE X LOAD CELL #37 VS STRINGPOT #37
LC #37 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 37 MM
MGA Research
04-01-1998 16:49

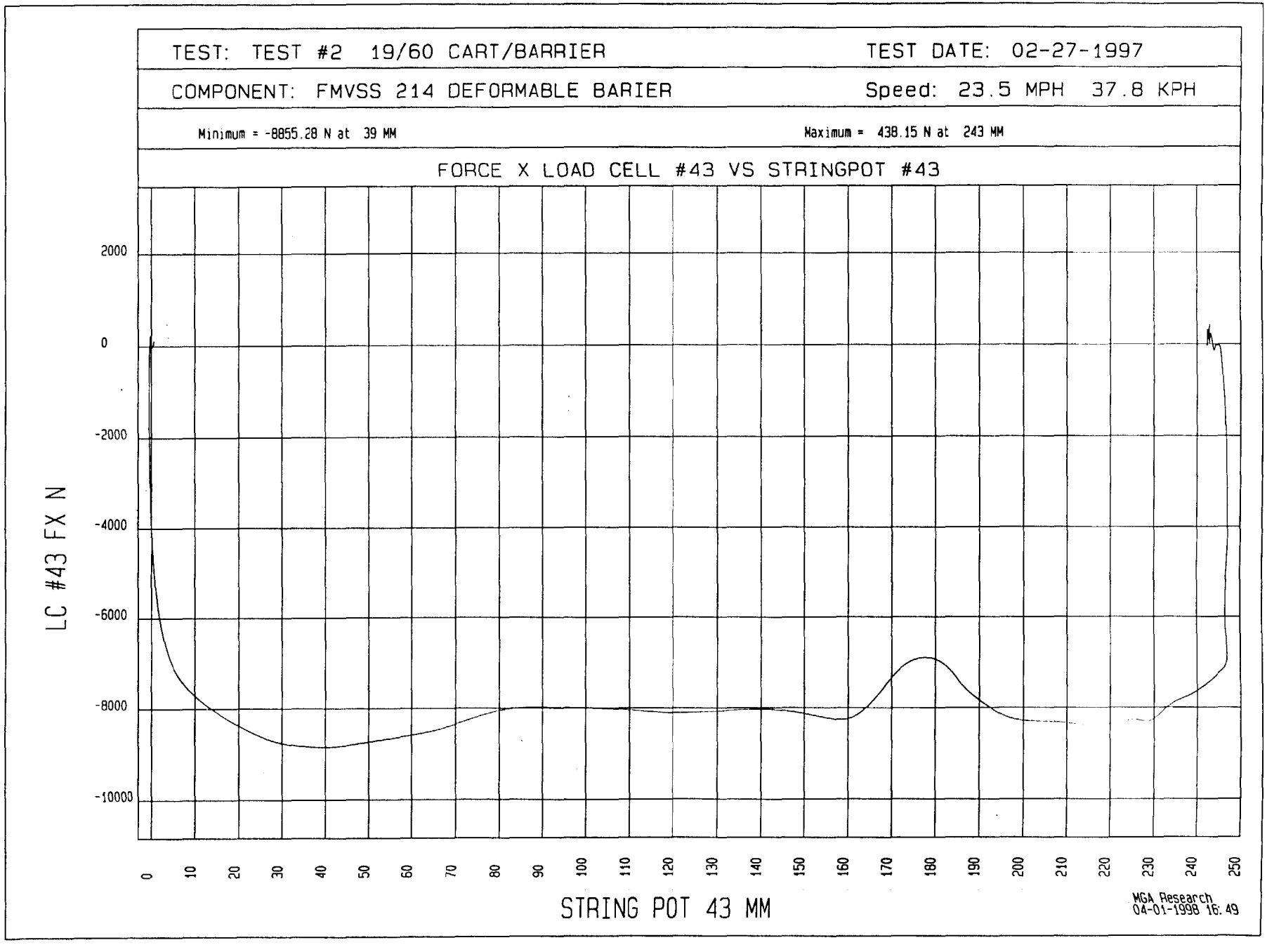

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -10217.88 N at 21 MM
Maximum = 330.57 N at 120 MM
FORCE X LOAD CELL #38 VS STRINGPOT #38
LC #38 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 38 MM
MGA Research
04-01-1998 16:49

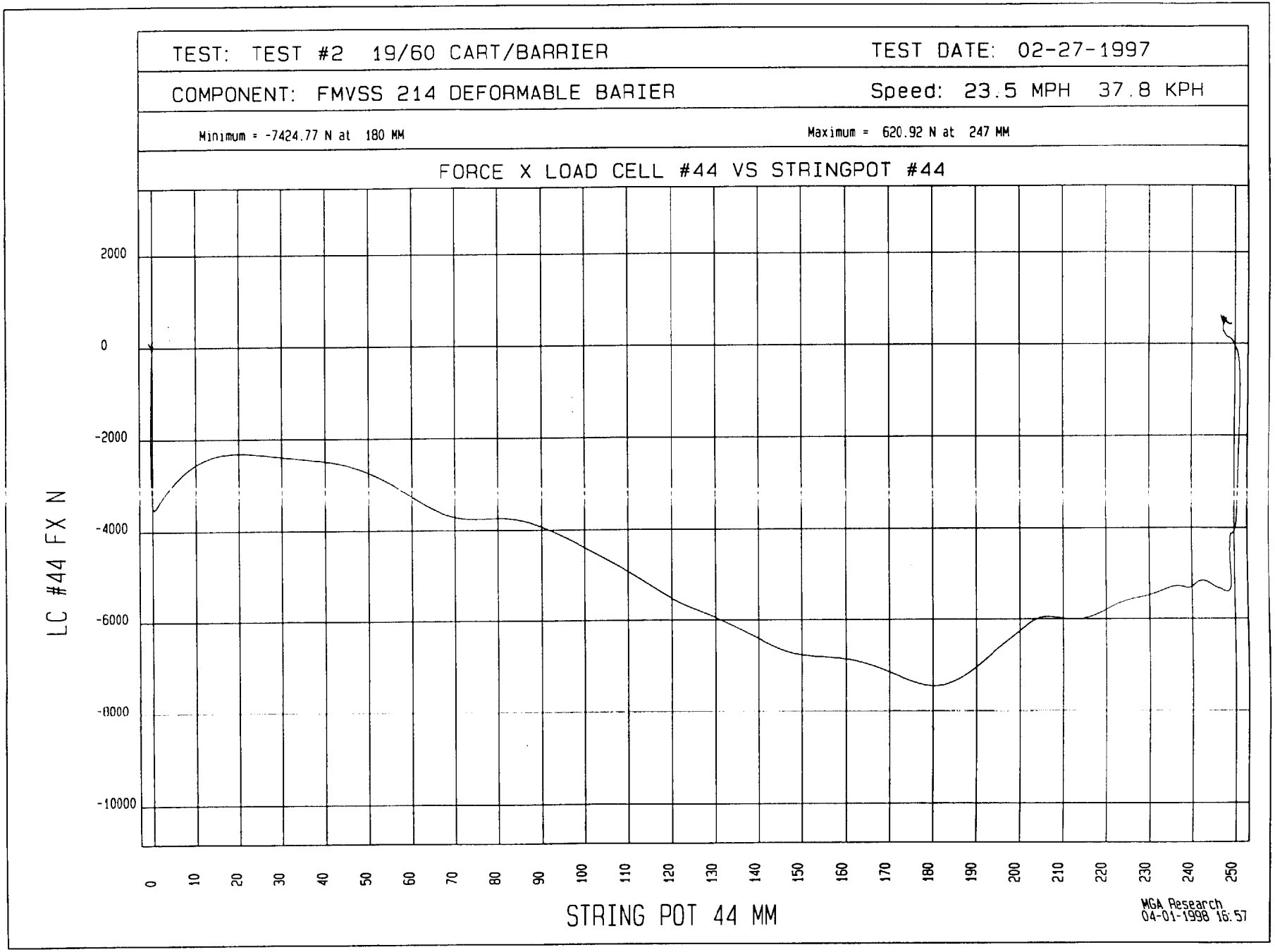

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -9486.98 N at 180 MM
Maximum = 499.66 N at 183 MM
FORCE X LOAD CELL #39 VS STRINGPOT #39
MGA Research
04-01-1998 16:49
LC #39 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 39 MM

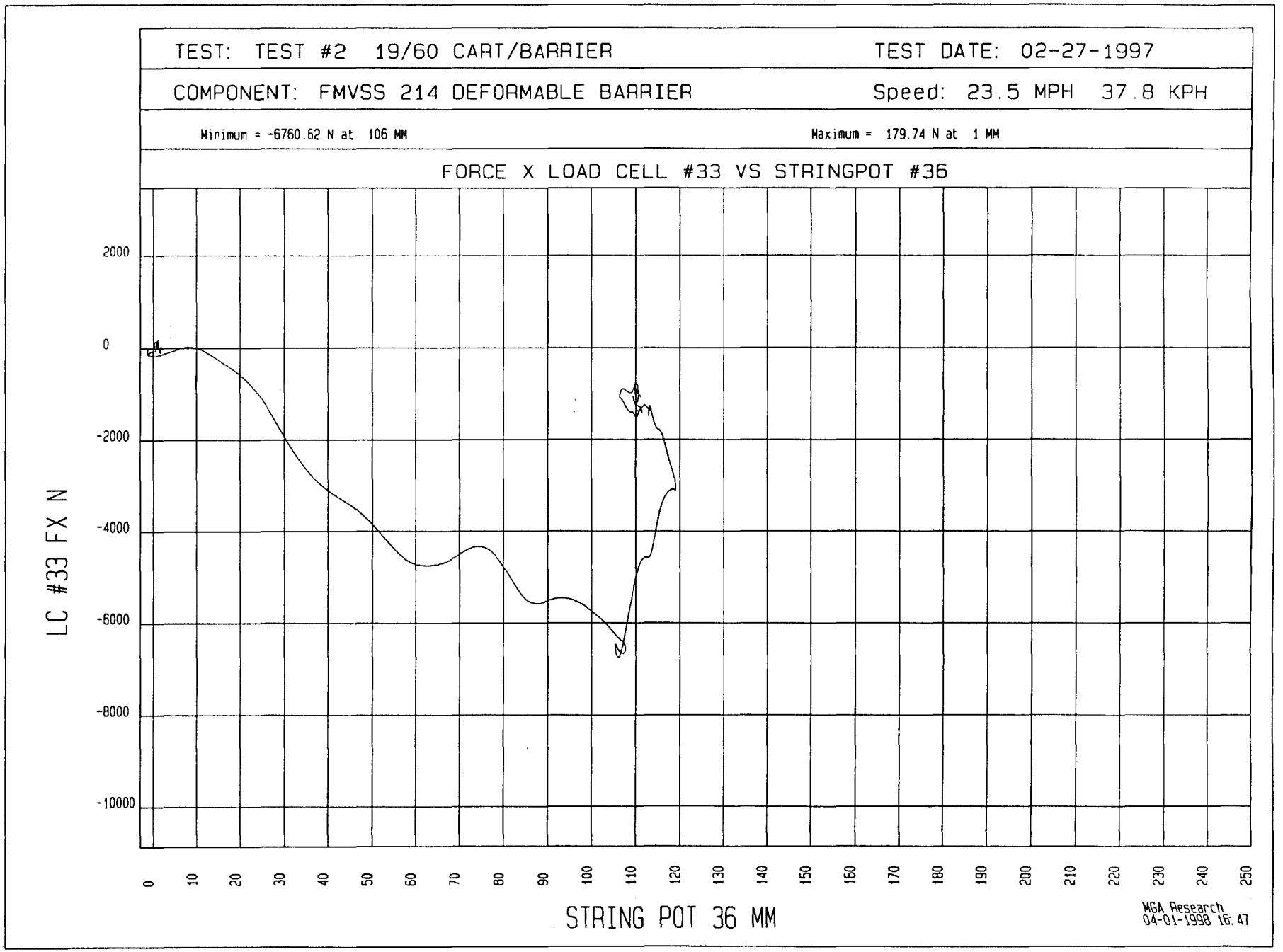

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8689.15 N at 134 MM
Maximum = 331.90 N at 192 MM
FORCE X LOAD CELL #40 VS STRINGPOT #40
LC #40 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 40 MM
MGA Research
04-01-1998 16:49

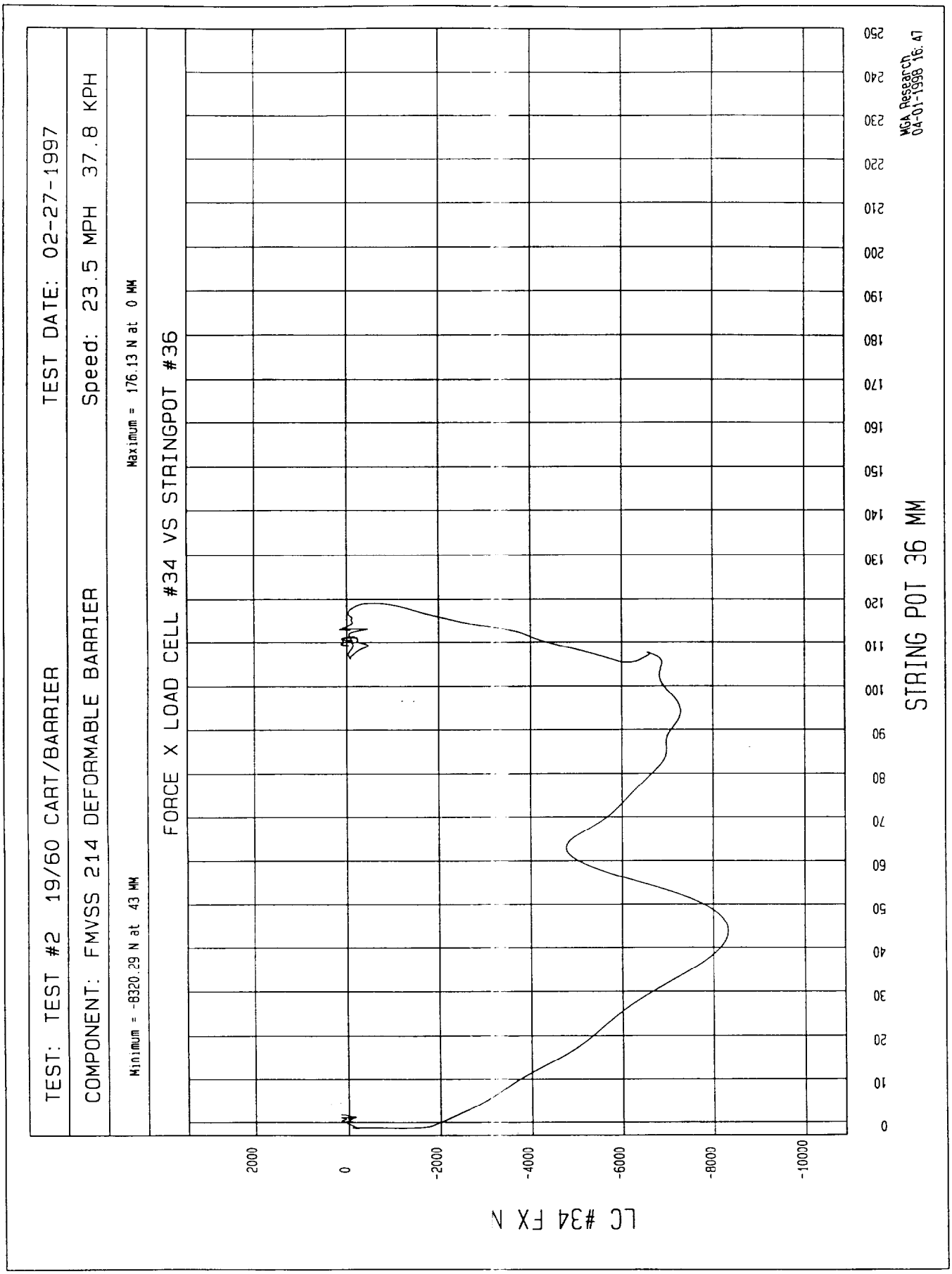

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8506.99 N at 79 MM
Maximum = 184.71 N at 0 MM
FORCE X LOAD CELL #41 VS STRINGPOT #41
LC #41 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
STRING POT 41 MM
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
MGA Research
04-01-1998 16:49

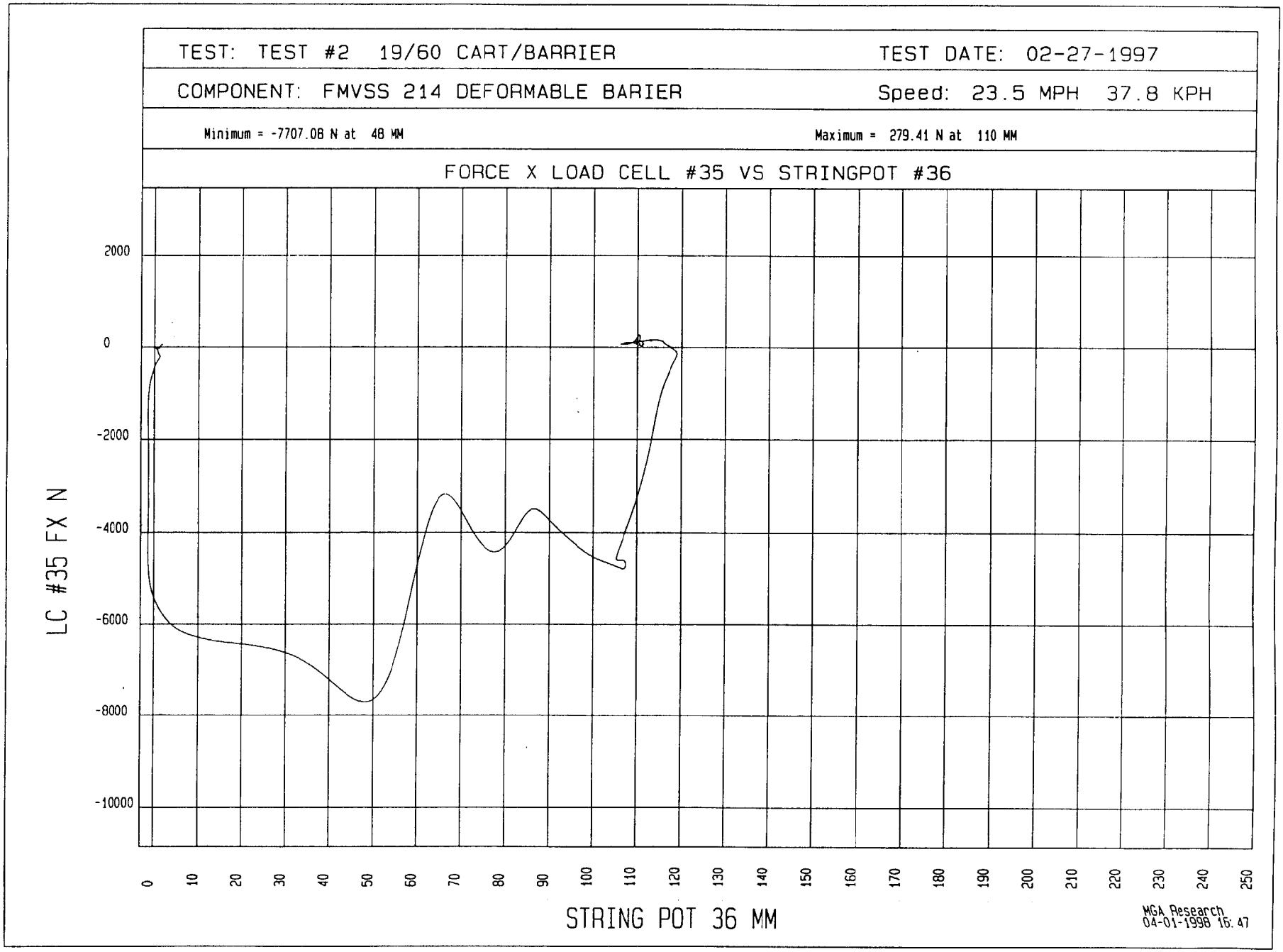

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8188.98 N at 165 MM
Maximum = 224.16 N at 177 MM
FORCE X LOAD CELL #42 VS STRINGPOT #42
LC #42 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 42 MM
MGA Research
04-01-1998 16:49

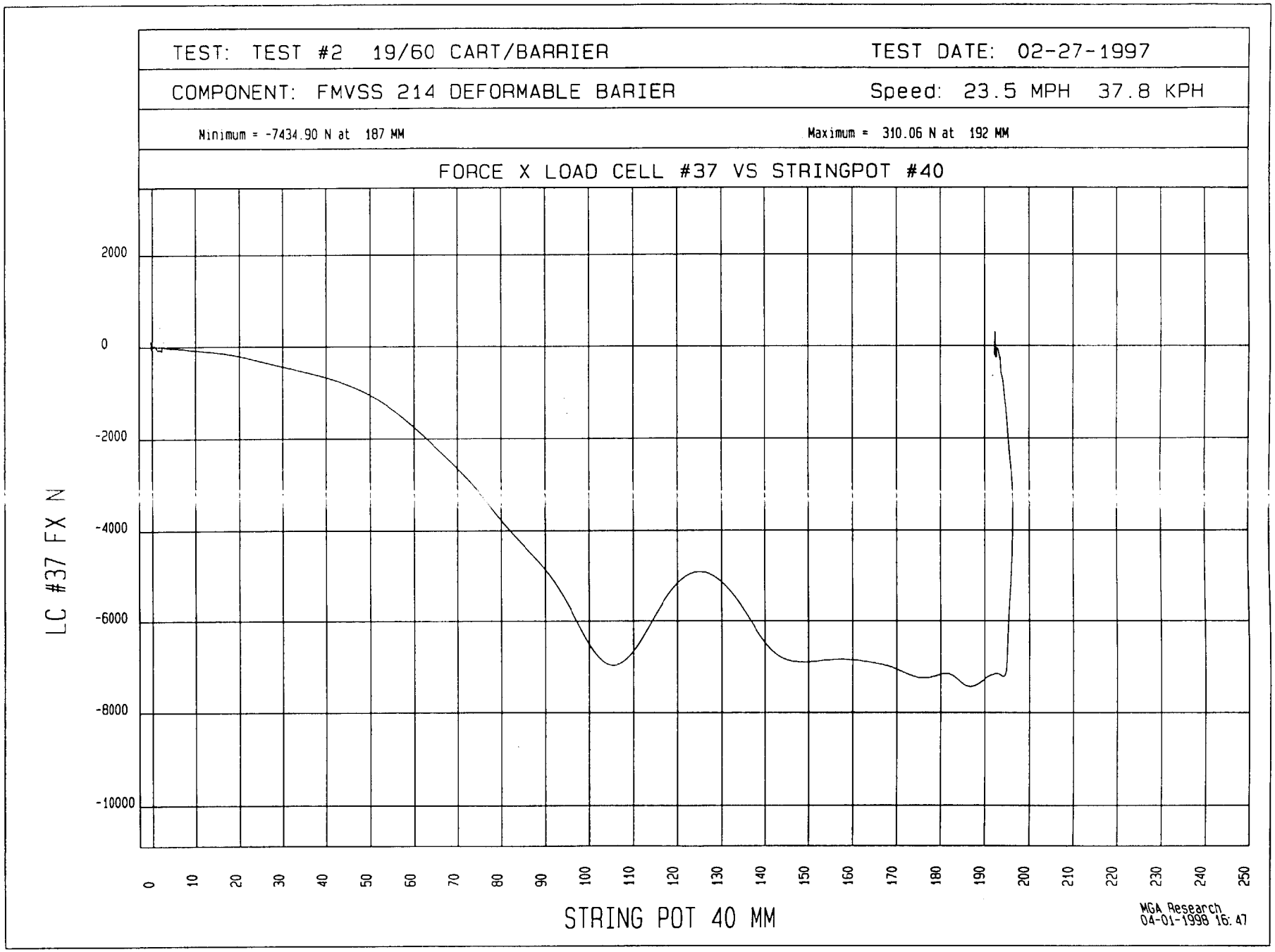

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8855.28 N at 39 MM
Maximum = 438.15 N at 243 MM
FORCE X LOAD CELL #43 VS STRINGPOT #43
LC #43 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
STRING POT 43 MM
MGA Research
04-01-1998 16:49

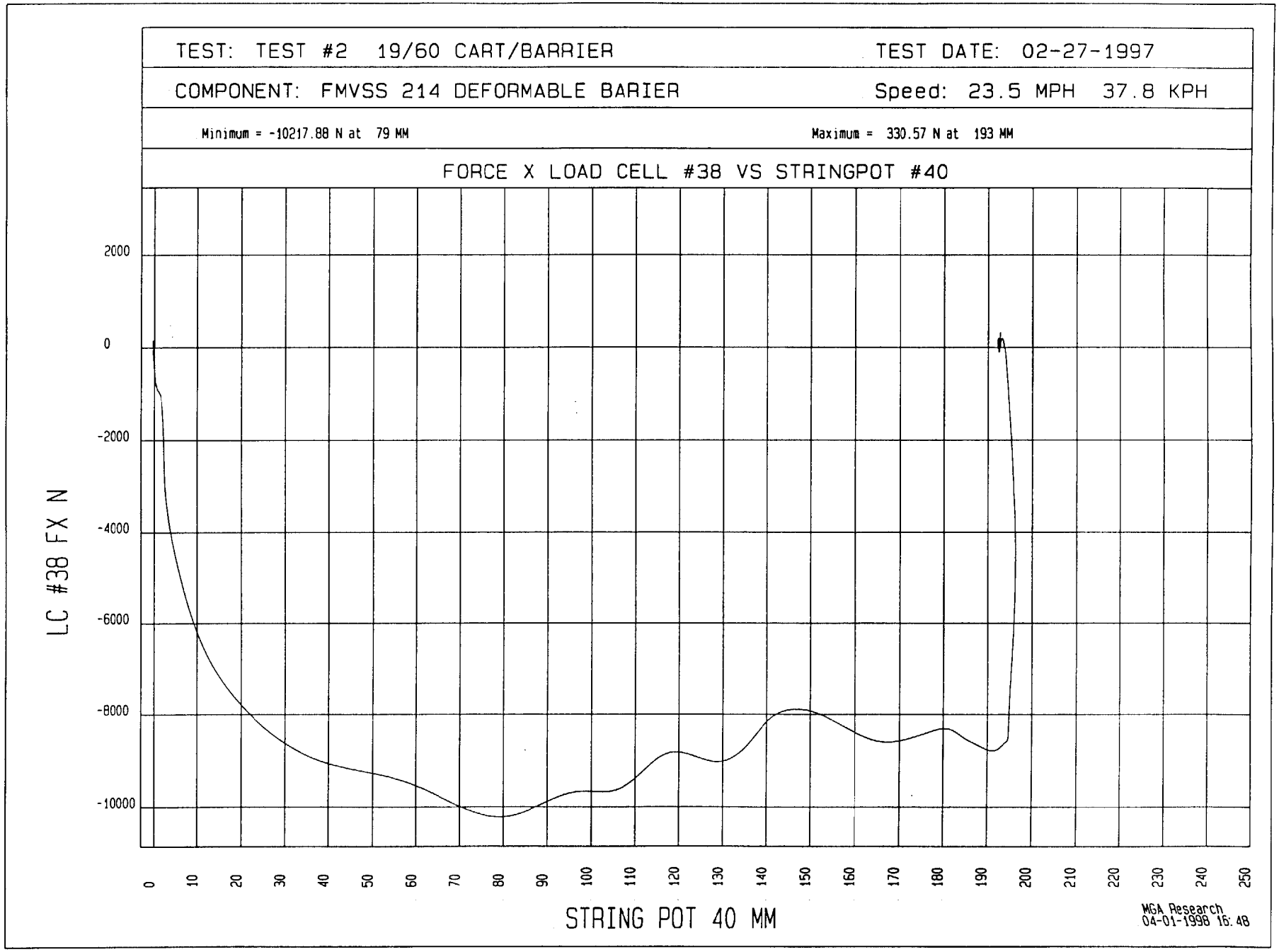

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7424.77 N at 180 MM
Maximum = 620.92 N at 247 MM
FORCE X LOAD CELL #44 VS STRINGPOT #44
LC #44 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 44 MM
MGA Research
04-01-1998 16:57

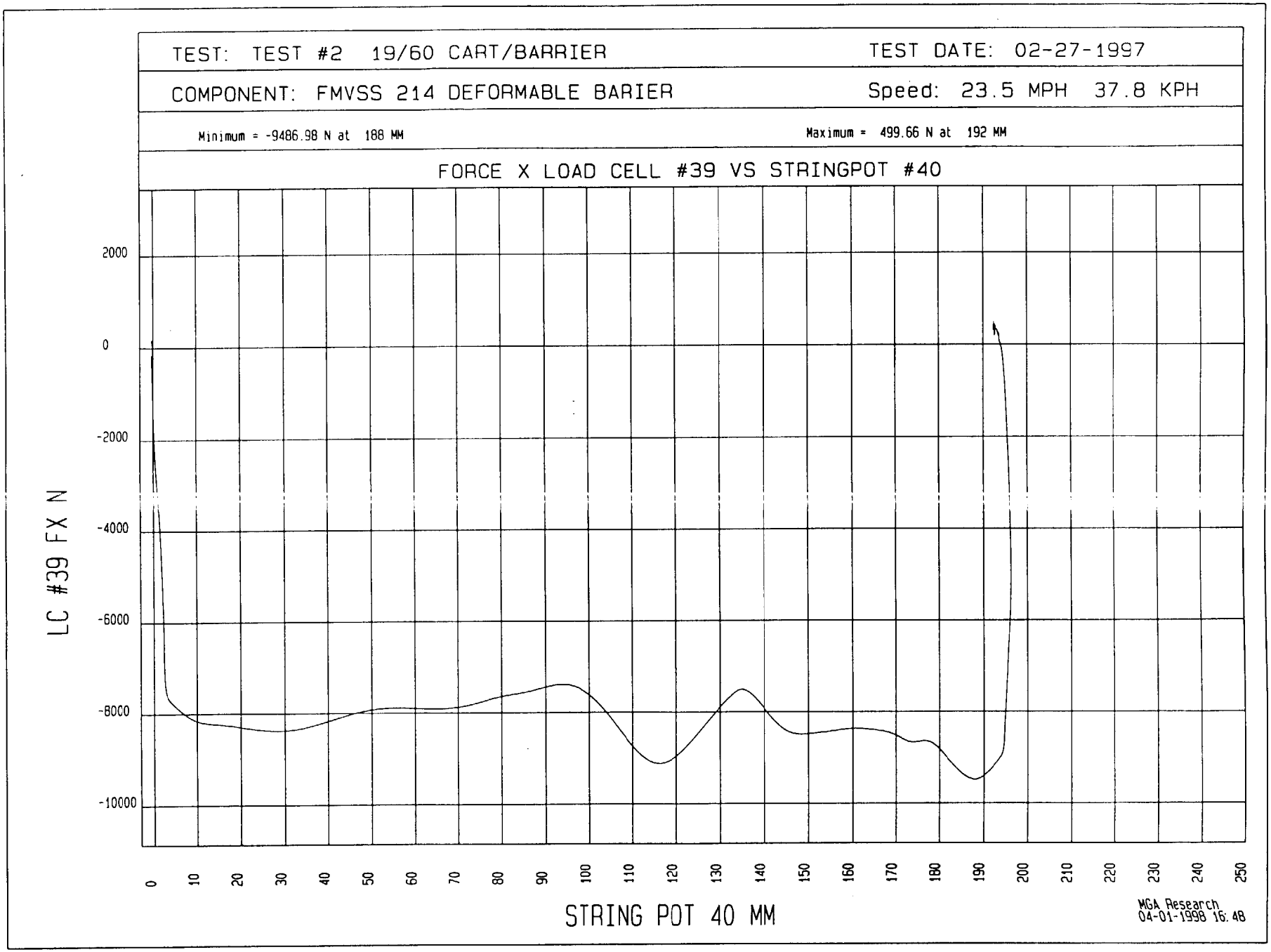

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -6760.62 N at 106 MM
Maximum = 179.74 N at 1 MM
FORCE X LOAD CELL #33 VS STRINGPOT #36
LC #33 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
STRING POT 36 MM
MGA Research
04-01-1998 16:47

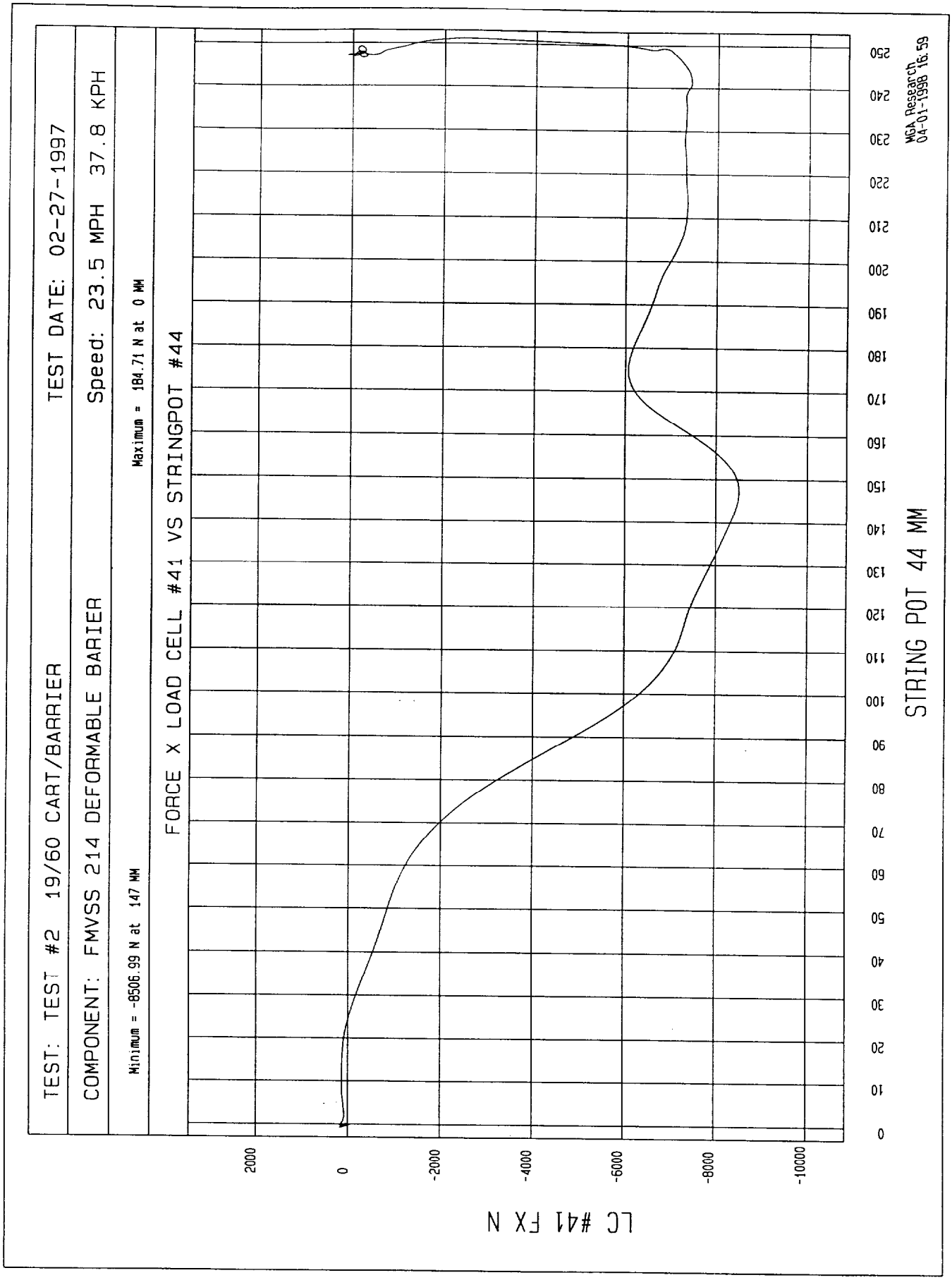

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARRIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8320.29 N at 43 MM
Maximum = 176.13 N at 0 MM
FORCE X LOAD CELL #34 VS STRINGPOT #36
MGA Research
04-01-1998 16:47
LC #34 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 36 MM

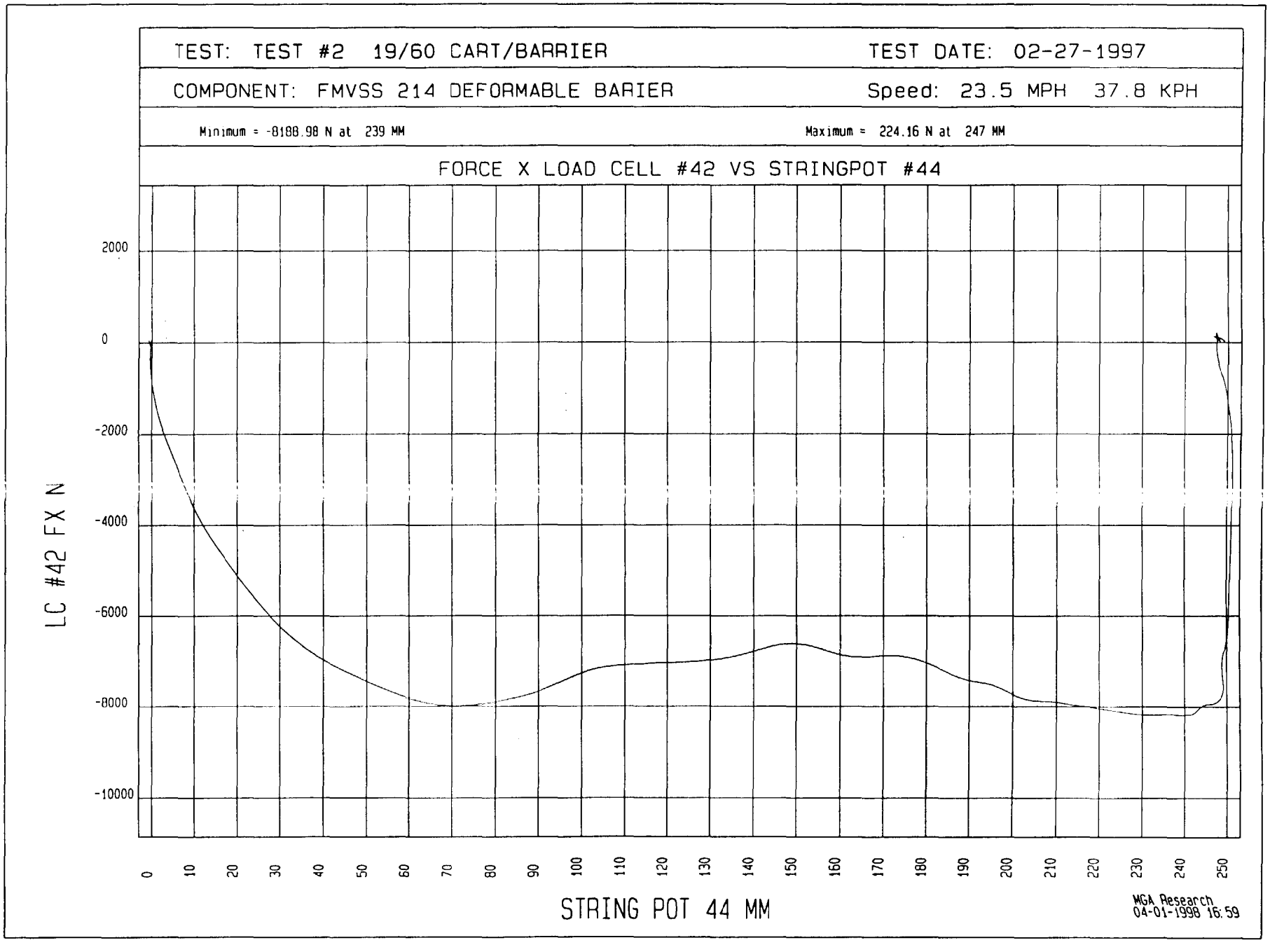

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7707.08 N at 48 MM
Maximum = 279.41 N at 110 MM
FORCE X LOAD CELL #35 VS STRINGPOT #36
LC #35 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 36 MM
MGA Research
04-01-1998 16:47

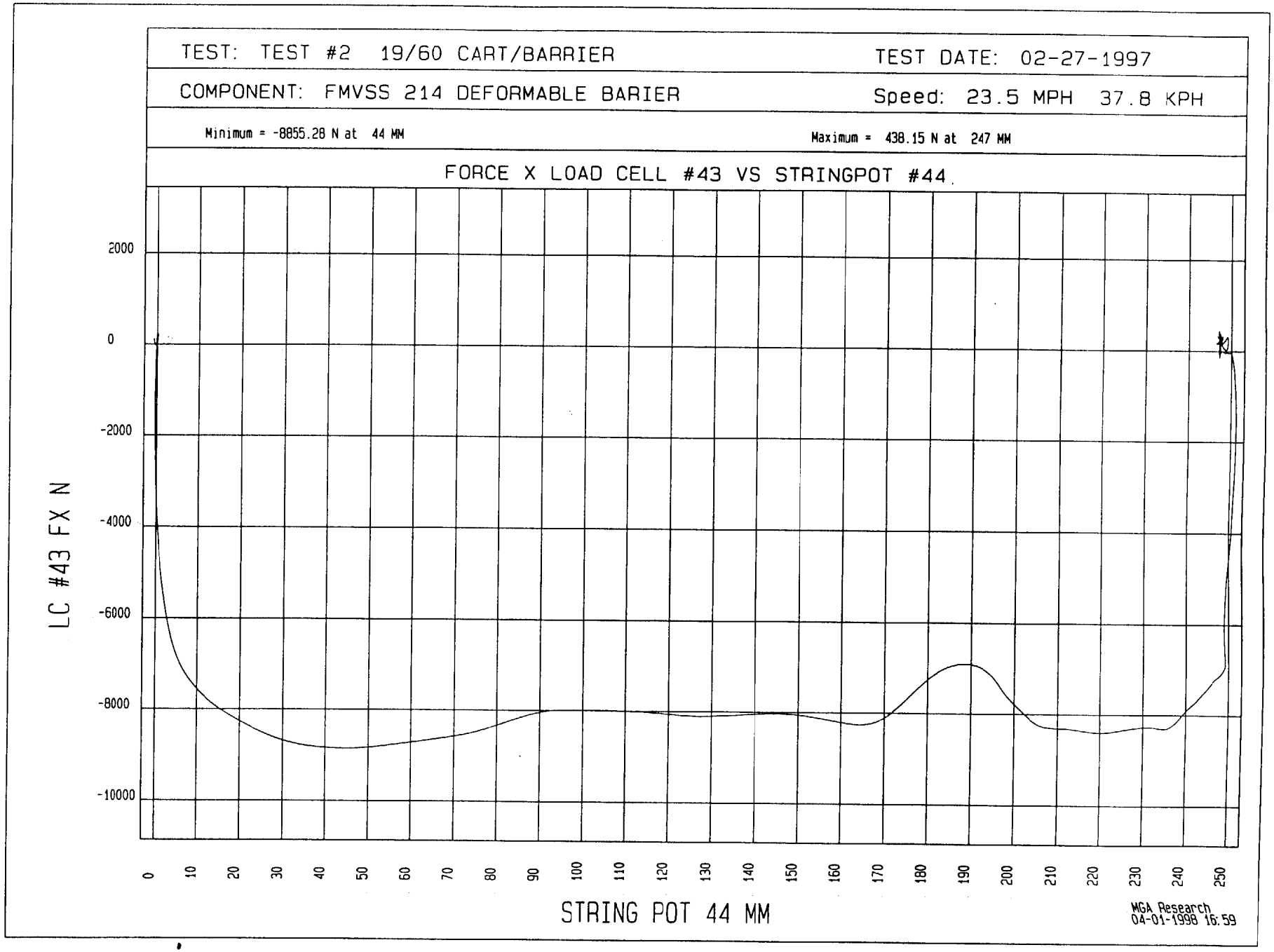

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -7434.90 N at 187 MM
Maximum = 310.06 N at 192 MM
FORCE X LOAD CELL #37 VS STRINGPOT #40
LC #37 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 40 MM
MGA Research
04-01-1998 16:47


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -10217.88 N at 79 MM
Maximum = 330.57 N at 193 MM
FORCE X LOAD CELL #38 VS STRINGPOT #40
LC #38 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
STRING POT 40 MM
MGA Research
04-01-1998 16:48


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -9486.98 N at 188 MM
Maximum = 499.66 N at 192 MM
FORCE X LOAD CELL #39 VS STRINGPOT #40
LC #39 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
STRING POT 40 MM
MGA Research
04-01-1998 16:48


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8506.99 N at 147 MM
Maximum = 184.71 N at 0 MM
FORCE X LOAD CELL #41 VS STRINGPOT #44
LC #41 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 44 MM
MGA Research
04-01-1998 16:59

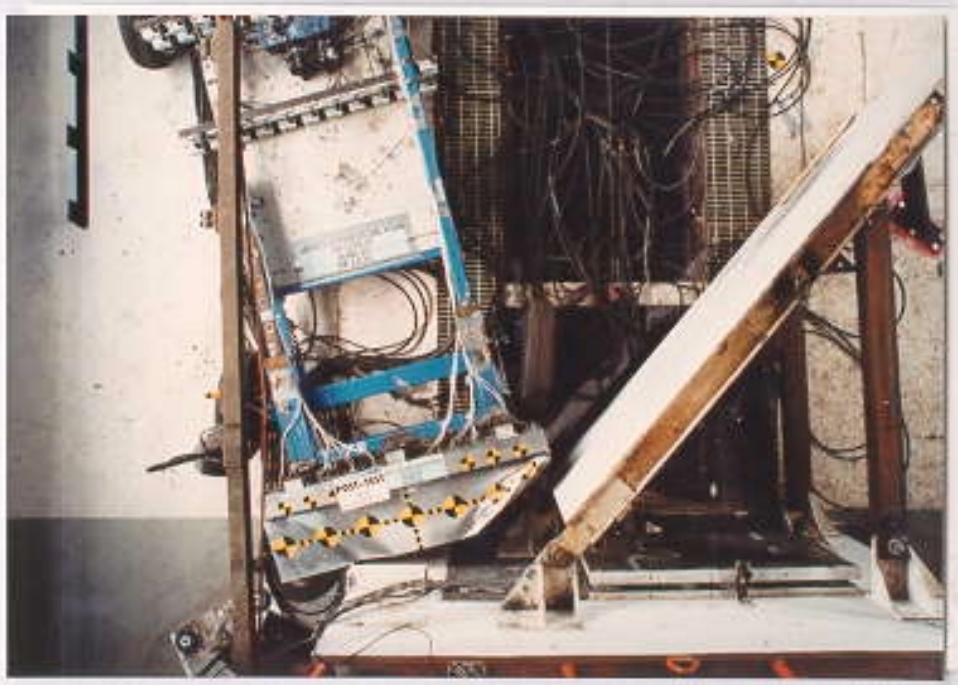

TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8188.98 N at 239 MM
Maximum = 224.16 N at 247 MM
FORCE X LOAD CELL #42 VS STRINGPOT #44
LC #42 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 44 MM
MGA Research
04-01-1998 16:59


TEST: TEST #2 19/60 CART/BARRIER
TEST DATE: 02-27-1997
COMPONENT: FMVSS 214 DEFORMABLE BARIER
Speed: 23.5 MPH 37.8 KPH
Minimum = -8855.28 N at 44 MM
Maximum = 438.15 N at 247 MM
FORCE X LOAD CELL #43 VS STRINGPOT #44
LC #43 FX N
2000
0
-2000
-4000
-6000
-8000
-10000
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
STRING POT 44 MM
MGA Research
04-01-1998 16:59

PHOTOGRAPHS


POST-TEST


POST-TEST

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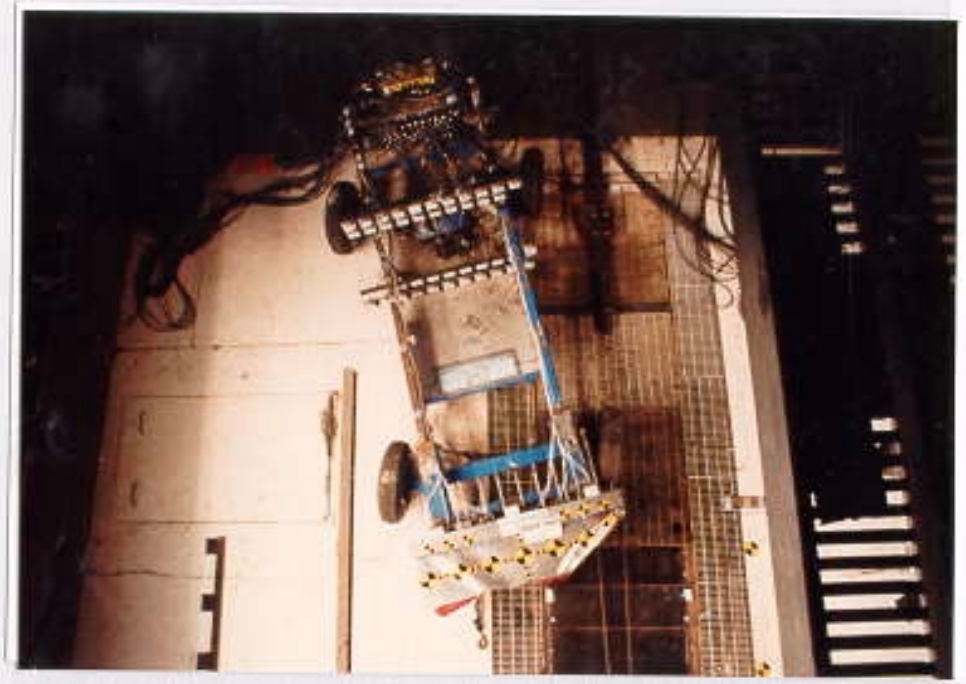
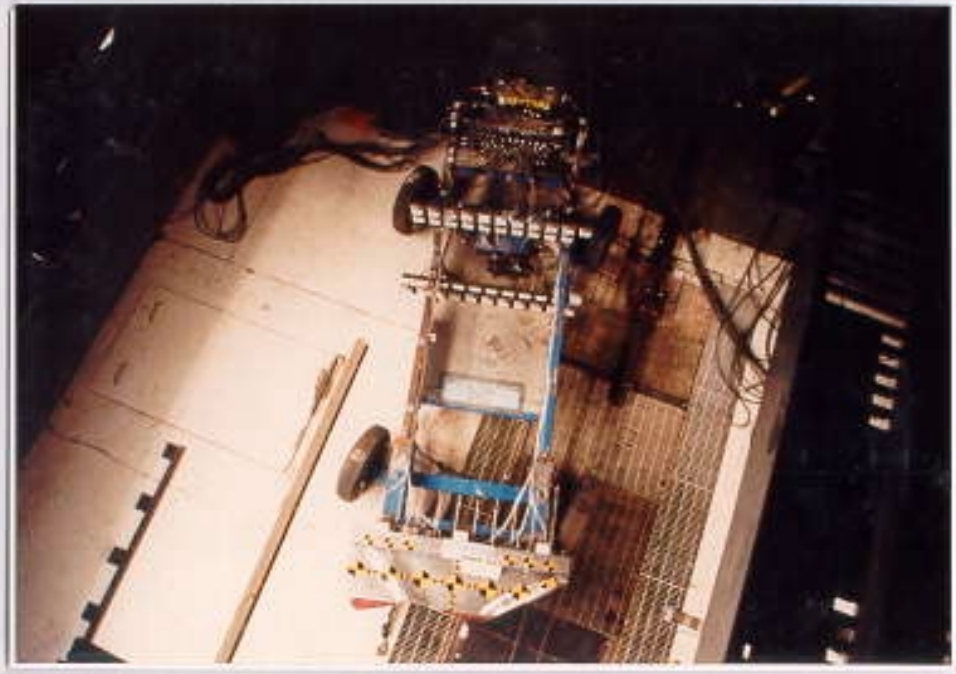
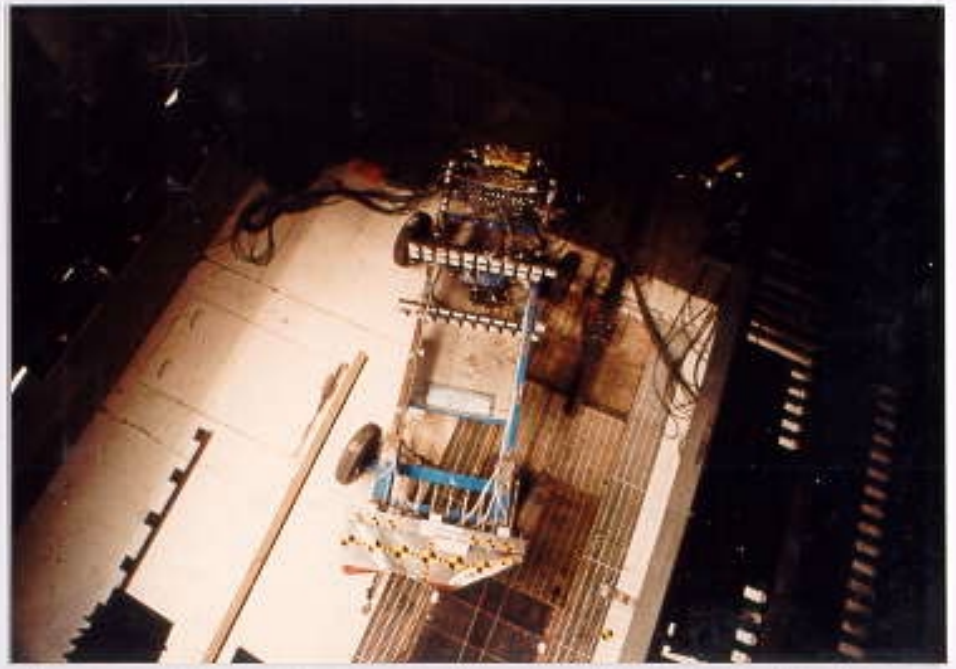






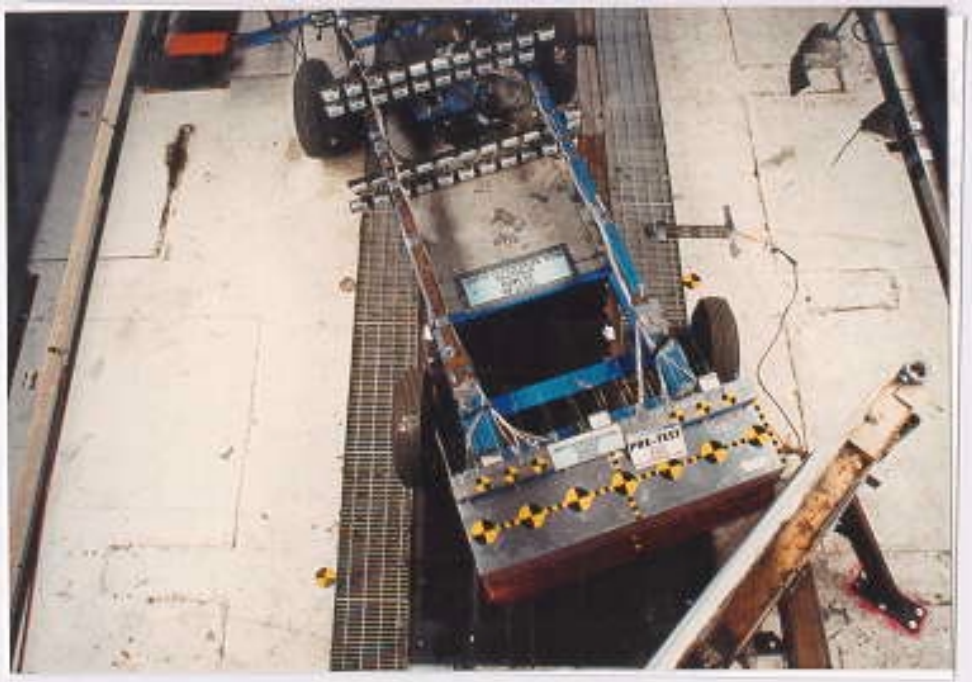

POST–TEST

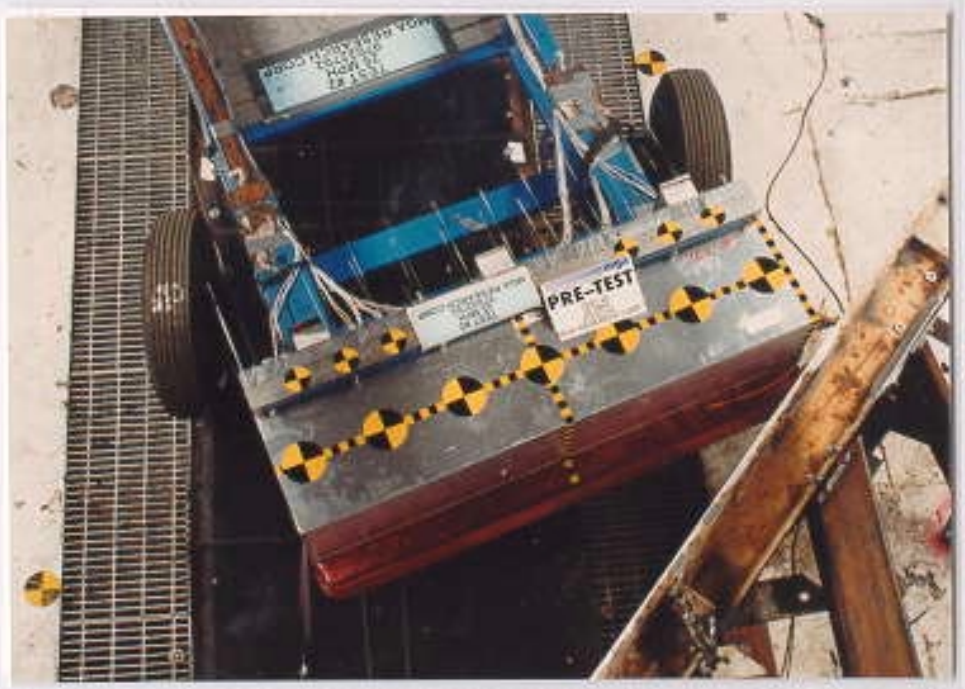

POST–TEST


POST–TEST

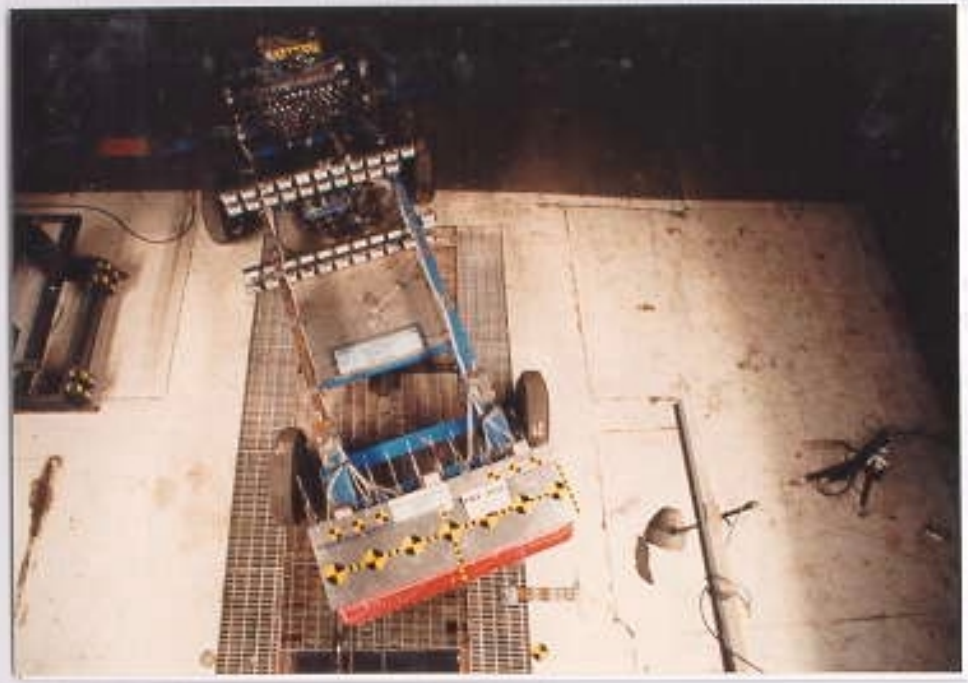

CRASH TEST
CENTER

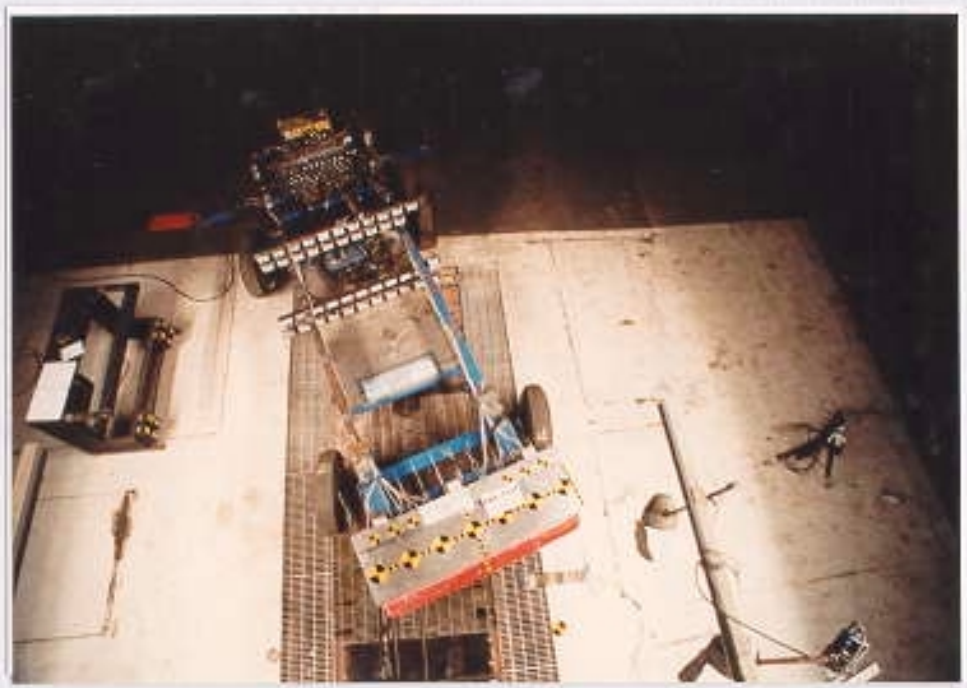

CRASH TEST
CENTER

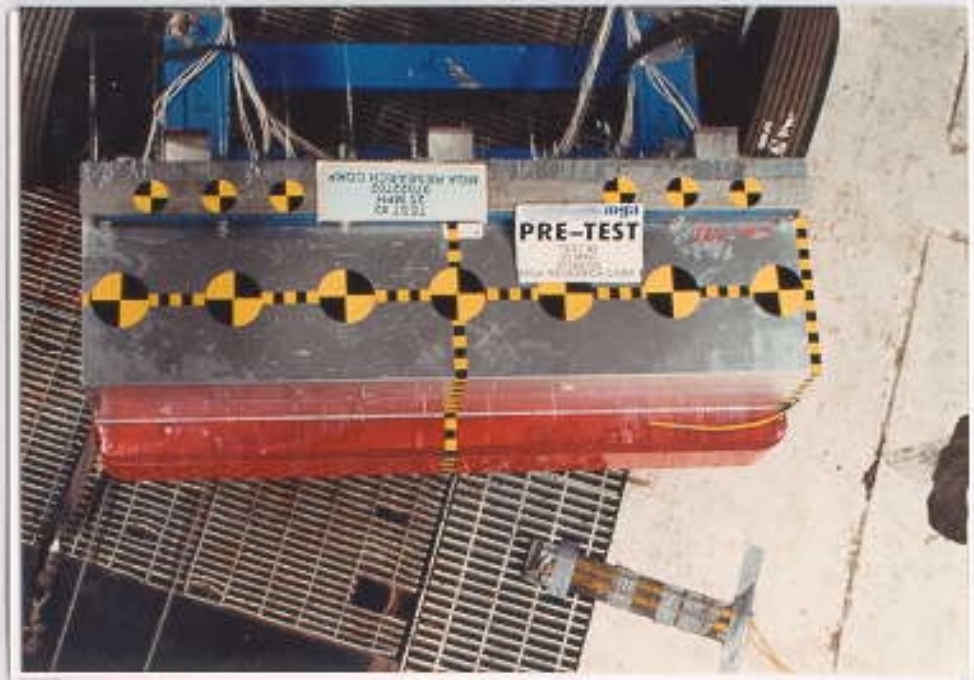



PRE-TEST


CRASH TEST



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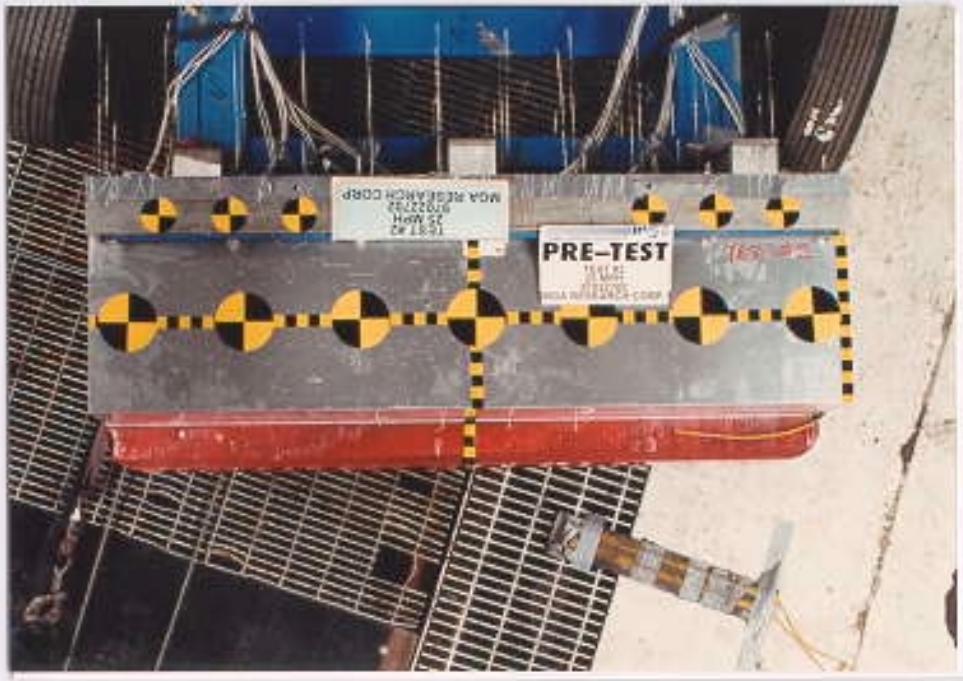

PRE-TEST

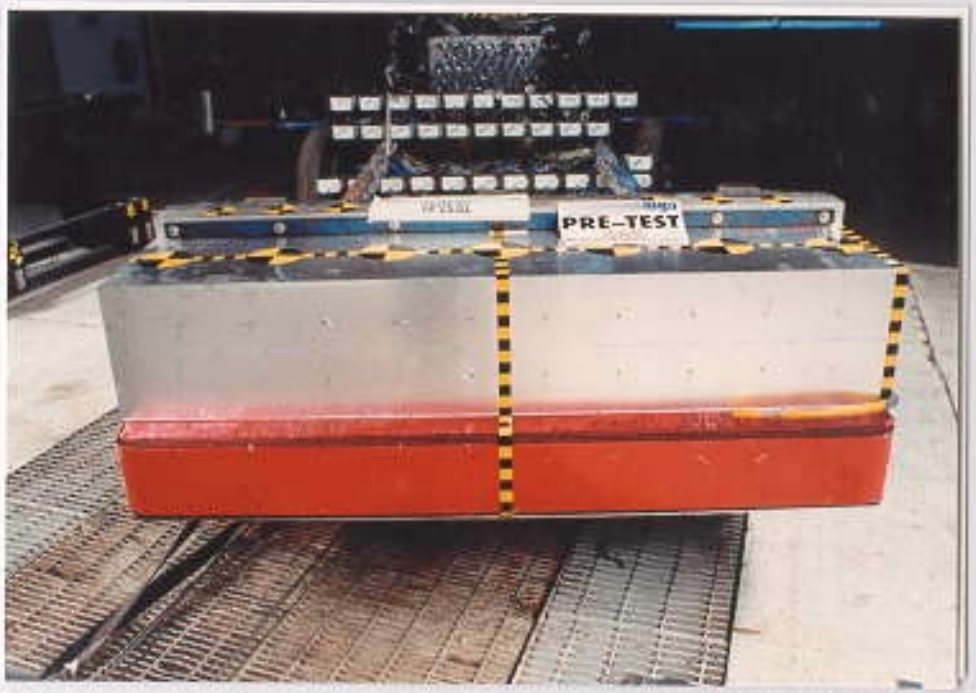

PRE-TEST


PRE-TEST

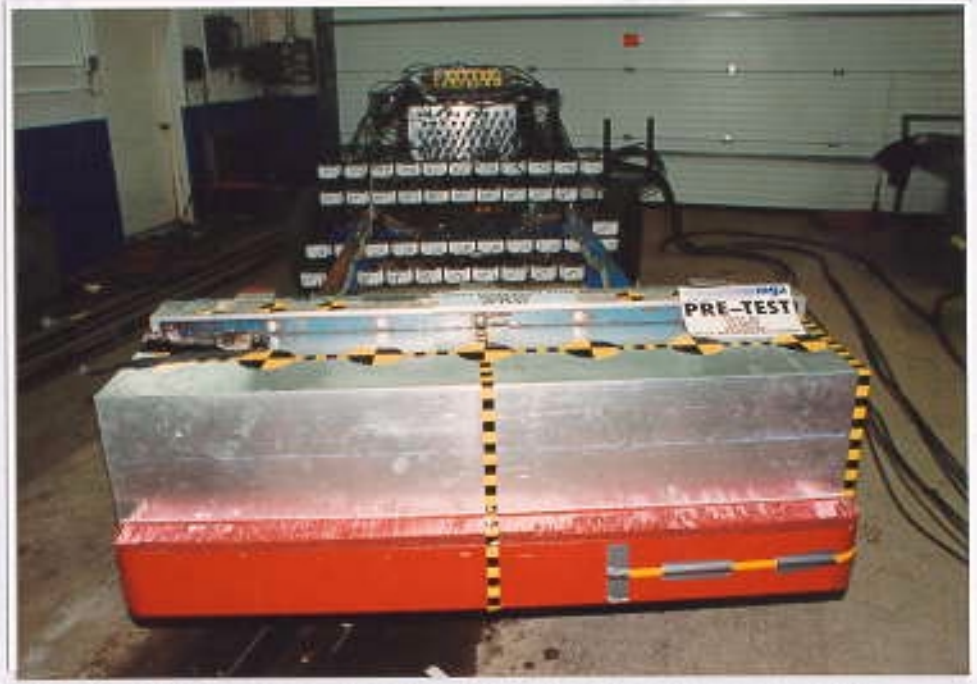

PRE-TEST


PRE-TEST


PRE-TEST


PRE-TEST


PRE-TEST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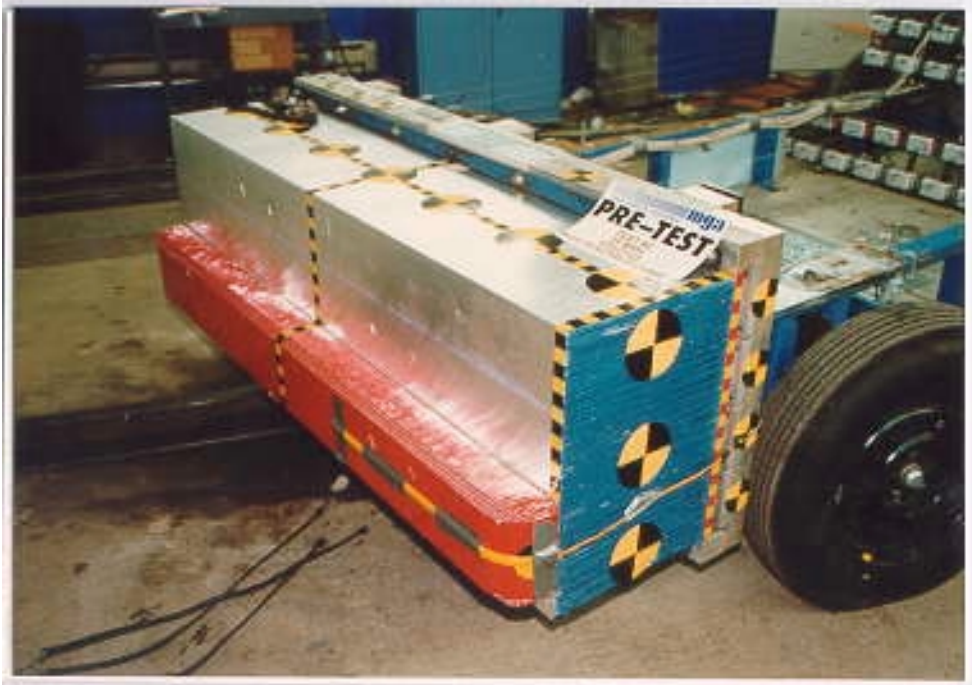
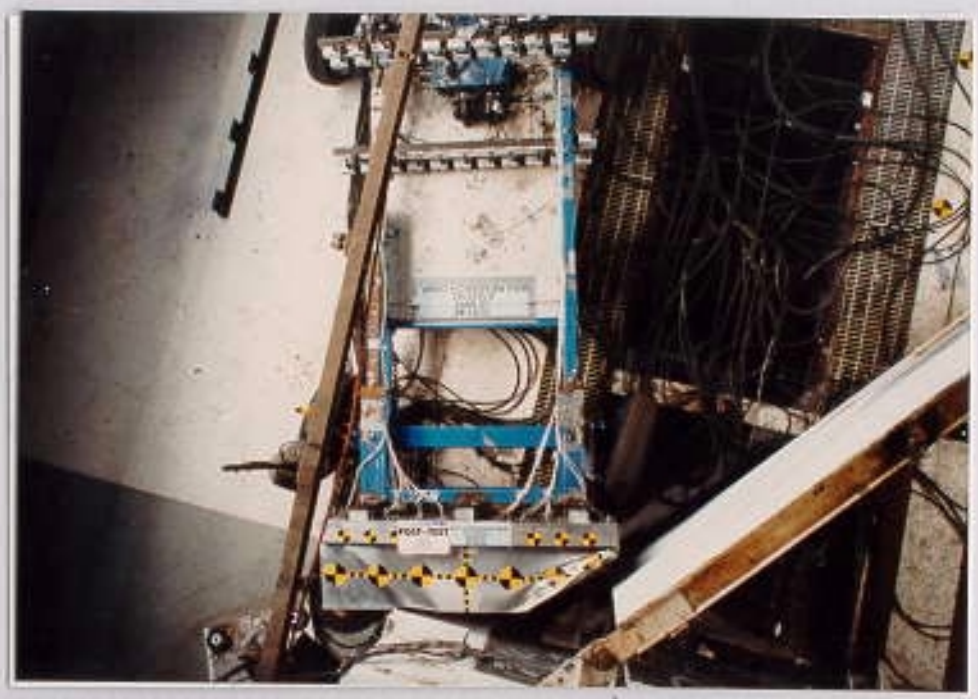
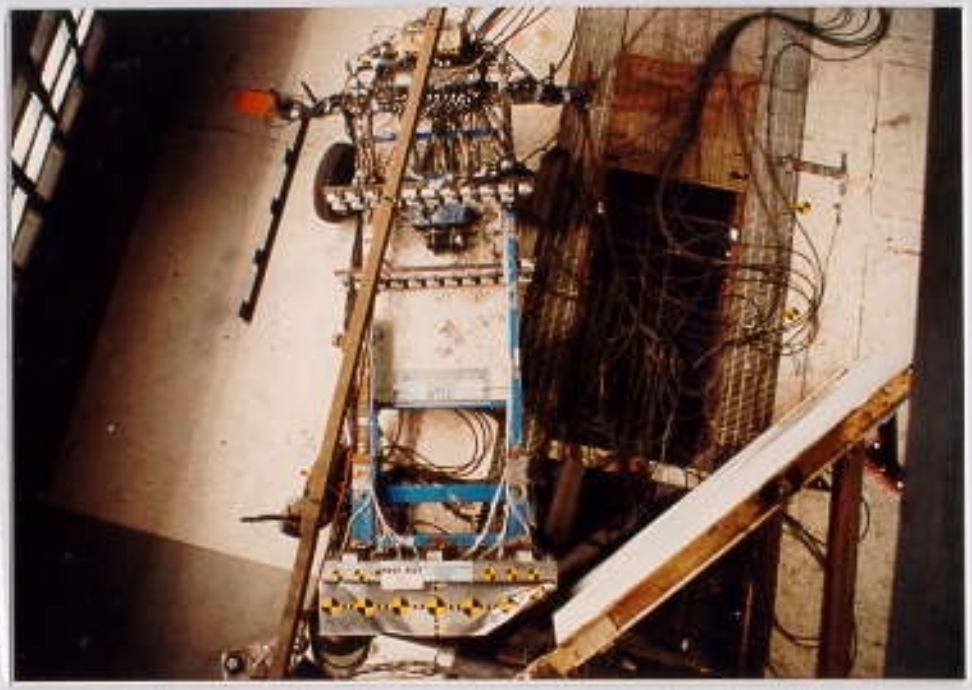
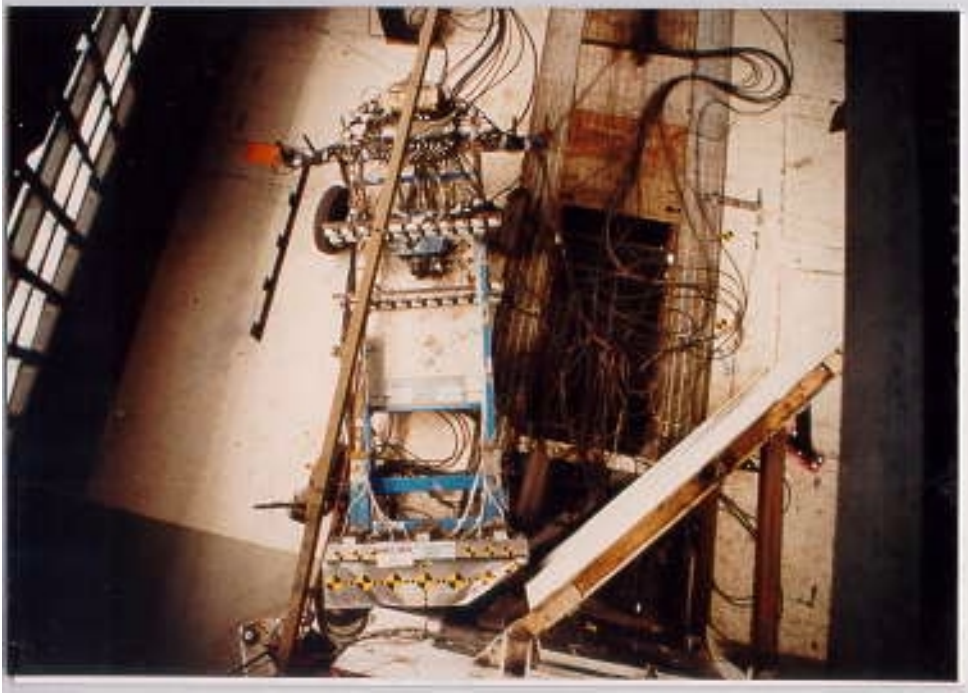
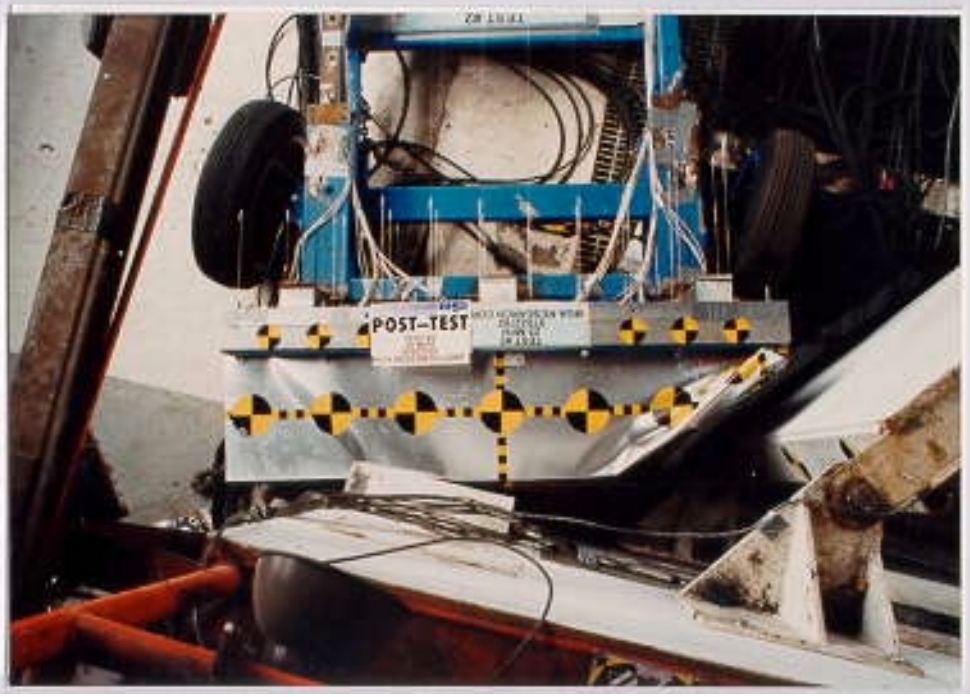

PRE-TEST


PRE-TEST








POST-TEST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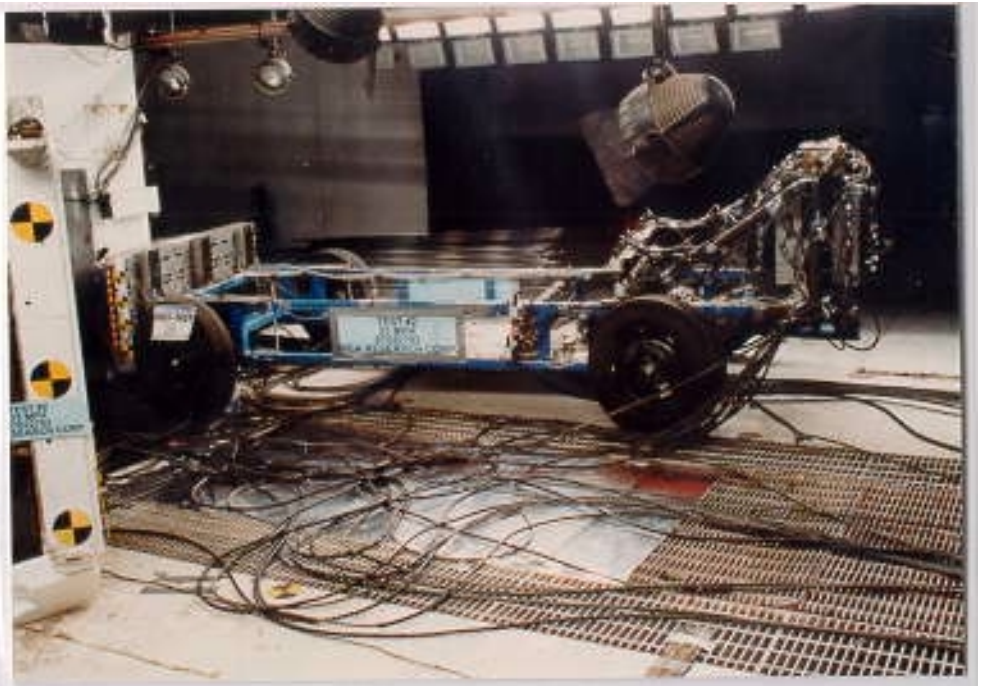


CRASH TEST