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REPORT NUMBER: 214D-MGA-2001-002

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT**

**Toyota Motor Corporation
2001 Toyota Celica 2 door
NHTSA NUMBER:C15102**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105**



December 19, 2000

FINAL REPORT

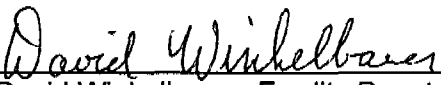
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OFFICE OF CRASHWORTHINESS STANDARDS
400 SEVENTH STREET, SW, ROOM 6111 (NSA-30)
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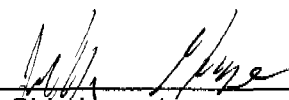
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16 Abstract A 55/28 km/h 90° Moving Deformable Barrier INDICANT Compliance Test was conducted on the subject 2001 Toyota Celica in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on December 19, 2000. The impact velocity of the Moving Deformable Barrier (MDB) was 62.0 kph, and the ambient temperature at the struck side (driver's) of the vehicle was 21 °C. The target vehicle's maximum post test static crush was 295 mm at level 3. The test vehicle's occupant performance is as follows: <table border="0"> <thead> <tr> <th></th> <th><u>DRIVER</u></th> <th><u>PASS.*</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td>95</td> <td>83</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td>97</td> <td>107</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td>85</td> <td>90</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td>91</td> <td>99</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td>86</td> <td>104</td> </tr> <tr> <td>HIC</td> <td>652</td> <td>390</td> </tr> </tbody> </table> The door on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite door did not open during the side impact event. *The passenger dummy could not be seated according to the dummy seating procedure due to lack of head clearance							<u>DRIVER</u>	<u>PASS.*</u>	Left Upper Rib (LUR) Accel., g	95	83	Left Lower Rib (LLR) Accel., g	97	107	Lower Spine (T ₁₂) Accel., g	85	90	Thoracic Trauma Index (TTI)	91	99	Pelvis (PEV) Accel., g	86	104	HIC	652	390
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17 Key Words Compliance Testing FMVSS 214D Side Impact Protection Side Impact Dummy (SID) New Car Assessment Program (NCAP)				18 Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590																						
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SECTION 1
PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This Side Impact test is conducted as part of the FY' 2001 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No DTNH22-97-C-11033. The purpose of this test was to evaluate side impact protection in a 2001 Toyota Celica 2 door manufactured by Toyota Motor Corporation.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC), laboratory test procedure TP-214D-05, dated August 2, 1999 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA2 with the exception of the test speed, which was at the NCAP High Speed Lateral Impact level (61.2 kph, approximately 8 kph faster than compliance speed). The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT TEST

A model year 2001 Toyota Celica 2 door was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.0 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1332.7 kg and the test weight of the MDB was 1362 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on December 19, 2000.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID's) can be found in Appendix A. Two 50th percentile adult male SID's were placed in the driver and left rear passenger designated seating positions according to instructions specified in the OVSC Side Impact Laboratory Test Procedure dated August 2, 1999. Each SID was instrumented with eleven accelerometers in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axes)

The test vehicle was instrumented with twenty (20) structural accelerometers and the MDB was instrumented with five (5) accelerometers and two (2) contact switches on the bumper to compare left side to right side bumper impact timing. All data channels were recorded with a fully self contained on-board EME Data Acquisition System. The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 295 mm at level 3, 750 mm rearward of the left vertical impact point. The driver and passenger SID's, Serial Nos. 049 and 048 respectively, were calibrated just prior to this test. The SID's injury criteria is summarized as follows:

Measurements	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	91	99
Peak Pelvic G's (PEV)	G's	86	104
Head Injury Criteria (HIC)	none	652	390

Test summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID's, vehicle, and MDB response data traces. Appendix C contains the SID's configuration and performance verification data. Appendix D contains the test equipment information.

TEST NOTES

The following accelerometers were not used for this test:

Left Front Door on Centerline
Midrear of Left Front Door
Left Front Door Upper Centerline
Midrear of Left Rear Door
Left Rear Door Upper Centerline
Rear Seat Track

Stoddard Solvent leakage was noted at the start of the post test FMVSS 301 Static Rollover. Leakage occurred during the 90 degree rotation, this position was held for 8 minutes and solvent leakage measured. The factory fitting was then reconnected and the rotation continued. No leakage was noted after fitting was reconnected. It was found that in preparation, the fitting may not have been properly reconnected after draining the fuel system. The leakage noted was caused by the separation of this fitting.

The dummy could not be seated according to dummy seating procedure.

SECTION 3

SIDE IMPACT DUMMY (SID) AND VEHICLE TEST DATA

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Old Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressure	lb/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

*Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

TEST VEHICLE INFORMATION

Make	Toyota
Model	Celica
Body Style	Coupe
NHTSA No.	C15102
VIN	JTDDR32T510078324
Color	Black
Delivery Date	November 29, 2000
Odometer Reading (mile)	178
Dealer	Wilde Toyota
Transmission	5 speed manual
Final Drive	Front
Number of Cylinders	4
Engine Displacement (L)	1.8
Engine Placement	Lateral

TEST VEHICLE OPTIONS

Front Airbags	yes
Side Airbags	no
Power Windows	yes
Power Steering	yes
Power Door Locks	yes
Tilt Wheel	yes
Air Conditioning	yes
Power Brakes	yes
Disc Brakes, Front	yes
Disc Brakes, Rear	no
Anti-lock Brakes	no
AM/FM/Cassette	no
Anti-theft System	no
Cruise Control	yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Corporation	GVWR (kg)	3325
Date of Manufacture	10/00	GAWR Front (kg)	2115
		GAWR Rear (kg)	2080

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	210	210
Cold Pressure (kPa)	210	210
Recommend Tire Size	P195/60R15	P195/60R15
Tire Size on Vehicle	P195/60R15	P195/60R15
Tire Manufacturer	Bridgestone	Bridgestone

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	2	2		4
Capacity Wt. (VCW) (kg)				328.9
Cargo Weight (RCI W) (kg)				56.7

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	344.7	215.5		352.9	274.9	
Right	kg	343.4	218.6		399.2	305.7	
Ratio	%	61.3%	38.7%		56.4%	43.6%	
Totals	kg	688.1	434.1	1122.2	752.1	580.6	1332.7

TARGET TEST WEIGHT CALCULATION*

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1122.2
Weight of 2 P572F Side Impact Dummies	kg	161.4
Rated Cargo/Luggage Weight (RCLW)	kg	56.7
Calculated Vehicle Target Weight (TVTW)	kg	1340.3

*Actual As Tested Weight (ATW) will be TVTW -5/-10 kg

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	667	672	682	690	1005
As Tested	mm	653	660	637	651	1132
Fully Loaded	mm	652	664	630	644	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2600
Total Vehicle Length at Left Side	mm	3705
Total Vehicle Length at Centerline	mm	4304
Total Vehicle Length at Right Side	mm	3705
Weight of Ballast in Cargo Area	kg	53.0
Amount of Stoddard Solvent in Fuel Tank	liters	50.7

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2600
Target Impact Point Aft of Front Axle	mm	360
Actual Impact Point Aft of Front Axle	mm	357

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Toyota/Celica/2 door

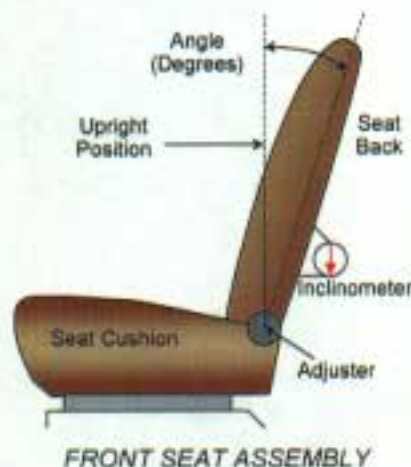
NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

NORMAL DESIGN RIDING POSITION

The driver's seat back is positioned to the manufacturer's designated angle. The procedure for the seat is as follows: a slit is cut into the fabric of the seat at the outboard edge, approximately 13 inches above the pivot point to expose the frame of the seat. An inclinometer is firmly placed against the flat portion of the frame surface and the seat back is adjusted to the manufacturer's designated angle. The rear passenger seat is fixed; no adjustments can be made.



Driver seat back angle: notch 6 from 1st as one

Passenger seat back angle: non - adjustable

SEAT FORE/AFT POSITIONS

The driver's seat is manually operated and the rear passenger seat has no adjustments. The fore/aft is set to the middle position for the driver's seat. The first detent is numbered "1".

Driver seat fore/aft total travel: 17 detents

Rear passenger seat fore/aft total travel: non-adjustable

Driver seat fore/aft position: 9th detent 1st one

Rear passenger seat fore/aft position: non-adjustable

SEAT BELT UPPER ANCHORAGE

The test vehicle is not equipped with adjustable "D" ring anchorage for the driver's seat position.

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

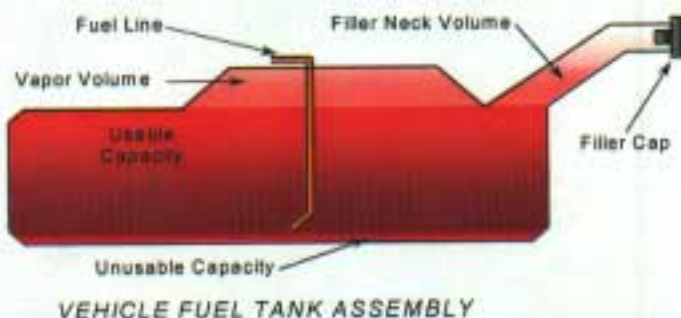
Test Program: FMVSS 214

Test Date: December 19, 2000

FUEL TANK CAPACITY DATA

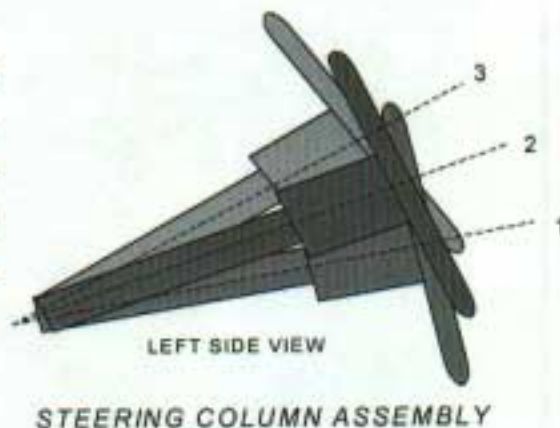
The "Usable Capacity" of the standard equipment fuel tank is:	<u>54.9</u> liters
The "Usable Capacity" of any optional equipment fuel tank is:	<u>N/A</u> liters
92-94% of "Usable Capacity" for certification to FMVSS 301 requirement:	<u>50.5 to 51.6</u> liters
Actual amount of Stoddard solvent added to vehicle for certification test:	<u>50.7</u> liters

The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender.



STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes, when it is moved through its full range of motion. A square is placed across the rim of the steering wheel, and inclinometer is placed onto the square and the angle is measured.



Lowermost, position 1: 0°

Geometric center, position 2: 1.6 °

Uppermost, position 3: 3.2°

DATA SHEET NO. 2**TEST VEHICLE SUMMARY OF RESULTS**Test Vehicle: 2001/Toyota/Celica/2 doorNHTSA No.: C15102Test Program: FMVSS 214Test Date: December 19, 2000**TEST VEHICLE WEIGHTS**

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	344.7	215.5		352.9	274.9	
Right	kg	343.4	218.6		399.2	305.7	
Weight Ratio	%	61.3%	38.7%		56.4%	43.6%	
Totals	kg	688.1	434.1	1122.2	752.1	580.6	1332.7

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	78	259
Level 2	Occupant H-Point	mm	198	371
Level 3	Mid Door	mm	295	548
Level 4	Window Sill	mm	164	863
Level 5	Window Top	mm	31	1211
N/A	Maximum Penetration	mm	295	548

INSTRUMENTATION

Driver SID Accelerometers	11
Passenger SID Accelerometers	11
Vehicle Structure Accelerometers	20
MDB Accelerometers	5
Total	47

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

MDB SPECIFICATIONS (mm)

Measurement Description	Length
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2590
C.G. Location aft of Front Axle	1127

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	395.1	293.8	
Right	kg	385.7	287.4	
Ratio	%	57.3	42.7	
Totals	kg	780.8	581.2	1362.0

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.9
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.8
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.8

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

Vertical Location			From Centerline		Max. Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Right	162
B	Top of Bumper	533	800	Right	150
C	Mid Level	686	600	Left	89
D	Top of Stack	813	600	Left	180

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	2
High Speed Cameras	2

DATA SHEET NO. 4
POST TEST OBSERVATIONS

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID	Rear Seat SID
Dummy Type / Serial No.	SID/048	SID/049
Head Contact	Door Panel / Outside Trim	C-post
Upper Torso Contact	Door Panel	Side Panel
Lower Torso Contact	Door Panel	Side Panel
Left Knee Contact	Door Panel	Side Panel
Right Knee Contact	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	remained closed	N/A
Right Side Door Opening	remained closed	N/A
Seat Movement	none	none
Seat Back Failure	none	none

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	None
Sill Separation	None
Windshield Damage	Lower Left Corner Glazing Cracked
Window Damage	LF,LR Windows Broken
Other Notable Effects	None

AIRBAG DEPLOYMENT

	Driver	Front Passenger	Rear Passenger
Front	no	no	
Side			

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	3 forward
Vertical Offset	mm	+/-20	2 up

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

SID INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

THORAX AND PELVIS PEAK ACCELERATIONS, PRIMARY (FIR 100 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	94.8	39	18.2	74	83.1	46	12.3	62
Upper Rib (LUR) (R)	Y	G's	94.5	39	18.6	73	85.2	46	9.6	93
Lower Rib (LLR)	Y	G's	96.5	39	13.2	96	106.9	34	39.8	39
Lower Rib (LLR) (R)	Y	G's	96.1	39	12.9	96	107.7	34	40.1	39
Lower Spine (T ₁₂)	Y	G's	84.7	36	25.6	62	90.3	48	13.8	68
Lower Spine (T ₁₂) (R)	Y	G's	83.7	36	25.7	62	89.7	48	13.8	68
Pelvis (PEV)	Y	G's	85.8	34	17.3	84	104.0	40	5.9	110
Pelvis (PEV) (R)	Y	G's	85.9	34	13.2	86	103.8	40	6.2	112

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION, PRIMARY (FIR 100 Filtered)

Location	Driver				Passenger			
	LLR	T ₁₂	TTI(g)	PEV(g)	LLR	T ₁₂	TTI(g)	PEV(g)
Rib, Spine, and Pelvis	96.5	84.7	91	86	106.9	90.3	99	104
Rib, Spine, and Pelvis (R)	96.1	83.7	90	86	107.7	89.7	99	104

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	9.4	58	45.0	66	6.0	198	34.5	35
Head CG	Y	G's	82.3	52	1.1	25	128.5	35	7.5	200
Head CG	Z	G's	114.4	65	14.6	200	34.8	36	47.2	55
Head CG Resultant	R	G's	124.0	66			136.0	35		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G's	HIC	T ¹	T ²	Avg G's
Head CG	652	42.6	70.8	22	390	32.6	36.7	39

Positive Acceleration Polarities: Longitudinal (X) = Forward
 (Conforms to SAE J211) Lateral (Y) = Right
 Vertical (Z) = Down

DATA SHEET NO. 6

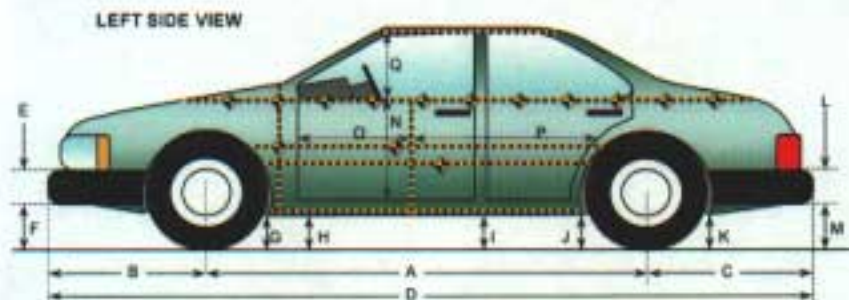
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2600	2605	5
B	Front Axle to FSOV	912	885	27
C	Rear Axle to RSOV	792	828	36
D	Total Length at Centerline	4304	4218	86
E	Front Bumper Thickness	110	110	0
F	Front Bumper Bottom to Ground	362	368	-6
G	Sill Height at Front Wheel Well	165	180	15
H	Sill Height at Front Door Leading Edge	160	179	19
I	Sill Height at "B" Pillar	162	158	4
J1	Sill Height at Rear Wheel Well	149	160	11
J2	Pinch Weld Height at Rear Wheel Well	150	152	2
K	Sill Height Aft of Rear Wheel Well	229	225	4
L	Rear Bumper Thickness	180	180	0
M	Rear Bumper Bottom to Ground	310	305	5
N	Sill Height to Window Bottom Sill	672	615	57
O	Front Door Leading Edge to Impact CL	732	722	10
P	Rear Door Trailing Edge to Impact CL	608	612	4
Q	Front Window Opening	374	337	37
R	Right Side Length	3705	3706	1
S	Left Side Length	3705	3662	43
T	Vehicle Width at "B" Post	1700	1547	153

DATA SHEET NO. 7

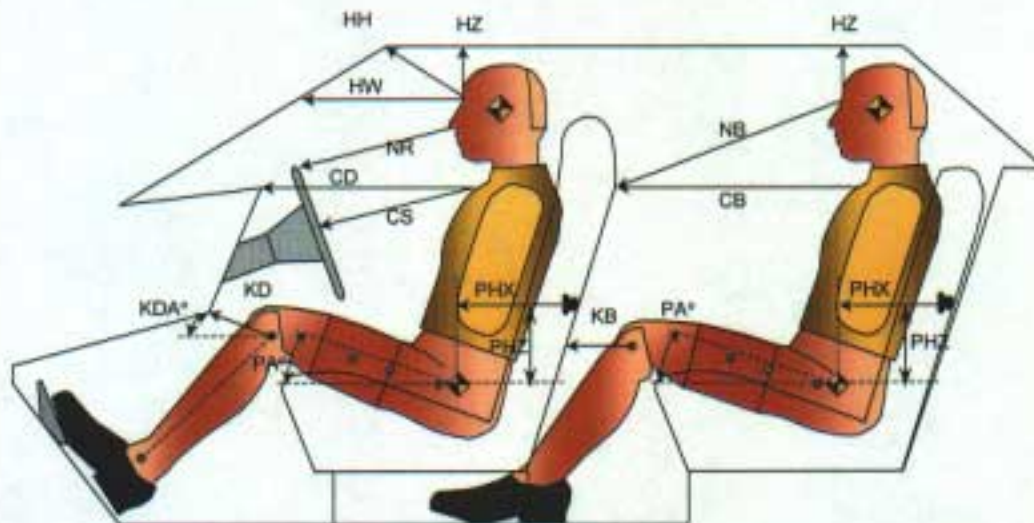
SID LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	368			
HW		Head to Windshield	640			
HZ	HZ	Head to Roof	149		89	
NR	NB	Nose to Rim/Nose to Seatback	514		462	
CD	CB	Chest to Dash or Seatback	507		391	
CS		Chest to Steering Wheel	354			
KDL	KBL	Left Knee to Dash or Seatback	236	0.0	93	0.0
KDR	KBR	Right Knee to Dash or Seatback	263	0.0	91	0.0
PA	PA	Pelvic Angle		24.2		34.9
PHX	PHX	H-Point to Striker (X-Axis)	455		330	
PHZ	PHZ	H-Point to Striker (Z-Axis)	268		235	

DATA SHEET NO. 8
SID LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	171	114
HS	Head to Side Window	mm	273	126
AD	Arm to Door	mm	77	65
HD	H-Point to Door	mm	140	98

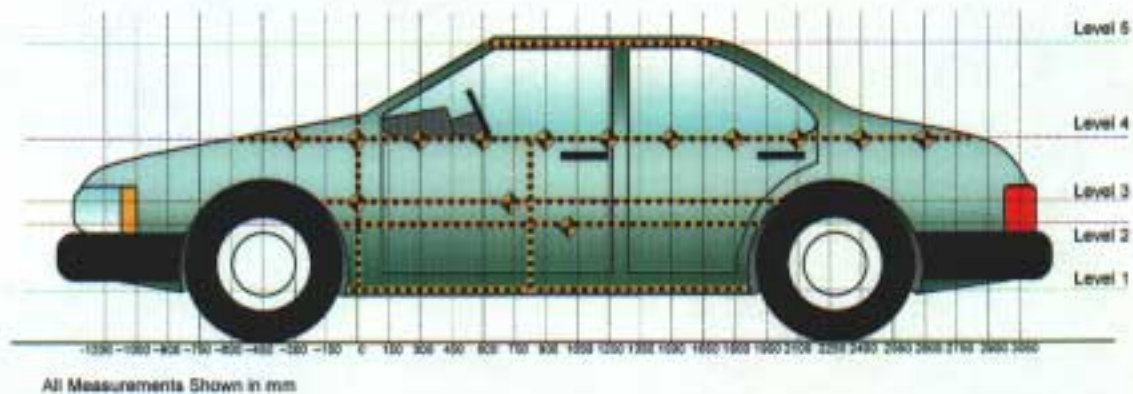
DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

Measurements along the vertical 800 mm.

All measurements below in mm.

Level	Measurement Description	Height Above Ground
5	Window	1211
4	Window Sill	863
3	Mid Door	548
2	Occupant H-Point	371
1	Sill Top	259

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

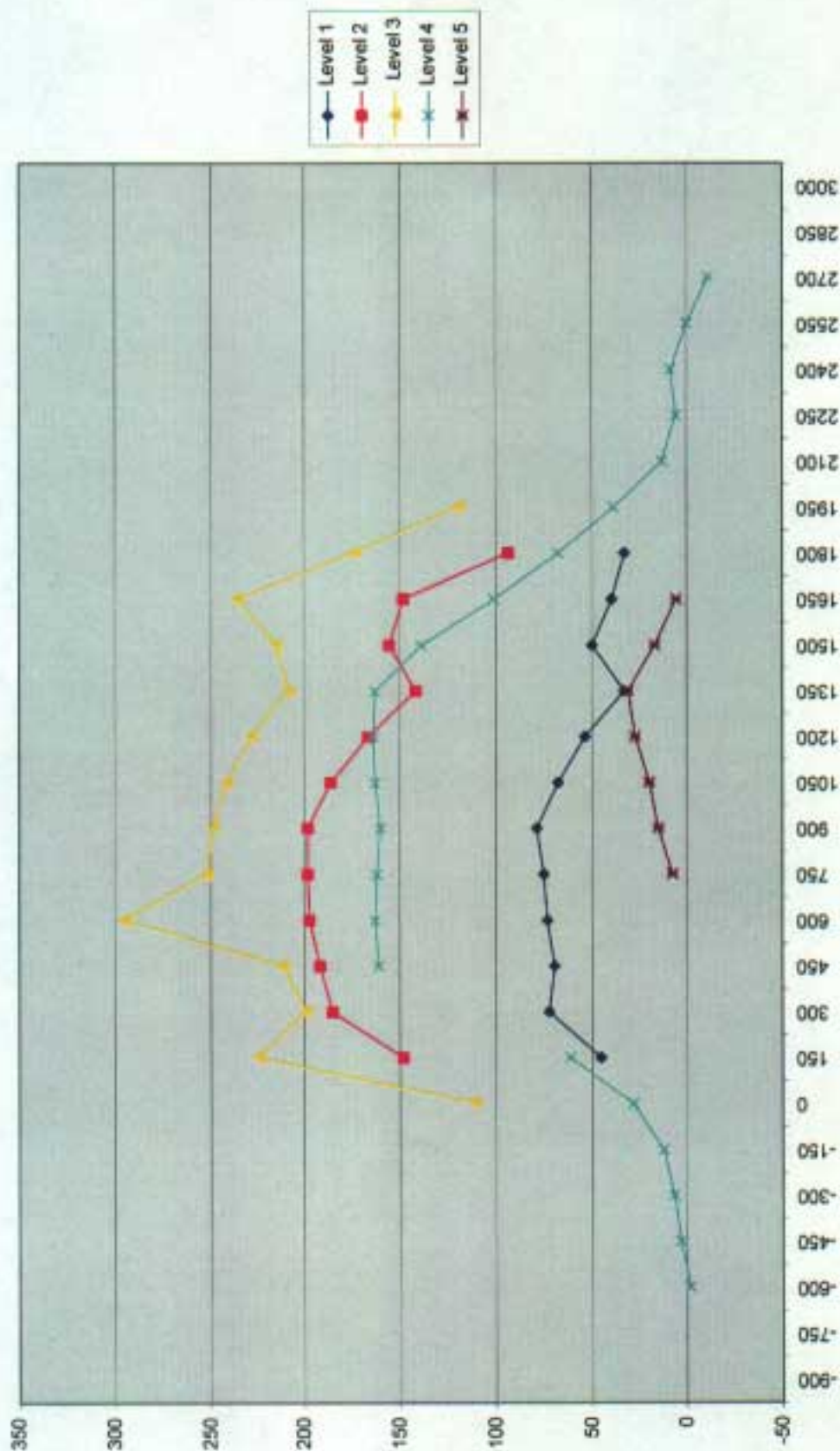
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600				384					382					-2	
-450				361					364					3	
-300				352					359					7	
-150				355					367					12	
0			294	356				405	384				111	28	
150	337	312	300	358		382	460	524	419		45	148	224	61	
300	340	315	299			412	500	498			72	185	199		
450	339	315	297	364		408	507	508	525		69	192	211	161	
600	337	312	295	371		410	509	590	534		73	197	295	163	
750	336	310	293	372	593	411	508	544	534	601	75	198	251	162	8
900	336	310	292	378	593	414	508	541	538	608	78	198	249	160	15
1050	335	309	291	381	596	402	495	532	544	616	67	186	241	163	20
1200	335	308	290	385	600	388	475	518	549	627	53	167	228	164	27
1350	334	307	290	392	601	367	449	499	555	632	33	142	209	163	31
1500	331	306	288	401	612	381	462	503	540	629	50	156	215	139	17
1650	326	306	287	407	619	365	454	523	508	625	39	148	236	101	6
1800	320	302	286	415		353	395	460	482		33	93	174	67	
1950			286	425				405	463				119	38	
2100				433					446					13	
2250				445					451					6	
2400				456					465					9	
2550				469					469					0	
2700				484					473					-11	
2850															
3000															

Reference Points X - Rear of Vehicle Y - Vehicle Centerline Z - Ground Plane

DATA SHEET NO. 10...(continued)

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2001/Toyota/Celica/2 door NHTSA No.: C15102
 Test Program: FMVSS 214 Test Date: December 19, 2000



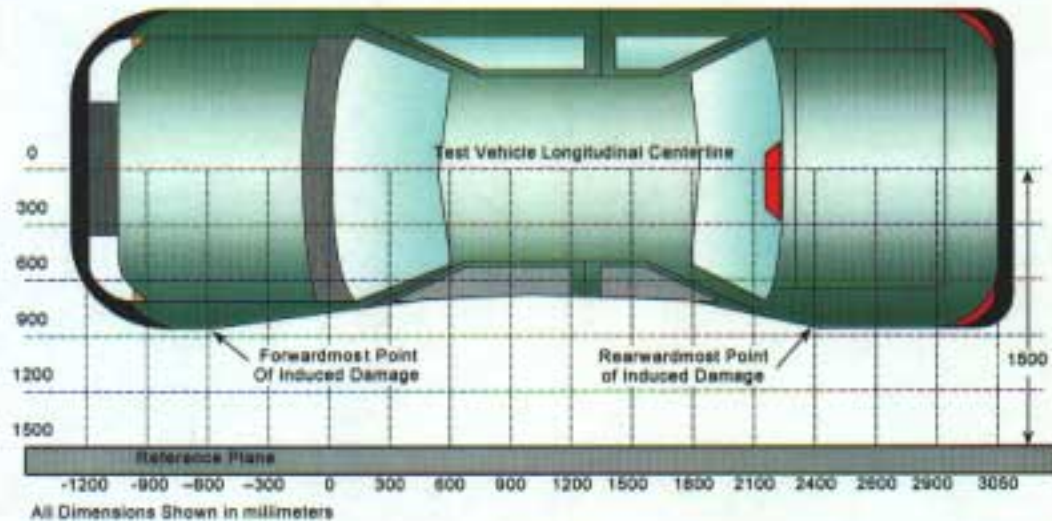
DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



TOP VIEW

Damage Profile Distances

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2550mm	4	469	469	0
2	1937mm	3	399	420	-21
3	1255mm	2.5	536	345	191
4	630mm	2.5	570	301	269
5	70mm	3	438	296	142
6	-600mm	4	382	384	-2

Reference Points X - Rear of Vehicle Y - Vehicle Centerline Z - Ground Plane

DATA SHEET NO. 12

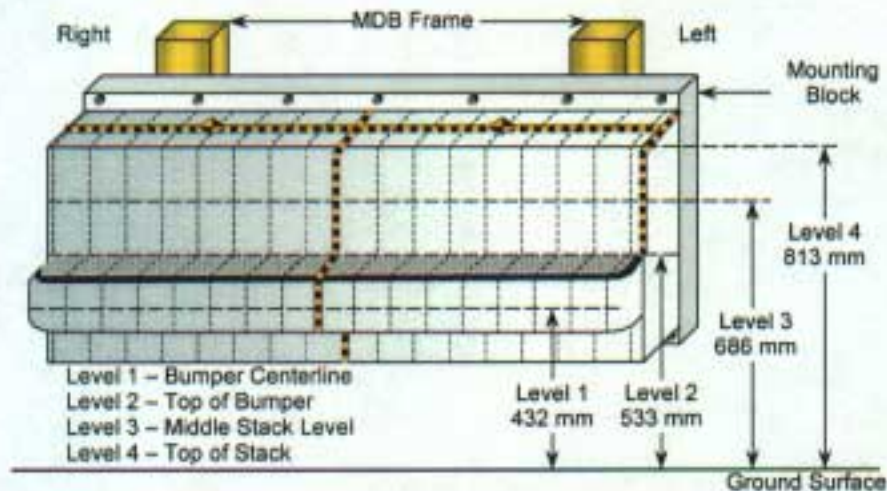
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C _L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	44	14	1	2	3	10	16	20	22	21	21	26	33	44	144	133	162
2	34	21	14	27	17	11	10	13	17	14	16	19	27	34	56	102	150
3	82	85	89	85	70	52	38	39	37	36	44	49	53	59	65	71	84
4	180	165	166	164	154	130	109	96	88	91	94	101	103	109	123	146	143

All Dimensions in mm

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

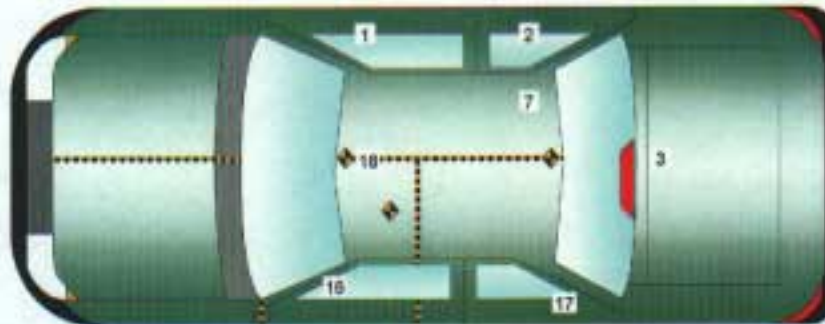
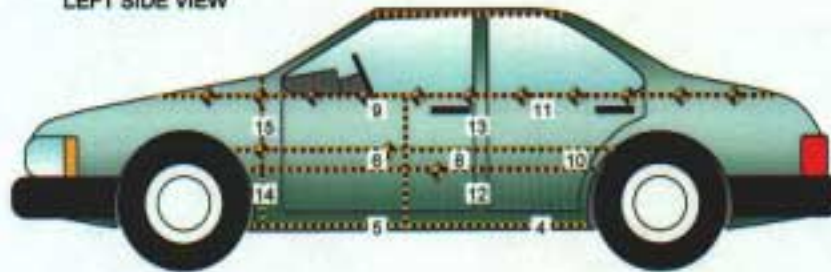
Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

LEFT SIDE VIEW



No.	Location
1	Right Sill at Front Seat
2	Right Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Sill at Rear Door
5	Left Sill at Front Door
6	Left Front Door Centerline
7	Right Rear Occupant Compartment
8	Left Front Door Mid-Rear
9	Left Front Door Upper Centerline

No.	Location
10	Left Rear Door Mid-Rear
11	Left Rear Door Upper Centerline
12	Left Lower B-Post
13	Left Middle B-Post
14	Left Lower A-Post
15	Left Middle A-Post
16	Front Seat Track
17	Rear Seat Track or Structure
18	Vehicle CG

DATA SHEET NO. 13...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	Right Sill at Front Seat	2354	688	200	X	2.5	37	9.6	18
					Y	34.6	7	2.3	161
					Z	4.7	55	9.1	10
					RES	35.7	7	--	--
2	Right Sill at Rear Seat	12.2	690	208	X	3.2	63	9.7	18
					Y	42.0	7	3.0	161
					Z	8.6	39	7.8	20
					RES	42.4	7	--	--
3	Rear Floorpan Above Axle	791	0	562	X	2.1	63	15.1	20
					Y	25.3	23	2.1	81
					Z	9.9	10	5.9	58
					RES	27.7	20	--	--
4	Left Sill at Rear Door	2372	-690	212	Y	47.6	18	9.0	13
5	Left Sill at Front Door	1316	-688	223	Y	28.7	7	4.0	79
7	Rear Occupant Compartment	1700	-372	352	Y	41.6	6	2.3	82
12	B-Post Lower	1651	-664	273	Y	42.6	6	2.4	159
13	B-Post Middle	1715	-655	870	Y	129.5	6	75.1	28
14	A-Post Lower	2794	-768	261	Y	27.0	14	9.3	20
15	A-Post Middle	2836	-670	822	Y	56.1	13	8.1	59
16	Front Seat Track	2082	-560	276	Y	120.9	45	27.8	29
18	Vehicle CG	2188	0	365	X	10.3	16	4.2	49
					Y	1.6	115	29.8	7
					Z	9.2	20	11.5	60
					RES	30.8	7	--	--

Reference Points X - Rear of Vehicle (+ forward)
 Y - Vehicle Centerline (+ to right)
 Z - Ground Plane (+ up)

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

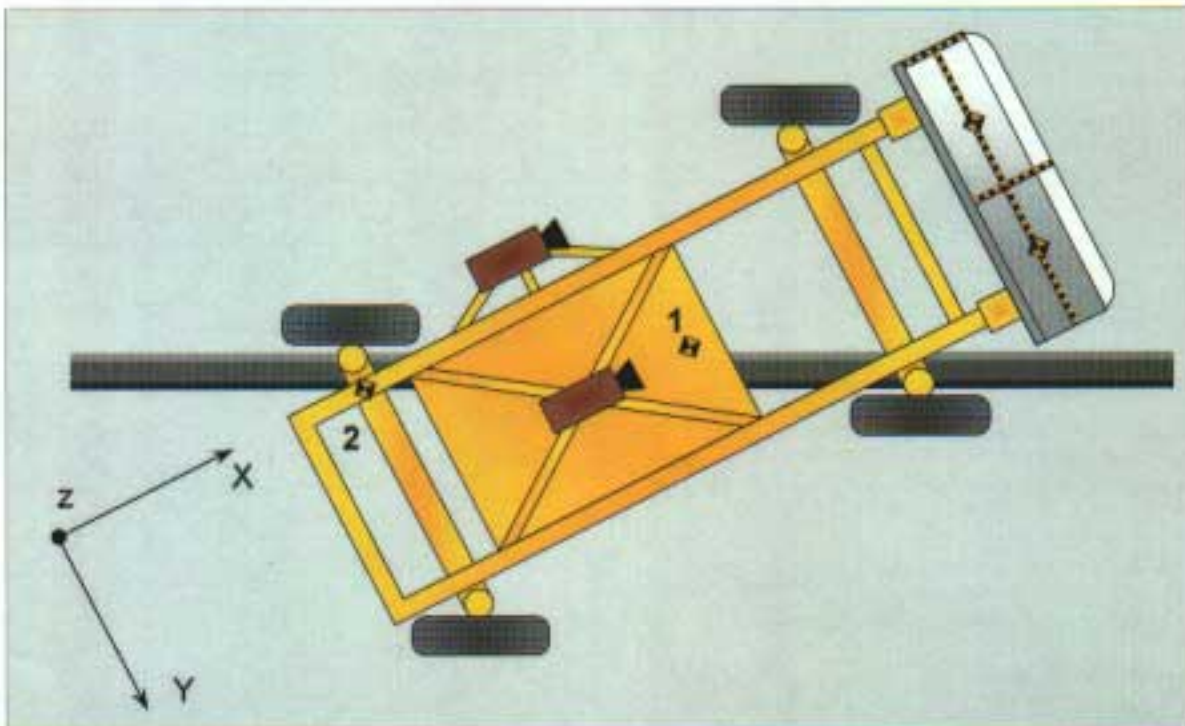
Test Program: FMVSS 214

Test Date: December 19, 2000

MDB ACCELEROMETER PEAK DATA AND LOCATIONS

Loc. No.	Accelerometer Location	Measurement (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG	-1098	0	485	X	1.5	97	18.8	39
					Y	2.8	58	8.8	29
					Z	17.2	32	14.3	68
					RES	24.7	32		
2	MDB Rear	-2591	-625	622	X	1.8	153	21.9	27
					Y	5.7	28	1.4	144

Reference Points
 X - MDB Front Axle (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ up)



DATA SHEET NO. 15

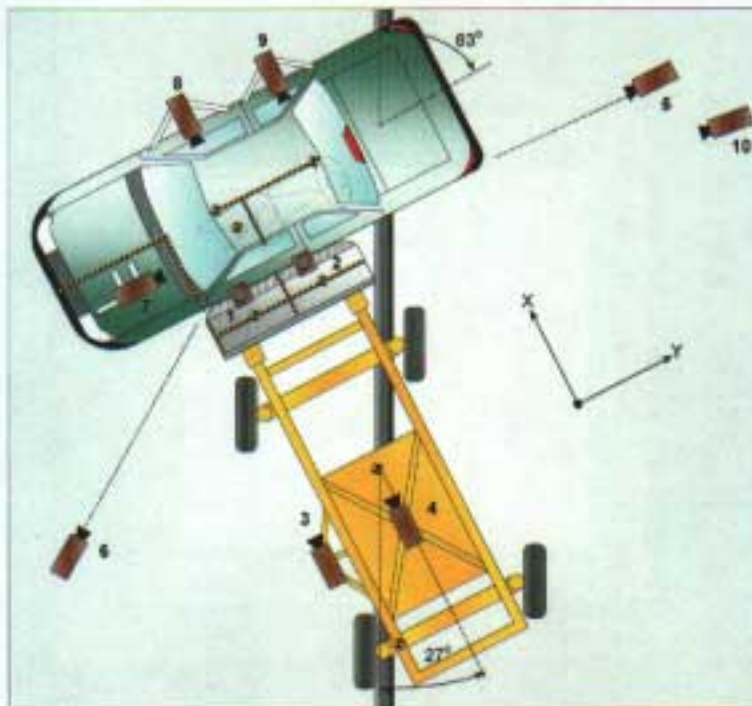
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	230	1160	5000	8	901
2	Overhead Close-up	-540	-330	5000	13	1000
3	MDB Onboard, Impact Point Close-up				35	1031
4	MDB Onboard, Centerline of Impact				13	1005
5	Right Side, Ground Level, Overall	-910	10520	1860	25	*
6	Left Side, Ground Level, Overall	-470	-2000	1720	13	1020
7	Vehicle Onboard Front SID, Front				8	1005
8	Vehicle Onboard Front SID, Side				13	1015
9	Vehicle Onboard Rear SID, Side				13	1010
10	Real Time Coverage				10	24

Reference Points X - MDB Front Axle (+ forward)
Y - MDB Centerline (+ to right)
Z - Ground Plane (+ up)

* No timing marks

DATA SHEET NO. 16

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2001/Toyota/Celica/2 door

NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000

Test Time: 2:24 p.m.

Temperature at Time of Impact: 21 °C

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0.84 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 4.72 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Details: Fuel line fitting separation at left rear sill area.

Note: It was found that during vehicle preparation, this fitting may not have been properly reconnected after draining the fuel system.

DATA SHEET NO. 17

FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2001/Toyota/Celica/2 door

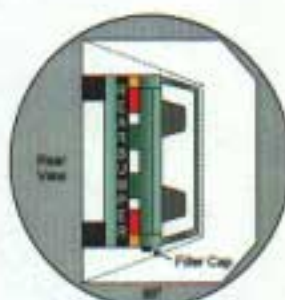
NHTSA No.: C15102

Test Program: FMVSS 214

Test Date: December 19, 2000



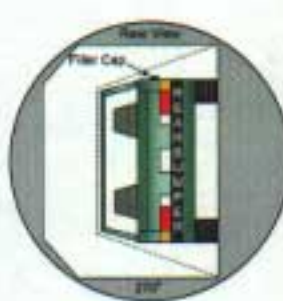
0° TO 90°



90° TO 180°



180° TO 270°



270° TO 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.

2. The position hold time at each position is 300 seconds (minimum)

3. Details of Stoddard Solvent spillage locations: Leakage occurred during the 90 degree rotation, this position was held for 8 minutes and solvent leakage measured. The factory fitting was then reconnected and the rotation continued. No leakage was noted after fitting was reconnected. It was found that in preparation, the fitting may not have been properly reconnected after draining the fuel system. The leakage noted was caused by the separation of this fitting.

Rollover Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	173	480	30.85
90° TO 180°	150	300	0
180° TO 270°	136	300	0
270° TO 360°	155	300	0

APPENDIX A
PHOTOGRAPHS

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Photo No. A-54 - Left Rear Attitude Point	A-54
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Photo No. A-1 - Pre-Test Front View of Test Vehicle

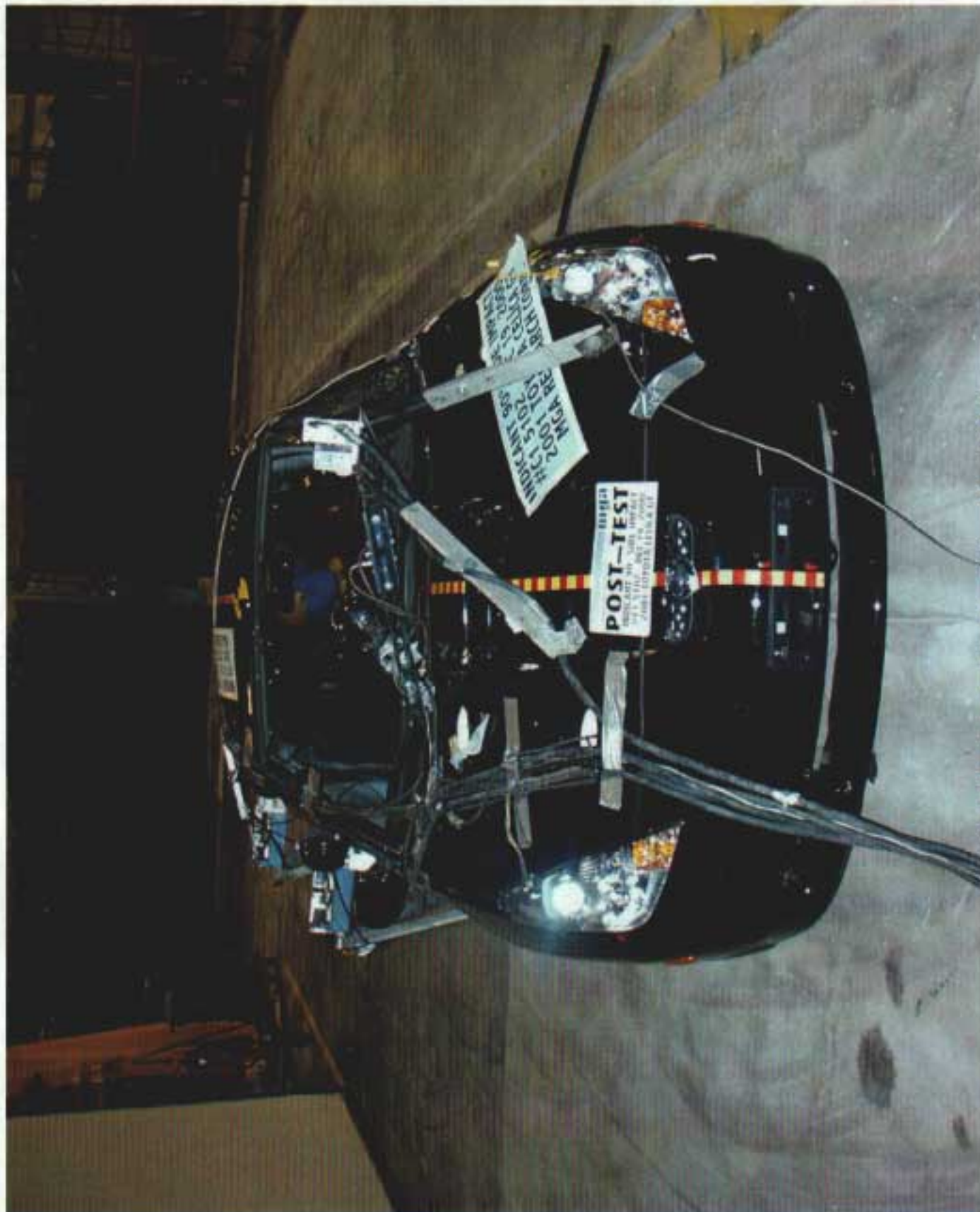




Photo No. A-3 - Pre-Test Rear View of Test Vehicle

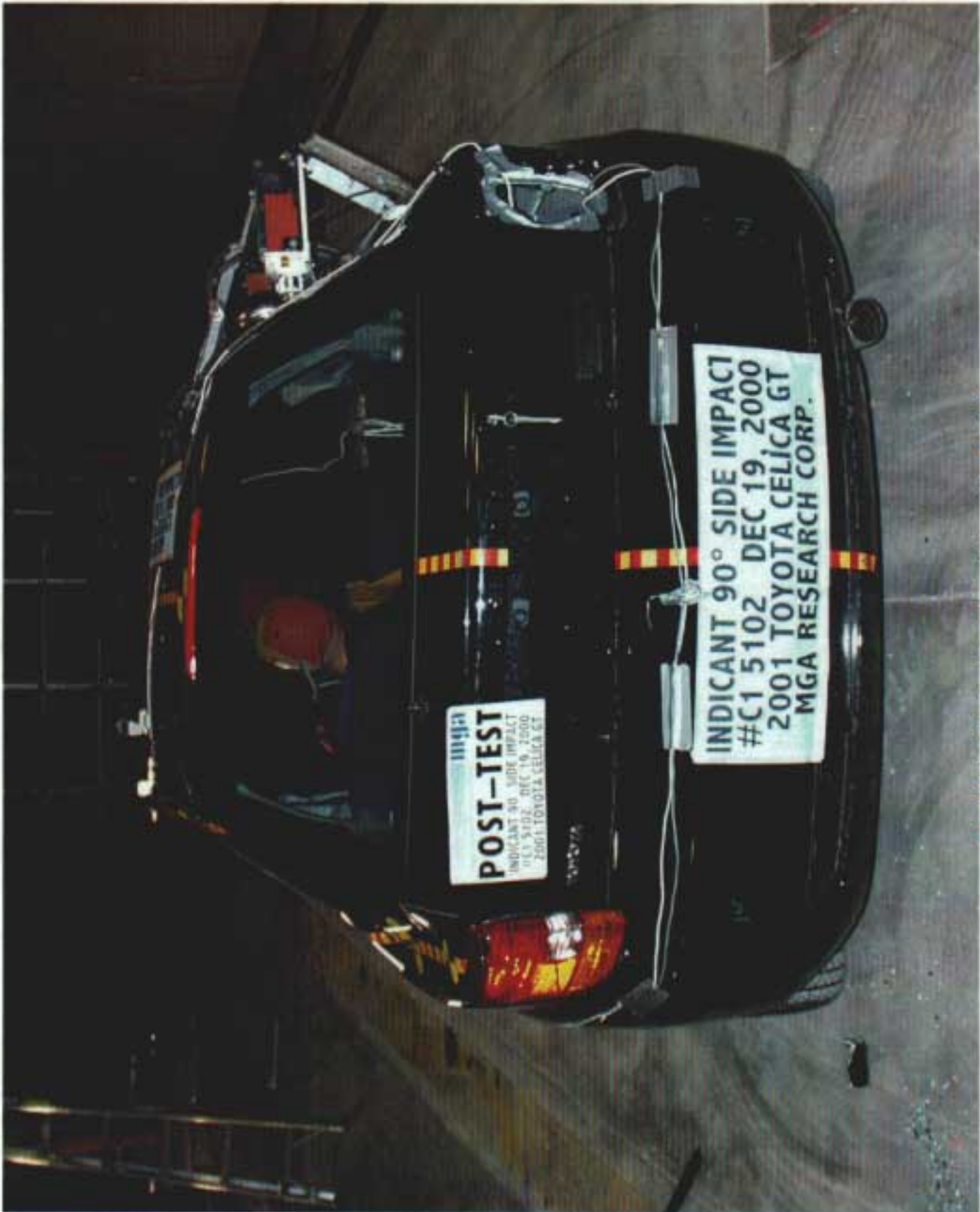


Photo No. A-4 - Post-Test Rear View of Test Vehicle

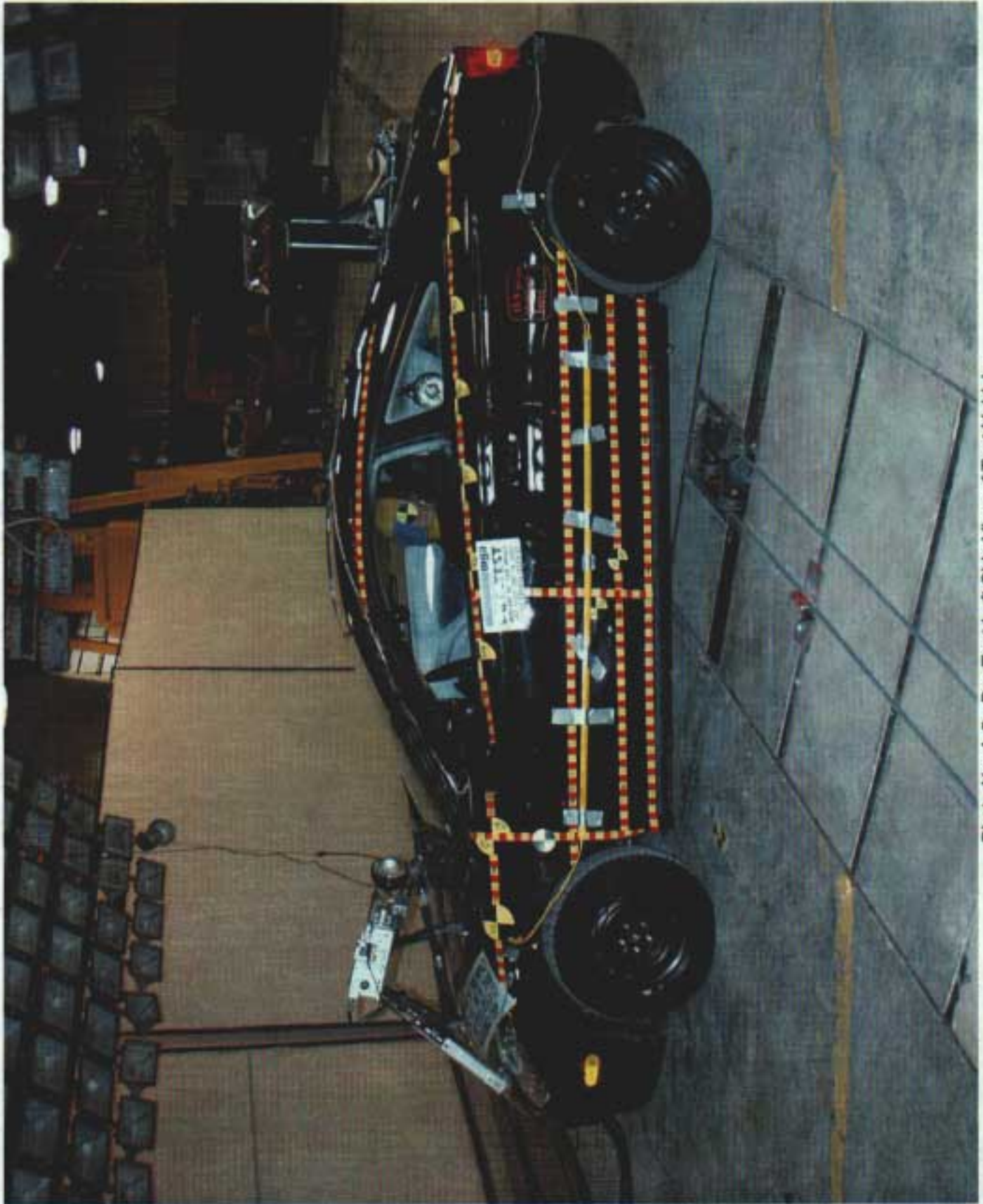


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle



Photo No. A-6 - Post-Test Left Side View of Test Vehicle

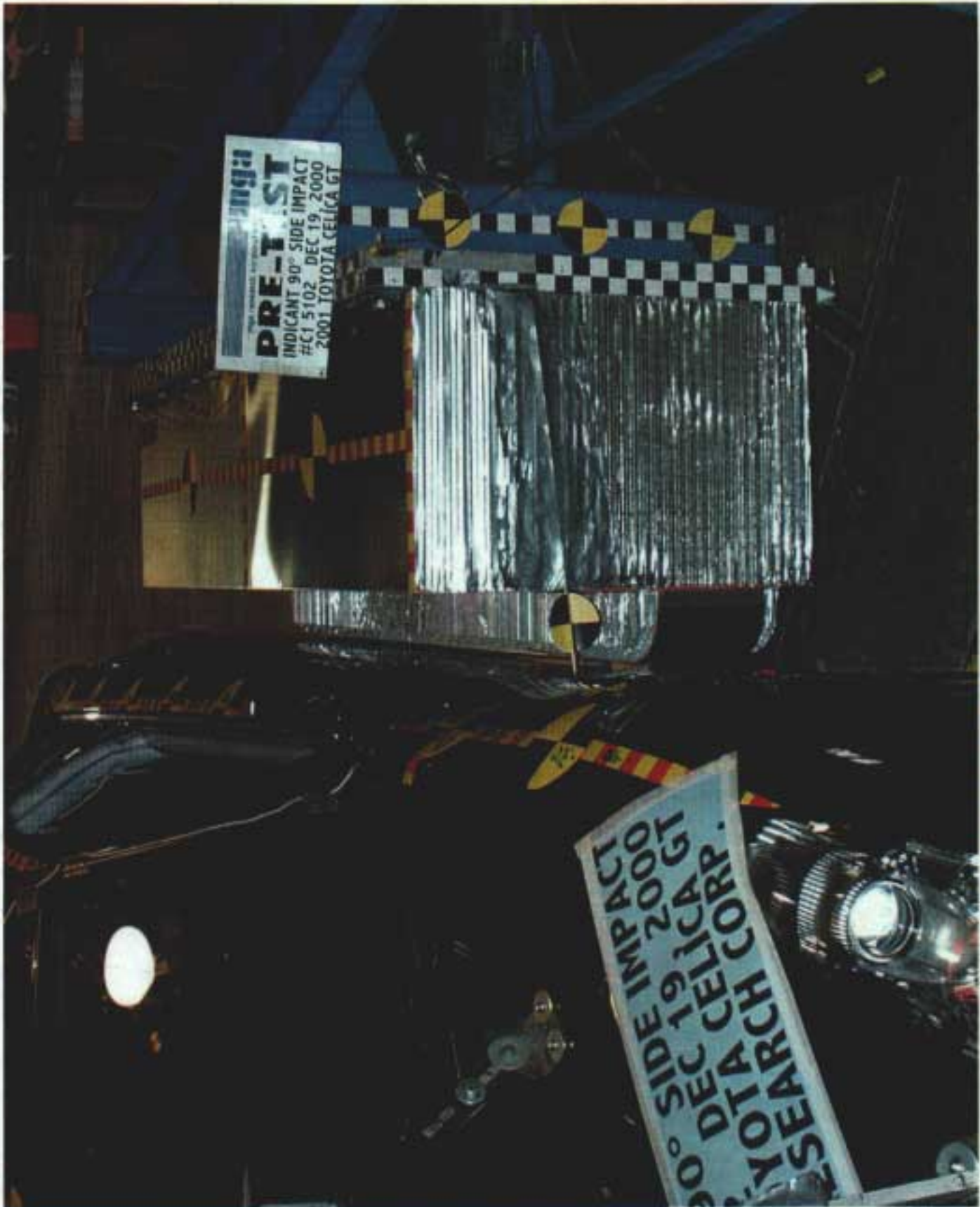


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)



Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

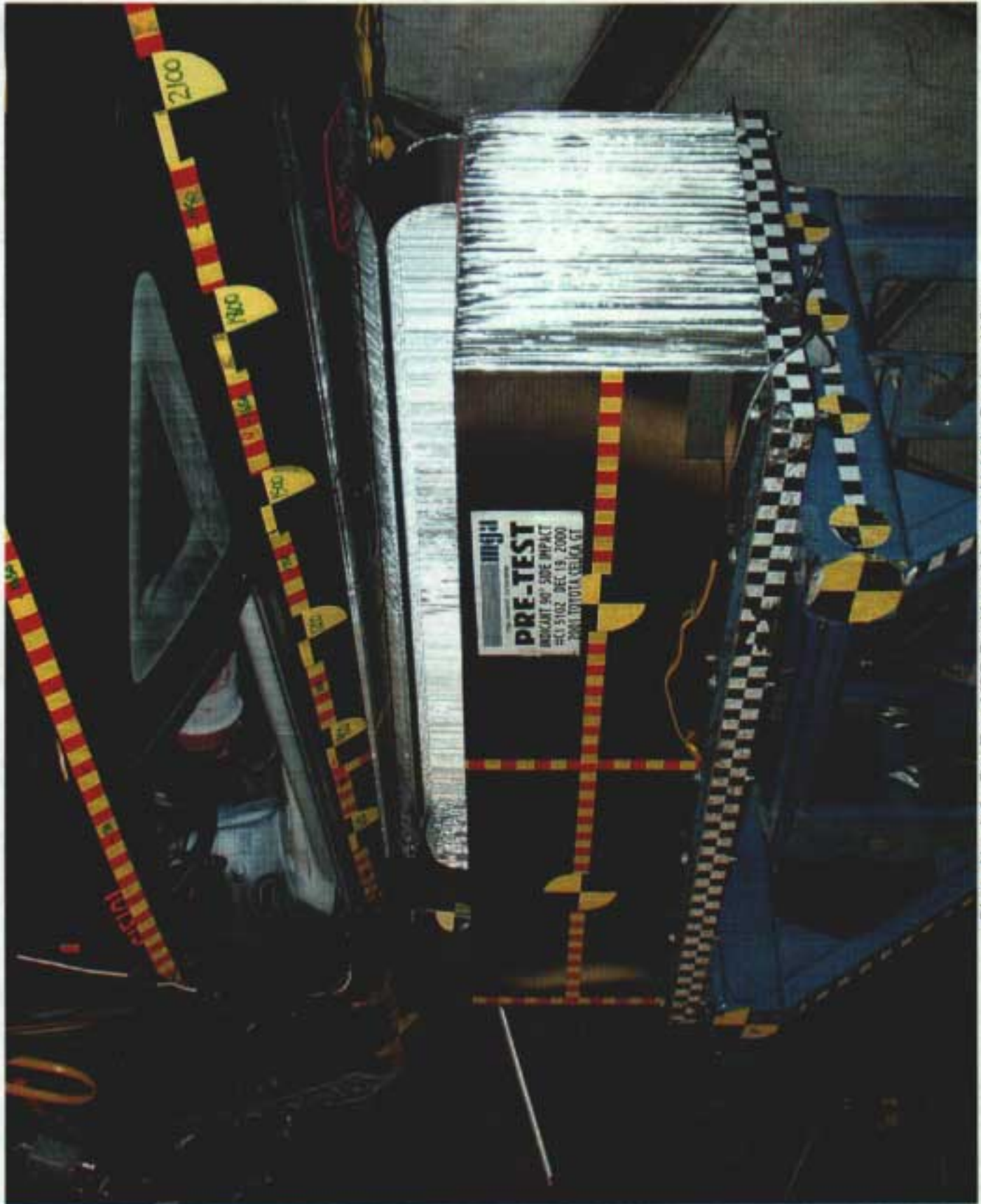


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

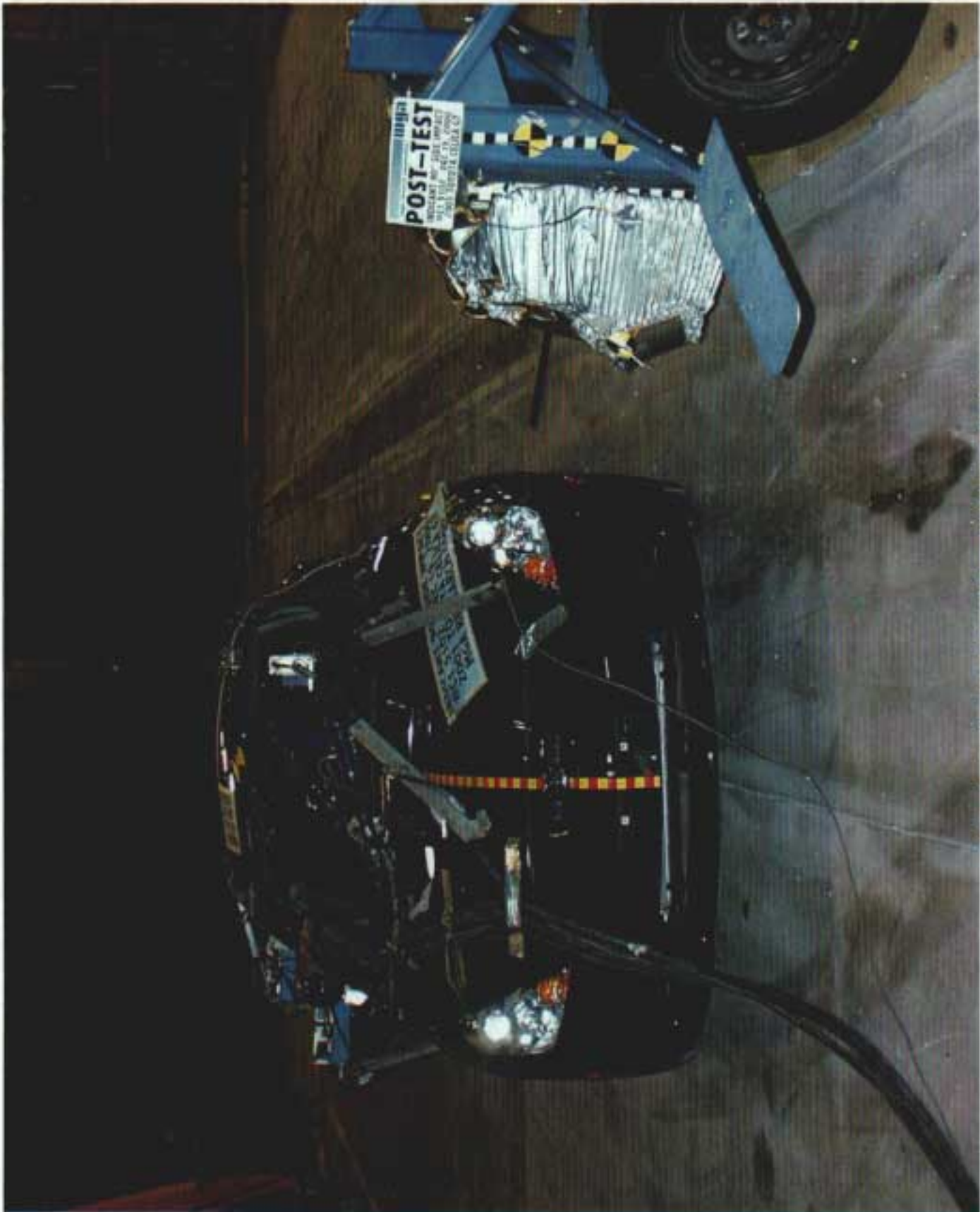


Photo No. A-10 - Post-Test MDB and Vehicle (left side)



Photo No. A-11 - Post-Test MDB and Vehicle (right side)



Photo No. A-12 - Post-Test MDB and Vehicle Overhead View

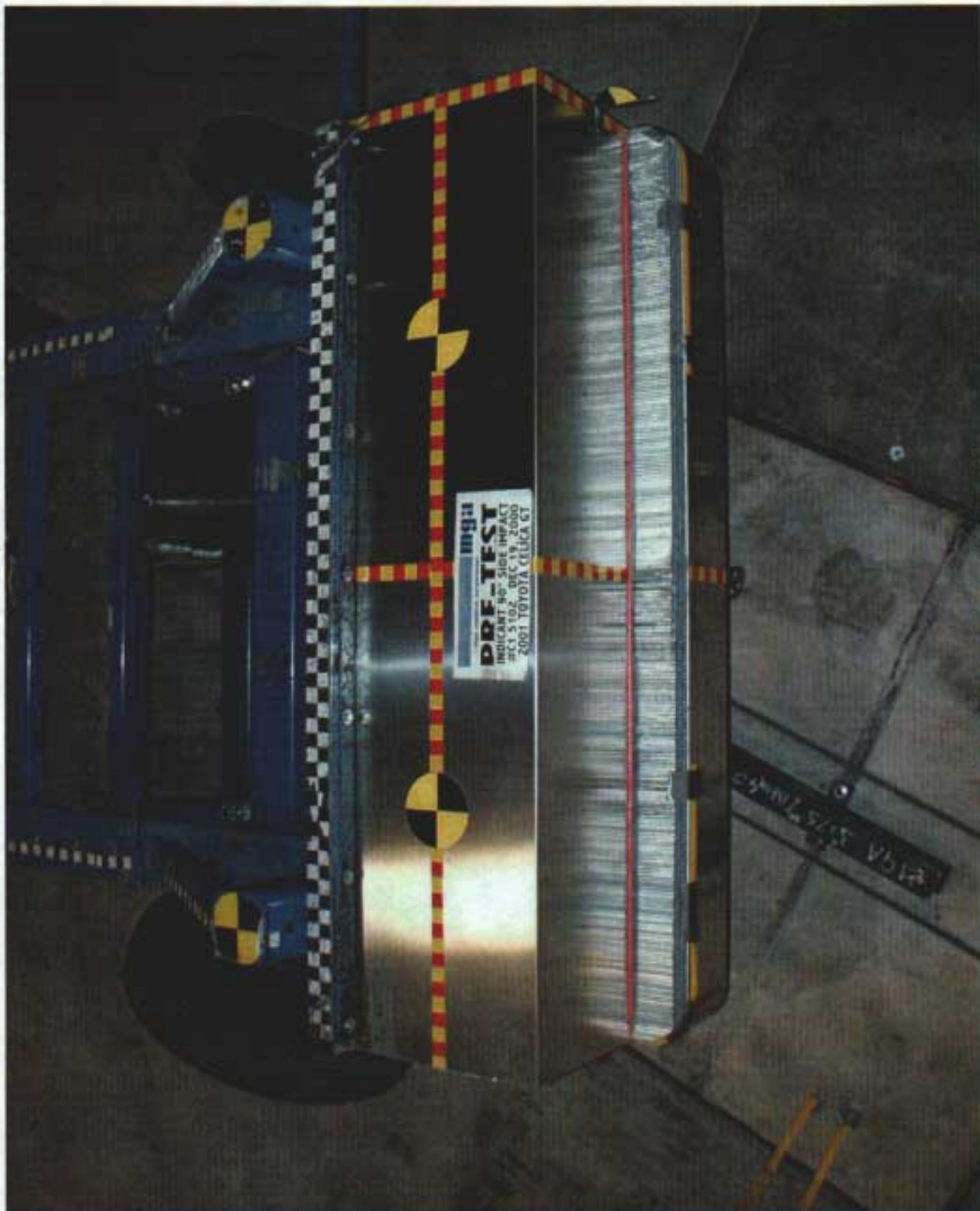


Photo No. A-13 - Pre-Test MDB Top View



Photo No. A-14 - Post-Test MDB Top View

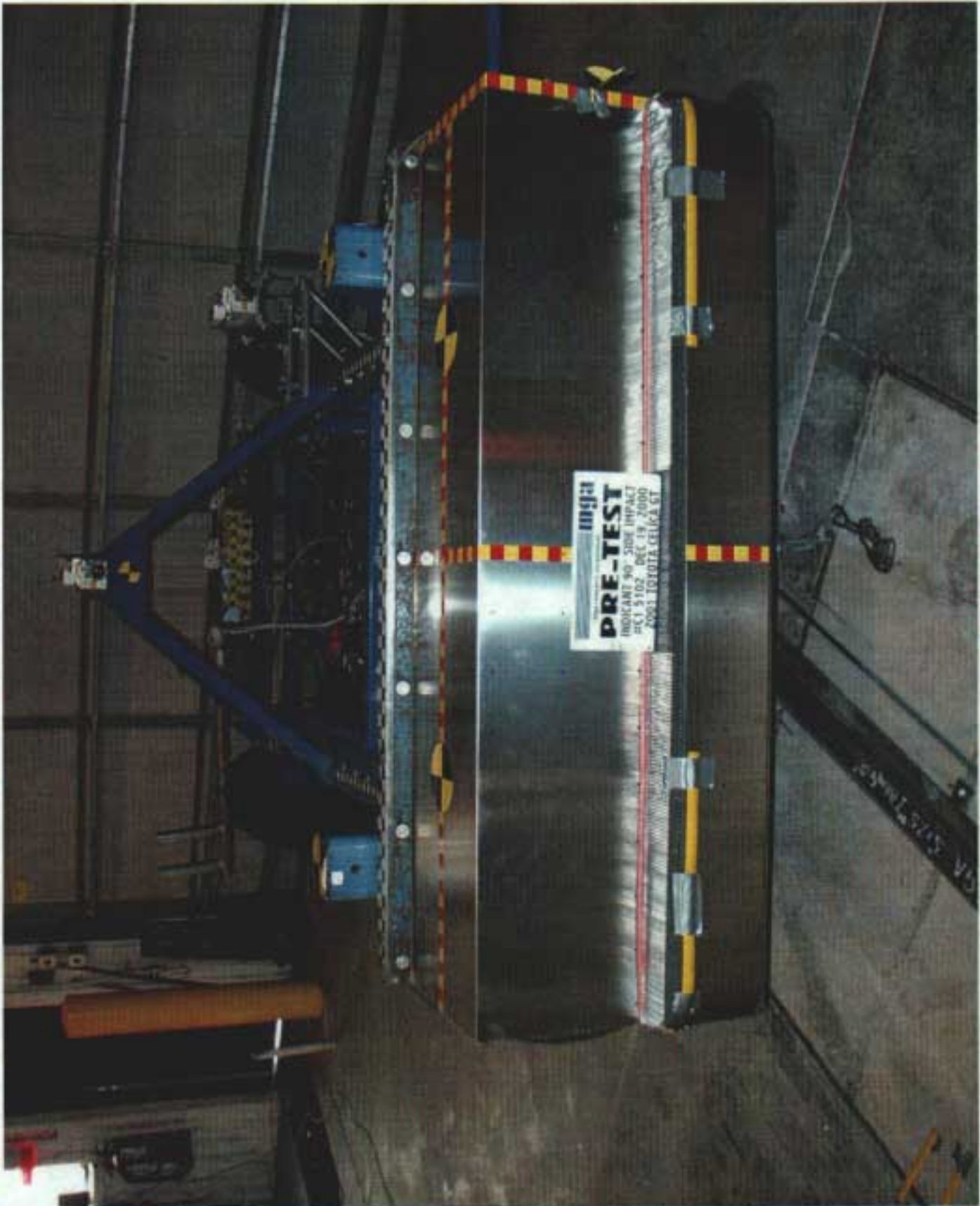


Photo No. A-15 - Pre-Test MDB Front View

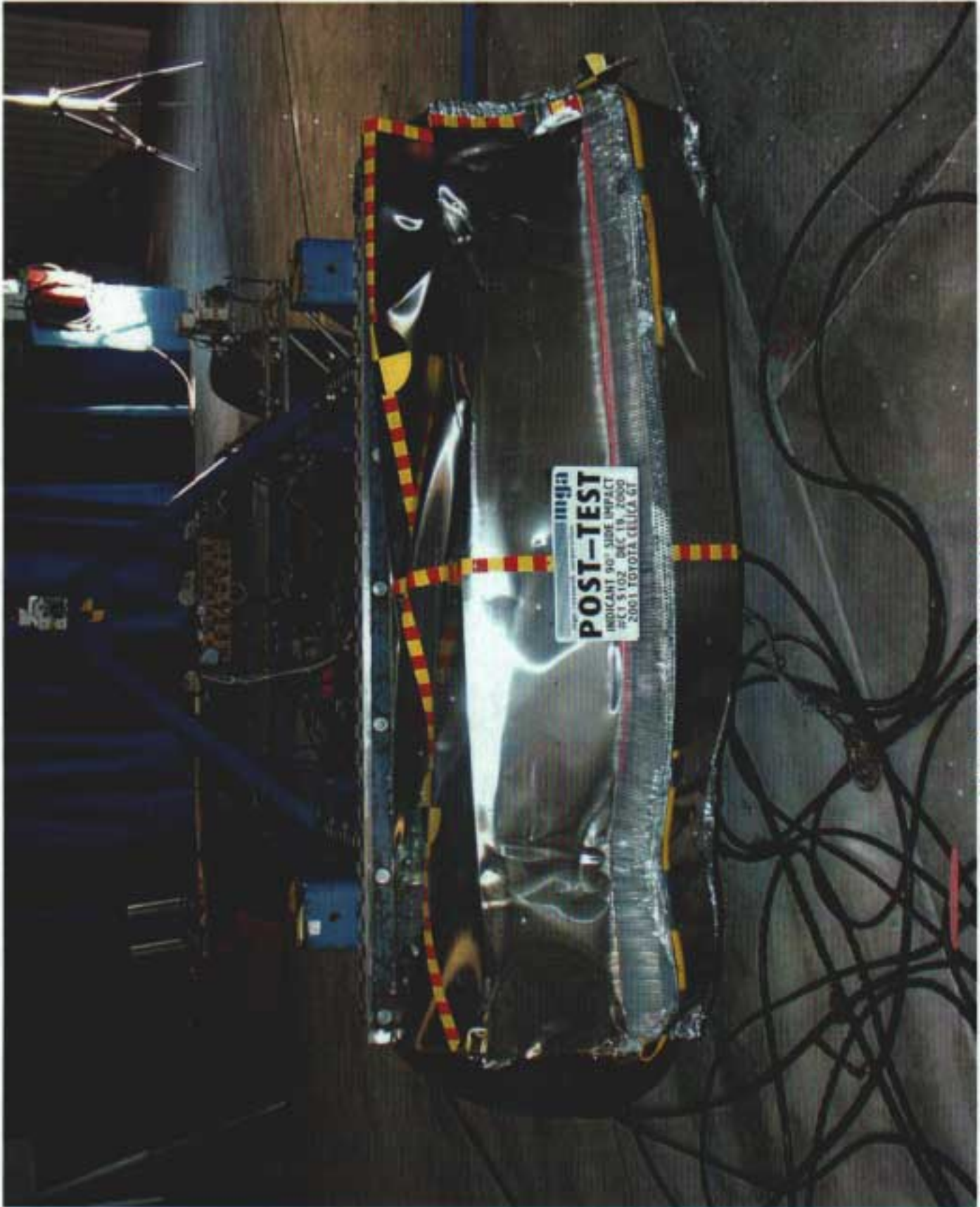


Photo No. A-16 - Post-Test MDB Front View



Photo No. A-17 - Pre-Test MDB Right Side View



Photo No. A-18 - Post-Test MDB Right Side View

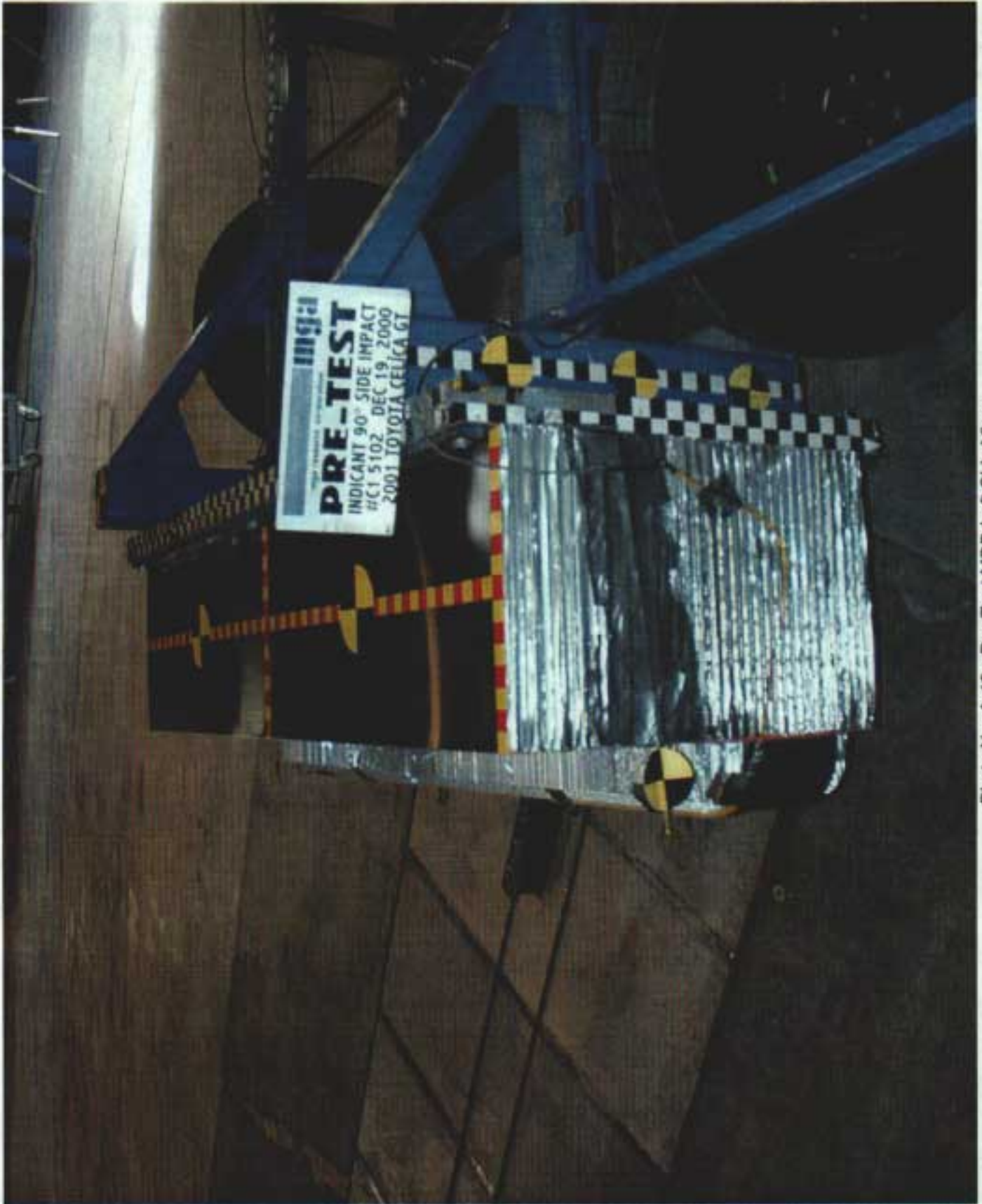


Photo No. A-19 - Pre-Test MDB Left Side View



Photo No. A-20 - Post-Test MDB Left Side View

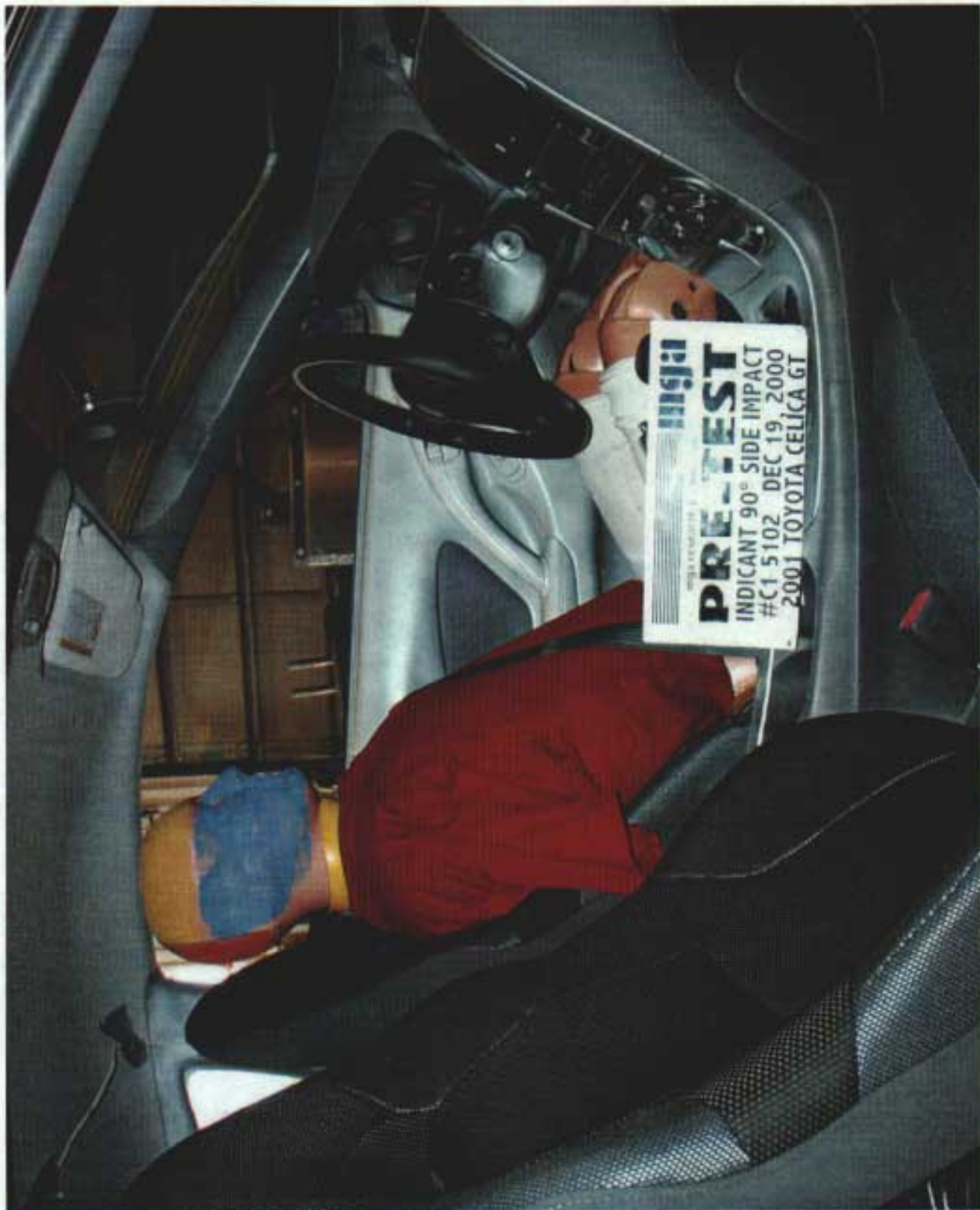


Photo No. A-21 - Pre-Test Driver Dummy Right Side View

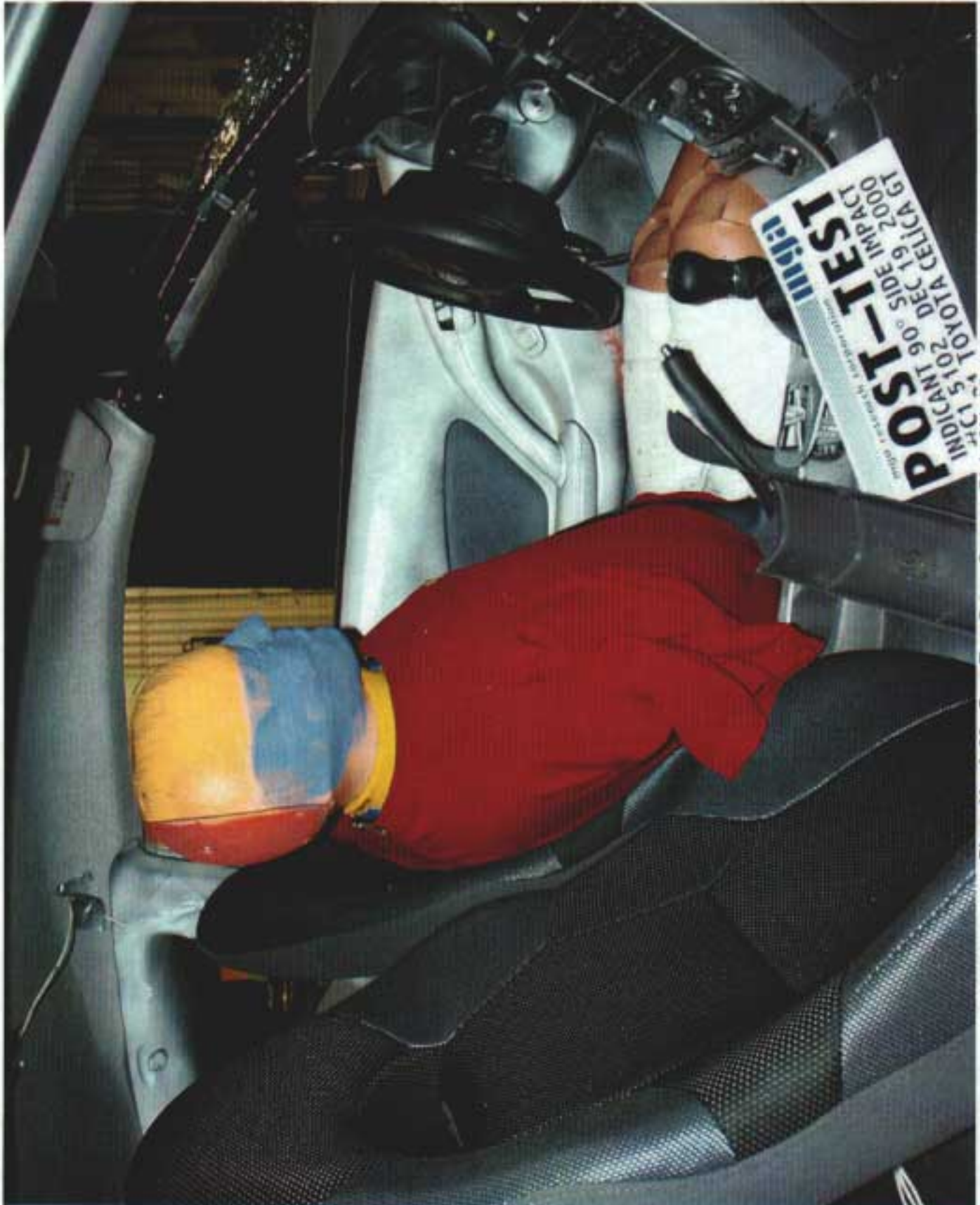


Photo No. A-22 - Post-Test Driver Dummy Right Side View



Photo No. A-23 - Pre-Test Driver Dummy Left Side View



Photo No. A-24 - Post-Test Driver Dummy Left Side View



Photo No. A-25 - Pre-Test Driver Dummy Left Side View (Door Open)



Photo No. A-26 - Pre-Test Driver Dummy Shoulder and Door Top View



Photo No. A-27 - Post-Test Driver Dummy Shoulder and Door Top View

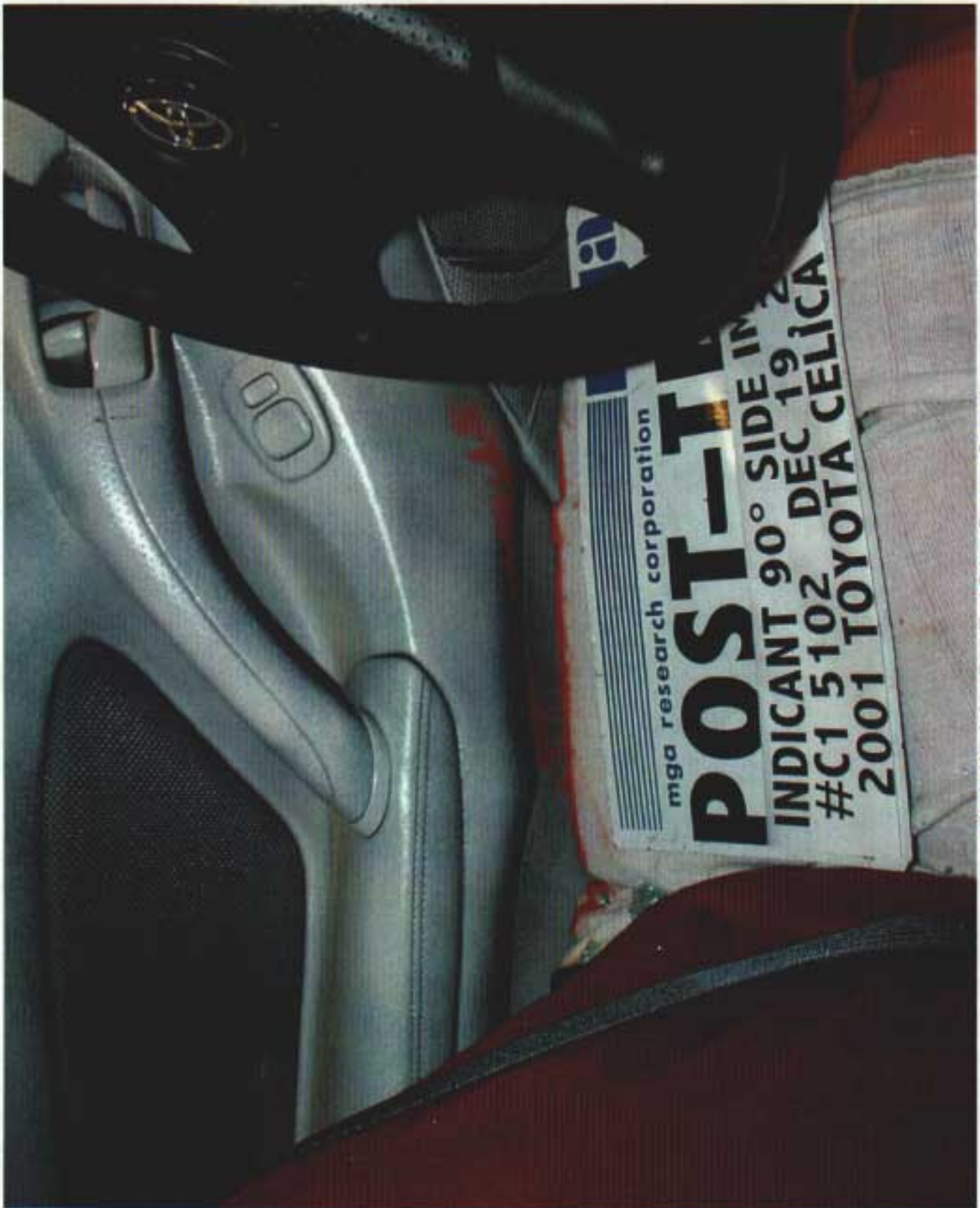


Photo No. A-28 - Post-Test Driver Dummy Contact



Photo No. A-29 - Post-Test Driver Dummy Contact



Photo No. A-30 - Post-Test Driver Dummy Head Contact



Photo No. A-31 - Pre-Test Passenger Dummy Right Side View



Photo No. A-32 - Post-Test Passenger Dummy Right Side View

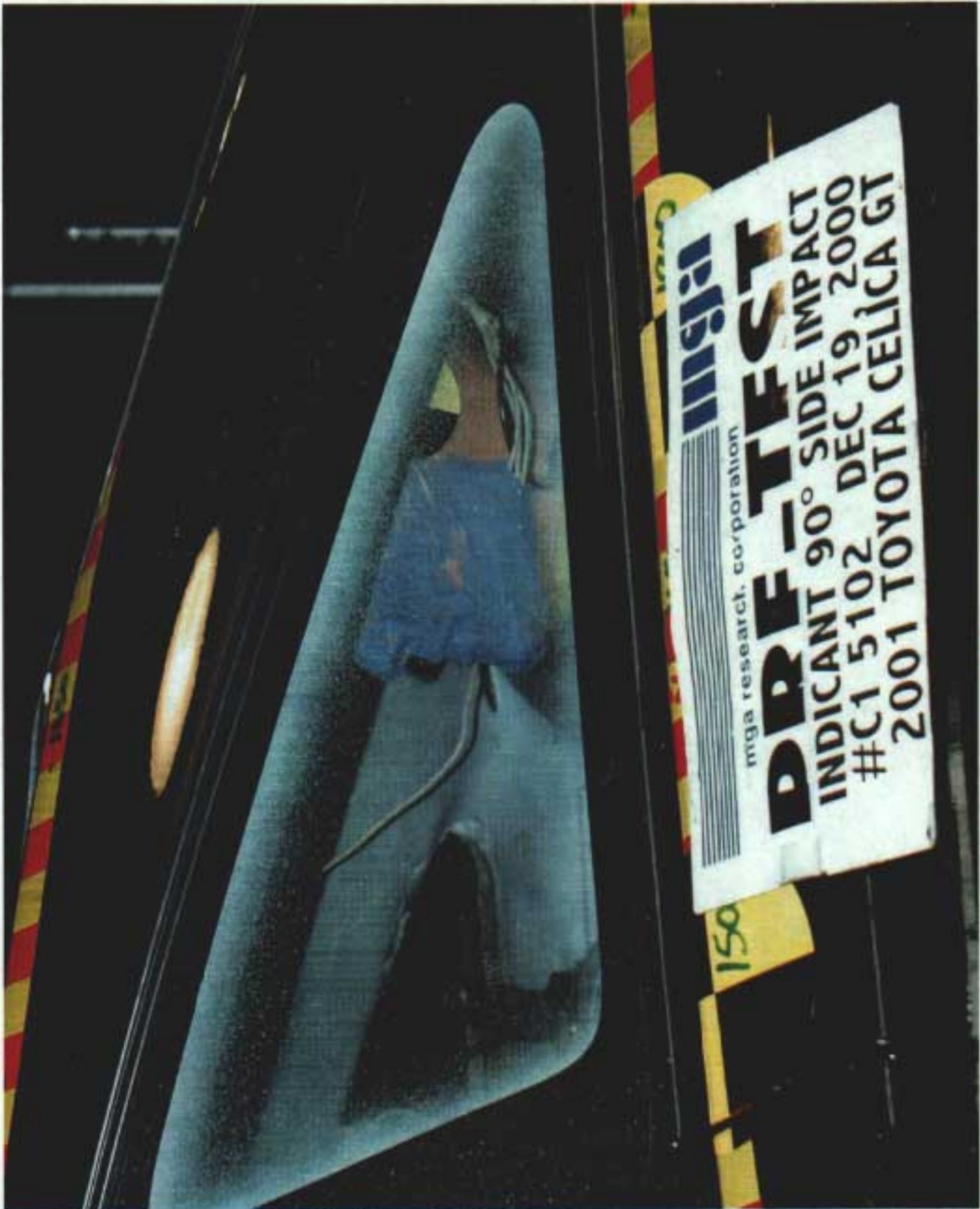


Photo No. A-33 - Pre-Test Passenger Dummy Left Side View



Photo No. A-34 - Post-Test Passenger Dummy Left Side View



Photo No. A-35 - Pre-Test Passenger Dummy Shoulder Top View



Photo No. A-36 - Post-Test Passenger Dummy Shoulder Top View



Photo No. A-37 - Post-Test Passenger Dummy Contact



Photo No. A-38 - Post-Test Passenger Dummy Contact

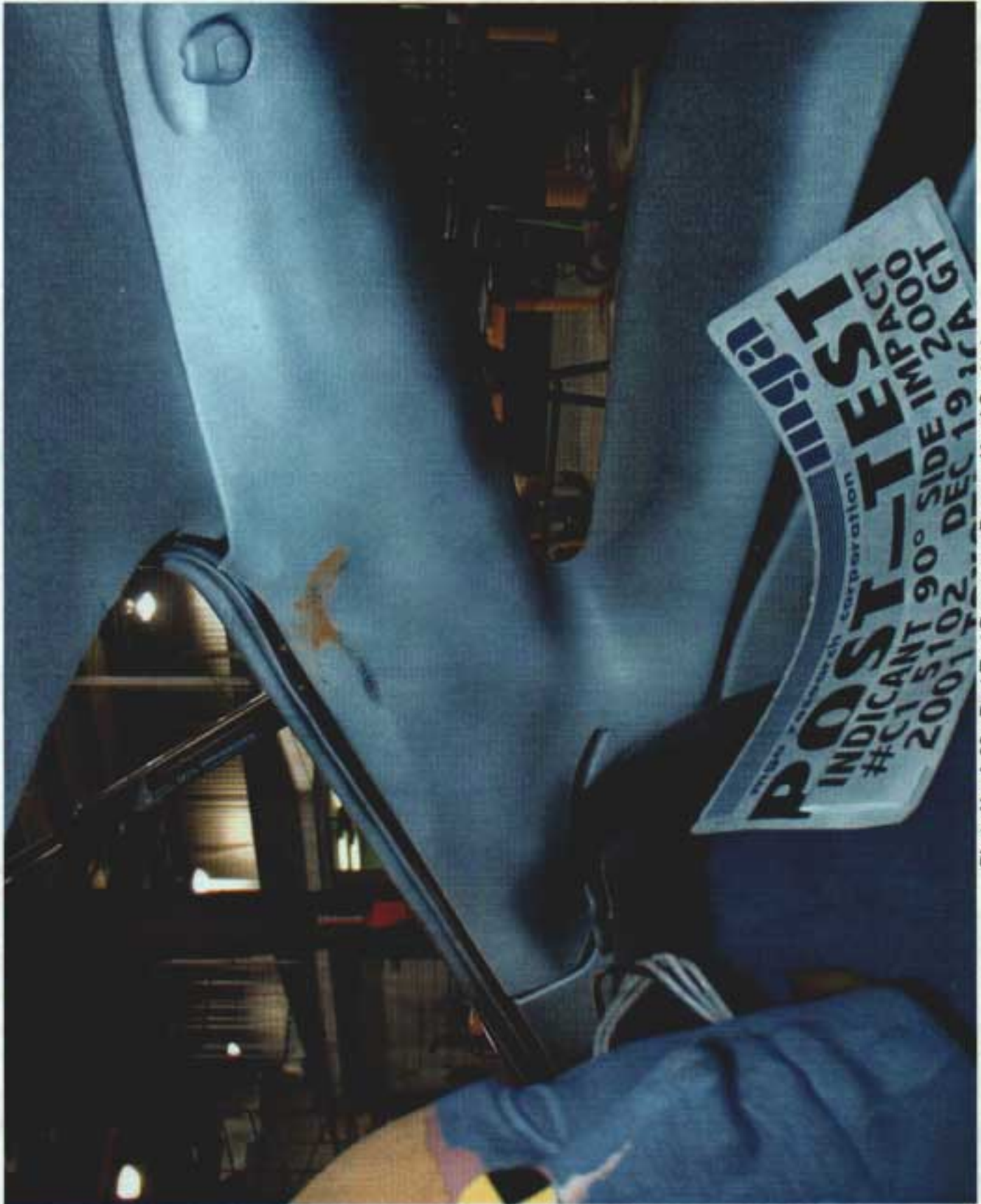


Photo No. A-39 - Post-Test Passenger Dummy Head Contact



A-40

Photo No. A-40 - Post-Test Passenger Dummy Head Contact



Photo No. A-41 - Pre-Test Left Front Impact Point on Vehicle



Photo No. A-42 - Post-Test Left Front Impact Point on Vehicle



Photo No. A-43 - Impact

REC'D BY: TOYOTA MOTOR CORPORATION 10/00
GVAW 3325LB GAWR FR 2115LB RR 2030LB
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY BUMPER AND
THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE
JT0DR32T510078324 PASS CAR



C4R 202/FA22 MODEL: ZZT230L-BLMSHA
A/TM:-01A/C56 MADE IN JAPAN
NO. 171

BA4789981

Photo No. A-44 - Vehicle Certification Label

TIRE - LOADING INFORMATION

VEHICLE CAPACITY WEIGHT 329^{kg} (725^{lbs})

OCCUPANTS FRT. 2 RR. 2 TOTAL 4

TIRE SIZE

195/60R15 88H P195/60R15 87H

COLD TIRE PRESSURE kPa^(psi) FRT. 210(29) RR. 210(29)

SPARE TIRE

TIRE SIZE T125/70D16 96M

COLD TIRE PRESSURE kPa^(psi) 420(60)

SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION

2B640

3A



Photo No. A-46 - Rollover 90°

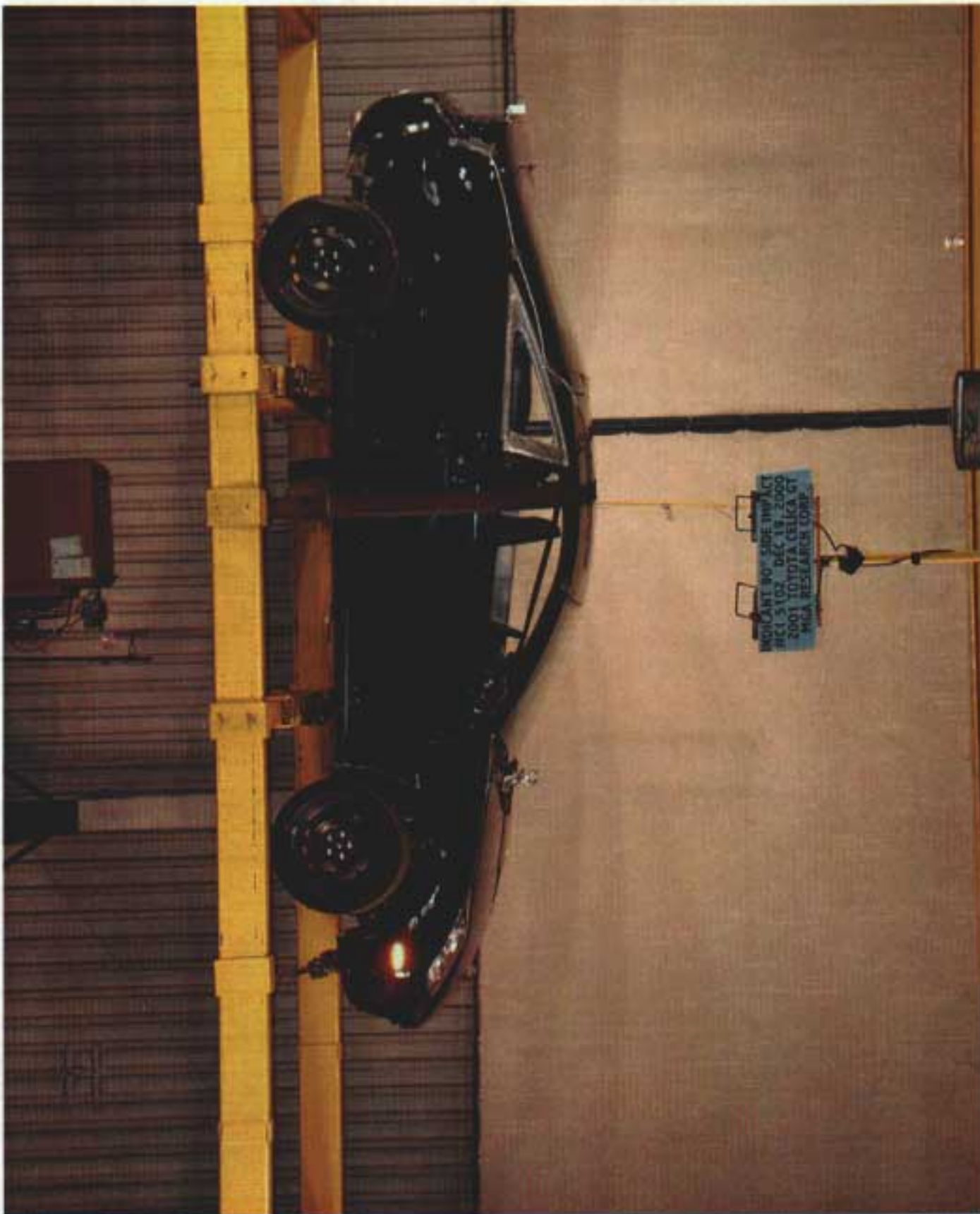


Photo No. A-47 - Rollover 180°

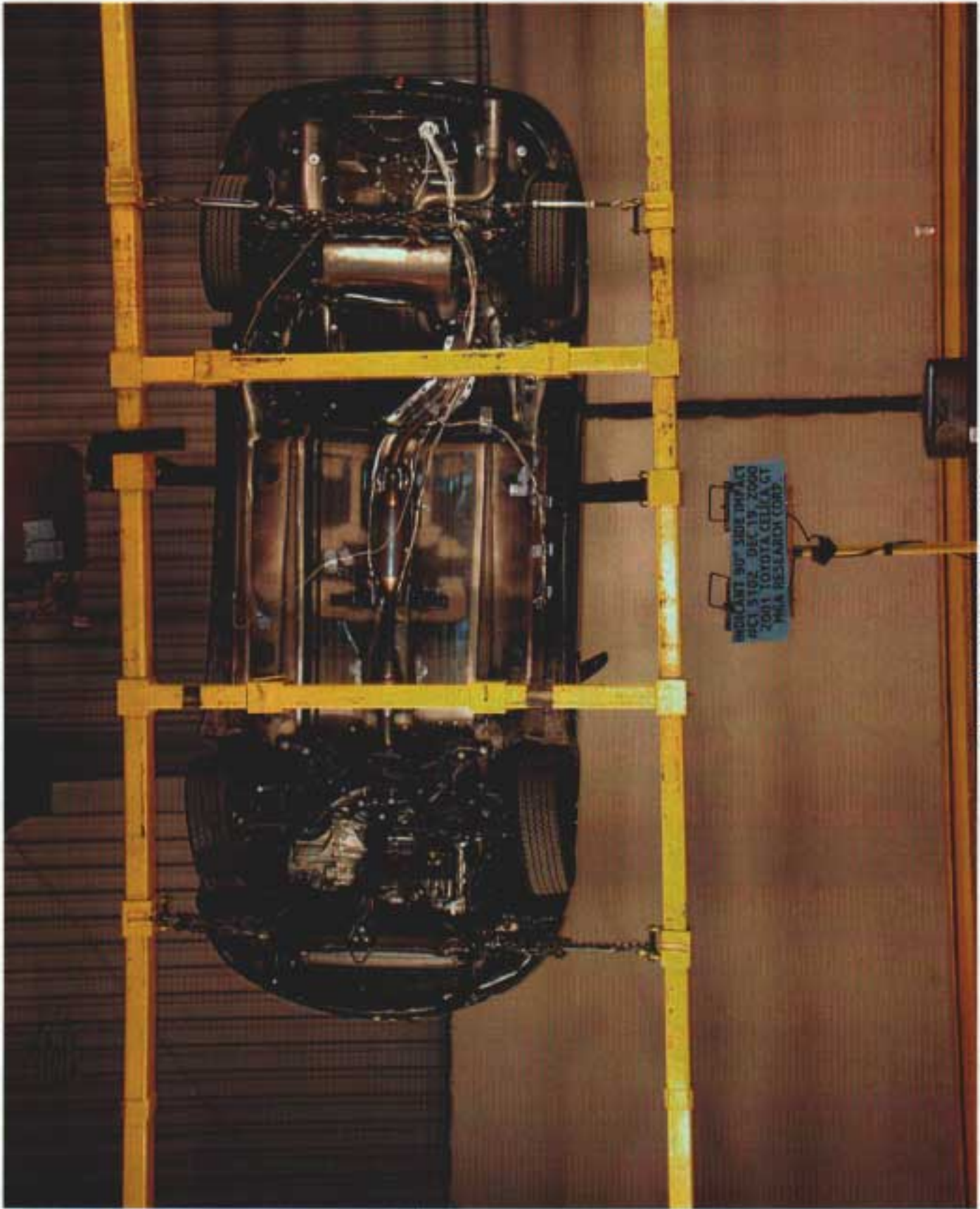
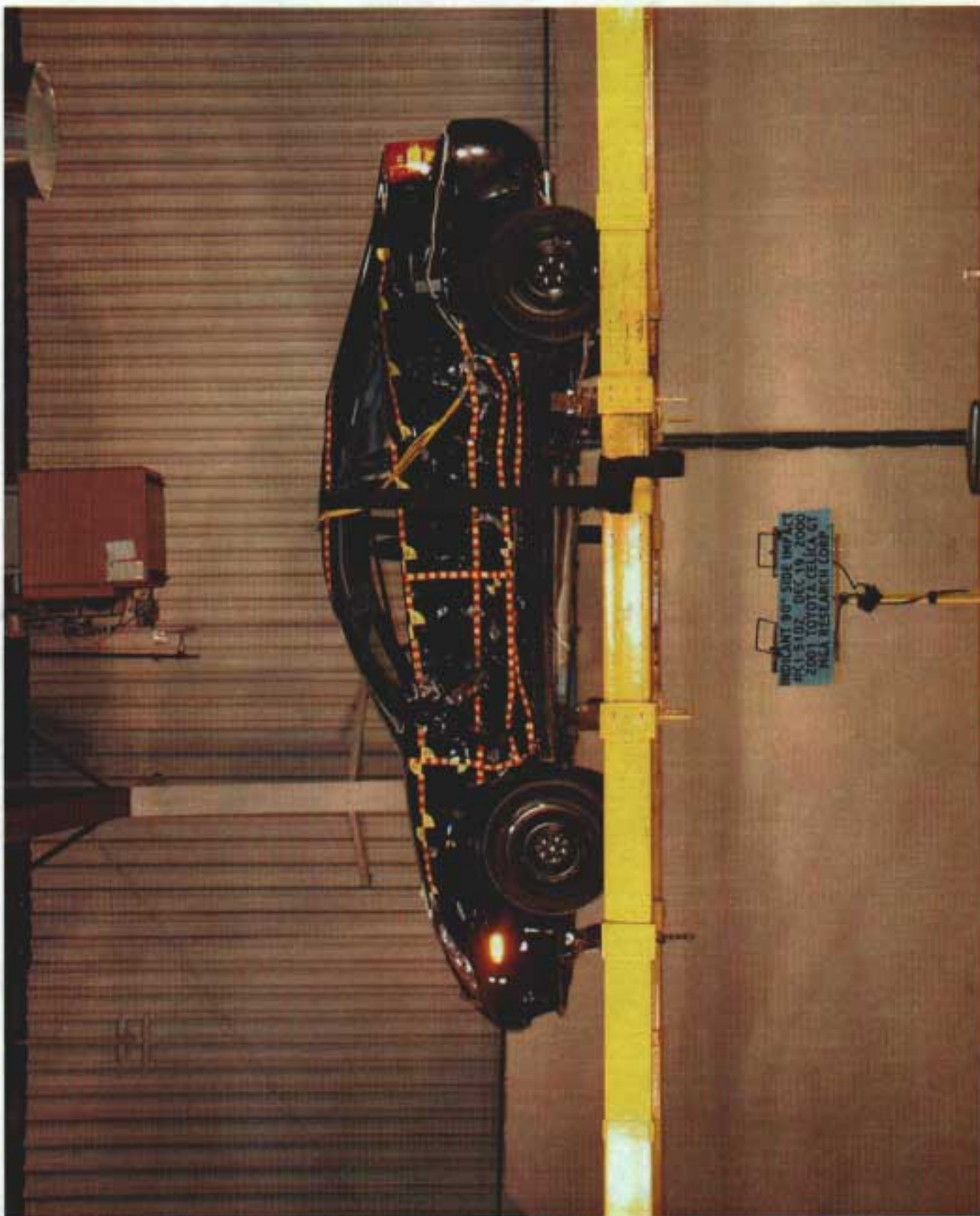


Photo No. A-48 - Rollover 270°



INDICANT 90° SIDE IMPACT
#C1 5102 DEC 19 2000
2001 TOYOTA CELICA GT
NSA RESEARCH CORP

Photo No. A-49 - Rollover 360°

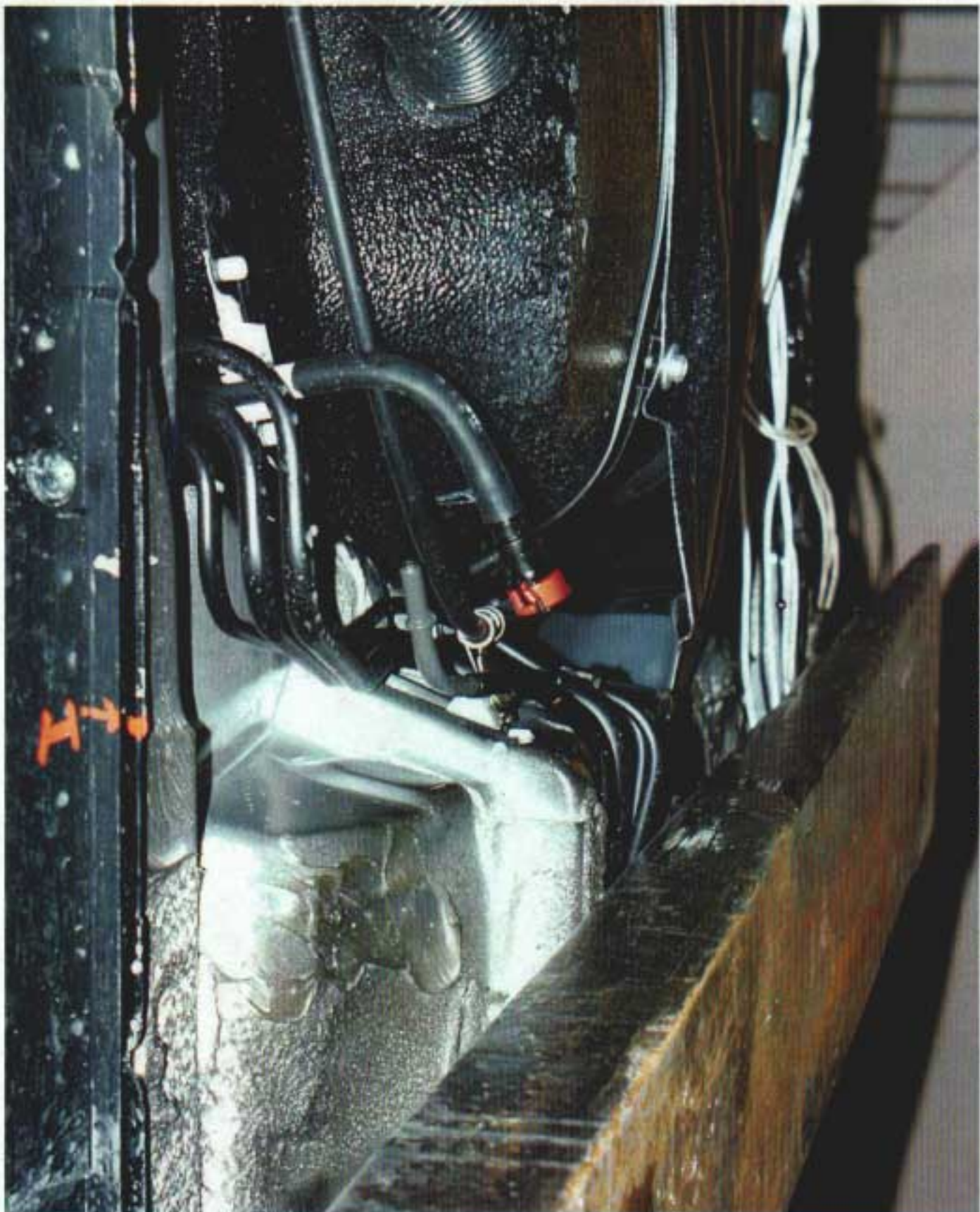


Photo No. A-50 - Post-Test Fuel Leakage Location

A-50



Photo No. A-51 - Post-Test Fuel Leakage Location



Photo No. A-52 - Left Front Attitude Point



Photo No. A-53 - Right Front Attitude Point



Photo No. A-54 - Left Rear Attitude Point



Photo No. A-55 - Right Rear Attitude Point

APPENDIX B

SID, VEHICLE, AND MDB RESPONSE DATA

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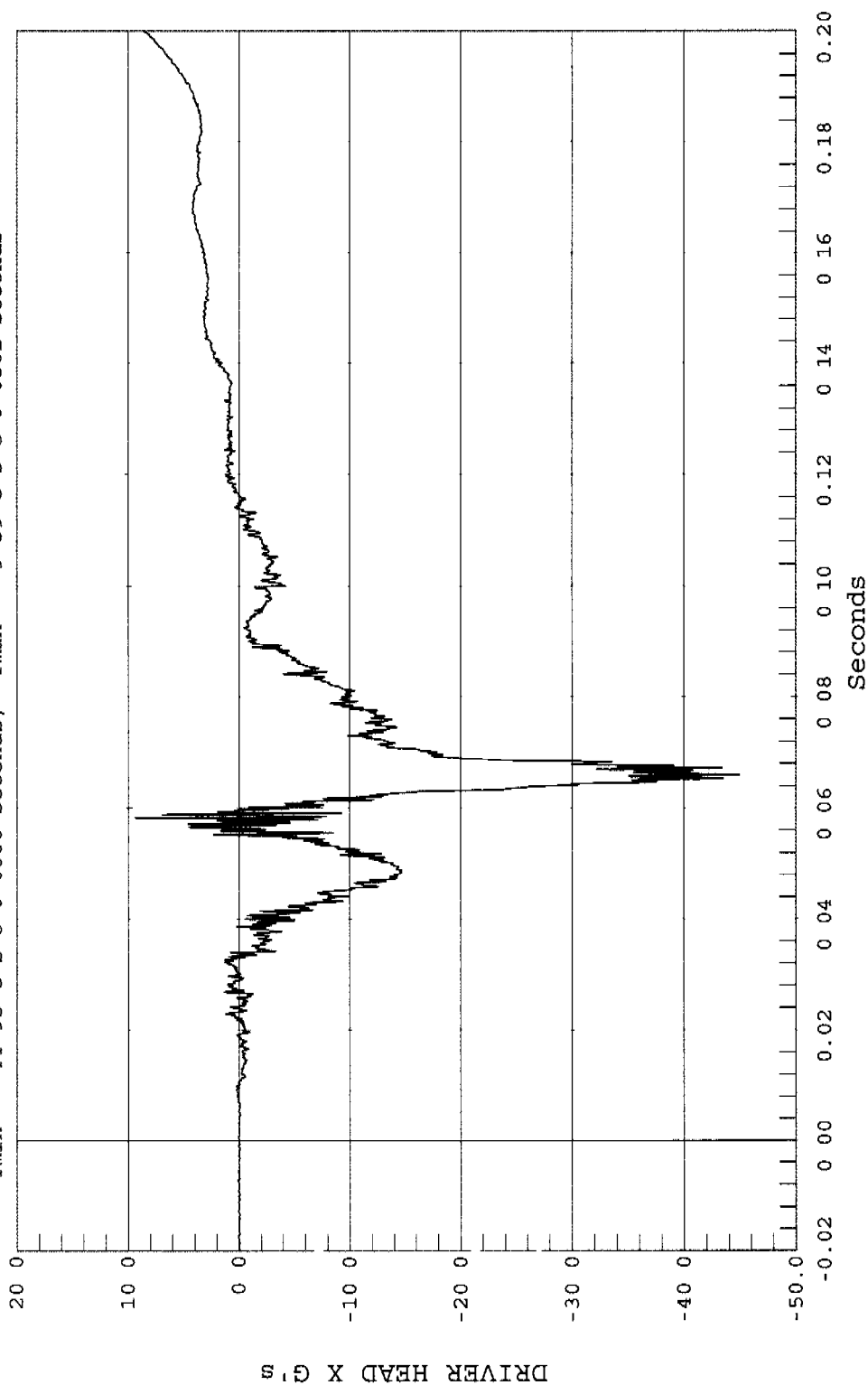
DRIVER HEAD X ACCELERATION

Test Date: 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Filter Class 1000

Test Desc: INDICANT 90 DEG. SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info:

1 DRIVER HEAD X, b00103AT A01

Ymin = -44.95 G's @ 0.0660 Seconds, Ymax = 9.39 G's @ 0.0581 Seconds

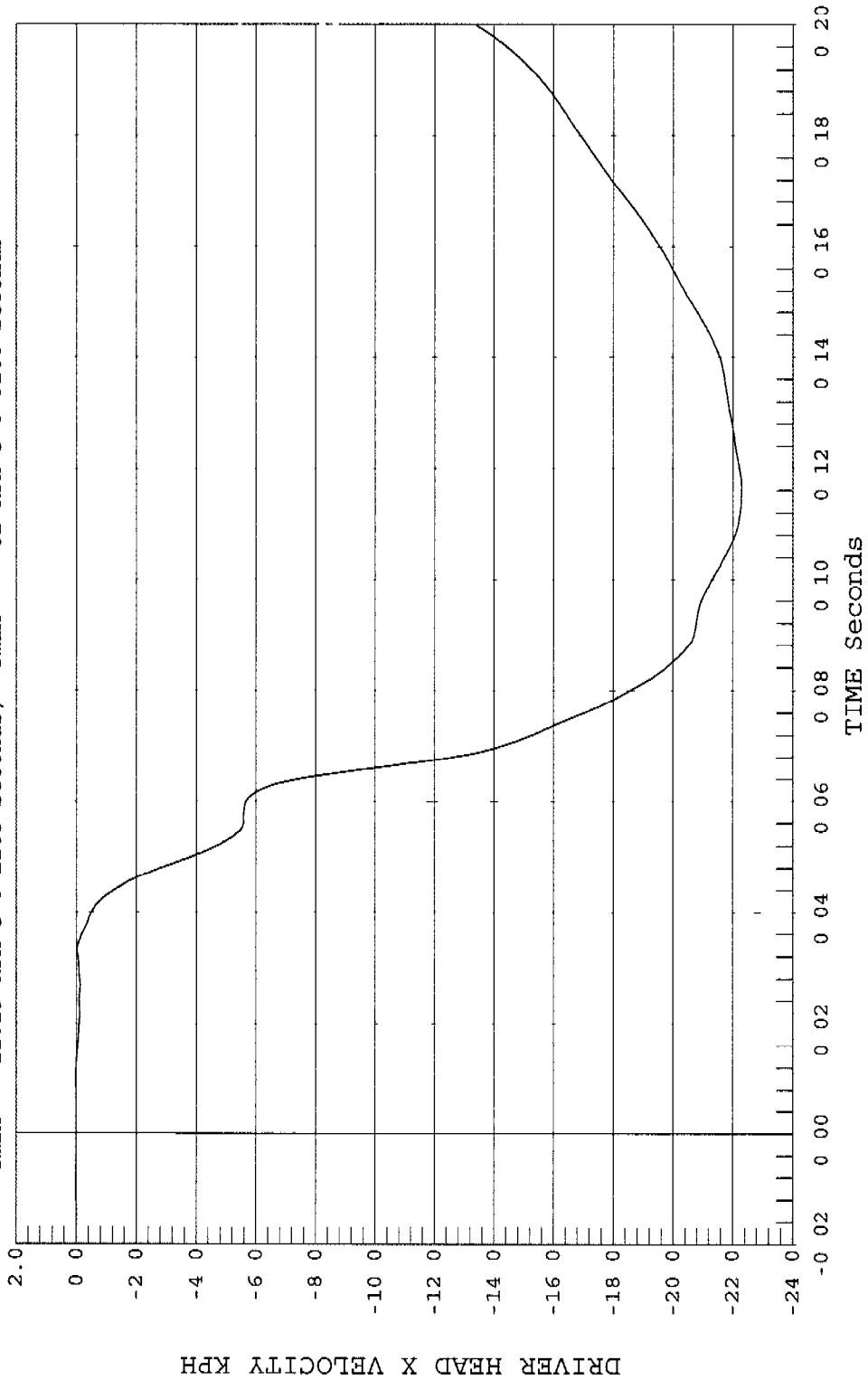


DRIVER HEAD X VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date: 12-19-00
 Speed 38.5 MPH, 62 0 KPH
 Filter Class: 180

1 DRIVER HEAD X VELOCITY, b00103AI.V01

Ymin = -22.29 KPH @ 0 1163 Seconds, Ymax = 02 KPH @ 0 0106 Seconds



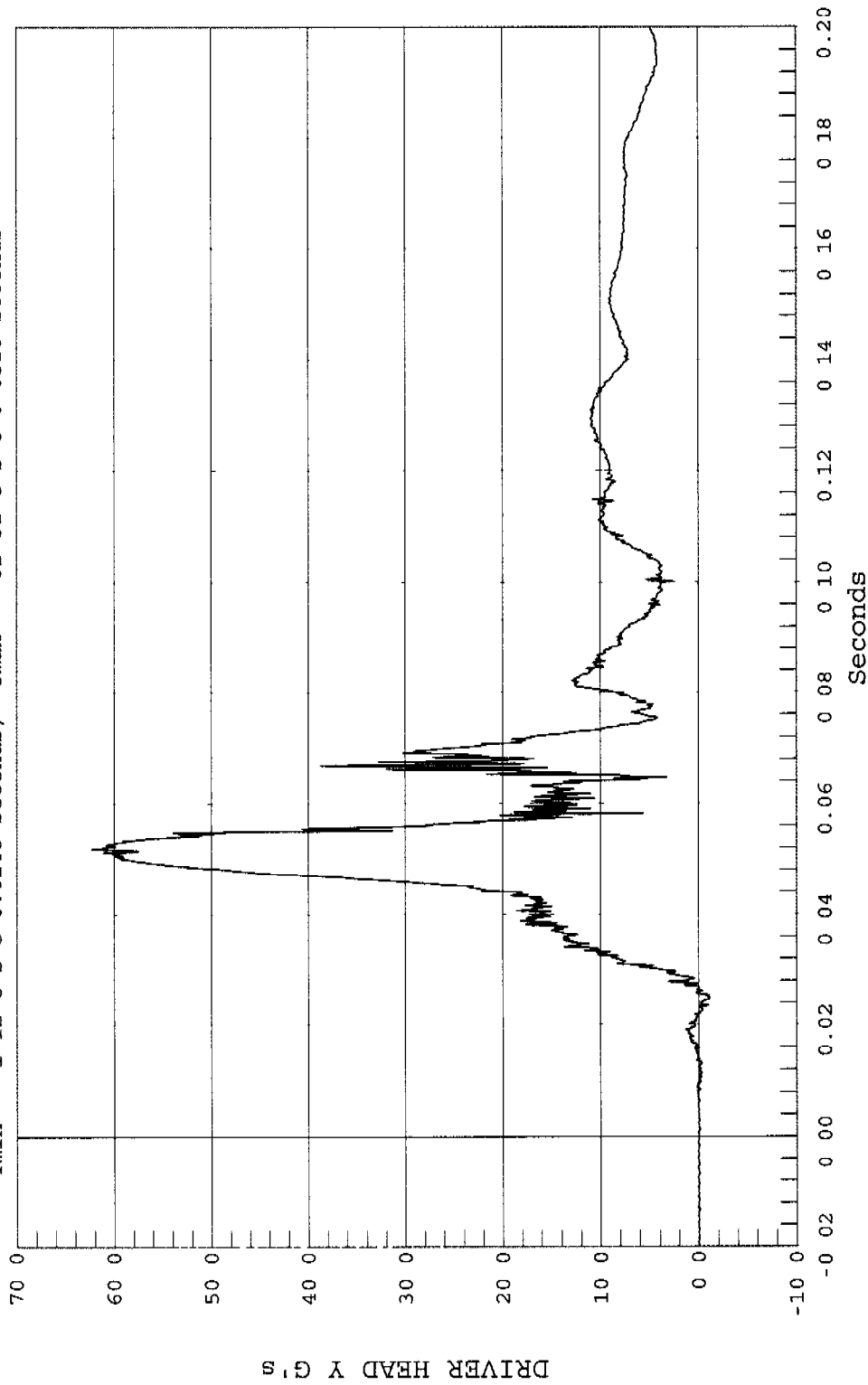
DRIVER HEAD Y ACCELERATION

Test Date. 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 1000

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info

1 DRIVER HEAD Y, b00103AT A02

Ymin = -1.12 G's @ 0.0248 Seconds, Ymax = 62.31 G's @ 0.0518 Seconds



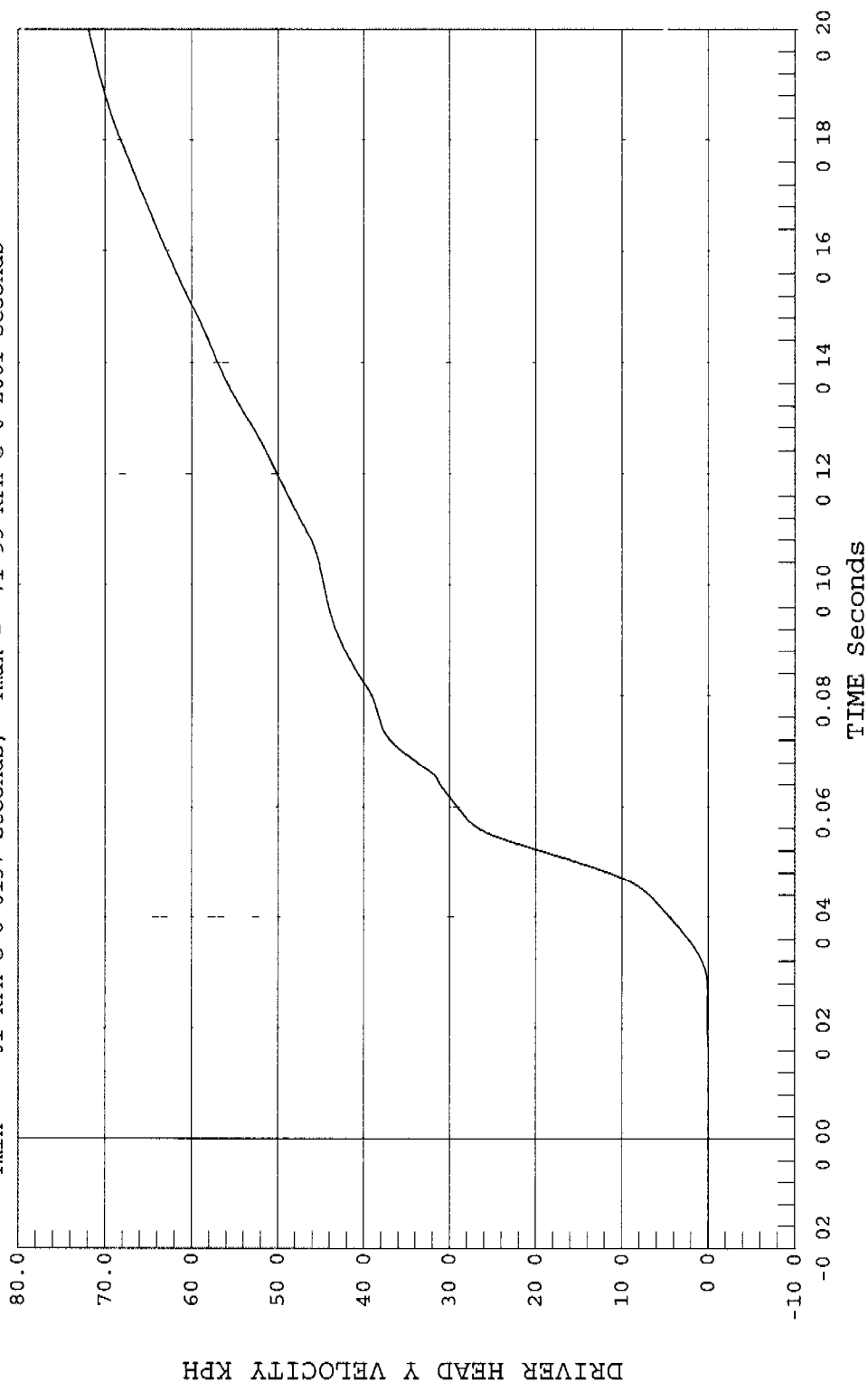
DRIVER HEAD Y VELOCITY

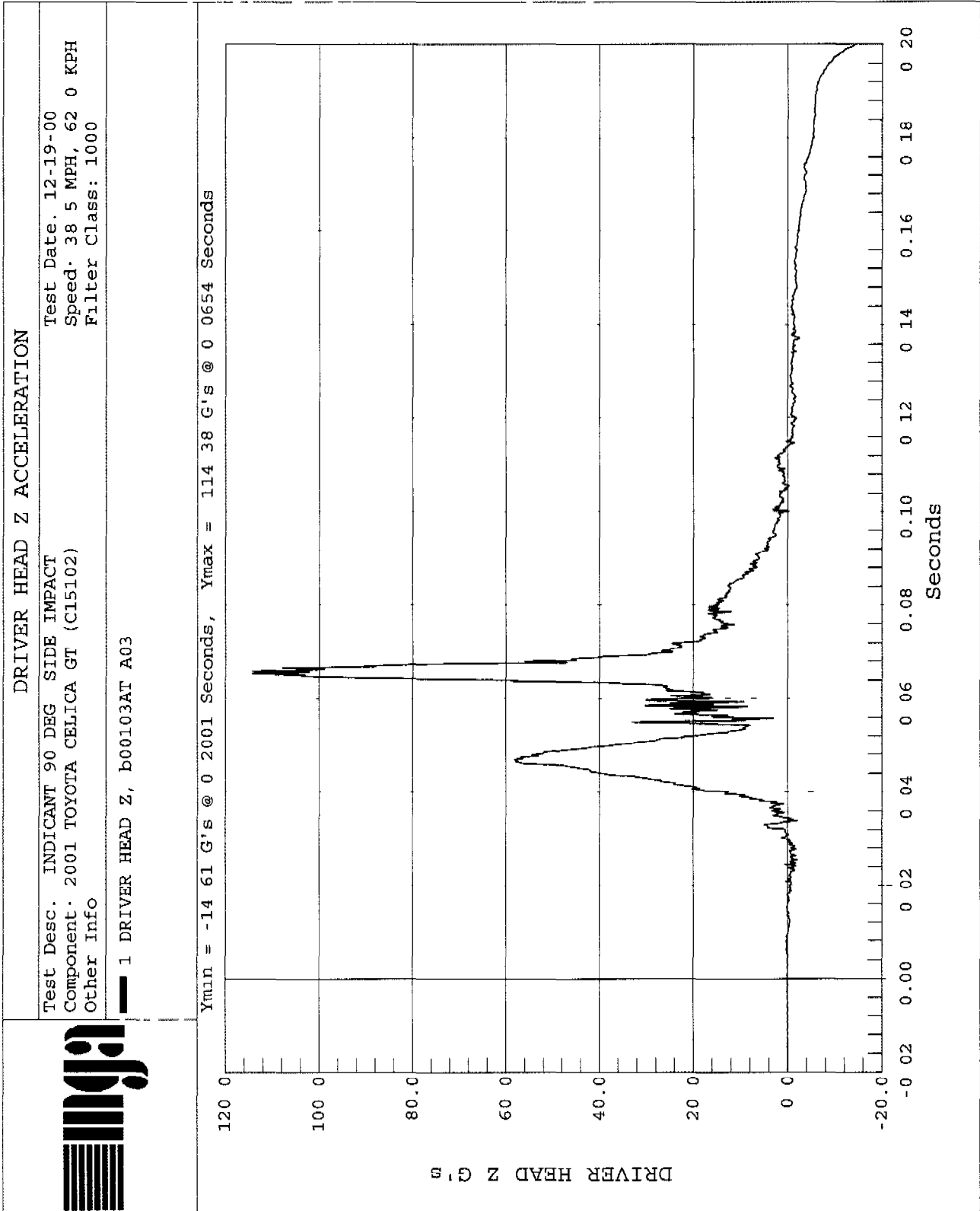
Test Date 12-19-00
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

Test Desc : INDICANT 90 DEG. SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info:

1 DRIVER HEAD Y VELOCITY, b00103AI V02

Ymin = -01 KPH @ 0.0137 Seconds, Ymax = 71.95 KPH @ 0.2001 Seconds





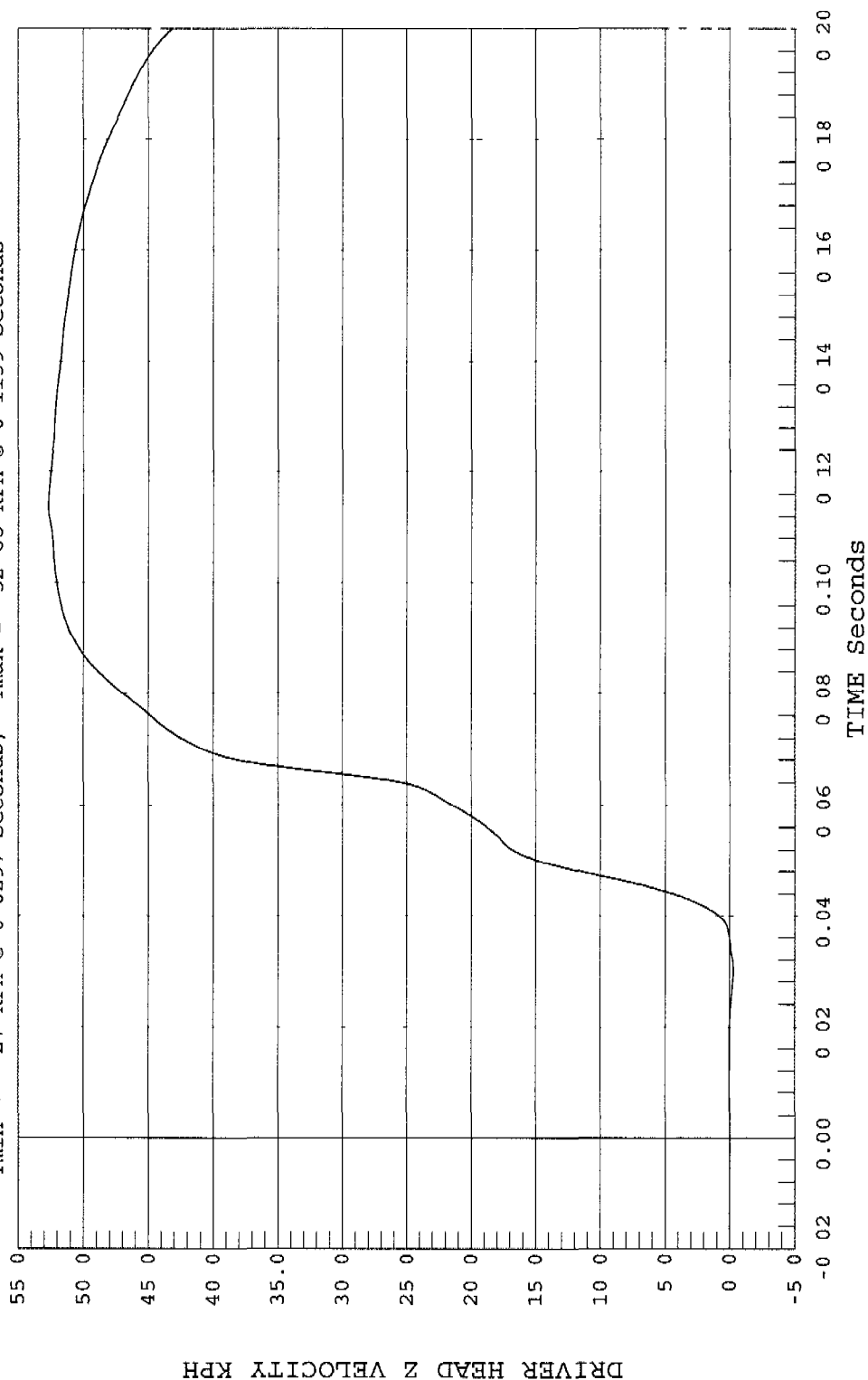
DRIVER HEAD Z VELOCITY

Test Date: 12-19-00
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

Test Desc: INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info:

1 DRIVER HEAD Z VELOCITY, b00103AI.V03

Ymin = - 27 KPH @ 0.0297 Seconds, Ymax = 52.68 KPH @ 0.1139 Seconds



DRIVER HEAD RESULTANT ACCELERATION

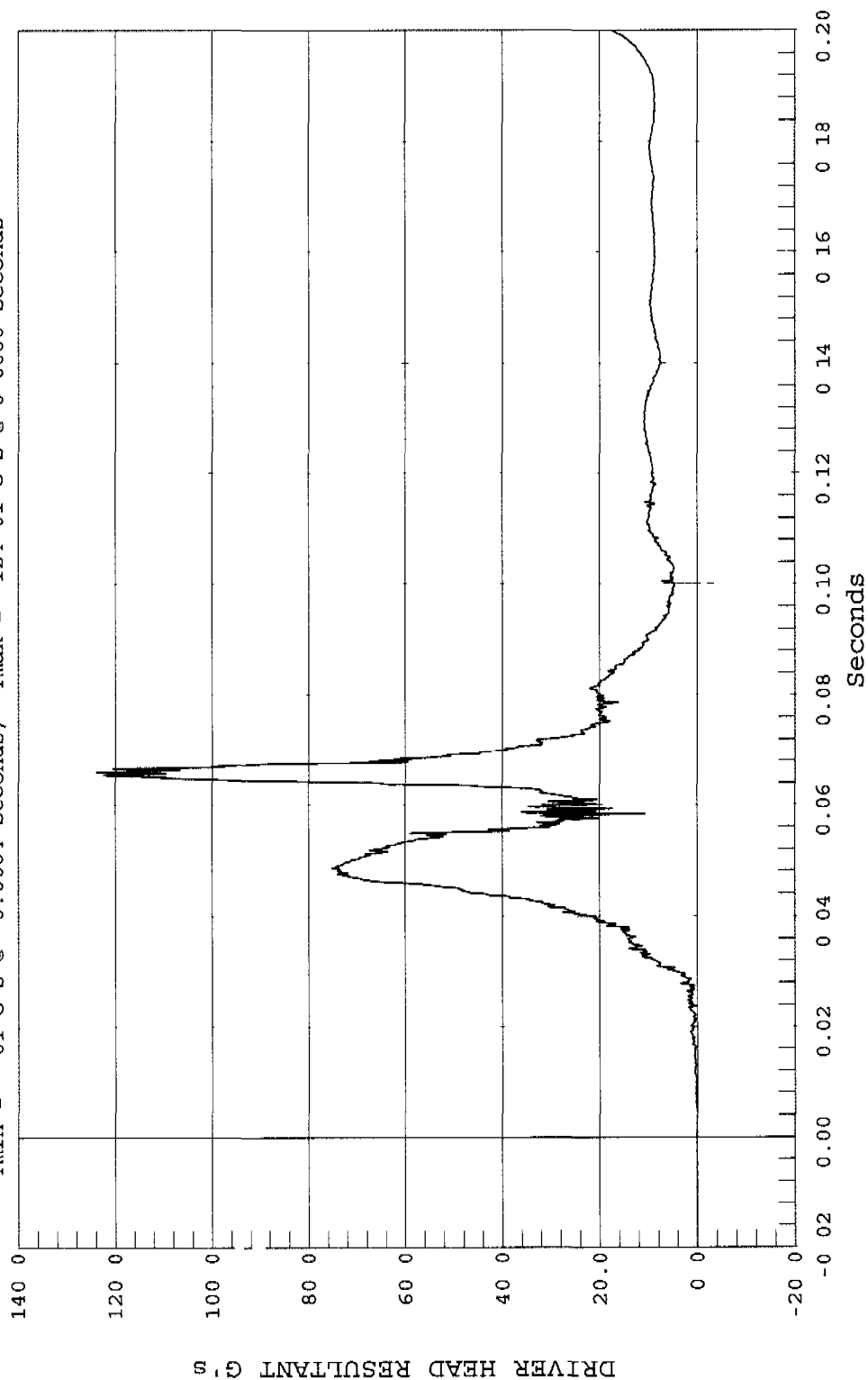
Test Date: 12-19-00
Speed 38.7 MPH, 62.3 KPH
Filter Class: 1000

Test Desc: INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info:

1 DRIVER HEAD RESULTANT, b00103AV A01



Ymin = 01 G's @ -0.0064 Seconds, Ymax = 124.01 G's @ 0.0660 Seconds

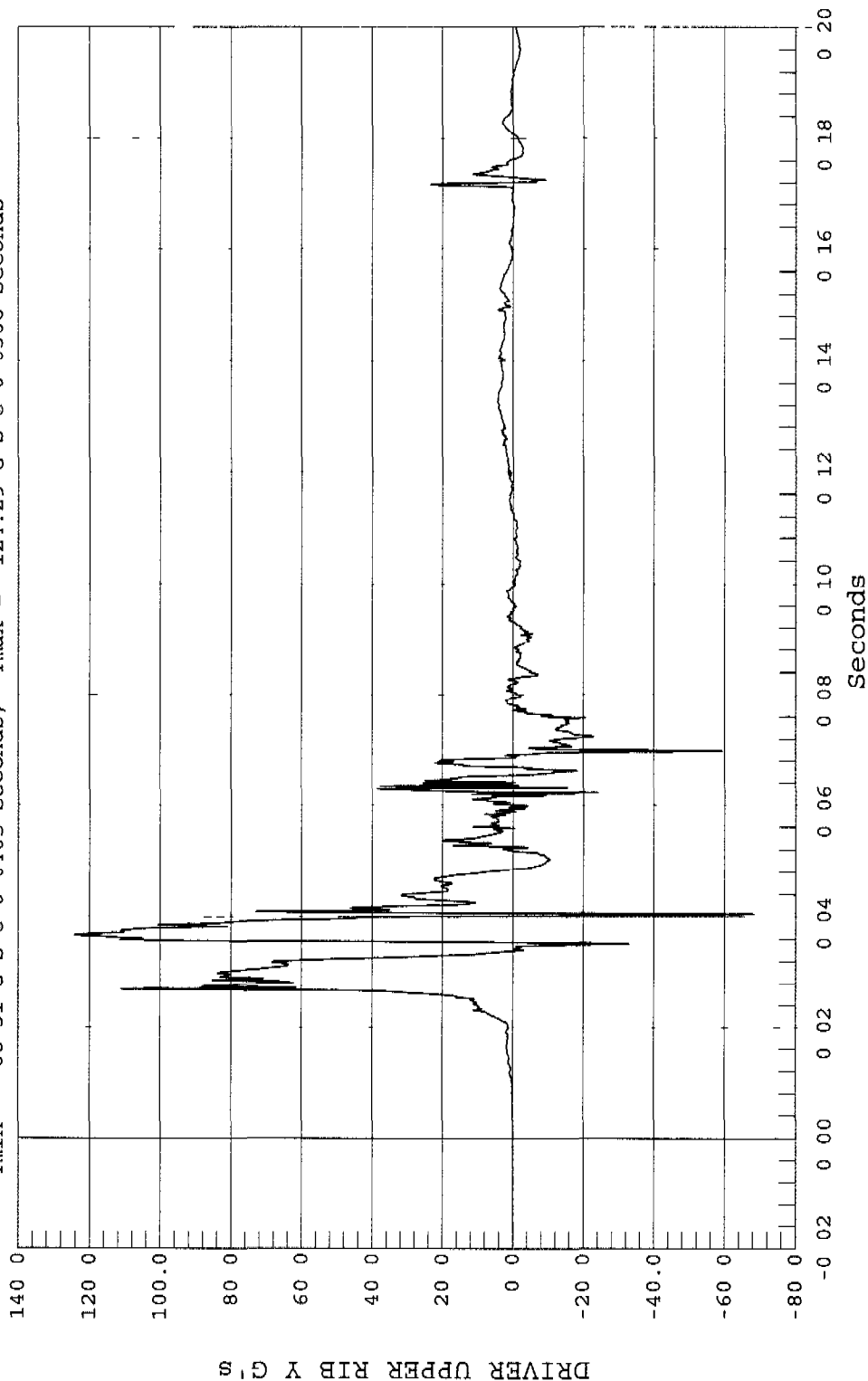


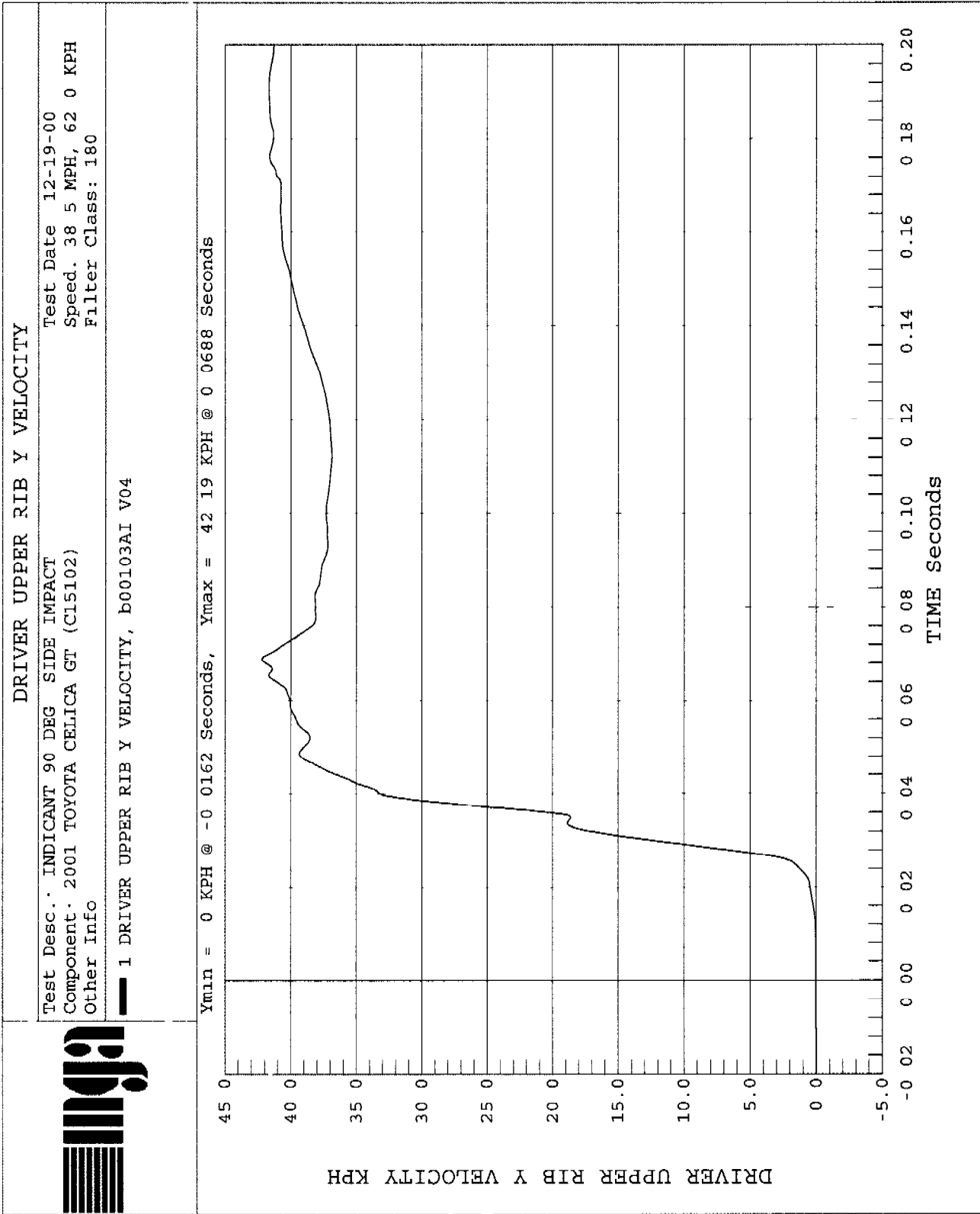
DRIVER UPPER RIB Y ACCELERATION

Test Desc . INDICANT 90 DEG. SIDE IMPACT
 Component. 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date. 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 1000

1 DRIVER UPPER RIB Y, b00103AT A04

Ymin = -68.31 G's @ 0.0405 Seconds, Ymax = 124.29 G's @ 0.0366 Seconds





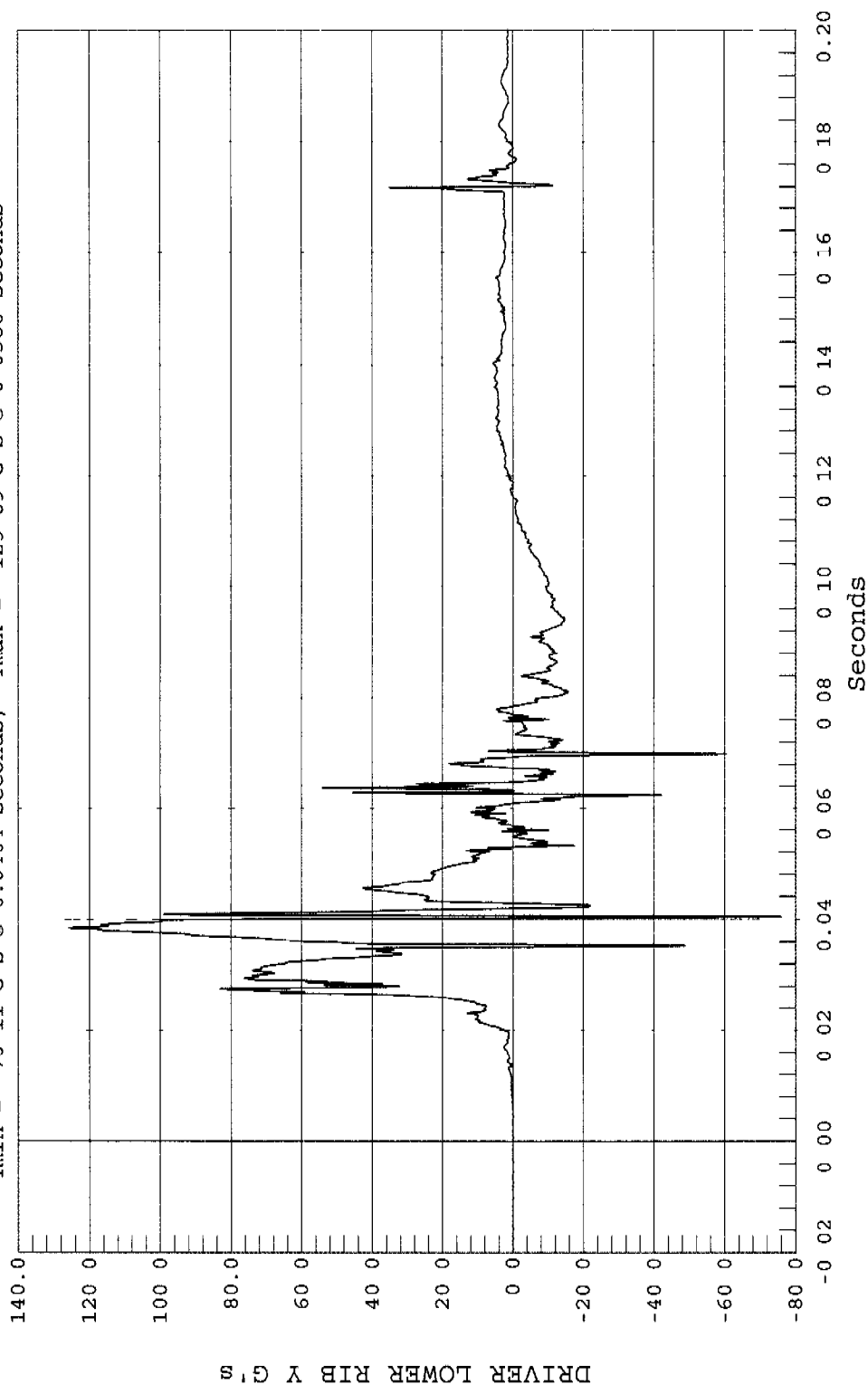
DRIVER LOWER RIB Y ACCELERATION

Test Date: 12-19-00
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

Test Desc: INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info:

1 DRIVER LOWER RIB Y, b00103AT A05

Ymin = -76.11 G's @ 0.0404 Seconds, Ymax = 125.89 G's @ 0.0386 Seconds

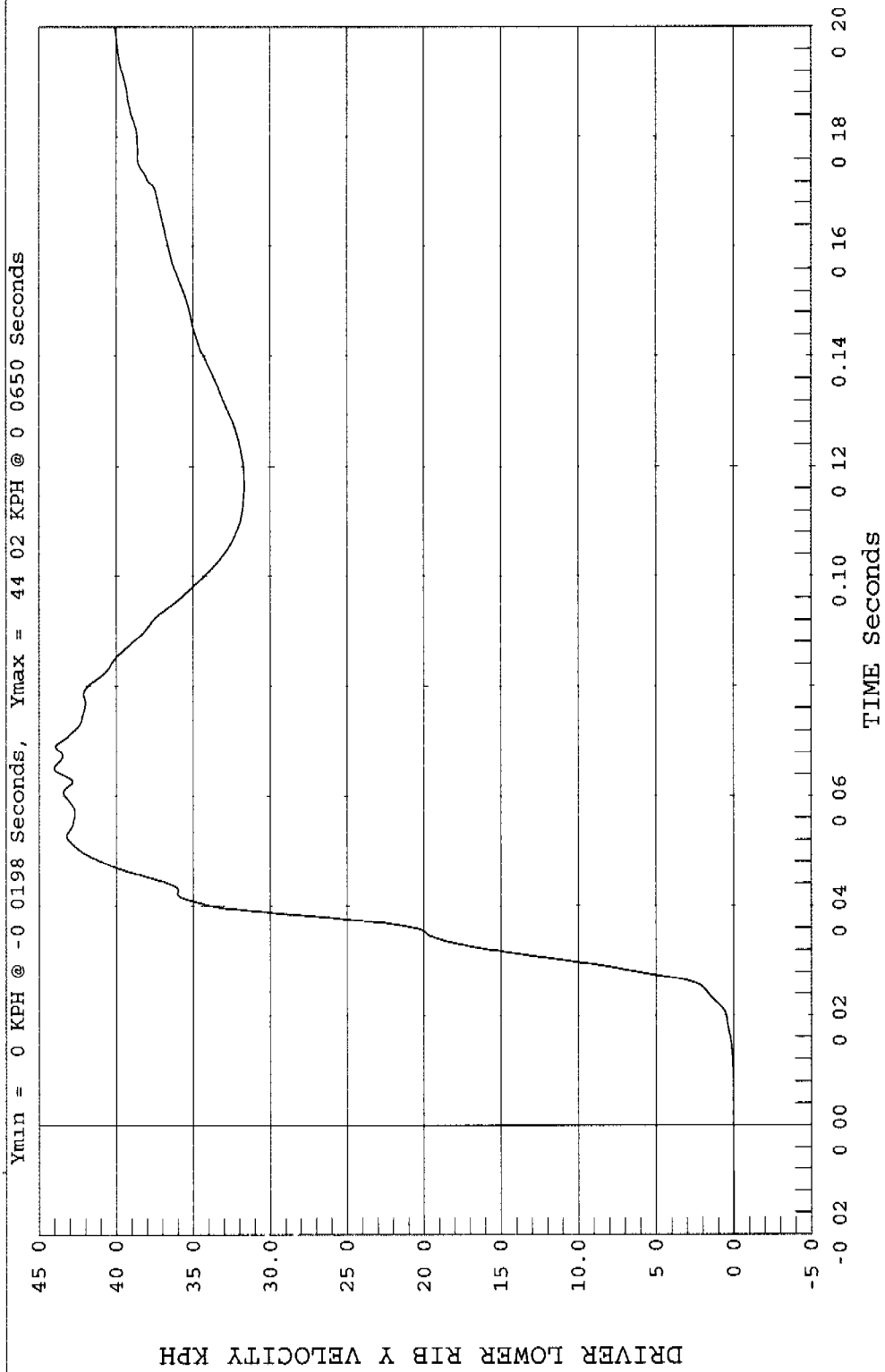


DRIVER LOWER RIB Y VELOCITY

Test Date 12-19-00
Speed 38.5 MPH, 62 0 KPH
Filter Class 180

Test Desc . INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info

1 DRIVER LOWER RIB Y VELOCITY, b00103AI V05



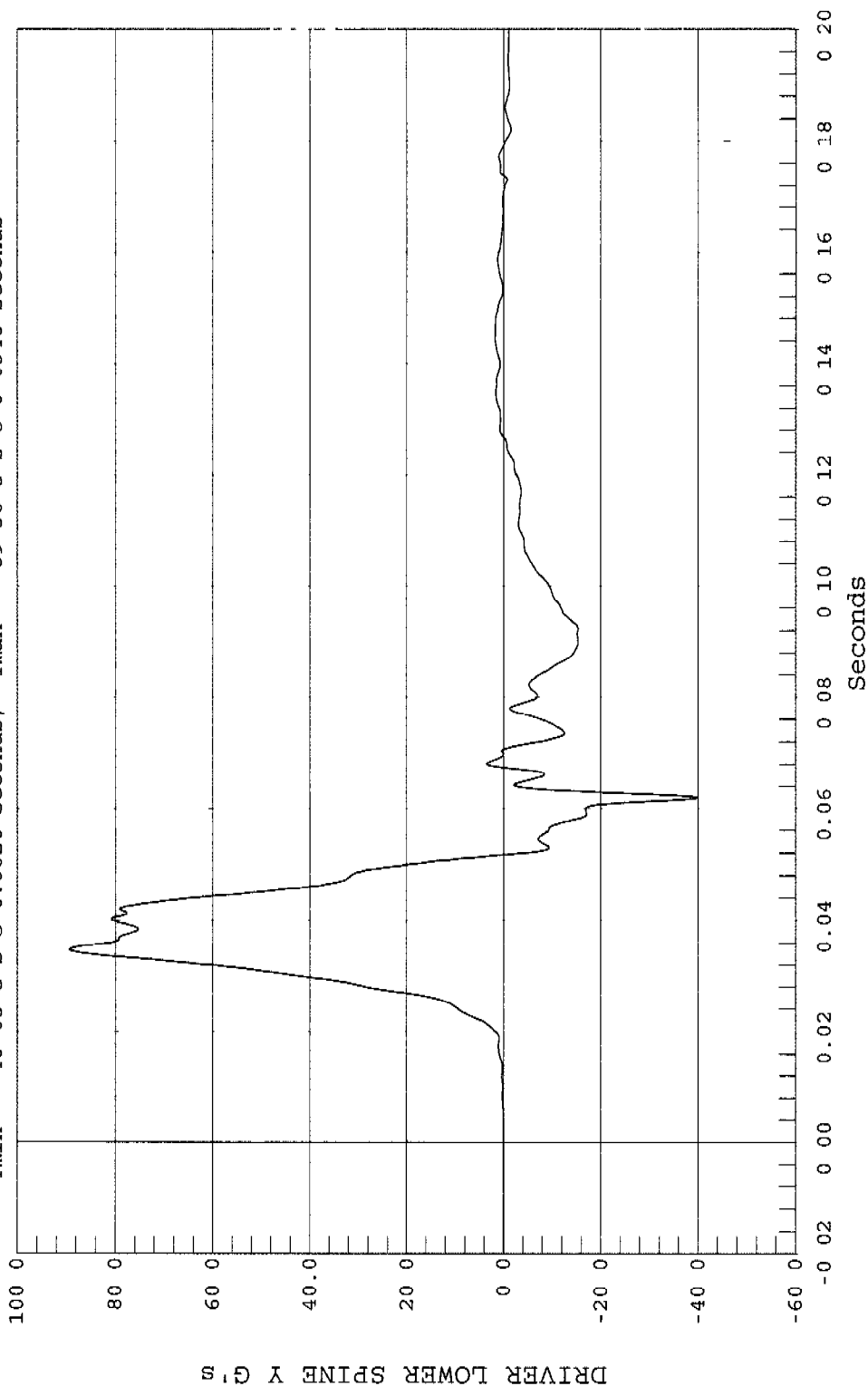
DRIVER LOWER SPINE Y ACCELERATION

Test Date. 12-19-00
Speed. 38.5 MPH, 62.0 KPH
Filter Class. 180

Test Desc : INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info.

1 DRIVER LOWER SPINE Y, b00103AF A06

Ymin = -40.05 G's @ 0.0620 Seconds, Ymax = 89.36 G's @ 0.0348 Seconds



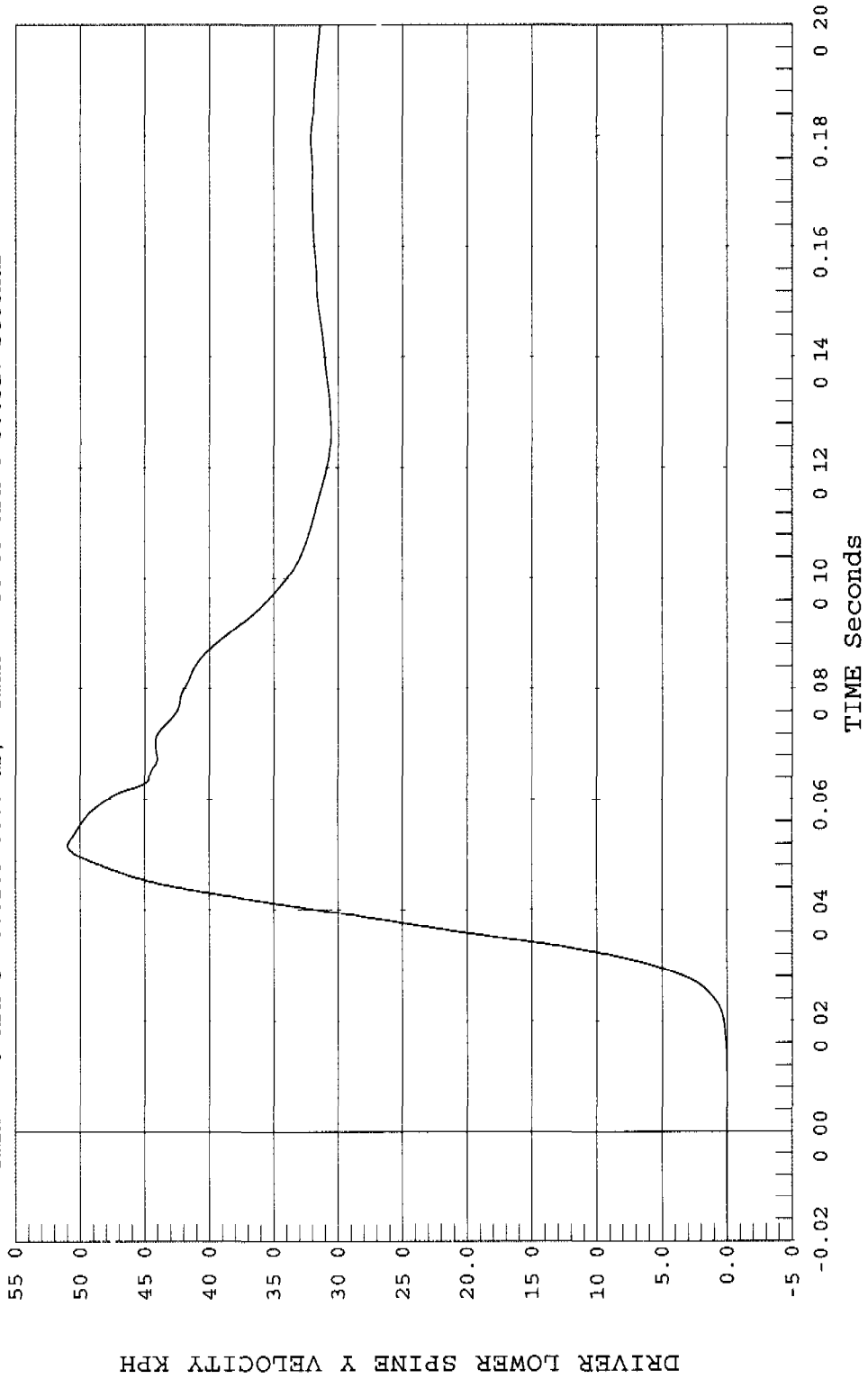
DRIVER LOWER SPINE Y VELOCITY

Test Date. 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 180

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info

1 DRIVER LOWER SPINE Y VELOCITY, b00103AI V06

Ymin = 0 KPH @ -0.0183 Seconds, Ymax = 50.99 KPH @ 0.0517 Seconds

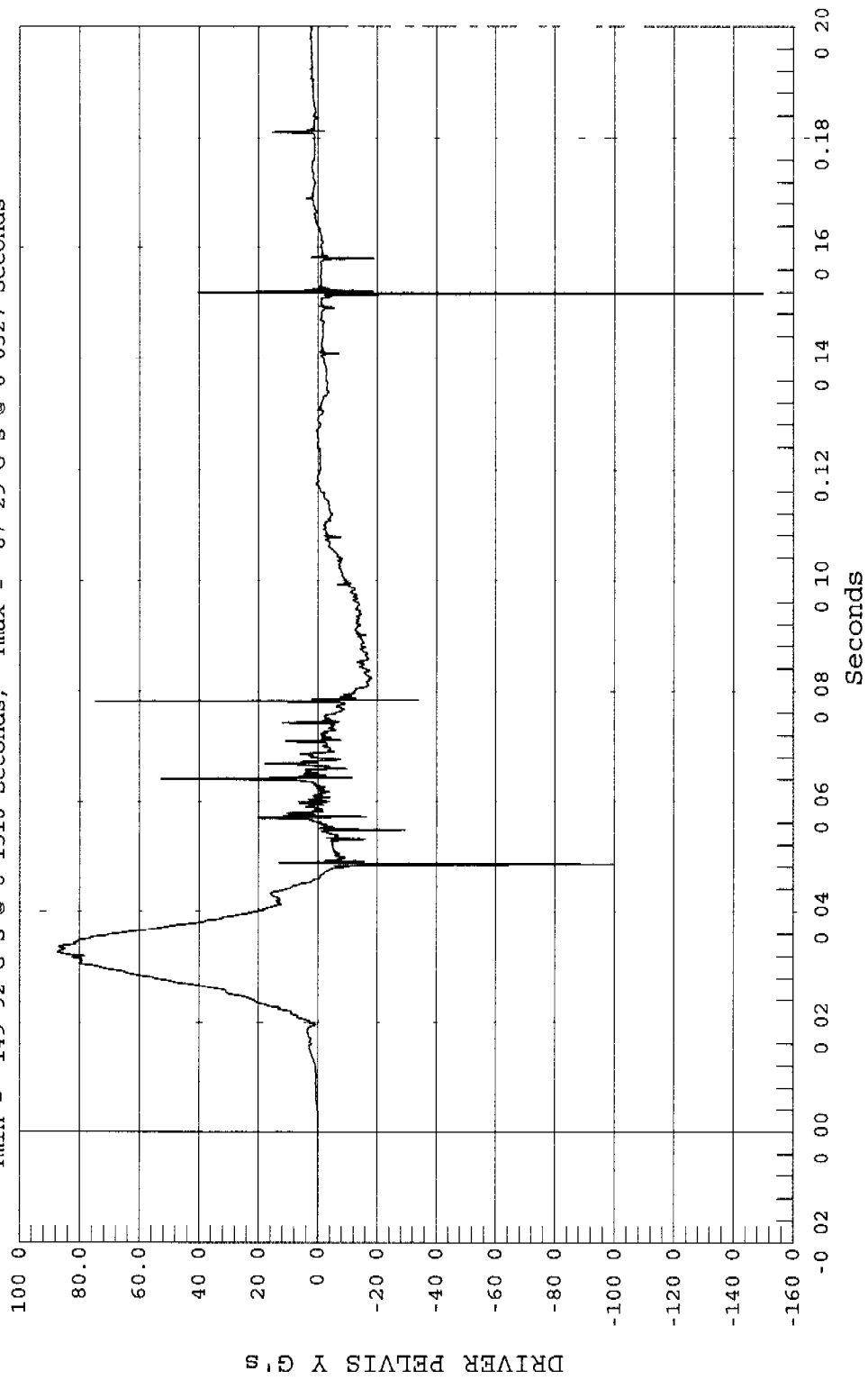


DRIVER PELVIS Y ACCELERATION

Test Desc : INDICANT 90 DEG. SIDE IMPACT
 Component. 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date. 12-19-00
 Speed. 38.5 MPH, 62.0 KPH
 Filter Class: 1000

1 DRIVER PELVIS Y, b00103AT A07

Ymin = -149.92 G's @ 0.1518 Seconds, Ymax = 87.29 G's @ 0.0327 Seconds



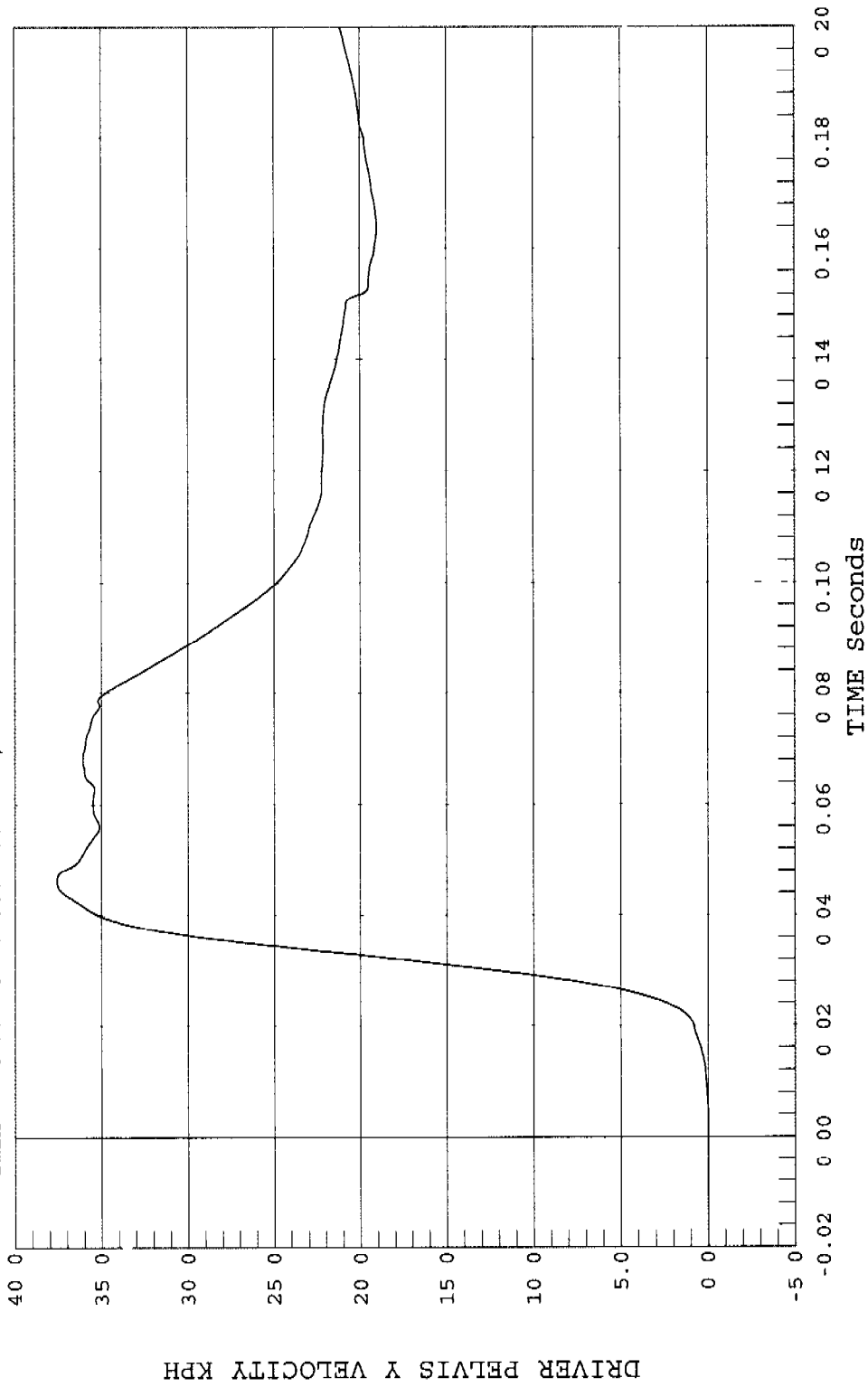


DRIVER PELVIS Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info
Test Date. 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class. 180

1 DRIVER PELVIS Y VELOCITY, b00103AI V07

Ymin = 0 KPH @ -0.0061 Seconds, Ymax = 37.58 KPH @ 0.0460 Seconds



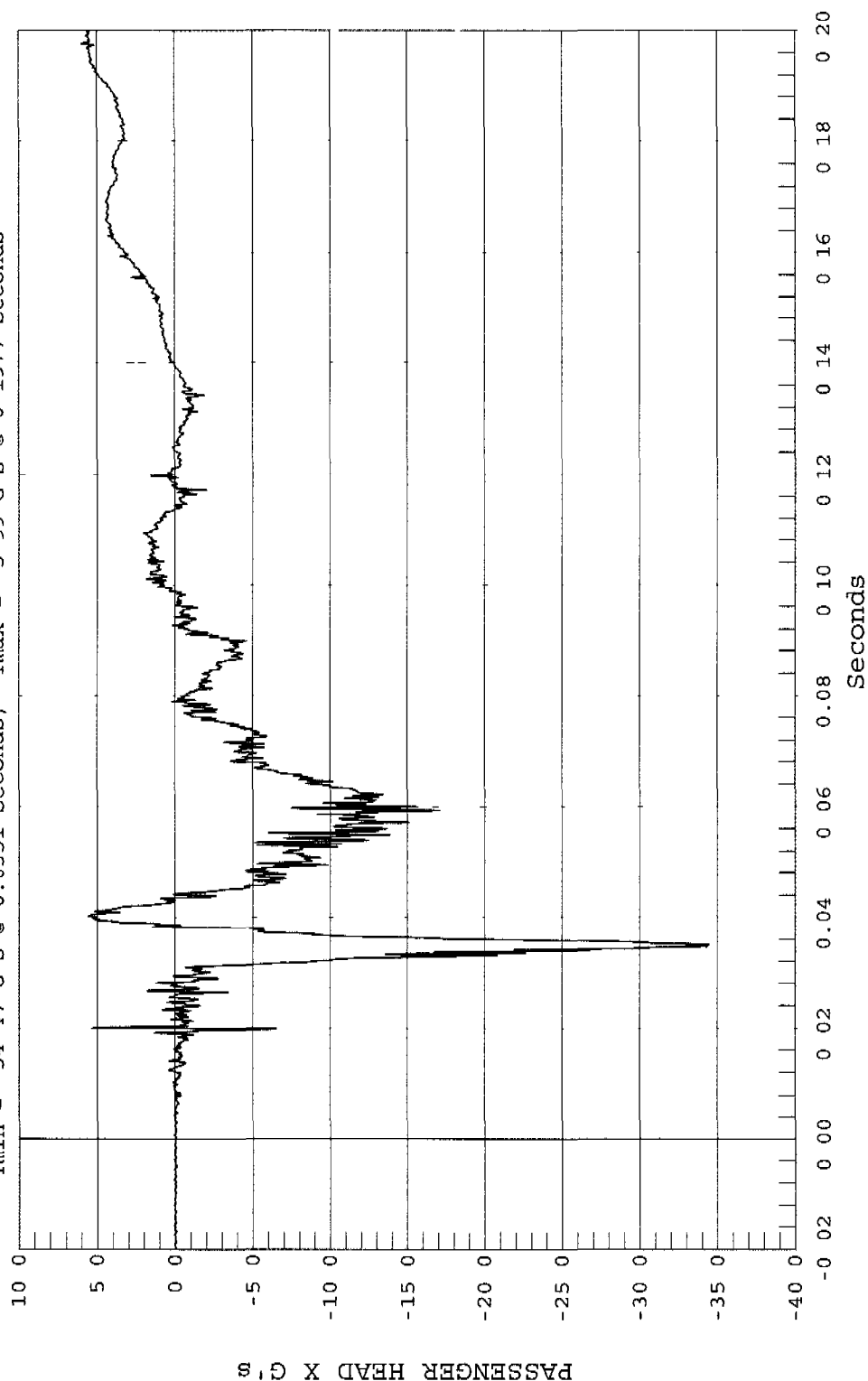
REAR PASSENGER HEAD X ACCELERATION

Test Date. 12-19-00
Speed: 38.5 MPH, 62.0 KPH
Filter Class. 1000

Test Desc.. INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info

1 PASSENGER HEAD X, b00103AT A08

Ymin = -34.47 G's @ 0.0351 Seconds, Ymax = 5.99 G's @ 0.1977 Seconds



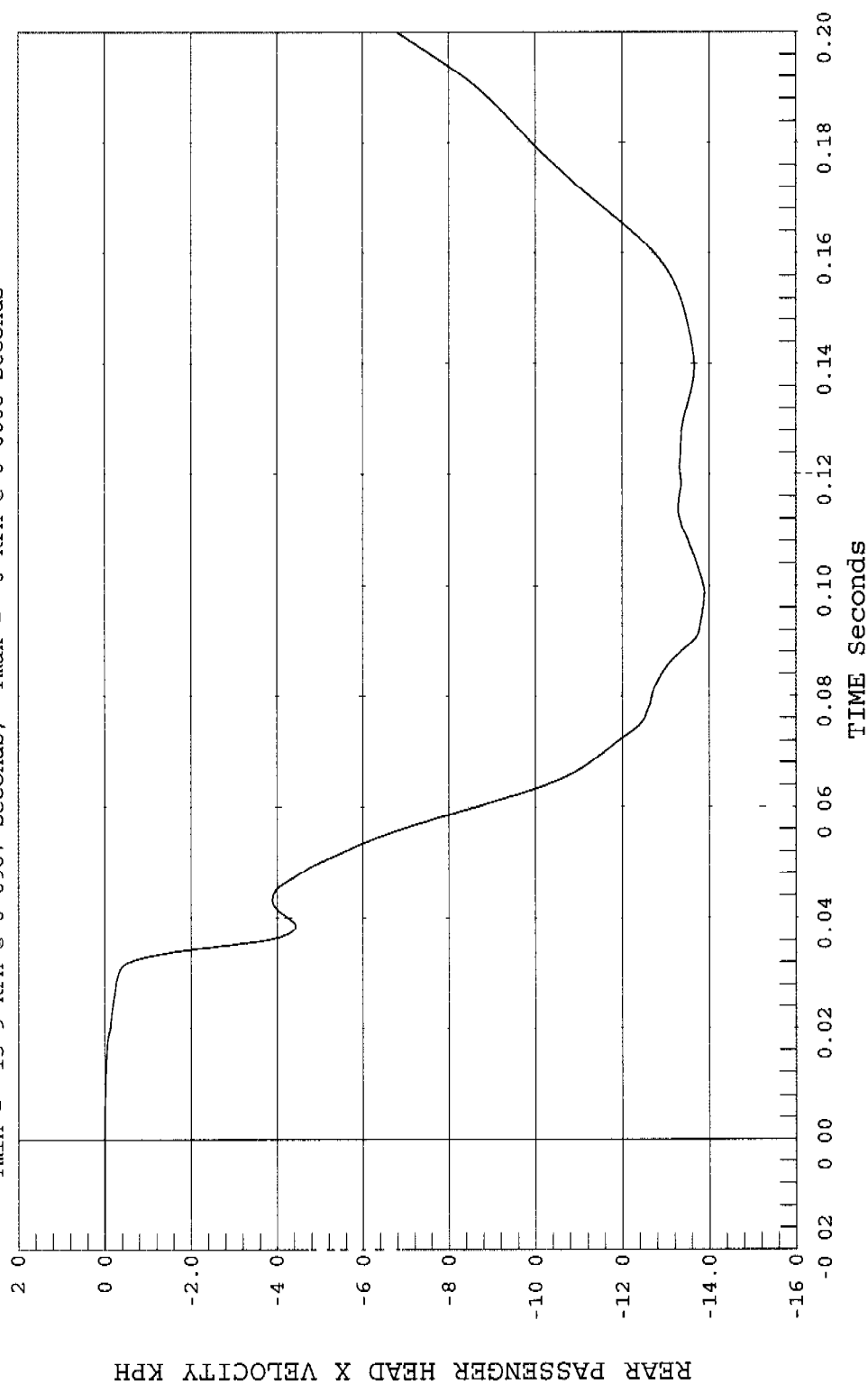


REAR PASSENGER HEAD X VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
Component. 2001 TOYOTA CELICA GT (C15102)
Other Info:
Test Date 12-19-00
Speed 38 5 MPH, 62 0 KPH
Filter Class. 180

1 REAR PASSENGER HEAD X VELOCITY, b00103AI V08

Ymin = -13 9 KPH @ 0 0987 Seconds, Ymax = 0 KPH @ 0 0008 Seconds



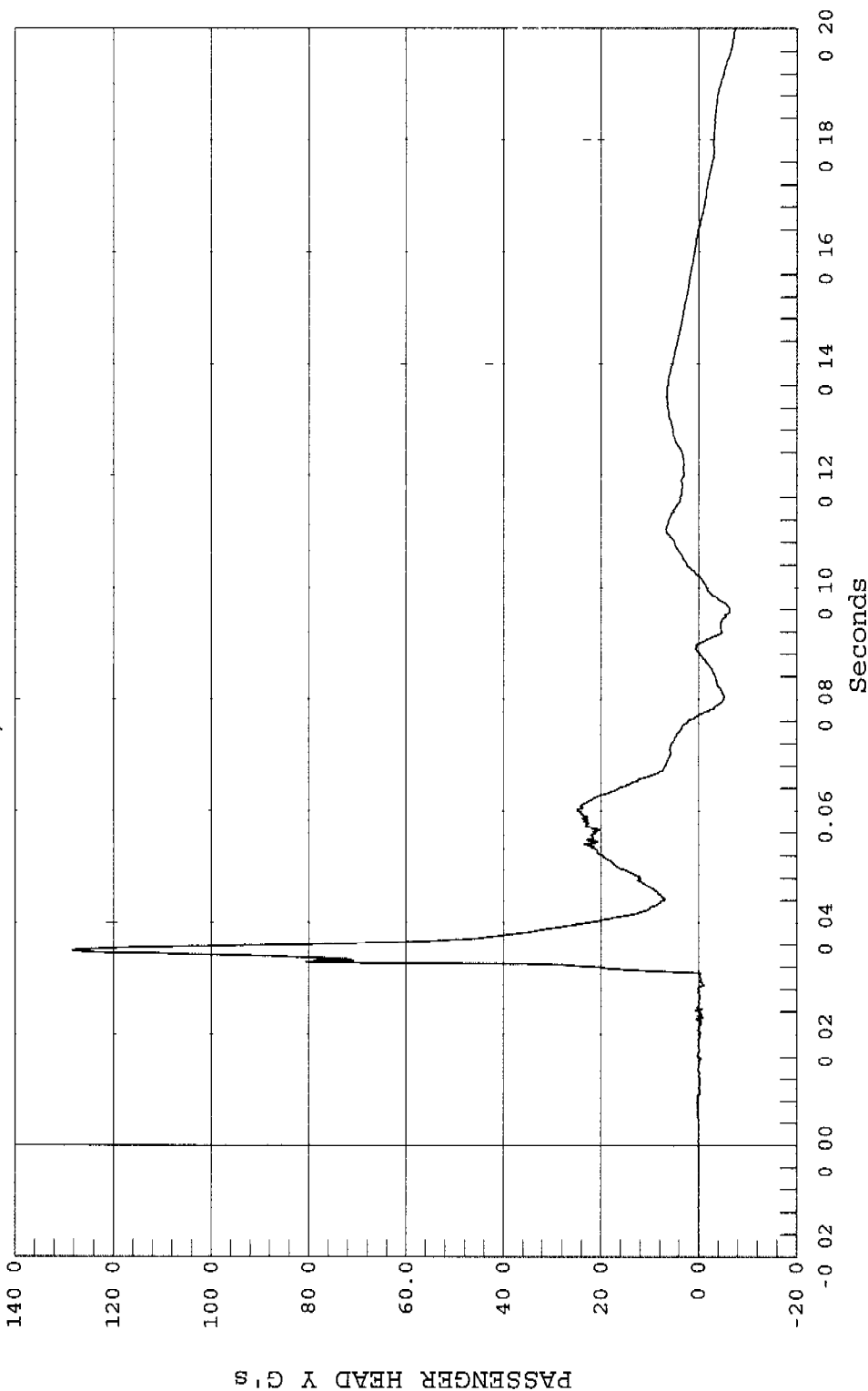
REAR PASSENGER HEAD Y ACCELERATION

Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 1000

Test Desc.: INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:

1 PASSENGER HEAD Y, b00103AT A09

Ymin = -7.54 G's @ 0.2001 Seconds, Ymax = 128.53 G's @ 0.0350 Seconds



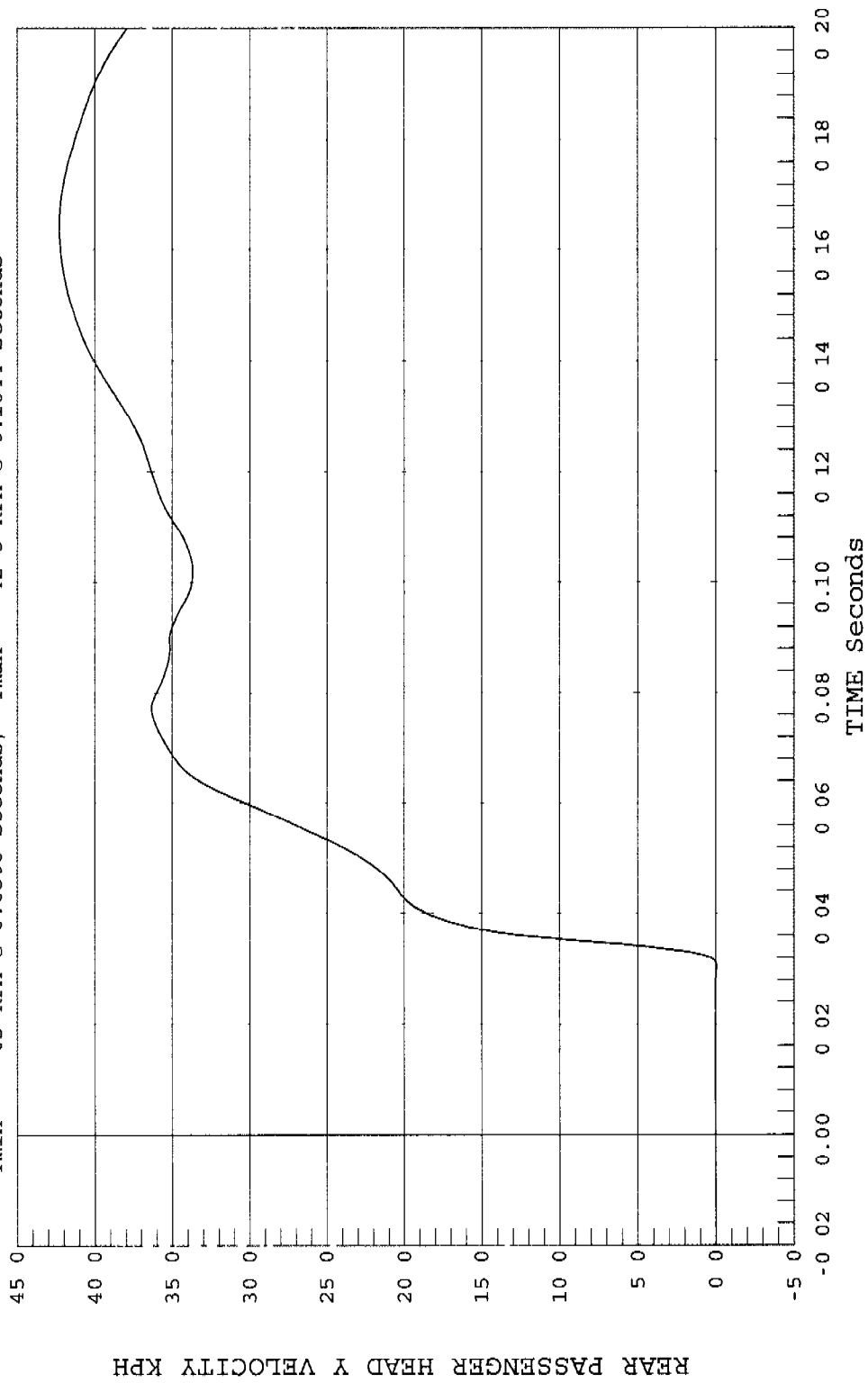
REAR PASSENGER HEAD Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info

Test Date 12-19-00
 Speed 38 5 MPH, 62 0 KPH
 Filter Class 180

1 REAR PASSENGER HEAD Y VELOCITY, b00103AI V09

Ymin = - 05 KPH @ 0.0306 Seconds, Ymax = 42 3 KPH @ 0.1644 Seconds



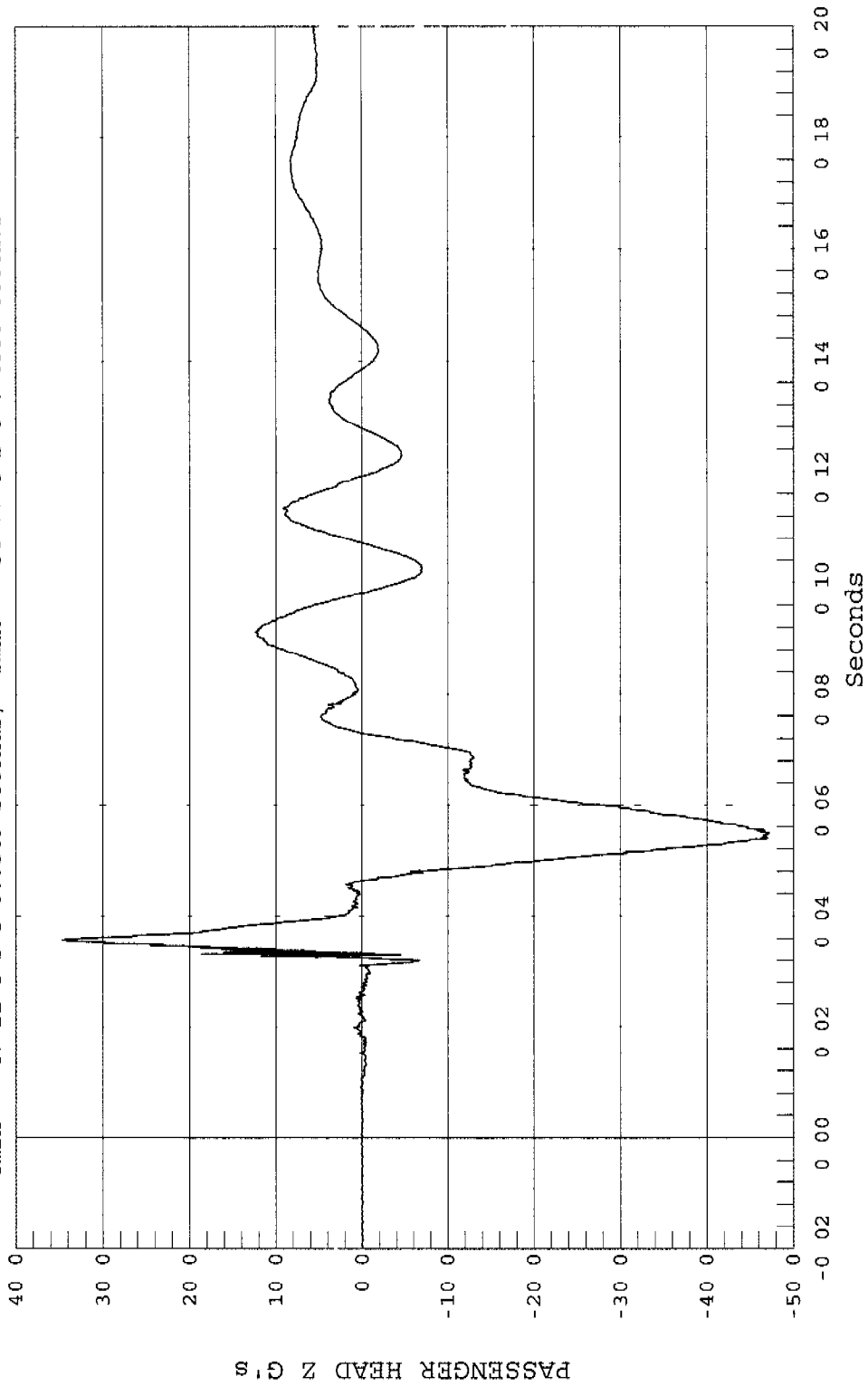
REAR PASSENGER HEAD Z ACCELERATION

Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 1000

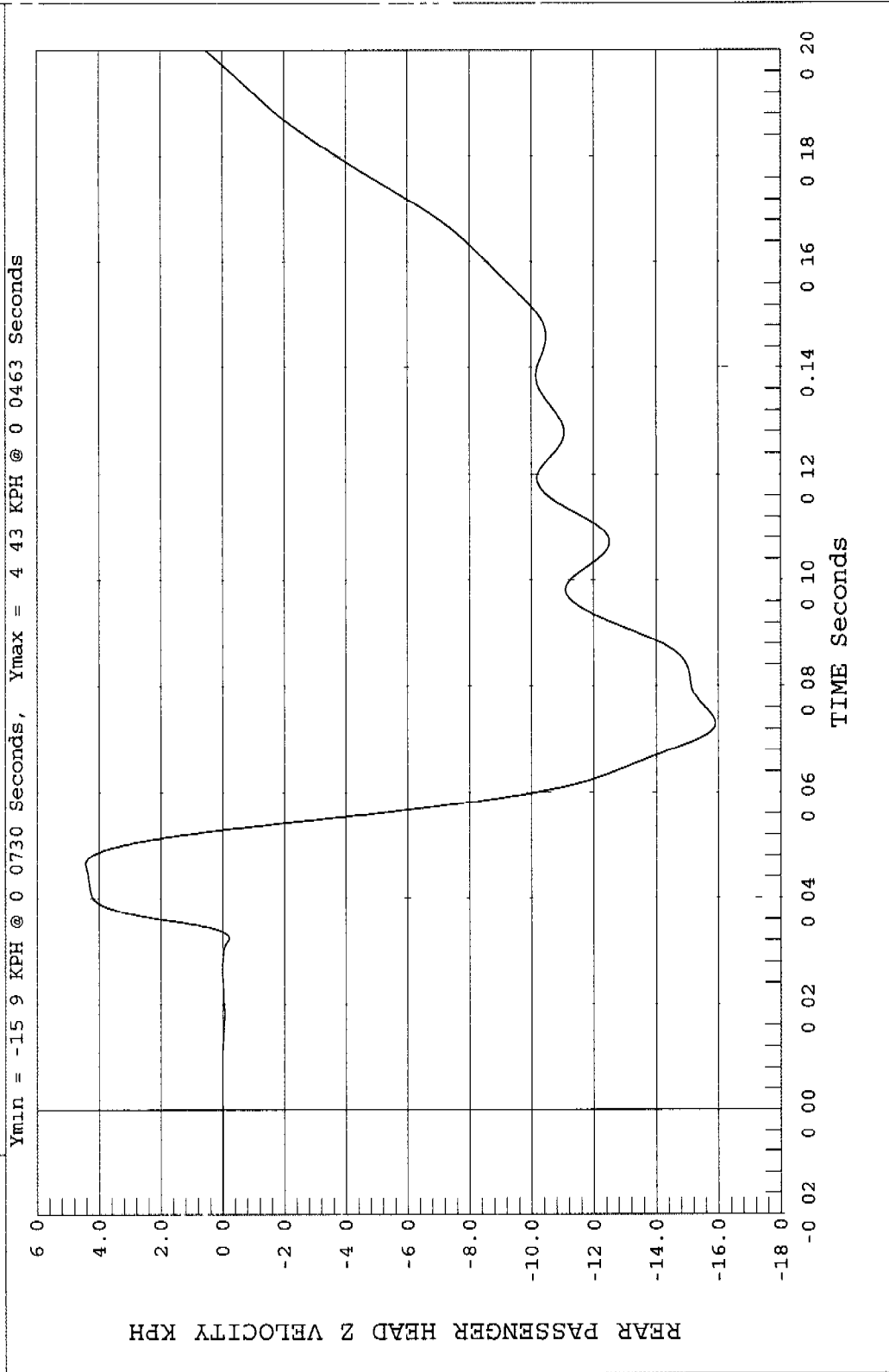
Test Desc: INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:

1 PASSENGER HEAD Z, b00103AT A10

Ymin = -47.21 G's @ 0.0549 Seconds, Ymax = 34.77 G's @ 0.0358 Seconds



		REAR PASSENGER HEAD Z VELOCITY	
Test Desc INDICANT 90 DEG SIDE IMPACT		Test Date 12-19-00	
Component 2001 TOYOTA CELICA GT (C15102)		Speed 38.5 MPH, 62 0 KPH	
Other Info		Filter Class 180	
1 REAR PASSENGER HEAD Z VELOCITY, b00103AI V10			

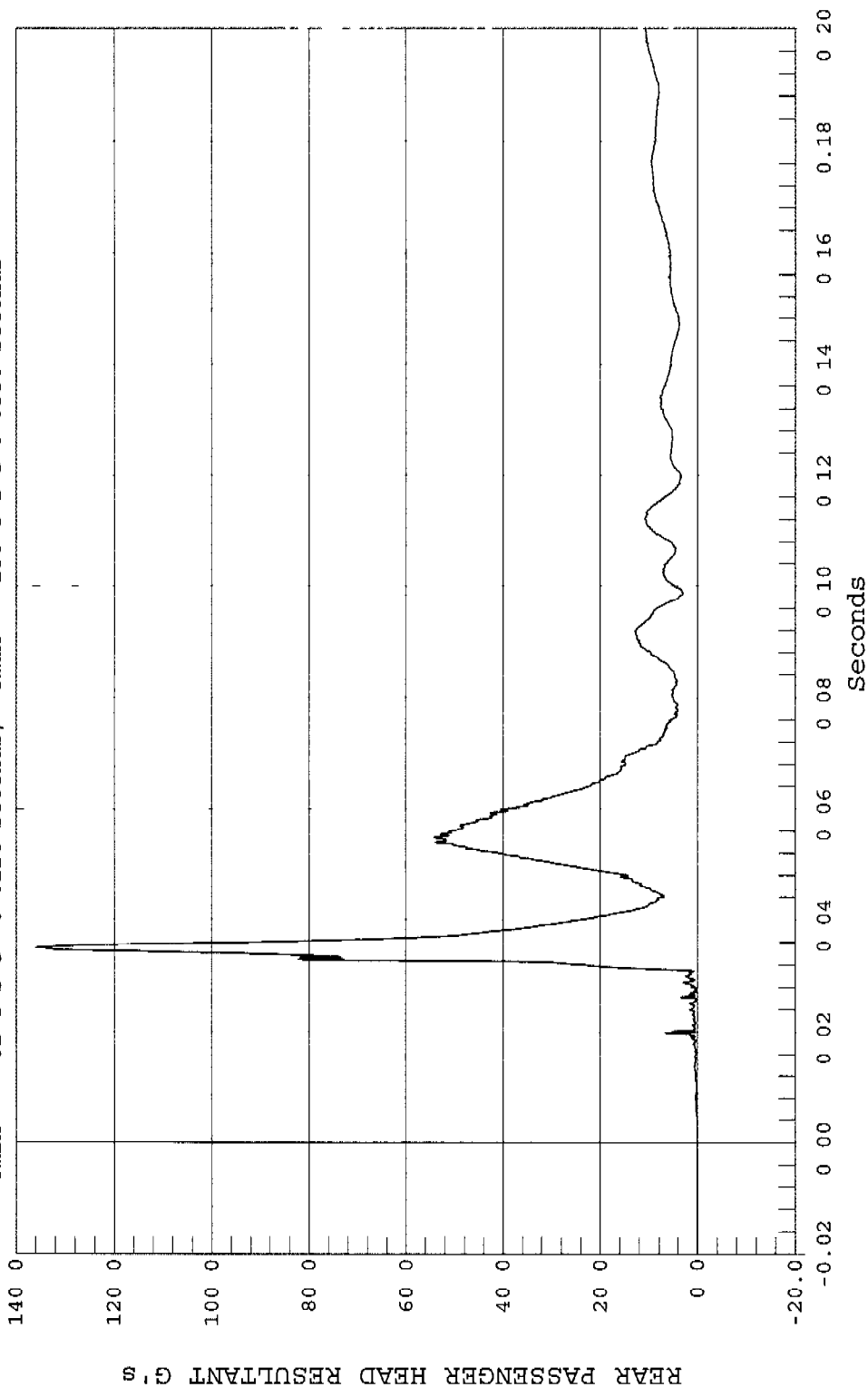


REAR PASSENGER HEAD RESULTANT ACCELERATION

Test Desc.: INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date: 12-19-00
 Speed: 38.7 MPH, 62.3 KPH
 Filter Class: 1000

1 REAR PASSENGER HEAD RESULTANT, b00103AV A08

Ymin = 01 G's @ -0 0124 Seconds, Ymax = 136 G's @ 0 0350 Seconds



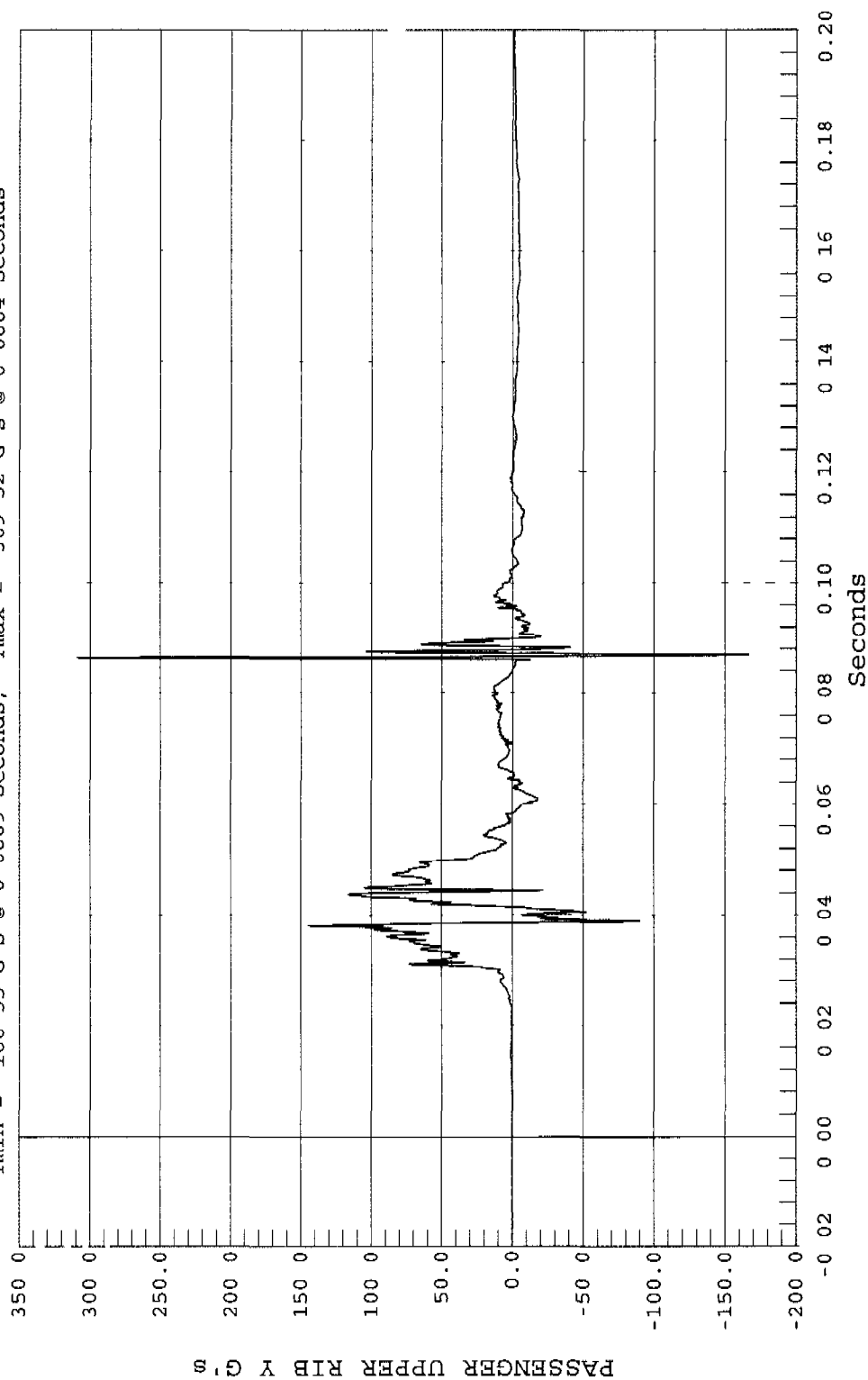
REAR PASSENGER UPPER RIB Y ACCELERATION

Test Date. 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class. 1000

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info

1 PASSENGER UPPER RIB Y, b00103AT All

Ymin = -166.55 G's @ 0.0869 Seconds, Ymax = 309.52 G's @ 0.0864 Seconds



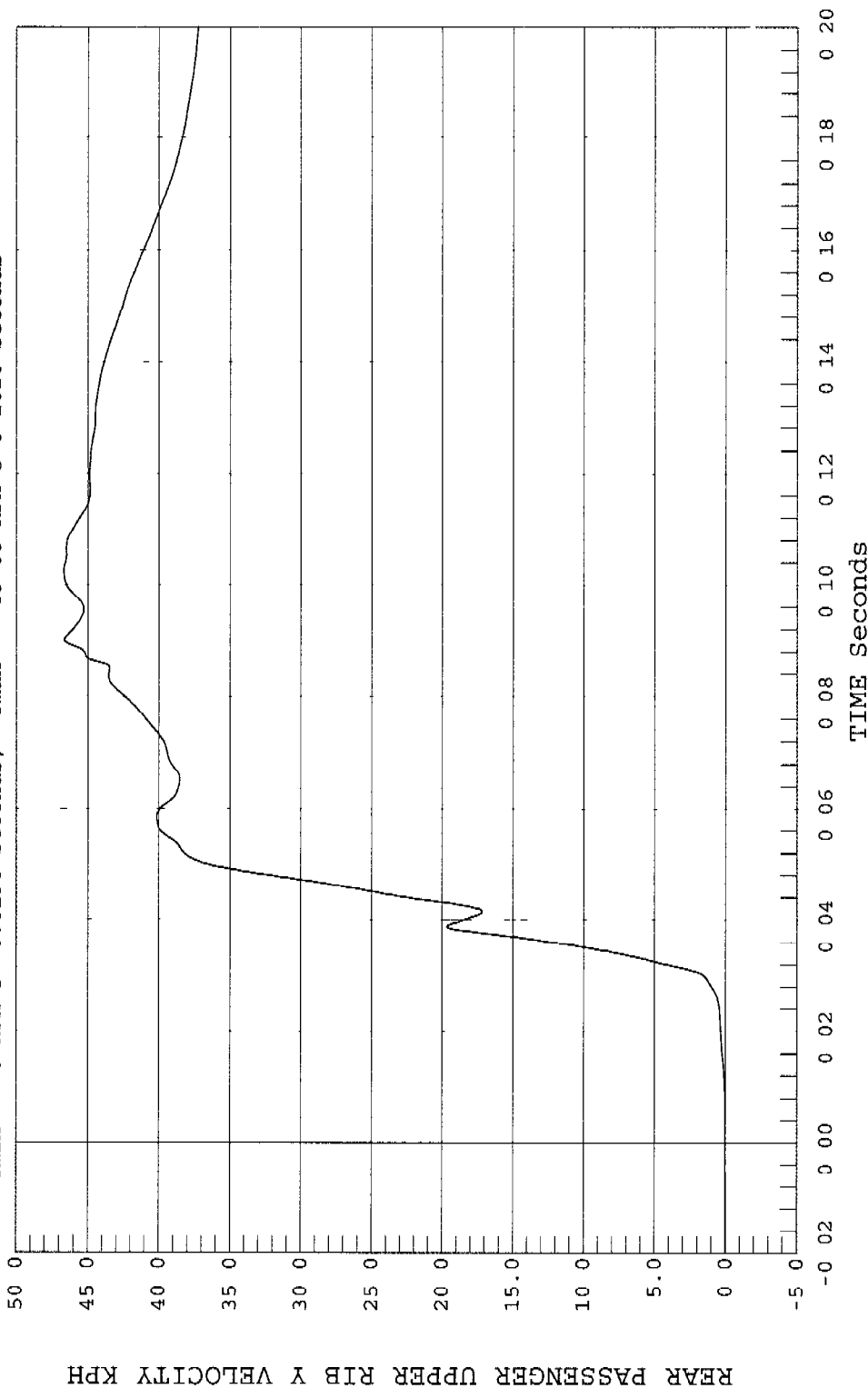
REAR PASSENGER UPPER RIB Y VELOCITY

Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 180

Test Desc: INDICANT 90 DEG. SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:

1 REAR PASSENGER UPPER RIB Y VELOCITY, b00103AI V11

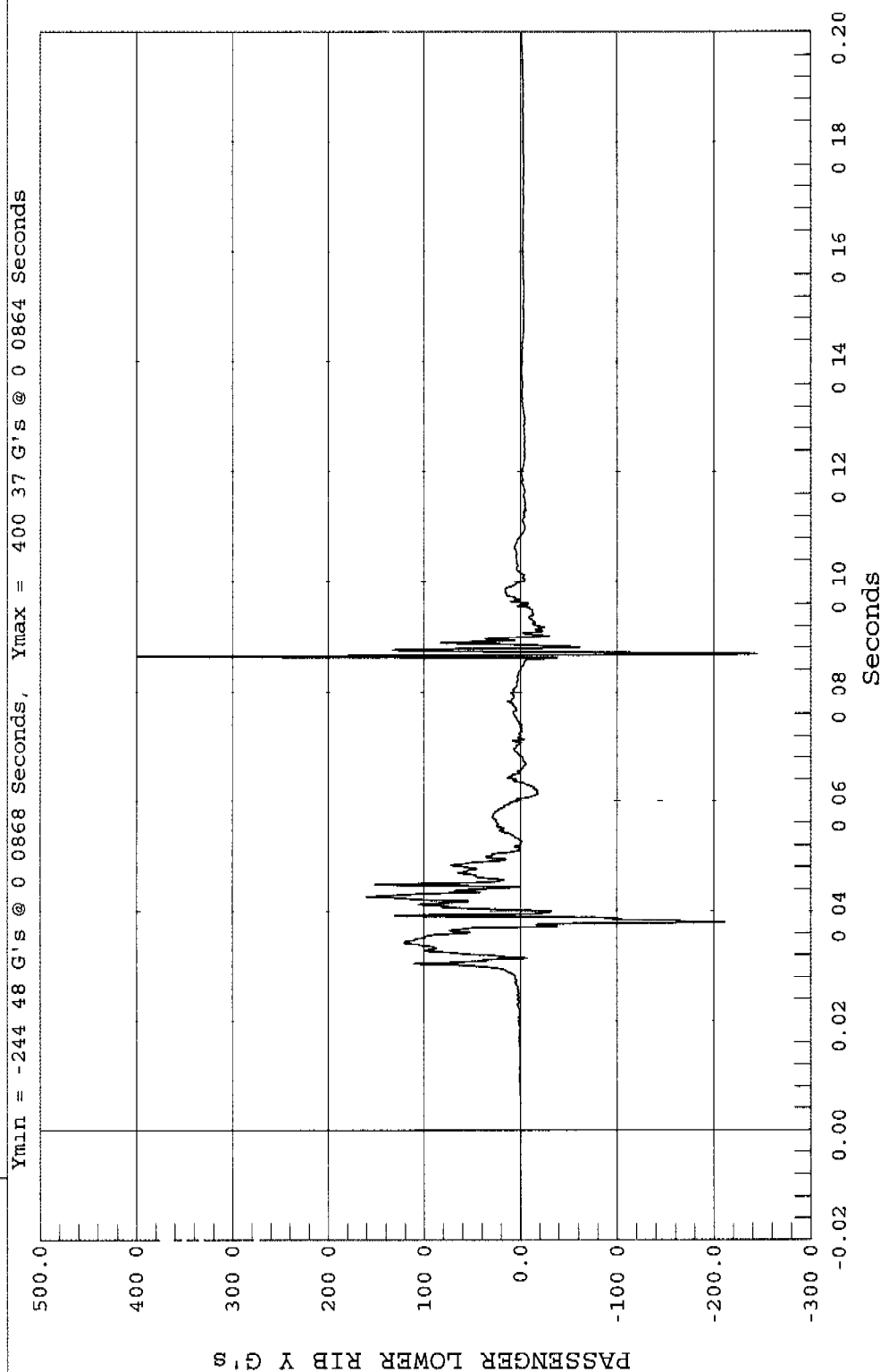
Ymin = 0 KPH @ -0.0198 Seconds, Ymax = 46.68 KPH @ 0.1026 Seconds



REAR PASSENGER LOWER RIB Y ACCELERATION

Test Desc INDICANT 90 DEG SIDE IMPACT Test Date 12-19-00
 Component 2001 TOYOTA CELICA GT (C15102) Speed 38 5 MPH, 62 0 KPH
 Other Info. Filter Class. 1000

1 PASSENGER LOWER RIB Y, b00103AT A12

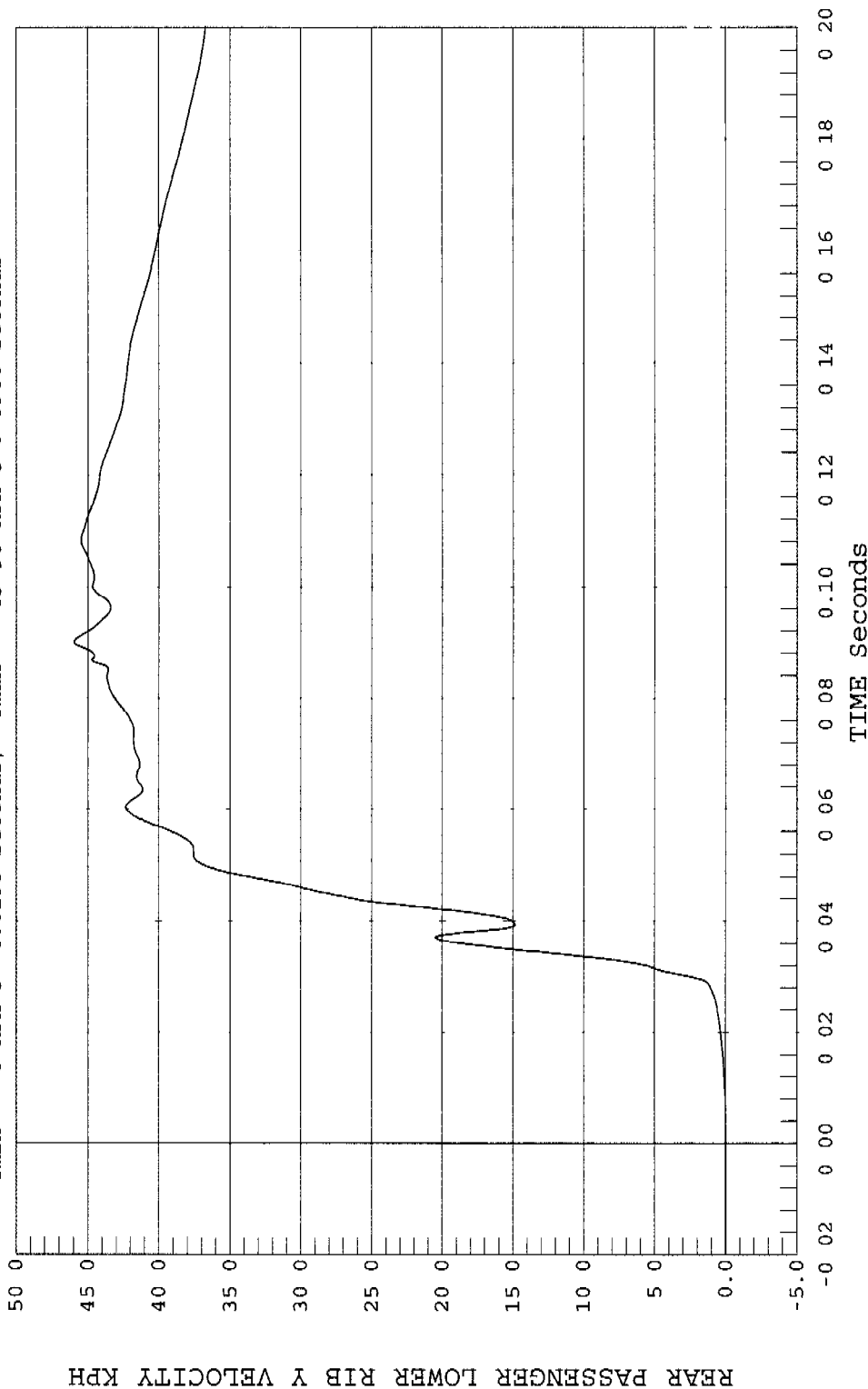


REAR PASSENGER LOWER RIB Y VELOCITY

Test Desc.: INDICANT 90 DEG. SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 180

1 REAR PASSENGER LOWER RIB Y VELOCITY, b00103AI V12

Ymin = 0 KPH @ -0.0198 Seconds, Ymax = 45.96 KPH @ 0.0900 Seconds

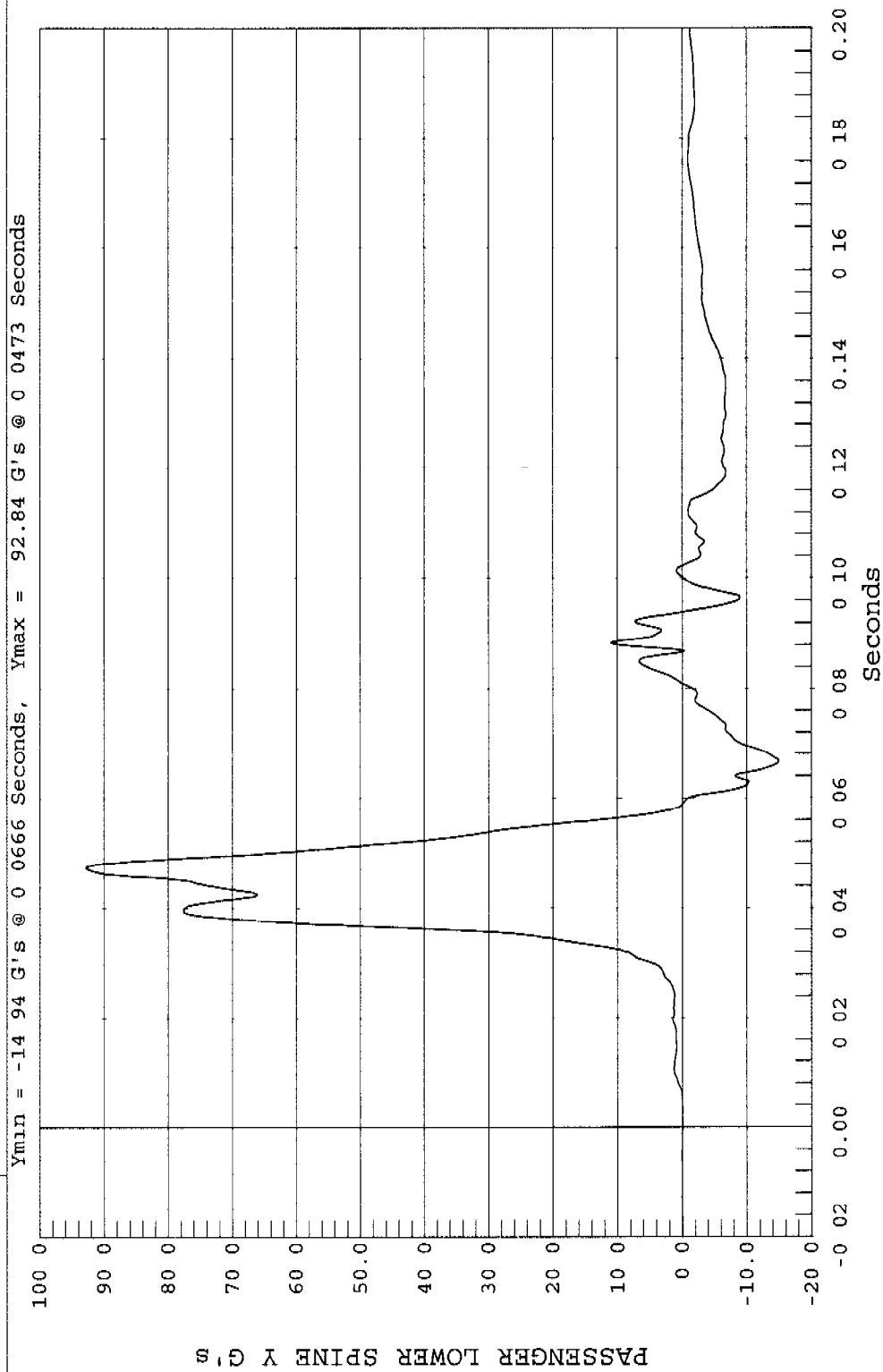




REAR PASSENGER LOWER SPINE Y ACCELERATION

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info
Test Date. 12-19-00
Speed. 38.5 MPH, 62.0 KPH
Filter Class. 180

1 PASSENGER LOWER SPINE Y, b00103AF A13

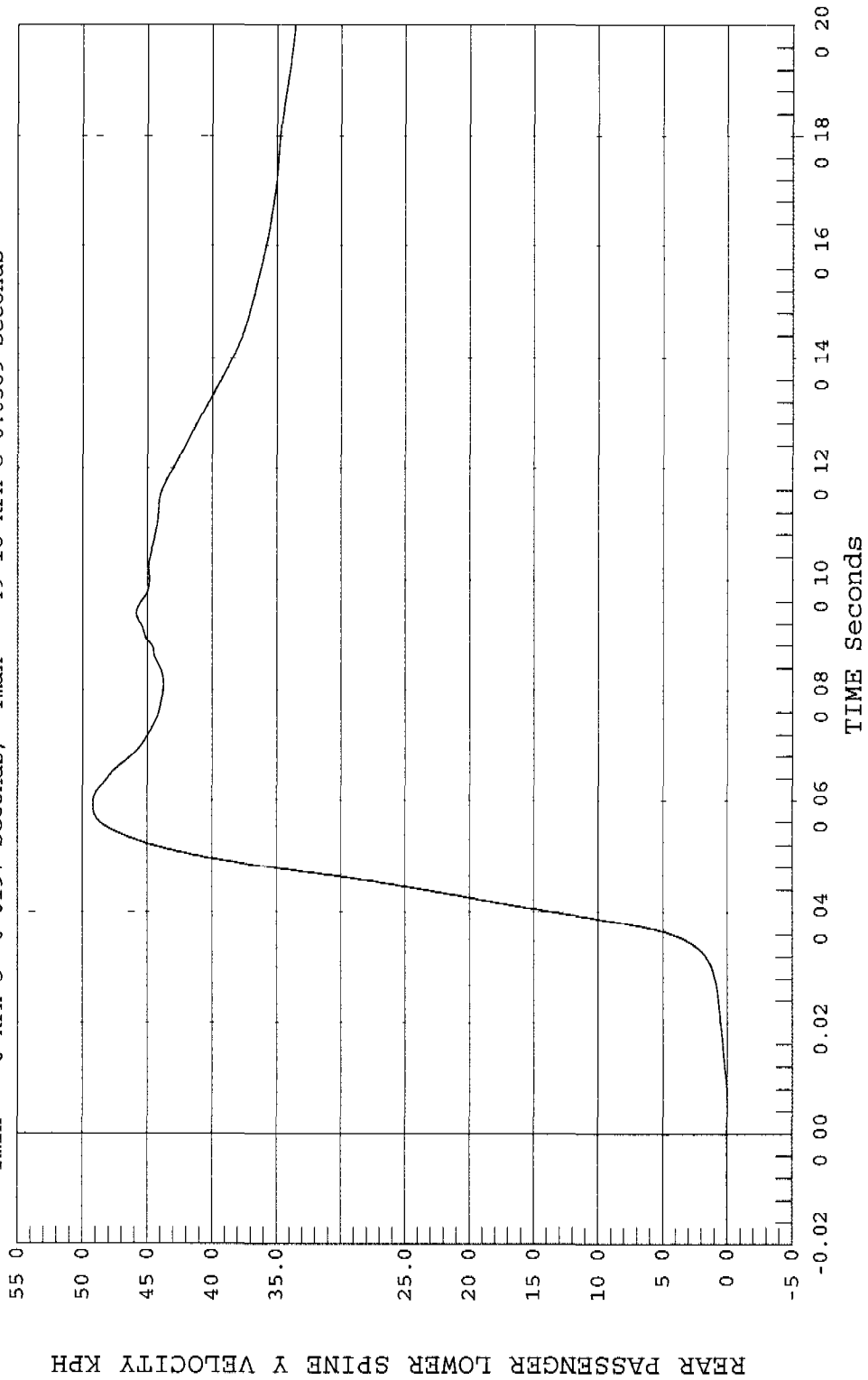


REAR PASSENGER LOWER SPINE Y VELOCITY

Test Desc. INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 180

1 REAR PASSENGER LOWER SPINE Y VELOCITY, b00103AI V13

Ymin = 0 KPH @ -0.0197 Seconds, Ymax = 49.18 KPH @ 0.0589 Seconds

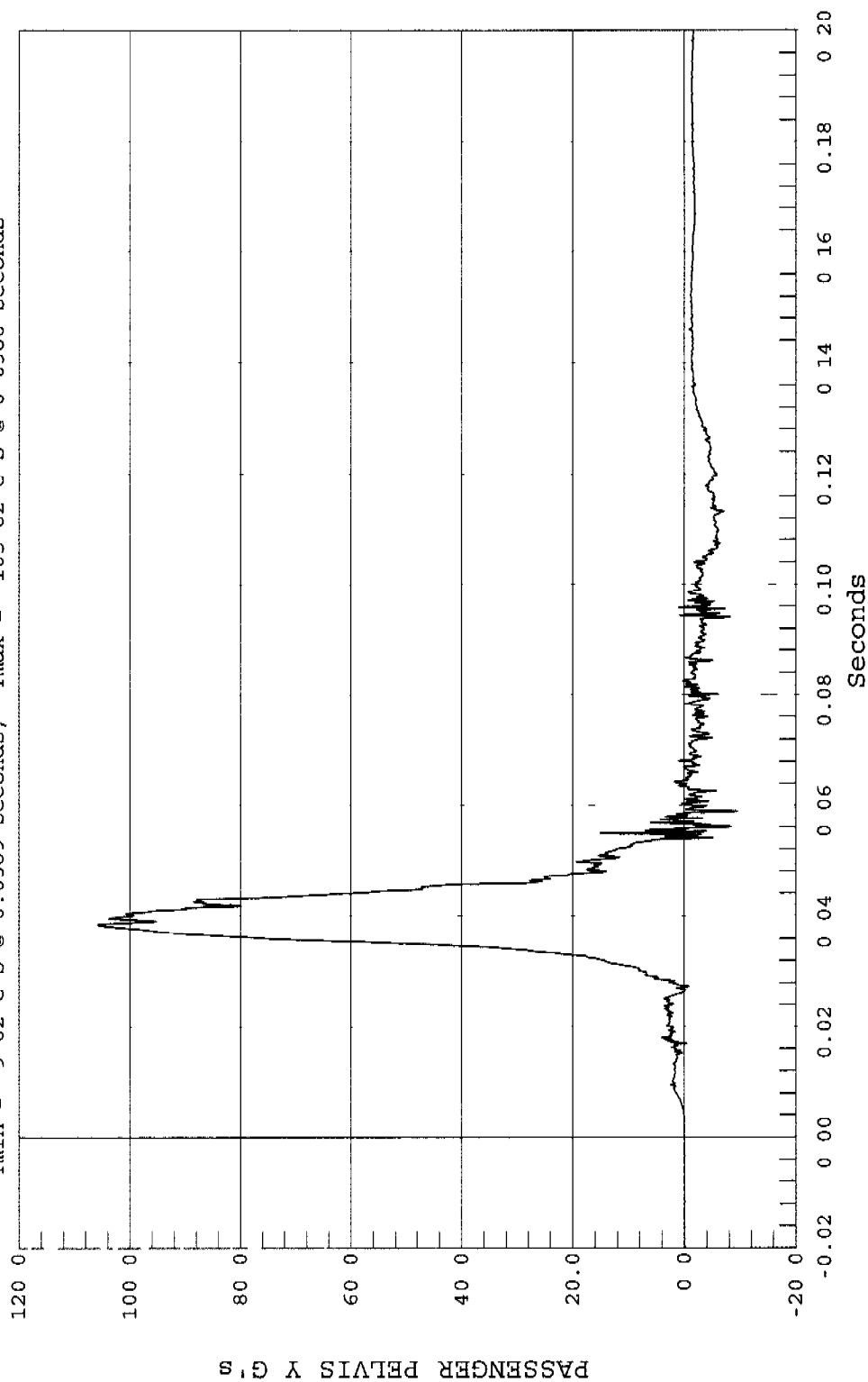


REAR PASSENGER PELVIS Y ACCELERATION

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date 12-19-00
 Speed. 38.5 MPH, 62.0 KPH
 Filter Class. 1000

1 PASSENGER PELVIS Y, b00103AT A14

Ymin = -9.62 G's @ 0.0589 Seconds, Ymax = 105.82 G's @ 0.0386 Seconds

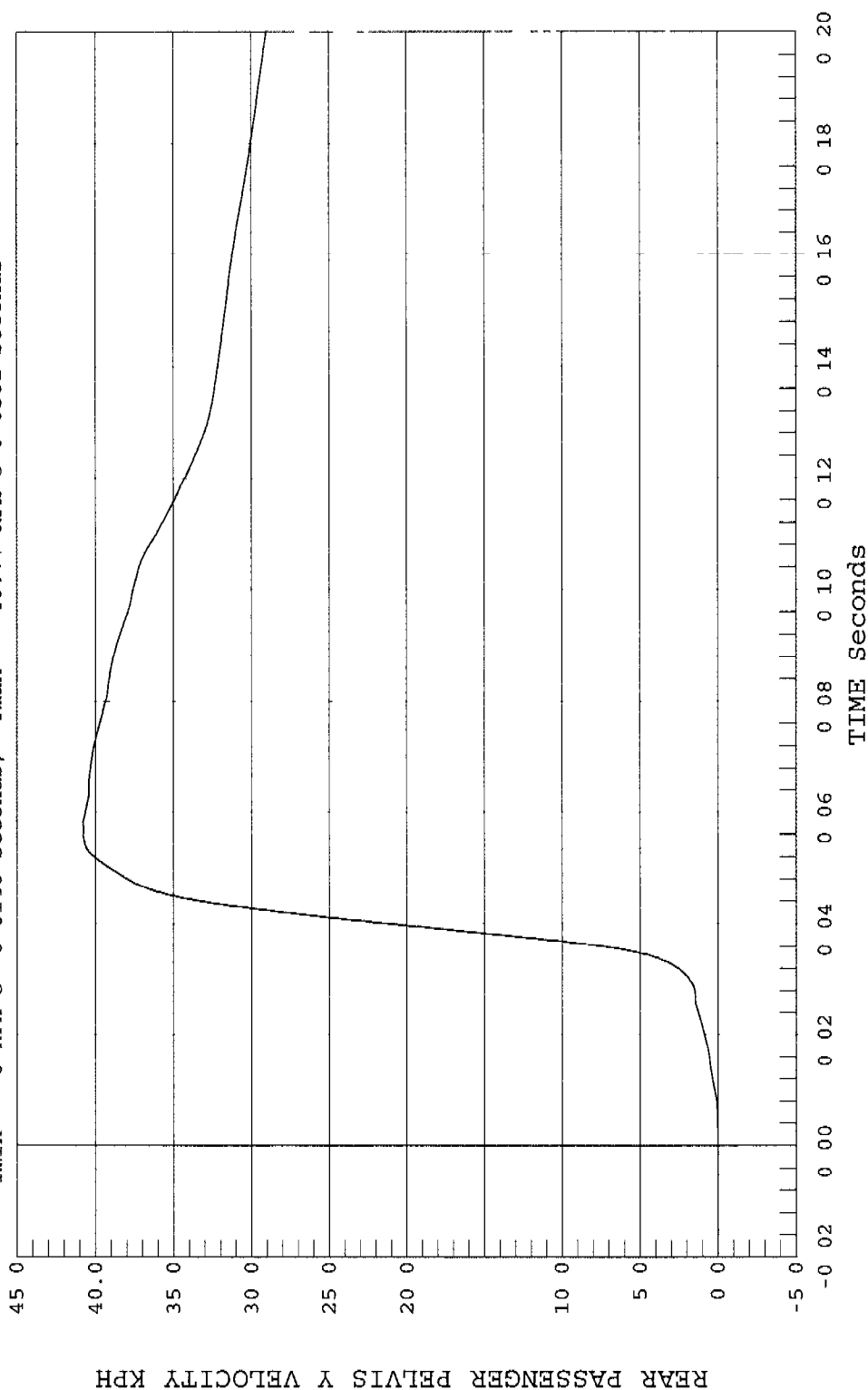


REAR PASSENGER PELVIS Y VELOCITY

Test Desc.: INDICANT 90 DEG. SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 180

1 REAR PASSENGER PELVIS Y VELOCITY, b00103AI V14

Ymin = 0 KPH @ -0.0146 Seconds, Ymax = 40.77 KPH @ 0.0581 Seconds

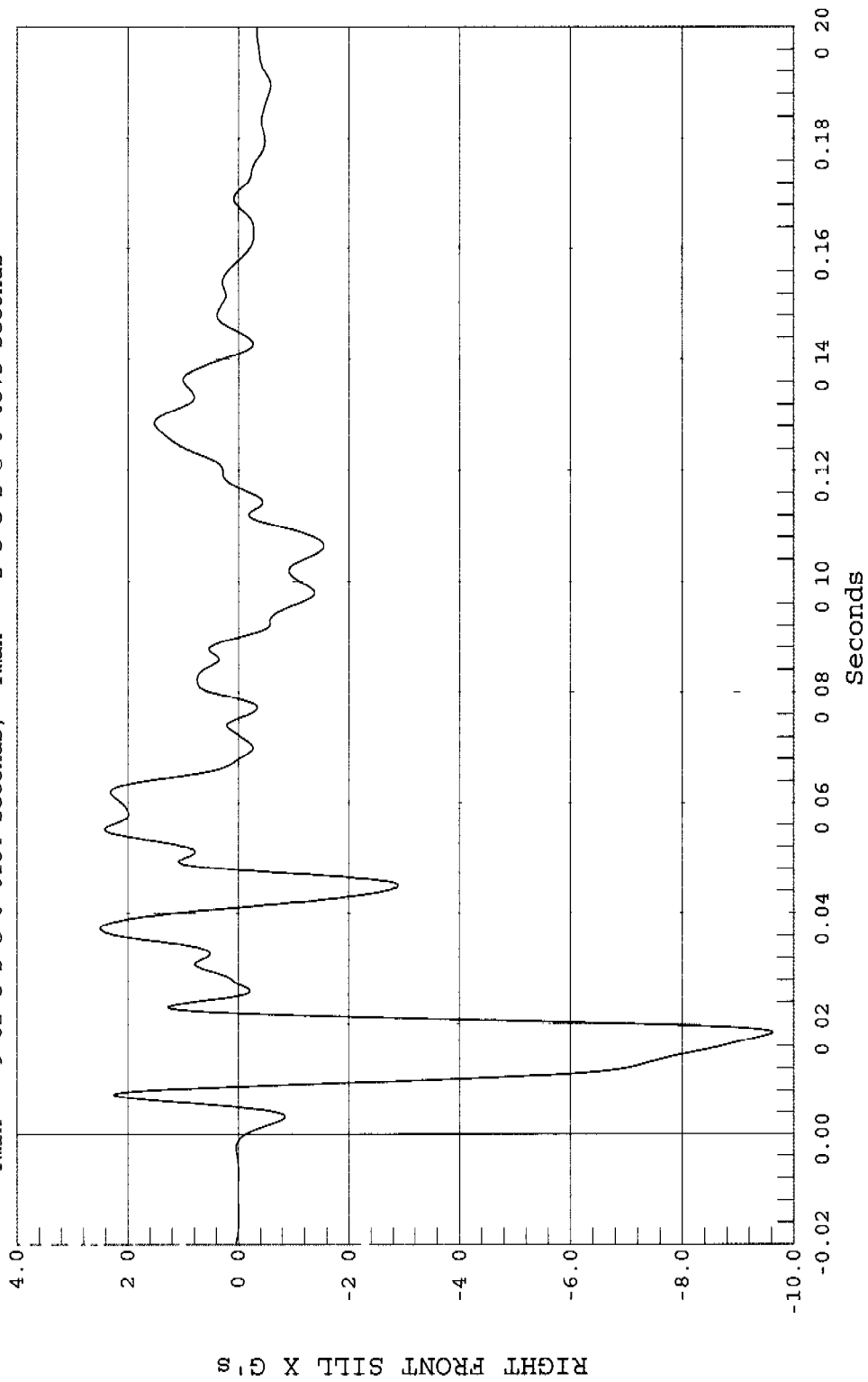


RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

Test Desc : INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date: 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Filter Class: 60

1 RIGHT FRONT SILL X, b00103AF A15

Ymin = -9.62 G's @ 0.0184 Seconds, Ymax = 2.5 G's @ 0.0373 Seconds

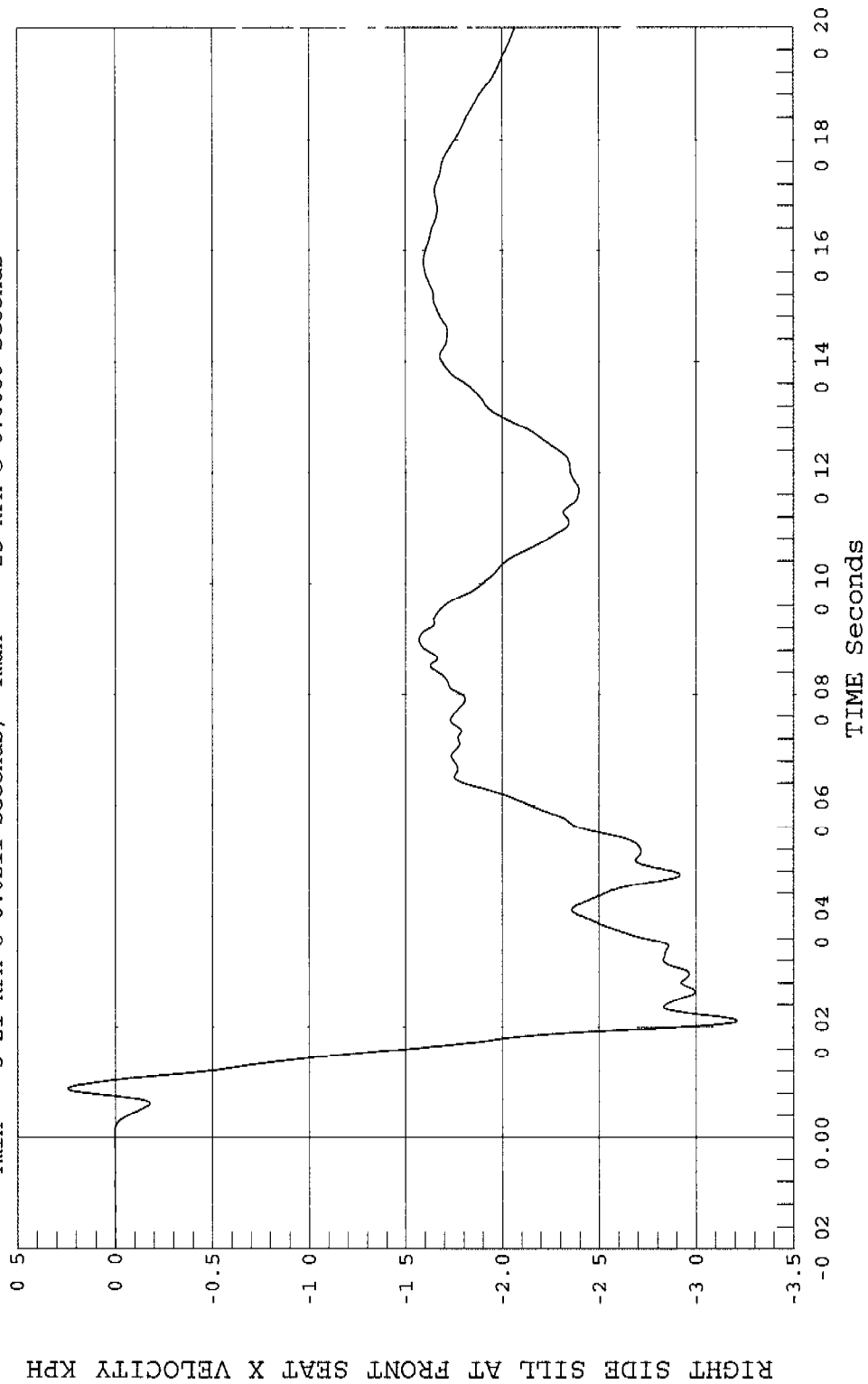


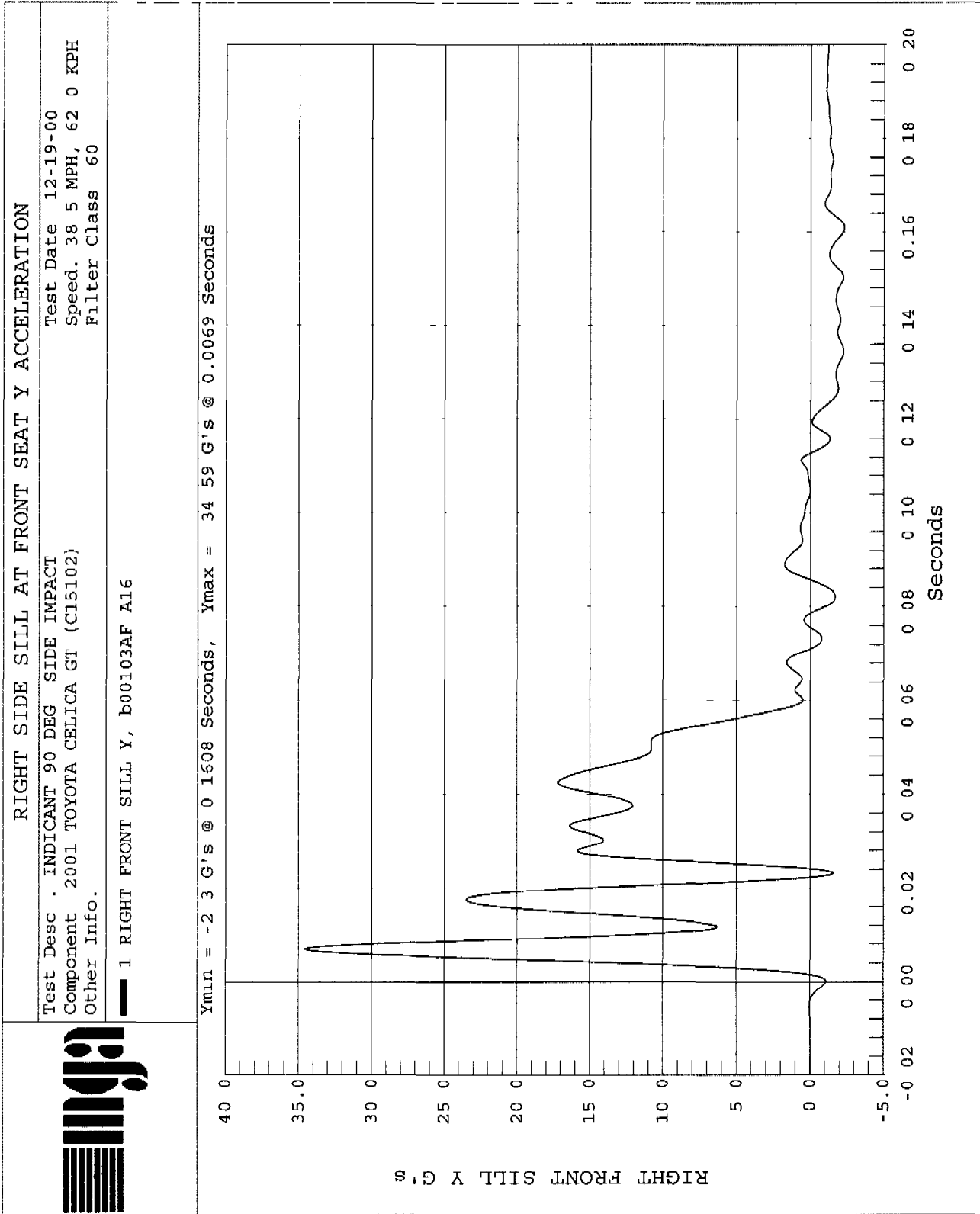
RIGHT SIDE SILL AT FRONT SEAT X VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class. 180

1 RIGHT SIDE SILL AT FRONT SEAT X VELOCITY, b00103AI V15

Ymin = -3 21 KPH @ 0.0211 Seconds, Ymax = 25 KPH @ 0.0088 Seconds



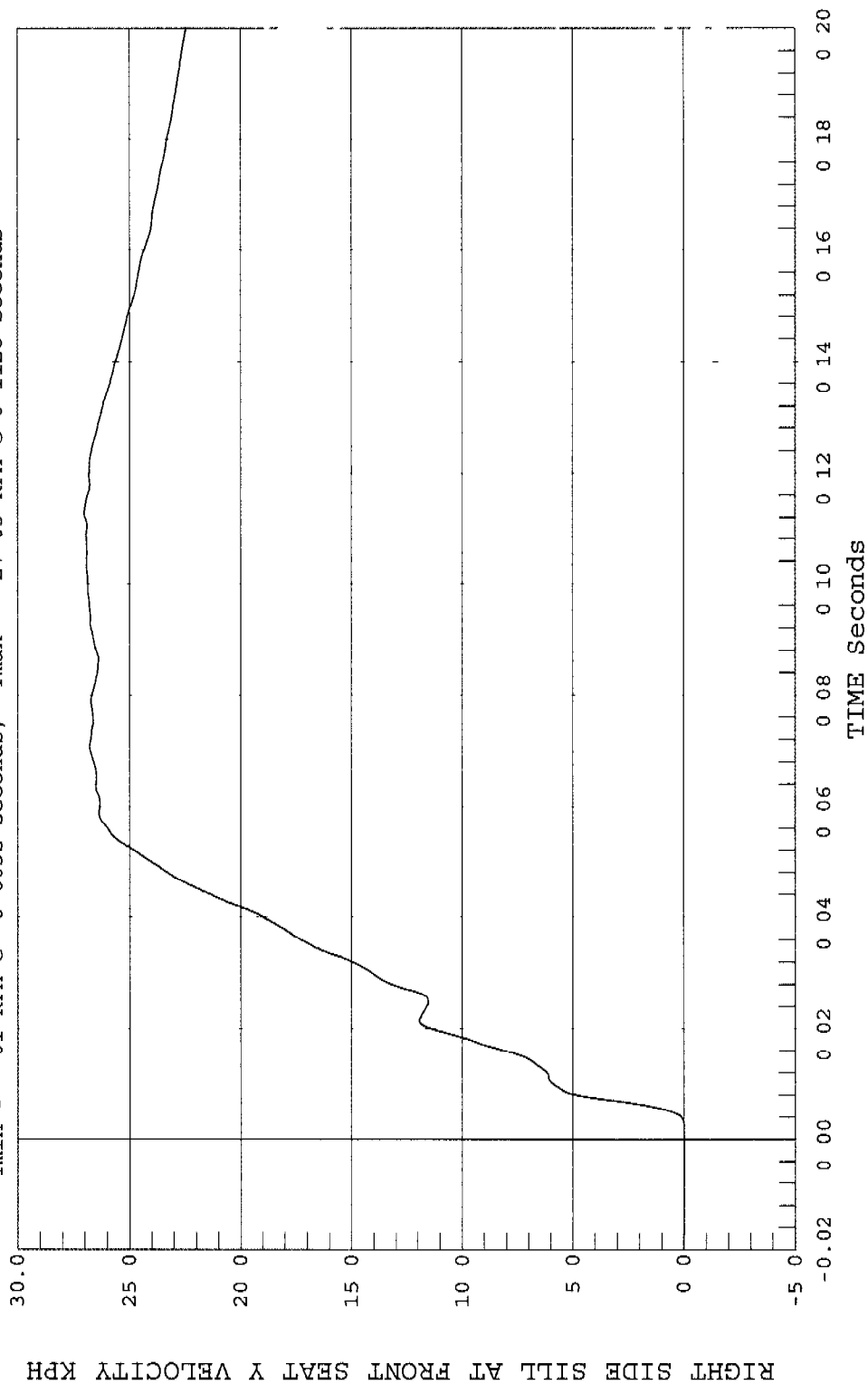


RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY

Test Desc : INDICANT 90 DEG. SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 180

1 RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY, b00103AI V16

Ymin = -01 KPH @ -0.0032 Seconds, Ymax = 27.03 KPH @ 0.1128 Seconds



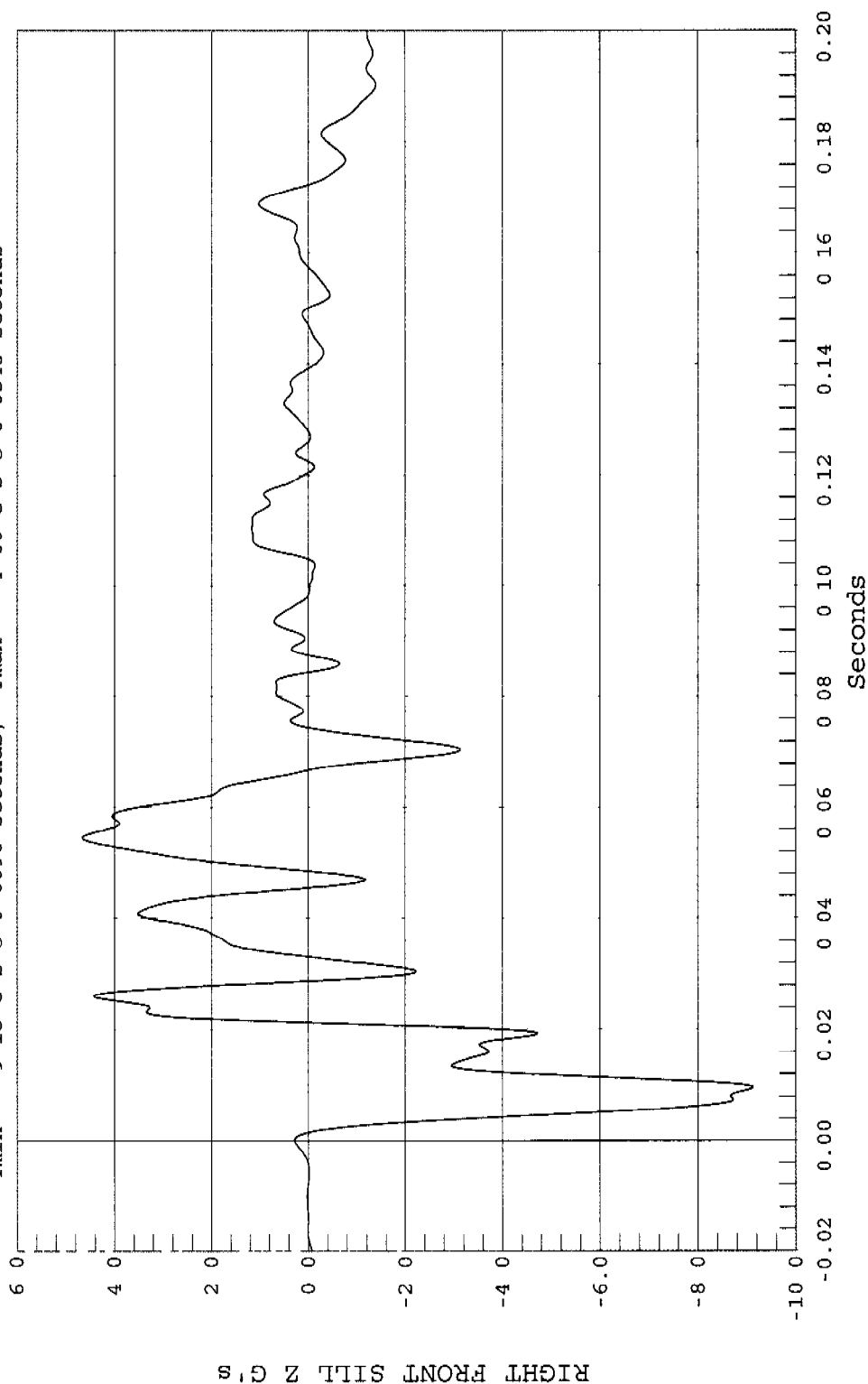
RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION

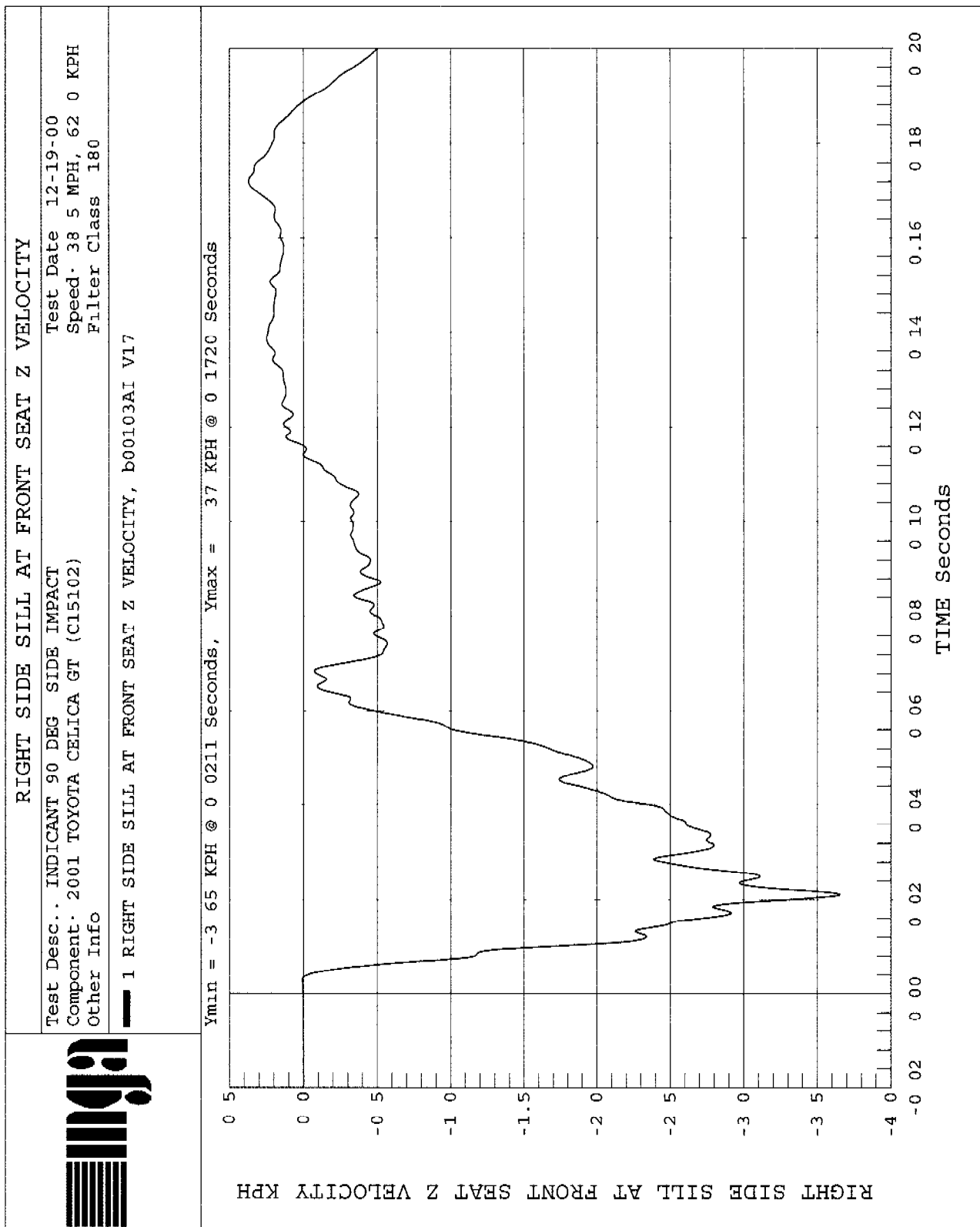
Test Date 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 60

Test Desc INDICANT 90 DEG. SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info.

1 RIGHT FRONT SILL Z, b00103AF A17

Ymin = -9.13 G's @ 0.0096 Seconds, Ymax = 4.66 G's @ 0.0545 Seconds



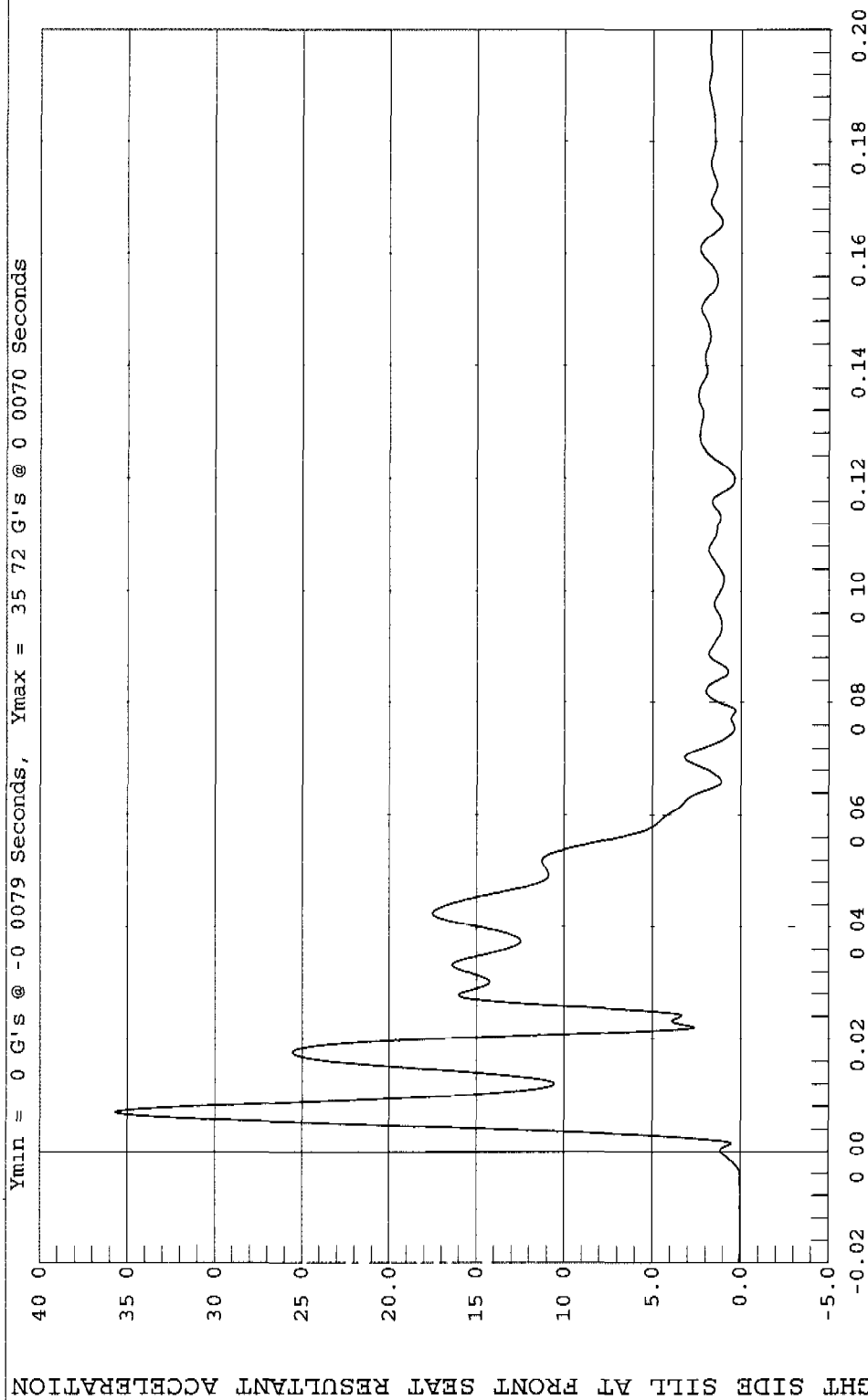




RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info
Test Date: 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class: 60

1 RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION, b00103AV.A15



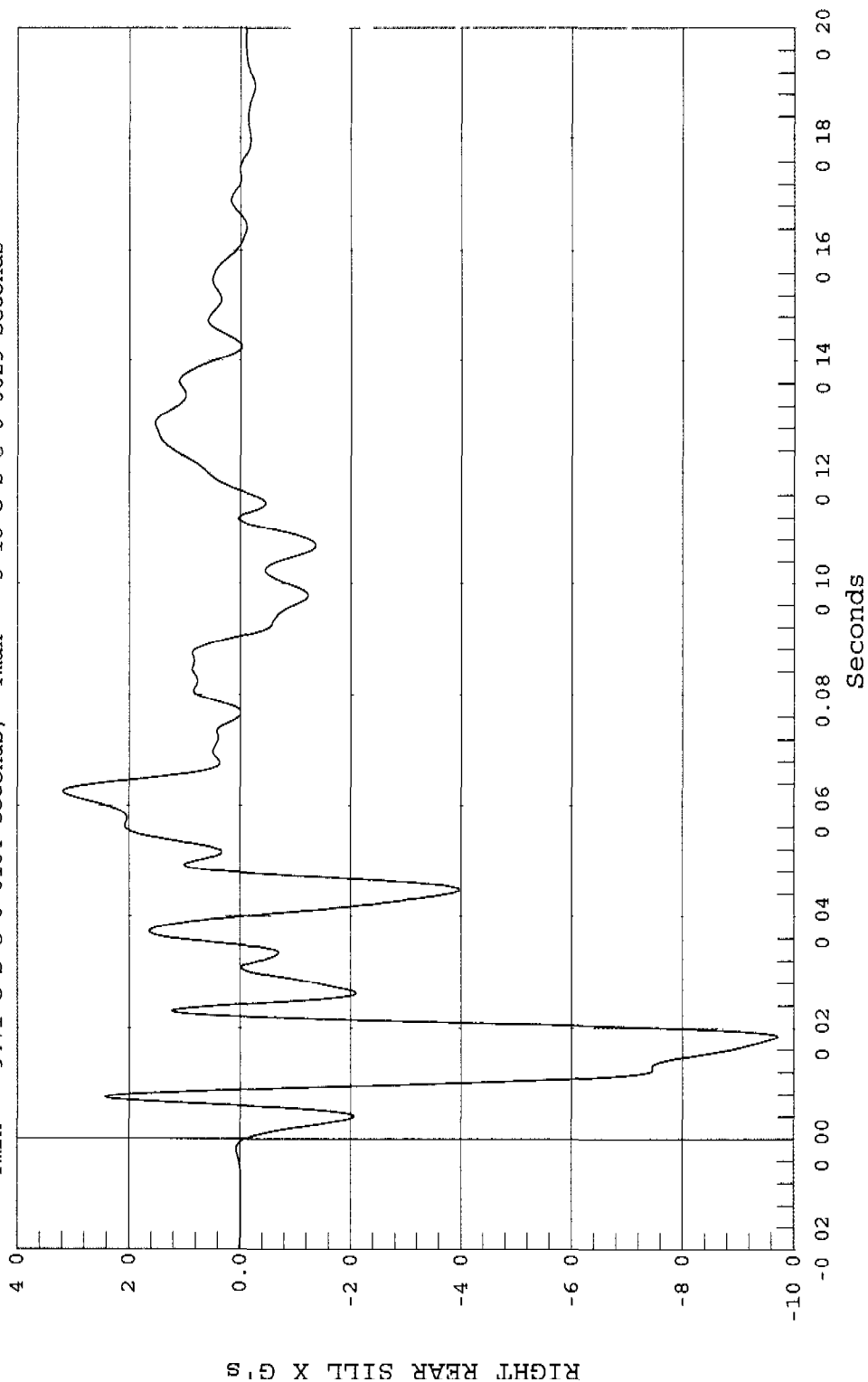
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

Test Date: 12-19-00
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

Test Desc: INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info

1 RIGHT REAR SILL X, b00103AF A18

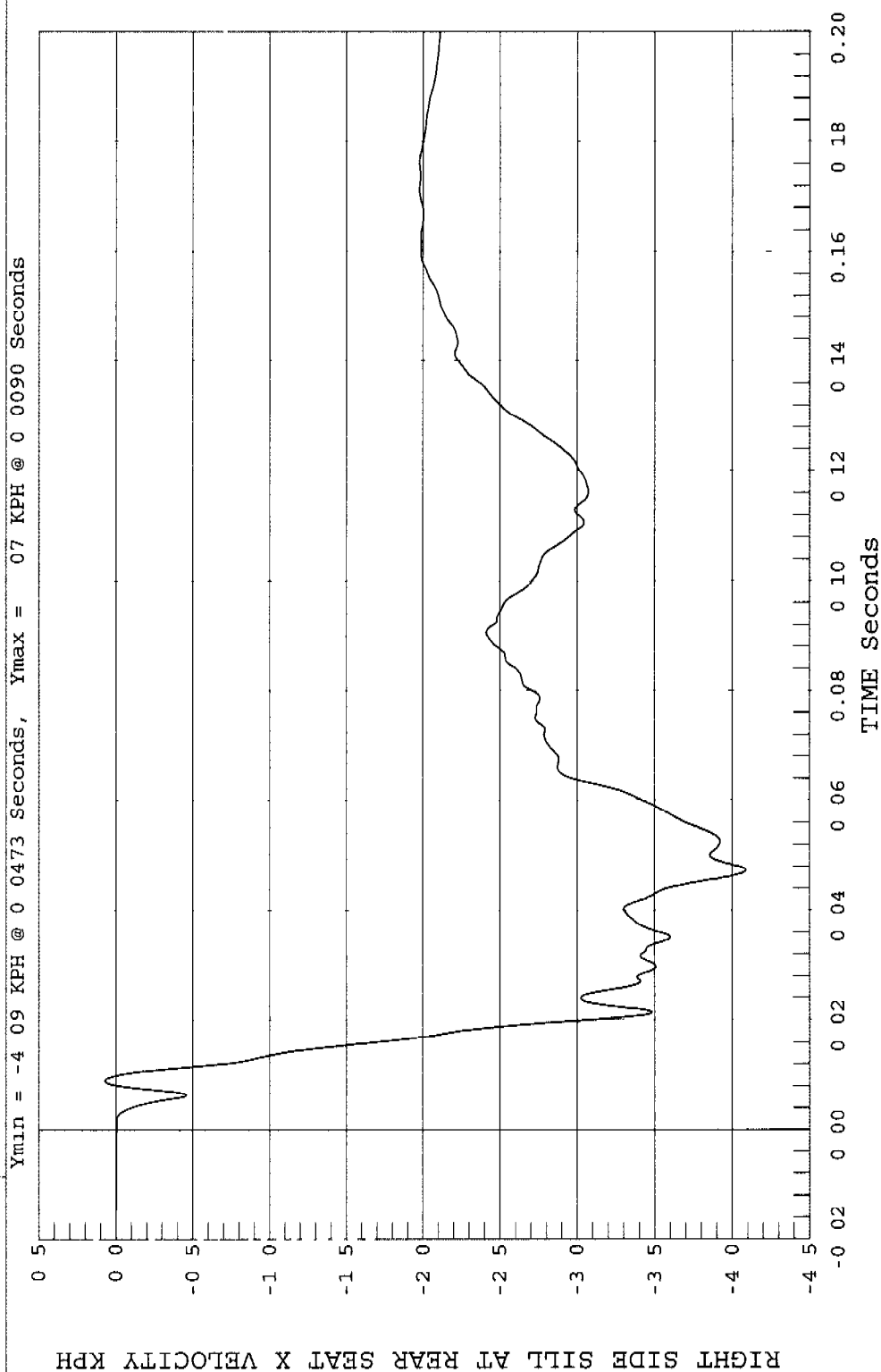
Ymin = -9.71 G's @ 0.0184 Seconds, Ymax = 3.18 G's @ 0.0625 Seconds

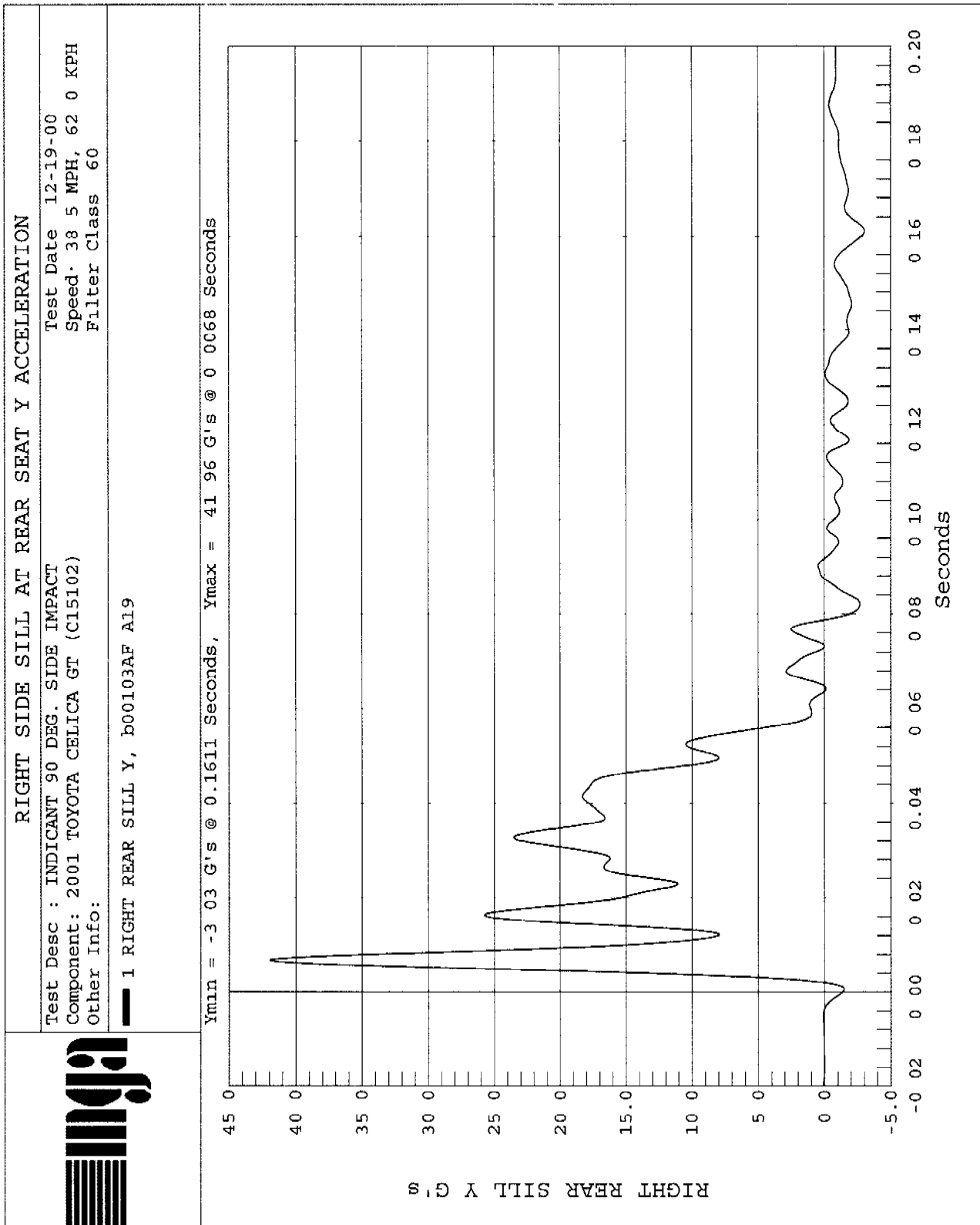


RIGHT SIDE SILL AT REAR SEAT X VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date. 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Filter Class. 180

1 RIGHT SIDE SILL AT REAR SEAT X VELOCITY, b00103AI V18



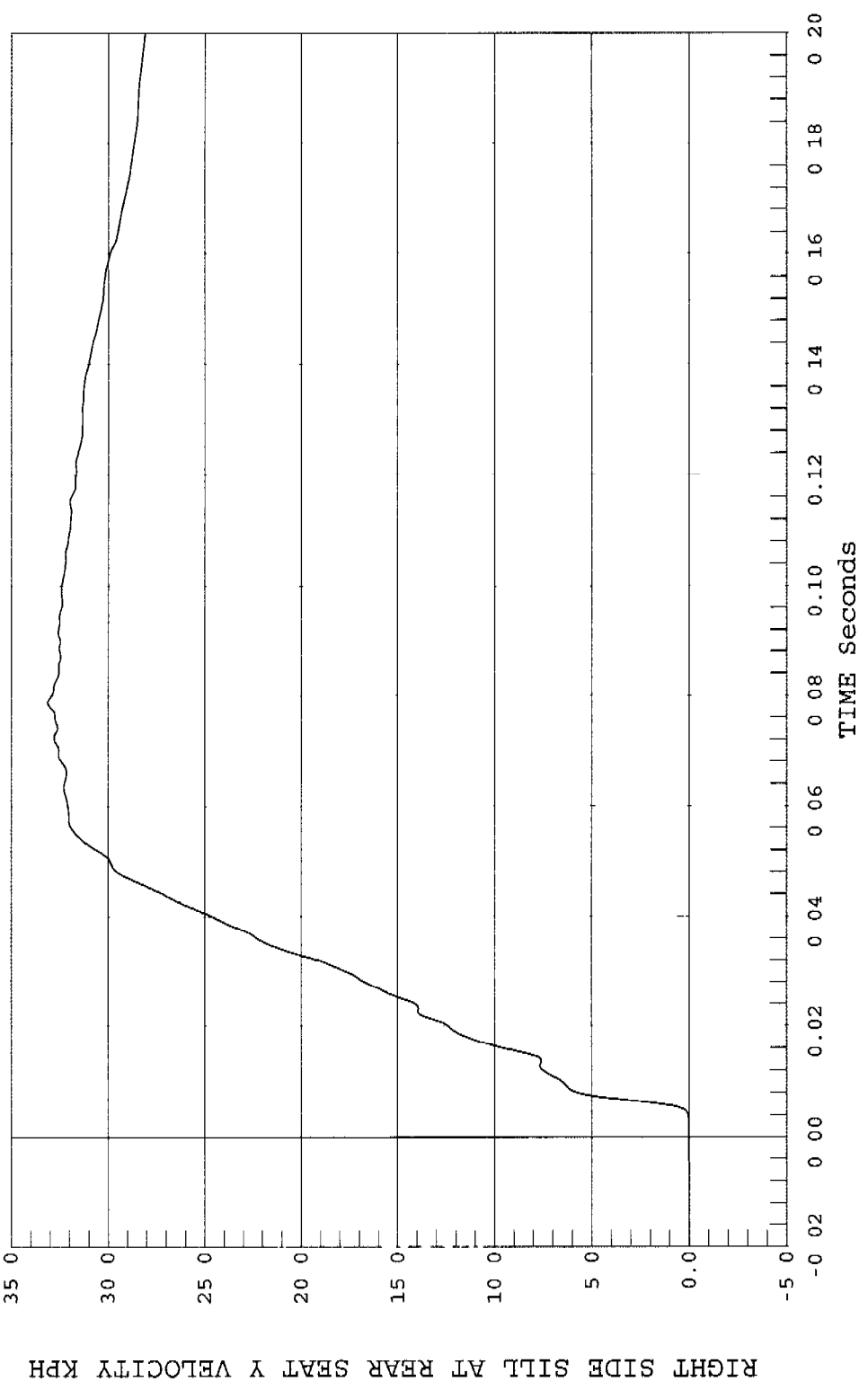


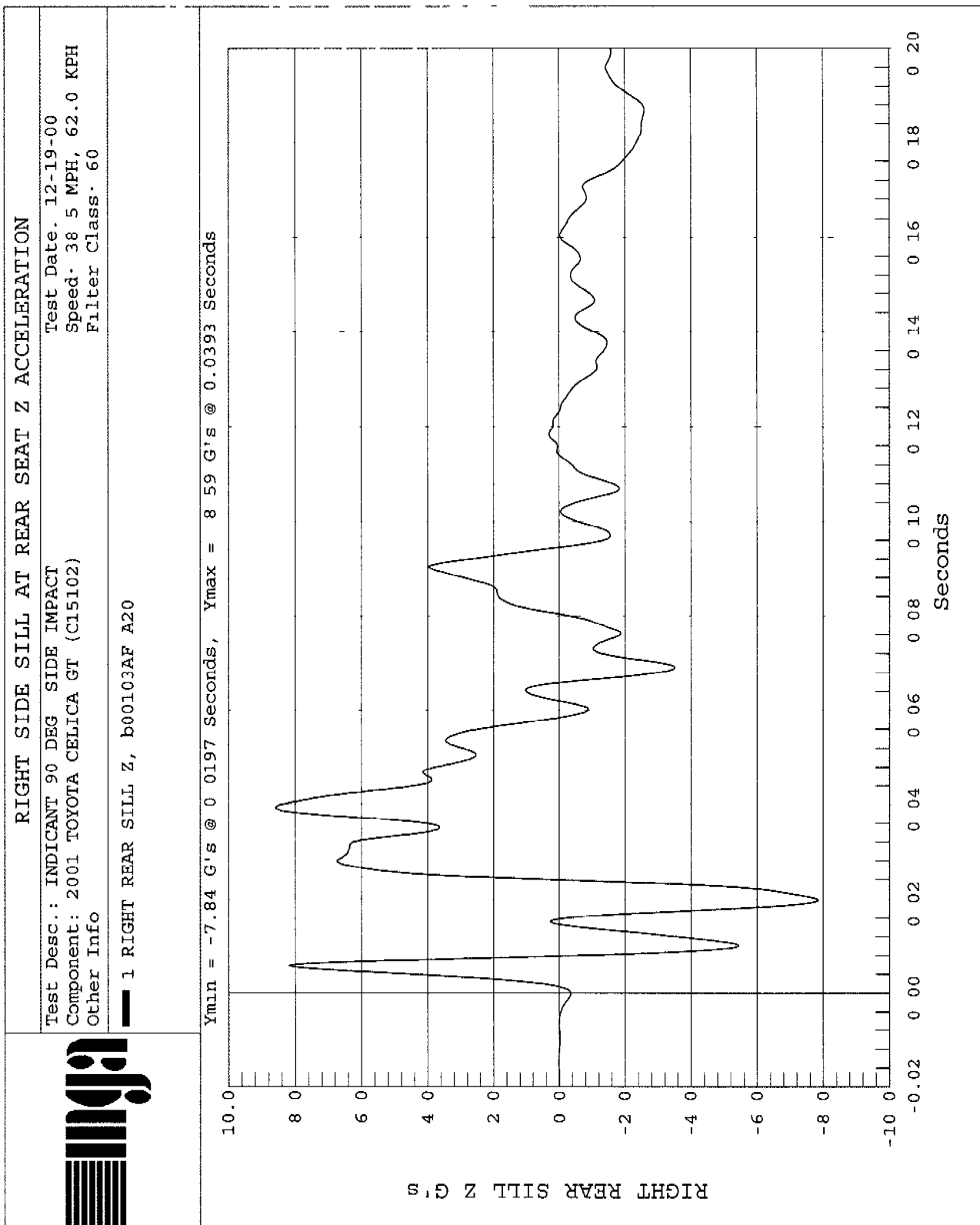
RIGHT SIDE SILL AT REAR SEAT Y VELOCITY

Test Desc.. INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info
Test Date. 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class. 180

1 RIGHT SIDE SILL AT REAR SEAT Y VELOCITY, b00103AI V19

Ymin = 0 KPH @ -0.0198 Seconds, Ymax = 33.12 KPH @ 0.0785 Seconds



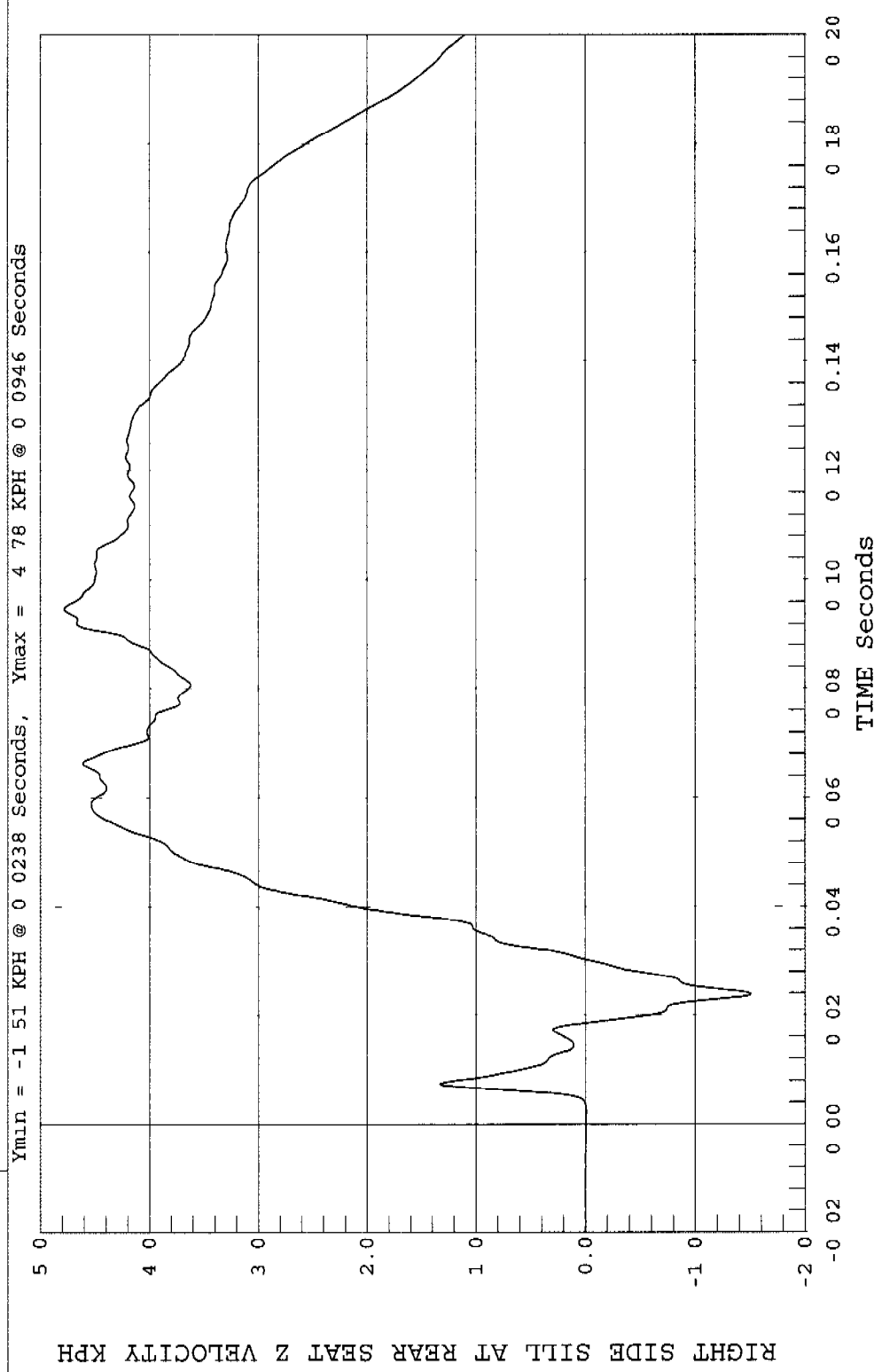


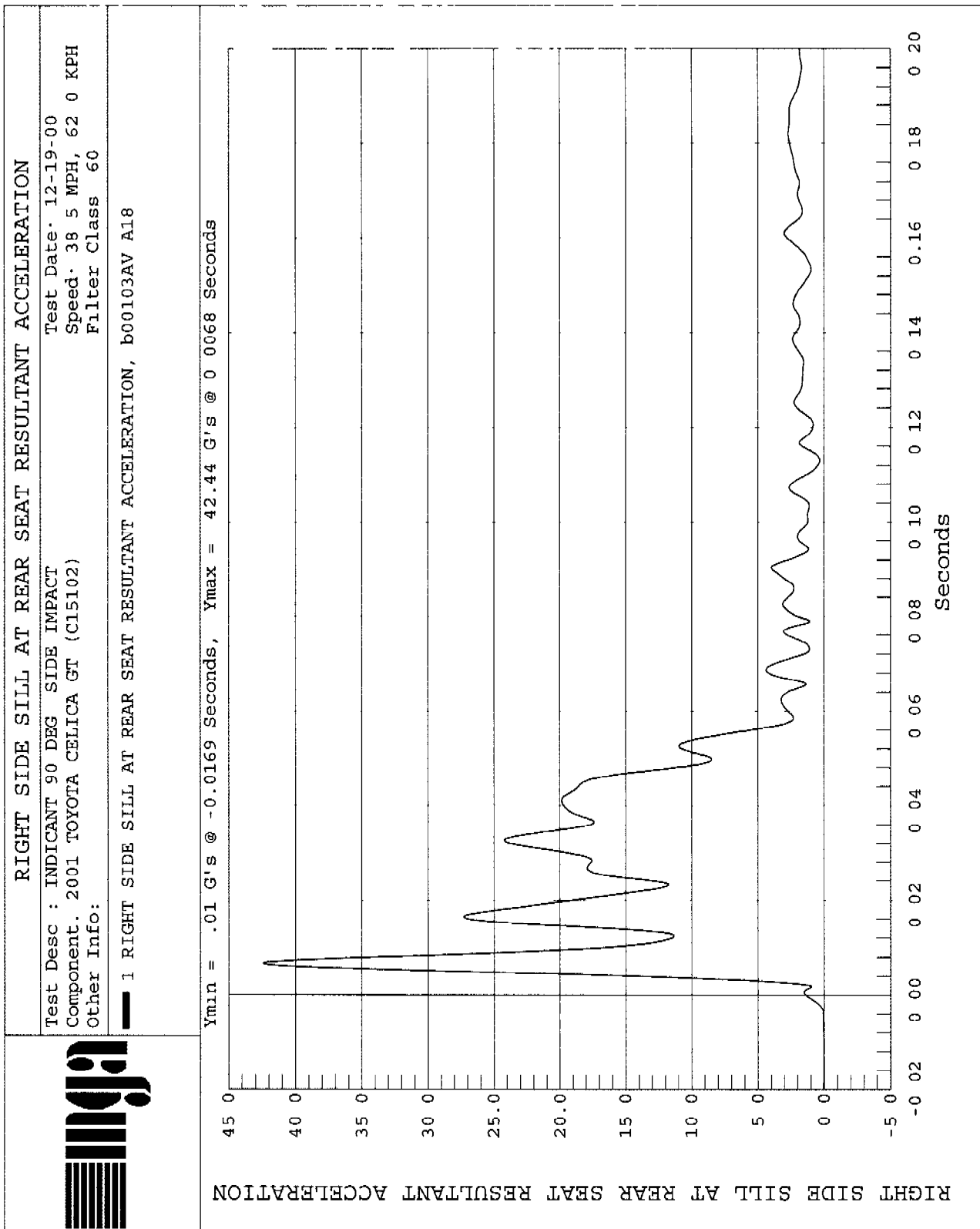


RIGHT SIDE SILL AT REAR SEAT Z VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info
Test Date: 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class. 180

1 RIGHT SIDE SILL AT REAR SEAT Z VELOCITY, b00103AI V20





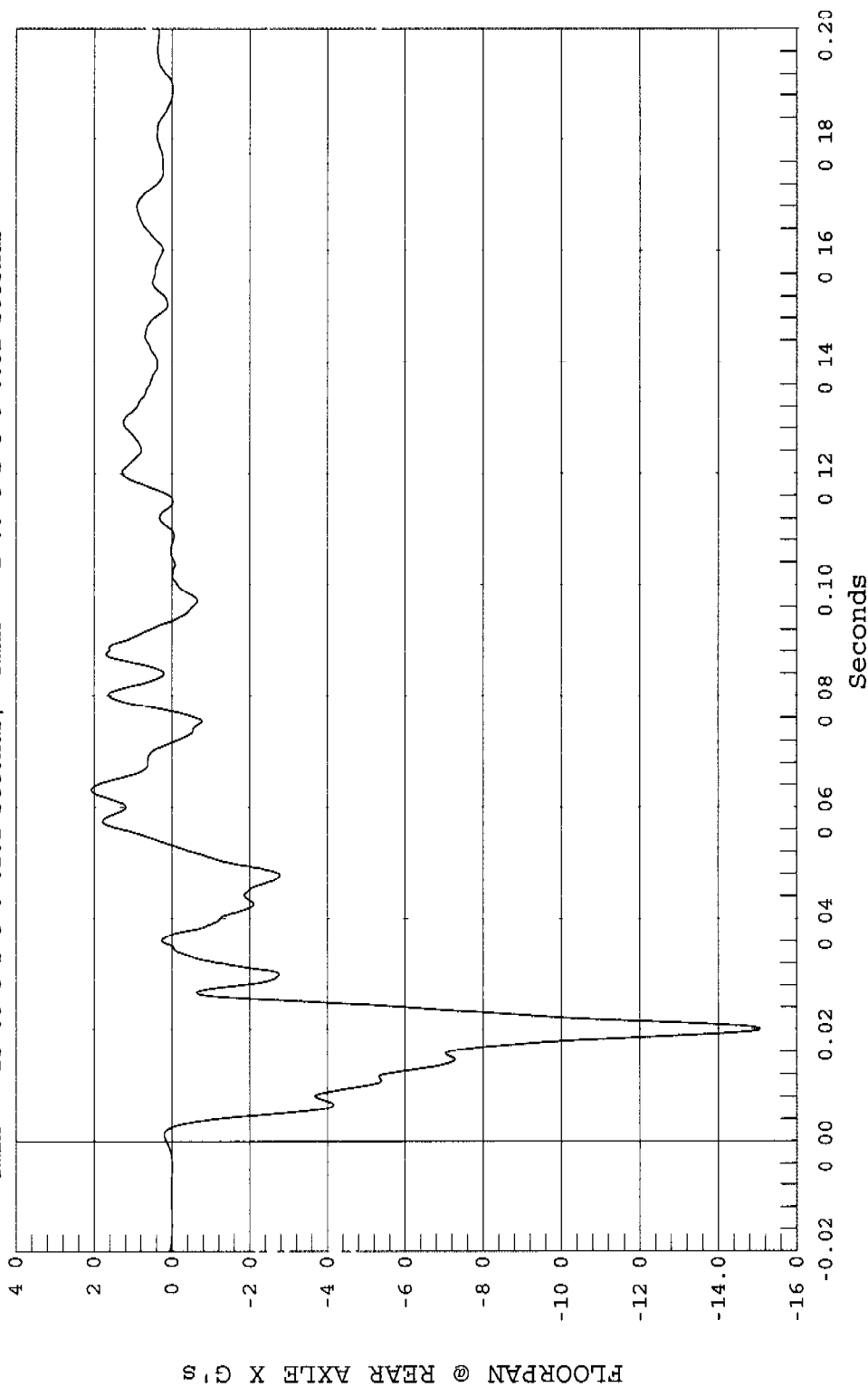
REAR FLOORPAN ABOVE AXLE X ACCELERATION

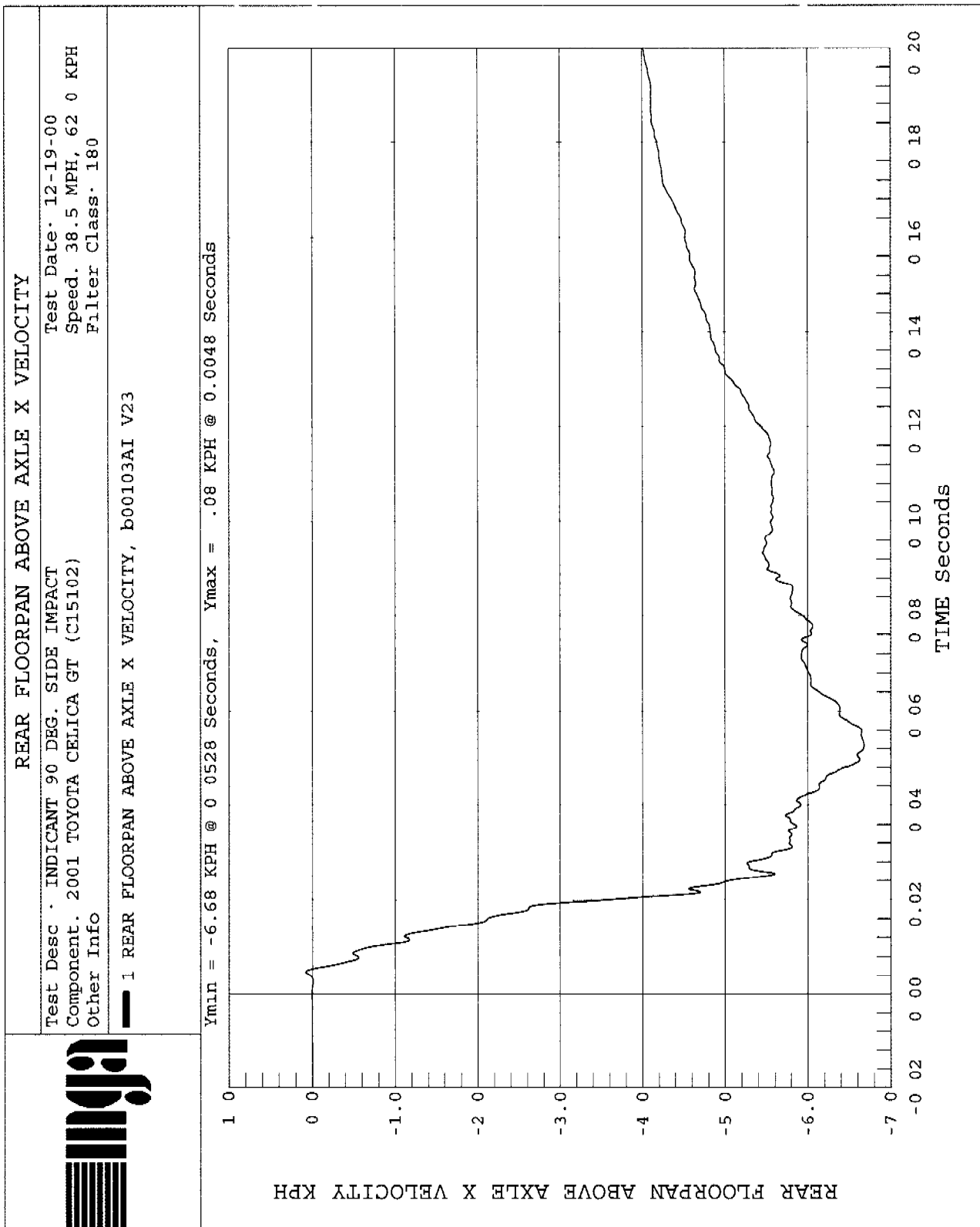
Test Date: 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 60

Test Desc INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info

1 FLOORPAN @ REAR AXLE X, b00103AF.A23

Ymin = -15.06 G's @ 0.0201 Seconds, Ymax = 2.08 G's @ 0.0631 Seconds





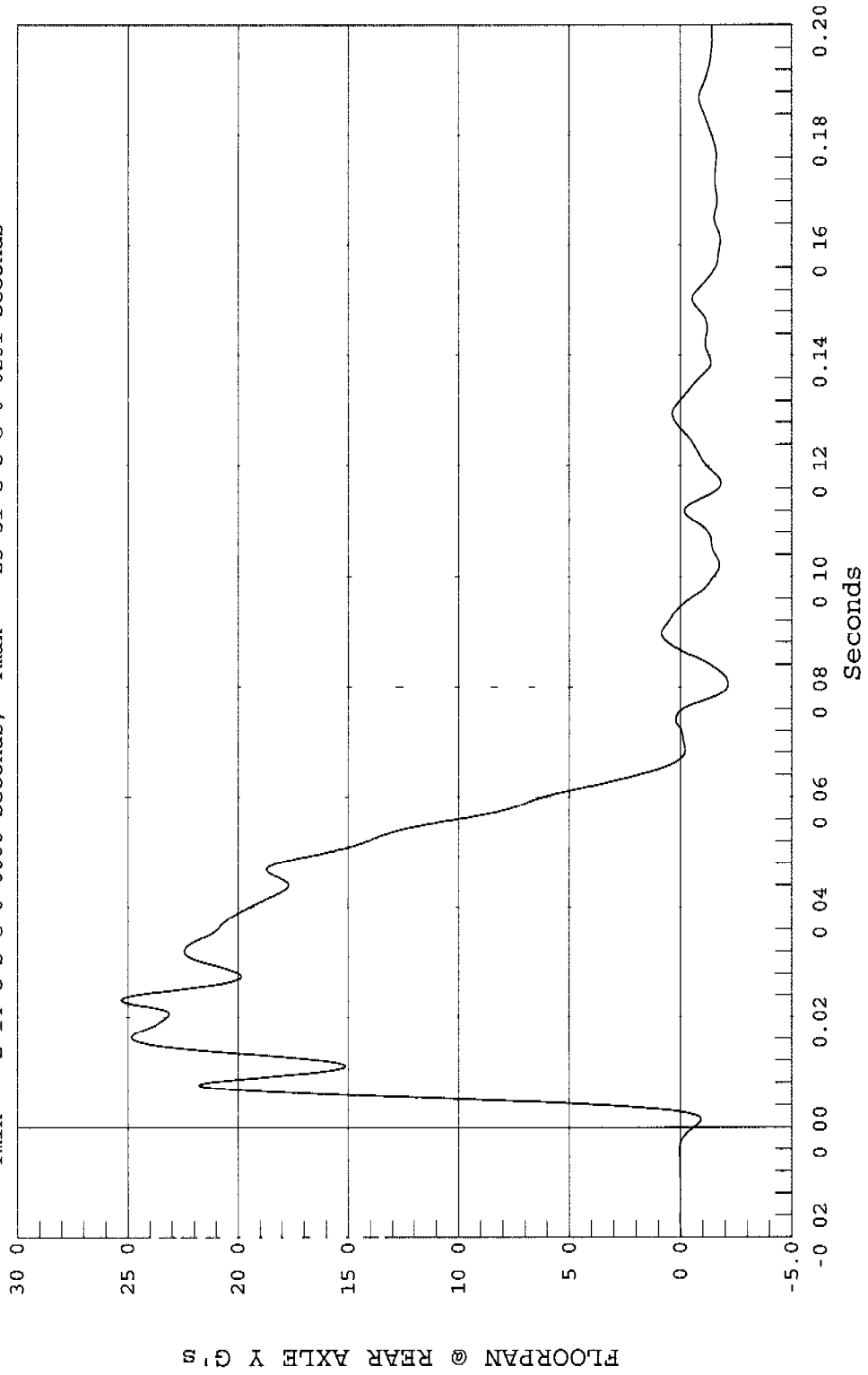
REAR FLOORPAN ABOVE AXLE Y ACCELERATION

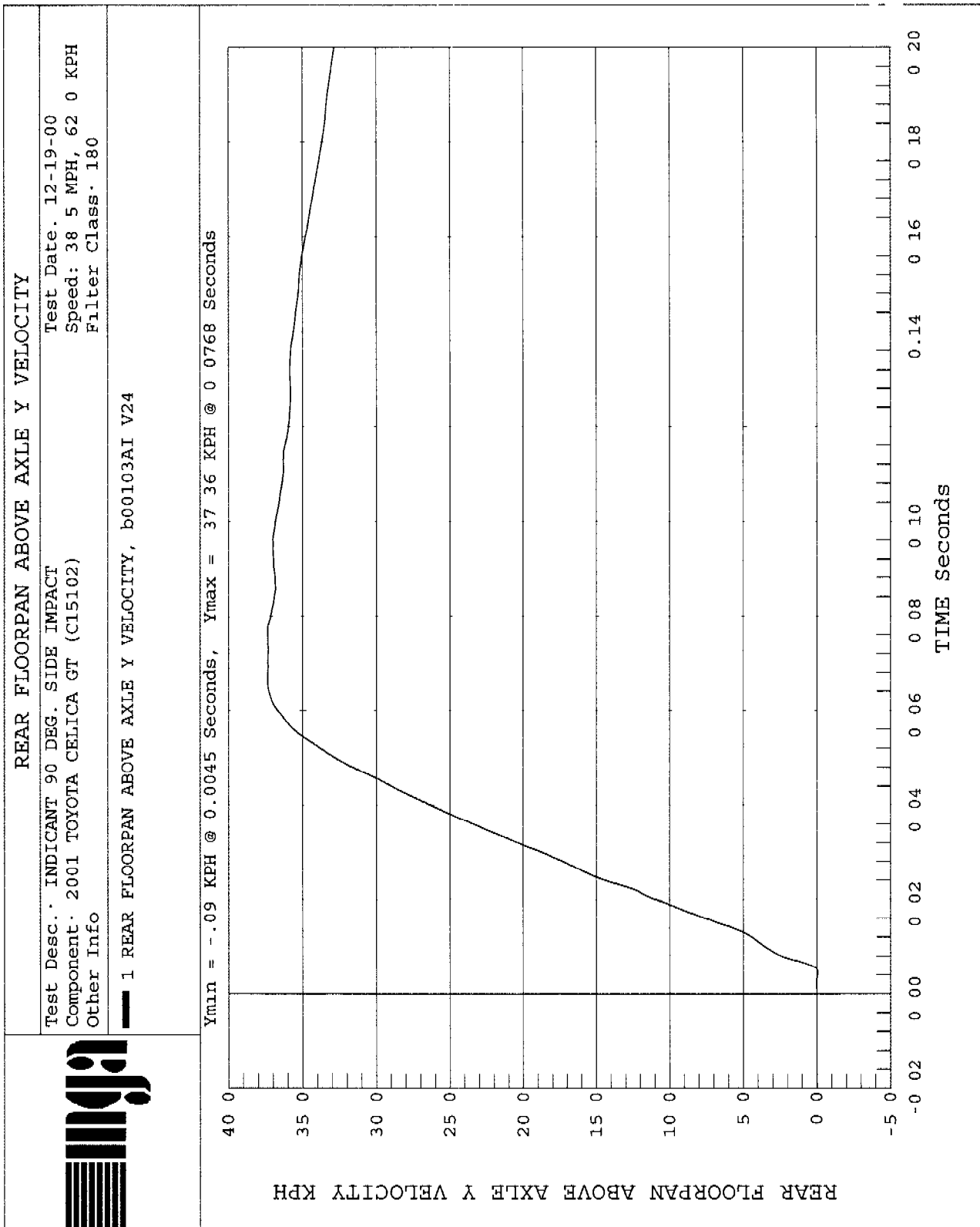
Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class: 60

Test Desc.: INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info:

1 FLOORPAN @ REAR AXLE Y, b00103AF A24

Ymin = -2.14 G's @ 0.0806 Seconds, Ymax = 25.31 G's @ 0.0231 Seconds





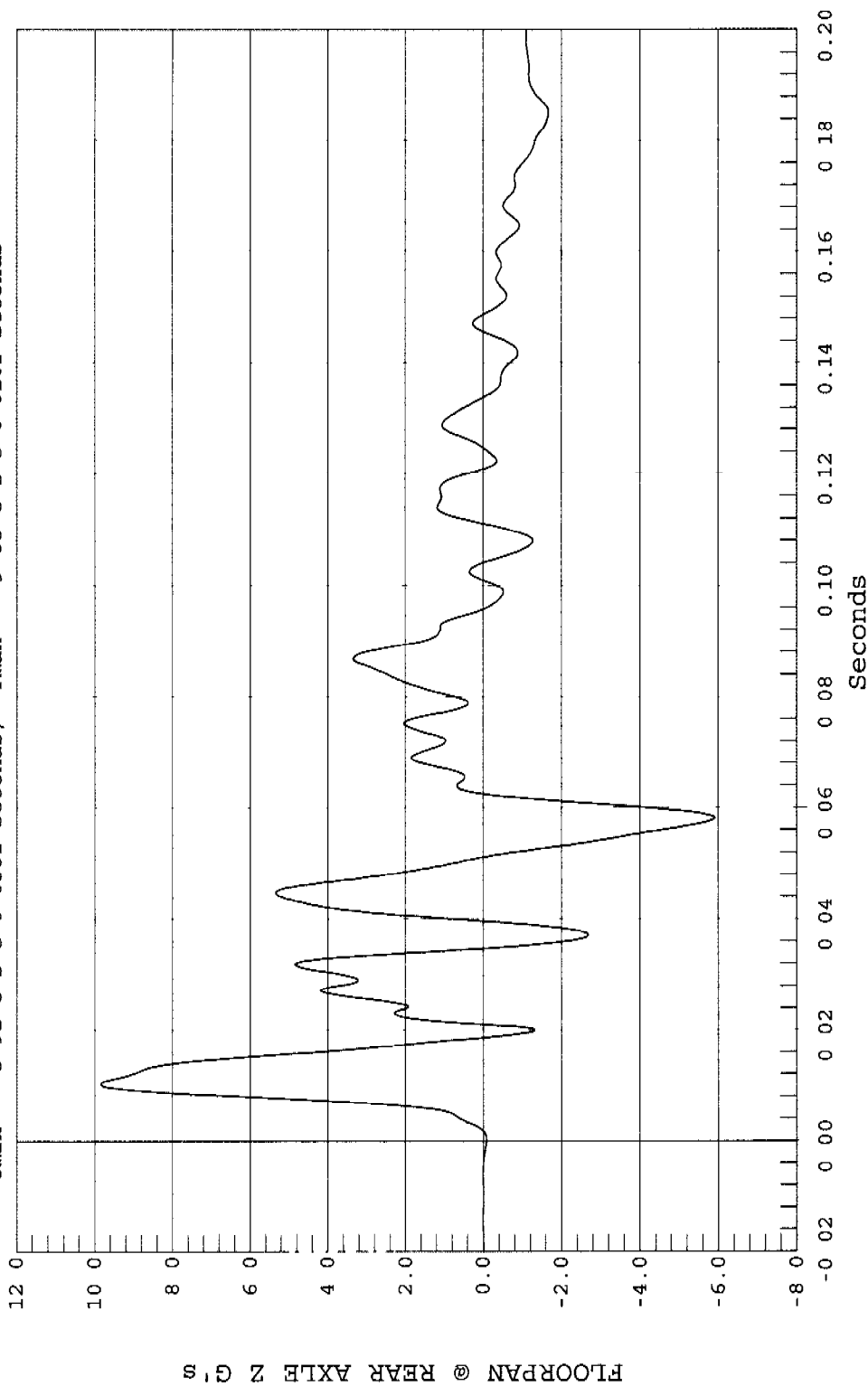
REAR FLOORPAN ABOVE AXLE Z ACCELERATION

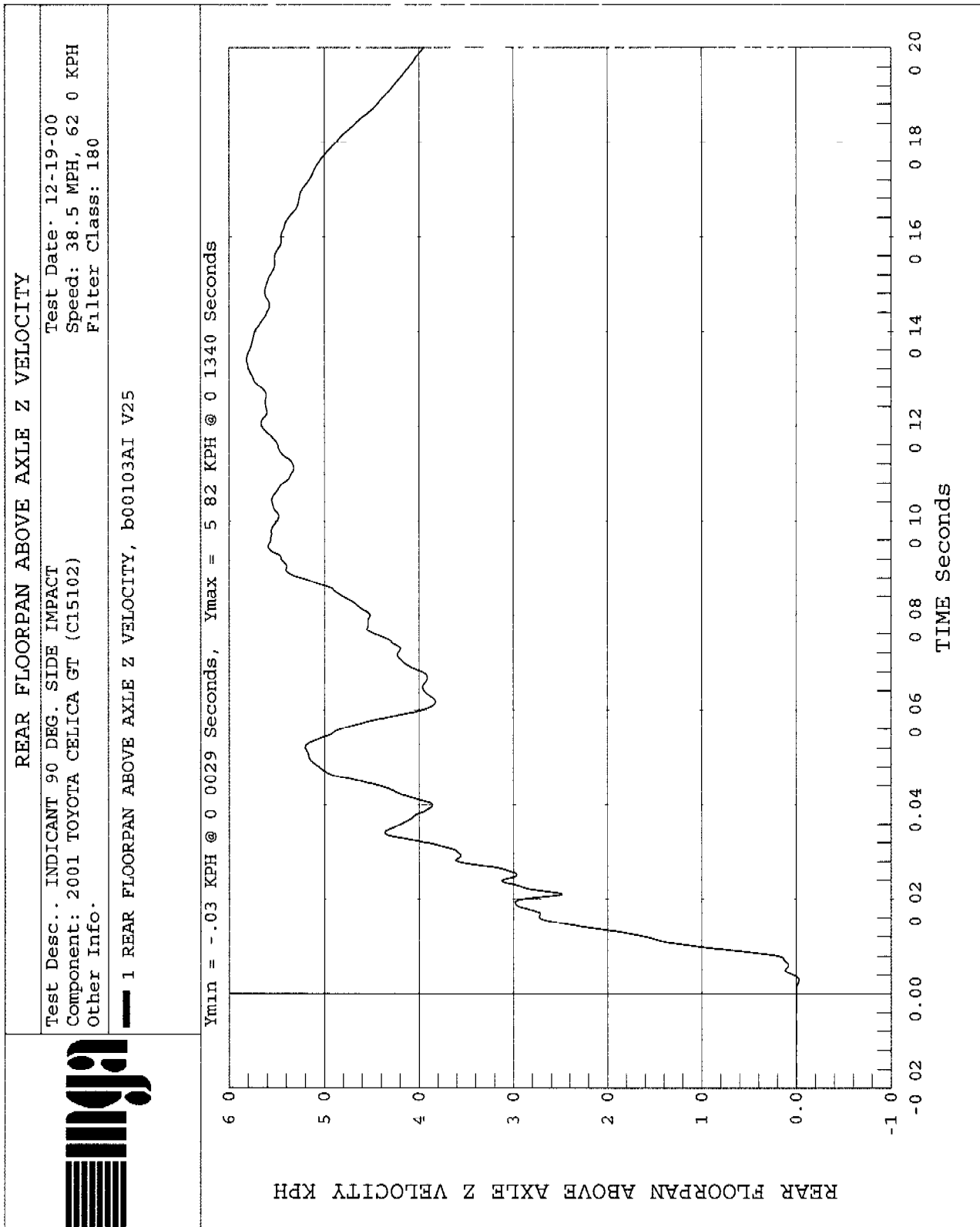
Test Date. 12-19-00
Speed. 38.5 MPH, 62 0 KPH
Filter Class. 60

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info

1 FLOORPAN @ REAR AXLE Z, b00103AF.A25

Ymin = -5.91 G's @ 0.0581 Seconds, Ymax = 9.85 G's @ 0.0102 Seconds



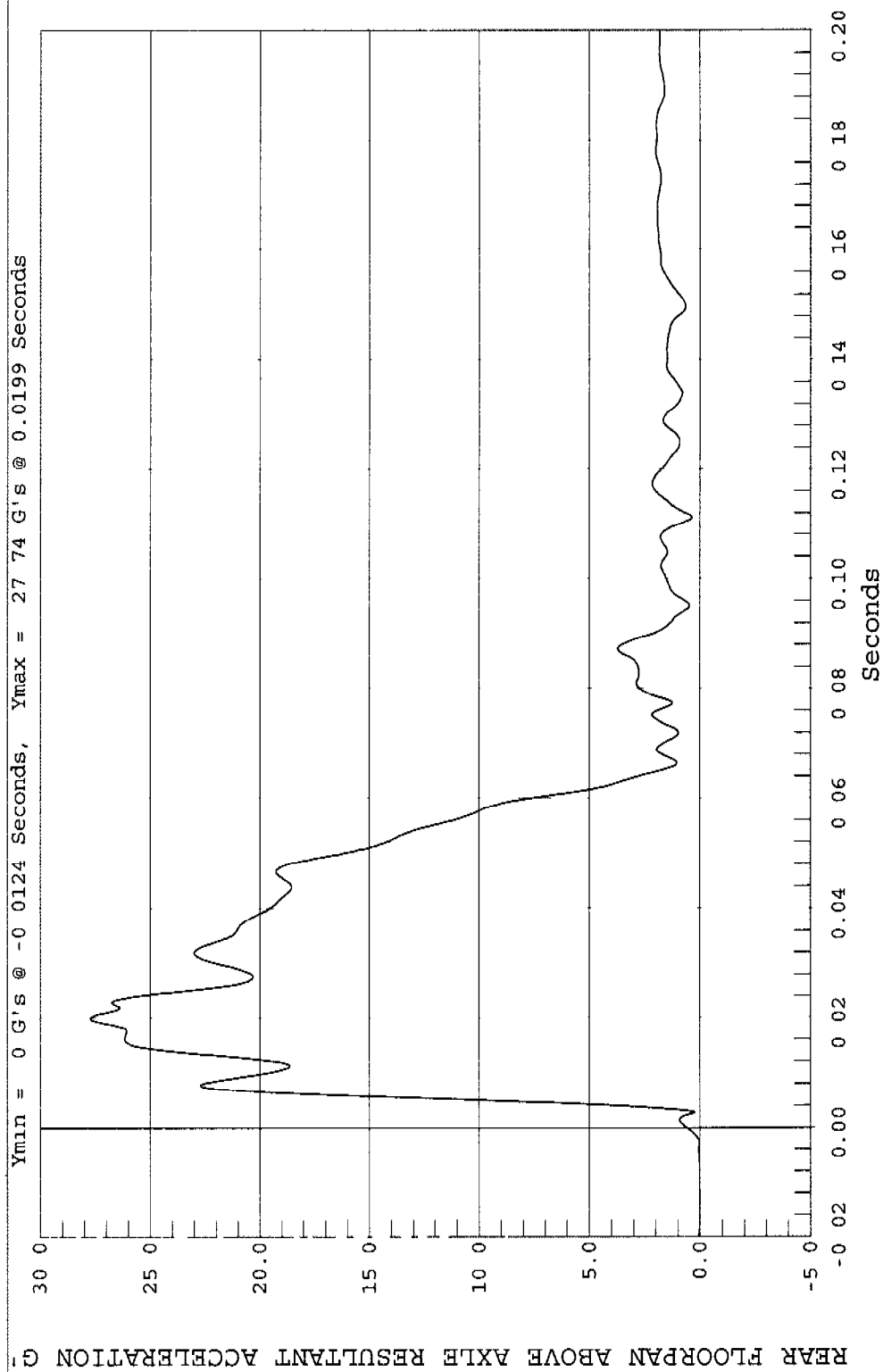




REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info.
Test Date 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 60

1 REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION, b00103AV.A23



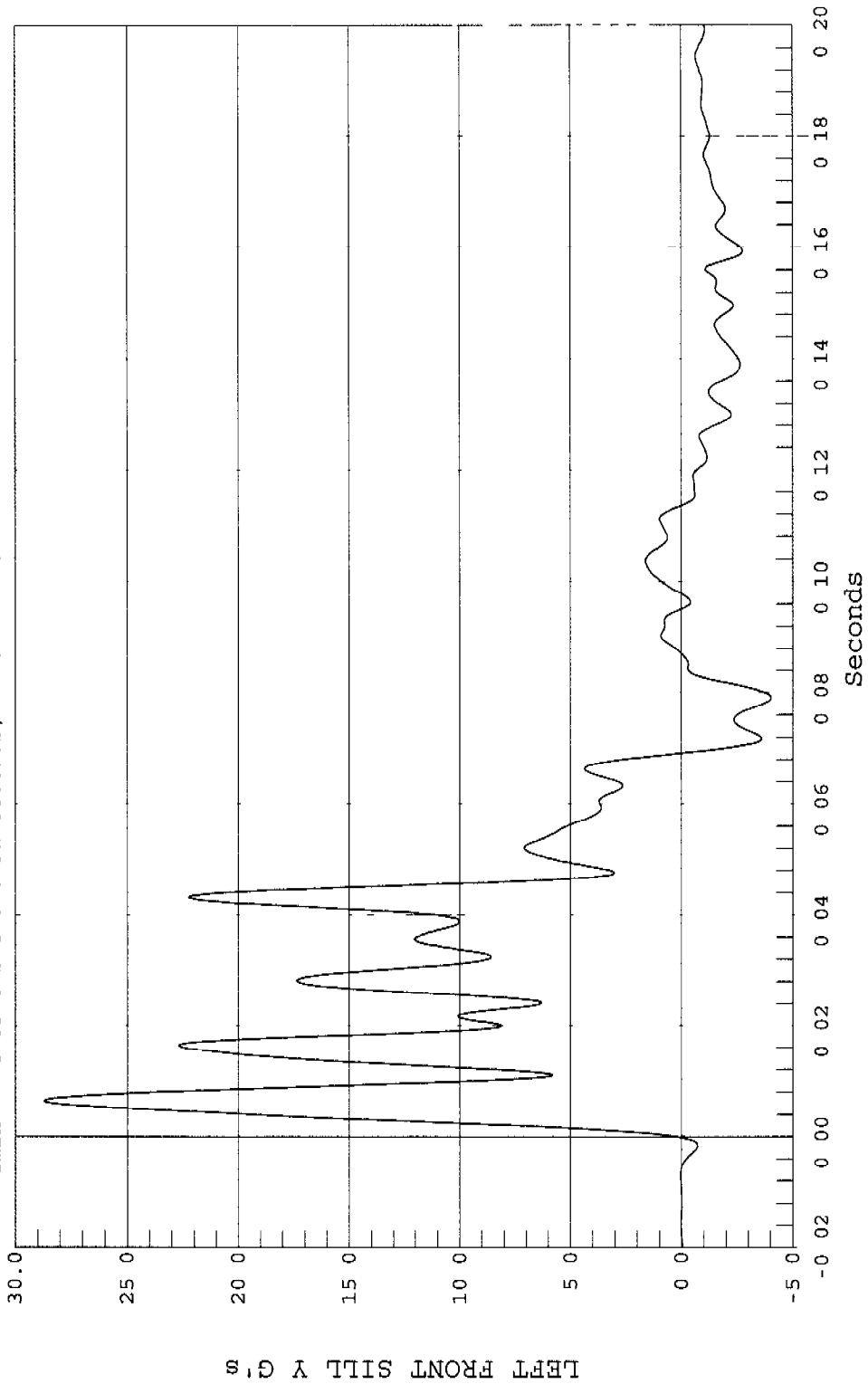
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

Test Date: 12-19-00
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

Test Desc: INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info:

1 LEFT FRONT SILL Y, b00103AF A21

Ymin = -4.03 G's @ 0.0791 Seconds, Ymax = 28.72 G's @ 0.0065 Seconds

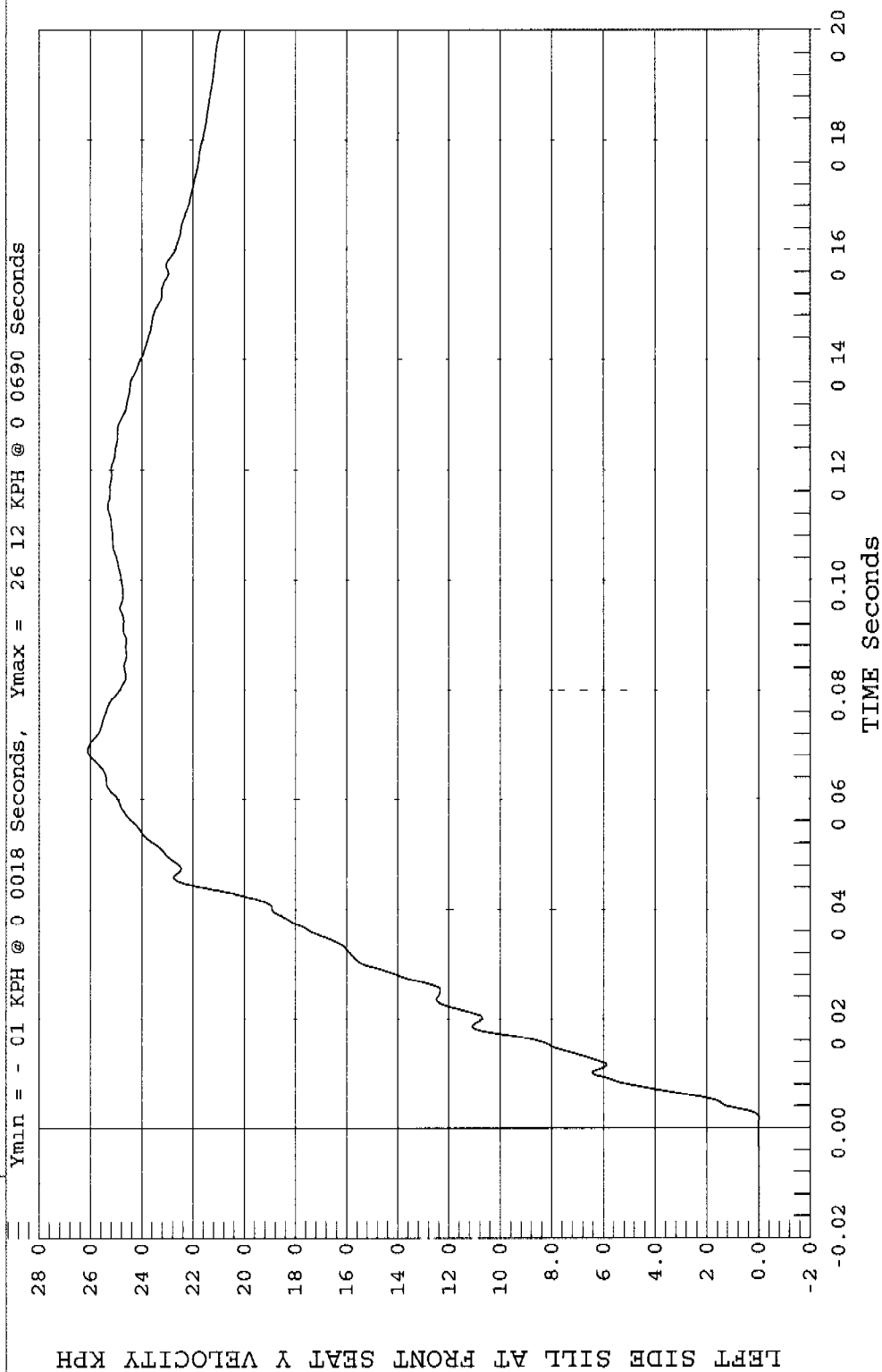


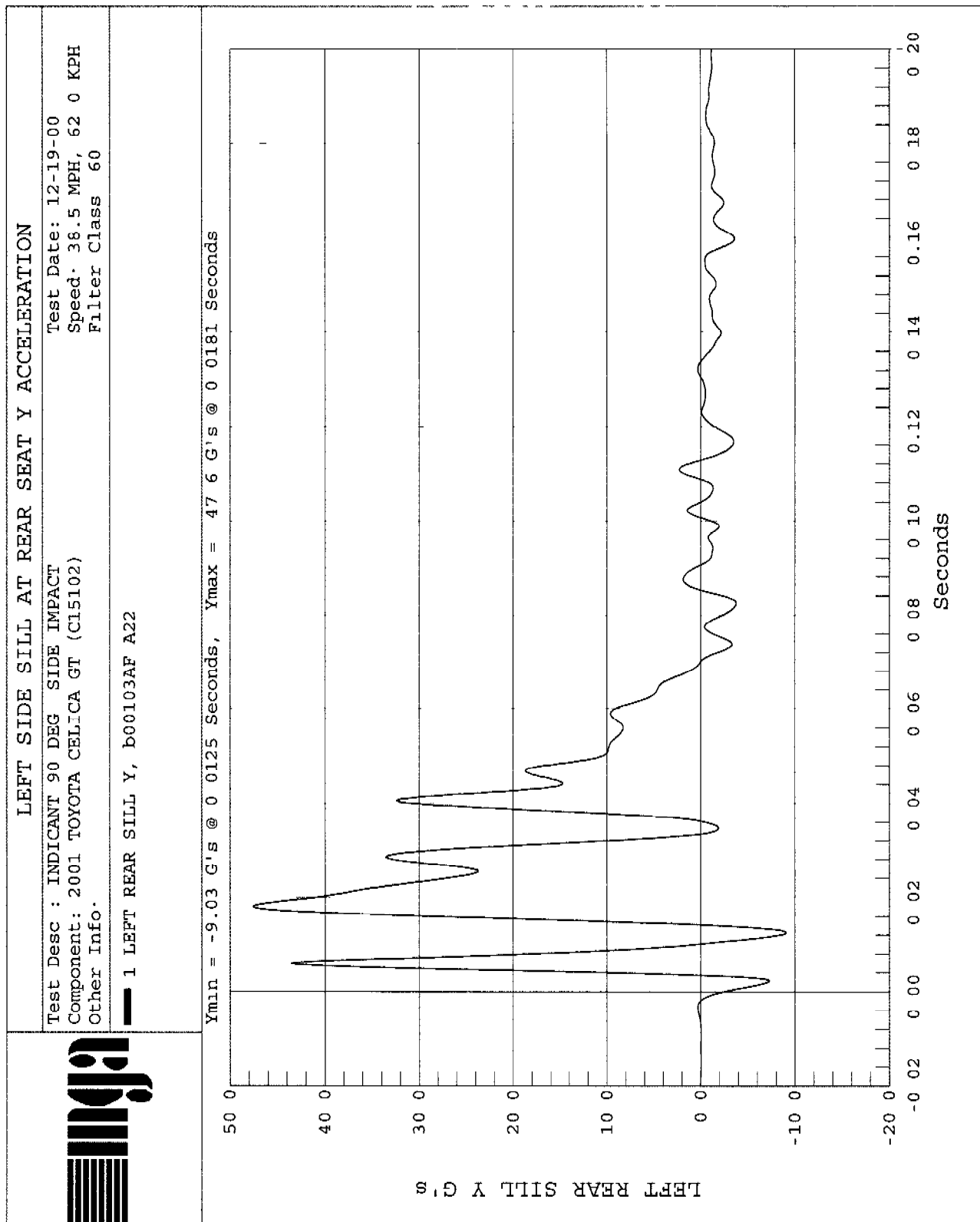
LEFT SIDE SILL AT FRONT SEAT Y VELOCITY

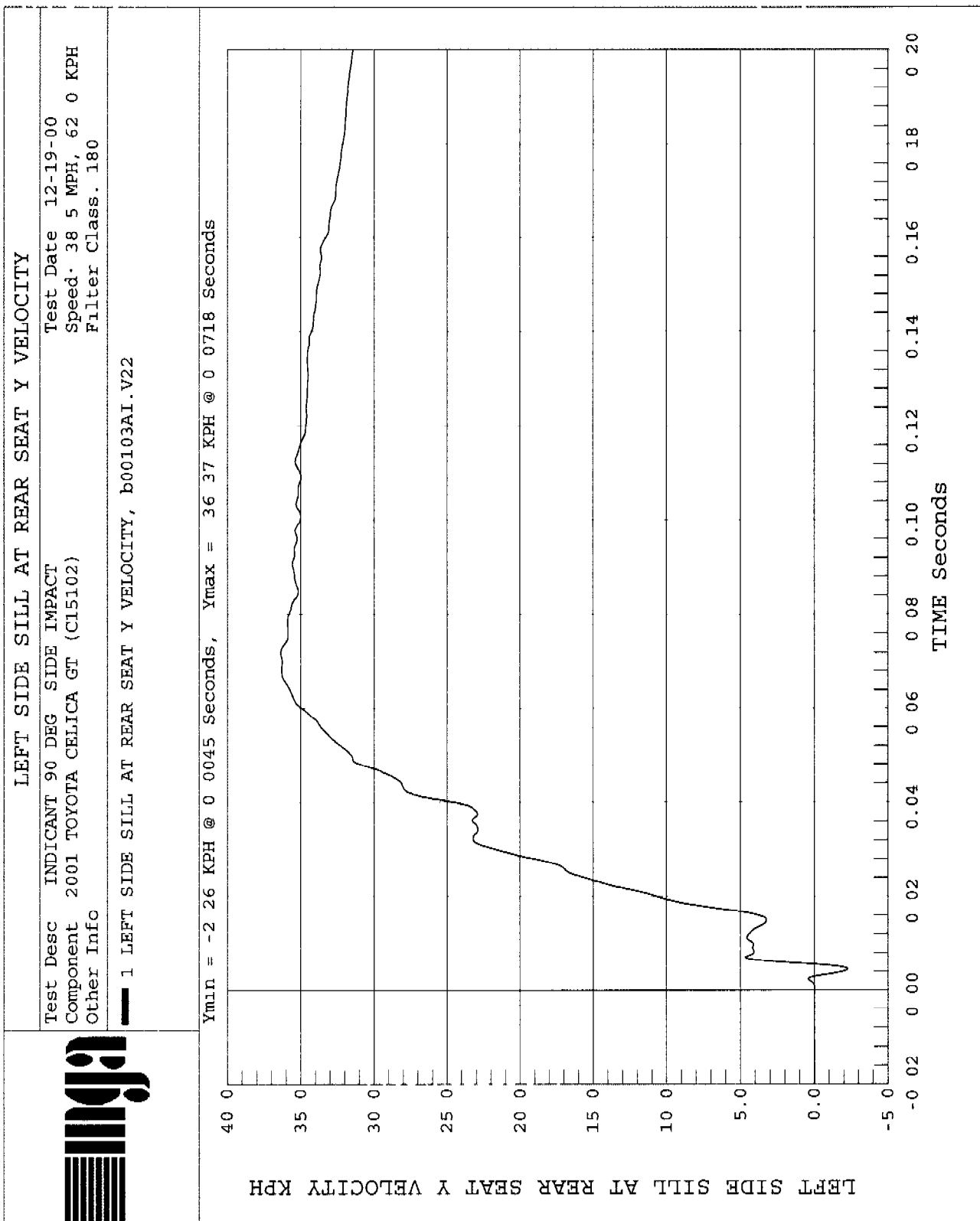
Test Date: 12-19-00
Speed: 38.5 MPH, 62.0 KPH
Filter Class 180

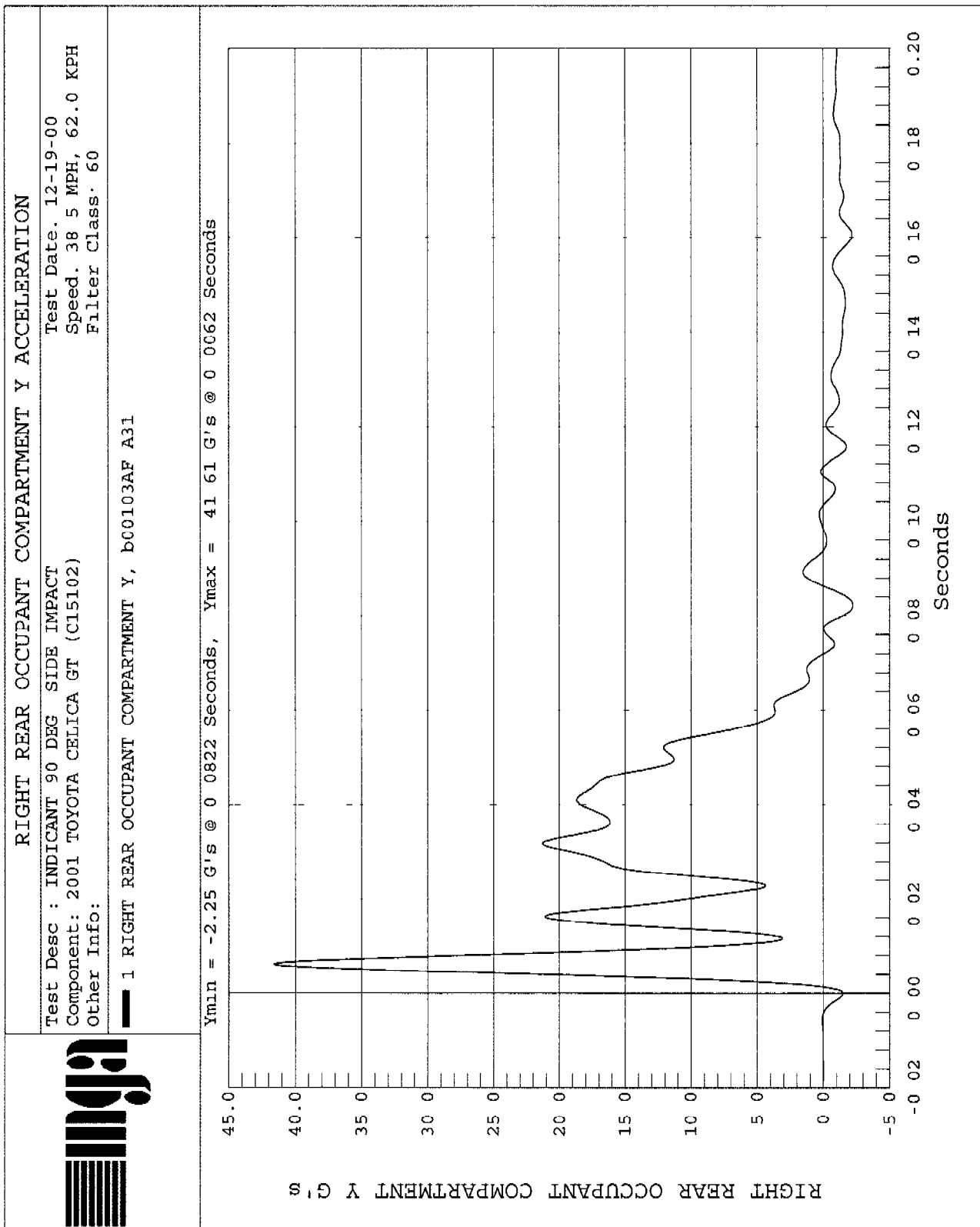
Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info.

1 LEFT SIDE SILL AT FRONT SEAT Y VELOCITY, b00103AI.V21





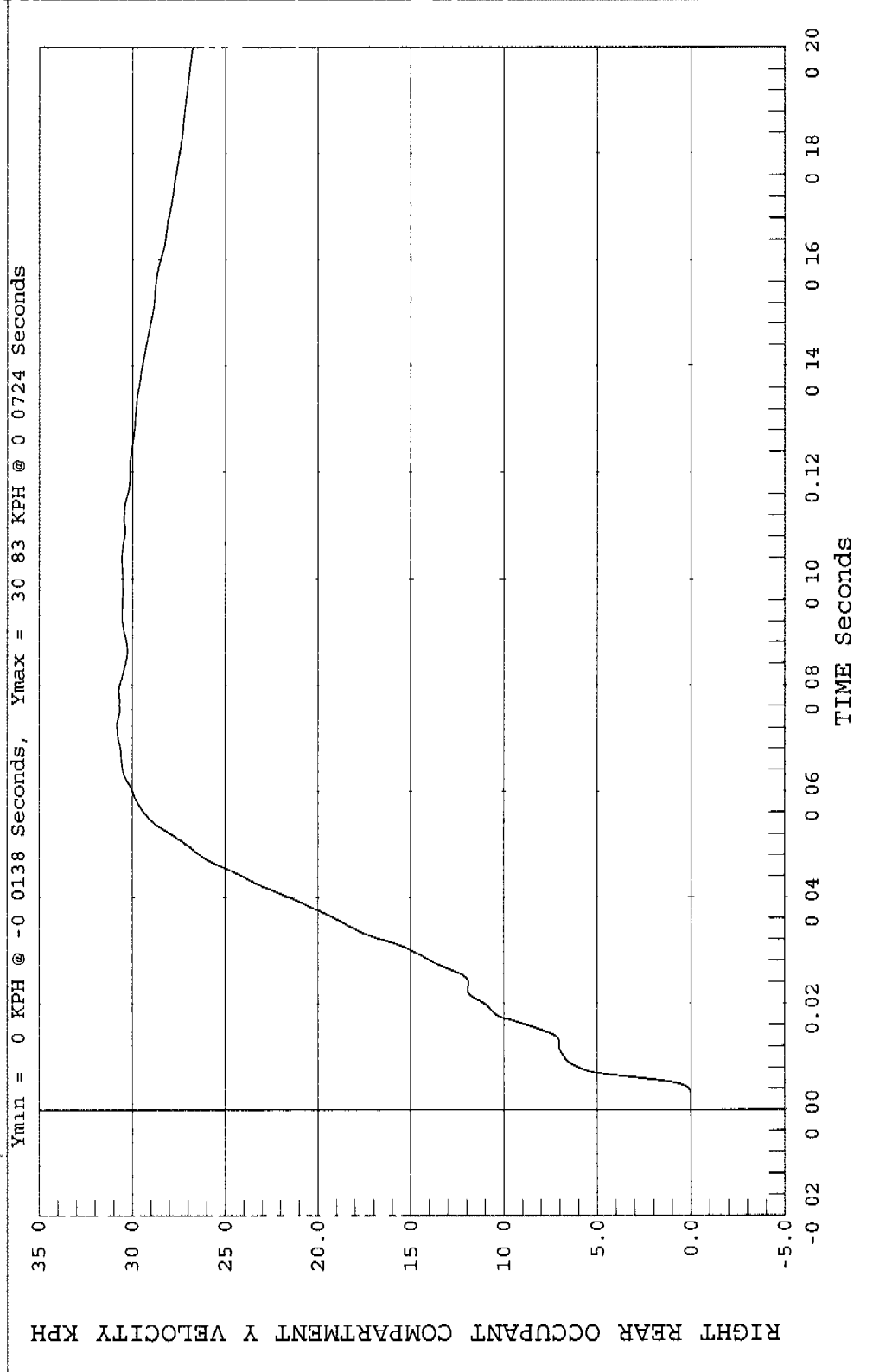




RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY

Test Desc : INDICANT 90 DEG SIDE IMPACT
 Component : 2001 TOYOTA CELICA GT (C15102)
 Other Info :
 Test Date: 12-19-00
 Speed 38 5 MPH, 62 0 KPH
 Filter Class 180

1 RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY, b00103AI V31



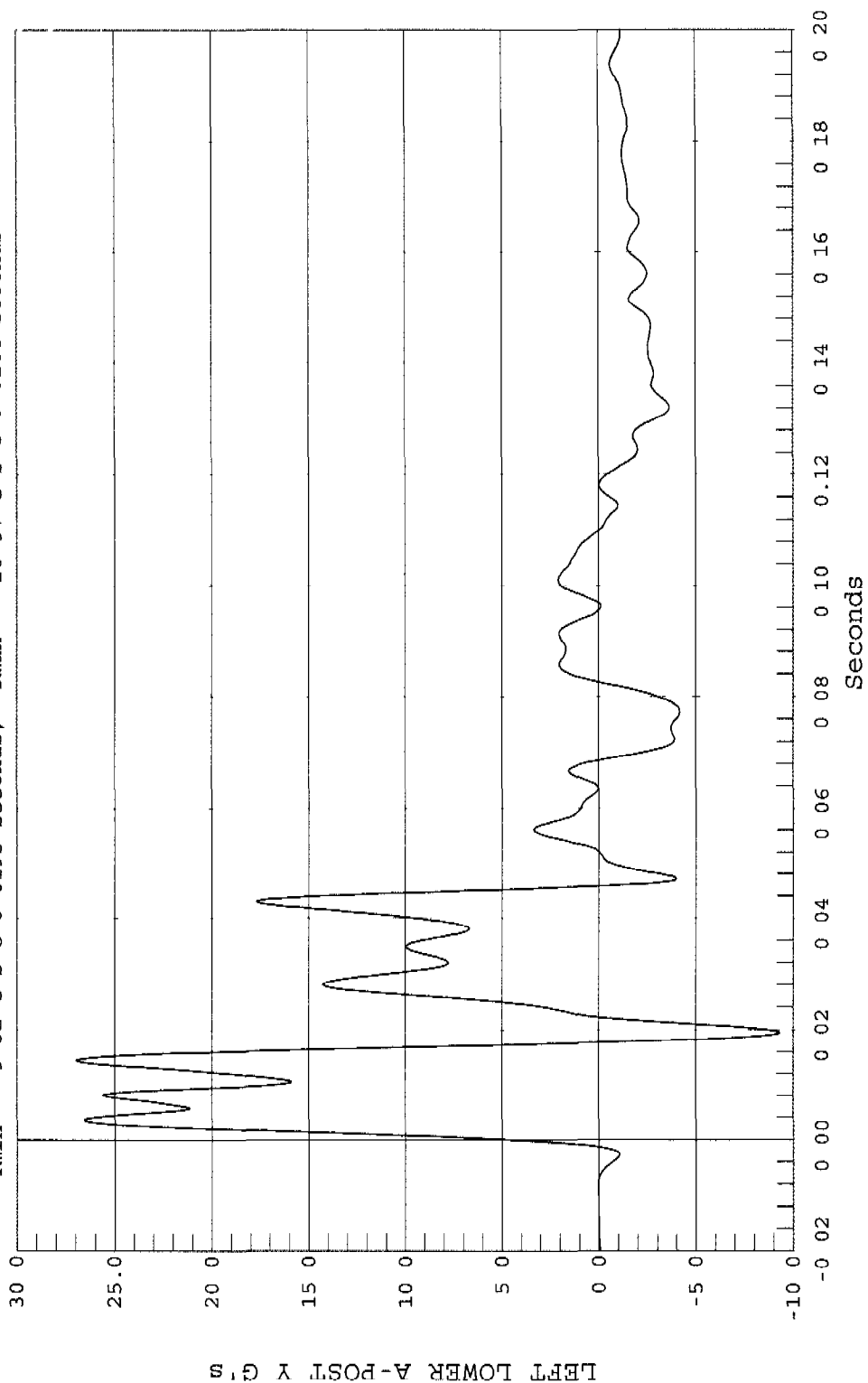
LEFT LOWER A-POST Y ACCELERATION

Test Date 12-19-00
Speed. 38.5 MPH, 62.0 KPH
Filter Class 60

Test Desc · INDICANT 90 DEG. SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info.

1 LEFT LOWER A-POST Y, b00103AF.A27

Ymin = -9.32 G's @ 0.0195 Seconds, Ymax = 26.97 G's @ 0.0144 Seconds

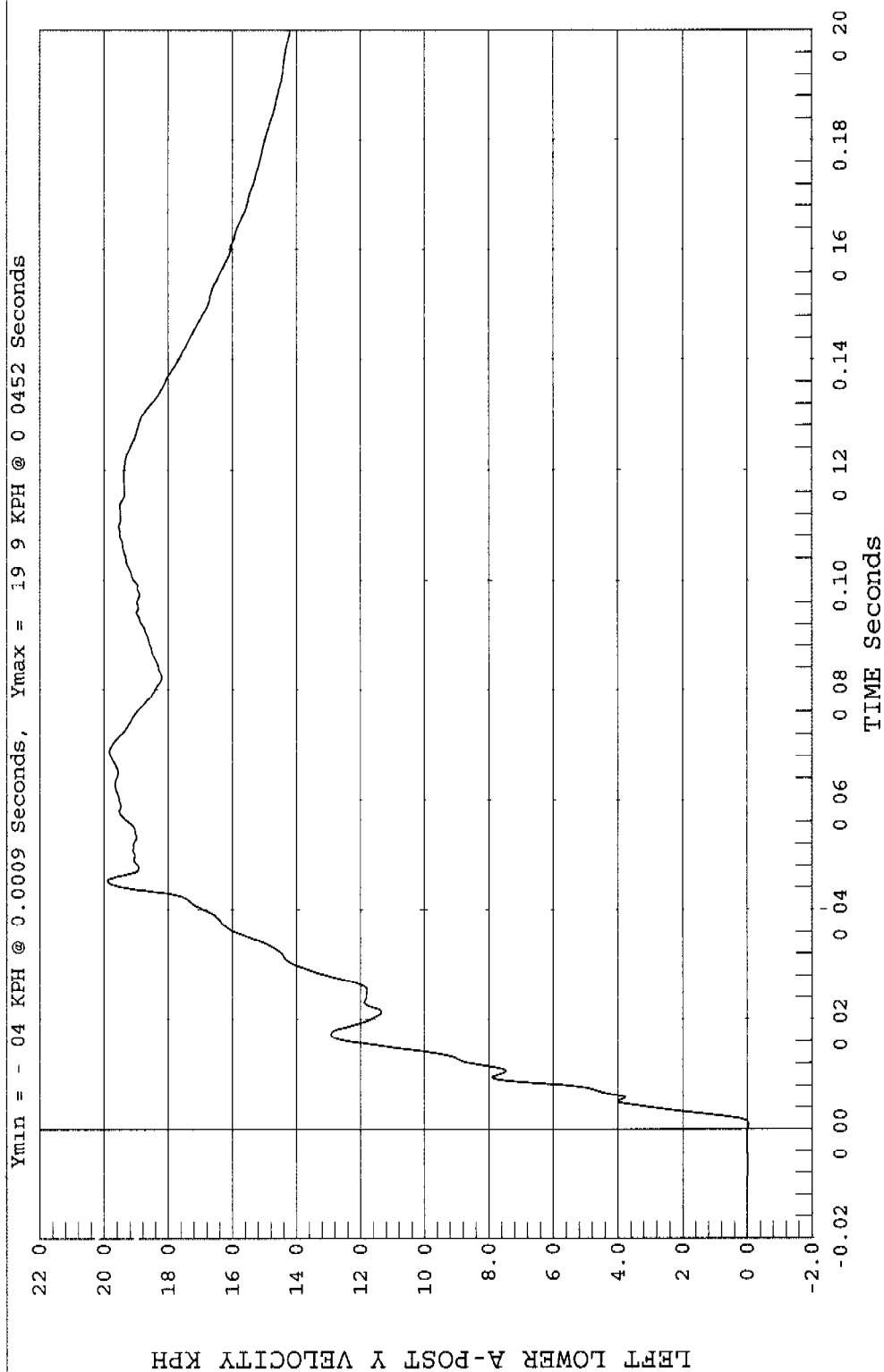




LEFT LOWER A-POST Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info
Test Date: 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class: 180

1 LEFT LOWER A-POST Y VELOCITY, b00103AI V27



LEFT MID A-POST Y ACCELERATION

Test Desc.: INDICANT 90 DEG SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info.

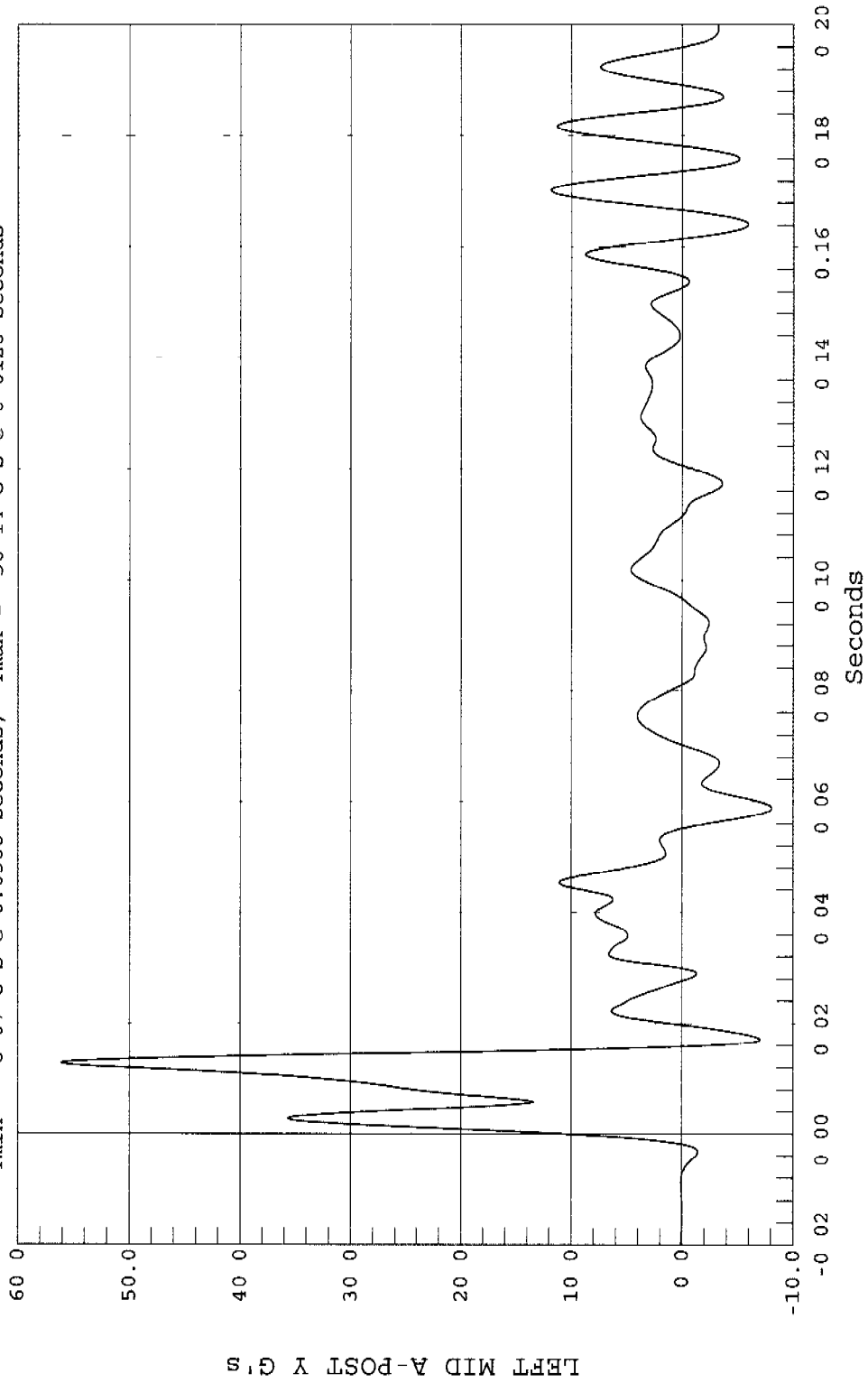
Test Date: 12-19-00

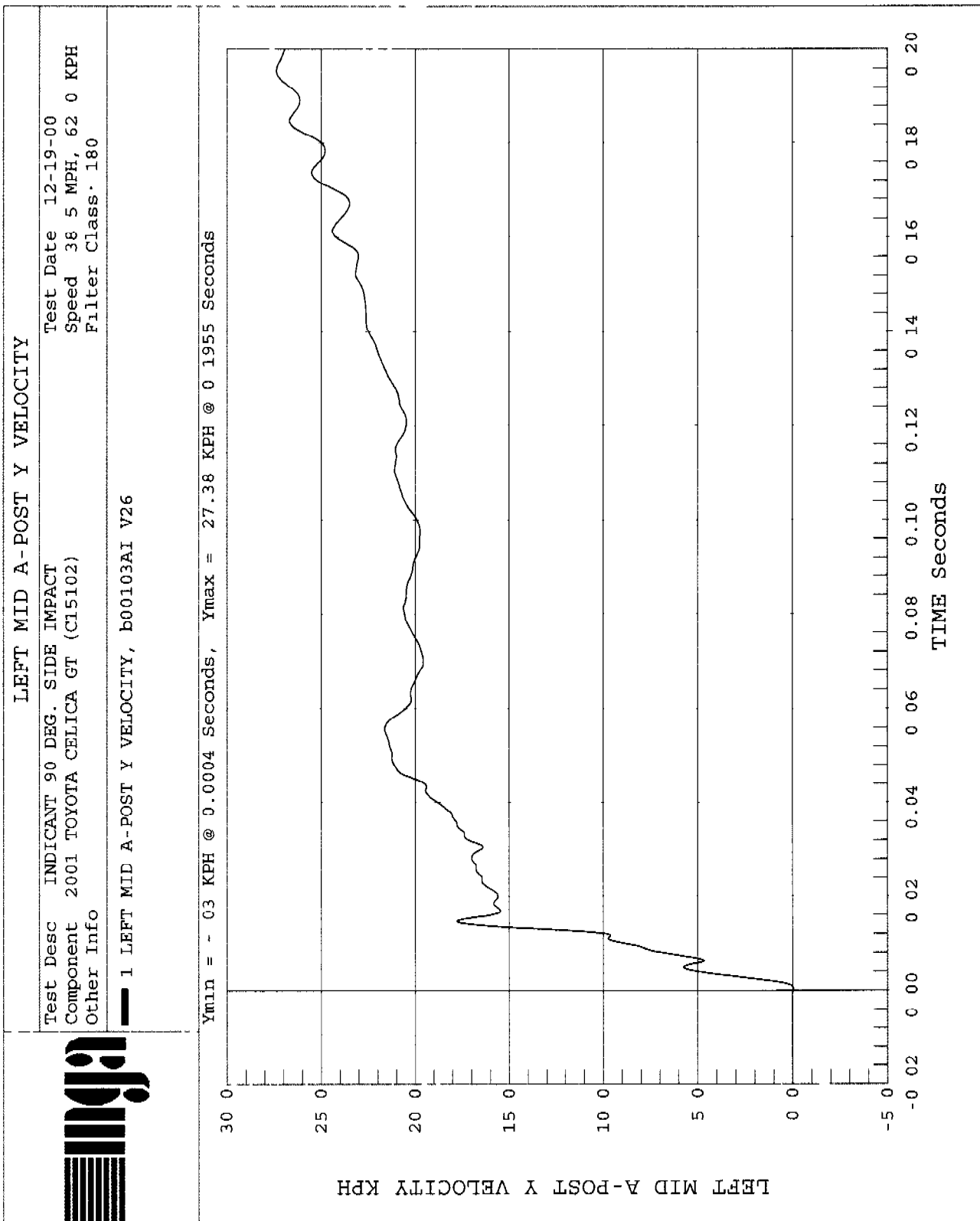
Speed 38.5 MPH, 62.0 KPH

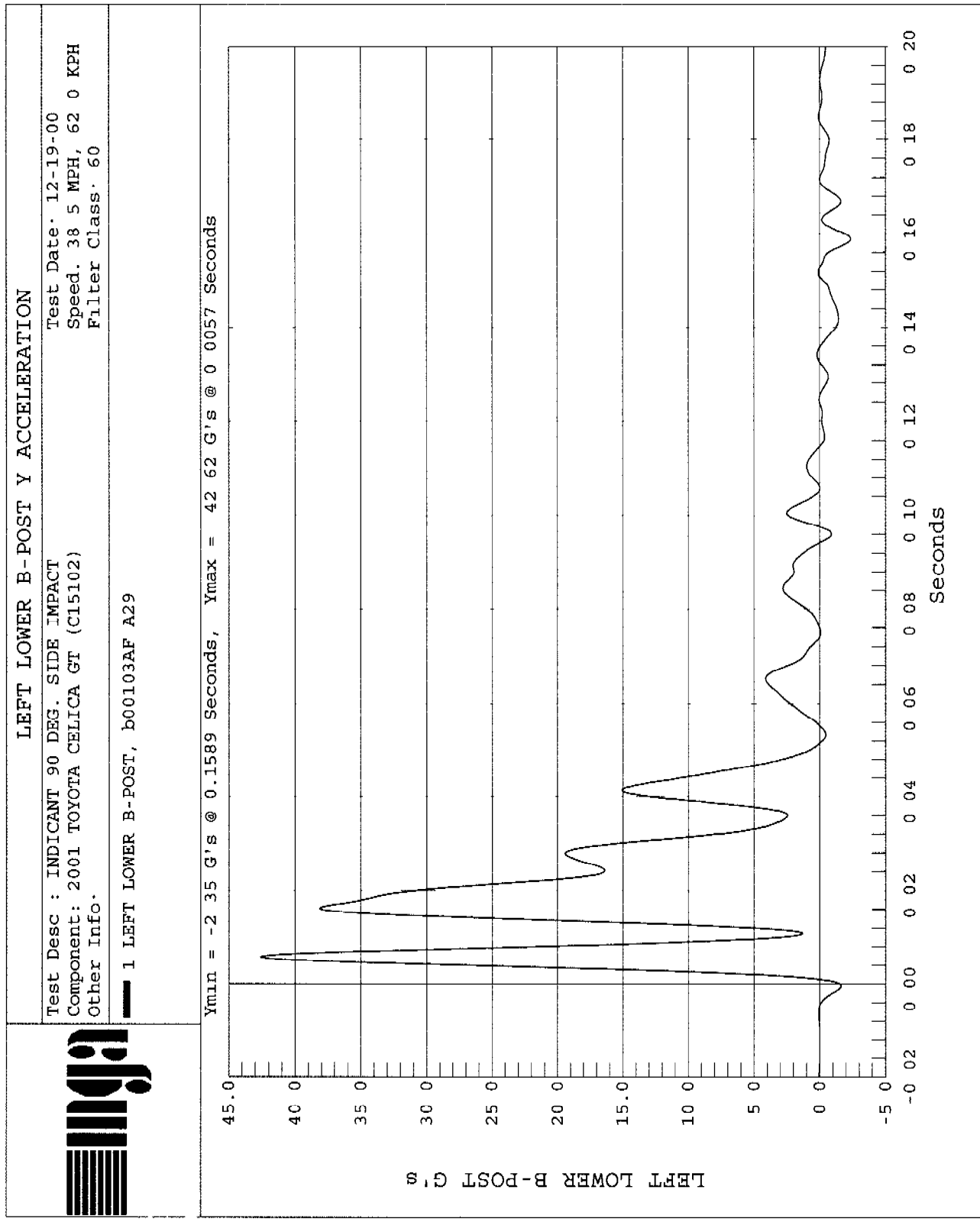
Filter Class. 60

1 LEFT MID A-POST Y, b00103AF A26

Ymin = -8.07 G's @ 0.0588 Seconds, Ymax = 56.14 G's @ 0.0128 Seconds



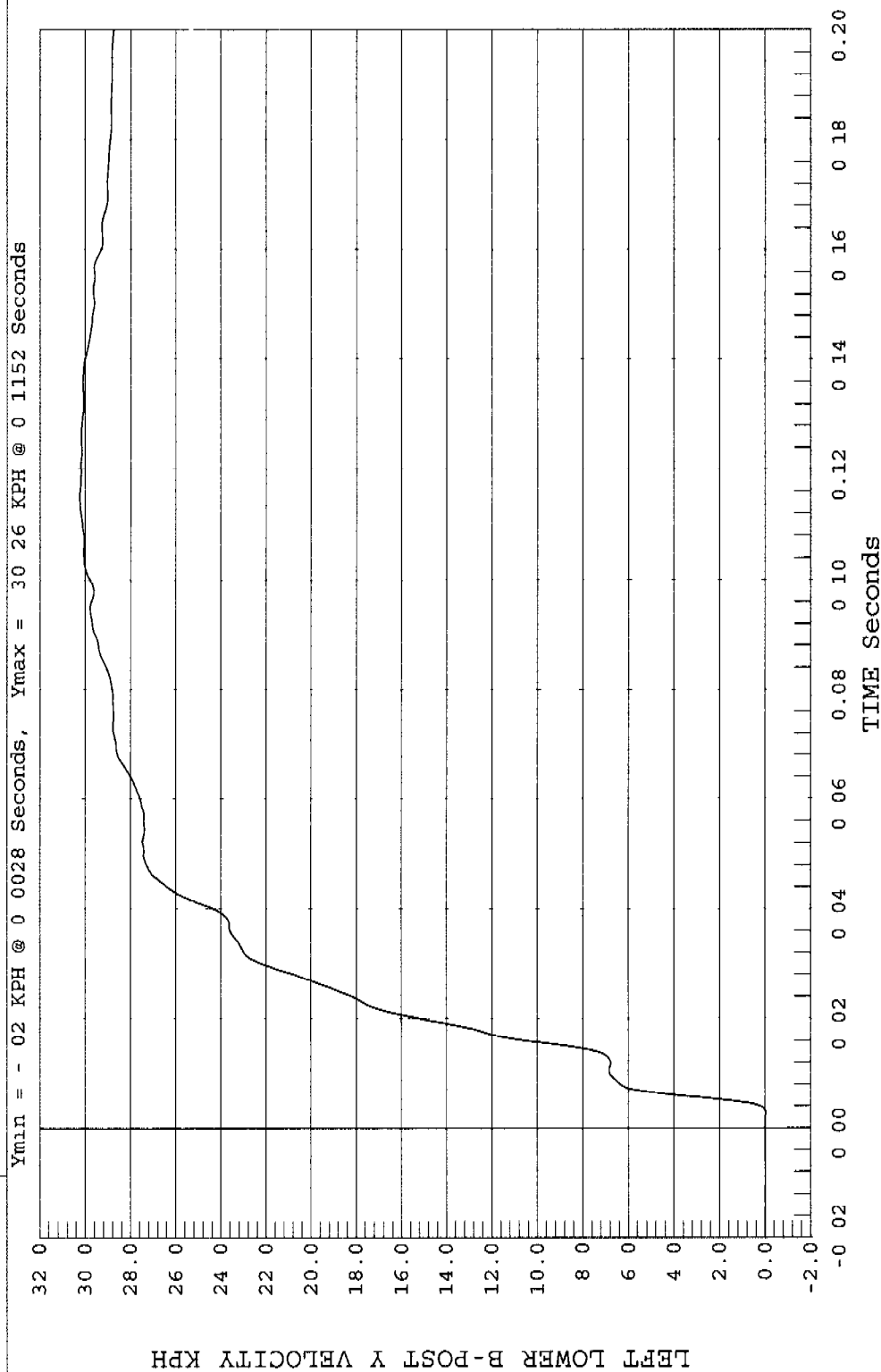




LEFT LOWER B-POST Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Filter Class. 180

1 LEFT LOWER B-POST Y VELOCITY, b00103AI V29



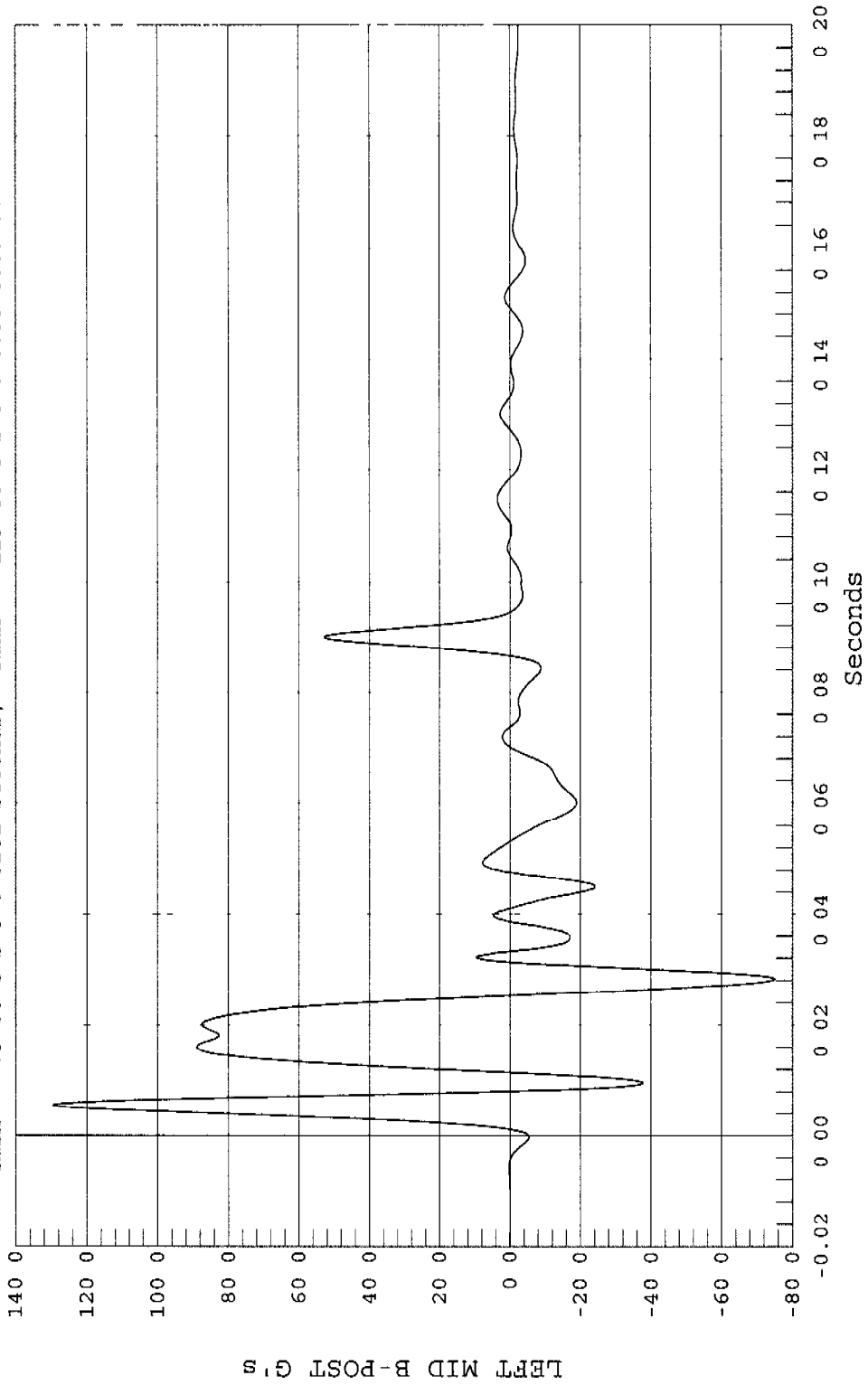
LEFT MID B-POST Y ACCELERATION

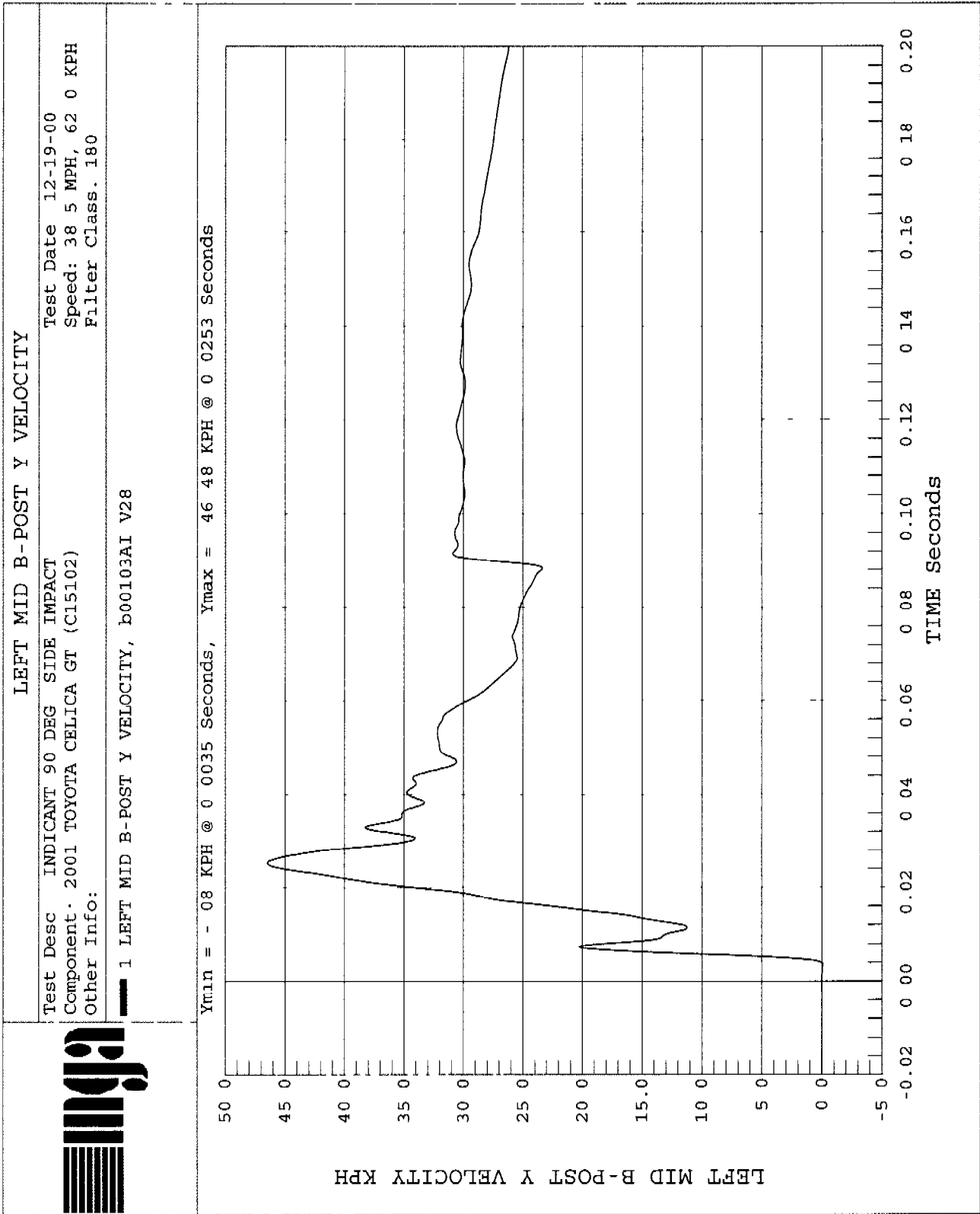
Test Date: 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 60

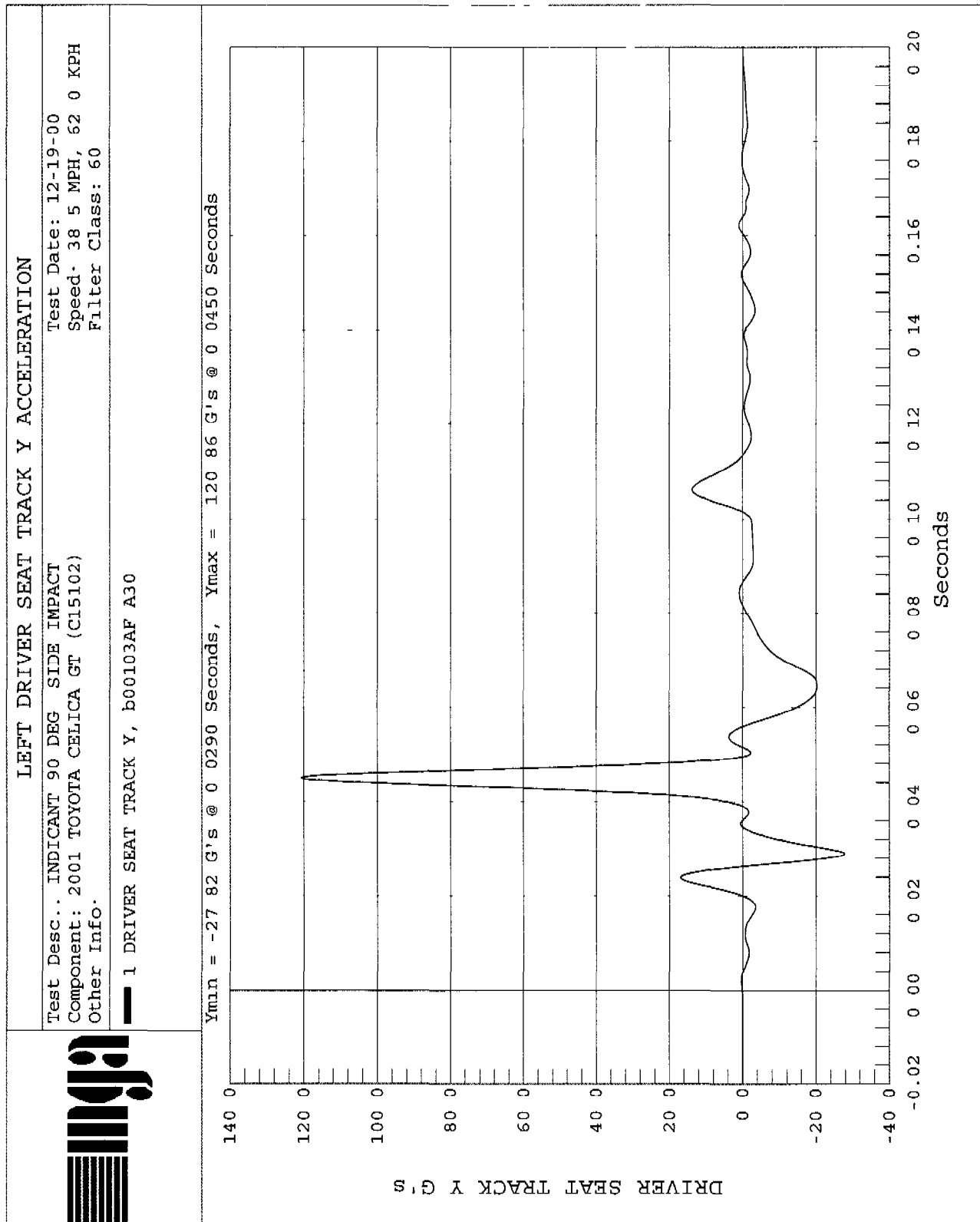
Test Desc.: INDICANT 90 DEG SIDE IMPACT
Component: 2001 TOYOTA CELICA GT (C15102)
Other Info

1 LEFT MID B-POST, b00103AF A28

Ymin = -75.06 G's @ 0.0282 Seconds, Ymax = 129.53 G's @ 0.0055 Seconds







LEFT DRIVER SEAT TRACK Y VELOCITY

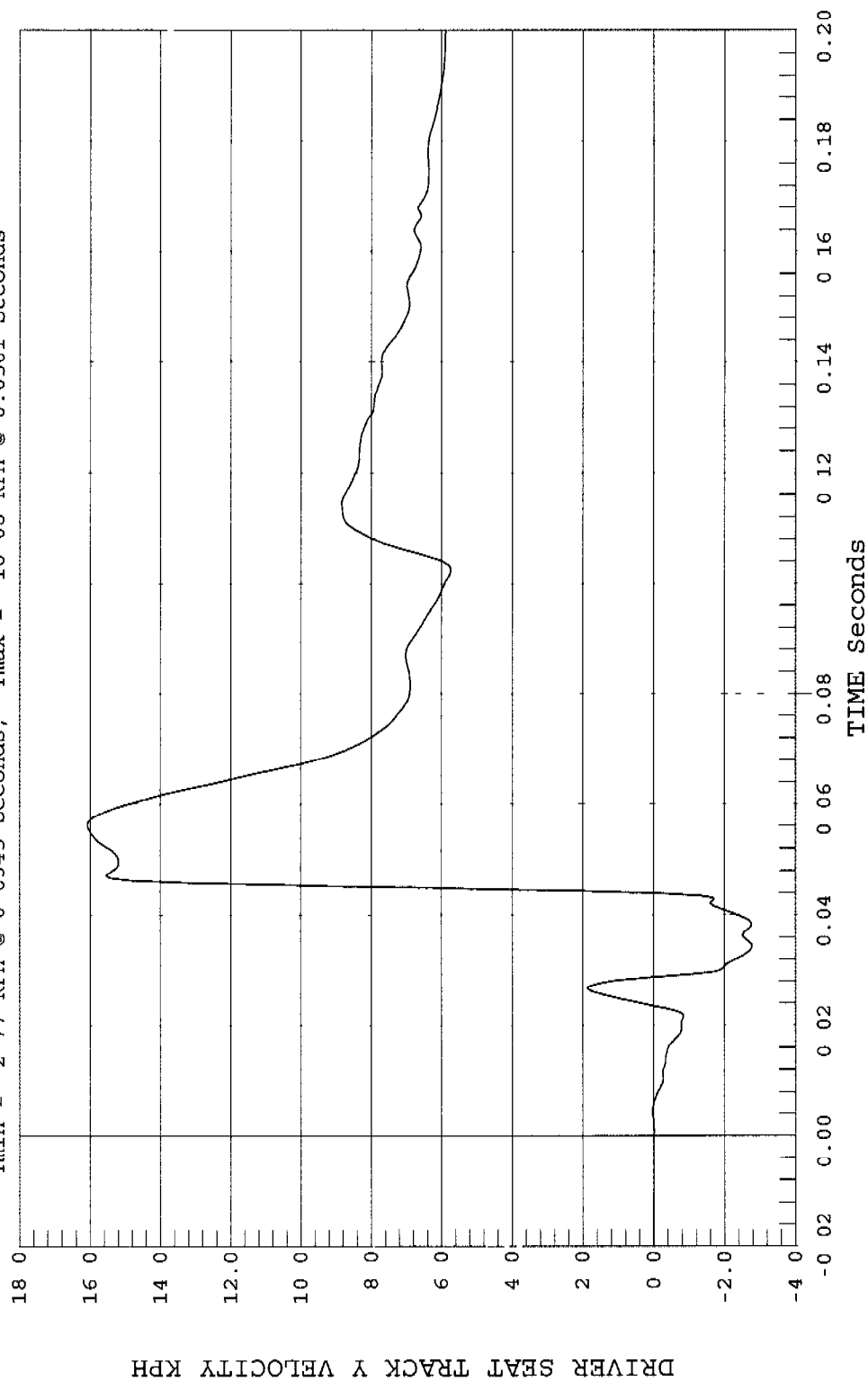
Test Desc - INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.

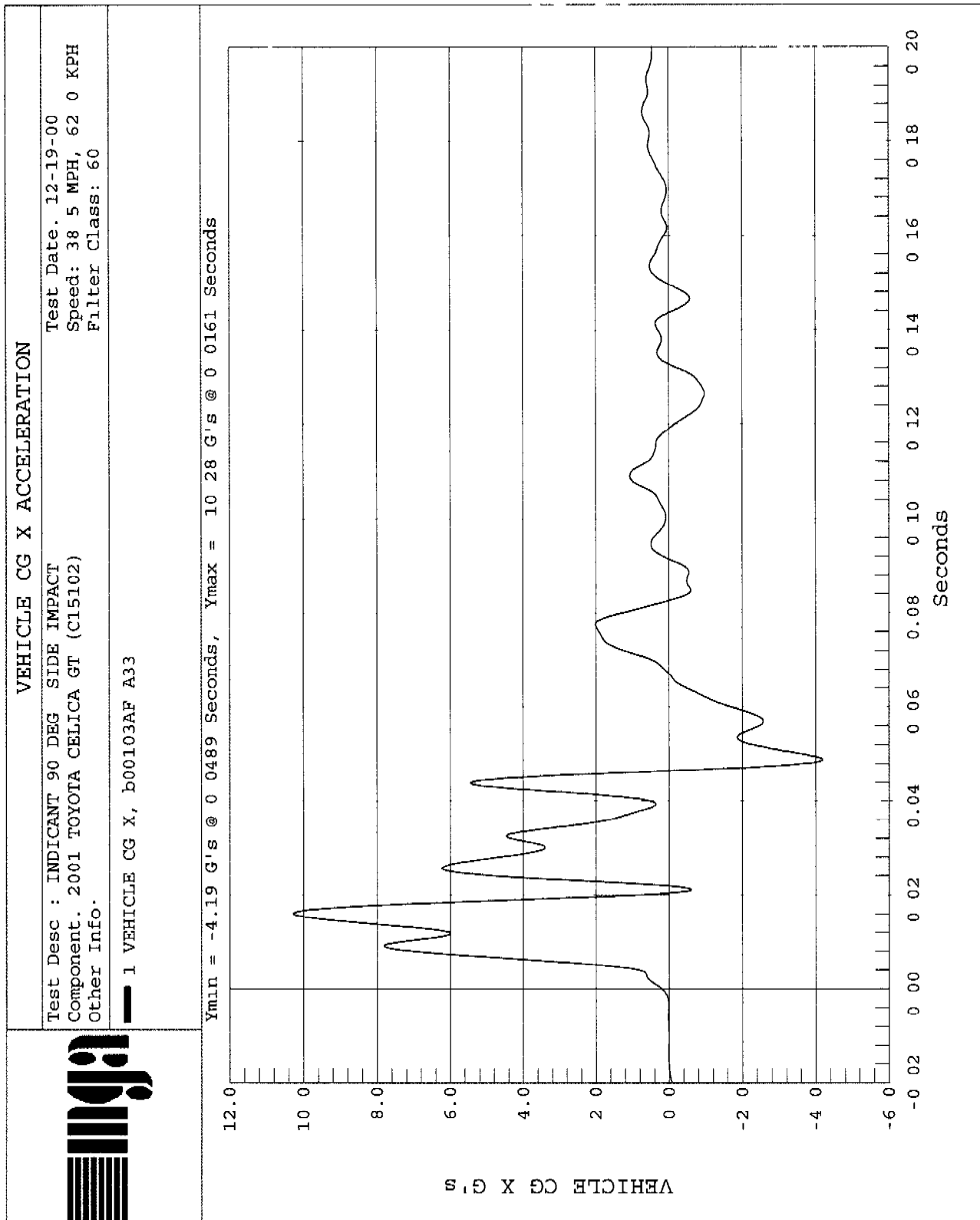
Test Date. 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Filter Class 180

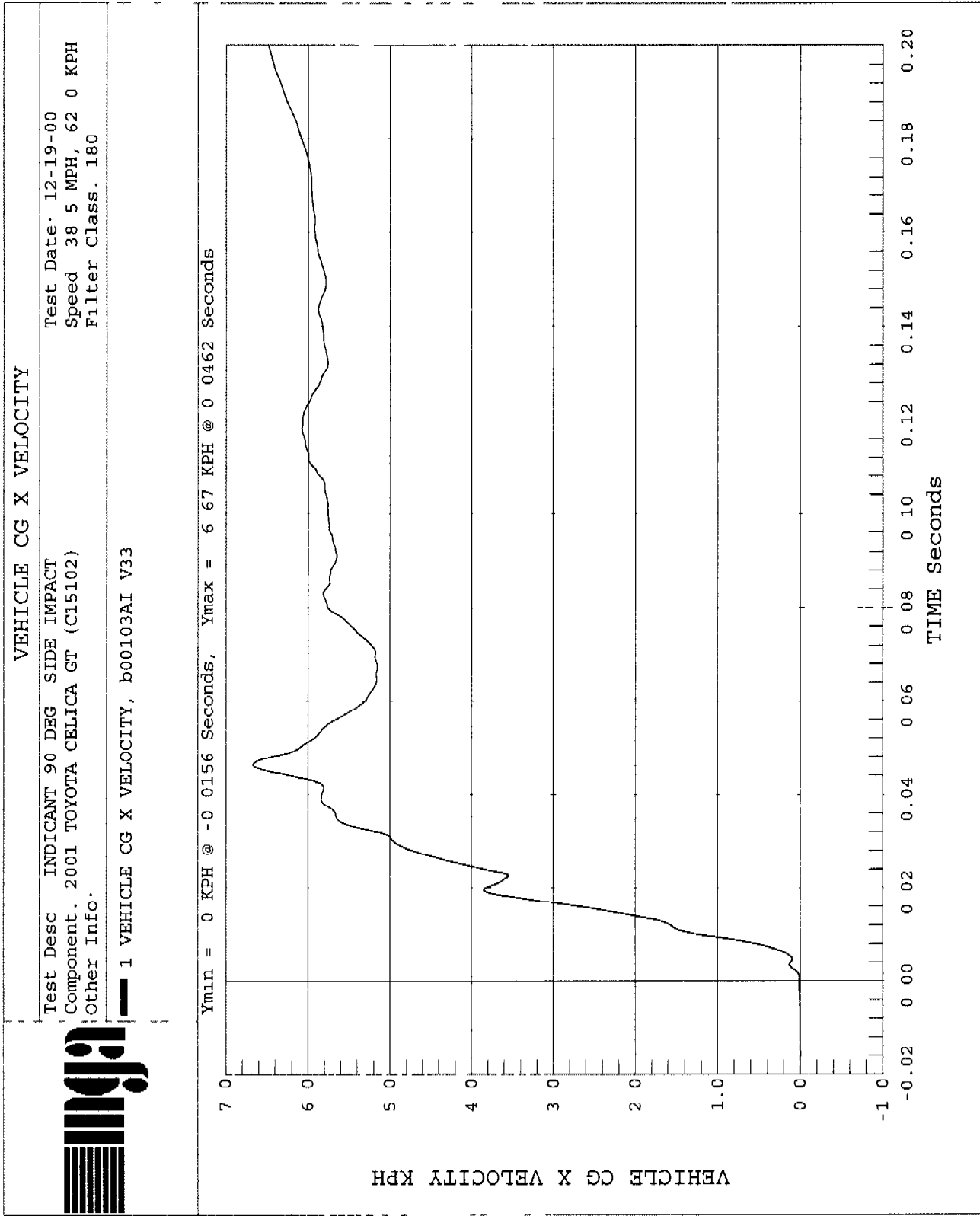


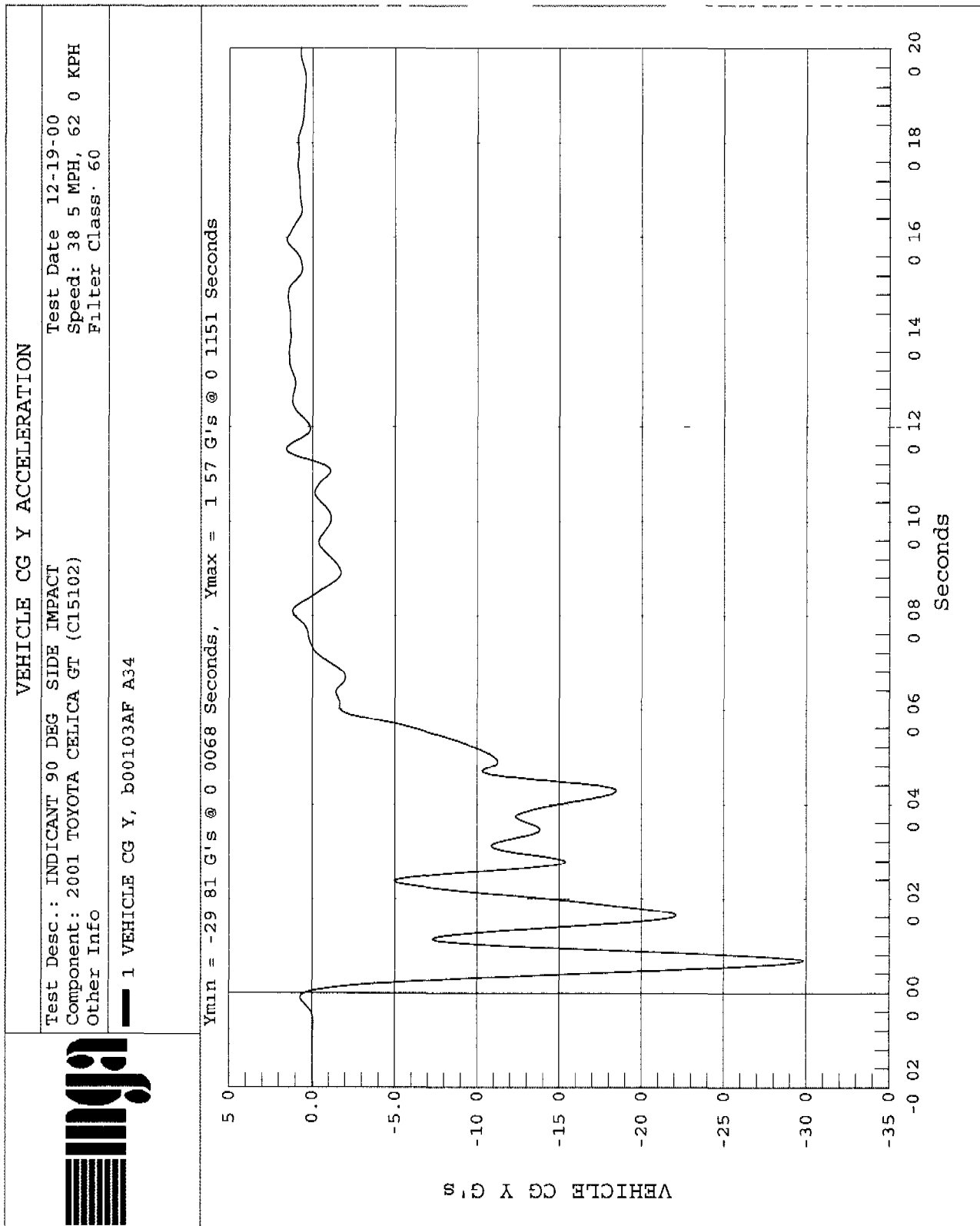
1 DRIVER SEAT TRACK Y VELOCITY, b00103AI V30

Ymin = -2.77 KPH @ 0.0343 Seconds, Ymax = 16.08 KPH @ 0.0561 Seconds







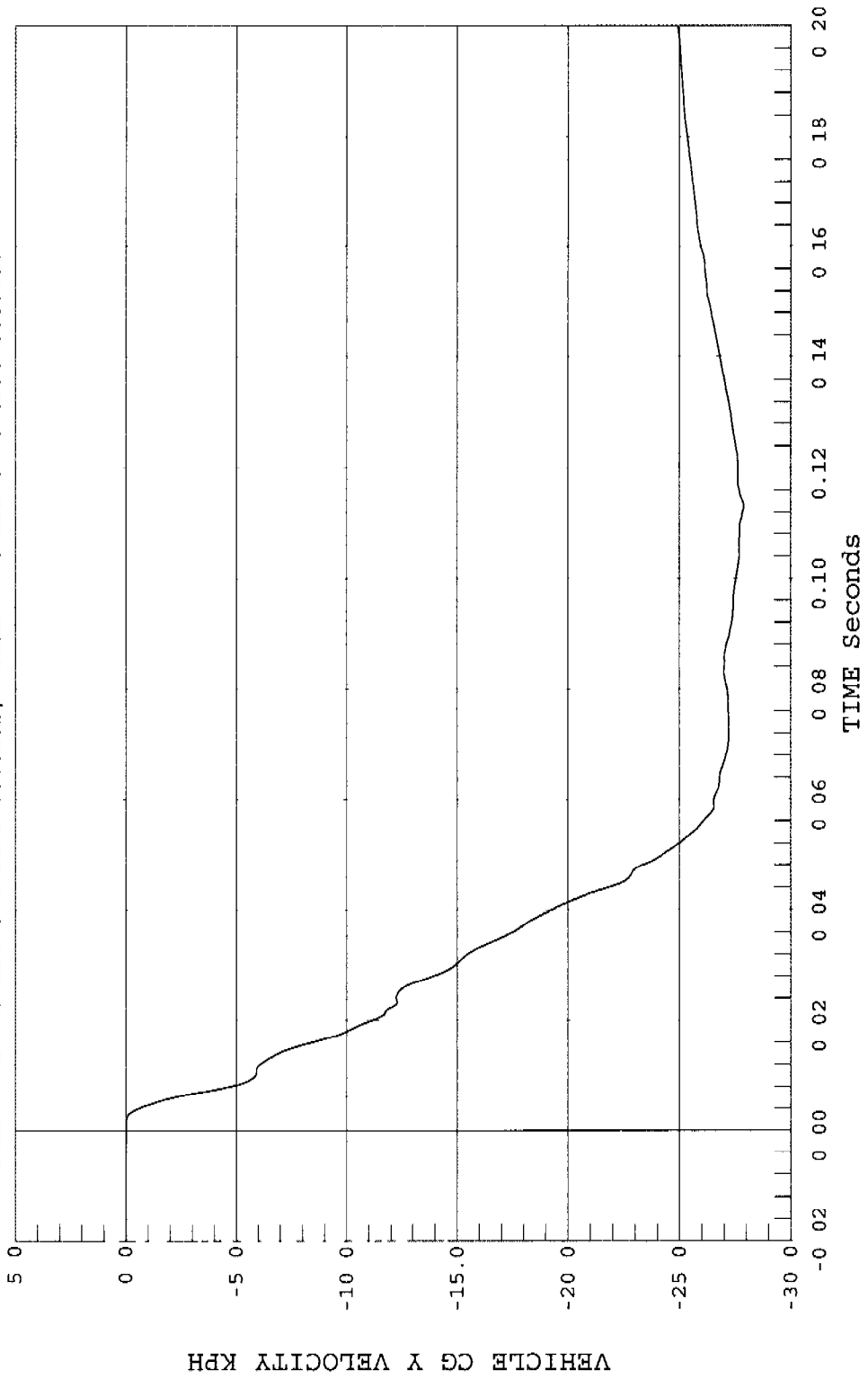


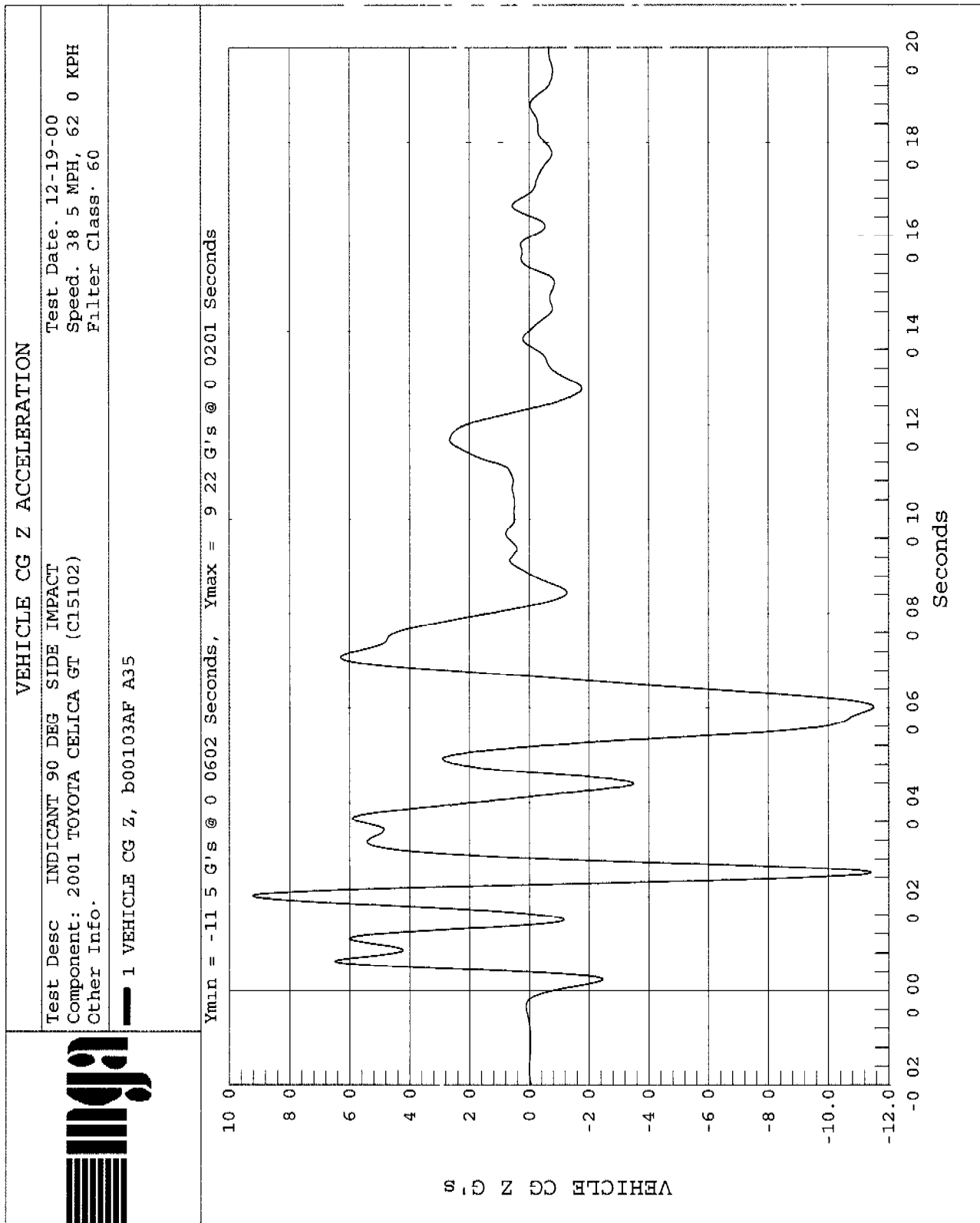
VEHICLE CG Y VELOCITY

Test Desc . INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date. 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Filter Class 180

1 VEHICLE CG Y VELOCITY, b00103AI.V34

Ymin = -27.89 KPH @ 0.1131 Seconds, Ymax = 0 KPH @ -0.0198 Seconds





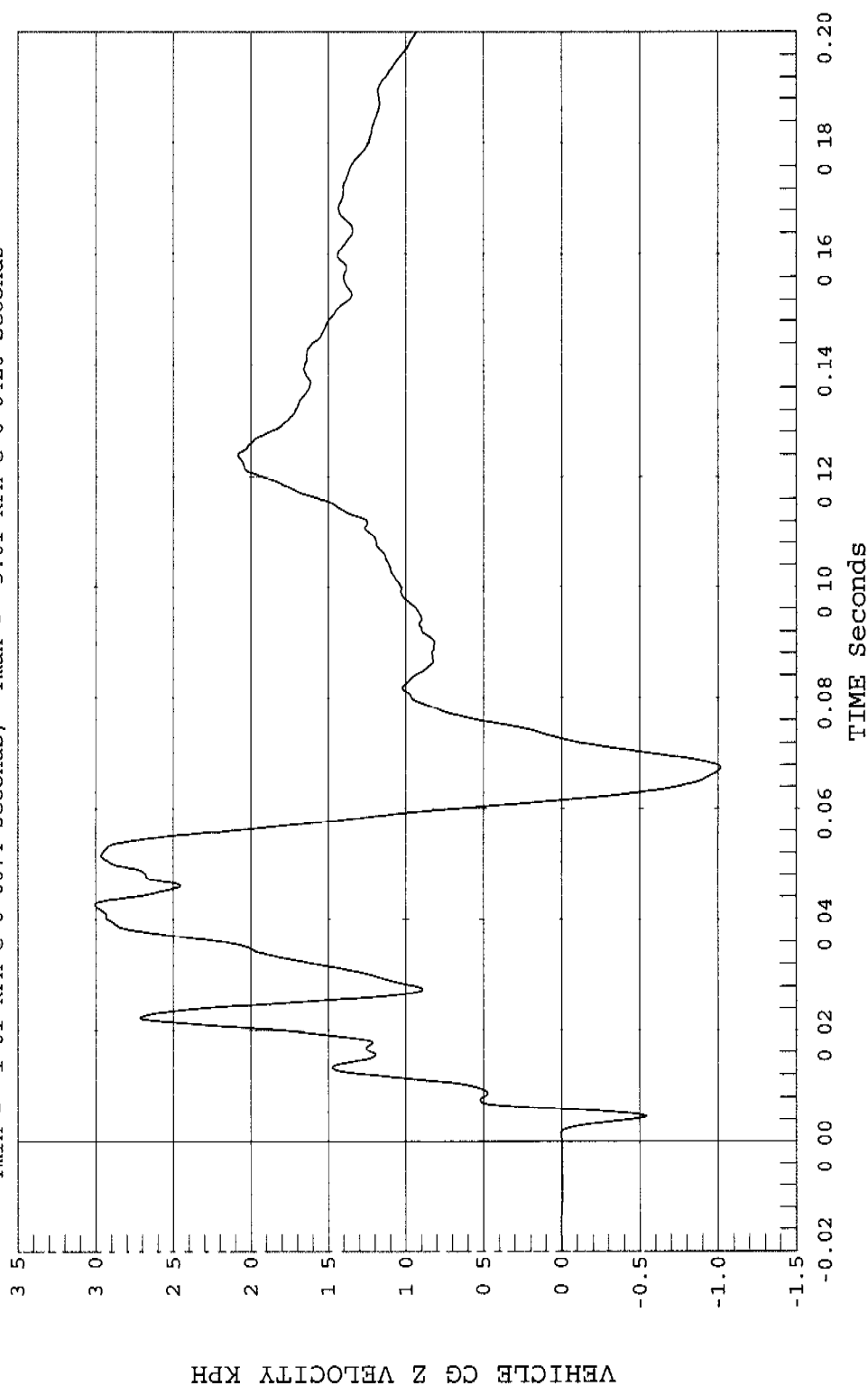
VEHICLE CG Z VELOCITY

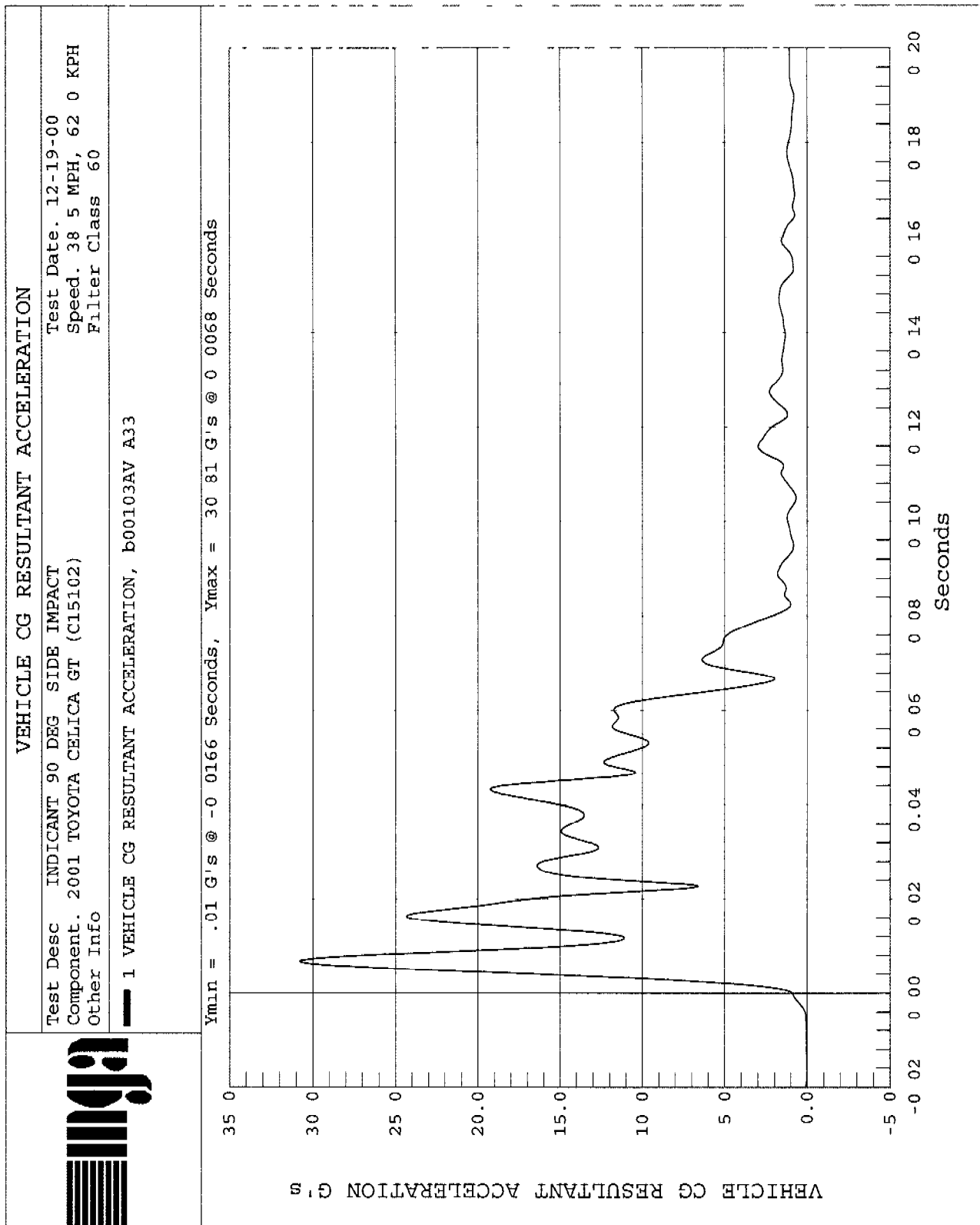
Test Date. 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 180

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info

1 VEHICLE CG Z VELOCITY, b00103AI V35

Ymin = -1.01 KPH @ 0.0674 Seconds, Ymax = 3.01 KPH @ 0.0426 Seconds





MOVING BARRIER CG X ACCELERATION

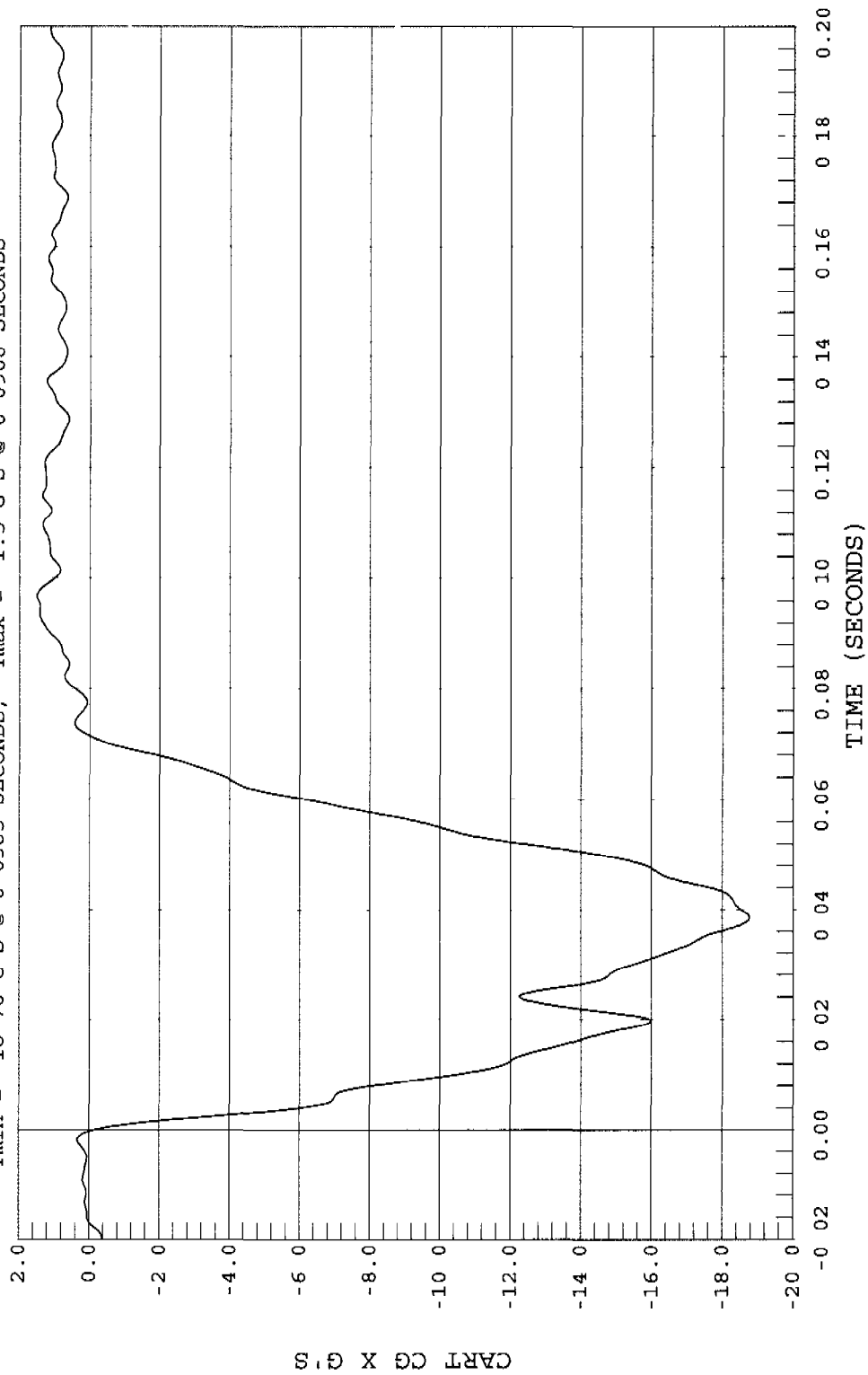
Test Date: 12-19-00
Speed 38.5 MPH, 62.0 KPH
Filter Class 60

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info

1 CART CG X, c00103AF A02



Ymin = -18.76 G'S @ 0.0385 SECONDS, Ymax = 1.5 G'S @ 0.0968 SECONDS

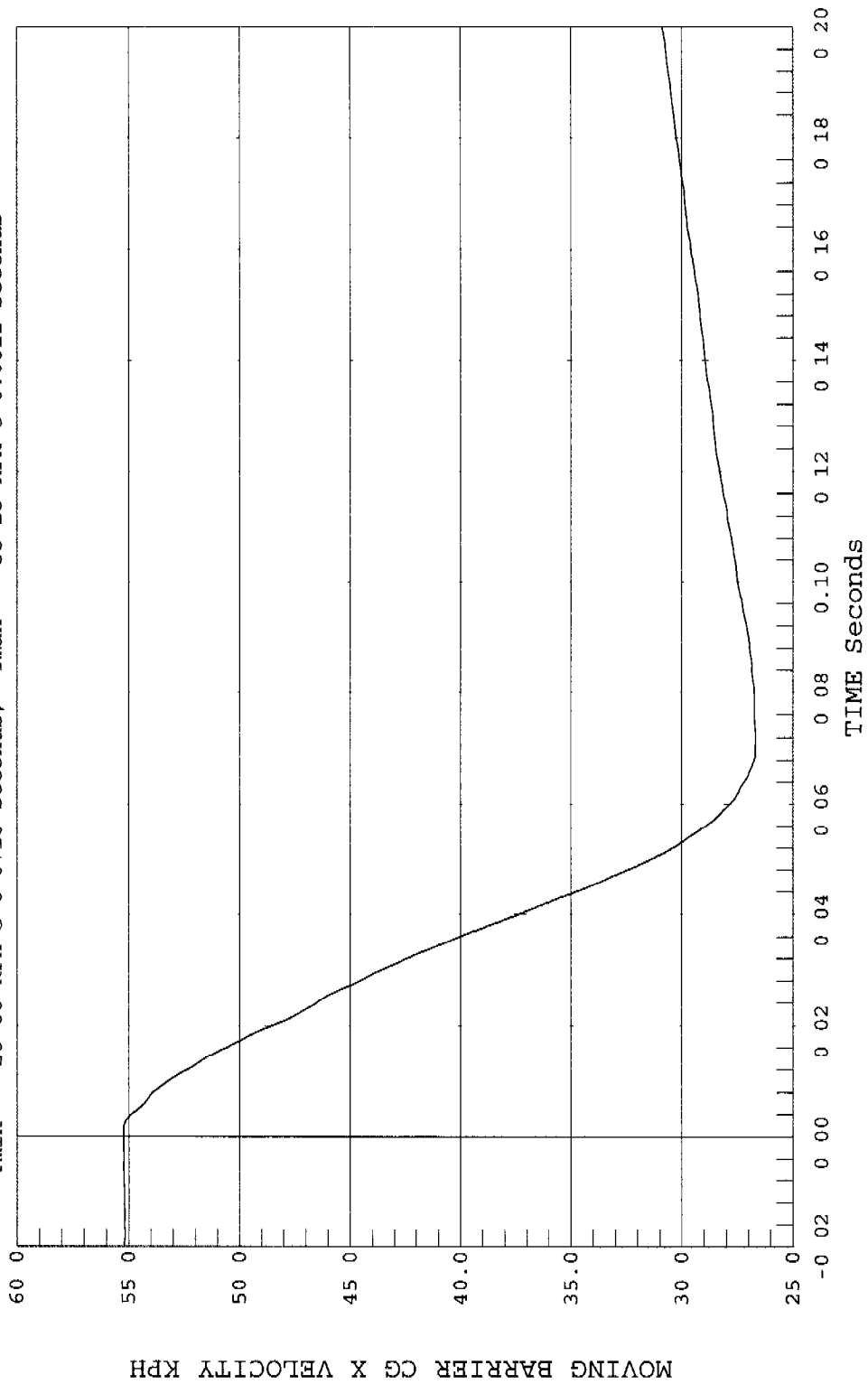


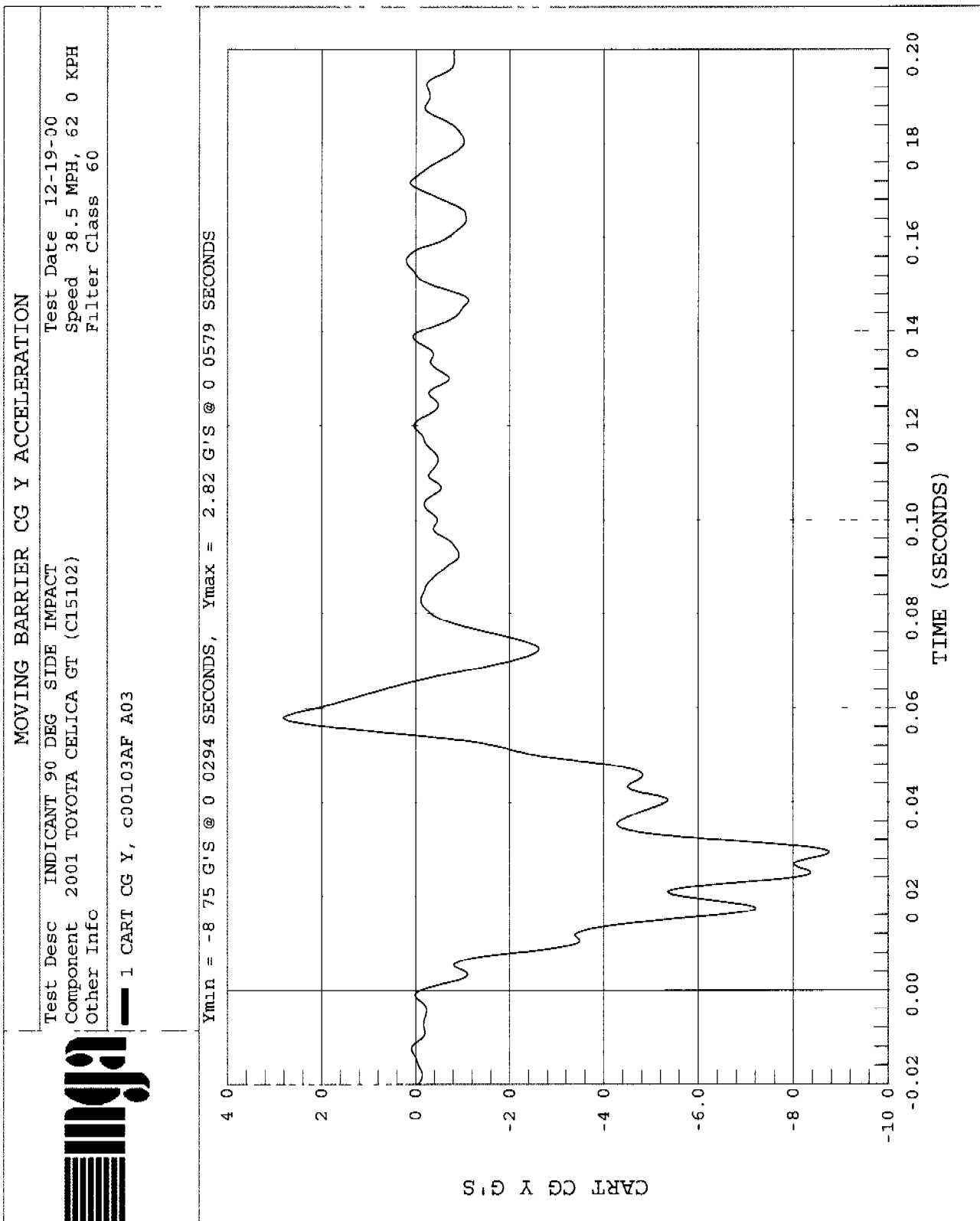
MOVING BARRIER CG X VELOCITY

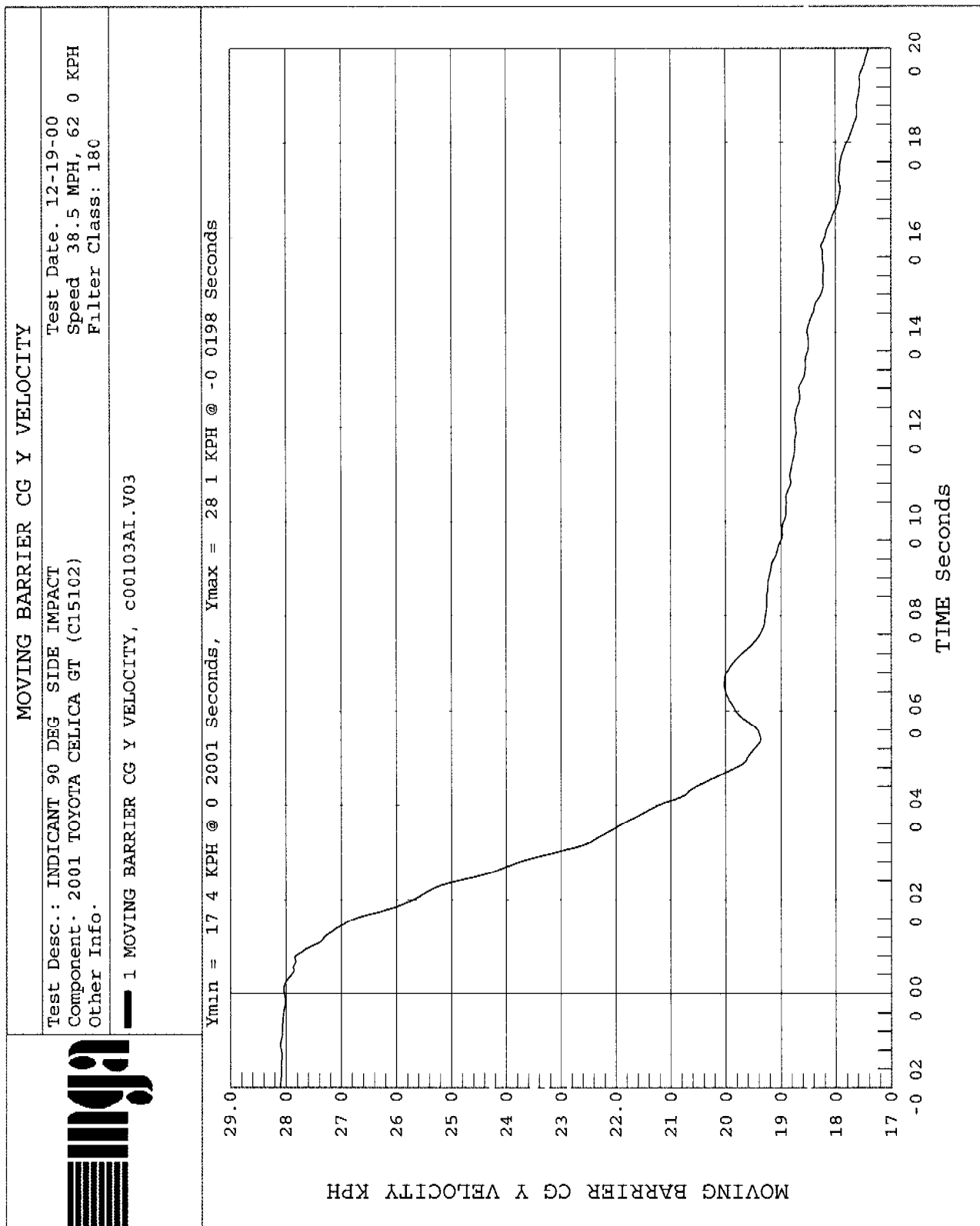
Test Desc . INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date: 12-19-00
 Speed: 38 5 MPH, 62 0 KPH
 Filter Class: 180

1 MOVING BARRIER CG X VELOCITY, c00103AI V02

Ymin = 26 66 KPH @ 0 0718 Seconds, Ymax = 55 23 KPH @ 0.0012 Seconds







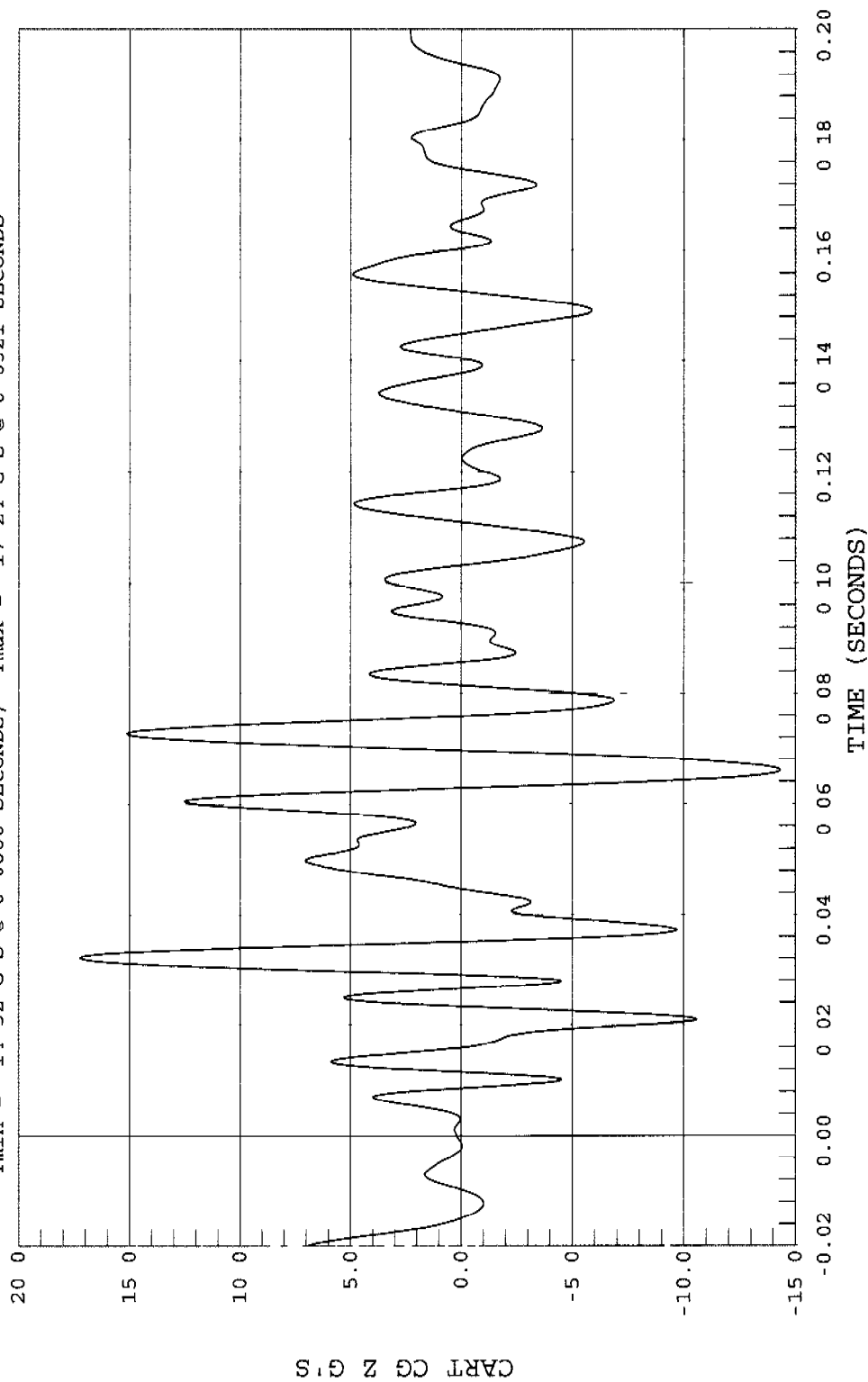
MOVING BARRIER CG Z ACCELERATION

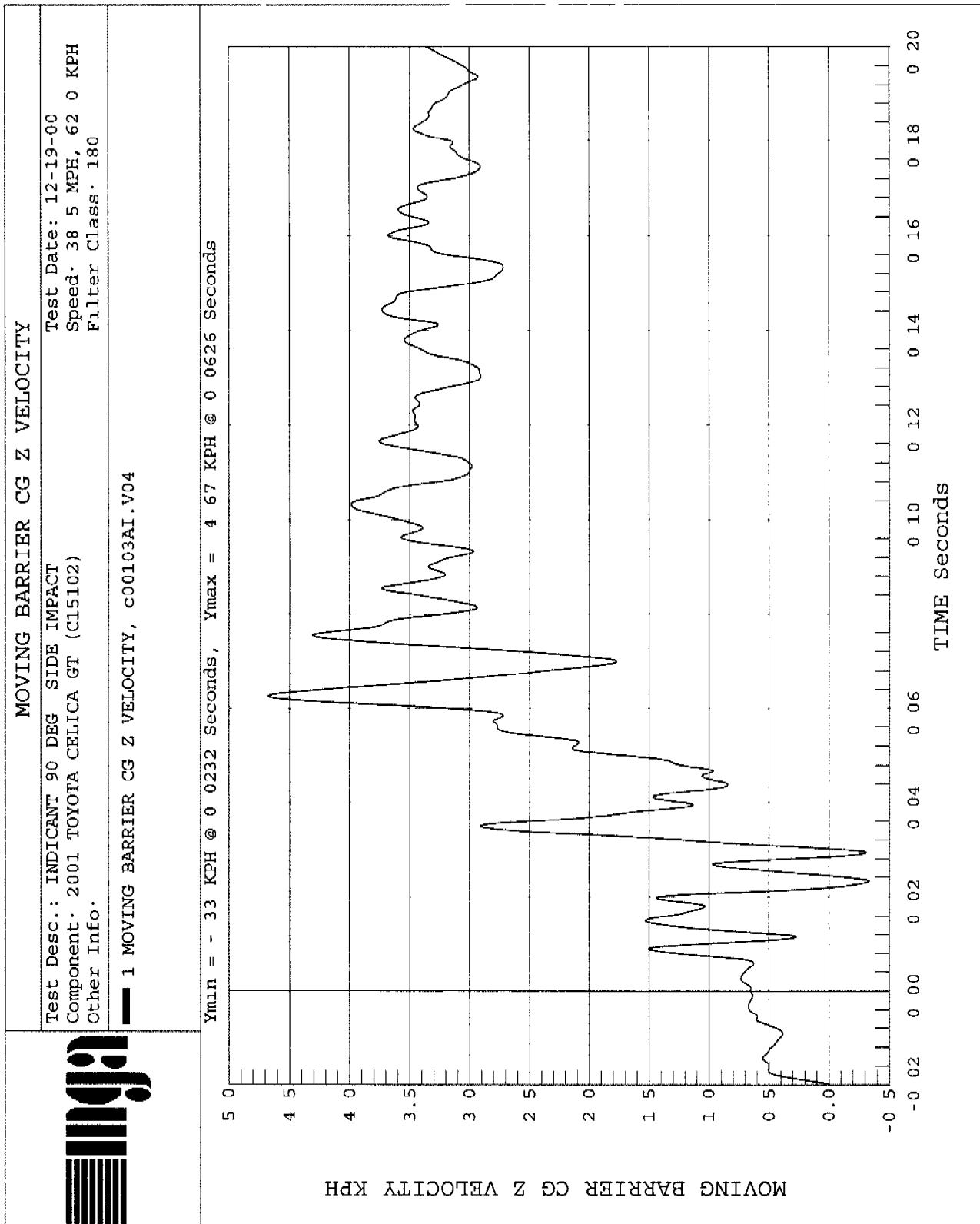
Test Date. 12-19-00
Speed 38.5 MPH, 52.0 KPH
Filter Class 60

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info.

1 CART CG Z, C00103AF A04

Ymin = -14.32 G'S @ 0.0660 SECONDS, Ymax = 17.24 G'S @ 0.0321 SECONDS



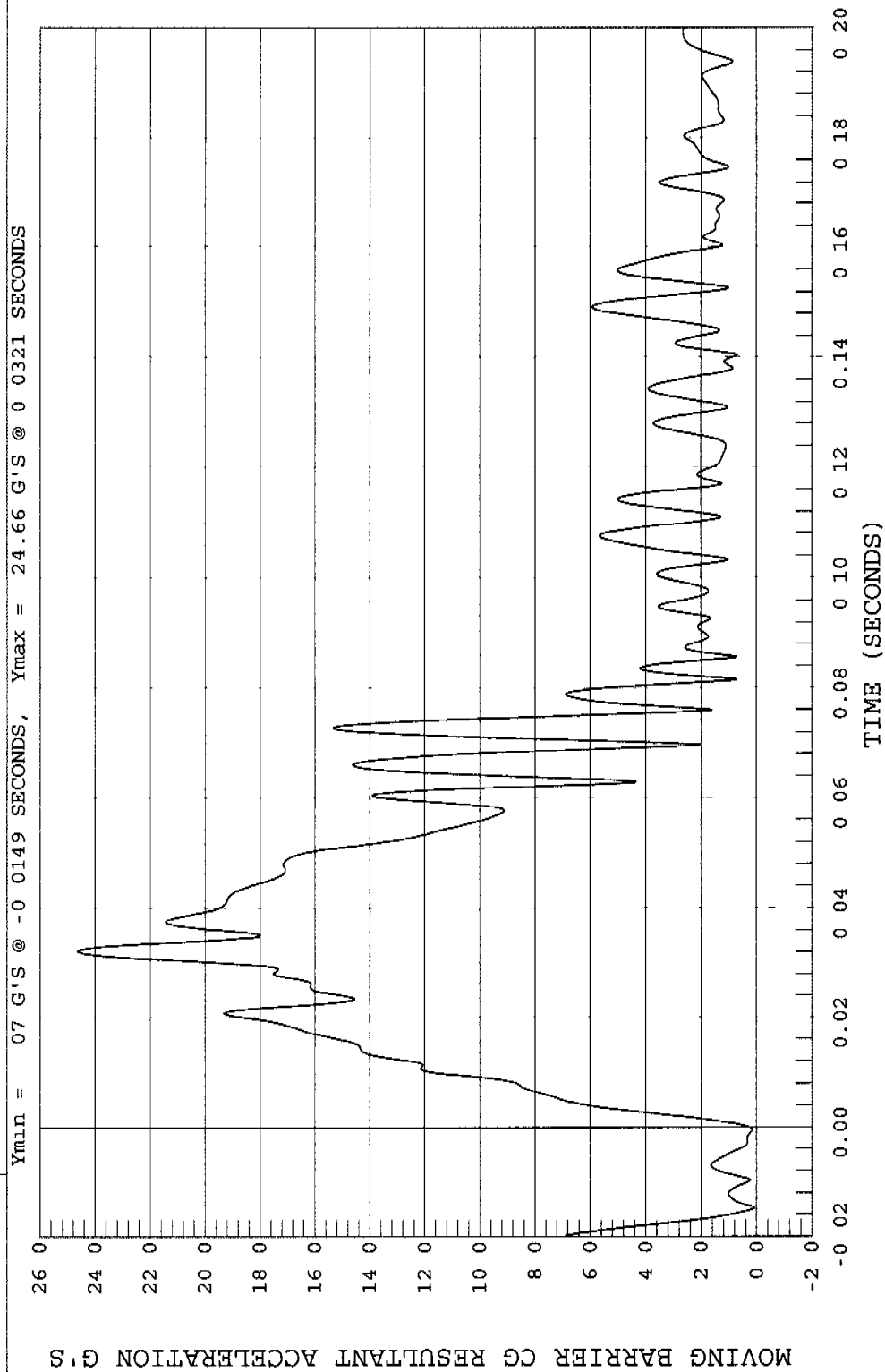


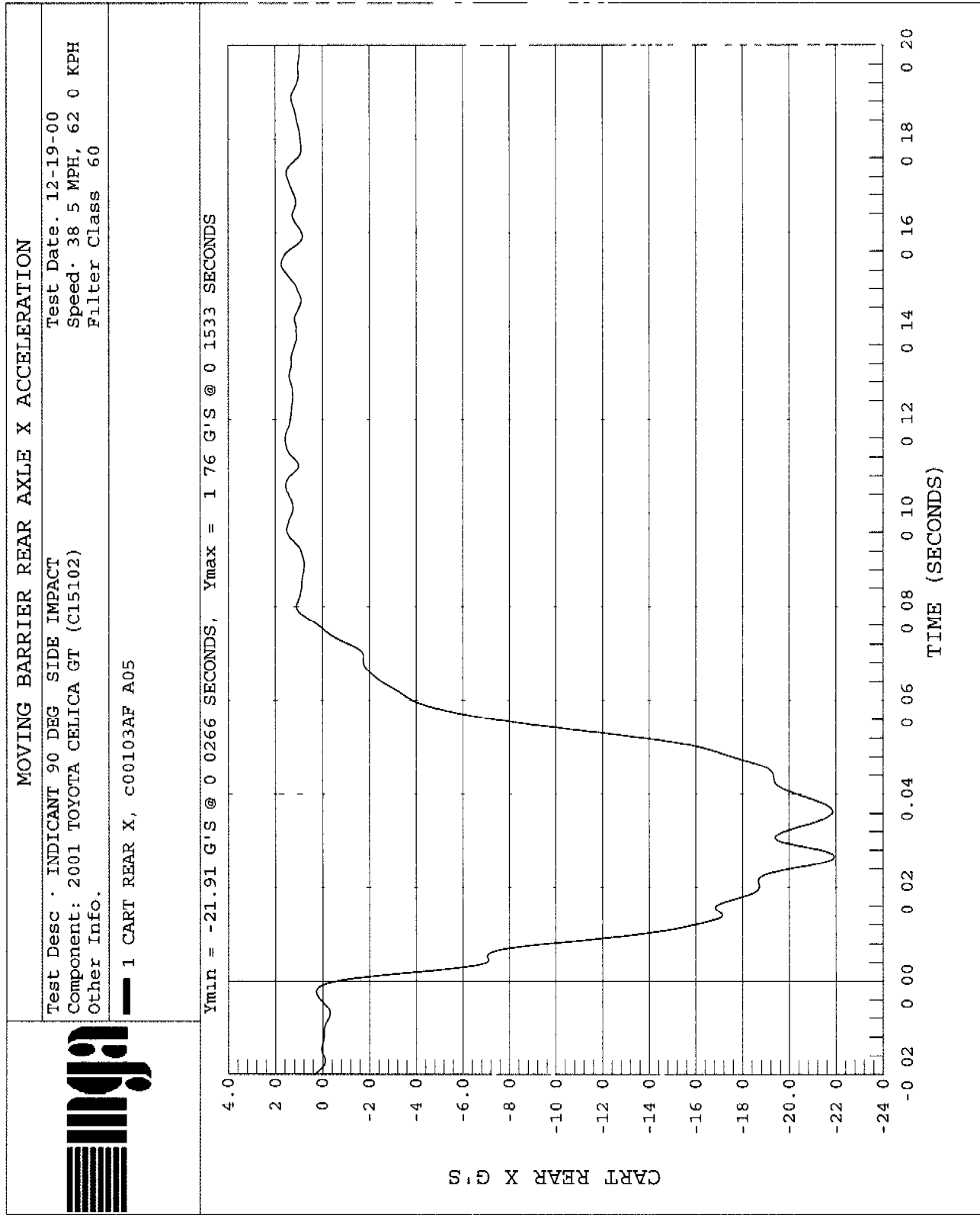


MOVING BARRIER CG RESULTANT ACCELERATION

Test Desc INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info.
Test Date: 12-19-00
Speed. 38 5 MPH, 62 0 KPH
Filter Class 60

1 MOVING BARRIER CG RESULTANT ACCELERATION, C00103AV A02



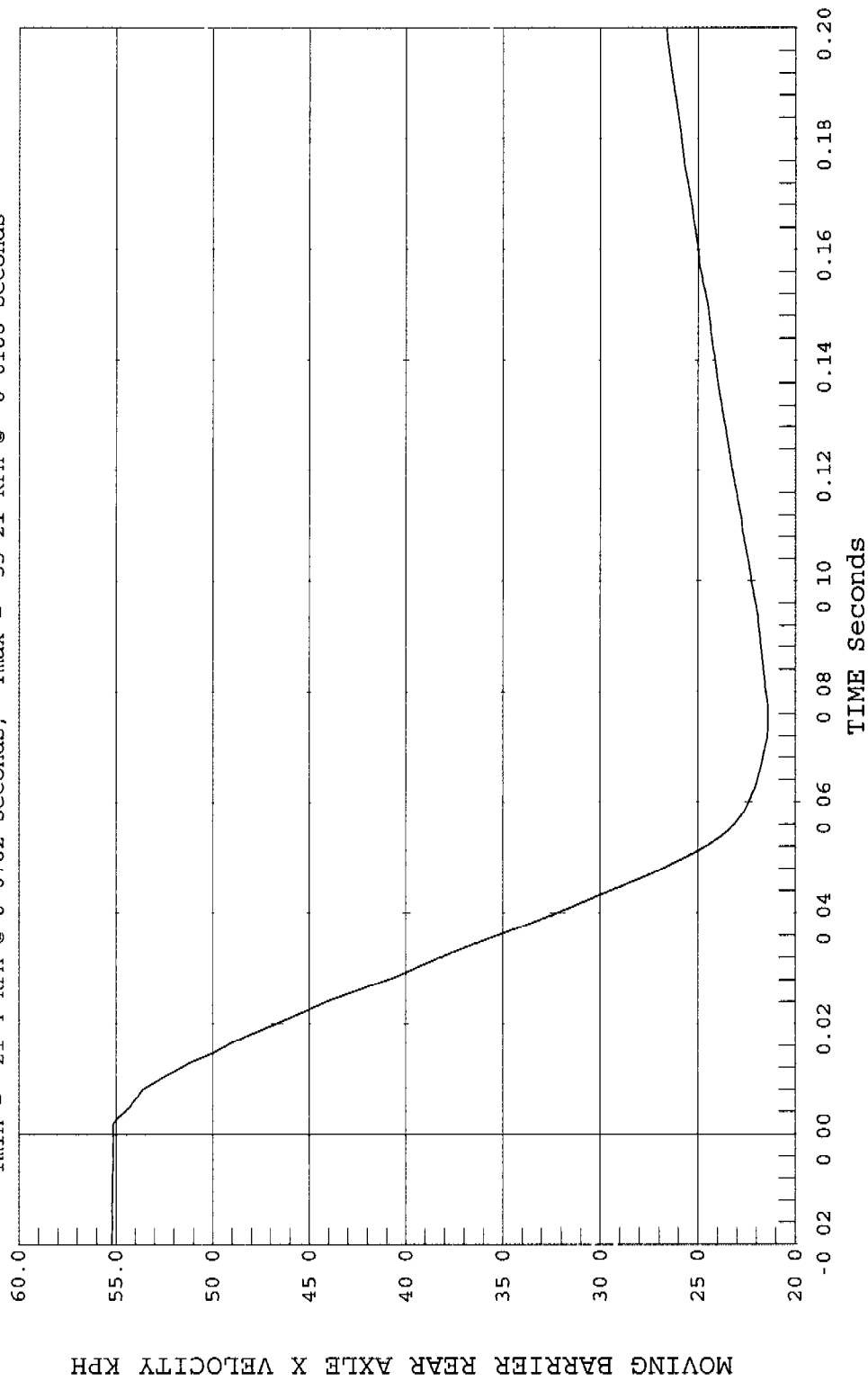


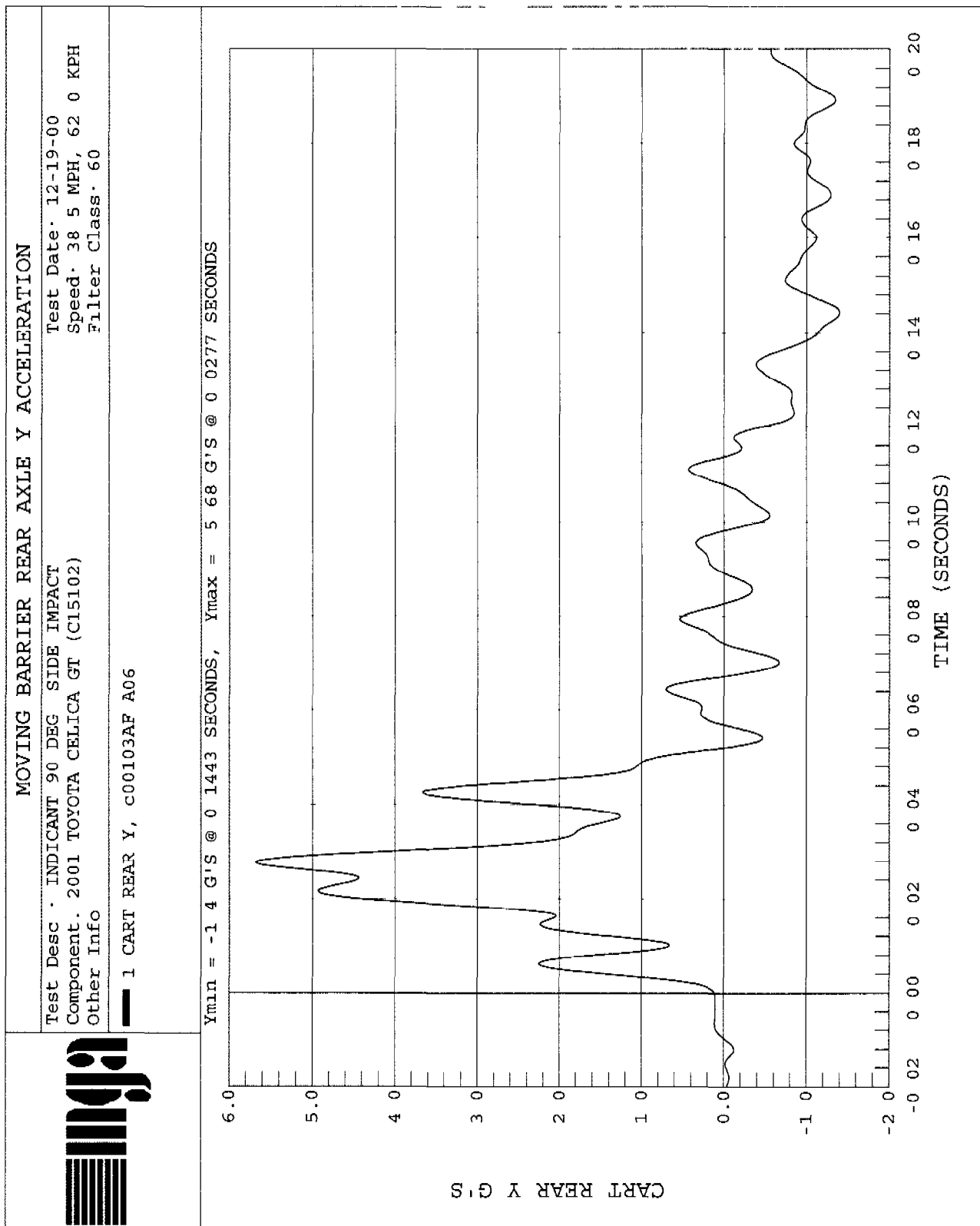
MOVING BARRIER REAR AXLE X VELOCITY

Test Desc.: INDICANT 90 DEG. SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date. 12-19-00
 Speed. 38 5 MPH, 62 0 KPH
 Filter Class. 180

1 MOVING BARRIER REAR AXLE X VELOCITY, c00103AI V05

Ymin = 21 4 KPH @ 0 0762 Seconds, Ymax = 55 21 KPH @ -0 0188 Seconds

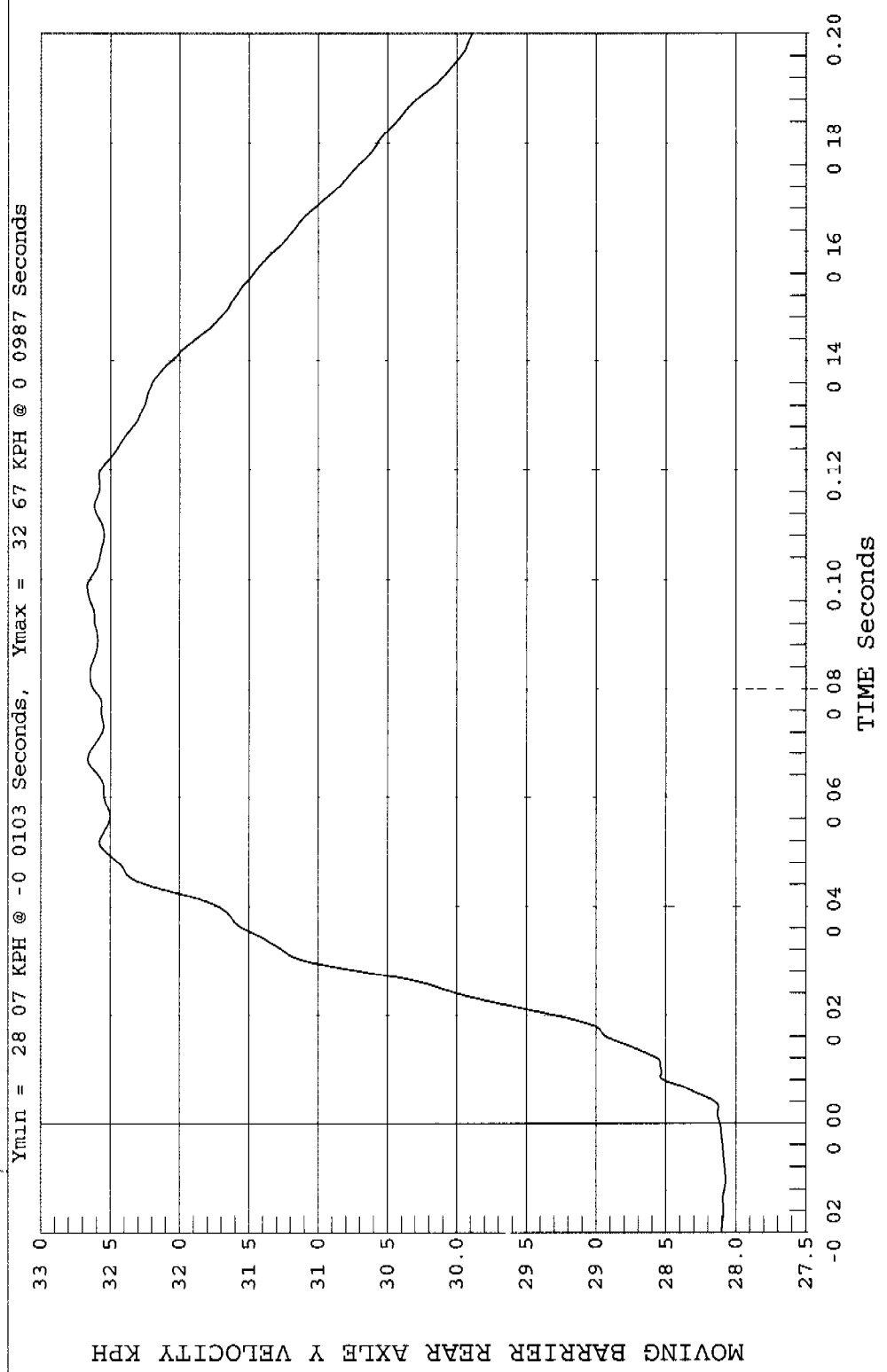


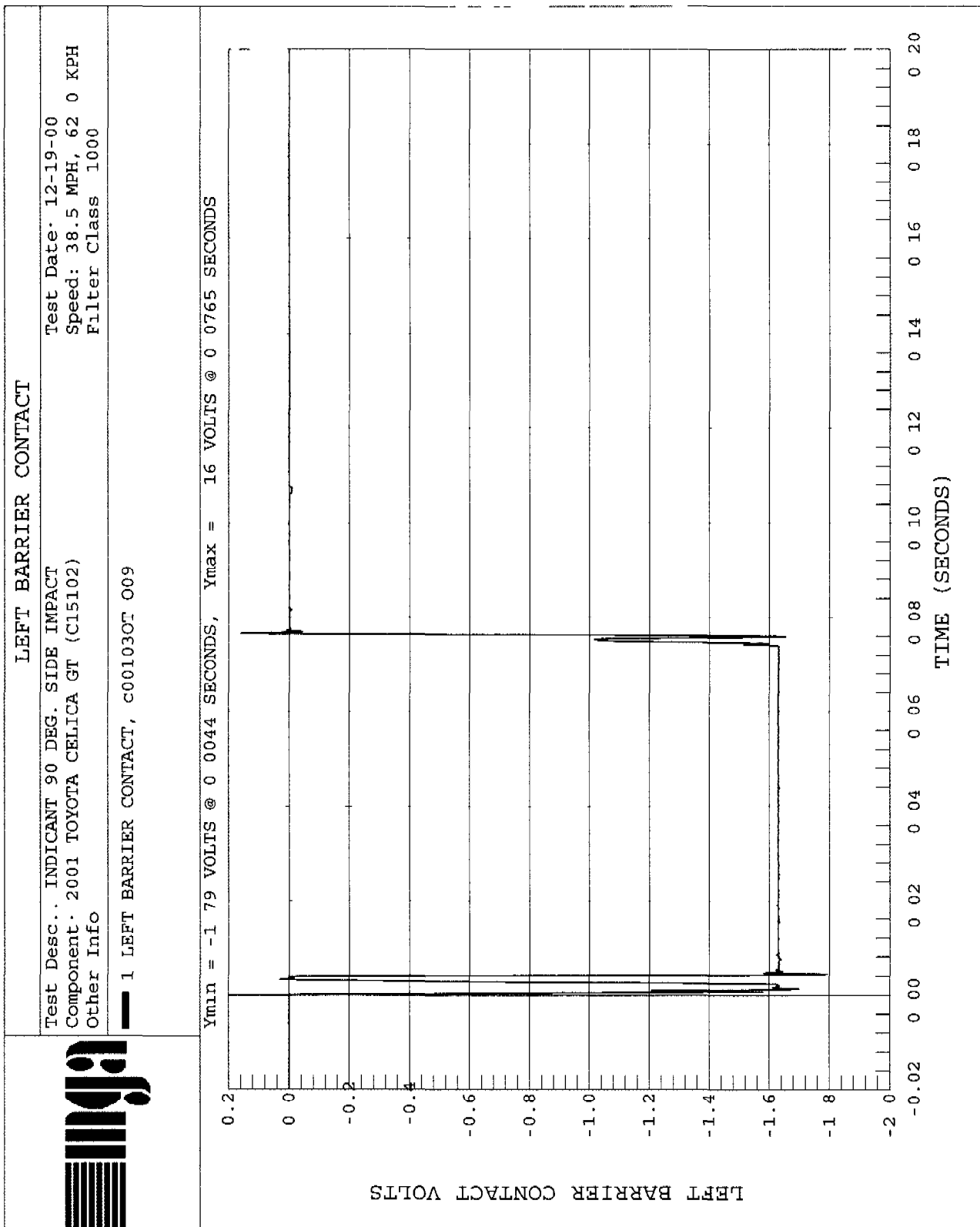


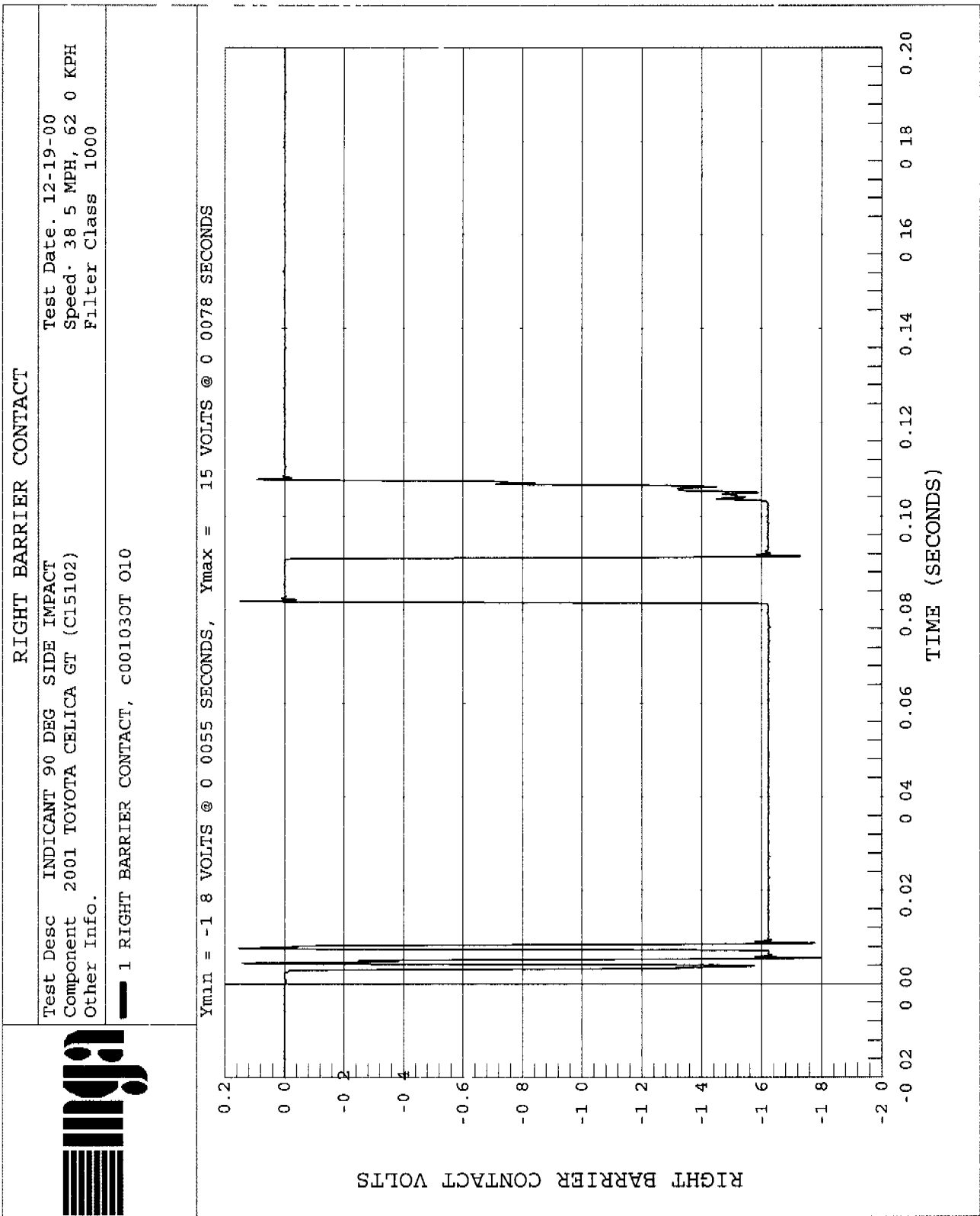
MOVING BARRIER REAR AXLE Y VELOCITY

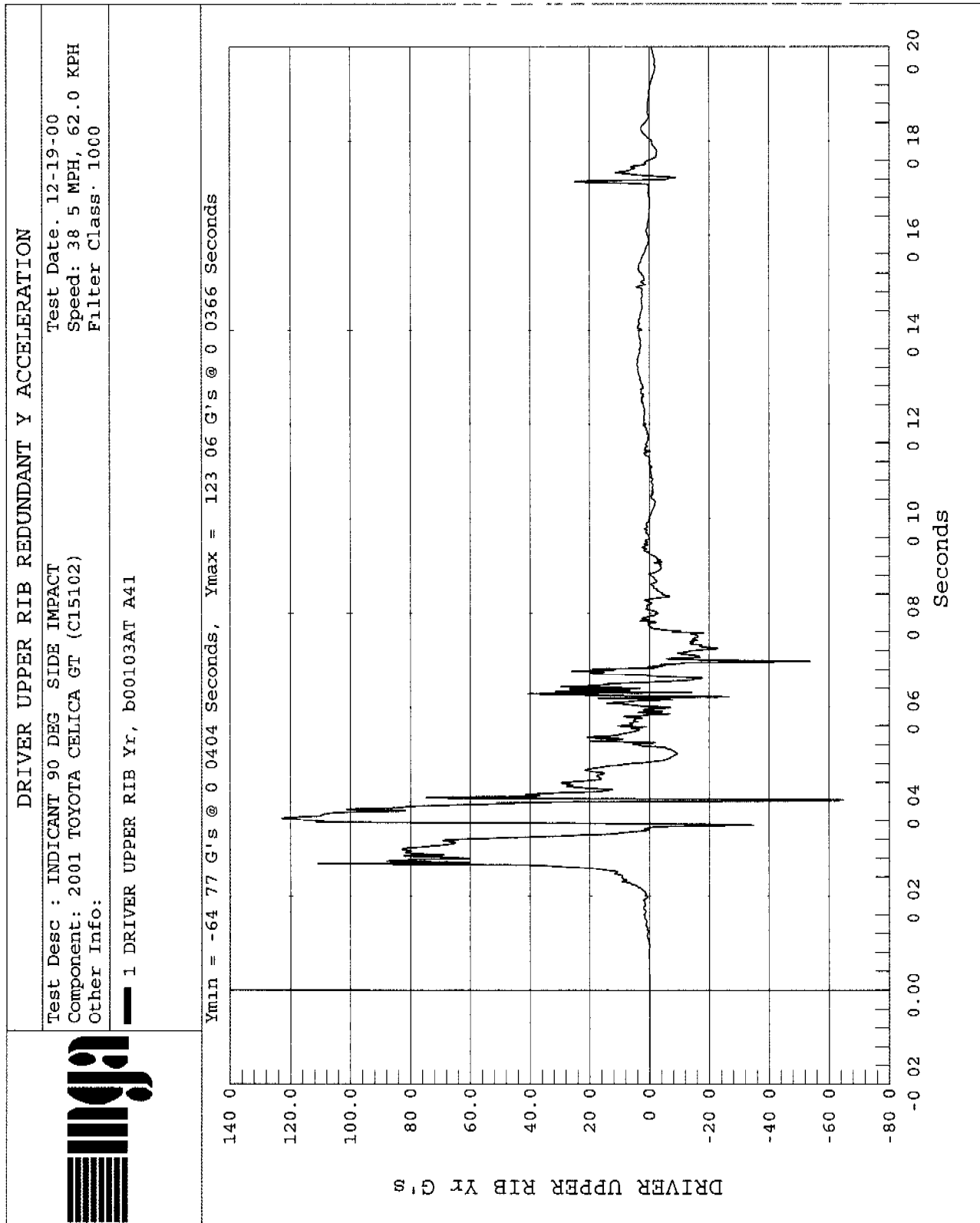
Test Desc. INDICANT 90 DEG SIDE IMPACT
 Component. 2001 TOYOTA CELICA GT (C15102)
 Other Info:
 Test Date. 12-19-00
 Speed. 38.5 MPH, 62.0 KPH
 Filter Class 180

1 MOVING BARRIER REAR AXLE Y VELOCITY, C00103AI V06





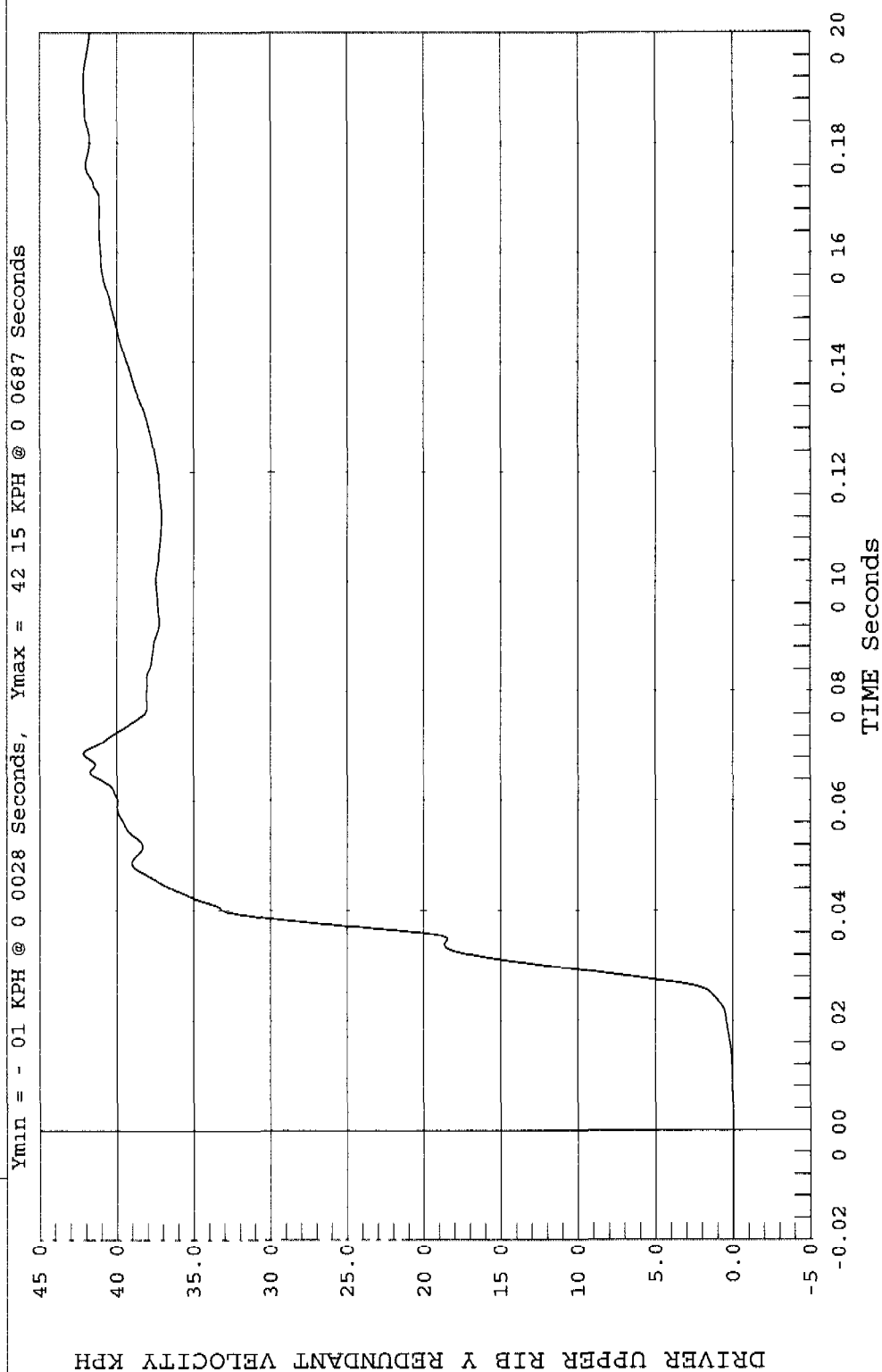


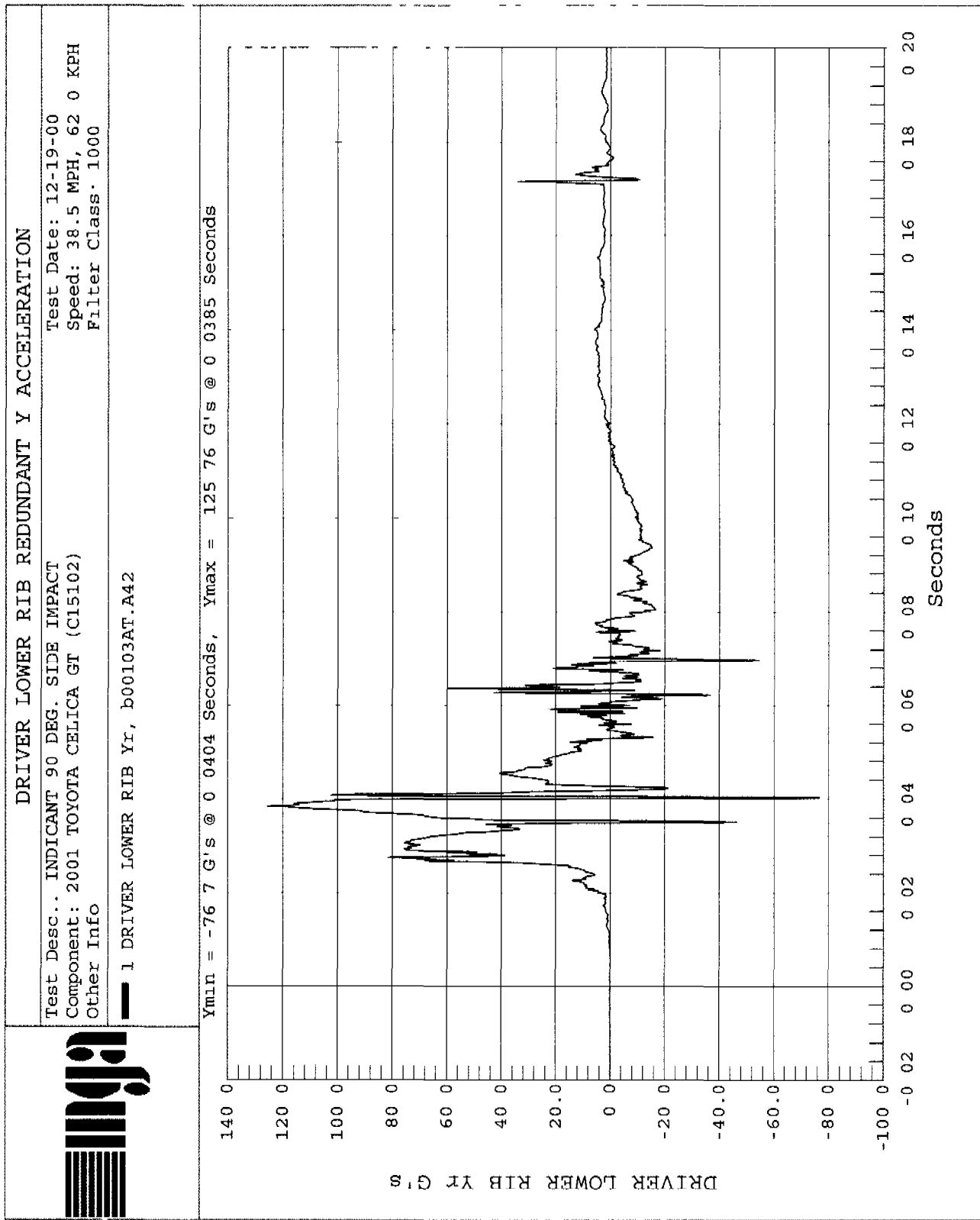


DRIVER UPPER RIB REDUNDANT Y VELOCITY

Test Desc. INDICANT 90 DEG. SIDE IMPACT
 Component. 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date. 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Filter Class. 180

1 DRIVER UPPER RIB Y REDUNDANT VELOCITY, b00103AI V41

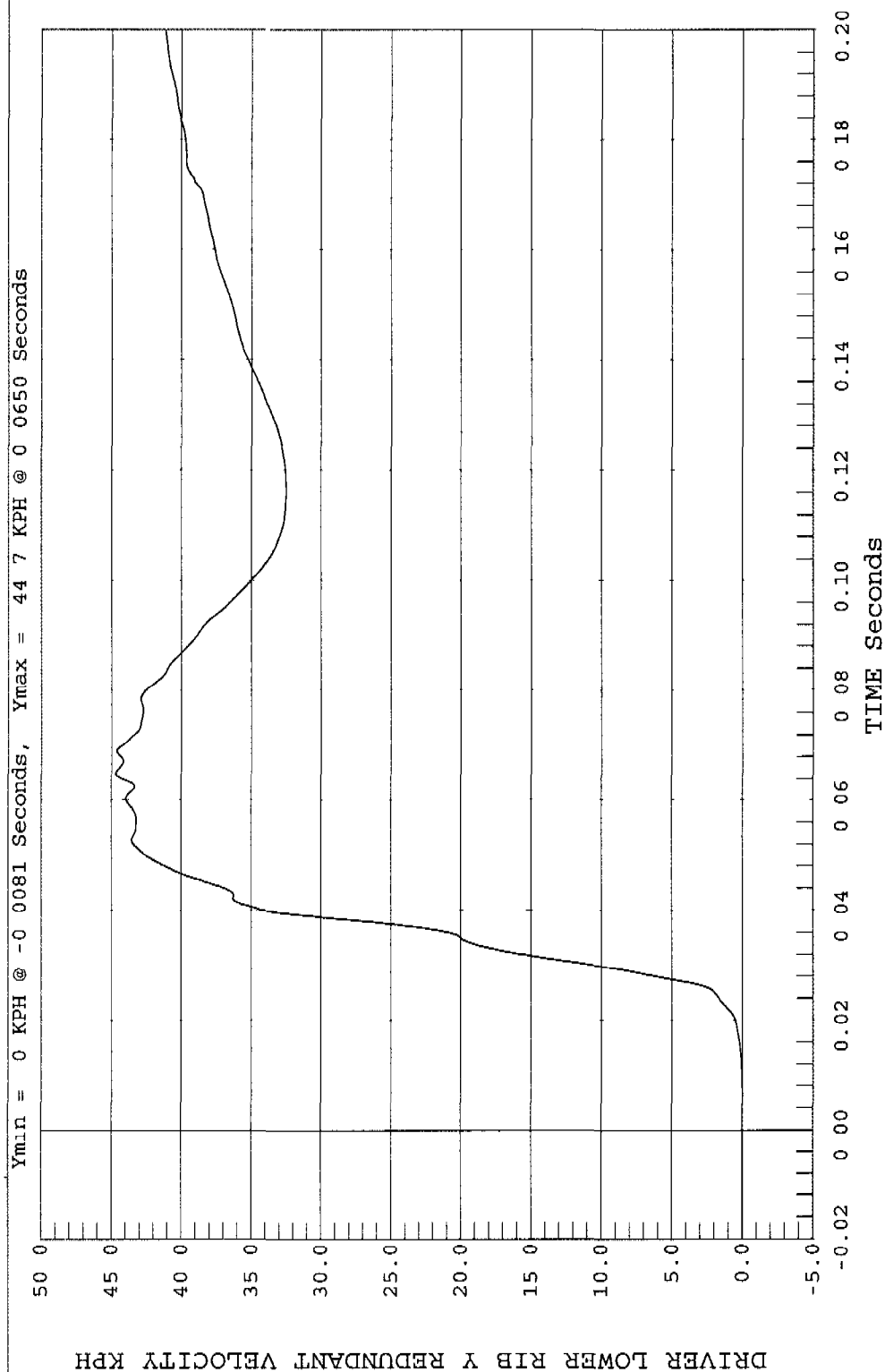


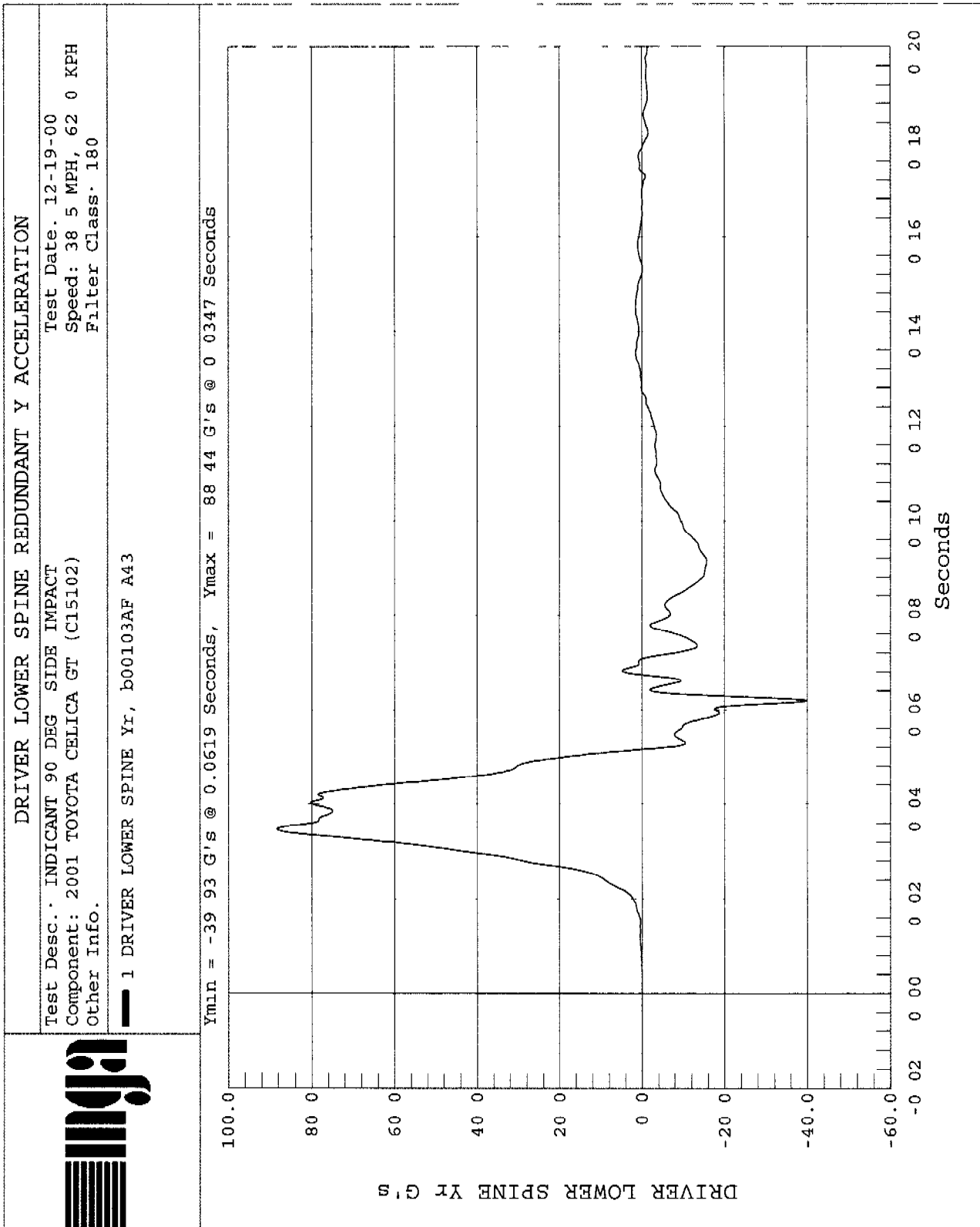


DRIVER LOWER RIB REDUNDANT Y VELOCITY

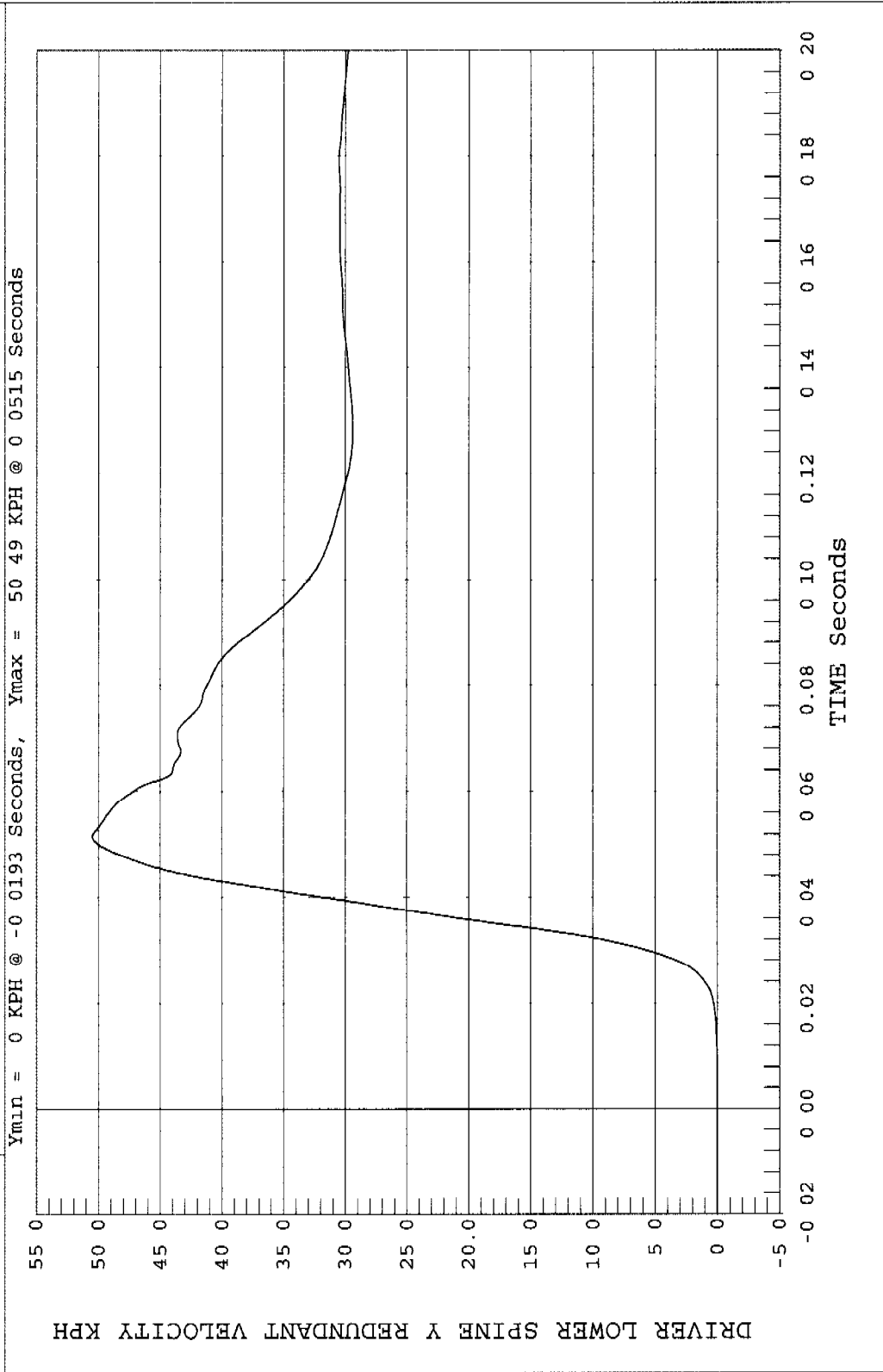
Test Desc INDICANT 90 DEG. SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date. 12-19-00
 Speed. 38.5 MPH, 62.0 KPH
 Filter Class. 180

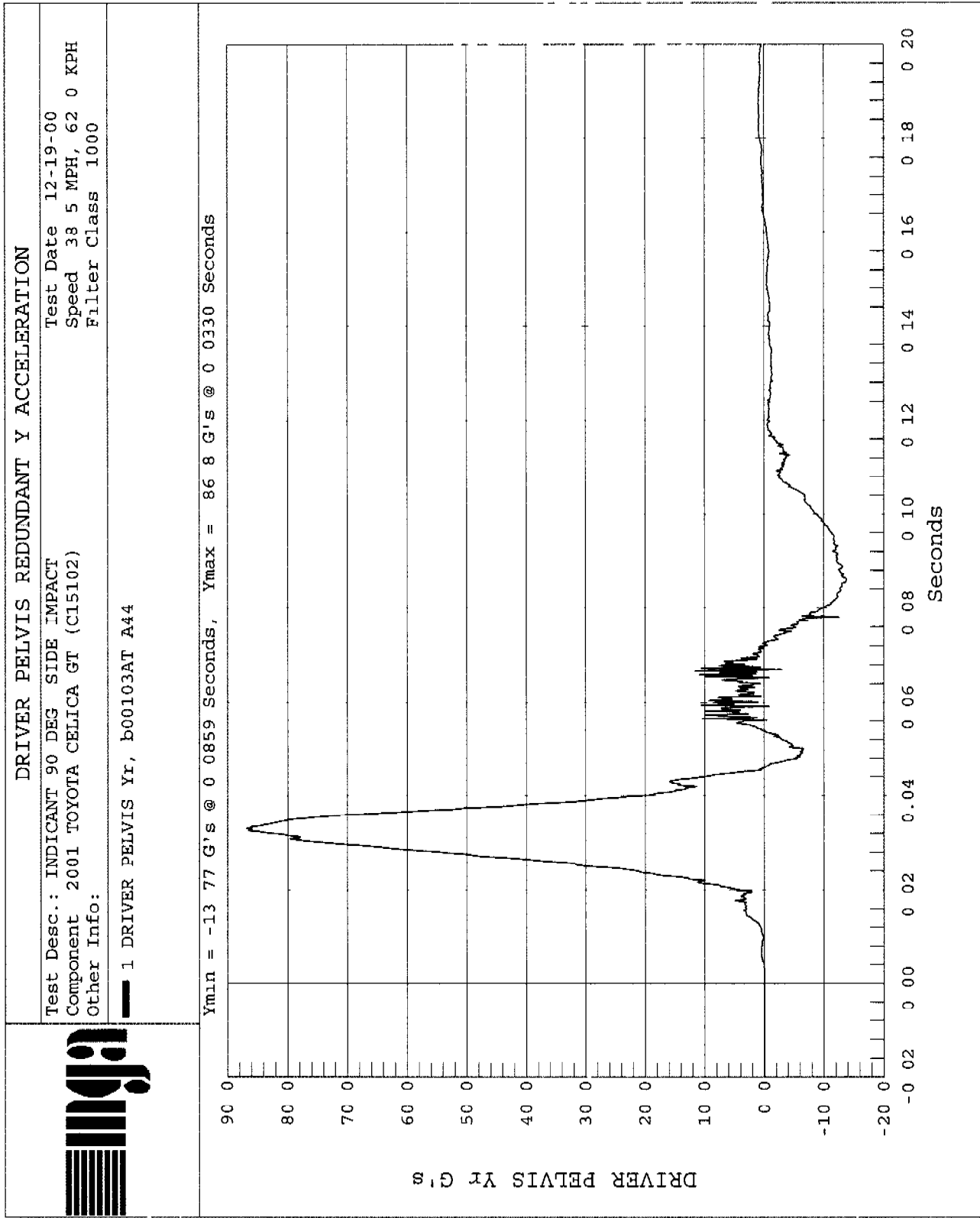
1 DRIVER LOWER RIB Y REDUNDANT VELOCITY, b00103AI V42





		DRIVER LOWER SPINE REDUNDANT Y VELOCITY	
Test Desc INDICANT 90 DEG SIDE IMPACT Component 2001 TOYOTA CELICA GT (C15102) Other Info.		Test Date: 12-19-00 Speed 38.5 MPH, 62.0 KPH Filter Class. 180	
 1 DRIVER LOWER SPINE Y REDUNDANT VELOCITY, b00103AI V43			



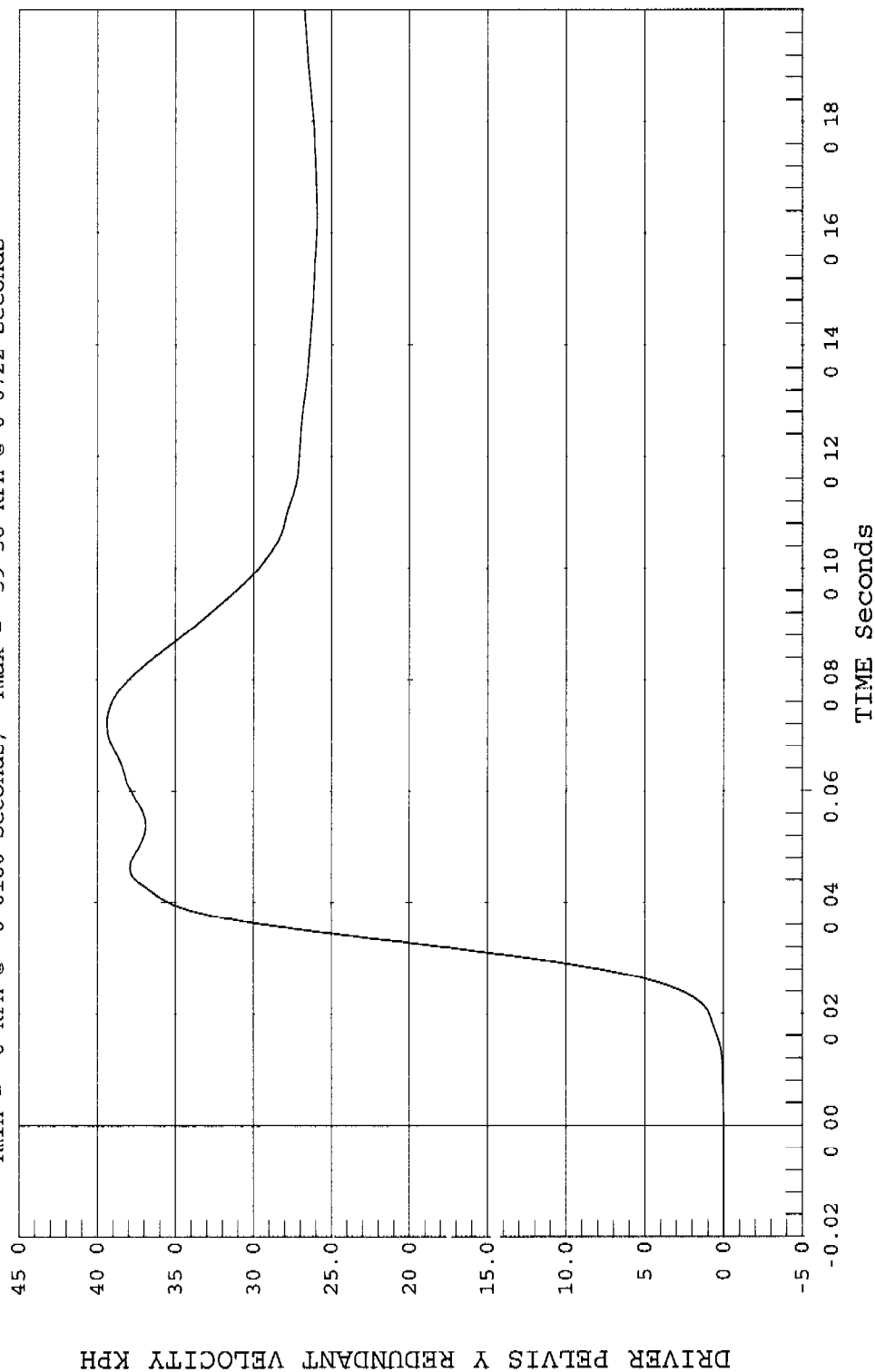


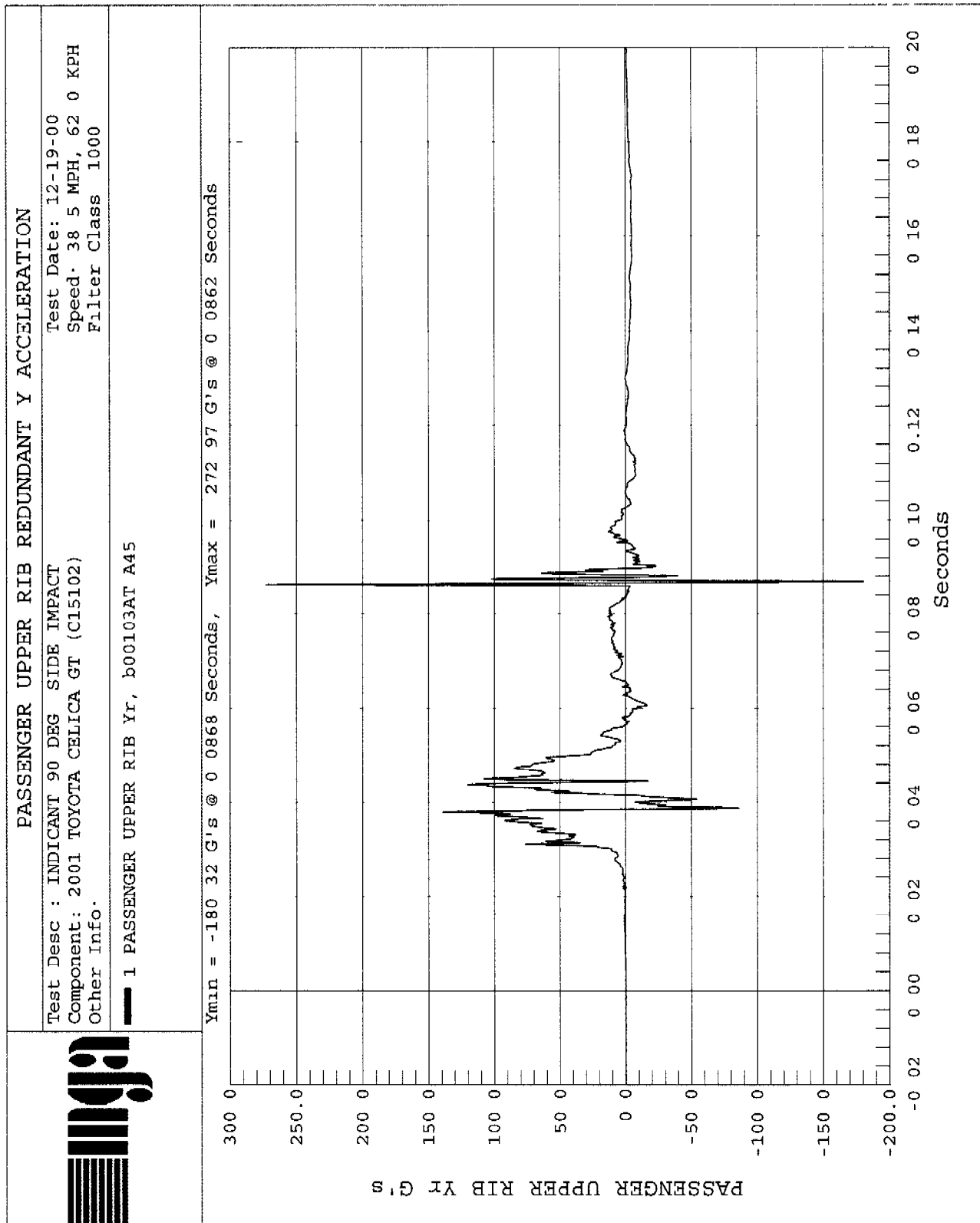
DRIVER PELVIS REDUNDANT Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date: 12-19-00
 Speed 38 5 MPH, 62 0 KPH
 Filter Class 180

1 DRIVER PELVIS Y REDUNDANT VELOCITY, b00103AI V44

Ymin = 0 KPH @ -0 0186 Seconds, Ymax = 39 38 KPH @ 0 0722 Seconds

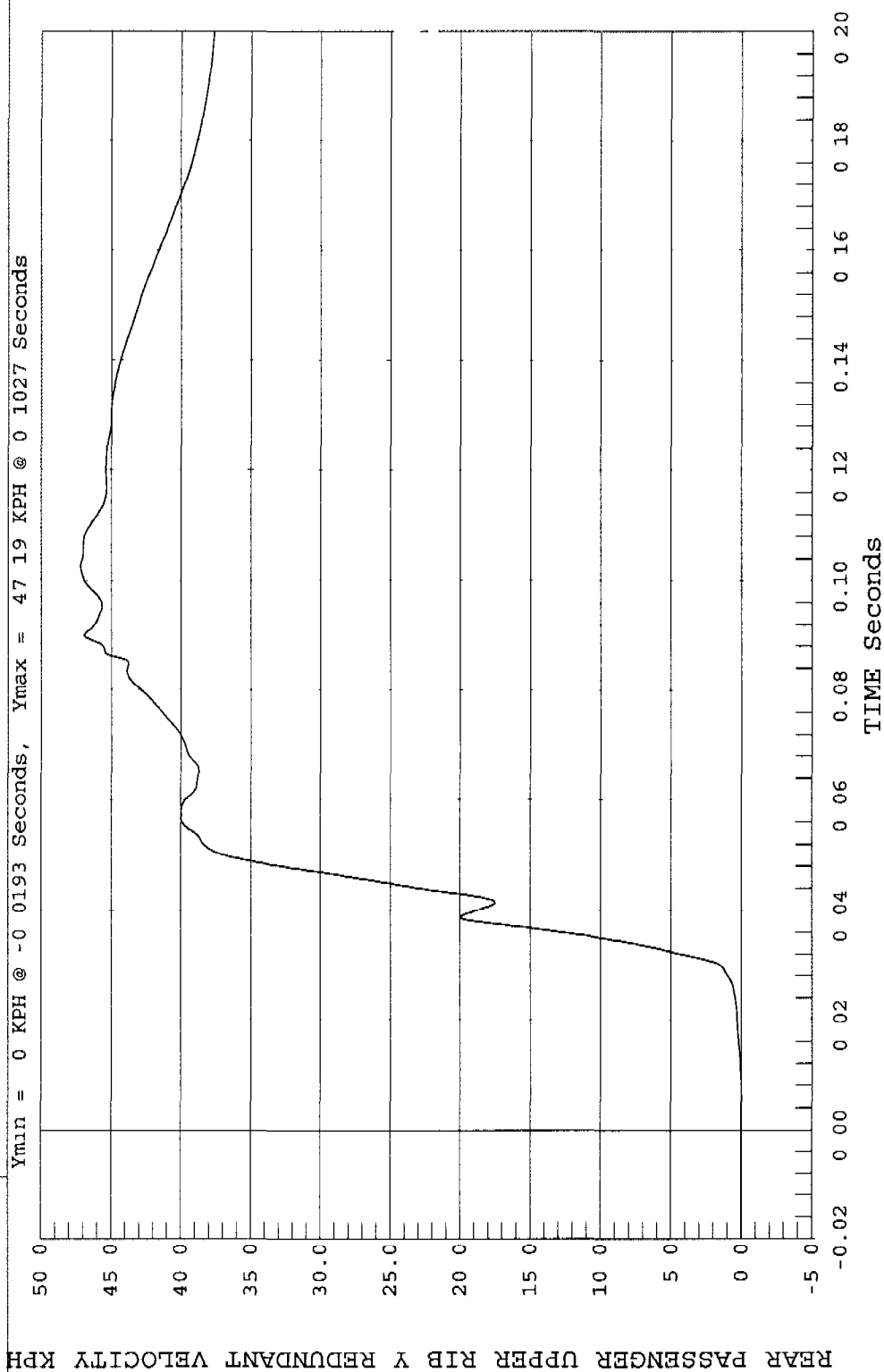


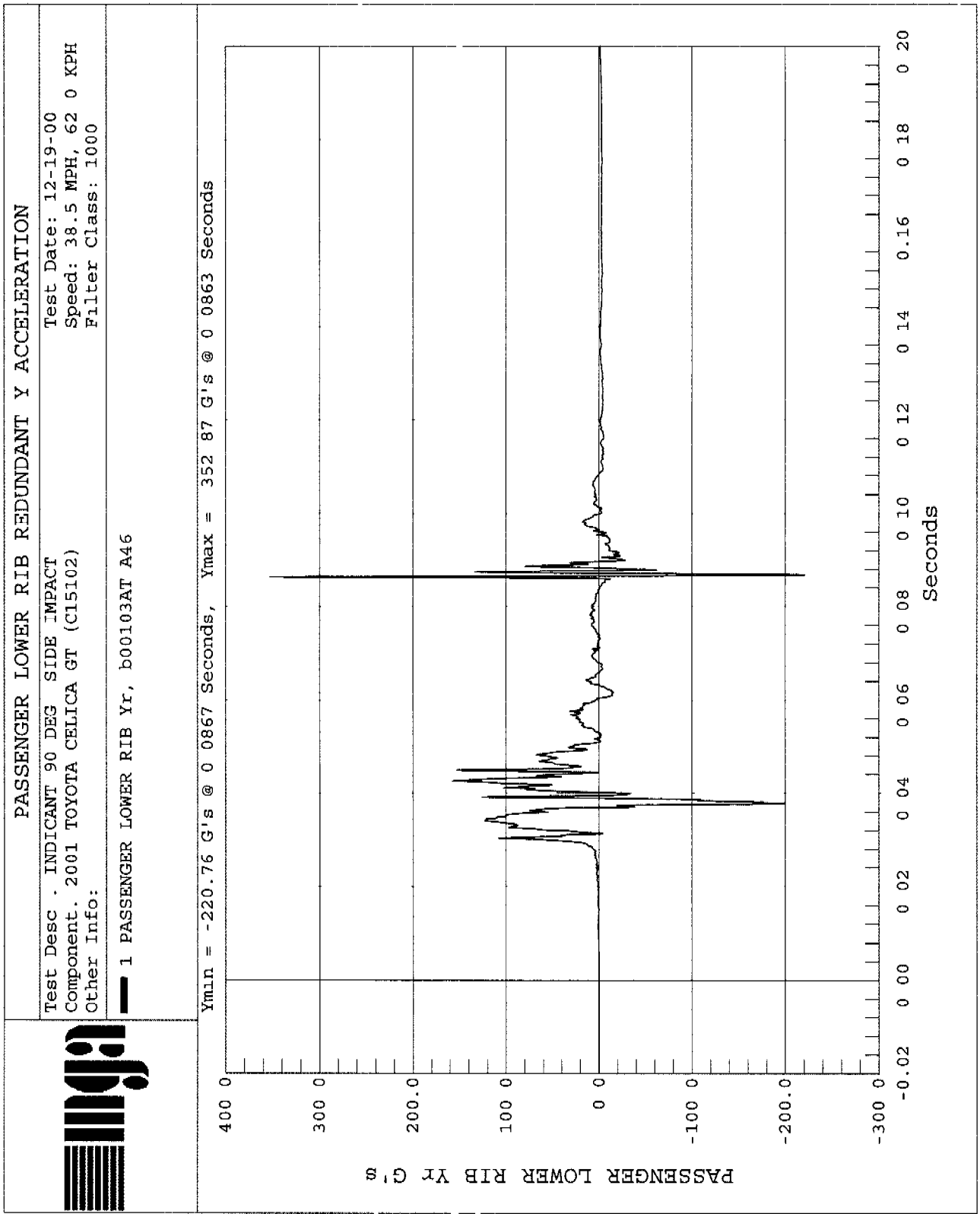


PASSENGER UPPER RIB REDUNDANT Y VELOCITY

Test Desc : INDICANT 90 DEG SIDE IMPACT
 Component. 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date: 12-19-00
 Speed: 38 5 MPH, 62 0 KPH
 Filter Class: 180

1 REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY, b00103AI V45

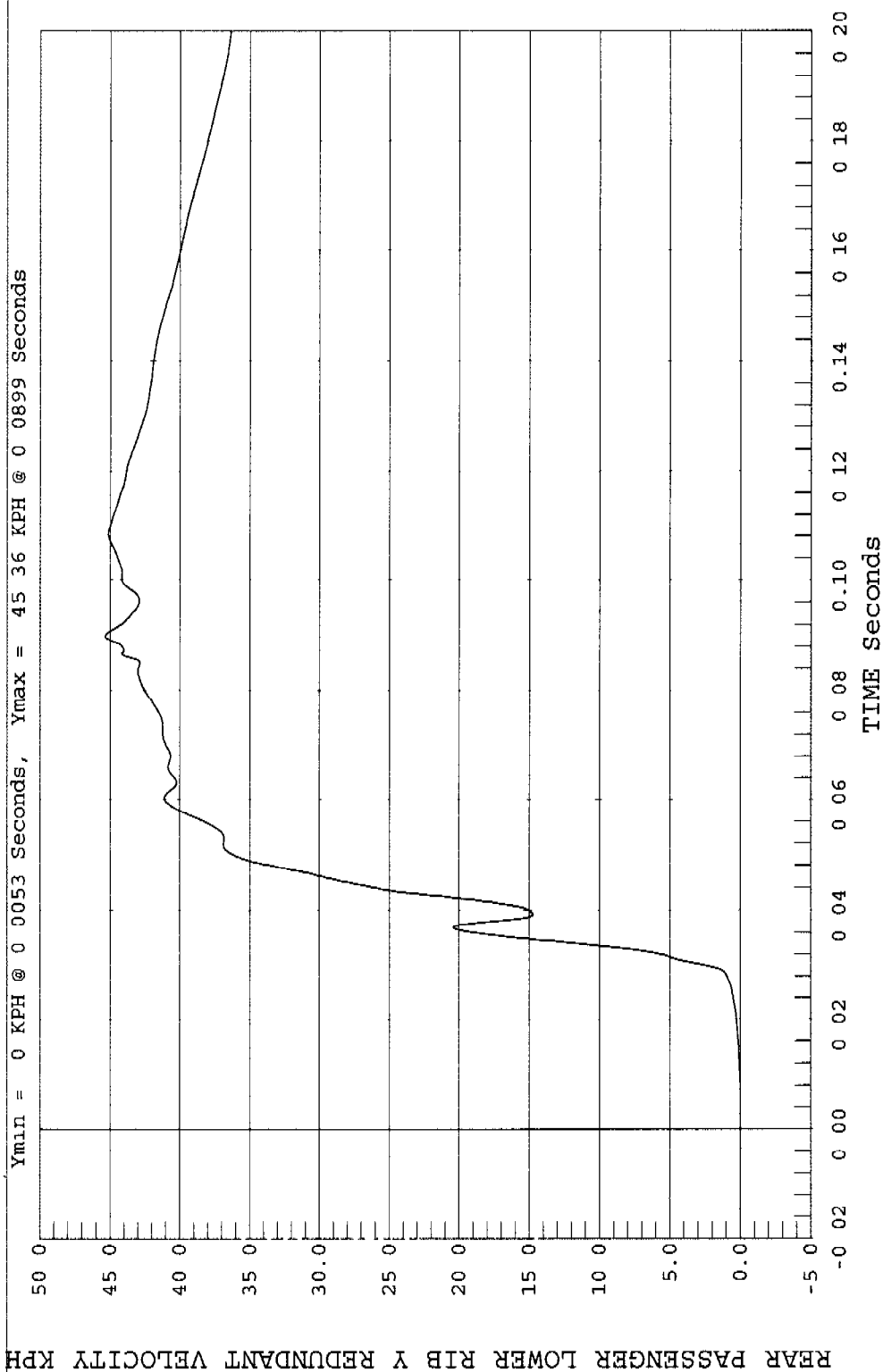


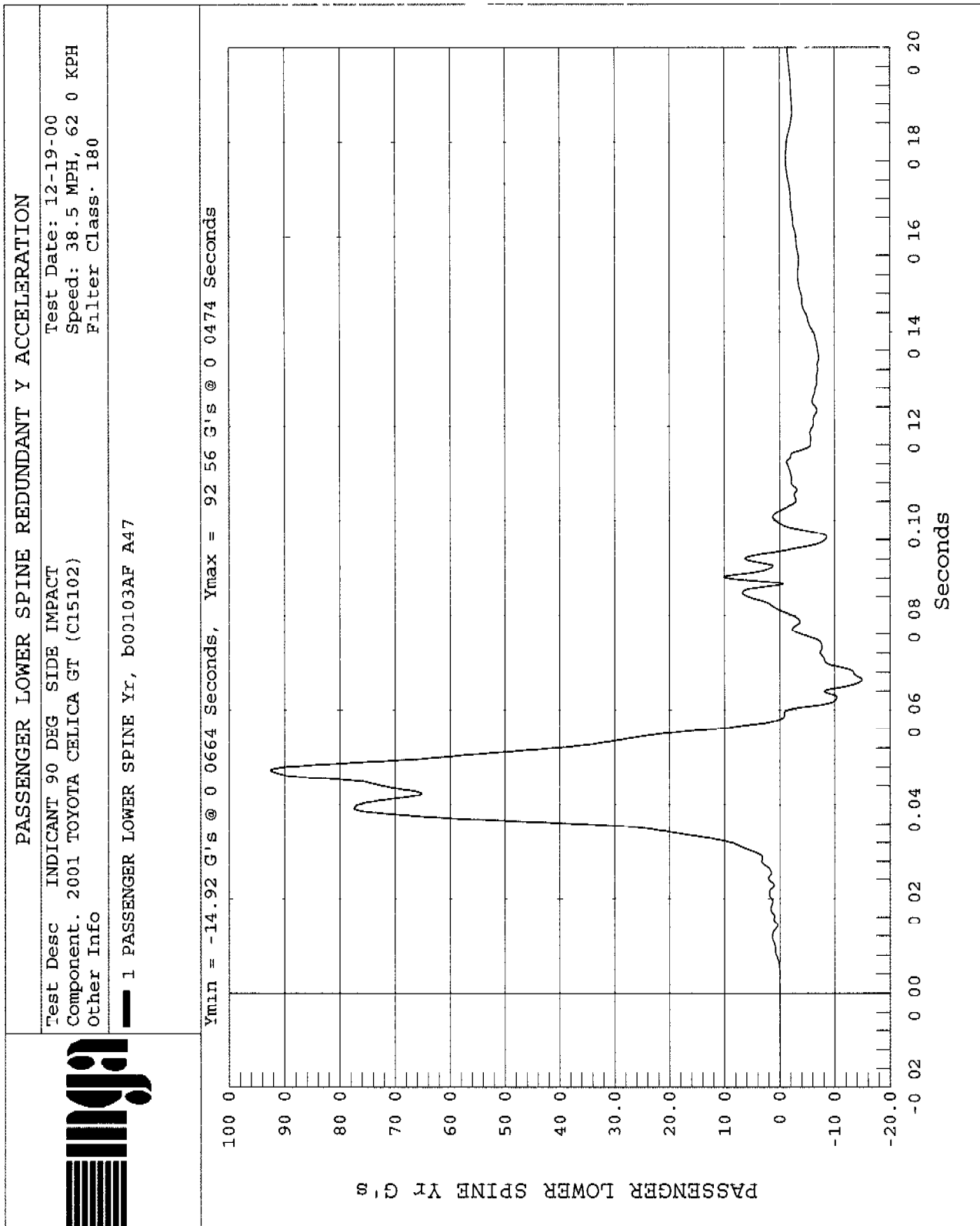


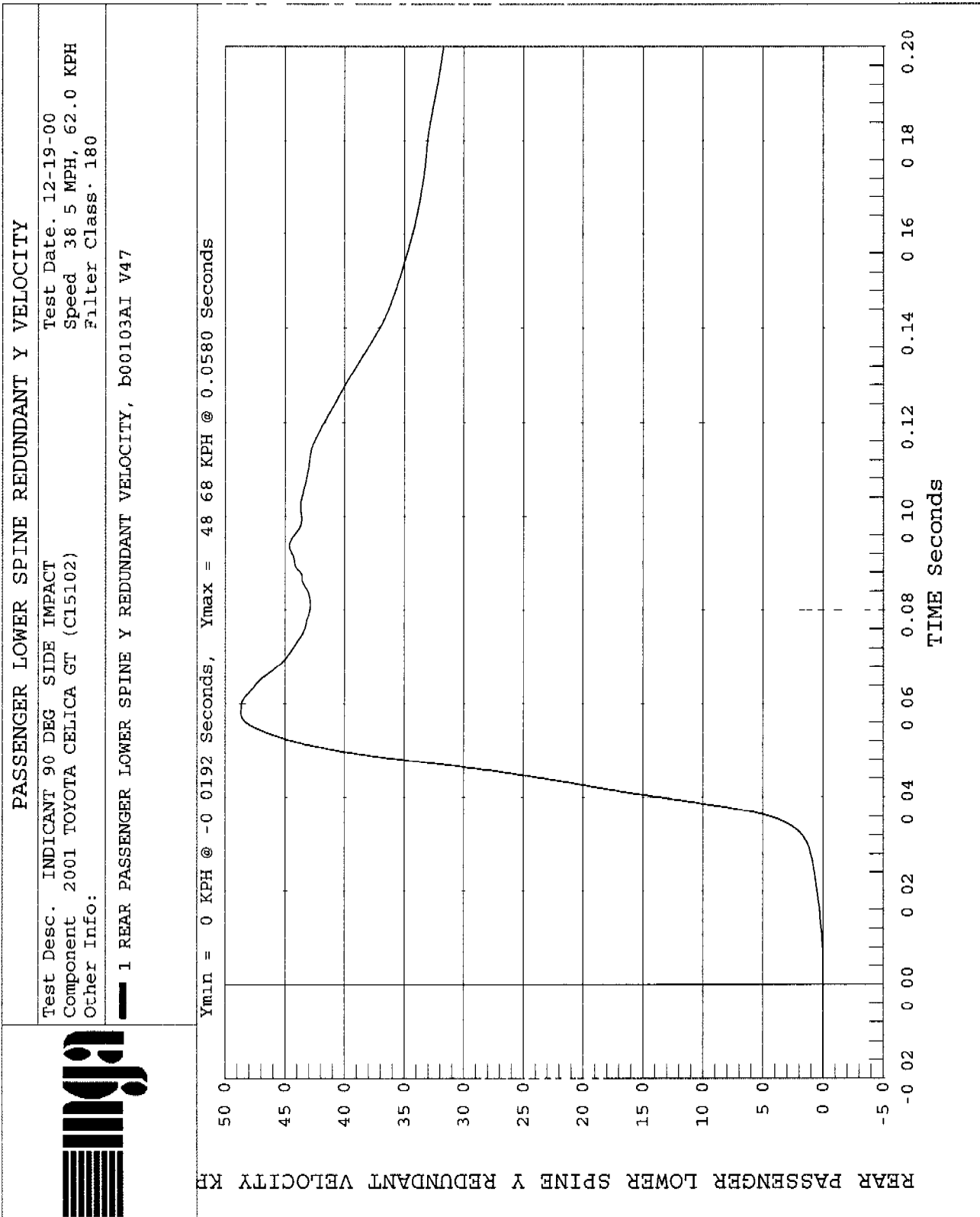
PASSENGER LOWER RIB REDUNDANT Y VELOCITY

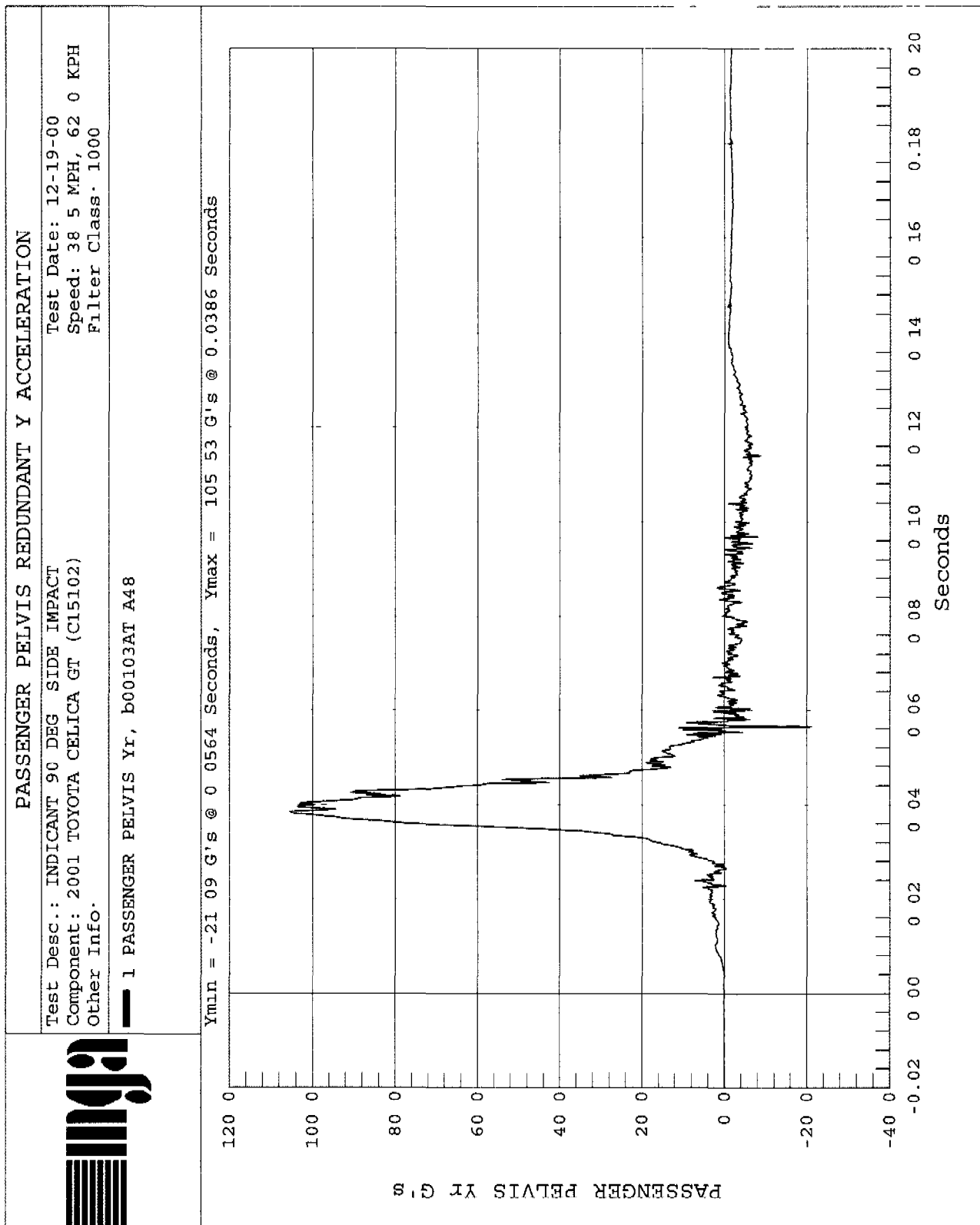
Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date: 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Filter Class: 180

1 REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY, b00103AI V46





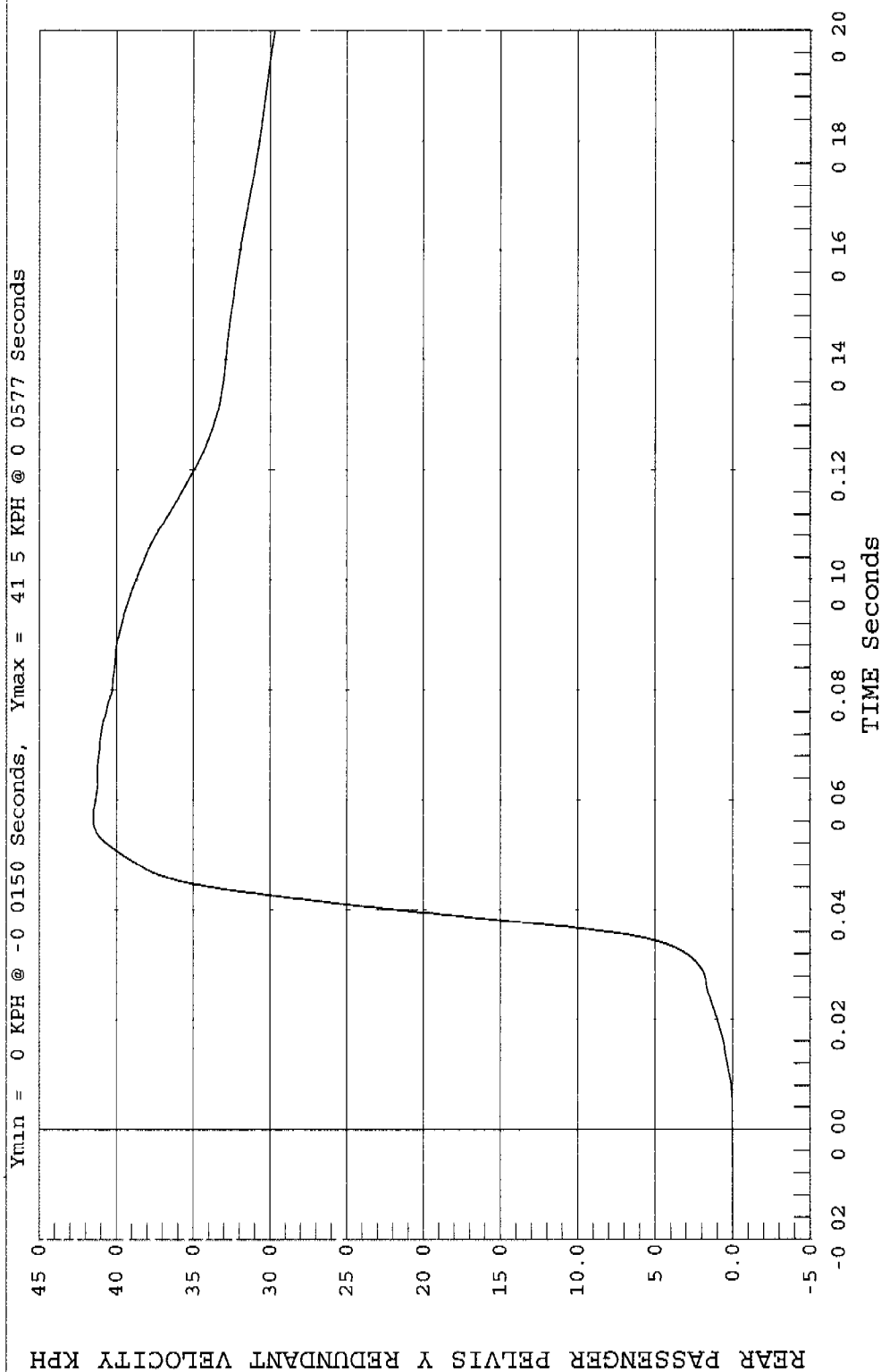


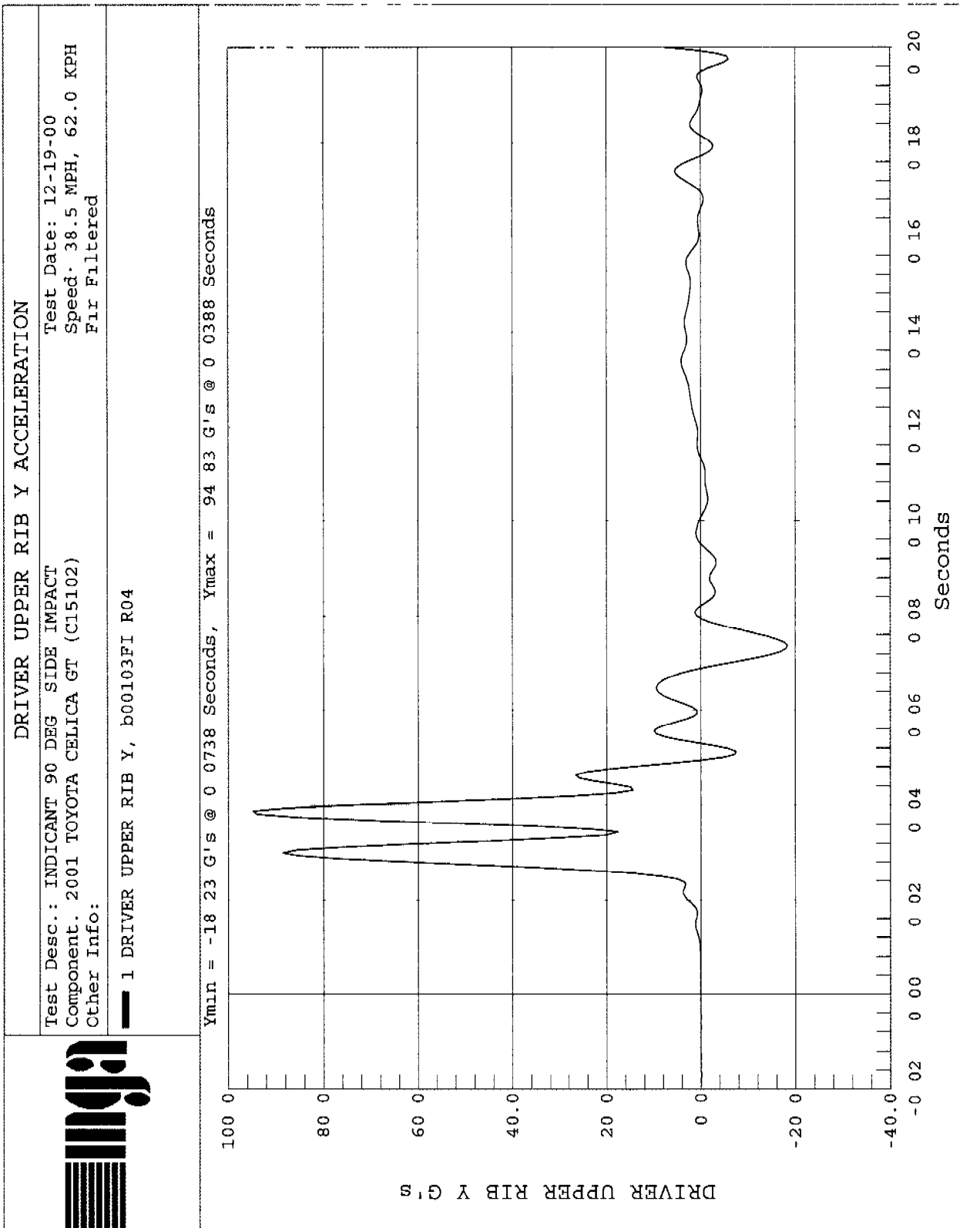


PASSENGER PELVIS REDUNDANT Y VELOCITY

Test Desc : INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date 12-19-00
 Speed. 38.5 MPH, 62.0 KPH
 Filter Class 180

1 REAR PASSENGER PELVIS Y REDUNDANT VELOCITY, b00103AI V48



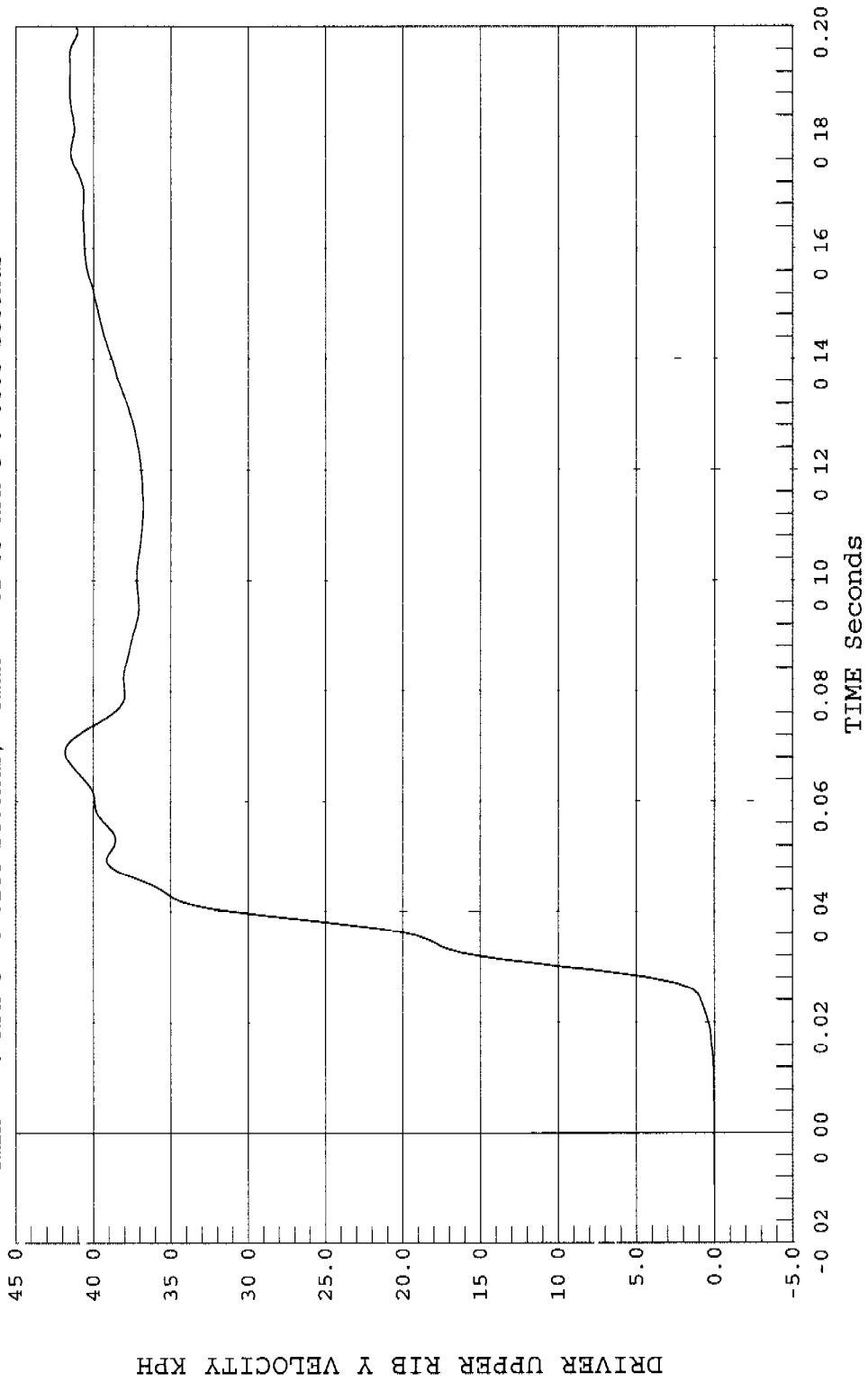


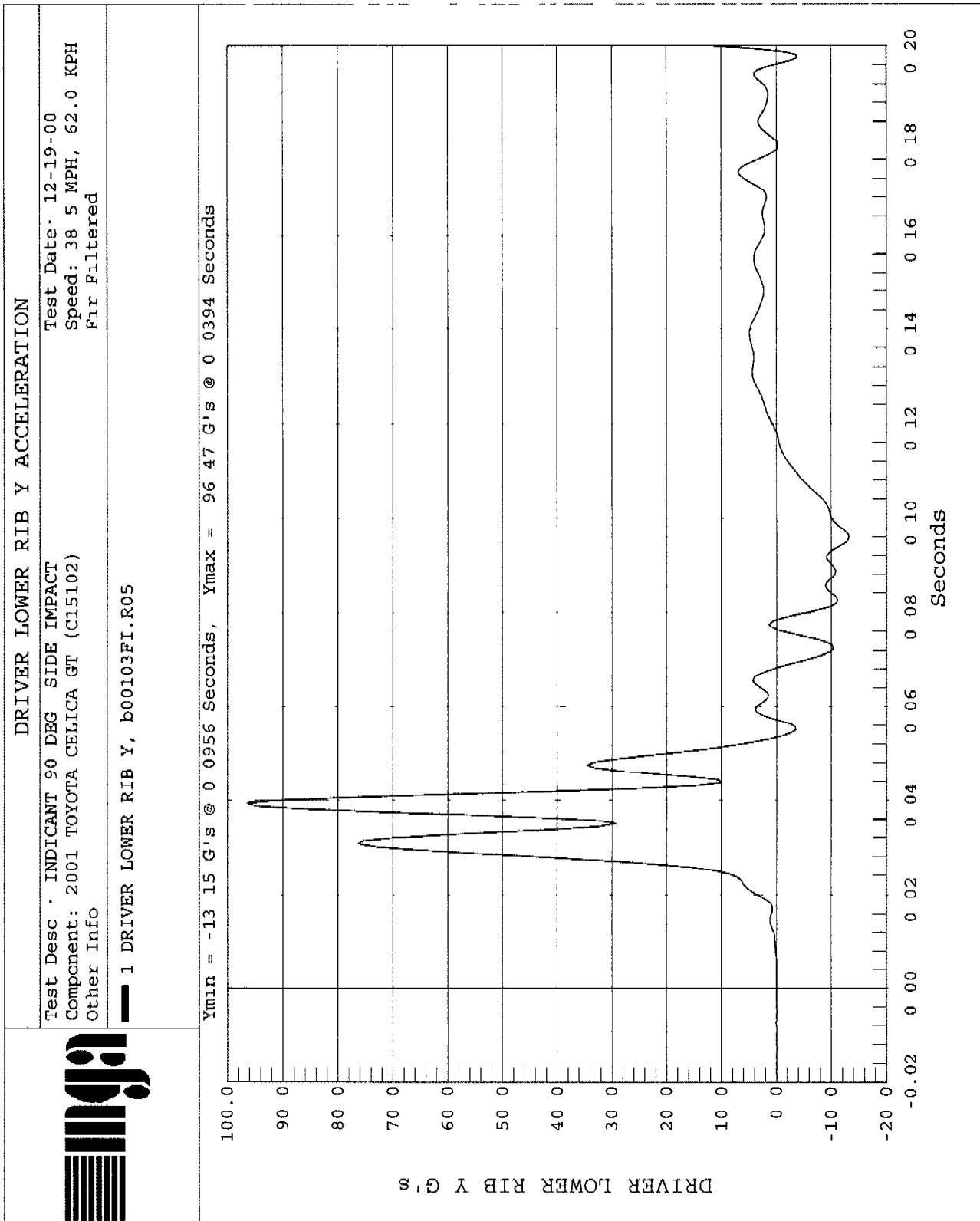
DRIVER UPPER RIB Y VELOCITY

Test Desc.. INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date. 12-19-00
 Speed 38 5 MPH, 62 0 KPH
 Fir Filtered

1 DRIVER UPPER RIB Y VELOCITY, b00103FI V04

Ymin = 0 KPH @ -0 0144 Seconds, Ymax = 41 83 KPH @ 0 0688 Seconds



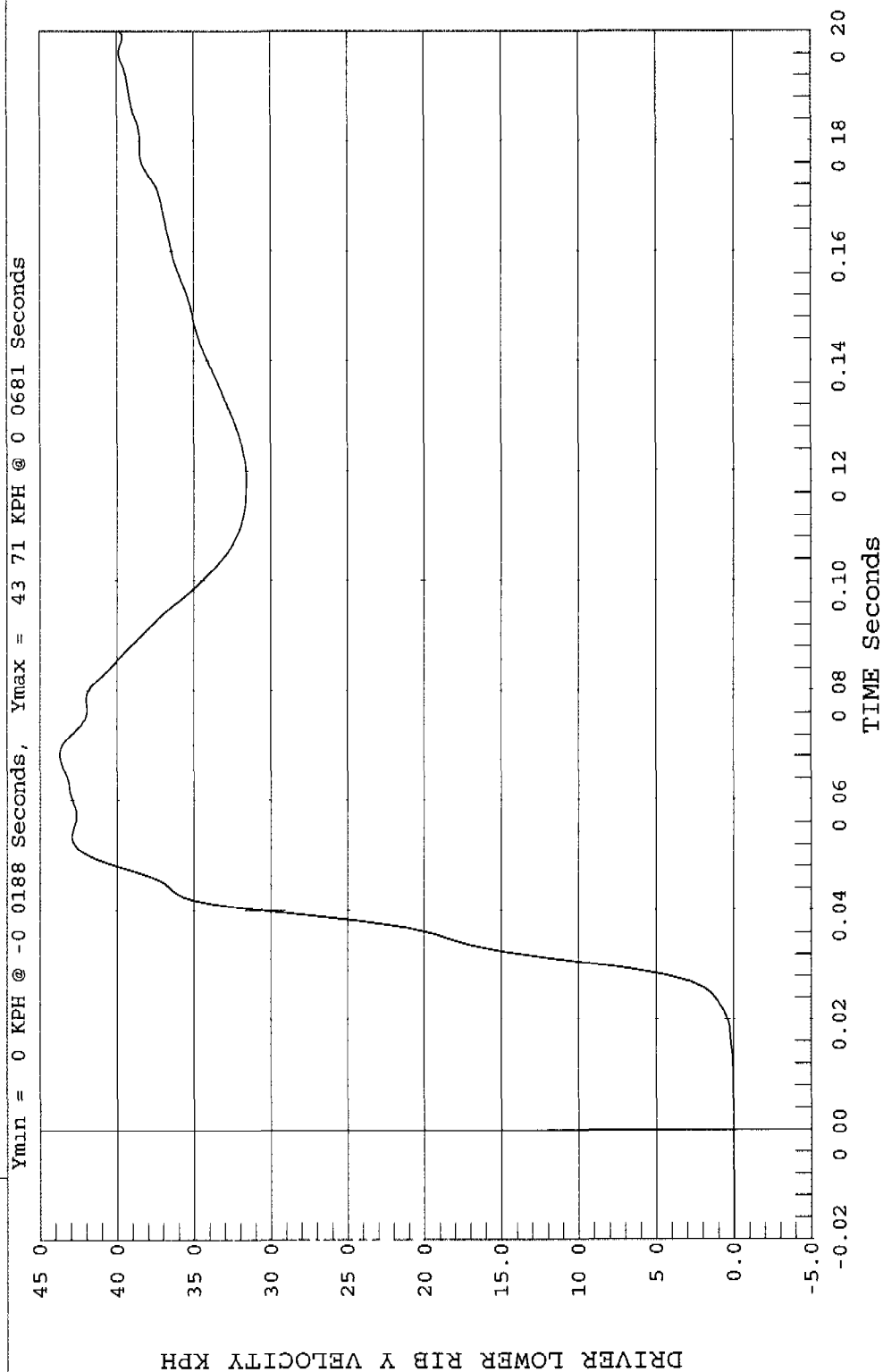


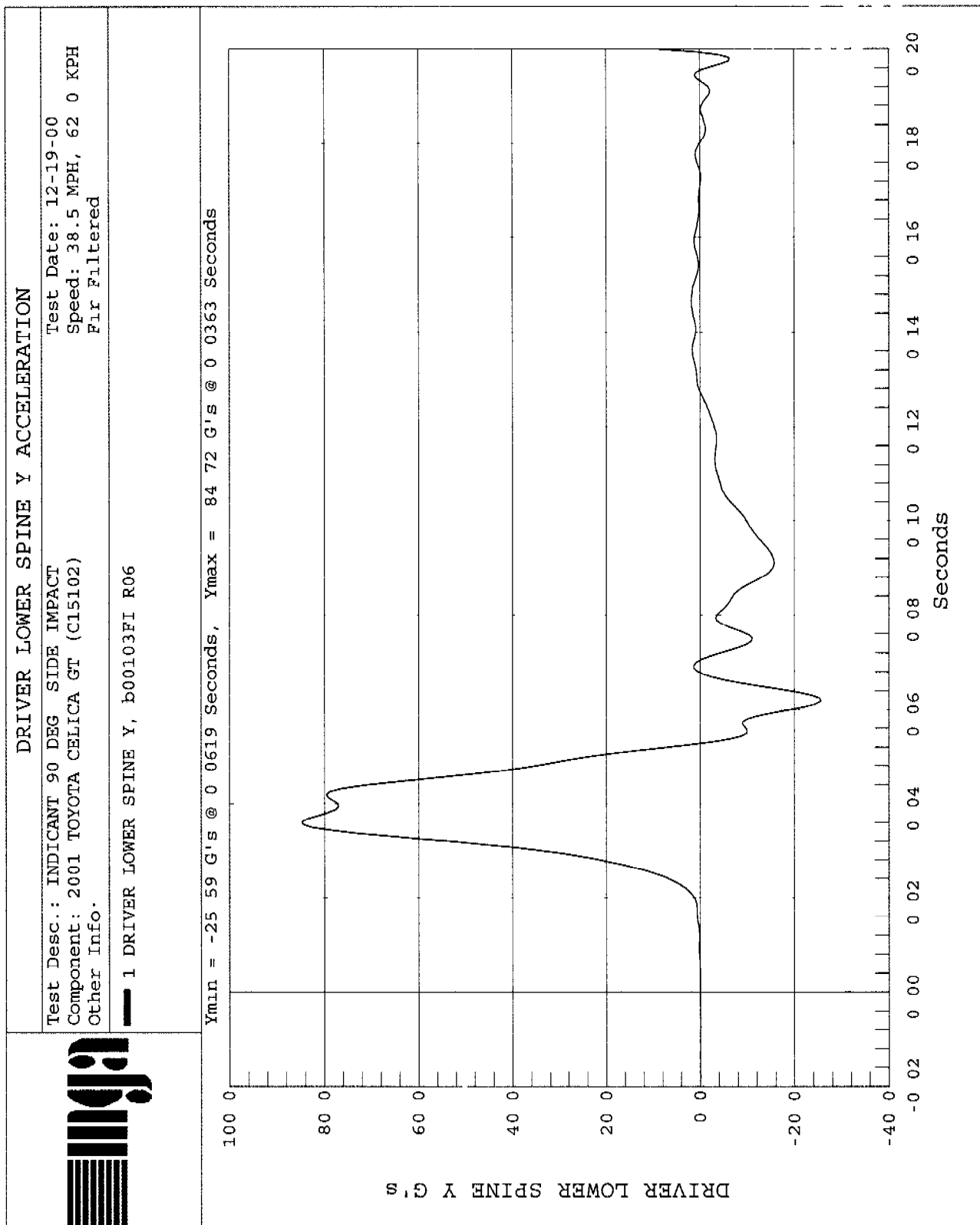
DRIVER LOWER RIB Y VELOCITY

Test Date: 12-19-00
Speed 38.5 MPH, 62 0 KPH
Fir Filtered

Test Desc : INDICANT 90 DEG SIDE IMPACT
Component : 2001 TOYOTA CELICA GT (C15102)
Other Info.

1 DRIVER LOWER RIB Y VELOCITY, b00103FI V05



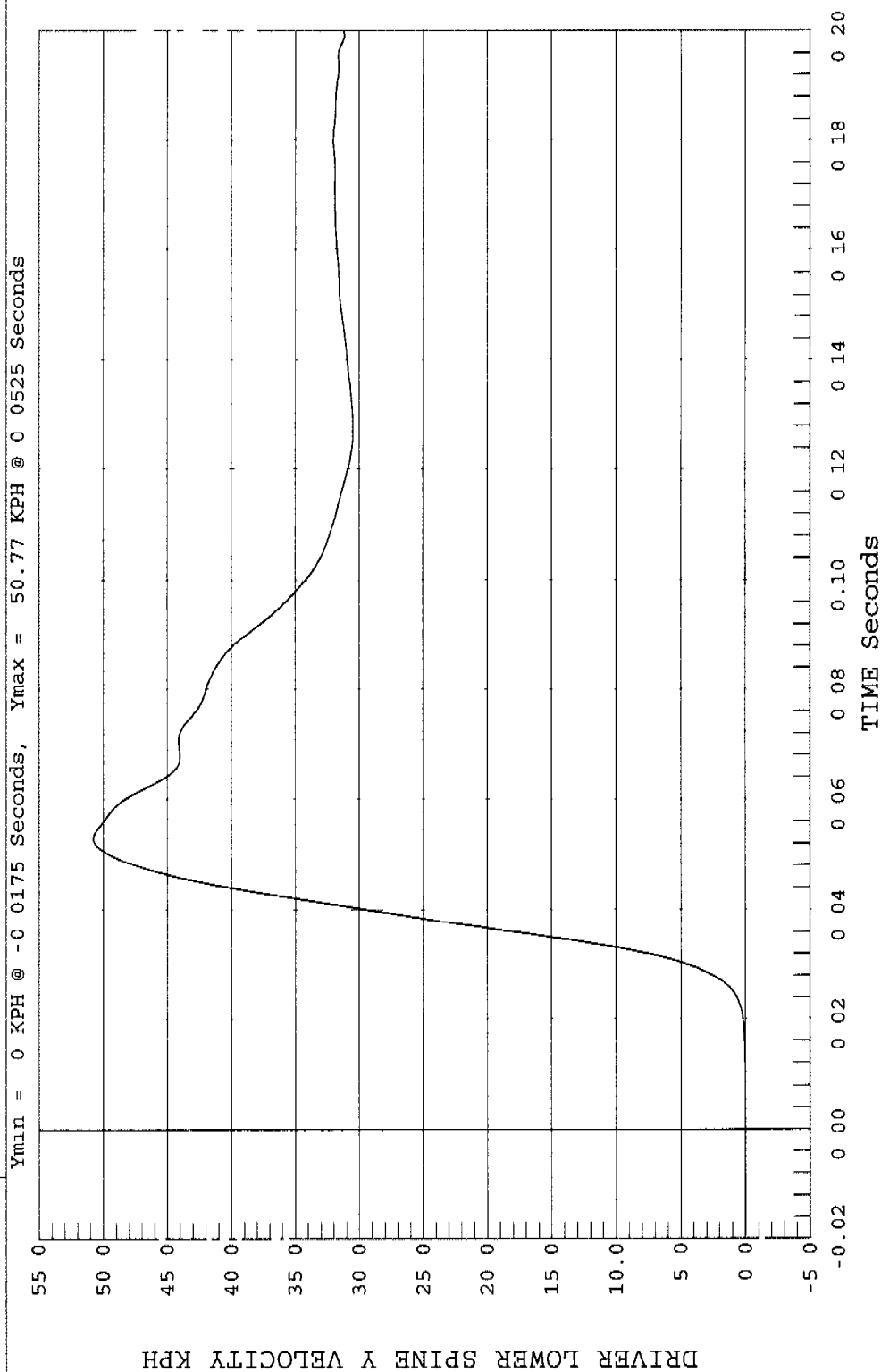


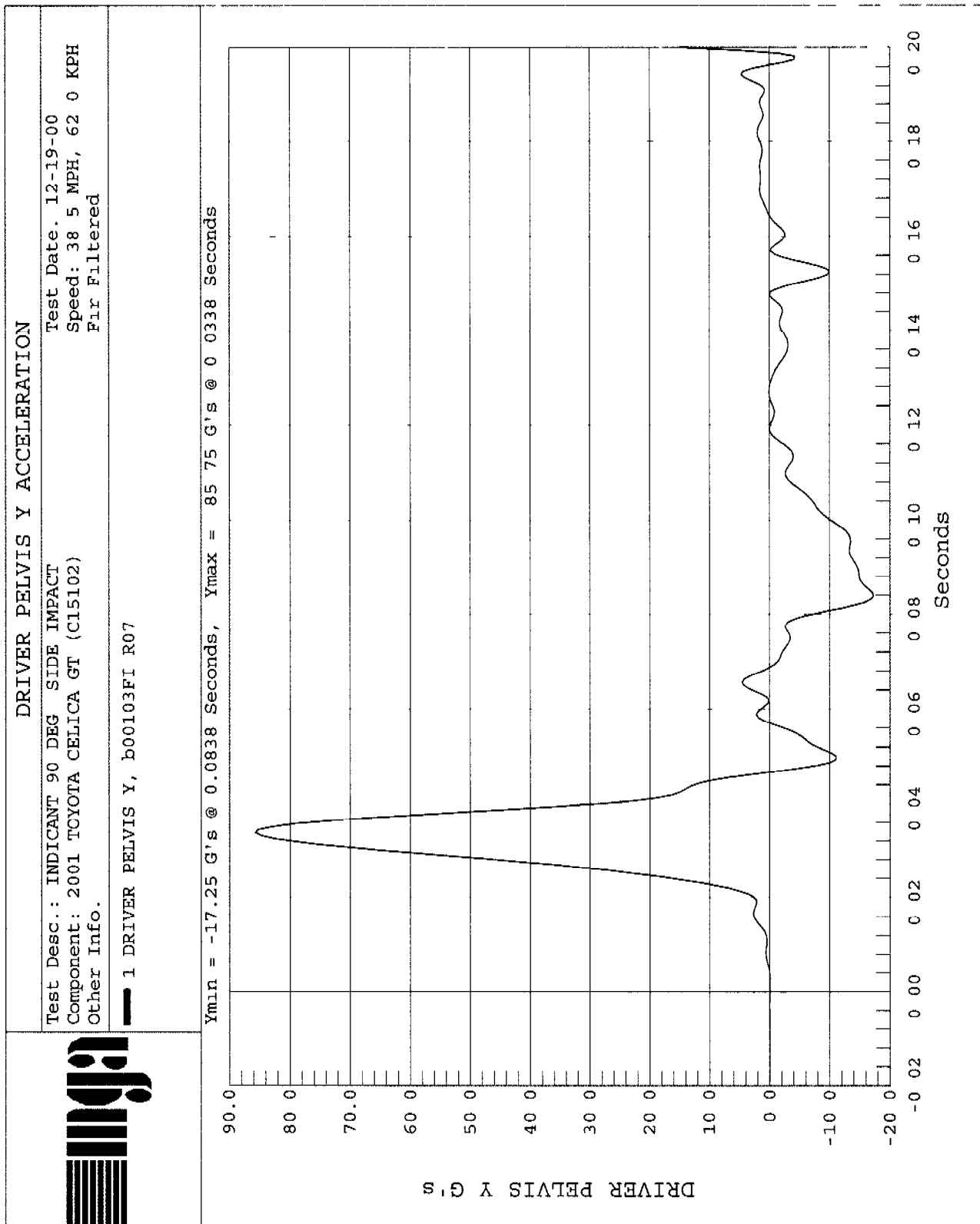


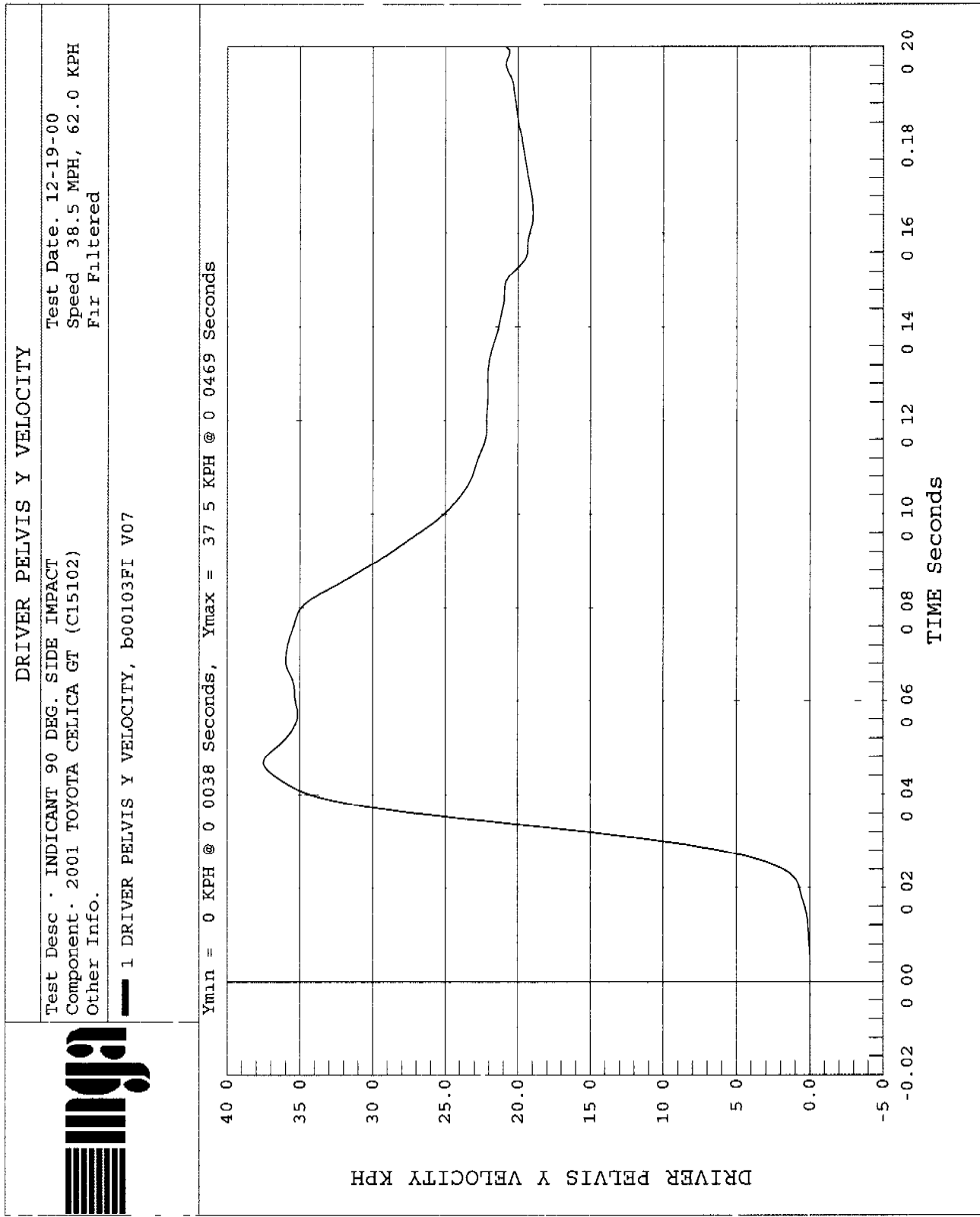
DRIVER LOWER SPINE Y VELOCITY

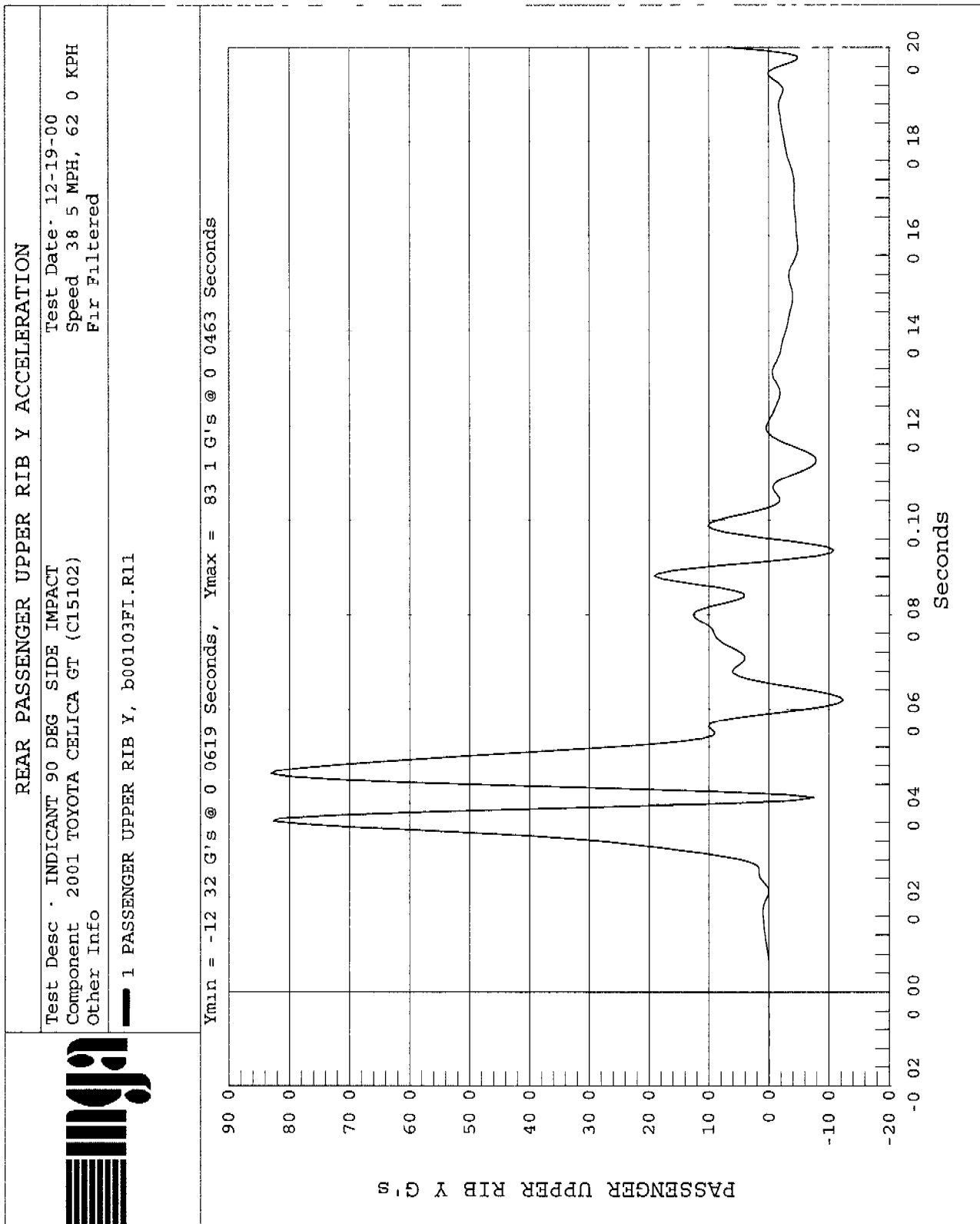
Test Desc.. INDICANT 90 DEG SIDE IMPACT
Component 2001 TOYOTA CELICA GT (C15102)
Other Info
Test Date 12-19-00
Speed 38.5 MPH, 62.0 KPH
Fir Filtered

1 DRIVER LOWER SPINE Y VELOCITY, b00103FI.V06







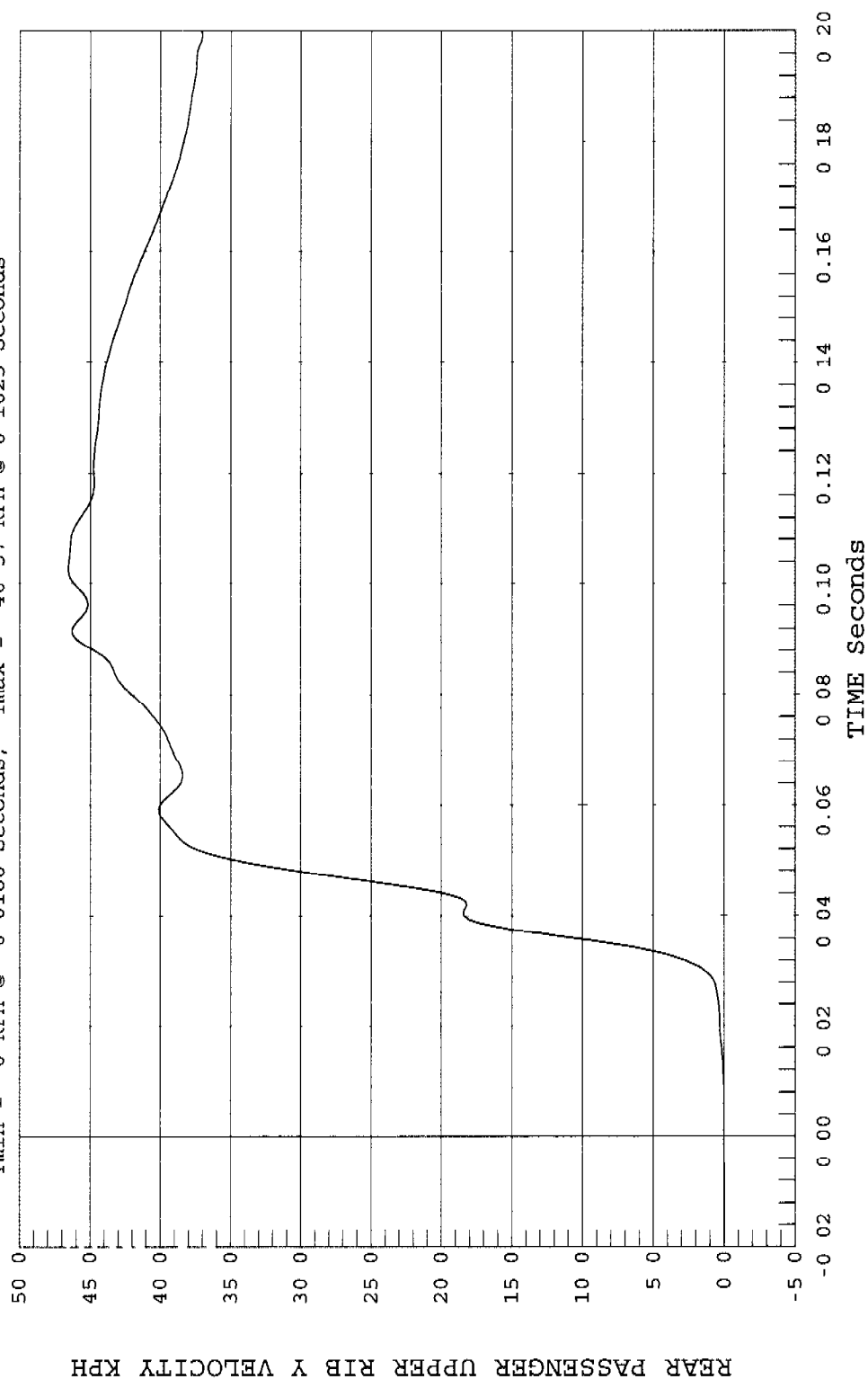


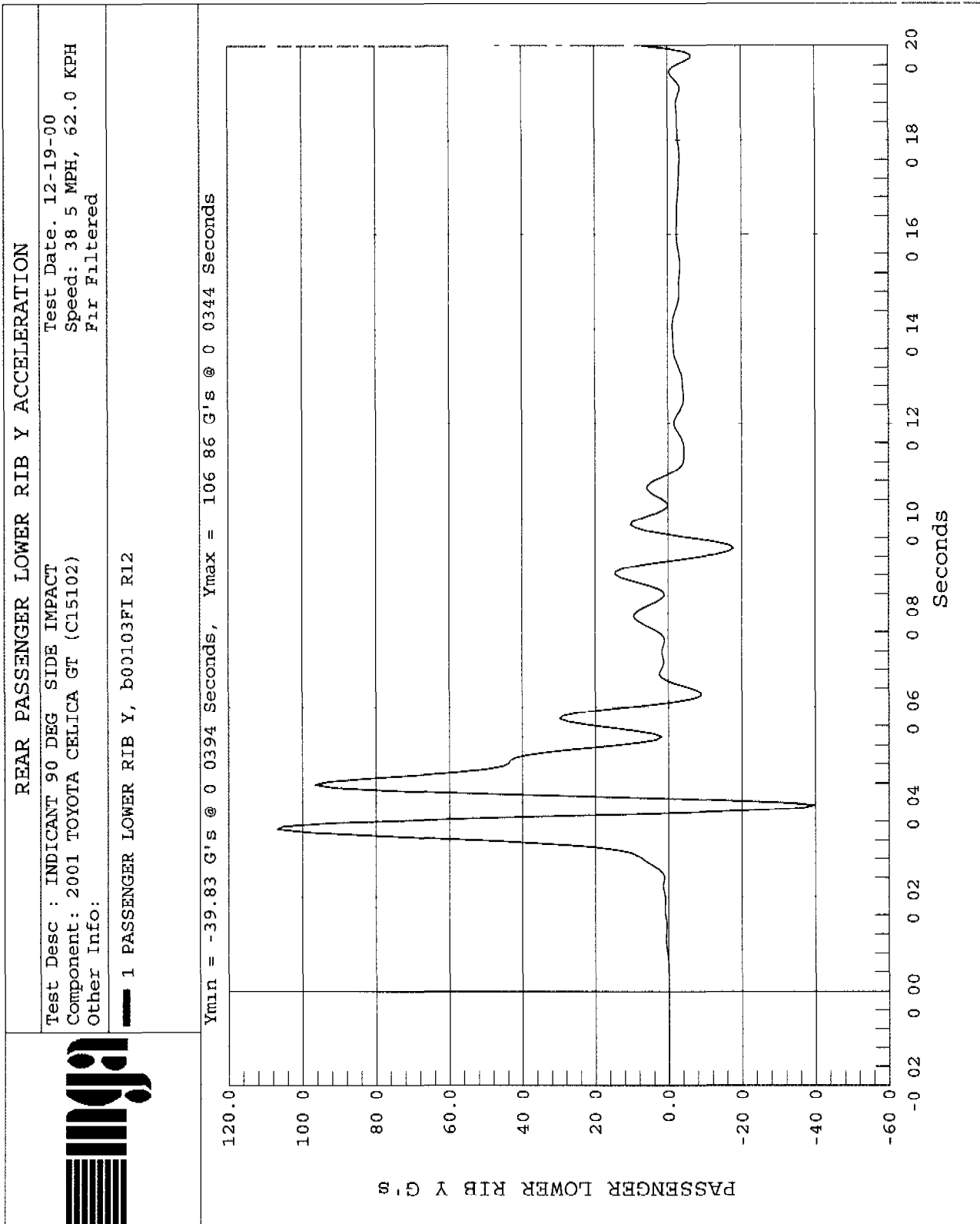
REAR PASSENGER UPPER RIB Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date: 12-19-00
 Speed: 38.5 MPH, 62 0 KPH
 Fil Filtered

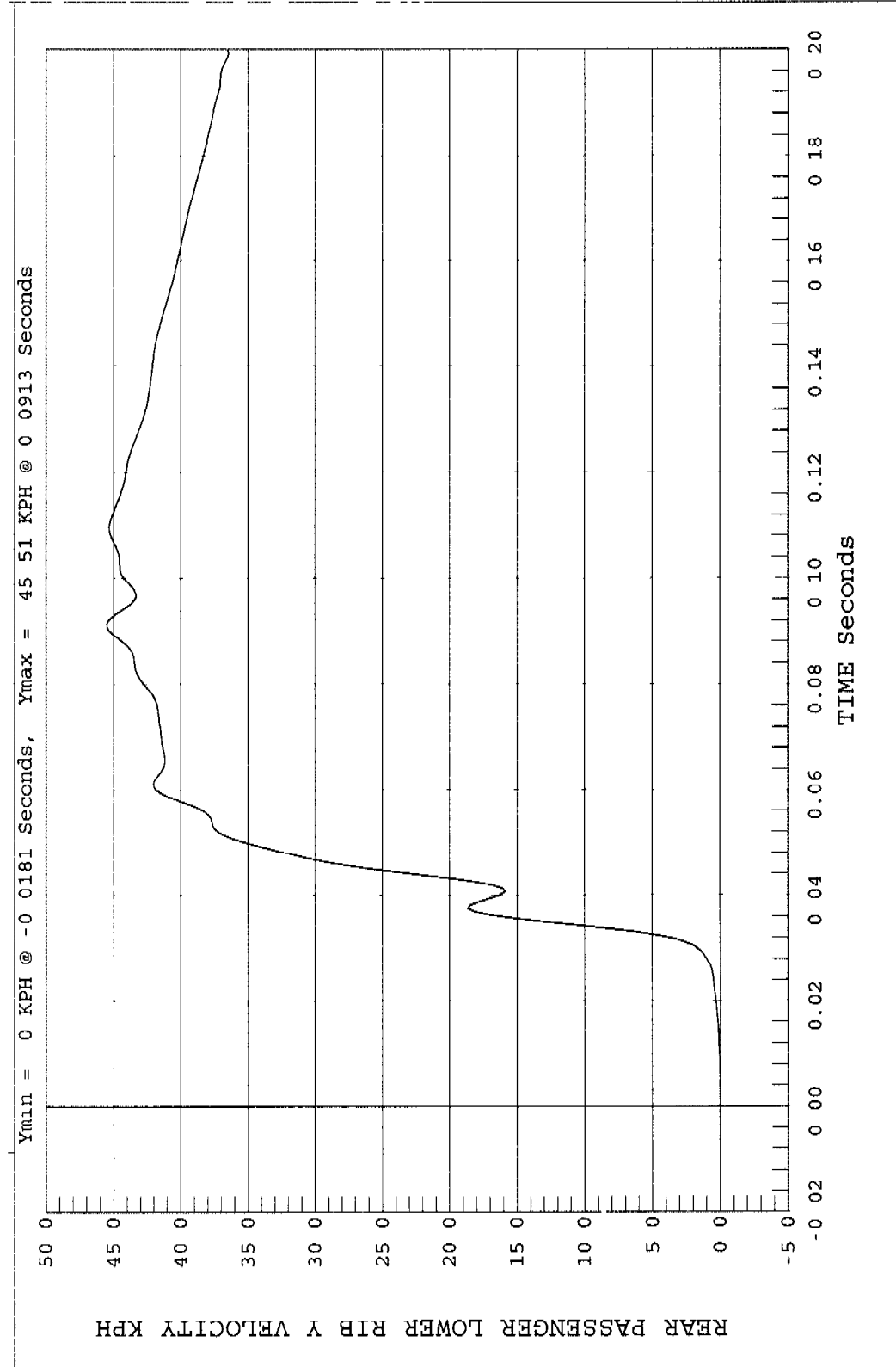
1 REAR PASSENGER UPPER RIB Y VELOCITY, b00103FI V11

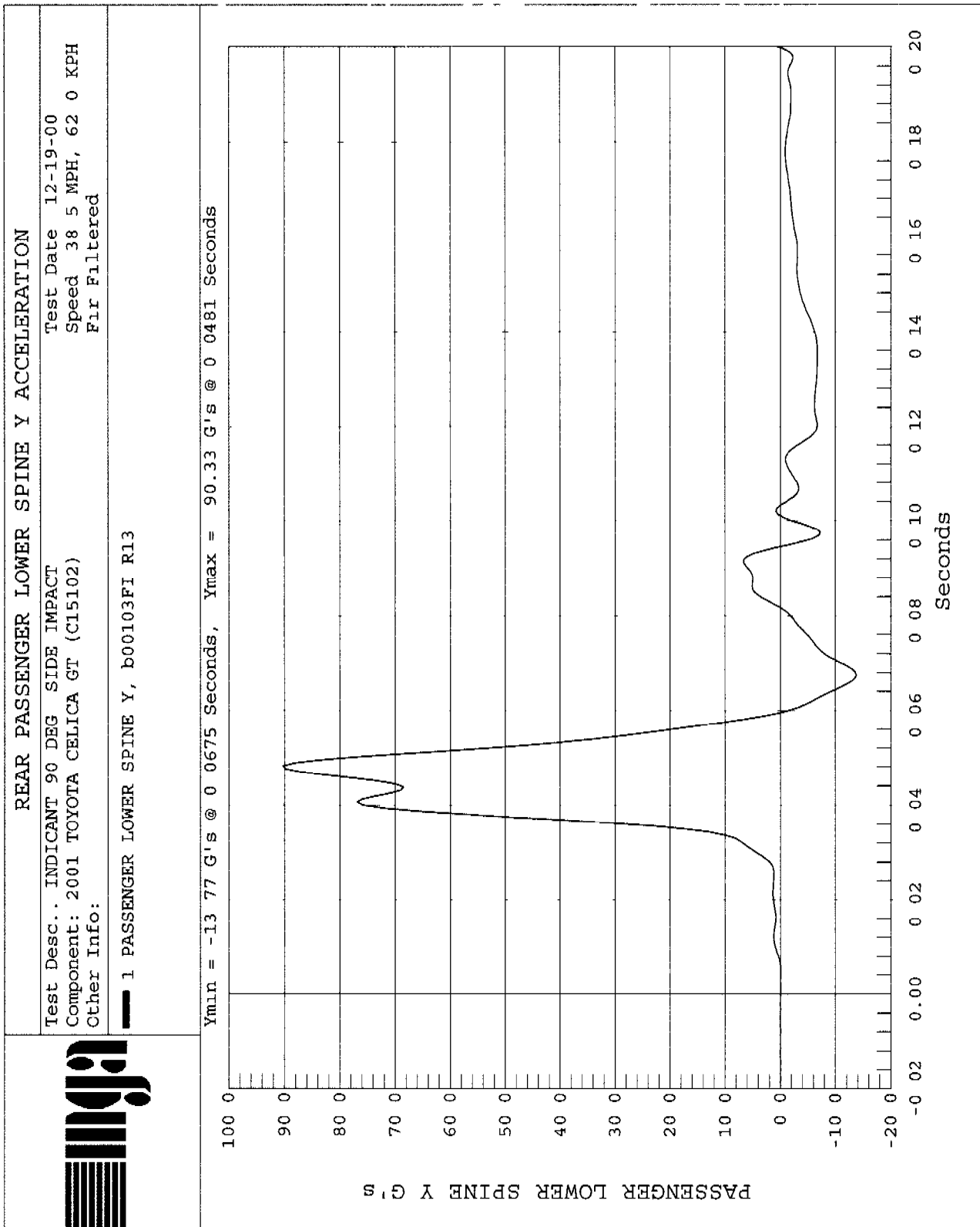
Ymin = 0 KPH @ -0 0188 Seconds, Ymax = 46 57 KPH @ 0 1025 Seconds





		REAR PASSENGER LOWER RIB Y VELOCITY	
Test Desc INDICANT 90 DEG SIDE IMPACT Component 2001 TOYOTA CELICA GT (C15102) Other Info.		Test Date 12-19-00 Speed 38.5 MPH, 62.0 KPH Fir Filtered	
1 REAR PASSENGER LOWER RIB Y VELOCITY, b00103FI V12			

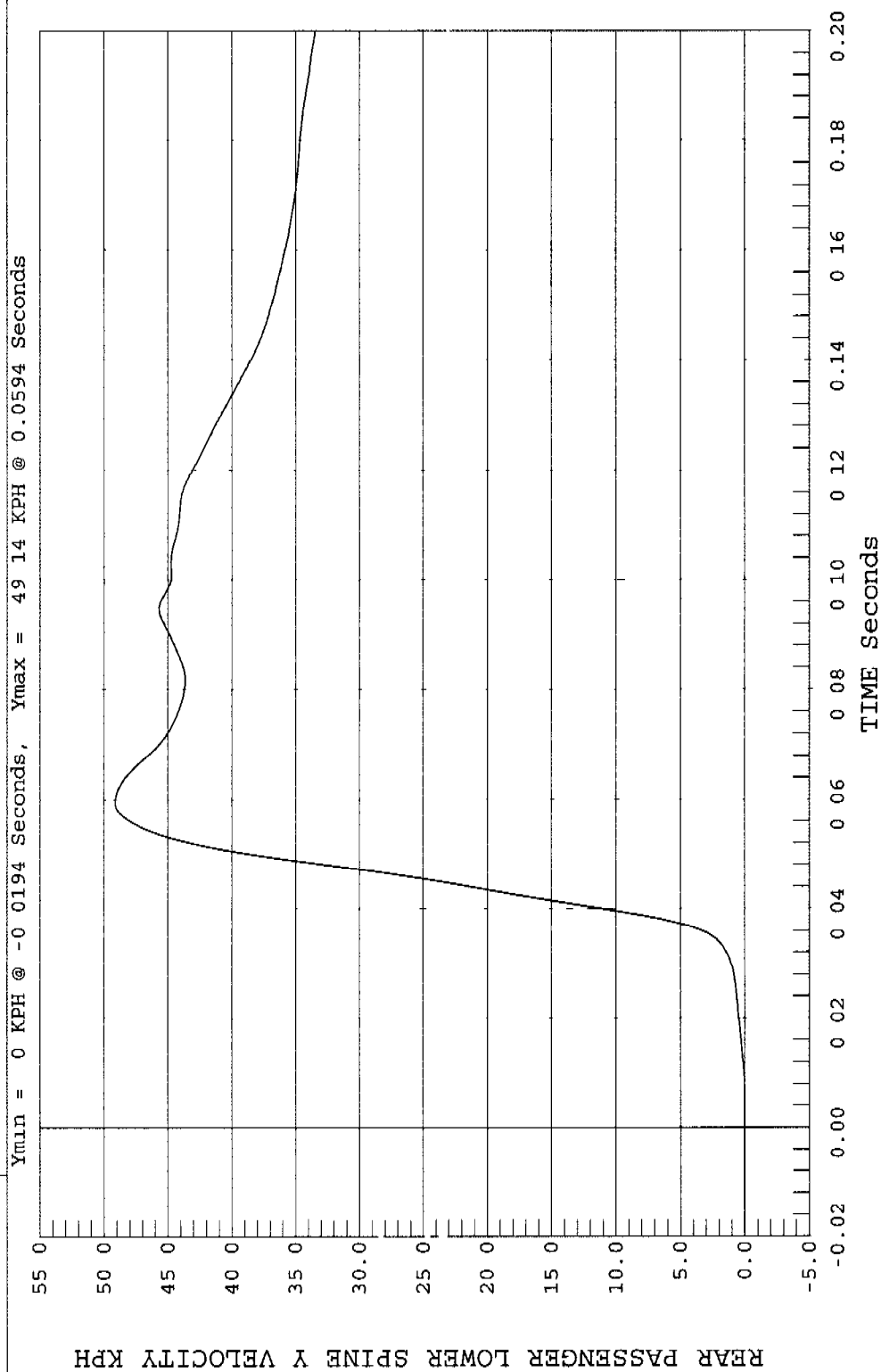


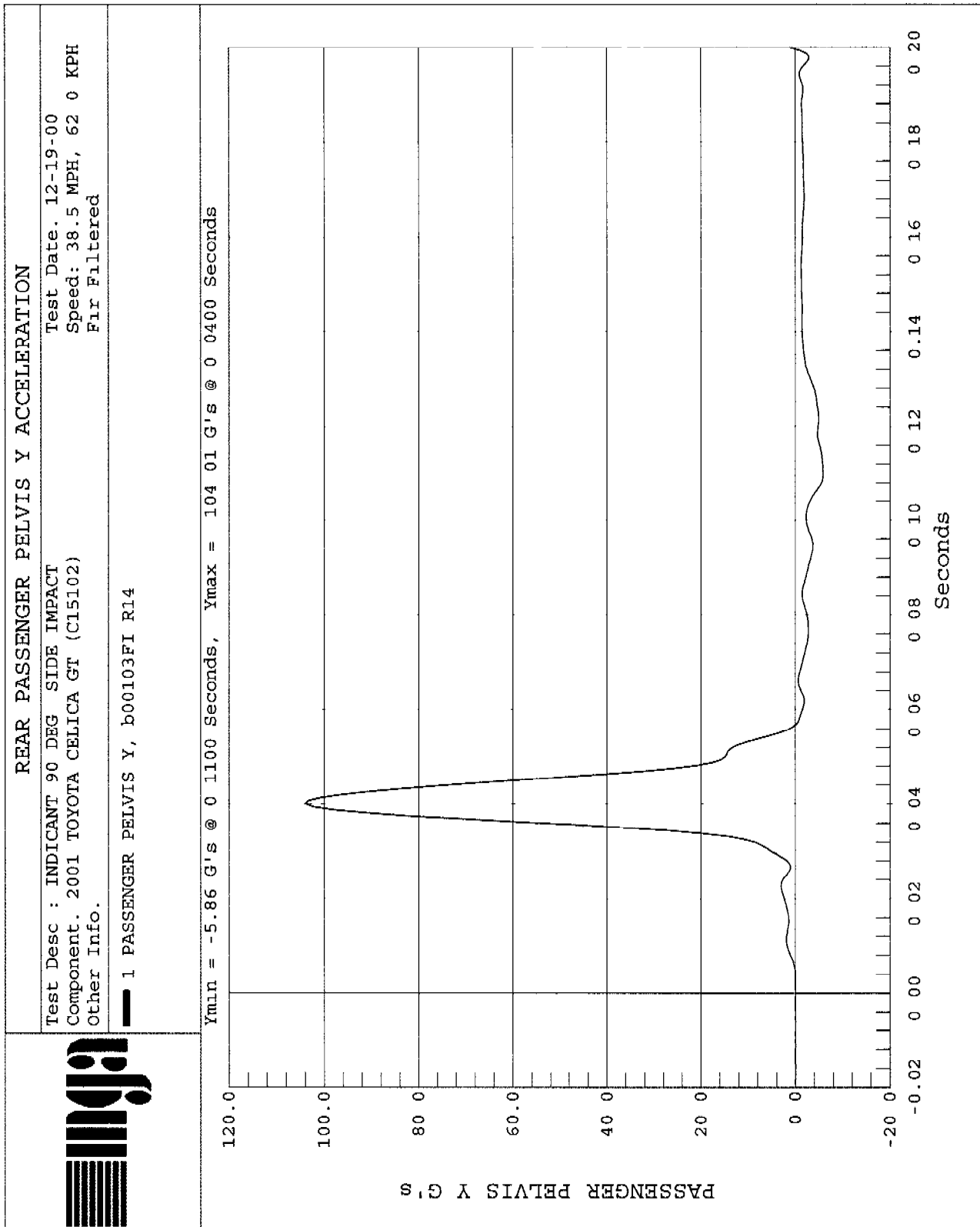


REAR PASSENGER LOWER SPINE Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT
 Component 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date: 12-19-00
 Speed: 38.5 MPH, 62 0 KPH
 Flr Filtered

1 REAR PASSENGER LOWER SPINE Y VELOCITY, b00103FI V13

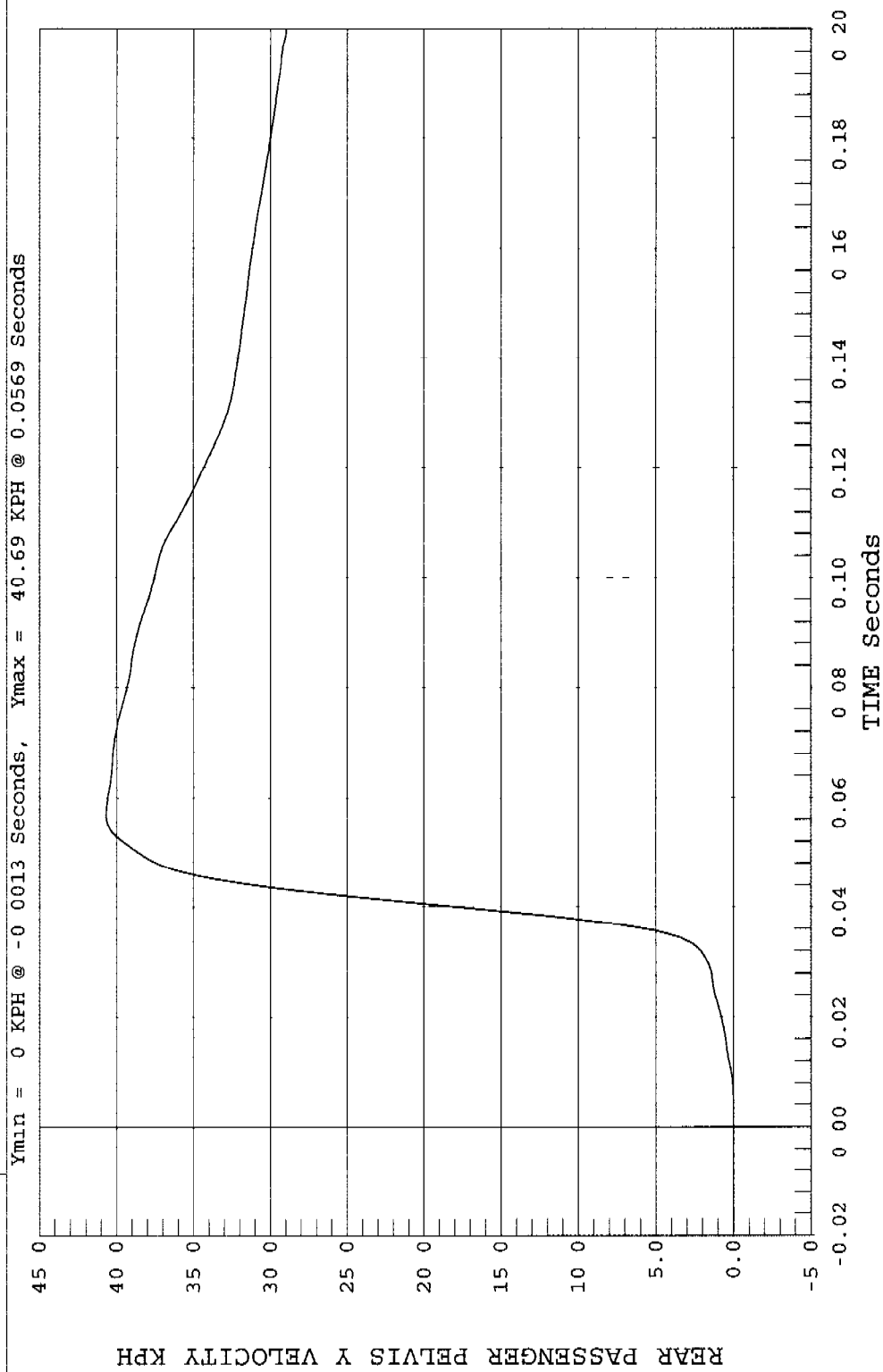


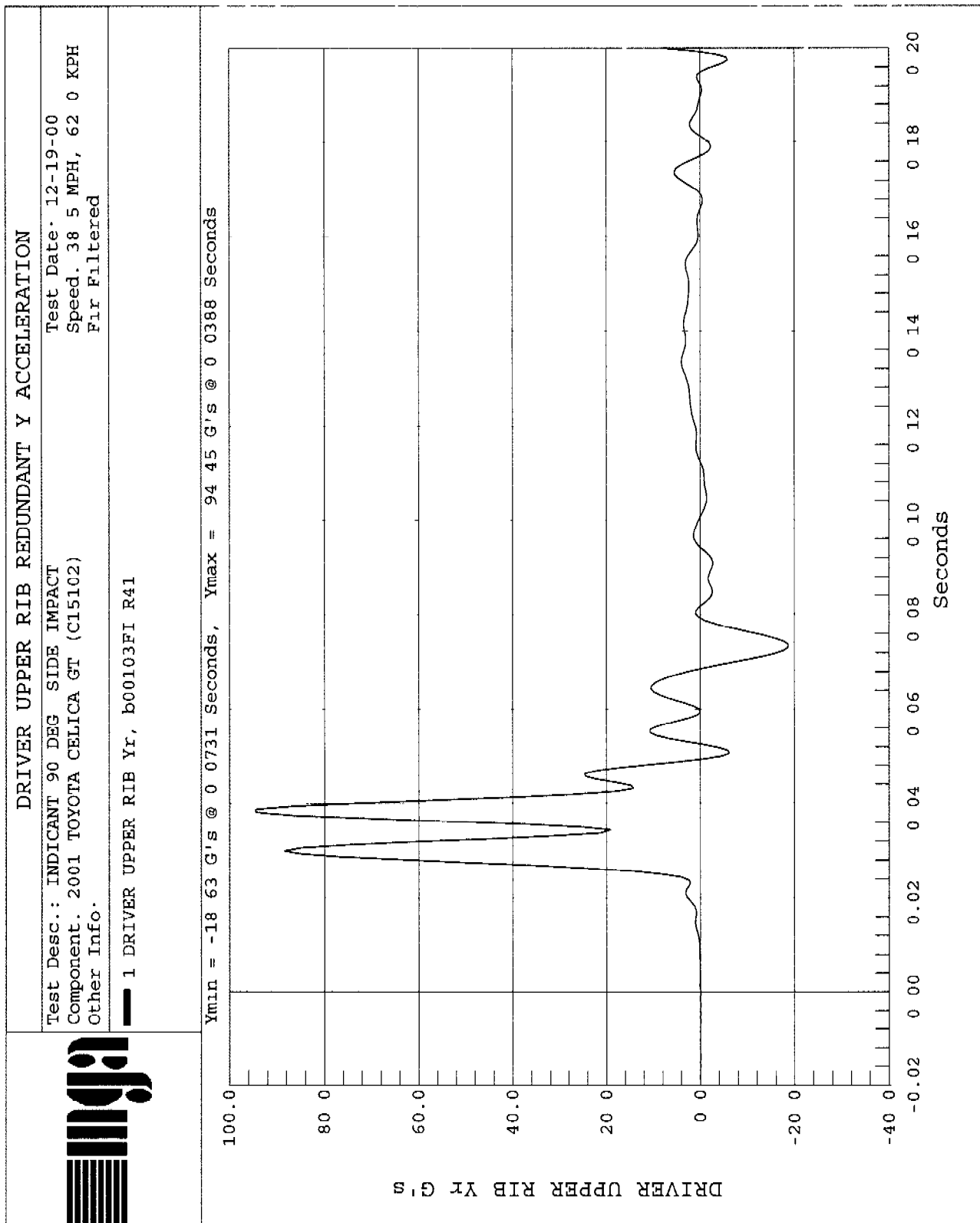


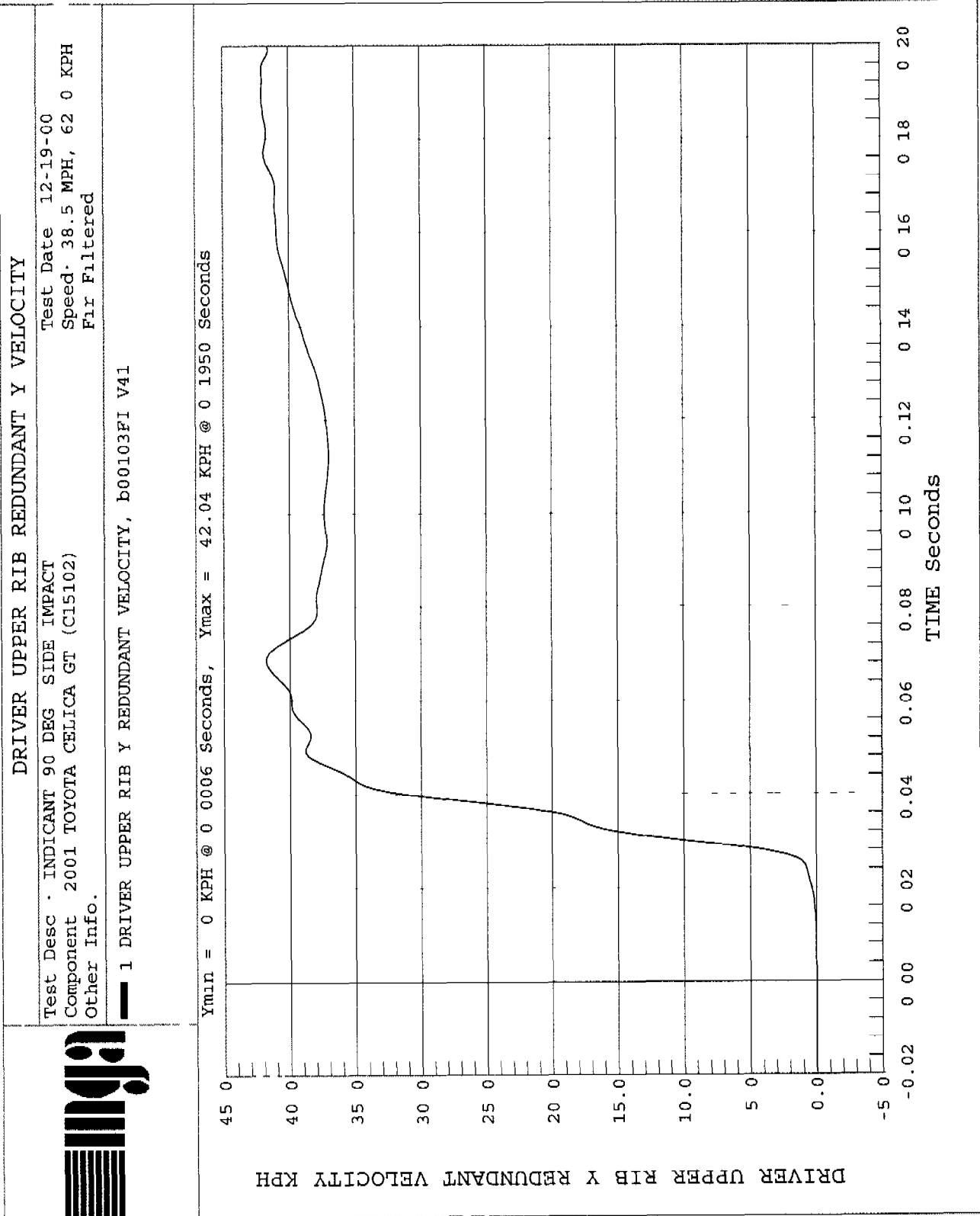
REAR PASSENGER PELVIS Y VELOCITY

Test Desc . INDICANT 90 DEG SIDE IMPACT
 Component . 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date . 12-19-00
 Speed . 38 5 MPH, 62 0 KPH
 Fir Filtered

1 REAR PASSENGER PELVIS Y VELOCITY, b00103FI.V14







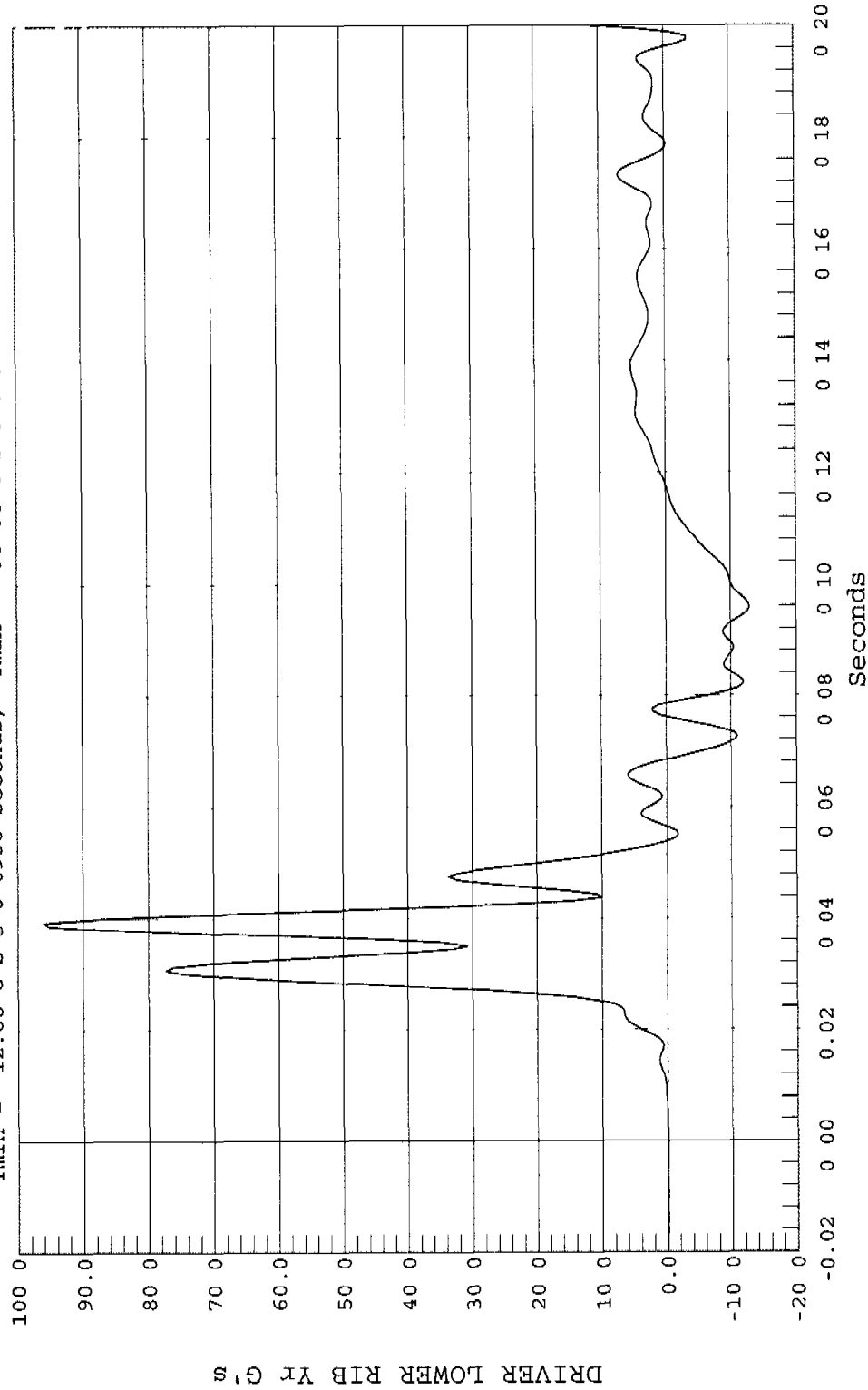
DRIVER LOWER RIB REDUNDANT Y ACCELERATION

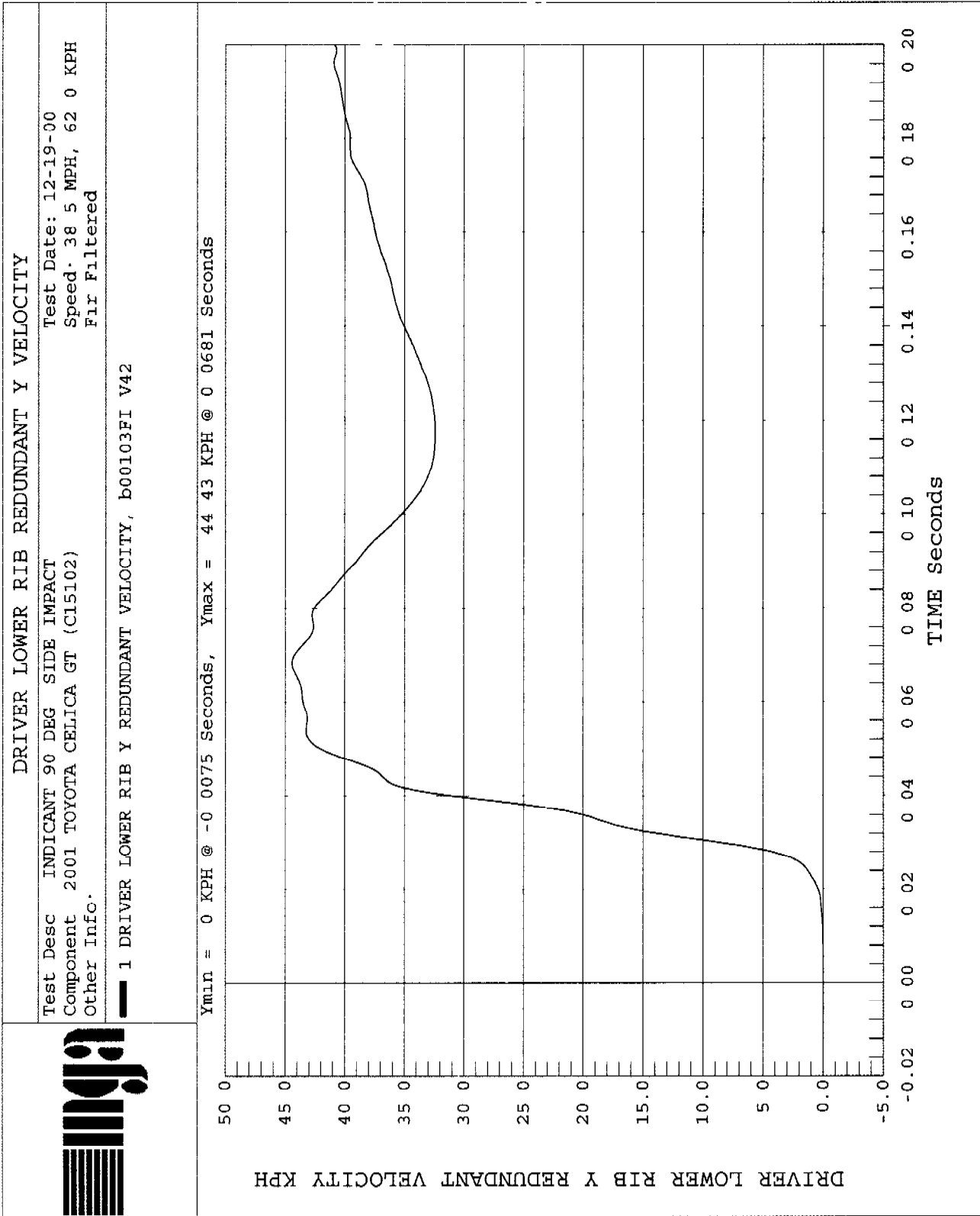
Test Desc.: INDICANT 90 DEG. SIDE IMPACT
 Component: 2001 TOYOTA CELICA GT (C15102)
 Other Info

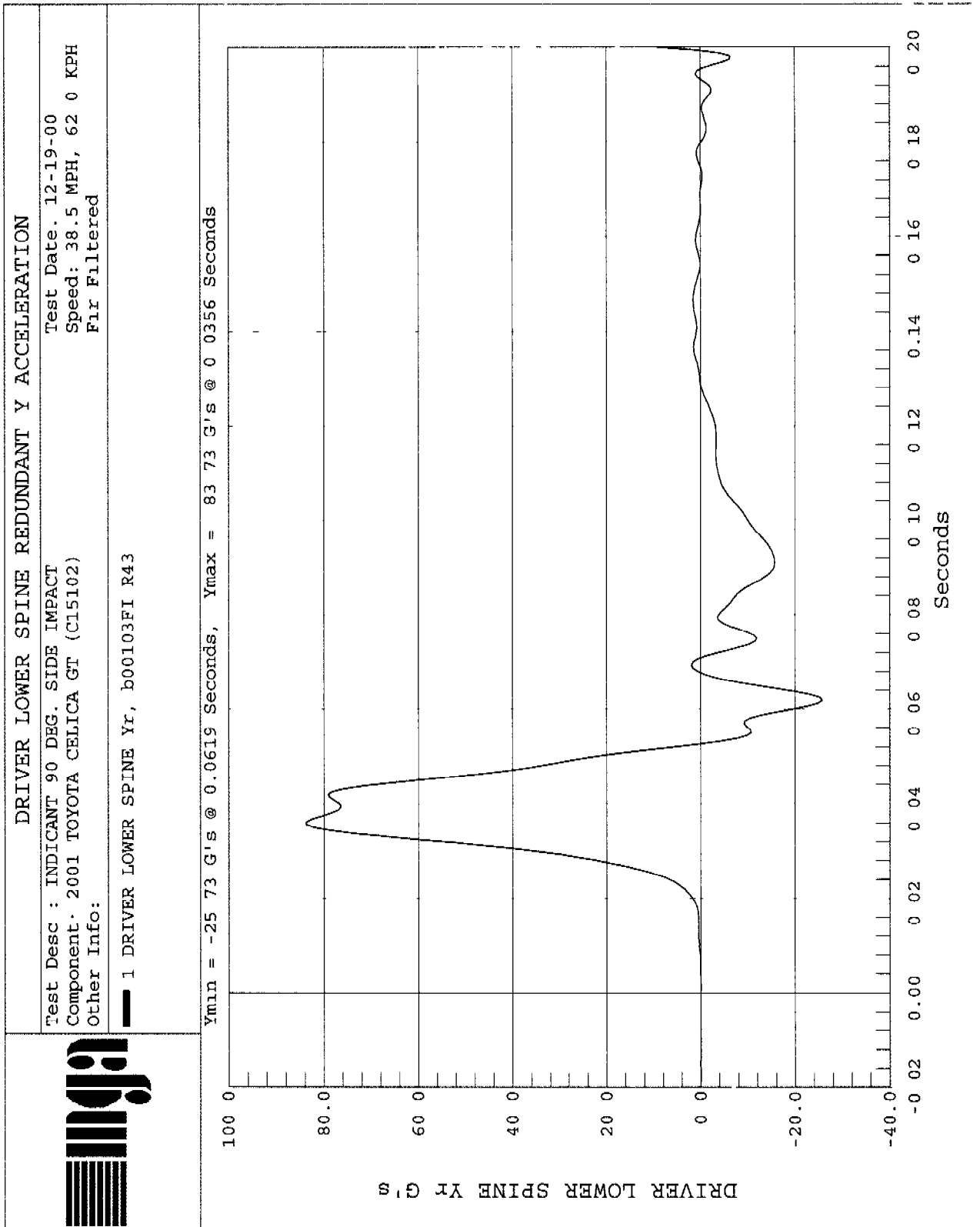
Test Date: 12-19-00
 Speed: 38.5 MPH, 62.0 KPH
 Fir Filtered

1 DRIVER LOWER RIB Yr, b00103FI.R42

Ymin = -12.88 G's @ 0 0956 Seconds, Ymax = 96 06 G's @ 0 0394 Seconds





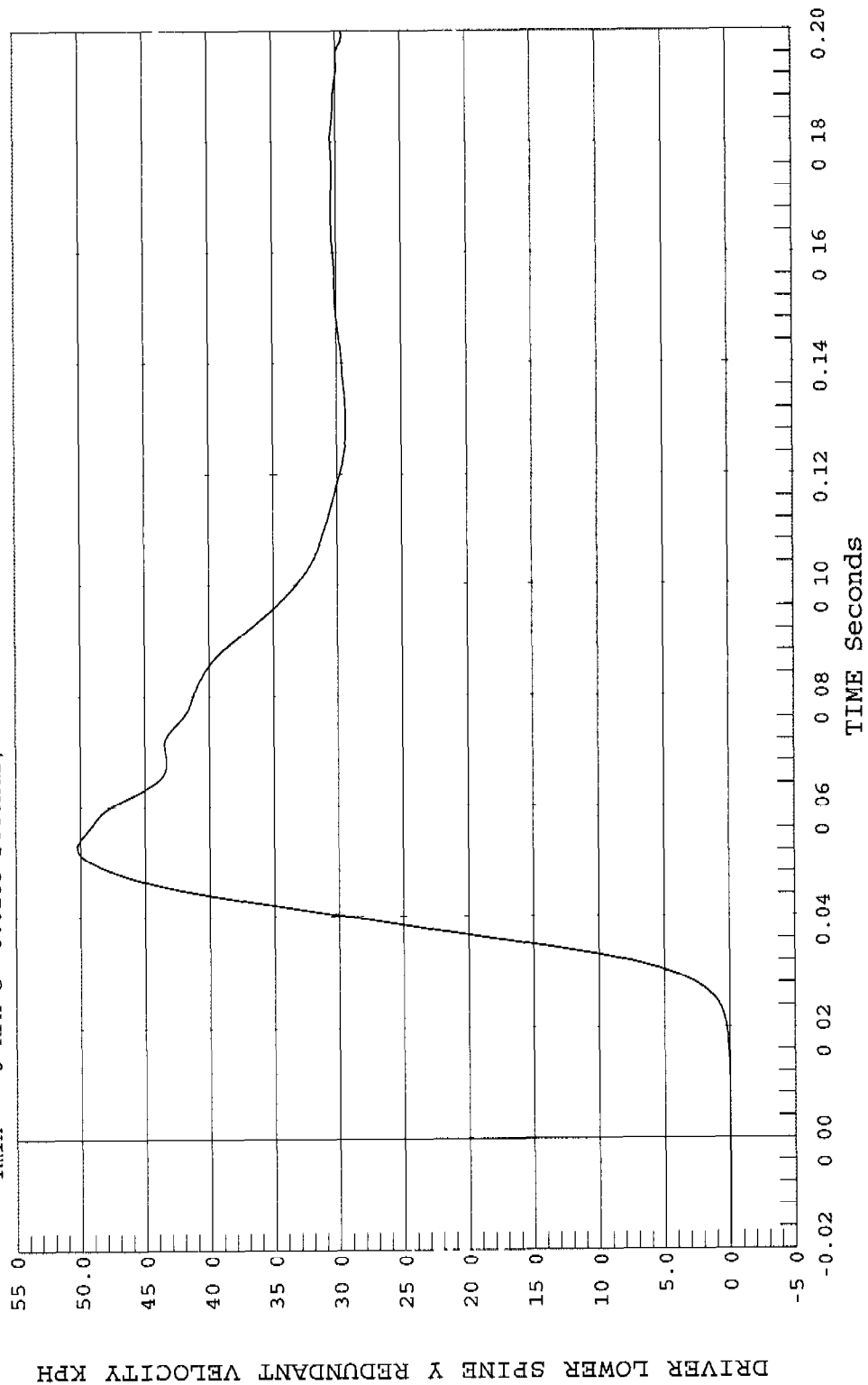


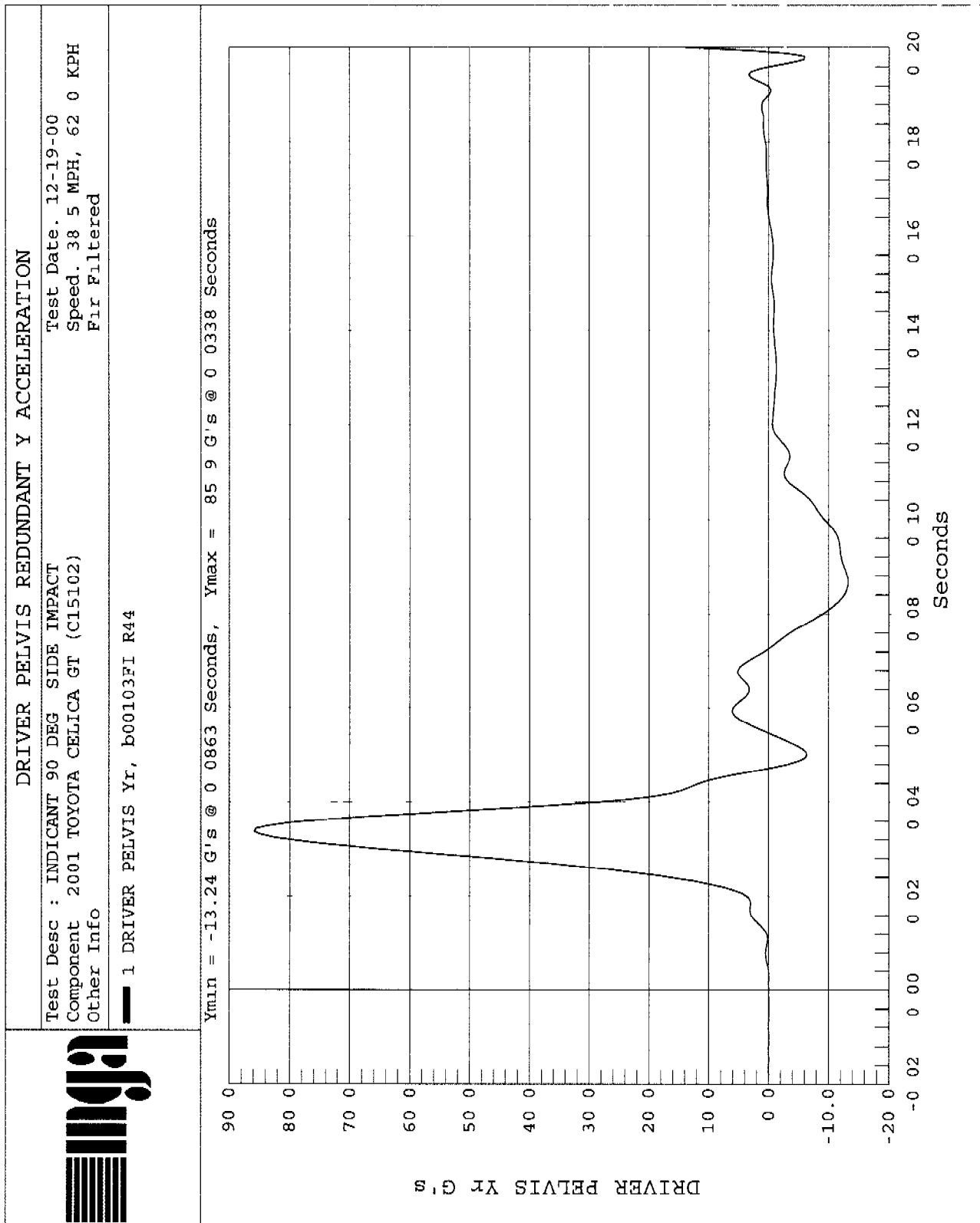
DRIVER LOWER SPINE REDUNDANT Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT Test Date 12-19-00
 Component 2001 TOYOTA CELICA GT (C15102) Speed 38 5 MPH, 62 0 KPH
 Other Info Fir Filtered

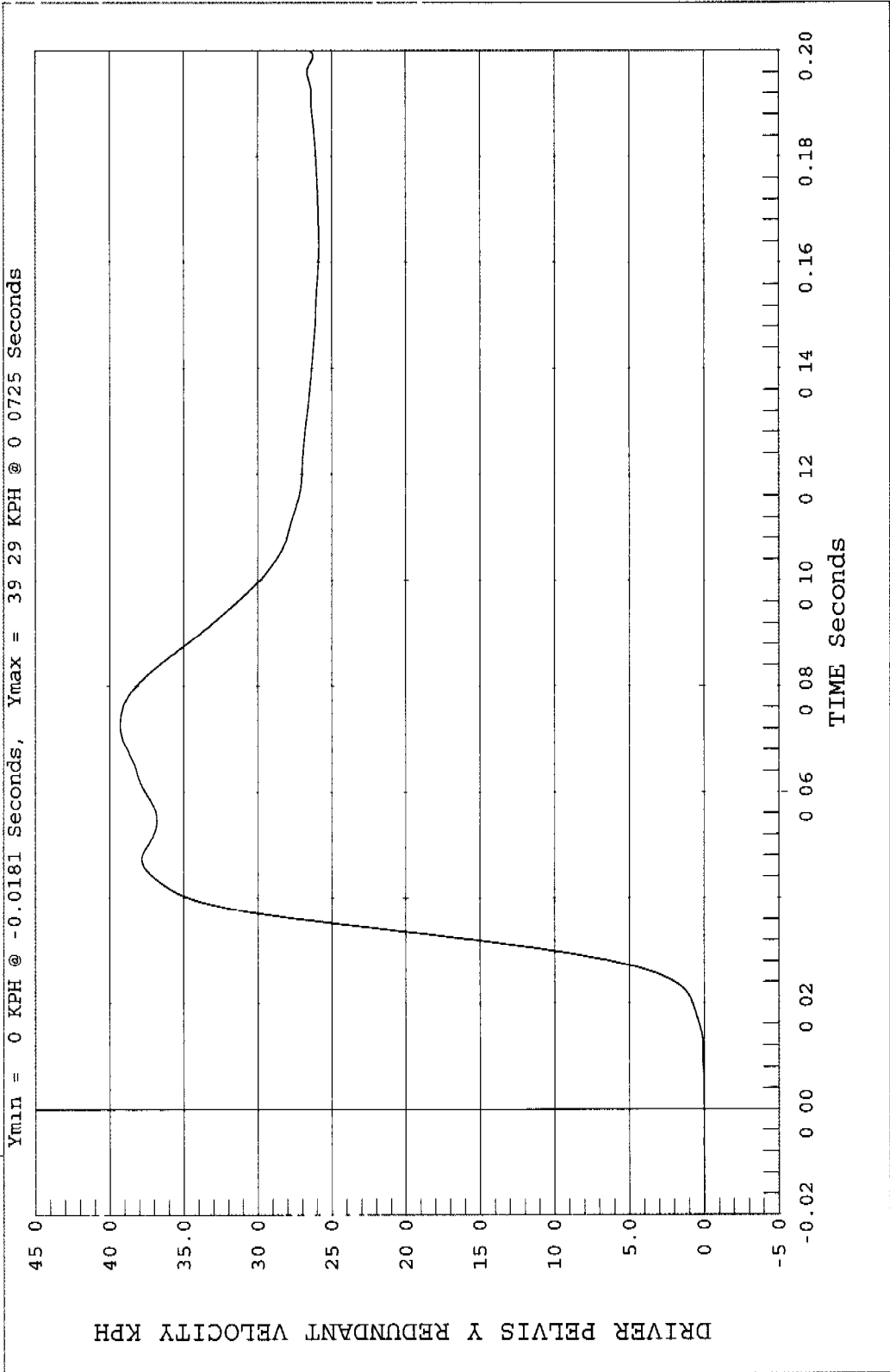
1 DRIVER LOWER SPINE Y REDUNDANT VELOCITY, b00103FI V43

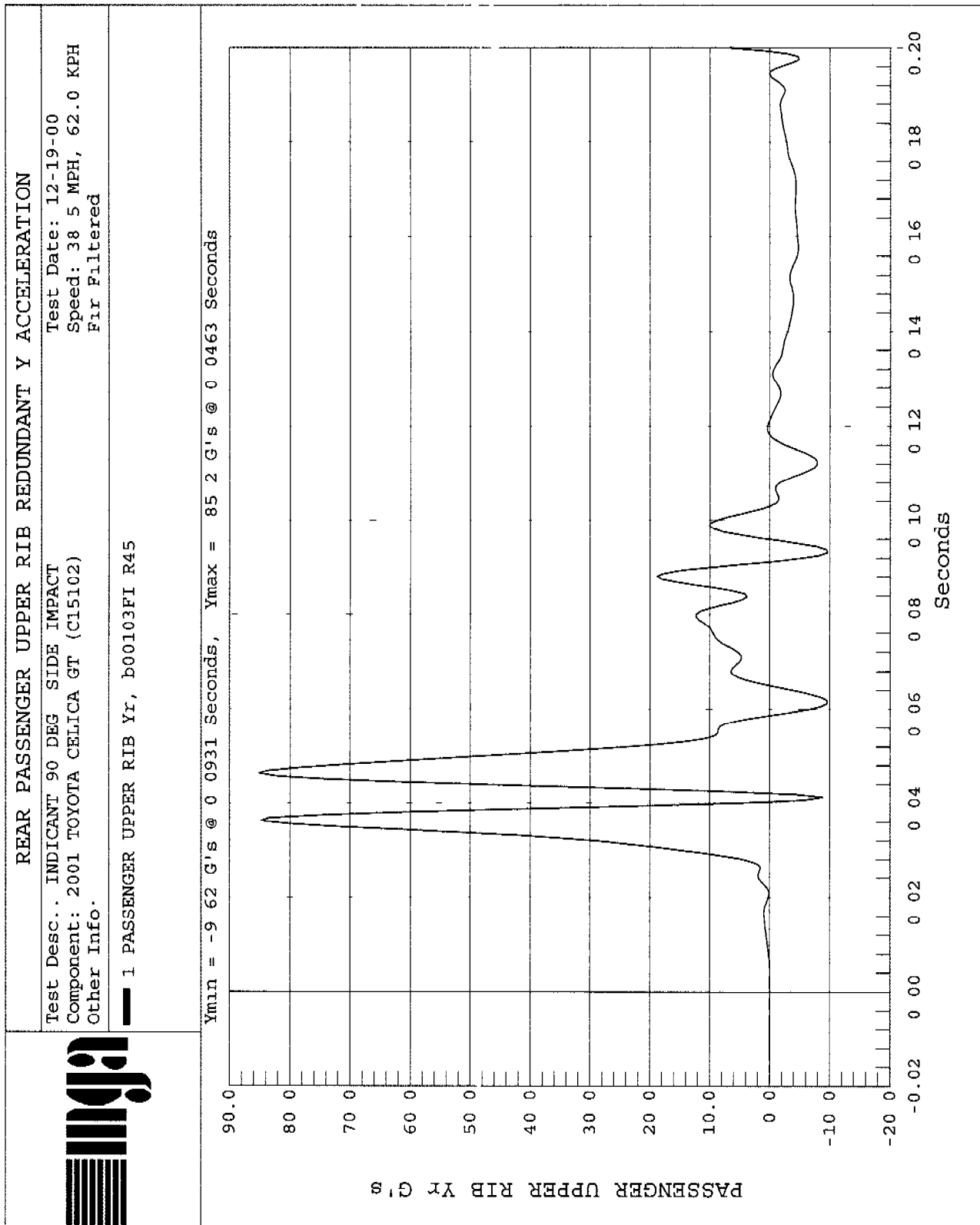
Ymin = 0 KPH @ -0.0163 Seconds, Ymax = 50.27 KPH @ 0 0525 Seconds

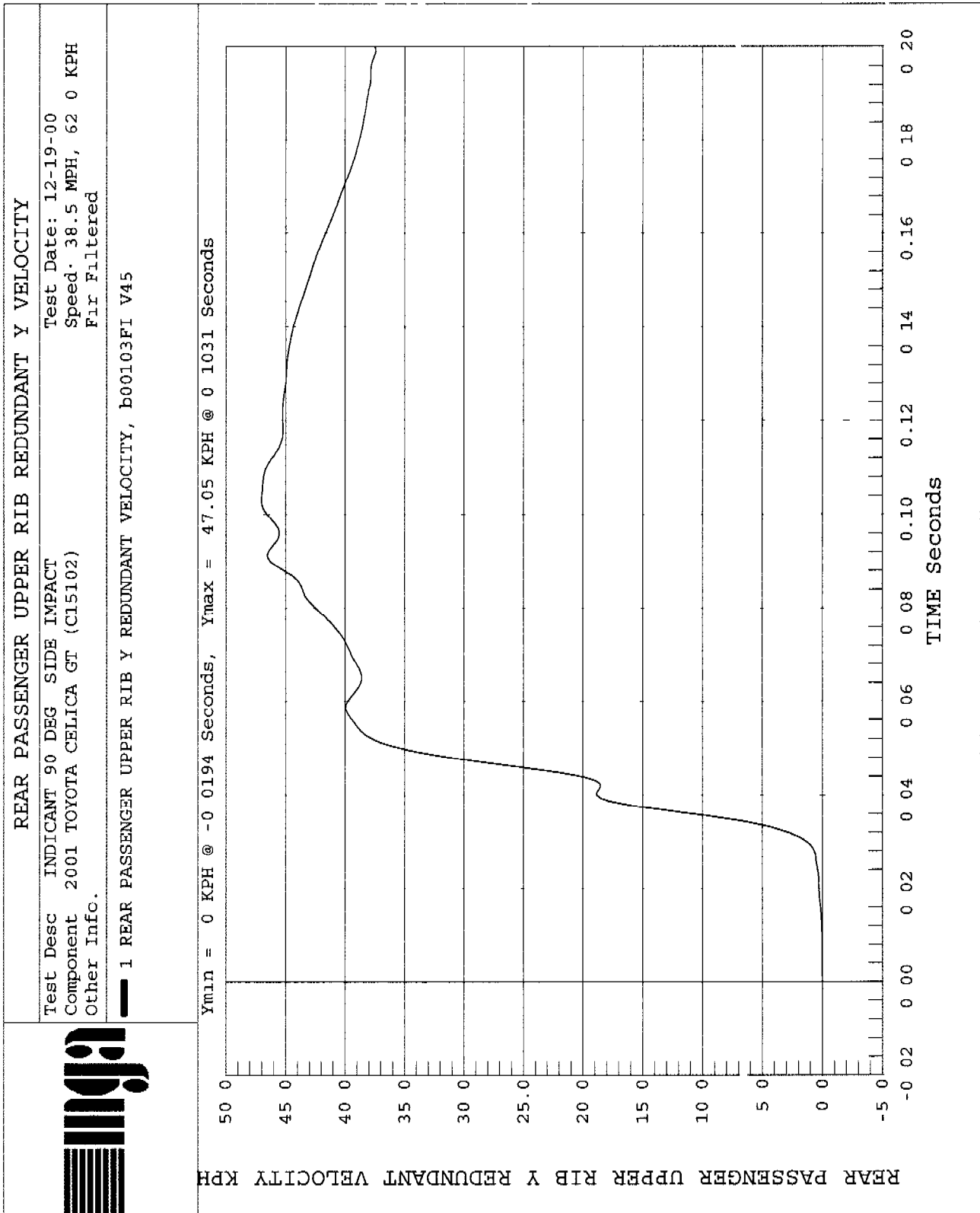


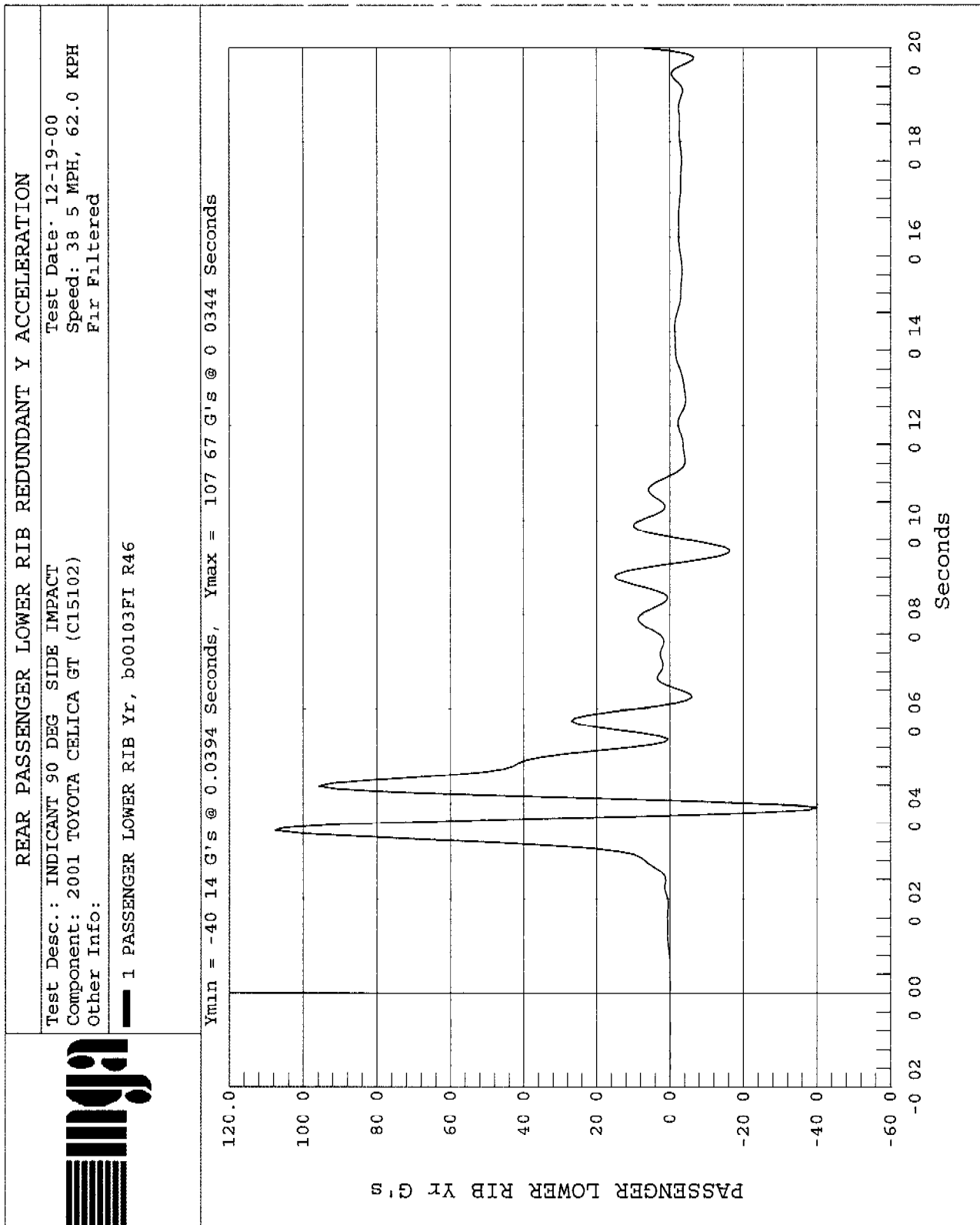


	DRIVER PELVIS REDUNDANT Y VELOCITY	
	Test Desc INDICANT 90 DEG SIDE IMPACT	Test Date: 12-19-00
	Component 2001 TOYOTA CELICA GT (C15102) Other Info.	Speed: 38 5 MPH, 62 0 KPH Fir Filtered
1 DRIVER PELVIS Y REDUNDANT VELOCITY, b00103FI V44		





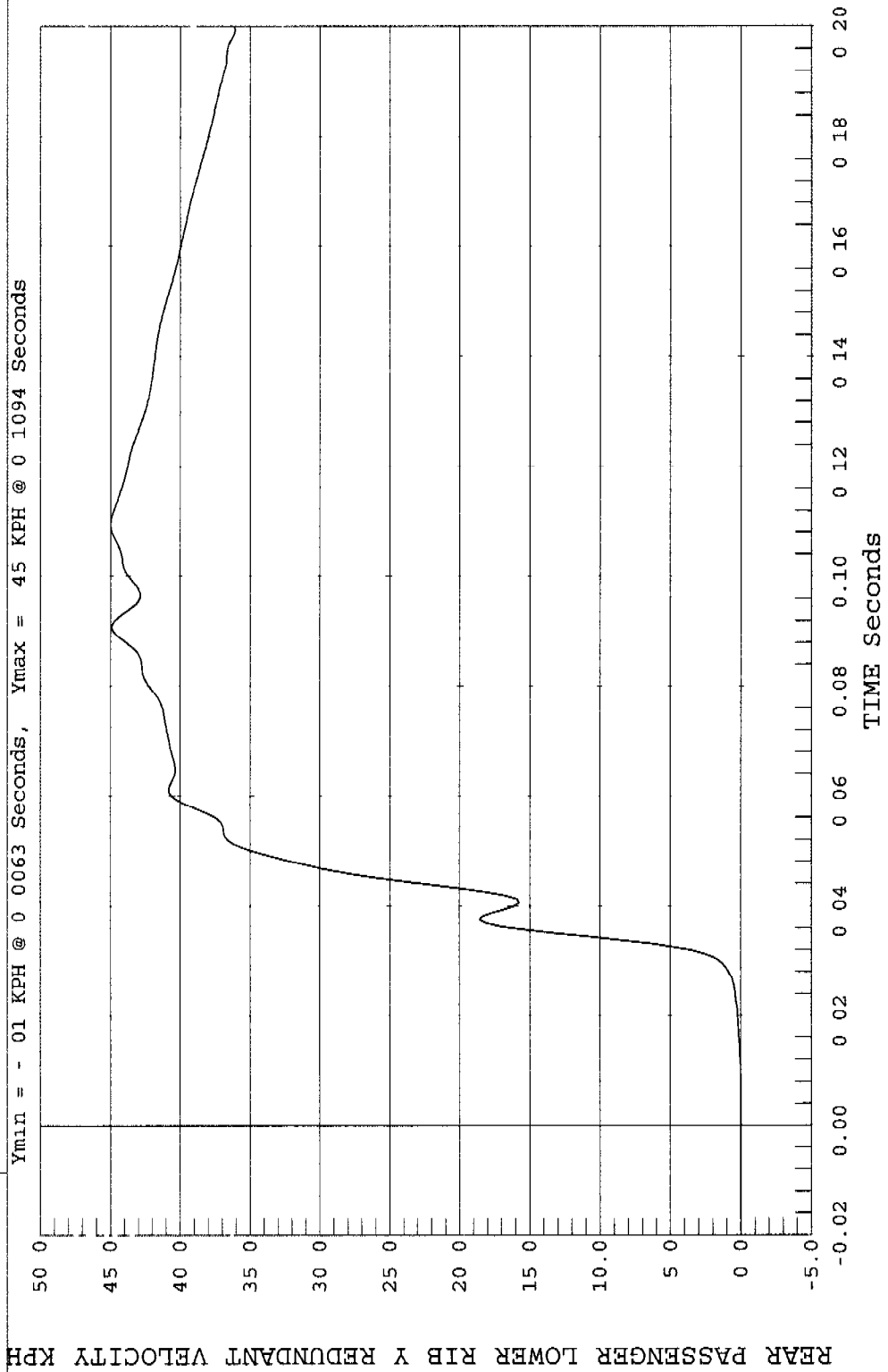


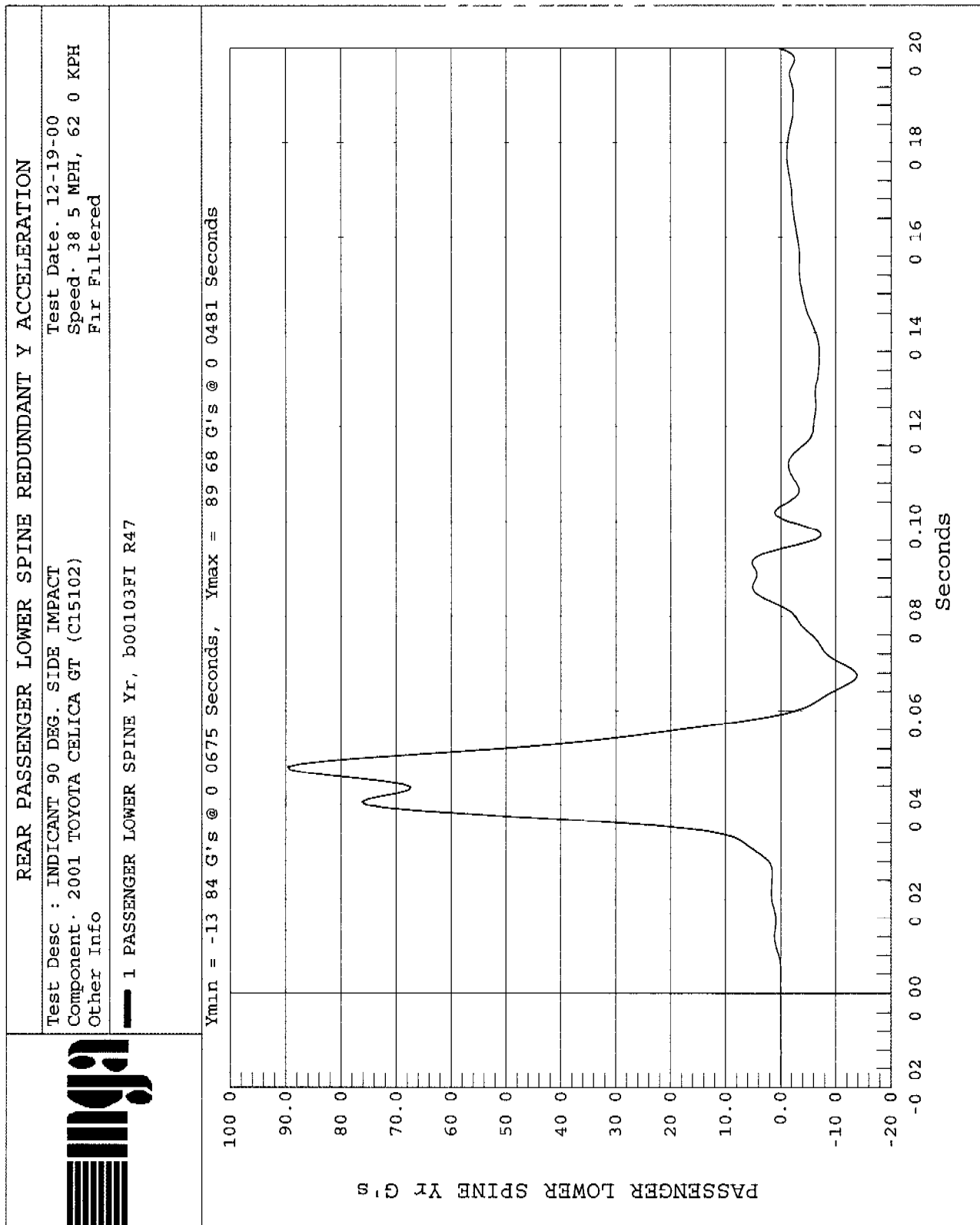


REAR PASSENGER LOWER RIB REDUNDANT Y VELOCITY

Test Desc INDICANT 90 DEG SIDE IMPACT Test Date: 12-19-00
 Component 2001 TOYOTA CELICA GT (C15102) Speed 38 5 MPH, 62 0 KPH
 Other Info Fir Filtered

1 REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY, b00103FI V46

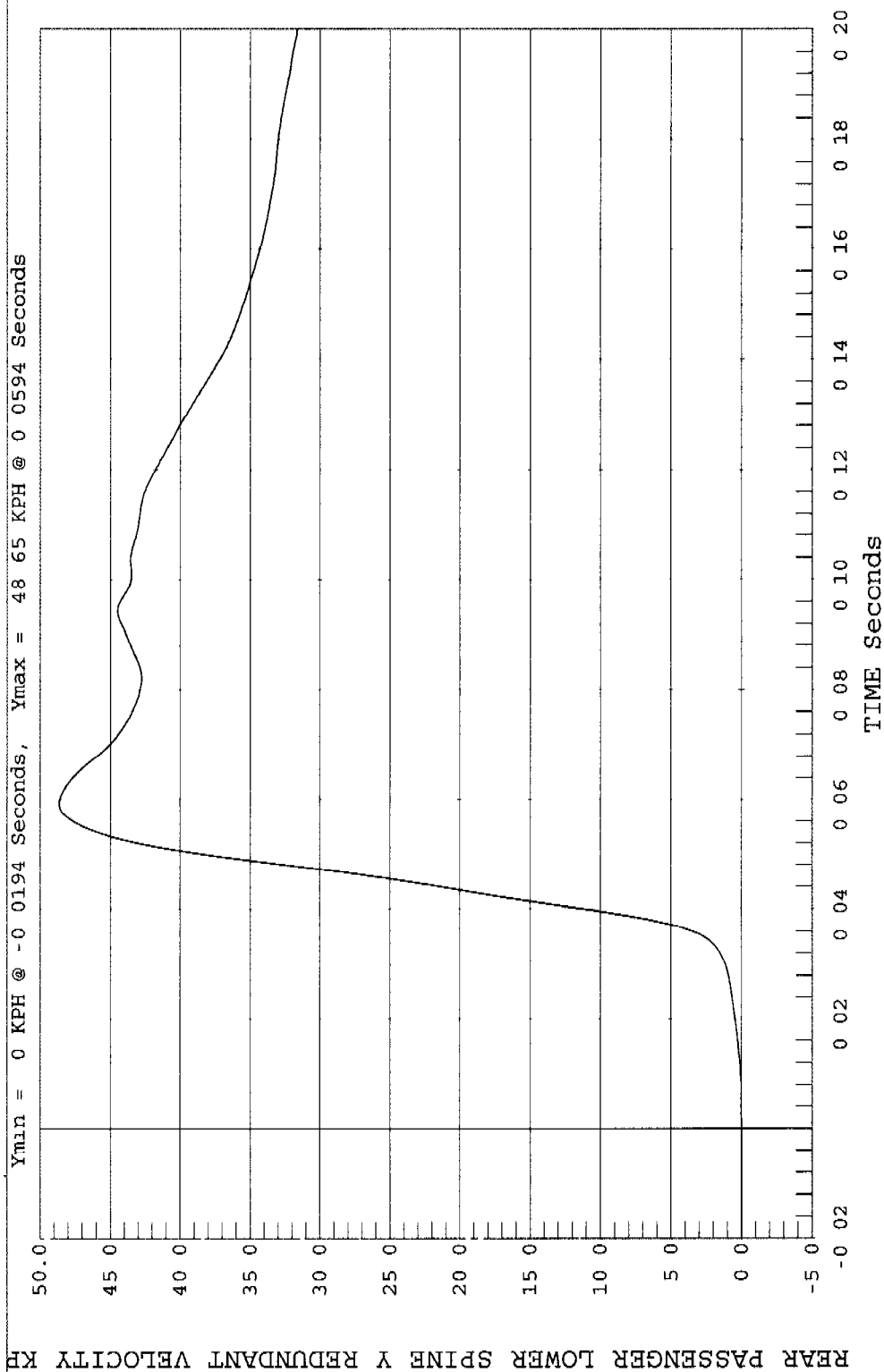


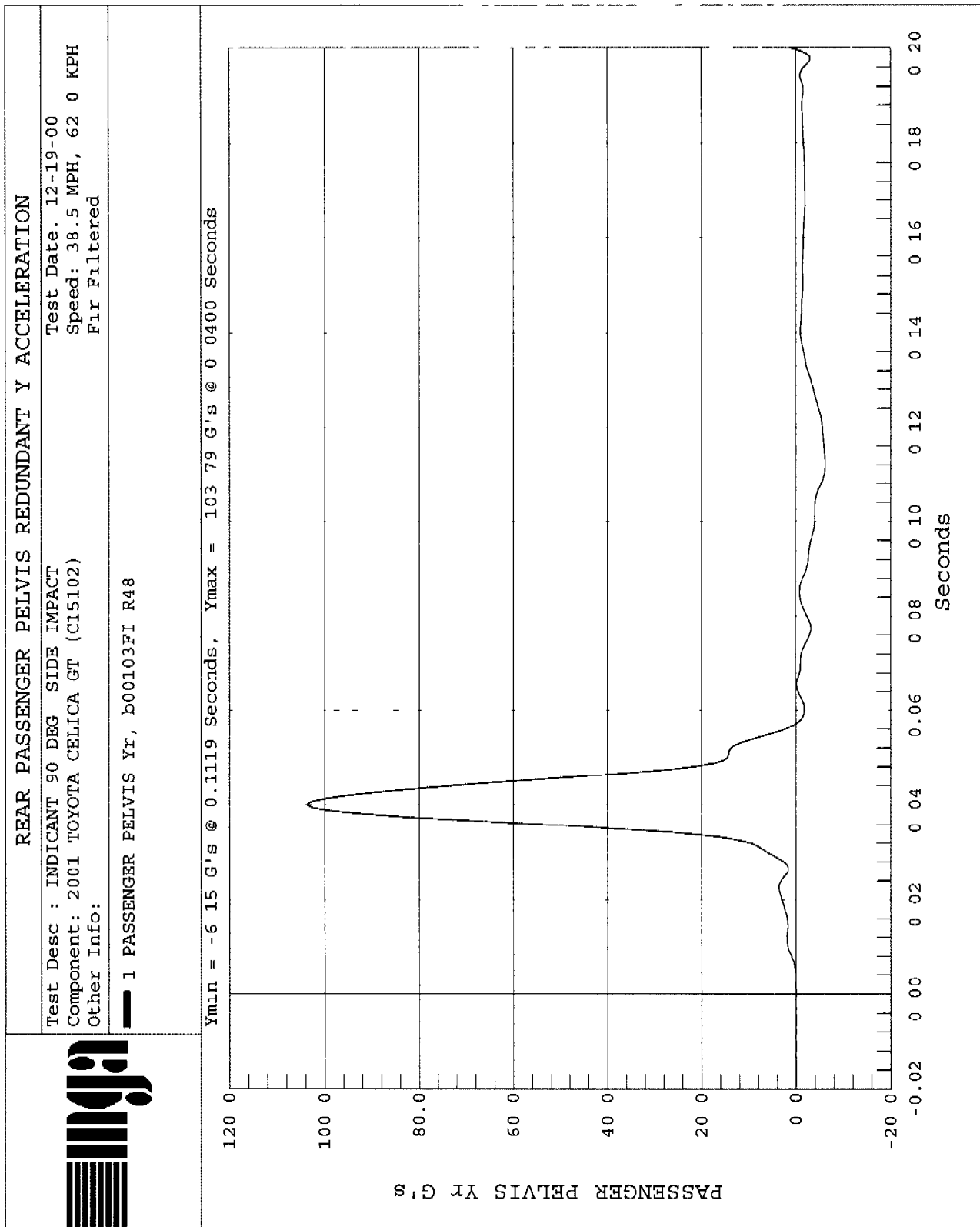


REAR PASSENGER LOWER SPINE REDUNDANT Y VELOCITY

Test Desc . INDICANT 90 DEG SIDE IMPACT
 Component . 2001 TOYOTA CELICA GT (C15102)
 Other Info
 Test Date: 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Fir Filtered

1 REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY, b00103F1.V47

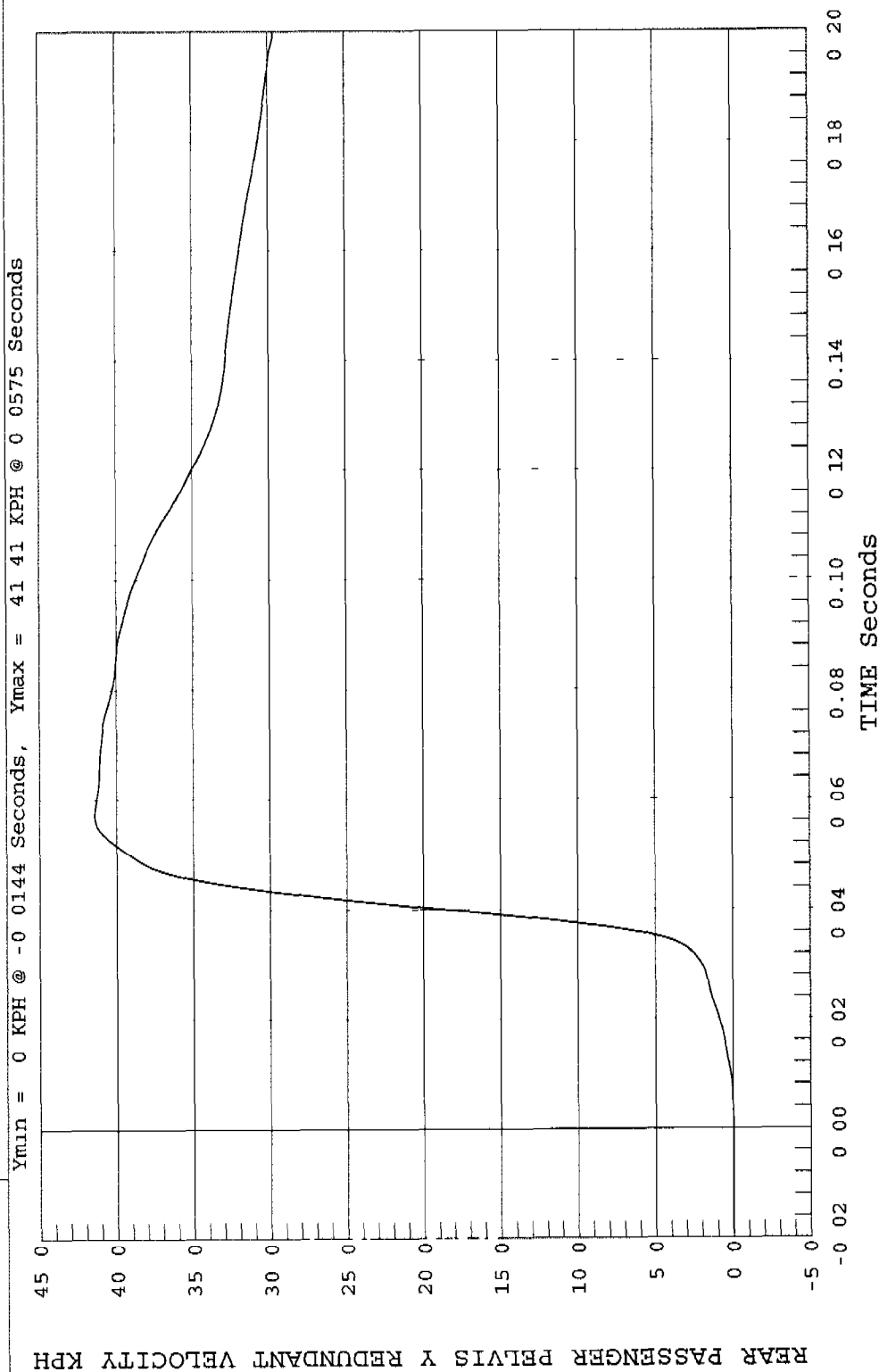




REAR PASSENGER PELVIS REDUNDANT Y VELOCITY

Test Desc - INDICANT 90 DEG SIDE IMPACT
 Component. 2001 TOYOTA CELICA GT (C15102)
 Other Info.
 Test Date. 12-19-00
 Speed 38.5 MPH, 62.0 KPH
 Fir Filtered

1 REAR PASSENGER PELVIS Y REDUNDANT VELOCITY, b00103FI V48



APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

CALIBRATION DATA SUMMARY
SIDE IMPACT DUMMY (SID)
CONFIGURED TO LEFT/RIGHT SIDE IMPACT

Report Date: 1/5/01
Calibration Date: 12/15/00

Technician: Tim Michnay
Test# D00154

Test Parameter	Specification	Dummy Serial Number: 048		Dummy Serial Number: 049	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH-Seated Height (mm)	889 – 909	903	903	900	900
RH-Rib Height (mm)	501 – 521	515	515	517	517
HP-Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD-Rib from Back Line (mm)	229 – 241	238	238	234	234
KV-Knee Pivot from Back Line (mm)	511 – 526	521	521	522	522
SW-Knee Pivot to Floor (mm)	490 – 505	493	493	492	492
HW-Hip Width (mm)	356 - 391	365	365	369	369
Thorax Impact					
Temperature (°C)	18.9 – 25.5	21.1	21.3	21.1	21.3
Relative Humidity (%)	10 – 70	27	18	27	18
Probe Speed (m/s)	4.27 – 4.33	4.27	4.27	4.27	4.31
Upper Rib (g's)	37 – 46	40	43	39	41
Lower Rib (g's)	37 – 46	41	39	40	41
Lower Spine (g's)	15 – 22	21	20	19	21
Pelvis Impact					
Temperature (°C)	18.9 – 25.5	21.1	21.3	21.1	21.2
Relative Humidity (%)	10 – 70	27	18	27	18
Probe Speed (m/s)	4.27 – 4.33	4.28	4.28	4.27	4.31
Pelvis (g's)	40 - 60	49	49	48	47

REMARKS:

CERTIFICATION DATA

Dummy Serial Number: 048

Calibration Test Results Summary

Dummy Serial Number: 048

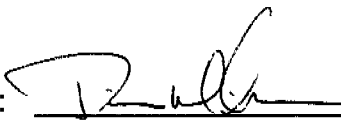
Pre-Test Calibration

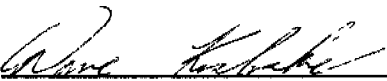
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Dummy Serial Number: 048
Date of Verification: 12/15/00
Test Number: D00154

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH-Seated Height (mm)	889 – 909	903
RH-Rib Height (mm)	501 – 521	515
HP-Hip Pivot Height (mm)	99 ref.	99
RD-Rib From Back Line (mm)	229 – 241	238
KV-Knee Pivot From Back Line (mm)	511 – 526	521
SW-Knee Pivot to Floor (mm)	490 – 505	493
HW – Hip Width (mm)	356 – 391	365

Technician: 

Approved By: 

MGA RESEARCH CORPORATION
THORACIC SHOCK ABSORBER TEST
SIDE IMPACT DUMMY (SID)

Date: 12/5/00
Dummy Serial Number: 048
Test Number: D001546/7/8

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.9 – 25.5	21.0
Relative Humidity (%)		10 – 70	22
Velocity 3.05 m/s	Force (N)	836 – 1125	901
	Displacement (mm)	30 – 35	33
Velocity 4.27 m/s	Force (N)	1730 – 2099	1777
	Displacement (mm)	32 – 37	36
Velocity 6.1 m/s	Force (N)	3741 – 4448	4221
	Displacement (mm)	33 – 40	38

TEST MEETS SPECIFICATIONS

Technician: 

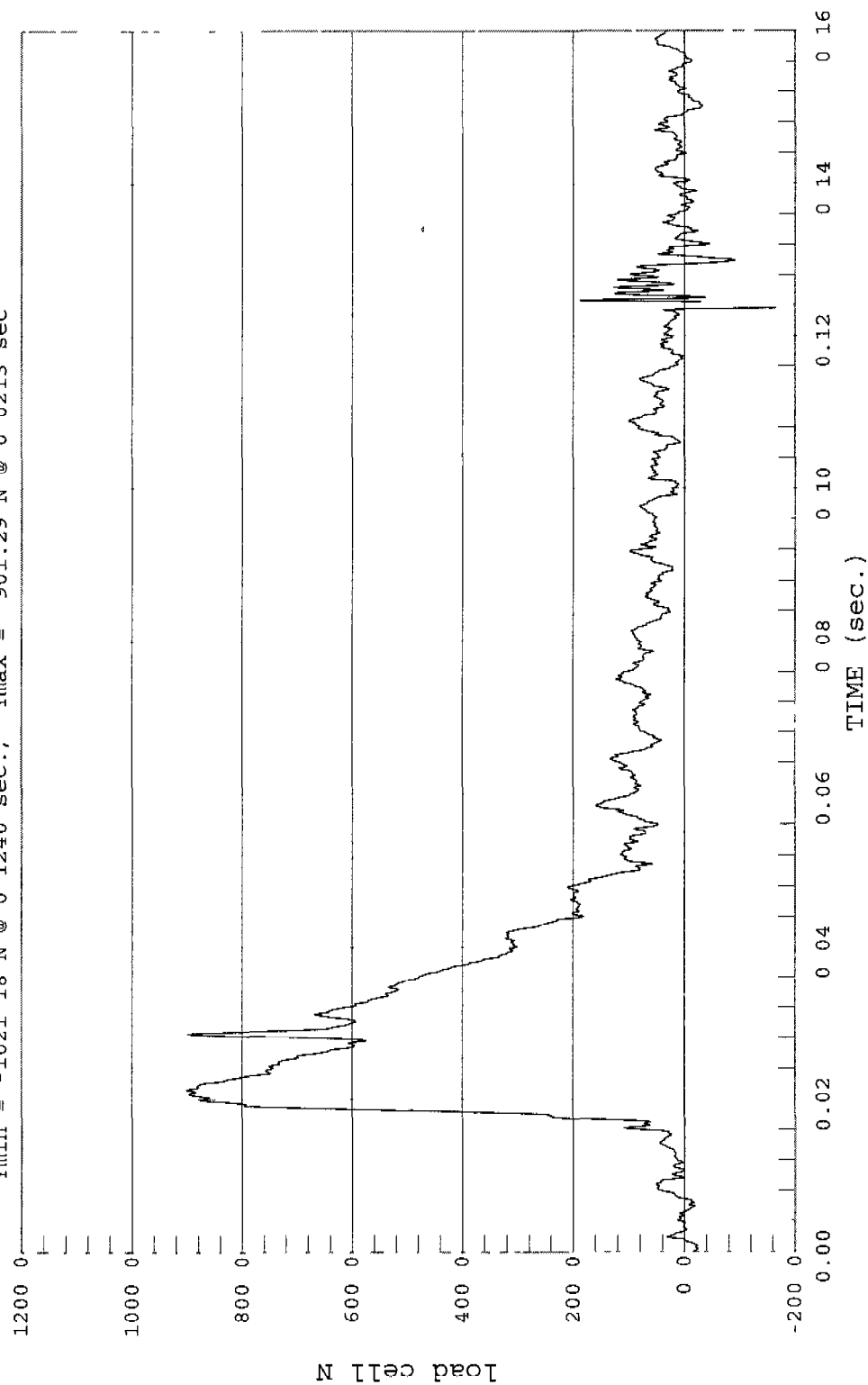
Approved By: 

PEAK FORCE

Test Desc Dummy Calibration - Dampener Impact
 Component Dummy #048
 Test Date. 12-05-00
 Speed: 10 00 FT/SEC, 3 05 M/SEC

1 load cell, D00546ff f04

Ymin = -1021 18 N @ 0 1240 sec., Ymax = 901.29 N @ 0 0213 sec

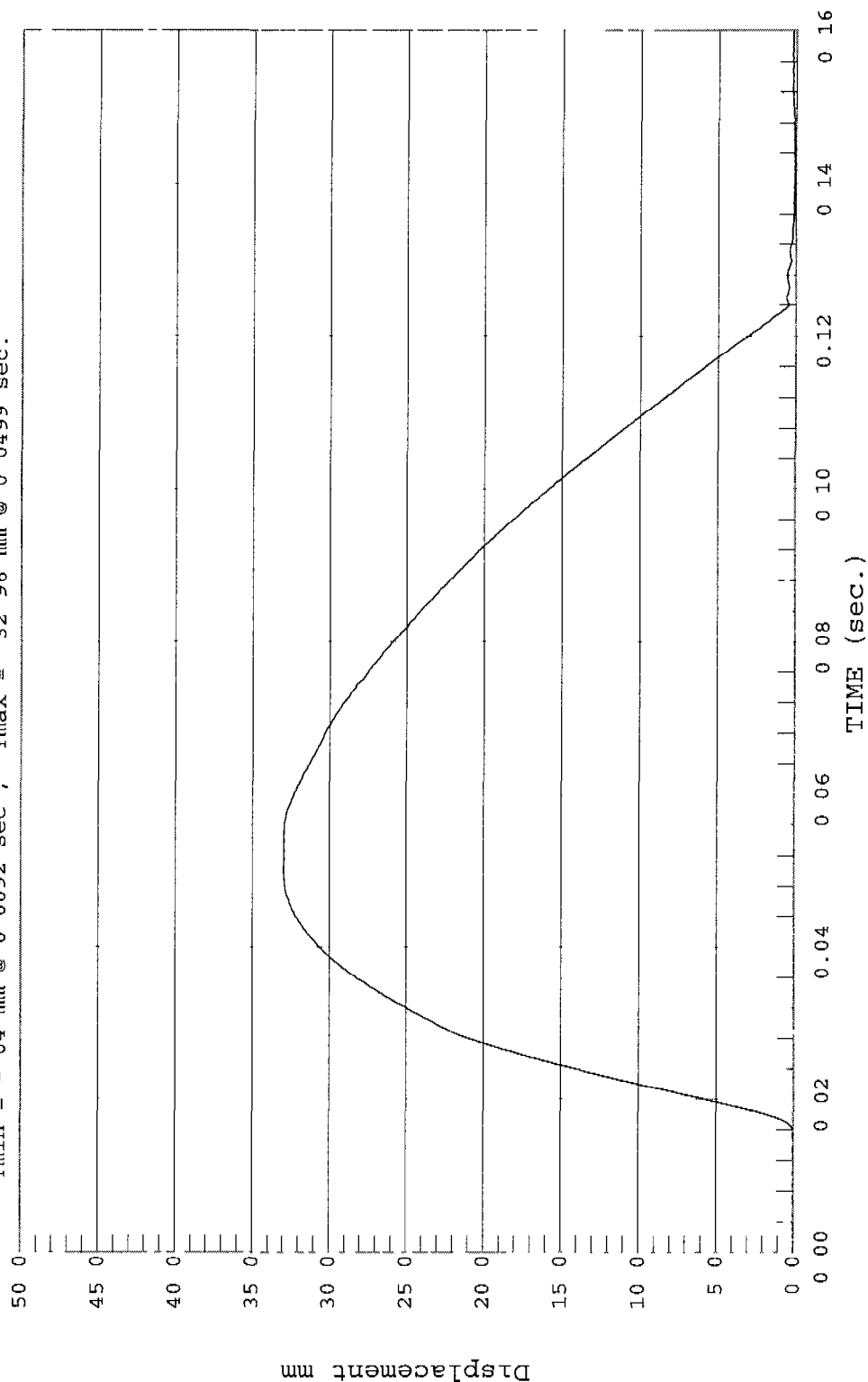


PEAK DISPLACEMENT

Test Desc.: Dummy Calibration - Dampener Impact
 Component: Dummy #048
 Test Date 12-05-00
 Speed: 10 00 FT/SEC, 3 05 M/SEC

1 Displacement, D00546DF D05

Ymin = - 04 mm @ 0 0092 sec , Ymax = 32 96 mm @ 0 0499 sec.



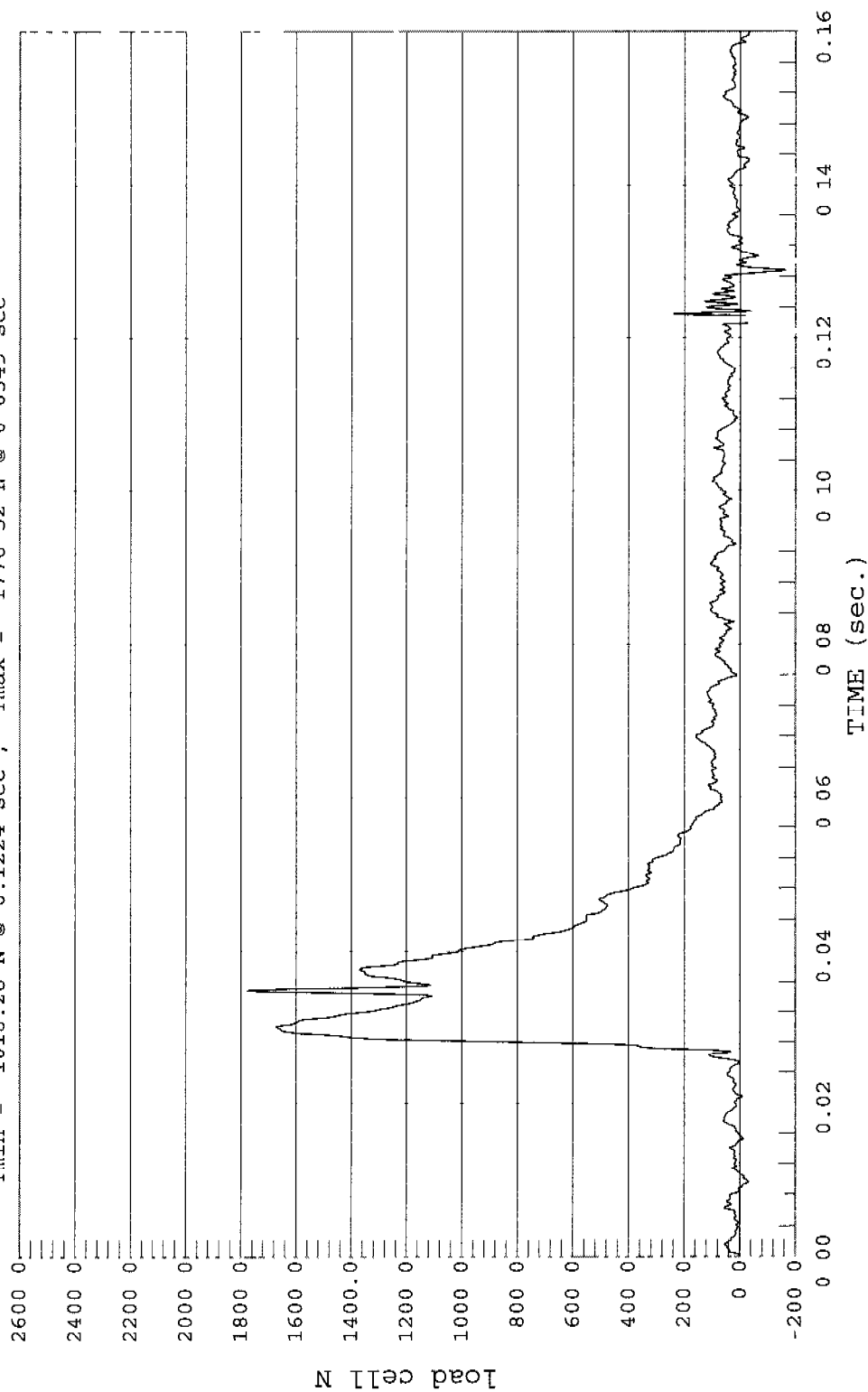


PEAK FORCE

Test Desc - Dummy Calibration - Dampener Impact Test Date- 12-05-00
Component Dummy #048 Speed- 14 00 FT/SEC, 4.27 M/SEC

1 load cell, D00547ff f04

Ymin = -1018.28 N @ 0.1224 sec , Ymax = 1776 52 N @ 0 0349 sec

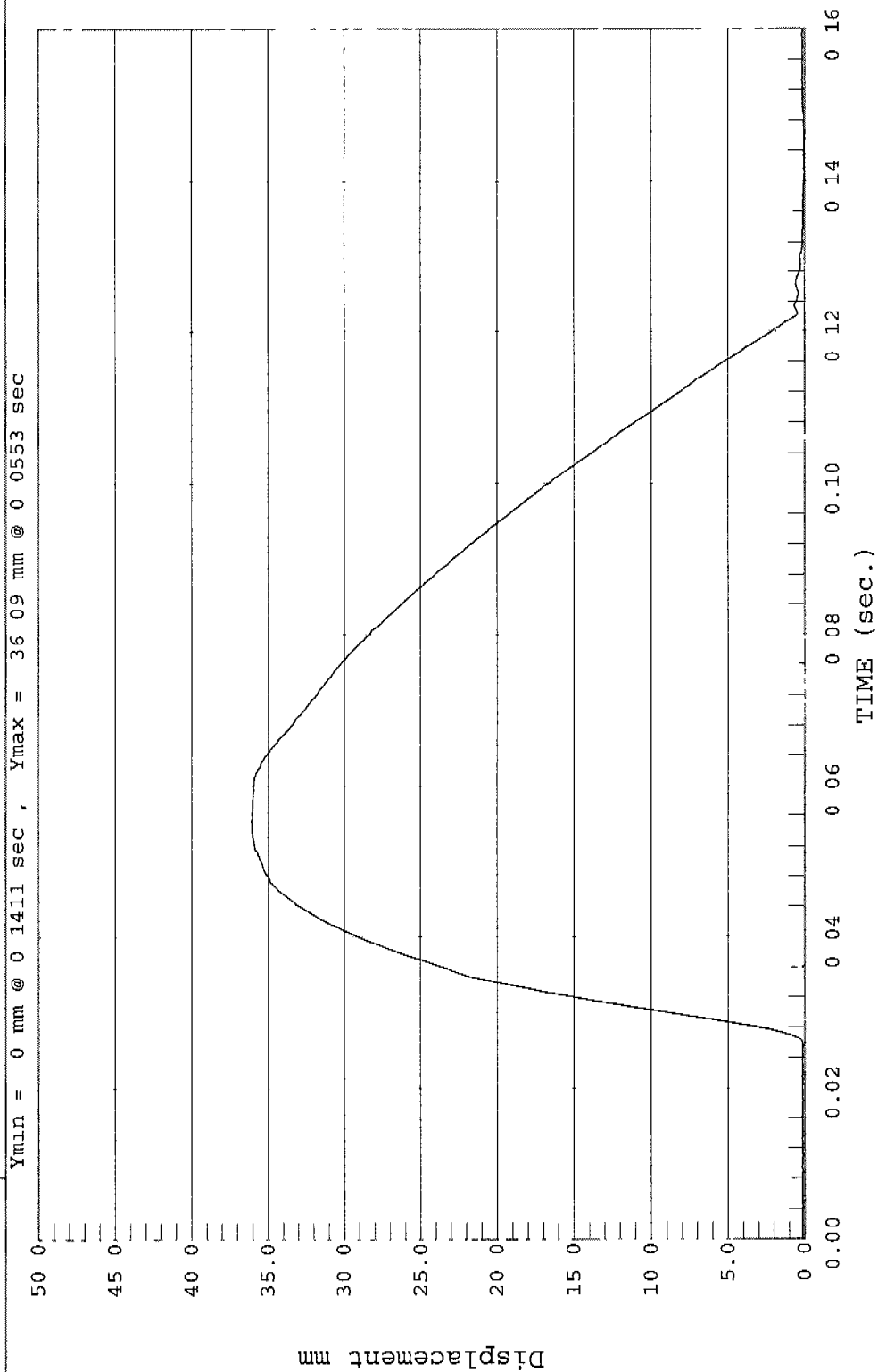




PEAK DISPLACEMENT

Test Desc. Dummy Calibration - Dampener Impact Test Date 12-05-00
Component. Dummy #048 Speed. 14 00 FT/SEC, 4.27 M/SEC

1 Displacement, D00547DF D05



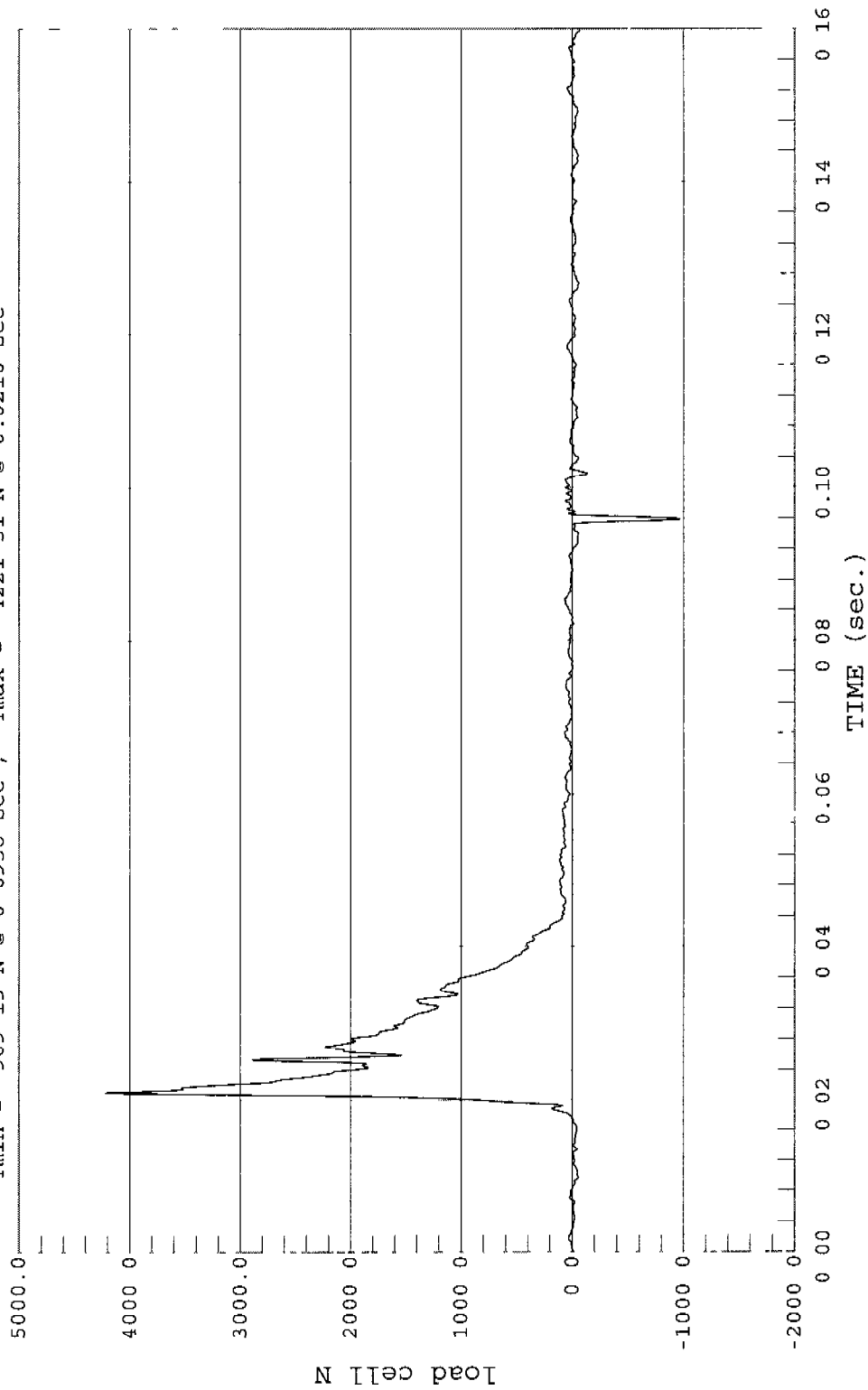


PEAK FORCE

Test Desc . Dummy Calibration - Dampener Impact Test Date 12-05-00
Component Dummy #048 Speed 20 00 FT/SEC, 6.10 M/SEC

1 load cell, D00548ff f04

Ymin = -969 19 N @ 0 0958 sec , Ymax = 4221 31 N @ 0.0210 sec



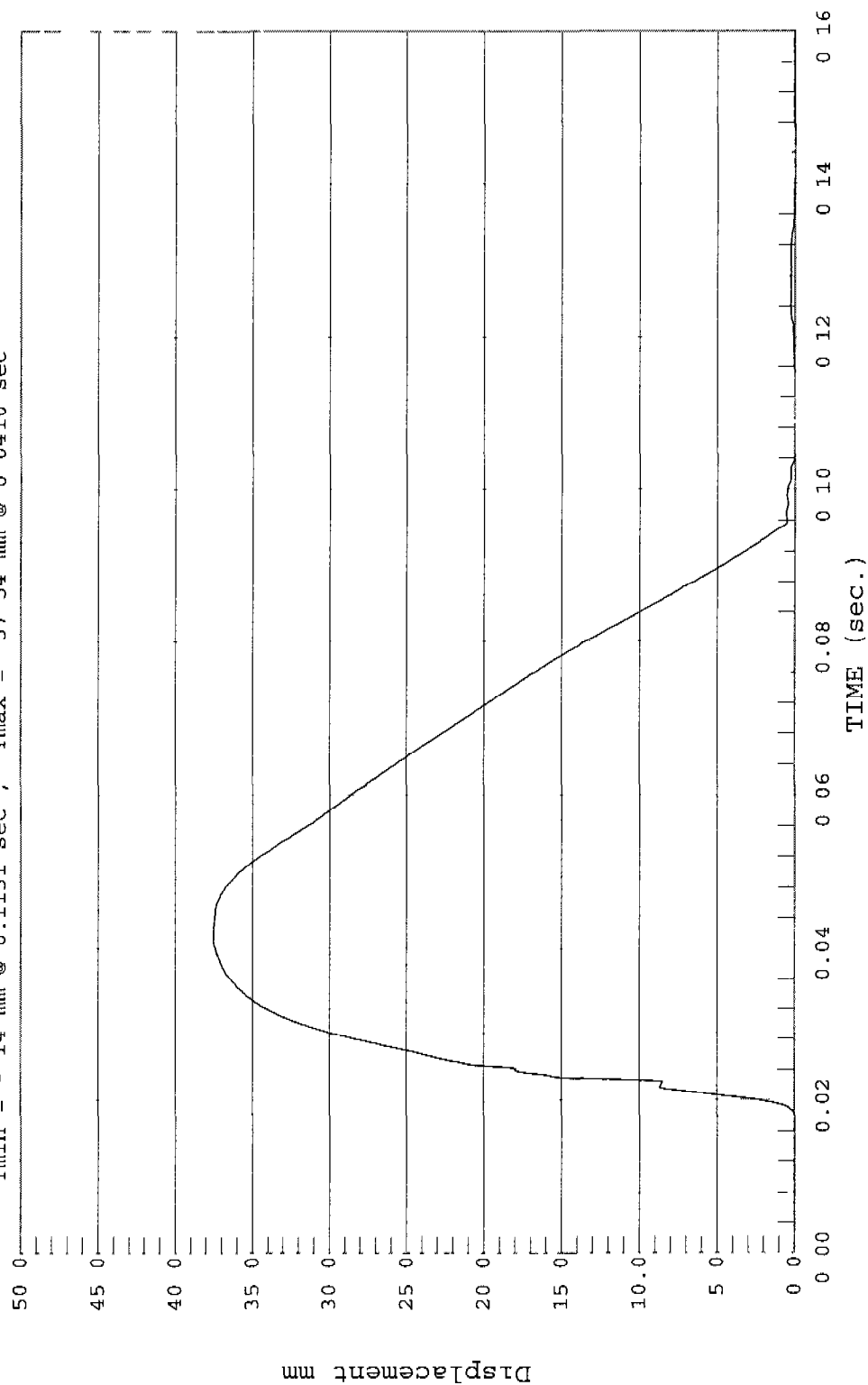


PEAK DISPLACEMENT

Test Desc . Dummy Calibration - Dampener Impact Test Date 12-05-00
Component: Dummy #048 Speed 20 00 FT/SEC, 6 10 M/SEC

1 Displacement, D00548DF D05

Ymin = - 14 mm @ 0.1131 sec , Ymax = 37 54 mm @ 0 0410 sec



MGA RESEARCH CORPORATION
THORAX IMPACT TEST
SIDE IMPACT DUMMY (SID)

Date: 12/15/00

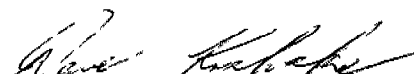
Dummy Serial Number: 048

Test Number: D001542

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.1
Relative Humidity (%)	10 – 70	27
Probe Speed (m/s)	4.27 – 4.33	4.27
Upper Rib (g's)	37 – 46	40
Lower Rib (g's)	37 – 46	41
Lower Spine (g's)	15 - 22	21

TEST MEETS SPECIFICATIONS

Technician: 

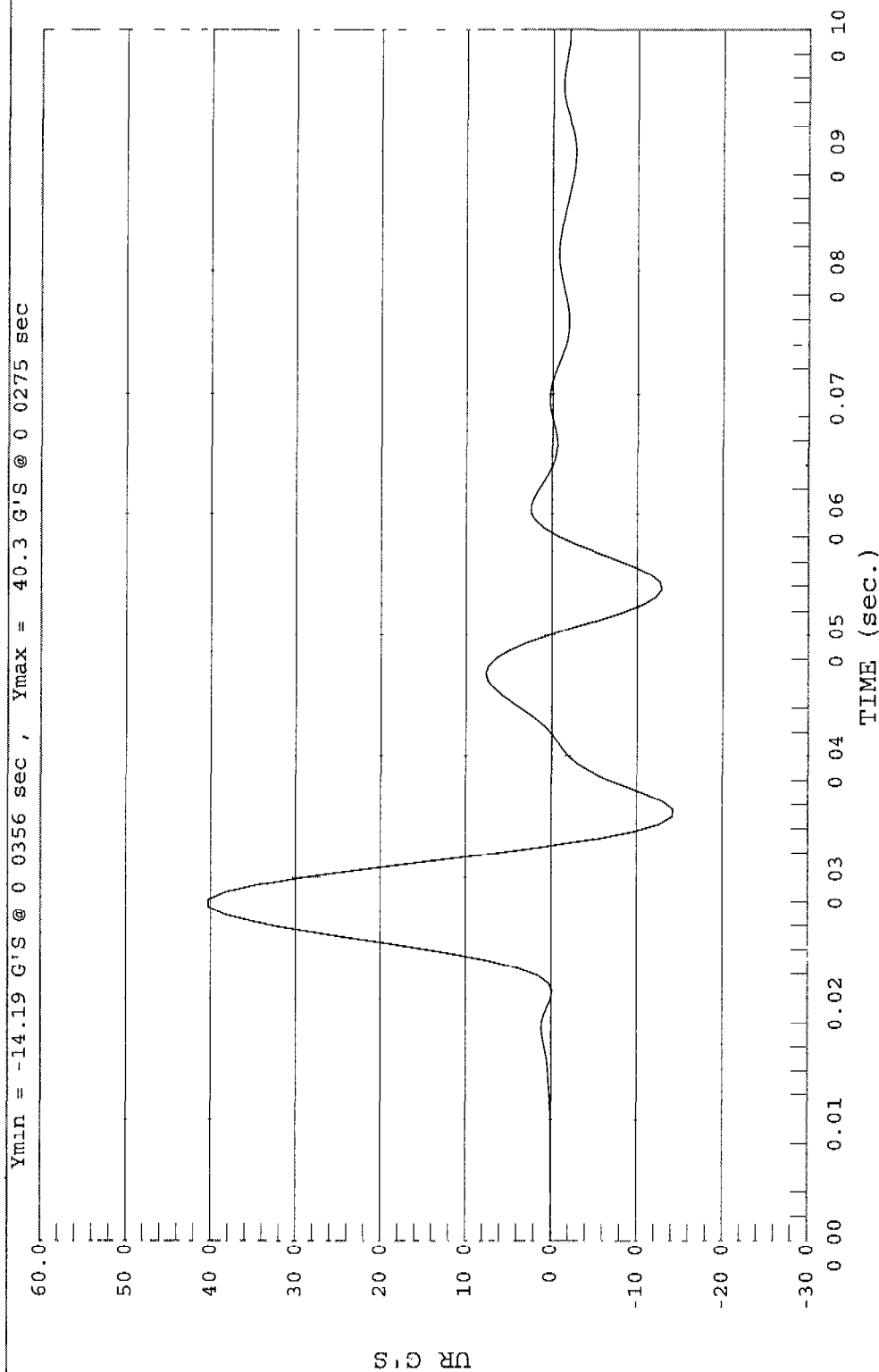
Approved By: 



UPPER RIB ACCELERATION

Test Desc : Dummy Calibration - Thorax Impact
Component: Dummy #048
Test Date: 12-15-00
Speed 14.02 FT/SEC, 4 27 M/SEC

1 UR, D00542FI R08



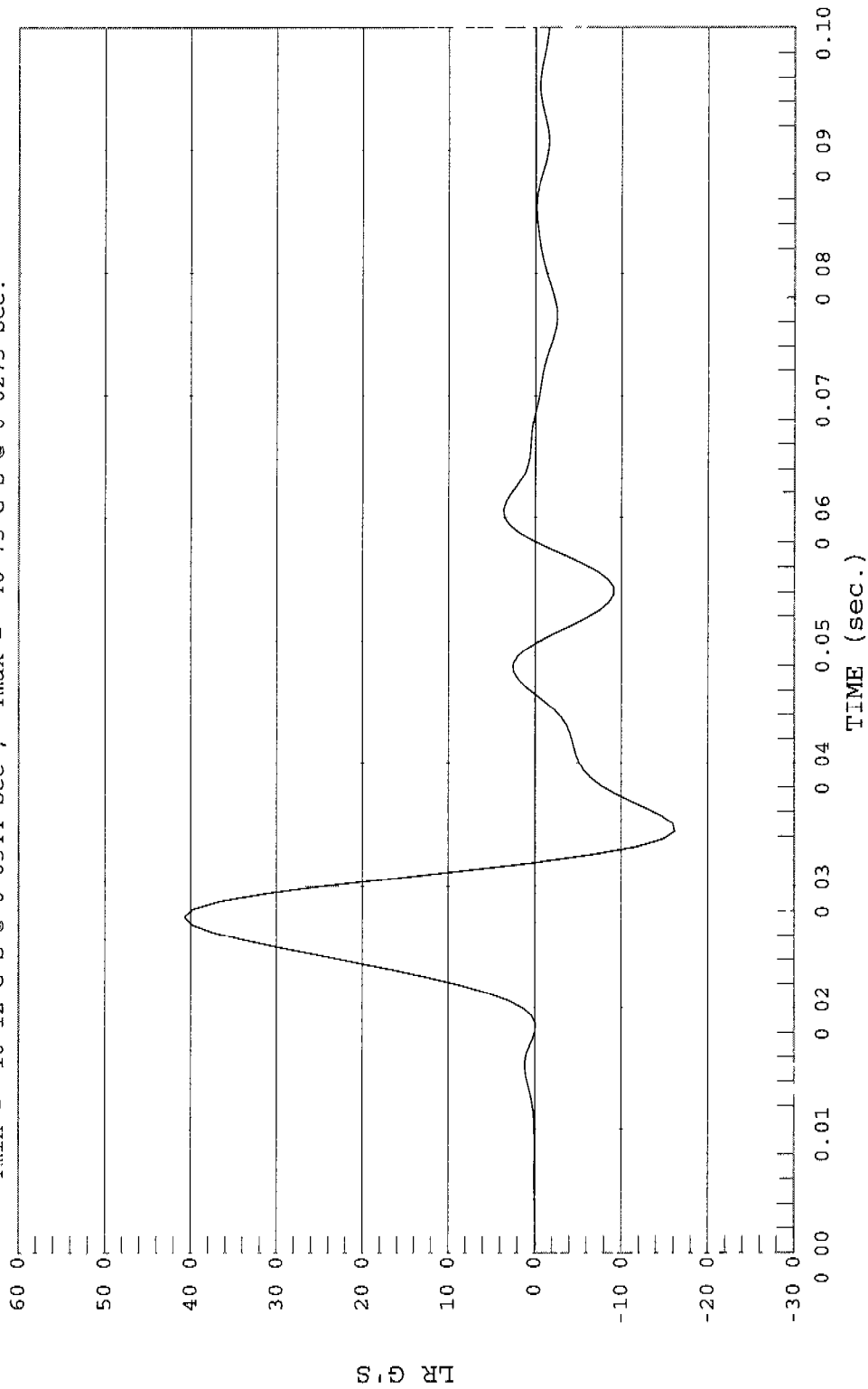


LOWER RIB ACCELERATION

Test Desc.: Dummy Calibration - Thorax Impact Test Date 12-15-00
Component: Dummy #048 Speed 14.02 FT/SEC, 4 27 M/SEC

1 LR, D00542FI.R09

Ymin = -16 12 G'S @ 0 0344 sec , Ymax = 40 75 G'S @ 0 0275 sec.



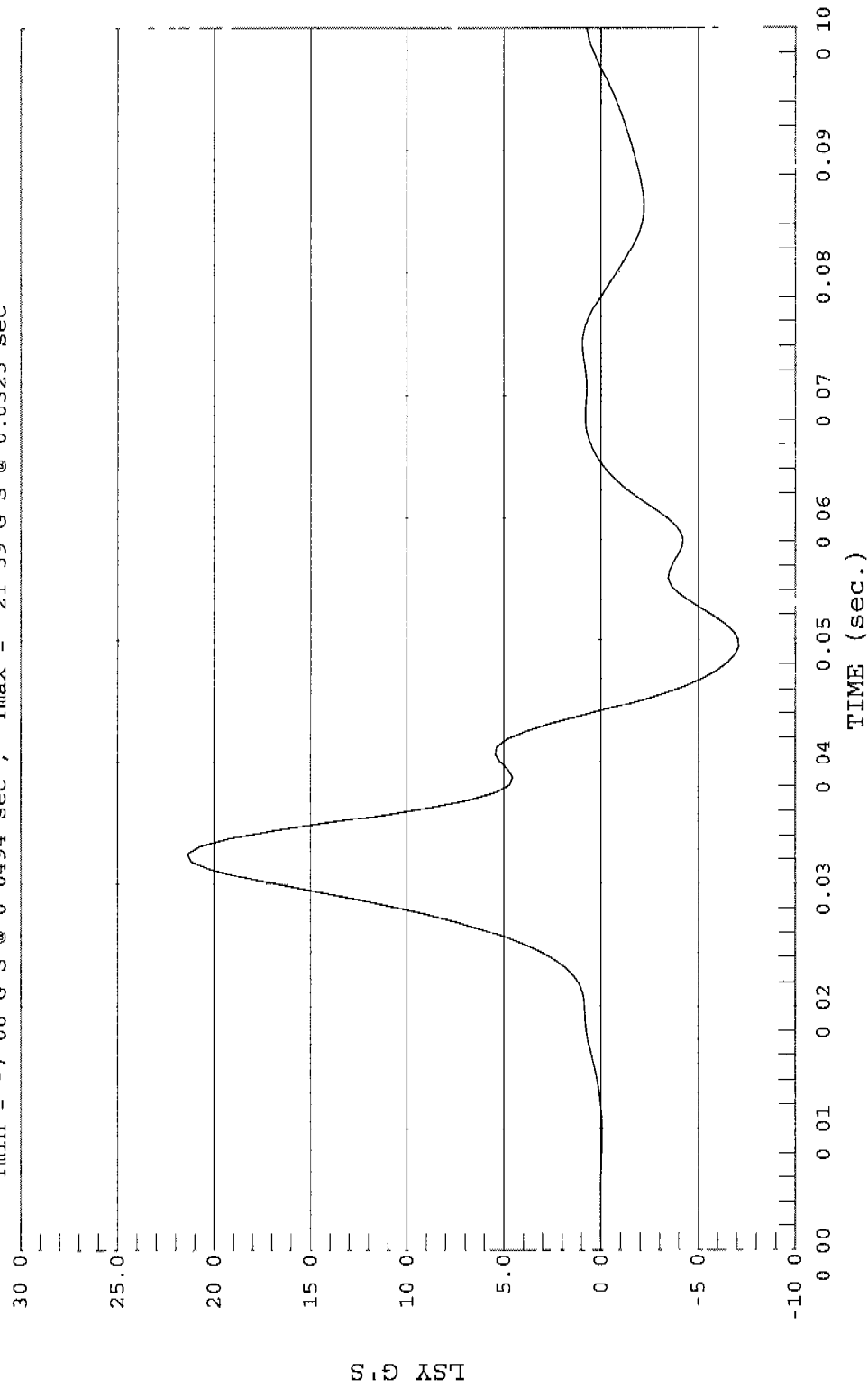


LOWER SPINE ACCELERATION

Test Desc Dummy Calibration - Thorax Impact Test Date. 12-15-00
Component. Dummy #048 Speed. 14.02 FT/SEC, 4 27 M/SEC

1 LSY, D00542FI R10

Ymin = -7 06 G'S @ 0 0494 sec , Ymax = 21 39 G'S @ 0.0325 sec



MGA RESEARCH CORPORATION
PELVIS IMPACT TEST
SIDE IMPACT DUMMY (SID)

Date: 12/15/00

Dummy Serial Number: 048

Test Number: D001543

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.1
Relative Humidity (%)	10 – 70	27
Probe Speed (m/s)	4.27 – 4.33	4.28
Pelvis Acceleration (g's)	40 – 60	49

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

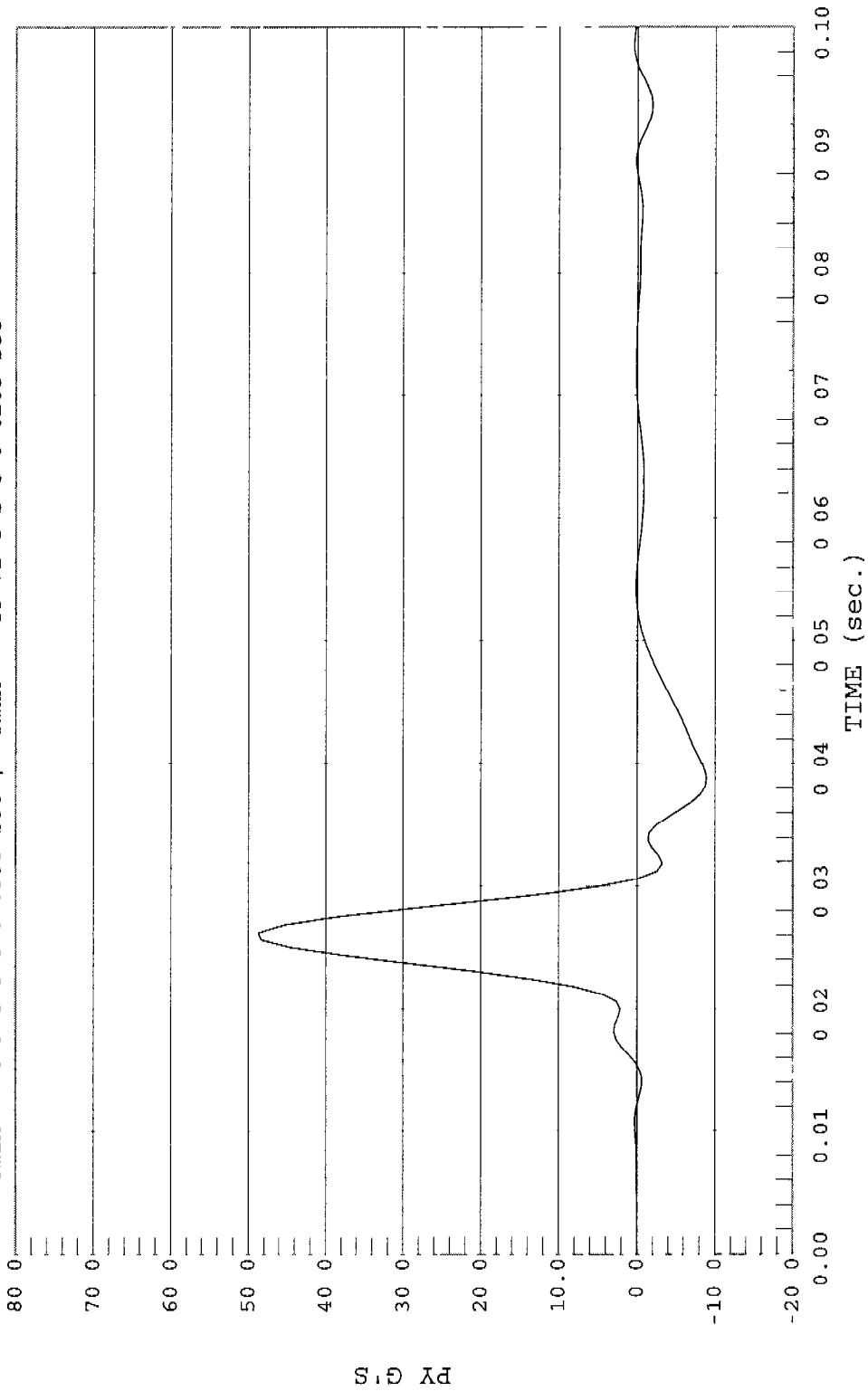


PELVIS ACCELERATION

Test Desc - Dummy Calibration - Pelvis Impact Test Date. 12-15-00
Component: Dummy #048 Speed. 14 03 FT/SEC, 4.28 M/SEC

1 PY, D00543FI R11

Ymin = -8 9 G'S @ 0 0388 sec , Ymax = 48 71 G'S @ 0 0263 sec



MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST (PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

Date: 12/5/00
Dummy Serial Number: 048
Test Number: D001544

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.4
Relative Humidity (%)	10 – 70	24
Force @ 12.7 mm	104 – 162	140
Force @ 19 mm	163 – 222	190
Force @ 25.4 mm	222 – 280	256
Force @ 33 mm	325 - 391	353

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

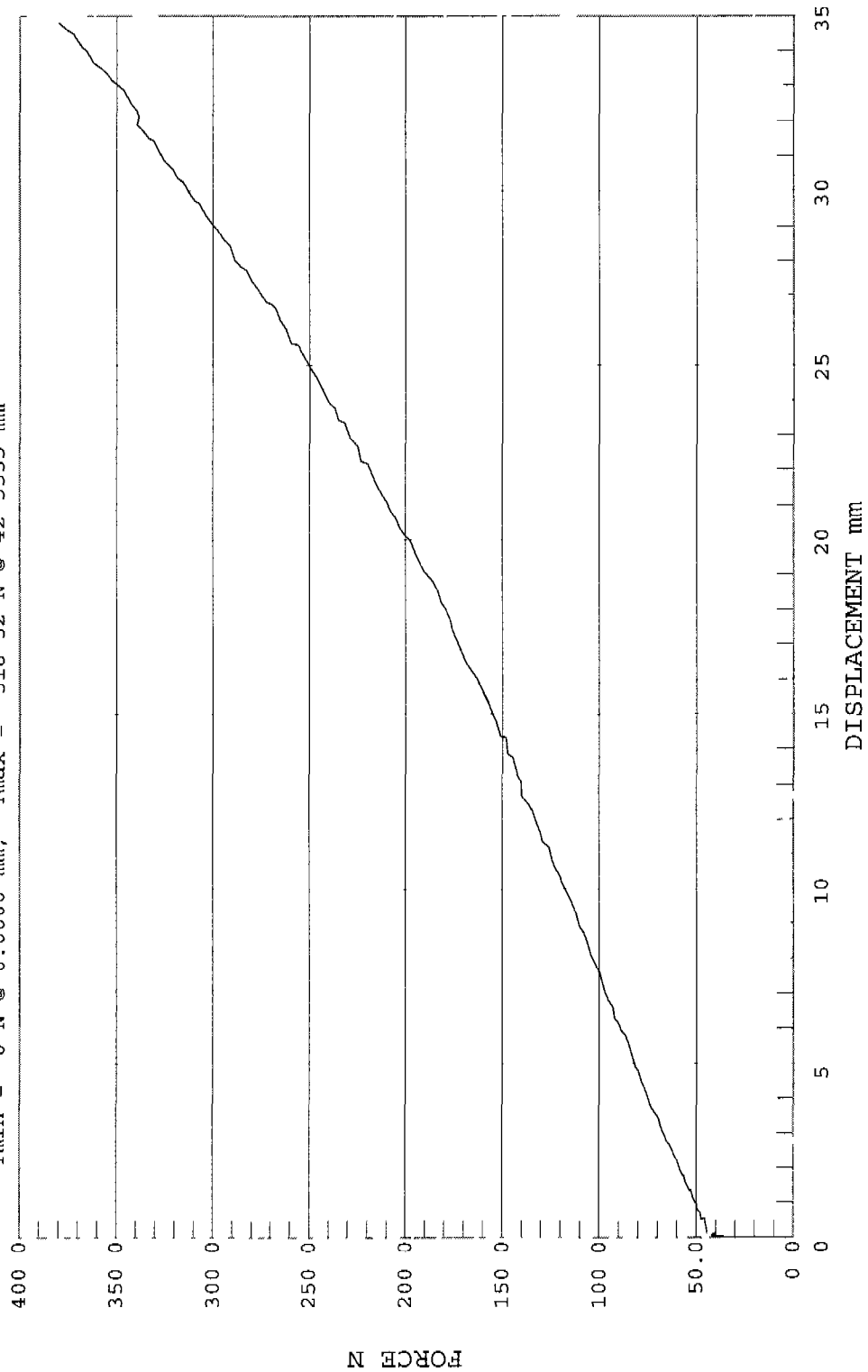
ABDOMEN COMPRESSION

Test Desc. DUMMY CALIBRATION - ABDOMEN COMPRESSION Test Date 12-05-00
 Component. DUMMY # 048 Speed. 0.00 FT/SEC, 0.00 M/SEC

1 FORCE, D00544FC F16



Ymin = 0 N @ 0.0000 mm, Ymax = 518 32 N @ 42 5535 mm

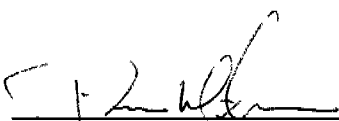


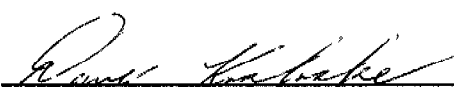
MGA RESEARCH CORPORATION
LUMBAR FLEXION TEST
SIDE IMPACT DUMMY (SID)

Date: 12/6/00
Dummy Serial Number: 048
Test Number: D001545

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.4
Relative Humidity (%)	10 – 70	24
Force @ 0°	0 – 26.7	0
Force @ 20°	97.9 – 151.2	105.0
Force @ 30°	151.2 – 204.6	153.1
Force @ 40°	204.6 – 258.0	217.3
Return Angle	12° maximum	3

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

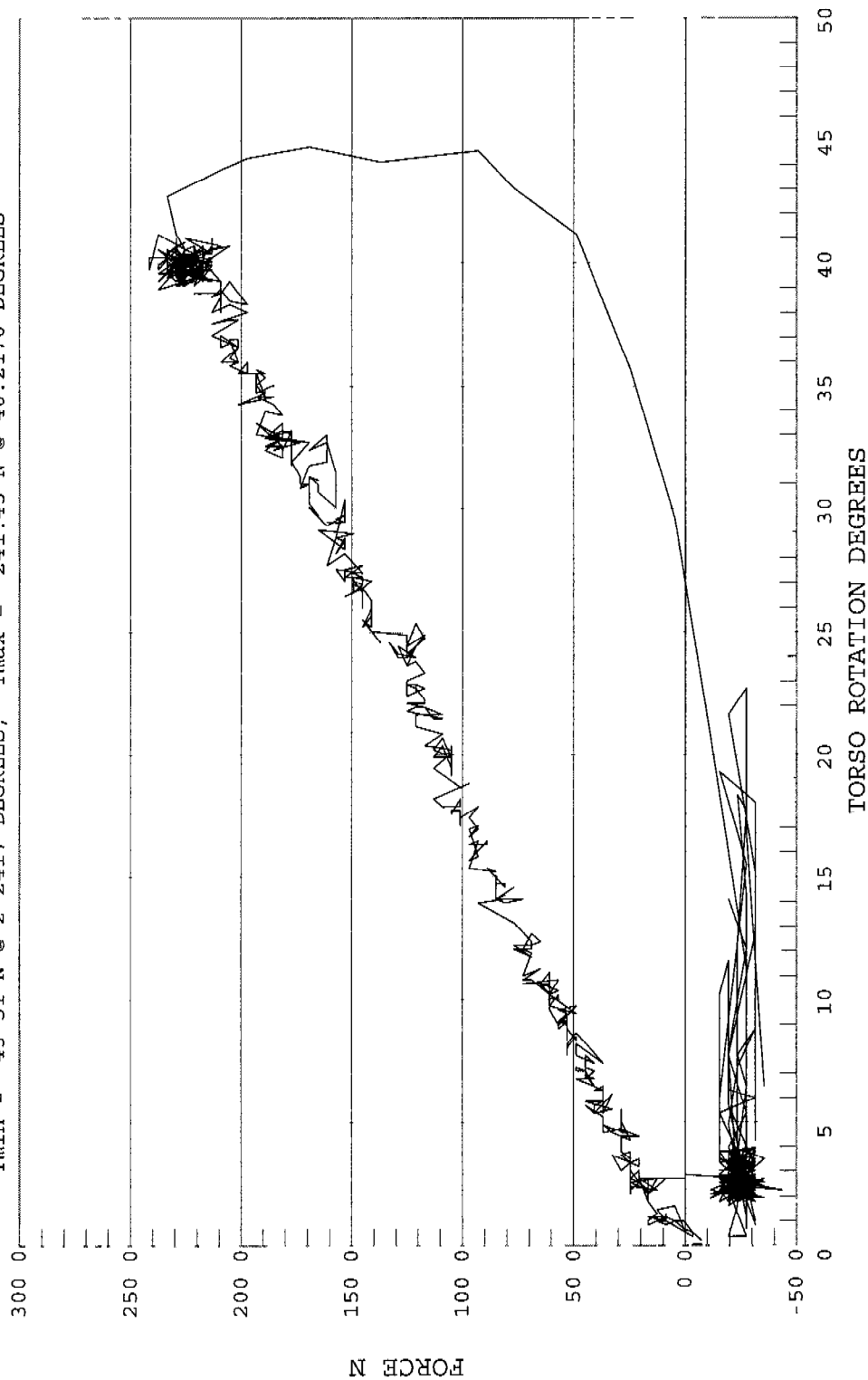


LUMBAR FLEXION

Test Desc. DUMMY CALIBRATION - LUMBAR FLEXION
Component. DUMMY # 048
Test Date. 12-06-00
Speed 0.00 FT/SEC, 0.00 M/SEC

1 FORCE, D00545FC.F14

Ymin = -43 51 N @ 2 2417 DEGREES, Ymax = 241.43 N @ 40.2170 DEGREES



DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 048

Inspected By: Tim Michnay

Date: 12/15/00

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

Notes (include component/problem/action/reason):

CERTIFICATION DATA

Dummy Serial Number: 049

Calibration Test Results Summary

Dummy Serial Number: 049

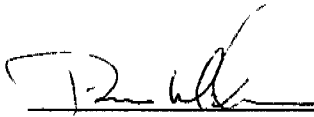
Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Dummy Serial Number: 049
Date of Verification: 12/15/00
Test Number: D00155

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH-Seated Height (mm)	889 – 909	900
RH-Rib Height (mm)	501 – 521	517
HP-Hip Pivot Height (mm)	99 ref.	99
RD-Rib From Back Line (mm)	229 - 241	234
KV-Knee Pivot From Back Line (mm)	511 – 526	522
SW-Knee Pivot to Floor (mm)	490 – 505	492
HW – Hip Width (mm)	356 – 391	369

Technician: 

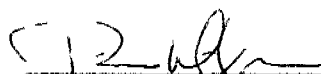
Approved By: 

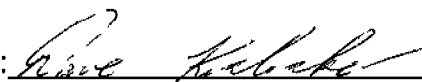
MGA RESEARCH CORPORATION
THORACIC SHOCK ABSORBER TEST
SIDE IMPACT DUMMY (SID)

Date: 12/5/00
Dummy Serial Number: 049
Test Number: D001556/7/8

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.9 – 25.5	21.0
Relative Humidity (%)		10 – 70	22
Velocity 3.05 m/s	Force (N)	836 – 1125	1005
	Displacement (mm)	30 – 35	30
Velocity 4.27 m/s	Force (N)	1730 – 2099	1965
	Displacement (mm)	32 – 37	33
Velocity 6.1 m/s	Force (N)	3741 – 4448	3858
	Displacement (mm)	33 – 40	38

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

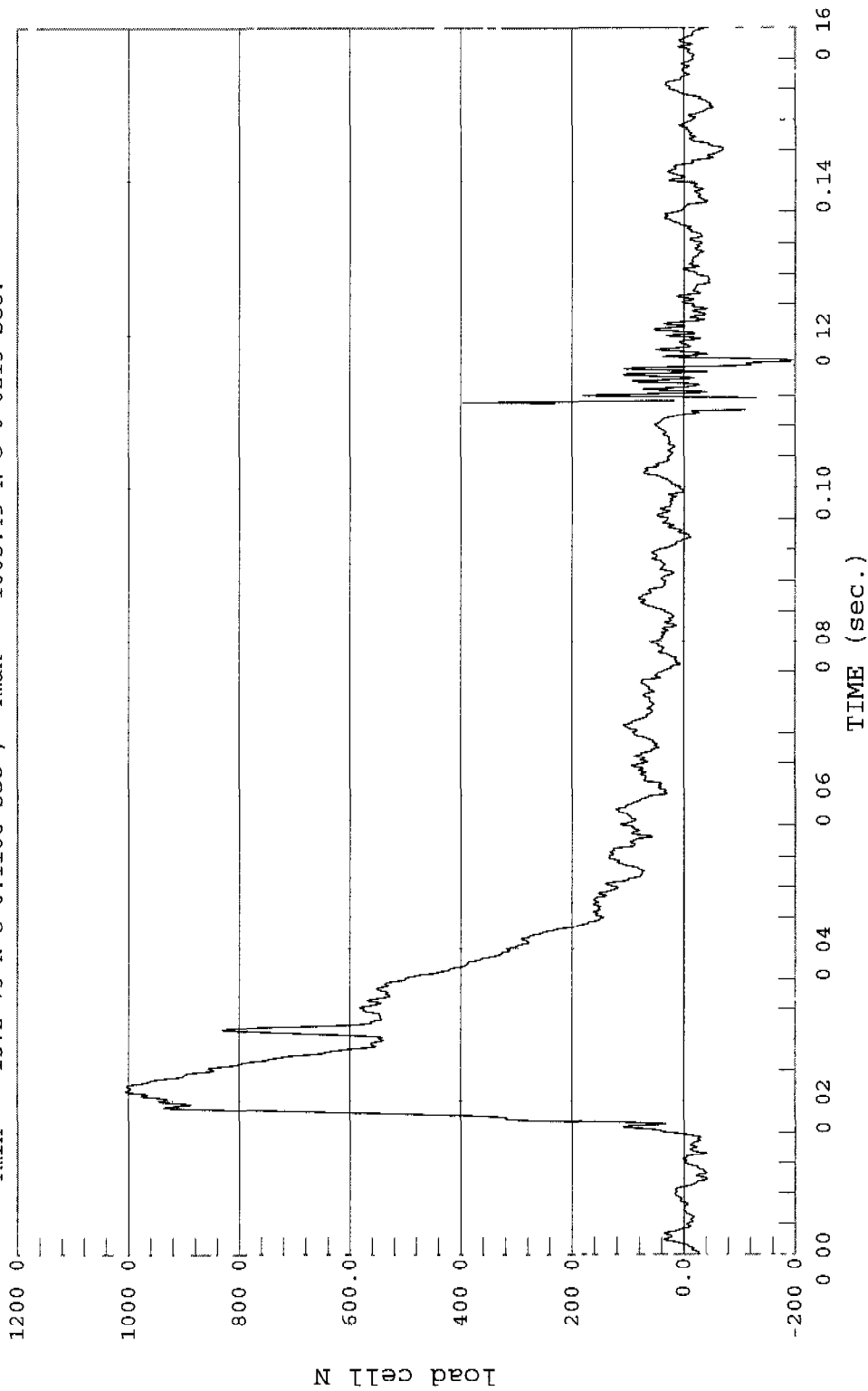


PEAK FORCE

Test Desc - Dummy Calibration - Dampener Impact
Component Dummy #049
Test Date 12-05-00
Speed. 10.00 FT/SEC, 3 05 M/SEC

1 load cell, D00556ff.f04

Ymin = -1372 73 N @ 0.1106 sec , Ymax = 1005.49 N @ 0.0213 sec.



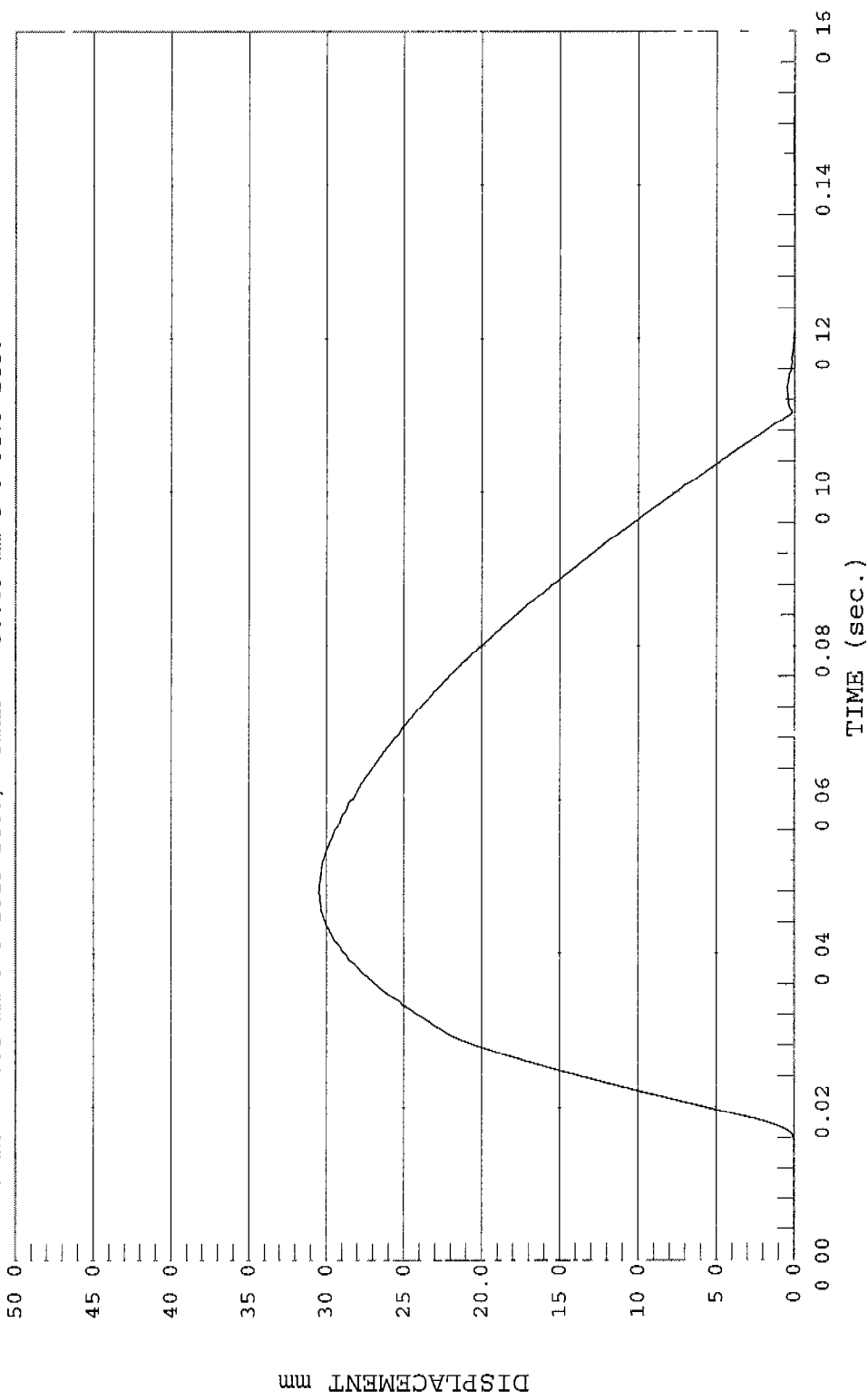


PEAK DISPLACEMENT

Test Desc - Dummy Calibration - Dampener Impact
Component Dummy #049
Test Date. 12-05-00
Speed. 10.00 FT/SEC, 3.05 M/SEC

1 DISPLACEMENT, D00556DF.D05

Ymin = -.04 mm @ 0.1815 sec., Ymax = 30.48 mm @ 0.0479 sec.



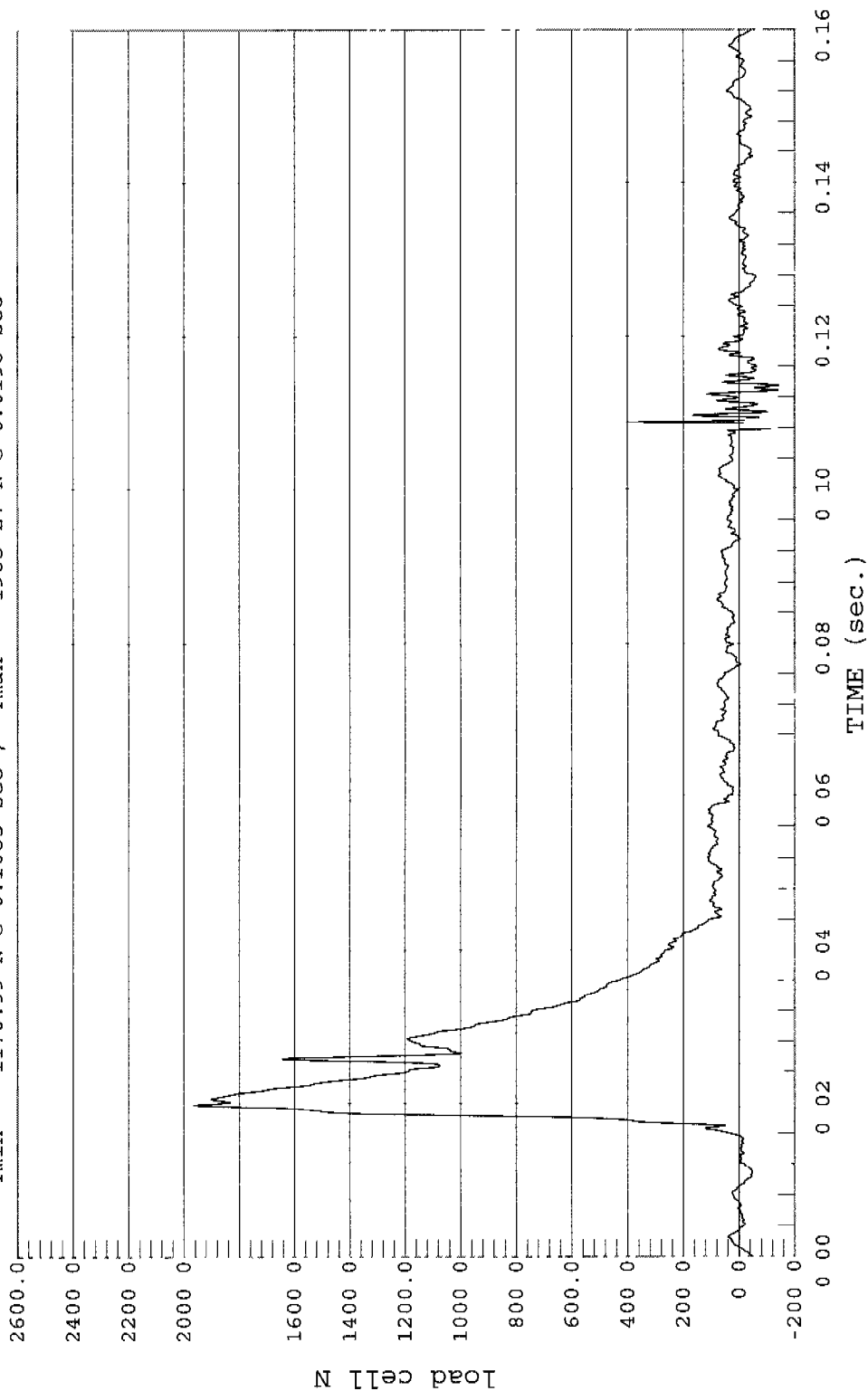


PEAK FORCE

Test Desc - Dummy Calibration - Dampener Impact
Component - Dummy #049
Test Date 12-05-00
Speed 10 00 FT/SEC, 3 05 M/SEC

1 load cell, D00557ff.f04

Ymin = -1170.99 N @ 0.1083 sec , Ymax = 1965.27 N @ 0.0198 sec



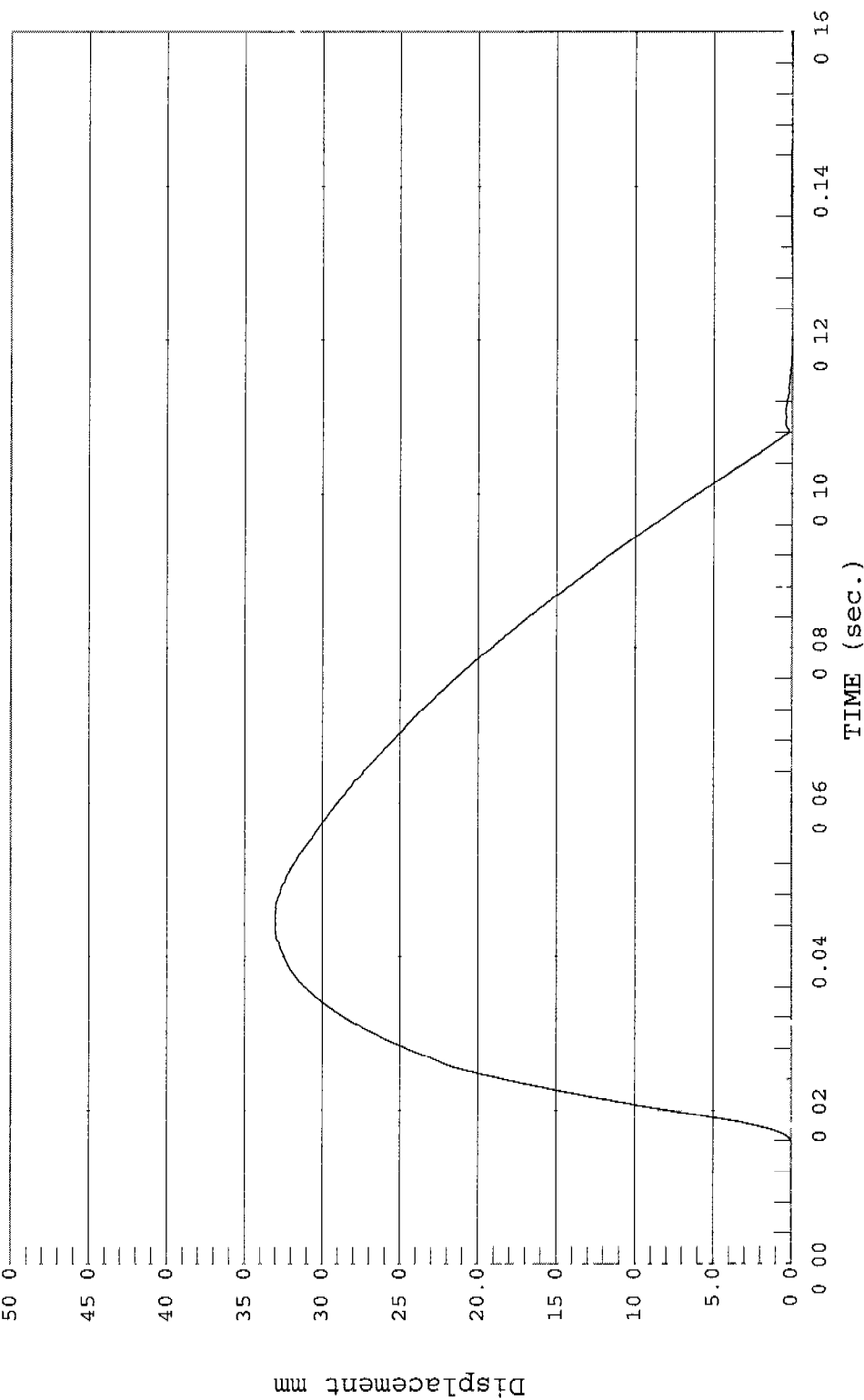


PEAK DISPLACEMENT

Test Desc Dummy Calibration - Dampener Impact
Component: Dummy #049
Test Date: 12-05-00
Speed: 10.00 FT/SEC, 3.05 M/SEC

1 Displacement, D00557DF.D05

Ymin = - 05 mm @ 0 1209 sec , Ymax = 33 03 mm @ 0 0447 sec.

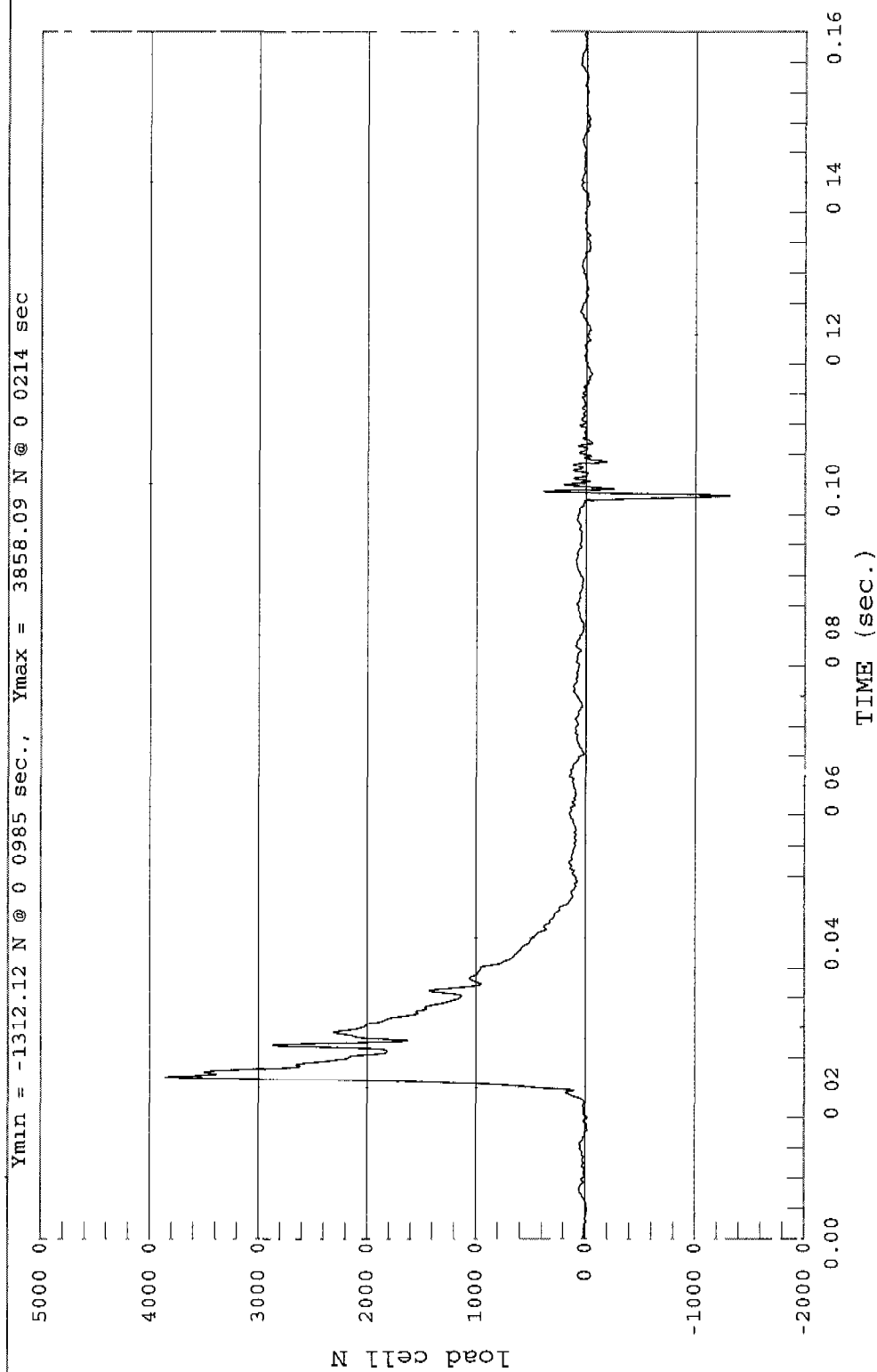




PEAK FORCE

Test Desc.. Dummy Calibration - Dampener Impact
Component. Dummy #049
Test Date. 12-05-00
Speed 20 00 FT/SEC, 6.10 M/SEC

1 load cell, D00558ff f04



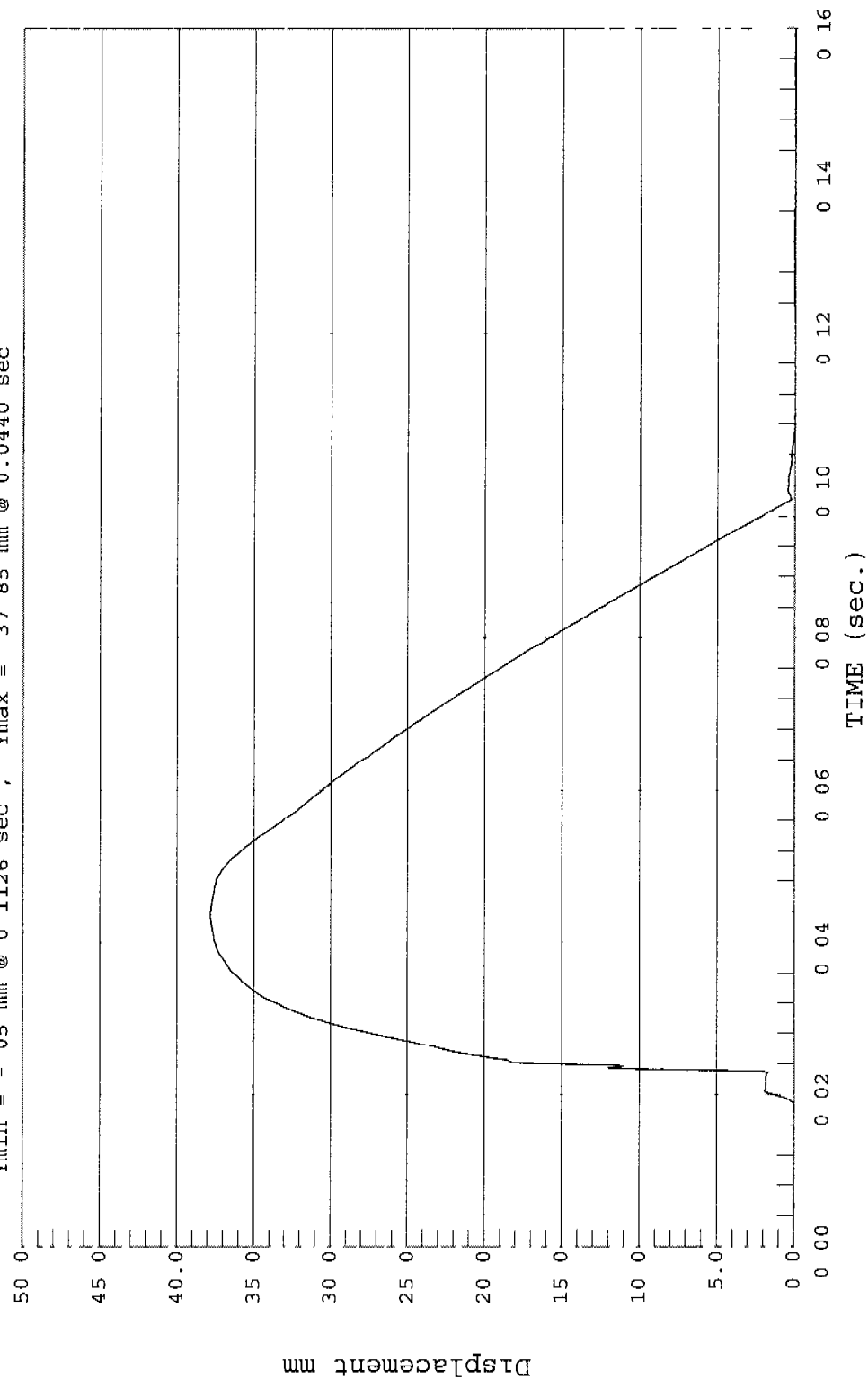


PEAK DISPLACEMENT

Test Desc Dummy Calibration - Dampener Impact
Component Dummy #049
Test Date 12-05-00
Speed 20 00 FT/SEC, 6 10 M/SEC

1 Displacement, D00558DF D05

Ymin = - 05 mm @ 0 1126 sec , Ymax = 37 85 mm @ 0.0440 sec



MGA RESEARCH CORPORATION
THORAX IMPACT TEST
SIDE IMPACT DUMMY (SID)

Date: 12/15/00
Dummy Serial Number: 049
Test Number: D001552

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.1
Relative Humidity (%)	10 – 70	27
Probe Speed (m/s)	4.27 – 4.33	4.27
Upper Rib (g's)	37 – 46	39
Lower Rib (g's)	37 – 46	40
Lower Spine (g's)	15 - 22	19

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

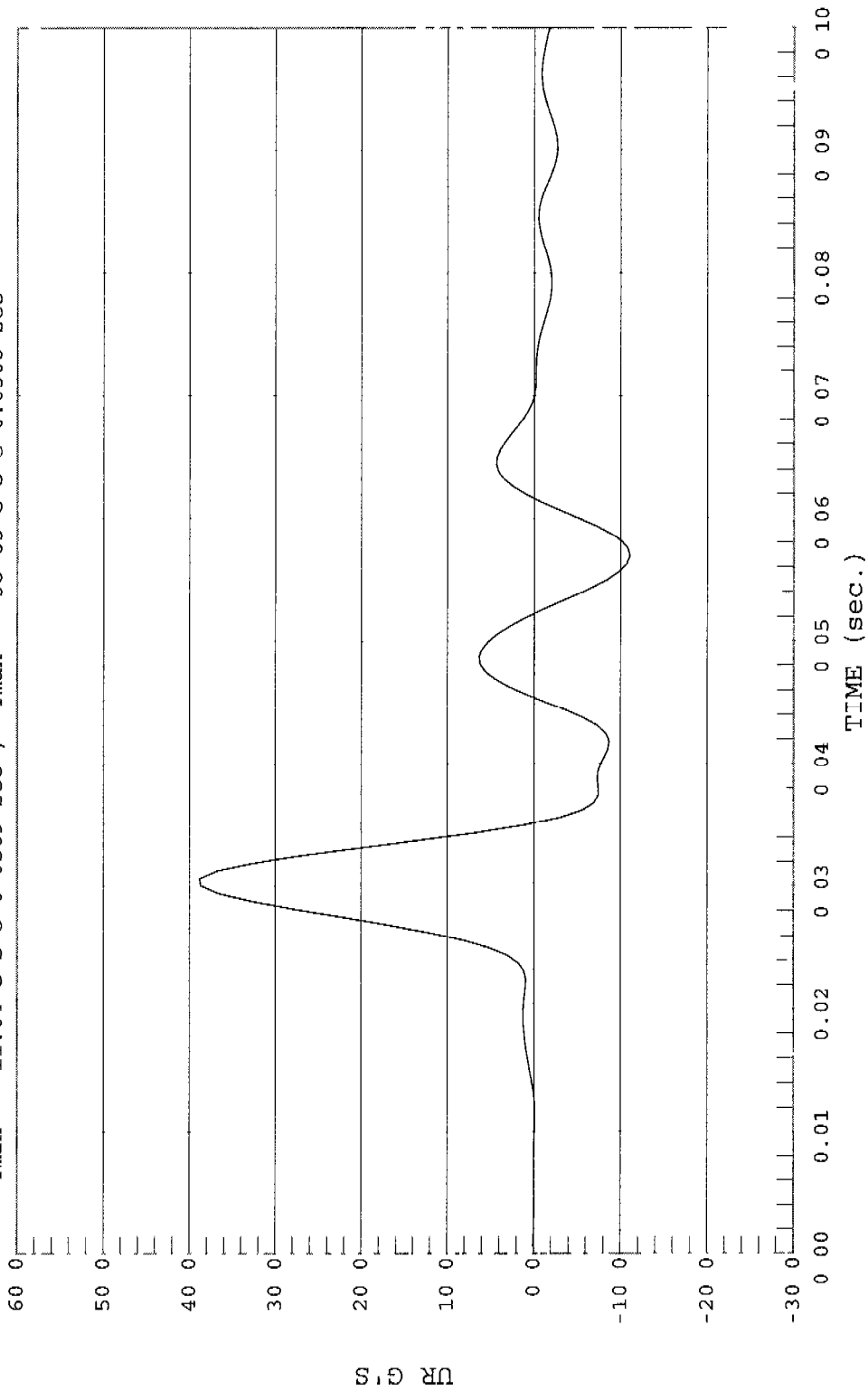


UPPER RIB ACCELERATION

Test Desc.: Dummy Calibration - Thorax Impact Test Date 12-15-00
Component: Dummy #049 Speed: 14.02 FT/SEC, 4 27 M/SEC

— 1 UR, D00552FI R08

Ymin = -11.04 G'S @ 0 0569 sec , Ymax = 38 85 G'S @ 0.0306 sec



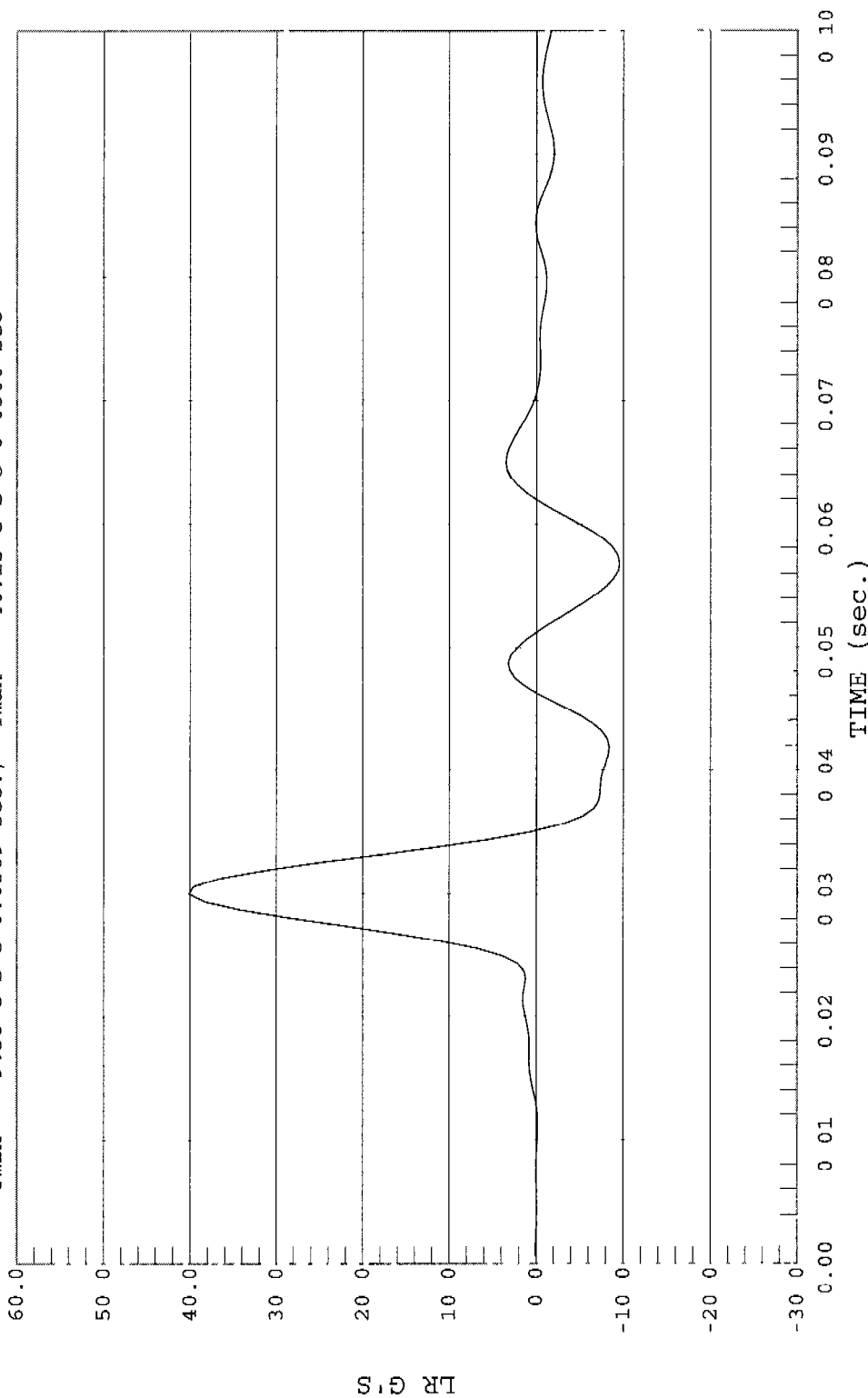


LOWER RIB ACCELERATION

Test Desc - Dummy Calibration - Thorax Impact Test Date 12-15-00
Component- Dummy #049 Speed 14.02 FT/SEC, 4.27 M/SEC

1 LR, D00552FI R09

Ymin = -9.56 G'S @ 0.0569 sec., Ymax = 40.13 G'S @ 0.0300 sec



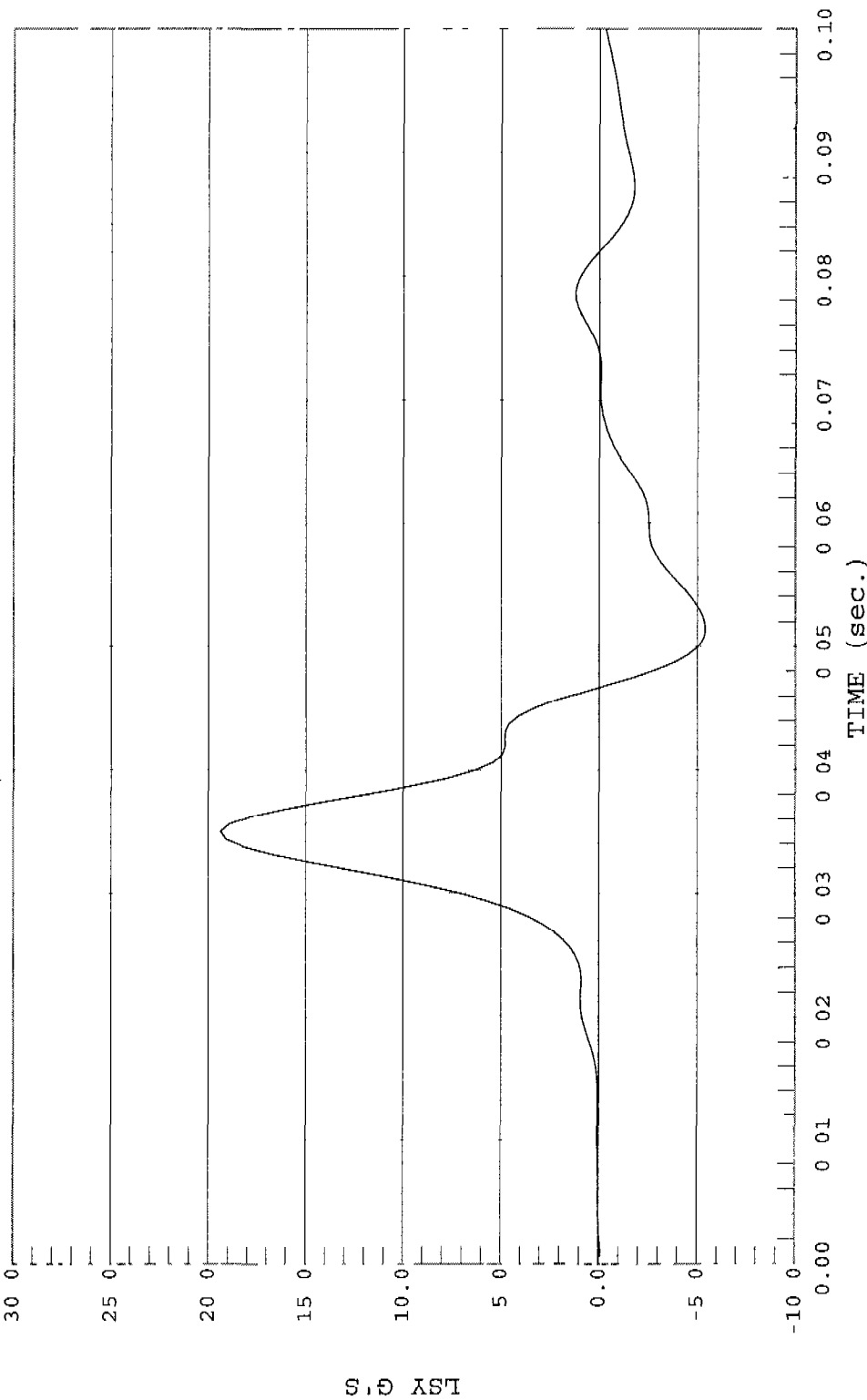


LOWER SPINE ACCELERATION

Test Desc Dummy Calibration - Thorax Impact Test Date 12-15-00
Component Dummy #049 Speed: 14 02 FT/SEC, 4.27 M/SEC

1 LSY, D00552FI R10

Ymin = -5 4 G'S @ 0 0513 sec , Ymax = 19 39 G'S @ 0 0350 sec



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

Date: 12/15/00

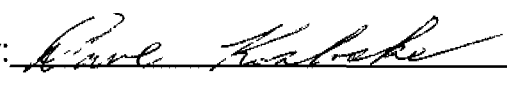
Dummy Serial Number: 049

Test Number: D01553

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.1
Relative Humidity (%)	10 – 70	27
Probe Speed (m/s)	4.27 – 4.33	4.27
Pelvis Acceleration (g's)	40 – 60	48

TEST MEETS SPECIFICATIONS

Technician: 

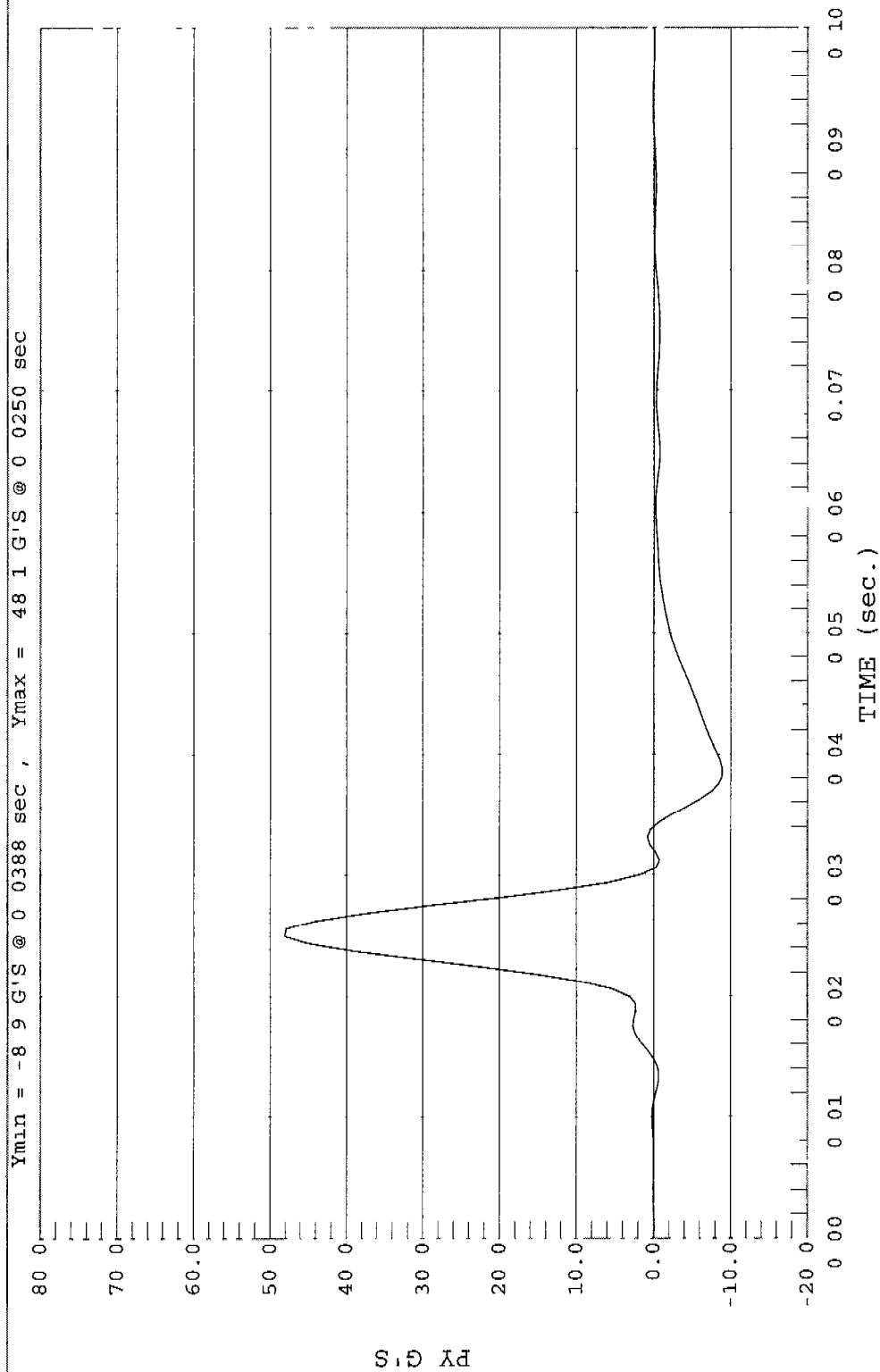
Approved By: 



PELVIS ACCELERATION

Test Desc.. Dummy Calibration - Pelvis Impact Test Date 12-15-00
Component. Dummy #049 Speed 14 00 FT/SEC, 4.27 M/SEC

1 PY, D00553FI R11

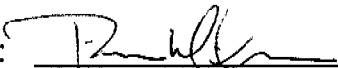


MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST (PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

Date: 12/5/00
Dummy Serial Number: 049
Test Number: D001554

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.4
Relative Humidity (%)	10 – 70	24
Force @ 12.7 mm	104 – 162	140
Force @ 19 mm	163 – 222	191
Force @ 25.4 mm	222 – 280	257
Force @ 33 mm	325 - 391	350

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

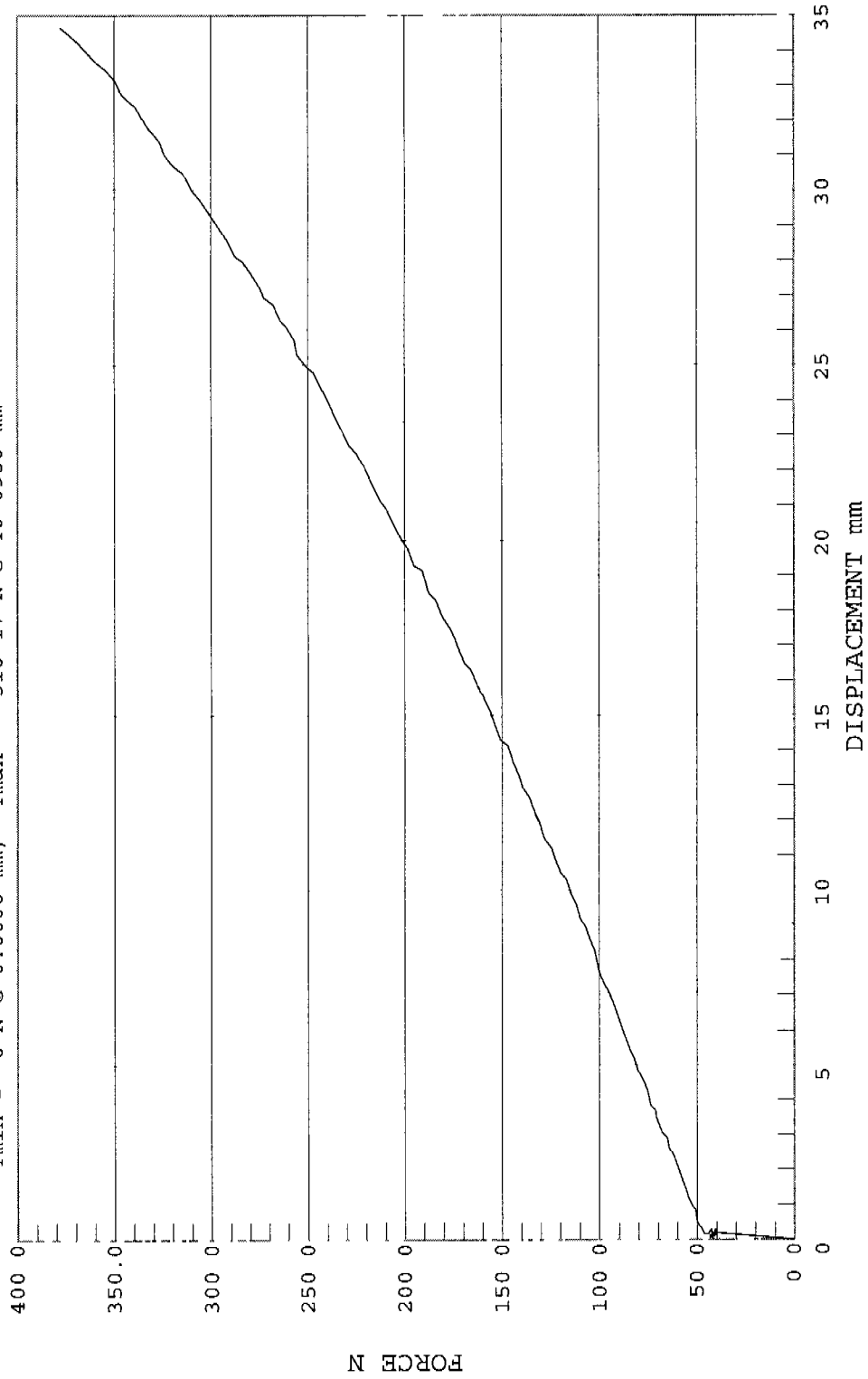
ABDOMEN COMPRESSION

Test Desc DUMMY CALIBRATION - ABDOMEN COMPRESSION Test Date: 12-05-00
 Component: DUMMY # 049 Speed: 0.00 FT/SEC, 0.00 M/SEC



1 FORCE, D00554FC.F16

Ymin = 0 N @ 0.0000 mm, Ymax = 510 17 N @ 40 0930 mm

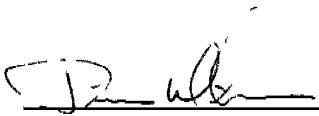


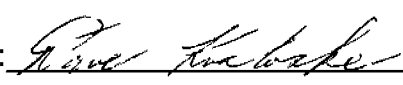
MGA RESEARCH CORPORATION
LUMBAR FLEXION TEST
SIDE IMPACT DUMMY (SID)

Date: 12/6/00
Dummy Serial Number: 049
Test Number: D01555

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	20.4
Relative Humidity (%)	10 – 70	15
Force @ 0°	0 – 26.7	0
Force @ 20°	97.9 – 151.2	104.4
Force @ 30°	151.2 – 204.6	152.6
Force @ 40°	204.6 – 258.0	224.8
Return Angle	12° maximum	2

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

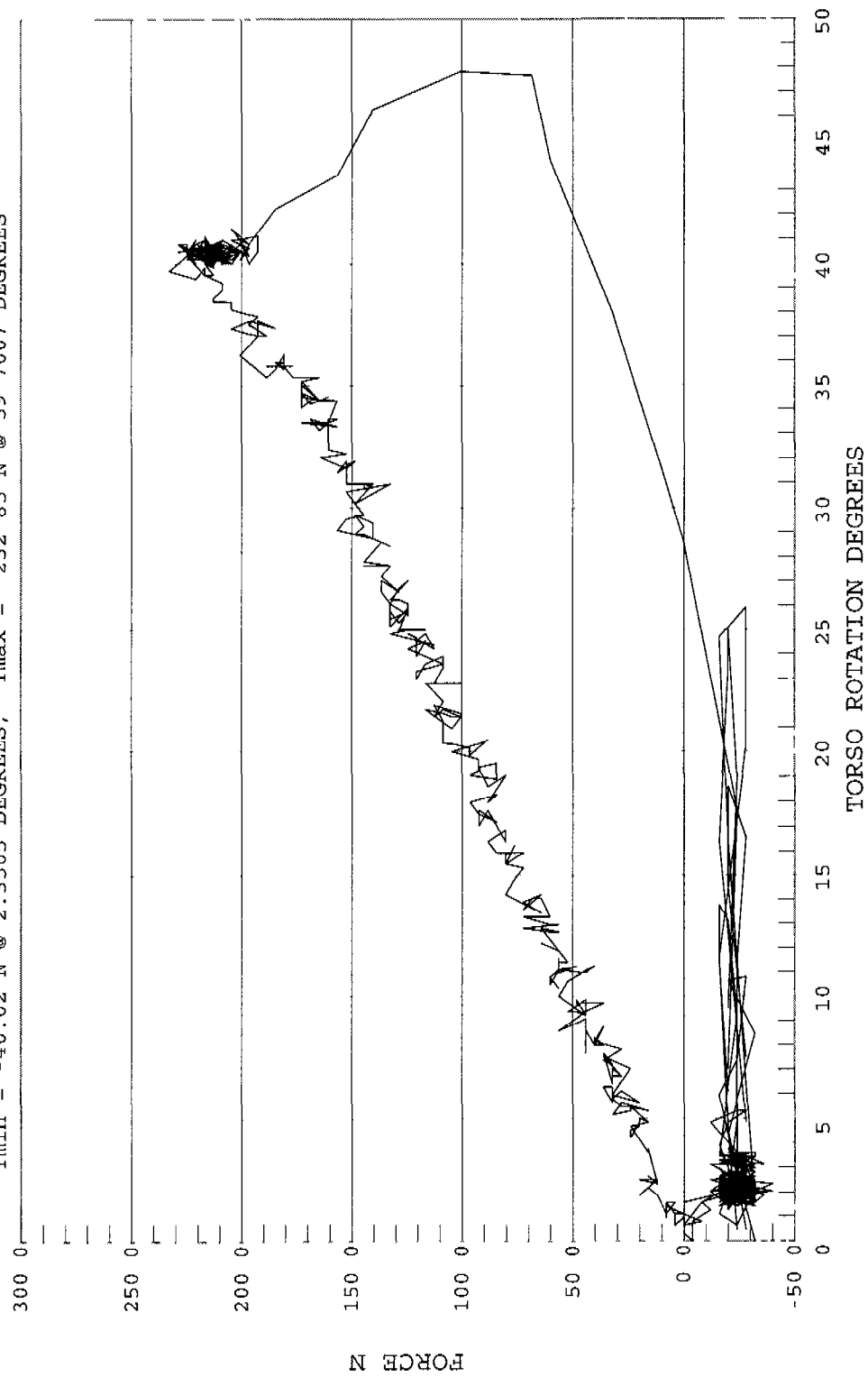


LUMBAR FLEXION

Test Desc DUMMY CALIBRATION - LUMBAR FLEXION
Component: DUMMY # 049
Test Date 12-06-00
Speed: 0 00 FT/SEC, 0 00 M/SEC

1 FORCE, D00555FC F14

Ymin = -40.02 N @ 2.3505 DEGREES, Ymax = 232 85 N @ 39 7007 DEGREES



DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 049

Inspected By: Tim Michnay

Date: 12/15/00

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

Notes (include component/problem/action/reason):

CERTIFICATION DATA

Dummy Serial Number: 048

Calibration Test Results Summary

Dummy Serial Number: 048

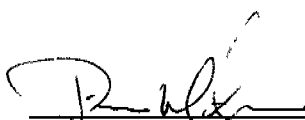
Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Dummy Serial Number: 048
 Date of Verification: 12/21/00
 Test Number: D00158

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH-Seated Height (mm)	889 – 909	903
RH-Rib Height (mm)	501 – 521	515
HP-Hip Pivot Height (mm)	99 ref.	99
RD-Rib From Back Line (mm)	229 - 241	238
KV-Knee Pivot From Back Line (mm)	511 – 526	521
SW-Knee Pivot to Floor (mm)	490 – 505	493
HW – Hip Width (mm)	356 – 391	365

Technician: 

Approved By: 

MGA RESEARCH CORPORATION
THORAX IMPACT TEST
SIDE IMPACT DUMMY (SID)

Date: 12/21/00

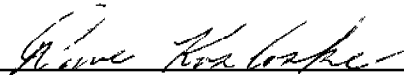
Dummy Serial Number: 048

Test Number: D01582

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.3
Relative Humidity (%)	10 – 70	18
Probe Speed (m/s)	4.27 – 4.33	4.27
Upper Rib (g's)	37 – 46	43
Lower Rib (g's)	37 – 46	39
Lower Spine (g's)	15 - 22	20

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

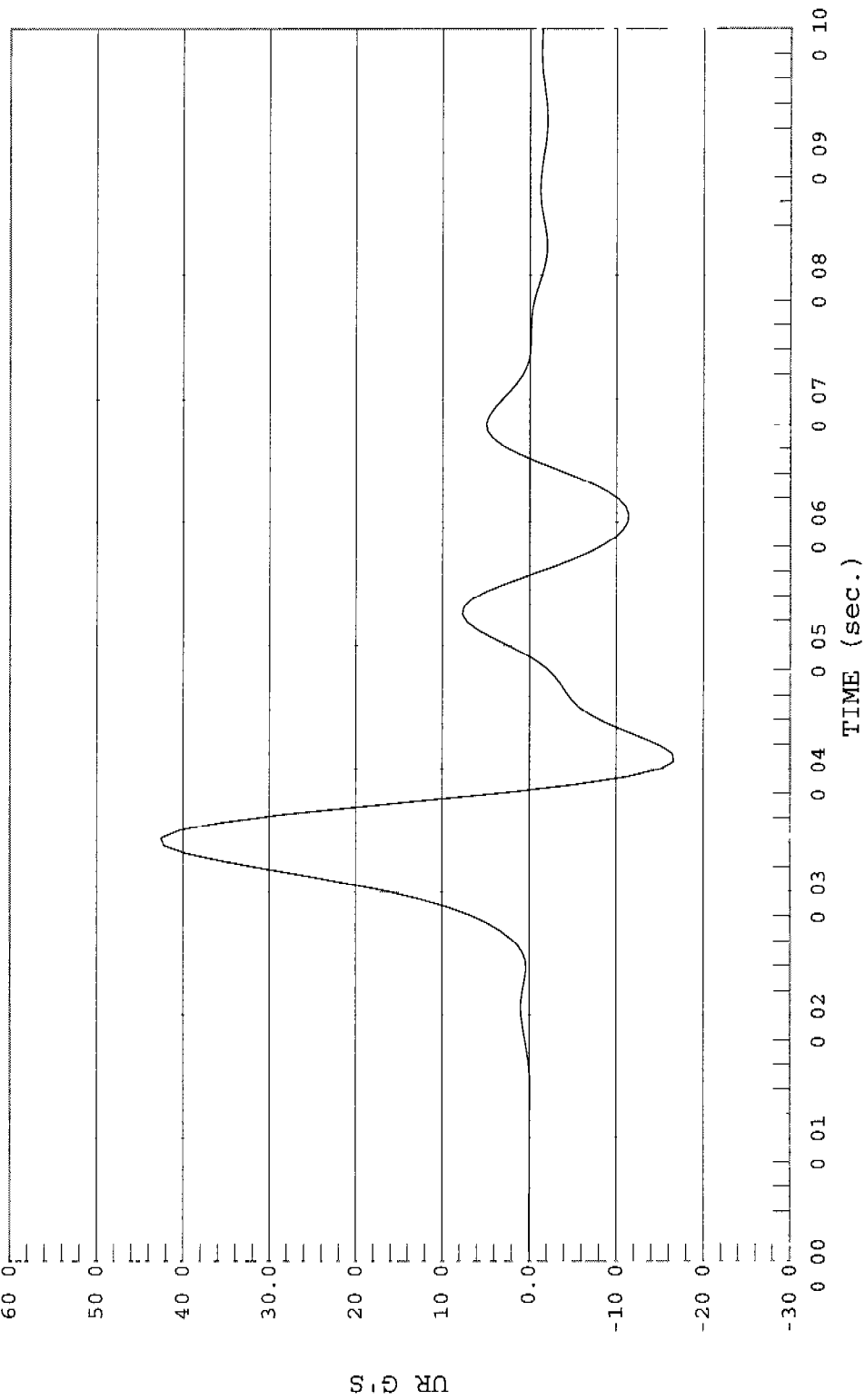


UPPER RIB ACCELERATION

Test Desc. Dummy Calibration - Thorax Impact Test Date 12-21-00
Component. Dummy #048 Speed. 14 01 FT/SEC, 4.27 M/SEC

1 UR, D00582FI.R08

Ymin = -16.59 G'S @ 0.0406 sec , Ymax = 42.57 G'S @ 0.0344 sec.



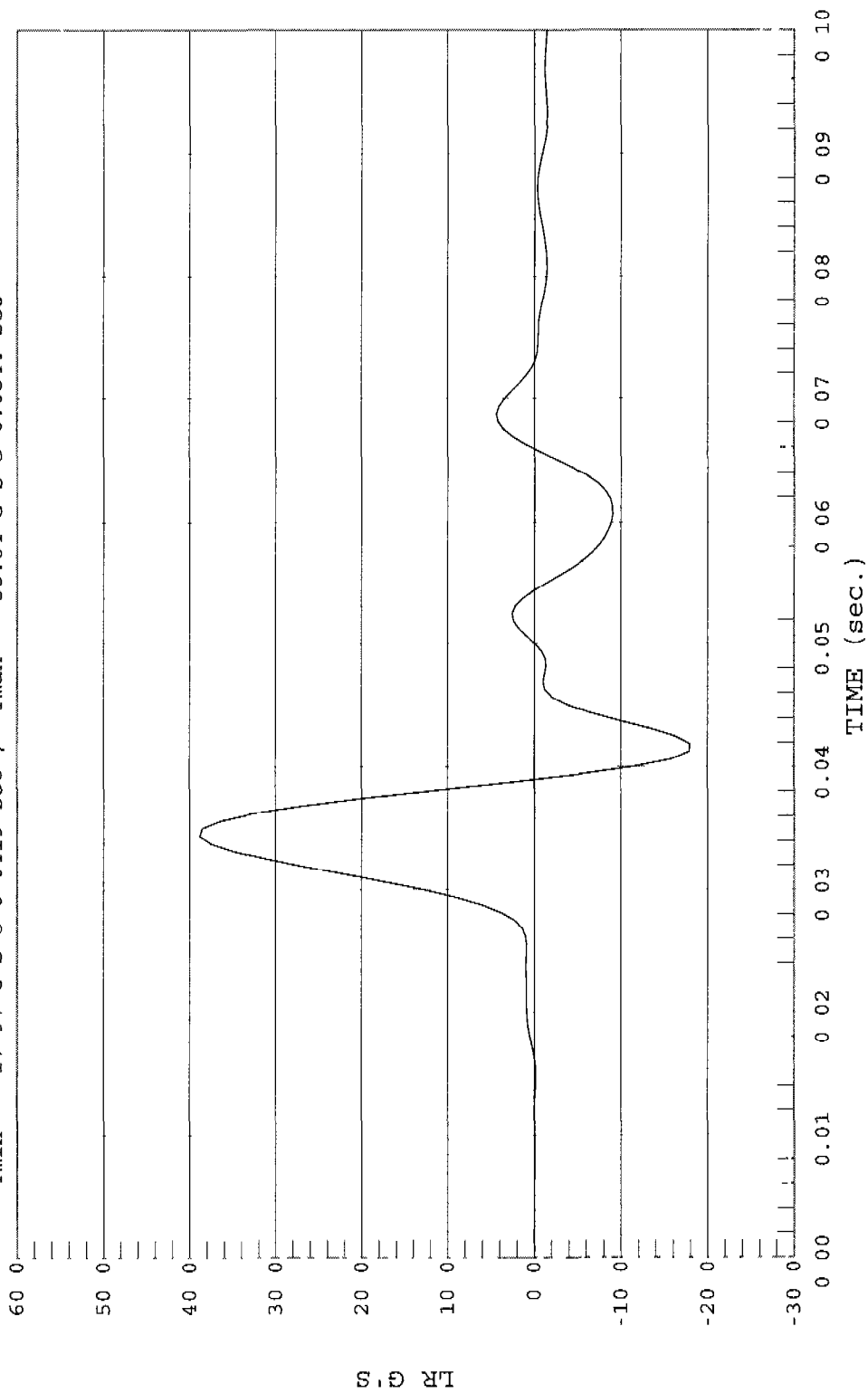


LOWER RIB ACCELERATION

Test Desc. Dummy Calibration - Thorax Impact Test Date 12-21-00
Component. Dummy #048 Speed. 14 01 FT/SEC, 4 27 M/SEC

1 LR, D00582FI R09

Ymin = -17 97 G'S @ 0 0419 sec , Ymax = 38.84 G'S @ 0.0344 sec



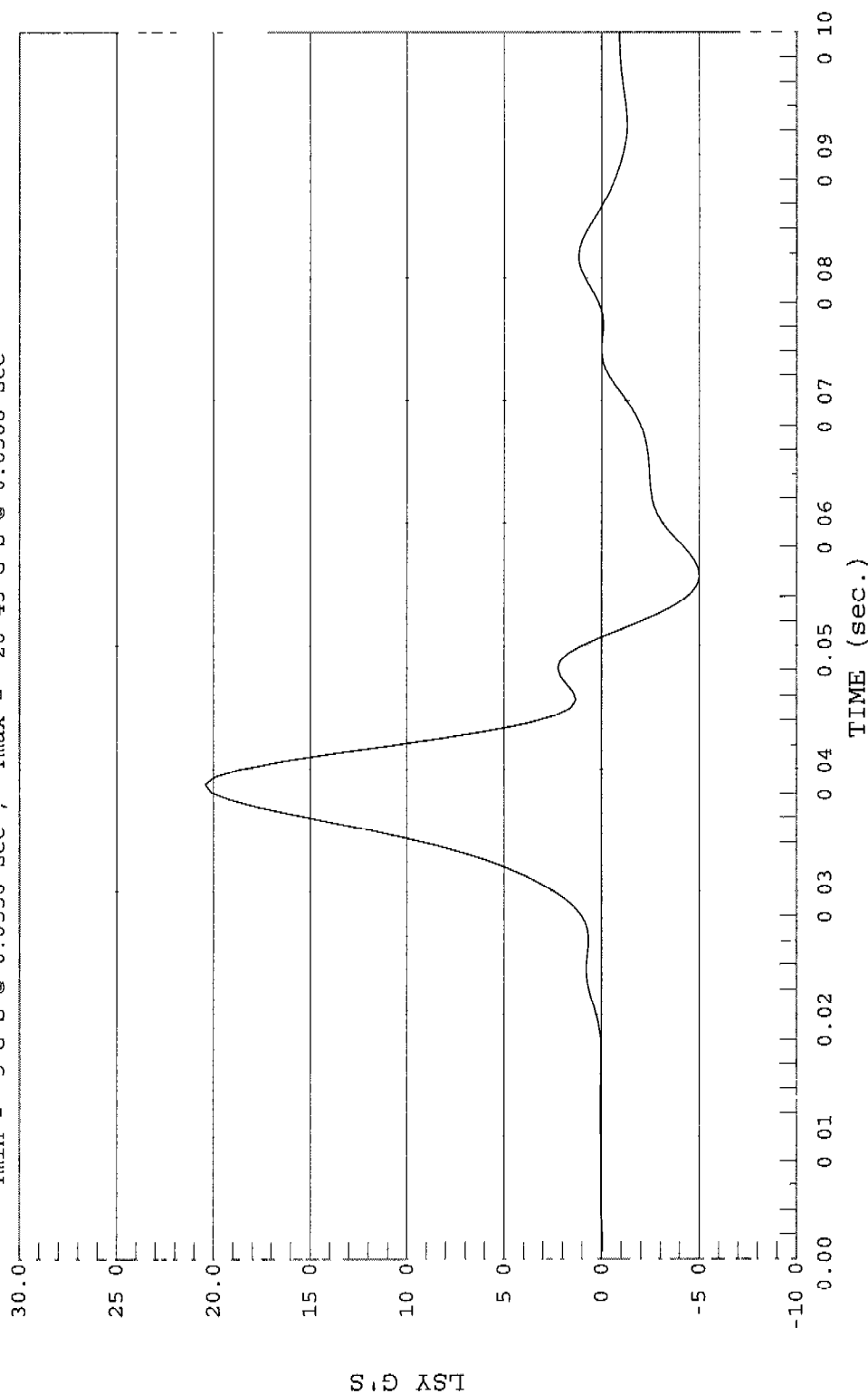


LOWER SPINE ACCELERATION

Test Desc Dummy Calibration - Thorax Impact Test Date 12-21-00
Component. Dummy #048 Speed 14 01 FT/SEC, 4 27 M/SEC

1 LSY, D00582FI.R10

Ymin = -5 G'S @ 0.0556 sec , Ymax = 20 43 G'S @ 0.0388 sec



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

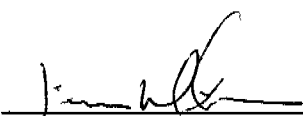
Date: 12/21/00

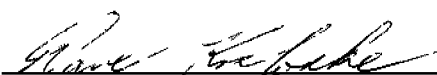
Dummy Serial Number: 048

Test Number: D001583

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.3
Relative Humidity (%)	10 – 70	18
Probe Speed (m/s)	4.27 – 4.33	4.28
Pelvis Acceleration (g's)	40 – 60	49

TEST MEETS SPECIFICATIONS

Technician: 

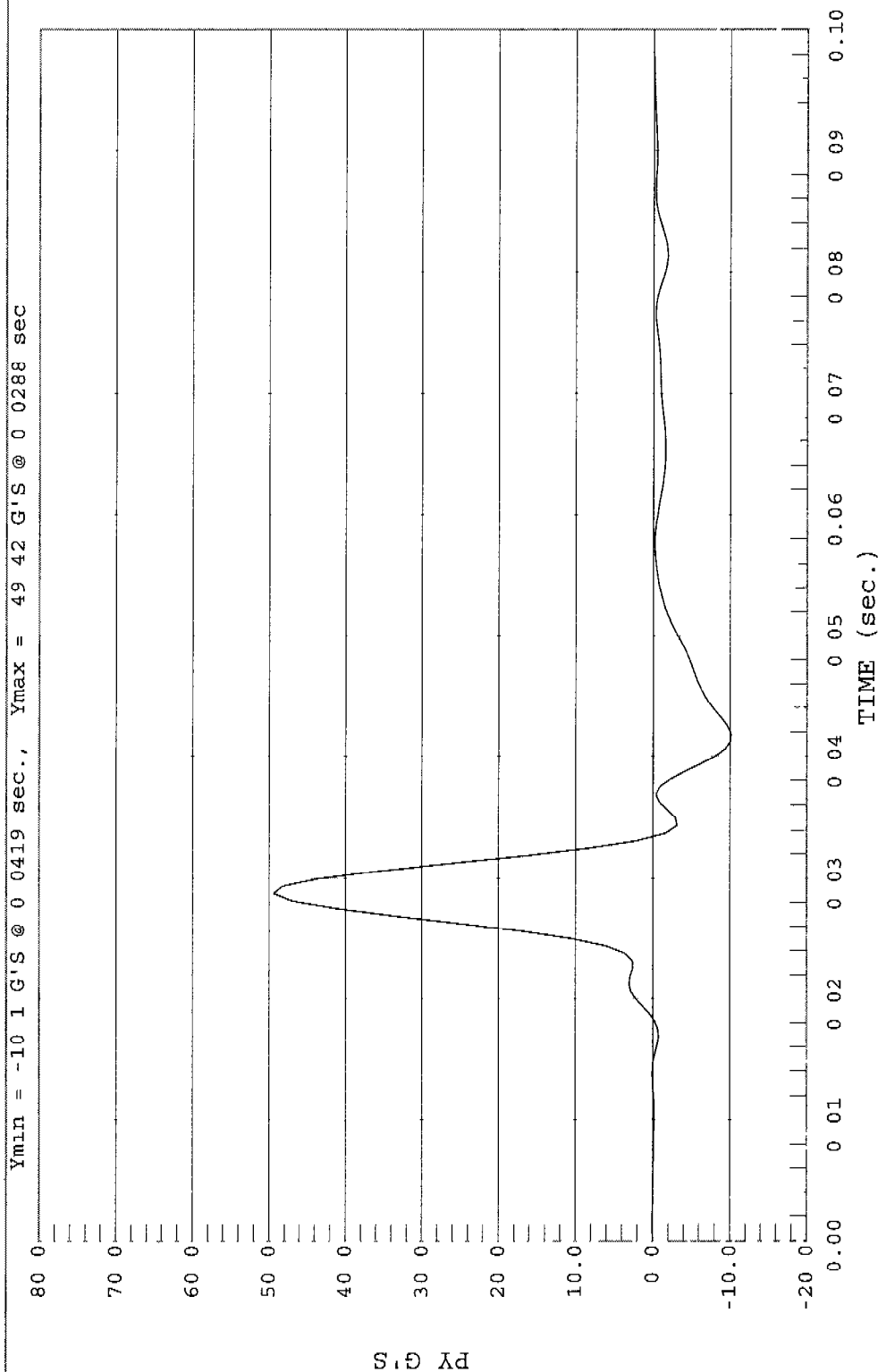
Approved By: 



PELVIS ACCELERATION

Test Desc Dummy Calibration - Pelvis Impact Test Date: 12-21-00
Component Dummy #048 Speed: 14 05 FT/SEC, 4 28 M/SEC

1 PY, D00583FI R11



MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST (PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

Date: 12/21/00

Dummy Serial Number: 048

Test Number: D001584

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.4
Relative Humidity (%)	10 – 70	18
Force @ 12.7 mm	104 – 162	146
Force @ 19 mm	163 – 222	204
Force @ 25.4 mm	222 – 280	270
Force @ 33 mm	325 - 391	368

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

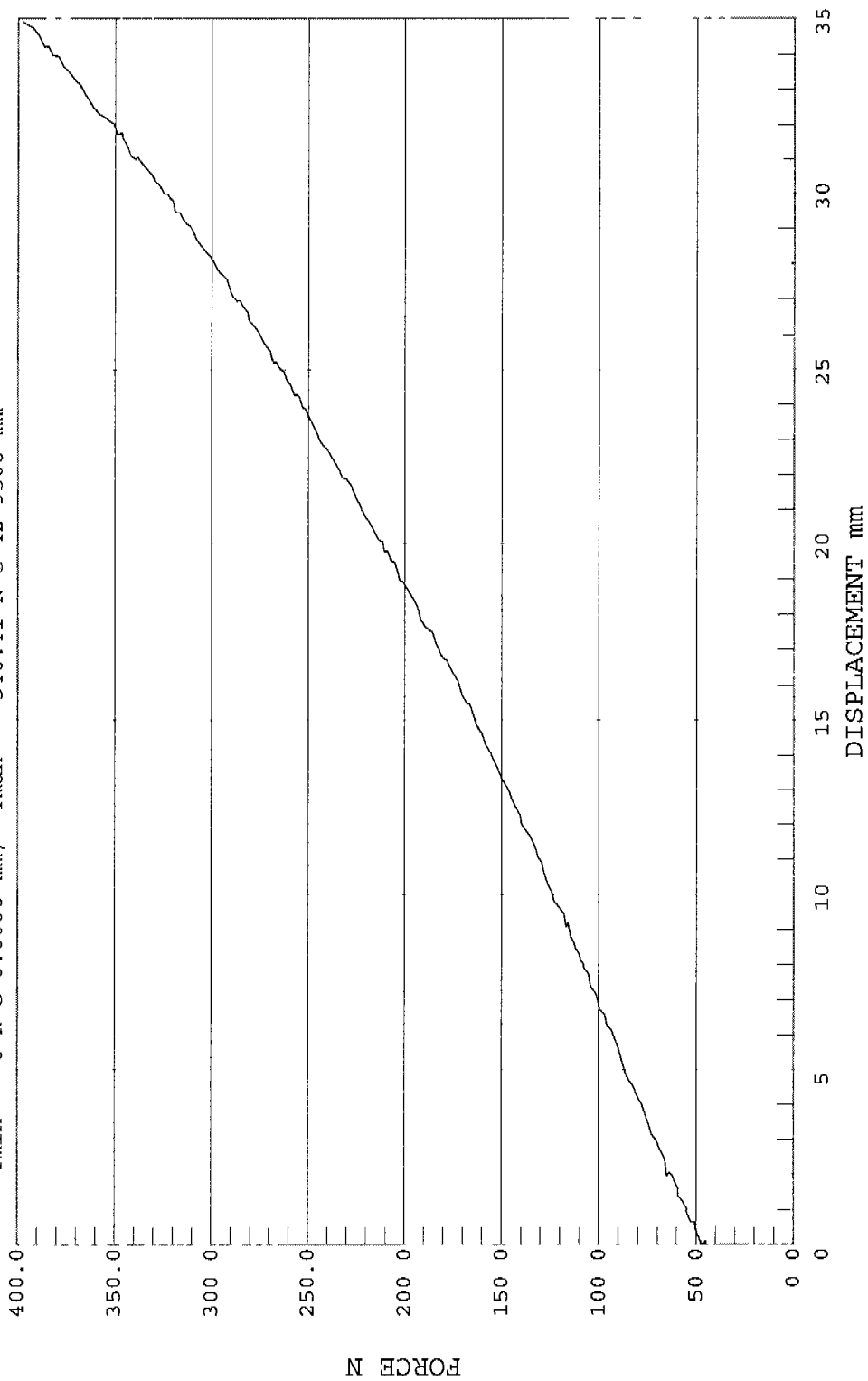


ABDOMEN COMPRESSION

Test Desc. DUMMY CALIBRATION - ABDOMEN COMPRESSION Test Date 12-21-00
Component DUMMY # 048 Speed. 0 00 FT/SEC, 0.00 M/SEC

1 FORCE, D00584FC.F16

Ymin = 0 N @ 0.0000 mm, Ymax = 540.41 N @ 42 9506 mm

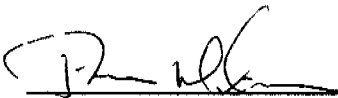


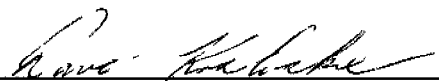
MGA RESEARCH CORPORATION
LUMBAR FLEXION TEST
SIDE IMPACT DUMMY (SID)

Date: 12/21/00
Dummy Serial Number: 048
Test Number: D001585

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.4
Relative Humidity (%)	10 – 70	18
Force @ 0°	0 – 26.7	0
Force @ 20°	97.9 – 151.2	110.8
Force @ 30°	151.2 – 204.6	163.0
Force @ 40°	204.6 – 258.0	235.2
Return Angle	12° maximum	4

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

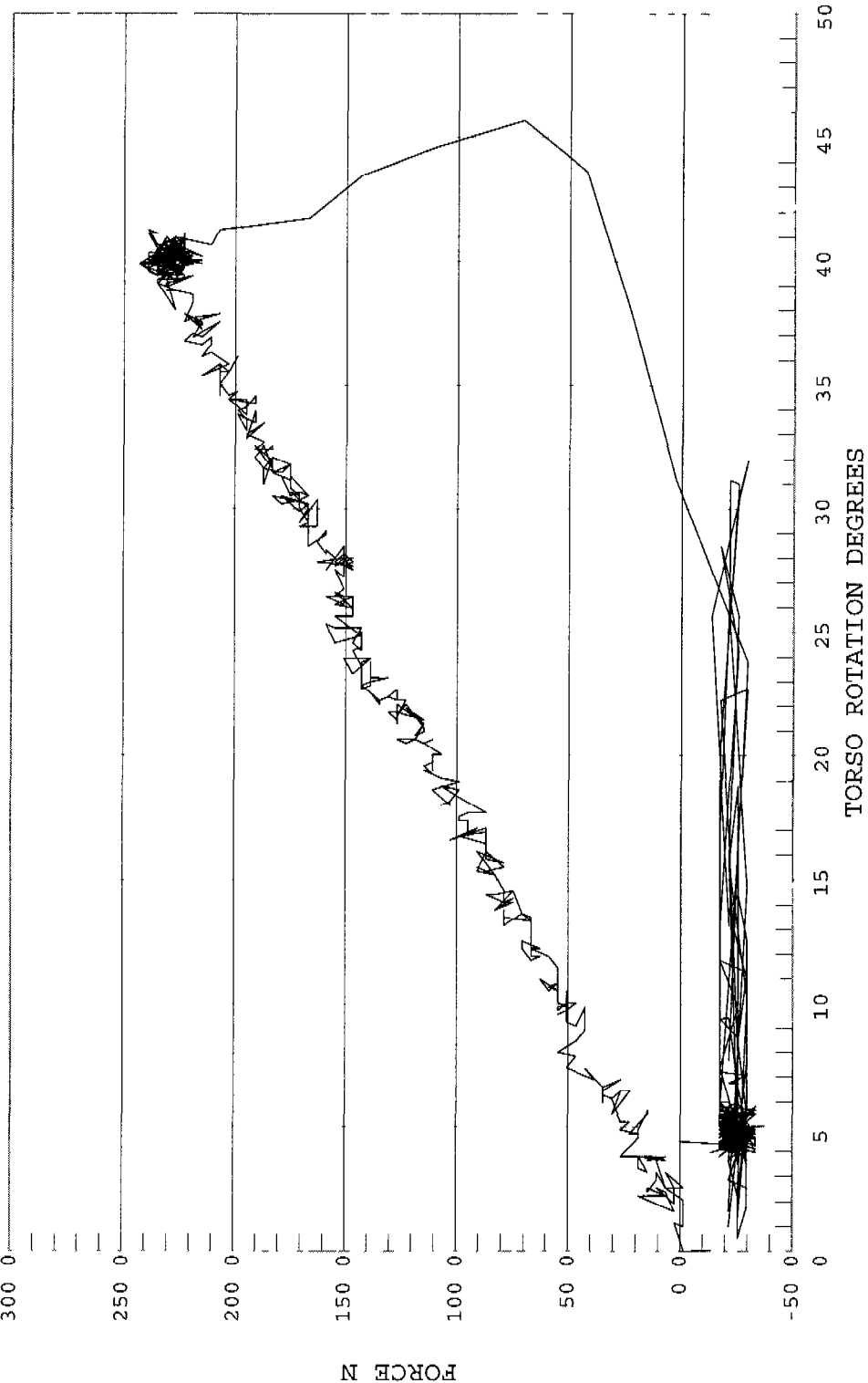


LUMBAR FLEXION

Test Desc.: DUMMY CALIBRATION - LUMBAR FLEXION
Component: DUMMY # 048
Test Date 12-21-00
Speed. 0 00 FT/SEC, 0.00 M/SEC

1 FORCE, D00585FC.F14

Ymin = -37.57 N @ 5 0443 DEGREES, Ymax = 243.2 N @ 39 8940 DEGREES



DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 048

Inspected By: Tim Michnay

Date: 12/22/00

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

Notes (include component/problem/action/reason):

CERTIFICATION DATA

Dummy Serial Number: 049

Calibration Test Results Summary

Dummy Serial Number: 049

Post-Test Calibration

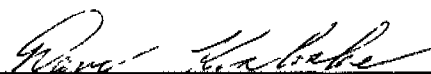
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Dummy Serial Number: 049
 Date of Verification: 12/21/00
 Test Number: D00159

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH-Seated Height (mm)	889 – 909	90
RH-Rib Height (mm)	501 – 521	517
HP-Hip Pivot Height (mm)	99 ref.	99
RD-Rib From Back Line (mm)	229 - 241	234
KV-Knee Pivot From Back Line (mm)	511 – 526	522
SW-Knee Pivot to Floor (mm)	490 – 505	492
HW – Hip Width (mm)	356 – 391	369

Technician: 

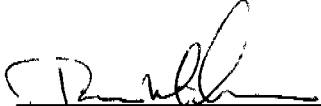
Approved By: 

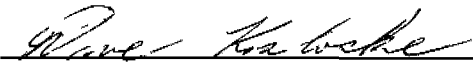
MGA RESEARCH CORPORATION
THORAX IMPACT TEST
SIDE IMPACT DUMMY (SID)

Date: 12/21/00
Dummy Serial Number: 049
Test Number: D001592

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.2
Relative Humidity (%)	10 – 70	18
Probe Speed (m/s)	4.27 – 4.33	4.31
Upper Rib (g's)	37 – 46	41
Lower Rib (g's)	37 – 46	41
Lower Spine (g's)	15 - 22	21

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

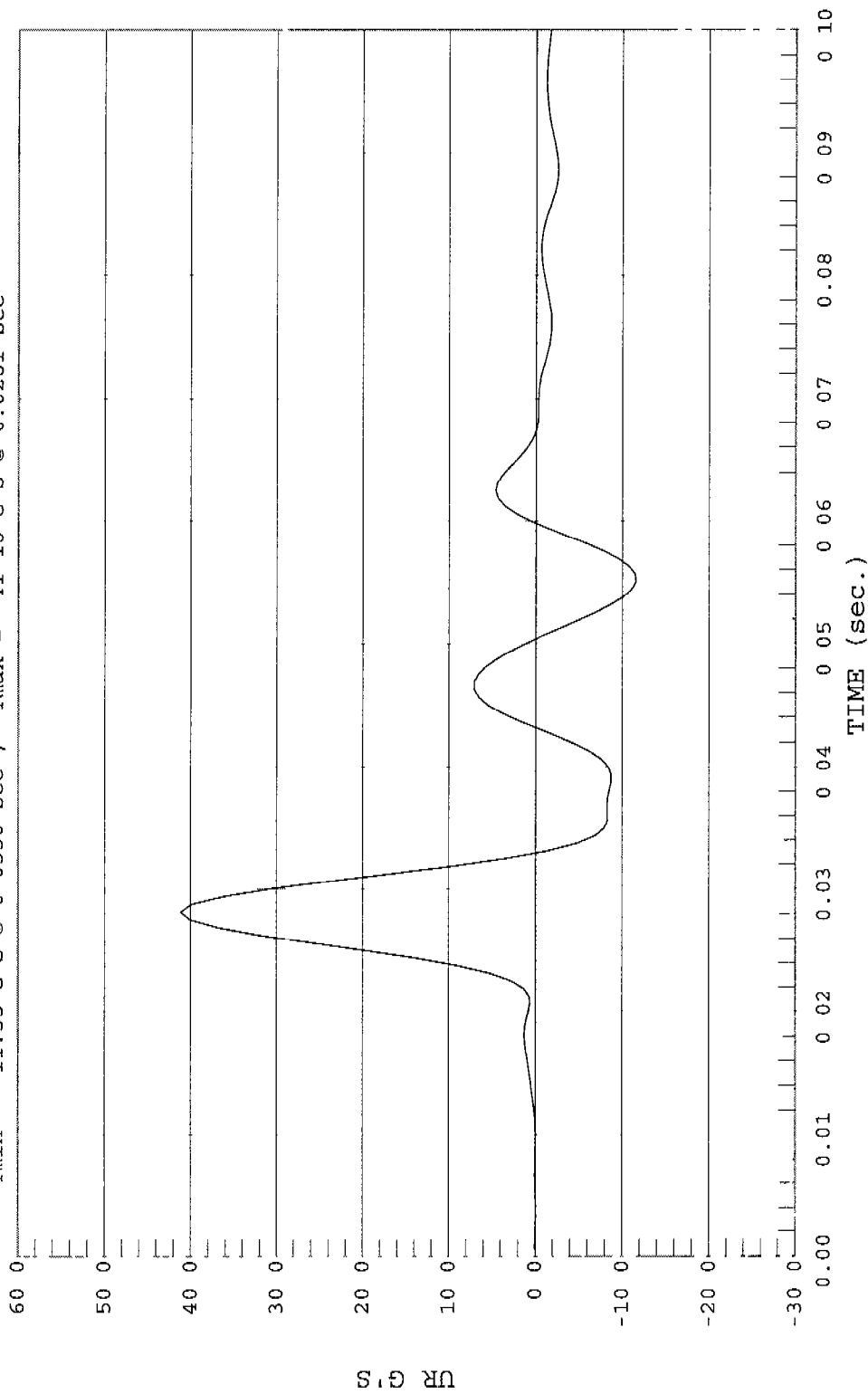


UPPER RIB ACCELERATION

Test Desc. Dummy Calibration - Thorax Impact Test Date 12-21-00
Component: Dummy #049 Speed: 14 15 FT/SEC, 4 31 M/SEC

1 UR, D00592FI.R08

Ymin = -11.55 G'S @ 0 0550 sec , Ymax = 41 18 G'S @ 0.0281 sec



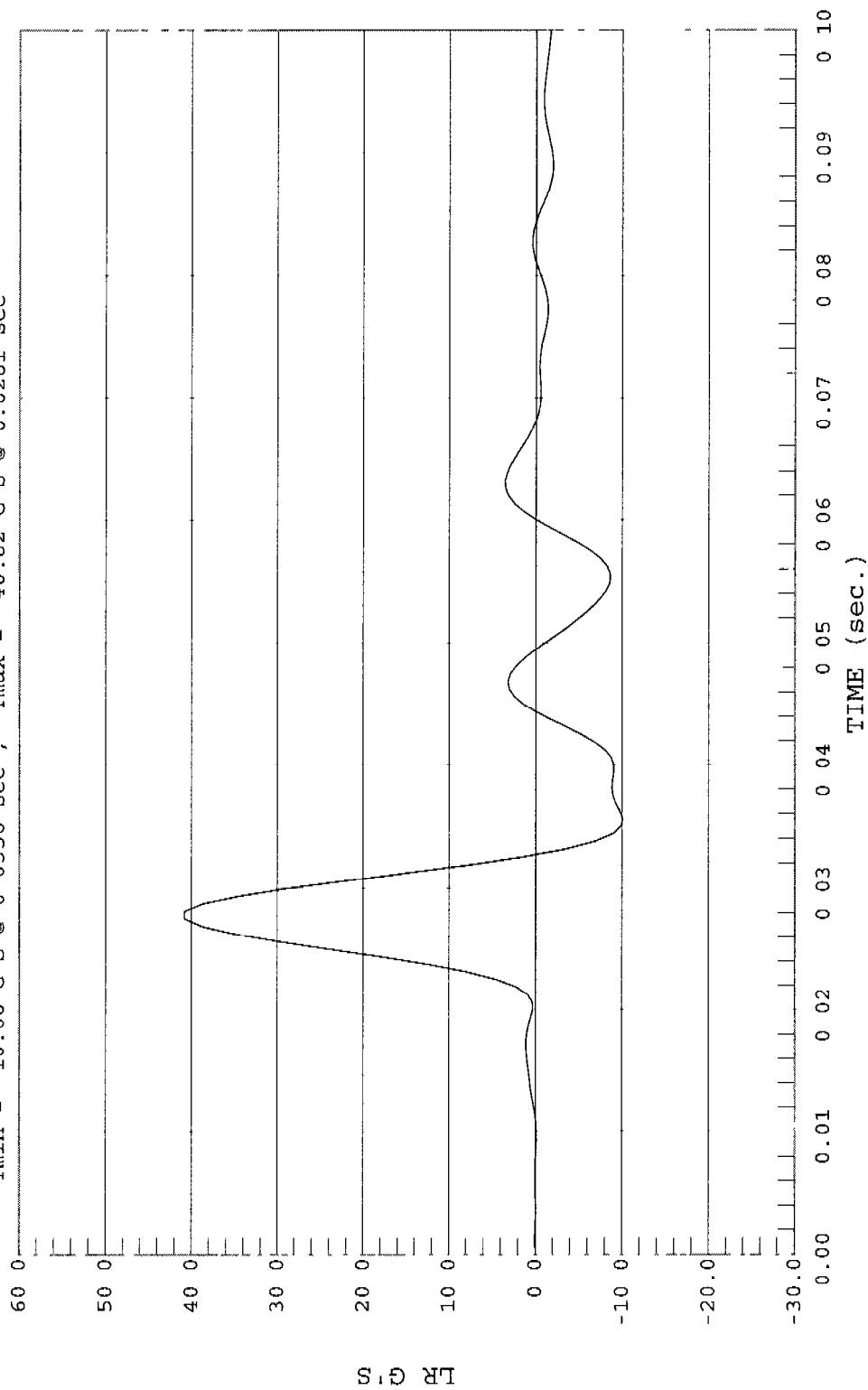


LOWER RIB ACCELERATION

Test Desc. Dummy Calibration - Thorax Impact Test Date. 12-21-00
Component. Dummy #049 Speed. 14 15 FT/SEC, 4.31 M/SEC

1 LR, D00592FI R09

Ymin = -10.06 G'S @ 0.0356 sec, Ymax = 40.82 G'S @ 0.0281 sec



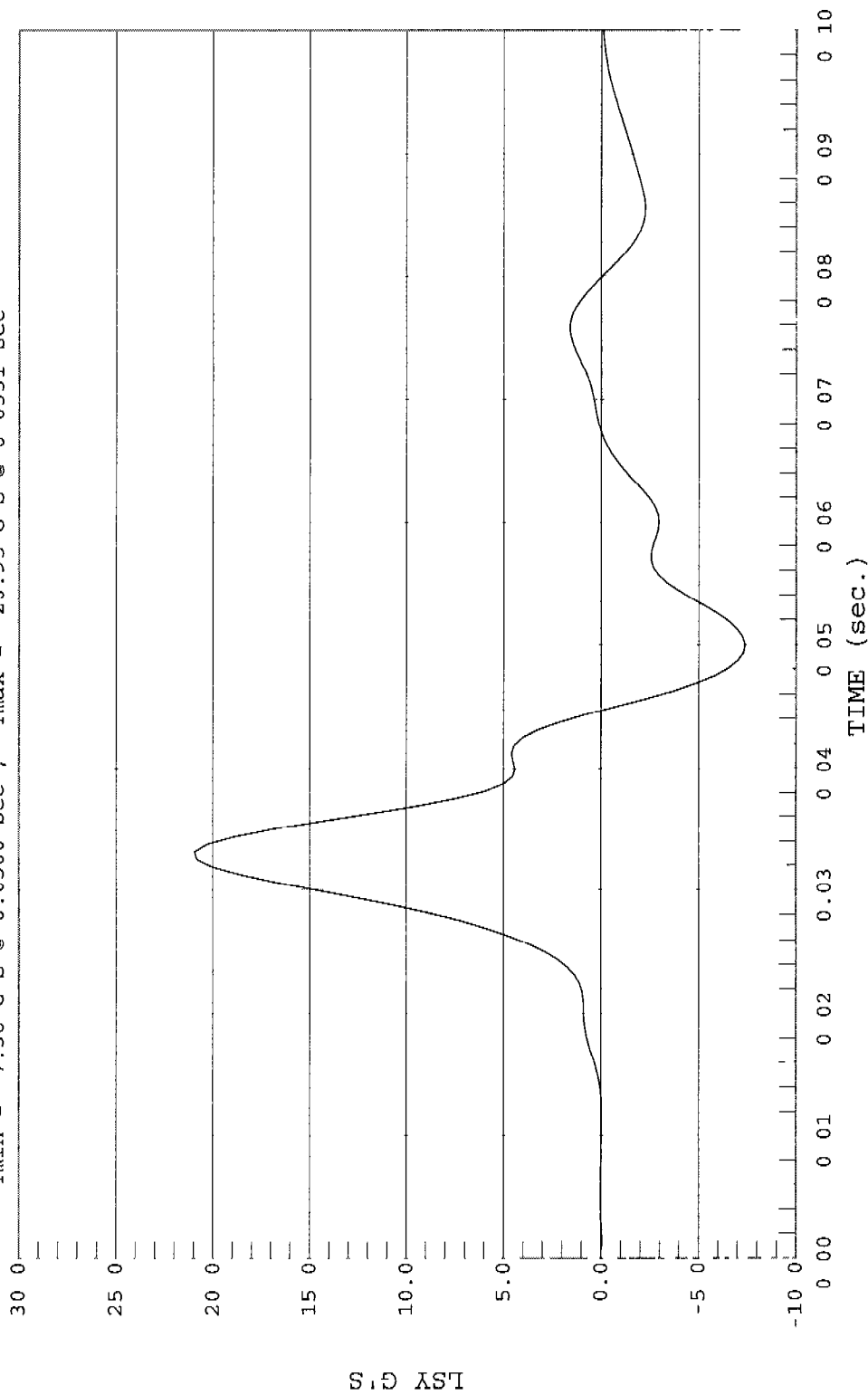


LOWER SPINE ACCELERATION

Test Desc . Dummy Calibration - Thorax Impact Test Date. 12-21-00
Component: Dummy #049 Speed 14 15 FT/SEC, 4 31 M/SEC

1 LSY, D00592FI.R10

Ymin = -7.36 G'S @ 0.0500 sec , Ymax = 20.95 G'S @ 0 0331 sec



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

Date: 12/21/00

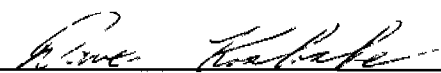
Dummy Serial Number: 049

Test Number: D001593

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.2
Relative Humidity (%)	10 – 70	18
Probe Speed (m/s)	4.27 – 4.33	4.31
Pelvis Acceleration (g's)	40 – 60	47

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

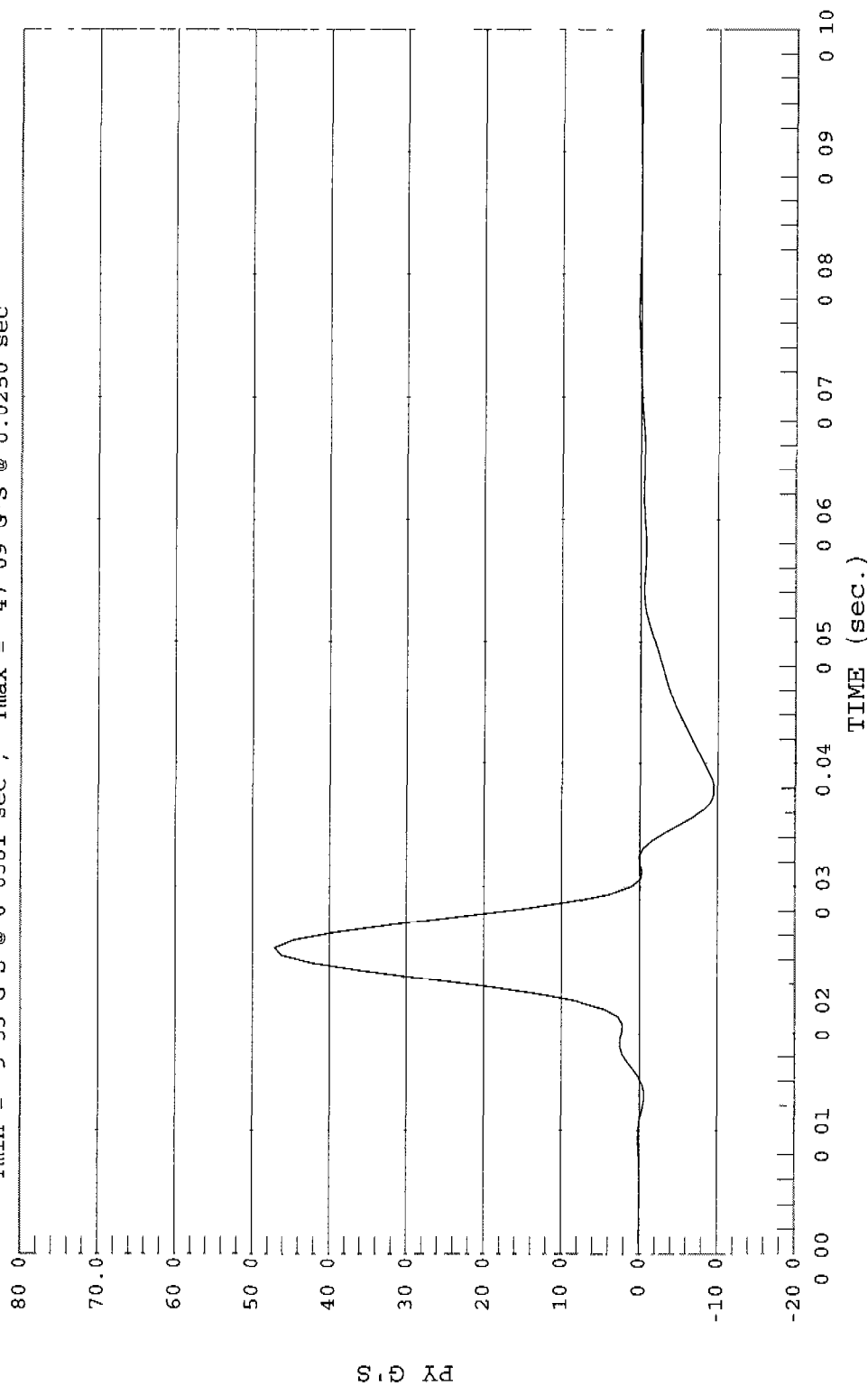


PELVIS ACCELERATION

Test Desc . Dummy Calibration - Pelvis Impact Test Date 12-21-00
Component. Dummy #049 Speed 14 15 FT/SEC, 4 31 M/SEC

1 PY, D00593FI R11

Ymin = -9 53 G'S @ 0 0381 sec , Ymax = 47 09 G'S @ 0.0250 sec



MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST (PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

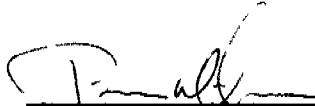
Date: 12/21/00

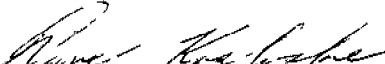
Dummy Serial Number: 049

Test Number: D01594

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.4
Relative Humidity (%)	10 – 70	18
Force @ 12.7 mm	104 – 162	142
Force @ 19 mm	163 – 222	195
Force @ 25.4 mm	222 – 280	255
Force @ 33 mm	325 - 391	336

TEST MEETS SPECIFICATIONS

Technician: 

Approved By: 

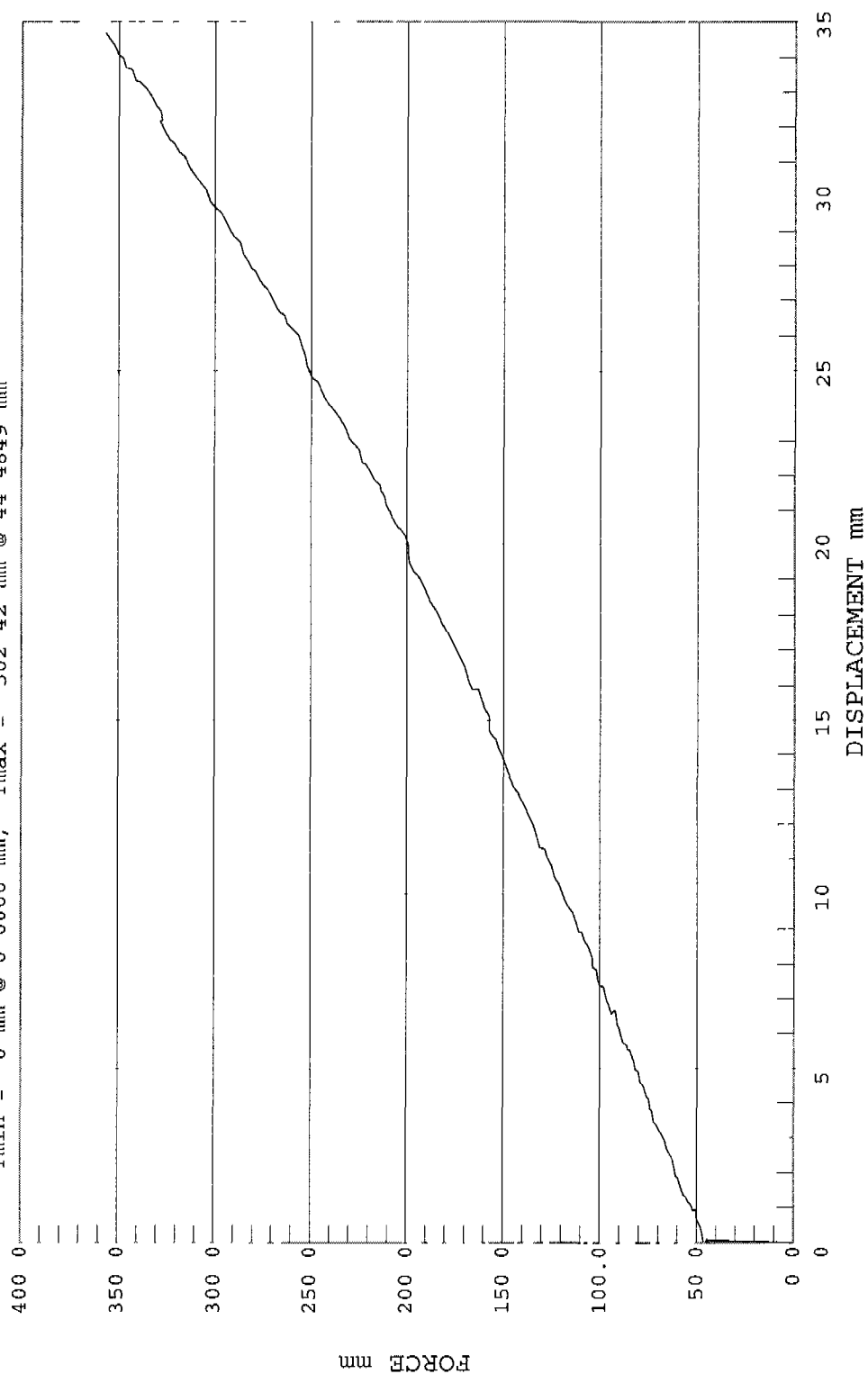


ABDOMEN COMPRESSION

Test Desc DUMMY CALIBRATION - ABDOMEN COMPRESSION Test Date 12-21-00
Component DUMMY # 049 Speed. 0.00 FT/SEC, 0.00 M/SEC

1 FORCE, D00594FC F16

Ymin = 0 mm @ 0 0000 mm, Ymax = 502 42 mm @ 44 4849 mm



MGA RESEARCH CORPORATION

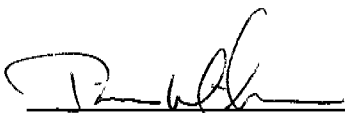
LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

Date: 12/21/00Dummy Serial Number: 049Test Number: D001595

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	18
Force @ 0°	0 – 26.7	0
Force @ 20°	97.9 – 151.2	98.5
Force @ 30°	151.2 – 204.6	166.7
Force @ 40°	204.6 – 258.0	234.6
Return Angle	12° maximum	6

TEST MEETS SPECIFICATIONS

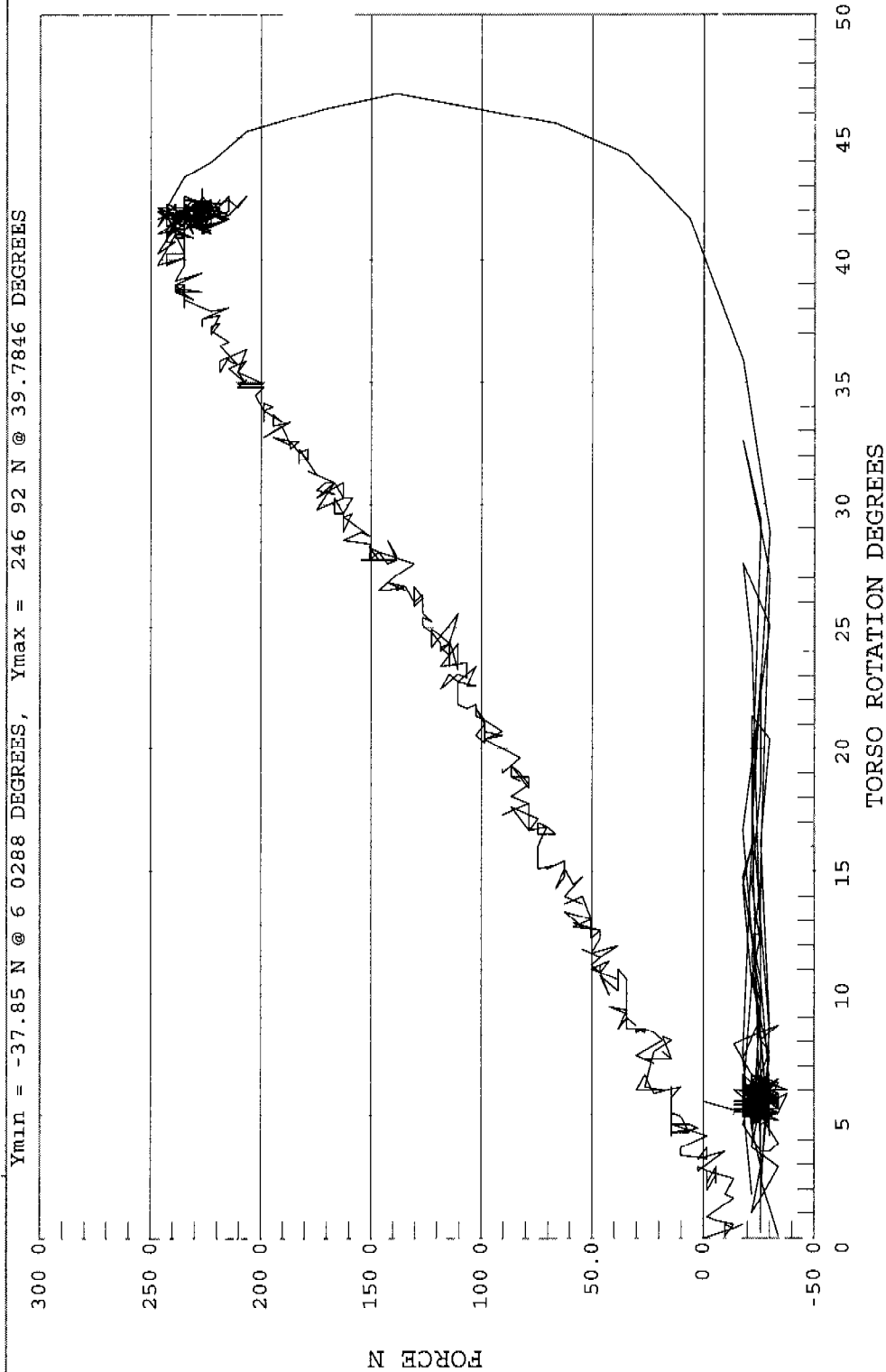
Technician: Approved By: 



LUMBAR FLEXION

Test Desc - DUMMY CALIBRATION - LUMBAR FLEXION
Component DUMMY # 049
Test Date: 12-21-00
Speed: 0 00 FT/SEC, 0 00 M/SEC

1 FORCE, D00595FC.F14



DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 049

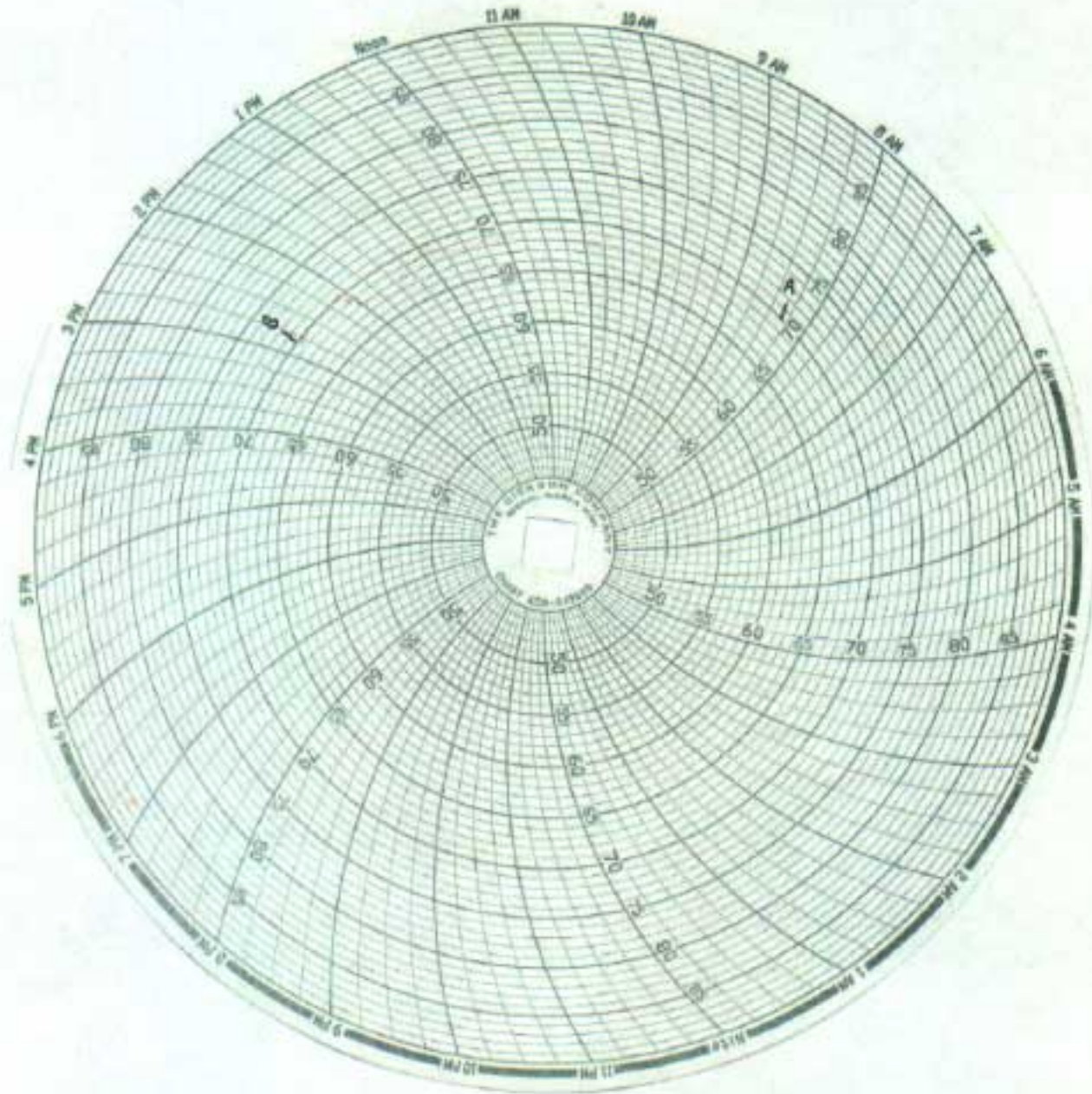
Inspected By: Tim Michnay

Date: 12/21/00

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

Notes (include component/problem/action/reason):

VEHICLE AND DUMMY TEMPERATURE



A = Dummies installed in vehicle at 8:15 a.m.

B = Test conducted at 2:24 p.m.

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR DRIVER DUMMY NO 049		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AGTB5	Endevco	9/19/00
Lower Rib Y	ANBP7	Endevco	10/2/00
Lower Spine Y	AHT13	Endevco	12/12/00
Pelvis Y	AKAA6	Endevco	10/2/00
Upper Rib Redundant Y	AGTM2	Endevco	9/19/00
Lower Rib Redundant Y	AP1C6	Endevco	10/2/00
Lower Spine Redundant Y	ADAB3	Endevco	12/12/00
Pelvis Redundant Y	AP2C4	Endevco	10/2/00
Head Center of Gravity X	J22055	Endevco	10/3/00
Head Center of Gravity Y	J22107	Endevco	10/3/00
Head Center of Gravity Z	J20965	Endevco	10/3/00

	INSTRUMENTS FOR PASSENGER DUMMY NO 048		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AN8L6	Endevco	9/5/00
Lower Rib Y	AC913	Endevco	12/14/00
Lower Spine Y	J11784	Endevco	12/12/00
Pelvis Y	J11047	Endevco	12/12/00
Upper Rib Redundant Y	APY13	Endevco	9/5/00
Lower Rib Redundant Y	AGTT3	Endevco	11/17/00
Lower Spine Redundant Y	J11046	Endevco	12/12/00
Pelvis Redundant Y	AMP95	Endevco	10/3/00
Head Center of Gravity X	J13930	Endevco	12/12/00
Head Center of Gravity Y	J13631	Endevco	12/12/00
Head Center of Gravity Z	J13990	Endevco	12/12/00

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	I25-F09	Entran	12/13/00
Moving Barrier CG Y	I25-F07	Entran	12/13/00
Moving Barrier CG Z	I25-F08	Entran	12/13/00
Moving Barrier Rear Axle X	K19-A15	Entran	7/11/00
Moving Barrier Rear Axle Y	G13-F10	Entran	8/14/00
Left Mid A-Post Y	K11-G07	Entran	8/8/00
Left Lower A-Post Y	K16-X08	Entran	7/11/00
Left Mid B-Post Y	E10-F18	Entran	7/11/00
Left Lower B-Post Y	J13-F22	Entran	11/17/00
Rear Floorpan Above Axle X	E23-R11	Entran	9/12/00
Rear Floorpan Above Axle Y	G13-F01	Entran	8/14/00
Rear Floorpan Above Axle Z	G13-F09	Entran	8/14/00
Driver Seat Track Y	F12-G09	Entran	8/18/00
Right Side Sill at Front Seat X	I14-D18	Entran	11/17/00
Right Side Sill at Front Seat Y	I25-J08	Entran	11/17/00
Right Side Sill at Front Seat Z	C25-A17	Entran	11/17/00
Right Side Sill at Rear Seat X	G13-F07	Entran	8/15/00
Right Side Sill at Rear Seat Y	G01-J14	Entran	7/11/00
Right Side Sill at Rear Seat Z	I25-J10	Entran	9/14/00
Left Side Sill at Front Seat Y	F20-G06	Entran	7/11/00
Left Side Sill at Rear Seat Y	F07-A20	Entran	9/14/00
Right Rear Occupant Compartment Y	D05-R16	Entran	8/10/00
Vehicle CG X	K11-J08	Entran	11/17/00
Vehicle CG Y	G13-F06	Entran	8/14/00
Vehicle CG Z	G13-F04	Entran	8/14/00

Note All Endevco accelerometers are Model No 7264-2000

All Entran accelerometers are Model No EGE-72