

SIDE IMPACT AGGRESSIVENESS
ATTRIBUTES

MDB-TO-CAR SIDE IMPACT TEST OF
A 19⁰ CRABBED MOVING DEFORMABLE BARRIER
TO A 1981 VOLKSWAGEN RABBIT
AT 46.0 MPH

PREPARED BY:
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16. Abstract This test report documents one of a series of twelve crash tests to evaluate the side impact aggressiveness attributes of various deformable barrier face configurations. The configurations to be used are designated as "Lowered Stiffness", "Altered Profile" and "Lowered Bumper". Testing was conducted on a 1981 baseline Volkswagen Rabbit 2-door hatchback at the TRCO Crash Test Facility, East Liberty, Ohio. The test vehicle was impacted on the left side by a moving deformable barrier designated as "Lowered Bumper", crabbled to 19°, at 46.0 mph. Occupant responses of two side impact dummies were measured. One dummy was located in the driver's designated seating position and one was located in the left rear passenger position. The test date was November 9, 1984 and the ambient temperature was 55° F.			
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures			
Symbol	When You Know	Multiply by	To Find
LENGTH			
in	inches	2.5	centimeters
ft	feet	30	centimeters
yd	yards	0.9	meters
mi	miles	1.6	kilometers
AREA			
in ²	square inches	6.5	square centimeters
ft ²	square feet	0.09	square meters
yd ²	square yards	0.8	square meters
mi ²	square miles	2.6	square kilometers
acres	acres	0.4	hectares
MASS (weight)			
oz	ounces	28	grams
lb	pounds	0.45	kilograms
	short tons	0.9	metric ton
	(2000 lb)		
VOLUME			
tsp	teaspoons	5	milliliters
Tbsp	tablespoons	15	milliliters
in ³	cubic inches	16	milliliters
fl oz	fluid ounces	30	milliliters
c	cups	0.24	liters
pt	pints	0.47	liters
qt	quarts	0.95	liters
gal	gallons	3.8	liters
ft ³	cubic feet	0.03	cubic meters
yd ³	cubic yards	0.76	cubic meters
TEMPERATURE (exact)			
°F	degrees Fahrenheit	5 (after subtracting 32)	degrees Celsius

Approximate Conversions from Metric Measures			
Symbol	When You Know	Multiply by	To Find
LENGTH			
mm	millimeters	0.04	inches
cm	centimeters	0.4	inches
m	meters	3.3	feet
m	meters	1.1	yards
km	kilometers	0.6	miles
AREA			
cm ²	square centimeters	0.16	square inches
m ²	square meters	1.2	square yards
km ²	square kilometers	0.4	square miles
ha	hectares	2.5	acres
	(10 000 m ²)		
MASS (weight)			
g	grams	0.035	ounces
kg	kilograms	2.2	pounds
t	metric ton	1.1	short tons
	(1000 kg)		
VOLUME			
mL	milliliters	0.03	fluid ounces
mL	milliliters	0.06	cubic inches
L	liters	2.1	pinta
L	liters	1.06	quarts
L	liters	0.26	gallons
m ³	cubic meters	35	cubic feet
m ³	cubic meters	1.3	cubic yards
TEMPERATURE (exact)			
°C	degrees Celsius	9/5 (then add 32)	degrees Fahrenheit

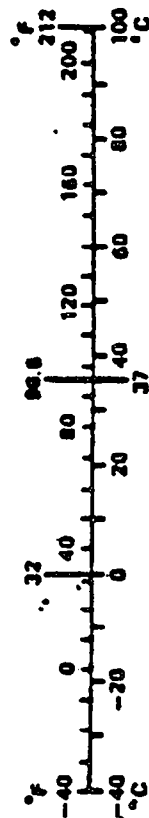


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SECTION 1.0

PURPOSE AND INTRODUCTION

PURPOSE

The main purpose of this test was to evaluate the side impact aggressiveness of a deformable barrier face designated as "Lowered Bumper". In all, there will be twelve crash tests involving deformable barrier faces designated as "Lowered Stiffness", "Altered Profile" and "Lowered Bumper". The vehicle was tested using conditions not currently contained in a Federal Motor Vehicle Safety Standard.

INTRODUCTION

A stationary 1981 Volkswagen Rabbit 2-door hatchback was impacted on the left side by a Moving Deformable Barrier (MDB) on November 9, 1984. The test was to simulate an intersection collision with the striking vehicle traveling at 35 mph and the struck vehicle traveling at 17.5 mph. The orientation angle of the striking vehicle was 60° counterclockwise with respect to the longitudinal axis of the struck vehicle. The impact point was to be 37 inches forward of the vehicle center of gravity which is defined by accident investigation to be the midpoint of the wheelbase.

To simulate this collision, the MDB was to be towed into the stationary Volkswagen Rabbit at 46.3 mph with the MDB's wheels crabbed clockwise to 19°. The actual test speed was 46.0 mph and the actual impact point was 37.5 inches forward of the midpoint of the Volkswagen Rabbit's wheelbase. The vehicle was structurally unmodified and contained no additional padding.

Section 2 contains General Test and Vehicle Parameter Data. Section 3 contains data required by R & D. Appendix A contains pre-test and post-test vehicle and dummy photographs. Appendix B contains Data Plots. Appendix C contains dummy certification data.

SECTION 2.0
GENERAL TEST AND VEHICLE PARAMETER DATA

The following data sheets describe the General Test and Vehicle Parameter Data.

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Volkswagen of America, Inc.

MAKE/MODEL: Volkswagen Rabbit

VIN: 1VWCB9178BV070517

BODY STYLE: 2-Door Hatchback

MODEL YEAR: 1981

NHTSA NO.: R & D

COLOR: Grey

ENGINE DATA: TYPE: Transverse CYLINDERS: 4 DISPLACEMENT 1600 cc

TRANSMISSION DATA: 4 Speed Manual

DATE VEHICLE RECEIVED: 10/24/84

ODOMETER READING: 60496

DEALER'S NAME AND ADDRESS: Volkswagen North
Worthington, Ohio

ACCESSORIES:

POWER STEERING	No	AUTOMATIC TRANSMISSION	No
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	No	TILTING STEERING WHEEL	No
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	Yes	AIR CONDITIONING	Yes
RADIO	No	ANTI-SKID BRAKE	No
CLOCK	No	REAR WINDOW DEFROSTER	Yes
OTHER			

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? Yes
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? No
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

DATA FROM CERTIFICATION LABEL ON LEFT DOOR FACE OR "B" POST:

VEHICLE MANUFACTURED BY: Volkswagen of America, Inc.

DATE OF MANUFACTURE: 1/81

GVWR: 2822 LBS.,

GAWR: FRONT 1609 LBS., REAR 1278 LBS.

VEHICLE TIRE DATA

RECOMMENDED COLD TIRE PRESSURE: FRONT 27 psi; REAR 31 psi

TIRES ON VEHICLE (MFG. & LINE, SIZE): Michelin XZX 155 SR 13

BIAS PLY, BELTED, OR RADIAL: Radial

PLY RATING: 3

IS SPARE TIRE "SPACE SAVER"? No

IS SPARE TIRE STANDARD EQUIPMENT? No

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH ESTIMATED FLUIDS):

RIGHT FRONT	690	LBS.	RIGHT REAR	368	LBS.
LEFT FRONT	685	LBS.	LEFT REAR	363	LBS.
TOTAL FRONT WEIGHT	1375		LBS. (65.3 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	731		LBS. (34.7 % OF TOTAL VEHICLE WEIGHT)		
TOTAL DELIVERED WEIGHT	2106		LBS.		

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE:	RF 23 3/4	;LF 23 3/8	;RR 24	;LR 23 11/16
PRE-TEST ATTITUDE:	RF 23 1/8	;LF 22 7/8	;RR 21 7/8	;LR 21 1/8
POST-TEST ATTITUDE:	RF 23 5/8	;LF 23 1/2	;RR 22 3/16	;LR 21 1/8

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 135 LBS. CARGO:

RIGHT FRONT	720	LBS.	RIGHT REAR	520	LBS.
LEFT FRONT	770	LBS.	LEFT REAR	580	LBS.
TOTAL FRONT WEIGHT	1490		LBS. (57.5 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	1100		LBS. (42.5 % OF TOTAL VEHICLE WEIGHT)		
TOTAL TEST WEIGHT	2590		LBS.		

WEIGHT OF BALLAST SECURED IN VEHICLE TRUNK AREA: 0 LBS.

TEST FLUID DATA

TEST FLUID TYPE: RED STODDARD SOLVENT #2; SPEC. GRAVITY: 0.764

KINEMATIC VISCOSITY: 0.99 CENTISTOKES

"USEABLE" CAPACITY*: NA GALLONS

TEST VOLUME: 2.0 GALLONS

FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 10.0 GALLONS

DETAILS OF FUEL SYSTEM: DNA

ELECTRIC FUEL PUMP: Yes

FUEL INJECTION: Yes

DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? No

DATA FROM "RECOMMENDED TIRE PRESSURE" LABEL ON DOOR, POST, GLOVEBOX, ETC.

VEHICLE LOAD (UP TO CAPACITY): FRONT 27 psi; REAR 31 psi

RECOMMENDED TIRE SIZE: 155 SR 13 LOAD RANGE X B, C,

VEHICLE CAPACITY: TYPES OF SEATS: Front - Bucket
Rear - Bench

NUMBER OF OCCUPANTS (DESIGNATED SEATING CAPACITY): 2 FRONT

CARGO LOAD 135 LBS. 2 REAR
4 TOTAL

TOTAL 735 LBS.

*WITH ENTIRE FUEL SYSTEM FILLED WITH FUEL TANK THROUGH CARBURETOR BOWL.

TEST CONDITIONS

TEST NUMBER: 841109

DATE OF TEST: November 9, 1984

TIME OF TEST: 11:15

WIND VELOCITY: 9-18 mph 189° S

HUMIDITY: DNA

AMBIENT TEMPERATURE AT IMPACT AREA: 55° F

TEMPERATURE IN OCCUPANT COMPARTMENT: 78° F

SUBJECT VEHICLE DATA

	<u>ACTUAL</u>	<u>INTENDED</u>
VEHICLE TEST WEIGHT (LBS.)	2590	2589
MDB TEST WEIGHT (LBS.)	2990	3000
MDB VELOCITY (MPH)*	46.0	46.3
IMPACT POINT (INCHES)**	37.5	37.0

DUMMIES

	<u>DRIVER</u>	<u>MIDDLE PASSENGER</u>	<u>RT. FRONT PASSENGER</u>	<u>LEFT REAR PASSENGER</u>	<u>RT. REAR PASSENGER</u>
TYPE:	SID			SID	
SERIAL NO.:	06			U02	
INSTRUMENTATION:					
HEAD ACCEL.:	Yes			Yes	
CHEST ACCEL.:	Yes (Upper/Lower)			Yes (Upper/Lower)	
FEMUR L.C.'S:	No			No	
OTHER:	Pelvis/Ribs			Pelvis/Ribs	
RESTRAINT SYSTEM:	Both dummies were unrestrained				

* As measured over final one foot of travel.

** As measured forward of the midpoint of the vehicle's wheelbase.

VISIBLE DUMMY CONTACT POINTS:

	DRIVER 06	PASSENGER U02
Head	<u>Side Mirror, Barrier Top, Roof, Left Door Panel, Ground</u>	<u>Side Header, Roof</u>
Chest	<u>Left Inner Door Panel, Ground</u>	<u>Left Rear Quarter Panel</u>
Abdomen	<u>Left Inner Door Panel, Ground</u>	<u>Left Rear Quarter Panel</u>
Left Knee	<u>Left Inner Door Panel, Ground</u>	<u>Left Rear Quarter Panel</u>
Right Knee	<u>Left Knee, Ground</u>	<u>Left Knee</u>

DOOR OPENING:

	LEFT	RIGHT
Front	<u>Door Separated from Vehicle At A-Pillar</u>	<u>Easy</u>
Rear	<u>DNA</u>	<u>DNA</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	<u>Yes</u>	<u>No</u>
Rear	<u>No</u>	<u>No</u>

GLAZING DAMAGE:

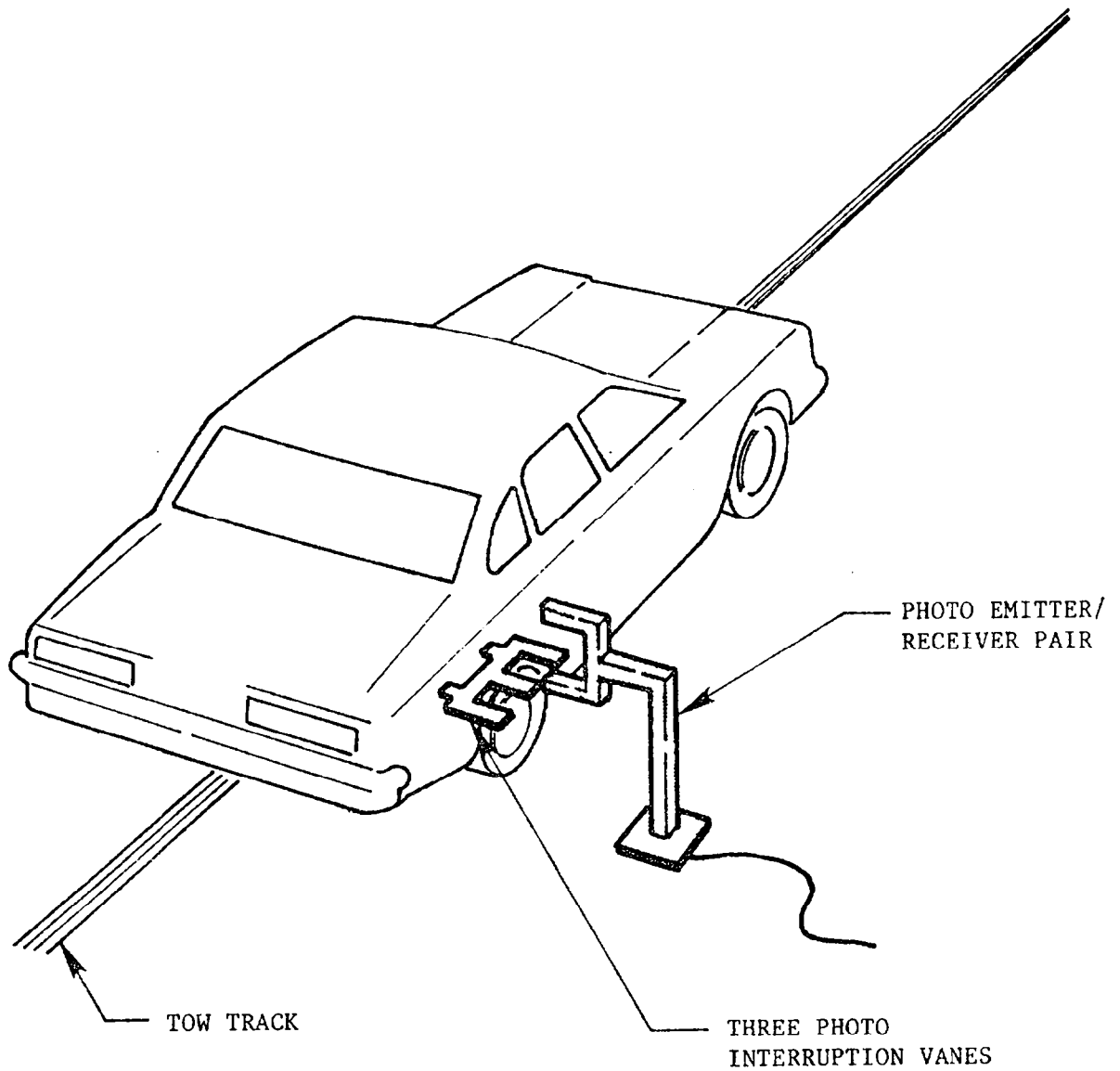
Windshield cracked, left side windows shattered.

OTHER NOTABLE IMPACT EFFECTS:

Left side door separated from car at A-Pillar, driver's

seat bottom damaged.

IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane is located two inches before impact.

The vanes have one foot spacing.

VEHICLE TEST WEIGHT CALCULATION

$$\begin{aligned}\text{Test Weight} &= \text{Unloaded Delivered Weight*} + \\ &\quad \text{Number of Dummies X 174 lbs.} + \\ &\quad \text{Cargo Weight} \\ &= 2106 + 2 \times 174 + 135 \text{ lbs.} \\ &= 2589 \text{ lbs.}\end{aligned}$$

To achieve test weight, the battery was removed and 2.0 gallons of Stoddard Solvent were added in the fuel tank. The weight of the test vehicle was measured by placing each wheel on a Loadmeter Corporation Hiway Loadometer.

$$\begin{aligned}\text{*Unloaded Delivered Weight} &= \text{Measured Weight} + \text{Estimated 10 Gallons Fuel} \\ &= 2046 + 60 \text{ lbs} \\ &= 2106 \text{ lbs}\end{aligned}$$

TEST ANOMALIES

The potentiometer in the passenger's chest, LRTDY3, broke during the test.

A cable to the accelerometer in the left front sill, LFSYG5, was severed during the test.

The left front door accelerometer in position 11, LFDYG5, had pinched wires occasionally throughout the test.

All the accelerometers in the driver's pelvis, PEVXG1, PEVYG1, PEVZG1, underwent severe rattling approximately 40-50 msec after impact.

SECTION 3.0
DATA REQUIRED BY R & D

The following pages are included in this section:

1. Dummy temperature control and position data
2. Dummy kinematic summary
3. Vehicle crush data
4. Dummy and vehicle accelerometer location and data summary
5. High speed camera information
6. Transducer information

DUMMY TEMPERATURE CONTROL AND POSITIONING

The vehicle was kept inside the temperature controlled crash test building until approximately 2 hours prior to the test. Temperature inside the vehicle and ambient temperature at the crash area were recorded. Dummy temperature while outside the crash test building was maintained portably until approximately 1 minute prior to the test.

The following table summarizes the steps taken to position the instrumented, calibrated dummies in the test vehicle.

DUMMY PLACEMENT AND POSITIONING

SIDE IMPACT DUMMY

DRIVER DSP

REAR PASSENGER DSP

HEAD Surface of transverse instrument mounting platform is as horizontal as possible without inducing torso movement & midsagittal plane falls in longitudinal plane.

UPPER TORSO Placed against seat back. Midsagittal plane is vertical and centered on bucket seat.

LOWER TORSO Midsagittal plane is vertical and centered on bucket seat.

UPPER LEGS (thighs or femurs) Placed against seat cushion. Planes defined by femur and tibia centerlines are as close as possible to vertical.

KNEES Knees set 14.5" apart between pivot bolt head outer surfaces. Outer surface of right knee pivot bolt is 8.6" from midsagittal plane of dummy. Outer surface of left knee pivot bolt is 5.9" from midsagittal plane of dummy.

LOWER LEGS Plane defined by femur and tibia centerlines are as close as possible to vertical longitudinal plane.

RIGHT FOOT Placed on undepressed accelerator pedal -- rearmost point of heel on floorplan in plane of pedal.

LEFT FOOT Placed on toeboard -- rearmost point of heel on floorpan as close as possible to intersection of toeboard and floorpan. Centerline falls in vertical longitudinal plane.

Surface of transverse instrument mounting platform is as horizontal as possible without inducing torso movement & midsagittal plane falls in longitudinal plane.

Placed against seat back. Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.

Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.

Placed against seat cushion. Planes defined by femur and tibia centerlines are as close as possible to vertical.

Located so that planes defined by femur and tibia centerlines are as close as possible to vertical.

Plane defined by femur and tibia centerlines are as close as possible to vertical longitudinal plane.

Centerline falls in vertical longitudinal plane. Placed on floor as far forward as possible without front seat interference.

Centerline falls in vertical longitudinal plane. Placed on floor as far forward as possible without front seat interference.

*NOTE: THE SIDE IMPACT DUMMY DOES NOT INCLUDE ARMS.

DUMMY IN-VEHICLE POSITION RECORDING SHEET

VEHICLE NHTSA NO. R & D

MFR./MAKE/MODEL: Volkswagen Rabbit

FRONT SEAT TYPE: BENCH
X BUCKET
 SPLIT BENCH

ADJUSTER TYPE: X MANUAL
 POWER

BUCKET SEAT BACK TYPE: FIXED
X ADJUSTABLE

TECHNICIANS:

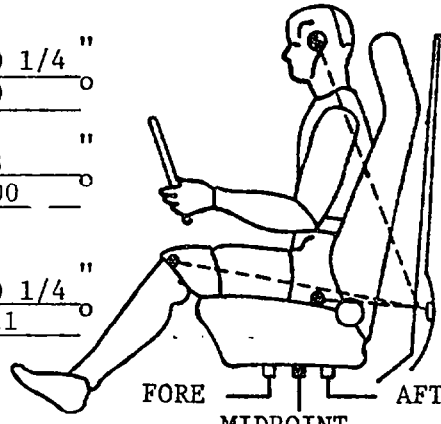
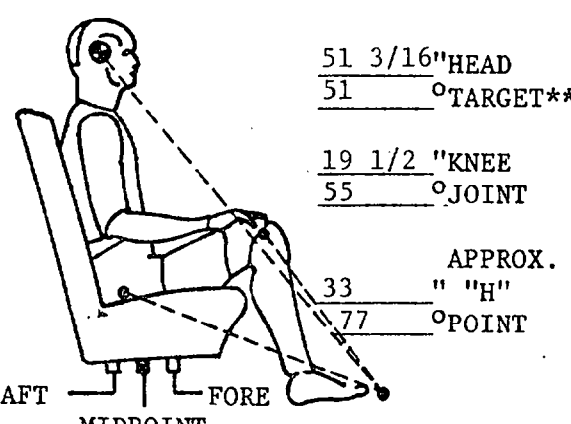
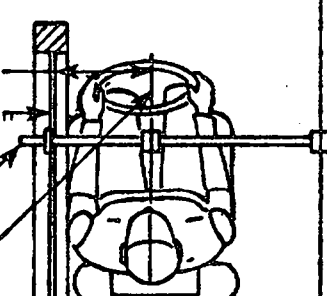
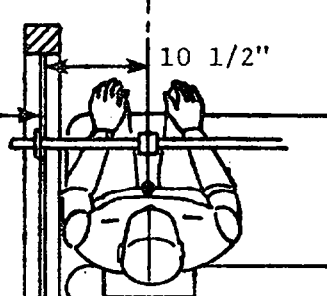
1. D. LeVally

2. B. Miller

3. B. Fishbaugh

POSITIONING DATE: 11/9/84

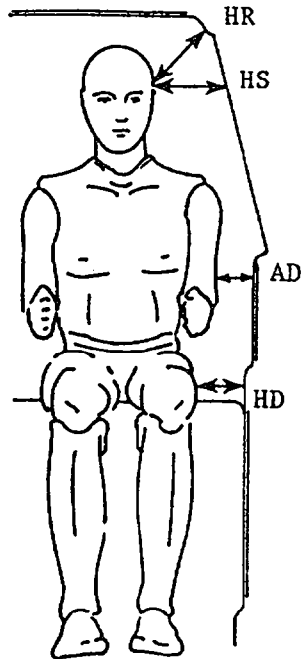
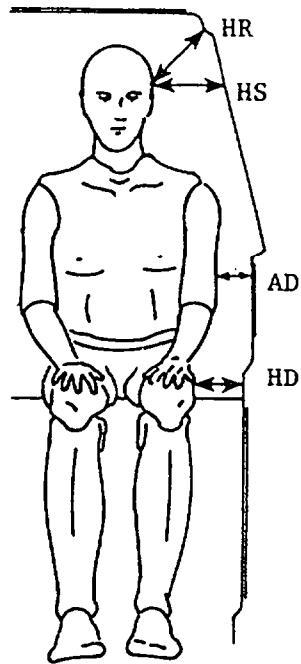
AMBIENT TEMP.: 74° F. TIME: 7:45

DRIVER DUMMY # 06 HEAD <u>20 1/4</u> " ° TARGET*<u>40</u> ° KNEE <u>33</u> " ° JOINT <u>100</u> ° APPROX. "H" <u>20 1/4</u> " ° POINT <u>121</u> ° 	REAR PASSENGER DUMMY # U02 <u>51 3/16</u> " HEAD <u>51</u> ° TARGET** <u>19 1/2</u> " KNEE <u>55</u> ° JOINT APPROX. "H" <u>33</u> " ° <u>77</u> ° POINT 
DOOR GLASS HEIGHT*** <u>12 3/16</u> " <u>9 3/8</u> " LATERAL BAR ADJUSTABLE POINTER  DRIVER DUMMY # 06	DOOR GLASS HEIGHT <u>10 1/2</u> " DNA  PASSENGER DUMMY # U02

*All driver dummy dimensions referenced to top of striker bolt and all angles referenced to vertical.

**All passenger dummy dimensions referenced to front seat back latch bolt with front seat in mid-position and all angles referenced to vertical.

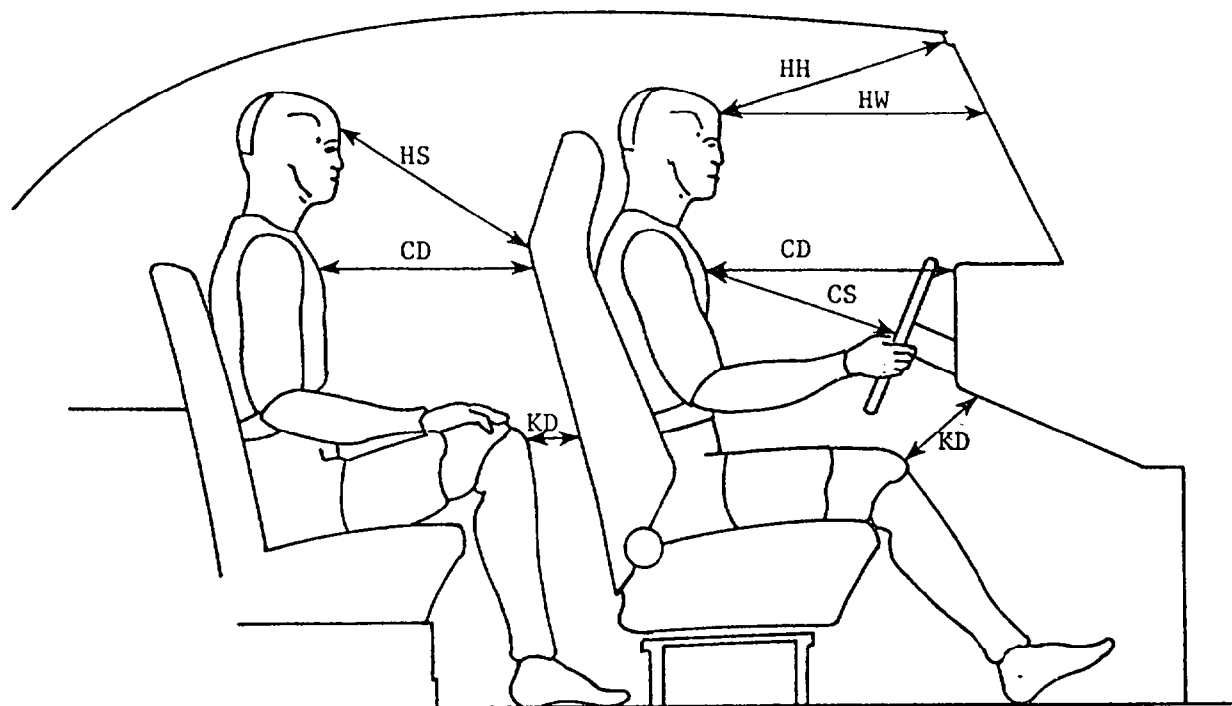
***Door glass height is equal on the right and left side of vehicle at dummy nose level.



	DRIVER 06	PASSENGER U02
HR	7	6 1/16
HS	8 1/4	8
AD	3 5/8	4 3/8
HD	5 1/4	5 5/16

ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS



DRIVER

PASSENGER

06

U02

HH	15 3/8	DNA
HW	19 5/16	DNA
HS	DNA	24 5/8
CD	20 15/16	17 1/2
CS	14 9/16	DNA
KDL	4 5/16	3 3/16
KDR	4 13/16	2 15/16

ALL MEASUREMENTS IN INCHES

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

DUMMY KINEMATIC SUMMARY

DRIVER

During impact, the dash panel below the steering column burst inward hitting the dummy's knees. The left hip of the dummy contacted the inner panel as the door caved in. As the buttocks swung to the right, the dummy's left shoulder and chest contacted the window sill and door panel. The head went outside the vehicle's boundaries contacting the side mirror and barrier top. As the torso lifted and travelled to the passenger side of the car, the dummy's head and shoulders contacted the roof and the buttocks travelled outside the passenger's front window. The dummy then moved back to the left side of the compartment. The driver somersaulted outside the vehicle boundaries hitting his head on the left door panel as the door separated from the car. Final resting position showed the dummy lying on his side with his legs outstretched at a right angle from the torso.

PASSENGER

During impact, the back of the driver's seat contacted the passenger's knees forcing them to the right. At the same time, the B-pillar crushed in, hitting the dummy's left knee and calf. As the left leg and hip rebounded from the door panel towards the right, the dummy's torso leaned left. The passenger's head then hit the side header and roof. The dummy came to rest in an upright position with his legs twisted to the right and his upper torso leaning left.

VEHICLE EXTERIOR PROFILES AND STATIC CRUSH
ZERO DISTANCE AT PROJECTED IMPACT POINT*

LOCATION	HEIGHT (in)	6	0	6	12	18	24	30	36	42	48	54	60	66	72	78
PRE-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)																
Axle Height	11.5	X	X	20.0	20.1	19.9	19.9	20.0	20.0	20.0	20.1	20.1	20.1	20.1	X	X
H-Point	20.0	X	17.1	17.9	17.9	17.8	17.8	17.8	17.8	17.9	17.9	18.1	18.1	18.3	17.8	X
Mid Door	24.3	16.6	17.9	17.7	17.6	17.5	17.5	17.5	17.5	17.6	17.6	17.7	17.8	17.9	18.1	16.6
Window Sill	34.9	19.9	19.6	19.5	19.2	19.3	19.0	19.1	19.1	19.1	19.1	19.1	19.3	19.3	19.3	19.5
Window Top	54.5	X	X	X	X	X	27.1	26.8	26.8	26.6	26.5	26.6	26.8	26.9	27.1	27.9

POST-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)

Axle Height	11.5	X	X	23.6	32.9	36.3	37.6	37.1	36.9	35.9	34.1	32.0	29.4	26.8	X	X
H-Point	20.0	X	22.3	22.8	***	***	***	***	***	***	***	34.6	31.9	28.2	25.4	X
Mid Door	24.3	20.9	22.6	22.8	***	***	***	***	***	***	***	34.8	30.2	27.1	24.5	21.4
Window Sill	34.9	22.3	22.4	22.5	***	***	***	***	***	***	***	34.0	31.9	28.1	24.8	22.8
Window Top	54.5	X	X	X	X	X	30.5	30.3	30.1	30.2	30.3	30.3	29.9	29.6	29.3	29.1

STATIC CRUSH (IN)

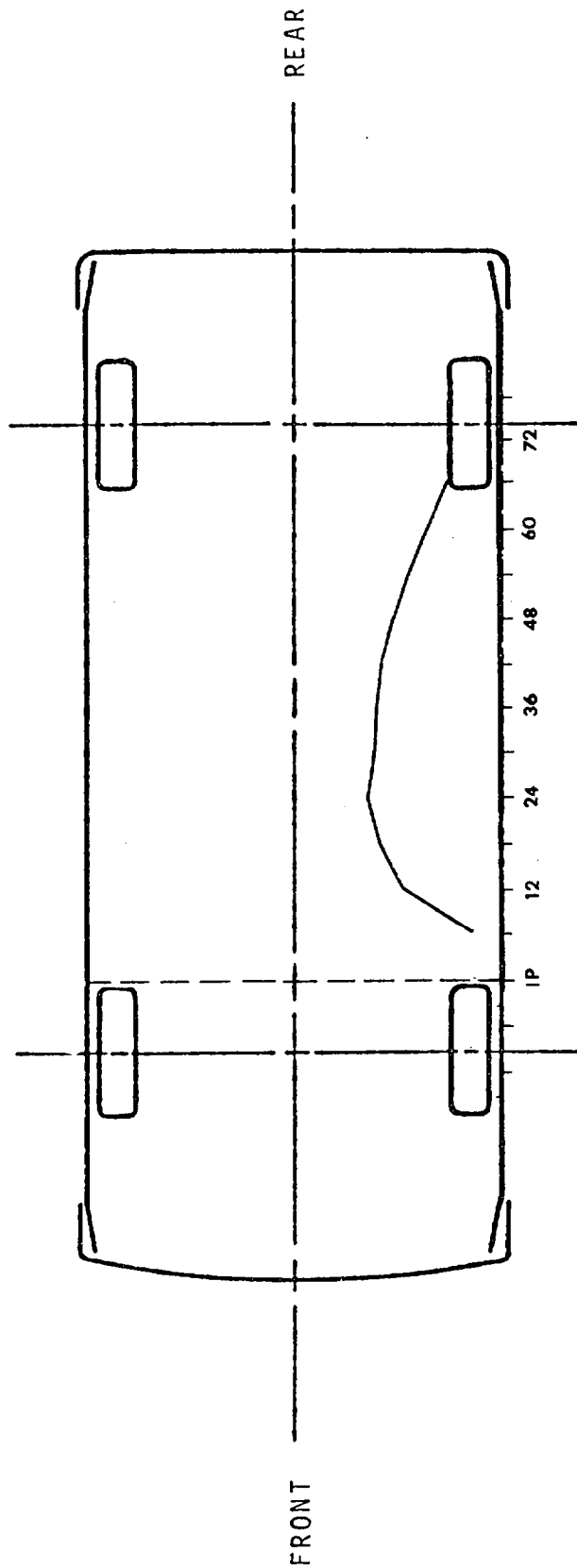
Axle Height	11.5	X	X	3.6	12.8	16.4	17.7	17.1	16.9	15.9	14.0	11.9	9.3	6.7	X	X
H-Point	20.0	X	5.2	4.9	***	***	***	***	***	***	***	16.5	13.8	9.9	7.6	X
Mid Door	24.3	4.3	4.7	5.1	***	***	***	***	***	***	***	17.1	12.4	9.2	6.4	4.8
Window Sill	34.9	2.4	2.8	3.0	***	***	***	***	***	***	***	14.9	12.6	8.8	5.5	3.3
Window Top	54.5	X	X	X	X	X	3.4	3.5	3.3	3.6	3.8	3.7	3.1	2.7	2.2	1.2

* Projected impact point is 37 inches forward of driver's side wheelbase midpoint. Column readings are front to rear from left to right.

** Reference plane is parallel to and 48 inches from the vehicle longitudinal centerline.

***Data point was not available following test.

VEHICLE EXTERIOR STATIC CRUSH PROFILE

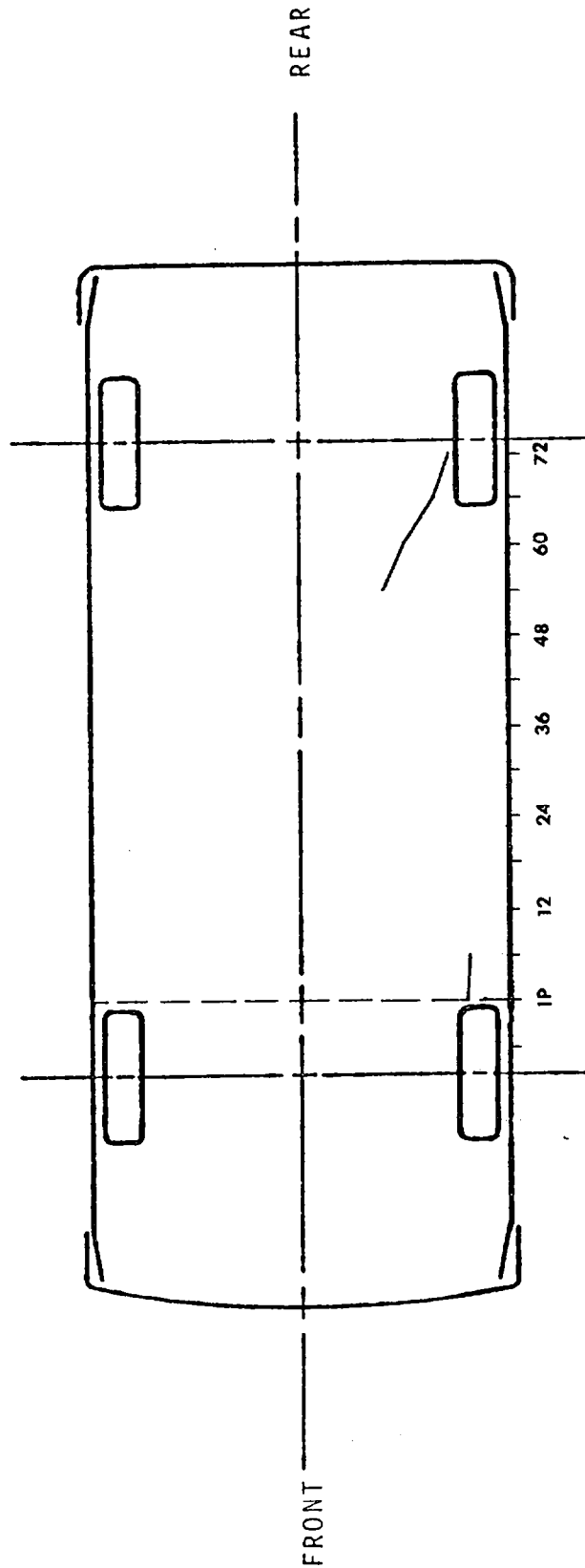


PROFILE LEVEL EQUALS AXLE HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 17.7"
Approximate Length of Crush = 60"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

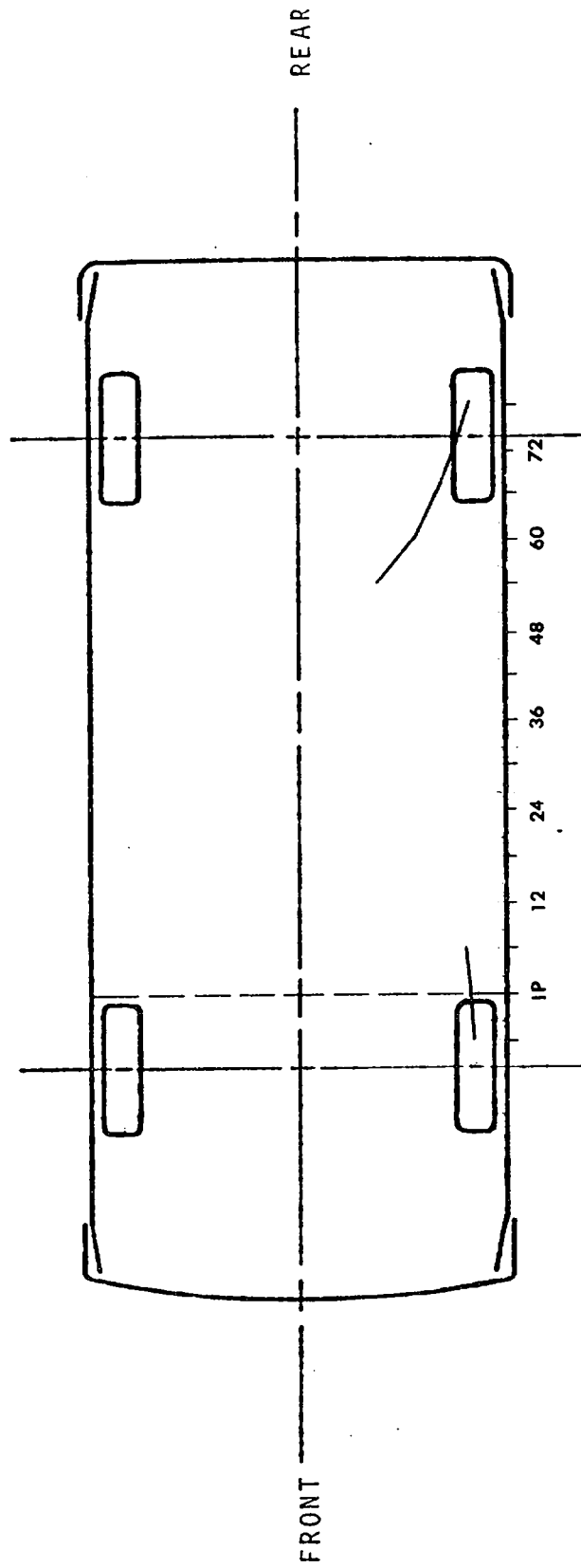


PROFILE LEVEL EQUALS H-POINT HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 16.5"
Approximate Length of Crush = 72"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

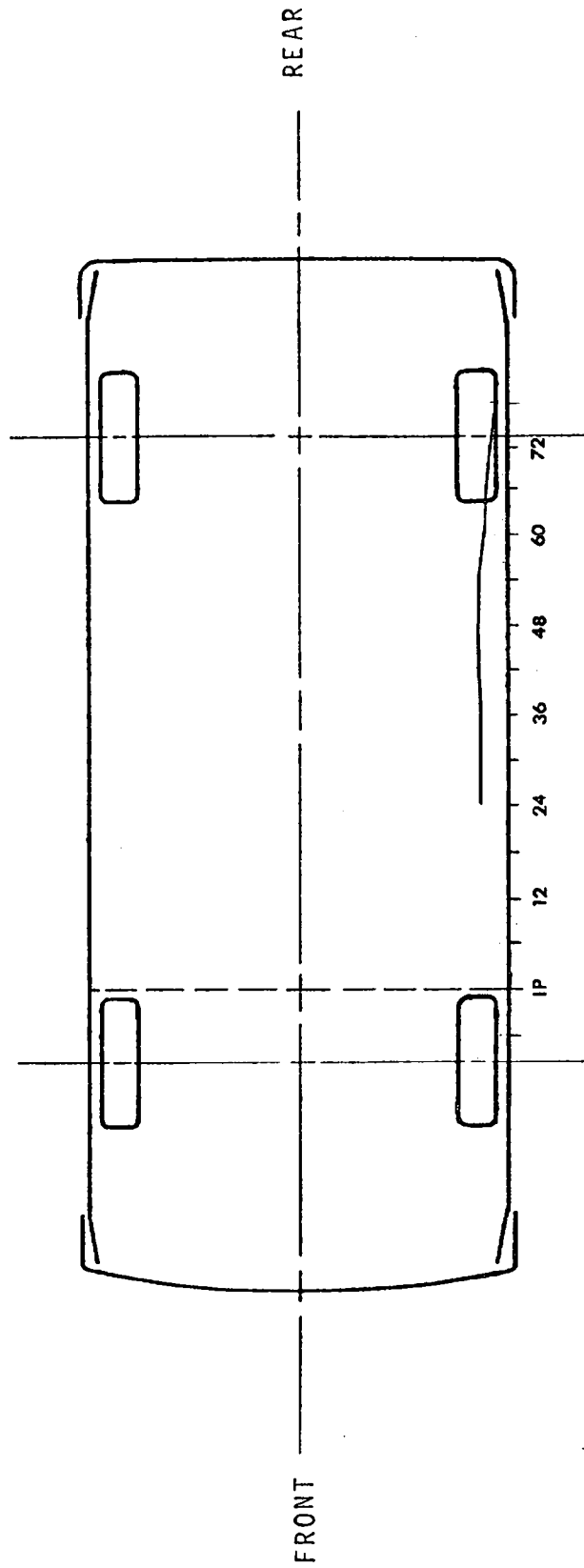


PROFILE LEVEL EQUALS MID-DOOR HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
Width of Car = 56.75"

Maximum Crush = 17.1"
Approximate Length of Crush = 84"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

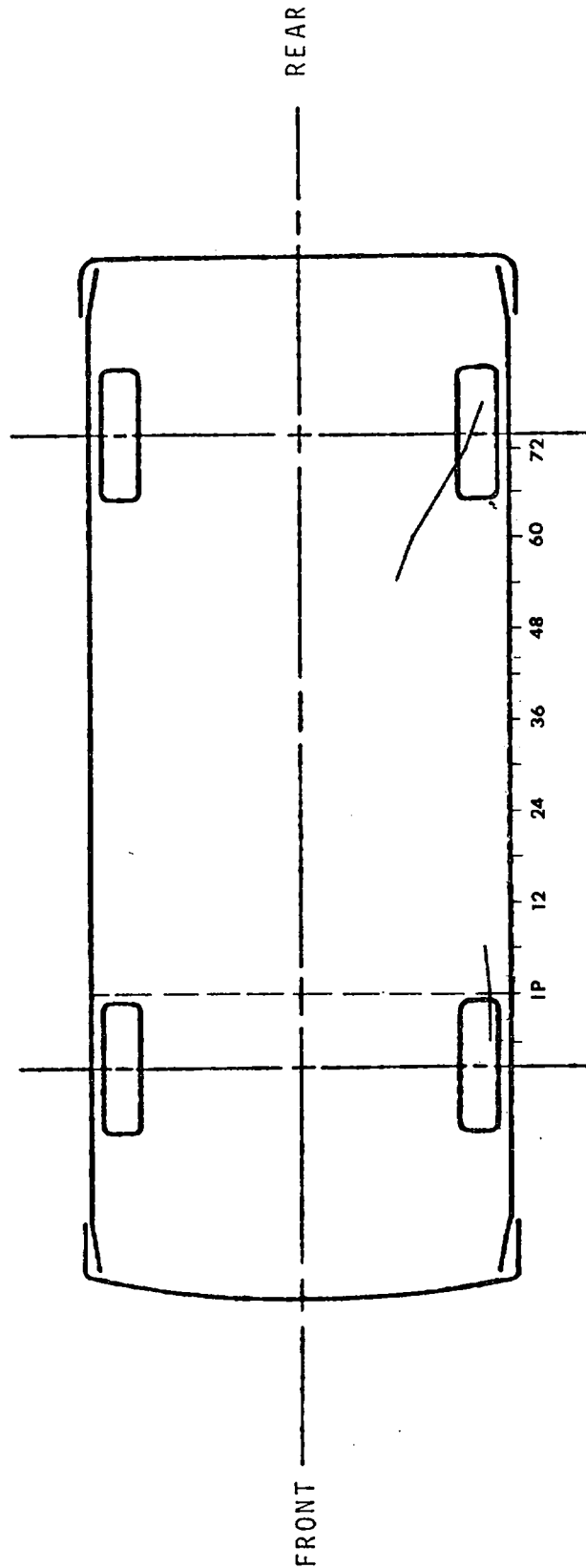


PROFILE LEVEL EQUALS WINDOW TOP HEIGHT
 IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
 Width of Car = 56.75"

Maximum Crush = 3.8"
 Approximate Length of Crush = 54"

VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW SILL HEIGHT
 IP EQUALS PROJECTED IMPACT POINT

Length of Car = 155.0"
 Width of Car = 56.75"

Maximum Crush = 14.9"
 Approximate Length of Crush = 84"

SIDE IMPACT DUMMY DATA SUMMARY

	DRIVER DUMMY				PASSENGER DUMMY			
	POSITIVE		NEGATIVE		POSITIVE		NEGATIVE	
	DIRECTION*		DIRECTION**		DIRECTION*		DIRECTION**	
	MAX	TIME	MAX	TIME	MAX	TIME	MAX	TIME
	(g)	(msec)	(g)	(msec)	(g)	(msec)	(g)	(msec)
HEAD ACCELERATION								
LONGITUDINAL	48.84	179.38	73.32	91.50	44.44	93.63	53.57	71.88
LATERAL	74.97	61.88	22.42	178.88	116.10	72.13	45.54	94.13
VERTICAL	34.77	44.00	96.22	73.25	73.52	89.63	74.56	71.75
RESULTANT		96.70 @ 61.88				146.59 @ 71.75		
HIC	1831.56	from 50.50 to 94.38			1237.13	from 69.63 to 97.13		
CHEST ACCELERATION								
UPPER SPINE								
LONGITUDINAL	38.28	63.13	41.31	68.75	8.61	73.75	66.29	81.88
LATERAL (P)***	202.26	50.00	51.31	44.38	162.97	80.00	26.03	91.25
LATERAL (R)***	209.07	50.00	51.04	44.38	164.99	80.00	26.62	91.25
VERTICAL	37.14	41.87	46.07	56.25	18.98	68.13	22.13	85.63
RESULTANT (P)		205.54 @ 50.00				172.80 @ 80.00		
RESULTANT (R)		212.23 @ 50.00				174.71 @ 80.00		
DELTA V (MPH)****		34.5 @ 64.38 (P)				22.4 @ 86.25 (P)		
		36.2 @ 64.38 (R)				22.4 @ 86.88 (R)		
LOWER SPINE								
LONGITUDINAL	109.71	56.87	33.27	48.13	57.44	72.50	76.75	78.13
LATERAL (P)	216.64	48.75	32.03	66.87	140.01	78.13	38.85	95.00
LATERAL (R)	218.77	48.75	29.59	66.87	150.80	78.75	37.42	95.00
VERTICAL	38.82	41.87	18.75	56.87	14.03	78.13	8.26	95.00
RESULTANT (P)		219.79 @ 48.75				160.29 @ 78.13		
RESULTANT (R)		221.88 @ 48.75				169.22 @ 78.13		
DELTA V (MPH)		41.0 @ 63.13 (P)				33.1 @ 85.63 (P)		
		43.6 @ 63.75 (R)				28.4 @ 86.25 (R)		
LEFT UPPER RIB								
LATERAL (P)	241.81	43.75	28.59	38.75	143.43	74.37	8.15	93.13
LATERAL (R)	240.77	44.38	28.01	38.75	145.06	74.37	10.12	93.13
DELTA V (MPH)		36.5 @ 86.88 (P)				33.6 @ 131.25 (P)		
		36.9 @ 86.25 (R)				33.8 @ 131.88 (R)		
LEFT LOWER RIB								
LATERAL (P)	263.75	43.13	51.26	47.50	129.99	72.50	32.16	93.75
LATERAL (R)	253.39	43.13	45.50	47.50	140.18	72.50	30.23	93.75
DELTA V (MPH)		39.6 @ 70.63 (P)				31.4 @ 122.50 (P)		
		37.4 @ 66.88 (R)				32.5 @ 123.13 (R)		
PELVIS ACCELERATION								
LONGITUDINAL	---	---	°	---	°	26.11	60.38	67.34
LATERAL	---	---	°	---	°	102.95	69.00	29.17
VERTICAL	---	---	°	---	°	32.57	75.75	17.93
RESULTANT		---	@	---	°		122.15 @ 69.38	
DELTA V (MPH)		---	@	---	°		34.1 @ 97.25	

SIDE IMPACT DUMMY DATA SUMMARY CONTD

		<u>DRIVER DUMMY</u>				<u>PASSENGER DUMMY</u>			
		<u>POSITIVE</u>		<u>NEGATIVE</u>		<u>POSITIVE</u>		<u>NEGATIVE</u>	
		<u>DIRECTION*</u>		<u>DIRECTION**</u>		<u>DIRECTION*</u>		<u>DIRECTION**</u>	
		<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>
		<u>(in)</u>	<u>(msec)</u>	<u>(in)</u>	<u>(msec)</u>	<u>(in)</u>	<u>(msec)</u>	<u>(in)</u>	<u>(msec)</u>
RIB DEFLECTION	†	1.92	102.13	---	--- [Ⓒ]	---	--- ^γ	---	--- ^γ

* LONGITUDINAL: FORWARD
 LATERAL: RIGHTWARD
 VERTICAL: UPWARD

**LONGITUDINAL: REARWARD
 LATERAL: LEFTWARD
 VERTICAL: DOWNWARD

*** (P) = Primary Sensor, (R) = Redundant Sensor

**** For dummy channels, Delta V is the velocity change at the approximate time of separation from the contact area.

† Compression: Positive

° The CTM has judged that intermittent rattling has occurred in these channels and, therefore, the peak values reported are questionable as are applicable resultants and Delta V's.

γ See TEST ANOMALIES

Ⓒ There were no negative values in the time interval of interest.

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

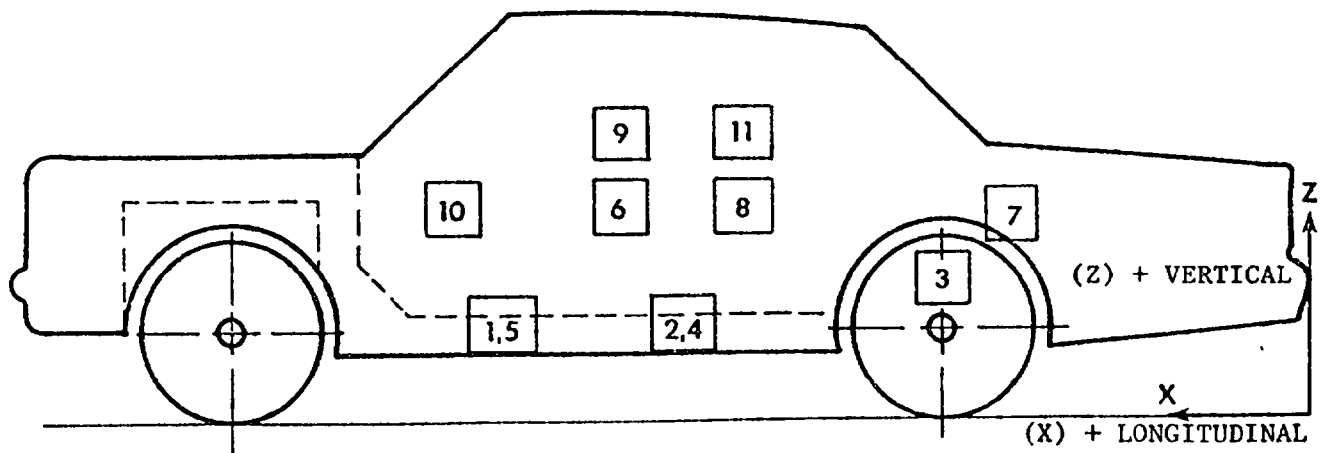
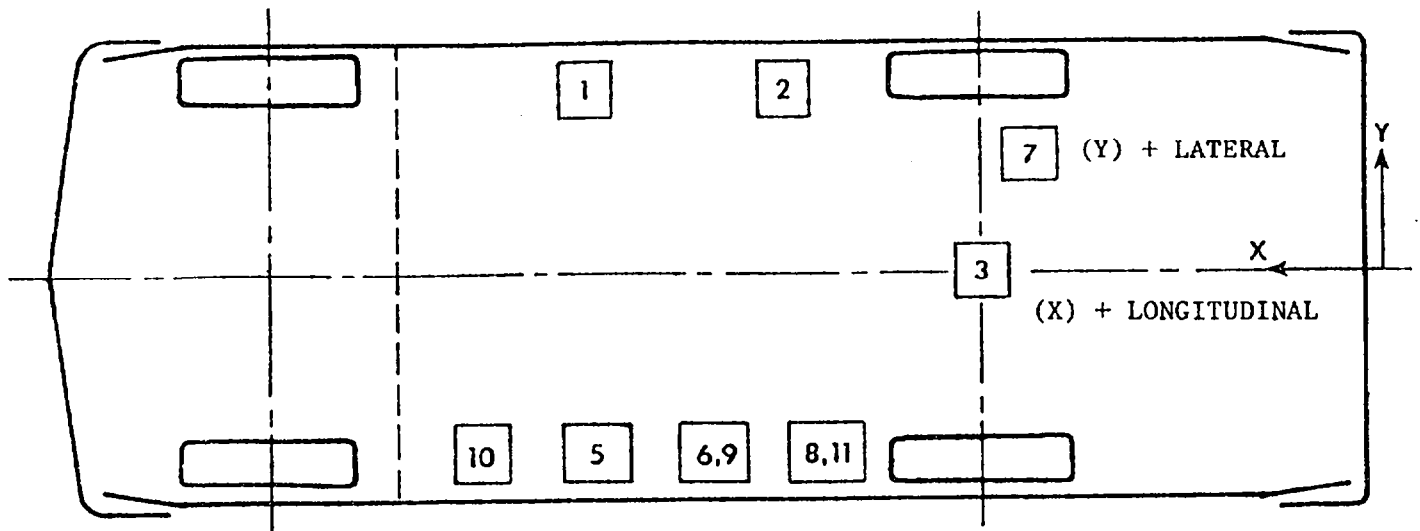
NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	RIGHT SILL AT FRONT SEAT (LONGITUDINAL)	83.5	23.5	10.1				
	(LATERAL)				2.20	121.25	8.43	83.00
	(VERTICAL)				18.73	50.25	3.78	113.88
	(RESULTANT)				8.98	75.13	7.72	39.63
						19.61 @ 50.13		
2	RIGHT SILL AT REAR SEAT (LONGITUDINAL)	62.0	23.5	10.3				
	(LATERAL)				3.84	120.38	7.54	83.25
	(VERTICAL)				23.81	72.13	3.54	155.13
	(RESULTANT)				7.91	52.50	6.67	40.00
						24.45 @ 72.00		
3	REAR DECK OVER AXLE (LONGITUDINAL)	32.0	0.0	6.1				
	(LATERAL)				12.92	87.63	32.25	78.75
	(VERTICAL)				48.62	75.63	4.11	124.38
	(RESULTANT)				18.06	83.13	10.95	75.50
						56.85 @ 76.88		
4	LEFT SILL AT REAR SEAT (LATERAL)	62.3	-23.5	8.0				
					104.82	43.88	32.80	59.00
5	LEFT SILL AT FRONT SEAT (LATERAL)	84.0	-23.5	9.1				
					---	--- Y	---	--- Y
6	LEFT FRONT DOOR CENTERLINE (LATERAL)	82.1	-26.1	22.2				
					154.60	24.38	108.98	48.75
7	RIGHT REAR COMPARTMENT (LONGITUDINAL)	31.0	15.5	13.8				
					6.21	119.38	14.53	74.13
8	MIDREAR OF LEFT FRONT DOOR (LATERAL)	61.6	-26.0	22.2				
					150.27	41.38	68.76	63.13
9	UPPER LEFT FRONT DOOR CENTERLINE (LATERAL)	82.8	-26.1	31.3				
					129.57	30.50	166.92	48.25
10	MIDFRONT OF LEFT FRONT DOOR (LATERAL)	100.6	-25.9	21.1				
					133.25	12.50	103.90	29.63
11	UPPER REAR OF LEFT REAR DOOR (LATERAL)	71.9	-25.8	31.2				
					---	--- Y	---	--- Y

* Reference: X - Rear Bumper (+ Forward), Y - Vehicle Centerline (+ To Right),
Z - Ground Level (+ Up)

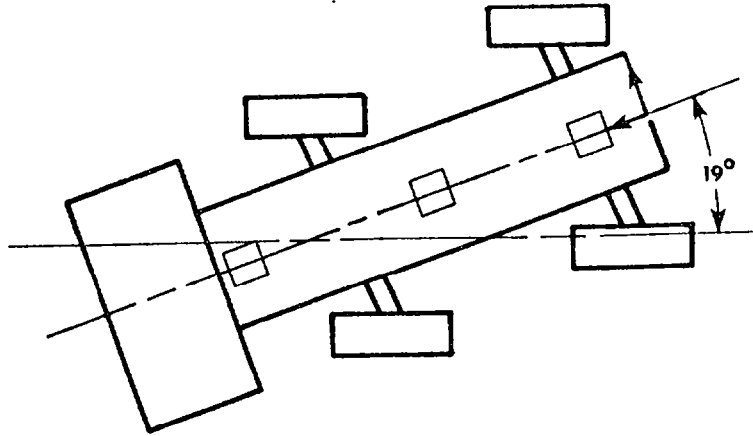
All measurements of accelerometer locations in inches.

Y See TEST ANOMALIES

VEHICLE ACCELEROMETER LOCATIONS



MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY



NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	CENTER OF GRAVITY	74.5	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -19.0 \text{ mph @ } 123.00 \text{ msec}$			---	---	16.13	55.88
	(LATERAL)	$\Delta V = -3.0 \text{ mph @ } 123.00 \text{ msec}$			1.84	24.25	5.09	83.25
	(VERTICAL)				11.98	60.50	12.78	53.75
	(RESULTANT)					19.40 @	54.25	
2	FRONT FRAME MEMBER	130.3	0.0	11.3				
	(LONGITUDINAL)	$\Delta V = -19.4 \text{ mph @ } 123.00 \text{ msec}$			---	---	16.20	55.63
3	REAR FRAME MEMBER	23.3	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -16.4 \text{ mph @ } 123.00 \text{ msec}$			1.29	117.63	15.25	55.13

* Reference: X - Rear Most Point of Frame (+ To Forward), Y - Barrier Centerline (+ To Right), Z - Ground Level (+ To Up)

All measurements of accelerometer locations in inches.

*There were no positive values in the time interval of interest.

HIGH SPEED CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overhead	Photosonic 1B	8	448	Vehicle Dynamics
2	Overhead	Photosonic 1B	25	477	Close-up of impact point
3	Onboard MDB	Photosonic 1B	25	505	Close-up of impact point
4	Onboard MDB	Photosonic 1B	13	500	Driver kinematics
5	Ground level - right	Photosonic 1B	25	500	Overall view
6	Ground level - left	Photosonic 1B	17	505	Overall view
7	Onboard vehicle	Photosonic 1B	8	817	Driver kinematics
8	Onboard vehicle	Photosonic 1B	8	807	Driver kinematics
9	Onboard vehicle	Photosonic 1B	8	800	Passenger kinematics

NOTE: CAMERAS ARE NUMBERED ACCORDING TO SPLICING SEQUENCE OF FILM.
 (24 fps) REAL TIME MOVIE FILM COVERAGE OF PRE-CRASH, POST-CRASH
 AND CRASH EVENT SPLICED AT START AND END OF FILM.

LOCATIONS OF OFFBOARD HIGH SPEED CAMERAS

CAMERA NO.	X	Y	Z
1	0	0	25'
2	0	0	25'
5	26'4"	60'	45"
6	-19'7"	-11'3"	45"

Origin of Coordinate System is Point of Impact

+X = Forward with Respect to Striking Vehicle's Velocity Vector
+Y = Rightward with Respect to Striking Vehicle's Velocity Vector
+Z = Upward with Respect to Striking Vehicle's Velocity Vector

NON-GOVERNMENT FURNISHED TRANSDUCER INFORMATION

PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NUMBER	SERIAL NUMBER	MFGR.	DATE OF LAST CALIBRATION	SENSITIVITY	DESIRED FULL SCALE (ENGR. UNITS)
BCGXG	Accel	4-202-0001	18845	Bell Howell	11/8/84	0.237 MV/G	50 G
BCGYG	Accel	4-202-0001	18858	Bell Howell	11/8/84	0.238 MV/G	50 G
BCGZG	Accel	4-202-0001	18857	Bell Howell	11/8/84	0.240 MV/G	50 G
BFCXG	Accel	4-202-0001	18240	Bell Howell	11/8/84	0.239 MV/G	50 G
BRCXG	Accel	4-202-0001	19022	Bell Howell	11/8/84	0.220 MV/G	50 G

All dummy and struck vehicle accelerometers were Government Furnished Equipment and were Endevco 2264 Accelerometers.

APPENDIX A
PHOTOGRAPHS



Figure A-1. PRE-TEST OVERALL - VIEW 1



Figure A-2. PRE-TEST OVERALL - VIEW 2
A-2



Figure A-3. PRE-TEST OVERALL - VIEW 3



Figure A-4. PRE-TEST OVERALL - VIEW 4
A-3

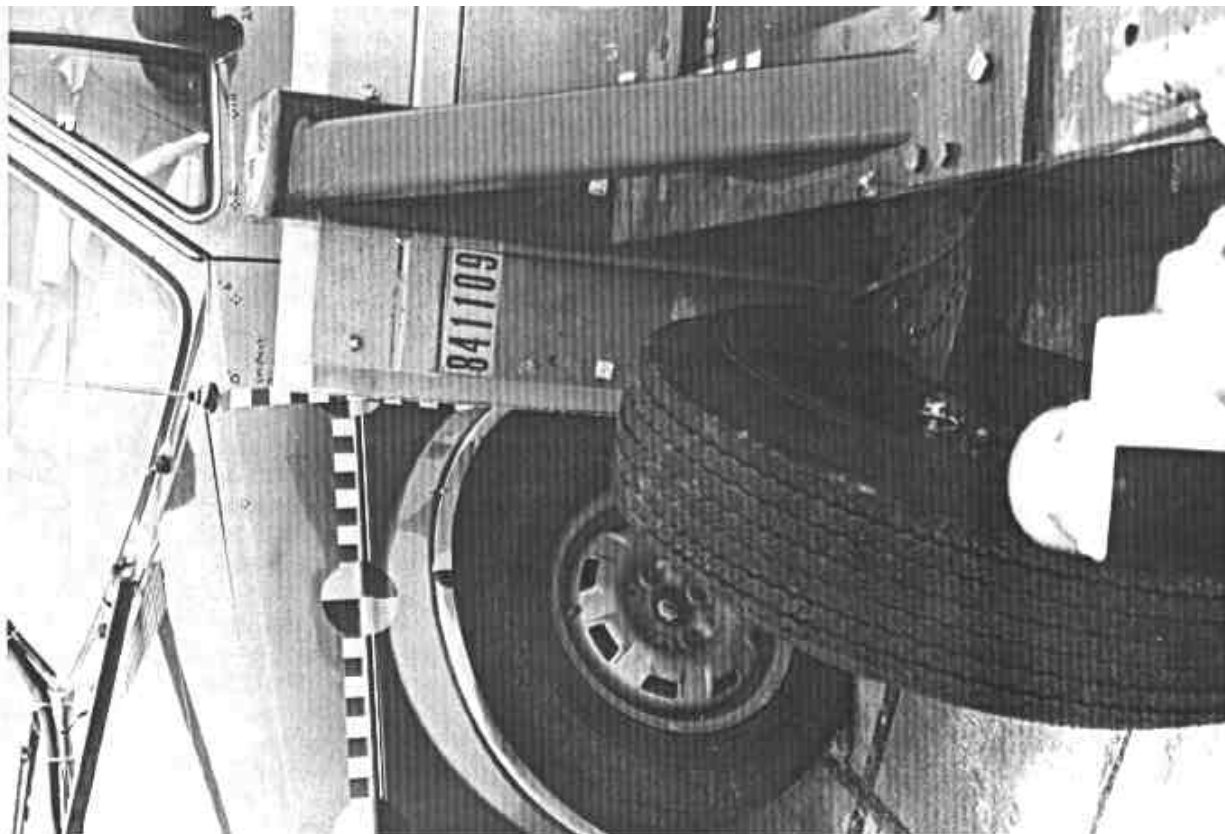


Figure A-5. PRE-TEST CLOSEUP - VIEW 1



Figure A-6. PRE-TEST CLOSEUP - VIEW 2



Figure A-7. PRE-TEST DRIVER DUMMY - VIEW 1



Figure A-8. PRE-TEST DRIVER DUMMY - VIEW 2
A-5



Figure A-9. PRE-TEST PASSENGER DUMMY - VIEW 1



Figure A-10. PRE-TEST PASSENGER DUMMY - VIEW 2



Figure A-11. PRE-TEST DUMMIES OVERALL



Figure A-12. CRASH EVENT PHOTOGRAPH
A-7



Figure A-13. POST-TEST OVERALL - VIEW 1



Figure A-14. POST-TEST OVERALL - VIEW 2
A-8



Figure A-15. POST-TEST OVERALL - VIEW 3



Figure A-16. POST-TEST OVERALL - VIEW 4
A-9



Figure A-17. POST-TEST DRIVER DUMMY - VIEW 1



Figure A-18. POST-TEST PASSENGER DUMMY - VIEW 1
A-10



Figure A-19. POST-TEST PASSENGER DUMMY - VIEW 2



Figure A-20. POST-TEST PASSENGER DUMMY - VIEW 3

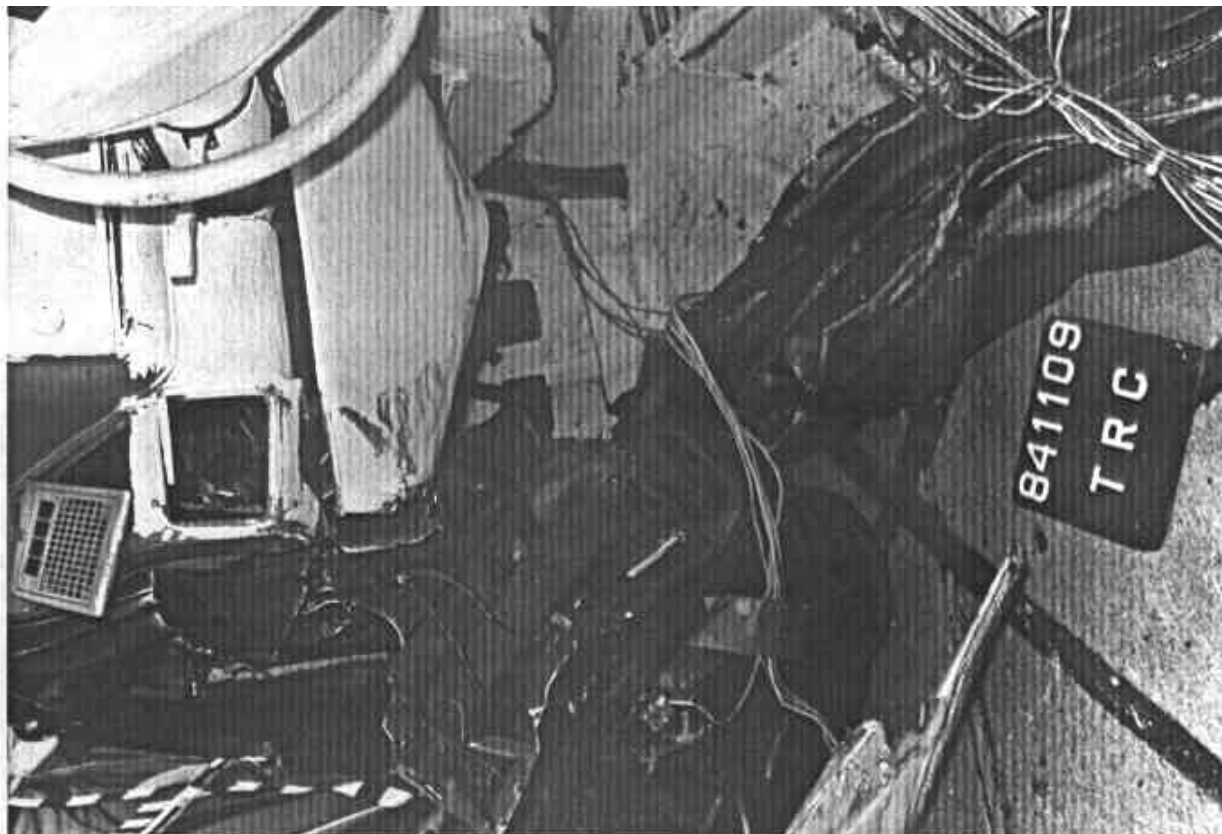


Figure A-21. POST-TEST VEHICLE DAMAGE - VIEW 1



Figure A-22. POST-TEST VEHICLE DAMAGE - VIEW 2
A-12

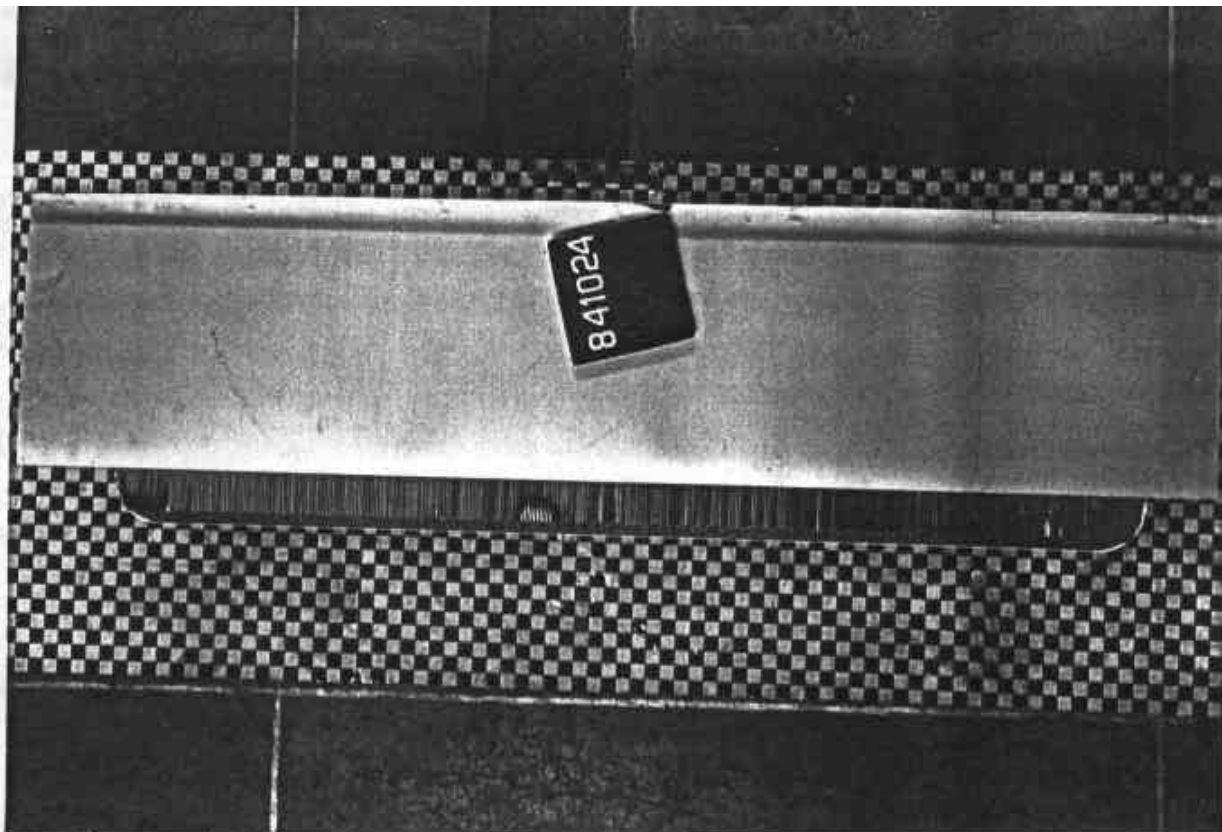


Figure A-23. PRE-TEST MDB FACE - VIEW 1

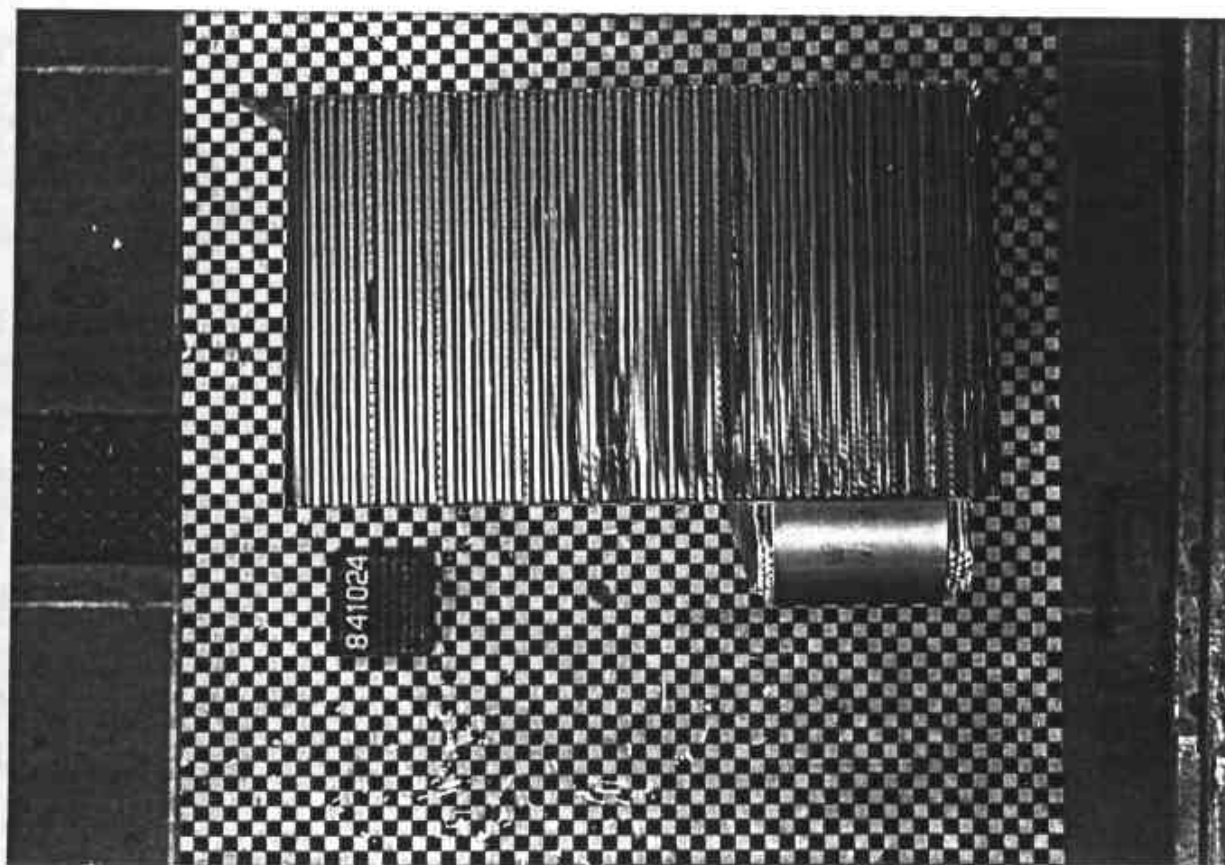


Figure A-24. PRE-TEST MDB FACE - VIEW 2
A-13

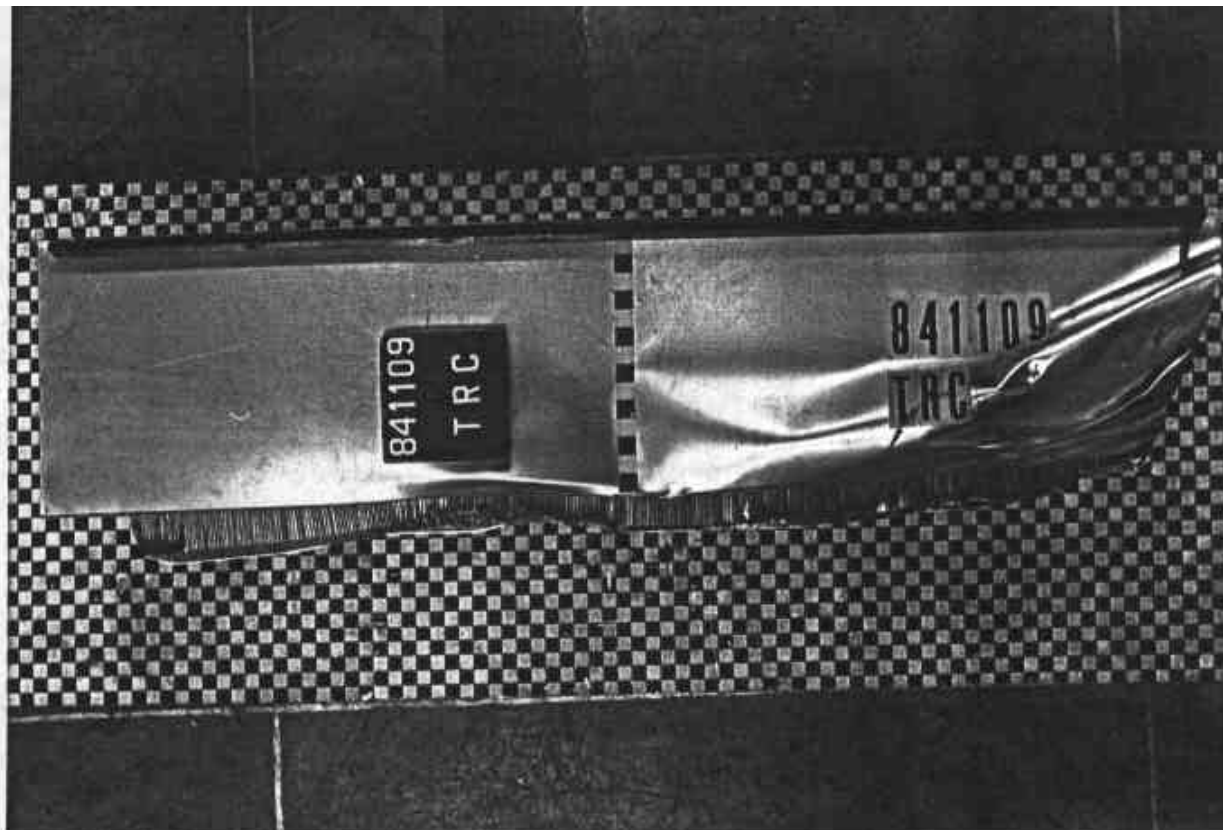


Figure A-25. POST-TEST MDB FACE - VIEW 1

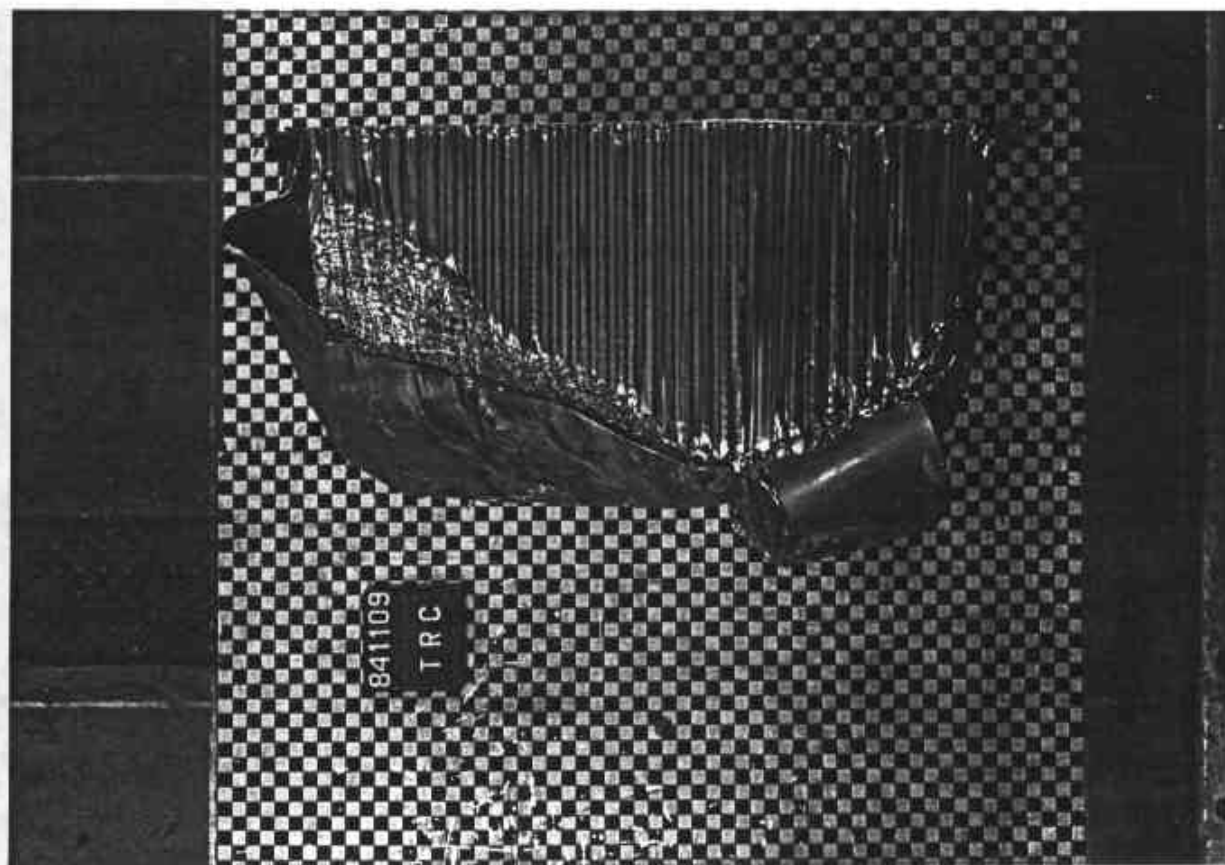


Figure A-26. POST-TEST MDB FACE - VIEW 2
A-14

APPENDIX B

DATA PLOT PRESENTATION

Data plots generated from the crash test data are presented on the following pages. All data are recorded on magnetic tape for inclusion in the NHTSA crash test data base system. The data was filtered according to SAE J211, except dummy thorax data which was filtered using the HSRI filter.

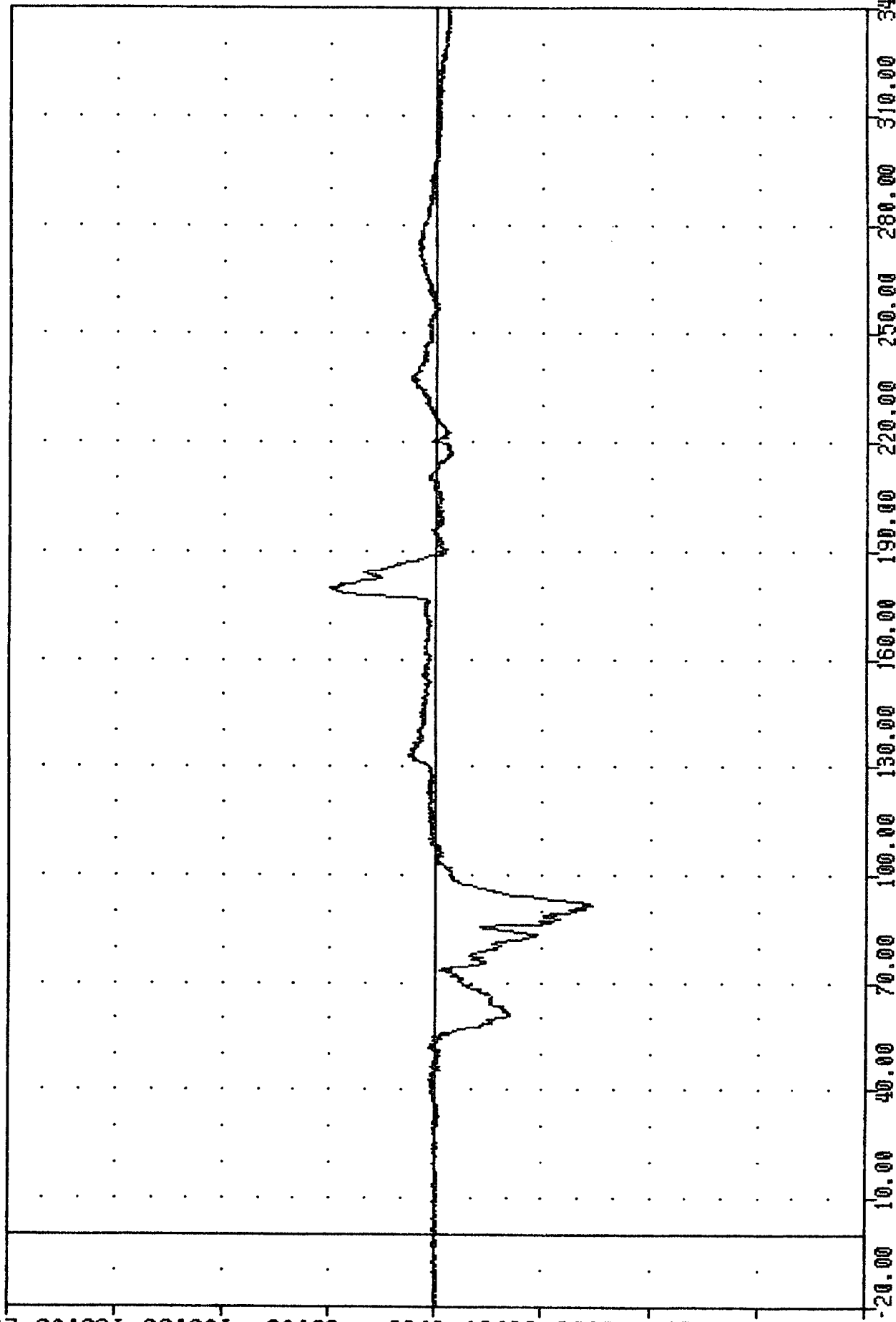
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEDXG1

PLOT DATE 15-NOV-84 15:49:06

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -73.32 91.50 , 48.84 179.38

ACCELERATION (G)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION X AXIS

IHC , 841103
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEDY61

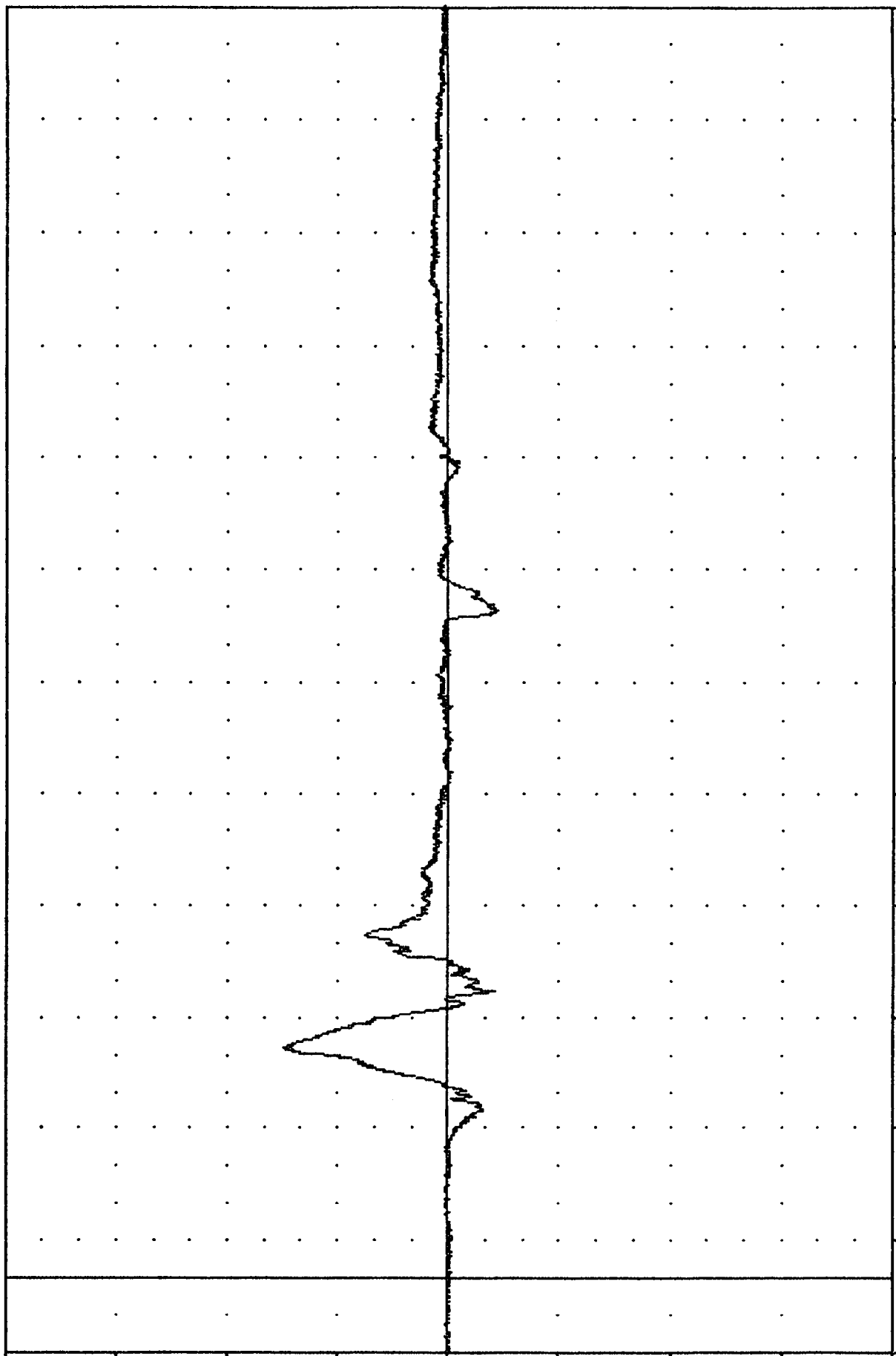
PLOT DATE 15-NOV-84 15:49:06

FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = -22.42 178.88, 74.97 61.88

ACCELERATION (G)

B-3



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION Y AXIS

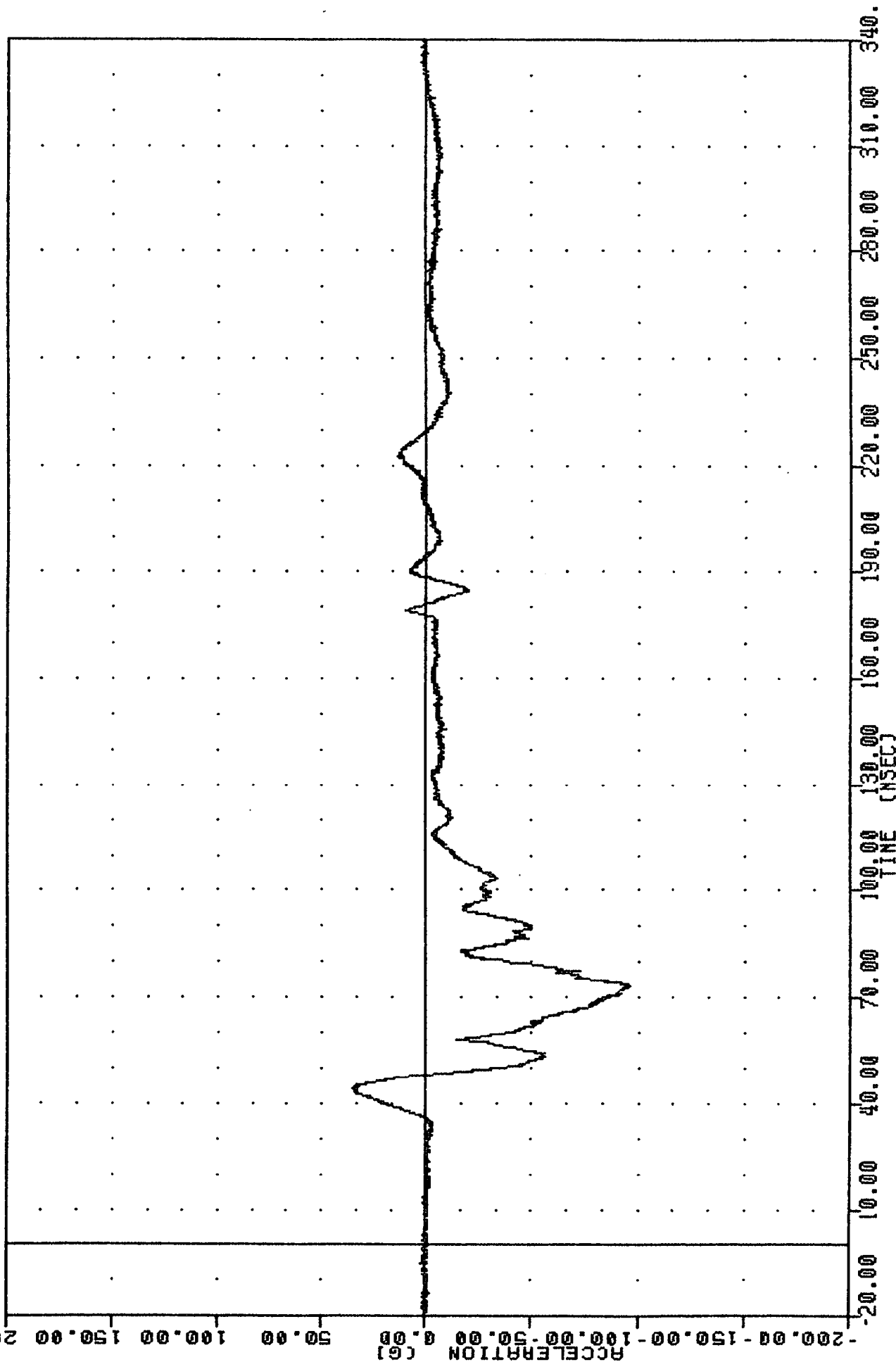
INL 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEDZ61

PLUI DMIE 15-NOV-84 15:49:06

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -96.22 73.25 34.77 44.00

B-4



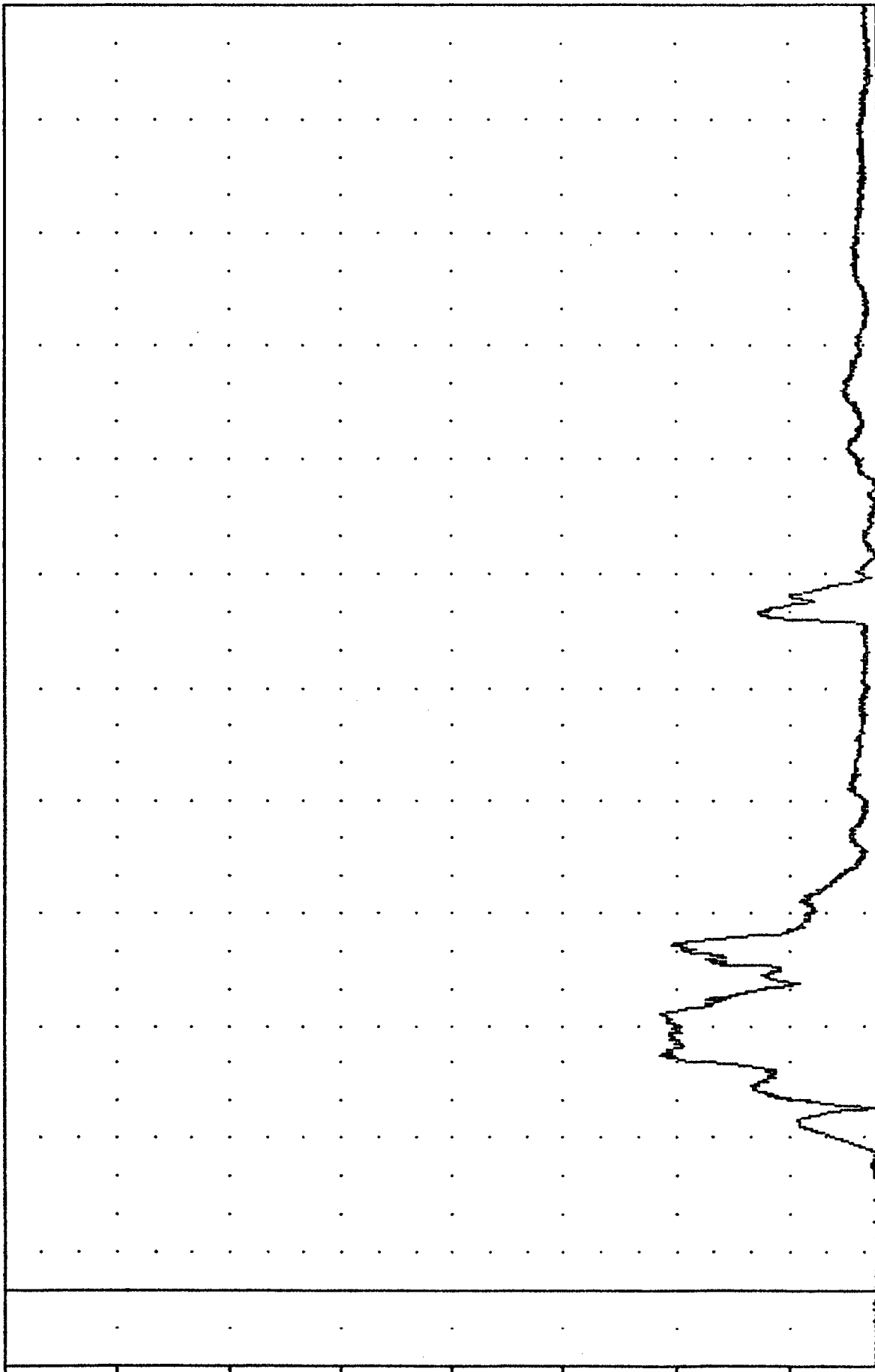
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION Z AXIS

INC. 041153
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 HEDRG1

FLUI UNIC 10-NDV-04 10-43-00

FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = 0.088 24.13, 96.70 @ 61.88

ACCELERATION (G)



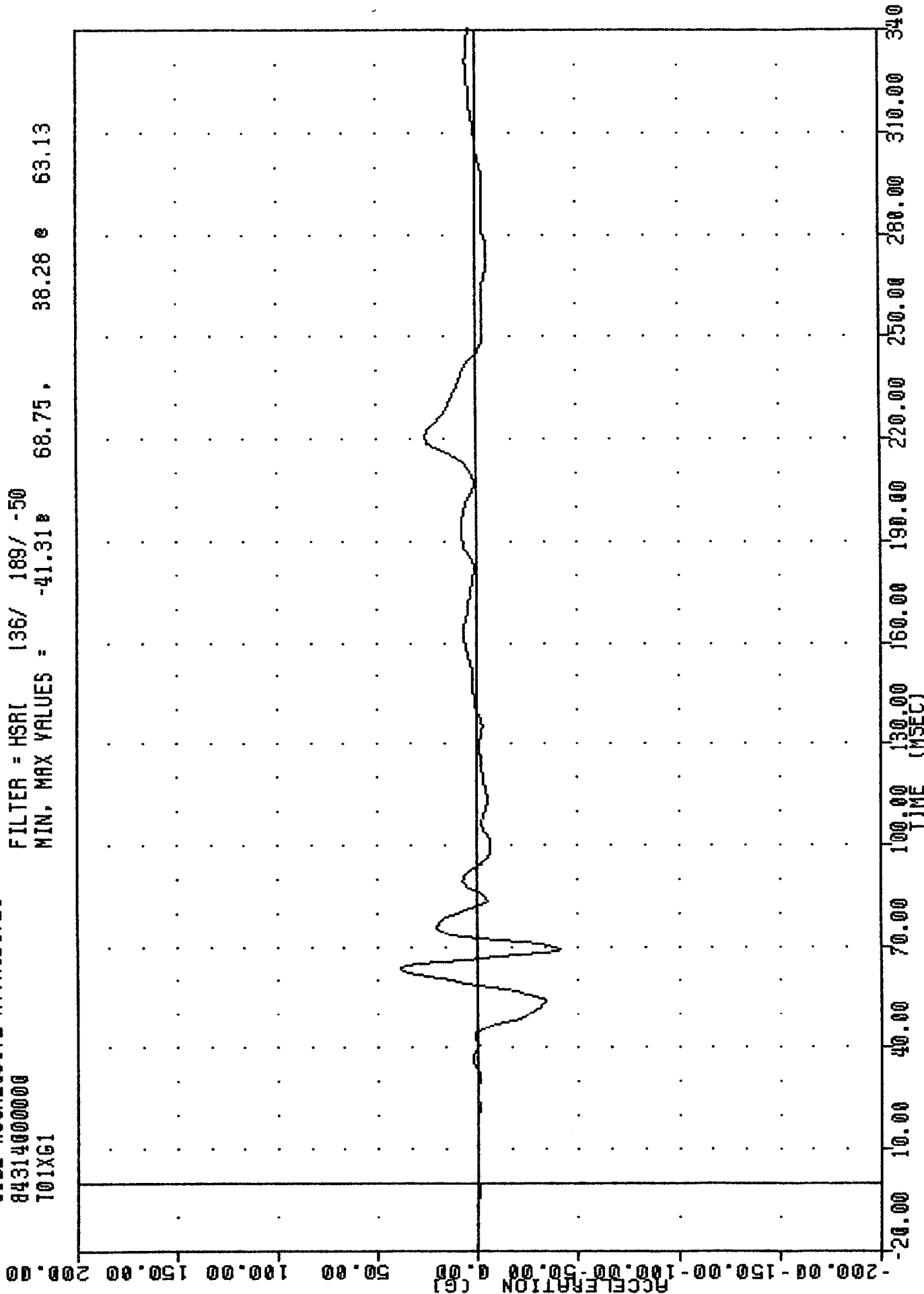
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER HEAD RESULTANT

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01XG1

PLOT DATE 15-NOV-84 15:49:47

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -41.31 68.75, 38.28 63.13

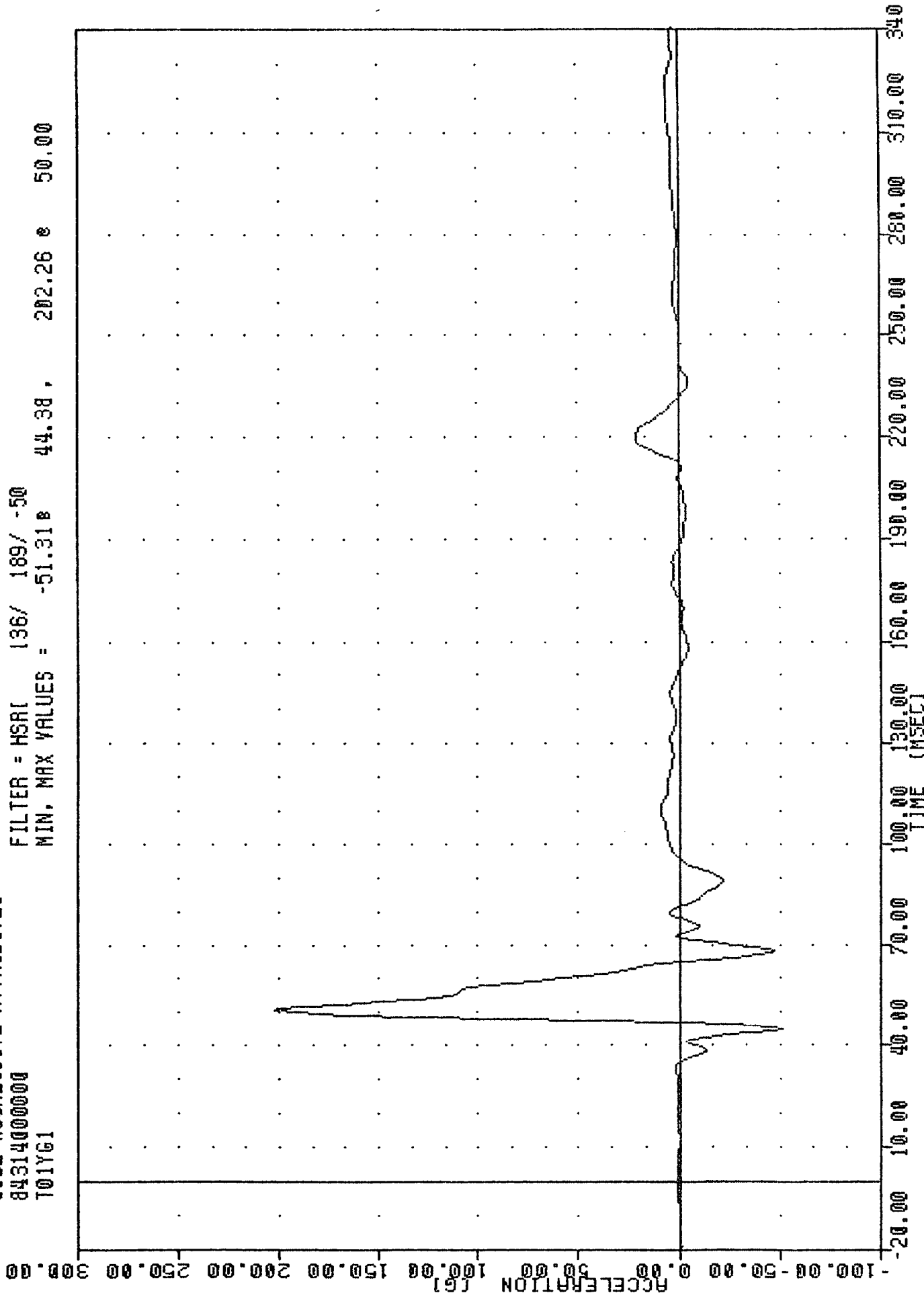


TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01YG1

PLOT DATE 19-NOV-84 14:24:09

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -51.318 44.38 , 202.26 50.00



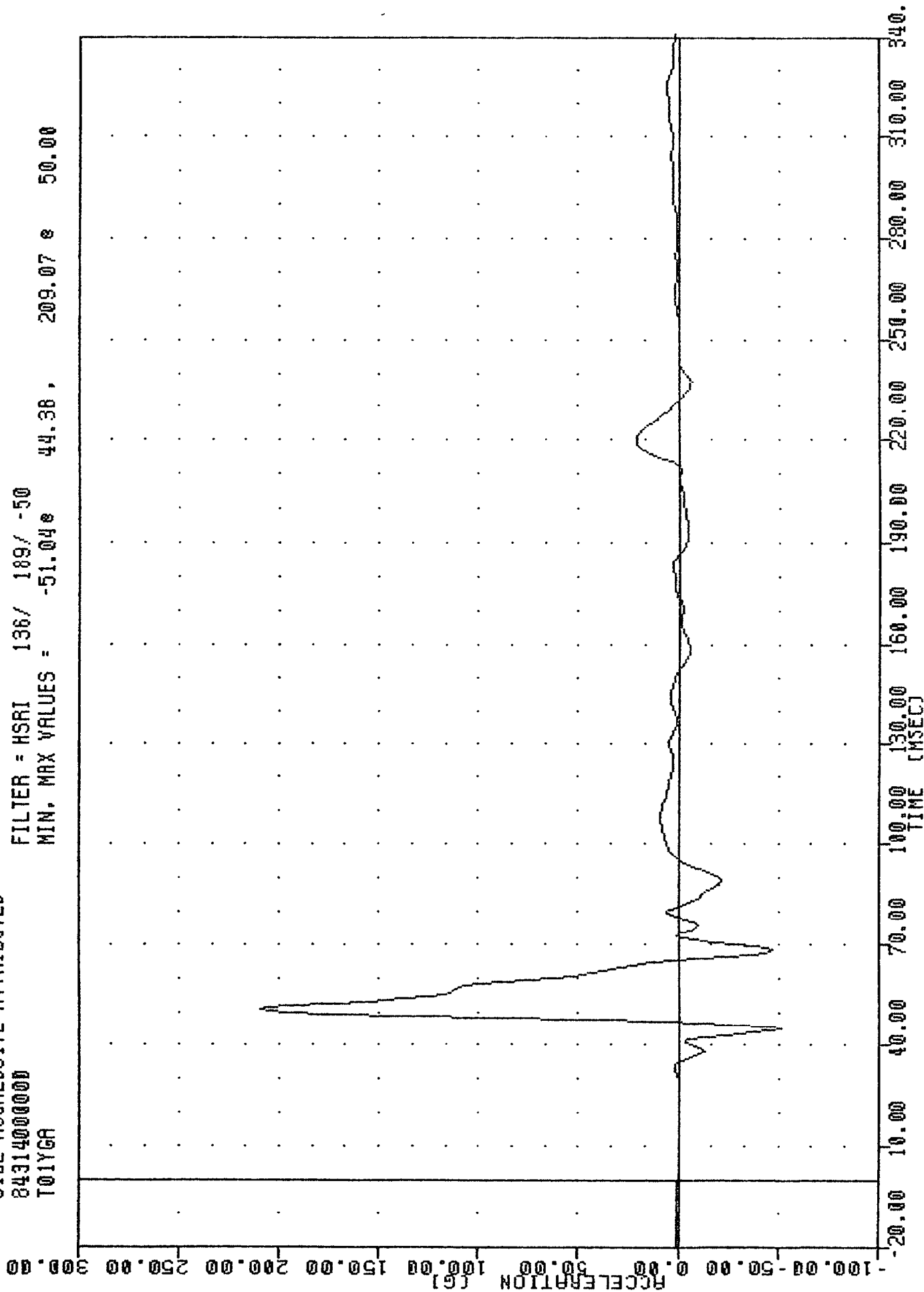
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE ACCELERATION Y AXIS

IML 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01YGR

PLUI UNIT 19-NOV-84 14:24:03

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -51.04e 44.38, 209.07 e 50.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE ACCELERATION -2 Y AXIS

IHC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
701261

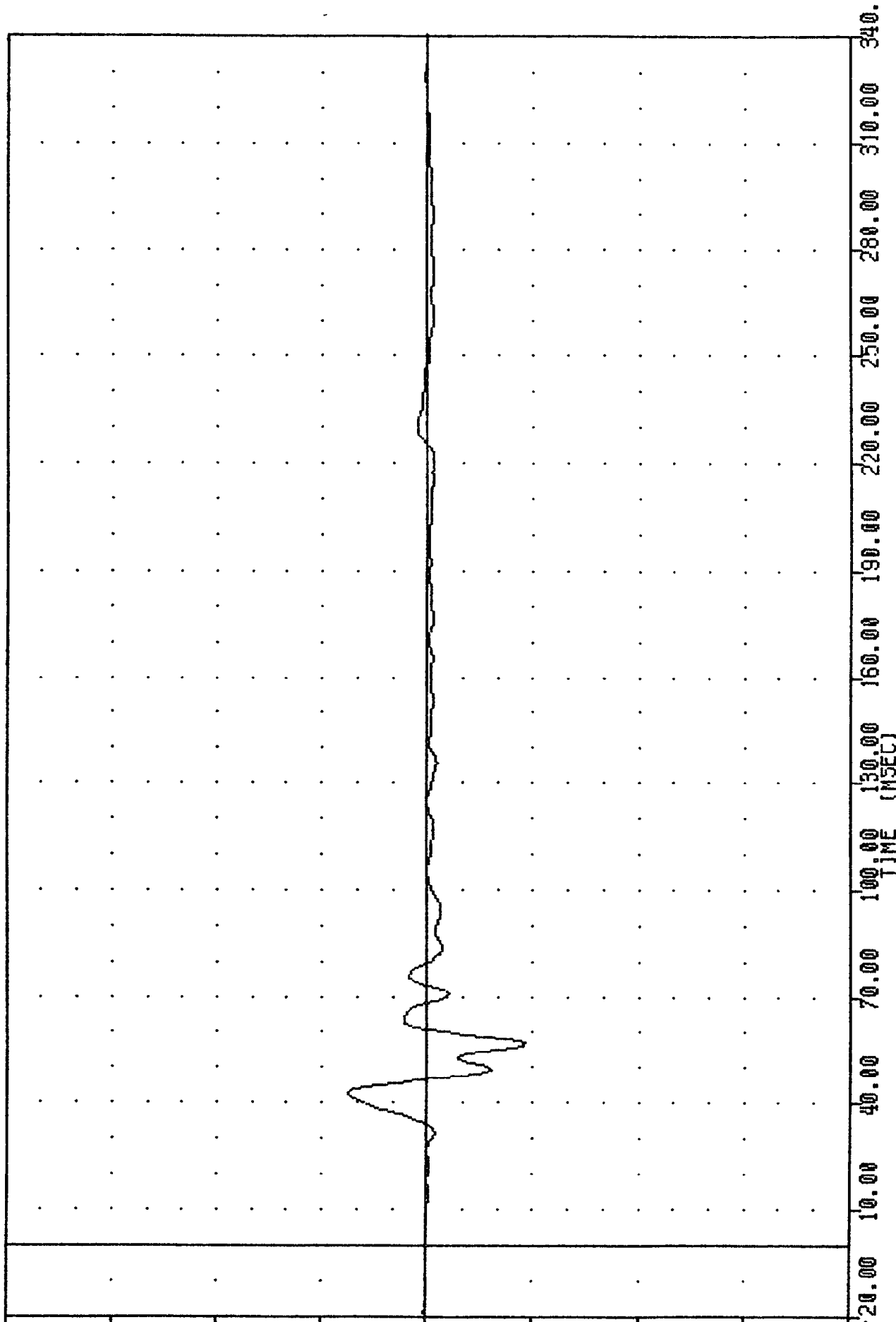
PLOT DATE 15-NOV-84 15:49:47

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -46.07 56.25 , 37.14 41.87

ACCELERATION (G)

B-9



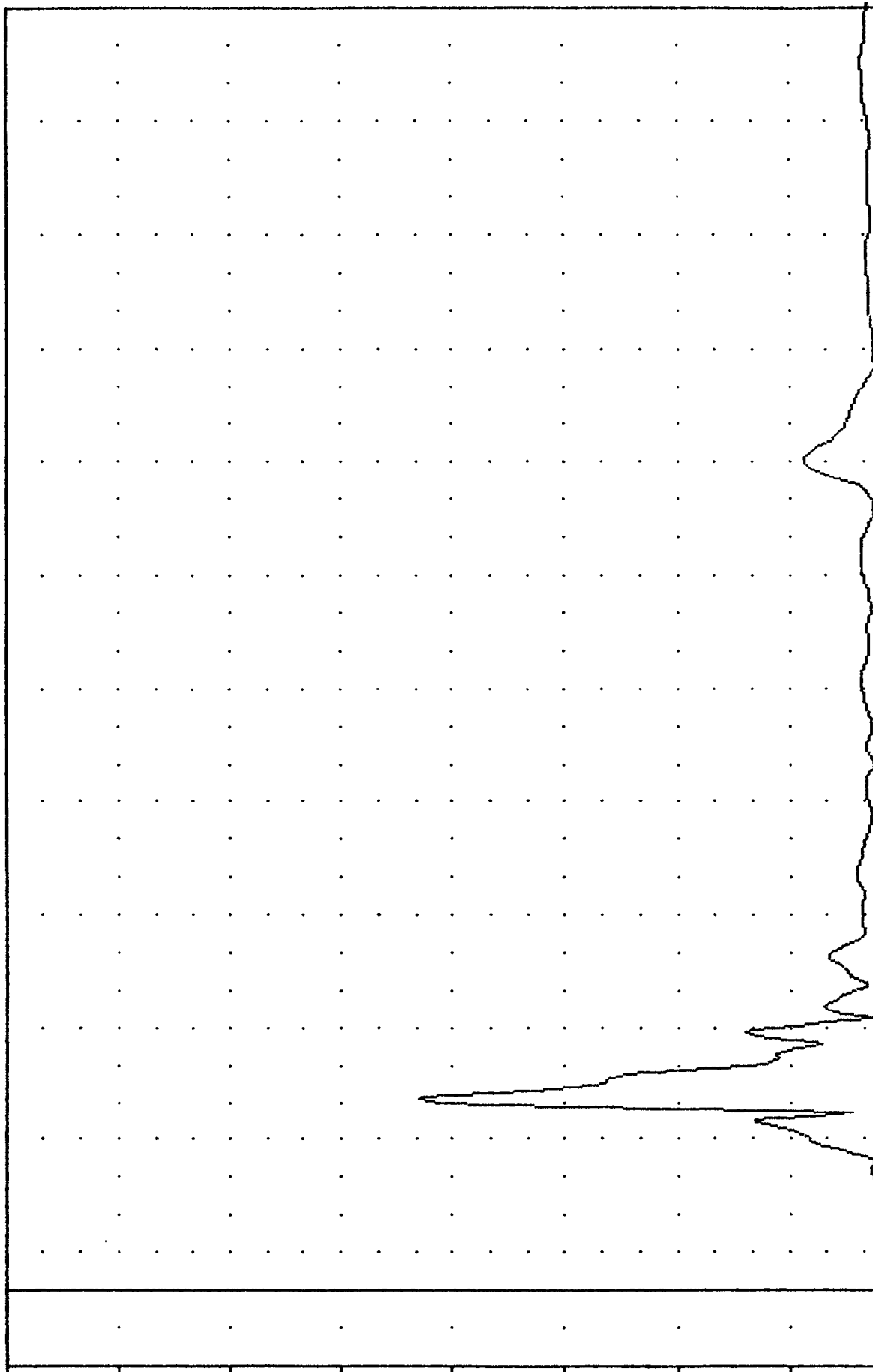
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE ACCELERATION Z AXIS

IMC 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01RG1

PLUI UNIE 12-NUV-84 12:49:47

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.09e -7.50 , 205.54 e 50.00

ACCELERATION (G)



TIME (msec)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE RESULTANT

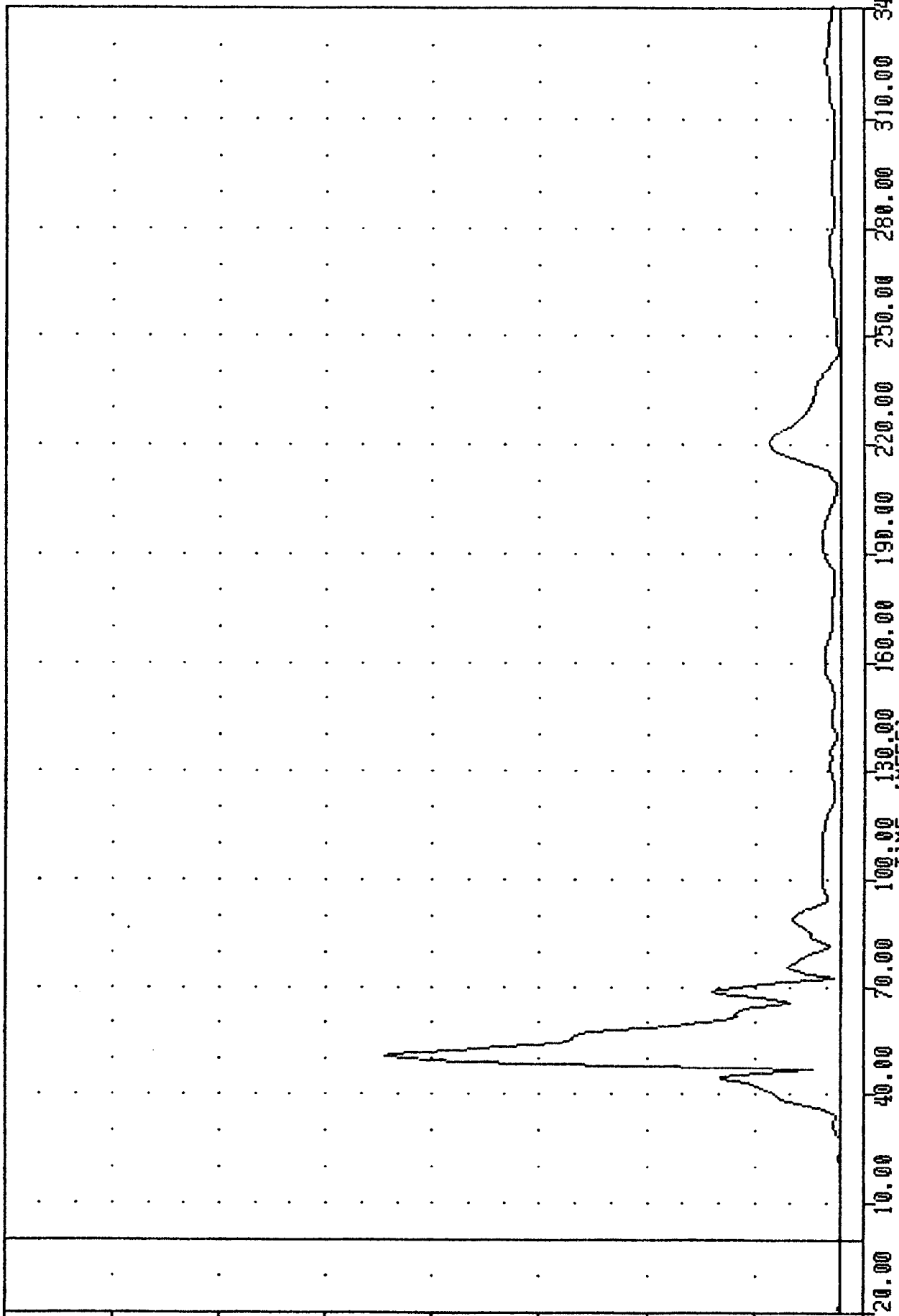
IMC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01RGA

PLUI DATE 15-NOV-84 15:50:45

FILTER = HSR 136/ 189/ -50

MIN. MAX VALUES = 0.228 0.00 . 212.23 50.00

ACCELERATION (G)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE RESULTANT USING T01YGA

INC 0411WS
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01YV1

PLUT UNIC 10-MUV-04 10-01-03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -4.23e 46.25, 40.32 e 340.00

60.00

50.00

40.00

30.00

20.00

10.00

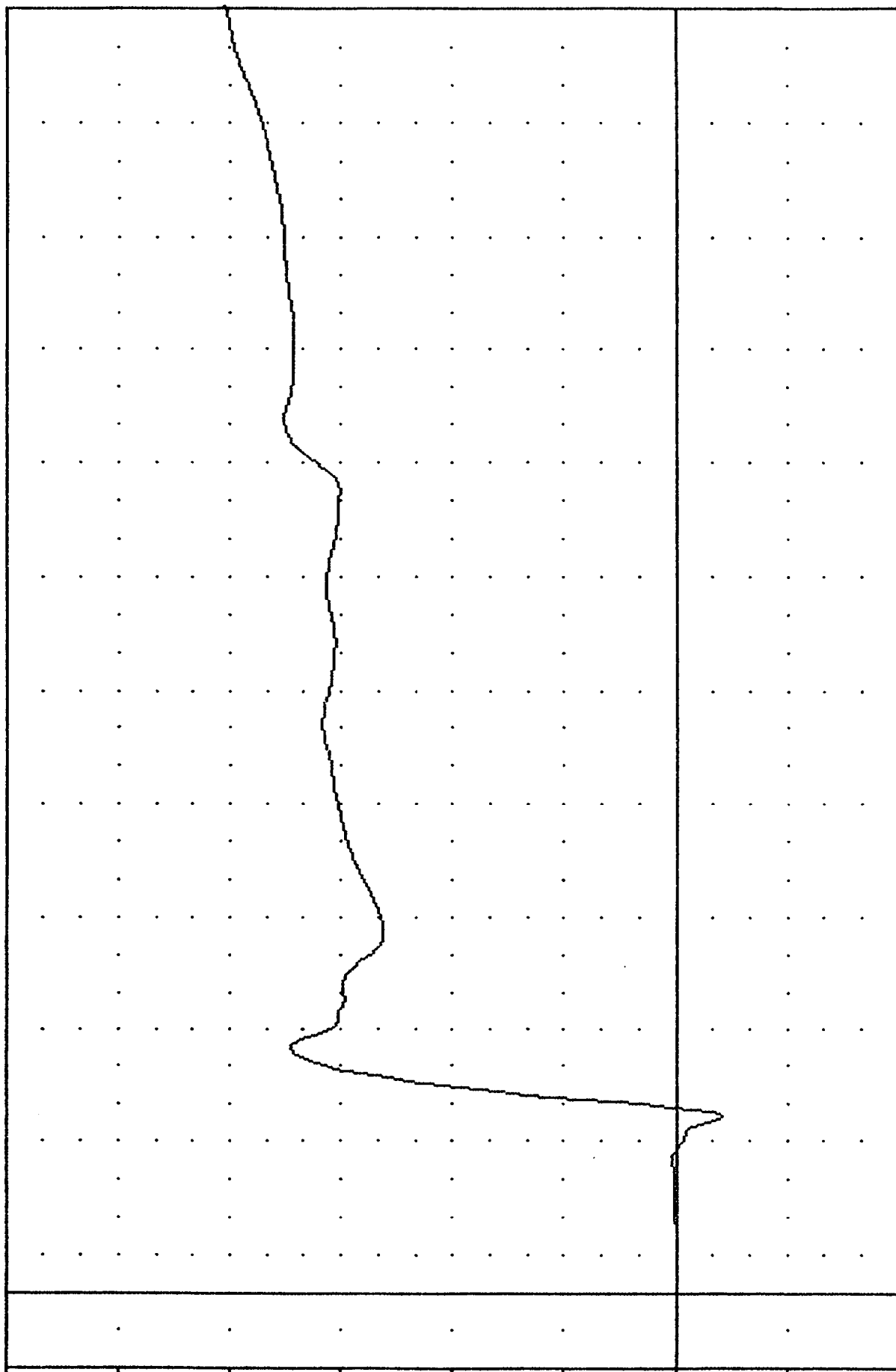
0.00

-10.00

-20.00

B-12

VELOCITY (MPH)



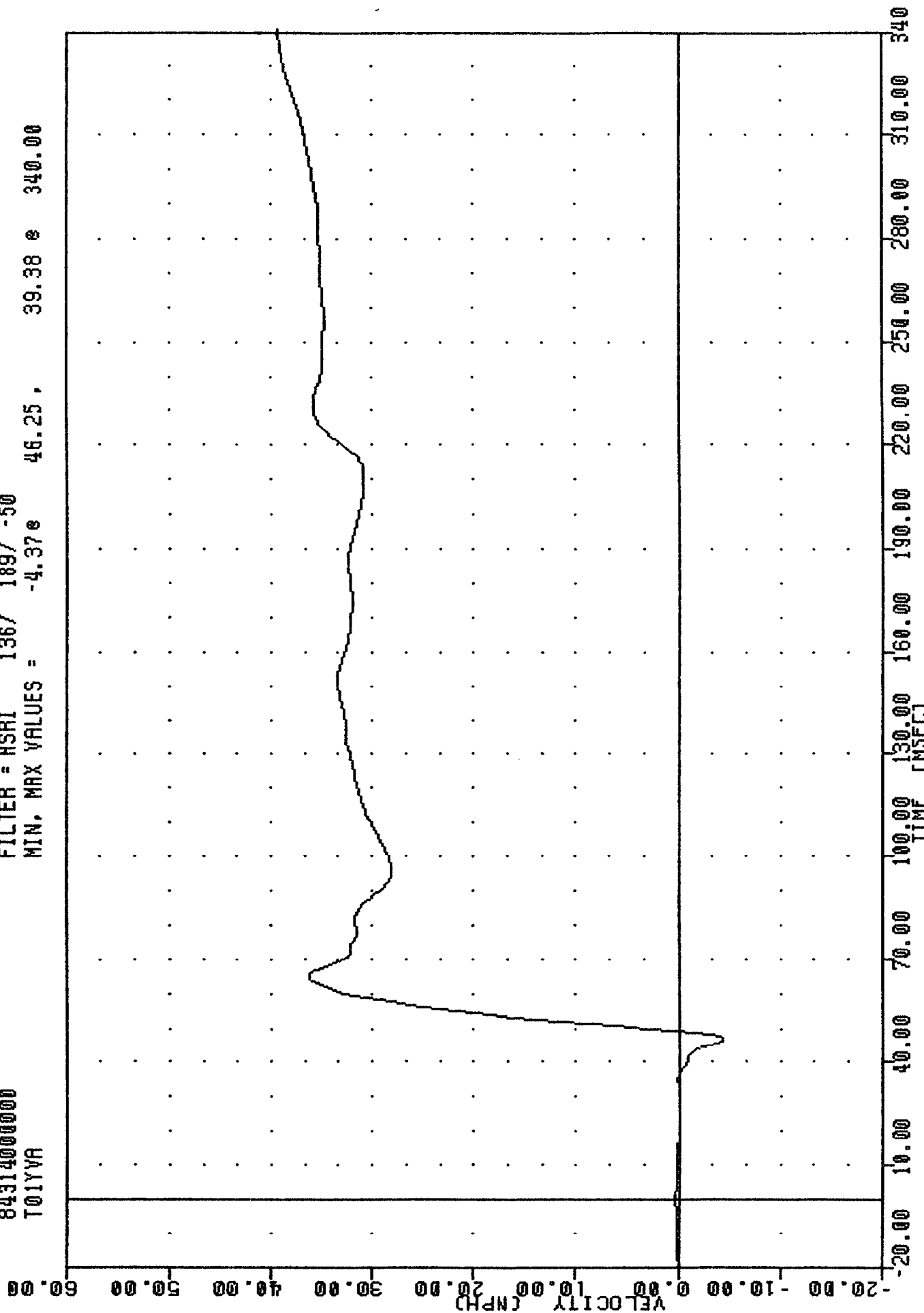
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA Y USING T01YGI

INC 041133
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01YVA

FLUT UNIC 10-NOV-04 10:01:00

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -4.37e 46.25, 39.38 e 340.00

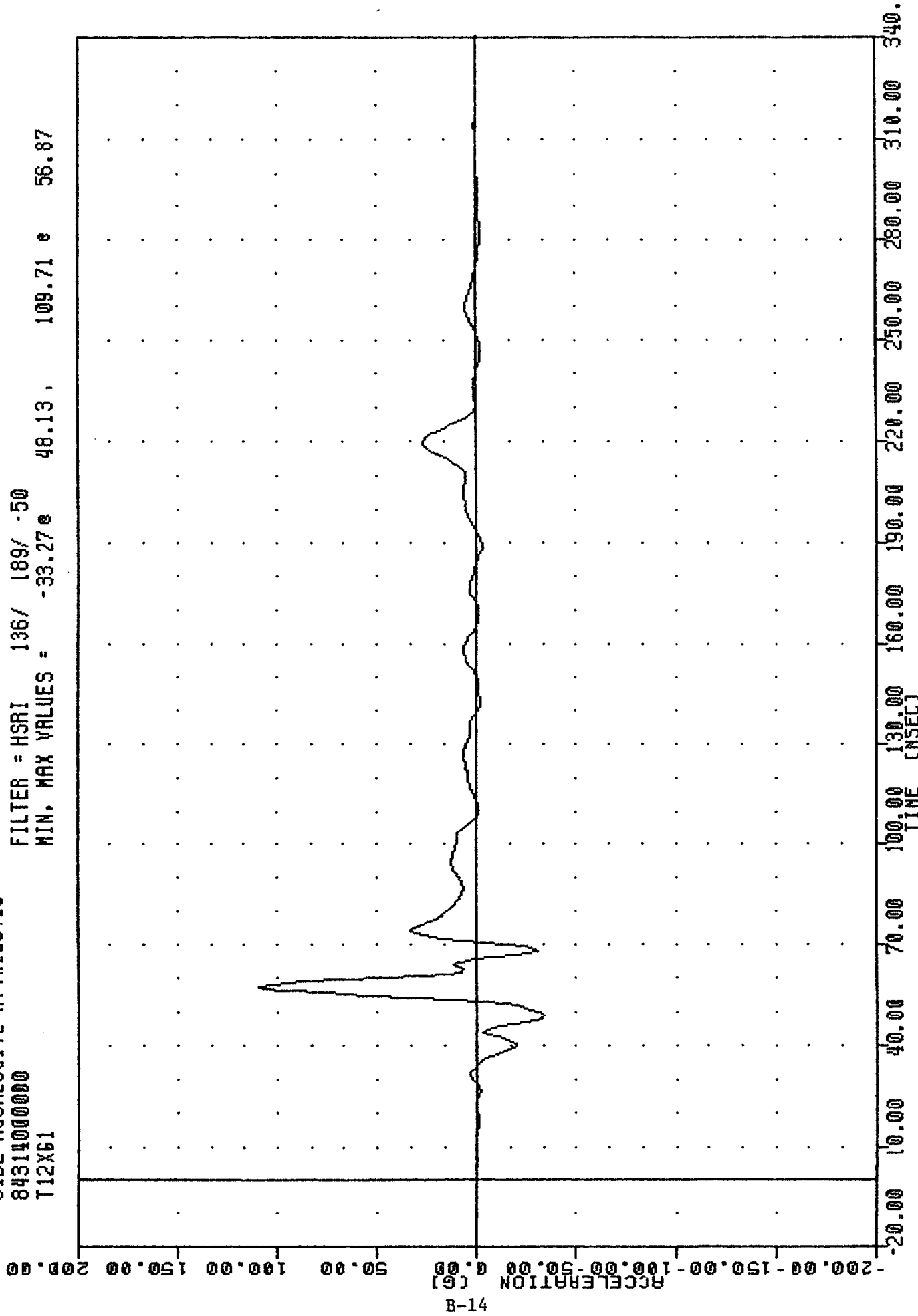


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T01YGA

INL 041115Z
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12X61

FLU1 UNIC 107 NOV 70 10.43.14Z

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -33.27 48.13, 109.71 56.87



B-14

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE ACCELERATION X AXIS

IHC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12Y61

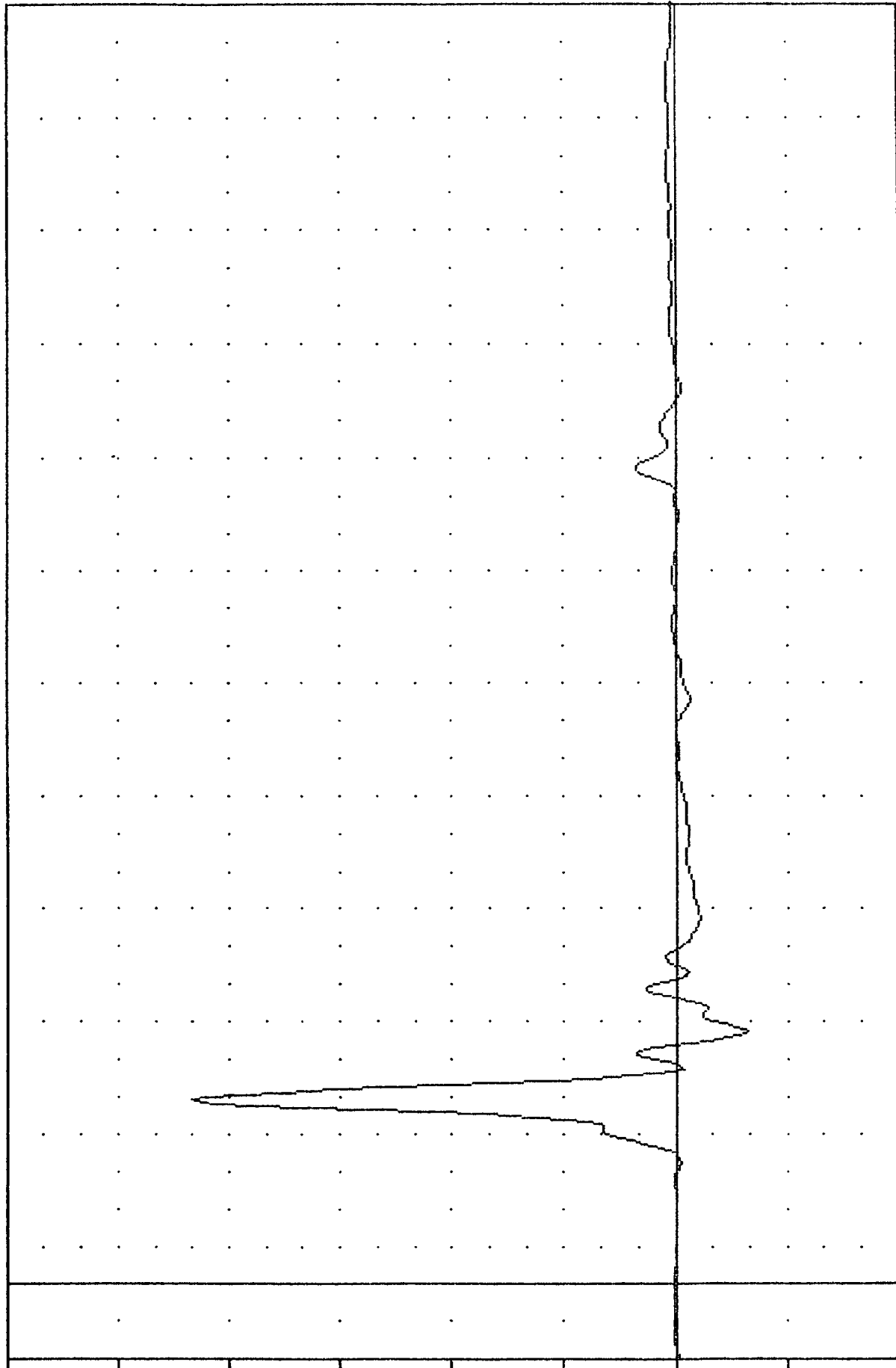
PLU1 UM1E 19-NOV-84 14:24:09

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -32.03 66.67 , 216.64 48.75

ACCELERATION (G)
 300.00
 250.00
 200.00
 150.00
 100.00
 50.00
 0.00
 -50.00
 -100.00

B-15



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE ACCELERATION Y AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12YGA

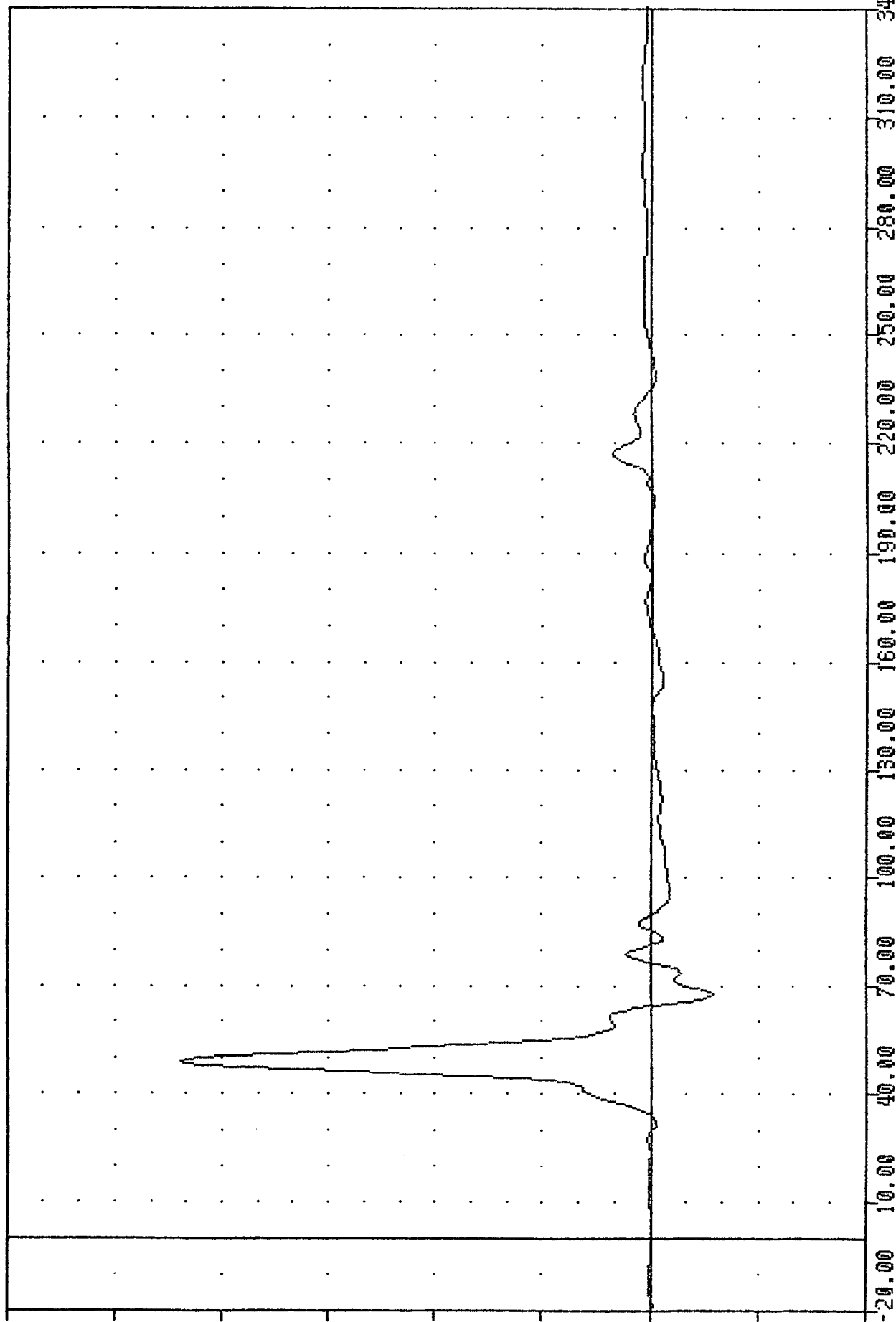
PLOT DATE 19-NOV-84 14:24:09

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -29.598 66.87, 218.77 & 48.75

ACCELERATION (G)

B-16



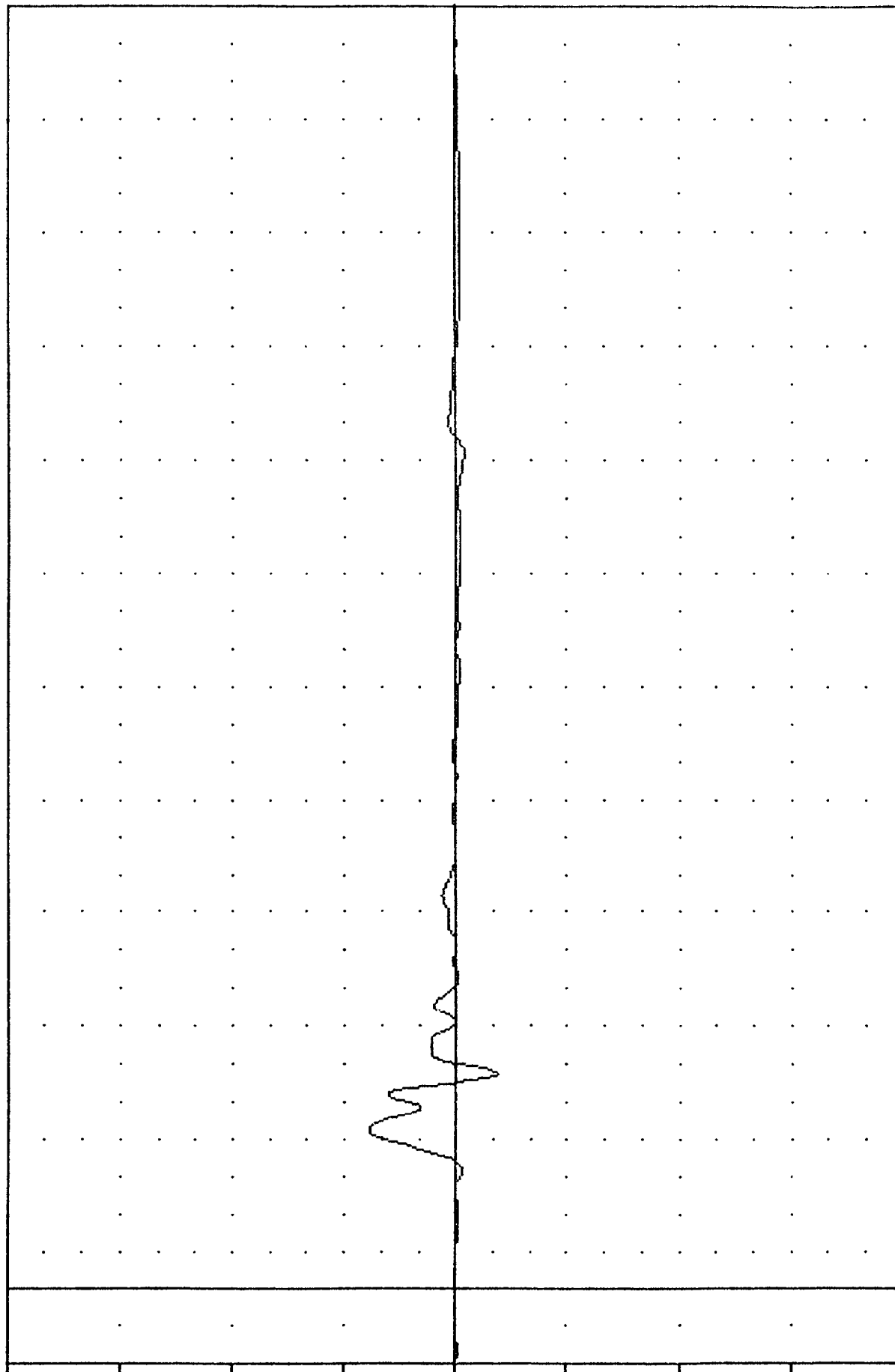
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE ACCELERATION #2 Y AXIS

INC
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12361

FLUT UNIT 10 INCHES 10.43147

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -18.75g 56.87 , 38.82 g 41.87

ACCELERATION [G]



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE ACCELERATION Z AXIS

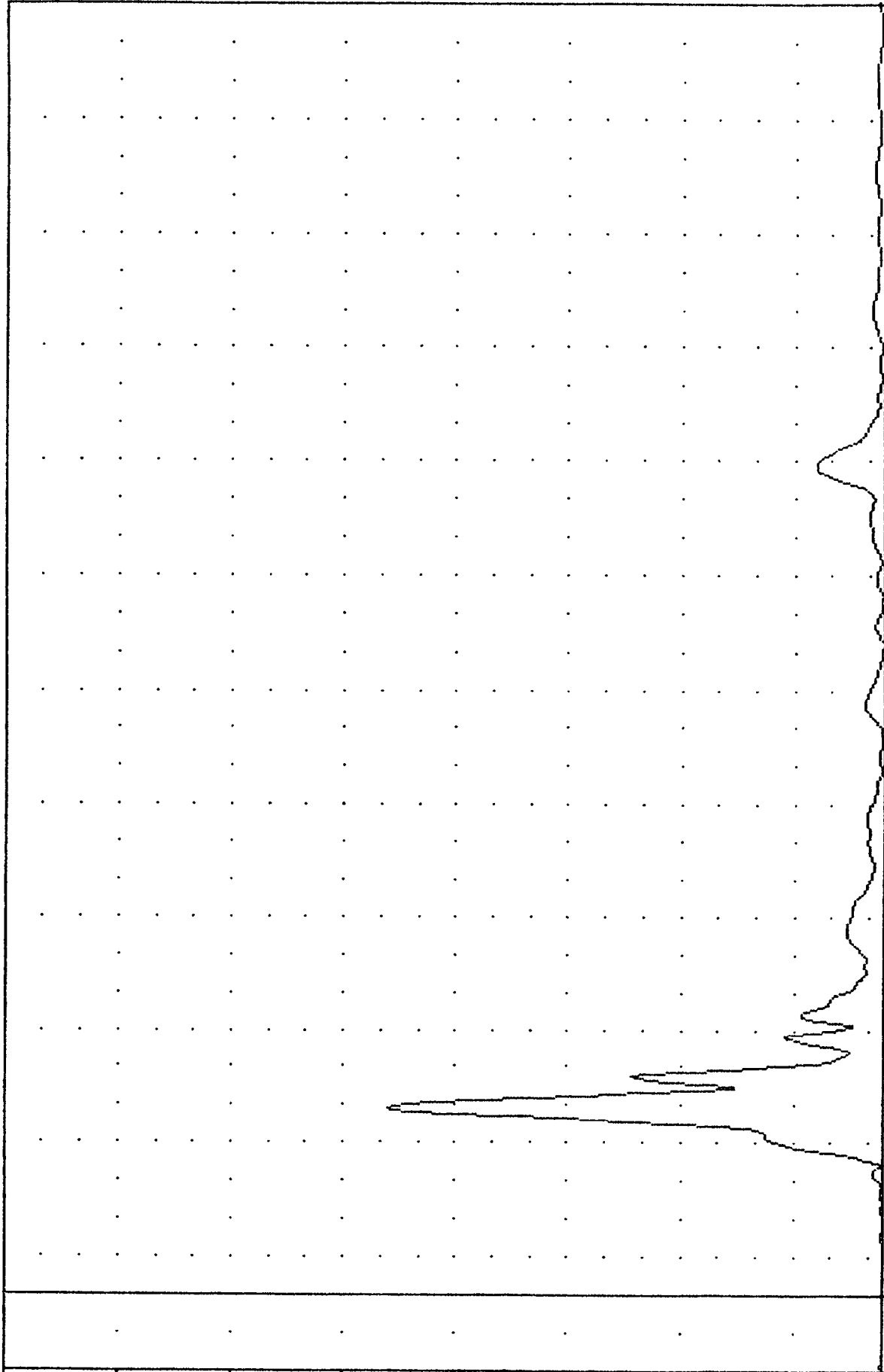
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T12RG1

PLOT DATE 15-NOV-84 15:49:47

FILTER = HSR[136/ 189/ -50

MIN, MAX VALUES = 0.08e 5.62, 219.79 e 48.75

ACCELERATION (G)
-10.00
-4.00
0.00
4.00
8.00
12.00
16.00
19.00
23.00
27.00
29.00
33.00
37.00



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DRIVER LOWER SPINE RESULTANT

FILE 10-11-83

SIDE AGGRESSIVE ATTRIBUTES

84314000000

T12RGA

FILE UNIT

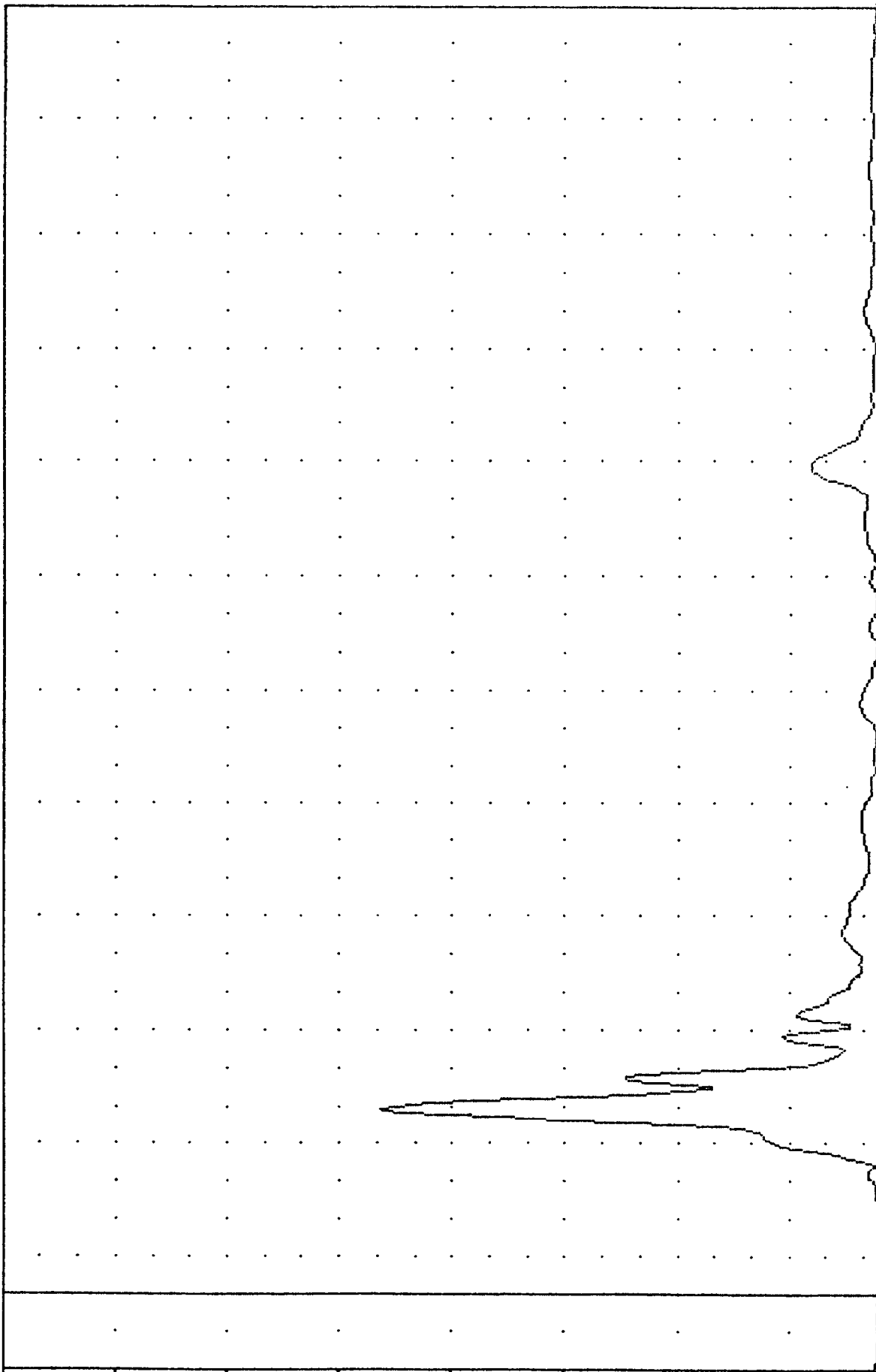
10-NOV-83

10-00-00

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = 0.068 -5.62, 221.88 e 48.75

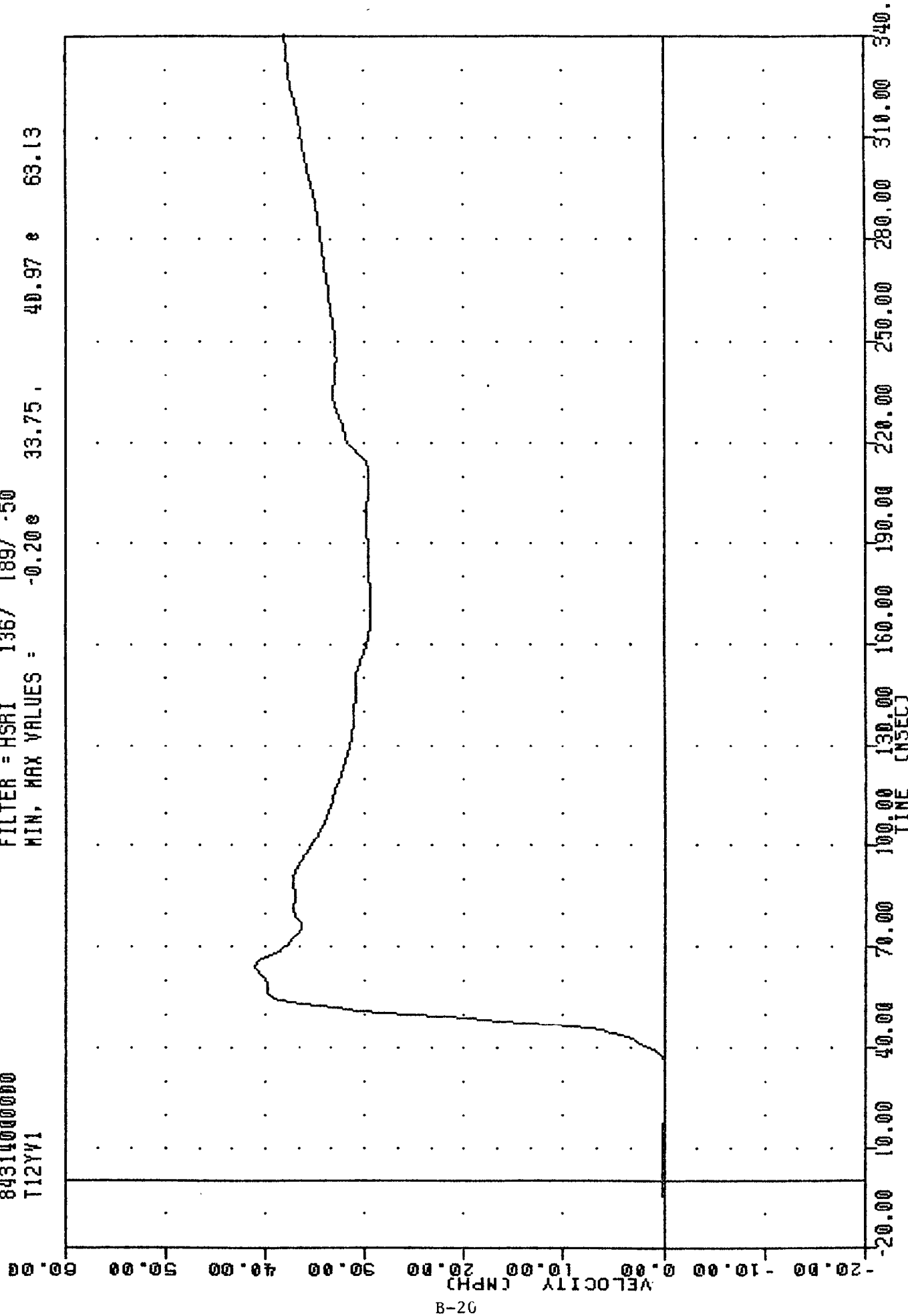
ACCELERATION (G)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE RESULTANT USING T12YGA

T12YV1
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12YV1

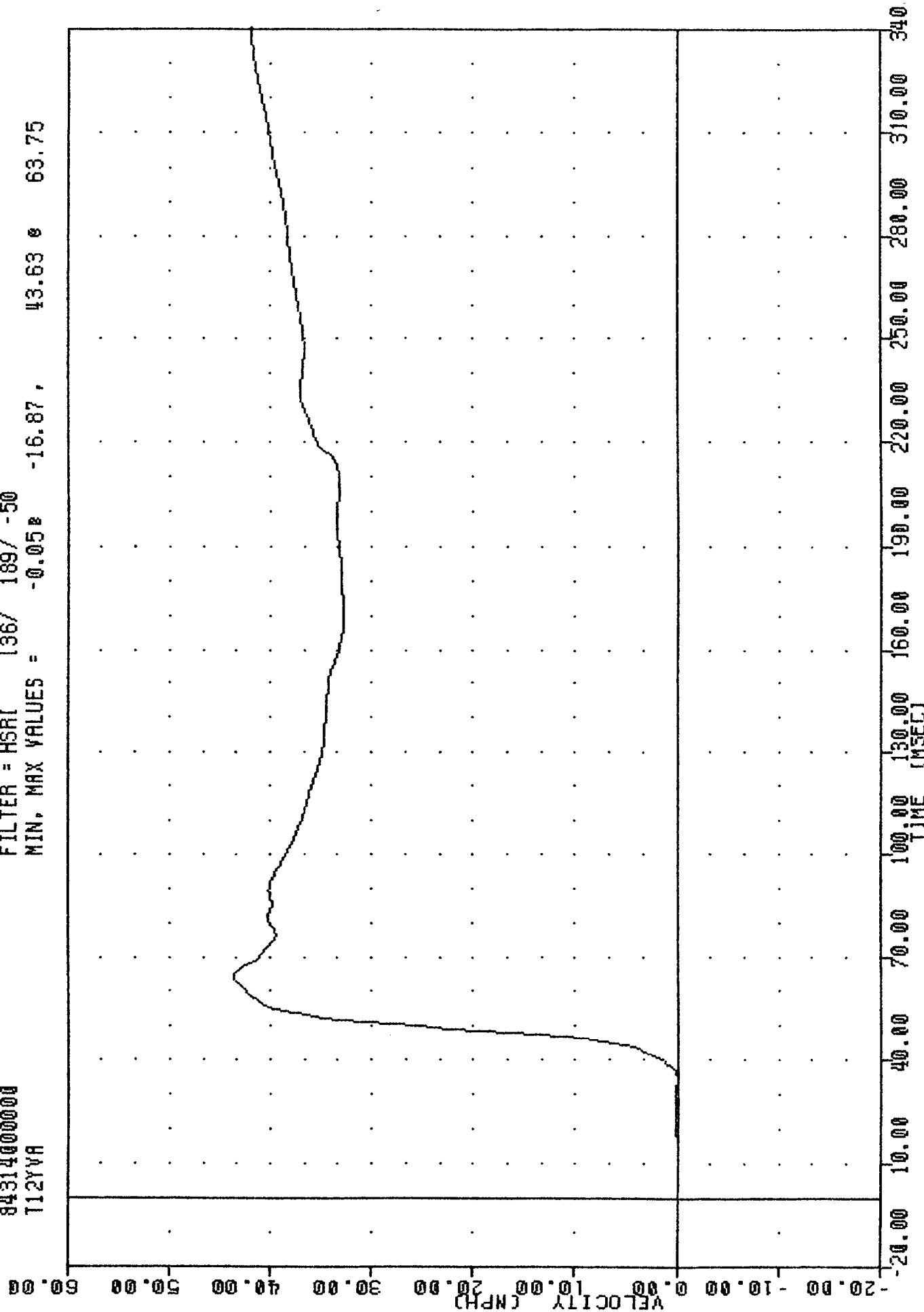
FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -0.20 33.75 40.97 63.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T12YGI

SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12YV8

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -0.050 -16.87, 43.63 @ 63.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T12YGA

TRC , 841109

PLOT DATE 19-NOV-84 14:24:09

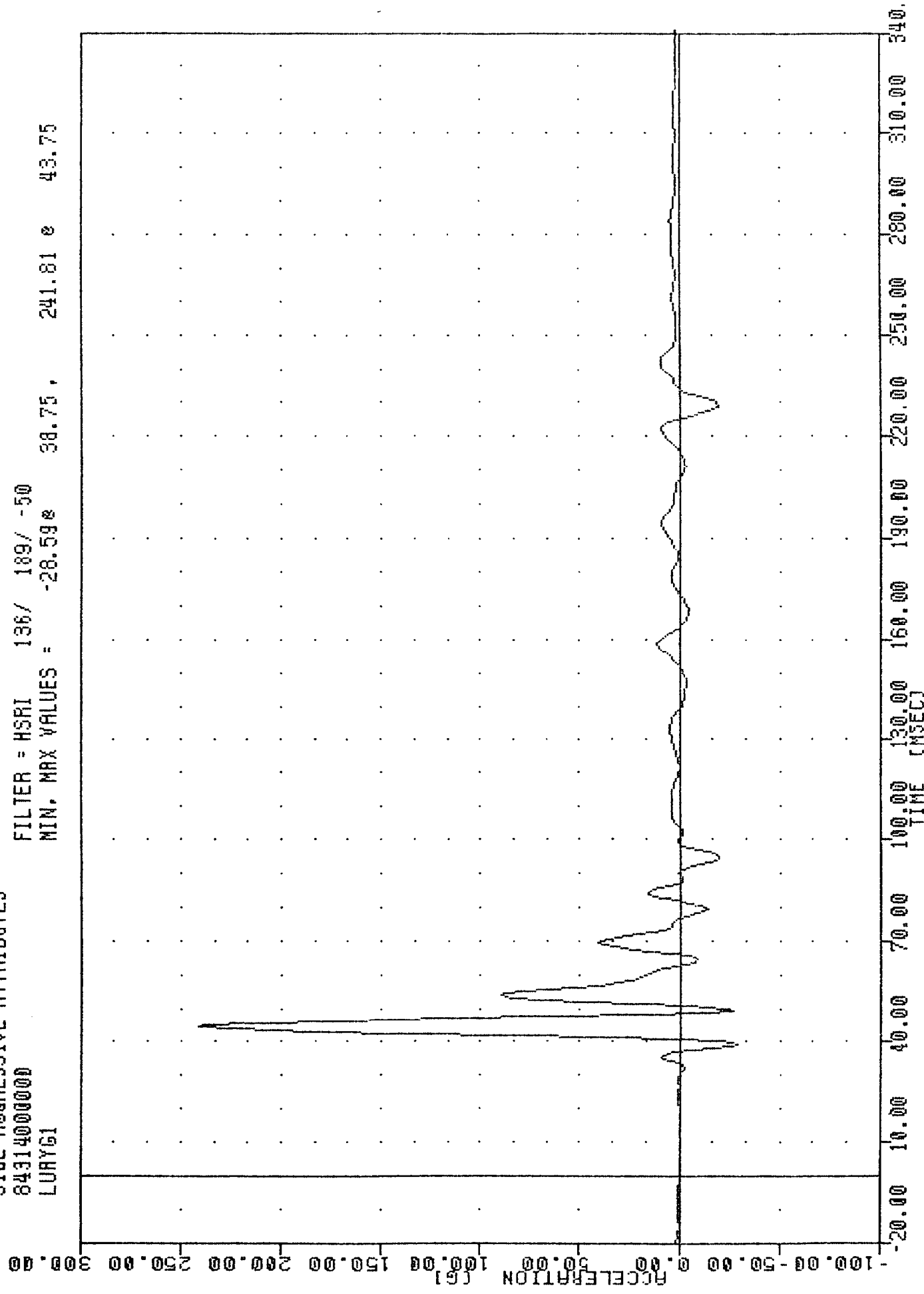
SIDE AGGRESSIVE ATTRIBUTES

84314000000

FILTER = HSRI 136/ 189/ -50

LURY61

MIN. MAX VALUES = -28.59 38.75, 241.81 43.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT HIPPER AIR ACCELERATION Y AXIS

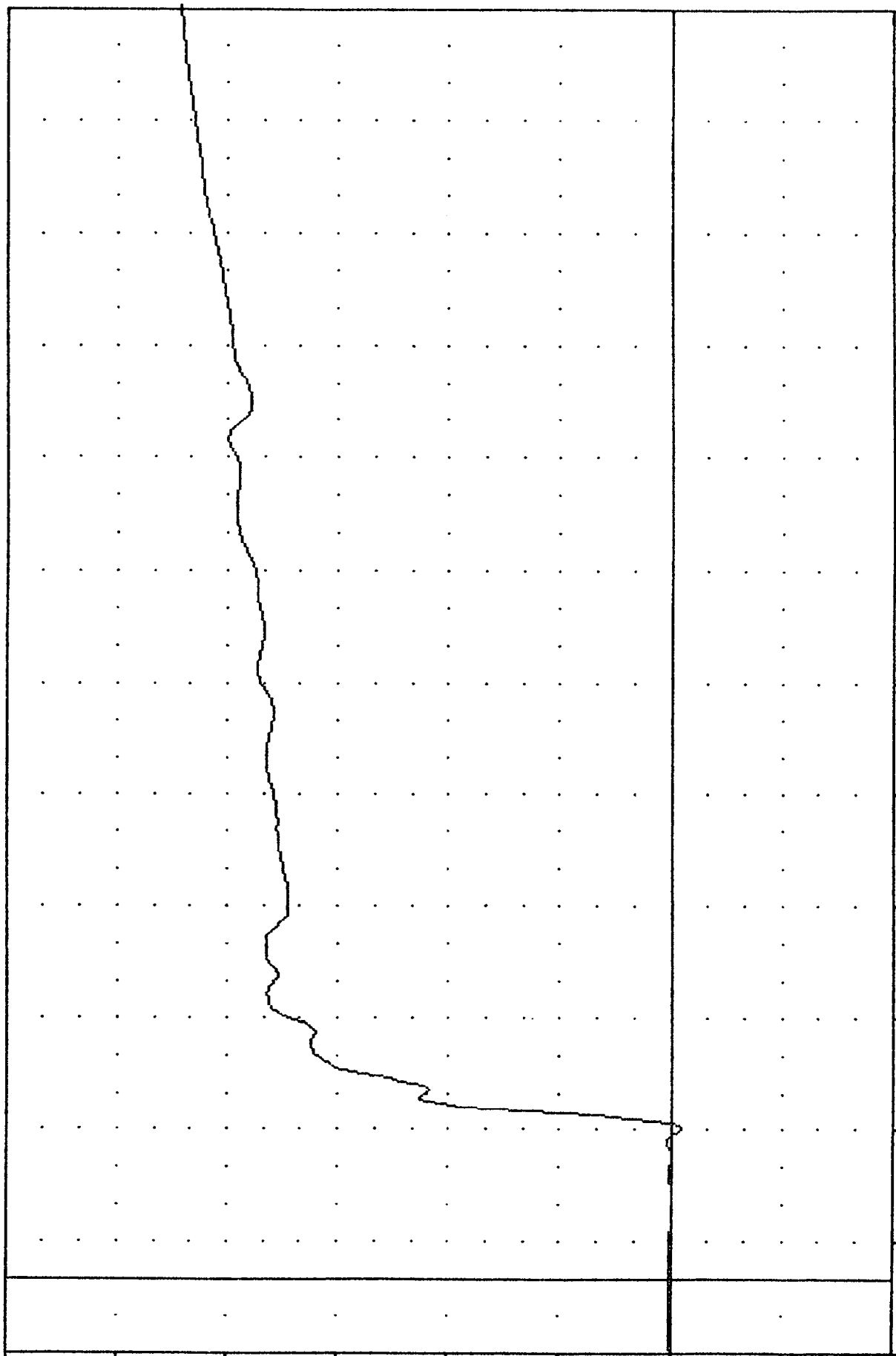
IMC , 841109
SIDE AGGRESSIVE ATTRIBUTES
8431400000
LURYV1

PLUI DHIE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -1.01e 40.00, 44.20 e 340.00

VELOCITY (MPH)



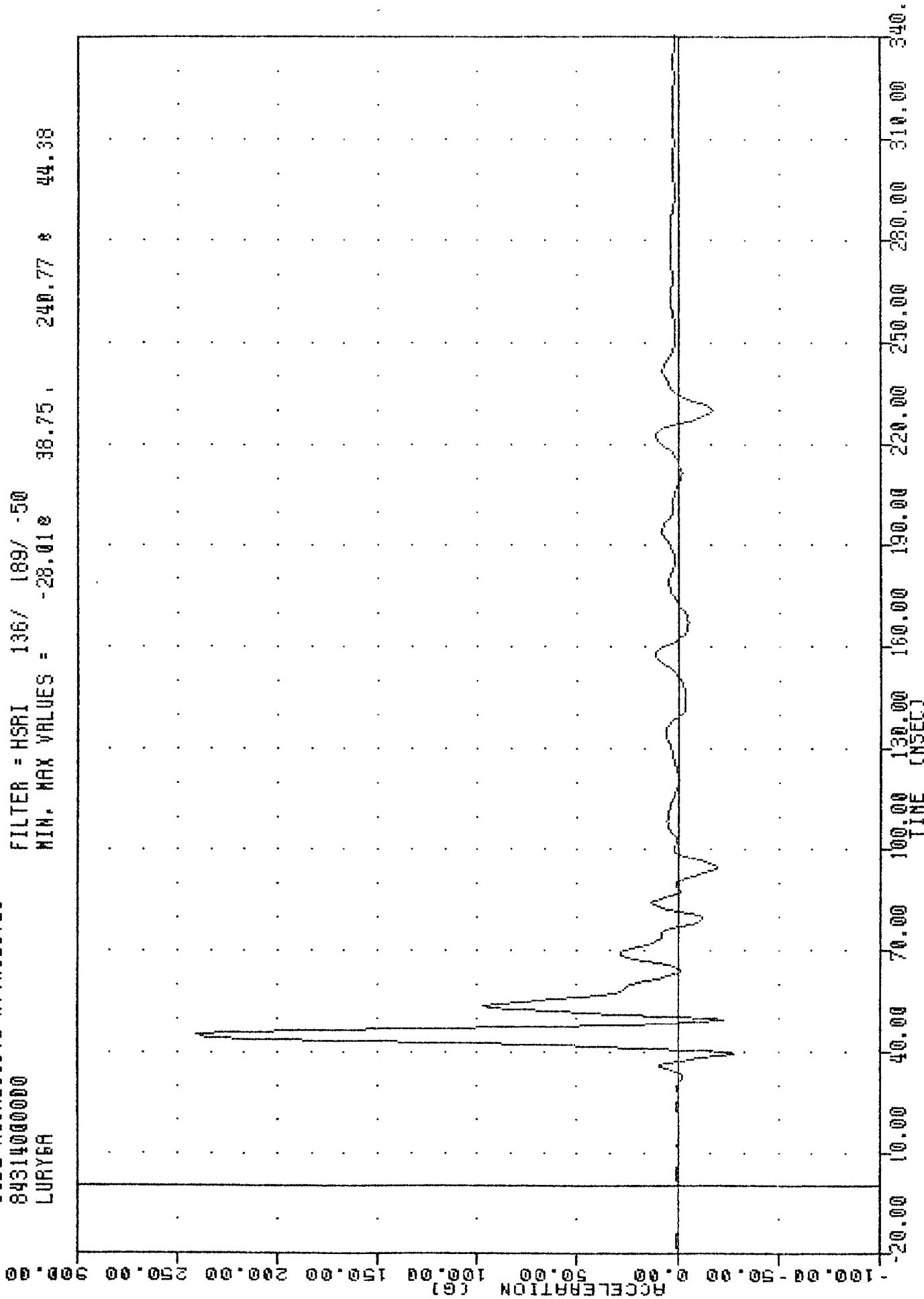
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LURYGI

INL 04JUN93
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURYER

PLU1 DATE 19-NOV-84 14:24:59

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -28.010 38.75 240.77 44.38



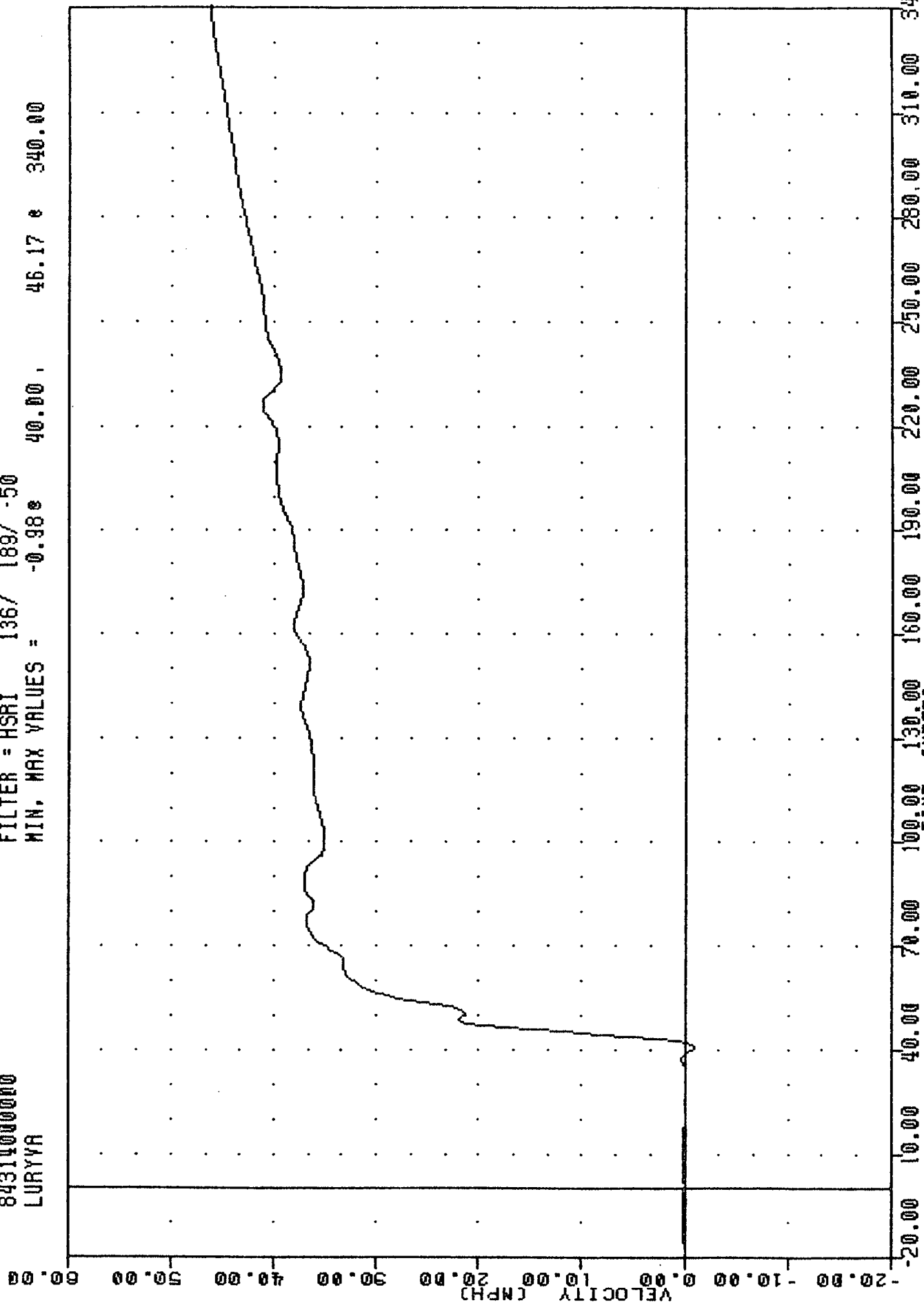
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT UPPER RIB ACCELERATION -2 Y AXIS

IHC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURYA

PLUT DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.98 40.00 46.17 340.00



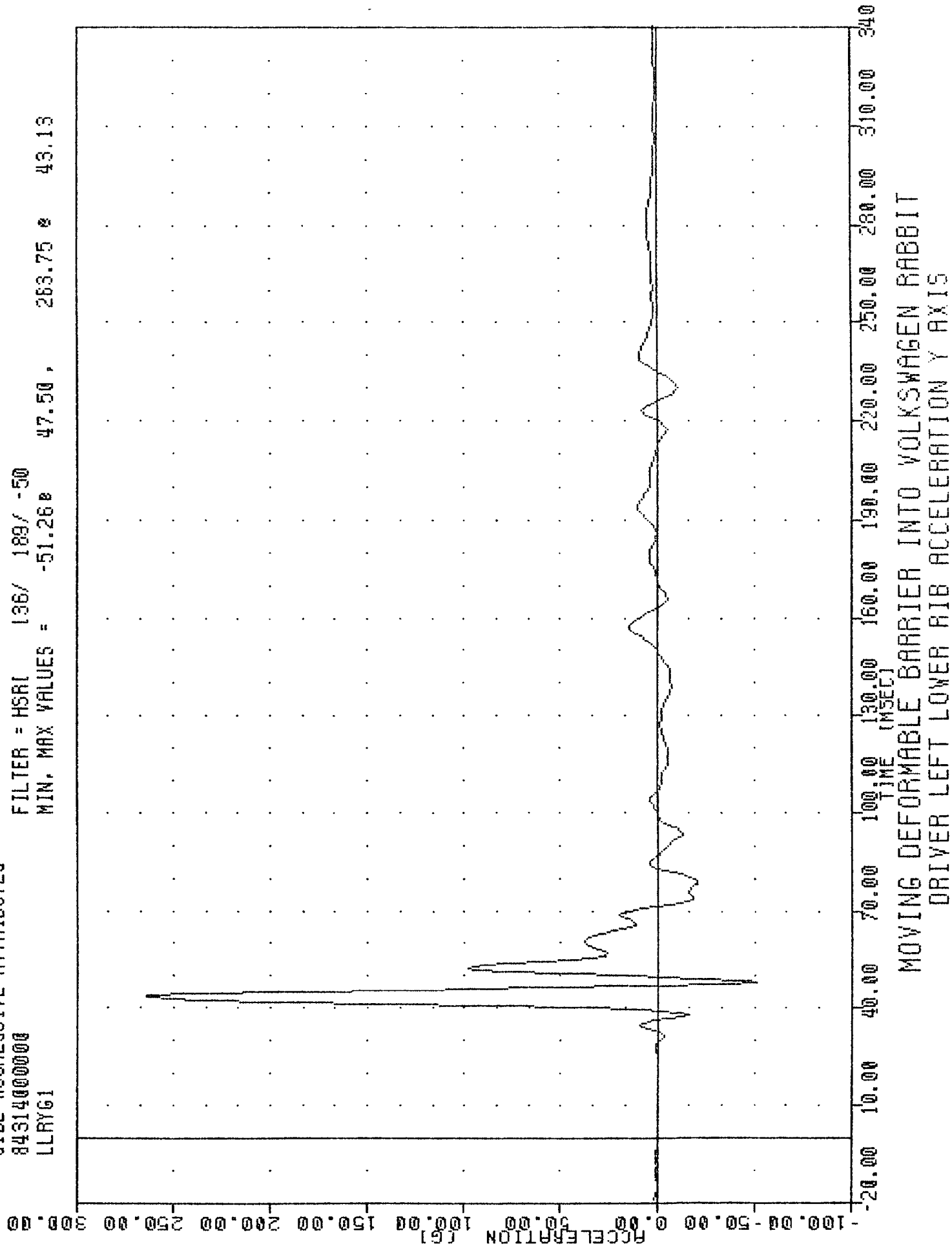
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURYGA

IHC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LLRYG1

PLU1 UH1E 19-NOV-84 14:24:03

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -51.260 47.50 , 283.75 0 43.13

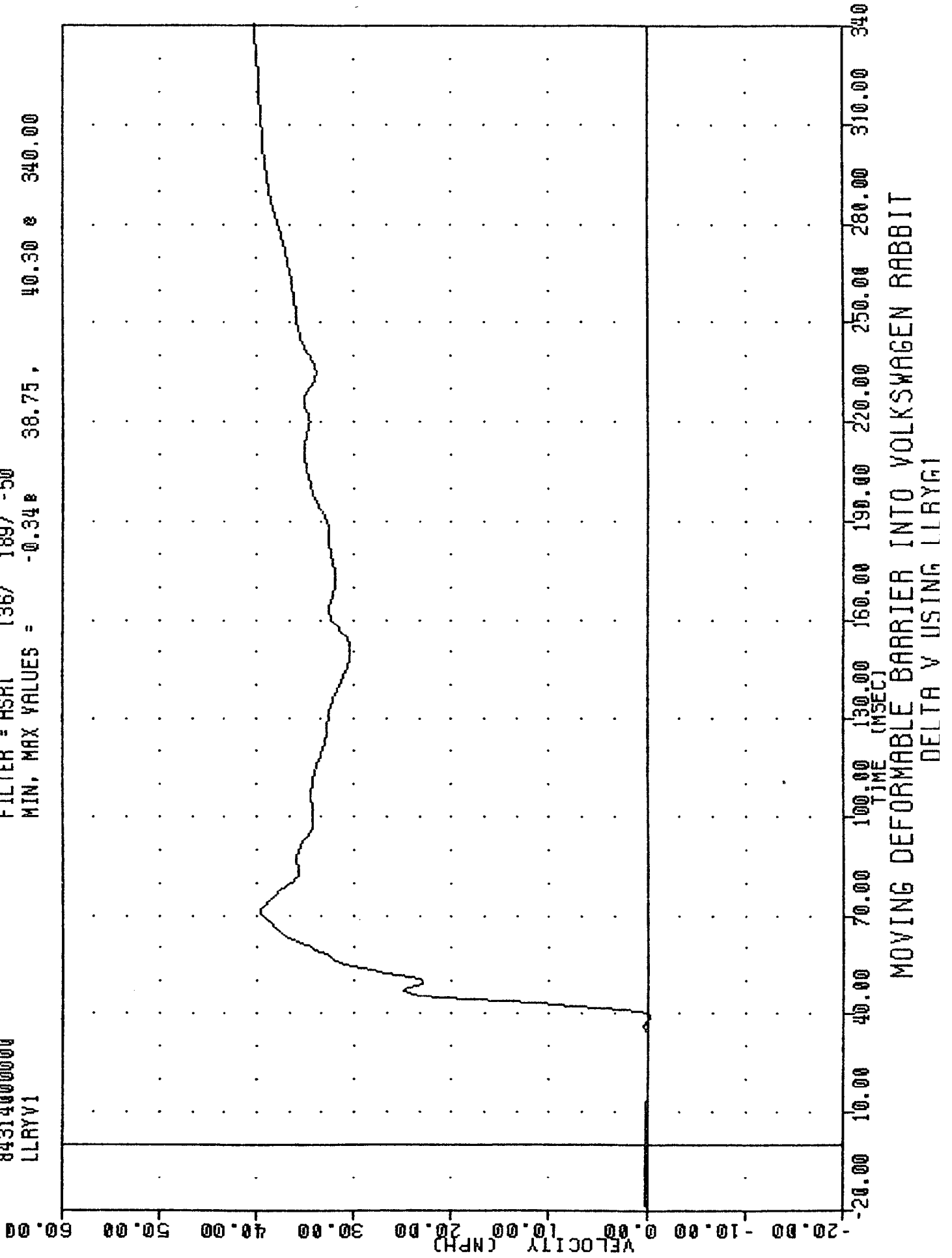


TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LLYV1

PLOT DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.34 38.75, 40.30 340.00



IML 041109

SIDE AGGRESSIVE ATTRIBUTES

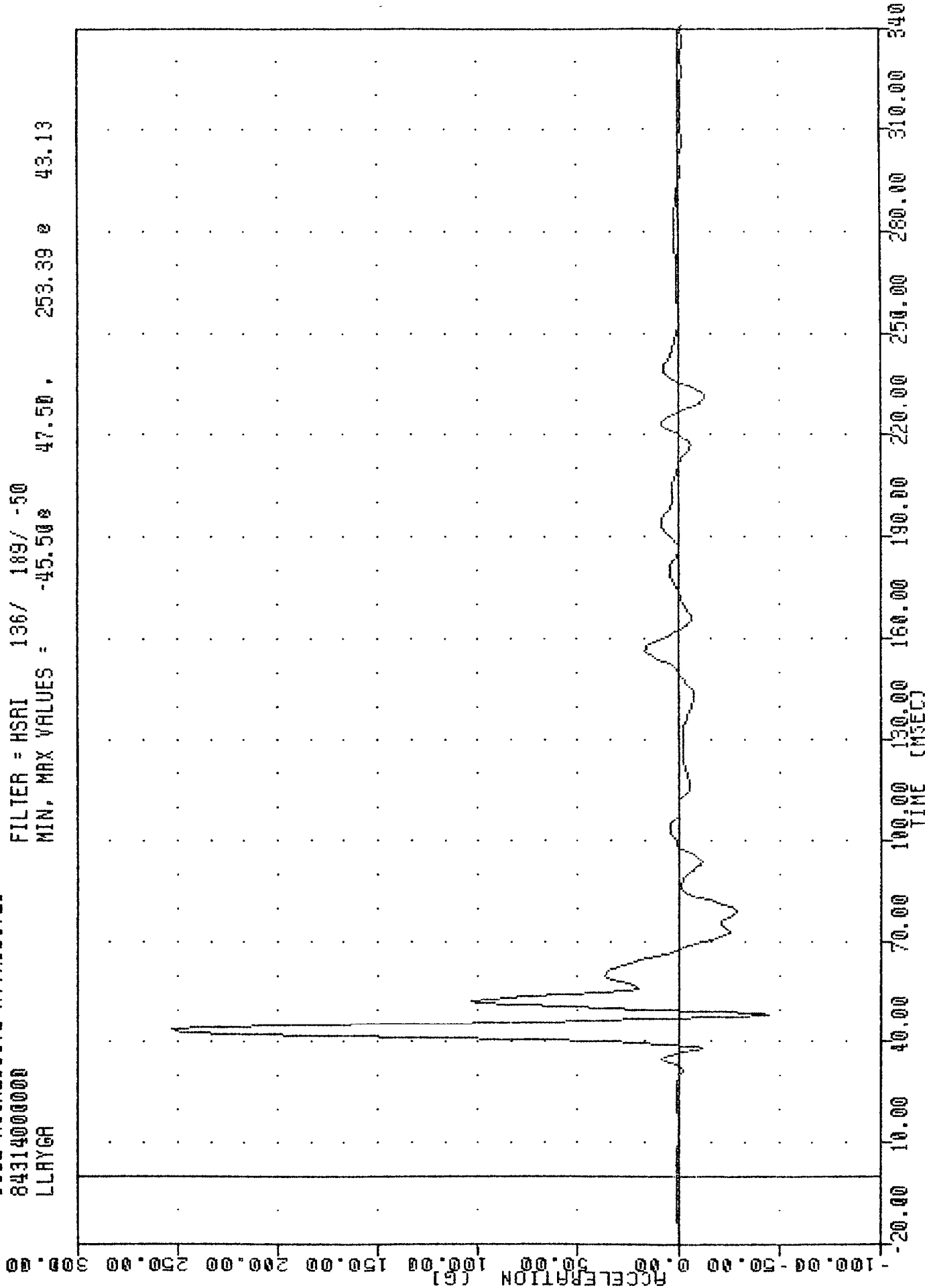
84314000000

LLRYGA

PLUI UNIE 19-MU-04 14:24:09

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -45.50 47.50 253.39 43.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT LOWER RIB ACCELERATION -2 Y AXIS

INC 041109

SIDE AGGRESSIVE ATTRIBUTES

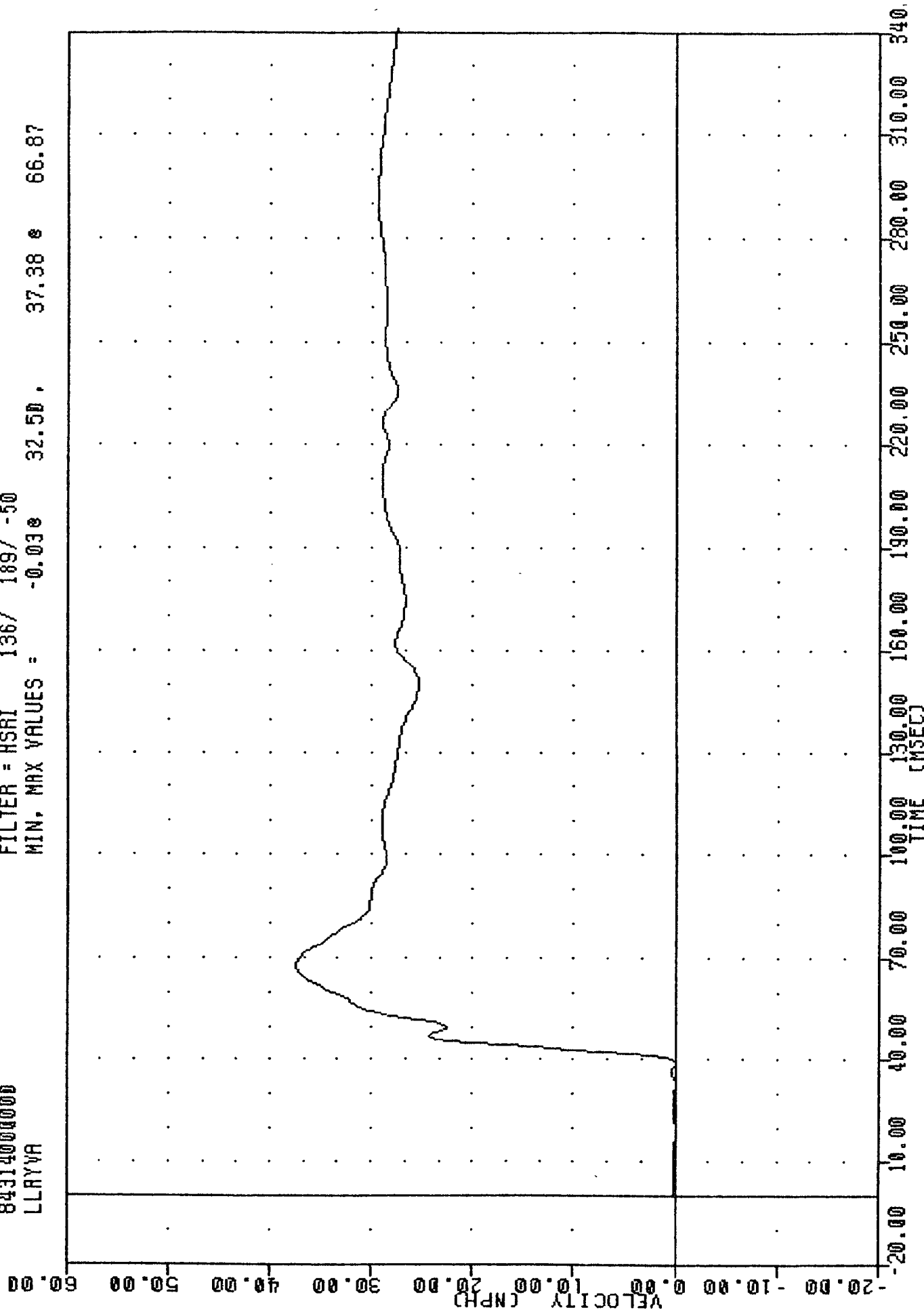
84314000000

LLRYVA

PLU1 UNIE 13-NOV-84 10:01:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.030 32.50, 37.38 66.87



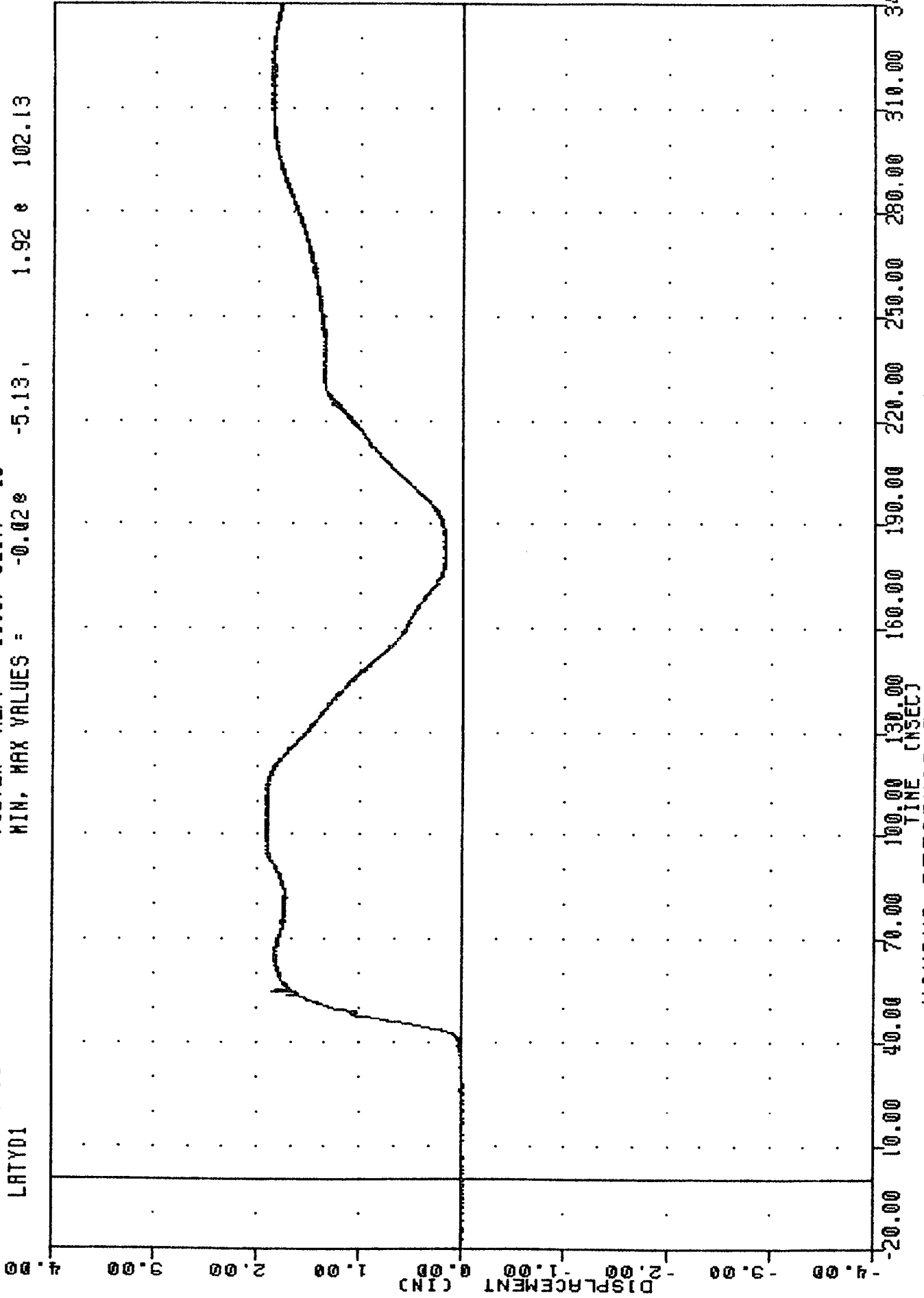
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LLRYGA

TAC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LATY01

PLOT DATE 15-NOV-84 15:49:06

FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = -0.020 -5.13, 1.92 e 102.13



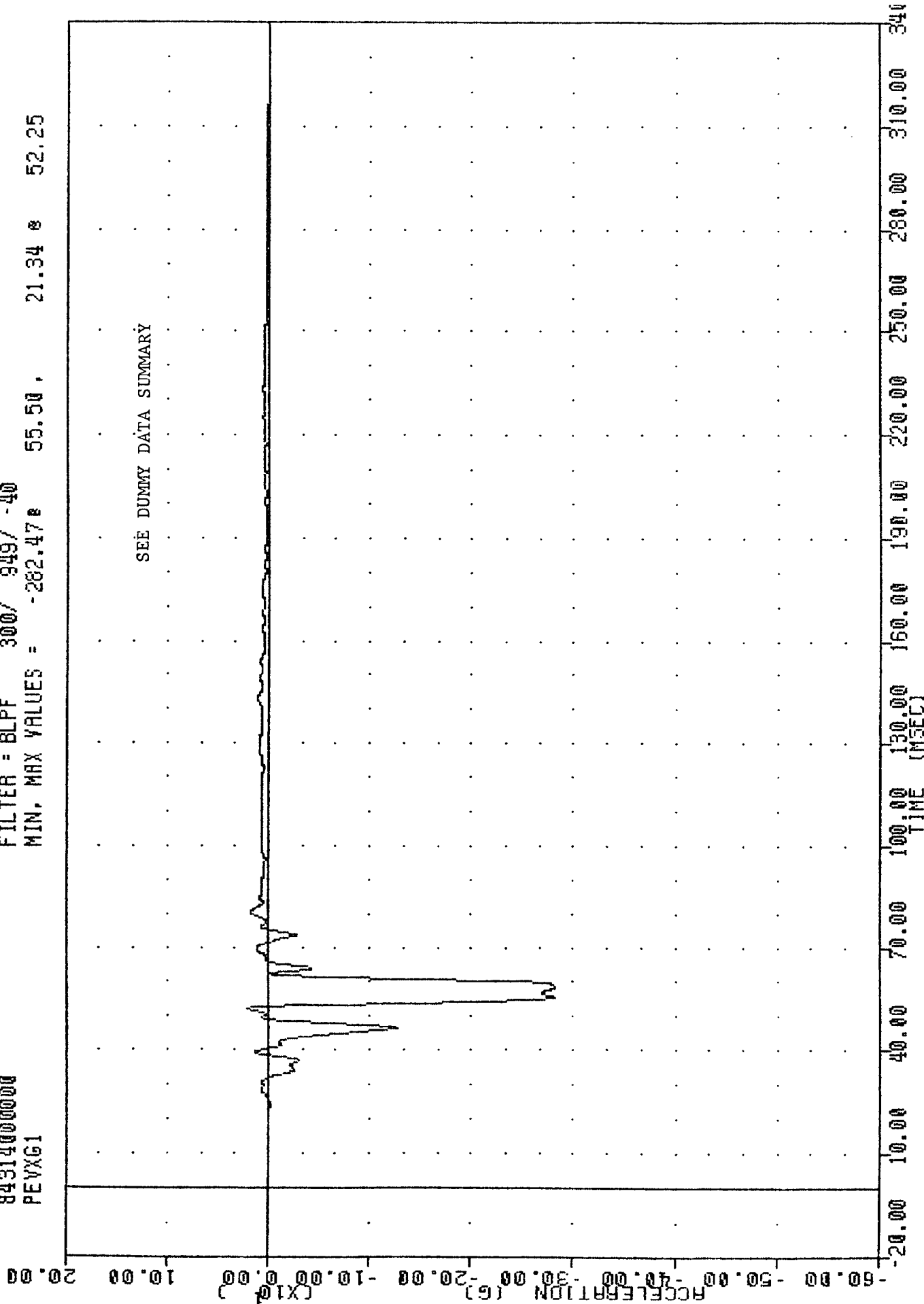
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT AIR TO SPINE DISPLACEMENT INCHES

IRL , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVXG1

PLUI DATE 19-NOV-84 14:23:41

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -282.47 55.50 , 21.34 52.25

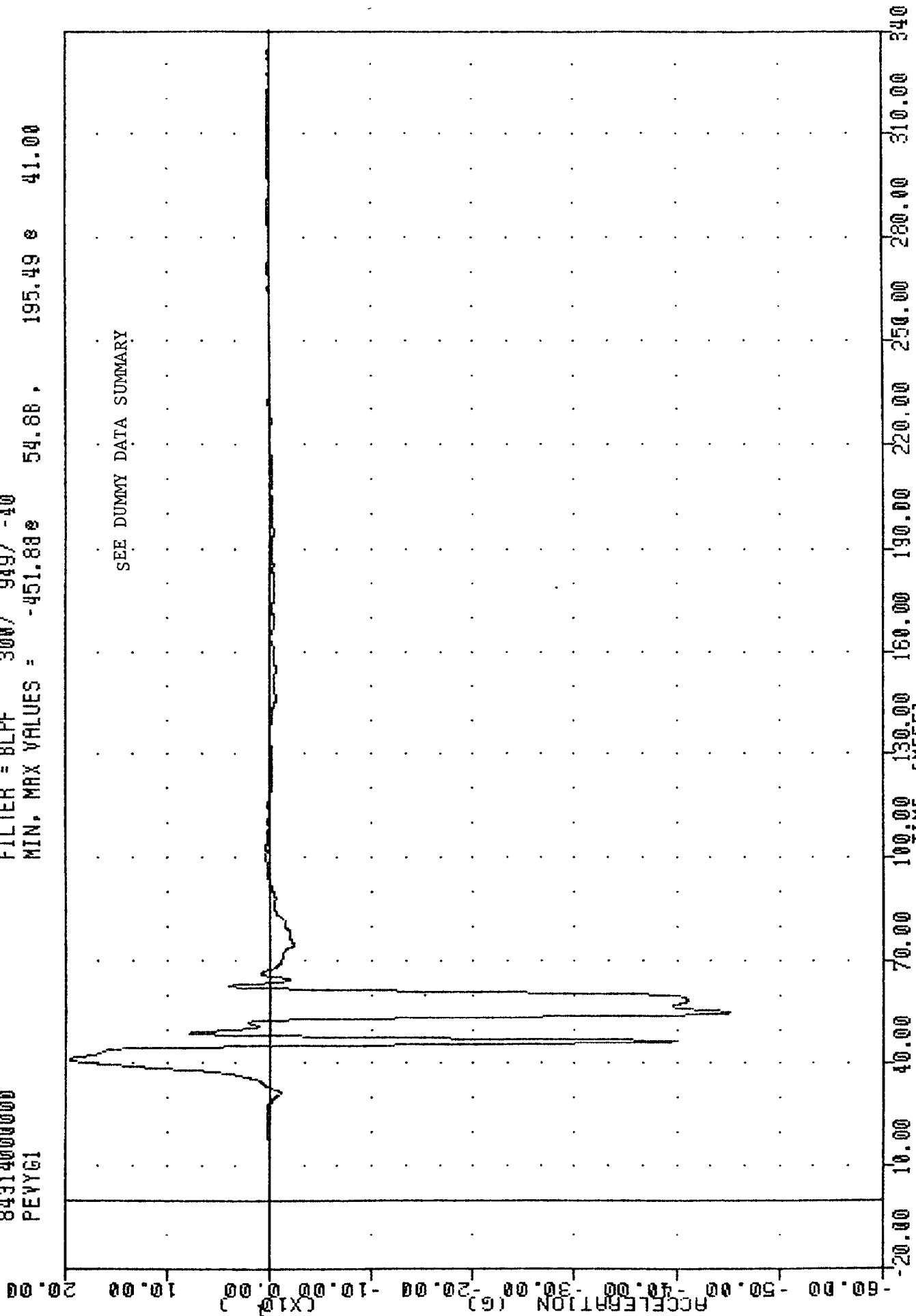


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PELVIS ACCELERATION X AXIS

TRC . 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVYG1

PLOT DATE 19-NOV-84 14:23:41

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -451.88 54.88 , 195.49 41.00



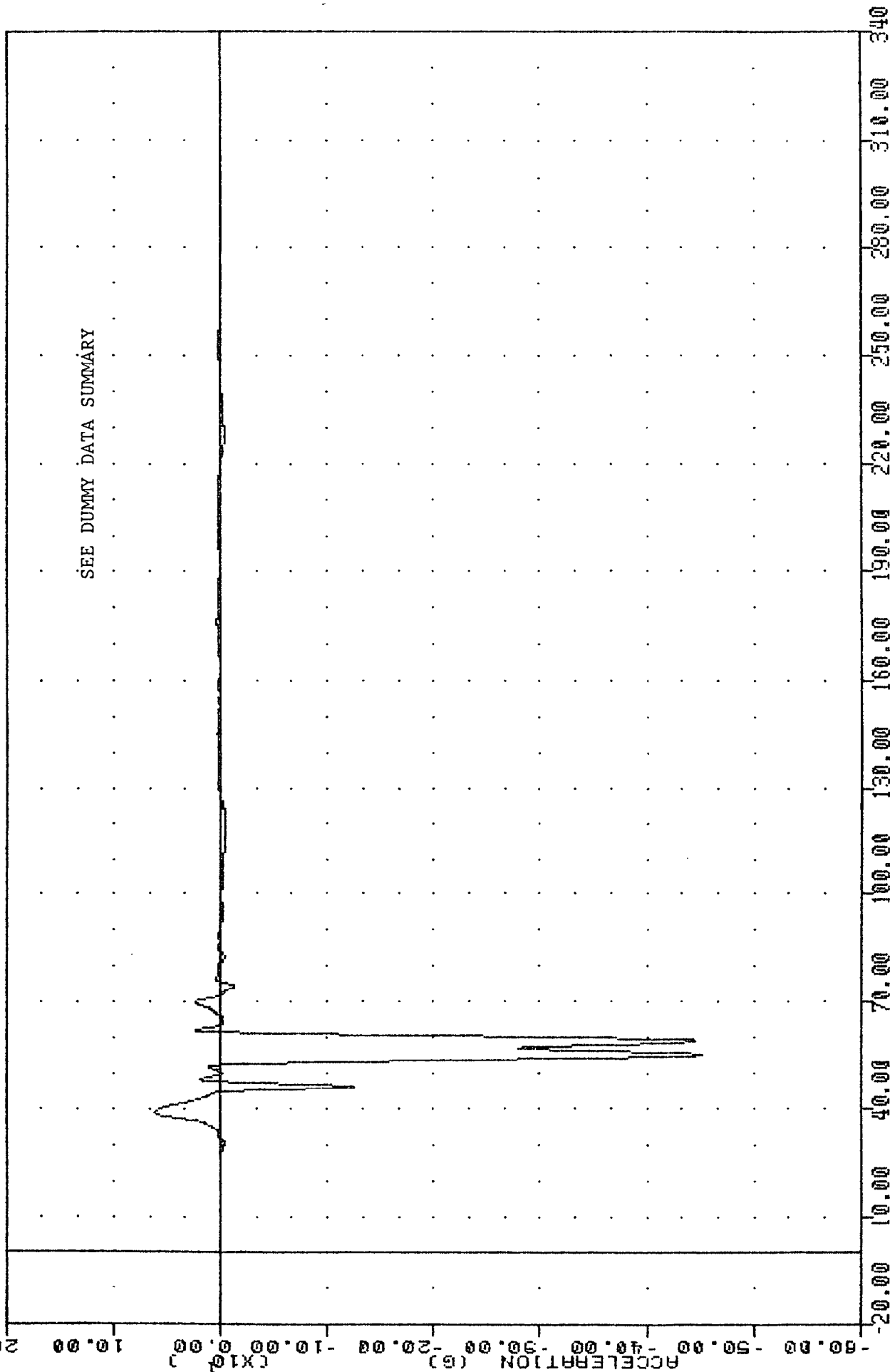
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PELVIS ACCELERATION Y AXIS

TAC ,841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVZE1

PLOT DATE 19-NOV-84 14:23:41

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -451.71 55.13 60.85 38.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PFI VTS ACCELERATION 7 AXIS

ILC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
PEVRG1

PLU1 DATE 19-NOV-84 14:23:41

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 0.038 -5.50 692.11 3 55.13

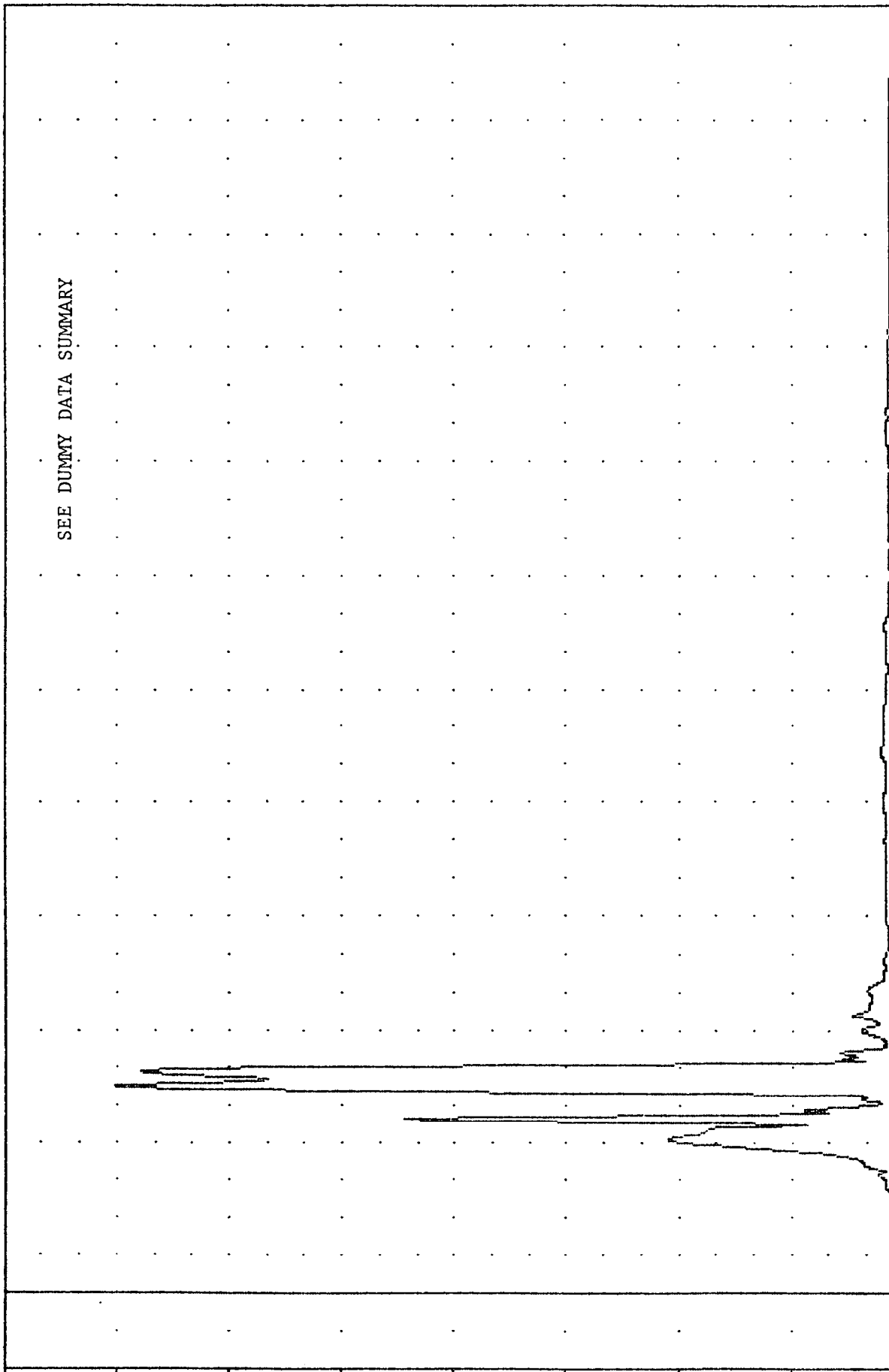
79.00

69.00

(X10³)

B-34

ACCELERATION (G)



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS RESULTANT

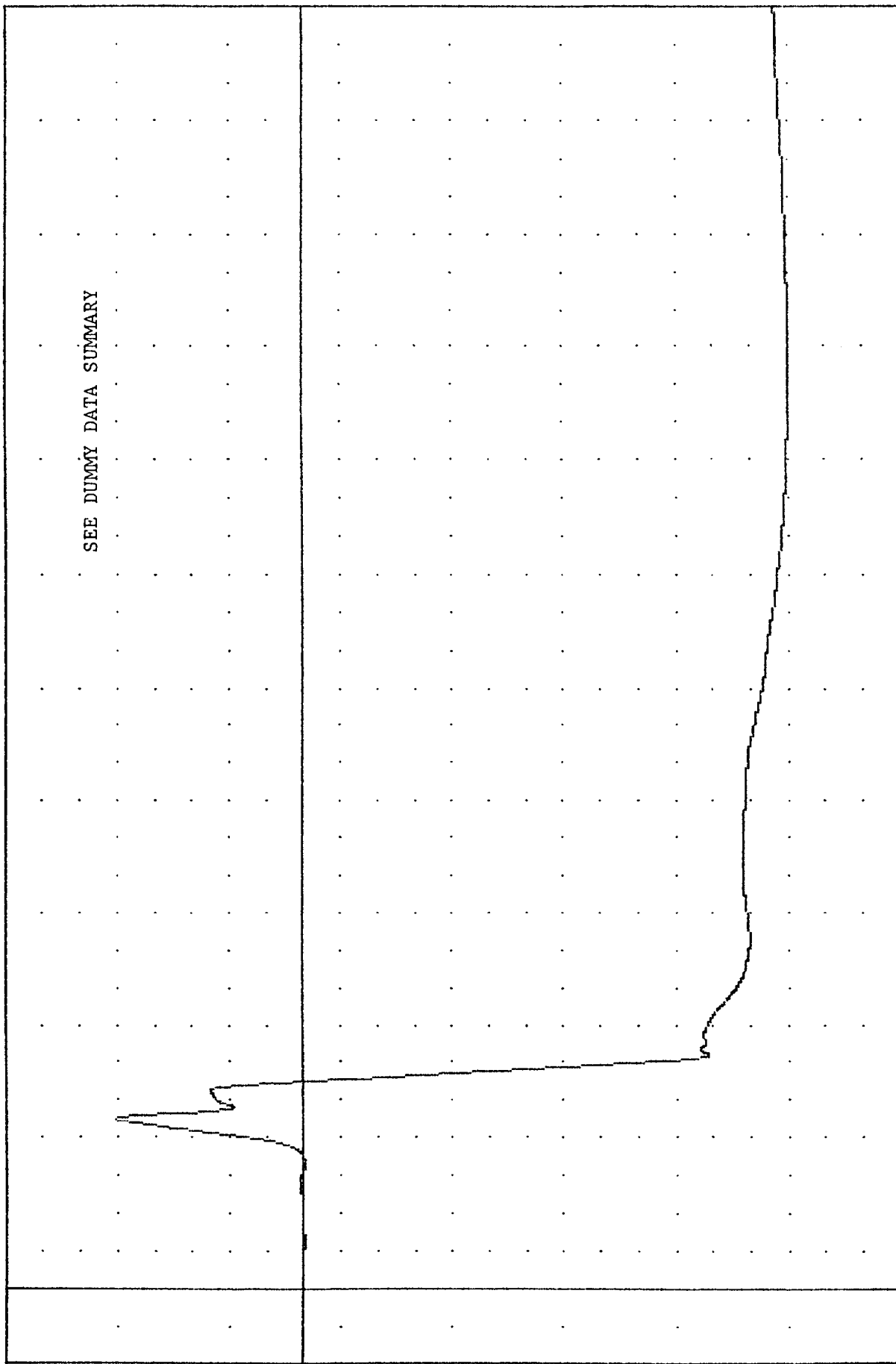
IHC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVYV1

PLUI UNIE 19-NOV-84 14:26:30

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -65.058 245.63 , 25.36 44.88

40.00 35.00 30.00 25.00 20.00 15.00 10.00 5.00 0.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00 -35.00 -40.00 -45.00 -50.00 -55.00 -60.00 -65.00 -70.00 -75.00 -80.00



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (MSEC)
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING PEVYGI

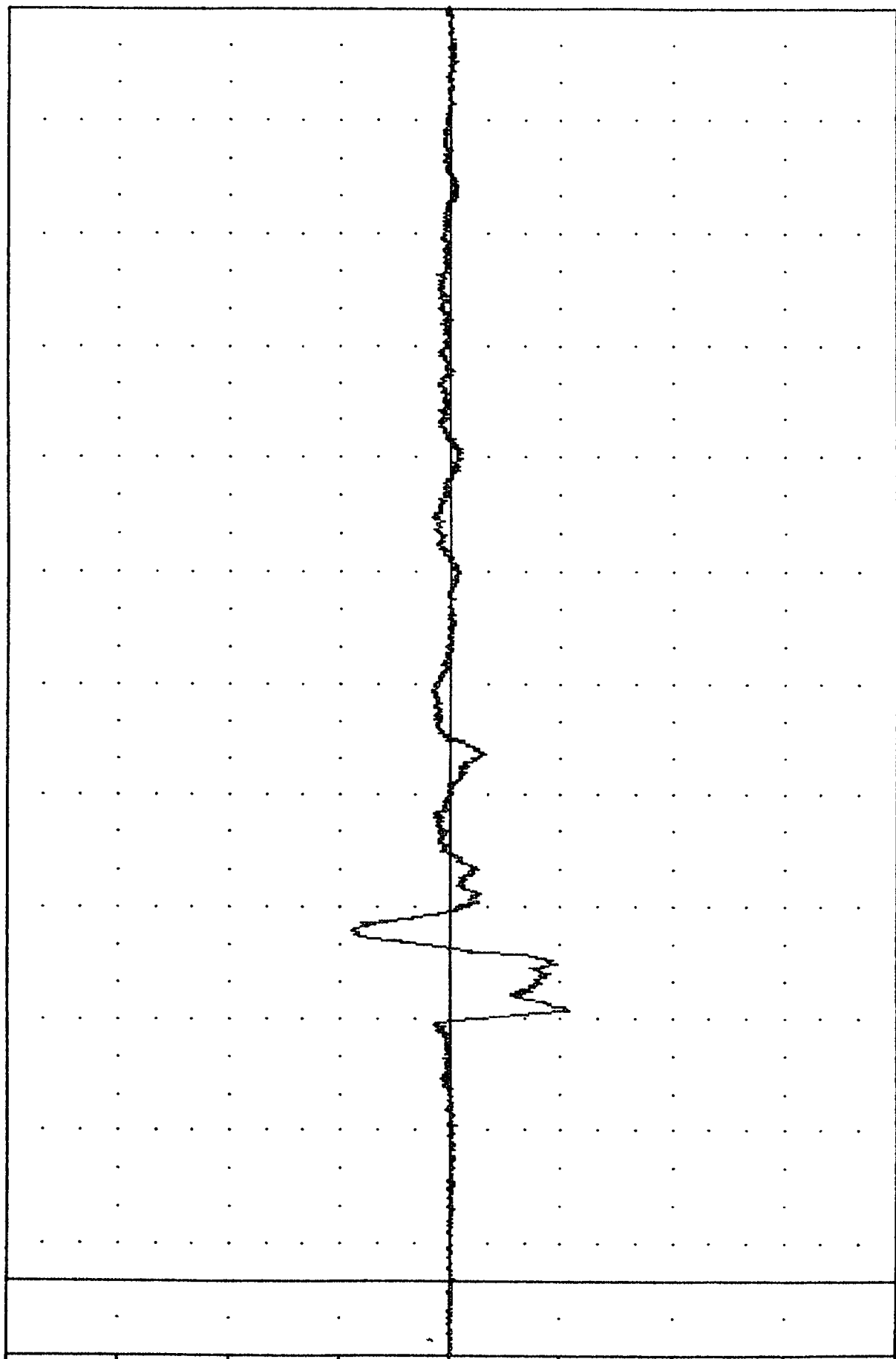
INL 0411W9
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEDXG3

FLUI UNIT 10-NOV-84 10:49:00

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -53.578 71.88 44.44 93.63

ACCELERATION (G)



TIME CMSEC

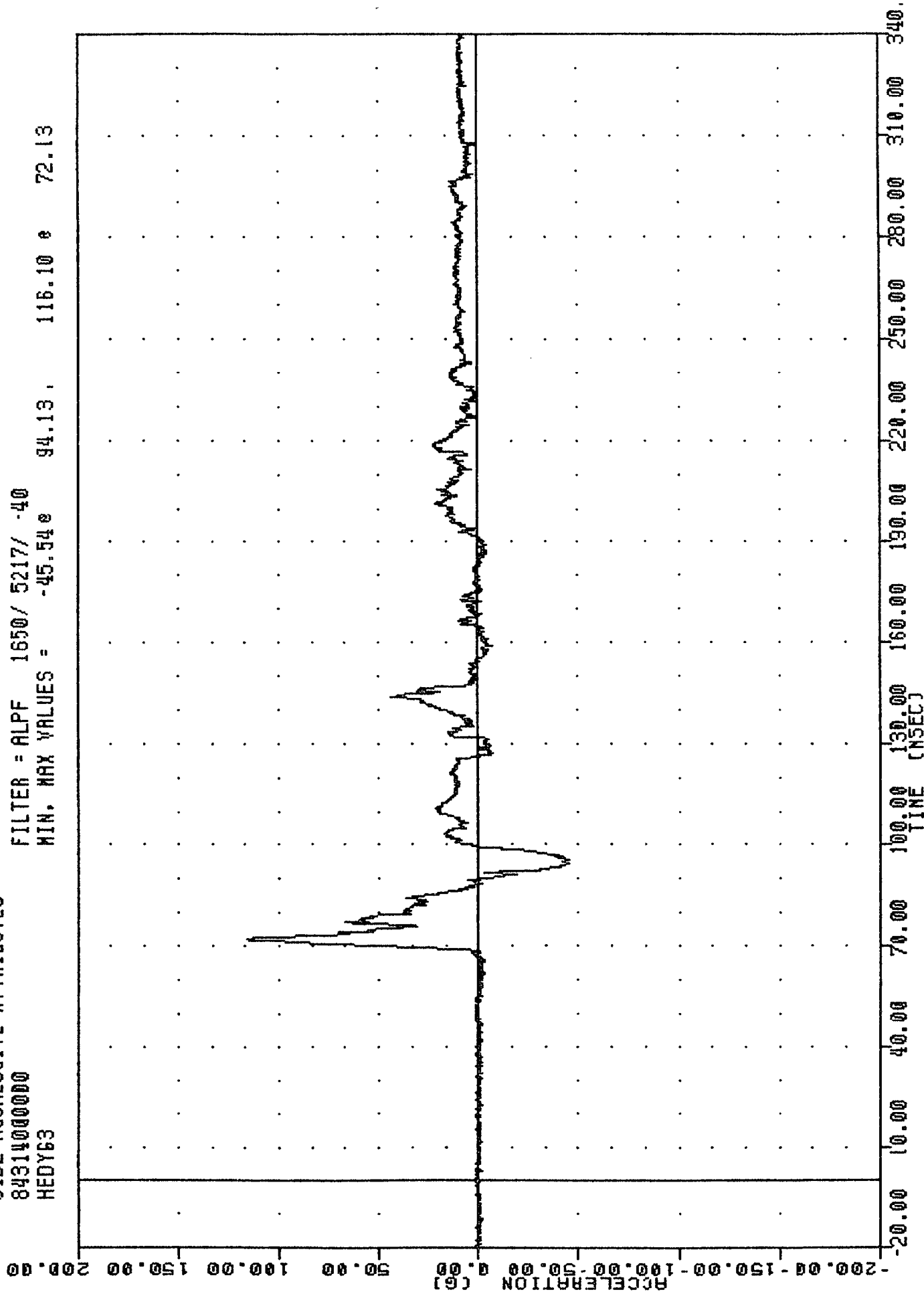
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER HEAD ACCELERATION X AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEDY63

PLOT DATE 15-NOV-84 15:49:06

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -45.54e 94.13 , 116.10 e 72.13

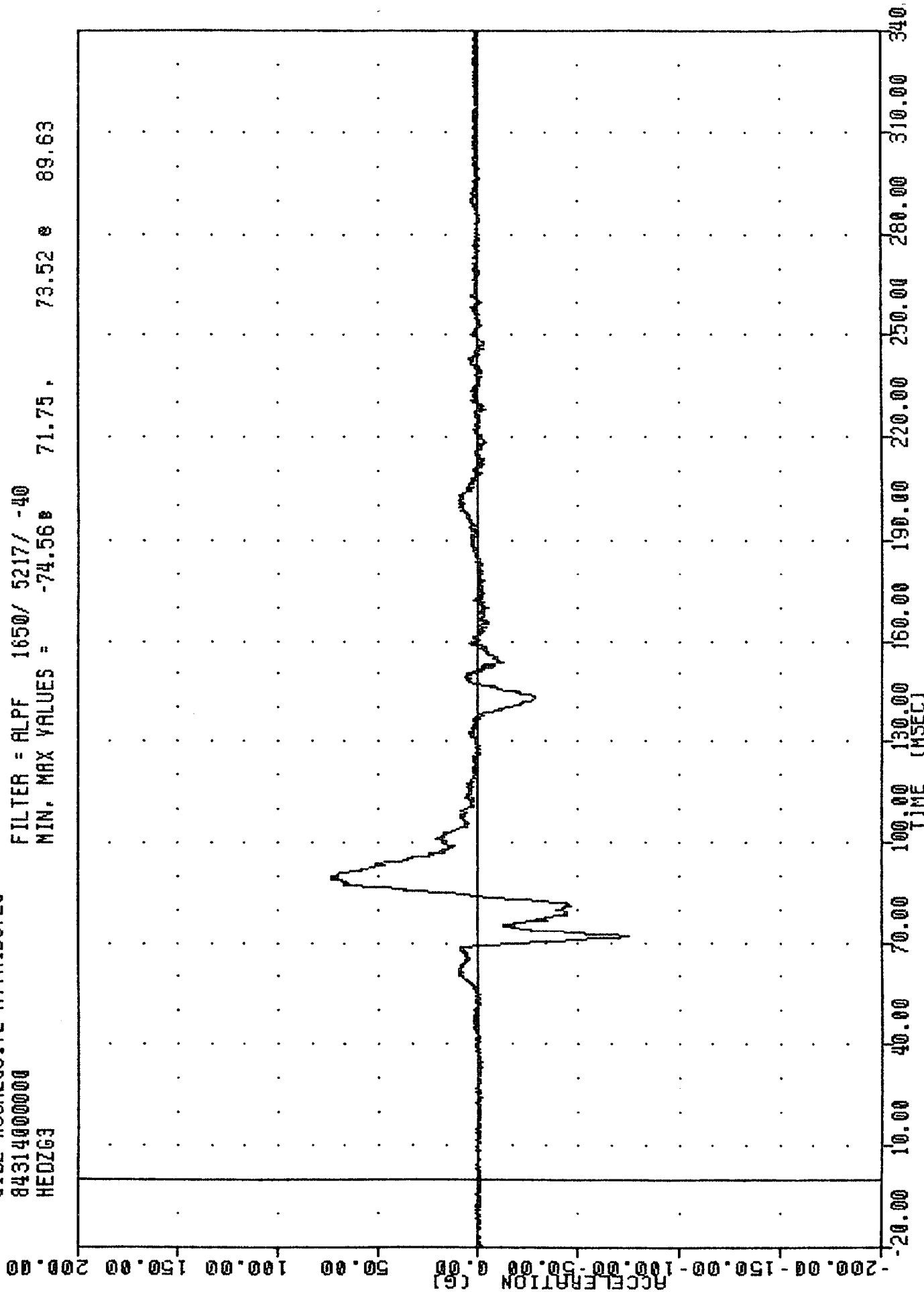


TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
HEDZG3

PLOT DATE 15-NOV-84 15:49:06

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -74.56 71.75 , 73.52 89.63



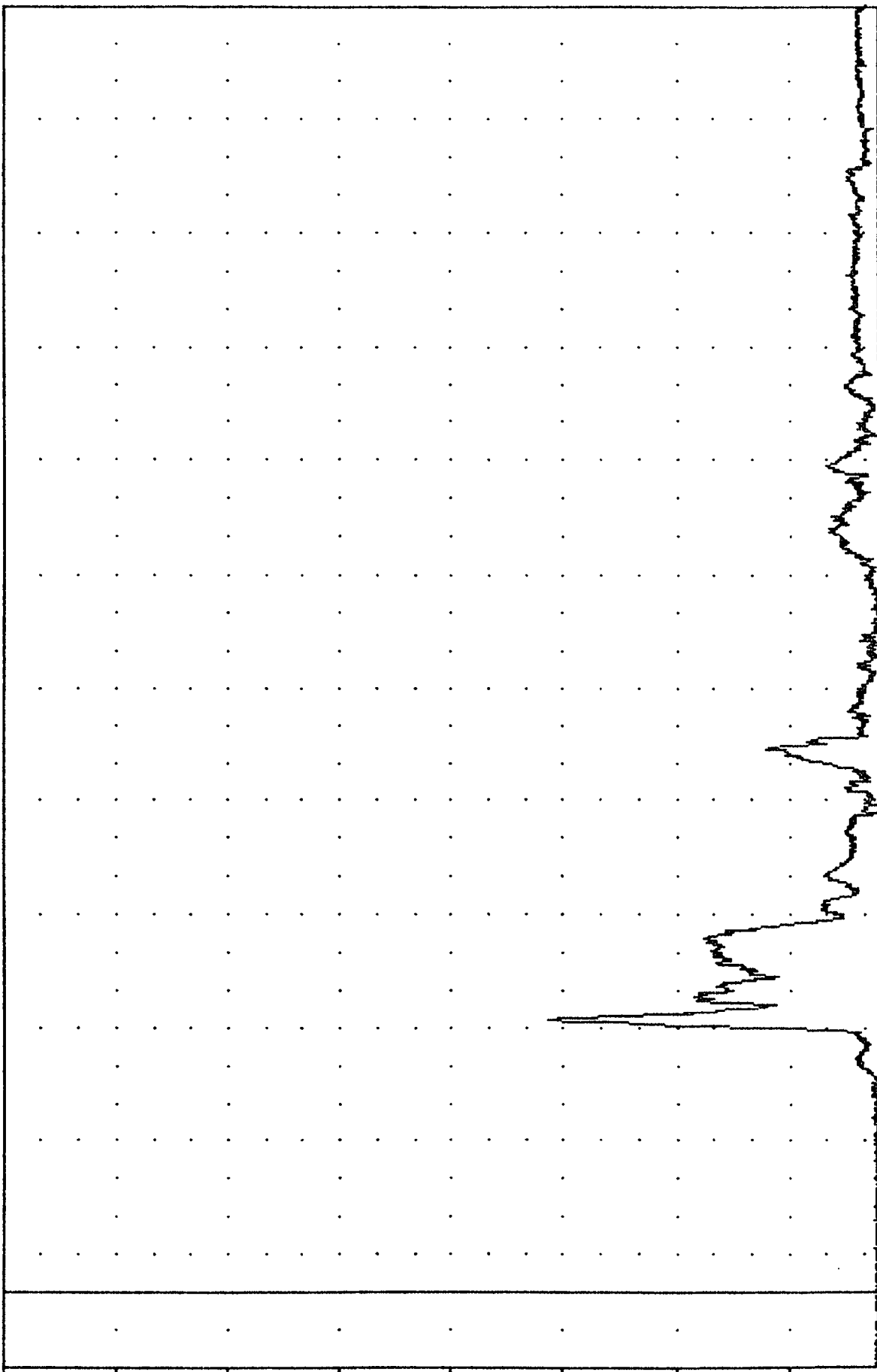
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER HEAD ACCELERATION Z AXIS

SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 HEDRG3

1101 UNTIL 12 NOV 02 10:43:00

FILTER = ALPF 1650/ 5217/ -40
 MIN, MAX VALUES = 0.12e 19.50, 146.59 e 71.75

ACCELERATION (G)



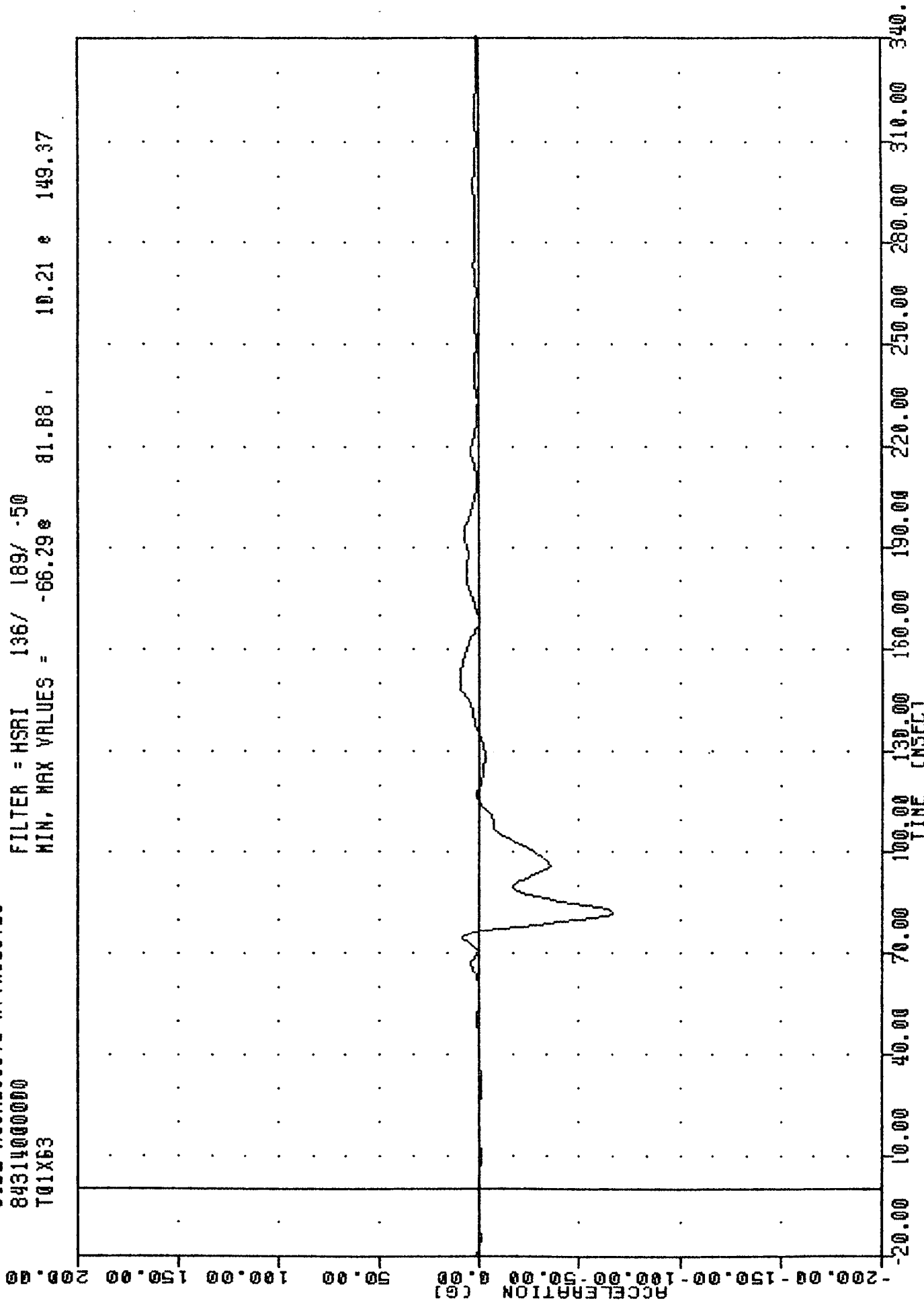
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (msec)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD RESULTANT

INU SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01X63

1201 0011 10 1001 00 10000000

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -66.29 81.88 10.21 149.37

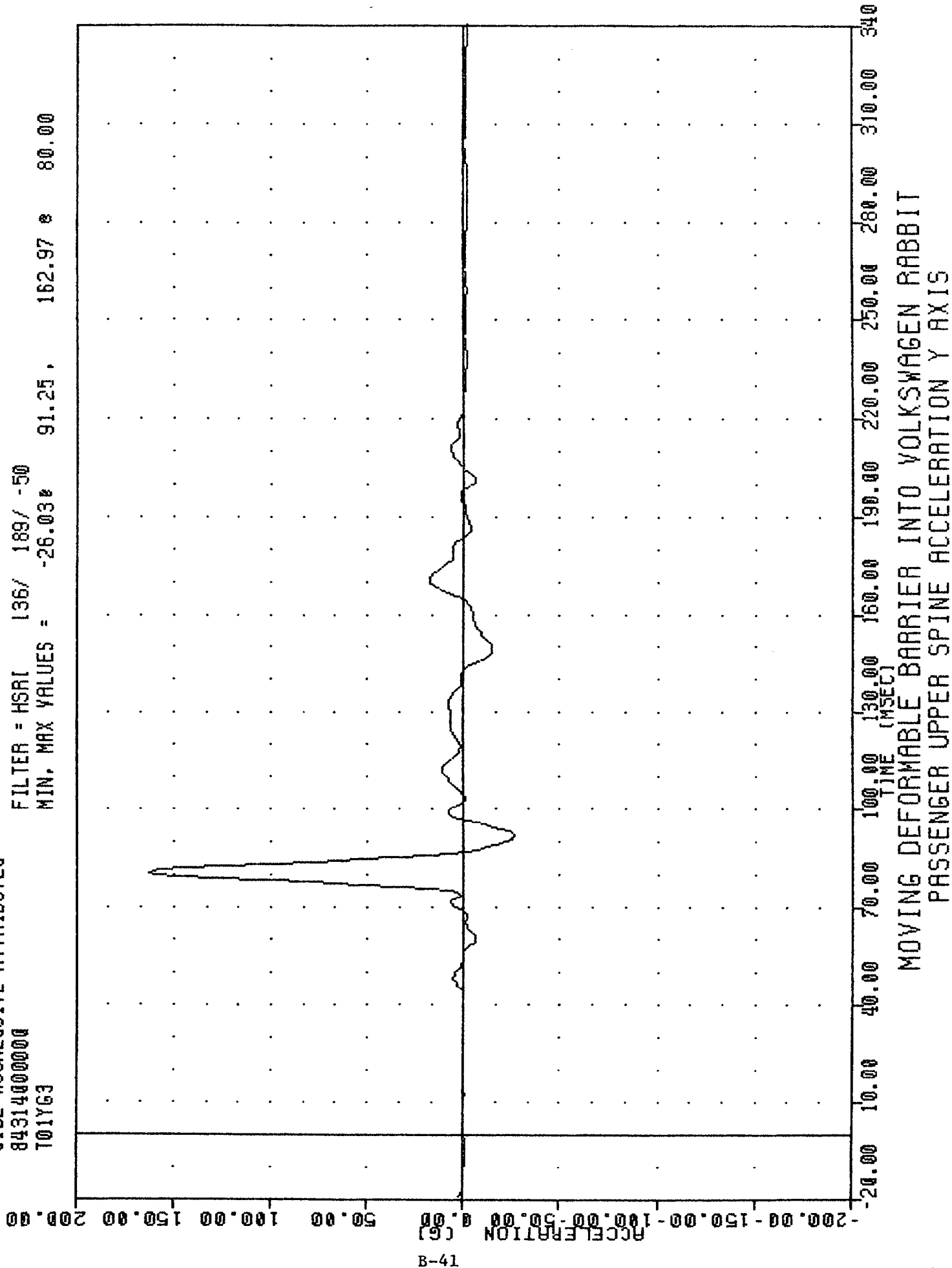


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE ACCELERATION X AXIS

1110
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01YG3

1101 UNIT 10 NOV 02 10:43:42

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -26.03 91.25, 162.97 80.00

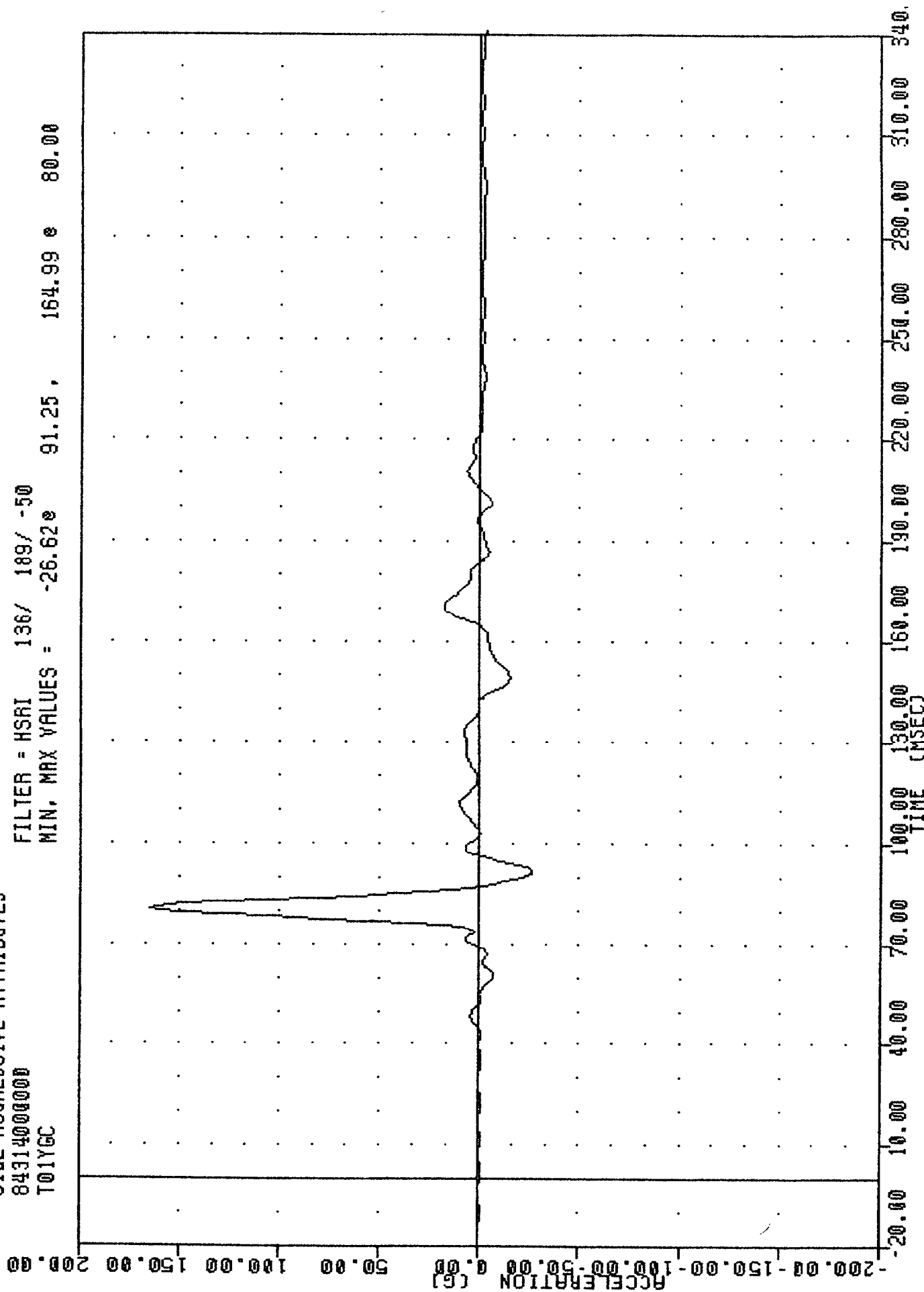


041103
SIDE AGGRESSIVE ATTRIBUTES
84314000000
T01YGC

FLU1 UNIC 10-NOV-04 10:49:11/

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -26.62e 91.25, 164.99 e 80.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER UPPER SPINE ACCELERATION -2 Y AXIS

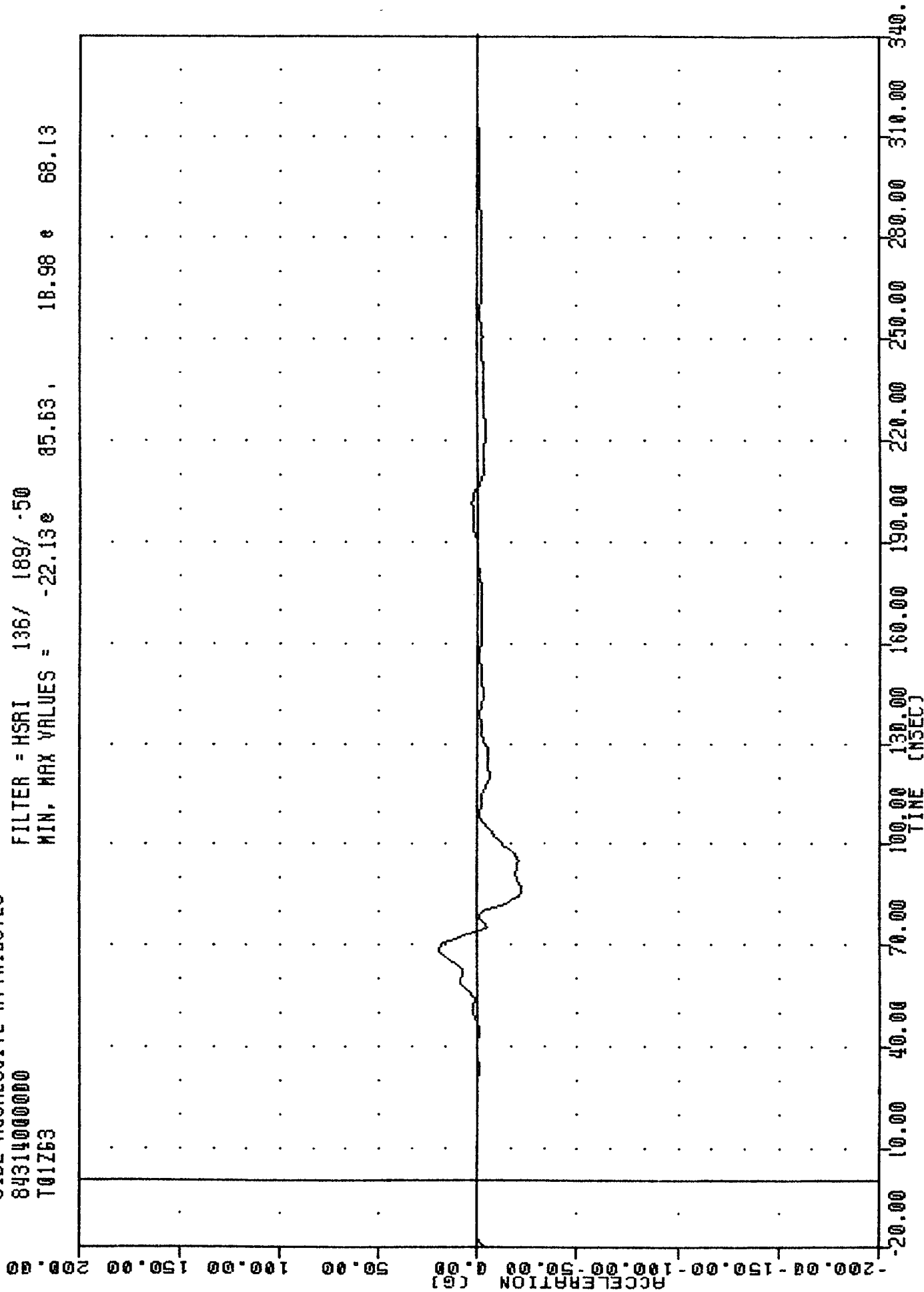
INC 04J1W3
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01Z63

FLU1 UNIE 10-NOV-84 10:49:47

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -22.13e 85.63, 18.98 e 68.13

B-43

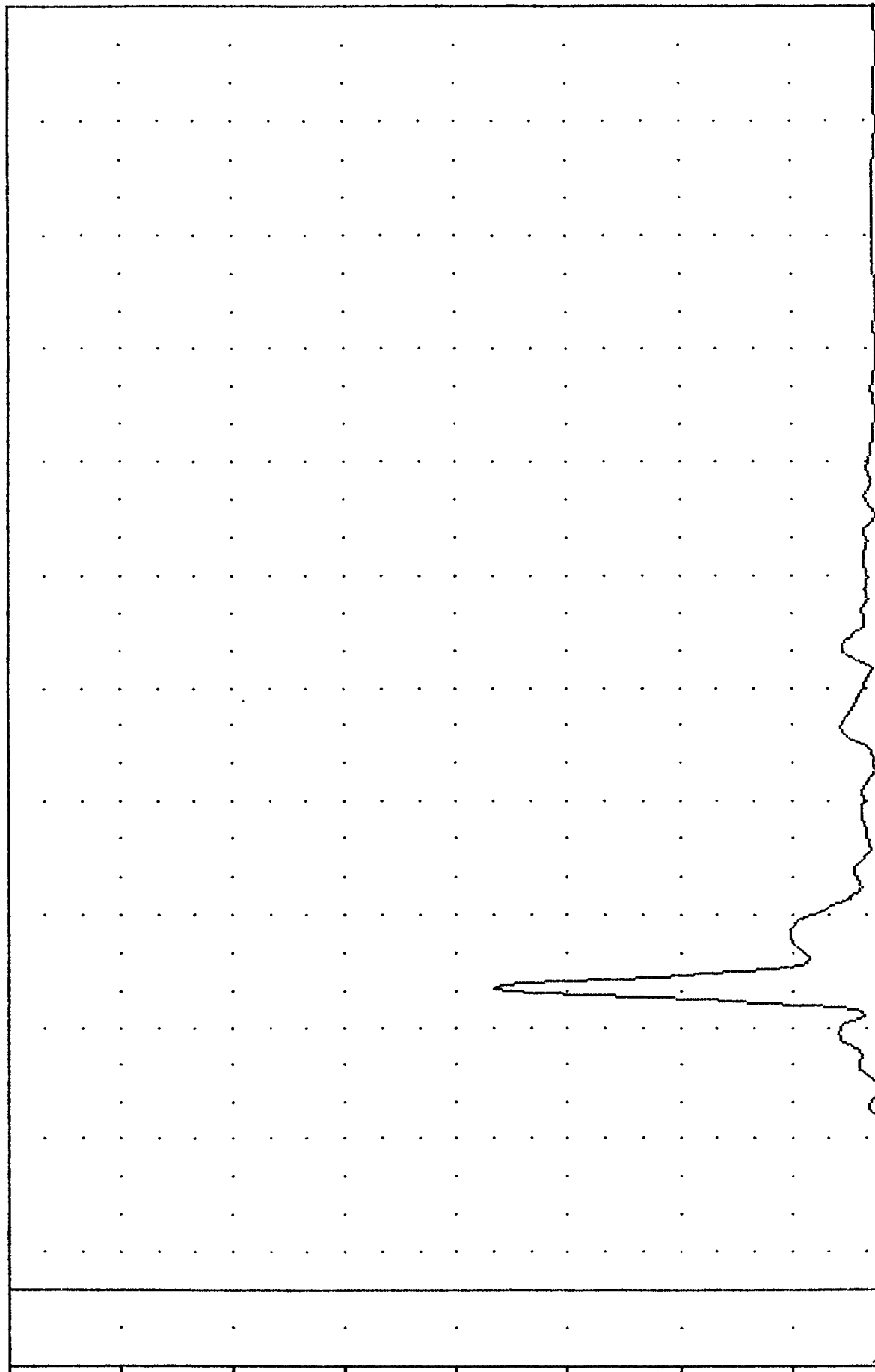


INTC
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01RG3

1001 UNITL 10 NOV 73 10:30:23

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = 0.028 4.38, 172.80 & 80.00

ACCELERATION [G]



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (MSEC)

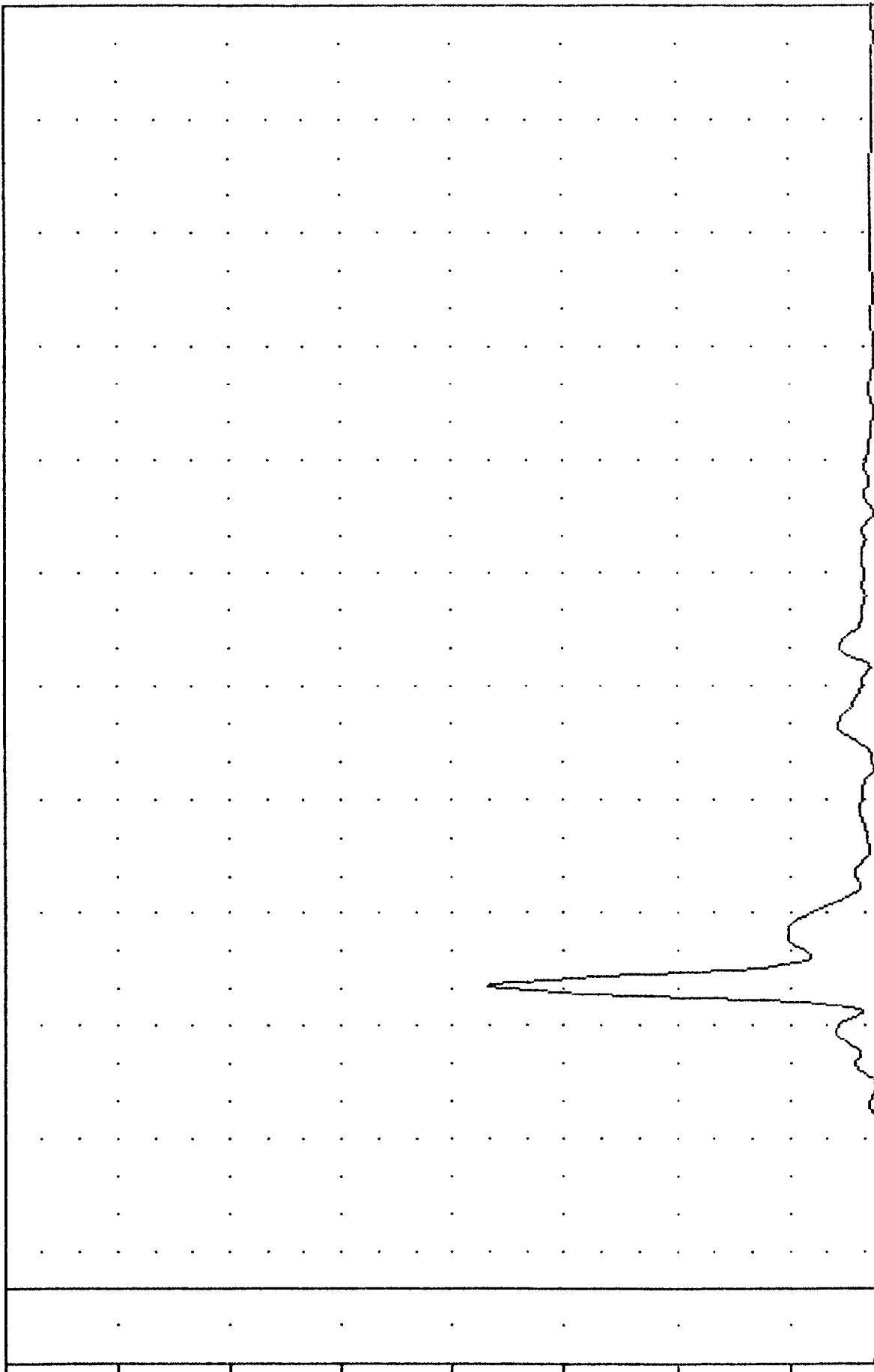
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE RESULTANT

INL 04J11W3
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T01R5C

FLU1 UNIC 10-NOV-04 10:30:40

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.130 15.00 174.71 80.00

ACCELERATION (G)



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE RESULTANT USING T01YGC

SIDE AGGRESSIVE ATTRIBUTES

84314000000

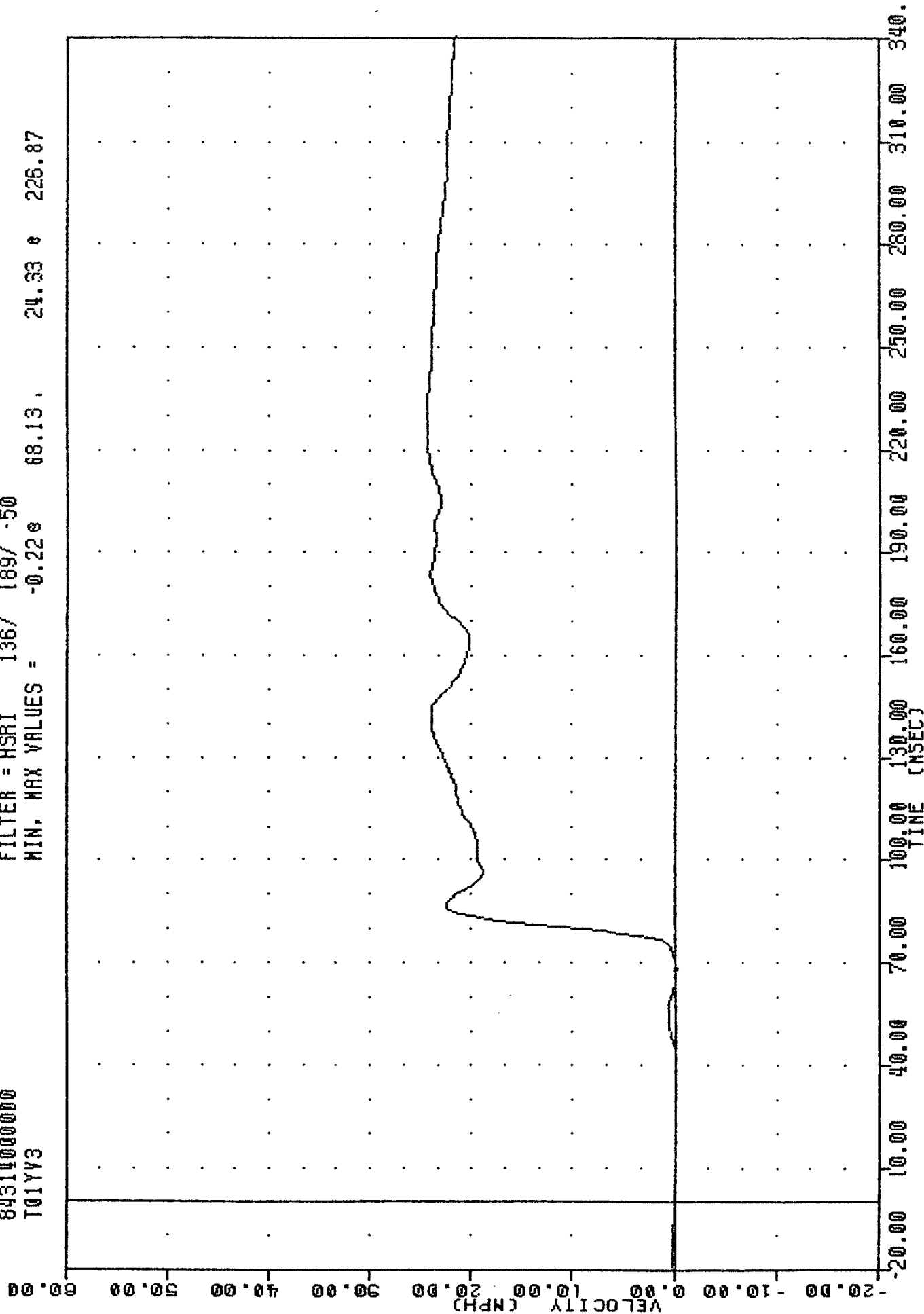
T01YV3

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.228

68.13

24.33 e 226.87



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T01YG3

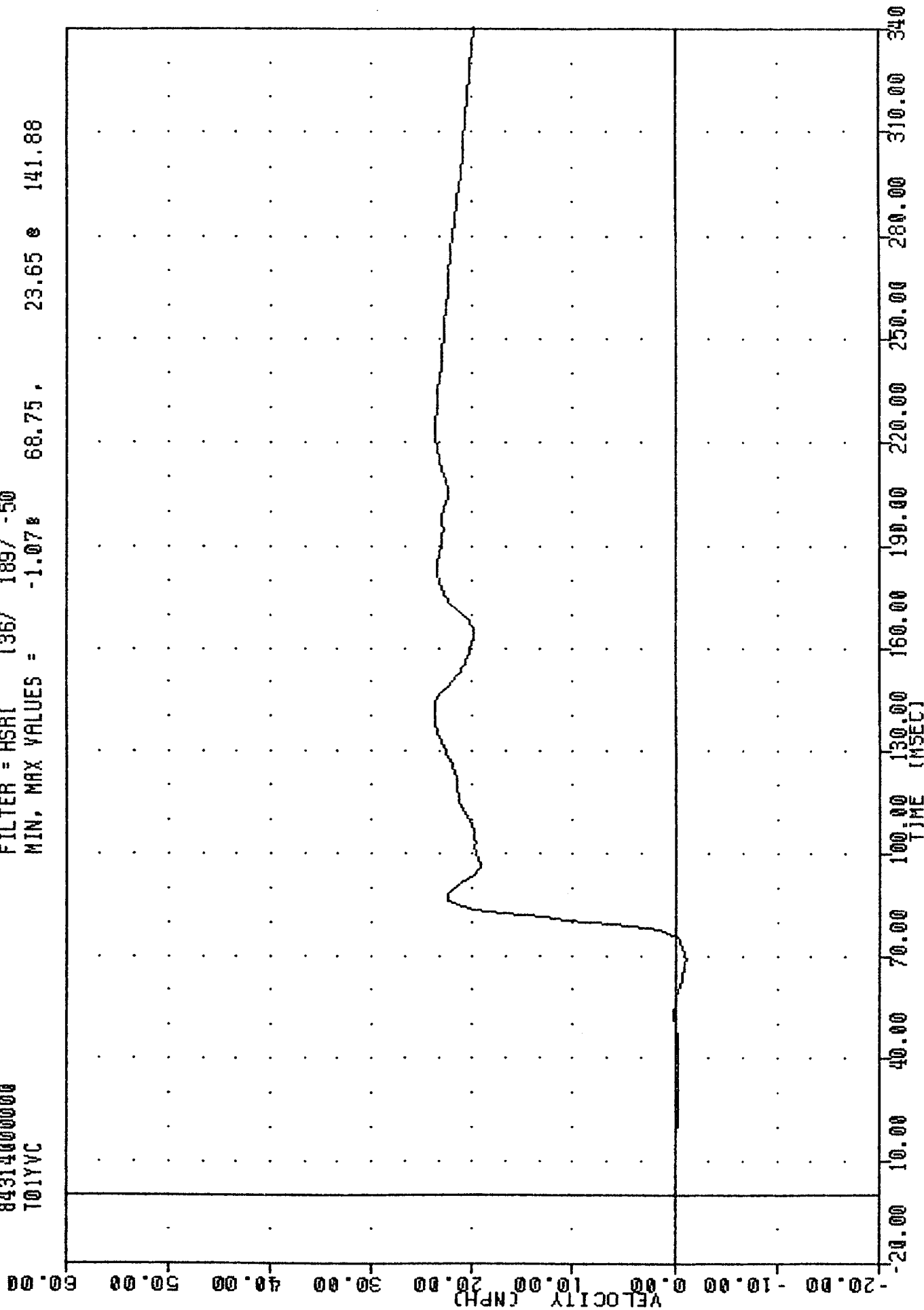
SIDE AGGRESSIVE ATTRIBUTES

84314000000

T01YVC

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -1.07% 68.75, 23.65 @ 141.88



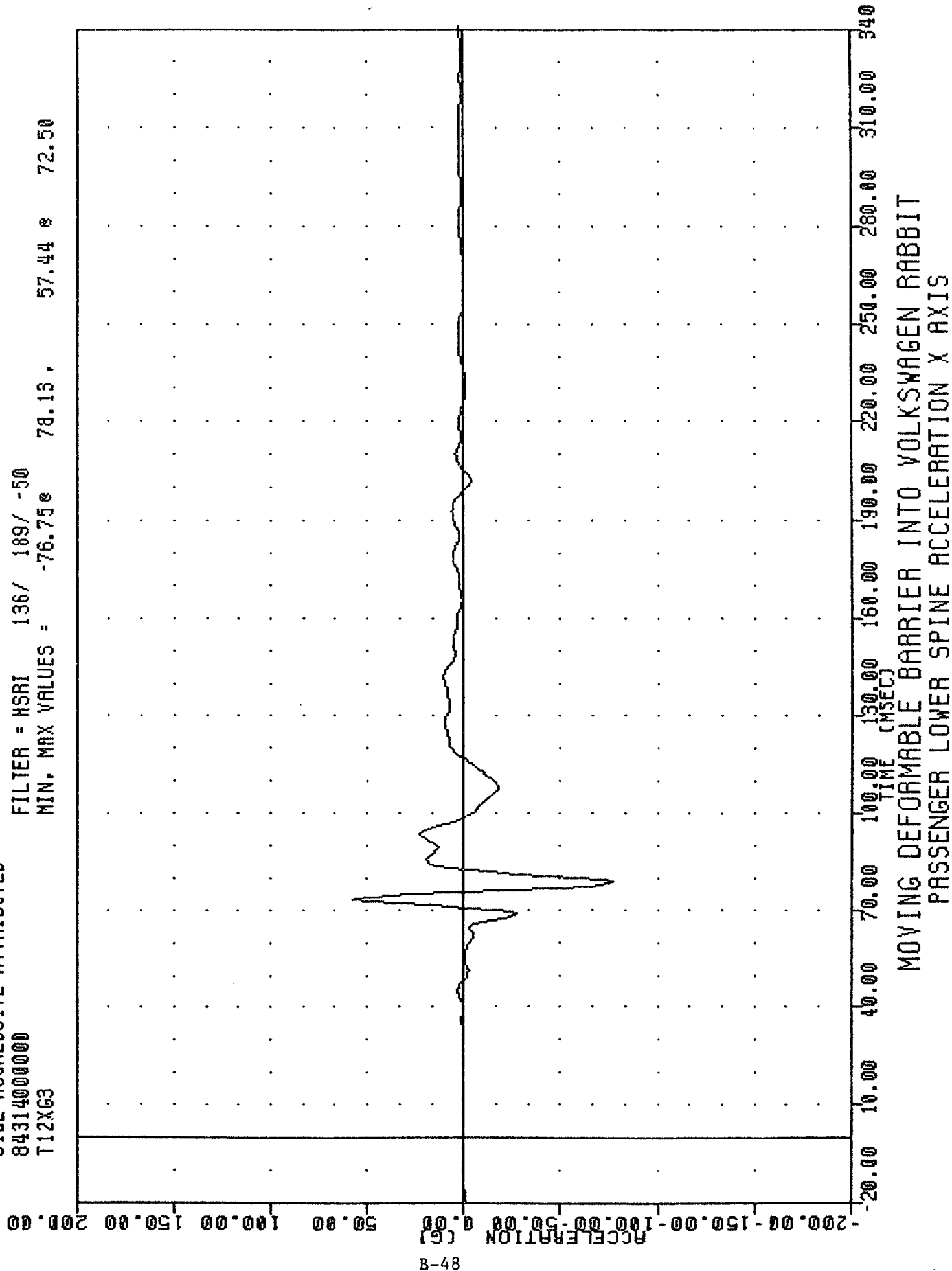
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING T01YGC

INL 041103
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12XG3

FLUI UNIT 13-NOV-04 10:49:47

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -76.75e 78.13, 57.44 e 72.50



INC 041103

SIDE AGGRESSIVE ATTRIBUTES

84314000000

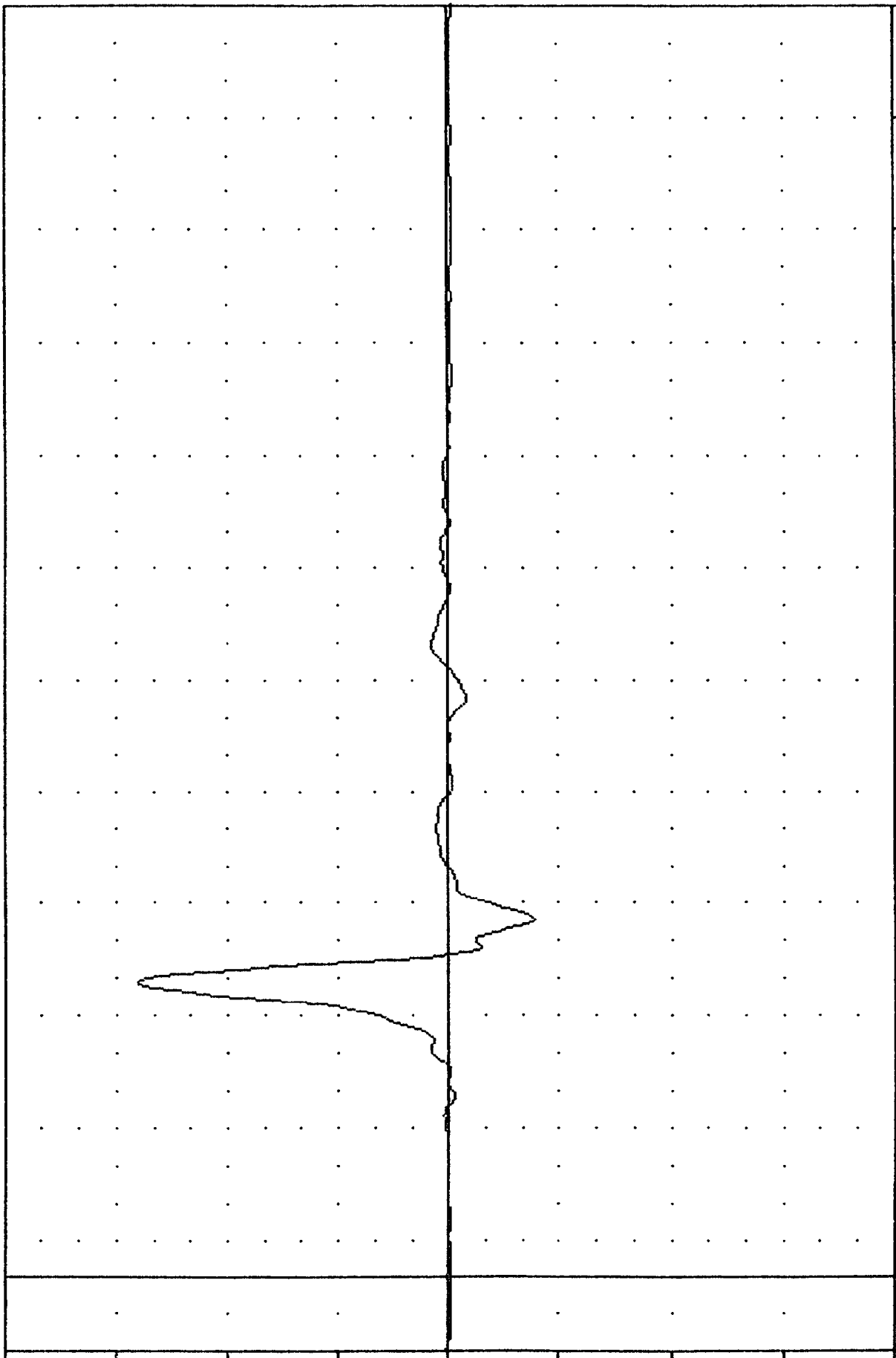
T12Y63

FLU1 UNIC 10-NOV-04 13:43:47

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -38.858 95.00 140.01 8 78.13

ACCELERATION (G)

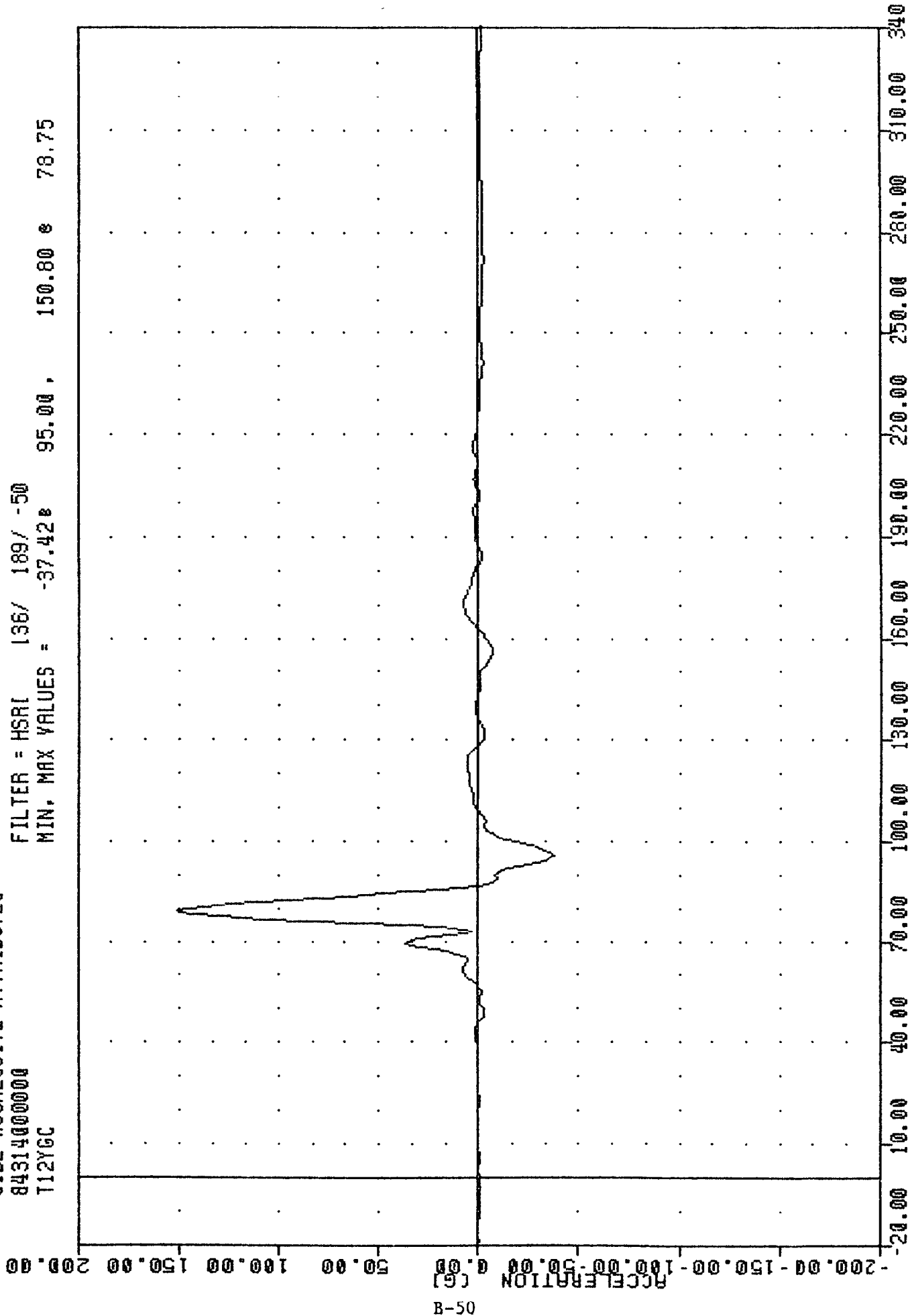


B-49

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE ACCELERATION Y AXIS

SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12Y6C

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -37.428 95.000

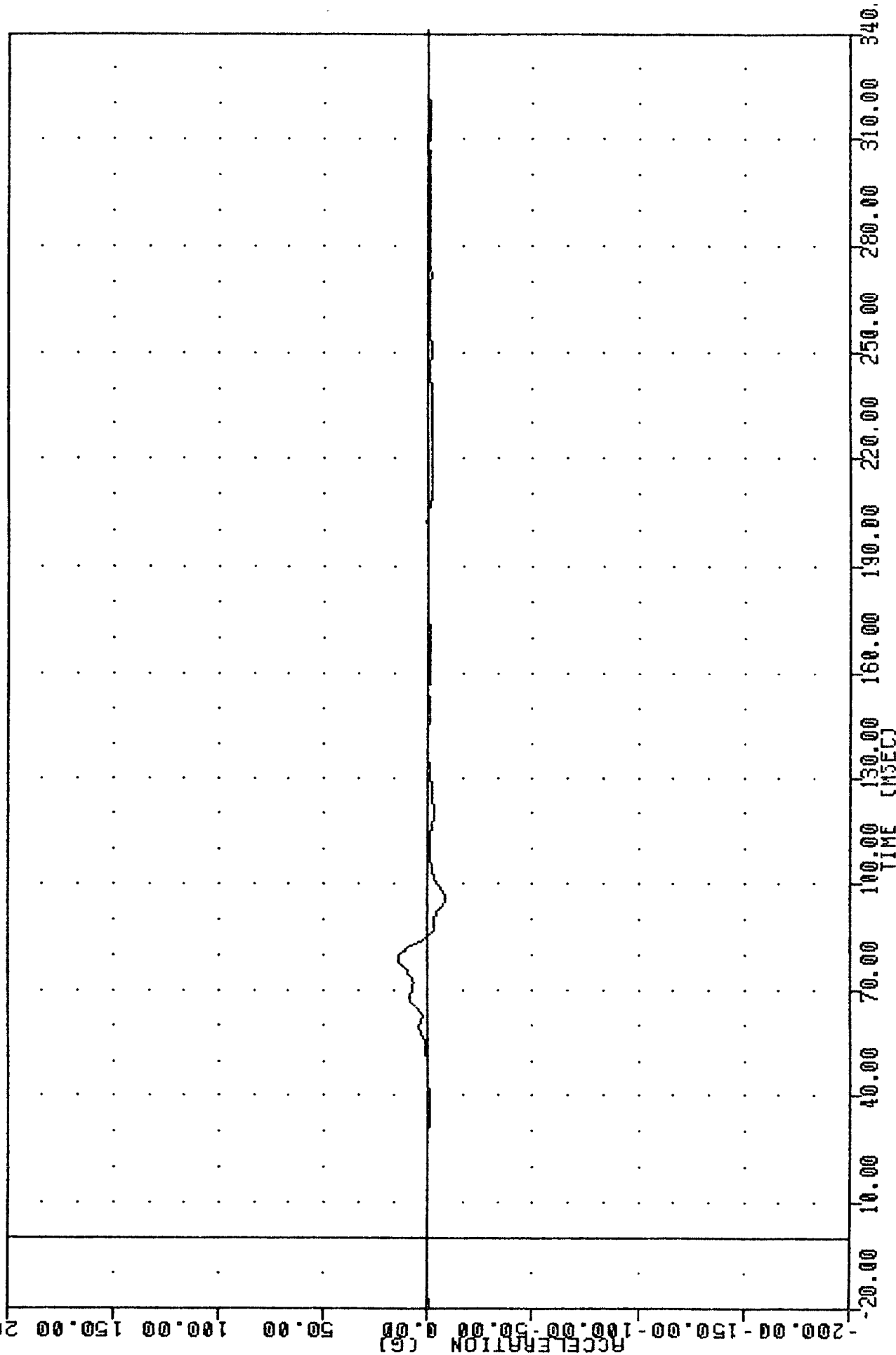


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCELERATION #2 Y AXIS

INL 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12ZG3

PLU1 UNIC 10-NOV-84 10:49:47

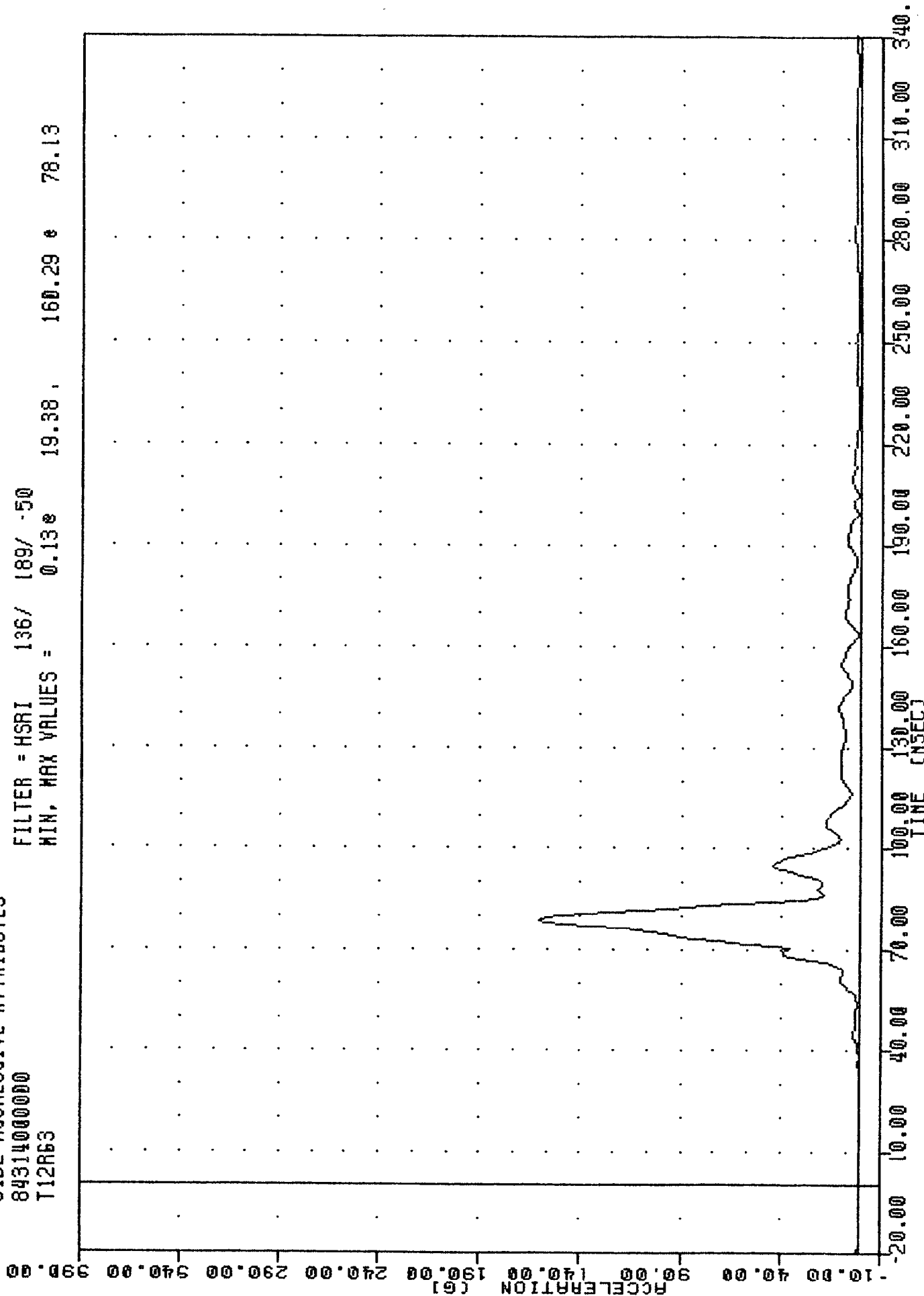
FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -8.260 95.00, 14.03 78.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCELERATION Z AXIS

SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12R63

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = 0.13e 19.38, 160.29 e 78.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE RESULTANT

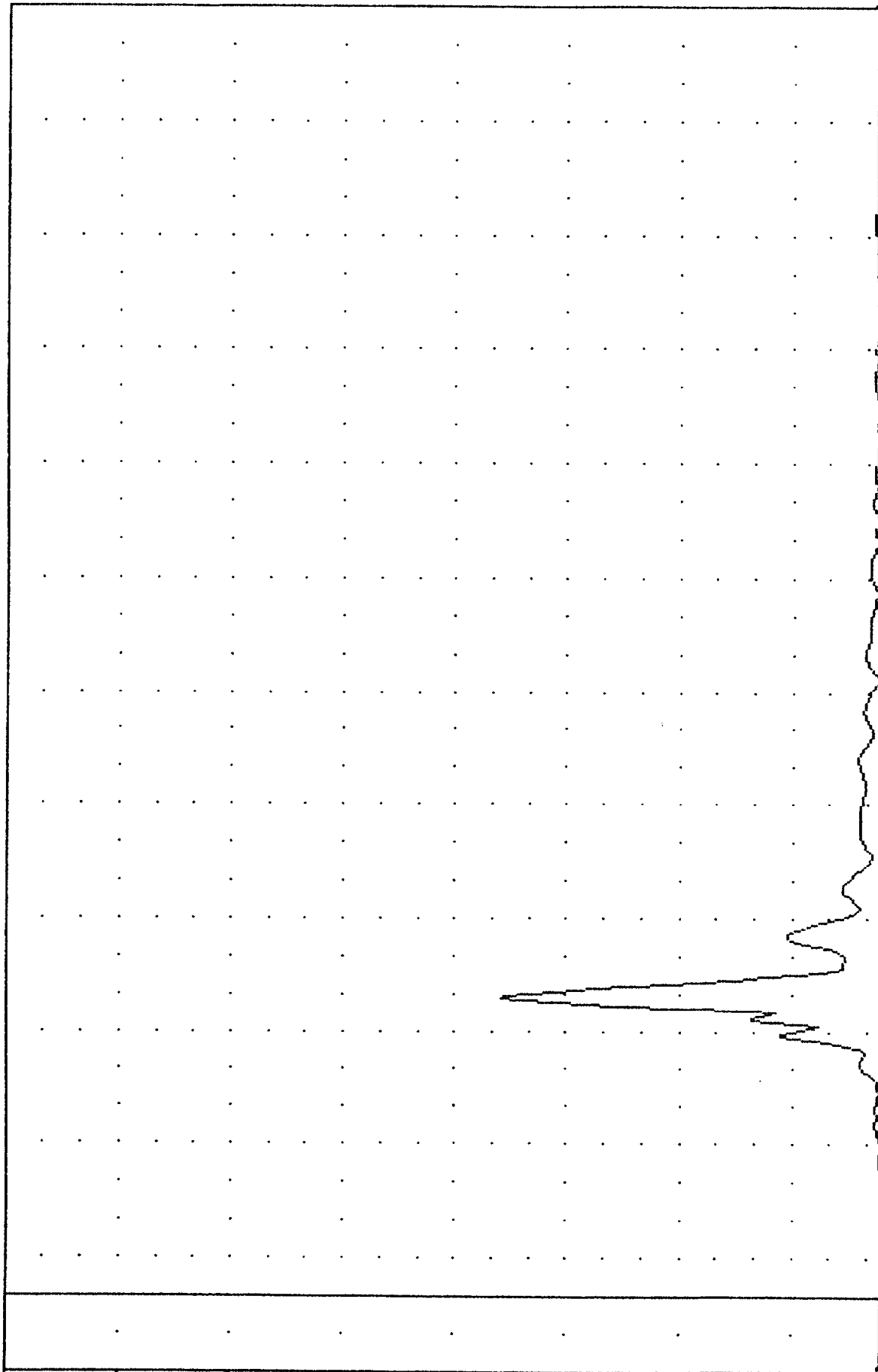
INC 041153
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12R6C

FLU1 UNIC 10-NOV-84 10:00:40

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = 0.082 25.63, 169.22 78.13

ACCELERATION (G)



TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE RESULTANT USING T12Y6C

INC 041100

PLU1 UNIE 13-NOV-84 10:01:03

SIDE AGGRESSIVE ATTRIBUTES

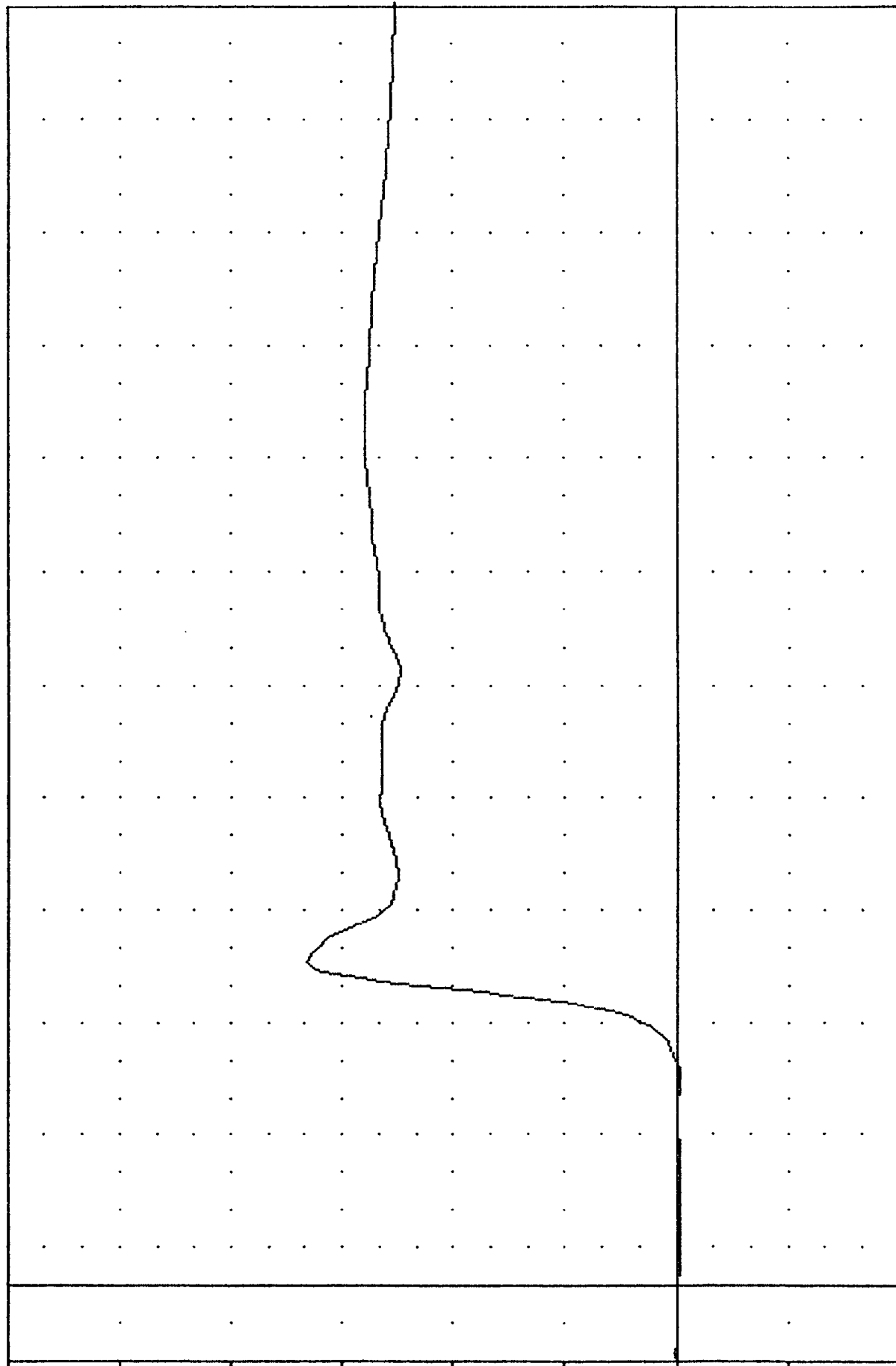
84314000000

FILTER = HSRI 136/ 189/ -50

T12YV3

MIN, MAX VALUES = -0.36 19.38, 33.13 85.63

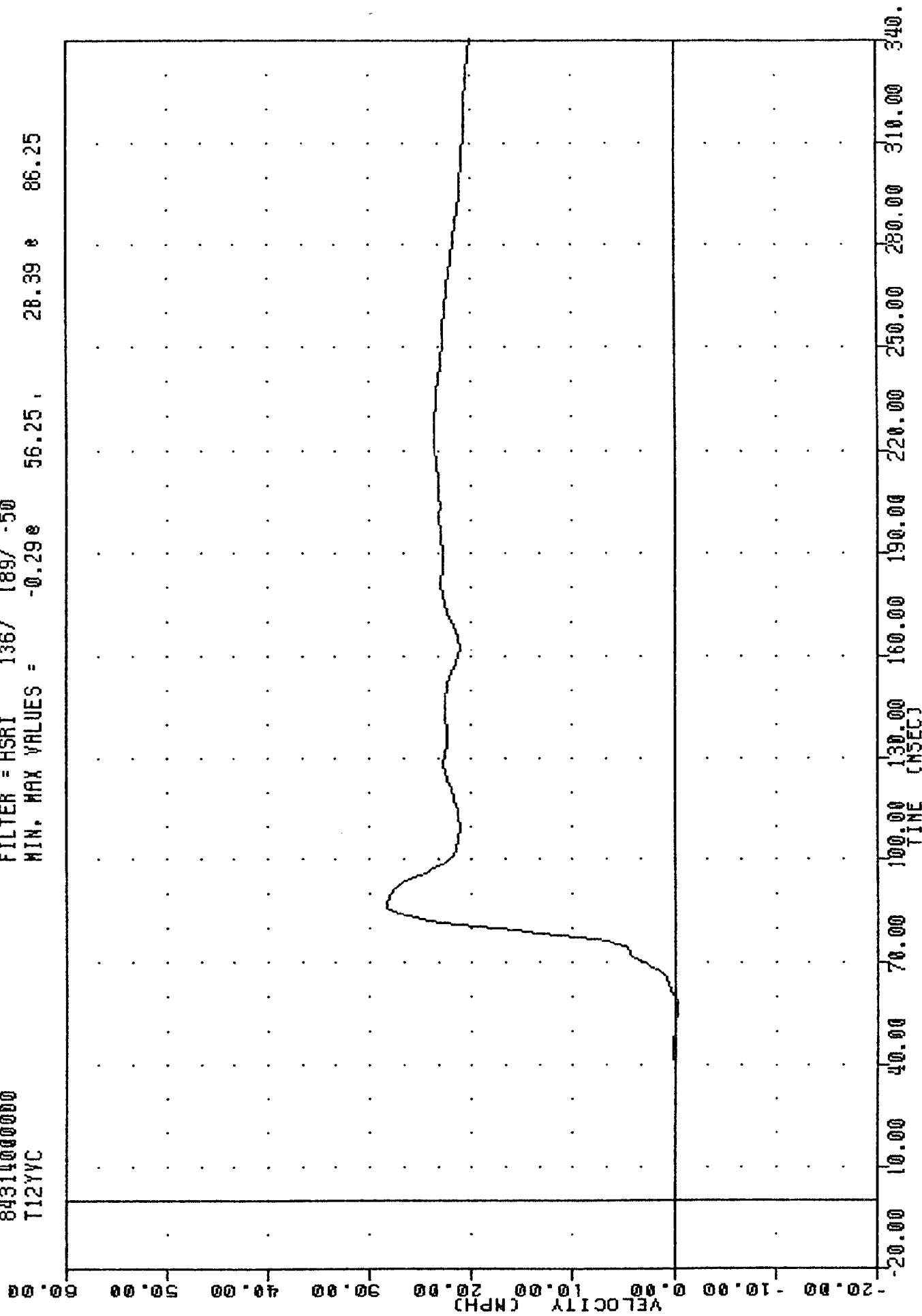
VELOCITY (MPH)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T12Y63

T12YVC
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 T12YVC

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.290 56.25 28.39 86.25



B-55

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T12YGC

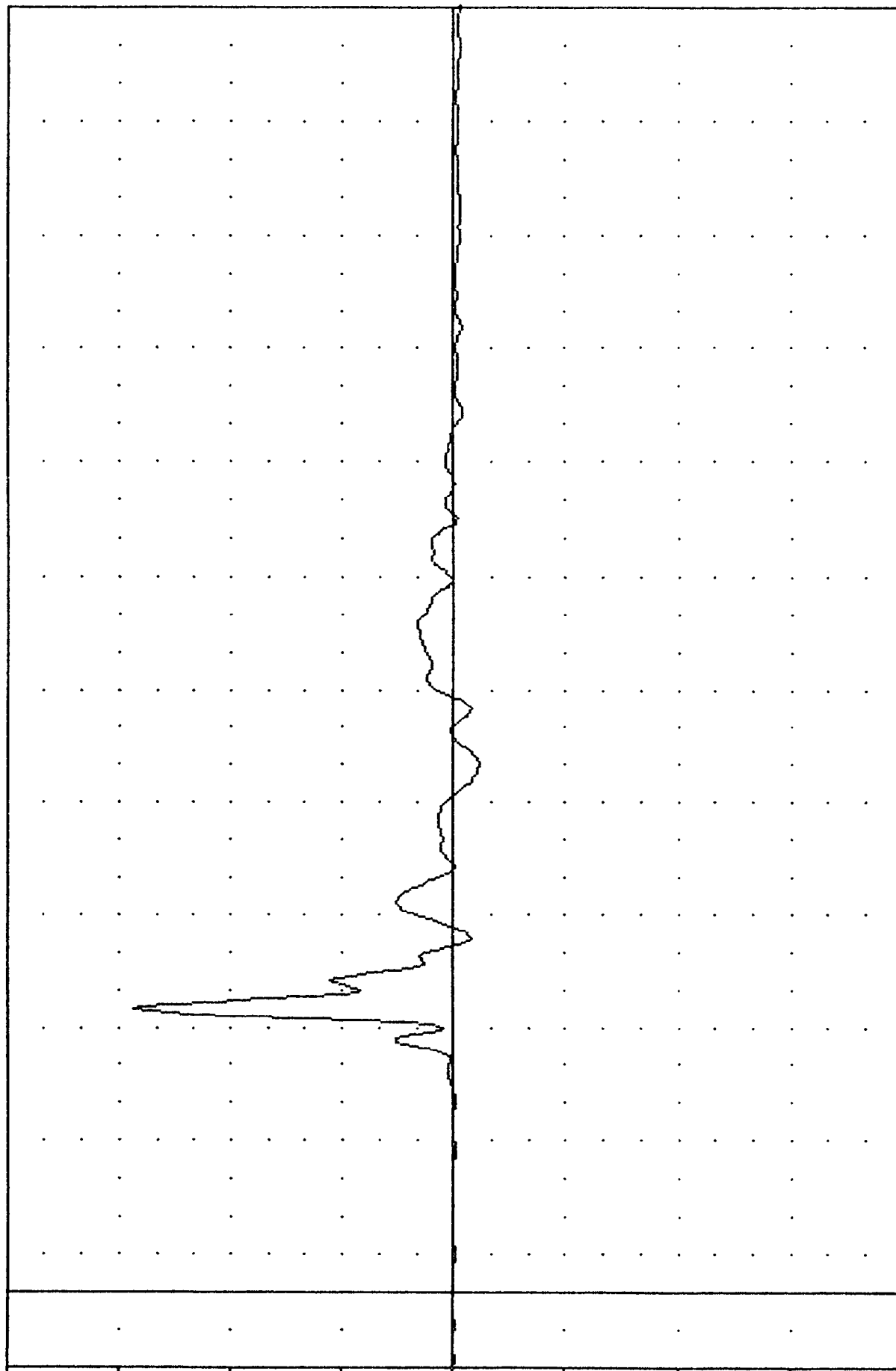
INC 041159
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURY63

FLUI UNIC 10-MUV-04 10:49:47

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -11.03e 139.38, 143.43 e 74.37

ACCELERATION (G)



B-56

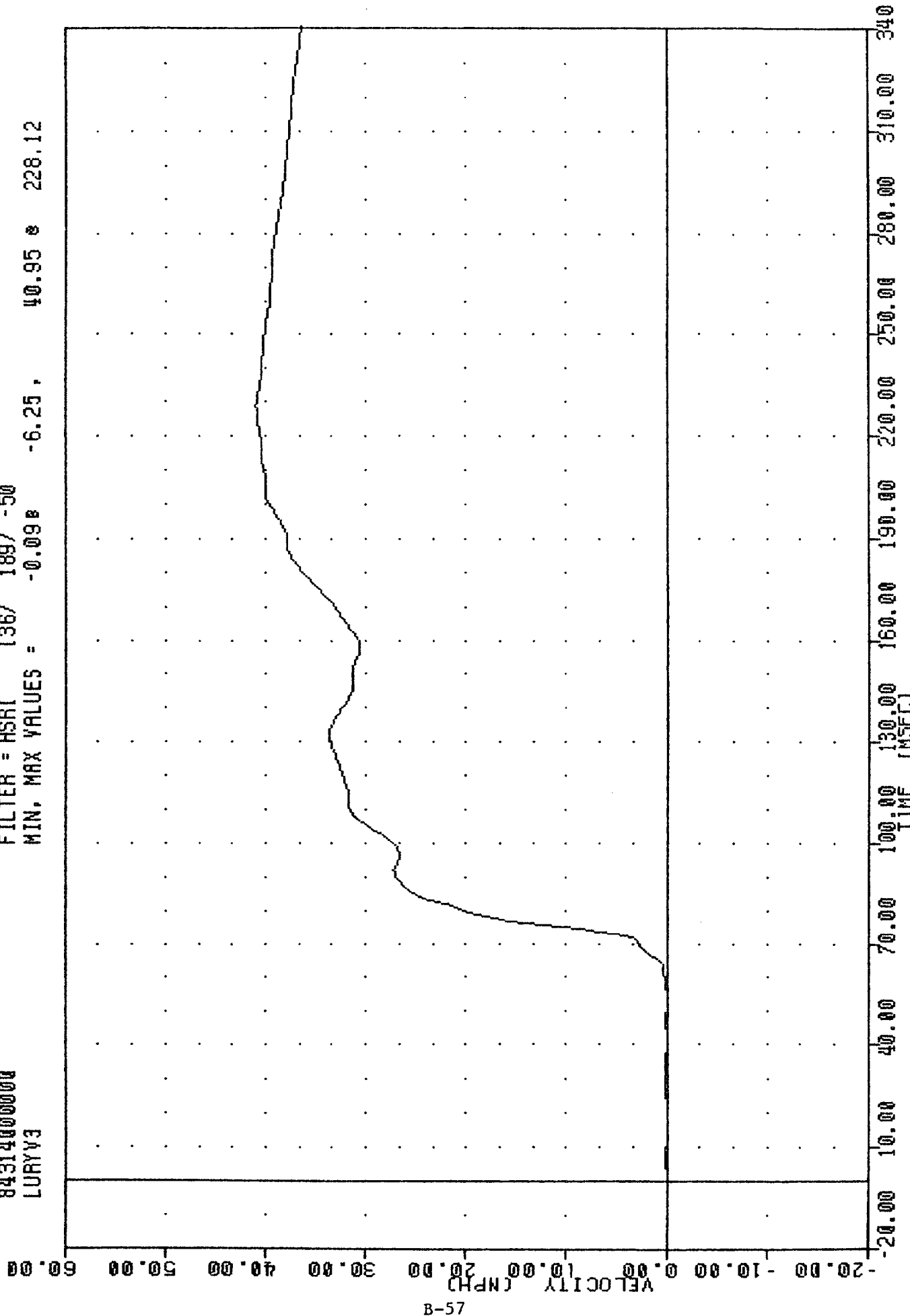
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

INC 0411WS
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURYV3

FLUT UNIC 10-NOV-04 10:01:00

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -0.098 -6.25, 40.95 228.12



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURYG3

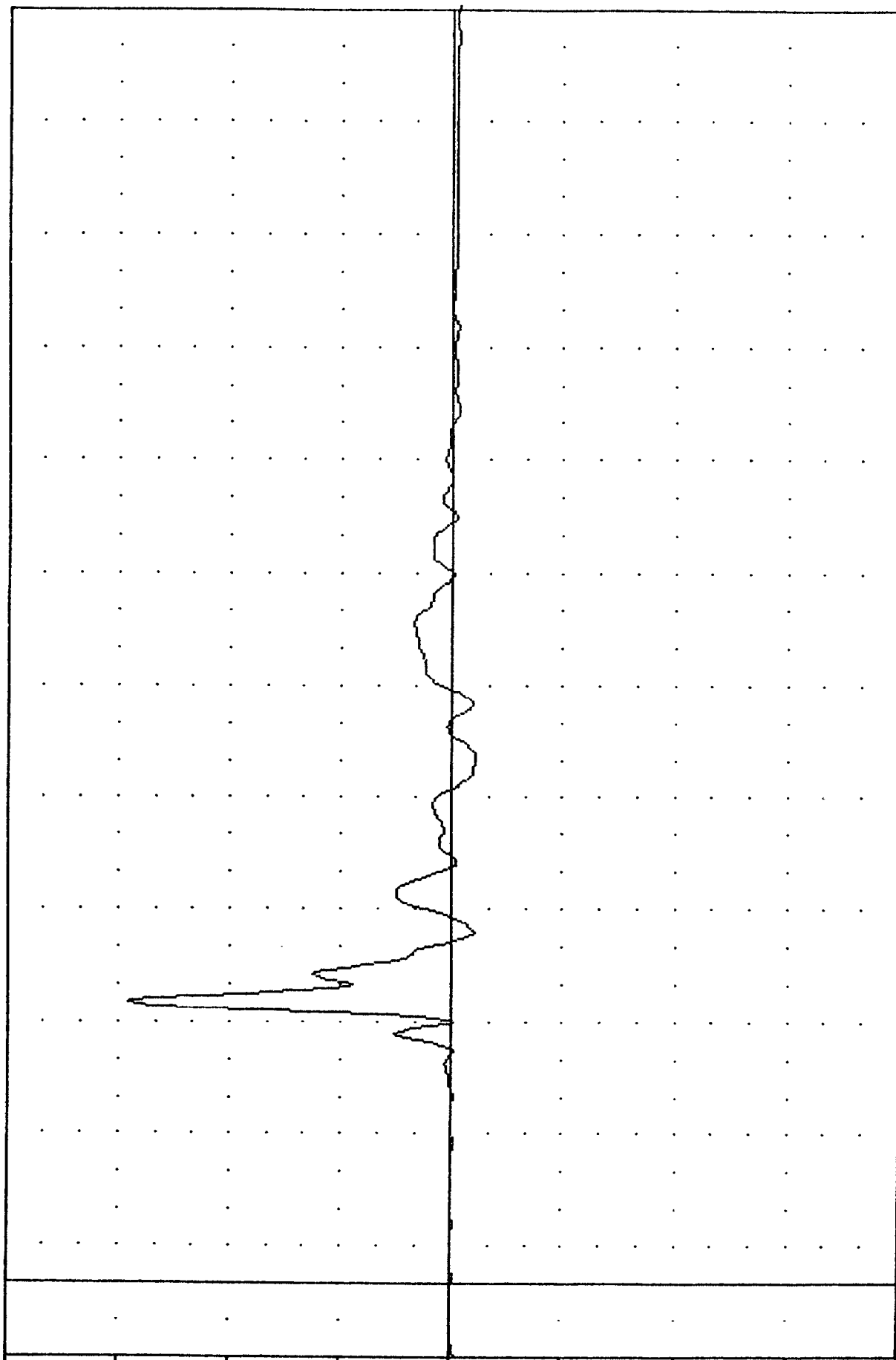
INC 041100
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LURY6C

PLU1 UNIC 10-NOV-84 10:49:47

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -10.77e 140.63, 145.06 e 74.37

ACCELERATION (G)



-200.00 -150.00 -100.00 -50.00 0.00 50.00 100.00 150.00 200.00

-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

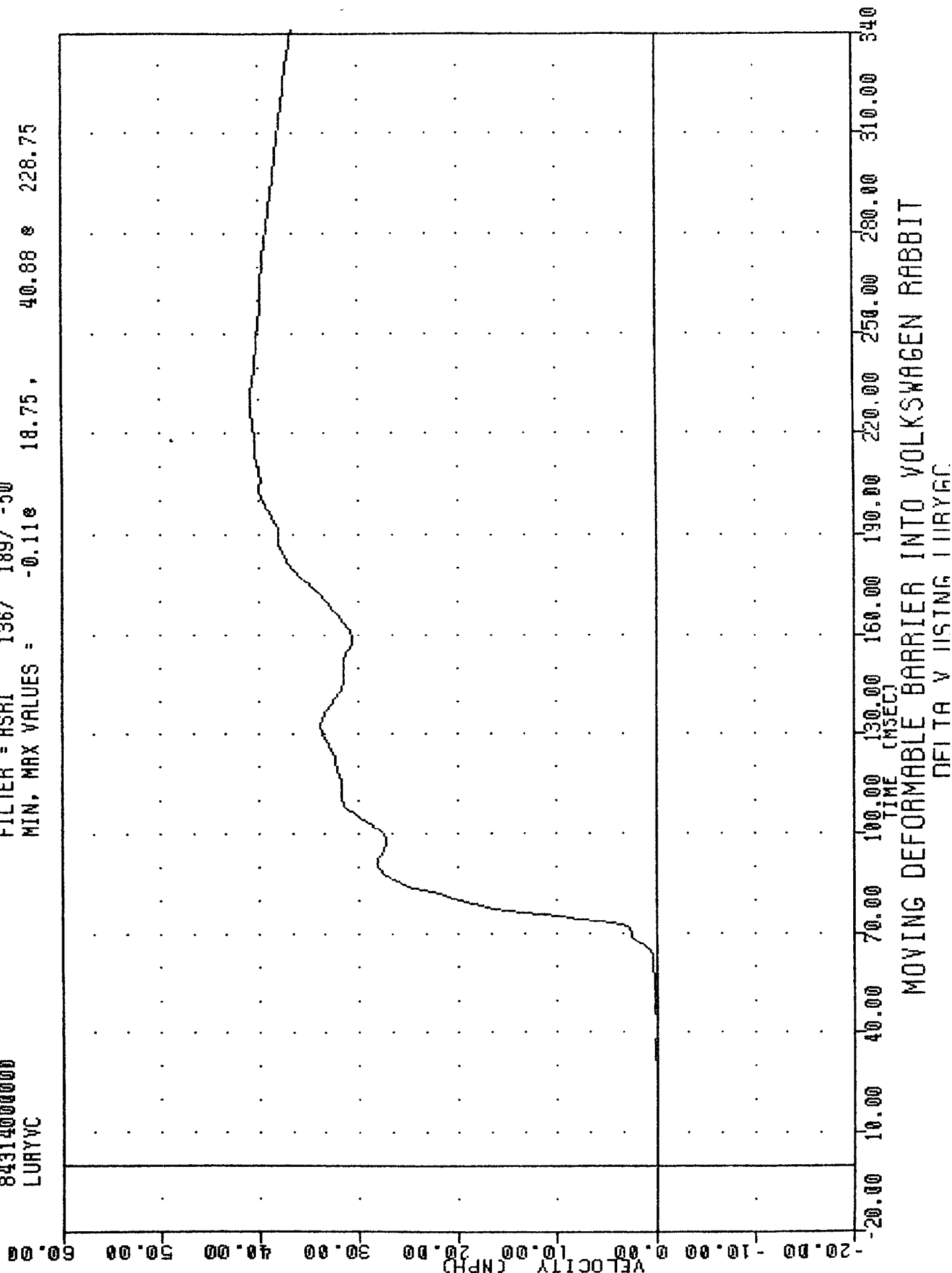
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT UPPER RIB ACCELERATION #2 Y AXIS

TRC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LURYVC

PLOT DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.11e 18.75, 40.88 e 228.75



INL 841109
SIDE AGGRESSIVE ATTRIBUTES
843140000000
LLRY63

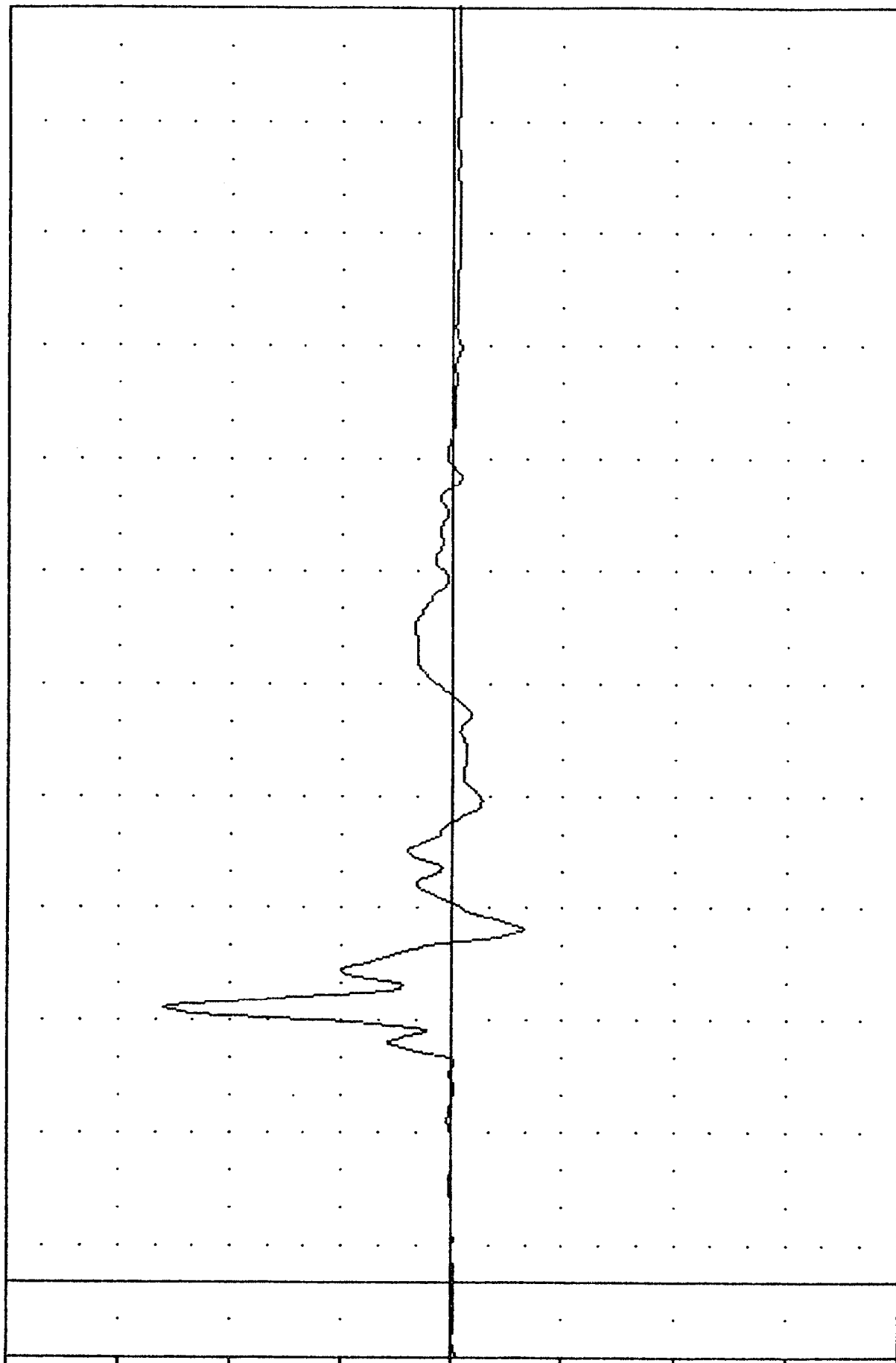
PLUI WHIE 15-NOV-84 15:49:47

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -32.16 93.75 129.99 72.50

09-B

ACCELERATION (G)

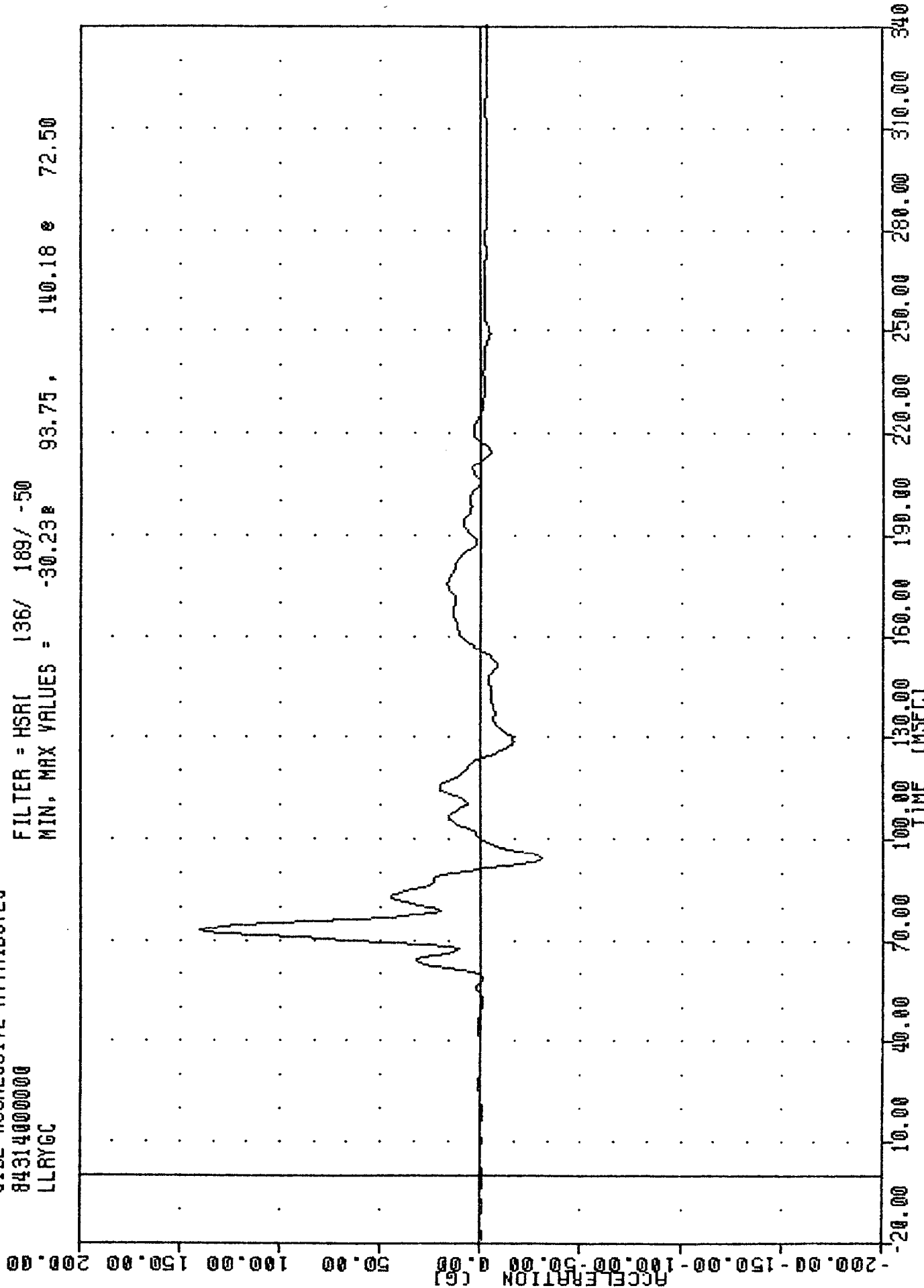


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT LOWER RIB ACCELERATION Y AXIS

INC 0411WS
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LLRYGC

FLUI UNIC 107MUV704 10749.47

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -30.23 93.75, 140.18 72.50

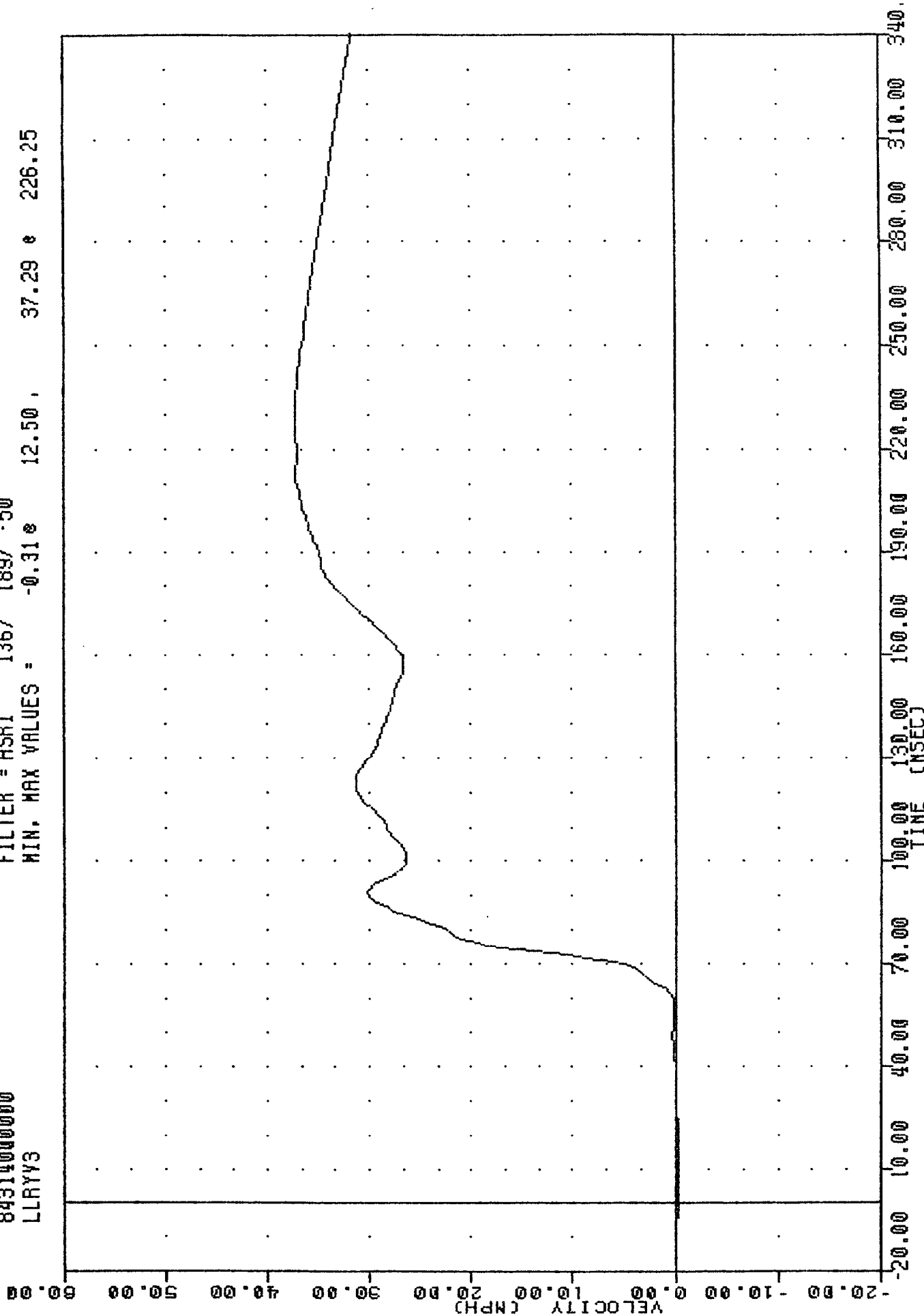


B-61

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT LOWER RIB ACCELERATION -2 Y AXIS

SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LLRYV3

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.31 0 12.50 , 37.29 0 226.25



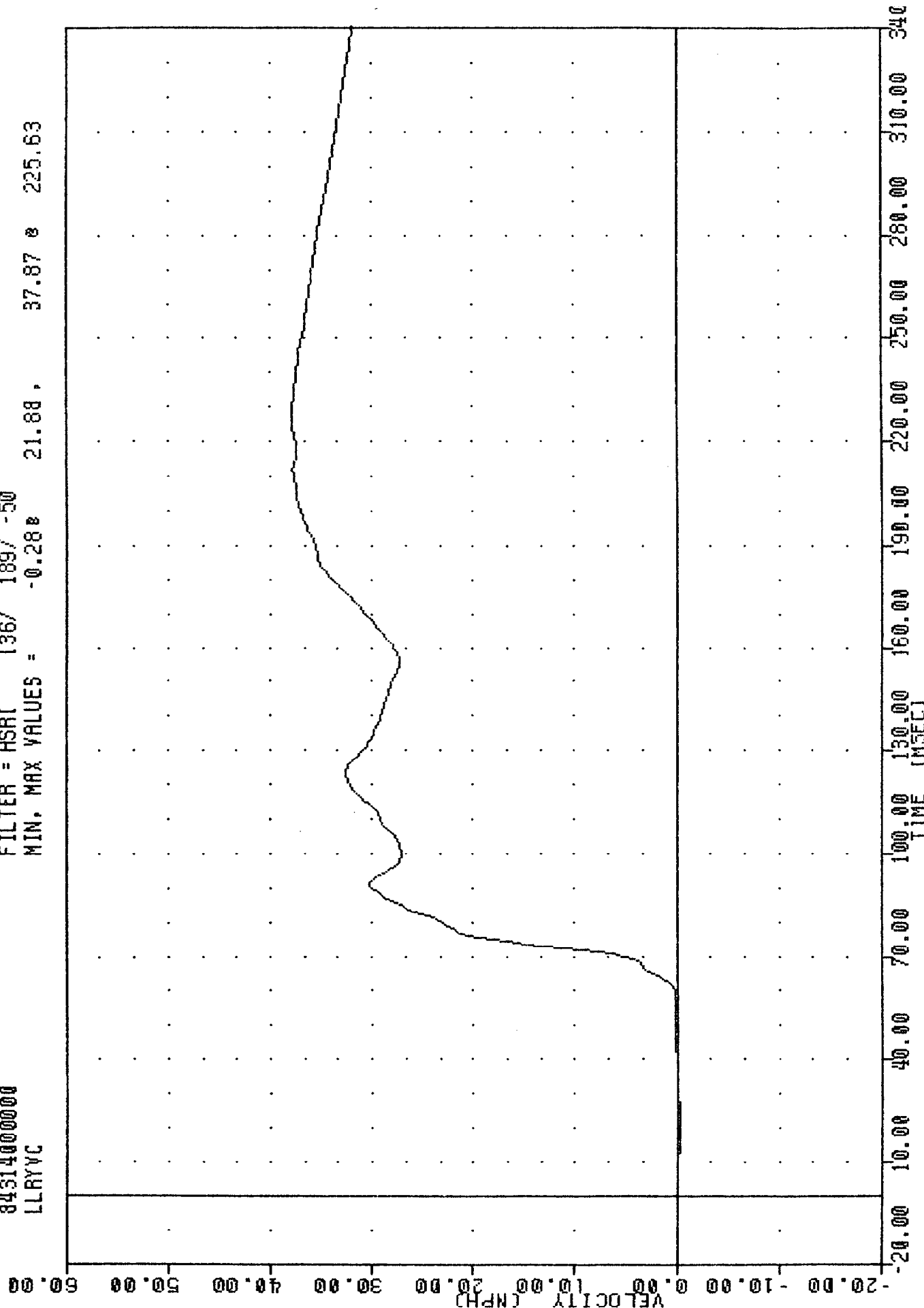
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LLRYG3

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LLRYVC

PLOT DATE 15-NOV-84 15:51:03

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.28 21.88 , 37.87 225.63



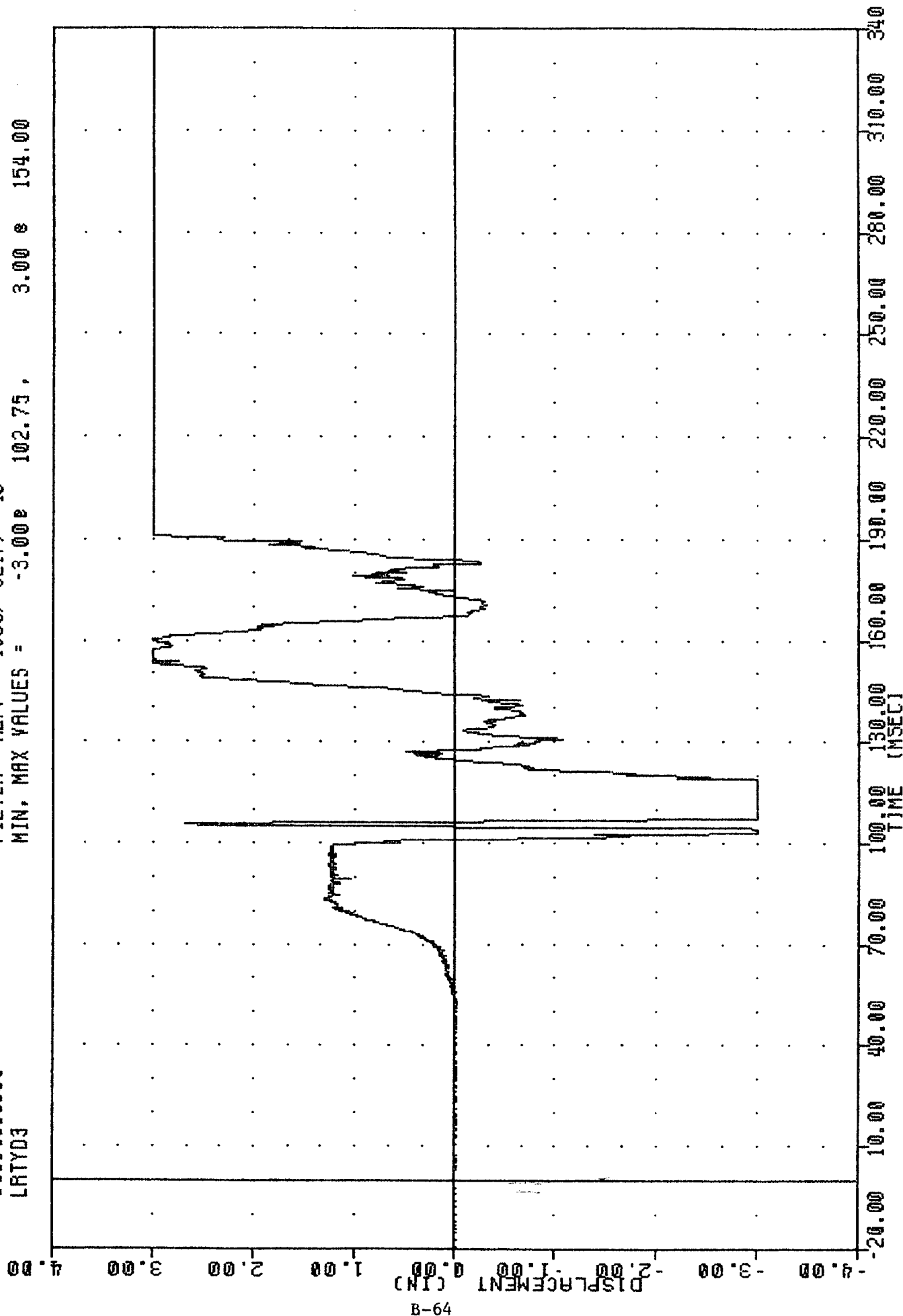
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LLRYGC

INC 0411W3
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LRTYD3

FLUI UNIC 10-NOV-04 10:52:09

FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = -3.00e 102.75, 3.00 e 154.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT RIB TO SPINE DISPLACEMENT INCHES

IML 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
PEYXG3

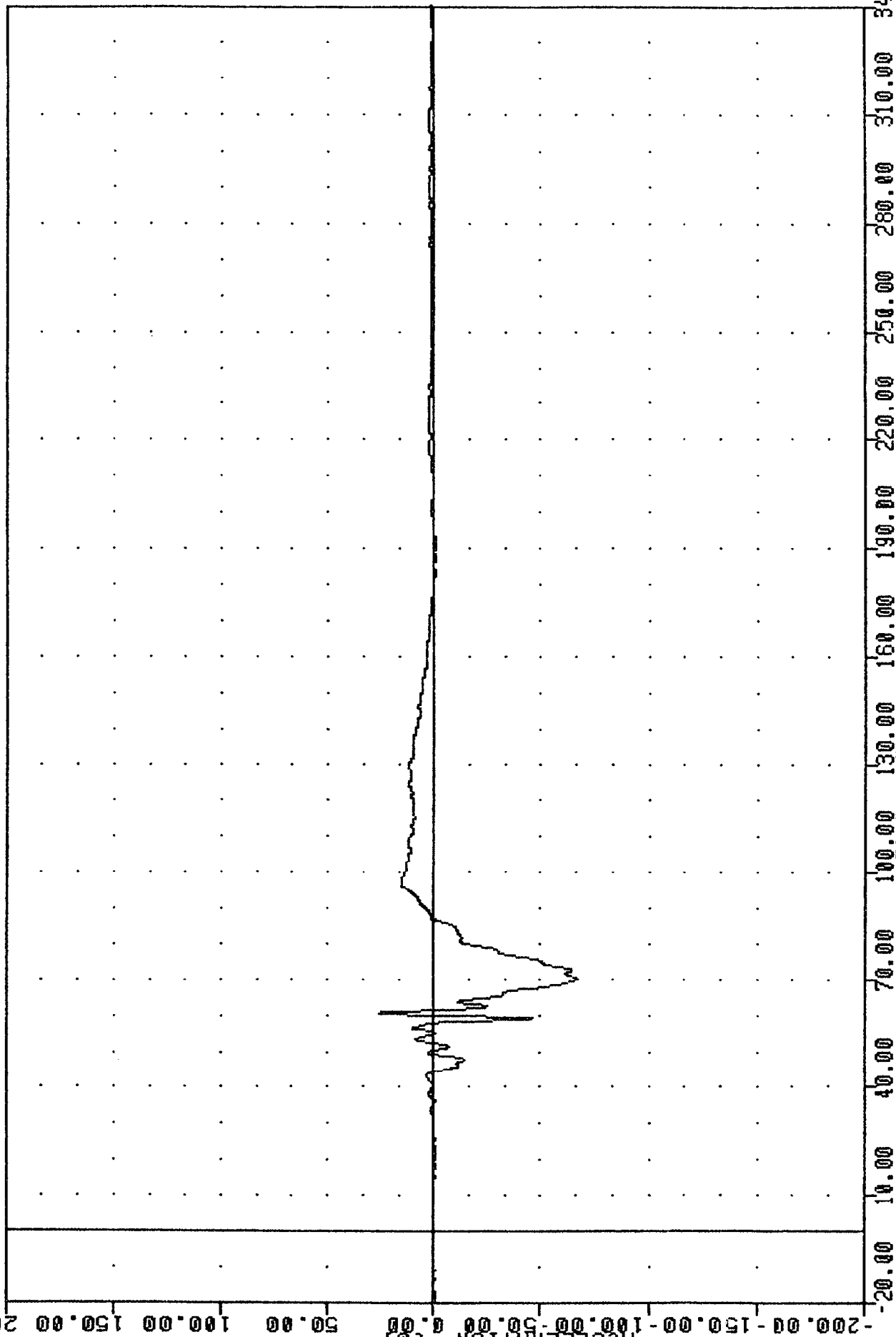
PLU1 UNIE 16-NOV-84 10:32:39

FILTER = BLPF 300/ 919/ -40

MIN. MAX VALUES = -67.34e 69.88e 26.11e 60.38

ACCELERATION [G]

B-65



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS ACCELERATION X AXIS

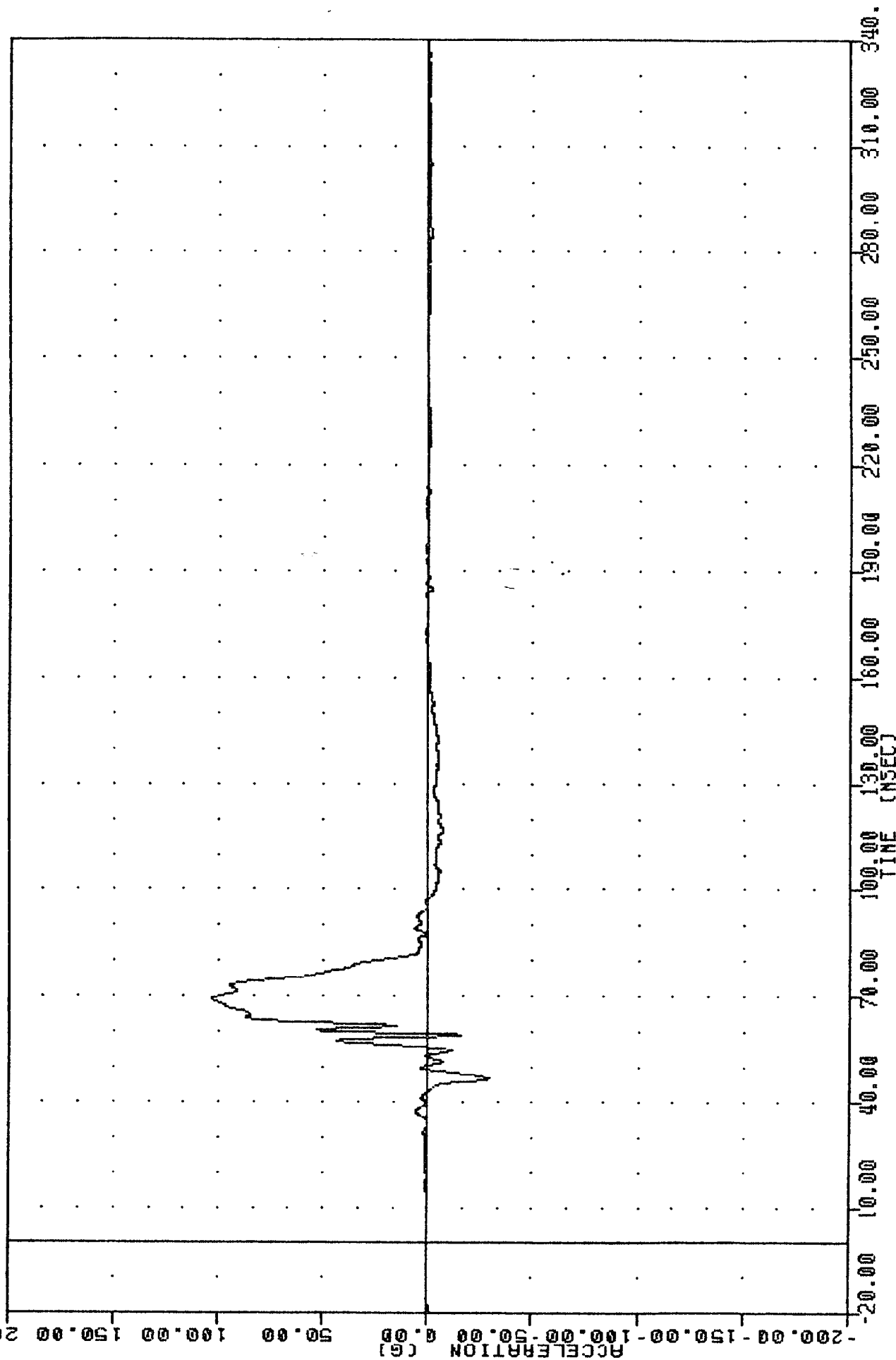
INL 841109
SIDE AGGRESSIVE ATTRIBUTES
843140000000
PEVY63

PLUI WHIE 16-NOV-84 10:32:59

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -29.17e 46.50 , 102.95 e 69.00

B-66

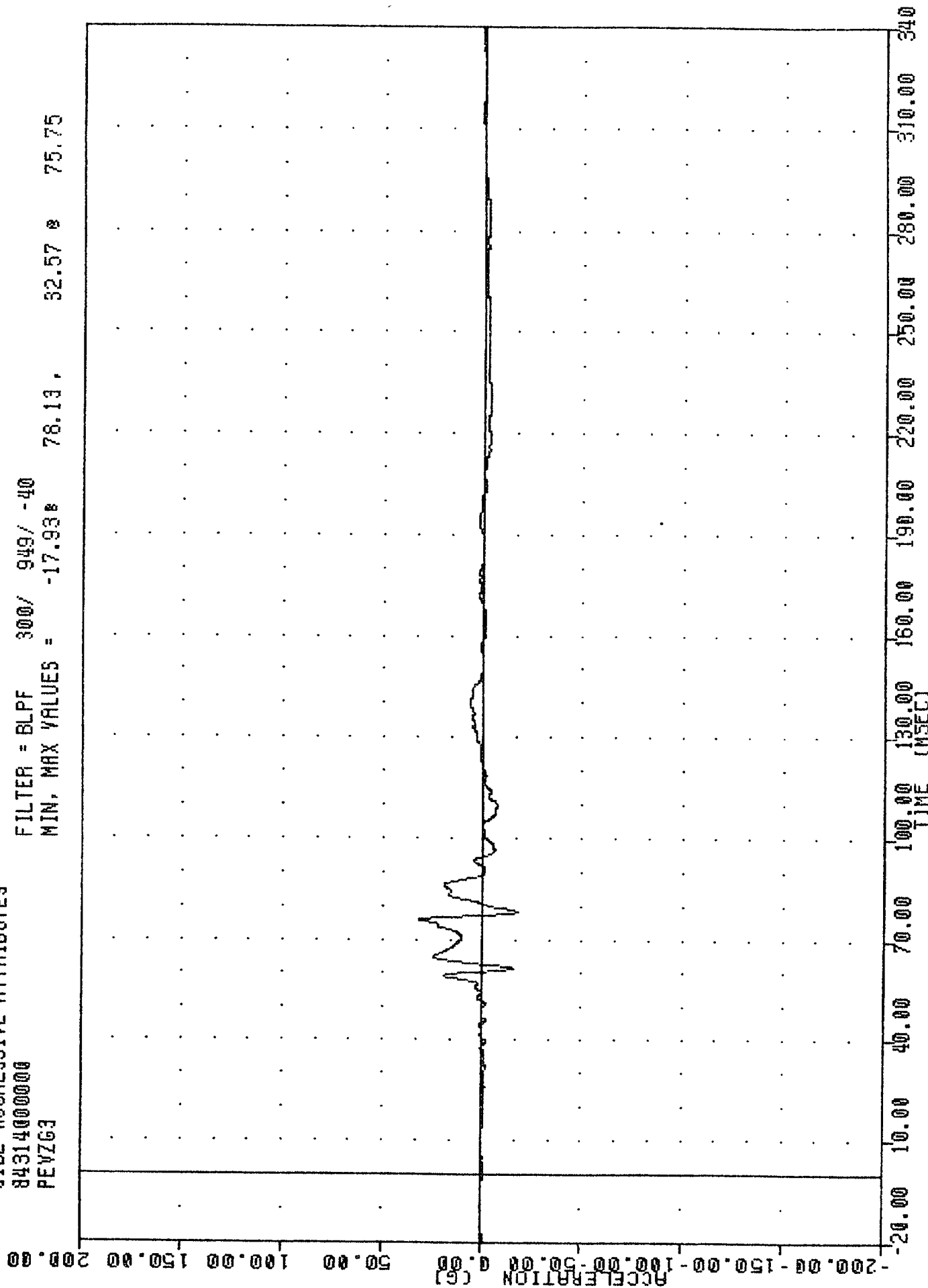


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS ACCELERATION Y AXIS

7 071100
SIDE AGGRESSIVE ATTRIBUTES
84314000000
PEVZG3

FILED UNTIL 10 NOV 04 10:01:40

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -17.93% 78.13, 32.57 % 75.75



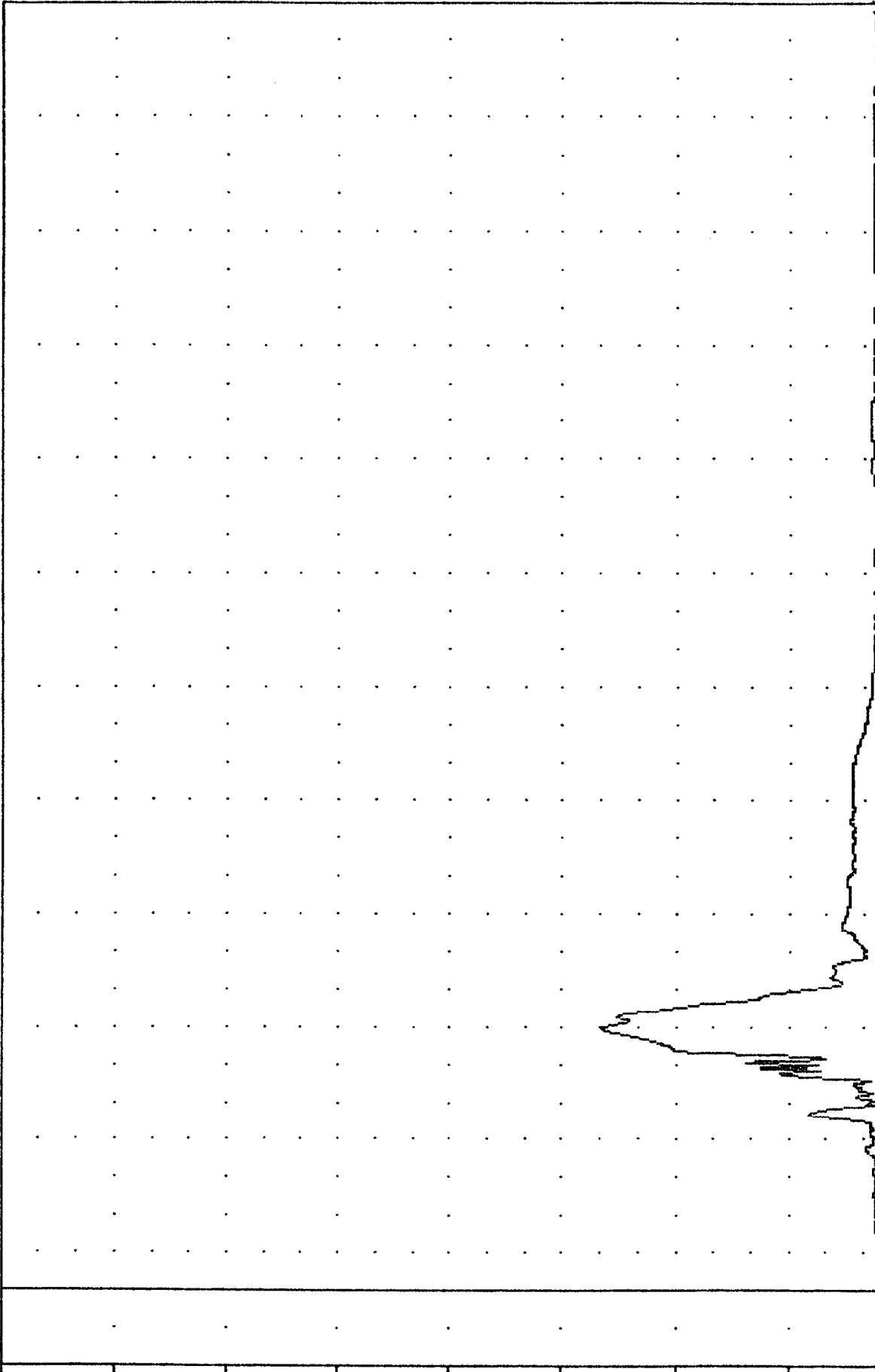
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS ACCELERATION Z AXIS

1114
SIDE AGGRESSIVE ATTRIBUTES
84314000000
PEYRG3

1001 0011 10 NOV 04 10:01:20

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = 0.110 -15.13, 122.15 0 69.38

ACCELERATION (G)



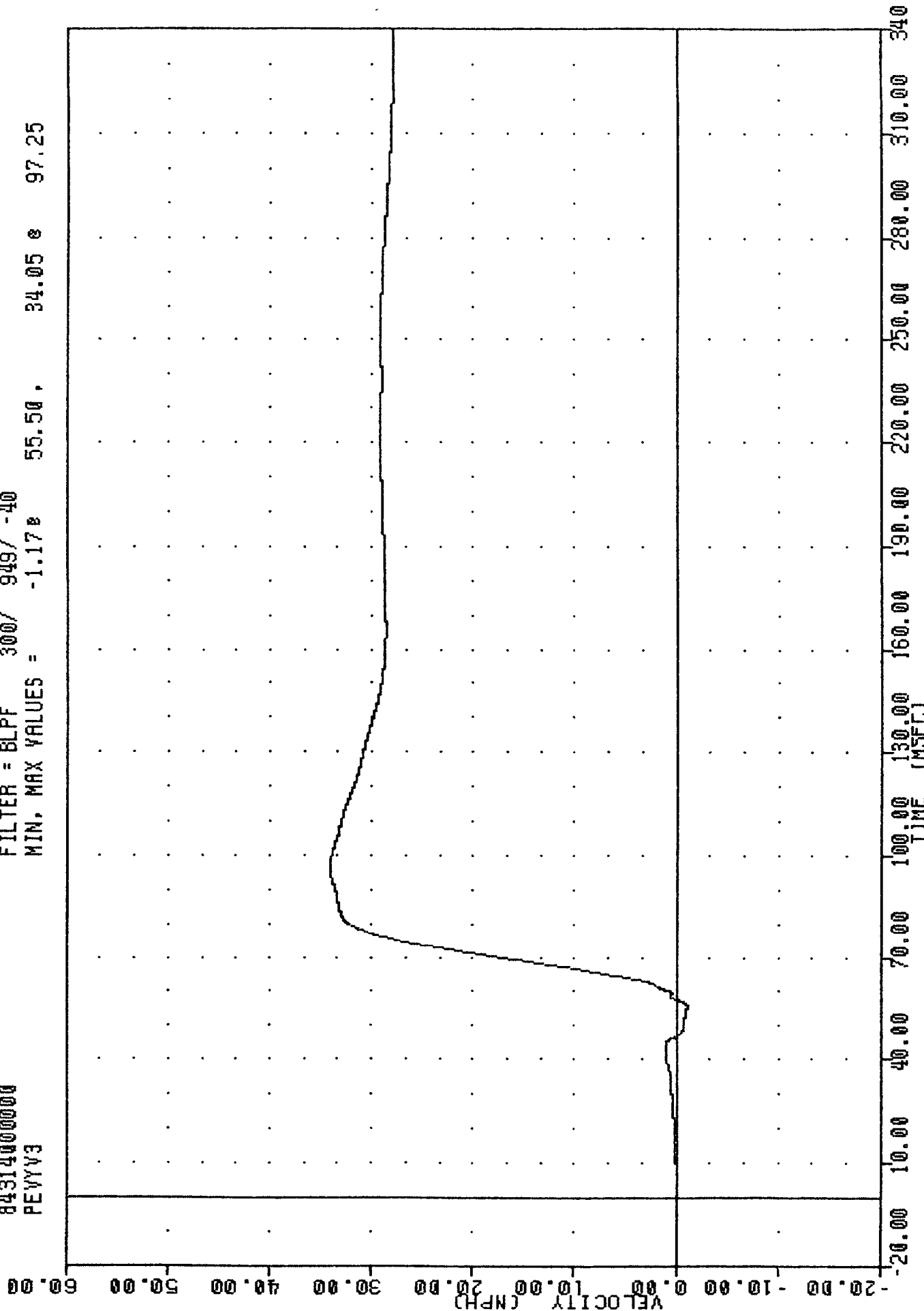
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS RESULTANT

INL 0411WS
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 PEVYV3

FLU1 UNIC 10-NOV-04 10:00.17

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -1.17e 55.50, 34.05 e 97.25

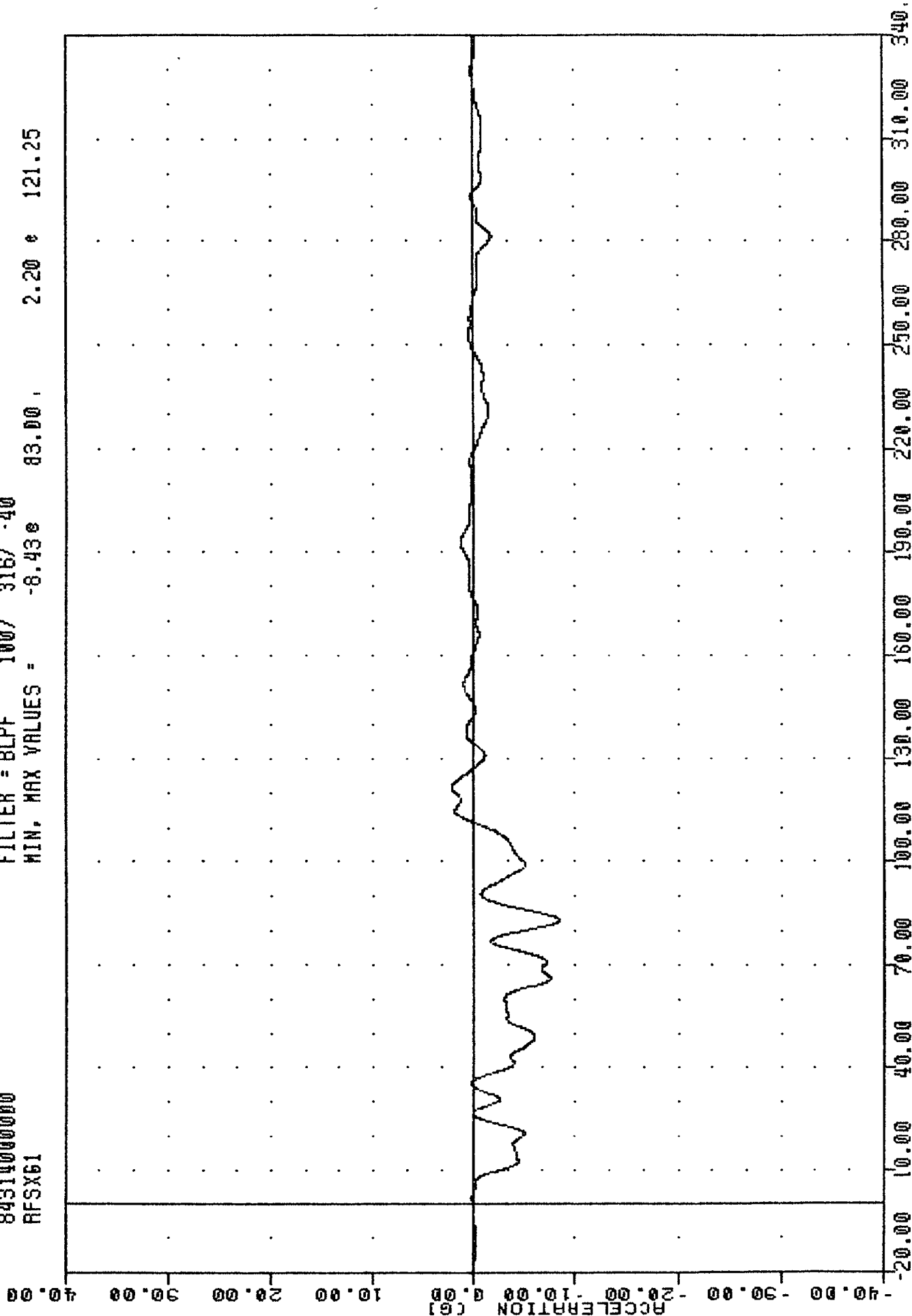


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING PEVYG3

THE
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RFSX61

PLUG UNIT 10 HUF 02 10000000

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -8.43e 83.00, 2.20 e 121.25



B-70

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT FRONT SILL ACCELERATION X AXIS

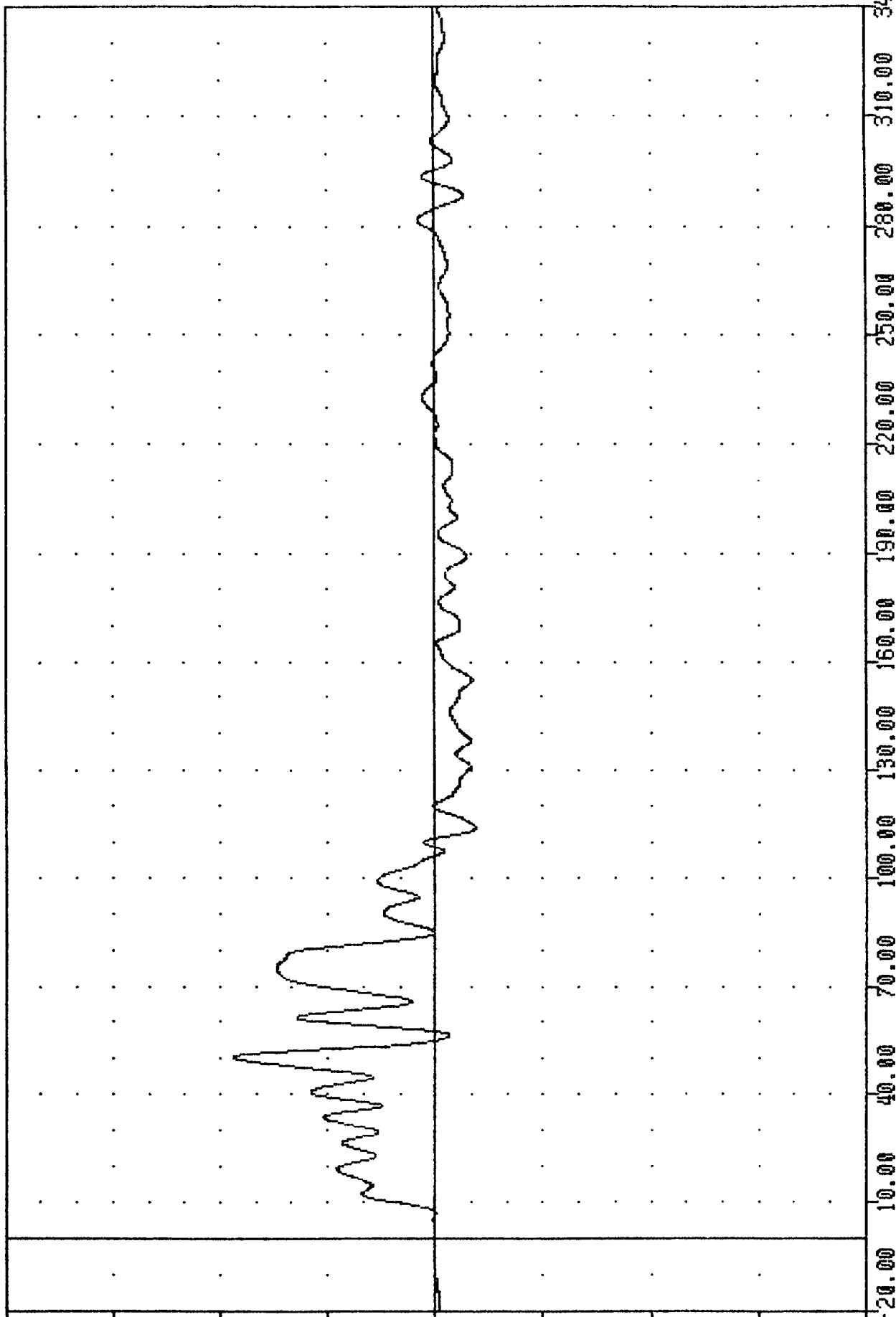
TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
AFSYG1

PLOT DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -3.78e 113.88, 18.73 e 50.25

ACCELERATION (G)



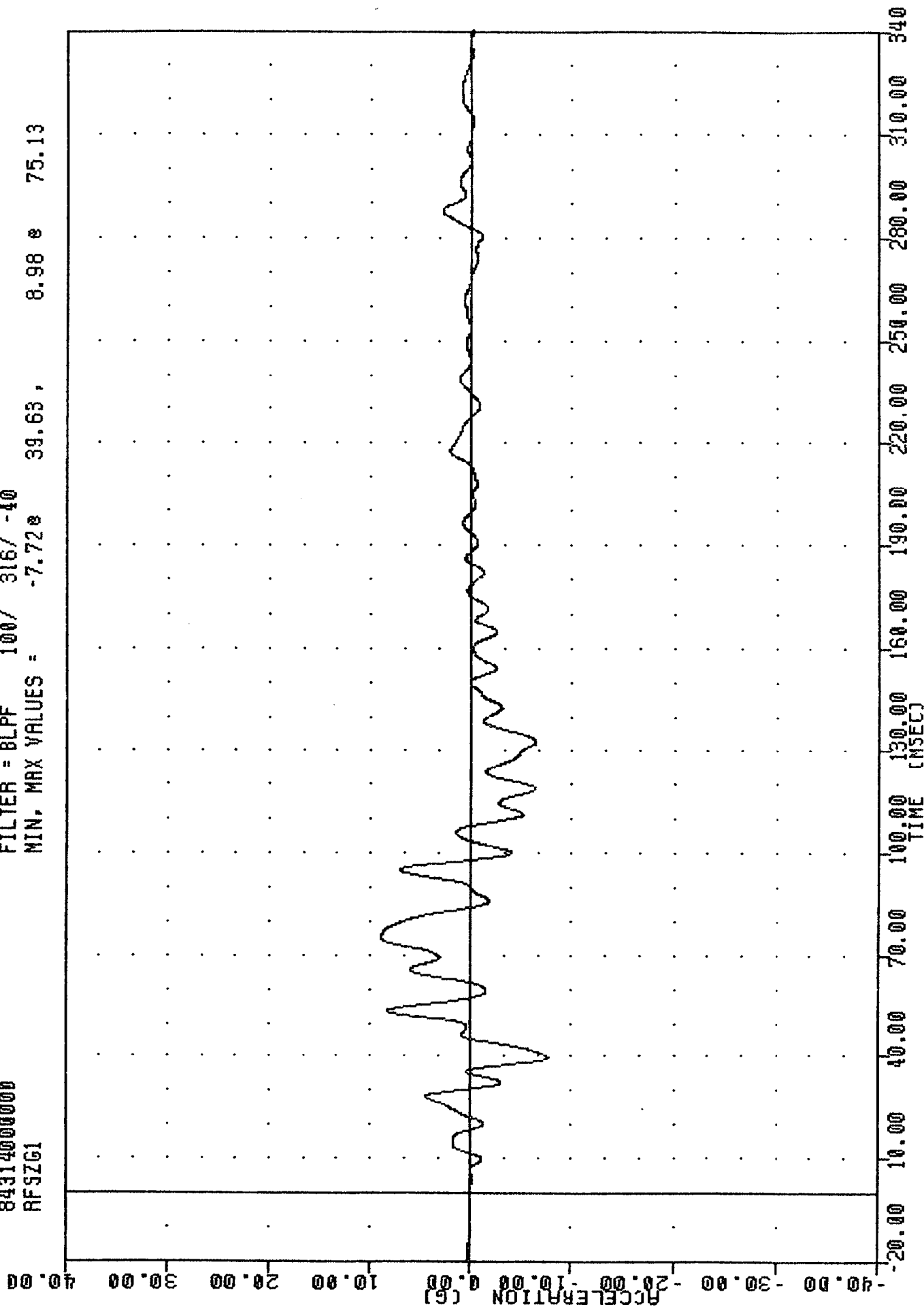
B-71

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT FRONT SILL ACCELERATION Y AXIS

SIDE AGGRESSIVE ATTRIBUTES
84314000000
RFSZG1

LOC: UNTIL 40 INVT 03 10/01/80

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -7.728 39.63, 8.98 8 75.13



B-72

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT FRONT SILL ACCELERATION Z AXIS

INL 041105
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RFSR61

FLW1 UNIC 10 NOV 04 10:01:40

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = 0.118 -1.63, 19.61 8 50.13

70.00

60.00

50.00

40.00

30.00

20.00

10.00

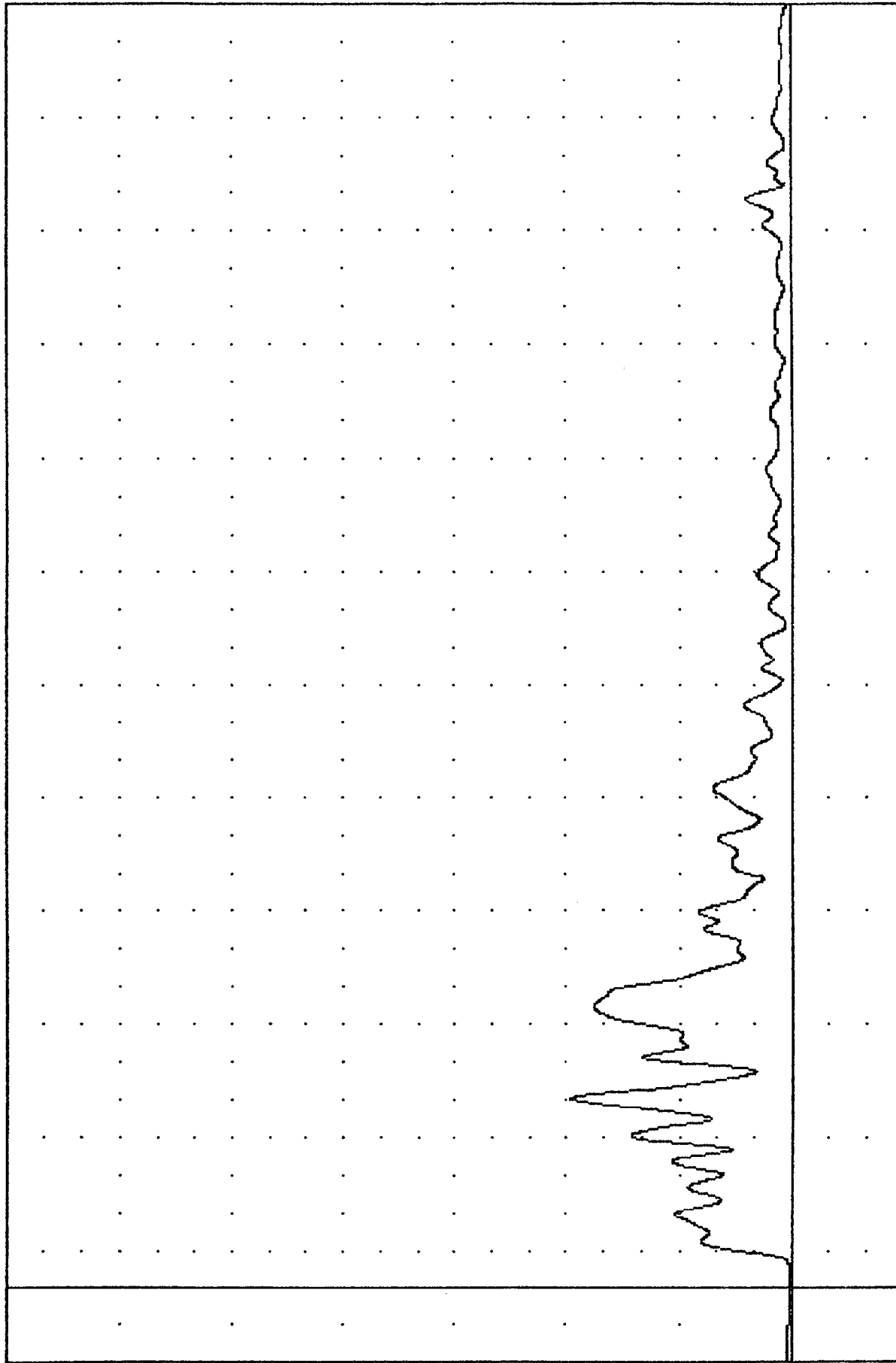
0.00

-10.00

-20.00

B-73

ACCELERATION (G)



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

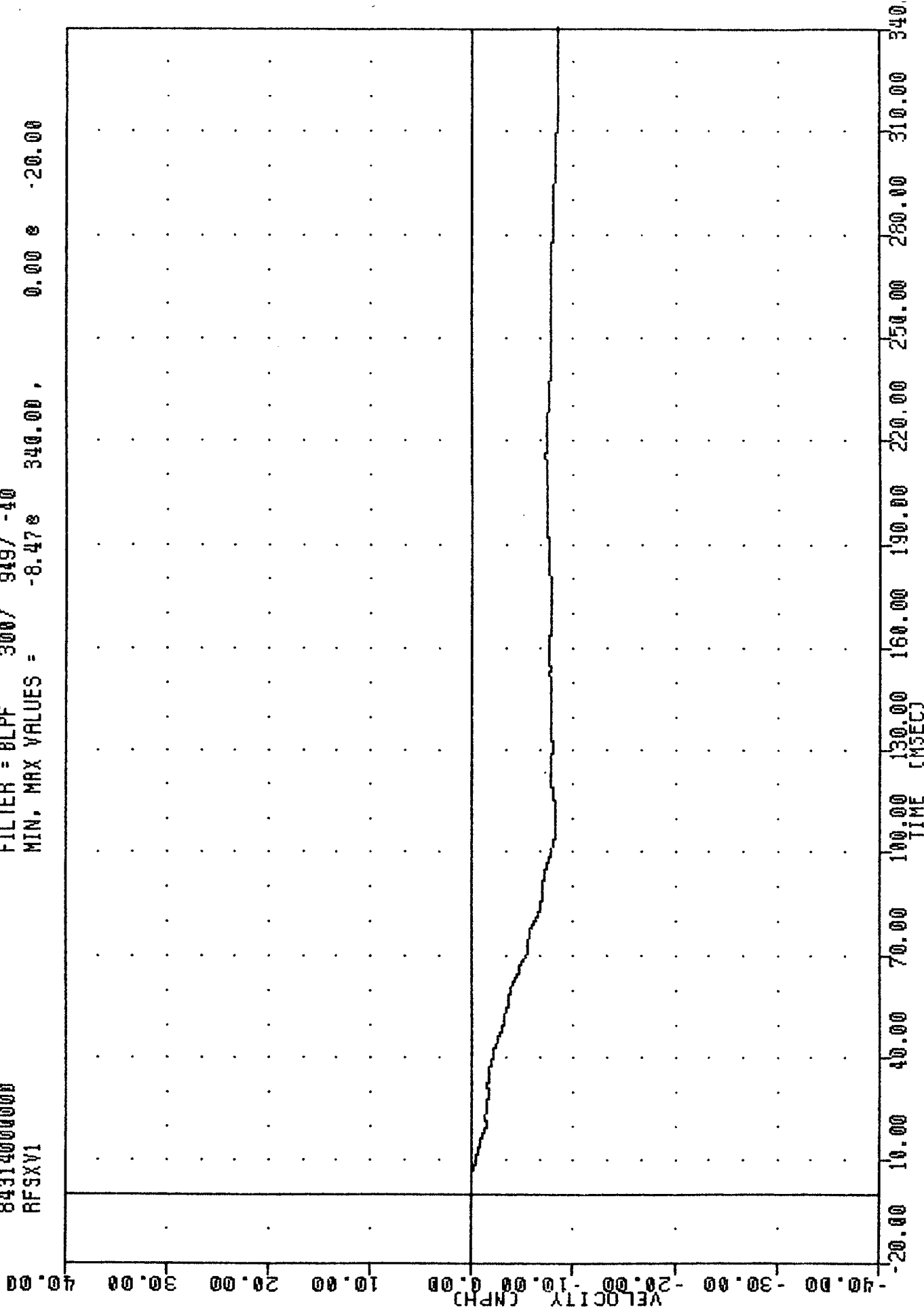
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT FRONT SILL RESULTANT

IML , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RFSXV1

PLU1 UN1E 13-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -8.478 340.00 , 0.00 8 -20.00

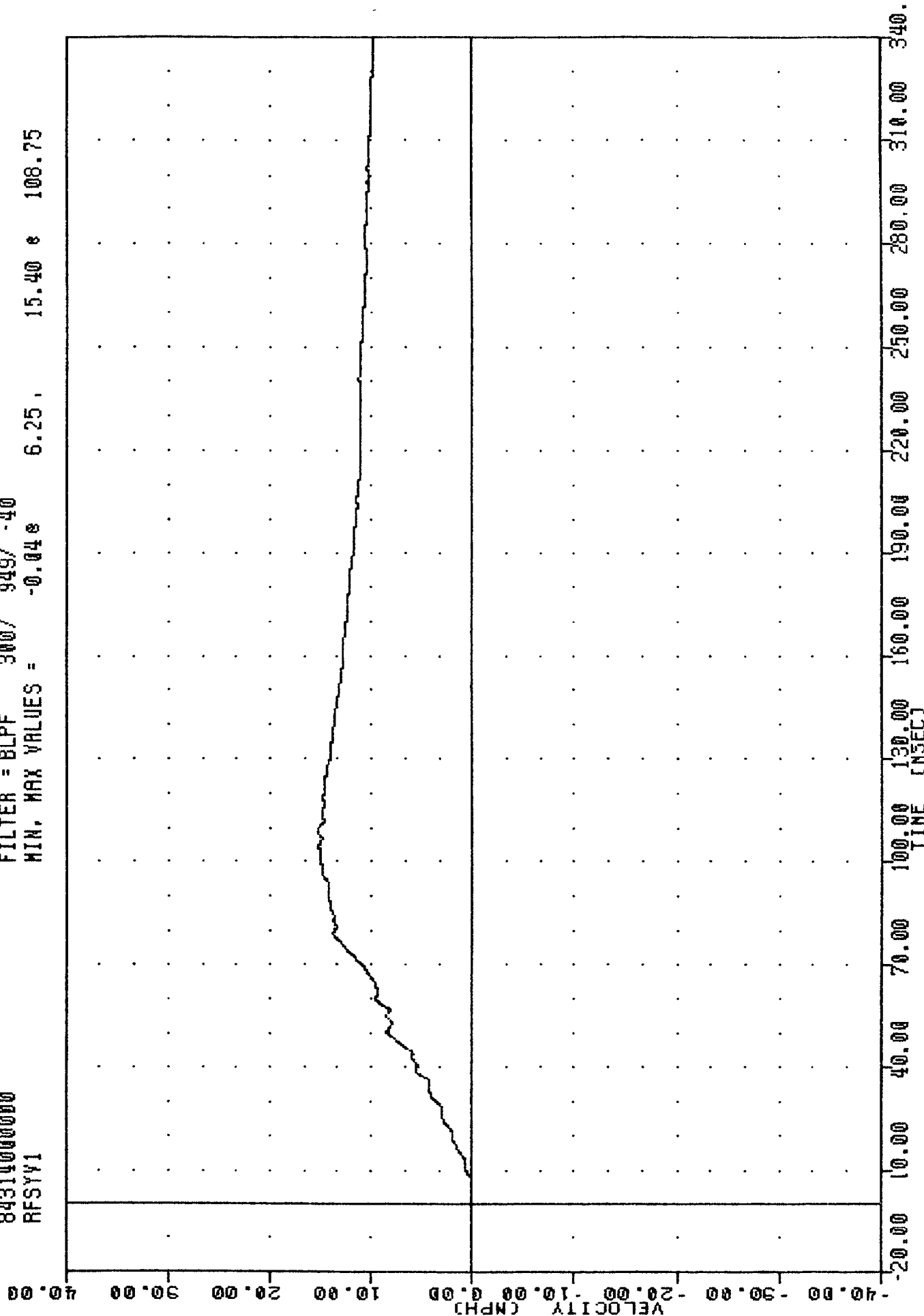


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING RFSXG1

INC 041153
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RFSYV1

FLUT UNIC 10 INUT 04 10-00-17

FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -0.048 15.40 108.75

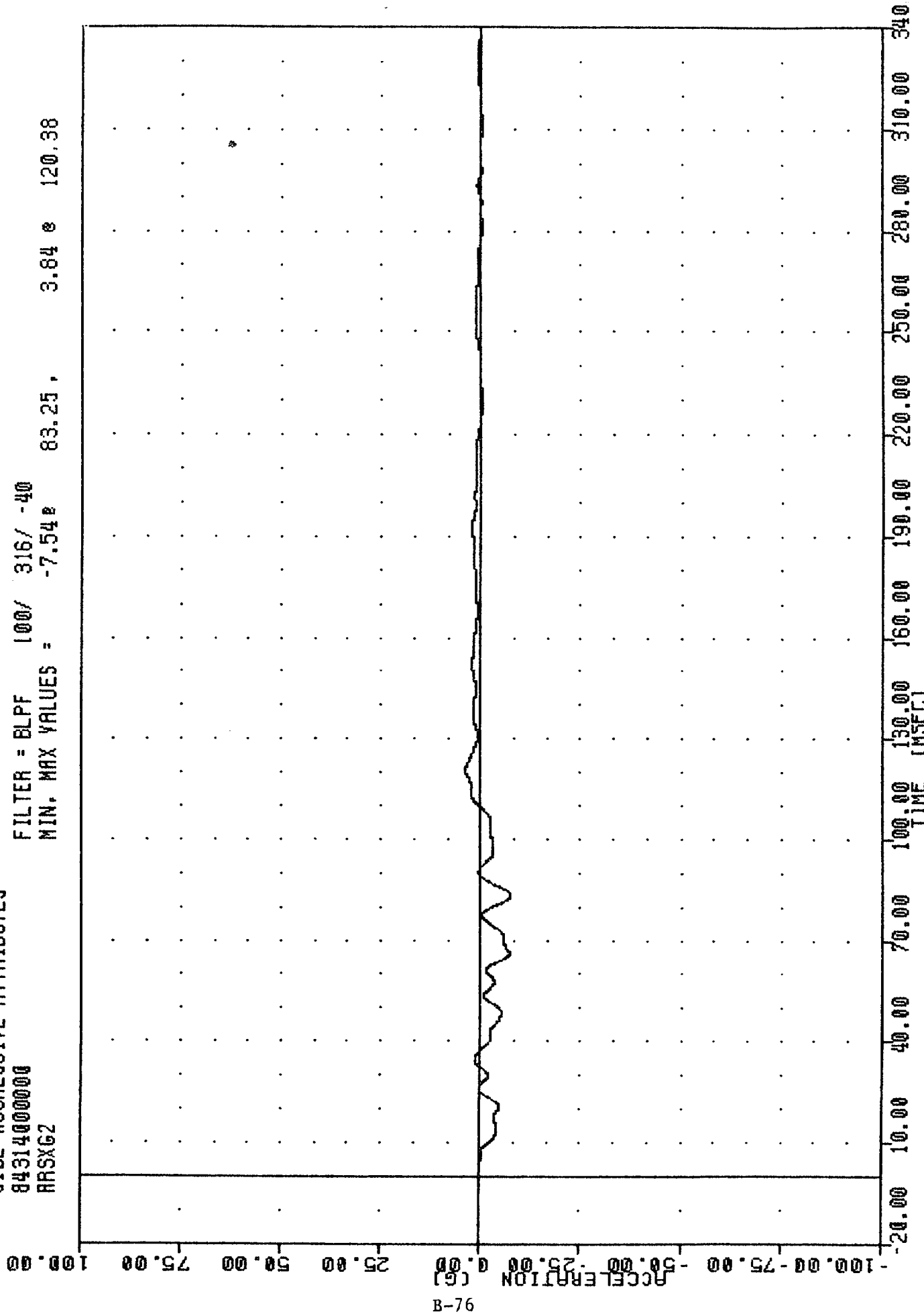


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING RFSYGI

SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RRSXG2

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -7.54e 83.25 , 3.84 e 120.38

10 NOV 04 10:31:40



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL ACCELERATION X AXIS

IML 041109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RRSYG2

PLUI UNIE 13-NOV-84 10:01:40

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -3.54e 155.13, 23.81 e 72.13

100.00

75.00

50.00

25.00

0.00

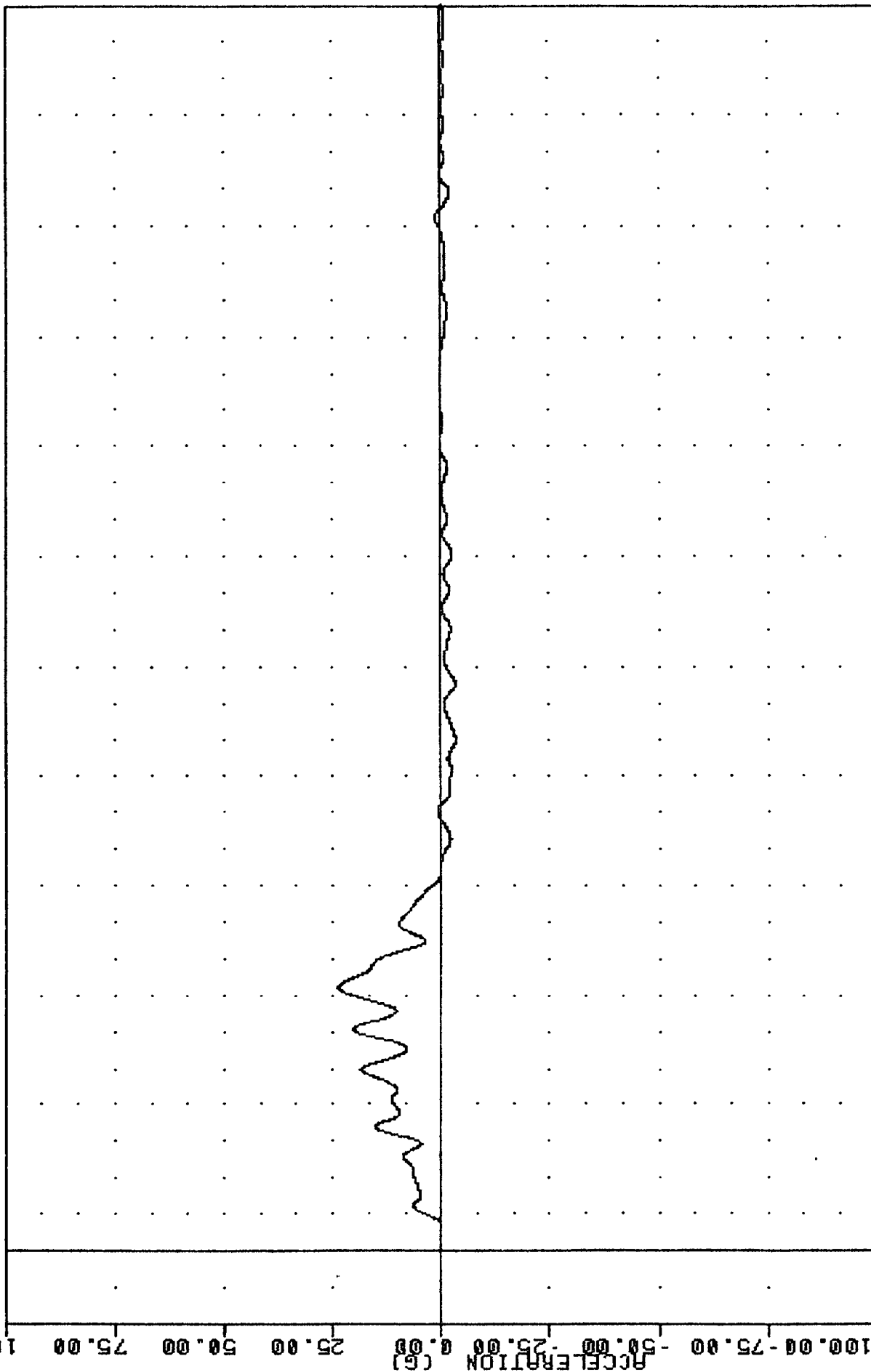
-25.00

-50.00

-75.00

-100.00

B-77



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL ACCELERATION Y AXIS

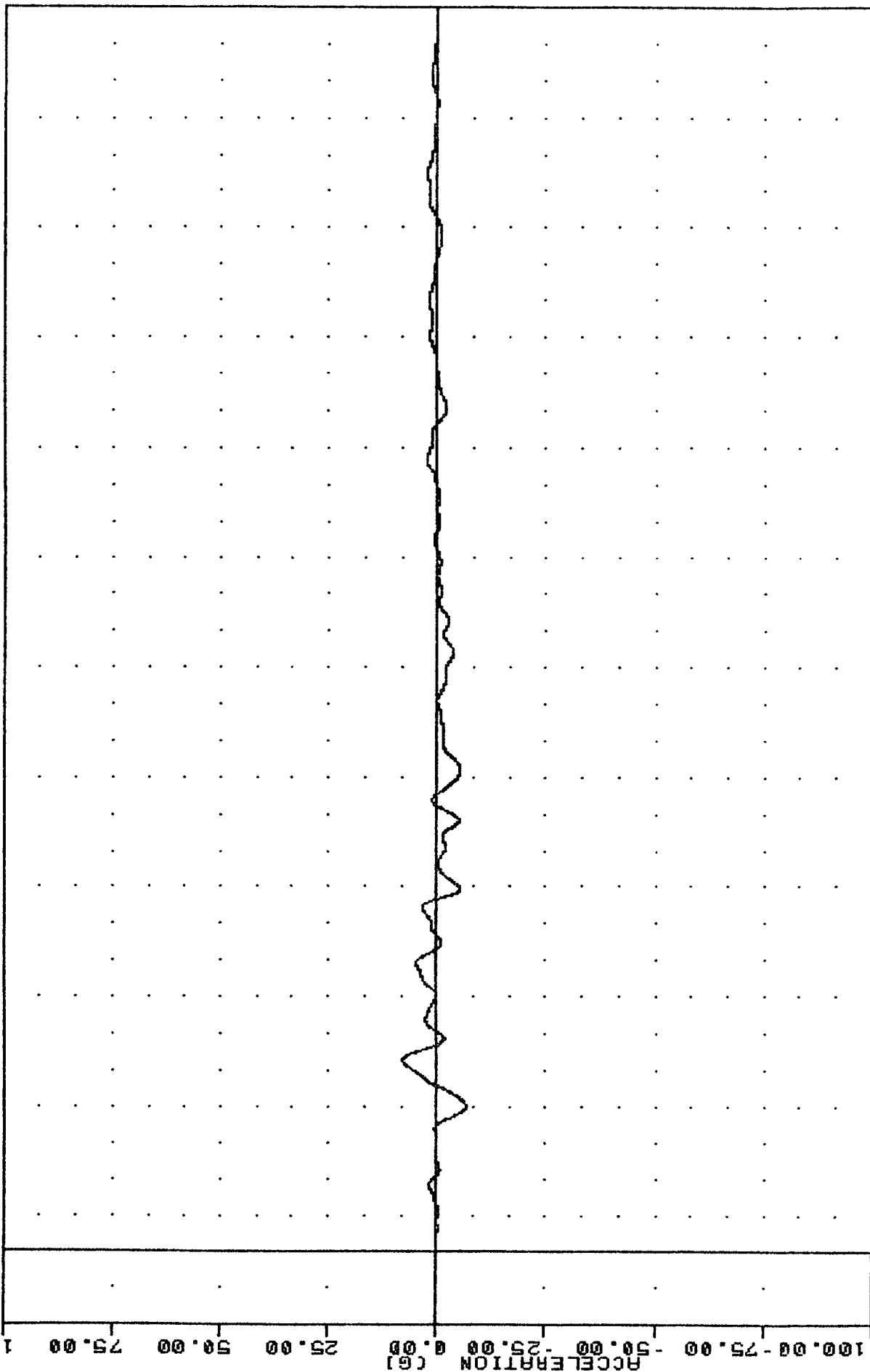
INCL 0431103
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RRSZ62

FLW1 UNIT 10-NOV-04 10-31-40

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -6.67e 40.00, 7.91 e 52.50

100.00
75.00
50.00
25.00
0.00
-25.00
-50.00
-75.00
-100.00

B-78

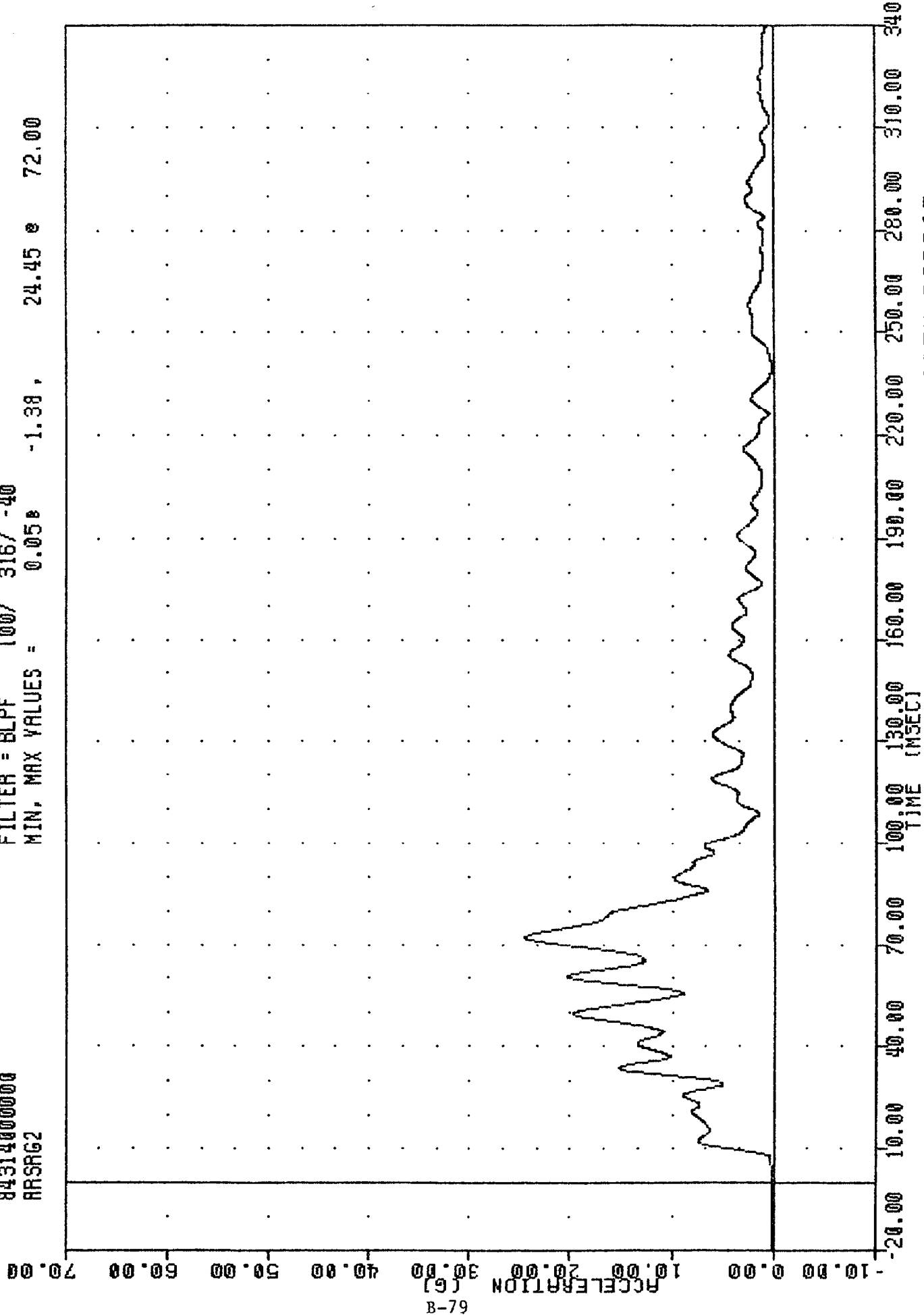


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL ACCELERATION Z AXIS

1110
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 ARSRG2

1001 0011 10 0000 00 10 0010 00

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = 0.058 -1.38, 24.45 @ 72.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL RESULTANT

INC 041153

SIDE AGGRESSIVE ATTRIBUTES

84314000000

ARSXV2

1001 0011 10 NOV 04 10:00:17

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -6.268 105.88, 0.01 8 -12.25

40.00

30.00

20.00

10.00

0.00

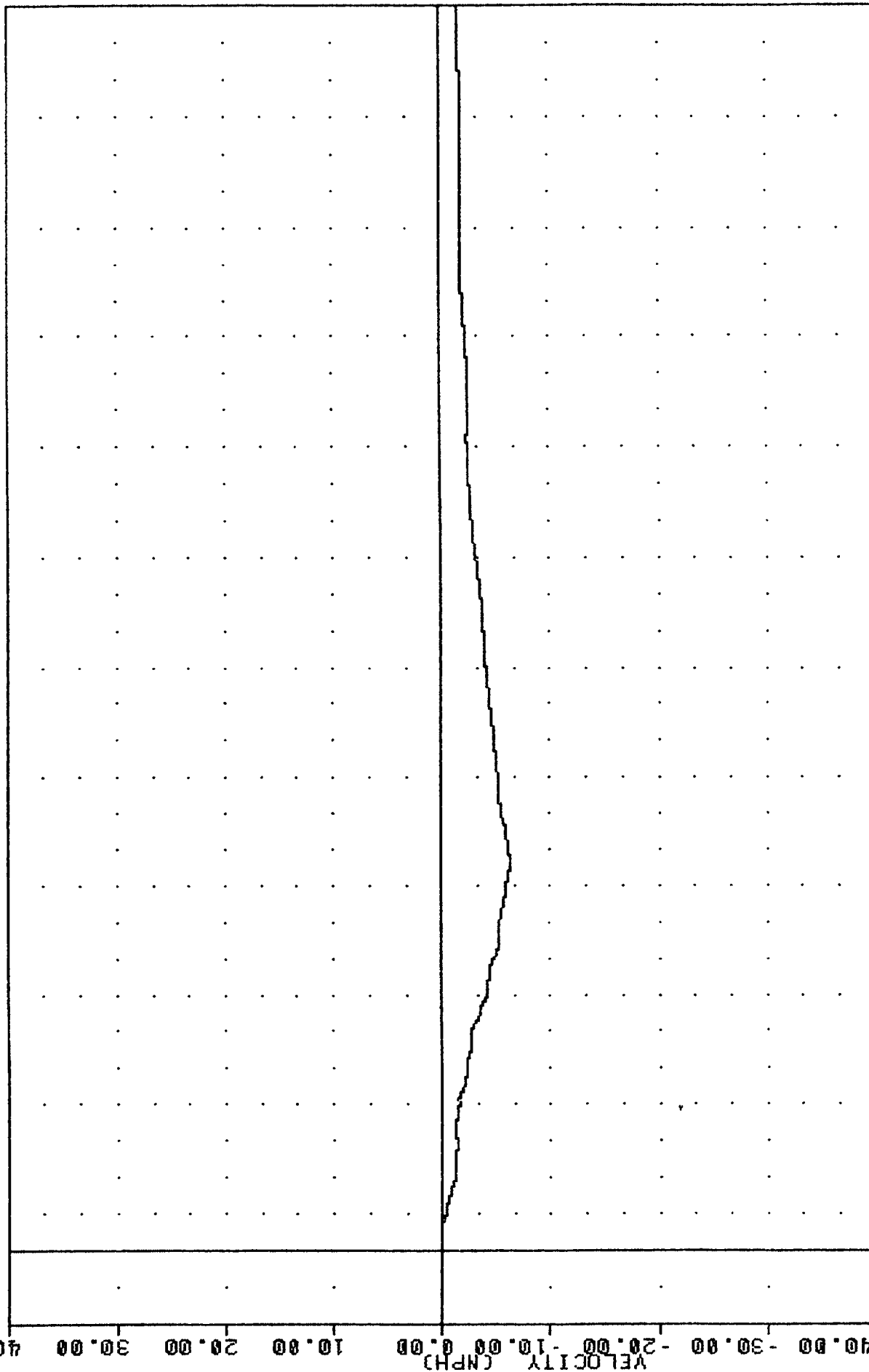
-10.00

-20.00

-30.00

-40.00

B-80

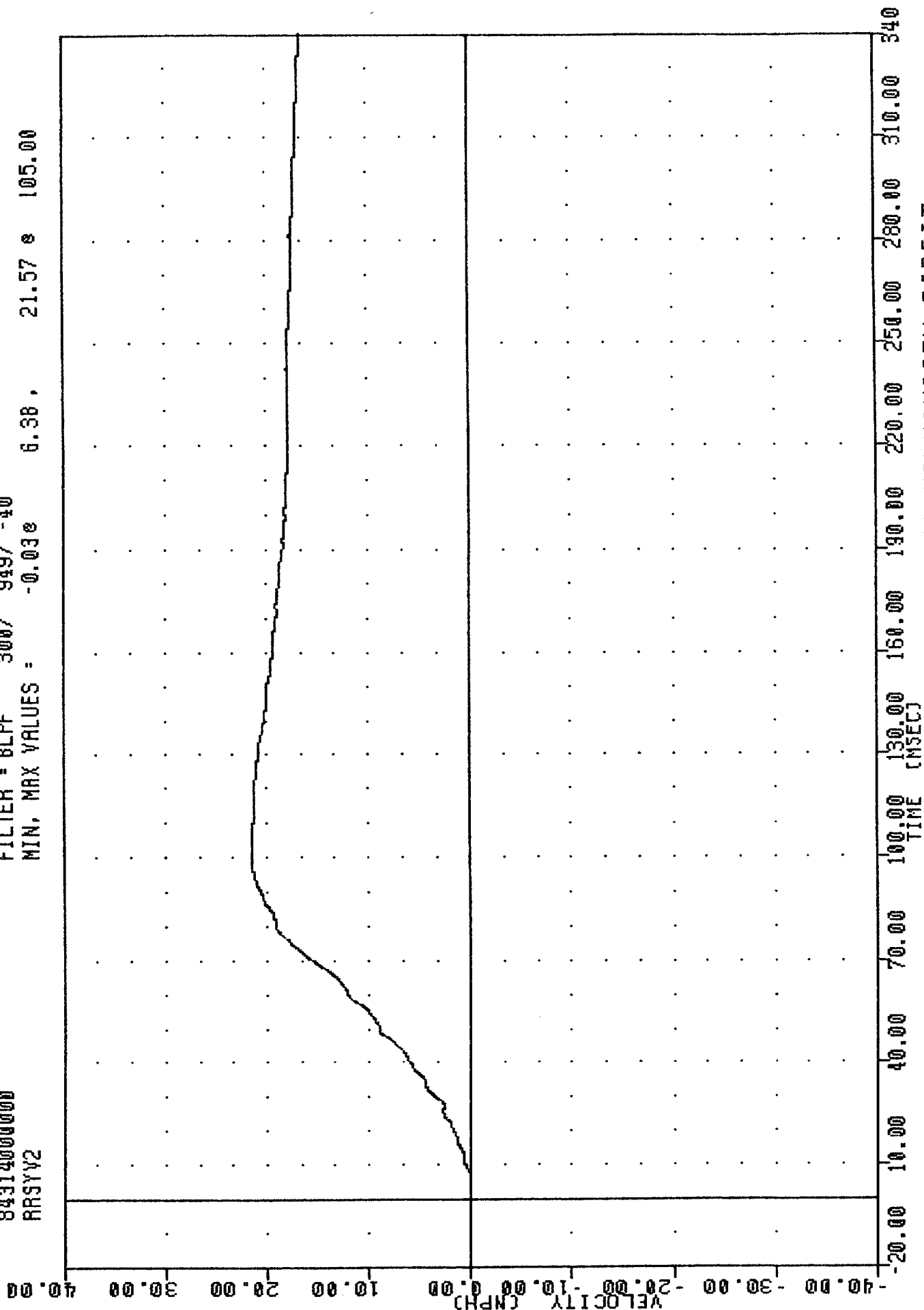


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING ARSXG2

SIDE AGGRESSIVE ATTRIBUTES
84314000000
RRSYV2

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -0.030 6.38, 21.57 s 105.00



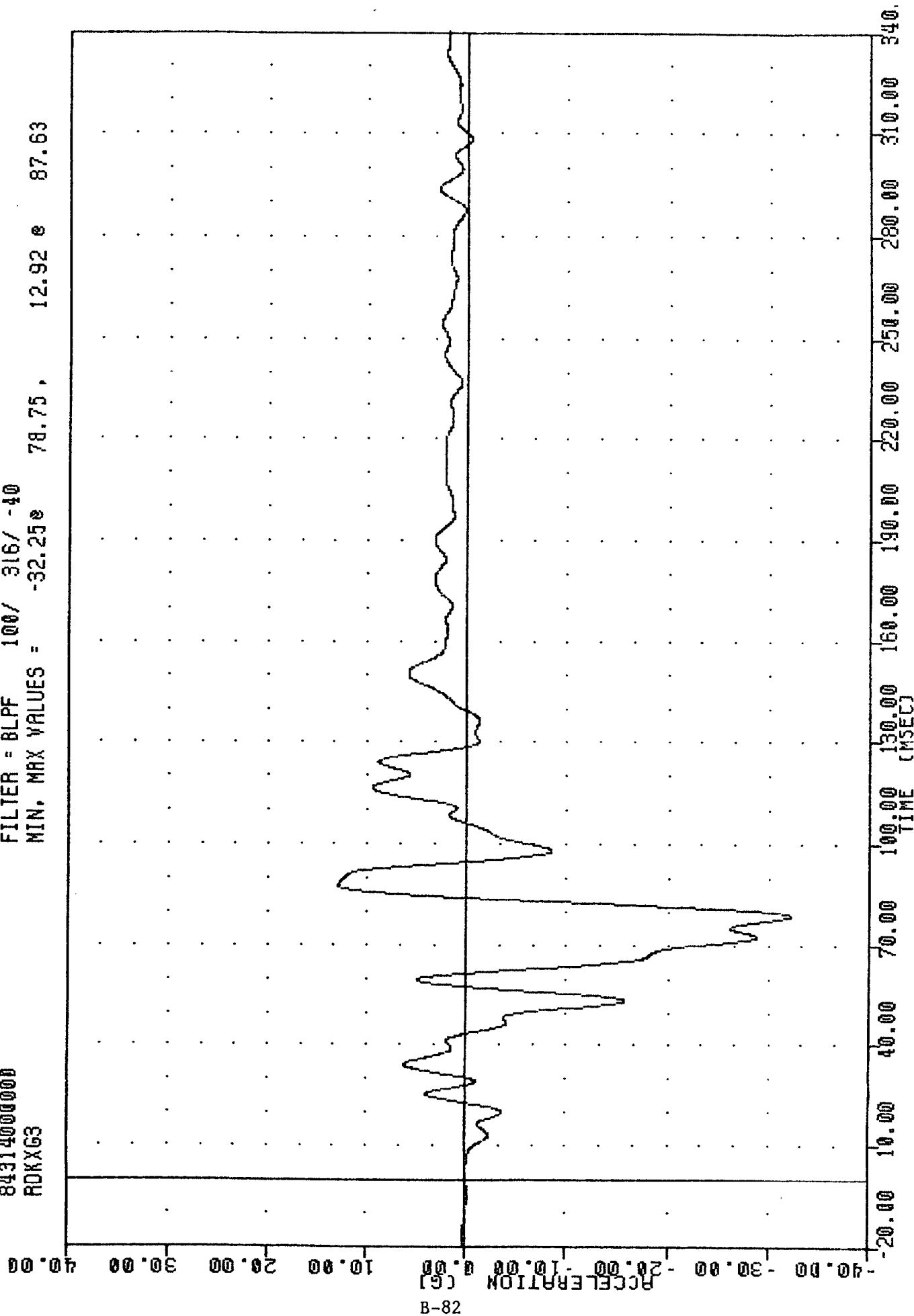
B-81

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RRSYG2

... SIDE AGGRESSIVE ATTRIBUTES
84314000000
RDKXG3

... 100/ 316/ -40

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -32.25e 78.75, 12.92 e 87.63



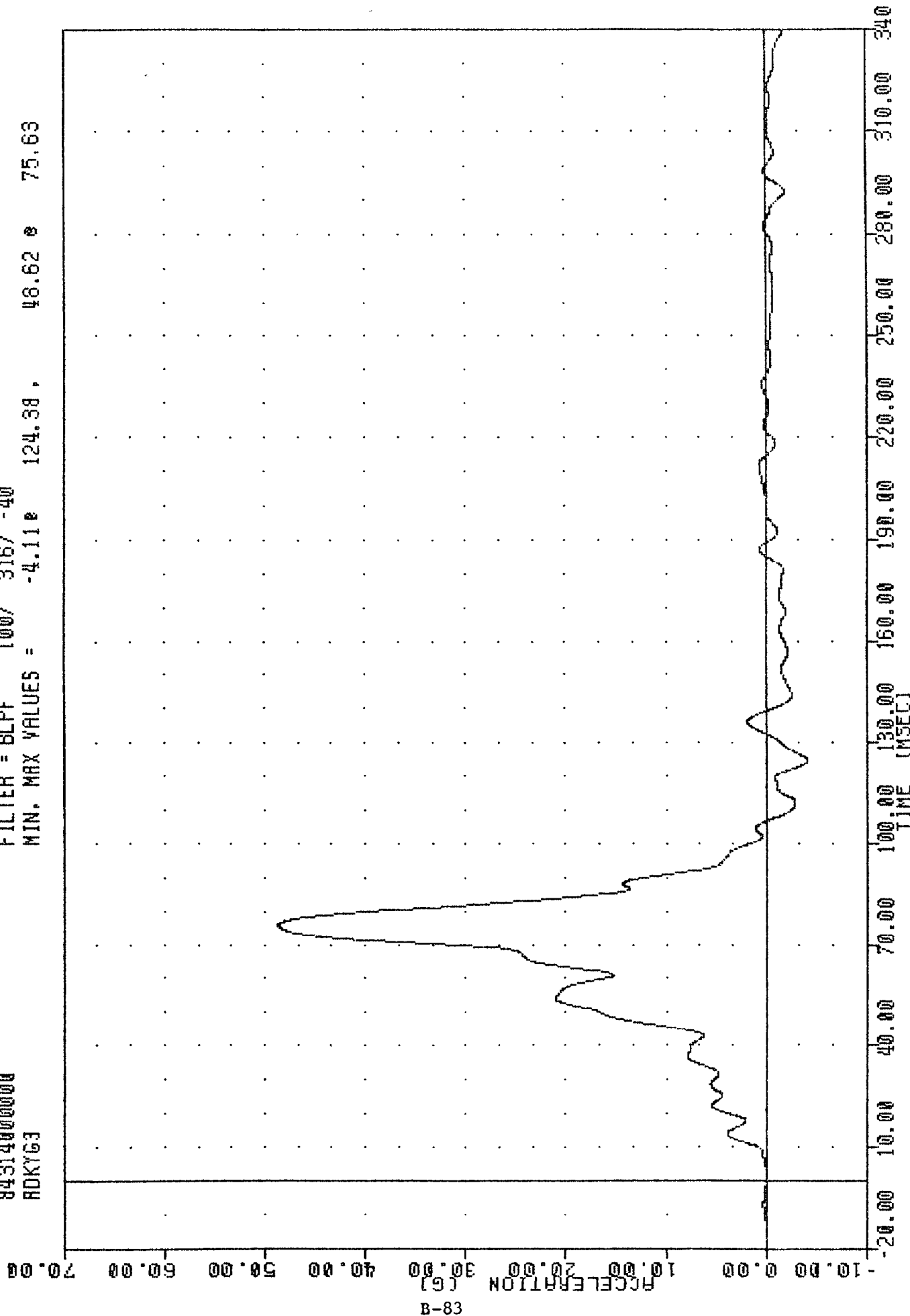
B-82

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION X AXIS

IML
SIDE AGGRESSIVE ATTRIBUTES
84314000000
ADKY63

PLUI UNIC 13-NOV-04 14:20:30

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -4.11e 124.38, 48.62 e 75.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION Y AXIS

TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
ADKZG3

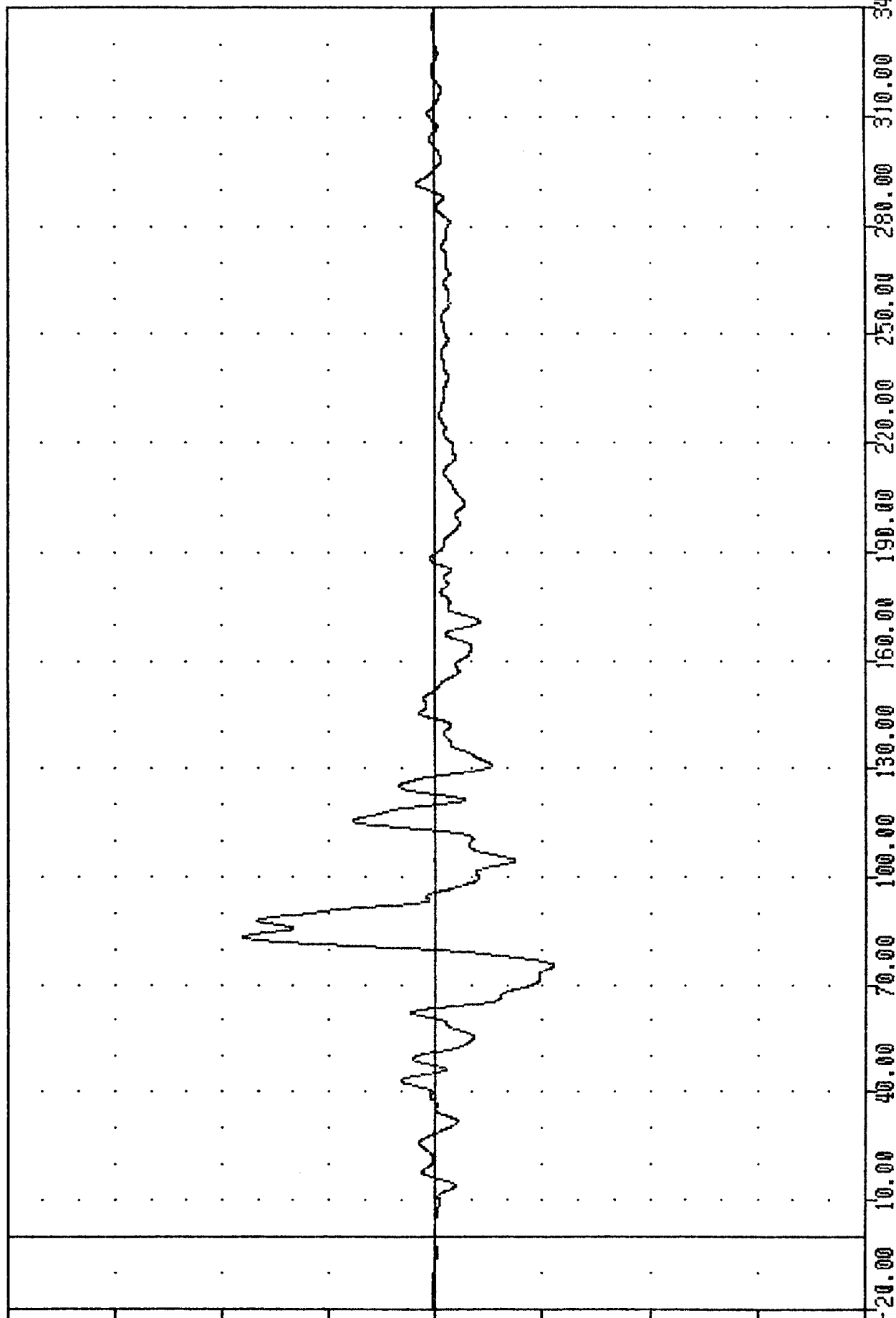
PLOT DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -10.958 75.50 , 18.06 83.13

ACCELERATION (G)

B-84



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION Z AXIS

INC 041103
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 RDKRG3

PLUT DATE 10-NOV-84 10-01-80

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = 0.05e -1.75, 56.85 e 76.88

70.00

60.00

50.00

40.00

30.00

20.00

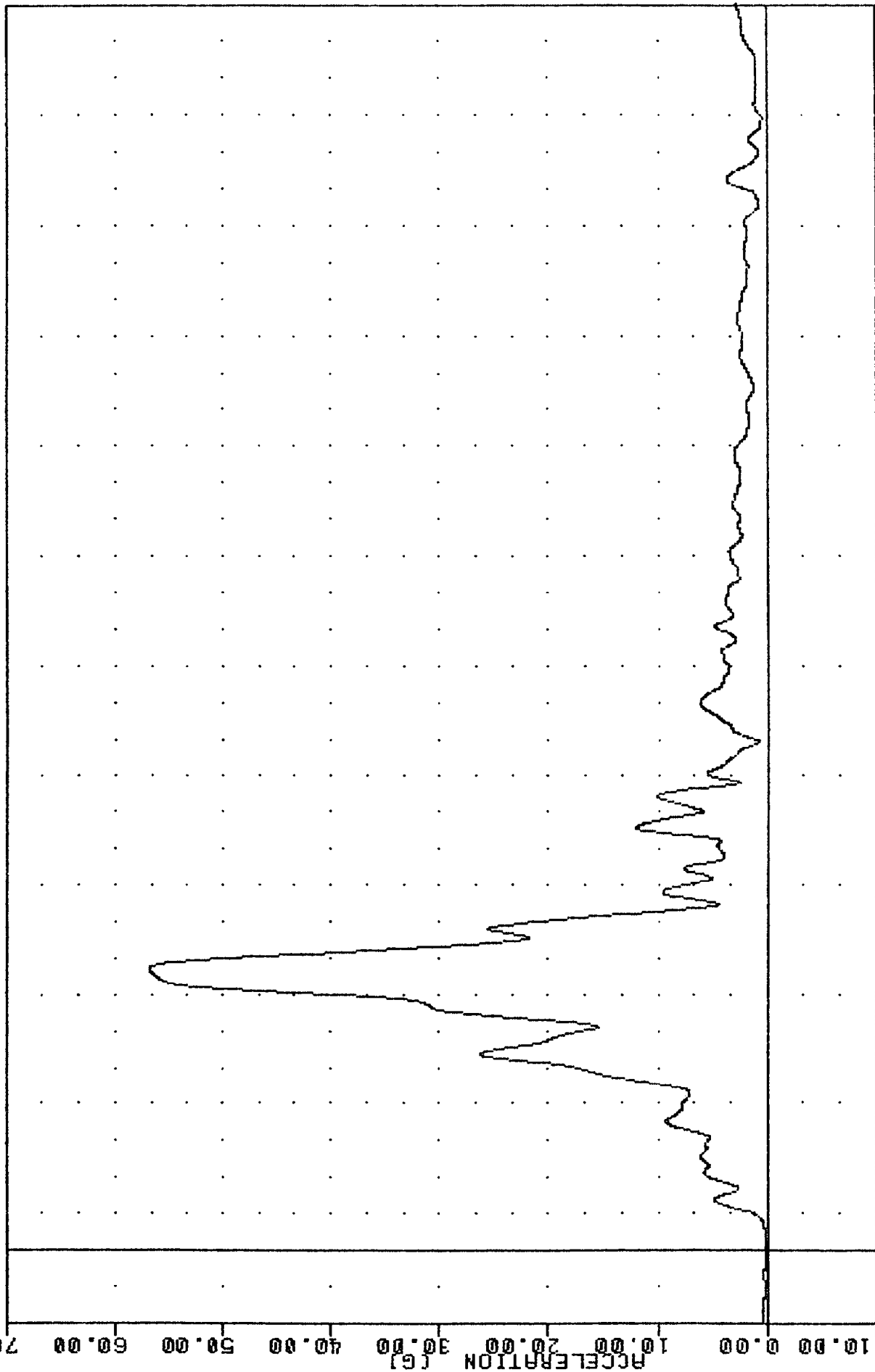
10.00

0.00

-10.00

-20.00

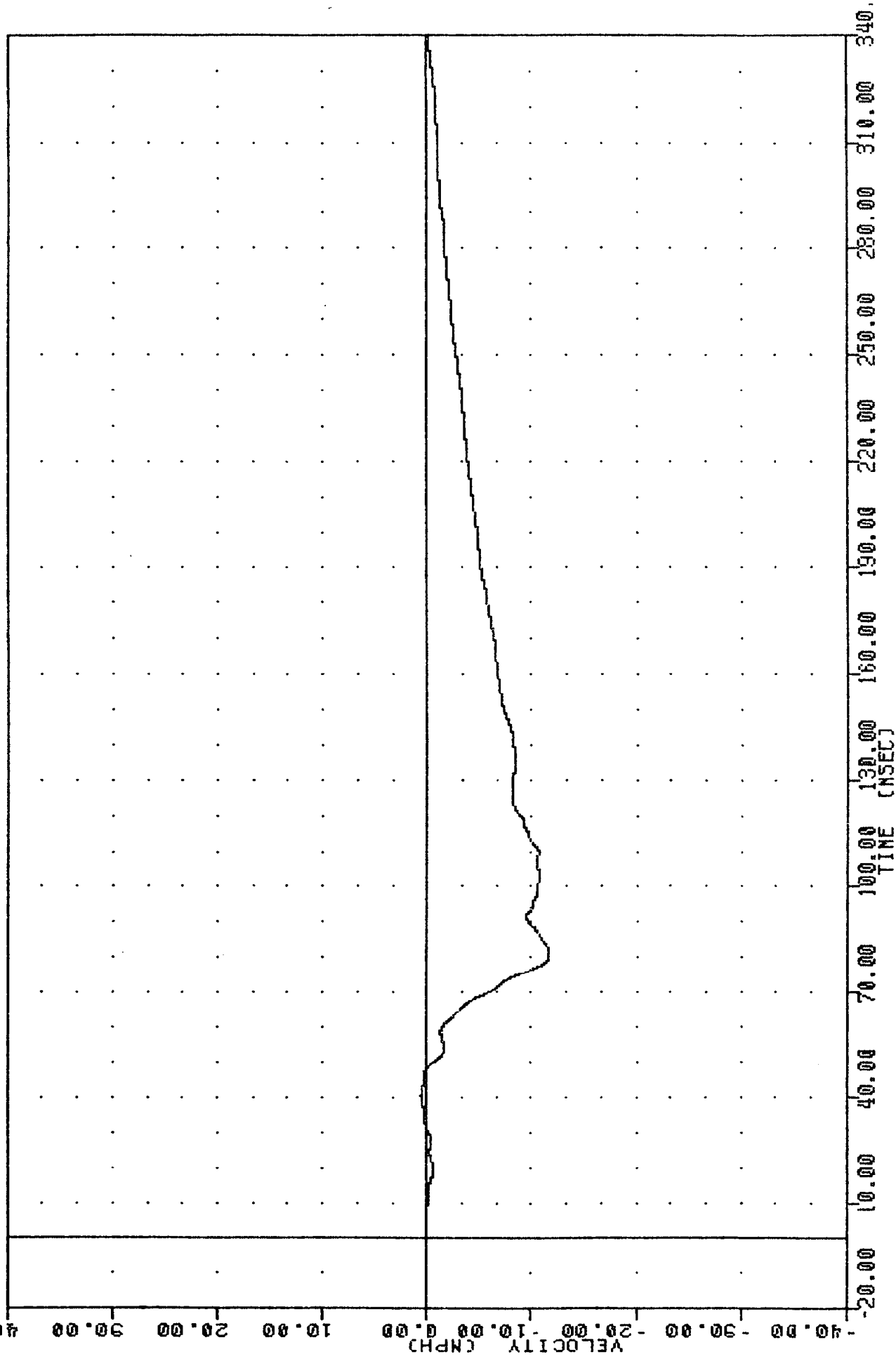
B-85



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE REAR DECK RESULTANT

SIDE AGGRESSIVE ATTRIBUTES
84314000000
RDKXY3

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -11.70e 81.50, 0.58 e 40.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RDKXG3

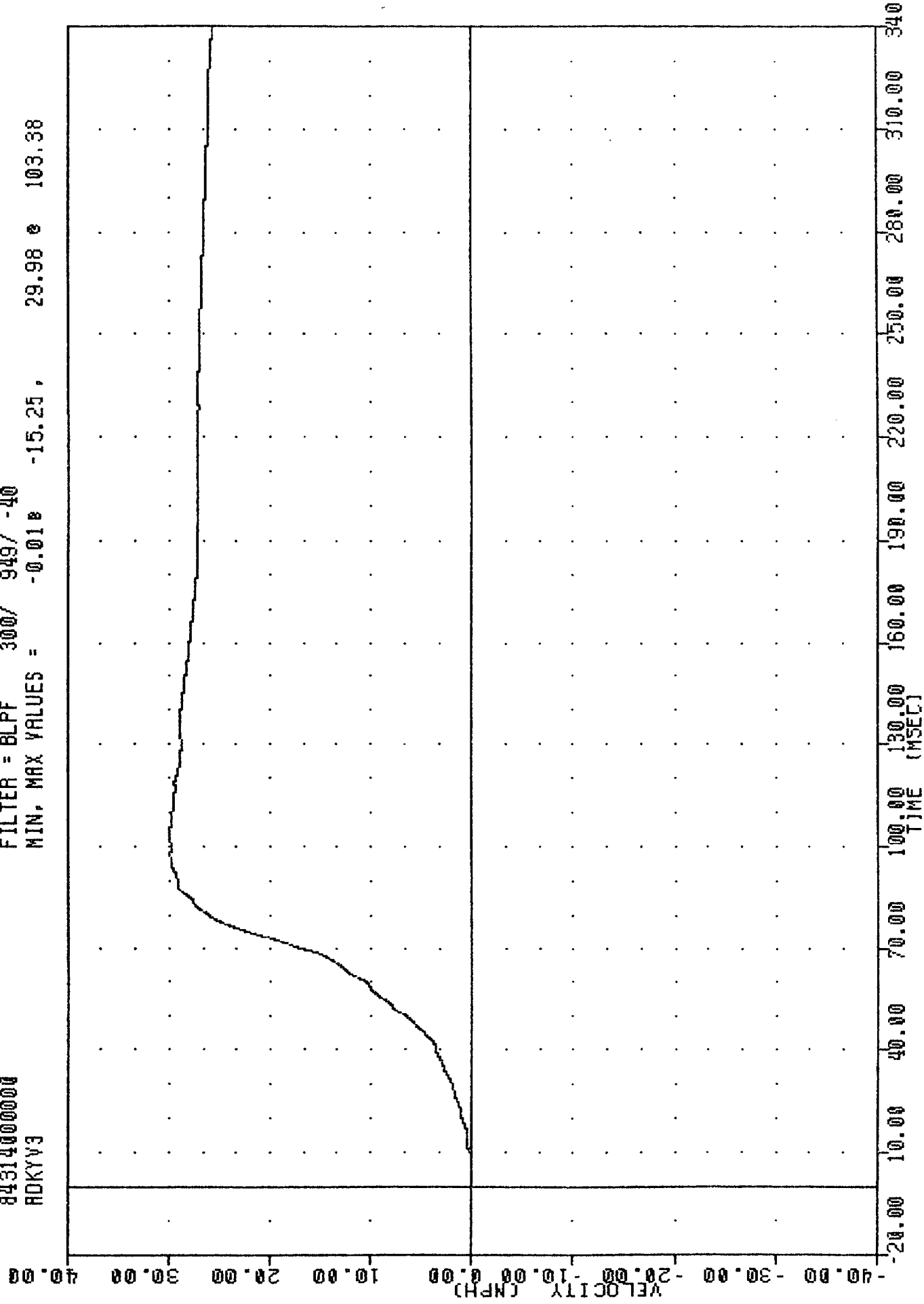
SIDE AGGRESSIVE ATTRIBUTES

84314000000

ADKYV3

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -0.018 -15.25, 29.98 @ 103.38

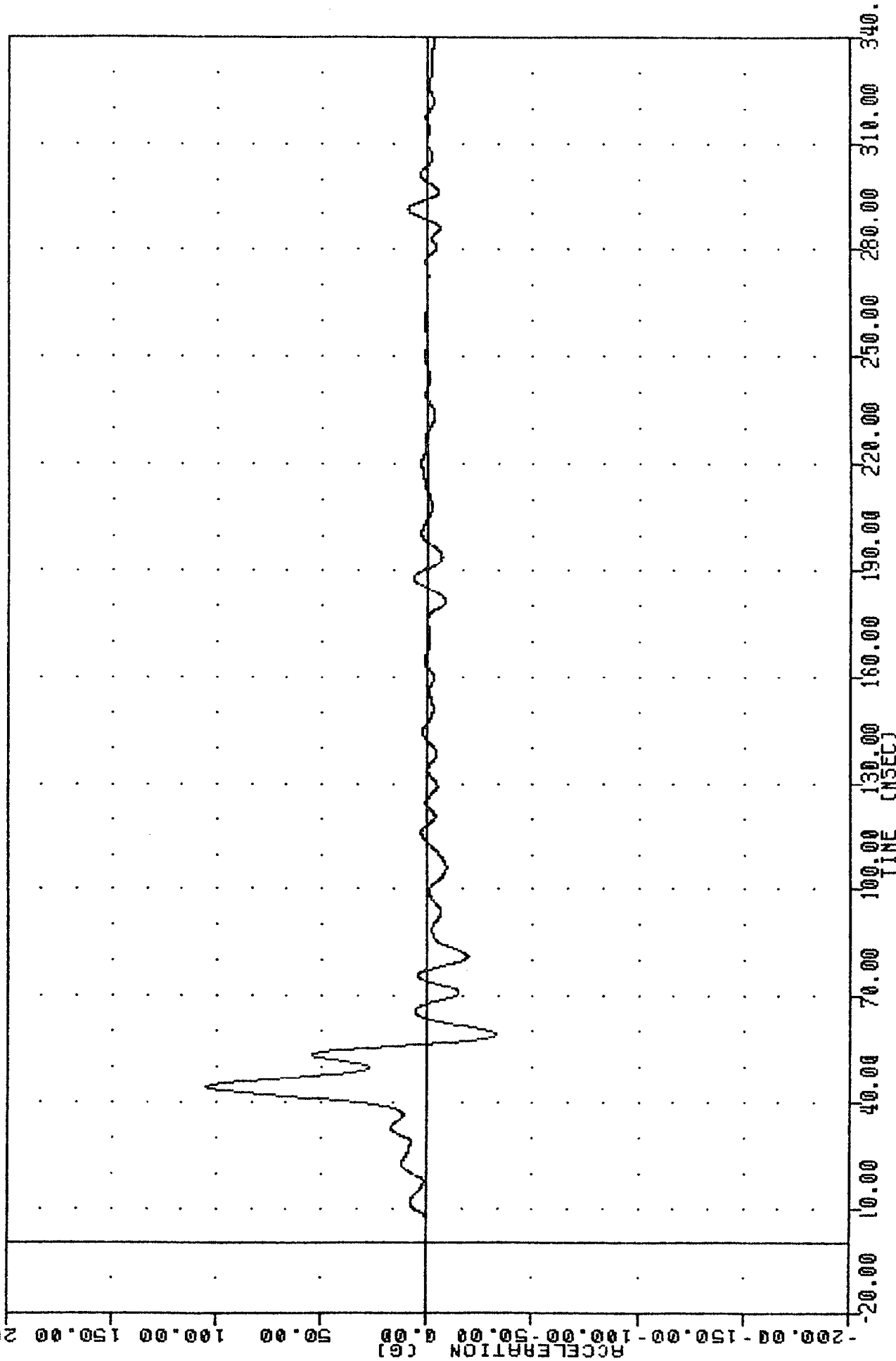


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING ADKYG3

TEST NUMBER 40 NOT SET LOGGING
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LRSY64

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -32.80 59.00 104.82 43.88

B-88

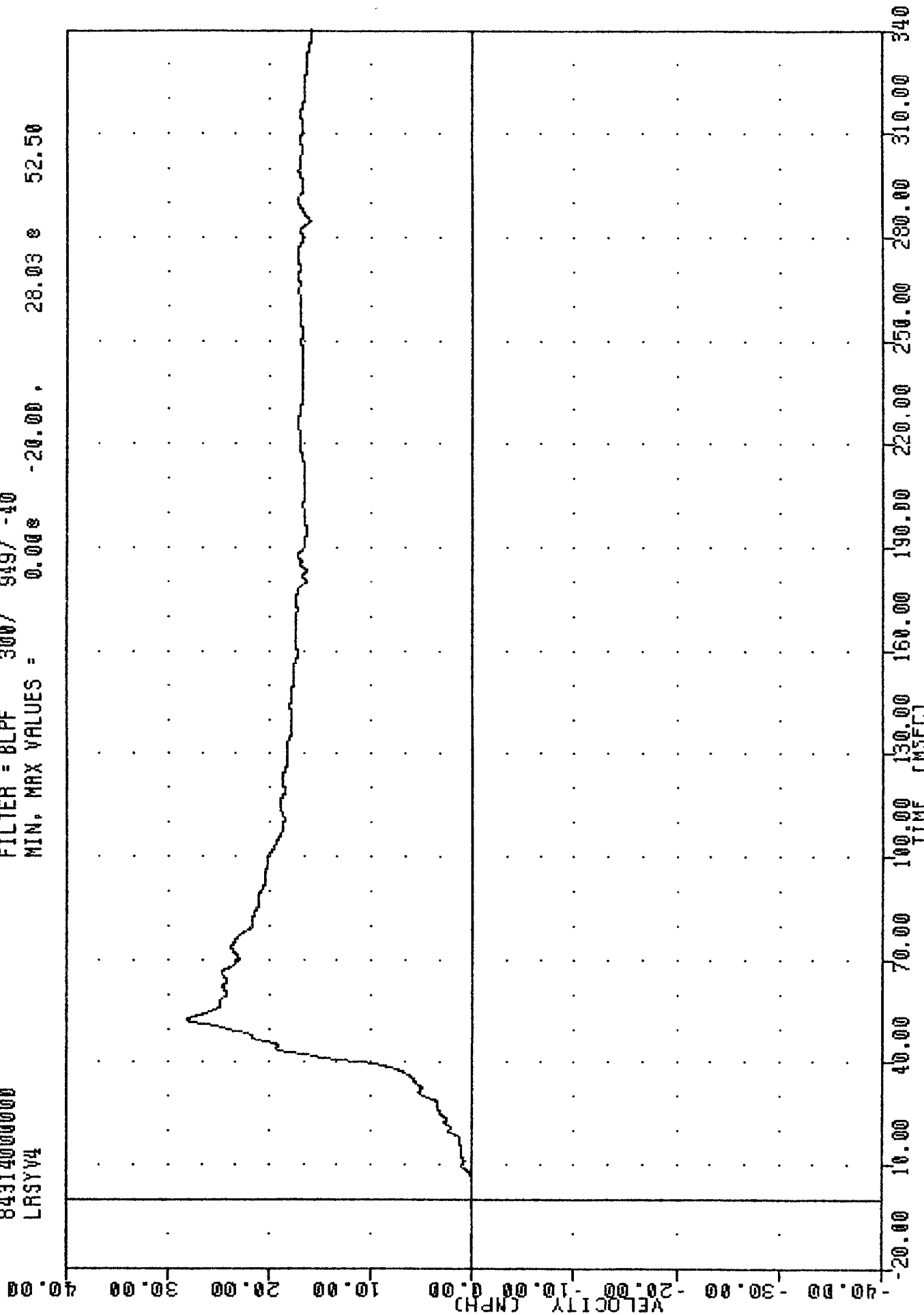


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT REAR SILL ACCELERATION Y AXIS

INC 041153
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LRSYV4

FLUI UNIC 13-NOV-04 10:00:17

FILTER = BLPF 300/ 919/ -40
MIN. MAX VALUES = 0.00e -20.00, 28.03 e 52.50



INC 041129
SIDE AGGRESSIVE ATTRIBUTES
8431400000
LFSY65

PLU1 UN1E 10-NOV-84 10:01:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -28.49 14.63, 741.97 80.63

200.00

150.00

100.00

50.00

0.00

-50.00

-100.00

-150.00

-200.00

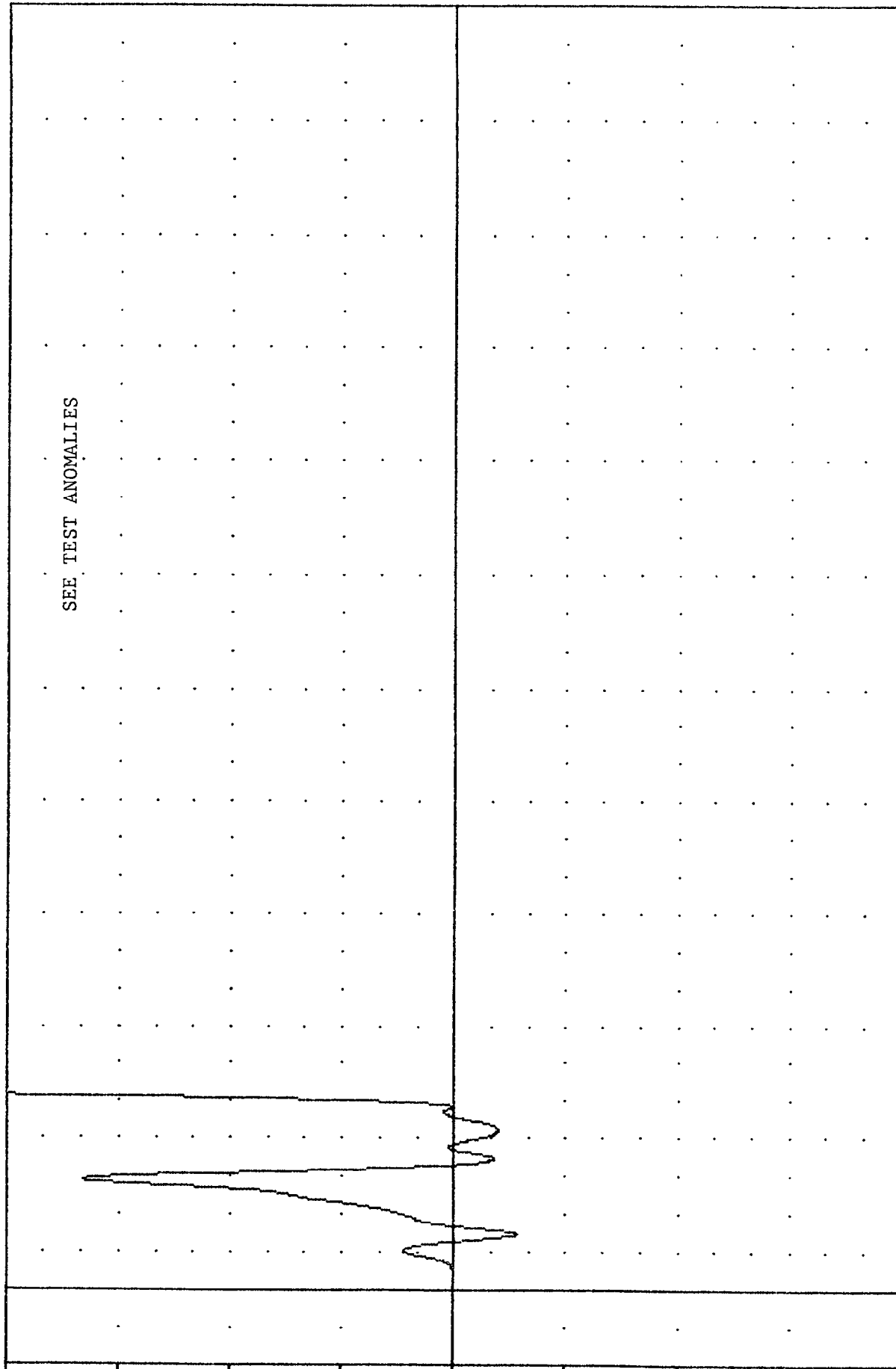
-250.00

-300.00

-350.00

06-B

ACCELERATION (G)



-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

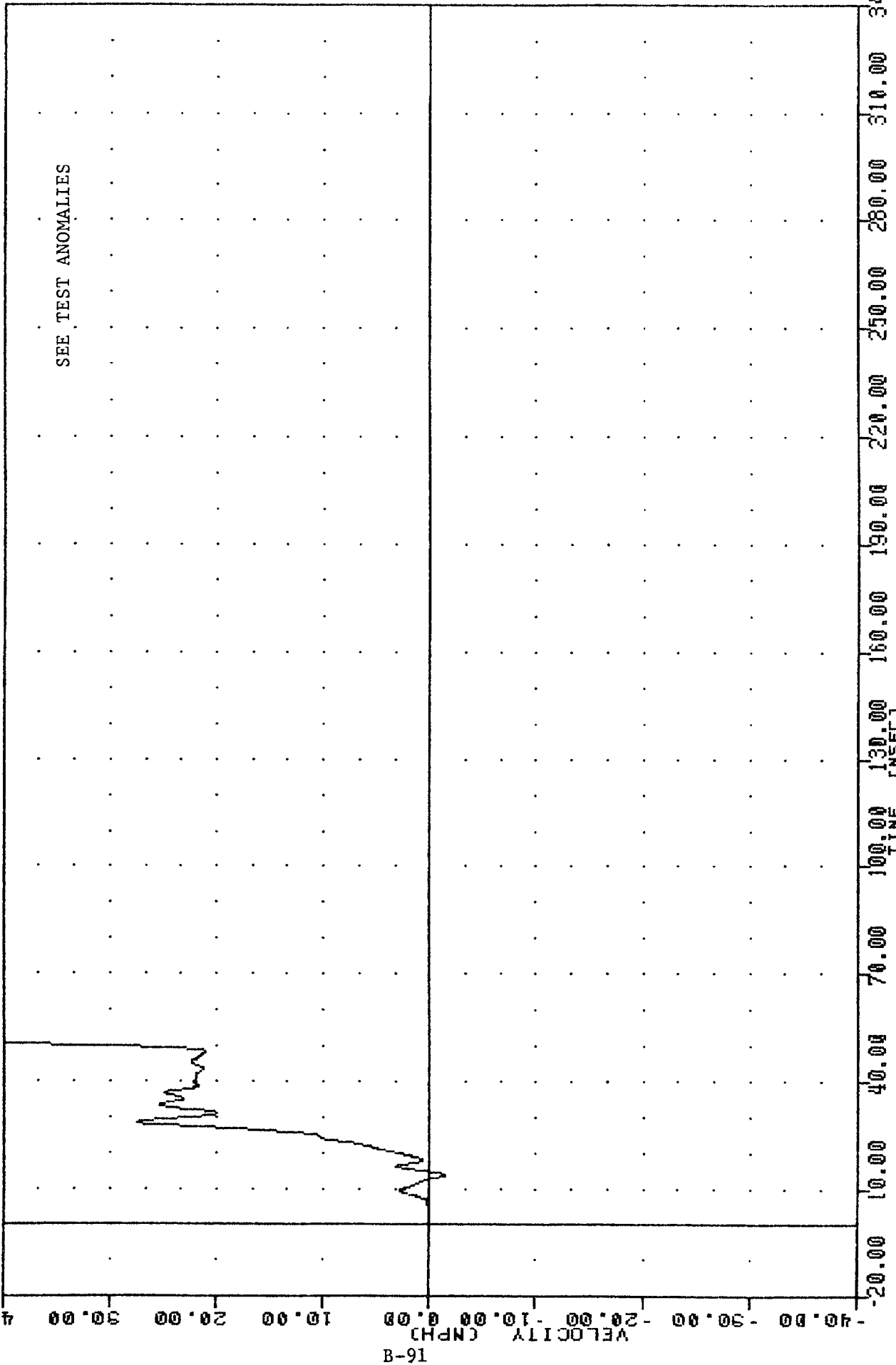
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS

1110
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LFSYV5

FLUT UNIC 10-NOV-04 10:30:17

FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -1.43e 13.75, 3901.84 e 340.00



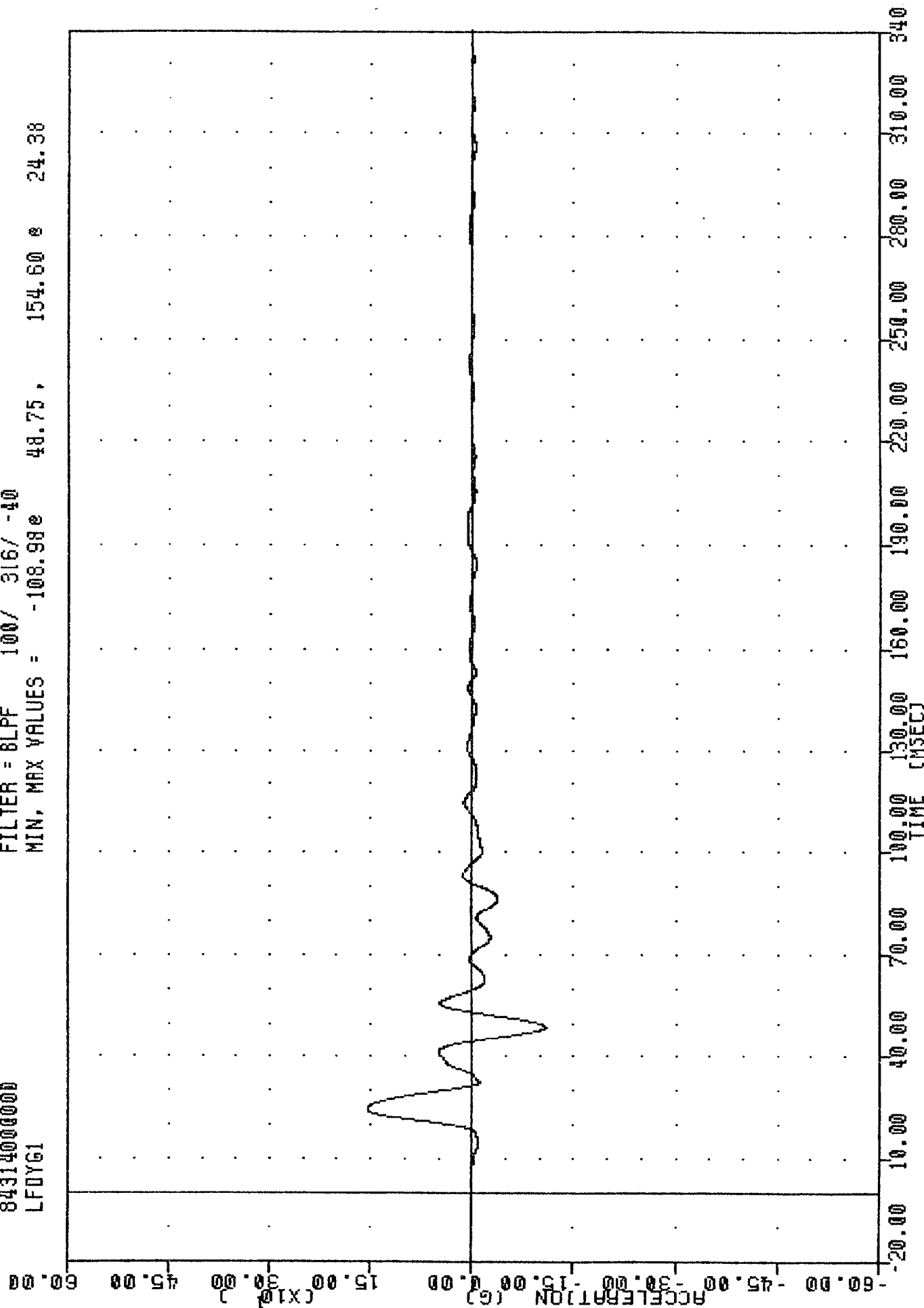
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFSYG5

IML , 8411W9
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDY61

PLU1 DATE 12-NOV-84 10:01:48

FILTER = 8LPF 100/ 316/ -40

MIN, MAX VALUES = -108.98e 48.75 , 154.60 e 24.38

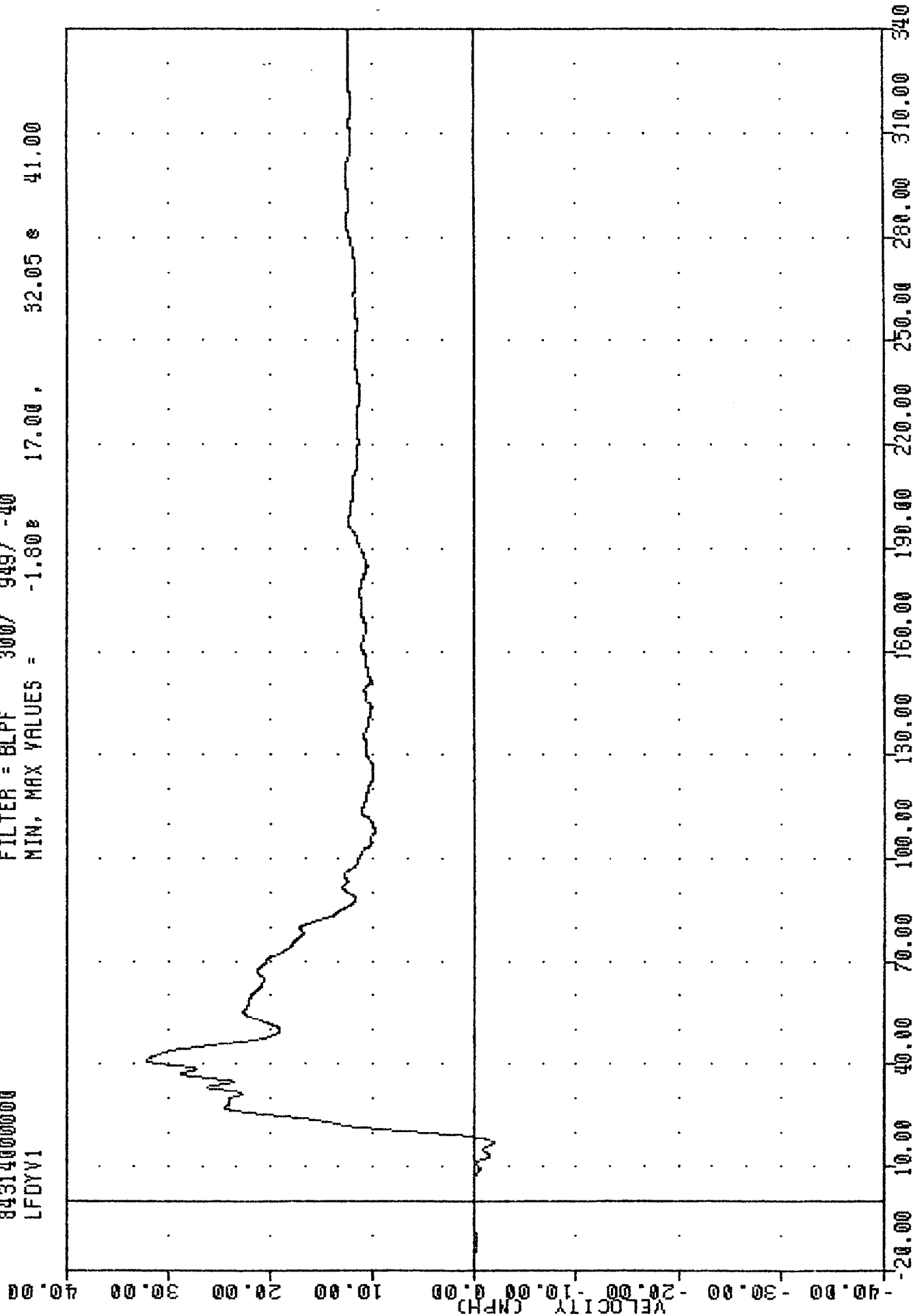


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 6) ACCELERATION Y AXIS

FILE
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDYV1

FILE NAME 10 NOV 83 10:00:17

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -1.80E 17.00, 32.05 E 41.00



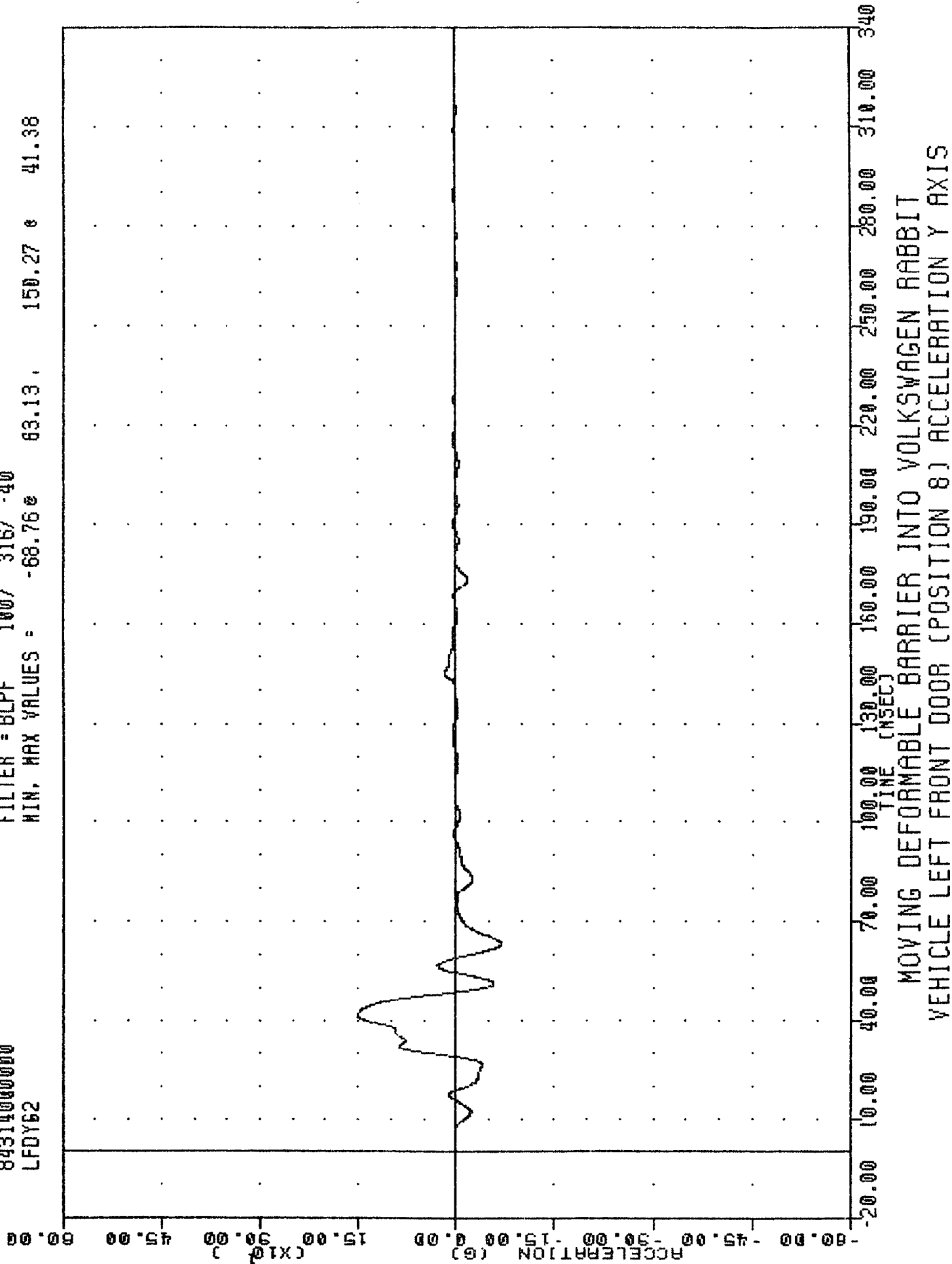
B-93

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDYGI

INC 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDY62

PLUI DATE 13-NOV-84 13:31:48

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -68.76 63.13 150.27 41.38



TIME VALUES

PLUT UNIT 10 NOV 02 10:00:17

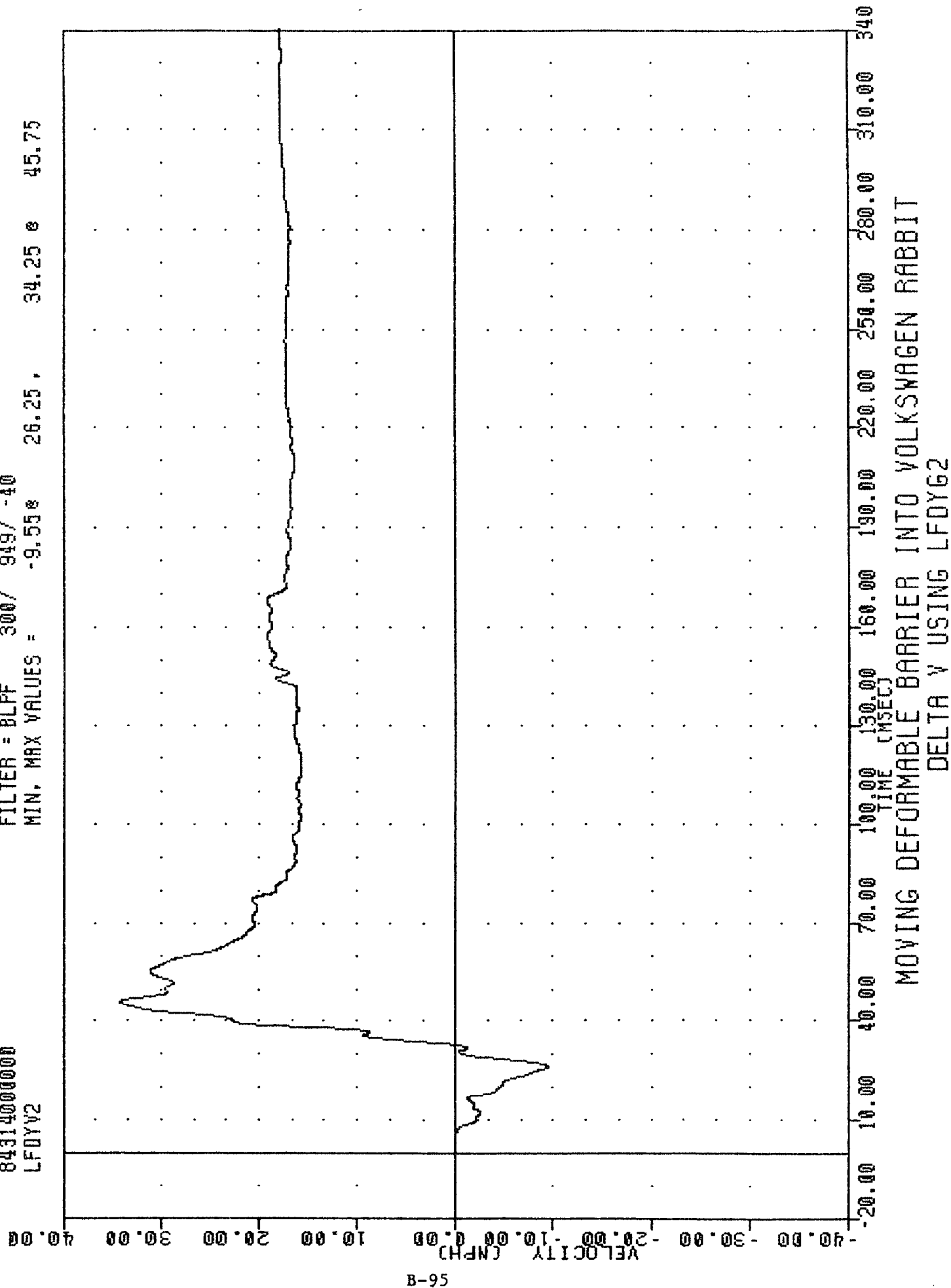
SIDE AGGRESSIVE ATTRIBUTES

84314000000

LFDYV2

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -9.55% 26.25, 34.25 @ 45.75



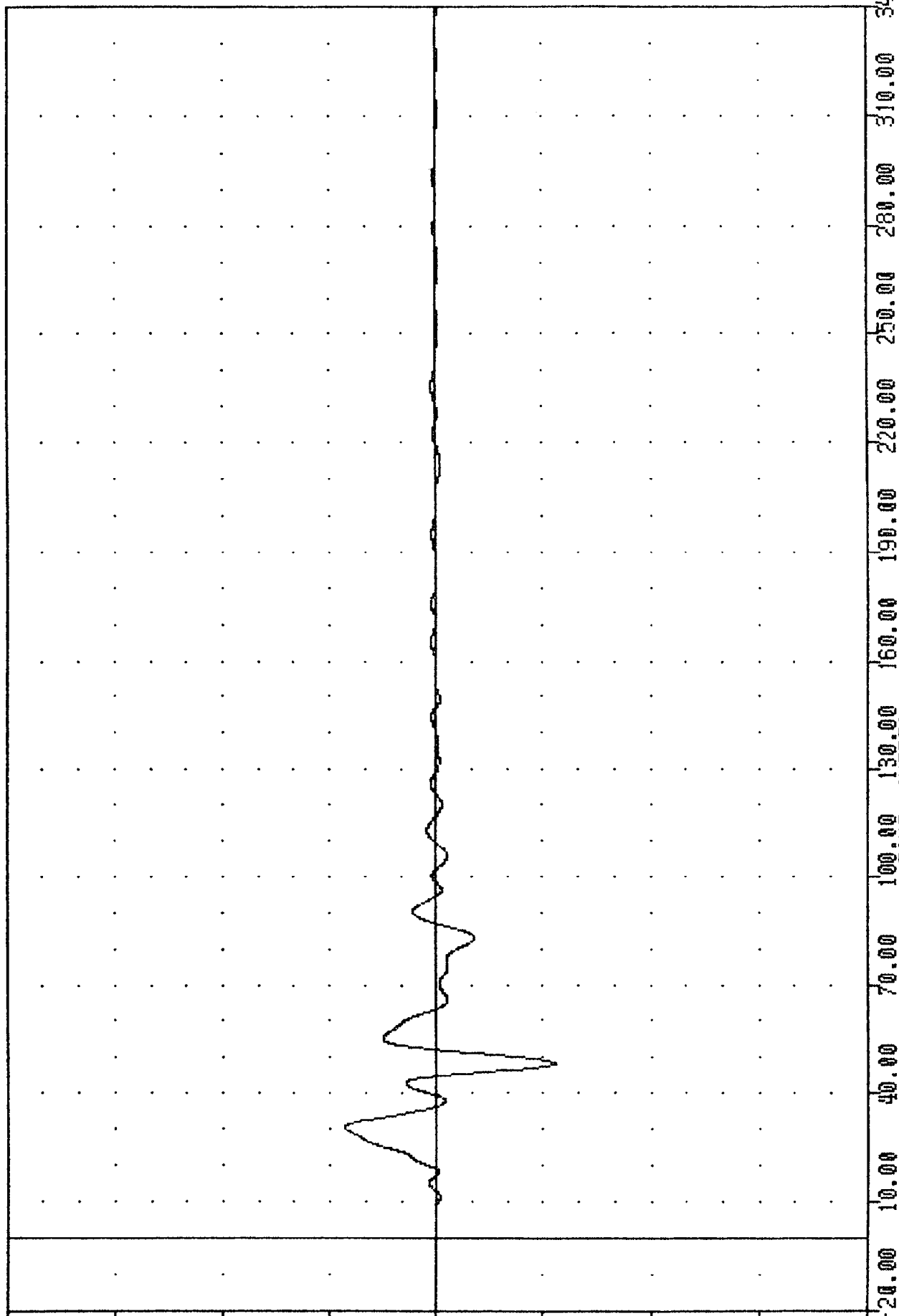
IHC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDY63

PLU1 UNIE 13-NOV-84 13:51:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -166.92 48.25 129.57 30.50

ACCELERATION (G)
(X10⁴)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 9) ACCELERATION Y AXIS

INC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDYV3

PLUI DATE 10-NOV-84 15:53:17

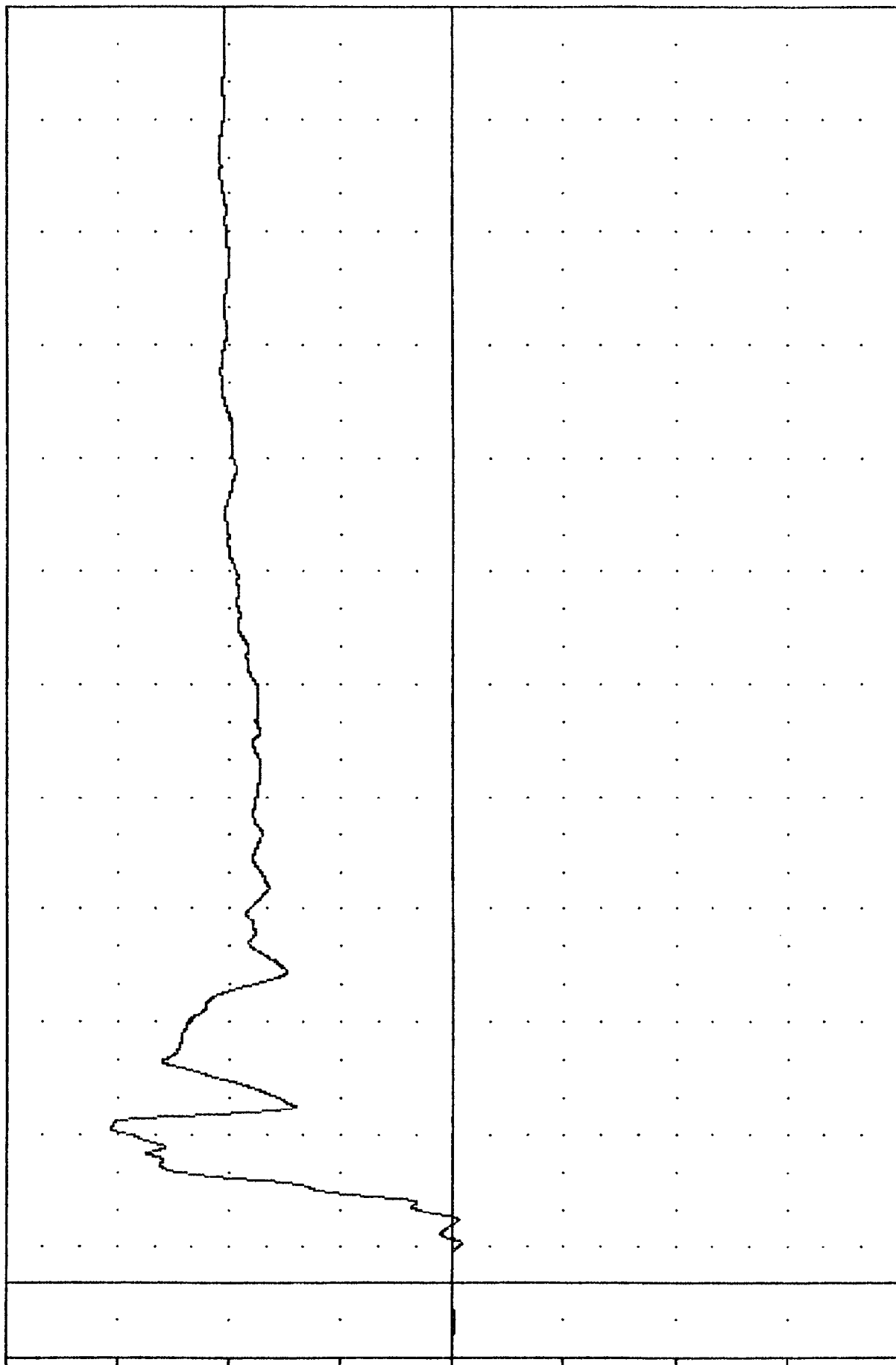
FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -0.820 10.50 , 30.57 e 41.38

40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00

B-97

VELOCITY (MPH)



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

TIME (NSEC)

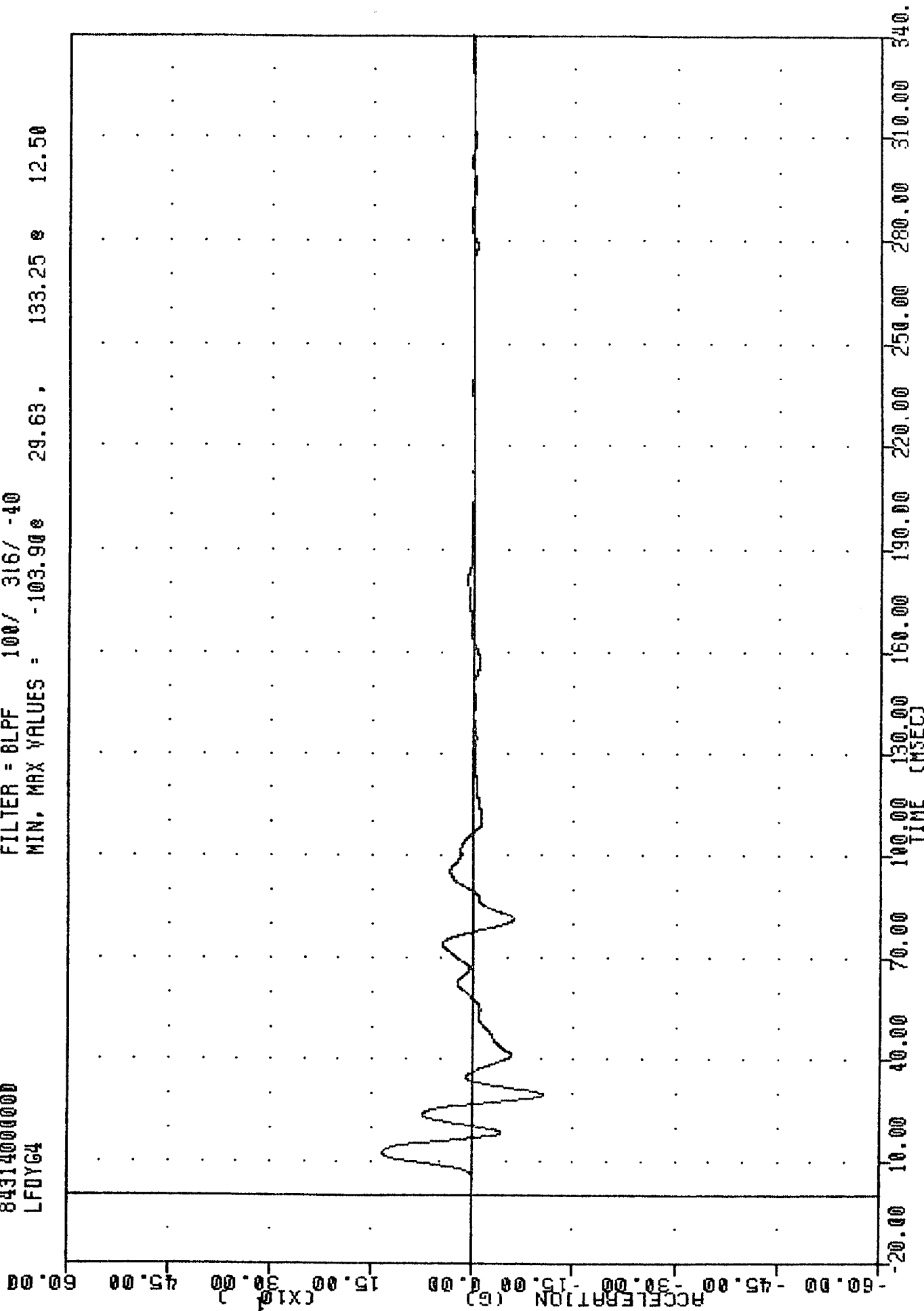
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING LFDY63

DATE
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LF0Y64

FLU1 UNIC 13-NOV-84 10:01:40

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -103.90e 29.63, 133.25 e 12.50



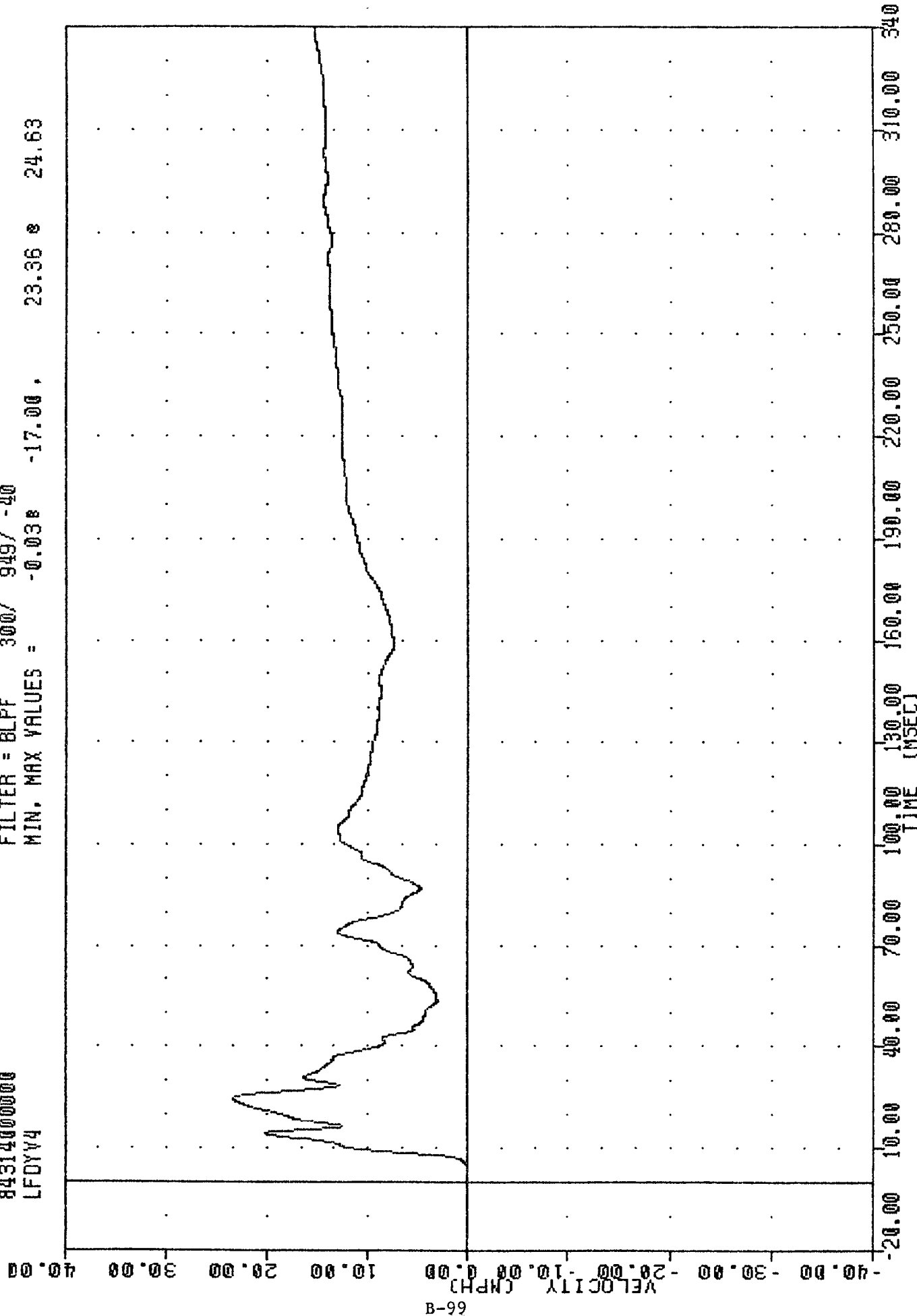
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 10) ACCELERATION Y AXIS

INL 0411W9
SIDE AGGRESSIVE ATTRIBUTES
84314000000
LFDYV4

PLU1 DATE 10-NOV-84 10:03:17

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -0.038 -17.00 23.36 24.63



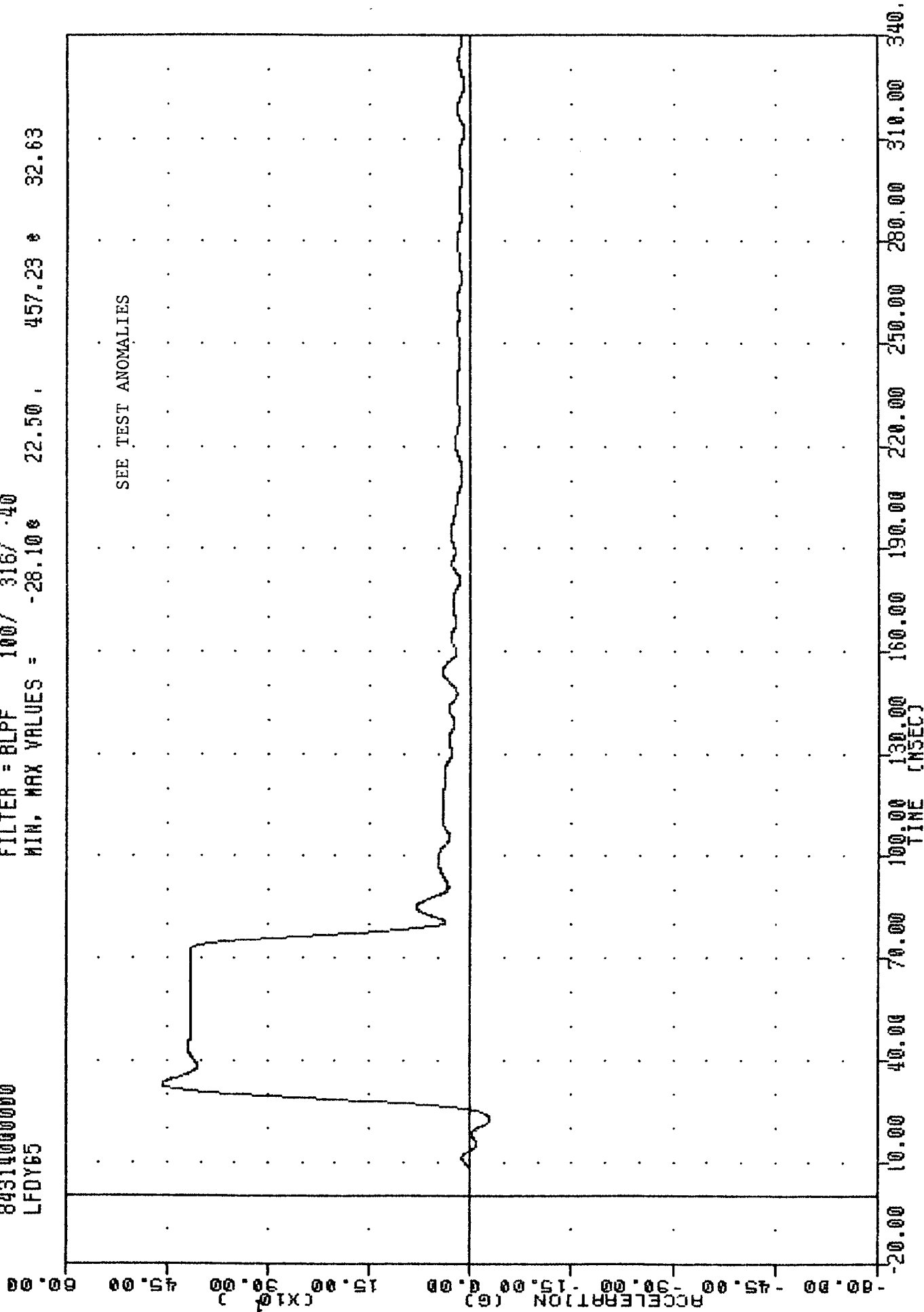
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDY64

INL 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LFDY65

PLU1 UMIE 10-NOV-84 10:51:48

FILTER = BLPF 100/ 316/ .40

MIN. MAX VALUES = -28.10 22.50 457.23 32.63

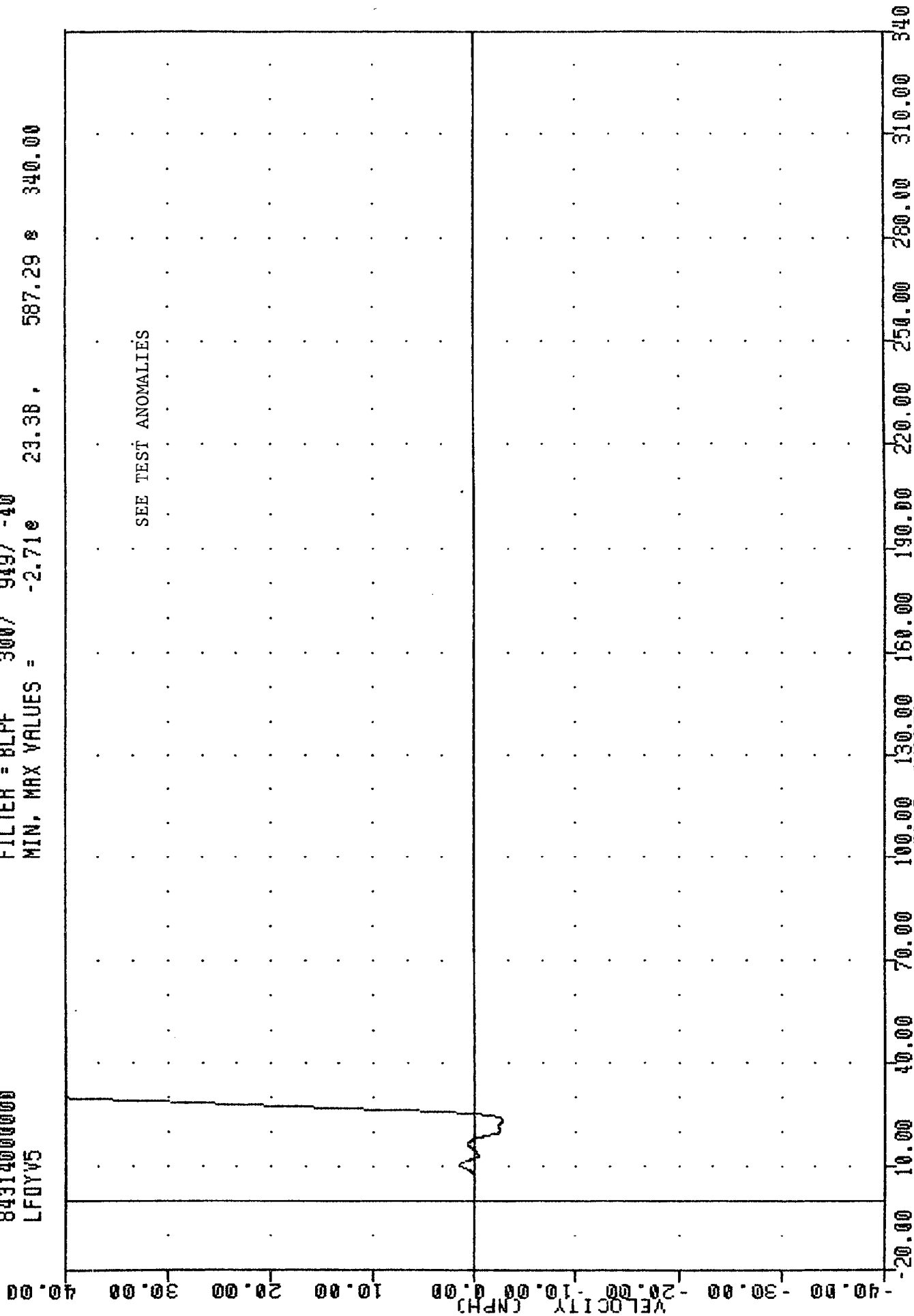


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE LEFT FRONT DOOR (POSITION 11) ACCELERATION Y AXIS

INC 70411W3
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 LFOYV5

PLUT UNIT 12 NOV 04 10:00:17

FILTER = 8LPF 300/ 949/ -40
 MIN, MAX VALUES = -2.71e 23.38, 587.29 e 340.00



B-101

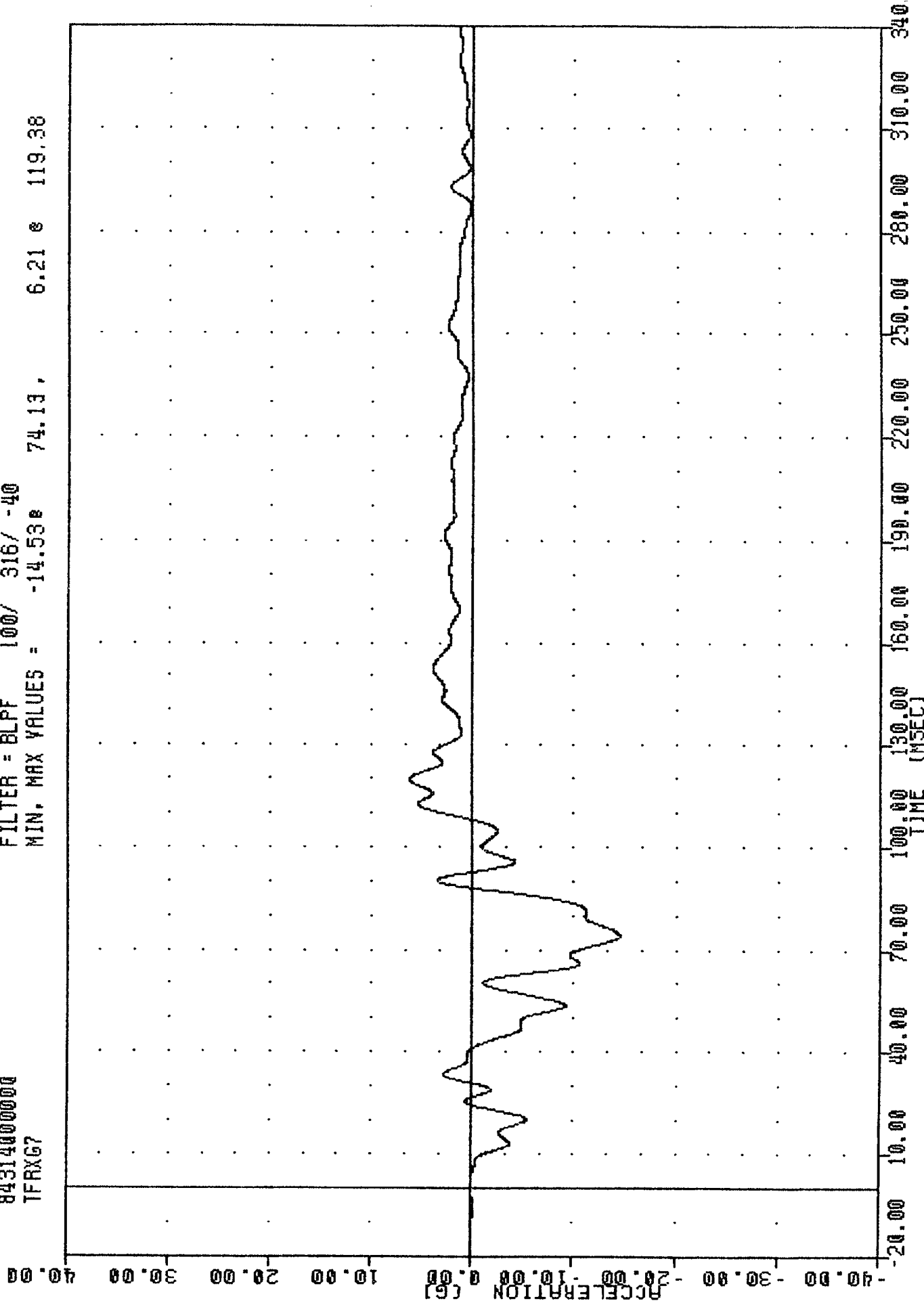
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFOYG5

INC 041109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
TFRXG?

PLU1 UNIE 10-NOV-84 10:51:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -14.53e 74.13, 6.21 e 119.38



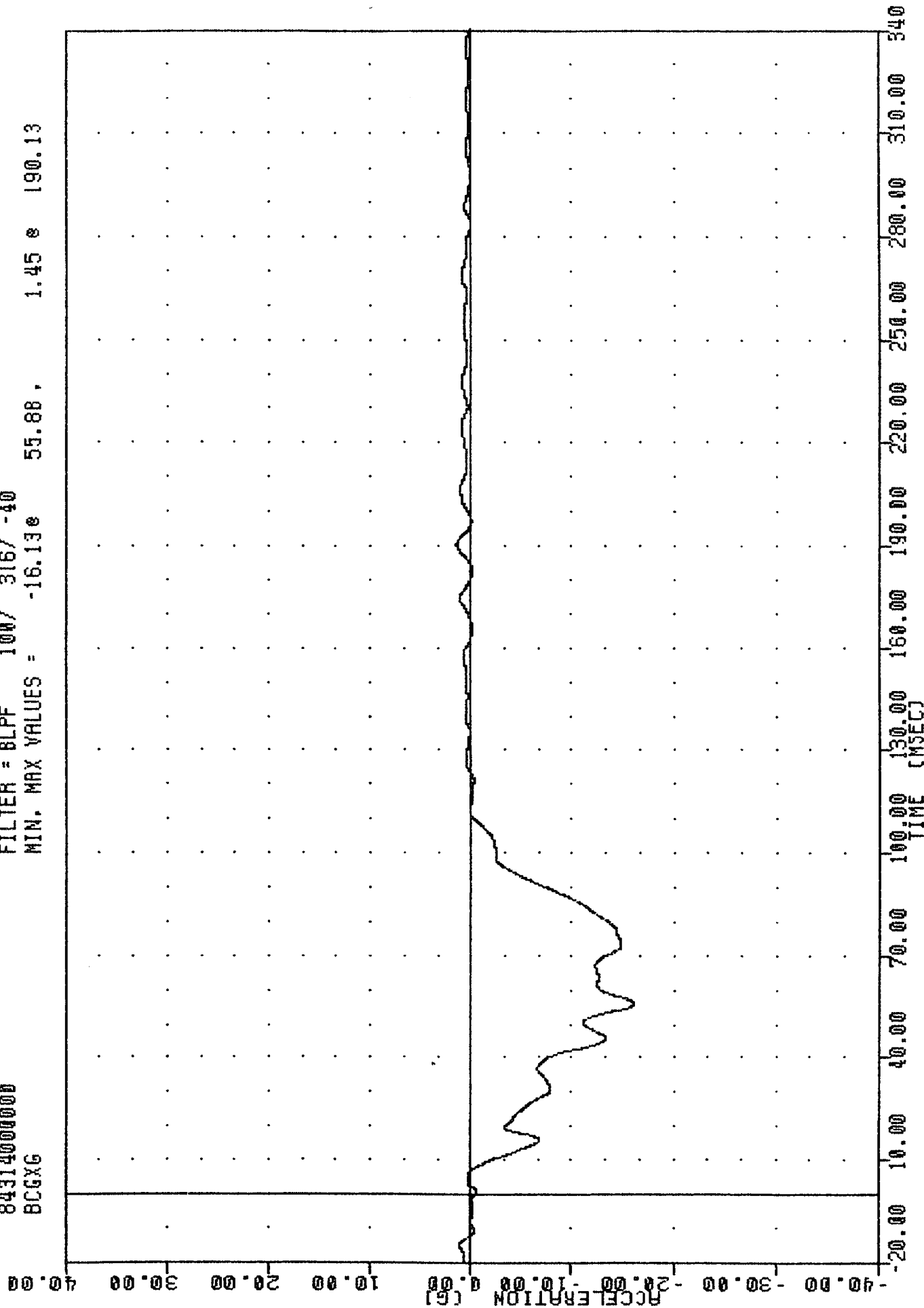
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE TRUNK FLOOR RIGHT ACCELERATION X AXIS

IML 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BCGXG

PLU1 UNIT 10-NOV-84 10:01:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -16.13e 55.88, 1.45 e 190.13



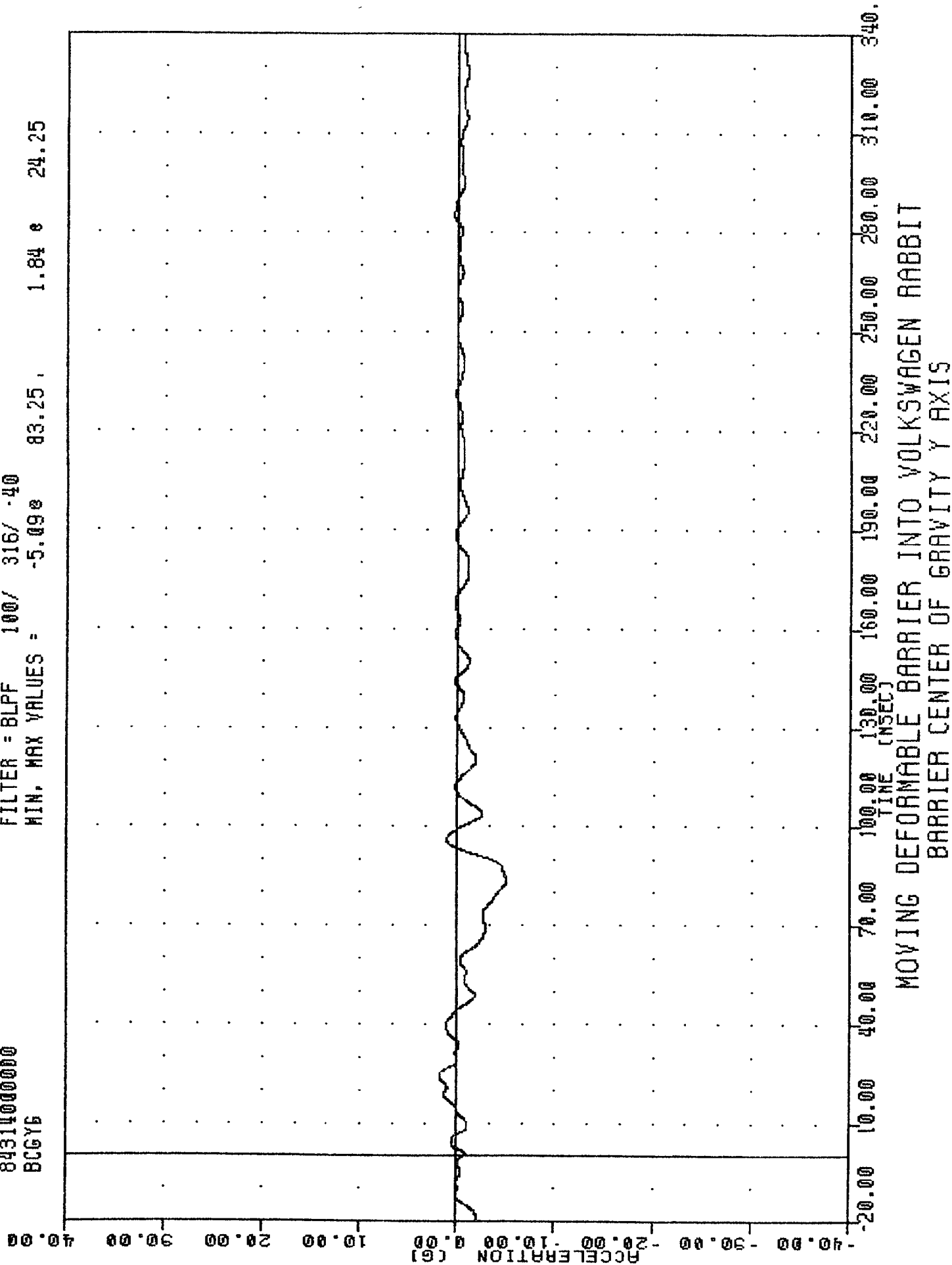
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER CENTER OF GRAVITY X AXIS

IRL , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BCCY6

PLU1 UMIE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -5.098 83.25 , 1.84 e 24.25

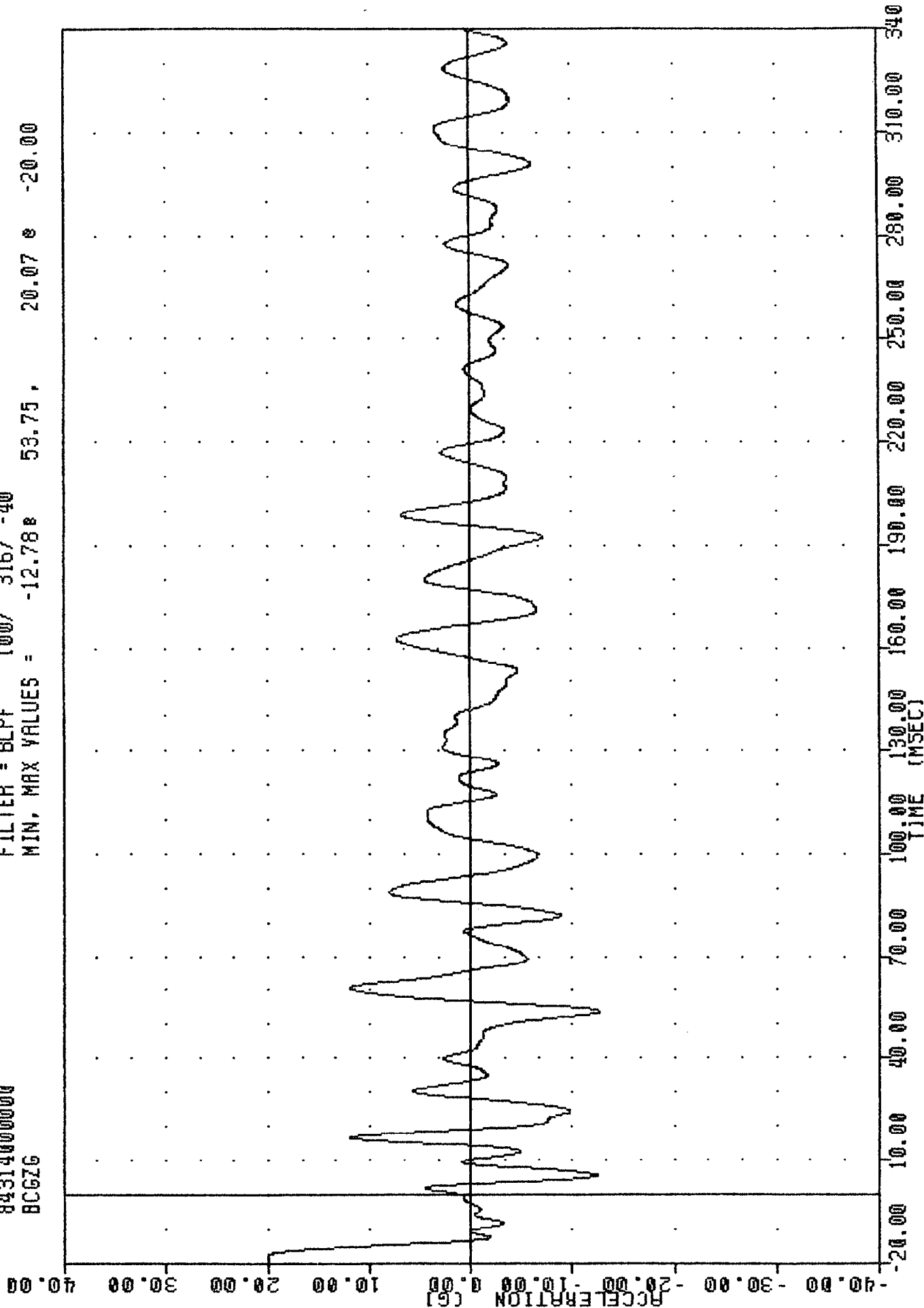


TRC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BC6Z6

PLOT DATE 15-NOV-84 15:51:48

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -12.78 53.75 , 20.07 20.00



B-105

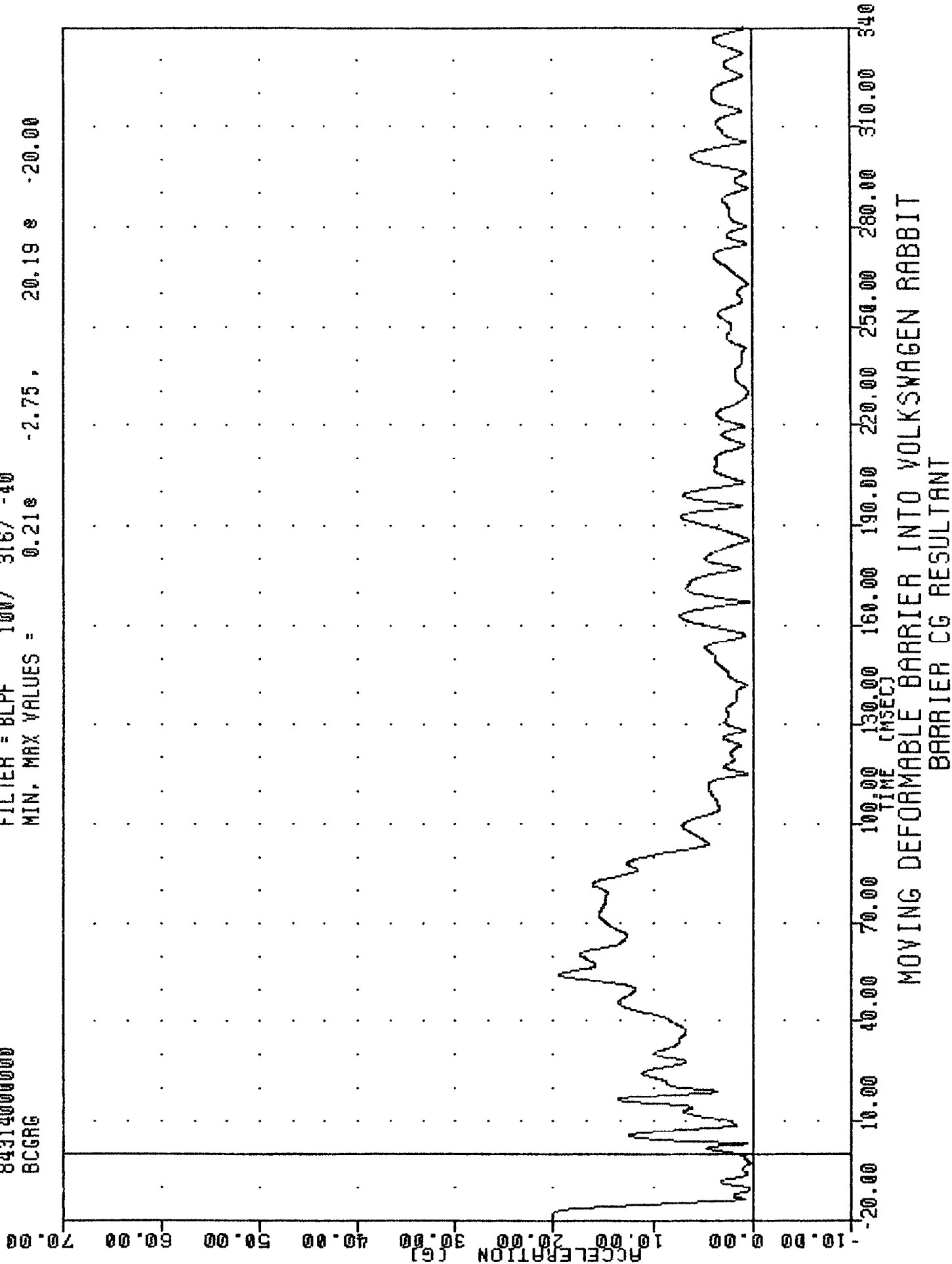
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER CENTER OF GRAVITY Z AXIS

IRL , 841119
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BCGRG

PLU1 UN1E 13-NOV-84 13:31:48

FILTER = BLPF 100/ 316/ -40

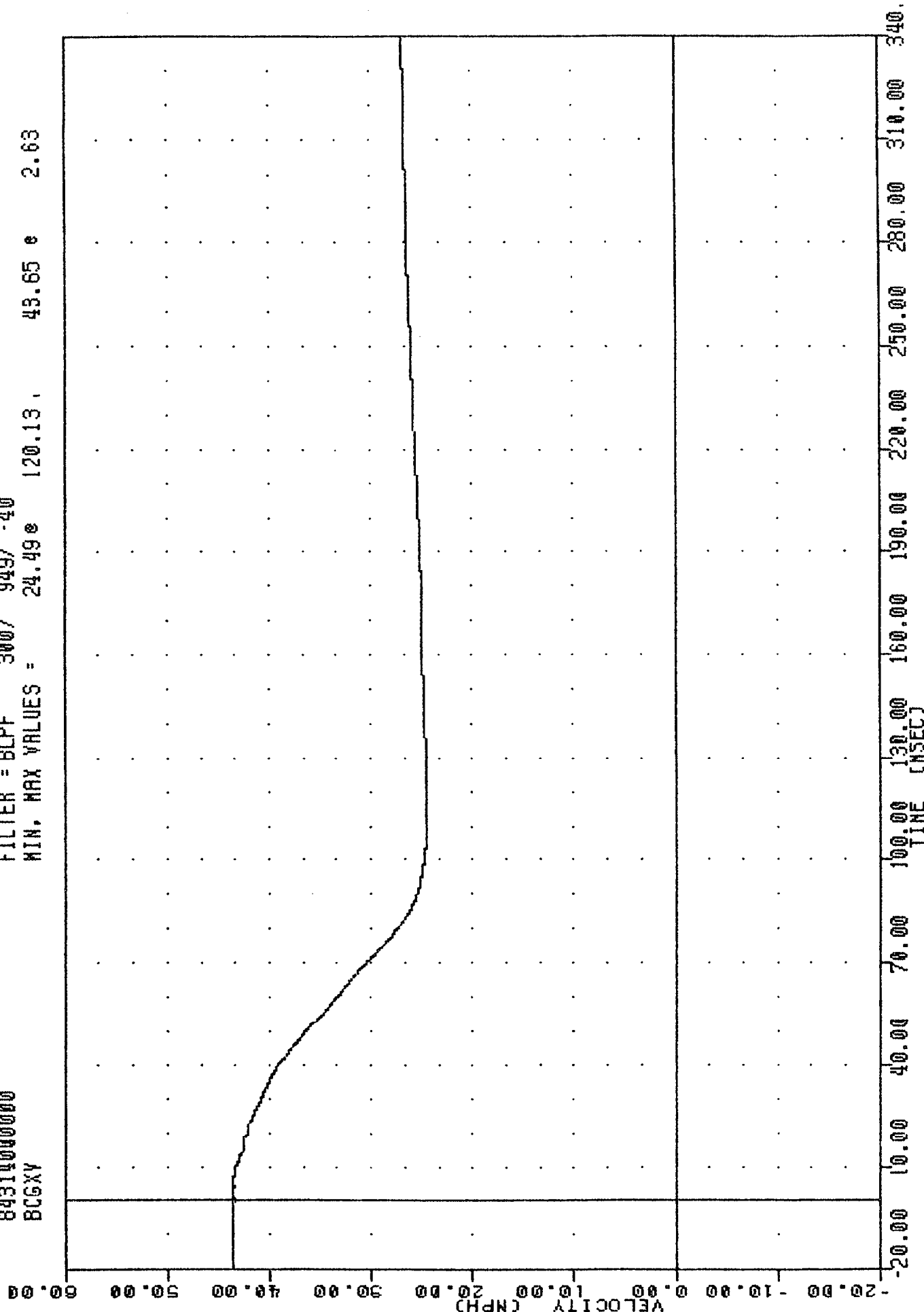
MIN. MAX VALUES = 0.21e -2.75, 20.19 e -20.00



INL P 0411WS
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BCGXY

FLUID DRIC 13-NOV-04 13-00-17

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 24.49e 120.13, 43.65 e 2.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BCGXG

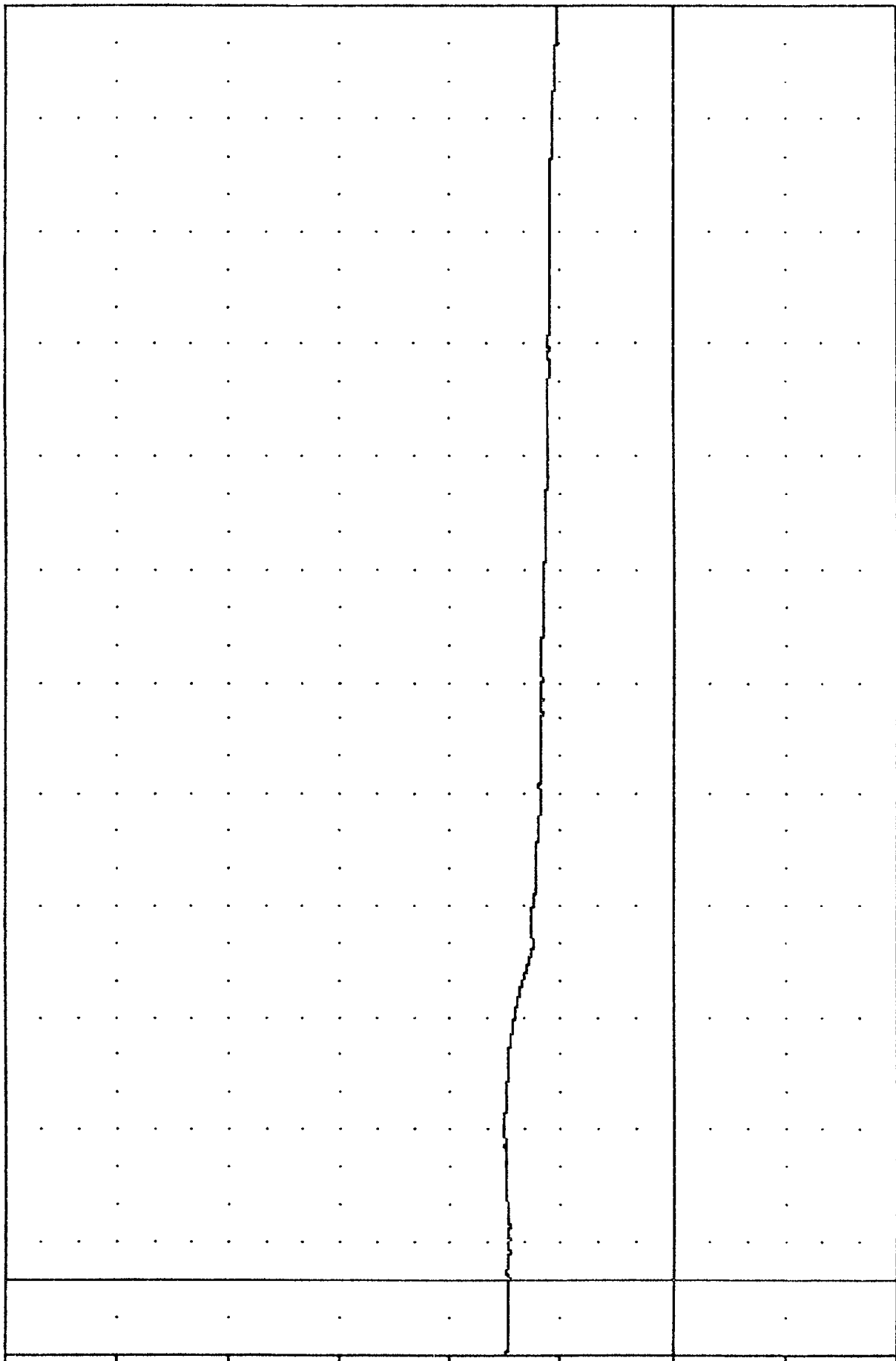
IMC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BCGYV

PLU1 UNIE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 10.24 340.00 15.16 42.75

VELOCITY (MPH)

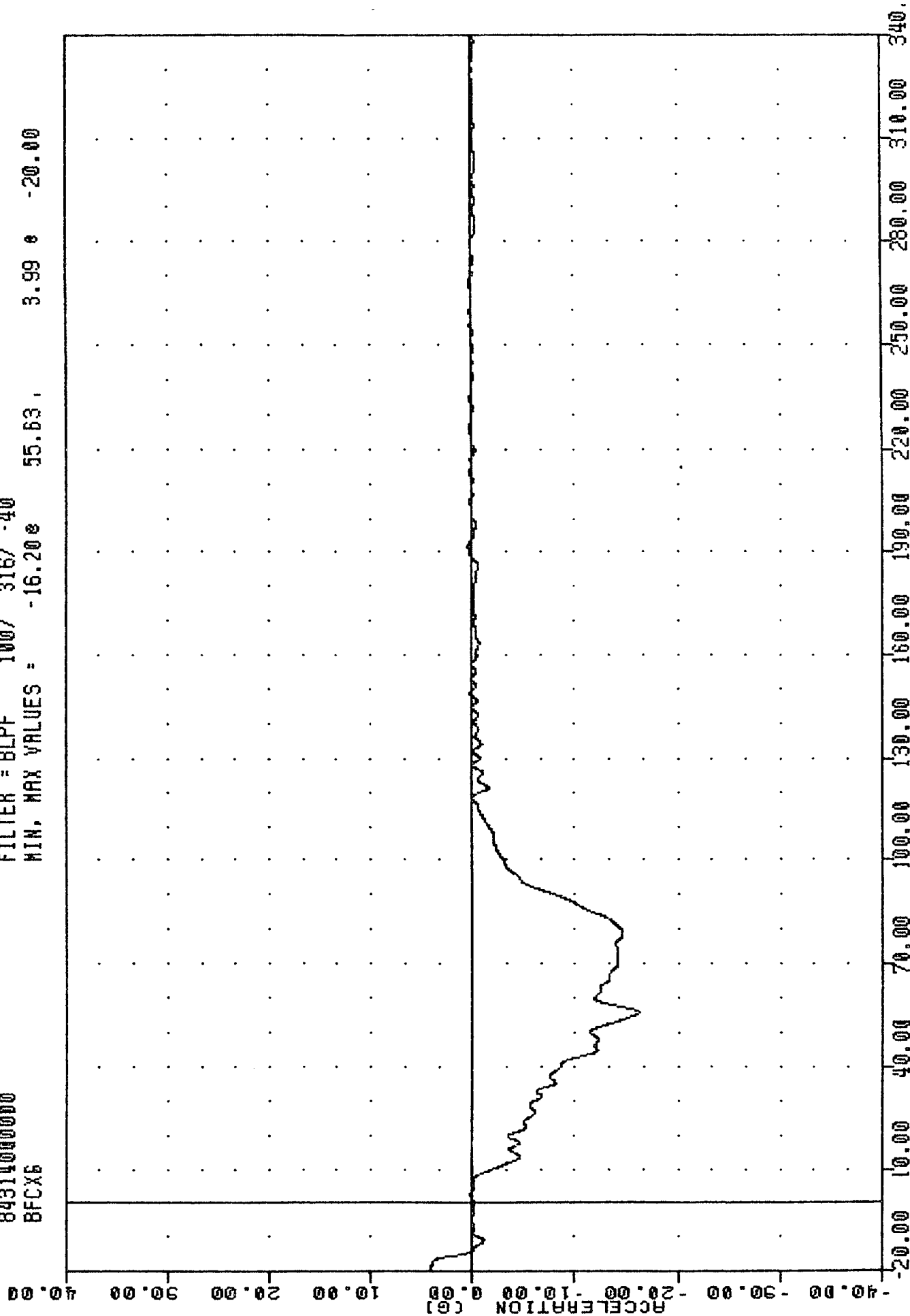


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BCGYG

INC SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BFCX6

1200 0000 1000 0000 1000 0000

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -16.20 55.63 3.99 0 -20.00

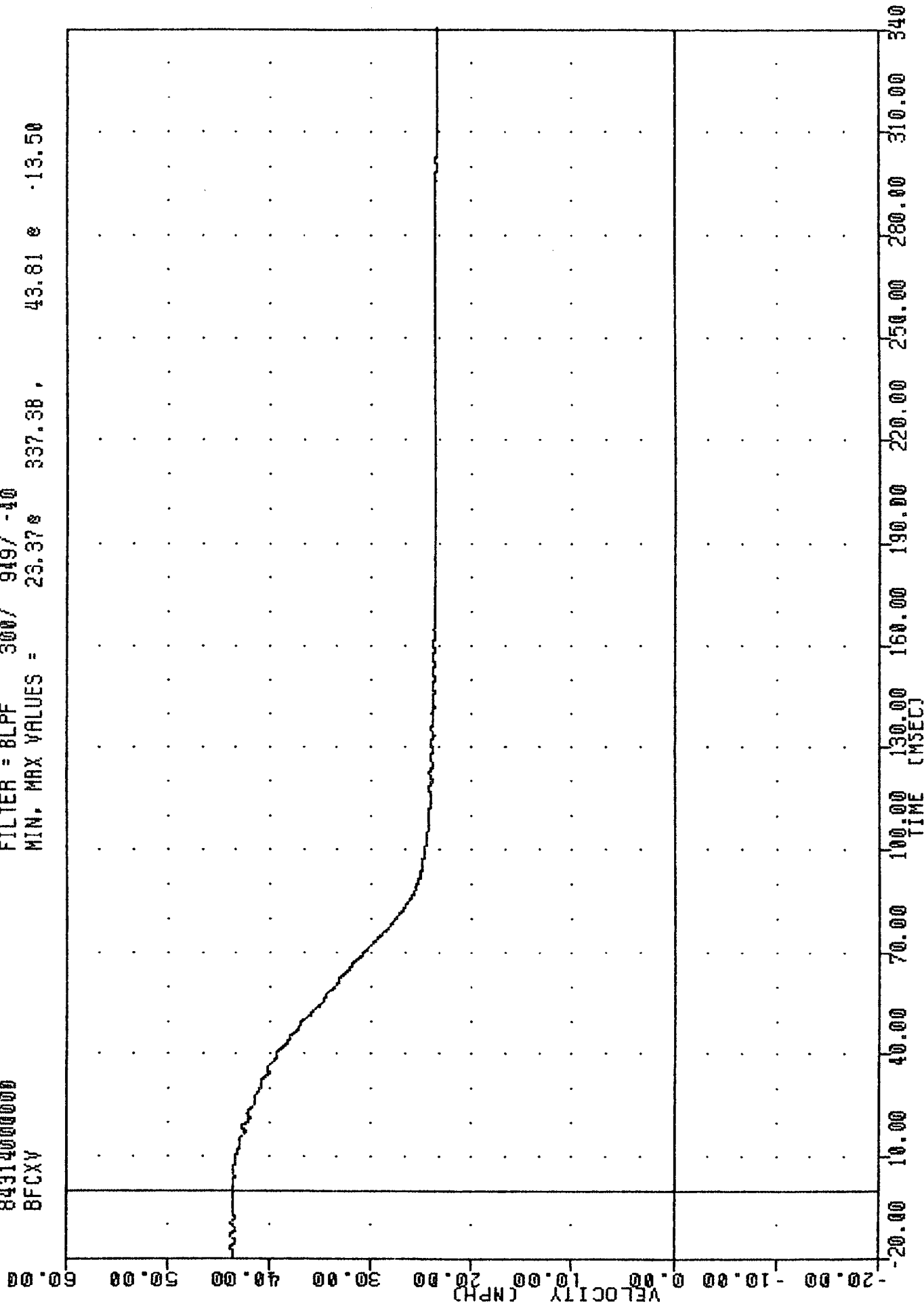


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 BARRIER FRONT CROSSMEMBER ACCELERATION X AXIS

INC
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BFCXV

FLUT UNIC 10 NOV 04 10:03:17

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 23.37 337.38 , 43.81 310.00



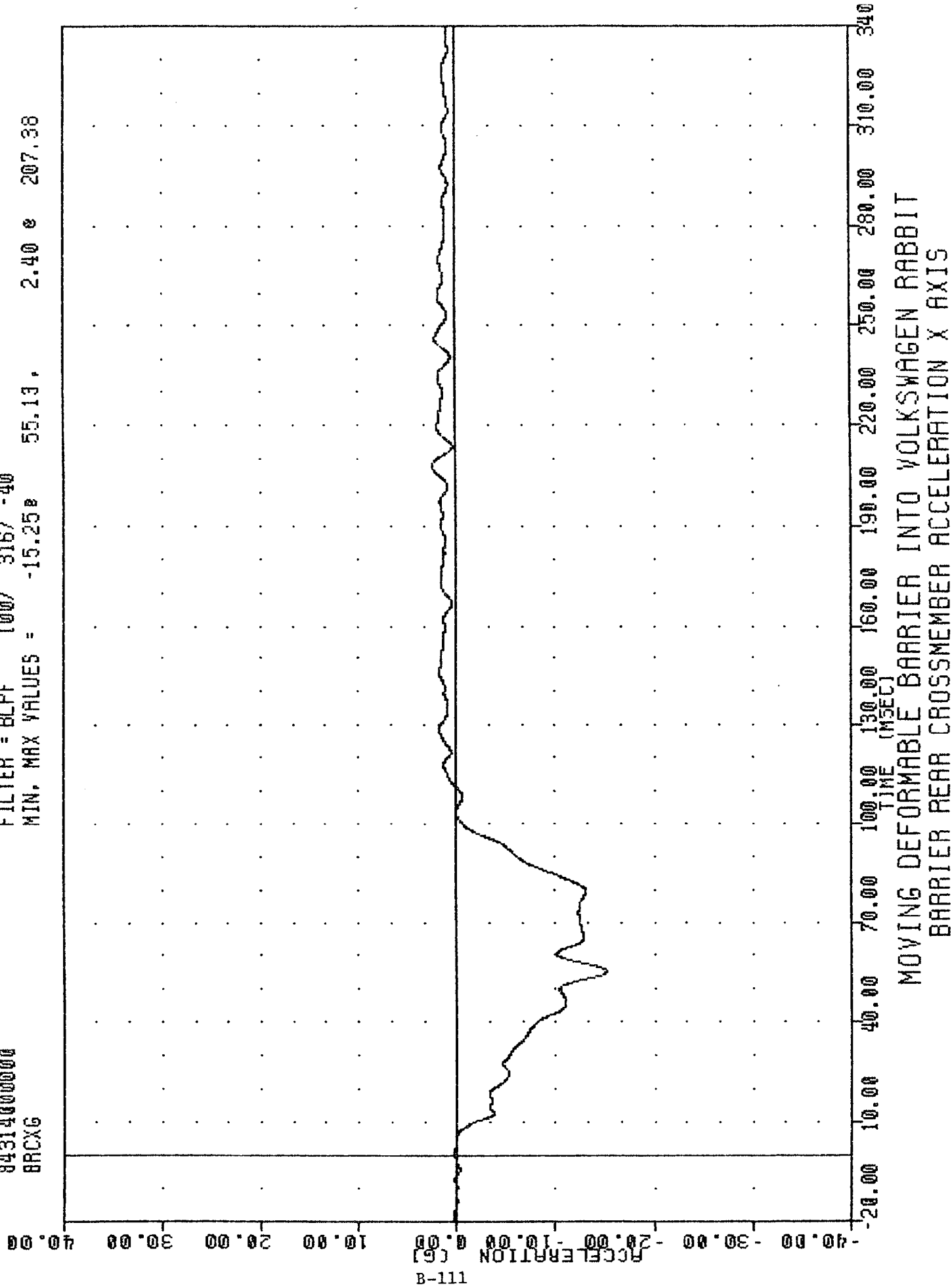
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BFCXG

ILC , 841109
SIDE AGGRESSIVE ATTRIBUTES
84314000000
BRCXG

PLU1 UNIE 10-NOV-84 10:01:40

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -15.25 55.13, 2.40 207.38

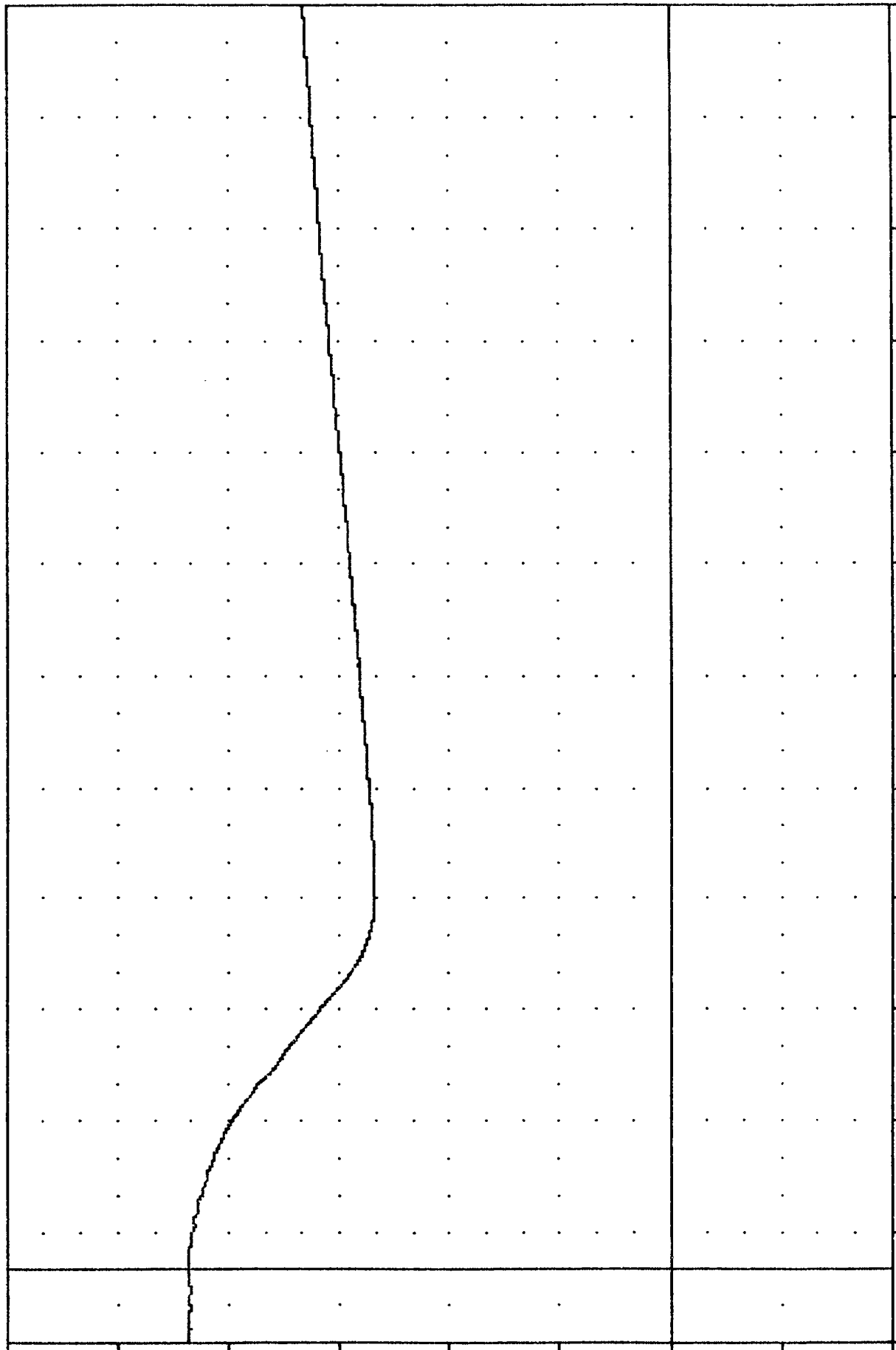


TAC , 841109
 SIDE AGGRESSIVE ATTRIBUTES
 84314000000
 BRCXV

PLOT DATE 15-NOV-84 15:53:17

FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = 26.79e 108.13, 43.54 e -8.63

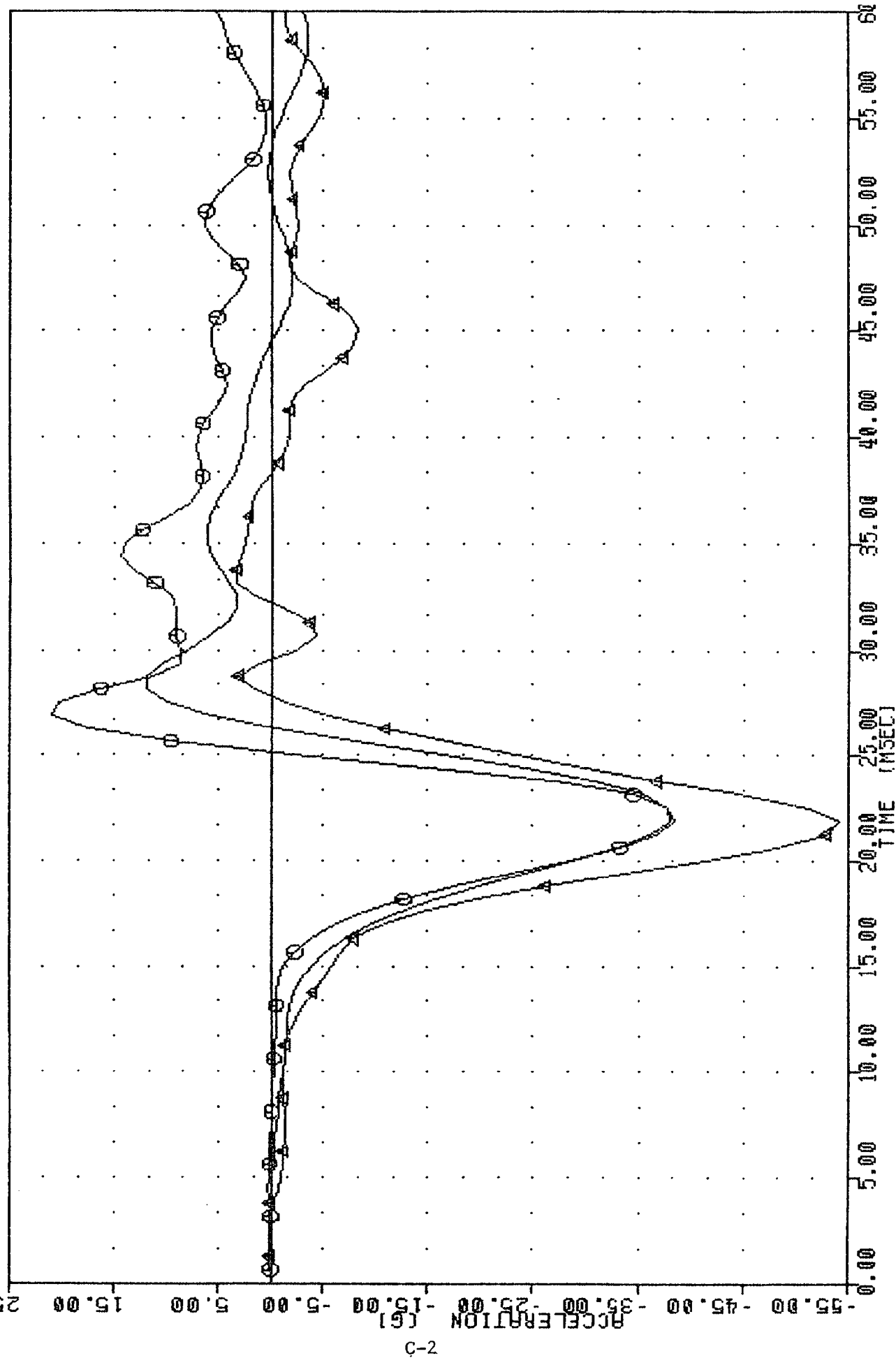
211-B
 VELOCITY (MPH)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BRCXG

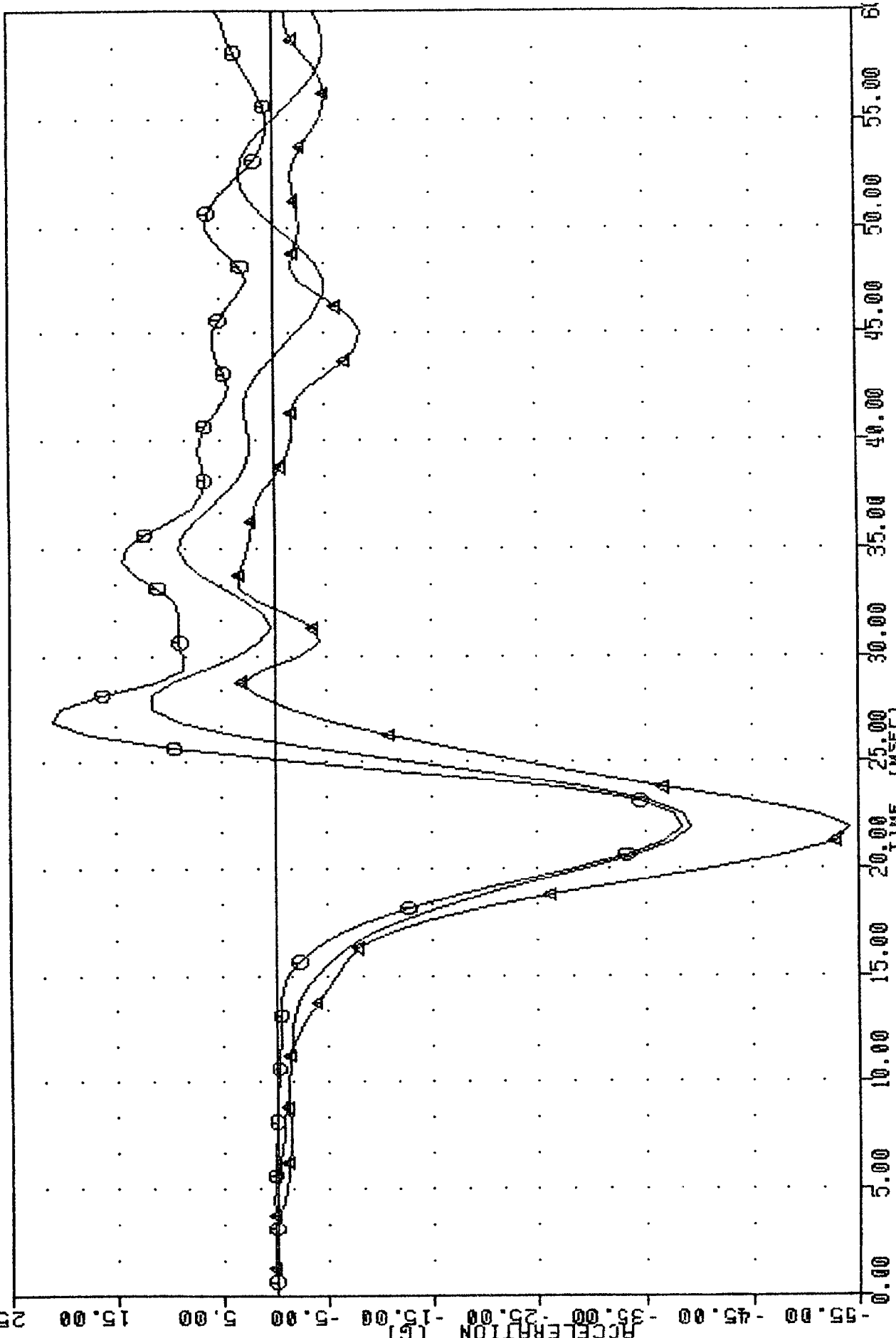
APPENDIX C
DUMMY CERTIFICATION

LURYGI	○	136/	189/	50	MIN, MAX =	-38.02	21.25	11.73	27.51
MN-2SD	○	136/	189/	50	MIN, MAX =	-38.44	21.25	20.92	26.21
MN-2SD	△	136/	189/	50	MIN, MAX =	-54.08	21.25	3.31	33.11



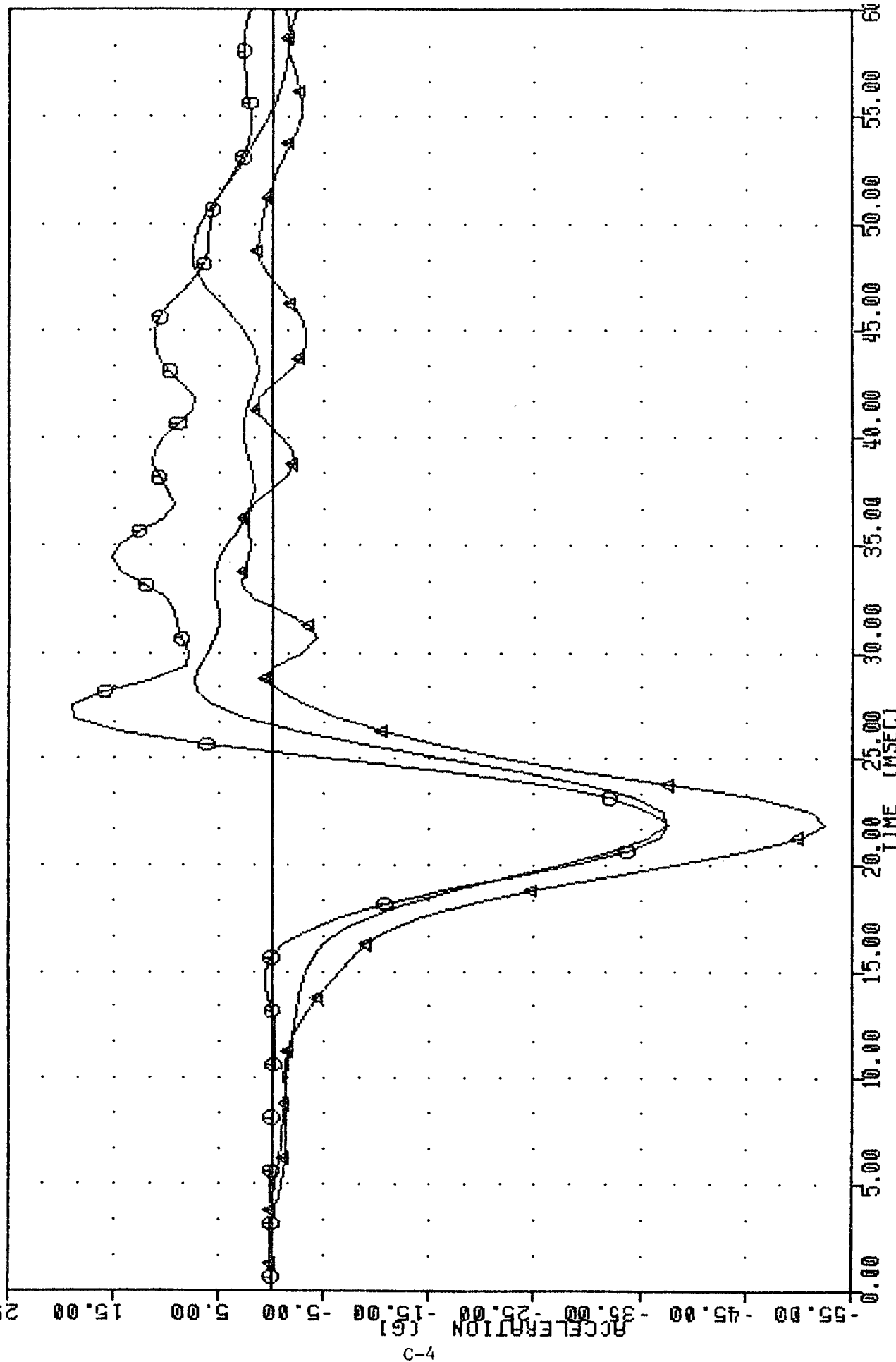
SIDE IMPACT TEST (006)
LEFT UPPER RIB ACCELERATION Y AXIS - 1

LURYGA	FILTER = HSRI	136/	189/	-50	MIN. MAX =	-39.36	8	11.398	27.30
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN. MAX =	-38.44	8	20.928	26.25
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN. MAX =	-54.08	8	3.318	33.13



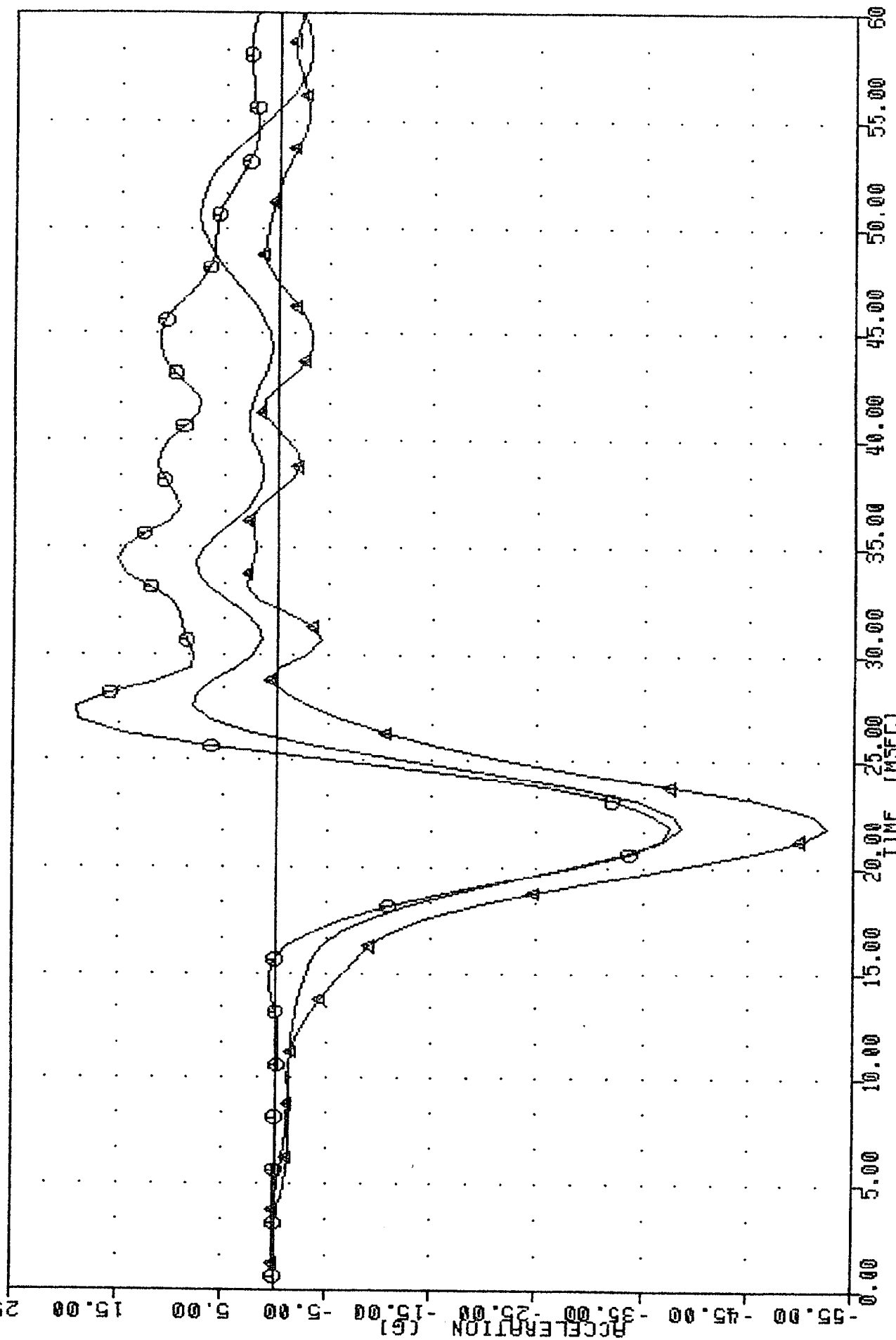
SIDE IMPACT TEST (0006)
LEFT UPPER RIB ACCELERATION Y AXIS - A

VARIABLE	FILTER	JOB	MINIMUM	MAX	CPU CLOCKS	OBJECTS	TOTAL TIME	AVERAGE CPU TIME
LAYER1	HSAI		136/	189/-50		-37.51	21.25,	7.61
MN+2SD	HSAI		136/	189/-50		-37.66	21.25,	19.00
MN-2SD	HSAI		136/	189/-50		-52.52	21.25,	2.94



SIDE IMPACT TEST (006)

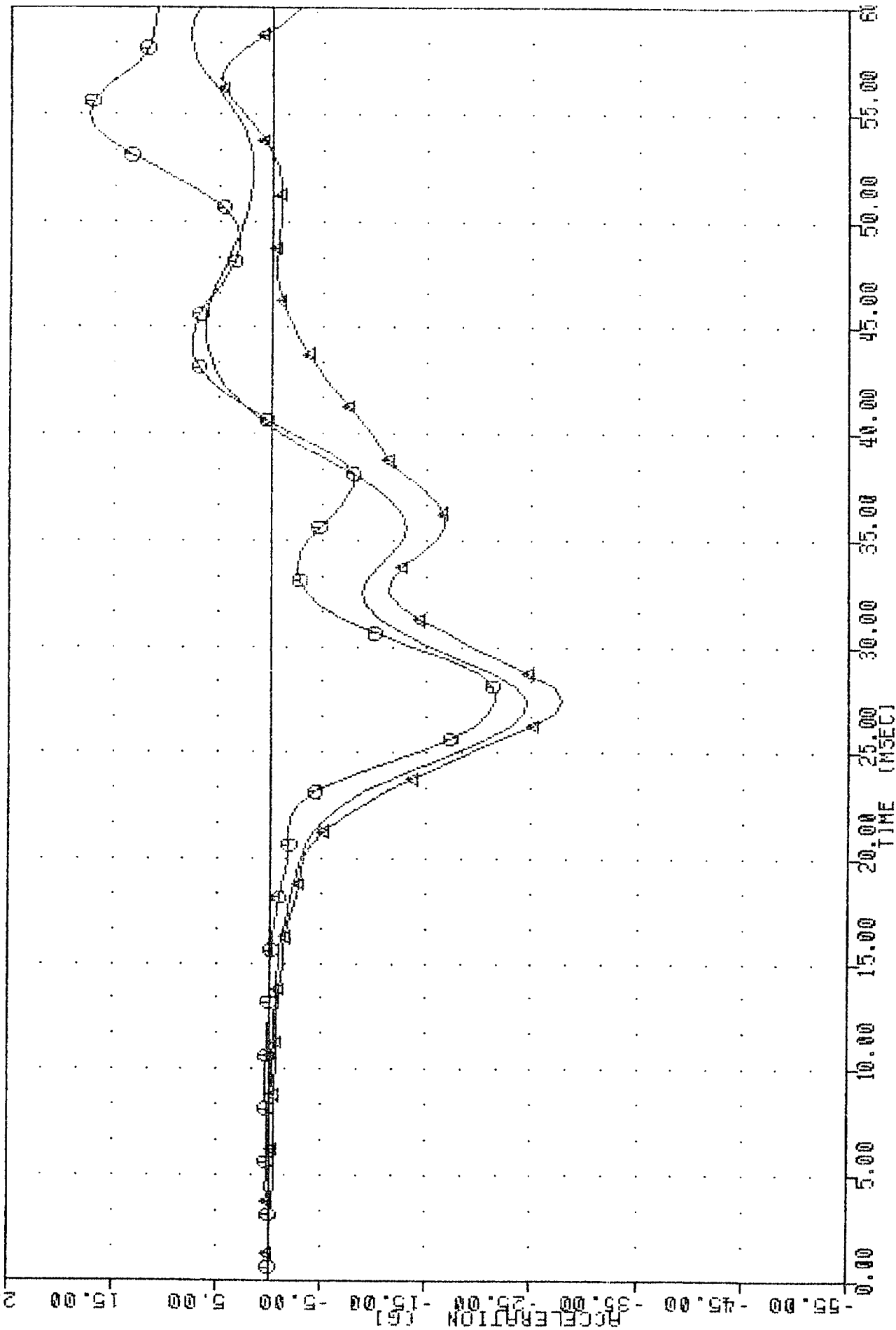
LEFT LOWER RIB ACCELERATION Y AXIS - 1

[illegible]

SIDE IMPACT TEST (006)

LEFT LOWER RIB ACCELERATION Y AXIS - A

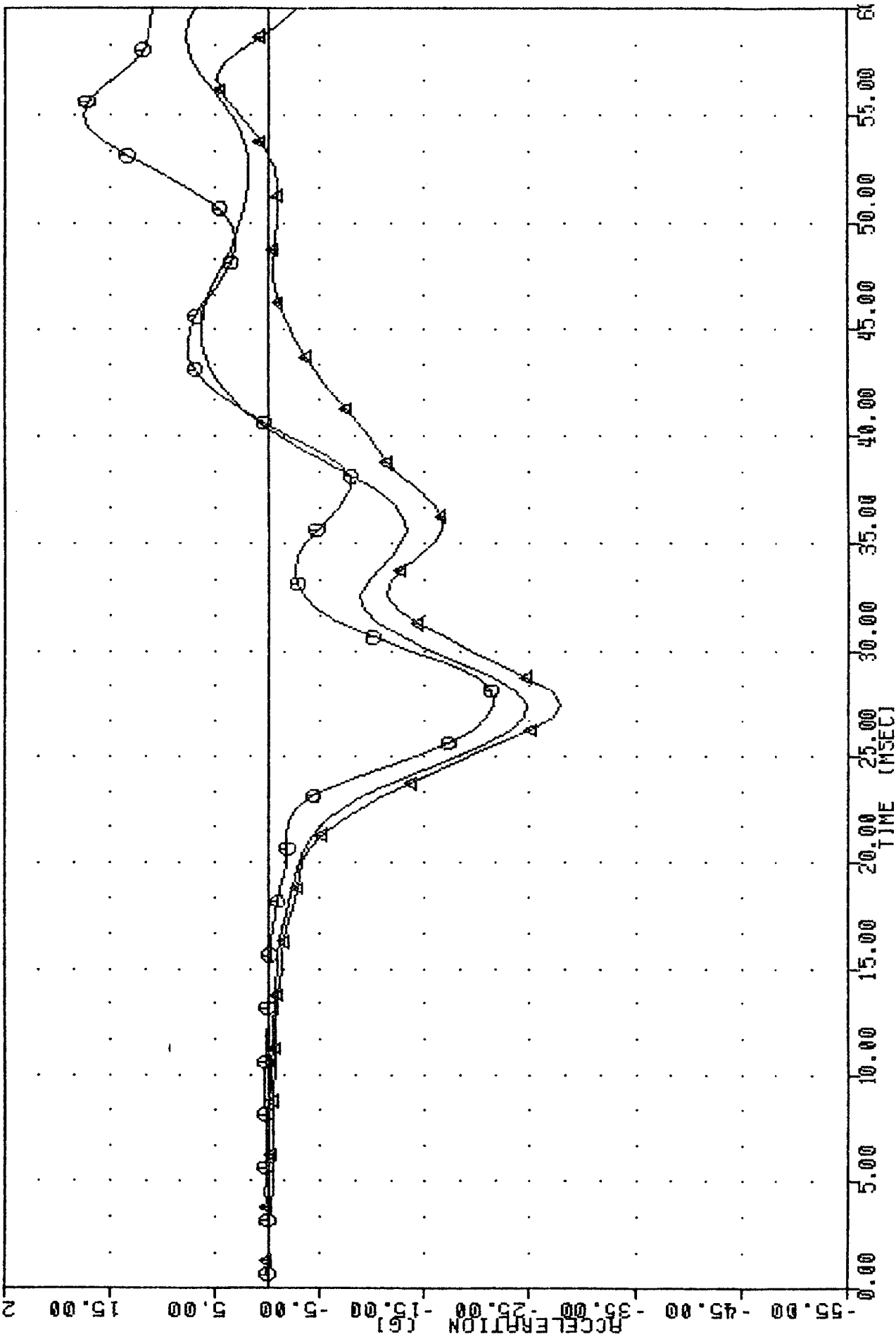
VOIL 30132 , 310W0114 310 INUMAX AND BUUT 310 LHLJ14 84321 FLUI UHIE 26-NOV-84 16:08:06
 T01Y61 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -24.46 26.87 7.70 58.1
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -21.58 26.87 17.54 54.3
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -27.91 26.87 4.78 56.2



SIDE IMPACT TEST (006)

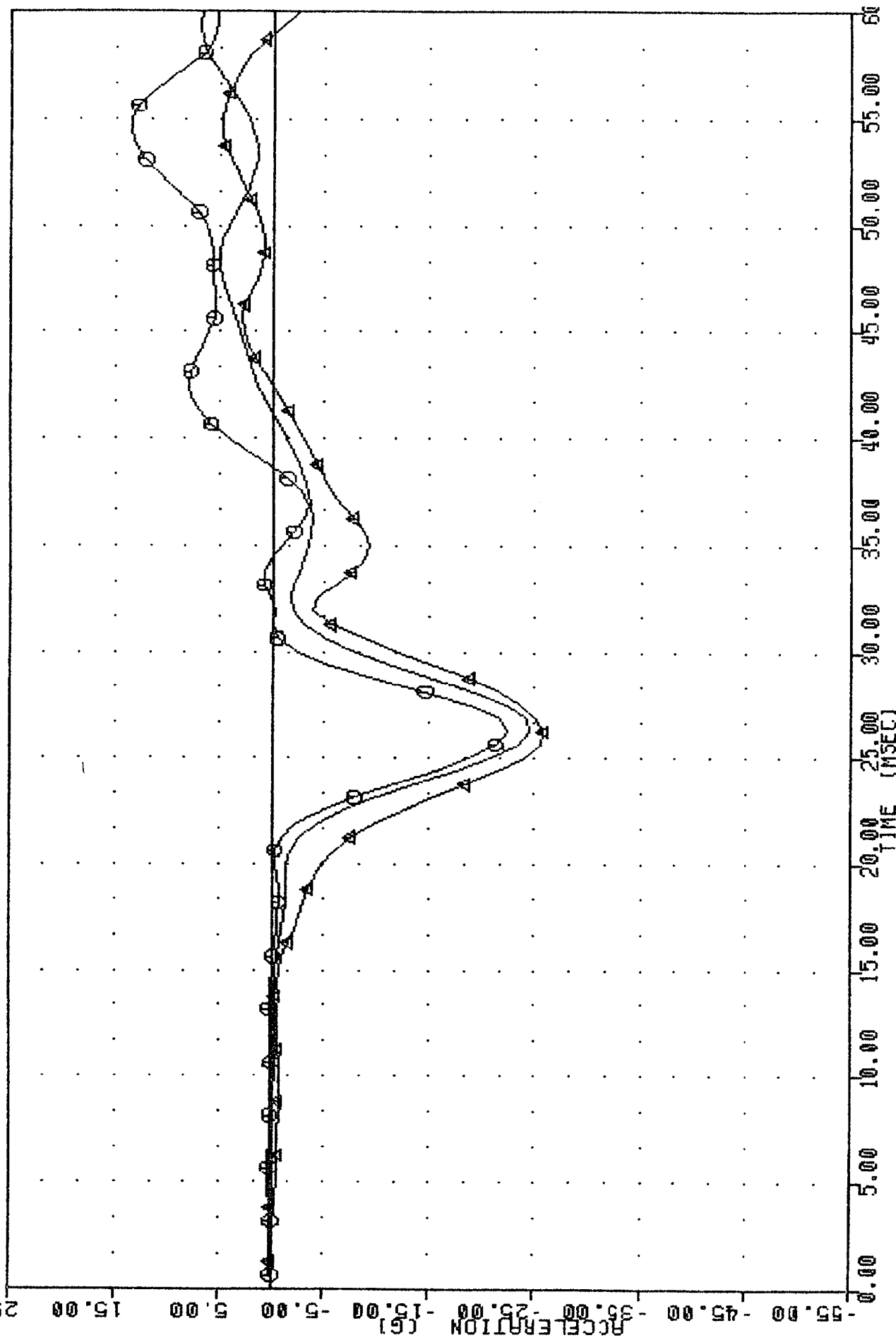
UPPER SPINE ACCELERATION Y AXIS - 1

VRIC SRL92 , S1006114 SID THORAX 006 BODY 318 CAL114 84321 PLOT DATE 27-NOV-84 15:36:45
 T01YGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -24.71 7.76 58.1
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -21.58 7.54 54.3
 MN-2SD A FILTER = HSRI 136/ 189/ -50 MIN, MAX = -27.91 4.78 56.2



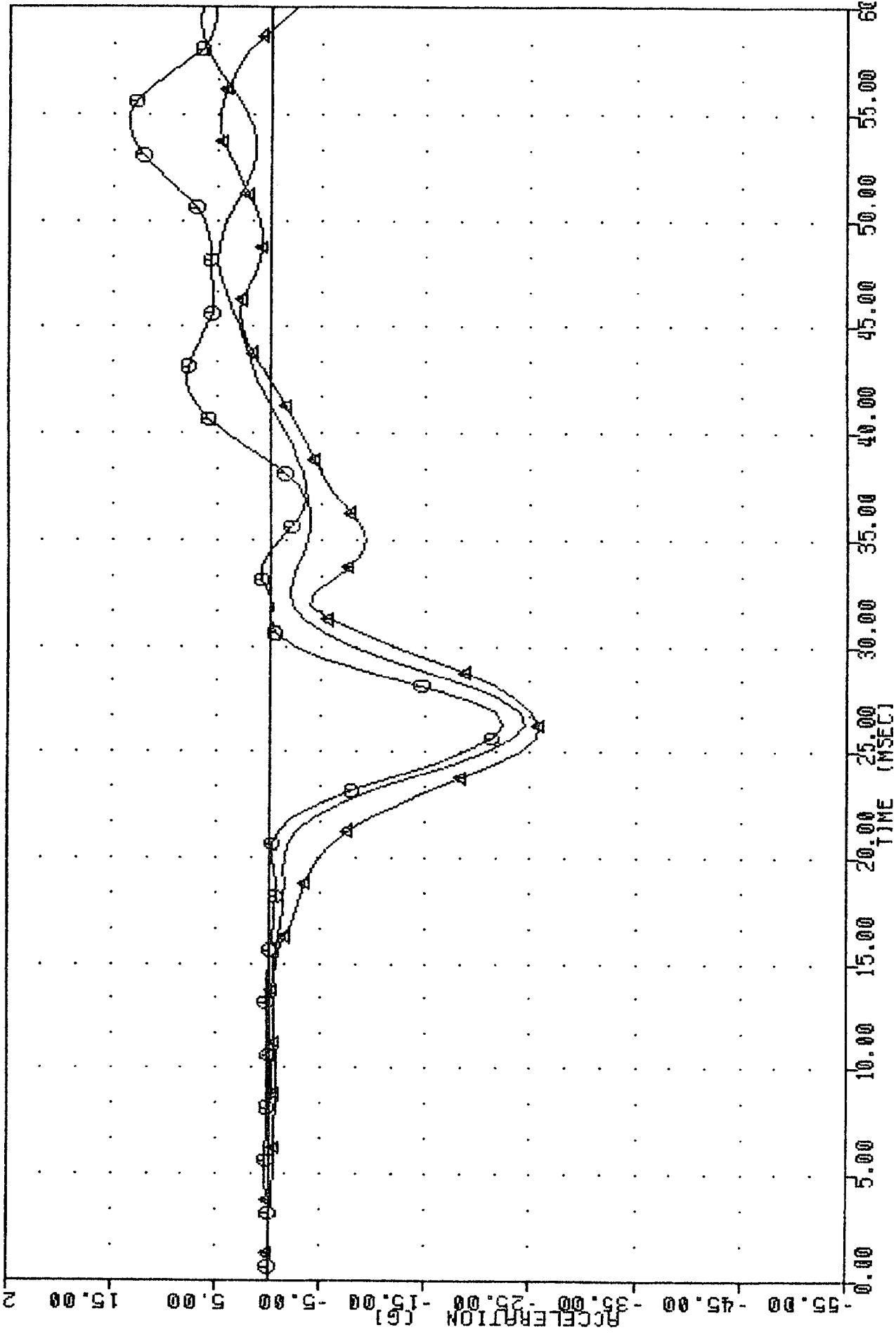
SIDE IMPACT TEST (006)
 UPPER SPINE ACCELERATION Y AXIS - A

T12YGI
 MN-2SD
 MN-2SD
 FILTER = HSRI
 FILTER = HSRI
 FILTER = HSRI
 136/ 189/ -50
 136/ 189/ -50
 136/ 189/ -50
 MIN, MAX =
 MIN, MAX =
 MIN, MAX =
 -24.59
 -22.37
 -25.84
 FLUI UNIE 27-NUV-04
 25.63
 25.63
 25.63
 6.858
 13.548
 4.858
 58.7
 53.7
 53.7

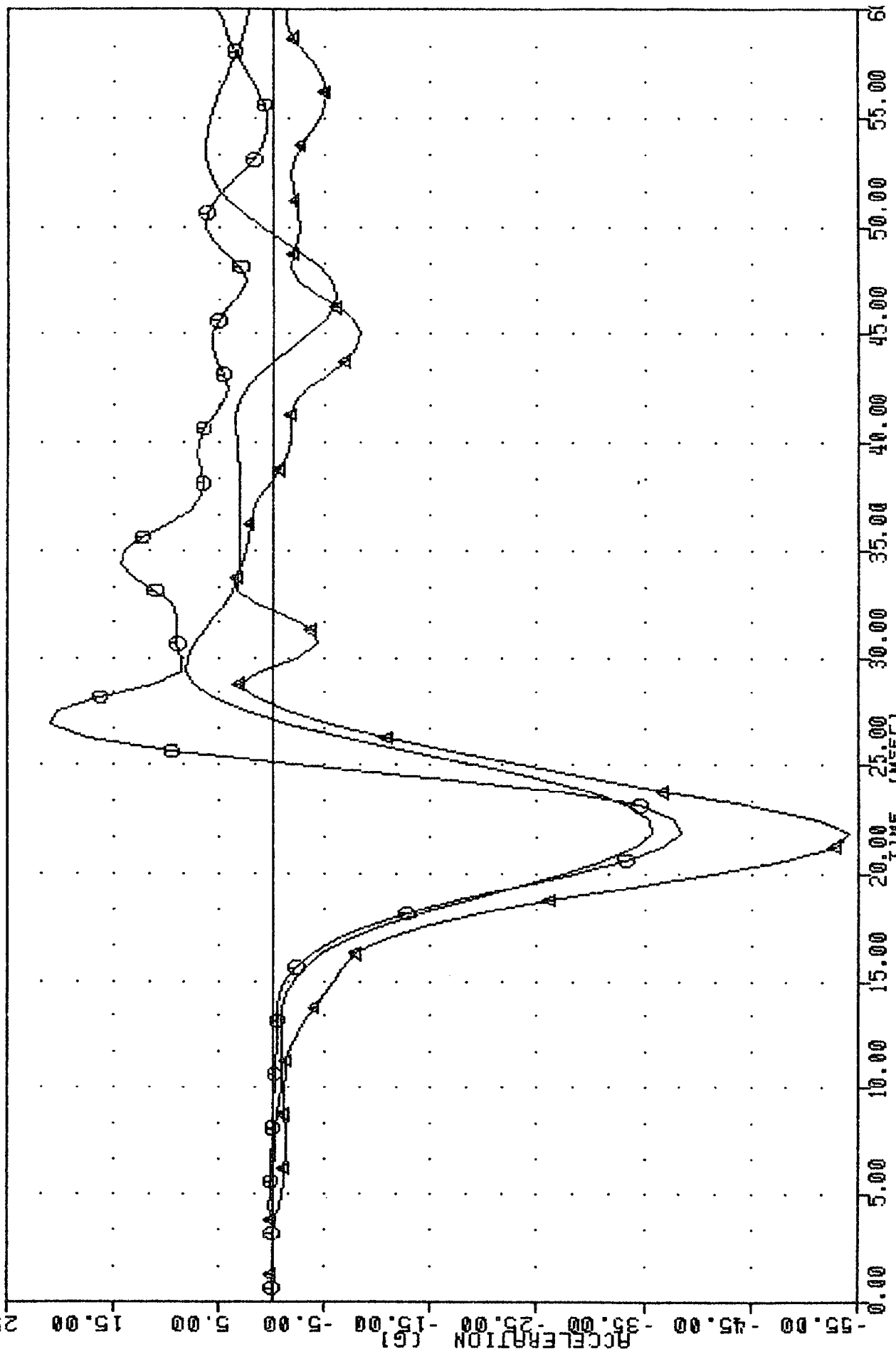


SIDE IMPACT TEST (006)
 LOWER SPINE ACCELERATION Y AXIS - 1

T12YGR	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-24.41	8	6.74	58.7
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-22.37	8	13.54	53.7
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-25.84	8	4.85	53.7

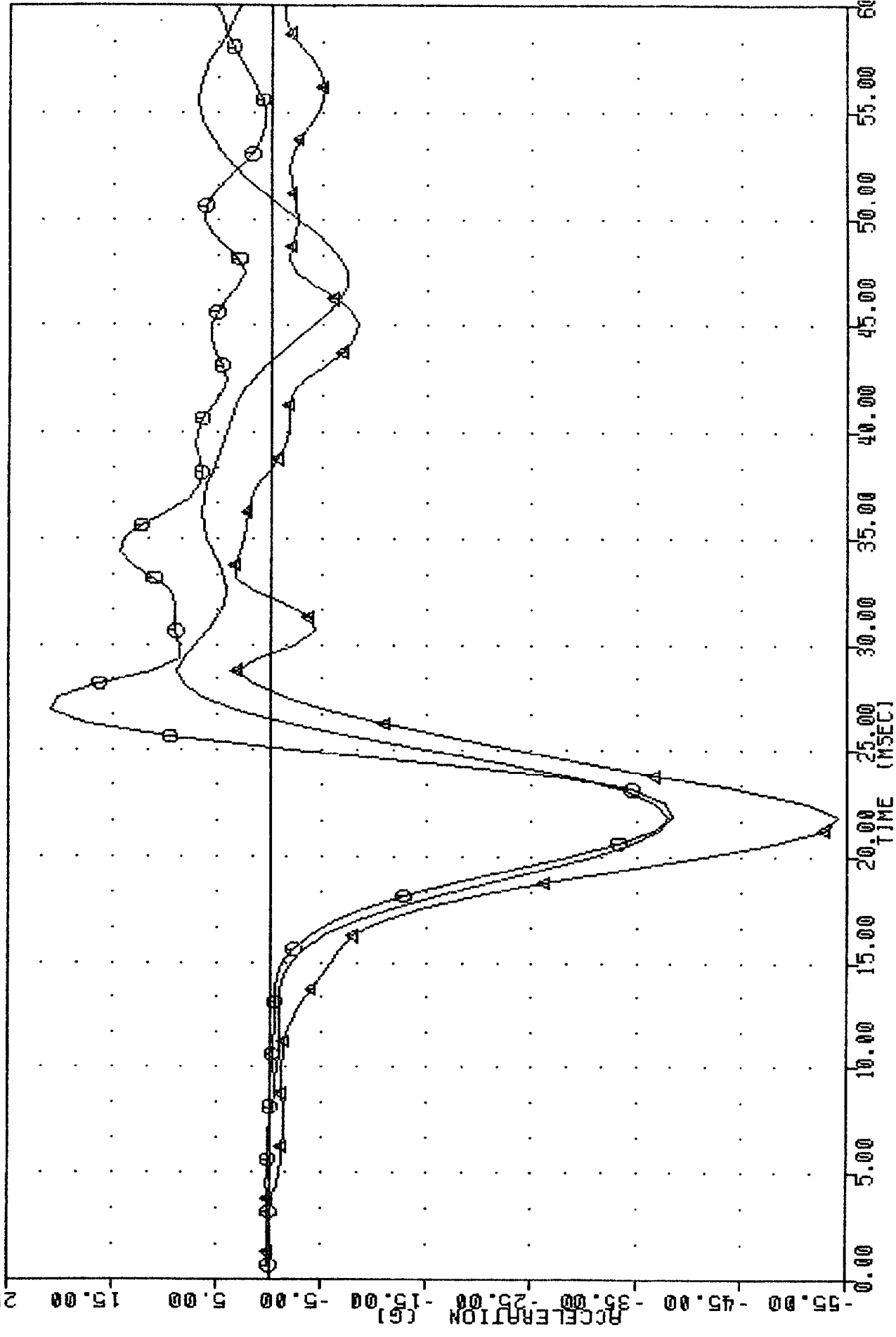


CURVGI
 MN-2SD 0
 MN-2SD 1
 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -35.65 8 21.25, 28.7
 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -38.44 8 21.25, 26.2
 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -54.08 8 21.25, 33.1

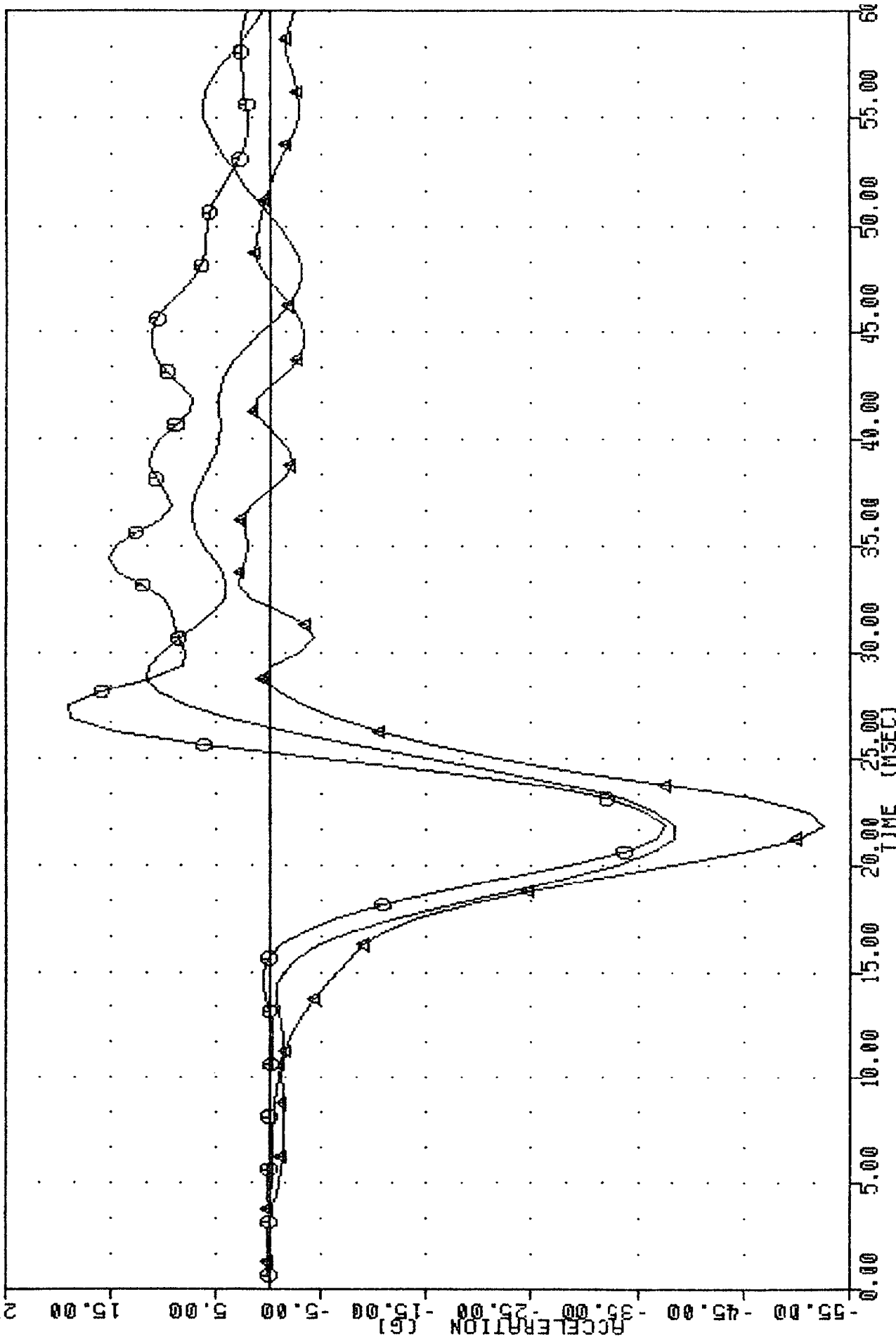


SIDE IMPACT TEST (U02)
 LEFT UPPER RIB ACCELERATION Y AXIS - 1

LURYGA	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-38.06	8	21.25,	8.718	28.1
MN+2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-38.44	8	21.25,	20.928	26.2
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-54.08	8	21.25,	3.318	33.1

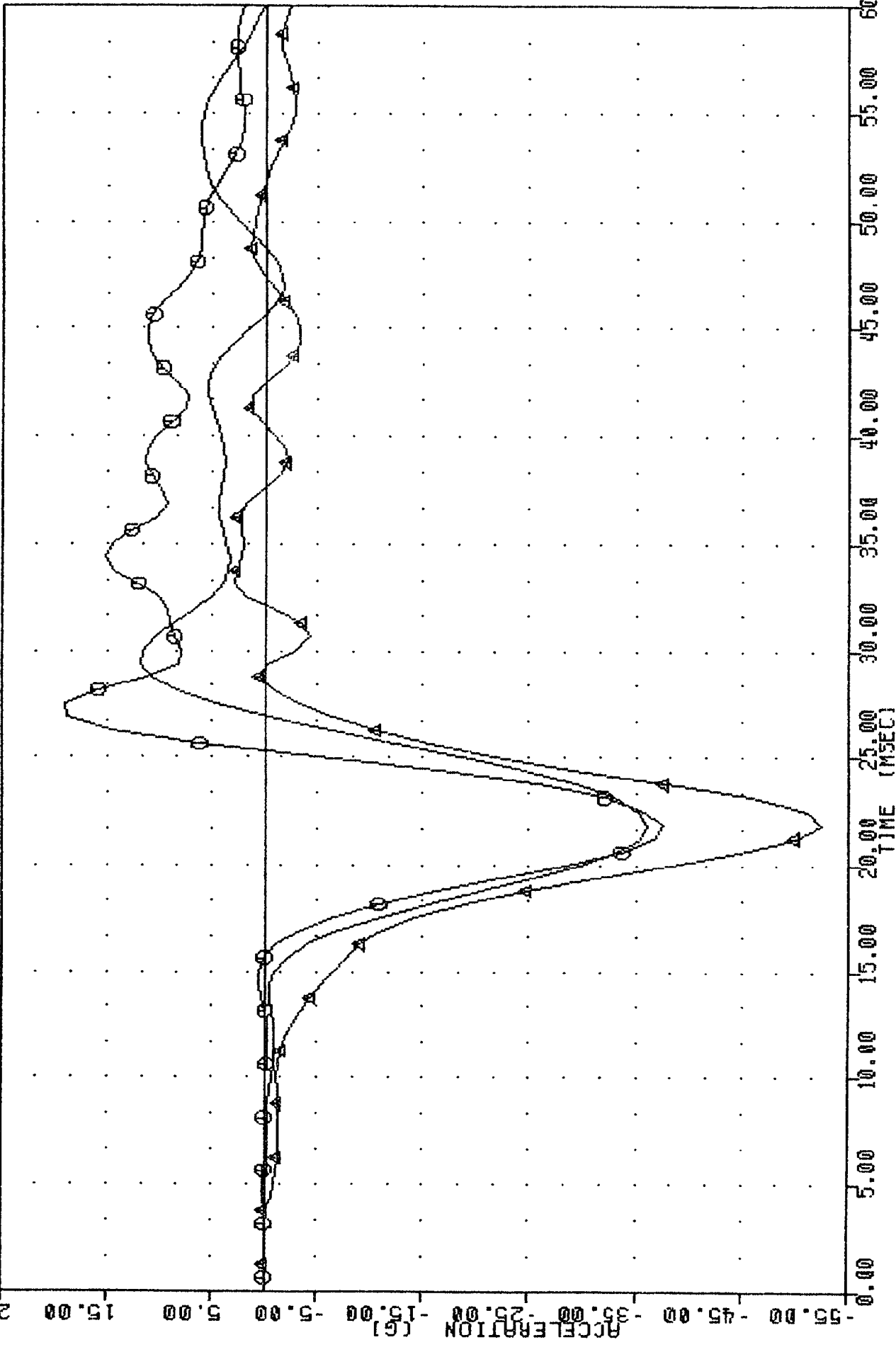


LLRYGI	136/	189/	50	MIN, MAX =	21.25,	11.640	28.1
MM-2SD	136/	189/	50	MIN, MAX =	21.25,	19.000	26.8
MM-2SD	136/	189/	50	MIN, MAX =	21.25,	2.940	32.5



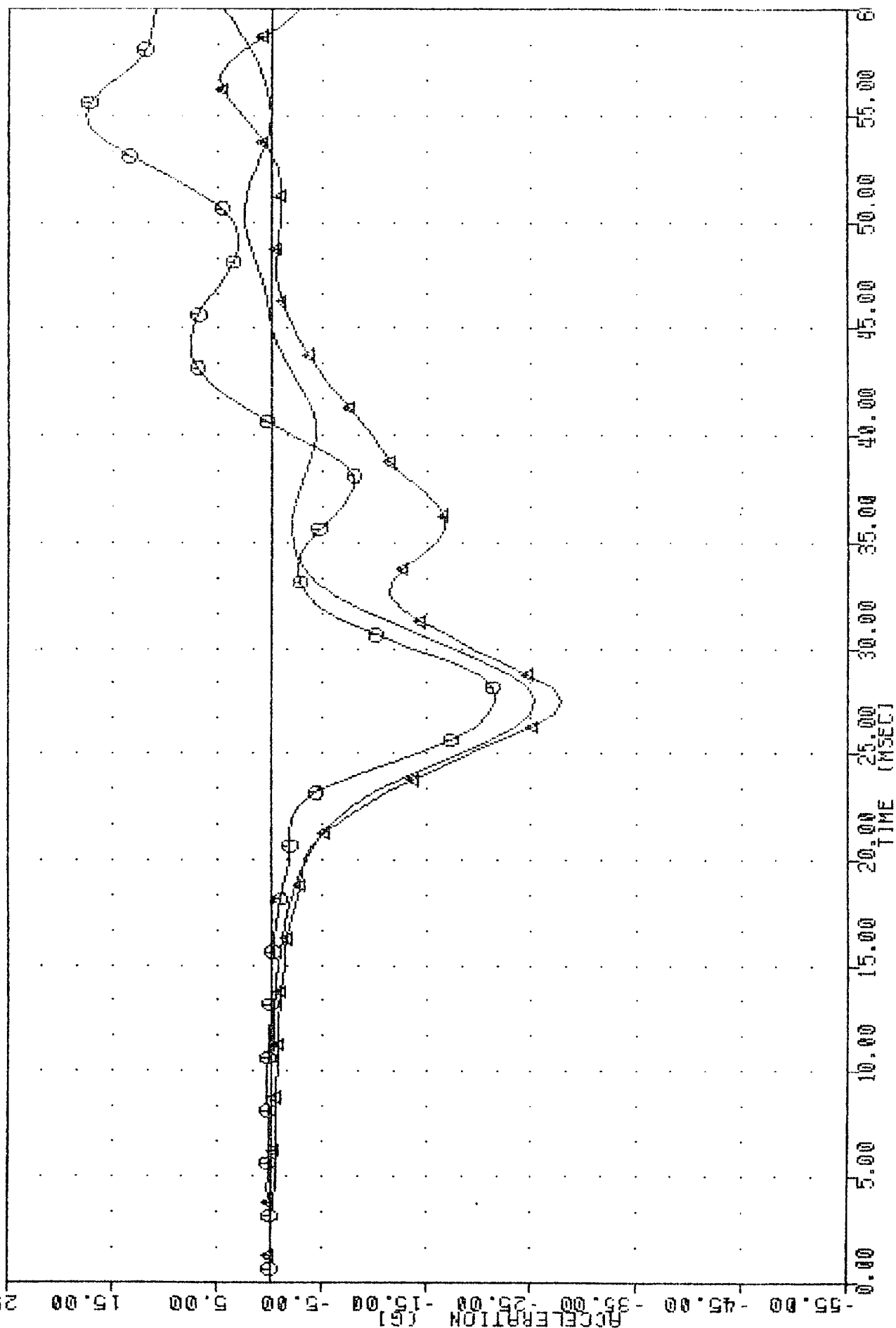
SIDE IMPACT TEST (U02)
LEFT LOWER RIB ACCELERATION Y AXIS - 1

LLRYGA
 MN-2SD 0
 MN-2SD A
 FILTER = HSRI
 FILTER = HSRI
 FILTER = HSRI
 136/ 189/ -50
 136/ 189/ -50
 136/ 189/ -50
 MIN, MAX =
 MIN, MAX =
 MIN, MAX =
 -36.19
 -37.66
 -52.52
 21.25
 21.25
 21.25
 11.75
 19.00
 2.94
 28.7
 26.8
 32.5



SIDE IMPACT TEST (U02)
 LEFT LOWER RIB ACCELERATION Y AXIS - A

TO1Y61	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-25.38	0	26.87,	5.930	60.0
MN+2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-21.58	0	26.87,	17.540	54.3
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-27.91	0	26.87,	4.780	56.2

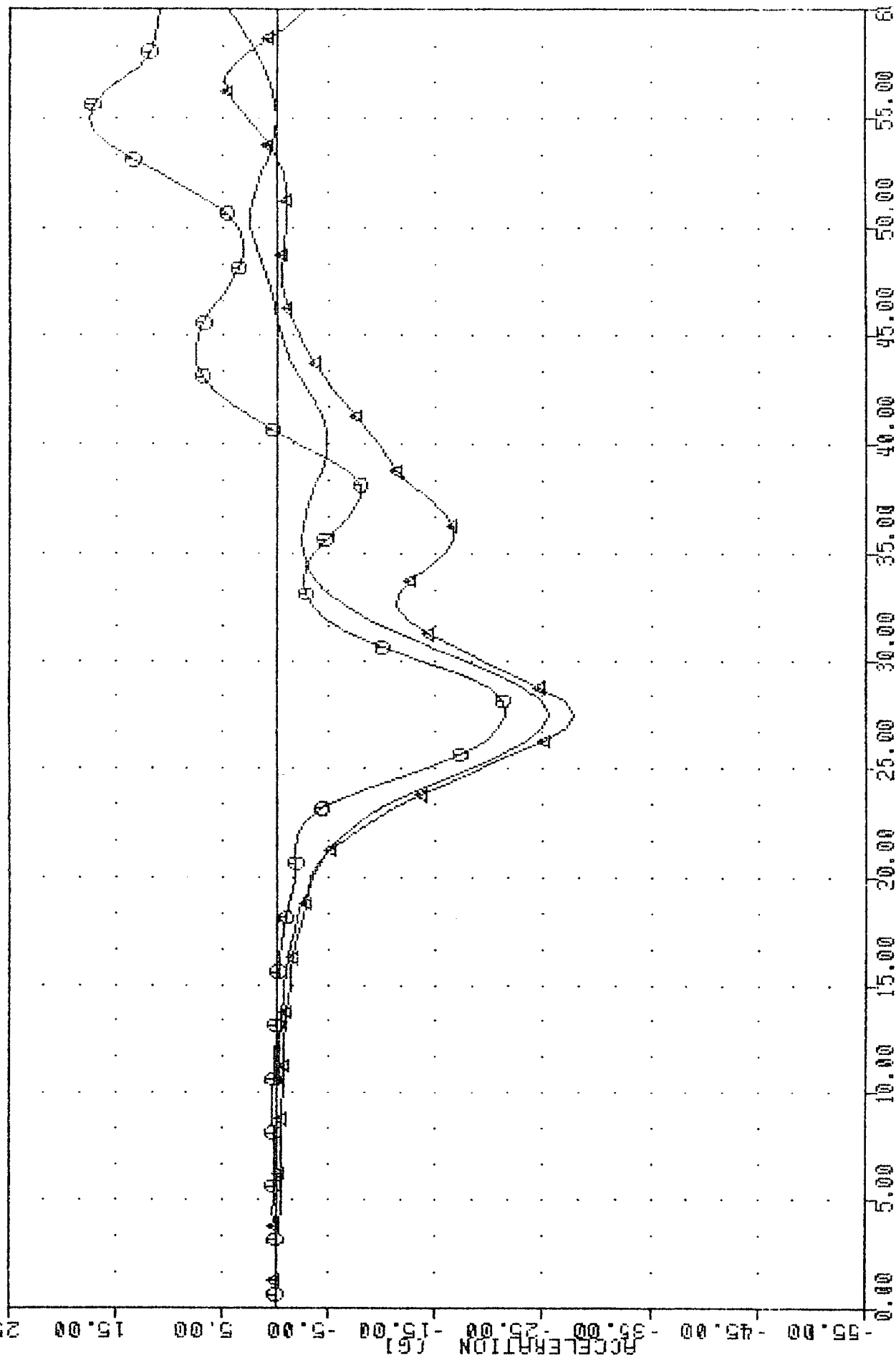


SIDE IMPACT TEST (U02)

UPPER SPINE ACCELERATION Y AXIS - 1

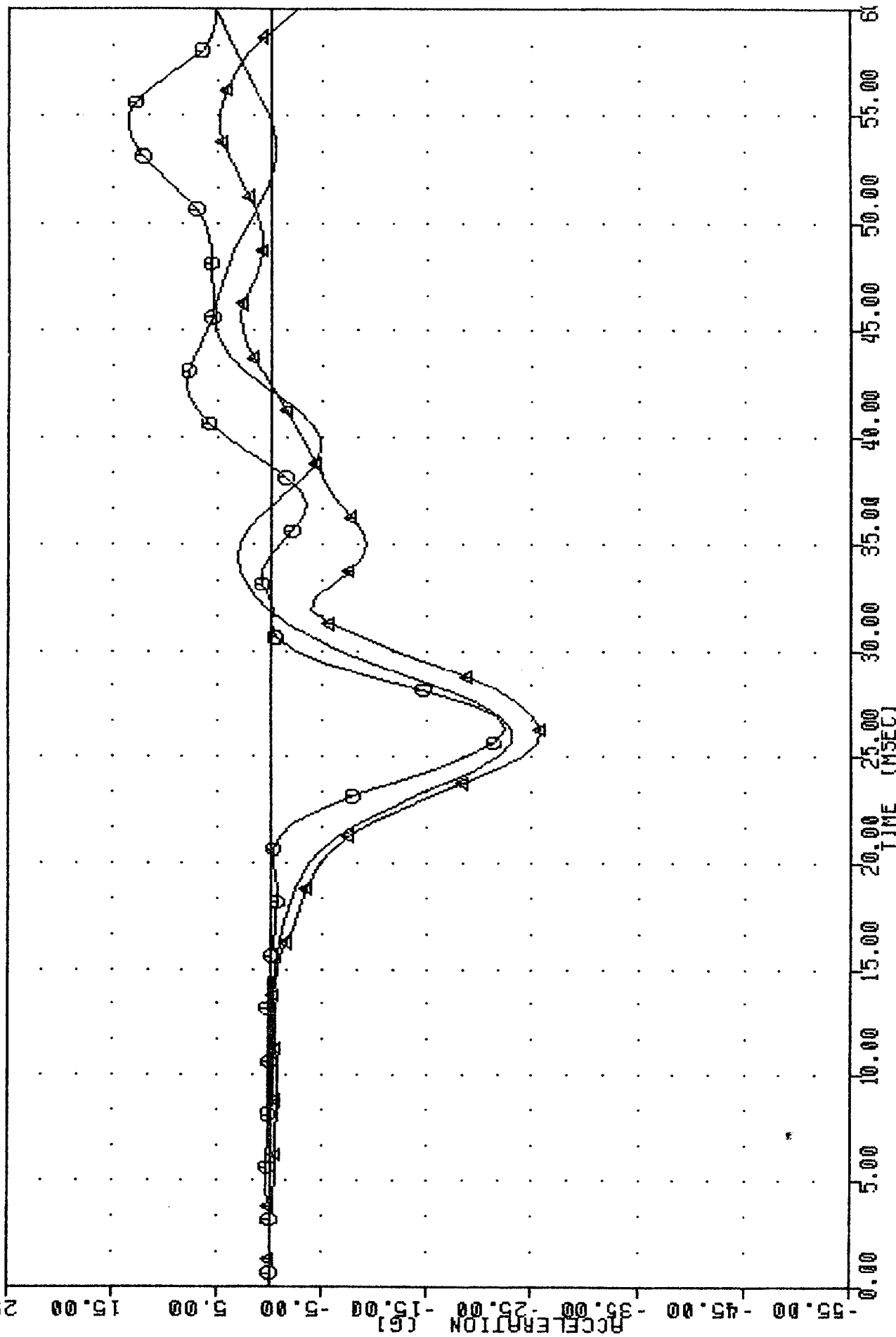
101Y6H	136/	189/	-50	MIN.	MAX =	-25.53	0	26.87	5.92	0	50.0
MN-2SD	0	136/	189/	-50	MIN.	MAX =	-21.58	0	17.54	0	54.3
MN-2SD	4	136/	189/	-50	MIN.	MAX =	-27.91	0	4.78	0	56.2

25.00



SIDE IMPACT TEST (U02)
UPPER SPINE ACCELERATION Y AXIS - A

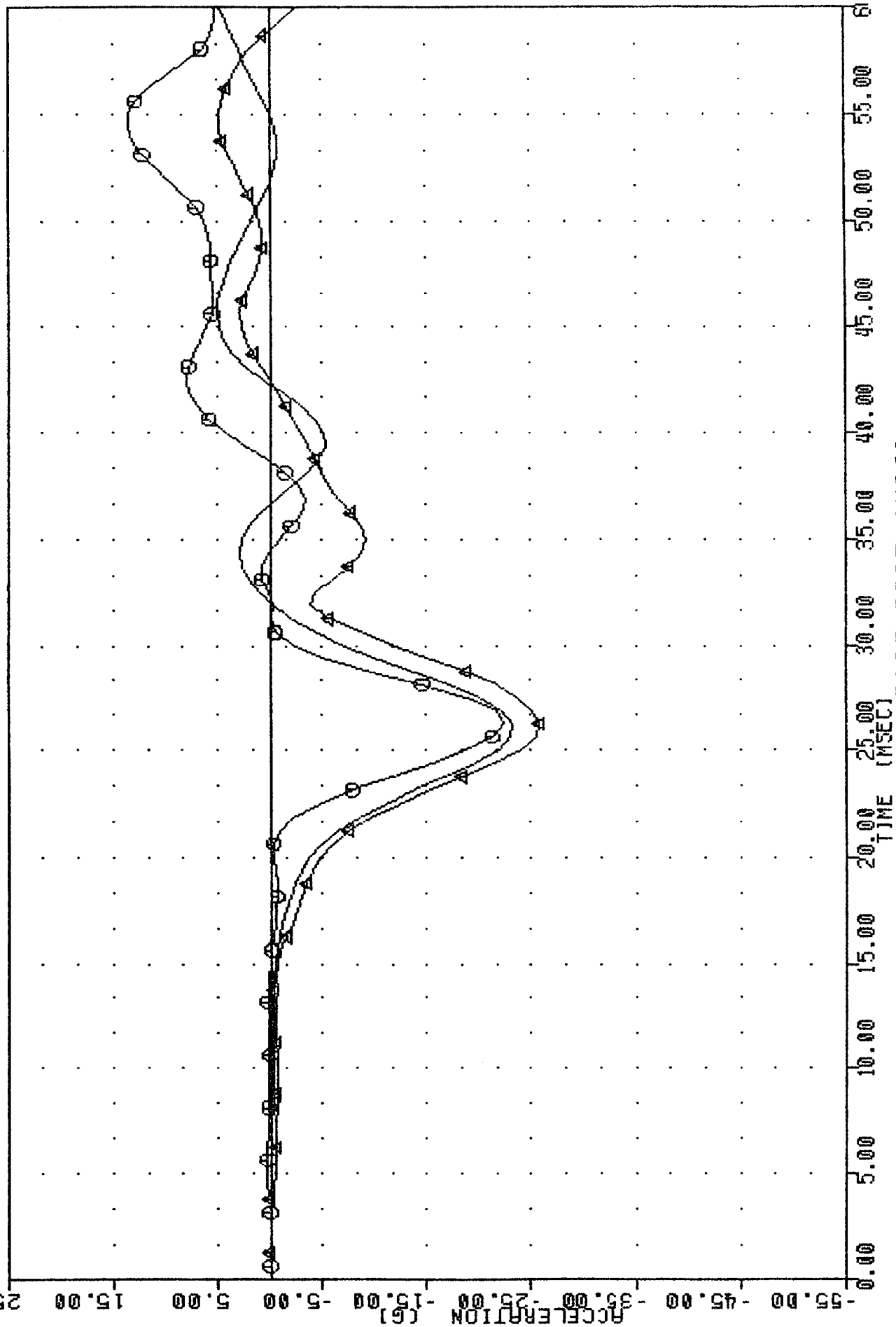
T12YGI	136/	189/	50	MIN, MAX =	-23.10	8	25.63	5.95	60.0
MN-2SD	136/	189/	50	MIN, MAX =	-22.37	8	25.63	13.54	53.7
MN-2SD	136/	189/	50	MIN, MAX =	-25.84	8	25.63	4.85	53.7



SIDE IMPACT TEST (U02)

LOWER SPINE ACCELERATION Y AXIS - 1

T12YGA	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-23.25	25.63	5.628	60.00
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-22.37	25.63	13.548	53.71
MN-2SD	FILTER = HSRI	136/	189/	-50	MIN, MAX =	-25.84	25.63	4.858	53.71



SIDE IMPACT TEST (U02)
LOWER SPINE ACCELERATION Y AXIS - A