

DOT 4777

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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FINAL REPORT
NOVEMBER 1984

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
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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 diesel Volkswagen Rabbit 2-door hatchback at the TRCO Crash Test Facility, East Liberty, Ohio. The test vehicle was structurally unmodified but contained additional padding on the driver's side door, the left rear quarter panel and the left rear side header. The test vehicle was impacted on the left side by a moving deformable barrier designated as "Altered Profile", crabbled to 19 ⁰ , 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 October 8, 1984 and the ambient temperature was 72 ⁰ F.			
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				

in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km

AREA

in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha

MASS (weight)

oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons	0.9	metric ton	t
	(2000 lb)			

VOLUME

tsp	teaspoons	5	milliliters	ml.
Tbsp	tablespoons	15	milliliters	ml.
in ³	cubic inches	16	milliliters	ml.
fl oz	fluid ounces	30	milliliters	ml.
c	cups	0.24	liters	L
pt	pints	0.47	liters	L
qt	quarts	0.95	liters	L
gal	gallons	3.8	liters	L
ft ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³

TEMPERATURE (exact)

°F	degrees Fahrenheit	5/9 (after subtracting 32)	degrees Celsius	°C
----	--------------------	----------------------------	-----------------	----

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				

mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi

AREA

cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares	2.5	acres	
	(10 000 m ²)			

MASS (weight)

g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	metric ton	1.1	short tons	
	(1000 kg)			

VOLUME

ml	milliliters	0.03	fluid ounces	fl oz
ml	milliliters	0.06	cubic inches	in ³
L	liters	2.1	pints	pt
L	liters	1.06	quarts	qt
L	liters	0.26	gallons	gal
m ³	cubic meters	35	cubic feet	ft ³
m ³	cubic meters	1.3	cubic yards	yd ³

TEMPERATURE (exact)

°C	degrees Celsius	9/5 (then add 32)	degrees Fahrenheit	°F
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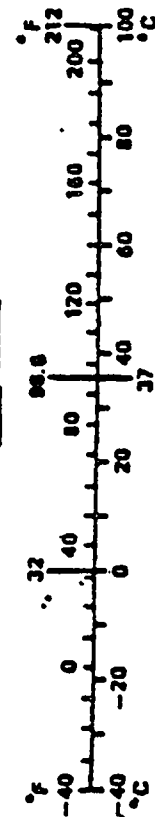
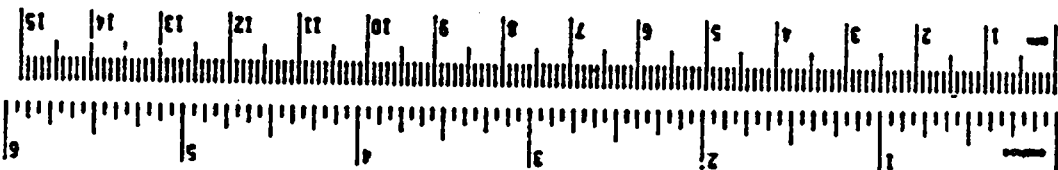


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SECTION 1.0
PURPOSE AND INTRODUCTION

PURPOSE

The main purpose of this test was to evaluate the side impact aggressiveness of a deformable barrier face designated as "Altered Profile". 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 diesel Volkswagen Rabbit 2-door hatchback was impacted on the left side by a Moving Deformable Barrier (MDB) on October 8, 1984. The barrier face was designated as "Altered Profile". In order to obtain the desired stiffness of 45 psi, 33 holes with a nominal diameter of 3 inches were drilled into the aluminum honeycomb, equally spaced throughout the back of the barrier face. 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 but contained additional padding in the driver's door, the left rear quarter panel and the left rear side header.

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, and Appendix C consists of 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 Diesel VIN: 1VWBG0179BV029614

BODY STYLE: 2-Door Hatchback MODEL YEAR: 1981

NHTSA NO.: R & D COLOR: Green

ENGINE DATA: TYPE: Transverse CYLINDERS: 4 DISPLACEMENT 1700 cc

TRANSMISSION DATA: 4 Speed Manual

DATE VEHICLE RECEIVED: 9/25/84 ODOMETER READING: 44108

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

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

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: 11/80

GVWR: 2822 LBS.,

GAWR: FRONT 1609 LBS., REAR 1278 LBS.

VEHICLE TIRE DATA

RECOMMENDED COLD TIRE PRESSURE: FRONT 32 psi; REAR 32 psi

TIRES ON VEHICLE (MFGR. & LINE, SIZE): LRR 155 SR 13 M/S

BIAS PLY, BELTED, OR RADIAL: Radial

PLY RATING 4

IS SPARE TIRE "SPACE SAVER"? No

IS SPARE TIRE STANDARD EQUIPMENT? Yes

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

RIGHT FRONT	655	LBS	RIGHT REAR	380	LBS.
LEFT FRONT	645	LBS	LEFT REAR	380	LBS.
TOTAL FRONT WEIGHT	1300		LBS. (63.1 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	760		LBS. (36.9 % OF TOTAL VEHICLE WEIGHT)		
TOTAL DELIVERED WEIGHT	2060		LBS.		

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE:	RF 24 5/8	;LF 24 15/16	;RR 24 3/16	;LR 24 5/16
PRE-TEST ATTITUDE:	RF 23 5/16	;LF 23 1/2	;RR 21	;LR 21 1/4
POST-TEST ATTITUDE	RF 23 3/4	;LF 24	;RR 21 1/8	;LR 22 7/8

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

RIGHT FRONT	725	LBS	RIGHT REAR	550	LBS.
LEFT FRONT	675	LBS.	LEFT REAR	600	LBS.
TOTAL FRONT WEIGHT	1400		LBS. (54.9 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	1150		LBS. (45.1 % OF TOTAL VEHICLE WEIGHT)		
TOTAL TEST WEIGHT	2550		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: No

FUEL INJECTION: Yes

DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? DNA

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

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

 2 REAR

CARGO LOAD 135 LBS. 4 TOTAL

TOTAL 735 LBS.

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

TEST CONDITIONS

TEST NUMBER: 841008

DATE OF TEST: October 8, 1984

TIME OF TEST: 14:10

WIND VELOCITY: 3-6 mph 162° SE

HUMIDITY: NA

AMBIENT TEMPERATURE AT IMPACT AREA: 63° F

TEMPERATURE IN OCCUPANT COMPARTMENT 72° F

SUBJECT VEHICLE DATA

	<u>ACTUAL</u>	<u>INTENDED</u>
VEHICLE TEST WEIGHT (LBS.)	2550	2543
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>MDB Face Plate Pillar, Roof Front Passenger Head Rest</u>	<u>Side Header, MDB Face Plate Pillar</u>
Chest	<u>Inner Door Panel</u>	<u>Left Rear Quarter Panel</u>
Abdomen	<u>Inner Door Panel</u>	<u>Left Rear Quarter Panel</u>
Left Knee	<u>Inner Door Panel, Lower Dash</u>	<u>Left Rear Quarter Panel</u>
Right Knee	<u>Lower Dash, Left Knee</u>	<u>Left Knee</u>

DOOR OPENING:

	LEFT	RIGHT
Front	<u>DNA*</u>	<u>Easy</u>
Rear	<u>DNA</u>	<u>DNA</u>

SEAT MOVEMENT:

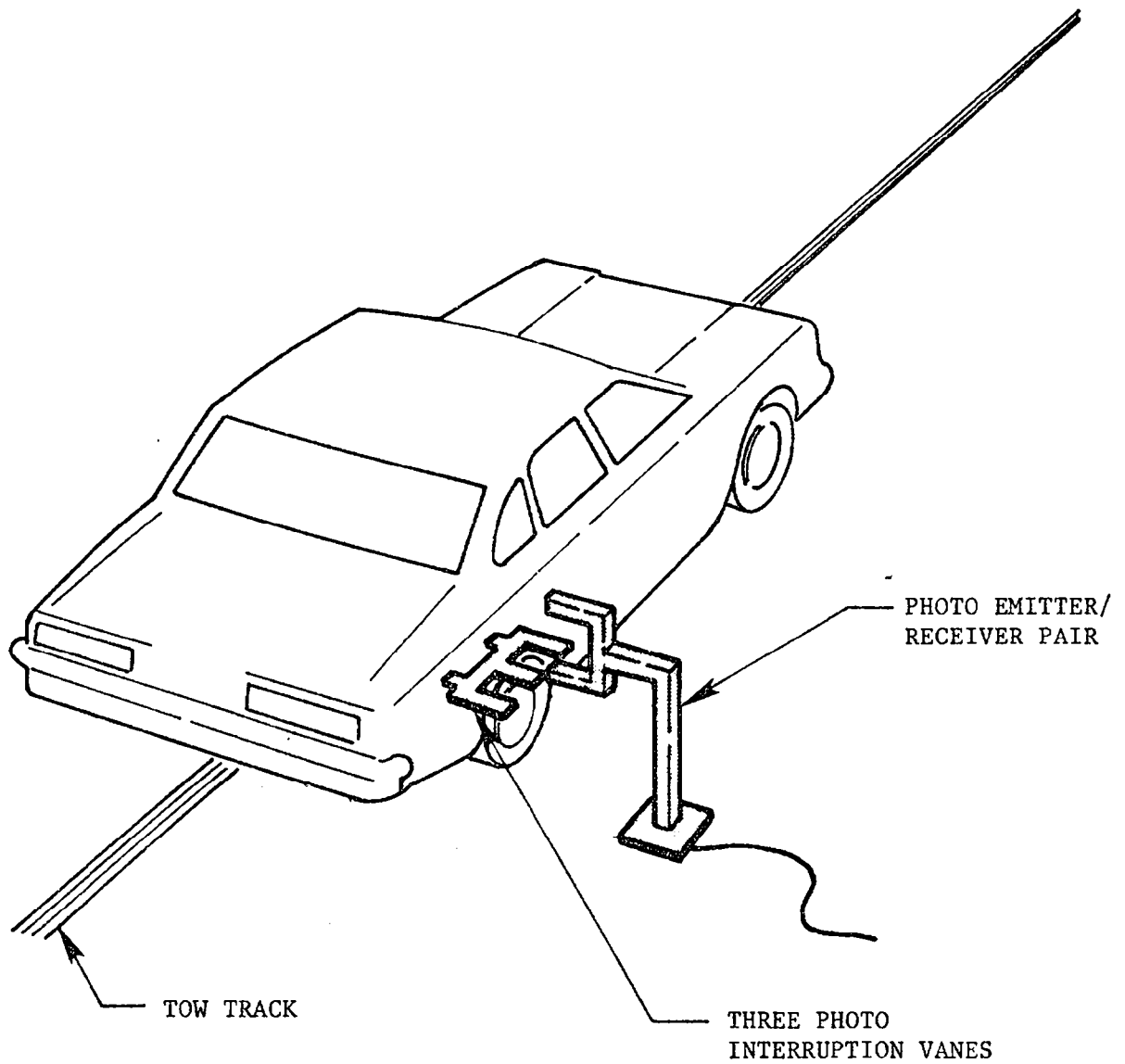
	SEAT BACK FAILURE	SEAT SHIFT
Front	<u>Yes</u>	<u>Yes</u>
Rear	<u>No</u>	<u>No</u>

GLAZING DAMAGE: Left side windows shattered, windshield cracked on
driver's side.

OTHER NOTABLE IMPACT EFFECTS:

*The driver's door was to remain closed for subsequent door opening effort studies.

IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane is located two inches before impact.

The vanes have one foot spacing.

VEHICLE TEST WEIGHT CALCULATION

$$\begin{aligned}\text{Test Weight} &= \text{Unloaded Delivered Weight}^* + \\ &\quad \text{Number of Dummies} \times 174 \text{ lbs.} + \\ &\quad \text{Cargo Weight} \\ &= 2060 + 2 \times 174 + 135 \text{ lbs.} \\ &= 2543 \text{ lbs.}\end{aligned}$$

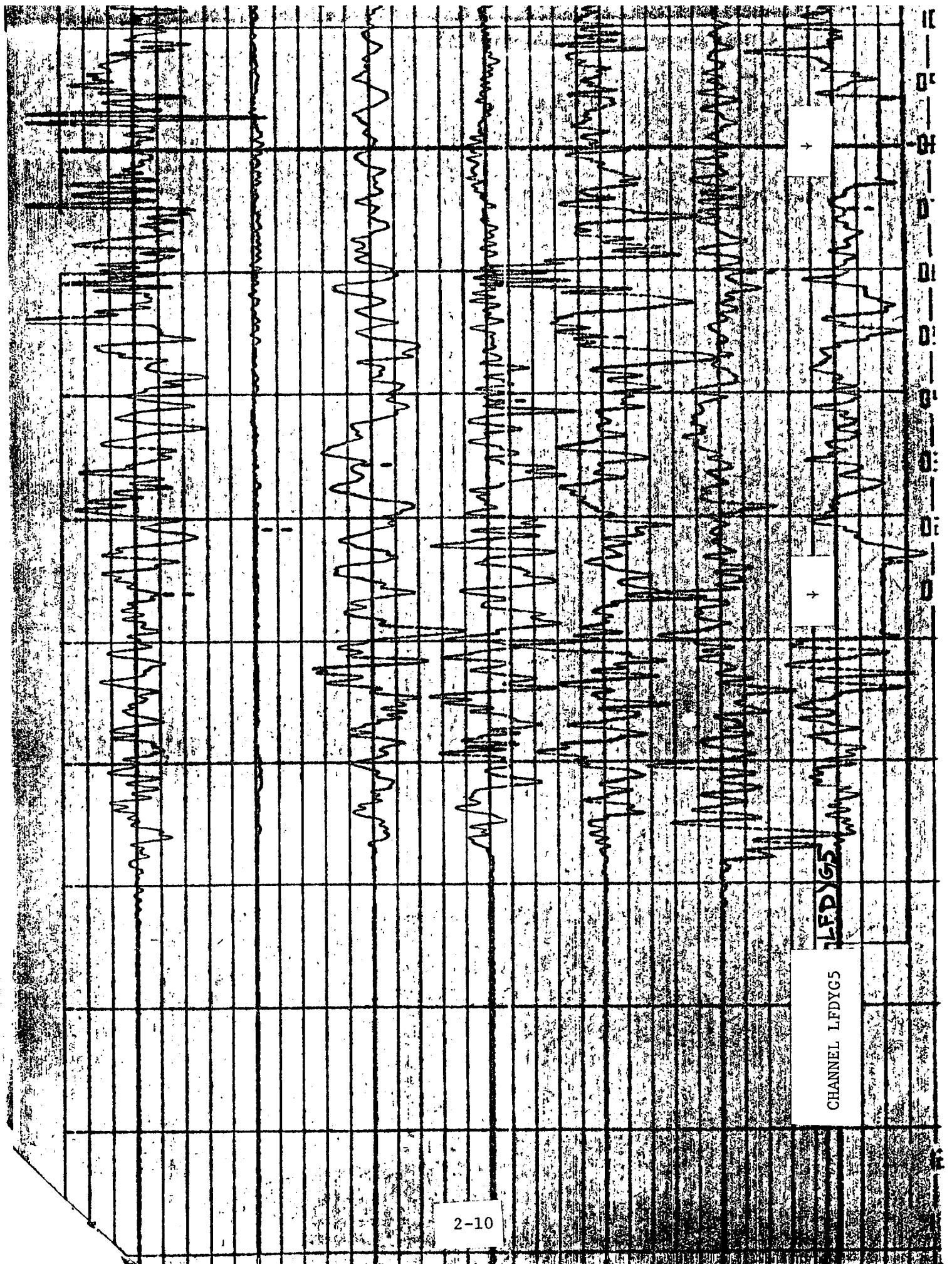
To achieve test weight, the battery, starter and alternator were removed and 2.0 gallons of Stoddard Solvent were added in the fuel tank. The weight of the test vehicle was measured by placing each wheel on a Loadmeter Corporation Hiway Loadometer.

$$\begin{aligned}\text{*Unloaded Delivered Weight} &= \text{Measured Weight} + \text{Estimated 10 Gallons Fuel} \\ &= 2000 + 60 \text{ lbs} \\ &= 2060 \text{ lbs}\end{aligned}$$

TEST ANOMALIES

Data from the passenger's redundant lower left rib, LLRYGC, was lost due to a faulty accelerometer.

There was a loose connection to the left front door accelerometer in Position 11, LFDYG5. See the following o'graph.



CHANNEL LFY65

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

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.

REAR PASSENGER DSP

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:

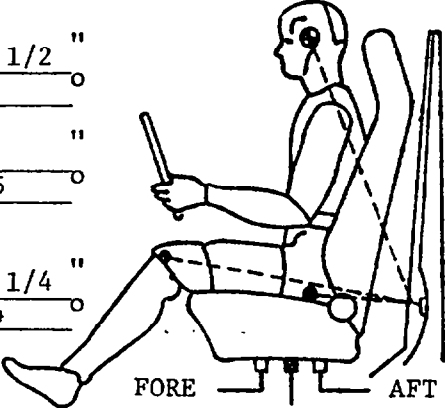
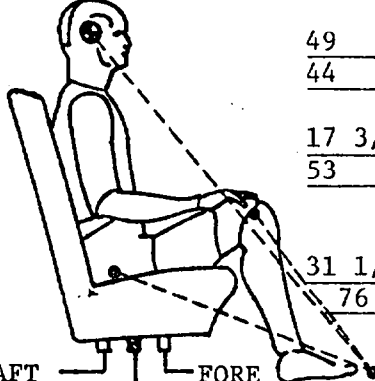
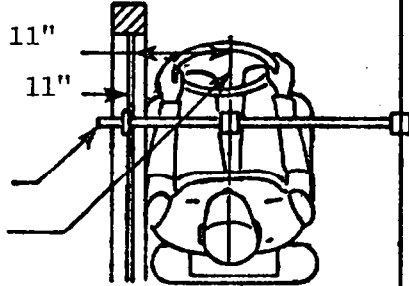
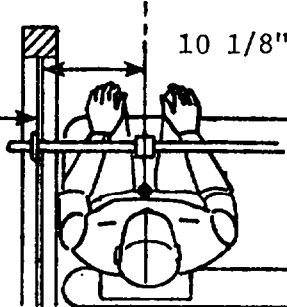
1. N. Echeverria

2. B. Fishbaugh

3. B. Miller

POSITIONING DATE: 10/8/84

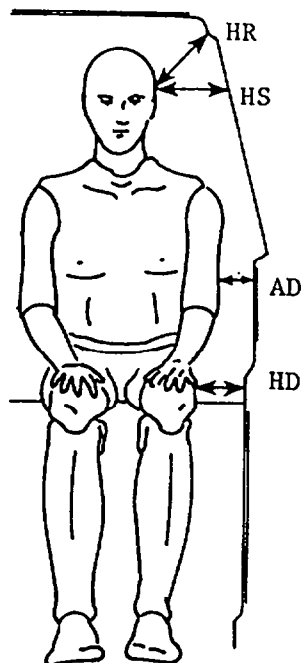
AMBIENT TEMP.: 70° F. TIME: 8:50

DRIVER DUMMY # 06 HEAD <u>20 1/2</u> " TARGET*<u>23</u> ° KNEE <u>32</u> " JOINT <u>105</u> ° APPROX. "H" <u>18 1/4</u> " POINT <u>124</u> °  FORE MIDPOINT AFT	REAR PASSENGER DUMMY # U02 <u>49</u> "HEAD <u>44</u> ° TARGET** <u>17 3/4</u> "KNEE <u>53</u> ° JOINT APPROX. <u>31 1/4</u> " "H" <u>76</u> ° POINT  AFT MIDPOINT FORE
DOOR GLASS HEIGHT*** <u>11"</u> <u>11"</u> LATERAL BAR ADJUSTABLE POINTER  DRIVER DUMMY # 06	DOOR GLASS HEIGHT <u>10 1/8"</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.

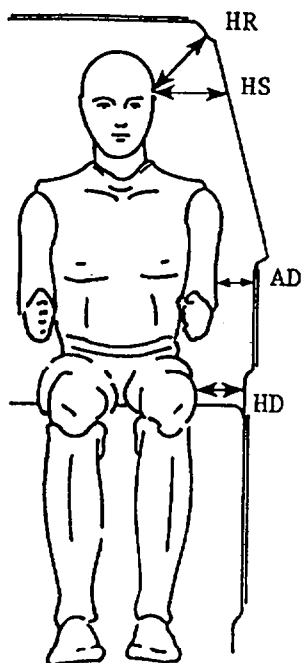
***Door glass height is equal on the right and left side of vehicle at dummy nose level.



DRIVER
06

PASSENGER
U02

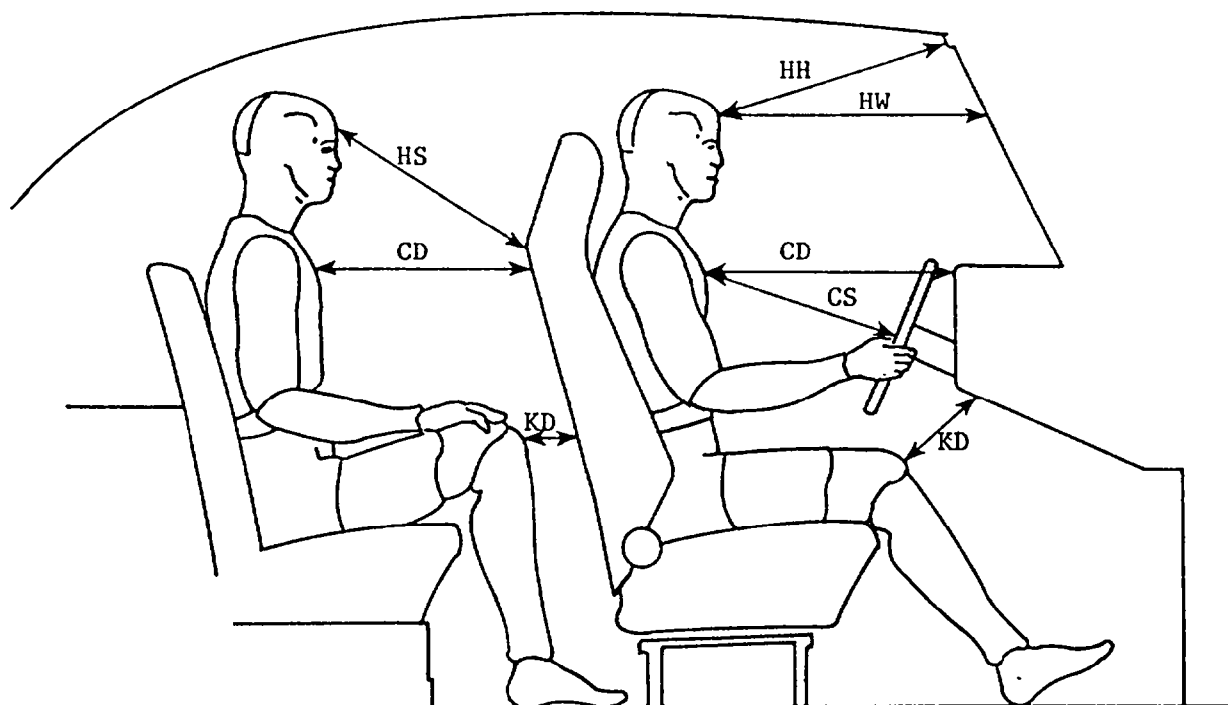
HR	6 3/8	3 3/4*
HS	7 1/2	6 1/2
AD	1*	0*
HD	2 1/2*	2 1/4*



ALL MEASUREMENTS IN INCHES

*Measurements were made from the dummy to the modified padding.

DUMMY LATERAL CLEARANCE DIMENSIONS



DRIVER

PASSENGER

06

U02

HH	12 1/16	DNA
HW	17 3/4	DNA
HS	DNA	23
CD	18 7/8	17 3/8
CS	11 9/16	DNA
KDL	4 3/4	4 1/2
KDR	4 7/16	5 5/16

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 and struck the left pillar of the barrier. Travelling to the right side of the car, buttocks first, the dummy lifted, hitting the roof with the length of the back. On rebound the driver twisted towards the left, striking the top of the passenger seat with the rib cage. The dummy then rocked back towards the driver's side of the car with the head and shoulders between the front seats facing the rear. Final resting position showed the driver with the buttocks in the front passenger window and the torso leaning left. The head remained between the two front seats, extending into the rear compartment.

PASSENGER

During impact, the left rear quarter panel caved in, striking the passenger's hip. As the knees twisted towards the right the dummy's torso leaned left. The passenger's head then hit the left rear side header and continued travelling outside the vehicle, striking the front barrier plate. The dummy came to rest with the head outside the vehicle, the torso leaning left and the knees swung to the right.

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	20.1	19.9	19.9	19.9	19.9	20.0	20.0	20.1	20.2	20.2	20.3	X	X
H-Point	23.3	X	18.0	17.9	17.9	17.9	17.8	17.8	17.8	17.9	17.9	18.0	18.0	18.1	18.3	X
Mid Door	24.5	16.7	18.0	17.8	17.9	17.8	17.8	17.8	17.8	17.8	17.8	17.9	17.9	18.0	18.2	17.4
Window Sill	35.0	20.3	19.9	19.8	19.6	19.5	19.4	19.4	19.4	19.4	19.5	19.5	19.6	19.8	19.8	20.0
Window Top	54.5	X	X	X	X	X	27.5	27.2	27.1	27.1	27.1	27.2	27.3	27.5	27.7	28.0

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

Axle Height	11.5	X	X	20.5	25.9	27.3	28.2	28.3	28.5	28.8	35.4	32.5	29.1	25.1	X	X
H-Point	23.3	X	22.0	22.0	39.9	40.9	39.9	39.8	39.1	38.5	37.2	***	33.1	30.3	27.1	X
Mid Door	24.5	20.3	21.9	21.5	39.0	39.1	38.9	38.4	38.4	37.5	36.8	***	33.4	30.5	27.1	24.6
Window Sill	35.0	20.4	20.3	20.3	32.0	34.2	33.1	31.2	29.9	29.8	29.8	***	29.7	25.4	22.1	20.6
Window Top	54.5	X	X	X	X	X	27.5	27.3	27.1	27.1	27.1	27.1	27.3	27.4	27.6	28.0

STATIC CRUSH (IN)

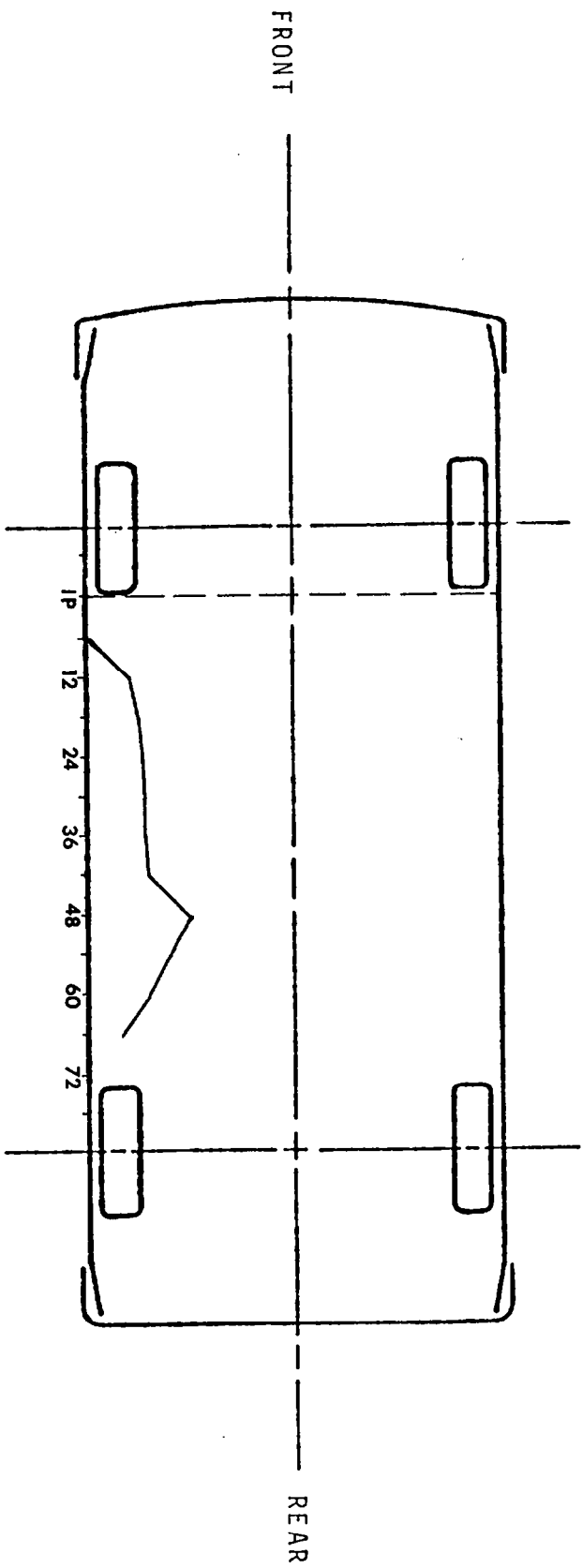
Axle Height	11.5	X	X	0.4	6.0	7.4	8.3	8.4	8.5	8.8	15.3	12.3	8.9	4.8	X	X
H-Point	23.3	X	4.0	4.1	22.0	23.0	22.1	22.0	21.3	19.1	19.3	***	15.1	12.2	8.8	X
Mid Door	24.5	3.6	3.9	3.7	21.1	21.3	21.1	20.6	20.6	19.7	19.0	***	15.5	12.5	8.9	7.2
Window Sill	35.0	0.1	0.4	0.5	12.4	14.7	13.7	11.8	10.5	10.4	10.3	***	10.1	5.6	2.3	0.6
Window Top	54.5	X	X	X	X	X	0.0	0.1	0.0	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.0

* 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

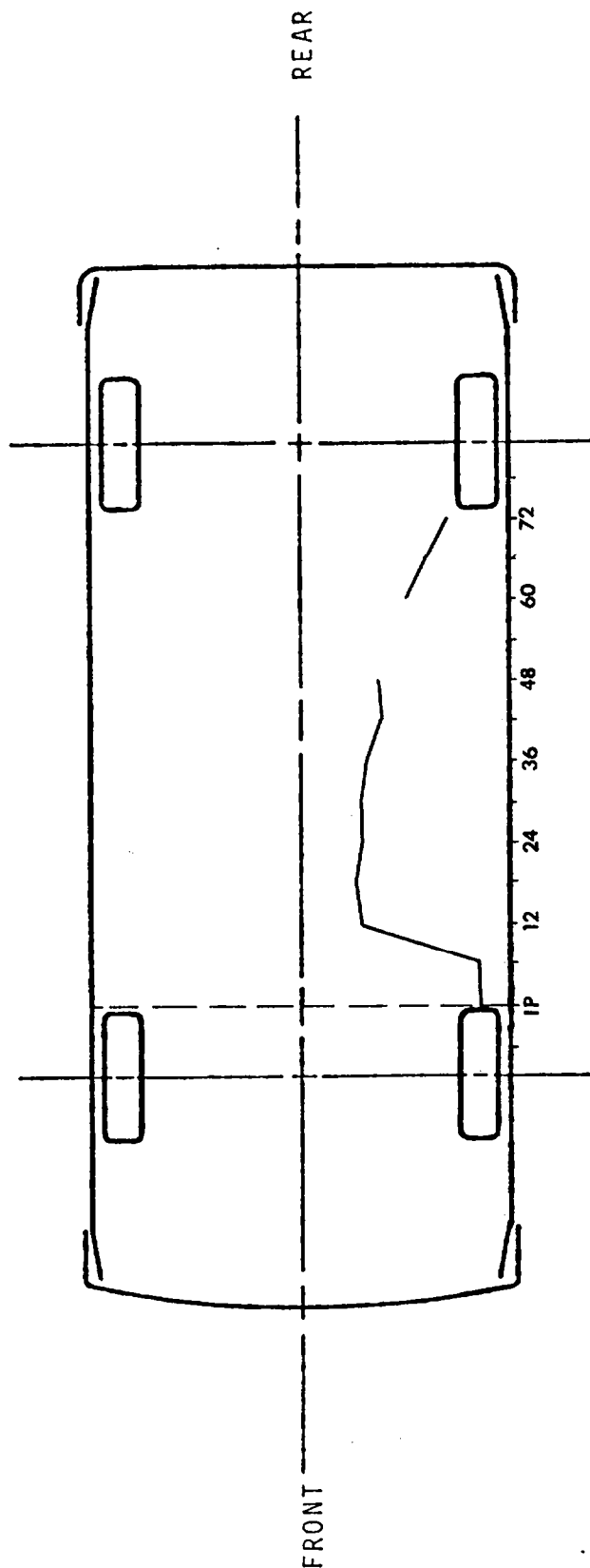


PROFILE LEVEL EQUALS AXLE HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 154.5"
Width of Car = 63.4"

Maximum Crush = 15.3"
Approximate Length of Crush = 60.0"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

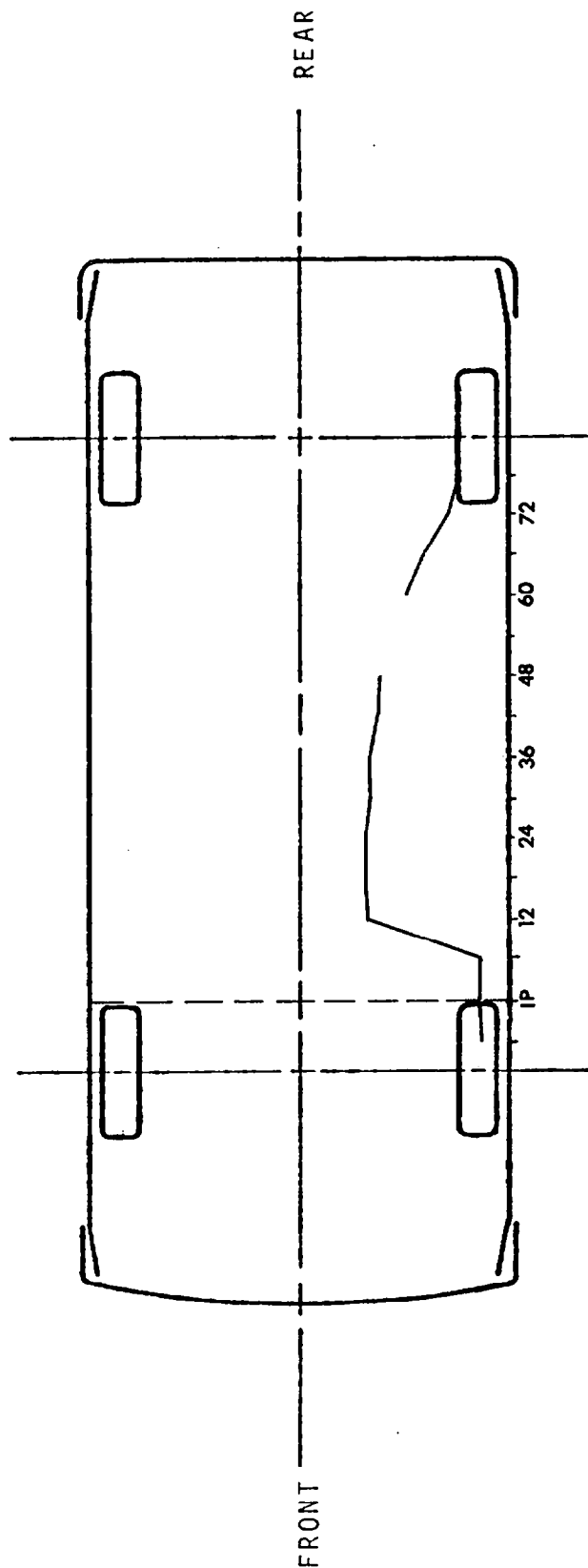


PROFILE LEVEL EQUALS H-POINT HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 154.5"
Width of Car = 63.4"

Maximum Crush = 23.0"
Approximate Length of Crush = 72.0"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

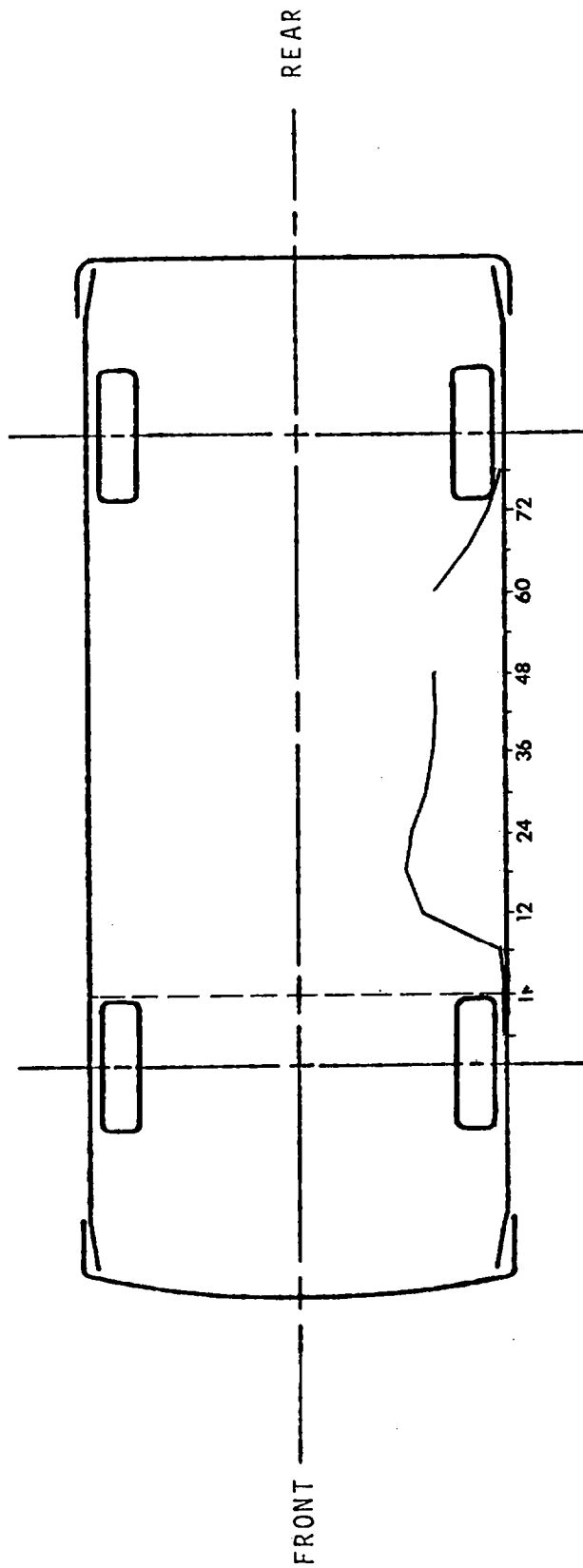


PROFILE LEVEL EQUALS MID-DOOR HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 154.5"
Width of Car = 63.4"

Maximum Crush = 21.3"
Approximate Length of Crush = 84"

VEHICLE EXTERIOR STATIC CRUSH PROFILE

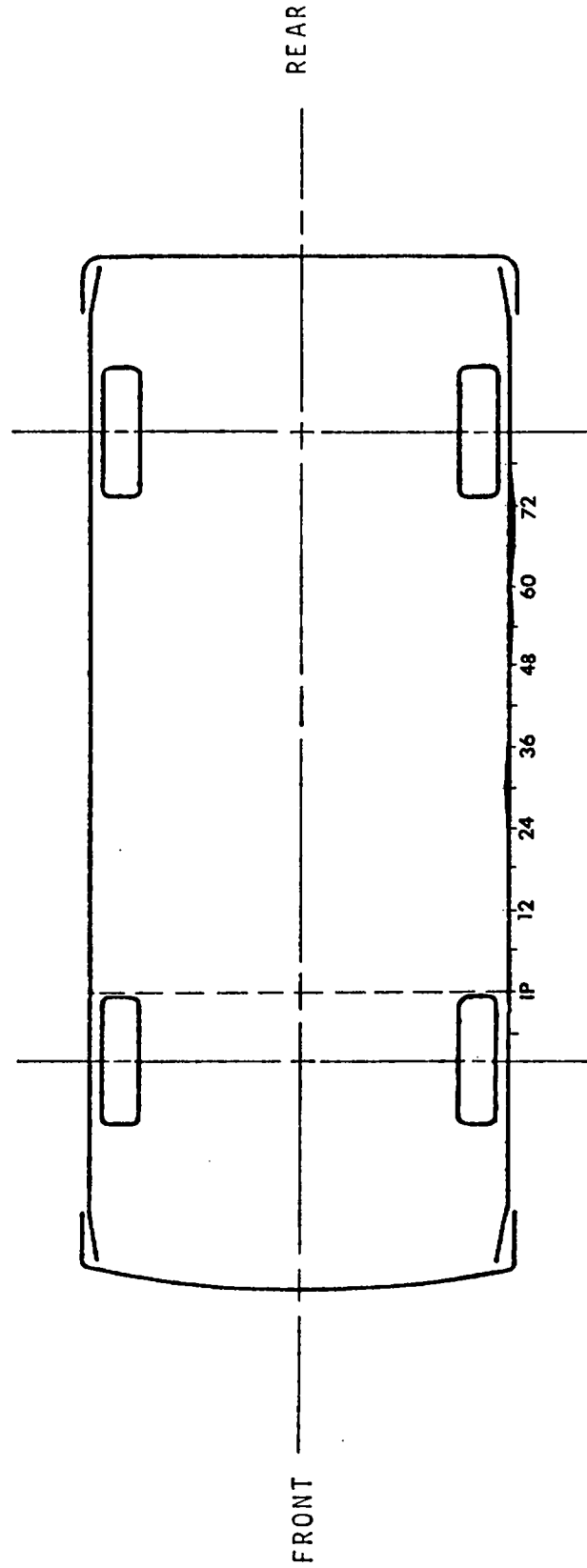


PROFILE LEVEL EQUALS WINDOW SILL HEIGHT
IP EQUALS PROJECTED IMPACT POINT

Length of Car = 154.5"
Width of Car = 63.4"

Maximum Crush = 14.7"
Approximate Length of Crush = 84"

VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW TOP HEIGHT
 IP EQUALS PROJECTED IMPACT POINT

Length of Car = 154.5"

Width of Car = 63.4"

Maximum Crush = .1"

Approximate Length of Crush = 54"

SIDE IMPACT DUMMY DATA SUMMARY

	DRIVER DUMMY				PASSENGER DUMMY			
	POSITIVE		NEGATIVE		POSITIVE		NEGATIVE	
	DIRECTION*		DIRECTION**		DIRECTION*		DIRECTION**	
	MAX (g)	TIME (msec)	MAX (g)	TIME (msec)	MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
HEAD ACCELERATION								
LONGITUDINAL	---	--- δ	---	--- δ	123.20	243.00	32.47	76.75
LATERAL	---	--- δ	---	--- δ	58.47	79.88	37.46	243.13
VERTICAL	---	--- δ	---	--- δ	45.87	87.75	60.74	75.88
RESULTANT		---	---	δ		133.14 @	243.00	
HIC	---	---	---	δ	590.61	from 70.50 to 99.50		
CHEST ACCELERATION								
UPPER SPINE								
LONGITUDINAL	34.93	99.37	57.64	83.75	5.85	151.25	37.52	94.38
LATERAL (P)***	93.19	52.50	43.03	45.00	67.58	78.75	4.49	69.38
LATERAL (R)***	98.34	52.50	42.90	45.00	69.90	78.75	5.79	68.75
VERTICAL	32.72	41.25	26.48	47.50	11.85	65.00	28.69	84.38
RESULTANT (P)		94.95 @	52.50			75.52 @	79.38	
RESULTANT (R)		100.02 @	52.50			77.81 @	79.38	
DELTA V (MPH)****		22.0 @	103.75 (P)			25.6 @	151.25 (P)	
		25.6 @	104.38 (R)			26.7 @	150.62 (R)	
LOWER SPINE								
LONGITUDINAL	25.54	55.00	27.46	90.62	14.18	85.00	36.08	70.63
LATERAL (P)	114.19	46.25	27.30	82.50	102.78	71.88	26.45	95.63
LATERAL (R)	116.25	46.25	26.57	82.50	103.32	71.88	24.99	95.63
VERTICAL	34.37	41.87	13.74	80.63	31.76	75.00	13.81	100.63
RESULTANT (P)		115.20 @	46.25			109.62 @	71.88	
RESULTANT (R)		117.24 @	46.25			110.13 @	71.88	
DELTA V (MPH)		30.7 @	67.50 (P)			30.0 @	90.62 (P)	
		32.2 @	68.13 (R)			31.6 @	91.25 (R)	
LEFT UPPER RIB								
LATERAL (P)	83.14	46.88	37.93	52.50	56.88	85.00	2.81	53.75
LATERAL (R)	90.63	47.50	42.71	52.50	53.61	85.00	1.45	53.75
DELTA V (MPH)		---	@ --- δ			35.2 @	132.50 (P)	
		---	@ --- δ			35.1 @	132.50 (R)	
LEFT LOWER RIB								
LATERAL (P)	63.18	55.63	21.28	90.00	88.39	76.88	1.92	51.25
LATERAL (R)	70.97	47.50	22.81	101.25	---	--- Y	---	--- Y
DELTA V (MPH)		32.6 @	83.75 (P)			34.9 @	118.75 (P)	
		34.3 @	83.13 (R)			---	@ --- Y	
PELVIS ACCELERATION								
LONGITUDINAL	17.41	95.50	80.41	42.88	17.42	97.00	72.18	68.75
LATERAL	271.94	41.25	57.56	29.00	209.77	67.88	20.19	53.25
VERTICAL	79.02	40.75	16.20	28.75	53.40	70.50	8.69	63.75
RESULTANT		286.86 @	41.25			220.41 @	68.00	
DELTA V (MPH)		35.2 @	82.50			36.6 @	89.13	

SIDE IMPACT DUMMY DATA SUMMARY CONTD

	DRIVER DUMMY				PASSENGER DUMMY			
	POSITIVE		NEGATIVE		POSITIVE		NEGATIVE	
	DIRECTION*		DIRECTION**		DIRECTION*		DIRECTION**	
	MAX (in)	TIME (msec)	MAX (in)	TIME (msec)	MAX (in)	TIME (msec)	MAX (in)	TIME (msec)
RIB DEFLECTION †	0.77	83.63	0.15	52.00	0.93	100.38	0.14	51.88

* 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

δ See Data Plots

γ See TEST ANOMALIES

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	23.6	9.0				
	(LATERAL)	$\Delta V = -8.7 \text{ mph @ } 149.88 \text{ msec}$			0.56	133.00	8.09	102.25
	(VERTICAL)	$\Delta V = 10.2 \text{ mph @ } 149.88 \text{ msec}$			19.44	71.75	5.46	64.63
	(RESULTANT)				6.31	86.13	7.78	45.88
						20.73 @ 71.75		
2	RIGHT SILL AT REAR SEAT (LONGITUDINAL)	61.6	23.6	10.5				
	(LATERAL)	$\Delta V = -6.6 \text{ mph @ } 149.88 \text{ msec}$			1.23	132.38	6.64	103.00
	(VERTICAL)	$\Delta V = 16.9 \text{ mph @ } 149.88 \text{ msec}$			21.16	83.25	4.17	145.00
	(RESULTANT)				5.96	86.88	6.40	45.13
						21.72 @ 83.50		
3	REAR DECK OVER AXLE (LONGITUDINAL)	32.0	0.0	7.5				
	(LATERAL)	$\Delta V = -11.9 \text{ mph @ } 149.88 \text{ msec}$			5.23	113.13	20.64	64.50
	(VERTICAL)	$\Delta V = 23.8 \text{ mph @ } 149.88 \text{ msec}$			27.04	79.50	3.44	146.25
	(RESULTANT)				11.77	52.50	21.22	65.88
						36.03 @ 65.38		
4	LEFT SILL AT REAR SEAT (LATERAL)	61.4	-23.8	10.8				
		$\Delta V = \text{---} \text{ --- } \tau$			52.14	86.25	67.55	92.50
5	LEFT SILL AT FRONT SEAT (LATERAL)	83.5	-23.3	9.5				
		$\Delta V = 8.8 \text{ mph @ } 52.00 \text{ msec}$			49.56	49.63	37.42	75.25
6	LEFT FRONT DOOR CENTERLINE (LATERAL)	80.8	-25.9	23.1				
		$\Delta V = 7.9 \text{ mph @ } 62.13 \text{ msec}$			106.70	51.38	103.20	44.63
7	RIGHT REAR COMPARTMENT (LONGITUDINAL)	31.0	16.0	14.8				
					3.76	131.38	8.90	69.63
8	MIDREAR OF LEFT FRONT DOOR (LATERAL)	61.0	-25.8	23.3				
		$\Delta V = 27.6 \text{ mph @ } 60.38 \text{ msec}$			95.08	33.63	56.56	68.50
9	UPPER LEFT FRONT DOOR CENTERLINE (LATERAL)	82.0	-25.8	32.3				
		$\Delta V = 21.8 \text{ mph @ } 50.63 \text{ msec } \tau$			107.25	51.13	85.41	58.88
10	MIDFRONT OF LEFT FRONT DOOR (LATERAL)	99.2	-25.8	22.1				
		$\Delta V = 29.4 \text{ mph @ } 24.13 \text{ msec}$			165.00	12.88	121.12	31.25
11	UPPER REAR OF LEFT REAR DOOR (LATERAL)	70.9	-25.9	32.6				
		$\Delta V = \text{---} \text{ --- } \gamma$			---	--- γ	---	--- γ

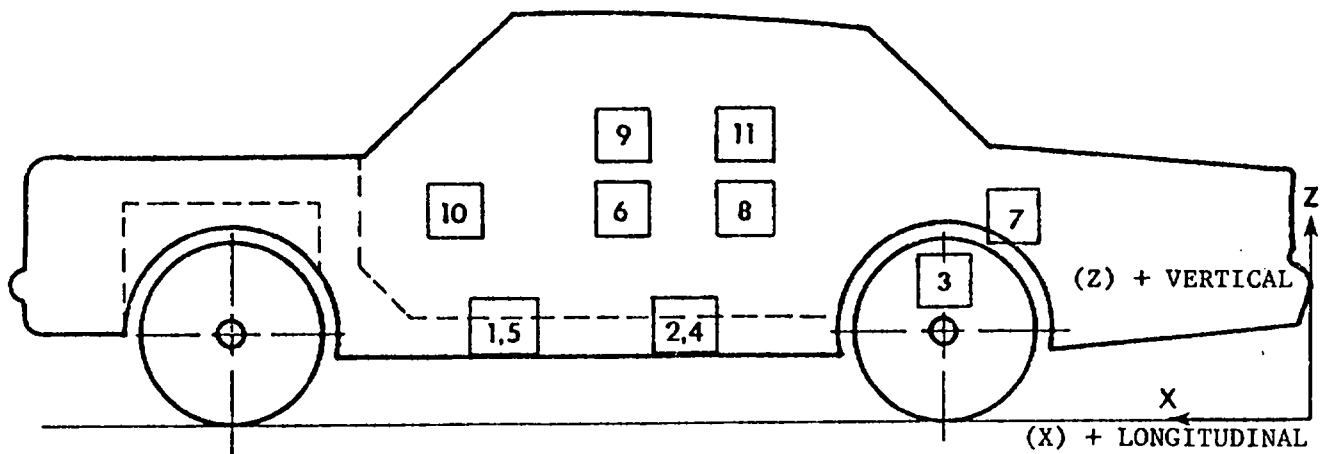
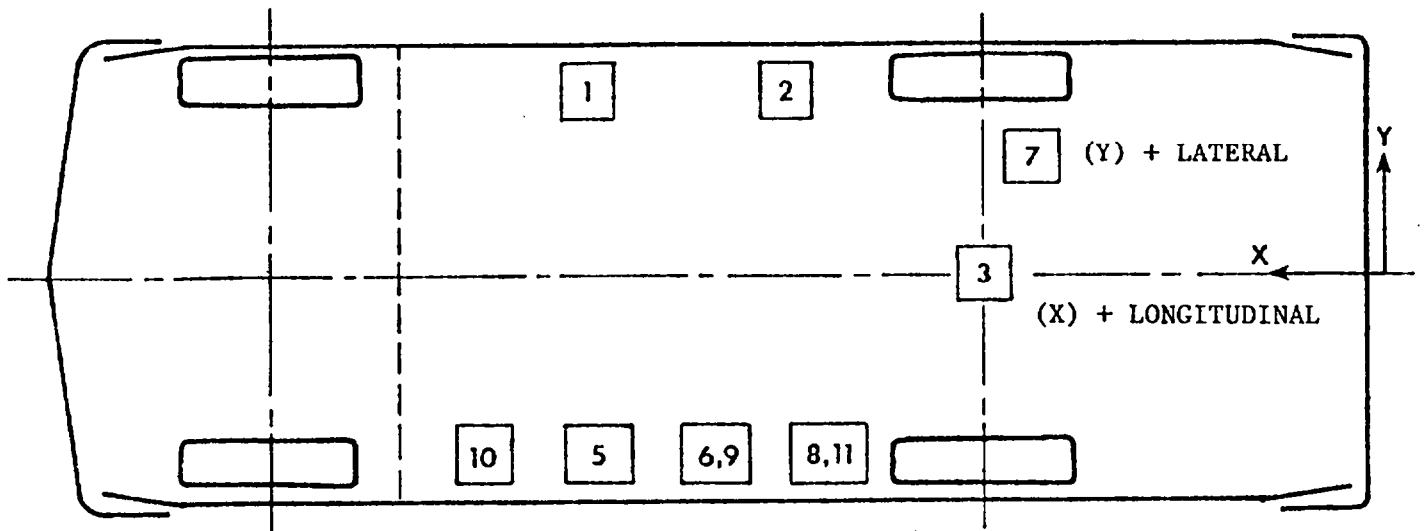
* Reference: X - Rear Bumper (+ Forward), Y - Vehicle Centerline (+ To Right),
Z - Ground Level (+ Up)

All measurements of accelerometer locations in inches.

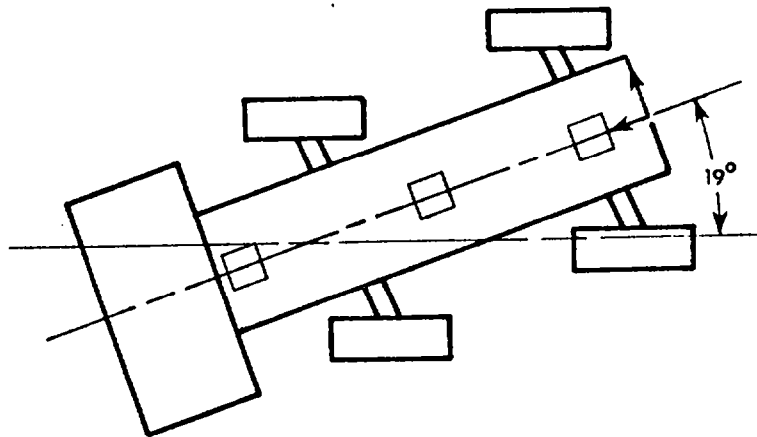
γ See TEST ANOMALIES

τ This Delta V appears unrealistic.

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)	$\Delta V = -18.2 \text{ mph @ } 149.88 \text{ msec}$			---	---	^x 13.75	73.88
	(LATERAL)	$\Delta V = -4.1 \text{ mph @ } 149.88 \text{ msec}$			1.87	145.63	5.81	101.75
	(VERTICAL)				21.37	102.50	13.37	55.75
	(RESULTANT)					22.94 @	102.38	
2	FRONT FRAME MEMBER	130.3	0.0	11.3				
	(LONGITUDINAL)	$\Delta V = -20.5 \text{ mph @ } 149.88 \text{ msec}$			---	---	^x 13.65	74.00
3	REAR FRAME MEMBER	23.3	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -16.7 \text{ mph @ } 149.88 \text{ msec}$			0.32	140.00	13.21	71.63

* 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.

^x 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	493	Vehicle dynamics
2	Overhead	Photosonic 1B	25	498	Close-up of impact point
3	Onboard MDB	Photosonic 1B	25	498	Close-up of impact point
4	Onboard MDB	Stalex	13	500	Driver kinematics
5	Ground level - right	Photosonic 1B	25	500	Overall view
6	Ground level - left	Photosonic 1B	17	493	Overall view
7	Onboard vehicle	Photosonic 1B	8	805	Driver kinematics - front view
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)
BOGXG	Accel	4-202-0001	18845	Bell Howell	5/2/84	0.237 MV/G	50 G
BOGYG	Accel	4-202-0001	18858	Bell Howell	5/2/84	0.236 MV/G	50 G
BOGZG	Accel	4-202-0001	18857	Bell Howell	5/2/84	0.239 MV/G	50 G
BFCXG	Accel	4-202-0001	18240	Bell Howell	5/2/84	0.239 MV/G	50 G
BRCXG	Accel	4-202-0001	19022	Bell Howell	5/2/84	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

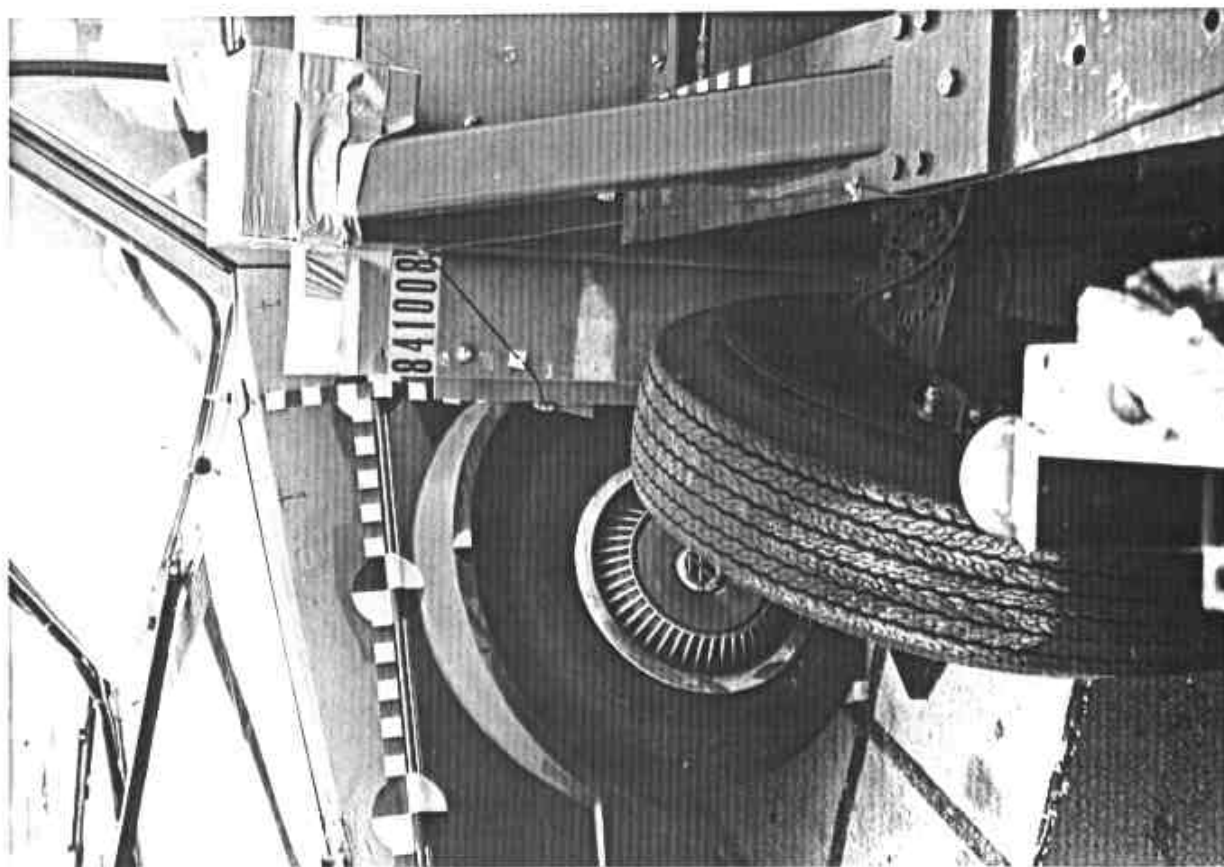


Figure A-6. PRE-TEST CLOSEUP - VIEW 2



Figure A-7. PRE-TEST CLOSEUP - VIEW 3

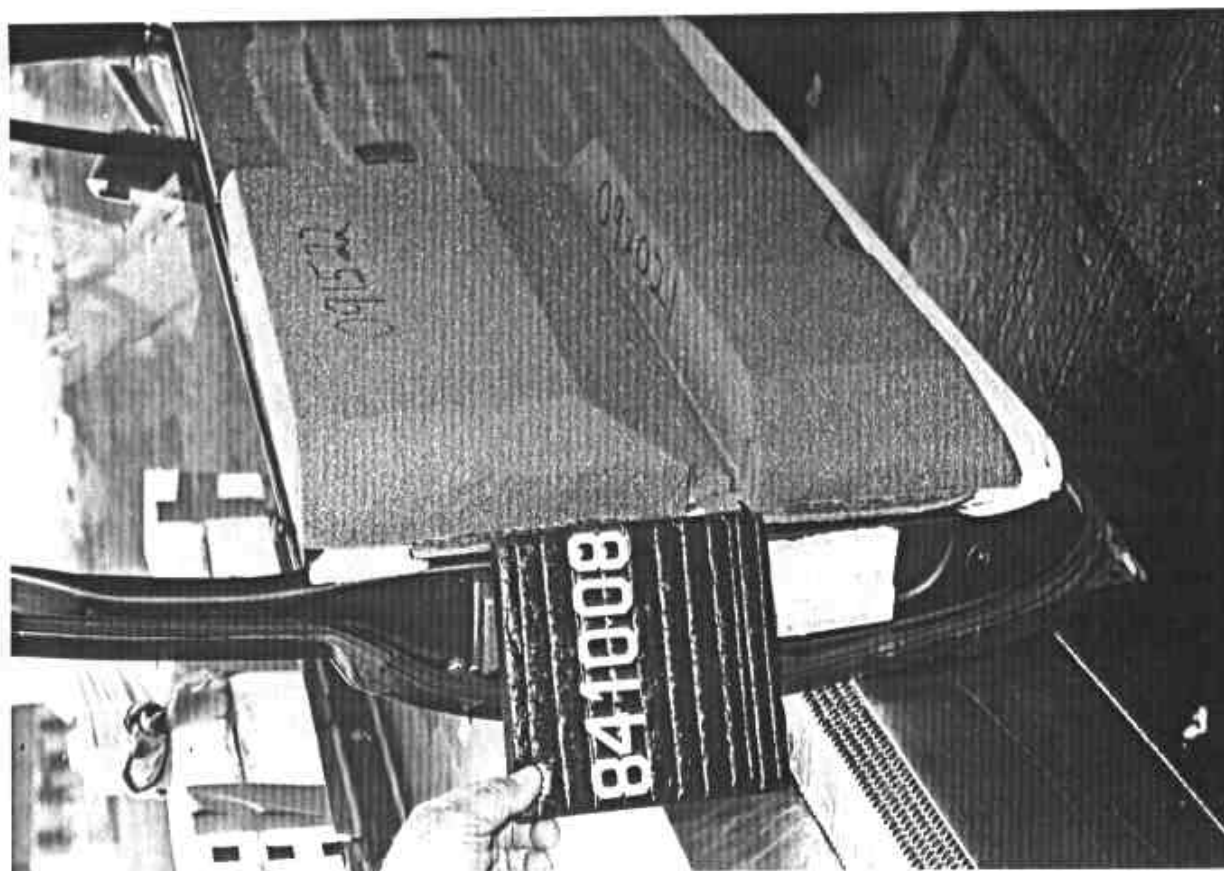


Figure A-8. PADDING MODIFICATIONS
A-5



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

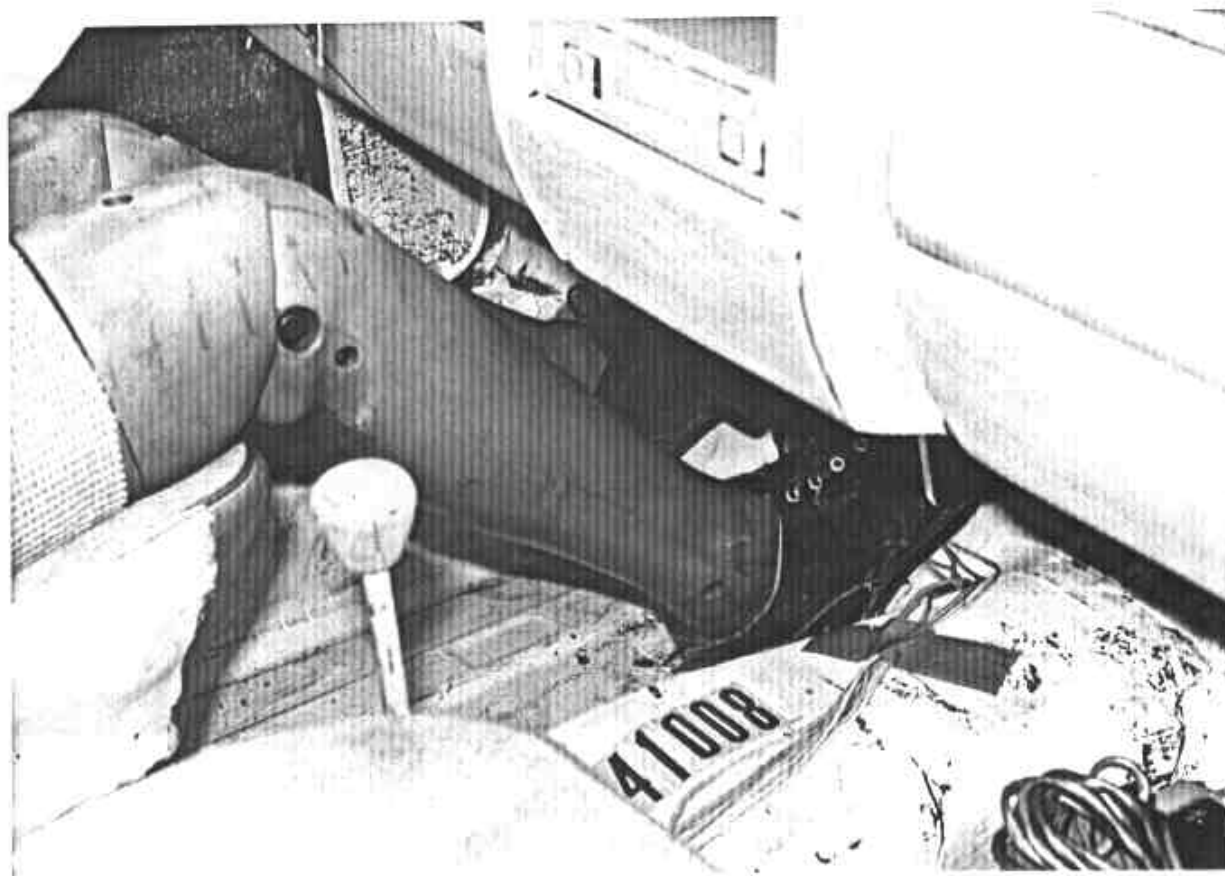


Figure A-10. PRE-TEST DRIVER DUMMY - VIEW 2

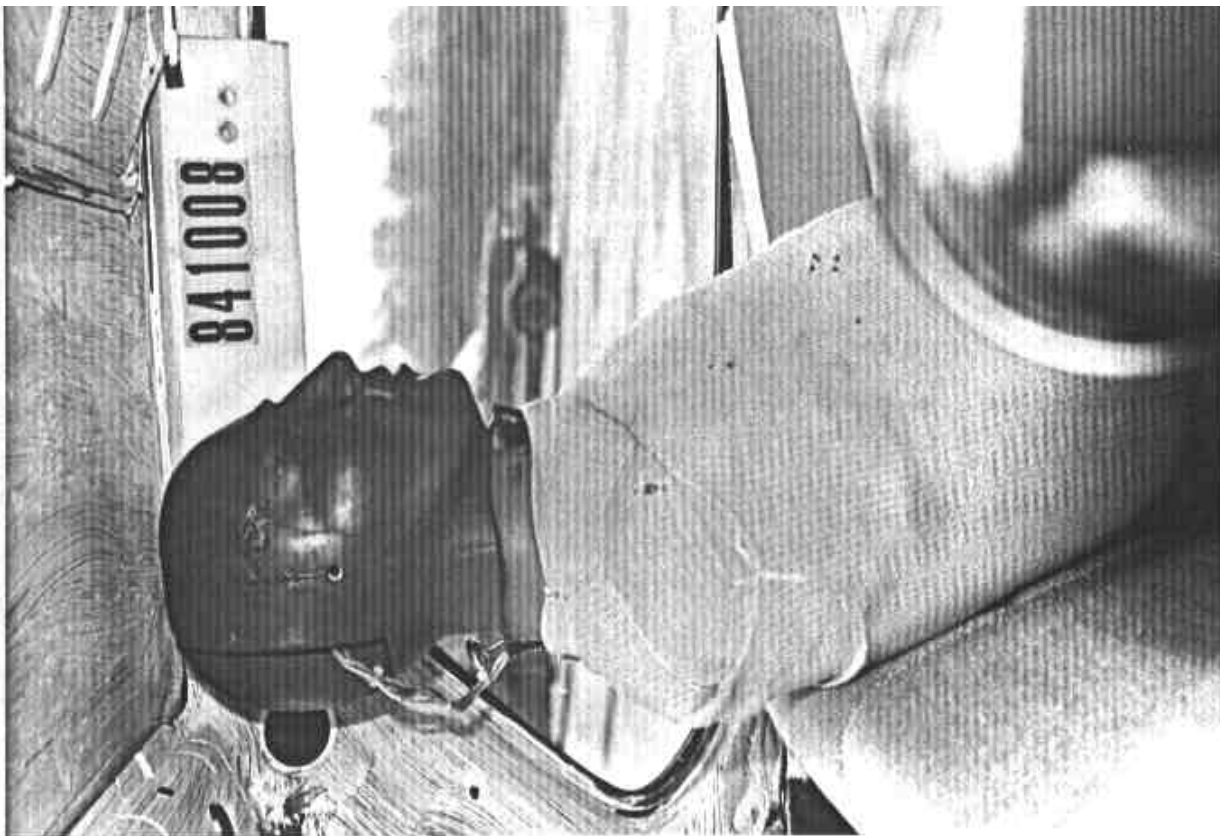


Figure A-11. PRE-TEST PASSENGER DUMMY - VIEW 1

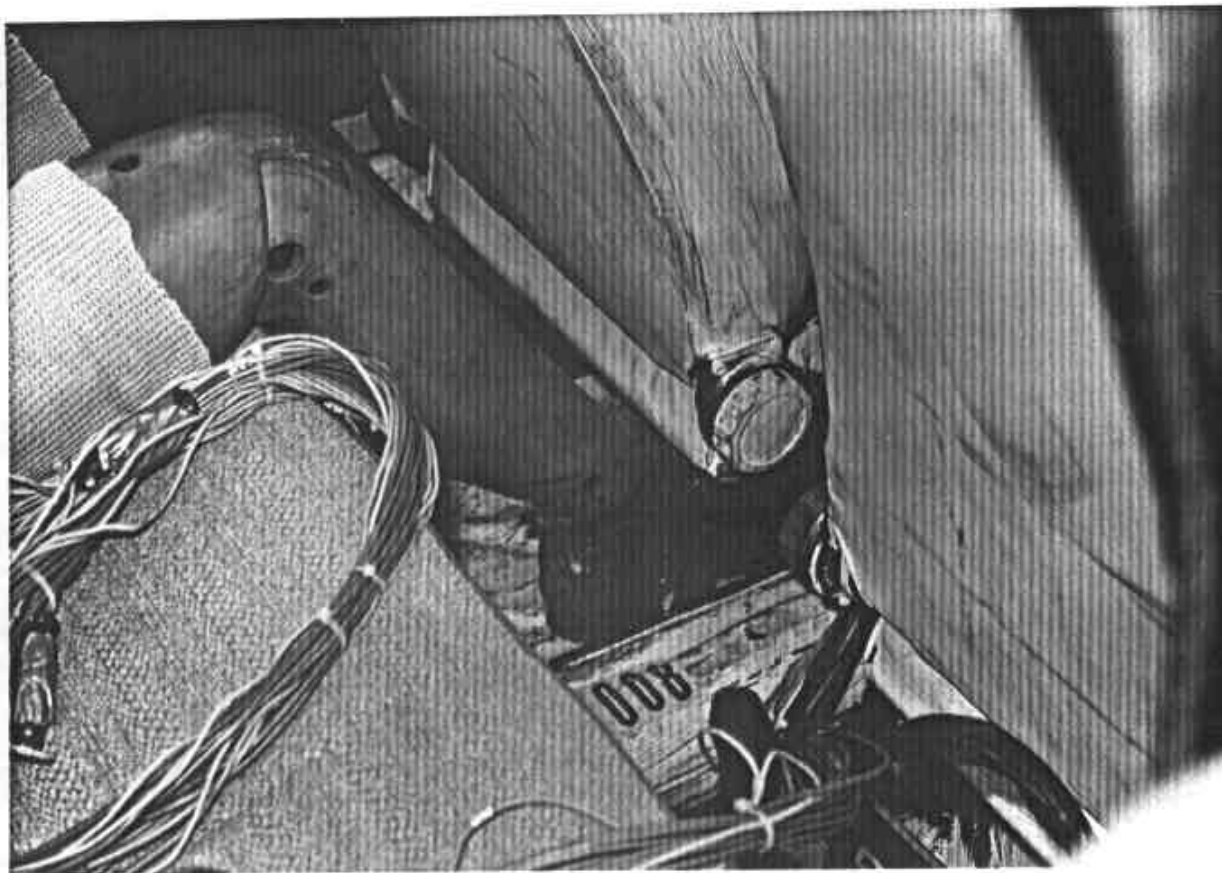


Figure A-12. PRE-TEST PASSENGER DUMMY - VIEW 2
A-7

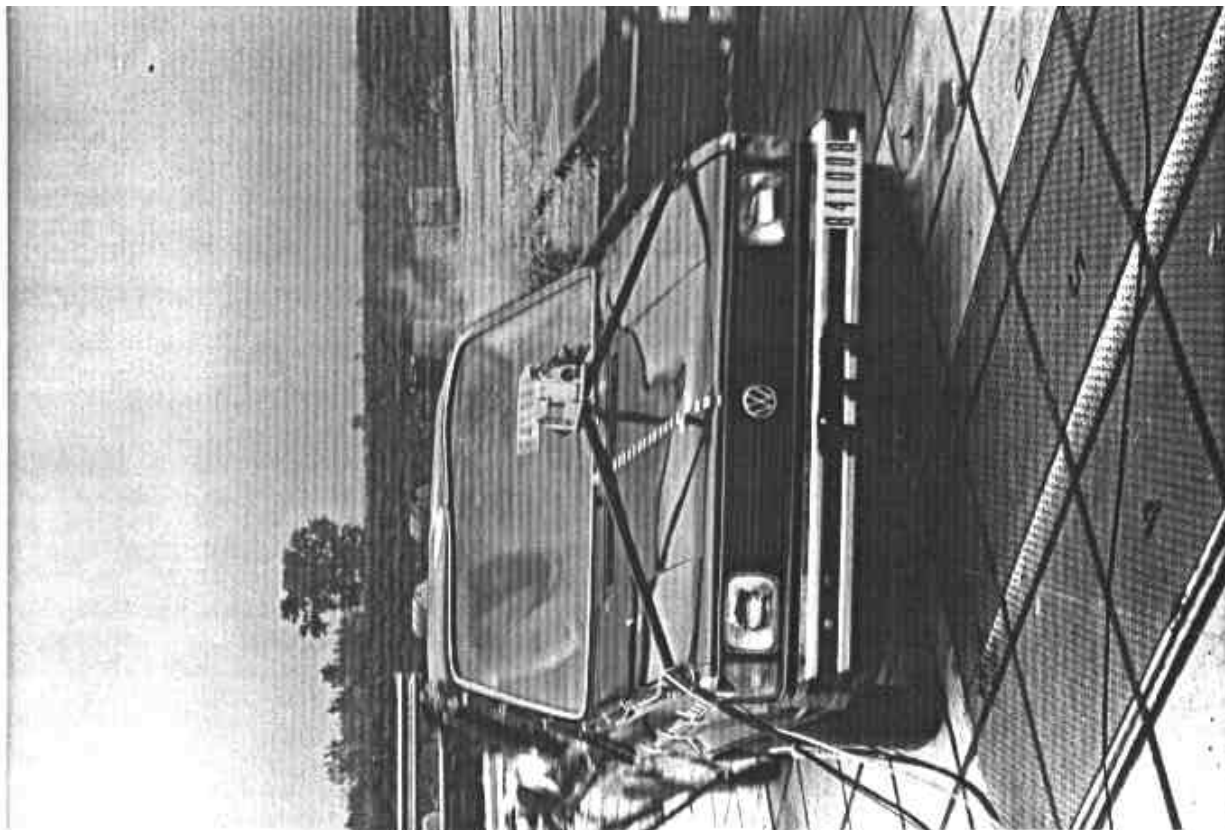


Figure A-13. CRASH EVENT PHOTOGRAPH



Figure A-14. POST-TEST OVERALL - VIEW 1
A-8



Figure A-15. POST-TEST OVERALL - VIEW 2



Figure A-16. POST-TEST OVERALL - VIEW 3



Figure A-17. POST-TEST OVERALL - VIEW 4



Figure A-18. POST-TEST DRIVER DUMMY - VIEW 1



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



Figure A-20. POST-TEST PASSENGER DUMMY - VIEW 1



Figure A-21. POST-TEST PASSENGER DUMMY - VIEW 2



Figure A-22. POST-TEST DUMMIES OVERALL
A-12



Figure A-23. POST-TEST VEHICLE DAMAGE - VIEW 1

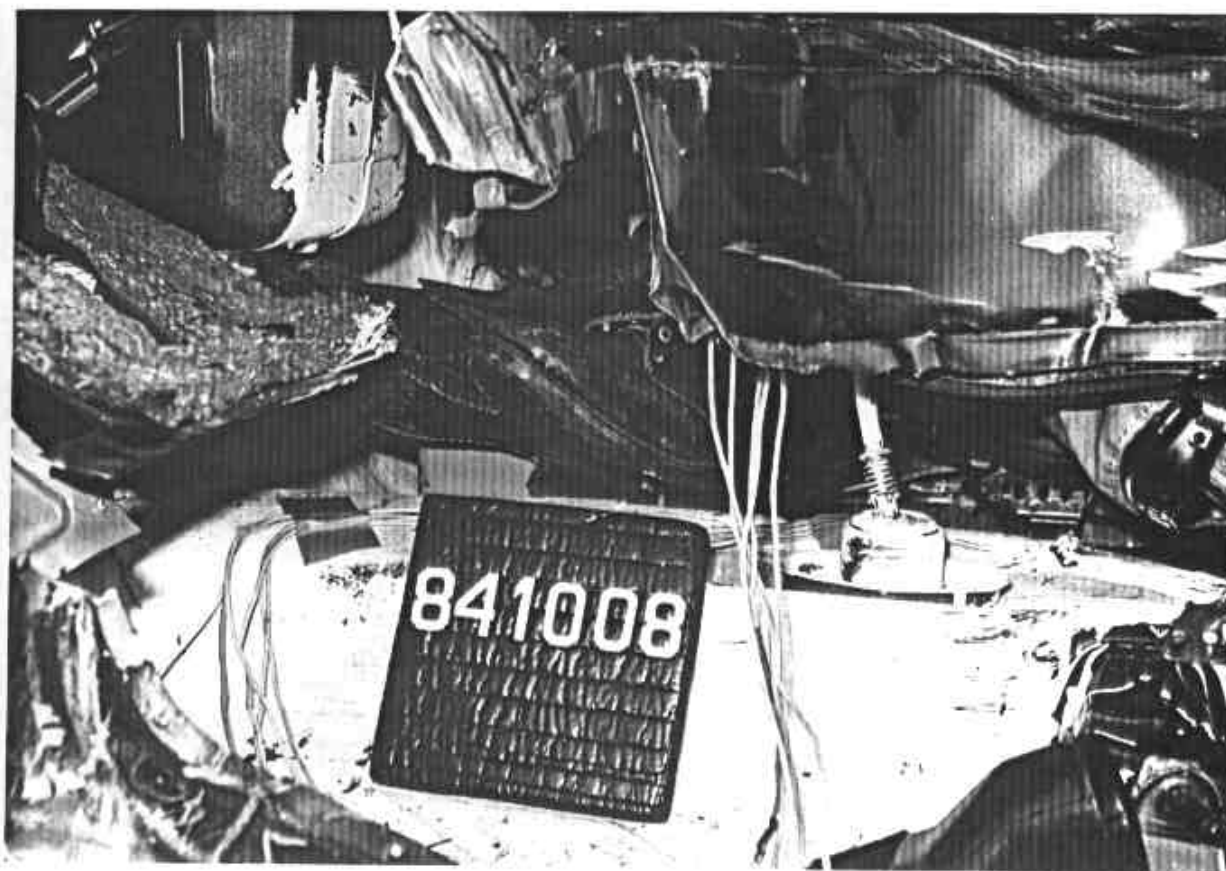


Figure A-24. POST-TEST VEHICLE DAMAGE - VIEW 2



Figure A-25. POST-TEST VEHICLE DAMAGE - VIEW 3

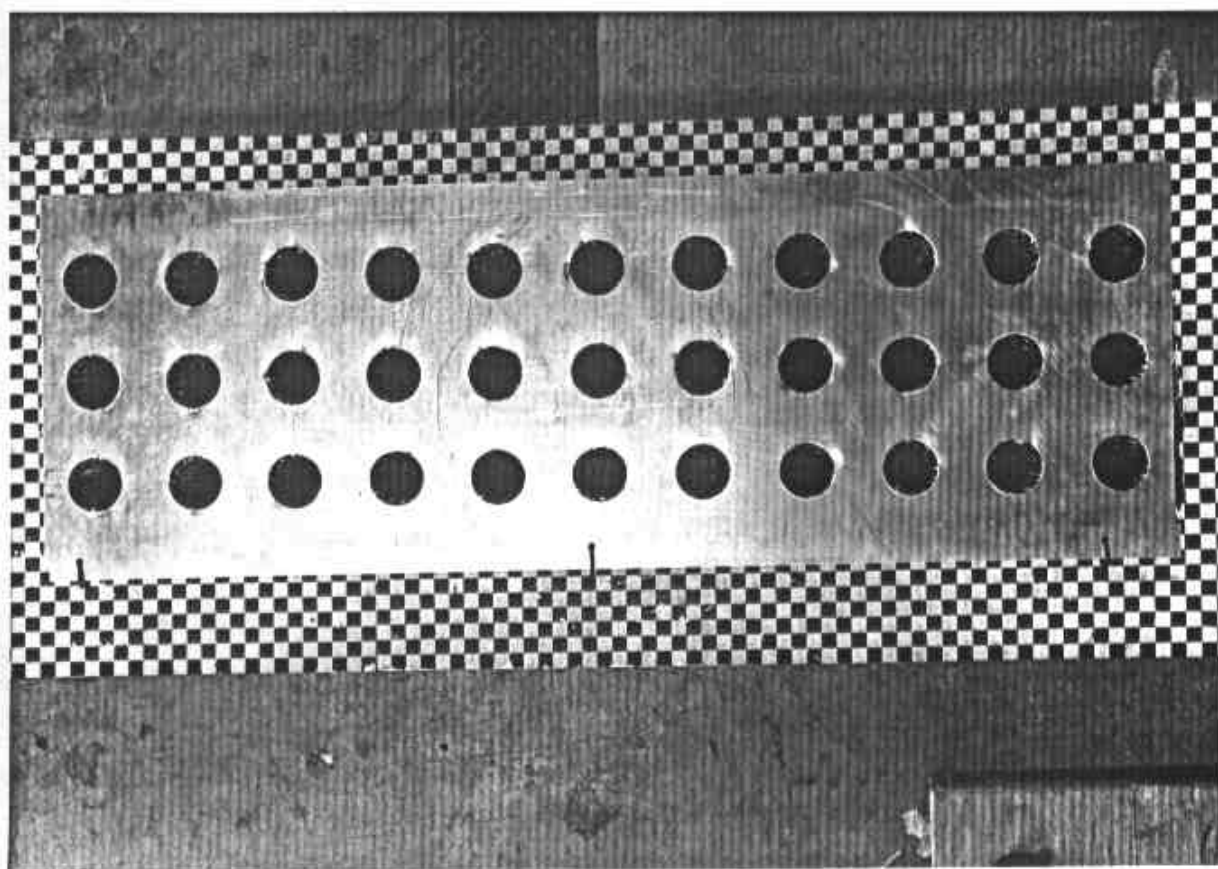


Figure A-26. PRE-TEST MDB FACE - VIEW 1
A-14

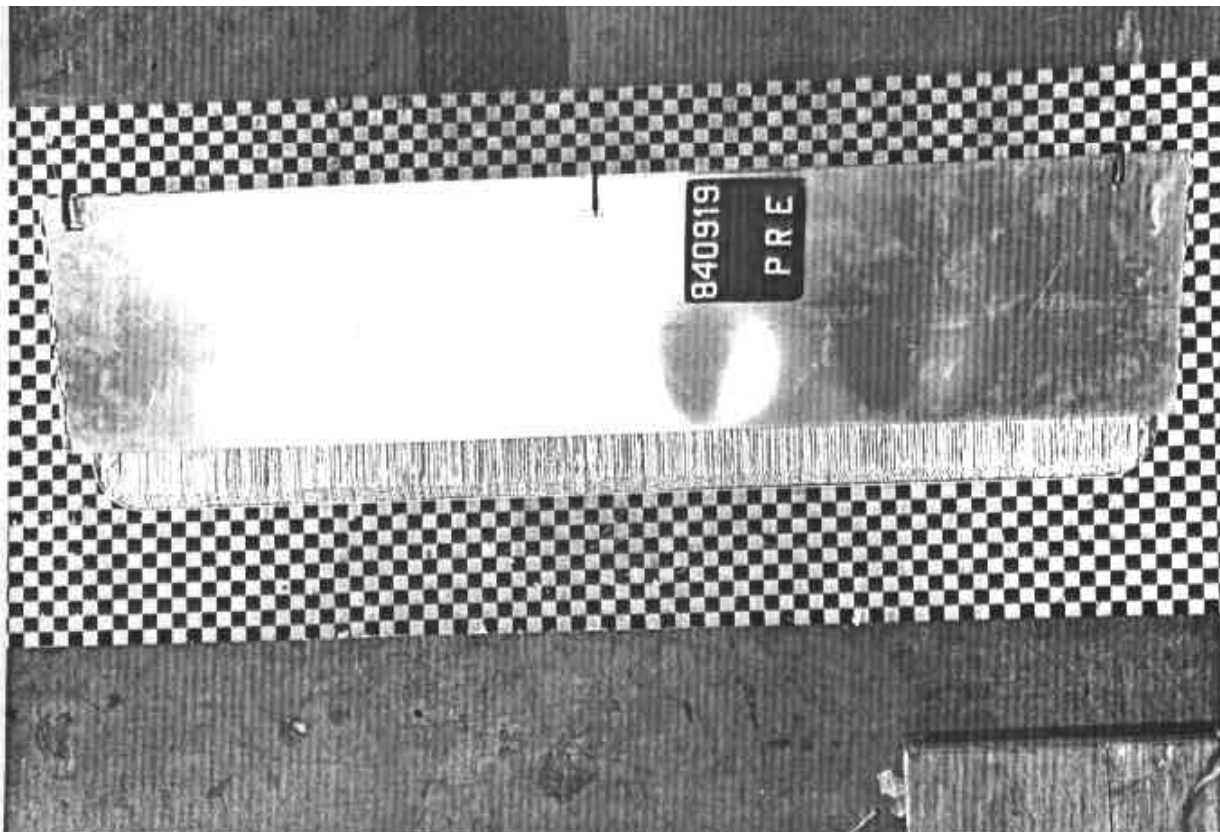


Figure A-27. PRE-TEST MDB FACE - VIEW 2

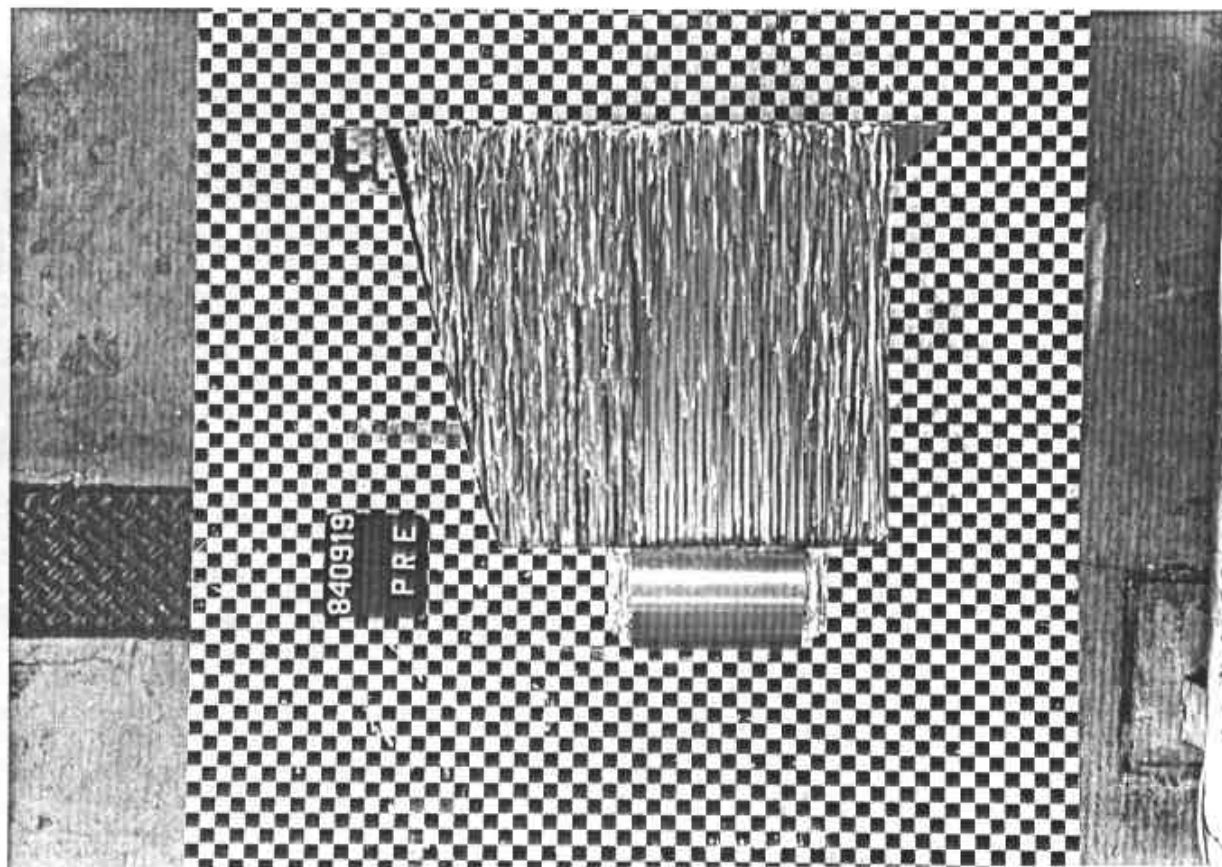


Figure A-28. PRE-TEST MDB FACE - VIEW 3
A-15

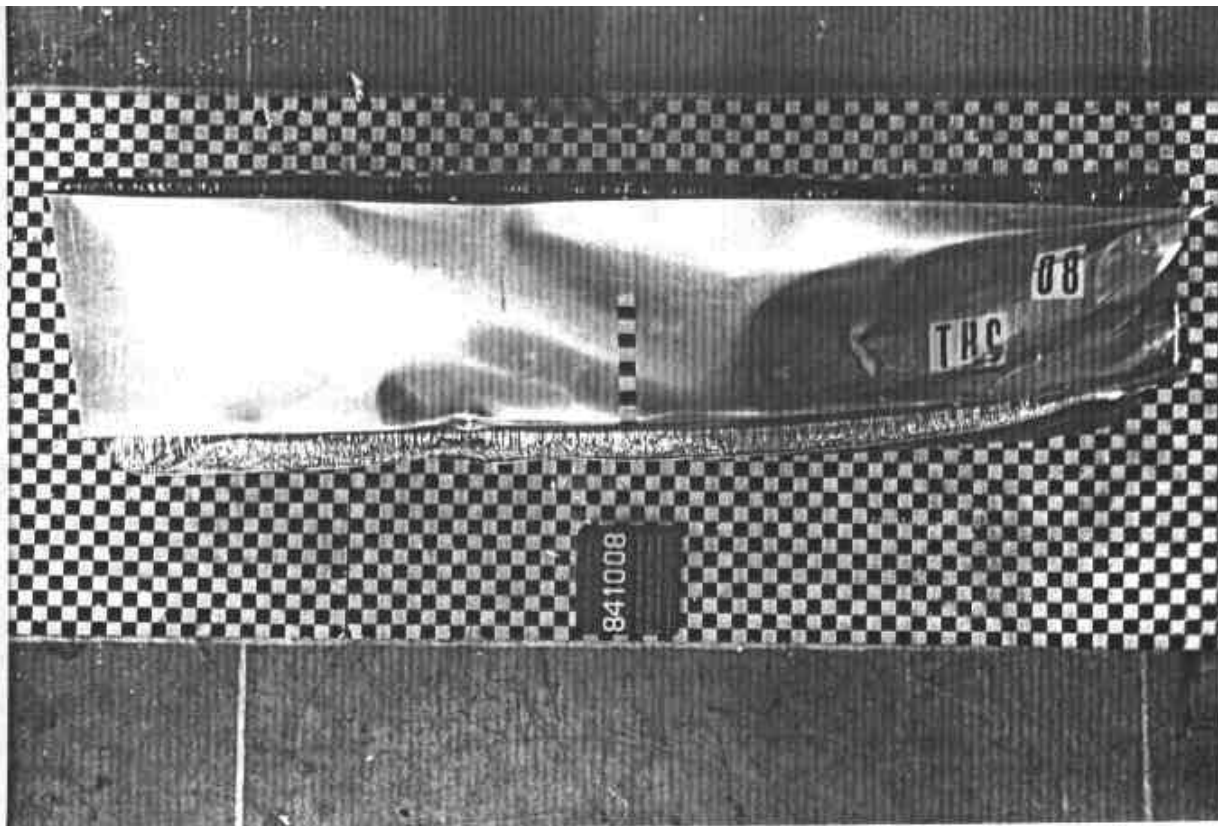


Figure A-29. POST-TEST MDB FACE - VIEW 1

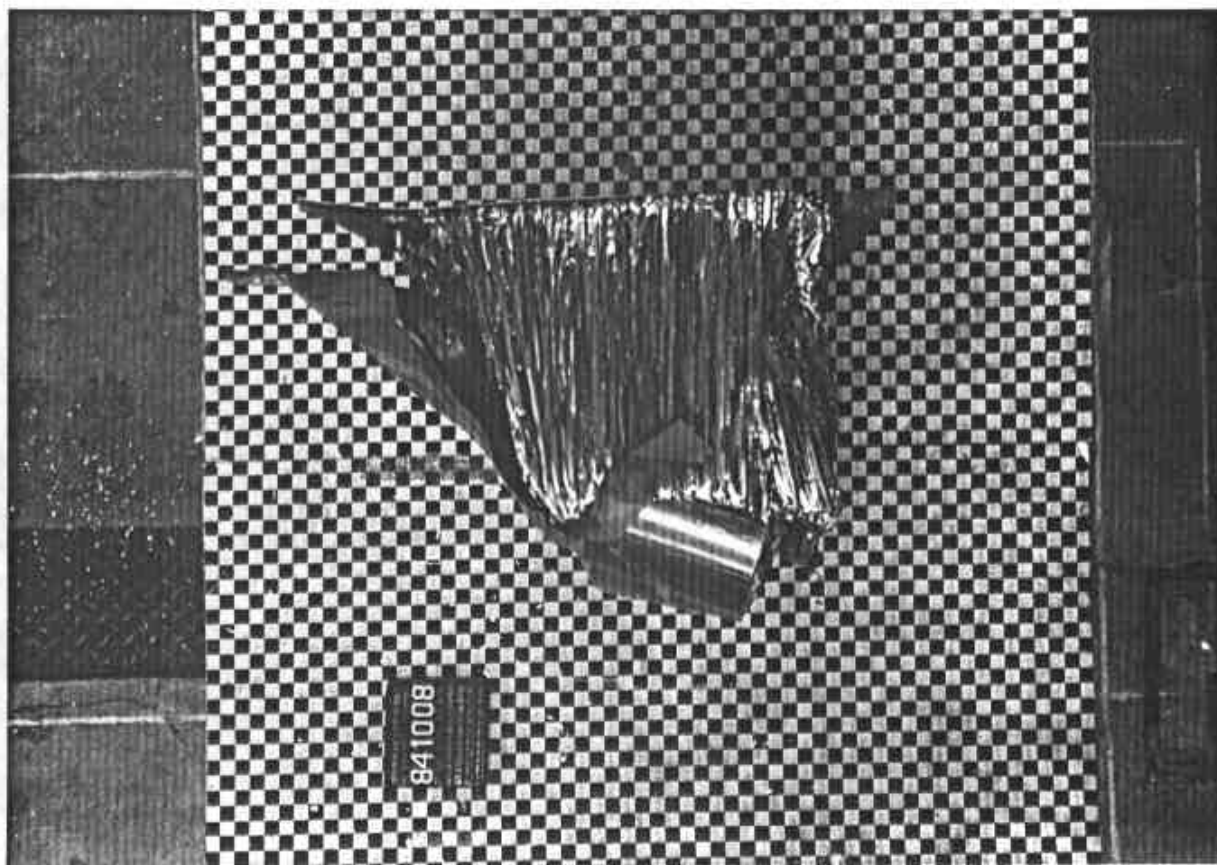


Figure A-30. POST-TEST MDB FACE - VIEW 2
A-16

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
SIDE AGGRESSIVE ATTRIBUTES
842820000000
HEDXG1

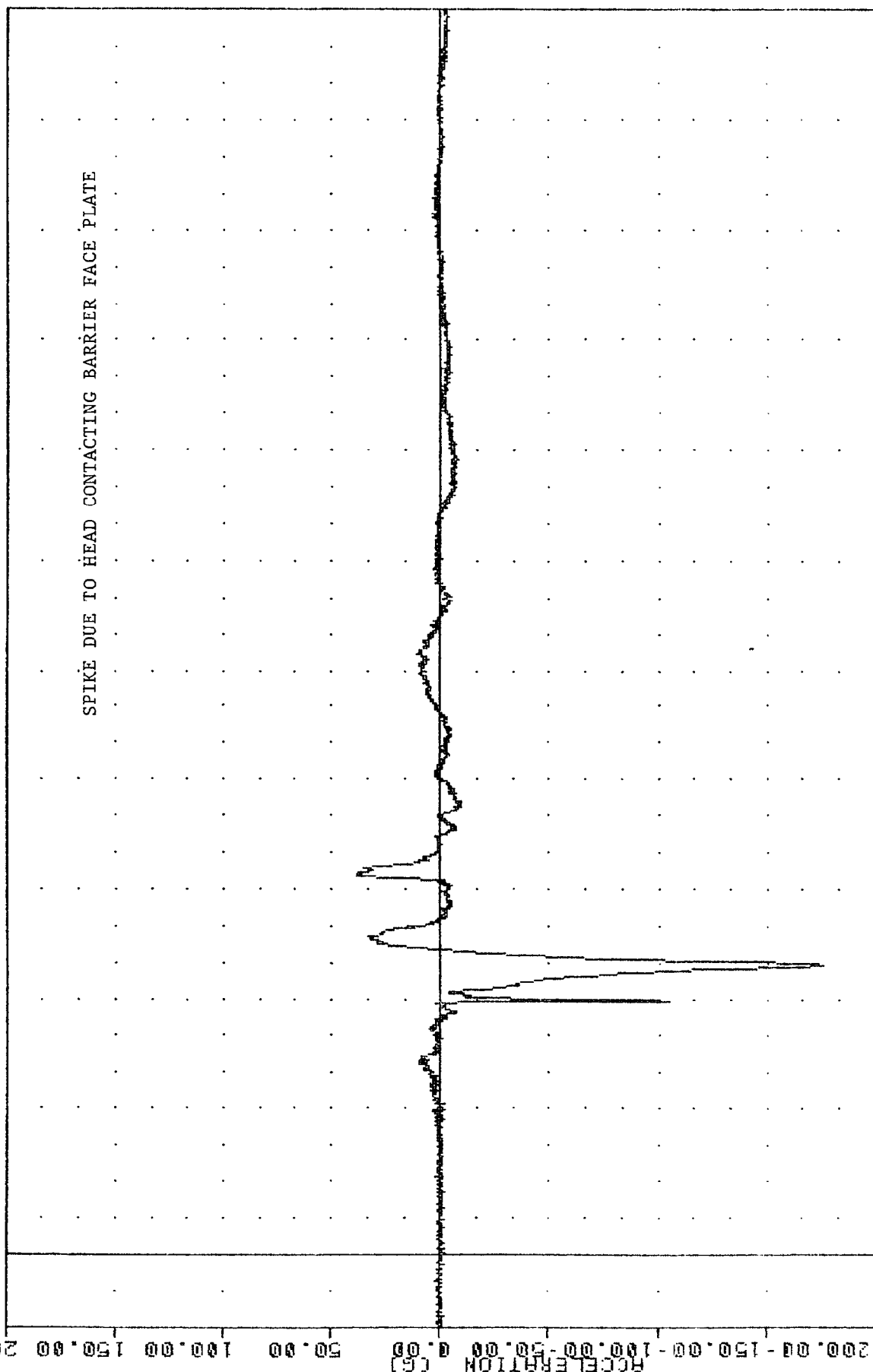
PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -175.27 79.38 , 38.65 103.83

ACCELERATION (G)

B-2



-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
DRIVER HEAD ACCELERATION X AXIS

TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
HEOY61

PLOT DATE 18-OCT-84 16:14:32

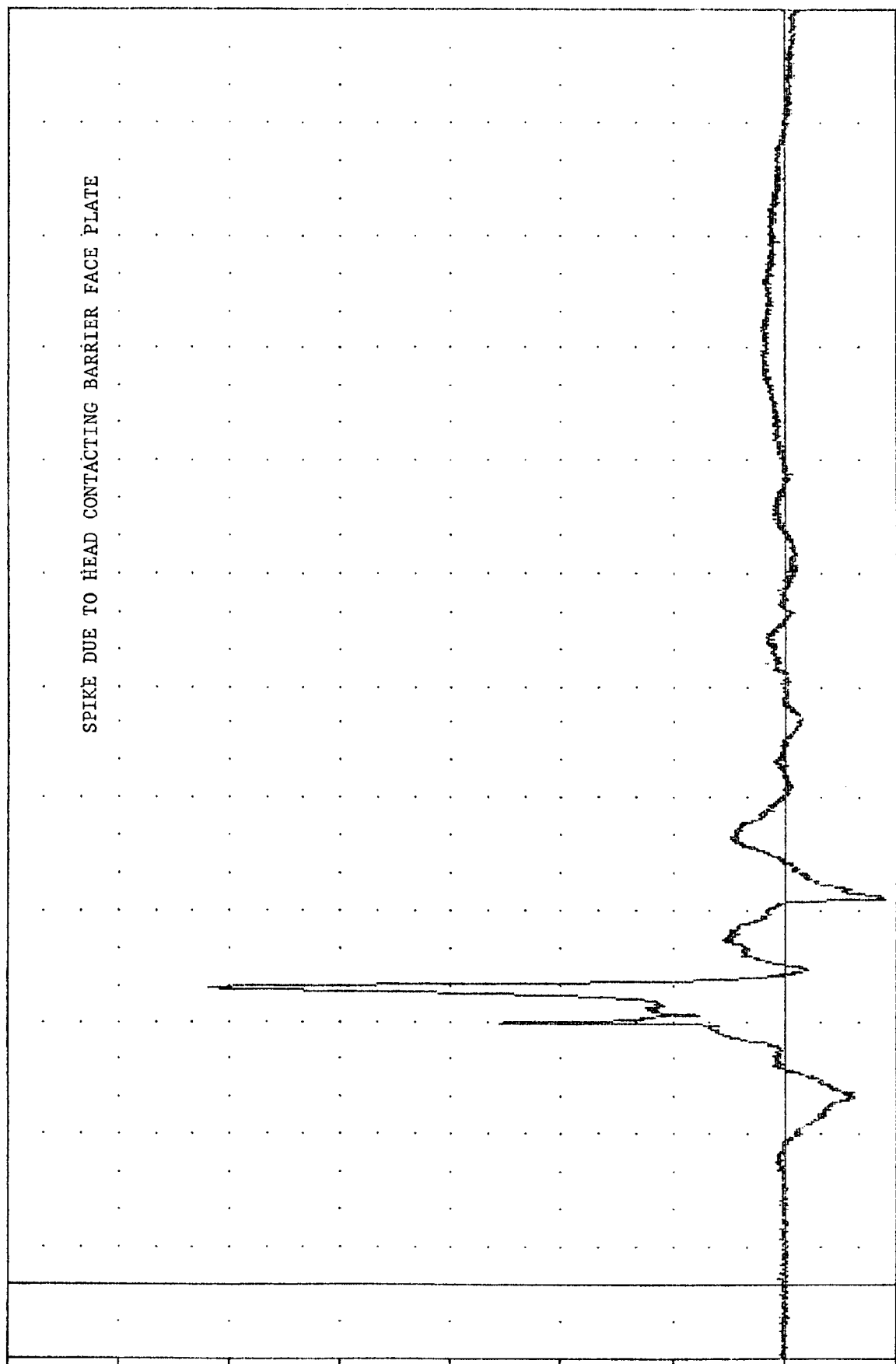
FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -44.78e 103.25, 259.82 e 79.13

ACCELERATION (G)

B-3

SPIKE DUE TO HEAD CONTACTING BARRIER FACE PLATE



-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
DRIVER HEAD ACCELERATION Y AXIS

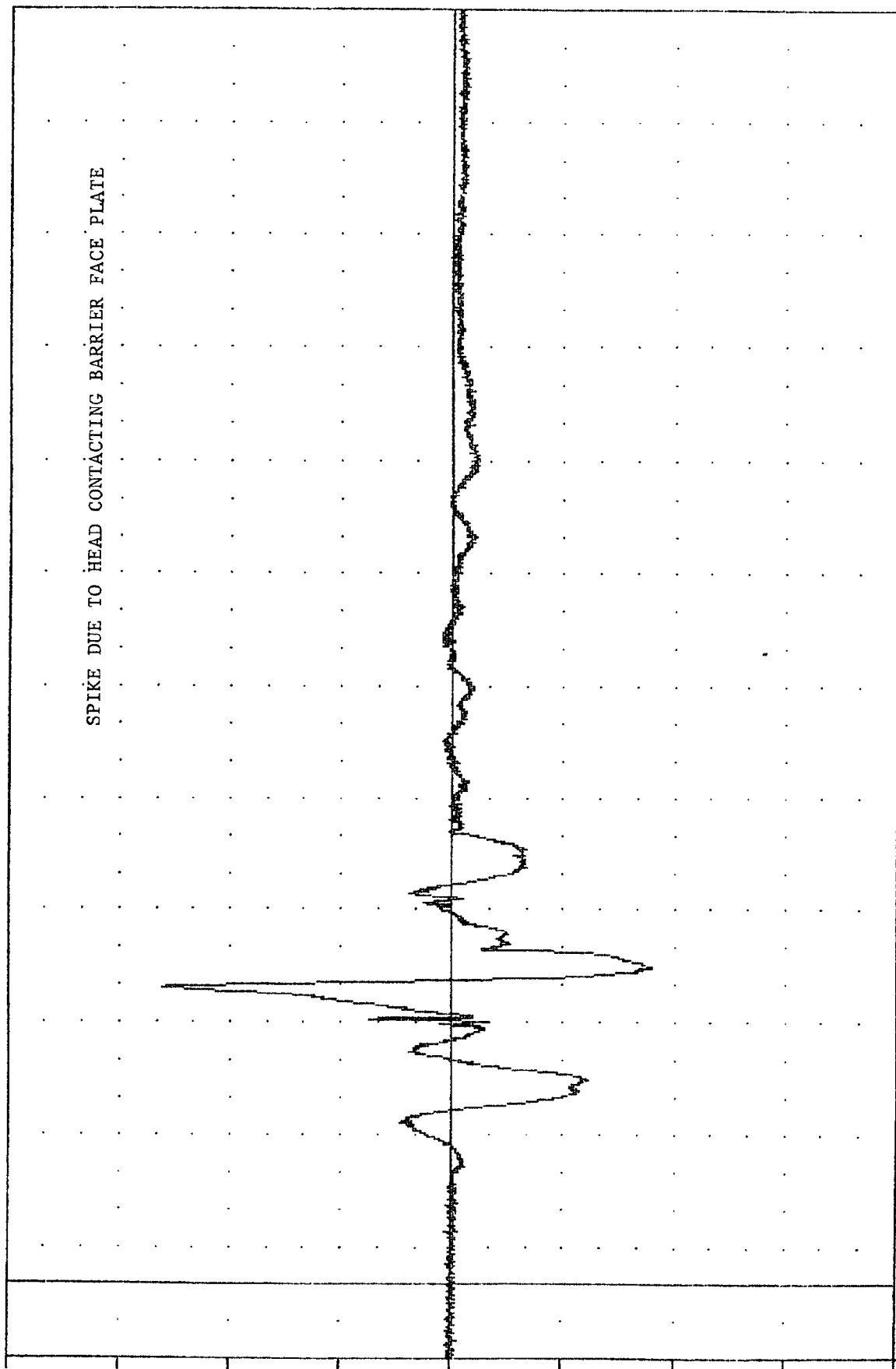
TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
HEDZ61

PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -90.04e 84.88, 130.48 e 79.13

ACCELERATION (G)



B-4

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION 7 AXIS

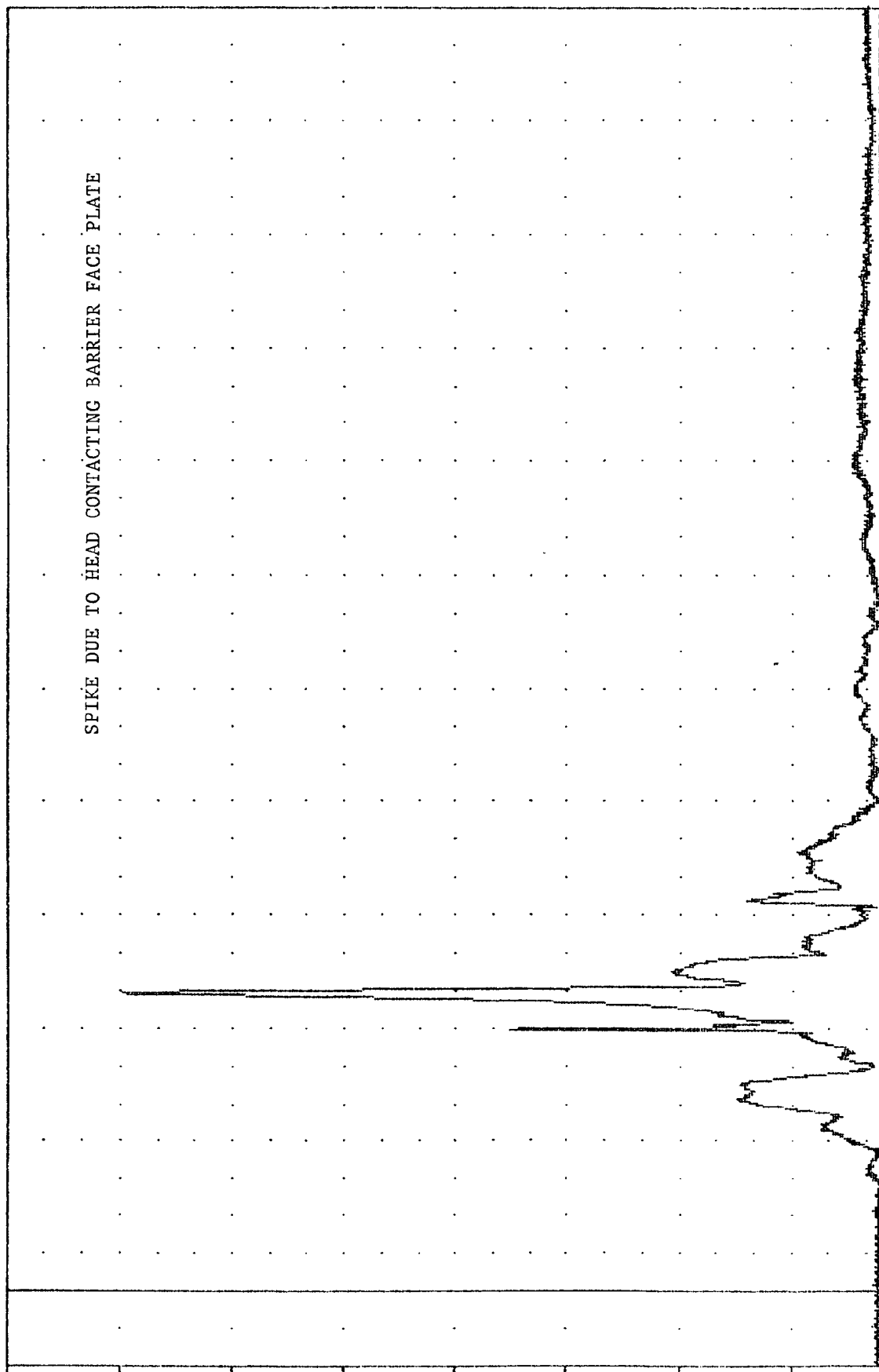
TRC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 HEORC1

PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = 0.12e 21.00, 338.38 e 79.13

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)

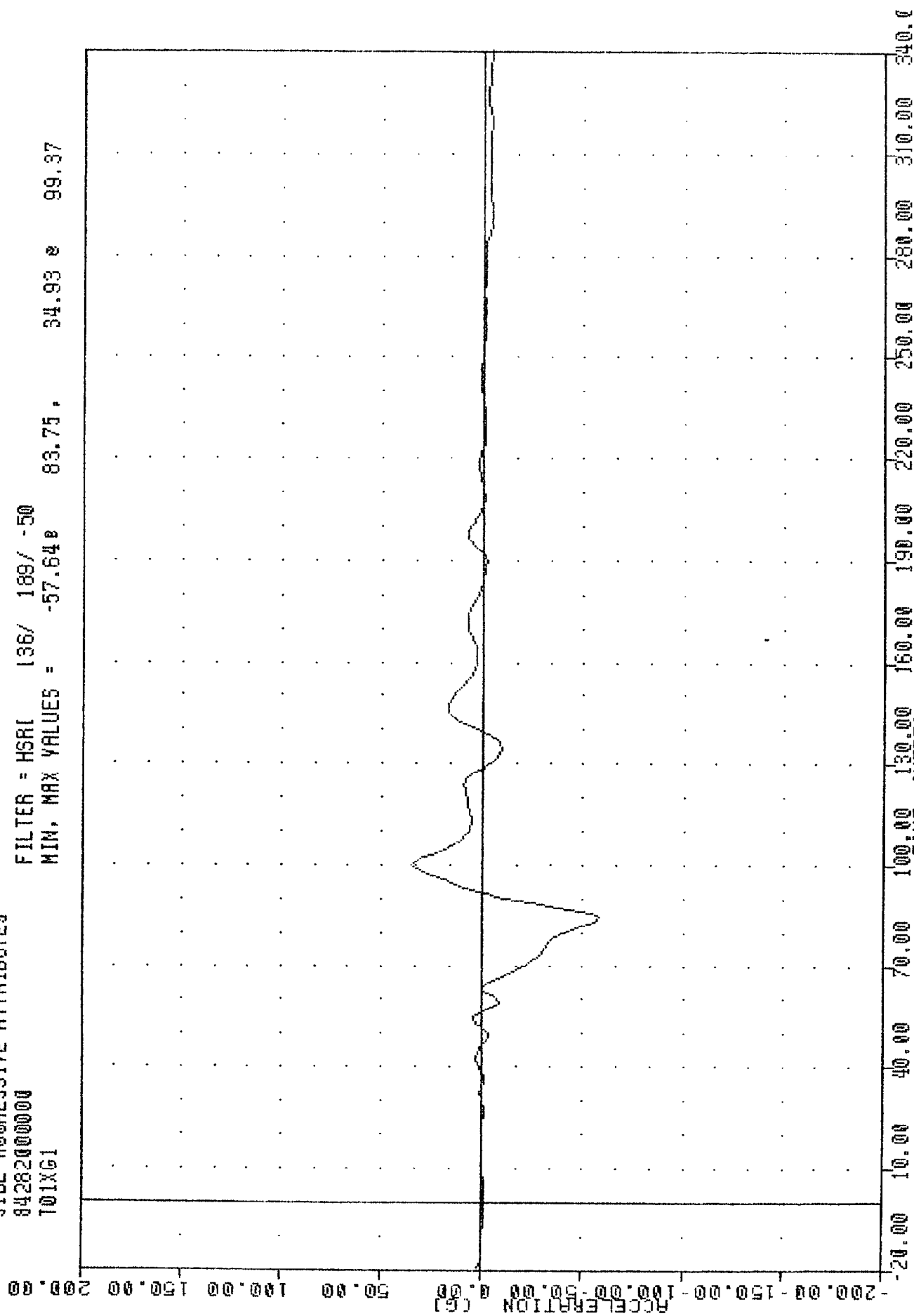
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DRIVER HEAD RESULTANT

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 701XG1

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -57.64 83.75, 34.93 99.37



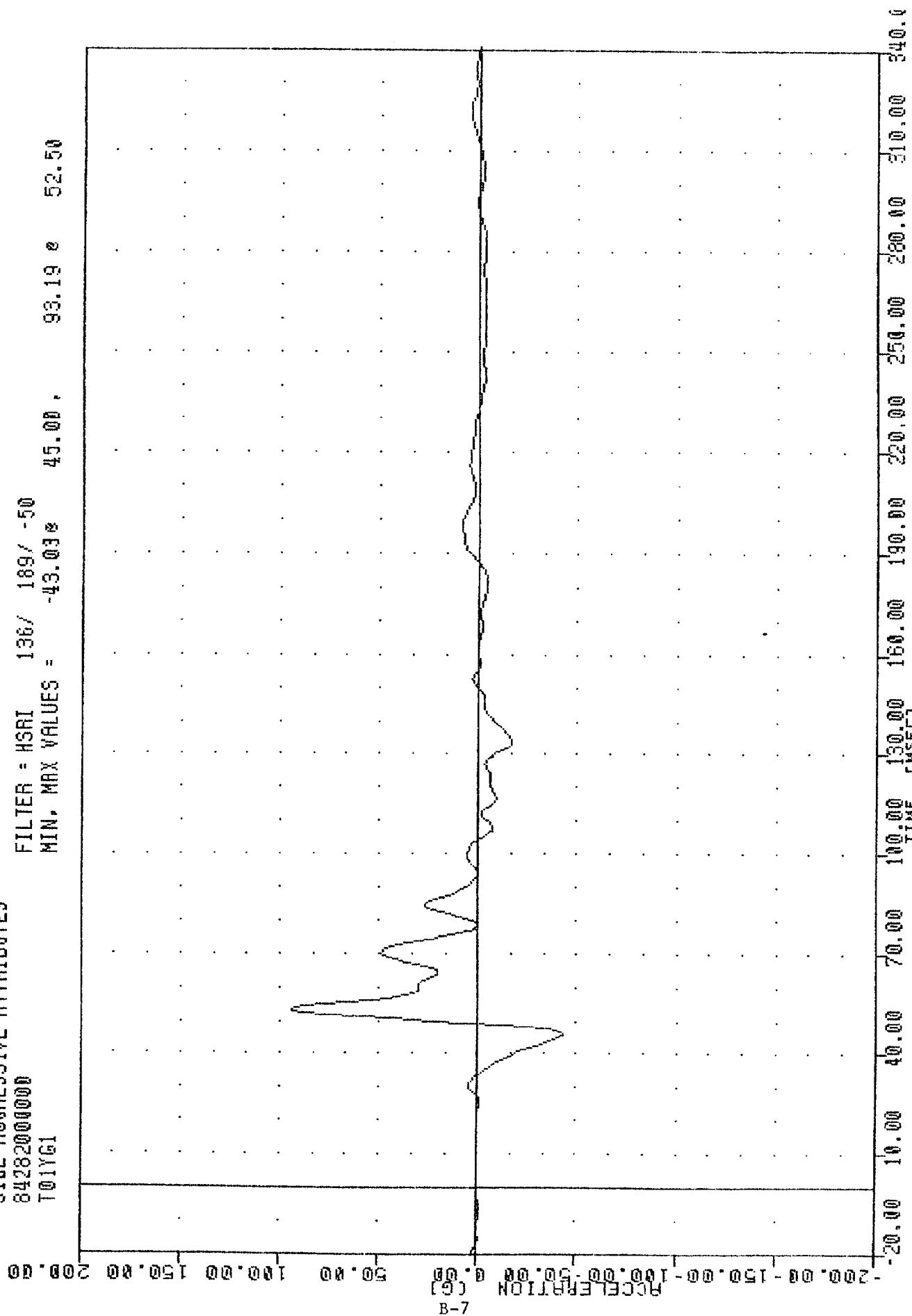
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE ACCELERATION X AXIS

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01Y61

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -43.03 45.00 93.19 52.50



B-7

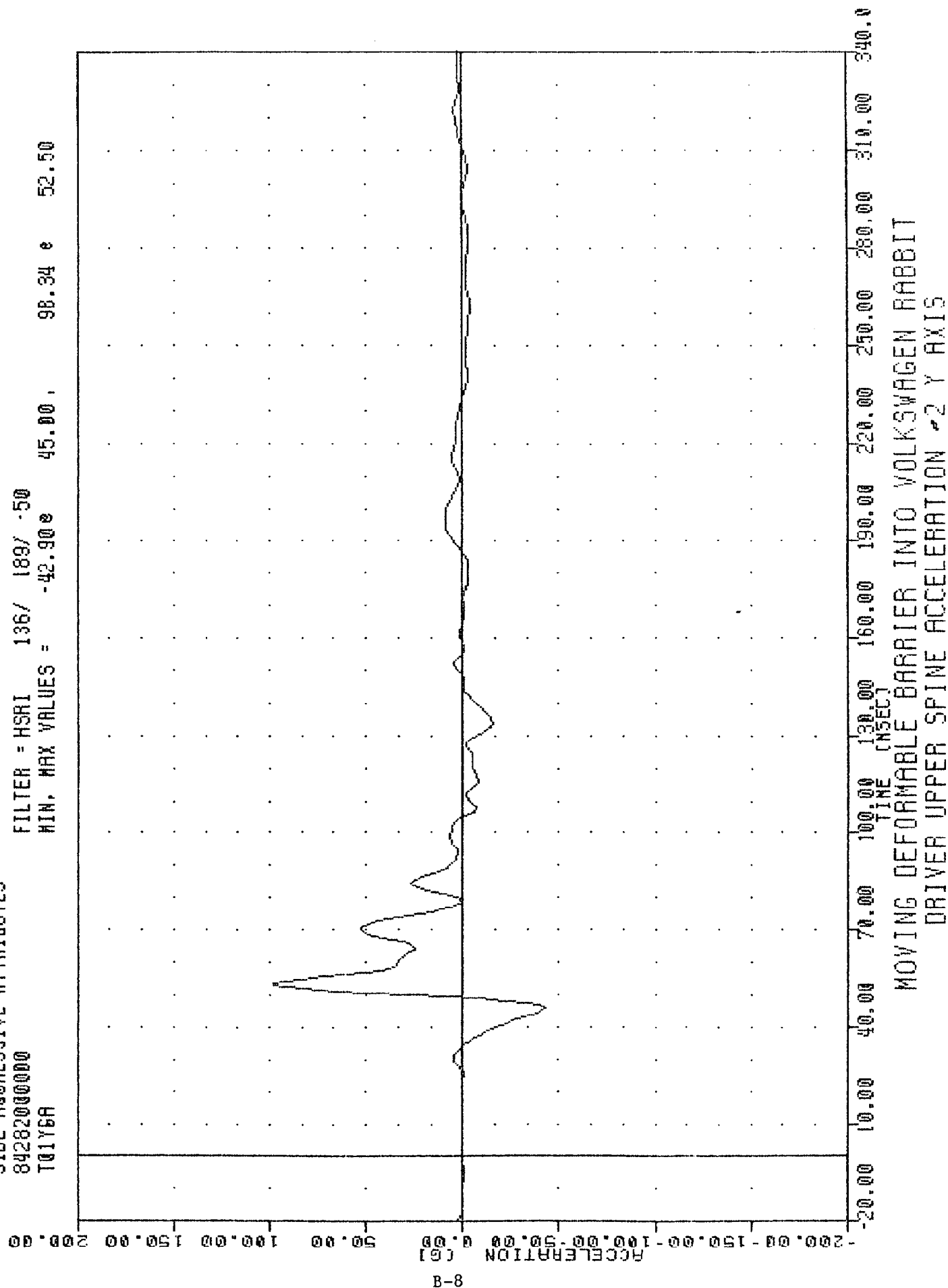
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE ACCELERATION Y AXIS

TAC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
T01Y6A

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -42.90e 45.00 , 98.34 e 52.50



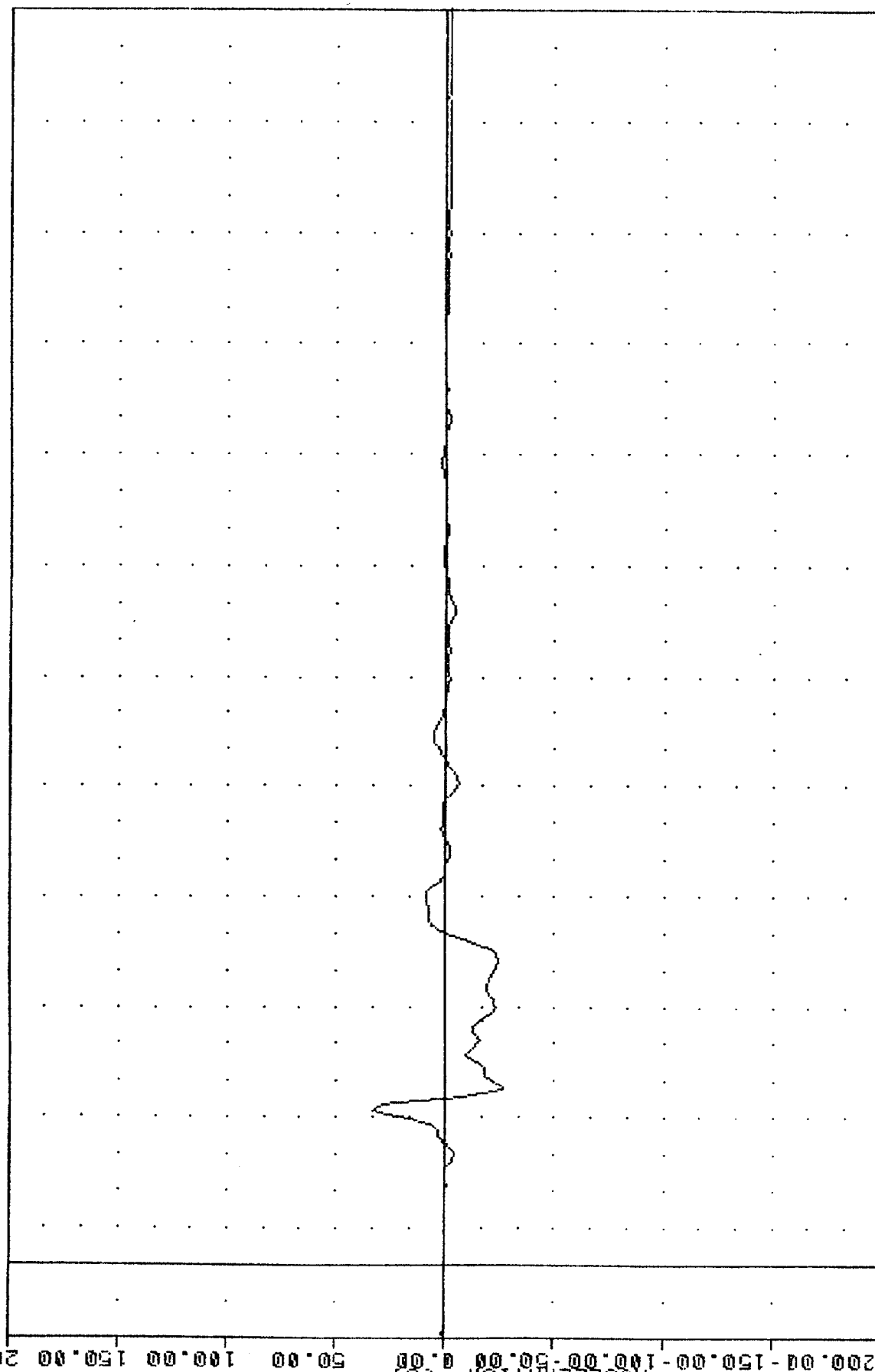
TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 T01ZG1

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -26.48 47.50 32.72 41.25

ACCELERATION (G)



-200.00 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

DRIVER-UPPER SPINE RECELERATION Z-AXIS

TRC 841008

SIDE AGGRESSIVE ATTRIBUTES

84262000000

T01RG1

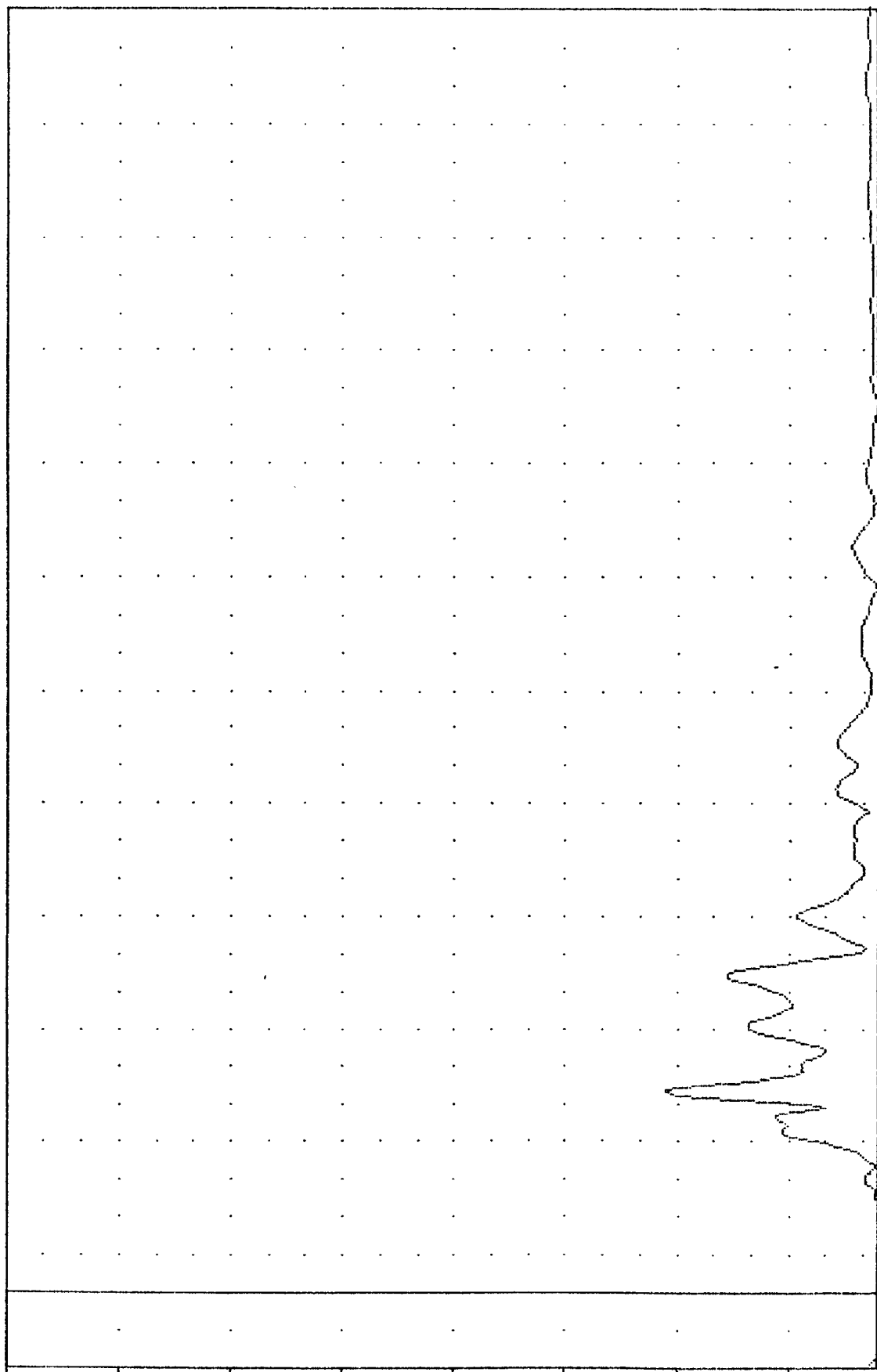
PLOT DATE 17-OCT-84 10:13:38

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = 0.148 22.50, 94.95 52.50

ACCELERATION (G)

B-10



-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

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE RESULTANT

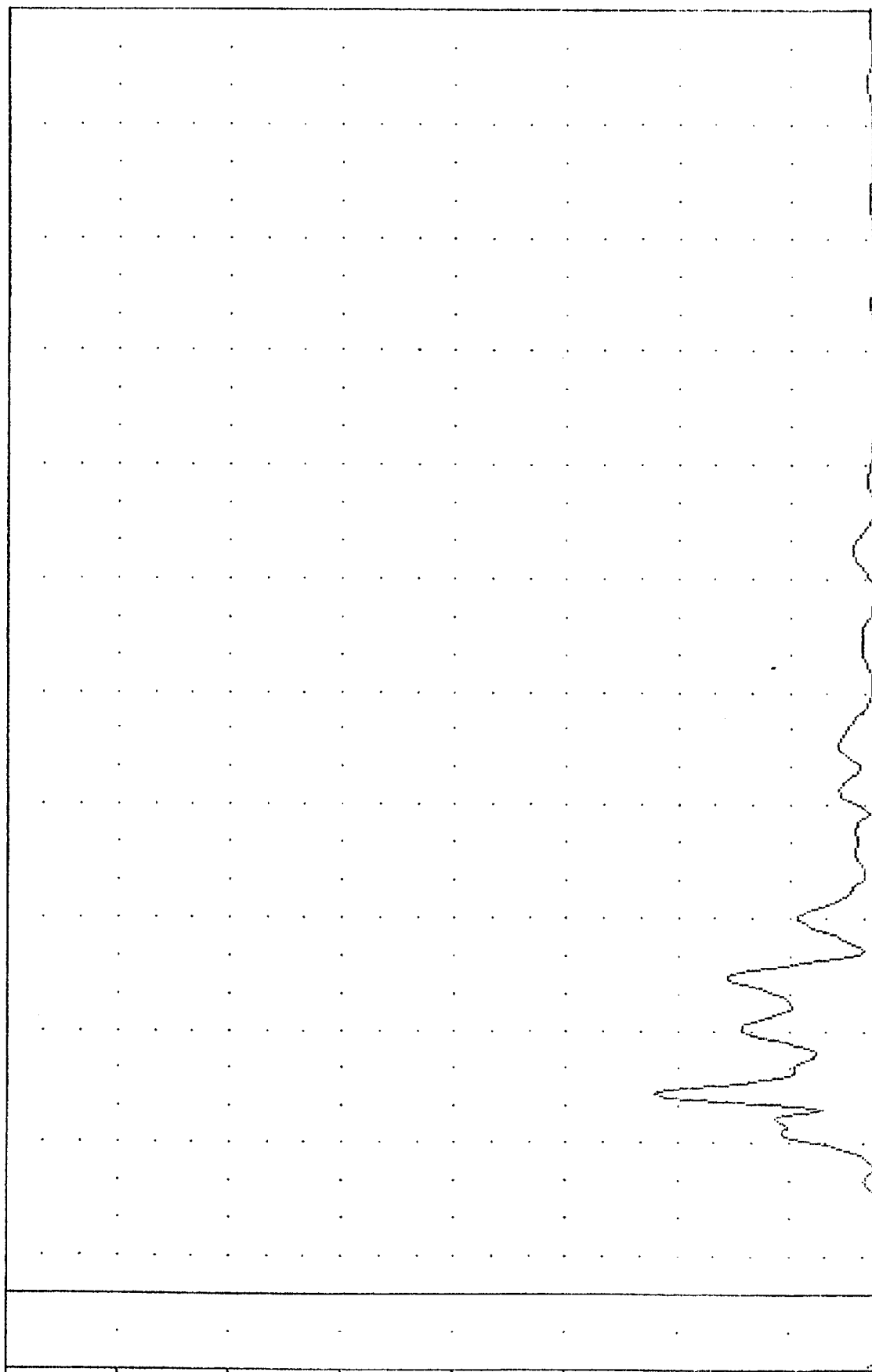
TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01RGR

PLOT DATE 17-OCT-84 10:14:56

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = 0.15% 22.50, 100.02 & 52.50

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)

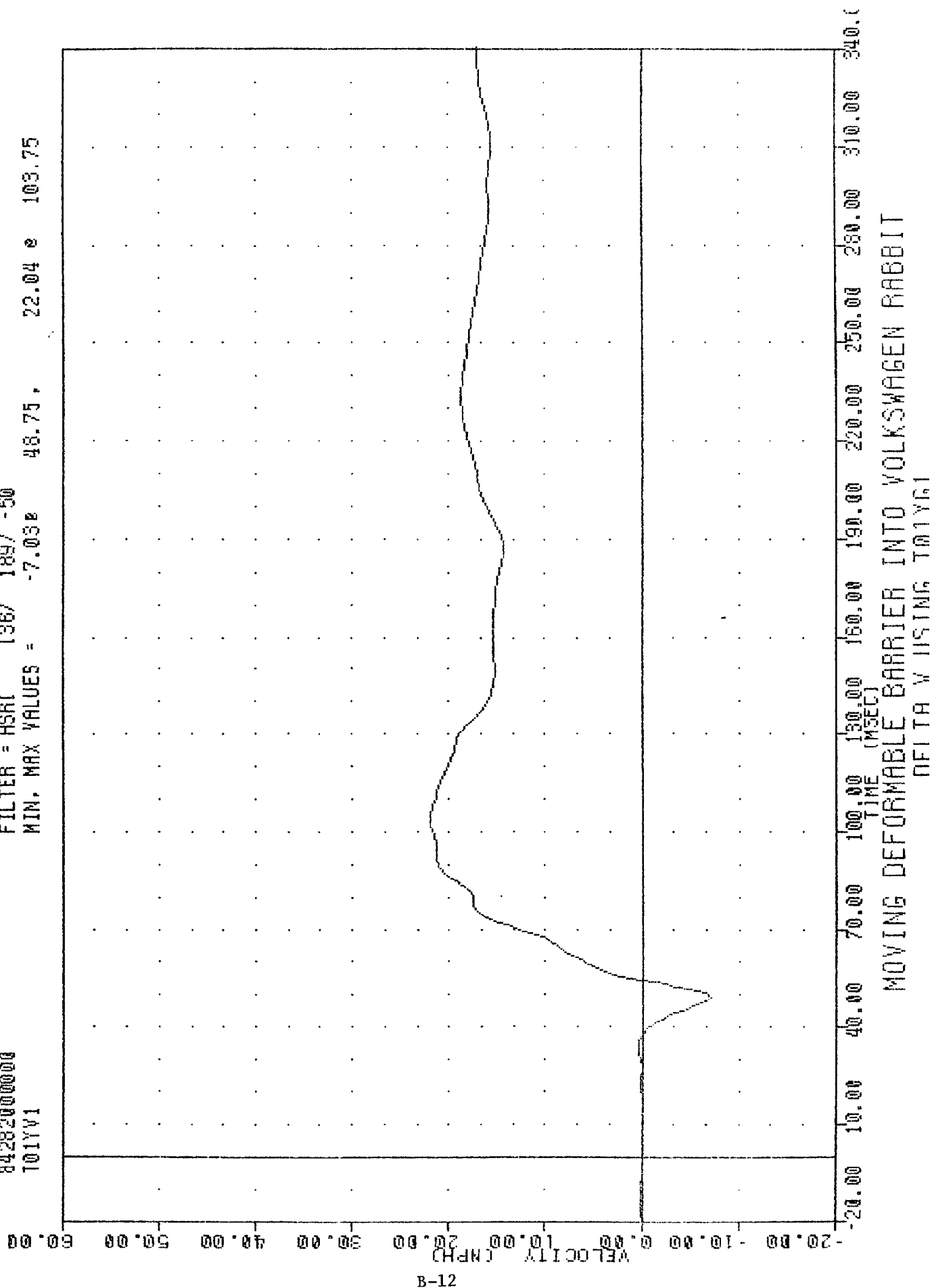
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER HADDED SOME DECHIT TANT DURING TRAVEL

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01YV1

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -7.03e 48.75, 22.04 e 103.75



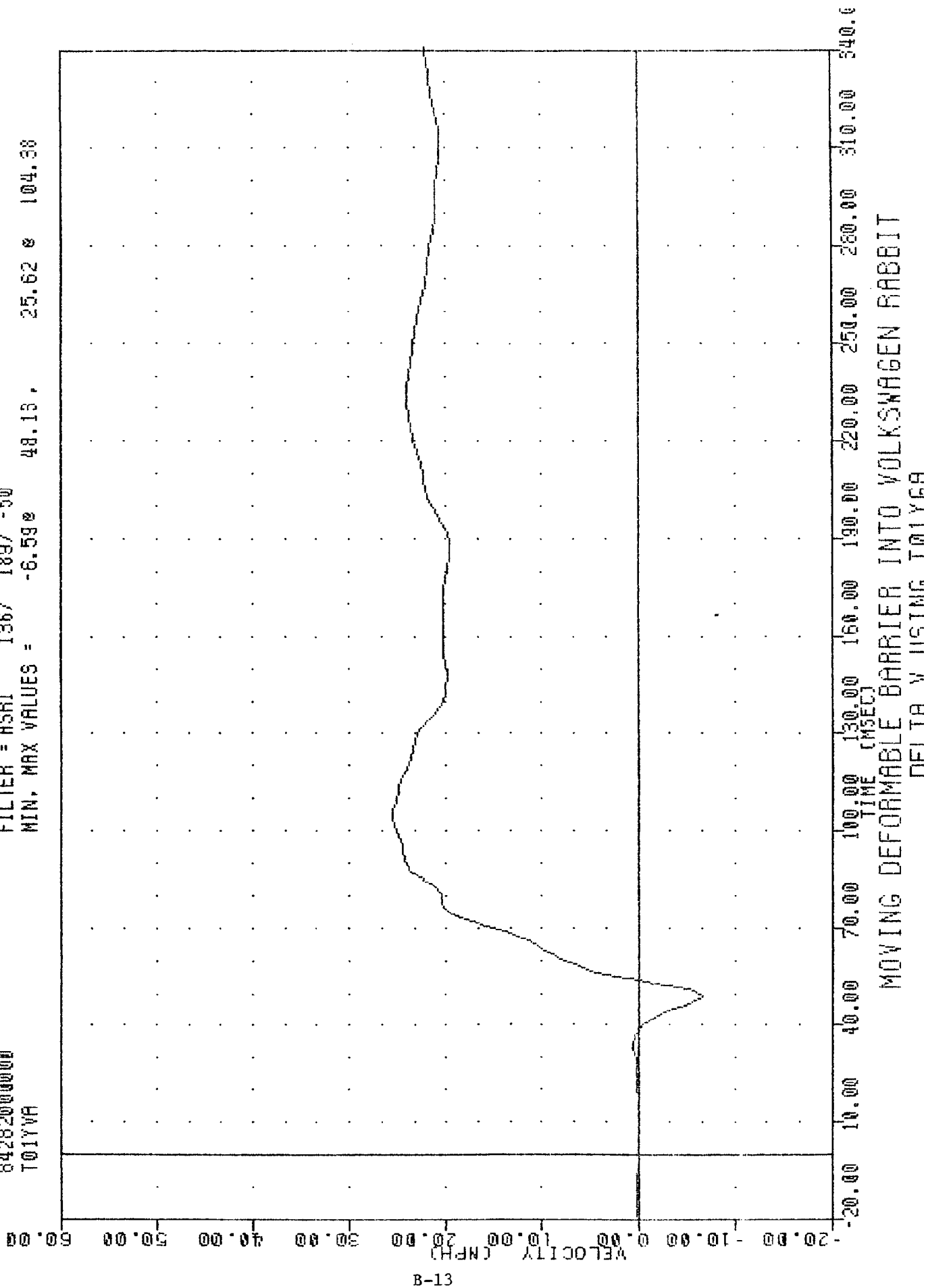
B-12

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 NETTA W IISING T01YV1

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01YVA

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -6.59e 48.13, 25.62 e 104.38



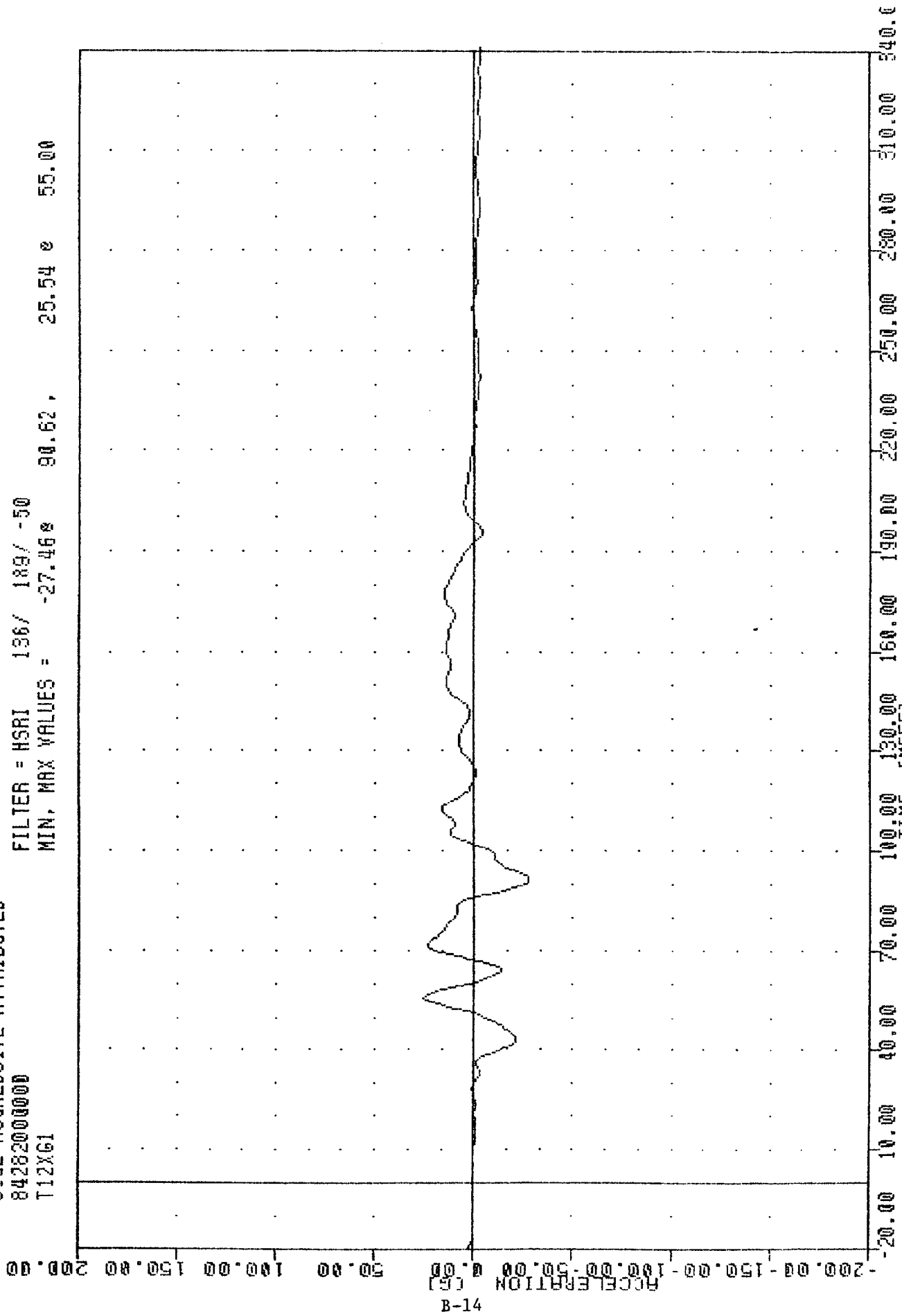
B-13

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W LISTING T01YVA

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12XG1

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -27.46s 90.62, 25.54 e 55.00



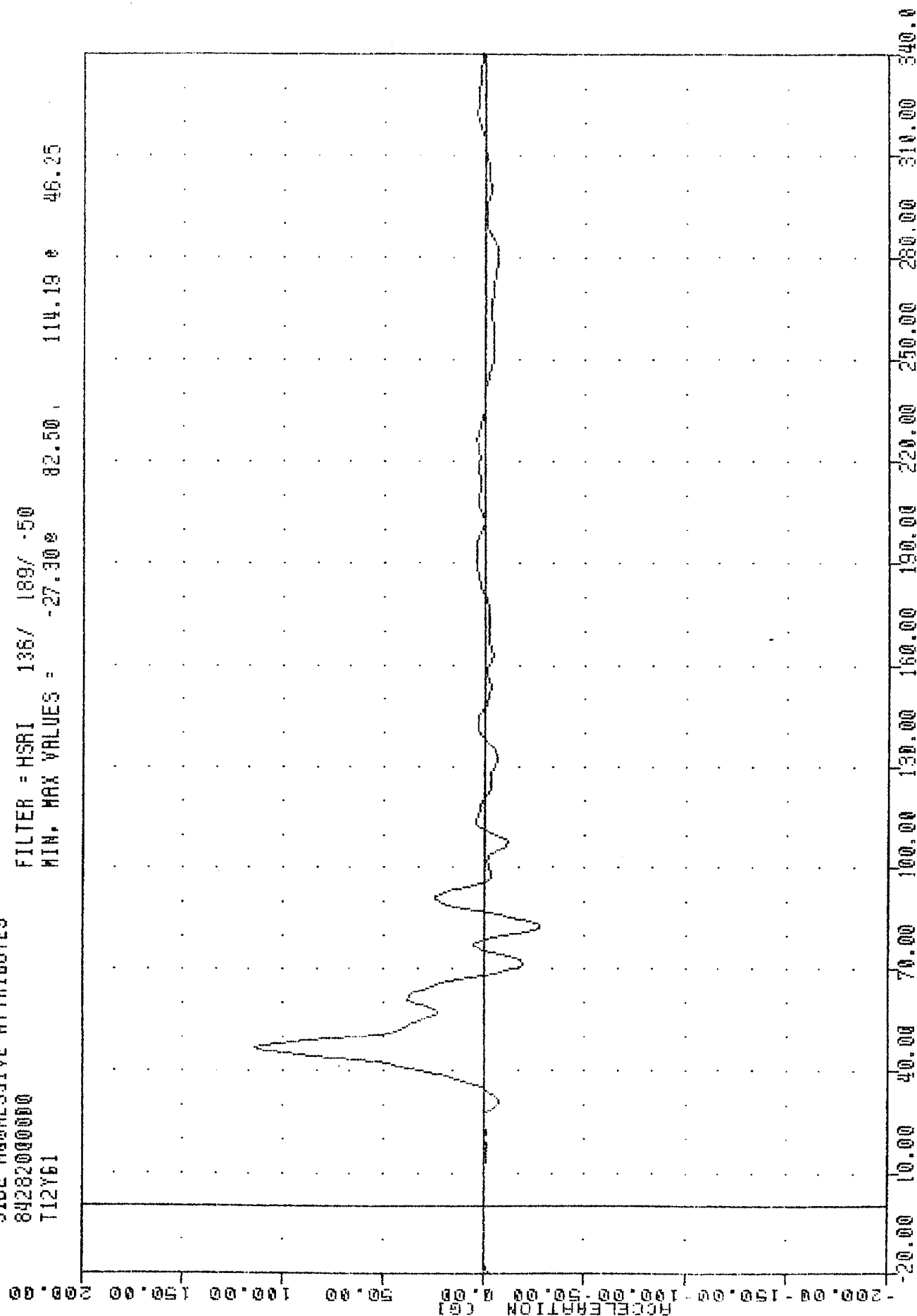
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE ACCELERATION X AXIS

TAC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12Y61

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -27.30% 82.50 114.19 46.25



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

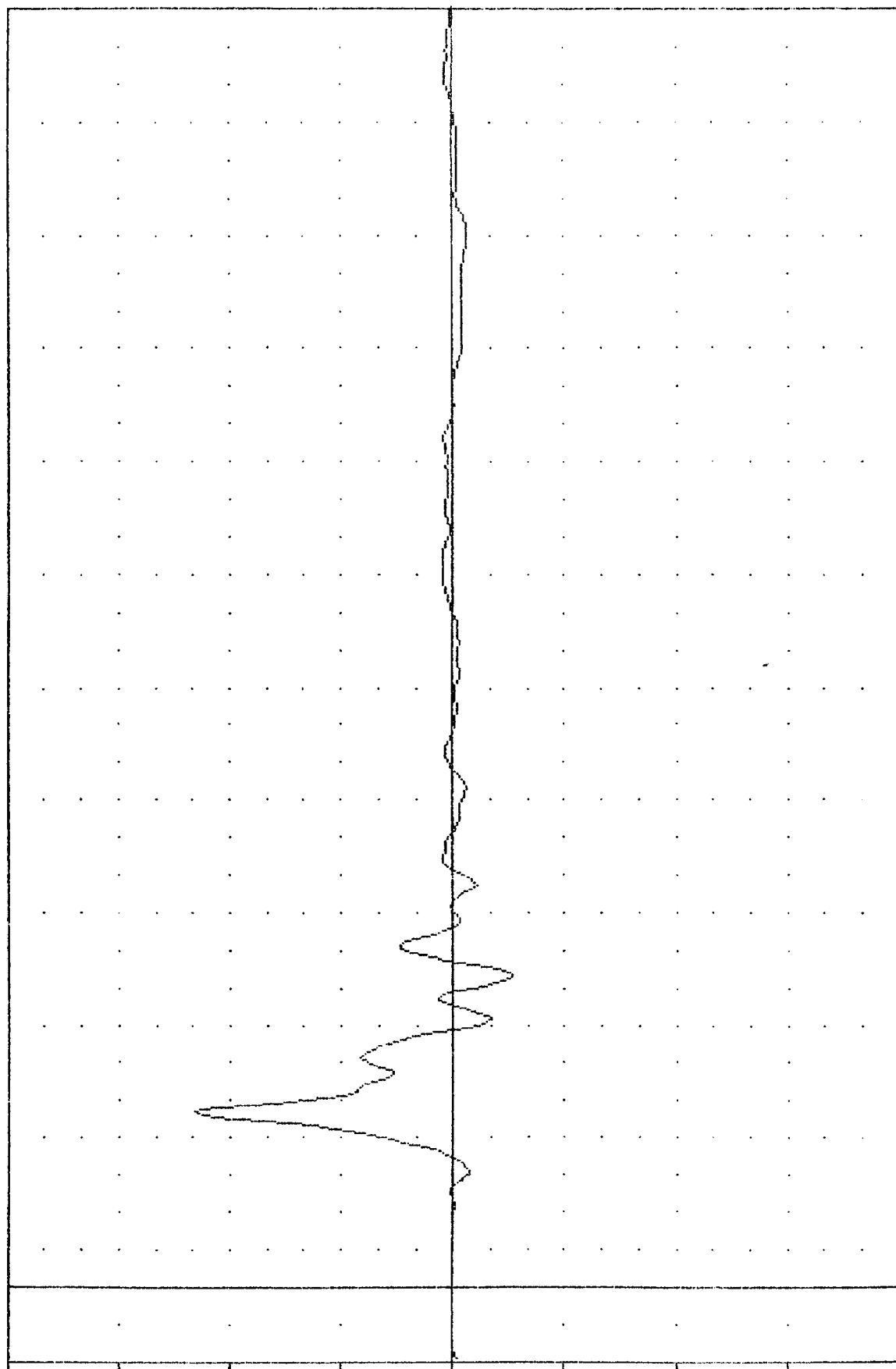
TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
842820000000
T12YGA

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSR 136/ 189/ -50

MIN. MAX VALUES = -26.57 82.50, 116.25 48.25

ACCELERATION (G)



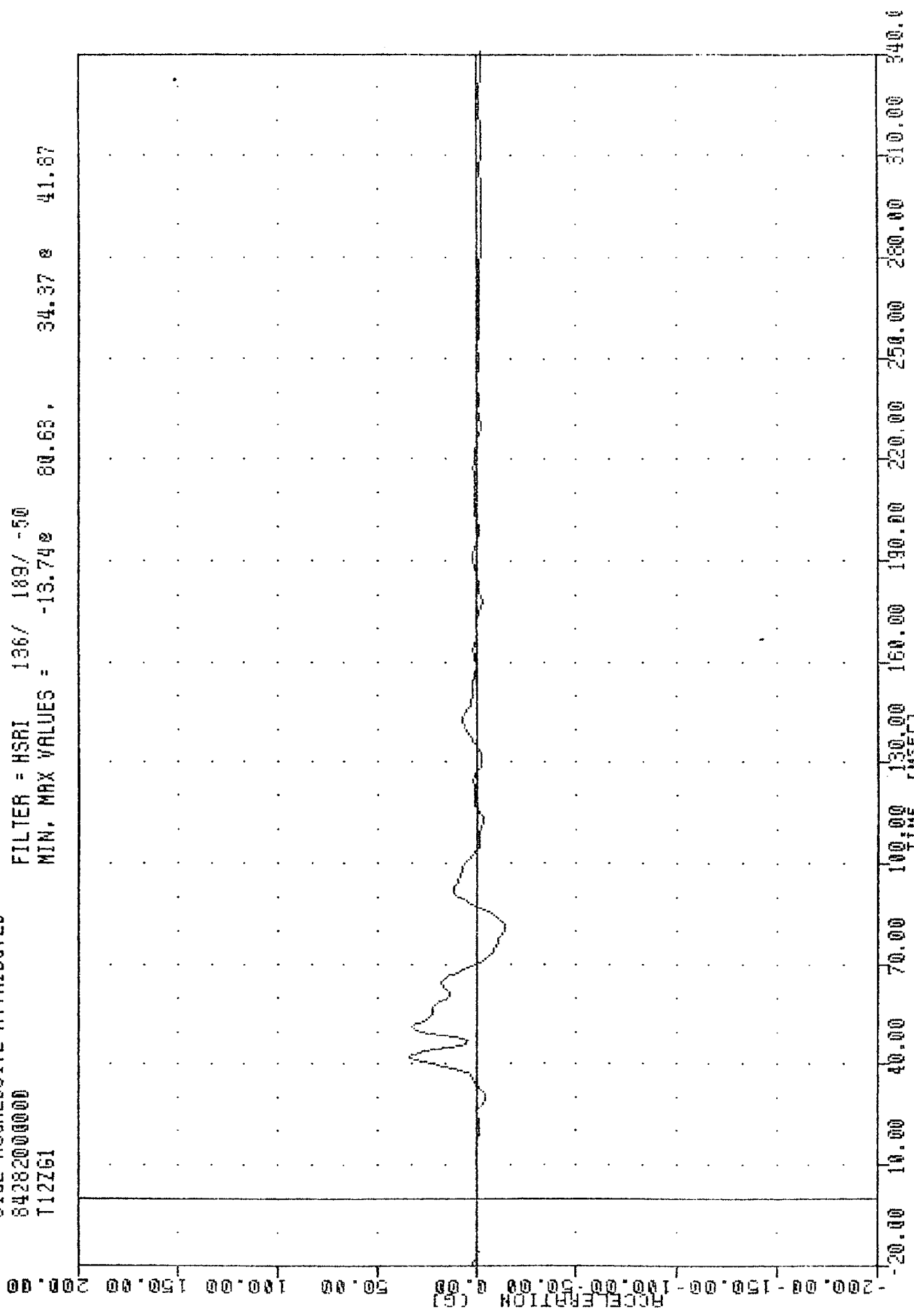
-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

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

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12Z61

PLOT DATE 17-OCT-84 10:13:38

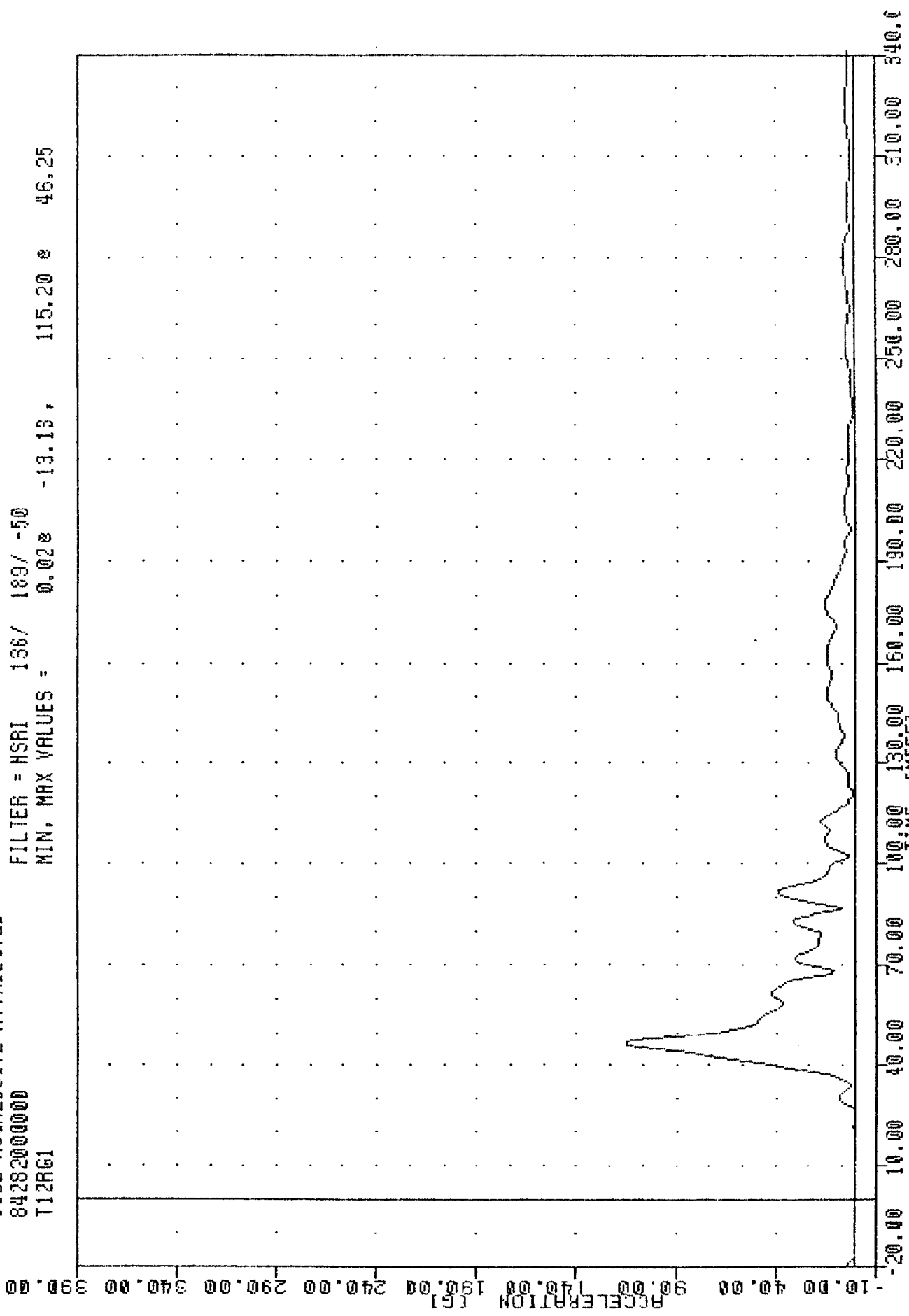
FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -13.748 80.63, 34.37 8 41.87



TRC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12RG1

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.028 -13.13 115.20 46.25

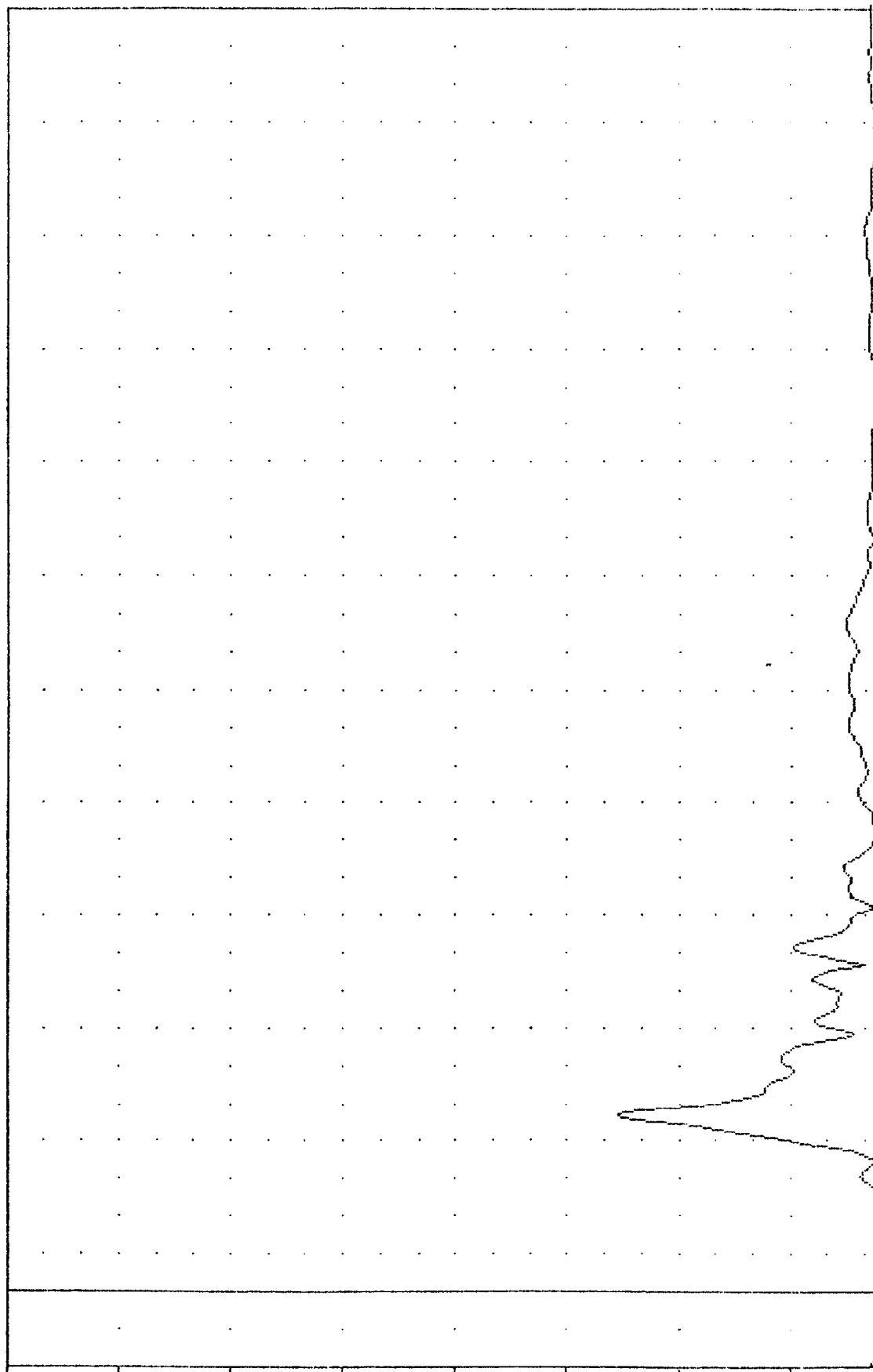


TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12RGA

PLUT DATE 17-OCT-84 10:14:56

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = 0.02e -13.13, 117.24 e 46.25

ACCELERATION [G]



TIME (MSEC)

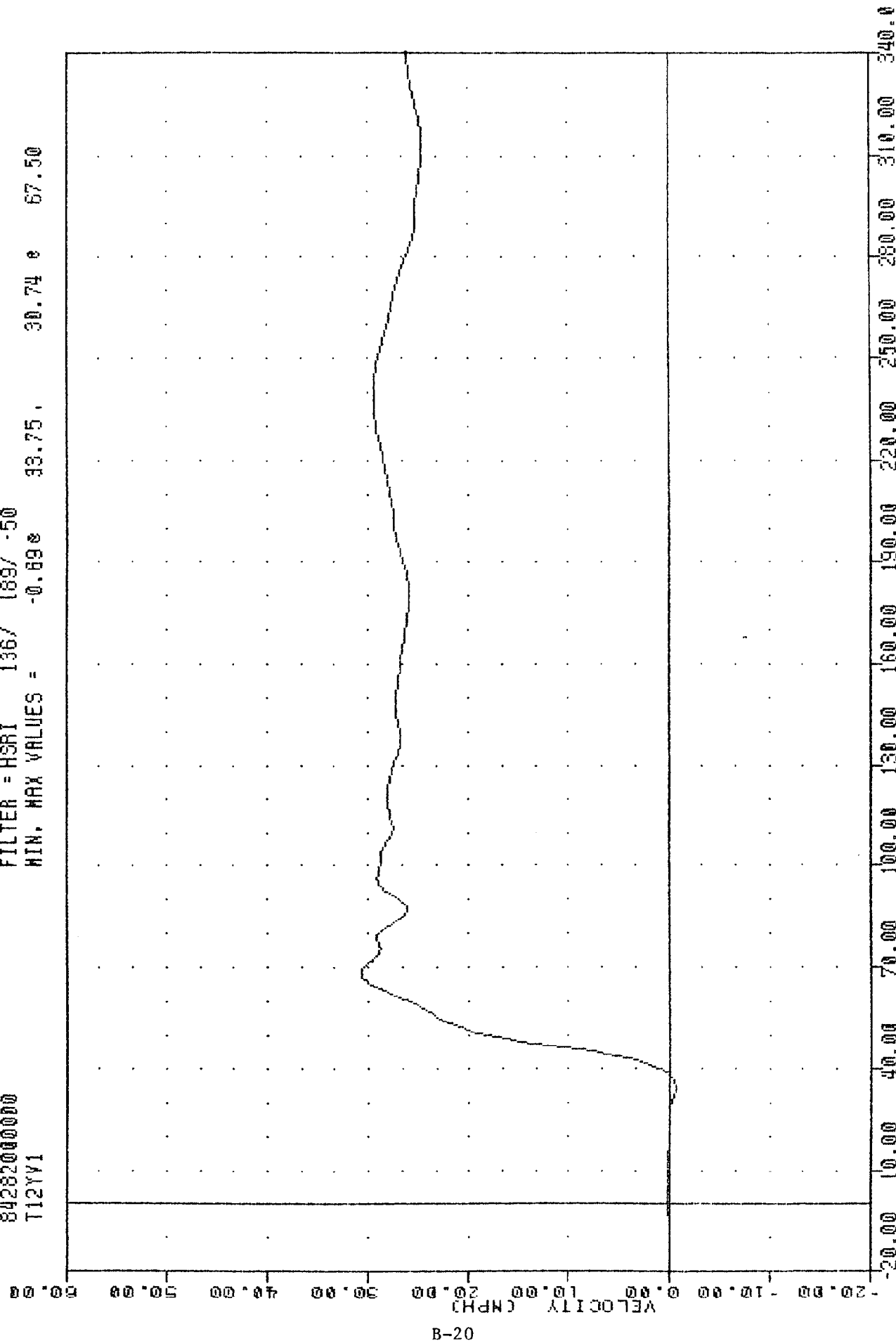
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE RESISTANT USING T12YGA

TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12YV1

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.898 33.75 , 30.74 0 67.50



B-20

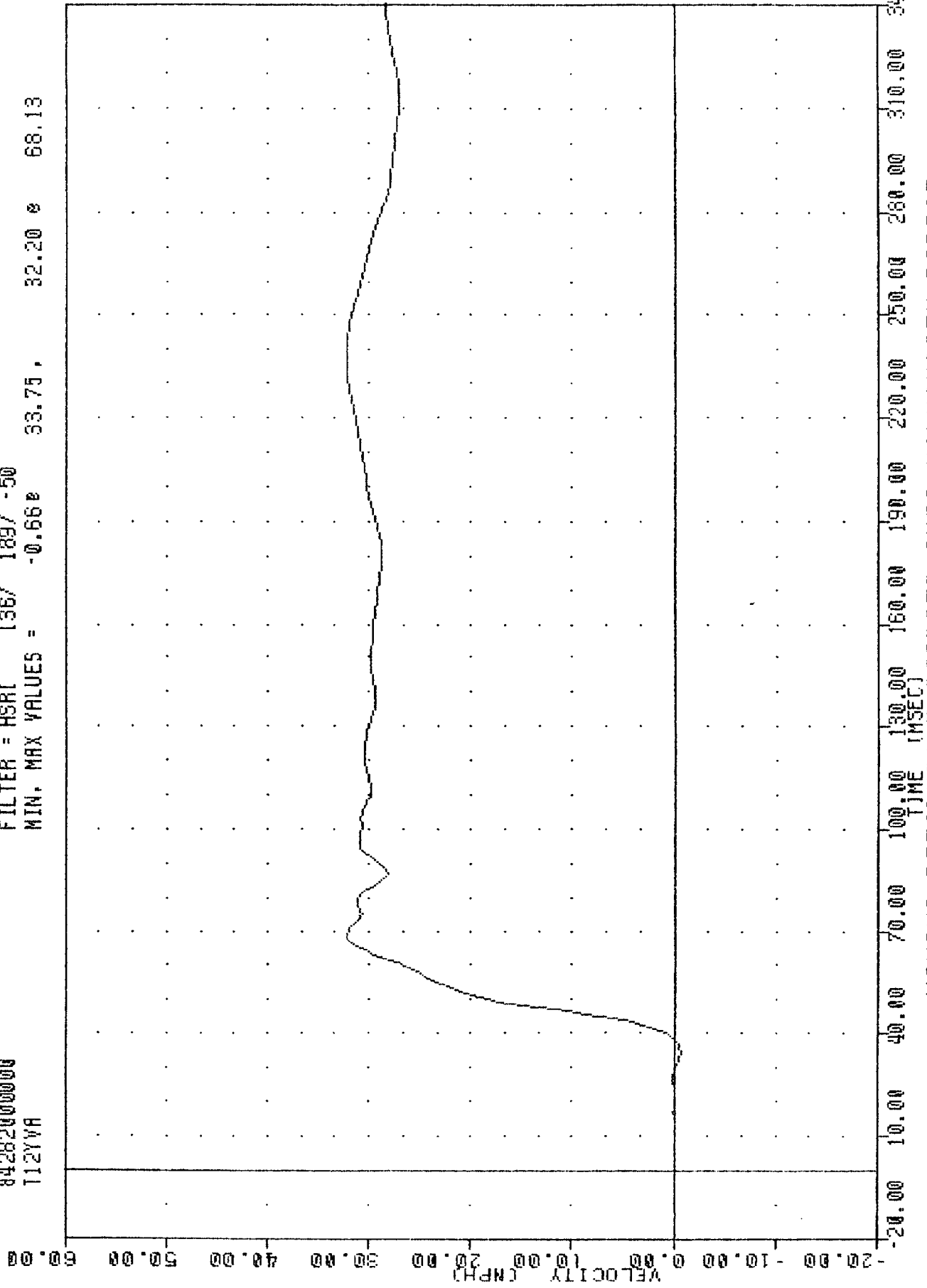
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 NFITA V HISING T12YGI

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 T12YVA

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.660 33.75, 32.20 68.13



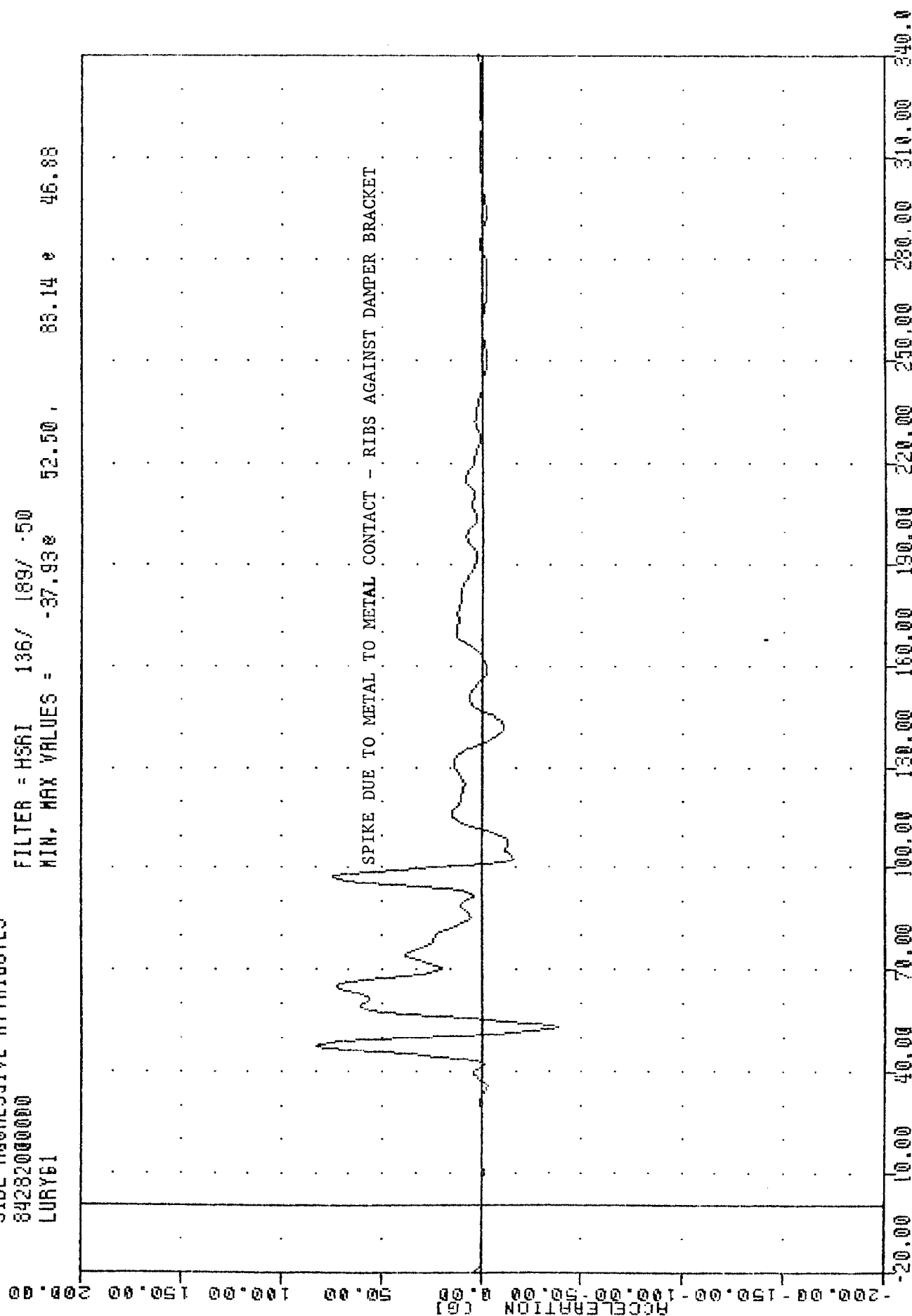
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W HUNG T12YCA

TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LURY61

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSB1 136/ 189/ -50

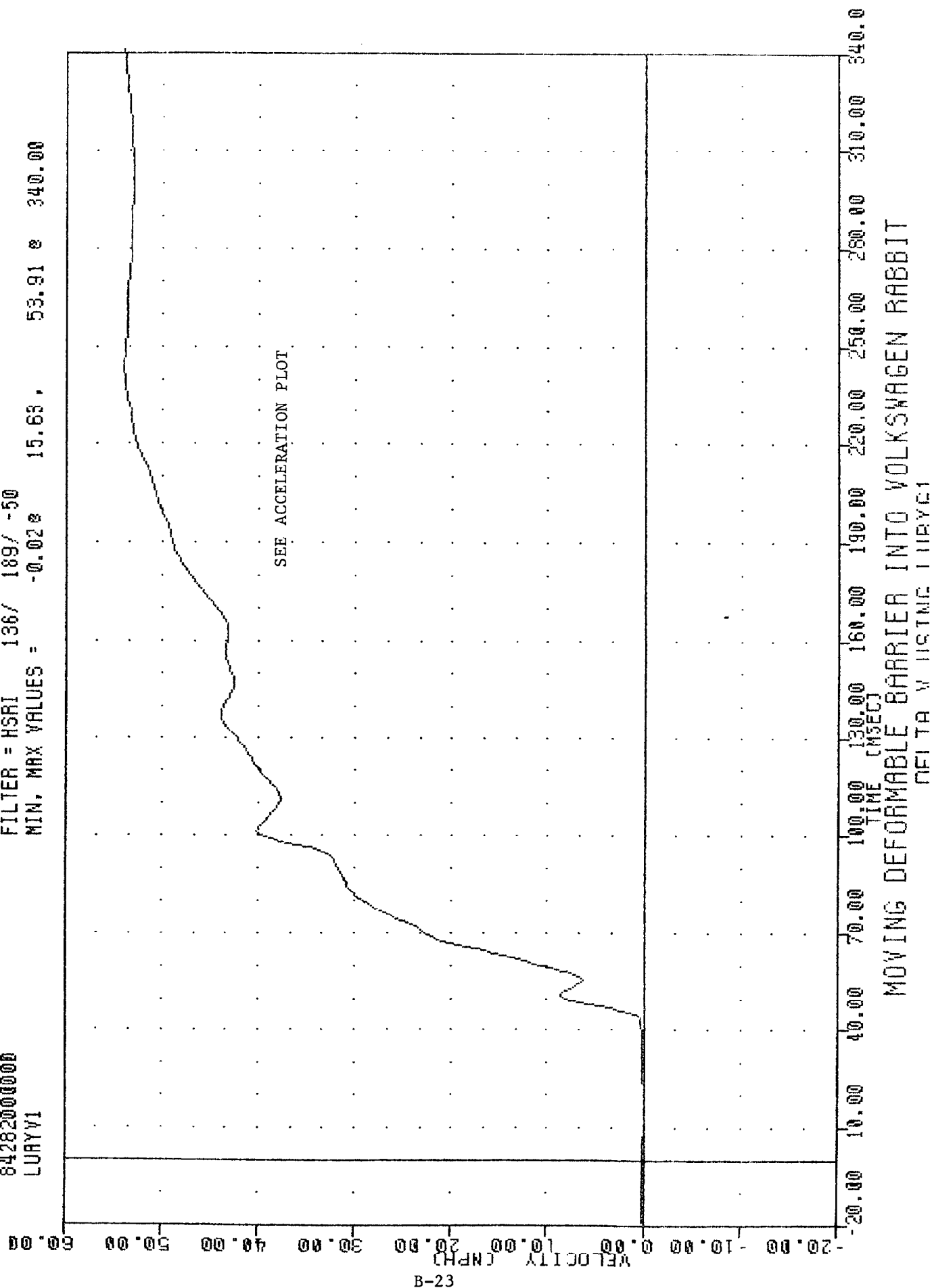
MIN. MAX VALUES = -37.93e 52.50 , 88.14 e 46.88



TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LURYV1

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.028 15.63 , 53.91 & 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W HSTMC TURVE1

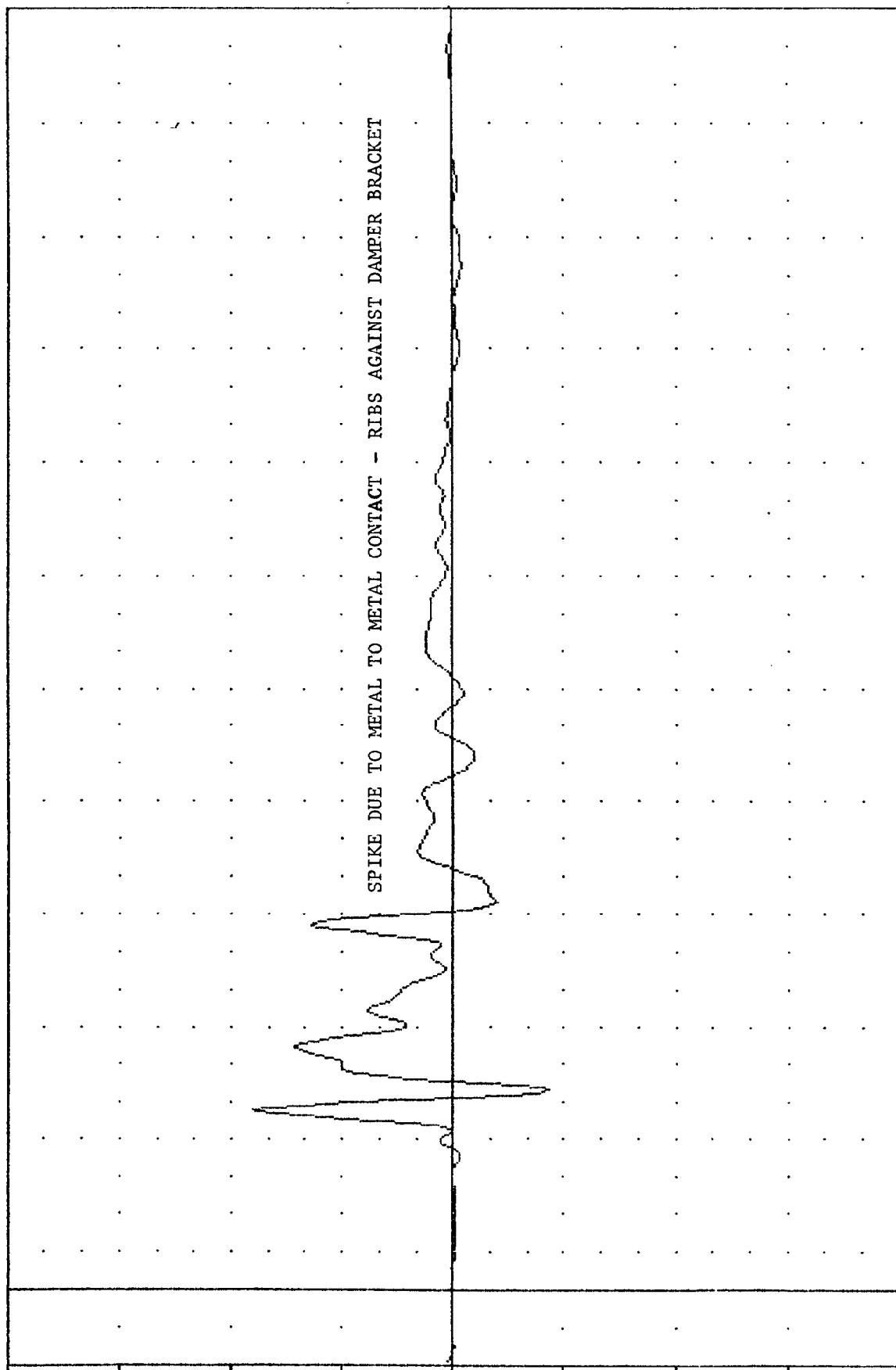
TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LURYGA

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSR1 136/ 189/ -50

MIN, MAX VALUES = -42.71g 52.50g 90.63g 47.50g

ACCELERATION (G)



B-24

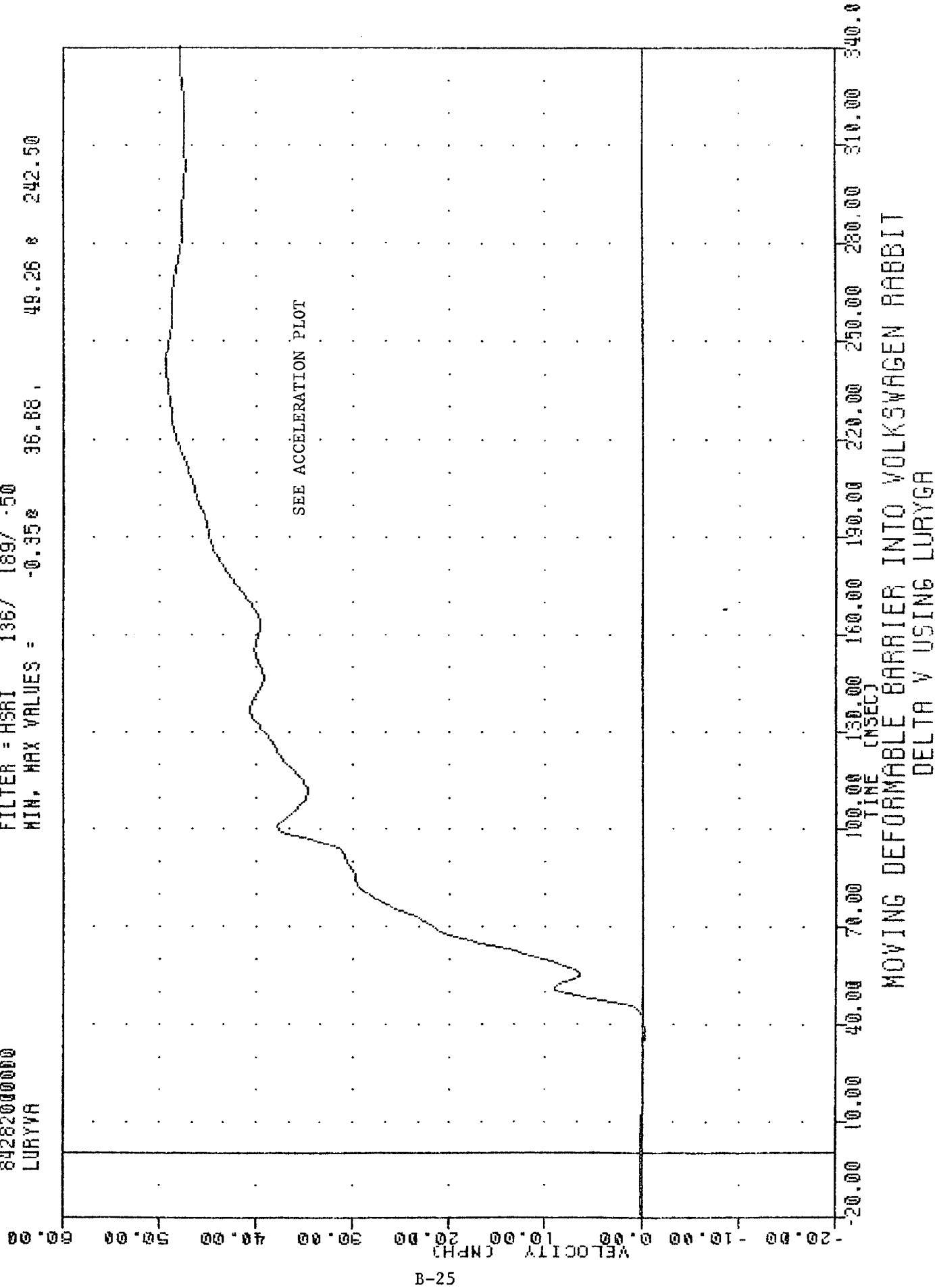
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT HIPPER RTR ACCELERATION 2 Y AXIS

TAC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LURYVA

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.35 49.26 242.50

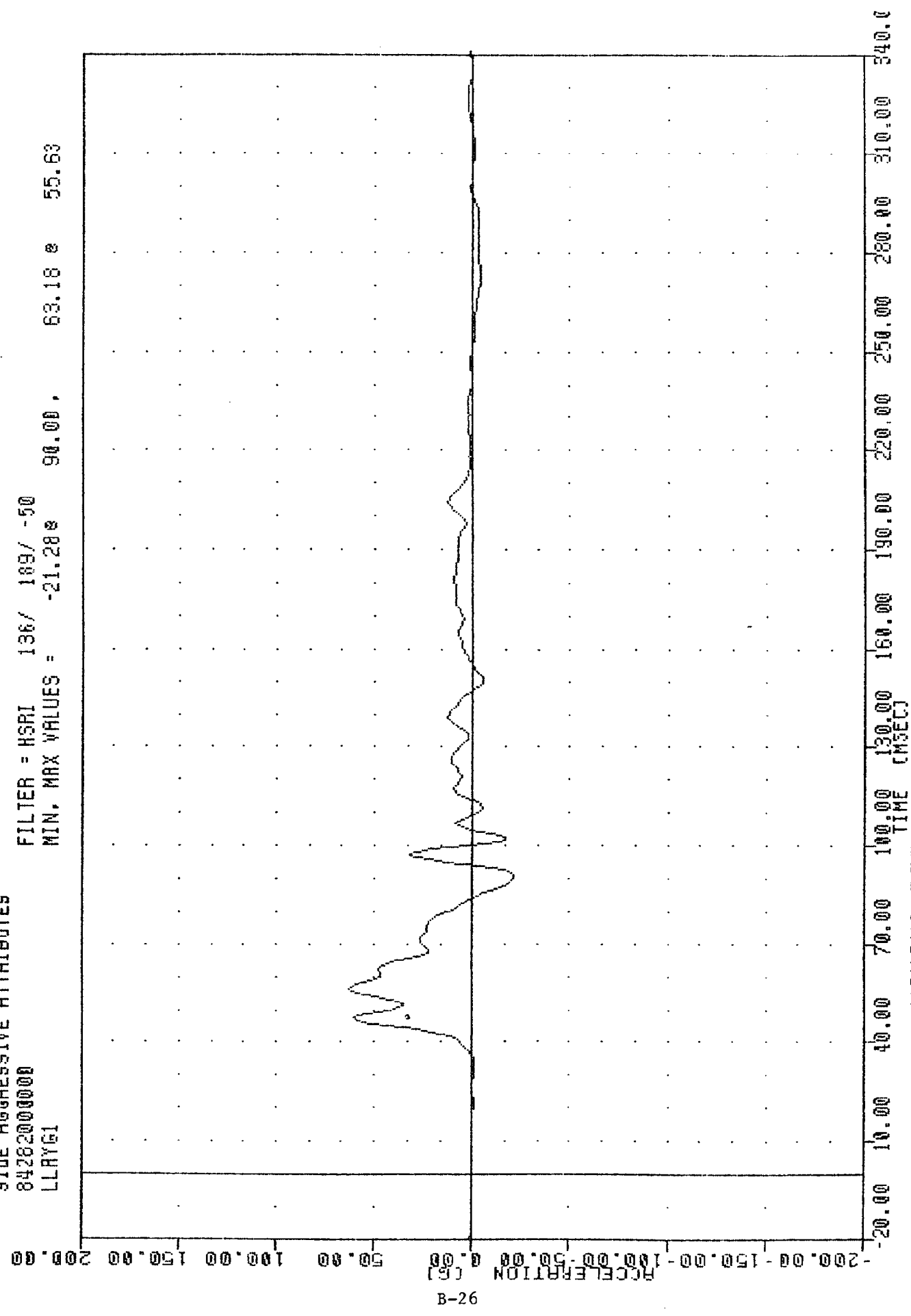


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURYGA

TRC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84262000000
 LLY61

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSPI 136/ 189/ -50
 MIN. MAX VALUES = -21.28 90.00, 63.18 55.63



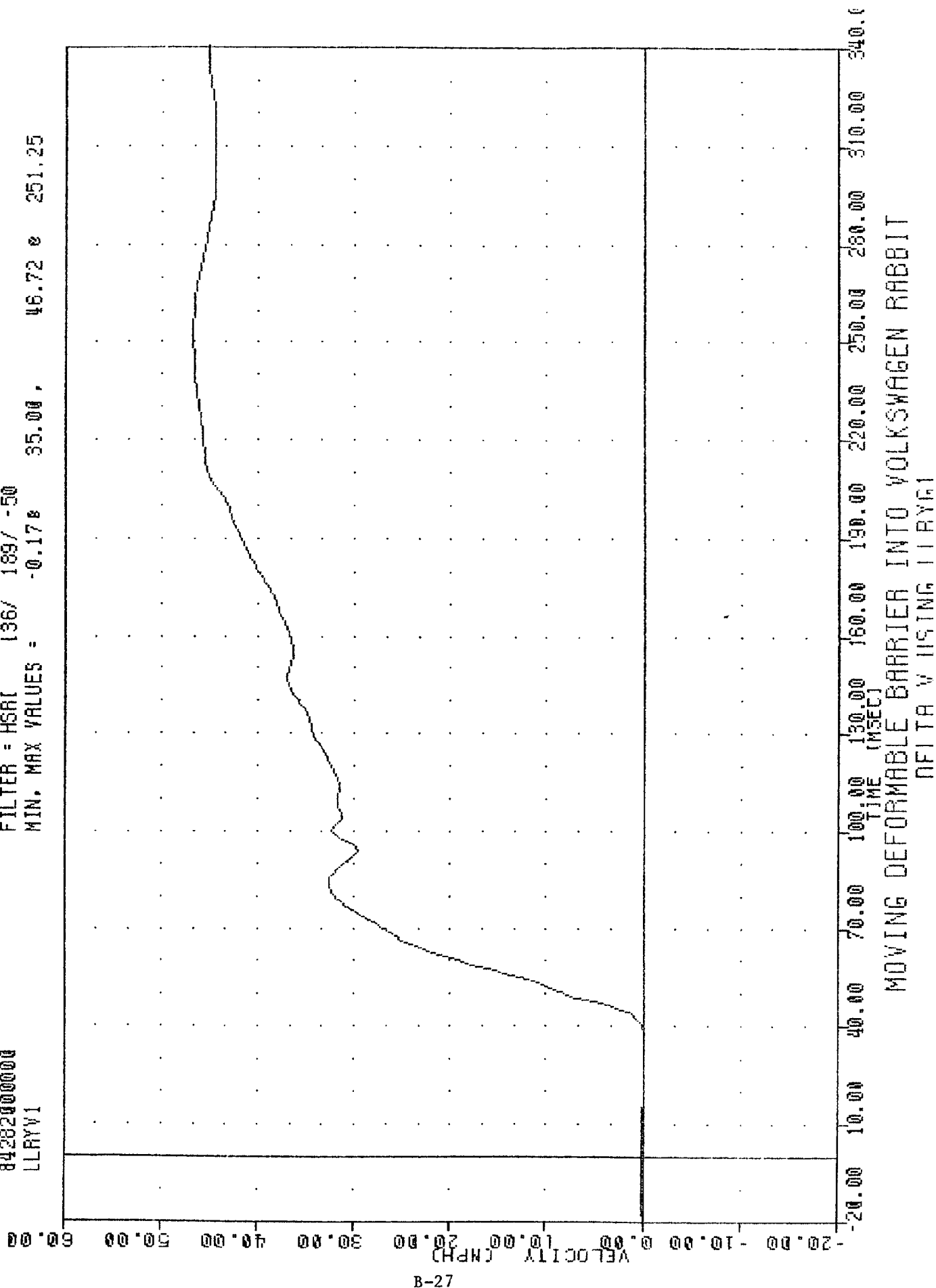
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT LOWER RIB ACCELERATION Y AXIS

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LLRYV1

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -0.178 35.00, 46.72 e 251.25

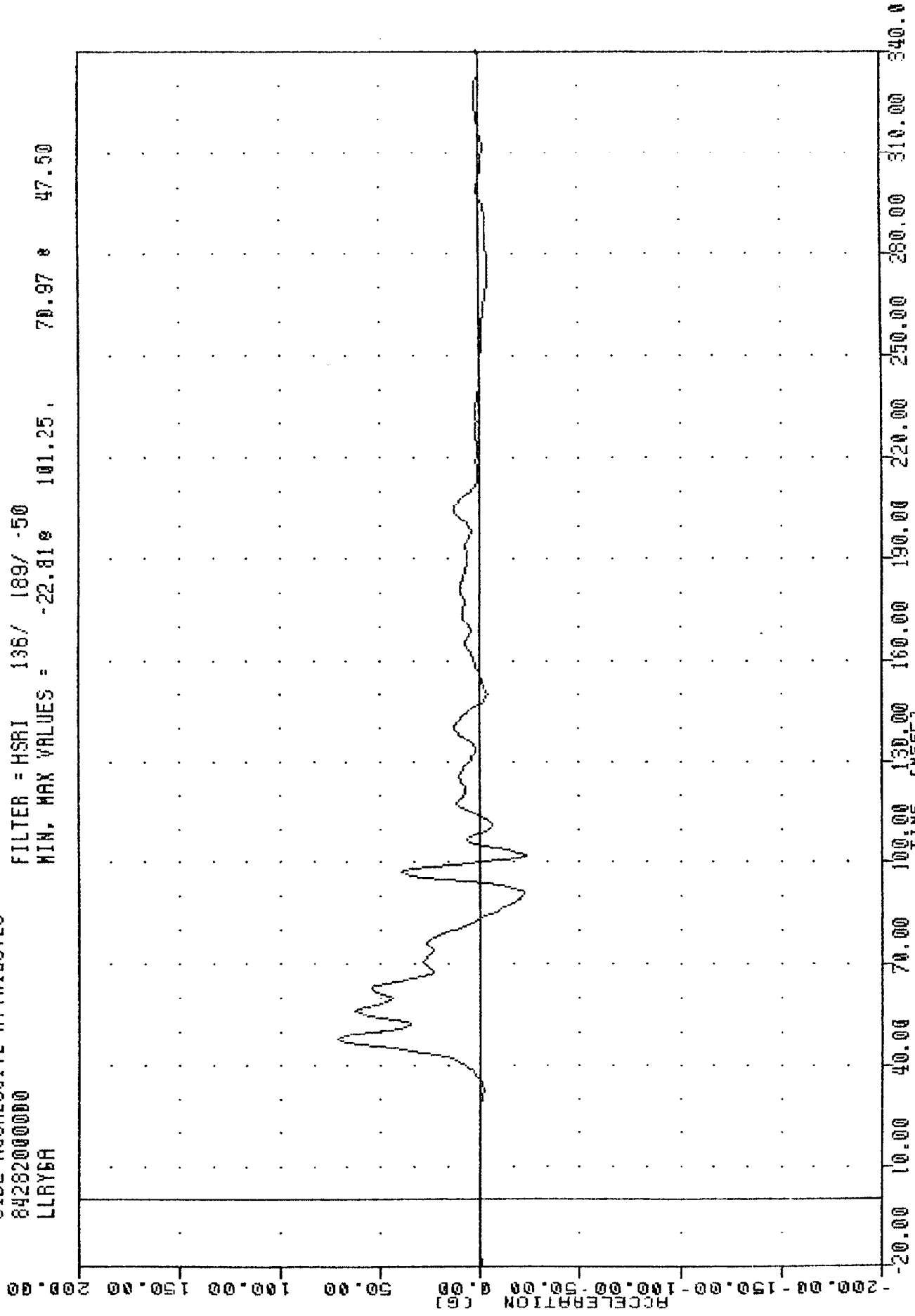


TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LLRY6R

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 135/ 189/ -50

MIN, MAX VALUES = -22.81e 101.25, 70.97 e 47.50

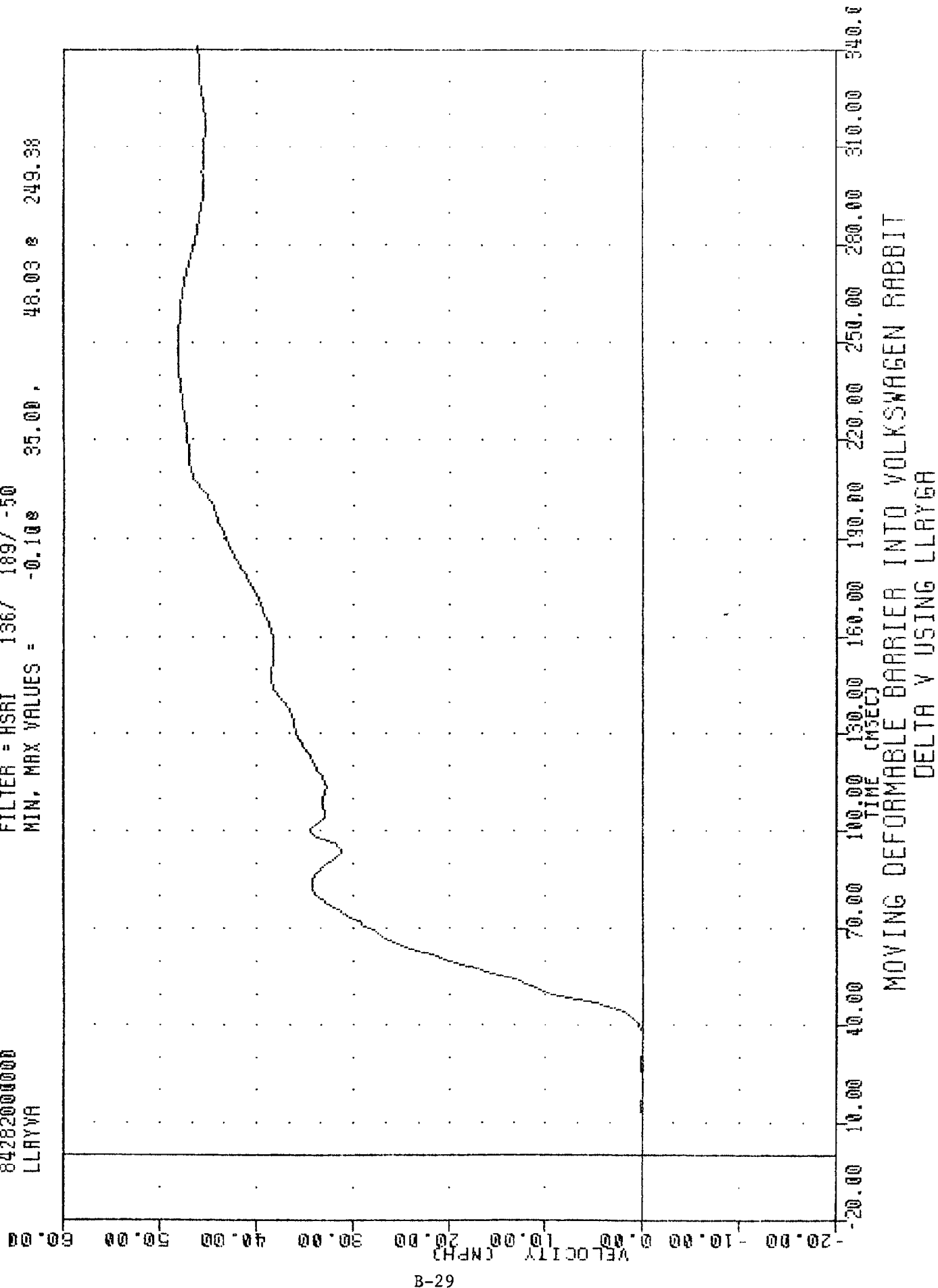


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT LOWER AIR ACCELERATION 2 Y AXIS

TRC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LLAYVA

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -0.108 35.00, 48.03 249.38

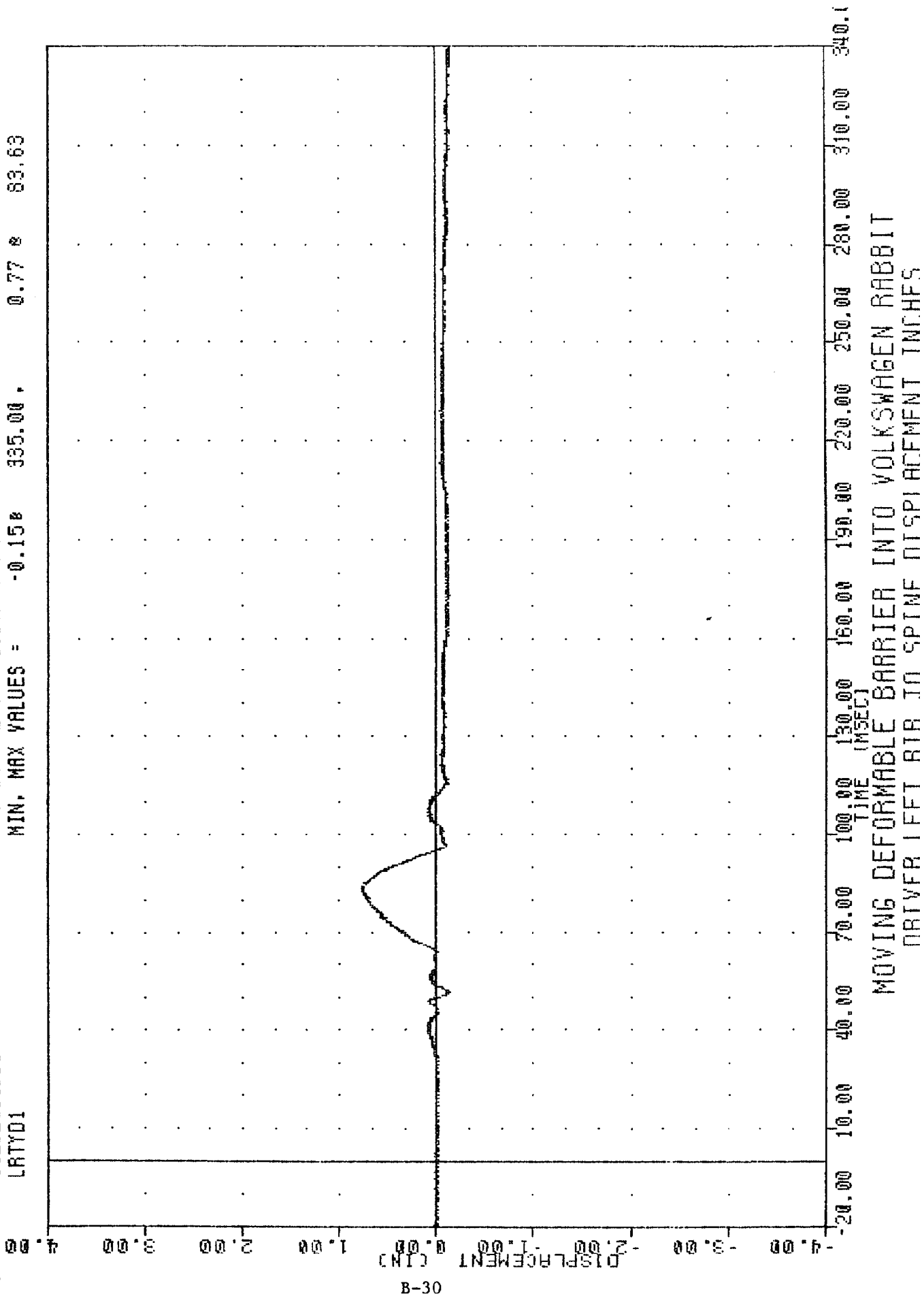


TRC
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 LRTYD1

PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -0.158 335.00 0.77 83.63

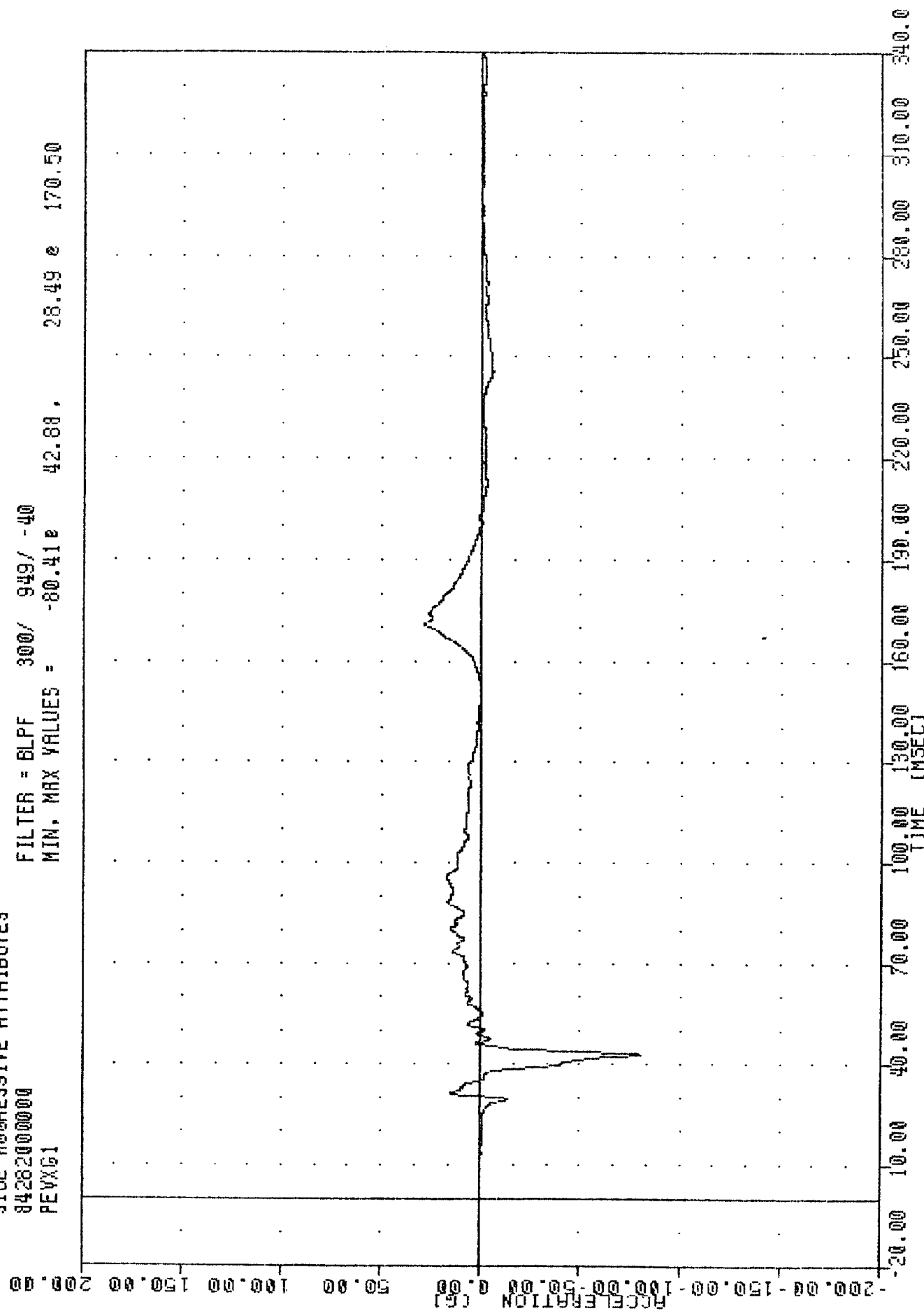


TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
PEVXG1

PLOT DATE 17-OCT-84 10:12:38

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -80.41e 42.88, 28.49 e 170.50



B-31

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS ACCELERATION X AXIS

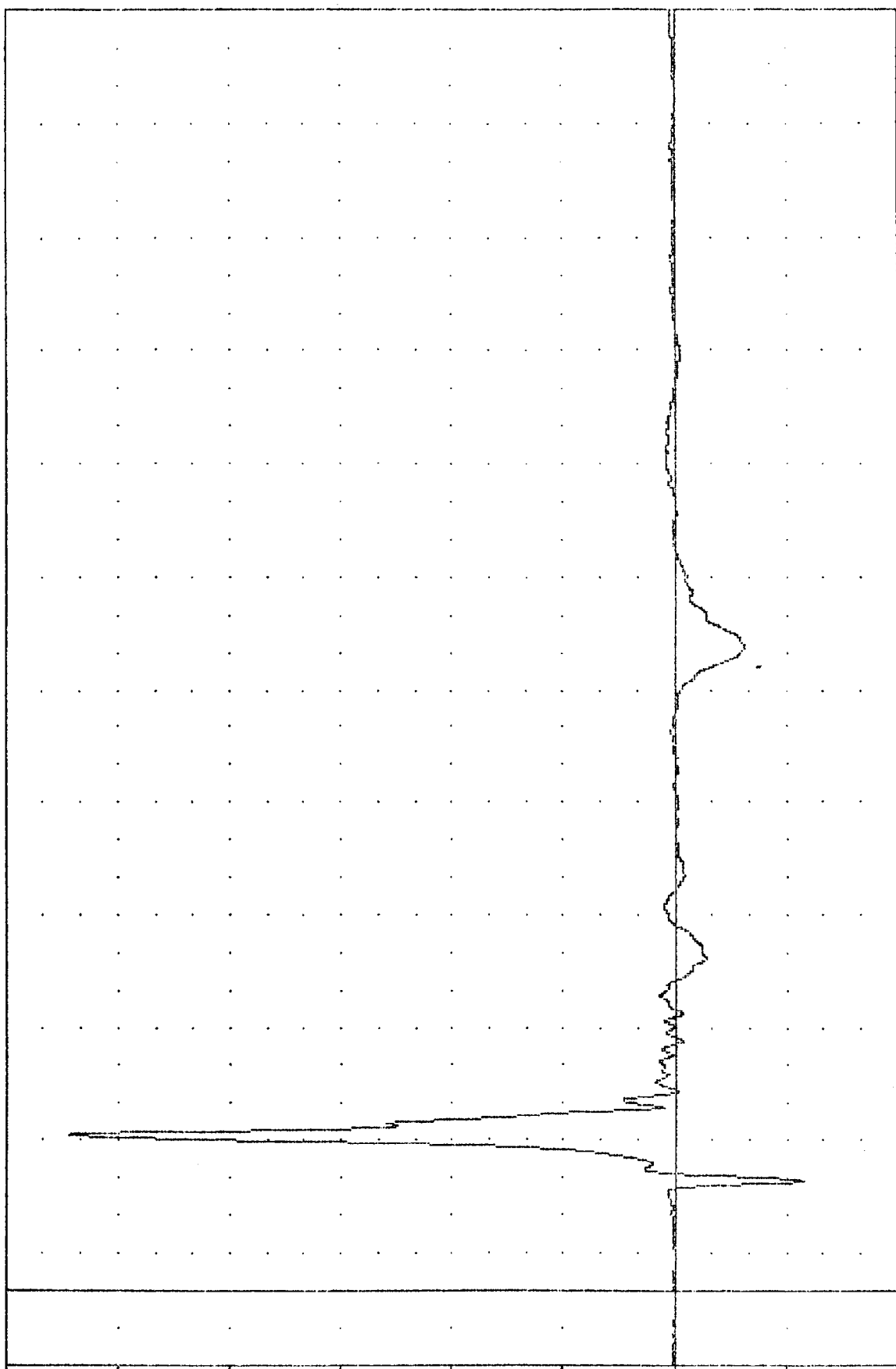
TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
842820000000
PEVY61

PLOT DATE 18-OCT-84 16:14:32

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -57.568 29.00 . 271.94 41.25

ACCELERATION (G)



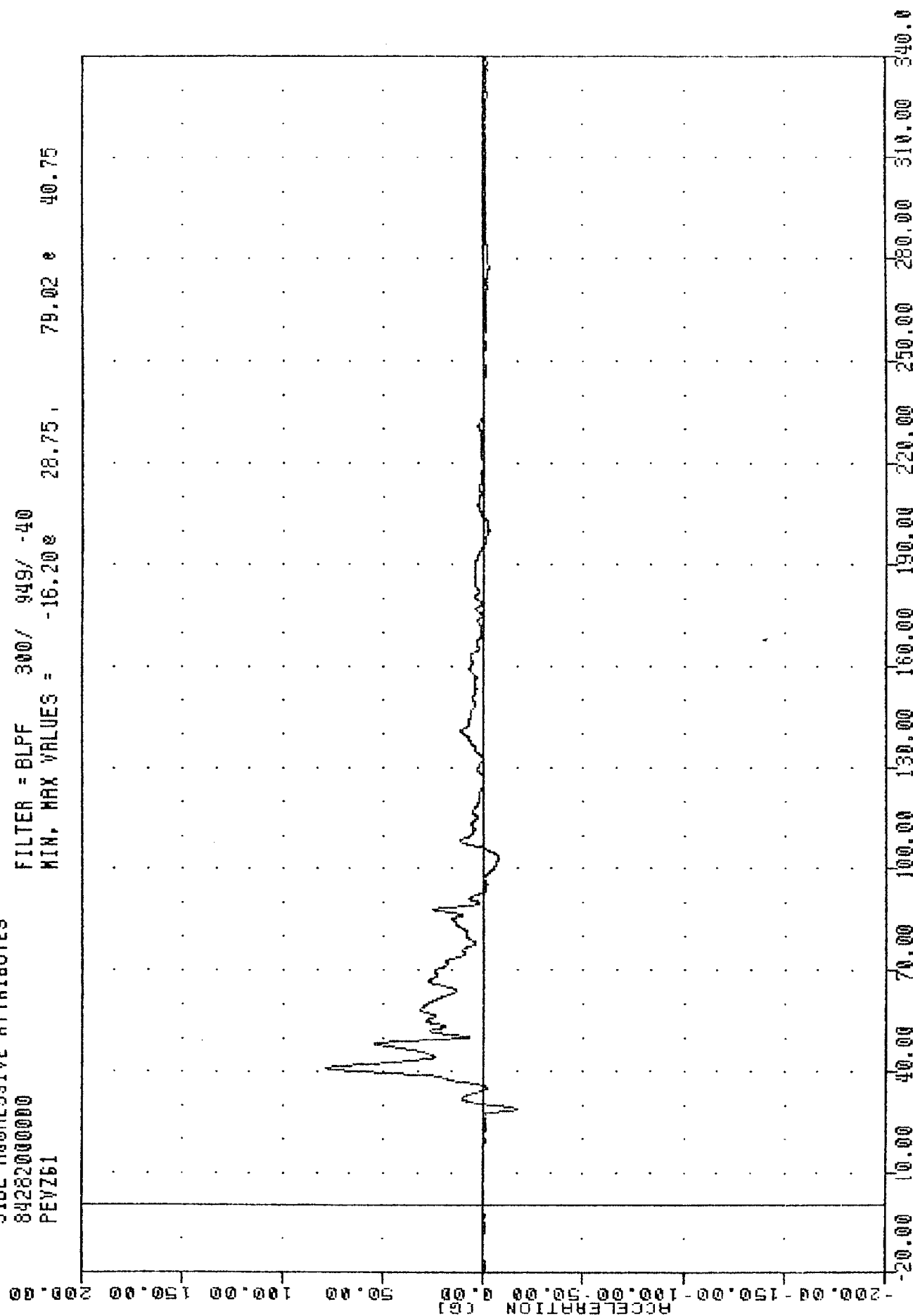
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 PEVZ61

PLOT DATE 17-OCT-84 10:12:38

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -16.20e 28.75, 79.02 e 40.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PEVZ61'S ACCELERATION 7 RVIS

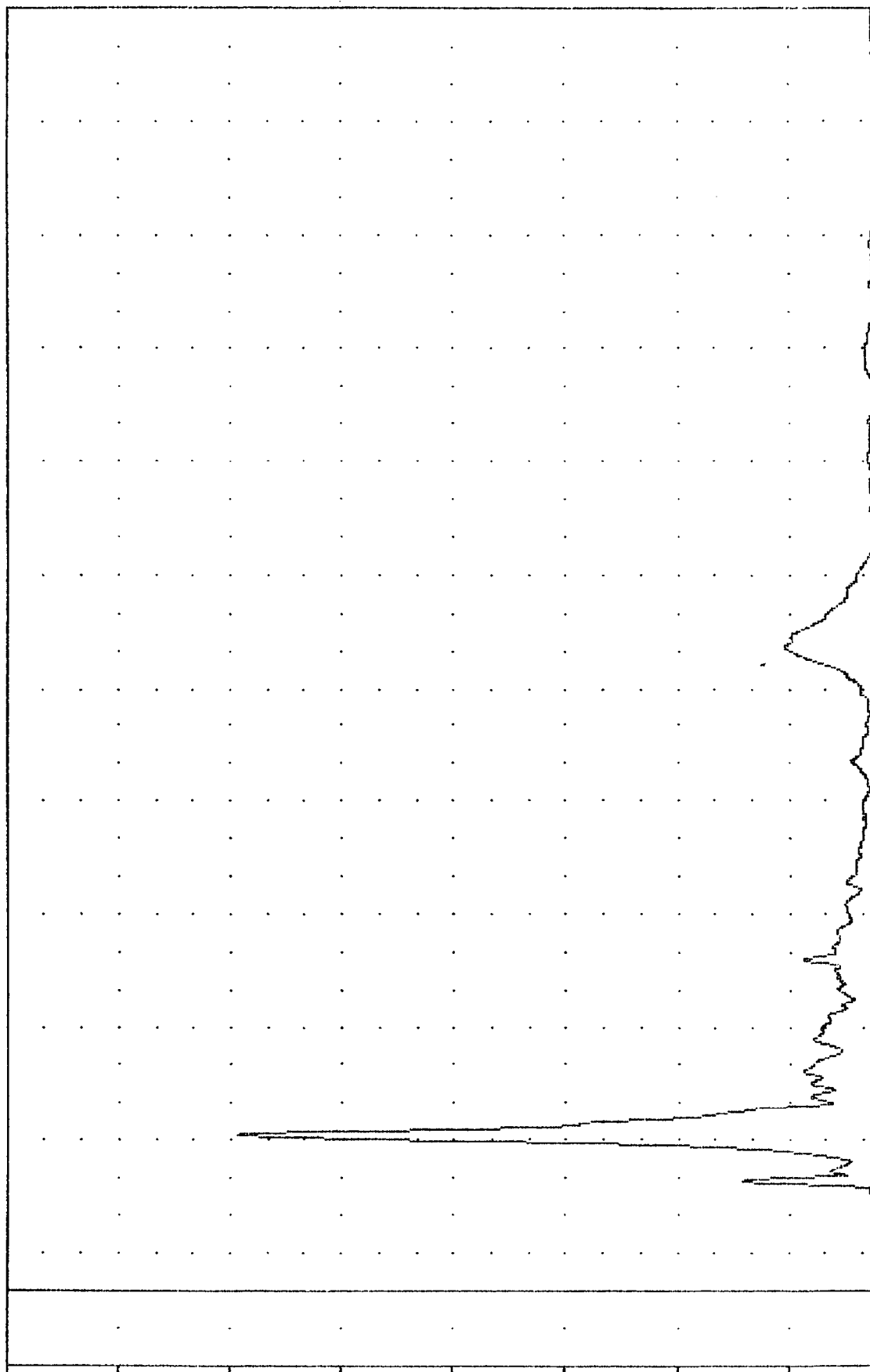
TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 PEVRG1

PLOT DATE 17-OCT-84 10:12:38

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = 0.11e 8.50, 286.86 e 41.25

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 BELT AND SEAT BELT

TRC , 841008

SIDE AGGRESSIVE ATTRIBUTES

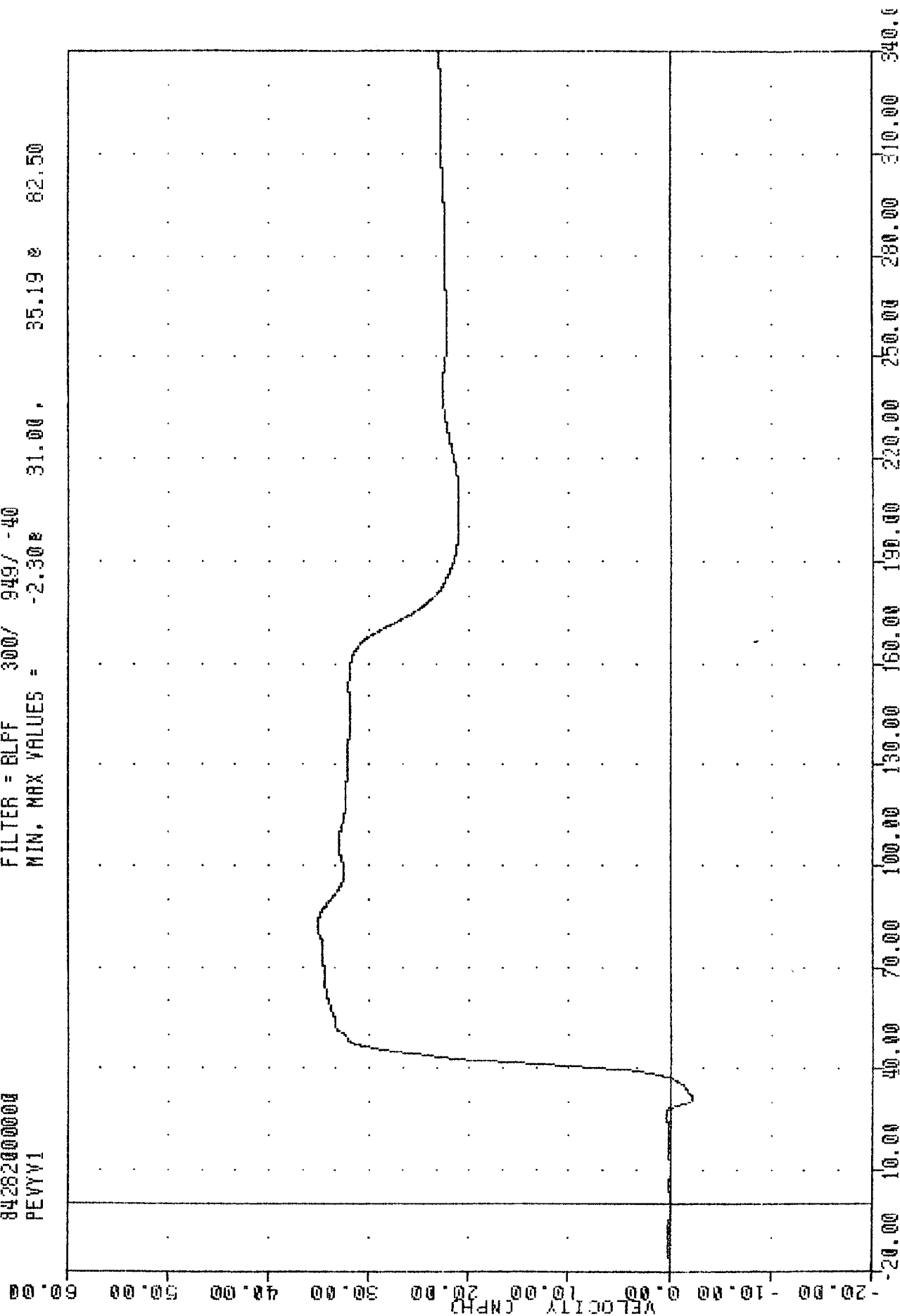
84282000000

PEVYV1

PLOT DATE 17-OCT-84 10:16:18

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -2.30s 31.00, 35.19 s 82.50



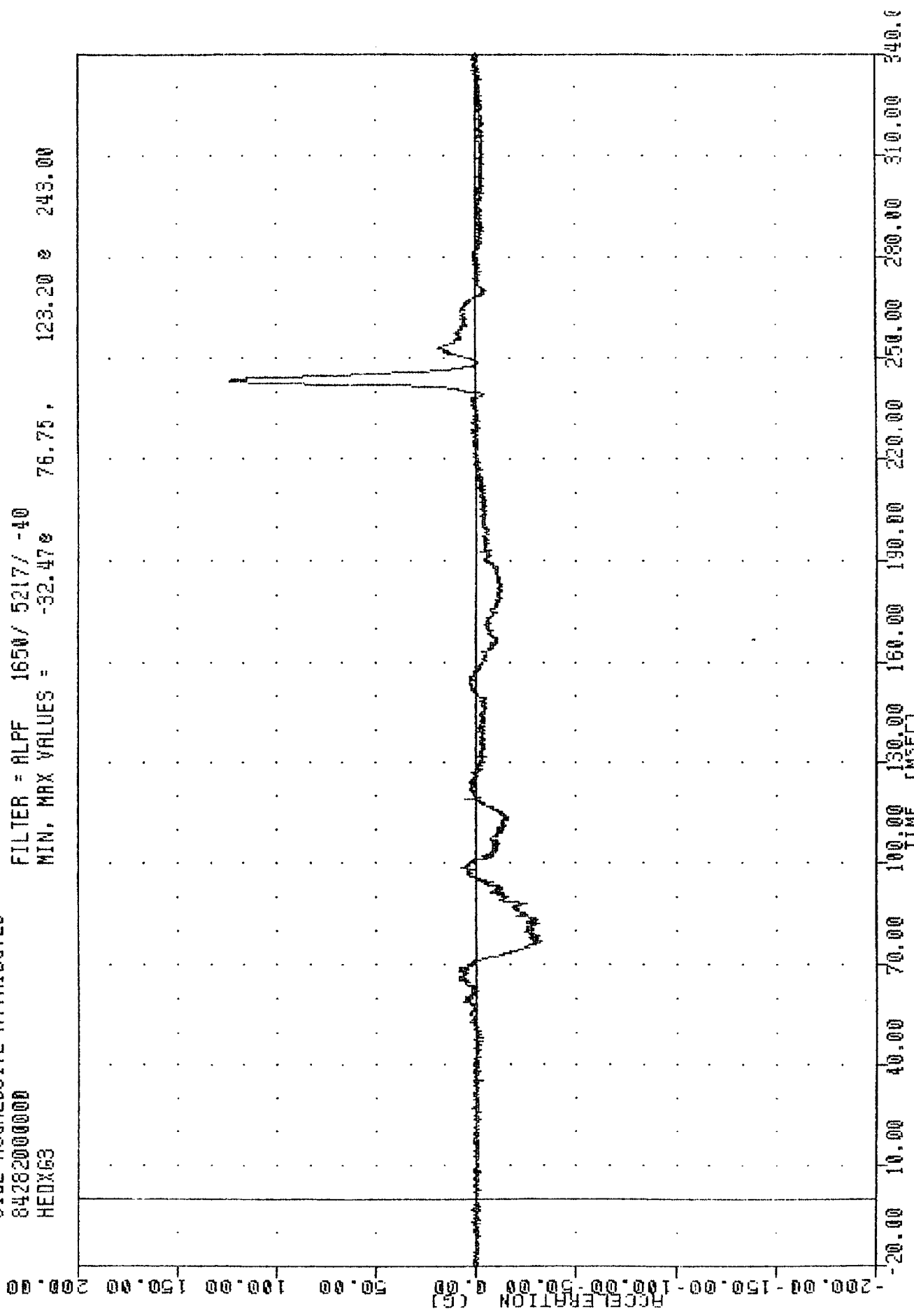
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING PFVYV1

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 HEDXG3

PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = -32.47% 76.75 , 123.20 @ 243.00



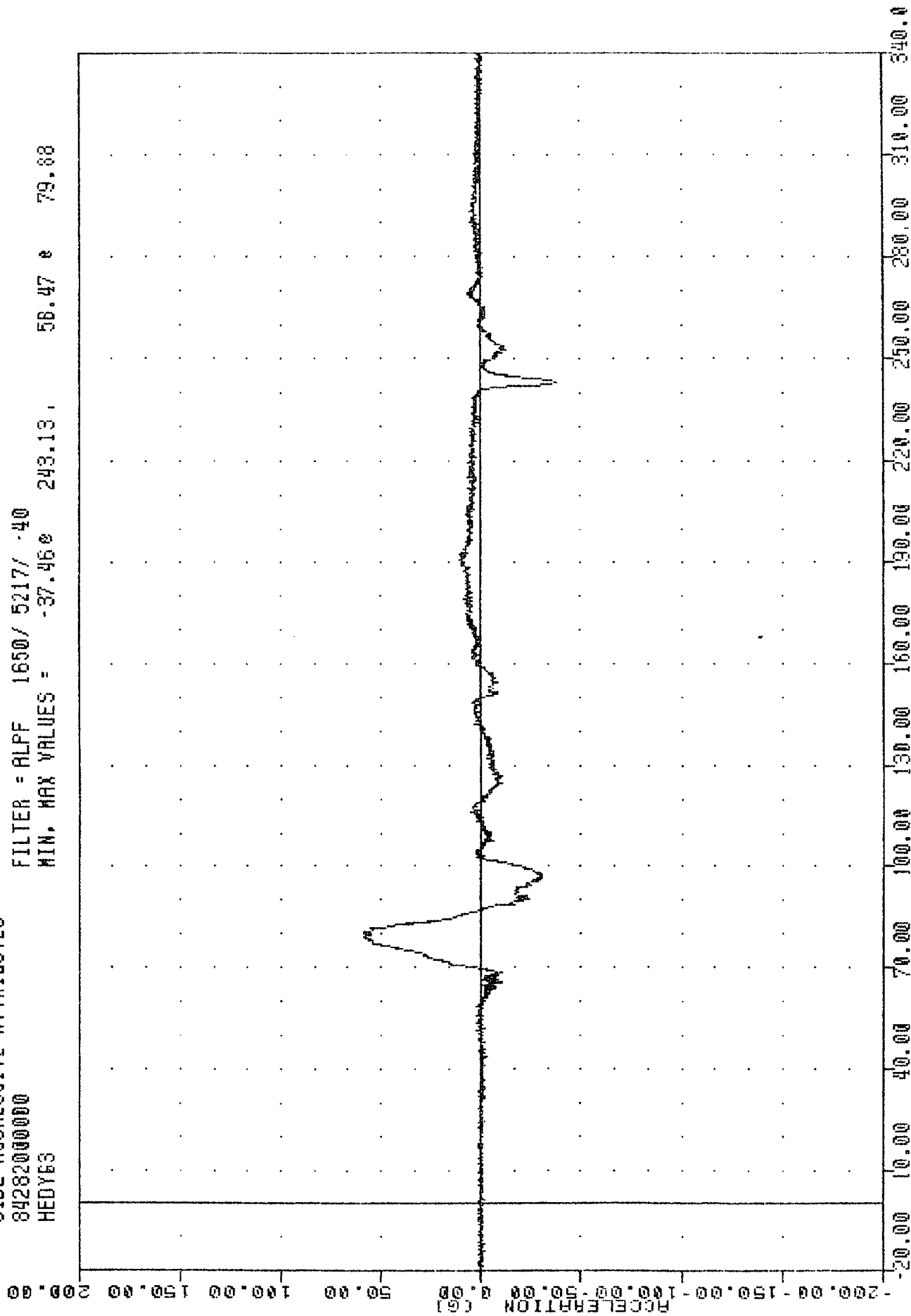
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD ACCELERATION Y AXIS

TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 HEDY63

PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -37.46 243.13 56.47 79.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD ACCELERATION Y AXIS

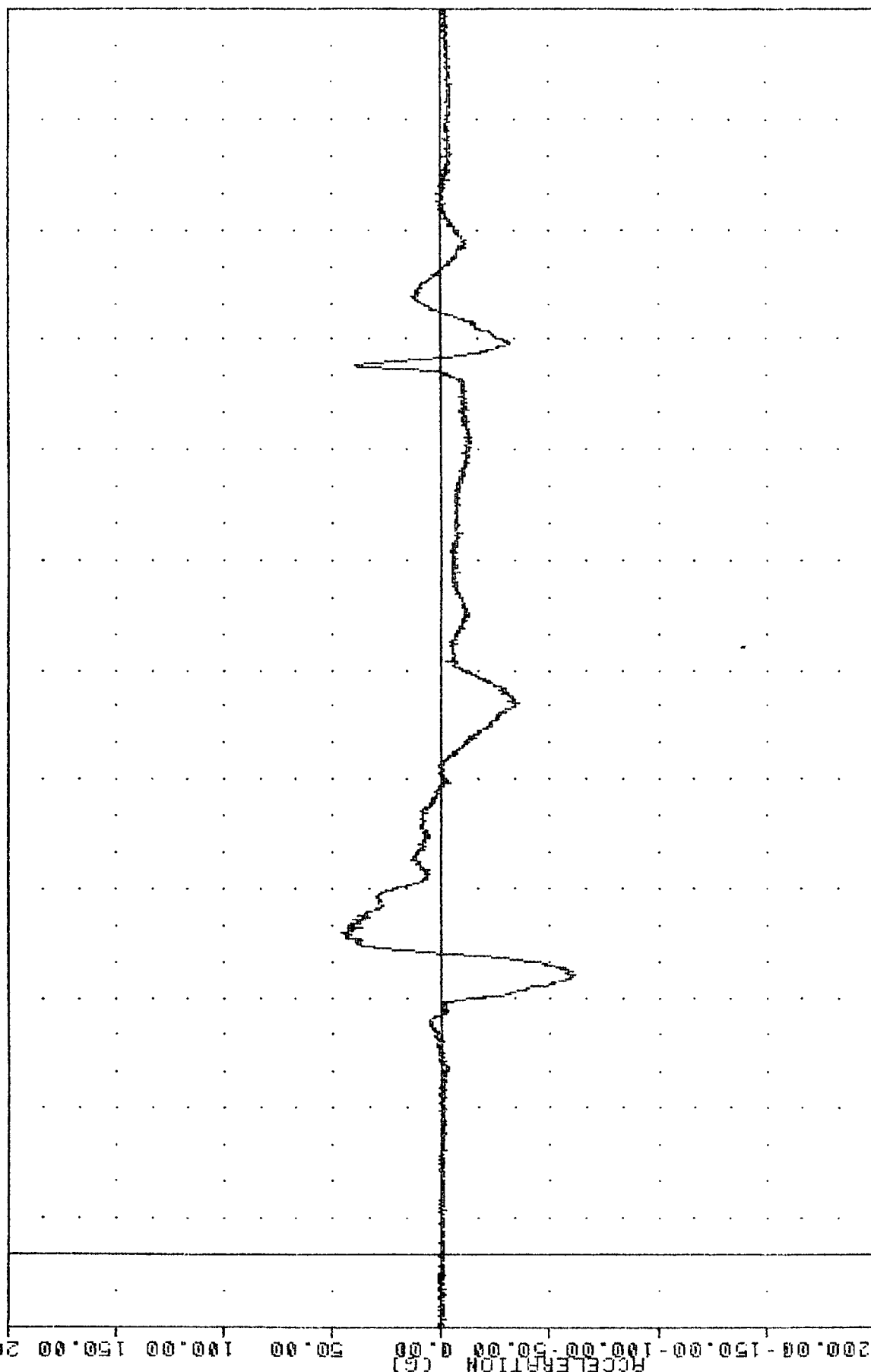
TRC ,841008
SIDE AGGRESSIVE ATTRIBUTES
842820000000
HEDZ63

PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -60.74e 75.88e 45.87 e 87.75

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

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER HEAD ACCELERATION 7 AXIS

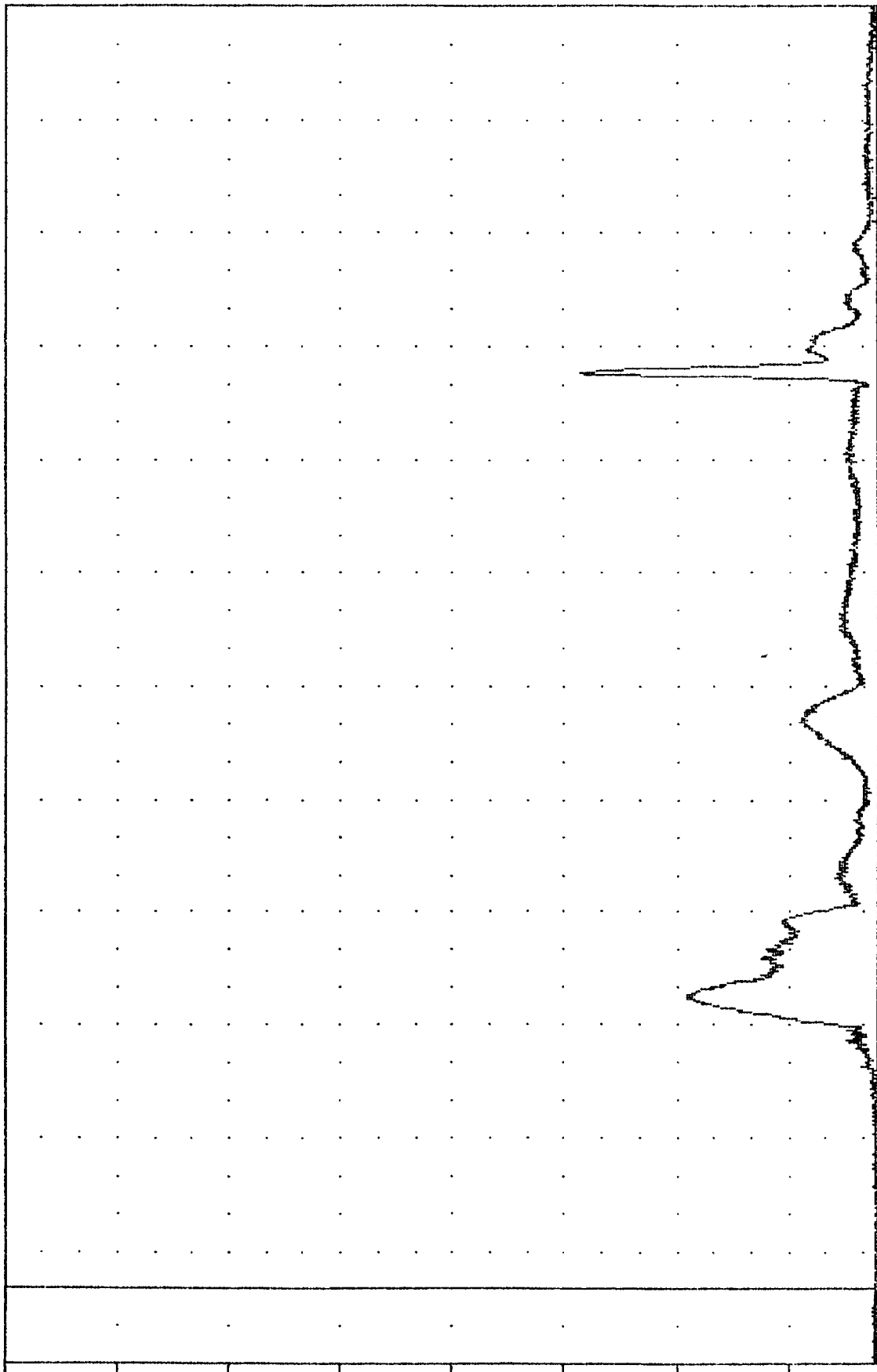
THC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 HEAD83

PLOT DATE 17-OCT-84 10:12:38

FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = 0.16e 1.75, 133.14 e 243.00

ACCELERATION (G)

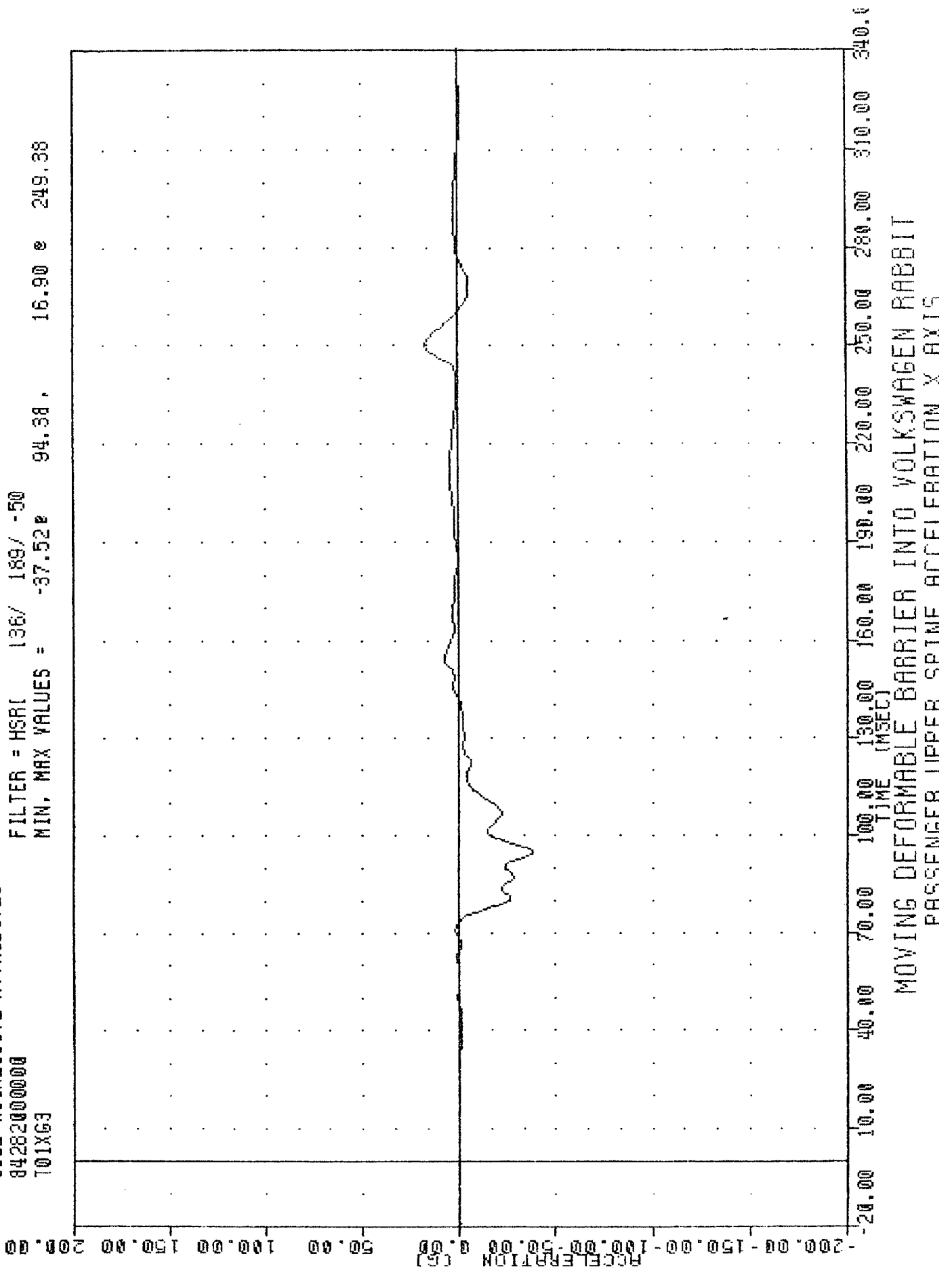


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (msec)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD RFSIII TANT

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 T01X63

PLOT DATE 17-OCT-84 10:13:38
 FILTER = HSR[136/ 189/ -50
 MIN. MAX VALUES = -37.52 e 94.38 e 16.90 e 249.38



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

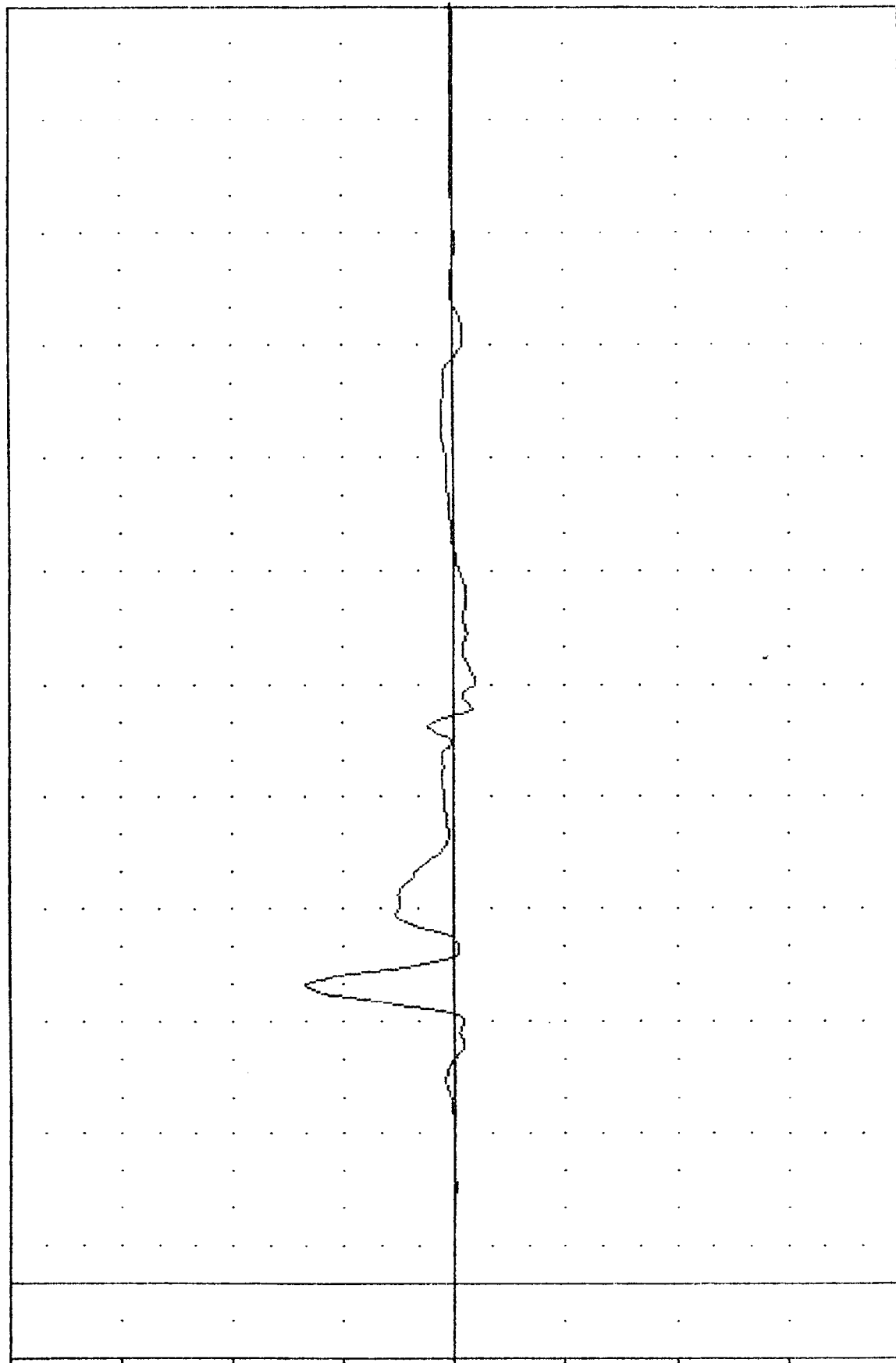
TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01Y63

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -9.32e 160.63, 67.58 e 78.75

B-41
 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
 TIME (MSEC)

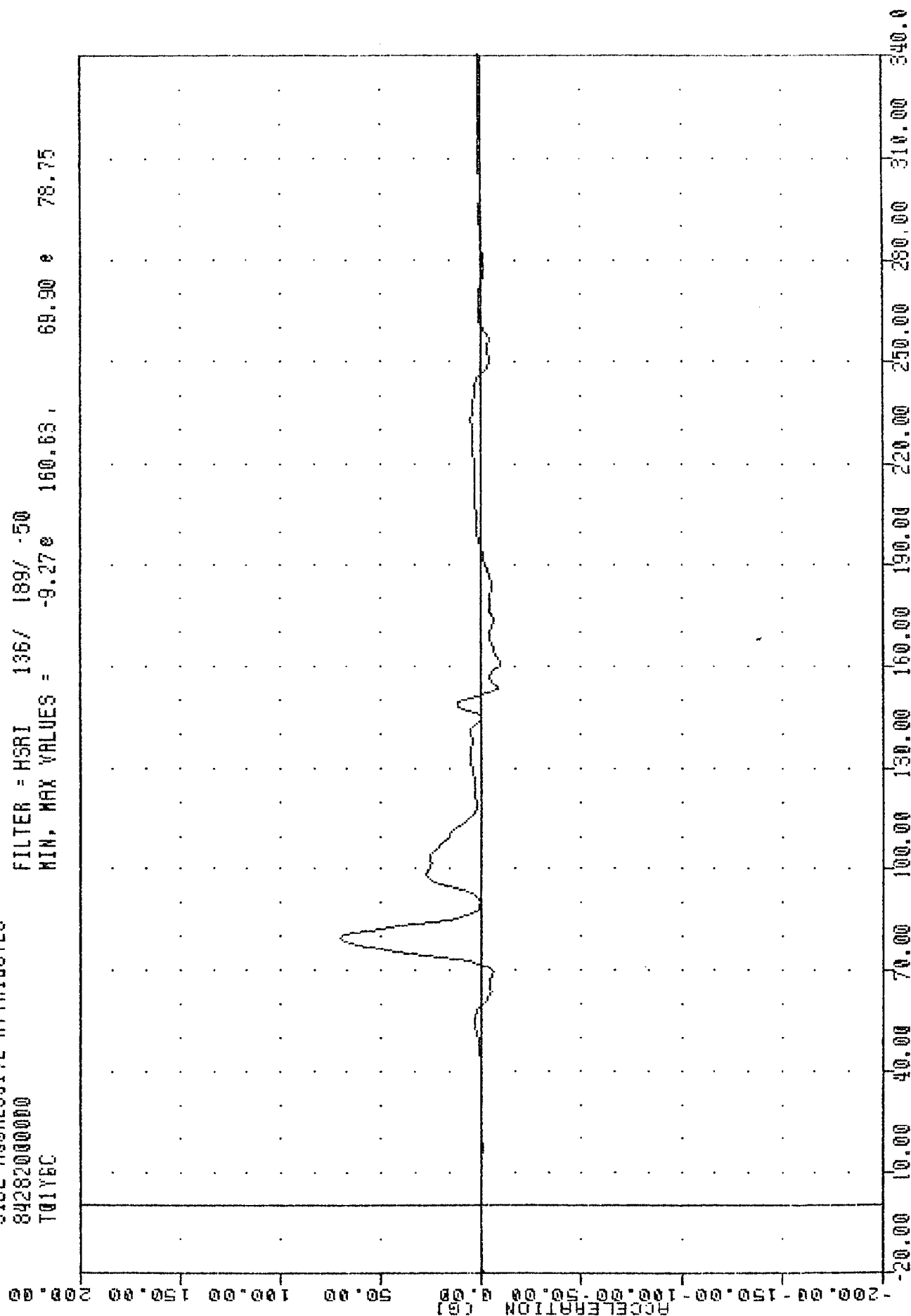
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE ACCELERATION Y AXIS

TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01YEC

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -9.27e 160.63, 69.90 e 78.75



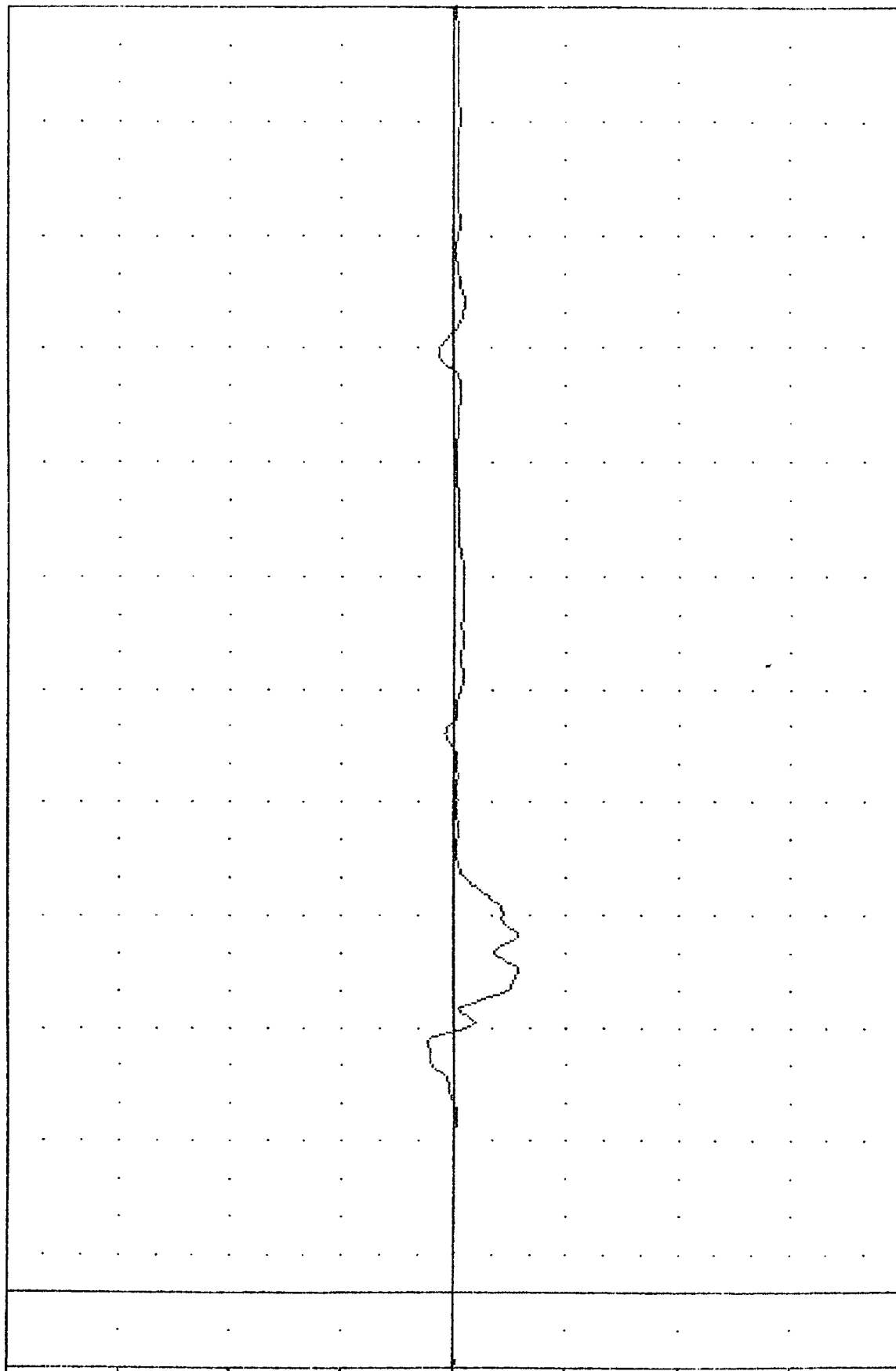
TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 701263

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -28.69 84.38 11.85 65.00

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

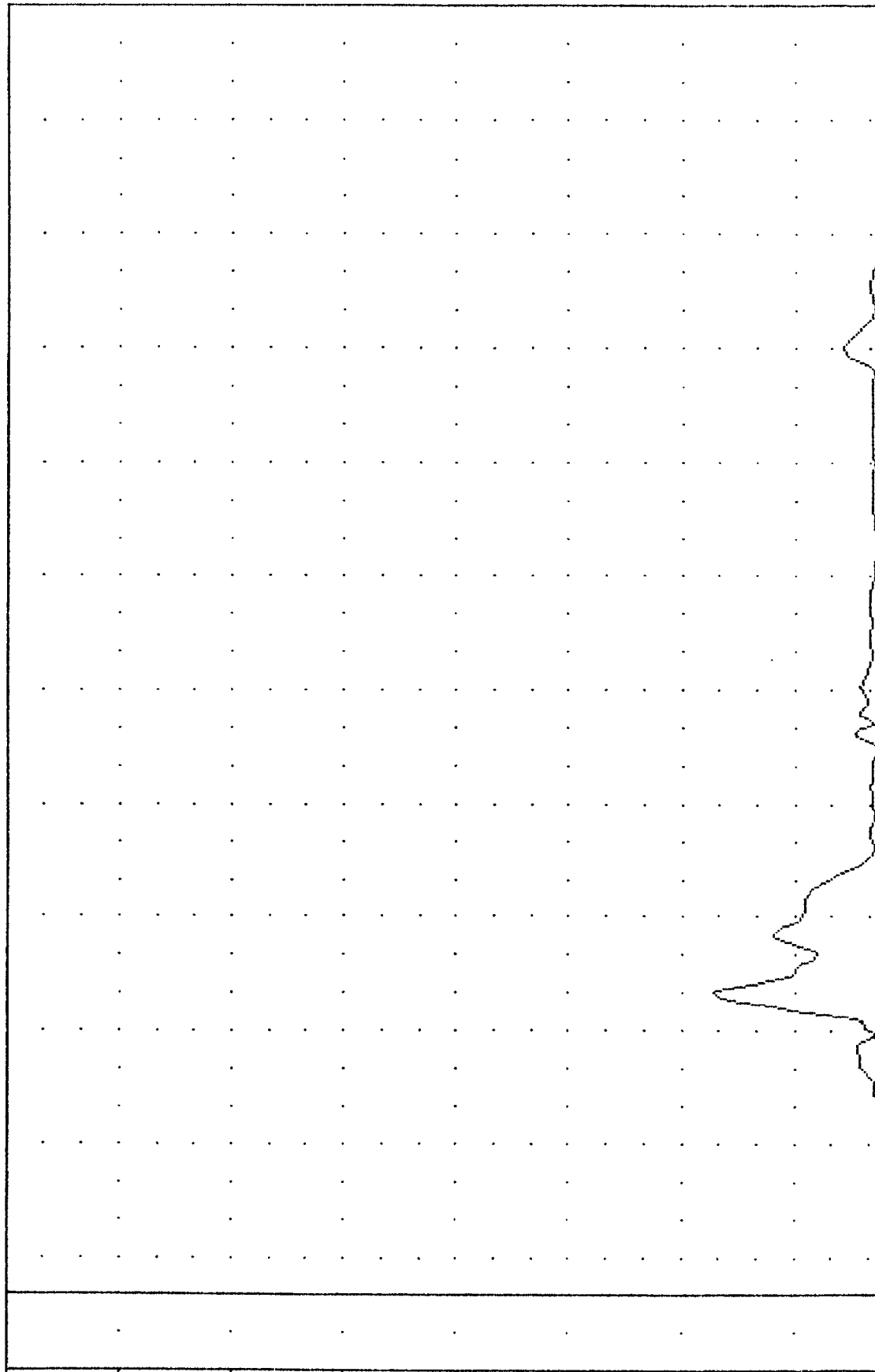
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE ACCELERATION 7 AV19

TAC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01R63

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = 0.08e -17.50, 75.52 e 79.38

ACCELERATION (G)



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

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE RESULTANT

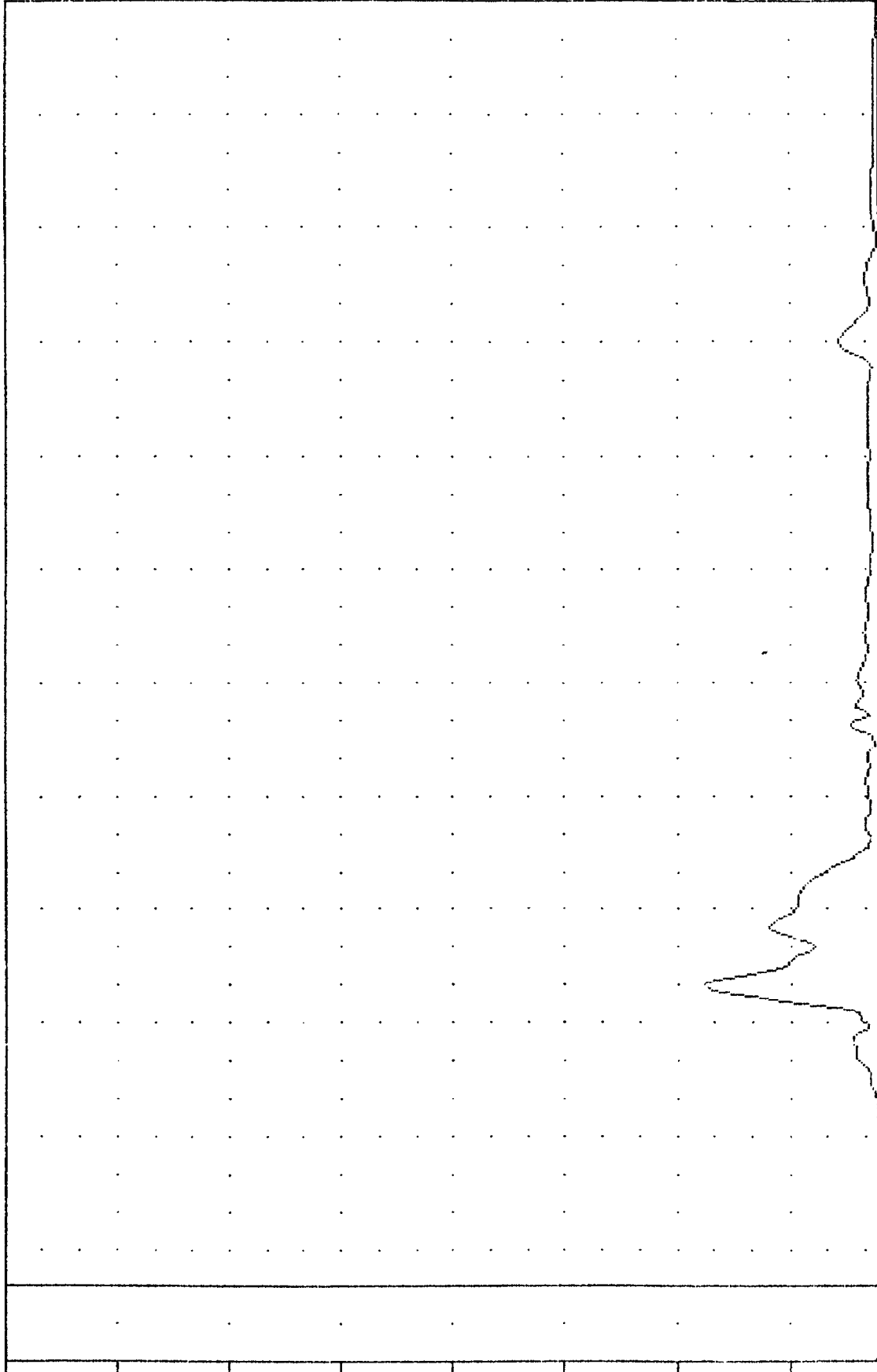
TAC
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 TQ1R6C

PLOT DATE 17-OCT-84 10:14:56

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = 0.10e 13.13, 77.81 e 79.38

ACCELERATION (G)



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

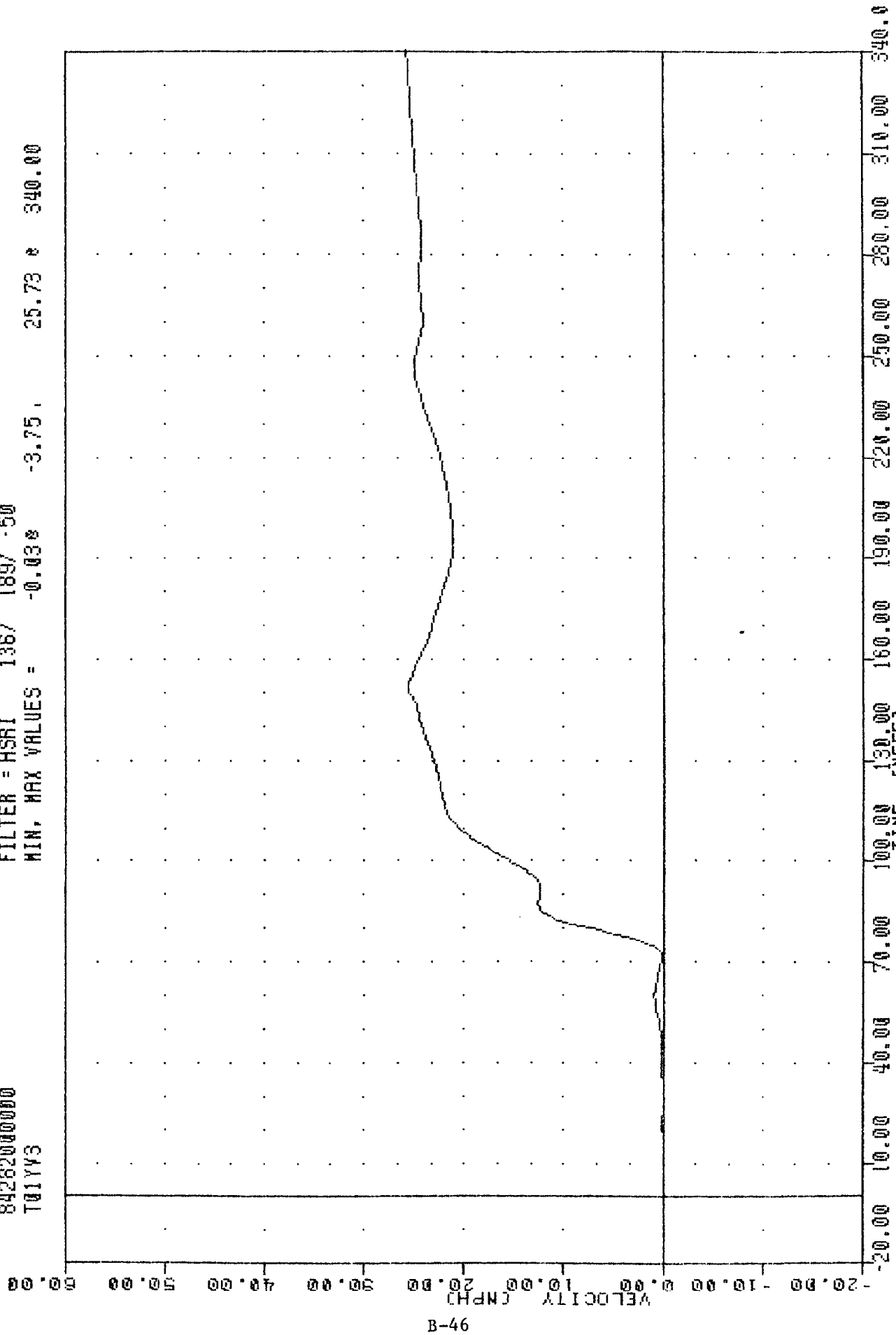
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE RESULTANT LISTING TRAJECT

TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84262000000
 T01YV3

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.038 -3.75 25.73 340.00



B-46

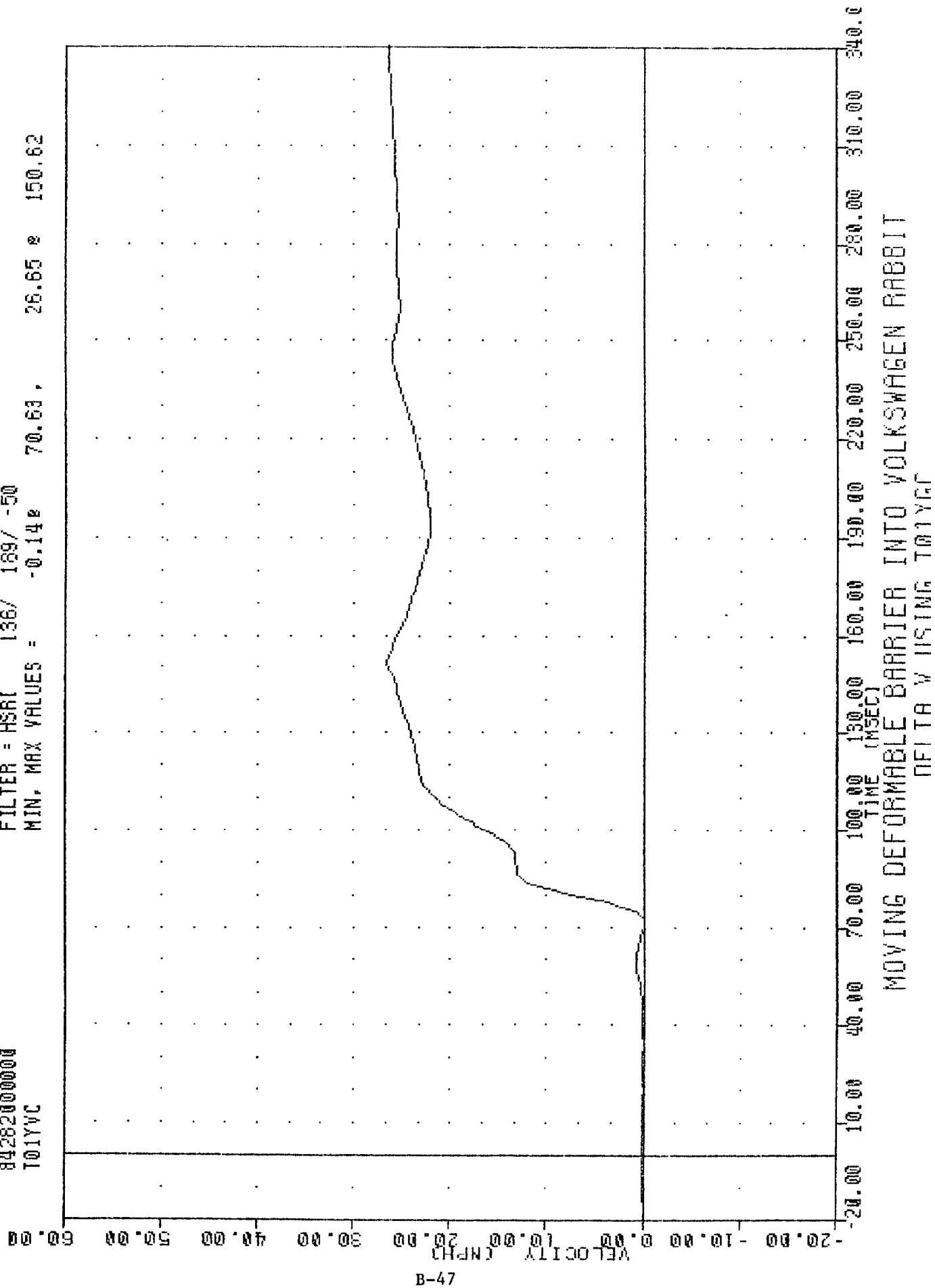
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W HING T01YV3

TRC , 641008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T01YVC

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSR 136/ 189/ -50

MIN. MAX VALUES = -0.14 70.63, 26.65 150.62



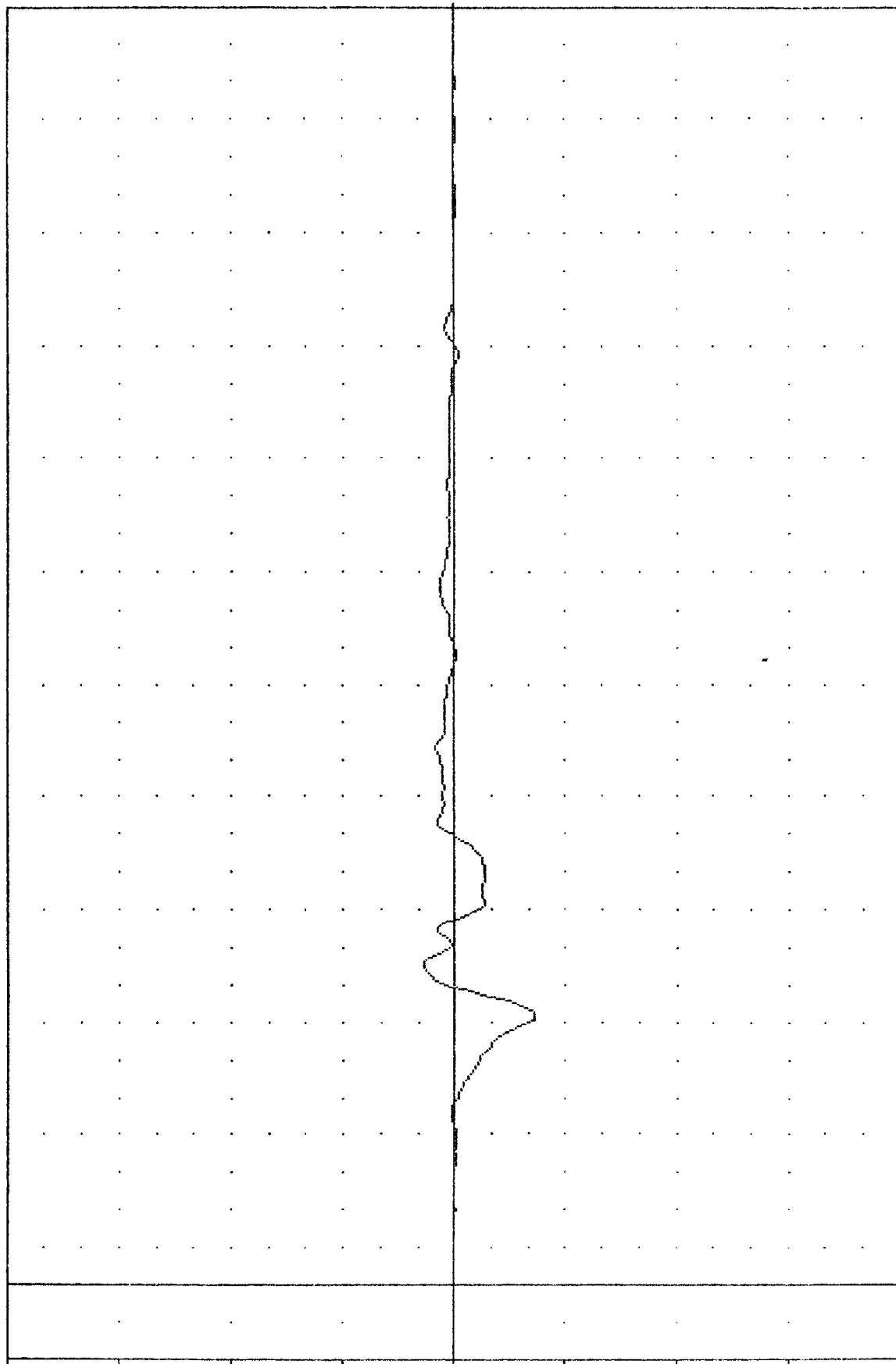
TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12XG3

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -36.08 70.63, 14.18 85.00

ACCELERATION (G)



B-48

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DECELERED LINED COTING ACCELERATION V DVIC

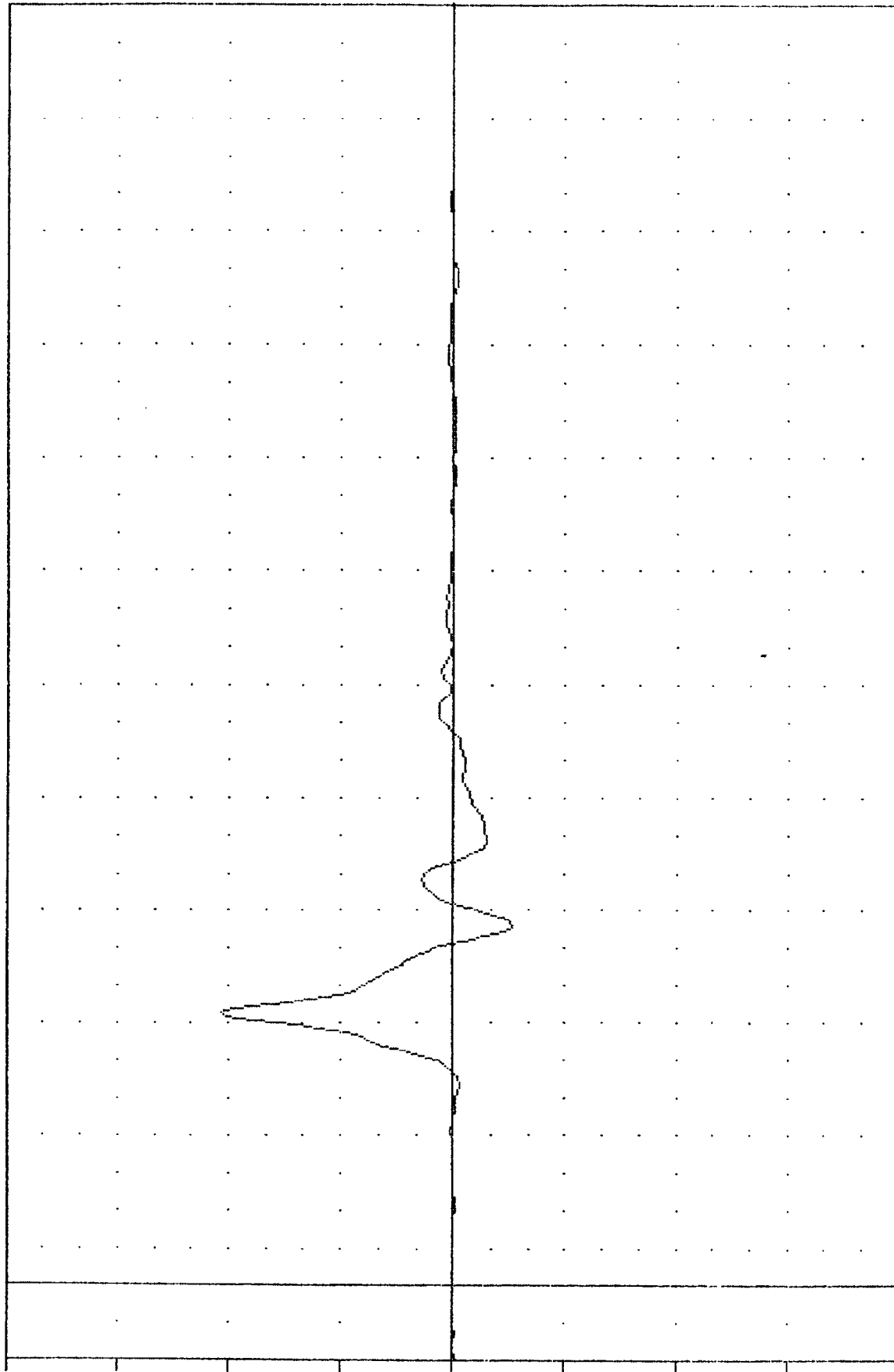
TRC ,841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12Y63

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -26.45s 95.63. 102.78 e 71.88

ACCELERATION (G)



B-49

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

TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
842820000000
T12YGC

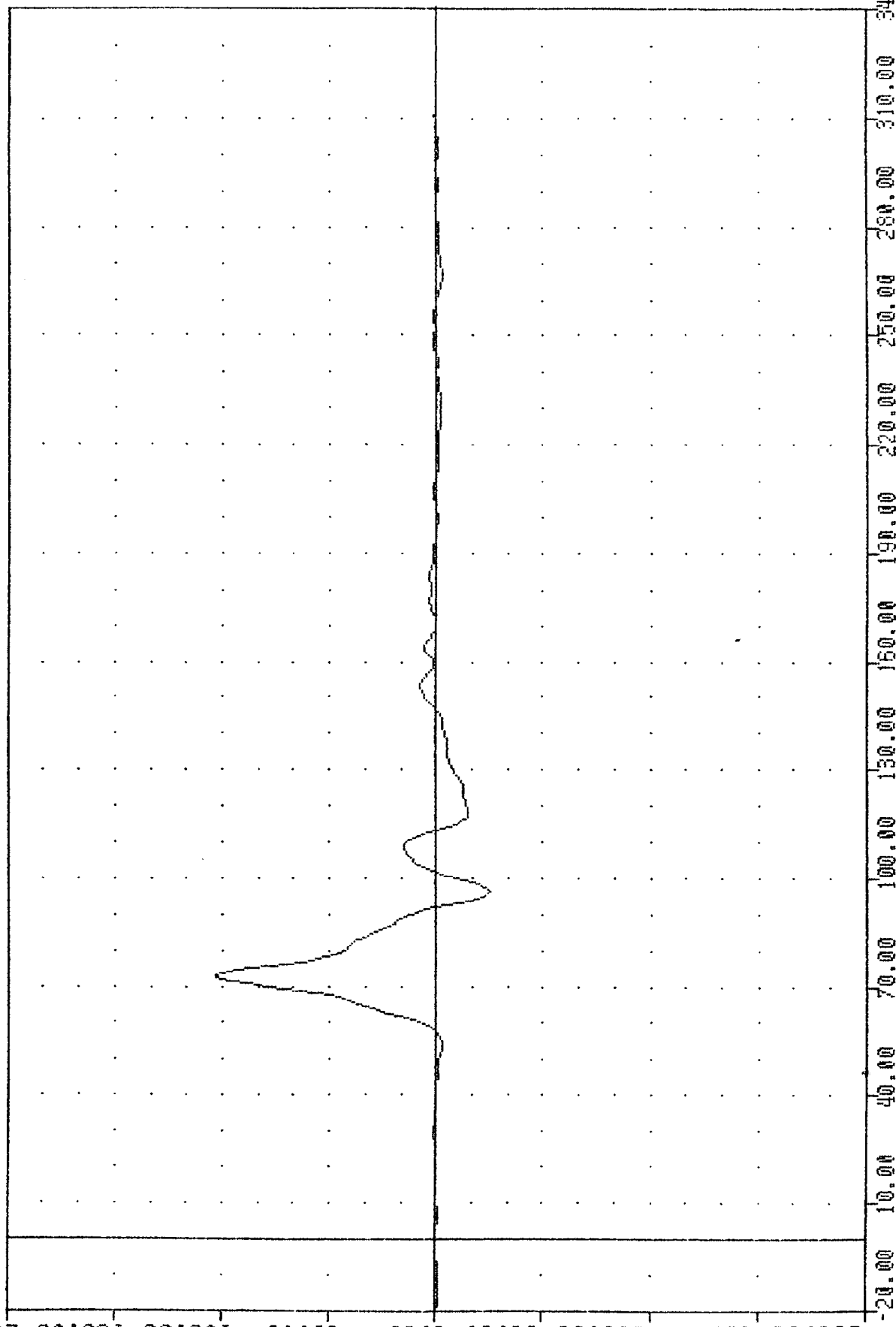
PLOT DATE 17-OCT-84 10:13:38

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -24.99e 95.63 , 103.32 e 71.88

ACCELERATION (G)

B-50



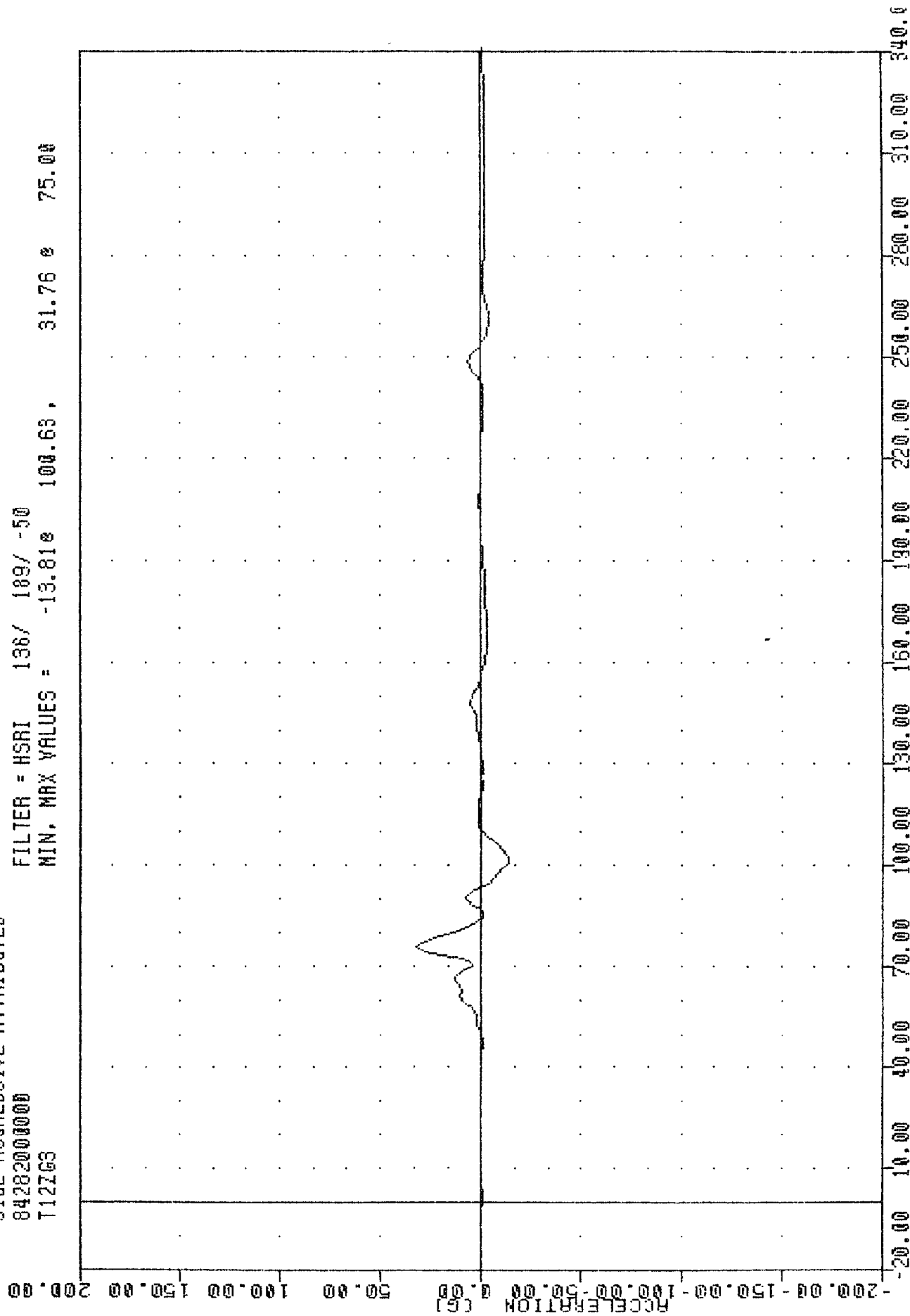
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE ACCELERATION 20 Y AVTS

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12763

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -13.81e 100.63, 31.76 e 75.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCIFRATION 7 AXIS

TRC 841008

SIDE AGGRESSIVE ATTRIBUTES

84282000000

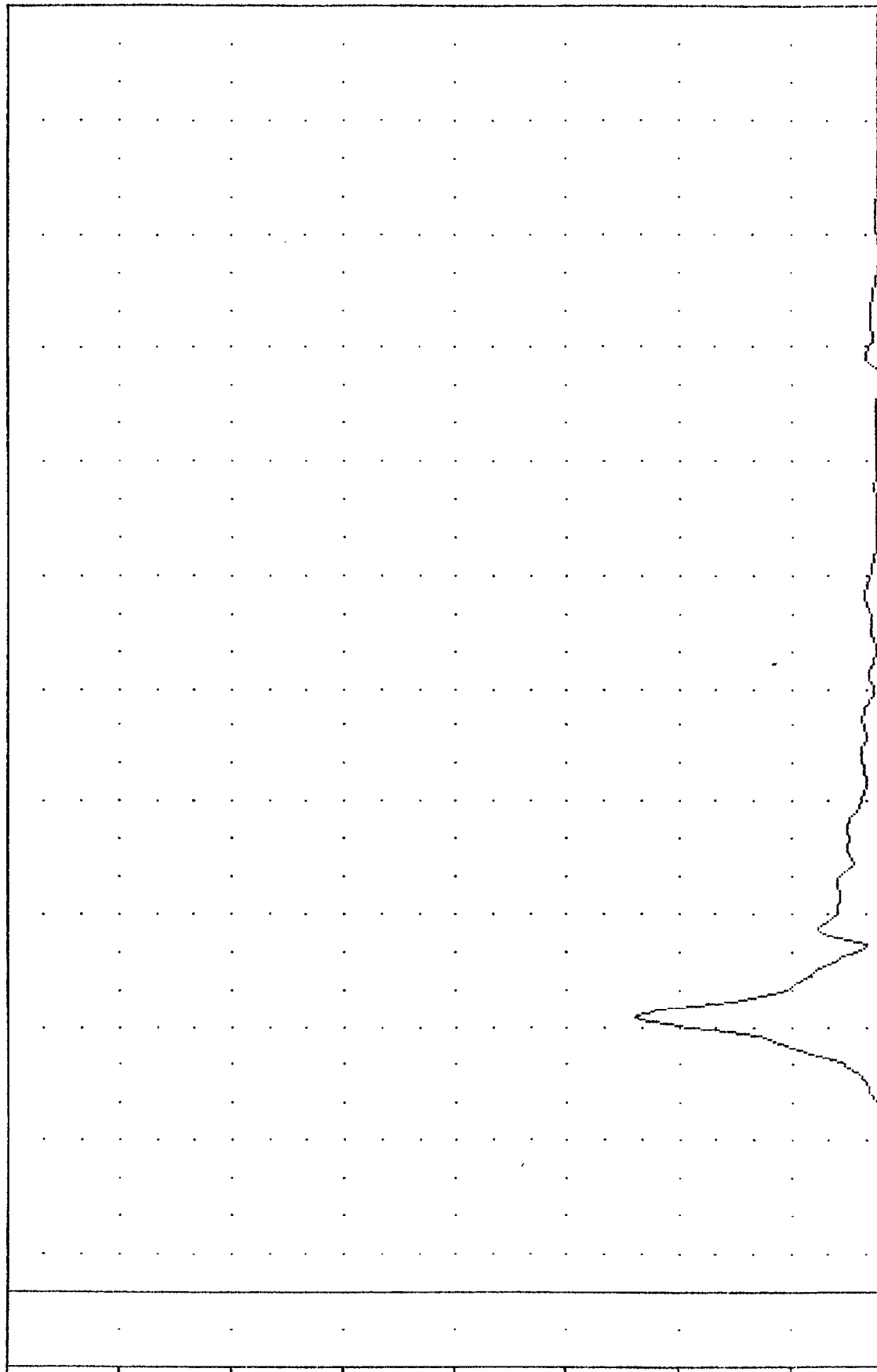
712863

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSR 138/ 189/ -50

MIN. MAX VALUES = 0.128 11.25, 109.62 71.88

ACCELERATION (G)



B-52

-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 LOWER SPINE RESULTANT

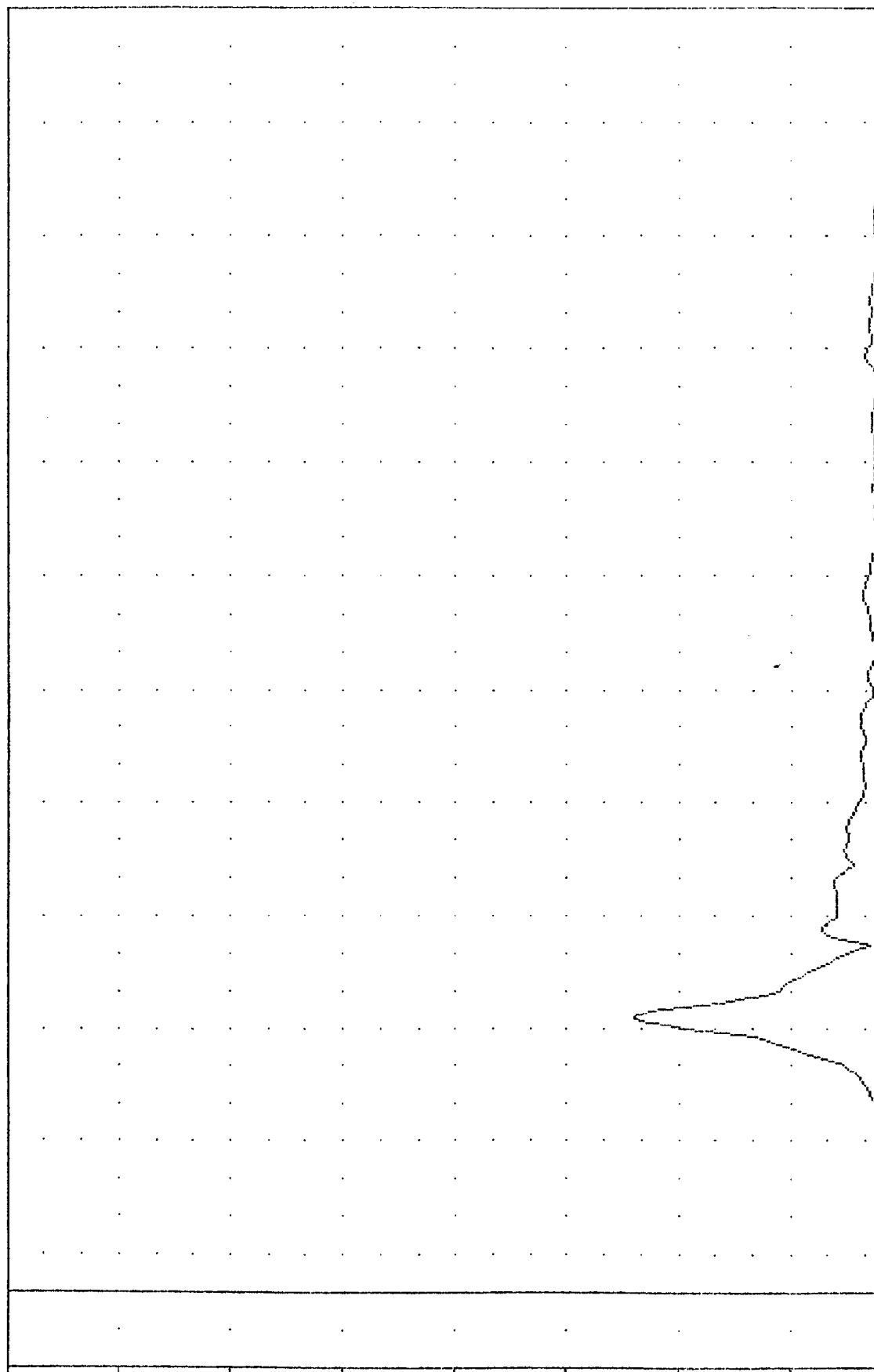
TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
T12RGC

PLOT DATE 17-OCT-84 10:14:56

FILTER = HSR 136/ 189/ -50

MIN. MAX VALUES = 0.12e 11.25. 110.13 e 71.88

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

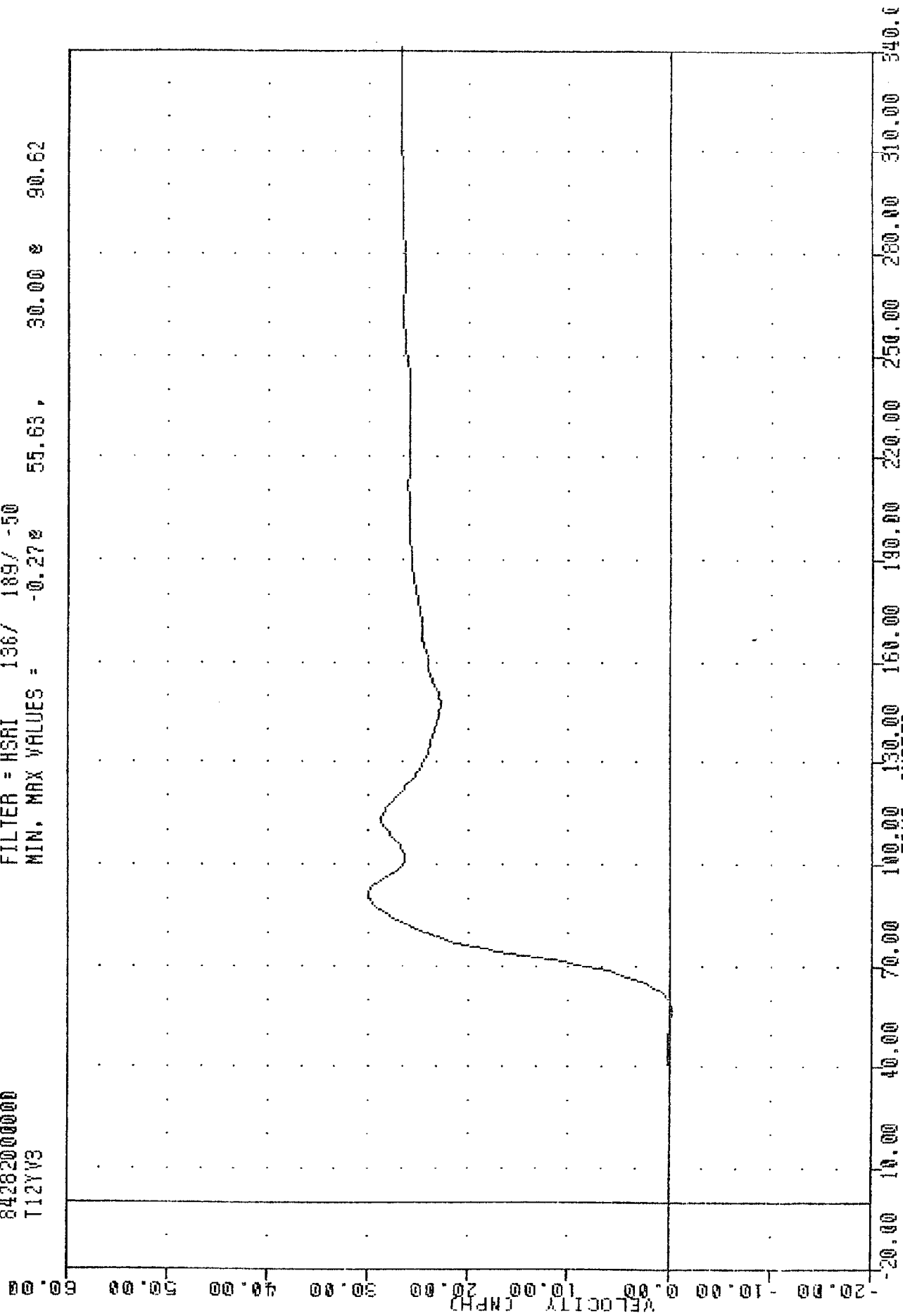
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE RESULTANT USING T12YGC

TAC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12YV3

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.27 55.63, 30.00 90.62



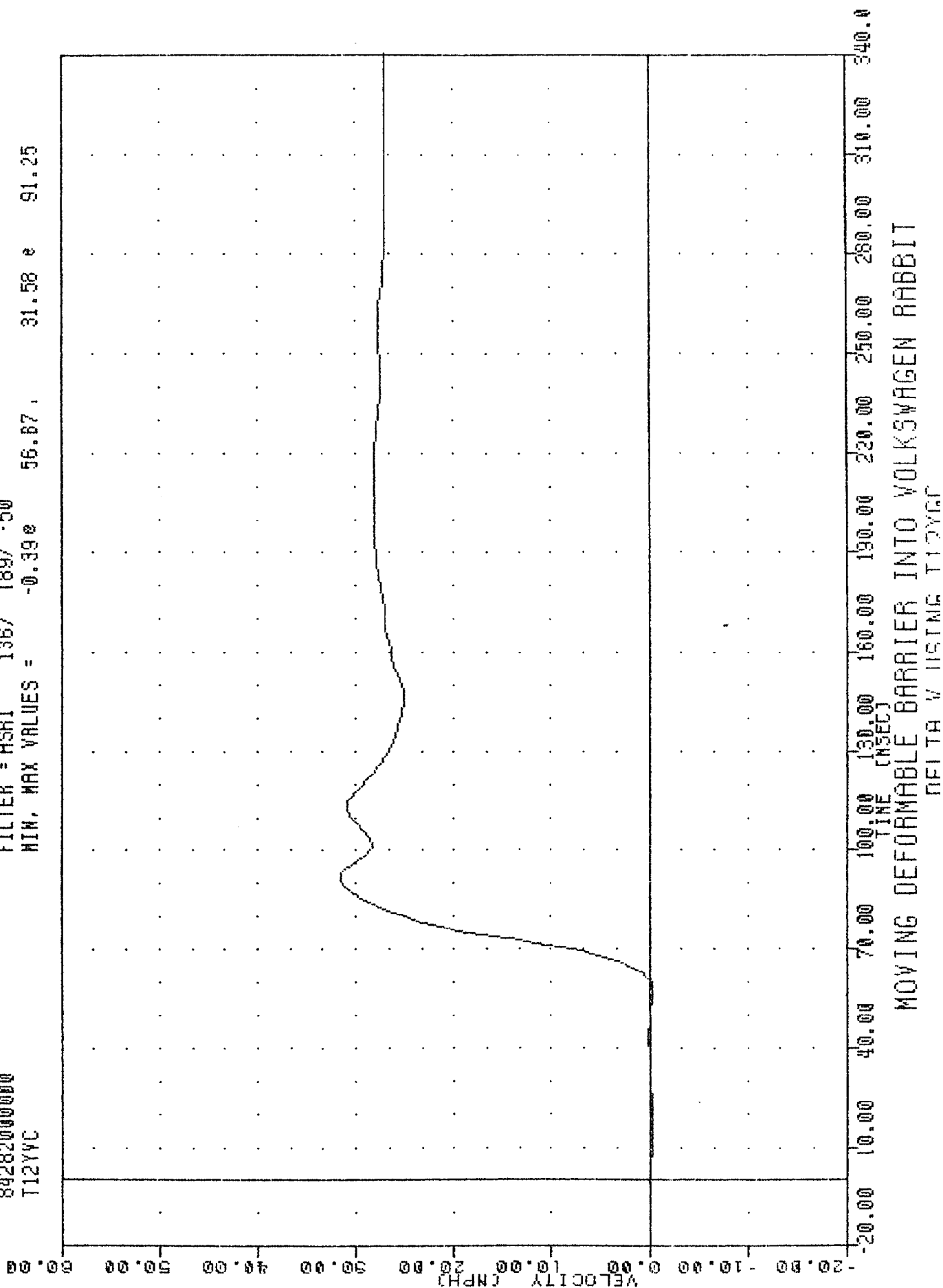
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T12YV3

THC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 T12YVC

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.39e 56.87, 31.58 e 91.25

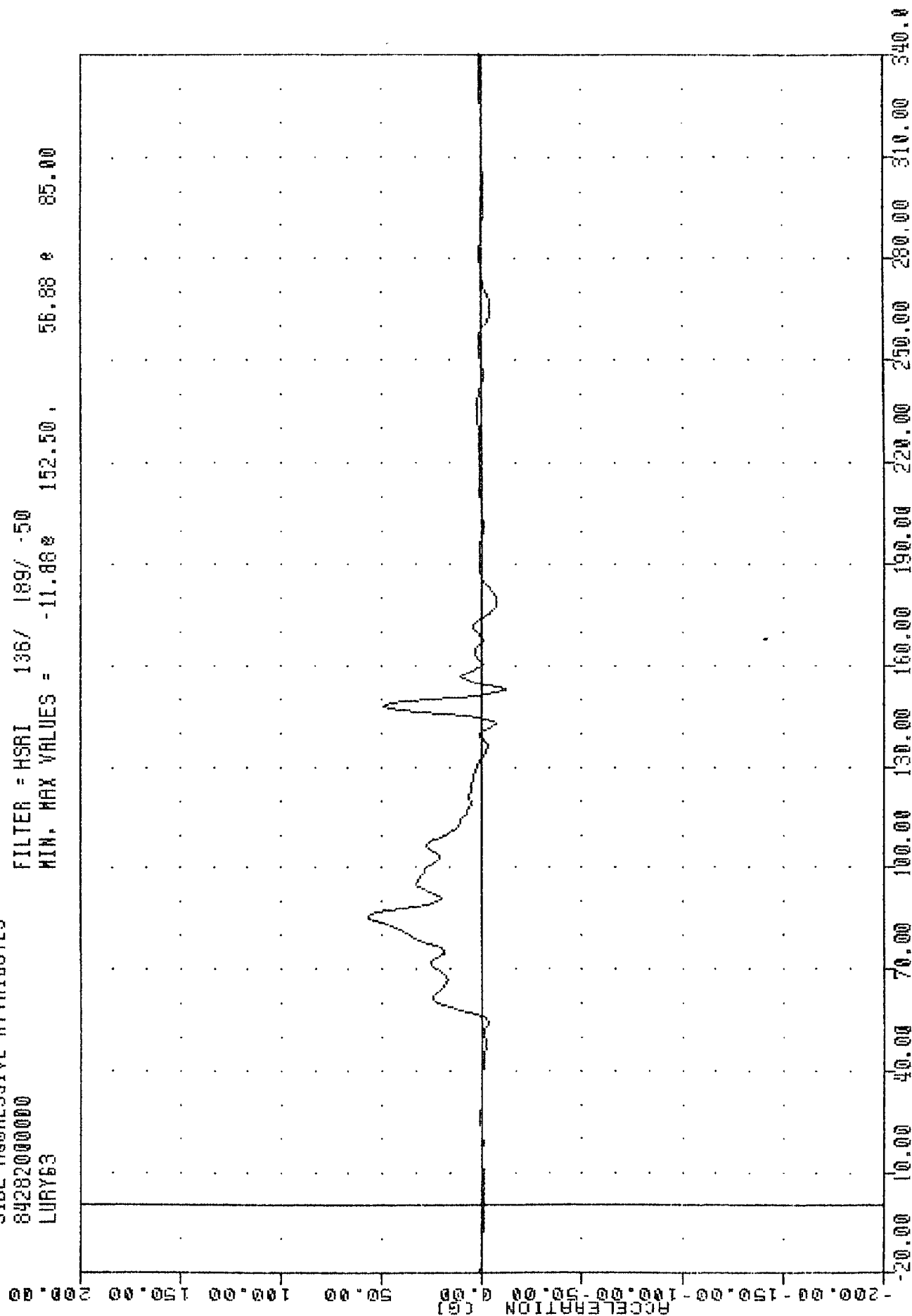


TAC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LURY63

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -11.88e 152.50, 56.88 e 85.00



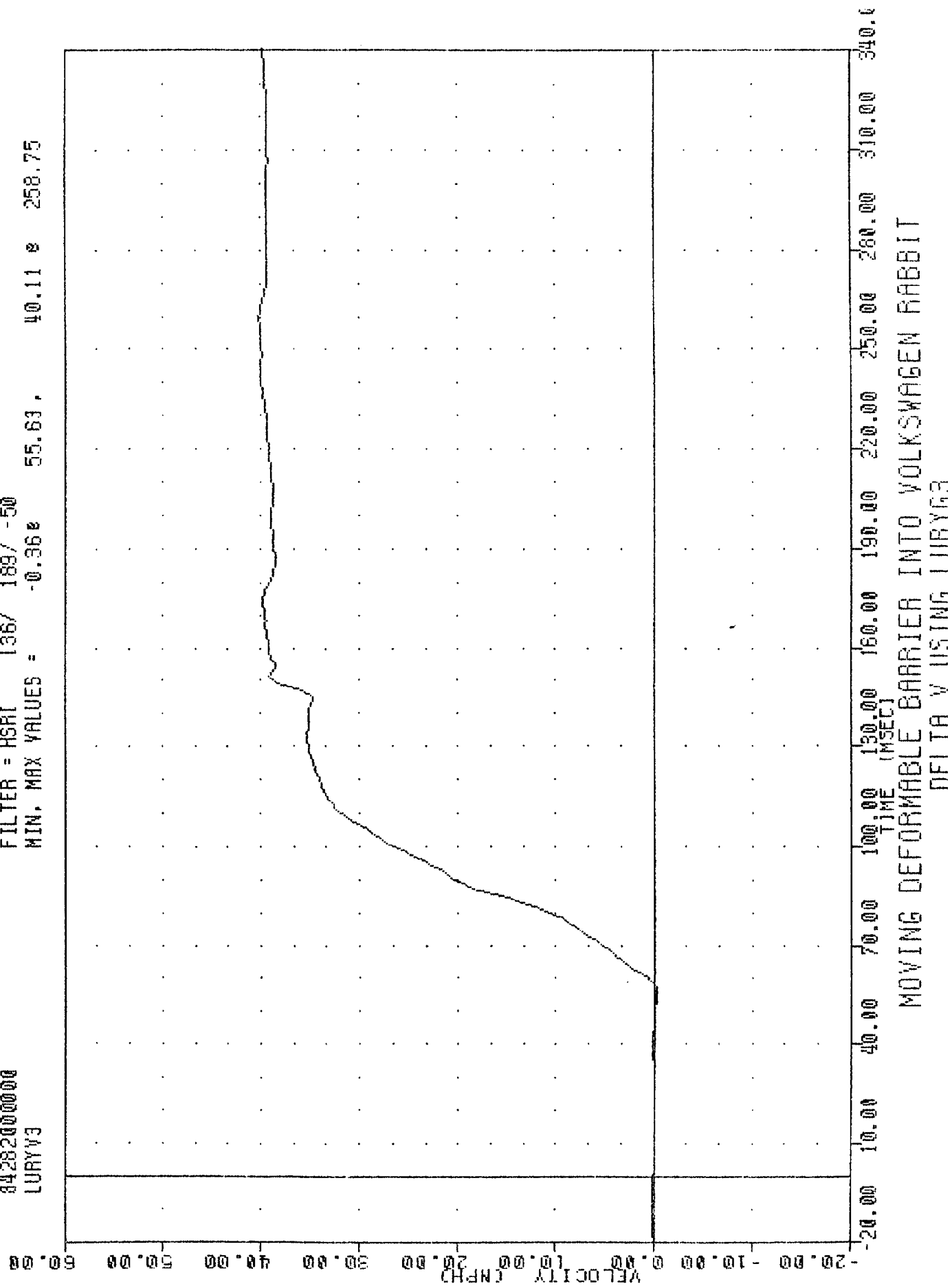
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

TRC
SIDE AGGRESSIVE ATTRIBUTES
842820000000
LURYV3

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSP1 136/ 189/ -50

MIN. MAX VALUES = -0.36e 55.63, 40.11 e 258.75



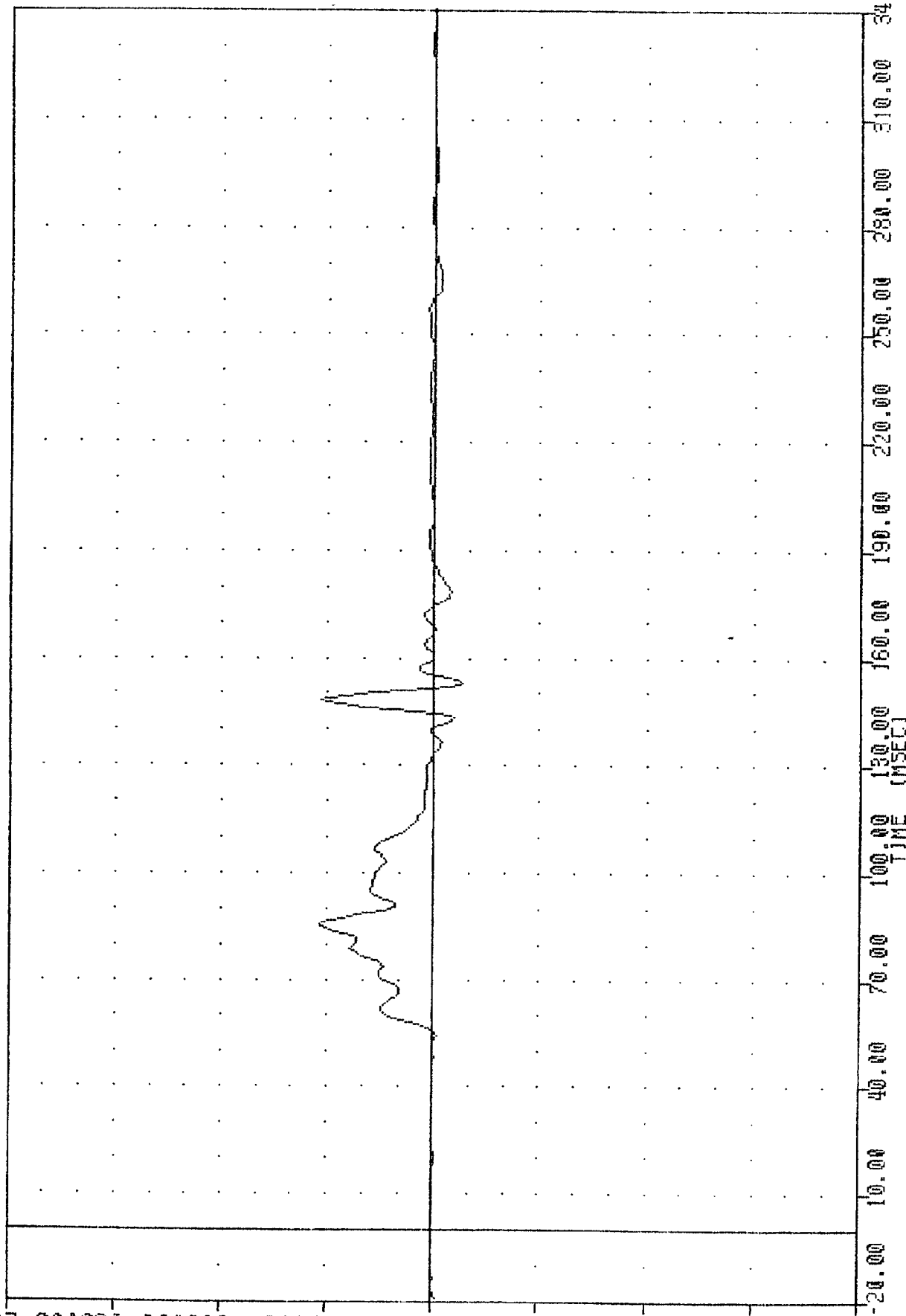
TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LURYGC

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -13.44e 152.50, 53.61 e 85.00

ACCELERATION (G)



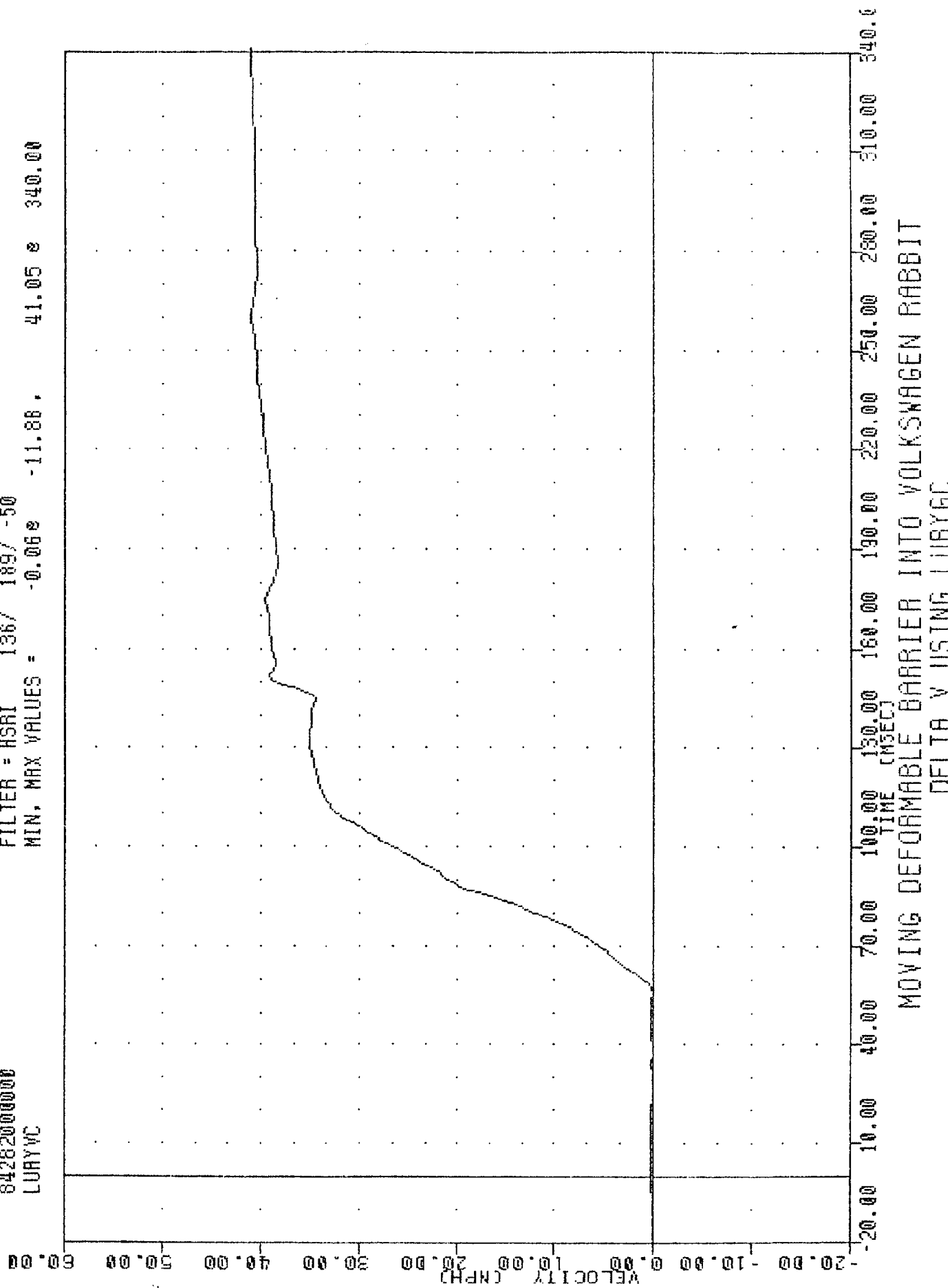
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT UPPER RTR ACCELERATION 2 Y AVTS

TRC 841006
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LURYVC

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 136/ 189/ -50

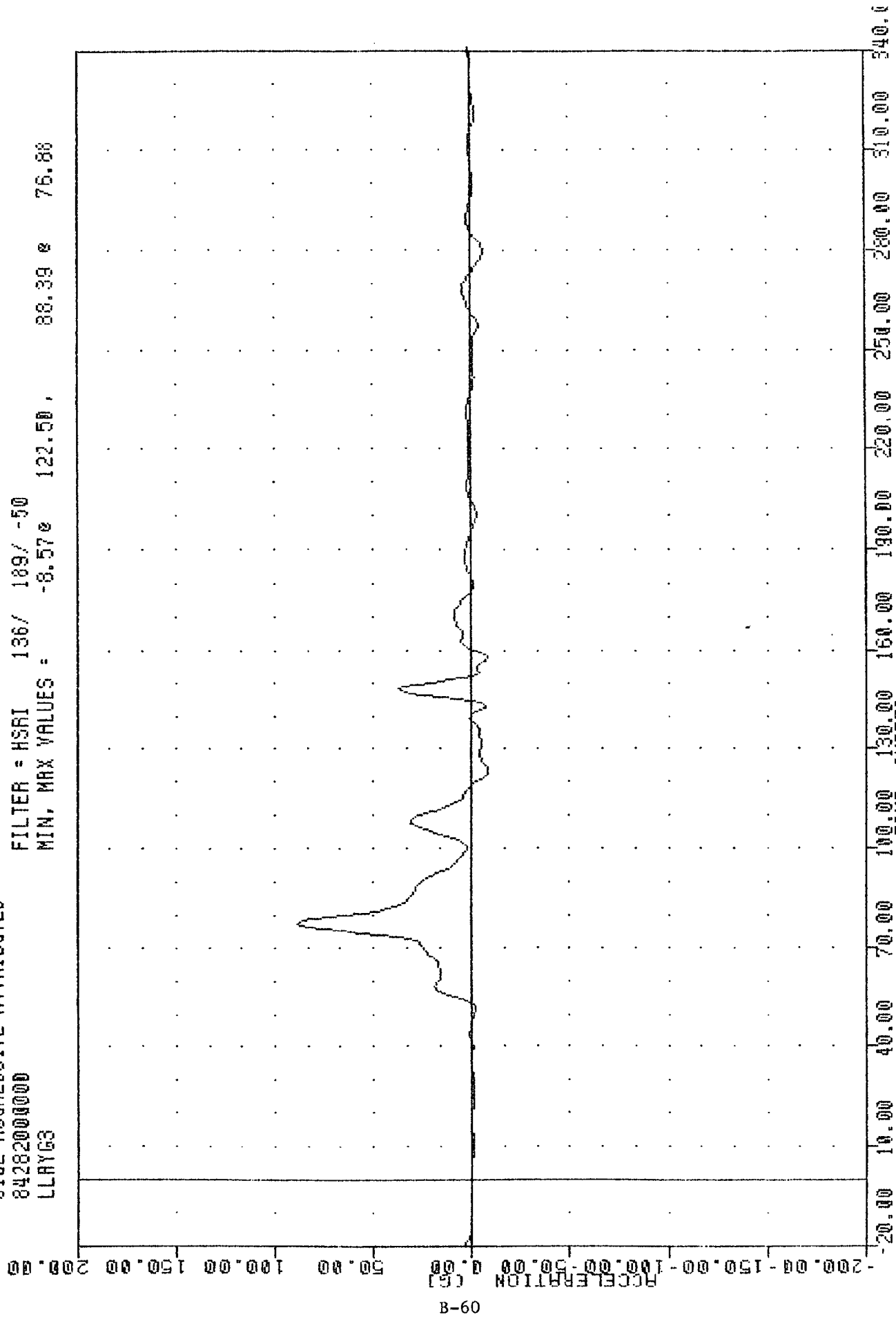
MIN. MAX VALUES = -0.06e -11.88, 41.05 e 340.00



TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LLRYG3

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -8.57e 122.50, 88.39 e 75.88



B-60

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 RECORDED LEFT LATER DTD ACCELERATION V DATA

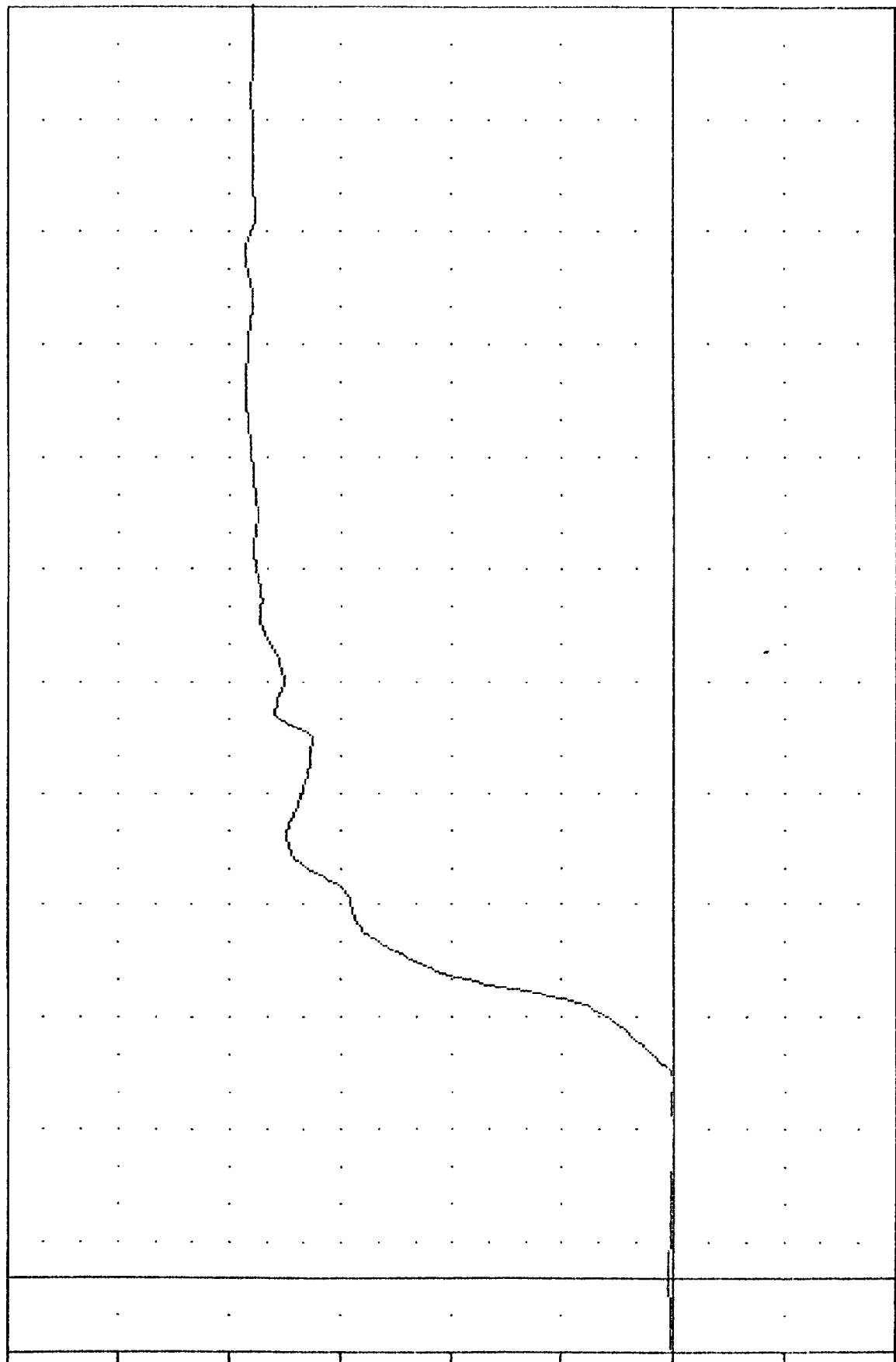
TAC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LLRYV3

PLOT DATE 17-OCT-84 10:15:20

FILTER = HSRI 135/ 189/ -50

MIN, MAX VALUES = -0.088 52.50 , 38.56 * 273.13

VELOCITY (MPH)



B-61

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LLRYG3

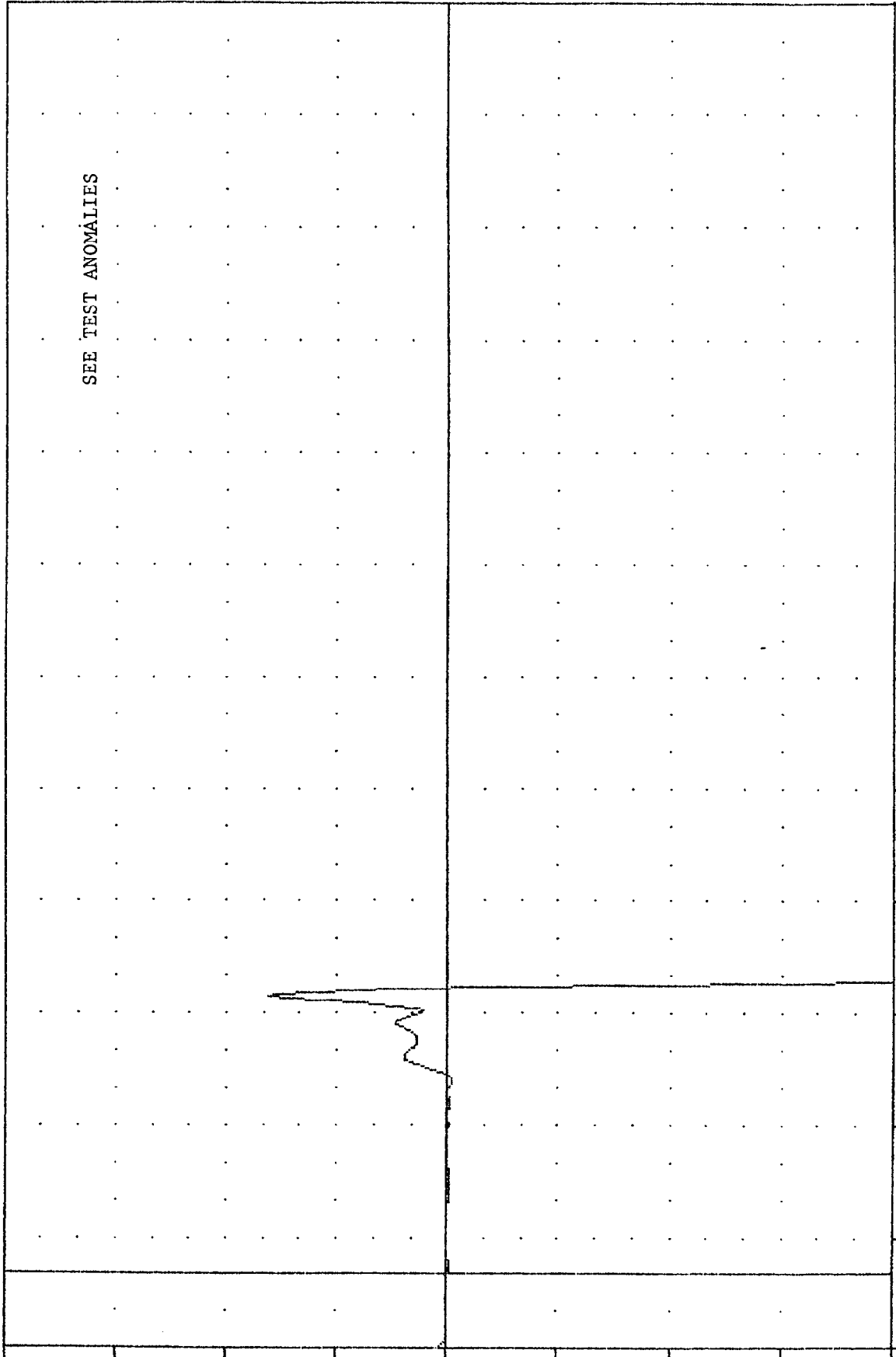
TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 LLRY6C

PLOT DATE 17-OCT-84 10:13:38

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -308.26 80.53, 81.08 73.75

B-62
 ACCELERATION (G)
 200.00
 150.00
 100.00
 50.00
 0.00
 -50.00
 -100.00
 -150.00
 -200.00



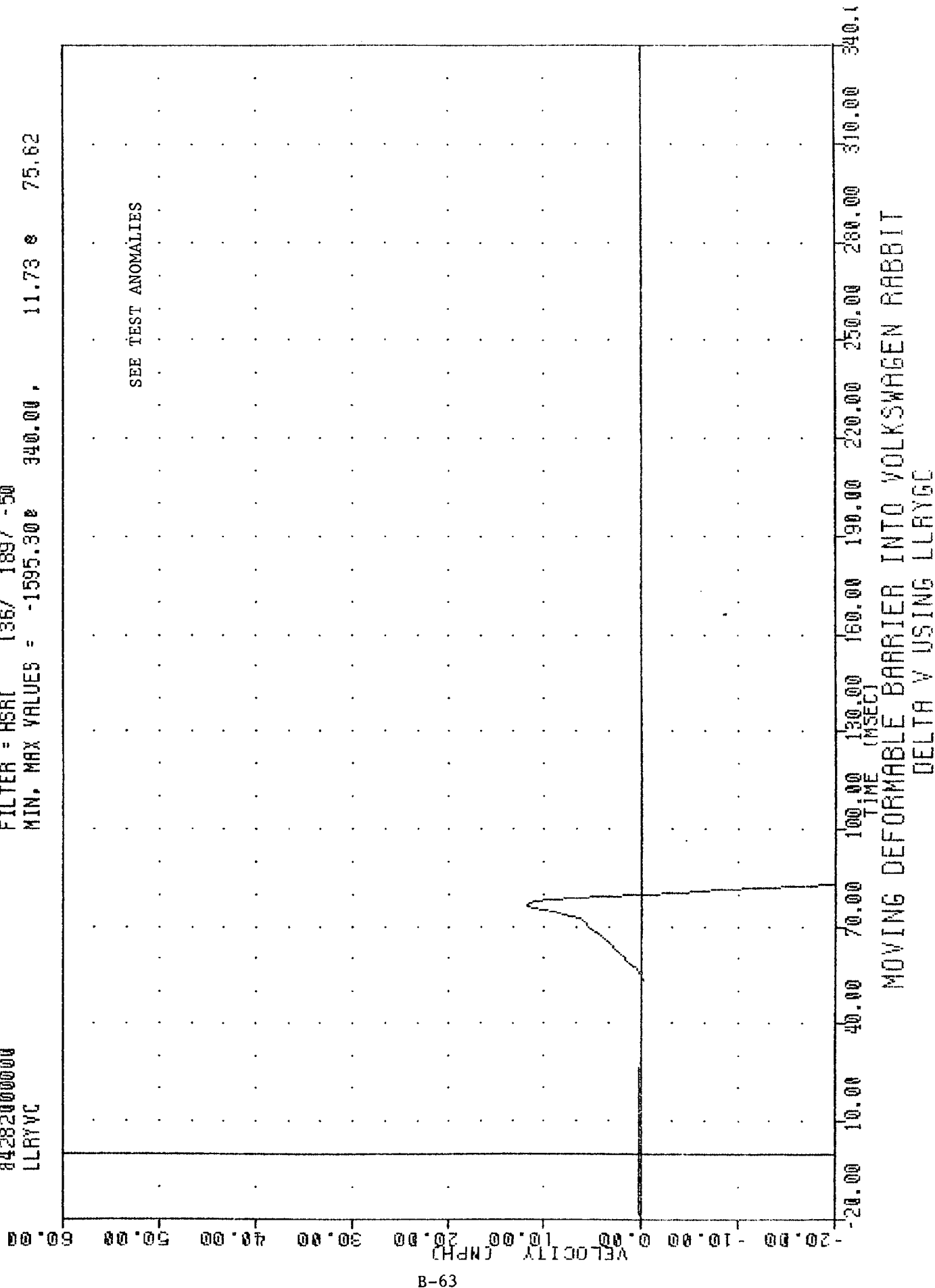
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT LOWER AIR ACCELERATION 23 V AYTE

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 LLRYVC

PLUT DATE 17-OCT-84 10:15:20

FILTER = HSR1 136/ 189/ -50
 MIN. MAX VALUES = -1595.30 340.00, 11.73 75.62

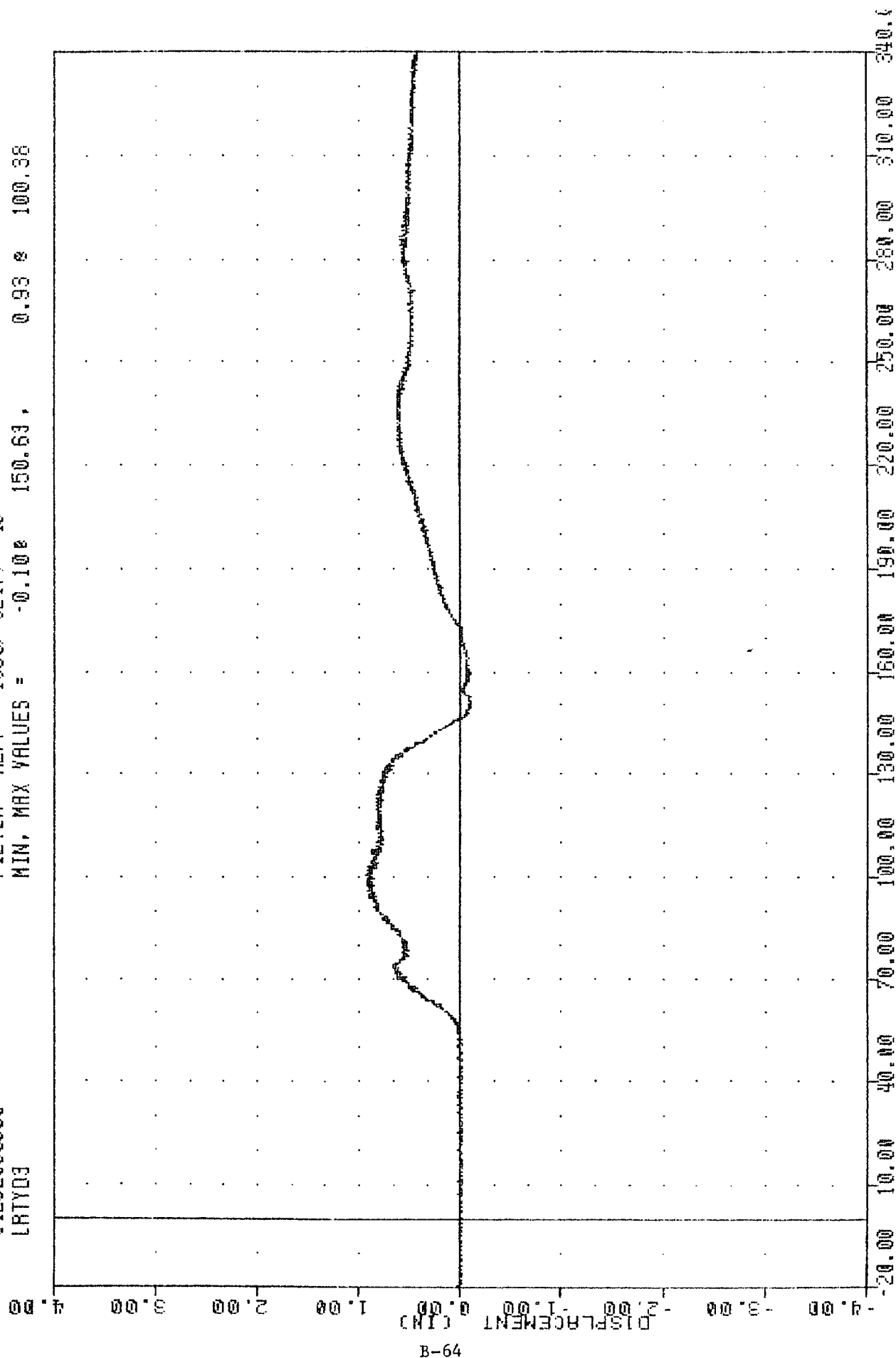


TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 LRTYD3

PLOT DATE 17-OCT-84 10:16:30

FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = -0.108 150.63, 0.93 100.38

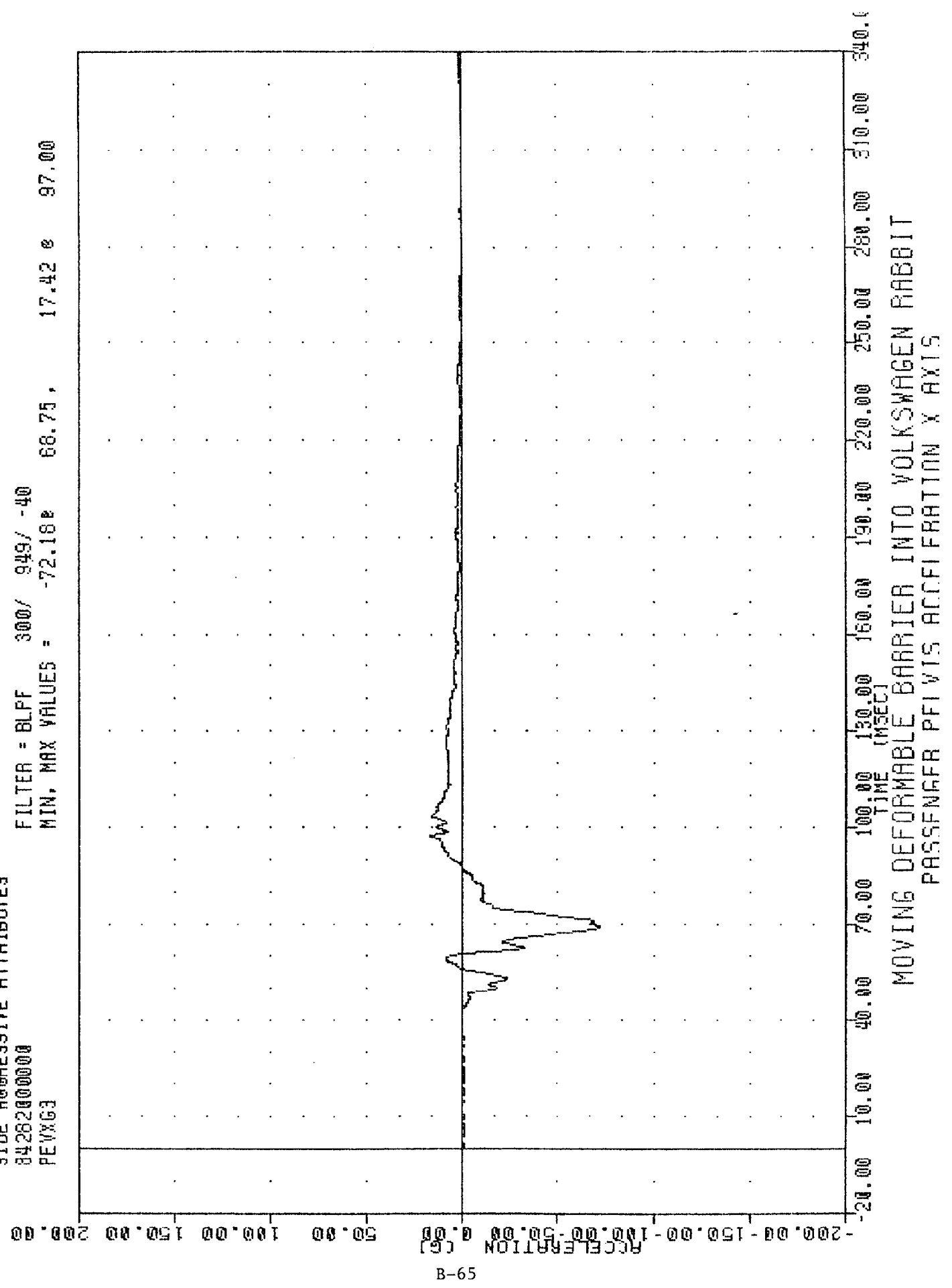


B-64

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

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 PEVXG3

PLOT DATE 17-OCT-84 10:16:30
 FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -72.18 68.75, 17.42 97.00



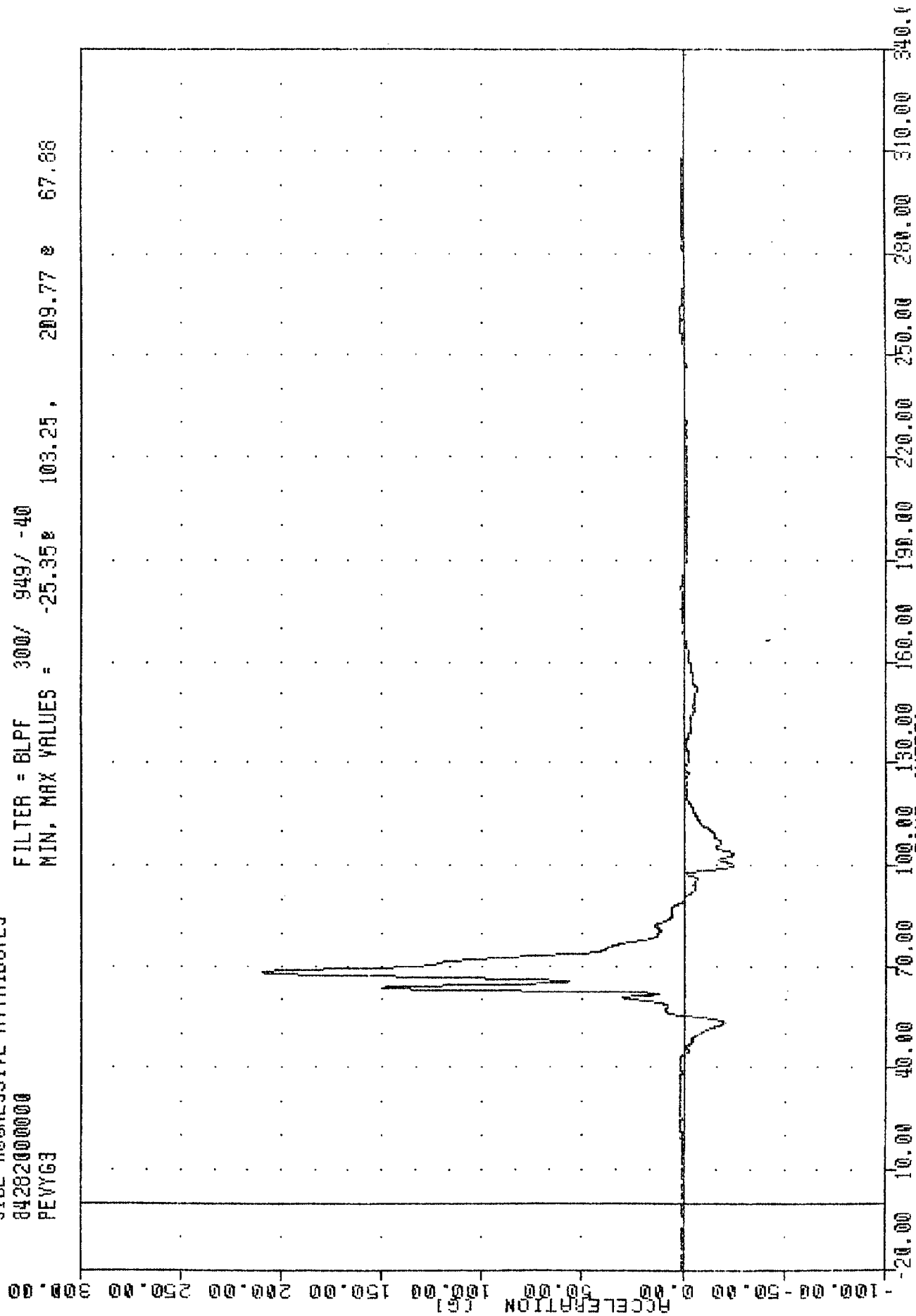
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER PIVOT ACCELERATION X AXIS

TRC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
PEVY63

PLOT DATE 18-OCT-84 16:14:32

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -25.35 103.25, 209.77 67.88

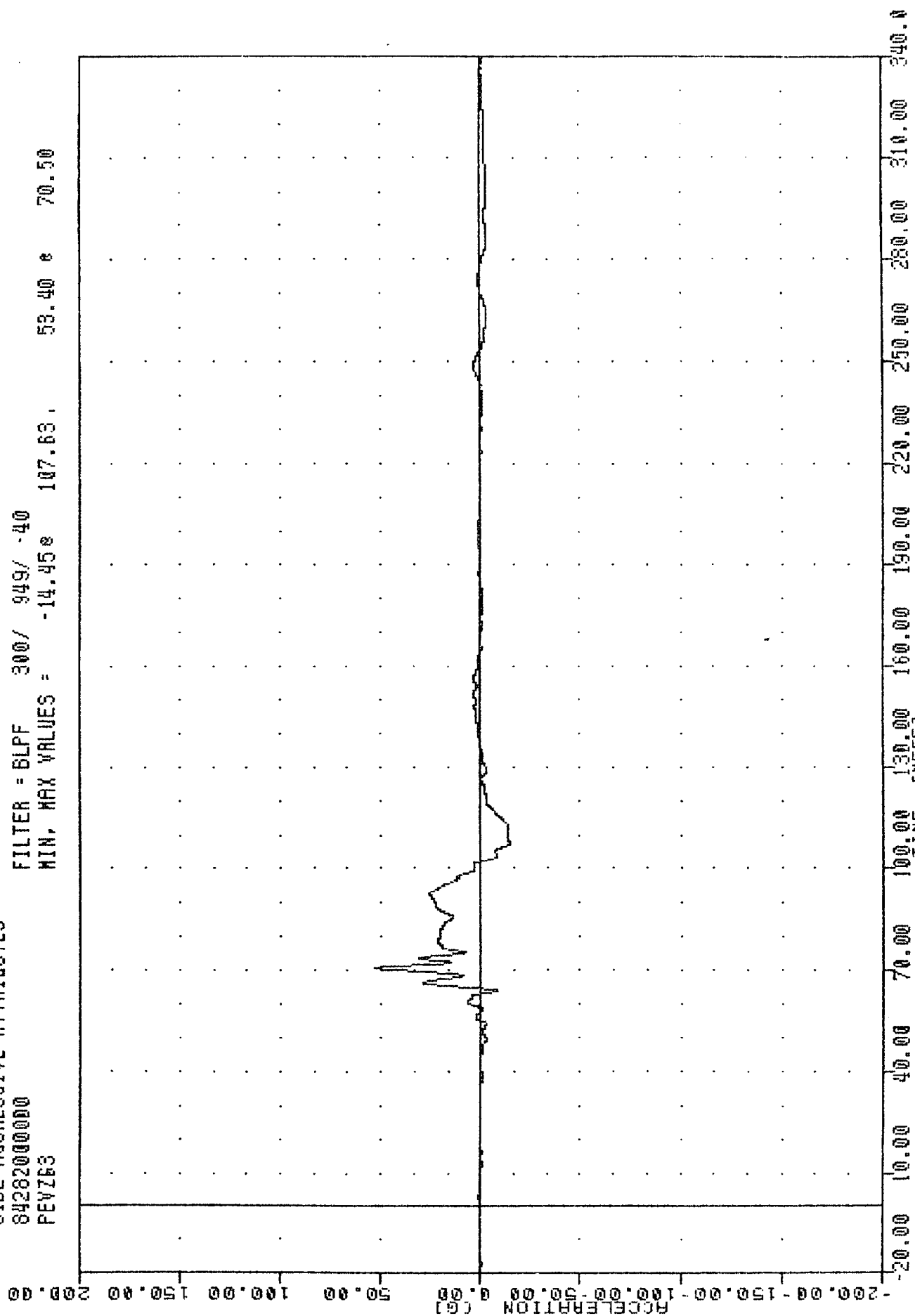


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS ACCELERATION Y AXIS

TAC
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 PEVZB3

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -14.45e 107.63, 53.40 e 70.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER PELVIS ACCELERATION Z AXIS

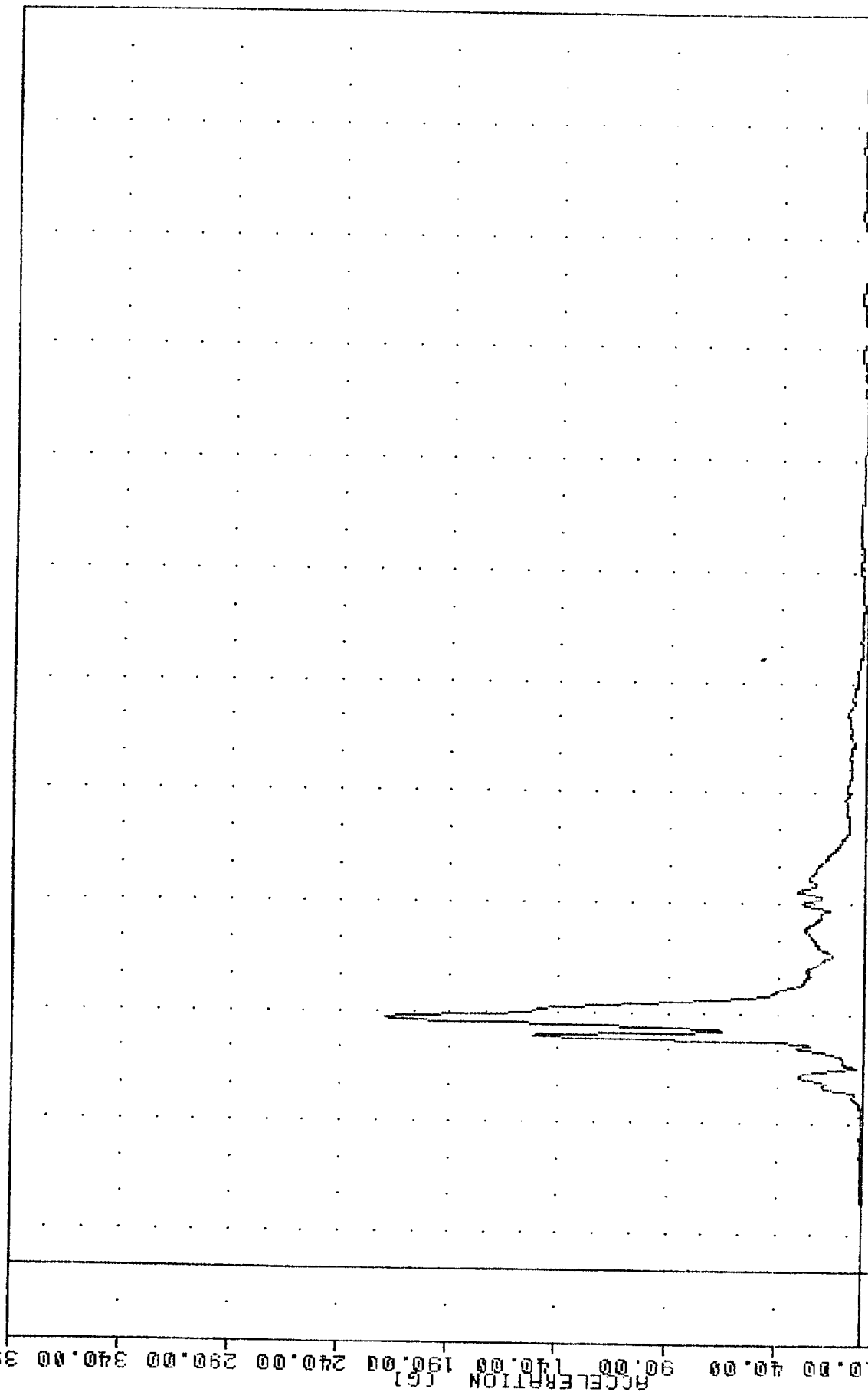
TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
PEVRG3

PLOT DATE 17-OCT-84 10:18:22

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 0.068 11.00, 220.41 68.00

ACCELERATION (G)



TIME (MSEC)

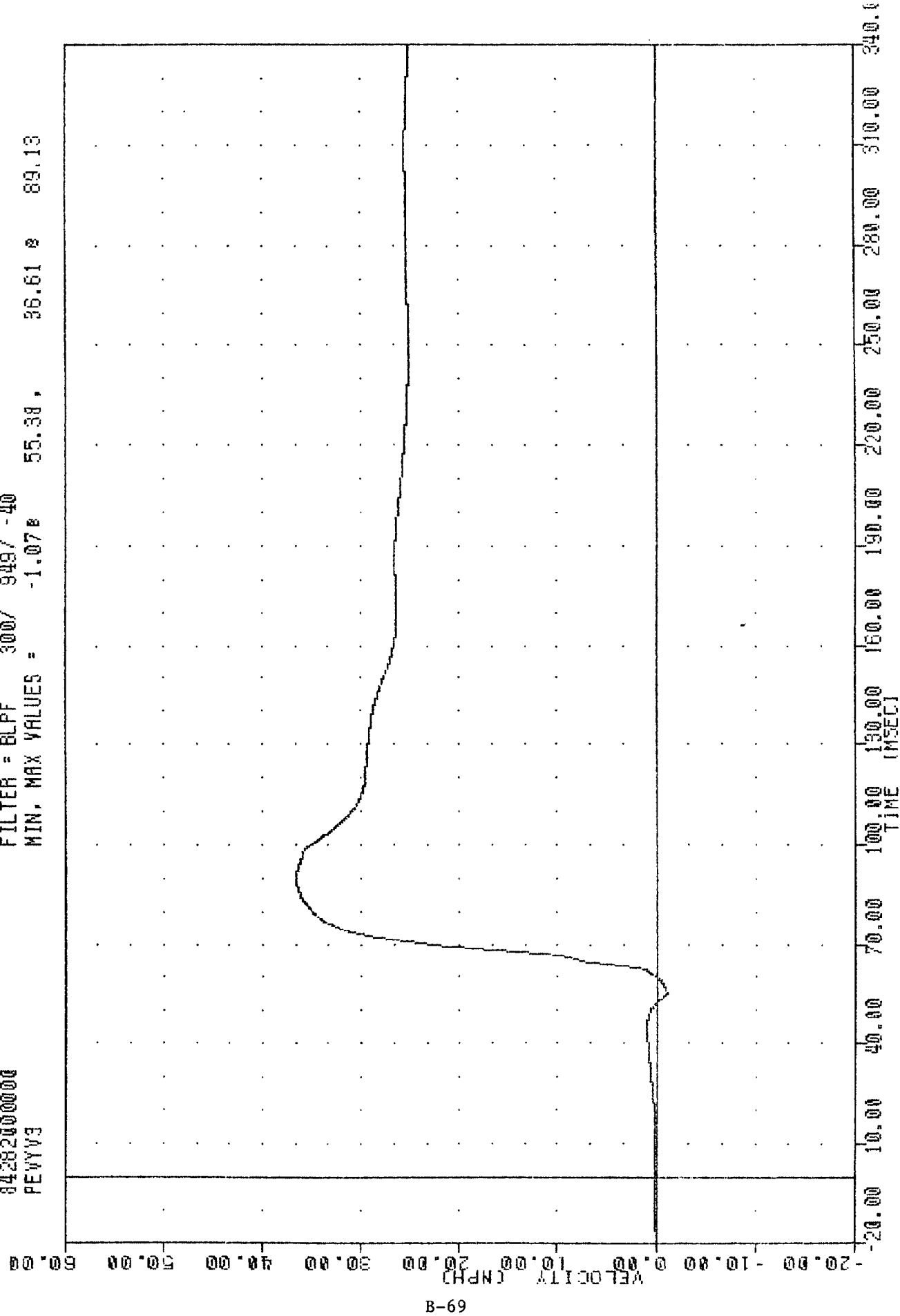
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS RESULTANT

TRC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
PEVYV3

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -1.07 55.38 36.61 89.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING PEVY63

TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
RFSXG1

PLOT DATE 17-OCT-84 10:16:30

FILTER = 8LPF 100/ 316/ -40
MIN, MAX VALUES = -8.09e 102.25, 2.05 e 188.13

40.00

30.00

20.00

10.00

ACCELERATION (G)

-10.00

-20.00

-30.00

-40.00

-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)

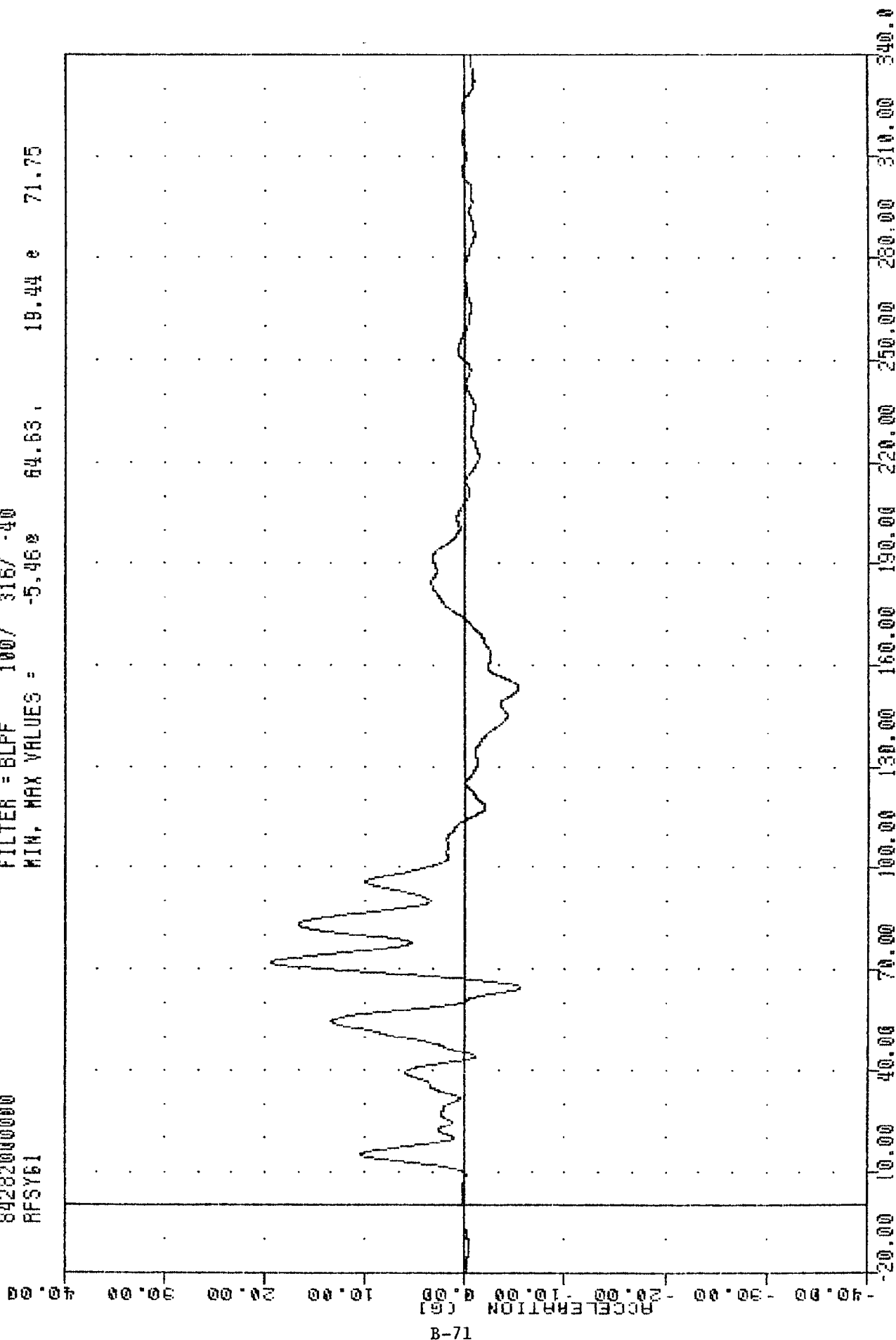
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT FRONT SILL ACCELERATION X AXIS

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 RFSY61

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -5.462 64.63 , 19.44 e 71.75

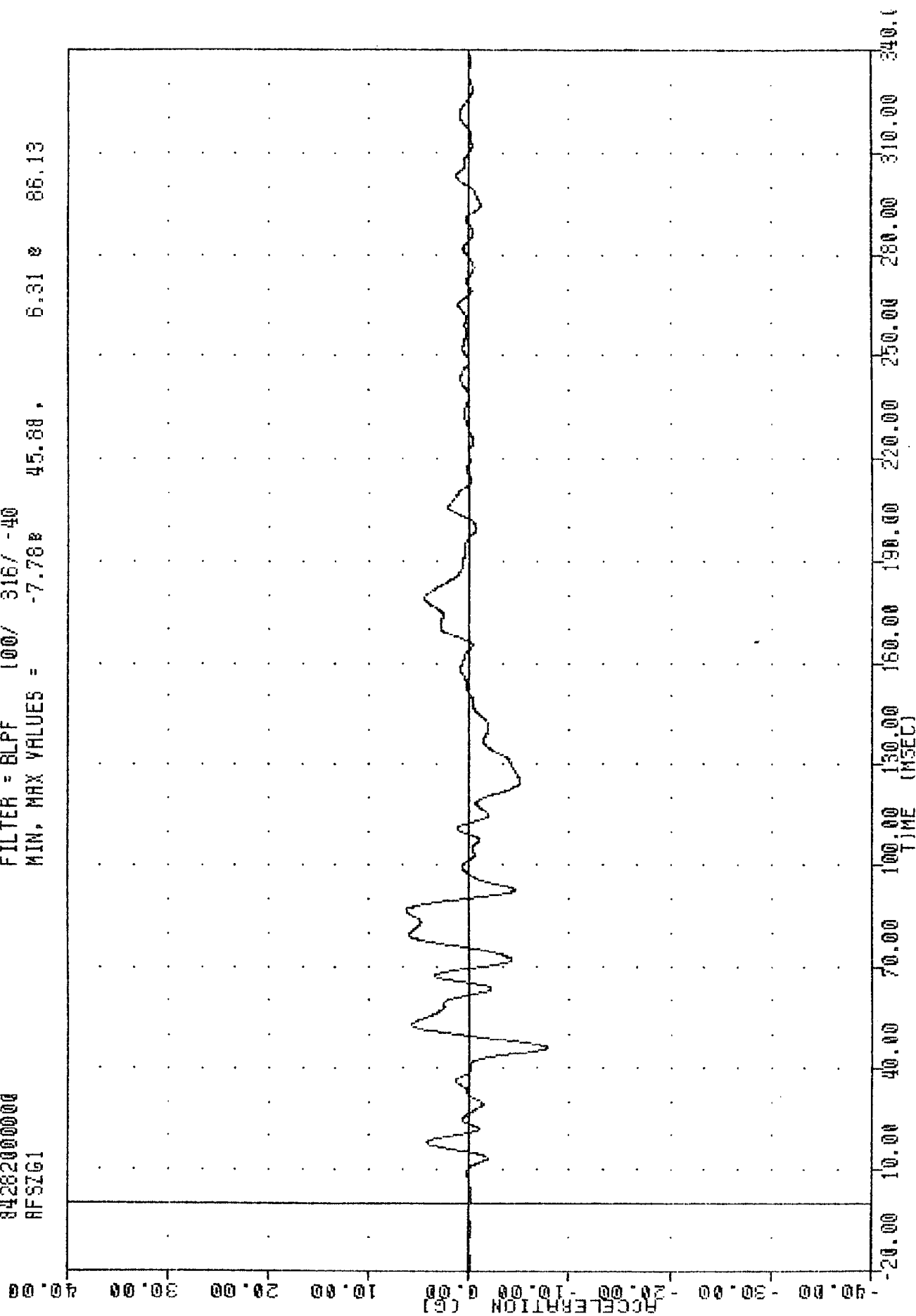


TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
AFSZG1

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -7.788 45.88, 5.31 8 86.13



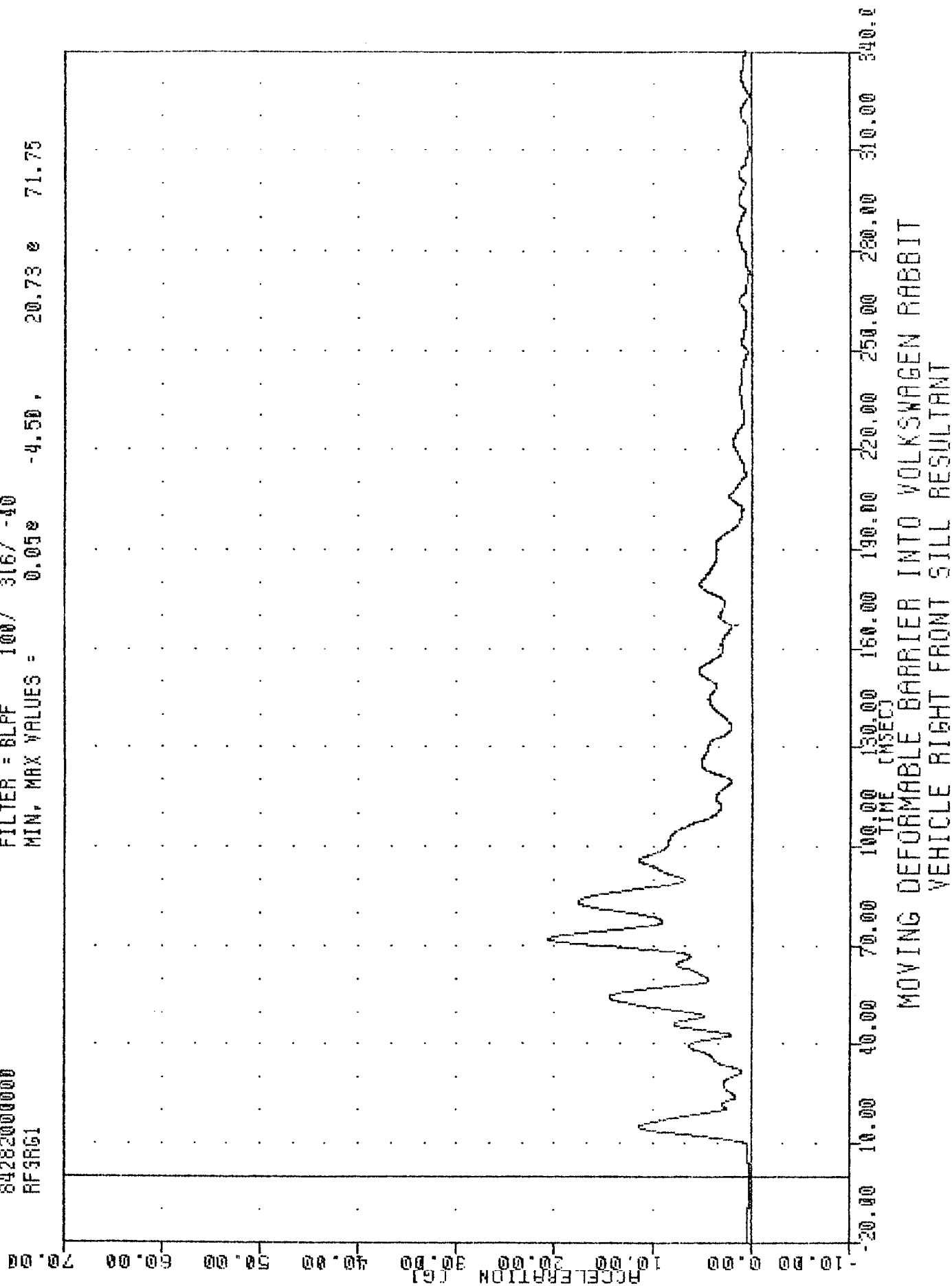
B-72

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

TRC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 RFGRG1

PLOT DATE 17-OCT-84 10:18:22

FILTER = 8LPF 100/ 316/ -40
 MIN, MAX VALUES = 0.05e -4.50, 20.73 e 71.75



TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
RFSXV1

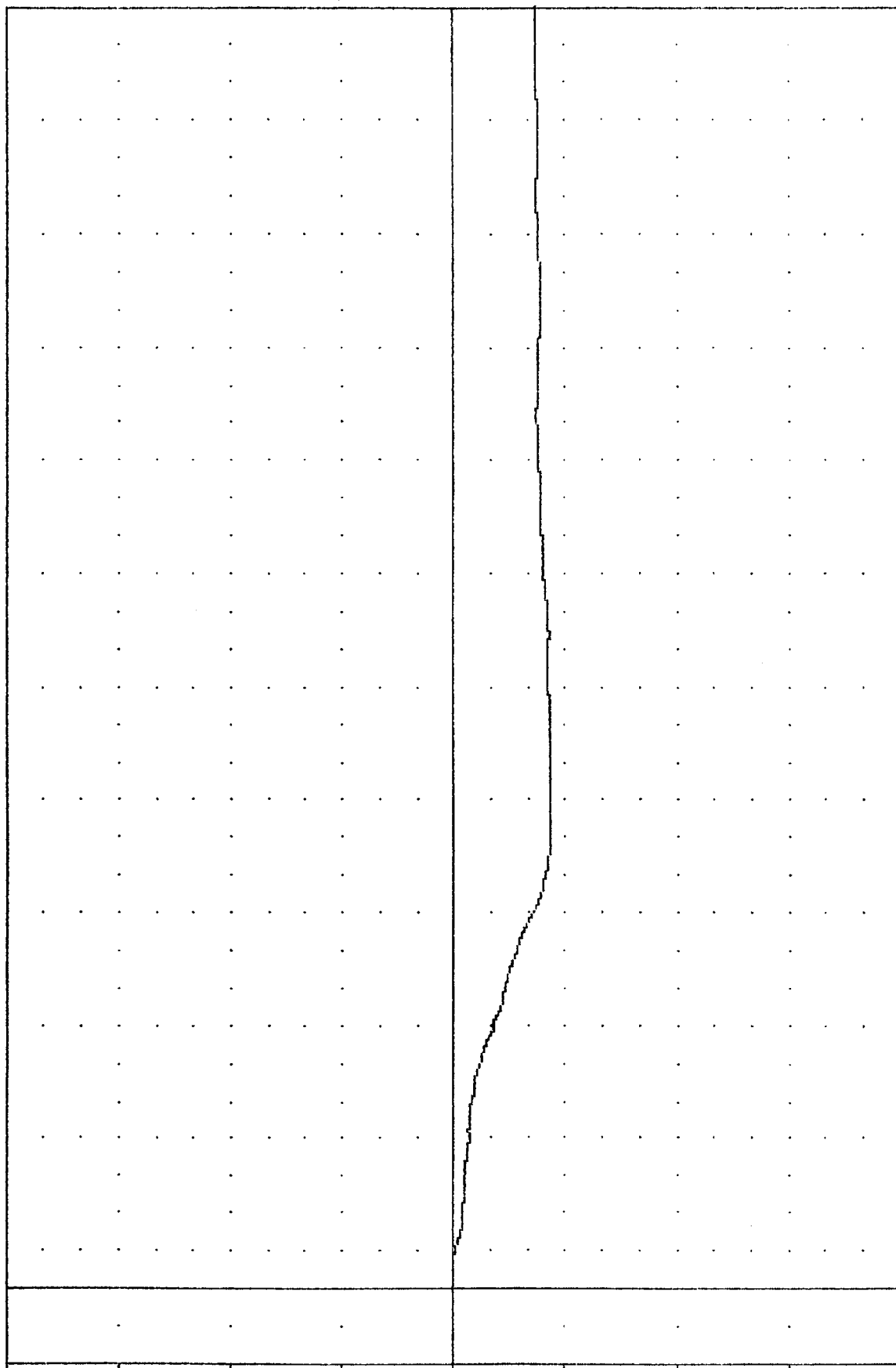
PLOT DATE 17-OCT-84 10:18:53

FILTER = 8LFF 300/ 949/ -40

MIN, MAX VALUES = -8.74e 140.13, 0.00 e -20.00

VELOCITY (MPH)

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



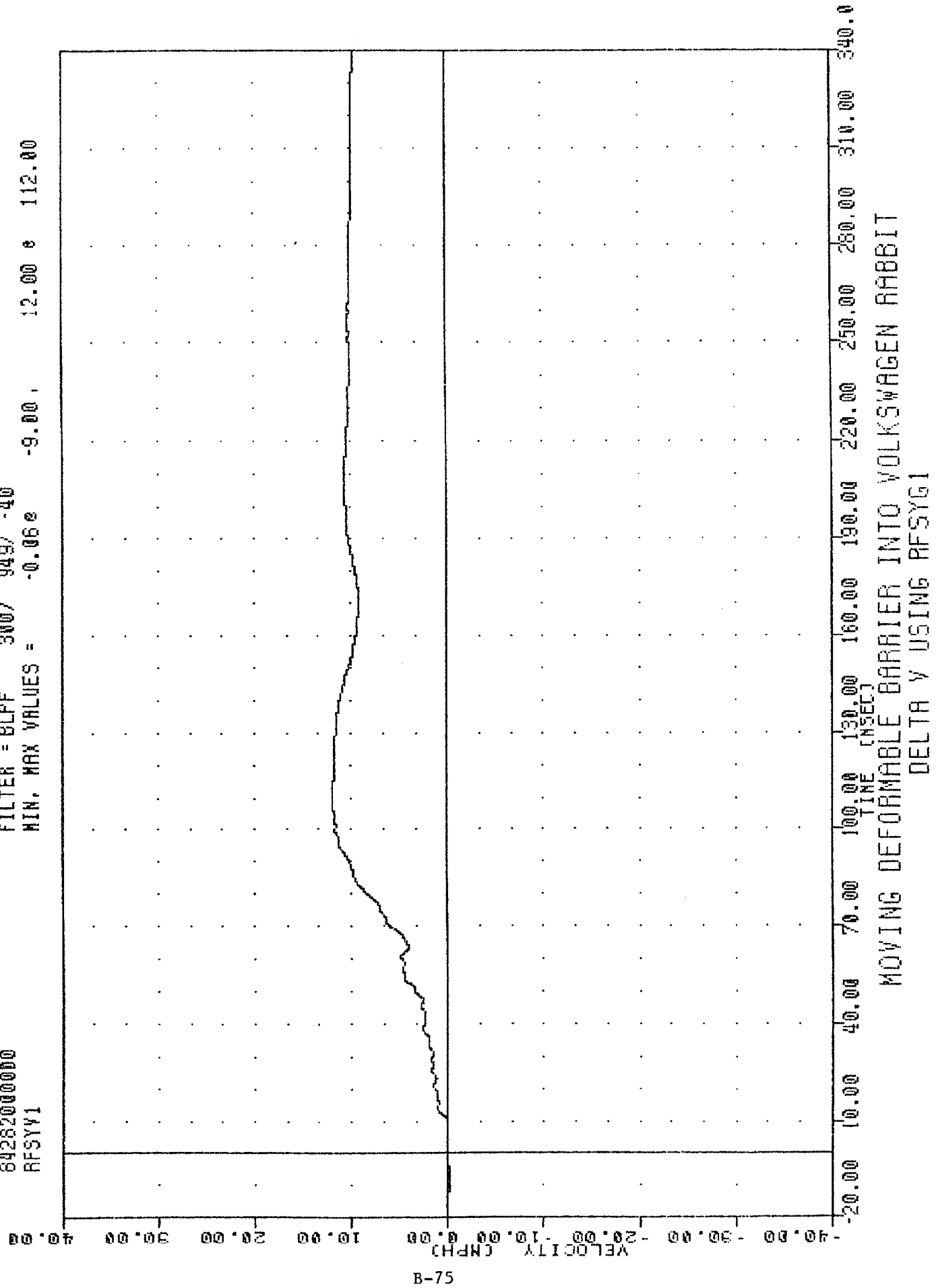
TIME (MSEC) 0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

NET TO W IETIM DECVR1

TAC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 642820000000
 RFSYV1

PLOT DATE 17-OCT-84 10:18:53
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -0.062 -9.00 12.00 112.00

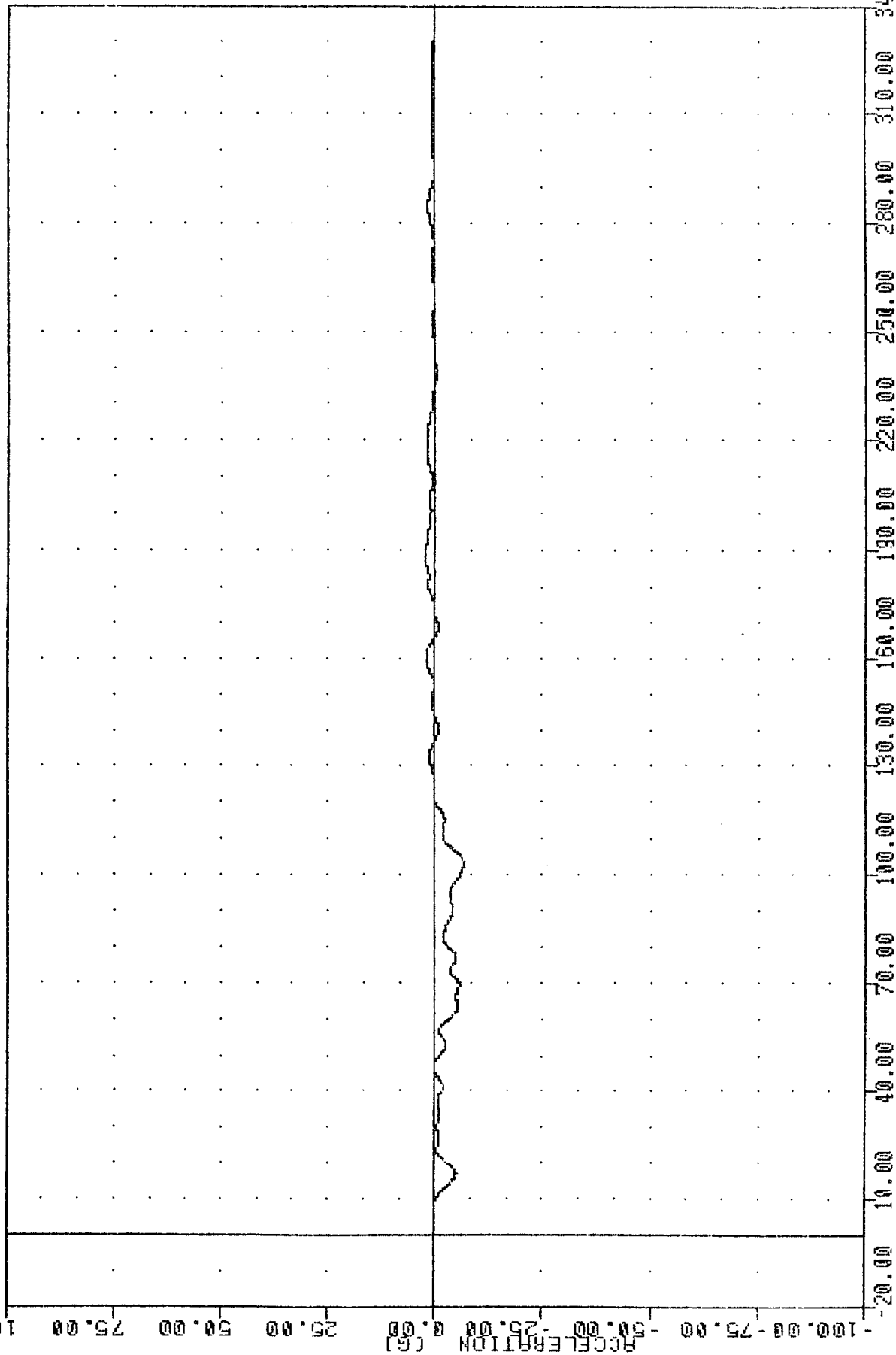


TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
RRSXG2

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

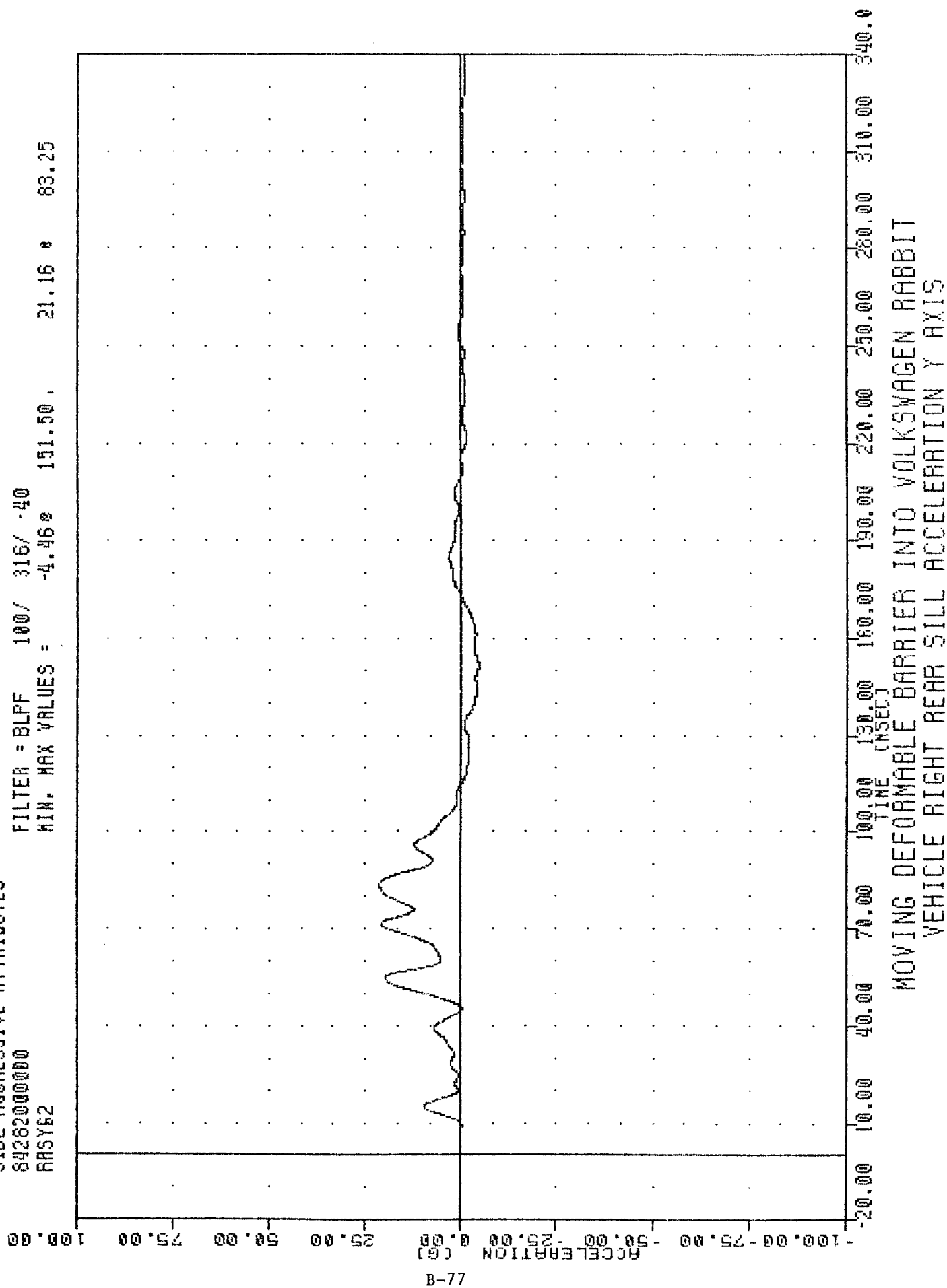
MIN. MAX VALUES = -6.64e 103.00, 2.42 e 188.38



TAC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 RASY62

PLOT DATE 17-OCT-84 10:16:30

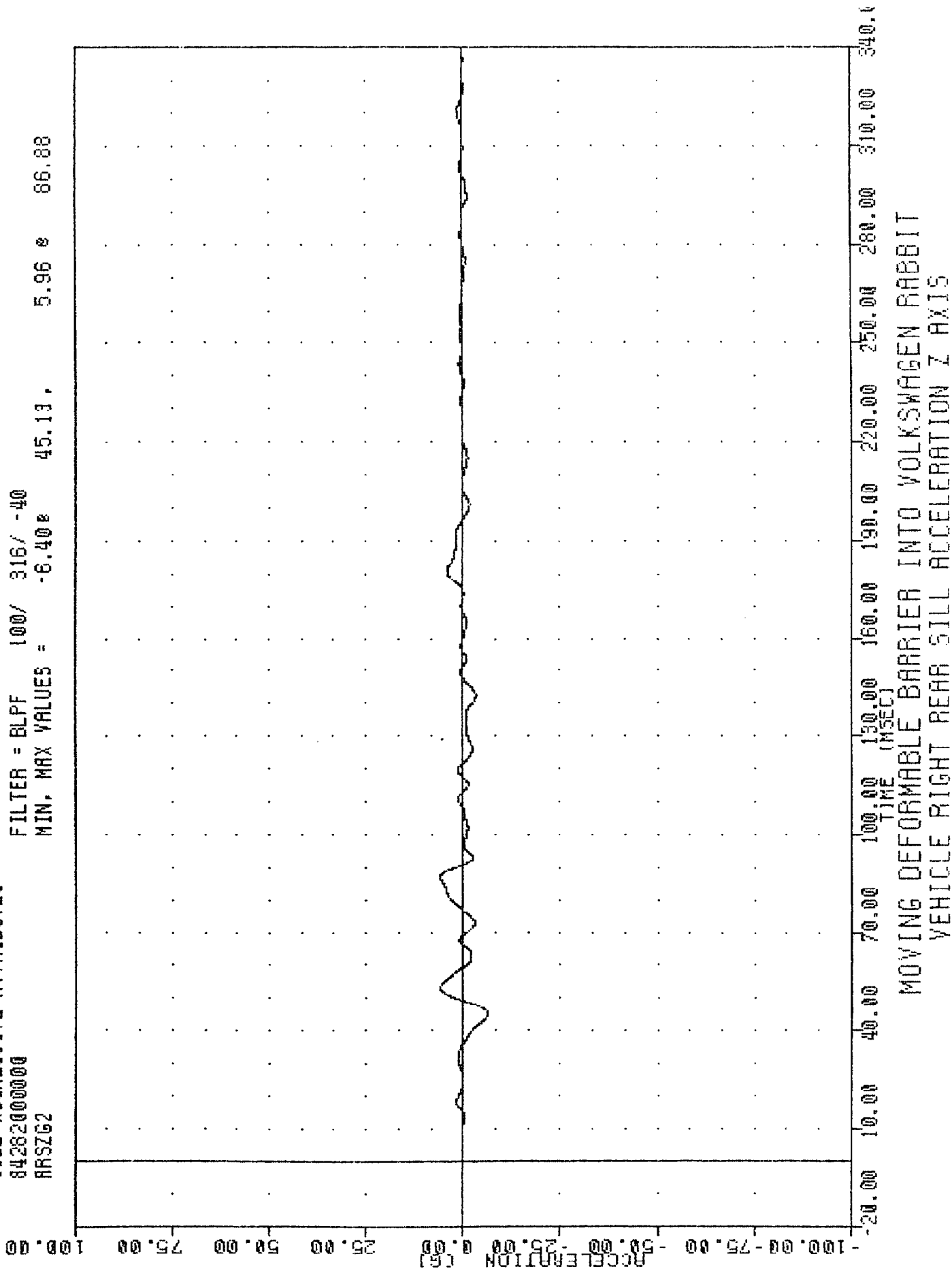
FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -4.468 151.50 21.16 83.25



TRC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 RRSZG2

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -6.40E 45.13, 5.96 E 66.88



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

TAC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84262000000
 RASRE2

PLOT DATE 17-OCT-84 10:18:22

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = 0.01e -11.75, 21.72 e 83.50

70.00

60.00

50.00

40.00

30.00

20.00

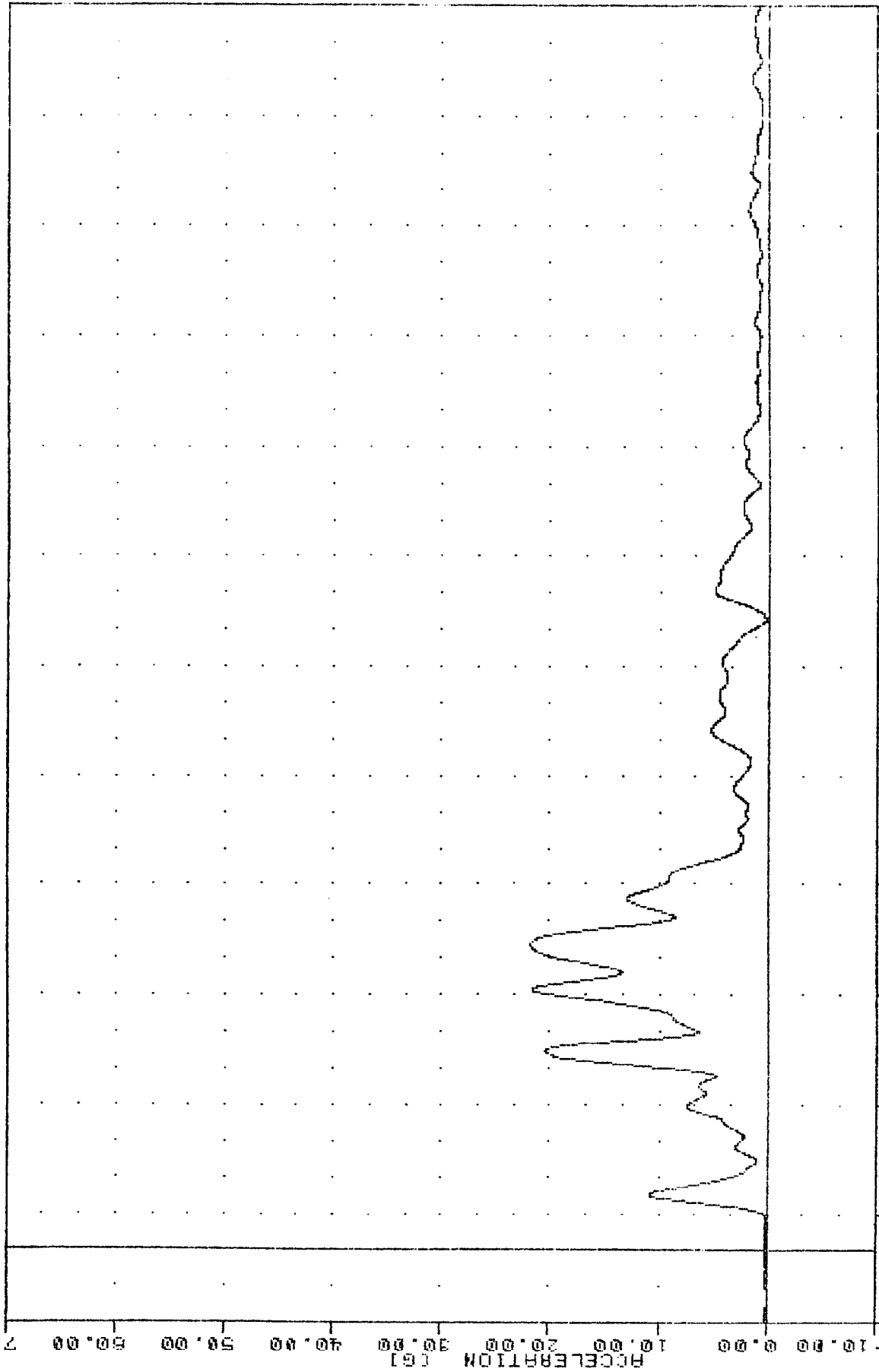
10.00

0.00

-10.00

-20.00

B-79



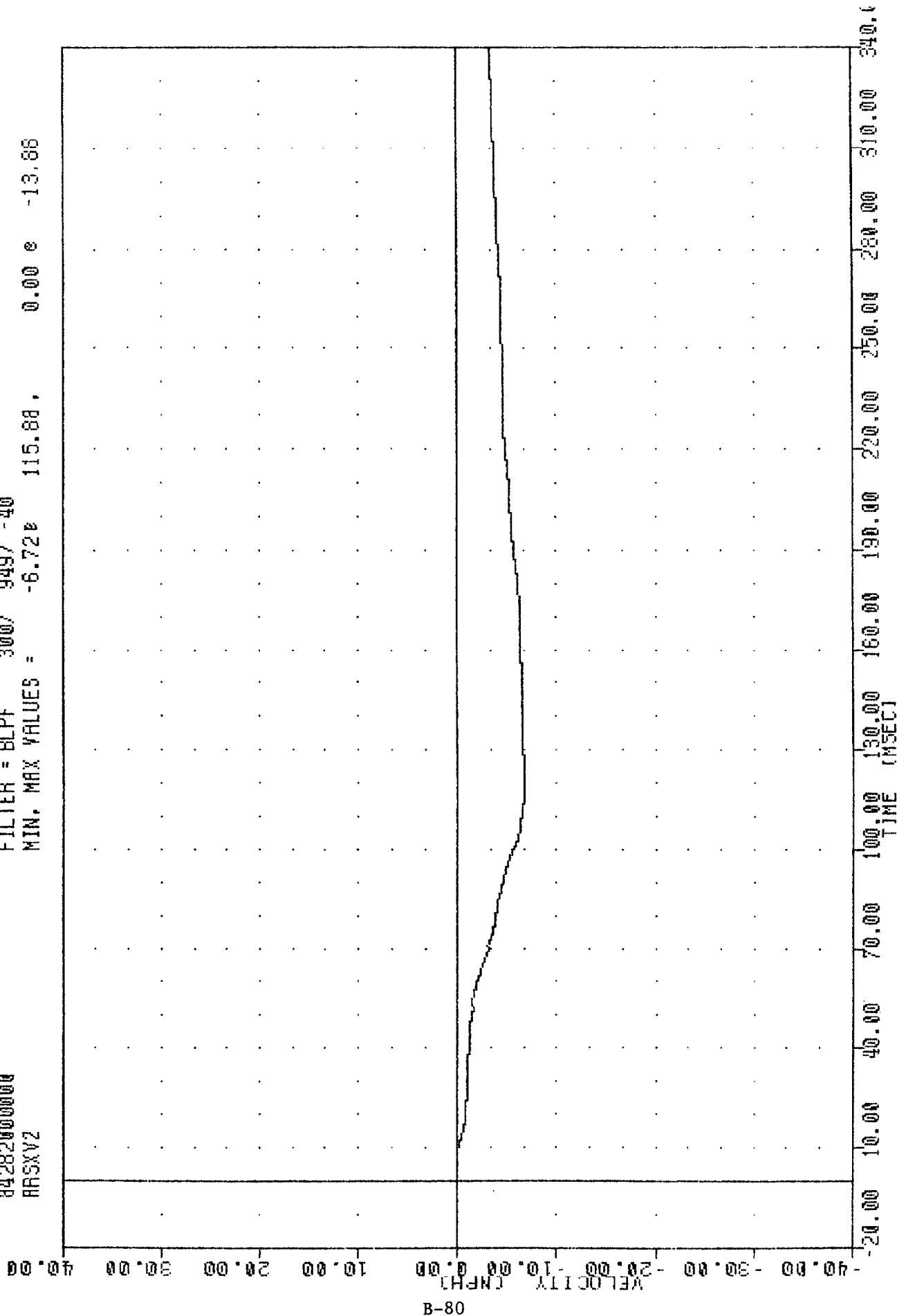
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (msec)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL RESULTANT

TRC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
RRSXVZ

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -6.72e 0.00 e -13.86



TPC 841008

PLUT DATE 17-OCT-84 10:18:53

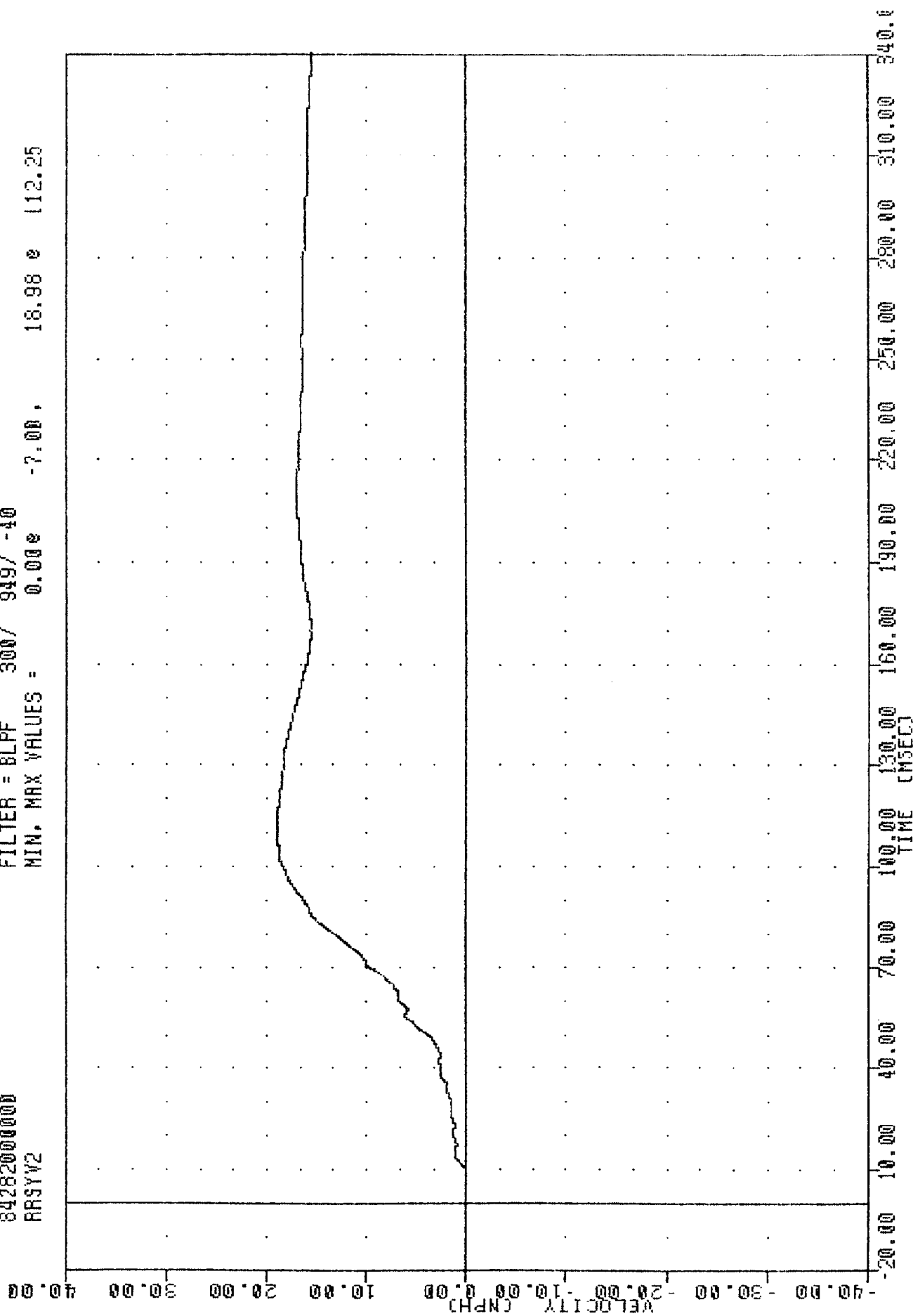
SIDE AGGRESSIVE ATTRIBUTES

84282000000

RRSYV2

FILTER = BLPF 300/ 949/ -40

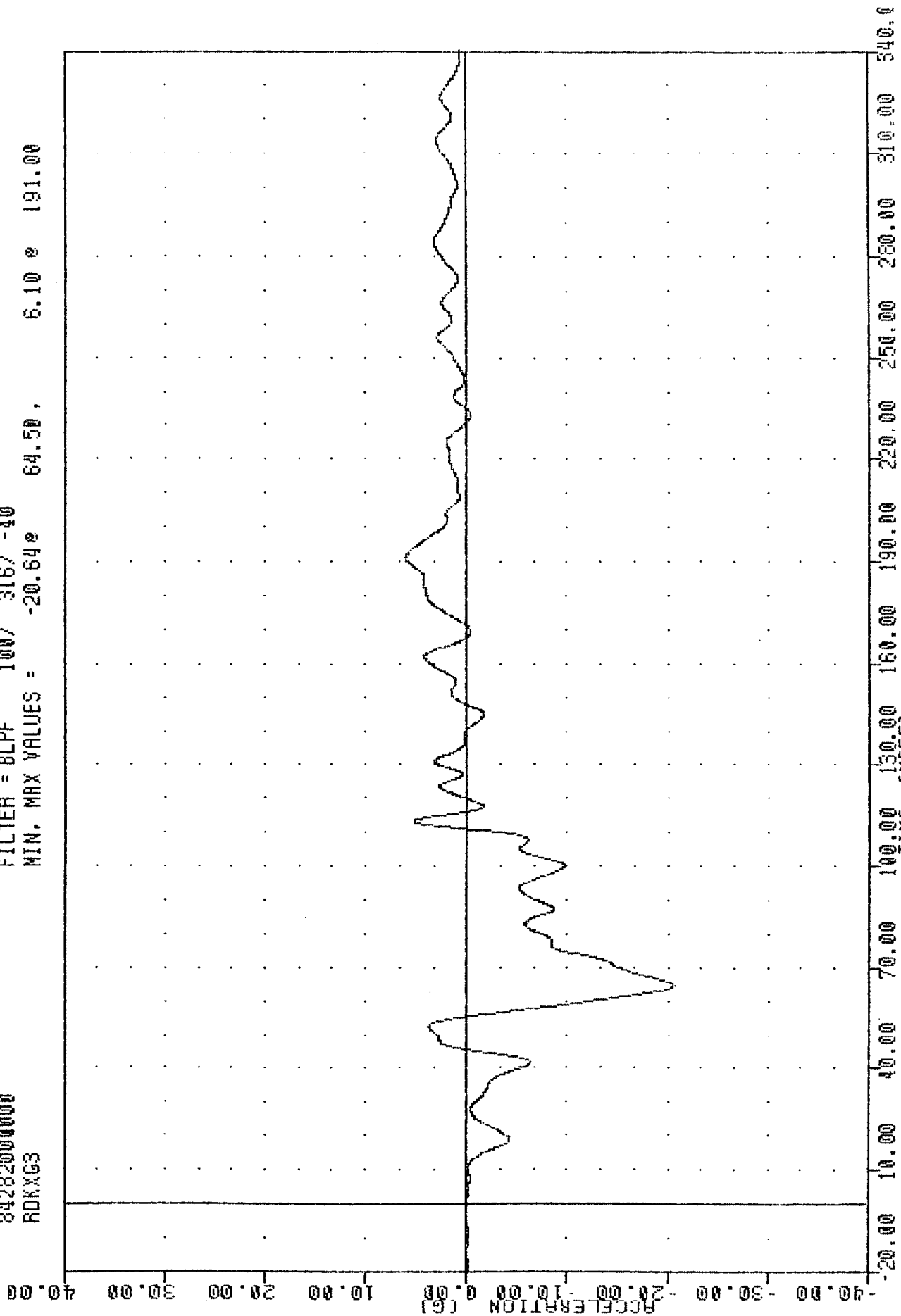
MIN. MAX VALUES = 0.00e -7.00, 18.98 e 112.25



TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
RDKXG3

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -20.64e 64.50, 6.10 e 191.00



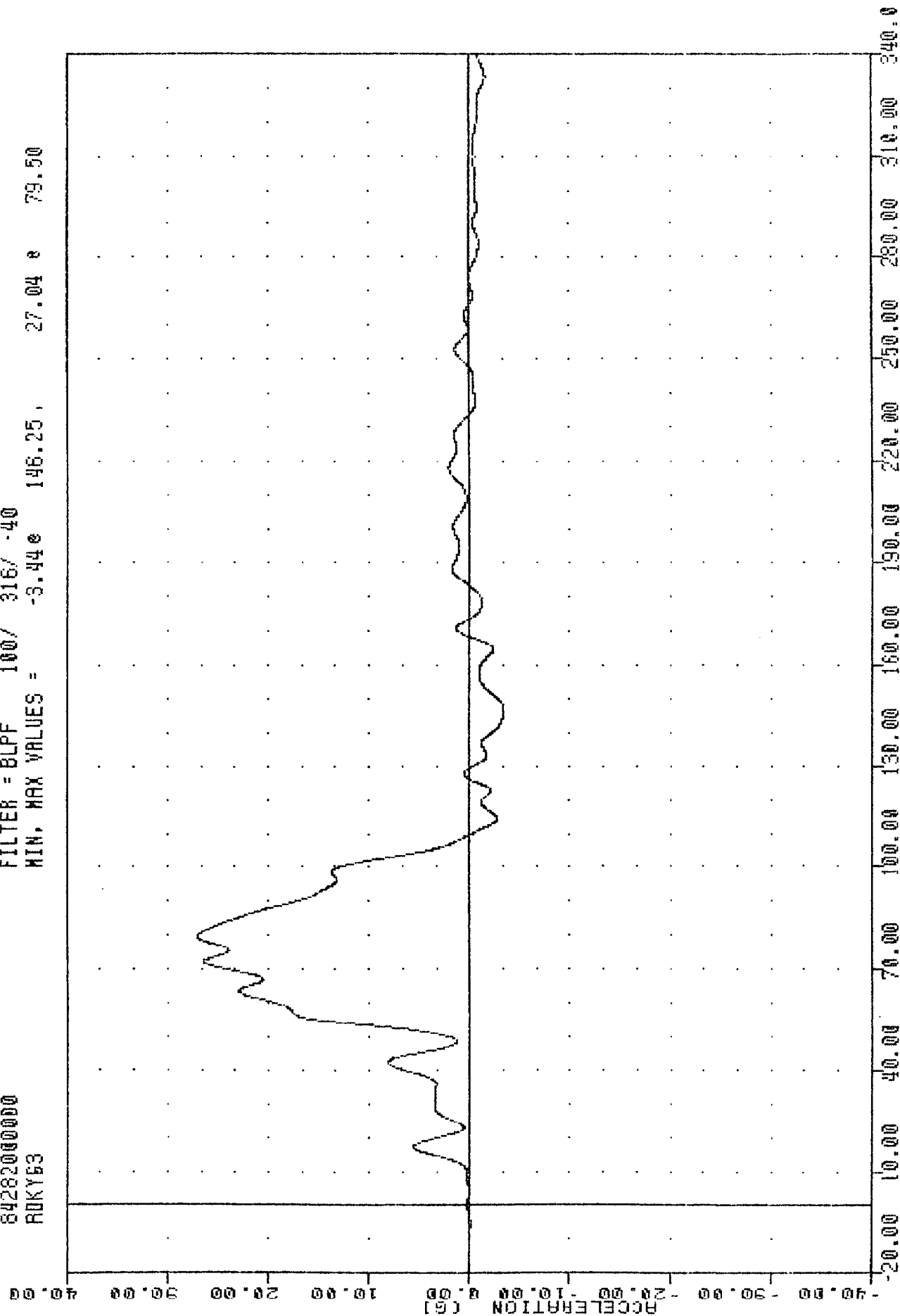
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION X AXIS

TAC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 ROKY53

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -3.44e 146.25, 27.04 e 79.50

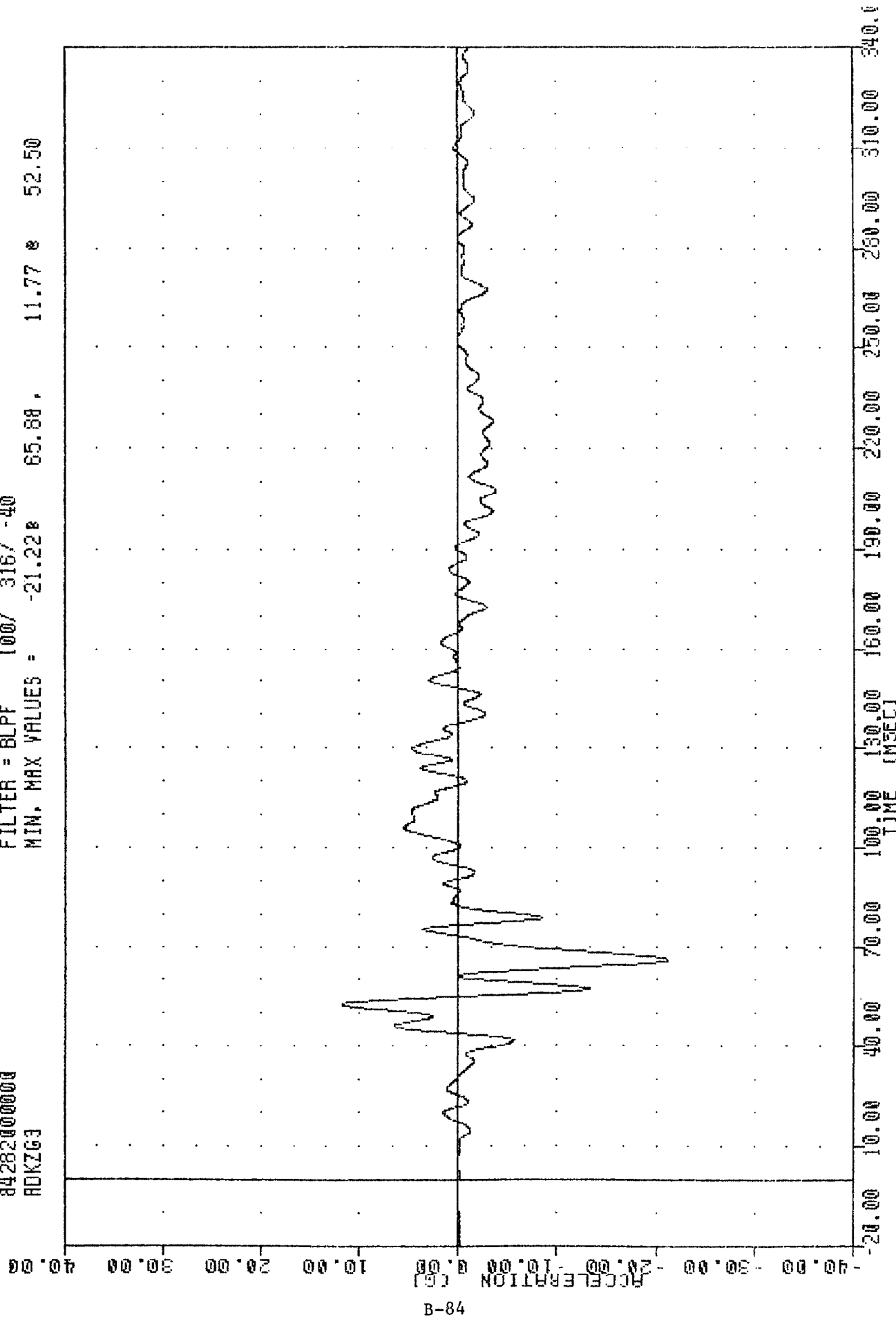


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE REAR DECK ACCELERATION Y AXIS

TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
ADKZG3

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -21.22 65.88 11.77 52.50

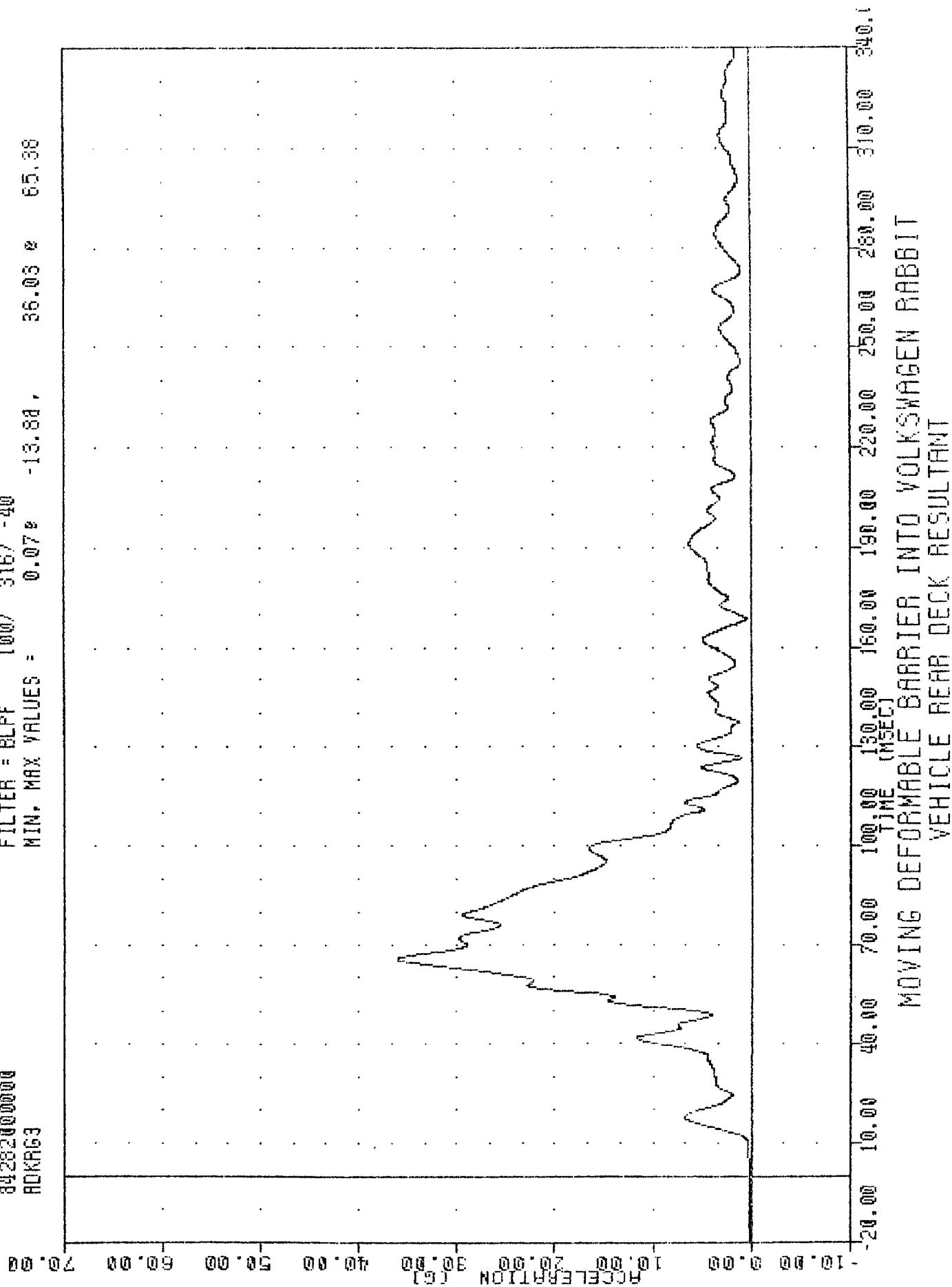


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION Z AXIS

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 ROKRG3

PLOT DATE 17-OCT-84 10:18:22

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = 0.07% -13.88, 36.03 % 65.38

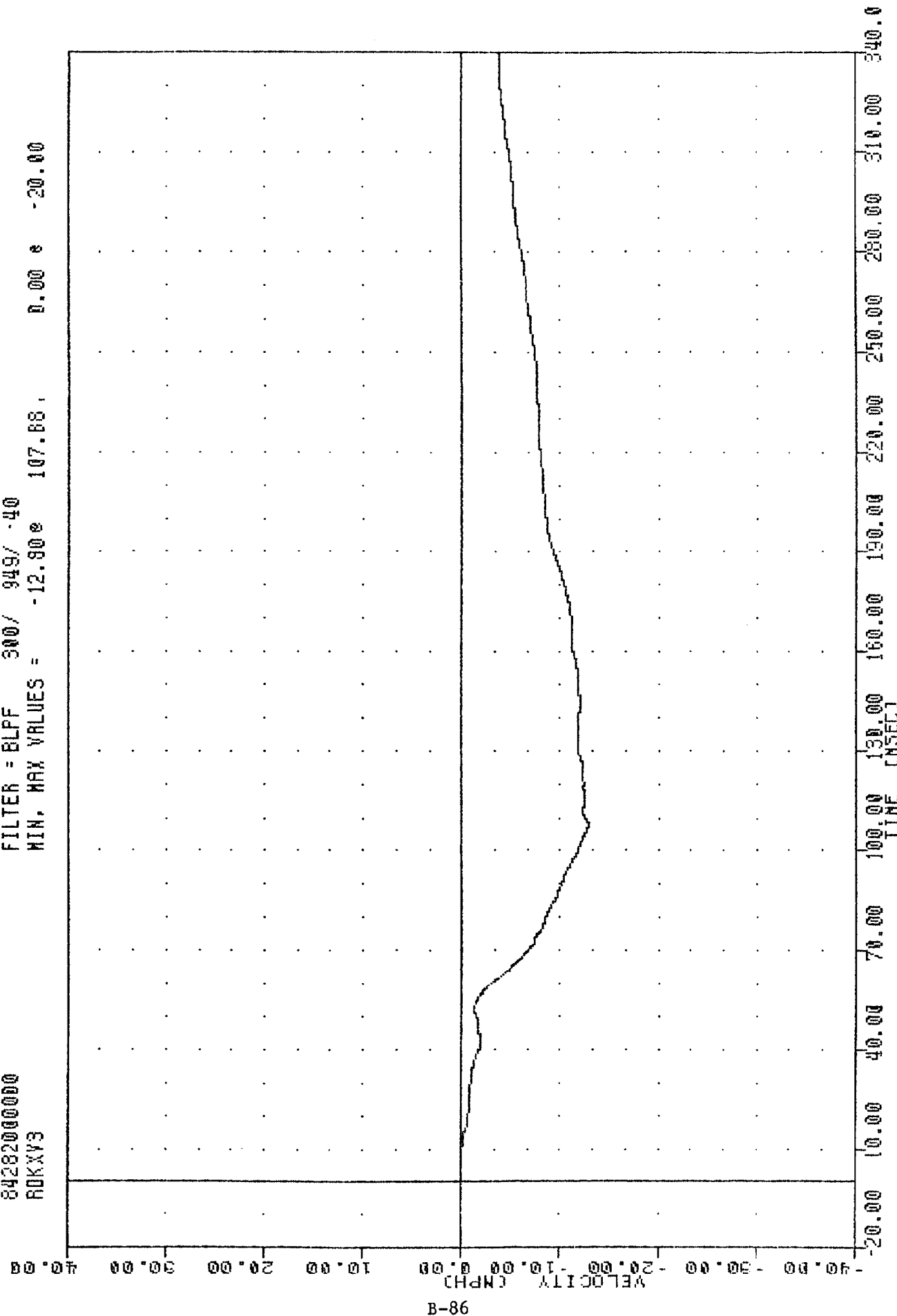


THC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
RDKXY3

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -12.90 107.68 0.00 e -20.00



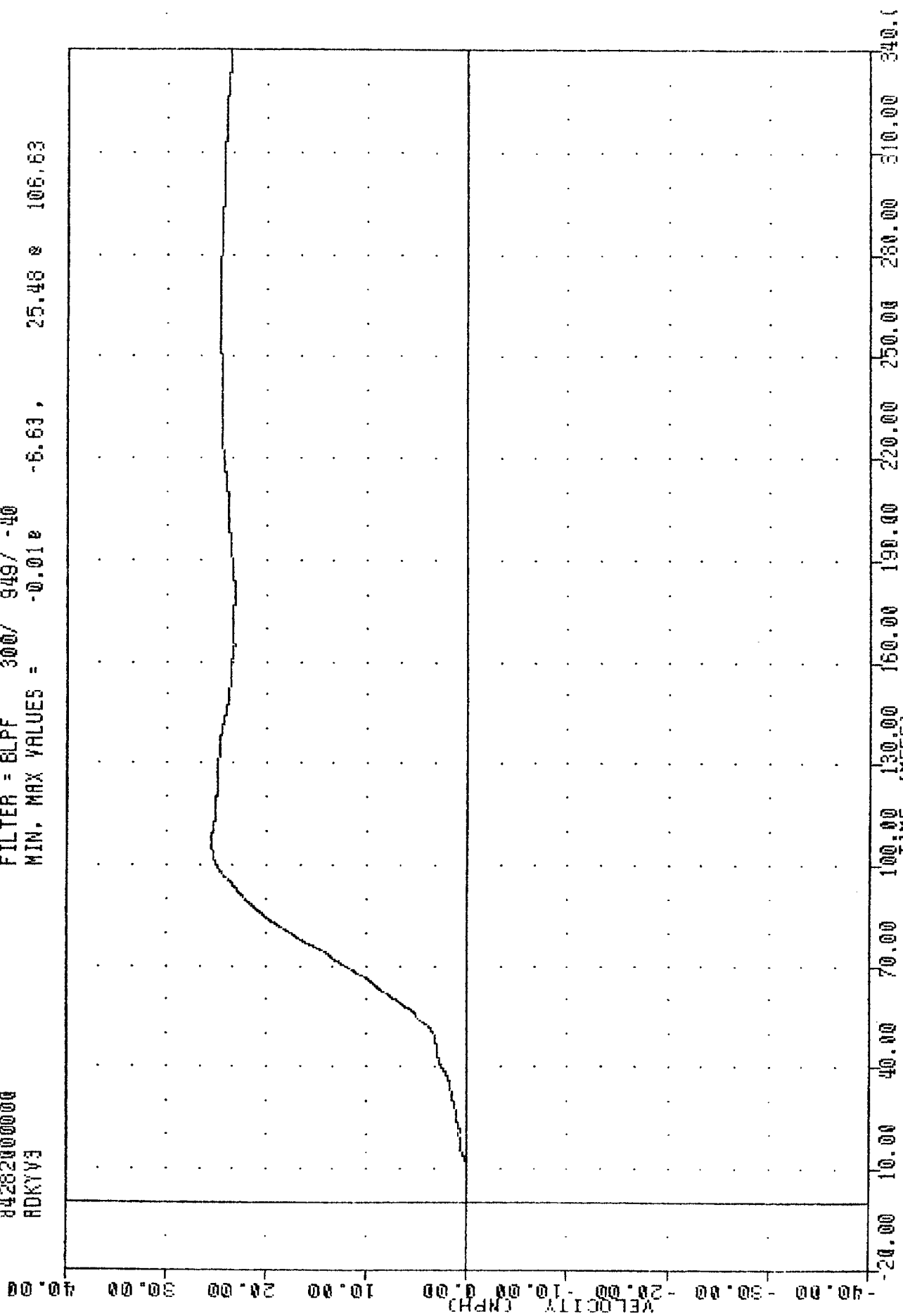
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RDKXG3

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 RDKYV3

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -0.01e -6.63, 25.48 e 106.63



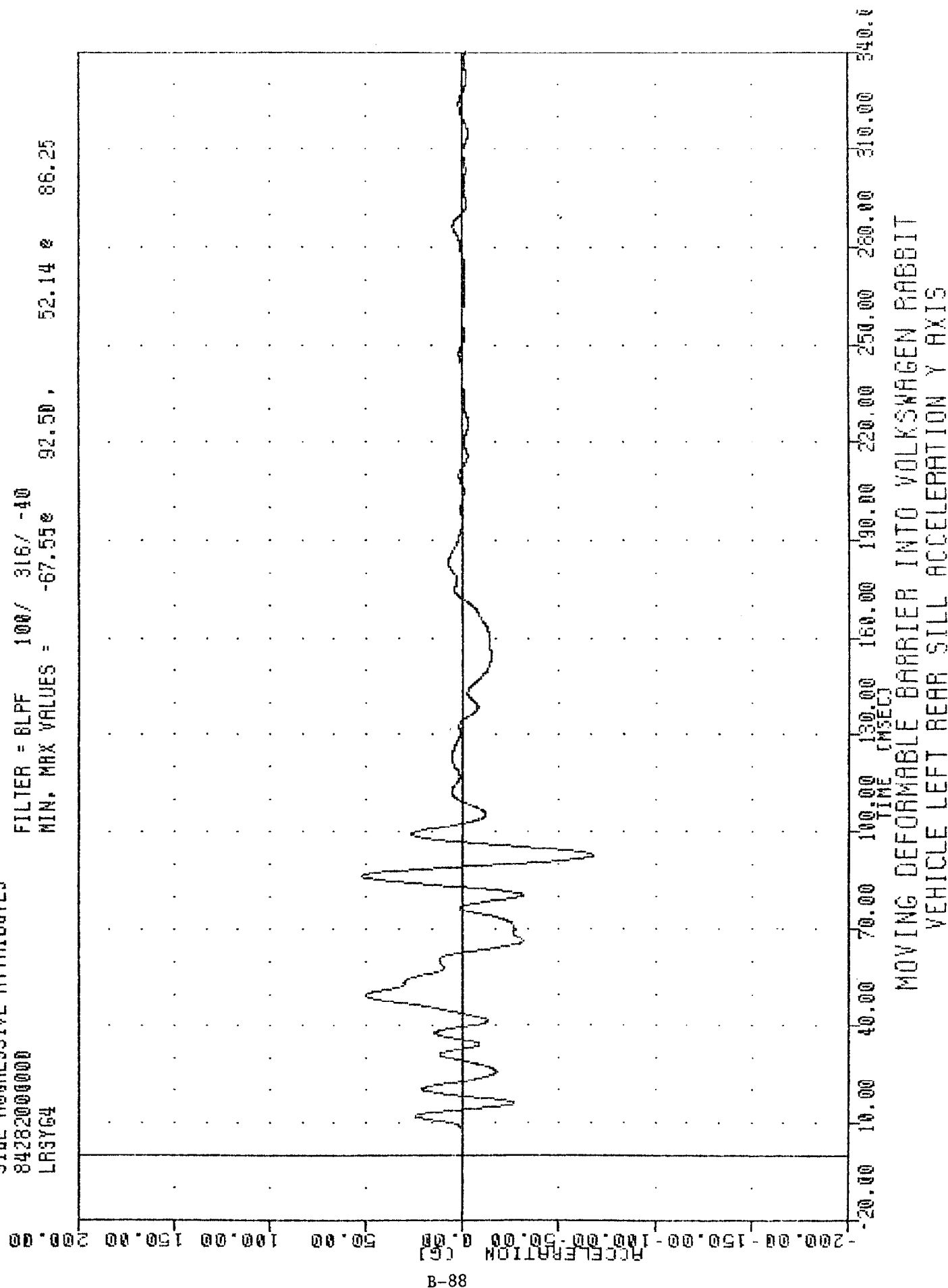
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING RDKYV3

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LRSYG4

PLOT DATE 17-OCT-84 10:16:30

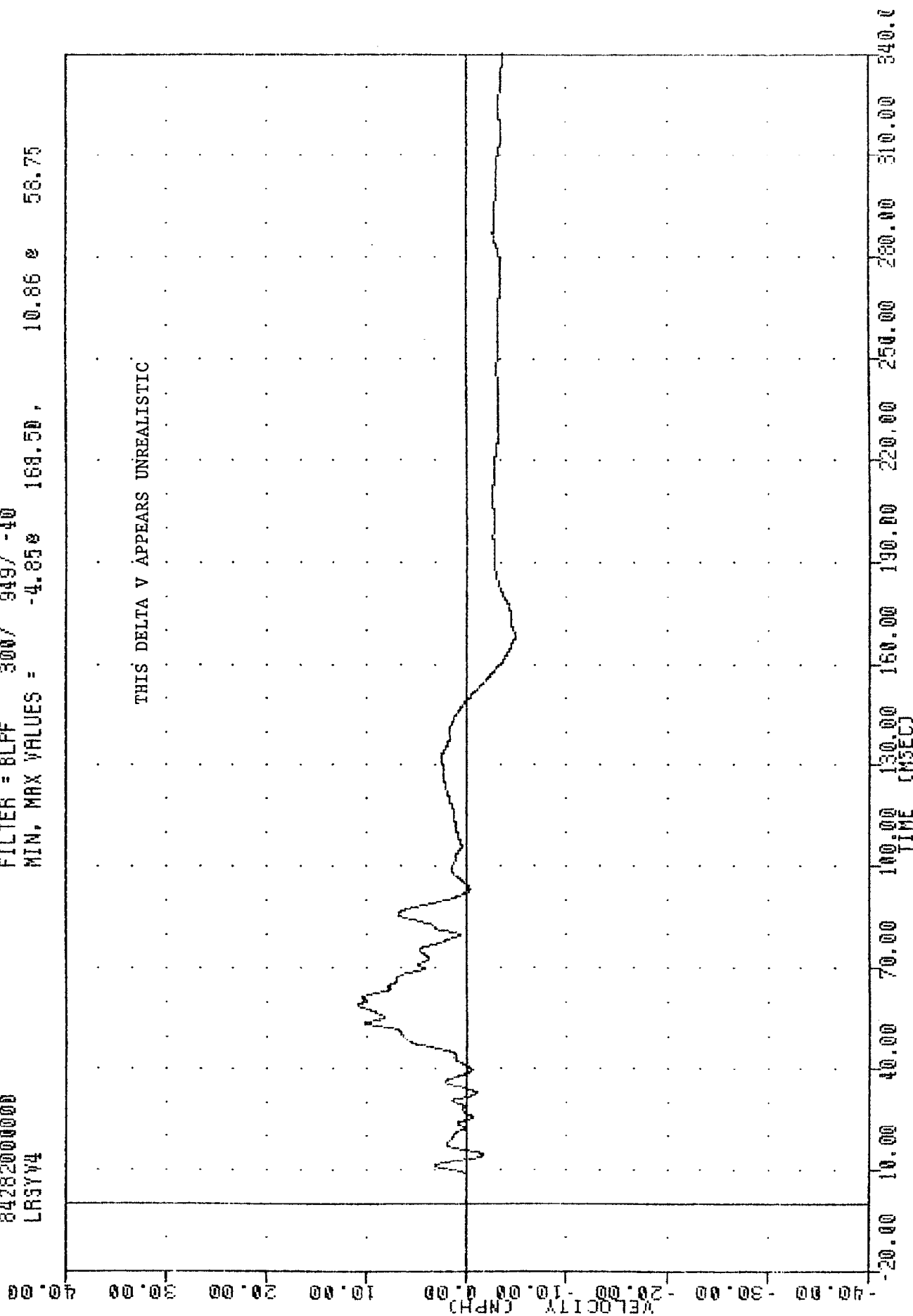
FILTER = 6LPF 100/ 316/ -40
 MIN. MAX VALUES = -67.550 92.50, 52.14 0 86.25



TMC
841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LRSYV4

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLFF 300/ 949/ -40
MIN, MAX VALUES = -4.858 168.58, 10.86 58.75



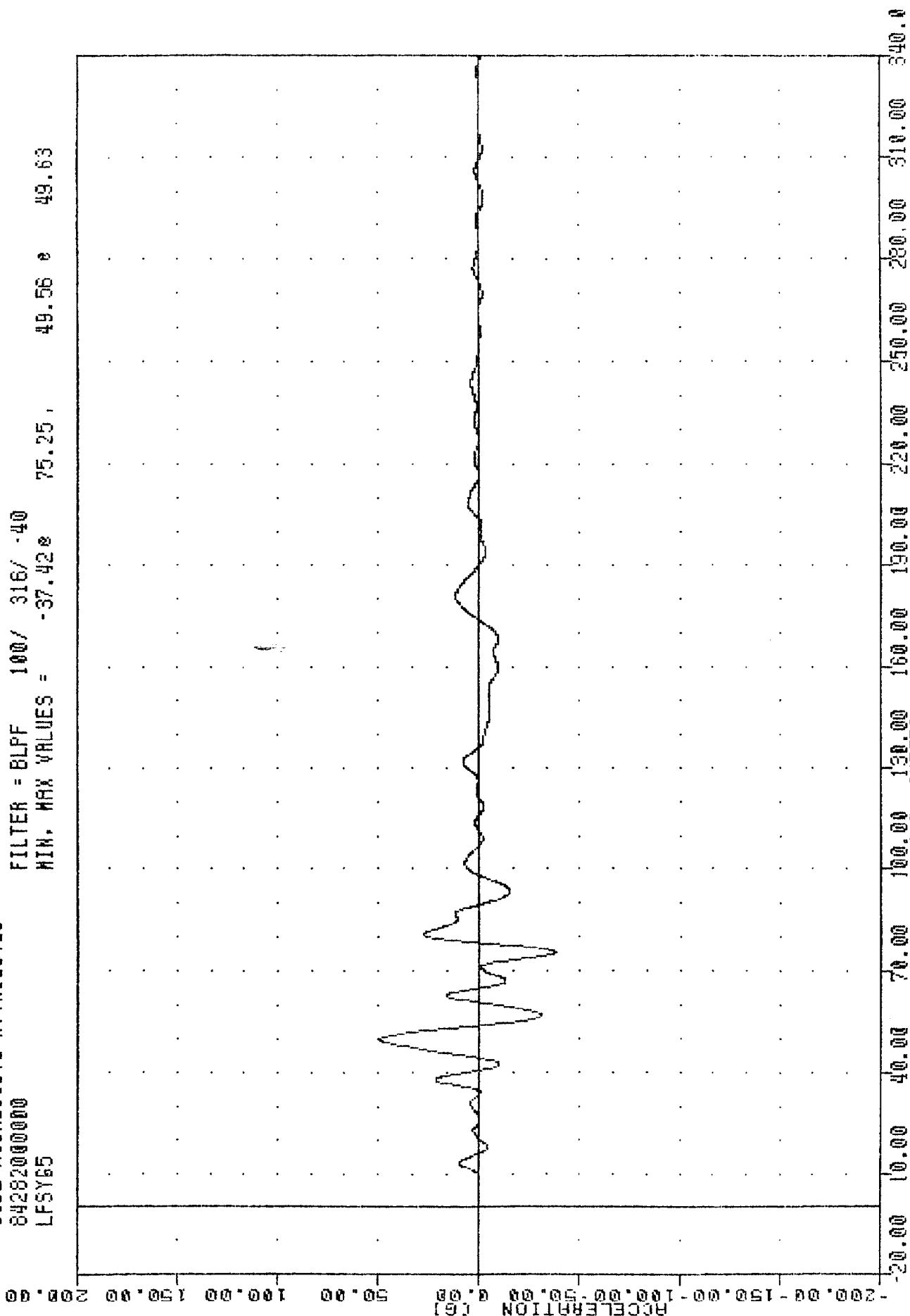
B-89

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LRSY64

TAC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LFSY65

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -37.428 75.25 , 49.56 e 49.63



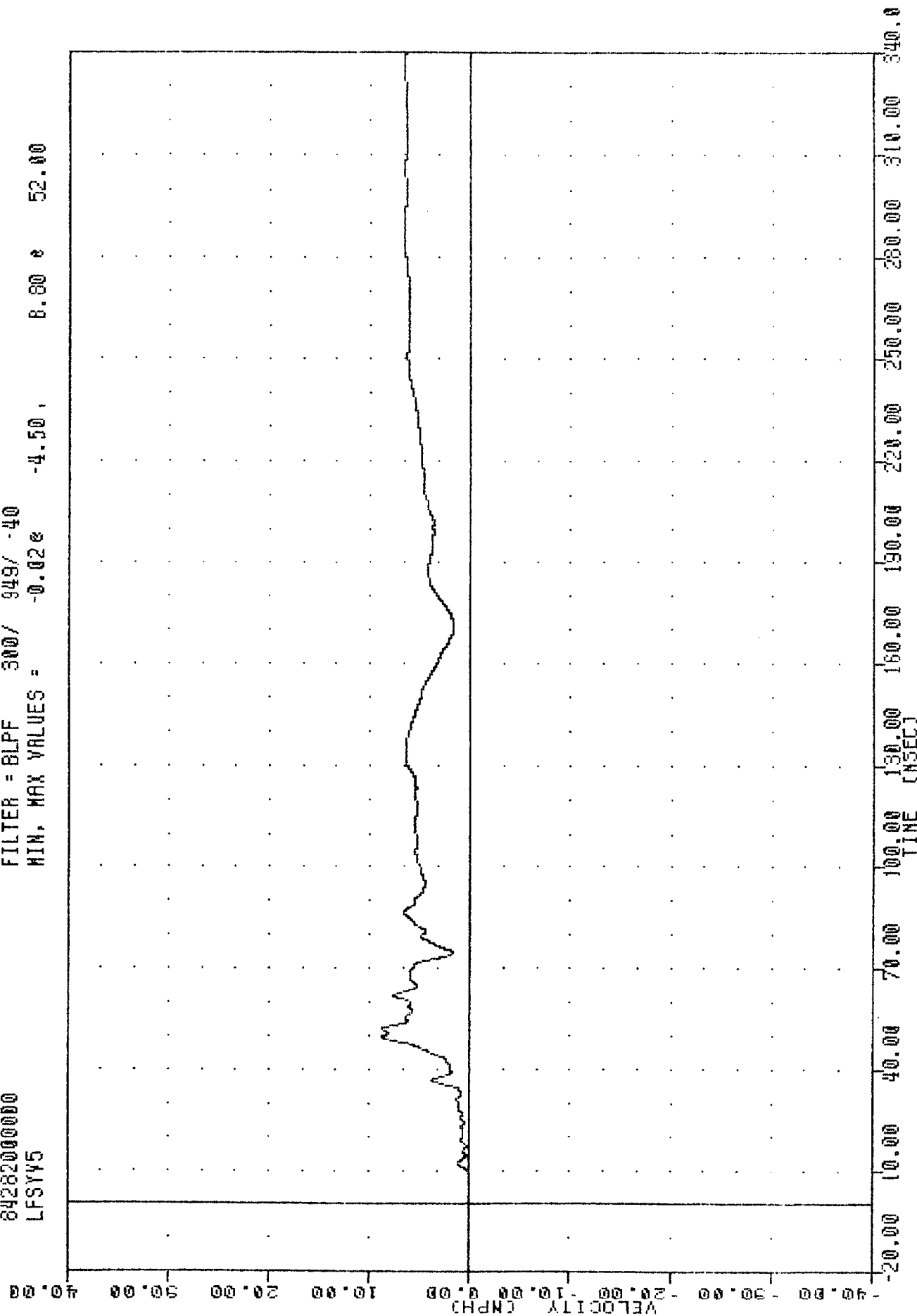
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS

TAC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LFSY45

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -0.02e -4.50, 8.80 e 52.00



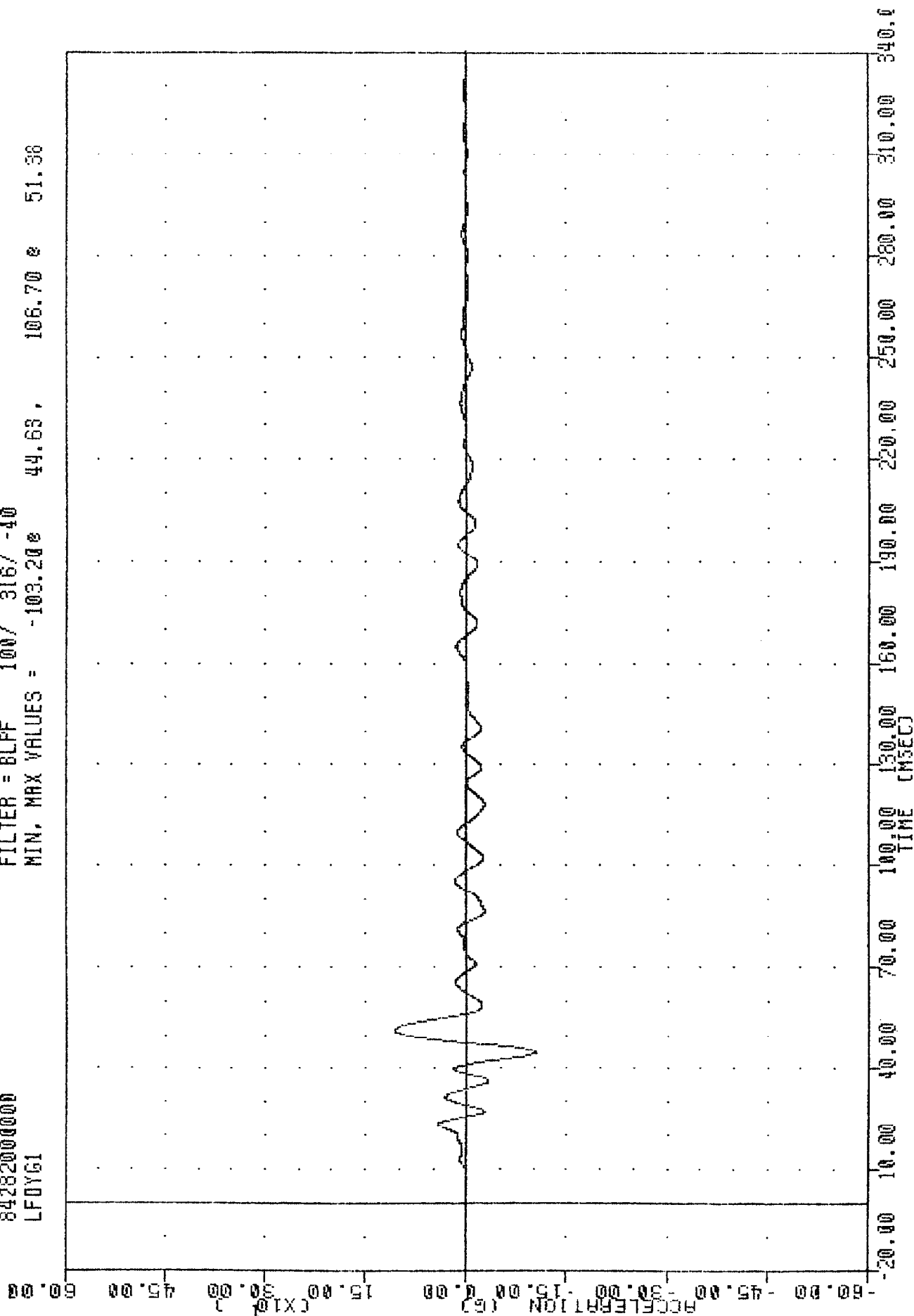
B-91

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFSY65

TRC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LFOY61

PLUT DATE 17-OCT-84 10:16:30

FILTER = BLFF 100/ 316/ -40
 MIN, MAX VALUES = -103.20e 44.63, 106.70 e 51.38

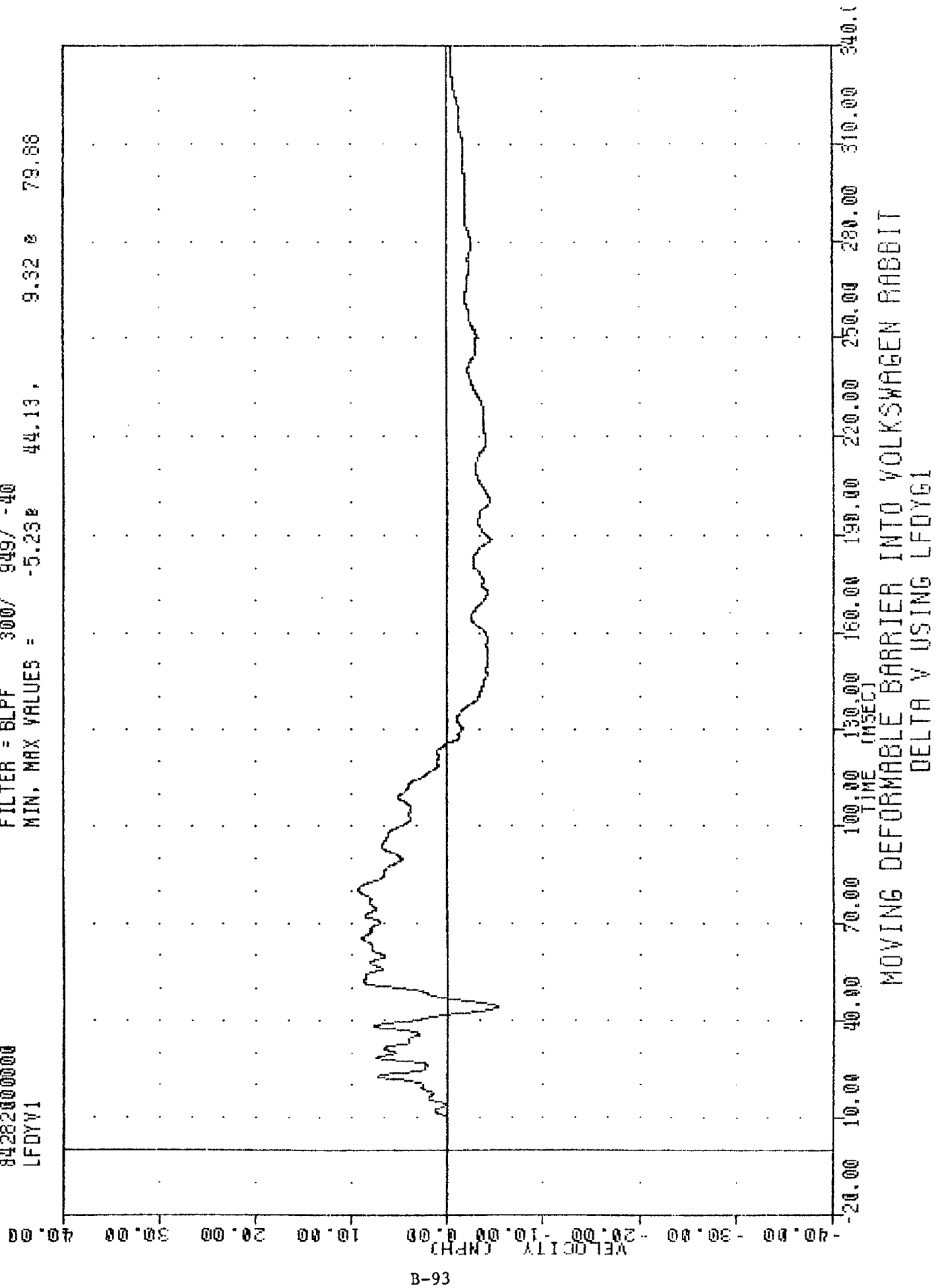


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE LEFT FRONT DOOR (POSITION 6) ACCELERATION Y AXIS

TRC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LFDYV1

PLOT DATE 17-OCT-84 10:18:53

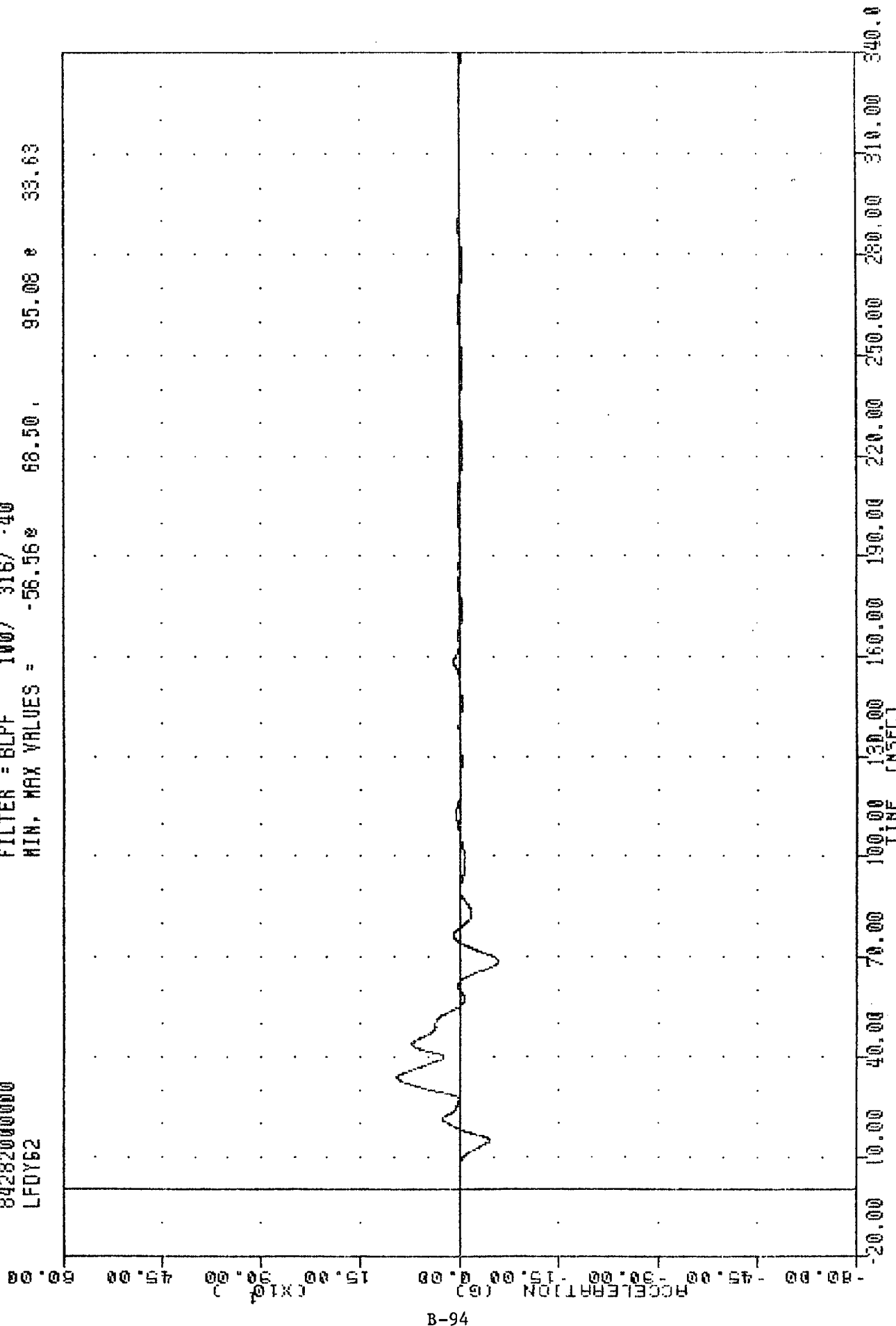
FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -5.23E 44.13 , 9.32 E 79.68



THC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 LFOY62

PLUT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -56.56 68.50 95.08 33.63



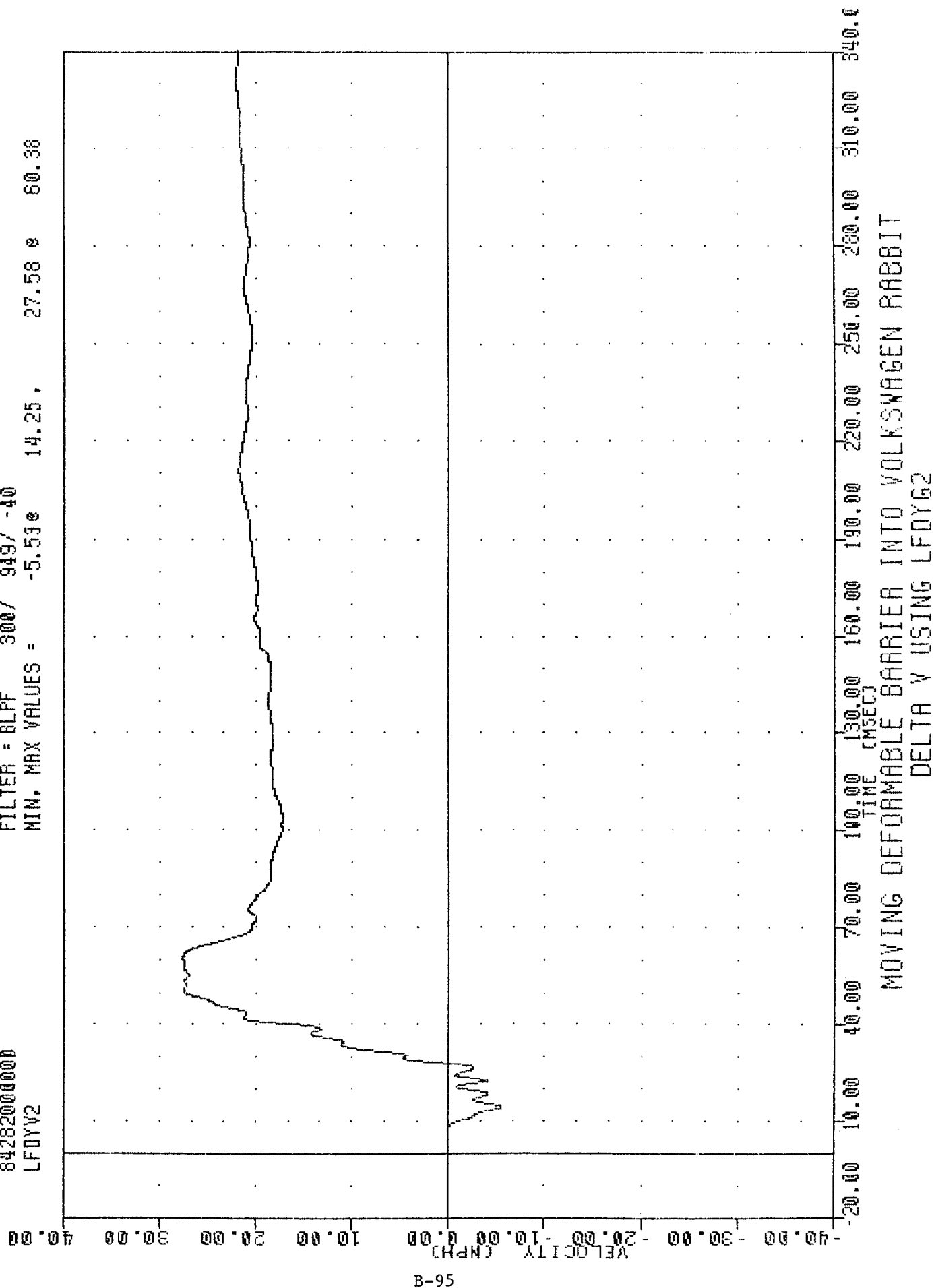
B-64

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE LEFT FRONT DOOR (POSITION 8) ACCELERATION Y AXIS

THC 841008
SIDE AGGRESSIVE ATTRIBUTES
64282000000
LFDYV2

PLOT DATE 17-OCT-84 10:18:53

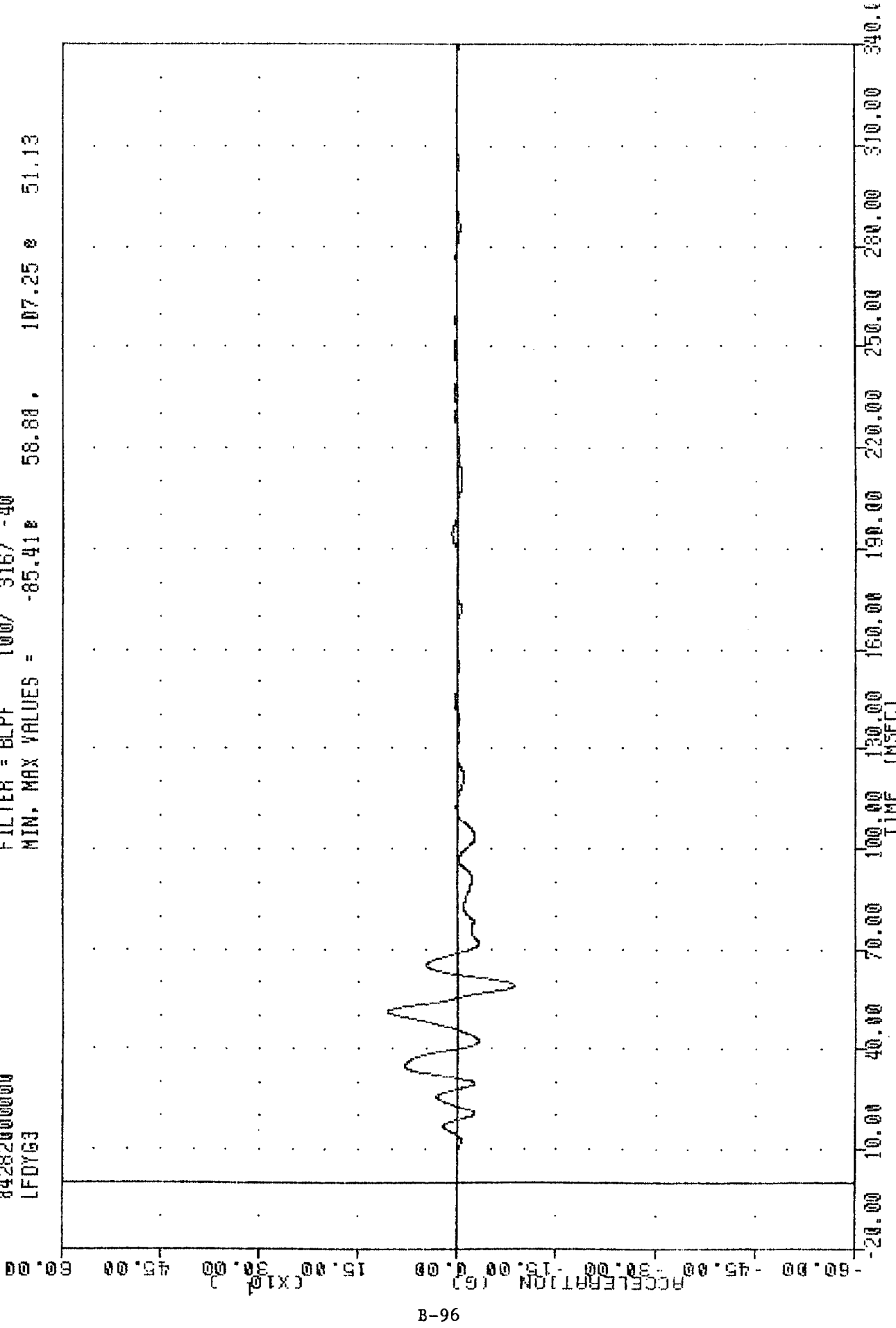
FILTER = 8LPF 300/ 949/ -40
MIN. MAX VALUES = -5.53e 14.25, 27.58 e 60.36



TRC 841008
SIDE AGGRESSIVE ATTRIBUTES
842820000000
LFDY63

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -85.41e 58.88. 107.25 e 51.13

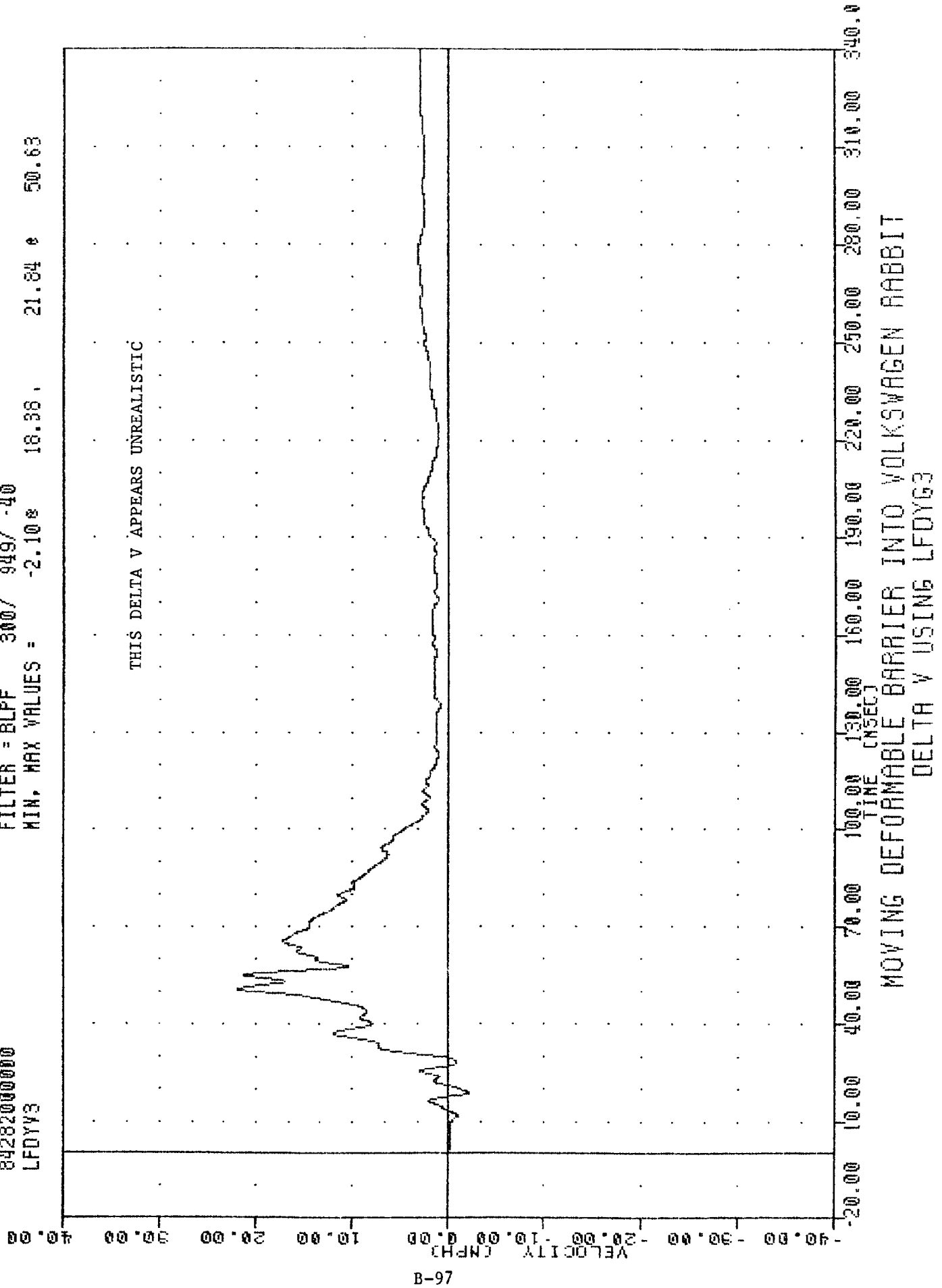


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 9) ACCELERATION Y AXIS

TAC 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LFDYV3

PLOT DATE 17-OCT-84 10:18:53

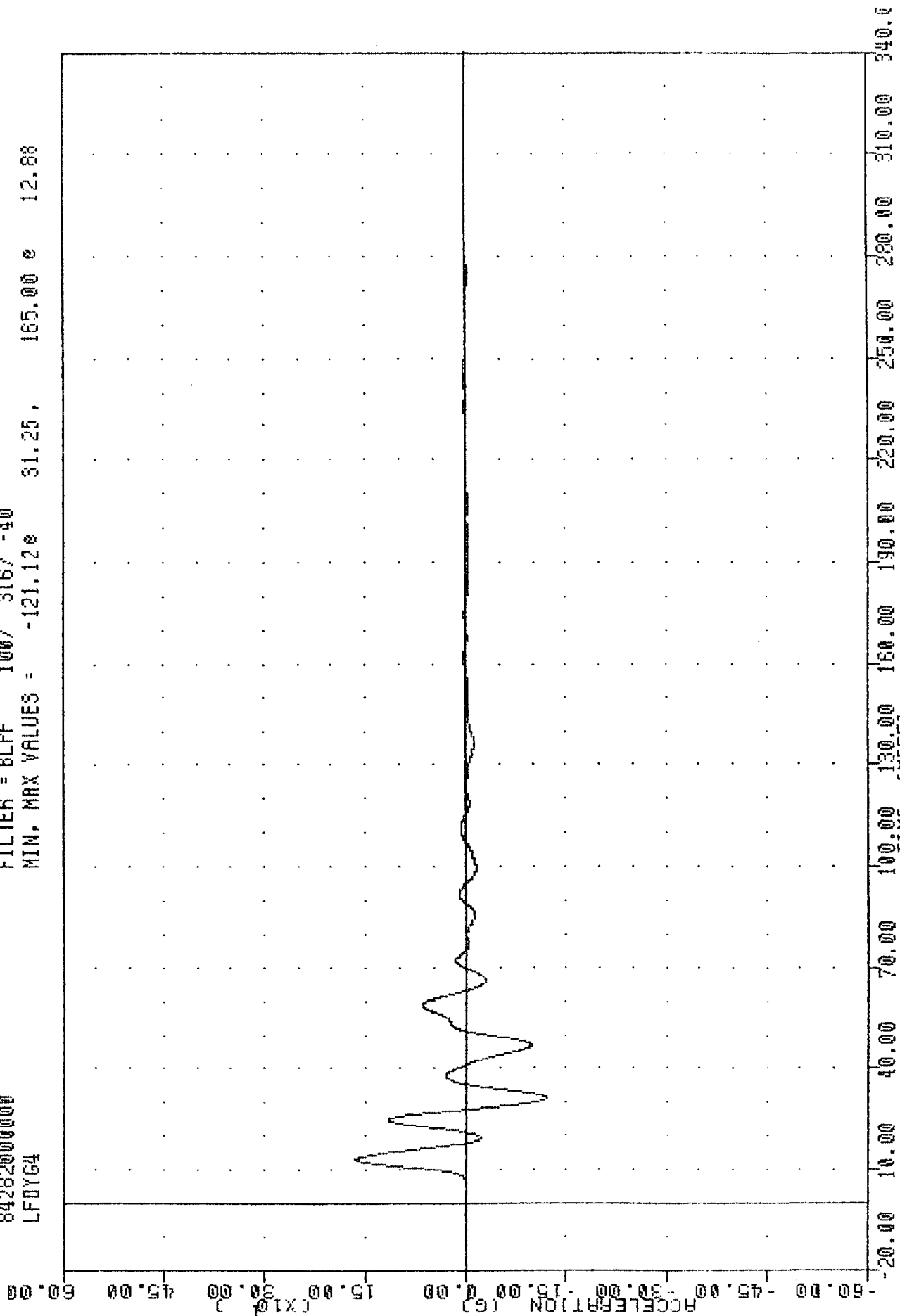
FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -2.10s 18.38 21.84 50.63



TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LF0Y64

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -121.12 31.25, 165.00 12.88



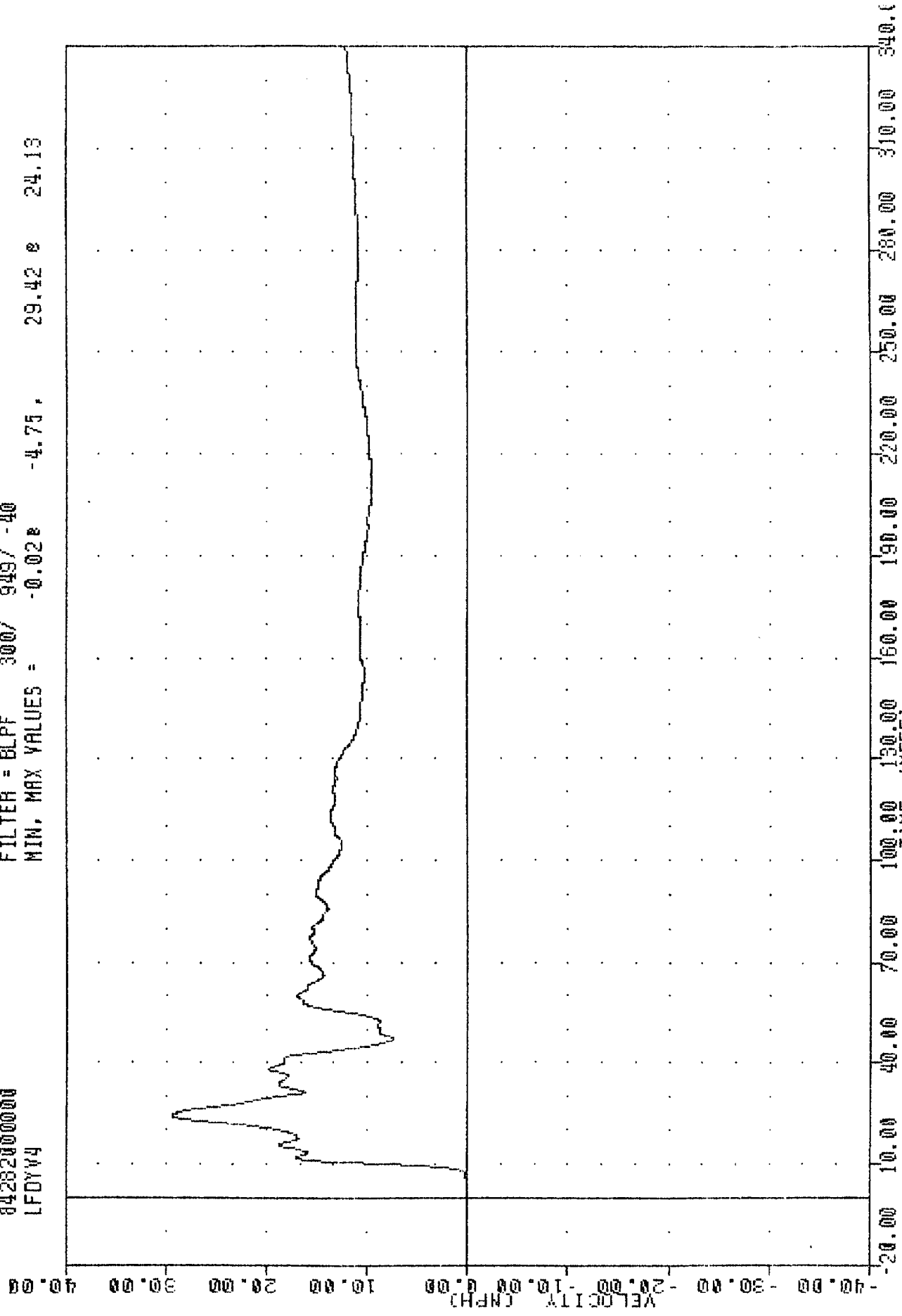
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 10) ACCELERATION Y AXIS

TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
LFDYV4

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -0.028 -4.75, 29.42 24.13



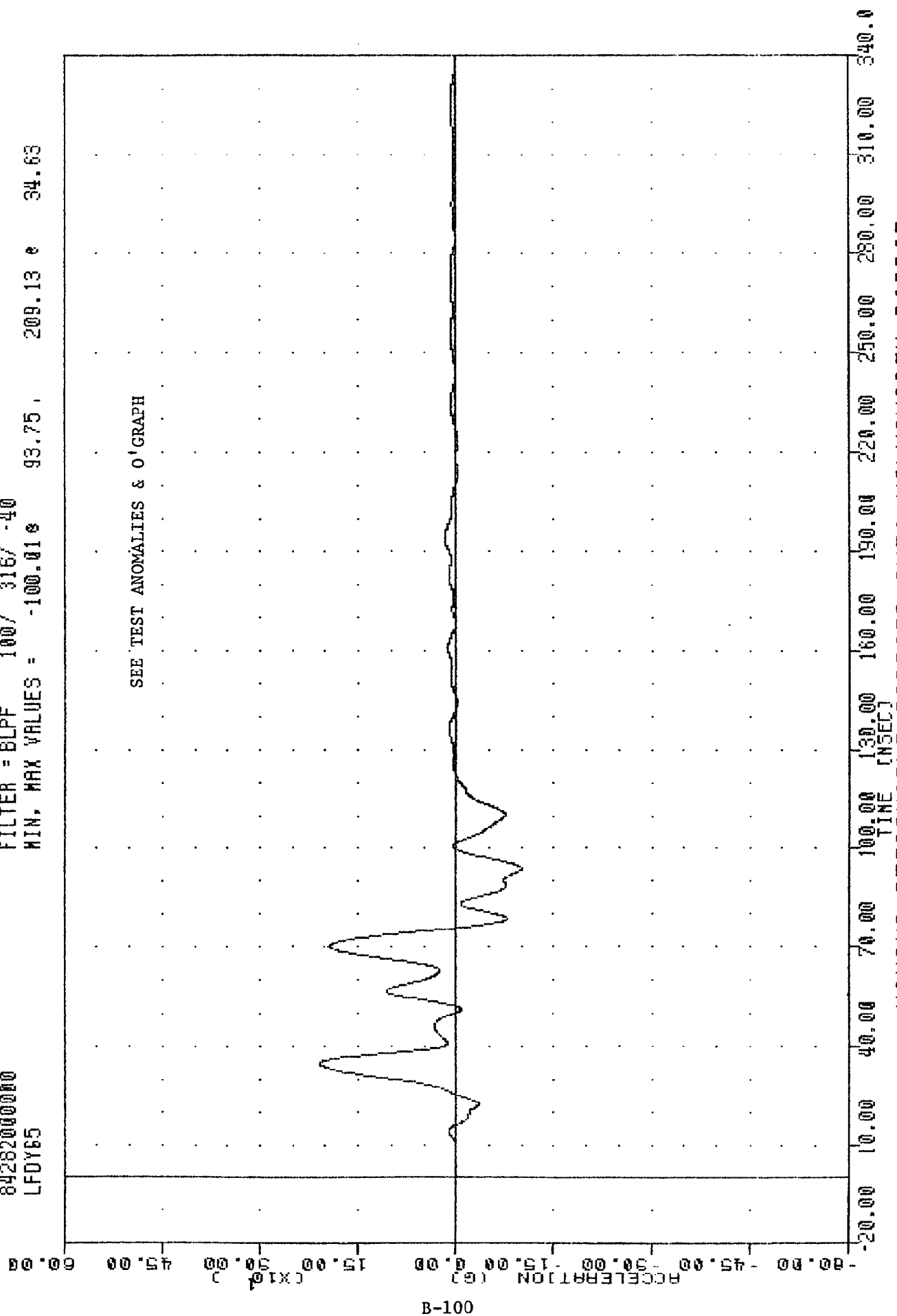
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDYV4

TAC .841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 LFDY65

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -100.01g 93.75, 209.13 g 34.63



B-100

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE TEST FRONT RAMP POSITION 117 ACCELERATION Y AXIS

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 LFDYV5

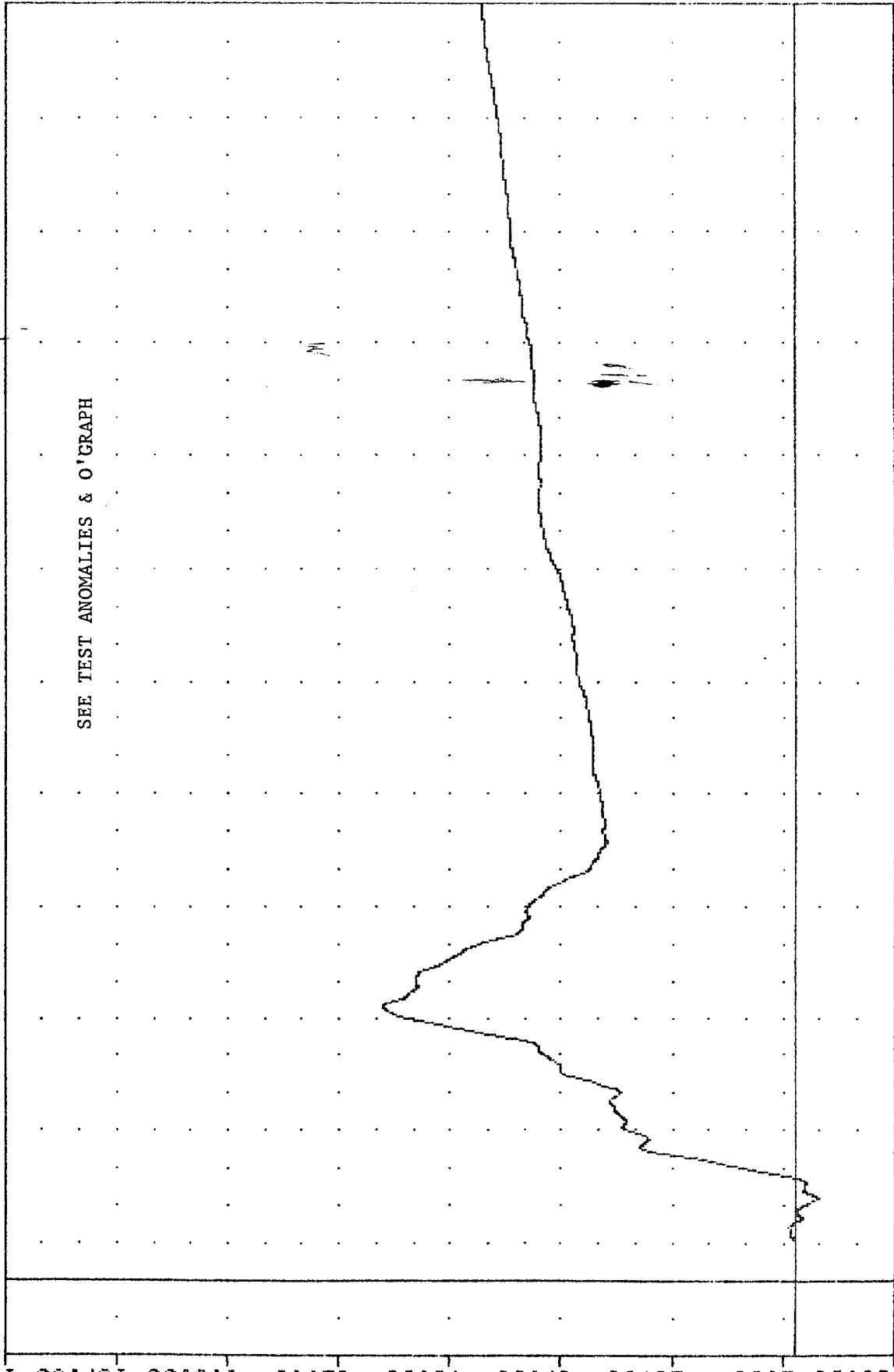
PLOT DATE 18-OCT-84 16:14:32

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -4.648 21.75 ,

83.69 8 73.13

101-B
 VELOCITY (MPH)



SEE TEST ANOMALIES & O'GRAPH

-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 FFDVCS

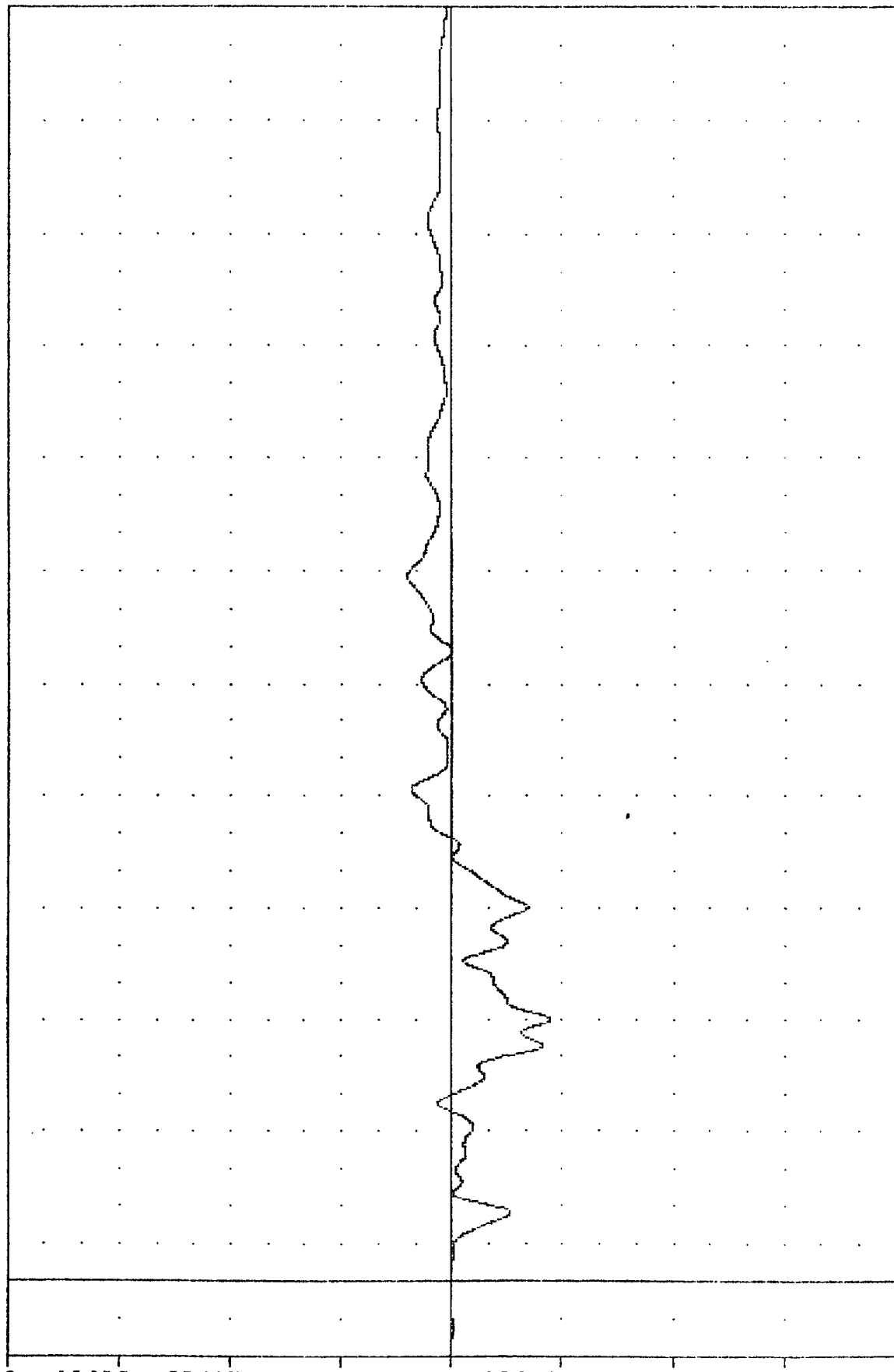
TRC
SIDE AGGRESSIVE ATTRIBUTES
84282000000
TFRXG7

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -8.90 69.63, 4.06 188.25

ACCELERATION (G)



TIME (MSEC)

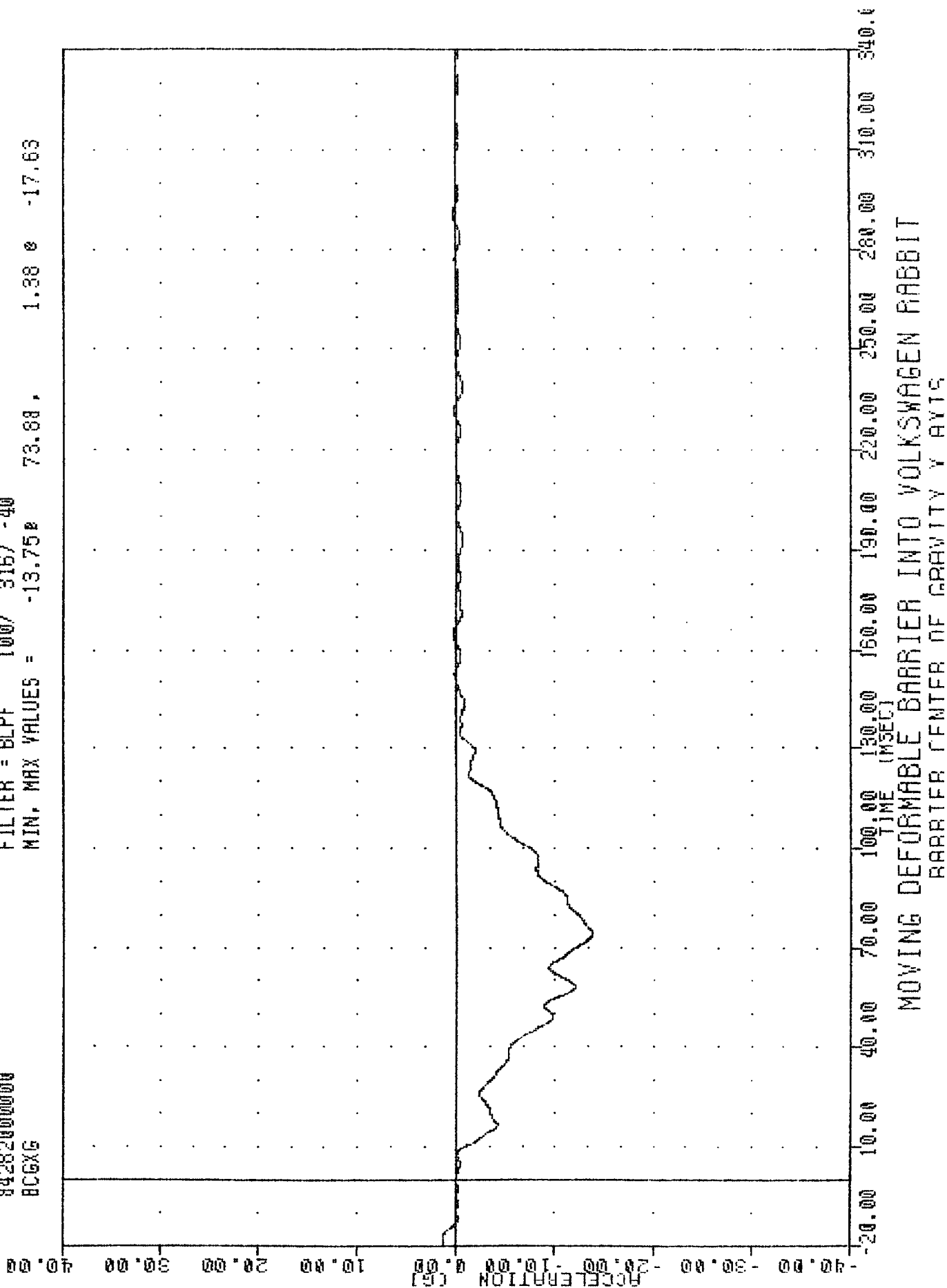
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE TRUNK FINNR RIGHT ACCELERATION Y AXIS

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 BCGXG

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

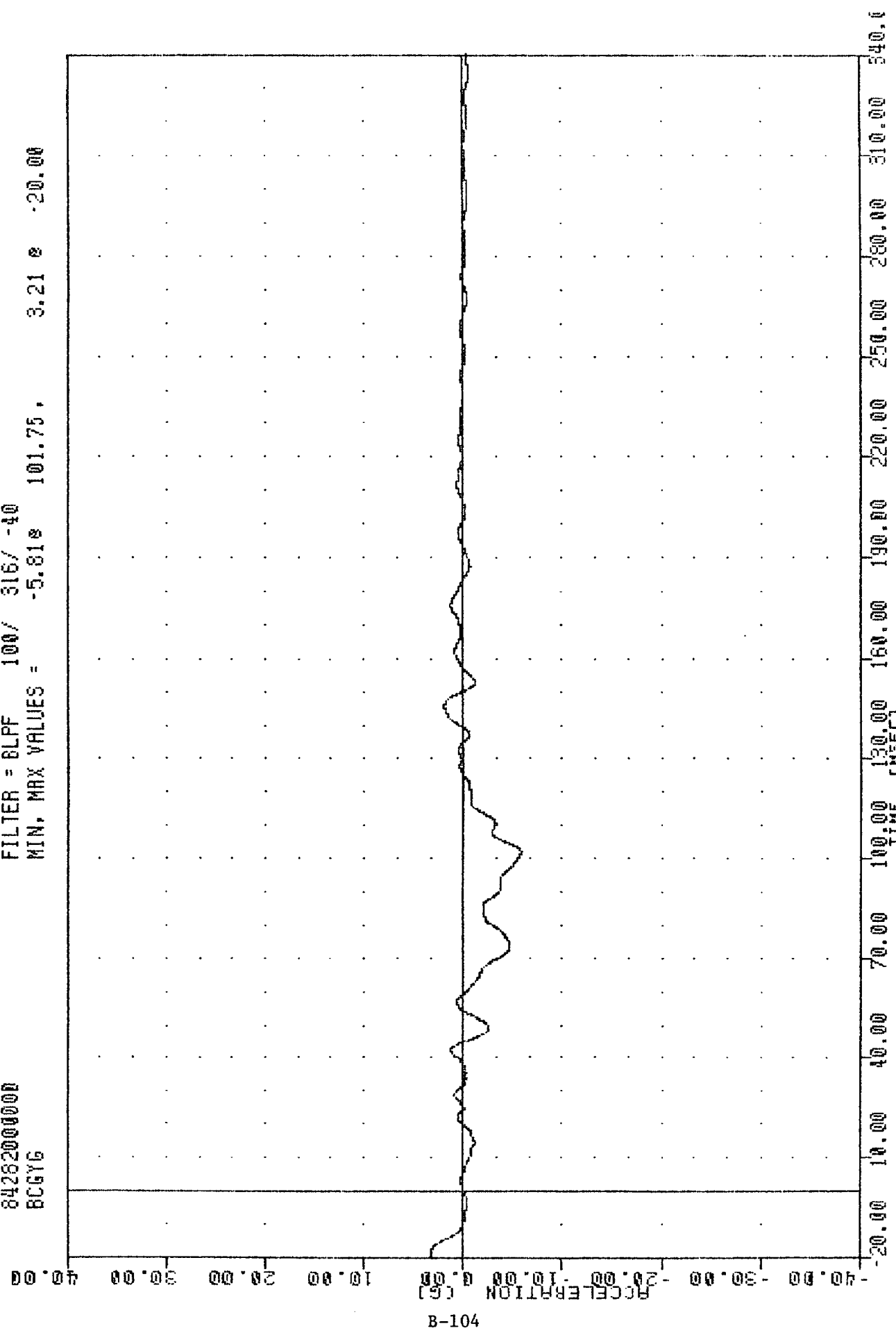
MIN. MAX VALUES = -13.75 73.88 1.38 0 -17.63



TRC 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 BCGYG

PLOT DATE 17-OCT-84 10:16:30

FILTER = 8LPF 100/ 316/ -40
 MIN, MAX VALUES = -5.81g 101.75, 3.21 g -20.00



B-104

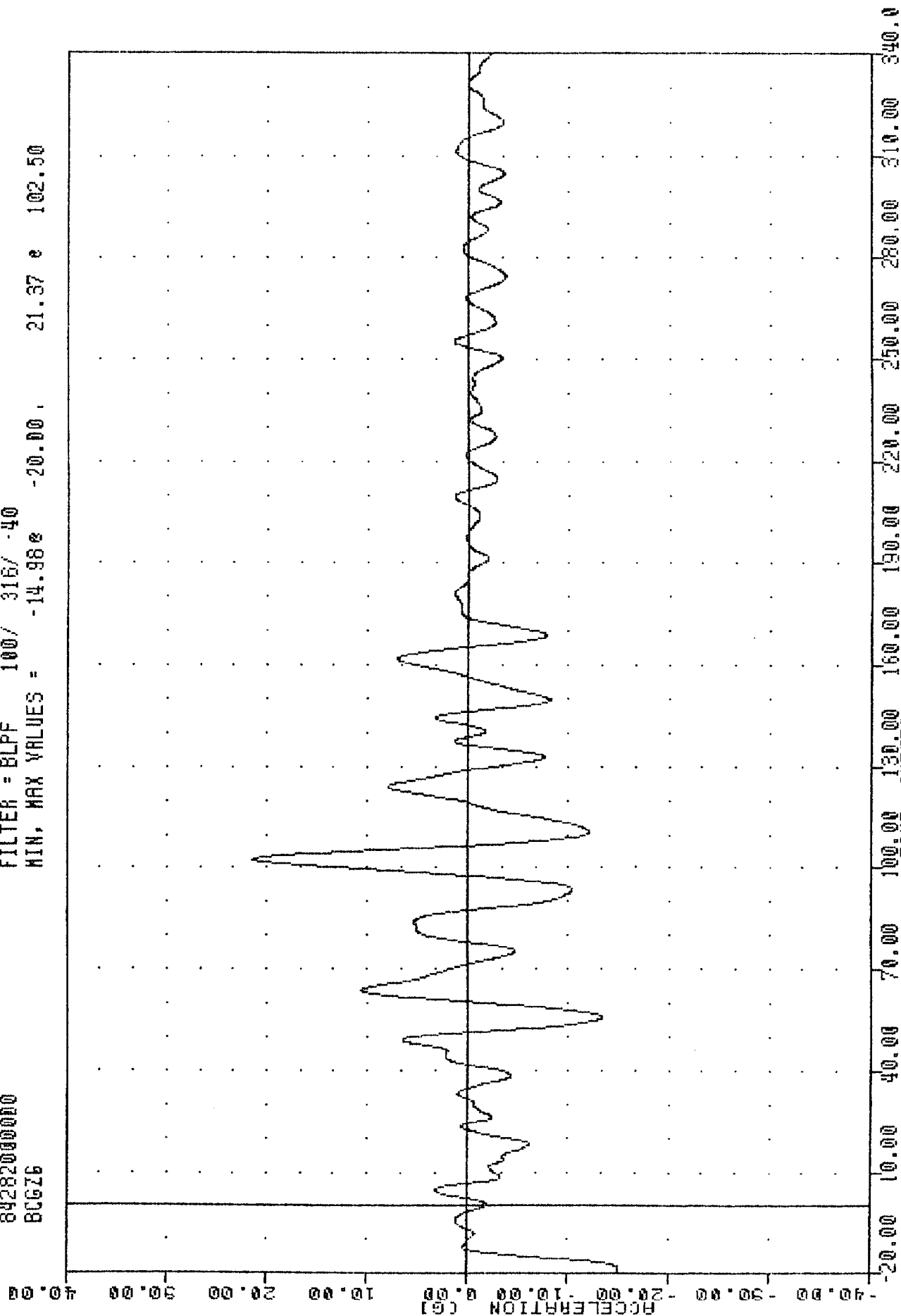
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 BARRIER CENTER OF GRAVITY Y AXIS

TAC , 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
BCG76

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -14.98e -20.00, 21.37 e 102.50



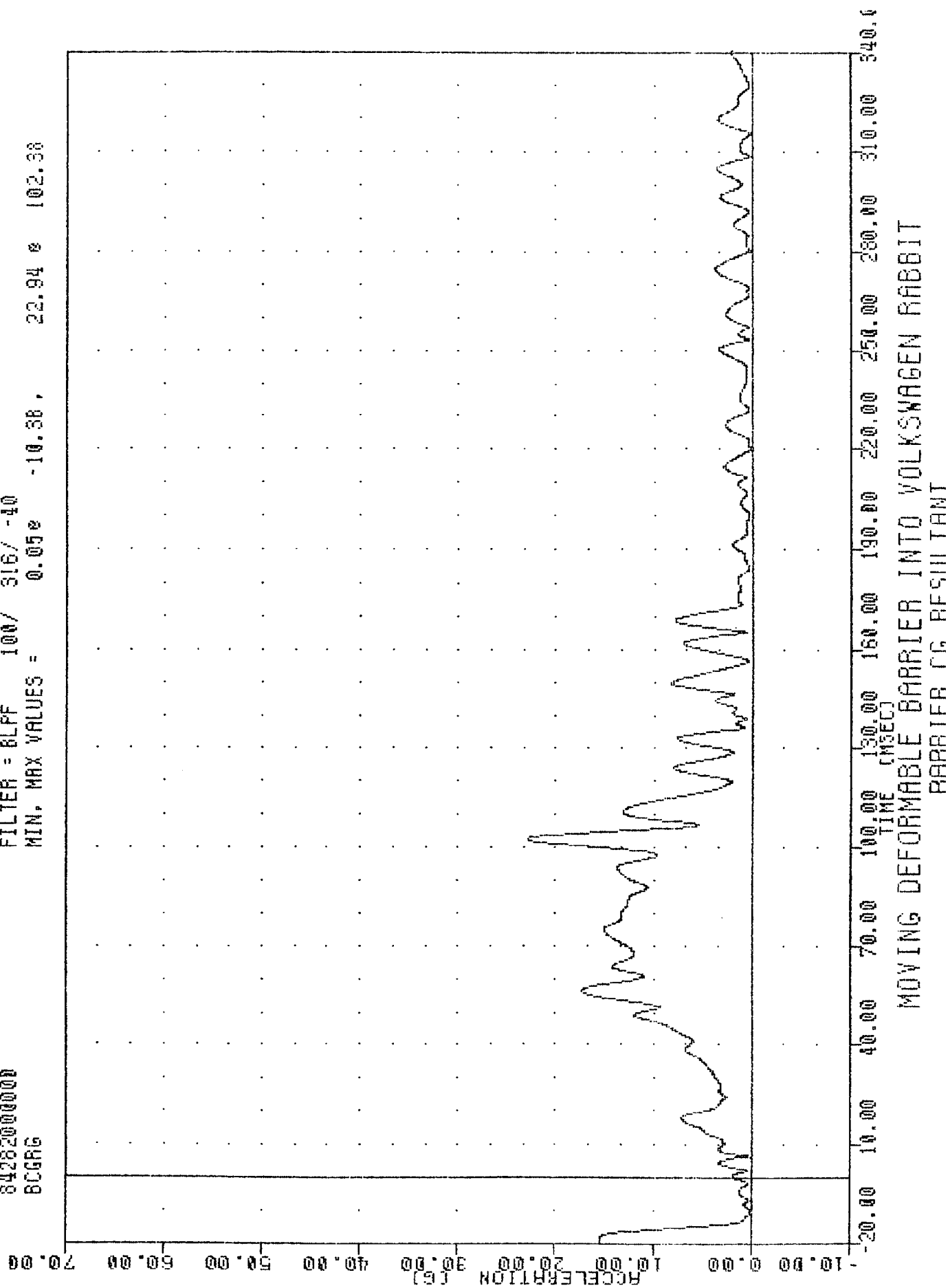
B-105

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

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 BCGRG

PLOT DATE 17-OCT-84 10:18:22

FILTER = 8LFF 100/ 316/ -40
 MIN. MAX VALUES = 0.05e -10.38, 22.94 e 102.38



TAC 841008

SIDE AGGRESSIVE ATTRIBUTES

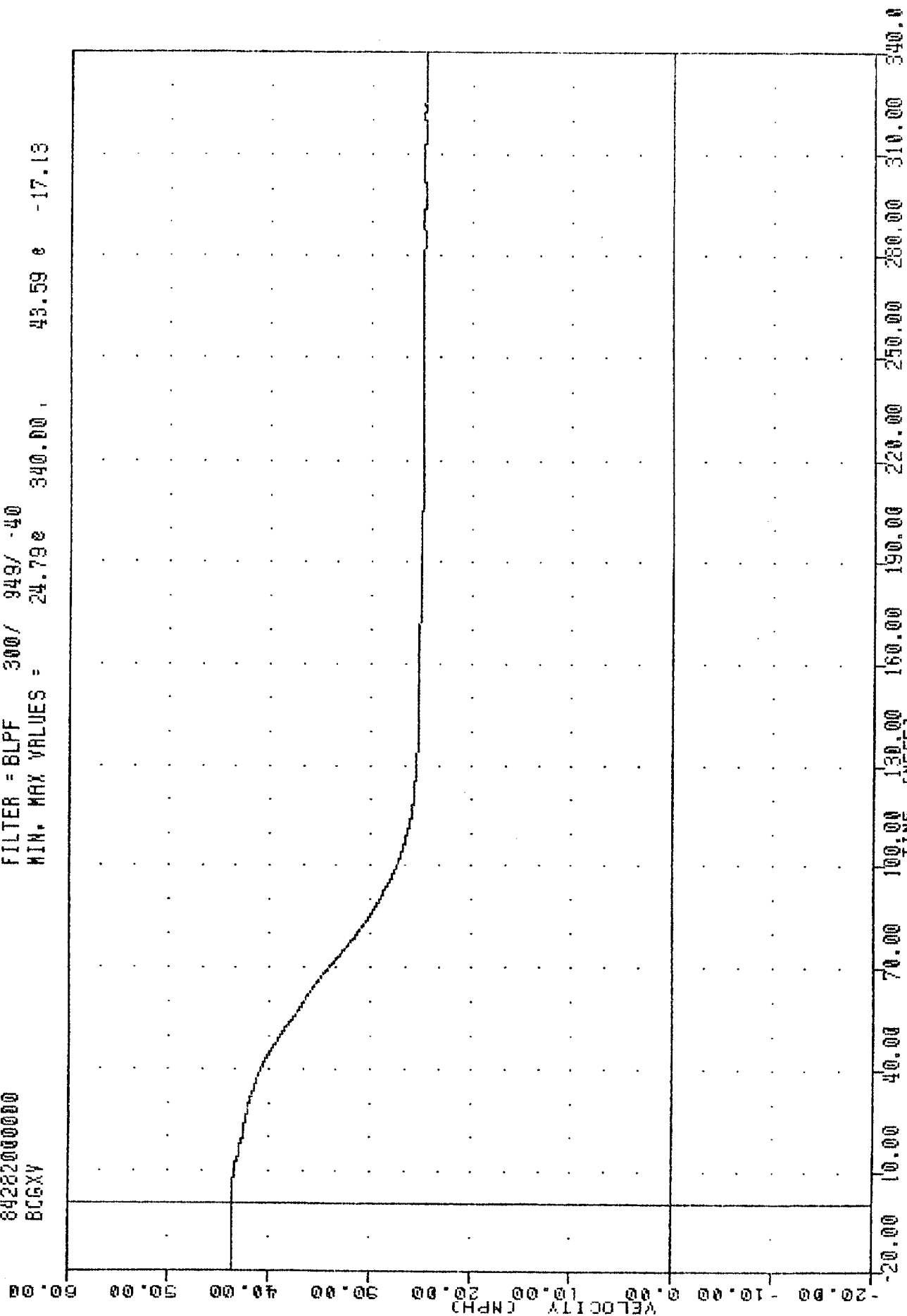
84282000000

BCGXV

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 24.79e 340.00 , 43.59 e -17.13



B-107

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING BCGXG

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 BCGYV

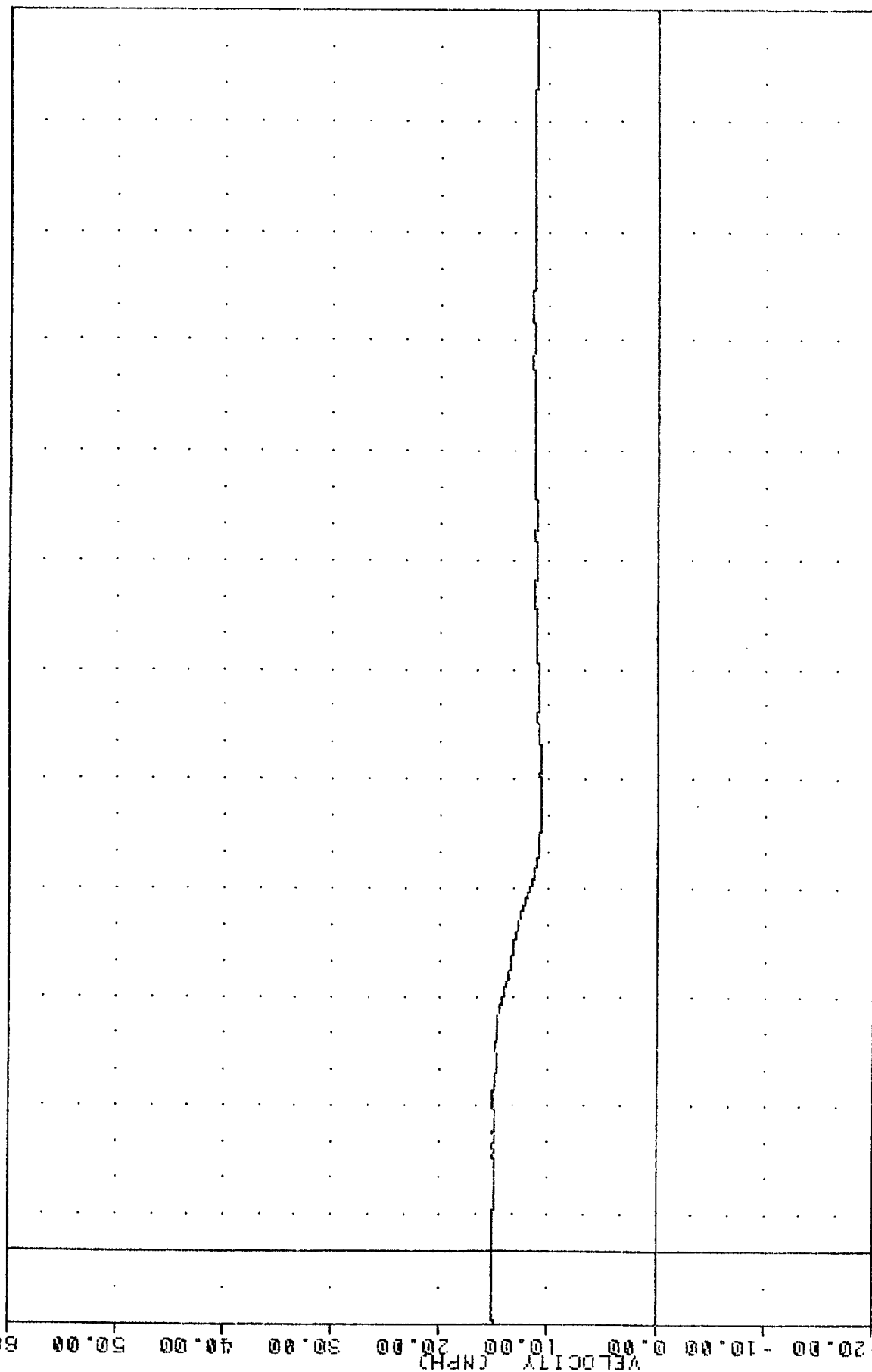
PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 10.71e 122.13. 15.22 e -11.25

50.00
 40.00
 30.00
 20.00
 10.00
 0.00
 -10.00
 -20.00
 -30.00
 -40.00
 -50.00
 -60.00

B-108

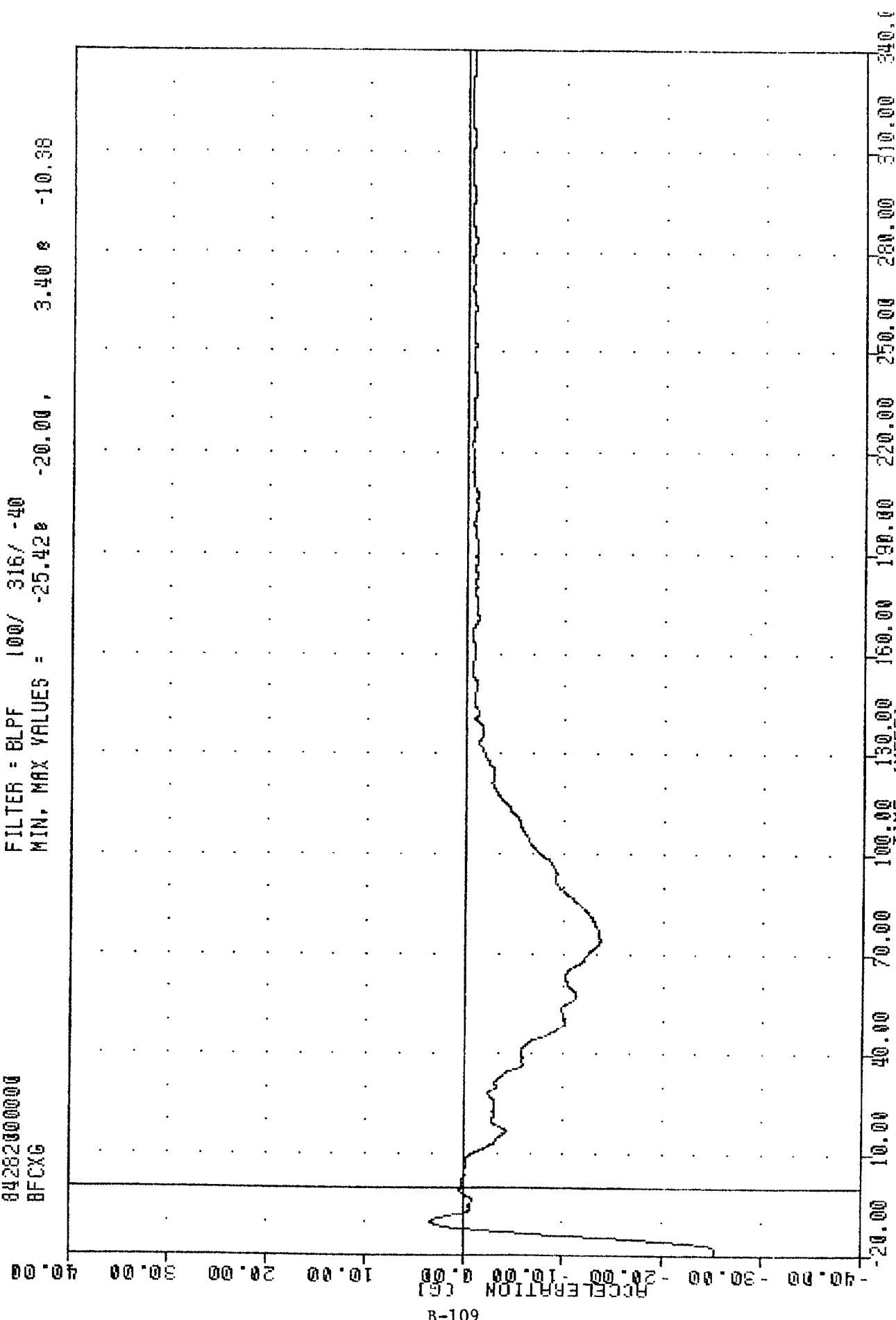


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 NFITA V USING RCGYV

TRC
 SIDE AGGRESSIVE ATTRIBUTES
 84282000000
 BFCXG

PLOT DATE 17-OCT-84 10:16:30

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -25.420 -20.00, 3.40 0 -10.38



B-109

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

TRC , 841008
 SIDE AGGRESSIVE ATTRIBUTES
 842820000000
 BFCXV

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 20.418 340.00 , 43.50 8 -20.00

VELOCITY (MPH)

60.00

50.00

40.00

30.00

20.00

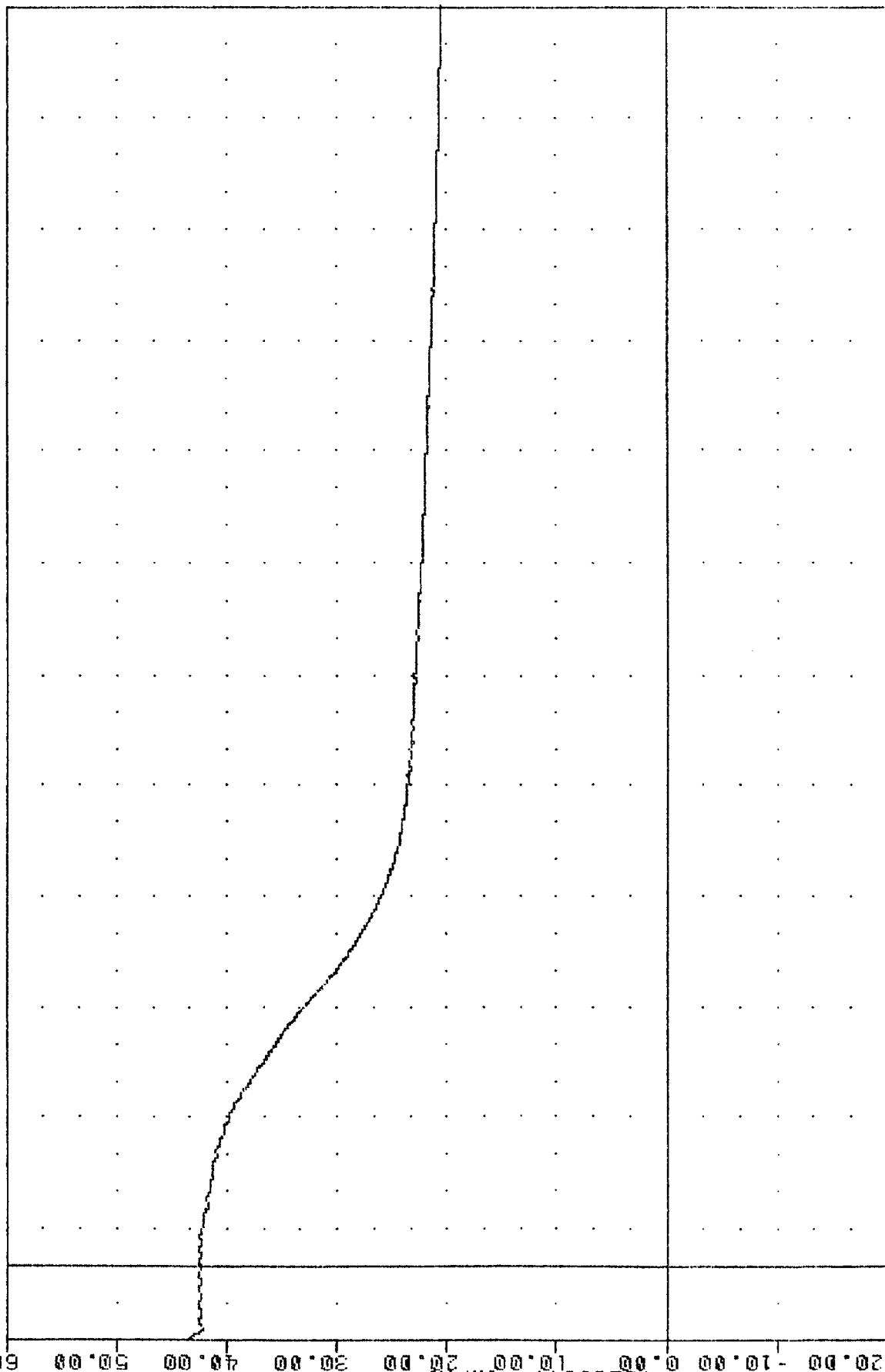
10.00

0.00

-10.00

-20.00

B-110



TIME (msec)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

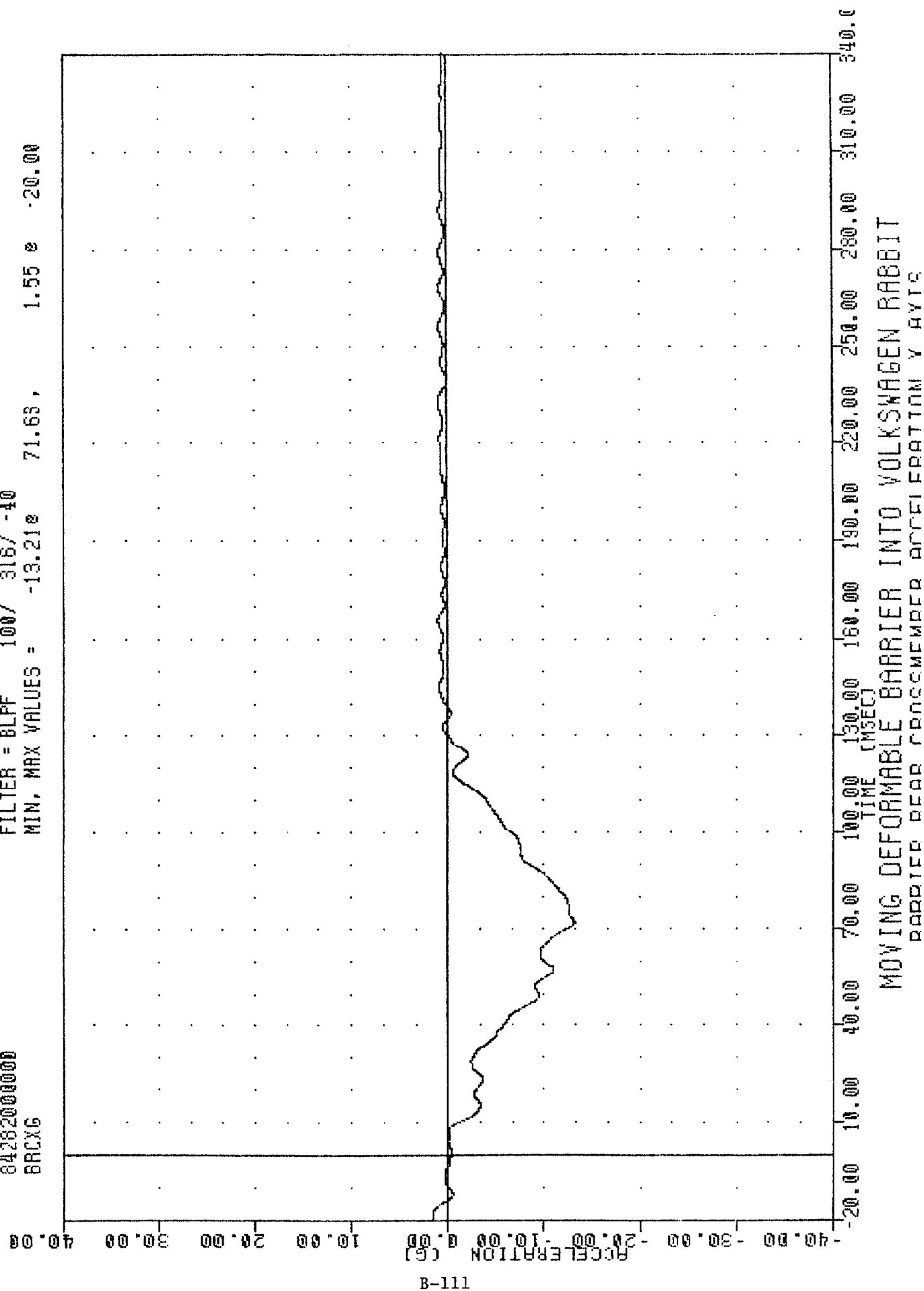
DELTA V (FT/SEC)

TRC , 841008
SIDE AGGRESSIVE ATTRIBUTES
84282000000
BRCXG

PLOT DATE 17-OCT-84 10:16:30

FILTER = 8LPF 100/ 316/ -40

MIN, MAX VALUES = -13.21e 71.63, 1.55 e -20.00



TAC , 841008

SIDE AGGRESSIVE ATTRIBUTES

842620000000

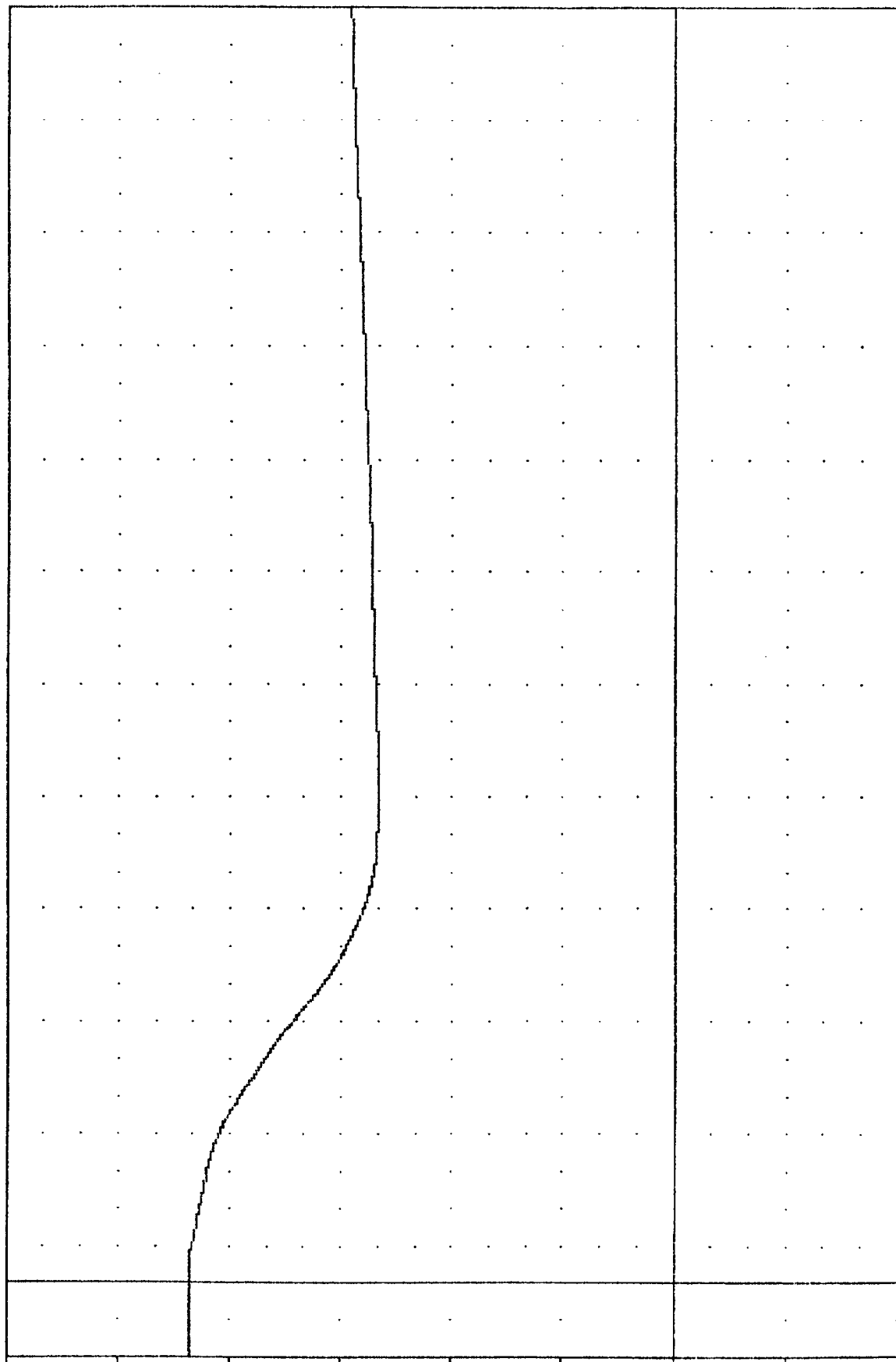
BACXY

PLOT DATE 17-OCT-84 10:18:53

FILTER = BLPF 300/ 943/ -40

MIN. MAX VALUES = 26.53e 128.88 , 43.59 e -6.00

VELOCITY (MPH)

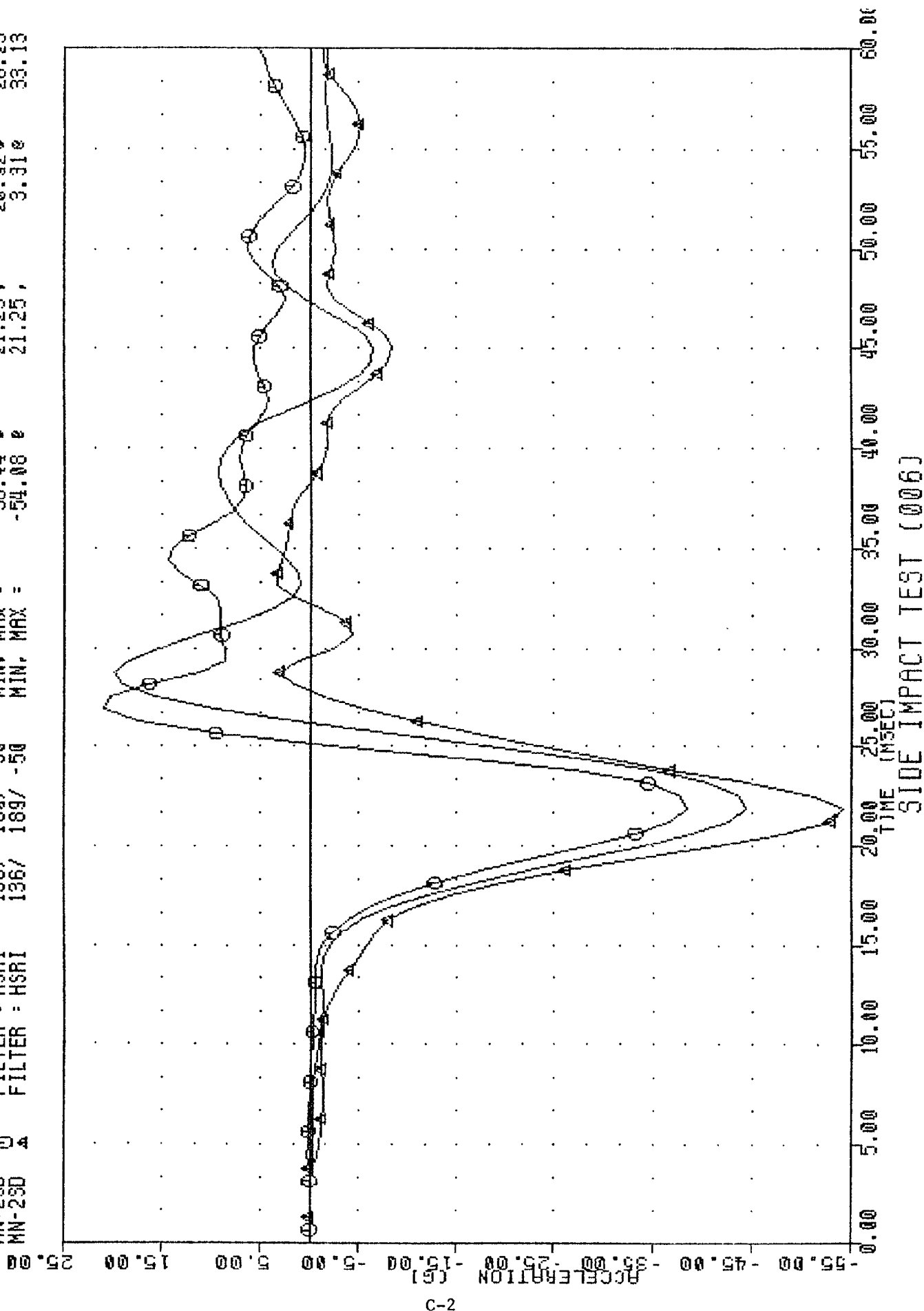


B-112

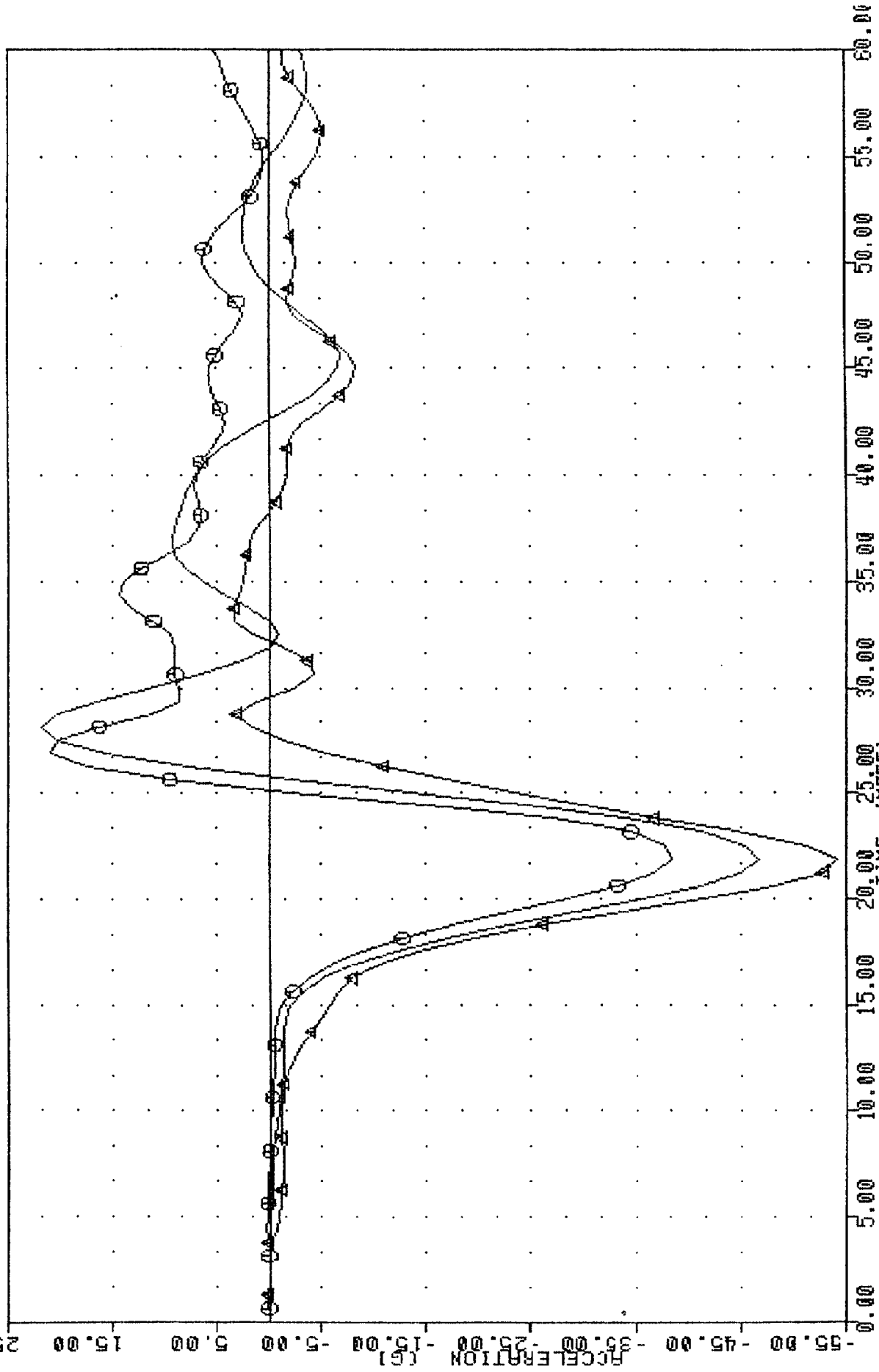
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
NFI TA V HING BRXG

APPENDIX C
DUMMY CERTIFICATION

VRIC SRL92 , S1006113 SID THORAX 006 BODY 316 CAL113 84286 PLOT DATE 13-OCT-84 11:38:12
 LURYGI FILTER = HSRI 136/ 189/ -50 MIN, MAX = -44.42 21.25, 19.75 28.13
 MN-23D O FILTER = HSRI 136/ 189/ -50 MIN, MAX = -38.44 21.25, 20.82 26.25
 MN-23D A FILTER = HSRI 136/ 189/ -50 MIN, MAX = -54.08 21.25, 3.31 33.13



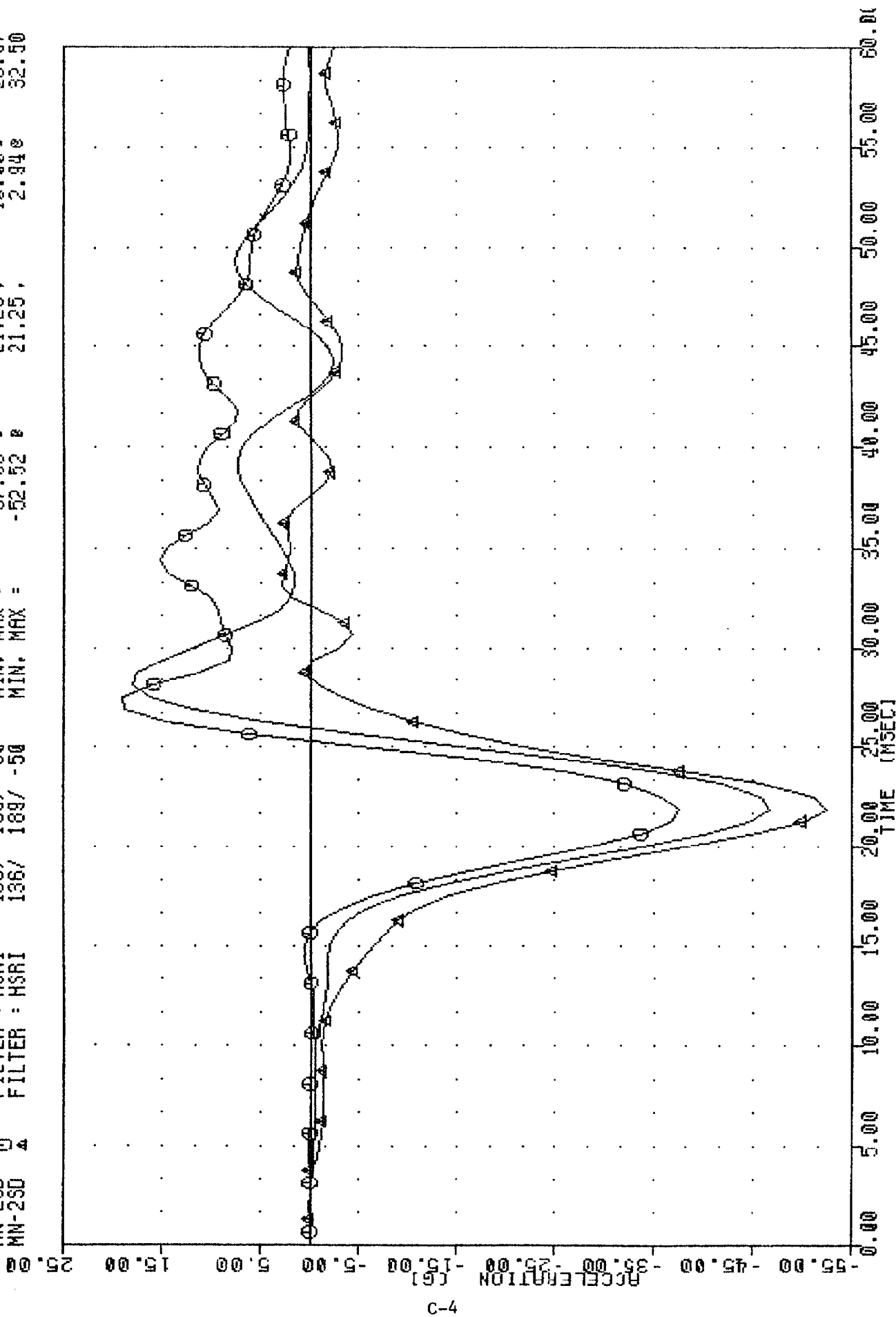
VRTC SRL92 , S1006113 SID THORAX 006 BODY 318 CAL113 84286 PLOT DATE 13-OCT-84 11:39:26
 LURYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -46.78 21.25, 21.82 27.50
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -38.44 21.25, 20.82 26.25
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -54.08 21.25, 3.31 33.13



SIDE IMPACT TEST (006)

LEFT UPPER RIB ACCELERATION Y AXIS - A

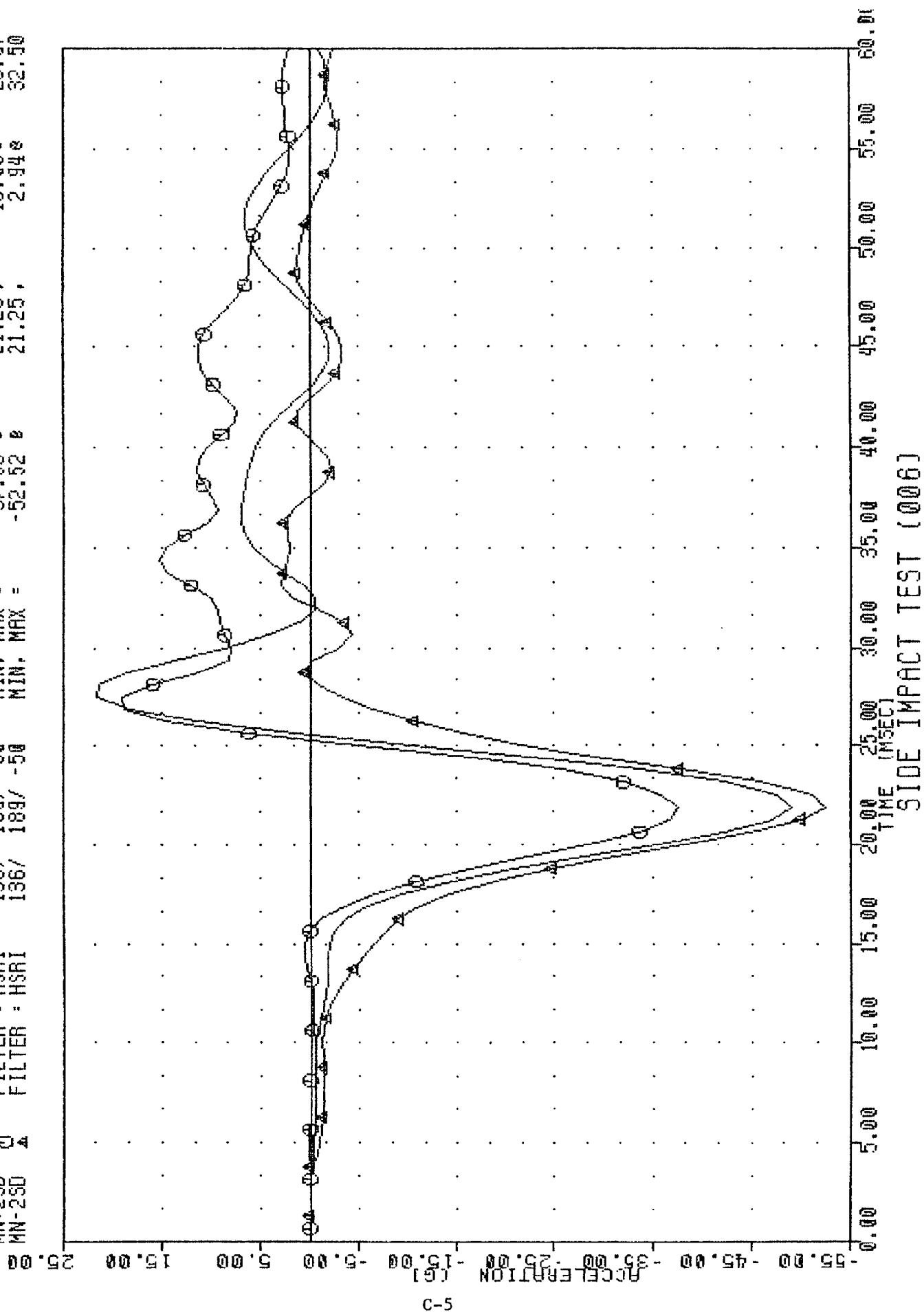
VRIC 3RL92 , SI006113 SID THORAX 006 BODY 318 CAL113 84286 PLOT DATE 13-OCT-84 11:36:19
 LLRY61 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -46.80 21.25, 18.028 27.50
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.66 21.25, 19.000 26.87
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 21.25, 2.948 32.50



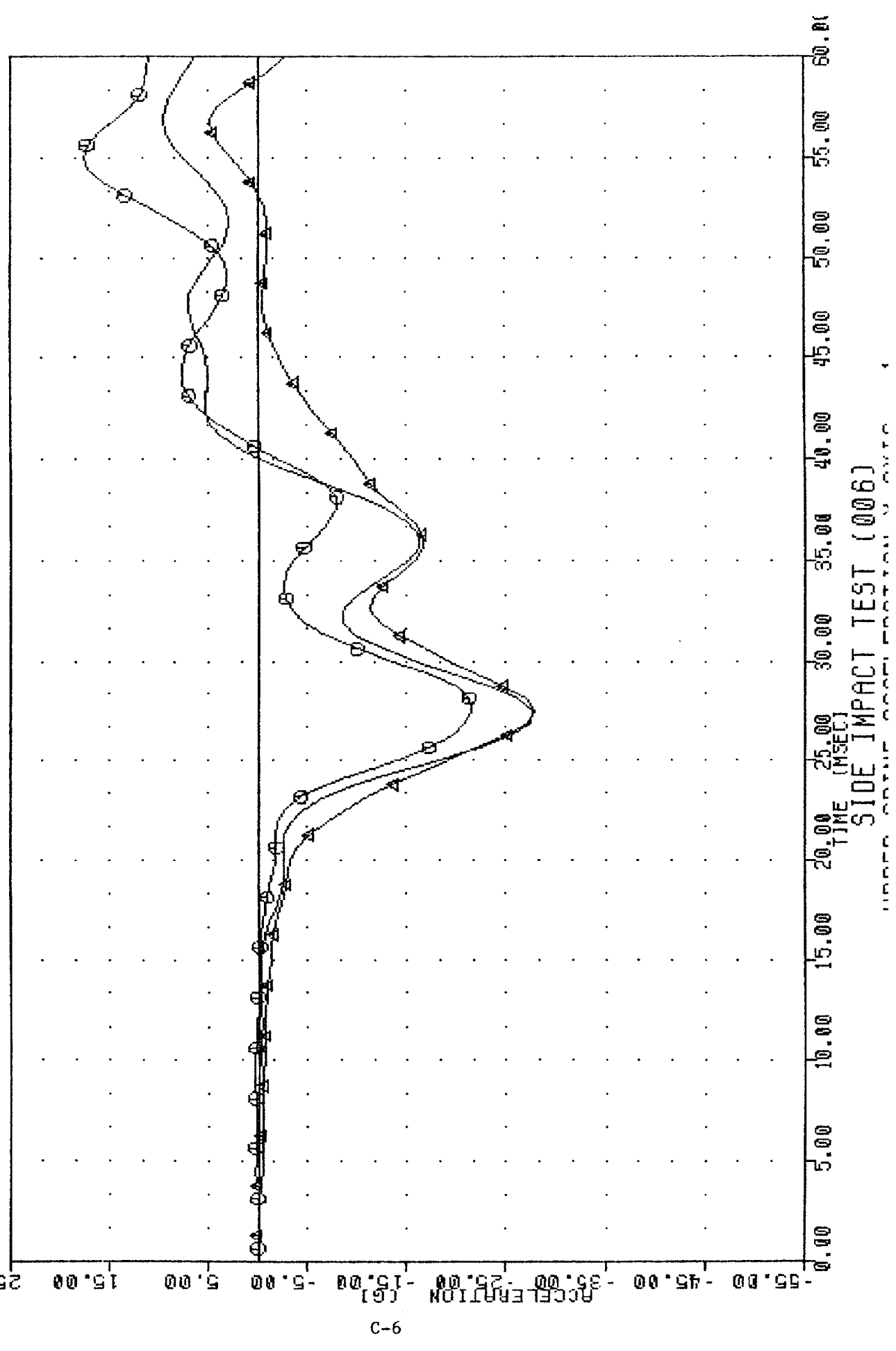
SIDE IMPACT TEST (006)

1 SET 1 INUED DID ACCELERATION V DUTC - 1

VRTC SRL92 , S1006113 SID THORAX 006 BODY 318 CAL113 84286 PLOT DATE 13-OCT-84 11:37:11
 LLRYGA FILTER = HSRI 136/ 189/ -50 MIN. MAX = -49.14 21.25 21.43 26.87
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN. MAX = -37.66 21.25 19.00 26.87
 MN-2SD 1 FILTER = HSRI 136/ 189/ -50 MIN. MAX = -52.52 21.25 2.94 32.50

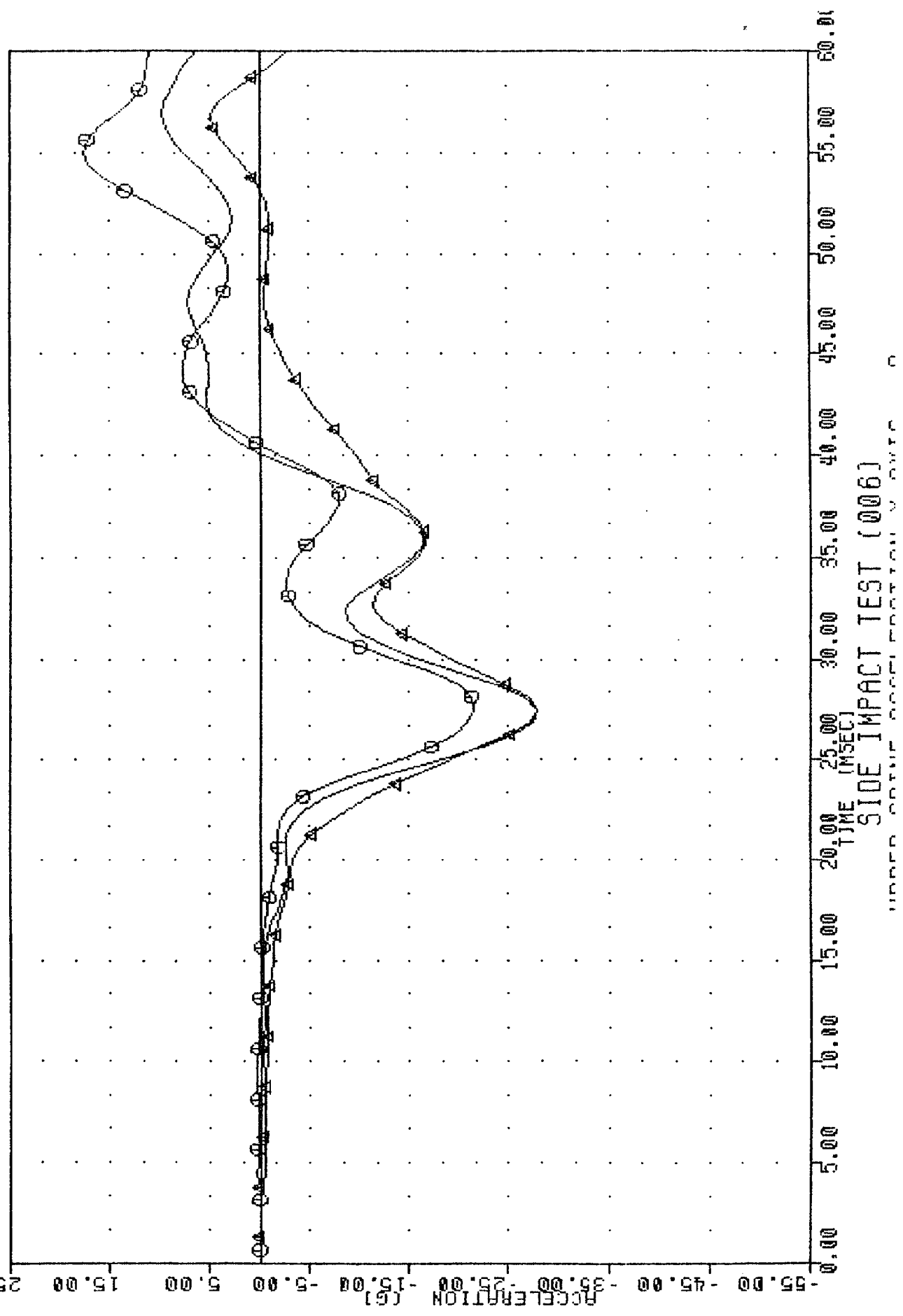


VRIC SRL92 , S1006113 SID THORAX 006 BODY 318 CAL113 84206 PLOT DATE 13-OCT-84 11:31:05
 701YGI FILTER : HSRI 136/ 189/ -50 MIN. MAX = -27.64 26.87, 9.47 56.25
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -21.58 26.87, 17.54 54.38
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -27.91 26.87, 4.78 56.25

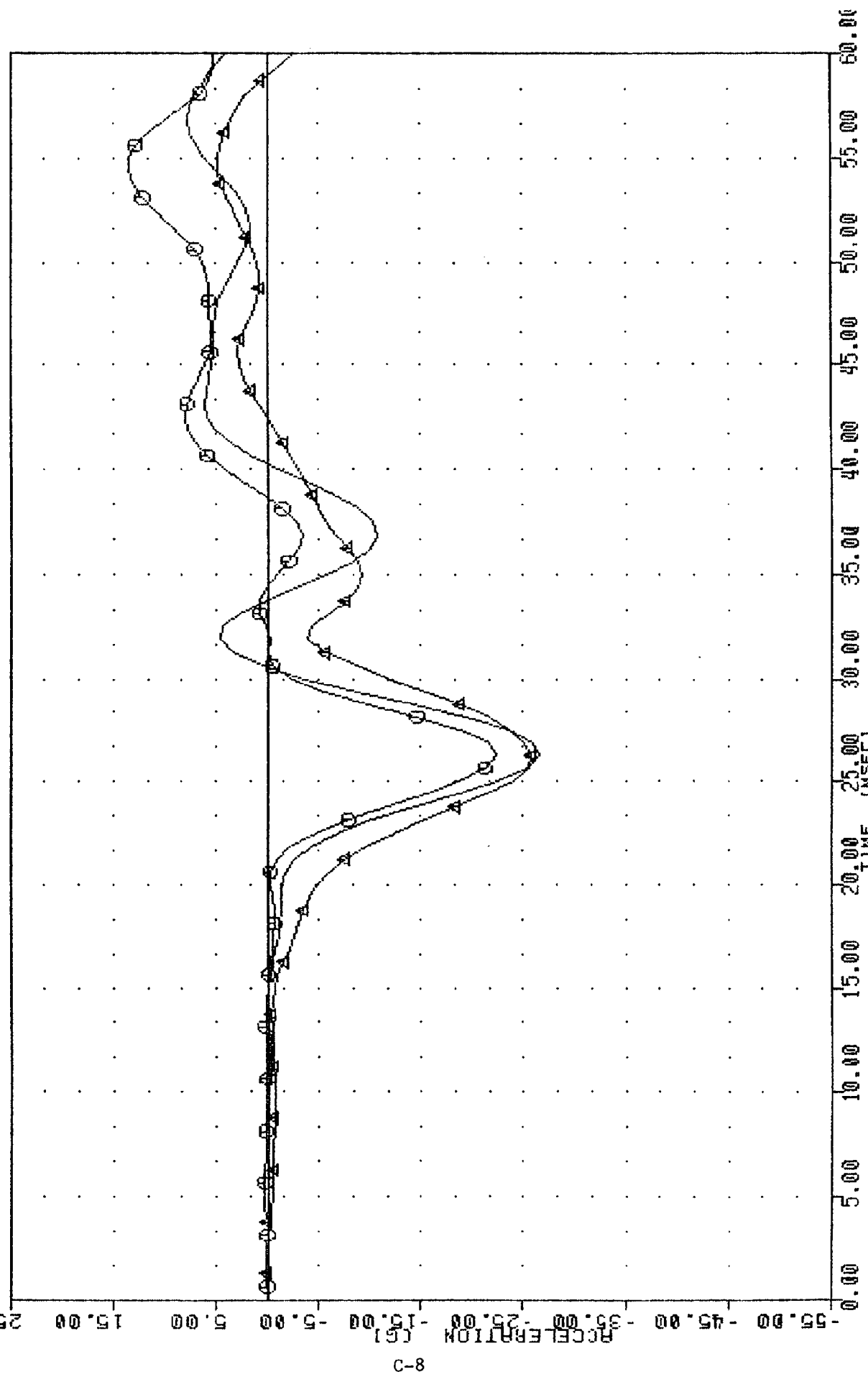


SIDE IMPACT TEST (006)
 UNDER CONTRAST PROTECTION

VRTC SRL92 , S1006113 SID THORAX 006 BODY 318 CAL113 84286 PLUT DATE 13-OCT-84 11:32:19
 T01YGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -27.86 9.558 56.25
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -21.58 17.540 54.38
 MN-2SD 4 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -27.91 4.788 56.25



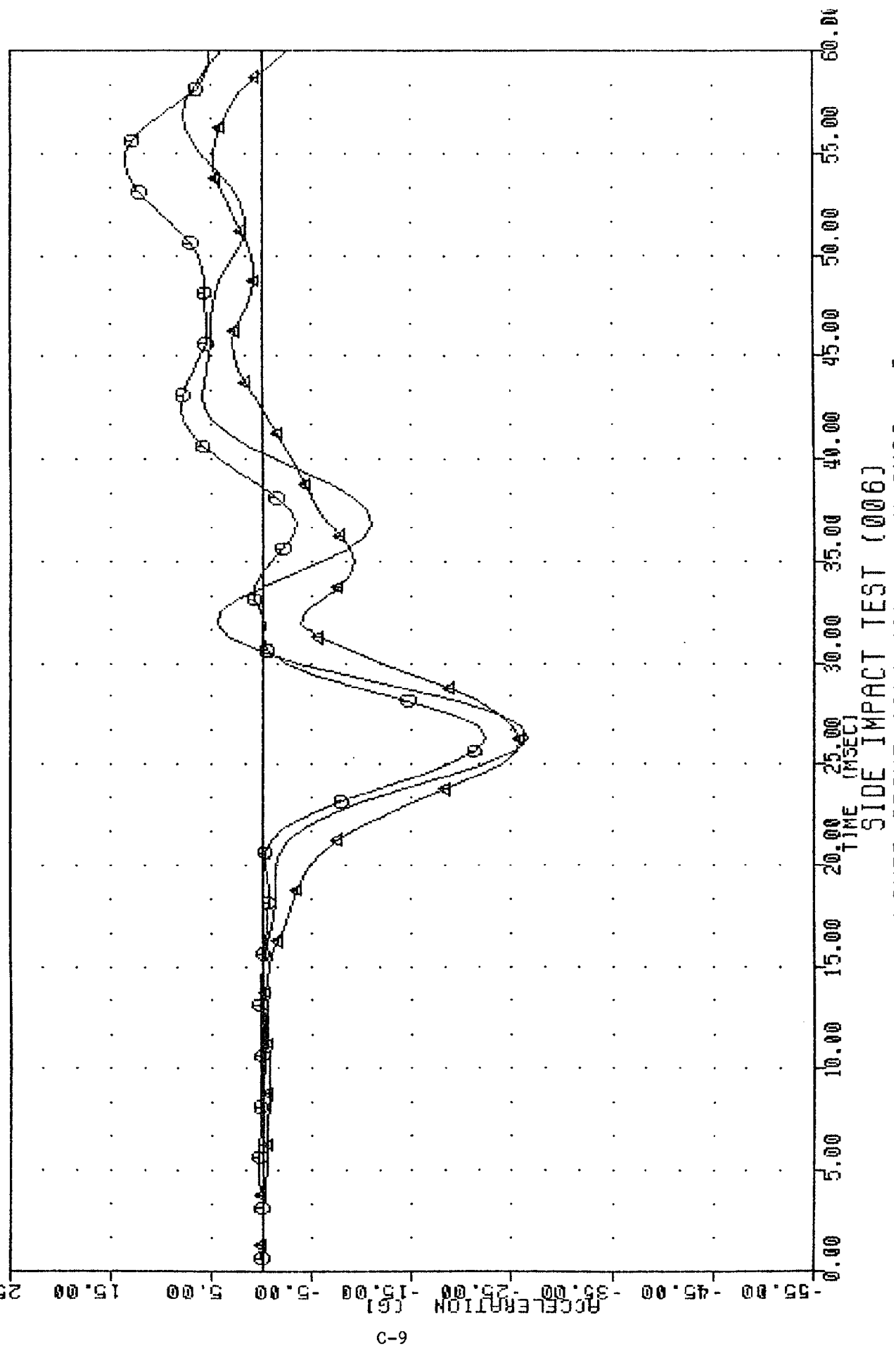
VRTC SRL92 • SI006113 SID THORAX 006 BODY 318 CAL113 84286 PLOT DATE 13-OCT-84 11:33:39
 T12Y61 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -26.68 25.63 7.82 56.25
 MN-230 D FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.37 25.63 13.54 53.75
 MN-230 A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.84 25.63 4.85 53.75



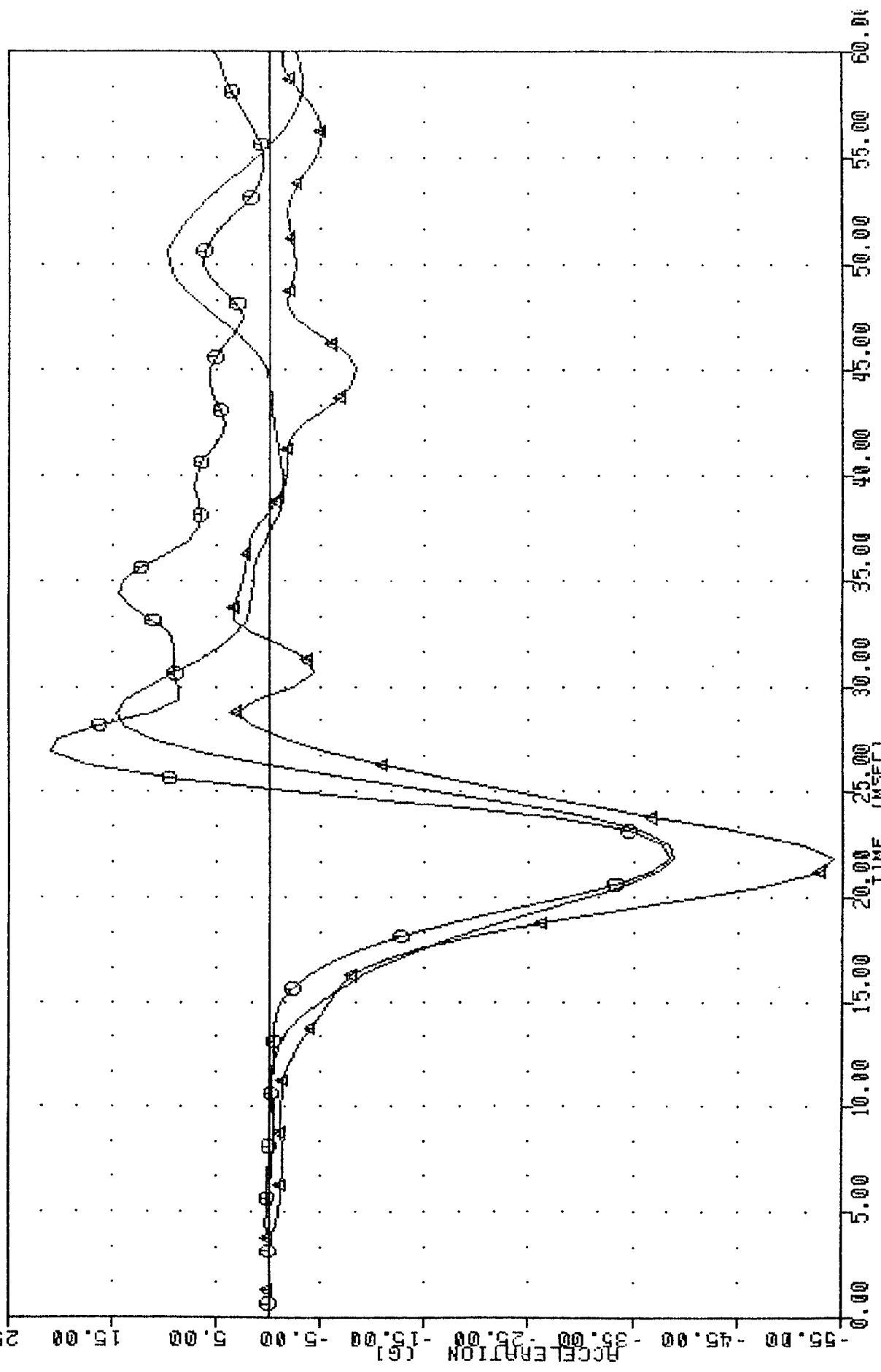
SIDE IMPACT TEST (006)

INJURED CORNE ACCELERATION V OVRG - 1

VRTC SRL92 , S1006113 SID THORAX 006 BODY 318 CAL113 84286 PLOT DATE 13-OCT-84 11:34:34
 T12YGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -26.57 7.74 56.25
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.37 13.54 53.75
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.84 4.85 53.75



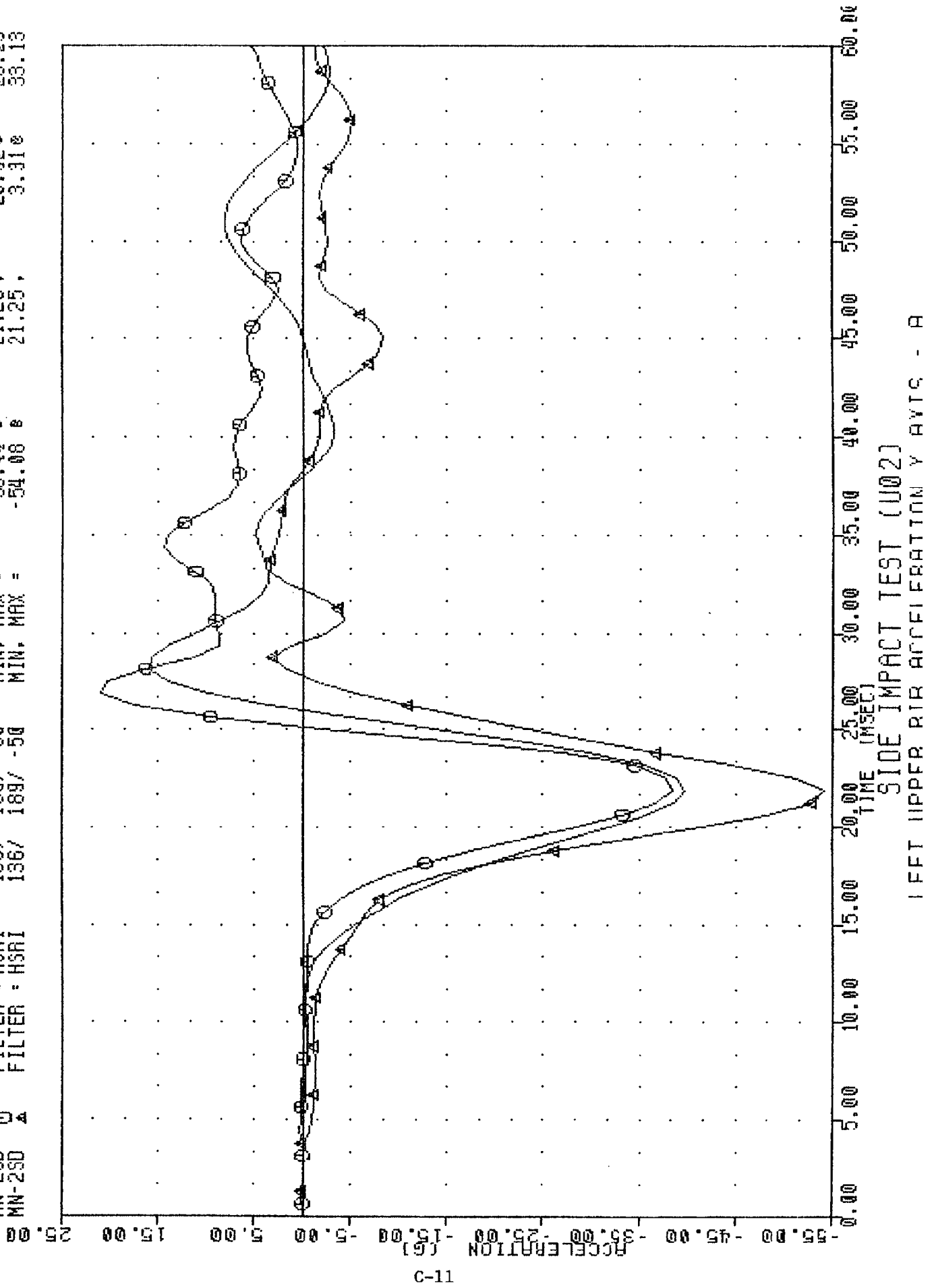
VRIC SRL92 , SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:44:51
 LURYGI FILTER : HSRI 136/ 189/ -50 MIN. MAX = -38.95 14.64 28.13
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -38.44 20.92 26.26
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -54.06 21.25 3.31 33.13



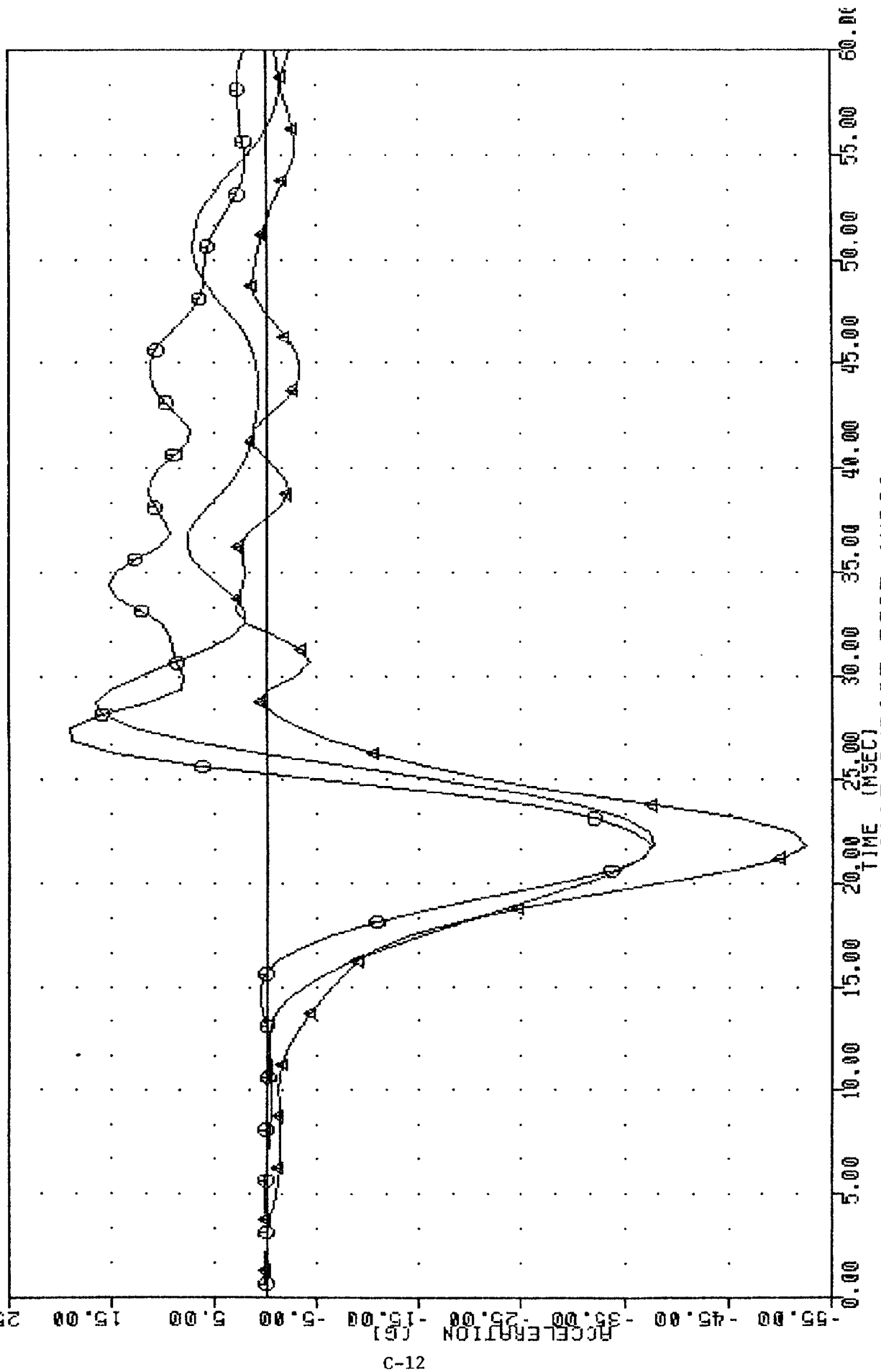
SIDE IMPACT TEST (U02)

LEFT UPPER RIB ACCELERATION Y AXIS - 1

VRIC SRL92 , SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:45:51
 LURYGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -39.80 21.25 15.90 27.50
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -38.44 21.25 20.92 26.25
 MN-2SD A FILTER = HSRI 136/ 189/ -50 MIN, MAX = -54.00 21.25 3.31 33.13

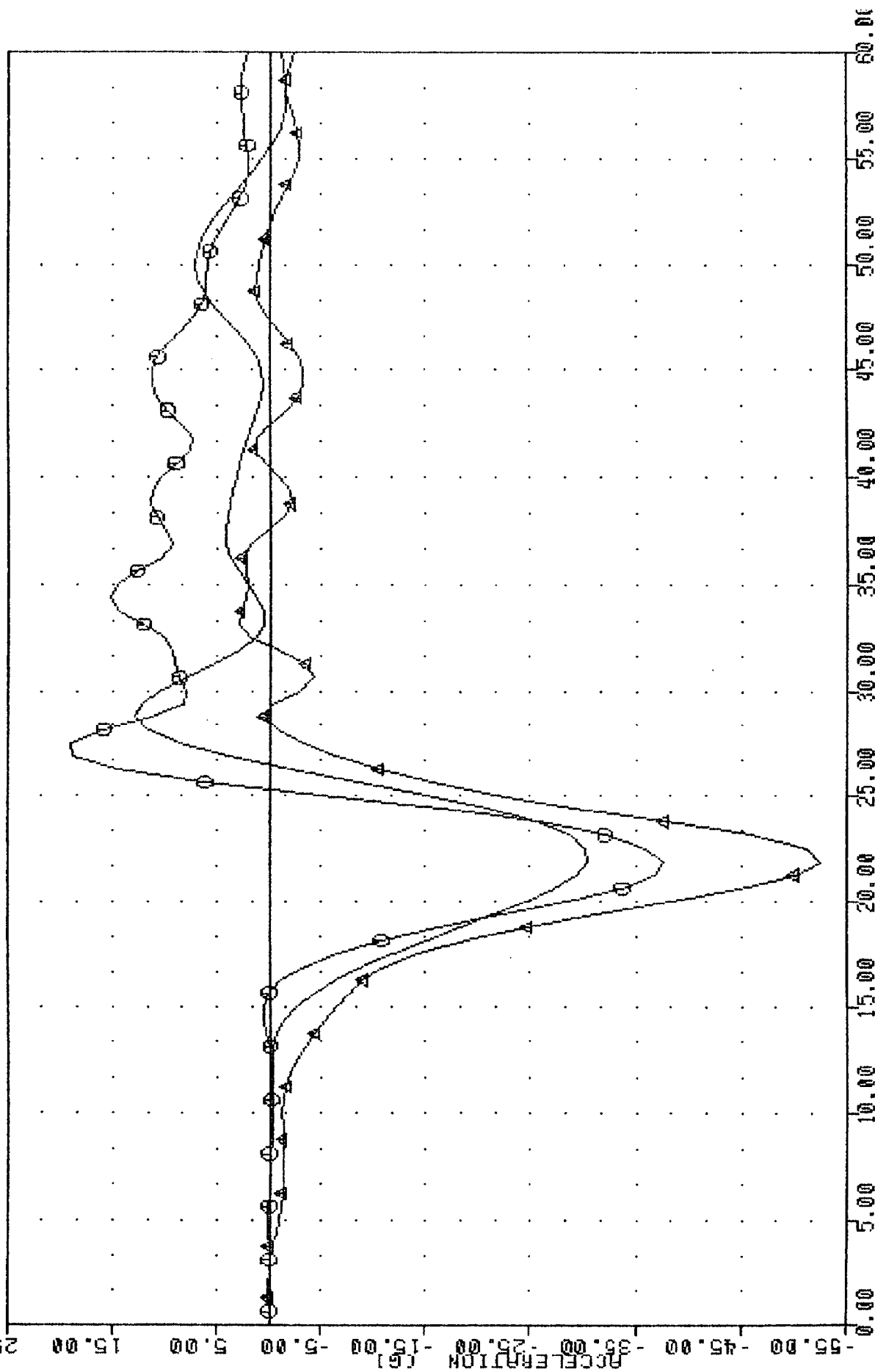


VRTC SRL92 , SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:43:11
 LLAYGI FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.80 21.25, 16.40 28.13
 MN-250 U FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.66 21.25, 19.00 26.87
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 21.25, 2.94 32.50



SIDE IMPACT TEST (U02)

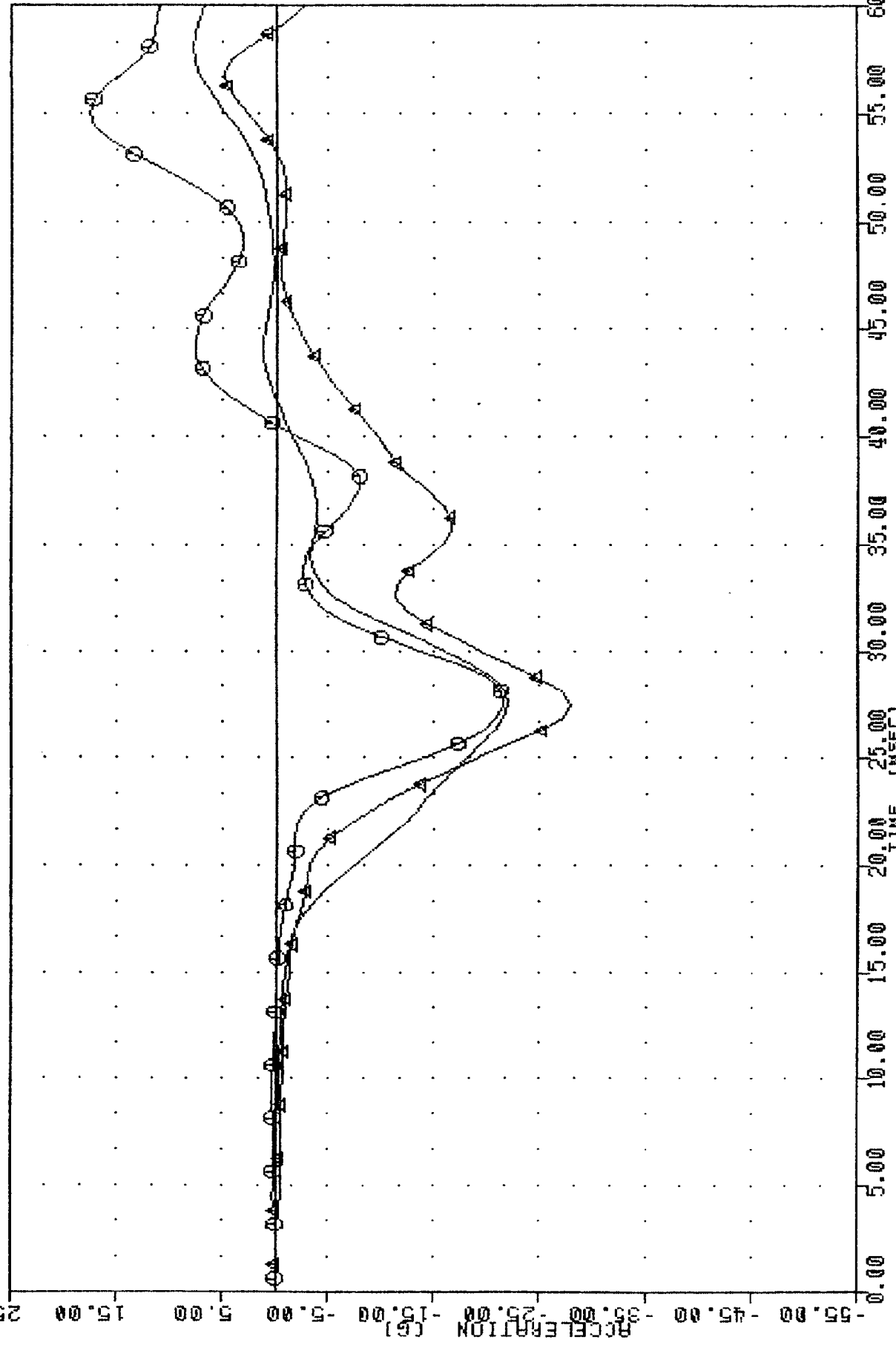
VRIC SRL92 , SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:44:06
 LLAYCA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -30.43 21.25 12.75 28.13
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.68 21.25 19.00 28.87
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 21.25 2.94 32.50



SIDE IMPACT TEST (U02)

LEFT LUNGS DID NOT DETECTED BY AUTO - 0

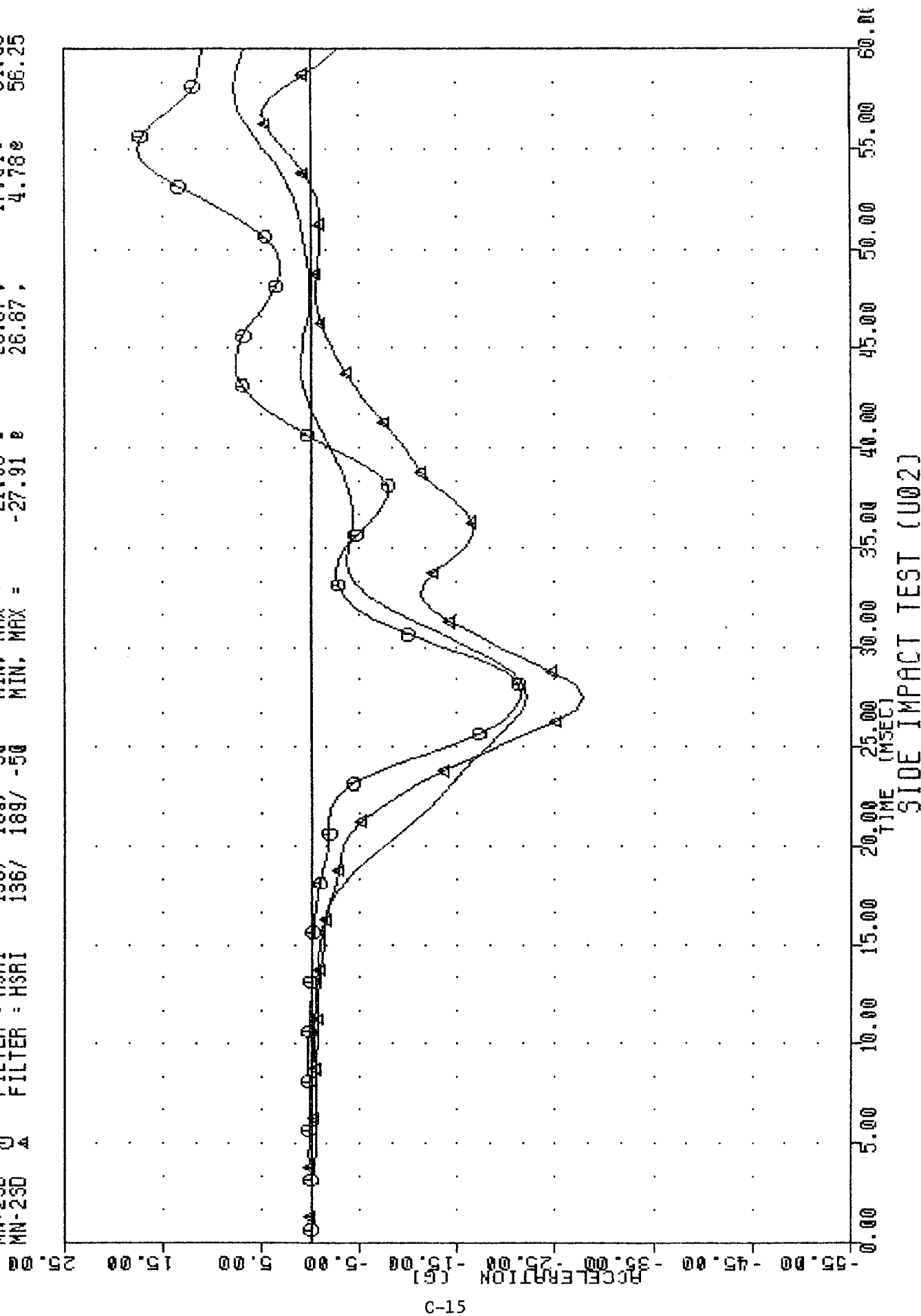
YRTC SRL92 • SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:26:34
 T01Y61 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -21.97 26.87 7.73 57.50
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -21.58 26.87 17.54 54.38
 MN-2SD 4 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -27.91 26.87 4.78 56.25



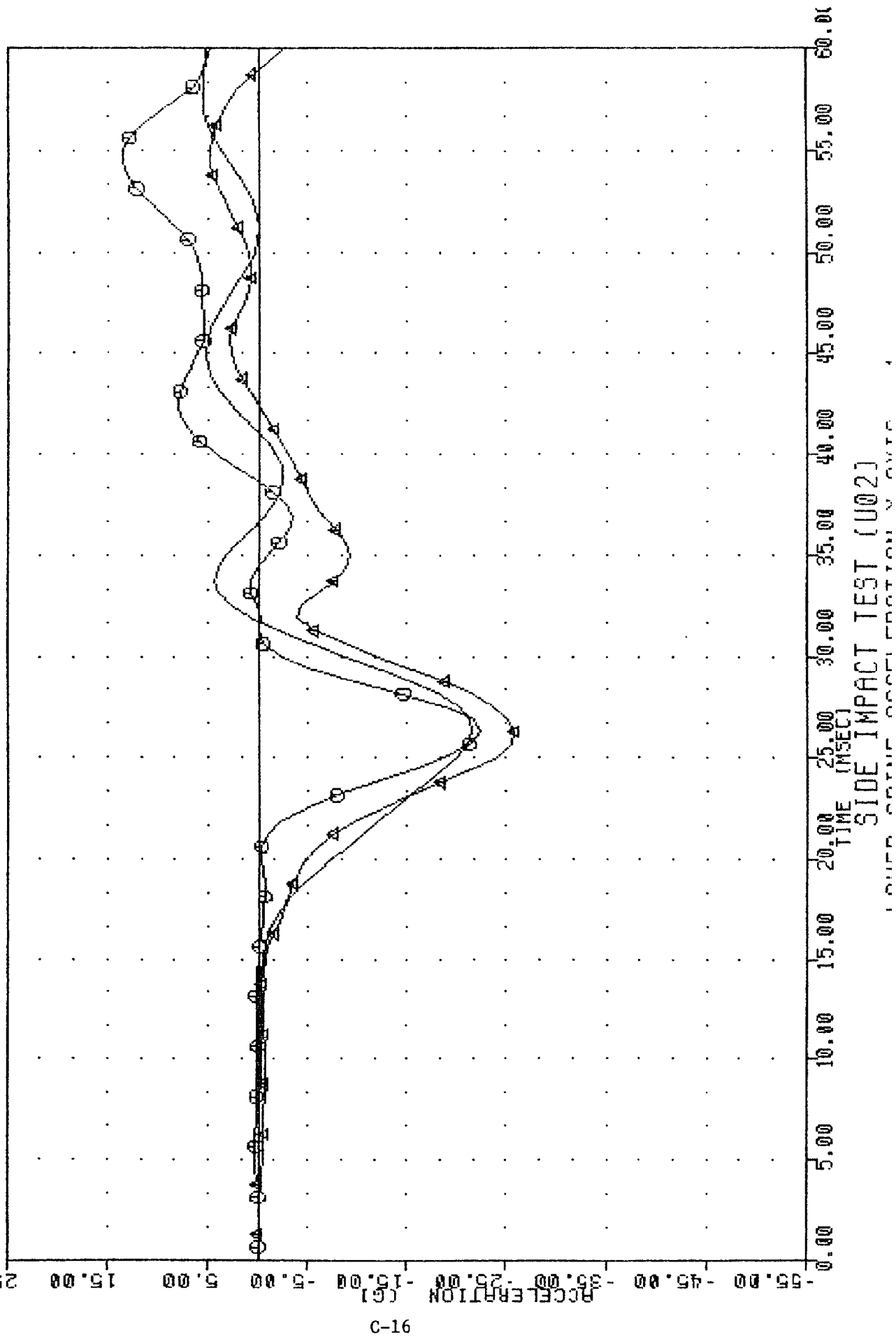
SIDE IMPACT TEST (U02)

HIPPER SPINE ACCELERATION Y AXIS - 1

VRTC SRL92 , SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:31:41
 TQ1YGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -22.10 7.73 57.50
 MN-250 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -21.58 17.54 54.38
 MN-250 A FILTER = HSRI 136/ 189/ -50 MIN, MAX = -27.91 4.78 56.25

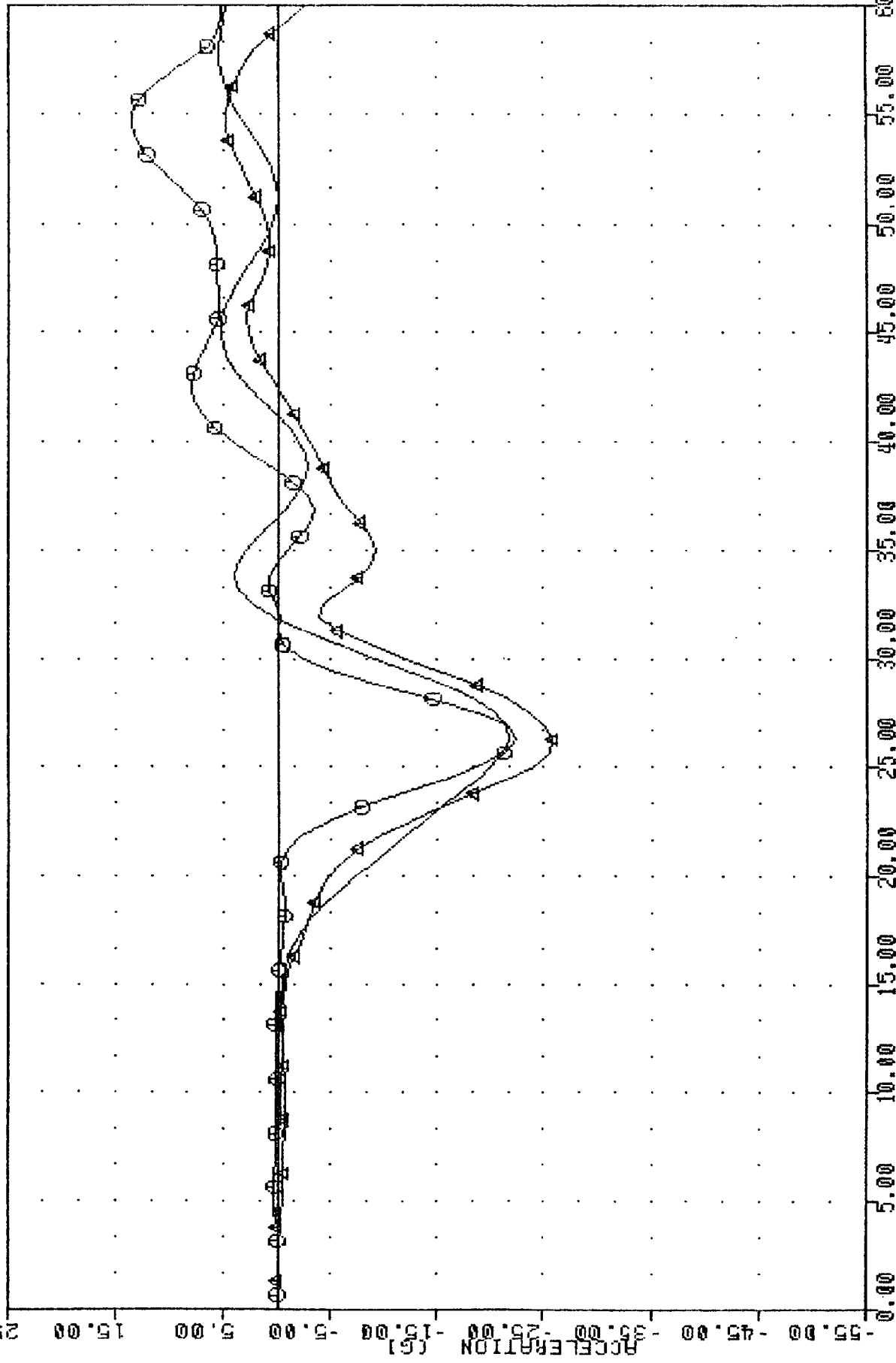


YRTC SRL92 , SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:32:48
 T12YGI FILTER : HSRI 136/ 189/ -50 MIN, MAX = -21.53 5.51 56.87
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.37 13.54 53.75
 MN-2SD A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.84 4.85 53.75



SIDE IMPACT TEST (U02)
 LOWER BODY ACCELERATION V. TIME

VRTC SRL92 , SIU02112 SID THORAX U02 BODY 830 CAL112 84285 PLOT DATE 13-OCT-84 11:34:09
 T12YGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -21.70 5.40 56.87
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -22.37 13.54 53.75
 MN-2SD A FILTER = HSRI 136/ 189/ -50 MIN, MAX = -25.84 4.85 53.75



SIDE IMPACT TEST (U02)

INWER SPINE ACCELERATION Y AXIS - A