

DOT 603

EVALUATION OF NHTSA MODIFIED
VOLKSWAGEN RABBITS.

MDB-TO-CAR SIDE IMPACT TEST OF
A 26⁰ CRABBED MOVING DEFORMABLE BARRIER
TO A 1982 VOLKSWAGEN RABBIT
AT 29.1 MPH

PREPARED BY:
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FINAL REPORT
OCTOBER 1983

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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 (2000 lb)	0.9	metric ton	t
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 (10 000 m ²)	2.5	acres	
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	metric ton (1000 kg)	1.1	short tons	
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 degrees add 32)	Fahrenheit	°F

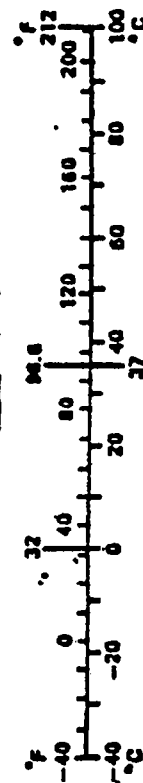


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SECTION 1.0
PURPOSE AND INTRODUCTION

PURPOSE

The main purpose of this test was to evaluate the NHTSA fleet of modified Volkswagen Rabbits with and without padding. The vehicle was tested using conditions not currently contained in a Federal Motor Vehicle Safety Standard.

INTRODUCTION

A stationary 1982 Volkswagen Rabbit 2-door hatchback was impacted on the left side by a Moving Deformable Barrier (MDB) on September 26, 1983. The test was to simulate an intersection collision with the striking vehicle traveling at 26 mph and the struck vehicle traveling at 13 mph. The orientation angle of the striking vehicle was 90° counterclockwise with respect to the longitudinal axis of the struck vehicle. The leading edge of contact 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 29.1 mph with the MDB's wheels crabbed clockwise to 26°. The actual test speed was 29.1 mph and the actual leading edge was 37.5 inches forward of the midpoint of the Volkswagen Rabbit's wheelbase.

The vehicle was a baseline model with no structural modifications. The driver door and left rear occupant wall contained three inches of padding.

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

SECTION 2.0
GENERAL TEST AND VEHICLE PARAMETER DATA

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

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Volkswagen of America, Inc.

MAKE/MODEL: Volkswagen Rabbit

VIN: 1VWCB9176CV013329

BODY STYLE: 2-Door Hatchback

MODEL YEAR: 1982

NHTSA NO.: R & D

COLOR: Gold

ENGINE DATA: TYPE: Transverse CYLINDERS: 4 DISPLACEMENT 105 CID

TRANSMISSION DATA: 4 Speed Manual

DATE VEHICLE RECEIVED: 9/9/83

ODOMETER READING: 18552

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			

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: 10/81

GVWR: 2822 LBS.,

GAWR: FRONT 1609 LBS., REAR 1278 LBS.

VEHICLE TIRE DATA

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

TIRES ON VEHICLE (MFG. & LINE, SIZE): Michelin XZX P155/80 V 13

BIAS PLY, BELTED, OR RADIAL: Radial

PLY RATING: 3

IS SPARE TIRE "SPACE SAVER"? No

IS SPARE TIRE STANDARD EQUIPMENT? Yes

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

RIGHT FRONT 650 LBS. RIGHT REAR 370 LBS.

LEFT FRONT 680 LBS. LEFT REAR 340 LBS.

TOTAL FRONT WEIGHT 1330 LBS. (65.2 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 710 LBS. (34.8 % OF TOTAL VEHICLE WEIGHT)

TOTAL DELIVERED WEIGHT 2040 LBS.

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE: RF 25 3/4 ;LF 24 7/16 ;RR 23 7/16 ;LR 23 1/2

PRE-TEST ATTITUDE: RF 24 1/8 ;LF 23 7/8 ;RR 21 7/16 ;LR 21 1/4

POST-TEST ATTITUDE: RF 23 1/8 ;LF 24 3/8 ;RR 20 11/16 ;LR 22 1/16

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 158 LBS. CARGO:

RIGHT FRONT 700 LBS. RIGHT REAR 558 LBS.

LEFT FRONT 710 LBS. LEFT REAR 578 LBS.

TOTAL FRONT WEIGHT 1410 LBS. (55.4 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 1136 LBS. (44.6 % OF TOTAL VEHICLE WEIGHT)

TOTAL TEST WEIGHT 2546 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: 2.5 GALLONS

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

DETAILS OF FUEL SYSTEM: DNA

ELECTRIC FUEL PUMP: No

FUEL INJECTION: No

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

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: 155/80 V 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: 830926

DATE OF TEST: September 26, 1983

TIME OF TEST: 11:35

WIND VELOCITY: 4-9 mph 216° W

HUMIDITY: 42%

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.)	2546	2523
MDB TEST WEIGHT (LBS.)	2990	3000
MDB VELOCITY (MPH)*	29.1	29.1
IMPACT POINT (INCHES)**	37.5	37

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 Volkswagen's wheelbase.

GENERAL TEST AND VEHICLE PARAMETER DATA

VISIBLE DUMMY CONTACT POINTS:

	DRIVER # 06	PASSENGER # UQ2
Head	<u>Side Window, Sill</u>	<u>Side Window, Header, Padding</u>
Chest	<u>Padding</u>	<u>Padding</u>
Abdomen	<u>Padding</u>	<u>Padding</u>
Left Knee	<u>Padding</u>	<u>Left Quarter Panel</u>
Right Knee	<u>Left Knee</u>	<u>Left Knee</u>

DOOR OPENING:

	LEFT	RIGHT
Front	<u>Tools Required</u>	<u>Easy</u>
Rear	<u>DNA</u>	<u>DNA</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	<u>No</u>	<u>Yes, Approx. 2 inches</u>
Rear	<u>No</u>	<u>No</u>

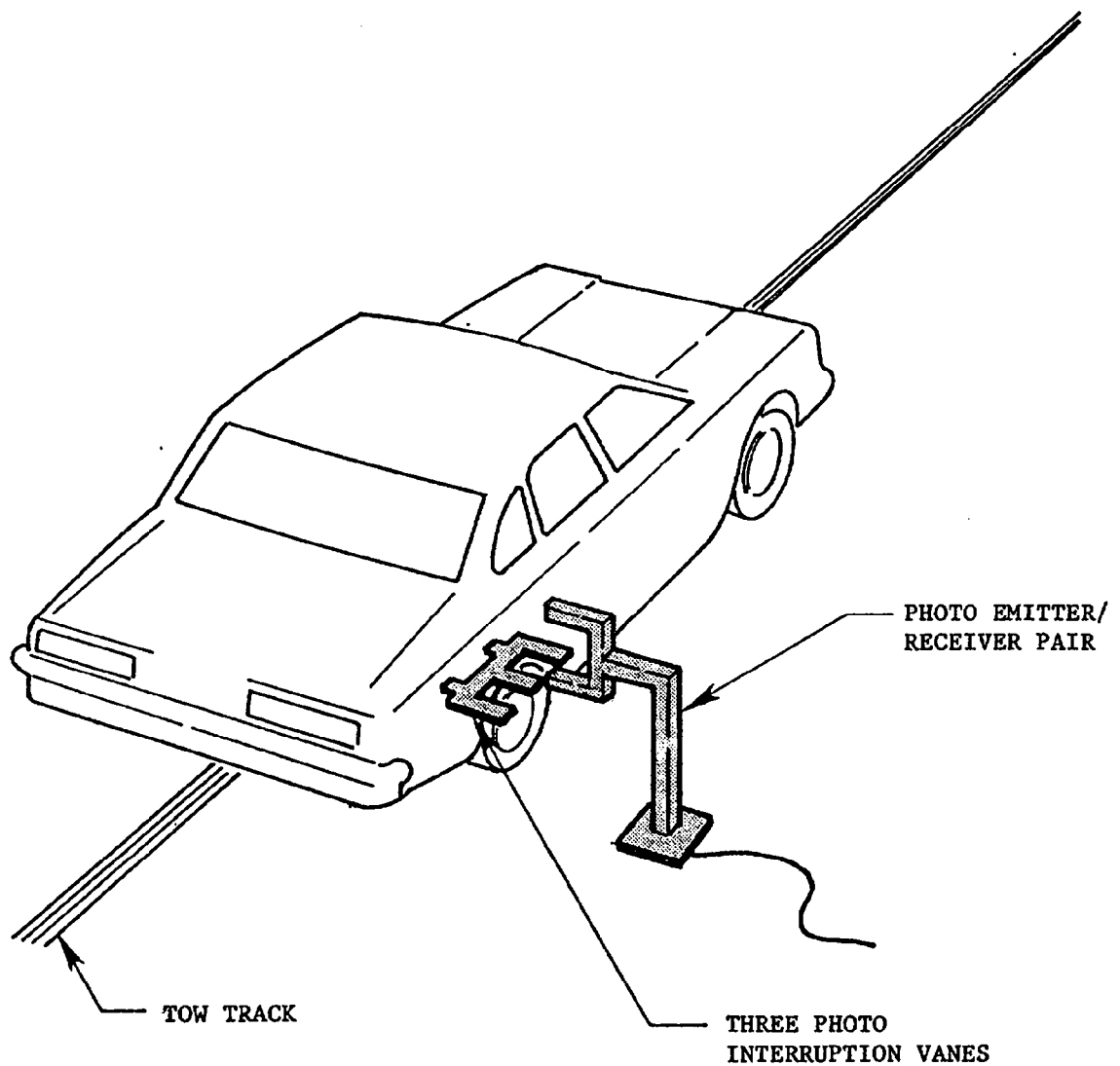
GLAZING DAMAGE:

Windshield cracked, driver window and left
rear passenger window shattered, no backlight
damage.

OTHER NOTABLE IMPACT EFFECTS:

Driver side sill split and deformed upward,
B-pillar intruding approximately 10 inches.

IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane is located two inches before impact.
The vanes have one foot spacing.

VEHICLE TEST WEIGHT CALCULATION

$$\begin{aligned}\text{Test Weight} &= \text{Unloaded Delivered Weight} + \\ &\quad \text{Number of Dummies} \times 174 \text{ lbs.} + \\ &\quad \text{Cargo Weight} \\ &= 2040 + 2 \times 174 + 135 \text{ lbs.} \\ &= 2523 \text{ lbs.}\end{aligned}$$

To achieve test weight, the radio, speakers, air conditioning compressor, and alternator were removed and 2.5 gallons of Stoddard Solvent was added in the fuel tank. The weight of the test vehicle was measured by placing each wheel on a Loadmeter Corporation Hiway Loadometer.

TEST ANOMALIES

1) Intermittent cable separation occurred in data channel LFDYG5 [Vehicle Left Front Door (Position 11) Acceleration Y Axis] at approximately 35 msec, no peak levels or delta velocity are reported.

2) Post-test examination conducted on September 26, 1983 of the driver dummy skull revealed unwelded joints that allowed the head to ring. All driver head data channel peak values, the resultants and HIC are therefore unrealistic.

3) High speed camera No. 7 which was mounted on the hood of the test vehicle ran for approximately one-half second and then failed. The camera was removed from service, but the fault has not been identified.

SECTION 3.0
DATA REQUIRED BY R&D

The following pages are included in this section:

1. Dummy Temperature control and positioning 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

<u>SIDE IMPACT DUMMY*</u>	<u>DRIVER DSP</u>	<u>REAR PASSENGER DSP</u>
HEAD	Surface of transverse instrument mounting platform is as horizontal as possible without inducing torso movement & midsagittal plane falls in longitudinal plane.	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.	Placed against seat back. Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.
LOWER TORSO	Midsagittal plane is vertical and centered on bucket seat.	Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.
UPPER LEGS (thighs or femurs)	Placed against seat cushion. Planes defined by femur and tibia centerlines are as close as possible to vertical.	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.	Located so that planes defined by femur and tibia centerlines are as close as possible to vertical.
LOWER LEGS	Plane defined by femur and tibia centerlines are as close as possible to vertical longitudinal plane.	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.	Centerline falls in vertical longitudinal plane. Placed on floor as far forward as possible without front seat interference.
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.	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. E. Grumbling

2. M. Garrison

3. J. Kokoruda

POSITIONING DATE: 9/26/83

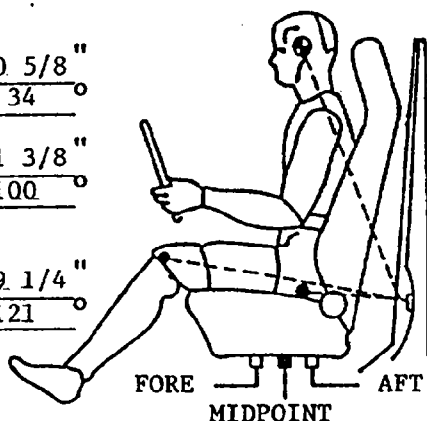
AMBIENT TEMP.: 69° F. TIME: 5:30

DRIVER DUMMY # 06

HEAD 20 5/8"
 TARGET* 34°

KNEE 31 3/8"
 JOINT 100°

APPROX.
 "H" 19 1/4"
 POINT 121°

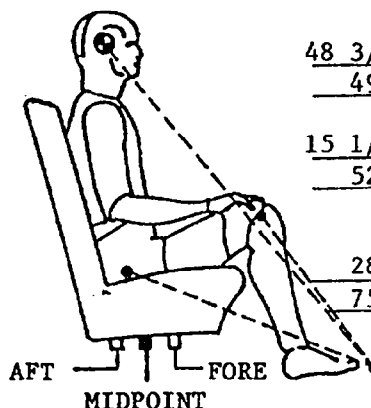


REAR PASSENGER DUMMY # U02

48 3/4" HEAD
49° TARGET**

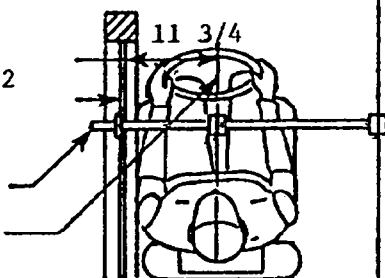
15 1/2" KNEE
52° JOINT

APPROX.
28" "H"
75° POINT



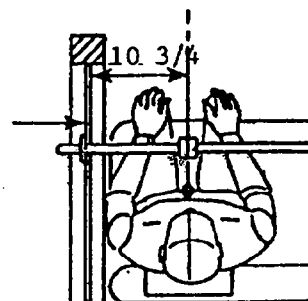
DOOR
 GLASS
 HEIGHT*** 9 1/2"

LATERAL BAR
 ADJUSTABLE
 POINTER



DRIVER
 DUMMY # 06

DOOR
 GLASS
 HEIGHT DNA

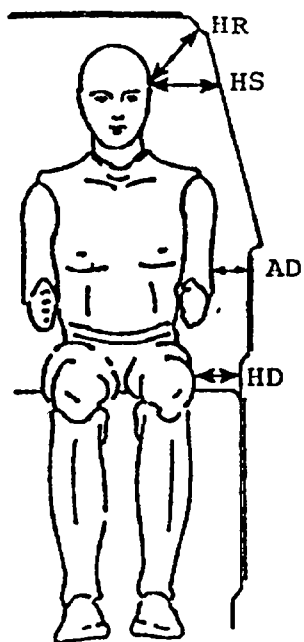
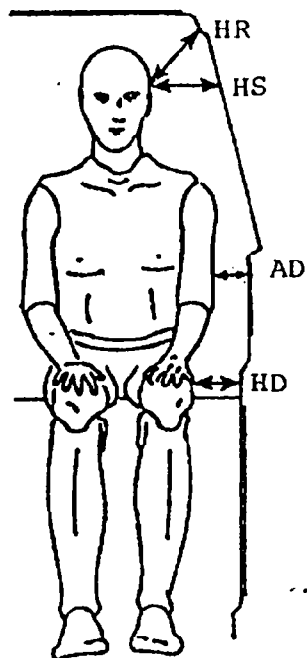


PASSENGER
 DUMMY # U02

*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.

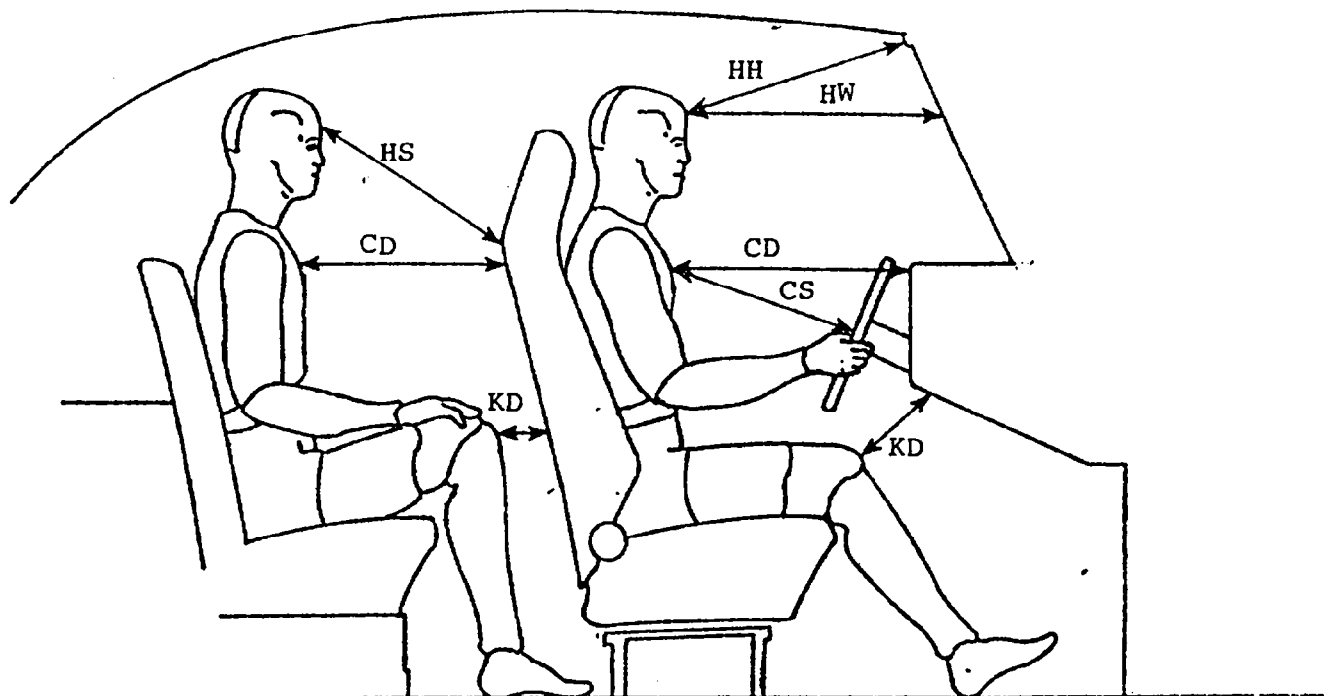


06 002

	DRIVER	PASSENGER
HR	6	4 3/4
HS	7 1/2	7 5/16
AD	0	1/4
HD	5 3/16	1 7/8

NOTE: ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS



Q6

U02

	DRIVER	PASSENGER
HH	12 5/8	DNA
HW	18 1/4	DNA
HS	DNA	22 3/4
CD	20 11/16	18 1/2
CS	11	DNA
KDL	4 15/16	2 1/4
KDR	5 7/16	1 7/16

NOTE: ALL MEASUREMENTS IN INCHES

DUMMY KINEMATIC SUMMARY

DRIVER

During impact, the dummy's torso contacted the padded driver's door and the head contacted the driver's window shattering the glass window. The dummy rebounded from the driver's door on its left side facing the rear of the vehicle. The left buttock struck the front passenger's side window sill. The dummy came to rest against the front passenger door facing the driver's side and with its head caught behind the front passenger's head restraint.

PASSENGER

During impact, the dummy's torso contacted the padded left rear passenger side wall and the head contacted the side window and padded side header. The dummy rebounded off the side wall and fell across the rear seat with its feet trapped in the left rear foot well. Its head struck the right rear passenger's window sill, rebounded once and the dummy came to rest laying across the rear seat with its head on the right rear window sill.

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	9.5	X	X	18.9	19.0	19.0	19.0	19.1	19.2	19.2	19.3	19.5	19.6	19.9	X	X
H-Point	17.4	X	X	16.6	16.7	16.7	16.6	16.6	16.6	16.7	16.8	16.9	17.1	17.2	X	X
Mid Door	23.1	15.3	16.4	16.3	16.3	16.3	16.3	16.3	16.3	16.4	16.4	16.6	16.6	16.8	16.9	16.0
Window Sill	33.6	X	18.3	18.1	18.1	18.0	17.5	18.0	18.0	18.0	18.1	18.2	18.3	18.3	18.5	18.6
Window Top	52.5	X	X	X	X	X	26.1	25.7	25.6	25.5	25.4	25.4	25.5	25.6	25.8	26.1

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

Axle Height	9.5	X	X	24.2	25.3	25.3	25.2	25.0	25.0	25.0	25.3	25.1	23.2	21.1	X	X
H-Point	17.4	X	X	26.8	27.2	27.9	28.1	28.2	28.3	28.3	28.8	29.6	27.8	25.6	X	X
Mid Door	23.1	20.6	22.8	24.1	24.6	25.3	25.4	25.8	26.1	26.5	26.9	28.1	27.3	26.1	23.3	19.1
Window Sill	33.6	X	20.8	21.7	22.9	23.4	23.3	24.5	24.8	25.5	25.6	27.0	26.3	26.4	23.1	20.9
Window Top	52.5	X	X	X	X	X	28.1	27.6	27.5	27.4	27.3	27.3	27.4	27.4	27.9	28.1

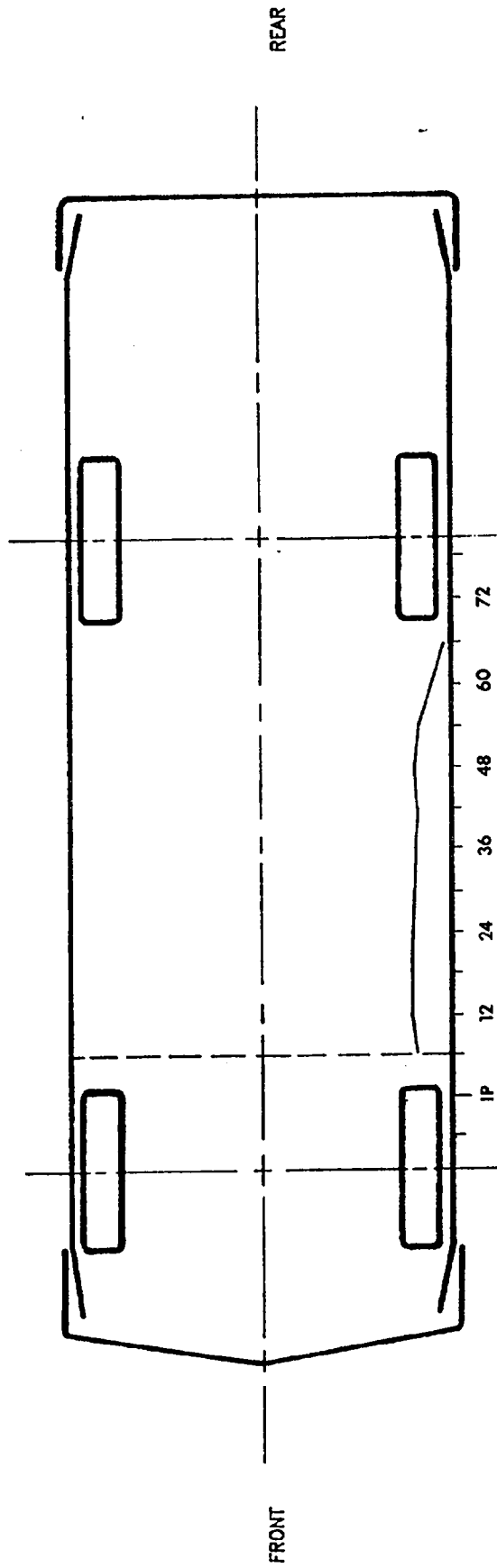
STATIC CRUSH (IN)

Axle Height	9.5	X	X	5.3	6.3	6.3	6.2	5.9	5.8	5.8	6.0	5.6	3.6	1.2	X	X
H-Point	17.4	X	X	10.2	10.5	11.2	11.5	11.6	11.7	11.6	12.0	12.7	10.7	8.4	X	X
Mid Door	23.1	5.3	6.4	7.8	8.3	9.0	9.1	9.5	9.8	10.1	10.5	11.5	10.7	9.3	6.4	3.1
Window Sill	33.6	X	2.5	3.6	4.8	5.4	5.8	6.5	6.8	7.5	7.5	8.8	8.0	8.1	4.6	2.3
Window Top	52.5	X	X	X	X	X	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	2.1	2.0

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

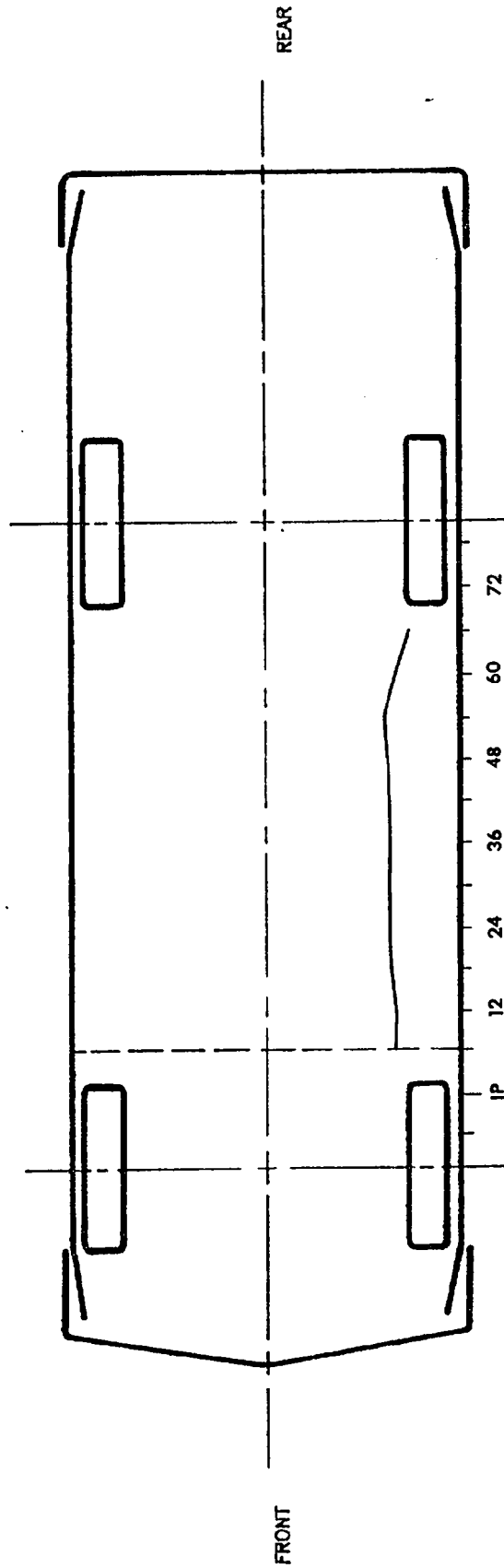
** Reference plane is parallel to and 48 inches from the vehicle longitudinal centerline.

VEHICLE EXTERIOR STATIC CRUSH PROFILE



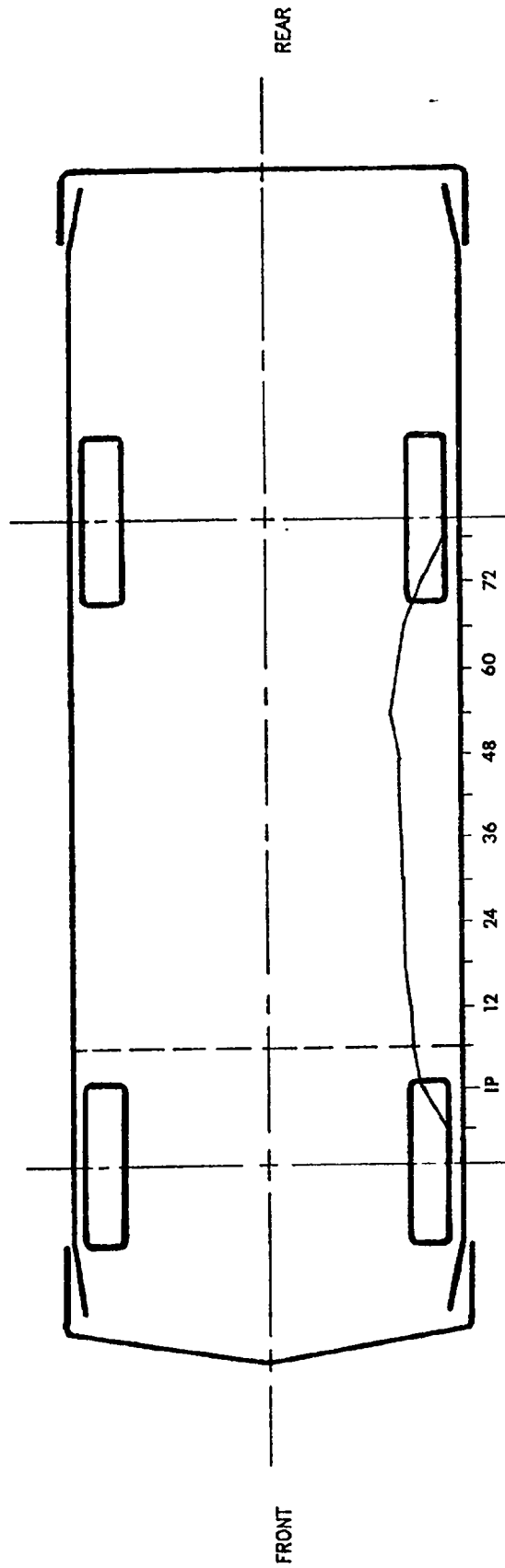
PROFILE LEVEL EQUALS AXLE HEIGHT
IP EQUALS PROJECTED IMPACT POINT

VEHICLE EXTERIOR STATIC CRUSH PROFILE



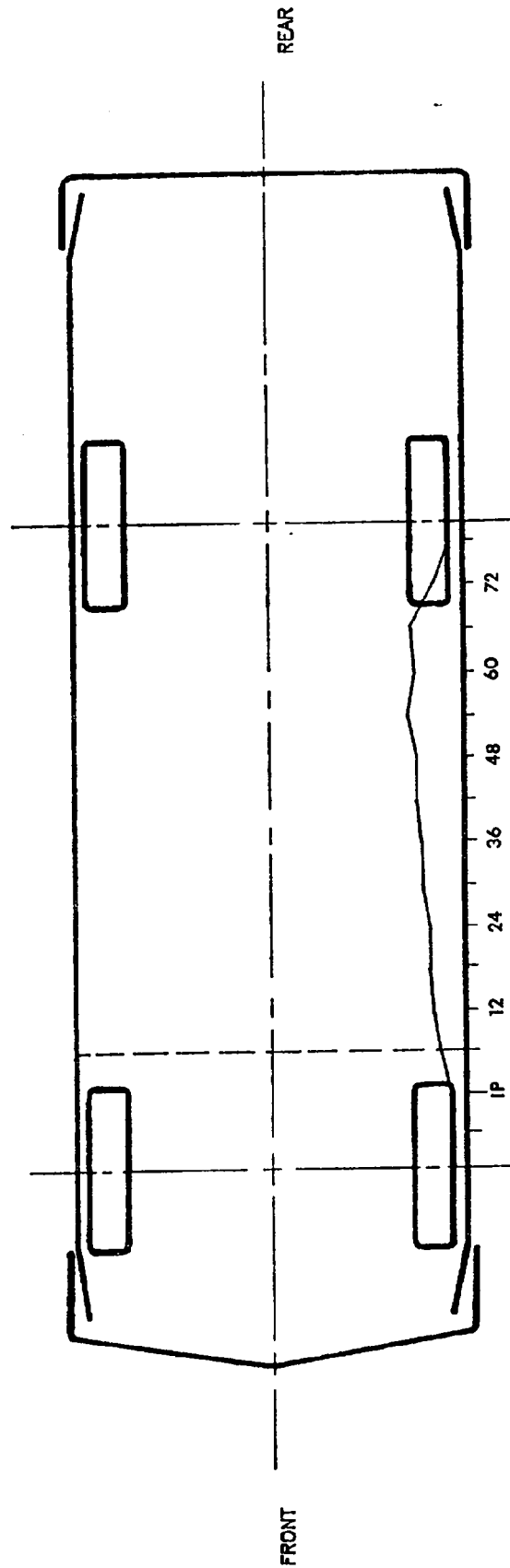
PROFILE LEVEL EQUALS H-POINT HEIGHT
IP EQUALS PROJECTED IMPACT POINT

VEHICLE EXTERIOR STATIC CRUSH PROFILE



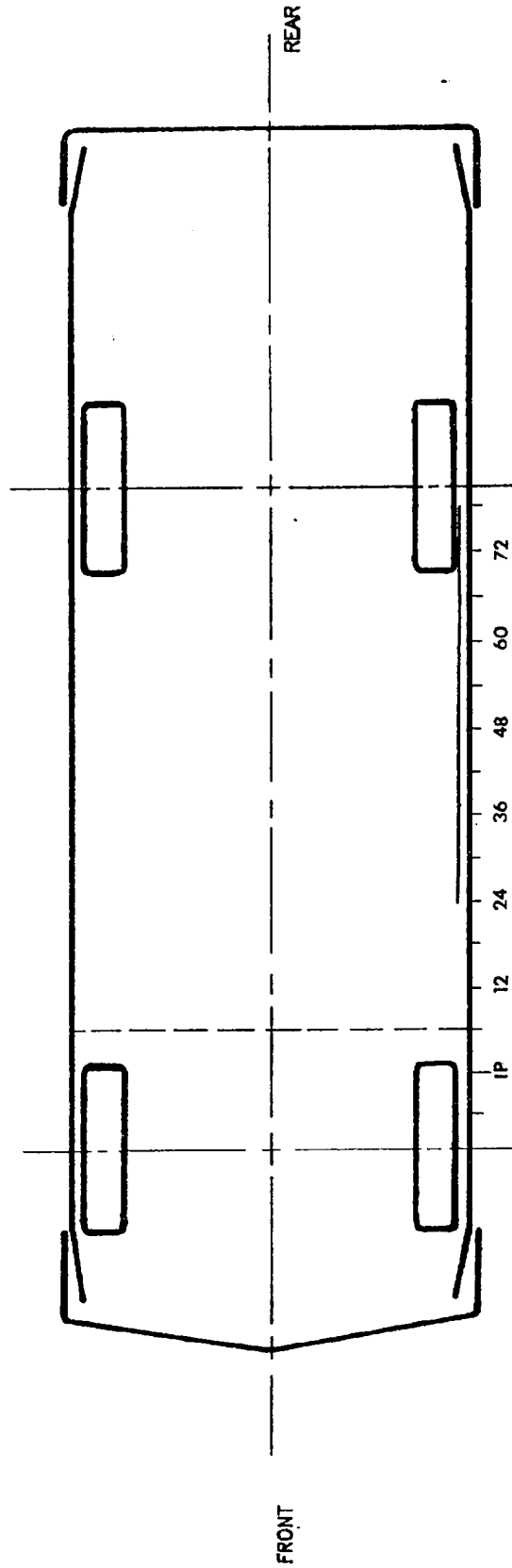
PROFILE LEVEL EQUALS MID-DOOR HEIGHT
 IP EQUALS PROJECTED IMPACT POINT

VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW SILL HEIGHT
IP EQUALS PROJECTED IMPACT POINT

VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW TOP HEIGHT
IP EQUALS PROJECTED IMPACT POINT

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	283.78	57.63	19.20	57.13 Y	24.66	166.50	23.43	68.13
LATERAL	156.44	57.25	281.70	57.63 Y	88.83	52.38	17.39	166.50
VERTICAL	310.87	57.88	76.62	58.75 Y	34.79	61.75	20.46	48.88
RESULTANT		506.48 @	57.88 Y			90.77 @	52.38	
HIC	6370.49	from 57.38 to 61.13 Y				345.70	from 48.13 to 57.38	
CHEST ACCELERATION								
UPPER SPINE								
LONGITUDINAL	10.63	51.25	14.10	65.63	3.51	55.00	25.75	61.87
LATERAL (P)***	58.11	43.13	35.00	63.13	32.14	50.00	5.55	131.25
LATERAL (R)***	59.47	43.13	33.89	63.13	32.80	49.37	5.00	131.25
VERTICAL	10.32	61.87	7.70	78.75	6.95	32.50	14.28	63.13
RESULTANT (P)		58.33 @	43.13			32.98 @	50.00	
RESULTANT (R)		59.68 @	43.13			33.54 @	49.37	
DELTA V (MPH)****		23.6 @	60.00 (P)			21.5 @	124.38 (P)	
		23.8 @	60.00 (R)			21.5 @	127.50 (R)	
LOWER SPINE								
LONGITUDINAL	37.89	37.50	27.51	32.50	6.26	74.37	13.17	38.13
LATERAL (P)	80.86	31.88	23.04	63.75	47.69	45.00	16.25	66.87
LATERAL (R)	80.33	31.88	26.36	63.13	49.02	45.00	15.39	66.87
VERTICAL	18.64	62.50	5.29	78.13	8.18	46.25	6.21	65.00
RESULTANT (P)		85.75 @	32.50			48.88 @	45.00	
RESULTANT (R)		85.40 @	32.50			50.18 @	45.00	
DELTA V (MPH)		29.1 @	52.50 (P)			22.9 @	59.38 (P)	
		28.9 @	53.12 (R)			23.6 @	60.00 (R)	
LEFT UPPER RIB								
LATERAL (P)	65.92	28.75	9.87	76.25	39.61	34.38	7.11	123.75
LATERAL (R)	68.51	28.13	12.81	75.62	40.31	34.38	12.19	70.63
DELTA V (MPH)		23.1 @	71.25 (P)			24.3 @	141.88 (P)	
		22.7 @	71.88 (R)			23.6 @	142.50 (R)	
LEFT LOWER RIB								
LATERAL (P)	62.40	27.50	25.37	68.13	46.68	45.00	18.93	63.00
LATERAL (R)	68.47	36.25	22.24	68.13	59.43	119.38	22.28	65.00
DELTA V (MPH)		23.6 @	76.25 (P)			23.4 @	163.75 (P)	
		24.2 @	75.63 (R)			24.7 @	122.50 (R)	
PELVIS ACCELERATION								
LONGITUDINAL	10.45	49.50	273.36	45.88 °	5.26	83.50	38.93	38.75
LATERAL	91.73	30.63	14.78	51.00	73.22	40.50	6.01	91.88
VERTICAL	13.76	40.50	7.52	25.00	20.24	45.38	5.47	67.38
RESULTANT		273.60 @	45.88 °			74.12 @	40.50	
DELTA V (MPH)		27.9 @	46.88			23.3 @	58.88	

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 †	0.08	177.00	1.62	106.25	0.08	122.38	1.64	71.63

* 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: Negative

‡See TEST ANOMALIES

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

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

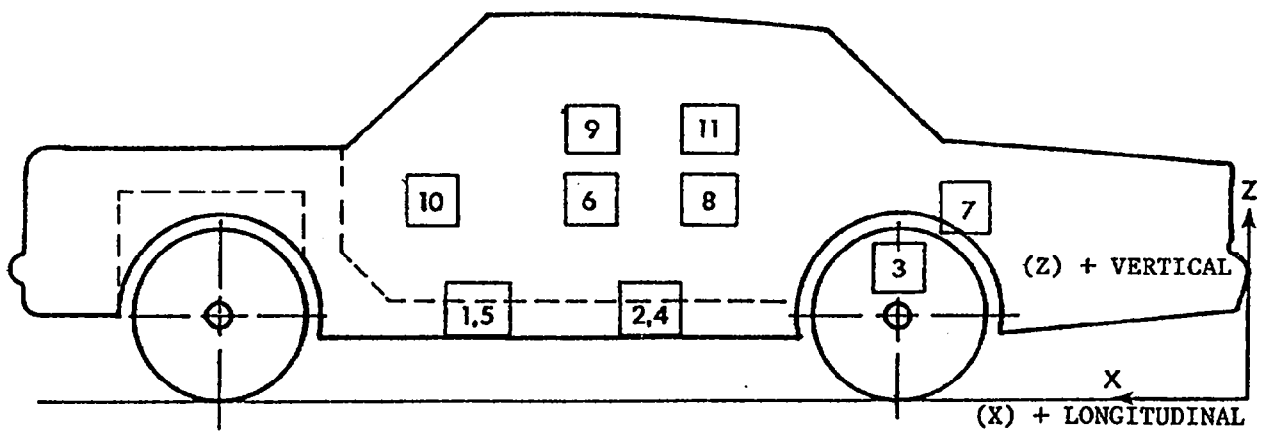
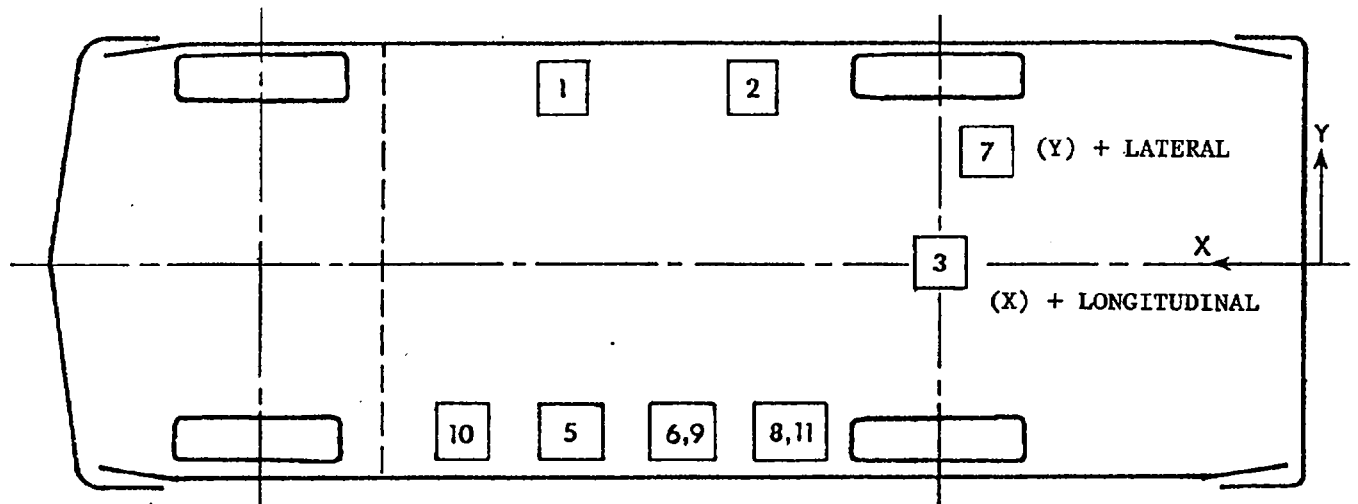
NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	RIGHT SILL AT FRONT SEAT (LONGITUDINAL)	83.4	23.9	9.5				
	(LATERAL)				$\Delta V = -1.7$ mph @ 90.00 msec	2.68	49.88	7.54 28.38
	(VERTICAL)				$\Delta V = 14.5$ mph @ 90.00 msec	18.68	35.13	2.62 138.00
	(RESULTANT)				6.34	68.88	6.73	41.13
						18.68 @ 35.13		
2	RIGHT SILL AT REAR SEAT (LONGITUDINAL)	61.4	24.5	8.5				
	(LATERAL)				$\Delta V = -0.7$ mph @ 90.00 msec	3.49	50.00	7.24 28.63
	(VERTICAL)				$\Delta V = 16.1$ mph @ 90.00 msec	20.92	34.63	2.03 137.50
	(RESULTANT)				6.50	69.38	8.26	44.75
						20.98 @ 34.68		
3	REAR DECK OVER AXLE (LONGITUDINAL)	32.0	0.0	7.0				
	(LATERAL)				$\Delta V = -1.4$ mph @ 90.00 msec	6.04	43.88	13.81 27.50
	(VERTICAL)				$\Delta V = 18.9$ mph @ 90.00 msec	20.20	54.50	3.07 6.88
	(RESULTANT)				4.67	31.63	3.37	47.75
						23.72 @ 27.25		
4	LEFT SILL AT REAR SEAT (LATERAL)	61.0	-24.5	8.6				
					$\Delta V = 15.3$ mph @ 46.88 msec	40.72	31.63	25.75 54.00
5	LEFT SILL AT FRONT SEAT (LATERAL)	83.5	-24.5	9.8				
					$\Delta V = 7.7$ mph @ 53.00 msec	36.96	12.25	13.39 17.88
6	LEFT FRONT DOOR CENTERLINE (LATERAL)	80.8	-27.0	23.0				
					$\Delta V = 19.2$ mph @ 24.00 msec	157.56	15.88	53.55 30.88
7	RIGHT REAR COMPARTMENT (LONGITUDINAL)	31.0	15.5	13.4				
					3.39	43.13	9.72	27.75
8	MIDREAR OF LEFT FRONT DOOR (LATERAL)	60.5	-26.5	23.5				
					$\Delta V = 18.9$ mph @ 11.38 msec	175.77	12.13	29.03 25.75
9	UPPER LEFT FRONT DOOR CENTERLINE (LATERAL)	81.3	-26.0	33.1				
					$\Delta V = 25.5$ mph @ 27.13 msec	117.54	27.25	125.47 33.63
10	MIDFRONT OF LEFT FRONT DOOR (LATERAL)	99.0	-26.5	22.0				
					$\Delta V = 17.0$ mph @ 23.63 msec	117.70	11.00	75.69 28.75
11	UPPER REAR OF LEFT FRONT DOOR (LATERAL)	69.9	-26.0	33.1				
					-----	----- Y -----	----- Y	

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

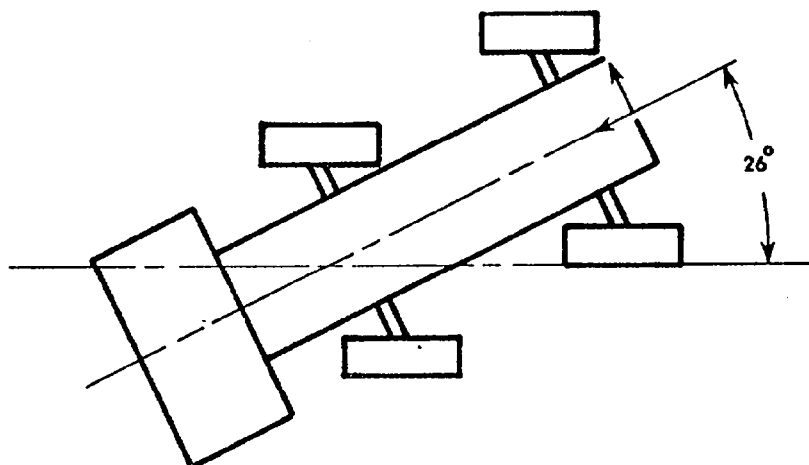
All measurements of accelerometer locations in inches.

YSee TEST ANOMALIES

VEHICLE ACCELEROMETER LOCATIONS



MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY



NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	CENTER OF GRAVITY	74.5	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -14.1 \text{ mph @ } 90.00 \text{ msec}$			0.95	272.38	15.24	43.25
	(LATERAL)	$\Delta V = -3.0 \text{ mph @ } 90.00 \text{ msec}$			1.48	79.38	8.06	34.00
	(VERTICAL)				7.51	182.38	7.40	173.38
	(RESULTANT)					17.05 @ 42.63		
2	FRONT FRAME MEMBER	130.3	0.0	11.3				
	(LONGITUDINAL)	$\Delta V = -14.9 \text{ mph @ } 90.00 \text{ msec}$			0.34	114.13	15.66	41.00
3	REAR FRAME MEMBER	23.3	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -13.6 \text{ mph @ } 90.00 \text{ msec}$			0.99	270.63	15.01	40.75

* 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.

HIGH SPEED CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overhead	Photosonics 1B	8	752	Vehicle dynamics
2	Overhead	Photosonics 1B	25	722	Close-up of impact point
3	Onboard MDB	Stalex	25	500	Close-up of impact point
4	Onboard MDB	Photosonics 1B	13	815	Driver kinematics
5	Ground level - right	Hycam	25	762	Overall view
6	Ground level - left	Hycam	16	805	Overall view
7	Onboard vehicle	Photosonics 1B	8	----*	Driver kinematics - front view
8	Onboard vehicle	Photosonics 1B	8	805	Driver kinematics
9	Onboard vehicle	Photosonics 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.

* See TEST ANOMALIES

LOCATIONS OF OFFBOARD HIGH SPEED CAMERAS

CAMERA NO.	X	Y	Z
1	0	0	25'
2	0	0	25'
5	24'10"	58'8"	45"
6	-20'11"	-13'	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	MEGR.	DATE OF LAST CALIBRATION	SENSITIVITY	DESIRED FULL SCALE (ENGR. UNITS)
BOGXG	Accel	4-202-0001	18845	Bell Howell	8/9/83	.236 MV/G	50 G
BOGYG	Accel	4-202-0001	18858	Bell Howell	8/9/83	.2385 MV/G	50 G
BOGZG	Accel	4-202-0001	18857	Bell Howell	8/9/83	.2385 MV/G	50 G
BFCXG	Accel	4-202-0001	18240	Bell Howell	8/9/83	.2385 MV/G	50 G
BRCXG	Accel	4-202-0001	19022	Bell Howell	8/9/83	.221 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



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

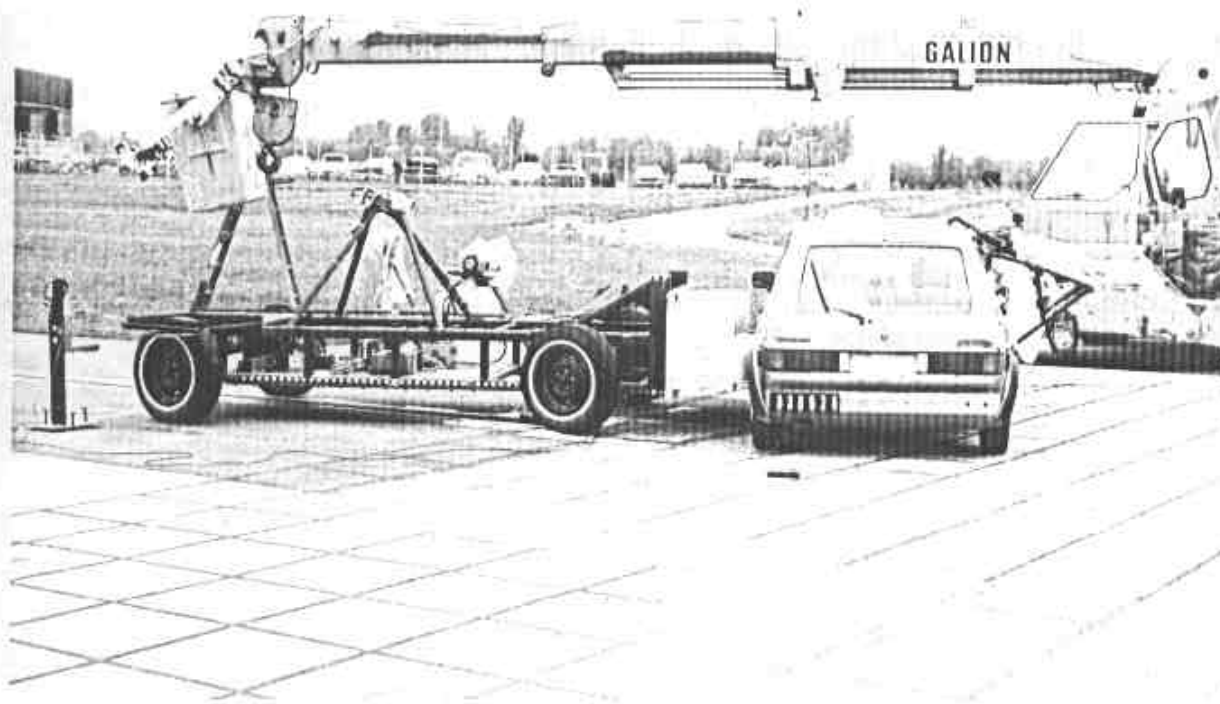


Figure A-4. PRE-TEST OVERALL - VIEW 4
A-3



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

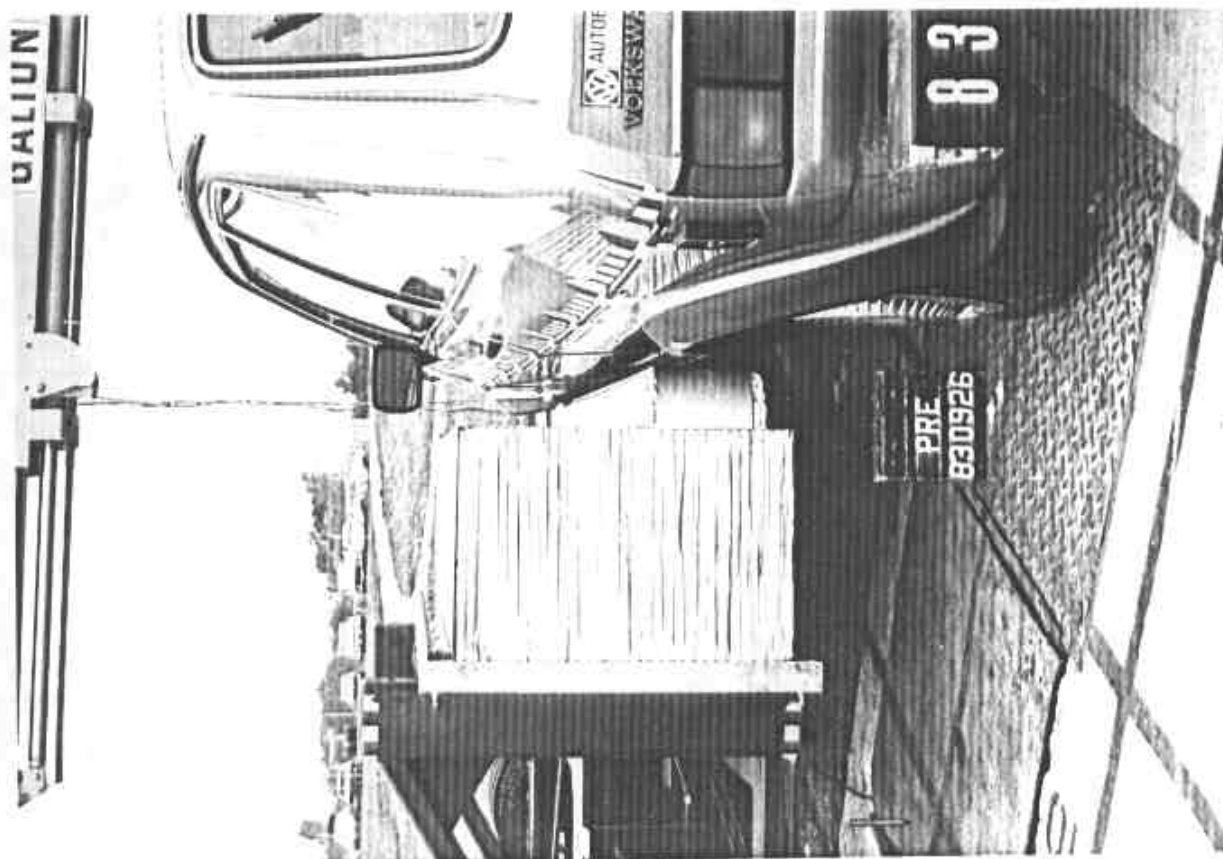


Figure A-6. PRE-TEST CLOSEUP - VIEW 2

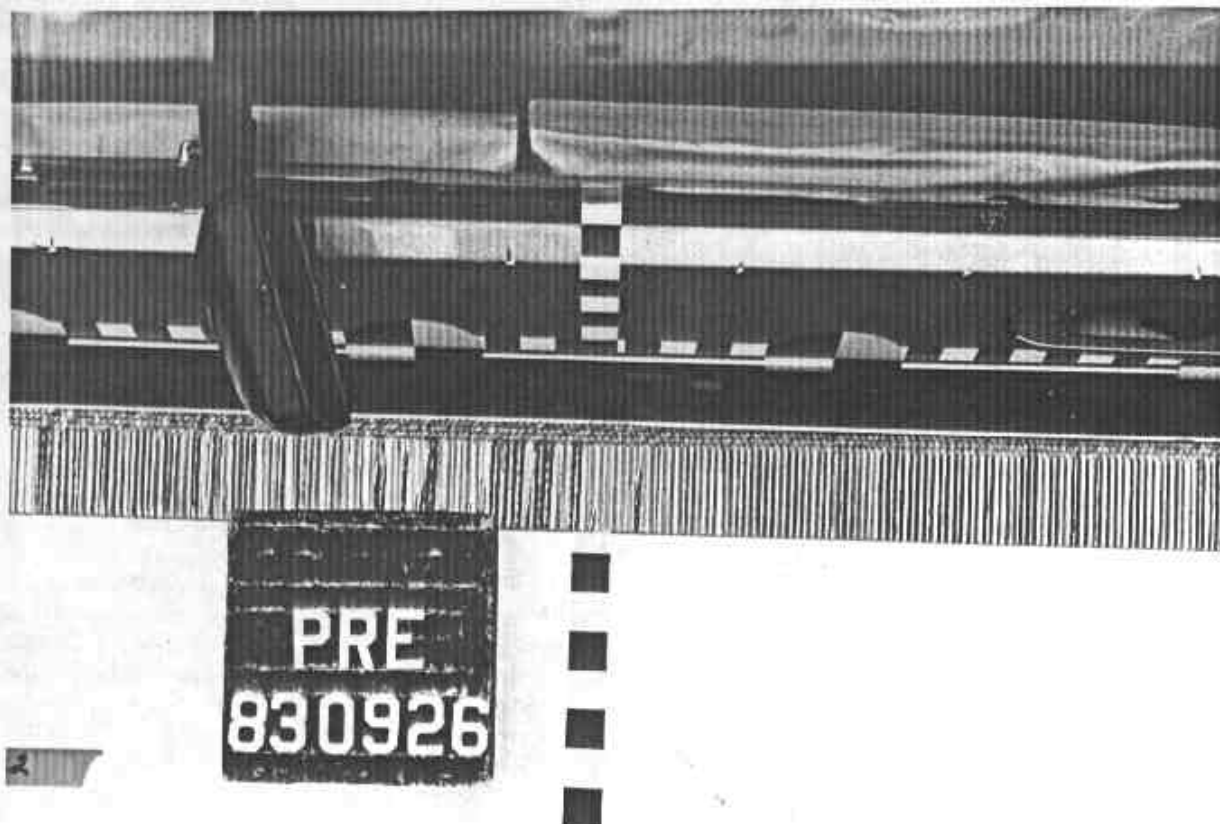


Figure A-7. PRE-TEST CLOSEUP - VIEW 3

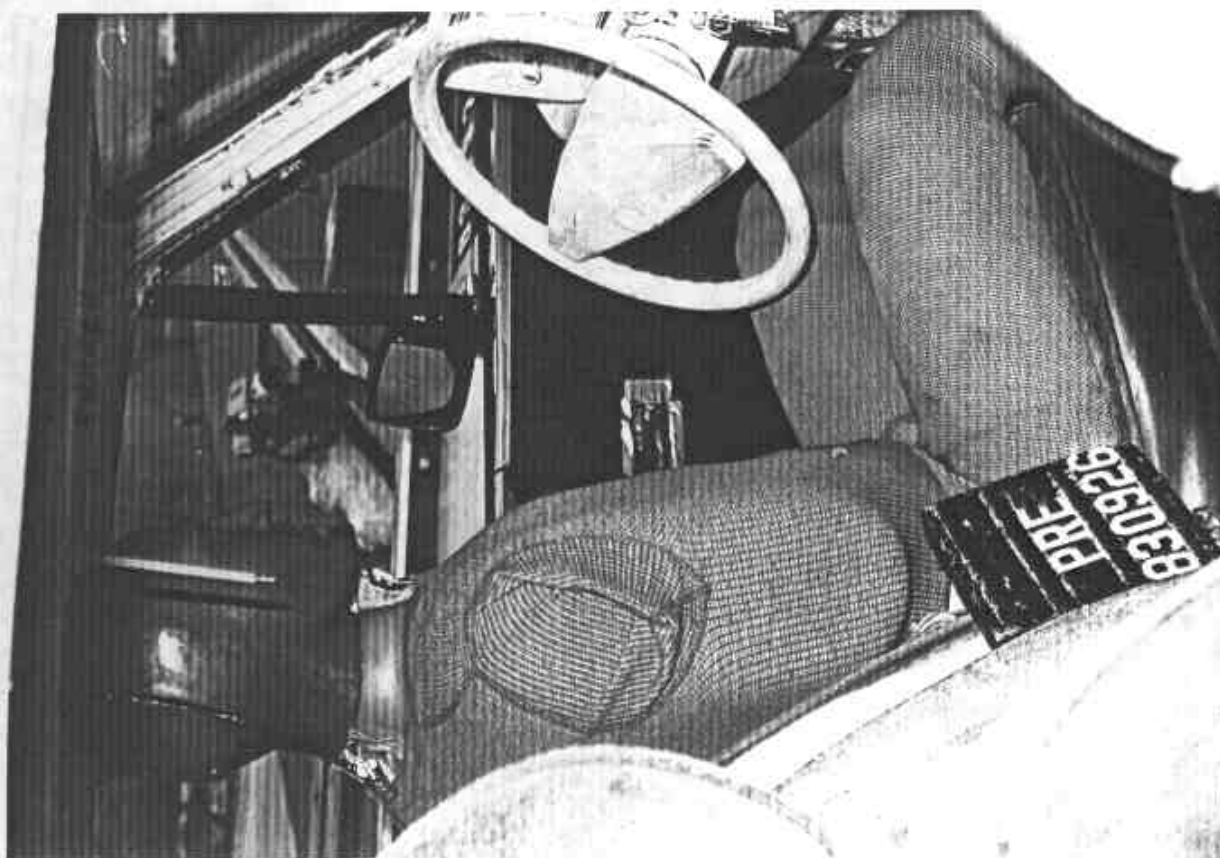


Figure A-8. PRE-TEST DRIVER DUMMY - VIEW 1
A-5

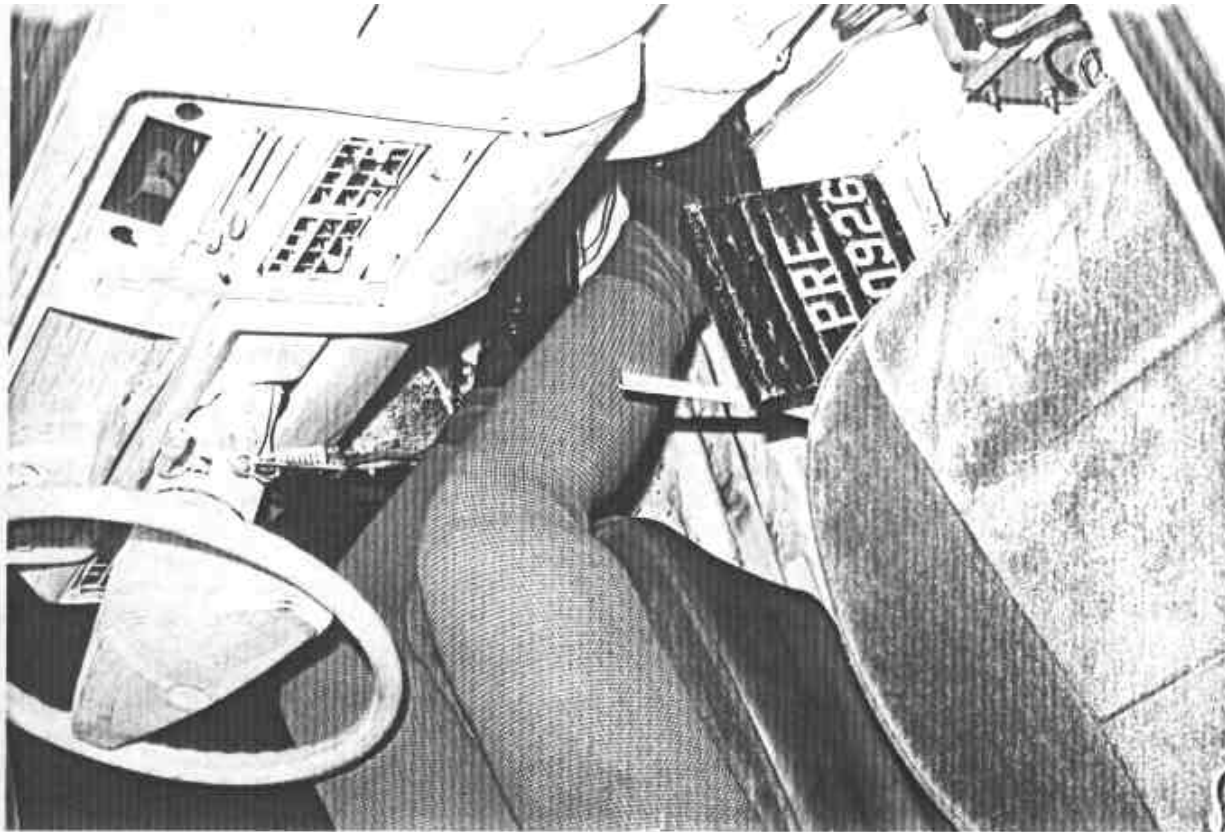


Figure A-9. PRE-TEST DRIVER DUMMY - VIEW 2



Figure A-10. PRE-TEST PASSENGER DUMMY - VIEW 1



Figure A-11. PRE-TEST PASSENGER DUMMY - VIEW 2



Figure A-12. CRASH EVENT PHOTOGRAPH

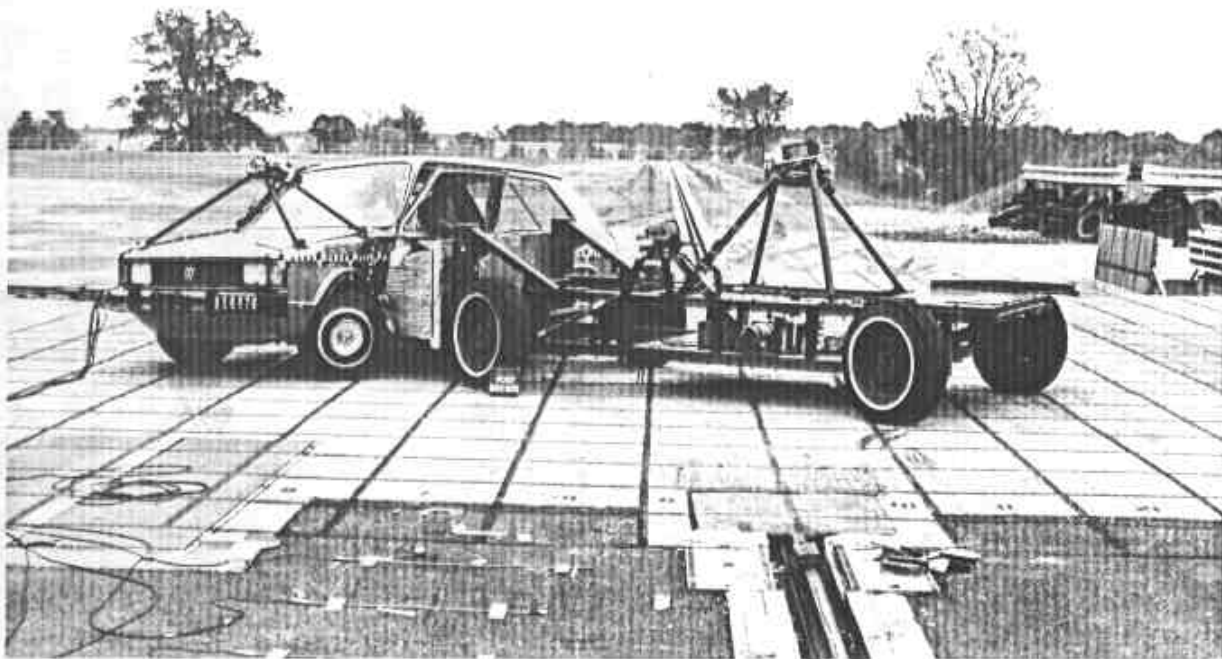


Figure A-13. POST-TEST OVERALL - VIEW 1

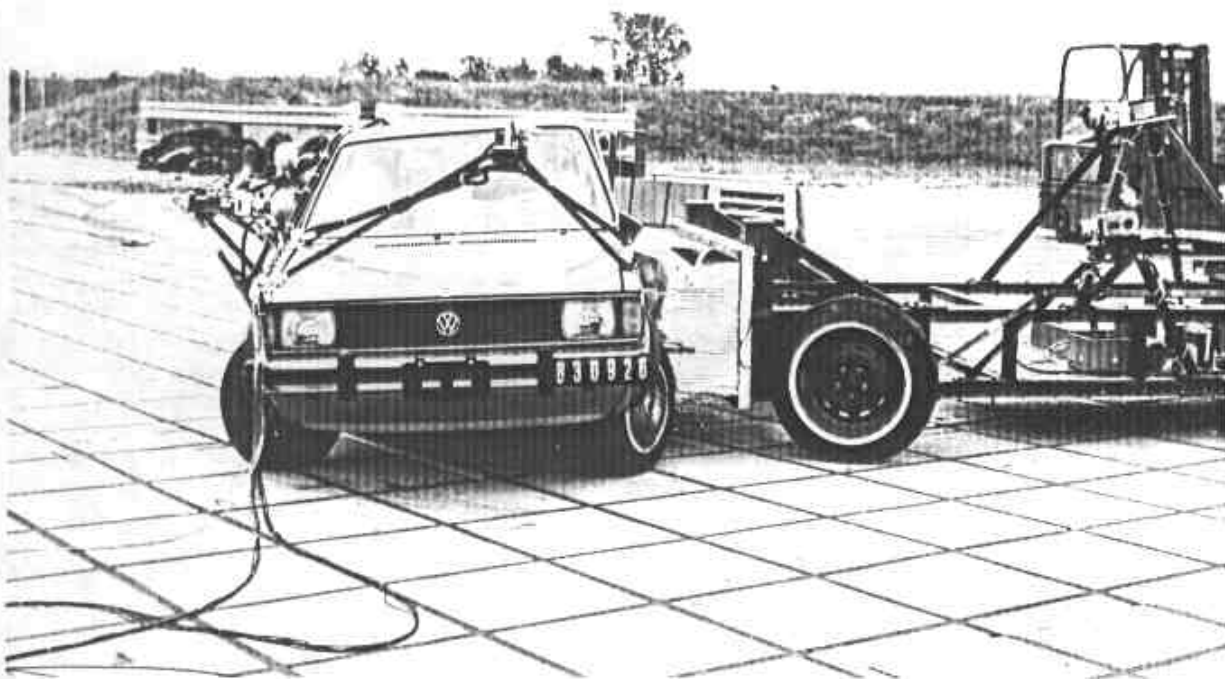


Figure A-14. POST-TEST OVERALL - VIEW 2

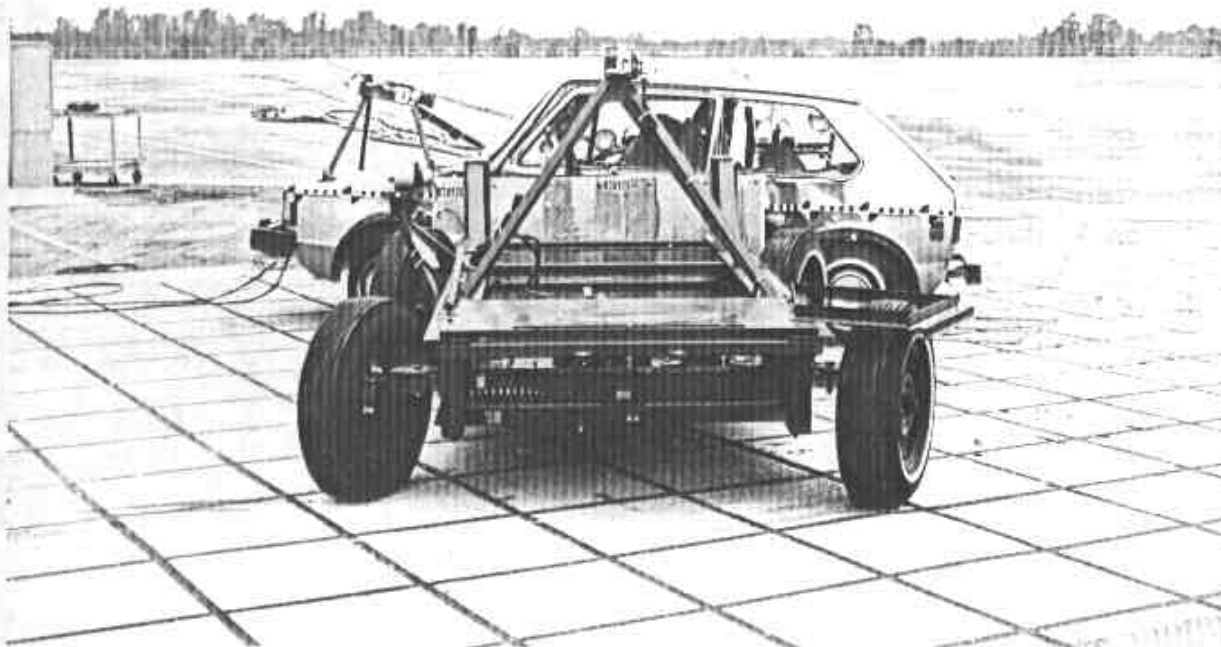


Figure A-15. POST-TEST OVERALL - VIEW 3

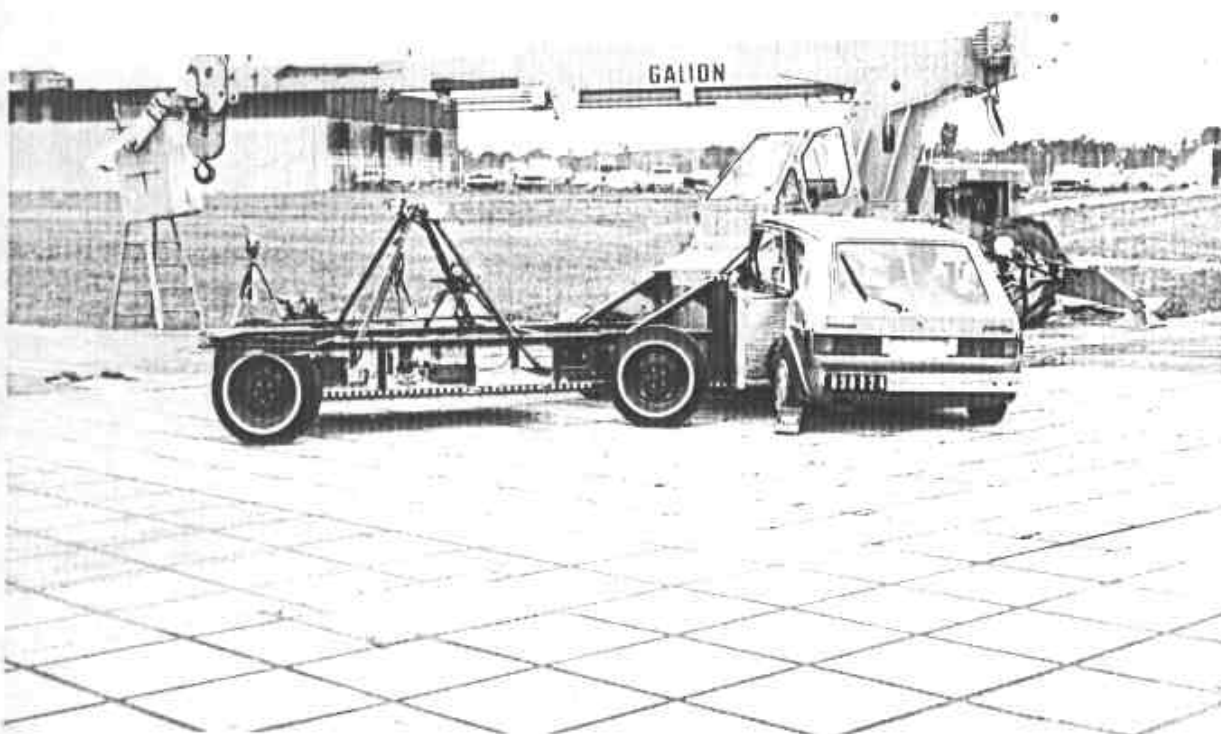


Figure A-16. POST-TEST OVERALL - VIEW 4

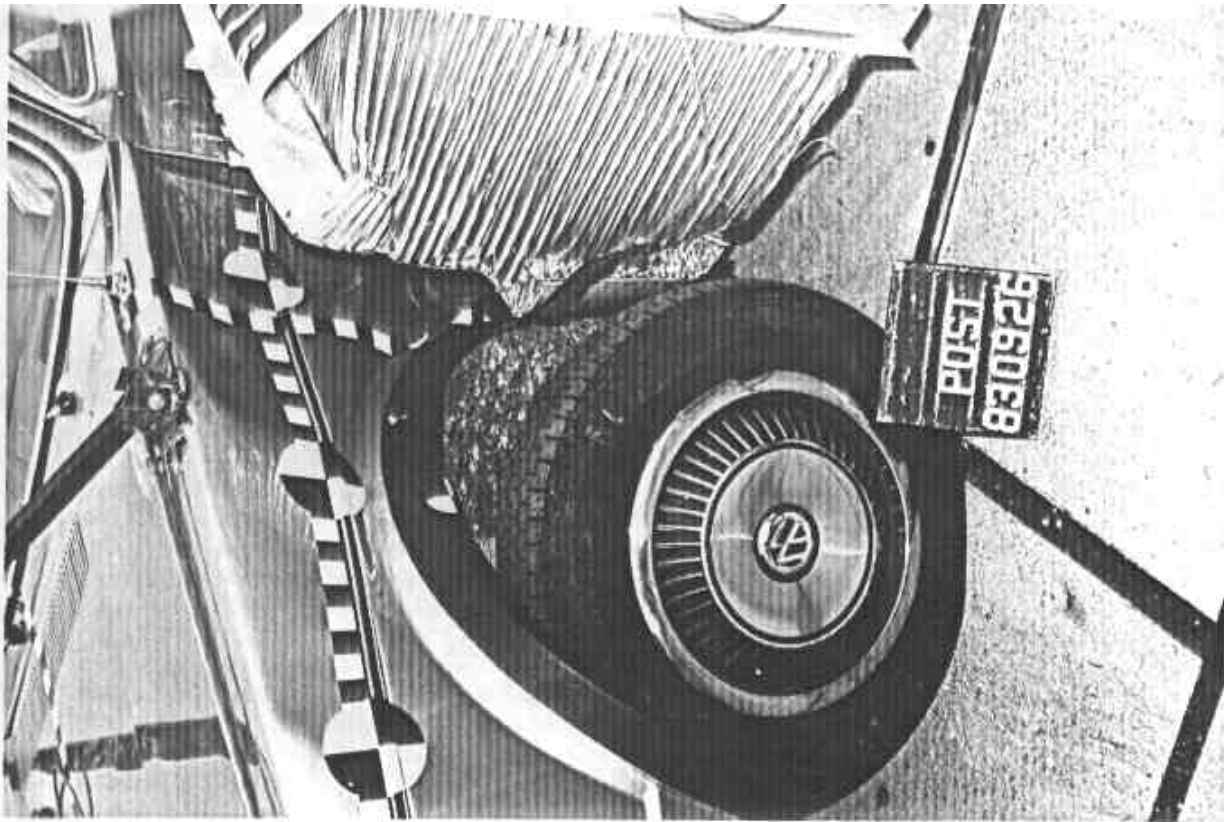


Figure A-17. POST-TEST CLOSEUP - VIEW 1



Figure A-18. POST-TEST CLOSEUP - VIEW 2

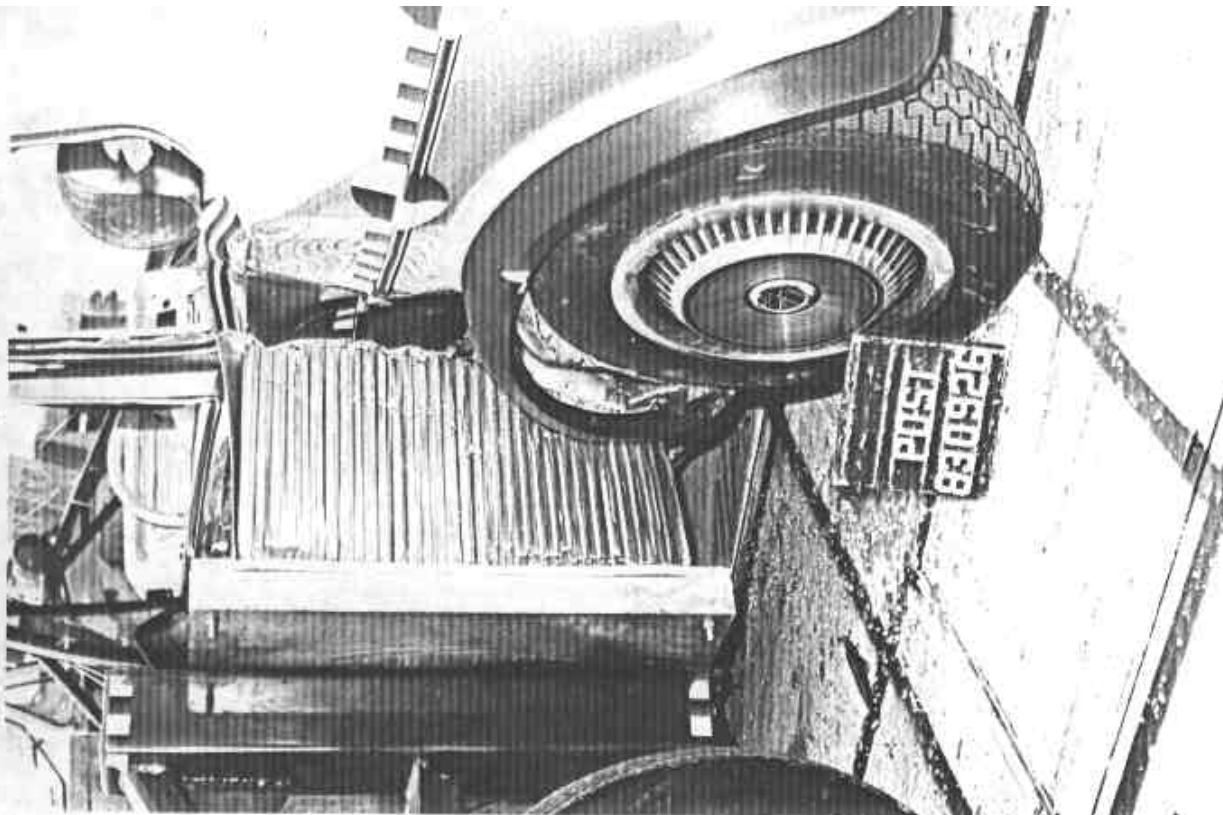


Figure A-19. POST-TEST CLOSEUP - VIEW 3



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



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

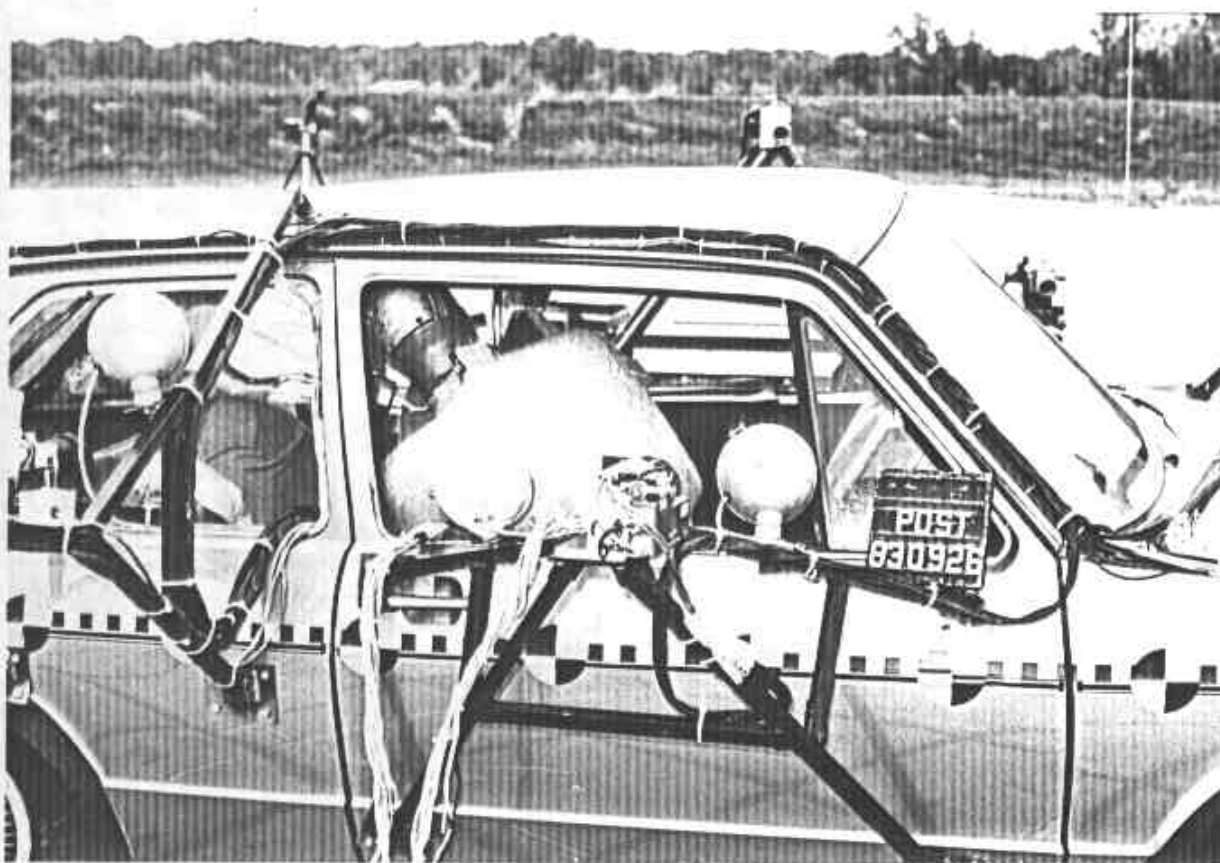


Figure A-22. POST-TEST DRIVER DUMMY - VIEW 3



Figure A-23. POST-TEST PASSENGER DUMMY - VIEW 1



Figure A-24. POST-TEST PASSENGER DUMMY - VIEW 2

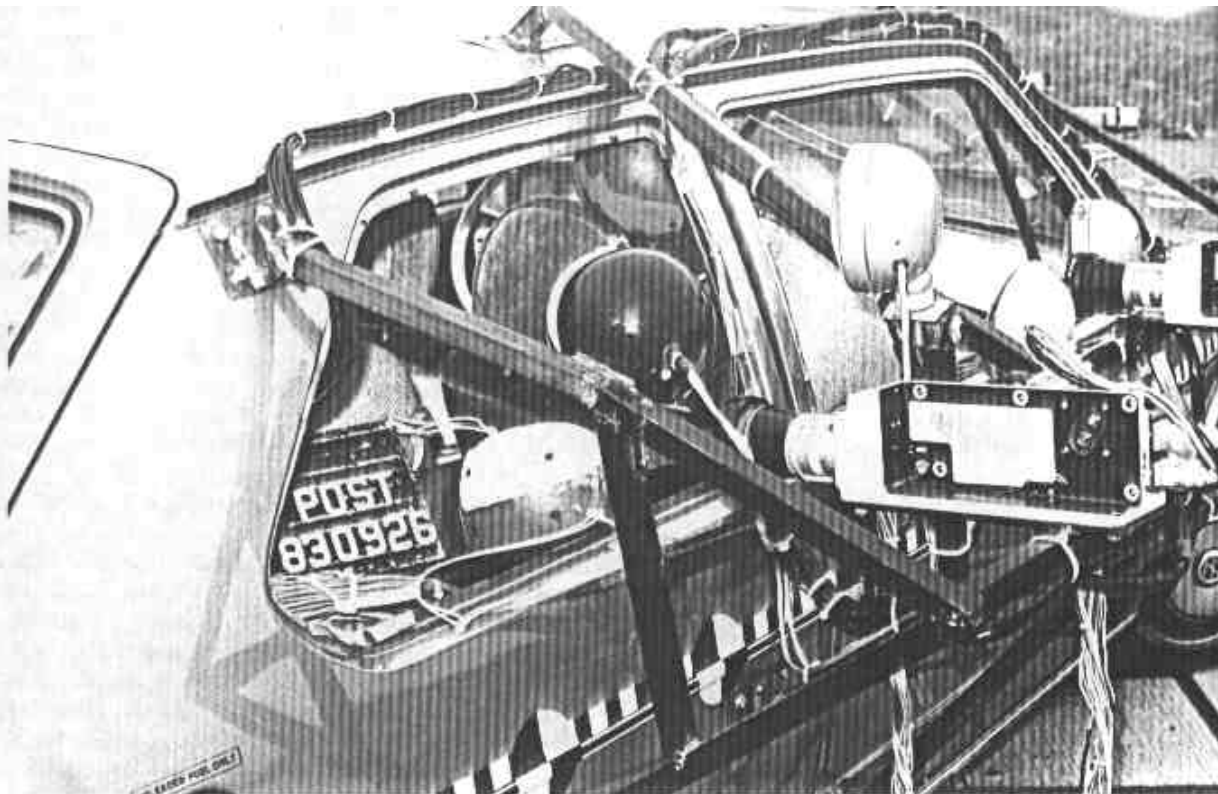


Figure A-25. POST-TEST PASSENGER DUMMY - VIEW 3



Figure A-26. POST-TEST VEHICLE DAMAGE - VIEW 1



Figure A-27. POST-TEST VEHICLE DAMAGE - VIEW 2

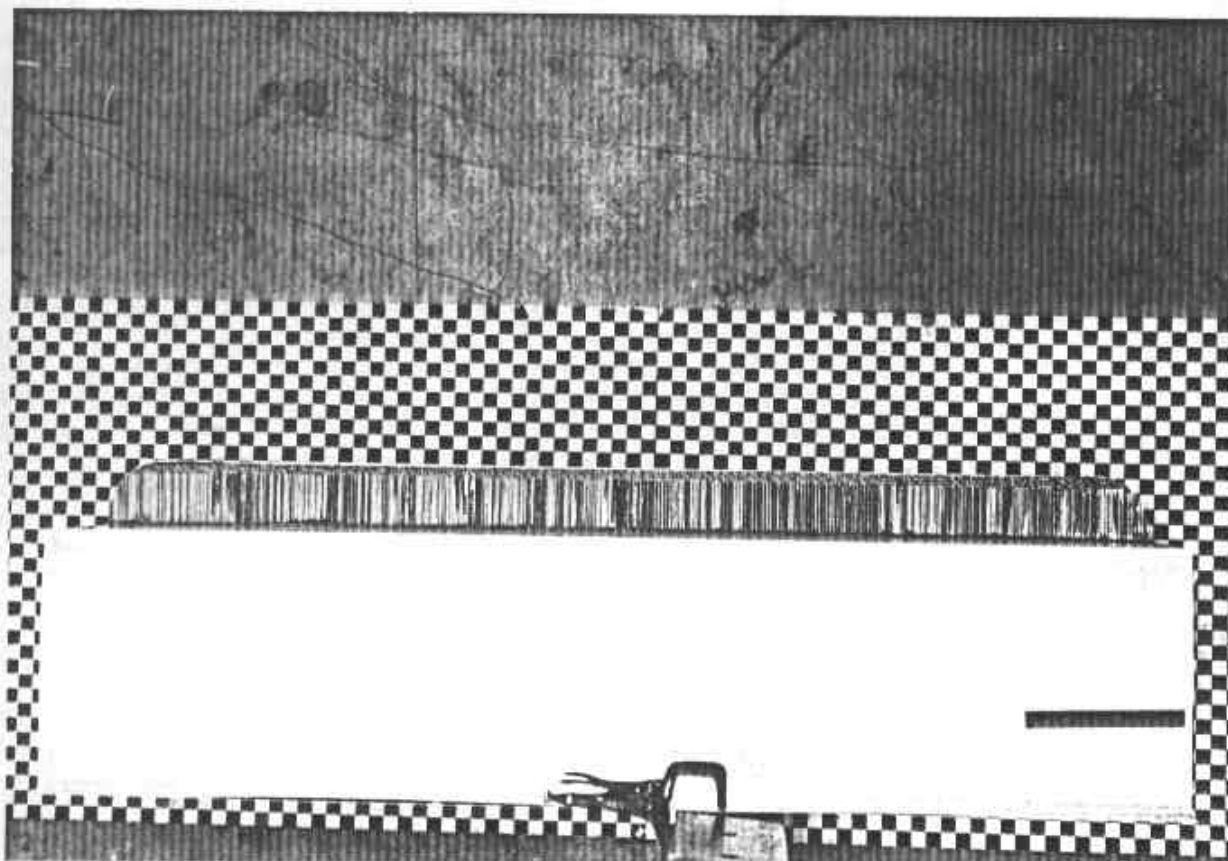


Figure A-28. PRE-TEST MDB FACE - VIEW 1

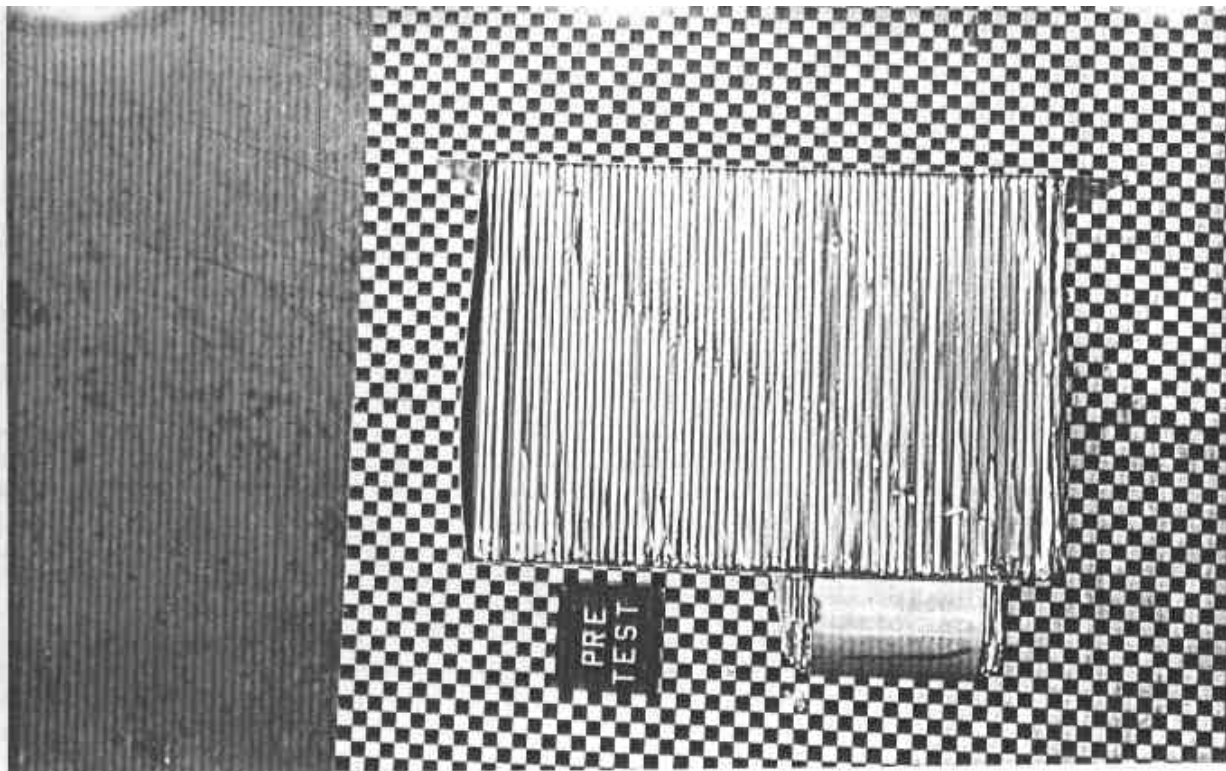


Figure A-29. PRE-TEST MDB FACE - VIEW 2

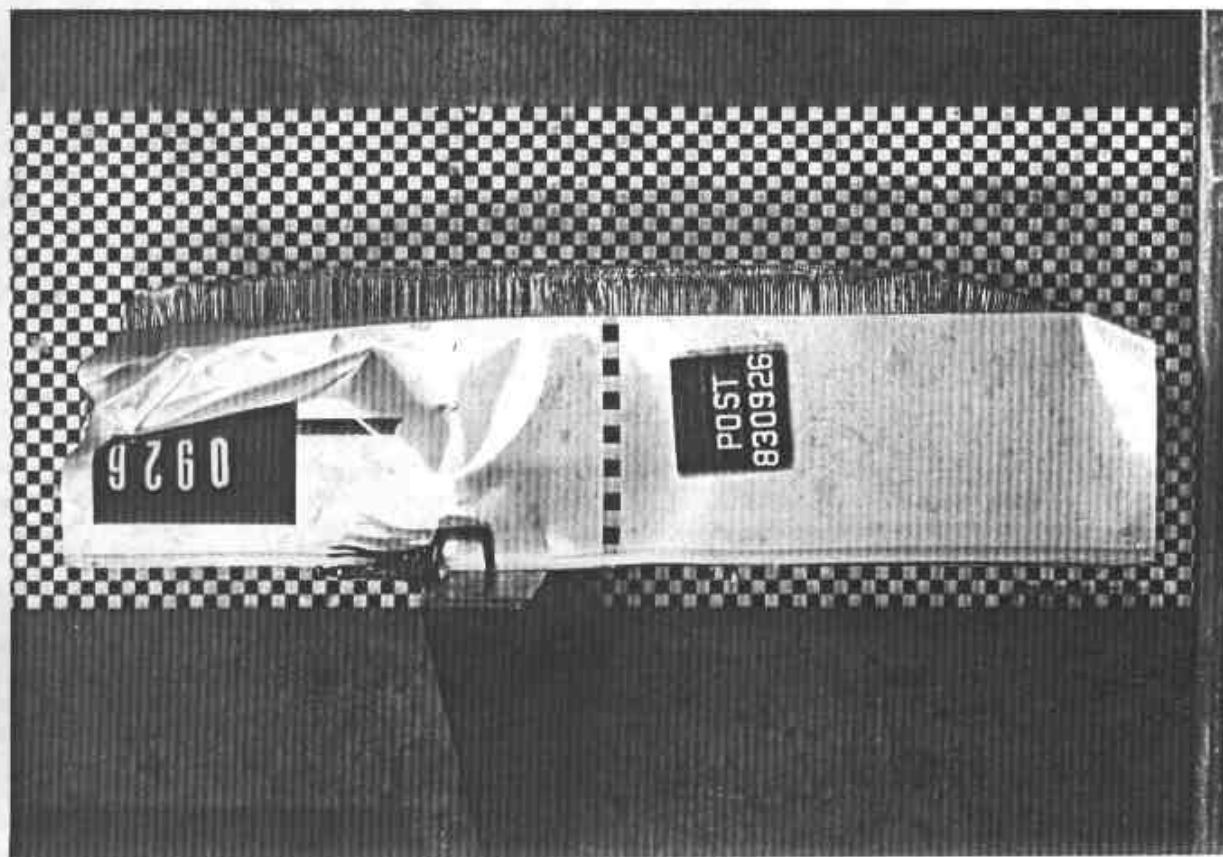


Figure A-30. POST-TEST MDB FACE - VIEW 1

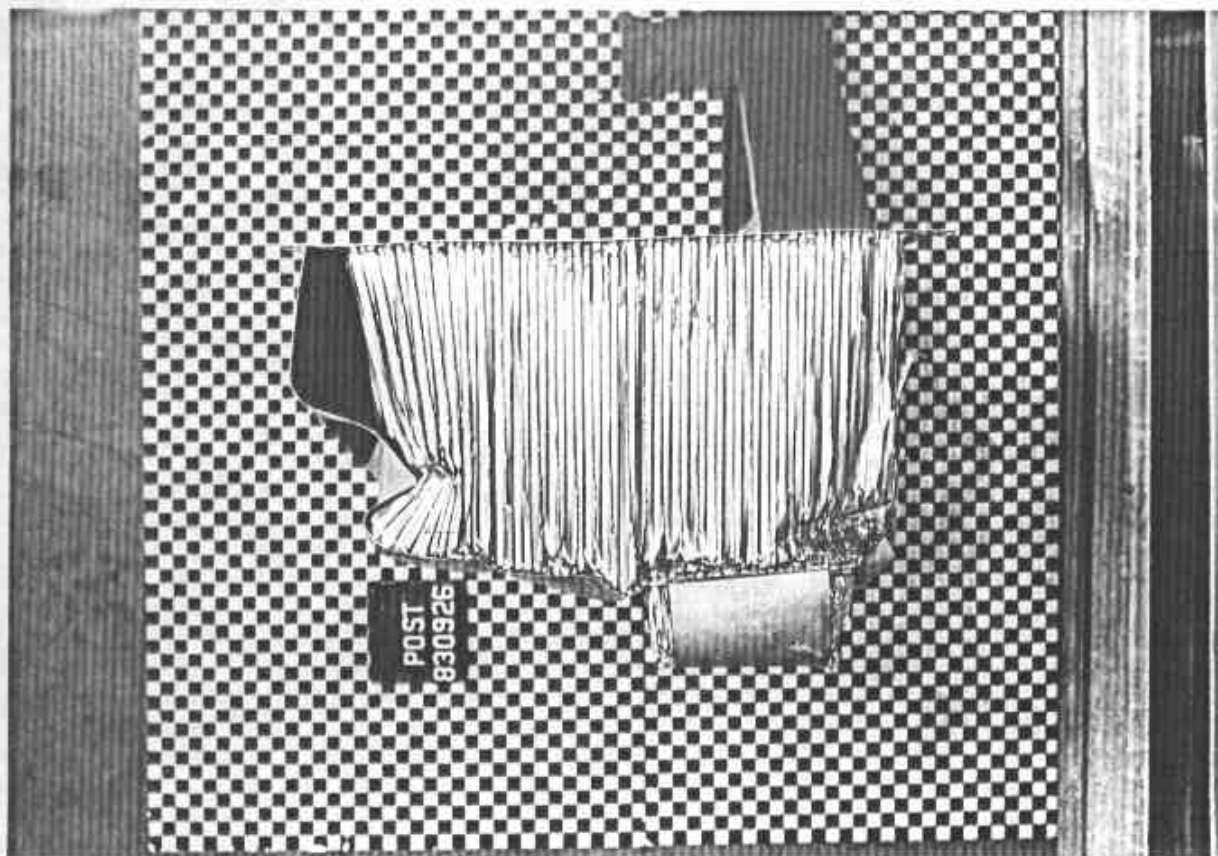


Figure A-31. POST-TEST MDB FACE - VIEW 2

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. All data were filtered according to SAE J211, except that dummy thorax data were filtered using the HSRI filter.

TRC 830926 PLOT DATE 11-OCT-83 10:44:26

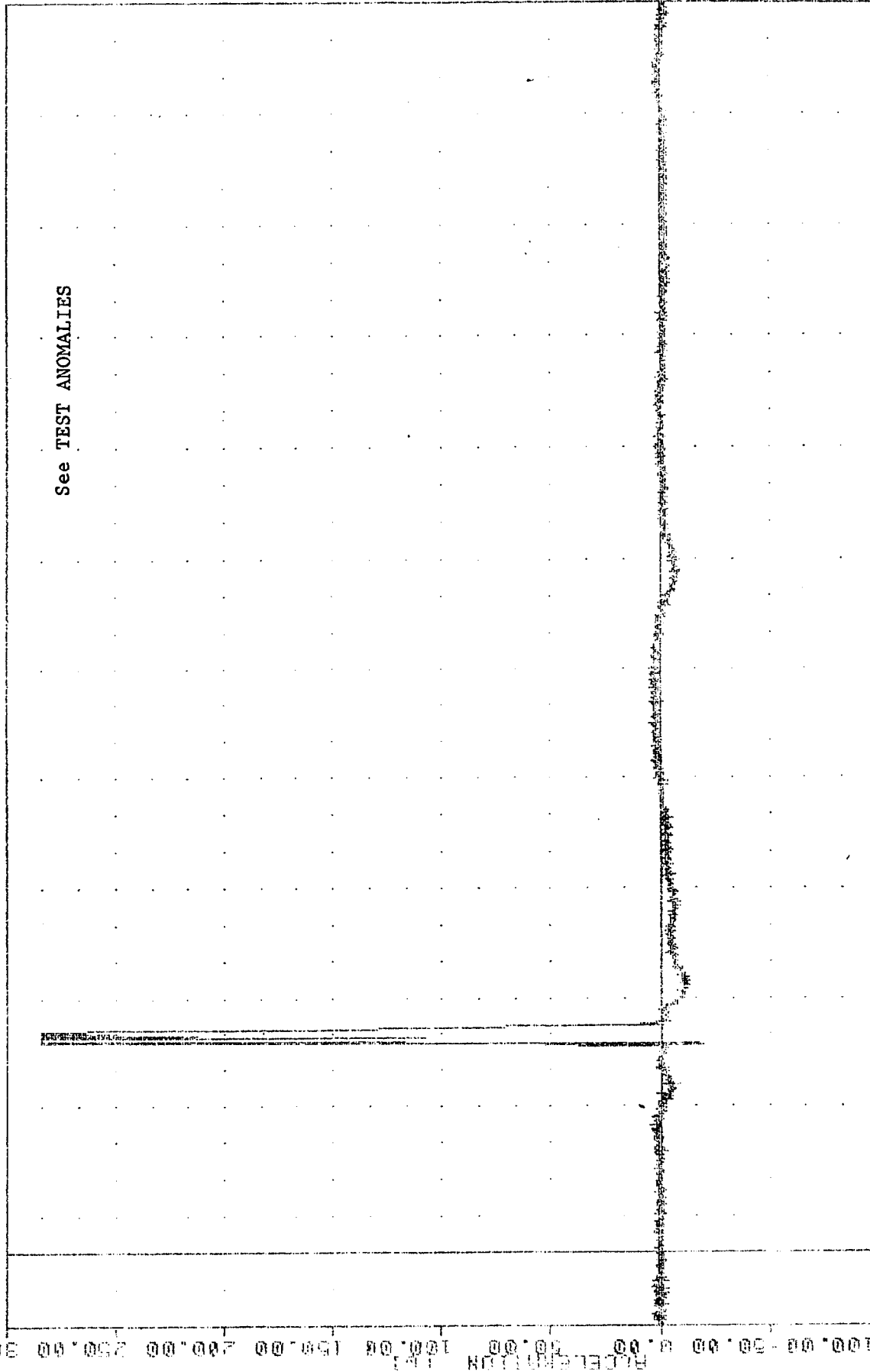
EVALUATION OF MOD VW FLEET

832650000000

HEX061

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -19.200 57.19, 283.78 57.63



-100.00 -50.00 0.00 50.00 100.00 150.00 200.00 250.00 300.00 340.00
-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 IN SEC

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION X AXIS

TAC 830926 PLOT DATE 11-OCT-88 10:44:26

EVALUATION OF MOD VW FLEET

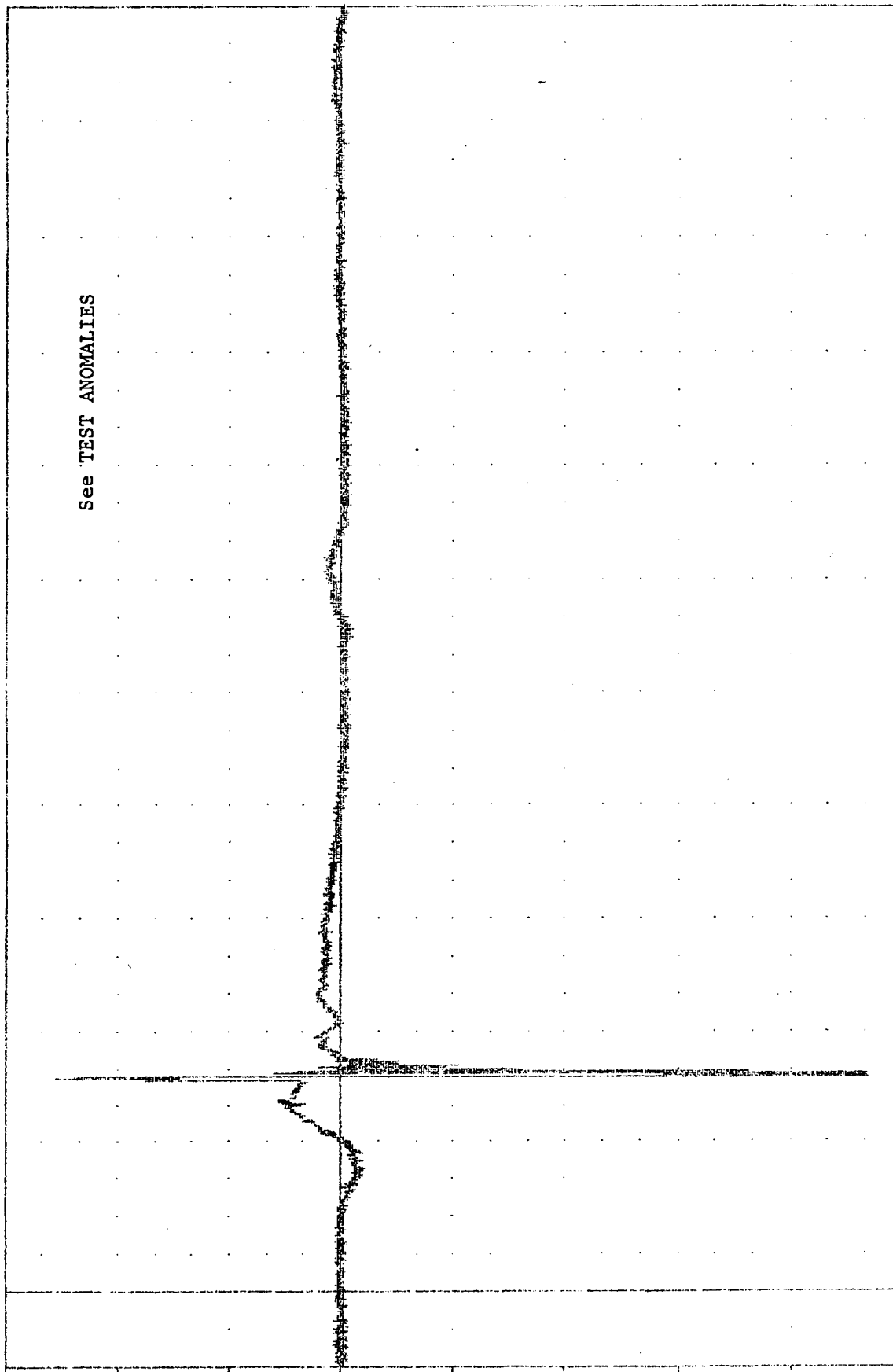
83269000000

HEADY61

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -281.70 57.63, 156.44 57.25

ACCELERATION (G) 180.00 160.00 140.00 120.00 100.00 80.00 60.00 40.00 20.00 0.00 -20.00 -40.00 -60.00 -80.00 -100.00 -120.00 -140.00 -160.00 -180.00



See TEST ANOMALIES

TIME (MSEC) 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

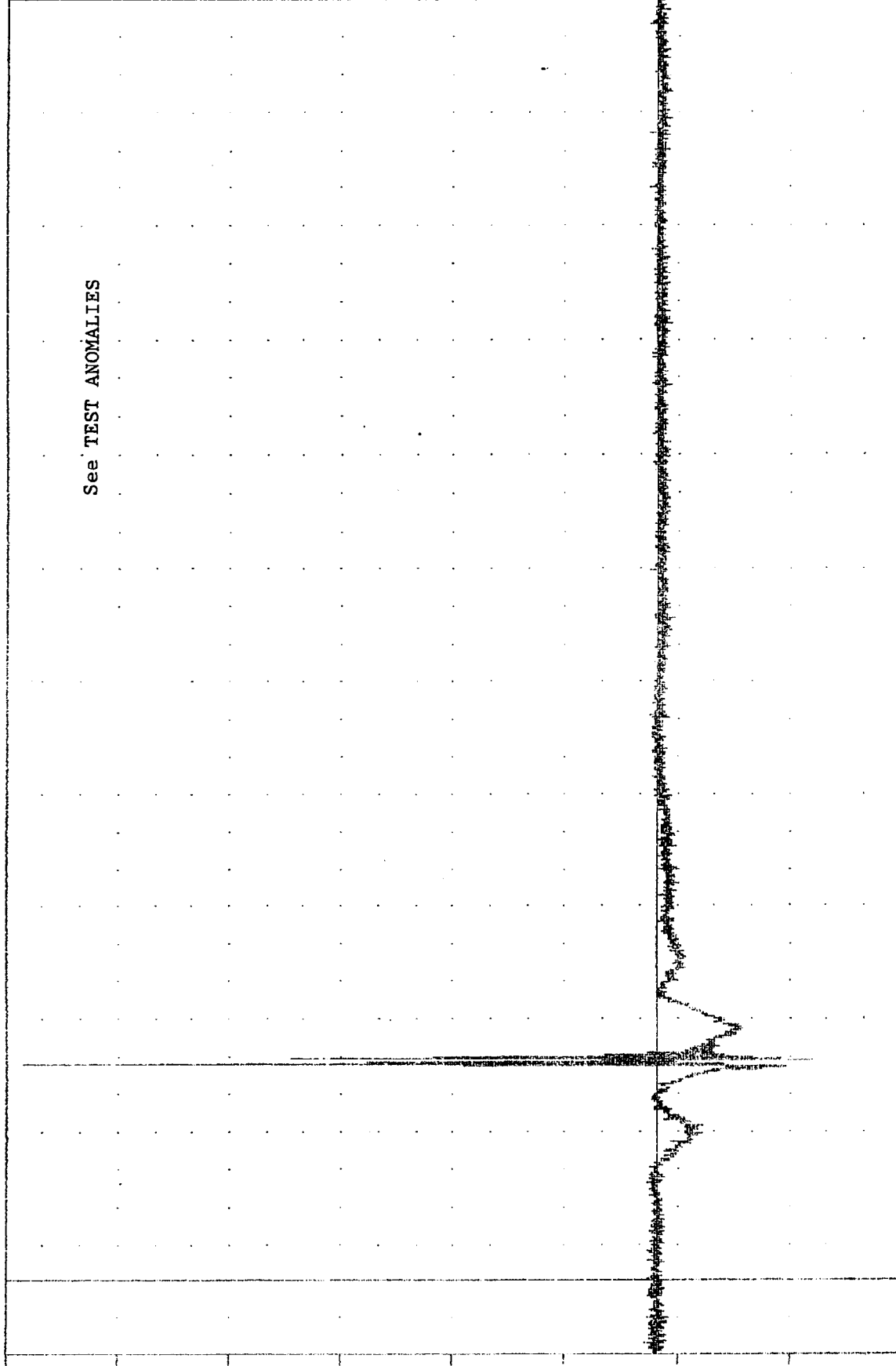
TAC 830926
EVALUATION OF MOD VW FLEET
83269000000
4E0261

PLOT DATE 11-OCT-83 10:44:26

FILTER = ALPF 1850/ 5217/ -40

MIN. MAX VALUES = -76.628 58.75 310.87 57.88

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

TIME (MS)

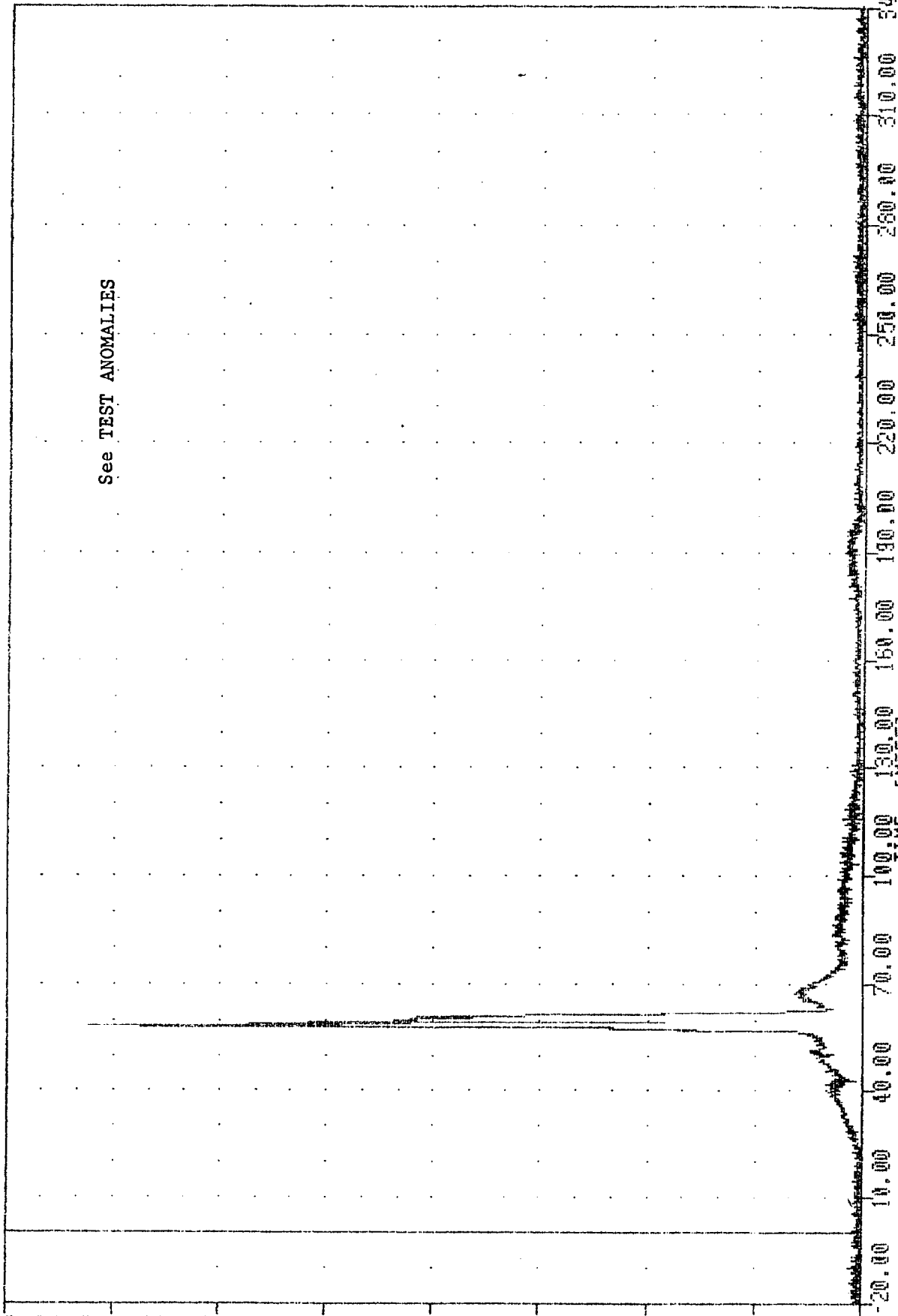
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION Z AXIS

TRC 830926
 EVALUATION OF MOD VW FLEET
 83269000000
 HEADG1

PLOT DATE 11-OCT-88 10:44:26

FILTER = ALPF 1650/ 5217/ -40
 MIN, MAX VALUES = 0.15e 506.48 e 57.88

ACCELERATION 1G



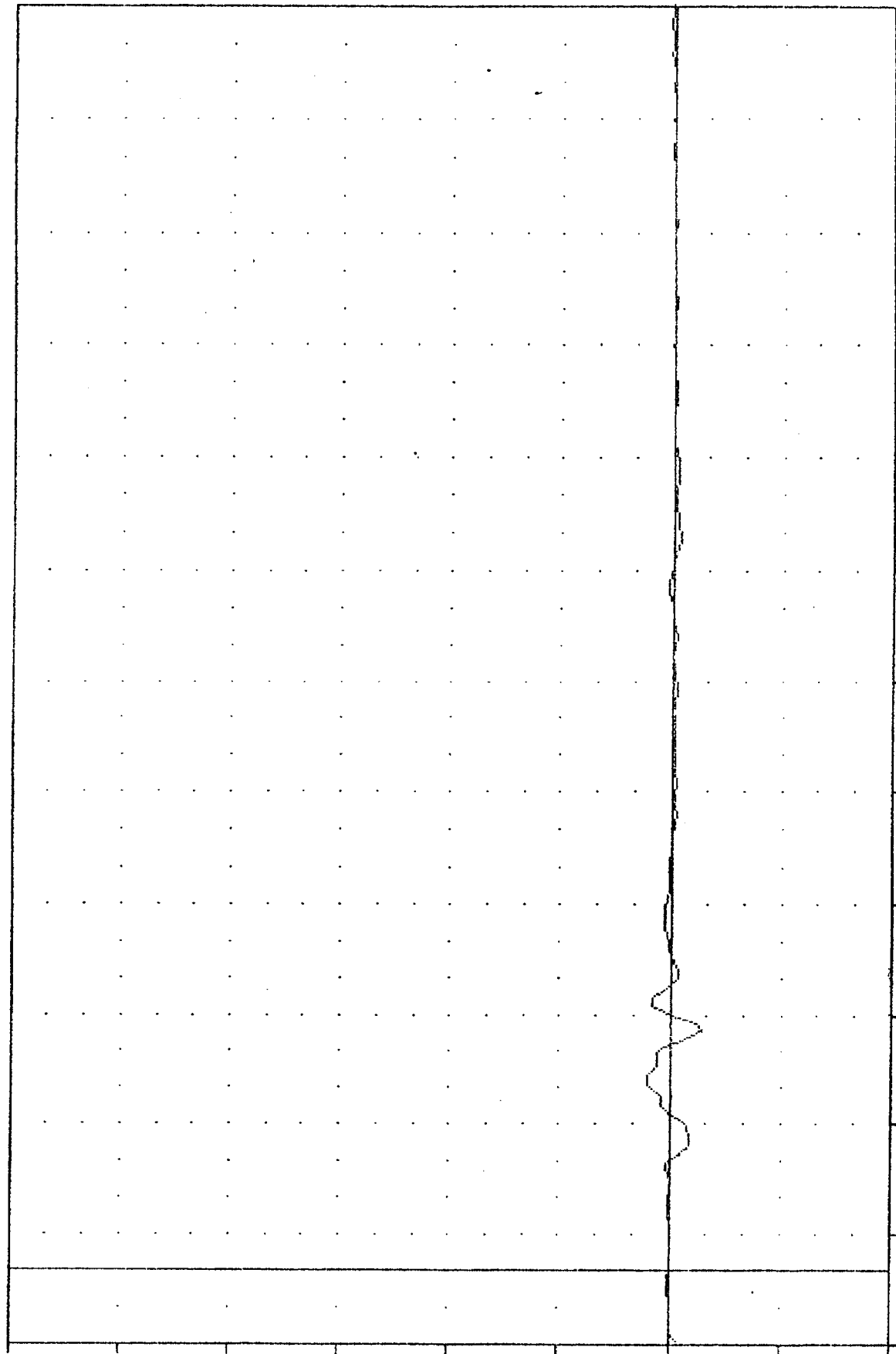
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER HEAD RESULTANT

TBC
 EVALUATION OF MOD VW FLEET
 83269000000
 701X61

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -14.10e 65.63, 10.83 e 51.25

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



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

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

TRC 830826 PLOT DATE 29-SEP-83 12:05:23

EVALUATION OF MOD VW FLEET

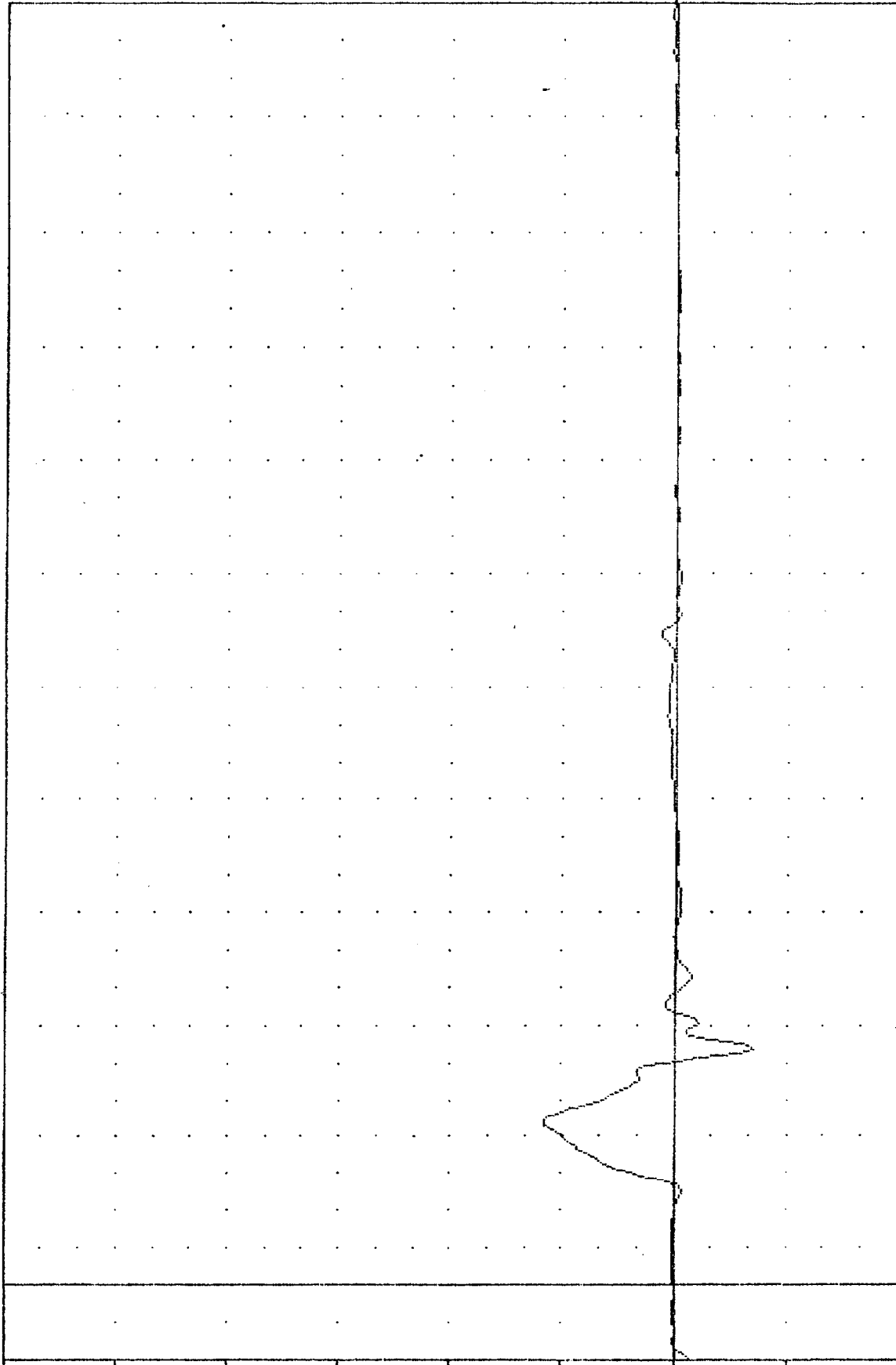
832690000000

T01Y61

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -35.00e 63.13, 58.11 e 43.13

ACCELERATION (G)

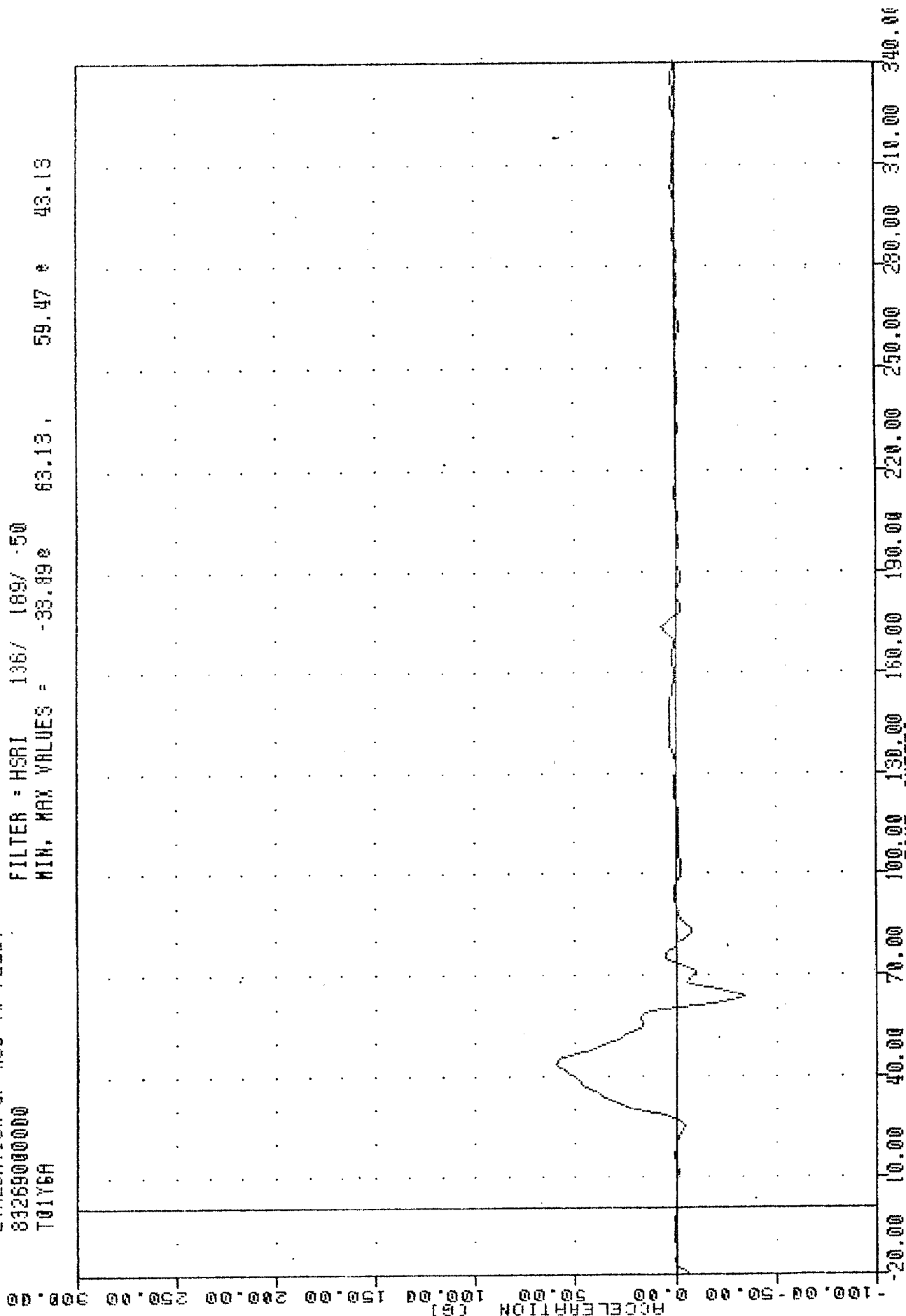


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE ACCELERATION Y AXIS

TAC 830926
 EVALUATION OF MOD VN FLEET
 83269000000
 T01Y6A

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -33.89 63.13 59.47 43.13



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

TPL

830926

EVALUATION OF MOD YW FLEET

832690000000

101761

PLUT DATE

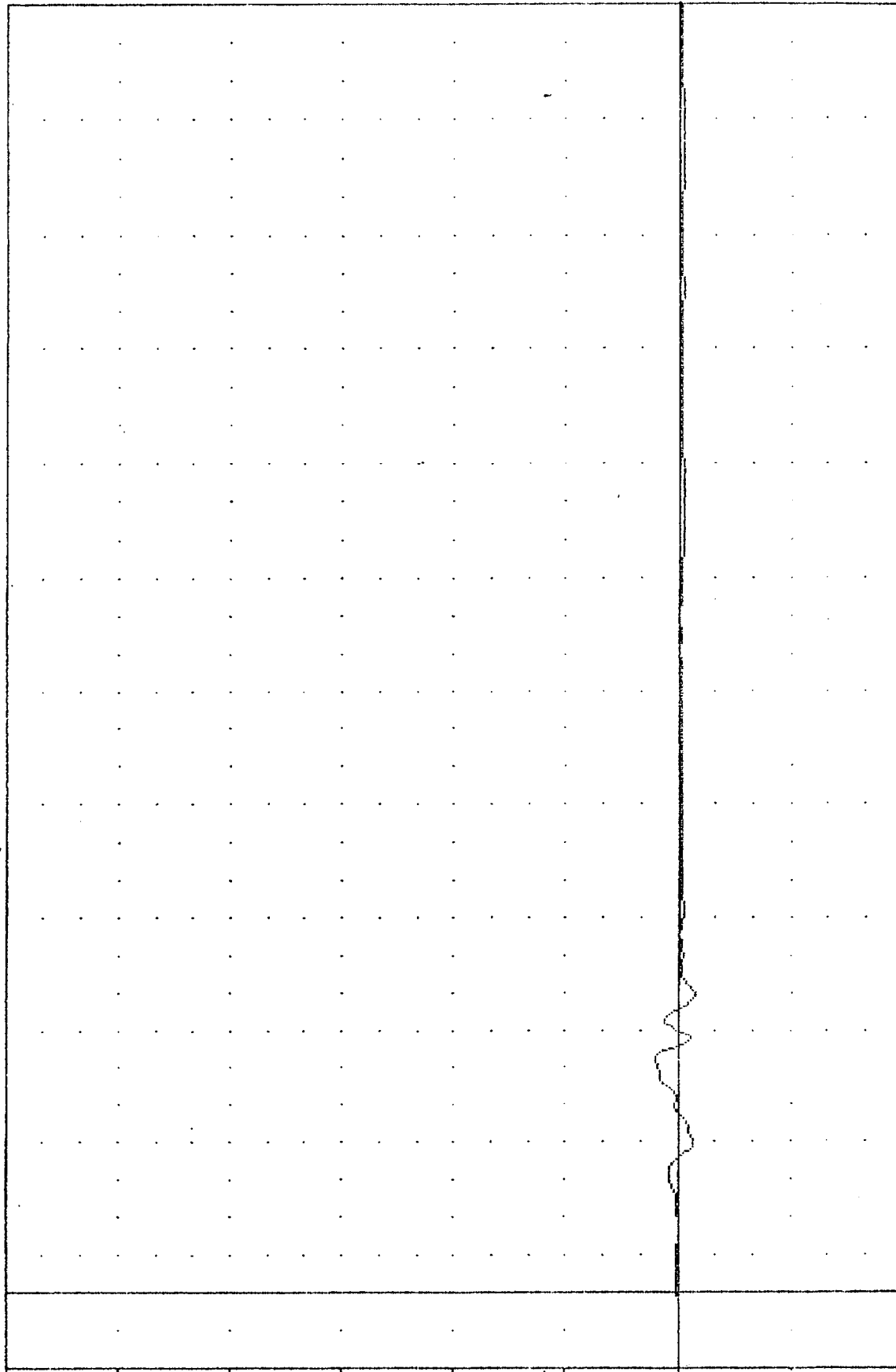
29-SEP-83

12:05:23

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -7.70e 78.75, 10.32 e 61.87

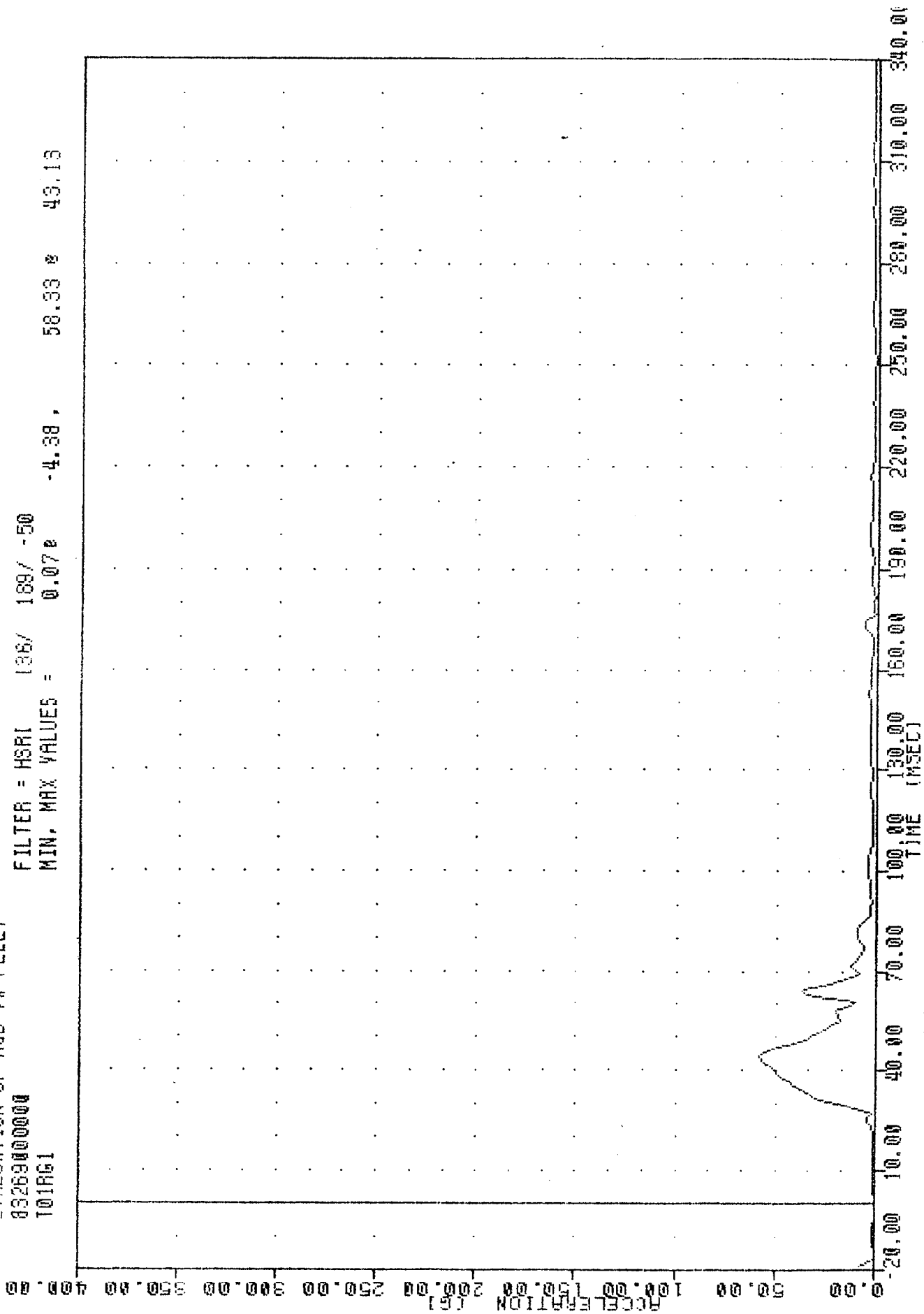
ACCELERATION (G)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DRIVER UPPER SPINE ACCELERATION Z AXIS

TAC, 830926, 830926
 EVALUATION OF MOD VV FLEET
 832690000000
 101RG1
 PLUT DATE 29-SEP-83 12:05:23
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.07e -4.38, 58.33 e 43.13

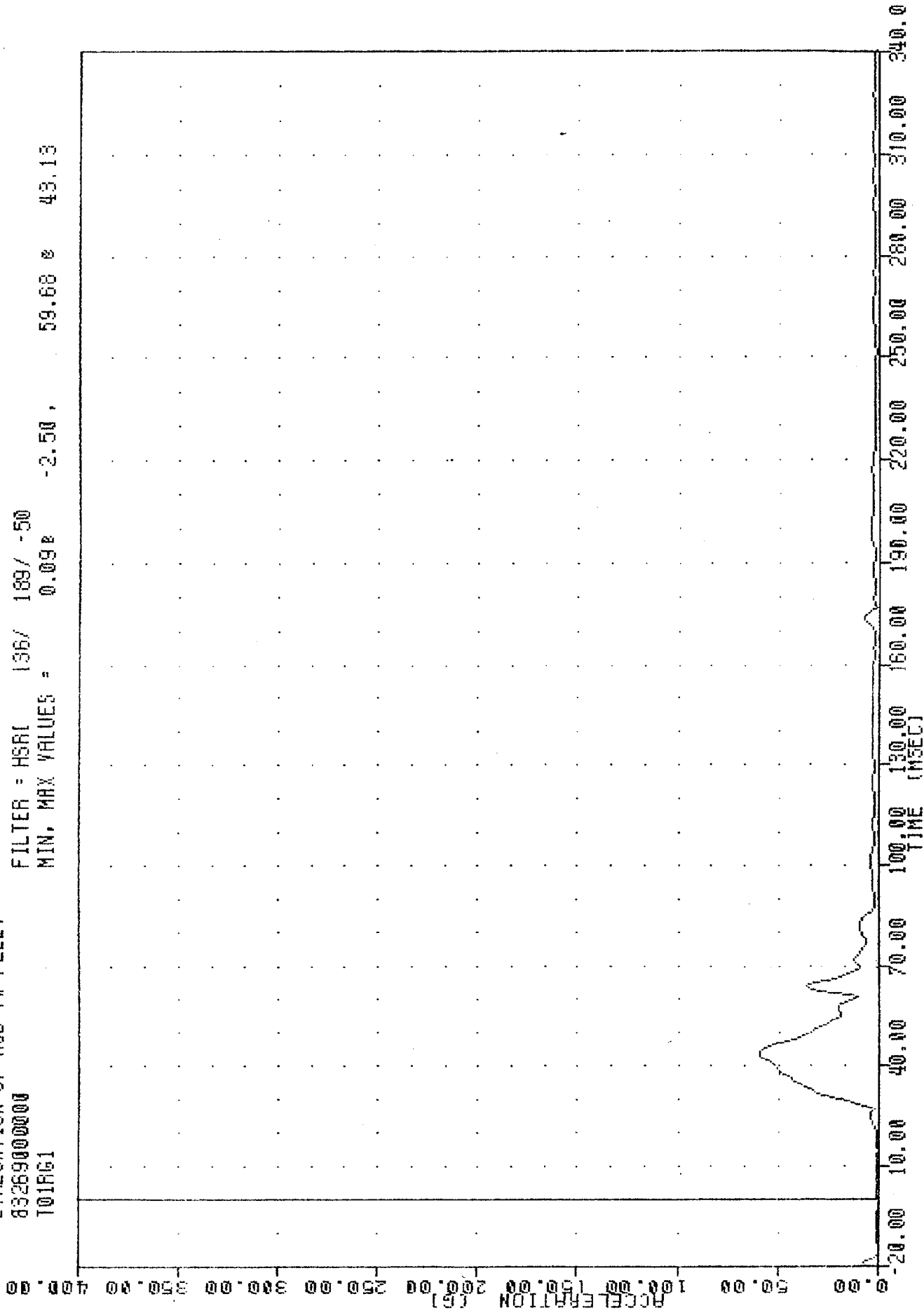


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER UPPER SPINE RESULTANT

TRC
EVALUATION OF MOD VV FLEET
83269000000
T01RG1

830926
PLOT DATE 29-SEP-83 12:06:28

FILTER = HSAI 136/ 189/ -50
MIN, MAX VALUES = 0.09e -2.50 , 59.68 e 43.13

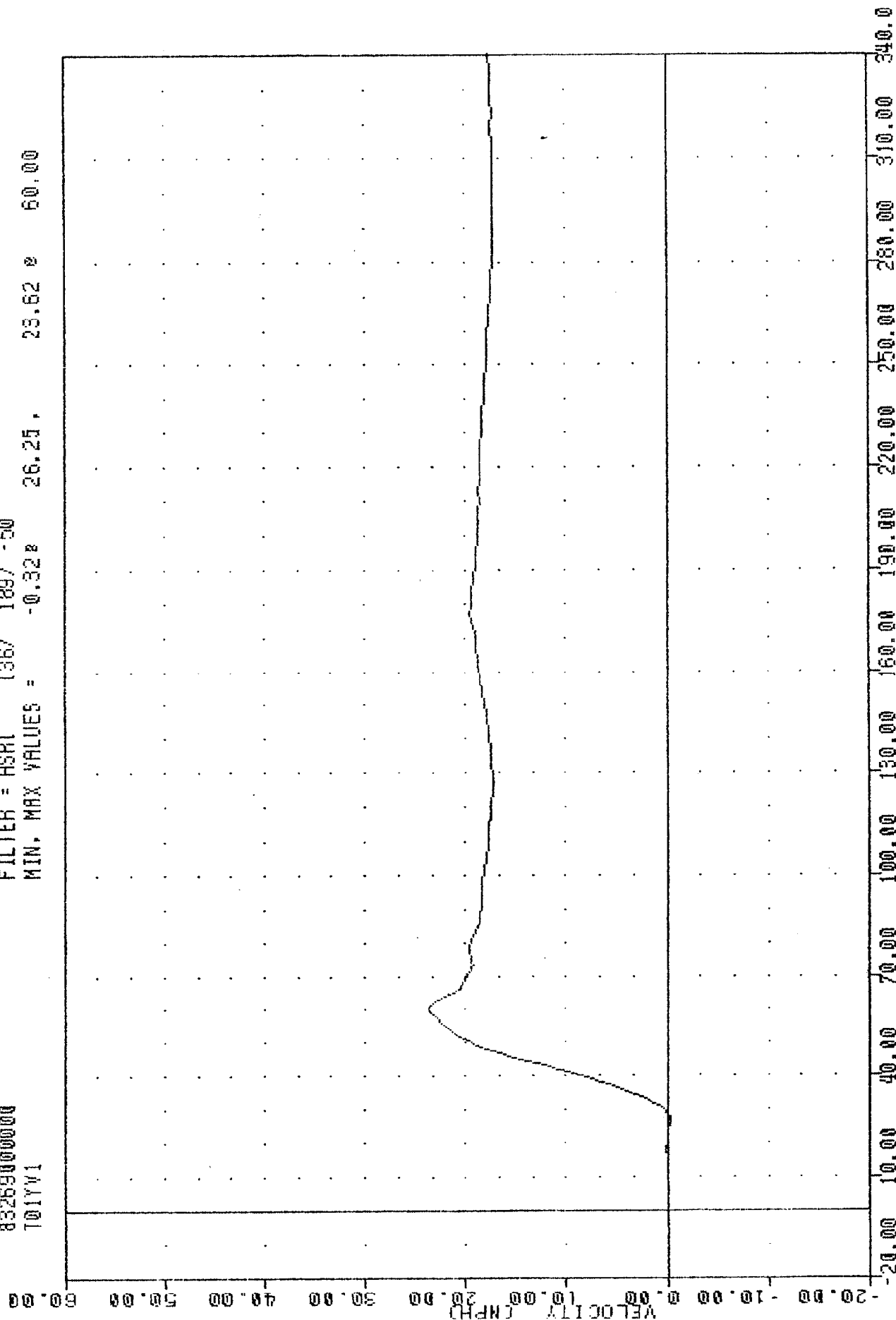


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE RESULTANT USING T01YGA

TRC
EVALUATION OF MOD VW FLEET
83269000000
T01YV1

PLOT DATE 30-SEP-83 08:40:32

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -0.32 26.25 23.62 60.00

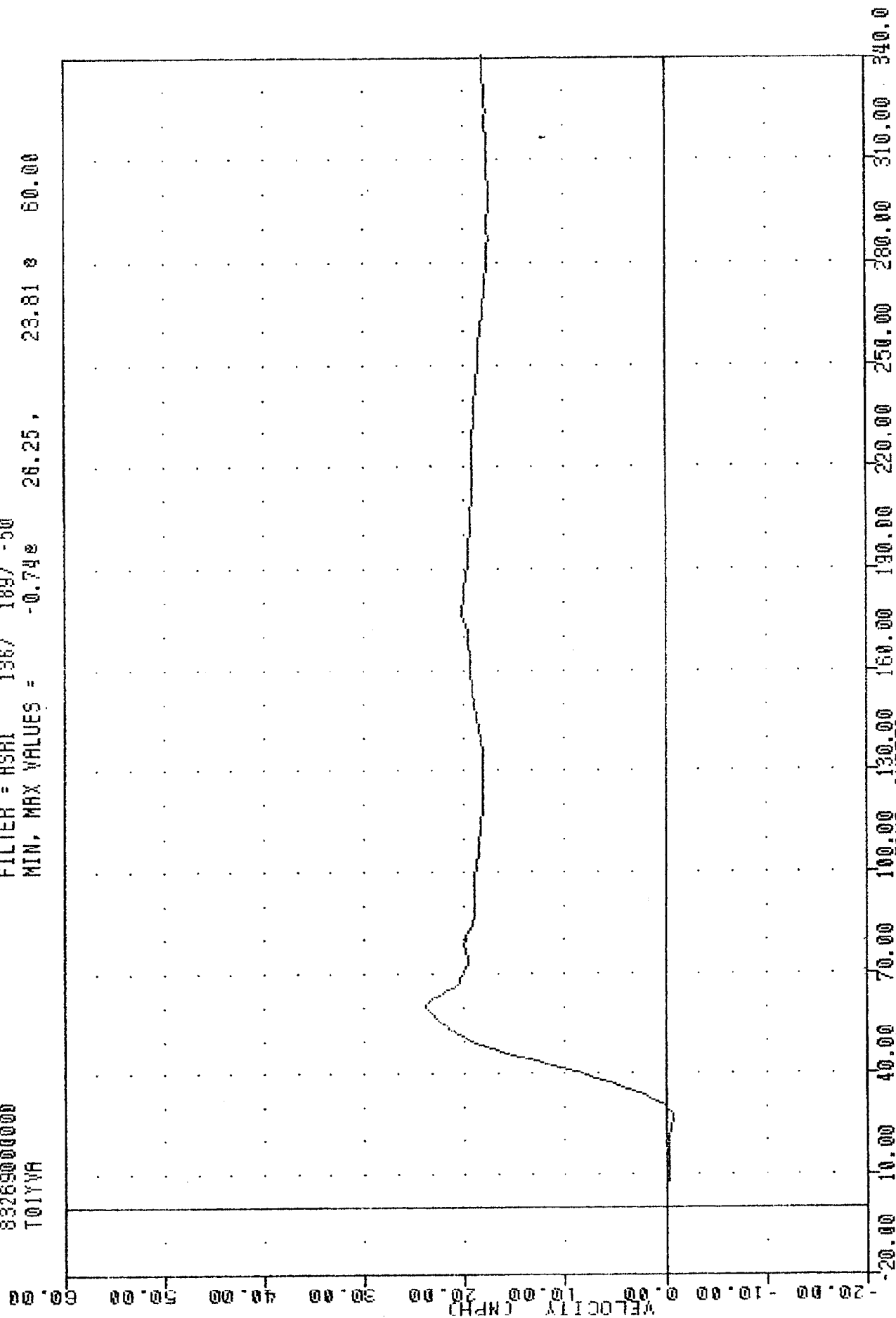


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T01YV1

TRC
EVALUATION OF MOD VW FLEET
83269000000
T01YVA

PLOT DATE 30-SEP-83 08:40:32

FILTER = HSRI 138/ 189/ -50
MIN, MAX VALUES = -0.748 26.25, 23.81 8 60.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T01Y6A

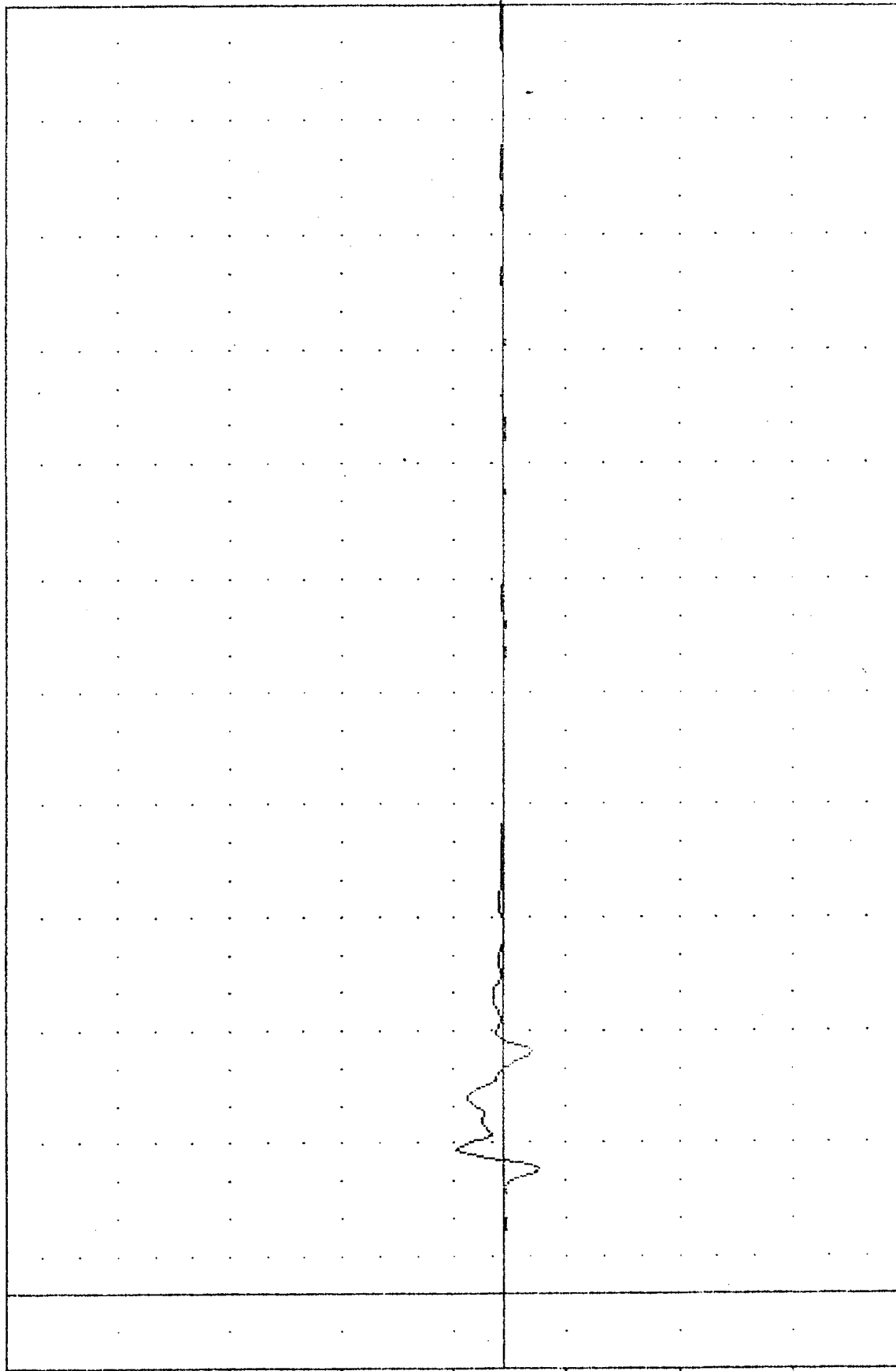
TRC 830926
EVALUATION OF MOD VW FLEET
832620000000
T12XG1

PLOT DATE- 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -27.51e 32.50, 37.89 s 37.50

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

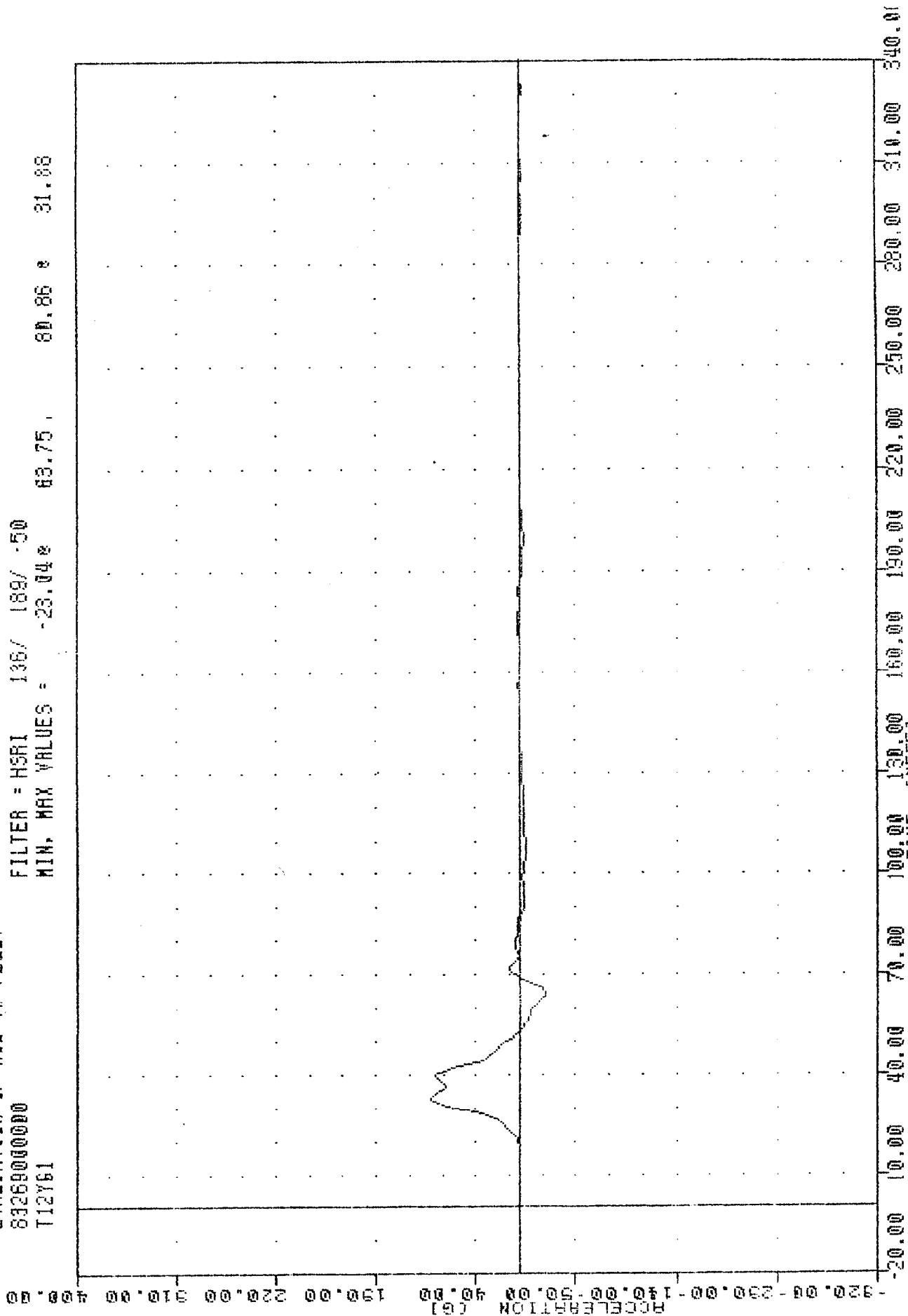
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE ACCELERATION Y AXIS

TAC
EVALUATION OF MOD VN FLEET
83269000000
T12Y61

PLOT DATE-- 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -23.04e 83.75 80.86 e 31.86



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DRIVER LOWER SPINE ACCELERATION Y AXIS

TRC , 830926

EVALUATION OF MCD YW FLEET

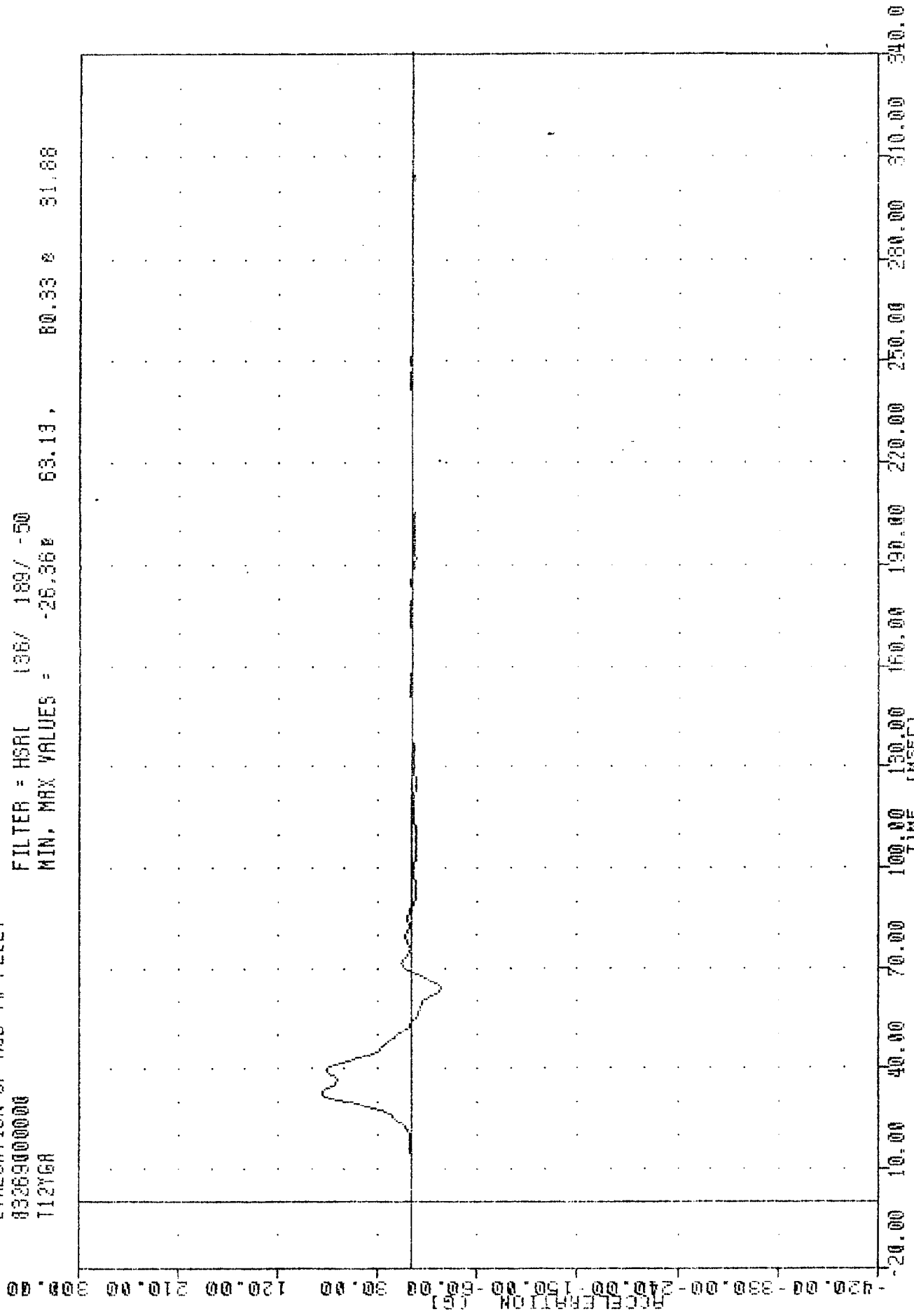
83269000000

112YGR

PLOT DATE: 29-SEP-83 12:05:23

FILTER = HSRL 136/ 189/ -50

MIN, MAX VALUES = -26.38 63.13, 80.33 31.88



TRC 830926 PLOT DATE 29-SEP-83 12:05:23

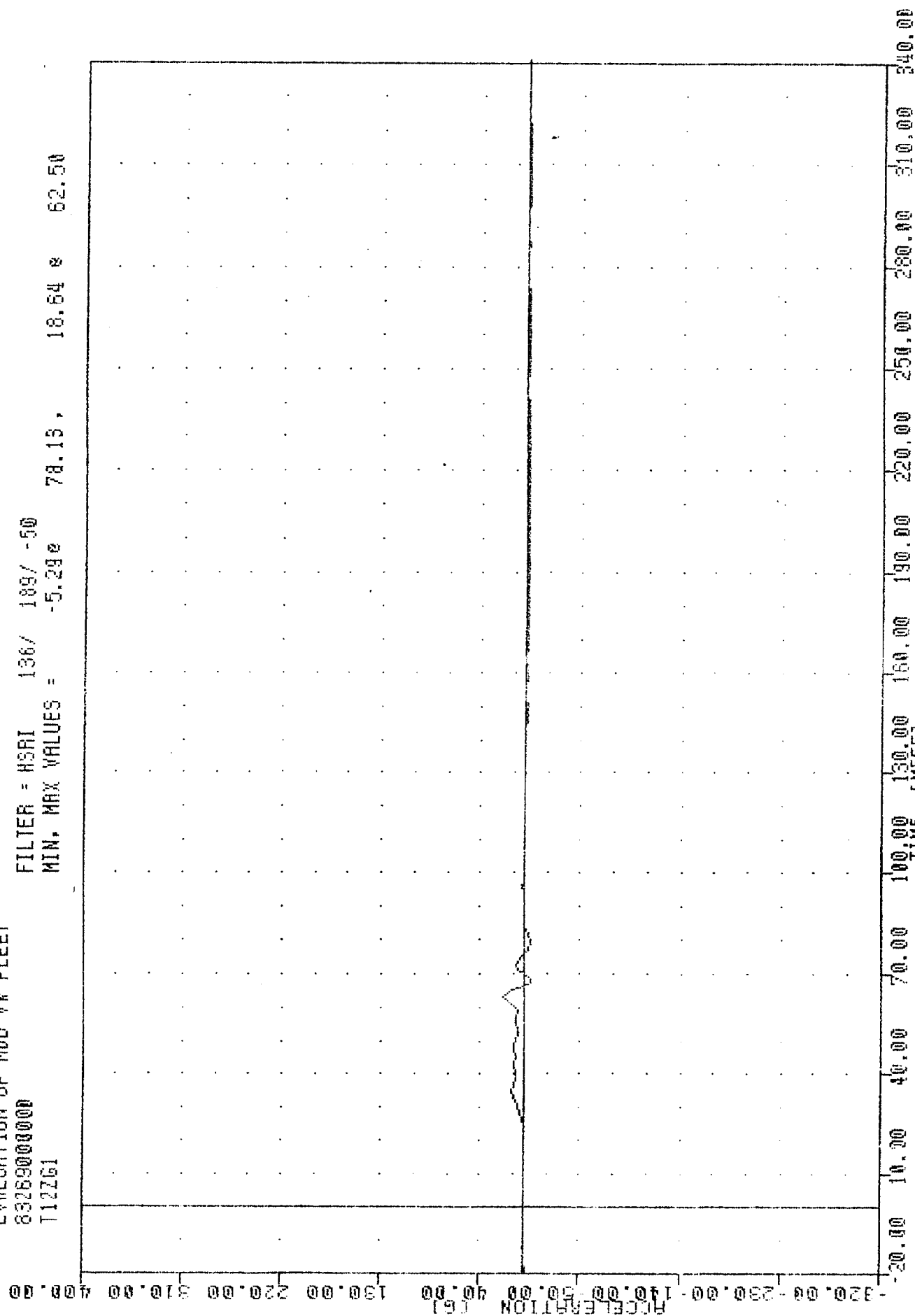
EVALUATION OF MOD VW FLEET

83269000000

T12761

FILTER = HSRI 136/ 109/ -50

MIN. MAX VALUES = -5.29e 78.13, 18.64 s 62.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE ACCELERATION 7 AXIS

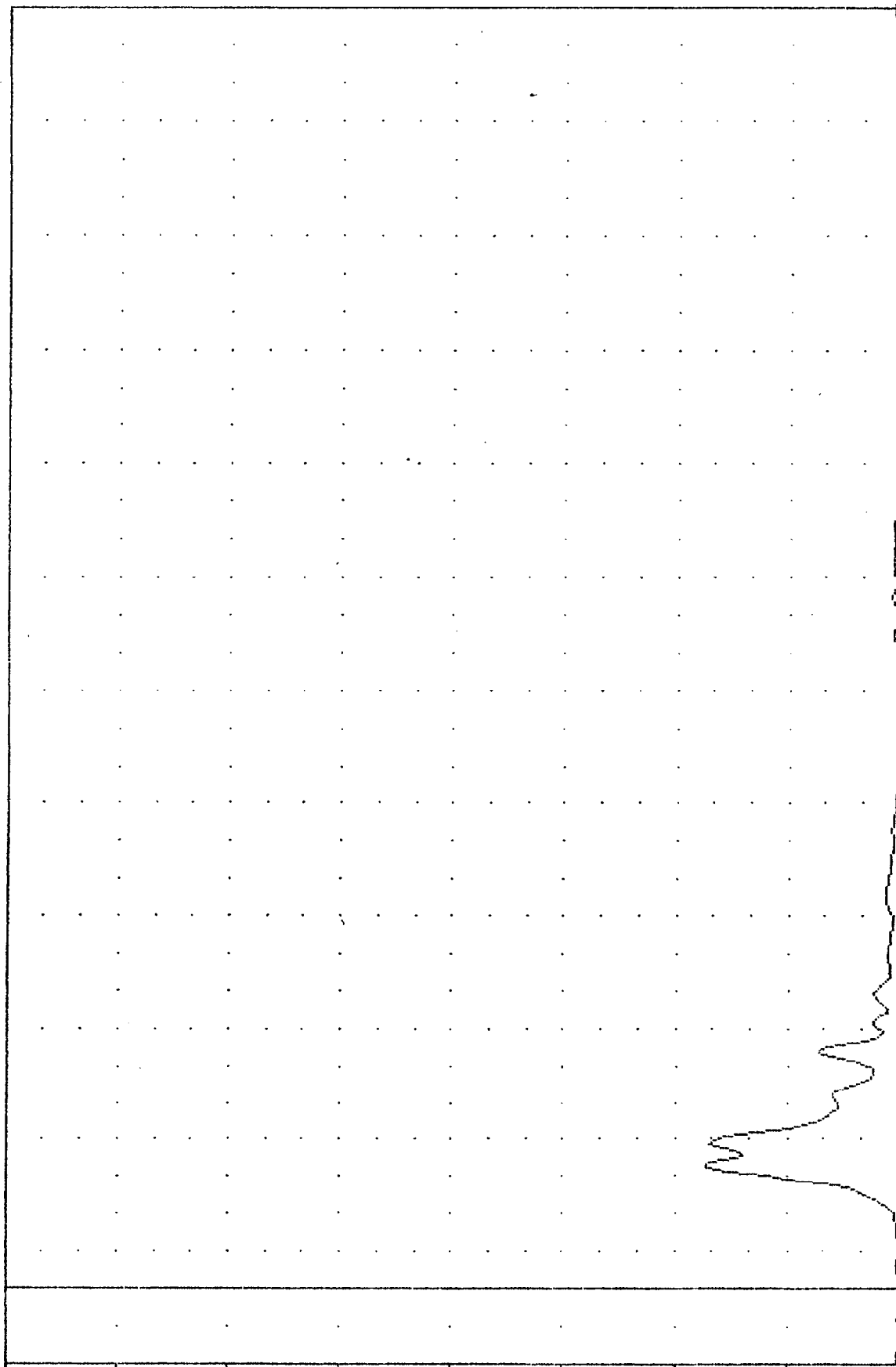
TRC , 830926
 EVALUATION OF MDD VW FLEET
 83269000000
 T12RG1

PLOT DATE- 29-SEP-83 12:05:23

FILTER = HSRI 136/ 109/ -50

MIN. MAX VALUES = 0.12e -15.00, 85.75 e 32.50

ACCELERATION (G)



0.00 50.00 100.00 150.00 200.00 250.00 300.00 350.00 400.00

TIME (MSEC)

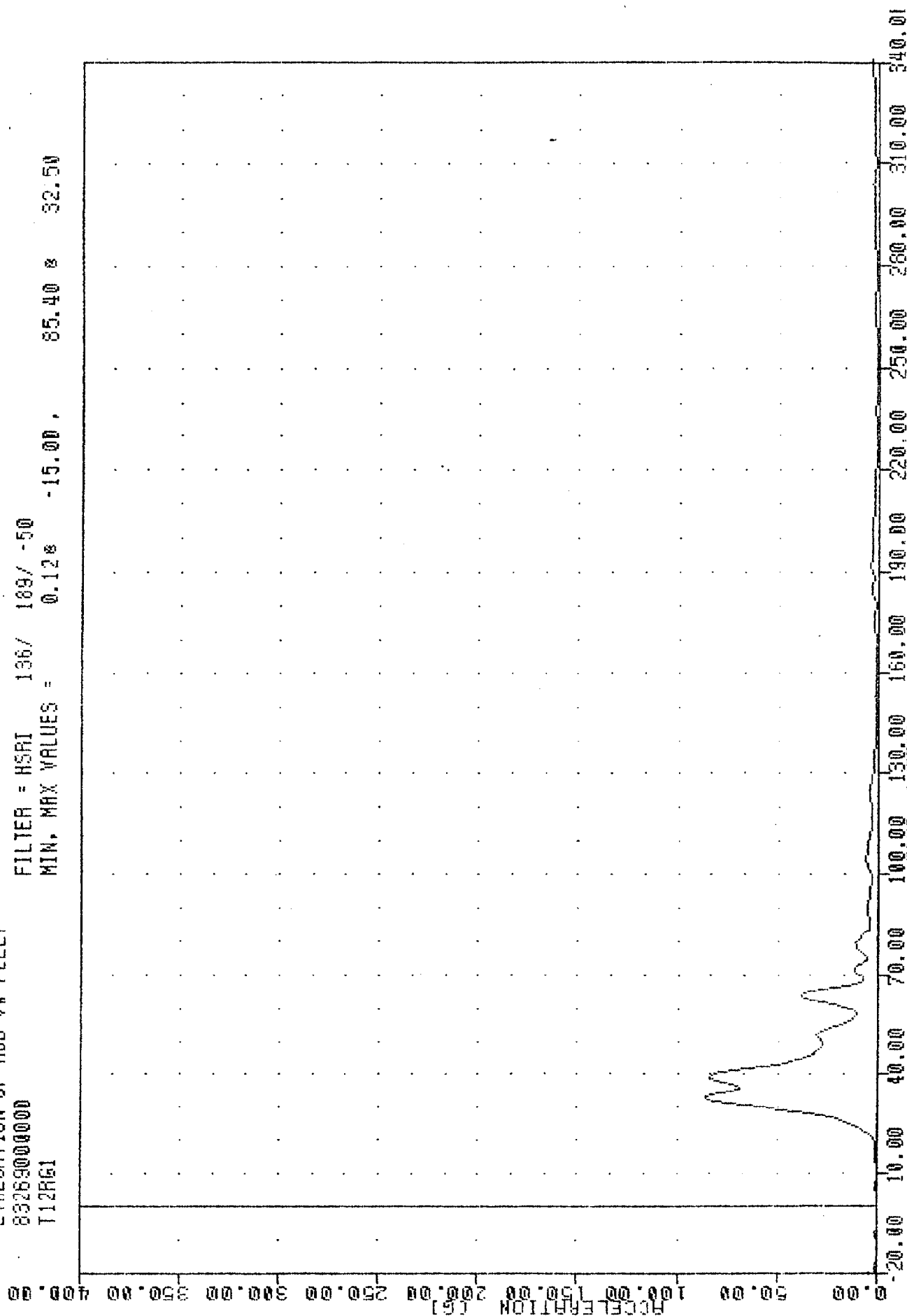
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 NATVR INVR SPINE RESISTANT

TRC
 EVALUATION OF MOD VW FLEET
 83269000000
 T12RG1

PLOT DATE. 29-SEP-83 12:06:28

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = 0.128 -15.00, 85.40 & 32.50



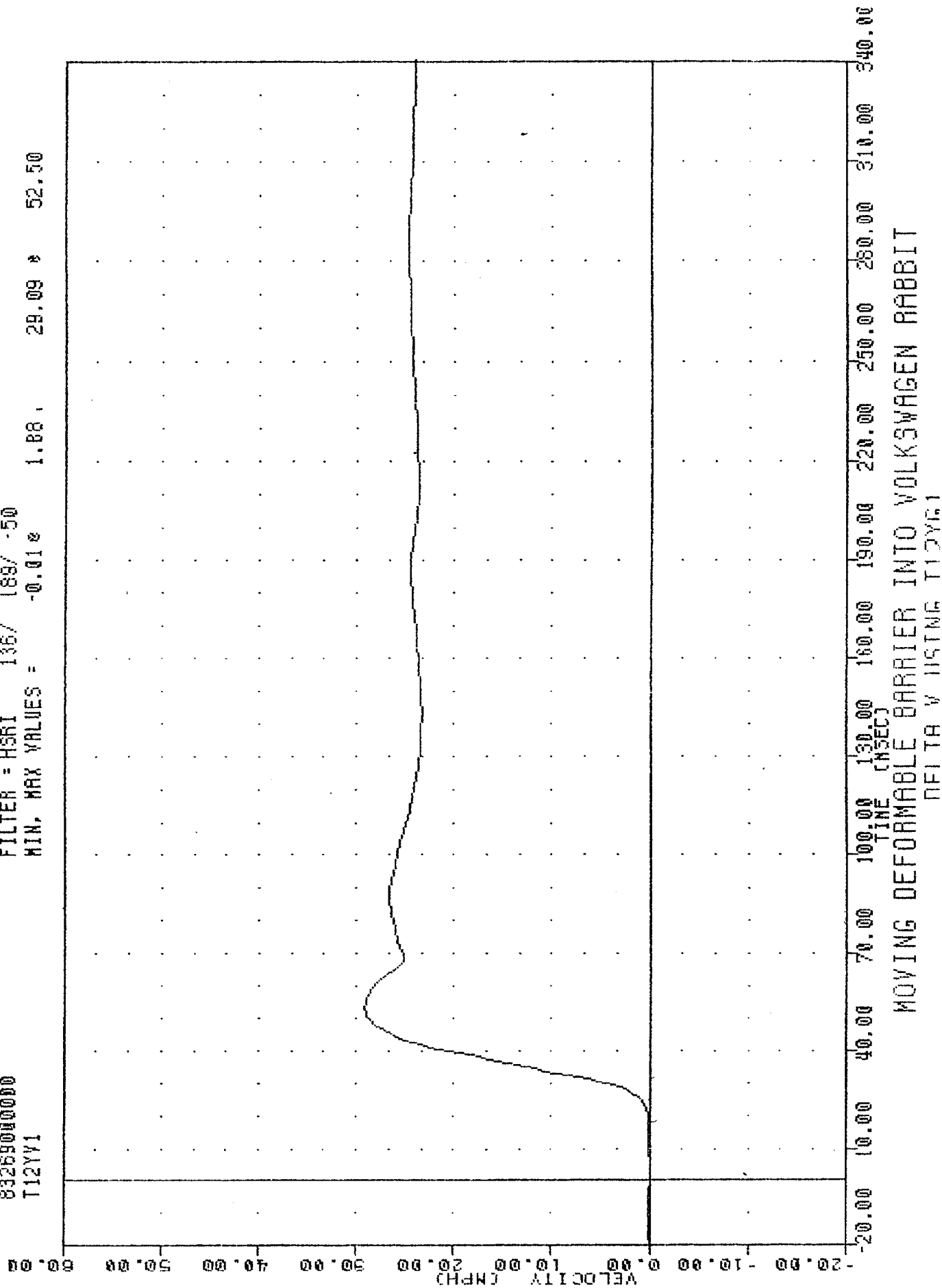
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE RESISTANT USING T12YGA

TRC
EVALUATION OF MOD VN FLEET
83269000000
T12YV1

PLOT DATE-- 30-SEP-83 08:40:32

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.01% 1.88 , 29.09 * 52.50

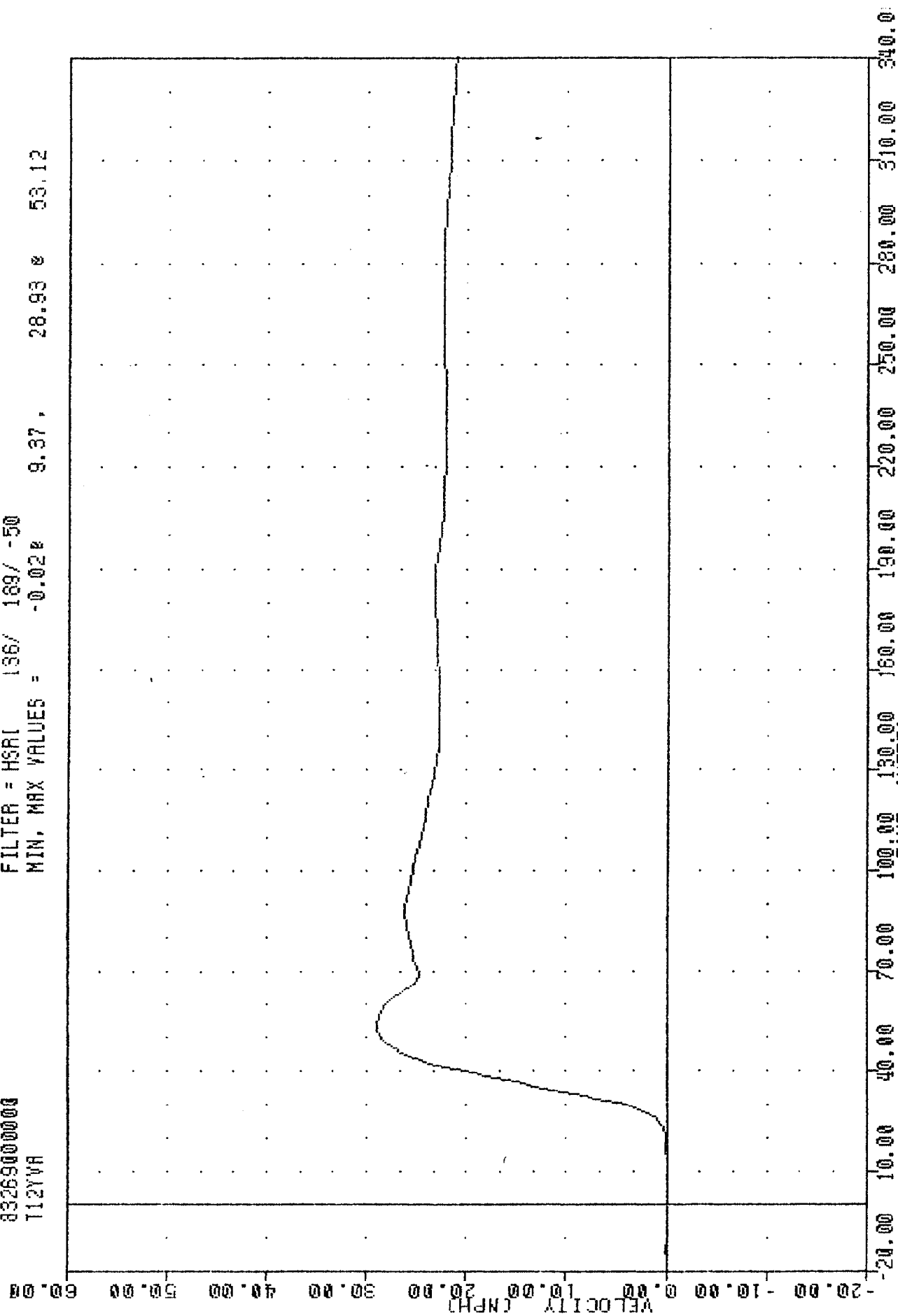


TRC
EVALUATION OF MOD YW FLEET
83269000000
T12YVA

PLOT DATE: 30-SEP-83 08:40:32

FILTER = HSRI 156/ 169/ -50

MIN. MAX VALUES = -0.02 9.37 28.93 53.12



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DIFITA V IISING T12YGA

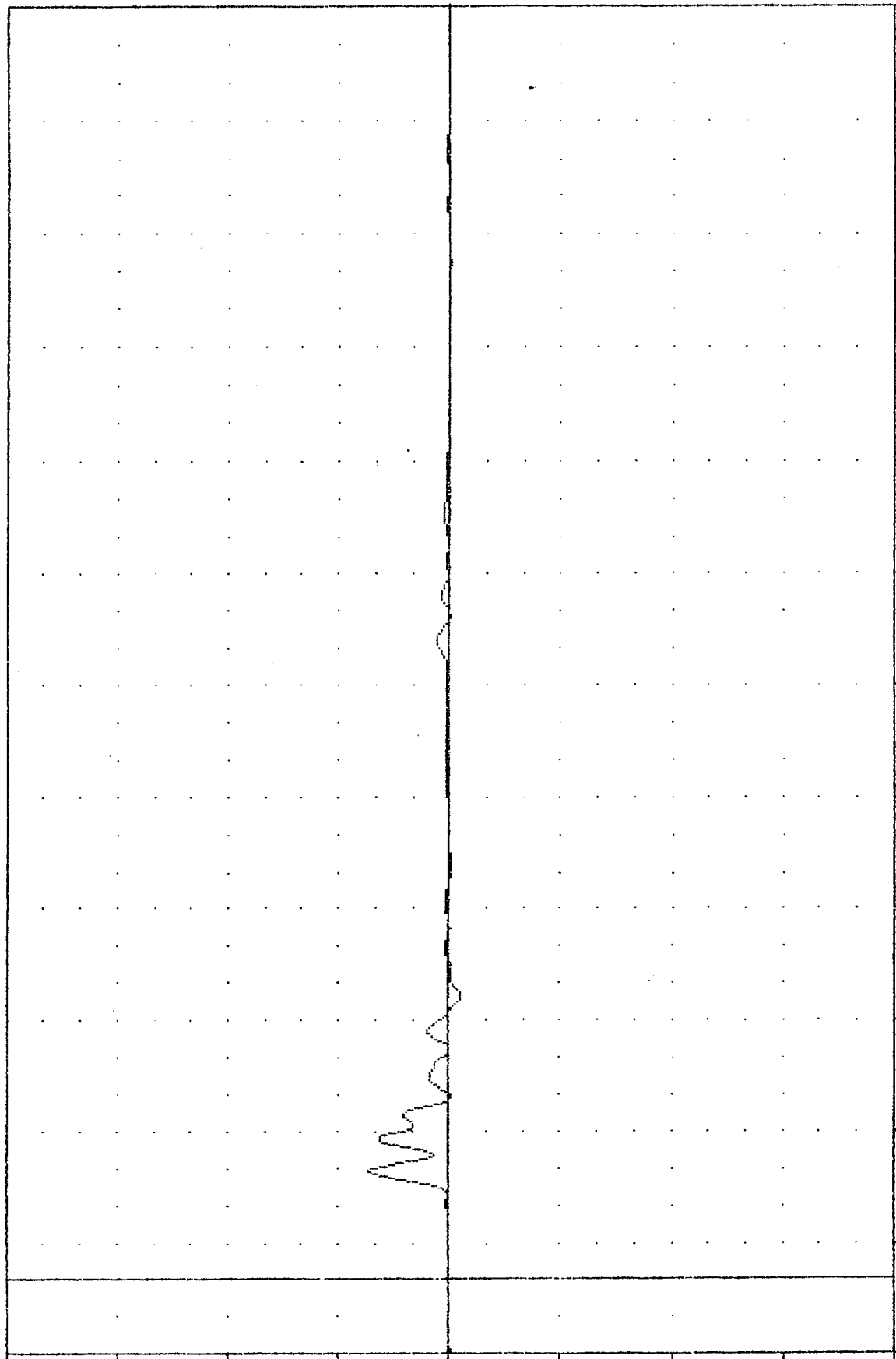
TAC
EVALUATION OF MOD VW FLEET
83269000000
LURAY61

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ .50

MIN, MAX VALUES = -9.87e 76.25 , 65.92 e 28.75

ACCELERATION (G)



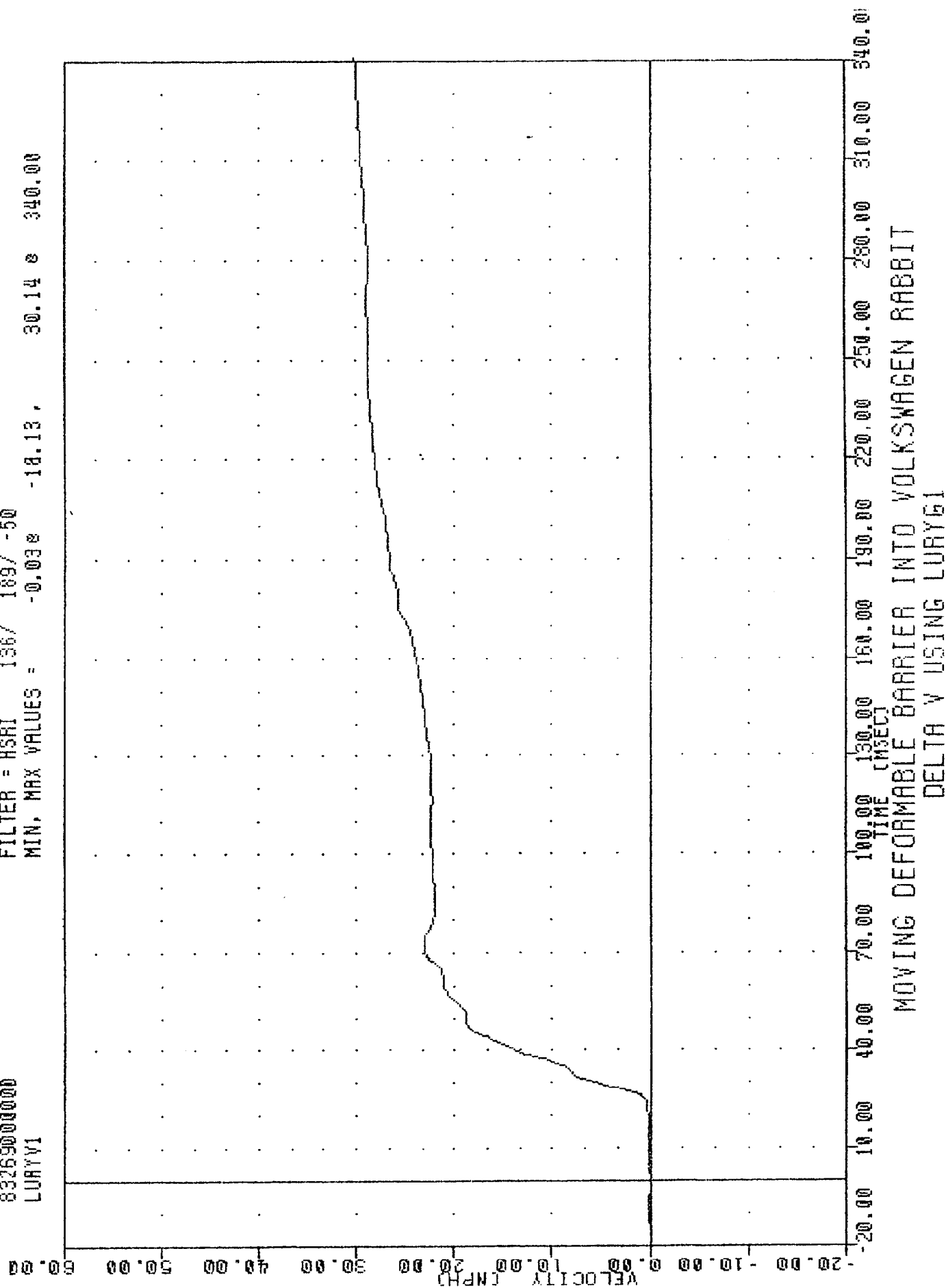
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

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

TRC
EVALUATION OF MOD VW FLEET
832690000000
LURYV1

PLOT DATE 30-SEP-83 00:40:32

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -0.038 -18.13, 30.14 & 340.00



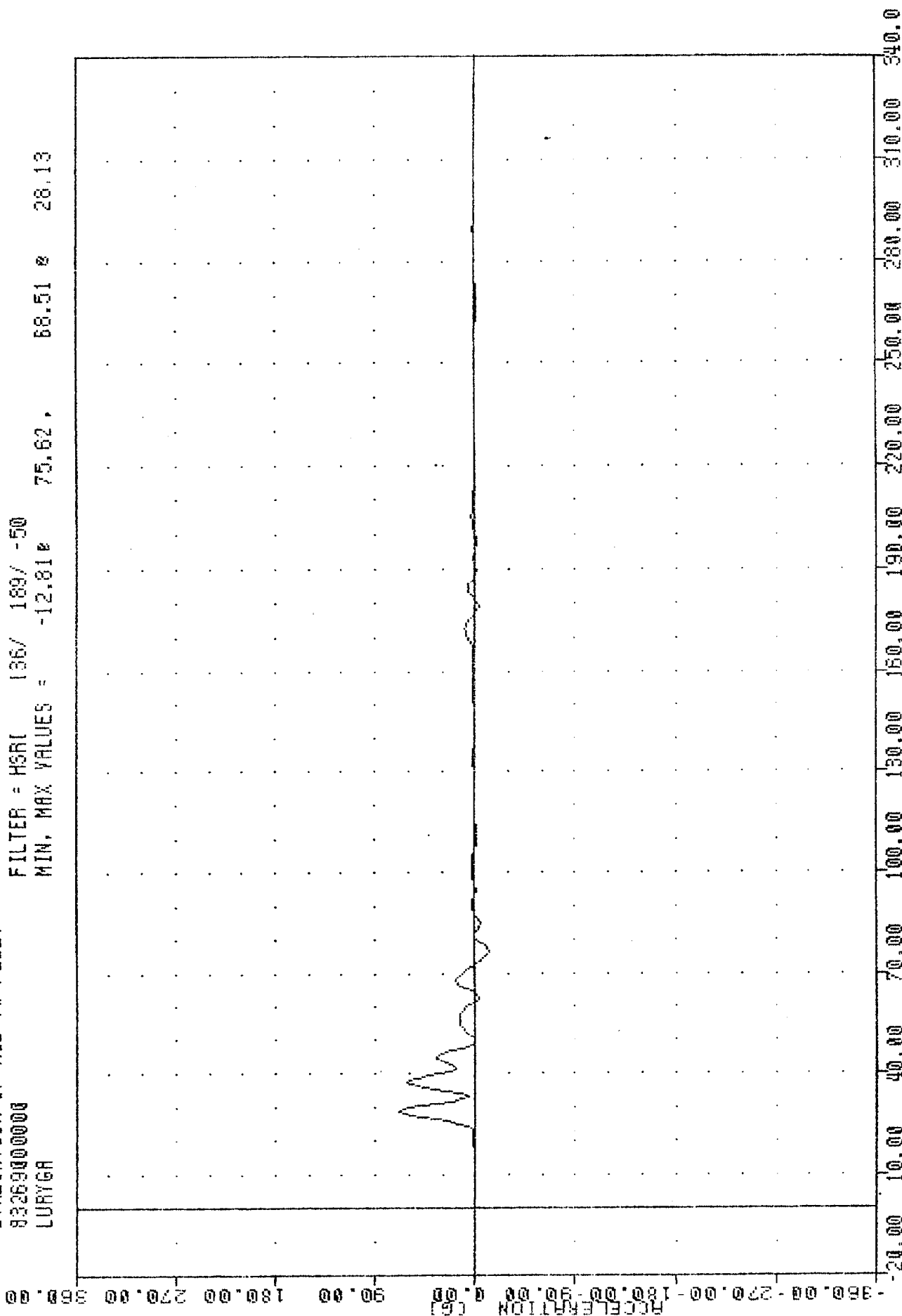
TRC
EVALUATION OF MOD VW FLEET
93269000000
LURYGA

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSR1 136/ 189/ -50

MIN, MAX VALUES = -12.81e 75.62,

68.51 e 28.13



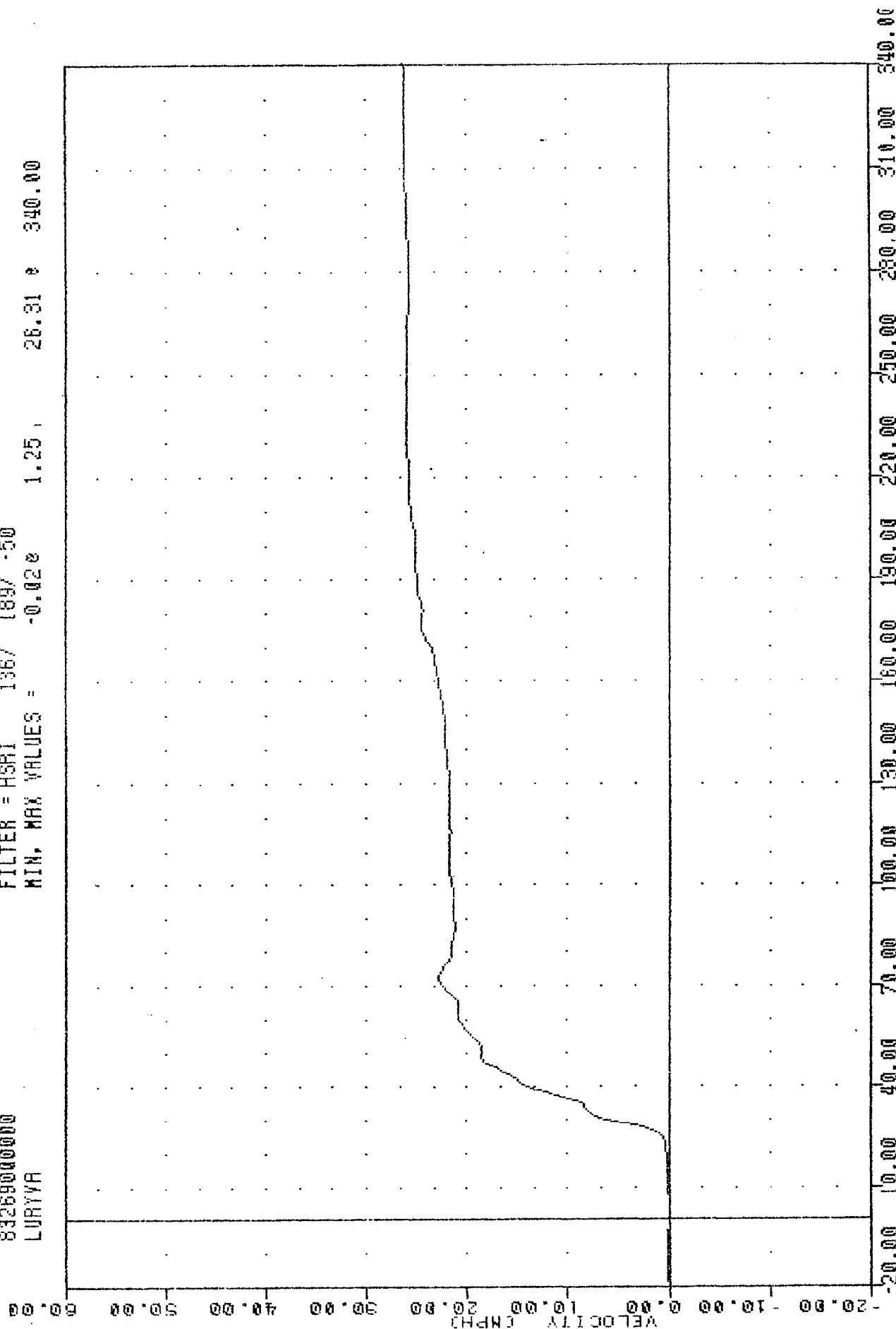
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT UPPER RTR ACCELERATION -2 Y AXIS

TAC
 EVALUATION OF MOD VW FLEET
 83269000000
 LURYVA

PLOT DATE 30-SEP-83 08:40:32

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.020 1.25 26.31 340.00

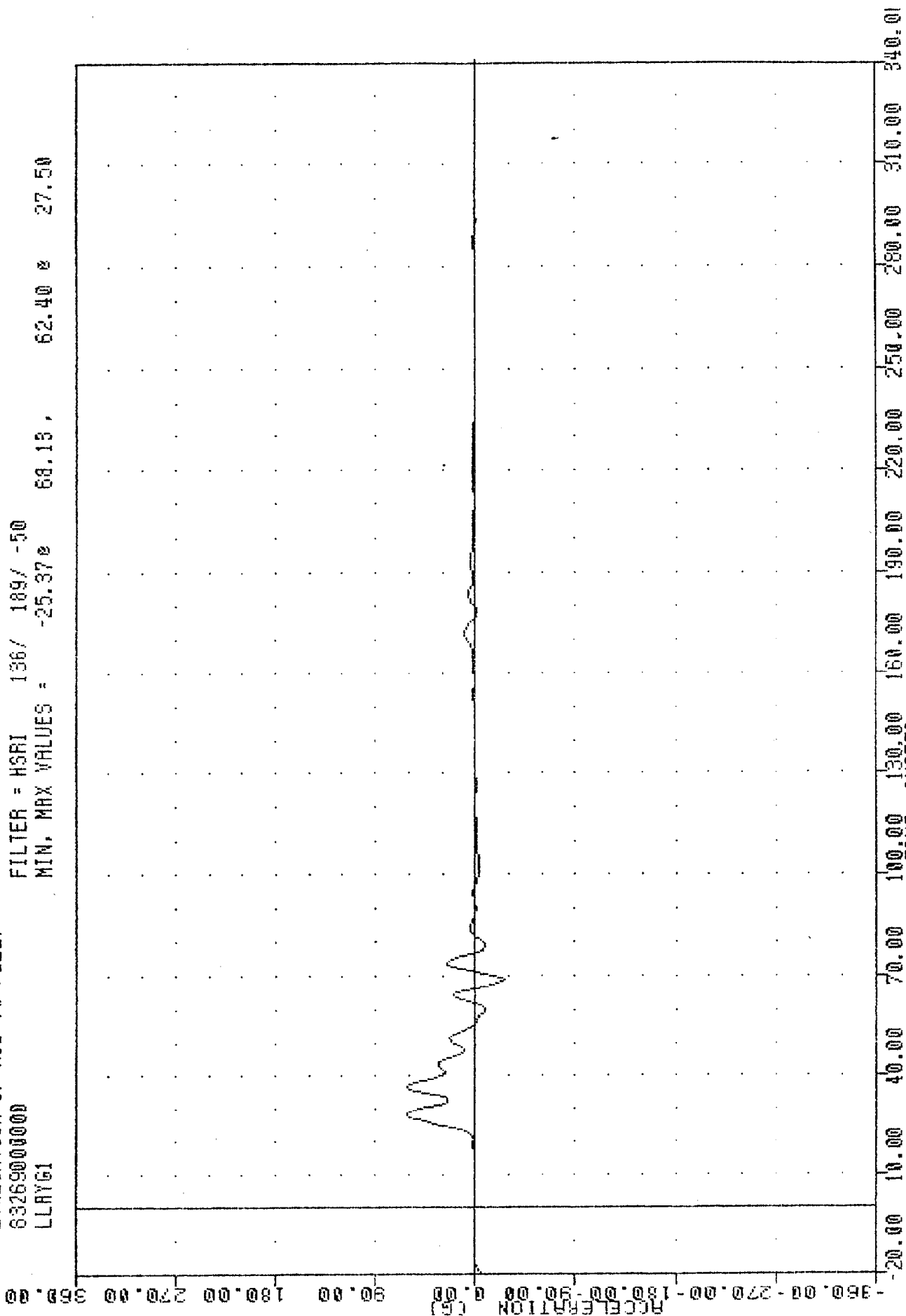


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURYGA

TRC
EVALUATION OF MOD VW FLEET
63269000000
LLAYG1

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -25.37e 68.13, 62.40 e 27.50



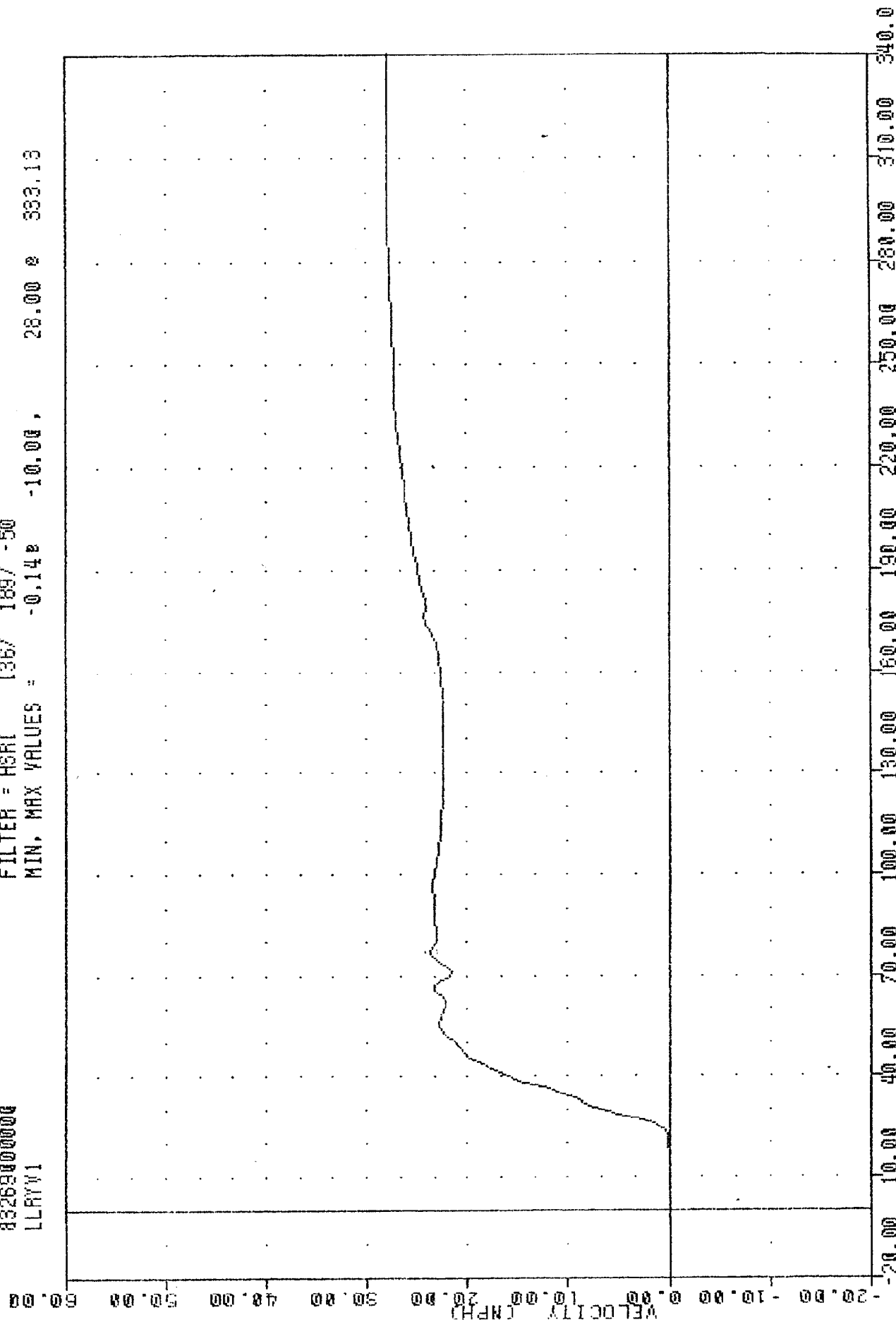
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT LOWER RIB ACCELERATION Y AXIS

TRC , 830926
 EVALUATION OF MOD YW FLEET
 83269000000
 LLYYV1

PLOT DATE 30-SEP-83 08:40:32

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -0.142 -10.00, 28.00 333.13

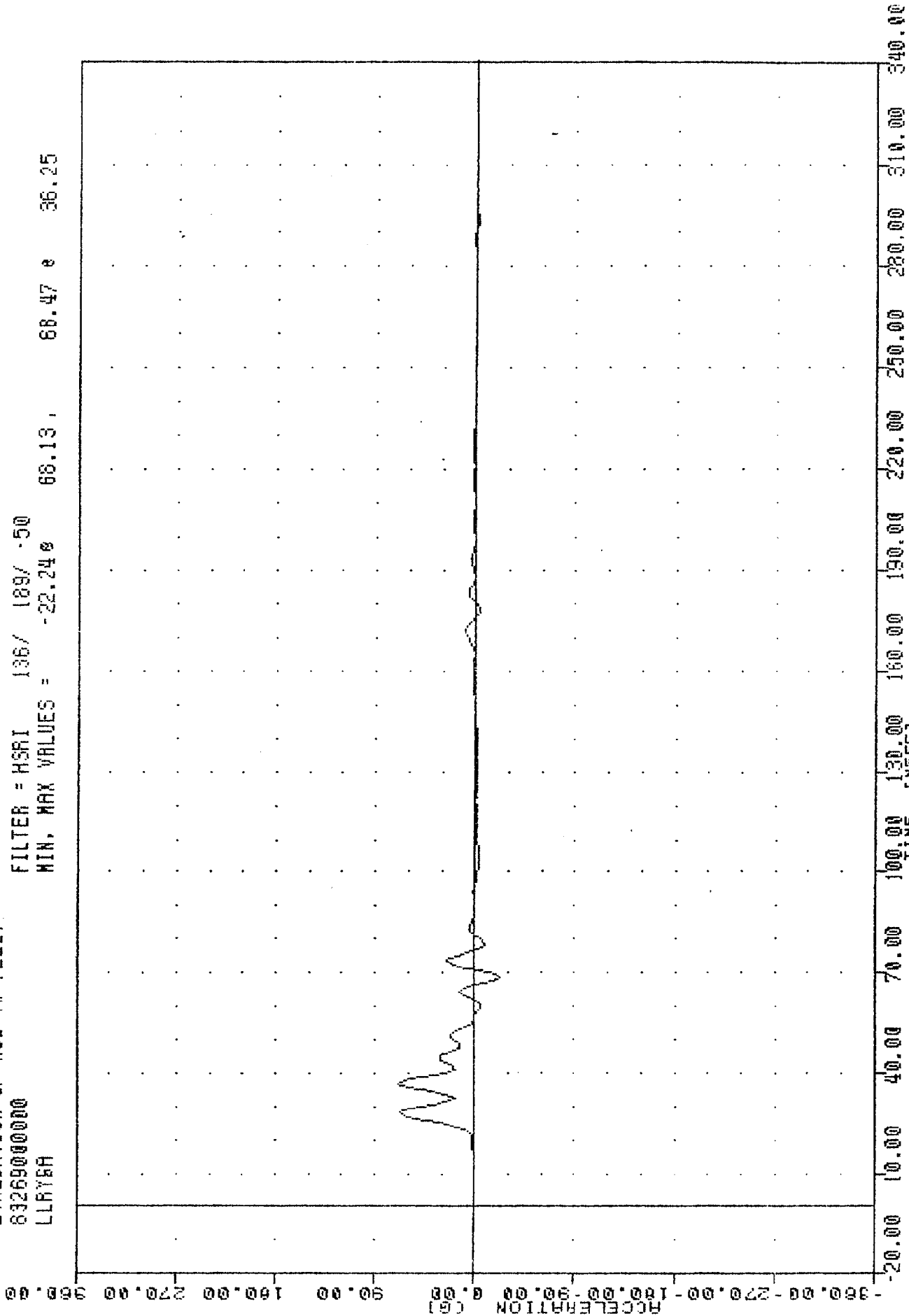


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LLYYV1

TAC 830926
 EVALUATION OF MOD VV FLEET
 83269000000
 L1RY5H

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ .50
 MIN, MAX VALUES = -22.240 68.13 , 68.47 e 36.25

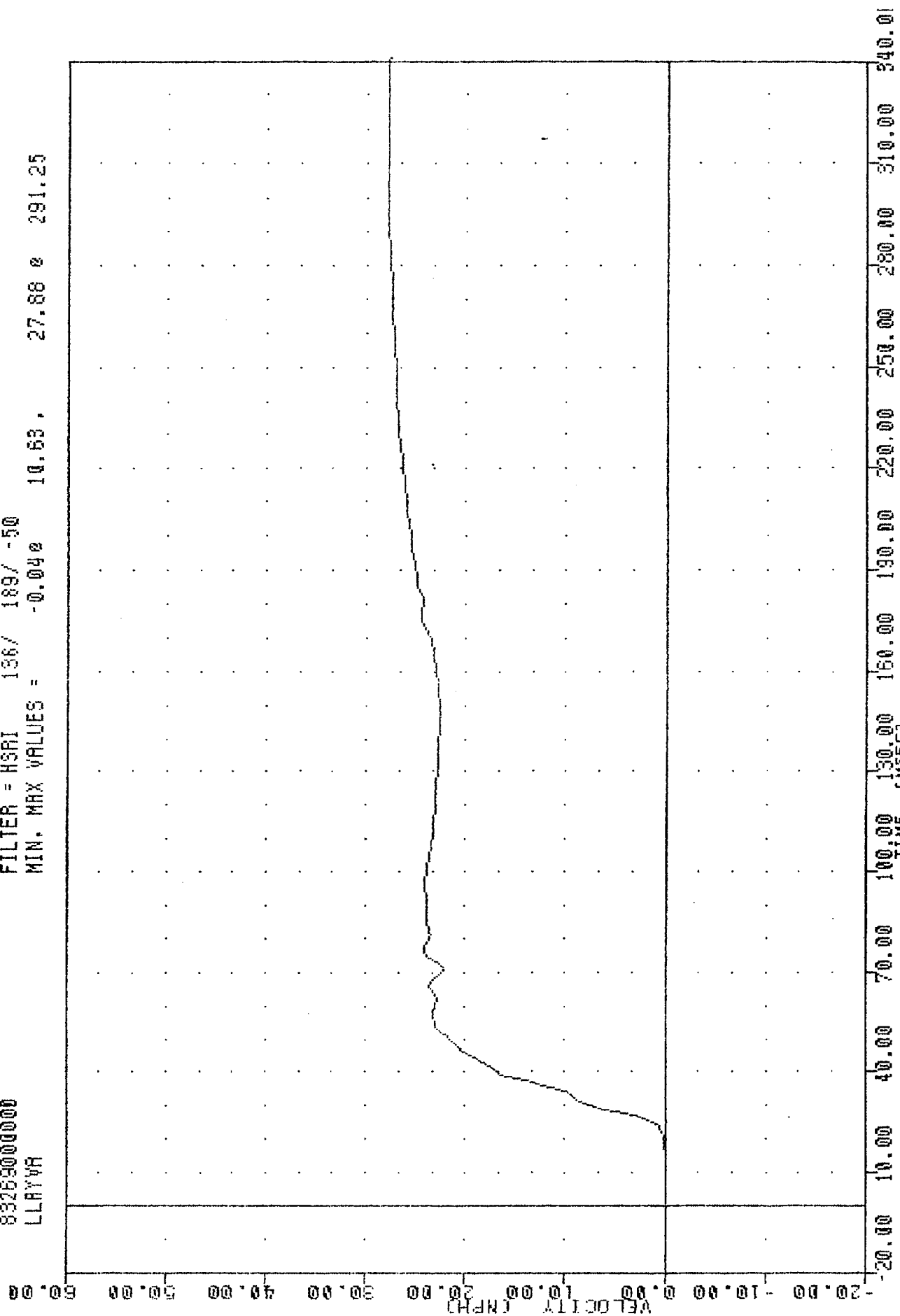


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT LOWER RIG ACCELERATION -2 Y AXIS

TRC 830926
 EVALUATION OF MDD VW FLEET
 83269000000
 LLYVA

PLOT DATE 30-SEP-83 08:40:32

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.040 10.63, 27.88 & 291.25



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LLYVA

TRC , 830926 PLOT DATE 29-SEP-83 12:04:12

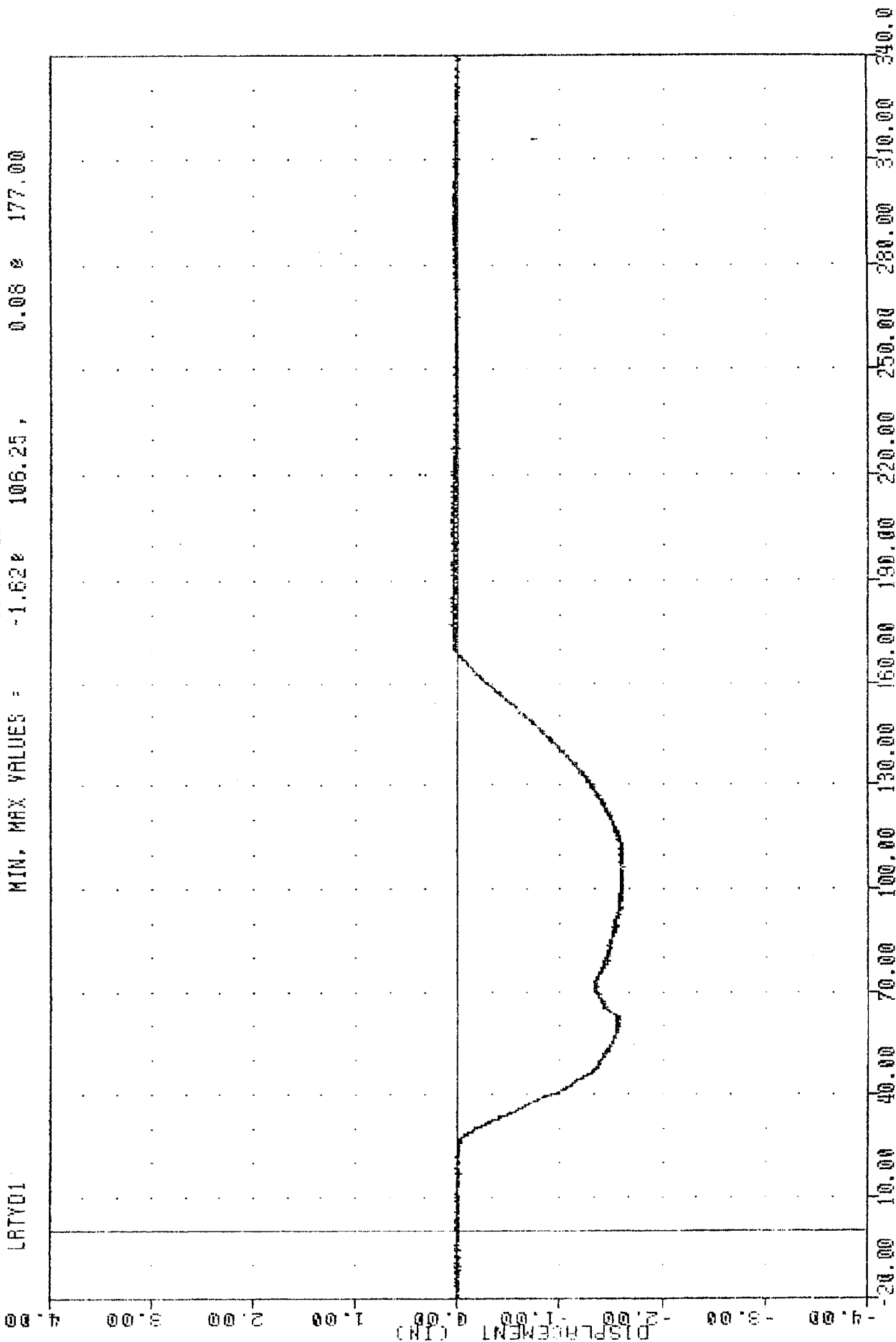
EVALUATION OF MOD YW FLEET

83269000000

LRTYD1

FILTER = ALFF 1650/ 5217/ -40

MIN. MAX VALUES = -1.62e 106.25, 0.08 e 177.00

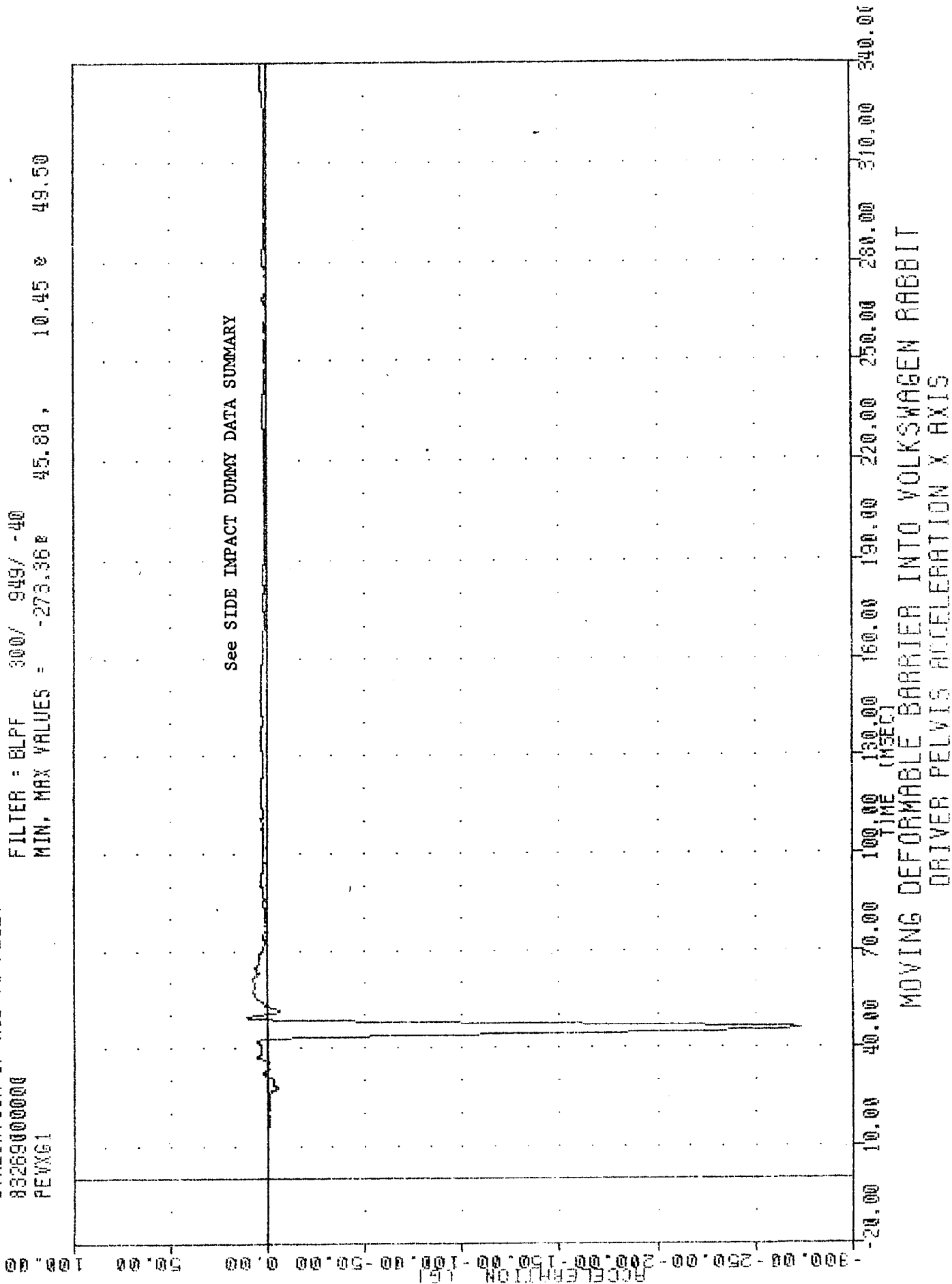


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT RTA TO SPINE DISPLACEMENT INCHES

TRC 830928
EVALUATION OF MOD VW FLEET
8326900000
PEVXG1

PLOT DATE 11-OCT-83 10:44:26

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -273.36 45.88, 10.45 49.50

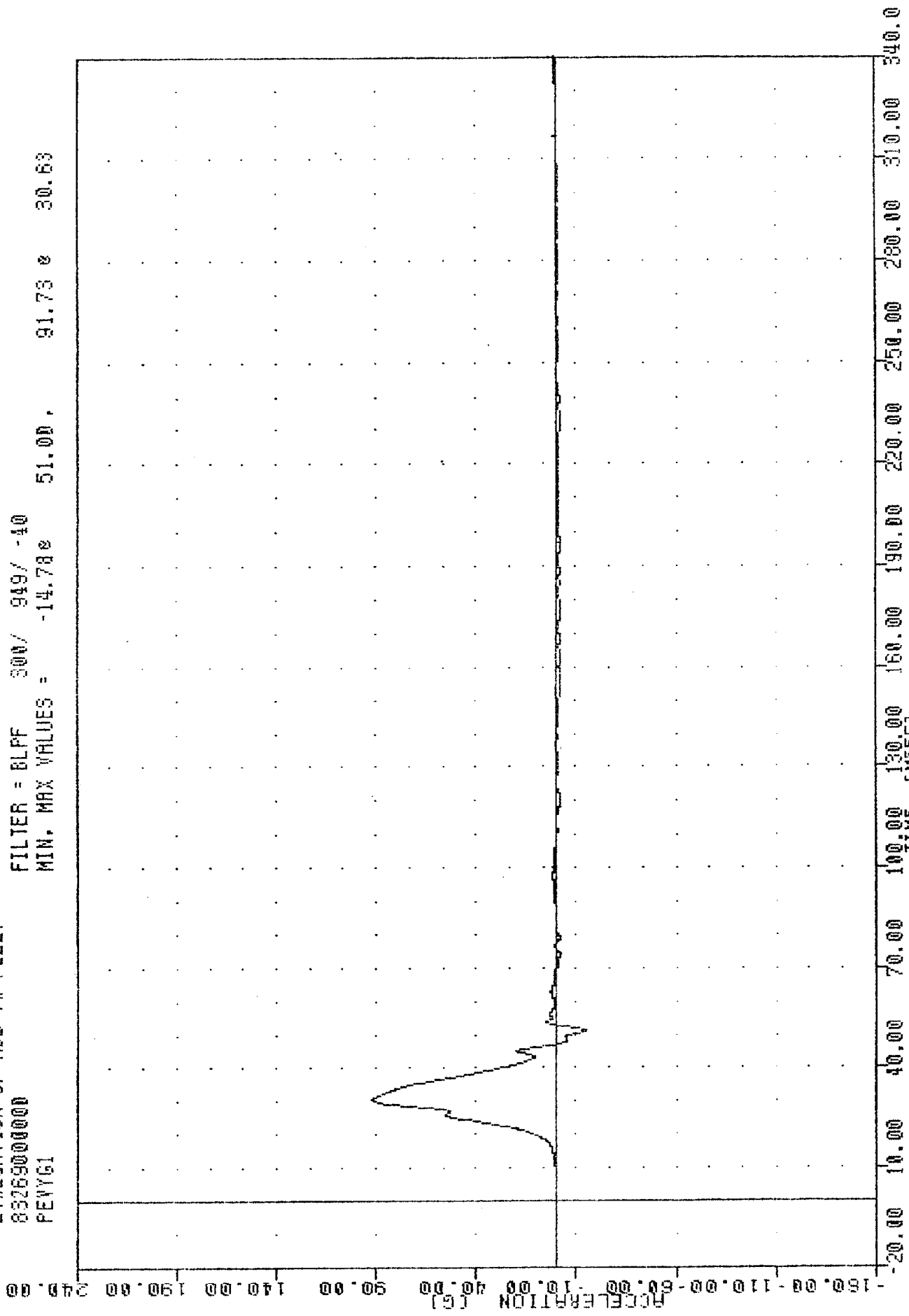


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS ACCELERATION X AXIS

TRC
EVALUATION OF MDD VW FLEET
83269000000
PEVY61

PLOT DATE: 29-SEP-83 12:04:12

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -14.78% 51.00, 91.73% 30.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS ACCELERATION Y AXIS

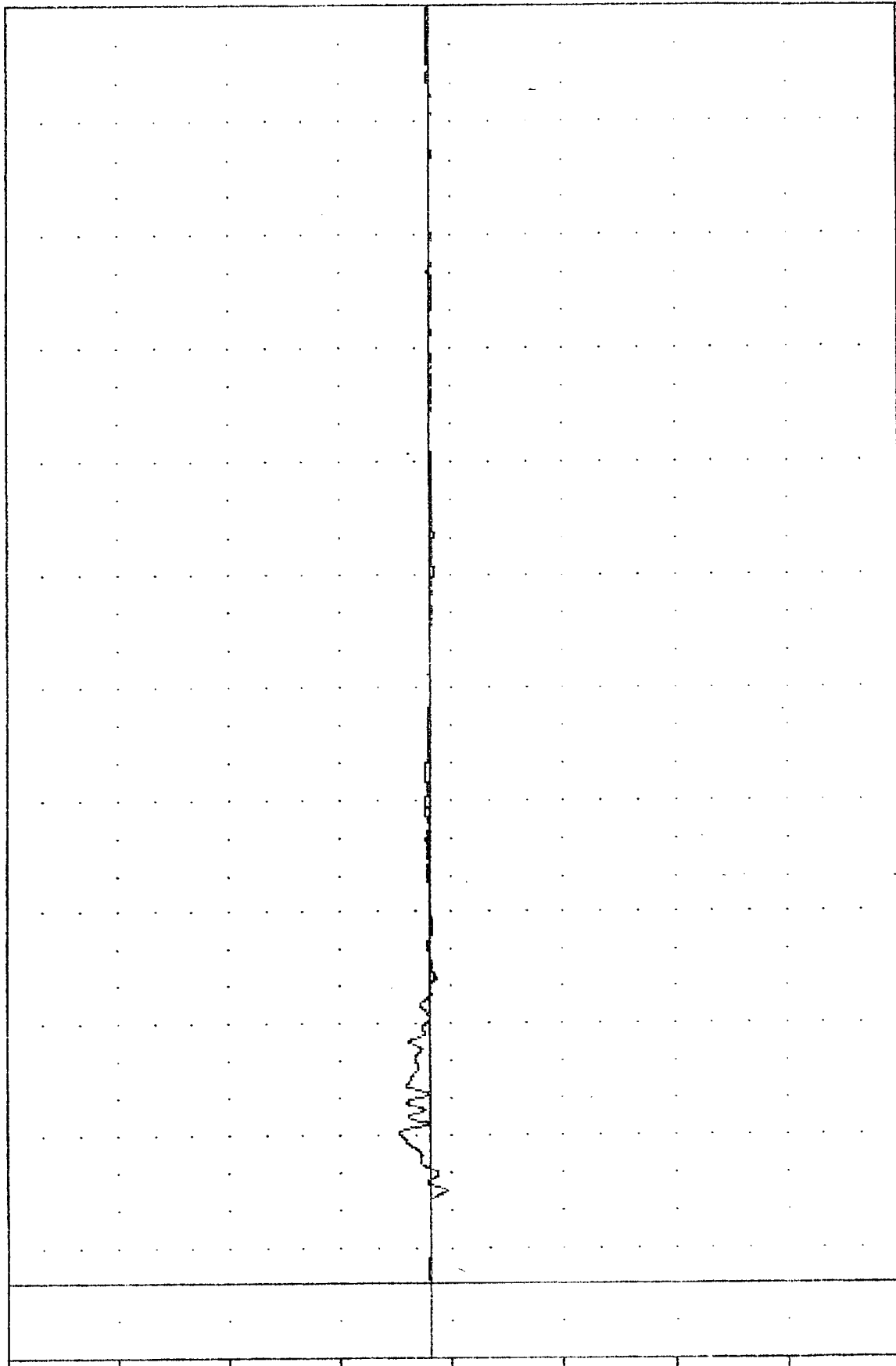
TAC
EVALUATION OF MOD VN FLEET
83269000000
PEVZ61

PLOT DATE 29-SEP-83 12:04:12

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -7.52e 25.00 13.76 e 40.50

ACCELERATION [G]



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

TRC 830926 PLOT DATE 29-SEP-83 12:04:12

EVALUATION OF MOD VW FLEET

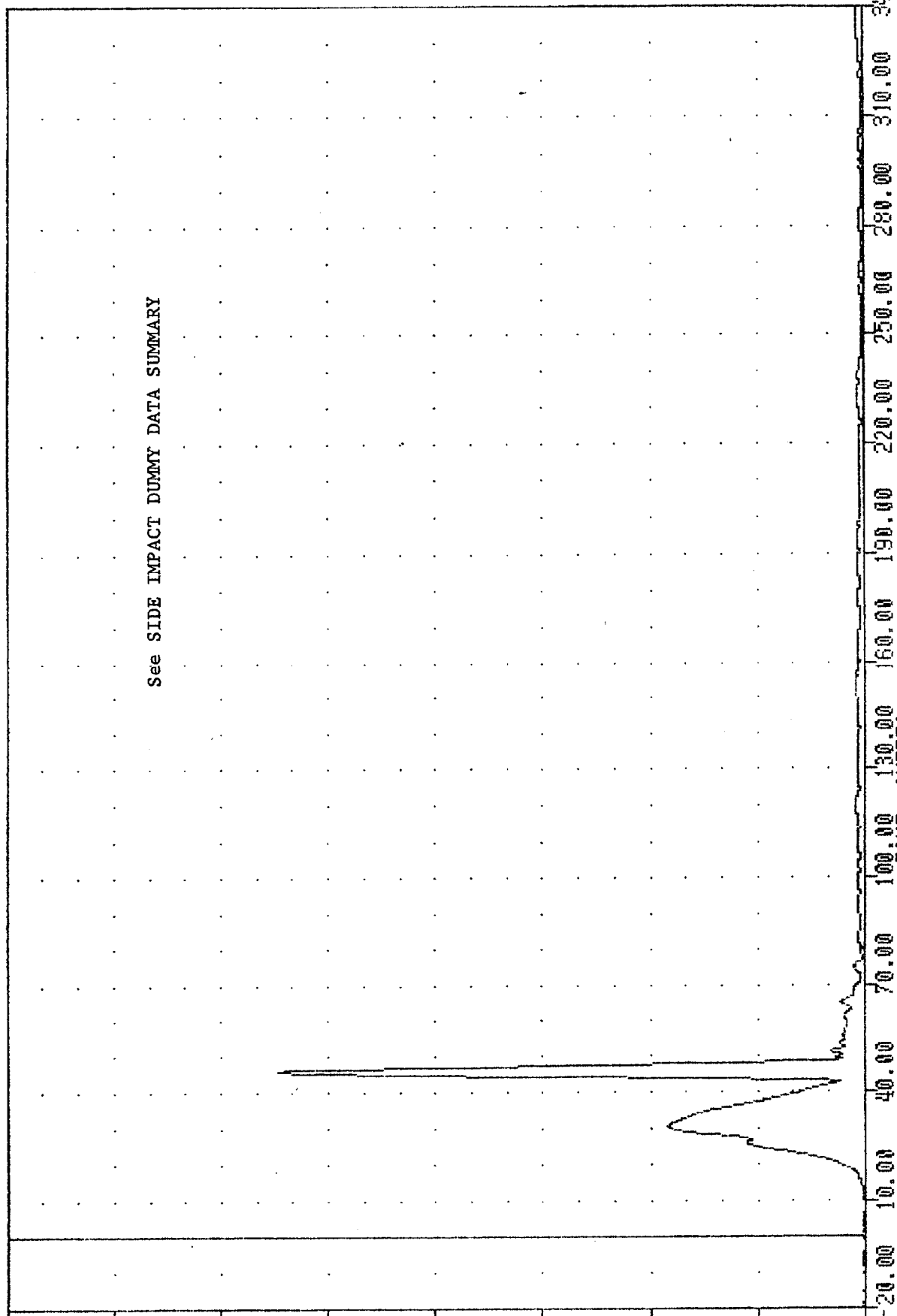
83269000000

PEVRG1

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 0.03e -12.63, 273.60 e 45.88

ACCELERATION (G)

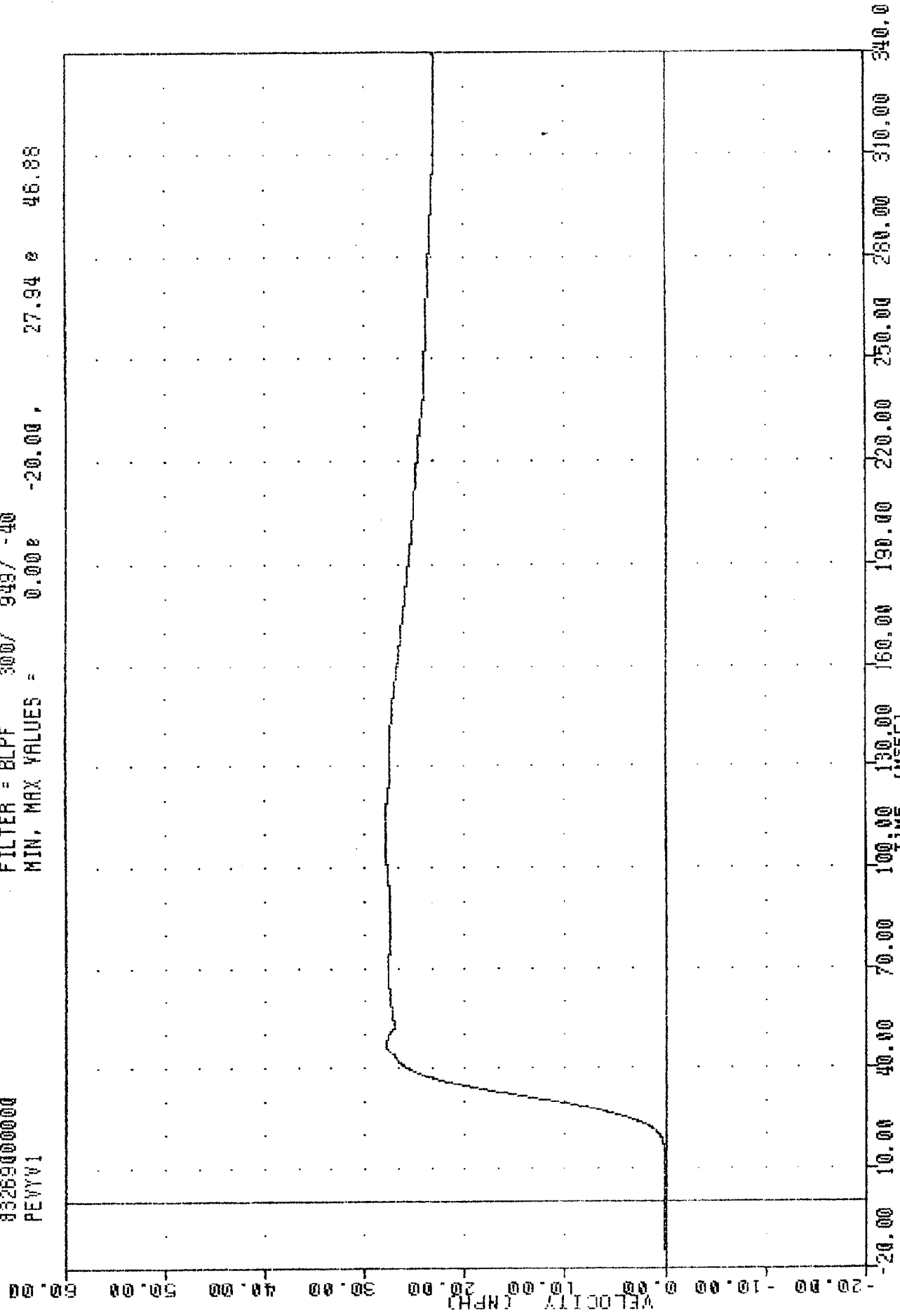


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS RESULTANT

TRC
EVALUATION OF MOD YW FLEET
83269000000
PEVYV1

PLOT DATE 30-SEP-83 08:41:19

FILTER = BLPF 300/ 943/ -40
MIN, MAX VALUES = 0.00e -20.00, 27.94 e 46.88

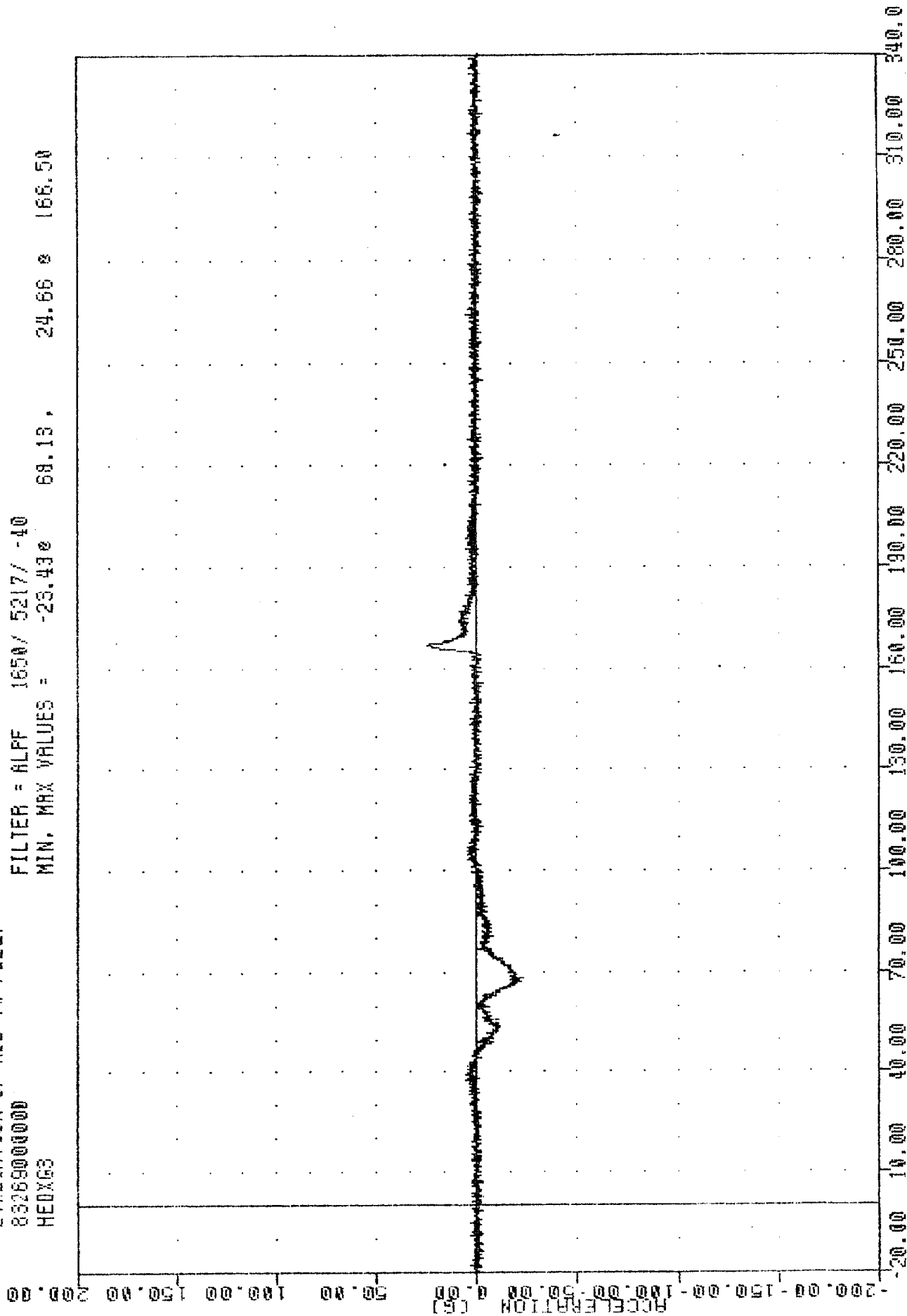


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING PEVYGI

TAC
EVALUATION OF M00 VW FLEET
83269000000
HEDXG3

PLOT DATE 29-SEP-83 12:04:12

FILTER = ALPF 1650/ 5217/ -40
MIN. MAX VALUES = -23.43e 68.13, 24.66 e 166.50

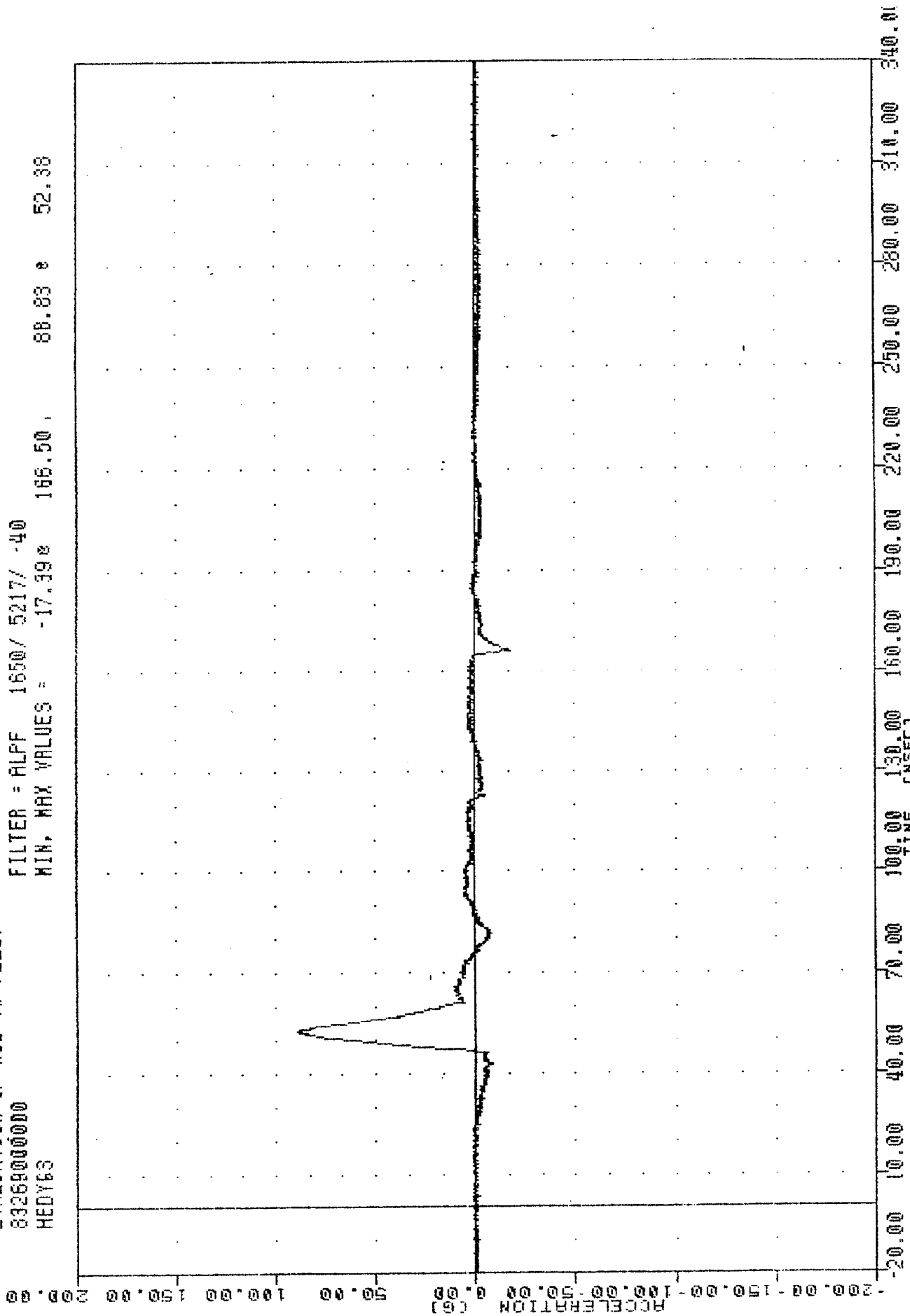


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER HEAD ACCELERATION X AXIS

TRC
 EVALUATION OF MOD VN FLEET
 83269000000
 HEDY63

PLOT DATE 29-SEP-83 12:04:12

FILTER = ALPF 1650 / 5217 / -40
 MIN, MAX VALUES = -17.99 166.50 88.83 52.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD ACCELERATION Y AXIS

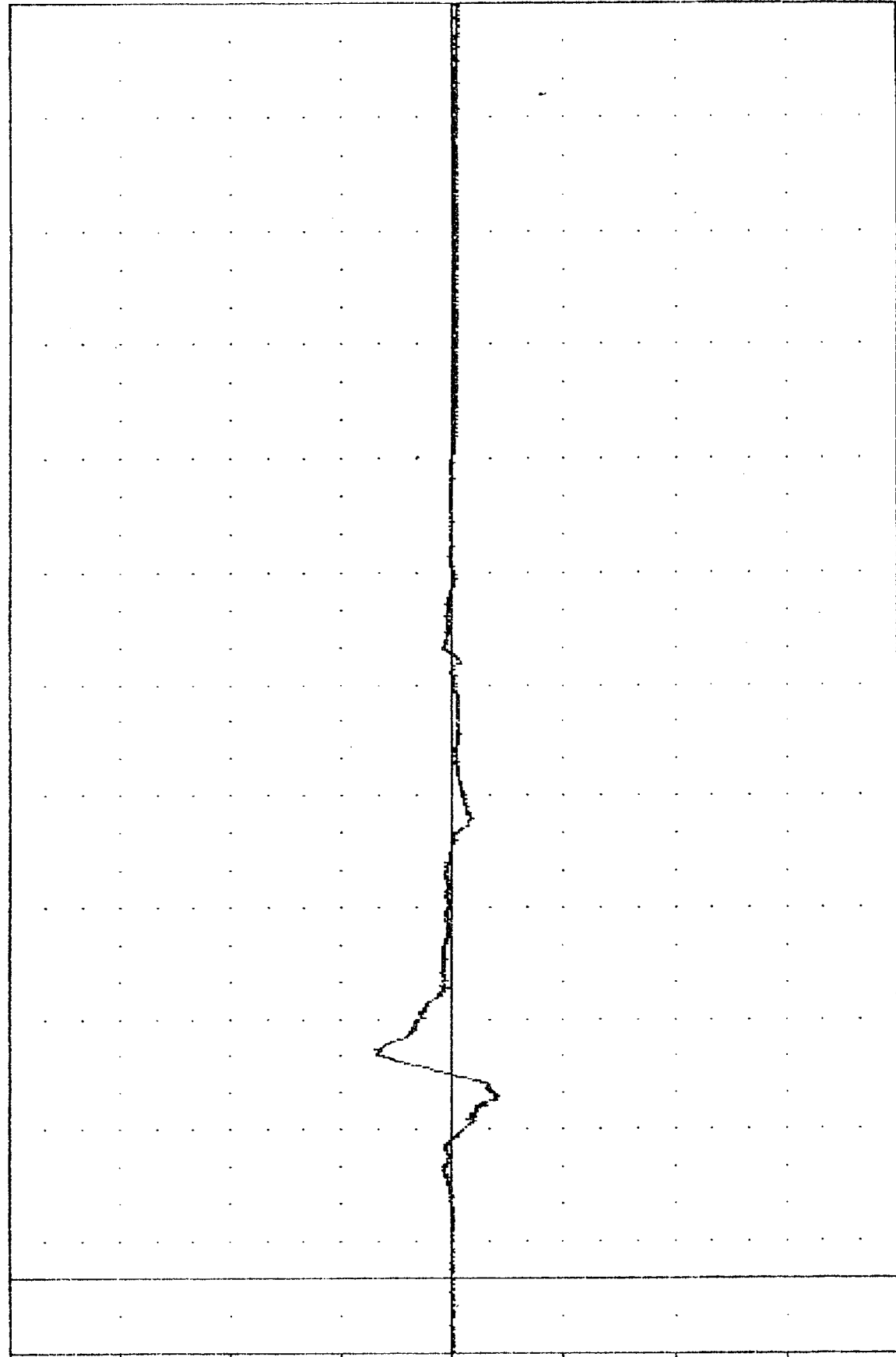
TRC 830926
 EVALUATION OF MOD VW FLEET
 83269000000
 HEDZ63

PLOT DATE 29-SEP-83 12:04:12

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -20.46e 48.88 , 34.79 e 61.75

ACCELERATION (G)



Time (msec)

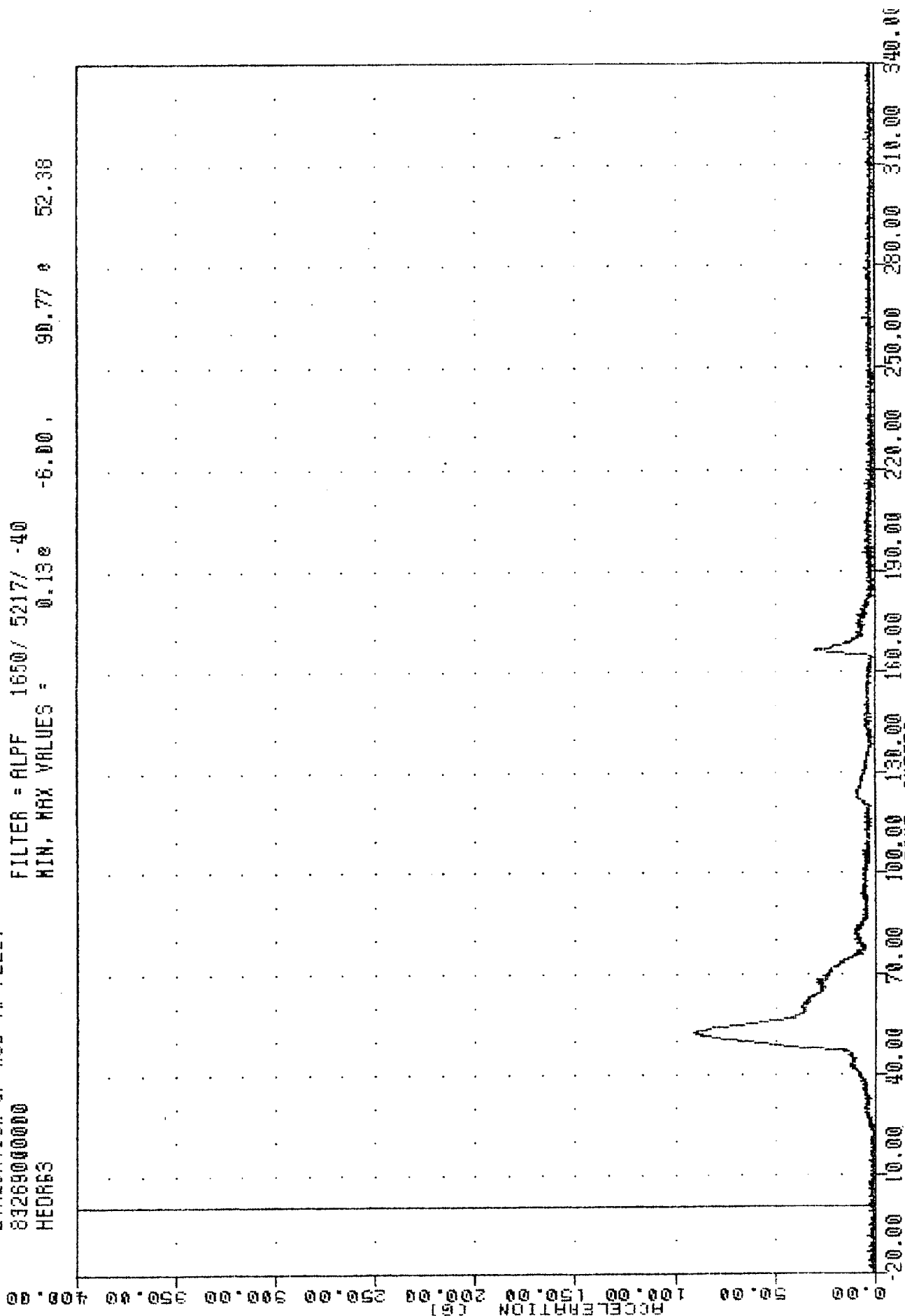
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD ACCELERATION Z AXIS

TAC
 EVALUATION OF MOD VN FLEET
 83269000000
 HEAD63

PLOT DATE 29-SEP-83 12:04:12

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = 0.13e -6.00, 90.77 e 52.38

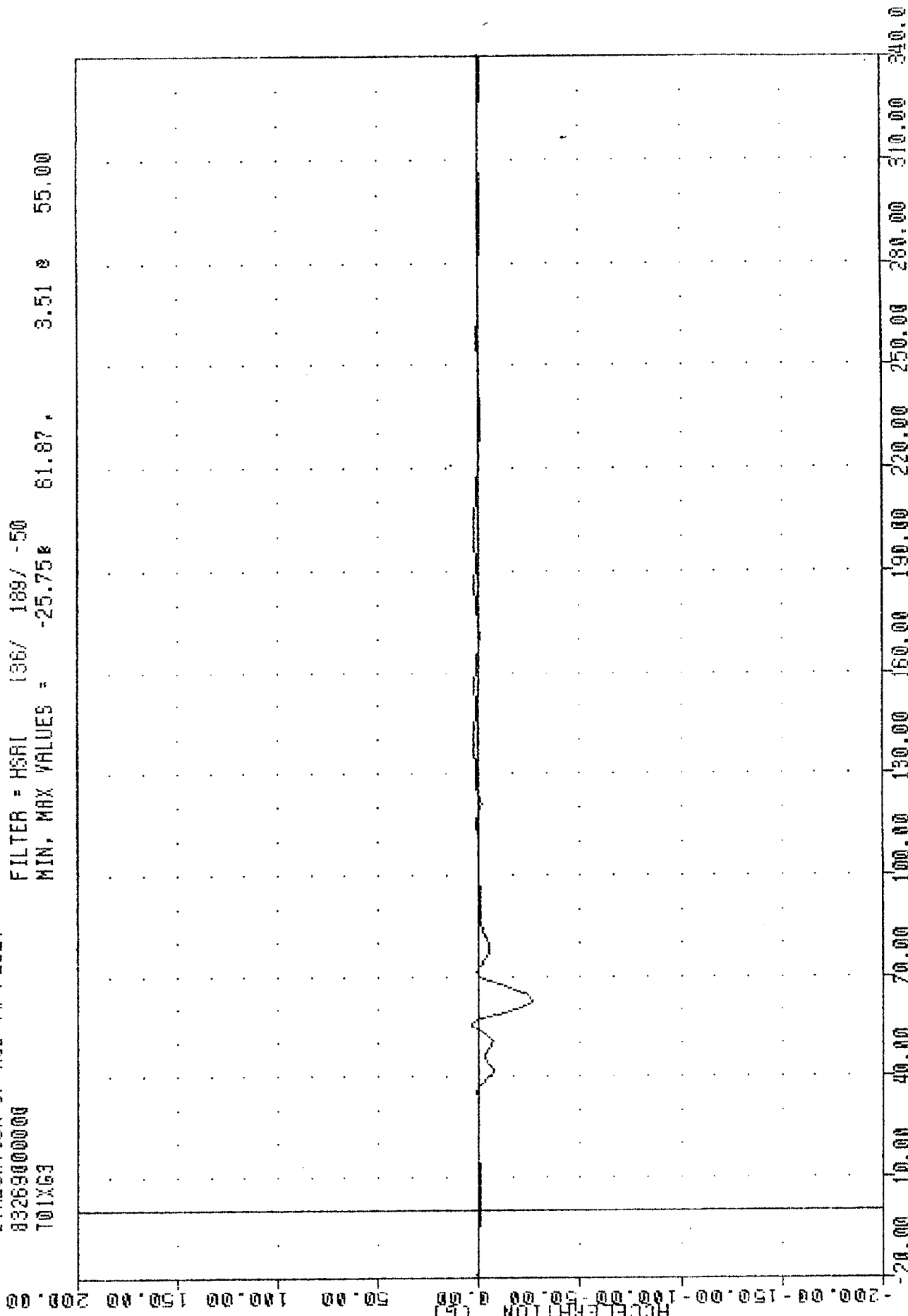


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD RESULTANT

TRC
EVALUATION OF MOD VV FLEET
83269000000
T01XG3

PLOT DATE 29-SEP-83 12:05:23

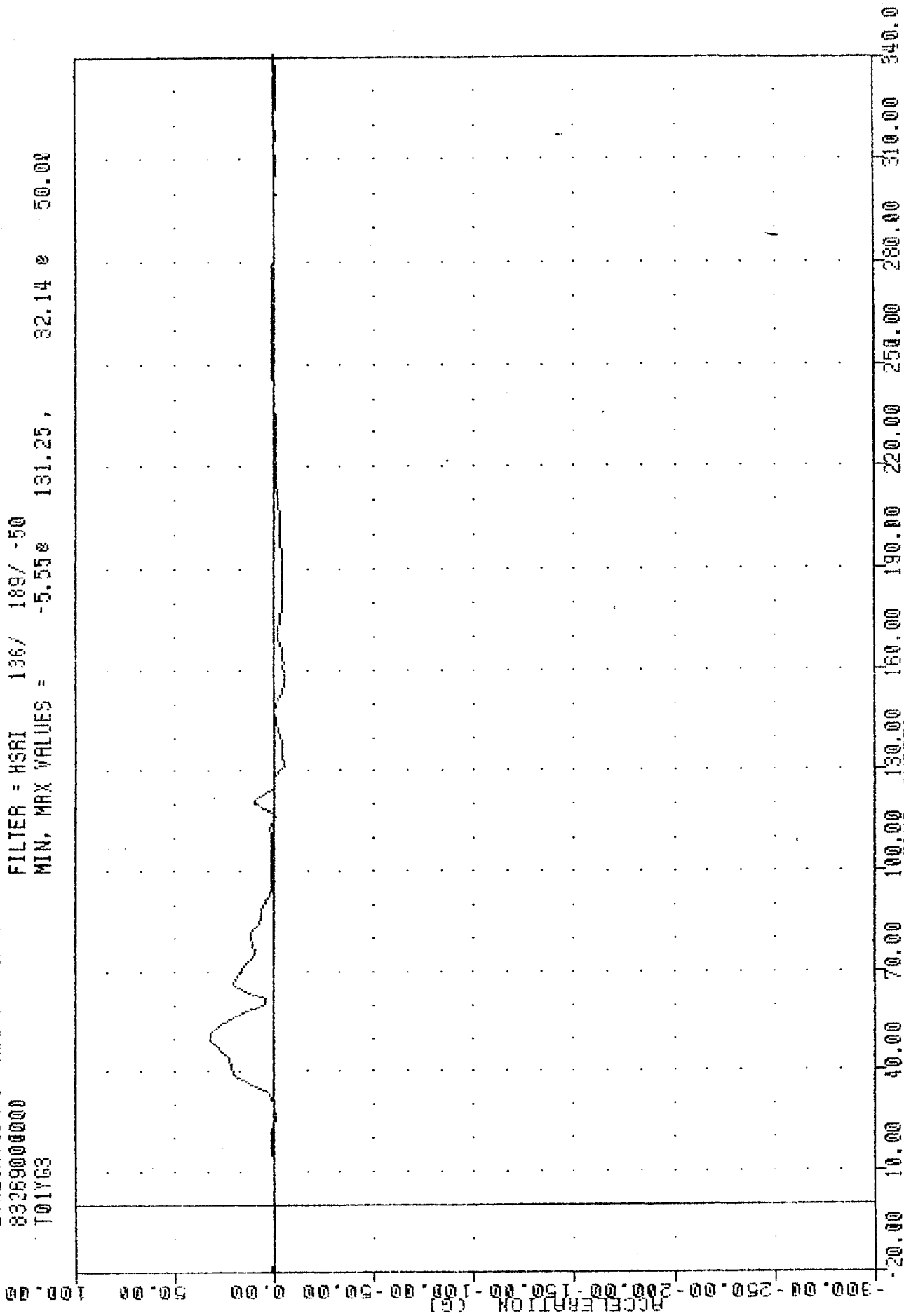
FILTER = HSRI 136/ 139/ -50
MIN. MAX VALUES = -25.75 61.87 3.51 55.00



TRC 830925
EVALUATION OF MDD VW FLEET
832590000000
T01Y63

PLUT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -5.55e 131.25, 32.14 e 50.00



TAC 830926 PLOT DATE 29-SEP-88 12:05:23

EVALUATION OF MOD VN FLEET

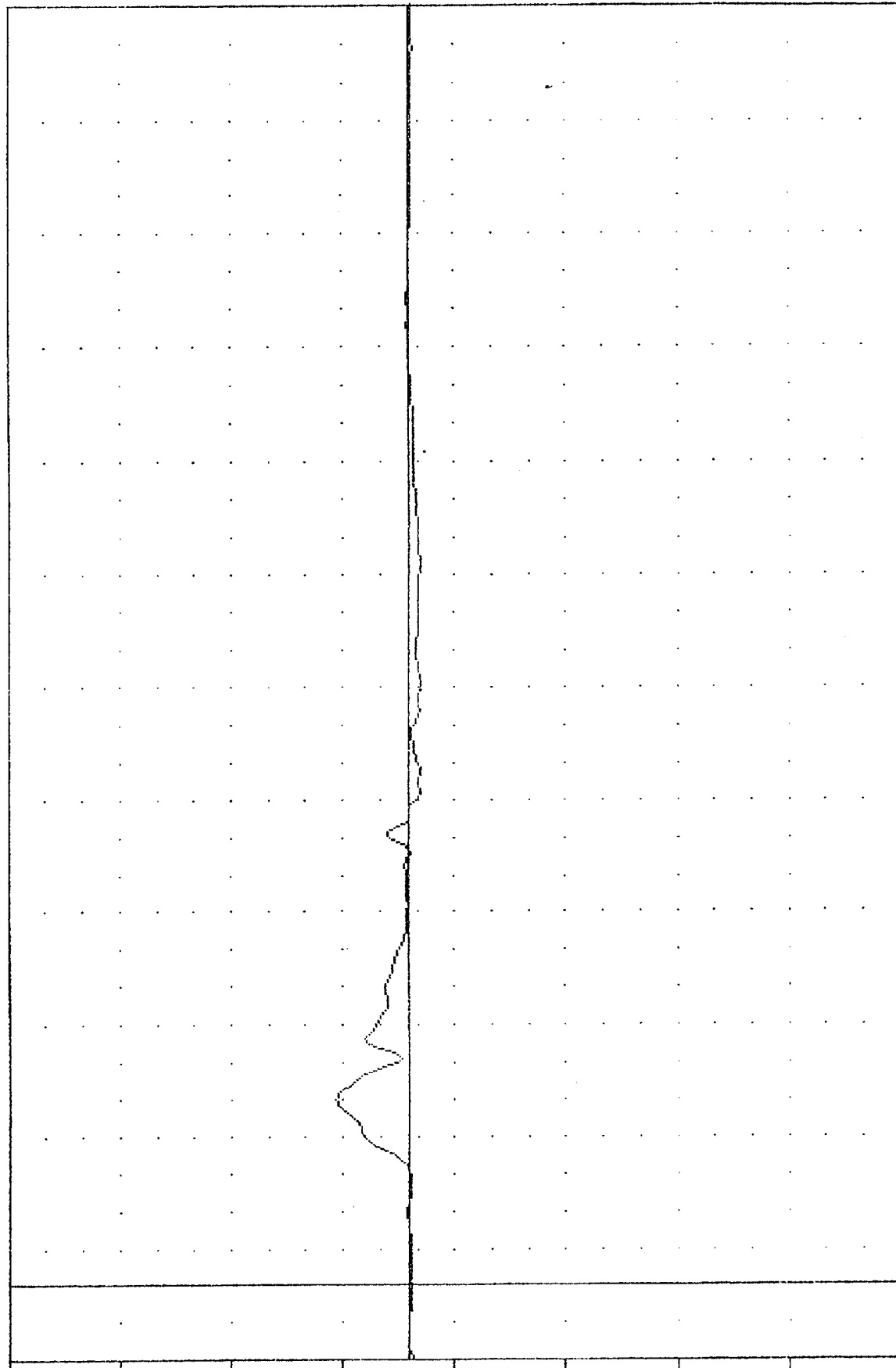
832690000000

T01Y6C

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -5.00 131.25 32.80 49.37

ACCELERATION G



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

TRC

830926

EVALUATION OF MOD YW FLEET

83269000000

701263

PLUT DATE 29-SEP-83

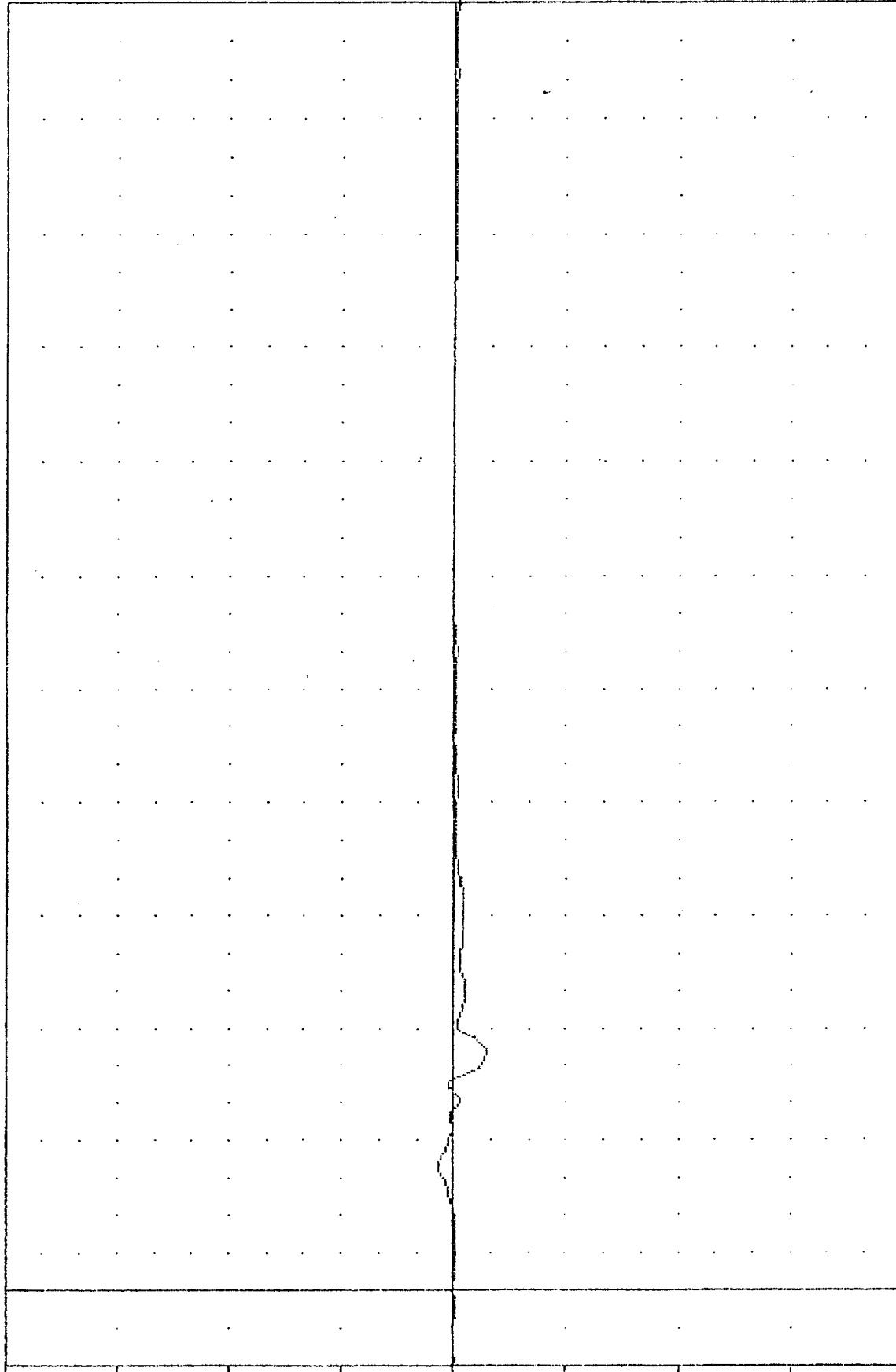
12:05:23

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -14.28 63.13

6.95 e 32.50

ACCELERATION (G)



TIME (MSEC)

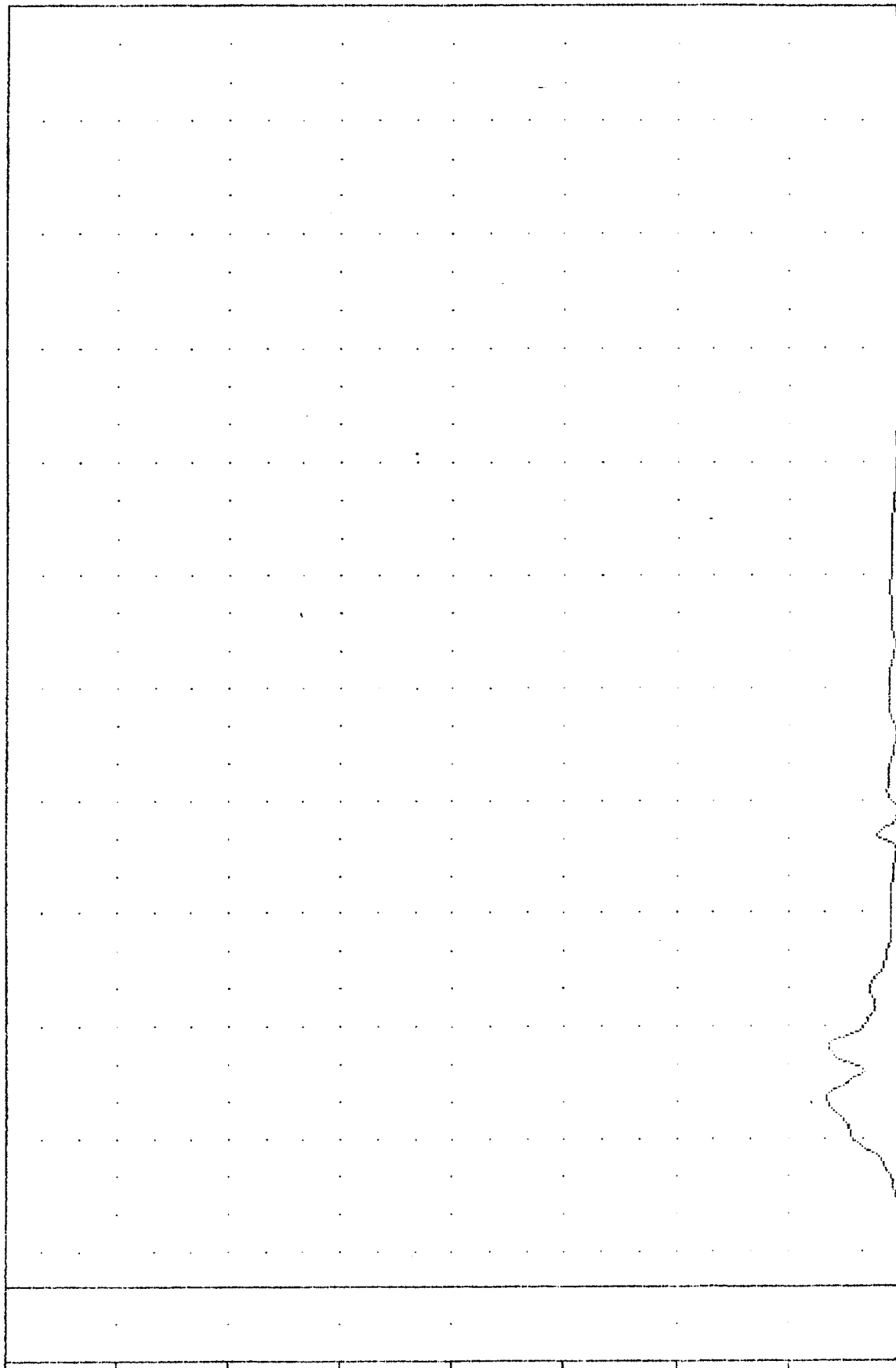
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER UPPER SPINE ACCELERATION Z AXIS

TRC
EVALUATION OF MOD VN FLEET
832690000000
T01R63

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = 0.218 -10.63, 32.98 * 50.00

ACCELERATION (G)



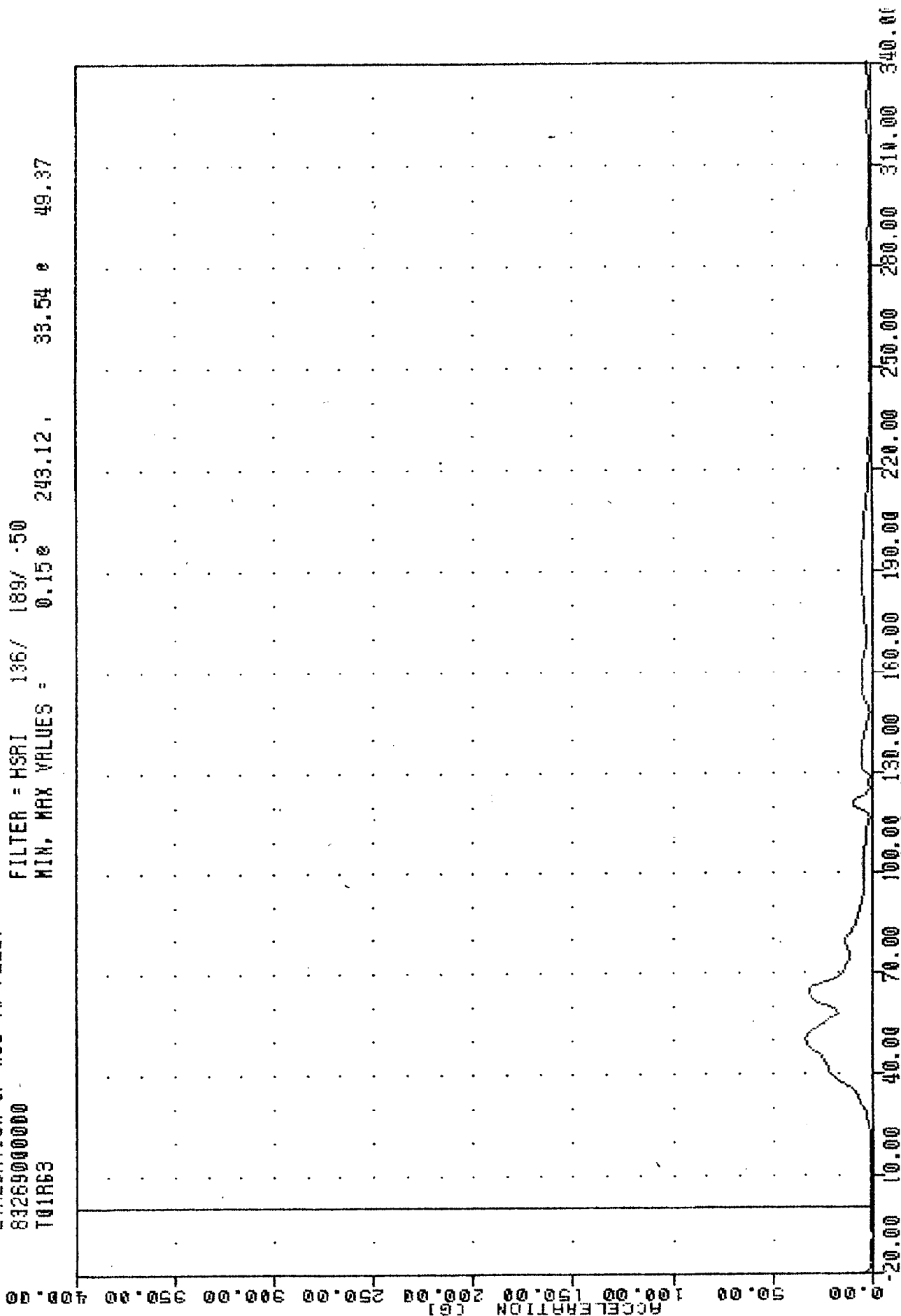
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER UPPER SPINE RESULTANT

TAC
 EVALUATION OF MOD VW FLEET
 83269000000
 T01R63

PLOT DATE, 29-SEP-83 12:06:28

FILTER = HSRI 136/ 189/ .50
 MIN, MAX VALUES = 0.150 243.12, 33.54 49.37

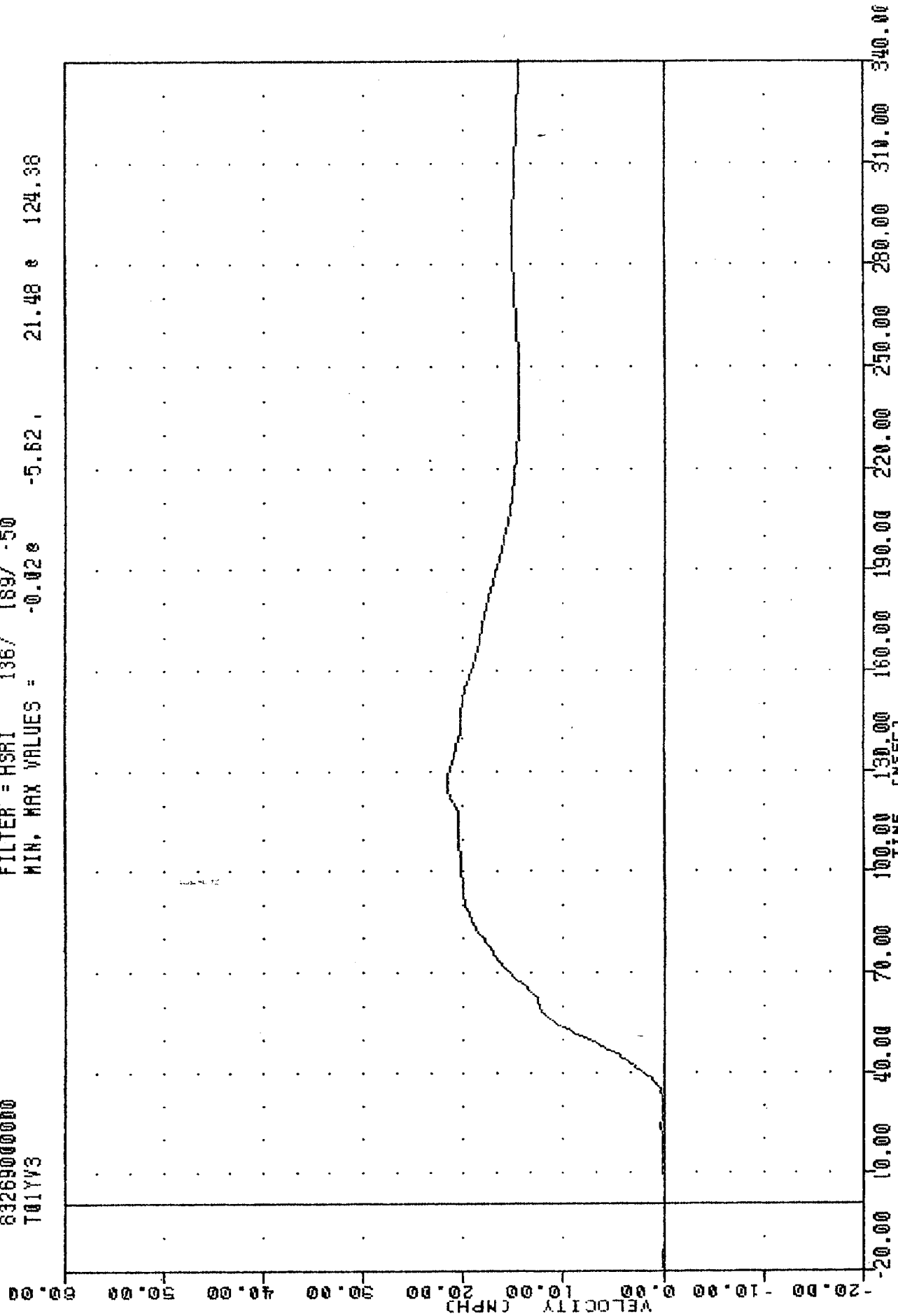


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE RESULTANT USING T01Y6C

TAC
EVALUATION OF MOD VW FLEET
83269000000
T01YV3

PLOT DATE 30-SEP-83 06:40:32

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -0.028 21.48 s 124.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T01Y63

TRC 830926 30 SEP 83 06:40:32

EVALUATION OF MOD YW FLEET

83269000000

T01YVC

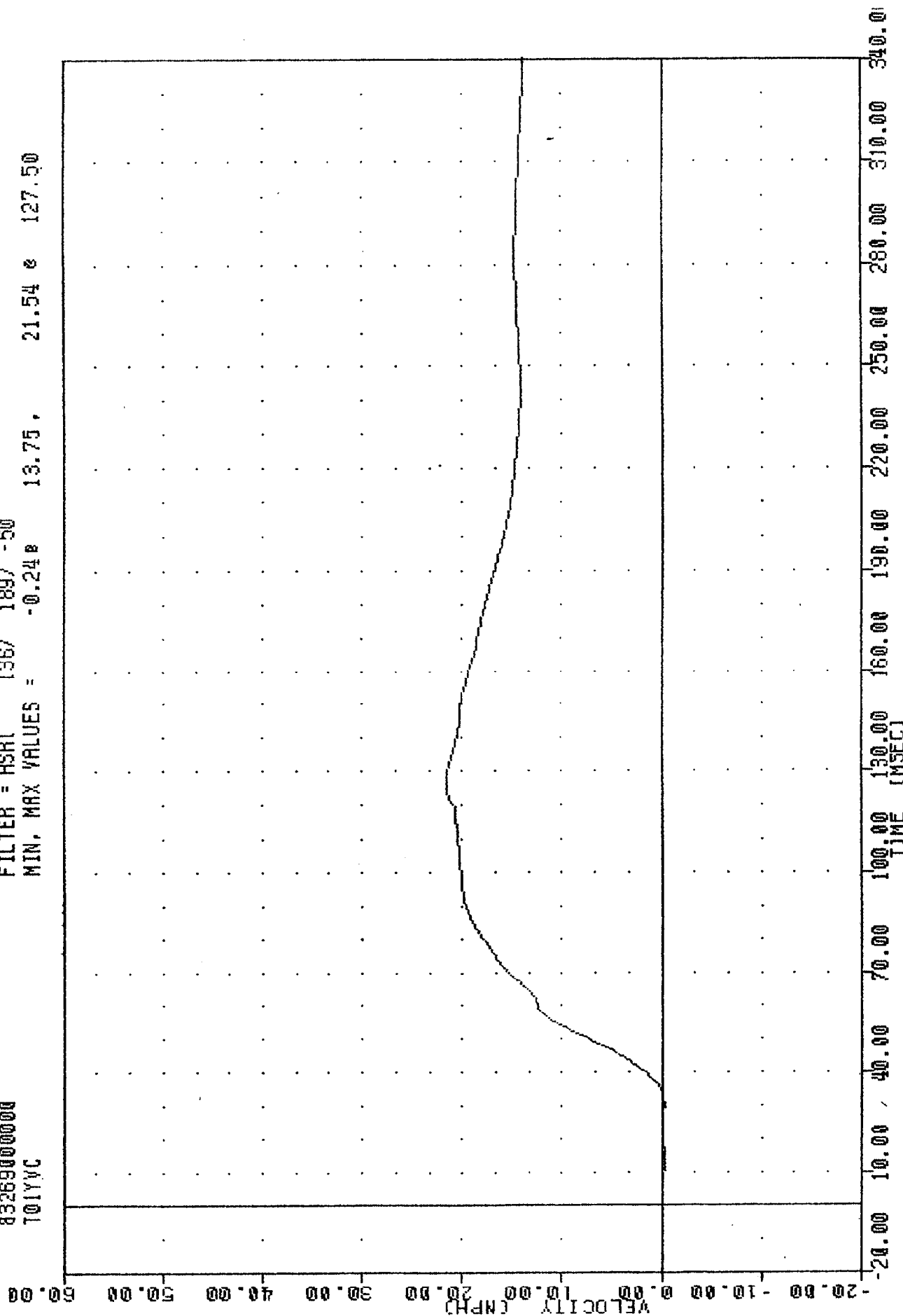
FILTER = HSR(136/ 189/ -50

MIN, MAX VALUES = -0.248

13.75,

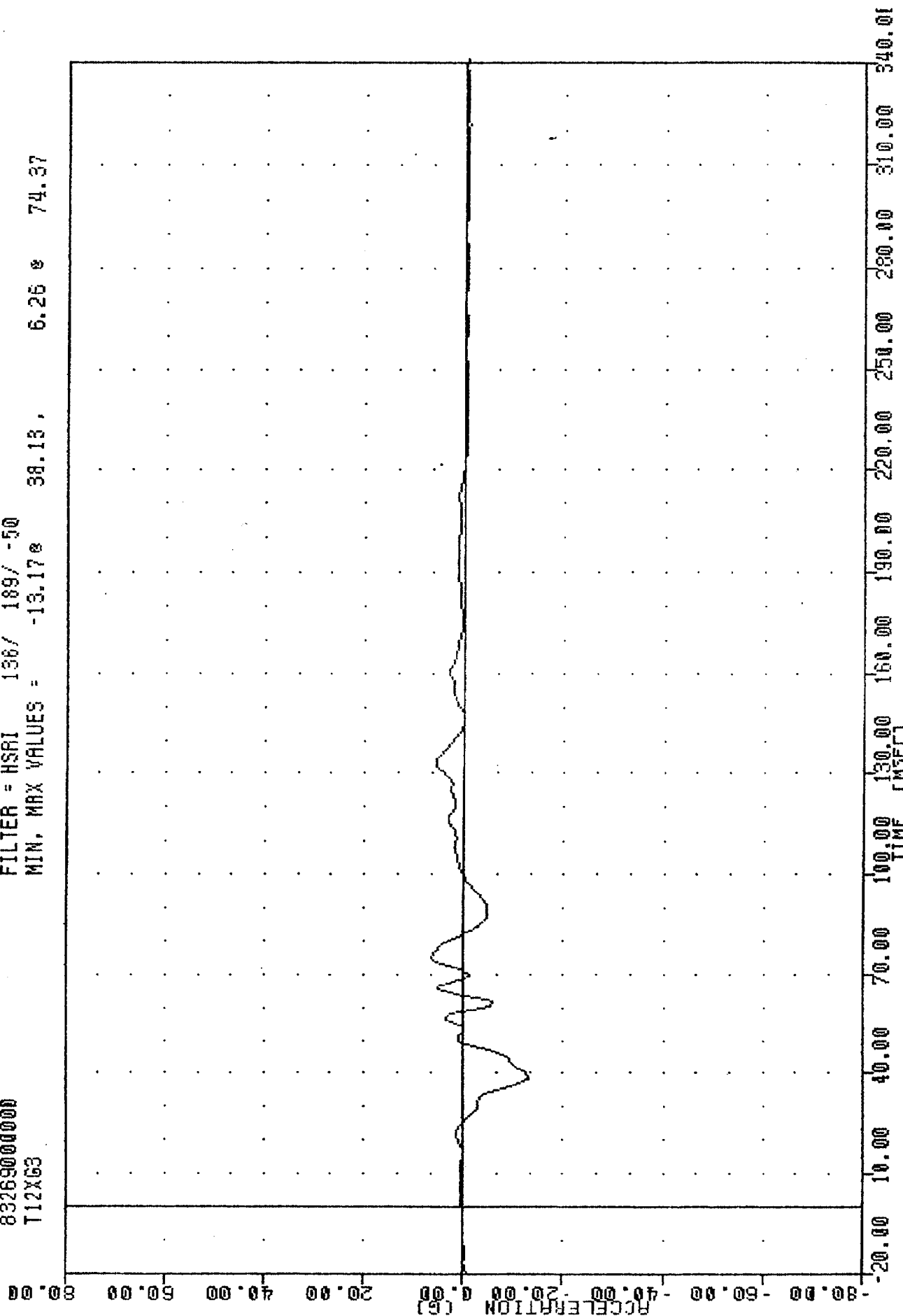
21.54 &

127.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA W USING T01YGC

THE 000926 28 SEP 83 12:05:25
 EVALUATION OF MOD VW FLEET
 83269000000
 T12X63
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -13.17% 38.13, 6.25 % 74.37



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

TRC 830926 PLOT DATE 29-JUL-83 12:00:23

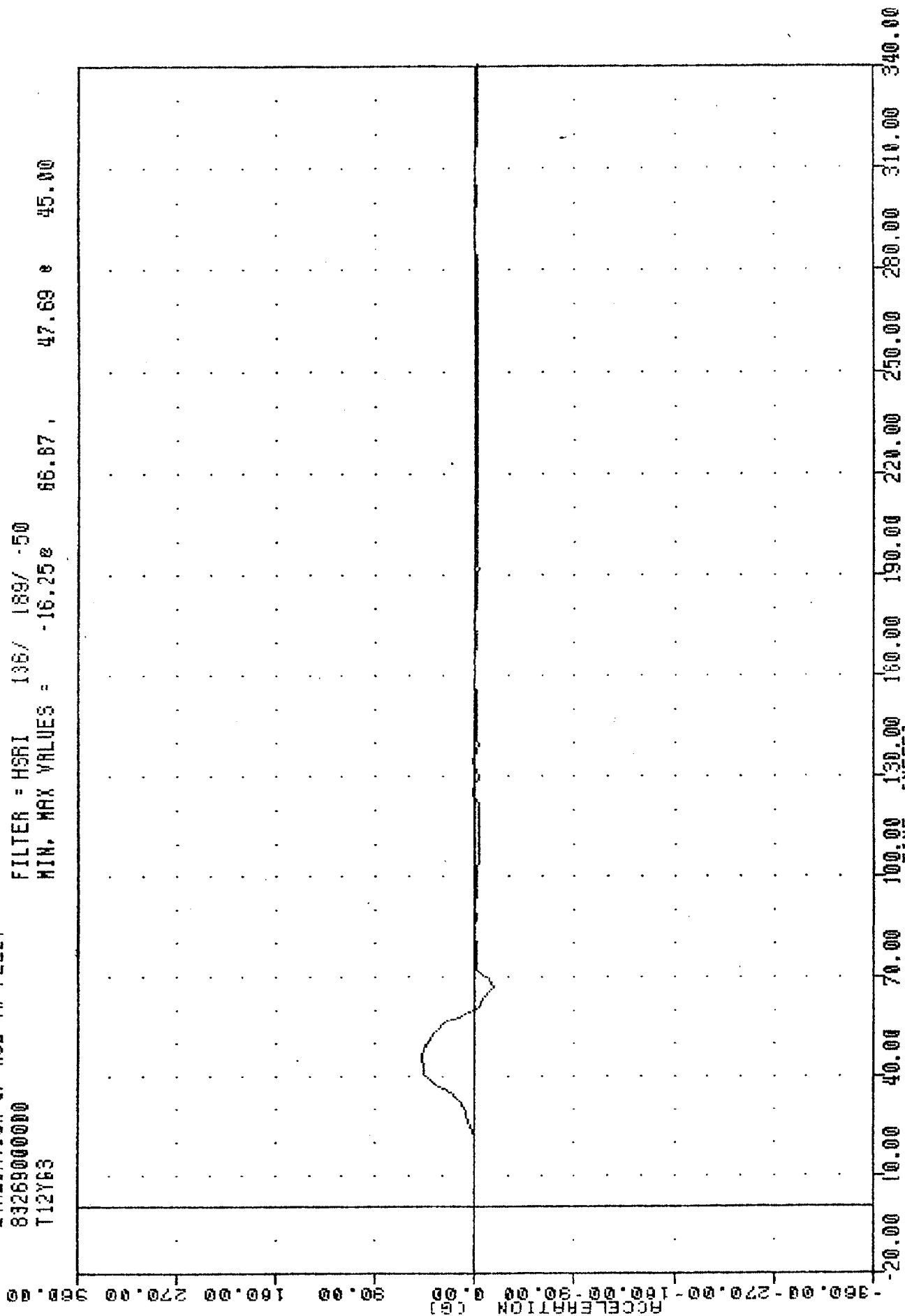
EVALUATION OF MOD VN FLEET

83269000000

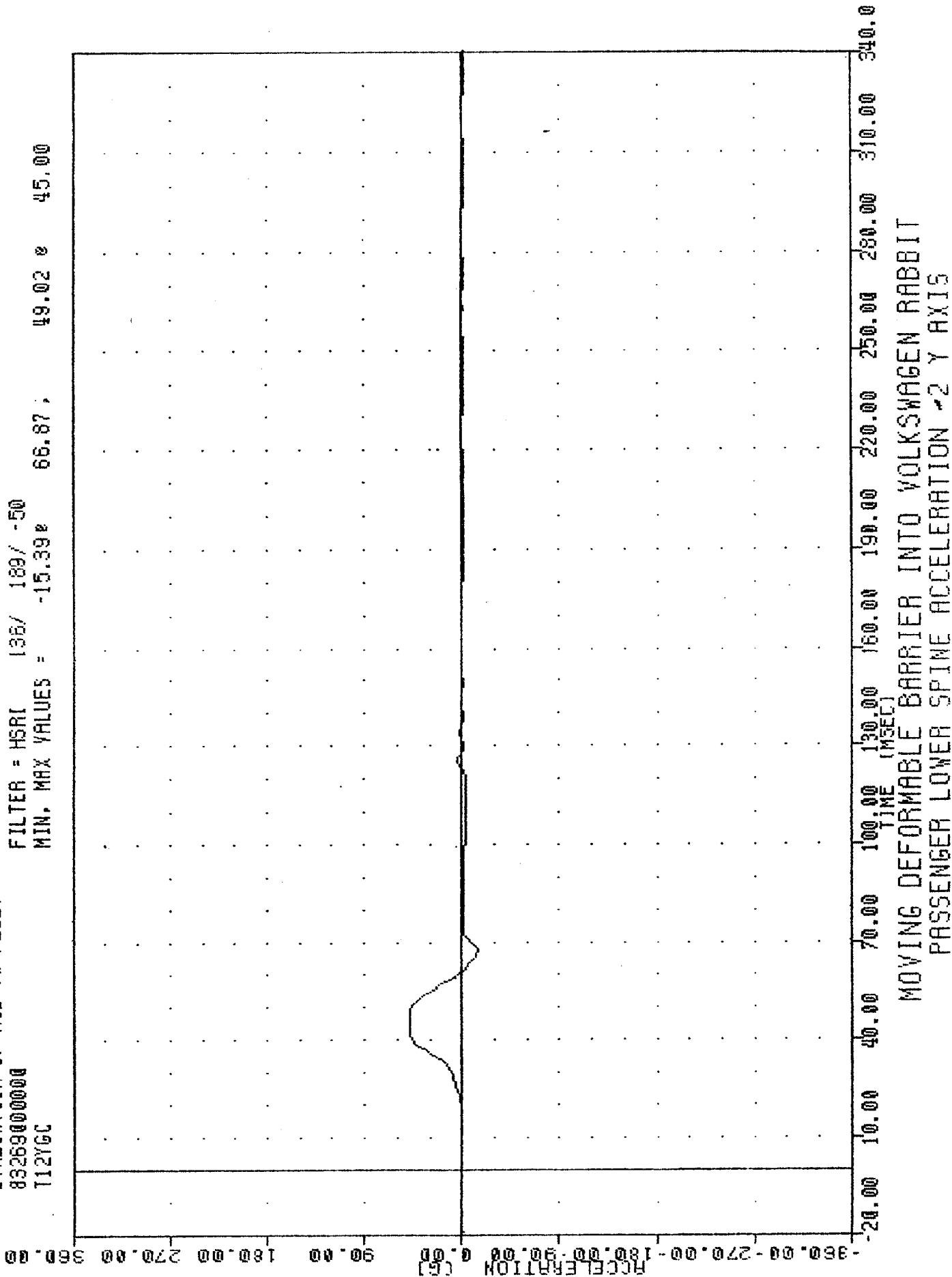
T12Y63

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -16.25e 66.67, 47.69 e 45.00

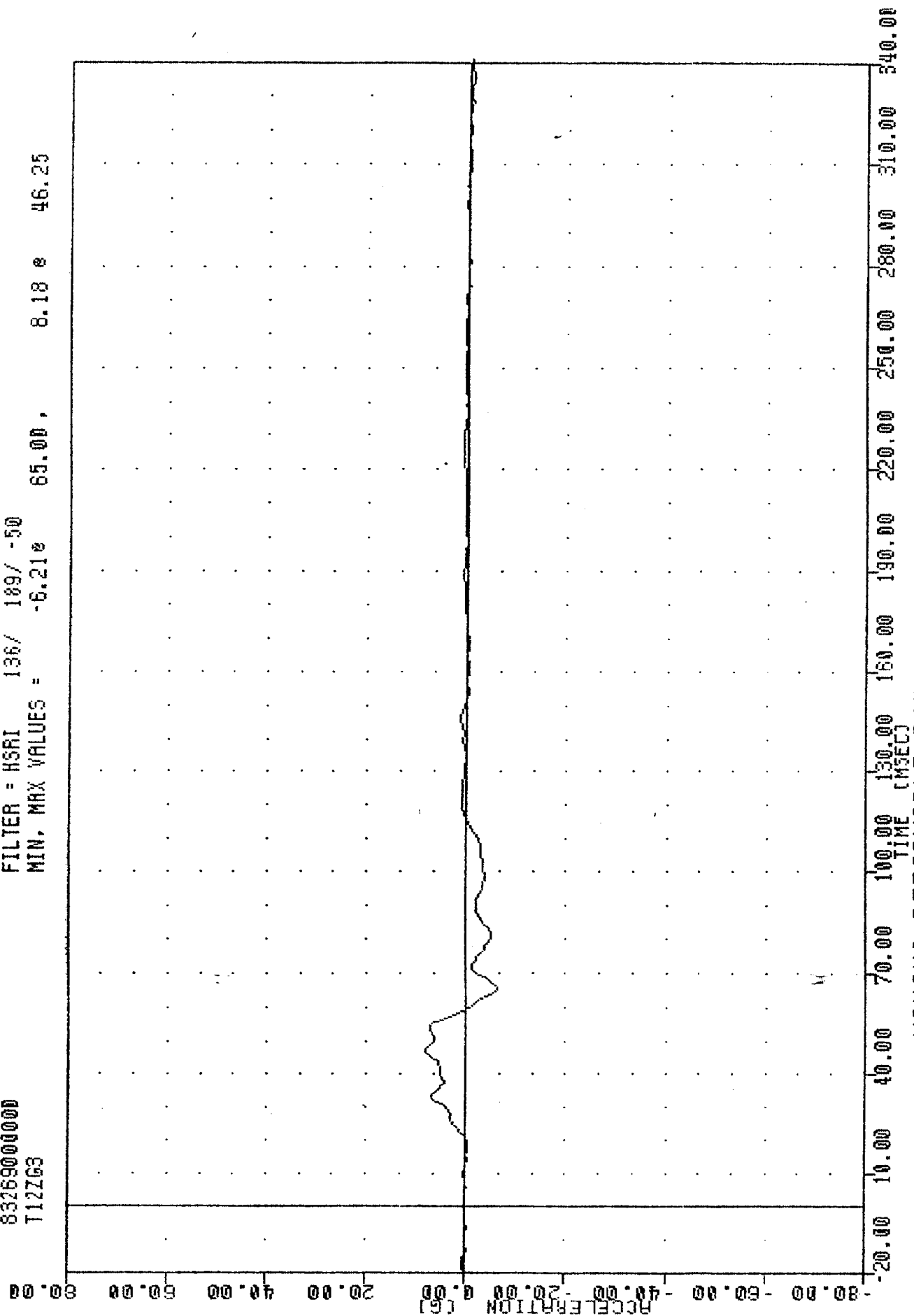


TRC 830926 PLOT DATE 29 SEP 83 12:05:23
 EVALUATION OF MOD YN FLEET
 83269000000
 112YGC
 FILTER = HSRI 135/ 189/ -50
 MIN. MAX VALUES = -15.39% 66.87; 49.02 @ 45.00



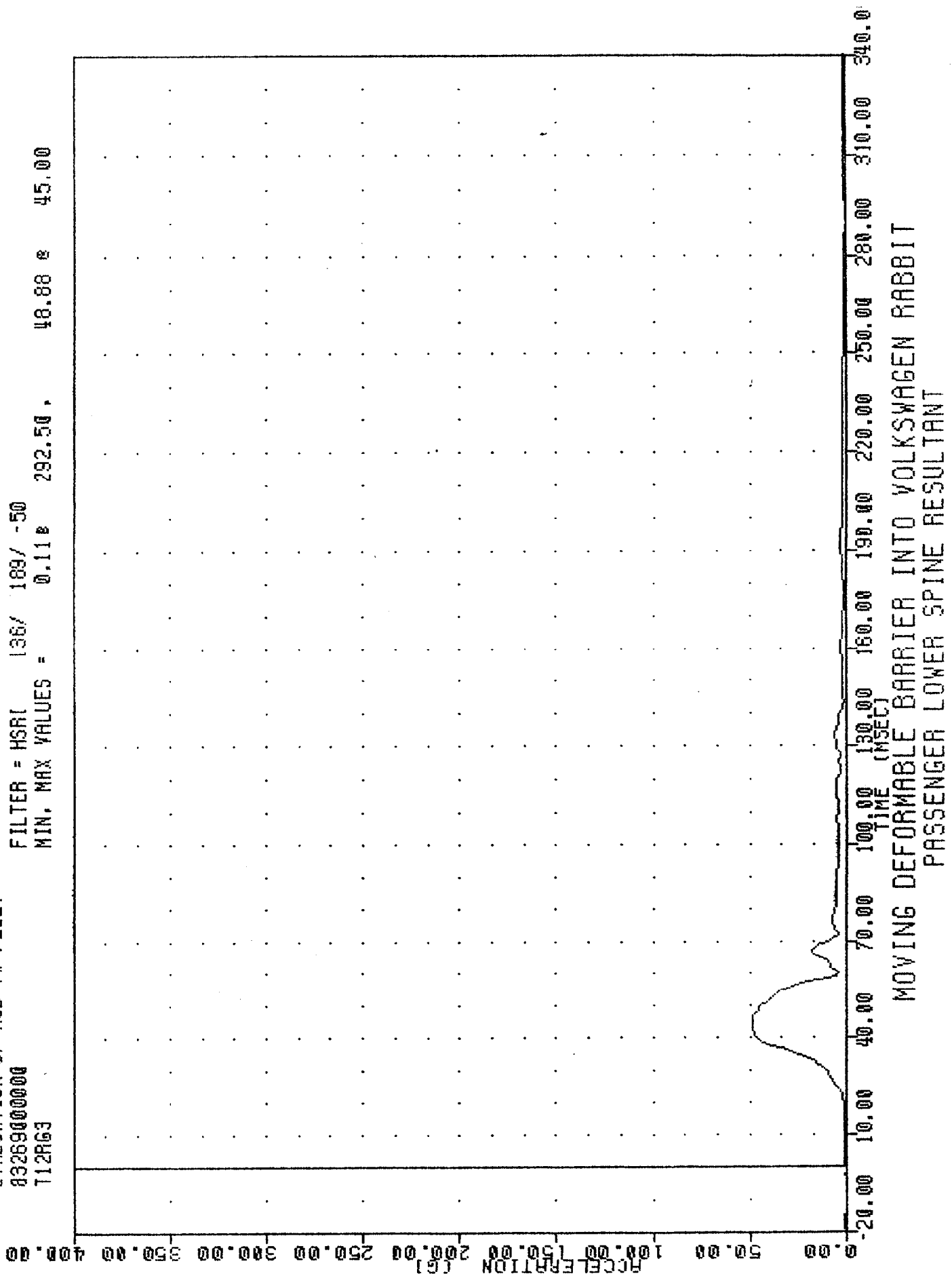
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCELERATION -2 Y AXIS

THE
 EVALUATION OF MOD VV FLEET
 83269000000
 T12ZG3
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -6.21e 65.00, 8.18 e 46.25
 PLOT DATE 29-SEP-83 12:05:23



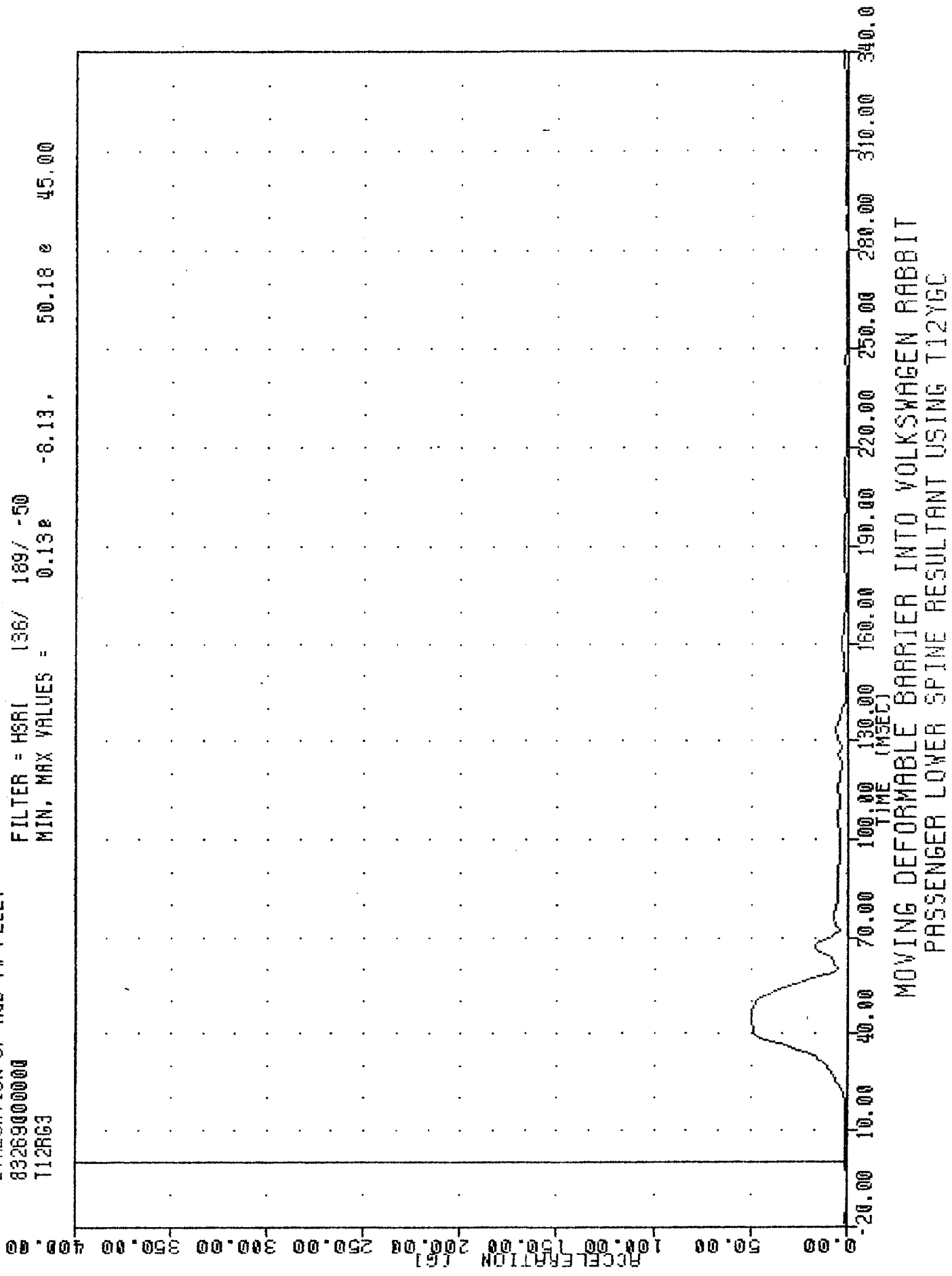
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCELERATION Z AXIS

INC 030826
 EVALUATION OF MOD VW FLEET
 83269000000
 712R63
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.118 292.50 48.88 45.00
 PLOT DATE 29-JUL-83 12:05:25



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE RESULTANT

TRC
 EVALUATION OF MOD VW FLEET
 83269000000
 T12RG3
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.13e -6.13, 50.18 e 45.00
 PLOT DATE 28 SEP-89 12:00:28



TRC 830926

EVALUATION OF MOD VV FLEET

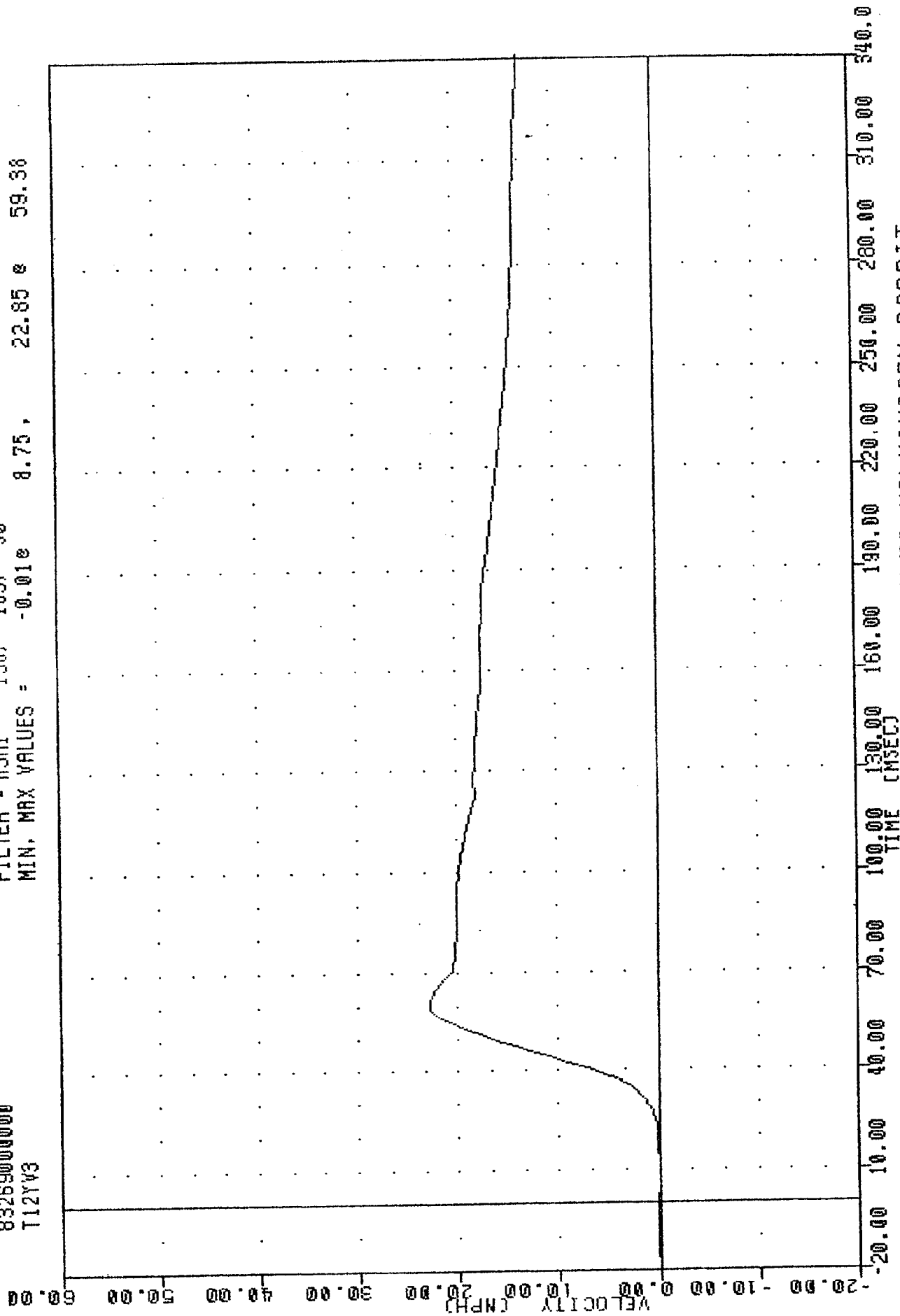
83269000000

T12YV3

PLOT DATE, 30-SEP-83 08:40:32

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.01e 8.75, 22.85 e 59.38



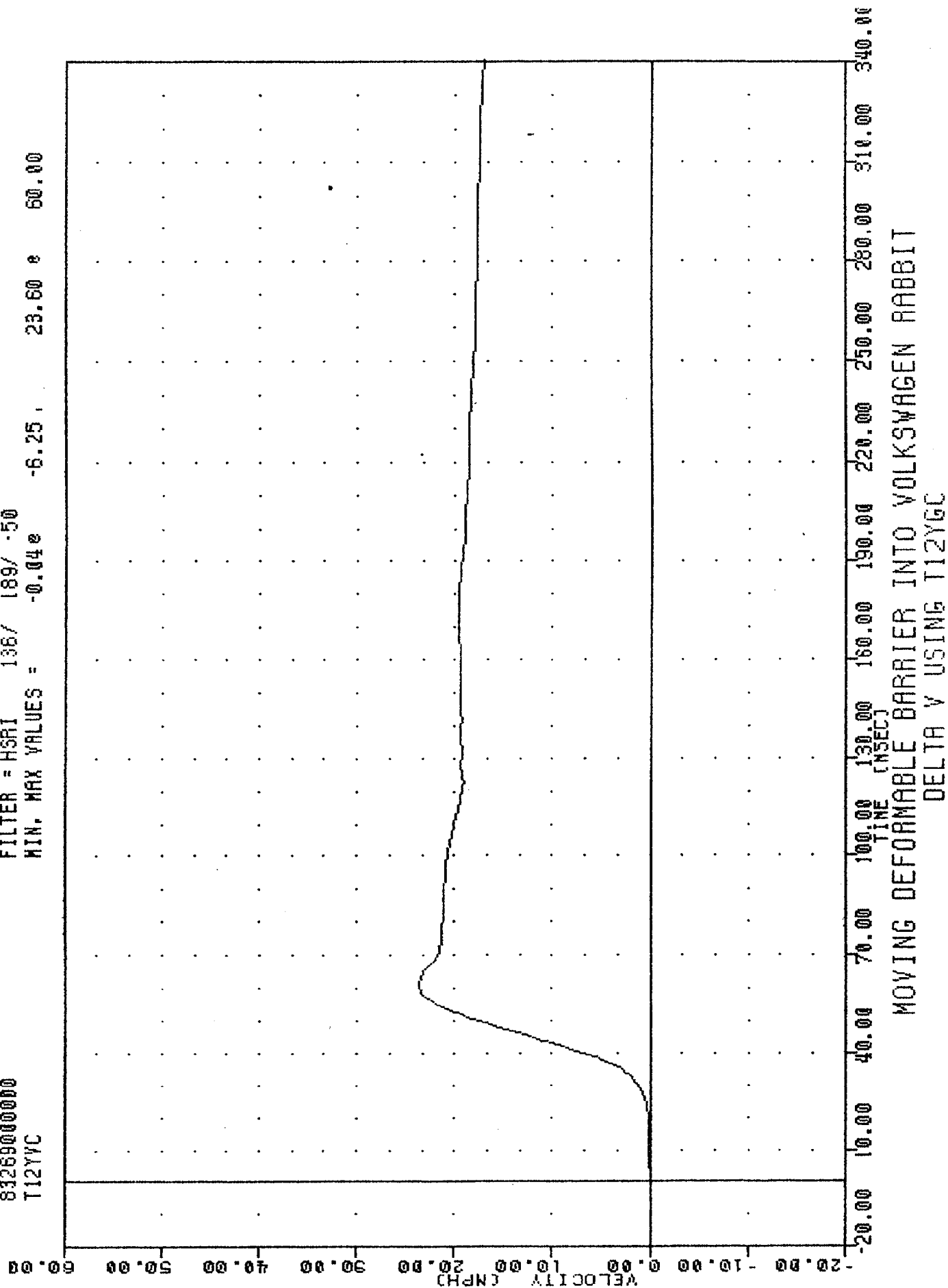
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING T12YV3

TAC
EVALUATION OF MOD VW FLEET
83269000000
T12YVC

PLOT DATE, 30-SEP-83 08:40:32

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -0.04e 23.60 e 60.00

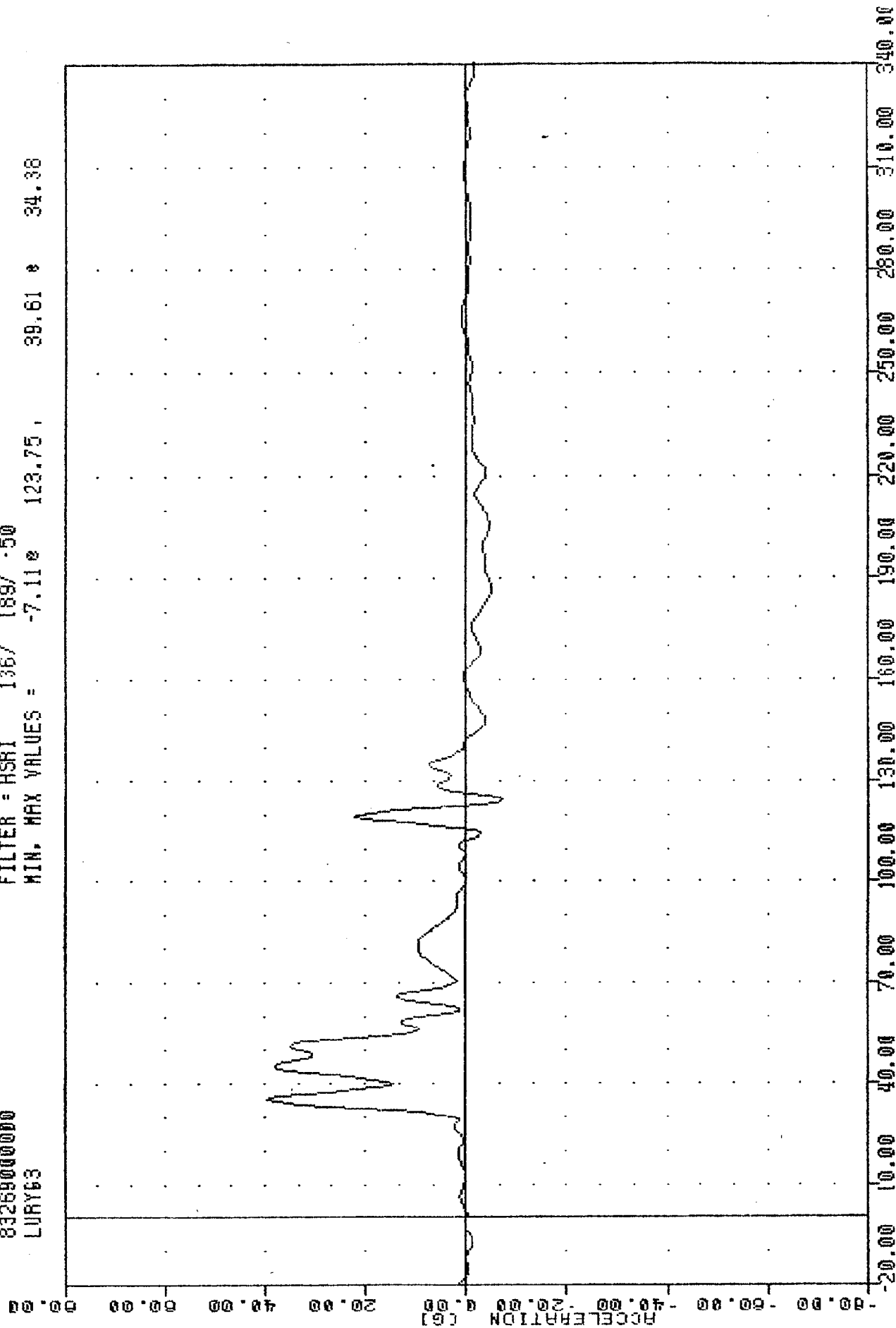


TAC 830928
EVALUATION OF MOD VW FLEET
83269000000
LURY63

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ .50

MIN. MAX VALUES = -7.11e 123.75, 39.61 e 34.38

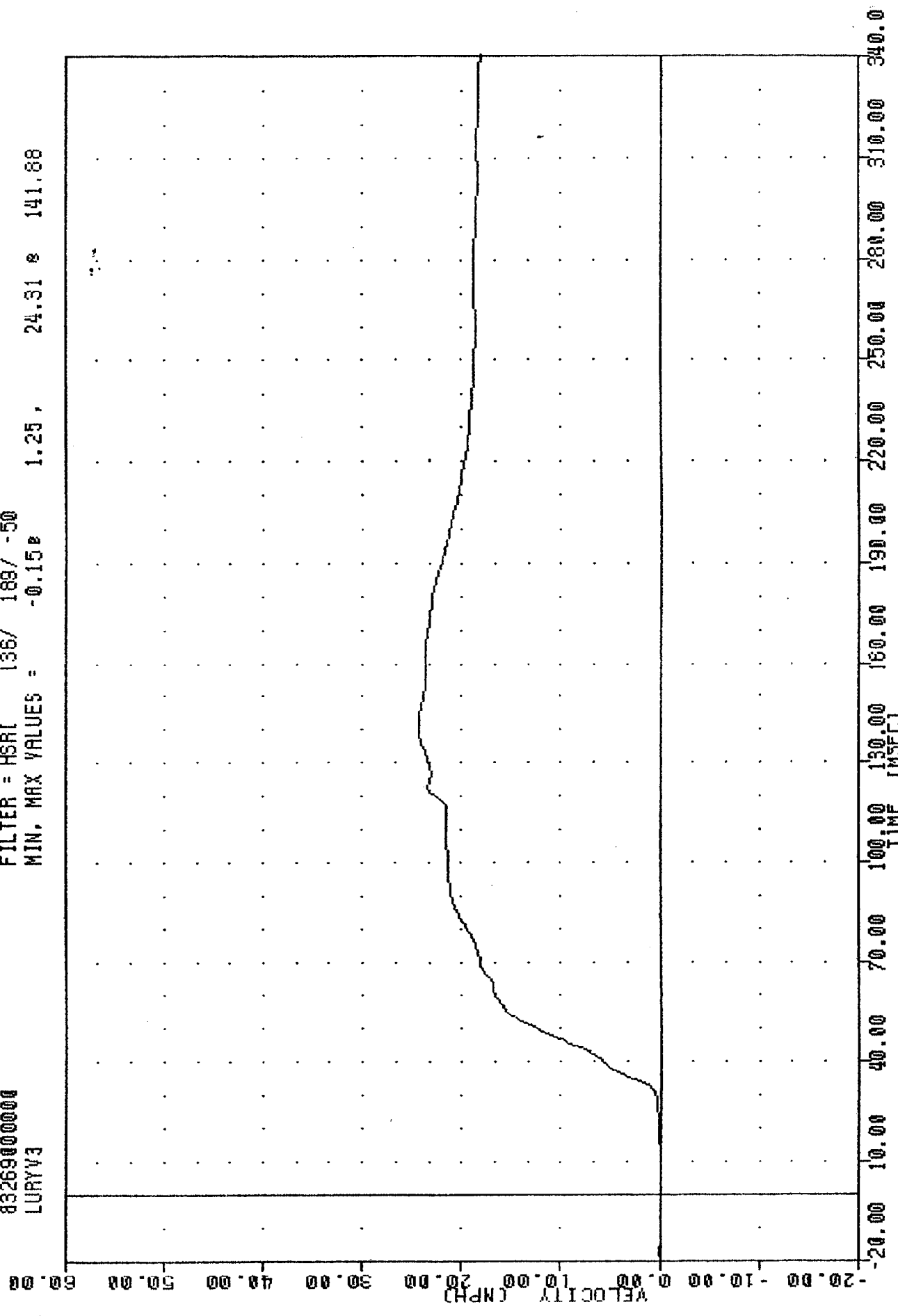


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

TRC
 EVALUATION OF MOD VV FLEET
 83269000000
 LURYV3

PLOT DATE 30-SEP-83 08:40:32

FILTER = HSR1 136/ 189/ -50
 MIN. MAX VALUES = -0.15 1.25, 24.31 141.88

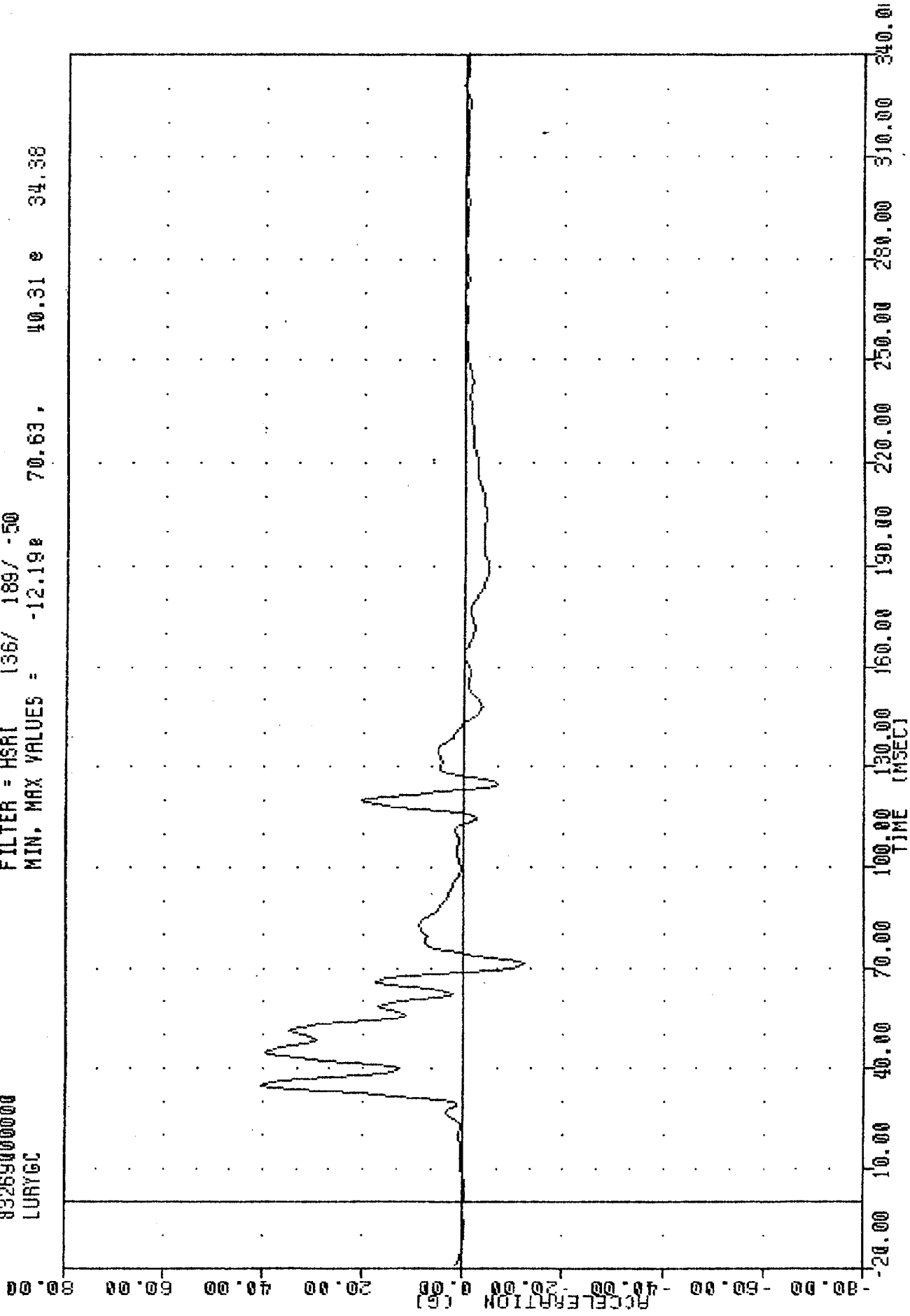


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W USING LURYG3

TRC
EVALUATION OF MCD YW FLEET
83269000000
LURYGC

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -12.19e 70.63, 40.31 e 34.38



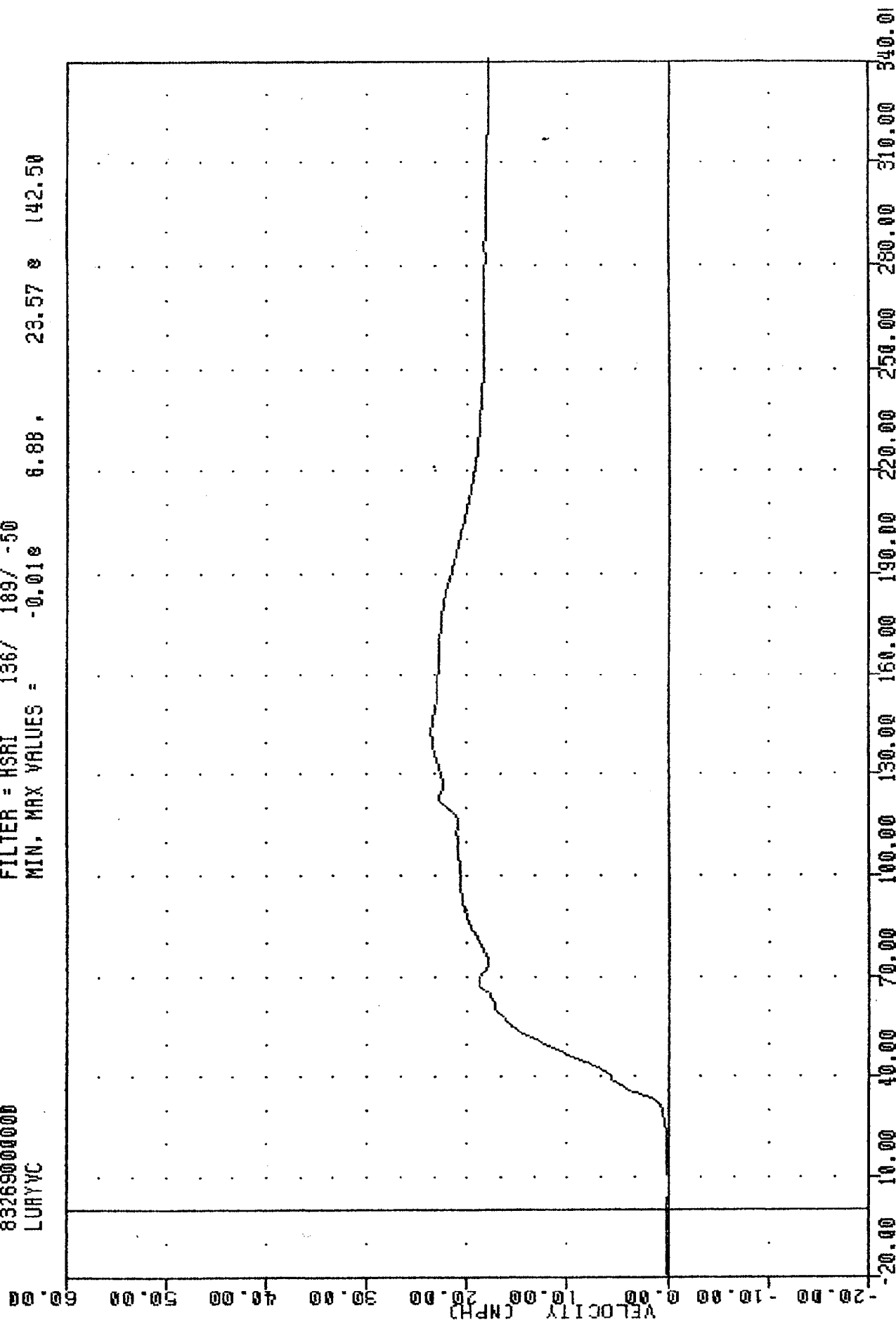
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT UPPER RIB ACCELERATION -2 Y AXIS

TRC
EVALUATION OF MDD VW FLEET
83269000000
LURYVC

PLOT DATE 30-SEP-83 08:40:32

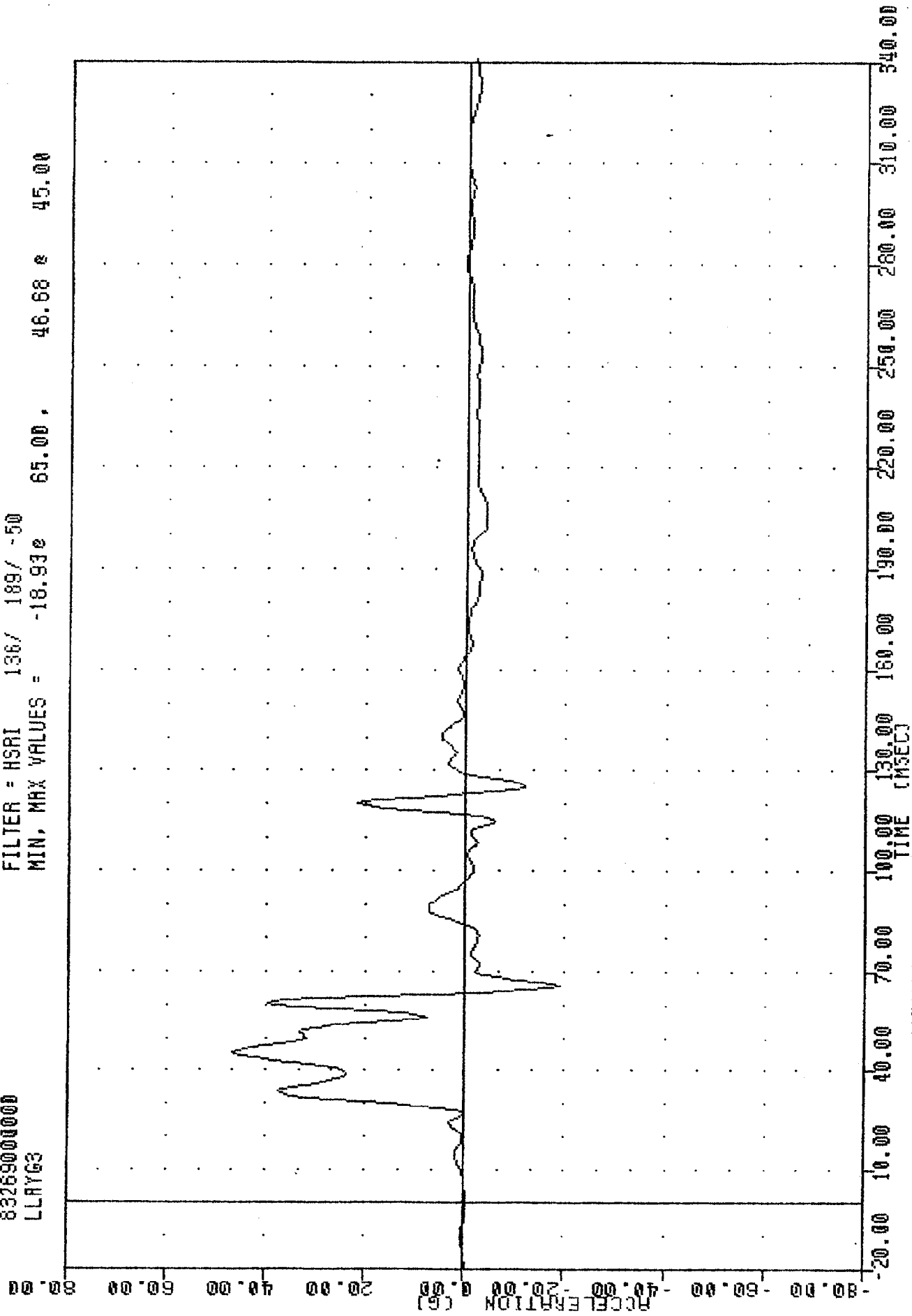
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -0.018 6.88,

23.57 142.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LURYGC

TRC 830925
 EVALUATION OF MOD V/N FLEET
 83269000000
 LLYG3
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -18.93e 65.00, 46.68 s 45.00
 PLUT DATE 29-SEP-83 12:05:23



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

TAC

830926

EVALUATION OF MOD VV FLEET

83269000000

LLRYV3

PLOT DATE 30-SEP-83 08:40:32

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.018 -16.25, 23.37 & 163.75

80.00

50.00

40.00

30.00

20.00

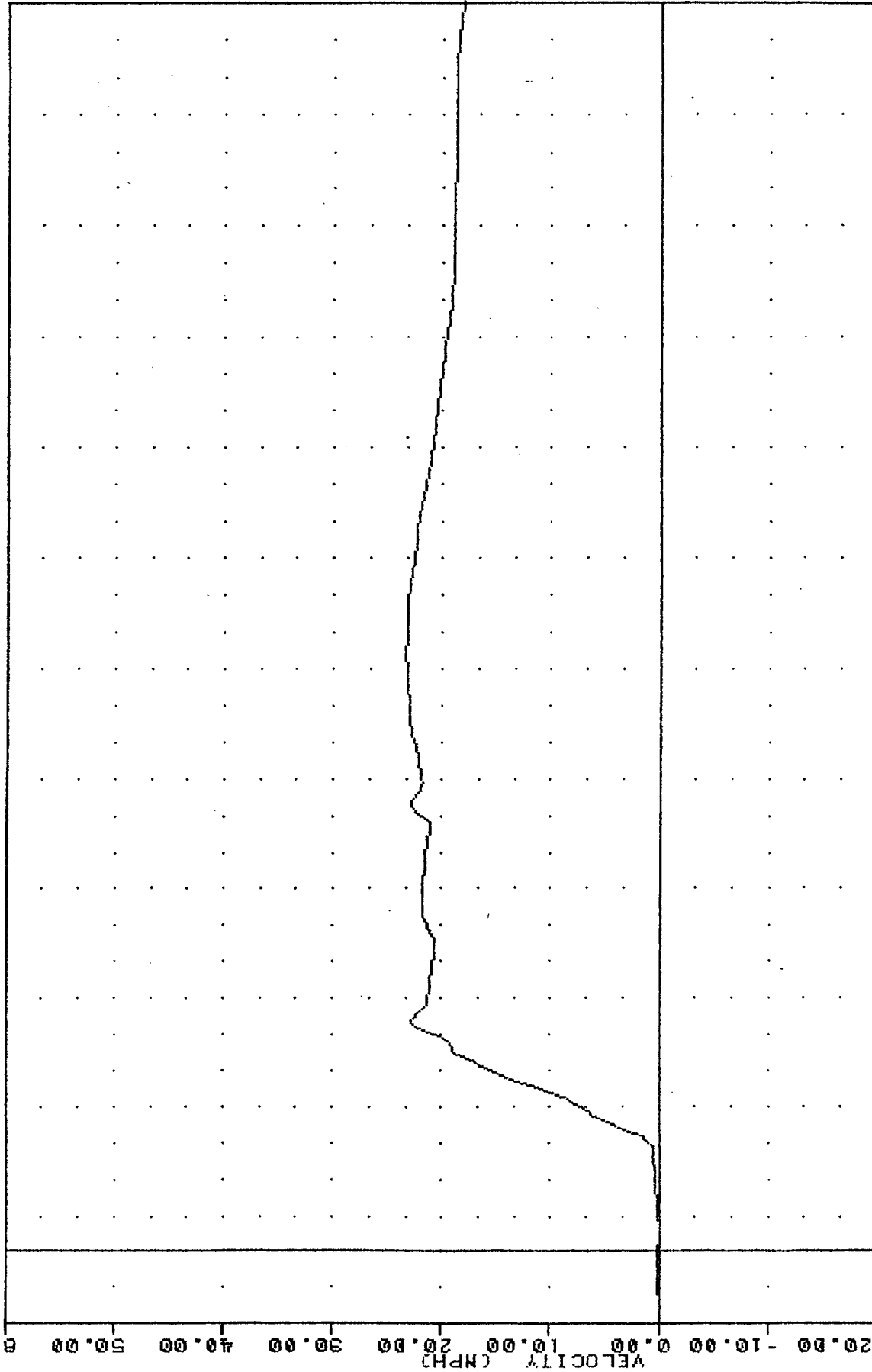
10.00

0.00

-10.00

-20.00

B-61



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

TIME (NSEC)

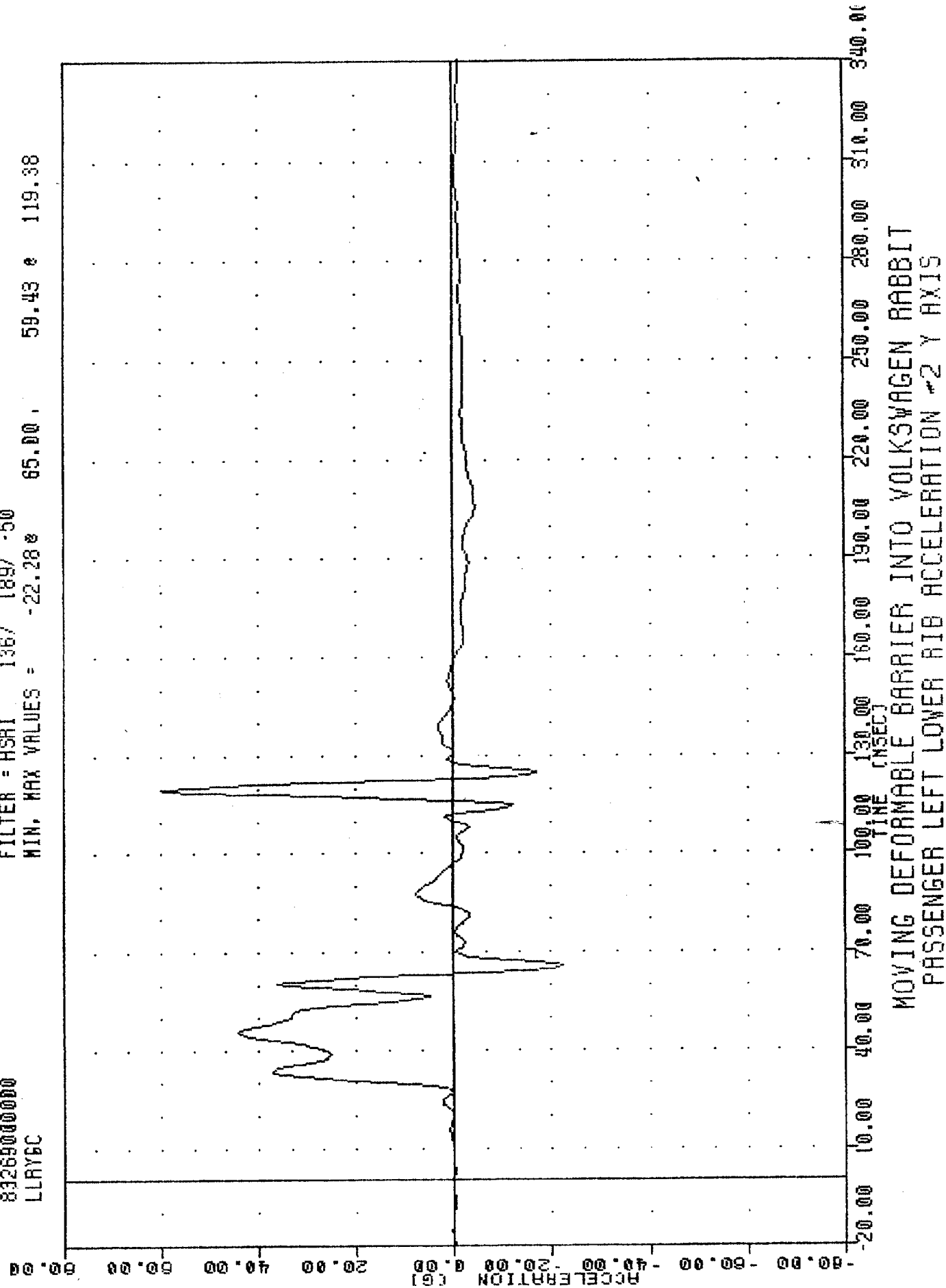
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING LLRYG3

TAC 830926
 EVALUATION OF MOD VV FLEET
 83269000000
 LLRY6C

PLOT DATE 29-SEP-83 12:05:23

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -22.28 65.00 59.43 119.38



THC 030926 30-SEP-83 08:40:32

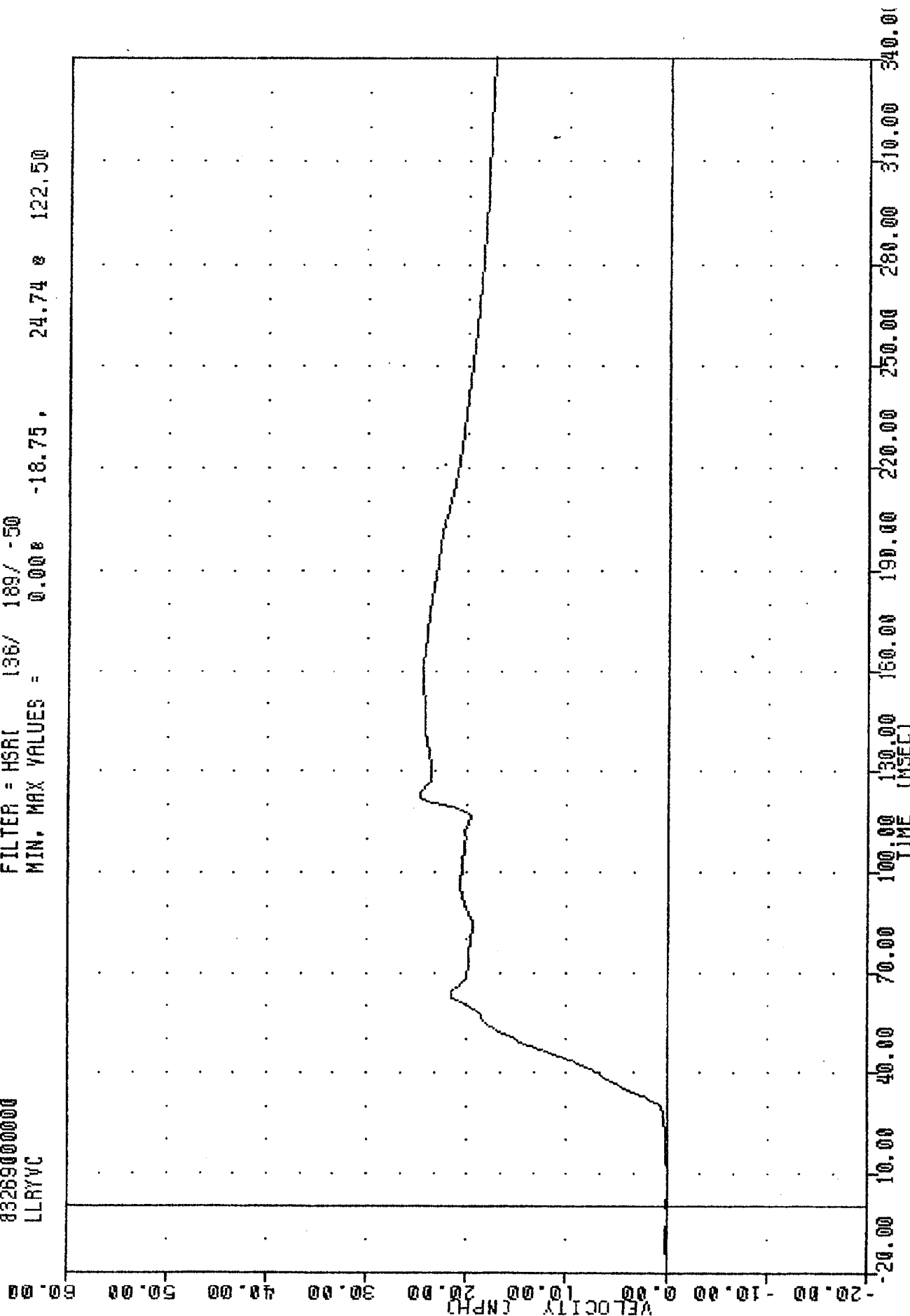
EVALUATION OF MOD VN FLEET

83269000000

LLRYVC

FILTER = HSRI 136/ 189/ -50

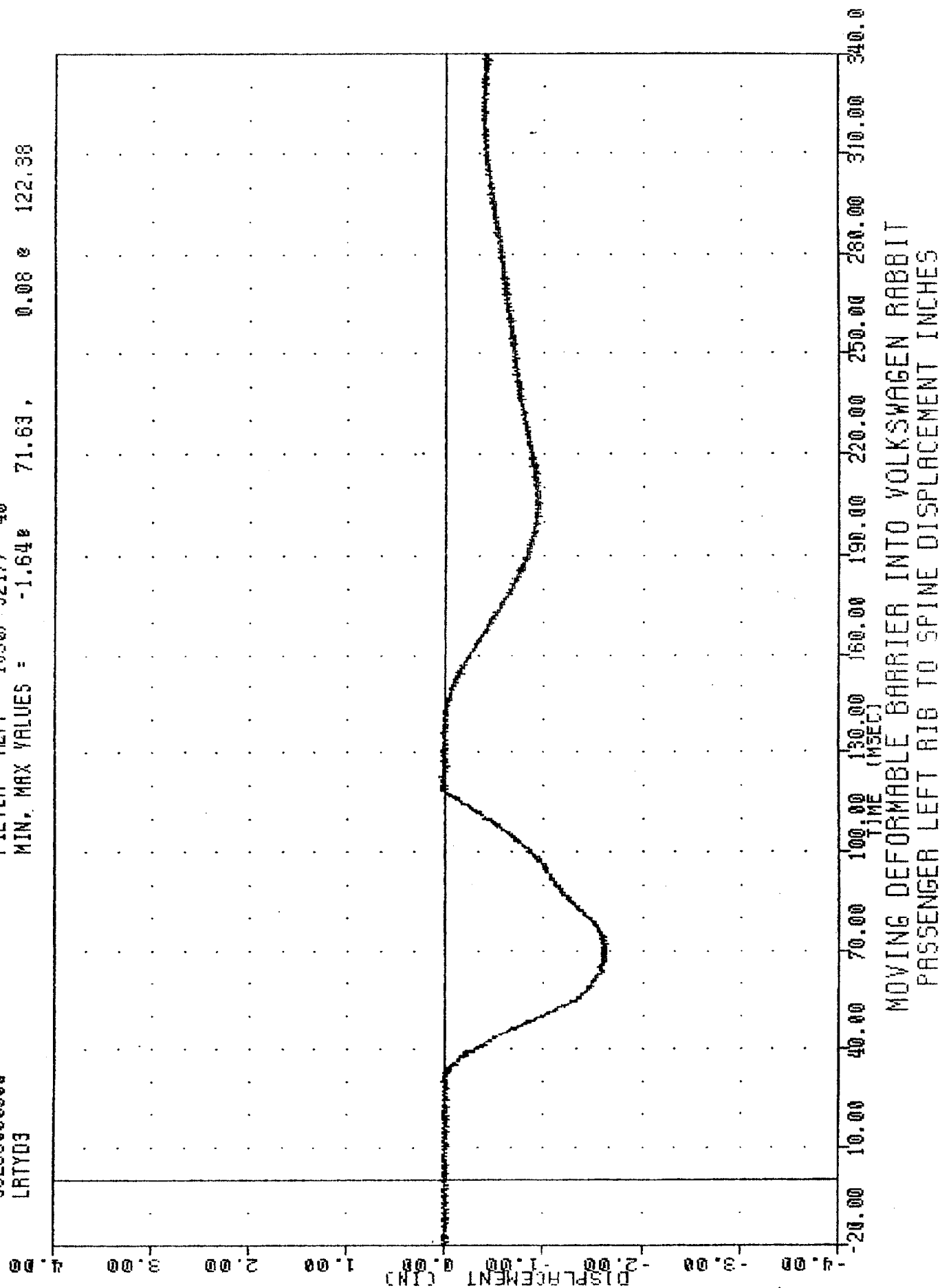
MIN. MAX VALUES = 0.00 24.74 122.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING LLRYGC

TRC 830925 28-SEP-83 12:06:59
 EVALUATION OF MOD VV FLEET
 83269000000
 LRTY03
 FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = -1.64 71.63, 0.08 122.38



TRC , 830926

PLOT DATE 29-SEP-83 14:29:08

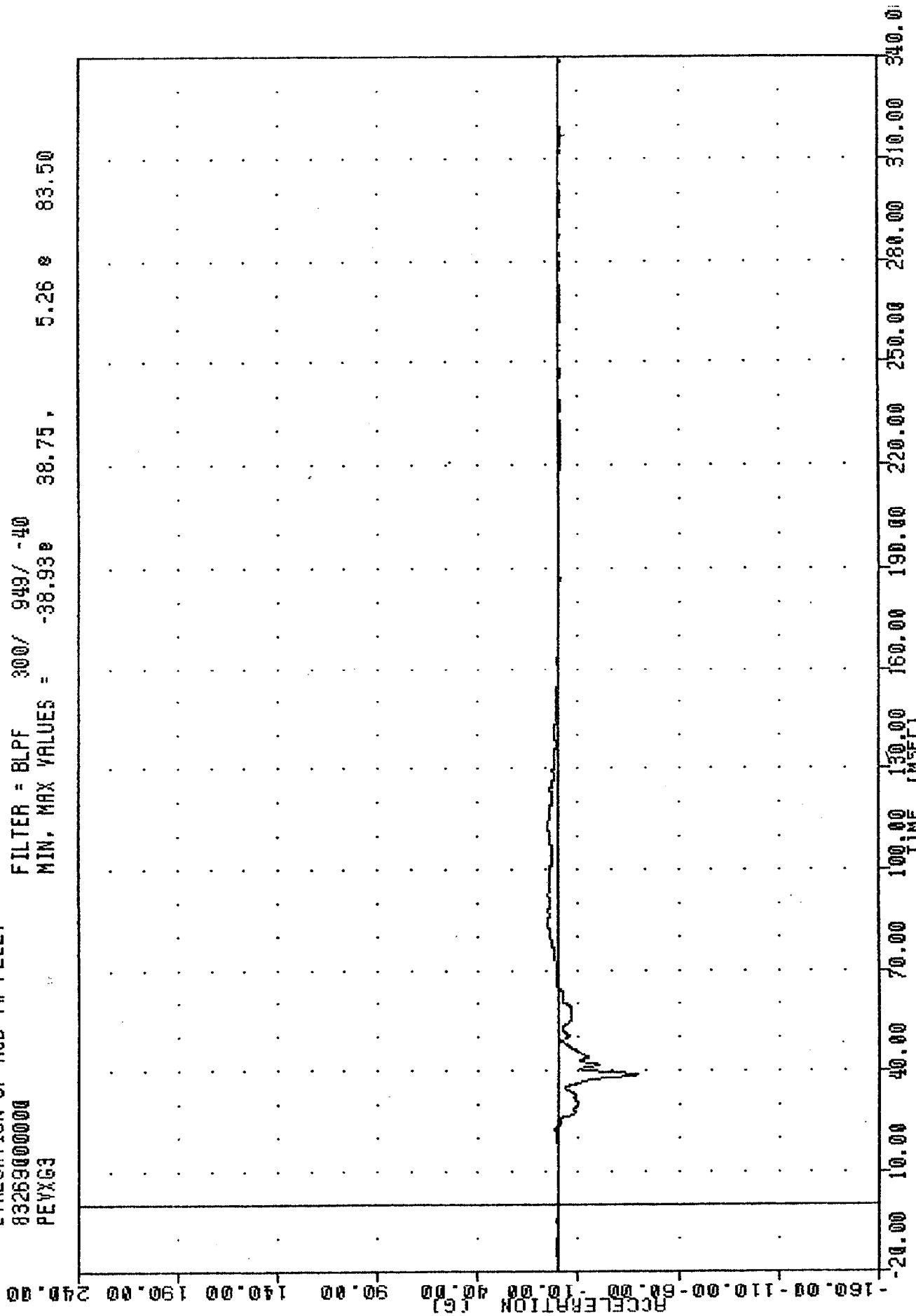
EVALUATION OF MOD YW FLEET

83263000000

PEVXG3

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -38.93e 38.75, 5.26 e 83.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS ACCELERATION X AXIS

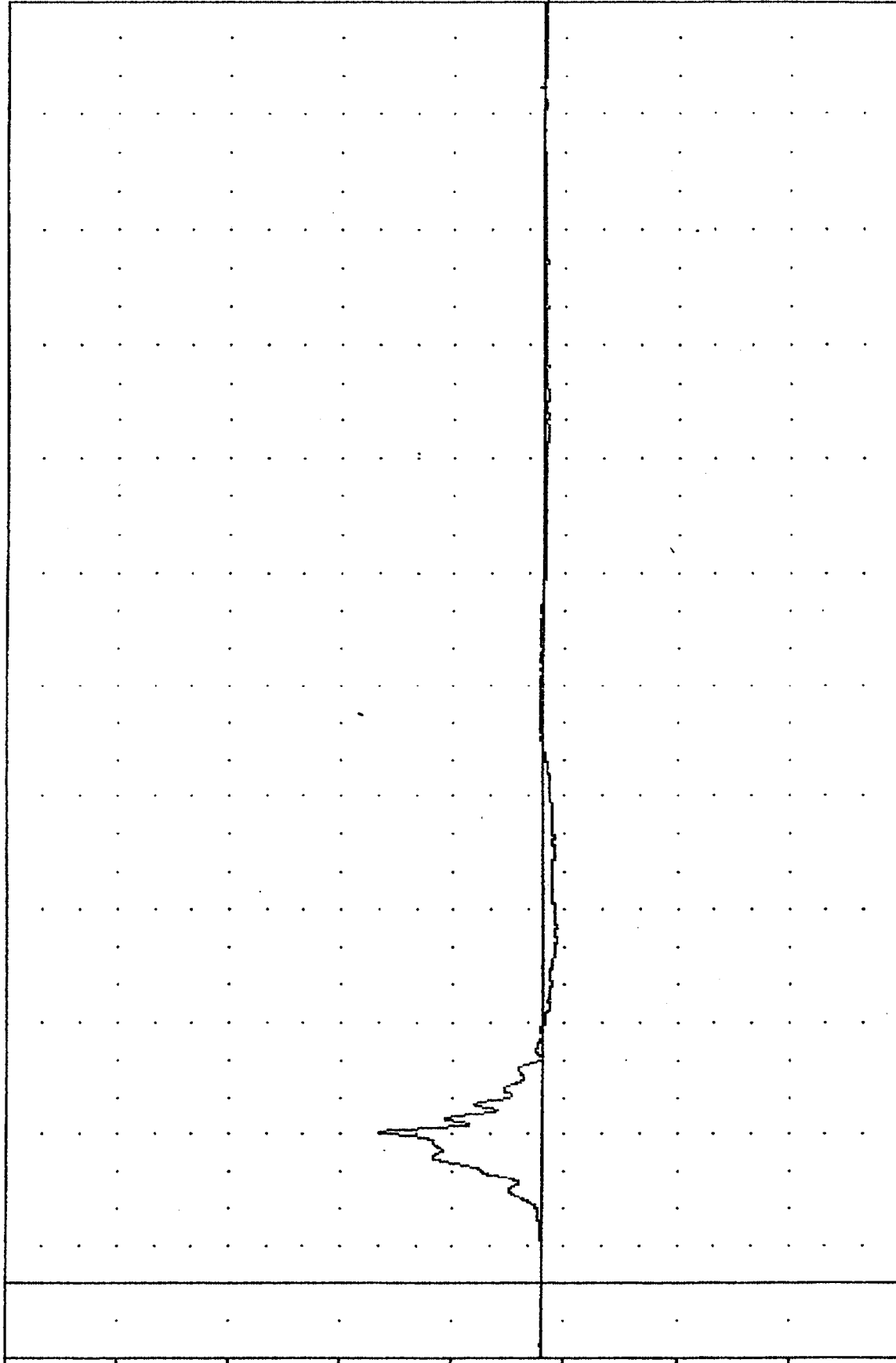
TRC , 830926
EVALUATION OF MDD VW FLEET
832690000000
PEVYG3

PLOT DATE 28-SEP-83 14:29:08

FILTER = BLPF 300/ 949/ -10

MIN, MAX VALUES = -6.018 91.88, 73.22 s 40.50

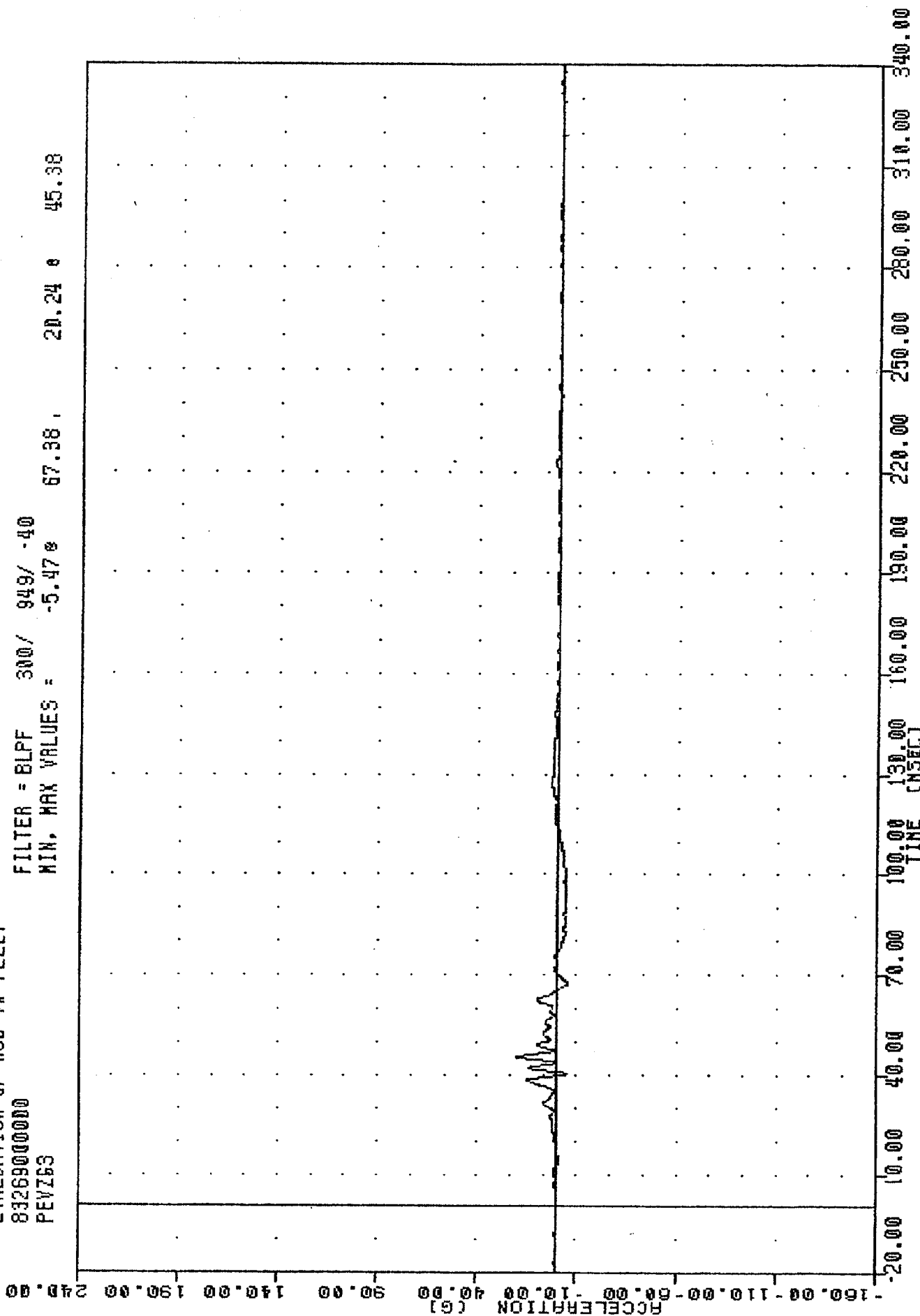
ACCELERATION (G)



TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS ACCELERATION Y AXIS

TAC 630926
 EVALUATION OF MOD VW FLEET
 83269000000
 PEVZ63
 PLOT DATE 29-SEP-83 14:29:08
 FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -5.47 67.38 20.24 45.38



TRC 830926 PLOT DATE 29-SEP-83 12:06:59

EVALUATION OF 100 VW FLEET

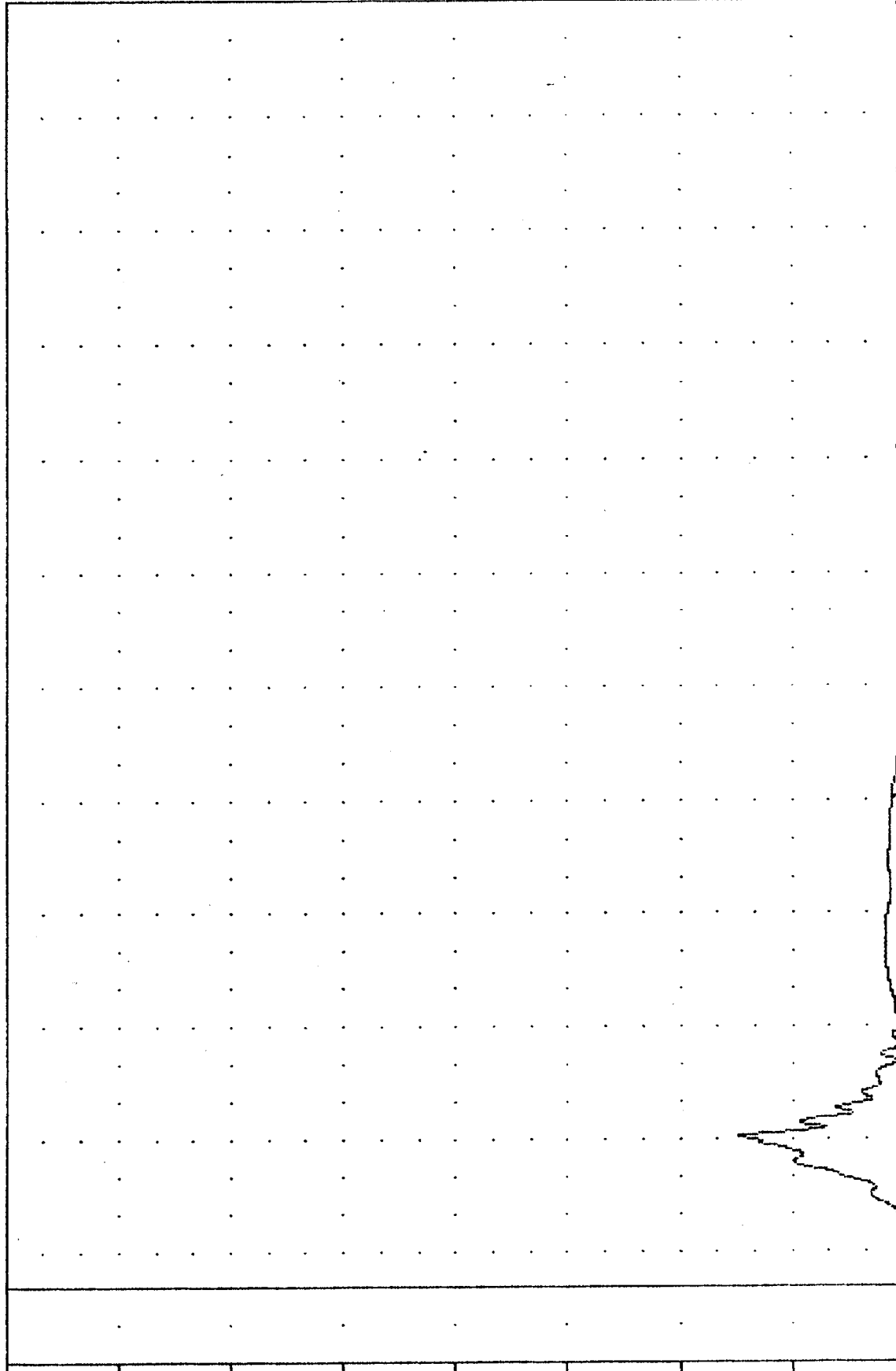
83269000000

PEVR63

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = 0.020 -1.25, 74.12 40.50

ACCELERATION [G]



TIME [MSEC]

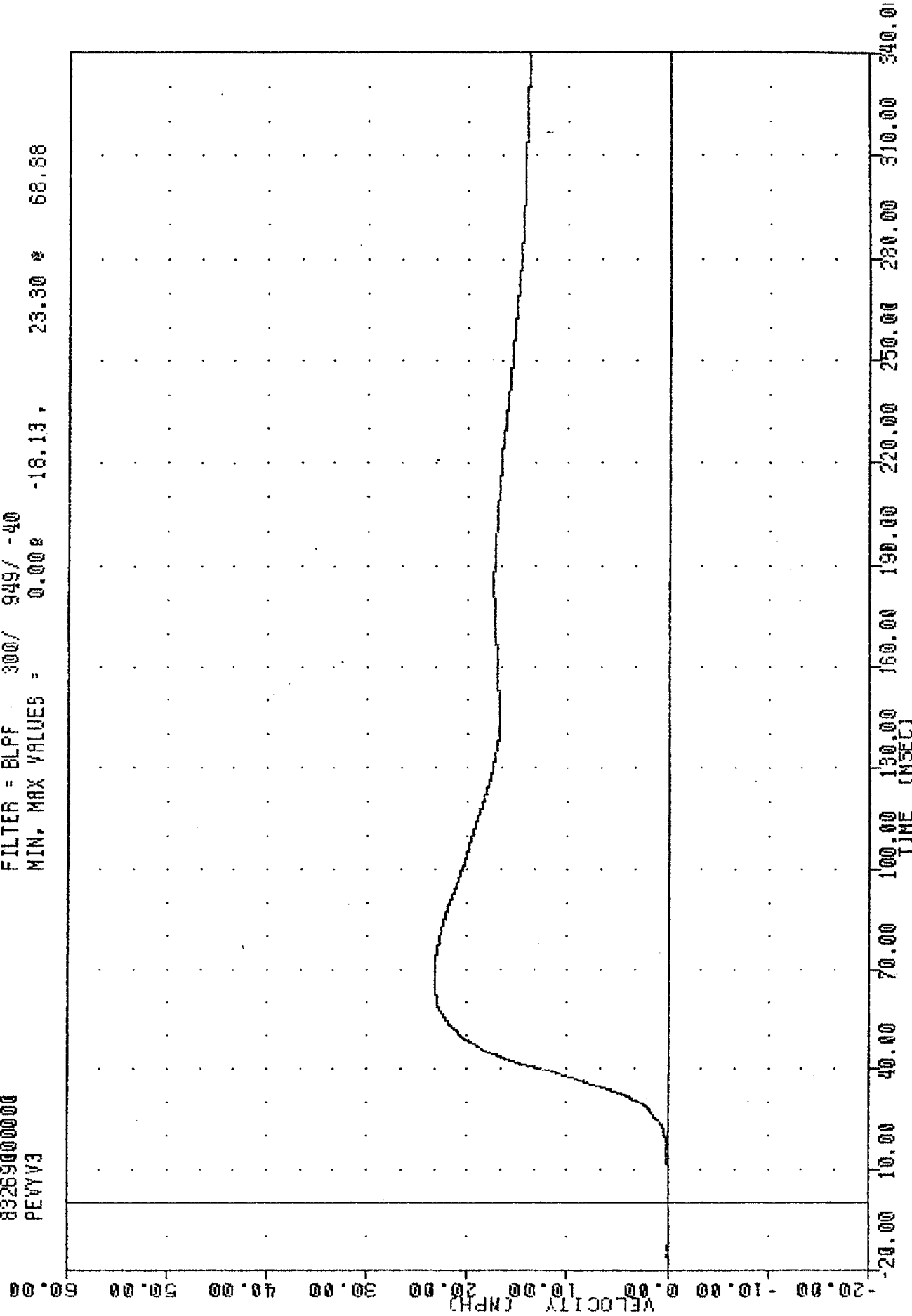
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

PASSENGER PELVIS RESULTANT

TRC
EVALUATION OF MOD YW FLEET
83269000000
PEVYV3

PLOT DATE 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = 0.00# -18.13, 23.30# 68.88

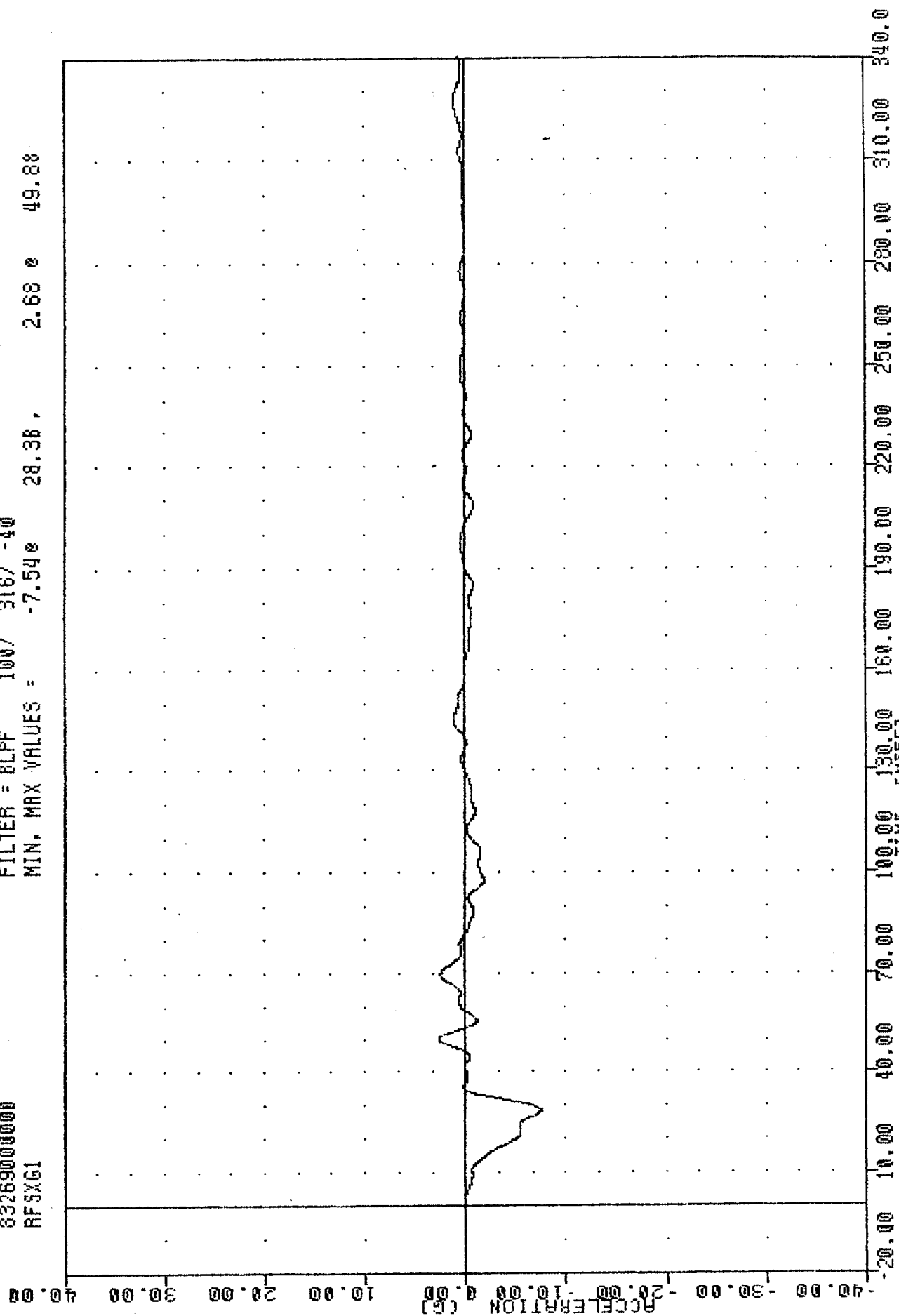


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING PEVY63

TRC 830926
 EVALUATION OF MOD VW FLEET
 832690000000
 RF5XG1

PLOT DATE 29-SEP-83 12:06:59

FILTER = 8LFF 100/ 316/ -40
 MIN. MAX VALUES = -7.54g 28.38g 2.68g 49.88g



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

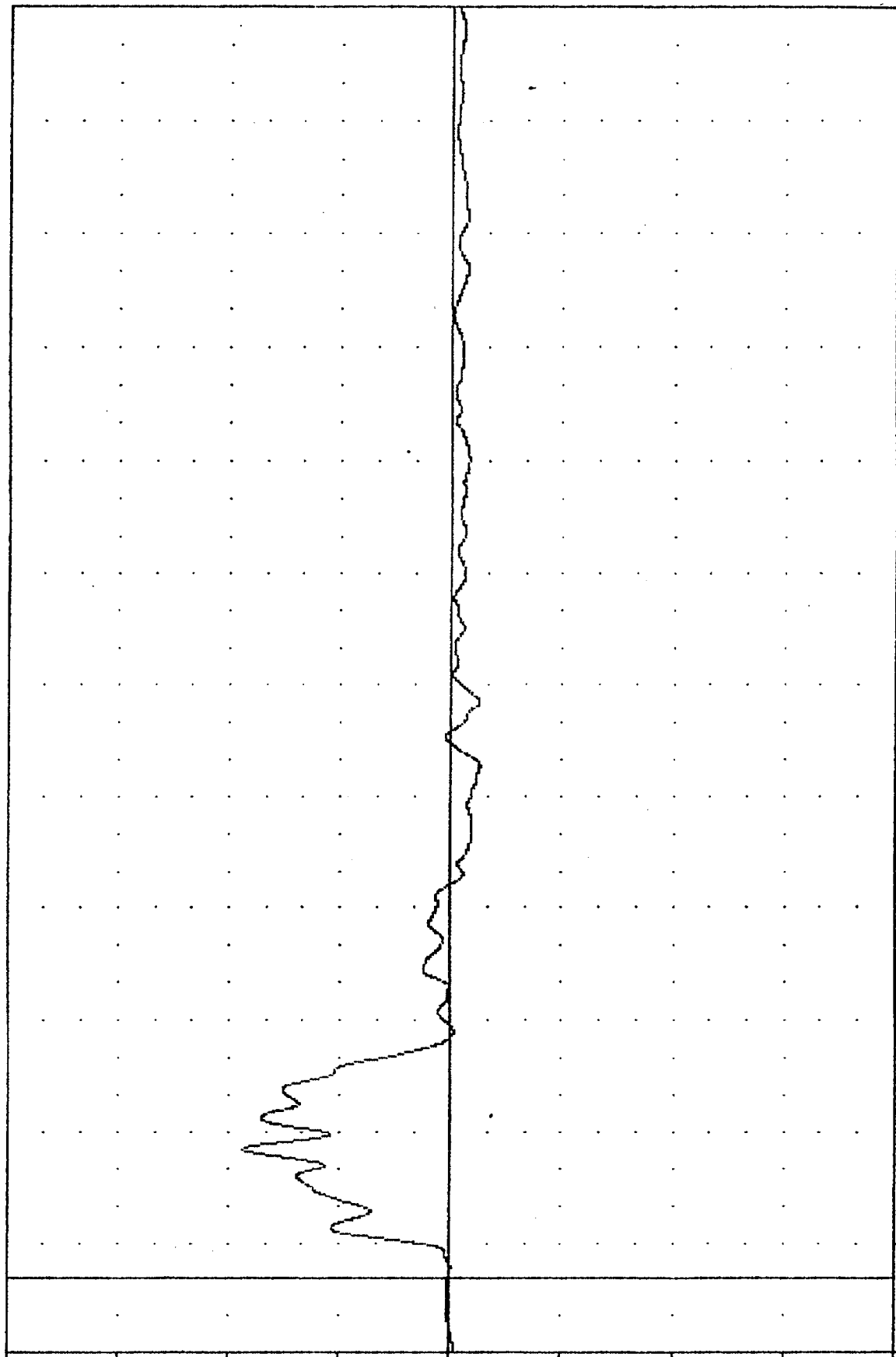
TAC
 EVALUATION OF MOD VV FLEET
 83269000000
 RFSYB1

PLOT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -2.62e 138.00, 18.68 e 35.13

ACCELERATION (G)



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

TRC 830926 PLOT DATE 29-SEP-83 12:06:59

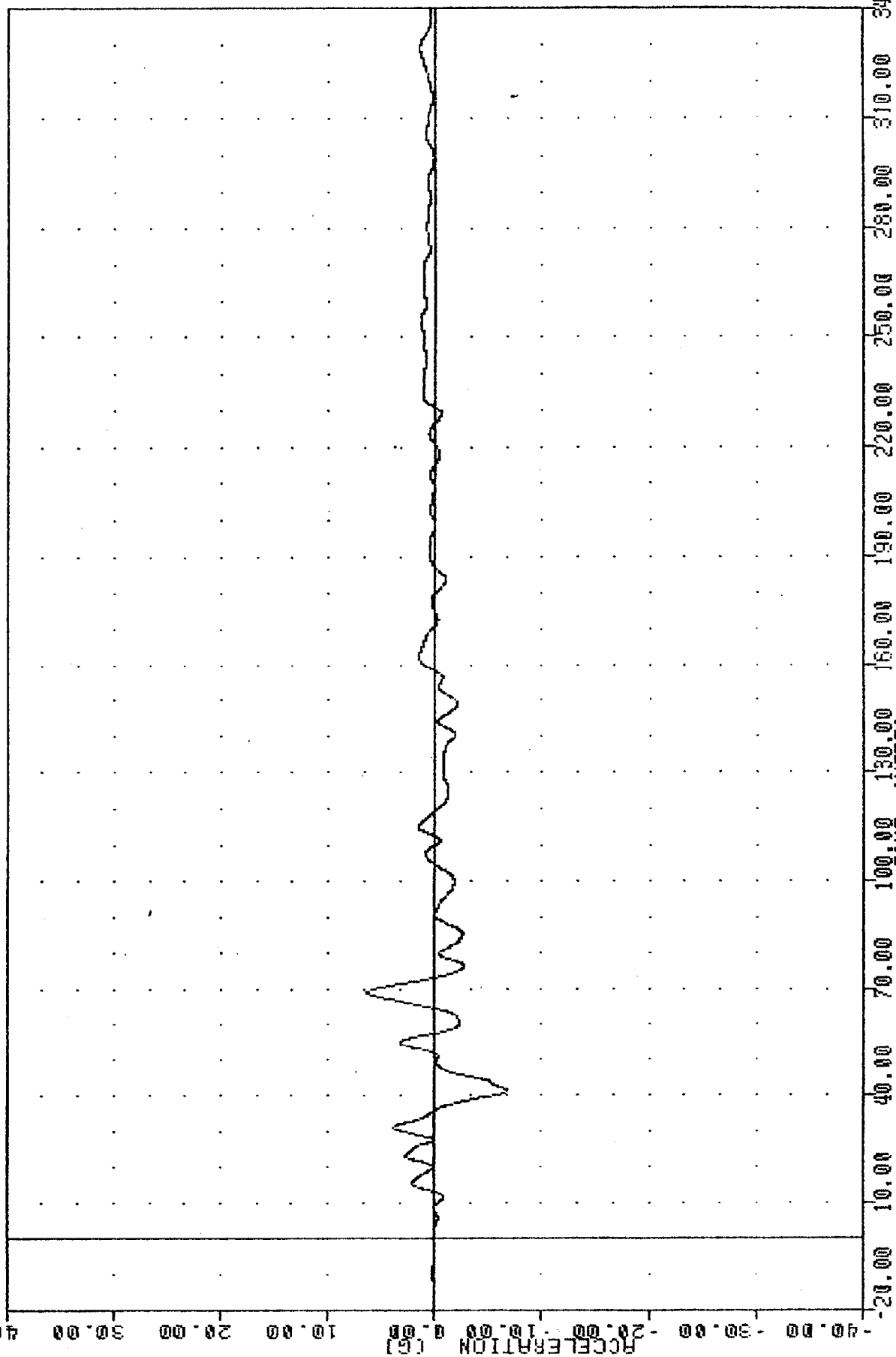
EVALUATION OF MOD VW FLEET

83269000000

RFSZG1

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -6.73 41.13, 6.34 68.88



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

TRC , 830926 PLOT DATE, 29-SEP-83 12:06:59

EVALUATION OF MOD YW FLEET

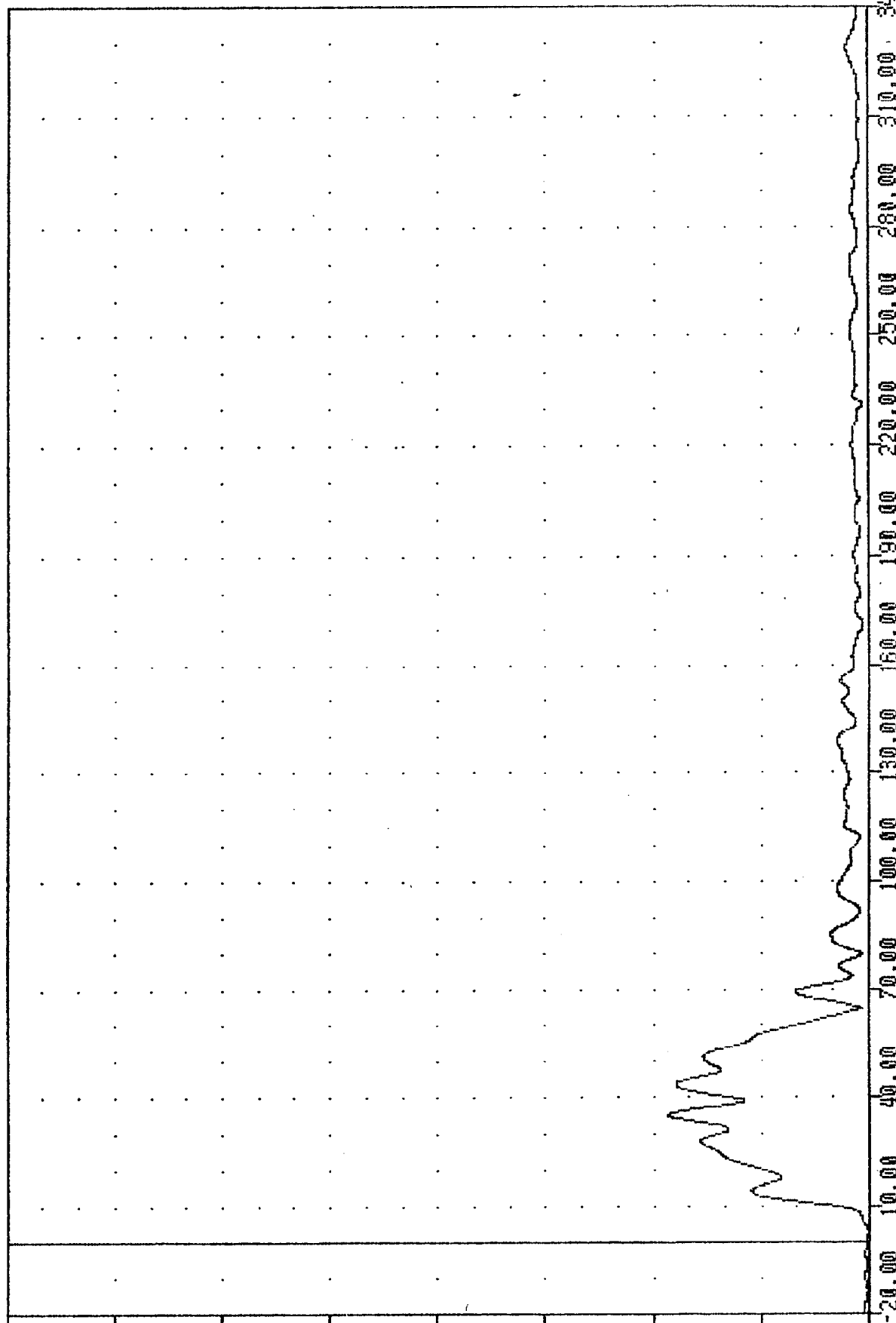
83269000000

AF3RG1

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = 0.068 3.00, 18.68 35.13

ACCELERATION (G)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT FRONT SILL REINFORCEMENT

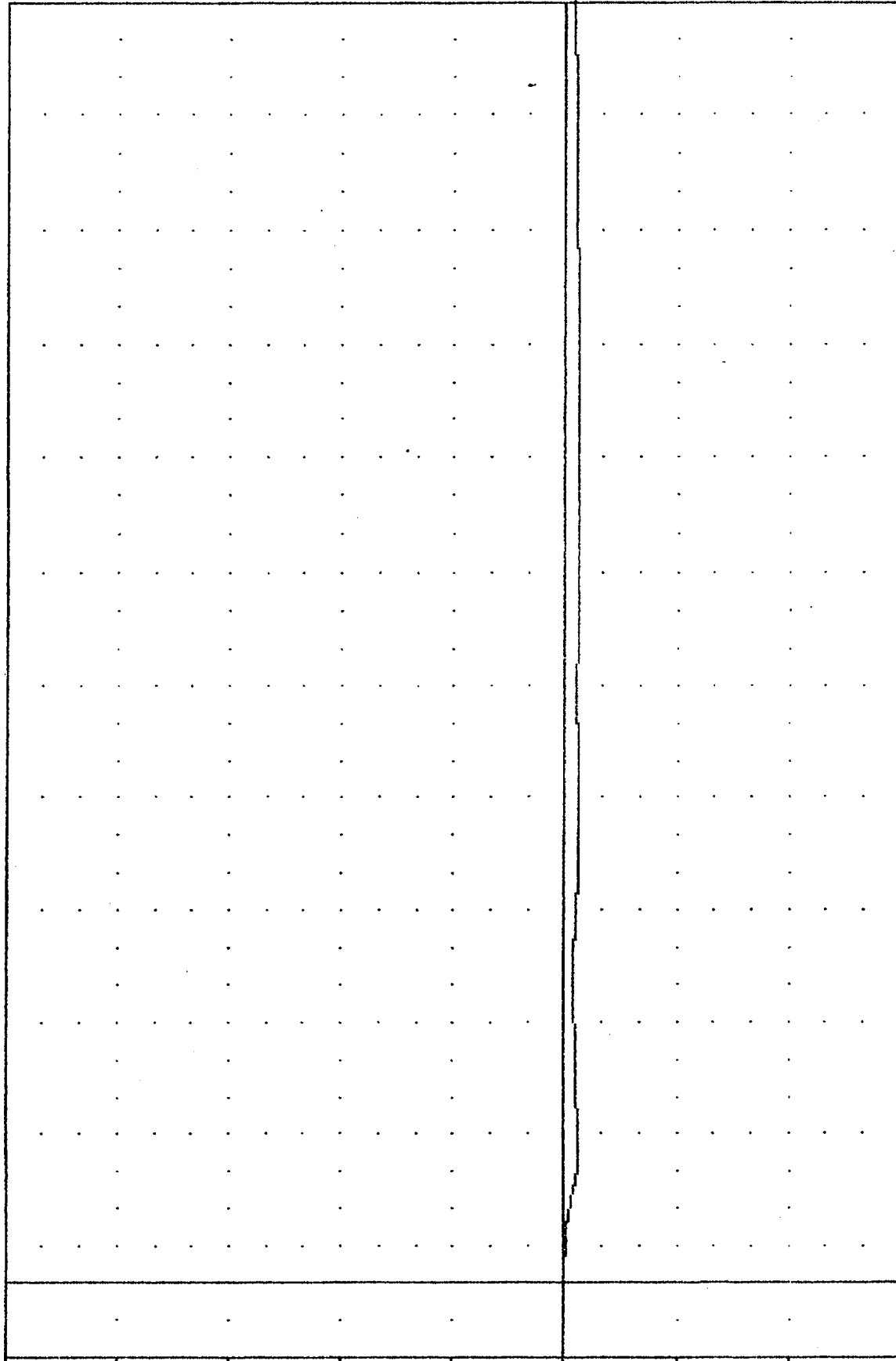
TRC
EVALUATION OF MOD VW FLEET
83269000000
RFSXV1

PLOT DATE- 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -2.438 125.75, 0.02 s 1.25

VELOCITY (MPH)



20.00 40.00 60.00 80.00 100.00 120.00 140.00 160.00 180.00 200.00 220.00 240.00 260.00 280.00 300.00 320.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

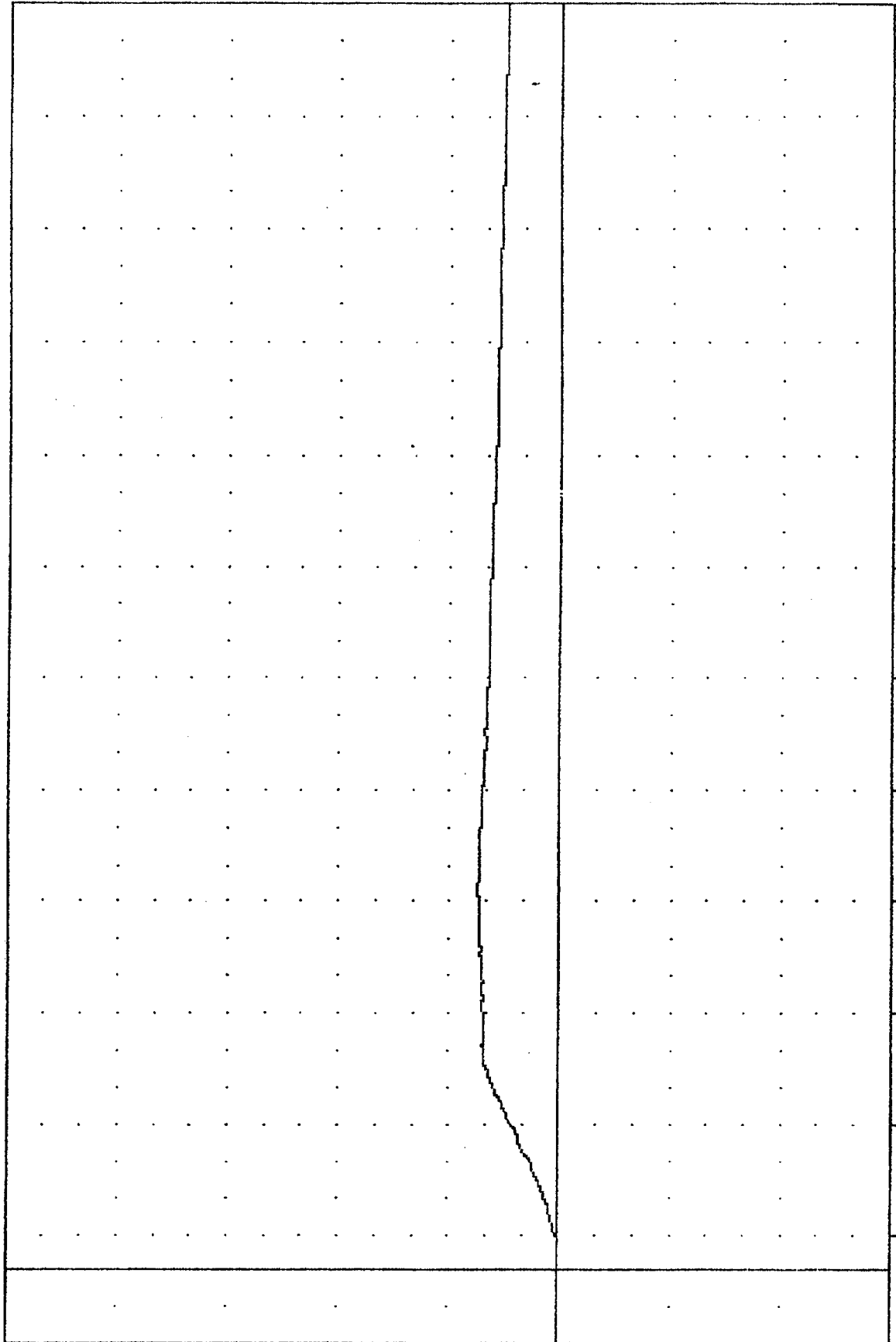
NET TA V LISTING RFSYGI

TAC
EVALUATION OF MOD VW FLEET
83269000000
RFSYV1

PLOT DATE, 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -0.010 -17.50, 14.86 e 102.38

100.00
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
-100.00



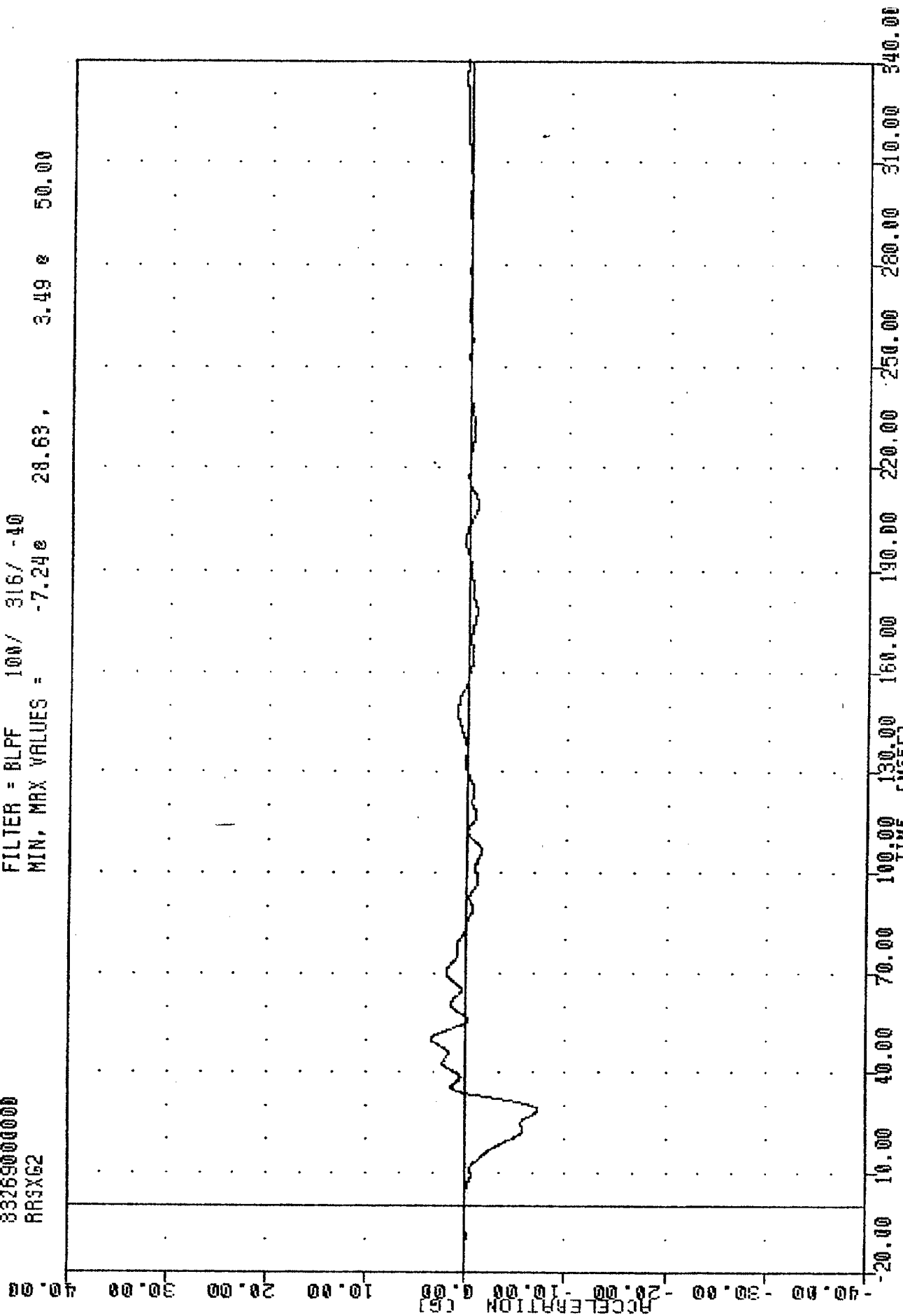
TIME (NSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RFSYG1

TRC
EVALUATION OF MOD VW FLEET
33269000000
RR3XG2

PLOT DATE, 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -7.24e 28.63, 3.49 e 50.00



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

TAC 830926

EVALUATION OF MOD VW FLEET

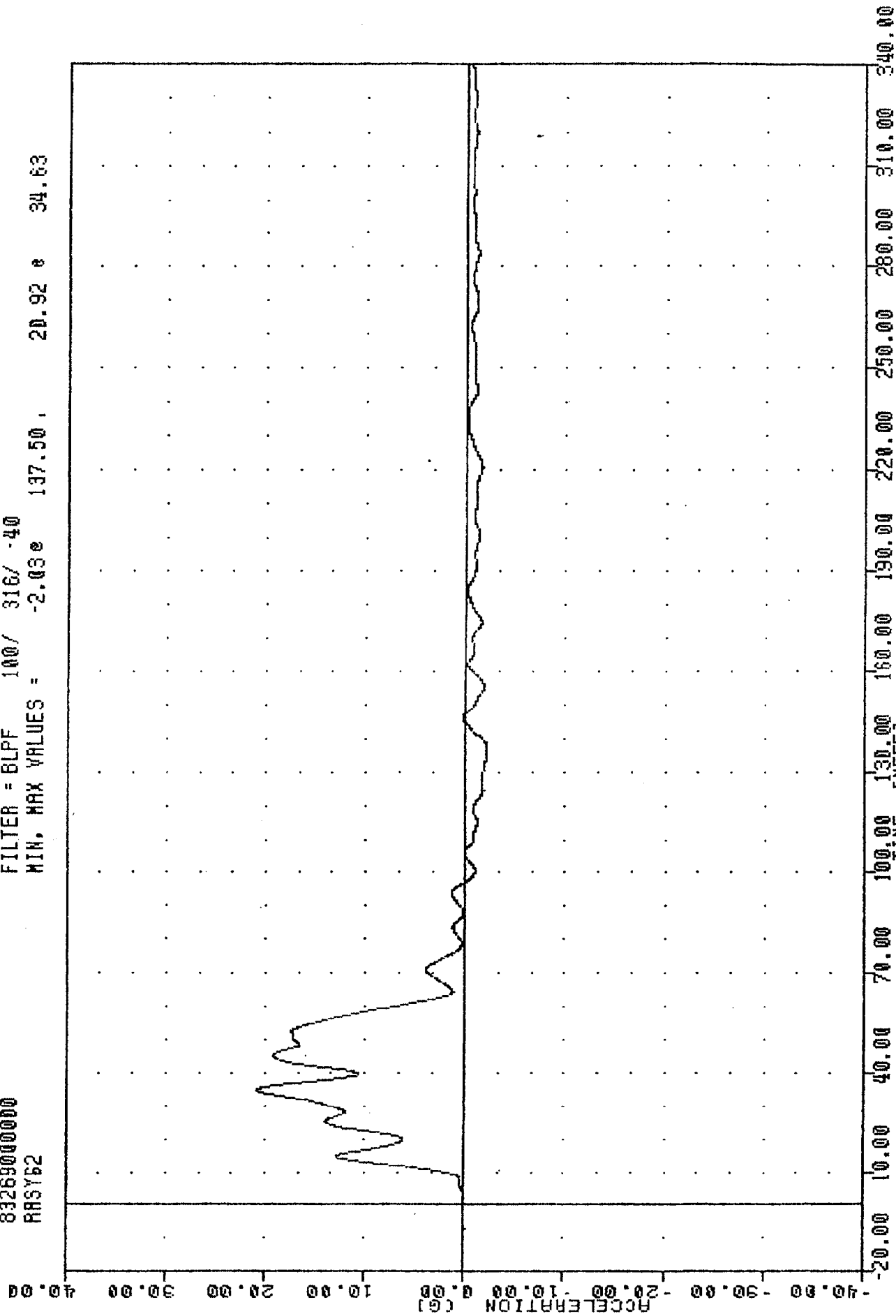
83269000000

RASY62

PLOT DATE, 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -2.03e 137.50, 20.92 e 34.63



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

TRC 830925 29-SEP-83 12:06:59

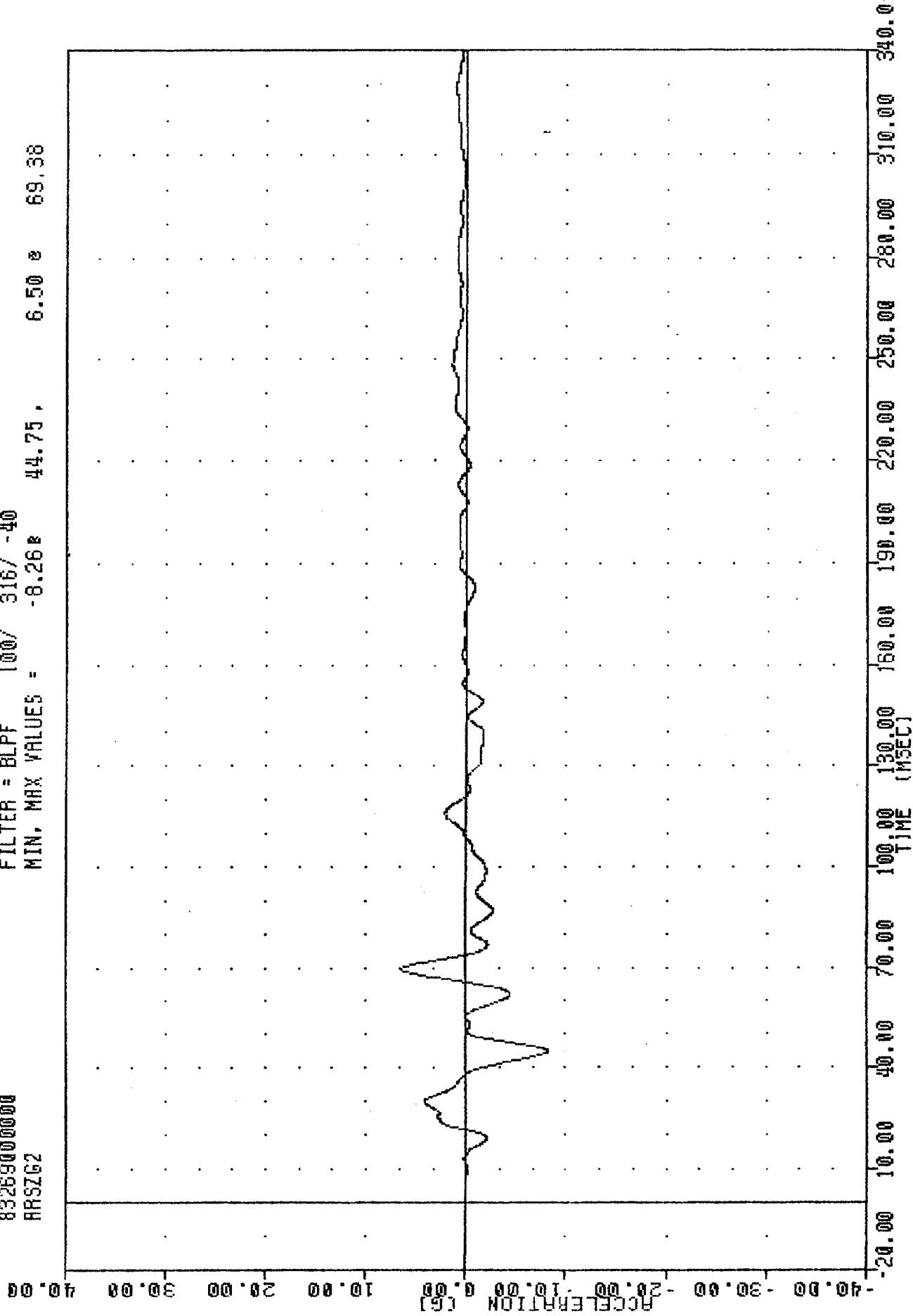
EVALUATION OF MOD YW FLEET

83269000000

ARSIG2

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -8.268 44.75 6.50 69.38



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

TRC

830926

EVALUATION OF MDD VV FLEET

83263000000

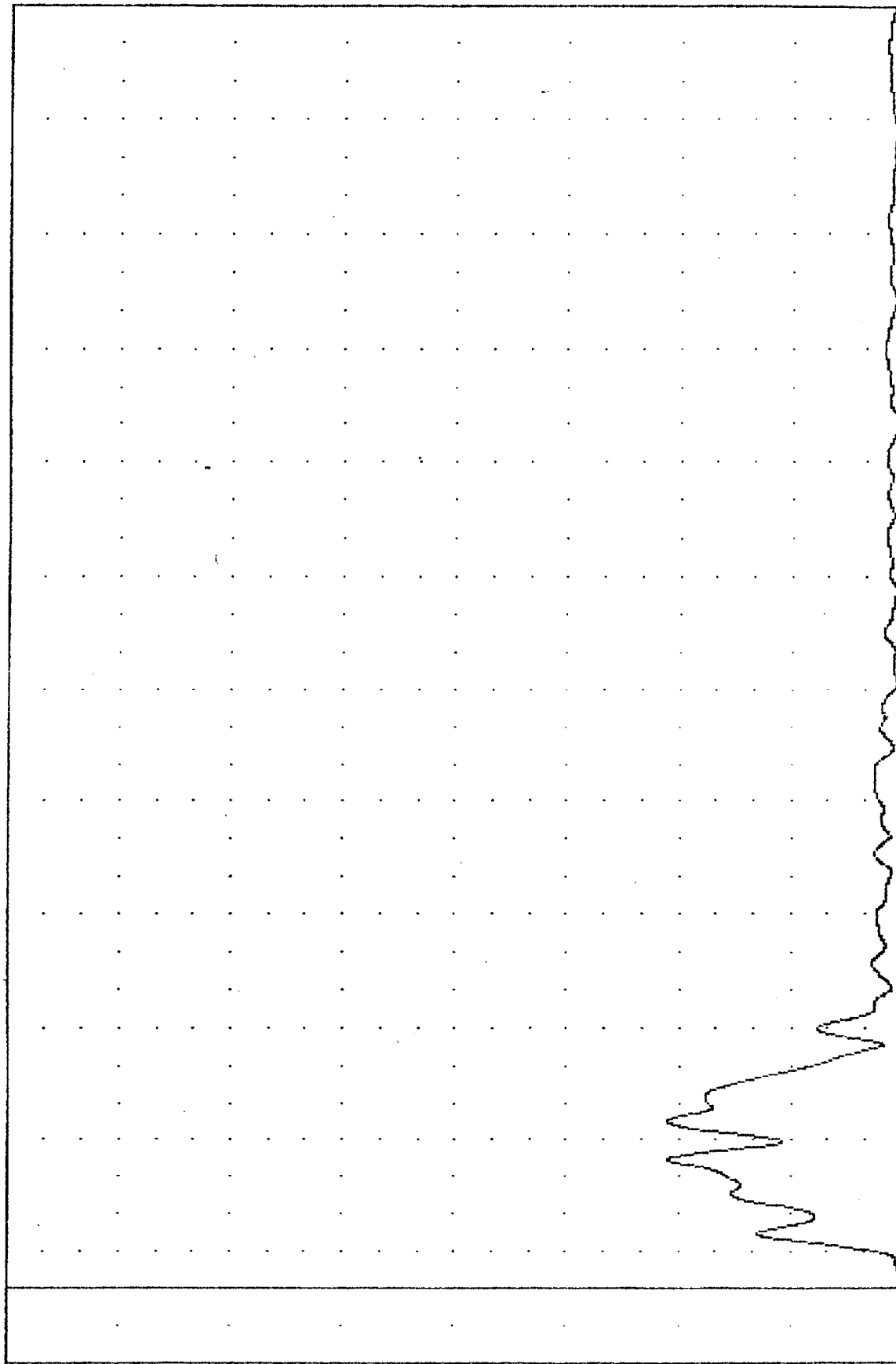
RRSRC2

PLOT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = 0.01% -5.63, 20.98 & 34.53

ACCELERATION (G)



TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT REAR SILL RESULTANT

TRC

830926

EVALUATION OF MOD YV FLEET

83269000000

RRSXV2

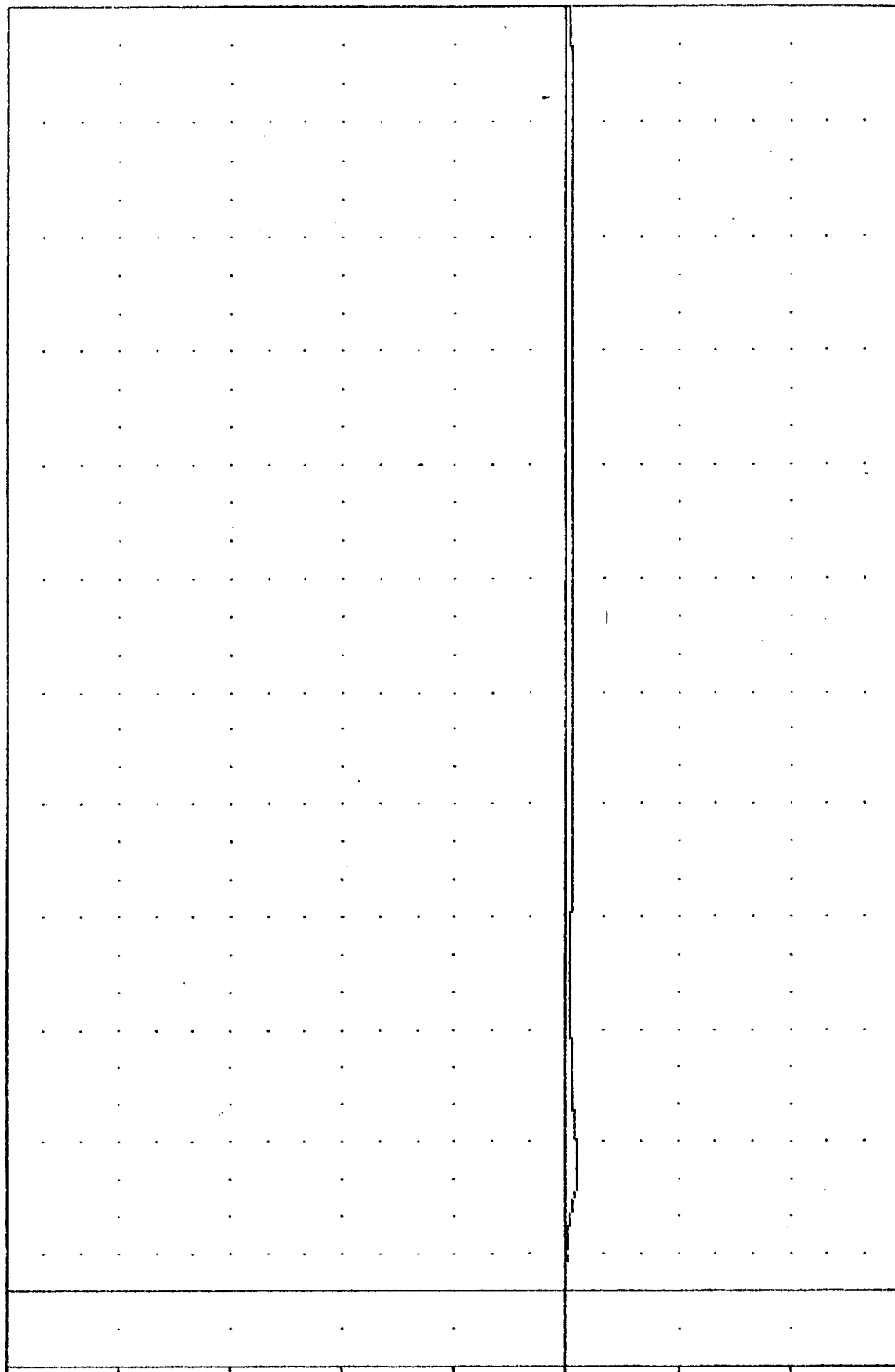
PLUT DATE 30-SEP-83

08:41:37

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -2.06 30.75, 0.01 e -14.63

VELOCITY (MPH)



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

TIME (MSEC)

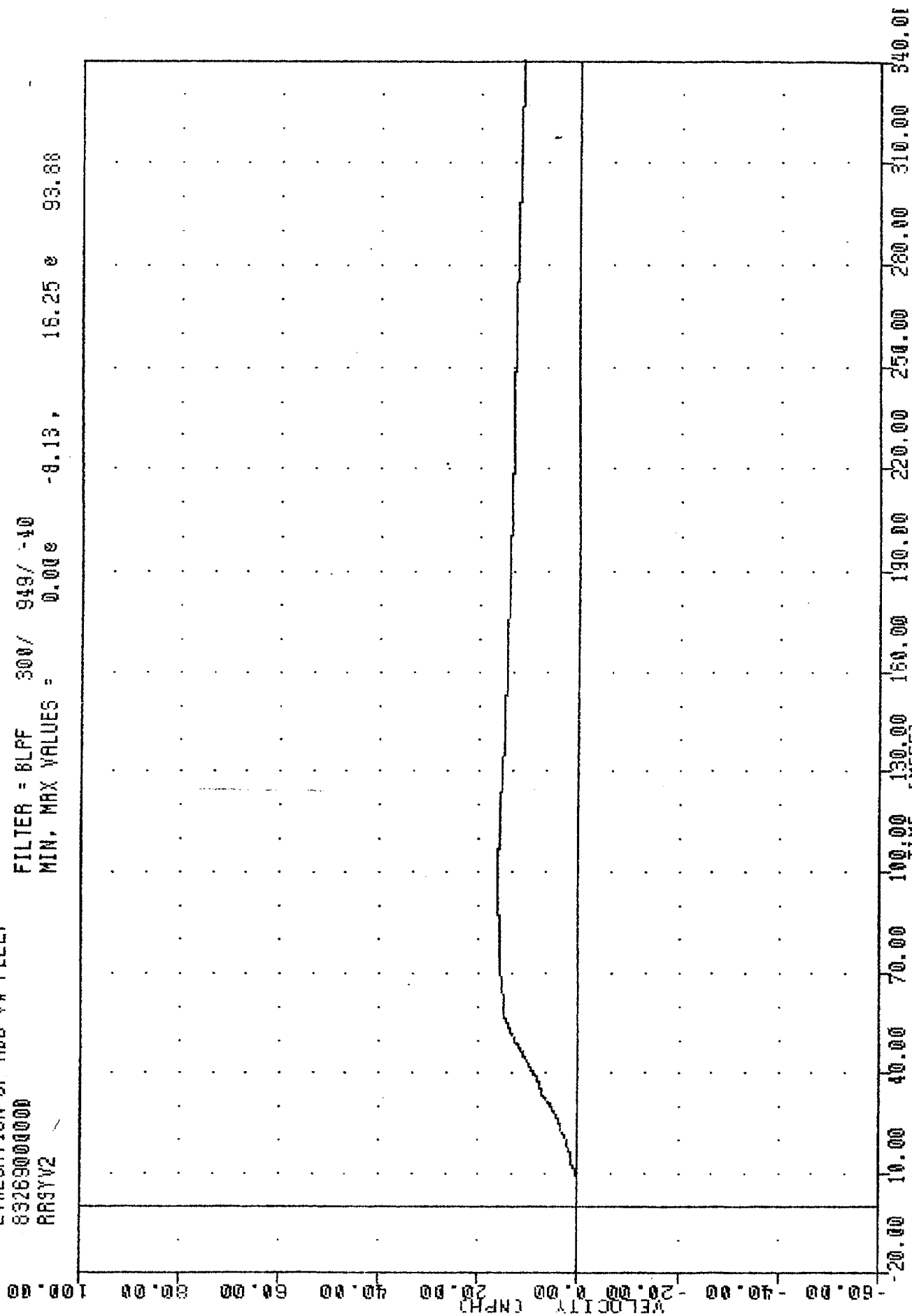
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING RRSXG2

TRC
EVALUATION OF MDD VW FLEET
83269000000
RRSYV2

PLOT DATE 30-SEP-83 08:41:37

FILTER = 8LPP 300/ 949/ -40
MIN. MAX VALUES = 0.000 -8.13, 16.25 93.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RRSYG2

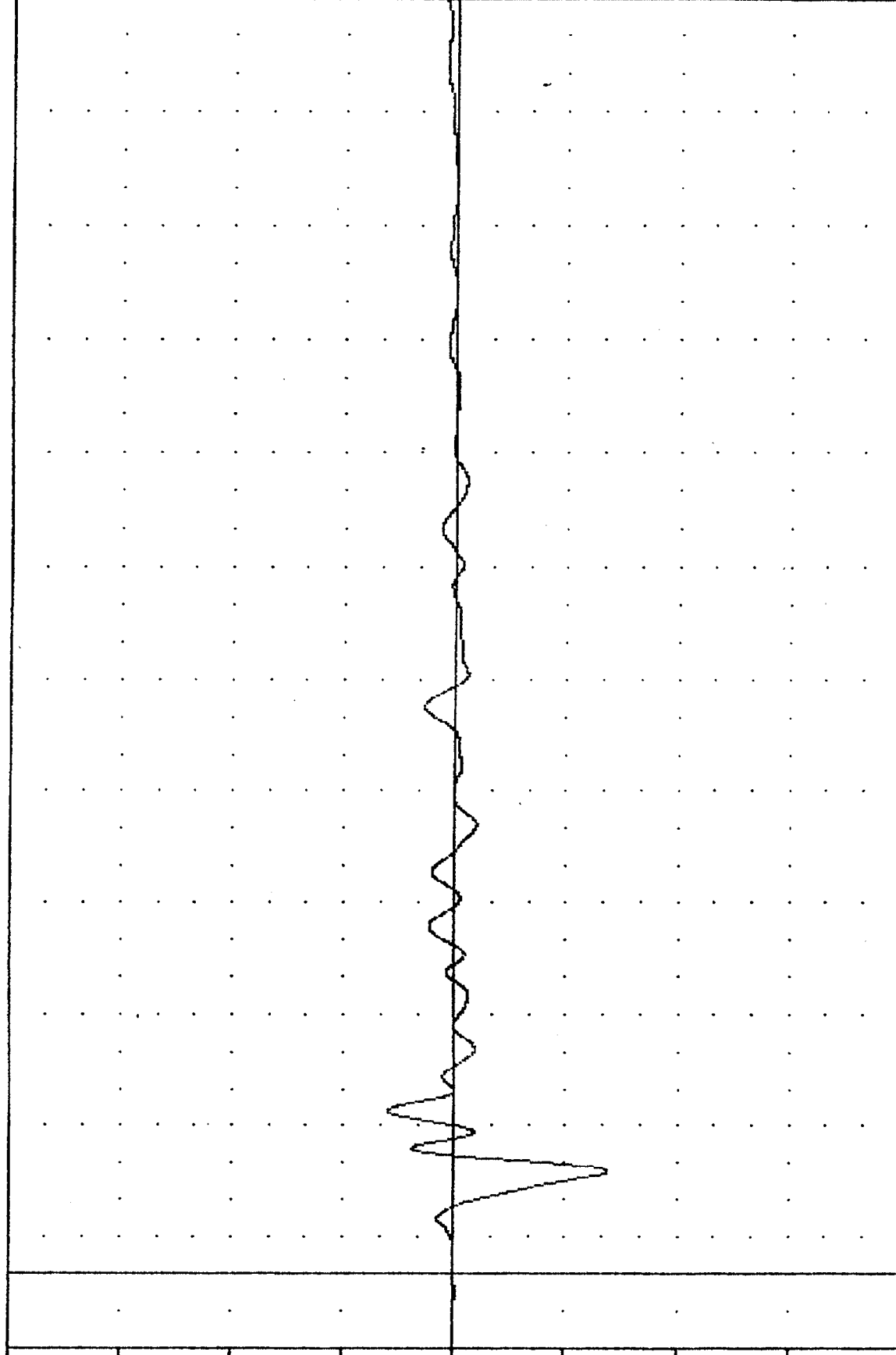
TFC
EVALUATION OF MDD VEHICLE FLEET
83269000000
RDKXG3

830926
PLUT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -10

MIN. MAX VALUES = -13.818 27.50 6.04 s 43.88

ACCELERATION (G)

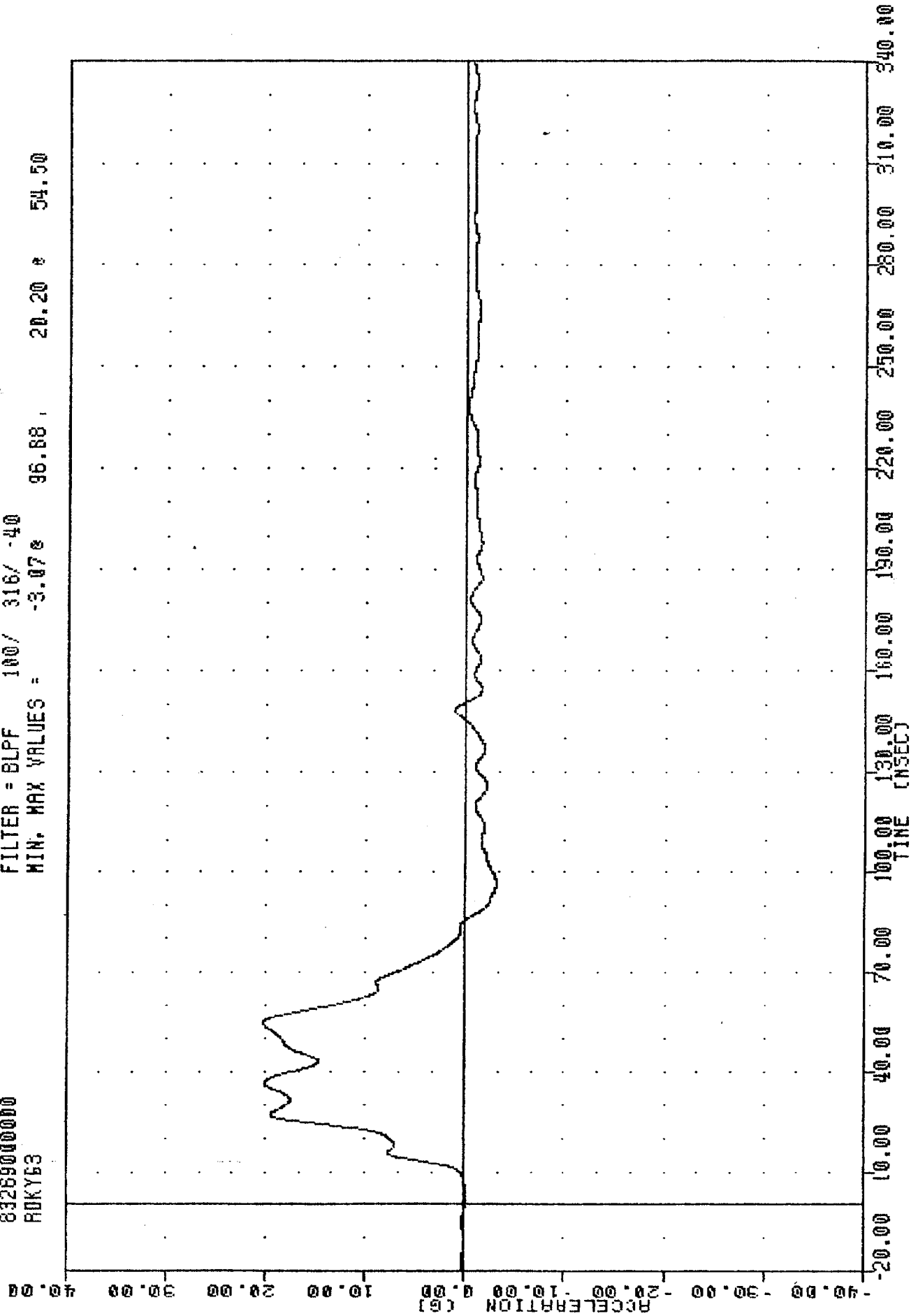


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION X AXIS

TAC 830926
EVALUATION OF MOD VW FLEET
83269000000
ADKY63

PLOT DATE 29-SEP-83 12:06:59

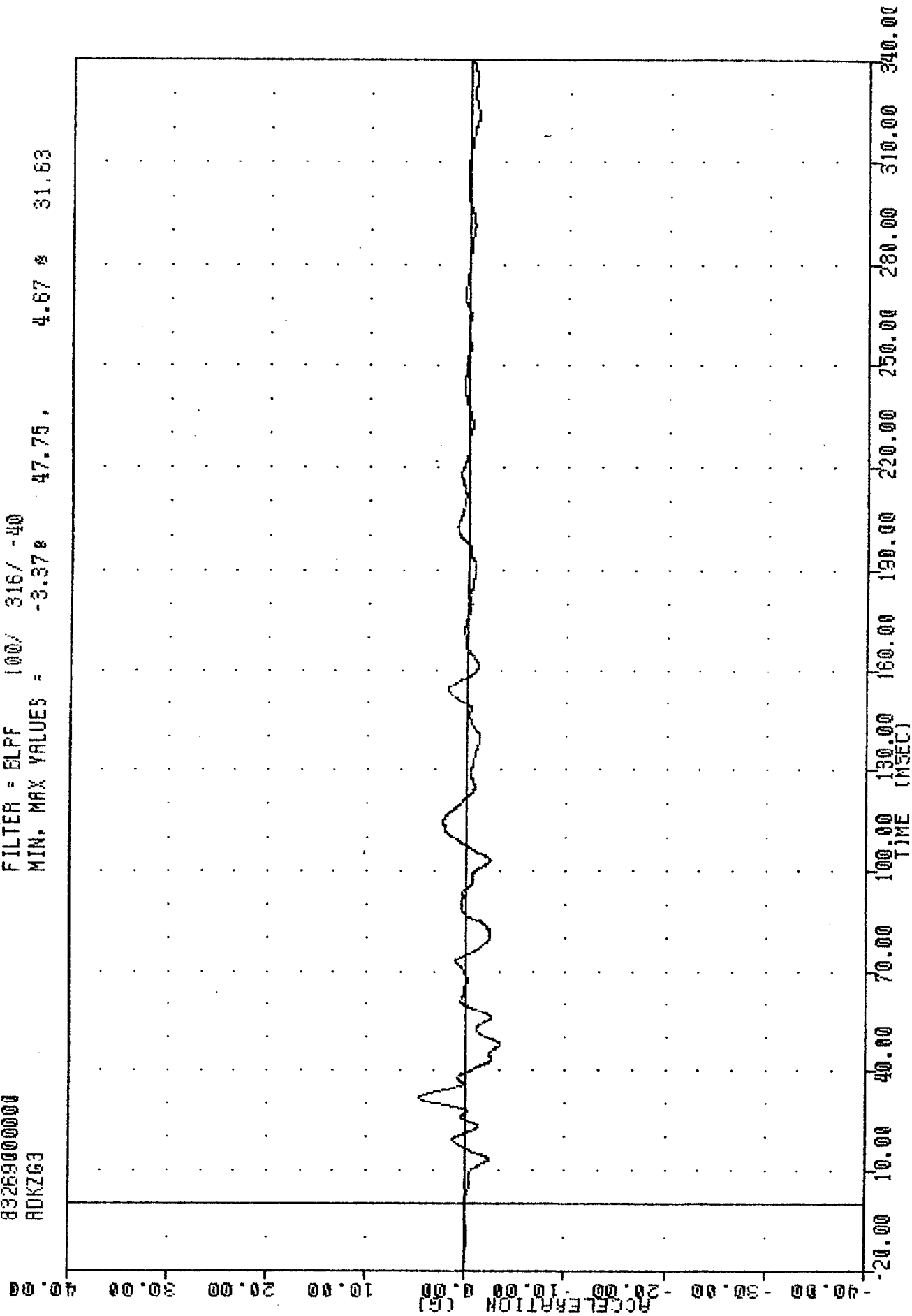
FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -3.078 96.88 20.20 * 54.50



TAC 830926
EVALUATION OF MOD YW FLEET
83259000000
ADKZG3

PLOT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -3.37% 47.75, 4.67% 31.63



TAC

830926

EVALUATION OF MOD VN FLEET

83269000000

RDKR63

PLOT DATE, 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = 0.078 -2.00, 23.72 & 27.25

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

350.00

360.00

370.00

380.00

390.00

400.00

410.00

420.00

430.00

440.00

450.00

460.00

470.00

480.00

490.00

500.00

510.00

520.00

530.00

540.00

550.00

560.00

570.00

580.00

590.00

600.00

610.00

620.00

630.00

640.00

650.00

660.00

670.00

680.00

690.00

700.00

710.00

720.00

730.00

740.00

750.00

760.00

770.00

780.00

790.00

800.00

810.00

820.00

830.00

840.00

850.00

860.00

870.00

880.00

890.00

900.00

910.00

920.00

930.00

940.00

950.00

960.00

970.00

980.00

990.00

1000.00

1010.00

1020.00

1030.00

1040.00

1050.00

1060.00

1070.00

1080.00

1090.00

1100.00

1110.00

1120.00

1130.00

1140.00

1150.00

1160.00

1170.00

1180.00

1190.00

1200.00

1210.00

1220.00

1230.00

1240.00

1250.00

1260.00

1270.00

1280.00

1290.00

1300.00

1310.00

1320.00

1330.00

1340.00

1350.00

1360.00

1370.00

1380.00

1390.00

1400.00

1410.00

1420.00

1430.00

1440.00

1450.00

1460.00

1470.00

1480.00

1490.00

1500.00

1510.00

1520.00

1530.00

1540.00

1550.00

1560.00

1570.00

1580.00

1590.00

1600.00

1610.00

1620.00

1630.00

1640.00

1650.00

1660.00

1670.00

1680.00

1690.00

1700.00

1710.00

1720.00

1730.00

1740.00

1750.00

1760.00

1770.00

1780.00

1790.00

1800.00

1810.00

1820.00

1830.00

1840.00

1850.00

1860.00

1870.00

1880.00

1890.00

1900.00

1910.00

1920.00

1930.00

1940.00

1950.00

1960.00

1970.00

1980.00

1990.00

2000.00

2010.00

2020.00

2030.00

2040.00

2050.00

2060.00

2070.00

2080.00

2090.00

2100.00

2110.00

2120.00

2130.00

2140.00

2150.00

2160.00

2170.00

2180.00

2190.00

2200.00

2210.00

2220.00

2230.00

2240.00

2250.00

2260.00

2270.00

2280.00

2290.00

2300.00

2310.00

2320.00

2330.00

2340.00

2350.00

2360.00

2370.00

2380.00

2390.00

2400.00

2410.00

2420.00

2430.00

2440.00

2450.00

2460.00

2470.00

2480.00

2490.00

2500.00

2510.00

2520.00

2530.00

2540.00

2550.00

2560.00

2570.00

2580.00

2590.00

2600.00

2610.00

2620.00

2630.00

2640.00

2650.00

2660.00

2670.00

2680.00

2690.00

2700.00

2710.00

2720.00

2730.00

2740.00

2750.00

2760.00

2770.00

2780.00

2790.00

2800.00

2810.00

2820.00

2830.00

2840.00

2850.00

2860.00

2870.00

2880.00

2890.00

2900.00

2910.00

2920.00

2930.00

2940.00

2950.00

2960.00

2970.00

2980.00

2990.00

3000.00

3010.00

3020.00

3030.00

3040.00

3050.00

3060.00

3070.00

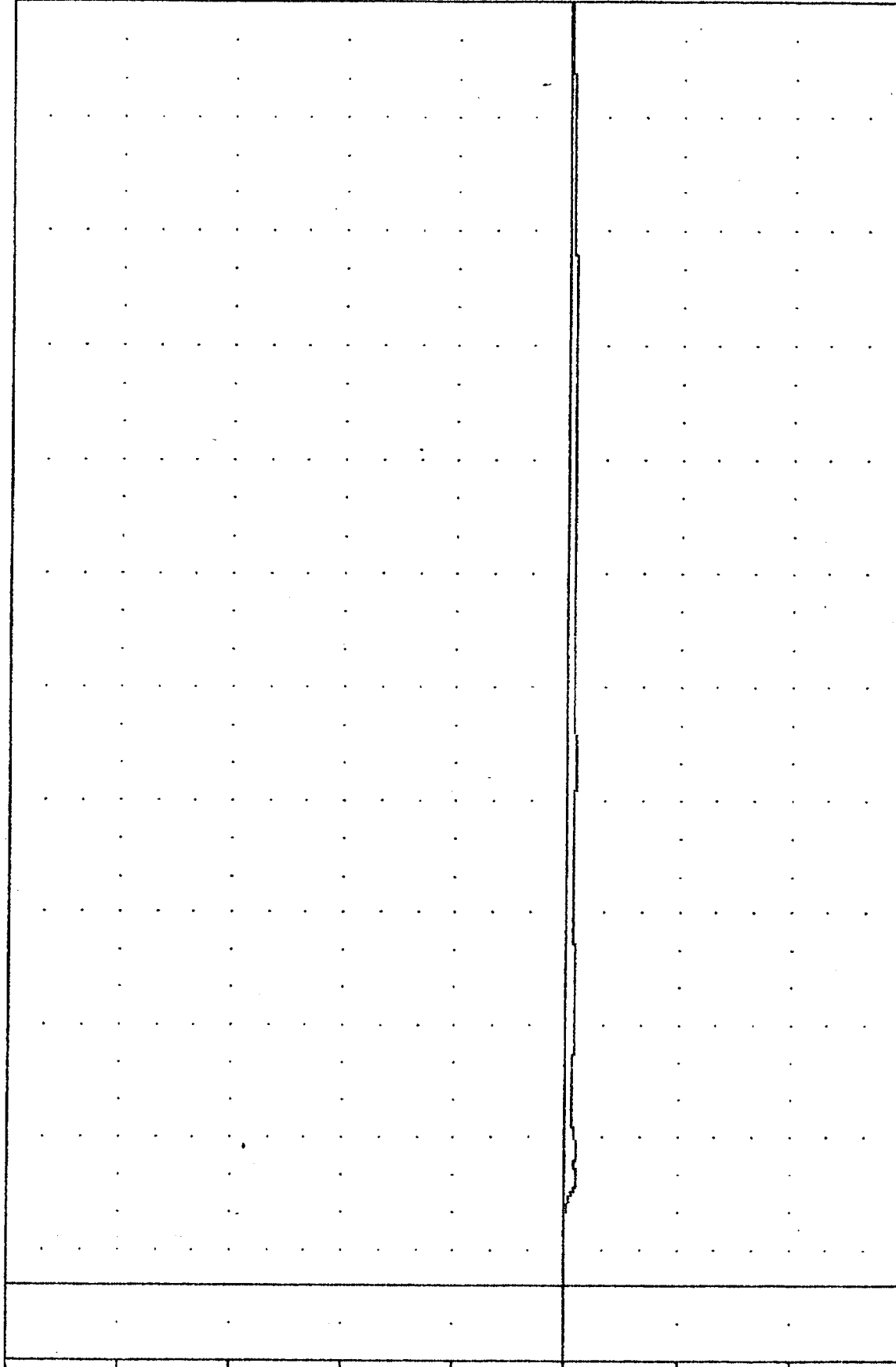
3080.00

TAC
EVALUATION OF MOO VN FLEET
83269000000
RDKXY3

PLOT DATE, 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -1.96e 27.88, 0.22 e 13.88

100.00
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
-100.00



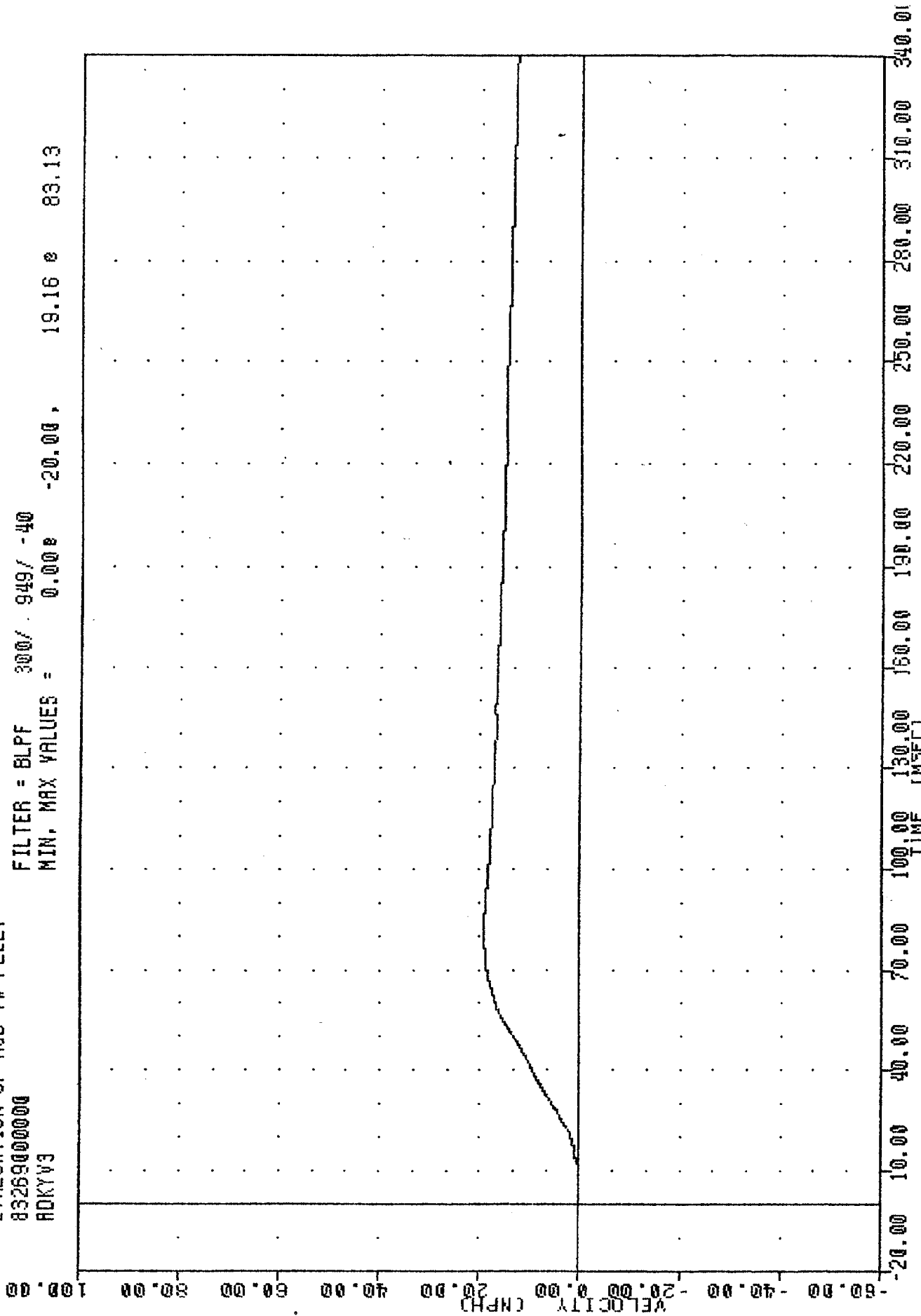
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RDKXG3

TRC
EVALUATION OF MOD YW FLEET
83269000000
ADKYV3

PLOT DATE 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = 0.000 -20.00, 19.16 83.13



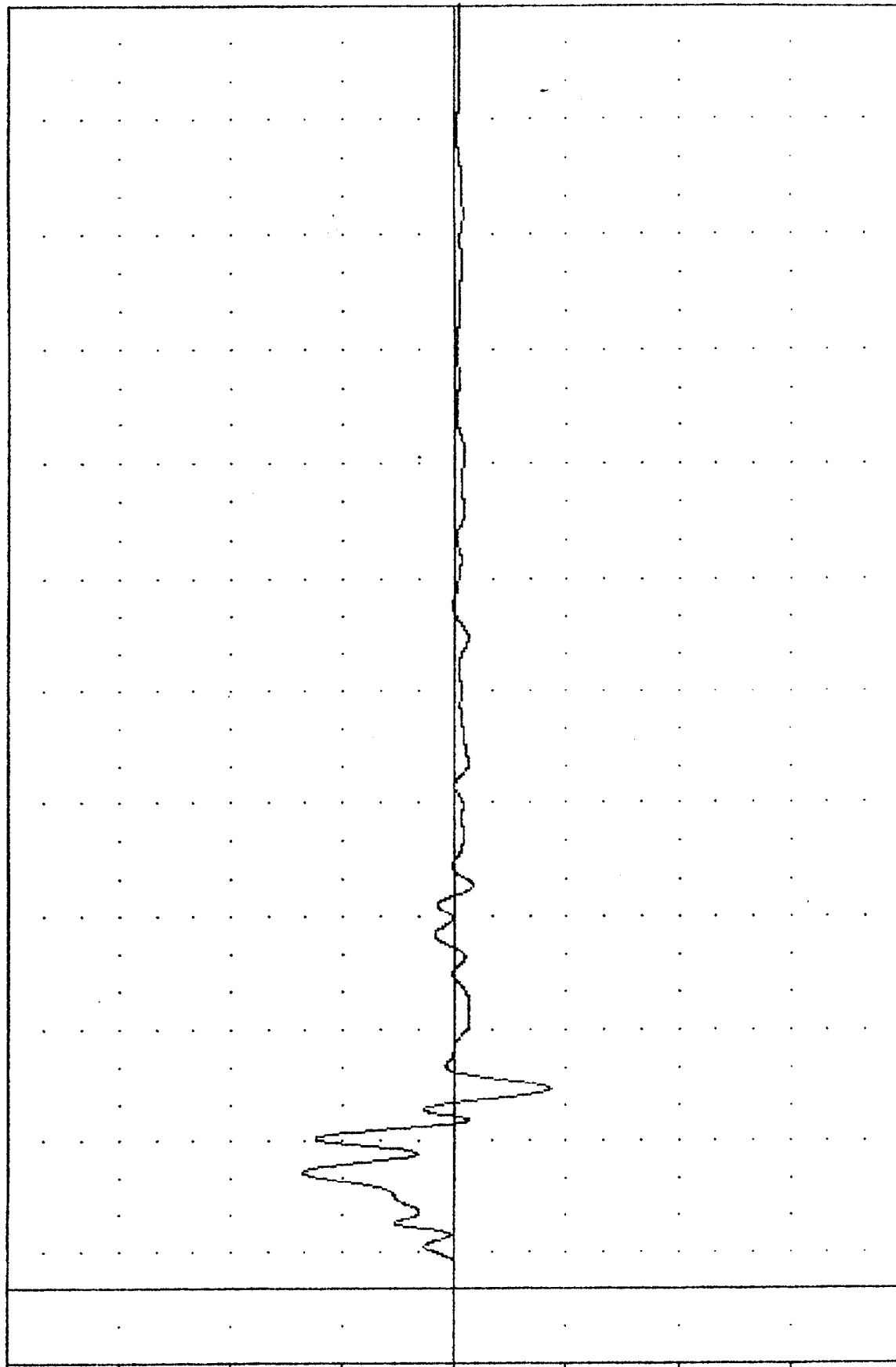
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RDKYG3

TRC
EVALUATION OF MOD VW FLEET
83269000000
LRSYG4

PLOT DATE, 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -25.75e 54.00, 40.72 e 31.63

ACCELERATION (G)



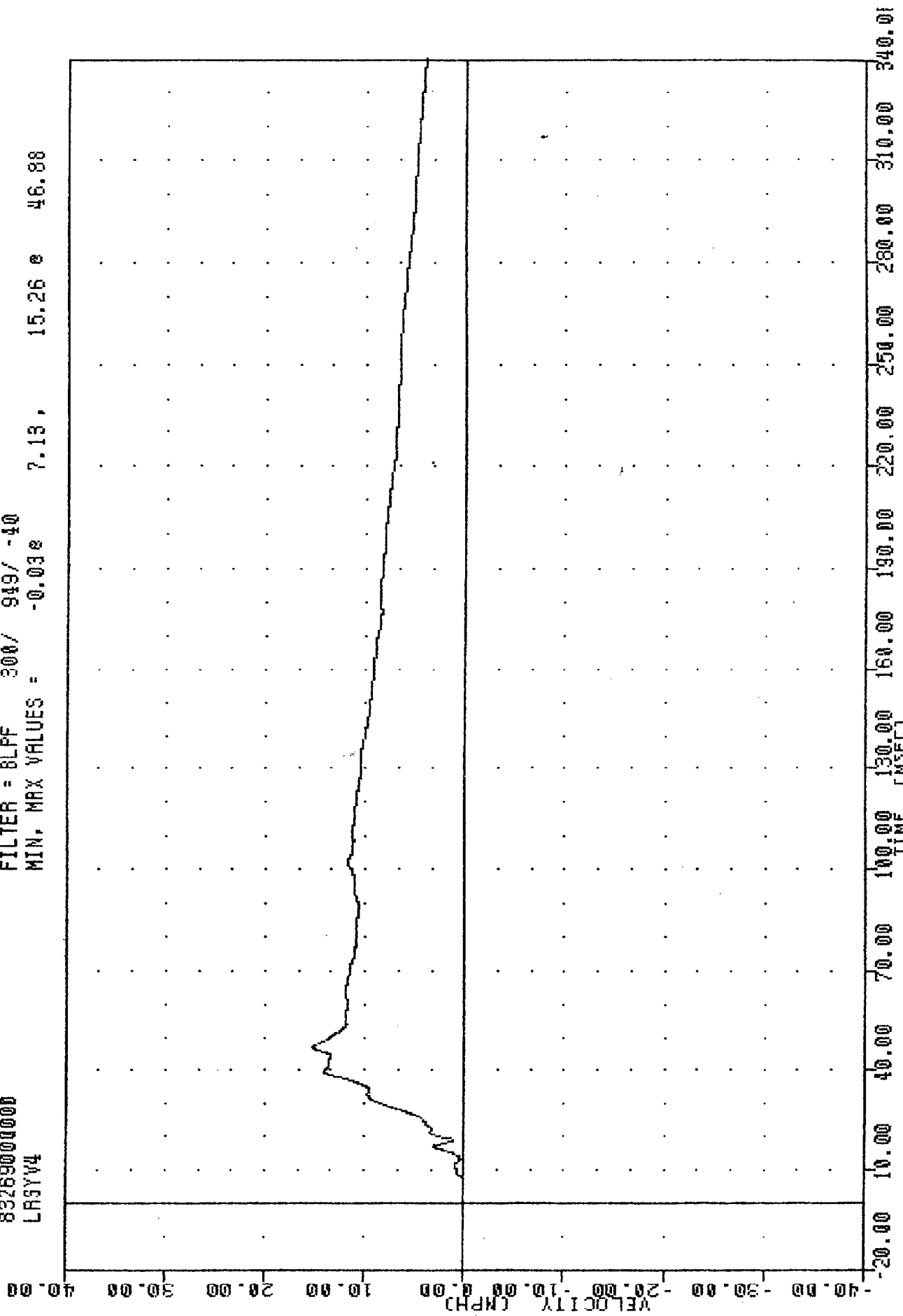
TIME (MSEC)

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

TRC
EVALUATION OF MOD VW FLEET
832690000000
LRSYV4

PLOT DATE 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -0.03e 7.13, 15.26 e 46.88

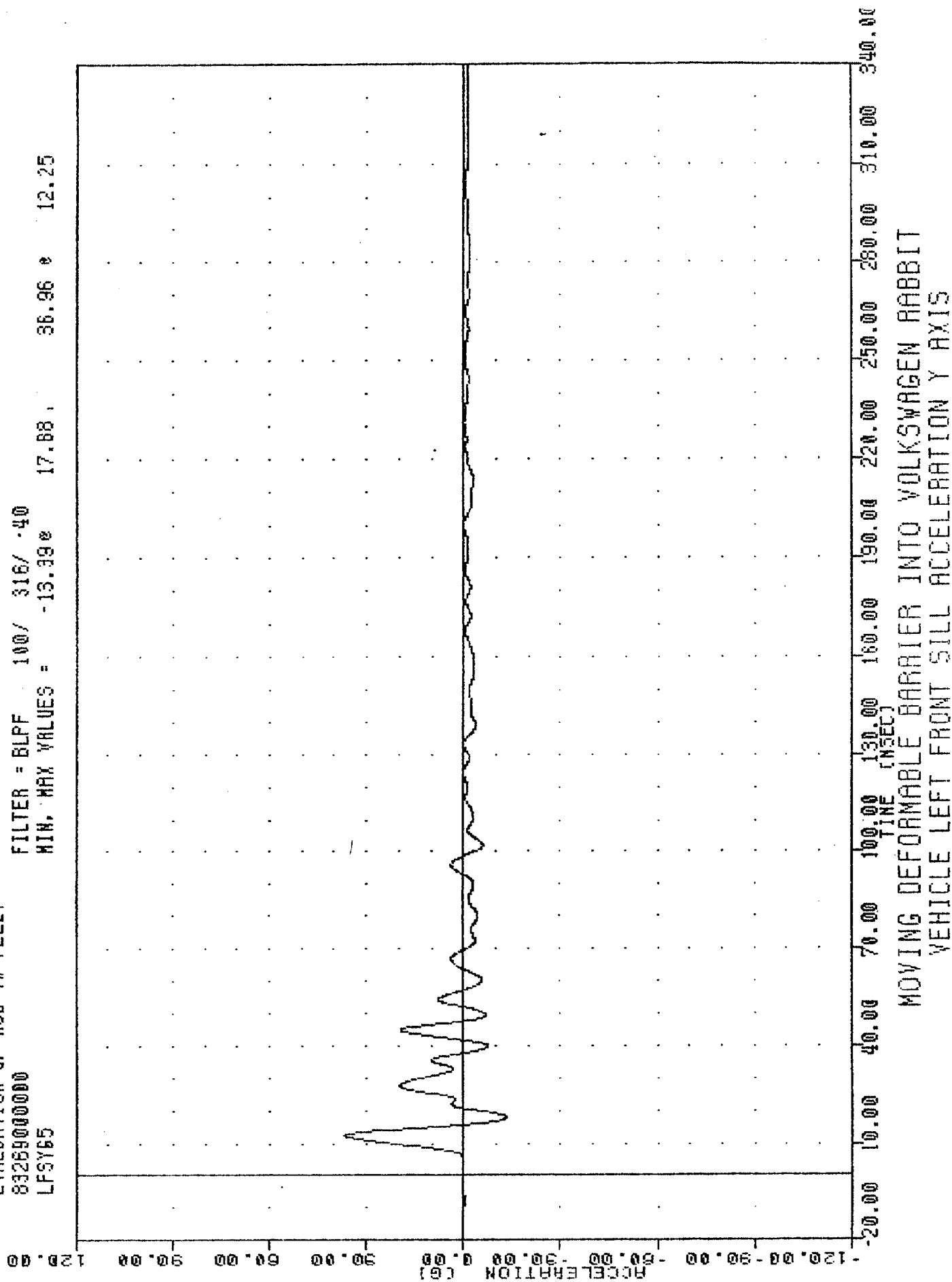


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LRSYG4

TAC 830926
EVALUATION OF MOD VW FLEET
83269000000
LFSYB5

PLOT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -13.39e 17.68 36.96 e 12.25



TAC

830926

EVALUATION OF MOD VM FLEET

83269000000

LFSY5

PLOT DATE

30-SEP-83

08:41:37

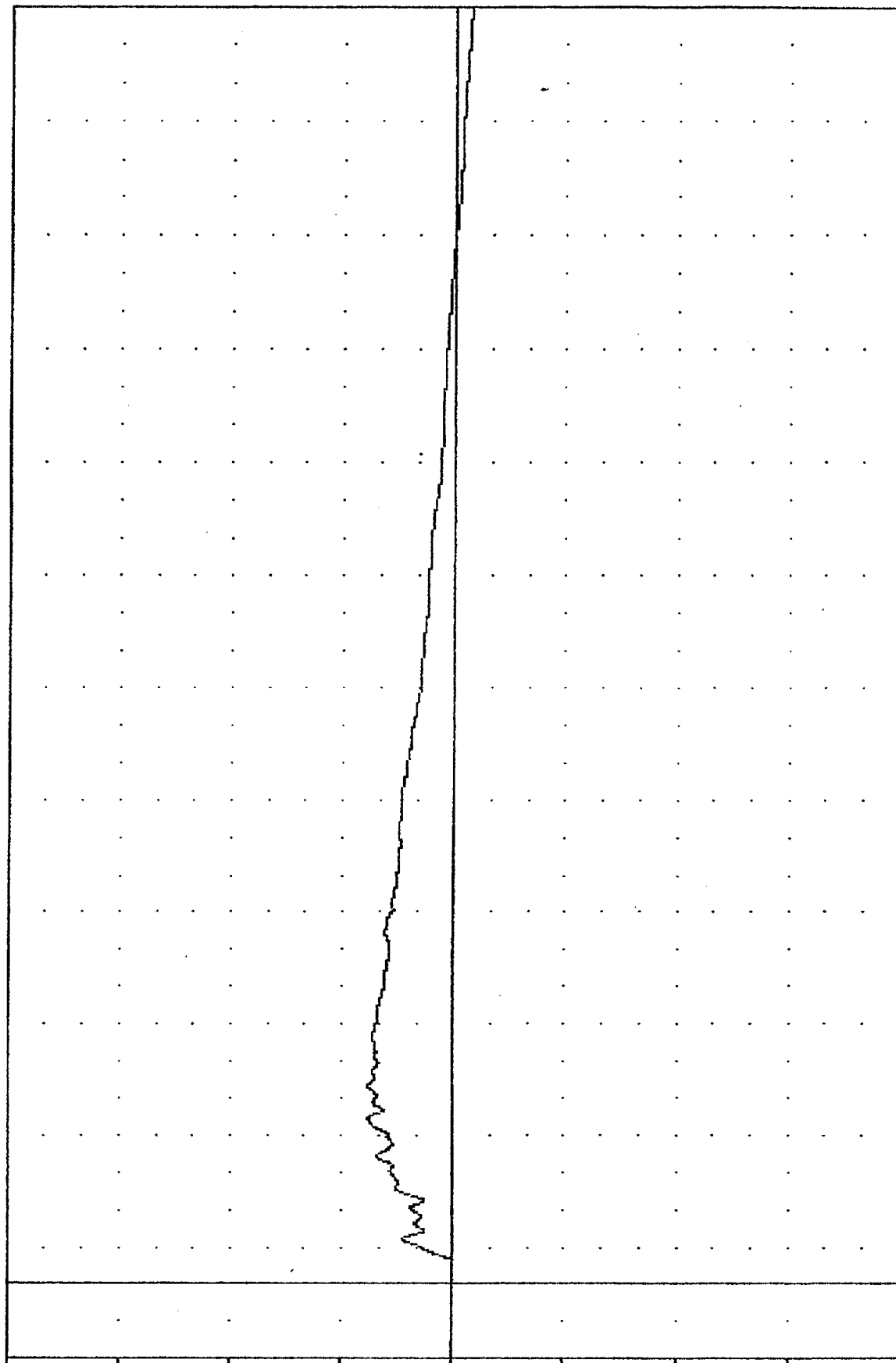
FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -1.39e 340.00

7.74 e

53.00

VELOCITY (MPH)



TIME (INSEC)

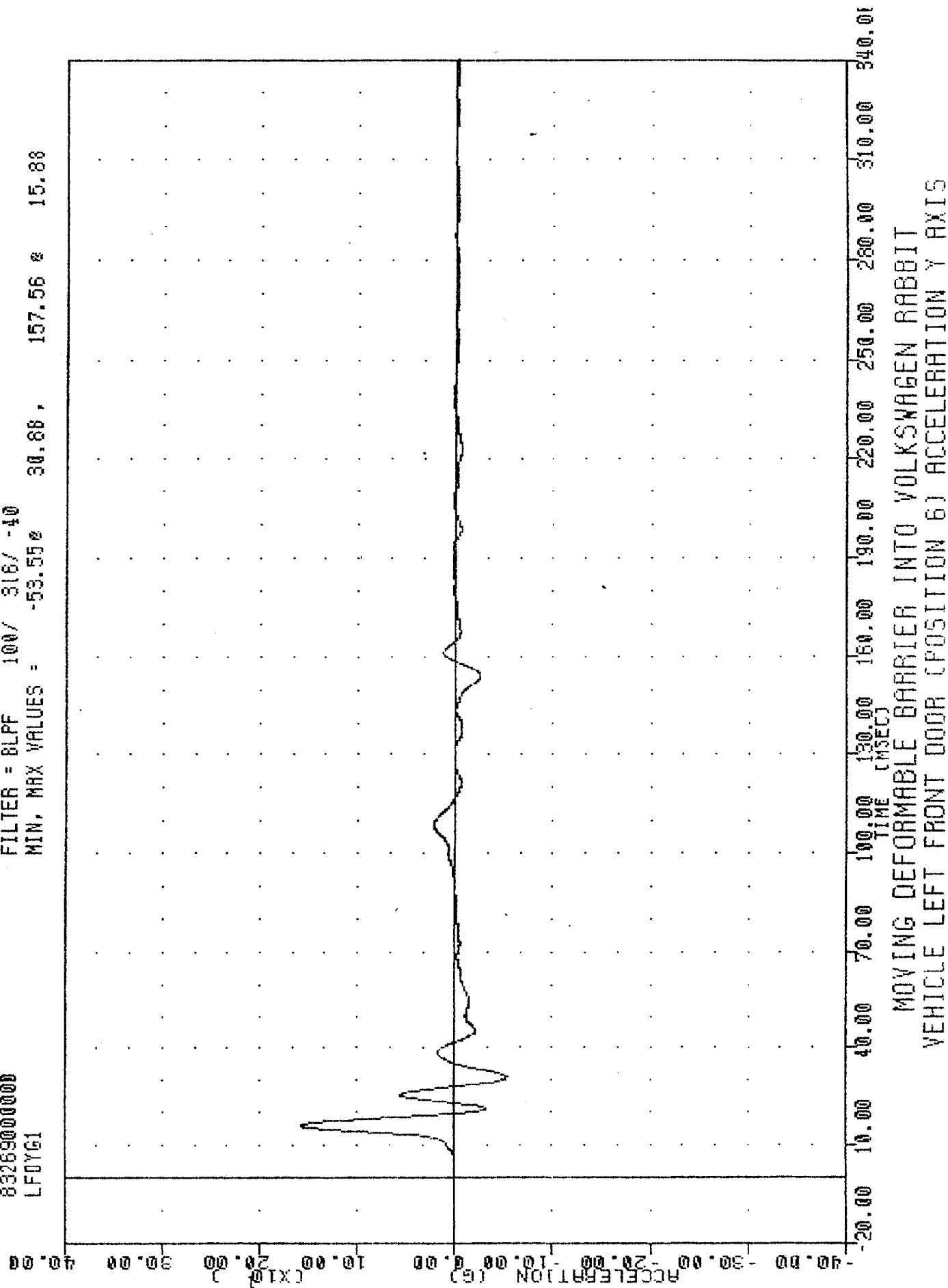
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING LFSYG5

TRC
EVALUATION OF MOD VV FLEET
83269000000
LF0Y61

PLOT DATE, 29-SEP-88 12:06:59

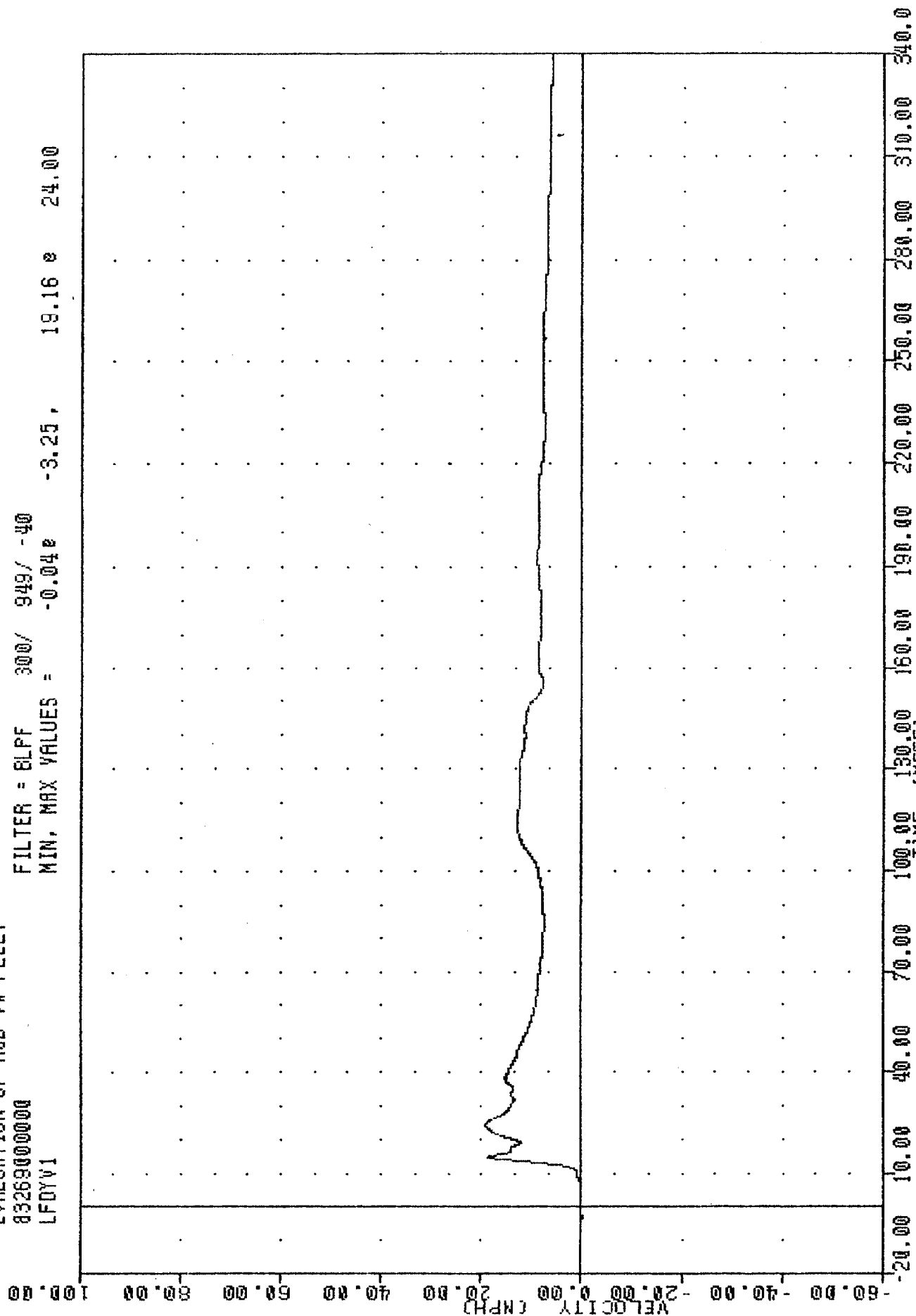
FILTER = 8LPE 100/ 316/ -40
MIN, MAX VALUES = -53.55% 30.88, 157.56% 15.88



TRC
EVALUATION OF MOD YW FLEET
832690000000
LFDYV1

PLOT DATE 30-SEP-83 08:41:37

FILTER = 8LPF 300/ 949/ -40
MIN, MAX VALUES = -0.040 -3.25, 19.16 24.00

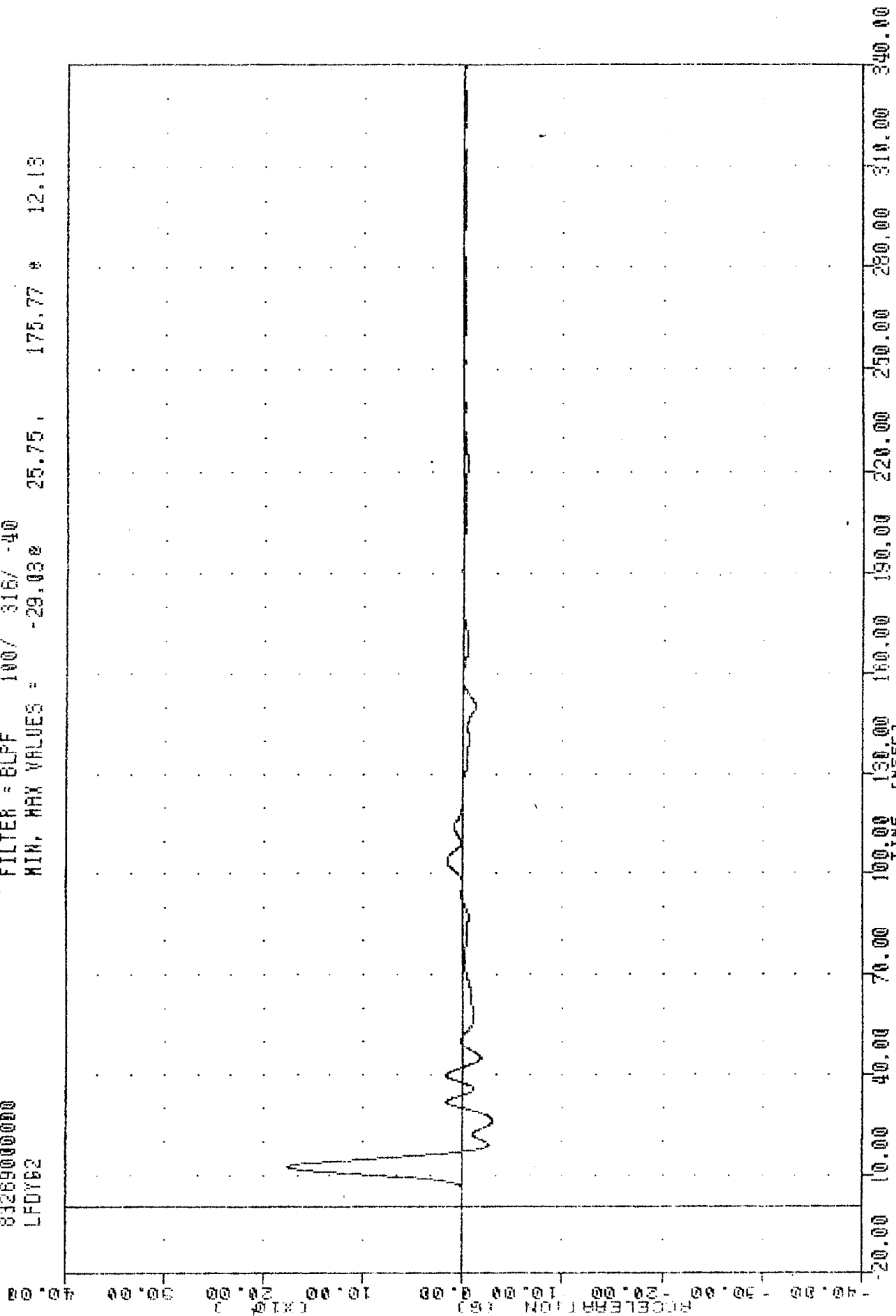


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDYGI

TAC
 EVALUATION OF MOD VW FLEET
 832690000000
 LFDY62

PLOT DATE 29-SEP-83 12:08:59

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -29.030 25.75, 175.77 * 12.13

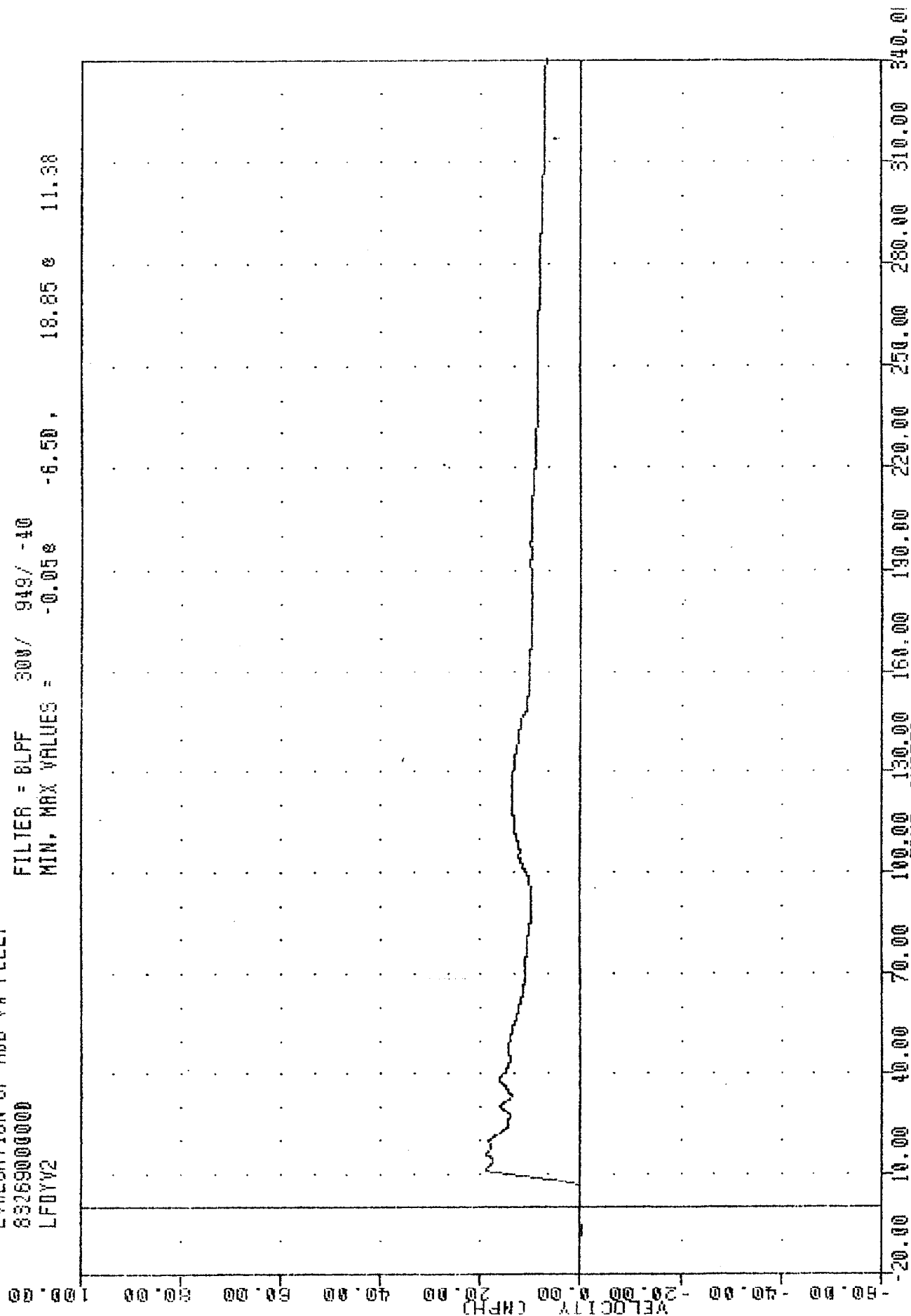


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE LEFT FRONT DOOR (POSITION 8) ACCELERATION Y AXIS

TRC
EVALUATION OF MOD VW FLEET
83269000000
LFDYV2

PLOT DATE 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -0.05% 18.85% 11.38

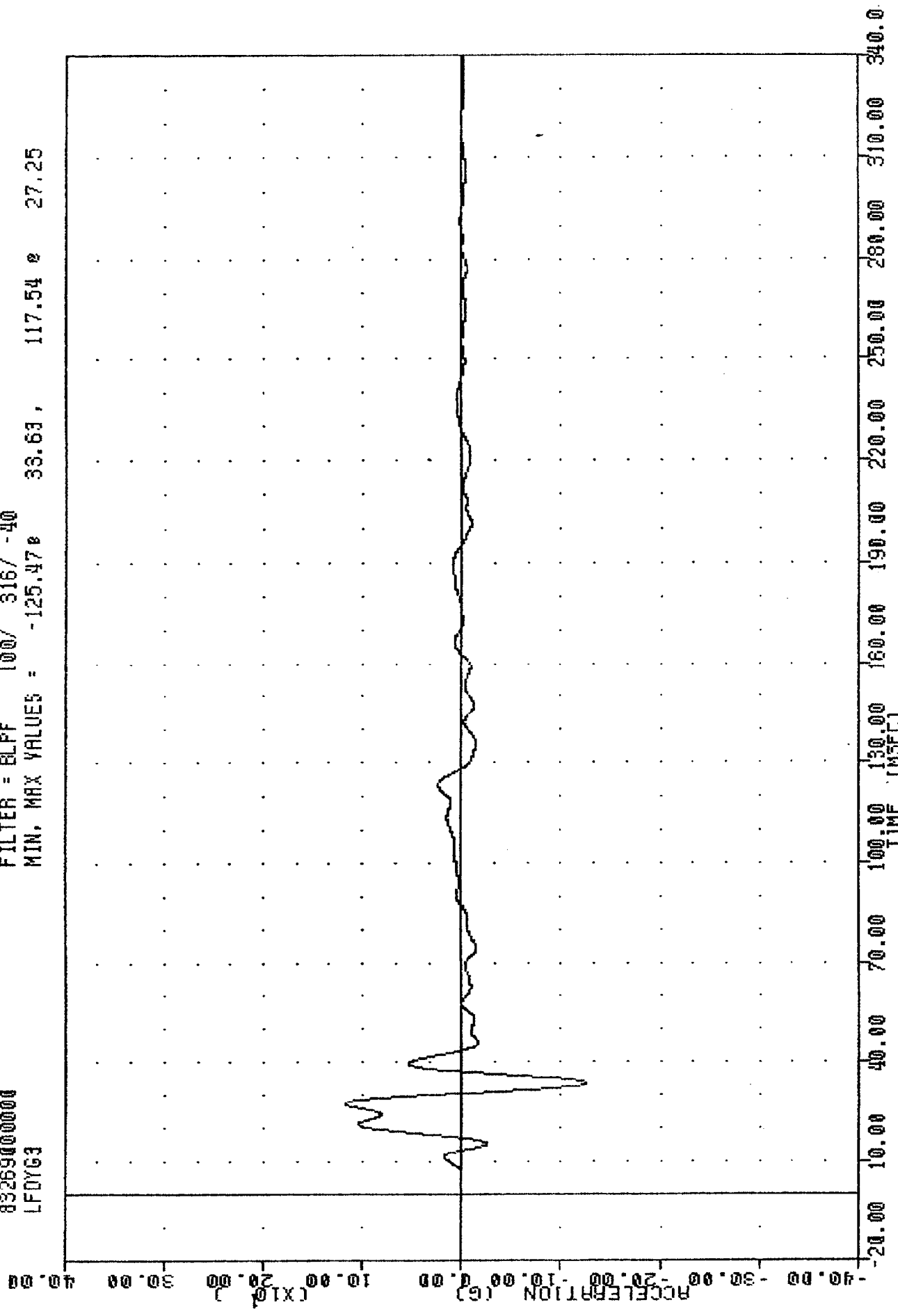


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDYV2

TRC
EVALUATION OF MOD VV FLEET
832690000000
LFDY63

PLOT DATE, 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -125.478 33.63, 117.54 27.25

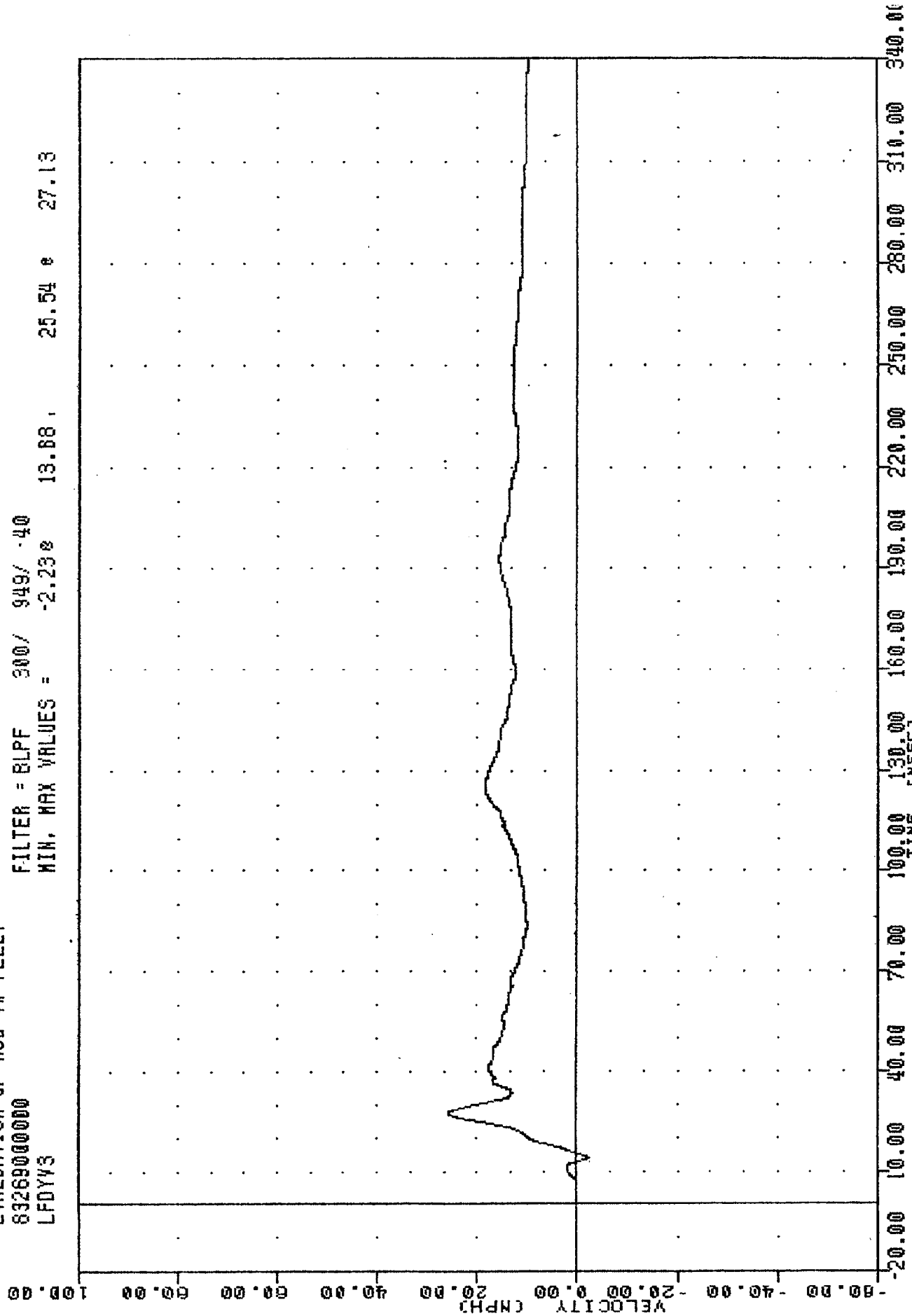


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 9) ACCELERATION Y AXIS

TAC
EVALUATION OF MOD VN FLEET
83269000000
LFDY43

PLOT DATE 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -2.238 13.88, 25.54 e 27.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDY63

TRC 830926

EVALUATION OF MDD VW FLEET

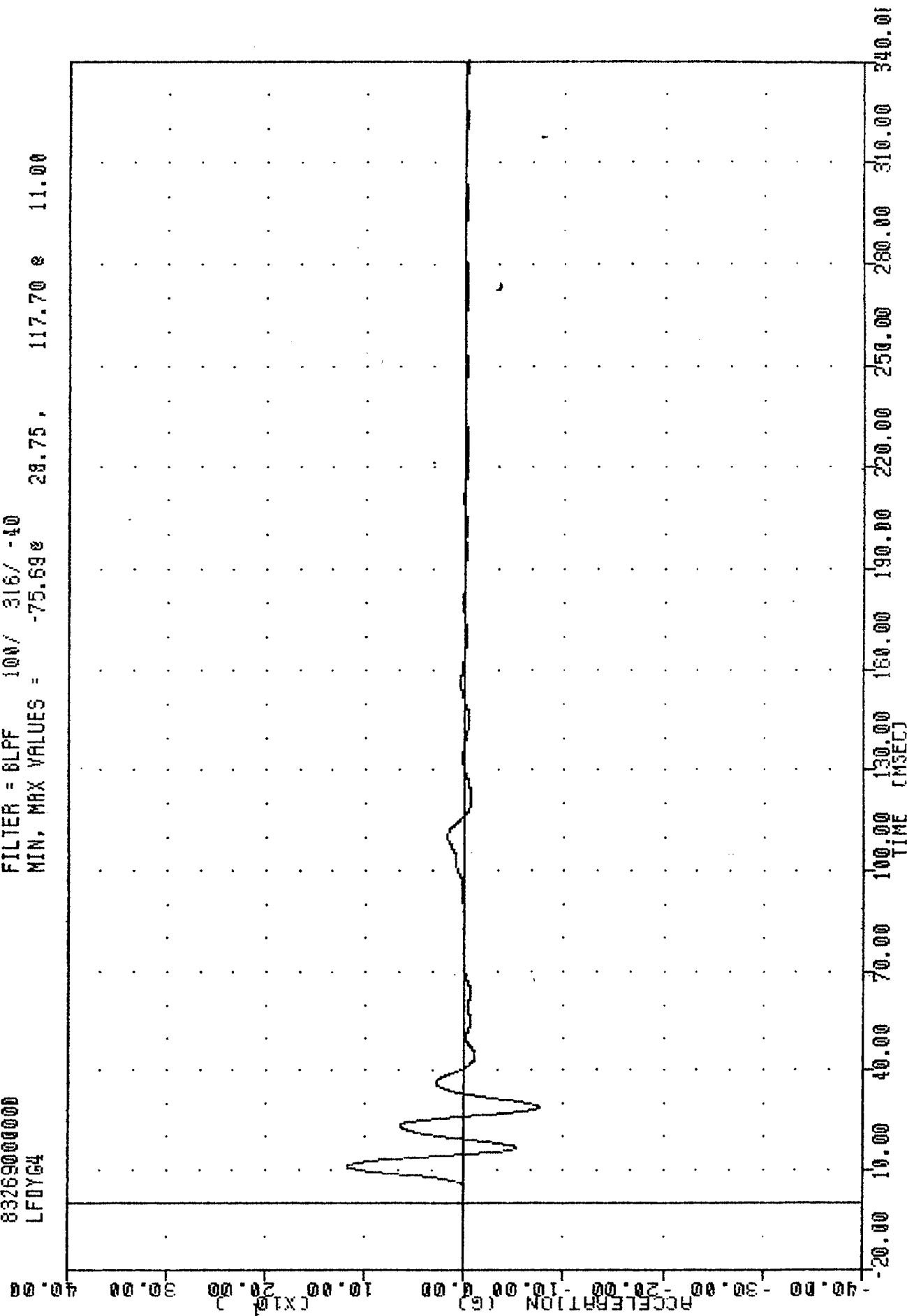
83269000000

LFDY64

PLOT DATE 29-SEP-83 12:06:59

FILTER = 8LPF 100/ 316/ -10

MIN. MAX VALUES = -75.69g 28.75, 117.70 g 11.00

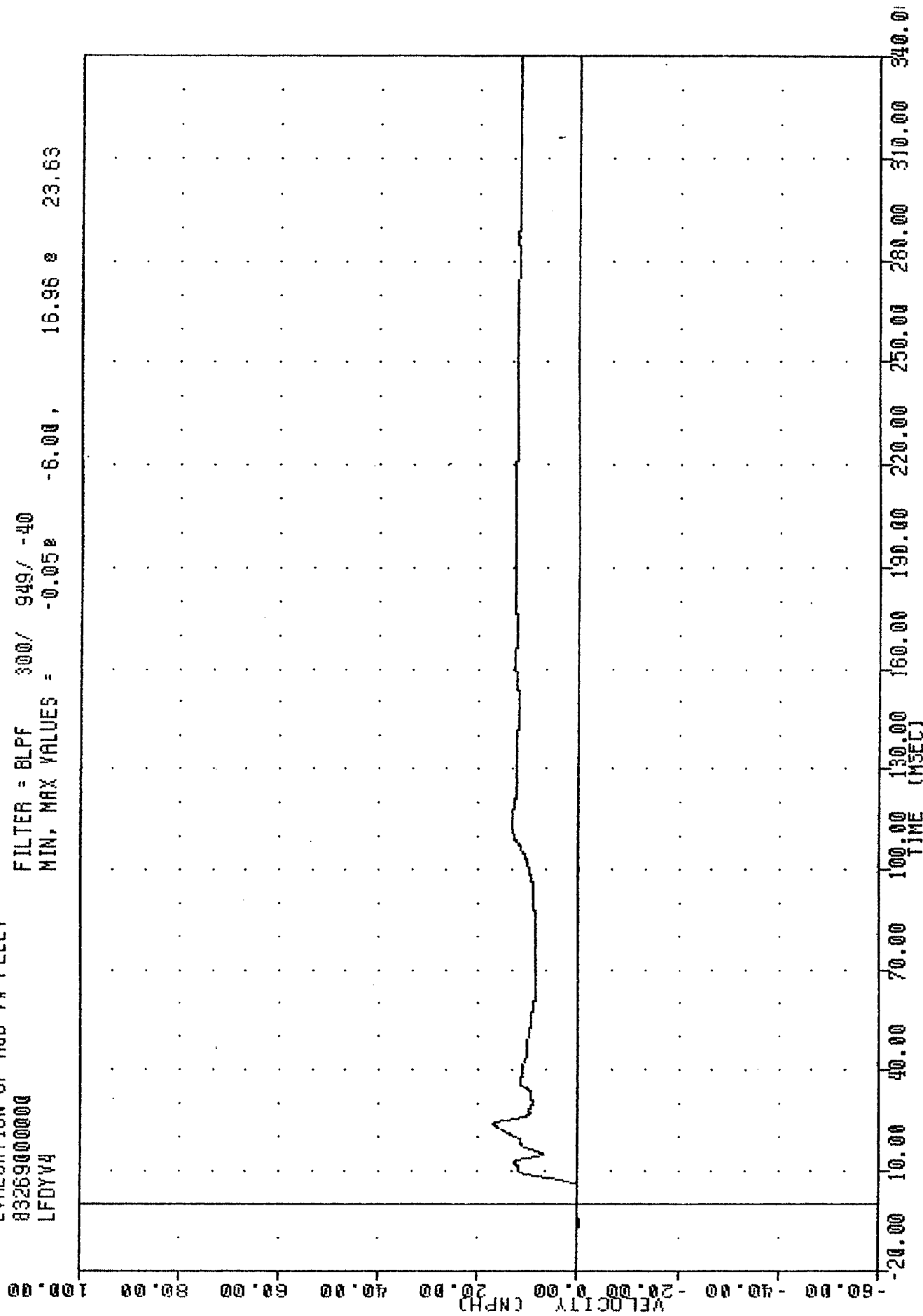


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 10) ACCELERATION Y AXIS

TRC
EVALUATION OF MOD VV FLEET
83269000000
LFDYV4

PLOT DATE 30-SEP-83 08:41:37

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -0.05e -6.00, 16.96 e 23.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING LFDY64

030928

TAC , 830926
EVALUATION OF MOD VN FLEET

PLOT DATE	29-SEP-89	12:06:59
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00000069258

FILTER = BLPF 100/ 316/ .40

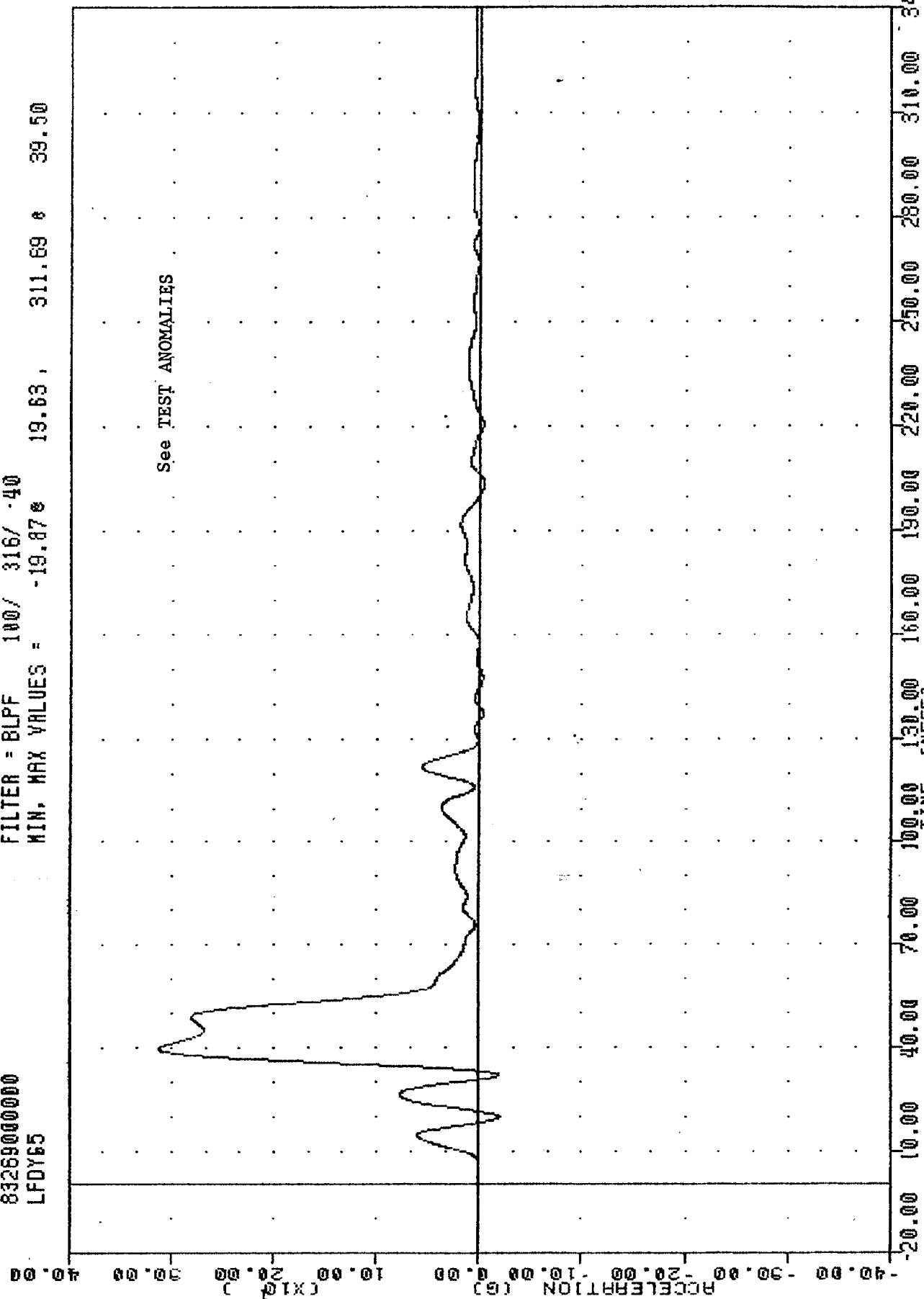
5910 FT

MIN. MAX. VALUES =

633

311.69 \$

22

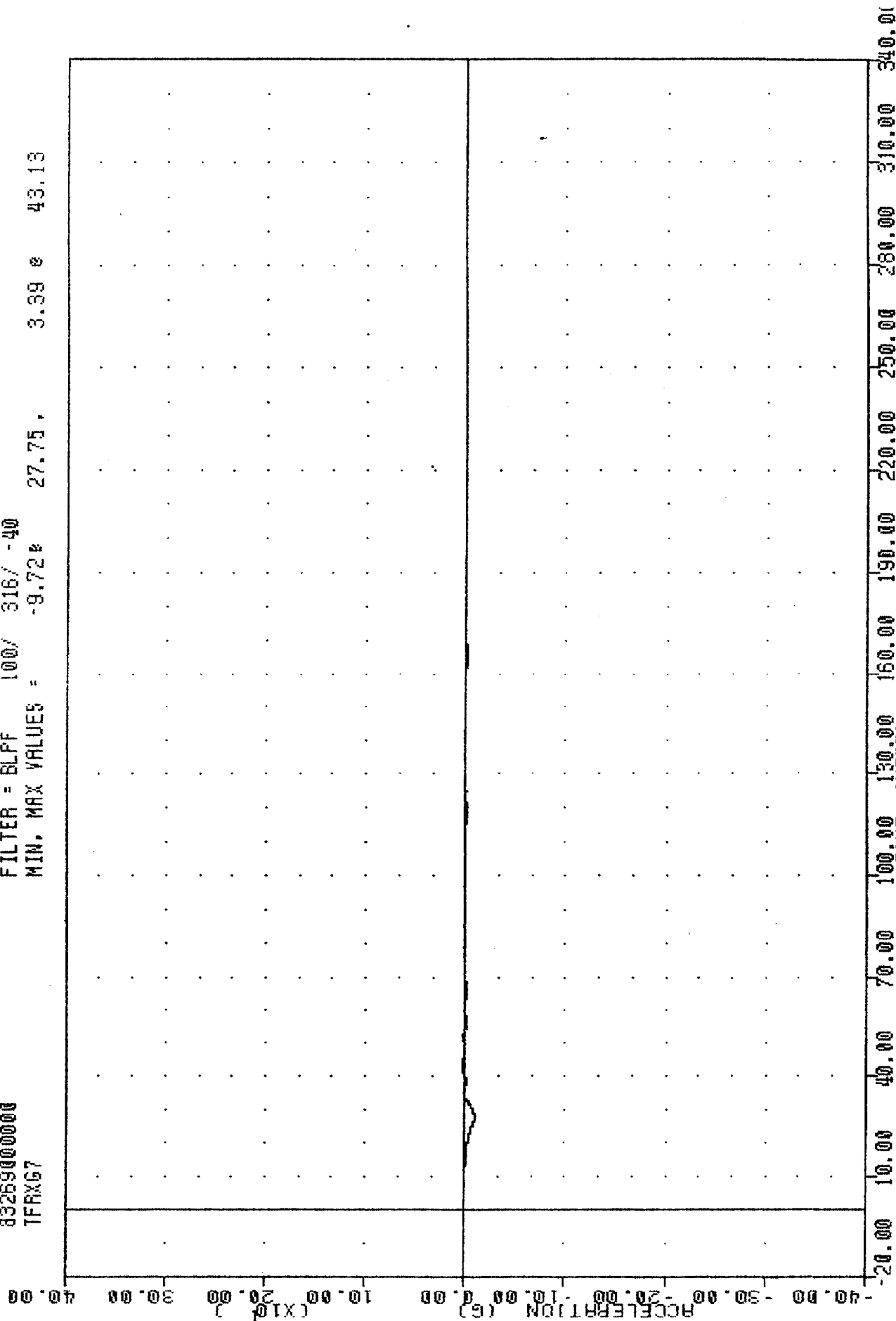


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 1) ACCELERATION Y AXIS

TRC
EVALUATION OF MOD YW FLEET
83269000000
TFRX67

PLOT DATE 29-SEP-83 12:06:59

FILTER = BLFF 100/ 316/ -40
MIN. MAX VALUES = -9.72% 27.75, 3.39 % 43.13

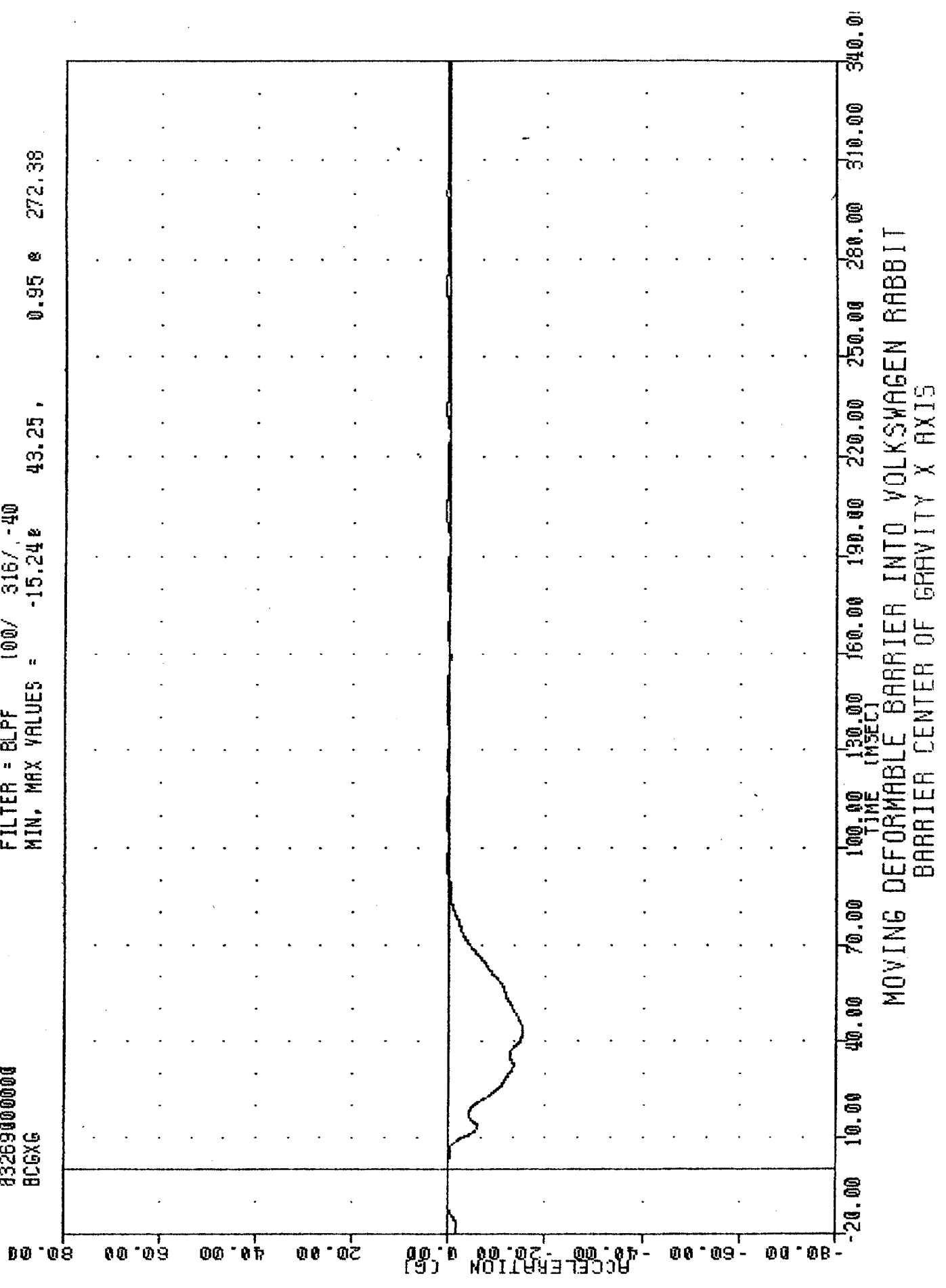


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE TRUNK FLOOR RIGHT ACCELERATION X AXIS

TRC 830926
 EVALUATION OF MOD VW FLEET
 03269000000
 BCGXG

PLOT DATE 29-SEP-83 12:06:59

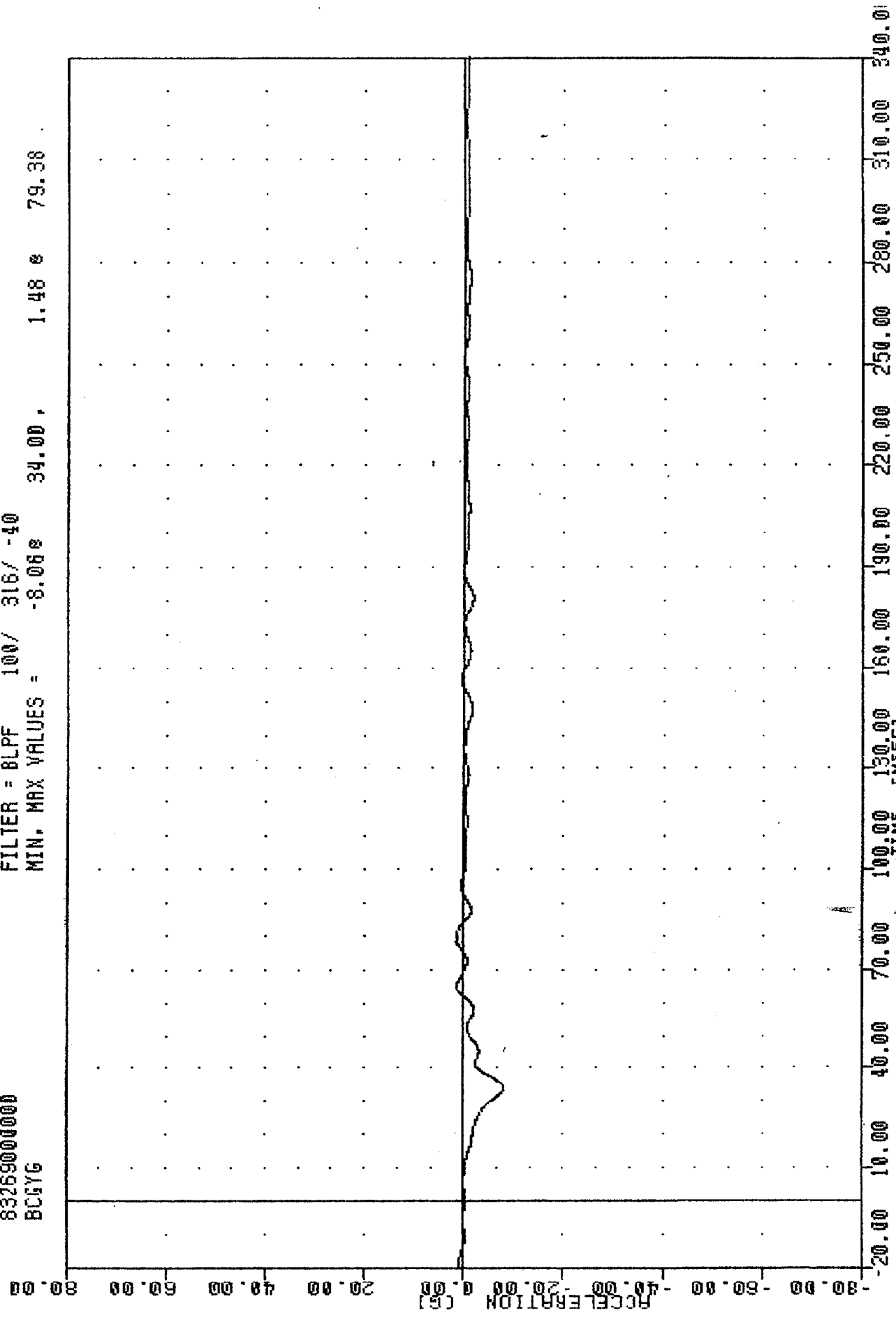
FILTER = BLPF 100/ 316/-40
 MIN, MAX VALUES = -15.24 43.25, 0.95 272.38



TRC
EVALUATION OF MDD YW FLEET
83269000000
BCGYG

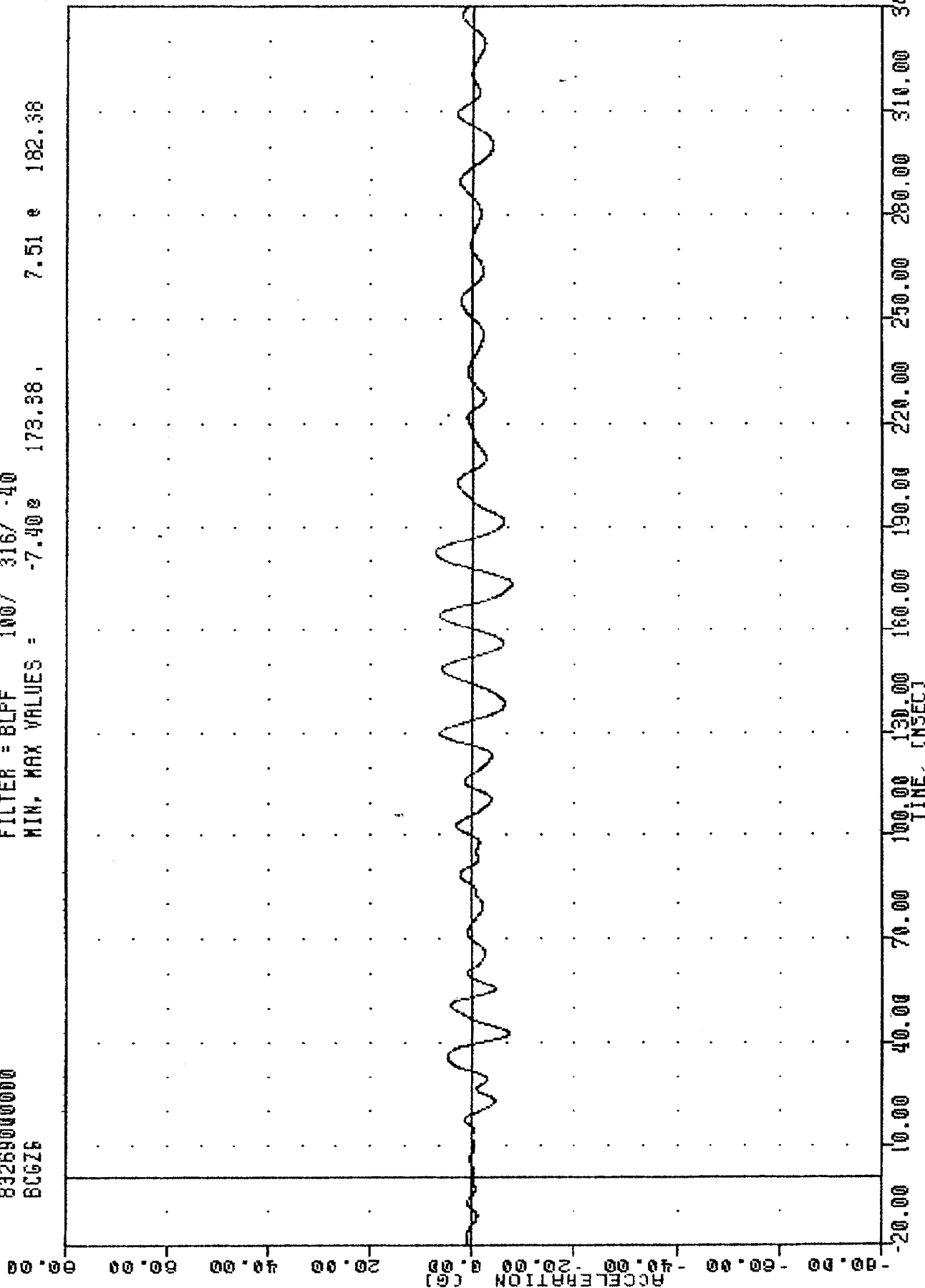
PLOT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -8.06e 34.00, 1.48 e 79.38



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

TAC 830926 29 SEP 83 12:05:59
 EVALUATION OF MOD YW FLEET
 83269000000
 BCGZ6
 FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -7.40e 173.38, 7.51 e 182.38

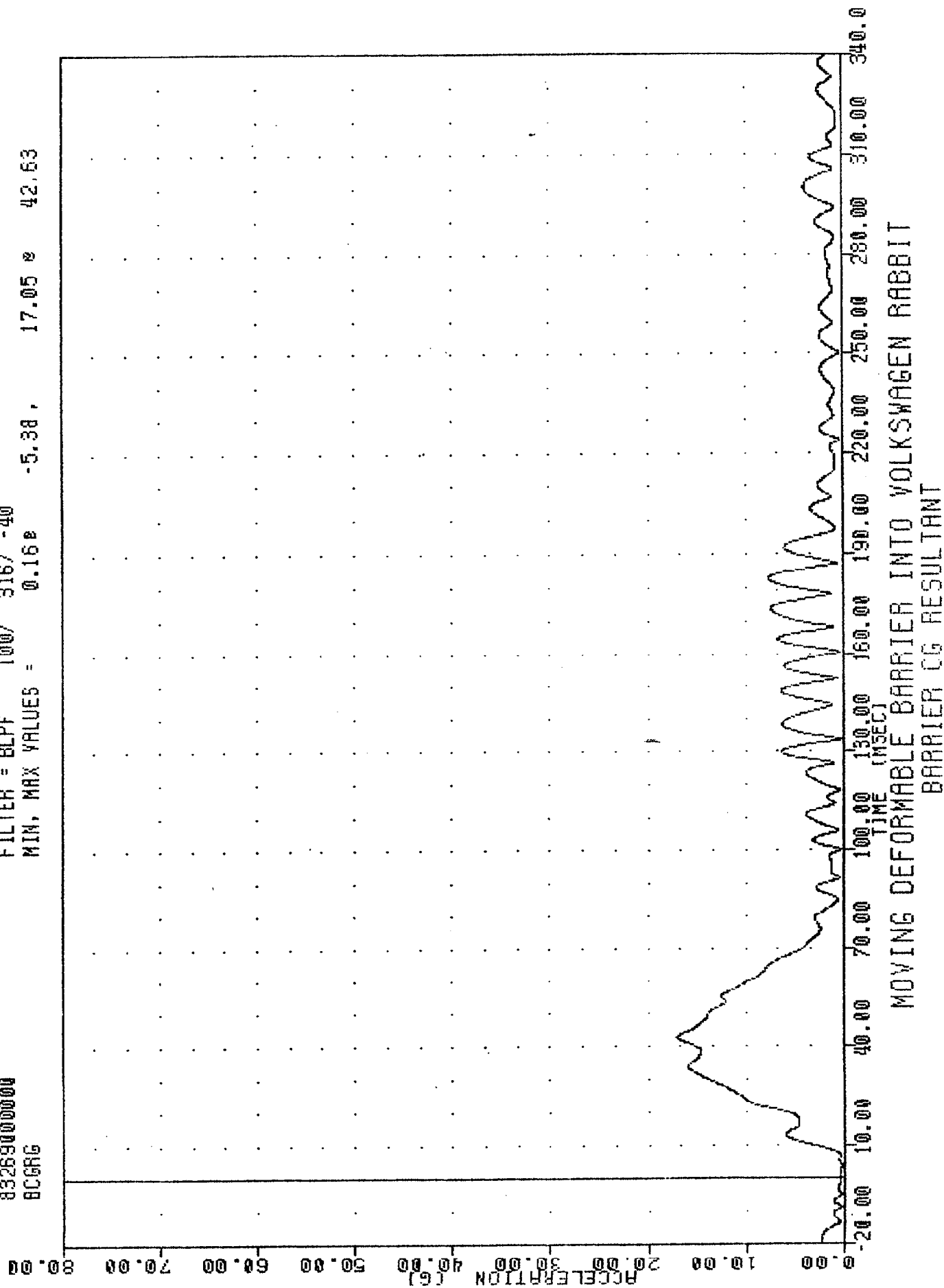


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 BARRIER CENTER OF GRAVITY Z AXIS

TRC 830826
EVALUATION OF MOD YW FLEET
83269000000
BCGRG

PLOT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = 0.16e -5.38, 17.05 e 42.63



TAC

830926

PLUT DATE

30 SEP 83

06:41:37

EVALUATION OF MOD YW FLEET

83269000000

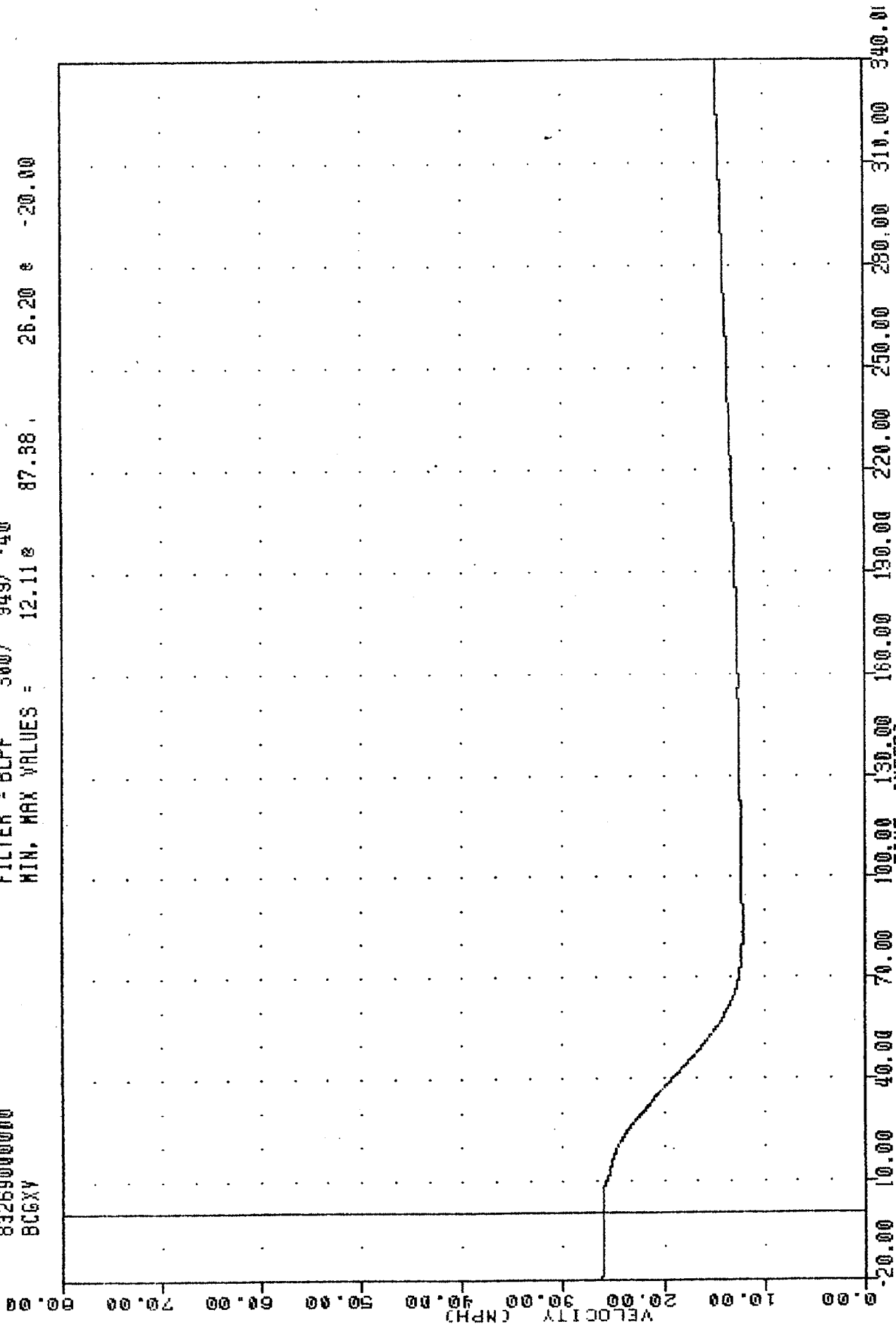
FILTER = BLPF 300/ 949/ -40

BCGXV

MIN. MAX VALUES = 12.11 8

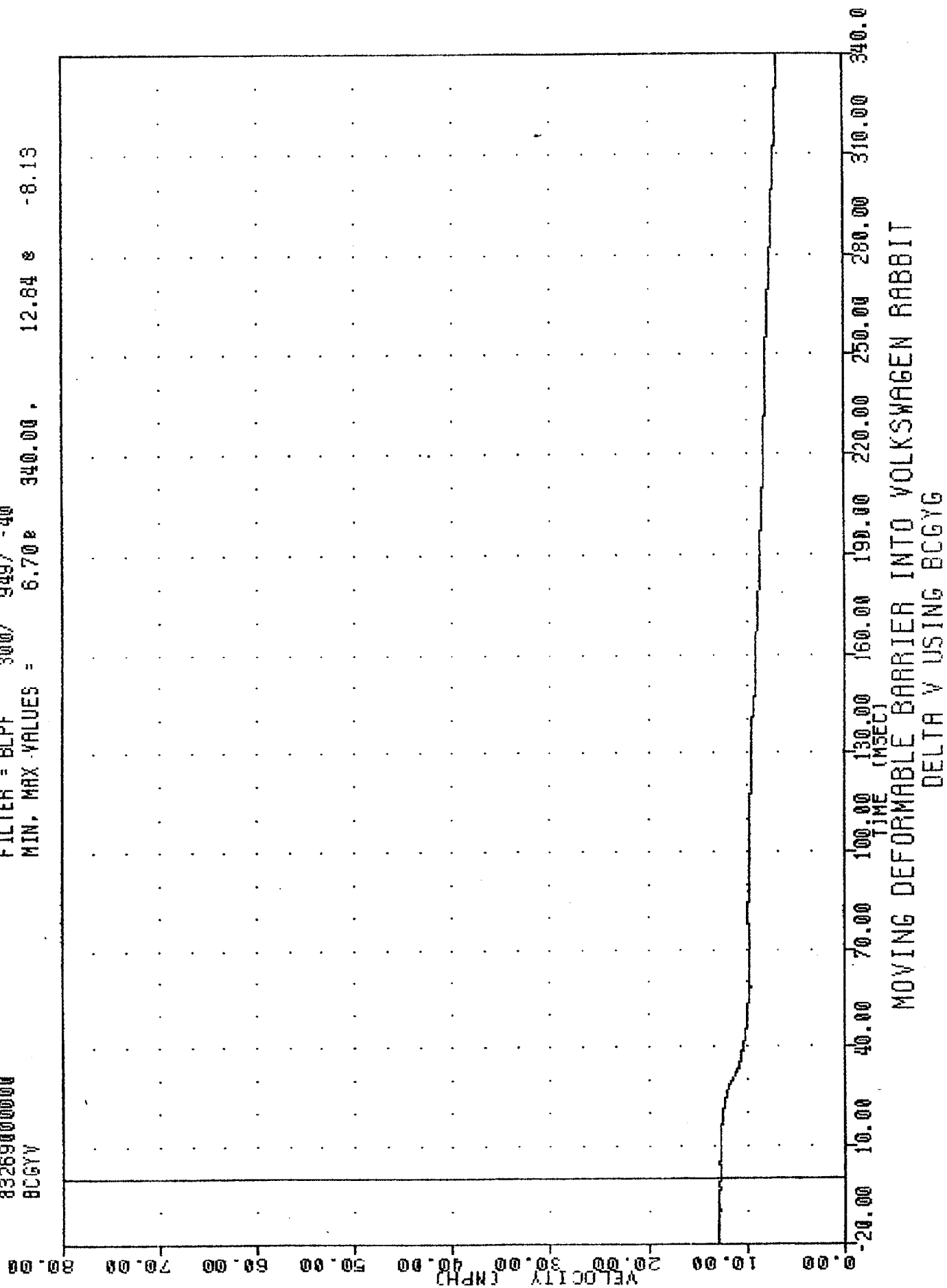
87.38

26.20 26.20



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING BCGXG

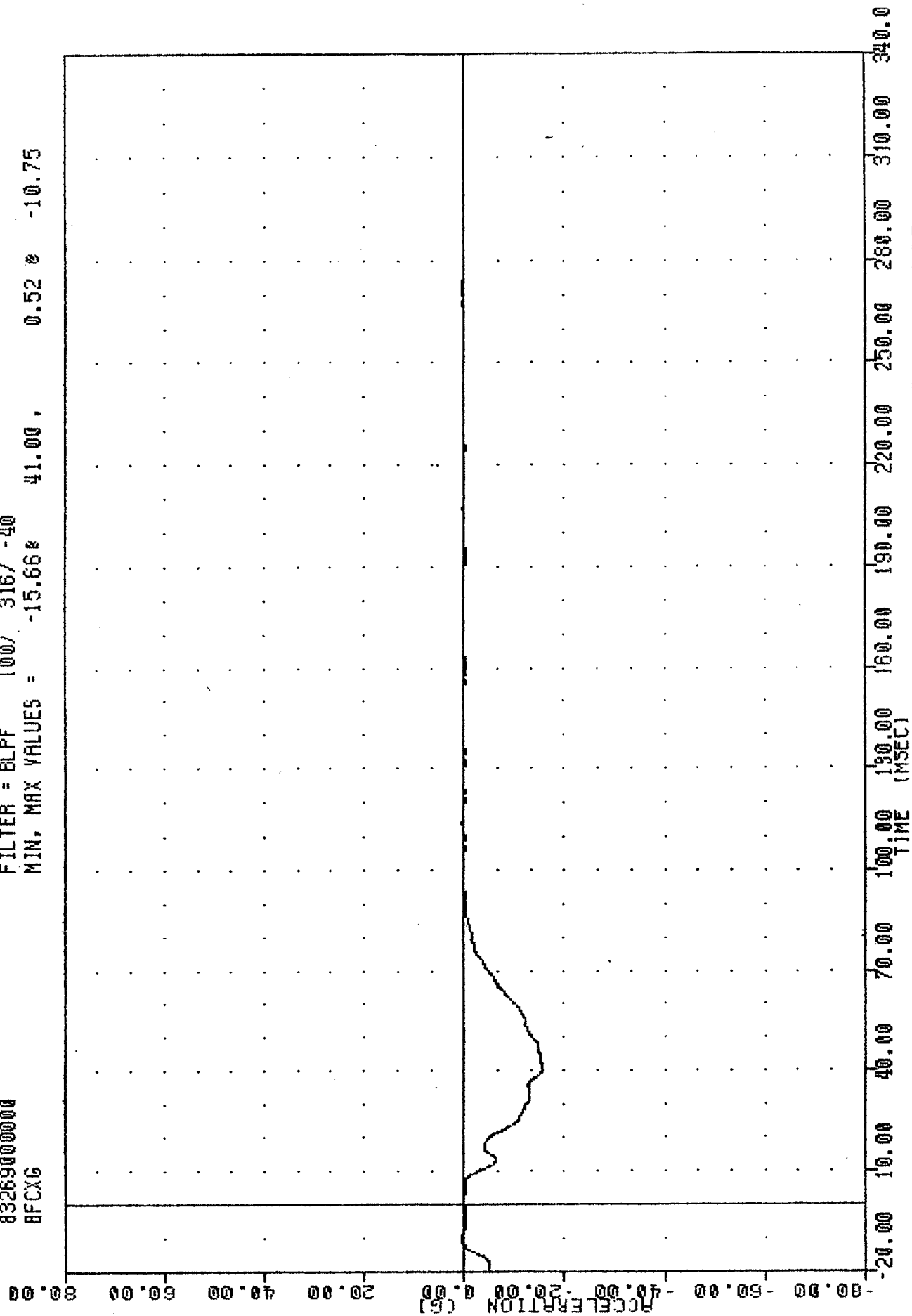
TRC 830920 30 SEP-83 00:41:37
 EVALUATION OF MOD YN FLEET
 83269000000
 BCGYV
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 6.70 340.00 12.84 -8.13



TRC 830926
EVALUATION OF MOD YV FLEET
83269000000
BFCXG

PLOT DATE 29-SEP-83 12:06:59

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -15.66% 41.00, 0.52 @ -10.75

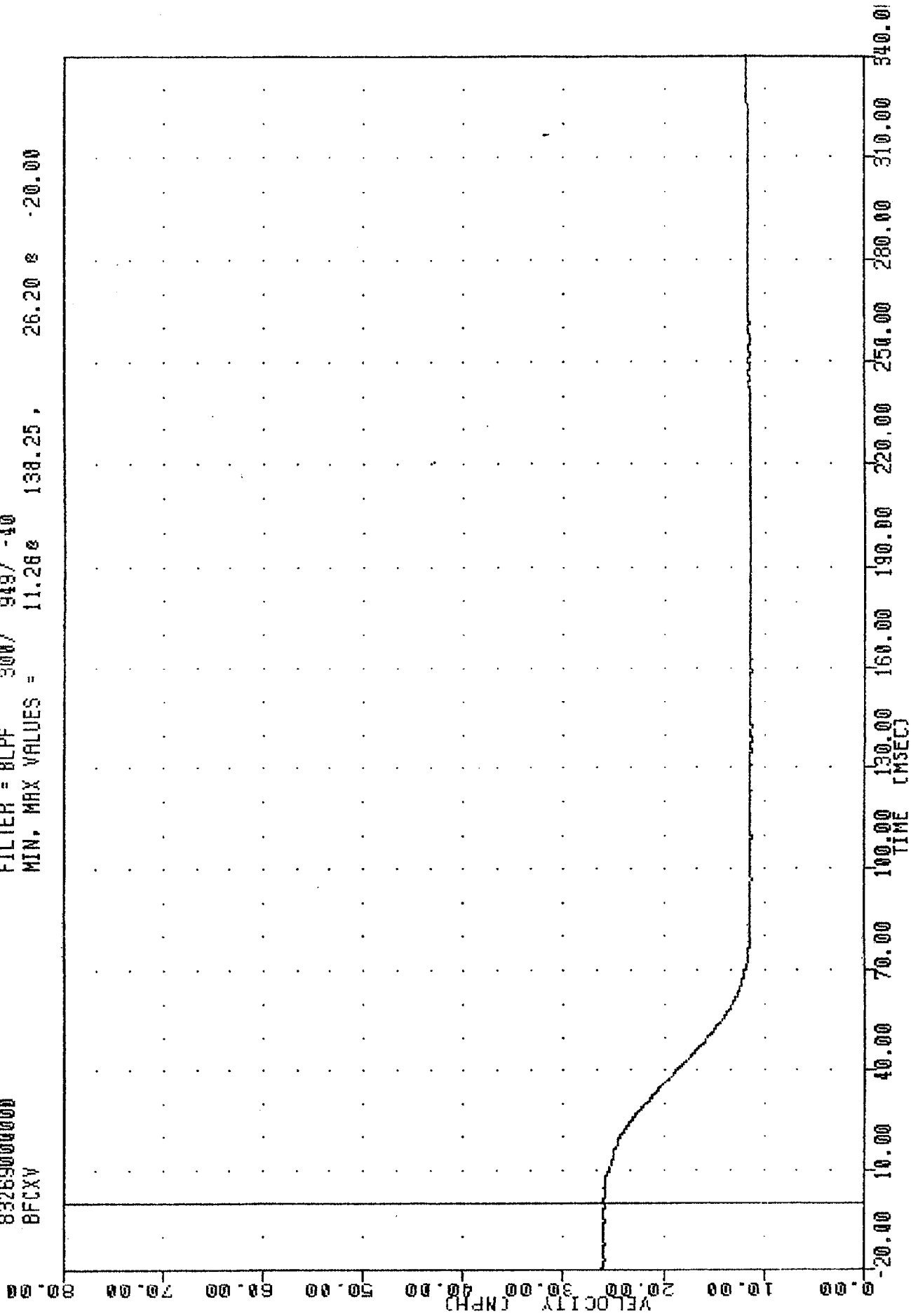


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER FRONT CROSSMEMBER ACCELERATION X AXIS

TRC 830926
 EVALUATION OF MOD VN FLEET
 83269000000
 BFCXV

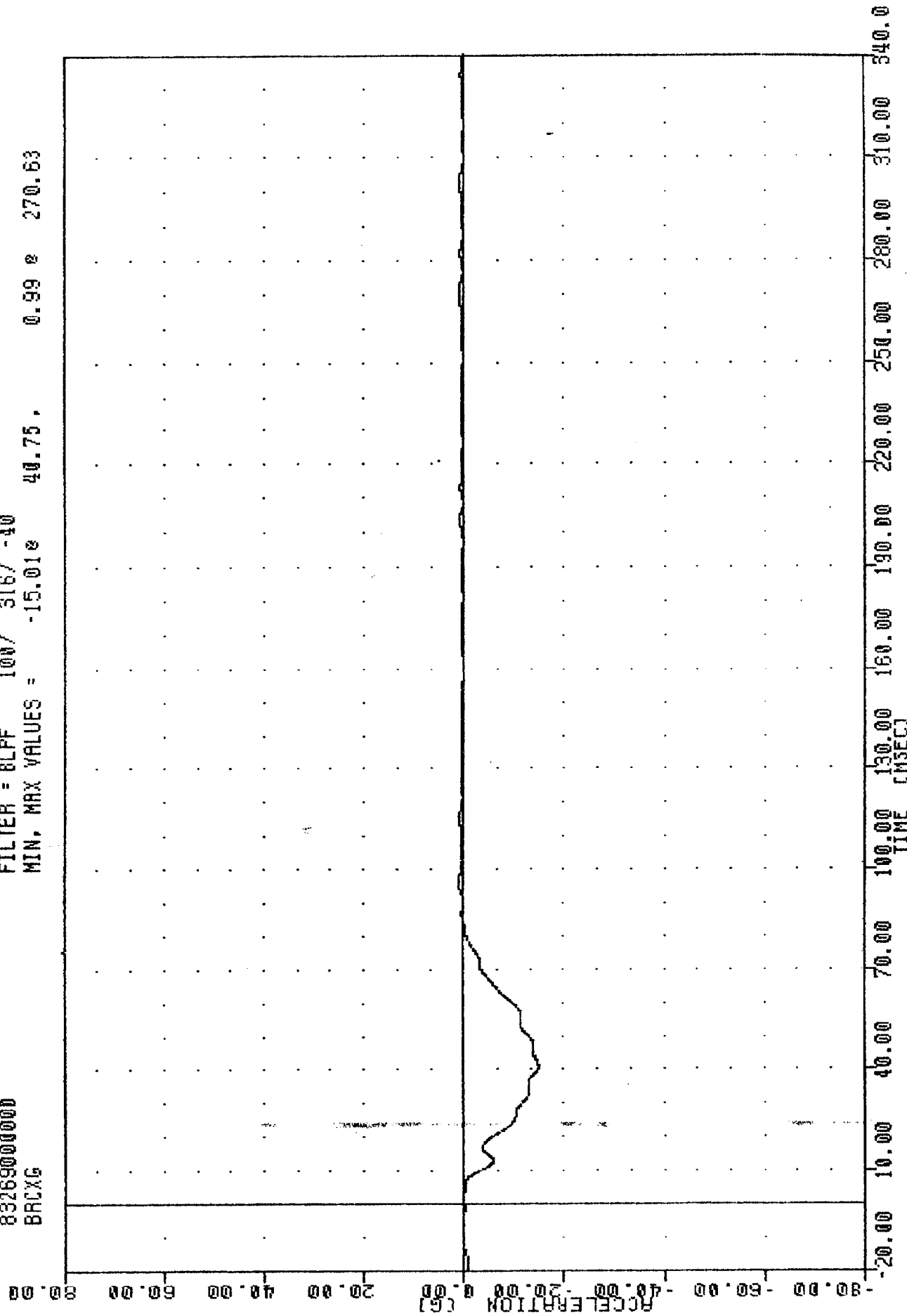
PLOT DATE 30-SEP-83 08:41:37

FILTER = 8LPF 300/ 949/ -10
 MIN. MAX VALUES = 11.260 138.25, 26.20 0 -20.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BFCXG

TRC 830926 PLOT DATE 29-SEP-83 12:06:59
 EVALUATION OF MOD YW FLEET
 83269000000
 BRCXC
 FILTER = 8LPF 100/ 316/ -10
 MIN, MAX VALUES = -15.018 40.75, 0.99 270.63



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

TRC

830926

EVALUATION OF MOD VN FLEET

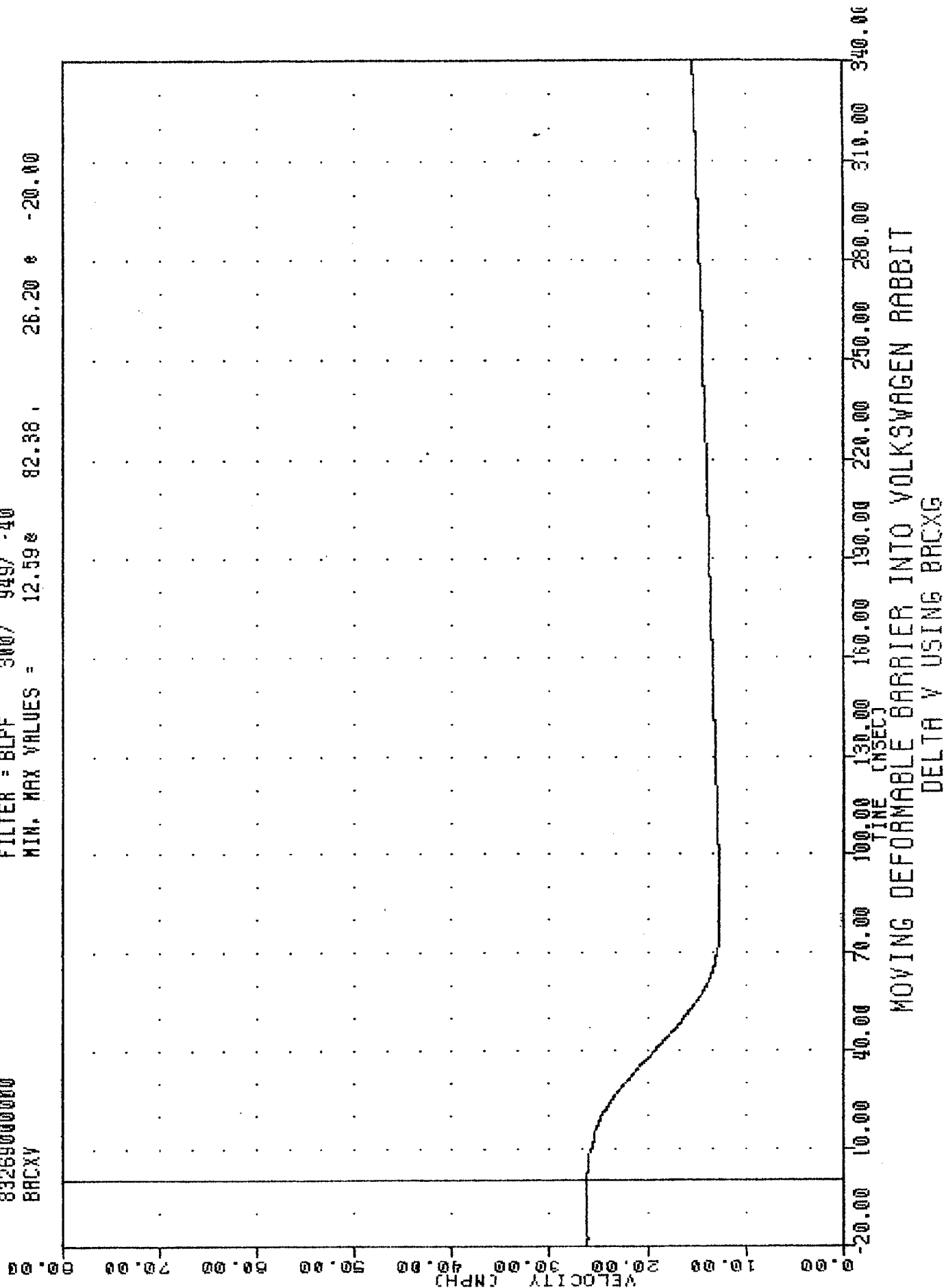
83269000000

BRCXV

PLOT DATE 30-SEP-83 06:41:37

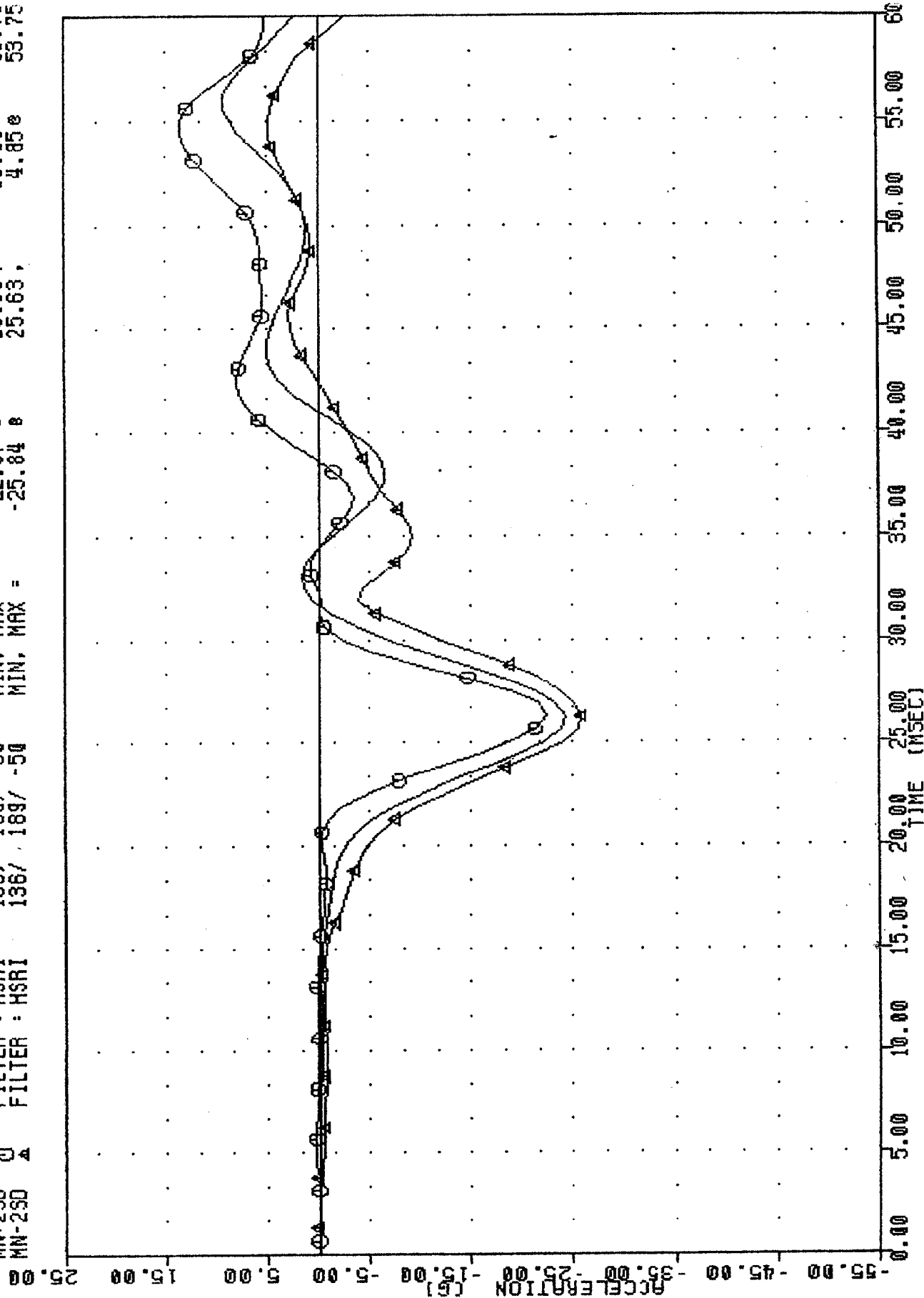
FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 12.59* 82.38 , 26.20 * -20.00



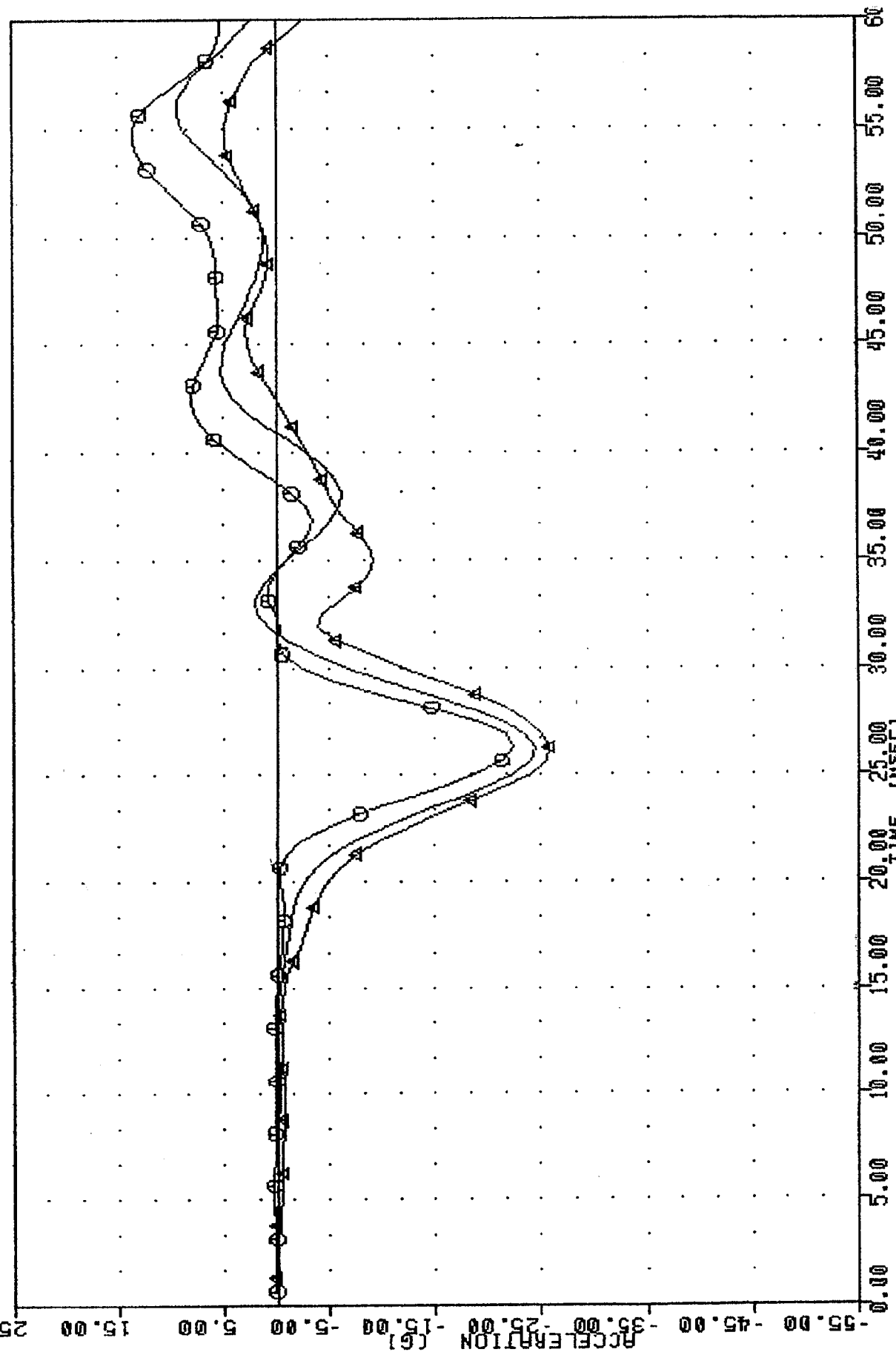
APPENDIX C
DUMMY CERTIFICATION

VRIC SRL26 , ARL6CA64 SID THORAX 6 BODY 318 CAL 64
 T12YGA FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 PLUT DATE 23-SEP-83 83271 -24.18 25.63 13.15:30
 9.16 25.63 13.54 55.00
 4.85 25.63 53.75



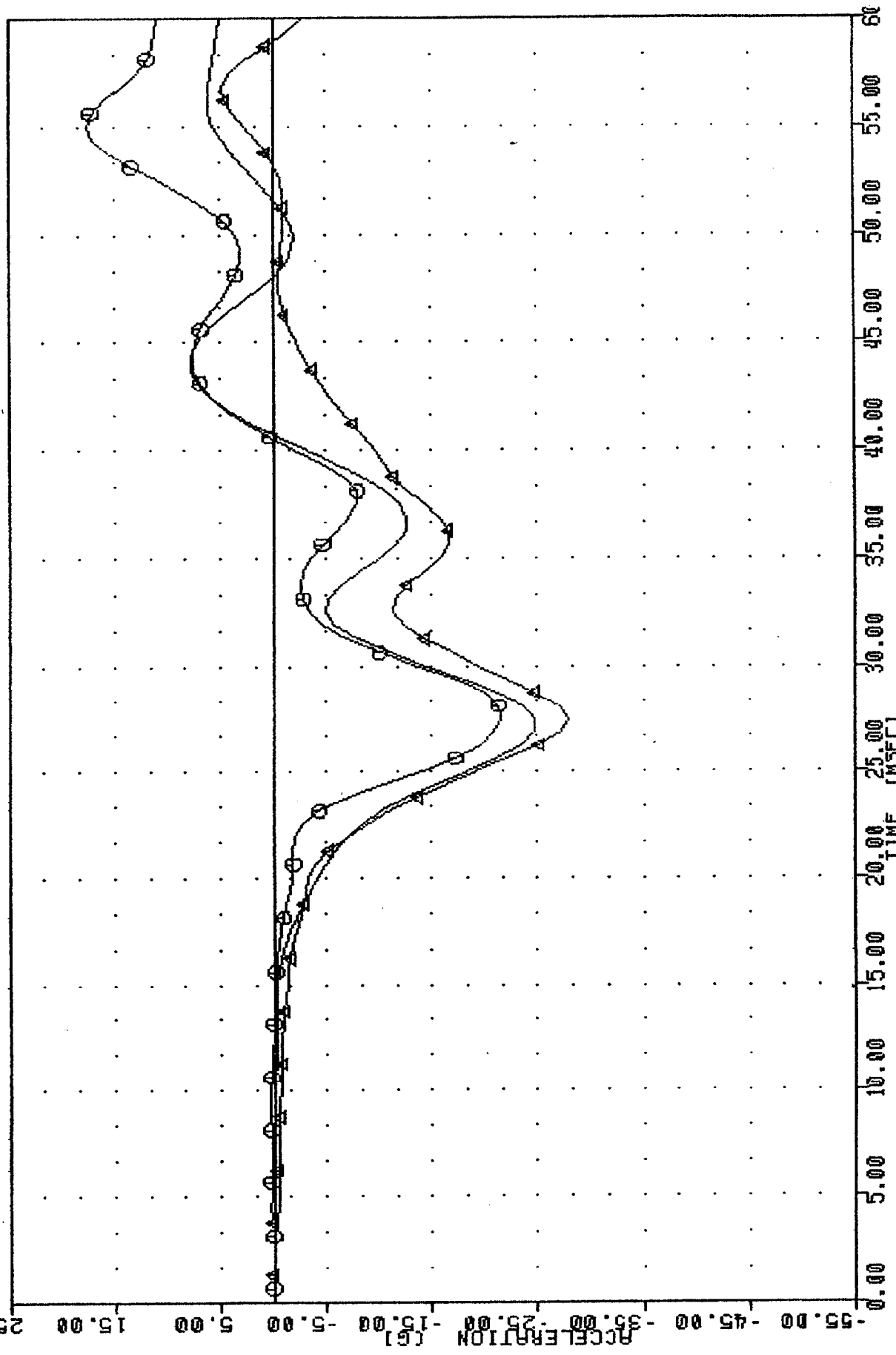
SIDE IMPACT TEST (006)
 LOWER SPINE ACCELERATION Y AXIS -A

YRIC SRL26 , ARL6CA64 SID THORAX 6 BODY 318 CHL 64
 T12YGI FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD A FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 83271 -24.39 25.63 9.258 13:14:23
 23-SEP-83 25.63 25.63 13.548 55.00
 25.63 25.63 4.858 53.75
 4.858 53.75



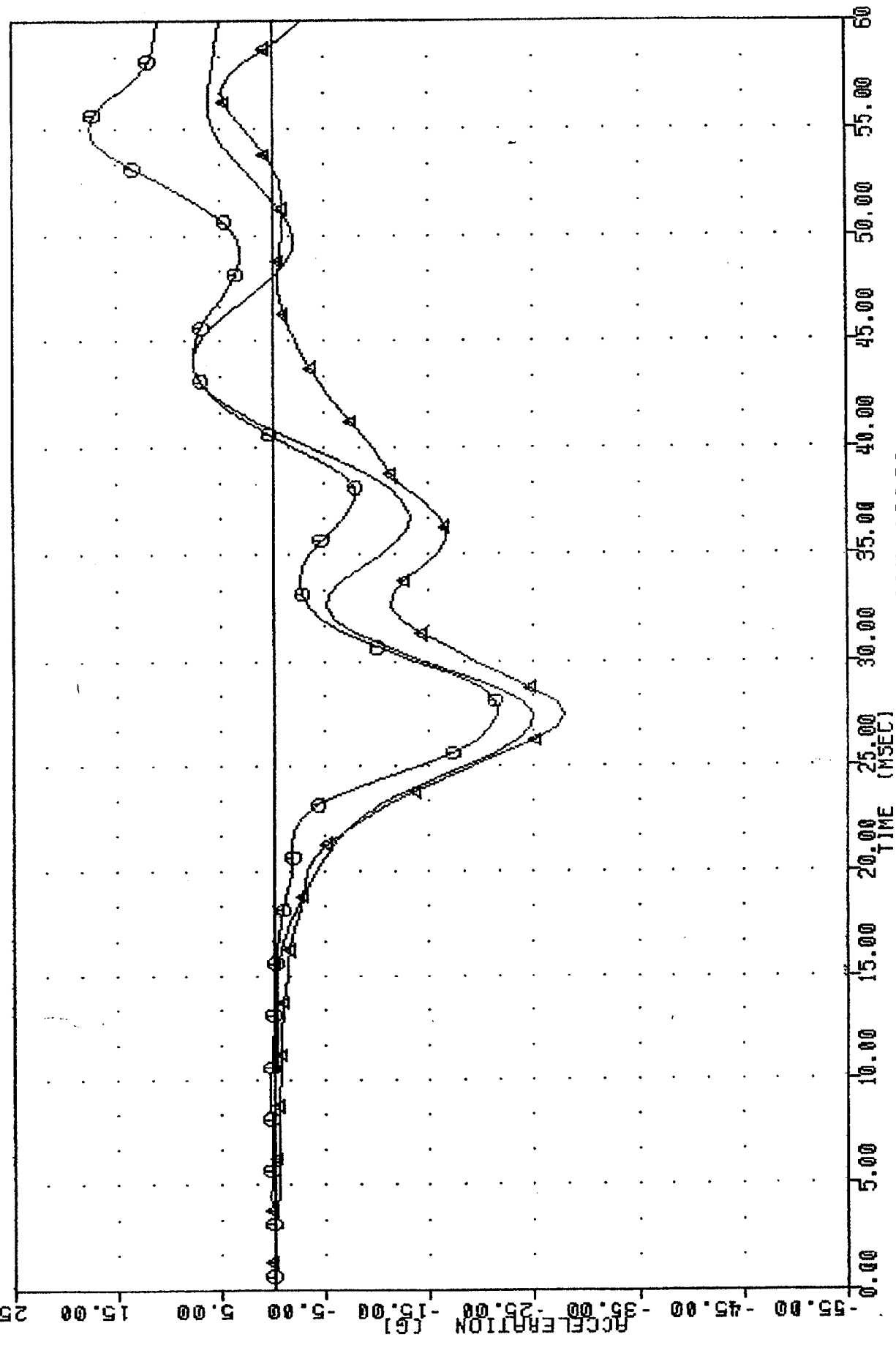
SIDE IMPACT TEST (0006)
 LOWER SPINE ACCELERATION Y AXIS -1

VRIC SRL26 , ARL6C864 SID THORAX 6 BODY 318 CAL 64
 T01Y61 FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX =
 PLOT DATE 23-SEP-83 13:11:12
 83271 -24.77 26.87 7.75 43.13
 -21.68 26.87 17.54 54.38
 -27.91 26.87 4.78 56.25



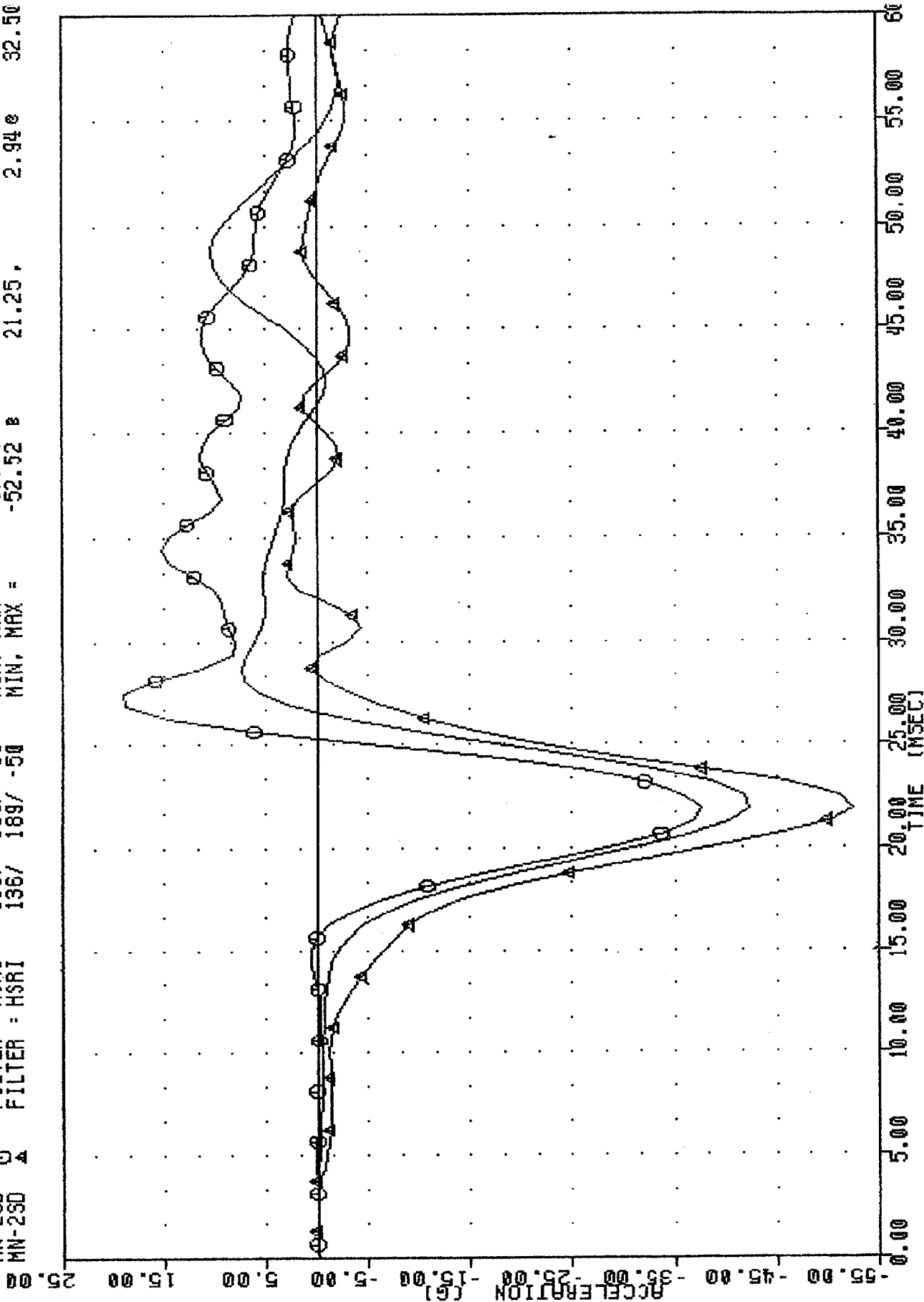
SIDE IMPACT TEST (006)
 UPPER SPINE ACCELERATION Y AXIS -1

VRIC SRL26 , ARL6C864 / S10 THORAX 6 BODY 318 CAL 84 83271 -24.91 26.87 23-SEP-83 13:07:35
 T01YGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -21.58 26.87 7.57 43.75
 MN-2SD Q FILTER = HSRI 136/ 189/ -50 MIN, MAX = -27.91 26.87 17.54 54.38
 MN-2SD A FILTER = HSRI 136/ 189/ -50 MIN, MAX = -27.91 26.87 4.78 56.25



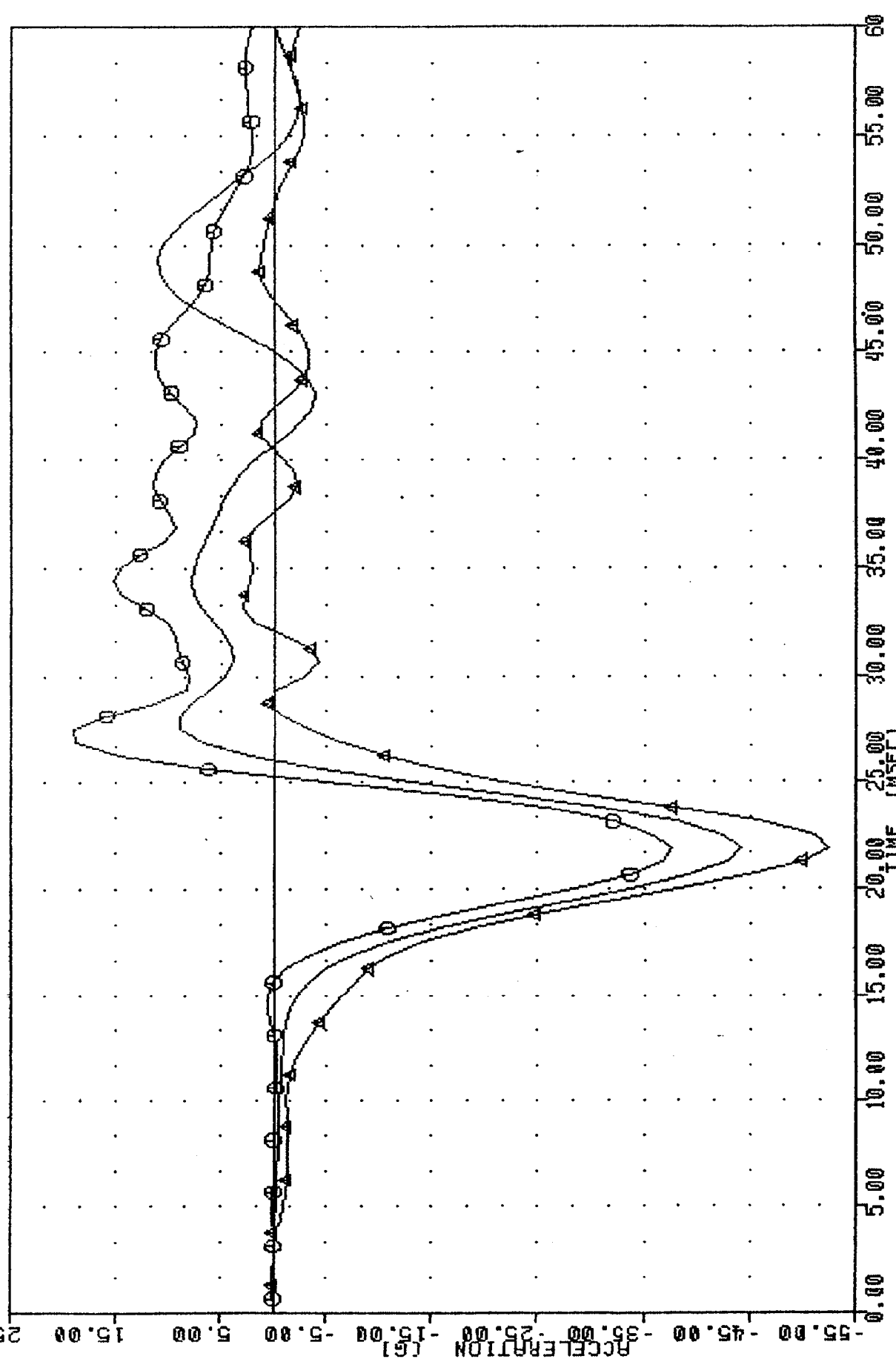
SIDE IMPACT TEST (006)
 UPPER SPINE ACCELERATION Y AXIS -A

VRIC SRL26 , ARL6CA64 SID THORAX 6 BODY 318 CAL 64
 LLRYG1 FILTER = HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN. MAX =
 MN-2SD 4 FILTER = HSRI 136/ 189/ -50 MIN. MAX =
 23-SEP-83 83271 -42.36 10.30 13:18:23
 21.25 10.30 48.13
 21.25 19.00 26.87
 21.25 2.94 32.50



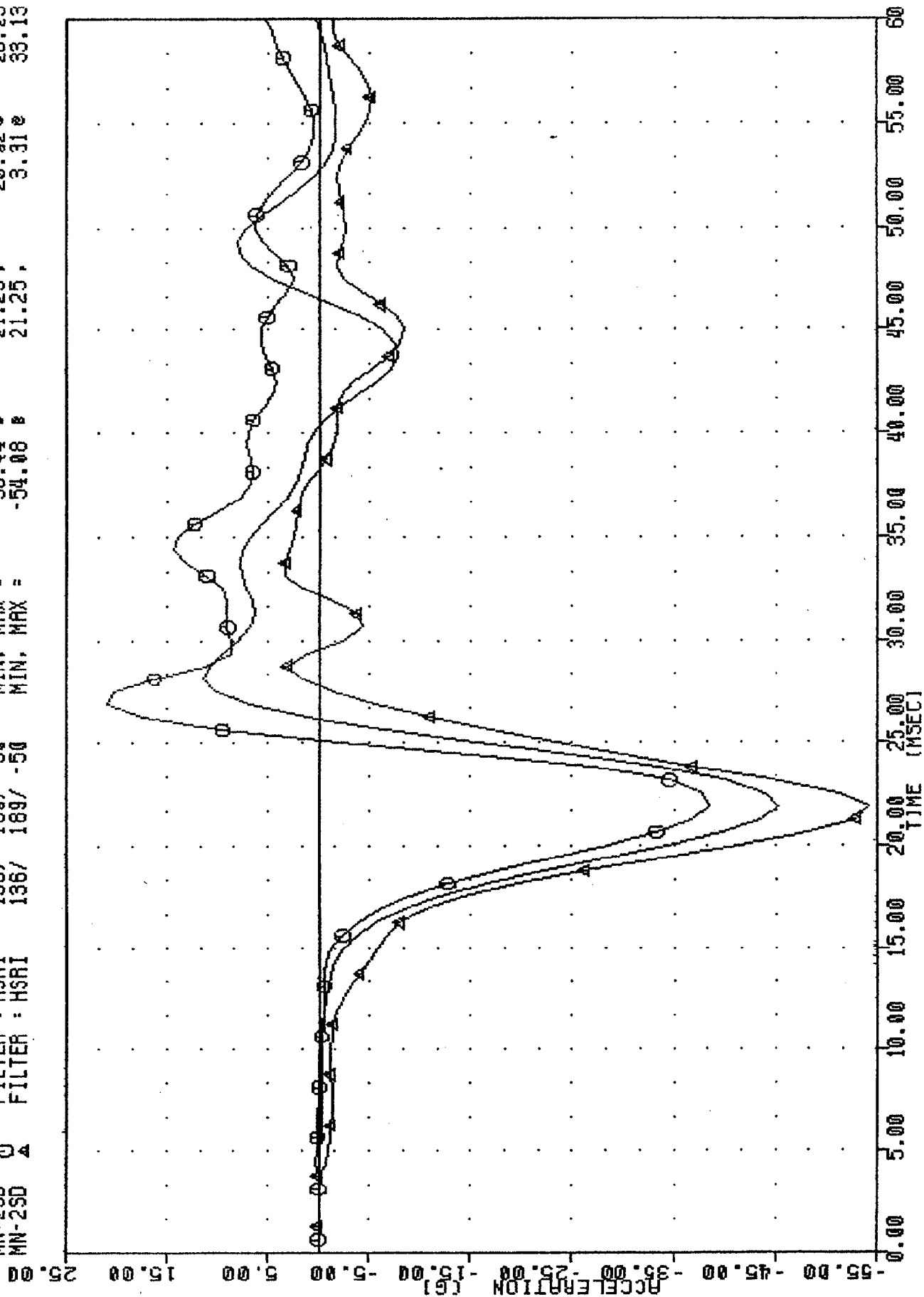
SIDE IMPACT TEST (006)
 LEFT LOWER RIB ACCELERATION Y AXIS -1

VRIC SRL26 , ARL6C864 SID THORAX 6 BODY 318 VAL 64 83271 23-SEP-83 13:19:57
 LLRYGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -44.22 21.25 10.92 48.75
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -37.66 21.25 19.00 26.87
 MN-2SD A FILTER = HSRI 136/ 189/ -50 MIN, MAX = -52.52 21.25 2.94 32.50



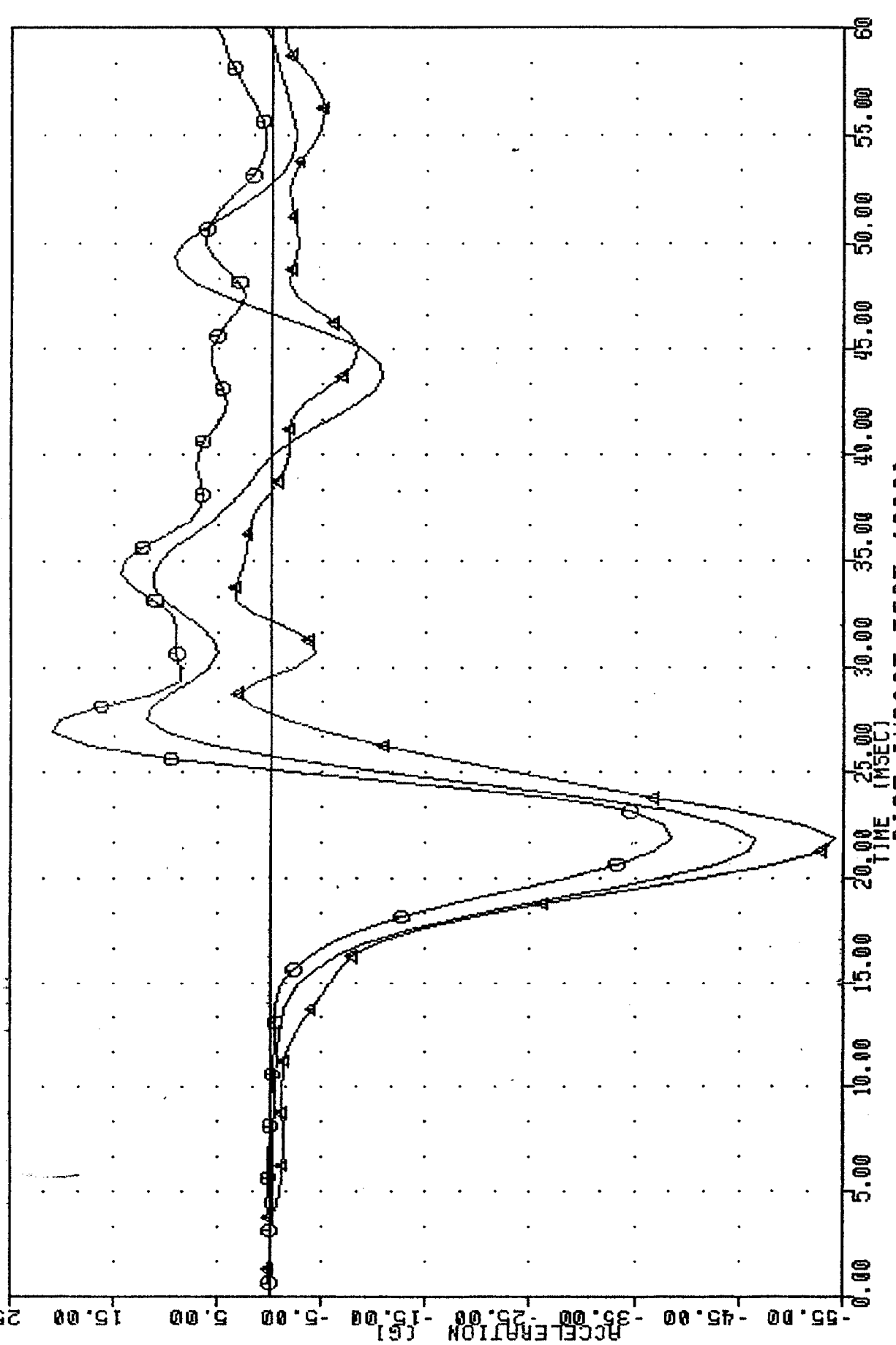
SIDE IMPACT TEST (006)
 LEFT LOWER RIB ACCELERATION Y AXIS -A

VRIC SRL26 , ARL6C864 SID THORAX 6 BODY 318 CAL 64 83271 23-SEP-83 13:08:31
 LURYGI FILTER : HSRI 136/ 189/ -50 MIN. MAX = -45.25 e 21.25 11.25 e 27.50
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -38.44 e 21.25 20.92 e 26.25
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -54.08 e 21.25 3.31 e 33.13



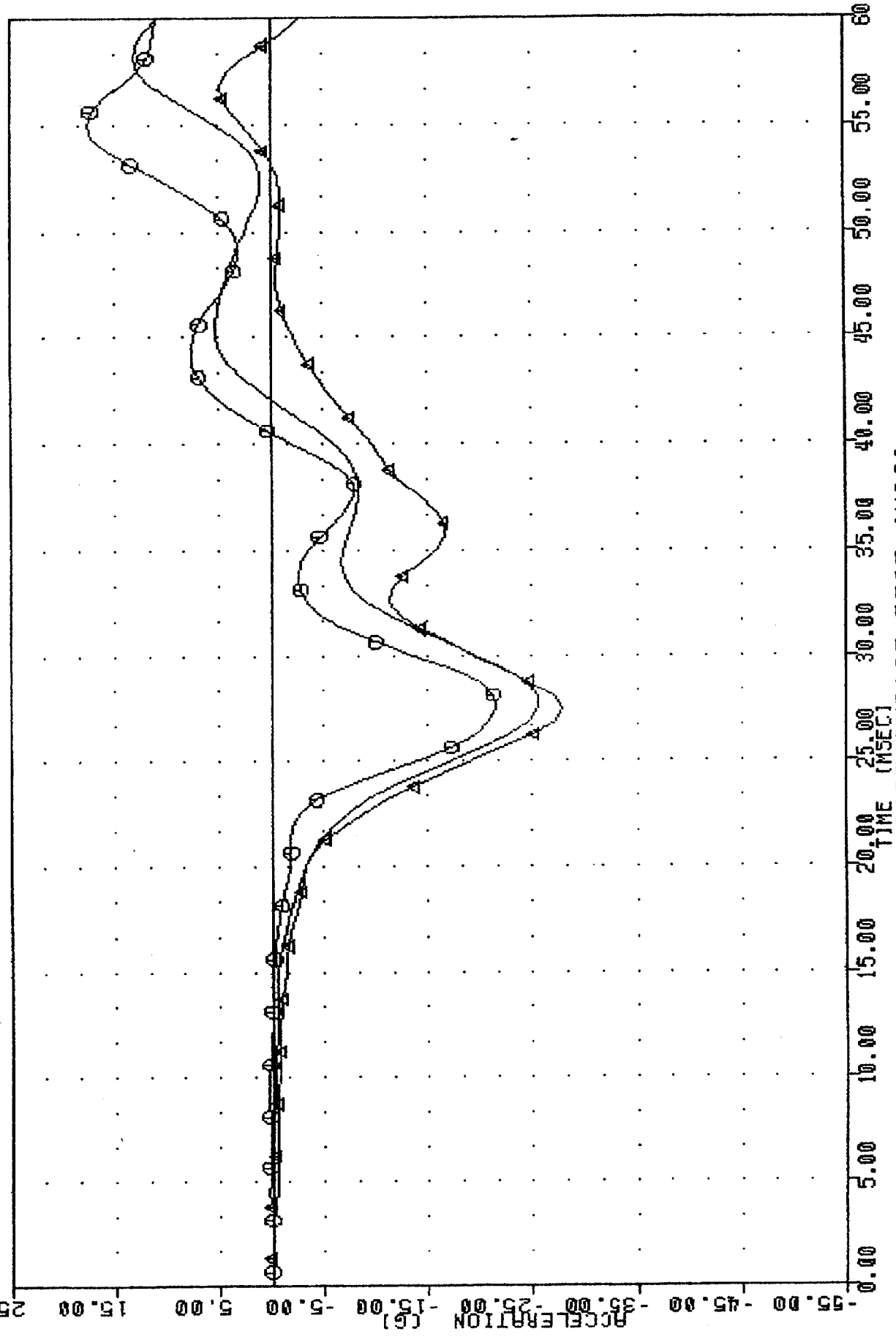
SIDE IMPACT TEST (006)
 LEFT UPPER RIB ACCELERATION Y AXIS -1

VRIC SRL26 , AR16CR64 SID THORAX & BODY 318 CAL 64 83271 PLUT DATE 23-SEP-83 13:10:13
 LURYGA FILTER = HSRI 136/ 189/ -50 MIN, MAX = -46.56 21.25, 11.81 26.87
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -38.44 21.25, 20.92 26.25
 MN-2SD 4 FILTER = HSRI 136/ 189/ -50 MIN, MAX = -54.08 21.25, 3.91 33.13



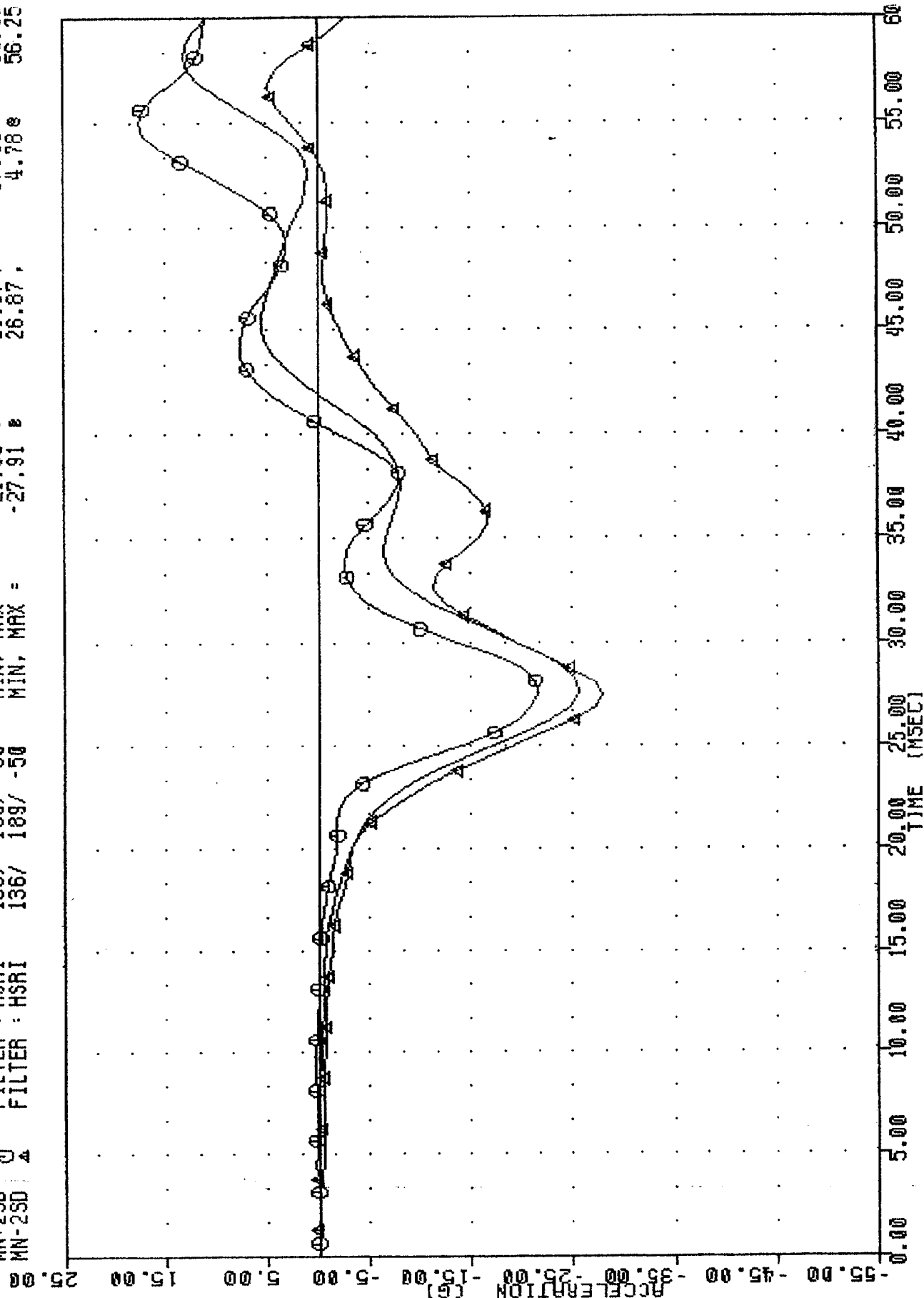
SIDE IMPACT TEST (006)
 LEFT UPPER RIB ACCELERATION Y AXIS - A

VRIC SRL26 , U02CAL63 SID THORAX U02 BODY 830 CAL 63 83271 PLUT DATE 23-SEP-83 13:36:31
 T01YGA FILTER : HSRI 136/ 189/ -50 MIN. MAX = -25.63 13.14e 57.50
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -21.58 17.54e 54.38
 MN-2SD A FILTER : HSRI 136/ 189/ -50 MIN. MAX = -27.91 4.78e 56.25



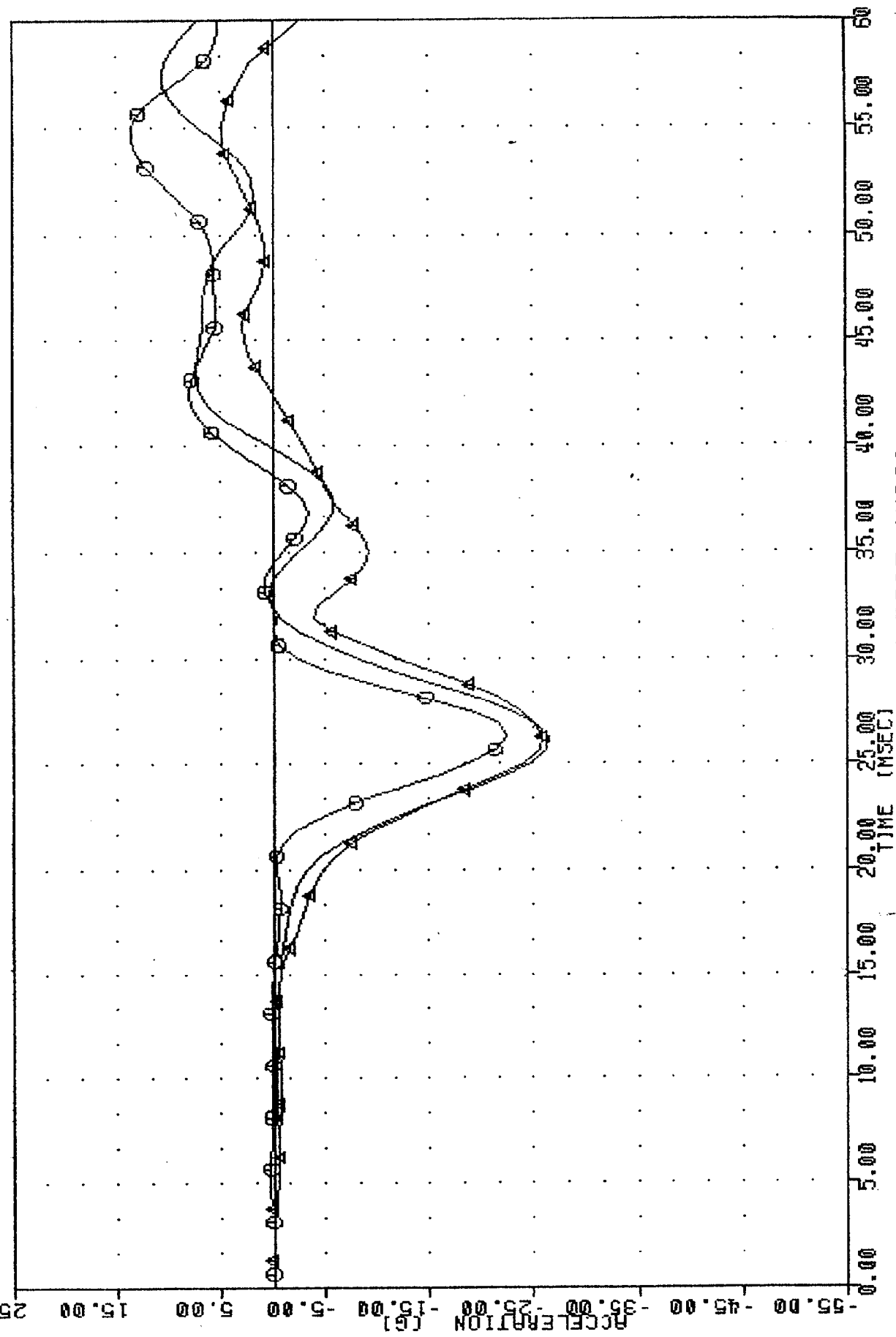
SIDE IMPACT TEST (U02)
 UPPER SPINE ACCELERATION Y AXIS -A

VRIC SRL26, U02CHL63 SID THORAX U02 BODY 830 CAL 83 83271 23-SEP-83 13.32:41
 TO1YGI FILTER: HSRI 136/ 189/ -50 MIN, MAX = -25.53 26.87, 13.13 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



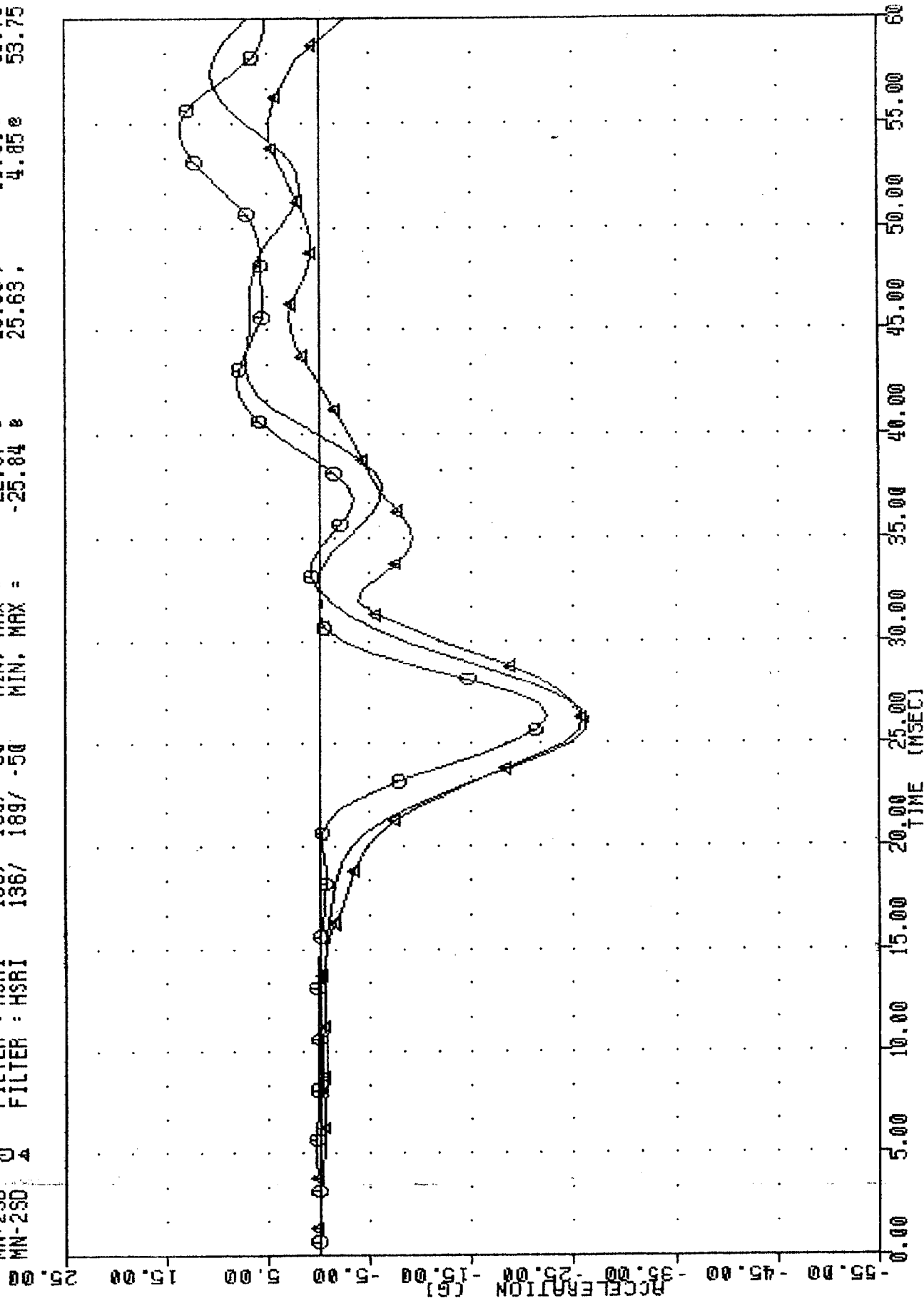
SIDE IMPACT TEST (U02)
 UPPER SPINE ACCELERATION Y AXIS -1

YRIC SRL26 , U02CHL63 SID THORAX U02 BODY 83N CAL 63 83271 23-SEP-83 13:23:42
 T12Y61 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -26.37 25.63 10.59 56.87
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -22.37 25.63 13.54 53.75
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -25.84 25.63 4.95 53.75



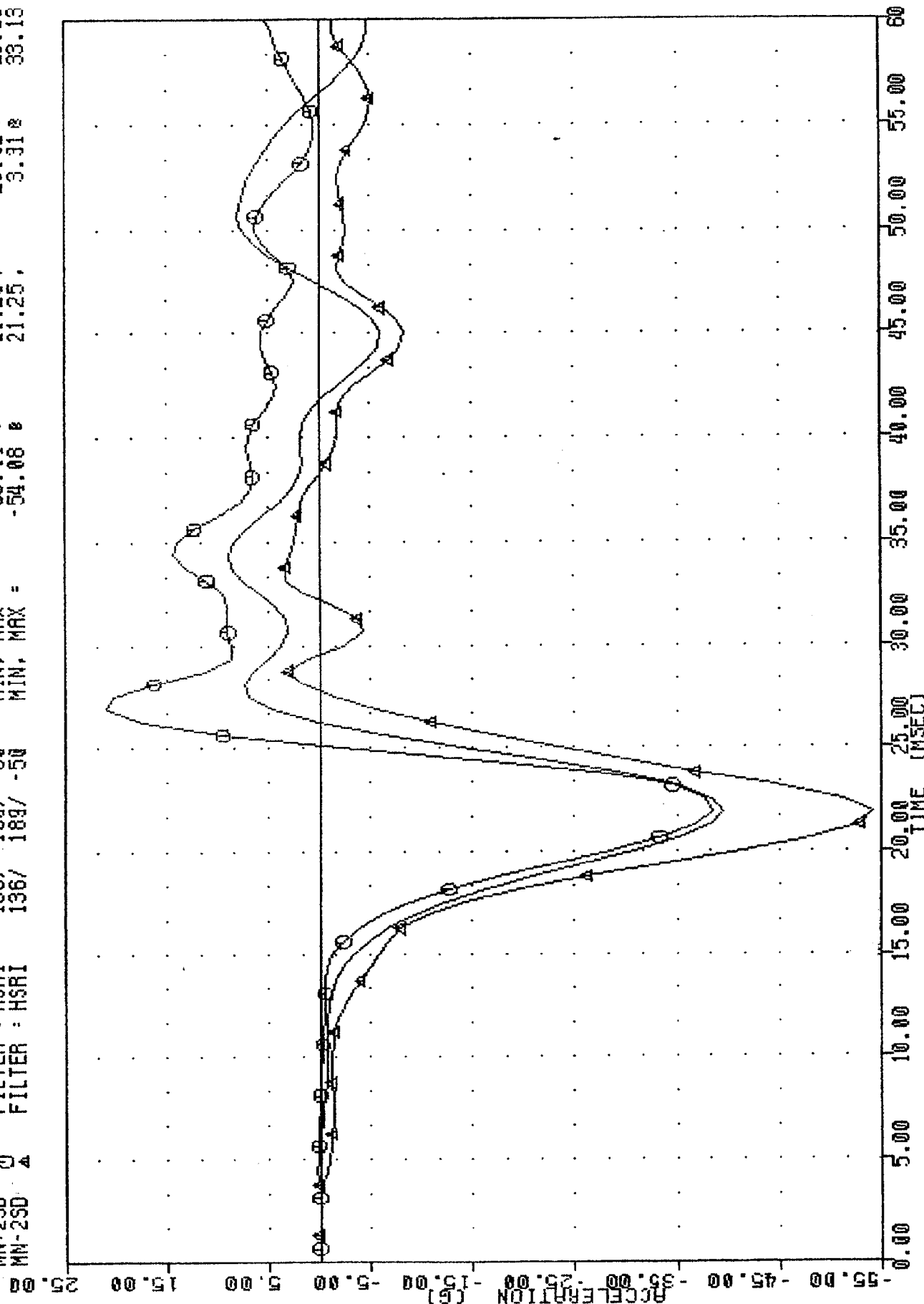
SIDE IMPACT TEST (U02)
 LOWER SPINE ACCELERATION Y AXIS -1

VRIC SRL26 , U02CAL63 S10 THORAX U02 BODY 83N CAL 63 83271 PLUT DATE 23-SEP-83 13:25:06
 T12YGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -26.30 25.63, 10.53 56.87
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.37 25.63, 13.54 53.75
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.84 25.63, 4.85 53.75



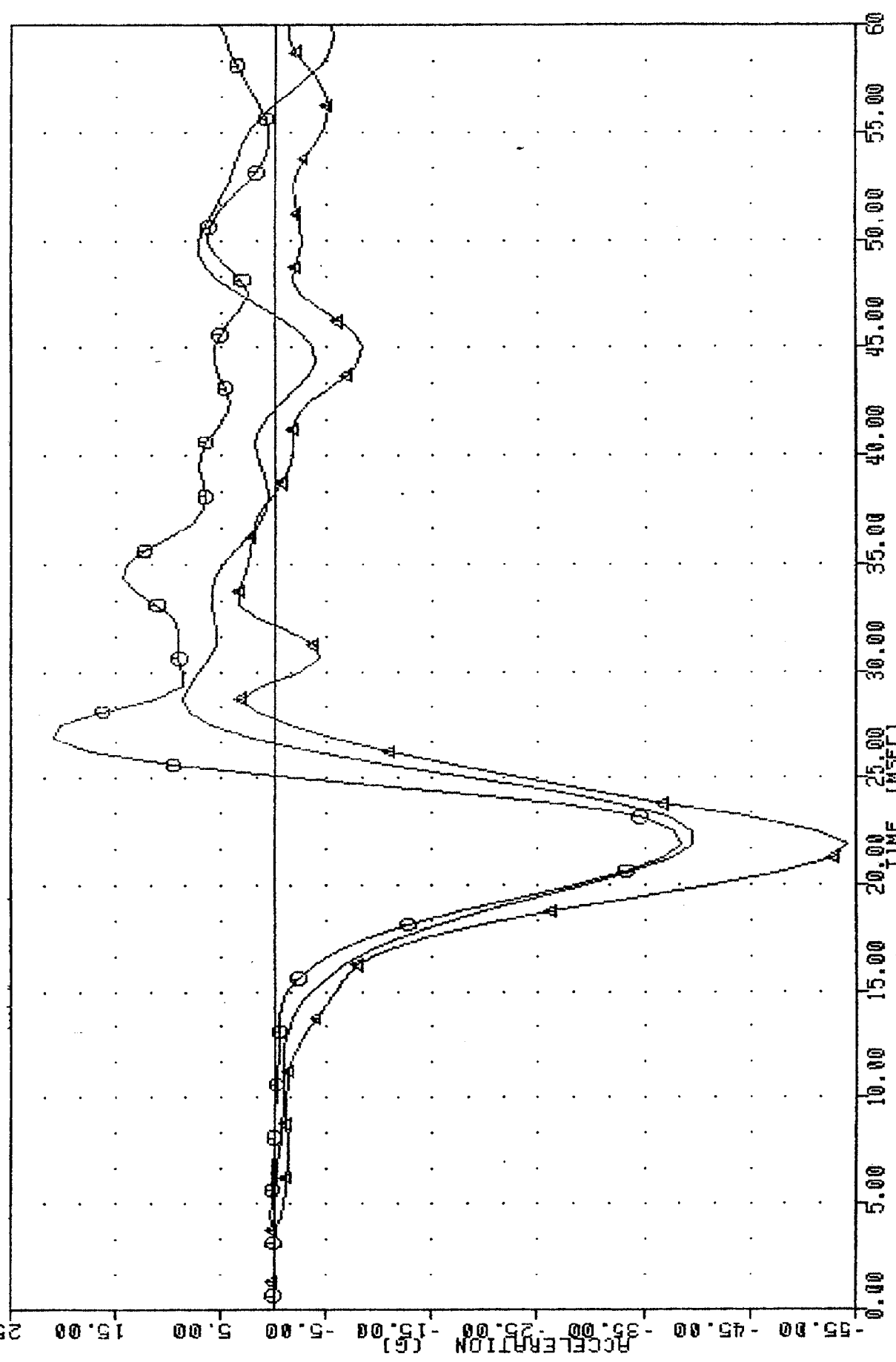
SIDE IMPACT TEST (U02)
 LOWER SPINE ACCELERATION Y AXIS -A

VRIC SRL26 U02CAL63 SID THORAX U02 BODY 83N CAL 63 83271 PLUT DATE 23-SEP-83 13:28:29
 LURYGA FILTER : HSRI 136/ 189/ -50 MIN. MAX = -39.56 8 21.25 8 8.86 8 33.75
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -38.44 8 21.25 8 20.82 8 26.25
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -54.08 8 21.25 8 3.31 8 33.13



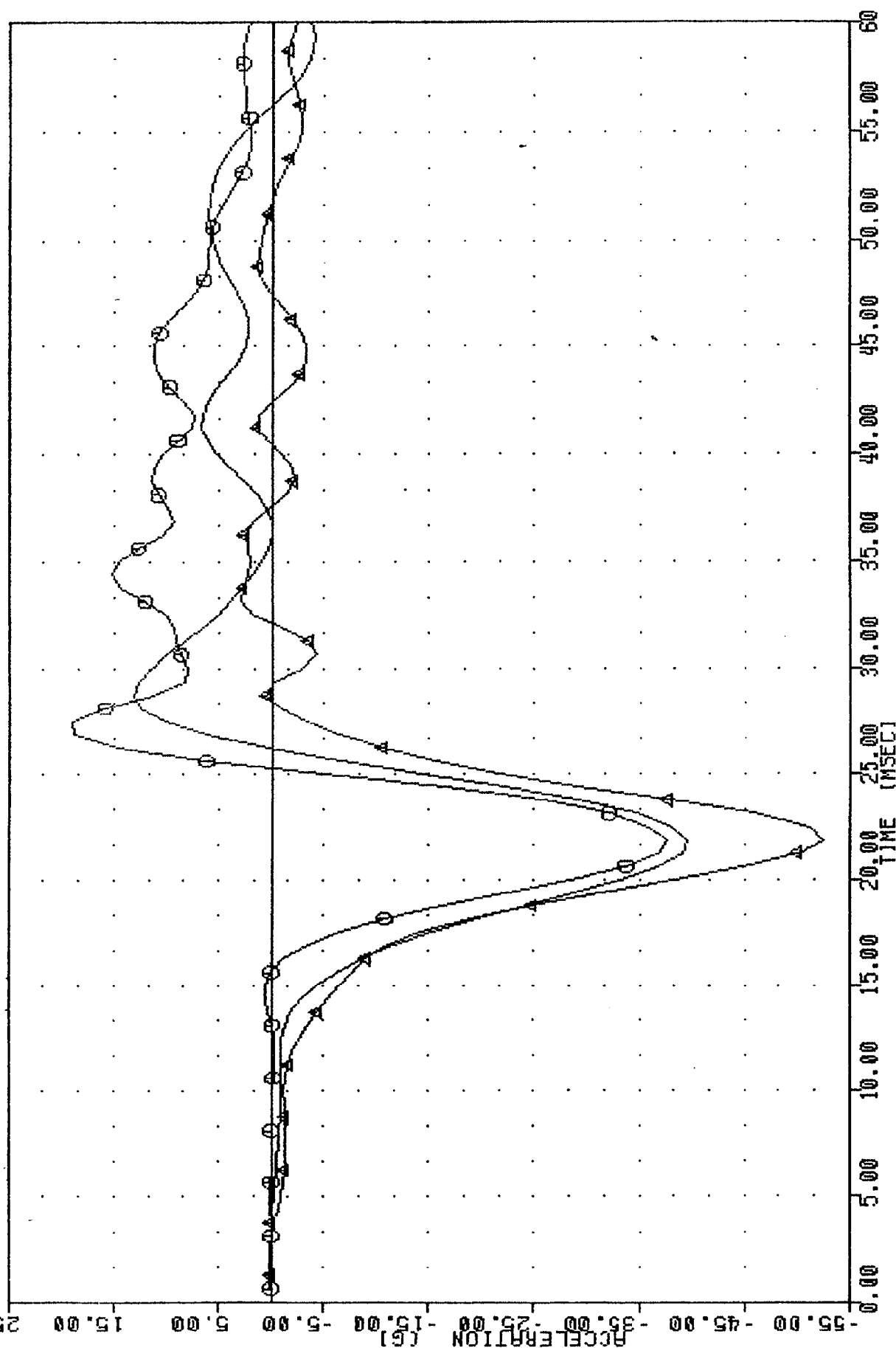
SIDE IMPACT TEST (U02)
 LEFT UPPER RIB ACCELERATION Y AXIS -A

VRIC SRL26 , U02CAL63 S10 THORAX U02 BODY 83W CAL 63 83271 PLOT DATE 23-SEP-83 13:27:13
 LURYGI FILTER = HSRI 136/ 189/ -50 MIN. MAX = -39.59 21.25 8.578 28.13
 MN-2SD 0 FILTER = HSRI 136/ 189/ -50 MIN. MAX = -38.44 21.25 20.820 26.25
 MN-2SD 4 FILTER = HSRI 136/ 189/ -50 MIN. MAX = -54.08 21.25 3.310 33.13



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

U02ZUL63	SID THOMAS	U02ZUL63	CHL 03	09271		LUT DML 23 SEP 03	13.148	13.40.22
FILTER = HSRI	136/ 189/-50	=	MIN. MAX	-39.63		21.25		28.13
FILTER = HSRI	136/ 189/-50	=	MIN. MAX	-37.68		21.25		26.87
FILTER = HSRI	136/ 189/-50	=	MIN. MAX	-52.52		21.25		32.50



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

U0	U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	U13	U14	U15	U16	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32	U33	U34	U35	U36	U37	U38	U39	U40	U41	U42	U43	U44	U45	U46	U47	U48	U49	U50	U51	U52	U53	U54	U55	U56	U57	U58	U59	U60	U61	U62	U63	U64	U65	U66	U67	U68	U69	U70	U71	U72	U73	U74	U75	U76	U77	U78	U79	U80	U81	U82	U83	U84	U85	U86	U87	U88	U89	U90	U91	U92	U93	U94	U95	U96	U97	U98	U99
U0	U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	U13	U14	U15	U16	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32	U33	U34	U35	U36	U37	U38	U39	U40	U41	U42	U43	U44	U45	U46	U47	U48	U49	U50	U51	U52	U53	U54	U55	U56	U57	U58	U59	U60	U61	U62	U63	U64	U65	U66	U67	U68	U69	U70	U71	U72	U73	U74	U75	U76	U77	U78	U79	U80	U81	U82	U83	U84	U85	U86	U87	U88	U89	U90	U91	U92	U93	U94	U95	U96	U97	U98	U99

