

DOT 597

EVALUATION OF NHTSA MODIFIED
VOLKSWAGEN RABBITS

MDB-TO-CAR SIDE IMPACT TEST OF
A 26⁰ CRABBED MOVING DEFORMABLE BARRIER
TO A 1976 VOLKSWAGEN RABBIT
AT 39.1 MPH

PREPARED BY:
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FINAL REPORT
OCTOBER 1983

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 NHTSA's Modified Volkswagen Rabbits. Testing was conducted on a 1976 Volkswagen Rabbit 2-door hatchback with structural modification designated as Optimized at the TRCO Crash Test Facility, East Liberty, Ohio. The test vehicle was impacted on the left side by a moving deformable barrier, crabbled to 26°, at 39.1 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 seating position. The test date was September 20, 1983 and the ambient temperature was 76°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

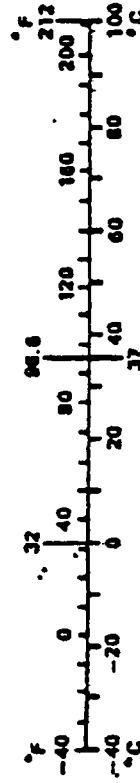


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SECTION 1.0
PURPOSE AND INTRODUCTION

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 1976 Volkswagen Rabbit 2-door hatchback was impacted on the left side by a Moving Deformable Barrier (MDB) on September 20, 1983. 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 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 39.1 mph with the MDB's wheels crabbed clockwise to 26°. The actual test speed was 39.1 mph and the actual leading edge was 37 inches forward of the midpoint of the Volkswagen Rabbit's wheelbase.

The vehicle was structurally modified to the level designated "Optimized". 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.

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: Volkswagenwerk AG

MAKE/MODEL: Volkswagen Rabbit

VIN: 1763257067

BODY STYLE: 2-Door Hatchback

MODEL YEAR: 1976

NHTSA NO.: R & D

COLOR: Red

ENGINE DATA: TYPE: Transverse

CYLINDERS: 4

DISPLACEMENT 97 CID

TRANSMISSION DATA: 4 Speed Manual

DATE VEHICLE RECEIVED: 8/8/83

ODOMETER READING: 83399

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 No

RADIO Yes

ANTI-SKID BRAKE No

CLOCK No

REAR WINDOW DEFROSTER Yes

OTHER

REMARKS:

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

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

VEHICLE MANUFACTURED BY: Volkswagenwerk AG

DATE OF MANUFACTURE: 3/76

GVWR: 2777 LBS.,

GAWR: FRONT 1609 LBS., REAR 1278 LBS.

* Passenger side door, left front fender and wheels rusted

VEHICLE TIRE DATA

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

TIRES ON VEHICLE (MFG. & LINE, SIZE): Michelin ZX Radial 155SR13

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 610 LBS. RIGHT REAR 340 LBS.

LEFT FRONT 610 LBS. LEFT REAR 310 LBS.

TOTAL FRONT WEIGHT 1220 LBS. (65.2 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 650 LBS. (34.8 % OF TOTAL VEHICLE WEIGHT)

TOTAL DELIVERED WEIGHT 1870 LBS.

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE: RF 25 3/8 ;LF 25 9/16 ;RR 25 1/16 ;LR 25

PRE-TEST ATTITUDE: RF 24 5/8 ;LF 24 9/16 ;RR 22 13/16 ;LR 22 13/16

POST-TEST ATTITUDE: RF 23 3/8 ;LF 25 ;RR 22 3/8 ;LR 22 15/16

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 162 LBS. CARGO:

RIGHT FRONT 655 LBS. RIGHT REAR 560 LBS.

LEFT FRONT 645 LBS. LEFT REAR 520 LBS.

TOTAL FRONT WEIGHT 1300 LBS. (54.6 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 1080 LBS. (45.4 % OF TOTAL VEHICLE WEIGHT)

TOTAL TEST WEIGHT 2380 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*: 11.2 GALLONS

TEST VOLUME: 3.0 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 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 142 LBS.

4 TOTAL

TOTAL 642 LBS.

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

TEST CONDITIONS

TEST NUMBER: 830920

DATE OF TEST: September 20, 1983

TIME OF TEST: 12:30

WIND VELOCITY: 3-6 117° SE

HUMIDITY: NA

AMBIENT TEMPERATURE AT IMPACT AREA: 76° F

TEMPERATURE IN OCCUPANT COMPARTMENT: 78° F

SUBJECT VEHICLE DATA

	<u>ACTUAL</u>	<u>INTENDED</u>
VEHICLE TEST WEIGHT (LBS.)	2380	2360
MDB TEST WEIGHT (LBS.)	2990	3000
MDB VELOCITY (MPH)*	39.1	39.1
IMPACT POINT (INCHES)**	37.	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 #	PASSENGER #
Head	<u>Left side window, barrier face</u>	<u>Left side header, window, 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>Yes</u>	<u>Yes, approx. 4 inches</u>
Rear	<u>Yes</u>	<u>No</u>

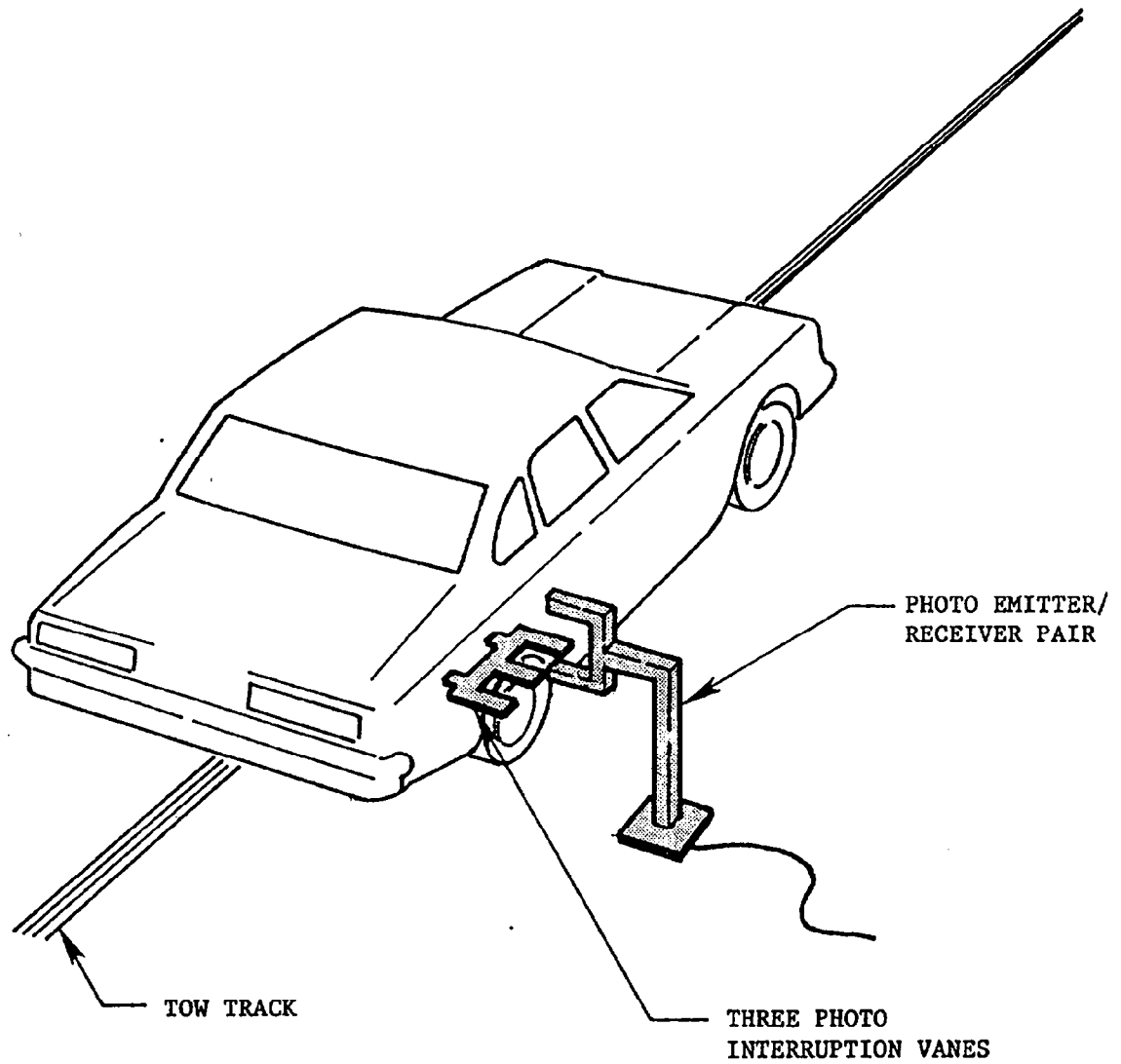
GLAZING DAMAGE:

Windshield cracked, both left side windows
separated intact.

OTHER NOTABLE IMPACT EFFECTS:

Sill curled upward and inward, driver's door
separated at hinges, driver's floor pan split
at firewall

IMPACT VELOCITY MEASUREMENT SYSTEM



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

VEHICLE TEST WEIGHT CALCULATION

Test Weight = Unloaded Delivered Weight +
Number of Dummies X 174 lbs. +
Cargo Weight
= 1870 + 2 X 174 + 142 lbs.
= 2360 lbs.

To achieve test weight, the exhaust system, alternator, battery, starter motor and carburetor were removed and 3 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

High speed camera No. 7 located on the hood of the Volkswagen Rabbit failed to run because of moisture condensation on the electronic controls. The camera had run pre-test but would not run once loaded. The camera was dried out, checked over and put back in service.

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

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.

**Due to structural modifications, the left foot was turned inward.

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. J. Kokoruda
3. M. Garrison

POSITIONING DATE: 9-20-83

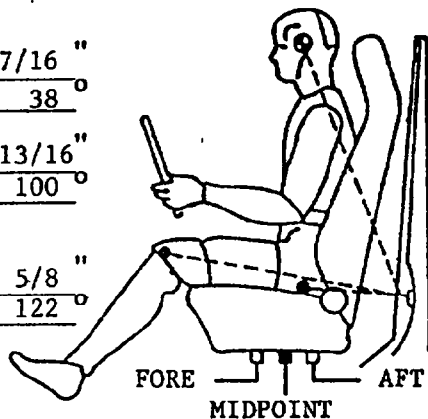
AMBIENT TEMP.: 71° F. TIME: 5:30 a.m.

DRIVER DUMMY # 06

HEAD 20 7/16 "
 TARGET* 38 °

KNEE 31 13/16 "
 JOINT 100 °

APPROX.
 "H" 19 5/8 "
 POINT 122 °

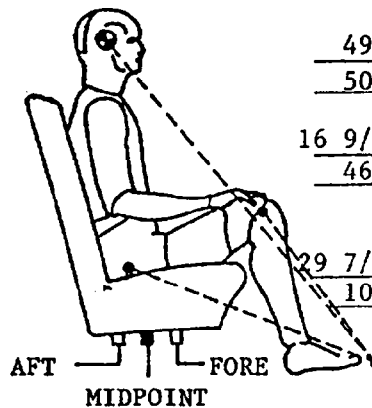


REAR PASSENGER DUMMY # U02

49 "HEAD
50 °TARGET**

16 9/16 "KNEE
46 °JOINT

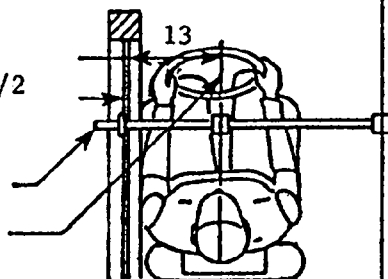
APPROX.
29 7/8 " "H"
109 °POINT †



DOOR
 GLASS
 HEIGHT*** 9 1/2

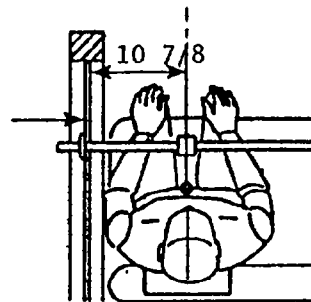
LATERAL BAR
 ADJUSTABLE
 POINTER

DRIVER
 DUMMY # 06



DOOR
 GLASS
 HEIGHT DNA

PASSENGER
 DUMMY # U02

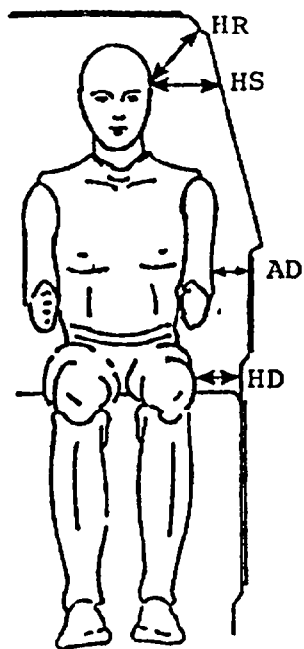
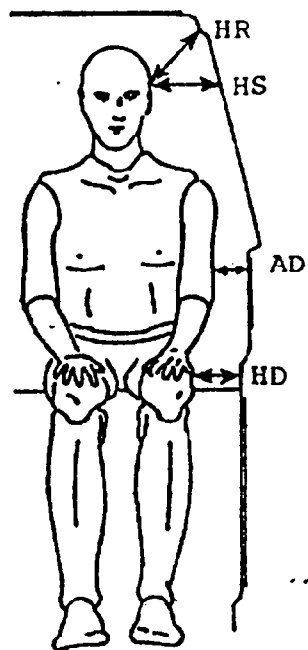


*All driver dummy dimensions referenced to top of striker bolt and all angles referenced to vertical.

**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.

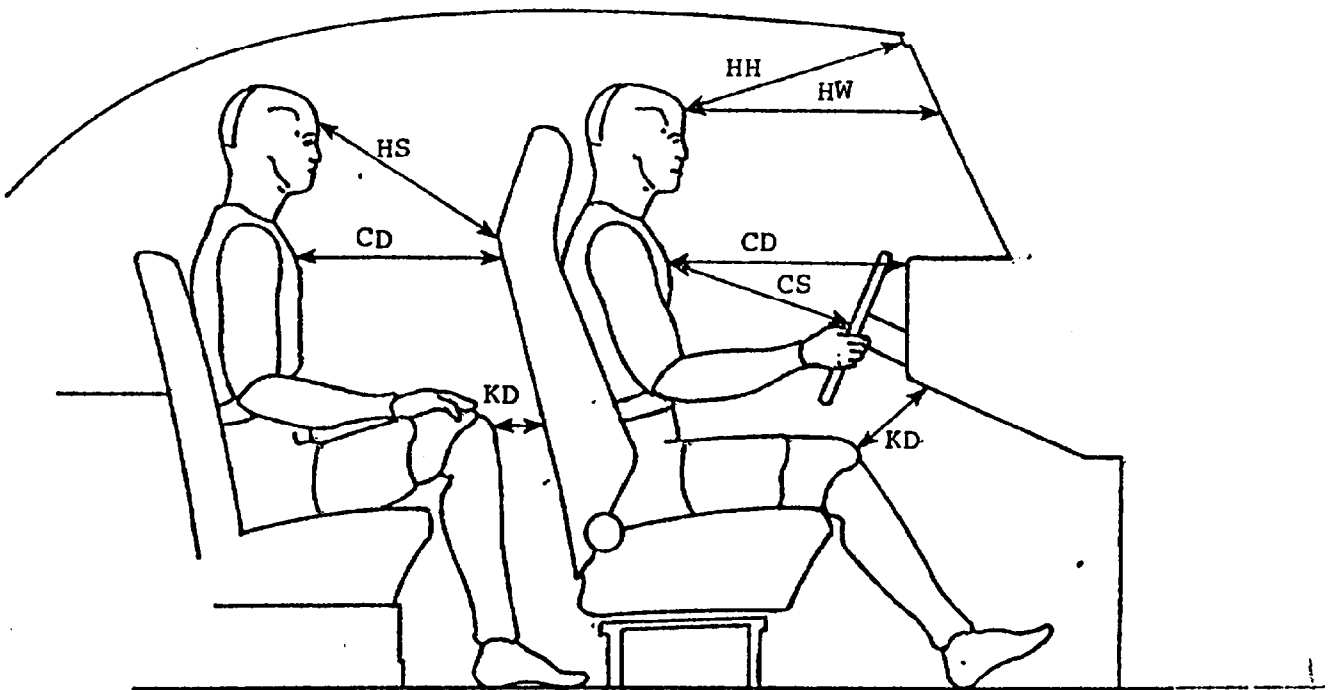
†Due to structural modification interference, the "H" point location was estimated.



	06 DRIVER	U02 PASSENGER
HR	6 11/16	6 5/8
HS	8 3/4	8 1/16
AD	0	3/16
HD	2 1/4	2 5/16

NOTE: ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS



	06 DRIVER	U02 PASSENGER
HH	14 13/16	DNA
HW	20 5/8	DNA
HS	DNA	23 3/4
CD	21 11/16	18 3/4
CS	12 3/4	DNA
KDL	7 1/16	3 1/8
KDR	8 1/4	3 1/8

NOTE: ALL MEASUREMENTS IN INCHES

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

DUMMY KINEMATIC SUMMARY

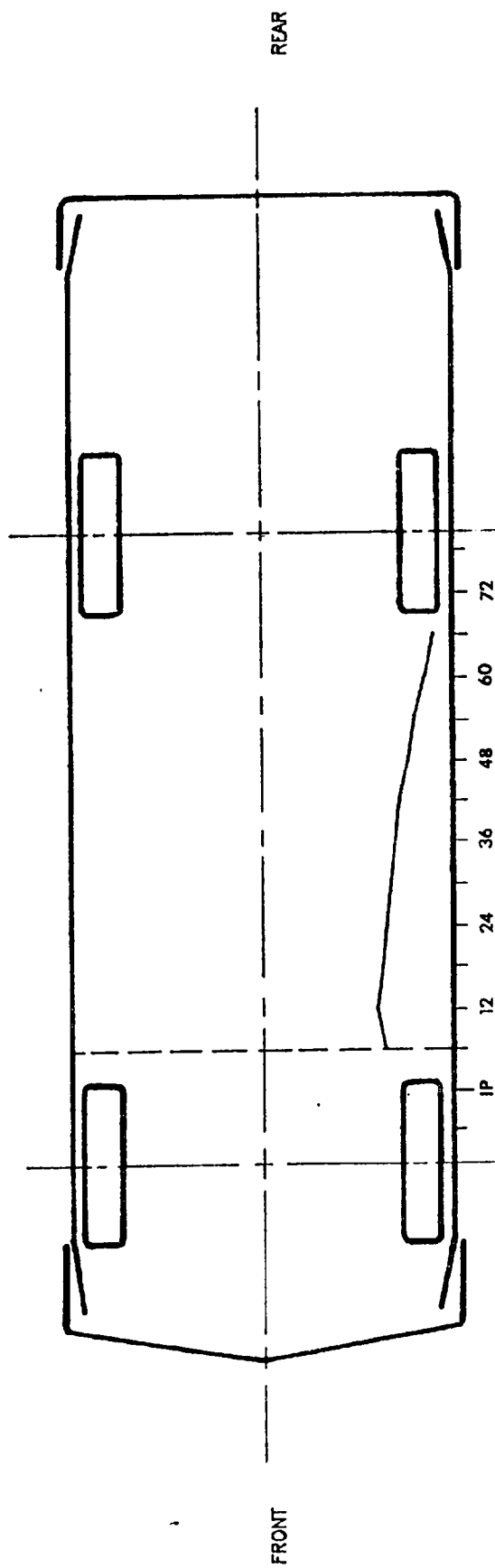
DRIVER

During impact, the dummy's torso contacted the padded driver's door and the head contacted the driver's window and the top of the deformable barrier face. The dummy rebounded from the driver's door and its buttocks passed through the passenger's side window. The dummy came to rest laying across the front passenger's seat with its buttocks resting on the window sill.

PASSENGER

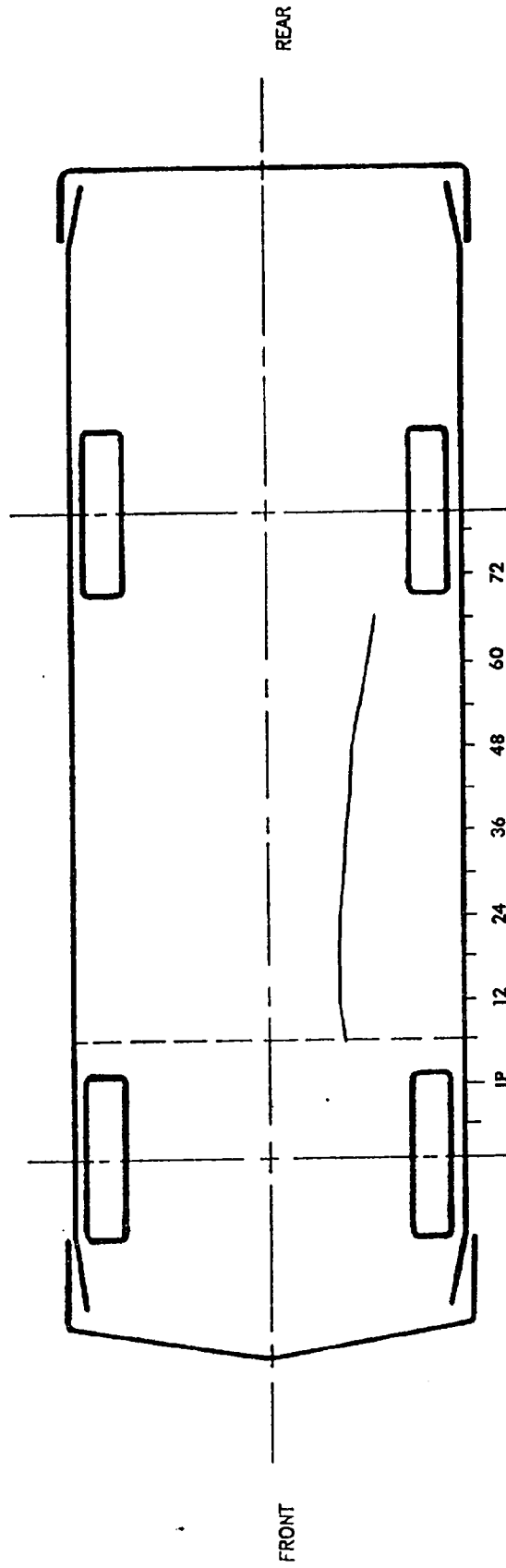
During impact, the dummy's torso contacted the padded left rear occupant side wall and the head contacted the side window and side header. The dummy rebounded laterally in an upright position and came to rest upright and facing forward.

VEHICLE EXTERIOR STATIC CRUSH PROFILE



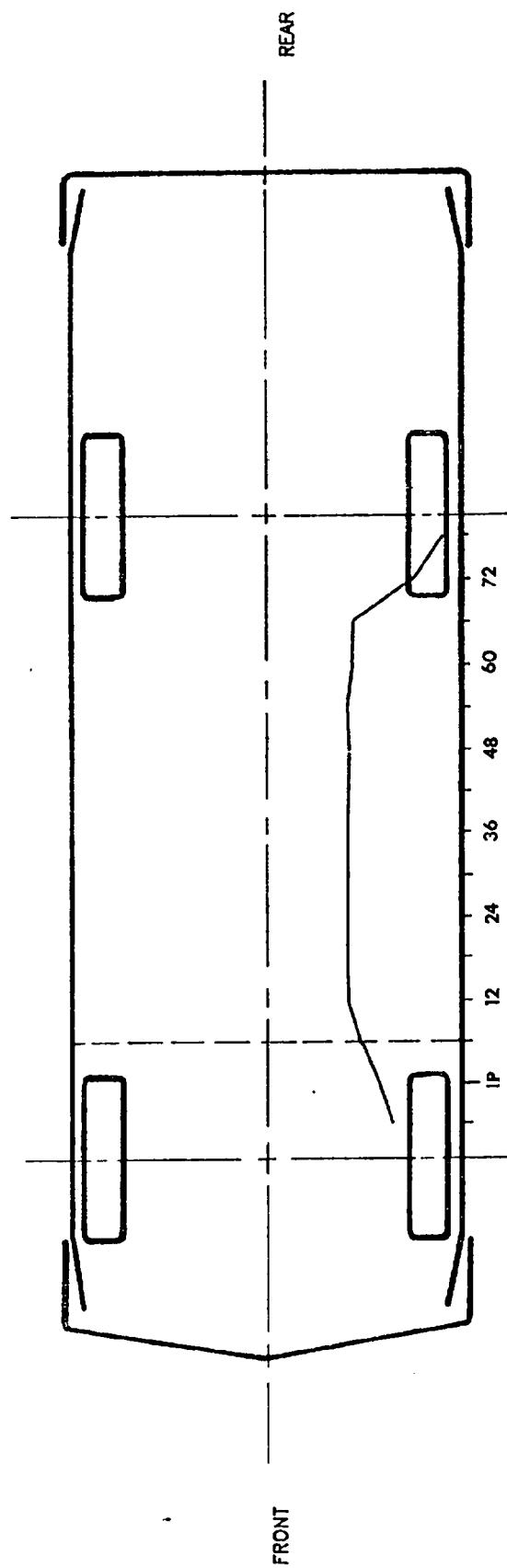
PROFILE LEVEL EQUALS AXLE HEIGHT
IP EQUALS PROJECTED IMPACT POINT

VEHICLE EXTERIOR STATIC CRUSH PROFILE



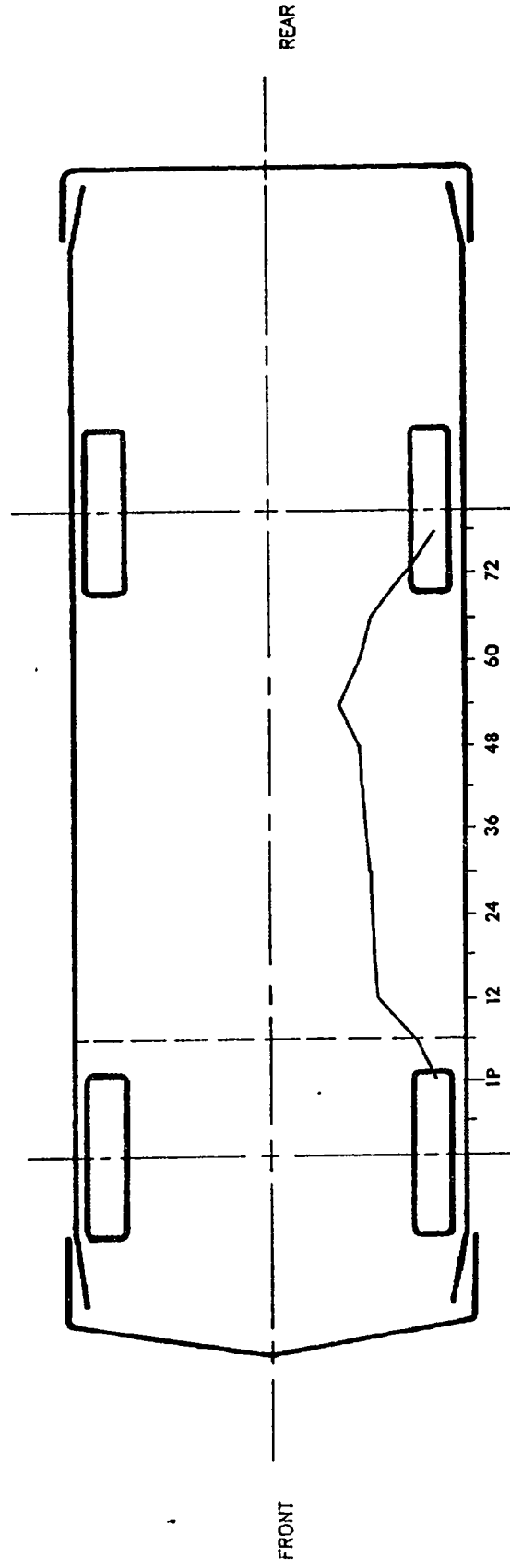
PROFILE LEVEL EQUALS H-POINT HEIGHT
IP EQUALS PROJECTED IMPACT POINT

VEHICLE EXTERIOR STATIC CRUSH PROFILE



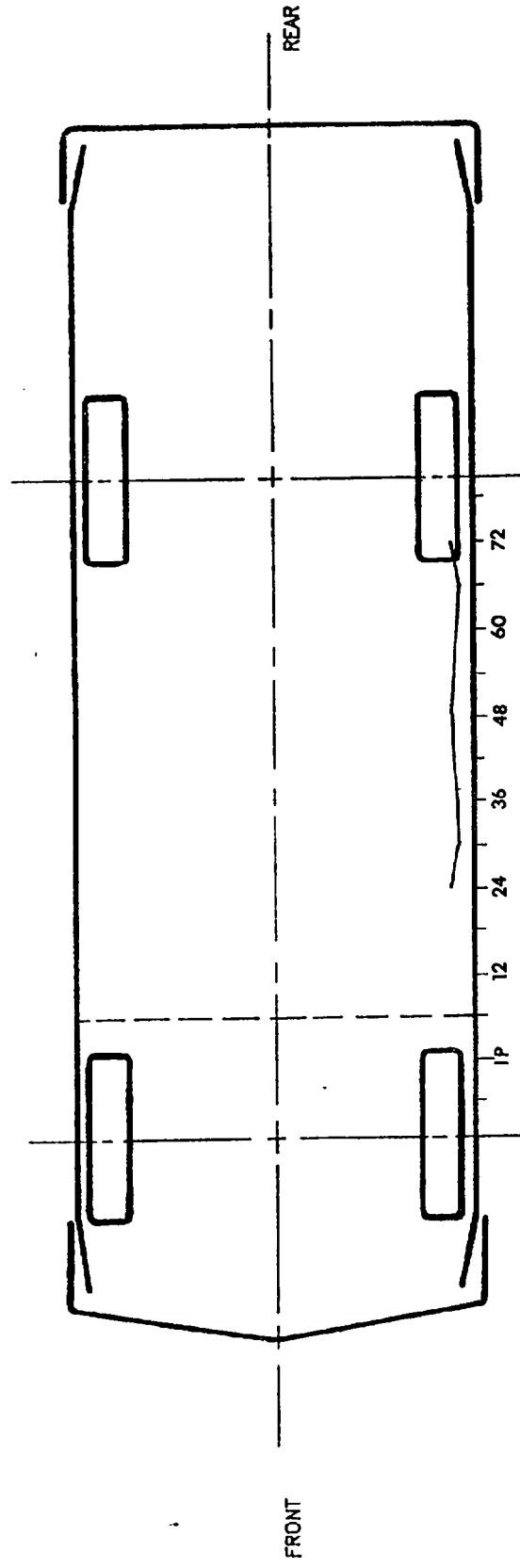
PROFILE LEVEL EQUALS MID-DOOR HEIGHT
IP EQUALS PROJECTED IMPACT POINT

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	TIME	MAX	TIME	MAX	TIME	MAX	TIME
	(g)	(msec)	(g)	(msec)	(g)	(msec)	(g)	(msec)
HEAD ACCELERATION								
LONGITUDINAL	80.02	314.88	50.81	75.25	10.52	83.00	34.66	46.38
LATERAL	66.20	74.38	25.13	315.88	100.47	47.63	21.92	216.13
VERTICAL	20.62	317.75	76.29	47.63	52.56	55.25	30.92	40.88
RESULTANT		86.40 @ 74.50				104.87 @ 47.63		
HIC	953.46	from 36.25 to 80.00				849.13 from 43.63 to 59.63		
CHEST ACCELERATION								
UPPER SPINE								
LONGITUDINAL	23.09	48.75	21.75	56.25	5.25	94.38	25.98	43.13
LATERAL (P)***	109.28	33.75	52.55	53.75	58.18	42.50	4.62	123.12
LATERAL (R)***	111.01	33.75	51.32	53.75	60.47	42.50	3.83	123.75
VERTICAL	18.08	51.88	16.28	25.00	3.90	21.25	19.19	51.88
RESULTANT (P)		109.64 @ 33.75				64.85 @ 42.50		
RESULTANT (R)		111.37 @ 33.75				66.92 @ 42.50		
DELTA V (MPH)****		35.1 @ 50.63 (P)				25.6 @ 100.63 (P)		
		37.1 @ 50.63 (R)				26.0 @ 100.63 (R)		
LOWER SPINE								
LONGITUDINAL	41.24	43.13	41.41	53.75	13.46	53.12	20.67	33.13
LATERAL (P)	115.16	25.00	33.47	53.12	87.76	34.38	21.46	57.50
LATERAL (R)	113.96	25.00	35.85	53.12	89.09	34.38	21.00	57.50
VERTICAL	19.70	52.50	7.55	57.50	18.41	38.13	6.57	68.13
RESULTANT (P)		117.80 @ 25.00				90.40 @ 34.38		
RESULTANT (R)		116.62 @ 25.00				91.70 @ 34.38		
DELTA V (MPH)		37.9 @ 43.75 (P)				32.4 @ 51.25 (P)		
		39.5 @ 44.38 (R)				33.3 @ 51.88 (R)		
LEFT UPPER RIB								
LATERAL (P)	69.45	20.00	18.99	66.87	60.42	34.38	4.89	55.63
LATERAL (R)	75.54	19.38	20.39	66.87	58.57	34.38	5.46	55.63
DELTA V (MPH)		31.2 @ 60.63 (P)				25.6 @ 53.75 (P)		
		31.7 @ 60.63 (R)				26.2 @ 53.75 (R)		
LEFT LOWER RIB								
LATERAL (P)	79.31	26.87	70.74	58.13	59.47	36.88	10.39	51.88
LATERAL (R)	83.79	26.87	70.35	58.75	59.39	36.88	12.43	51.88
DELTA V (MPH)		32.0 @ 56.63 (P)				28.9 @ 50.00 (P)		
		32.8 @ 56.63 (R)				28.9 @ 50.00 (R)		
PELVIS ACCELERATION								
LONGITUDINAL	54.04	284.75	19.17	35.75	8.26	86.63	84.63	30.13
LATERAL	129.54	22.88	36.80	37.25	176.04	31.25	10.83	83.00
VERTICAL	39.27	26.25	12.73	17.38	32.40	33.00	7.46	31.25
RESULTANT		130.41 @ 22.88				183.19 @ 31.13		
DELTA V (MPH)		34.8 @ 100.38				32.6 @ 57.88		

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 †	0.07	223.00	1.72	53.25	0.13	114.63	1.70	55.75

* 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

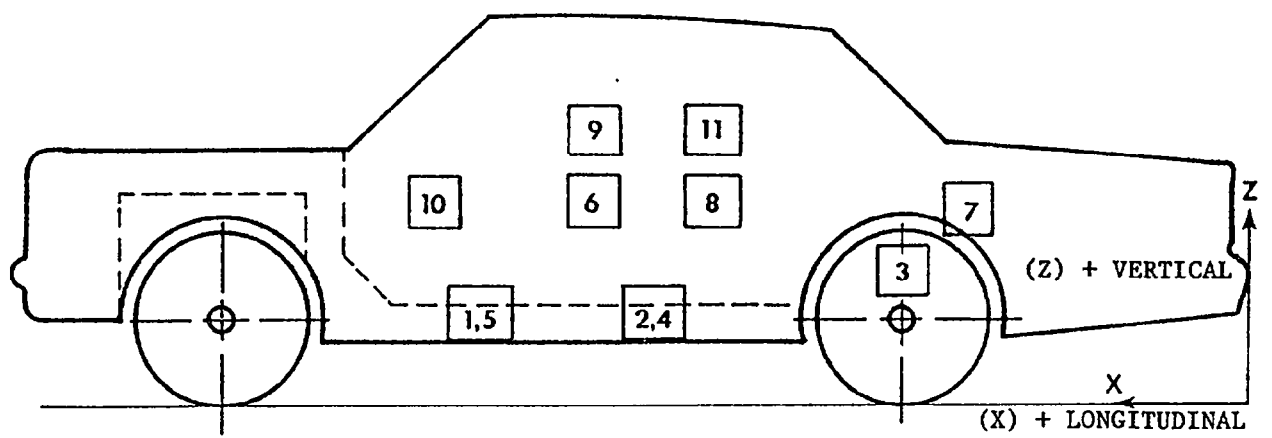
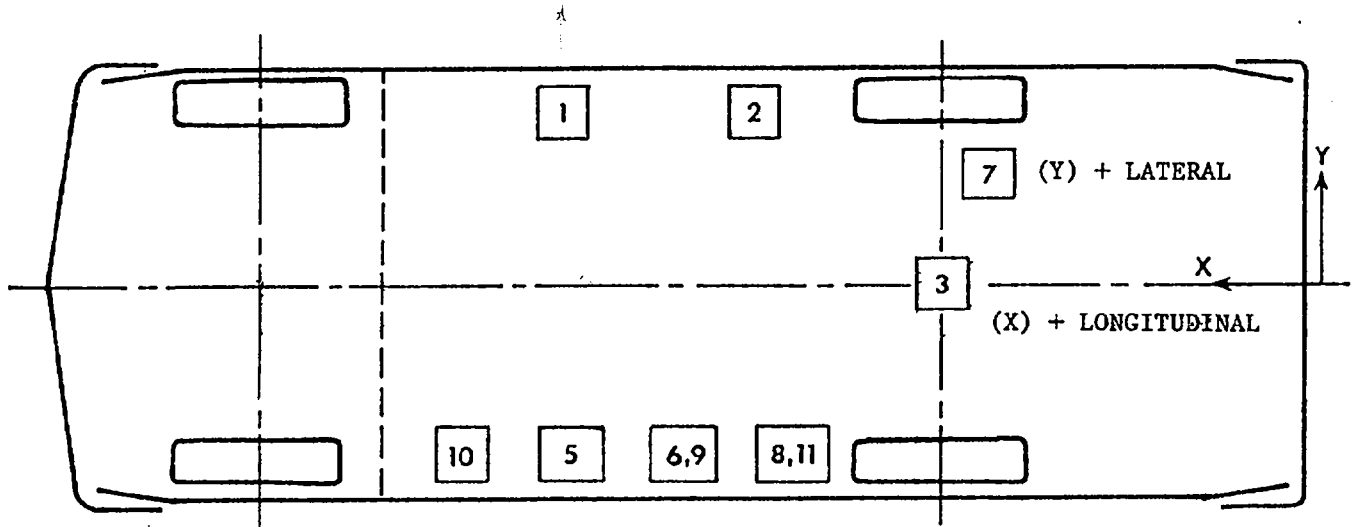
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	RIGHT SILL AT FRONT SEAT	83.5	23.4	10.1				
	(LONGITUDINAL)	$\Delta V = -2.5 \text{ mph @ } 100.00 \text{ msec}$			3.79	61.63	8.63	20.00
	(LATERAL)	$\Delta V = 18.9 \text{ mph @ } 100.00 \text{ msec}$			27.08	10.75	3.30	105.25
	(VERTICAL)				6.67	20.00	5.92	87.88
	(RESULTANT)					28.10 @ 10.75		
2	RIGHT SILL AT REAR SEAT	61.5	23.5	9.0				
	(LONGITUDINAL)	$\Delta V = -1.6 \text{ mph @ } 100.00 \text{ msec}$			4.95	60.75	8.57	20.00
	(LATERAL)	$\Delta V = 21.1 \text{ mph @ } 100.00 \text{ msec}$			35.78	10.00	2.45	106.50
	(VERTICAL)				10.21	28.38	6.62	45.13
	(RESULTANT)					36.03 @ 10.00		
3	REAR DECK OVER AXLE	31.5	0.0	6.6				
	(LONGITUDINAL)	$\Delta V = -2.6 \text{ mph @ } 100.00 \text{ msec}$			3.79	13.63	16.04	20.00
	(LATERAL)	$\Delta V = 25.5 \text{ mph @ } 100.00 \text{ msec}$			29.37	21.13	2.47	104.75
	(VERTICAL)				5.88	14.75	11.38	21.00
	(RESULTANT)					34.98 @ 20.88		
4	LEFT SILL AT REAR SEAT	60.9	-23.5	8.5				
	(LATERAL)	$\Delta V = 17.4 \text{ mph @ } 100.00 \text{ msec}$			30.22	16.25	5.55	107.13
5	LEFT SILL AT FRONT SEAT	83.6	-23.4	10.3				
	(LATERAL)	$\Delta V = 5.2 \text{ mph @ } 100.00 \text{ msec}$			96.72	10.50	63.96	18.00
6	LEFT FRONT DOOR CENTERLINE	80.9	-26.0	23.8				
	(LATERAL)	$\Delta V = 17.7 \text{ mph @ } 14.00 \text{ msec}$			157.99	10.63	67.57	20.38
7	RIGHT REAR COMPARTMENT	31.5	15.3	13.6				
	(LONGITUDINAL)				6.98	47.75	10.31	20.50
8	MIDREAR OF LEFT FRONT DOOR	60.5	-26.0	24.5				
	(LATERAL)	$\Delta V = 14.1 \text{ mph @ } 13.00 \text{ msec}$			96.37	9.75	37.07	22.75
9	UPPER LEFT FRONT DOOR CENTERLINE	82.0	-25.9	33.5				
	(LATERAL)	$\Delta V = 32.0 \text{ mph @ } 19.00 \text{ msec}$			222.83	18.50	169.71	25.63
10	MIDFRONT OF LEFT FRONT DOOR	99.5	-25.9	22.3				
	(LATERAL)	$\Delta V = 20.7 \text{ mph @ } 15.50 \text{ msec}$			130.73	7.38	66.35	21.50
11	UPPER REAR OF LEFT FRONT DOOR	70.8	-25.8	33.5				
	(LATERAL)	$\Delta V = 23.9 \text{ mph @ } 18.00 \text{ msec}$			139.24	18.88	79.50	84.63

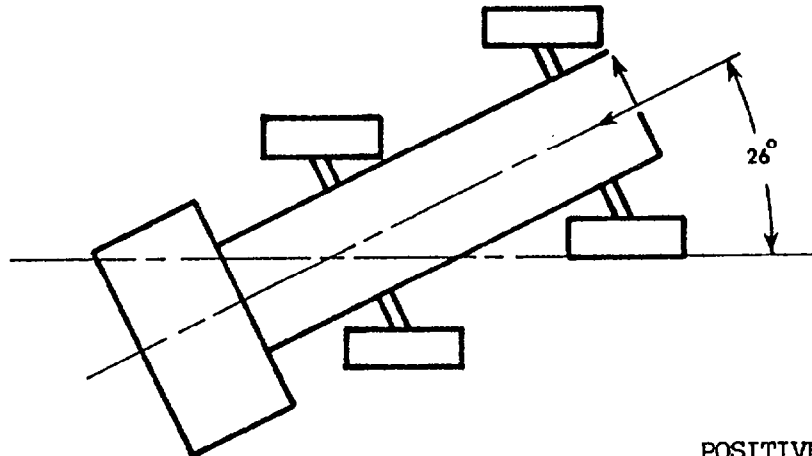
* Reference: X - Rear Bumper (+ Forward), Y - Vehicle Centerline (+ To Right), Z - Ground Level (+ Up)

All measurements of accelerometer locations in inches.

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)	$\Delta V = -17.4 \text{ mph @ } 100.00 \text{ msec}$			1.24	154.75	16.90	38.63
	(LATERAL)	$\Delta V = -4.6 \text{ mph @ } 100.00 \text{ msec}$			2.25	73.25	7.20	38.38
	(VERTICAL)				18.41	48.75	18.15	58.38
	(RESULTANT)					22.02 @	48.63	
2	FRONT FRAME MEMBER	130.3	0.0	11.3				
	(LONGITUDINAL)	$\Delta V = -18.3 \text{ mph @ } 100.00 \text{ msec}$			0.04	1.88	16.93	42.13
3	REAR FRAME MEMBER	23.3	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -16.5 \text{ mph @ } 100.00 \text{ msec}$			1.34	248.00	16.72	35.88

* 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	805	Vehicle dynamics
2	Overhead	Photosonics 1B	25	738	Close-up of impact point
3	Onboard MDB	Stalex	25	500	Close-up of impact point
4	Onboard MDB	Photosonics 1B	13	807	Driver kinematics
5	Ground level - right	Hycam	25	760	Overall view
6	Ground level - left	Photosonics 1B	17	805	Overall view
7	Onboard vehicle	Photosonics 1B	8	---*	Driver kinematics - front view
8	Onboard vehicle	Photosonics 1B	8	780	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	MFGR.	DATE OF LAST CALIBRATION	SENSITIVITY	DESIRED FULL SCALE (ENGR. UNITS)
BCGXG	Accel	4-202-0001	18845	Bell Howell	8/9/83	.236 MV/G	50 G
BCGYG.	Accel	4-202-0001	18858	Bell Howell	8/9/83	.2385 MV/G	50 G
BCGZG	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
A-2



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



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

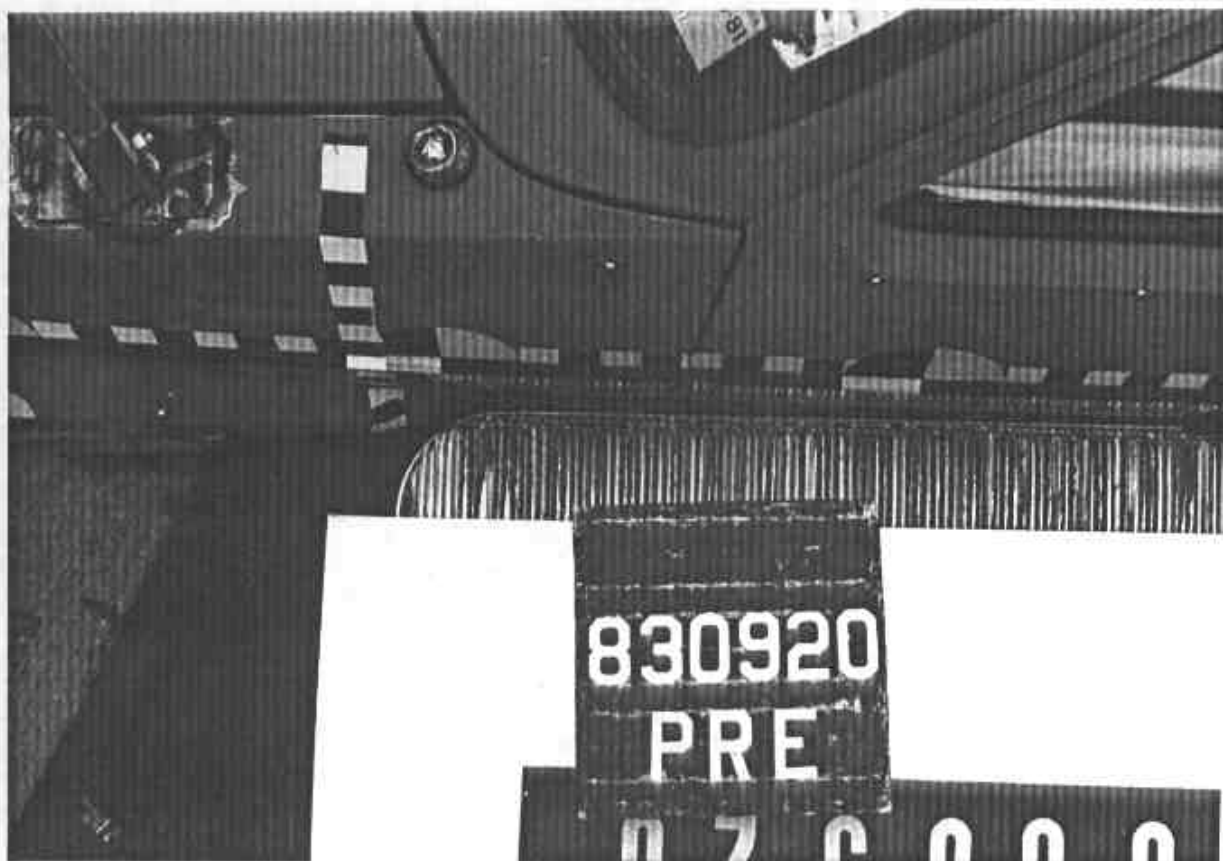


Figure A-5. PRE-TEST CLOSEUP - VIEW 1

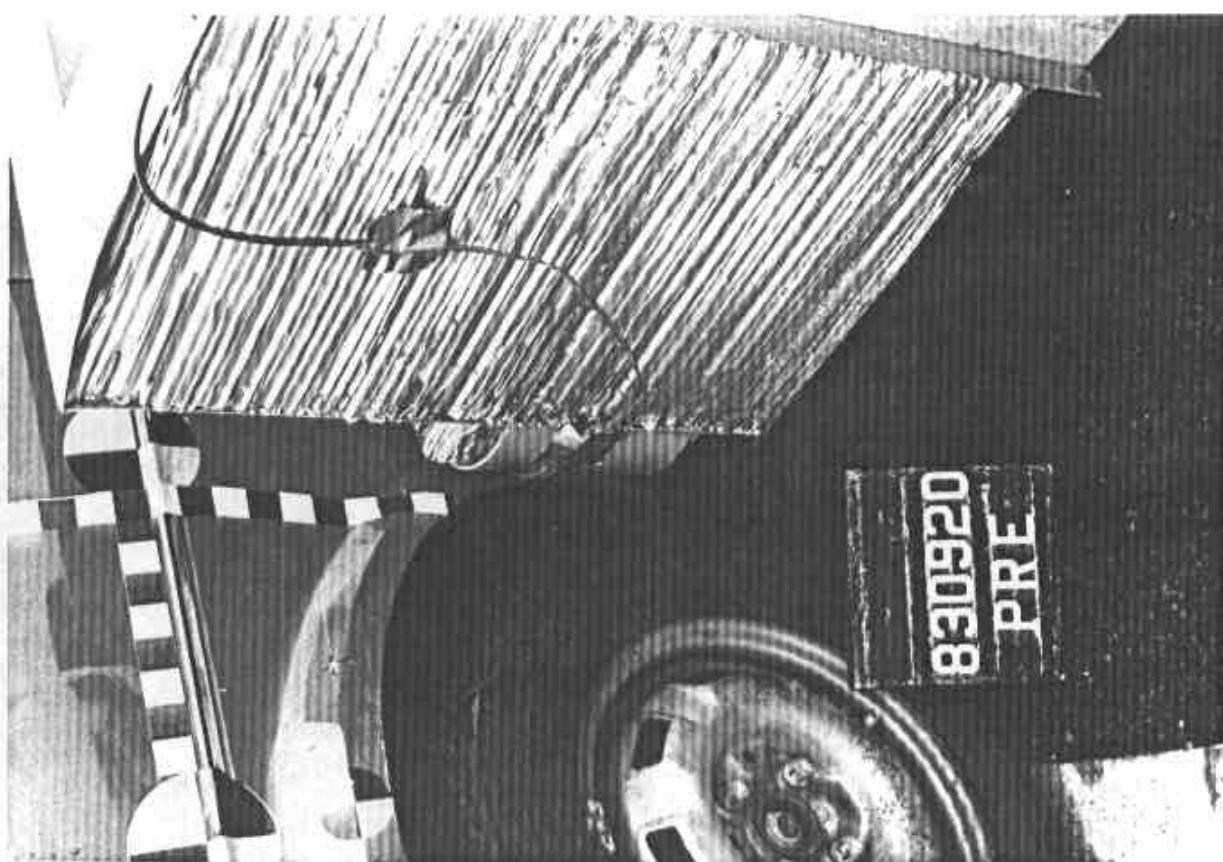


Figure A-6. PRE-TEST CLOSEUP - VIEW 2
A-4



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

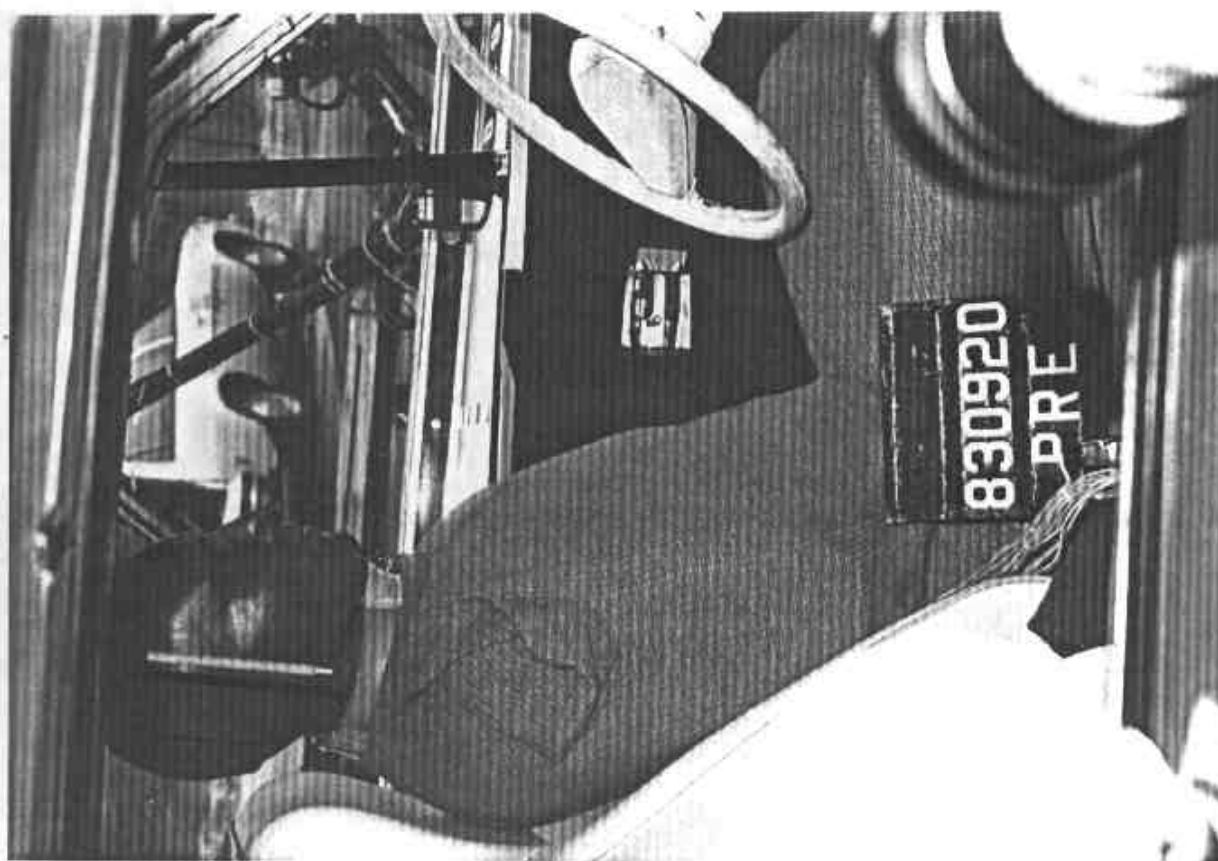


Figure A-8. PRE-TEST DRIVER DUMMY - VIEW 1
A-5



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

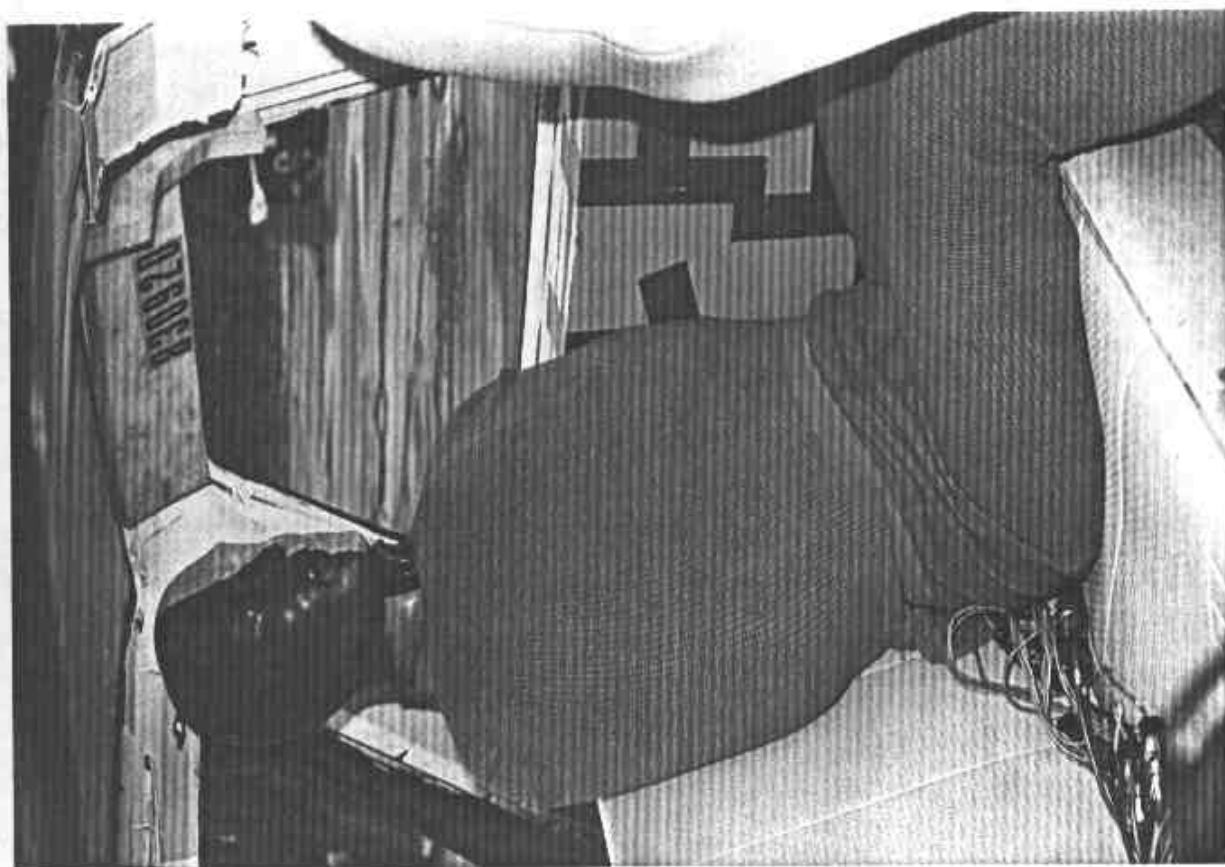


Figure A-10. PRE-TEST PASSENGER DUMMY - VIEW 1
A-6

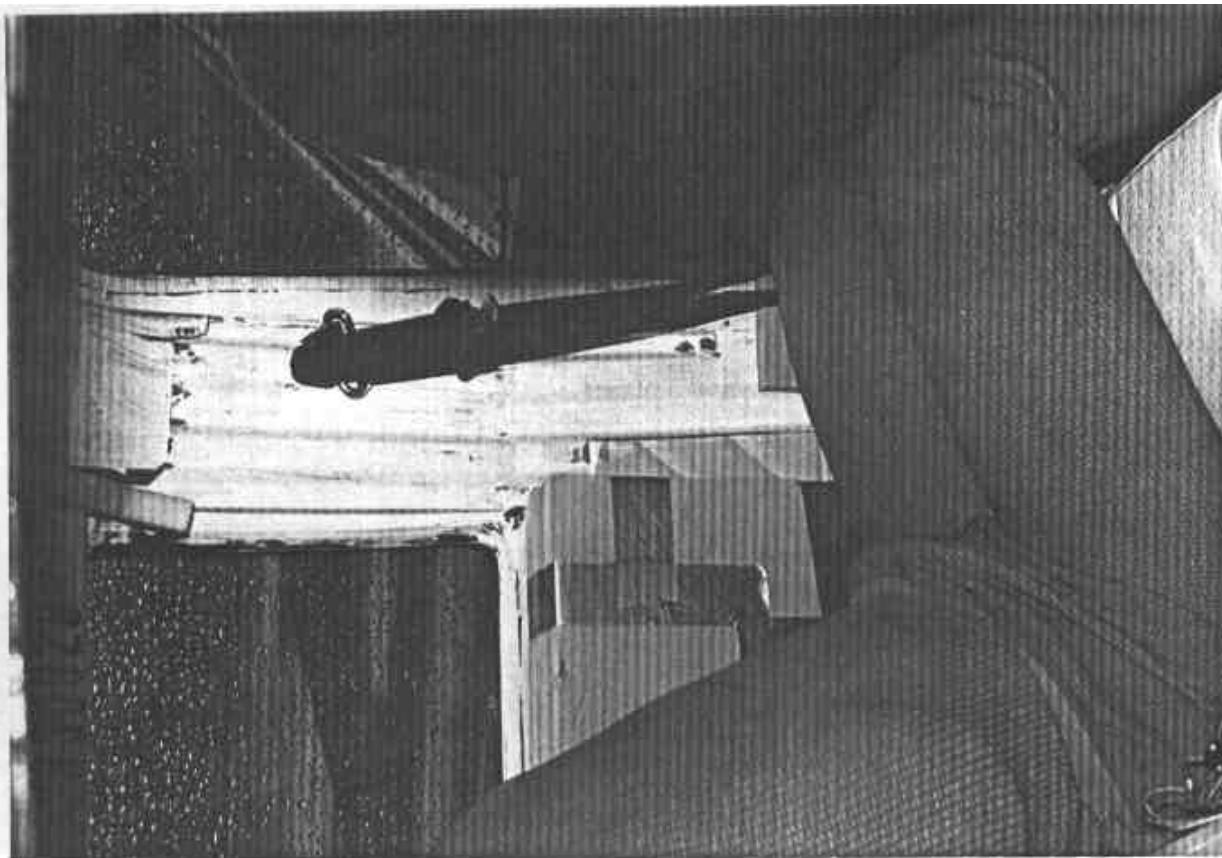


Figure A-11. PRE-TEST PASSENGER DUMMY - VIEW 2



Figure A-12. CRASH EVENT PHOTOGRAPH
A-7



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

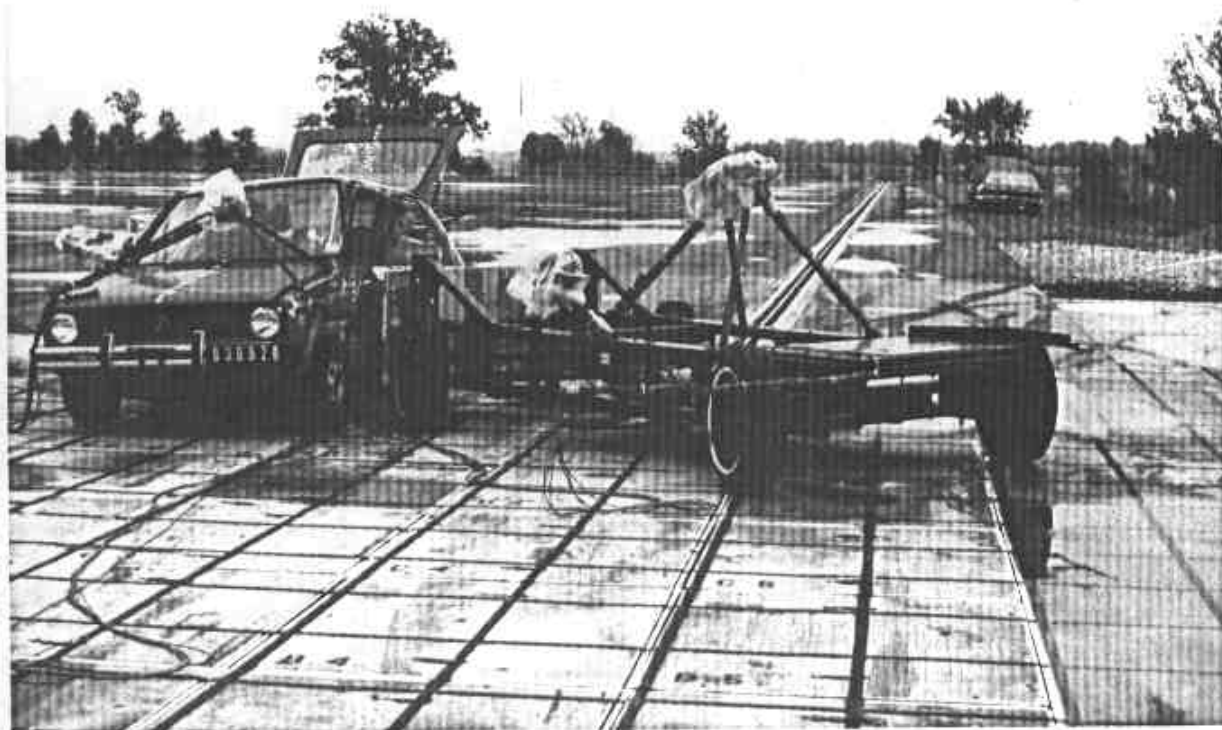


Figure A-14. POST-TEST OVERALL - VIEW 2



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



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

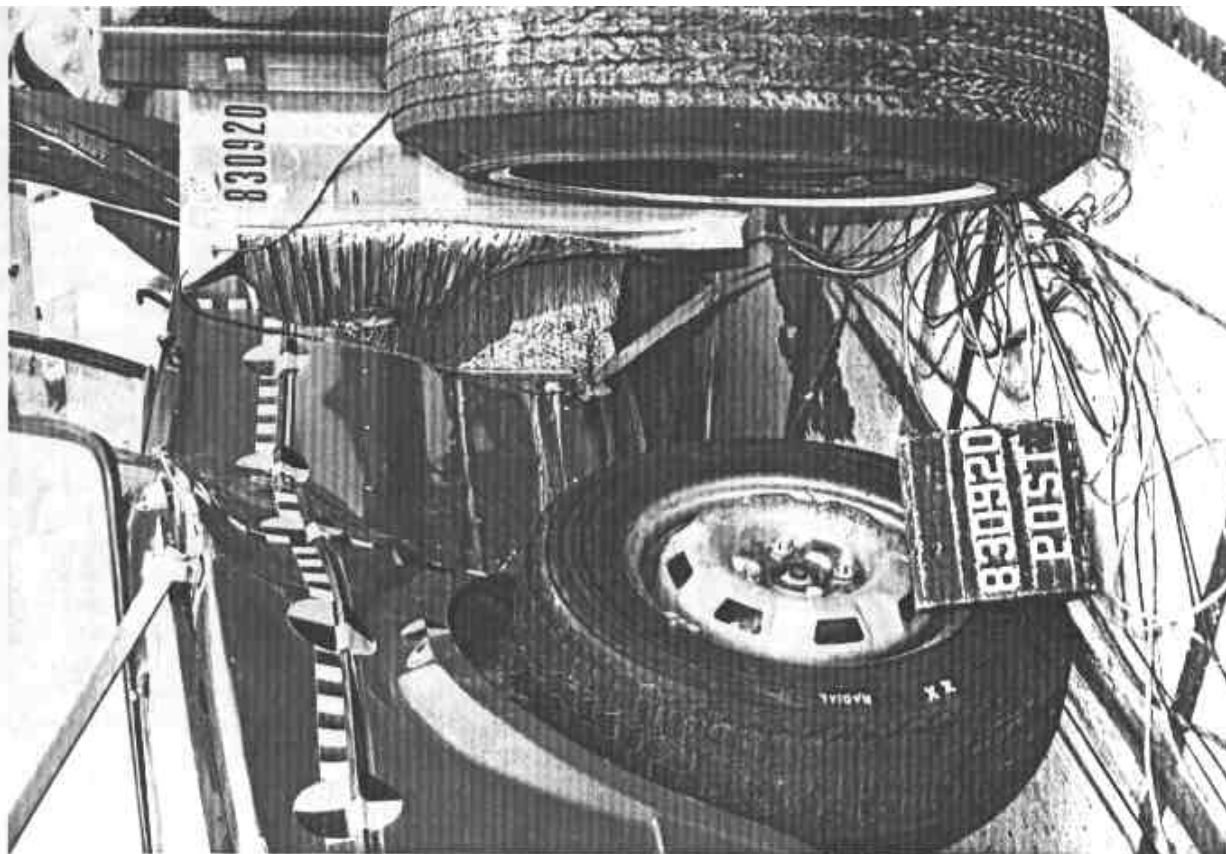


Figure A-17. POST-TEST CLOSEUP - VIEW 1



Figure A-18. POST-TEST CLOSEUP - VIEW 2
A-10



Figure A-19. POST-TEST DRIVER DUMMY - VIEW 1



Figure A-20. POST-TEST DRIVER DUMMY - VIEW 2



Figure A-21. POST-TEST DRIVER DUMMY - VIEW 3

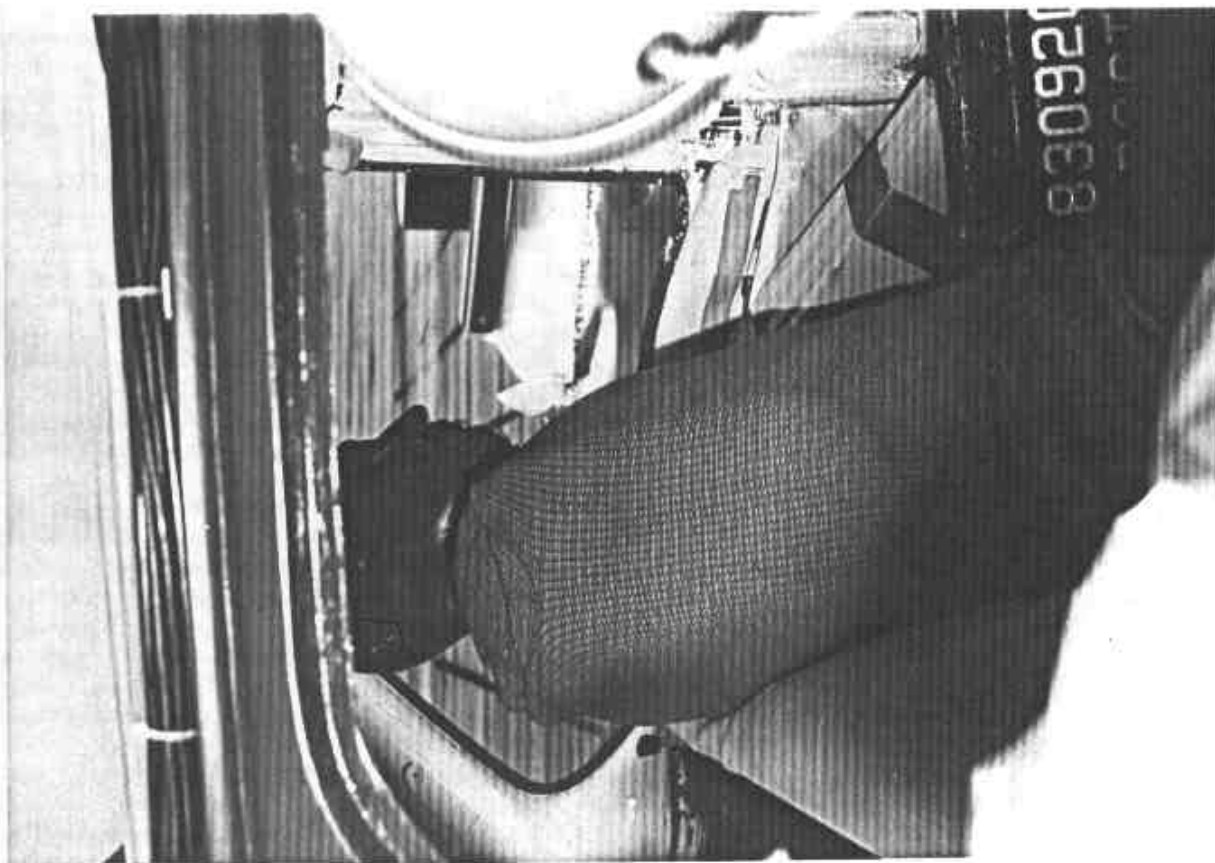


Figure A-22. POST-TEST PASSENGER DUMMY - VIEW 1
A-12

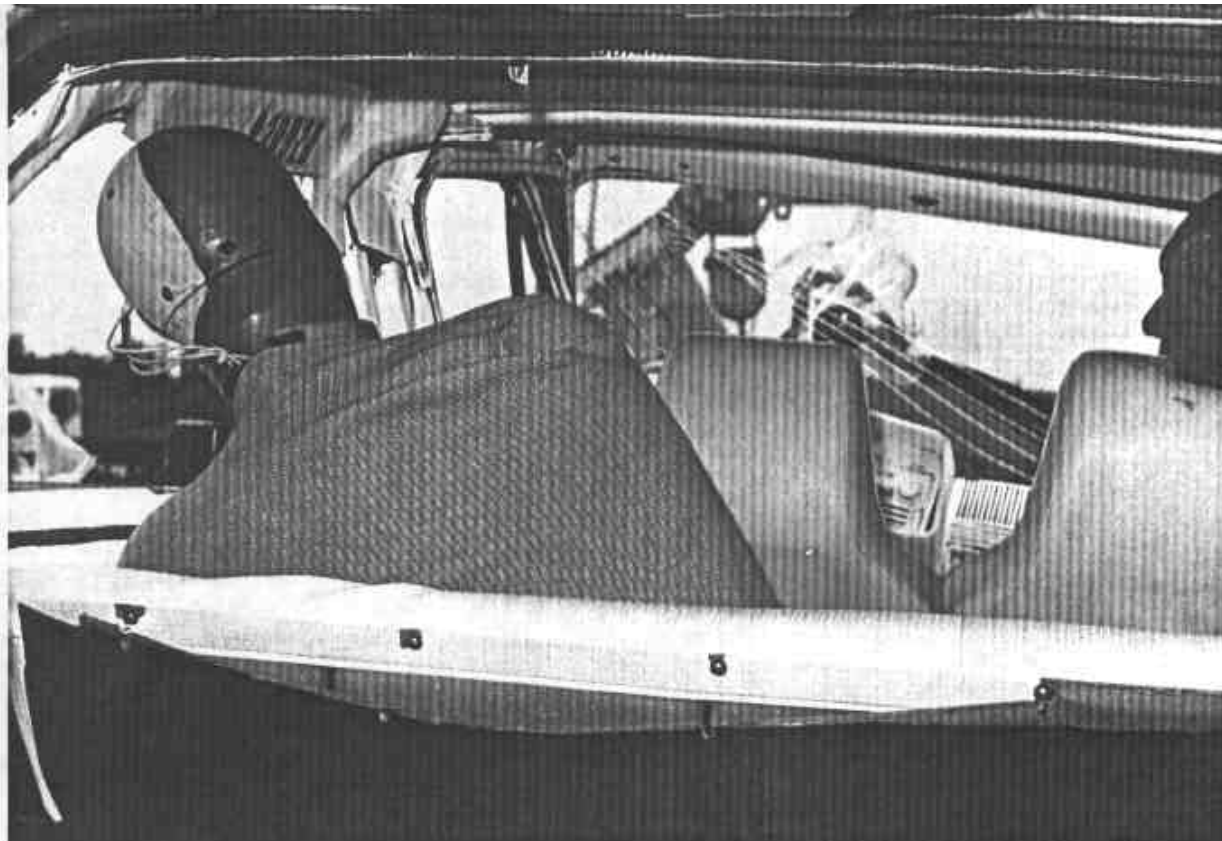


Figure A-23. POST-TEST PASSENGER DUMMY - VIEW 2



Figure A-24. POST-TEST PASSENGER DUMMY - VIEW 3

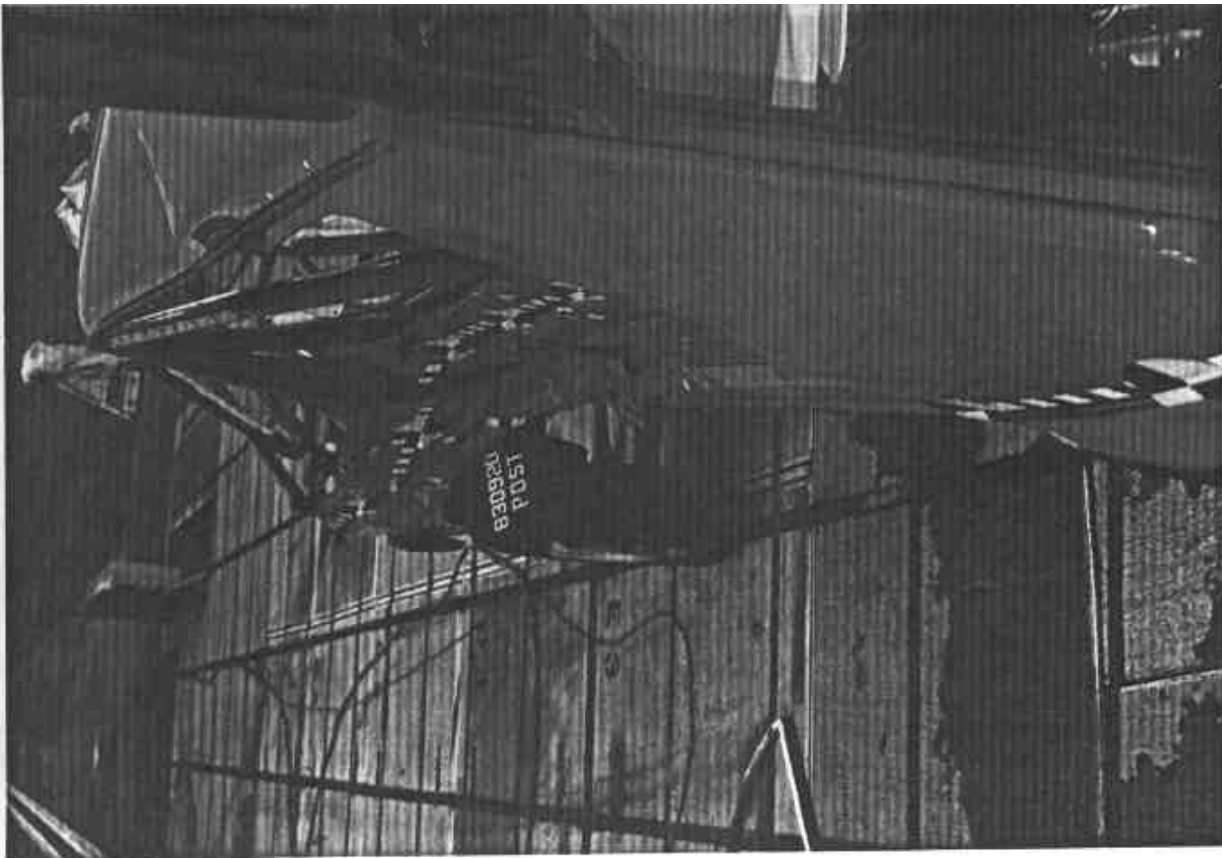


Figure A-25. POST-TEST VEHICLE DAMAGE - VIEW 1



Figure A-26. POST-TEST VEHICLE DAMAGE - VIEW 2

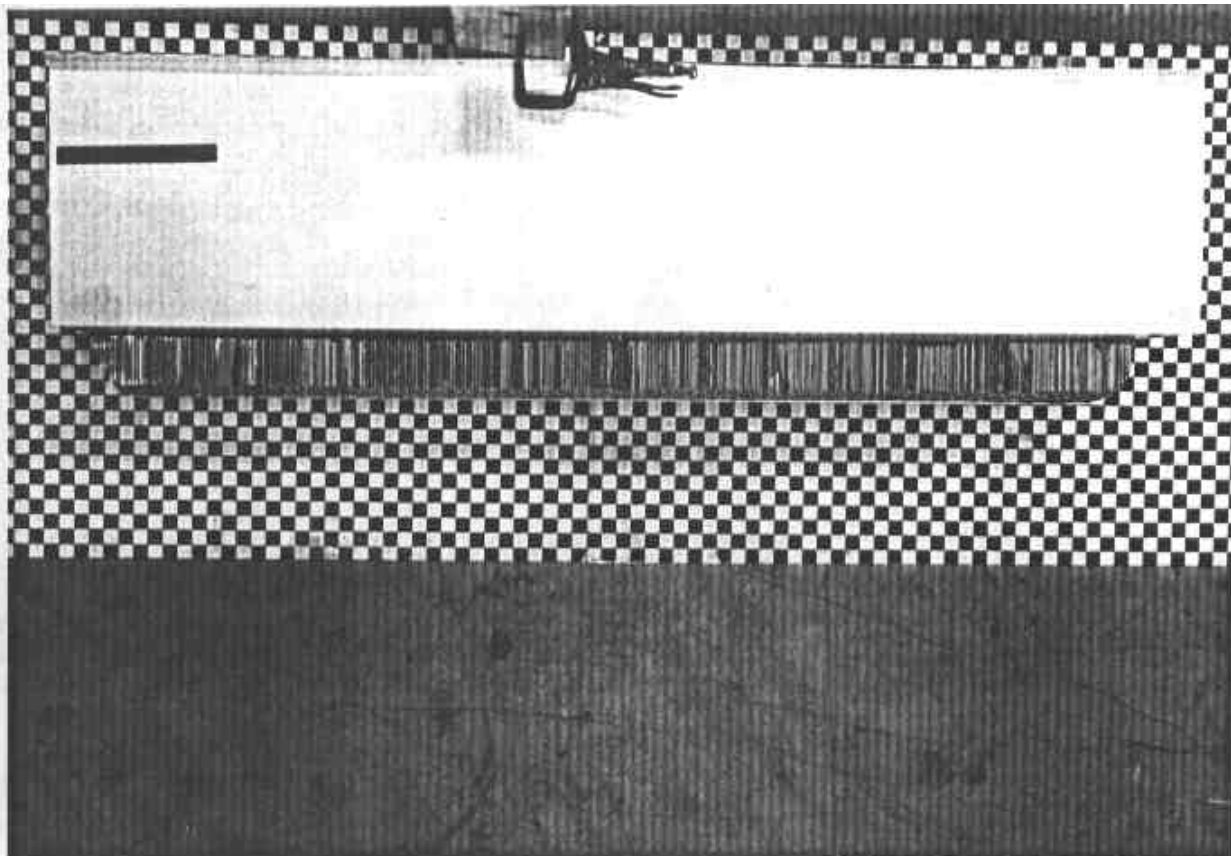


Figure A-27. PRE-TEST MDB FACE - VIEW 1

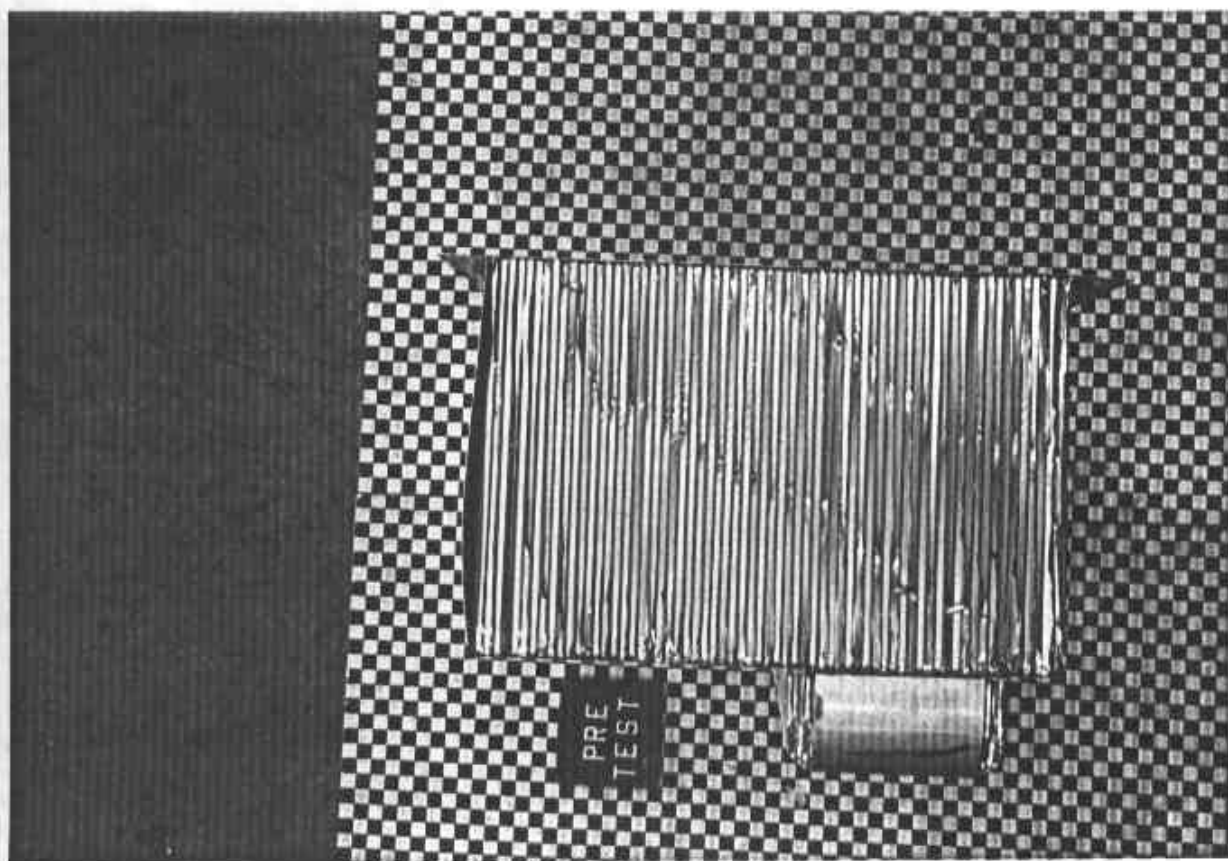


Figure A-28. PRE-TEST MDB FACE - VIEW 2
A-15

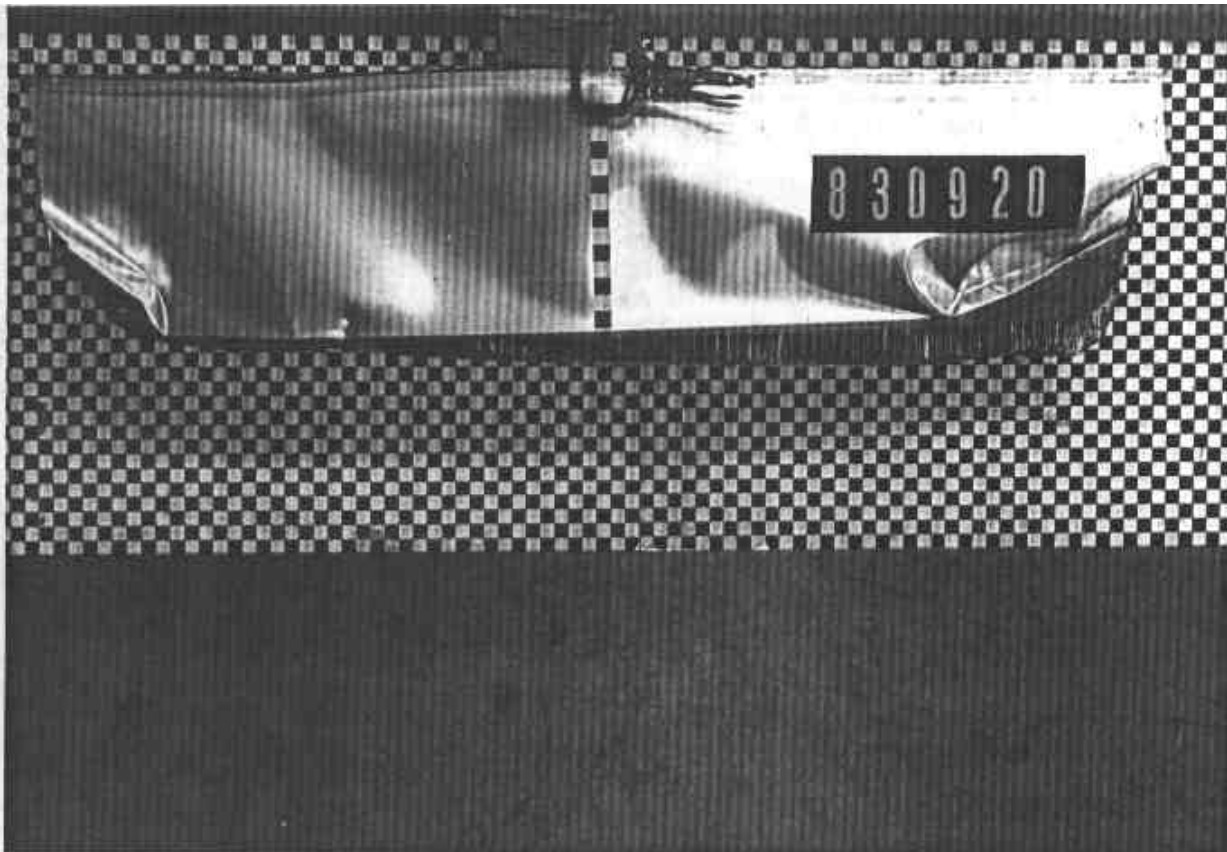


Figure A-29. POST-TEST MDB FACE - VIEW 1

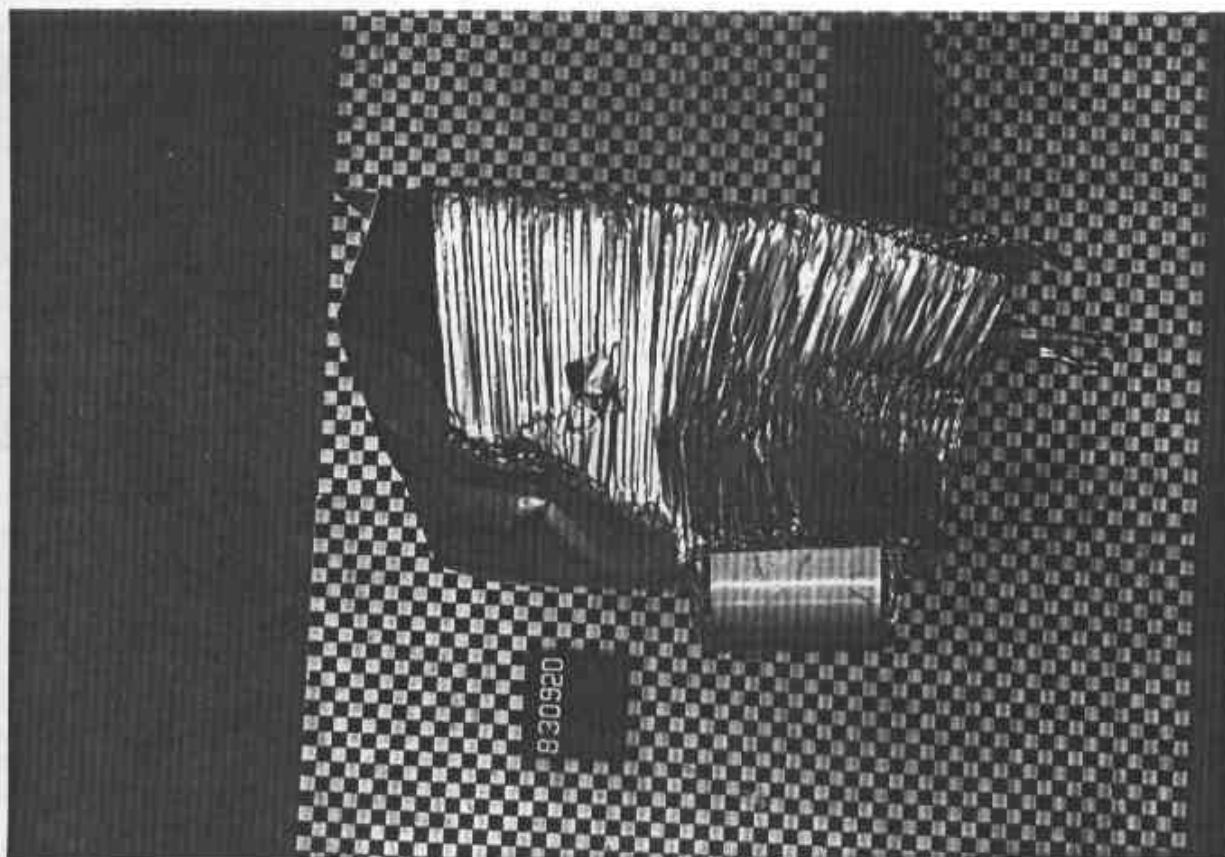


Figure A-30. POST-TEST MDB FACE - VIEW 2

APPENDIX B

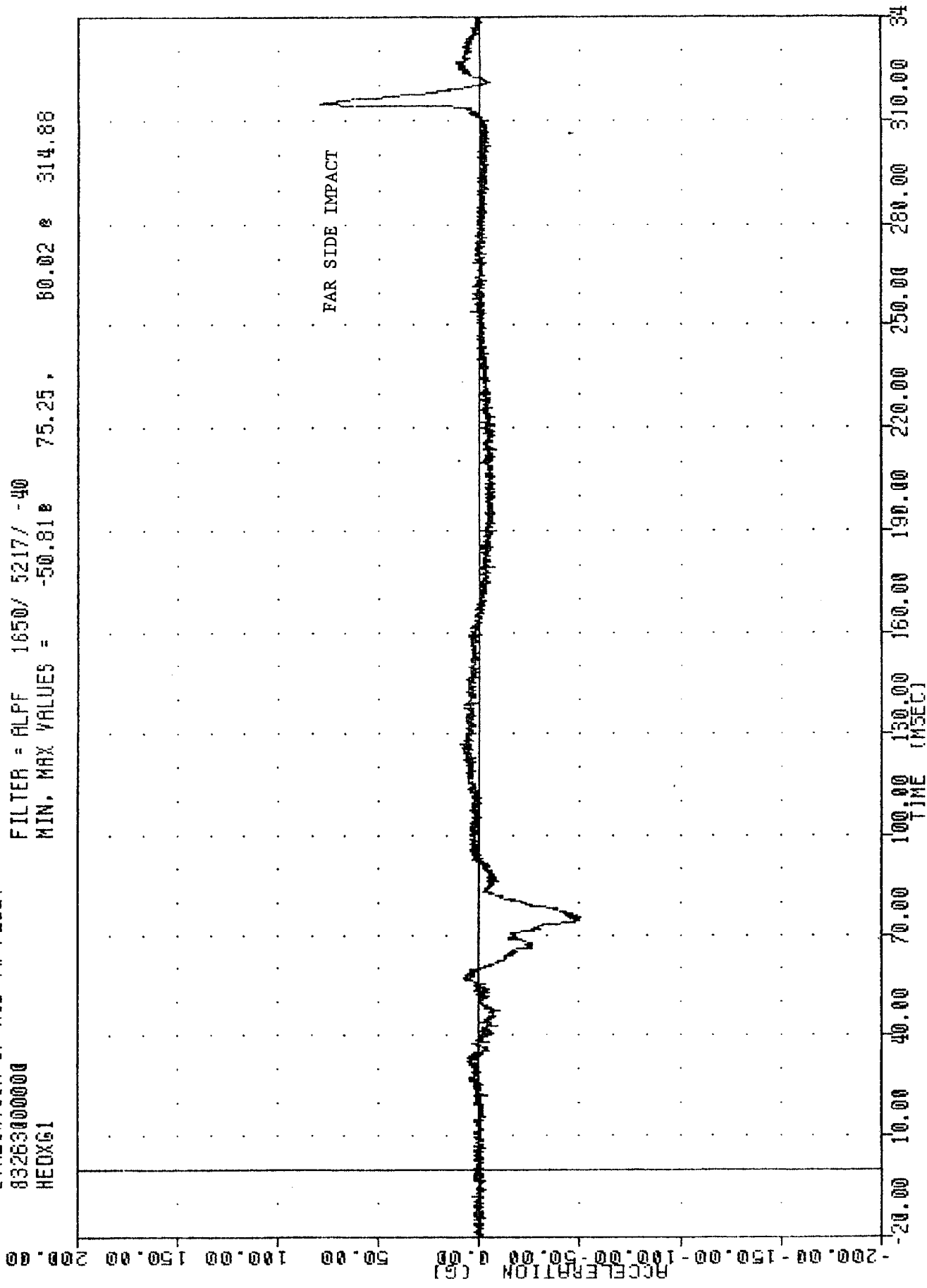
DATA PLOT PRESENTATION

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.

INC 830320
 EVALUATION OF MOD YN FLEET
 83263000000
 HEDX61

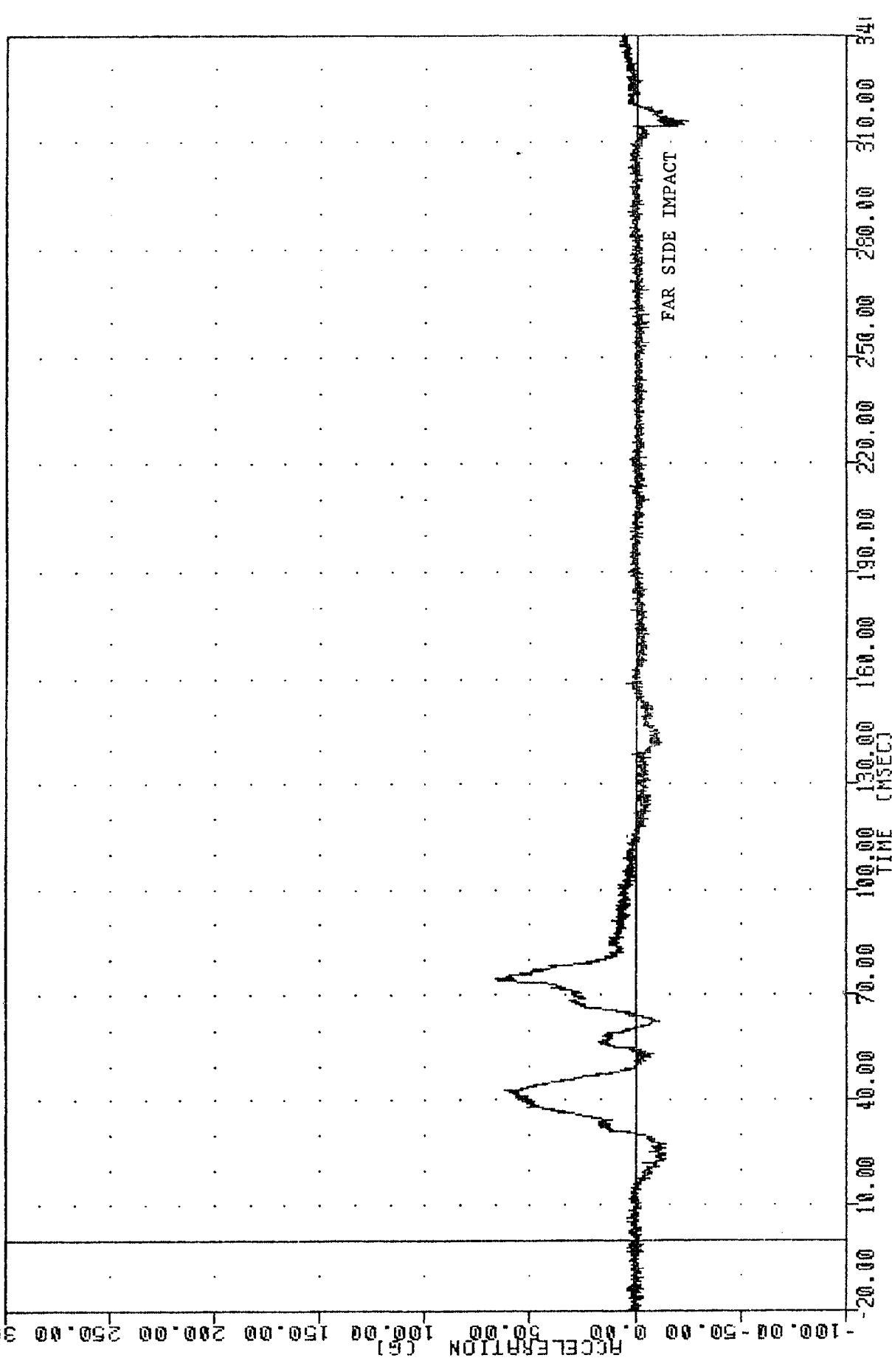
PLUT DATE 21 SEP 83 13:39.27

FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = -50.81e 75.25, 80.02 e 314.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER HEAD ACCELERATION X AXIS

TRC
 EVALUATION OF NDD VW FLEET
 83263000000
 HEDYG1
 830920
 21-SEP-83 13:39:27
 FILTER = ALPF 1650/ 5217/ -40
 MIN, MAX VALUES = -25.13e 315.68. 66.20 e 74.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER HEAD ACCELERATION Y AXIS

THC 830920 21-SEP-83 15:39:27

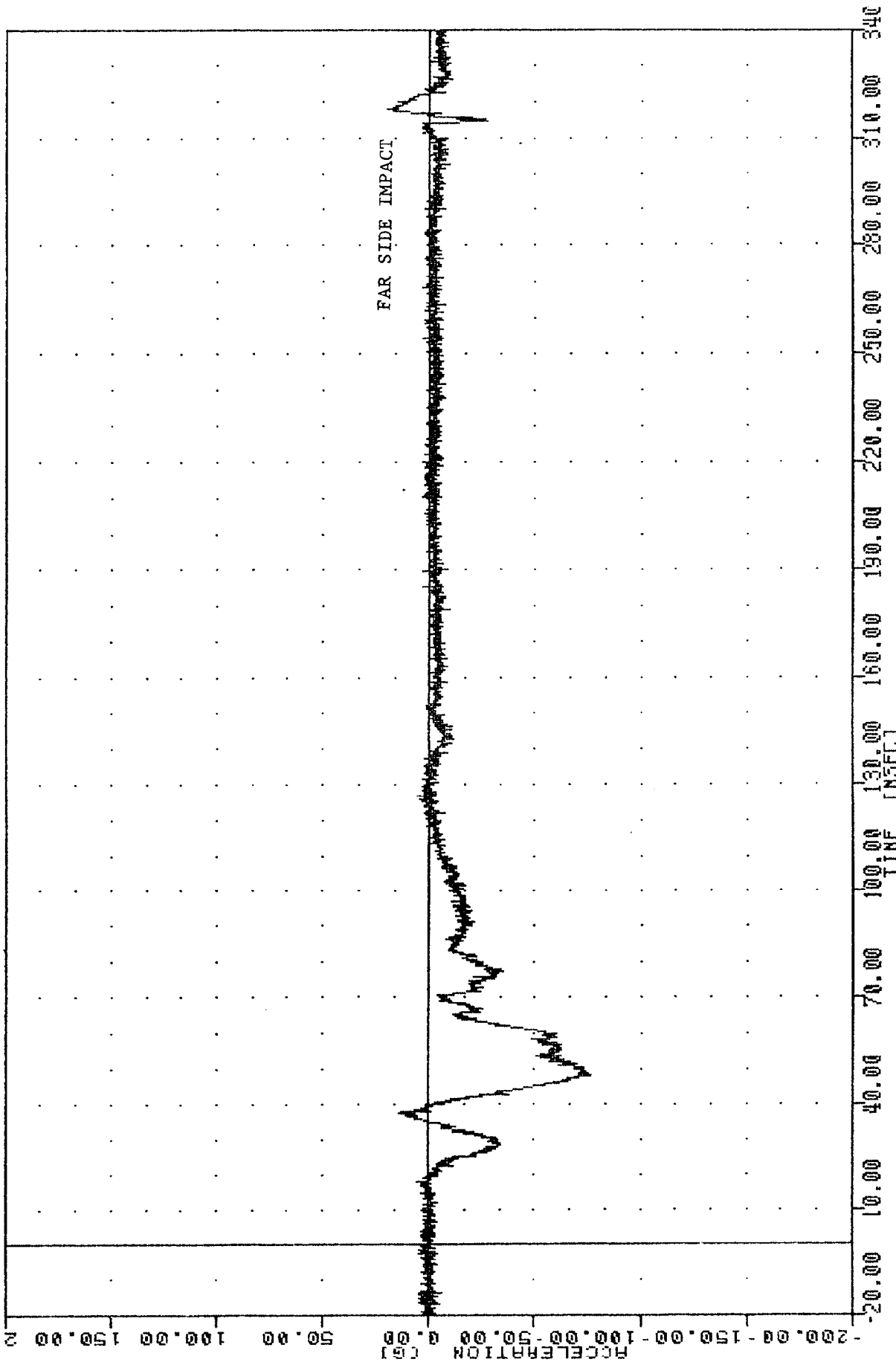
EVALUATION OF MOD VN FLEET

832630000000

HEDZ61

FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = -76.29e 47.63, 20.62 e 317.75

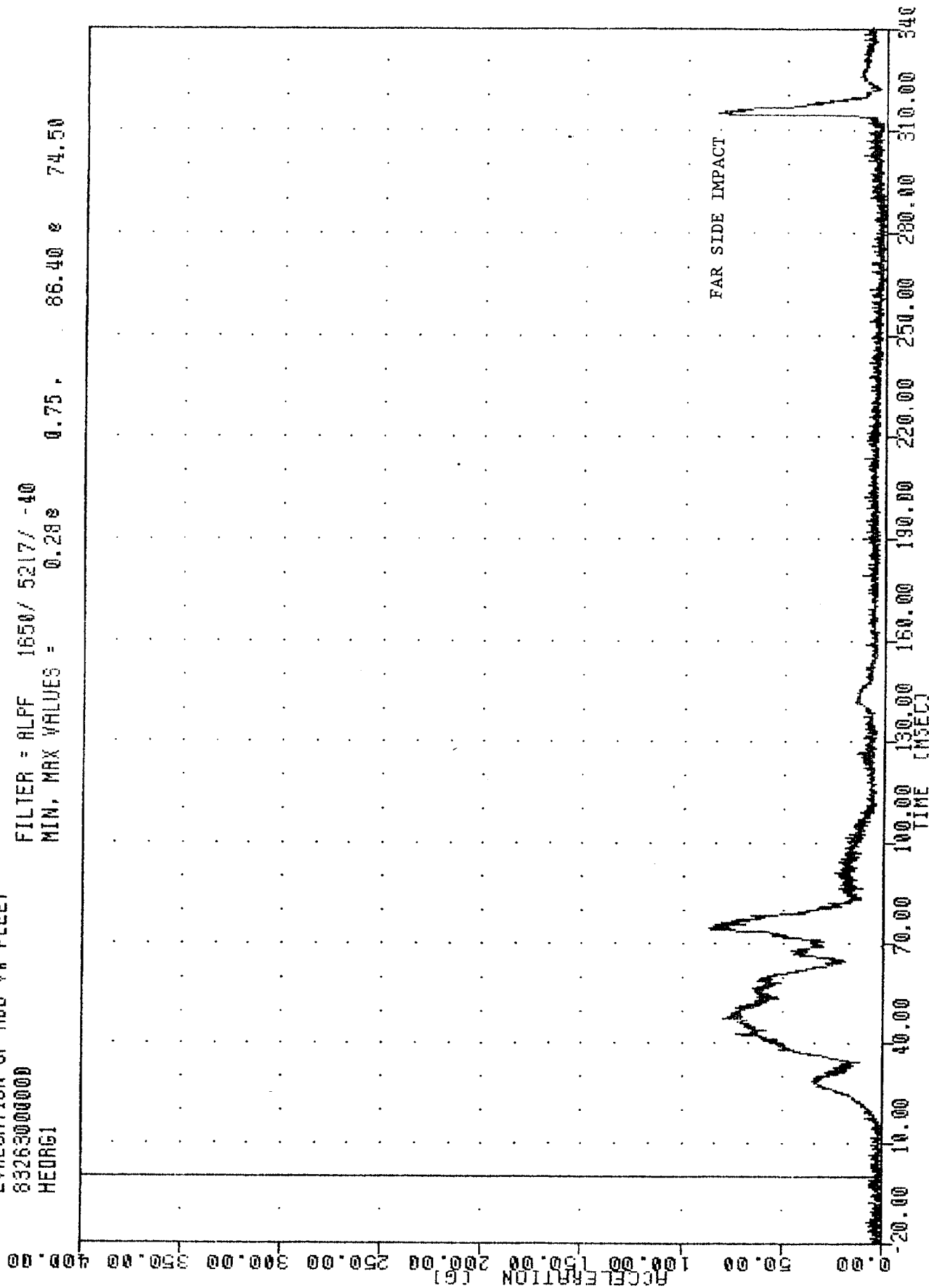


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD ACCELERATION Z AXIS

TRC
EVALUATION OF MDD YW FLEET
83263000000
HEORG1

PLOT DATE 21-SEP-83 15:39:27

FILTER = ALPF 1650/ 5217/ -40
MIN, MAX VALUES = 0.28g 86.40 g 74.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER HEAD RESULTANT

TRC
 EVALUATION OF MOD VV FLEET
 83263000000
 101XG1

, 830920

PLOT DATE

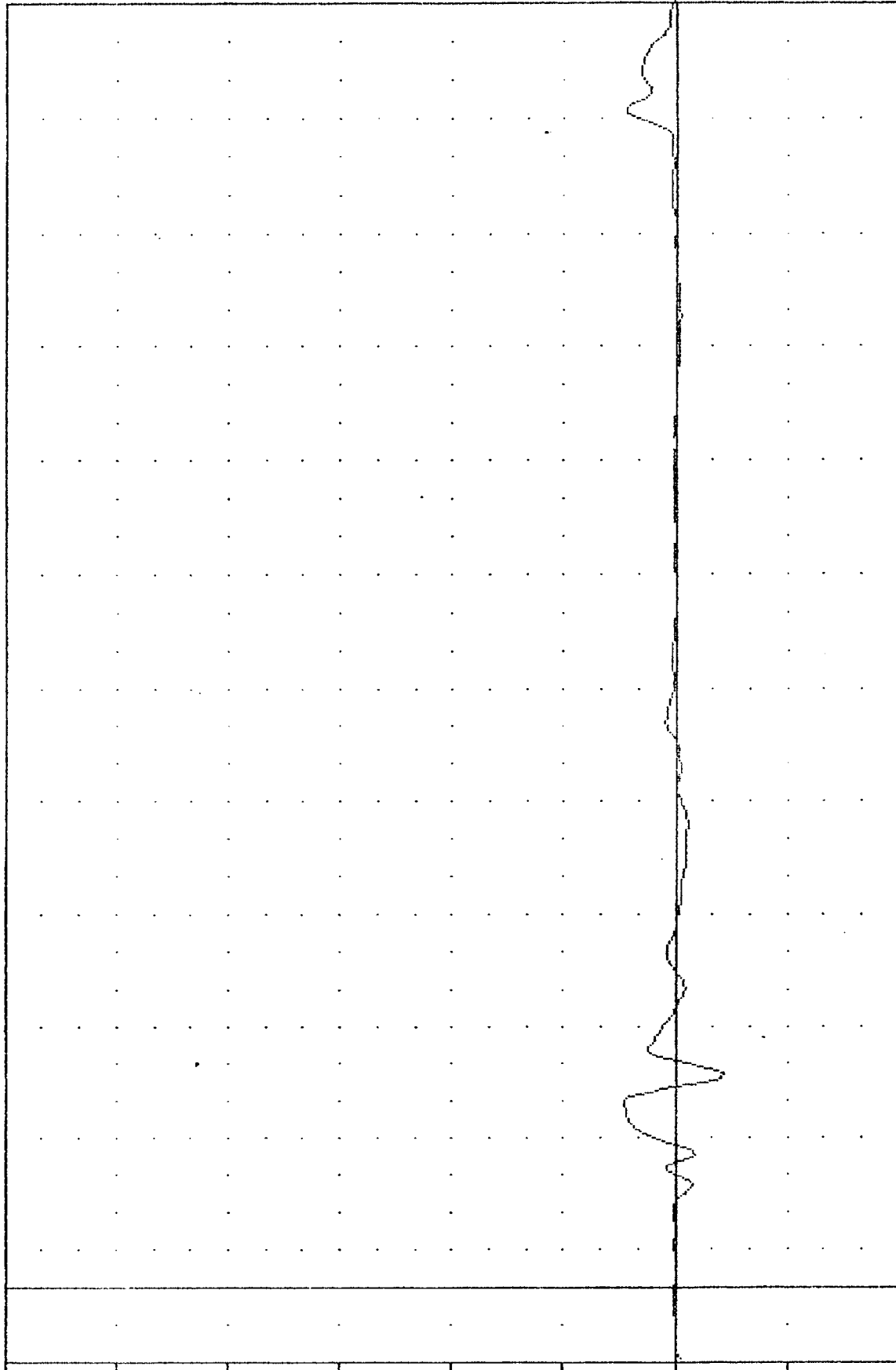
21-SEP-83

15:45:14

FILTER = HSRL 136/ 189/ -50

MIN. MAX VALUES = -21.75e 56.25, 23.09 e 48.75

ACCELERATION [G]



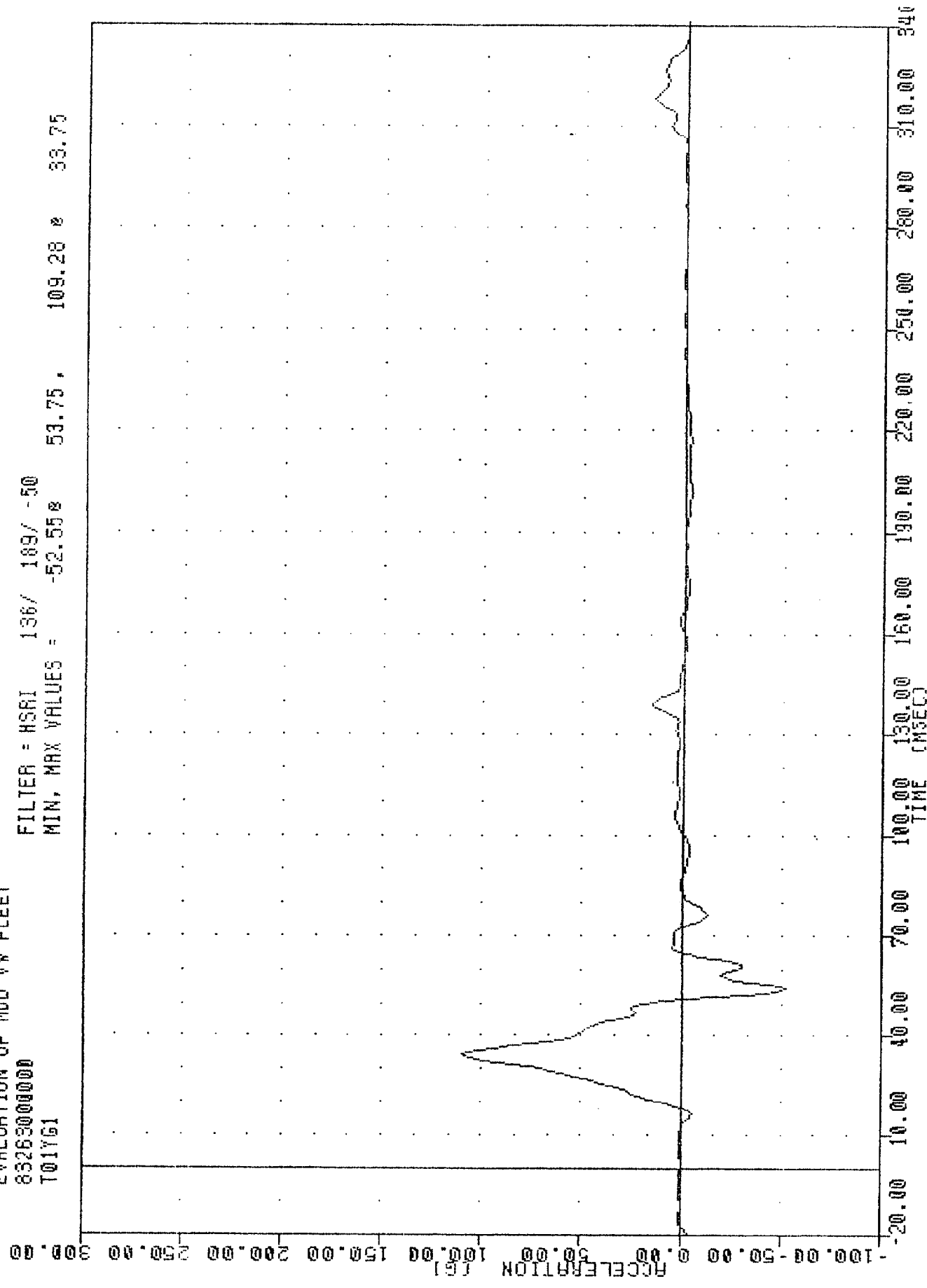
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

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

TRC
EVALUATION OF MDD VW FLEET
83263000000
T01Y61

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -52.558 53.75, 109.28 33.75

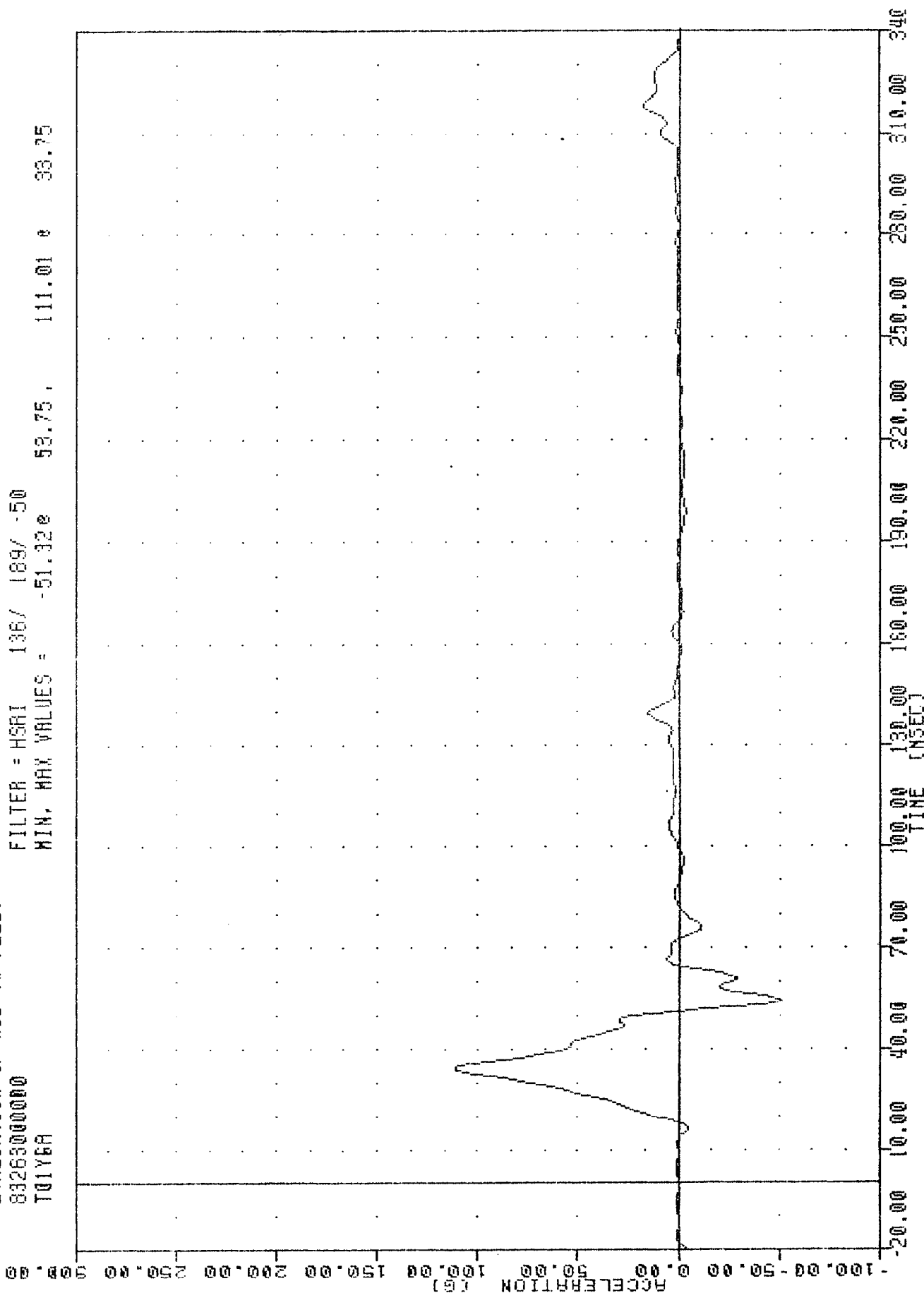


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE ACCELERATION Y AXIS

TAC
EVALUATION OF MOD VN FLEET
83263000000
T01Y6A

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -51.320 53.75, 111.01 e 33.75

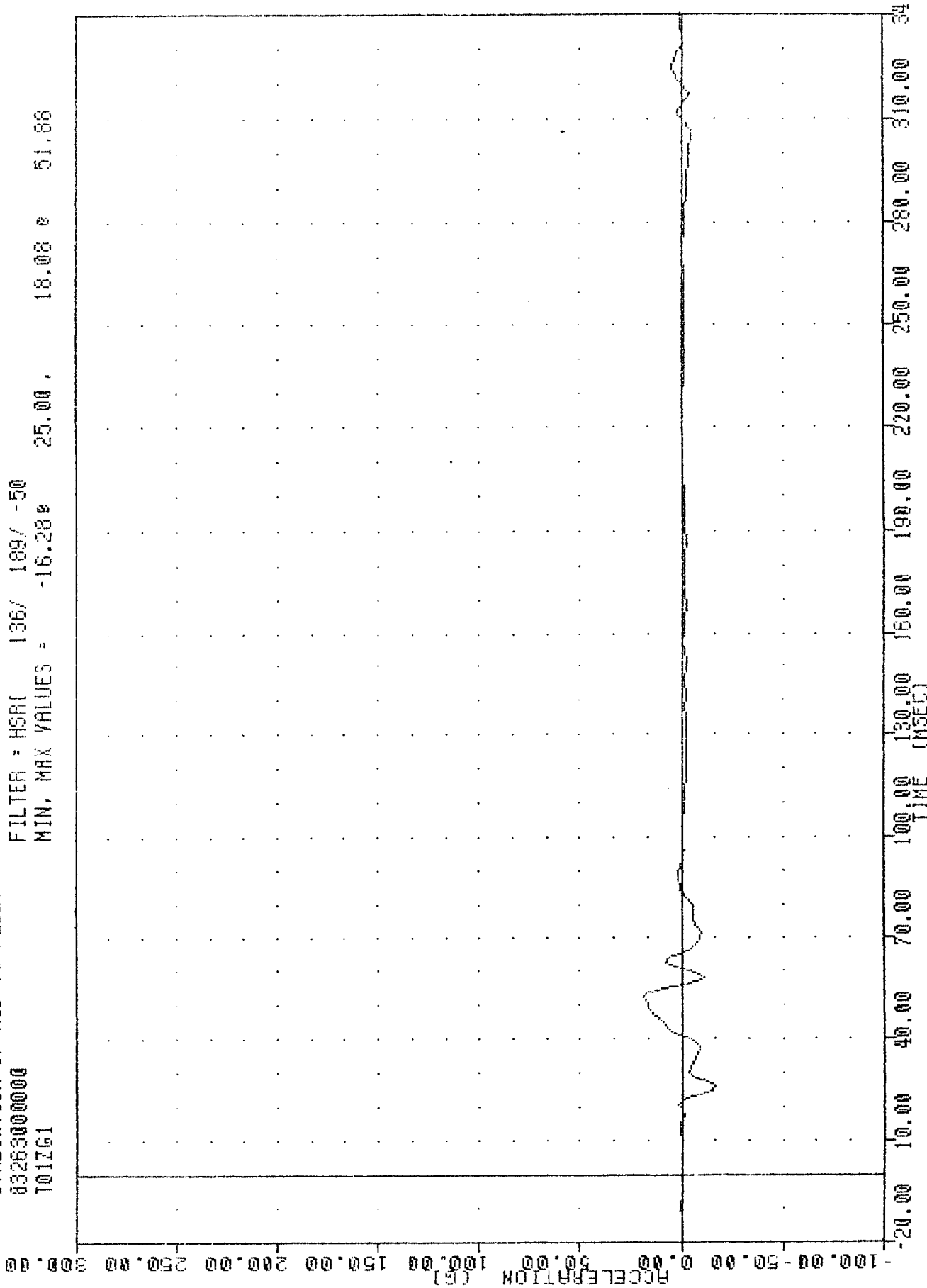


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE ACCELERATION -2 Y AXIS

TRC
EVALUATION OF MOD YW FLEET
83263000000
T01ZG1

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
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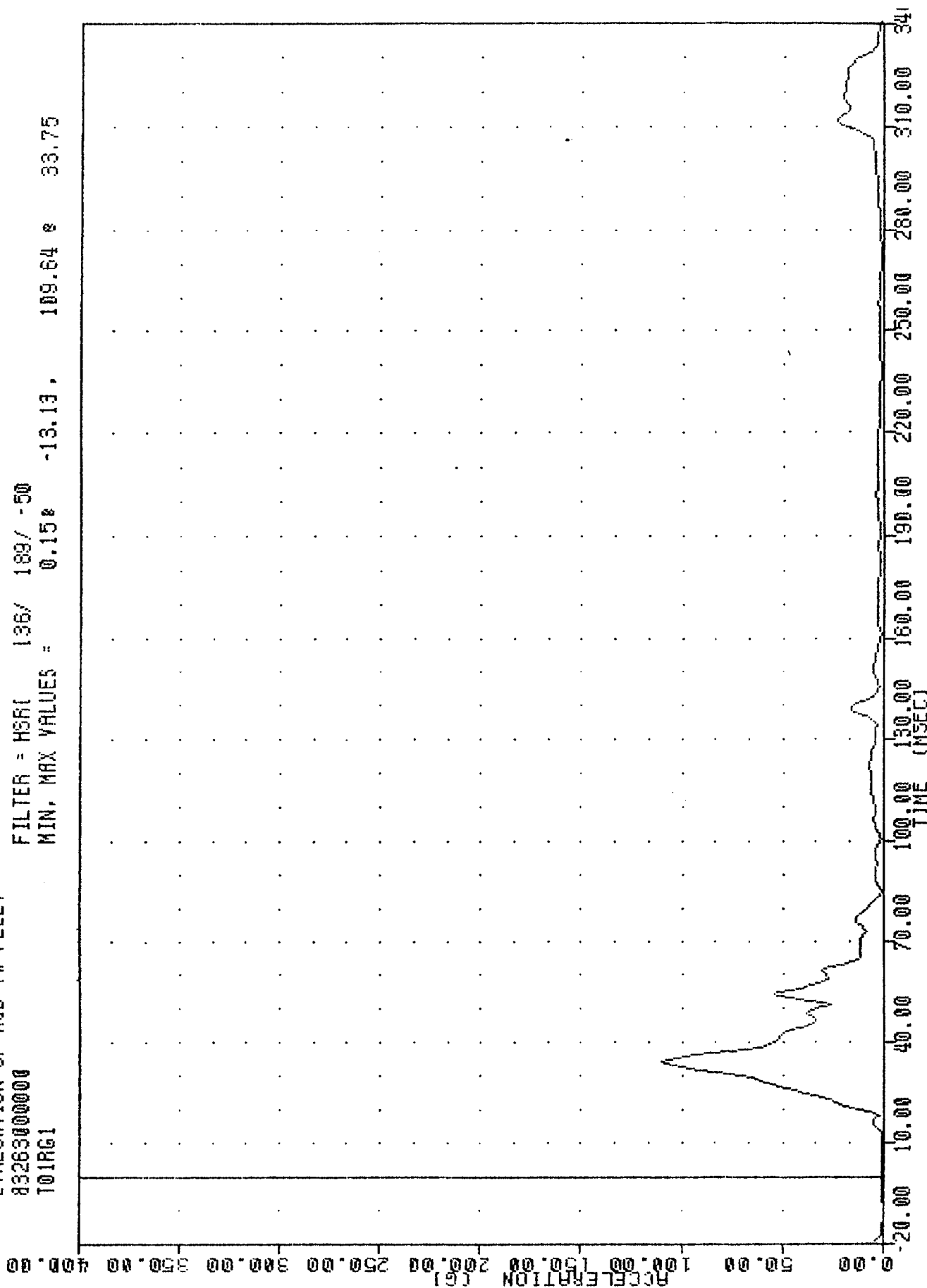


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE ACCELERATION Z AXIS

TRC
EVALUATION OF MOD VN FLEET
83263000000
T01RG1

PLUT DATE 21-SEP-83 15:45:14

FILTER = HSR1 136/ 189/ -50
MIN. MAX VALUES = 0.15% -13.13, 109.64 % 33.75

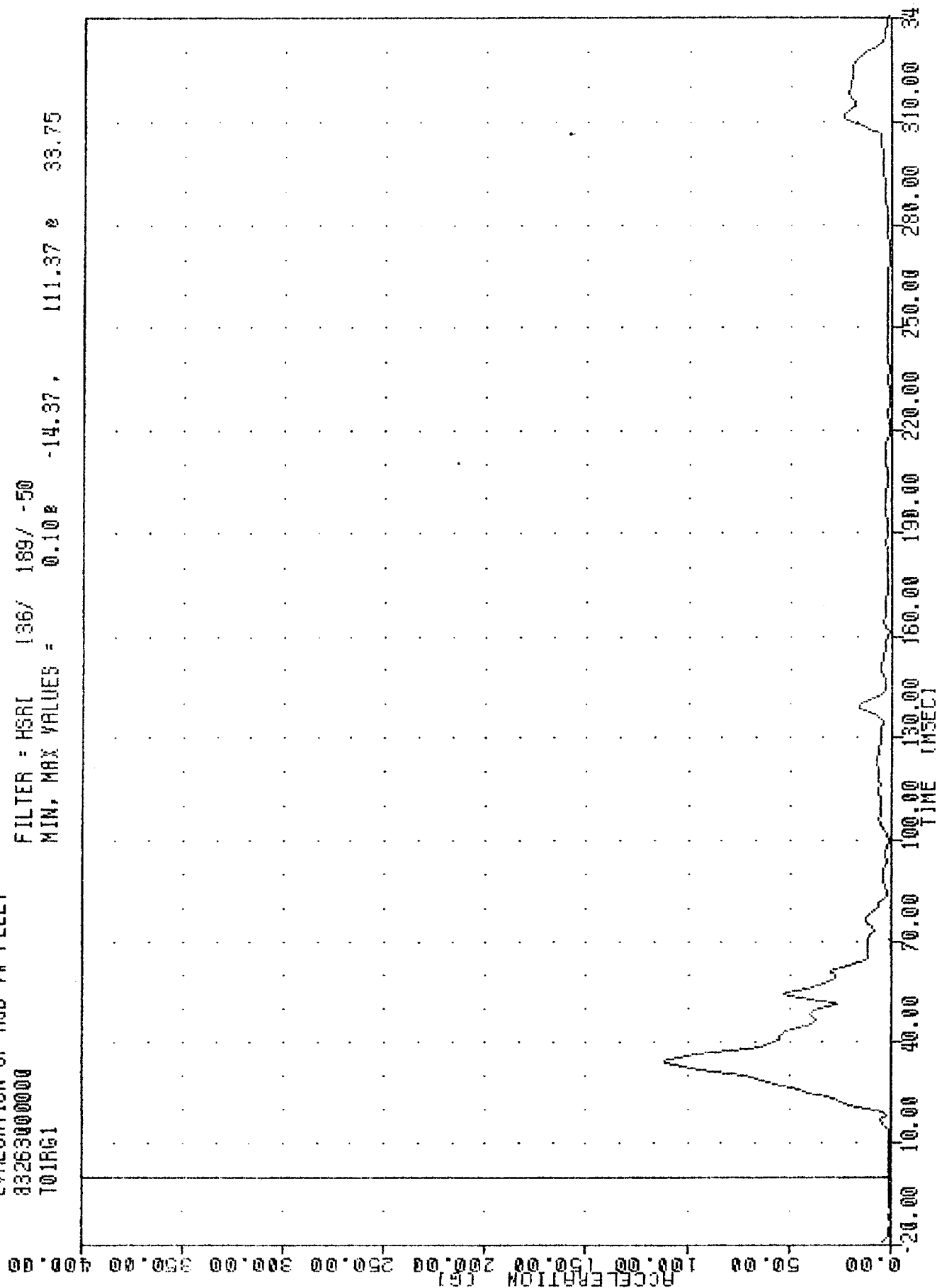


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER UPPER SPINE RESULTANT

TRC
EVALUATION OF MDD YW FLEET
83263000000
T01RG1

PLOT DATE 21-SEP-83 15:46:50

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = 0.10e -14.37, 111.37 e 33.75



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

TRC
 EVALUATION OF MOD YV FLEET
 832630000000
 T01YV1

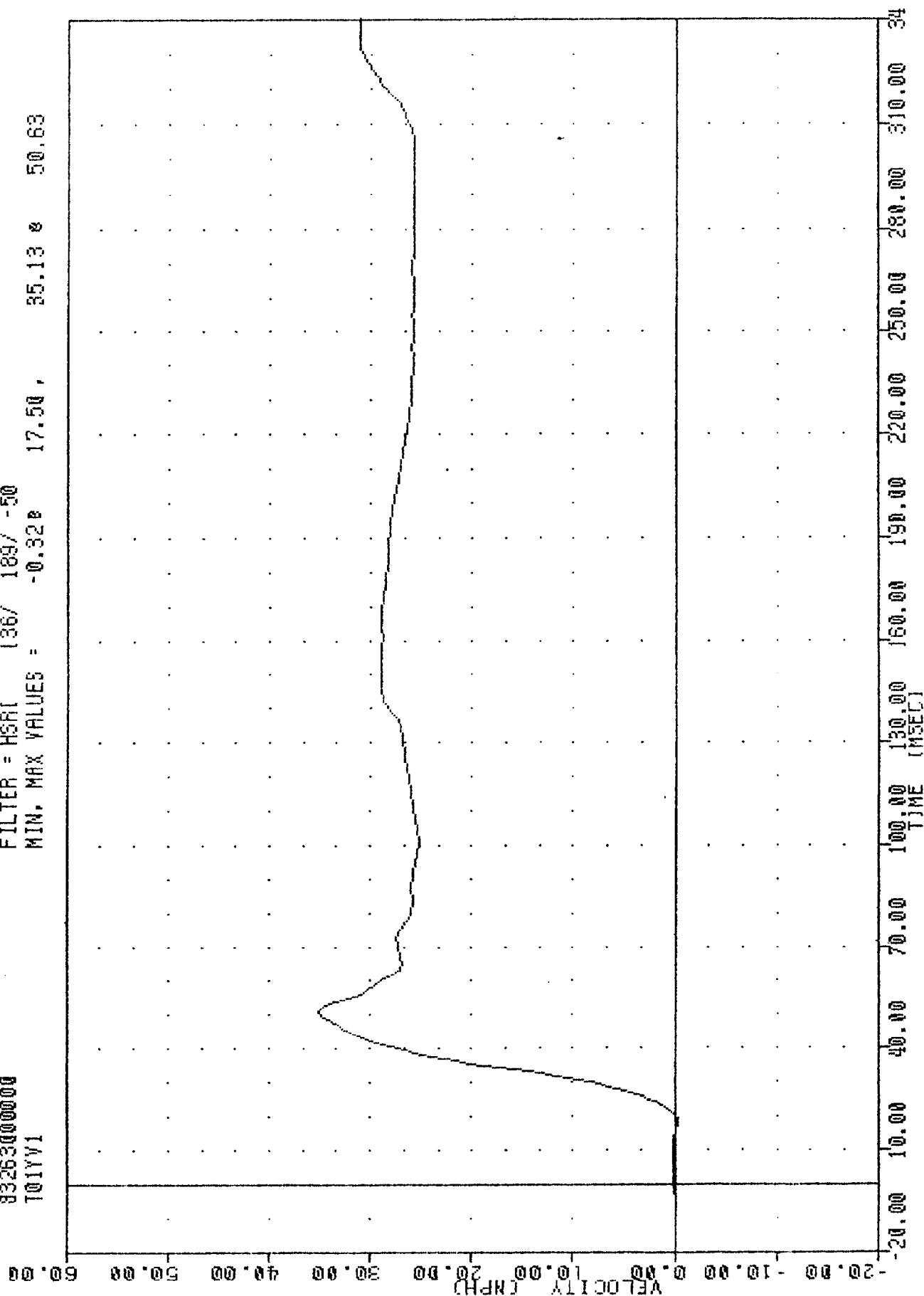
PLOT DATE

22-SEP-83

14:12:38

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -0.320 17.50, 35.13 0 50.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T01YGI

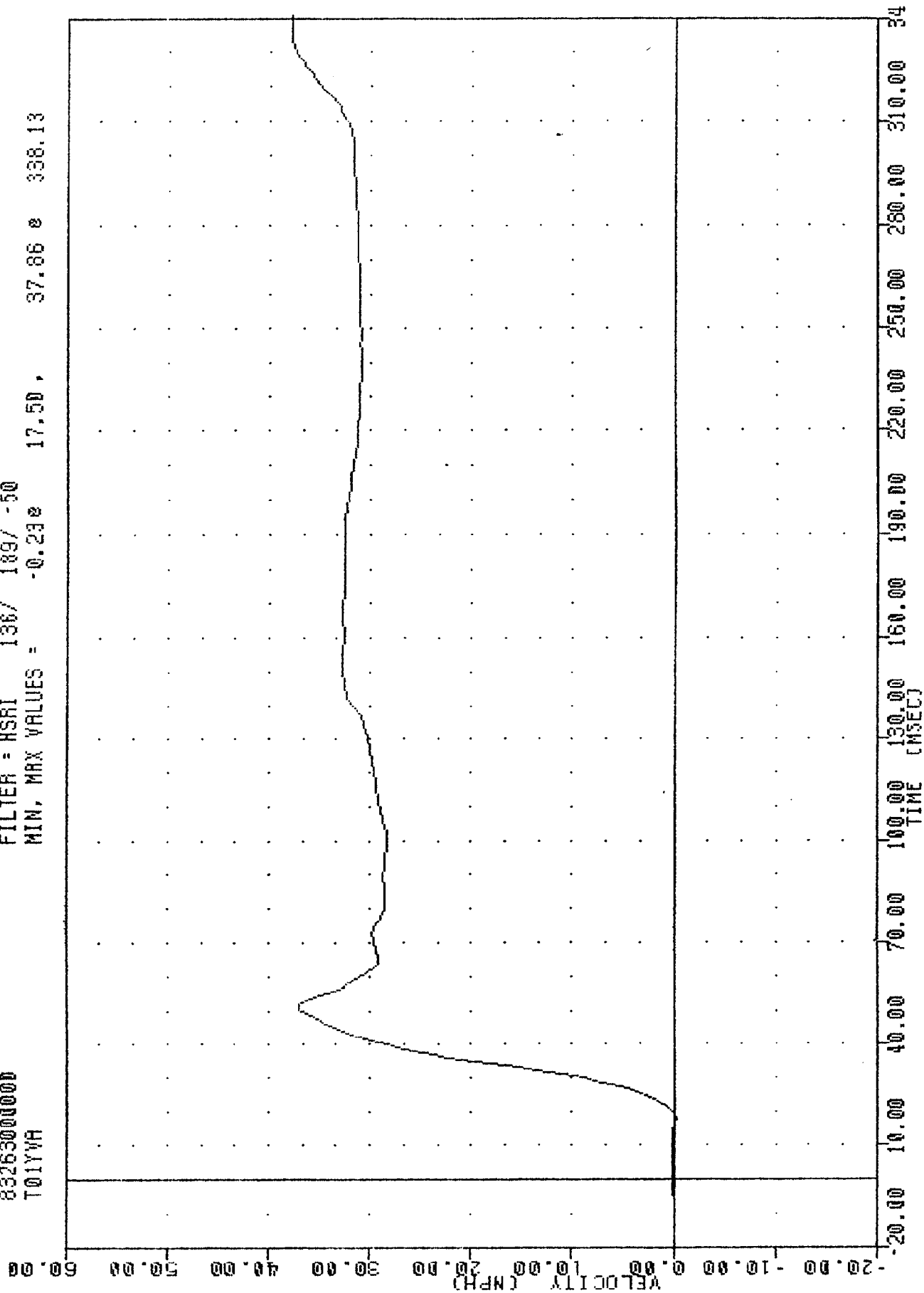
TAC
 EVALUATION OF MOD YW FLEET
 83263000000
 T01YVA

830920

PLOT DATE 22-SEP-83

14:12:39

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -0.23e 17.50, 37.86 e 338.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T01YGA

TRC

EVALUATION OF MOD YW FLEET
832630000000
T12XG1

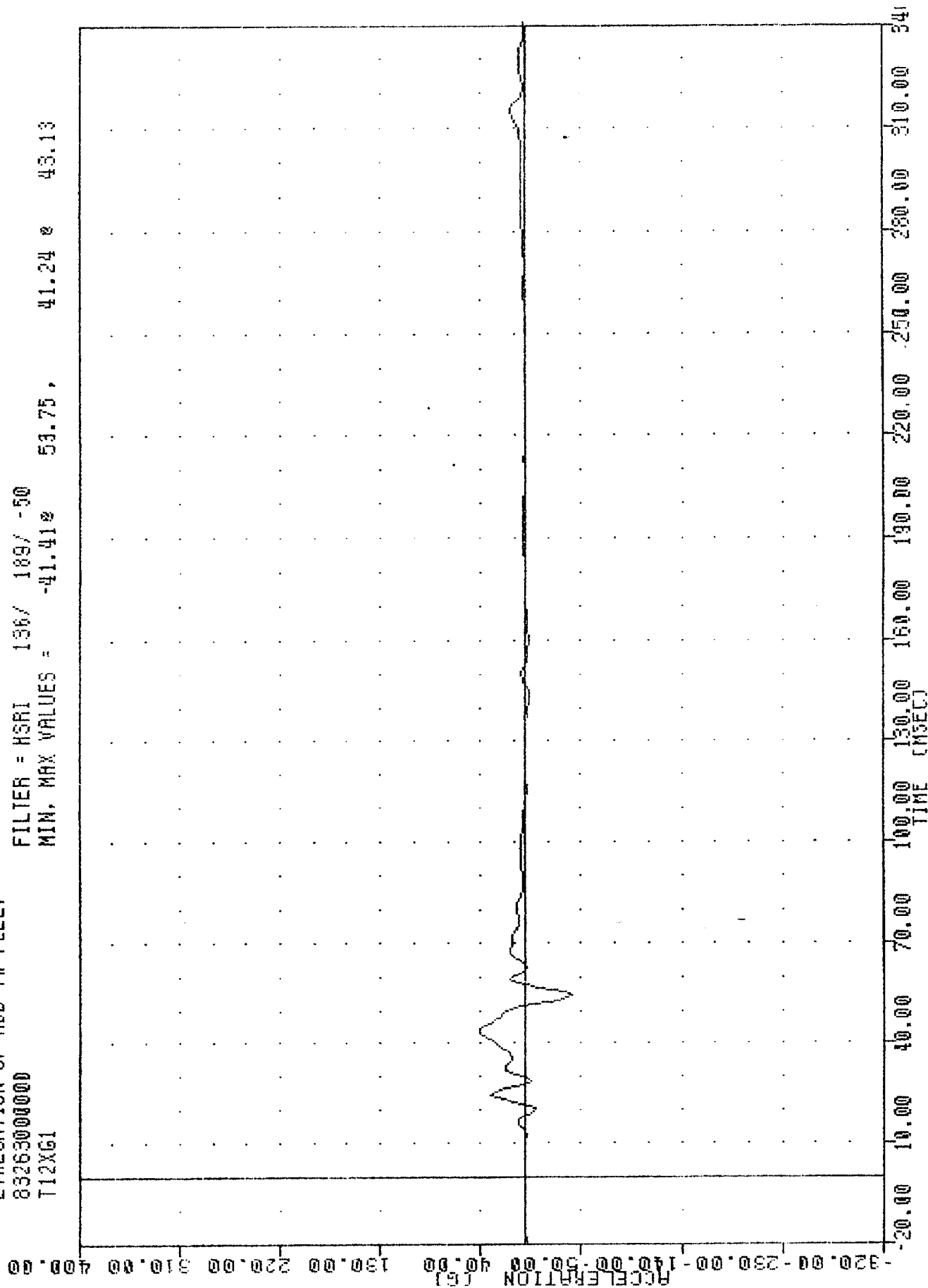
, 830920

PLUT DATE

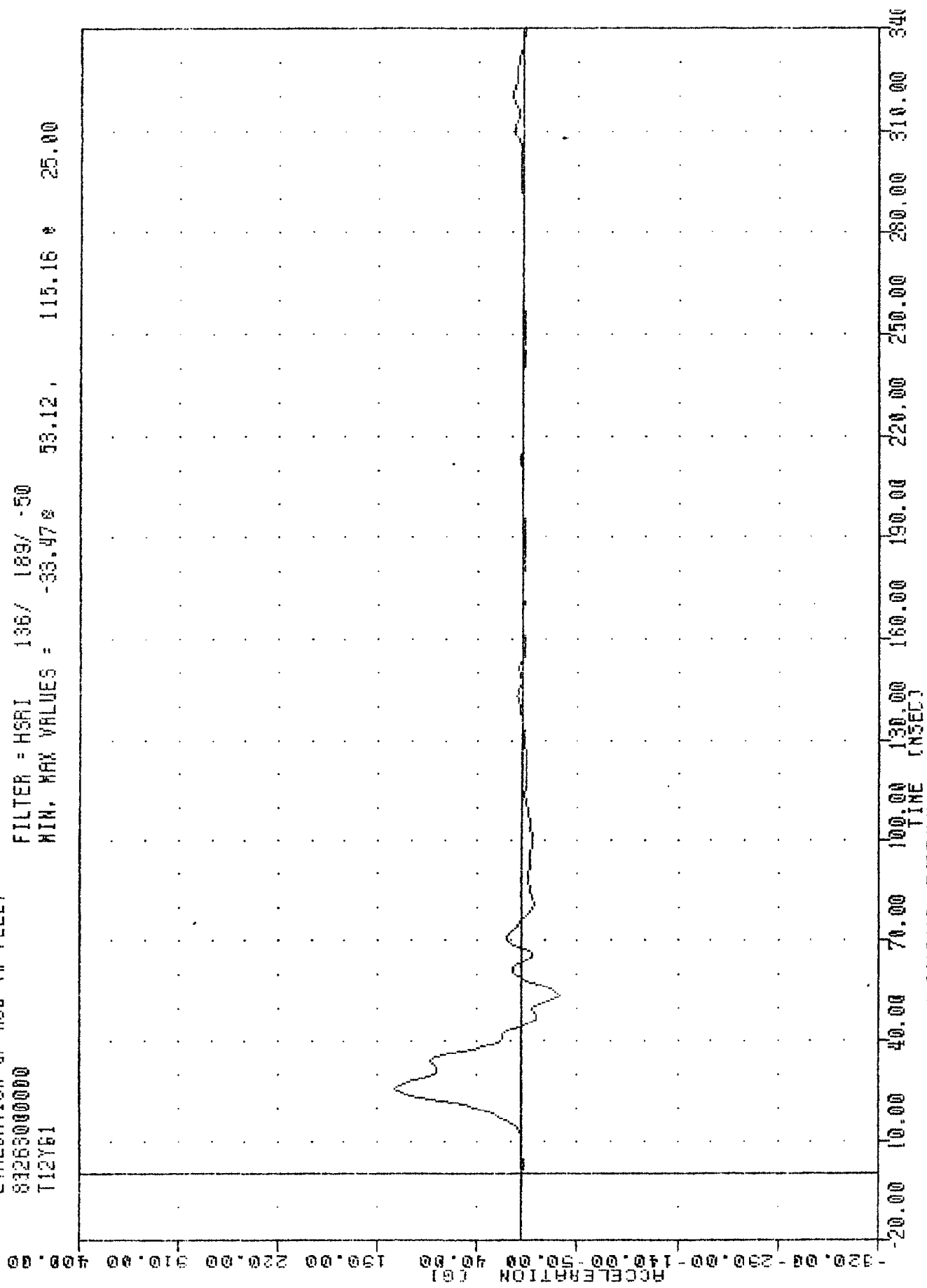
21-SEP-83

15:45:14

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -41.412 53.75, 41.24 43.13



TRC
 EVALUATION OF MOD VW FLEET
 83263000000
 T12Y61
 830920
 21-SEP-83 15:45:14
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -33.47% 53.12, 115.16 * 25.00



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

TRC 830920 PLOT DATE 21-SEP-83 15:45:14

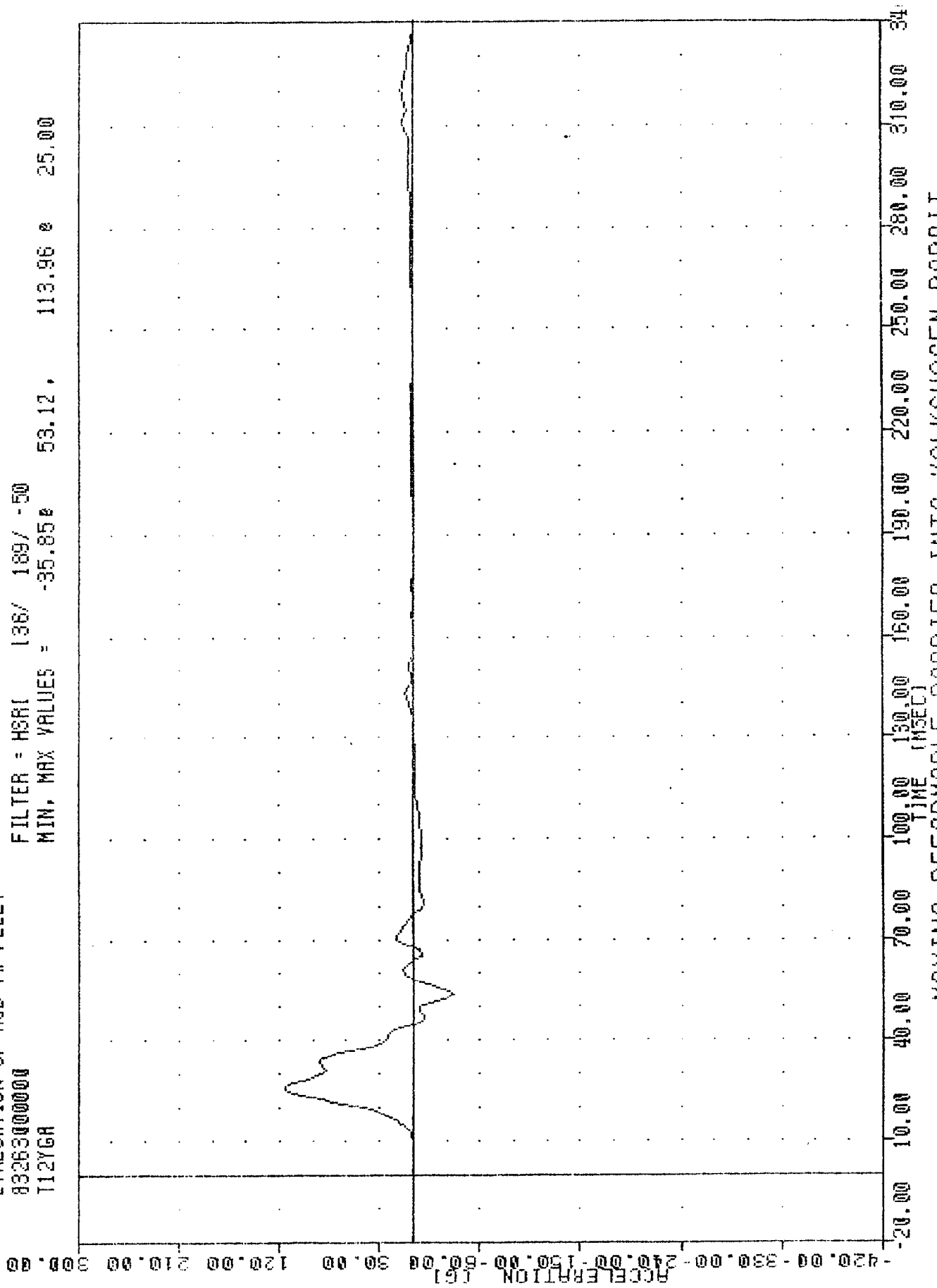
EVALUATION OF MOD YW FLEET

832630000000

T12YGR

FILTER = HSR1 136/ 189/ -50

MIN, MAX VALUES = -35.85e 53.12, 113.96 e 25.00



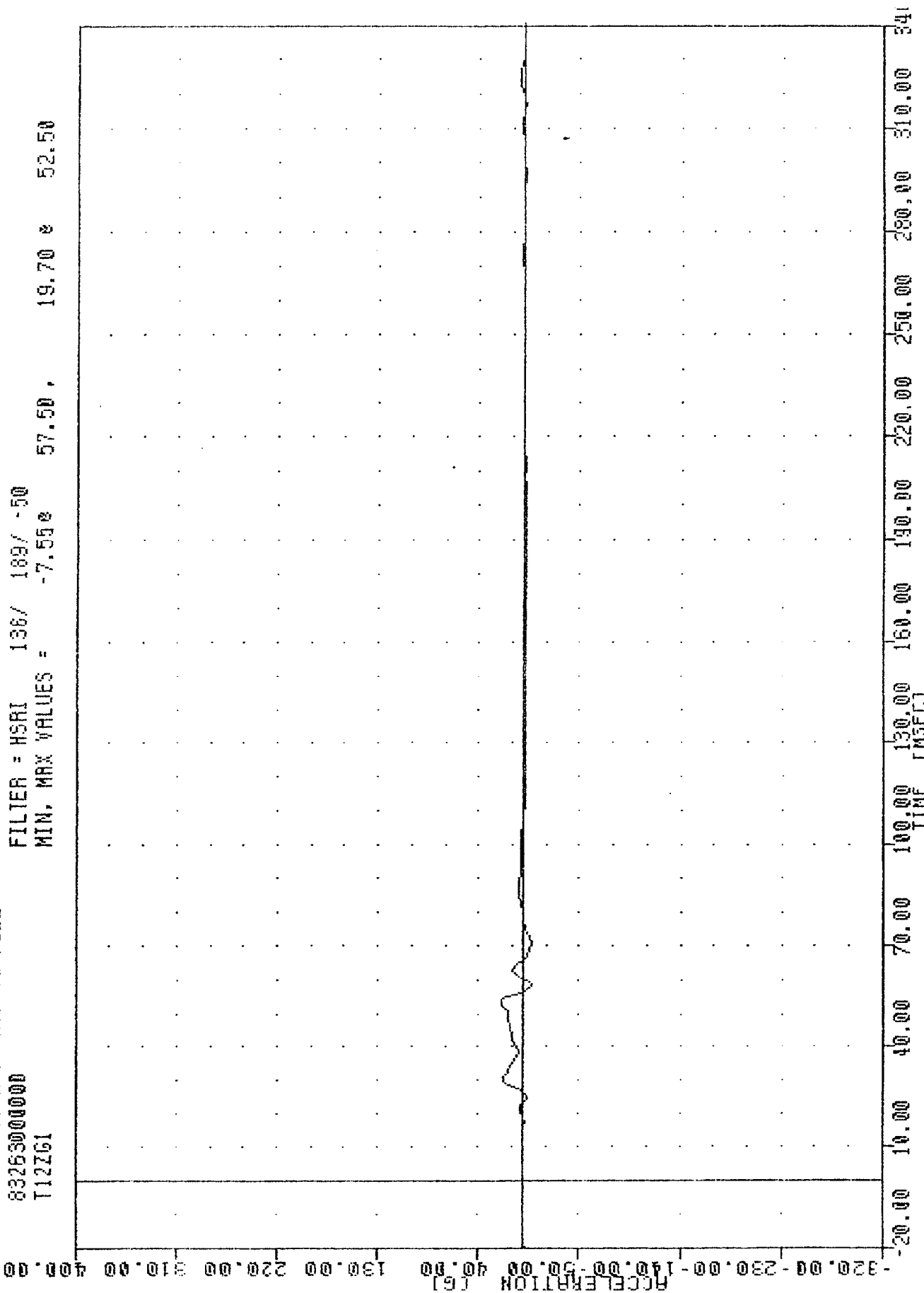
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LOWER SPINE ACCELERATION -2 Y AXIS

TRC 830920 832630000000 T12ZG1

EVALUATION OF MOD VW FLEET

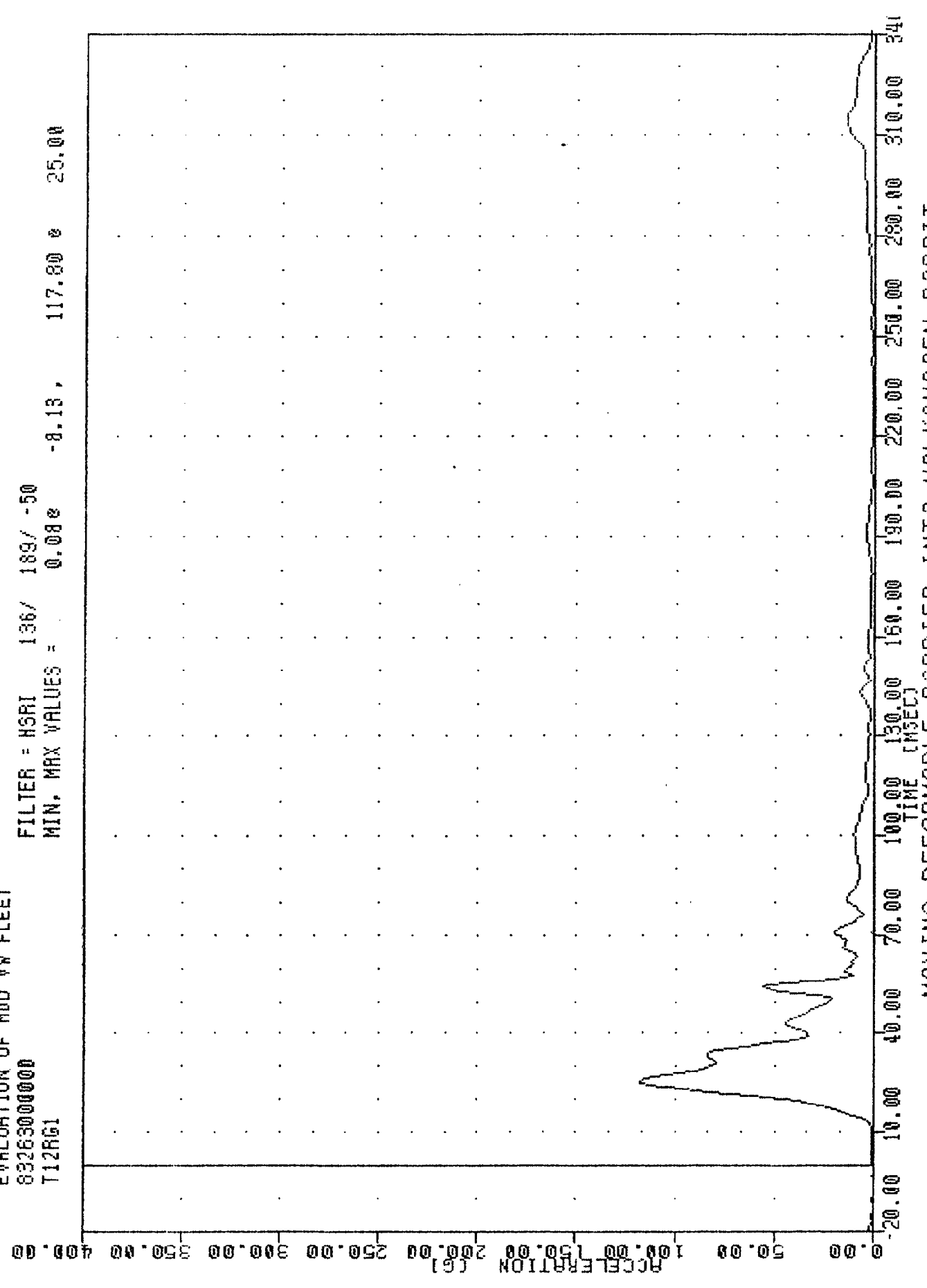
PLUT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -7.55e 57.50, 19.70 e 52.50



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

TRC
 EVALUATION OF MOD VW FLEET
 83263000000
 T12RG1
 , 830920
 21-SEP-83 15:45:14
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = 0.08e -8.13, 117.80 e 25.00

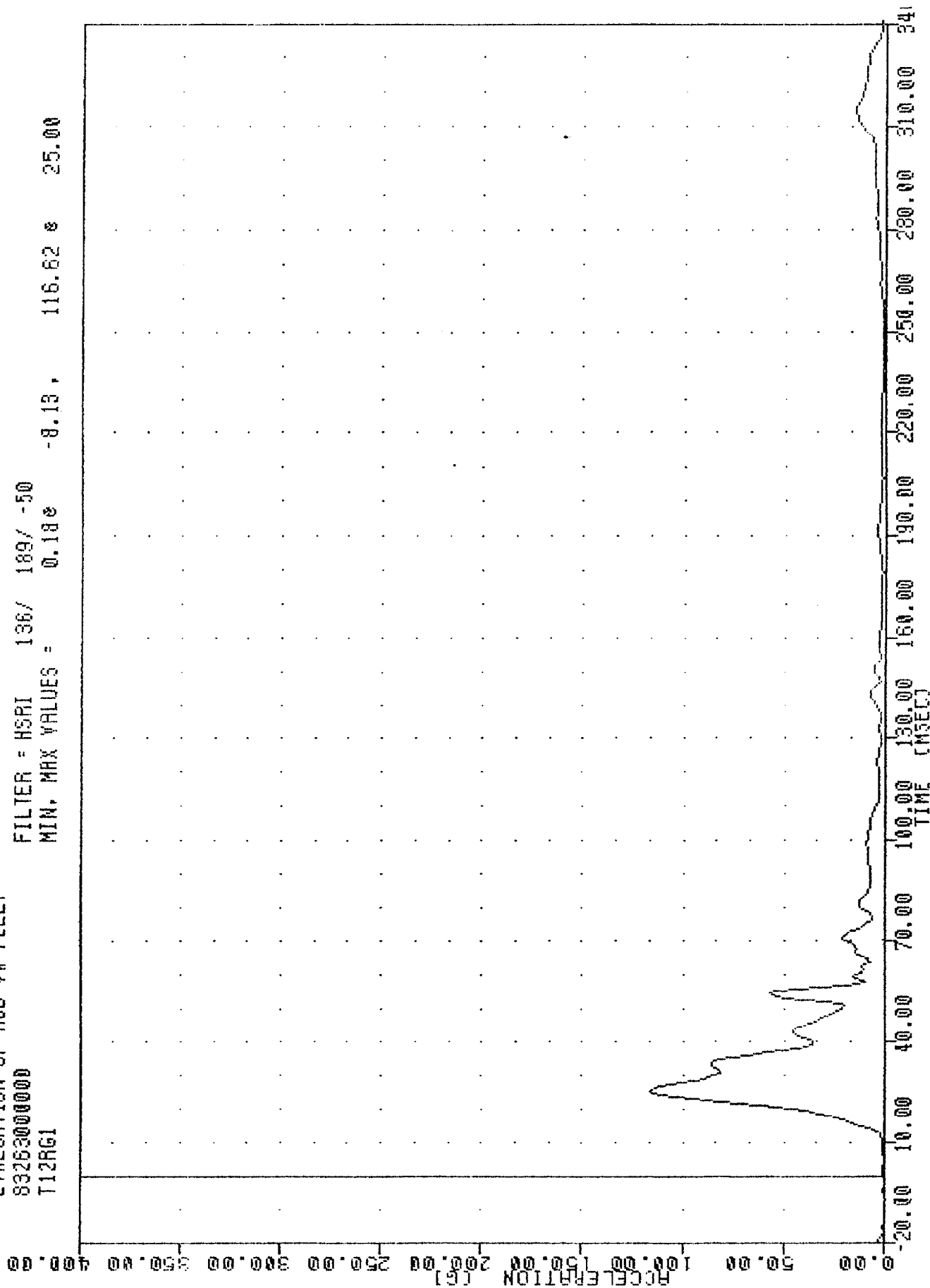


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LOWER SPINE RESULTANT

TRC
EVALUATION OF MDD VV FLEET
832530000000
T12RG1

PLUT DATE 21-SEP-83 15:46:50

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = 0.18e -8.13, 116.62 e 25.00



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

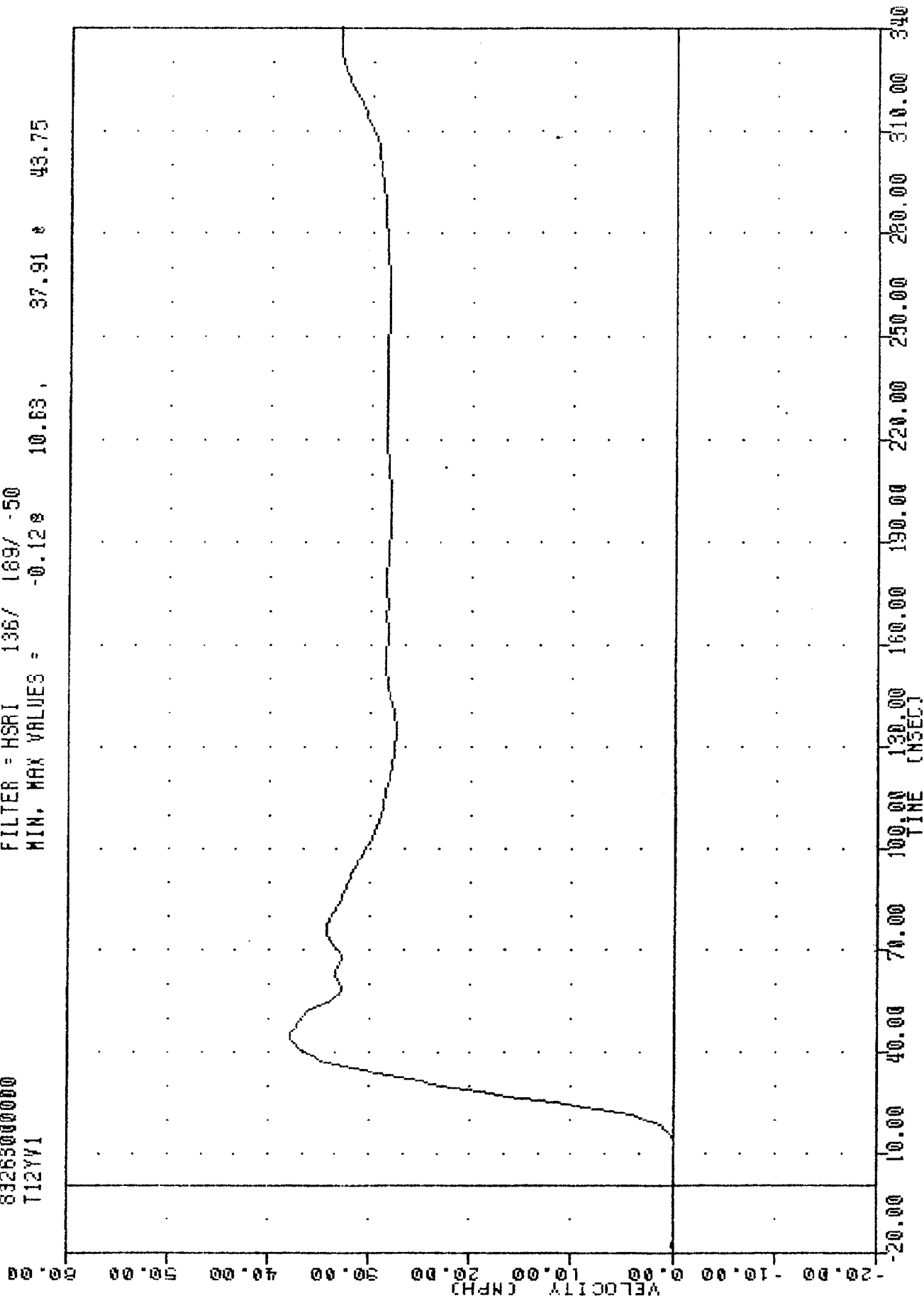
THC
EVALUATION OF MOD YN FLEET
83265000000
T12YV1

PLUT DATE 22-SEP-83

14:12:39

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.128 10.83 , 37.91 * 43.75

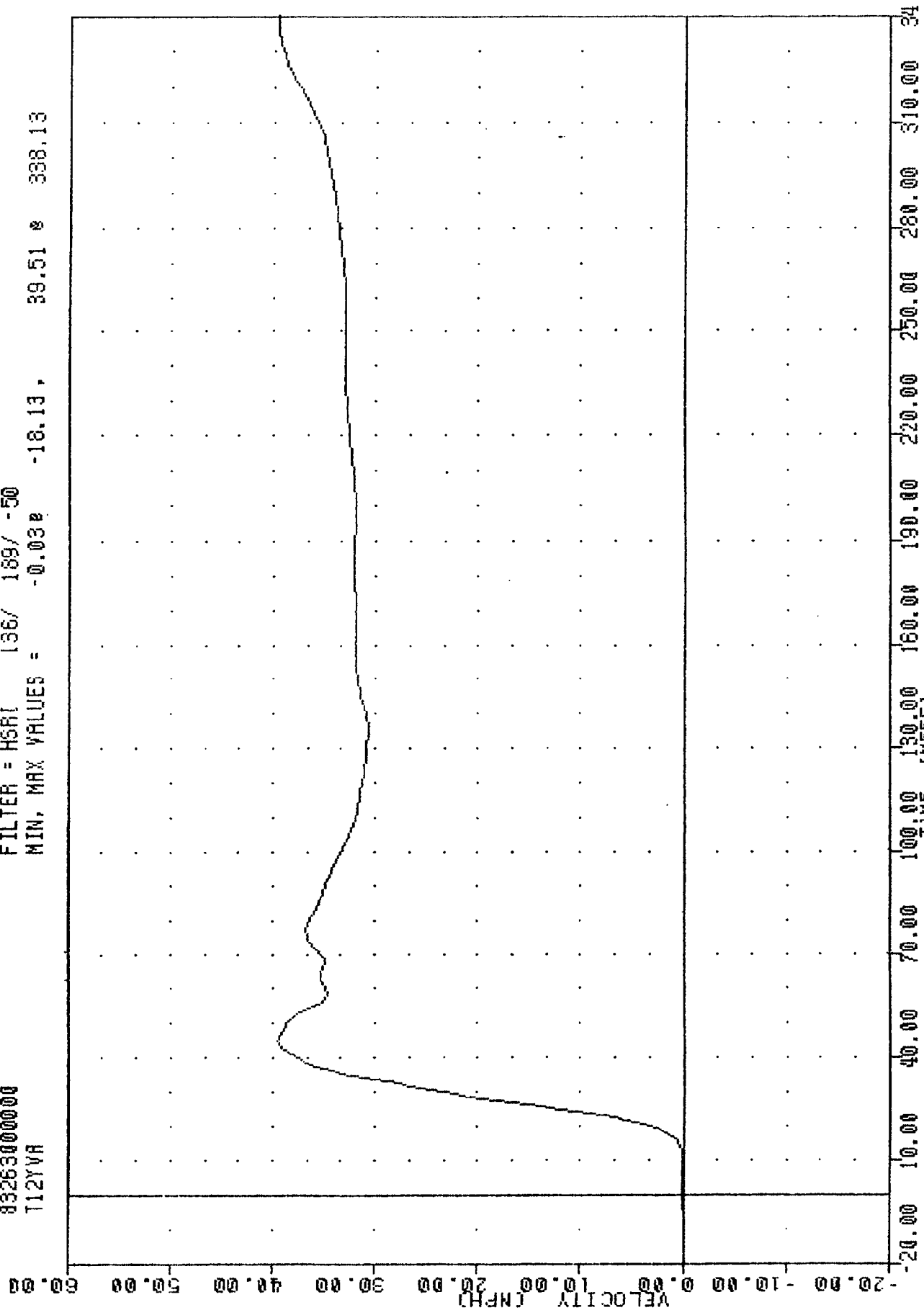


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T12Y61

TRC
EVALUATION OF MOD YW FLEET
83263000000
T12YVA

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSR1 136/ 189/ -50
MIN, MAX VALUES = -0.030 -18.13, 39.51 & 338.13

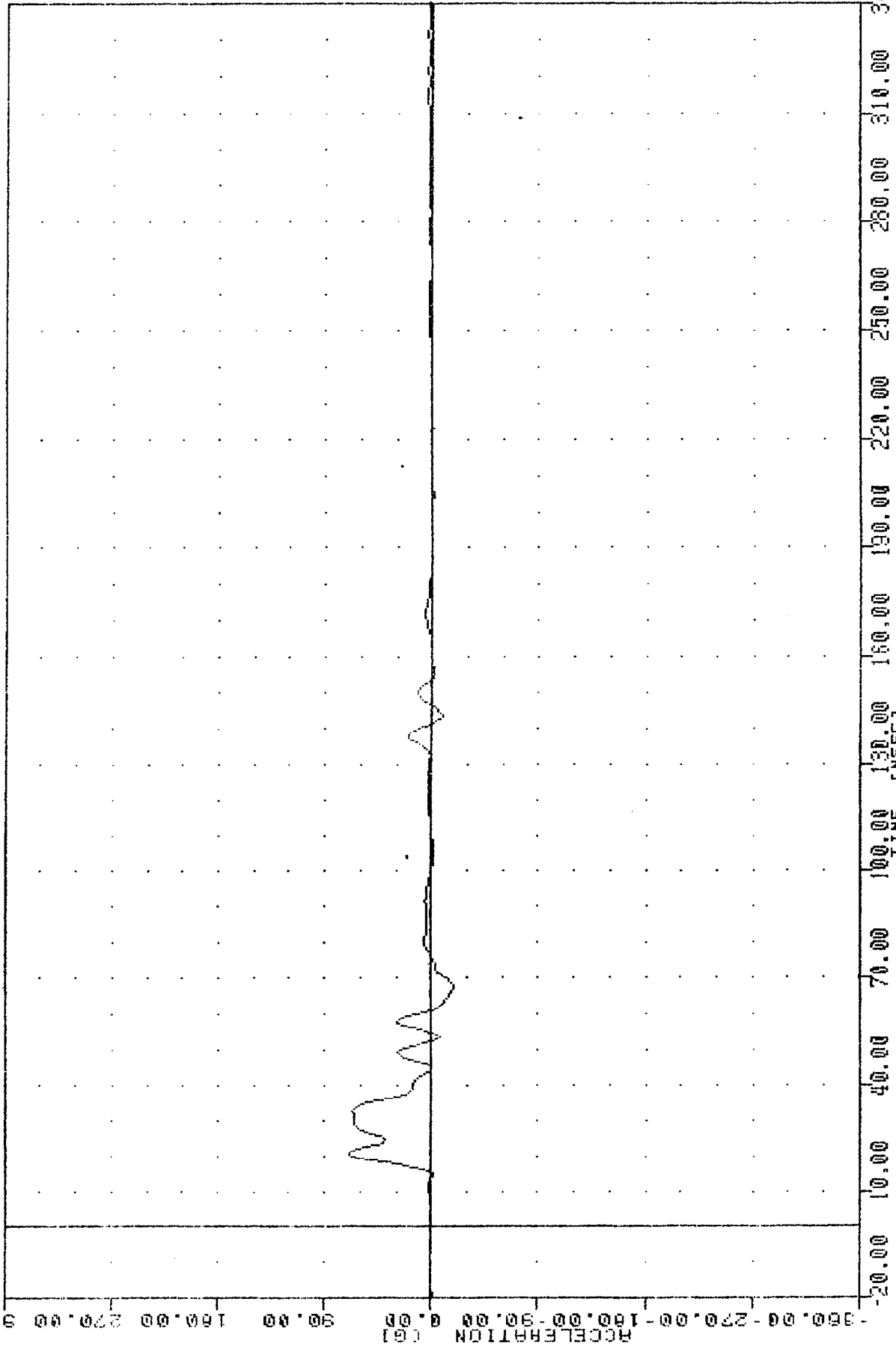


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T12YGA

THC 830920
 EVALUATION OF MOD VW FLEET
 83263000000
 LURYE1

PLUT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -18.99e 66.87, 69.45 e 20.00

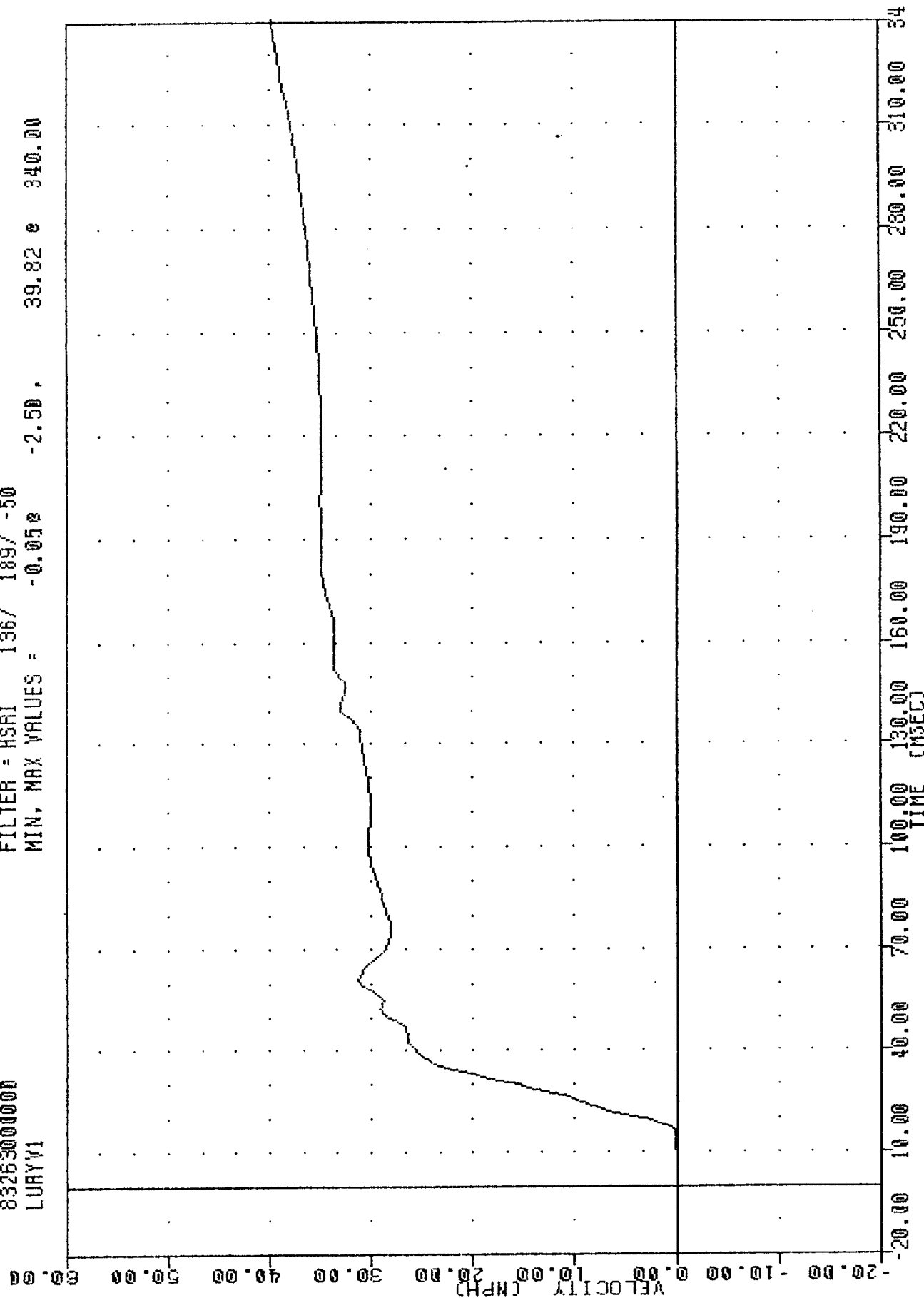


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT UPPER RIB ACCELERATION Y AXIS

TRC
 EVALUATION OF M00 VW FLEET
 83263000000
 LURYV1

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -0.050 -2.50, 39.82 e 340.00

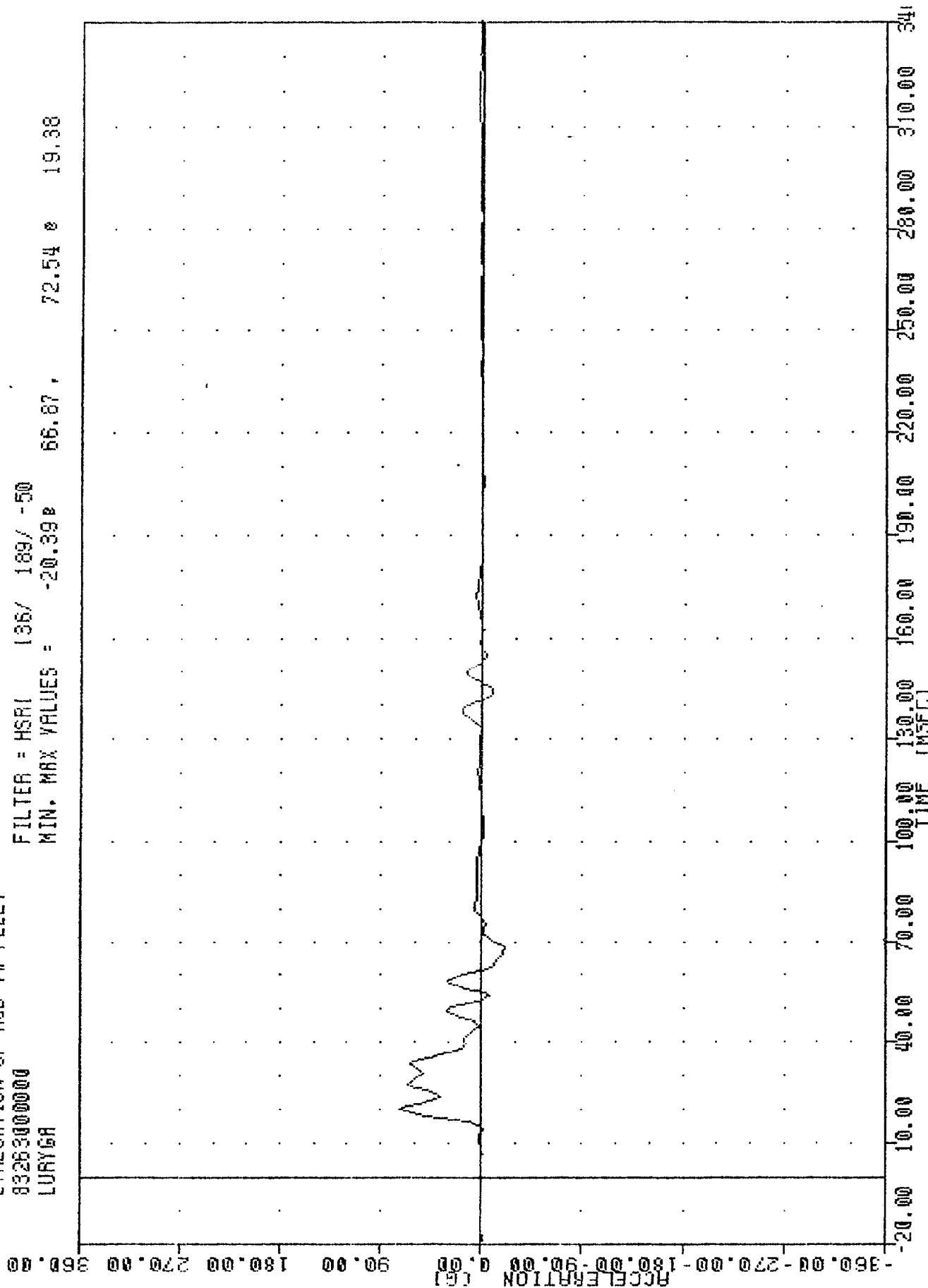


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURYGI

TRC 830920
 EVALUATION OF MOD YW FLEET
 83263000000
 LURYGR

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -20.39 66.87, 72.54 19.38



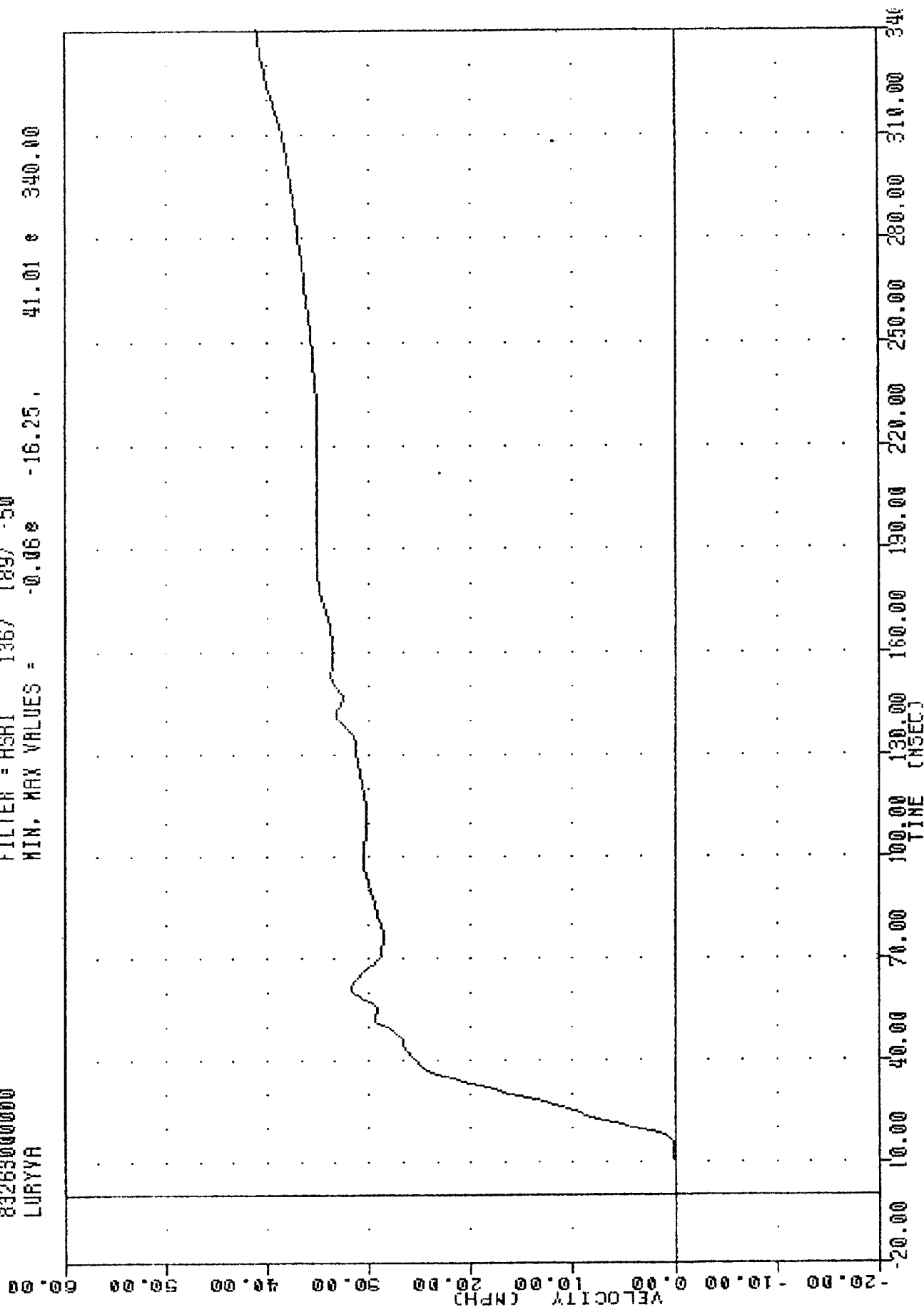
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER LEFT UPPER RIB ACCELERATION -2 Y AXIS

TRC
 EVALUATION OF MOD VN FLEET
 83263000000
 LURYYA

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.06 e -16.25 , 41.01 e 340.00

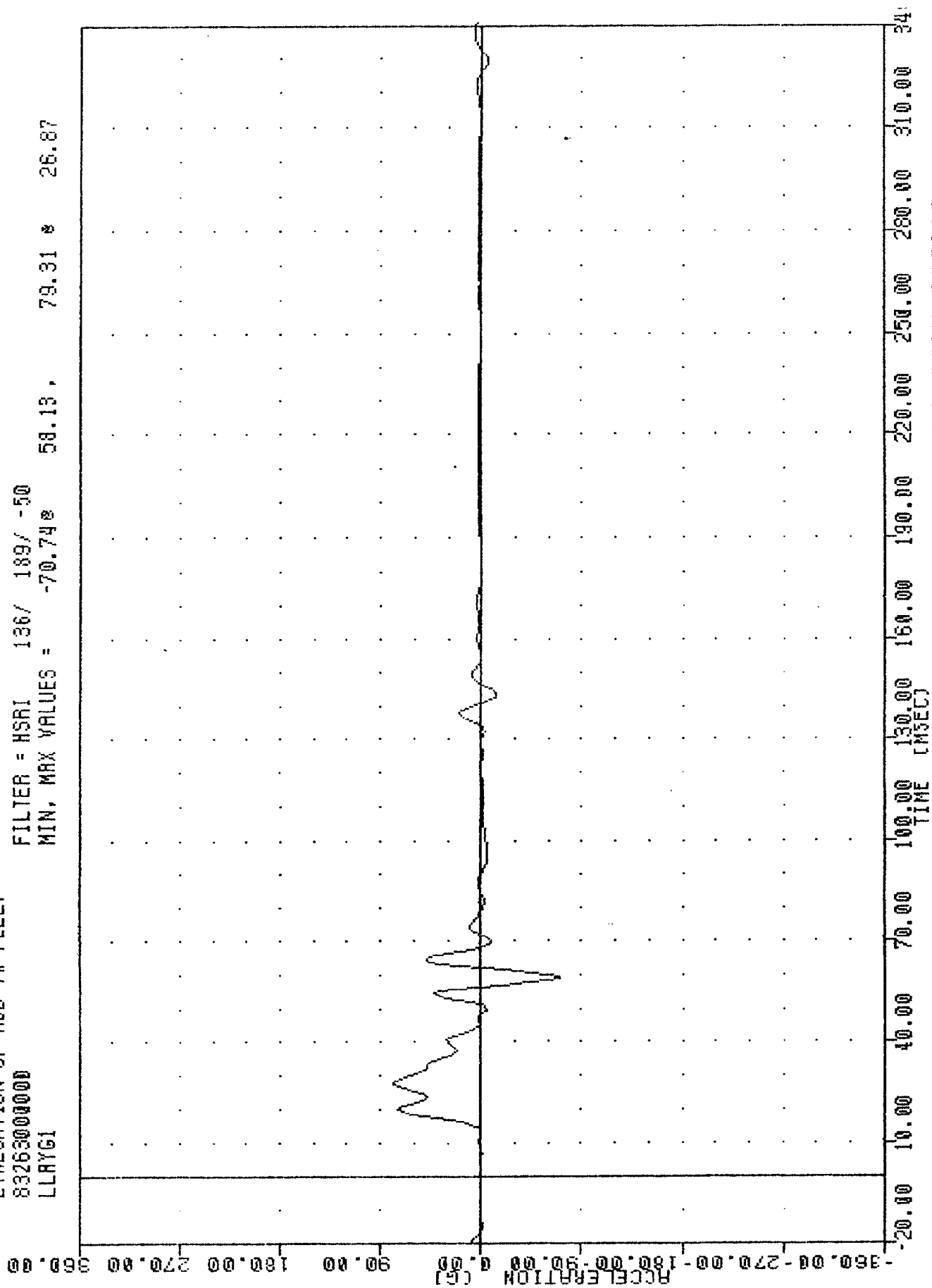


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURYYA

TRC
EVALUATION OF MOD YW FLEET
83263000000
LLAYG1

PLUT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -70.748 58.13, 79.31 26.87

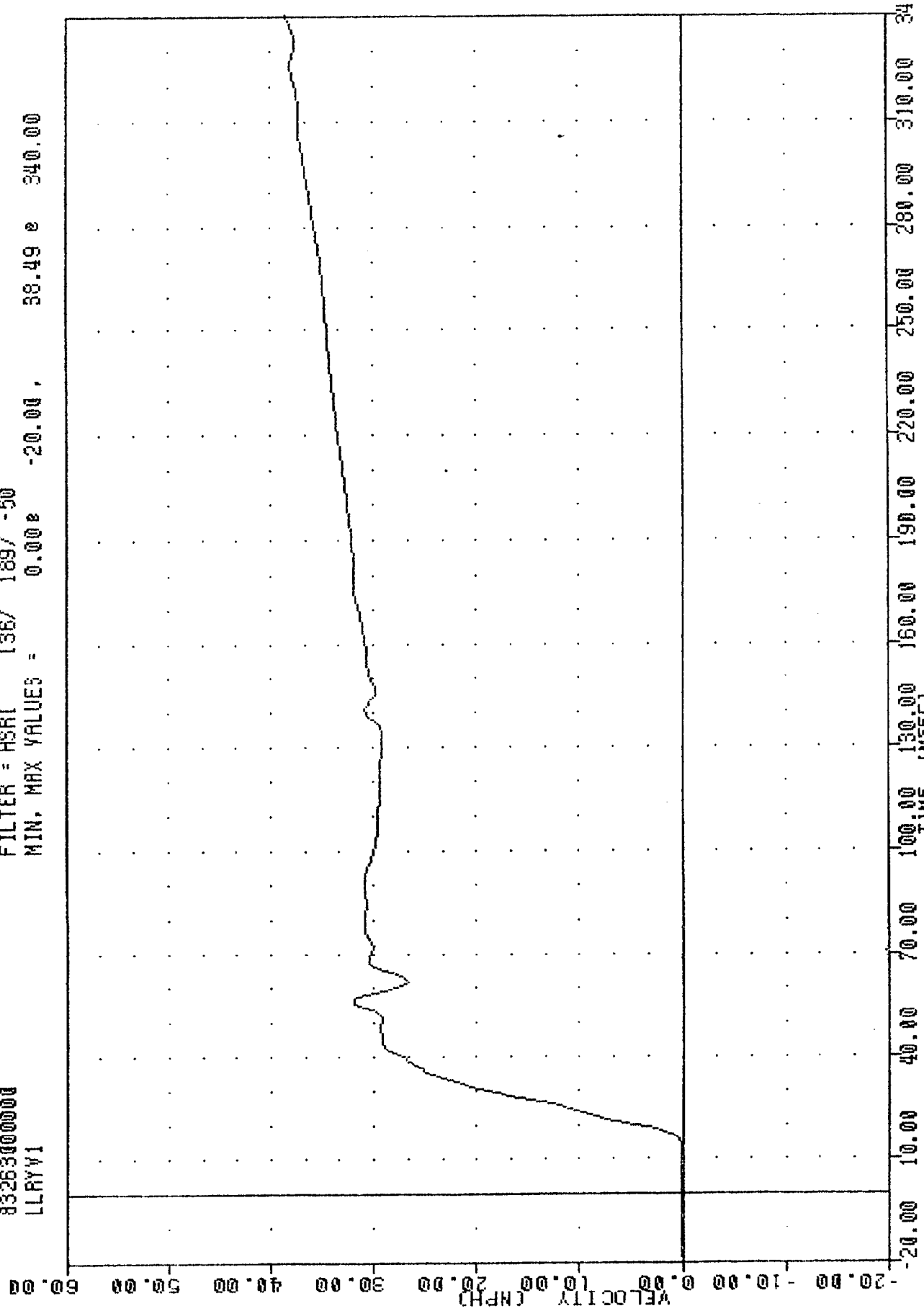


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT LOWER RIB ACCELERATION Y AXIS

TRC
 EVALUATION OF MOD VW FLEET
 83263000000
 LLRYV1

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSR1 136/ 189/ -50
 MIN. MAX VALUES = 0.00e -20.00, 38.49 e 340.00



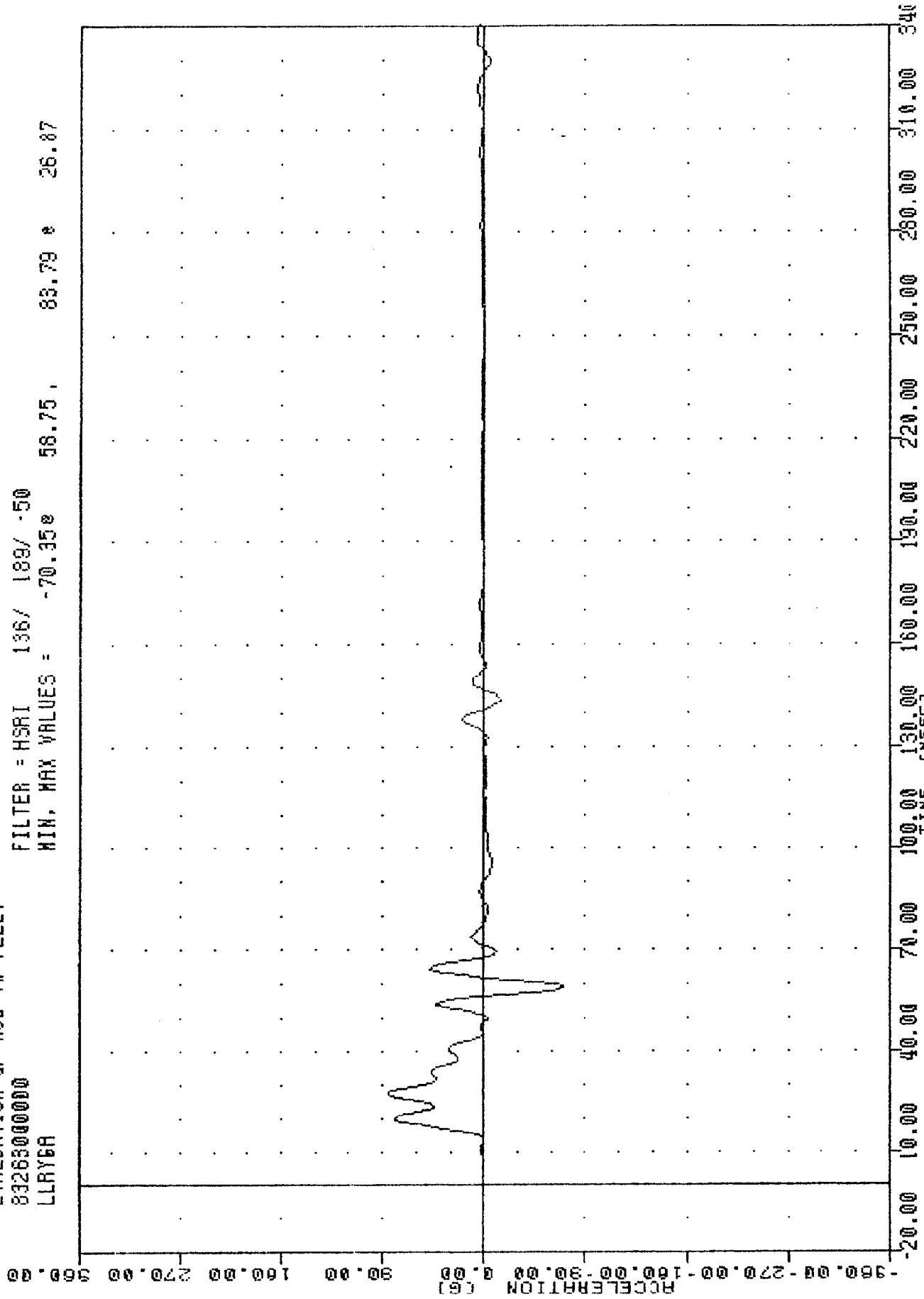
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LLRYG1

TAC
EVALUATION OF MOD VW FLEET
832630000000
LLRY6A

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -70.350 58.75, 83.79 * 26.87

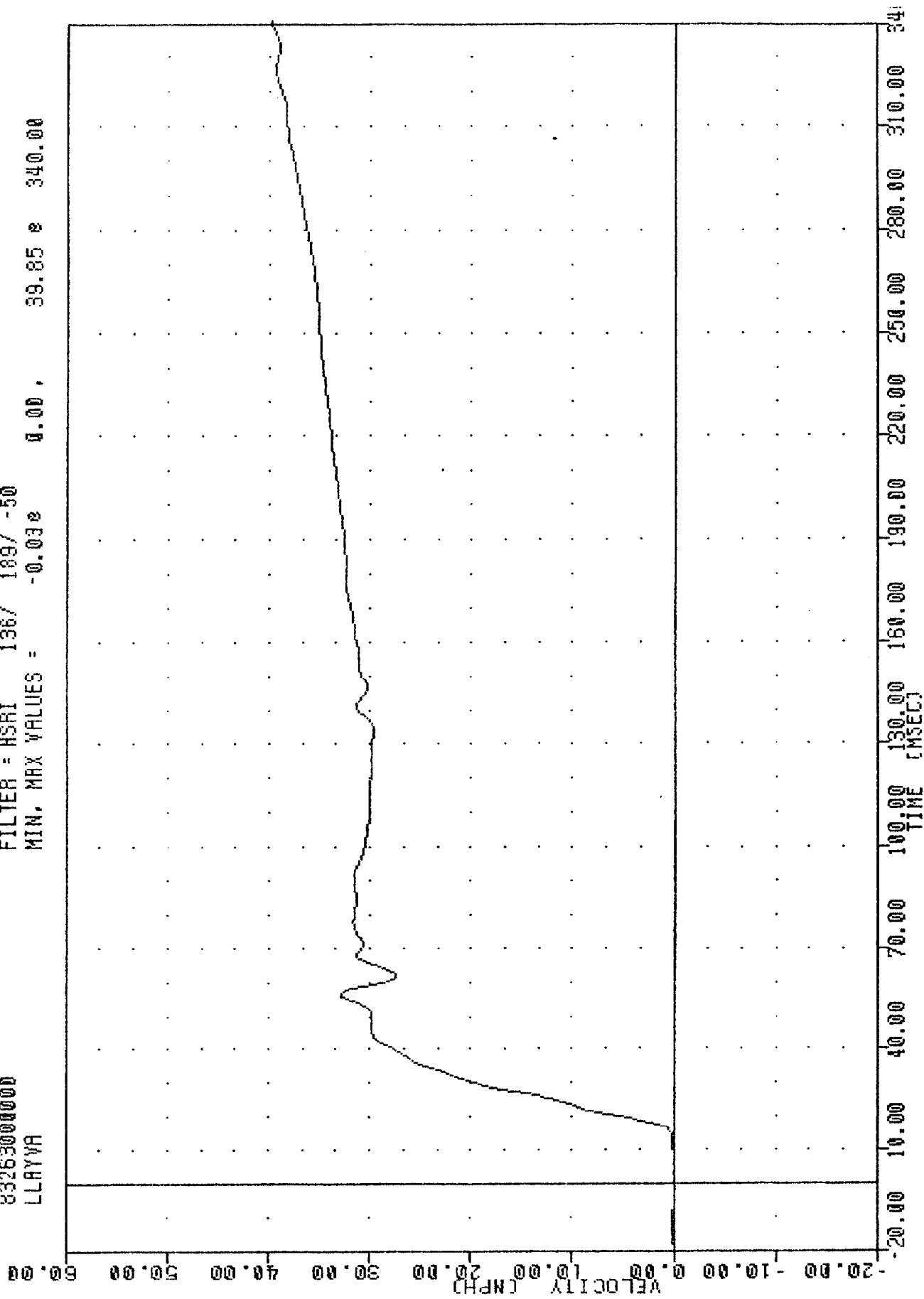


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT LOWER RIB ACCELERATION -2 Y AXIS

TRC
 EVALUATION OF MDD VV FLEET
 83263000000
 LLYVR

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.03e 0.00, 39.85 e 340.00

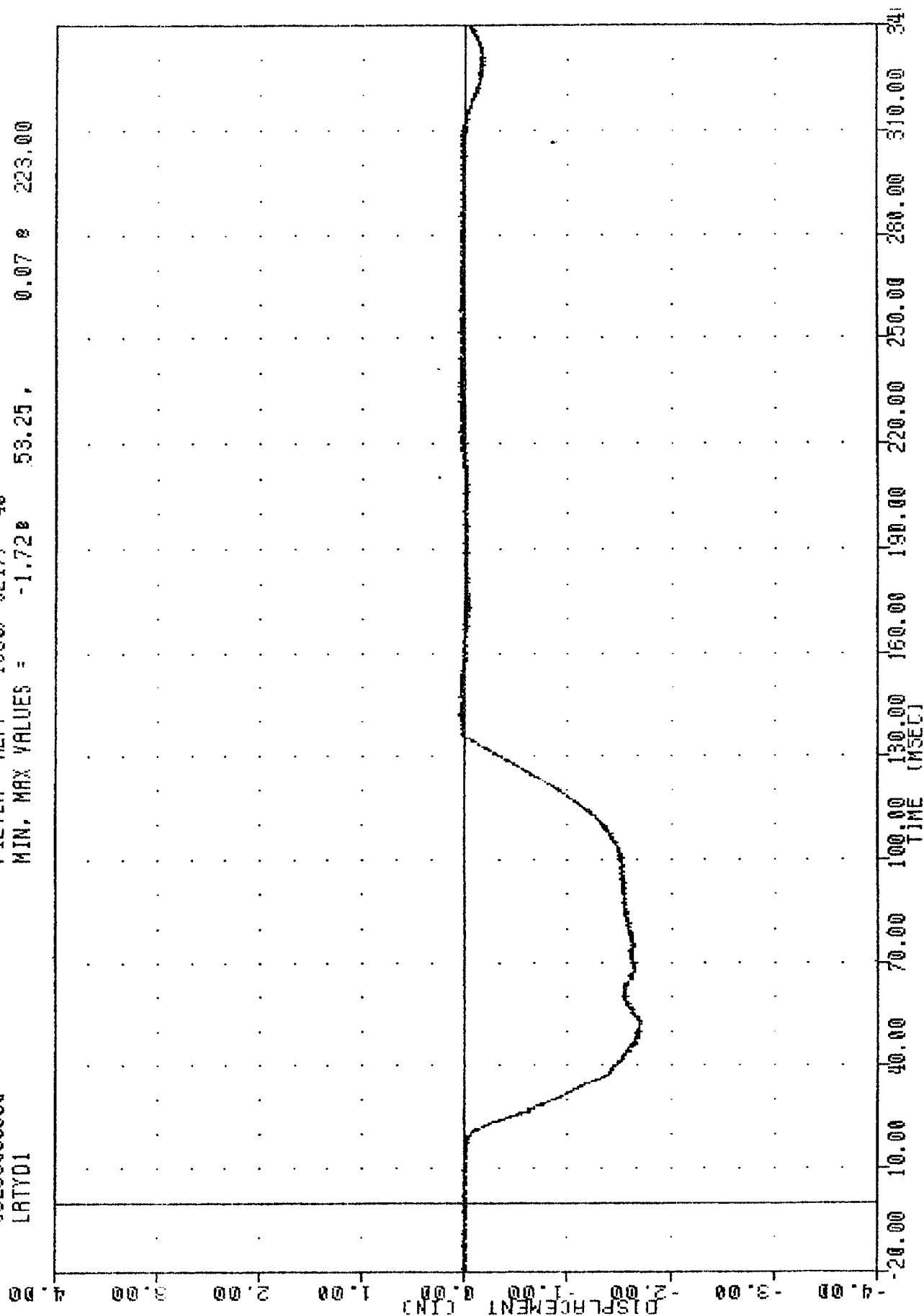


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LLYVR

IRC
EVALUATION OF MOD YW FLEET
83263000000
LATYD1

PLUT DATE 21-SEP-83 15:39:27

FILTER = ALPF 1650/ 5217/ -40
MIN, MAX VALUES = -1.720 53.25, 0.07 223.00

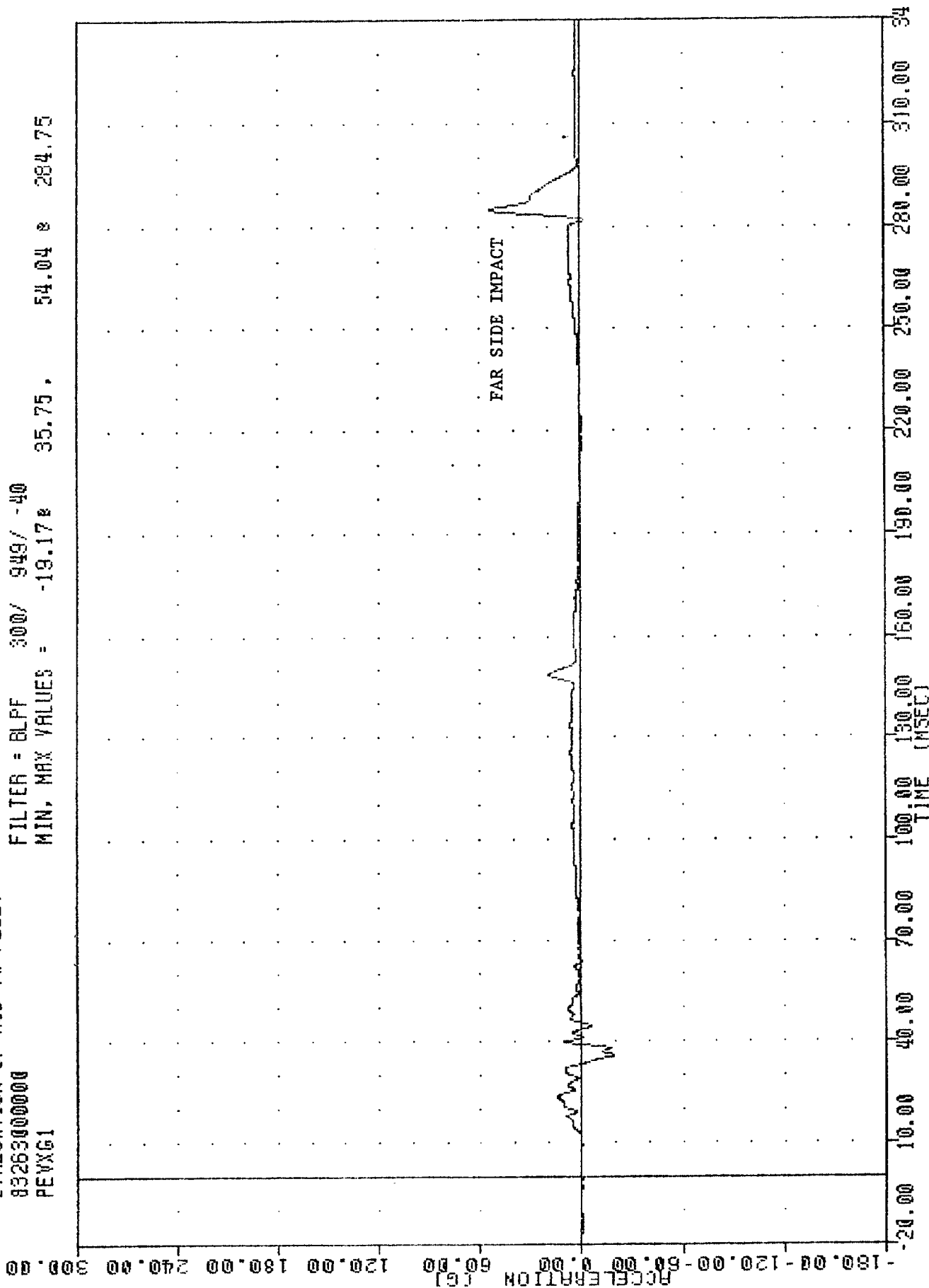


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER LEFT RIB TO SPINE DISPLACEMENT INCHES

TRC
EVALUATION OF MOD YW FLEET
832630000000
PEVXG1

PLOT DATE 21-SEP-83 15:39:29

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -19.17 35.75 54.04 284.75

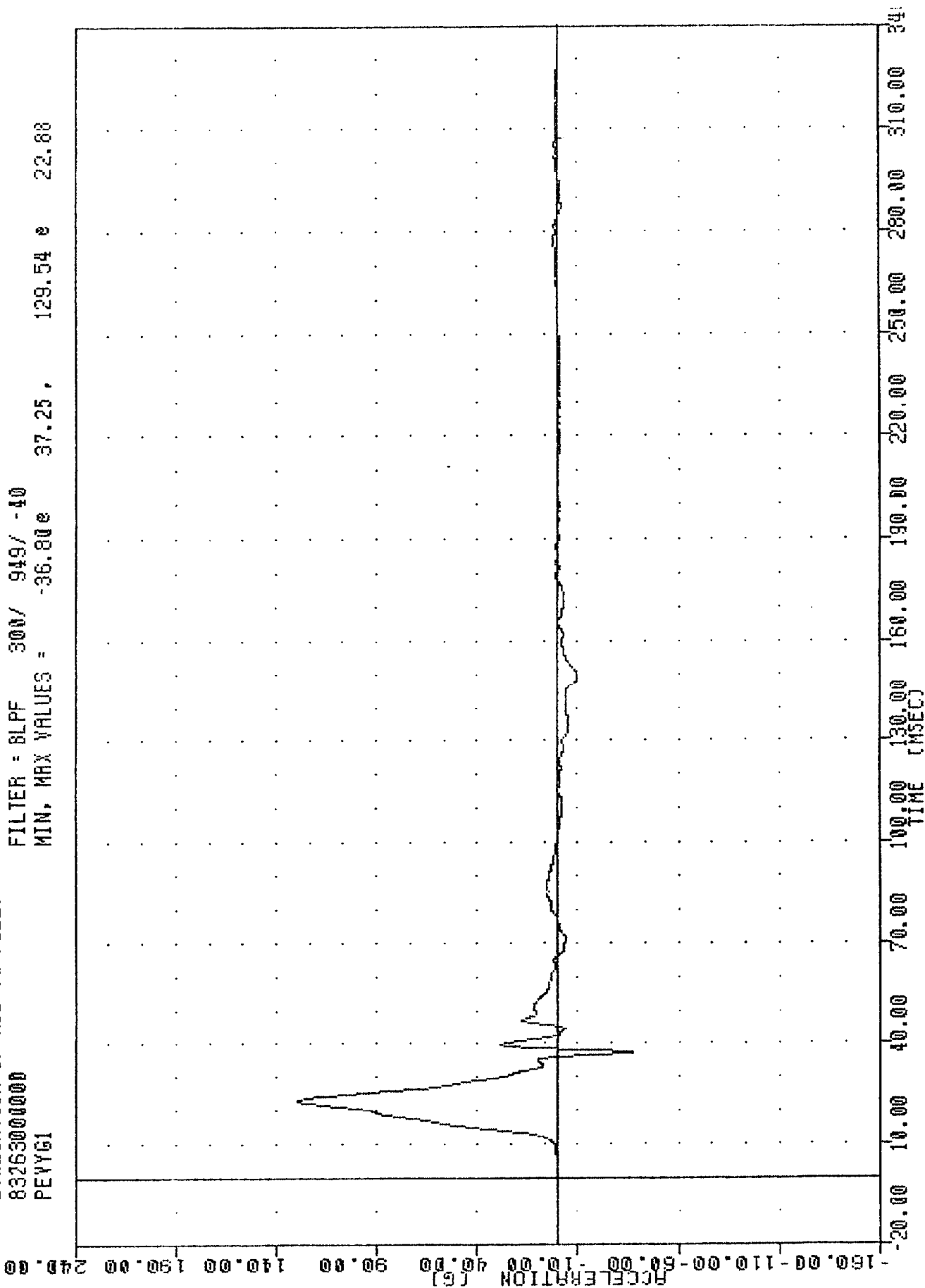


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS ACCELERATION X AXIS

TAC 830920
 EVALUATION OF MDD VW FLEET
 83263000000
 PEVYG1

PLOT DATE 21-SEP-83 15:39:27

FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -36.80e 37.25, 129.54 e 22.88



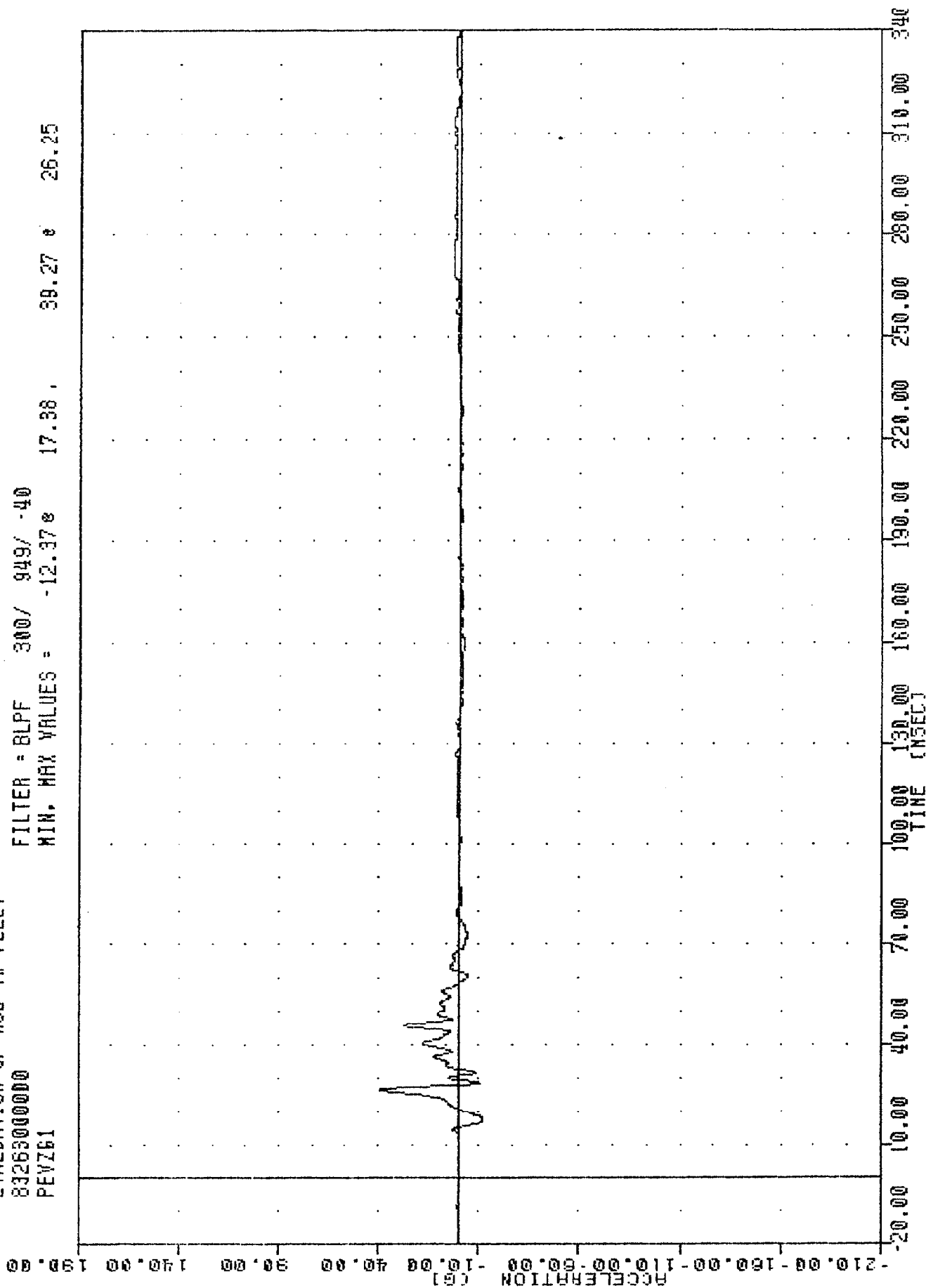
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DRIVER PELVIS ACCELERATION Y AXIS

TAC
EVALUATION OF MOD VEHICLE FLEET
832630000000
PEVZ61

PLOT DATE 21-SEP-83 15:39:27

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -12.37g 17.38g 39.27g 26.25

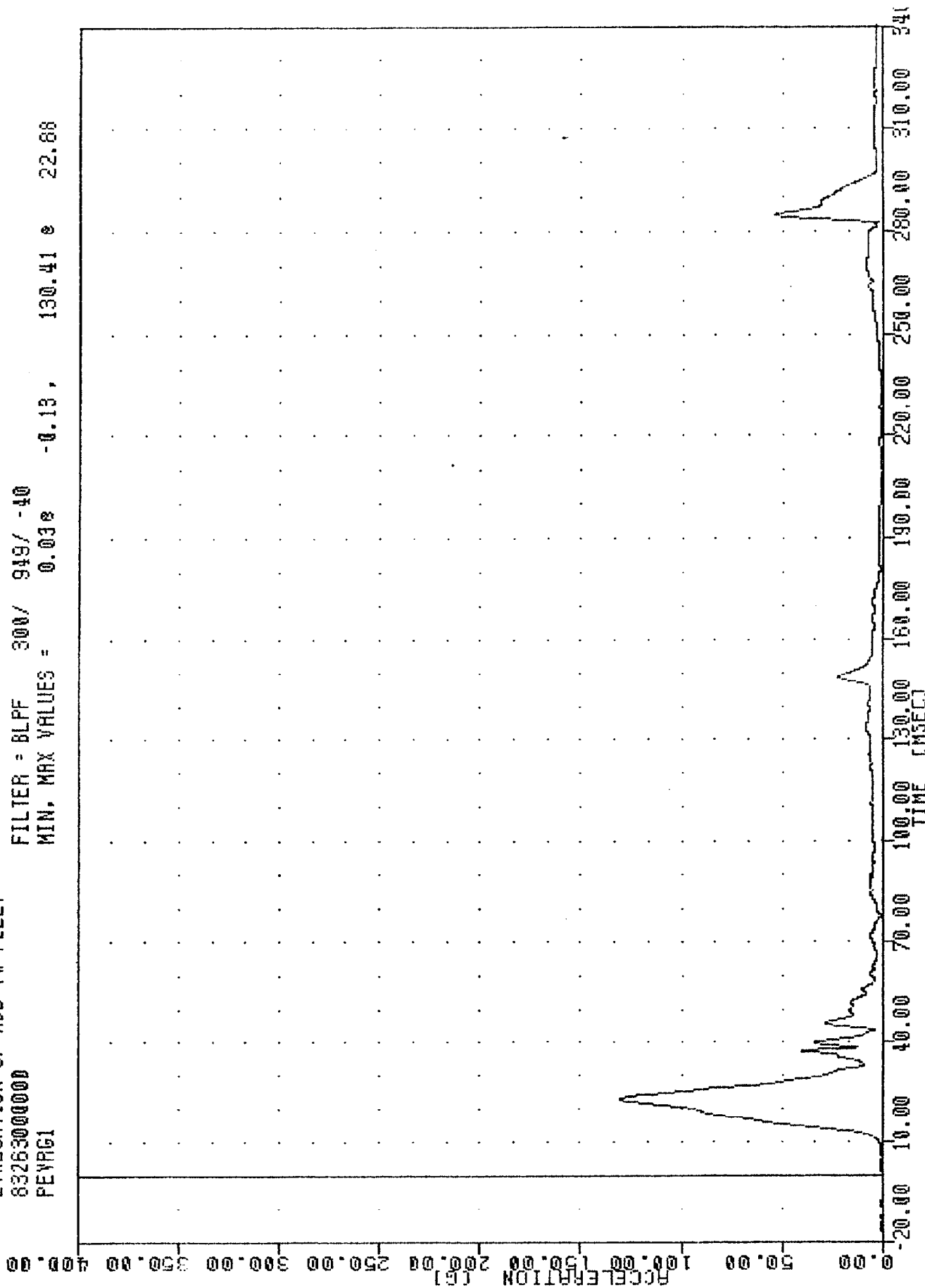


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS ACCELERATION Z AXIS

TRC
EVALUATION OF MDD VW FLEET
832630000000
PEVRG1

PLOT DATE 21-SEP-83 15:42:13

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = 0.038 -0.13, 130.41 e 22.68

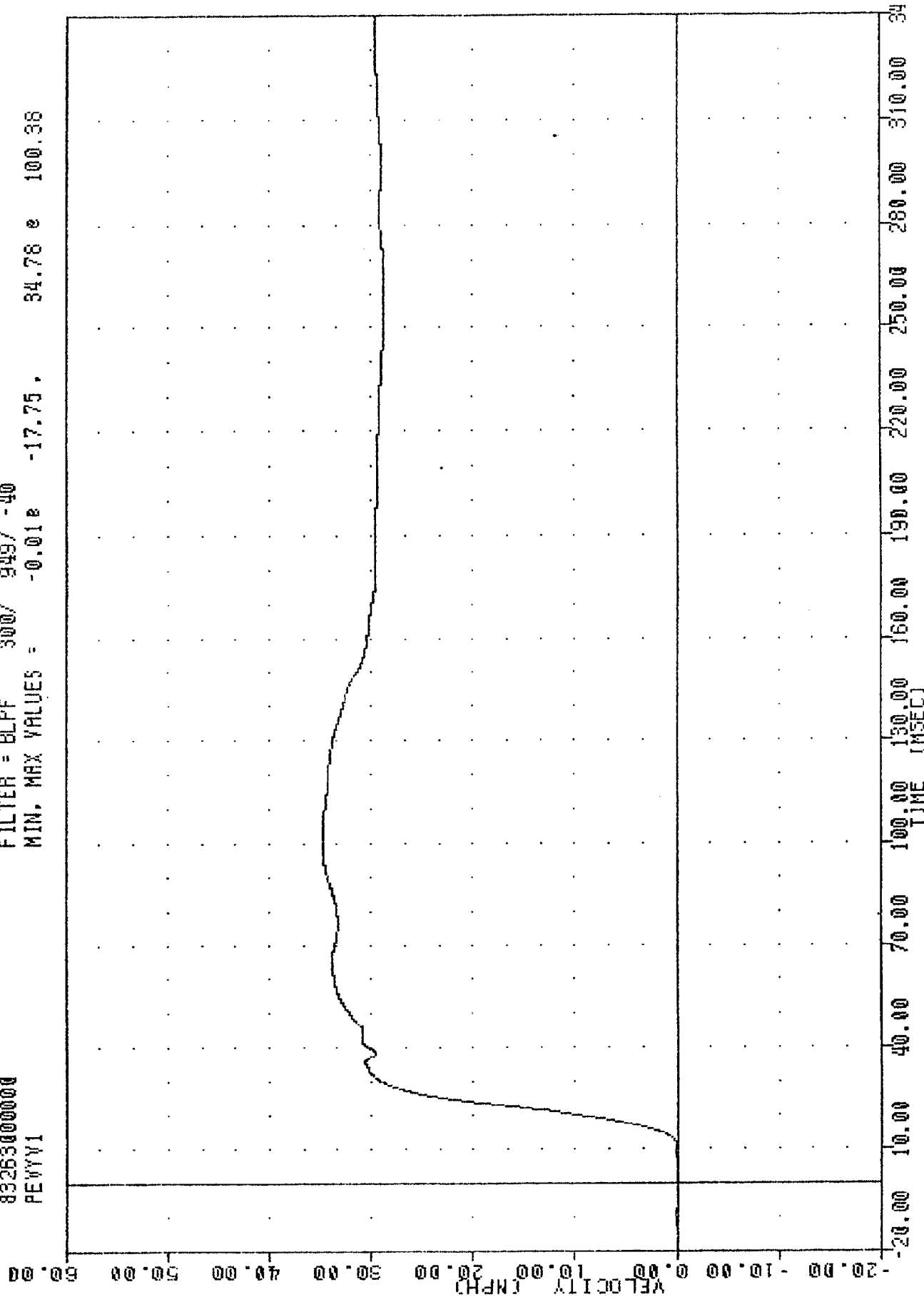


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DRIVER PELVIS RESULTANT

TRC
 EVALUATION OF MOD VN FLEET
 83263000000
 PEVYY1

PLOT DATE 22-SEP-83 14:41:09

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -0.018 -17.75. 34.78 e 100.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING PEVYGI

TRC

, 830920

EVALUATION OF MDD V/W FLEET

832630000000

HEADXG3

PLOT DATE

21-SEP-83

15:39:27

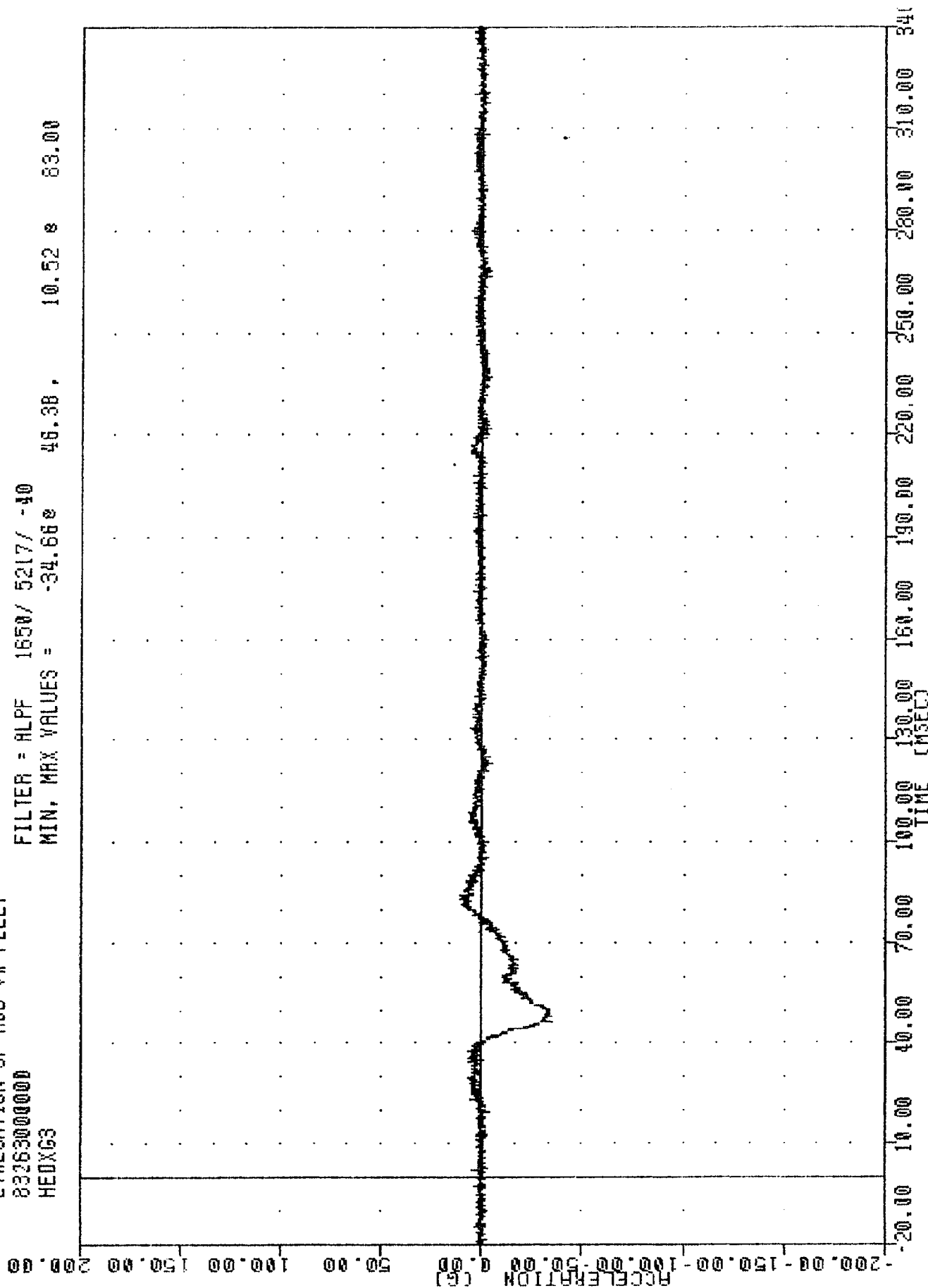
FILTER = ALPF 1650/ 5217/ -40

MIN, MAX VALUES = -34.66e

46.38,

10.52 e

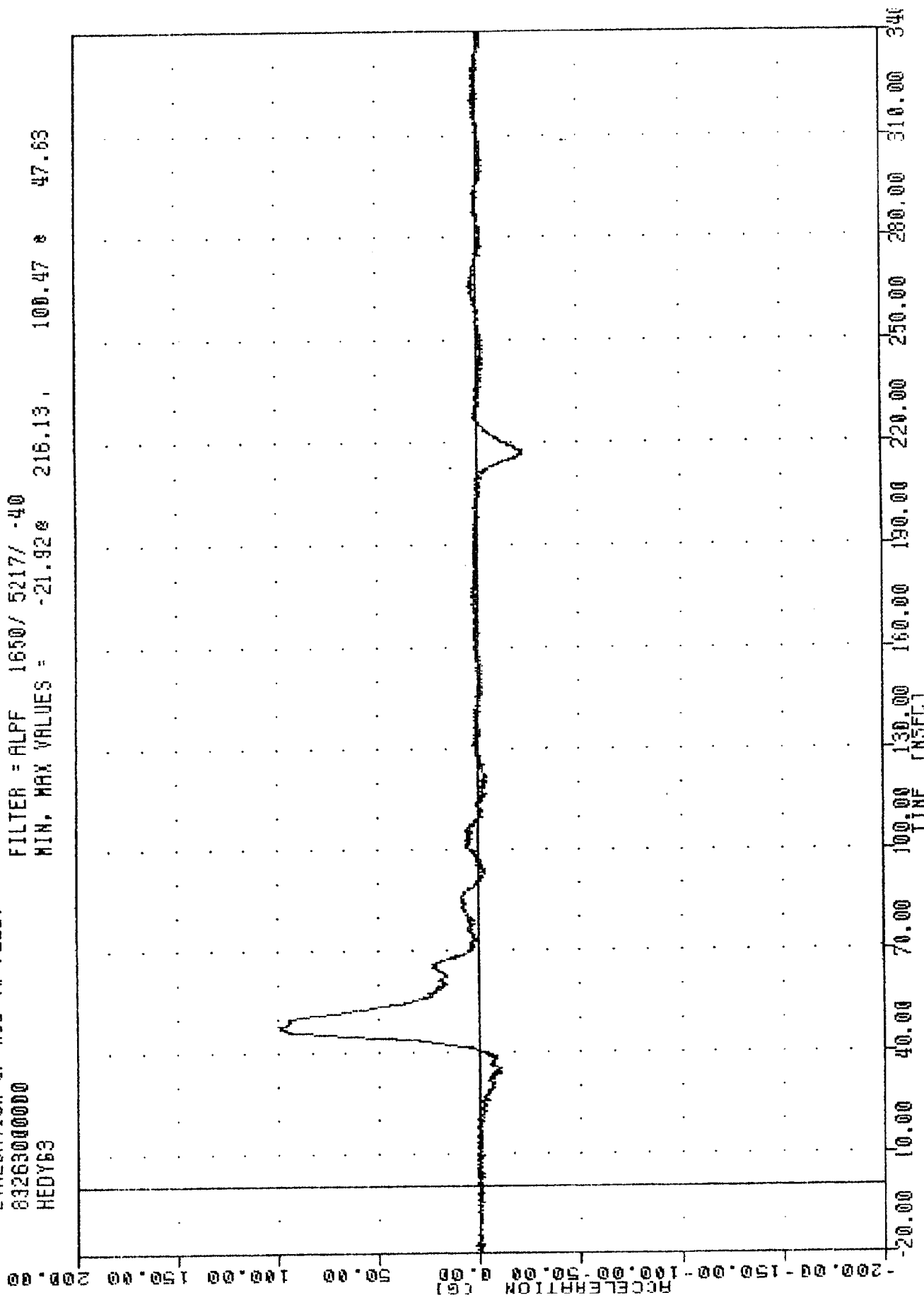
83.00



TAC
 EVALUATION OF MOD VN FLEET
 83263000000
 HEDY63

PLUT DATE 21-SEP-83 15:39:27

FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = -21.928 216.13 100.47 47.63

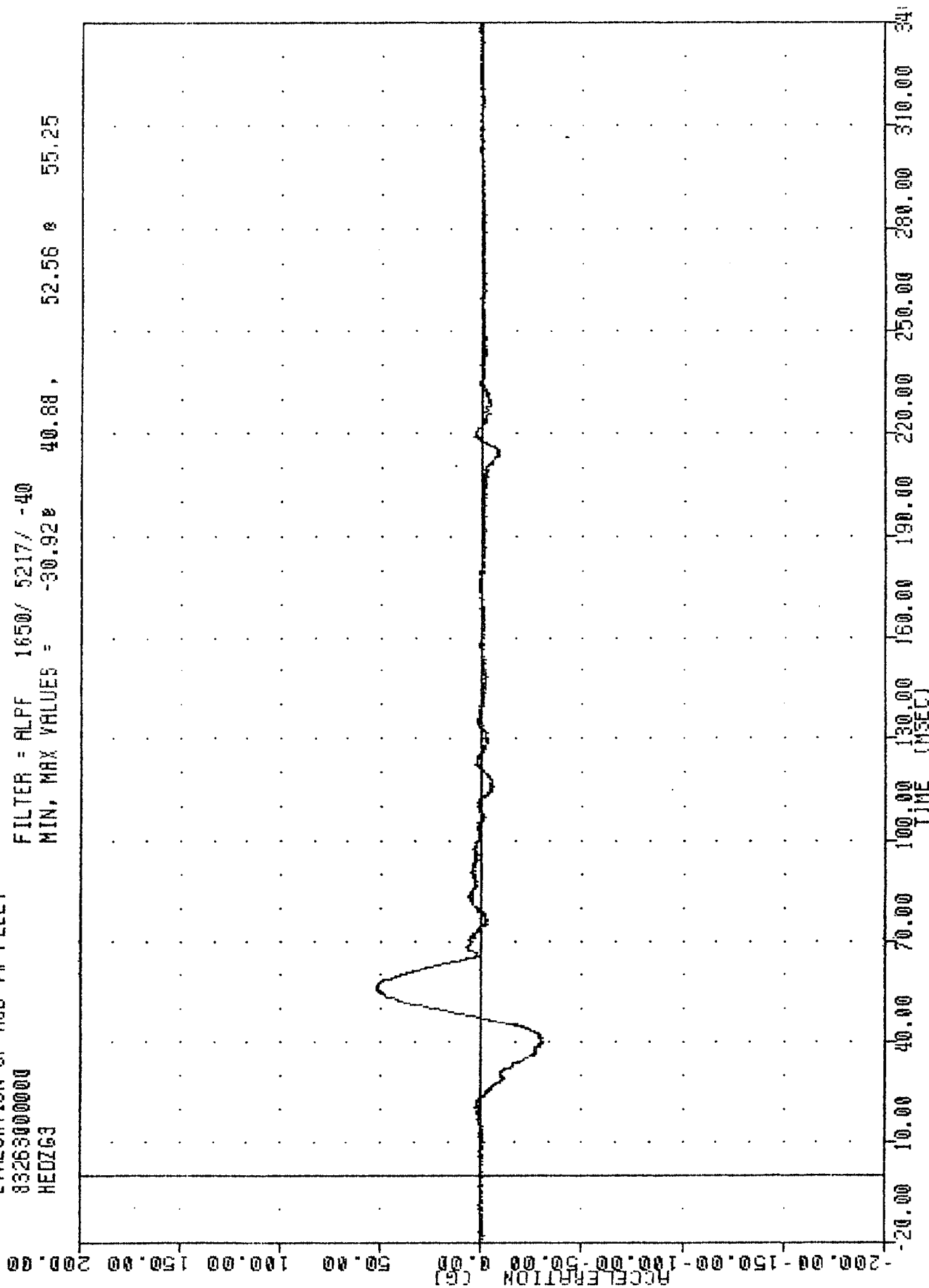


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD ACCELERATION Y AXIS

IPC
EVALUATION OF MOD YW FLEET
83263000000
HEDZG3

PLOT DATE 21-SEP-83 15:39:27

FILTER = ALPF 1650/ 5217/ -40
MIN, MAX VALUES = -30.92e 40.88, 52.56 e 55.25

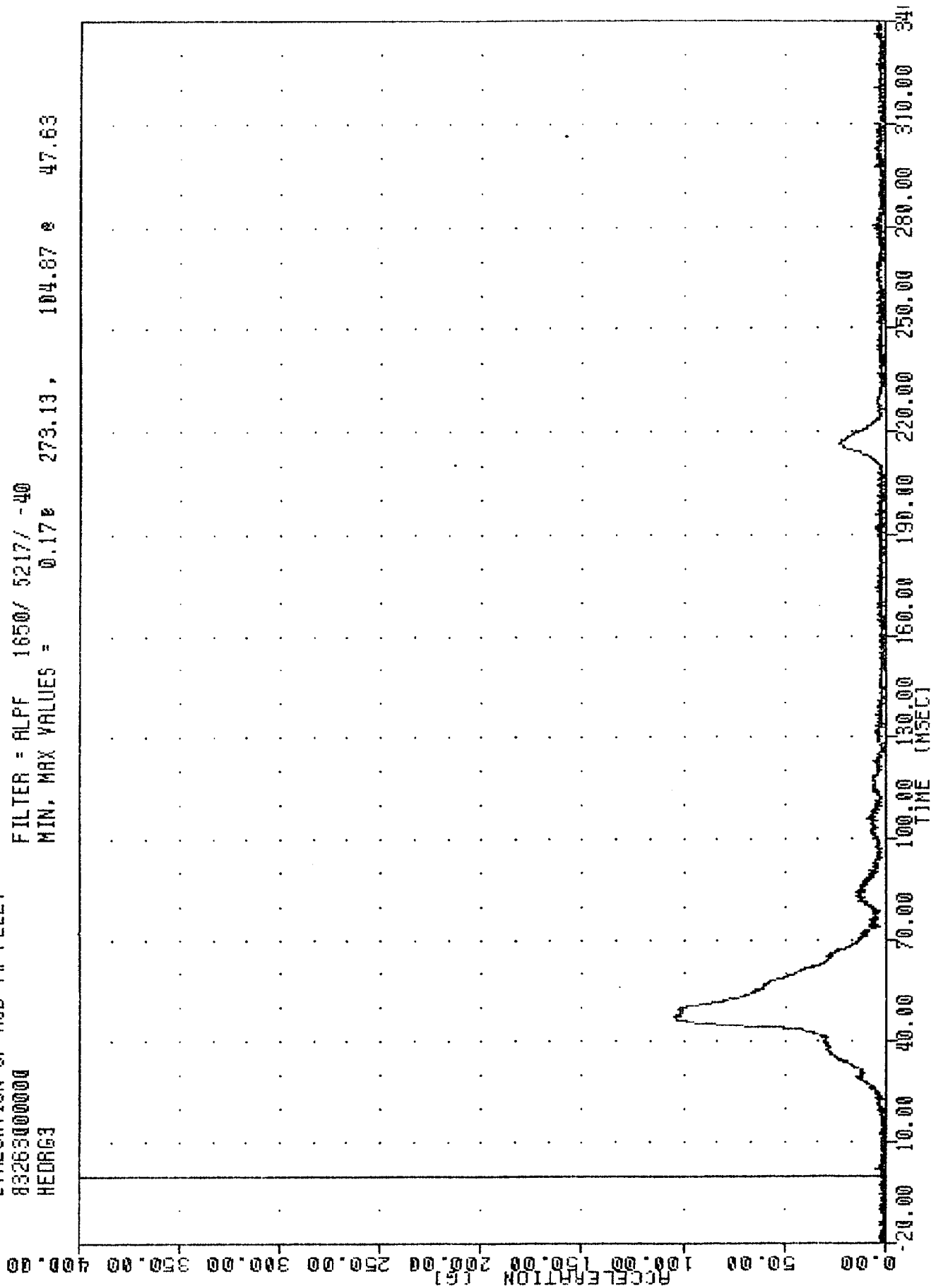


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER HEAD ACCELERATION Z AXIS

TRC
 EVALUATION OF MOD YW FLEET
 83263000000
 HEDRG3

PLOT DATE 21-SEP-83 15:42:13

FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = 0.17e 273.13, 104.87 e 47.63

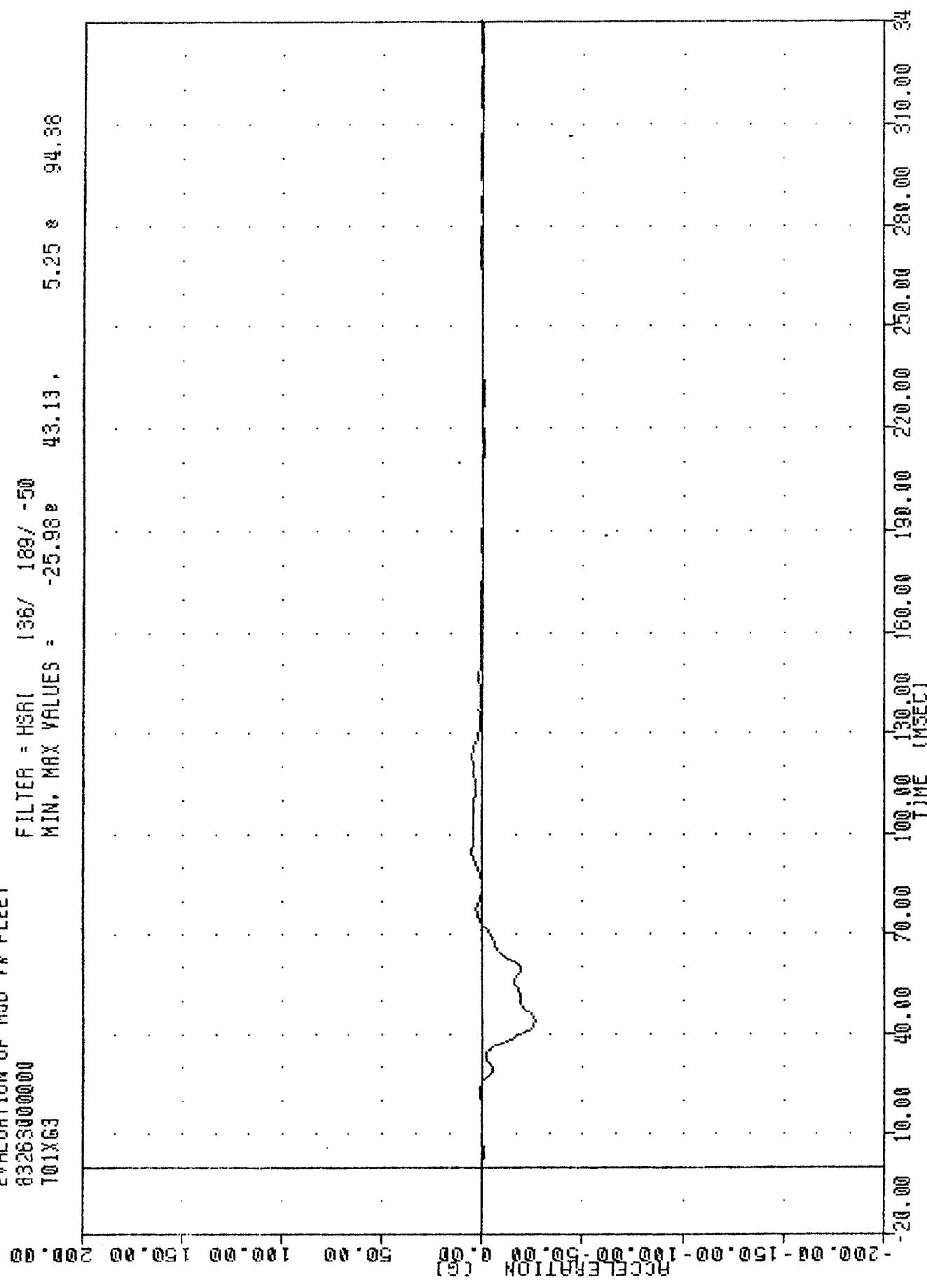


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER HEAD RESULTANT

INC 830920
 EVALUATION OF MOD VW FLEET
 83263000000
 T01X63

PLUT DATE 21 SEP 83 13:45:14

FILTER = H3R1 136/ 189/ -50
 MIN. MAX VALUES = -25.98e 43.13 5.25 e 94.38

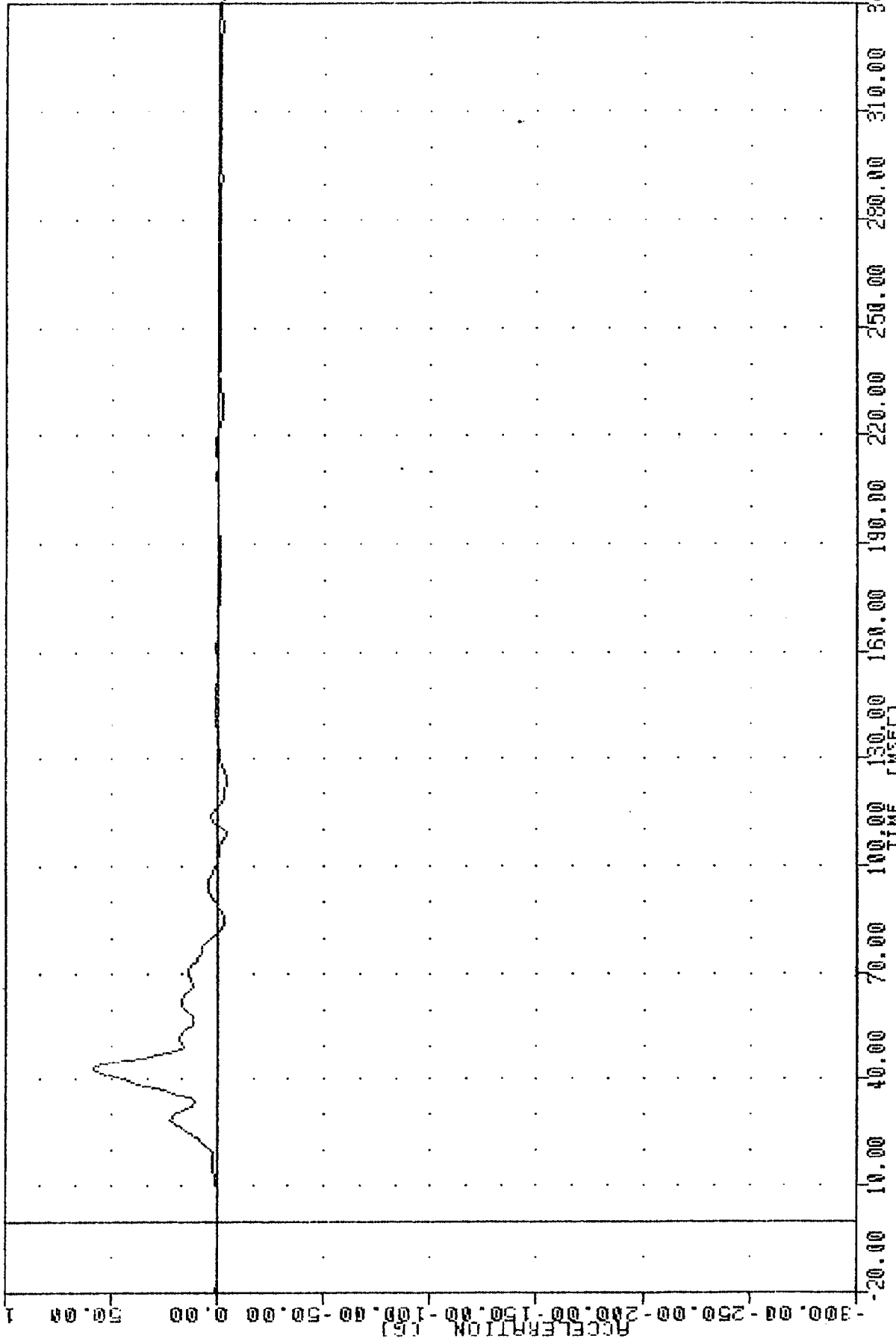


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE ACCELERATION X AXIS

TRC
EVALUATION OF MOD VW FLEET
83263000000
T01YG3

PLUT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -4.62e 123.12, 58.18 e 42.50



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

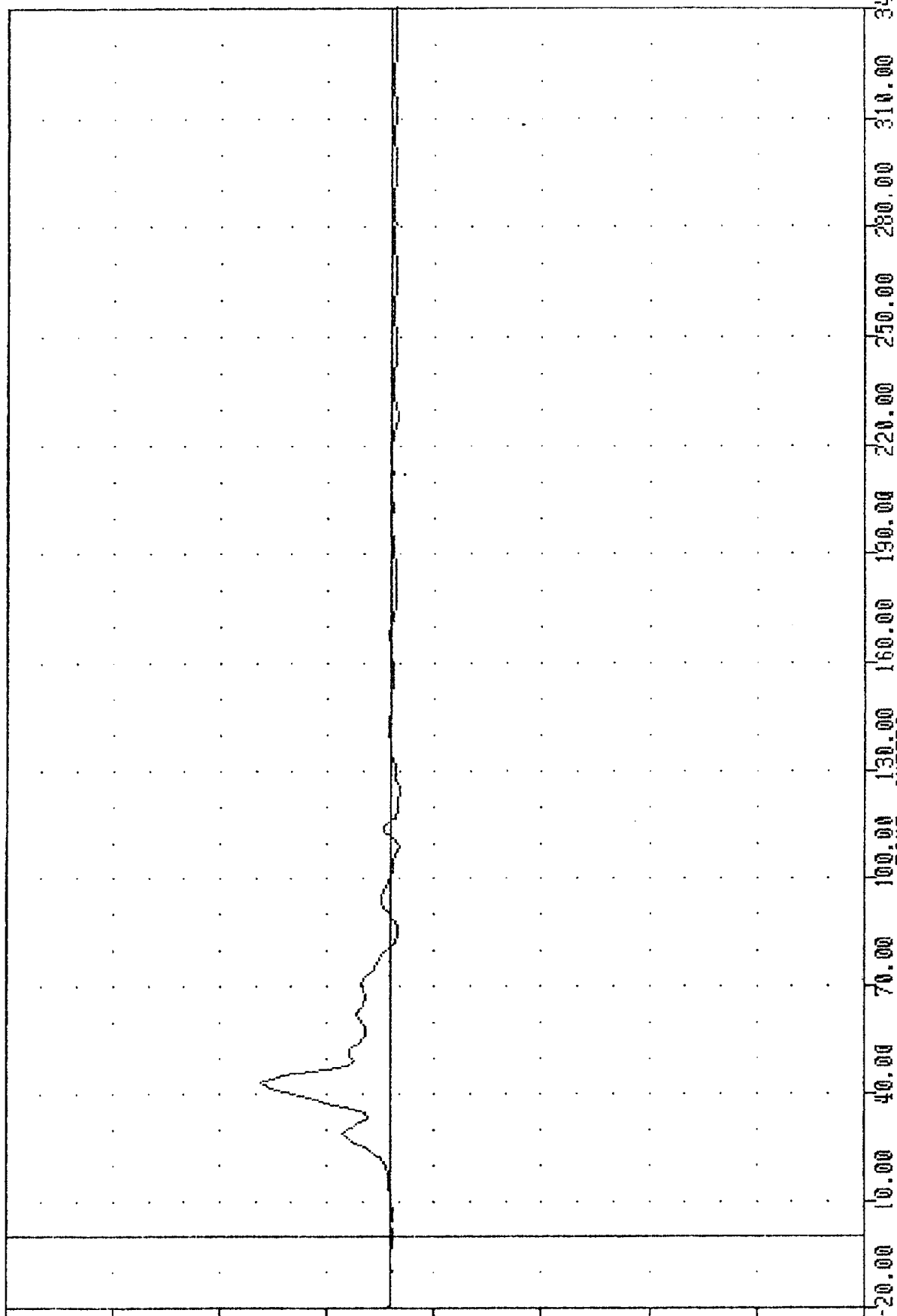
TAC
EVALUATION OF MOD VN FLEET
832630000000
T01Y6C

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -3.83e 123.75, 80.47 e 42.50

ACCELERATION (G)



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

PLUT DATE 21-SEP-83 15:45:14

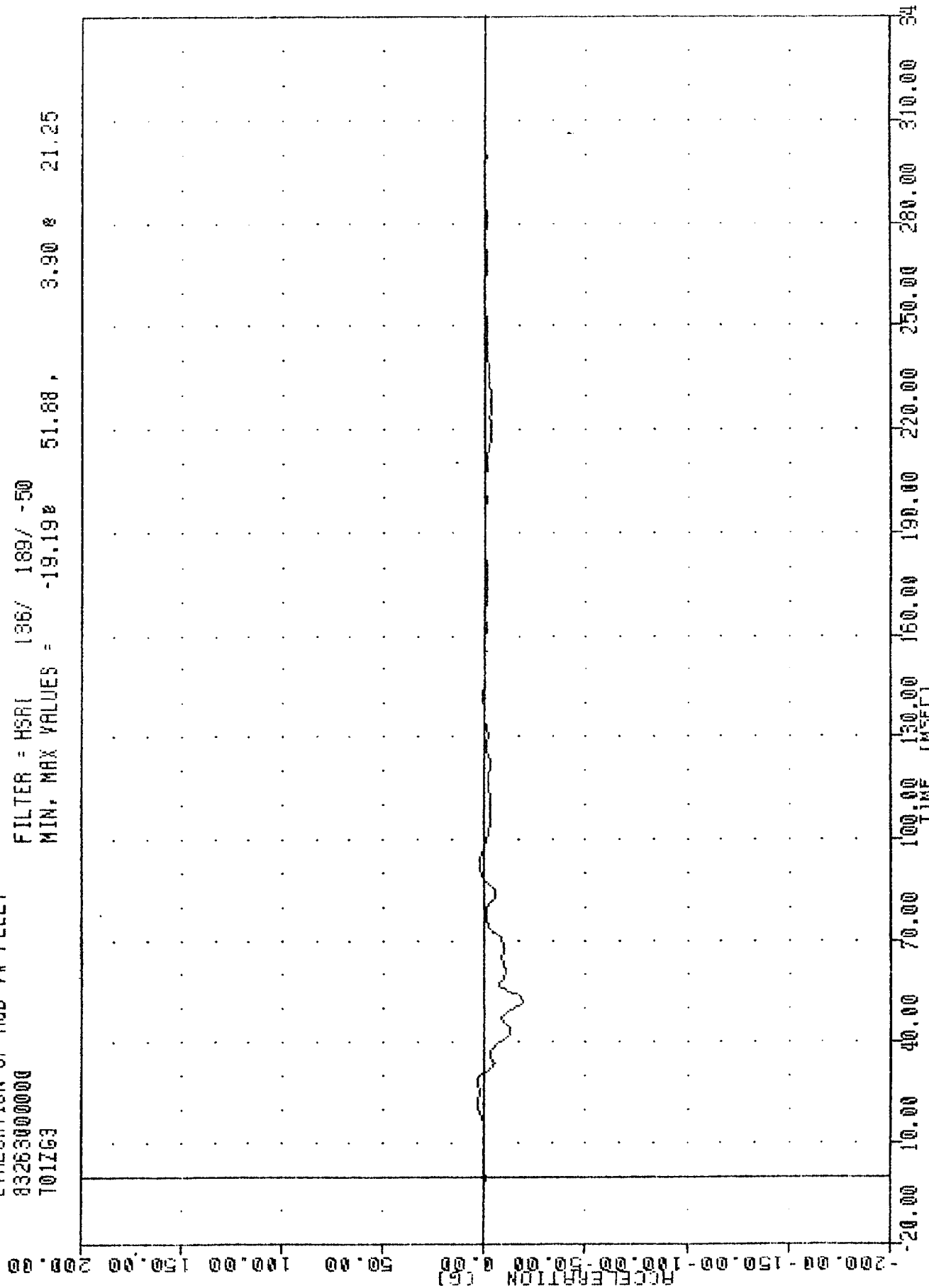
IRC 830920
EVALUATION OF MOD YW FLEET

83263000000

T01763

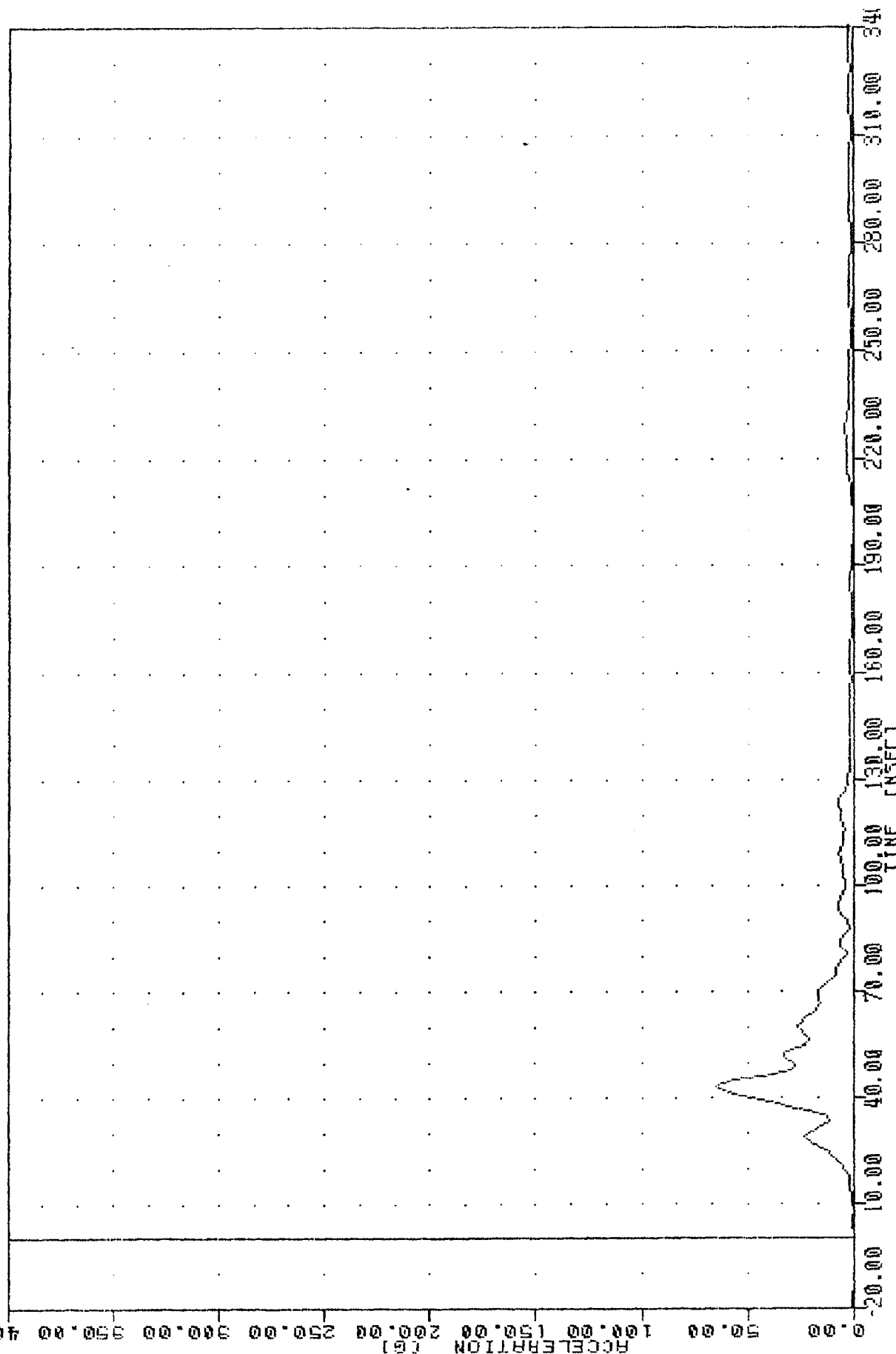
FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -19.19e 51.88, 3.90 e 21.25



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

TRC 830920 21 SEP 83 13:45:14
 EVALUATION OF MOD VW FLEET
 83263000000
 T01R63
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = 0.062 -7.50, 64.85 * 42.50

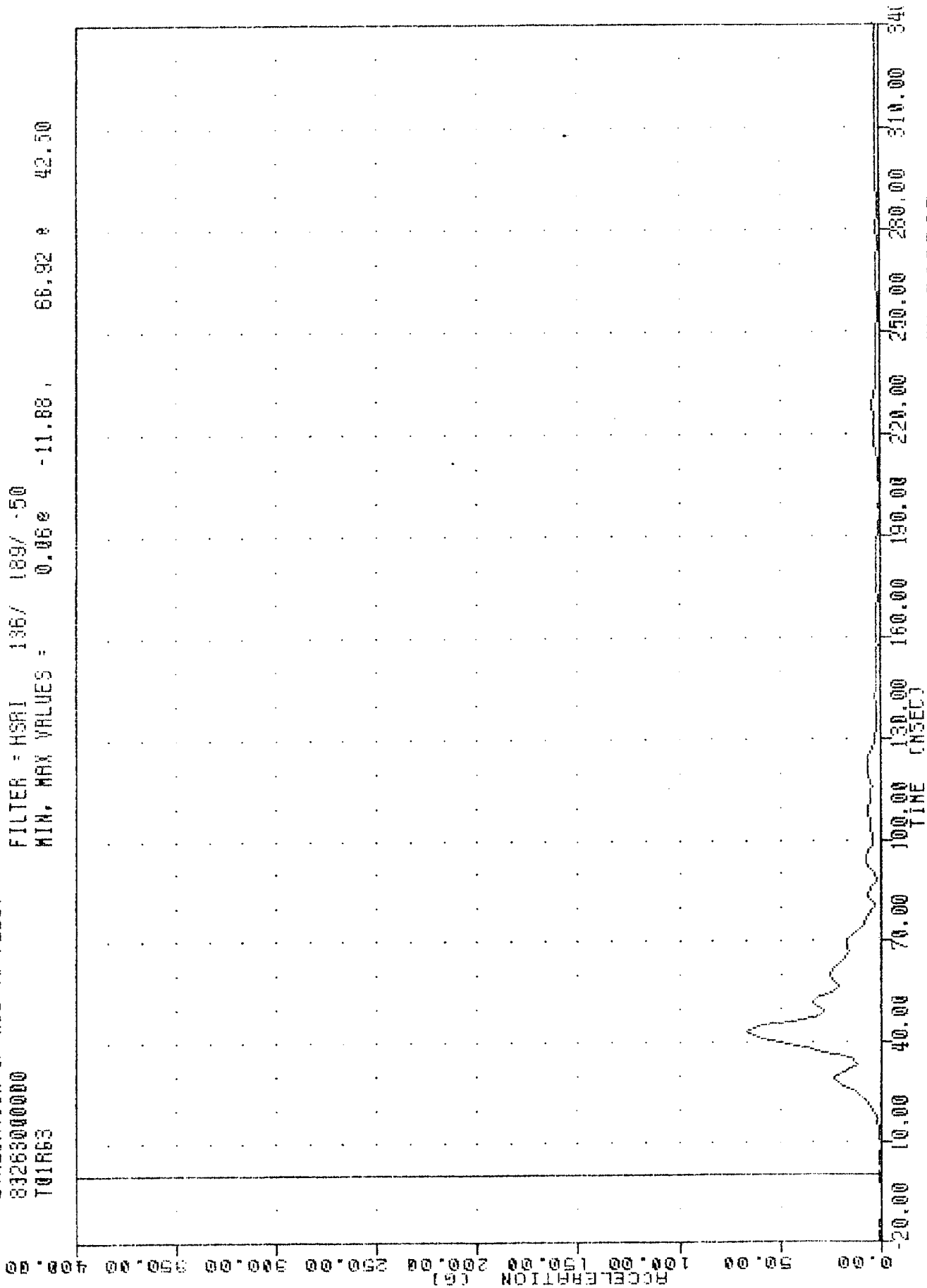


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER UPPER SPINE RESULTANT

TAC
 EVALUATION OF HOD VW FLEET
 83263000000
 T01R63

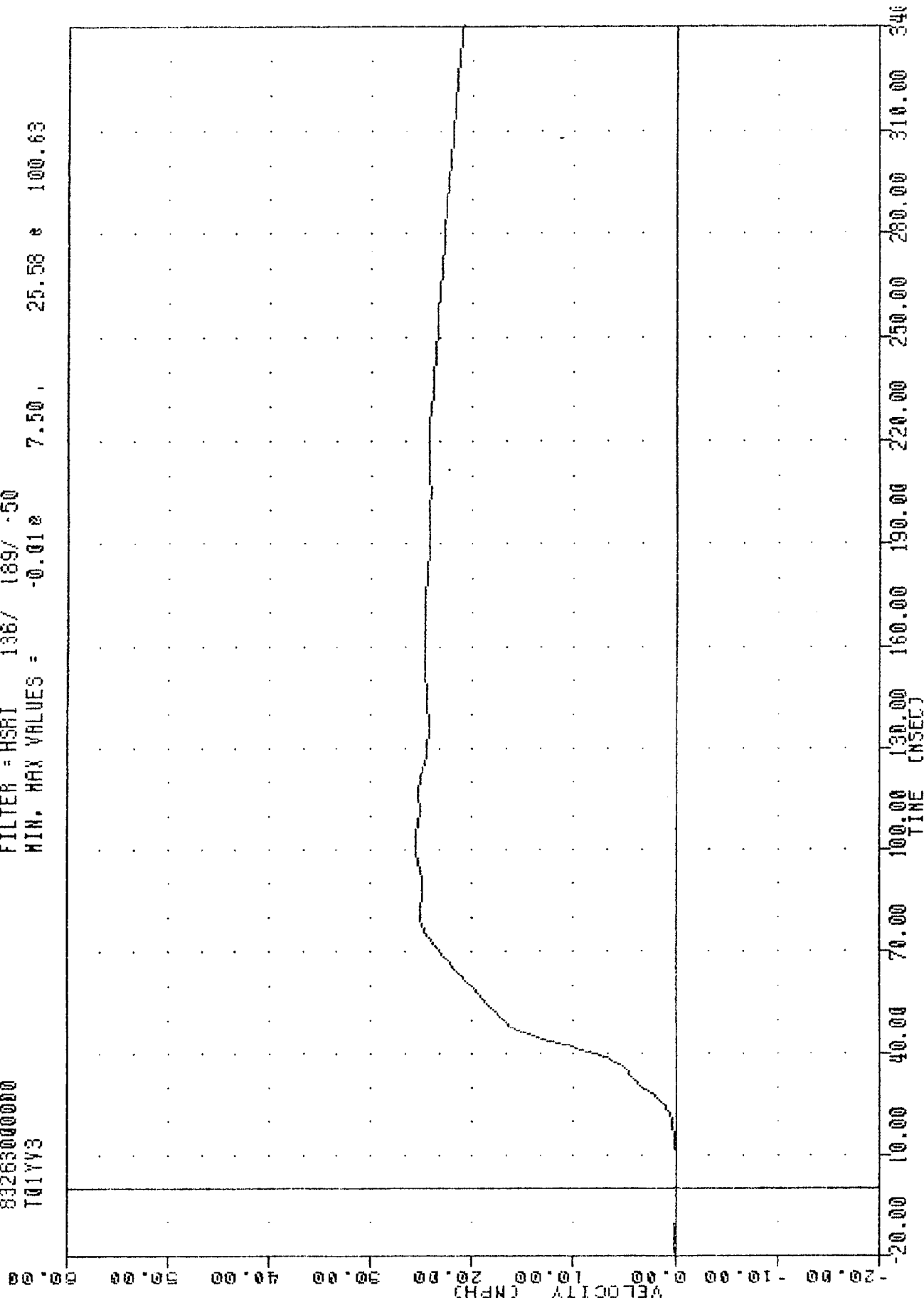
, 830920
 21-SEP-83 15:46:50

FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = 0.06e -11.88, 66.92 e 42.50



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

TRC
 EVALUATION OF HOG VN FLEET
 83263000000
 TQ1YV3
 830920
 FLUT DATE 22 SEP 03 14:12:38
 FILTER = HSRI 138/ 189/ -50
 MIN. MAX VALUES = -0.01 25.58 100.63

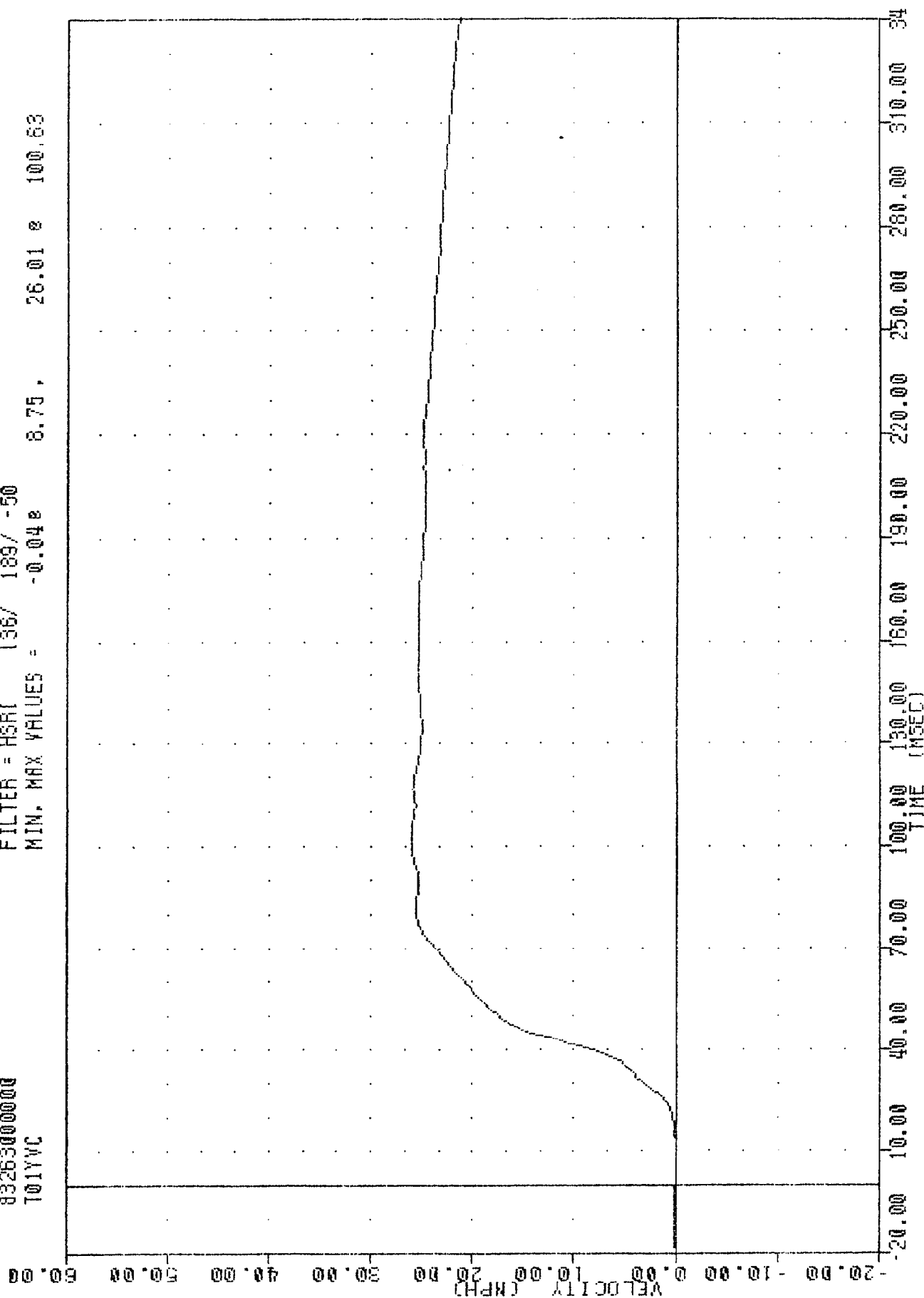


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING TQ1YV3

TRC
 EVALUATION OF MOD YW FLEET
 83263000000
 T01YVC

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSRI 136/ -50
 MIN. MAX VALUES = -0.048 8.75, 26.01 @ 100.63

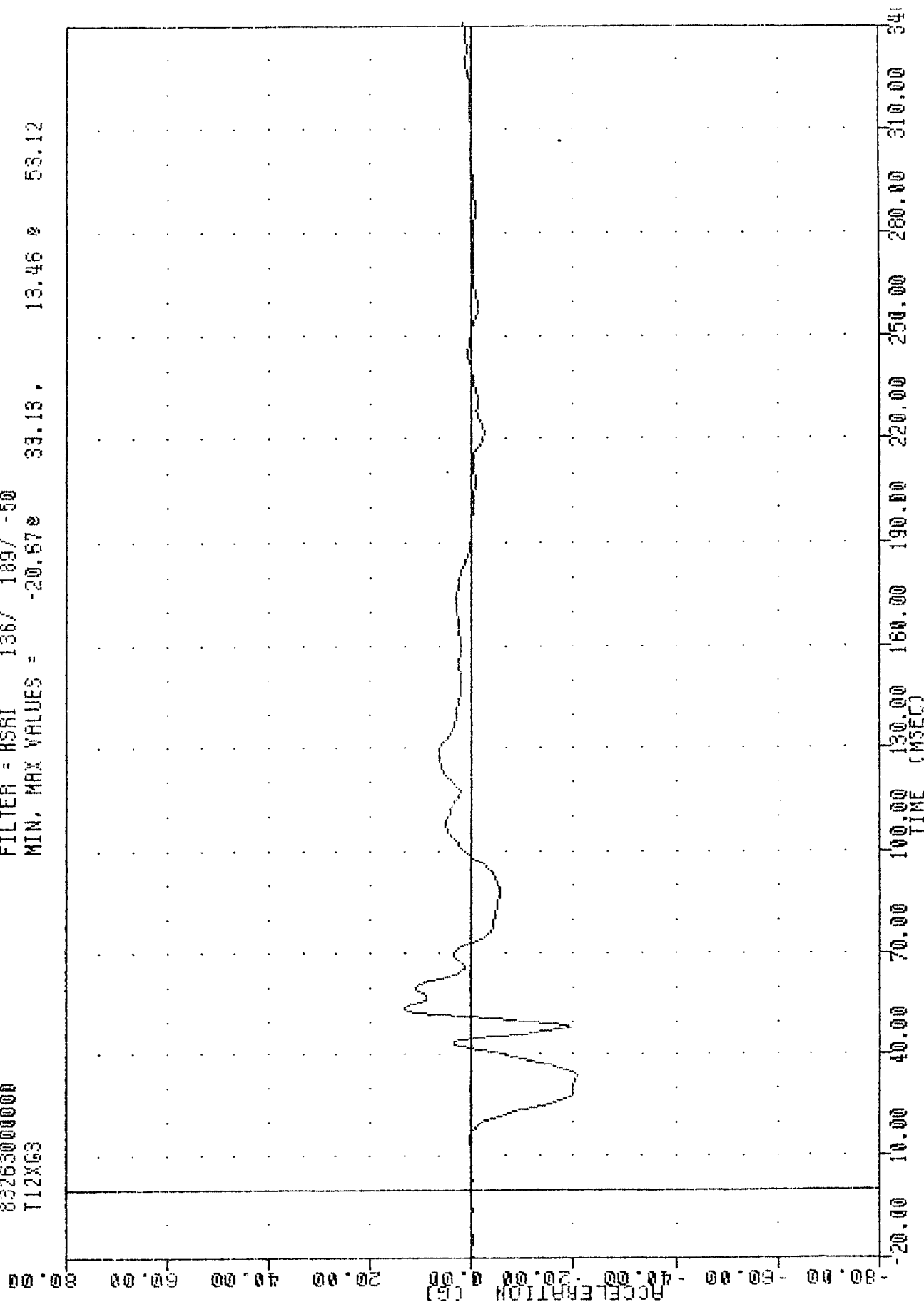


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T01YGC

TRC
 EVALUATION OF MOD VV FLEET
 83263000000
 T12X63

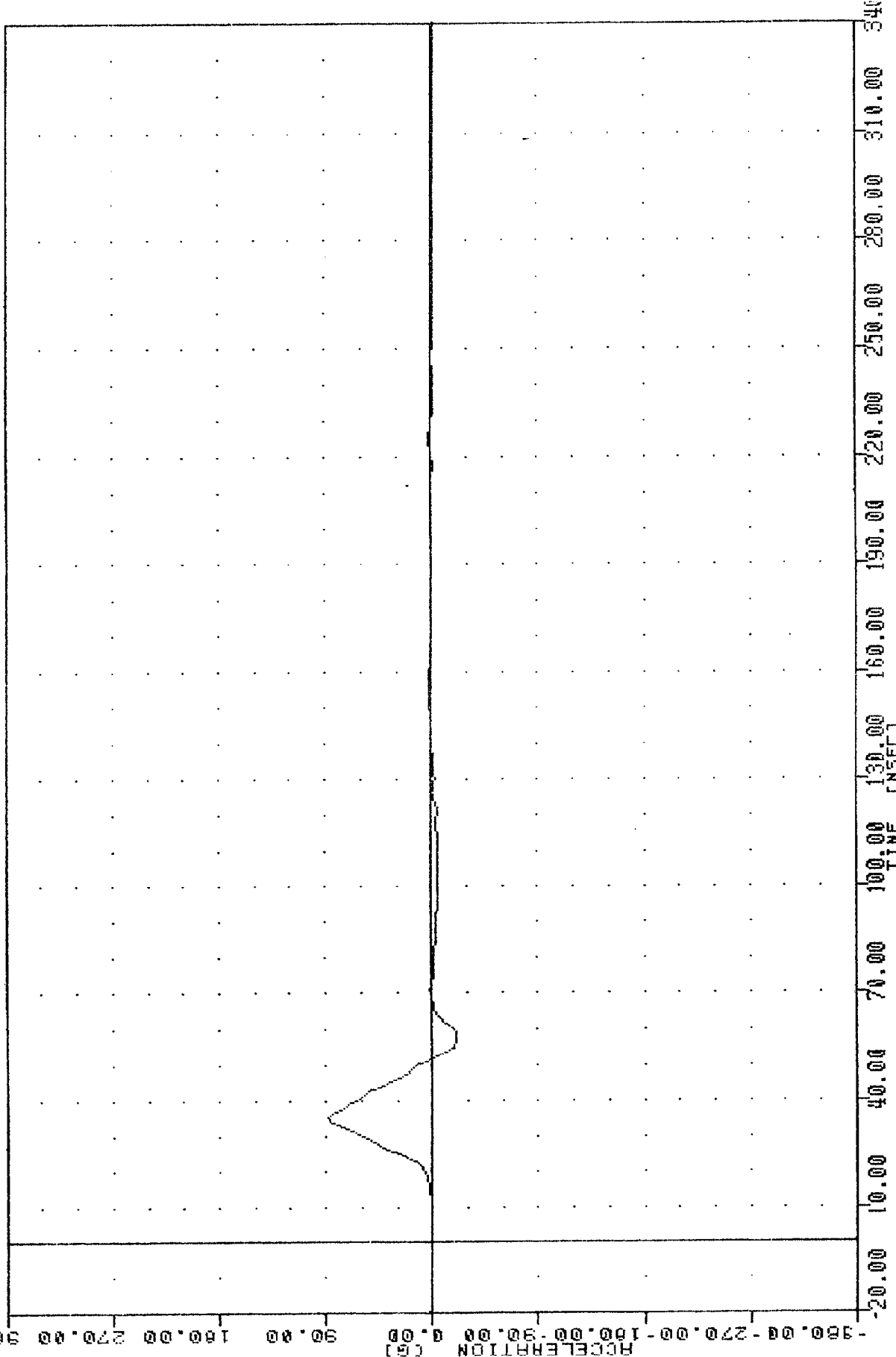
, 830920
 PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -20.67 33.13, 13.46 53.12



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

TRC
 EVALUATION OF MOD VV FLEET
 83263000000
 T12Y63
 830920
 PLUT DATE 21-SEP-83 15:45:14
 FILTER = HSRI 136/ 189/ .50
 MIN, MAX VALUES = -21.46 57.50 34.38

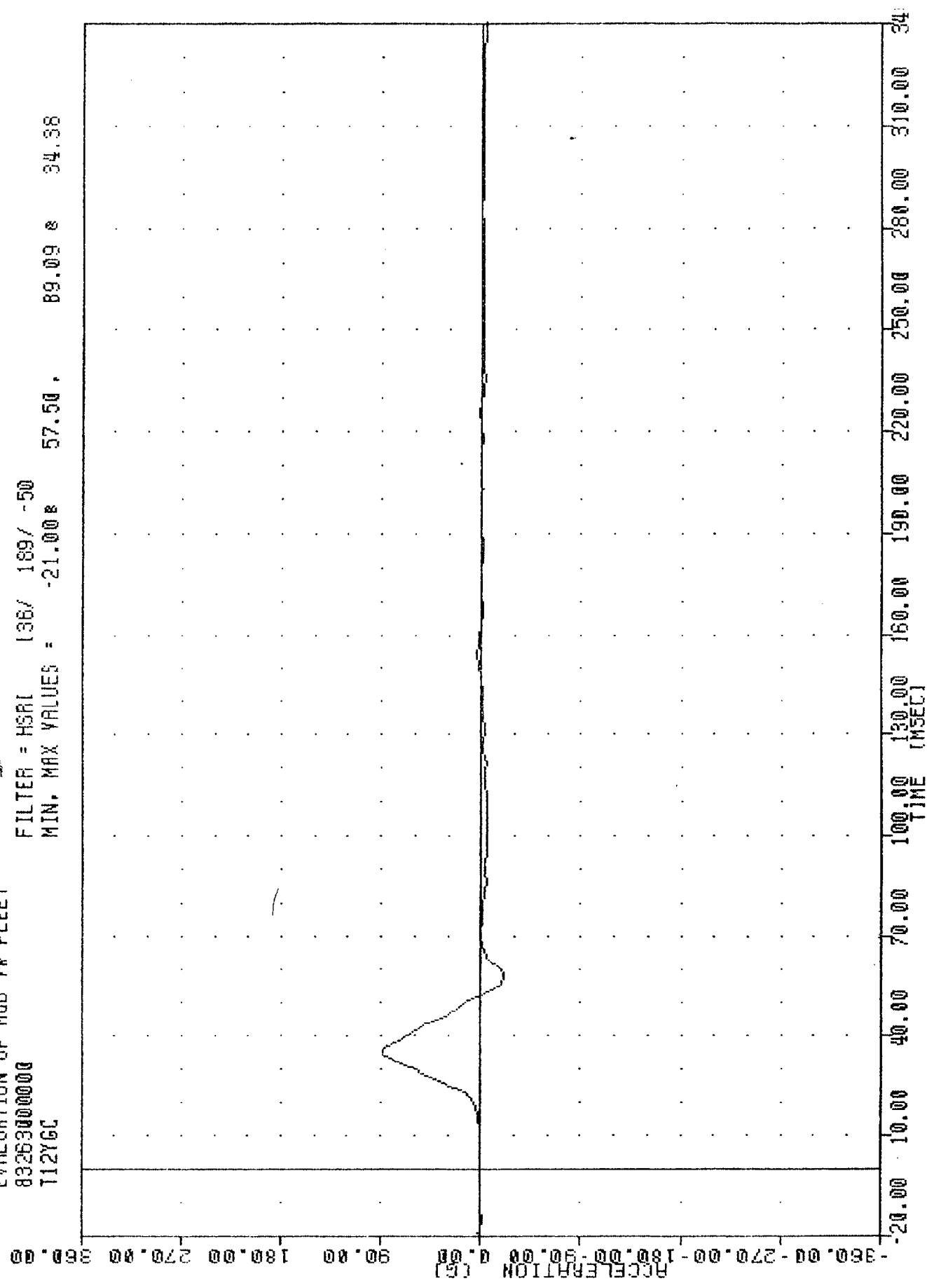


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LOWER SPINE ACCELERATION Y AXIS

INC
EVALUATION OF MOD YW FLEET
83263000000
T12Y6C

830820
PLOT DATE 21 SEP 68 13:45.14

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -21.00% 57.50, 89.09 s 34.38

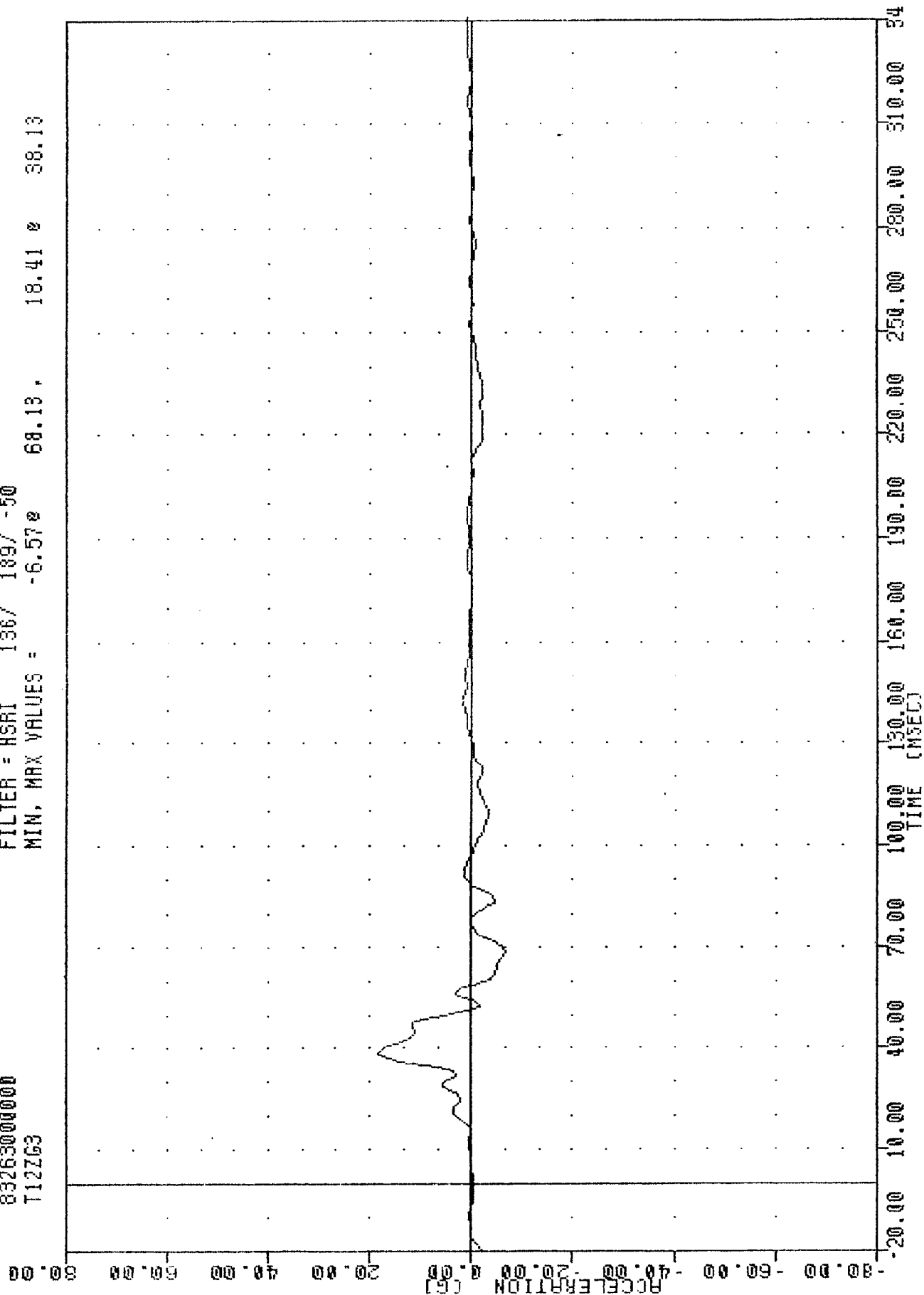


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE ACCELERATION #2 Y AXIS

TRC
EVALUATION OF MDD VW FLEET
832630000000
T12Z63

PLUT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -6.572 68.13 18.41 38.13

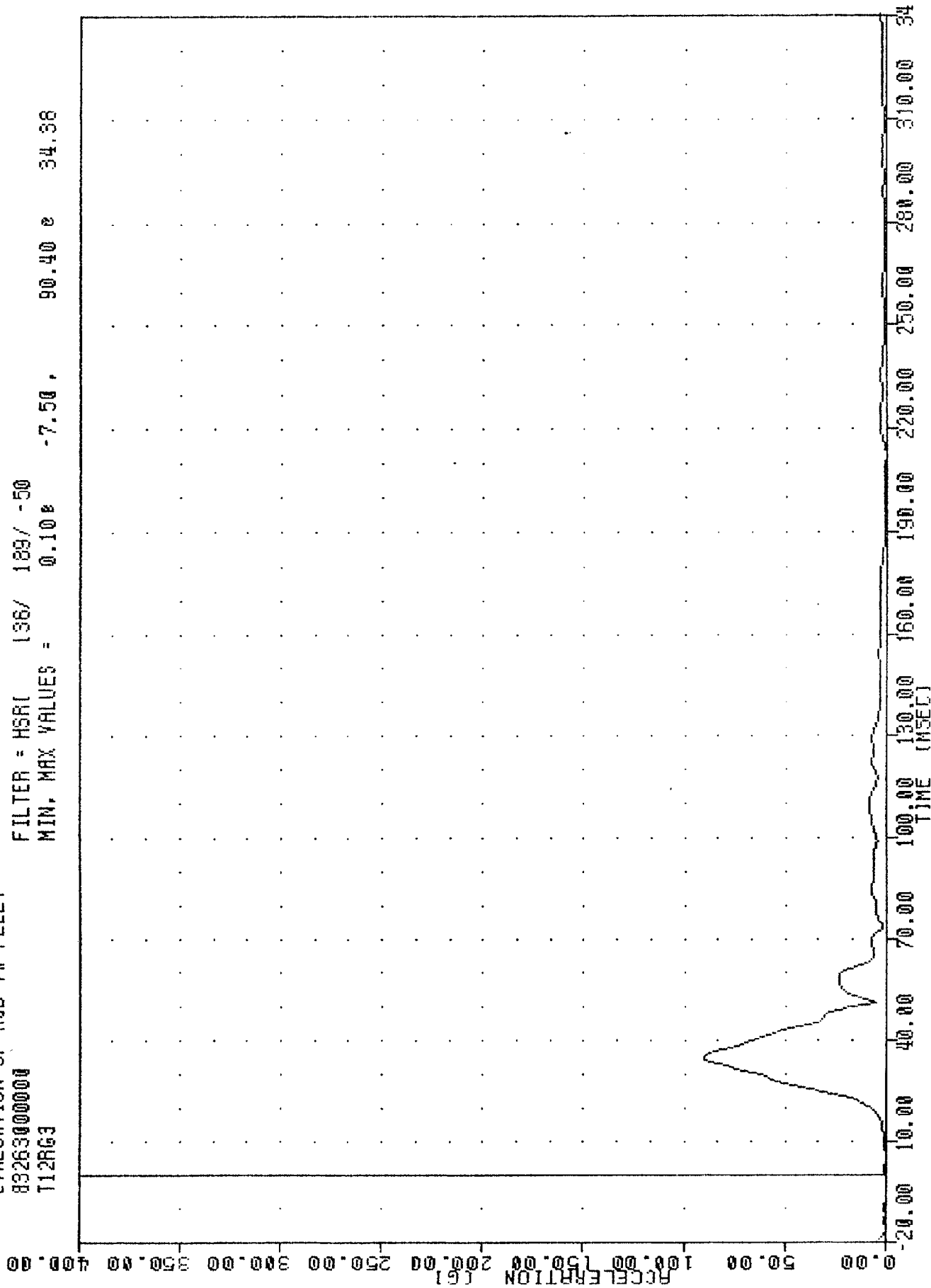


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE ACCELERATION Z AXIS

TRC
EVALUATION OF MOD YW FLEET
832630000000
T12RG3

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSR(136/ 129/ -50
MIN. MAX VALUES = 0.10e -7.50, 90.40 e 34.38

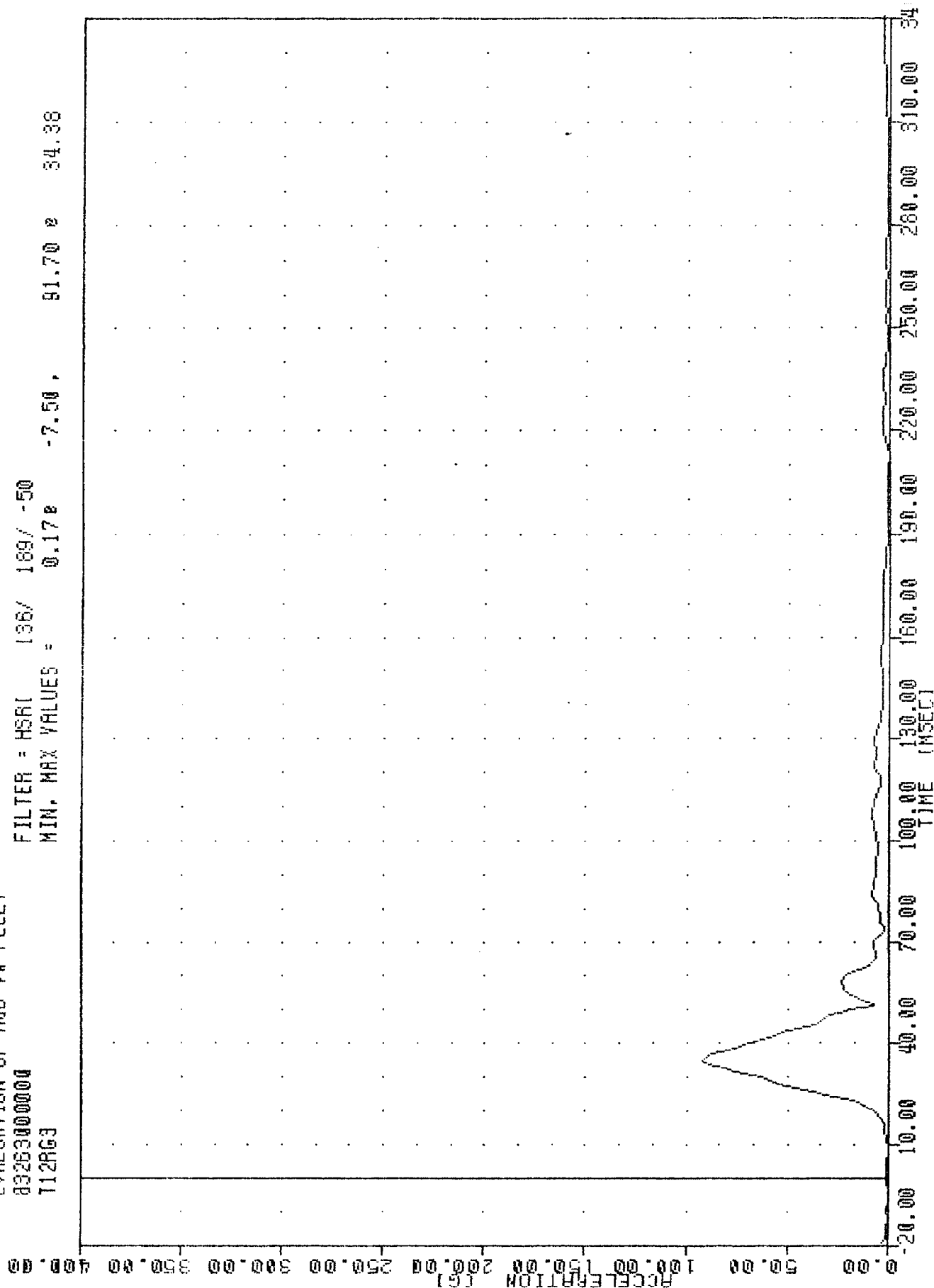


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE RESULTANT

TRC
EVALUATION OF MOD VV FLEET
83253000000
T12R63

PLOT DATE 21-SEP-83 15:46:50

FILTER = HSRI 136/ 169/ -50
MIN. MAX VALUES = 0.17e -2.50, 91.70 e 34.38

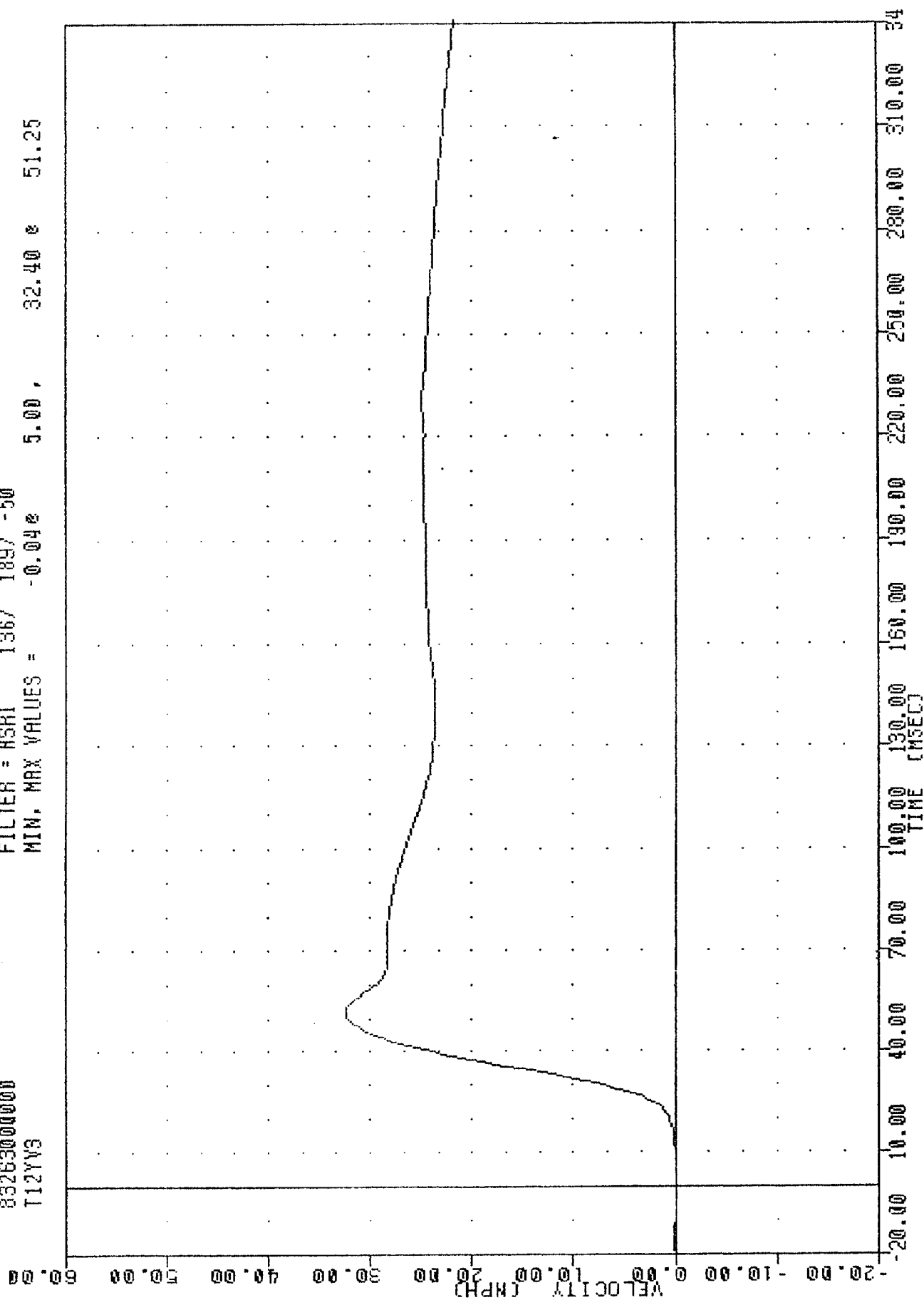


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LOWER SPINE RESULTANT USING T12Y6C

TRC
EVALUATION OF M00 VW FLEET
83263000000
T12YV3

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -0.040 5.00, 32.40 51.25



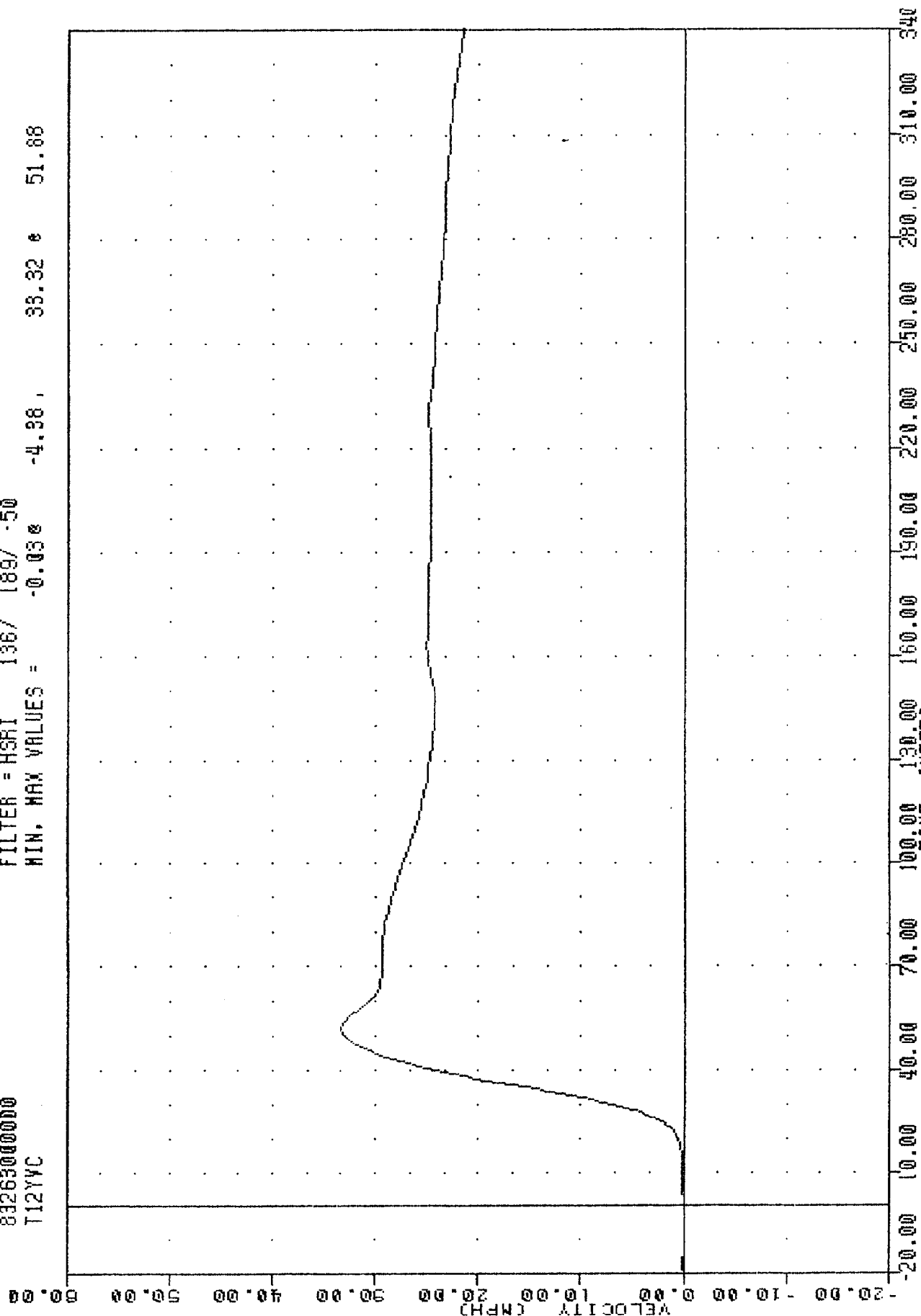
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING T12Y63

TRC
 EVALUATION OF MOD VN FLEET
 83263000000
 T12YVC

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.03 33.32 51.88



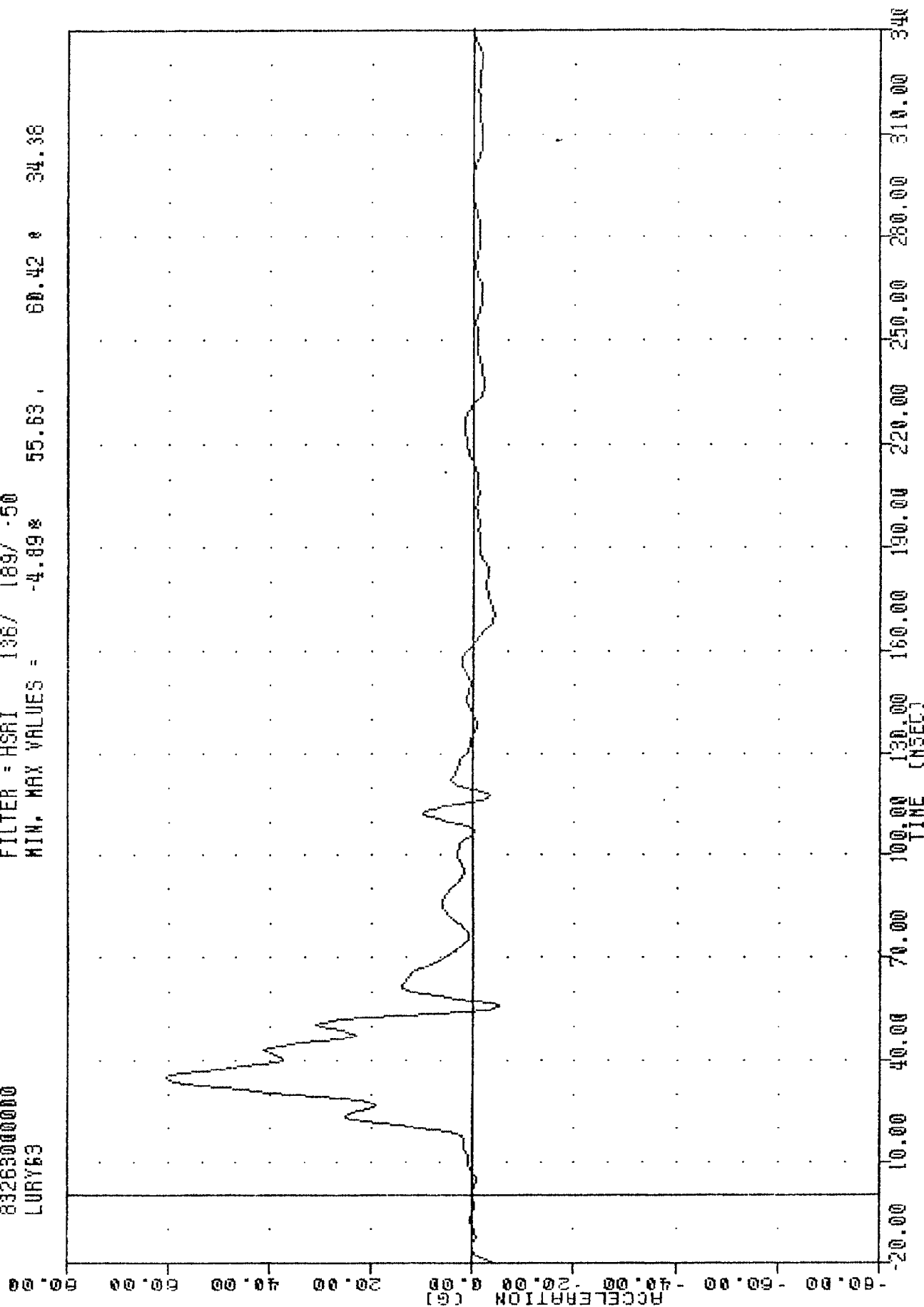
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING T12YGC

THC
EVALUATION OF MOD VN FLEET
83263000000
LURY63

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -4.89% 55.63 , 60.42 , 34.36

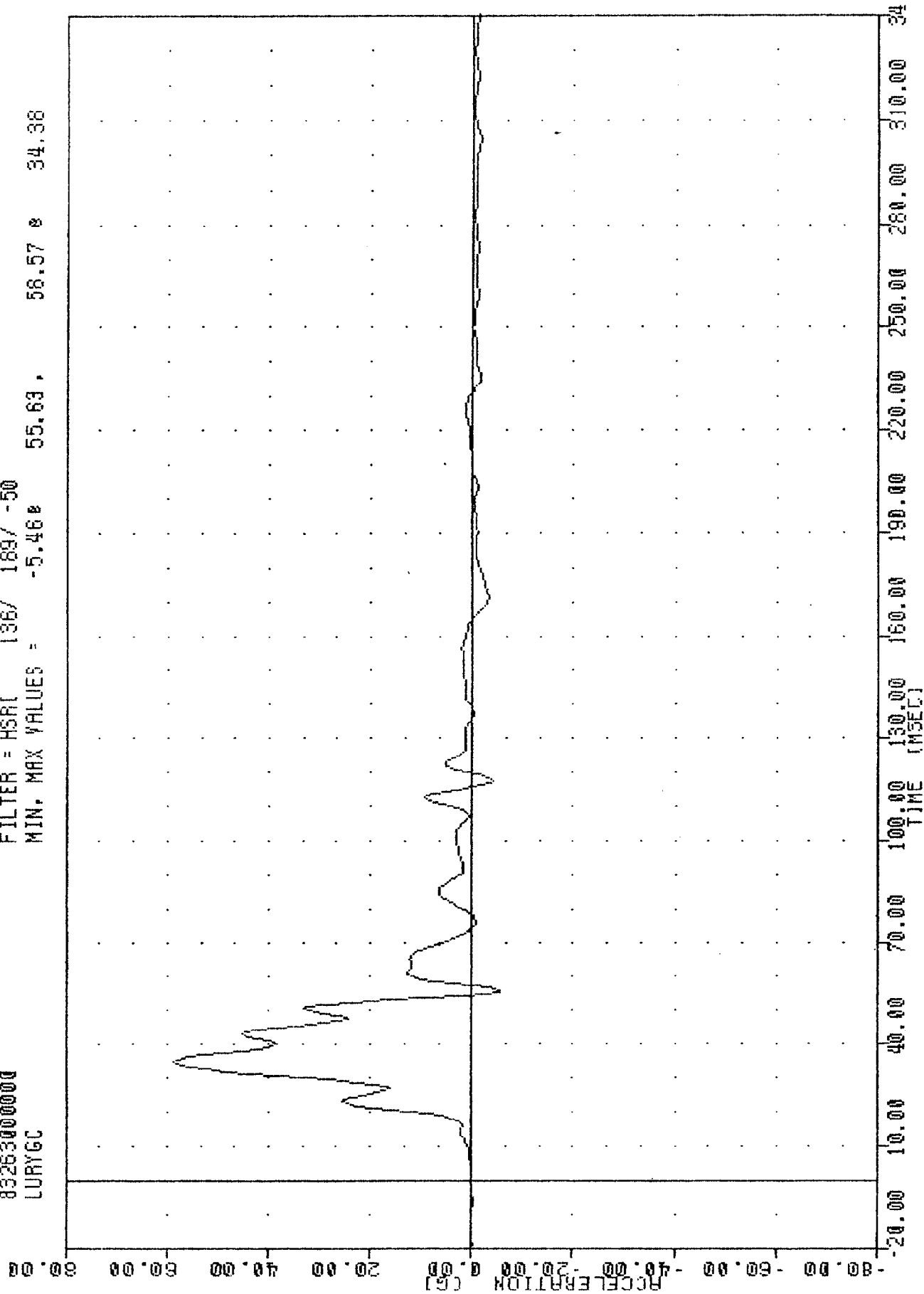


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

IRC
EVALUATION OF MOD YW FLEET
83263000000
LURYGC

PLOT DATE 21-SEP-83 15:45:14

FILTER = HSRL 136/ 189/ -50
MIN. MAX VALUES = -5.46e 55.63, 58.57 e 34.38



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

TRC 830920 22-SEP-83 14:12:39

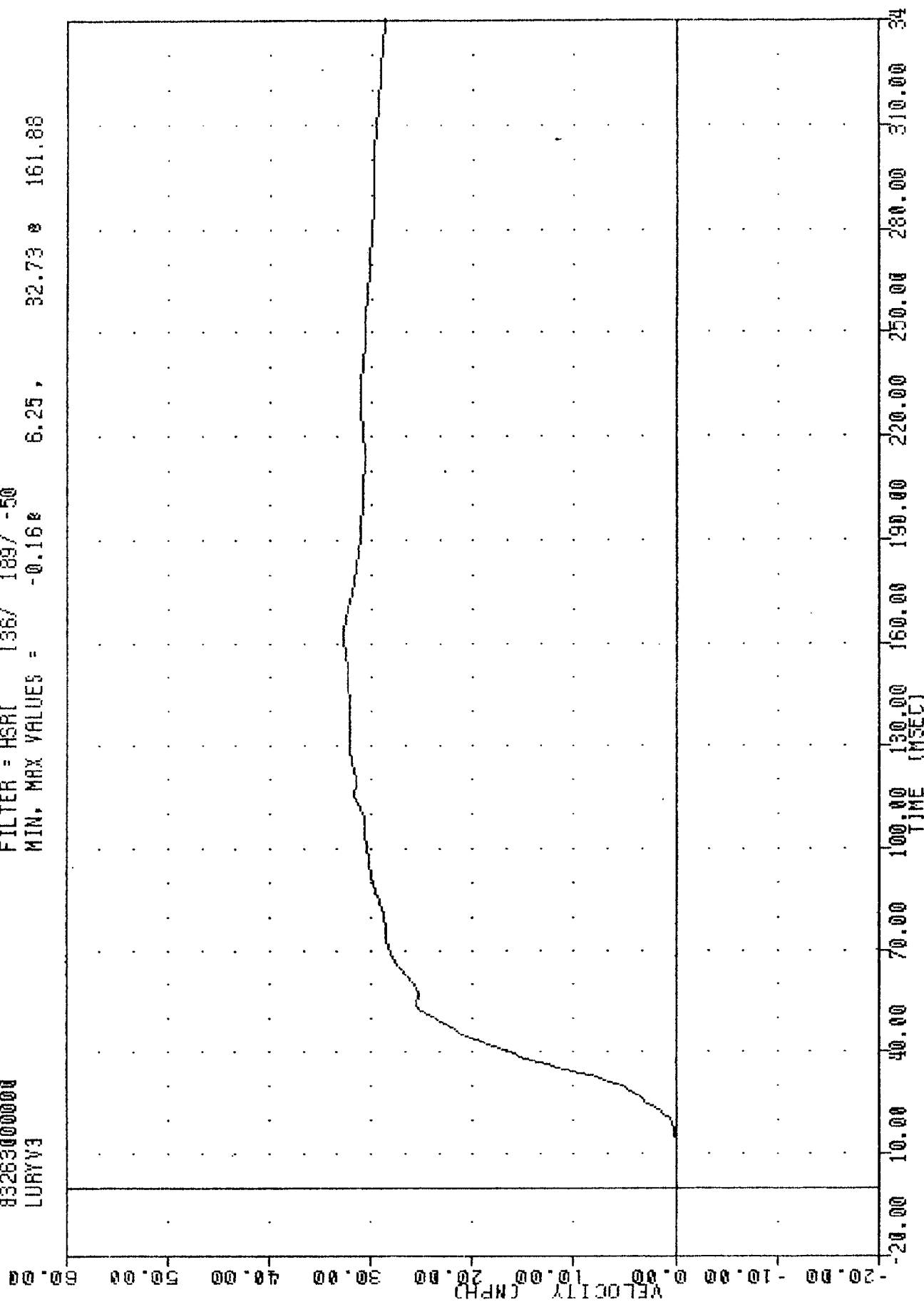
EVALUATION OF MOD YW FLEET

832630000000

LURYV3

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.16 6.25, 32.73 161.88

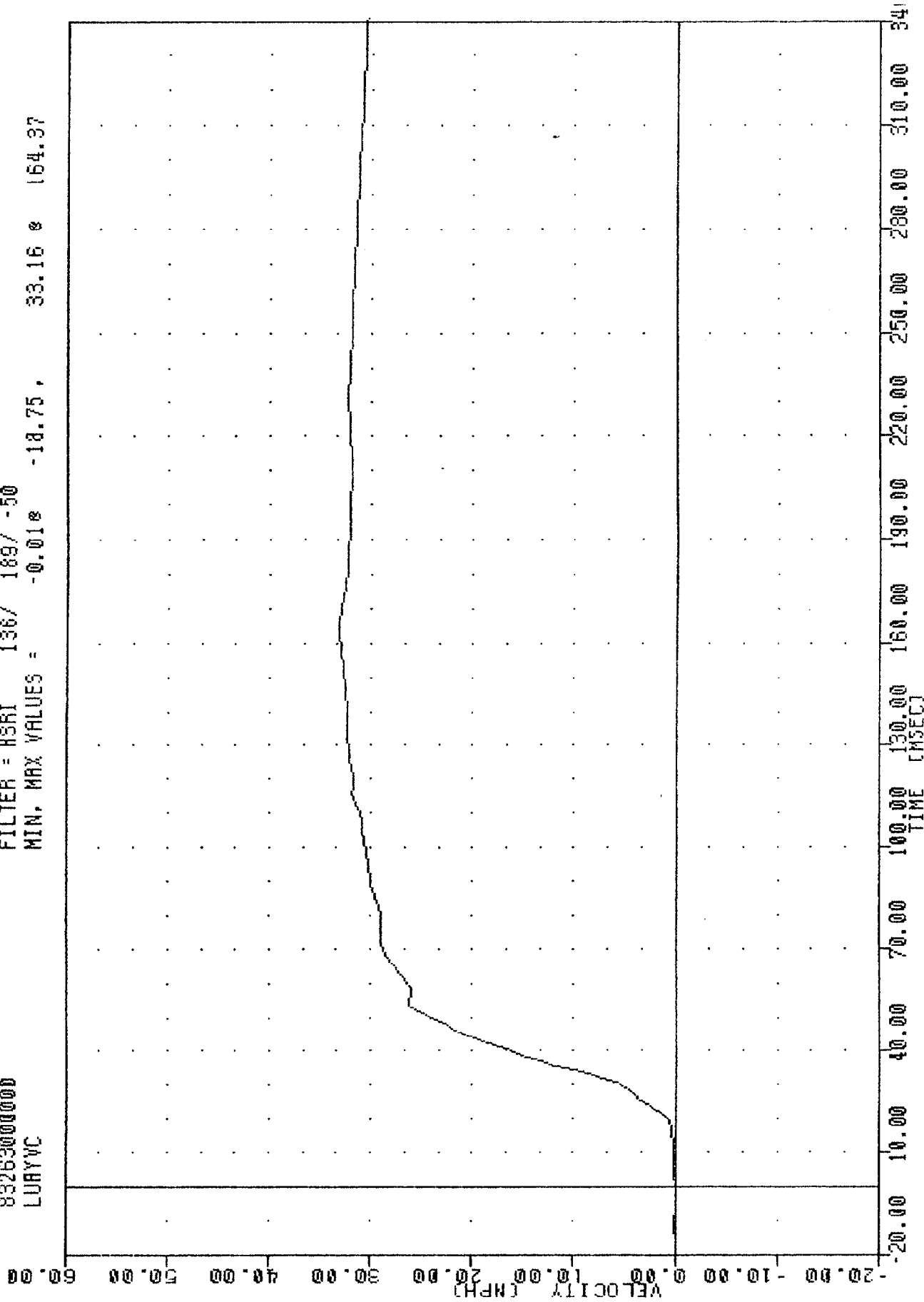


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA W USING LURYG3

TRC , 830920
 EVALUATION OF MDD VW FLEET
 832630000000
 LURYVC

PLOT DATE 22-SEP-83 14:12:39

FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -0.018 -18.75, 33.16 164.37

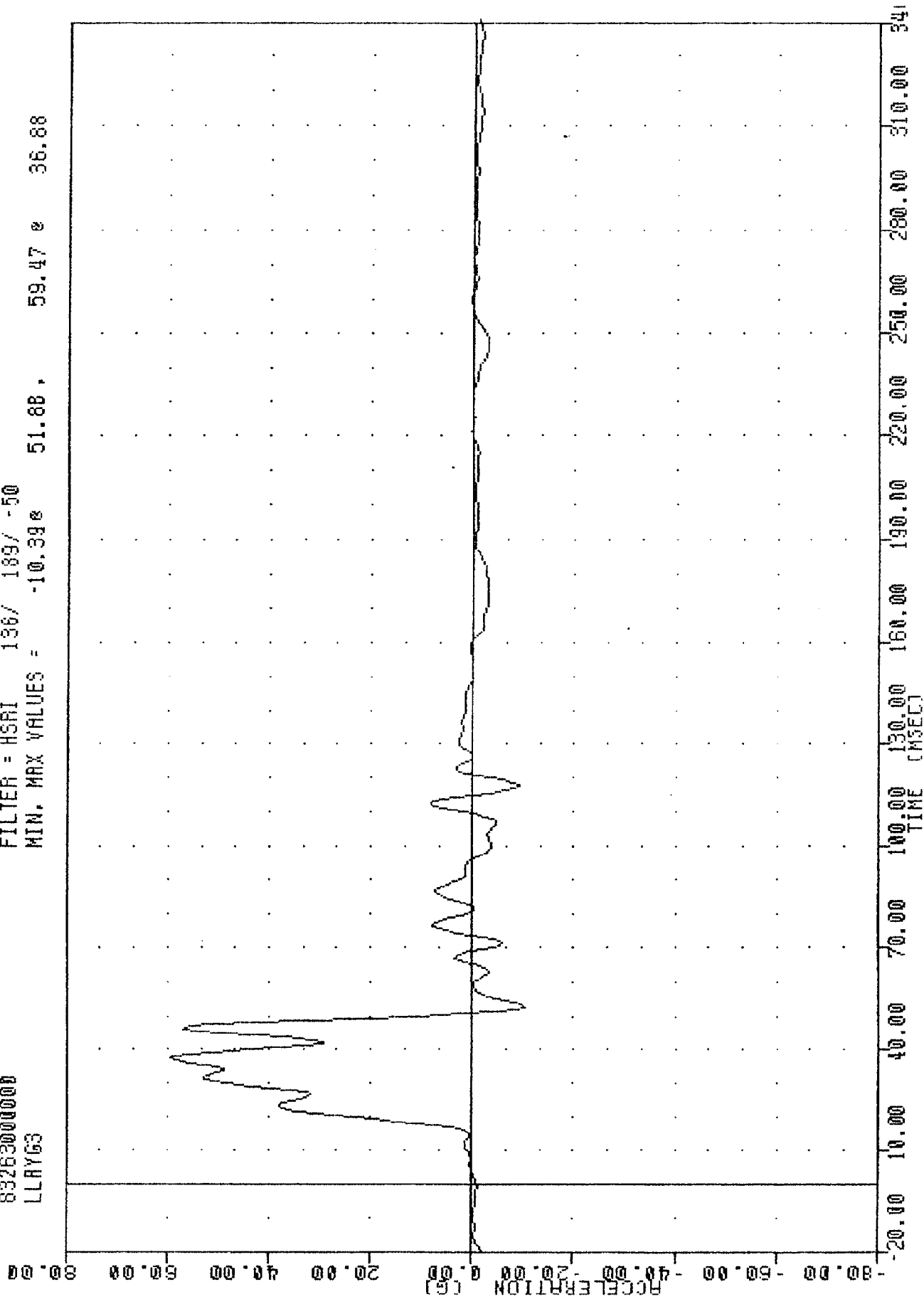


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LURY6C

INC , 830920
 EVALUATION OF MOD VW FLEET
 83263000000
 LLRY63

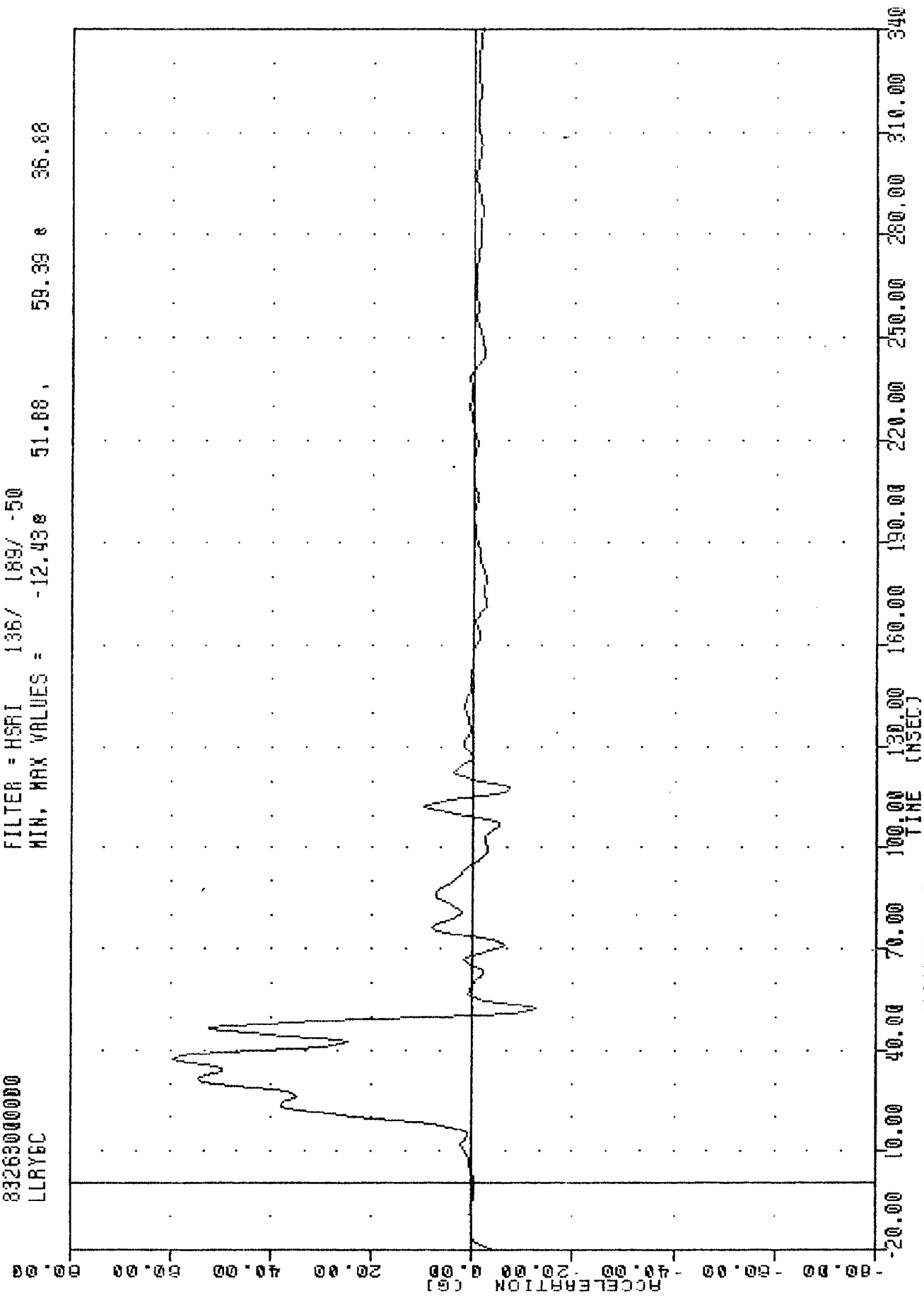
PLT DATE 21-SEP-83 19:45:14

FILTER = HSRI 136/ 139/ -50
 MIN. MAX VALUES = -10.39 51.88 , 59.47 36.88



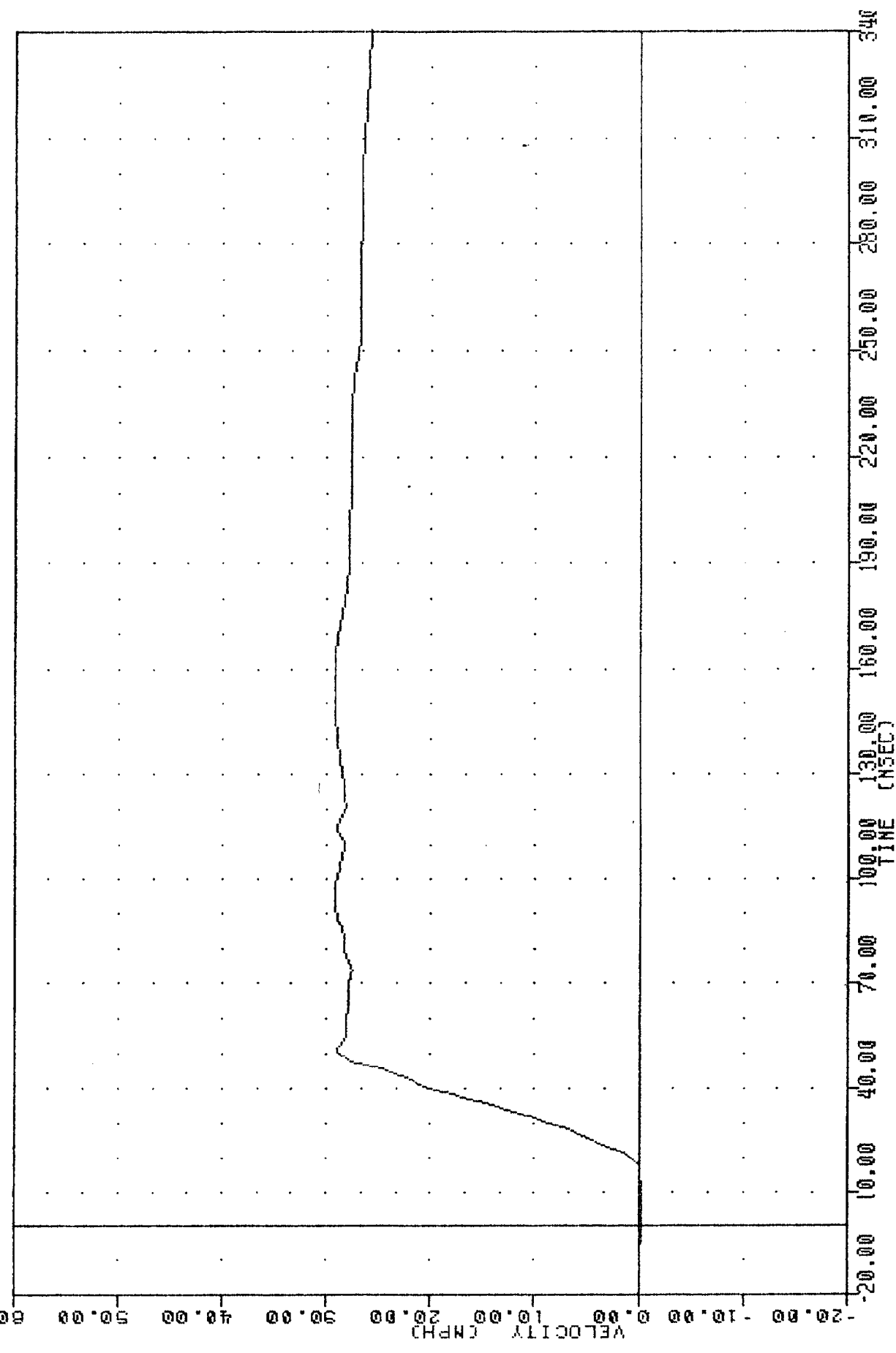
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT LOWER RIB ACCELERATION Y AXIS

INC 830520
 EVALUATION OF MOD VN FLEET
 83263000000
 LLRY6C
 FILTER = HSRI 136/ 189/ -50
 MIN. MAX VALUES = -12.43 51.88, 59.39 36.88
 TEST DATE 21 SEP 03 13:45:14



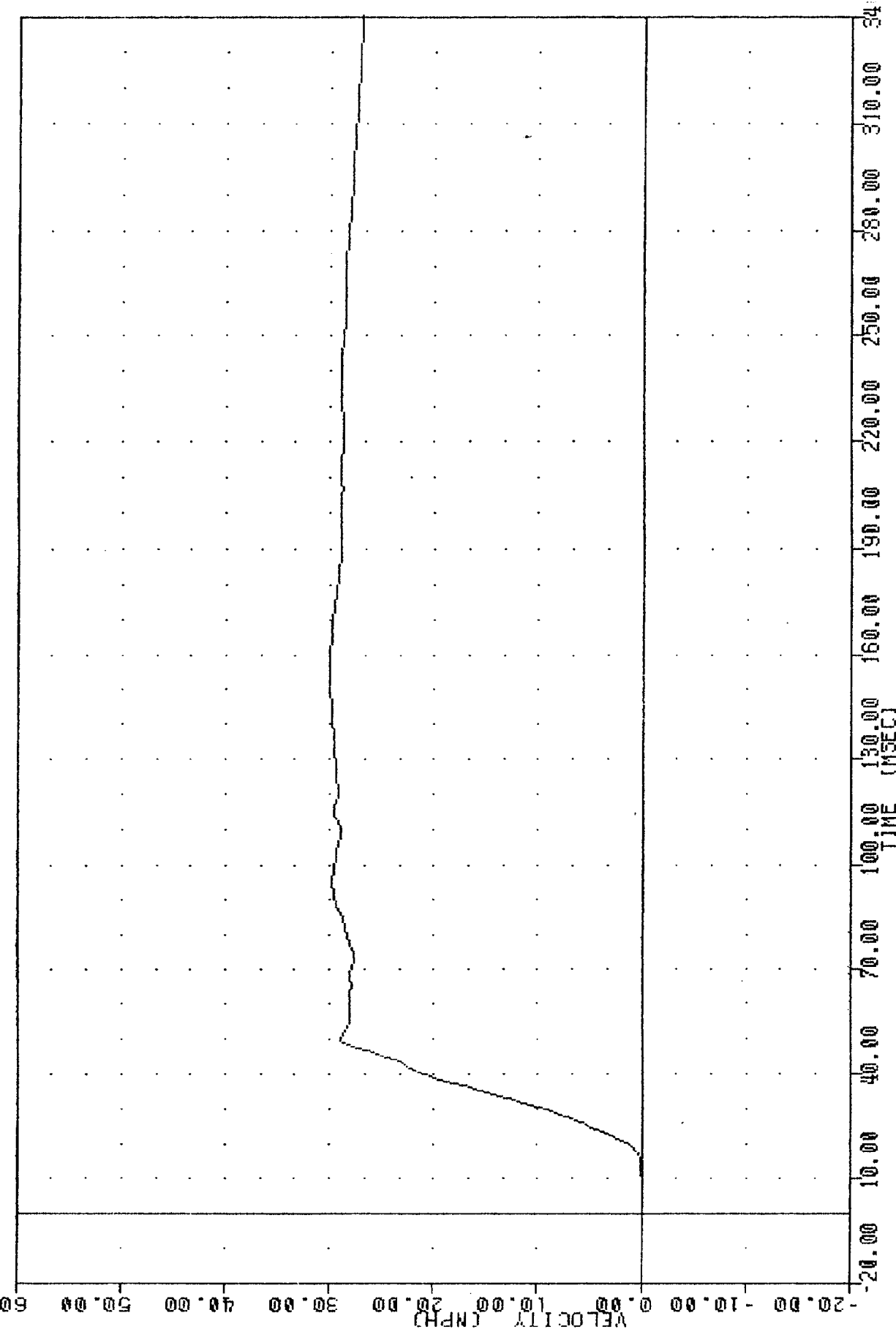
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT LOWER RIB ACCELERATION -2 Y AXIS

TMC 830320
 EVALUATION OF MOD VN FLEET
 83263000000
 LLRYV3
 FILTER = HSRI 136/ 189/ -50
 MIN, MAX VALUES = -0.34e 3.13, 29.25 e 160.00
 22 SEP 83 14:12:33



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LLRYG3

IRC
 EVALUATION OF MOD VW FLEET
 83263000000
 LLRYVC
 , 830920
 22-SEP-83
 14:12:39
 FILTER = HSR1 136/ 189/ -50
 MIN, MAX VALUES = -0.11e 2.50, 29.97 e 158.13

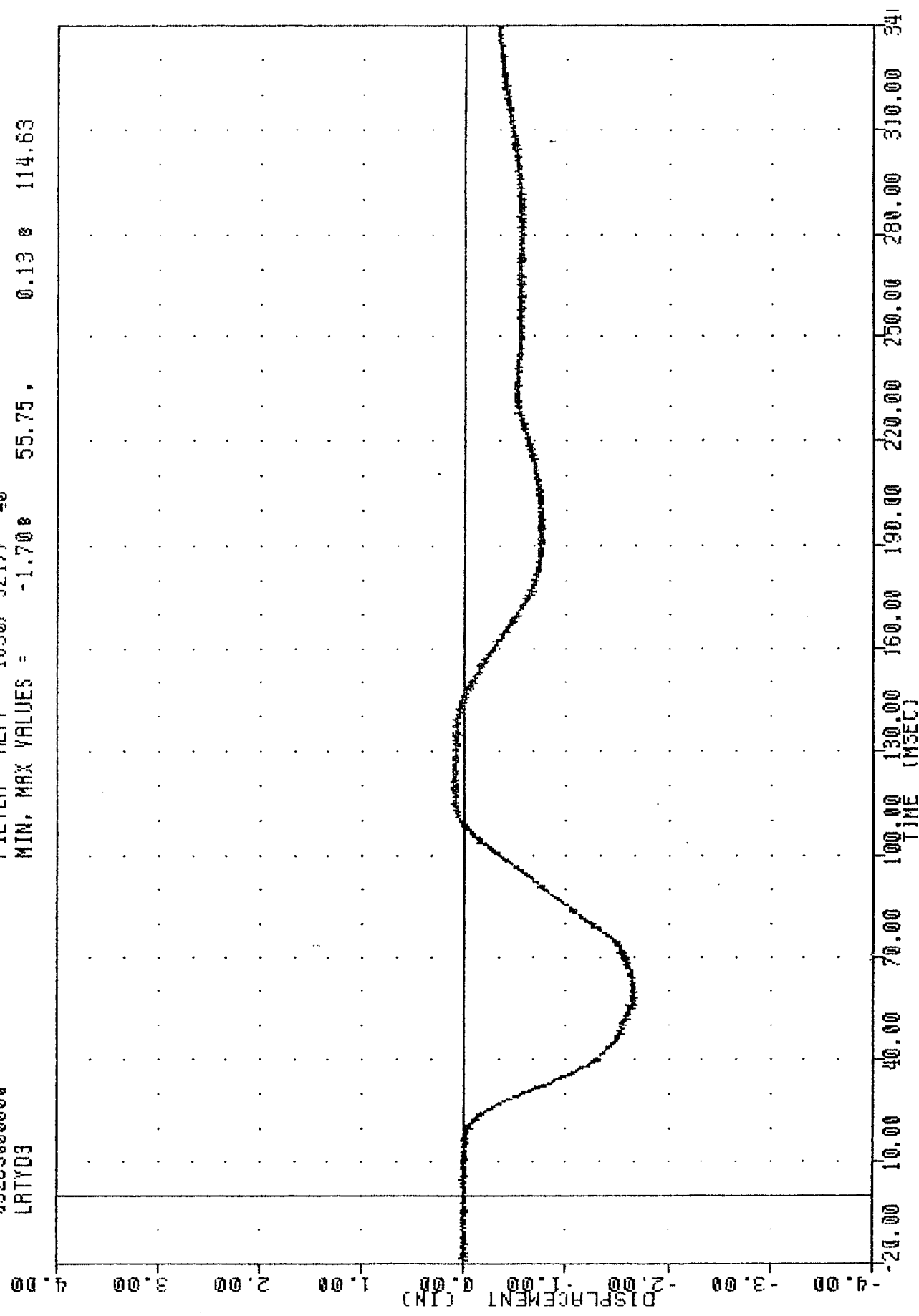


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W USING LLRYGC

IRC
 EVALUATION OF MOD VV FLEET
 83263000000
 LRTYD3

PLUT DATE 21-SEP-83 15:43:04

FILTER = ALPF 1650/ 5217/ -40
 MIN, MAX VALUES = -1.70e 55.75, 0.13 e 114.63

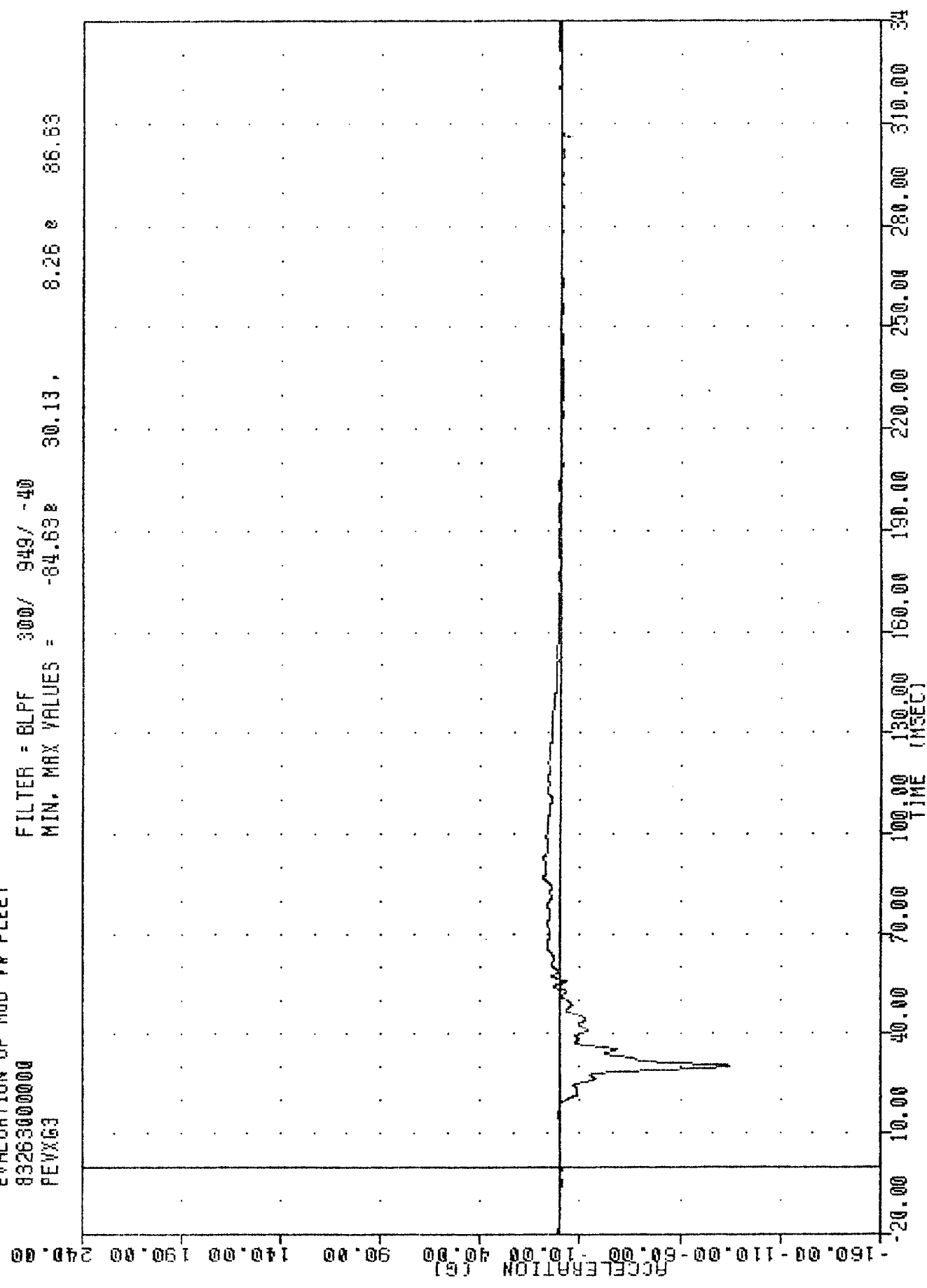


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER LEFT RIB TO SPINE DISPLACEMENT INCHES

TRC
 EVALUATION OF MOD VV FLEET
 83263000000
 PEVX63

PLT DATE 22-SEP-83 11:21:30

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -84.632 30.13 8.26 86.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER PELVIS ACCELERATION X AXIS

TRC

830920
EVALUATION OF MOD VN FLEET

83263000000

PEVYG3

PLOT DATE

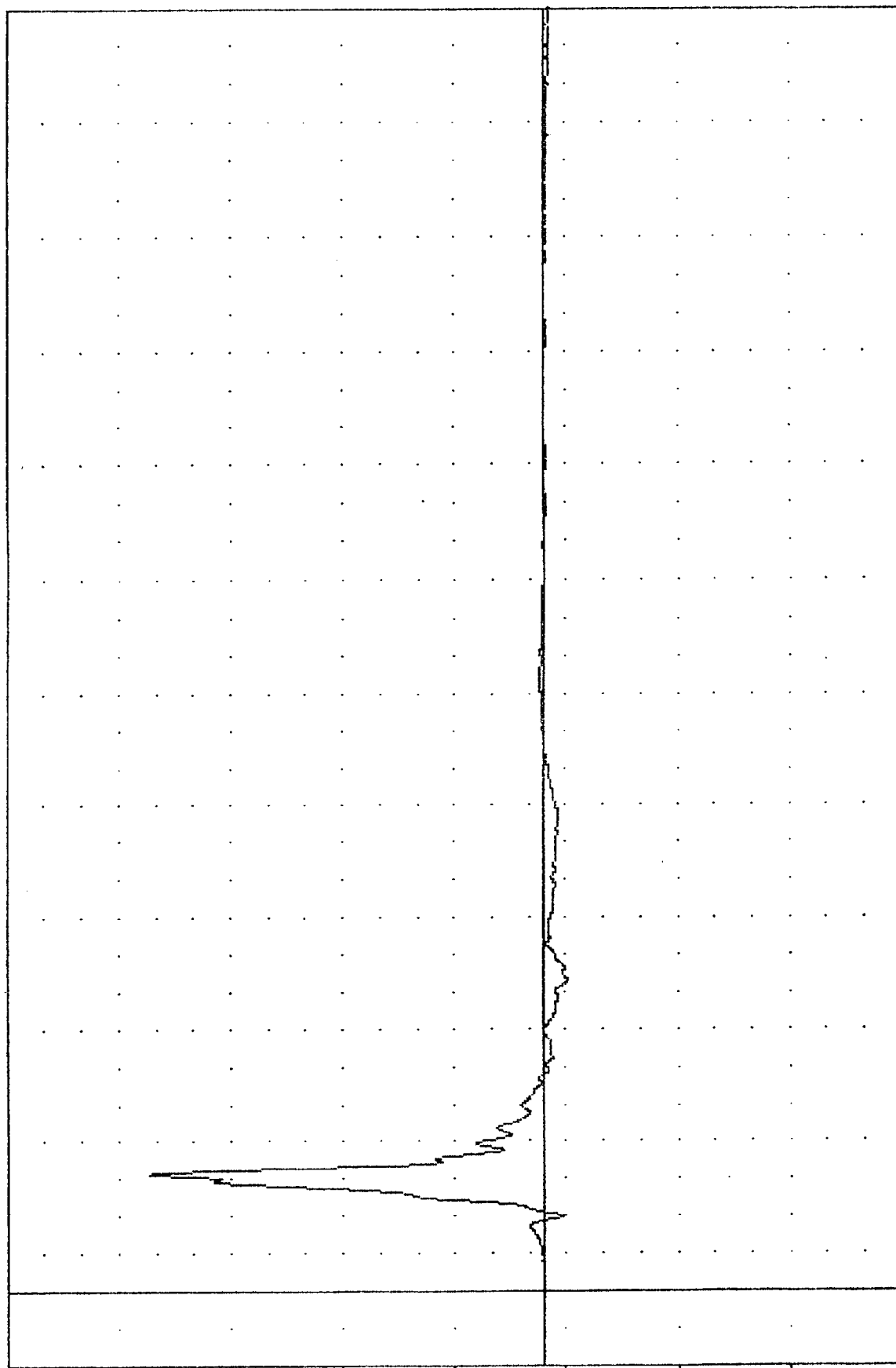
22-SEP-83

11:21:50

FILTER = 8LPPF 300/ 949/ -40

MIN. MAX VALUES = -10.83e 83.00, 176.04 e 31.25

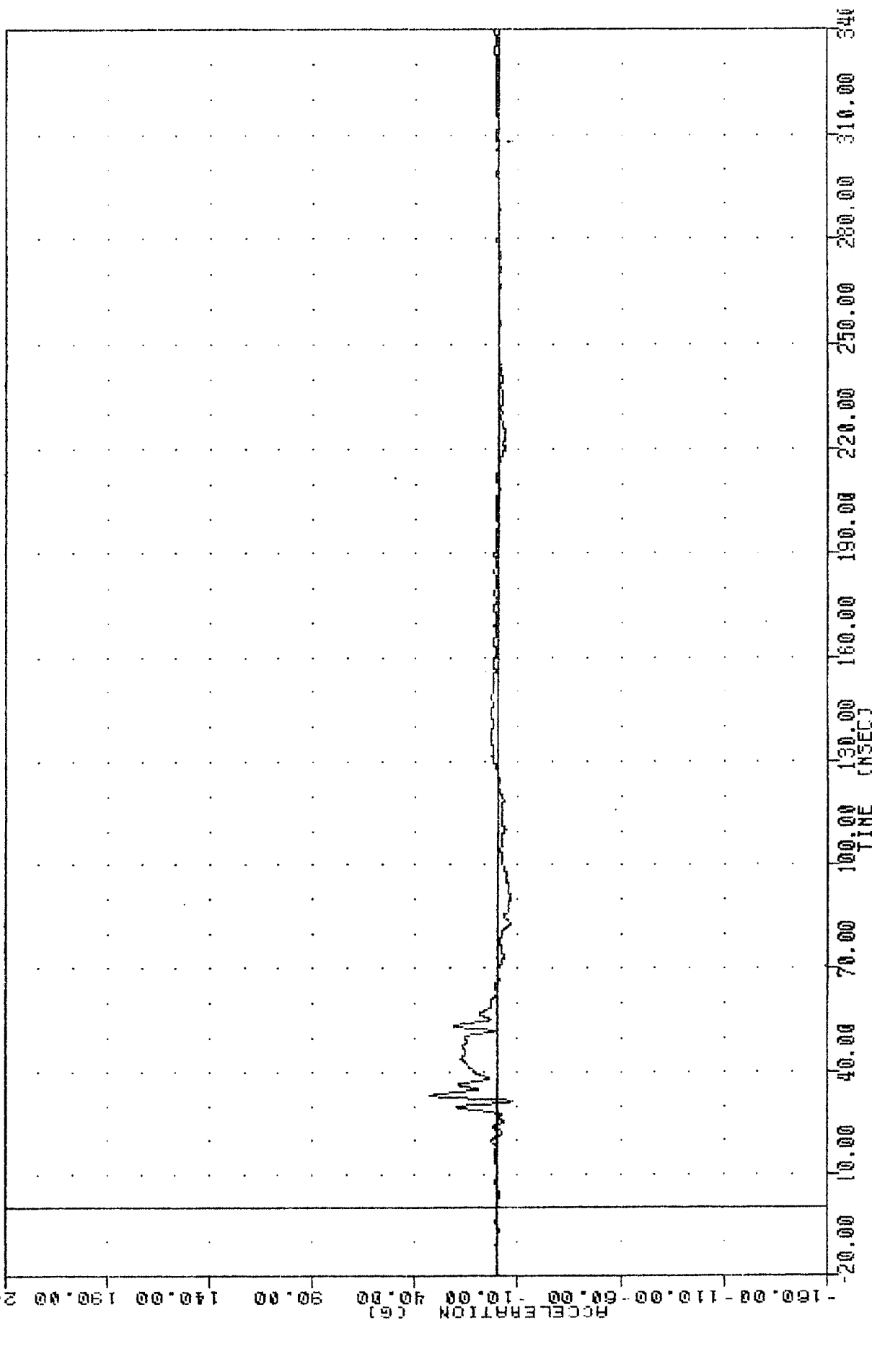
ACCELERATION (G)



TIME (msec)

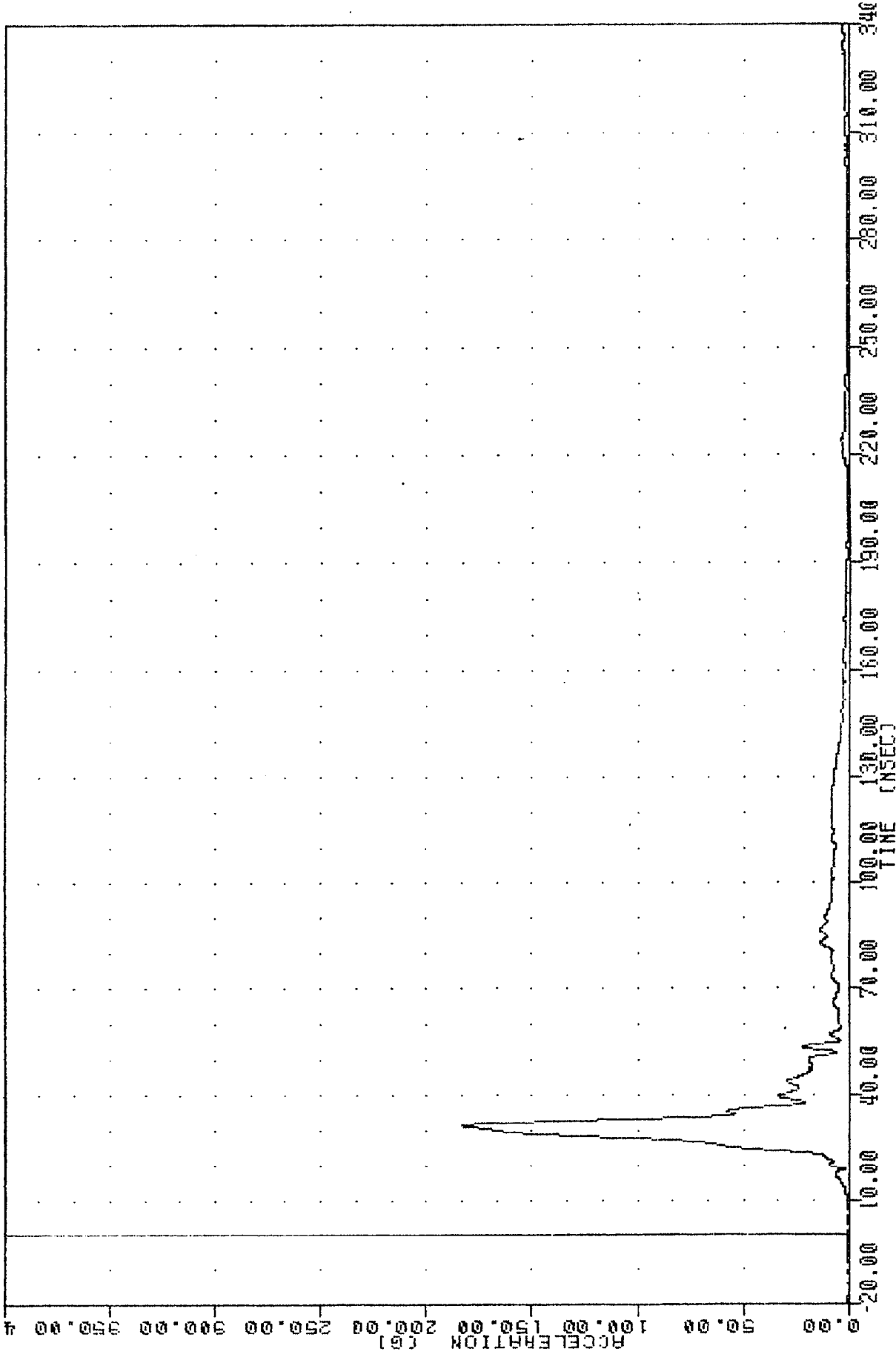
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
PASSENGER PELVIS ACCELERATION Y AXIS

THE
 EVALUATION OF MOD VN FLEET
 83263000000
 PEVIES
 , 830820
 PLUT DATE 22-SEP-83 11:21:50
 FILTER = BLFF 300/ 949/ -40
 MIN. MAX VALUES = -7.468 31.25, 32.40 * 33.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 PASSENGER PELVIS ACCELERATION Z AXIS

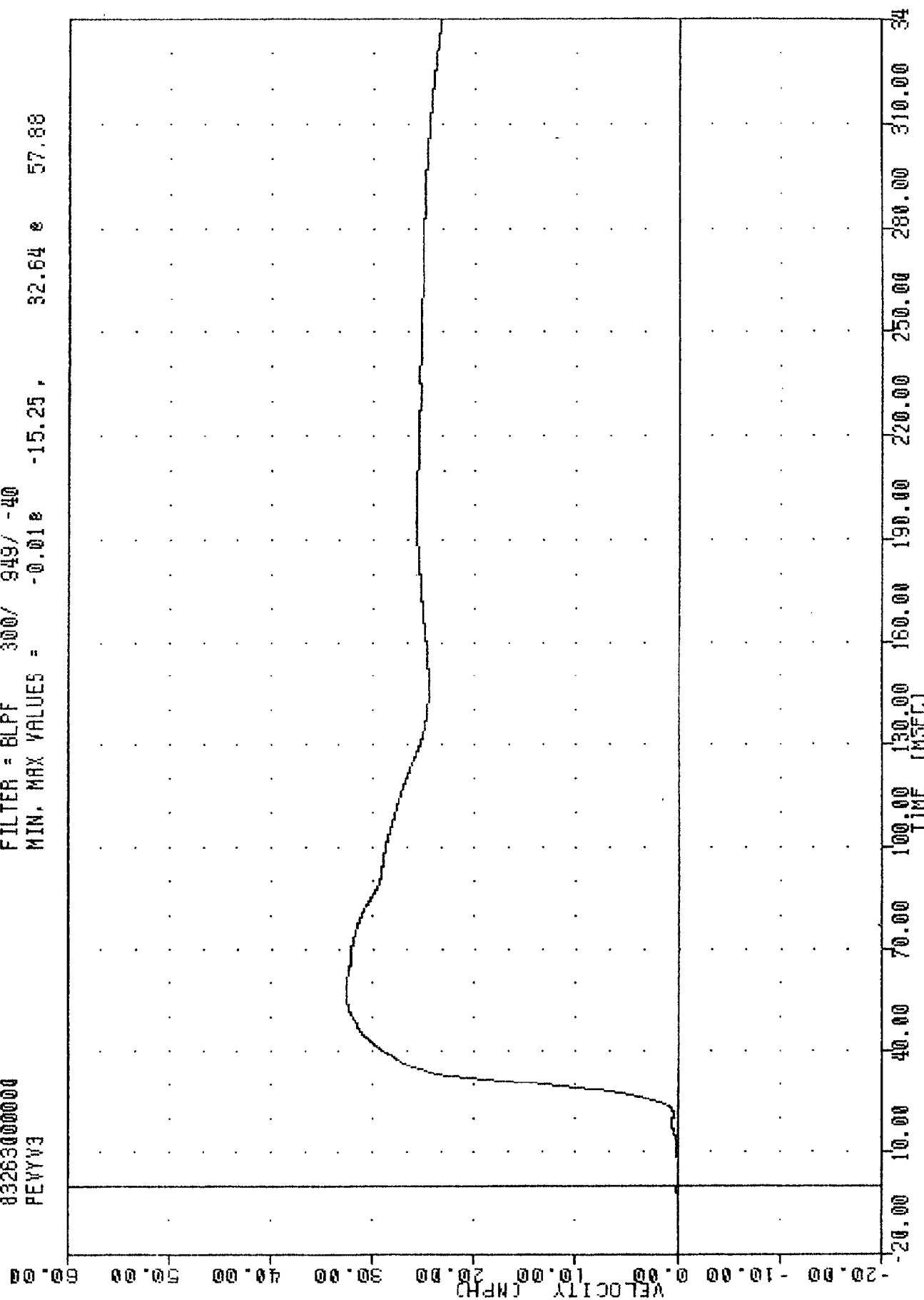
TAC 830920 21-SEP-83 15:43:04
 EVALUATION OF MOD VW FLEET
 83263000000
 PEVR63
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 0.090 -12.63, 183.19 e 31.13



TRC
EVALUATION OF MOD YW FLEET
83263000000
PEVYV3

PLOT DATE 22-SEP-83 14:26:05

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -0.01e -15.25 , 32.64 e 57.88



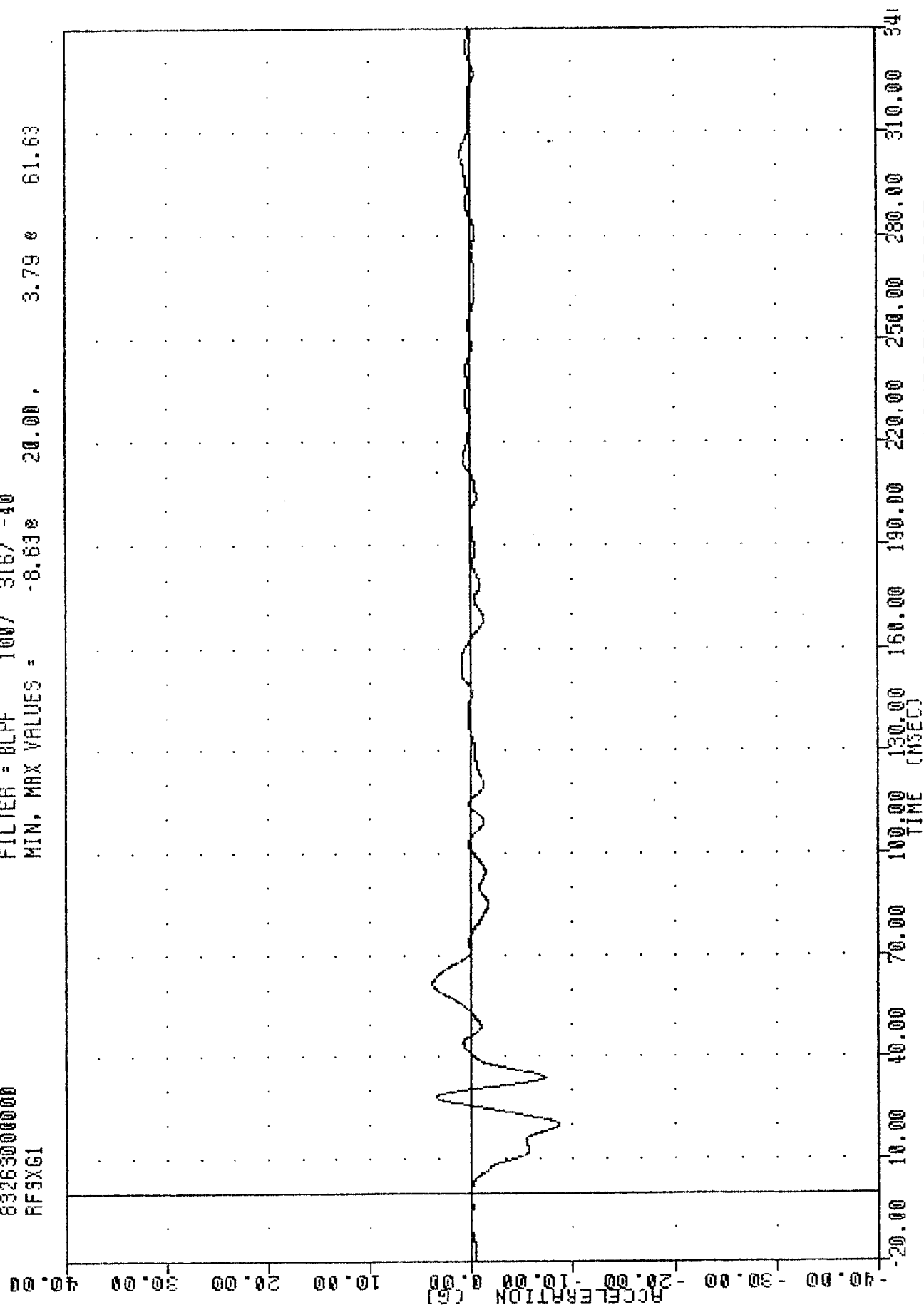
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING PEVYG3

TRC , 830920
EVALUATION OF MOD VW FLEET
83263000000
RFSXG1

PLOT QDATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -8.63e 20.00, 3.79 e 61.63

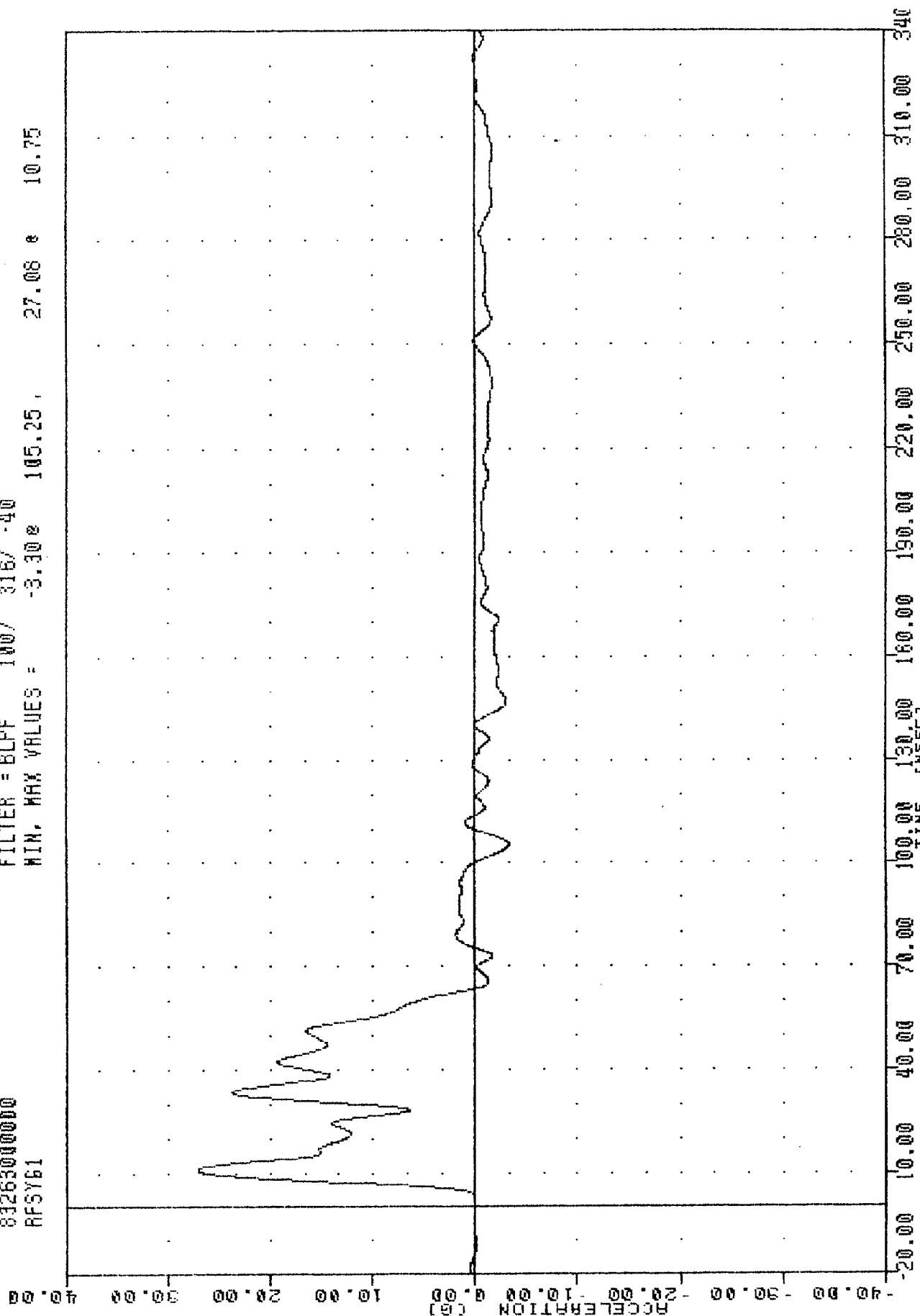


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT FRONT SILL ACCELERATION X AXIS

TAC
EVALUATION OF MOD VN FLEET
83263000000
RFSY61

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 318/ -40
MIN, MAX VALUES = -3.30e 105.25, 27.08 e 10.75



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

TRC

, 830920

EVALUATION OF MOD YW FLEET

83263000000

RFSZG1

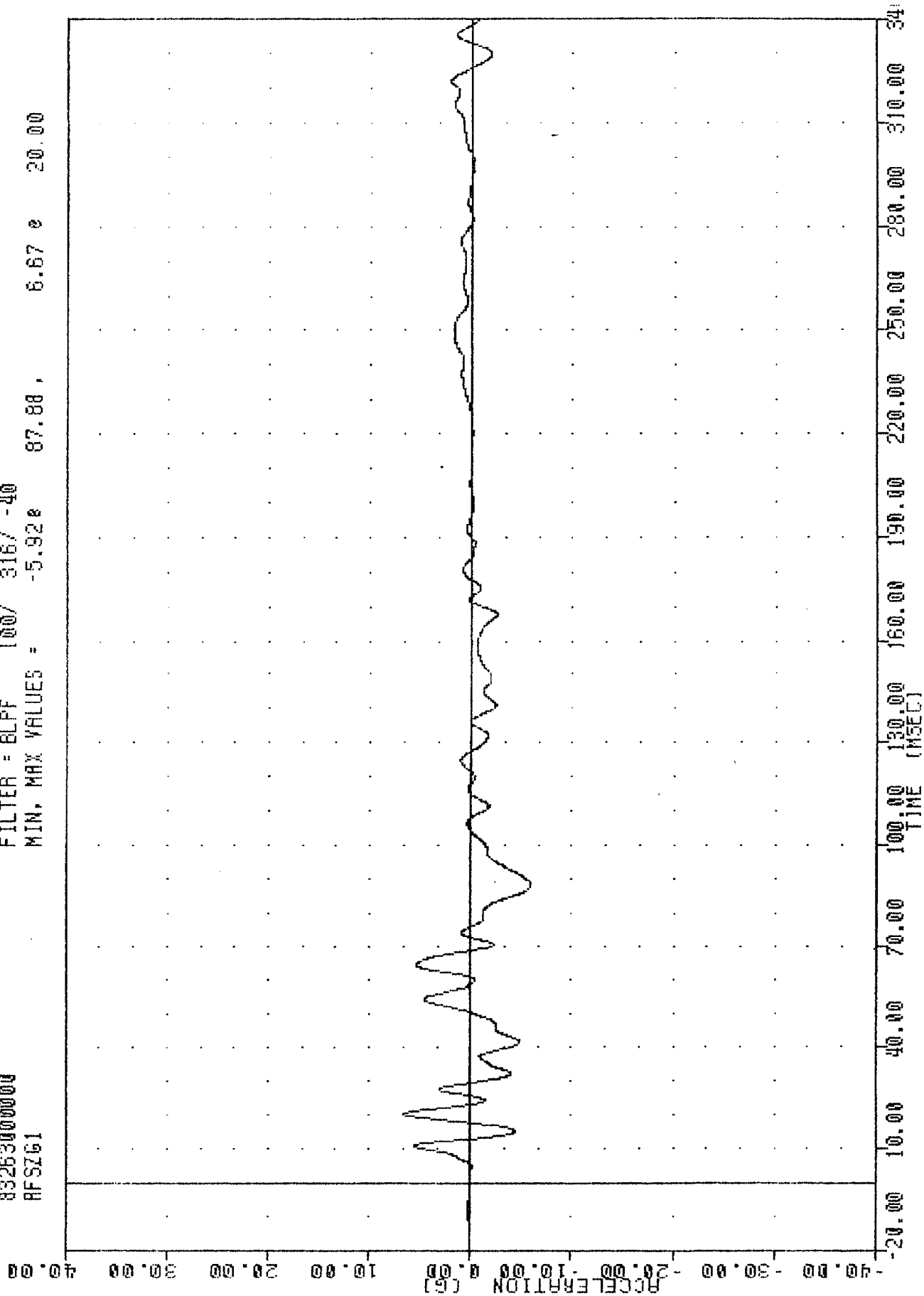
PLOT DATE

21-SEP-83

15:43:04

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -5.92e 87.88, 6.67 e 20.00



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

TRC 830920 21-SEP-83 15:43:04

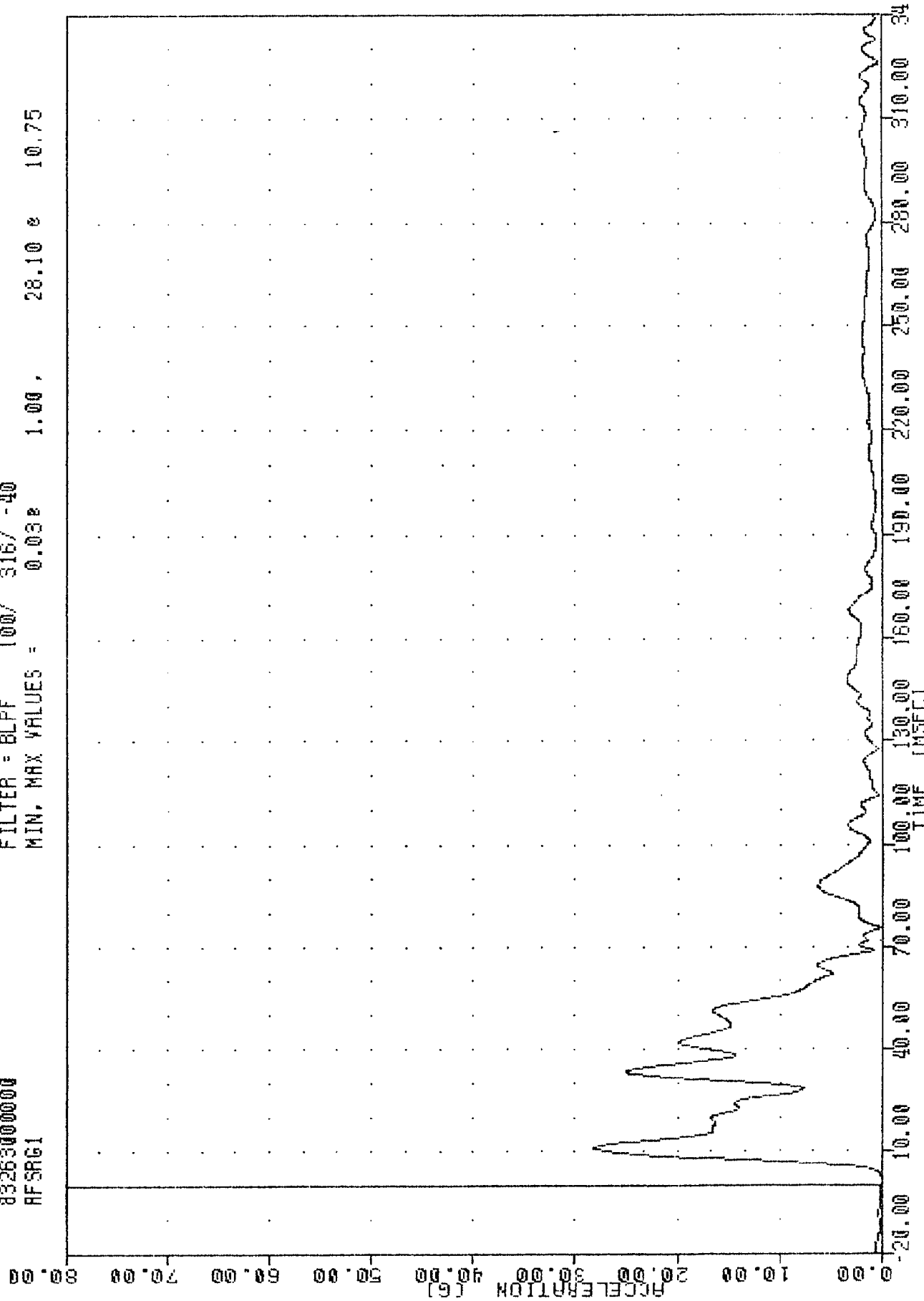
EVALUATION OF MOD YW FLEET

83263000000

AF5RG1

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = 0.03e 1.00, 28.10 e 10.75

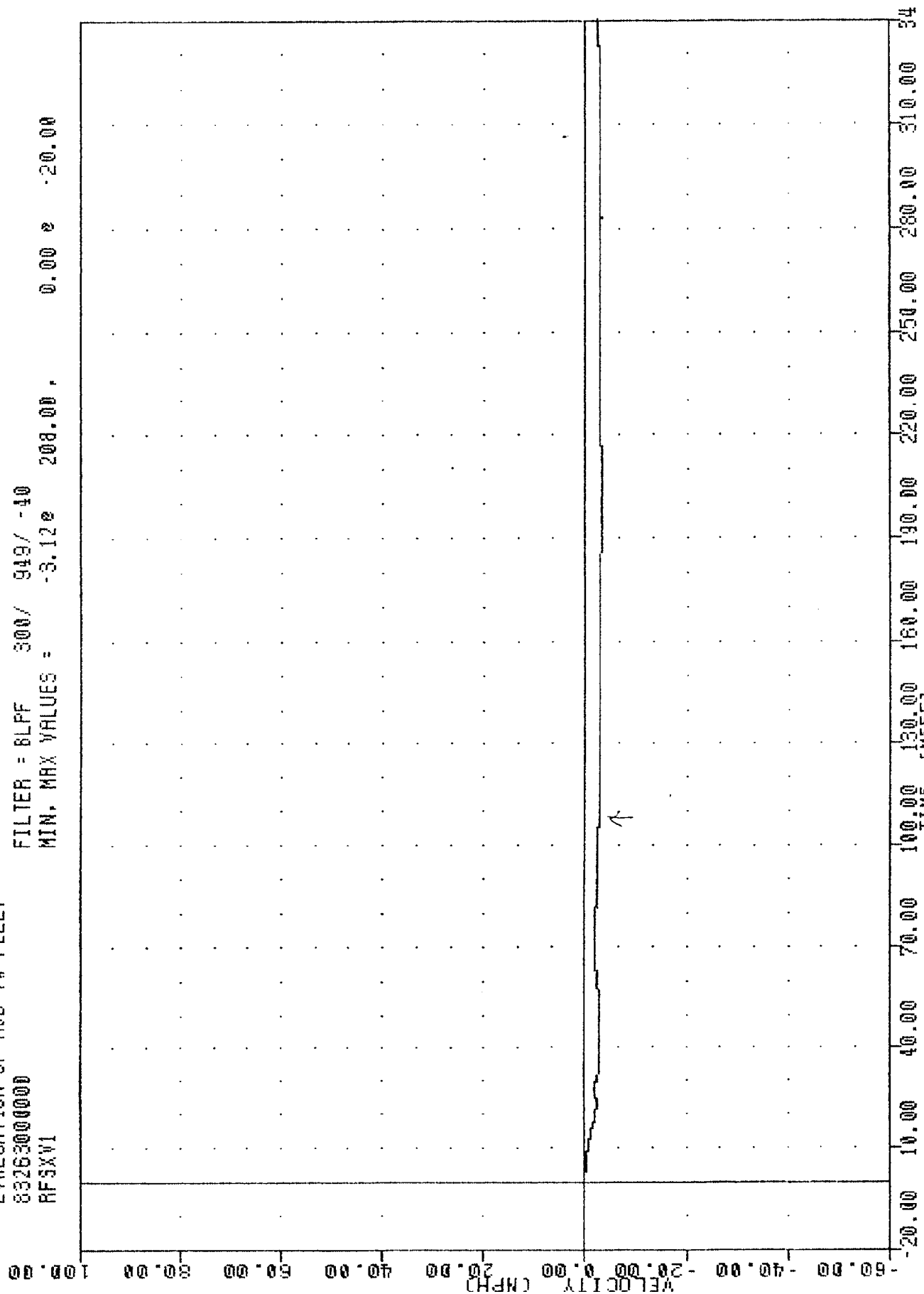


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT FRONT SILL RESULTANT

TRC
 EVALUATION OF MOD VW FLEET
 83263000000
 RFSXV1

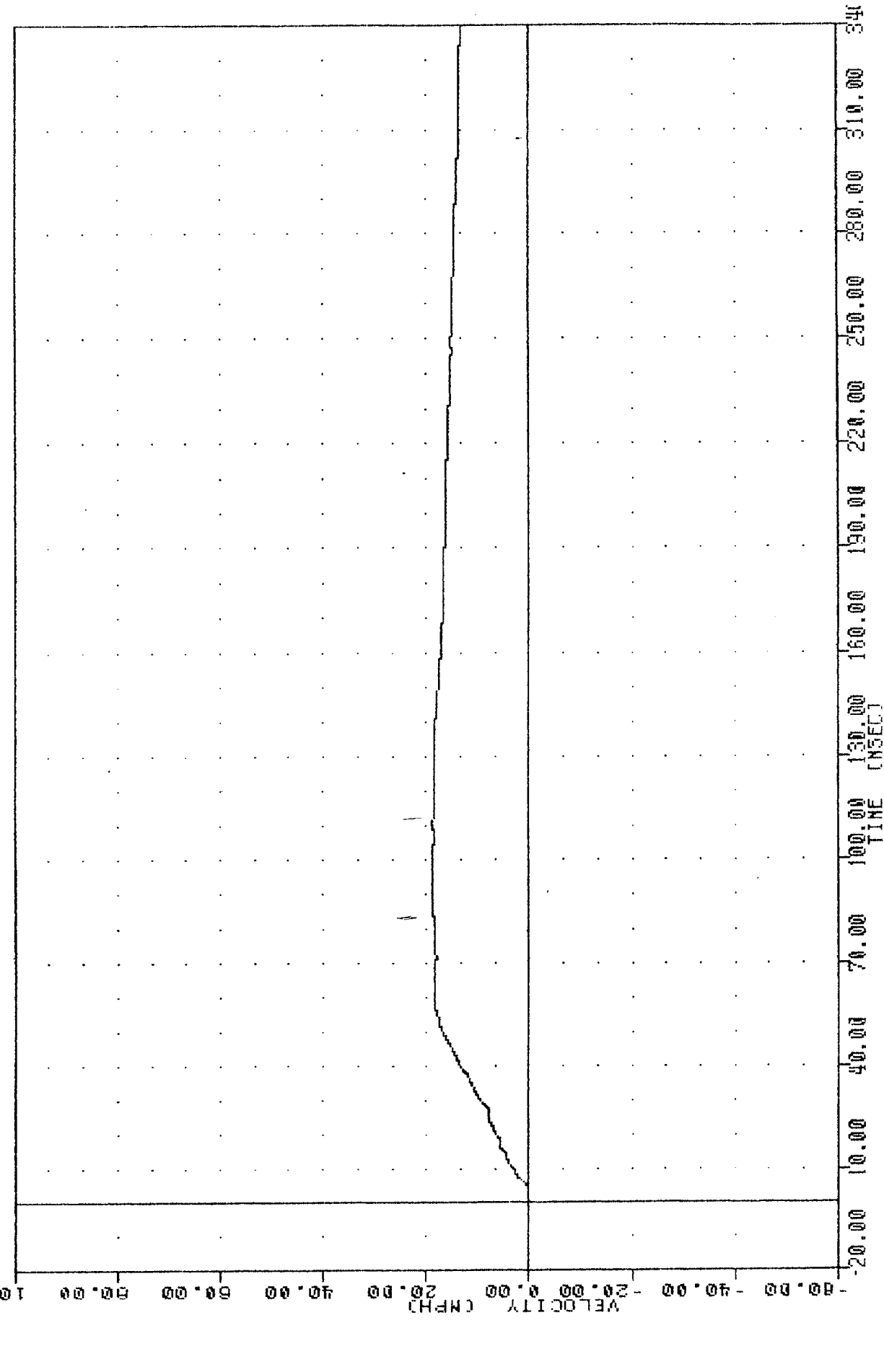
PLOT DATE 22-SEP-83 14:26:05

FILTER = 8LFF 300/ 949/ -40
 MIN. MAX VALUES = -3.12e 208.00, 0.00 e -20.00



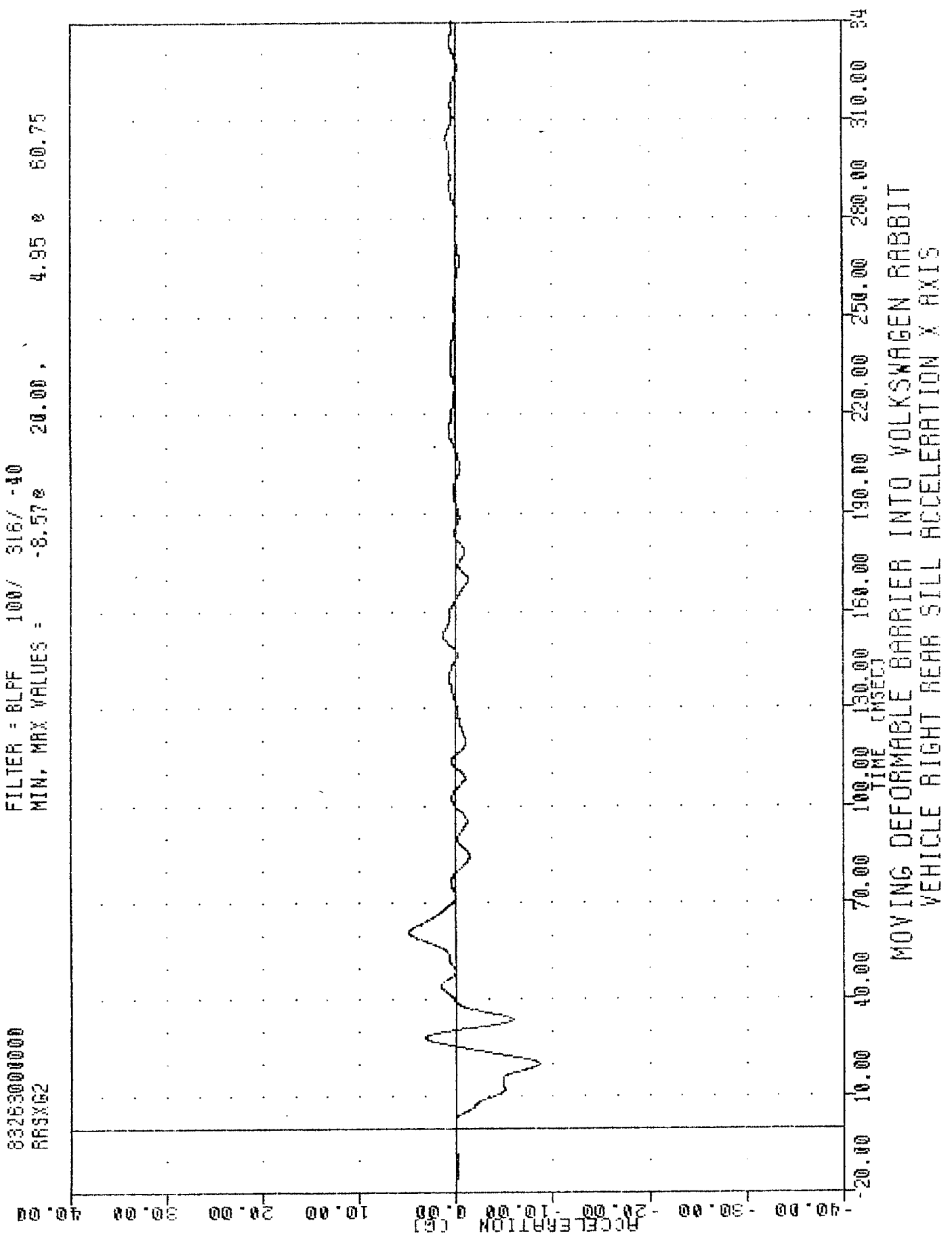
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING RFSXG1

TRC 830920 22 SEP 03 14:28:00
 EVALUATION OF MOD VN FLEET
 83265000000
 RFSYV1
 FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 0.000 -20.00 19.01 97.38

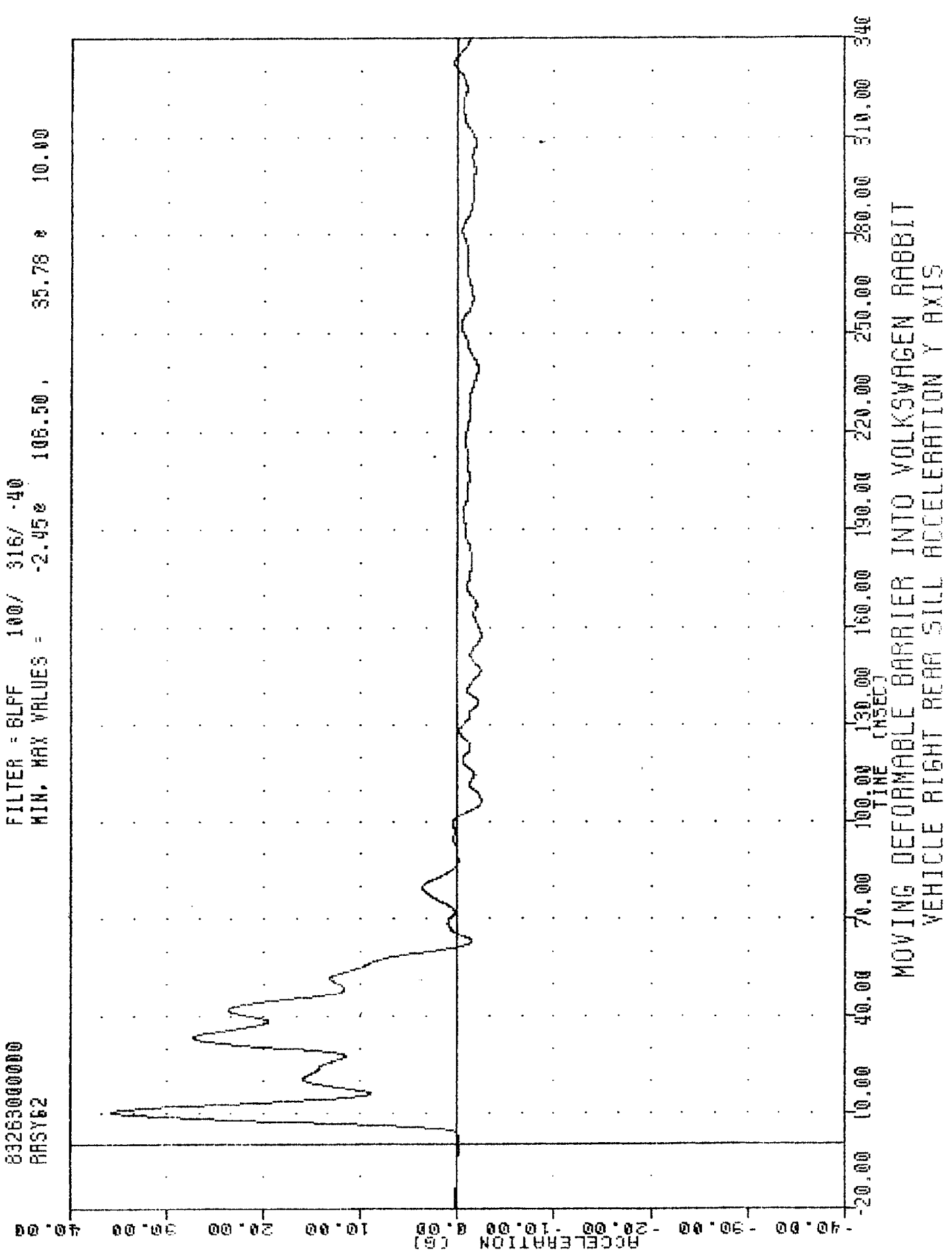


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING RFSYGI

TRC
 EVALUATION OF MDD VW FLEET
 83253000000
 RRSXG2
 830920
 21 SEP 83
 17:43.04
 FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -8.57% 20.00, 4.95% 80.75



TMC 830920
 EVALUATION OF MOD VN FLEET
 83263000000
 RRSY62
 FILTER = 6LPF 100/ 316/ -40
 MIN. MAX VALUES = -2.45e 106.50, 35.78 e 10.00
 PLOT DATE 21-SEP-83 10:43:04

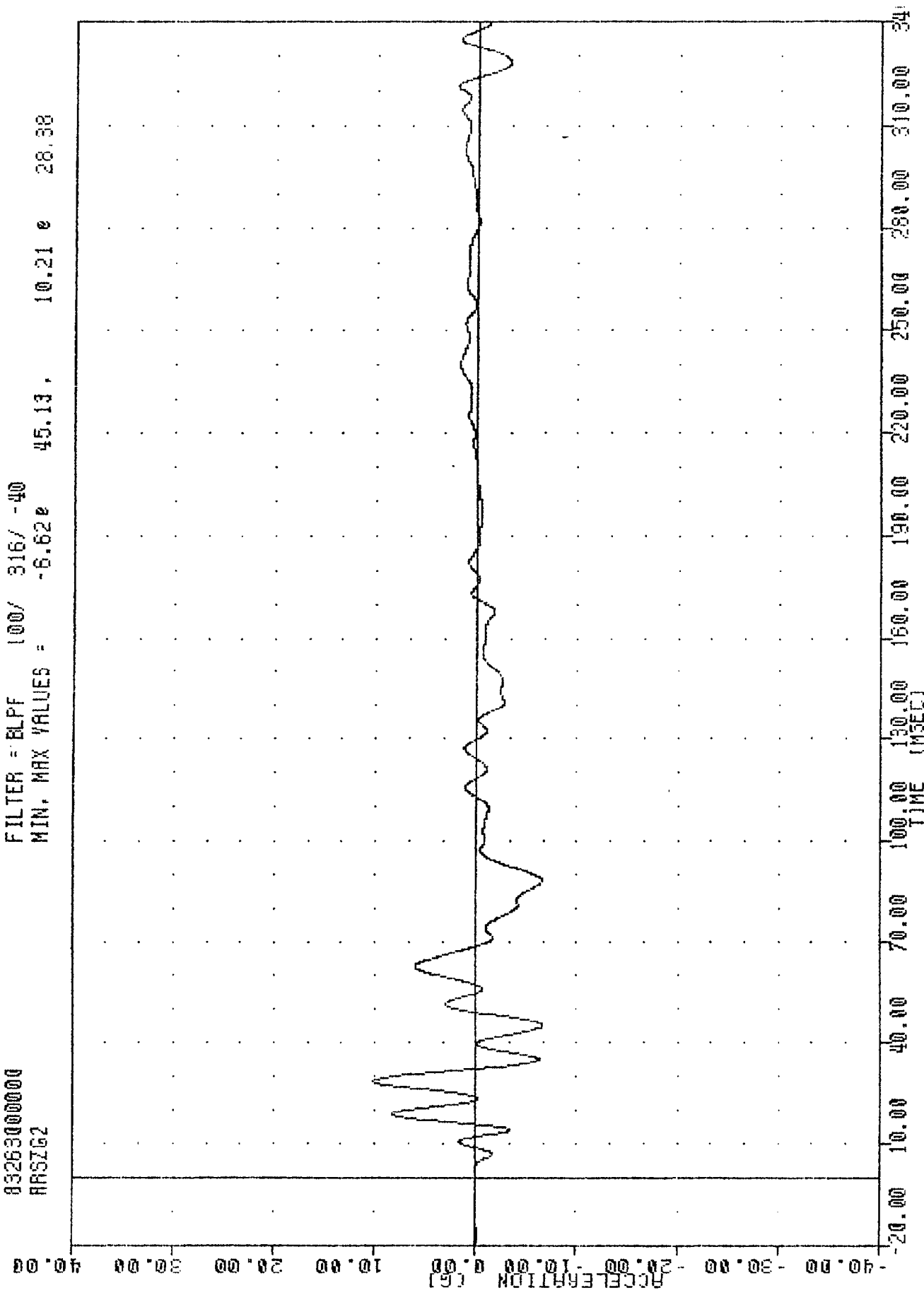


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE RIGHT REAR SILL ACCELERATION Y AXIS

INC
EVALUATION OF MOD YW FLEET
03263000000
ARSLG2

PLUT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -6.62e 45.13, 10.21 e 28.38



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

TRC 830920 21-SEP-83 15:43:W4

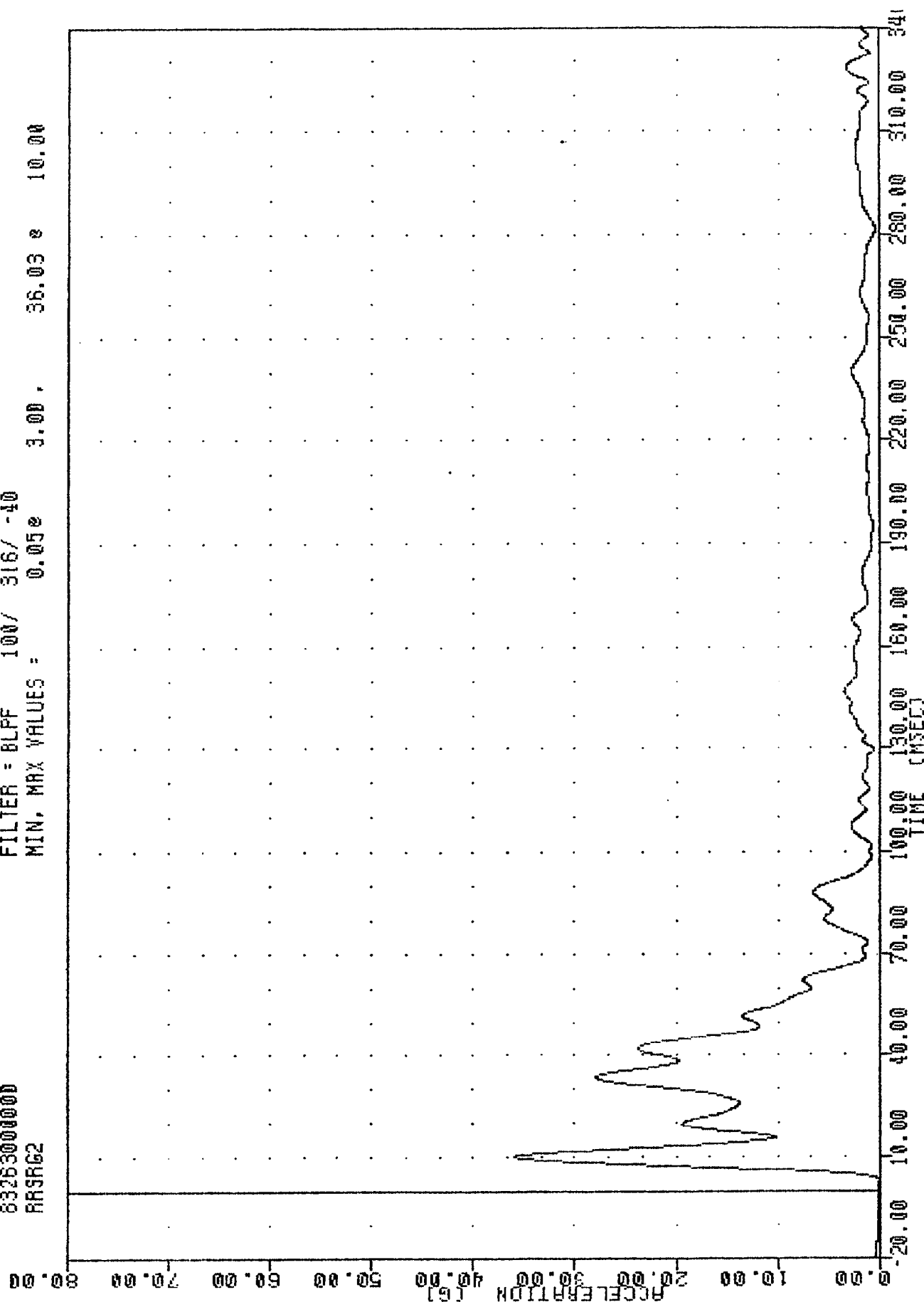
EVALUATION OF MDD VW FLEET

83253000000

RRSRG2

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = 0.05e 3.00, 36.03 e 10.00

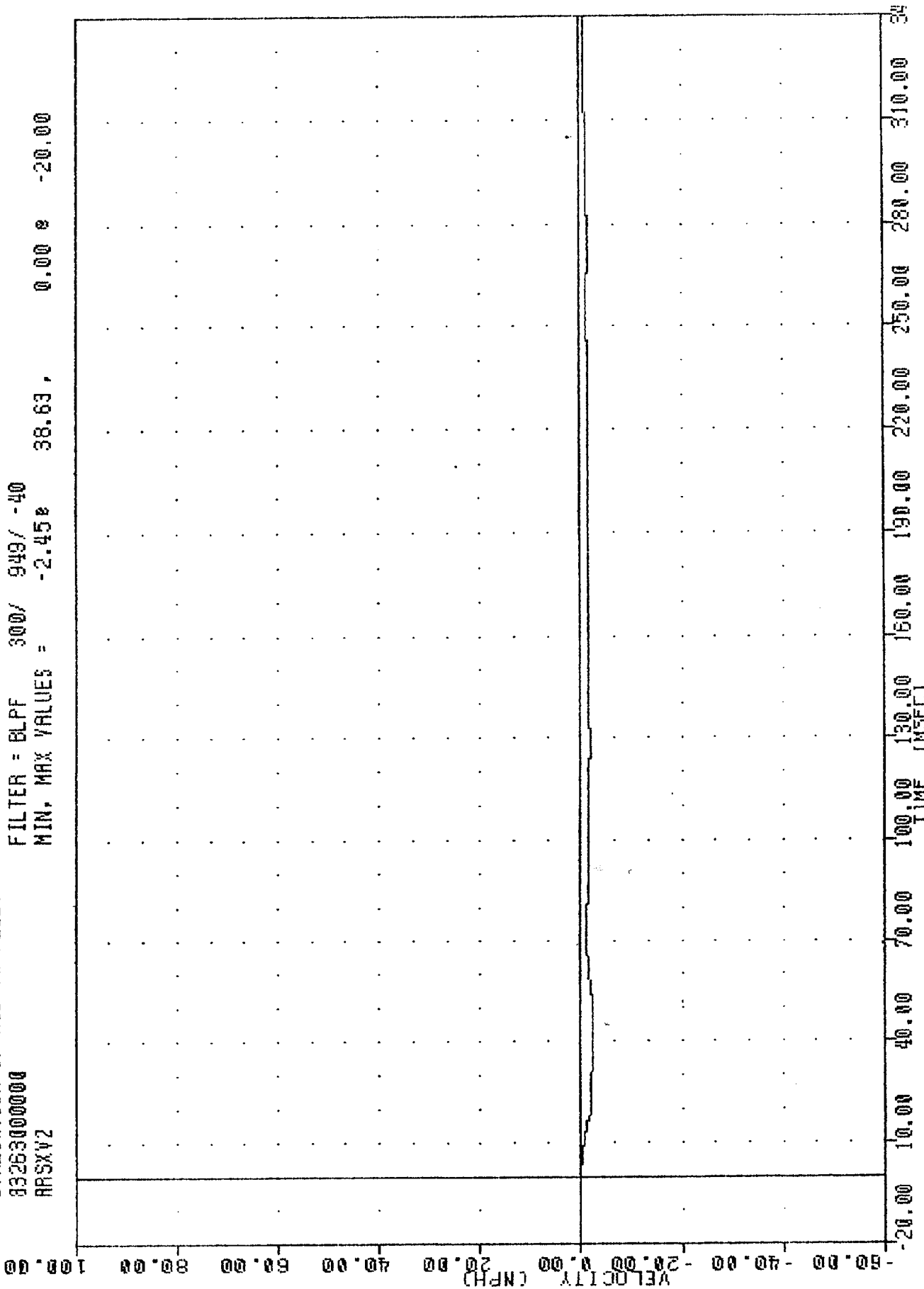


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE RIGHT REAR SILL RESULTANT

TRC
EVALUATION OF MOD YW FLEET
832630000000
RRSXV2

PLOT DATE 22-SEP-83 14:26:05

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -2.45e 38.63, 0.00 e -20.00

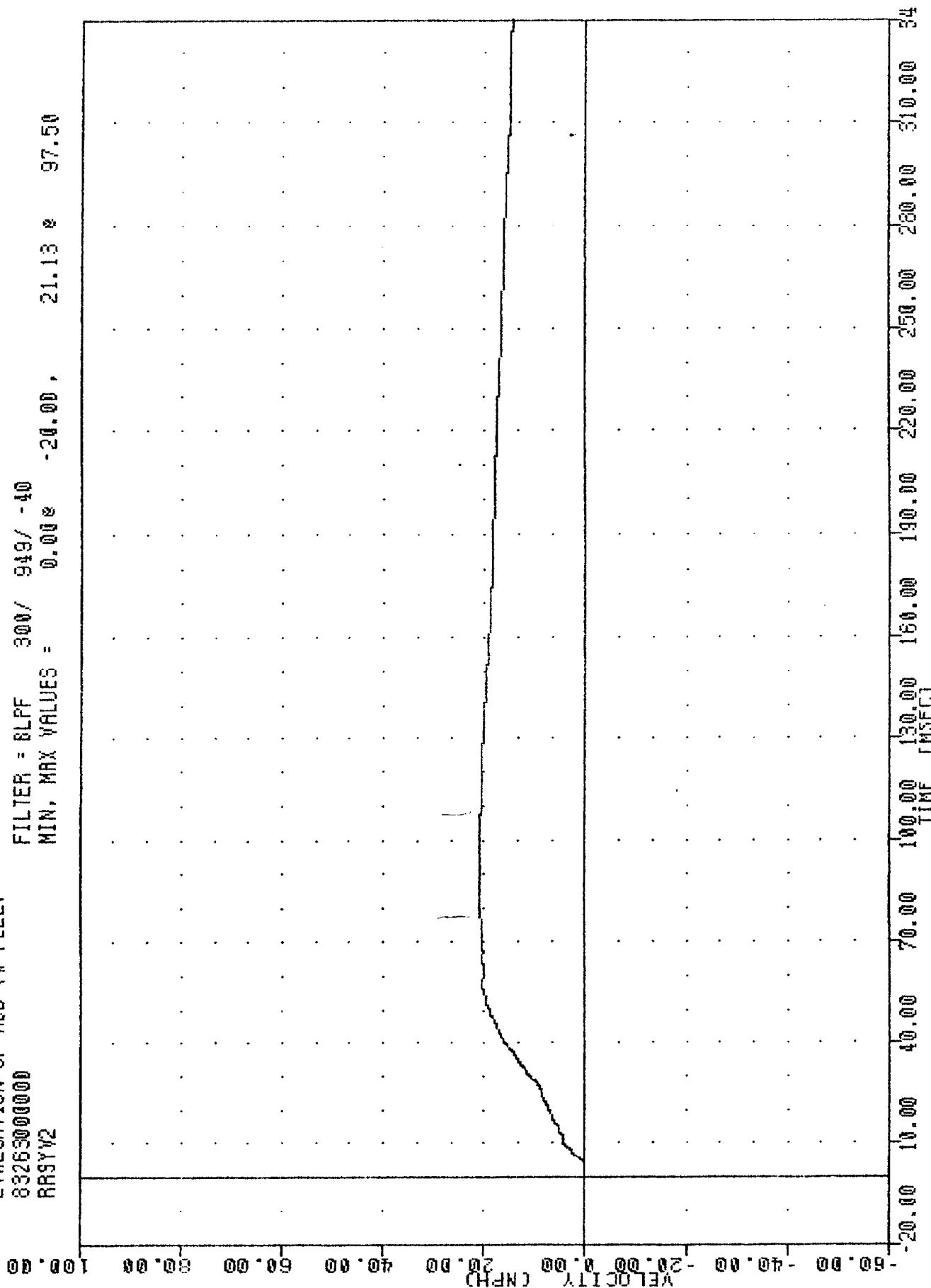


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RRSXG2

TRC
EVALUATION OF MOD VV FLEET
83263000000
RRSYV2

PLOT DATE 22-SEP-83 14:26:05

FILTER = 8LPF 300/ 949/ -40
MIN, MAX VALUES = 0.00E -20.00, 21.13 E 97.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RRSYG2

INC

830653

EVALUATION OF MDD VW FLEET

83263000000

ADKXG3

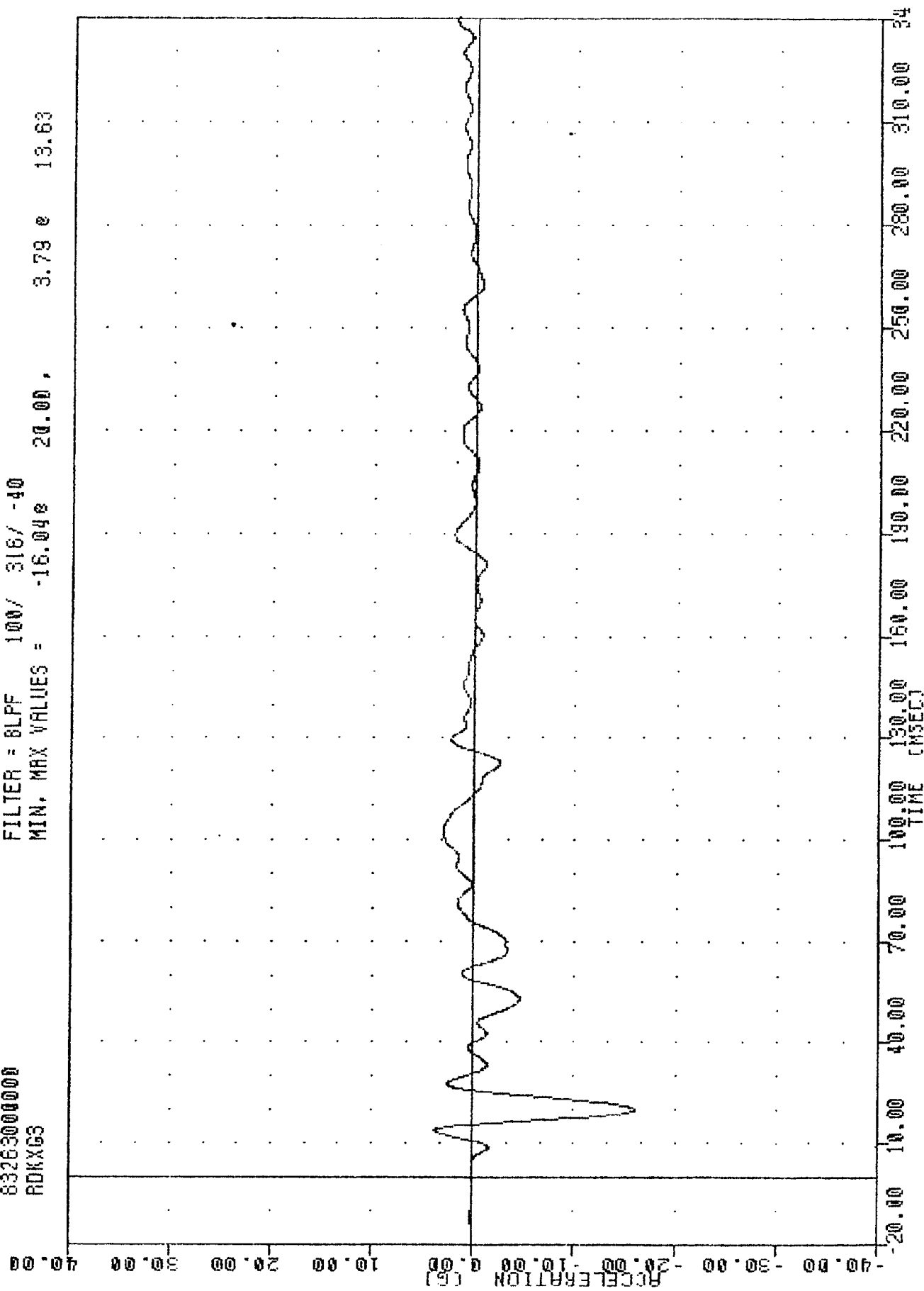
TEST DATE

21-SEP-83

13:43.04

FILTER = 8LPF 100/ 316/ -40

MIN. MAX VALUES = -16.04g 20.00, 3.79 g 13.63

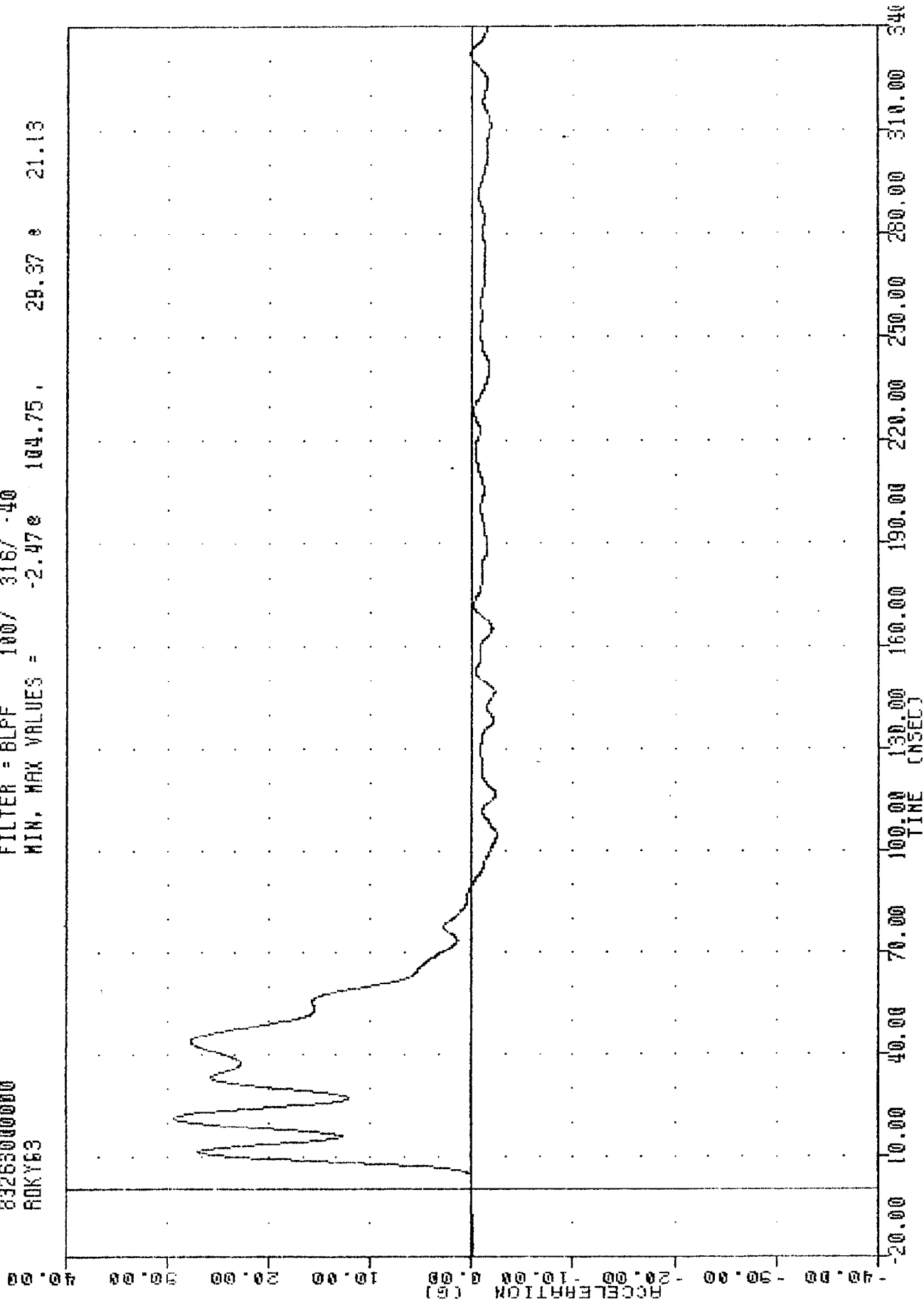


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE REAR DECK ACCELERATION X AXIS

INC 830520
 EVALUATION OF MOD VN FLEET
 83263000000
 ROKY63

PLOT DATE 21 SEP 83 10:43:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -2.97e 104.75, 29.37 * 21.13

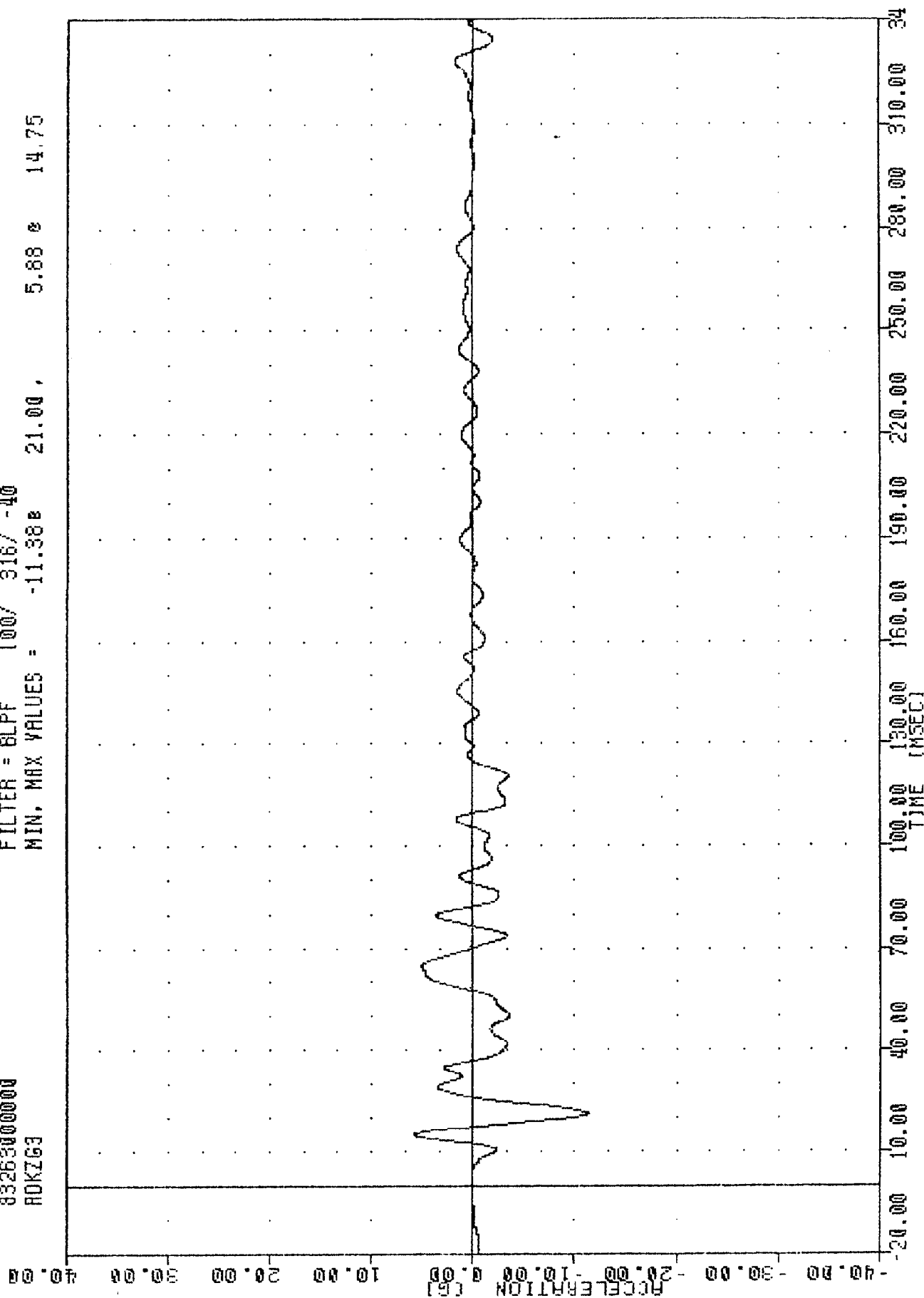


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE REAR DECK ACCELERATION Y AXIS

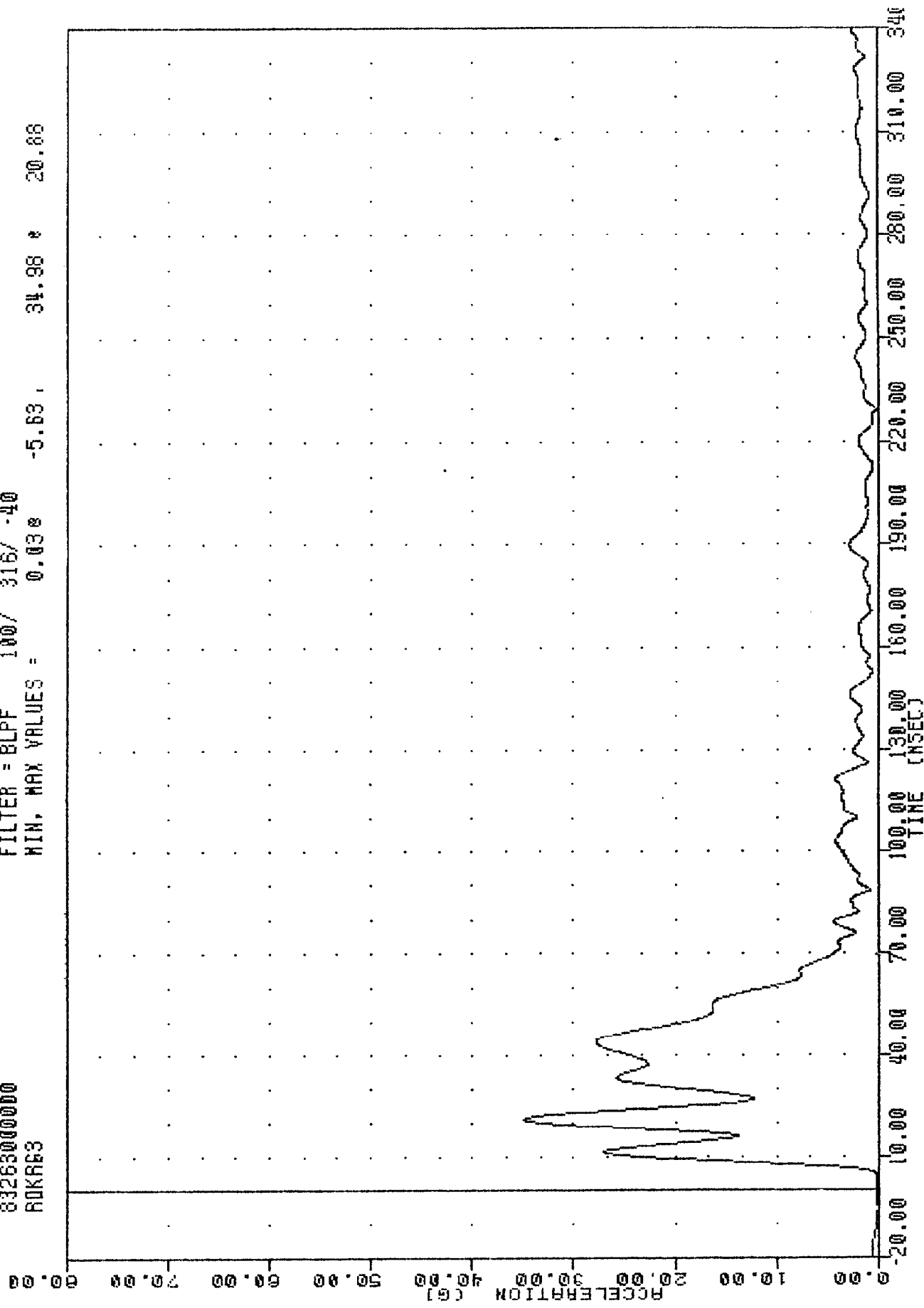
TRC
EVALUATION OF MOD YV FLEET
83263000000
RDKZG3

PLOT DATE 21-SEP-83 15:43:04

FILTER = 6LPF 100/ 316/ -40
MIN, MAX VALUES = -11.38 21.00, 5.88 14.75



TAC
 EVALUATION OF MOD VW FLEET
 83263000000
 ROKR63
 , 830920
 PLUT DATE 21-SEP-83 15:43:04
 FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = 0.038 -5.63 34.98 20.88

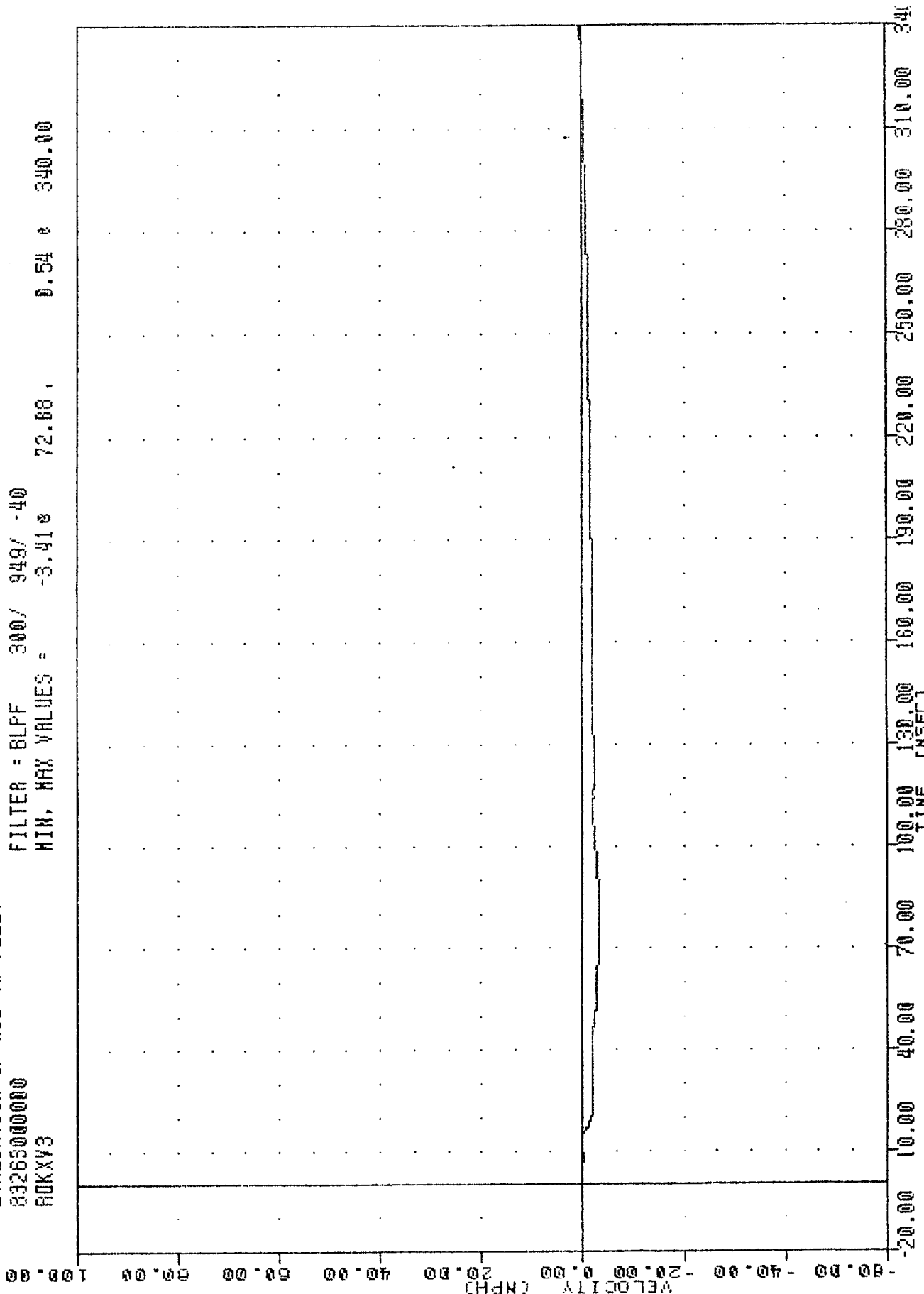


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 VEHICLE REAR DECK RESULTANT

TAC
EVALUATION OF MOD VN FLEET
83263000000
RDKXV3

PLOT DATE 22-SEP-83 14:26:05

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -3.41e 72.88, 0.54 e 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V USING RDKXG3

11RC 830920 22-SEP-83 14:26:05

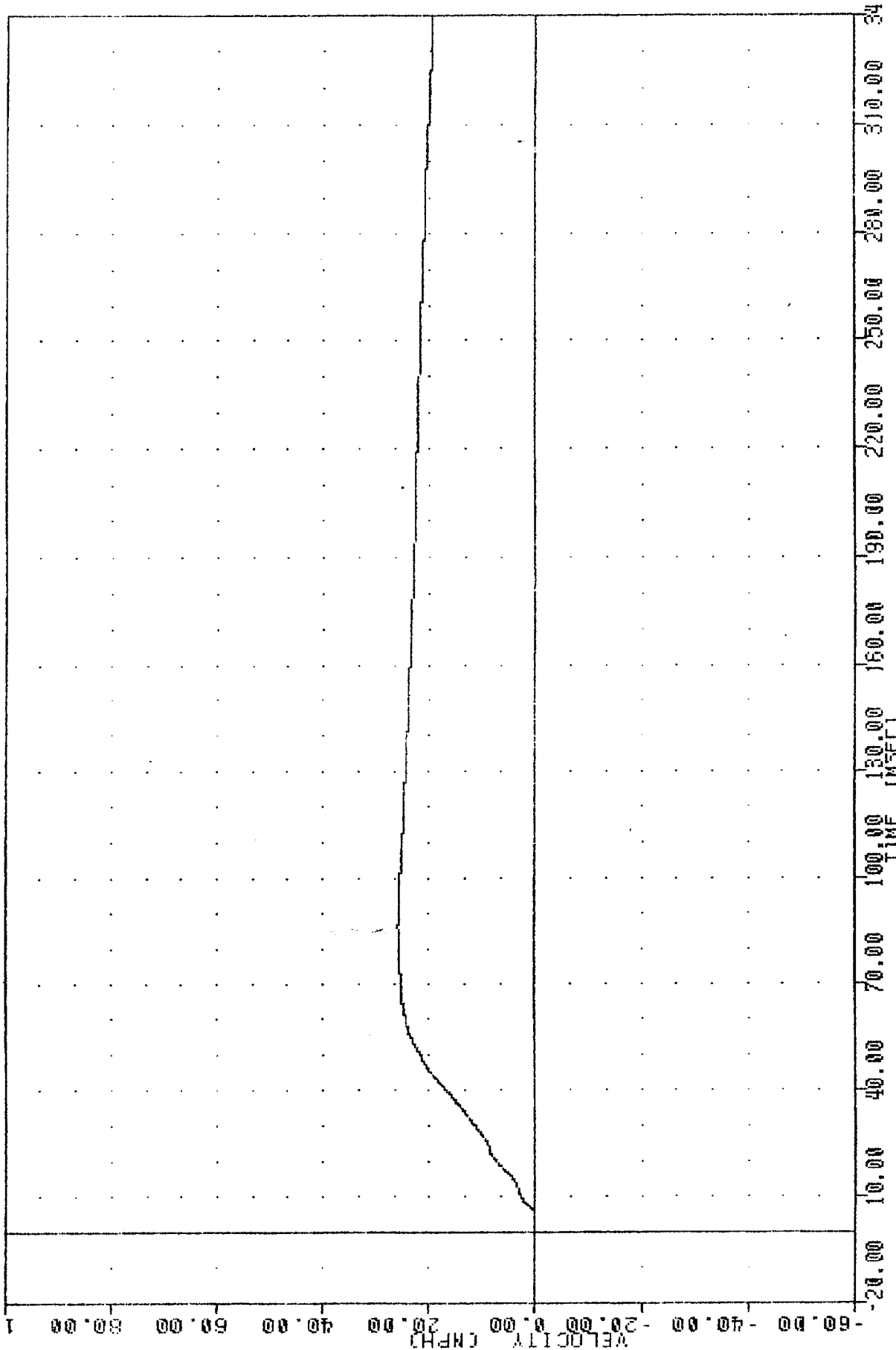
EVALUATION OF M00 YW FLEET

83263000000

ADKYV3

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -0.038 -10.00, 25.85 8 86.00



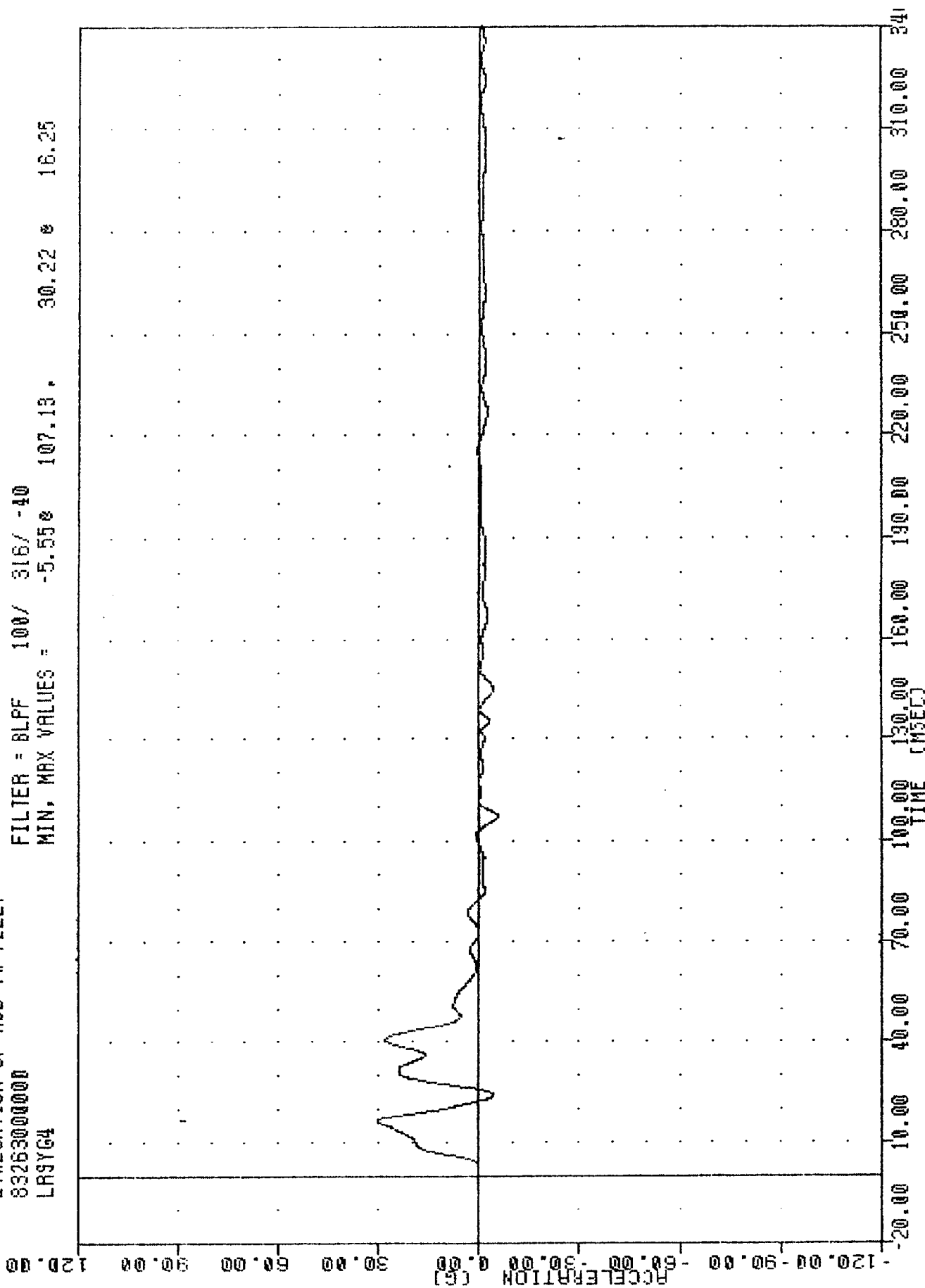
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT

DELTA V USING RDKY63

TRC
 EVALUATION OF MOD VV FLEET
 832630000000
 LRSYG4

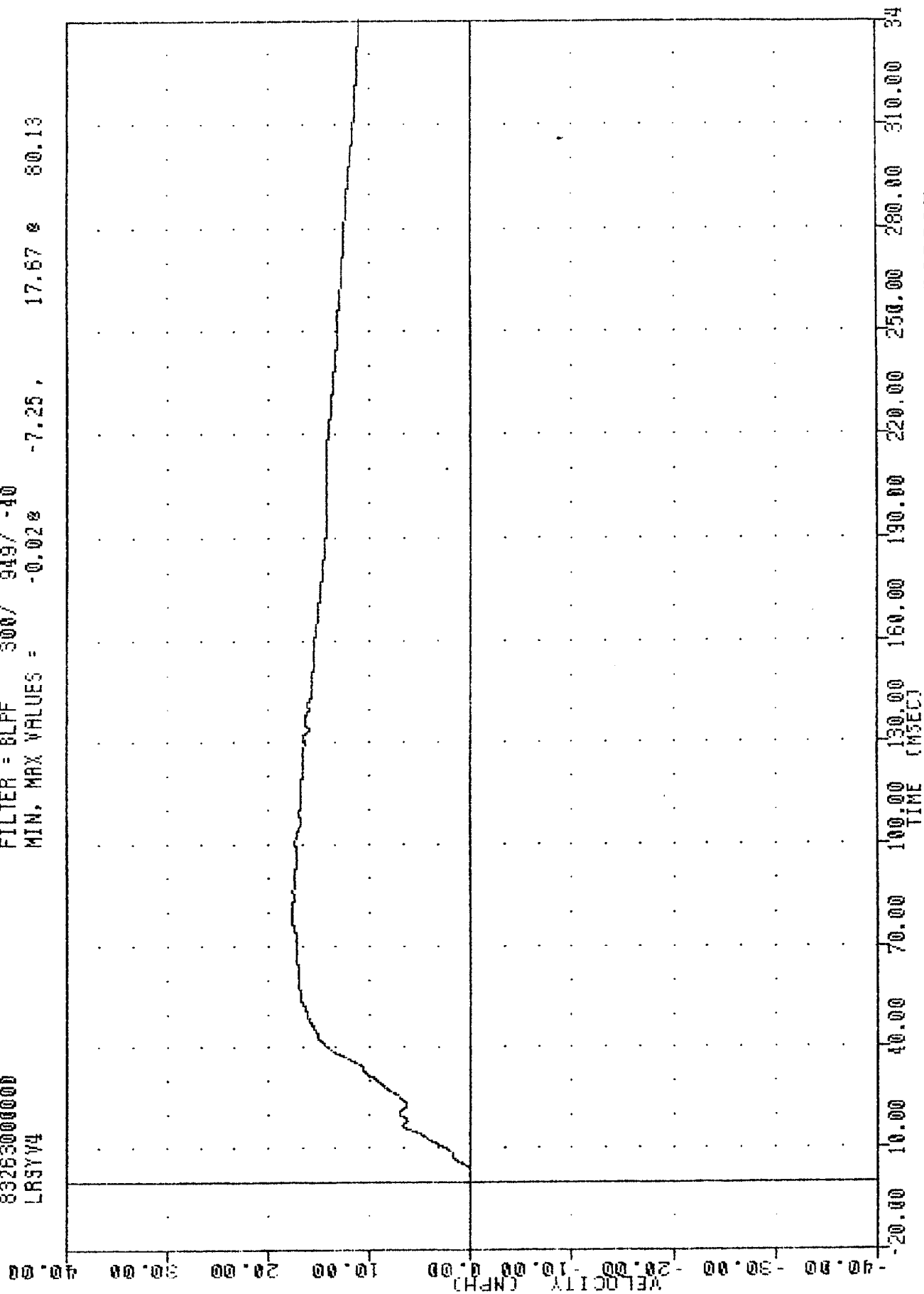
PLUT DATE 21-SEP-83 15:43:04

FILTER = 8LPF 100/ 316/ -40
 MIN, MAX VALUES = -5.55e 107.13, 30.22 e 18.25



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

TRC
 EVALUATION OF MDD VW FLEET
 83263000000
 LRSYV4
 , 830920
 27-SEP-83 14:26:05
 FILTER = 8LFF 300/ 949/ -40
 MIN. MAX VALUES = -0.028 -7.25, 17.67 80.13

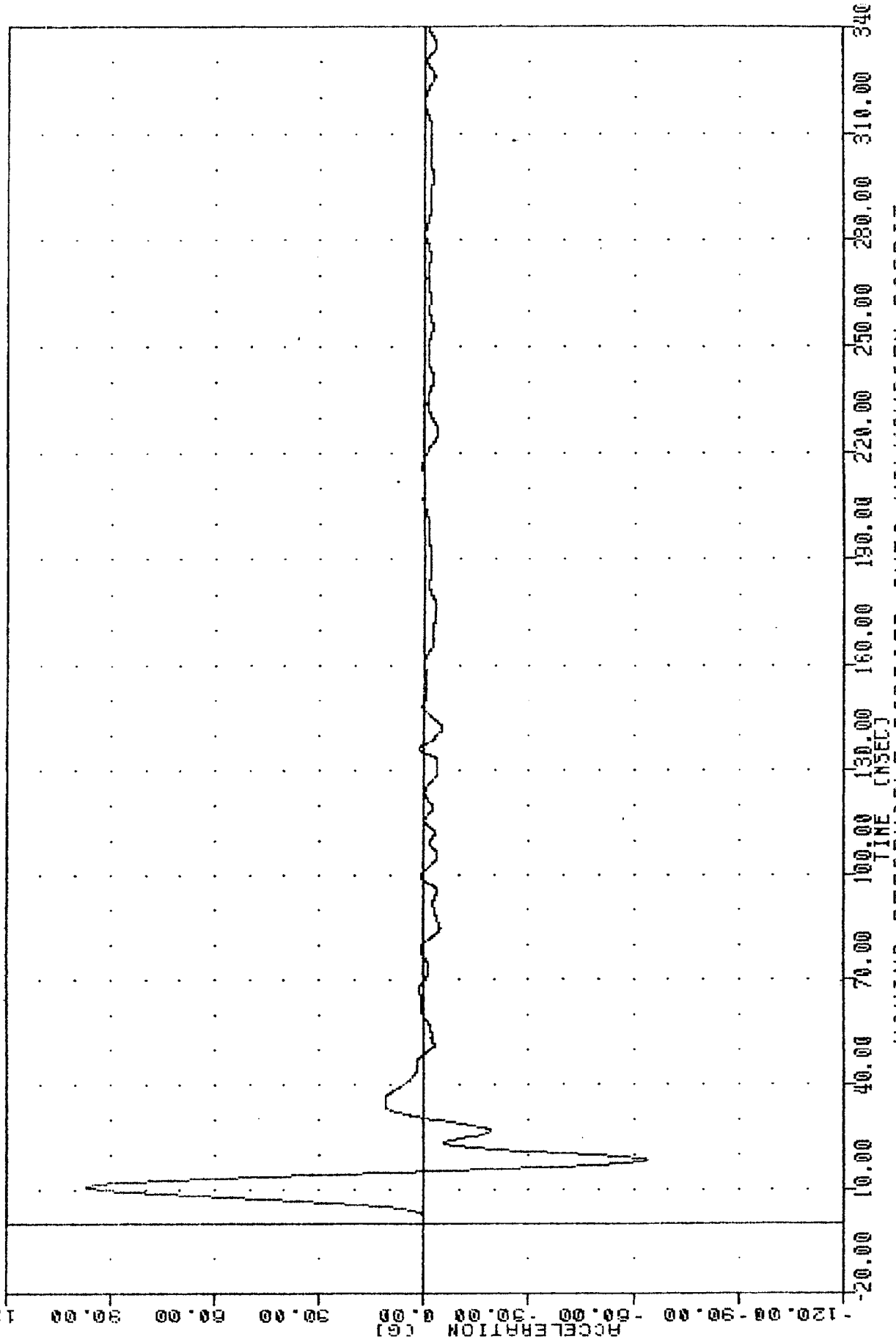


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LRSY64

THC
EVALUATION OF MOD VEH FLEET
832630000000
LFSY65

PLUT DATE 21-SEP-83 15:43:04

FILTER = 8LPF 100/ 316/ -40
MIN, MAX VALUES = -63.96 18.00 96.72 10.50

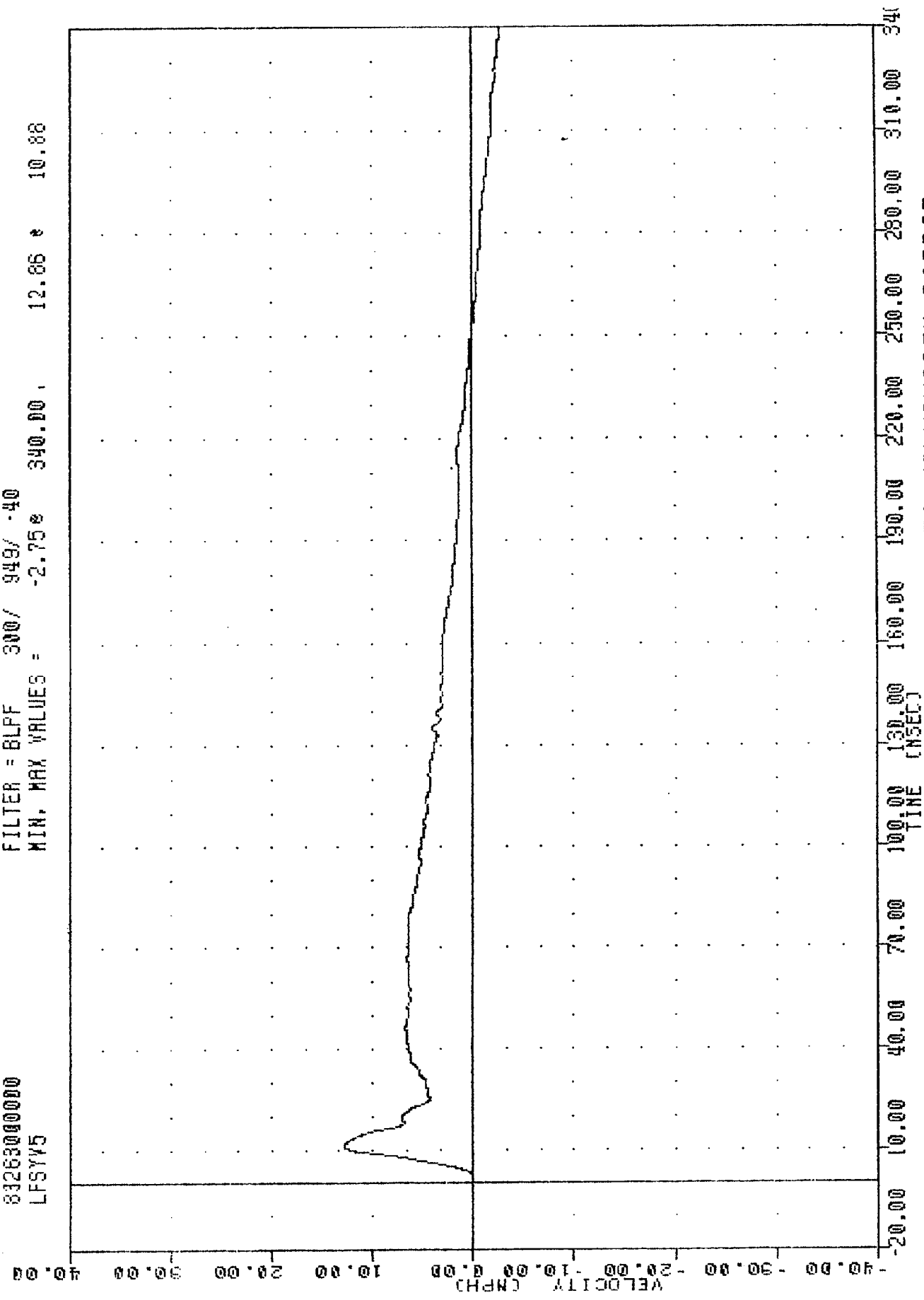


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS

TMC
 EVALUATION OF MOD VN FLEET
 83263000000
 LFSYV5

TEST DATE 22 SEP 03 14:28:00

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -2.75e 340.00 12.86 e 10.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFSYG5

TRC

830920

EVALUATION OF MOD VN FLEET

83263000000

LFDY61

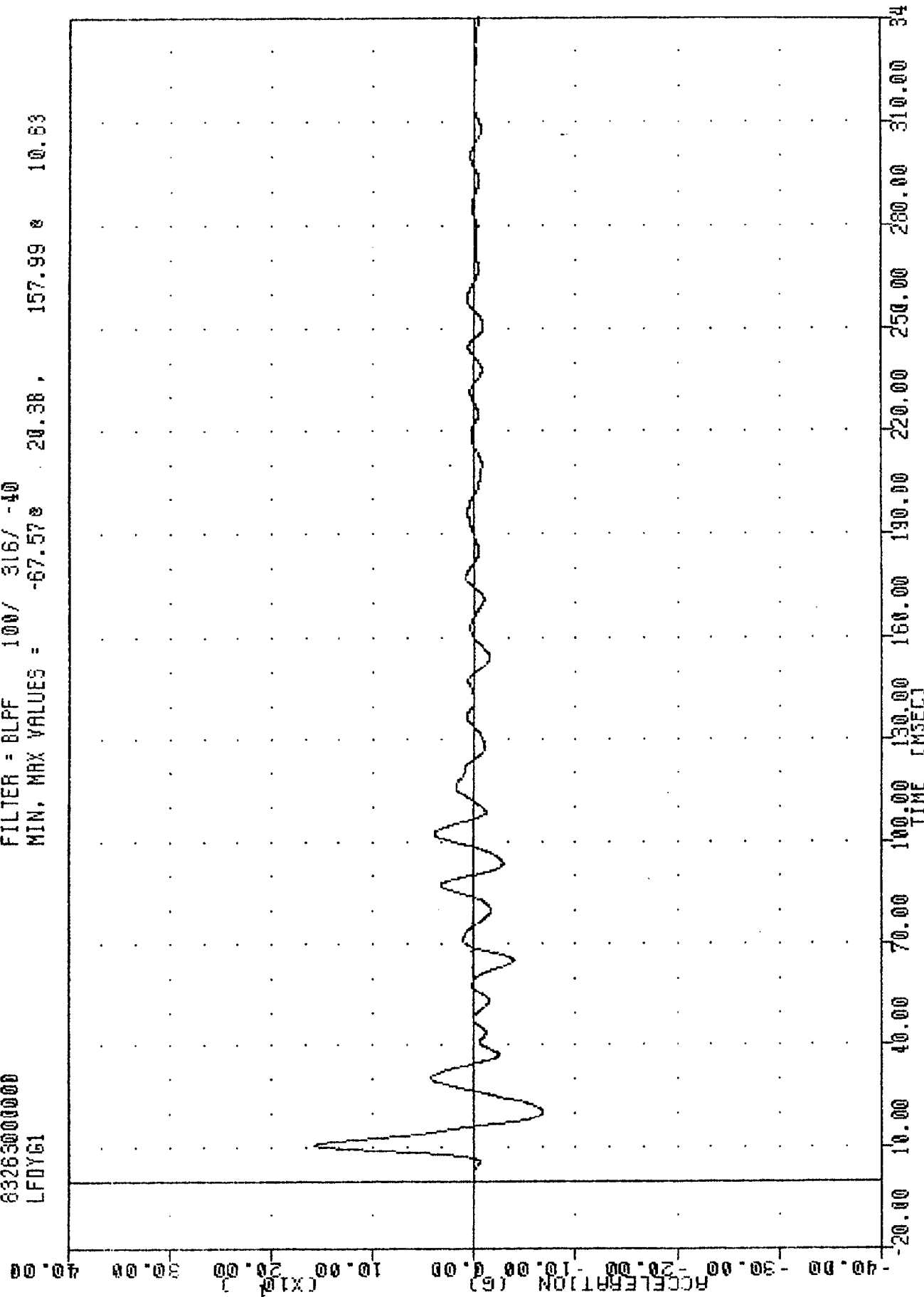
PLOT DATE

21-SEP-83

15:45:04

FILTER = BLPF 100/ 316/ -40

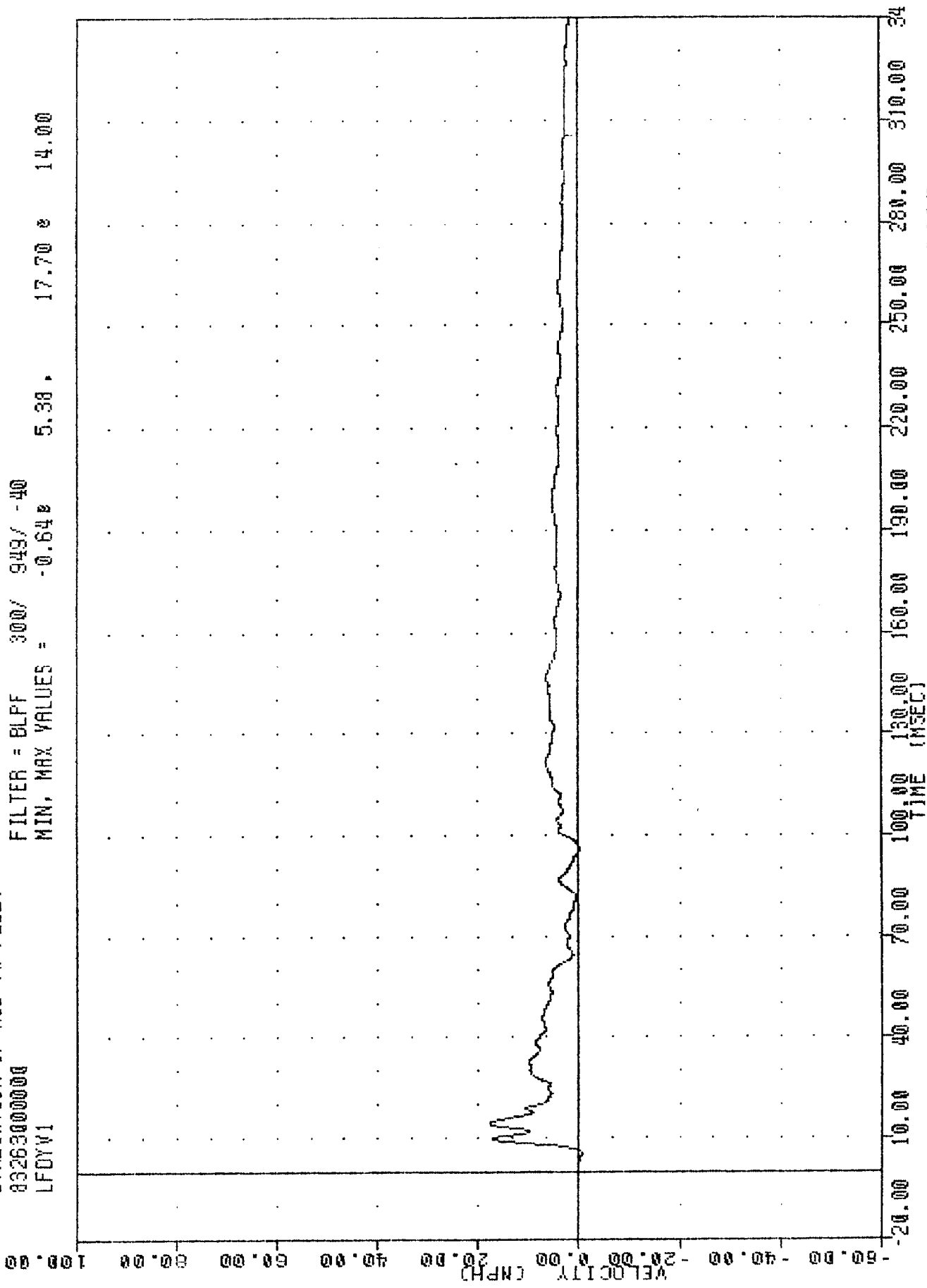
MIN, MAX VALUES = -67.578 20.38 , 157.99 8 10.53



INC 830820
 EVALUATION OF MOD VW FLEET
 83263000000
 LFDYV1

PLOT DATE 22-SEP-03 14:20:03

FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -0.648 5.38 17.70 14.00

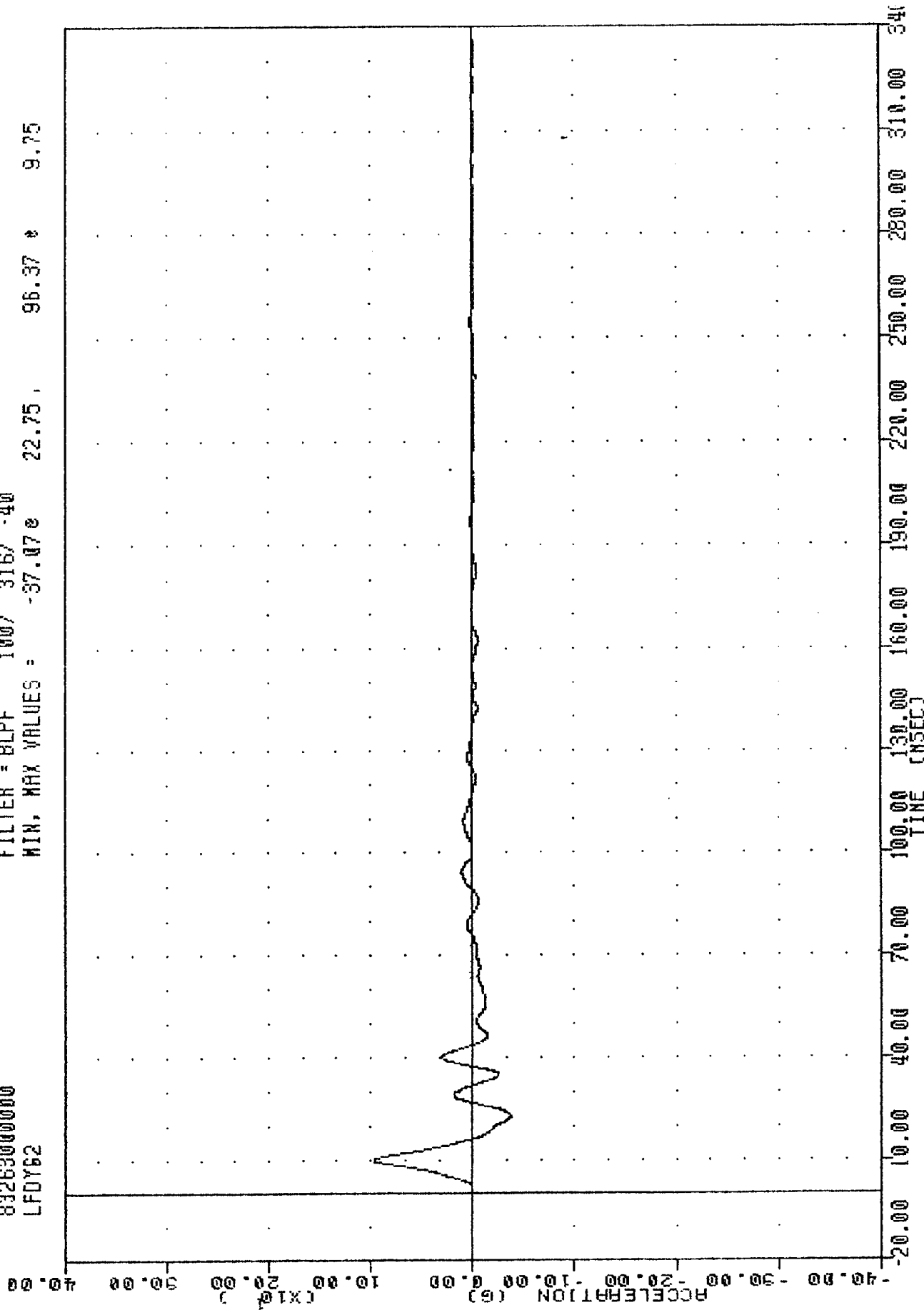


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFDYGI

TRC 830920
EVALUATION OF MOD VW FLEET
83263000000
LFDY62

PLUT DATE 21 SEP 03 13:43:04

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -37.07e 22.75 , 96.37 * 9.75



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

TRC
 EVALUATION OF MOD VW FLEET
 83263000000
 LFDYV2

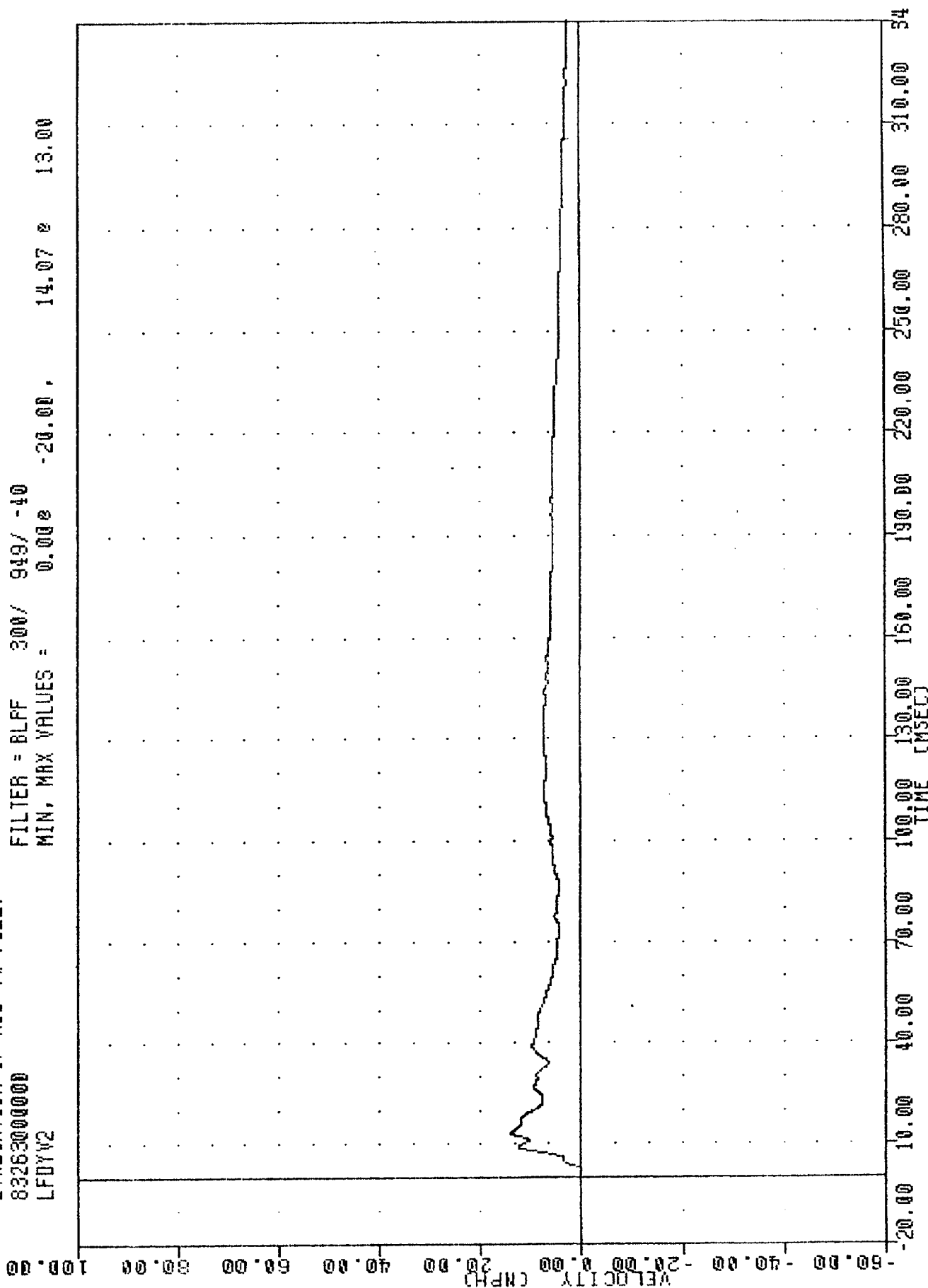
830920

PLOT DATE

22-SEP-83

14:26:05

FILTER = BLFF 300/ 949/ -40
 MIN, MAX VALUES = 0.000 -20.00, 14.07 13.00

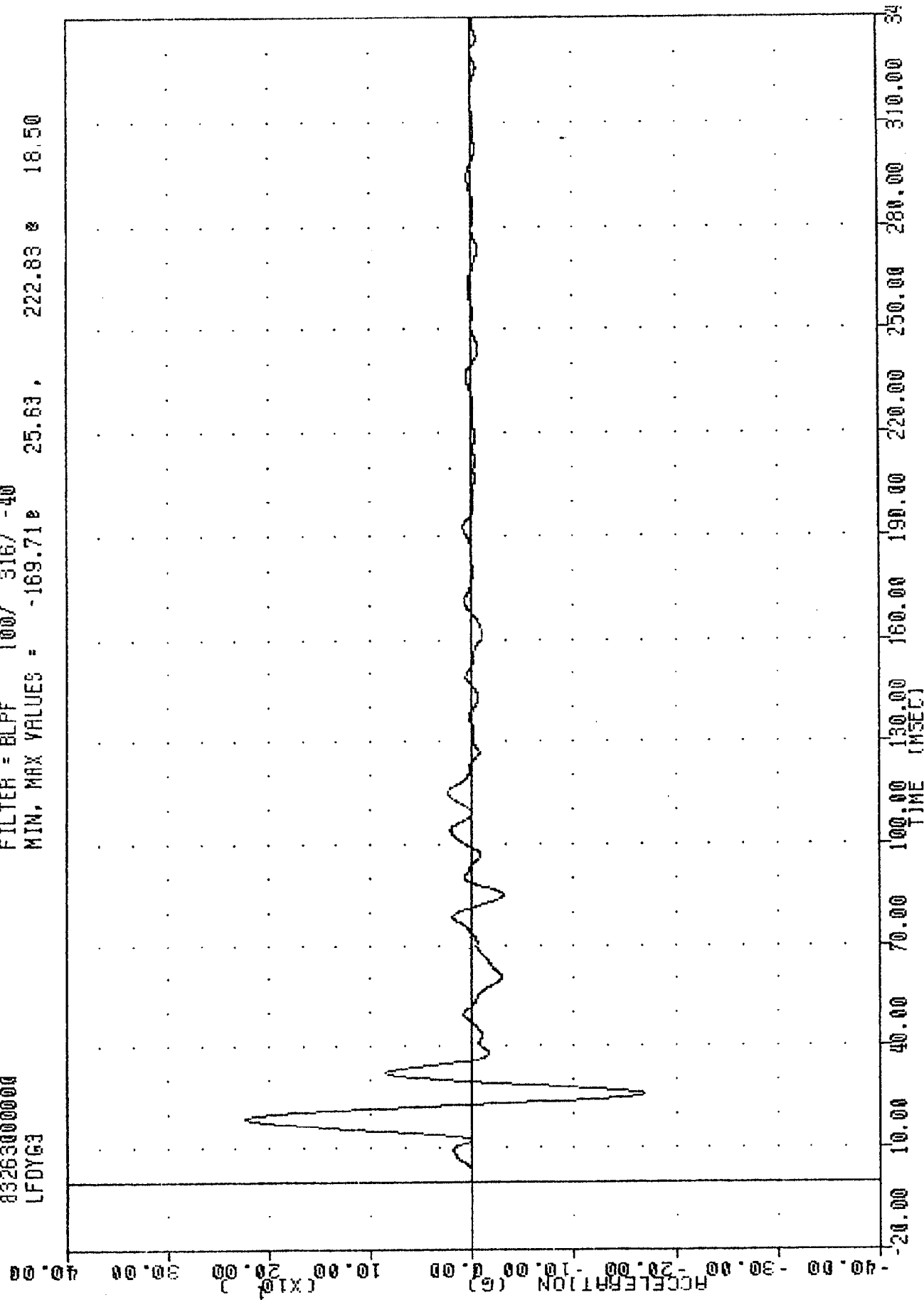


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFDY62

TRC 830320
 EVALUATION OF MOD VN FLEET
 83263000000
 LFDY63

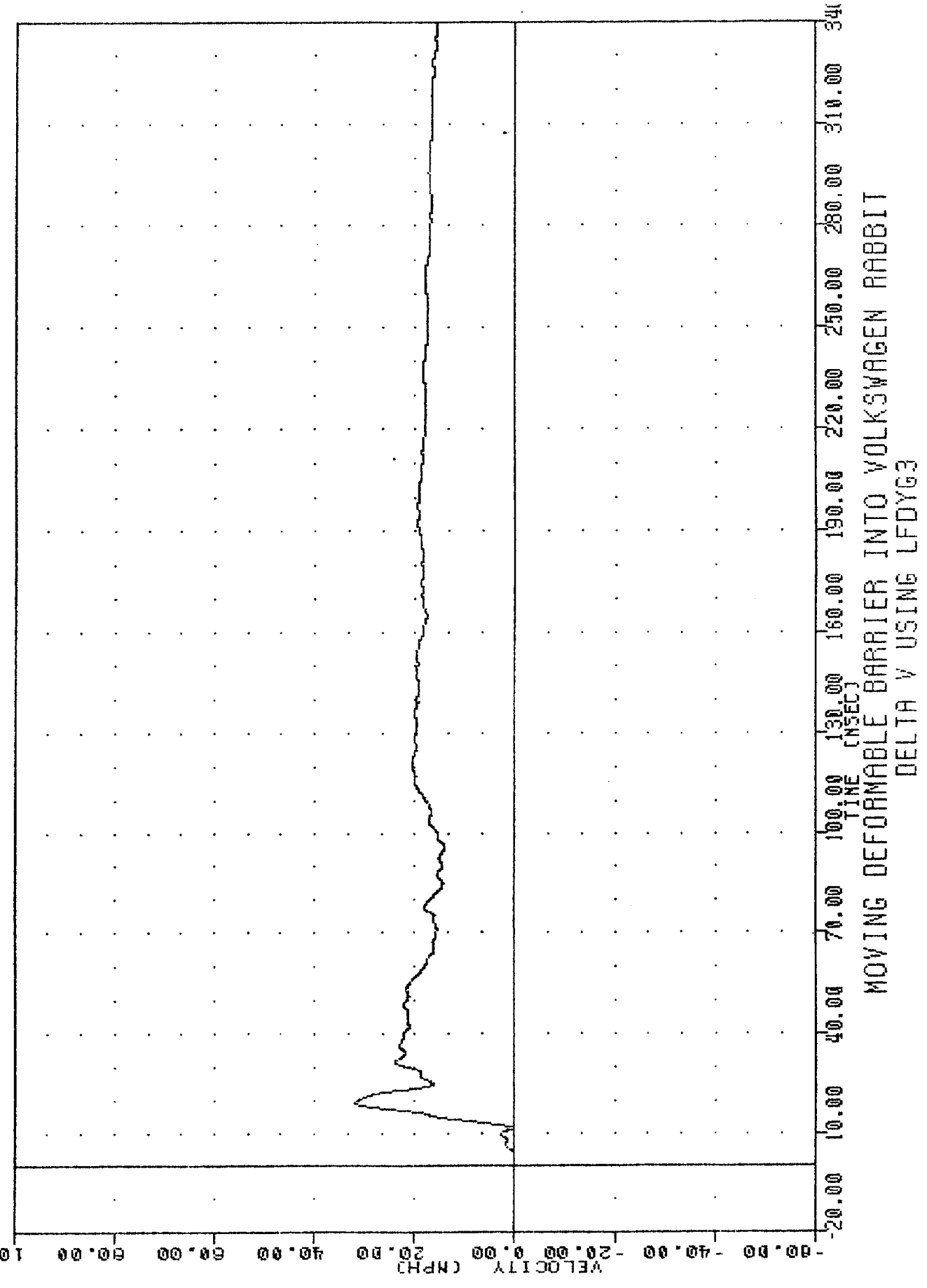
PLOT DATE 21-SEP-03 15:43:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -169.71e 25.63, 222.83 e 18.50



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

TAC 830920 22-SEP-83 14:26:00
 EVALUATION OF MOD VW FLEET
 83263000000
 LFDYV3
 FILTER = BLPF 300/ 949/ -40
 MIN, MAX VALUES = -0.03e -6.25, 32.03 e 19.00

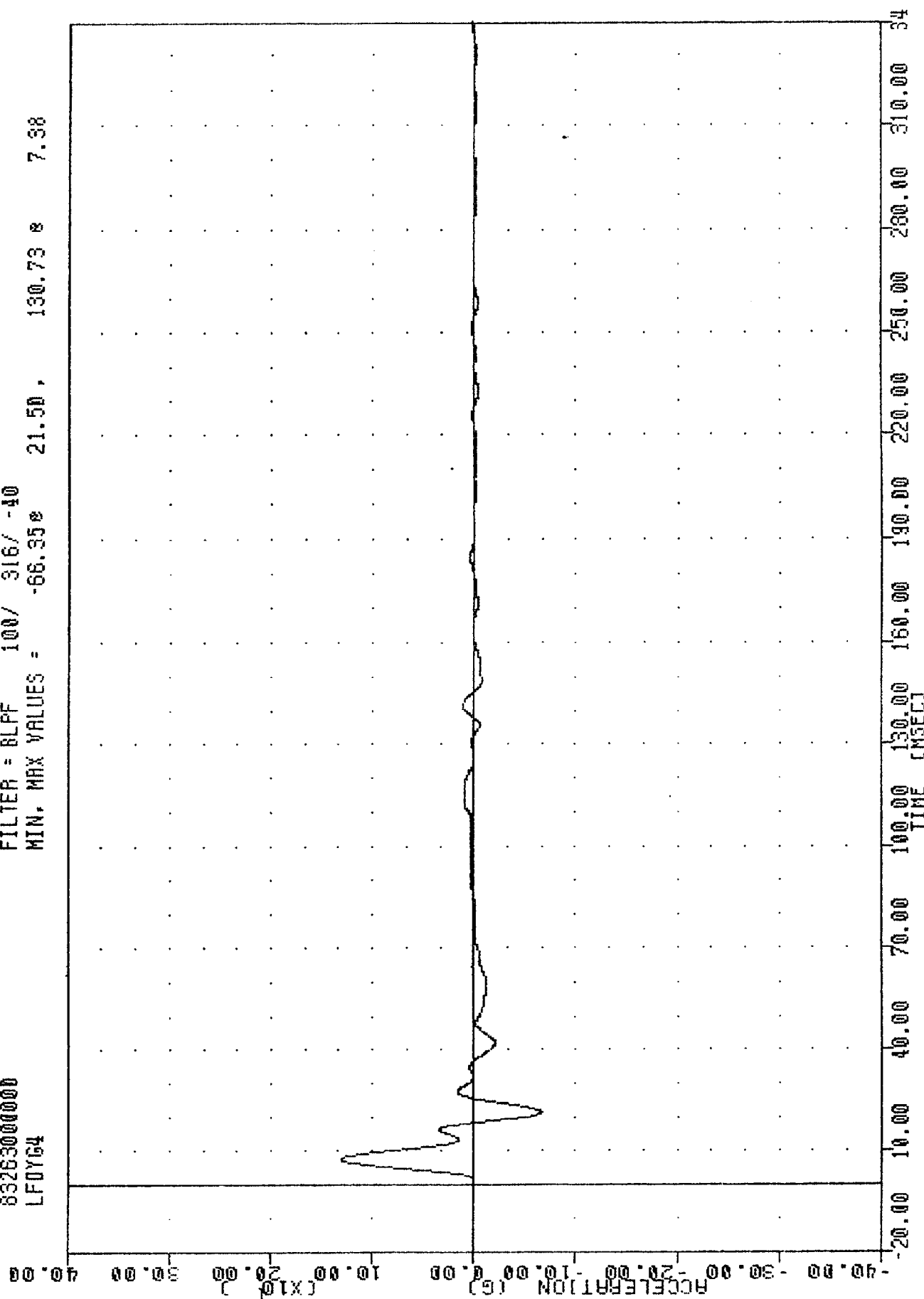


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING LFDYV3

INC 830920
EVALUATION OF MOD VN FLEET
83263000000
LF0Y64

PL07 DATE 21-SEP-83 13:43:04

FILTER = BLFF 100/ 316/ -40
MIN. MAX VALUES = -66.35 21.50, 130.73 7.38

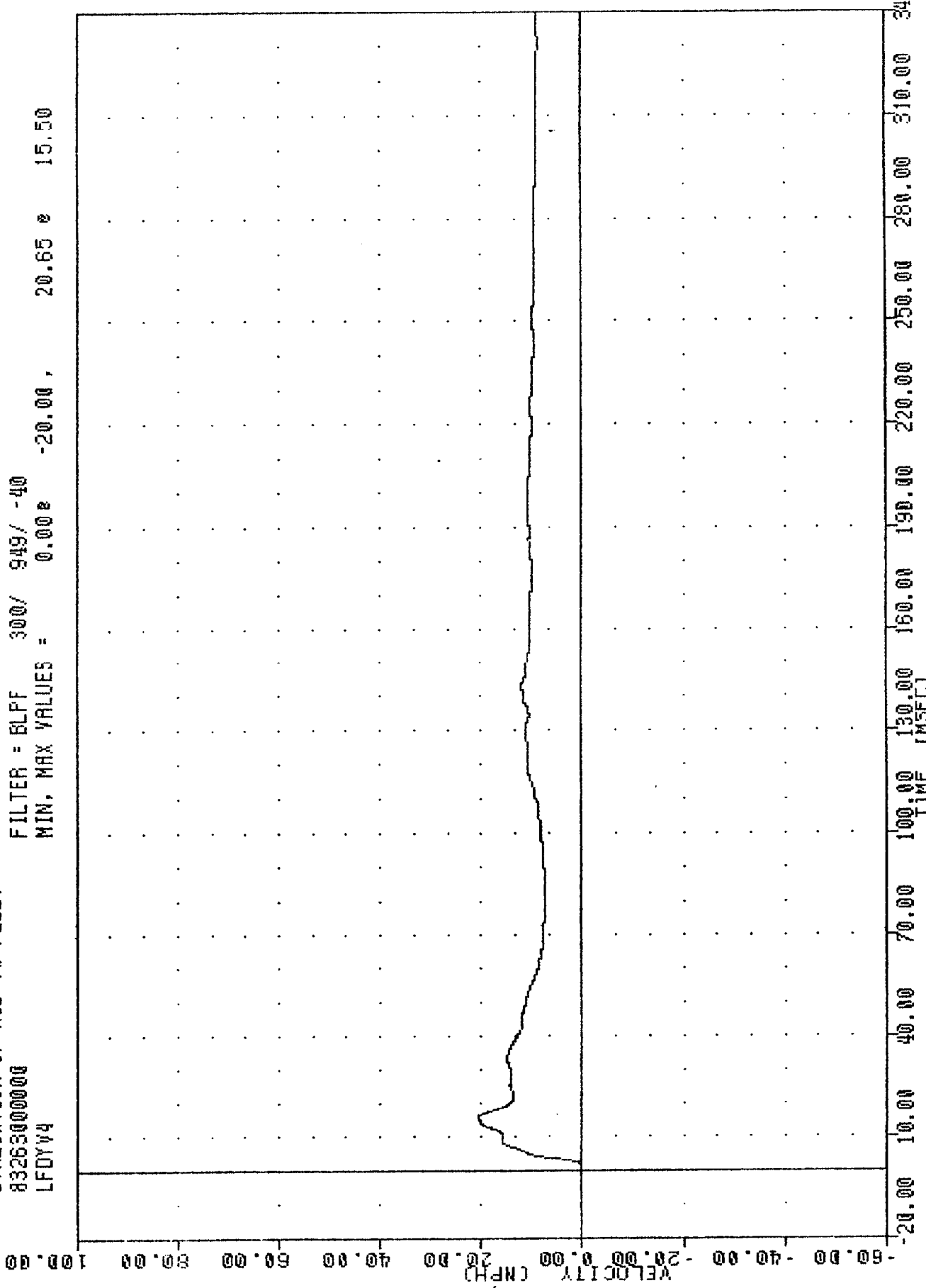


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT DOOR (POSITION 10) ACCELERATION Y AXIS

TRC , 830920
 EVALUATION OF MOD YV FLEET
 832630000000
 LFDYV4

PLOT DATE 22-SEP-63 14:26:05

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 0.00e -20.00 , 20.65 e 15.50



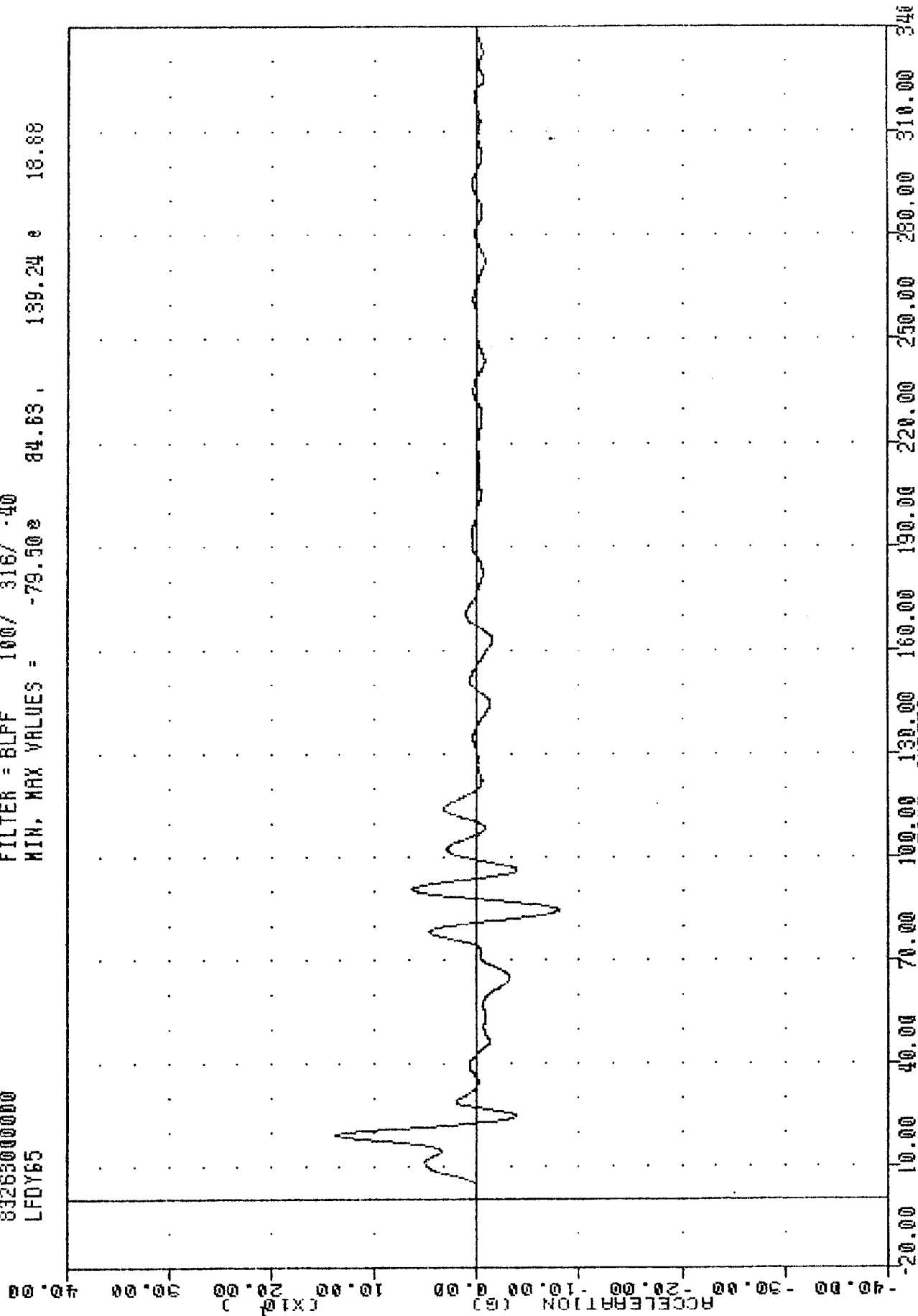
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA W IISING I FNYGR

TAC
EVALUATION OF MOD VN FLEET
83263000000
LFDY65

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -79.50e 84.63, 139.24 e 18.88



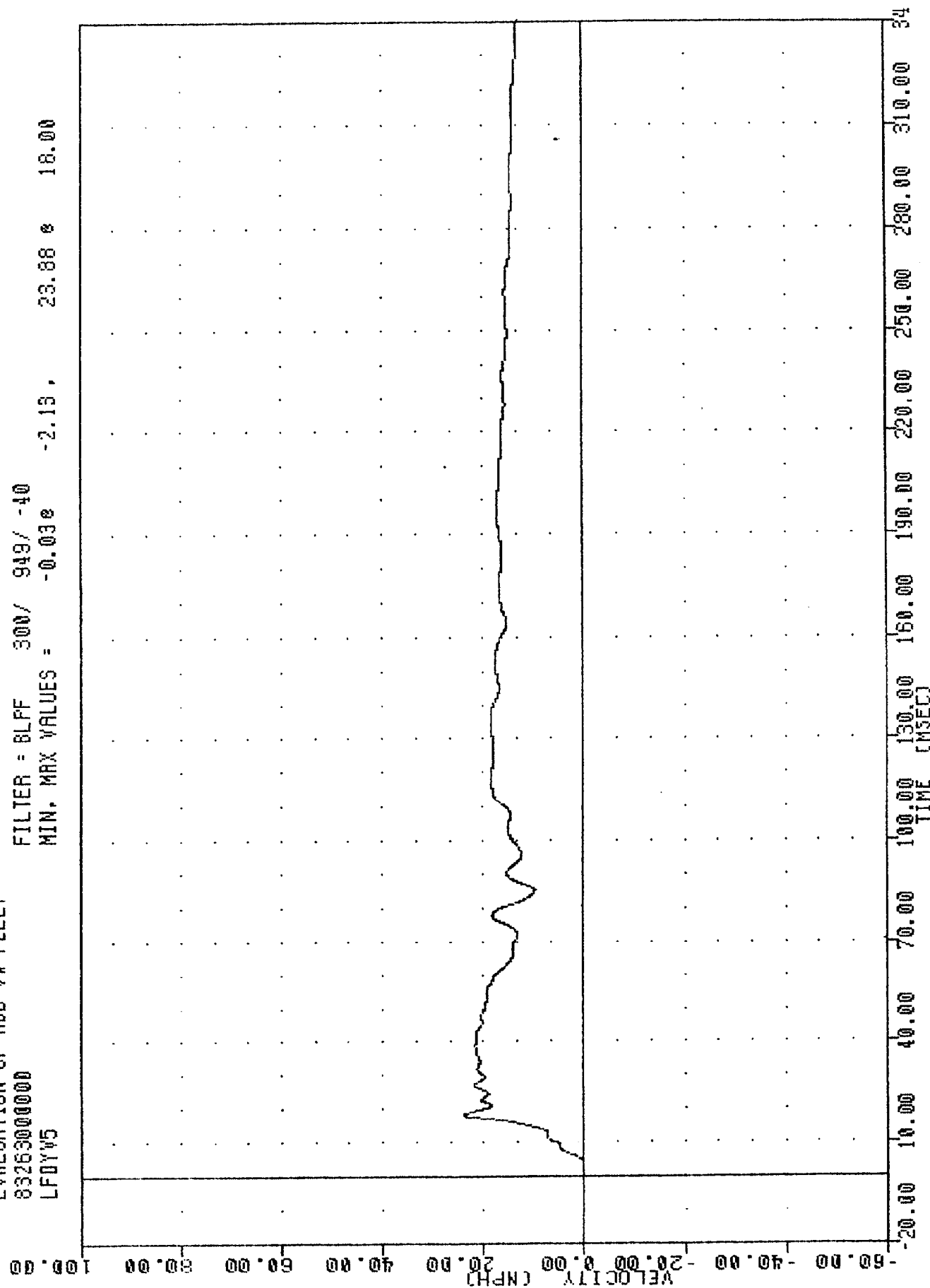
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE LEFT FRONT CORNER (POSITION 11) ACCELERATION Y AXIS

TRC , 830920
EVALUATION OF MDD VW FLEET
83263000000
LFOYV5

PLOT DATE 22-SEP-83 14:26:05

FILTER = 8LFF 300/ 949/ -40

MIN. MAX VALUES = -0.03e -2.13, 23.88 e 18.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
DELTA V LISTING LFOY65

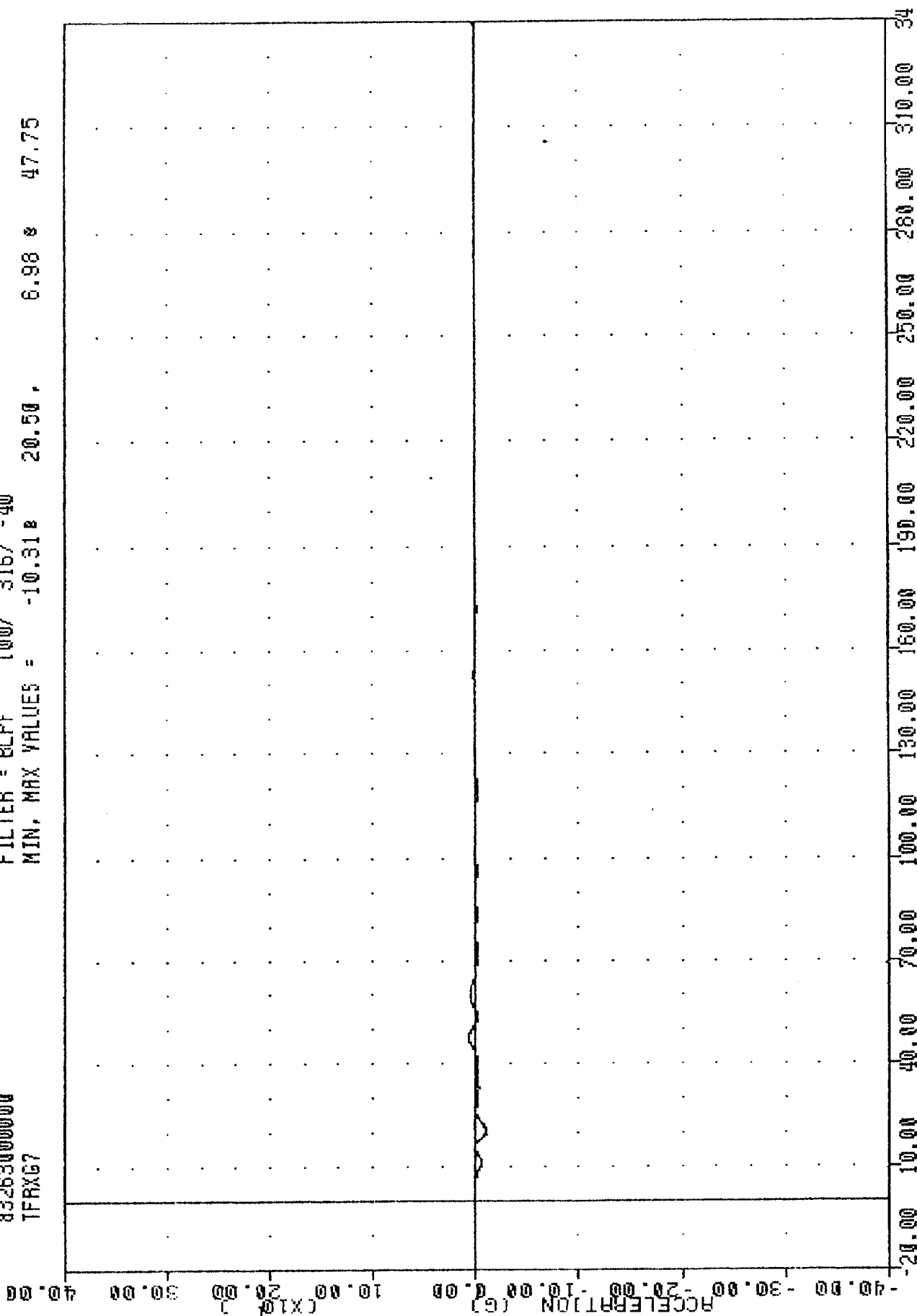
TRC
EVALUATION OF MOD YW FLEET
83263000000
TFRXG7

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -10.312 20.50 ,

6.98 s 47.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
VEHICLE TRIMM FINDER RIGHT ACCELERATION Y AXIS

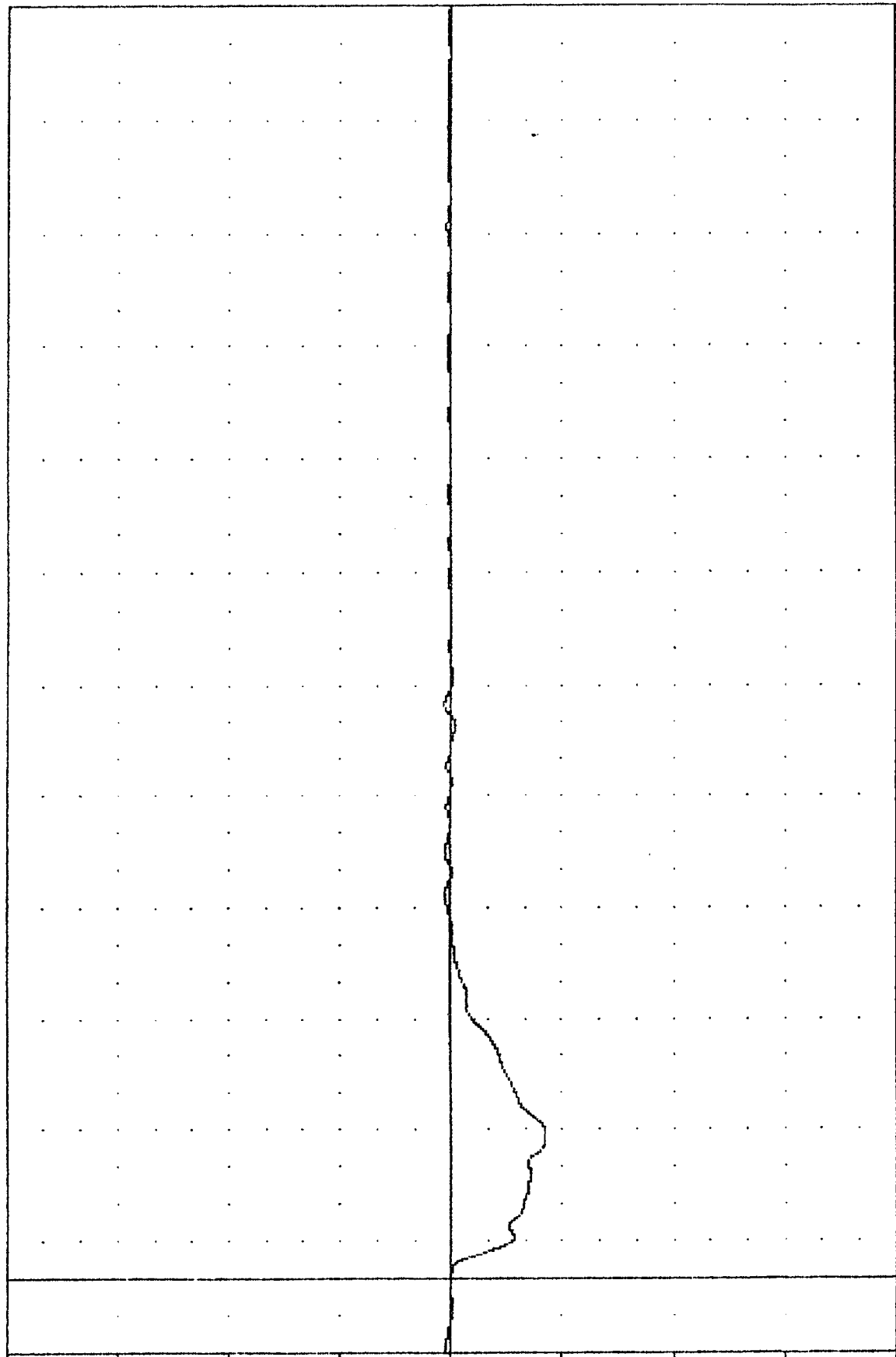
TRC
EVALUATION OF MOD VV FLEET
83263000000
BCGXG

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -16.90g 38.63, 1.24 g 154.75

ACCELERATION (g)



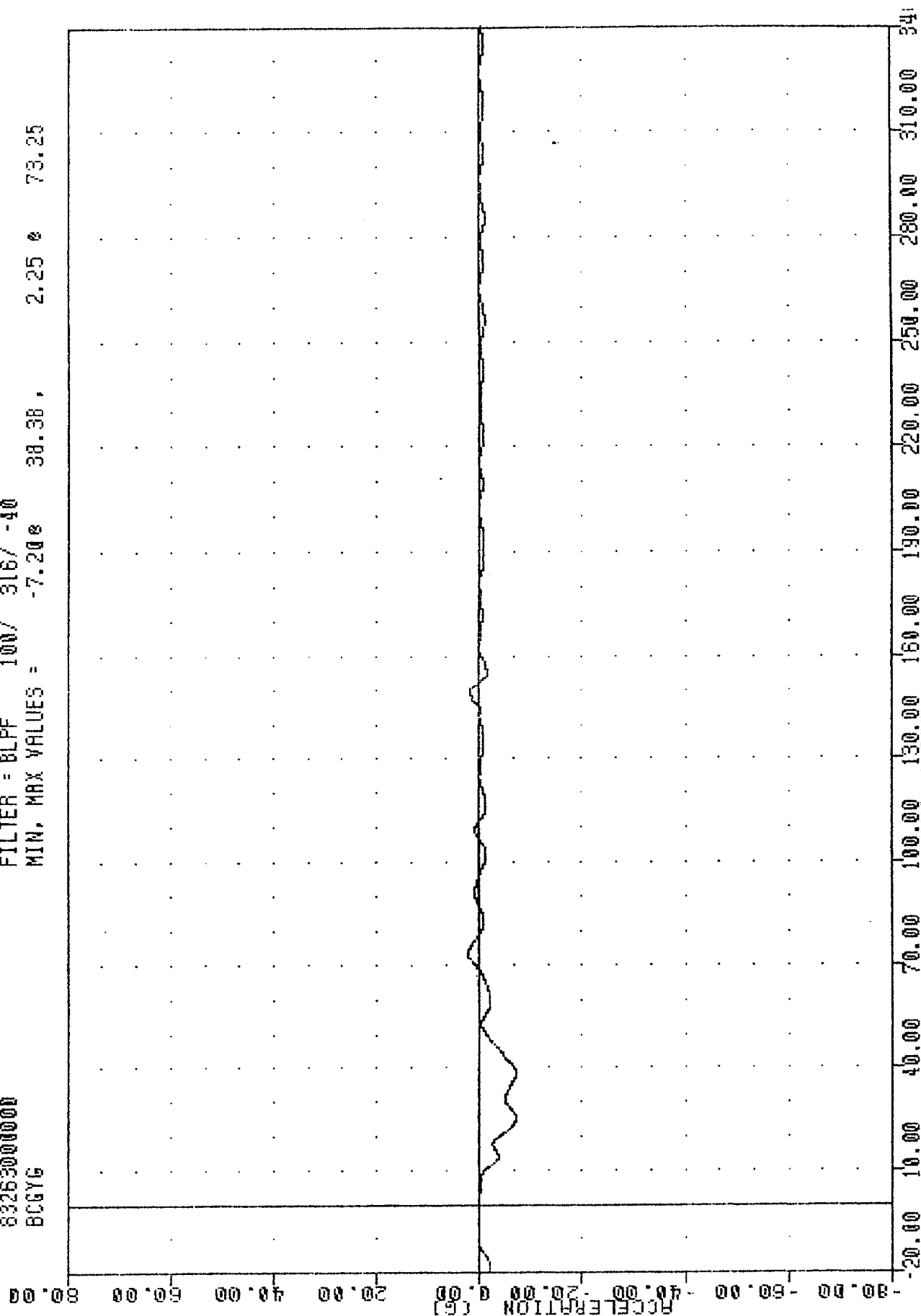
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER CENTER OF GRAVITY X AXIS

TRC , 830920
 EVALUATION OF MOD VW FLEET
 83263000000
 BCCYG

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -7.20e 38.38, 2.25 e 73.25

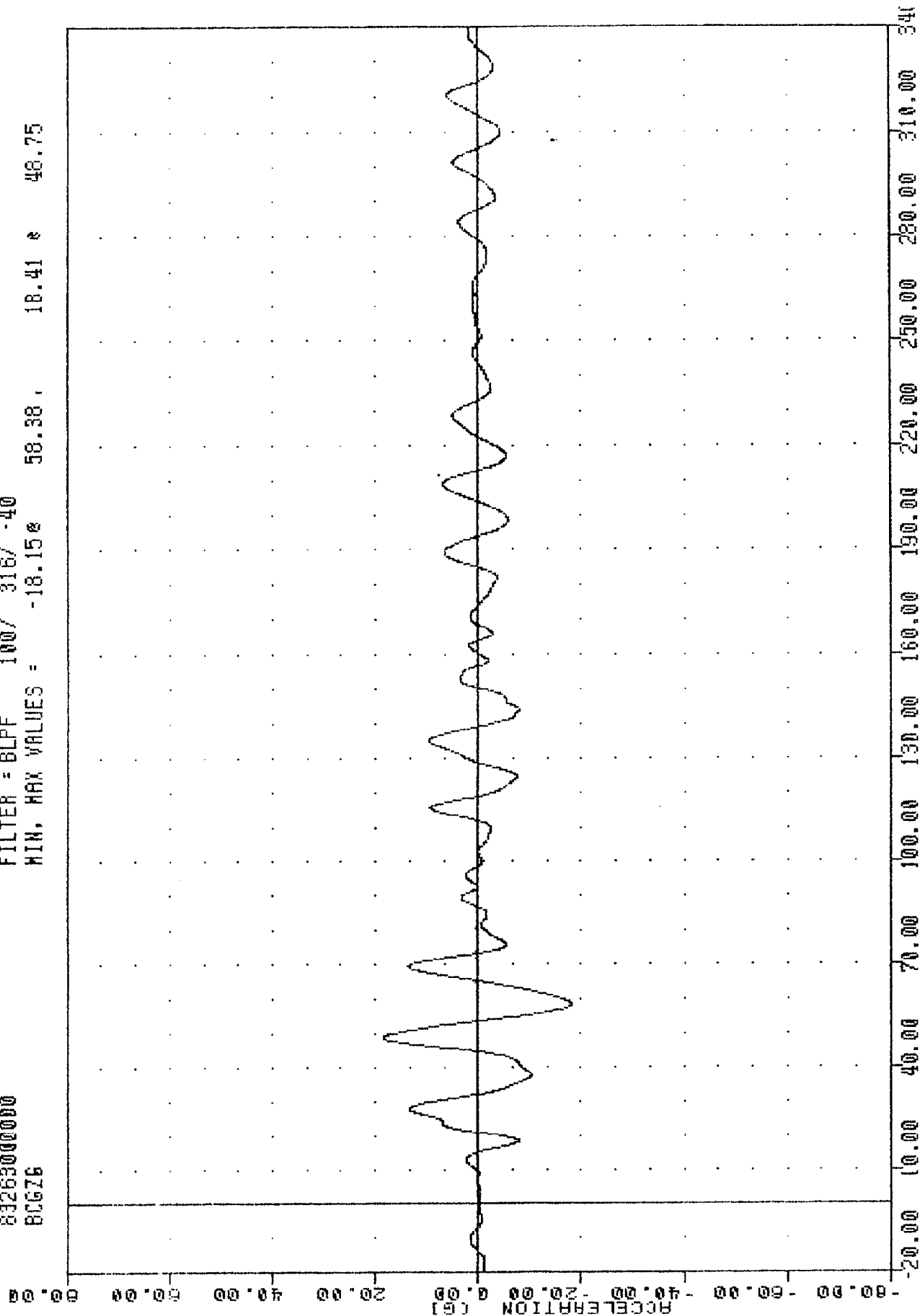


TAC
EVALUATION OF MOD VV FLEET
83263000000
8CG76

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -18.158 58.38, 18.41 48.75

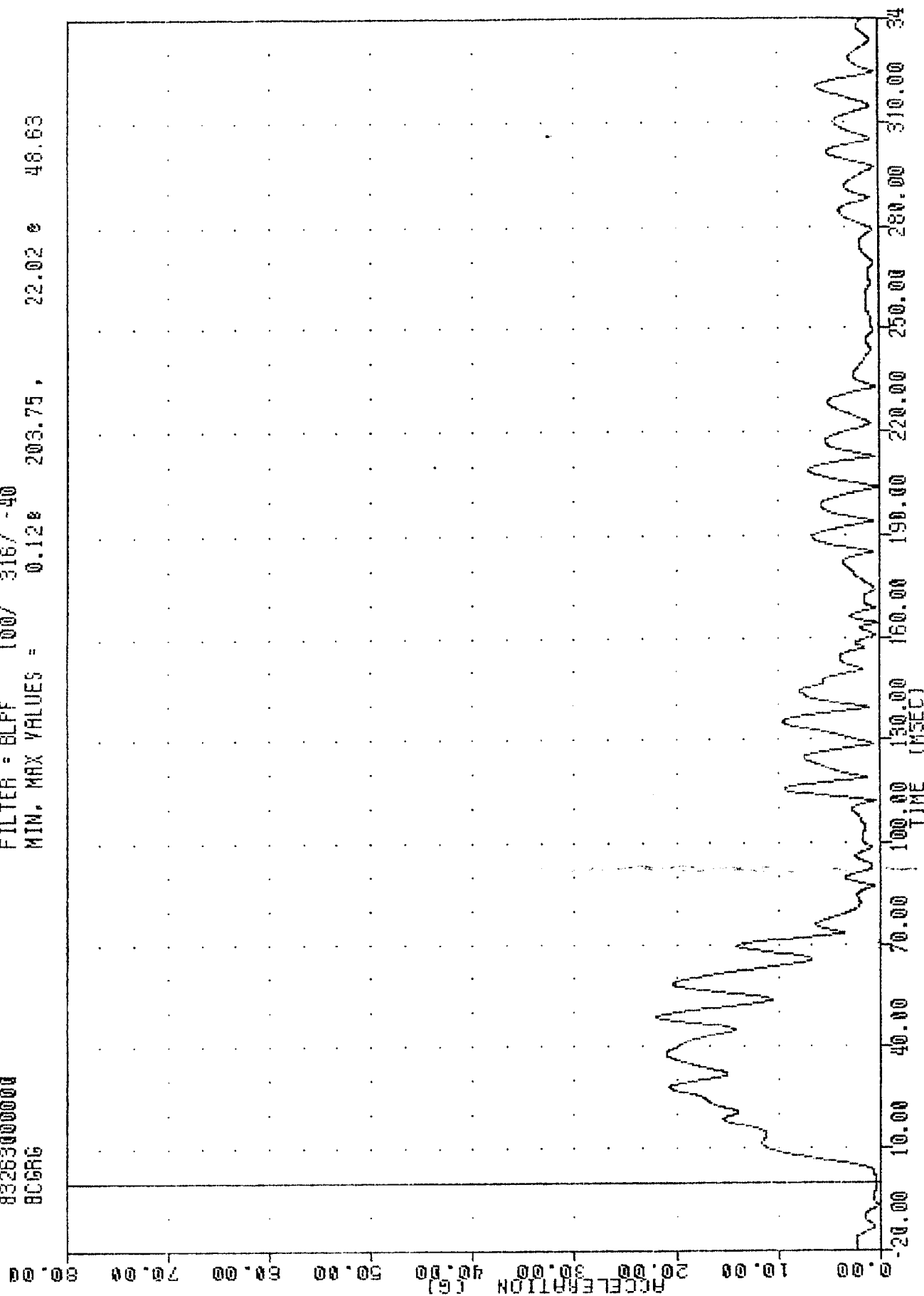


TRC
EVALUATION OF MOD YW FLEET
83263000000
BCGRG

PLOT DATE 22-SEP-83 10:14:03

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = 0.12e 203.75, 22.02 e 48.63



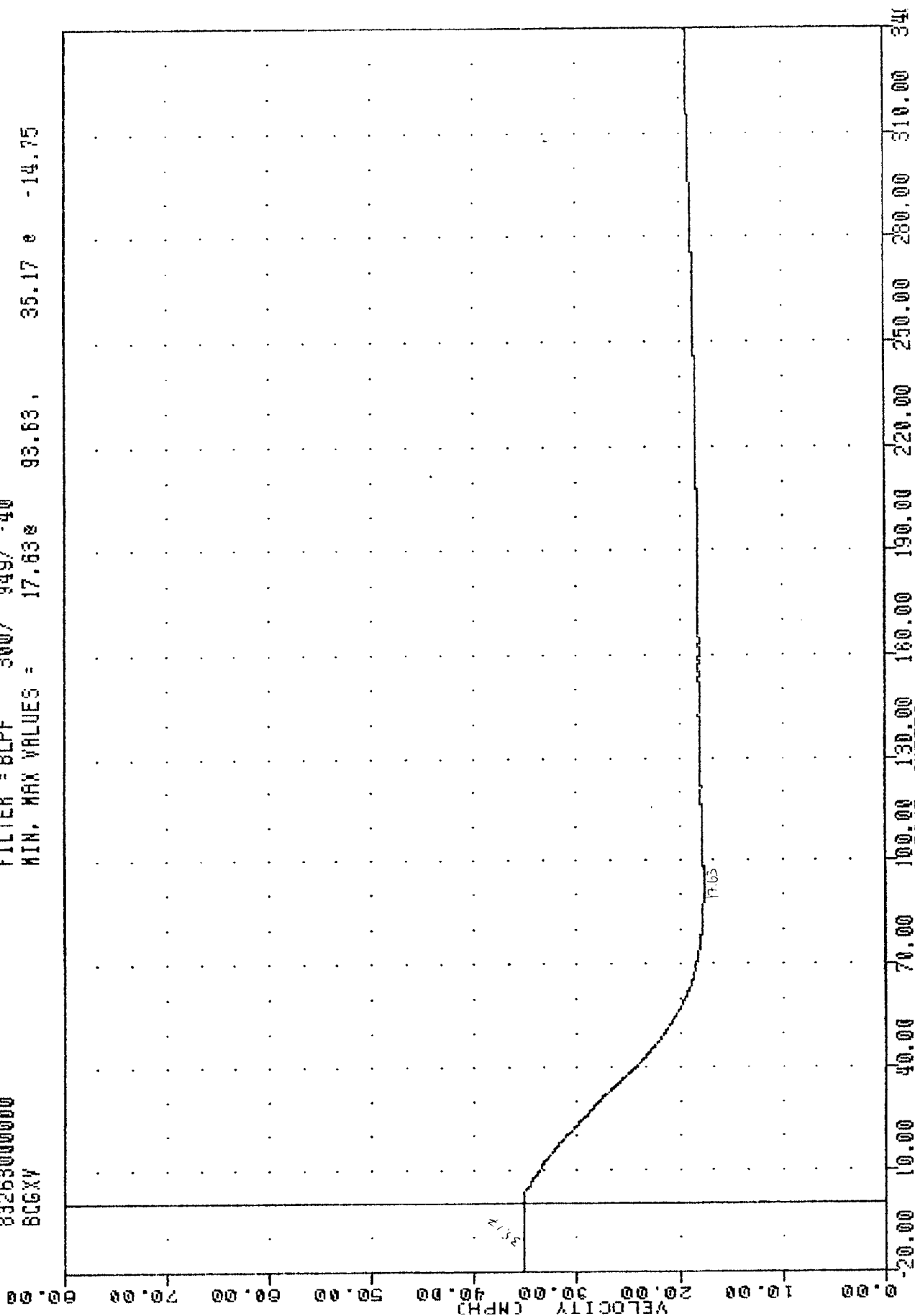
BARRIER CG RESULTANT

TAC , 830920
 EVALUATION OF MOD VN FLEET
 83263000000
 BCGXV

PLOT DATE 22-SEP-83 14:26:05

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 17.63e 93.63, 35.17 e -14.75

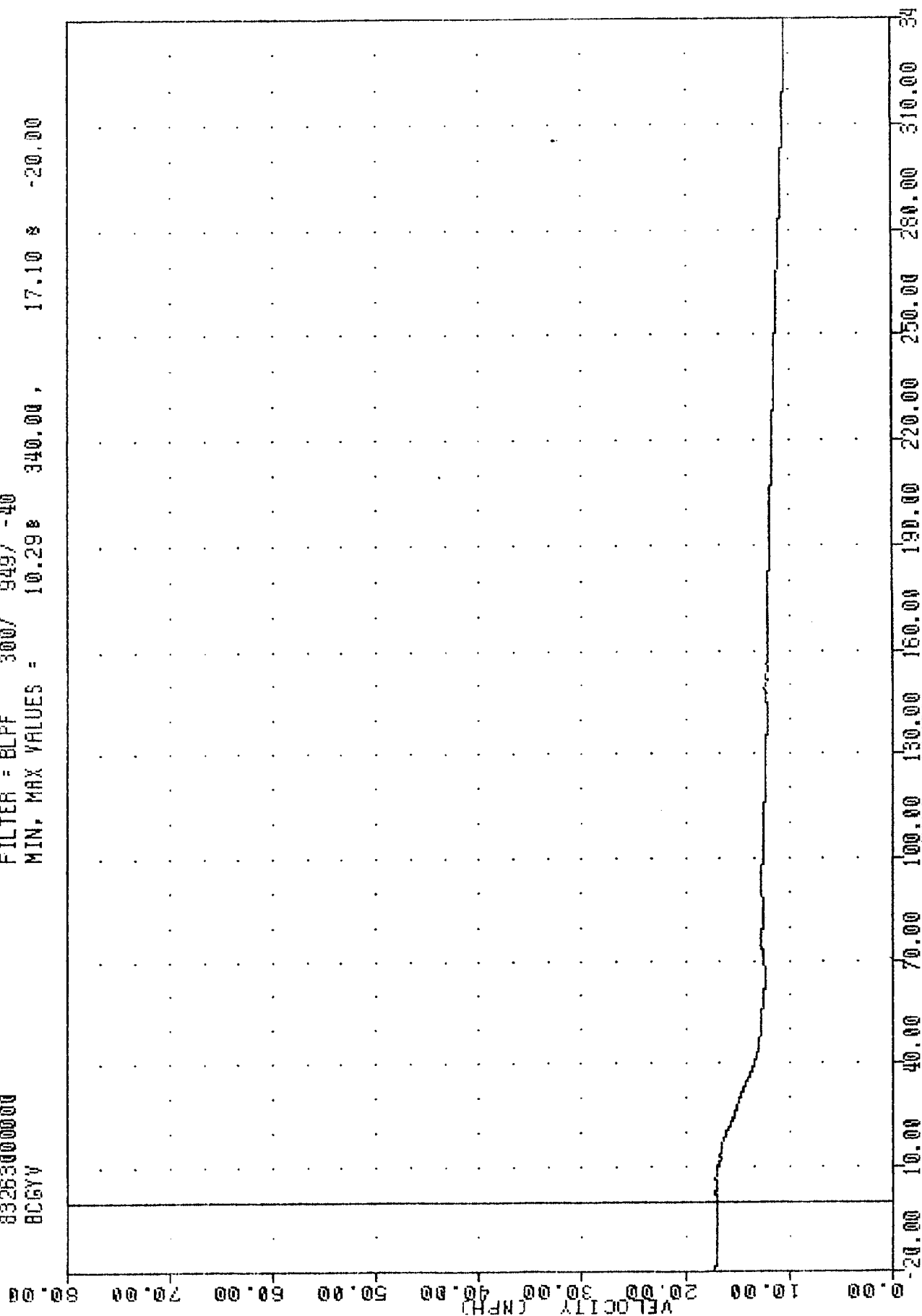


TRC , 830920
 EVALUATION OF MOD YW FLEET
 83263000000
 BCCGV

PLOT DATE 22-SEP-83 14:26:05

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = 10.298 340.00, 17.10 s -20.00

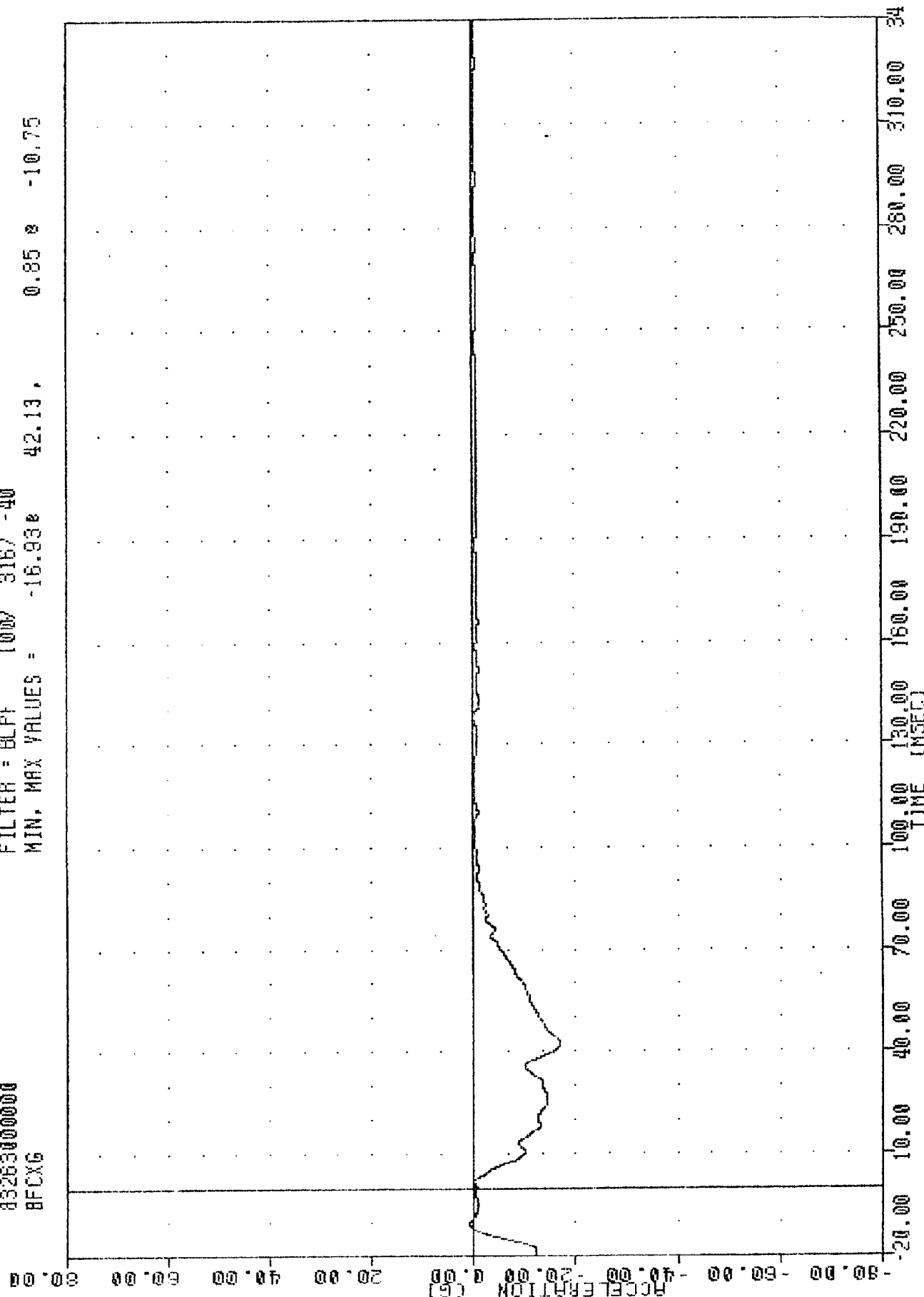


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BCCGV

TRC
EVALUATION OF MOD VN FLEET
83263000000
BFCXG

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100V 3167 -40
MIN. MAX VALUES = -16.93e 42.13, 0.85 e -10.75

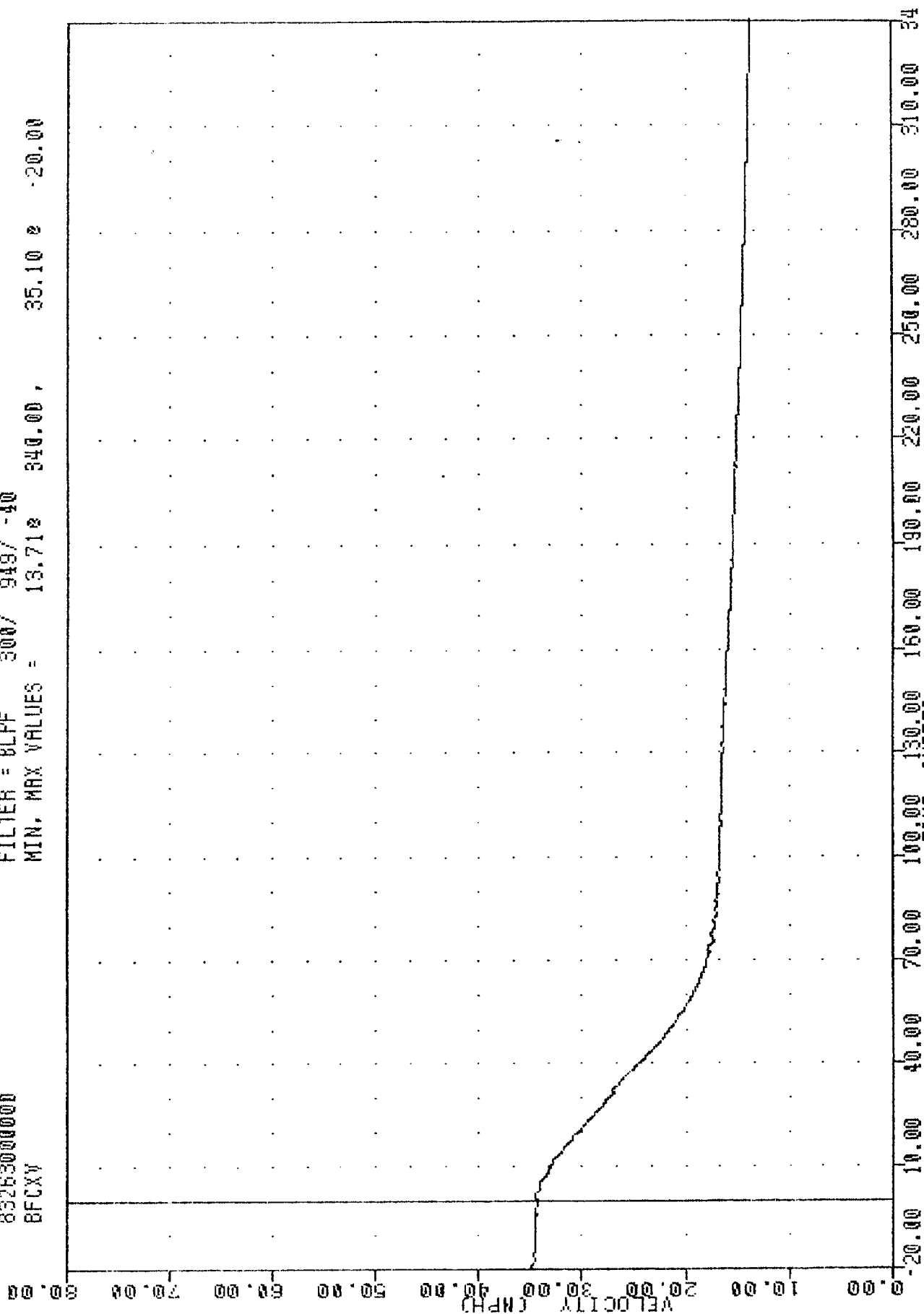


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER FRONT TRANSFORMER ACCELERATION X AXIS

TBC
 EVALUATION OF MOD VW FLEET
 832630000000
 BFCXY

PLOT DATE 22-SEP-83 14:26:05

FILTER = 6LFF 300/ 949/ -40
 MIN. MAX VALUES = 13.718 340.00, 35.10 2 -20.00

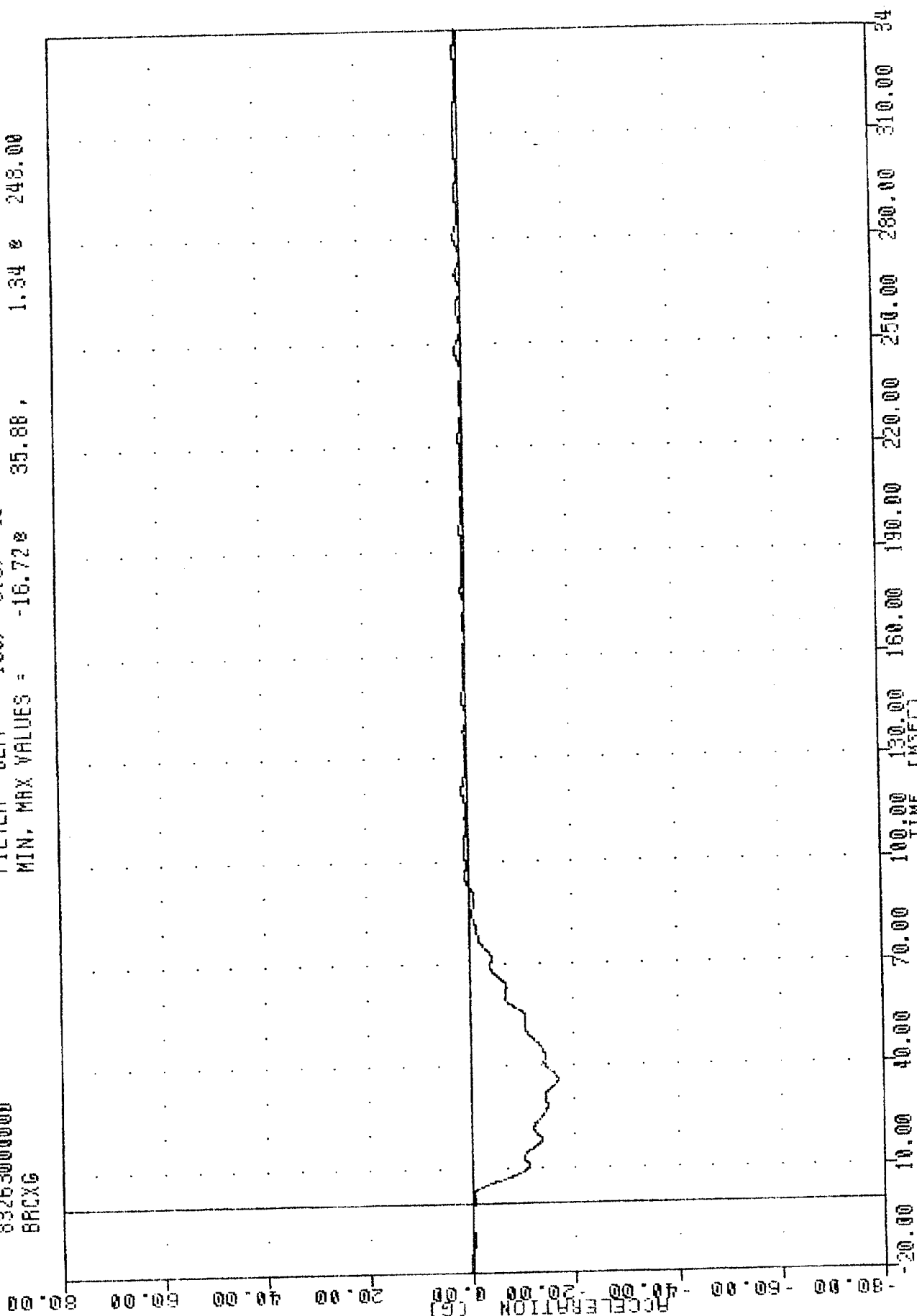


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 DELTA V USING BFCXG

TRC
EVALUATION OF MUD VW FLEET
83263000000
BRXG

PLOT DATE 21-SEP-83 15:43:04

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -16.72 35.88, 1.34 248.00



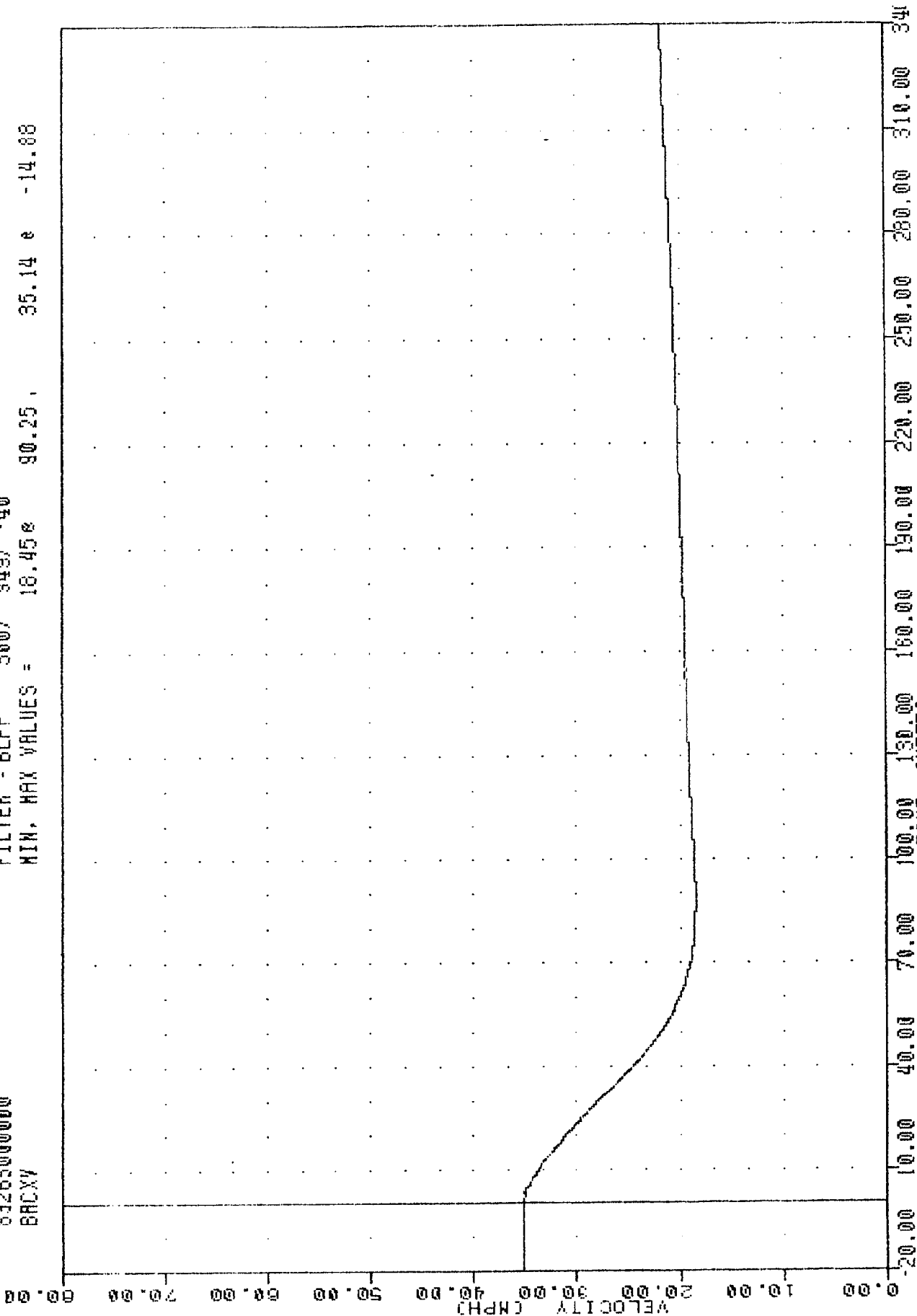
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
BARRIER REAR CROSSMEMBER ACCELERATION X AXIS

TAC , 830920
 EVALUATION OF MOD VN FLEET
 832630000000
 BRXXV

PLOT DATE 22-SEP-83 14:28:05

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = 18.45 90.25 , 35.14 e -14.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT
 NFITA V LISTING PROCXG