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SIDE IMPACT AGGRESSIVENESS  
ATTRIBUTES

MDB-TO-CAR SIDE IMPACT TEST OF  
A 26° CRABBED MOVING DEFORMABLE BARRIER  
TO A 1981 VOLKSWAGEN RABBIT L  
AT 39.3 MPH

PREPARED BY:  
VEHICLE RESEARCH AND TEST CENTER  
ST. RT. 33 LOGAN COUNTY  
EAST LIBERTY, OHIO 43319



FINAL REPORT  
JULY 1984

PREPARED FOR:  
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400 SEVENTH STREET, S.W.  
WASHINGTON, D.C. 20590

Prepared By: J. C. Stultz  
J. C. Stultz  
Project Engineer  
Transportation Research Center of Ohio

Approved By: R. W. Runyon  
R. W. Runyon  
Project Manager  
Transportation Research Center of Ohio

Report Accepted By: M. W. Monk  
M. W. Monk  
Project Engineer  
Vehicle Research & Test Center

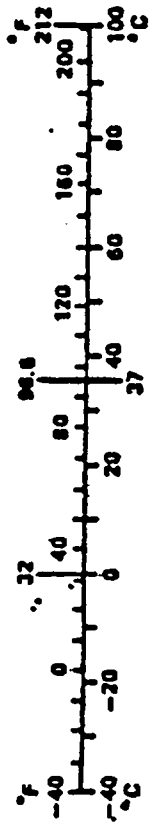
Report Accepted By: \_\_\_\_\_  
T. MacLaughlin  
Project Manager  
Vehicle Research & Test Center

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| 16. Abstract<br><br>This test report documents one of a series of twelve crash tests to evaluate the side impact aggressiveness attributes of various deformable barrier face configurations. The configuration to be used are designated "Lowered Stiffness", "Altered Profile" and "Lowered Bumper". In addition, four pole tests will be conducted. Testing was conducted on a 1981 baseline Volkswagen Rabbit L 2-door hatchback at the TRCO Crash Test Facility, East Liberty, Ohio. The test vehicle was impacted on the left side by a moving deformable barrier designated "Lowered Stiffness", crabbed to 26 <sup>0</sup> , at 39.3 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 June 21, 1984 and the ambient temperature was 79 F. |                                                        |                                                                                                                                                                                                                 |           |
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# METRIC CONVERSION FACTORS

## Approximate Conversions to Metric Measures

| Symbol                     | When You Know      | Multiply by                | To Find            | Symbol          |
|----------------------------|--------------------|----------------------------|--------------------|-----------------|
| <b>LENGTH</b>              |                    |                            |                    |                 |
| in                         | inches             | 2.5                        | centimeters        | cm              |
| ft                         | feet               | 30                         | centimeters        | cm              |
| yd                         | yards              | 0.9                        | meters             | m               |
| mi                         | miles              | 1.6                        | kilometers         | km              |
| <b>AREA</b>                |                    |                            |                    |                 |
| in <sup>2</sup>            | square inches      | 6.5                        | square centimeters | cm <sup>2</sup> |
| ft <sup>2</sup>            | square feet        | 0.09                       | square meters      | m <sup>2</sup>  |
| yd <sup>2</sup>            | square yards       | 0.8                        | square meters      | m <sup>2</sup>  |
| mi <sup>2</sup>            | square miles       | 2.6                        | square kilometers  | km <sup>2</sup> |
| acres                      | acres              | 0.4                        | hectares           | ha              |
| <b>MASS (weight)</b>       |                    |                            |                    |                 |
| oz                         | ounces             | 28                         | grams              | g               |
| lb                         | pounds             | 0.45                       | kilograms          | kg              |
|                            | short tons         | 0.9                        | metric ton         | t               |
|                            | (2000 lb)          |                            |                    |                 |
| <b>VOLUME</b>              |                    |                            |                    |                 |
| tsp                        | teaspoons          | 5                          | milliliters        | ml              |
| Tbsp                       | tablespoons        | 15                         | milliliters        | ml              |
| in <sup>3</sup>            | 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 <sup>3</sup>            | cubic feet         | 0.03                       | cubic meters       | m <sup>3</sup>  |
| yd <sup>3</sup>            | cubic yards        | 0.76                       | cubic meters       | m <sup>3</sup>  |
| <b>TEMPERATURE (exact)</b> |                    |                            |                    |                 |
| °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          |
|----------------------------|--------------------------|-------------------|--------------------|-----------------|
| <b>LENGTH</b>              |                          |                   |                    |                 |
| 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              |
| <b>AREA</b>                |                          |                   |                    |                 |
| cm <sup>2</sup>            | square centimeters       | 0.16              | square inches      | in <sup>2</sup> |
| m <sup>2</sup>             | square meters            | 1.2               | square yards       | yd <sup>2</sup> |
| km <sup>2</sup>            | square kilometers        | 0.4               | square miles       | mi <sup>2</sup> |
| ha                         | hectares                 | 2.5               | acres              | acres           |
|                            | (10 000 m <sup>2</sup> ) |                   |                    |                 |
| <b>MASS (weight)</b>       |                          |                   |                    |                 |
| g                          | grams                    | 0.035             | ounces             | oz              |
| kg                         | kilograms                | 2.2               | pounds             | lb              |
| t                          | metric ton               | 1.1               | short tons         |                 |
|                            | (1000 kg)                |                   |                    |                 |
| <b>VOLUME</b>              |                          |                   |                    |                 |
| ml                         | milliliters              | 0.03              | fluid ounces       | fl oz           |
| ml                         | milliliters              | 0.06              | cubic inches       | in <sup>3</sup> |
| L                          | liters                   | 2.1               | pints              | pt              |
| L                          | liters                   | 1.06              | quarts             | qt              |
| L                          | liters                   | 0.26              | gallons            | gal             |
| m <sup>3</sup>             | cubic meters             | 35                | cubic feet         | ft <sup>3</sup> |
| m <sup>3</sup>             | cubic meters             | 1.3               | cubic yards        | yd <sup>3</sup> |
| <b>TEMPERATURE (exact)</b> |                          |                   |                    |                 |
| °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 side impact aggressiveness of a deformable barrier face designated as "Lowered Stiffness". In all, there will be twelve crash tests involving deformable barrier faces designated as "Lowered Stiffness", "Altered Profile" and "Lowered Bumper". In addition, four pole tests will be conducted. The vehicle was tested using conditions not currently contained in a Federal Motor Vehicle Safety Standard.

INTRODUCTION

A stationary 1981 Volkswagen Rabbit 2-door hatchback was impacted on the left side by a Moving Deformable Barrier (MDB) on June 21, 1984. The test was to simulate an intersection collision with the striking vehicle traveling at 35 mph and the struck vehicle traveling at 17.5 mph. The orientation angle of the striking vehicle was 90° counterclockwise with respect to the longitudinal axis of the struck vehicle. The impact point was to be 37 inches forward of the vehicle center of gravity which is defined by accident investigation to be the midpoint of the wheelbase.

To simulate this collision, the MDB was to be towed into the stationary Volkswagen Rabbit L at 39.1 mph with the MDB's wheels crabbed clockwise to 26°. The actual test speed was 39.3 mph and the actual impact point was 37.0 inches forward of the midpoint of the Volkswagen Rabbit's wheelbase. The vehicle was structurally unmodified and contained no 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 describe the General Test and Vehicle Parameter Data.

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Volkswagen of America, Inc.

MAKE/MODEL: Volkswagen Rabbit L Diesel VIN: 1VWBG0176BV080486

BODY STYLE: 2-Door Hatchback MODEL YEAR: 1981

NHTSA NO.: R & D COLOR: White

ENGINE DATA: TYPE: Transverse CYLINDERS: 4 DISPLACEMENT 97 CID

TRANSMISSION DATA: 4 Speed Manual

DATE VEHICLE RECEIVED: 5/16/84 ODOMETER READING: 58551

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

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

REMARKS:

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

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

VEHICLE MANUFACTURED BY: Volkswagen of America, Inc.

DATE OF MANUFACTURE: 2/81

GVWR: 2822 LBS.,

GAWR: FRONT 1609 LBS., REAR 1278 LBS.



VEHICLE TIRE DATA

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

TIRES ON VEHICLE (MFGR. & LINE, SIZE): Sears Road Handler Sport  
Radial 155 SR 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            | 610  | LBS. | RIGHT REAR                       | 360 | LBS. |
| LEFT FRONT             | 670  | LBS. | LEFT REAR                        | 340 | LBS. |
| TOTAL FRONT WEIGHT     | 1280 | LBS. | (64.6 % OF TOTAL VEHICLE WEIGHT) |     |      |
| TOTAL REAR WEIGHT      | 700  | LBS. | (35.4 % OF TOTAL VEHICLE WEIGHT) |     |      |
| TOTAL DELIVERED WEIGHT | 1980 | LBS. |                                  |     |      |

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

|                     |            |            |              |              |
|---------------------|------------|------------|--------------|--------------|
| DELIVERED ATTITUDE: | RF 24 5/8  | ;LF 24 1/4 | ;RR 24       | ;LR 23 3/4   |
| PRE-TEST ATTITUDE:  | RF 24 1/16 | ;LF 23 3/8 | ;RR 21 11/16 | ;LR 20 15/16 |
| POST-TEST ATTITUDE: | RF 21 5/16 | ;LF 23 1/4 | ;RR 21 3/8   | ;LR 20 9/16  |

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 192 LBS. CARGO:

|                    |      |      |                                  |     |      |
|--------------------|------|------|----------------------------------|-----|------|
| RIGHT FRONT        | 700  | LBS. | RIGHT REAR                       | 560 | LBS. |
| LEFT FRONT         | 710  | LBS. | LEFT REAR                        | 550 | LBS. |
| TOTAL FRONT WEIGHT | 1410 | LBS. | (56.0 % OF TOTAL VEHICLE WEIGHT) |     |      |
| TOTAL REAR WEIGHT  | 1110 | LBS. | (44.0 % OF TOTAL VEHICLE WEIGHT) |     |      |
| TOTAL TEST WEIGHT  | 2520 | 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: 9.3 GALLONS

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

DETAILS OF FUEL SYSTEM: DNA

---

ELECTRIC FUEL PUMP: No

FUEL INJECTION: Yes

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

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

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

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

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

NUMBER OF OCCUPANTS (DESIGNATED SEATING CAPACITY): 2 FRONT

CARGO LOAD 185 LBS. 2 REAR  
4 TOTAL

TOTAL 785 LBS.

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

TEST CONDITIONS

TEST NUMBER: 840621

DATE OF TEST: June 21, 1984

TIME OF TEST: 11:55

WIND VELOCITY: 4-8 mph 10° N

HUMIDITY: DNA

AMBIENT TEMPERATURE AT IMPACT AREA: 79° F

TEMPERATURE IN OCCUPANT COMPARTMENT: 76° F

SUBJECT VEHICLE DATA

|                            | <u>ACTUAL</u> | <u>INTENDED</u> |
|----------------------------|---------------|-----------------|
| VEHICLE TEST WEIGHT (LBS.) | 2520          | 2513            |
| MDB TEST WEIGHT (LBS.)     | 2990          | 3000            |
| MDB VELOCITY (MPH)*        | 39.3          | 39.1            |
| IMPACT POINT (INCHES)**    | 37.0          | 37              |

DUMMIES

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

\* As measured over final one foot of travel.

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

VISIBLE DUMMY CONTACT POINTS:

|            | DRIVER 06                                           | PASSENGER U02                  |
|------------|-----------------------------------------------------|--------------------------------|
| Head       | <u>Side Glass, Possibly<br/>Top of Barrier Face</u> | <u>C-Pillar</u>                |
| Chest      | <u>Driver's Inner Door Panel</u>                    | <u>Left Rear Quarter Panel</u> |
| Abdomen    | <u>Driver's Inner Door Panel</u>                    | <u>Left Rear Quarter Panel</u> |
| Left Knee  | <u>Driver's Inner Door Panel</u>                    | <u>Left Rear Quarter Panel</u> |
| Right Knee | <u>Left Knee</u>                                    | <u>Left Knee</u>               |

DOOR OPENING:

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

SEAT MOVEMENT:

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

GLAZING DAMAGE:

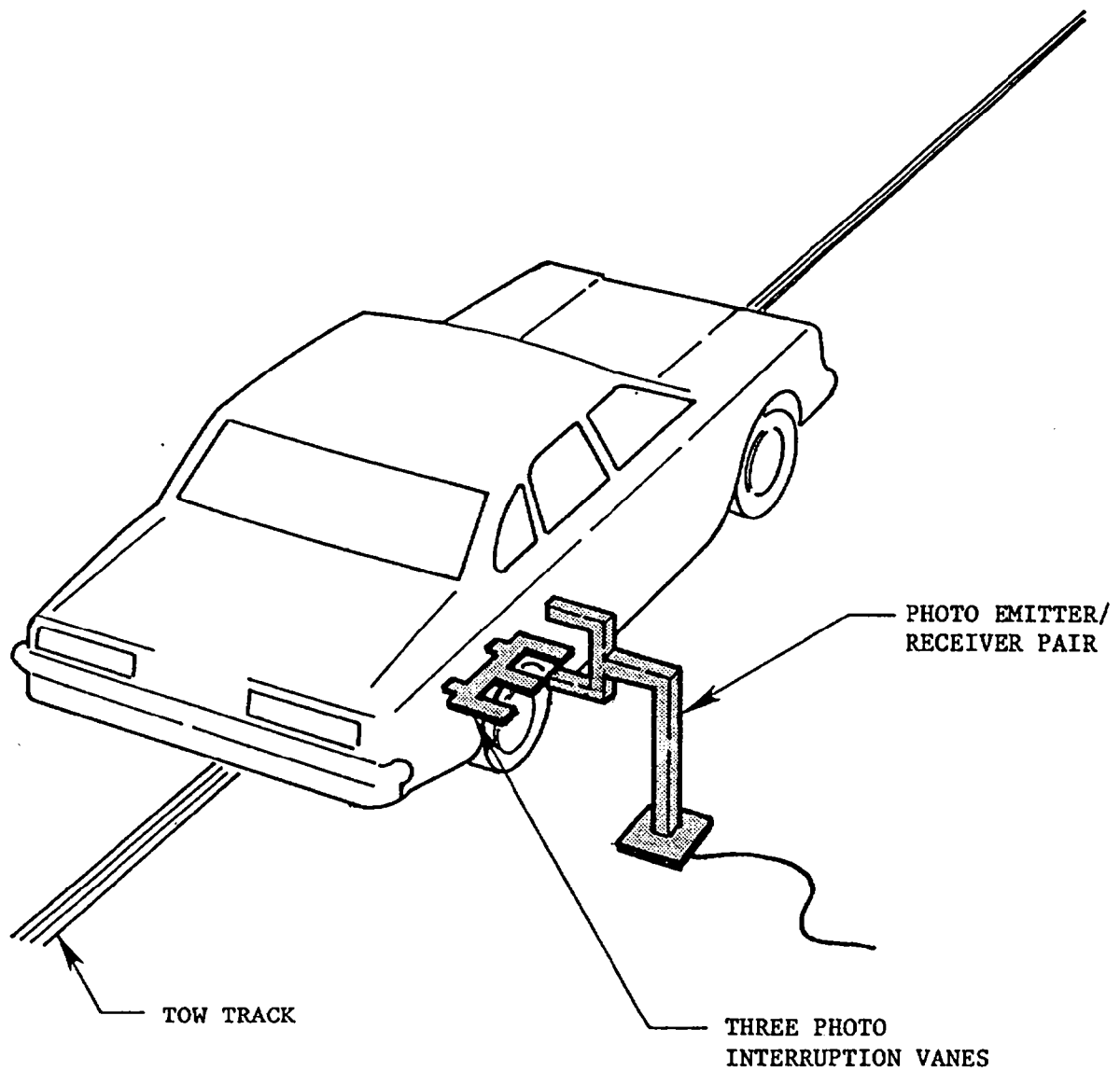
Left side of windshield cracked; all left side windows  
shattered except vent window; no backlight damage.  
   
 

OTHER NOTABLE IMPACT EFFECTS:

Passenger's door popped open during impact, dummy  
partially ejected.  
   
 

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

## IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane is located two inches before impact.

The vanes have one foot spacing.

### VEHICLE TEST WEIGHT CALCULATION

Test Weight = Unloaded Delivered Weight +  
                    Number of Dummies X 174 lbs. +  
                    Cargo Weight  
                    = 1980 + 2 X 174 + 185 lbs.  
                    = 2513 lbs.

To achieve test weight, 9.3 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

The cable for the Left Front Door accelerometer in Position 9, LFDYG3, was severed after impact, at approximately 160 msec.

The cable for the Left Front Door accelerometer in Position 11, LFDYG5, appears to have been "pinched" between approximately 160 to 180 msec. After 180 msec the cable straightened out and continued to record accurate data.

SECTION 3.0  
DATA REQUIRED BY R & D

The following pages are included in this section:

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



## DUMMY TEMPERATURE CONTROL AND POSITIONING

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

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

## DUMMY PLACEMENT AND POSITIONING

### SIDE IMPACT

#### DUMMY\*

#### DRIVER DSP

#### REAR PASSENGER DSP

#### HEAD

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

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 L

FRONT SEAT TYPE: BENCH  
☒ BUCKET  
☐ SPLIT BENCH

ADJUSTER TYPE: ☒ MANUAL  
☐ POWER

BUCKET SEAT BACK TYPE: FIXED  
☒ ADJUSTABLE

## TECHNICIANS:

1. J. Kokoruda

2. N. Echeverria

3.

POSITIONING DATE: 6/21/84

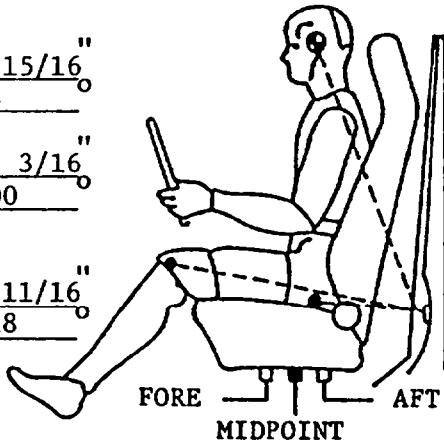
AMBIENT TEMP.: 74° F. TIME: 6:30

DRIVER DUMMY # 06

HEAD 19 15/16"  
 TARGET\* 34°

KNEE 33 3/16"  
 JOINT 100°

APPROX.  
 "H" 19 11/16"  
 POINT 118°

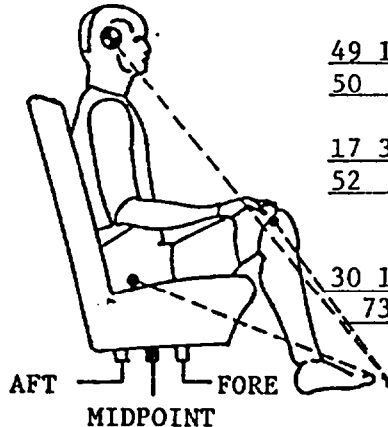


REAR PASSENGER DUMMY # U02

49 1/4" HEAD  
50° TARGET\*\*

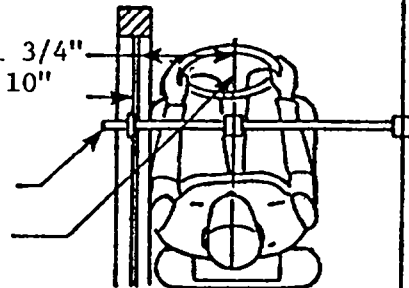
17 3/4" KNEE  
52° JOINT

APPROX.  
30 1/4" "H"  
73° POINT



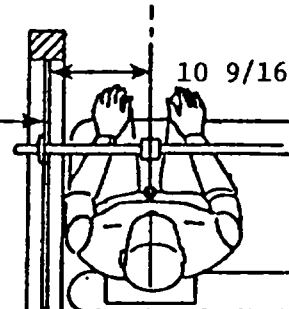
DOOR  
 GLASS  
 HEIGHT\*\*\* 11 3/4"  
10"

LATERAL BAR  
 ADJUSTABLE  
 POINTER



DRIVER  
 DUMMY #  
06

DOOR  
 GLASS  
 HEIGHT DNA 10 9/16"

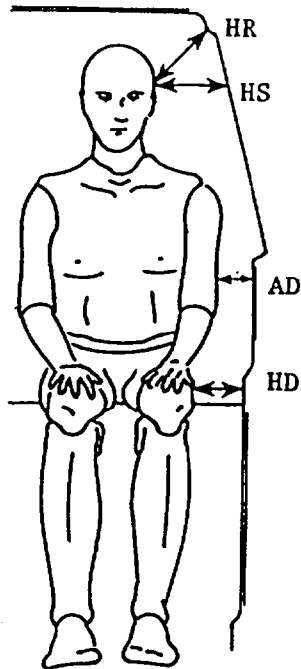


PASSENGER  
 DUMMY #  
U02

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

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

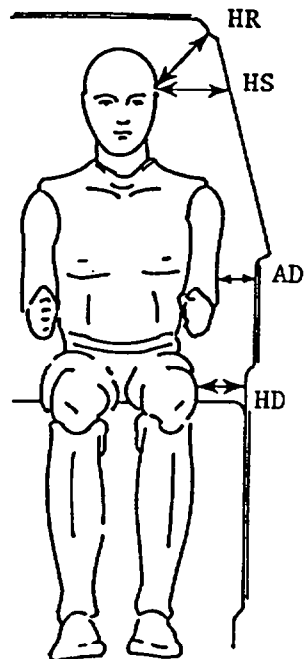
\*\*\*Door glass height is equal on the right and left side of vehicle at dummy nose level.



DRIVER  
06

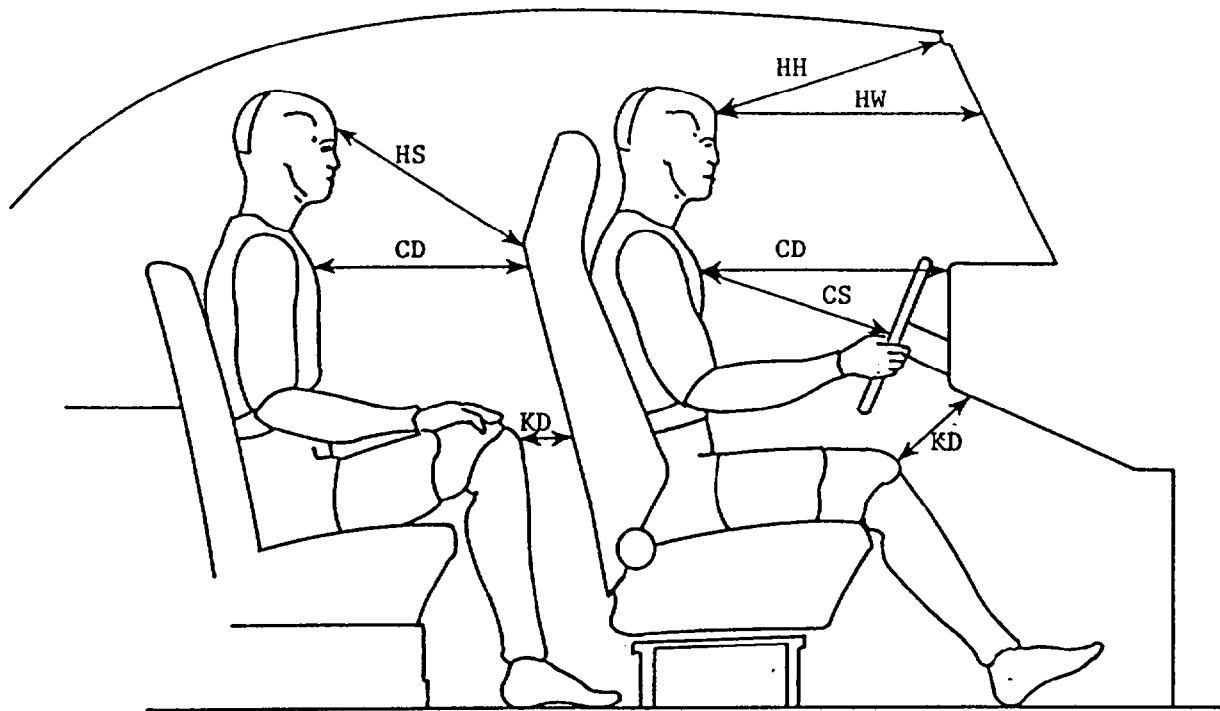
PASSENGER  
U02

|    |       |        |
|----|-------|--------|
| HR | 6 3/8 | 6 5/16 |
| HS | 8 1/8 | 7 7/8  |
| AD | 3 1/2 | 4 1/16 |
| HD | 5 3/4 | 5 3/16 |



ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS



DRIVER  
06

PASSENGER  
U02

|     |         |         |
|-----|---------|---------|
| HH  | 13 3/4  | DNA     |
| HW  | 20 5/16 | DNA     |
| HS  | DNA     | 22 7/16 |
| CD  | 19 1/2  | 18 3/16 |
| CS  | 12 1/2  | DNA     |
| KDL | 4 5/16  | 4       |
| KDR | 4 11/16 | 4 5/16  |

ALL MEASUREMENTS IN INCHES

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

## DUMMY KINEMATIC SUMMARY

### DRIVER

During impact, the dummy's torso contacted the driver's inner door panel and the head contacted the driver's side glass and possibly the top of the deformable barrier face. The dummy rebounded from the driver's door and the buttocks struck the front passenger's door and the head struck the right side B-pillar. Upon impact with the dummy, the passenger's door popped open, the dummy was partially ejected. The dummy came to rest seated in the front passenger seat with it's upper torso partially outside the passenger compartment.

### PASSENGER

During impact, the dummy's torso contacted the left rear inner quarter panel and the head contacted the C-pillar near the side header. The dummy rebounded across the rear occupant compartment in an upright position. The dummy came to rest seated upright in the right rear passenger's seat and facing forward.

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 | 8.8         | X                                                            | X    | 20.5 | 20.4 | 20.4 | 20.4 | 20.4 | 20.5 | 20.6 | 20.6 | 20.6 | 20.8 | 20.9 | X    | X    |
| H-Point     | 18.0        | X                                                            | X    | 18.4 | 18.4 | 18.3 | 18.3 | 18.3 | 18.3 | 18.3 | 18.4 | 18.4 | 18.5 | 18.6 | 17.6 | X    |
| Mid Door    | 22.0        | 16.5                                                         | 18.0 | 17.9 | 17.9 | 17.8 | 17.9 | 17.8 | 17.8 | 17.8 | 17.8 | 17.9 | 18.0 | 18.1 | 18.3 | 16.8 |
| Window Sill | 32.8        | 19.9                                                         | 19.6 | 19.4 | 19.4 | 19.3 | 19.3 | 19.2 | 19.2 | 19.2 | 19.3 | 19.3 | 19.3 | 19.4 | 19.6 | 19.8 |
| Window Top  | 50.8        | X                                                            | X    | X    | X    | X    | 26.6 | 26.3 | 26.3 | 26.3 | 26.3 | 26.4 | 26.5 | 26.8 | 27.0 | 27.6 |

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

|             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Axle Height | 8.8  | X    | X    | 30.9 | 32.4 | 31.9 | 31.5 | 31.1 | 30.6 | 30.2 | 29.8 | 29.1 | 27.0 | 25.1 | X    | X    |
| H-Point     | 18.0 | X    | X    | 30.0 | 35.3 | 35.8 | 35.8 | 35.9 | 35.8 | 35.5 | 35.5 | 35.5 | 34.3 | 32.5 | 28.4 | X    |
| Mid Door    | 22.0 | 25.6 | 27.5 | 30.4 | 33.1 | 33.3 | 33.6 | 33.8 | 34.1 | 34.3 | 34.3 | 35.1 | 34.4 | 33.6 | 29.9 | 24.8 |
| Window Sill | 32.8 | 23.1 | 24.0 | 25.3 | 30.9 | 31.9 | 32.8 | 33.3 | 33.4 | 34.3 | 34.6 | 35.1 | 35.6 | 32.9 | 28.3 | 24.3 |
| Window Top  | 50.8 | X    | X    | X    | X    | X    | 31.0 | 30.6 | 30.6 | 30.7 | 30.9 | 30.9 | 30.3 | 29.8 | 29.5 | 29.5 |

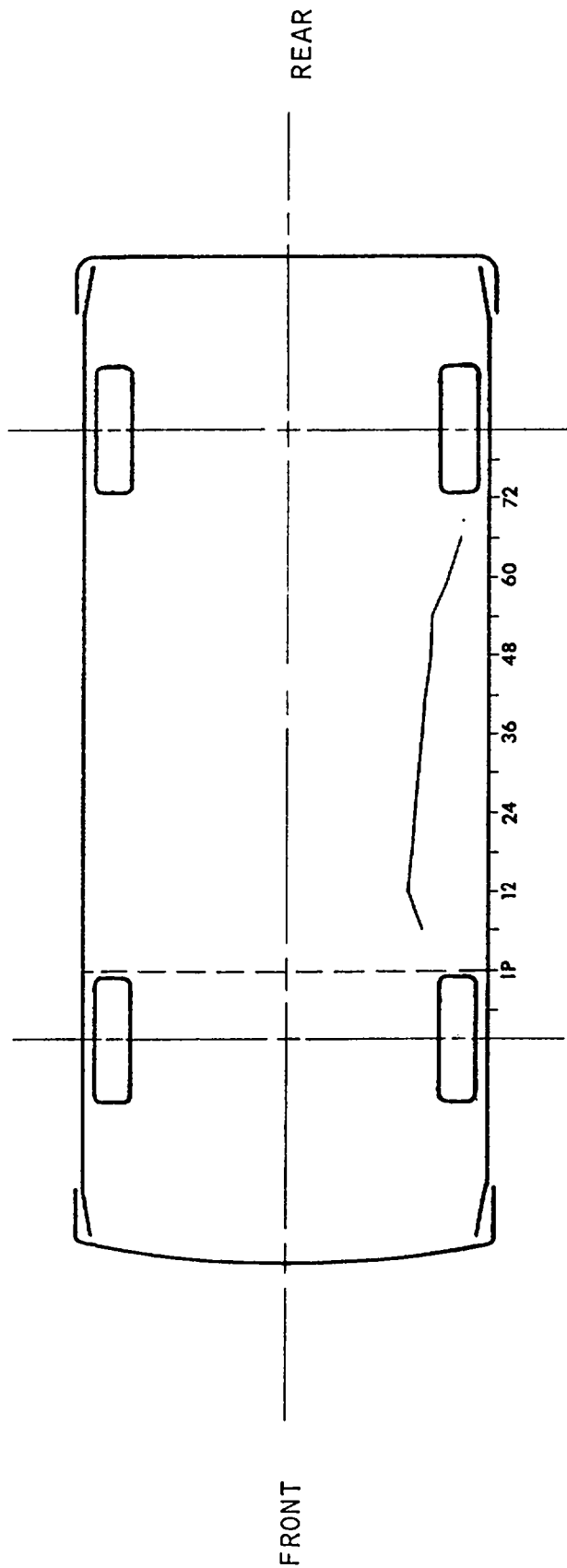
STATIC CRUSH (IN)

|             |      |     |     |      |      |      |      |      |      |      |      |      |      |      |      |     |
|-------------|------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| Axle Height | 8.8  | X   | X   | 10.4 | 12.0 | 11.5 | 11.1 | 10.7 | 10.1 | 9.6  | 9.2  | 8.5  | 6.2  | 4.2  | X    | X   |
| H-Point     | 18.0 | X   | X   | 11.6 | 16.9 | 17.5 | 17.5 | 17.6 | 17.5 | 17.2 | 17.1 | 17.1 | 15.8 | 13.9 | 10.8 | X   |
| Mid Door    | 22.0 | 9.1 | 9.5 | 12.5 | 15.2 | 15.5 | 15.7 | 16.0 | 16.3 | 16.5 | 16.5 | 17.2 | 16.4 | 15.5 | 11.6 | 8.0 |
| Window Sill | 32.8 | 3.2 | 4.4 | 5.9  | 11.5 | 12.6 | 13.5 | 14.1 | 14.2 | 15.1 | 15.3 | 15.8 | 16.3 | 13.5 | 8.7  | 4.5 |
| Window Top  | 50.8 | X   | X   | X    | X    | X    | 4.4  | 4.3  | 4.3  | 4.4  | 4.6  | 4.5  | 3.8  | 3.0  | 2.5  | 1.9 |

\* 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



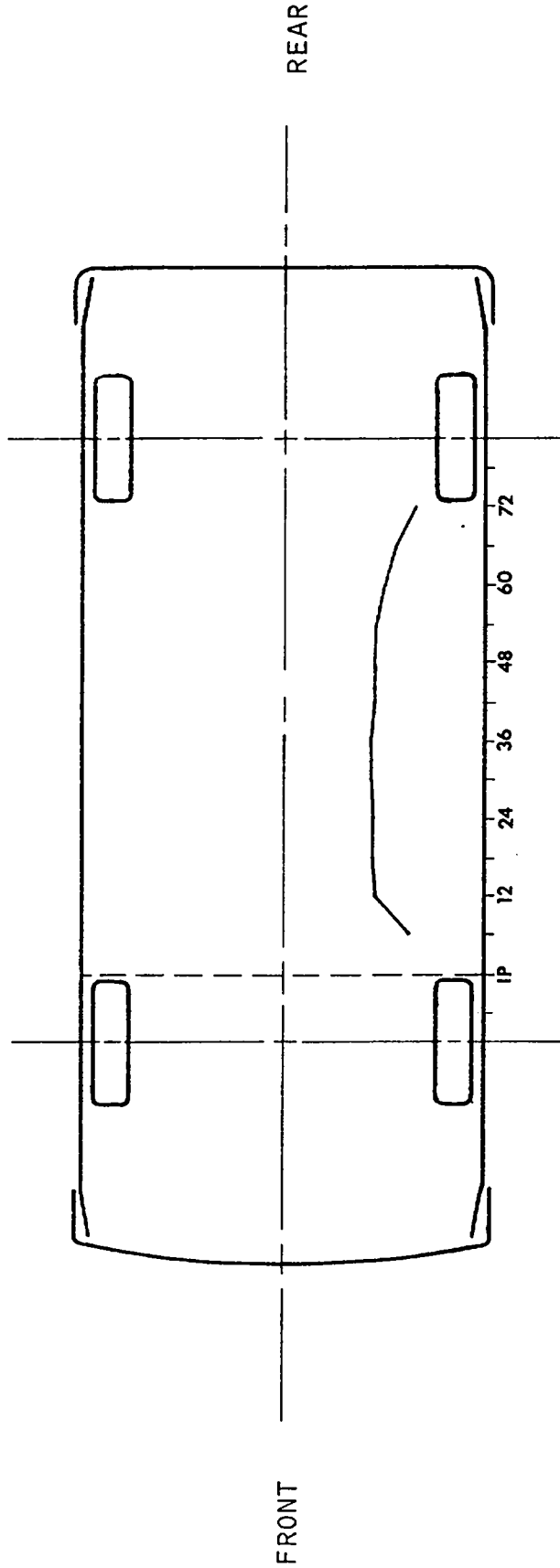
PROFILE LEVEL EQUALS AXLE HEIGHT  
IP EQUALS PROJECTED IMPACT POINT

Width of Car = 63.4"  
Length of Car = 154.75"

Maximum Crush = 12.0"  
Length of Crush = 60.0"



# VEHICLE EXTERIOR STATIC CRUSH PROFILE

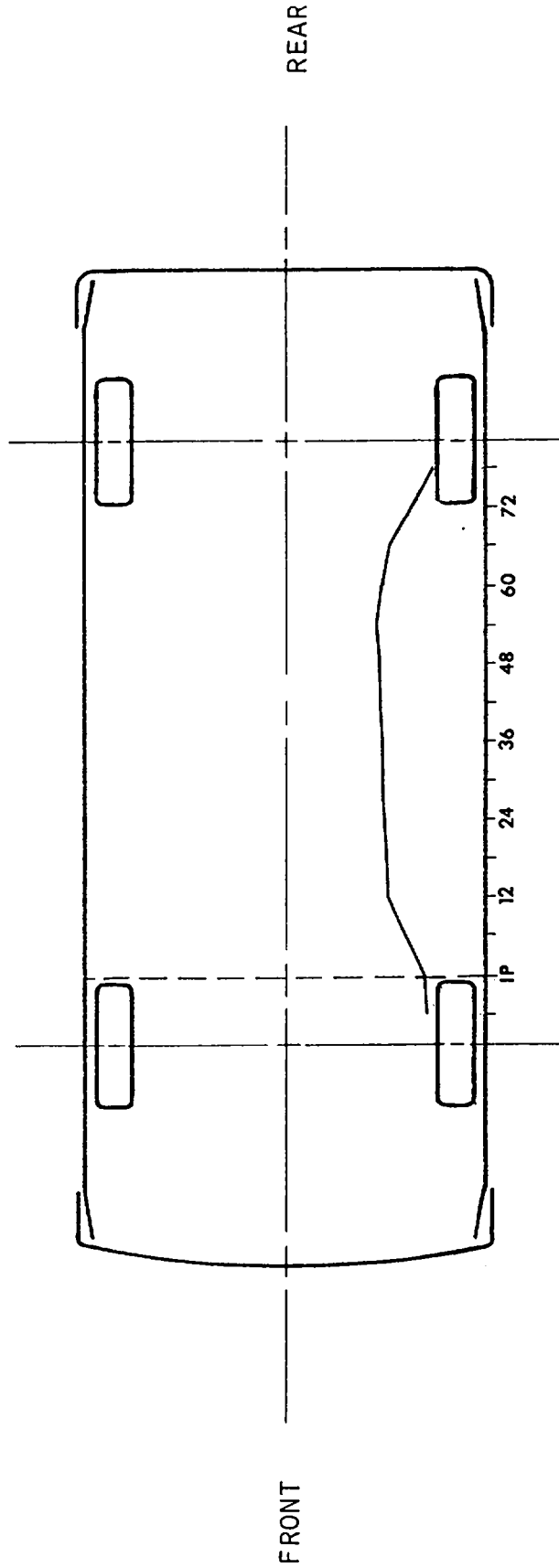


PROFILE LEVEL EQUALS H-POINT HEIGHT  
IP EQUALS PROJECTED IMPACT POINT

Width of Car = 63.4"  
Length of Car = 154.75"

Maximum Crush = 17.6"  
Length of Crush = 66.0"

# VEHICLE EXTERIOR STATIC CRUSH PROFILE

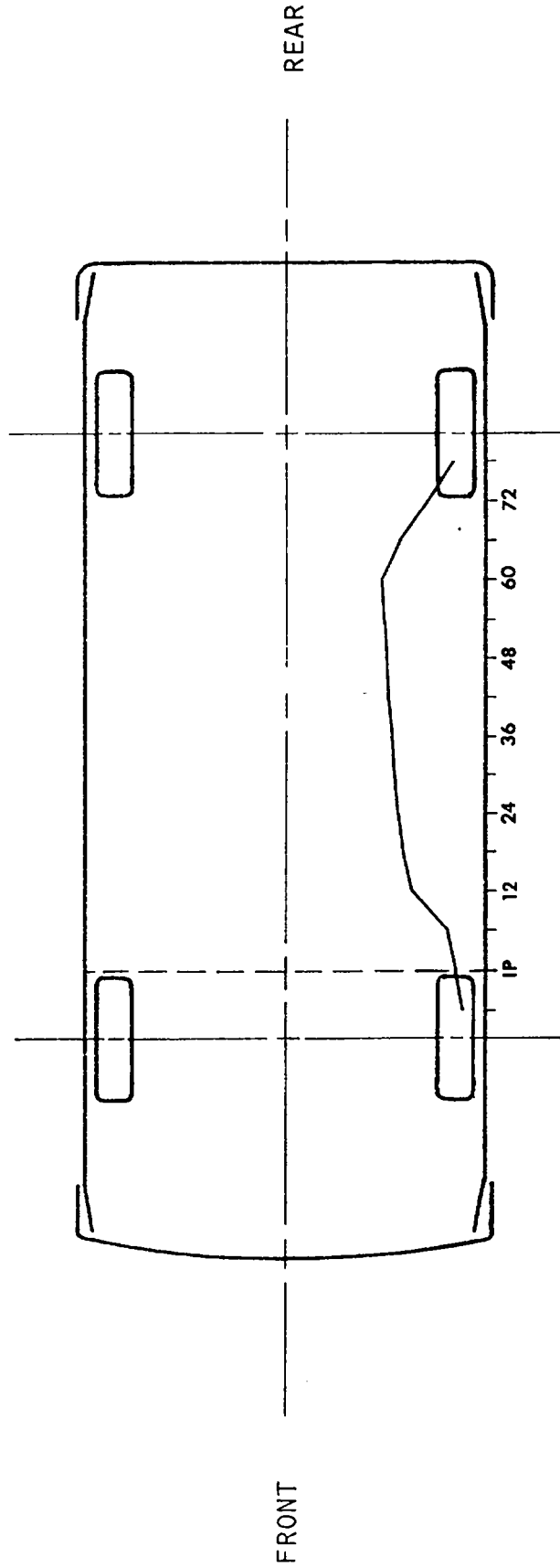


PROFILE LEVEL EQUALS MID-DOOR HEIGHT  
IP EQUALS PROJECTED IMPACT POINT

Width of Car = 63.4"  
Length of Car = 154.75"

Maximum Crush = 17.2"  
Length of Crush = 84.0"

# VEHICLE EXTERIOR STATIC CRUSH PROFILE

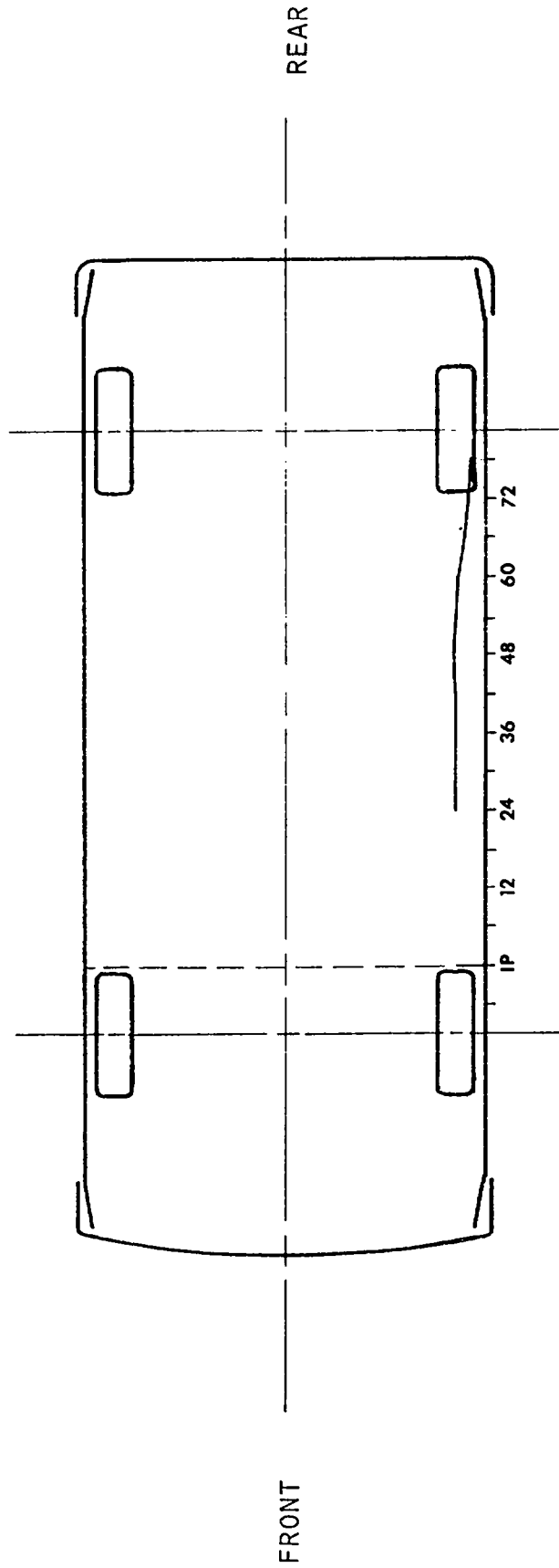


PROFILE LEVEL EQUALS WINDOW SILL HEIGHT  
IP EQUALS PROJECTED IMPACT POINT

Width of Car = 63.4"  
Length of Car = 154.75"

Maximum Crush = 16.3"  
Length of Crush = 84.0"

# VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW TOP HEIGHT  
IP EQUALS PROJECTED IMPACT POINT

Width of Car = 63.4"  
Length of Car = 154.75"

Maximum Crush = 4.6"  
Length of Crush = 54.0"

# SIDE IMPACT DUMMY DATA SUMMARY

|                     | DRIVER DUMMY |                     |             |                | PASSENGER DUMMY |                     |              |                |
|---------------------|--------------|---------------------|-------------|----------------|-----------------|---------------------|--------------|----------------|
|                     | POSITIVE     |                     | NEGATIVE    |                | POSITIVE        |                     | NEGATIVE     |                |
|                     | DIRECTION*   |                     | DIRECTION** |                | DIRECTION*      |                     | DIRECTION*** |                |
|                     | MAX<br>(g)   | TIME<br>(msec)      | MAX<br>(g)  | TIME<br>(msec) | MAX<br>(g)      | TIME<br>(msec)      | MAX<br>(g)   | TIME<br>(msec) |
| HEAD ACCELERATION   |              |                     |             |                |                 |                     |              |                |
| LONGITUDINAL        | 11.41        | 56.63               | 76.76       | 76.75          | 29.18           | 159.75              | 27.86        | 65.75          |
| LATERAL             | 60.97        | 75.63               | 22.32       | 30.00          | 103.22          | 47.13               | 9.94         | 41.50          |
| VERTICAL            | 9.46         | 25.00               | 70.23       | 60.63          | 53.42           | 58.13               | 43.95        | 44.50          |
| RESULTANT           |              | 99.95 @             | 76.88       |                |                 | 104.12 @            | 47.13        |                |
| HIC                 | 1220.42      | from 39.50 to 81.13 |             |                | 657.32          | from 42.50 to 66.25 |              |                |
| CHEST ACCELERATION  |              |                     |             |                |                 |                     |              |                |
| UPPER SPINE         |              |                     |             |                |                 |                     |              |                |
| LONGITUDINAL        | 35.53        | 45.00               | 45.52       | 31.88          | 5.83            | 75.62               | 28.01        | 60.00          |
| LATERAL (P)***      | 114.78       | 31.88               | 51.77       | 57.50          | 68.80           | 46.88               | 4.84         | 26.25          |
| LATERAL (R)***      | 119.16       | 31.88               | 51.15       | 57.50          | 70.36           | 46.25               | 5.24         | 26.87          |
| VERTICAL            | 12.88        | 49.37               | 21.10       | 35.63          | 5.82            | 27.50               | 23.15        | 40.00          |
| RESULTANT (P)       |              | 123.71 @            | 31.88       |                |                 | 70.84 @             | 46.88        |                |
| RESULTANT (R)       |              | 127.78 @            | 31.88       |                |                 | 72.49 @             | 46.25        |                |
| DELTA V (MPH)****   |              | 31.7 @              | 54.38 (P)   |                |                 | 27.2 @              | 86.88 (P)    |                |
|                     |              | 34.0 @              | 54.38 (R)   |                |                 | 28.1 @              | 86.25 (R)    |                |
| LOWER SPINE         |              |                     |             |                |                 |                     |              |                |
| LONGITUDINAL        | 92.52        | 40.63               | 44.76       | 30.00          | 14.96           | 62.50               | 18.21        | 57.50          |
| LATERAL (P)         | 152.74       | 27.50               | 34.72       | 57.50          | 71.71           | 43.75               | 19.19        | 63.13          |
| LATERAL (R)         | 161.38       | 27.50               | 35.76       | 57.50          | 74.22           | 43.75               | 17.61        | 63.13          |
| VERTICAL            | 28.87        | 30.00               | 6.97        | 62.50          | 9.08            | 47.50               | 8.91         | 61.25          |
| RESULTANT (P)       |              | 156.56 @            | 28.13       |                |                 | 72.51 @             | 36.25        |                |
| RESULTANT (R)       |              | 165.04 @            | 28.13       |                |                 | 74.48 @             | 43.75        |                |
| DELTA V (MPH)       |              | 35.5 @              | 45.00 (P)   |                |                 | 29.9 @              | 56.87 (P)    |                |
|                     |              | 36.1 @              | 45.62 (R)   |                |                 | 31.4 @              | 57.50 (R)    |                |
| LEFT UPPER RIB      |              |                     |             |                |                 |                     |              |                |
| LATERAL (P)         | 111.03       | 25.63               | 16.40       | 70.00          | 64.33           | 31.25               | 0.39         | 19.38          |
| LATERAL (R)         | 108.88       | 25.00               | 12.30       | 47.50          | 62.38           | 31.25               | 0.66         | 26.25          |
| DELTA V (MPH)       |              | 28.8 @              | 65.23 (P)   |                |                 | 31.4 @              | 104.38 (P)   |                |
|                     |              | 28.5 @              | 64.38 (R)   |                |                 | 31.9 @              | 105.63 (R)   |                |
| LEFT LOWER RIB      |              |                     |             |                |                 |                     |              |                |
| LATERAL (P)         | 117.16       | 25.00               | 62.94       | 62.50          | 80.04           | 28.75               | 14.86        | 61.87          |
| LATERAL (R)         | 118.78       | 24.38               | 59.57       | 62.50          | 86.61           | 28.75               | 16.33        | 61.87          |
| DELTA V (MPH)       |              | 30.8 @              | 60.00 (P)   |                |                 | 30.2 @              | 87.50 (P)    |                |
|                     |              | 30.1 @              | 60.00 (R)   |                |                 | 27.9 @              | 87.50 (R)    |                |
| PELVIS ACCELERATION |              |                     |             |                |                 |                     |              |                |
| LONGITUDINAL        | ---          | ---                 | ---         | ---            | 12.39           | 24.00               | 63.70        | 30.88          |
| LATERAL             | ---          | ---                 | ---         | ---            | 162.84          | 29.88               | 33.13        | 20.88          |
| VERTICAL            | ---          | ---                 | ---         | ---            | 28.88           | 33.50               | 9.18         | 35.75          |
| RESULTANT           |              | ---                 | ---         |                |                 | 168.66 @            | 30.00        |                |
| DELTA V (MPH)       |              | ---                 | ---         |                |                 | 31.0 @              | 53.38        |                |

SIDE IMPACT DUMMY DATA SUMMARY CONTD

|                  | <u>DRIVER DUMMY</u> |               |                    |               | <u>PASSENGER DUMMY</u> |               |                    |               |
|------------------|---------------------|---------------|--------------------|---------------|------------------------|---------------|--------------------|---------------|
|                  | <u>POSITIVE</u>     |               | <u>NEGATIVE</u>    |               | <u>POSITIVE</u>        |               | <u>NEGATIVE</u>    |               |
|                  | <u>DIRECTION*</u>   |               | <u>DIRECTION**</u> |               | <u>DIRECTION*</u>      |               | <u>DIRECTION**</u> |               |
|                  | <u>MAX</u>          | <u>TIME</u>   | <u>MAX</u>         | <u>TIME</u>   | <u>MAX</u>             | <u>TIME</u>   | <u>MAX</u>         | <u>TIME</u>   |
|                  | <u>(in)</u>         | <u>(msec)</u> | <u>(in)</u>        | <u>(msec)</u> | <u>(in)</u>            | <u>(msec)</u> | <u>(in)</u>        | <u>(msec)</u> |
| RIB DEFLECTION † | 2.01                | 81.25         | 0.03               | 144.50        | 1.87                   | 68.63         | 0.03               | 27.50         |

|                 |           |                 |          |
|-----------------|-----------|-----------------|----------|
| * LONGITUDINAL: | FORWARD   | **LONGITUDINAL: | REARWARD |
| LATERAL:        | RIGHTWARD | LATERAL:        | LEFTWARD |
| VERTICAL:       | UPWARD    | VERTICAL:       | DOWNWARD |

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

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

† Compression: Positive

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

# VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

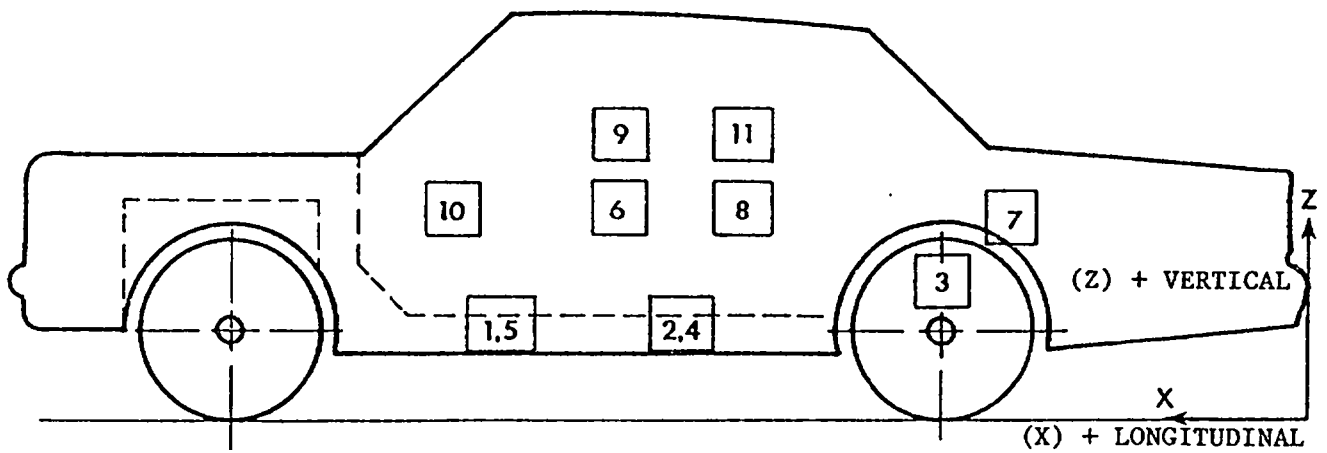
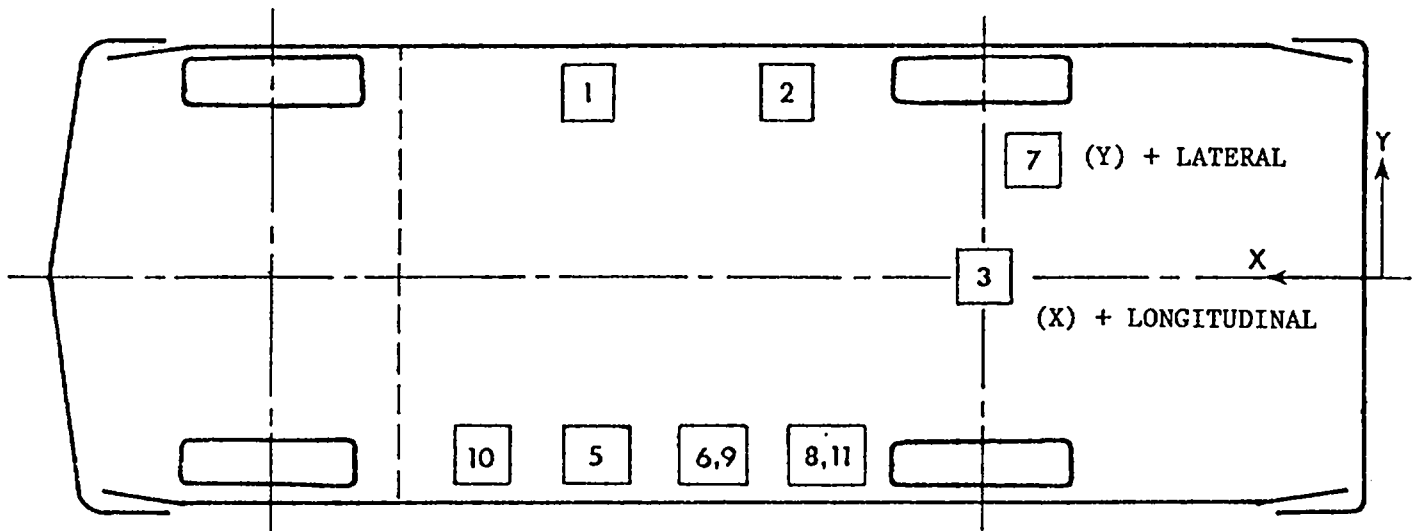
| NO. | LOCATION                                                                             | X*                                                                                 | Y*    | Z*   | POSITIVE DIRECTION     |                                          | NEGATIVE DIRECTION   |                          |
|-----|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------|------|------------------------|------------------------------------------|----------------------|--------------------------|
|     |                                                                                      |                                                                                    |       |      | MAX (g)                | TIME (msec)                              | MAX (g)              | TIME (msec)              |
| 1   | RIGHT SILL AT FRONT SEAT<br>(LONGITUDINAL)<br>(LATERAL)<br>(VERTICAL)<br>(RESULTANT) | 83.4<br>$\Delta V = -2.2$ mph @ 114.75 msec<br>$\Delta V = 17.8$ mph @ 114.75 msec | 23.4  | 10.2 | 3.24<br>16.11<br>4.40  | 62.50<br>45.63<br>63.38<br>17.14 @ 46.75 | 7.53<br>0.82<br>8.78 | 18.13<br>101.75<br>32.13 |
| 2   | RIGHT SILL AT REAR SEAT<br>(LONGITUDINAL)<br>(LATERAL)<br>(VERTICAL)<br>(RESULTANT)  | 61.5<br>$\Delta V = -0.5$ mph @ 114.75 msec<br>$\Delta V = 20.1$ mph @ 114.75 msec | 23.6  | 8.7  | 3.94<br>20.63<br>5.92  | 62.75<br>44.50<br>23.25<br>20.78 @ 44.88 | 7.06<br>1.27<br>8.10 | 18.63<br>106.38<br>33.00 |
| 3   | REAR DECK OVER AXLE<br>(LONGITUDINAL)<br>(LATERAL)<br>(VERTICAL)<br>(RESULTANT)      | 32.0<br>$\Delta V = 2.2$ mph @ 114.75 msec<br>$\Delta V = 24.5$ mph @ 114.75 msec  | 0.0   | 6.7  | 13.44<br>20.59<br>6.60 | 19.88<br>24.63<br>53.25<br>21.87 @ 20.13 | 5.46<br>1.98<br>7.42 | 46.00<br>110.00<br>19.75 |
| 4   | LEFT SILL AT REAR SEAT<br>(LATERAL)                                                  | 61.0<br>$\Delta V = 10.7$ mph @ 50.50 msec                                         | -23.7 | 8.7  | 35.33                  | 22.75                                    | 33.54                | 28.63                    |
| 5   | LEFT SILL AT FRONT SEAT<br>(LATERAL)                                                 | 83.4<br>$\Delta V = 6.7$ mph @ 9.25 msec                                           | -23.4 | 10.1 | 53.61                  | 8.75                                     | 61.71                | 15.13                    |
| 6   | LEFT FRONT DOOR CENTERLINE<br>(LATERAL)                                              | 80.4<br>$\Delta V = 19.7$ mph @ 45.00 msec                                         | -26.1 | 22.7 | 87.50                  | 25.50                                    | 73.57                | 10.63                    |
| 7   | RIGHT REAR COMPARTMENT<br>(LONGITUDINAL)                                             | 31.0                                                                               | -15.4 | 13.6 | 2.48                   | 46.63                                    | 6.61                 | 19.75                    |
| 8   | MIDREAR OF LEFT FRONT DOOR<br>(LATERAL)                                              | 60.2<br>$\Delta V = 25.7$ mph @ 12.00                                              | -26.4 | 22.6 | 198.56                 | 8.50                                     | 75.02                | 16.88                    |
| 9   | UPPER LEFT FRONT DOOR CENTERLINE<br>(LATERAL)                                        | 81.4<br>$\Delta V = 35.4$ mph @ 19.63 msec                                         | -26.1 | 31.8 | Y312.80                | 17.13                                    | Y223.73              | 28.00 Y                  |
| 10  | MIDFRONT OF LEFT FRONT DOOR<br>(LATERAL)                                             | 99.3<br>$\Delta V = 19.5$ mph @ 15.88 msec                                         | -26.4 | 21.7 | 120.50                 | 6.88                                     | 68.70                | 25.13                    |
| 11  | UPPER REAR OF LEFT REAR DOOR<br>(LATERAL)                                            | 70.3<br>$\Delta V = 32.2$ mph @ 18.13 msec                                         | 26.1  | 31.6 | Y182.50                | 18.88Y                                   | 167.59               | 26.13 Y                  |

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

All measurements of accelerometer locations in inches.

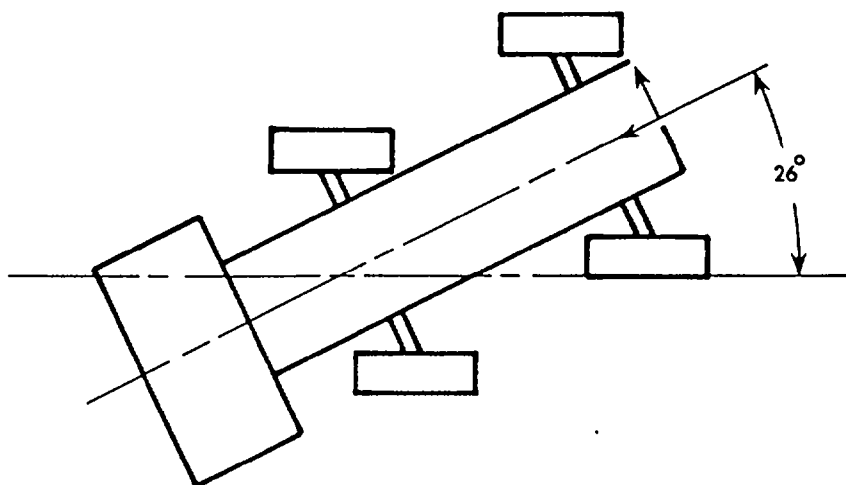
Y See TEST ANOMALIES

# VEHICLE ACCELEROMETER LOCATIONS





# MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY



| NO. | LOCATION           | X*                                                    | Y*  | Z*   | POSITIVE DIRECTION |                | NEGATIVE DIRECTION |             |
|-----|--------------------|-------------------------------------------------------|-----|------|--------------------|----------------|--------------------|-------------|
|     |                    |                                                       |     |      | MAX (g)            | TIME (msec)    | MAX (g)            | TIME (msec) |
| 1   | CENTER OF GRAVITY  | 74.5                                                  | 0.0 | 11.5 |                    |                |                    |             |
|     | (LONGITUDINAL)     | $\Delta V = -17.8 \text{ mph @ } 114.75 \text{ msec}$ |     |      | 1.71               | 119.00         | 16.32              | 39.25       |
|     | (LATERAL)          | $\Delta V = -5.7 \text{ mph @ } 114.75 \text{ msec}$  |     |      | 0.24               | 76.50          | 7.68               | 25.63       |
|     | (VERTICAL)         |                                                       |     |      | 14.97              | 69.95 °        | 16.88              | 59.00 °     |
|     | (RESULTANT)        |                                                       |     |      |                    | 19.99 @ 58.88° |                    |             |
| 2   | FRONT FRAME MEMBER | 130.3                                                 | 0.0 | 11.3 |                    |                |                    |             |
|     | (LONGITUDINAL)     | $\Delta V = -19.4 \text{ mph @ } 114.75 \text{ msec}$ |     |      | 0.14               | 120.00         | 17.09              | 42.88       |
| 3   | REAR FRAME MEMBER  | 23.3                                                  | 0.0 | 11.5 |                    |                |                    |             |
|     | (LONGITUDINAL)     | $\Delta V = -17.1 \text{ mph @ } 114.75 \text{ msec}$ |     |      | 0.34               | 110.00         | 15.47              | 37.75       |

\* 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.

° 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.

# HIGH SPEED CAMERA INFORMATION

| CAMERA NO. | LOCATION             | TYPE          | LENS (mm) | SPEED (fps) | PURPOSE OF CAMERA DATA         |
|------------|----------------------|---------------|-----------|-------------|--------------------------------|
| 1          | Overhead             | Photosonic 1B | 8         | 542         | Vehicle Dynamics               |
| 2          | Overhead             | Photosonic 1B | 25        | 537         | Close-up of impact point       |
| 3          | Onboard MDB          | Photosonic 1B | 25        | 500         | Close-up of impact point       |
| 4          | Onboard MDB          | Stalex        | 13        | 505         | Driver kinematics              |
| 5          | Ground level - right | Stalex        | 25        | 505         | Overall view                   |
| 6          | Ground level - left  | Photosonic 1B | 17        | 525         | Overall view                   |
| 7          | Onboard vehicle      | Photosonic 1B | 8         | 807         | Driver kinematics - front view |
| 8          | Onboard vehicle      | Photosonic 1B | 8         | 787         | Driver kinematics              |
| 9          | Onboard vehicle      | Photosonic 1B | 8         | 782         | Passenger kinematics           |

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

LOCATIONS OF OFFBOARD HIGH SPEED CAMERAS

| CAMERA NO. | X       | Y     | Z   |
|------------|---------|-------|-----|
| 1          | 0       | 0     | 25' |
| 2          | 0       | 0     | 25' |
| 5          | 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<br>BEING<br>MEASURED | TYPE OF<br>TRANSDUCER | MODEL<br>NUMBER | SERIAL<br>NUMBER | MEGR.          | DATE OF<br>LAST<br>CALIBRATION | SENSITIVITY | DESIRED<br>FULL SCALE<br>(ENGR. UNITS) |
|--------------------------------|-----------------------|-----------------|------------------|----------------|--------------------------------|-------------|----------------------------------------|
| BOGXG                          | Accel                 | 4-202-0001      | 18845            | Bell<br>Howell | 5/2/84                         | 0.237 MV/G  | 50 G                                   |
| BOGYG                          | Accel                 | 4-202-0001      | 18858            | Bell<br>Howell | 5/2/84                         | 0.236 MV/G  | 50 G                                   |
| BOGZG                          | Accel                 | 4-202-0001      | 18857            | Bell<br>Howell | 5/2/84                         | 0.239 MV/G  | 50 G                                   |
| BFCXG                          | Accel                 | 4-202-0001      | 18240            | Bell<br>Howell | 5/2/84                         | 0.239 MV/G  | 50 G                                   |
| BRCXG                          | Accel                 | 4-202-0001      | 19022            | Bell<br>Howell | 5/2/84                         | 0.220 MV/G  | 50 G                                   |

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

APPENDIX A  
PHOTOGRAPHS



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

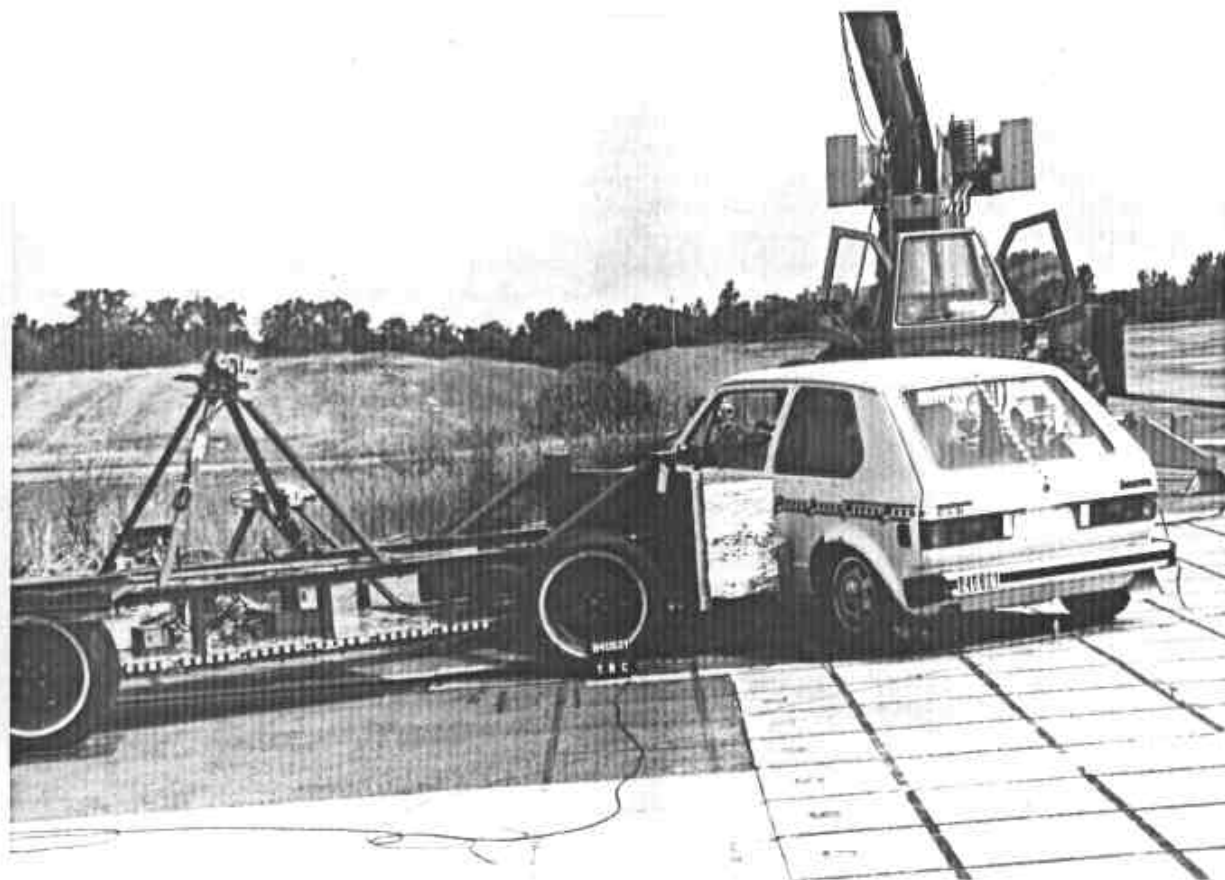


Figure A-2. PRE-TEST OVERALL - VIEW 2  
A-2



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

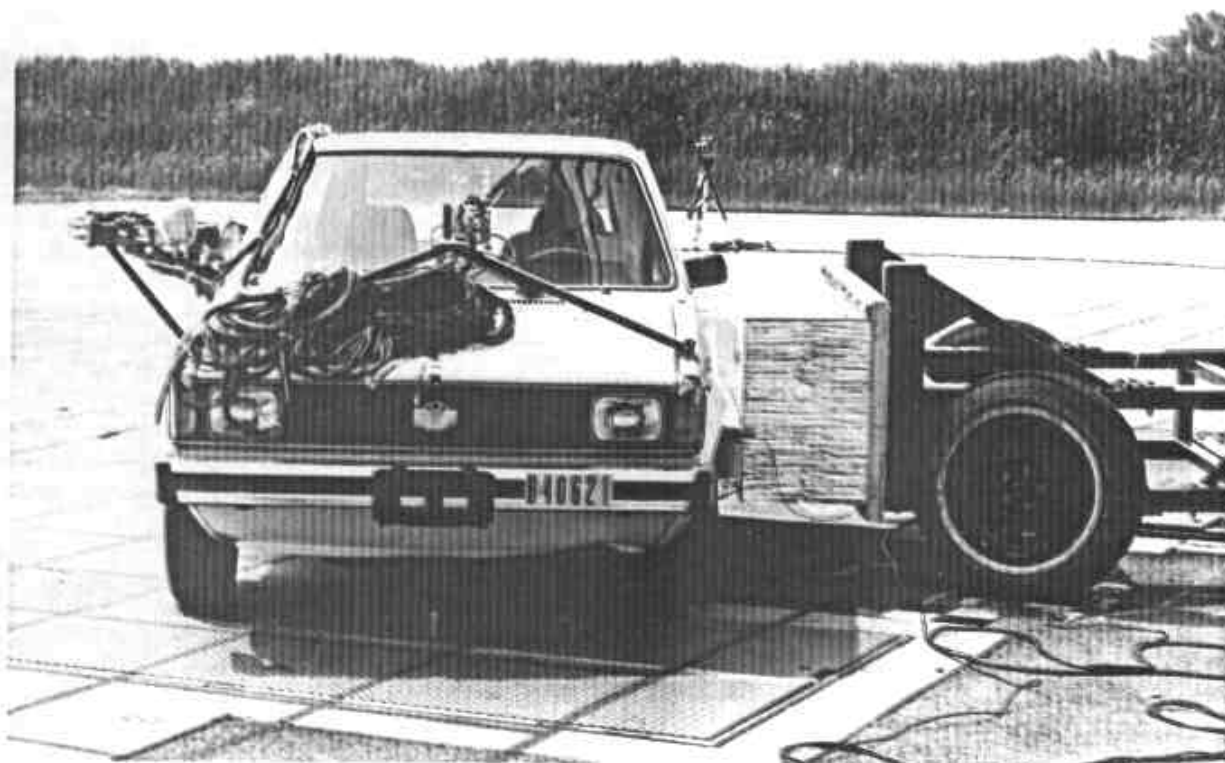


Figure A-4. PRE-TEST OVERALL - VIEW 4  
A-3

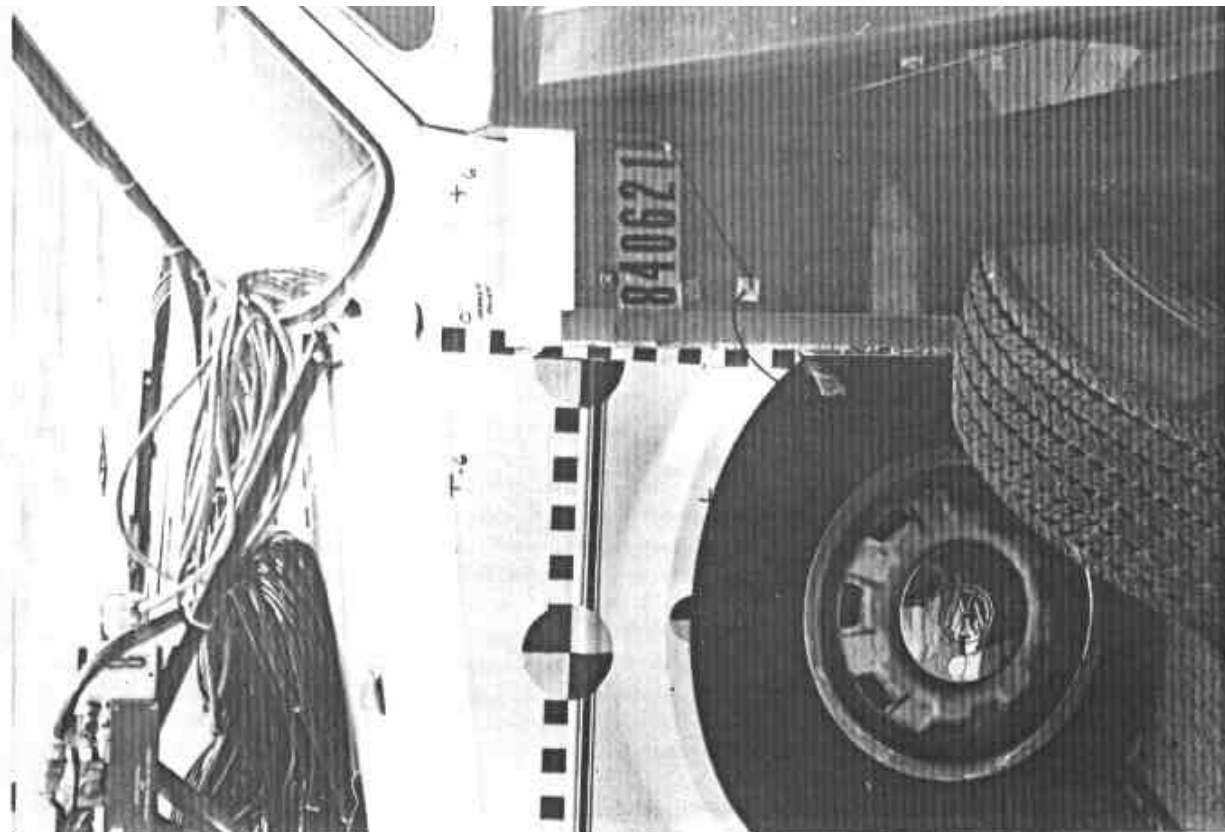


Figure A-5. PRE-TEST CLOSEUP - VIEW 1

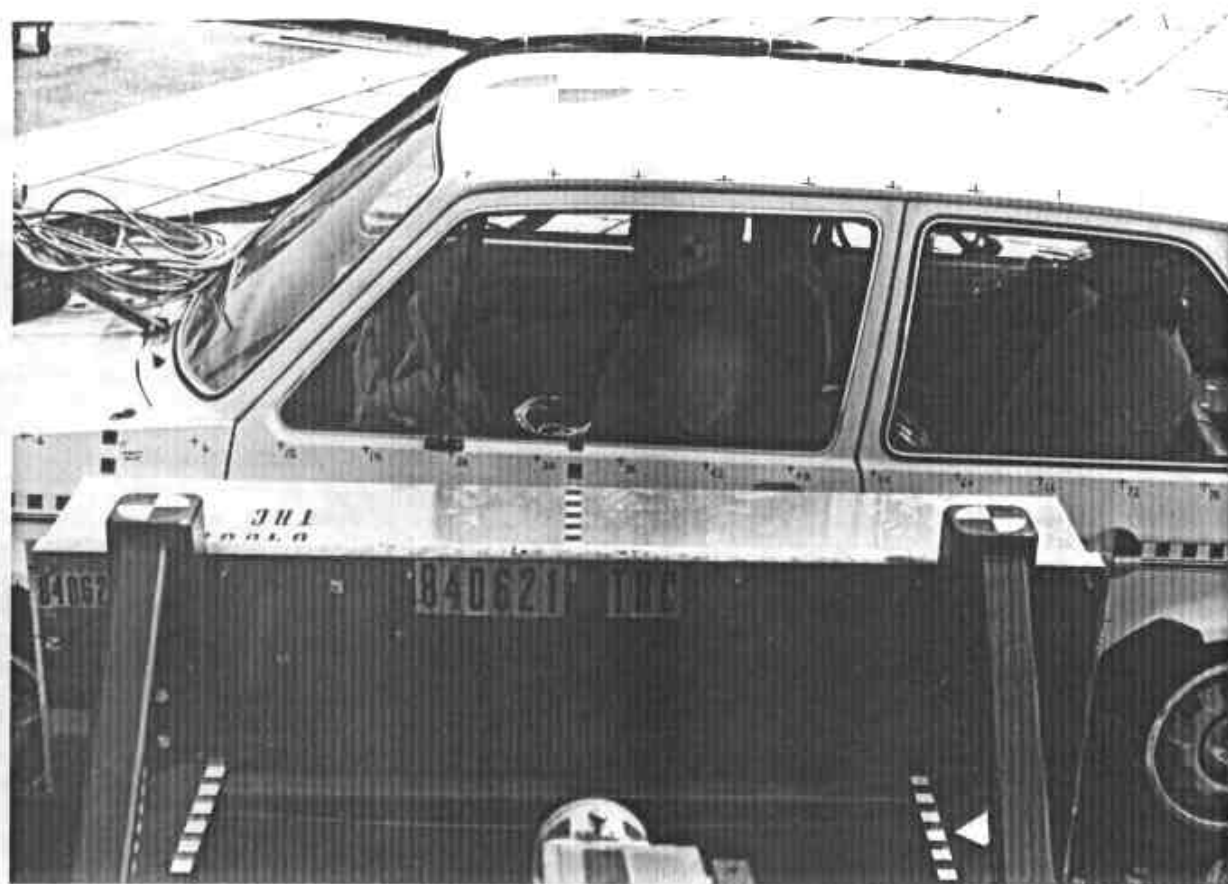


Figure A-6. PRE-TEST CLOSEUP - VIEW 2  
A-4



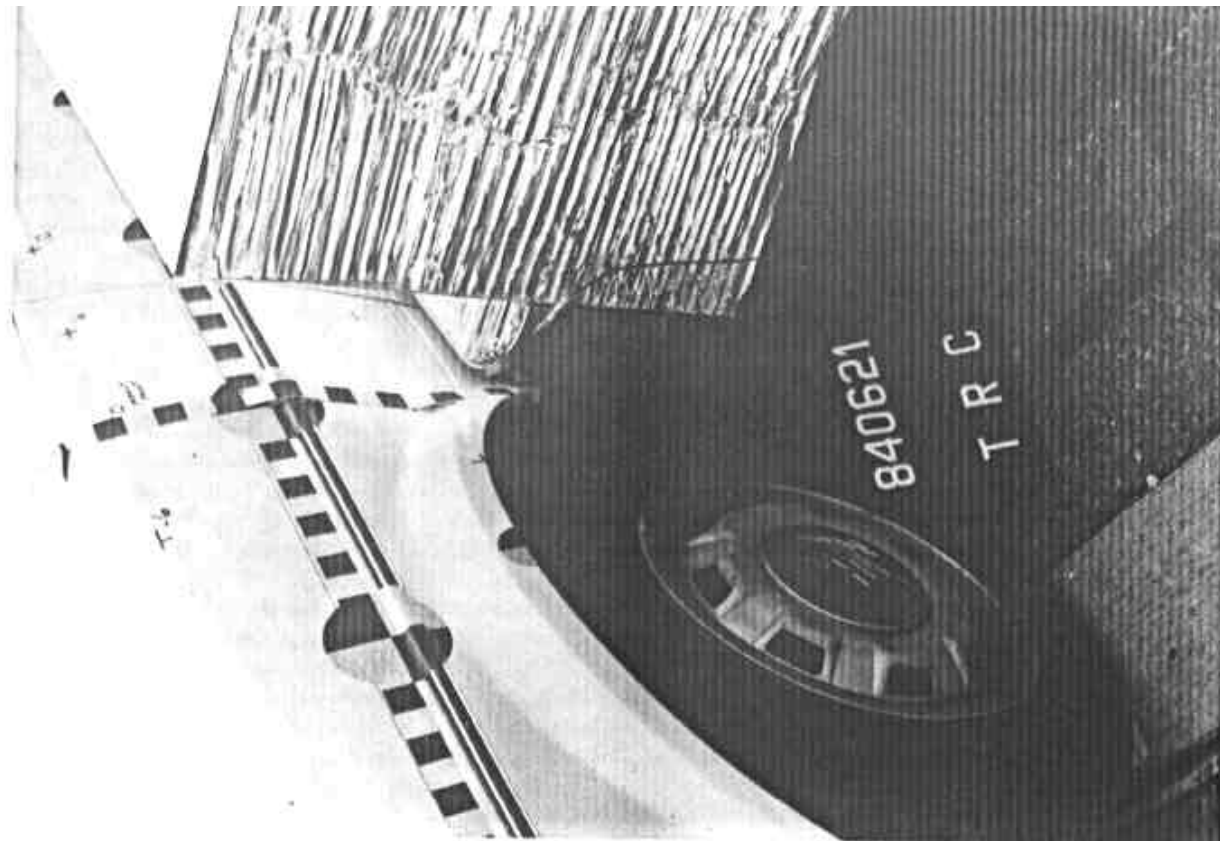


Figure A-7. PRE-TEST CLOSEUP - VIEW 3

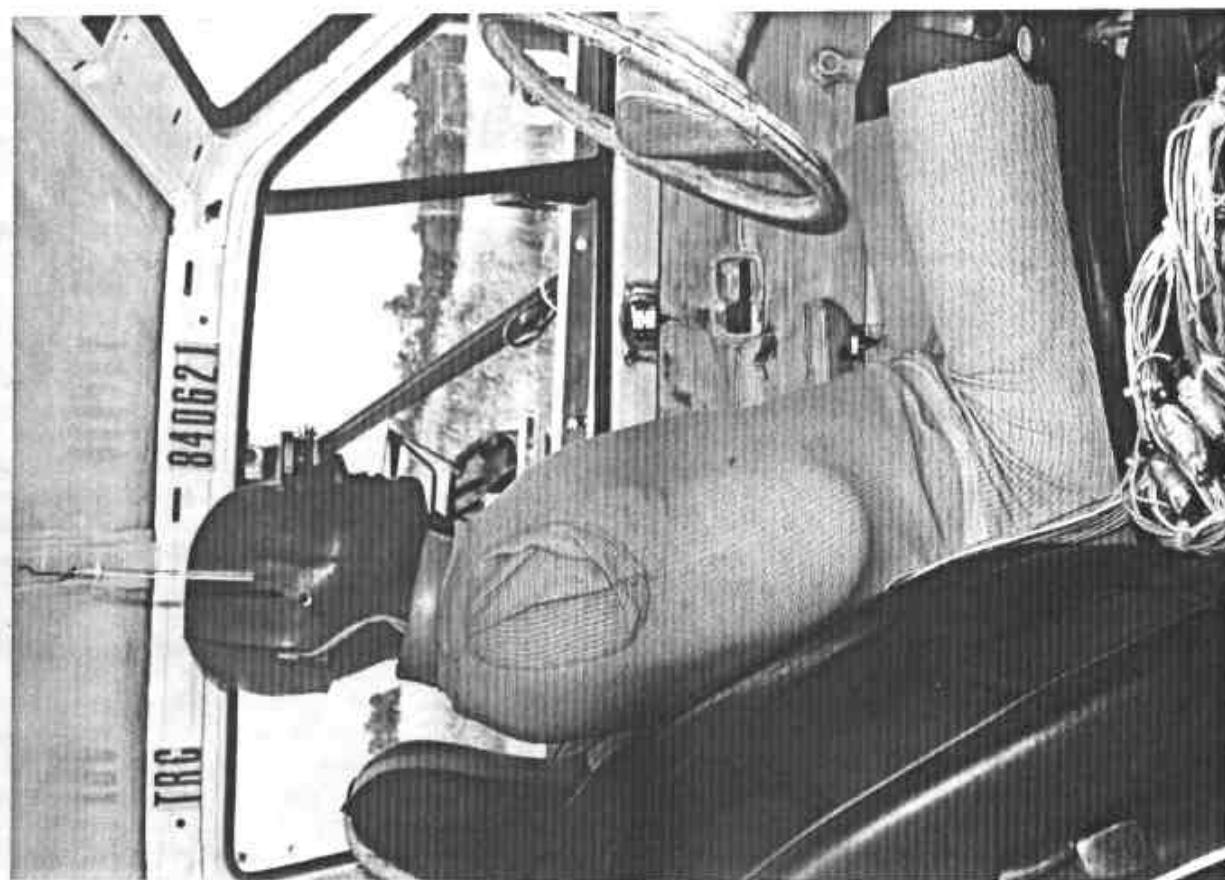


Figure A-8. PRE-TEST DRIVER DUMMY - VIEW 1  
A-5

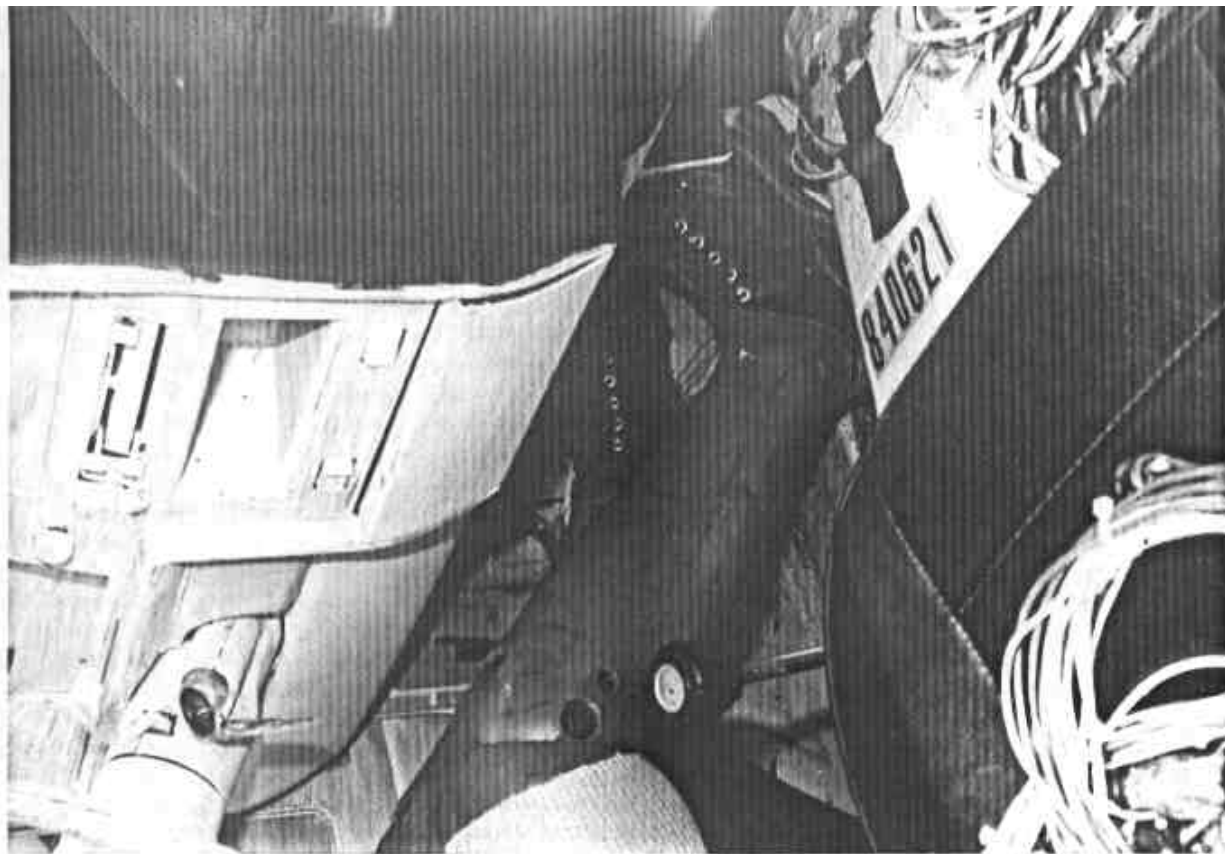


Figure A-9. PRE-TEST DRIVER DUMMY - VIEW 2



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

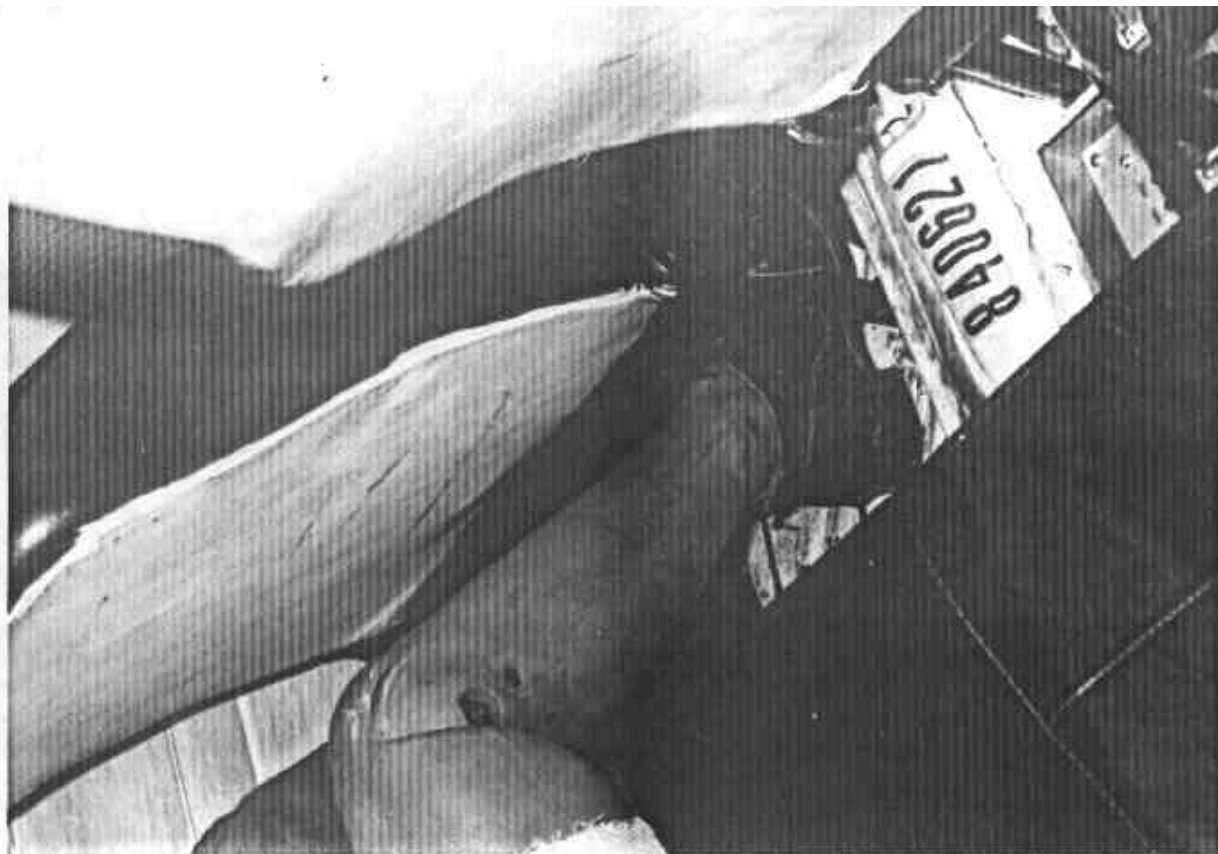


Figure A-11. PRE-TEST PASSENGER DUMMY - VIEW 2

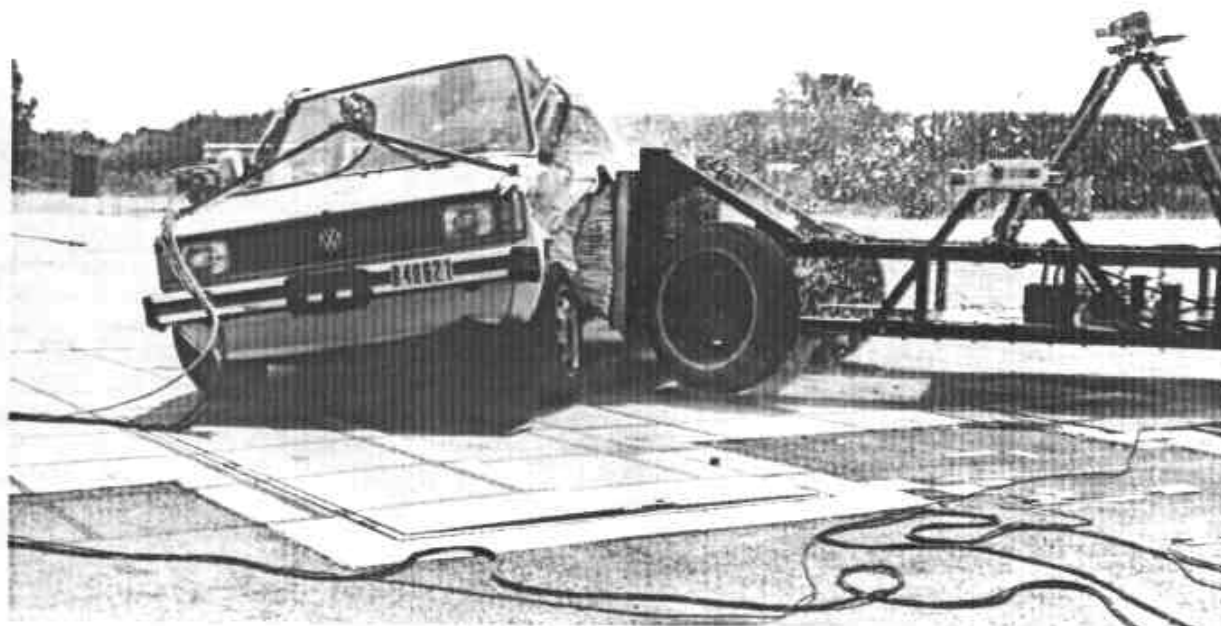


Figure A-12. CRASH EVENT PHOTOGRAPH  
A-7



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

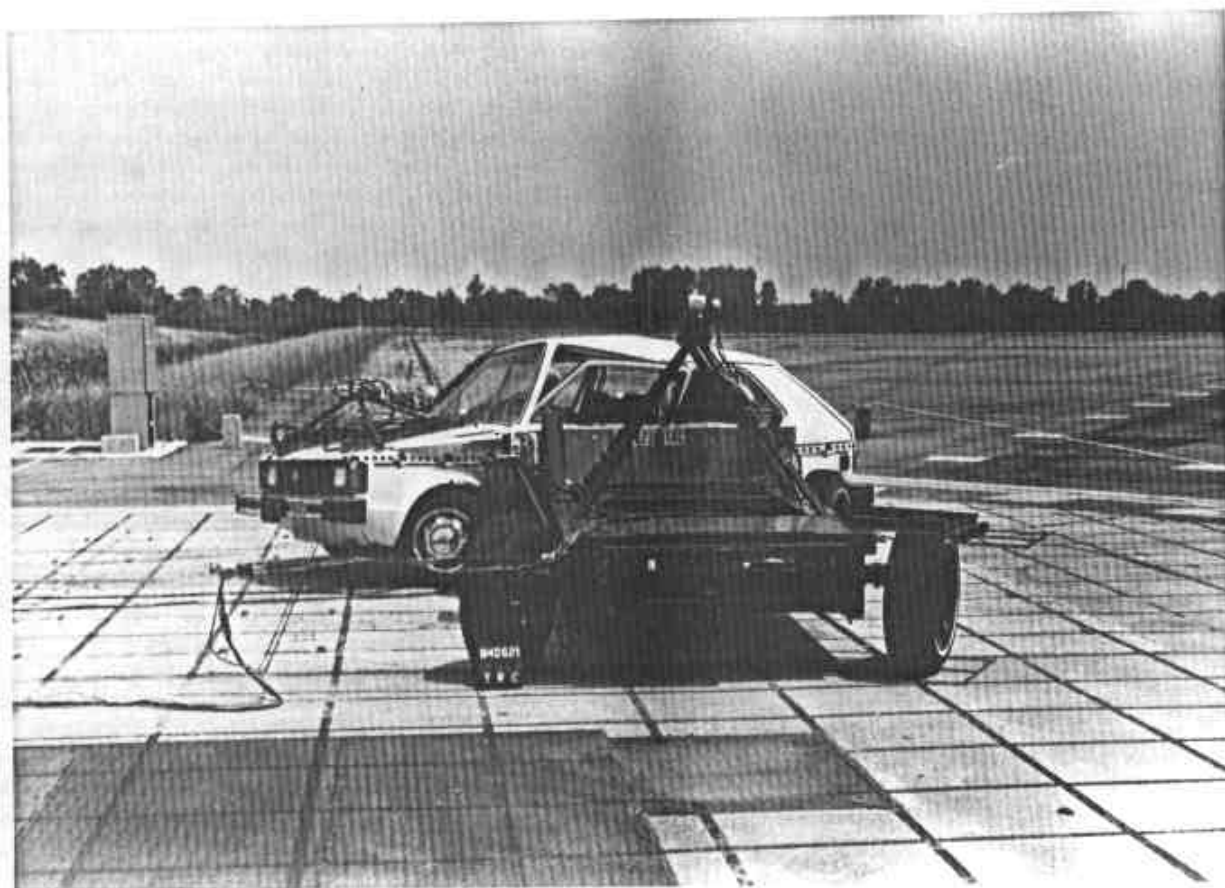


Figure A-14. POST-TEST OVERALL - VIEW 2  
A-8





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



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

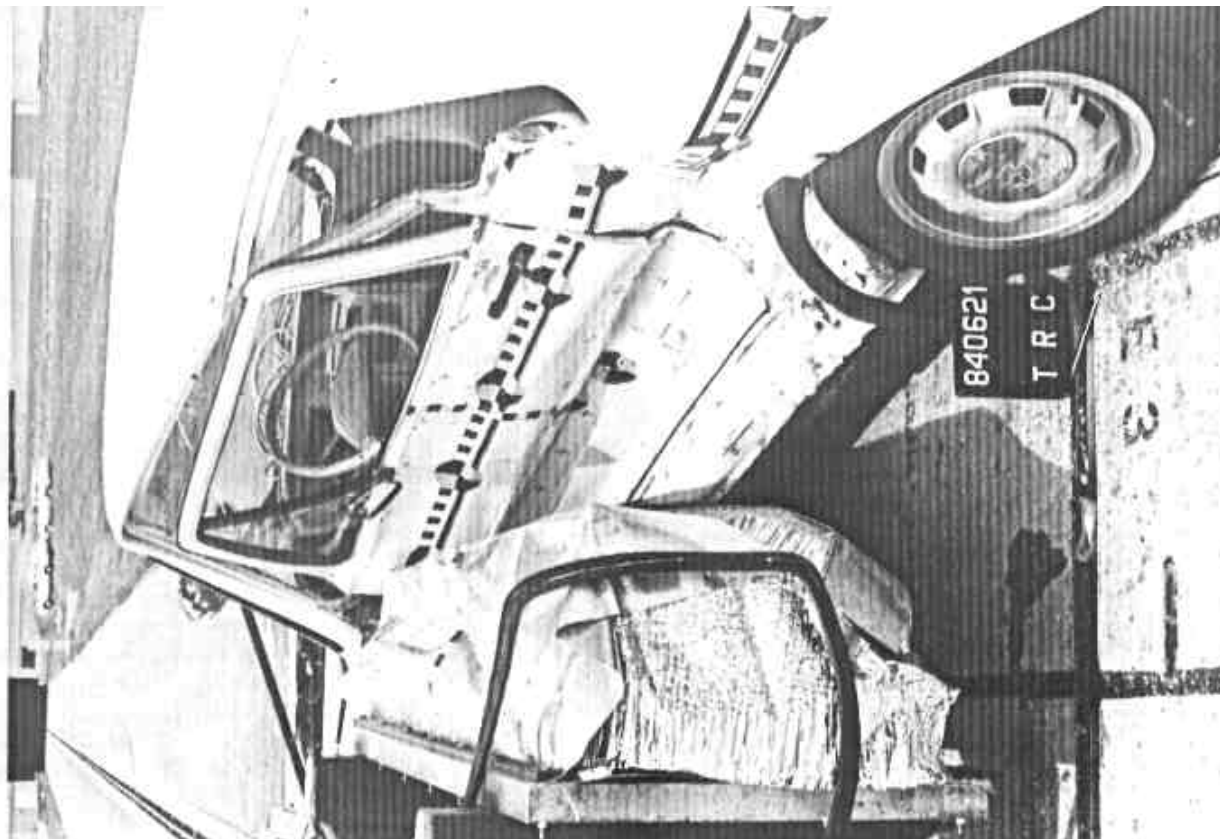


Figure A-17. POST-TEST CLOSEUP

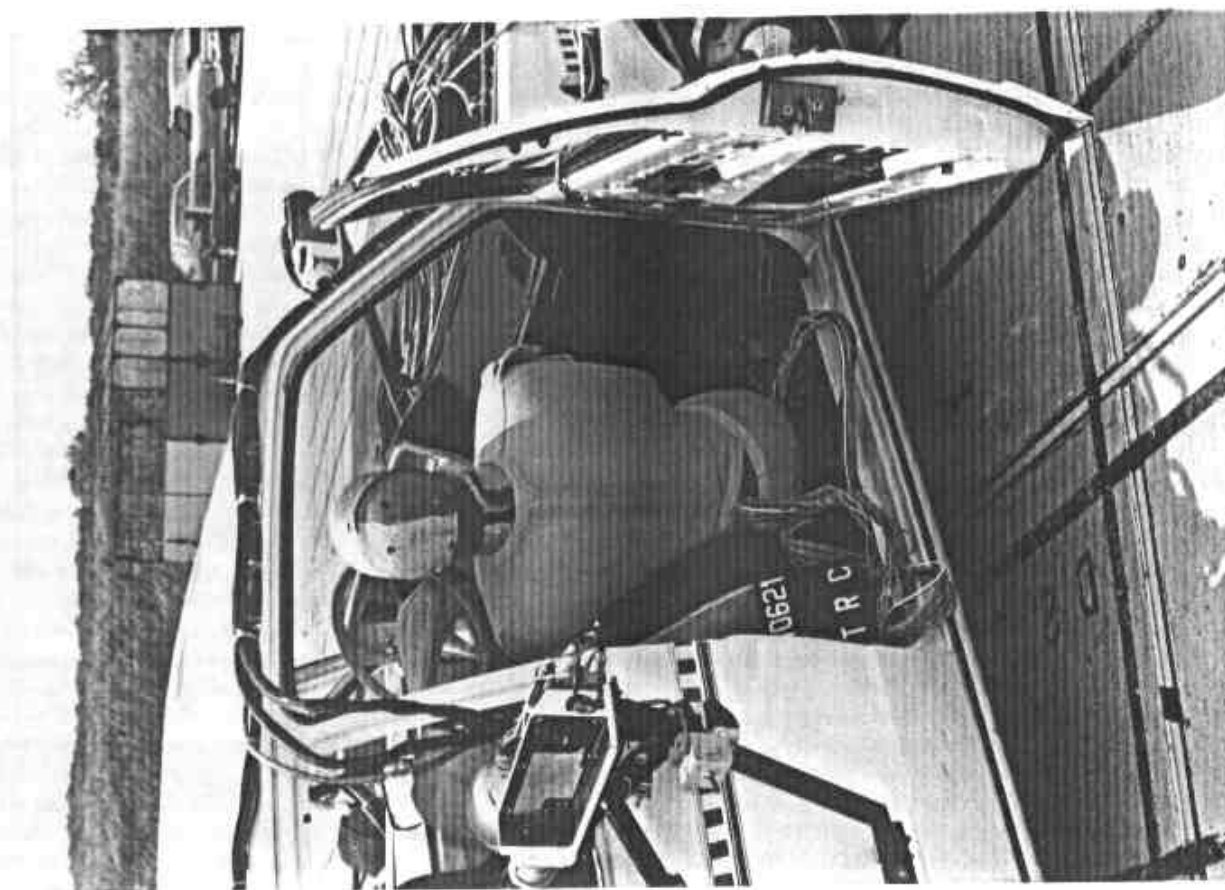


Figure A-18. POST-TEST DRIVER DUMMY - VIEW 1  
A-10



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



Figure A-20. POST-TEST PASSENGER DUMMY - VIEW 1  
A-11

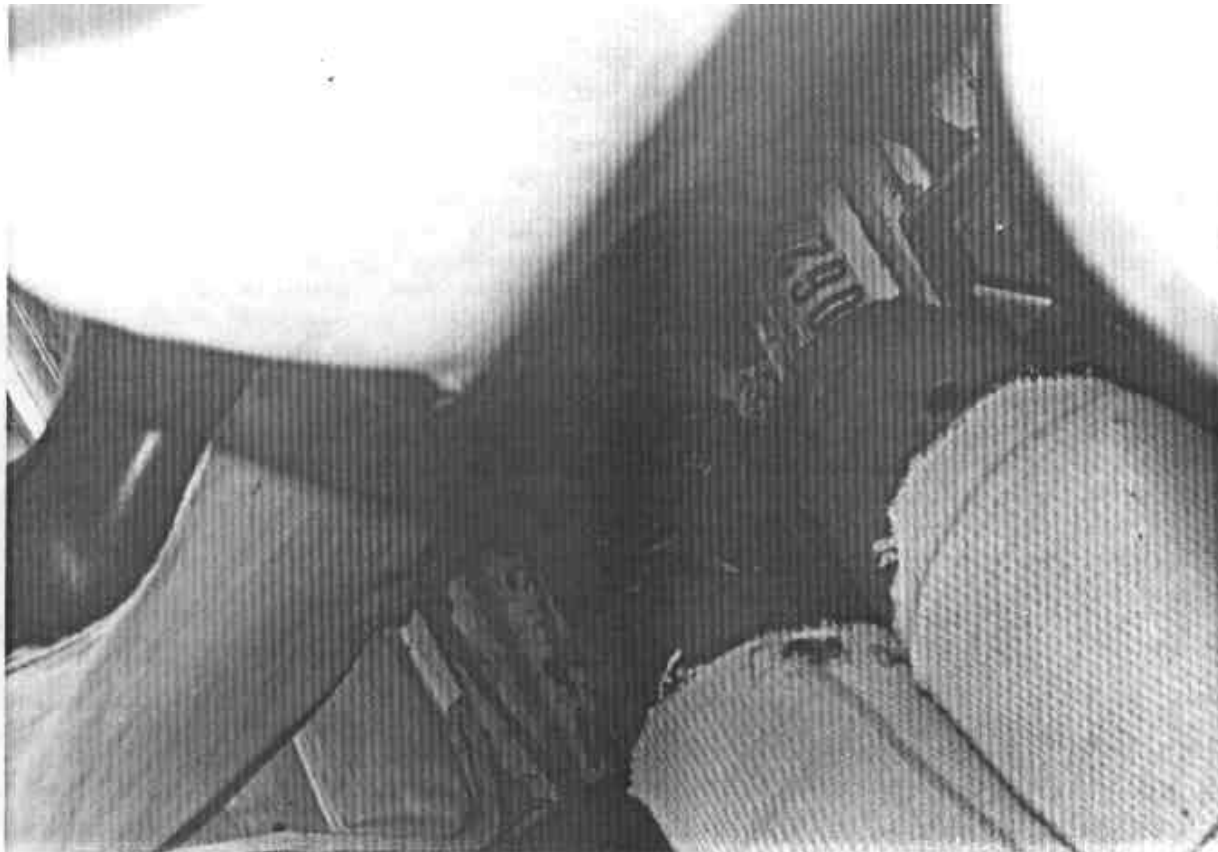


Figure A-21. POST-TEST PASSENGER DUMMY - VIEW 2

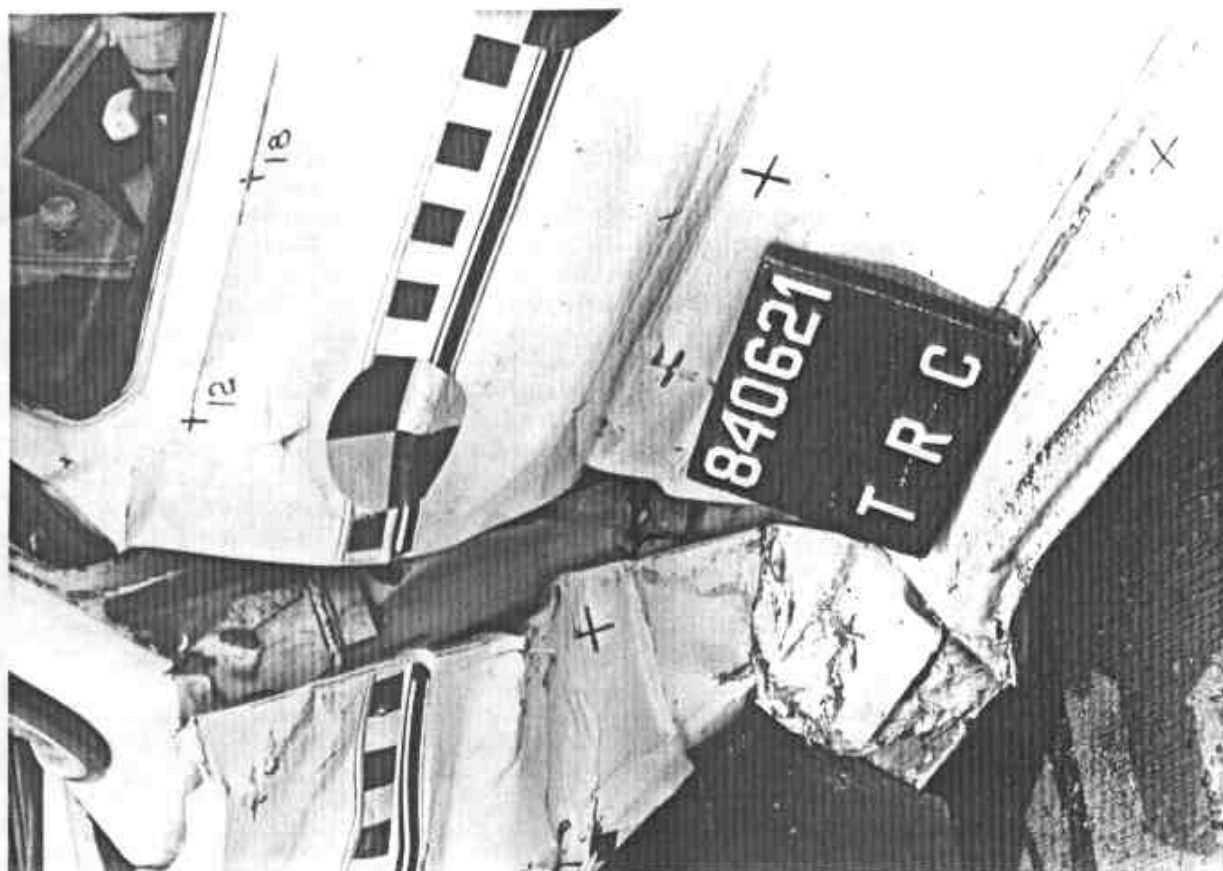


Figure A-22. POST-TEST VEHICLE DAMAGE - VIEW 1  
A-12





Figure A-23. POST-TEST VEHICLE DAMAGE - VIEW 2

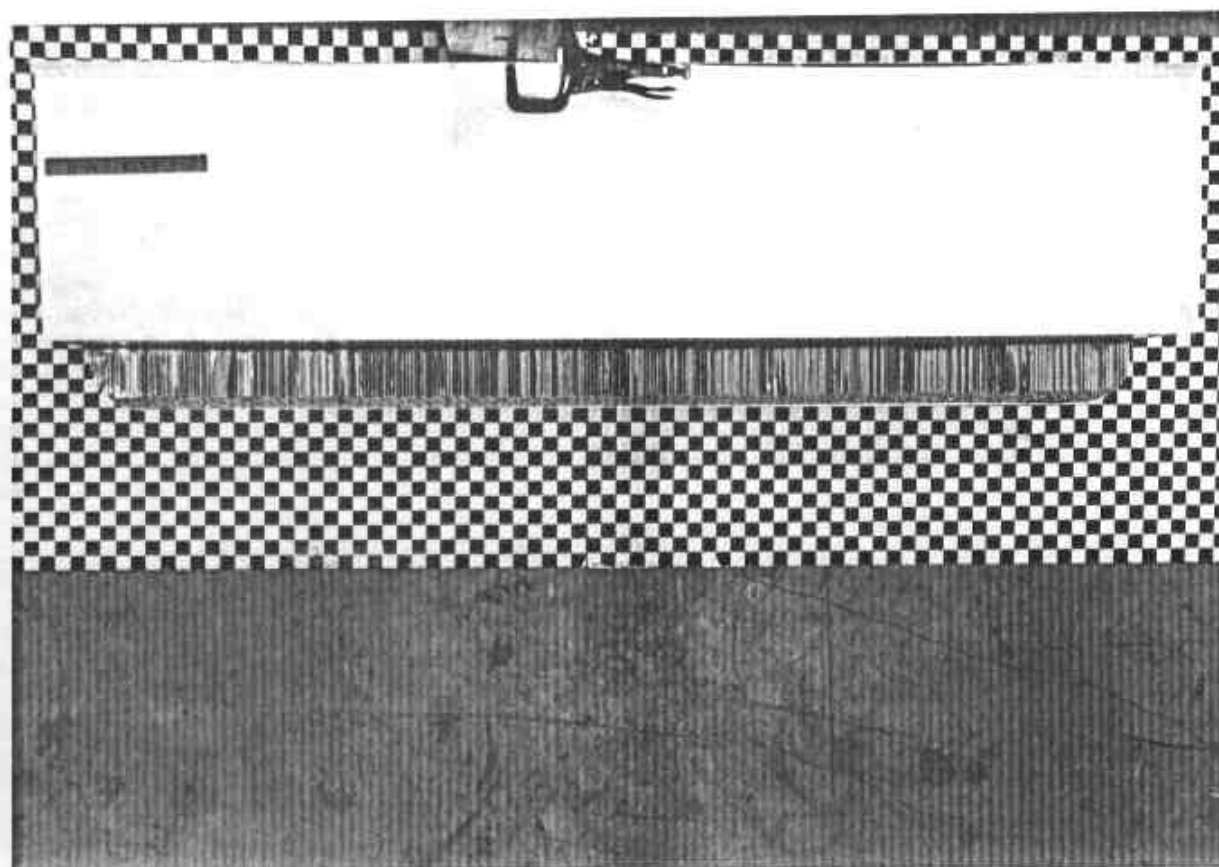


Figure A-24. PRE-TEST MDB FACE - VIEW 1  
A-13

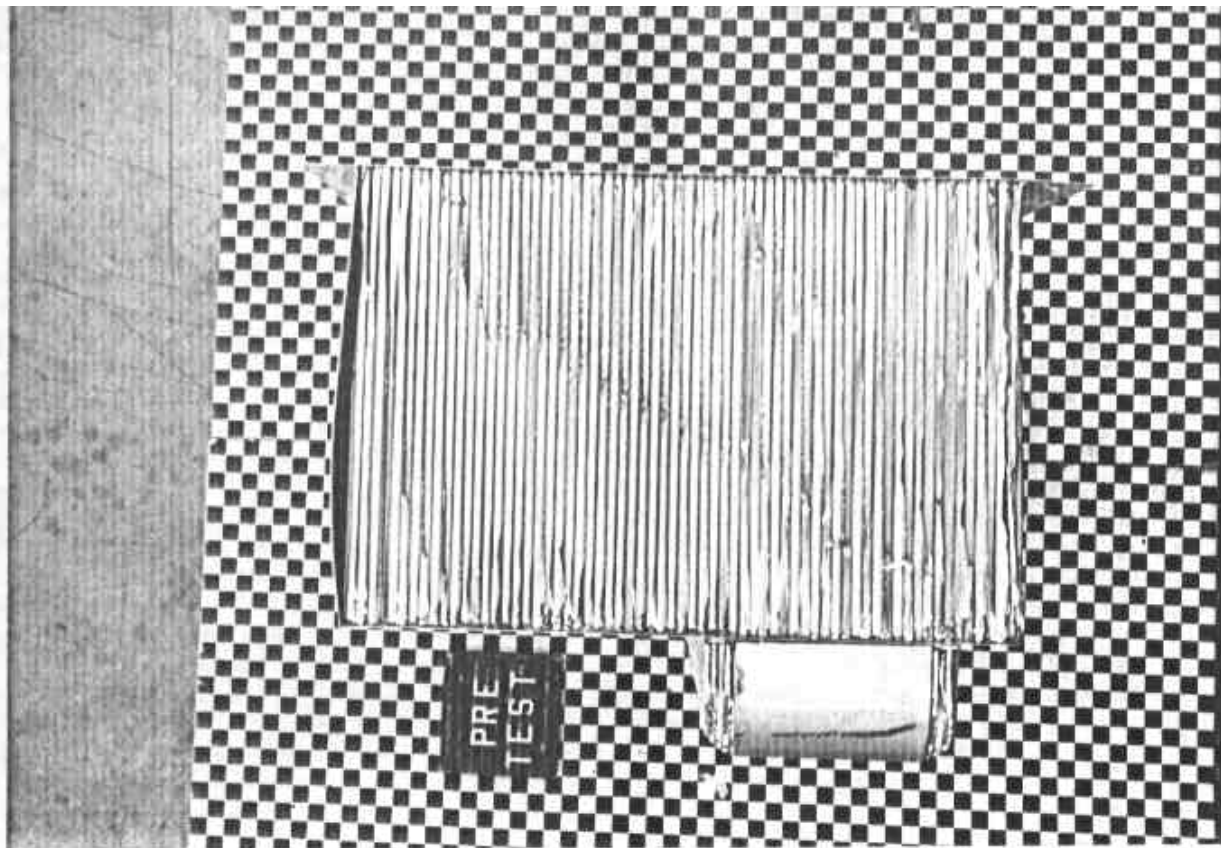


Figure A-25. PRE-TEST MDB FACE - VIEW 2

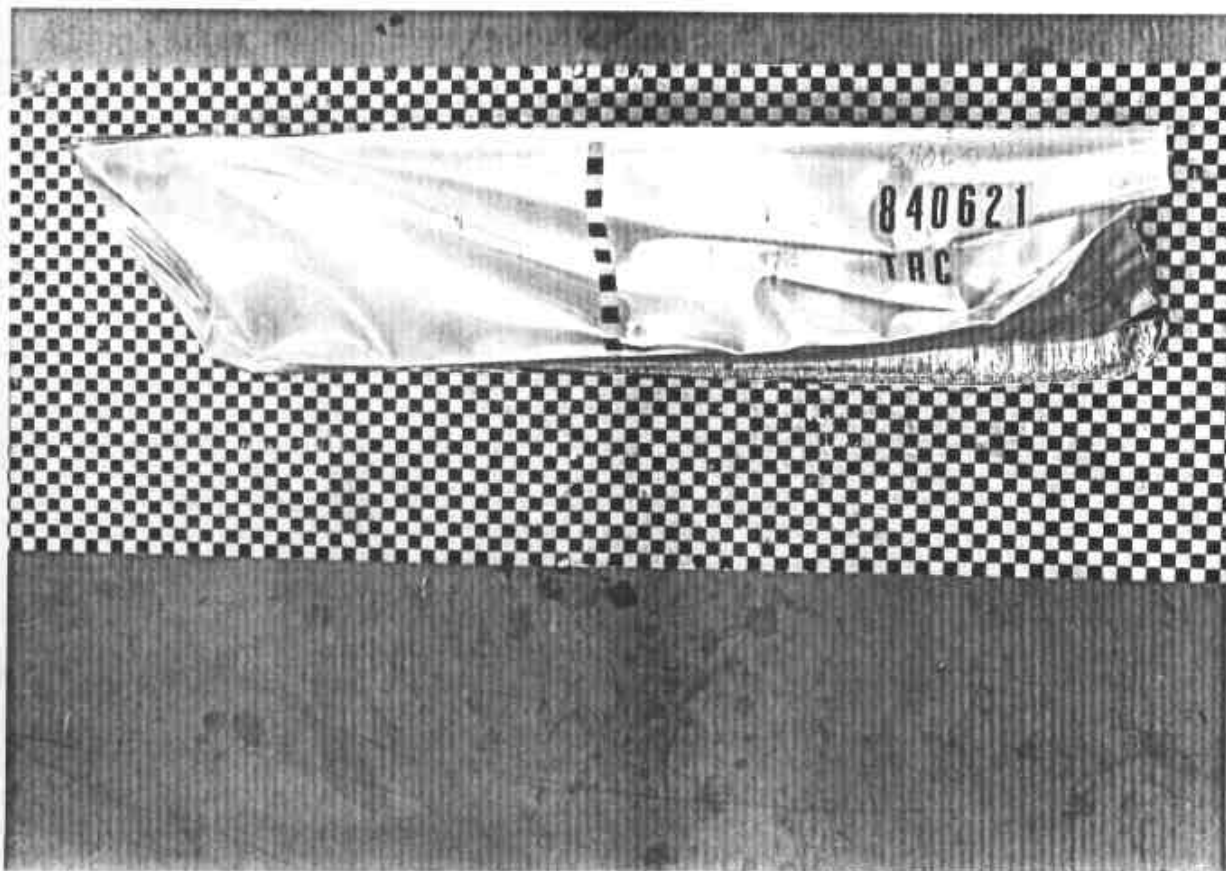


Figure A-26. POST-TEST MDB FACE - VIEW 1  
A-14

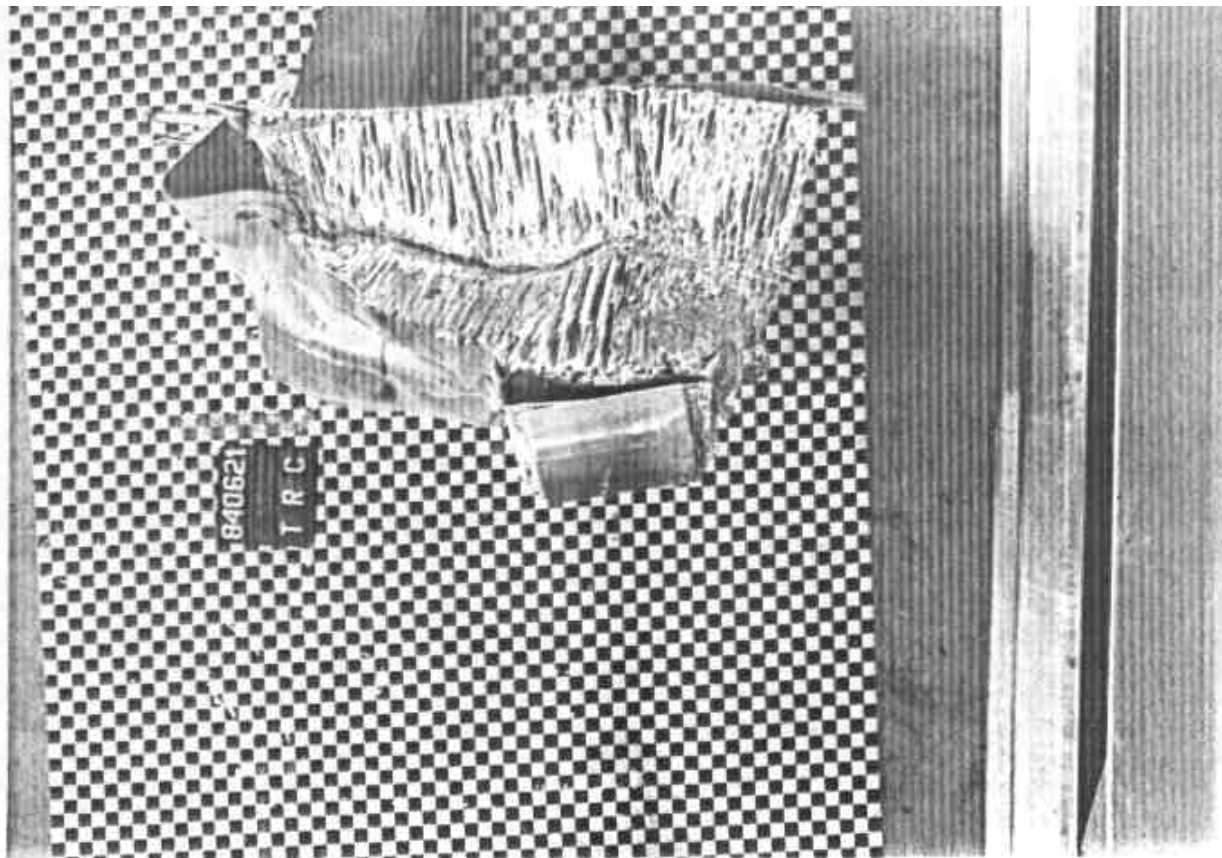
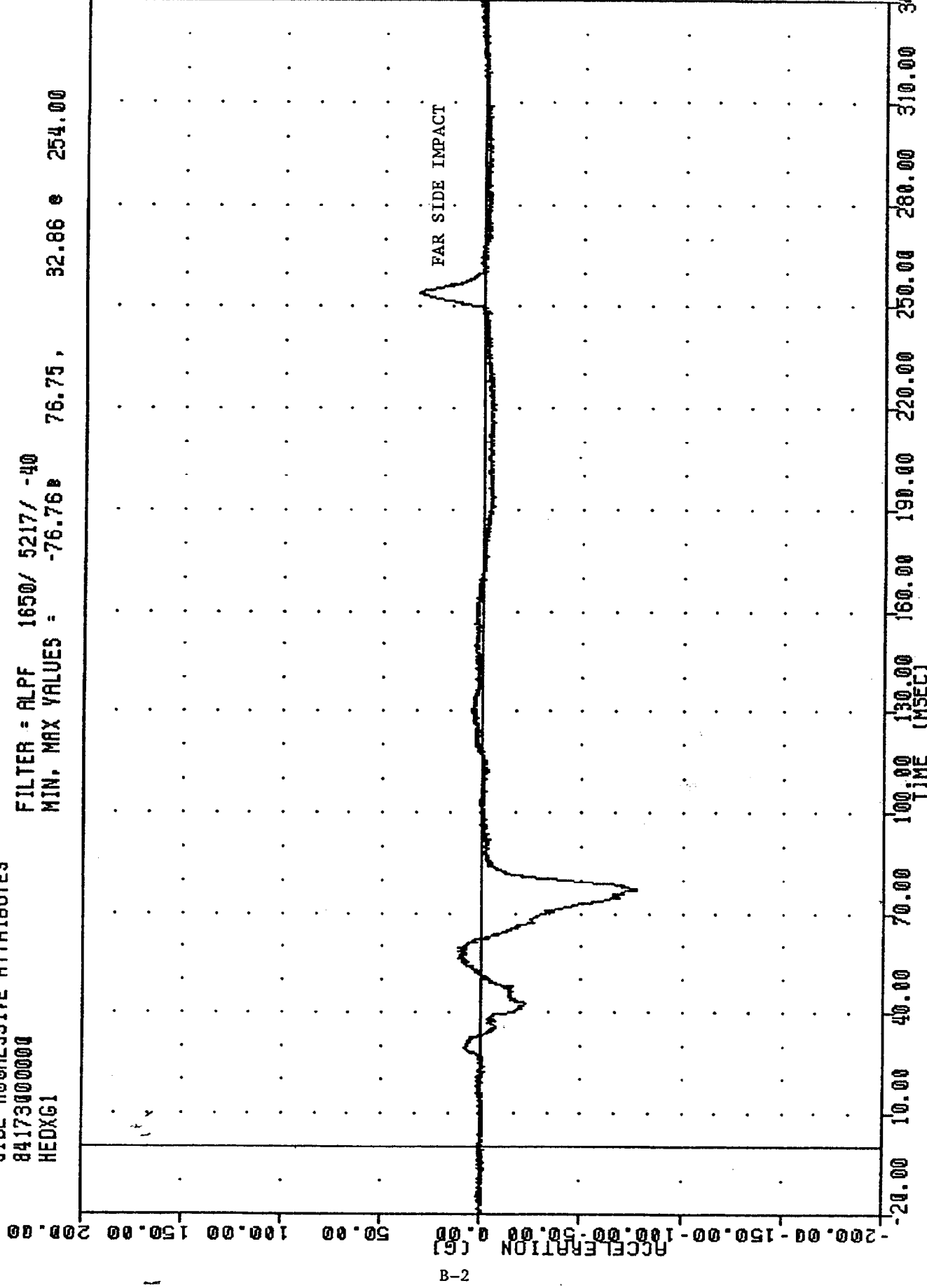


Figure A-27. POST-TEST MDB FACE - VIEW 2

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.

THE 0621 PLOT DATE 17 JUL 84 08:11:35  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 HEDXG1  
 FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = -76.76 76.75, 32.86 254.00

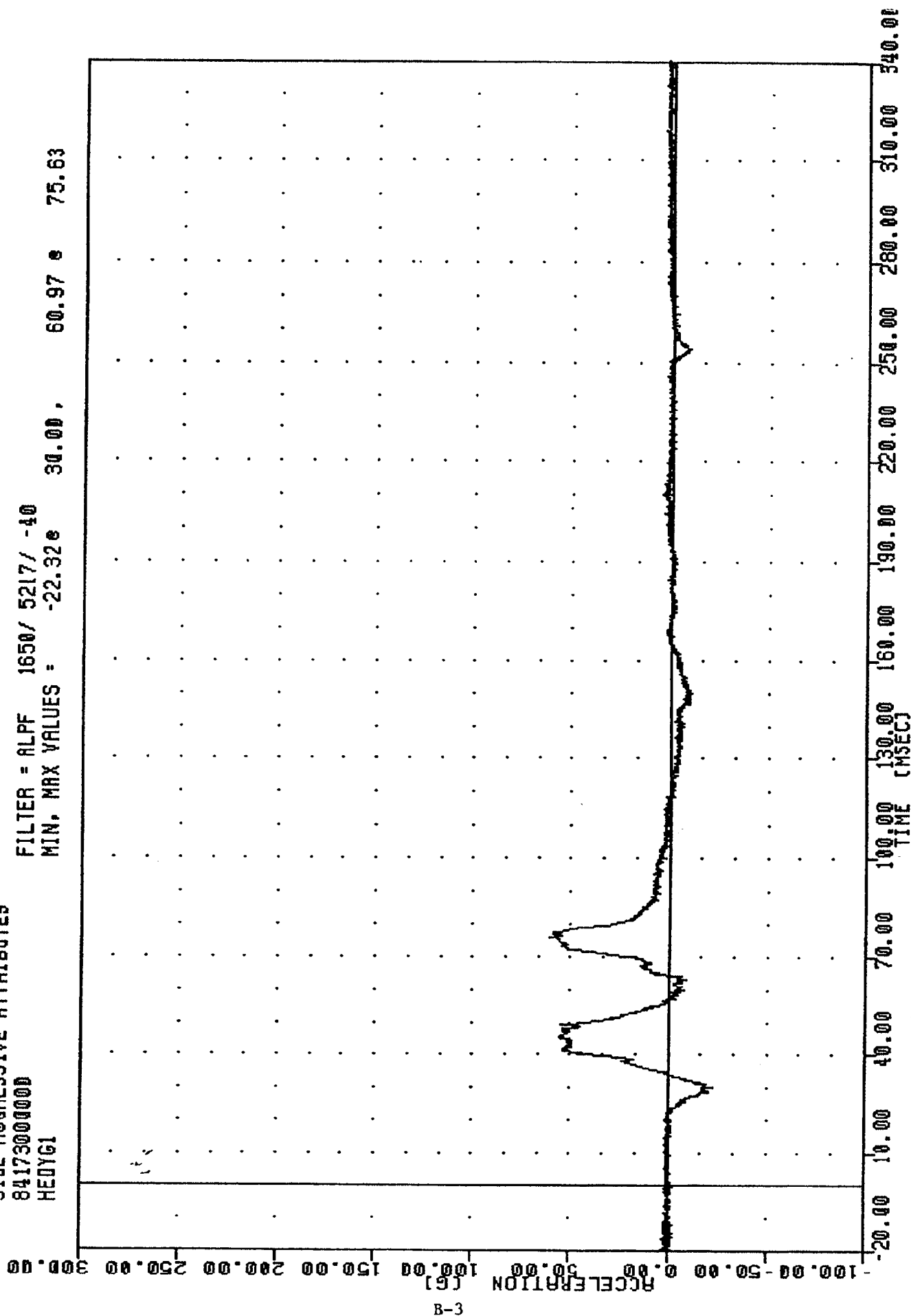


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER HEAD ACCELERATION X AXIS

841730000000  
 SIDE AGGRESSIVE ATTRIBUTES  
 HE0Y61

8410621  
 PLOT DATE 17 JUL 64 00:11:33

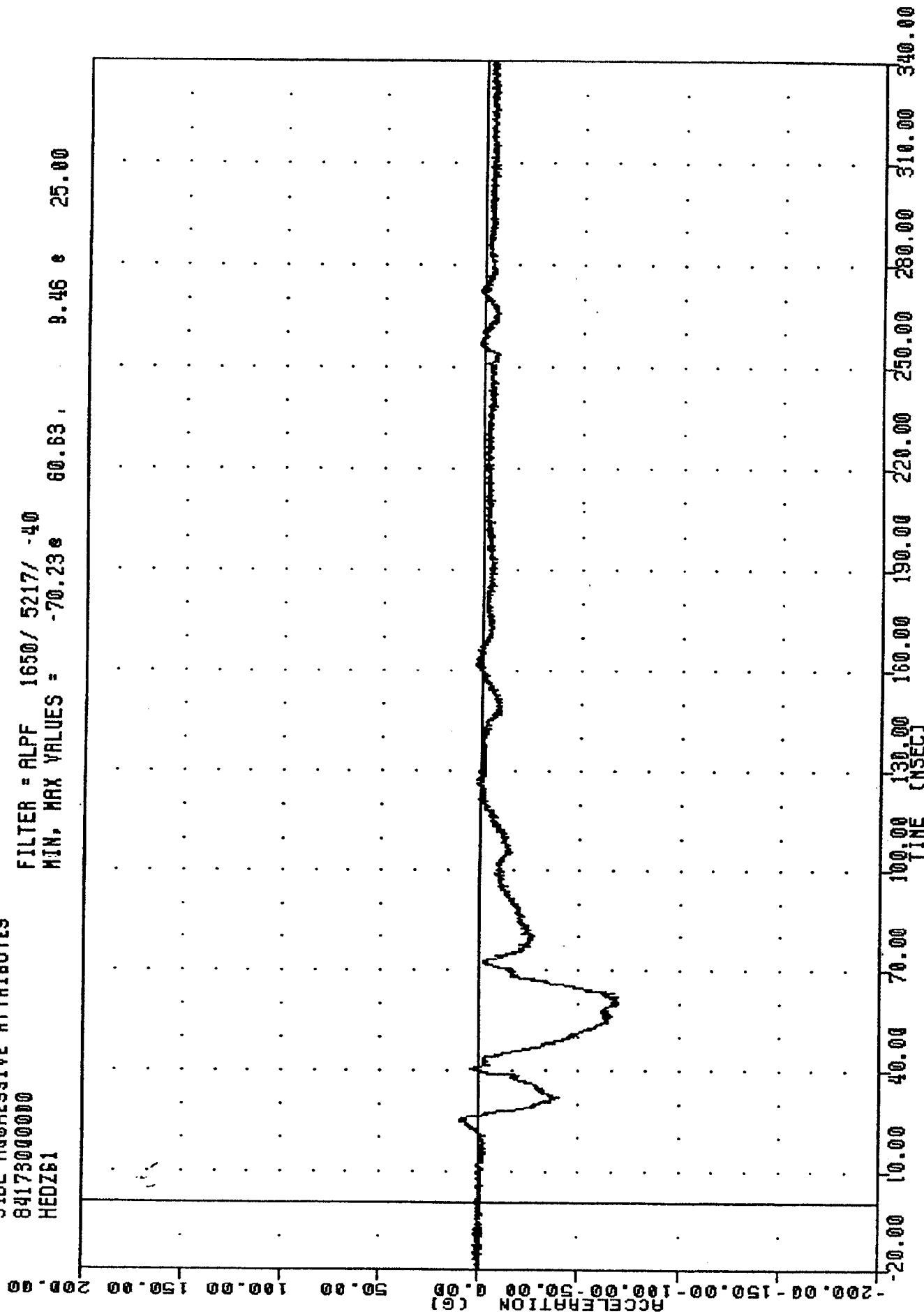
FILTER = ALPF 1650/ 5217/ -40  
 MIN. MAX VALUES = -22.32e 30.00, 60.97 e 75.63



TR 000000000000  
 SIDE AGGRESSIVE ATTRIBUTES  
 841730000000  
 HEDZ61

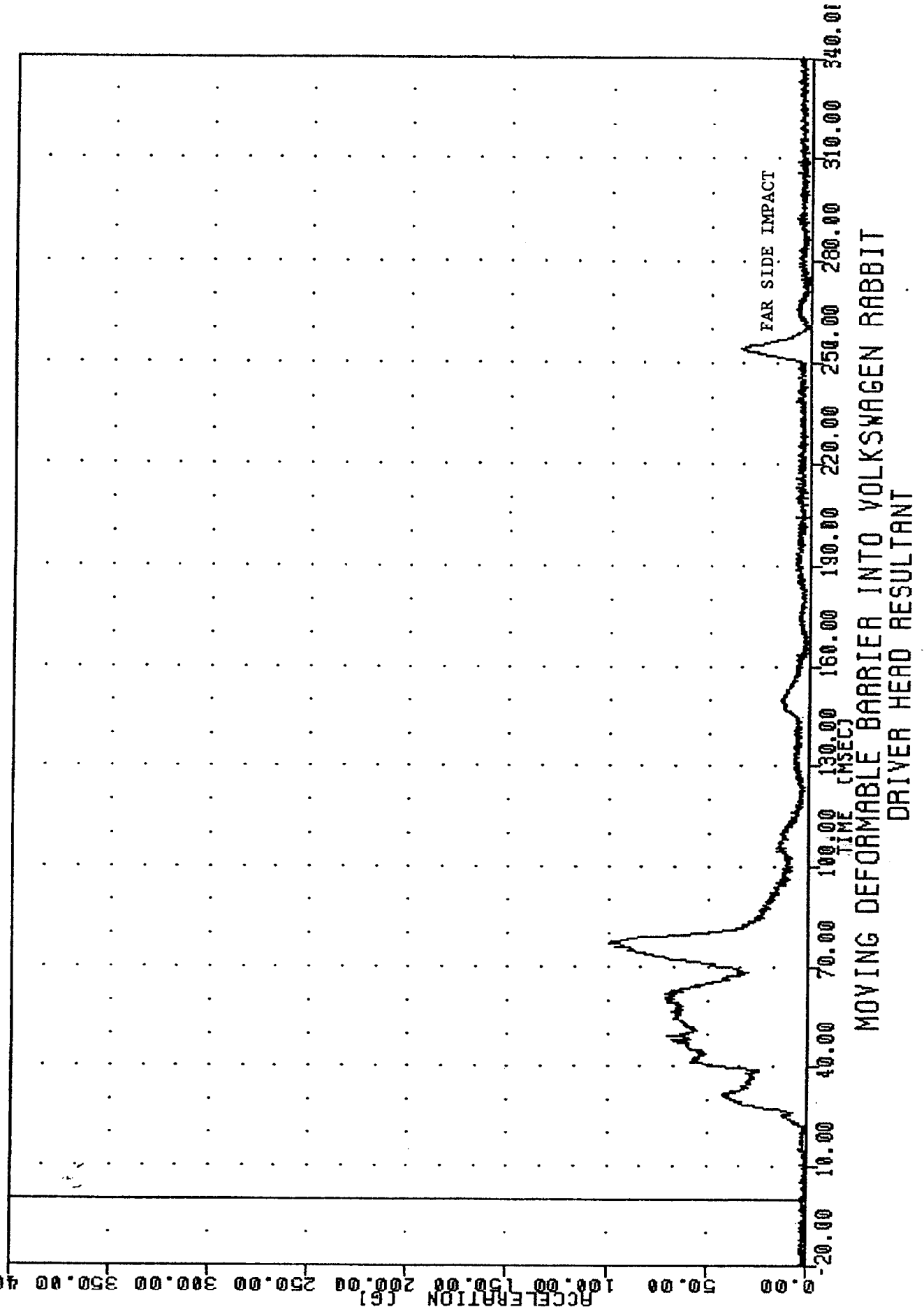
PLT DATE 17 JUL 84 06:11:35

FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = -70.23 60.63 , 9.46 25.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER HEAD ACCELERATION Z AXIS

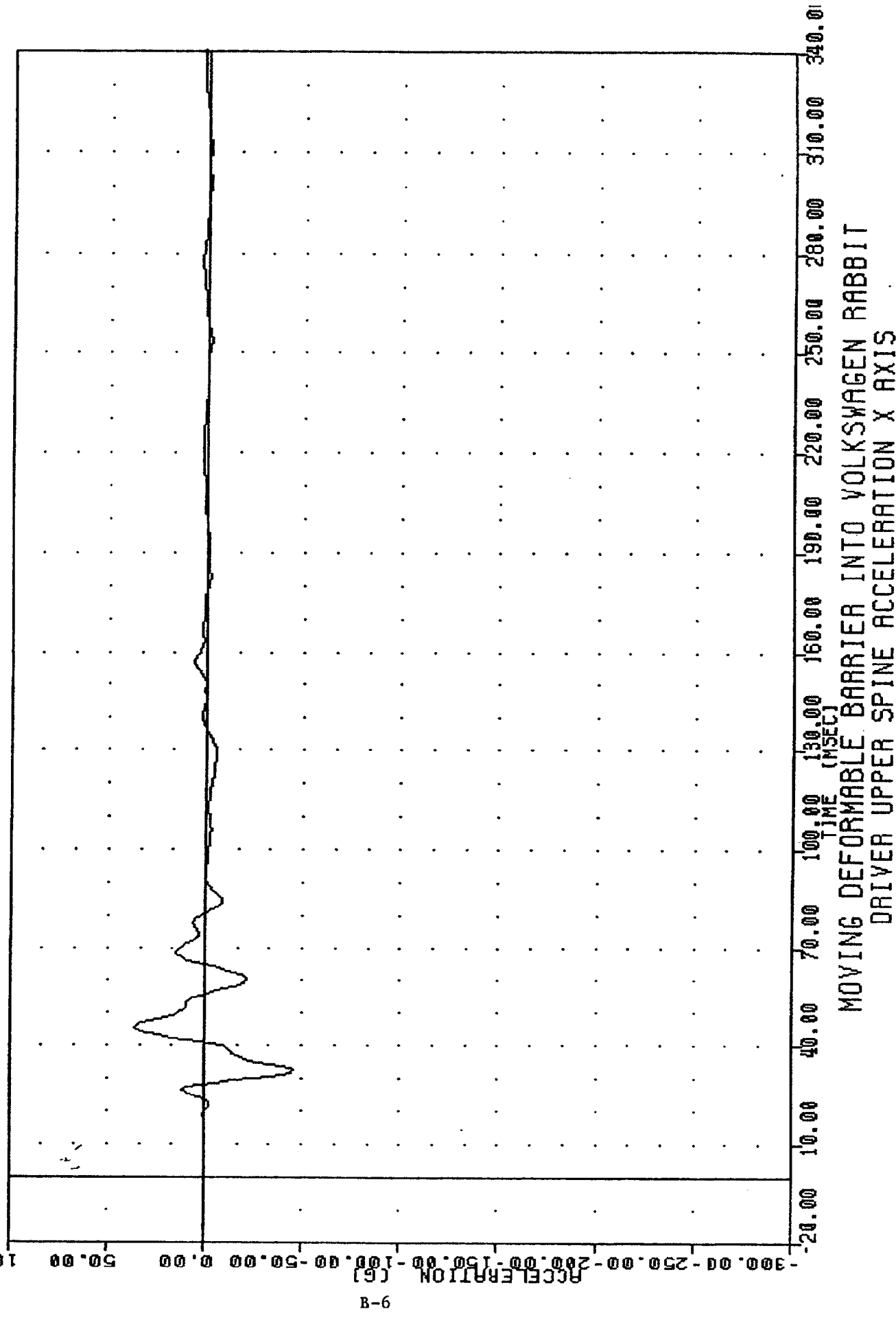
TEST NO. 10621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 HEDRG1  
 FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = 0.05e 11.50, 99.95 e 76.88  
 POST DATE 17 JUL 84 00:11:33



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER HEAD RESULTANT

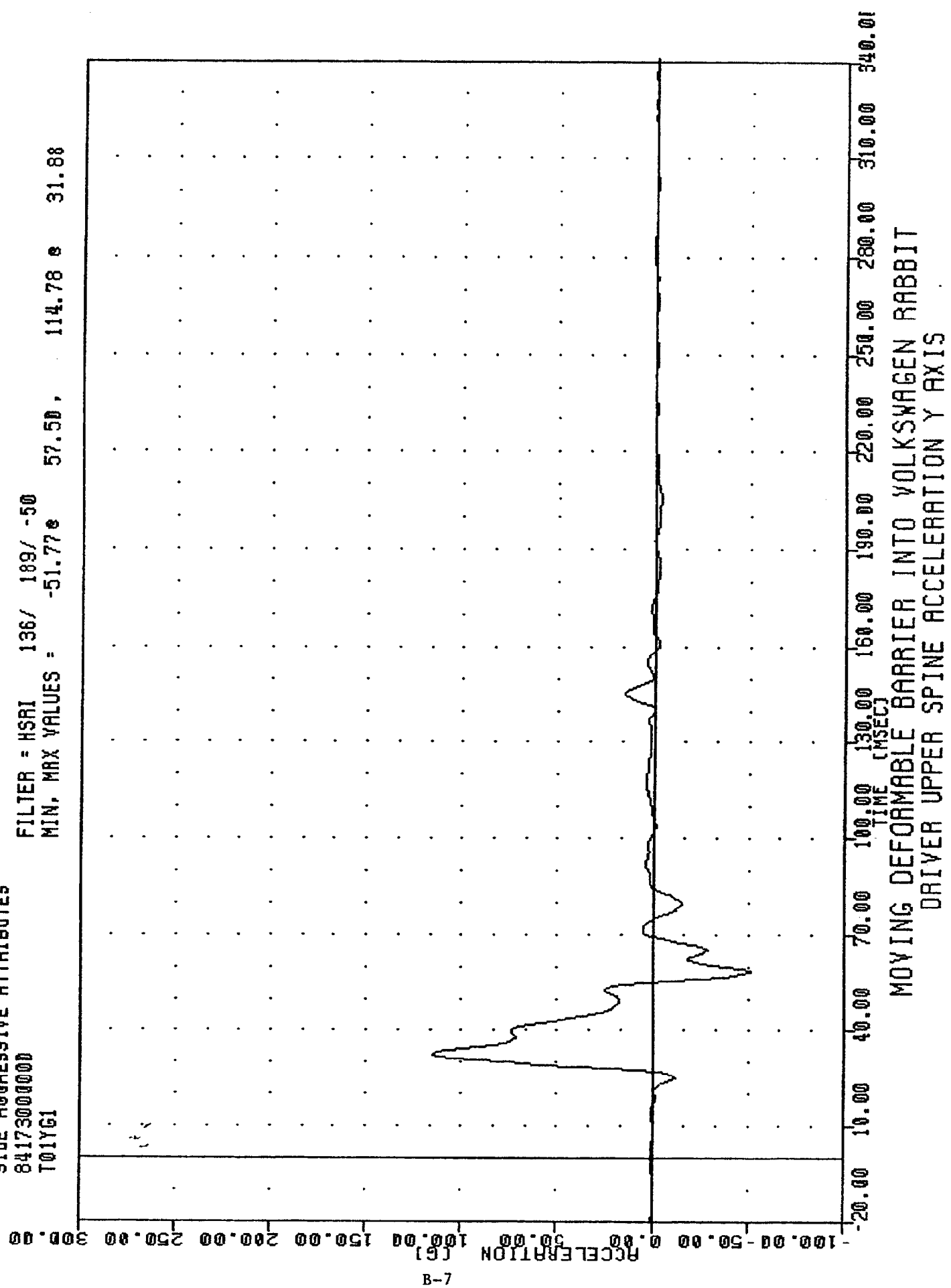


10621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 701XG1  
 FILTER = HSR1 136/ 189/ -50  
 MIN. MAX VALUES = -45.52 31.88 35.53 45.00  
 17 JUL 84 00:12:13

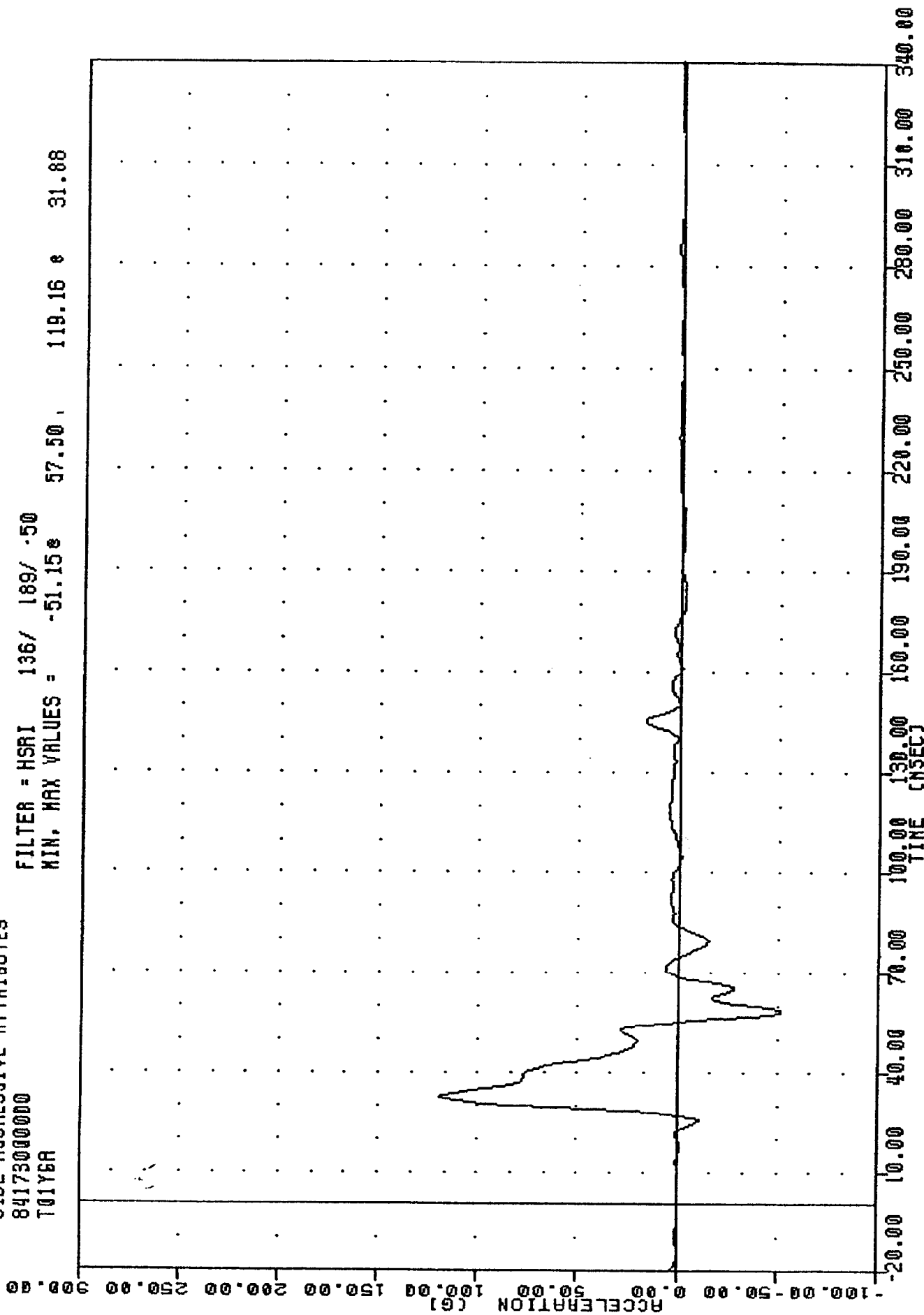


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER UPPER SPINE ACCELERATION X AXIS

T01Y61  
 84173000000  
 SIDE AGGRESSIVE ATTRIBUTES  
 062  
 17 JUL 84 00:12:13  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -51.77 57.50 114.78 31.88

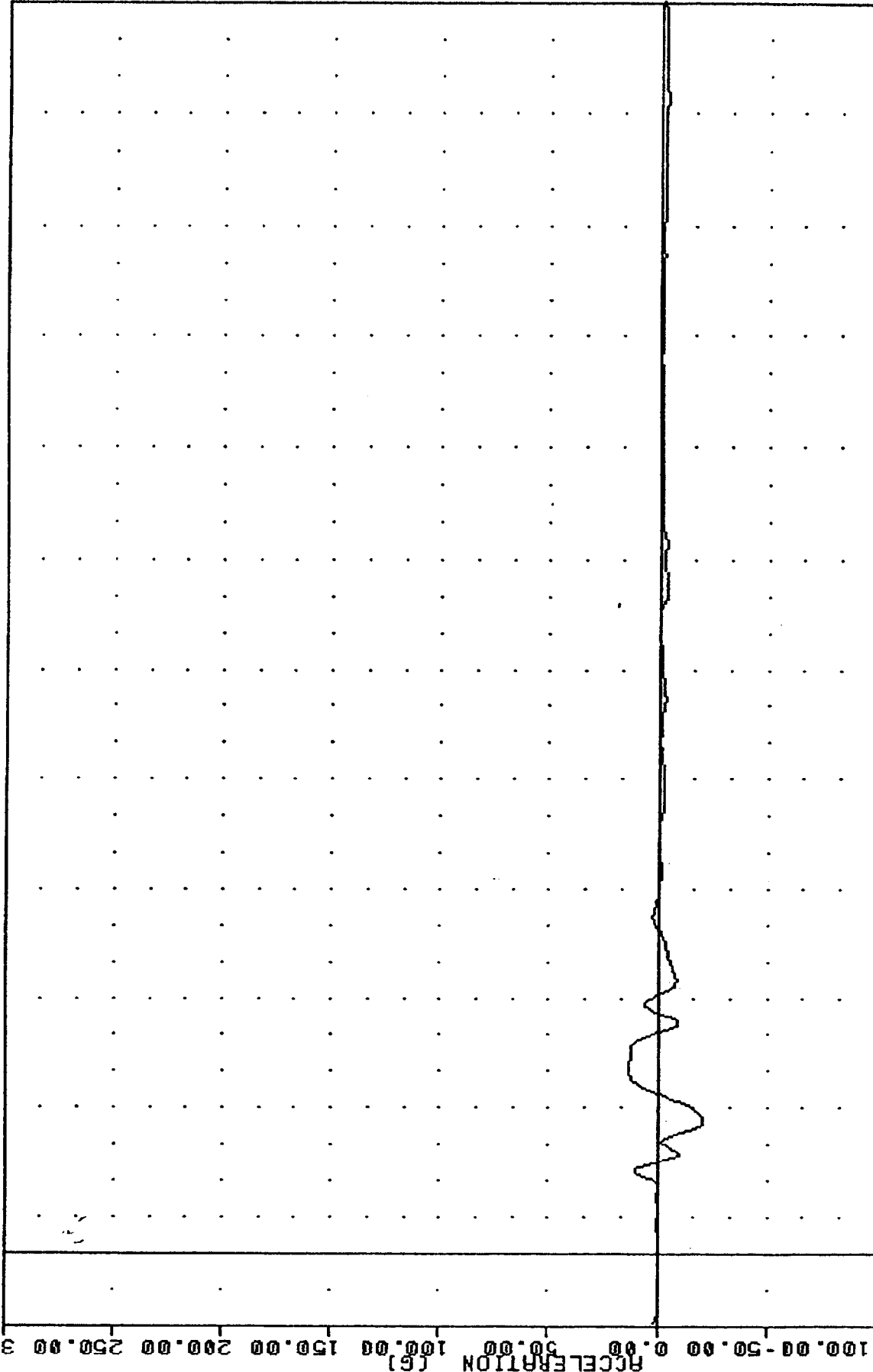


T01YER  
84173000000  
SIDE AGGRESSIVE ATTRIBUTES  
PLATE DATE 17 JUL - 84 0612:15  
FILTER = HSRI 136/ 189/ -50  
MIN. MAX VALUES = -51.15° 57.50 , 119.16 & 31.88



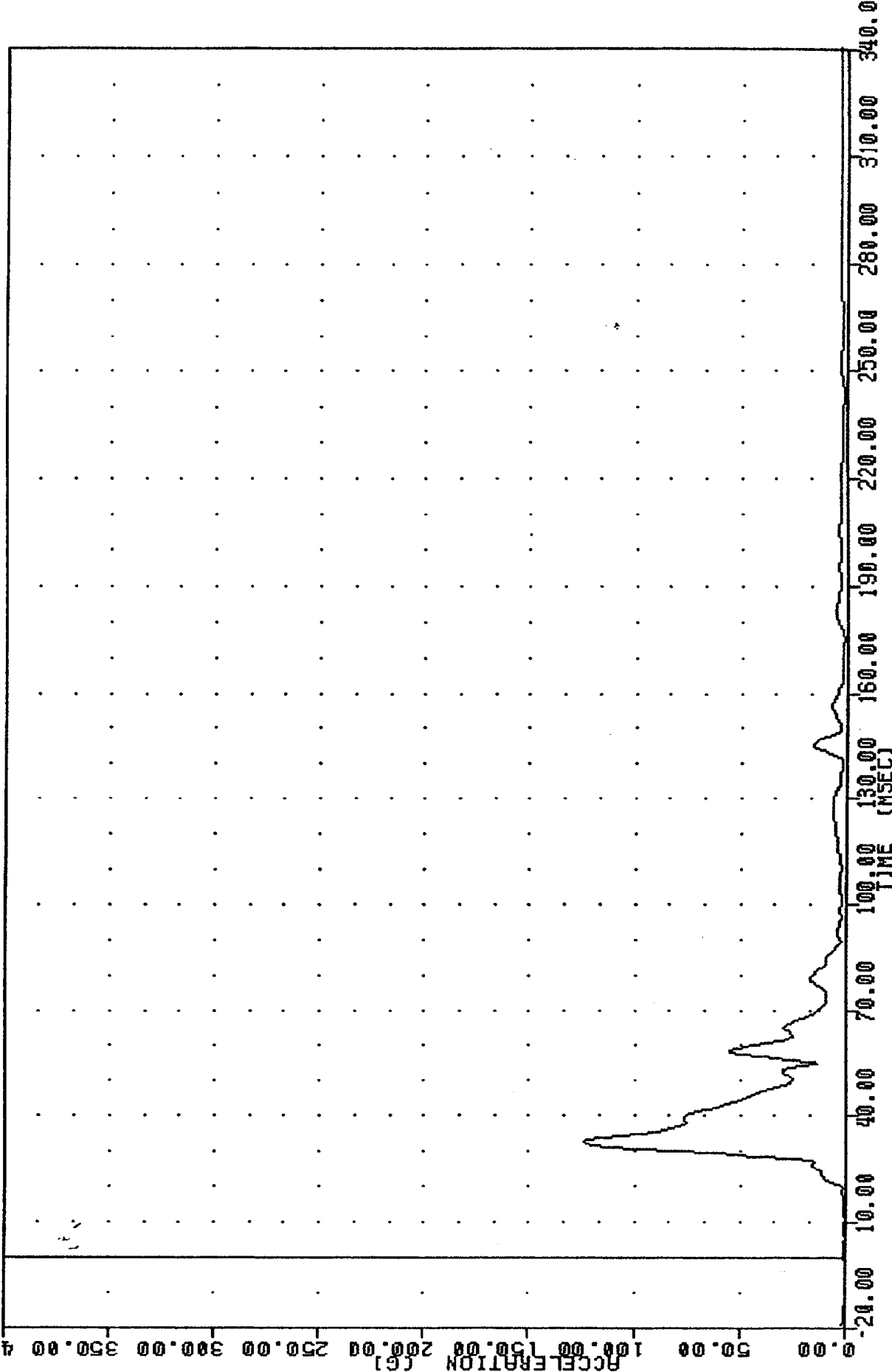
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER UPPER SPINE ACCELERATION -2 Y AXIS

T0621 17 JUL 84 00:12:13  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 701261  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -21.10 35.63, 12.88 49.37



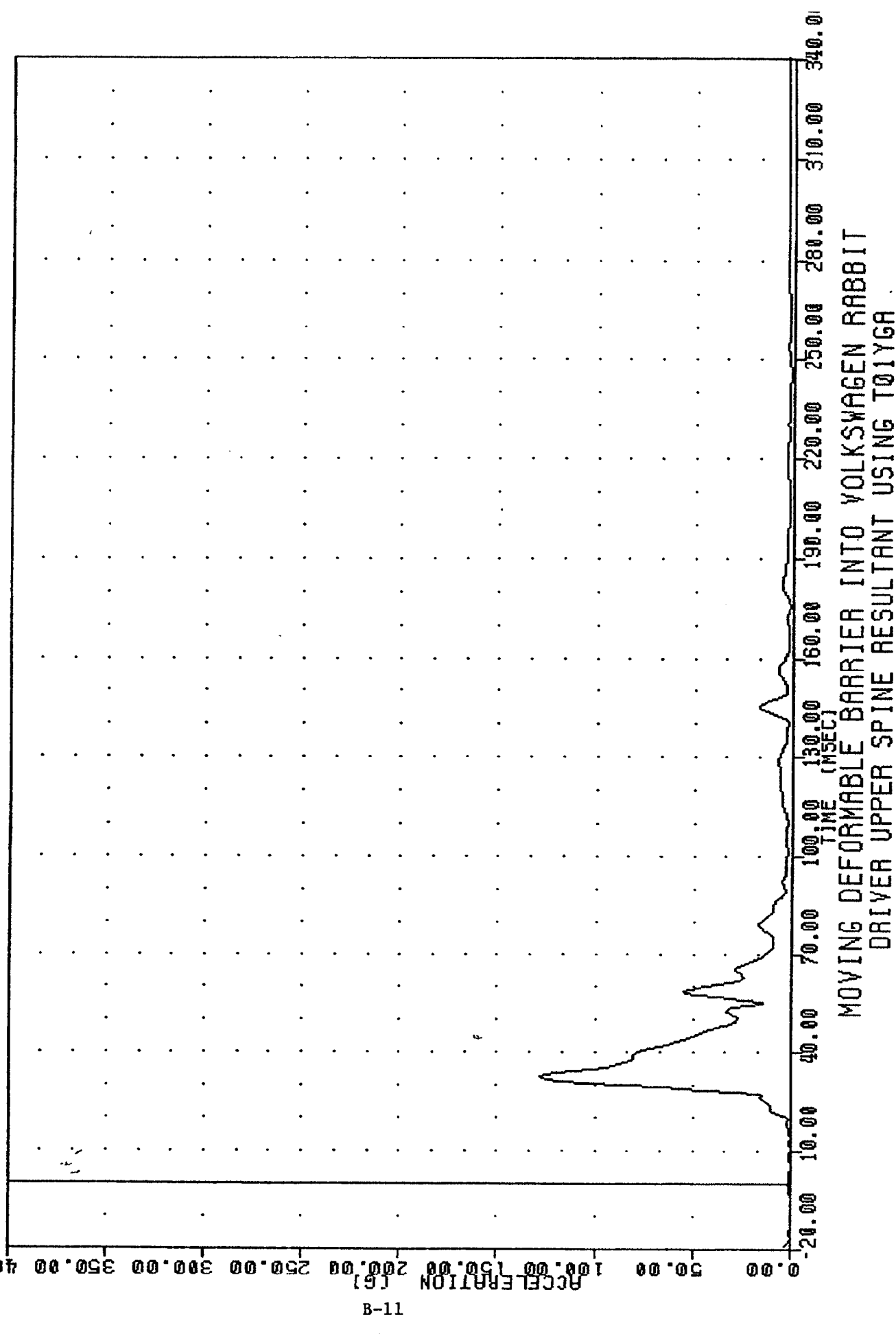
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER UPPER SPINE ACCELERATION Z AXIS

100621 17 JUL 84 00:12:13  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01RG1  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = 0.138 -6.88, 123.71 e 31.88

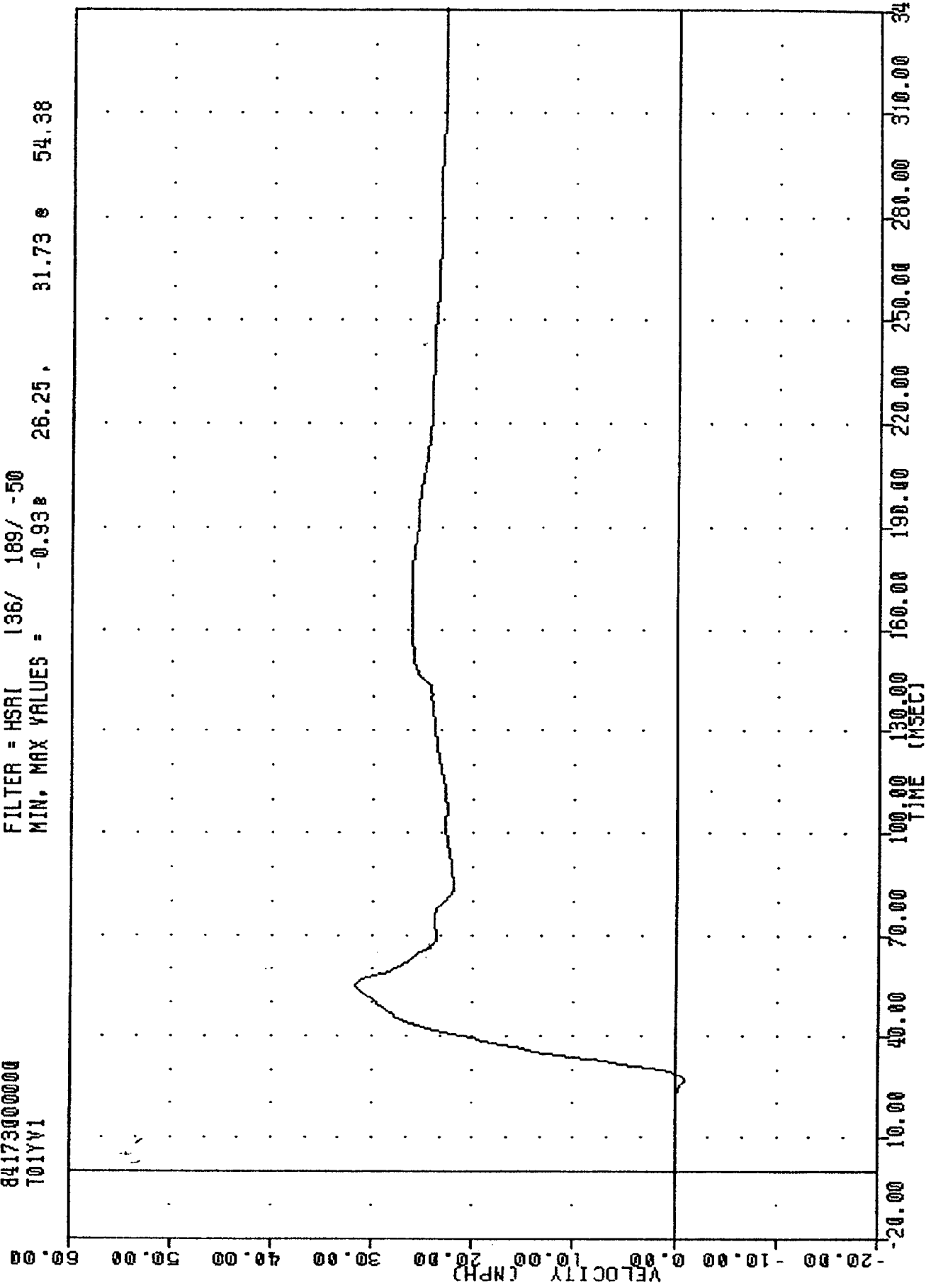


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER UPPER SPINE RESULTANT

1062  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01RGA  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = 0.09e -17.50. 127.78 e 31.88

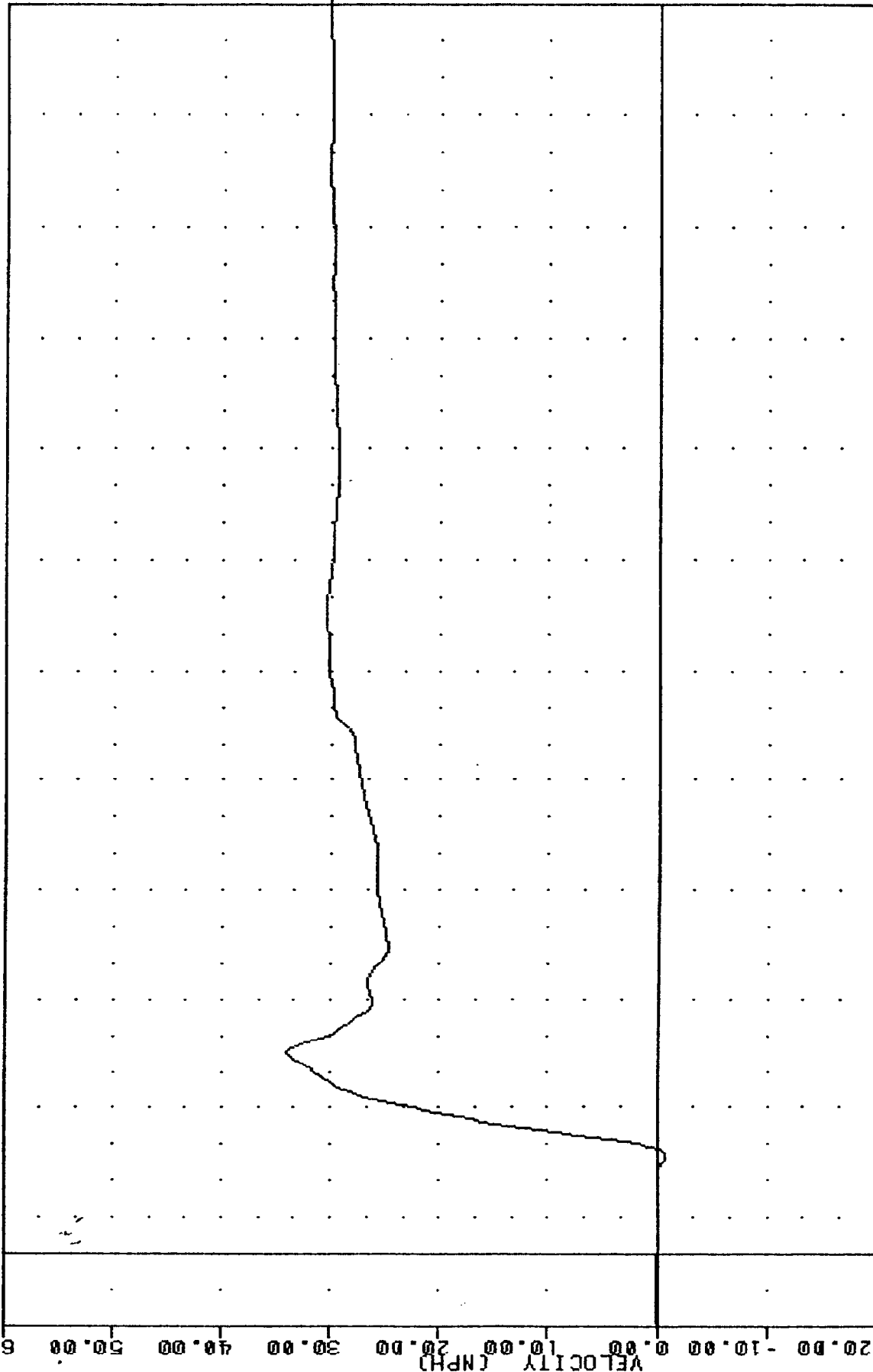


THE 040621 PLOT DATE 17 JUL 04 00:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01YV1  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.93 26.25, 31.73 54.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T01YV1

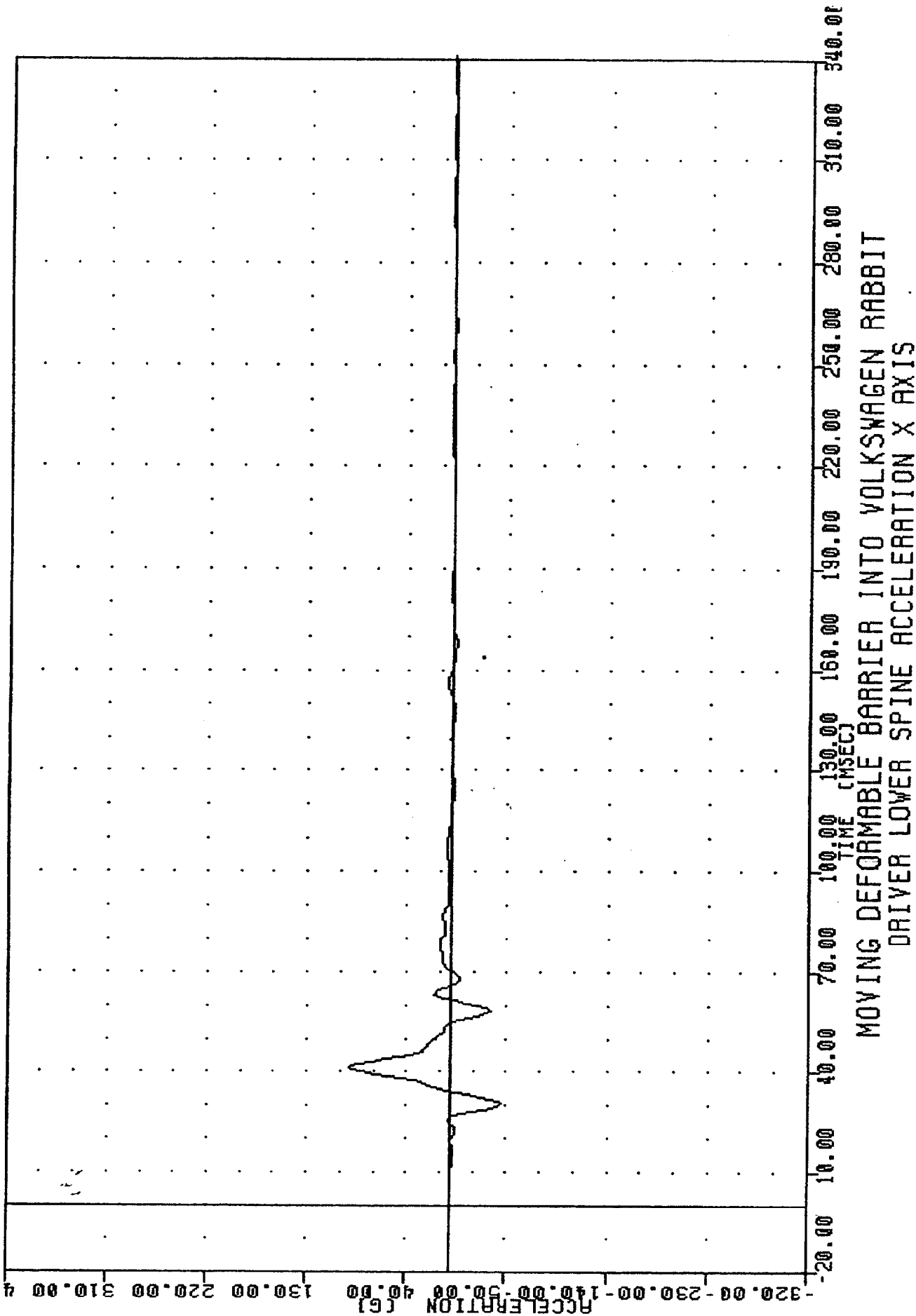
T01YVR  
 84173000000  
 SIDE AGGRESSIVE ATTRIBUTES  
 06062  
 PLOT DATE 17 JUL 84 00:13:47  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.82 26.25, 34.03 54.38



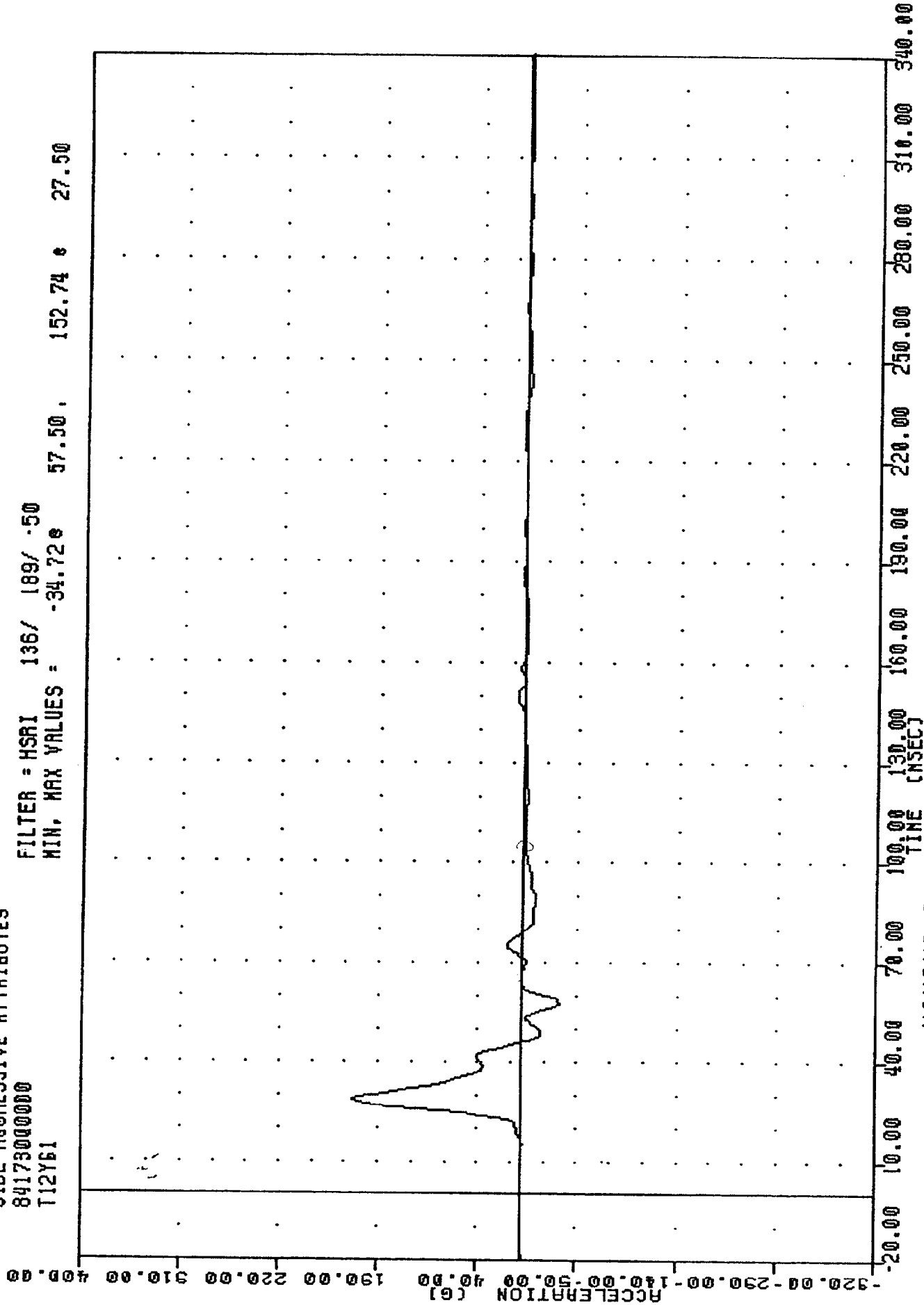
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T01Y6A



T 062 PL 062:10  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12X61  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -44.76 30.00 92.52 40.63



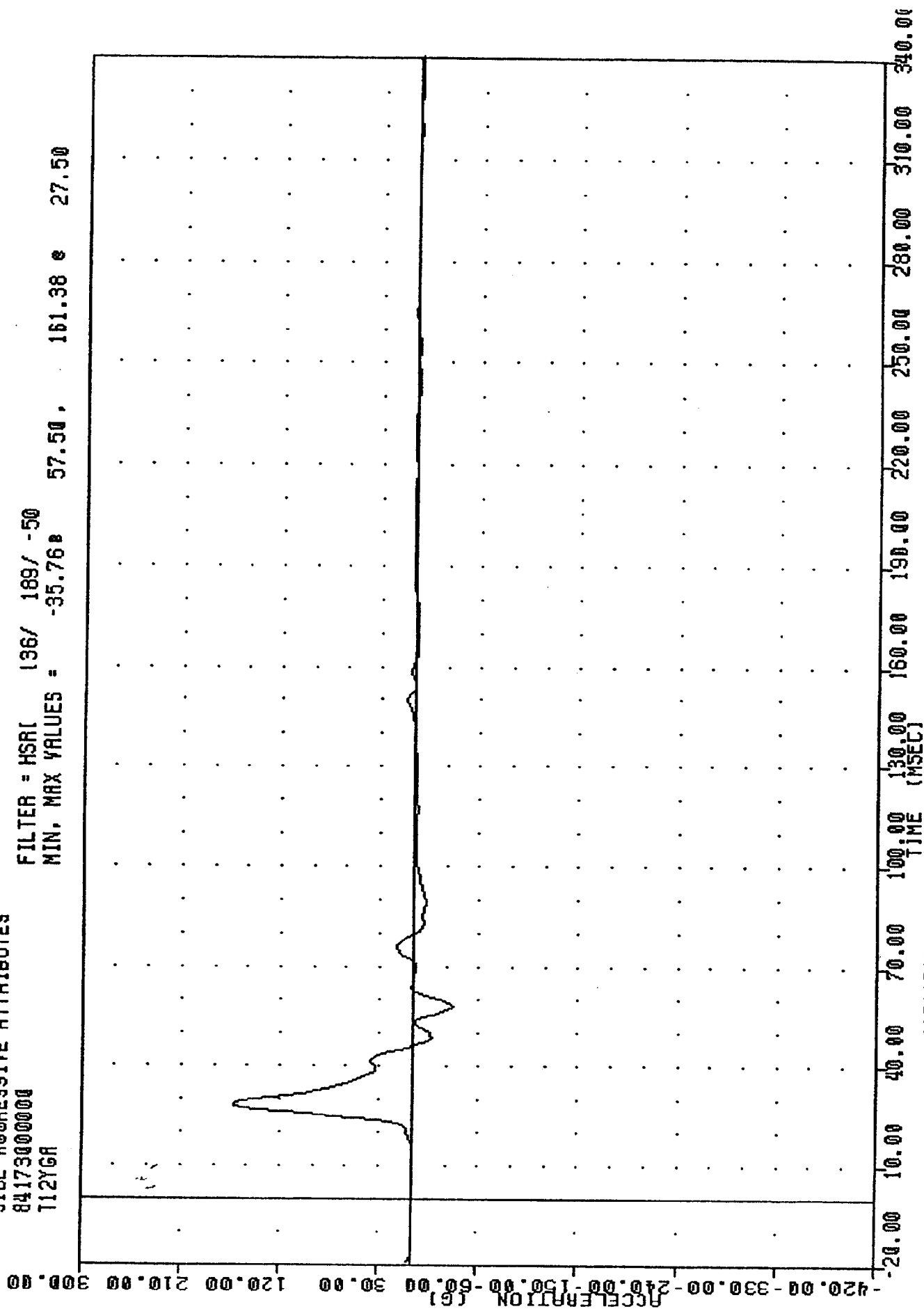
T12Y61, 062 PL 1700L-8 0672:10  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12Y61  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -34.72 57.50 152.74 27.50



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

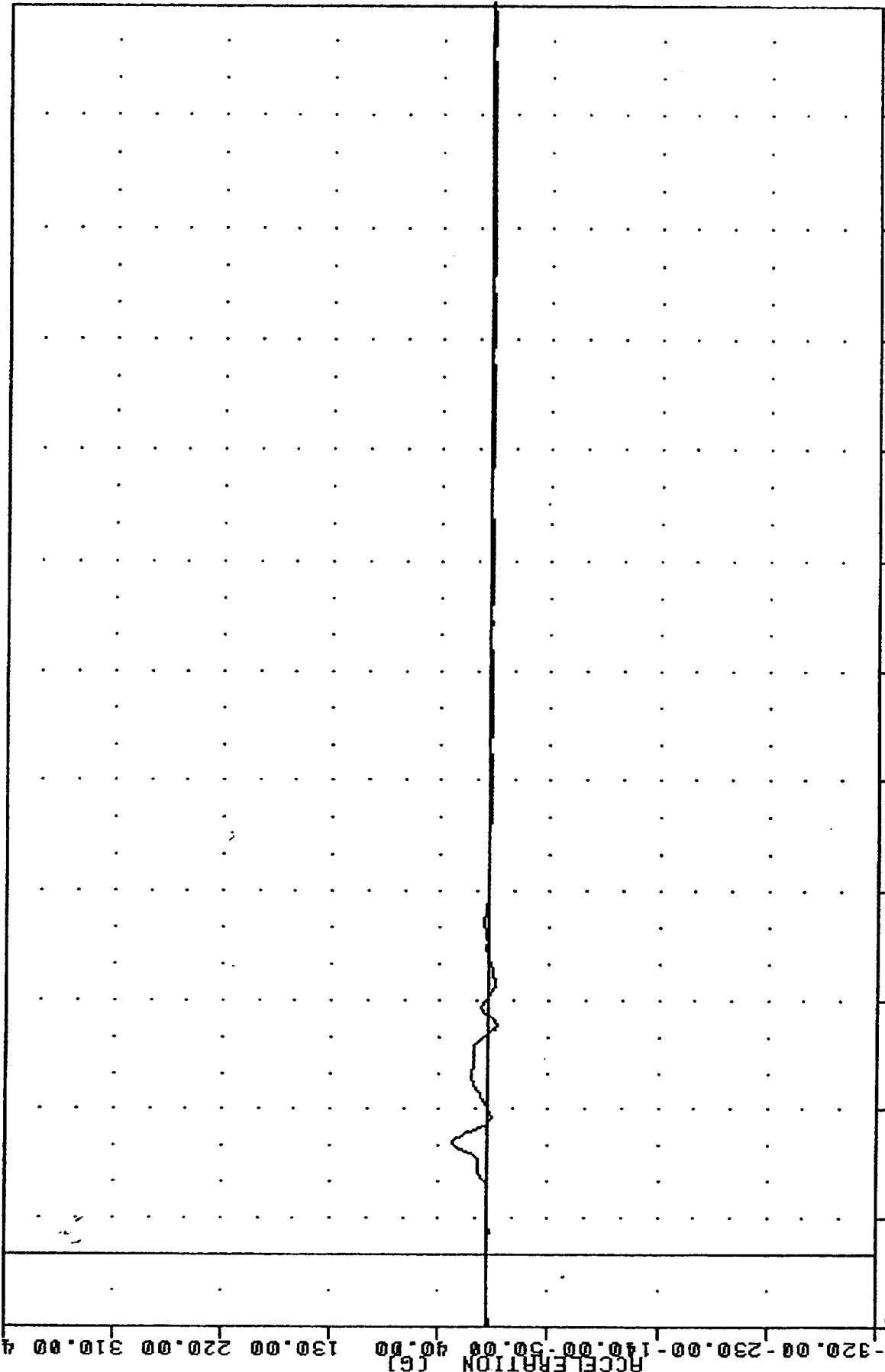
000621  
 SIDE AGGRESSIVE ATTRIBUTES  
 8417300000  
 112YGR  
 PLOT DATE 17 JUL 84 00:12:13  
 FILTER = HSR 136/ 189/ -50  
 MIN, MAX VALUES = -35.768 57.50, 161.38 e 27.50

FILTER = HSRI 136/ 189/ -50  
MIN. MAX VALUES = -35.76



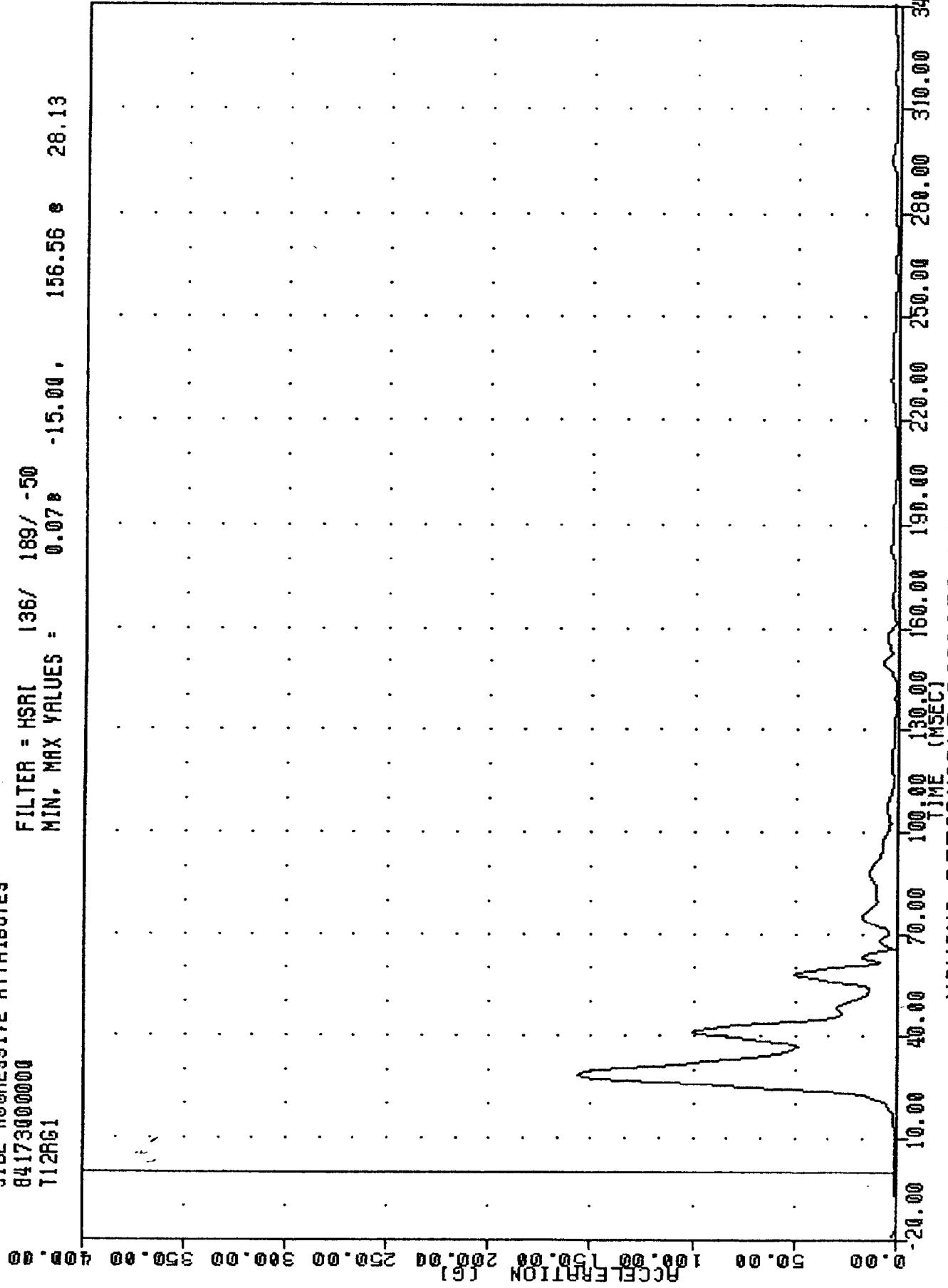
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LOWER SPINE ACCELERATION -2.Y AXIS

T12ZG1  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12ZG1  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -6.97e 62.50, 28.87 e 30.00  
 PLOT DATE 17 JUL-04 00:12:19



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

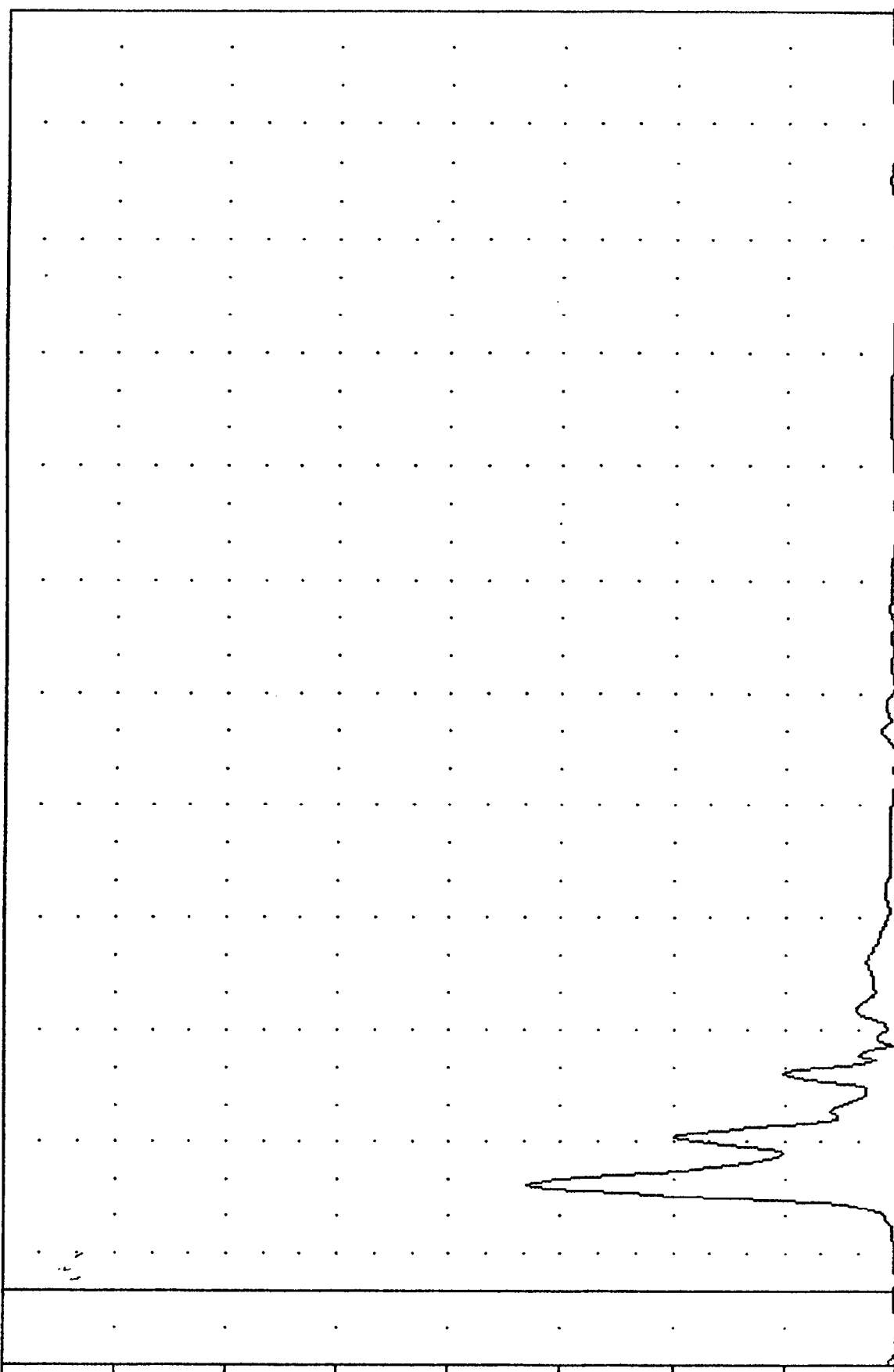
7100 0622 PLOT DATE 17 JUL 84 19:37  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 712RG1  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = 0.078 -15.00, 156.56 s 28.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER LOWER SPINE RESULTANT

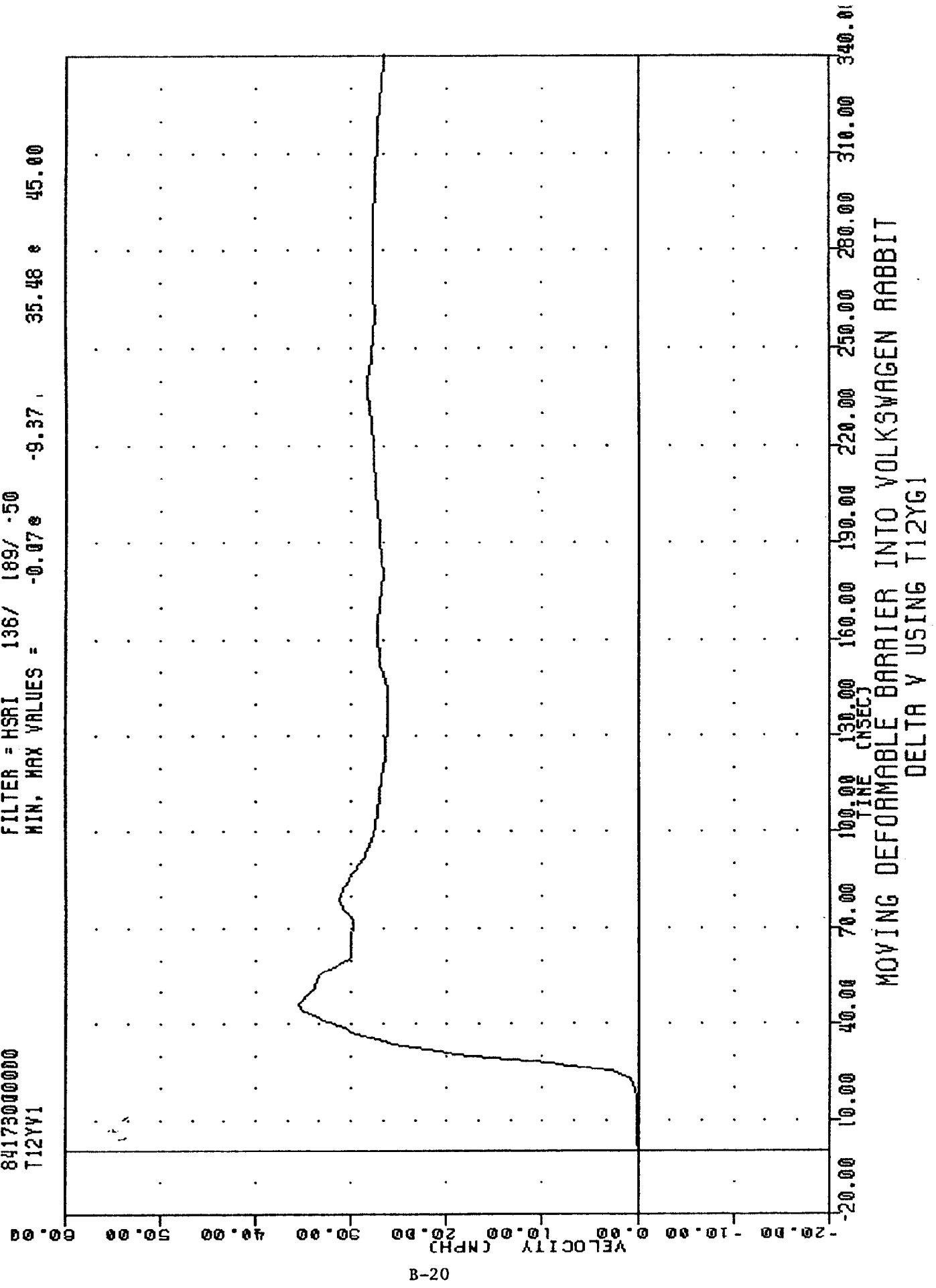
TMC 040621 17 JUL 84 08:13:17  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12RGA  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = 0.06e 2.50, 165.04 e 28.13

ACCELERATION (G)  
 400.00  
 350.00  
 300.00  
 250.00  
 200.00  
 150.00  
 100.00  
 50.00  
 0.00

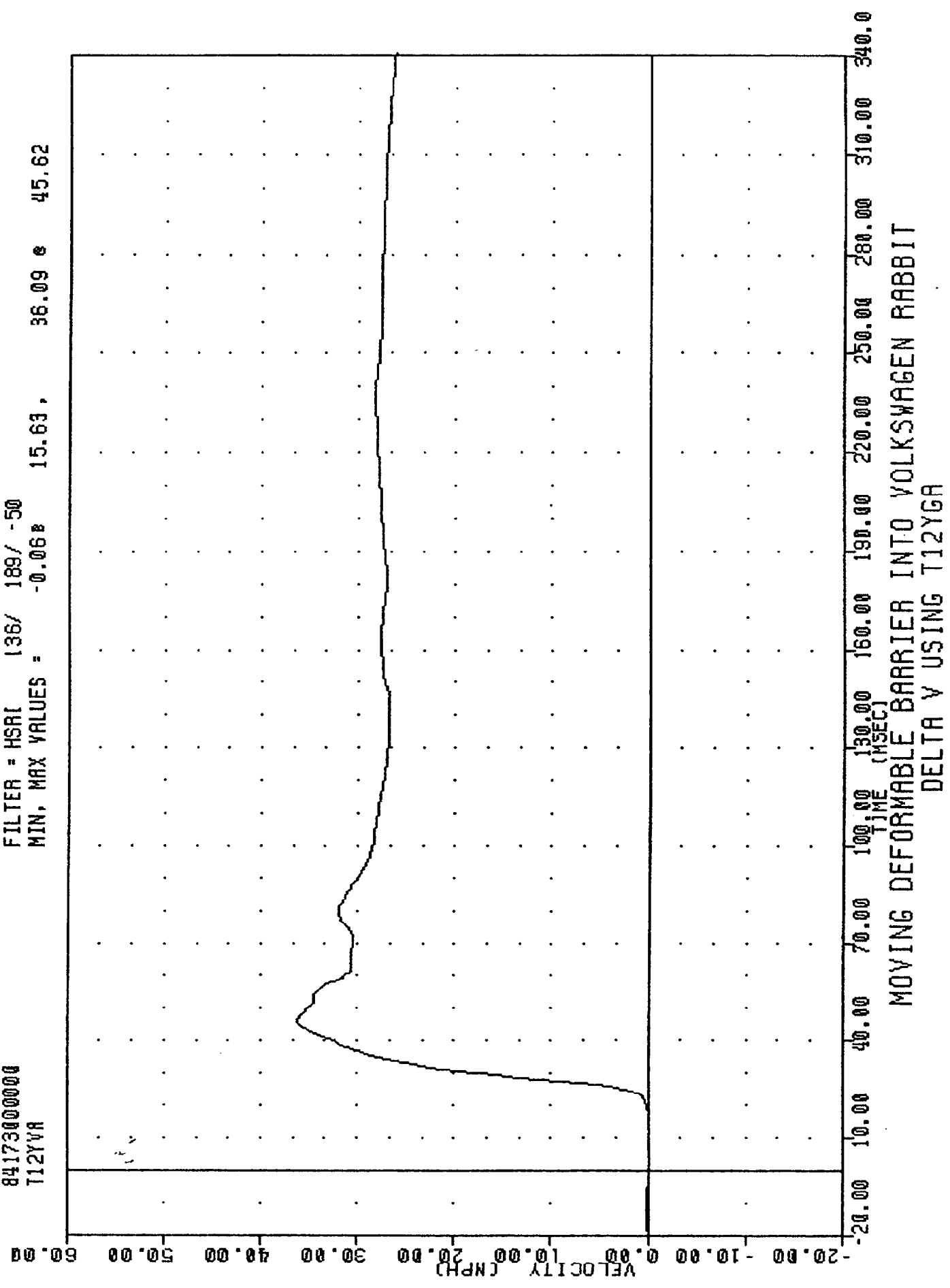


-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER LOWER SPINE RESULTANT USING T12YGA

TAC 840621 17 JUL 84 08:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12YV1  
 FILTER = HSRI 136/ 189/ .50  
 MIN, MAX VALUES = -0.07 35.48 45.00  
 -9.37



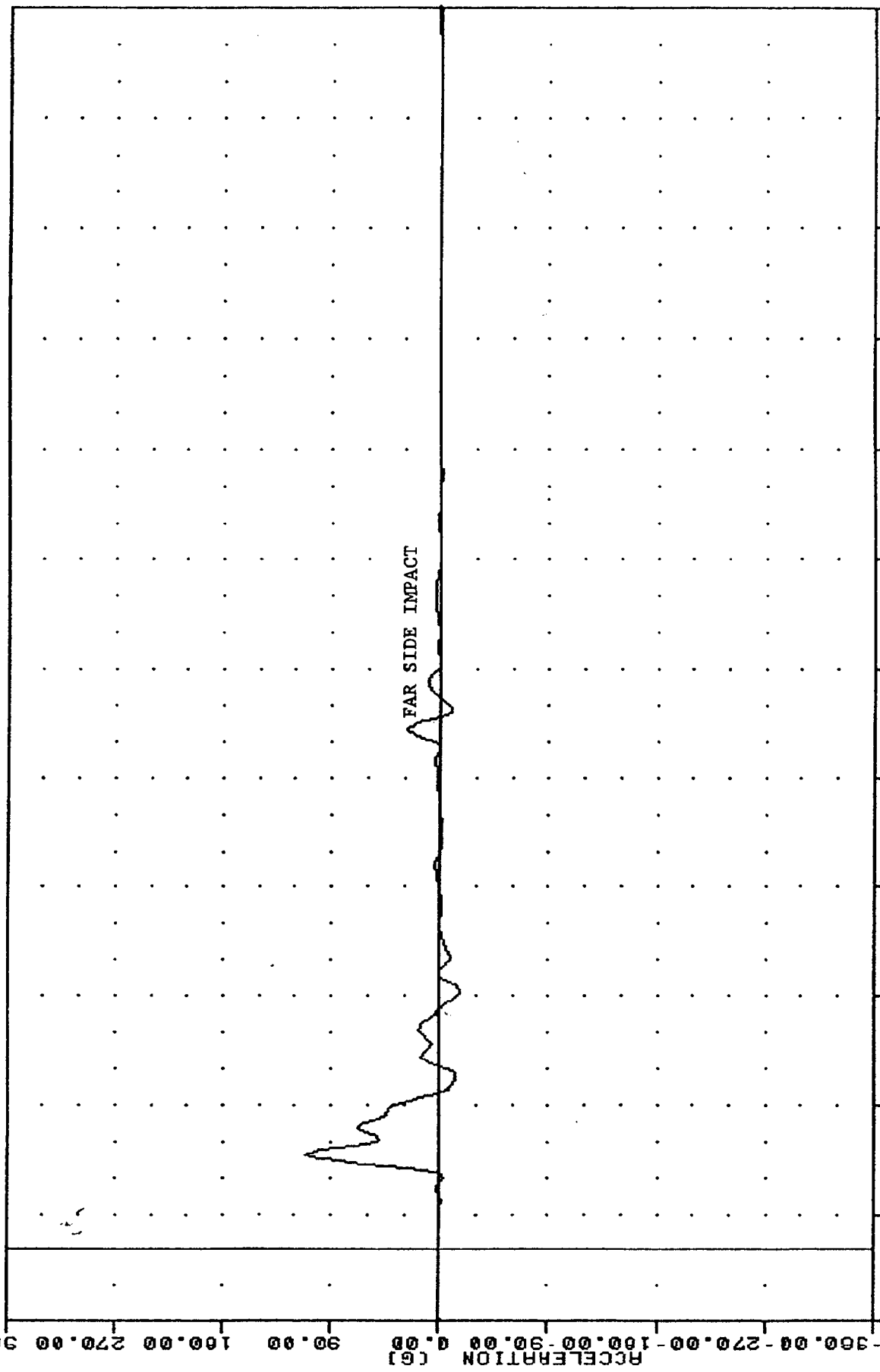
INC 040621 17 JUL 84 06:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12YVA  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -0.068 15.63, 36.09 & 45.62



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T12YGA



TMC 040621 17 JUL 84 08:12:19  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LURY61  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -16.98 70.63 111.03 25.63

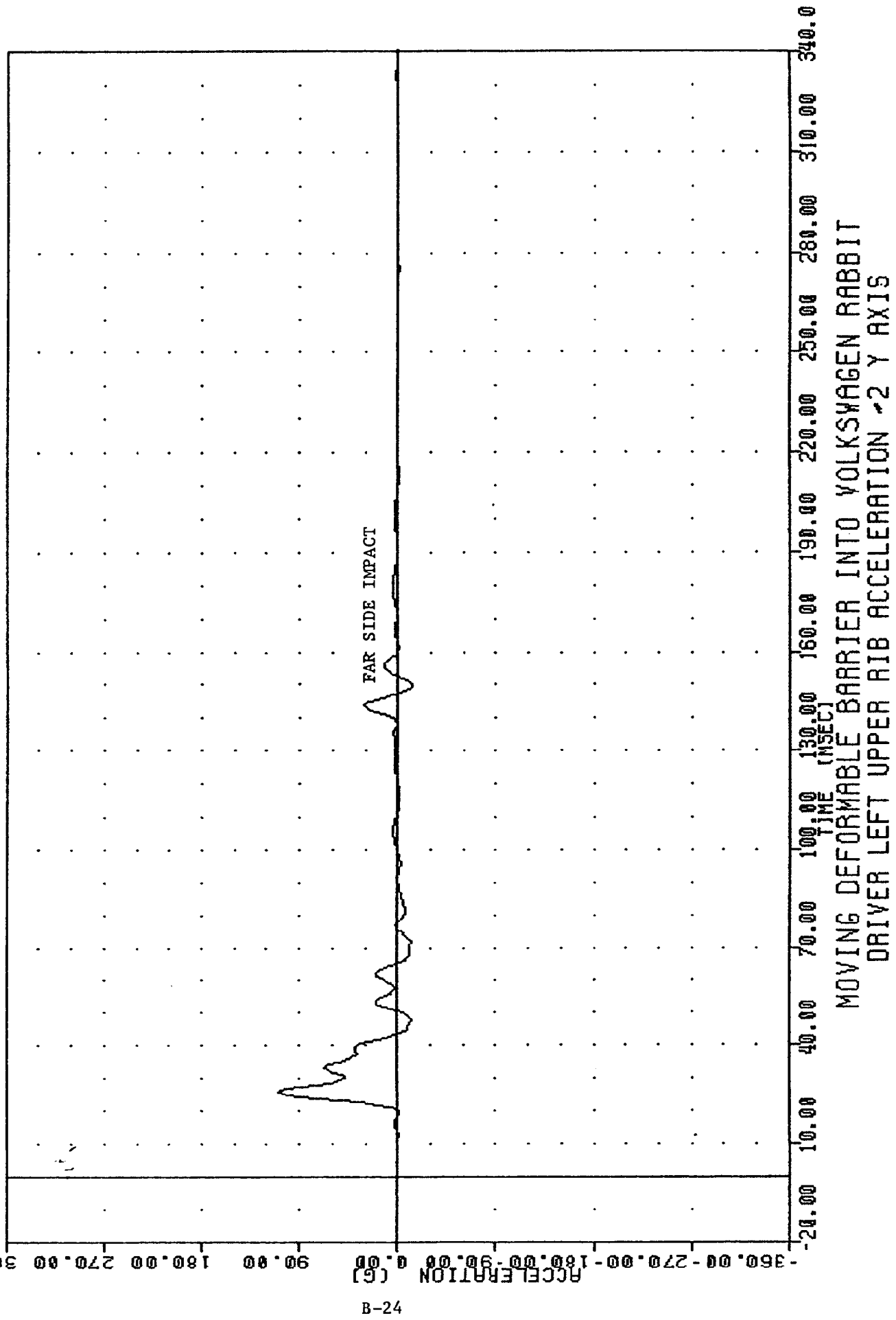


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER LEFT UPPER RIB ACCELERATION Y AXIS

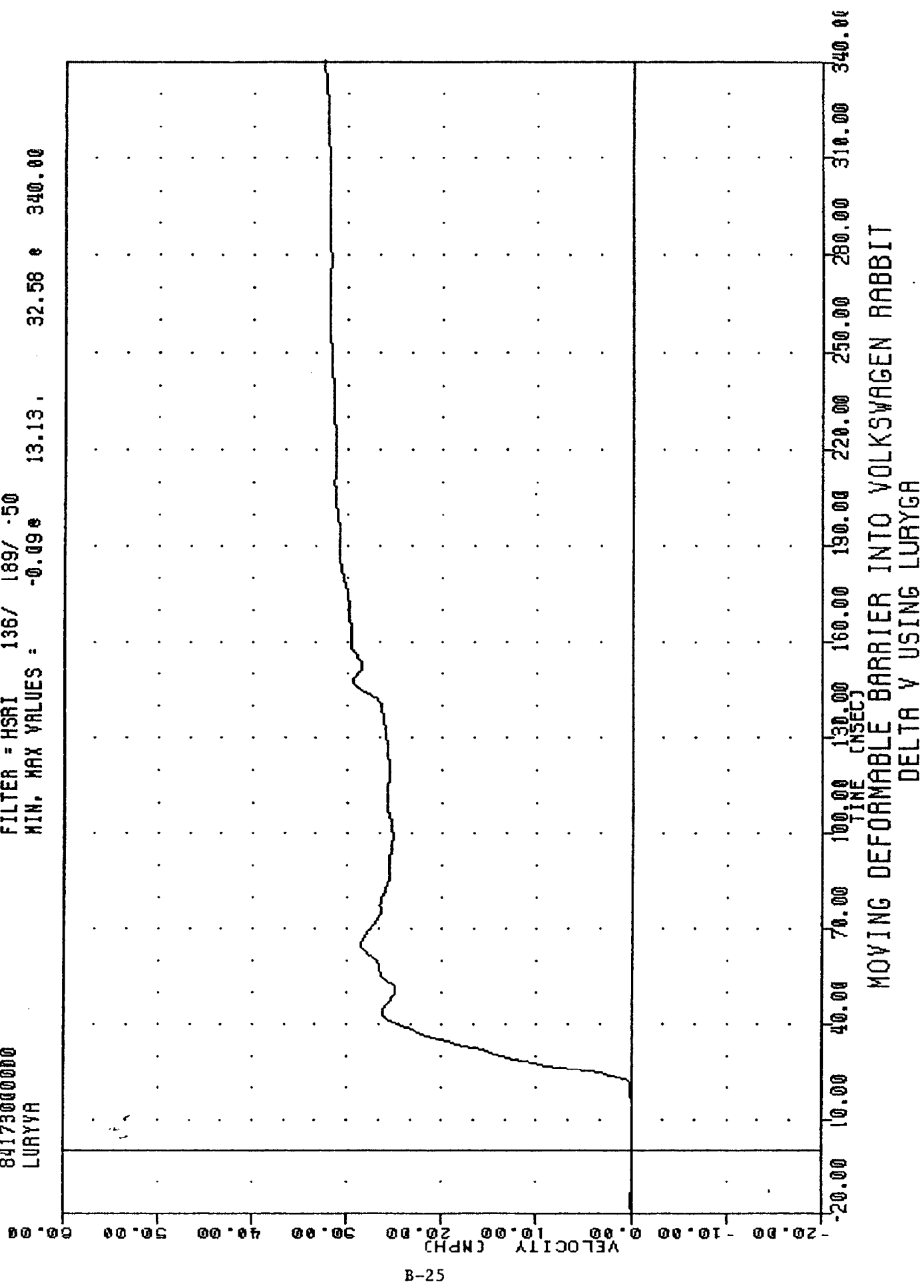
|                   |        |        |     |       |        |
|-------------------|--------|--------|-----|-------|--------|
| FILTER = HSRI     | 136/   | 189/   | -50 |       |        |
| MIN. MAX VALUES = | -0.020 | -16.87 |     | 33.90 | 340.00 |



THC 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LURYGR  
 FILTER = HSR 136/ 189/ -50  
 MIN. MAX VALUES = -12.36 148.75, 108.88 25.00  
 PLOT DATE 17-JUL-84 08:12:19

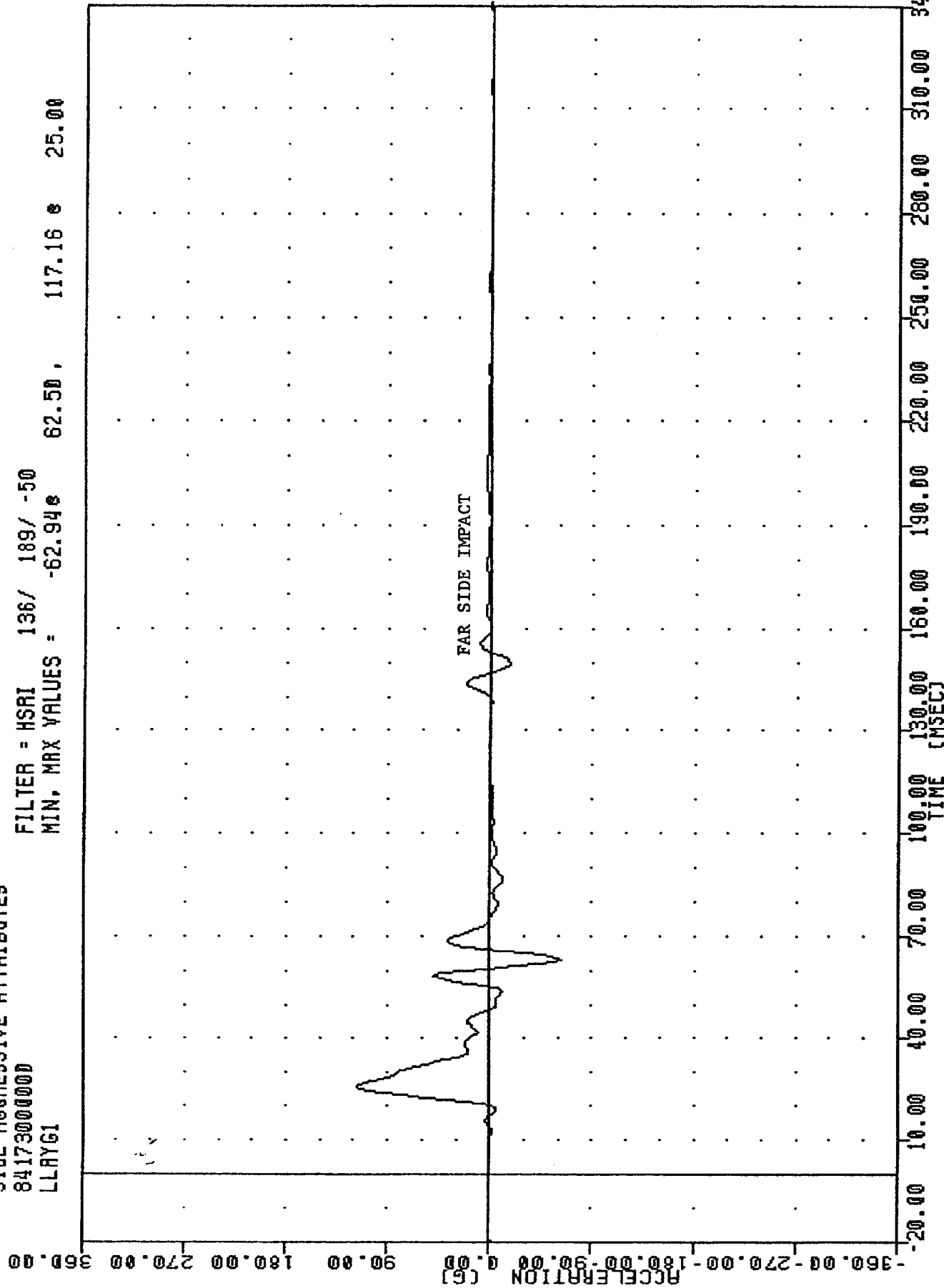


THC 840621, 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LURYVA  
 FILTER = HSRI 136/ 189/ .50  
 MIN, MAX VALUES : -0.09 13.13, 32.58 340.00  
 PLOT DATE 17-JUL-84 08:13:47

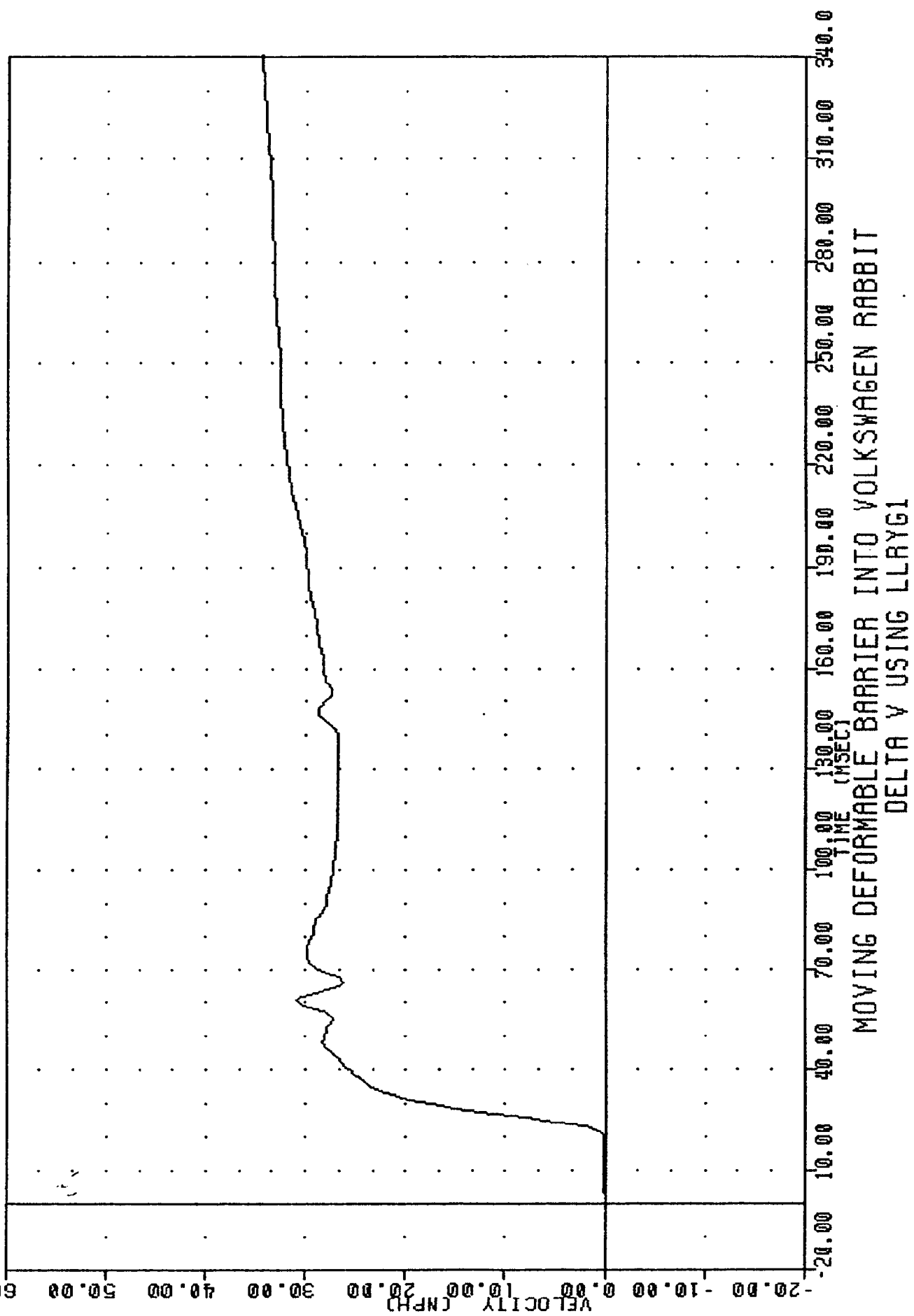


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LURYGA

TMC 040621 PLOT DATE 17 JUL 84 00:12:15  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LLAG1  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -62.94 62.50, 117.16 25.00

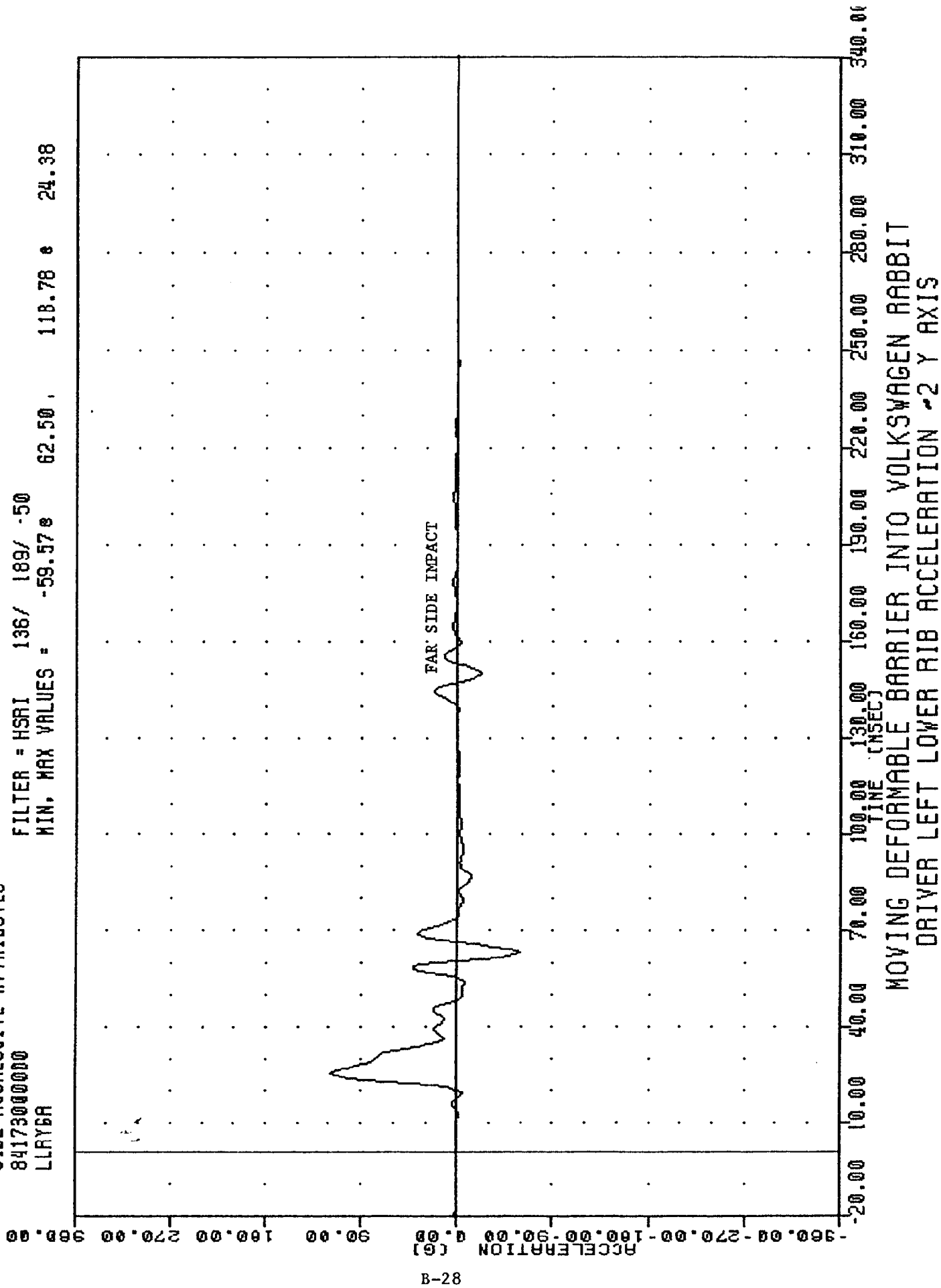


TRC 840621 17 JUL 84 06:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LLRYV1  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -0.028 -7.50 34.51 e 340.00

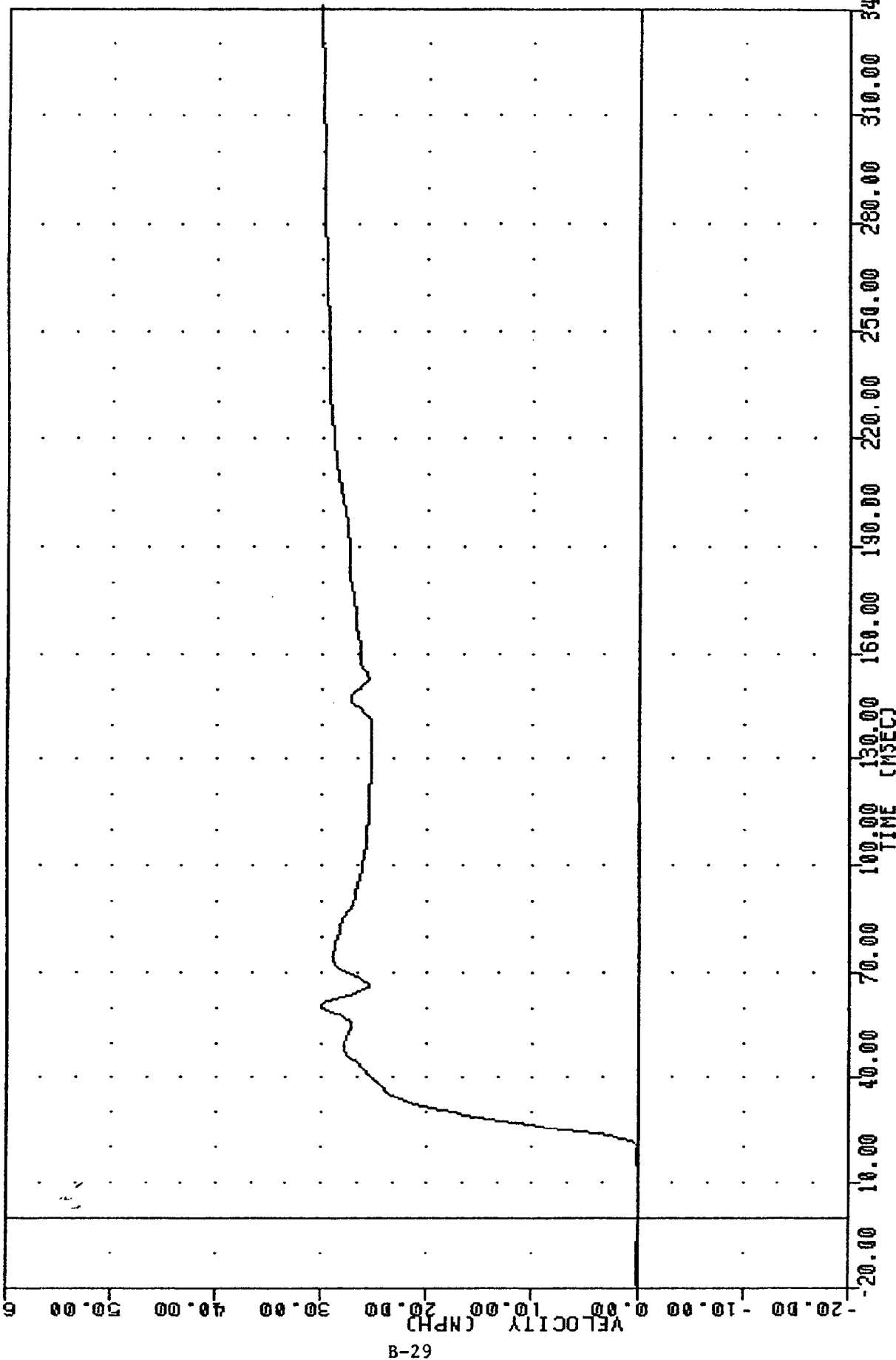


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LLRYG1

TRC 840621, 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LLY6R  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -59.57e 62.50, 118.78 e 24.38  
 PLOT DATE 17 JUL 84 05:12:19



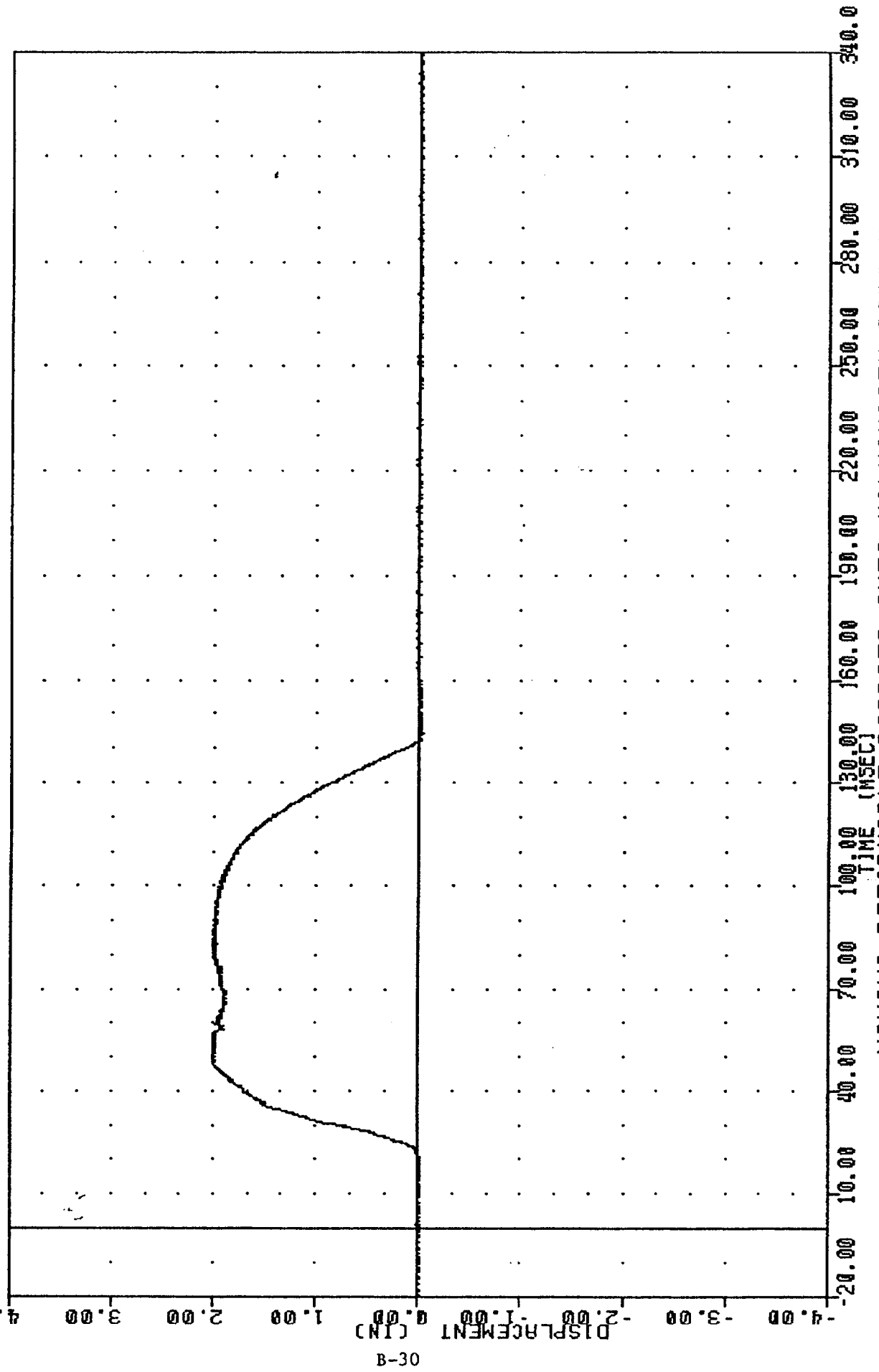
TMC 040621, PLOT DATE 1 JUL 84 00:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
 64173000000  
 LLYYR  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.04e 12.50, 30.24 e 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LLYGA

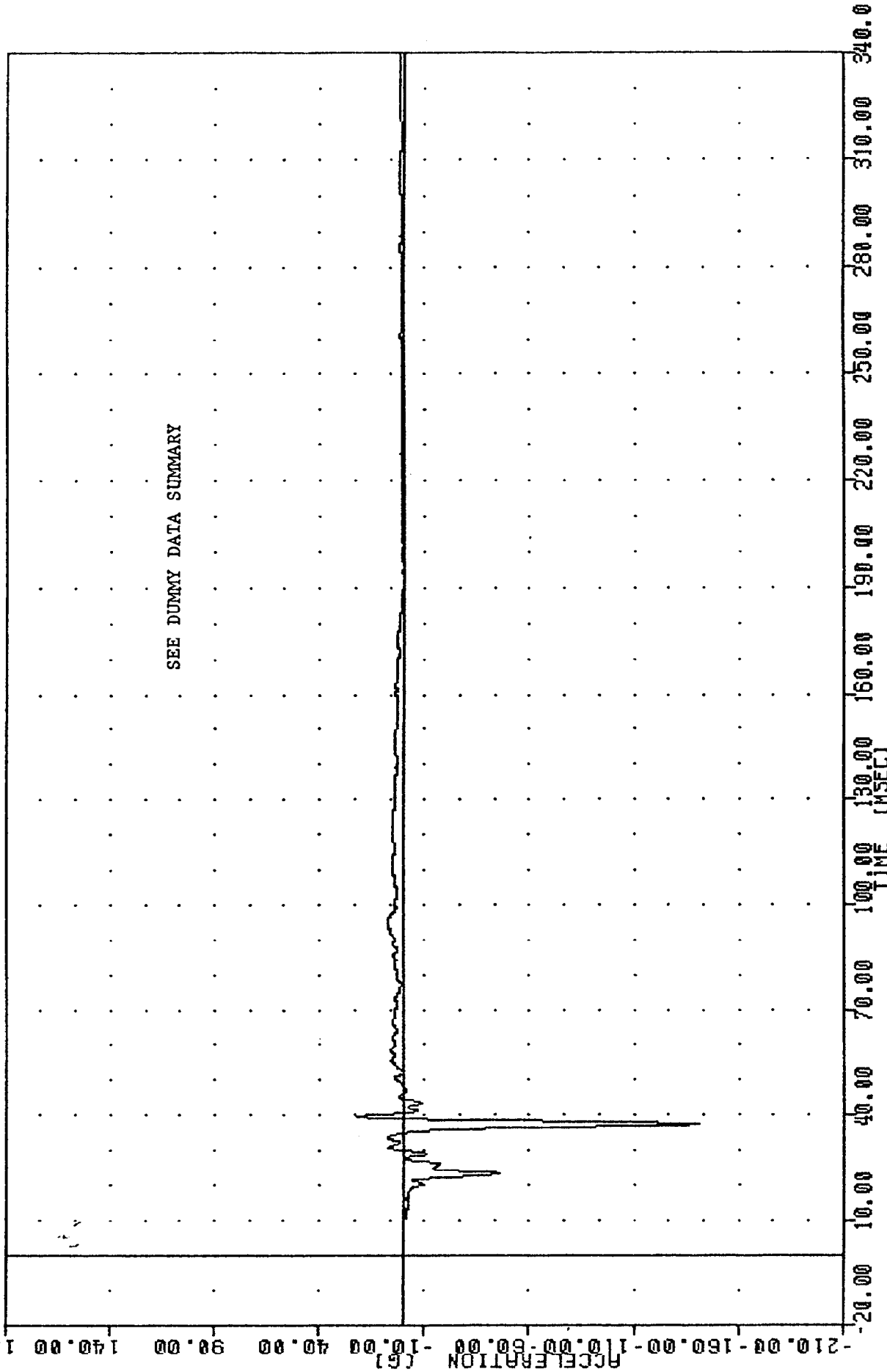


TMC 84173000000  
 SIDE AGGRESSIVE ATTRIBUTES  
 LRTYD1  
 FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = -0.038 144.50, 2.01 e 81.25  
 PLOT DATE 17 JUL 84 00:11:33



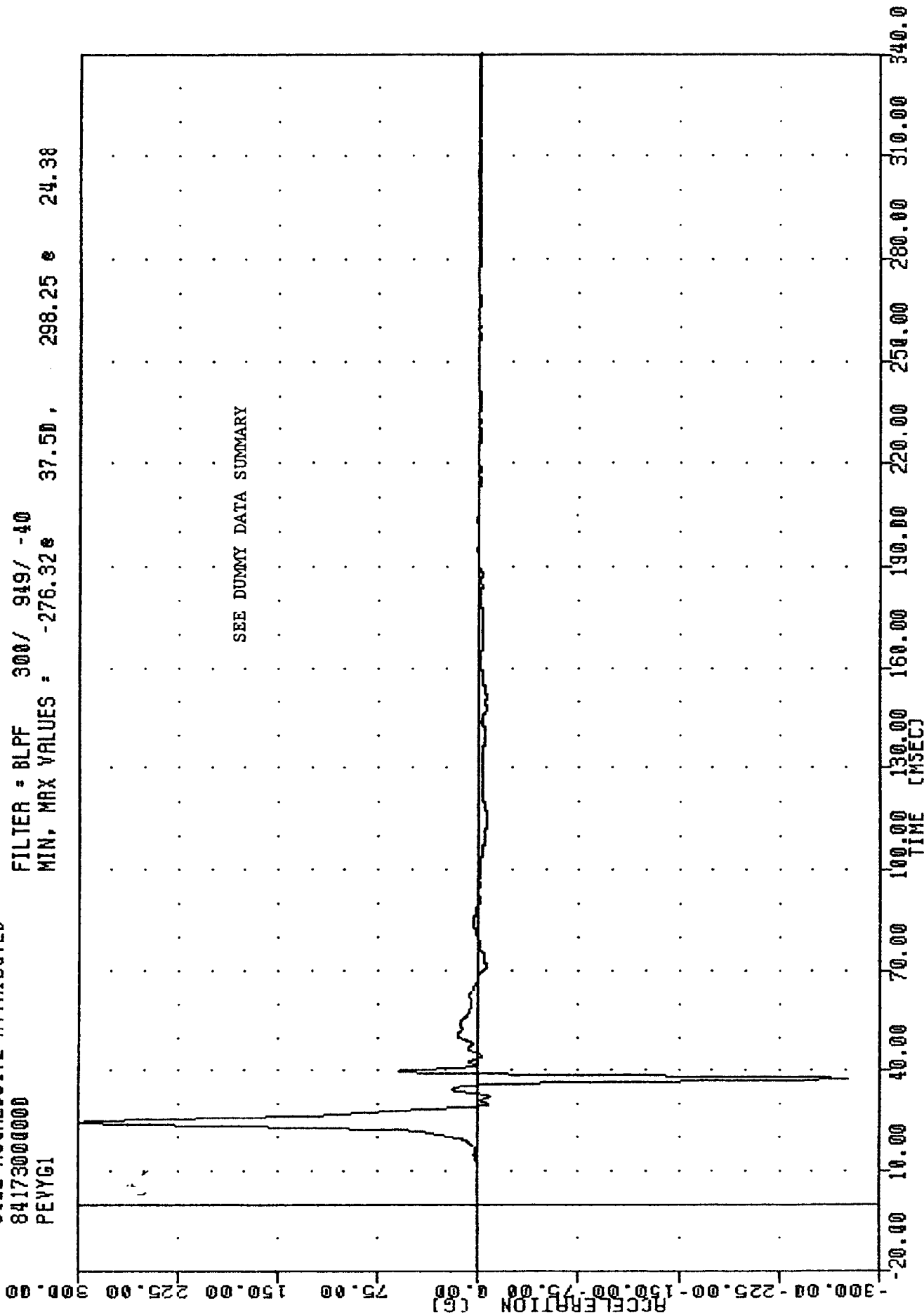
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER LEFT RIB TO SPINE DISPLACEMENT INCHES

TRC 840621 17 JUL 84 10:49:37  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVXG1  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -141.43 37.25 22.07 39.50



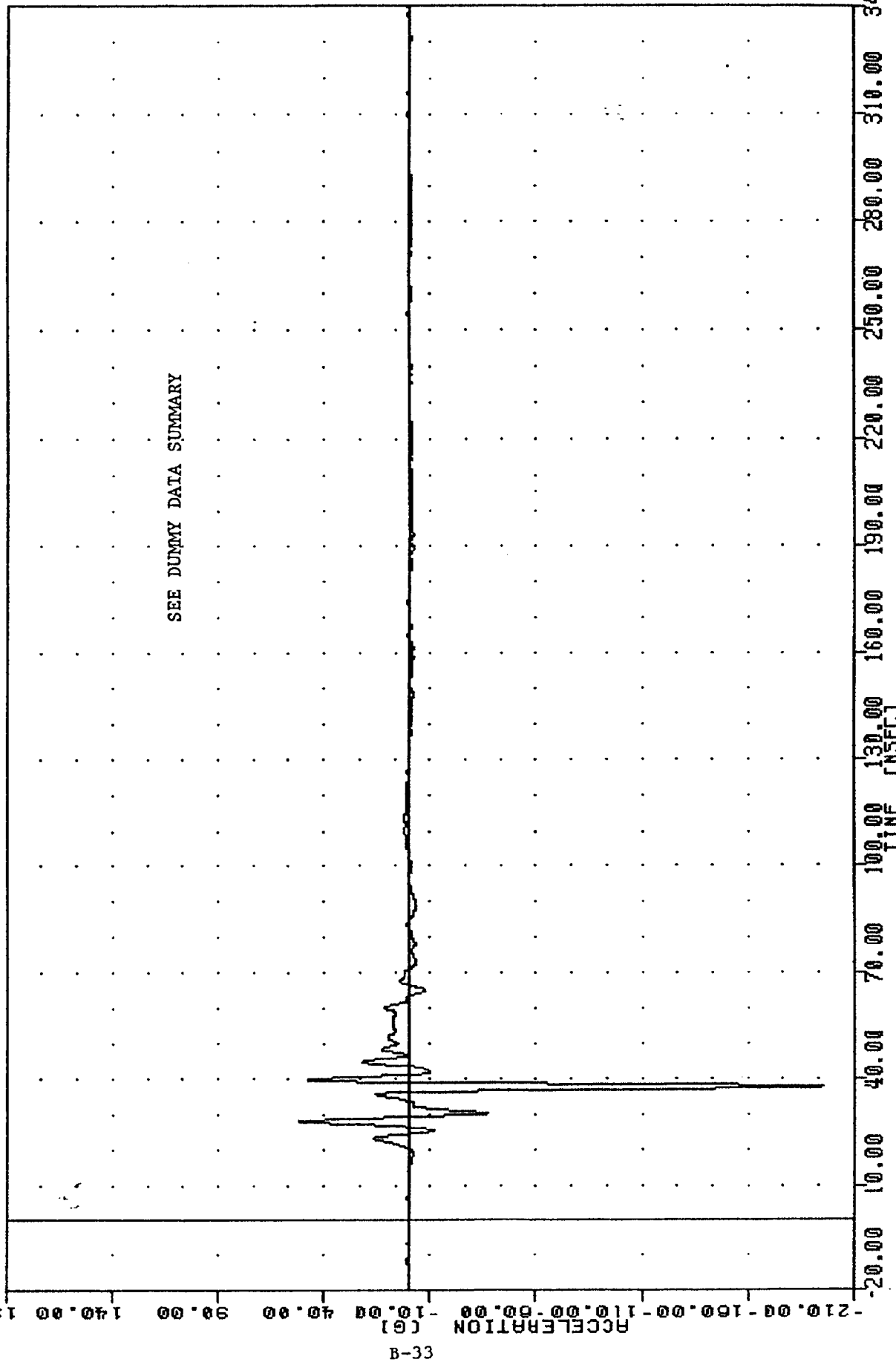
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER PELVIS ACCELERATION X AXIS

TRC 840621, 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVYG1  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -276.32e 37.50, 298.25 e 24.38  
 PLUT DATE 17 JUL-84 10:49:37



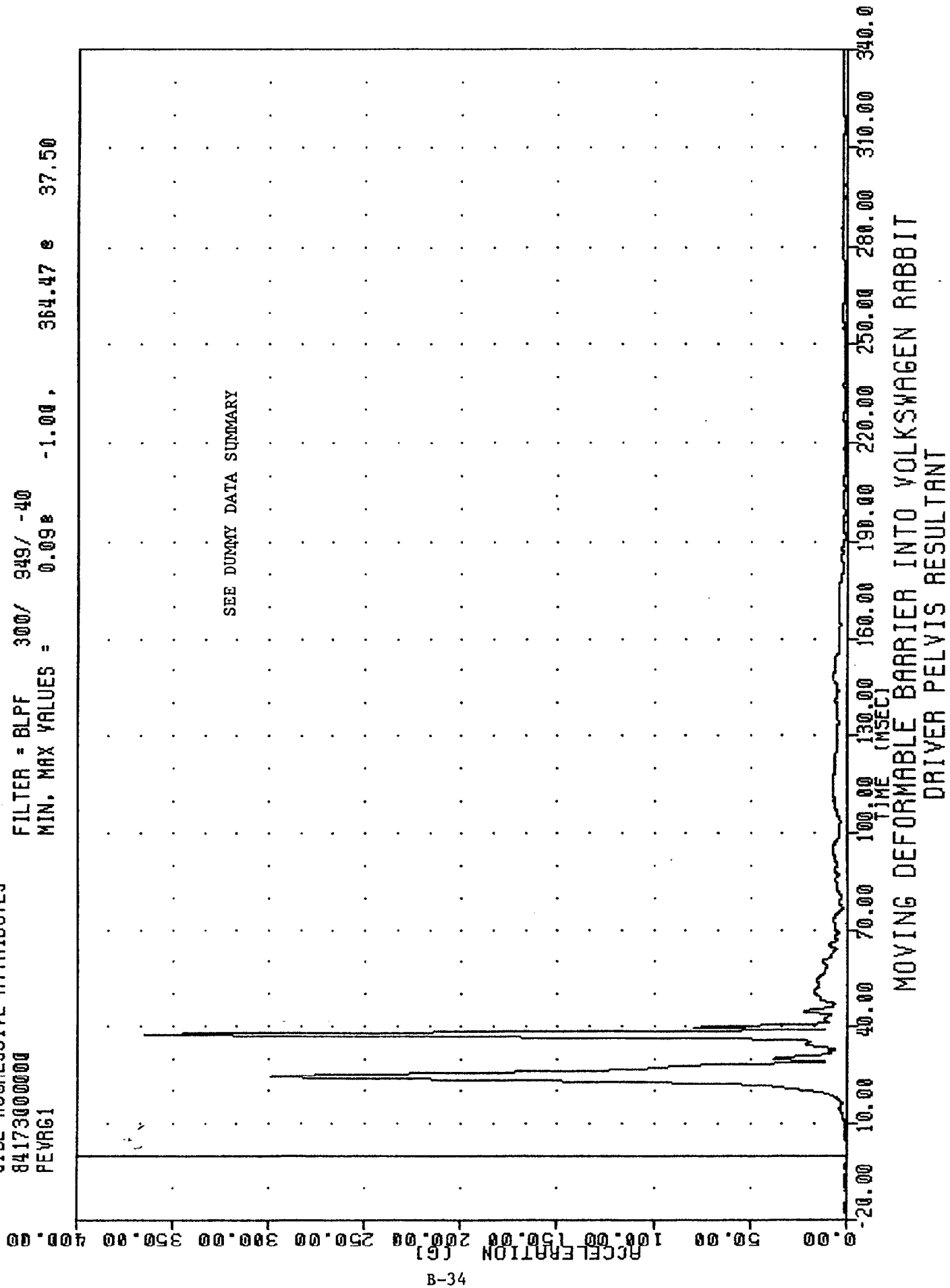
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER PELVIS ACCELERATION Y AXIS

TMC 040621 17 JUL 84 00:11:33  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVZ61  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -195.55 37.50 51.56 27.88

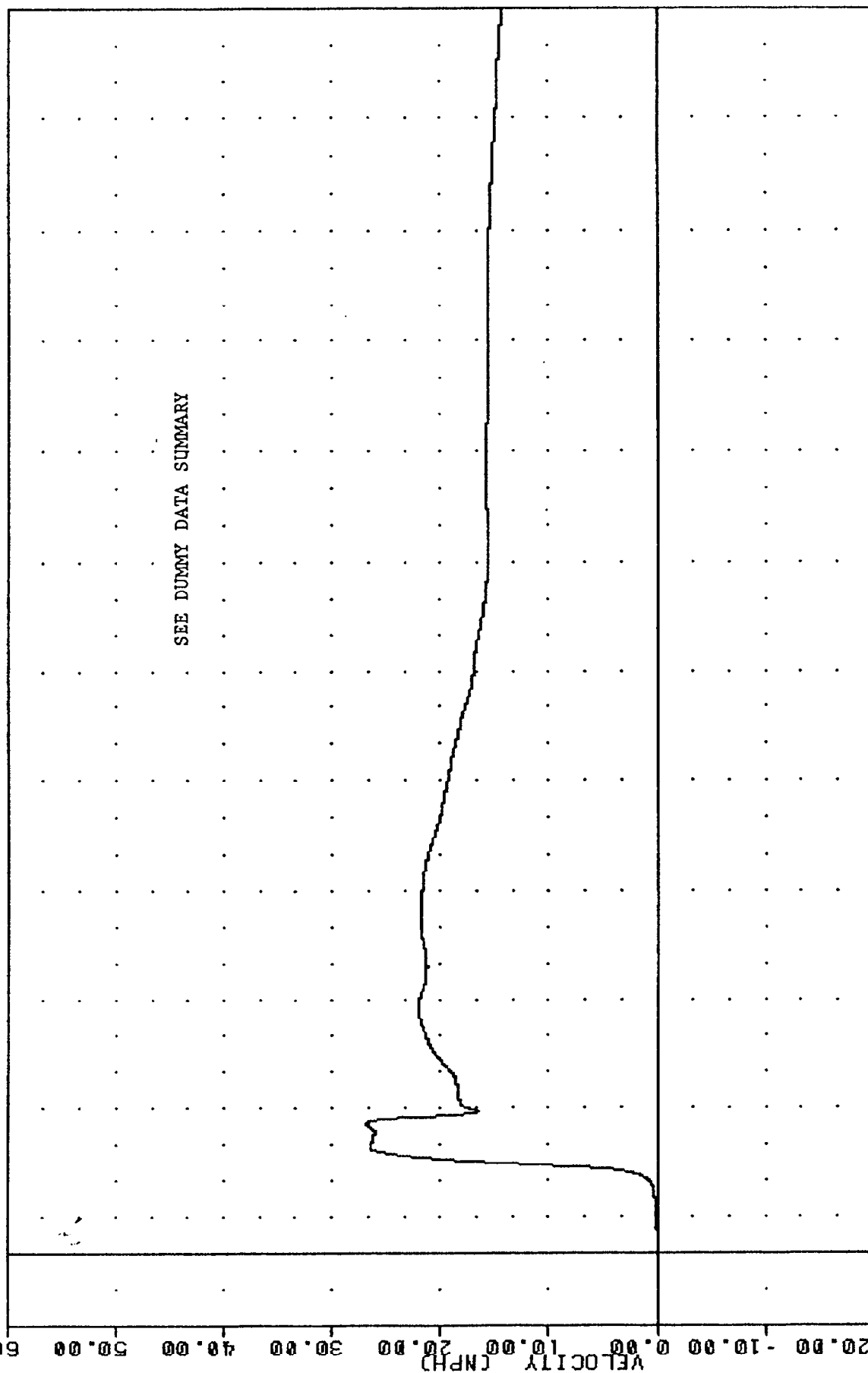


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER PELVIS ACCELERATION Z AXIS

TMC 040621 17 JUL 84 00:11:33  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVRG1  
 FILTER = BLPF 300/ 349/ -40  
 MIN. MAX VALUES = 0.098 -1.00, 364.47 e 37.50



THE 040621 17 JUL 82 0014:23  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVYV1  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -0.032 -7.13, 26.75 e 35.63



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

TRC 840621 17-JUL-84 08:11:35

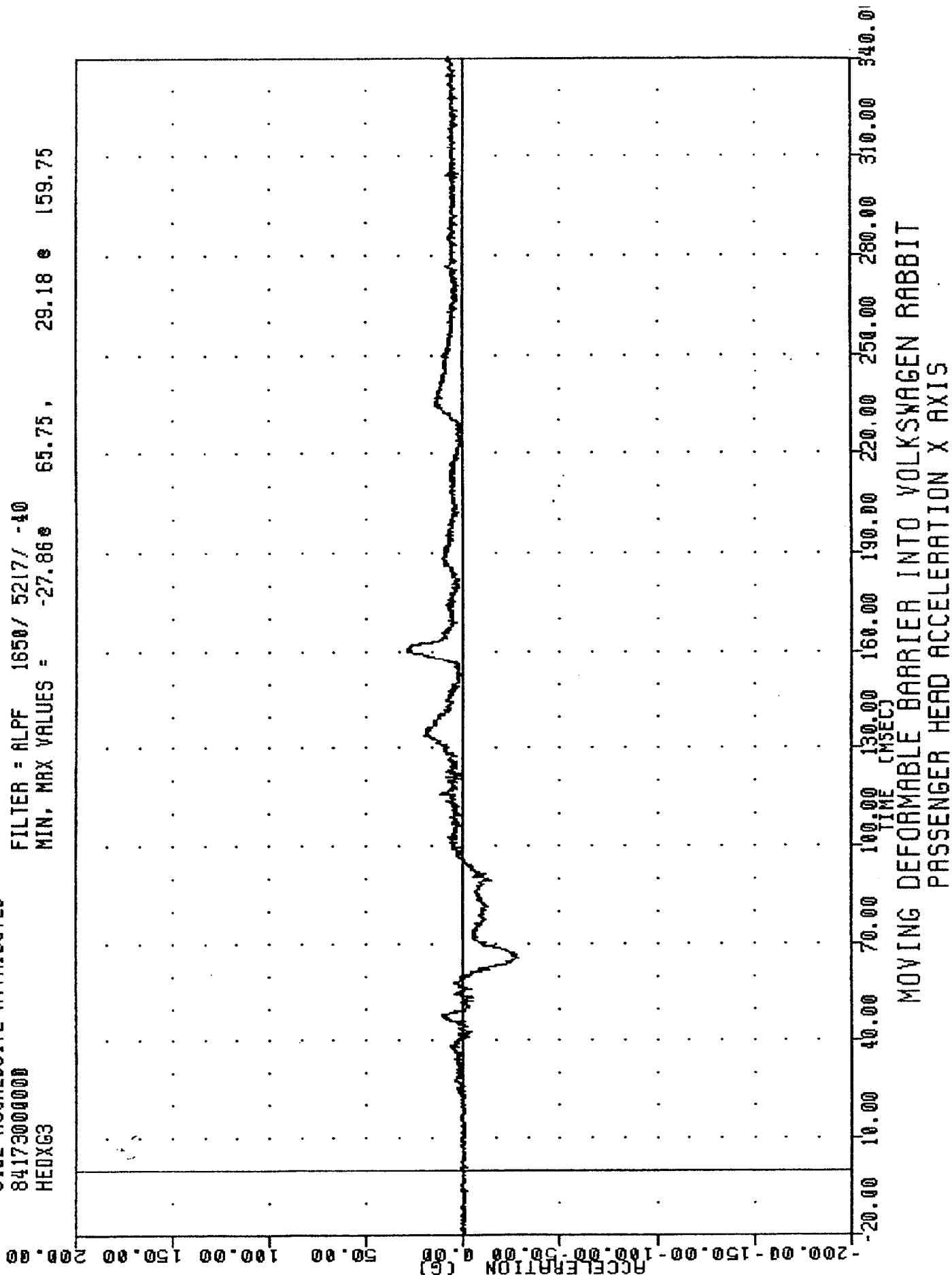
SIDE AGGRESSIVE ATTRIBUTES

84173000000

HEDXG3

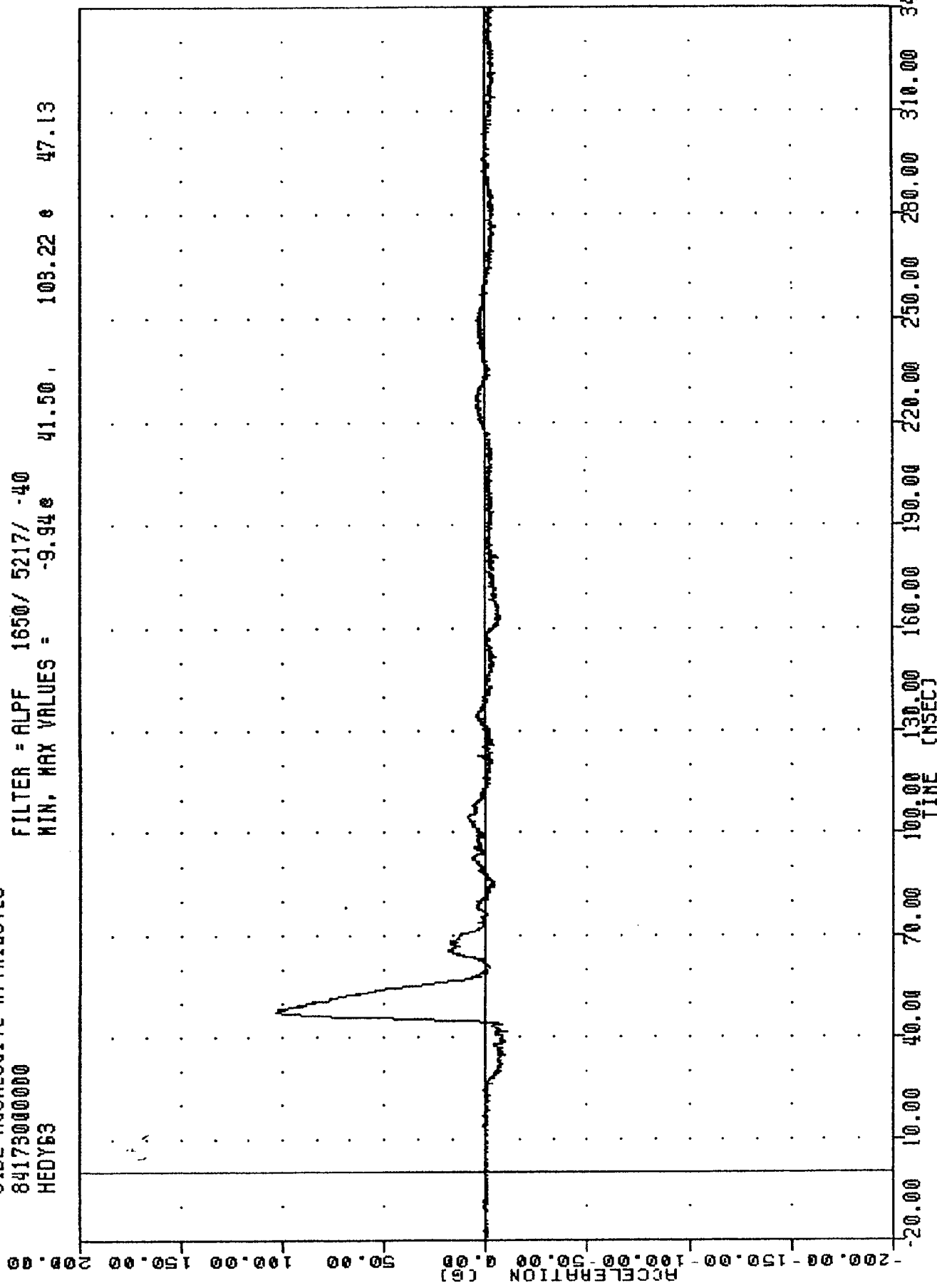
FILTER = ALPF 1650/ 5217/ -40

MIN, MRX VALUES = -27.86 65.75, 29.18 159.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER HEAD ACCELERATION X AXIS

TAC 840621 17 JUL 84 06:11:33  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 HEDY63  
 FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = -9.94e 41.50, 103.22 e 47.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER HEAD ACCELERATION Y AXIS



TRC 840621 17-JUL-84 08:11:35

SIDE AGGRESSIVE ATTRIBUTES

84173000000

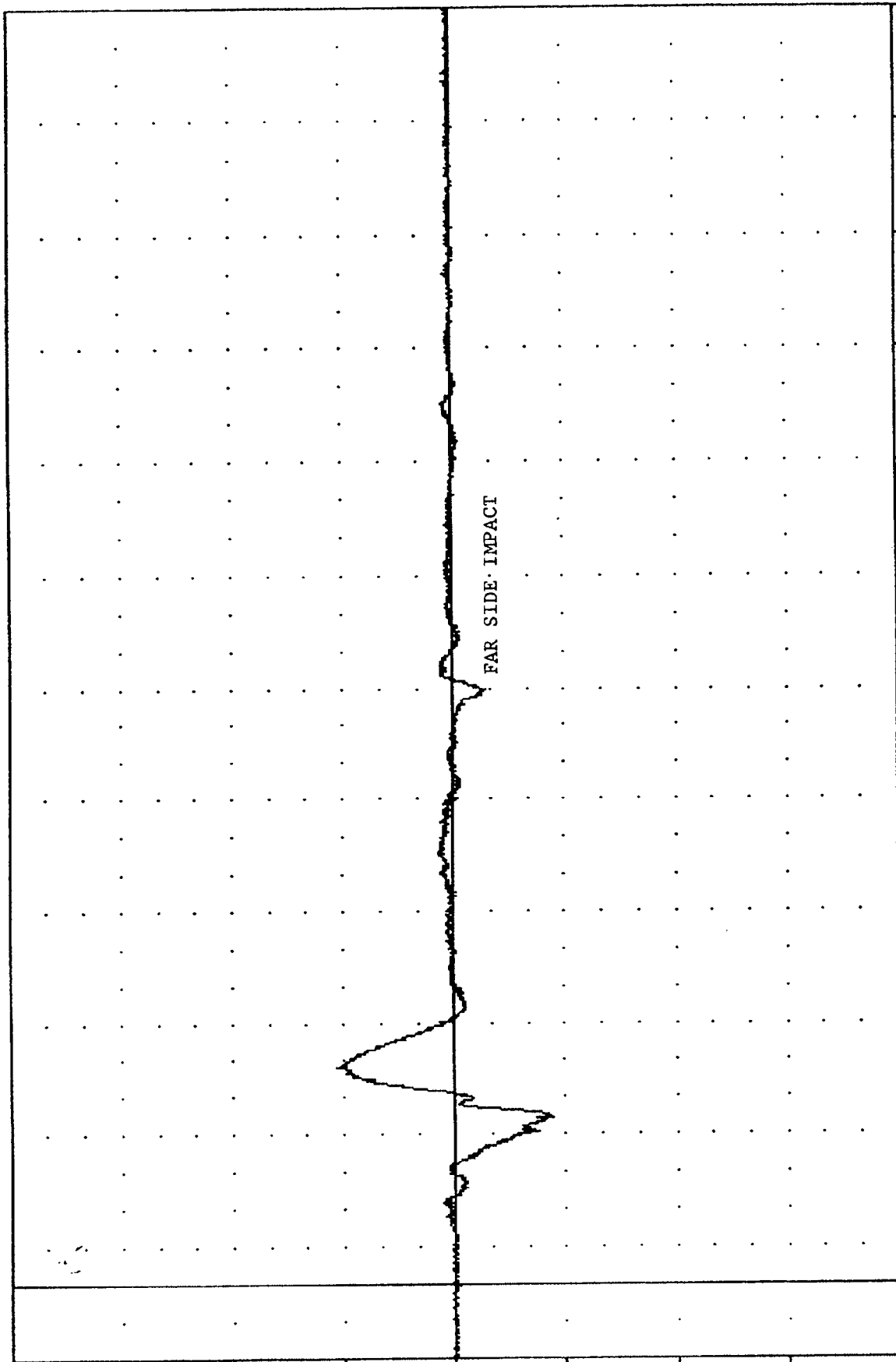
HEDZG3

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -43.95 44.50

53.42 58.13

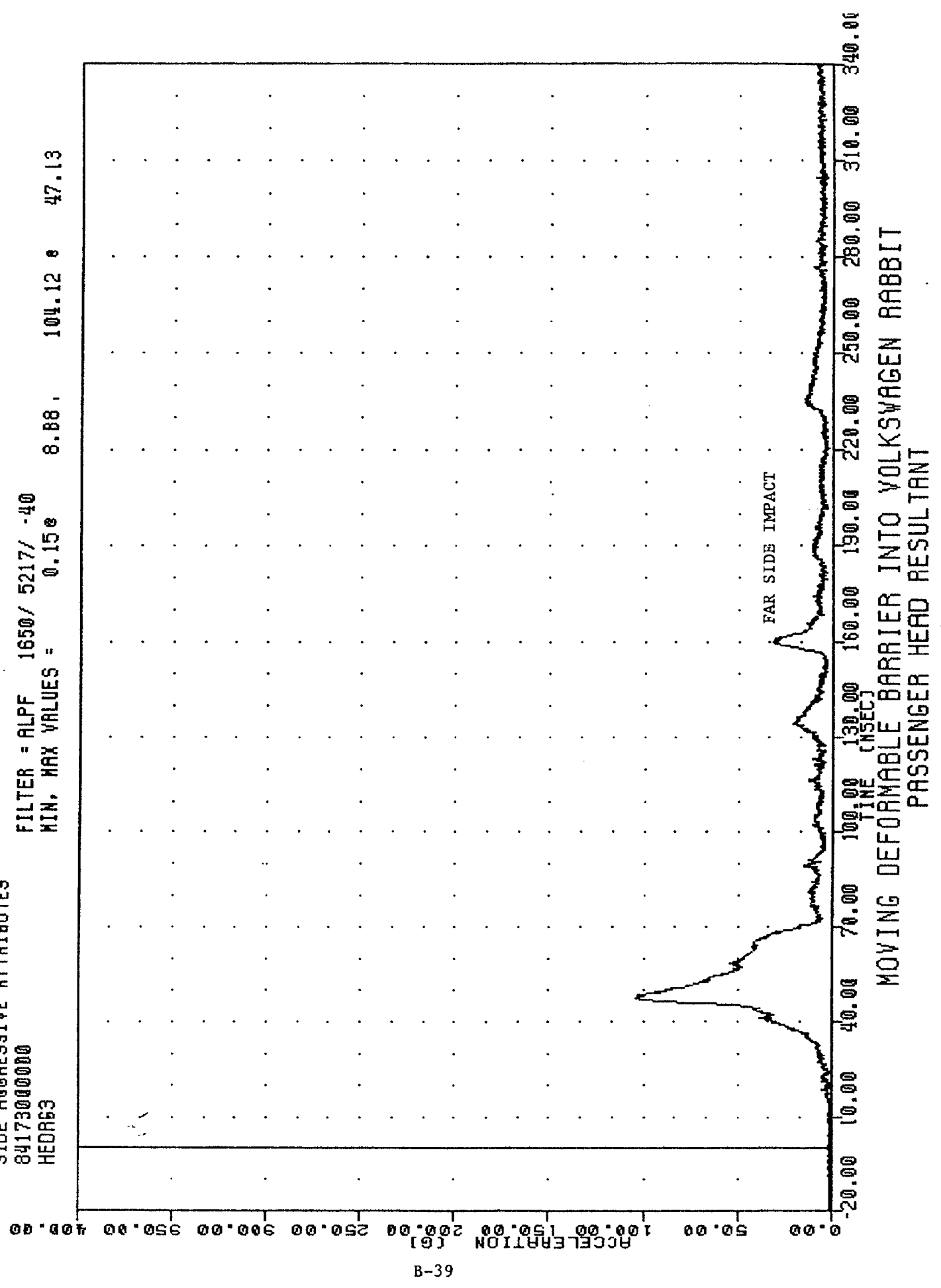
ACCELERATION (G)



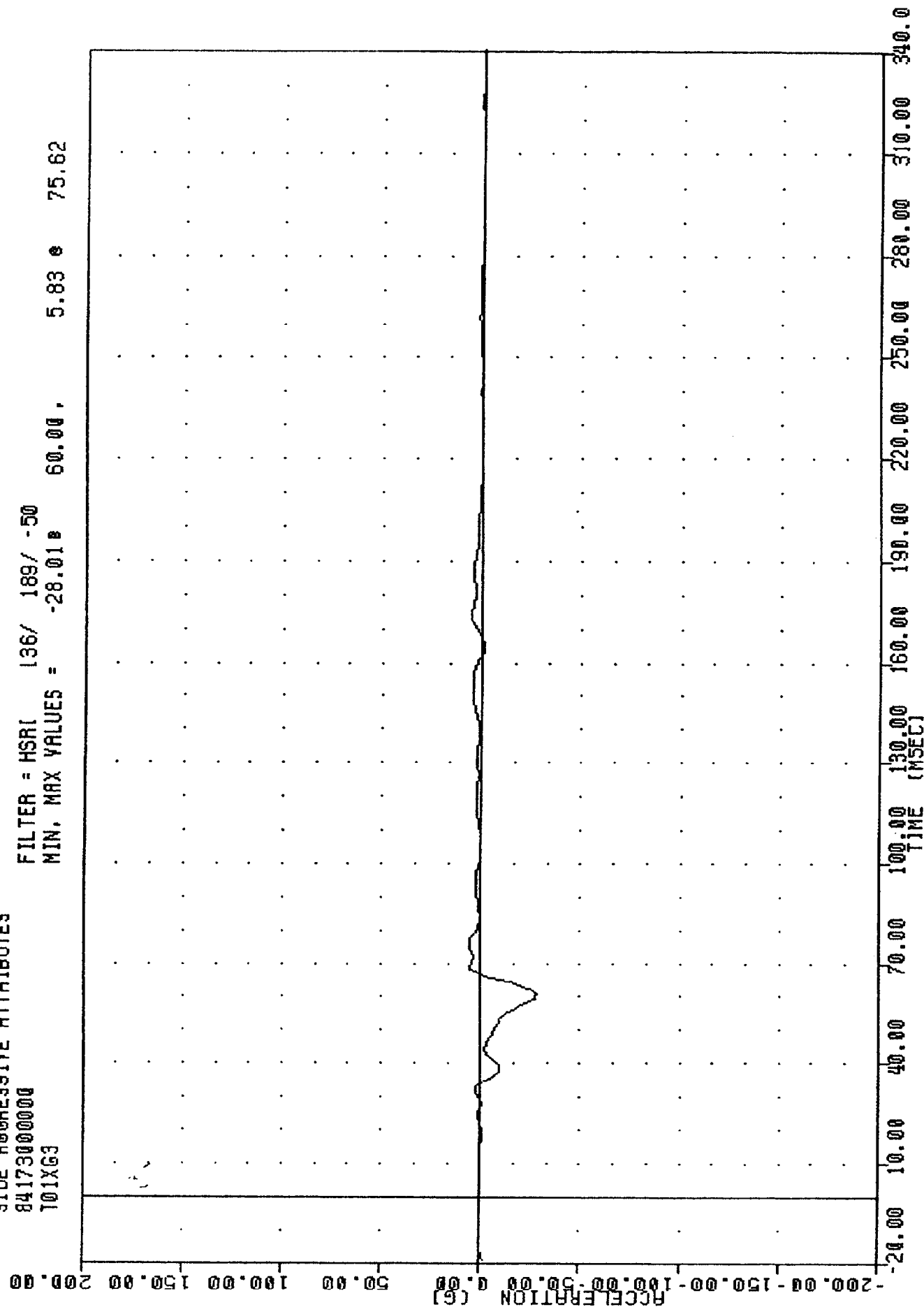
FAR SIDE IMPACT

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER HEAD ACCELERATION Z AXIS

THE 040621 17 JUL 84 06:11:30  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 HEAD53  
 FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = 0.15e 8.88, 104.12 e 47.13



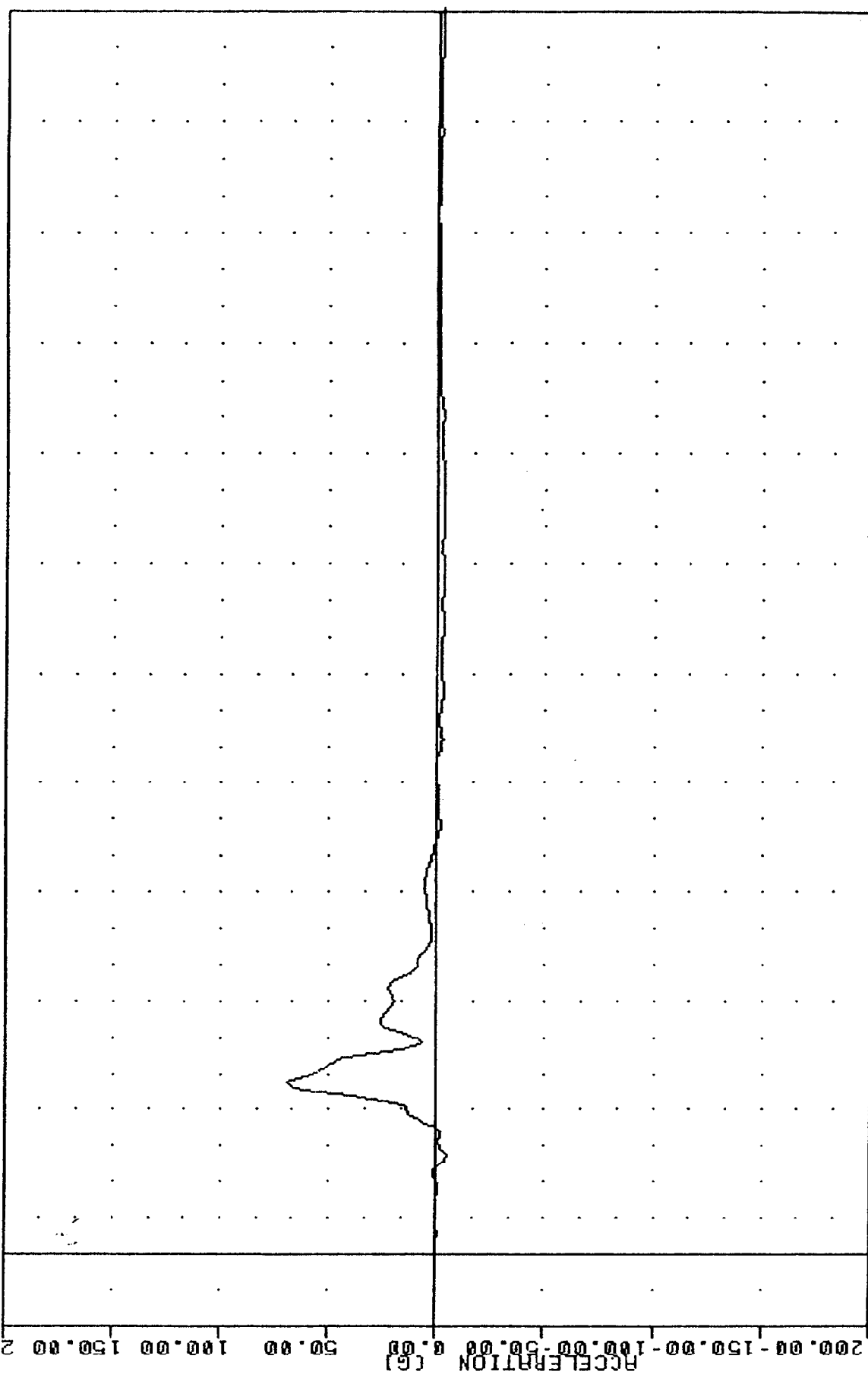
INC 7040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 701X63  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -28.01 60.00, 5.83 75.62  
 PLOT DATE 17-JUL-84 08:12:19



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

THE 040621 PLOT DATE 17 JUL 84 08:12:19  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01Y63  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -4.84e 26.25, 68.80 e 46.88

200.00

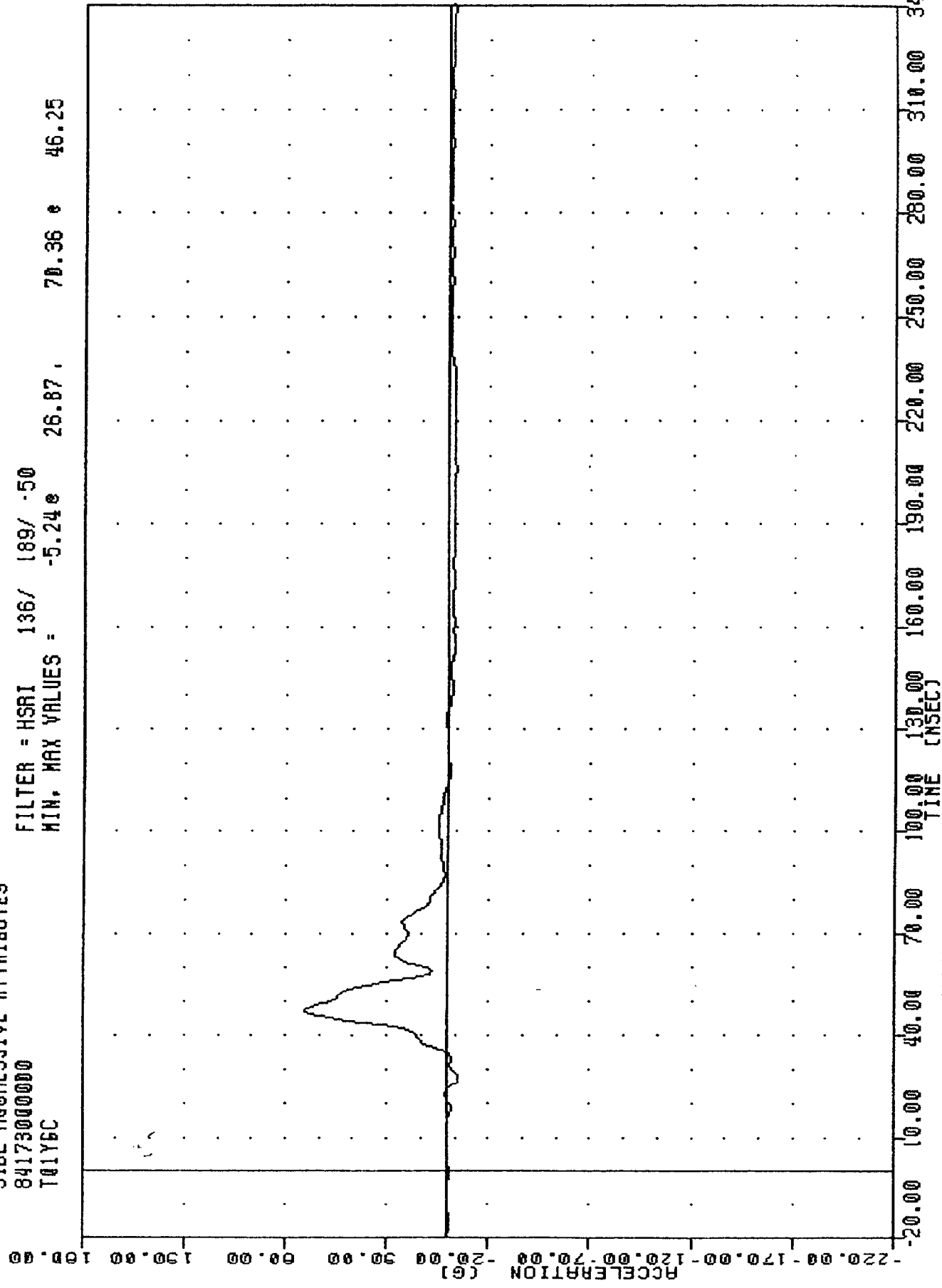


B-41

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

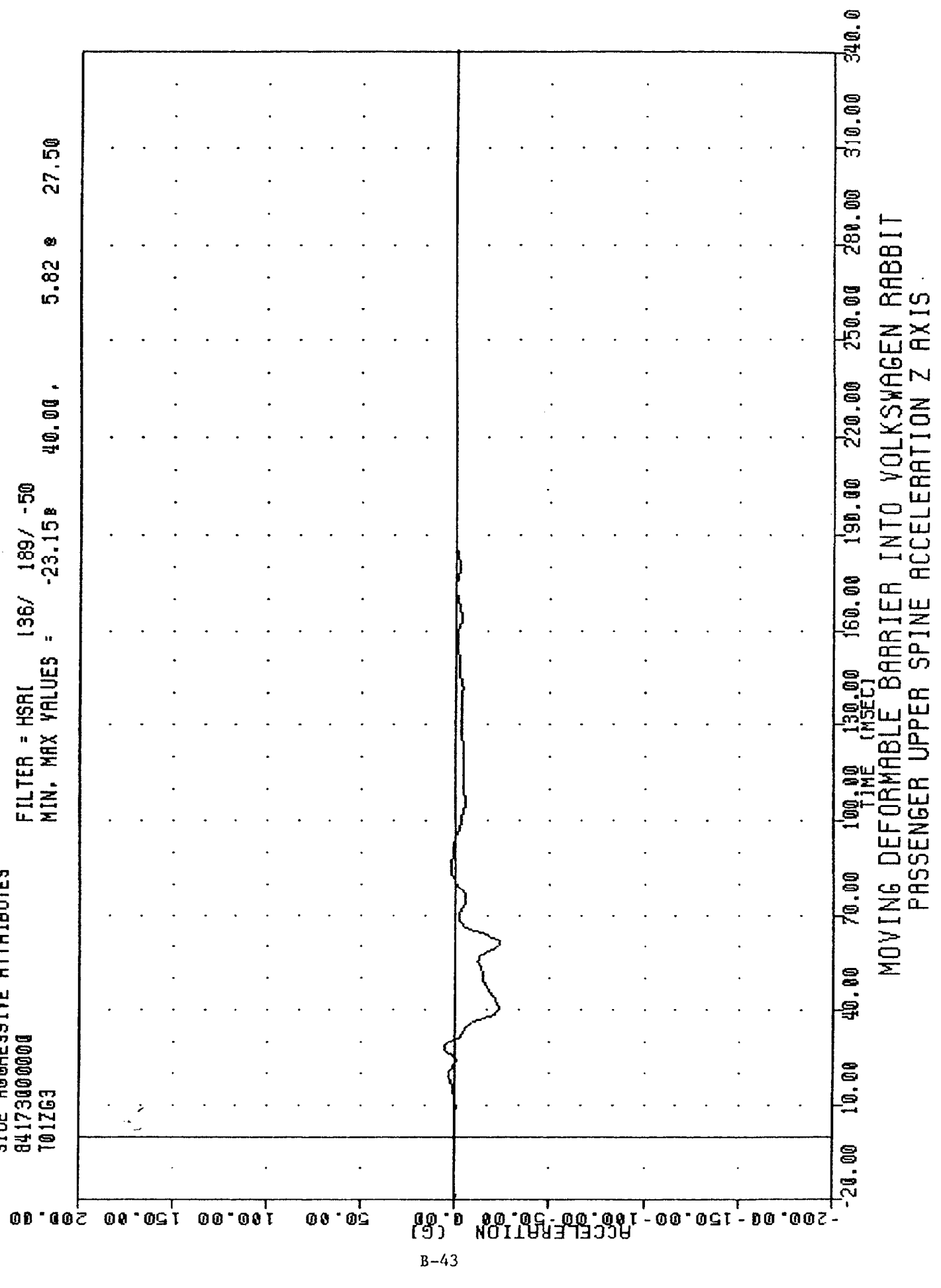
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER UPPER SPINE ACCELERATION Y AXIS

THE 040621 17 JUL 84 06:12:19  
 SIDE AGGRESSIVE ATTRIBUTES  
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 T01Y6C  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -5.24e 26.87, 70.36 e 46.25



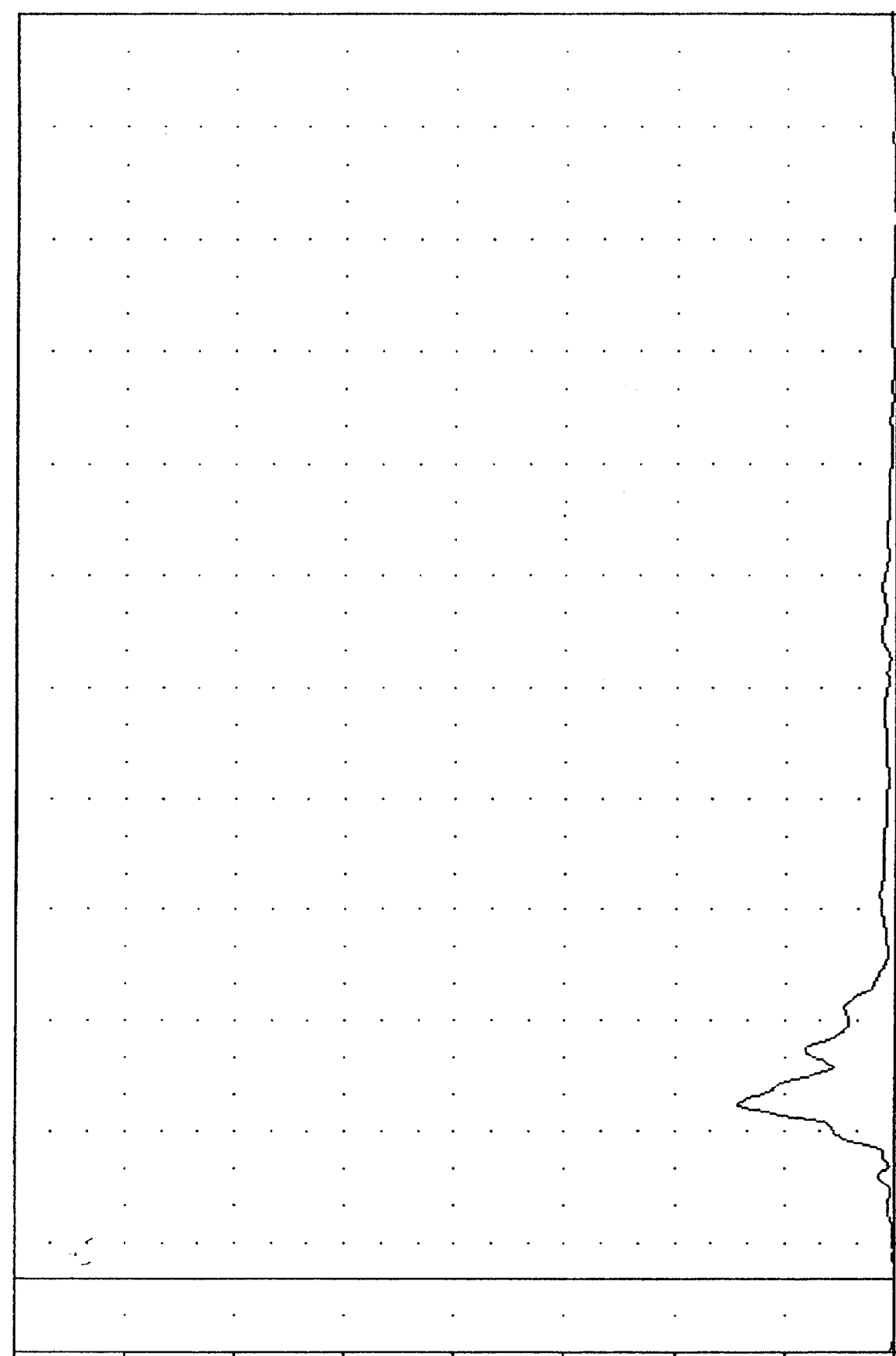
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER UPPER SPINE ACCELERATION #2 Y AXIS

TMC 040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 701ZG3  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -23.15 40.00, 5.82 27.50  
 PLOT DATE 17 JUL 84 08:12:19



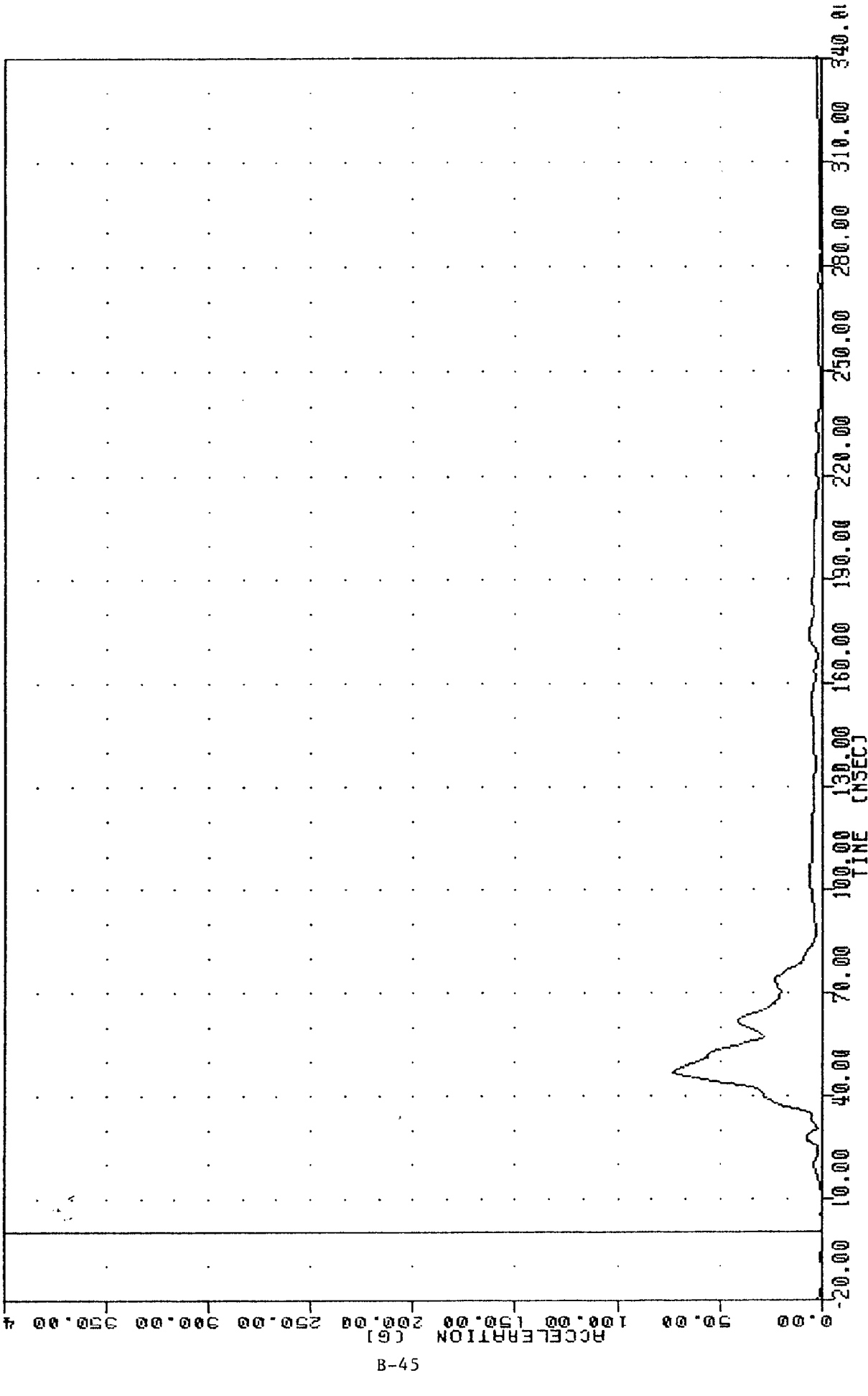
THEC 040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01R63  
 FILTER = HSRI 136/ 189/ .50  
 MIN. MAX VALUES = 0.07s -15.00, 70.84 s 46.88  
 PLOT DATE 17 JUL 84 08:12:19

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  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER UPPER SPINE RESULTANT

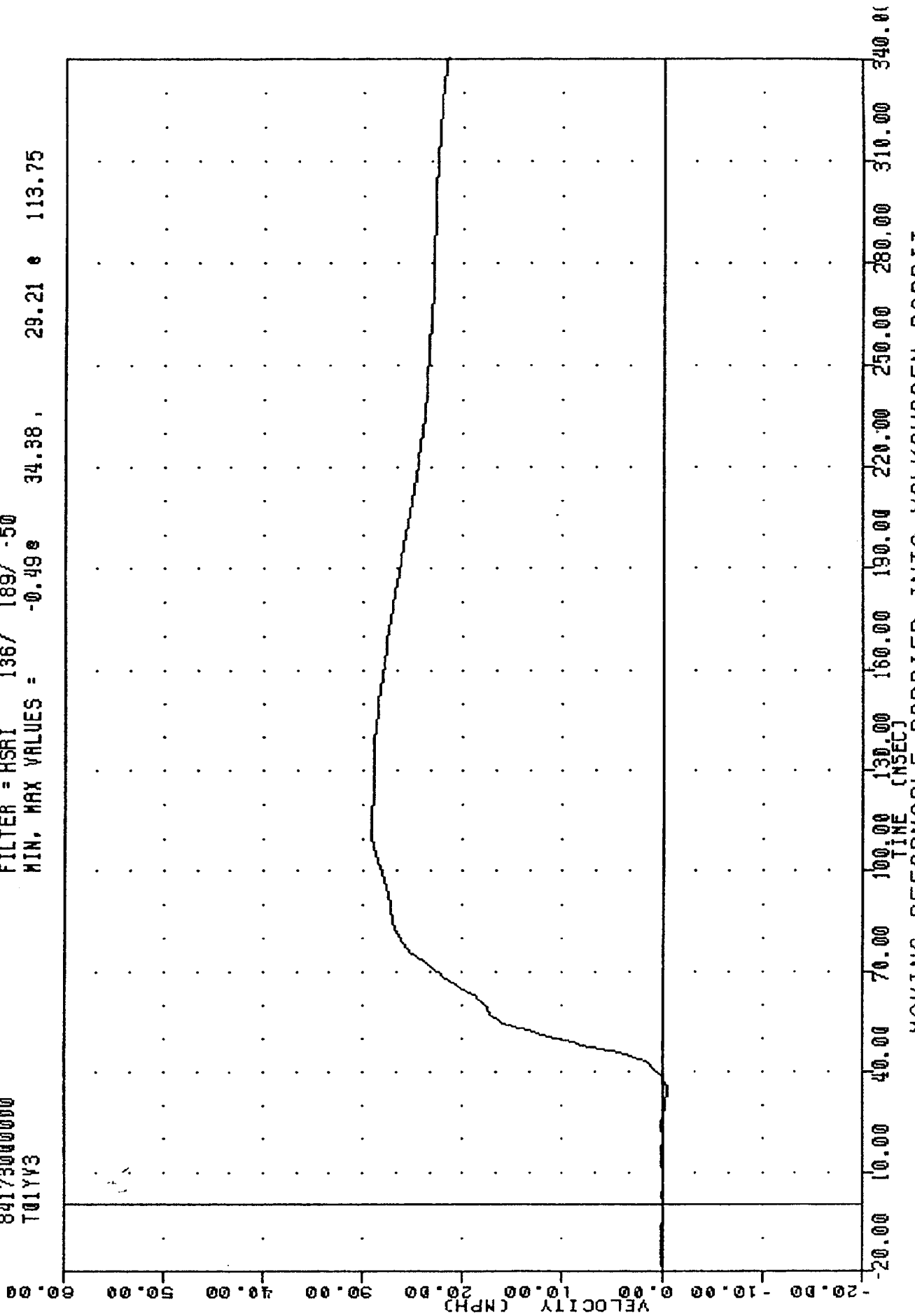
TMC 040621 17 JUL 84 08:13:17  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01REC  
 FILTER = HSRI 136/ 189/ .50  
 MIN, MAX VALUES = -4.38 , 72.49 \* 46.25



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

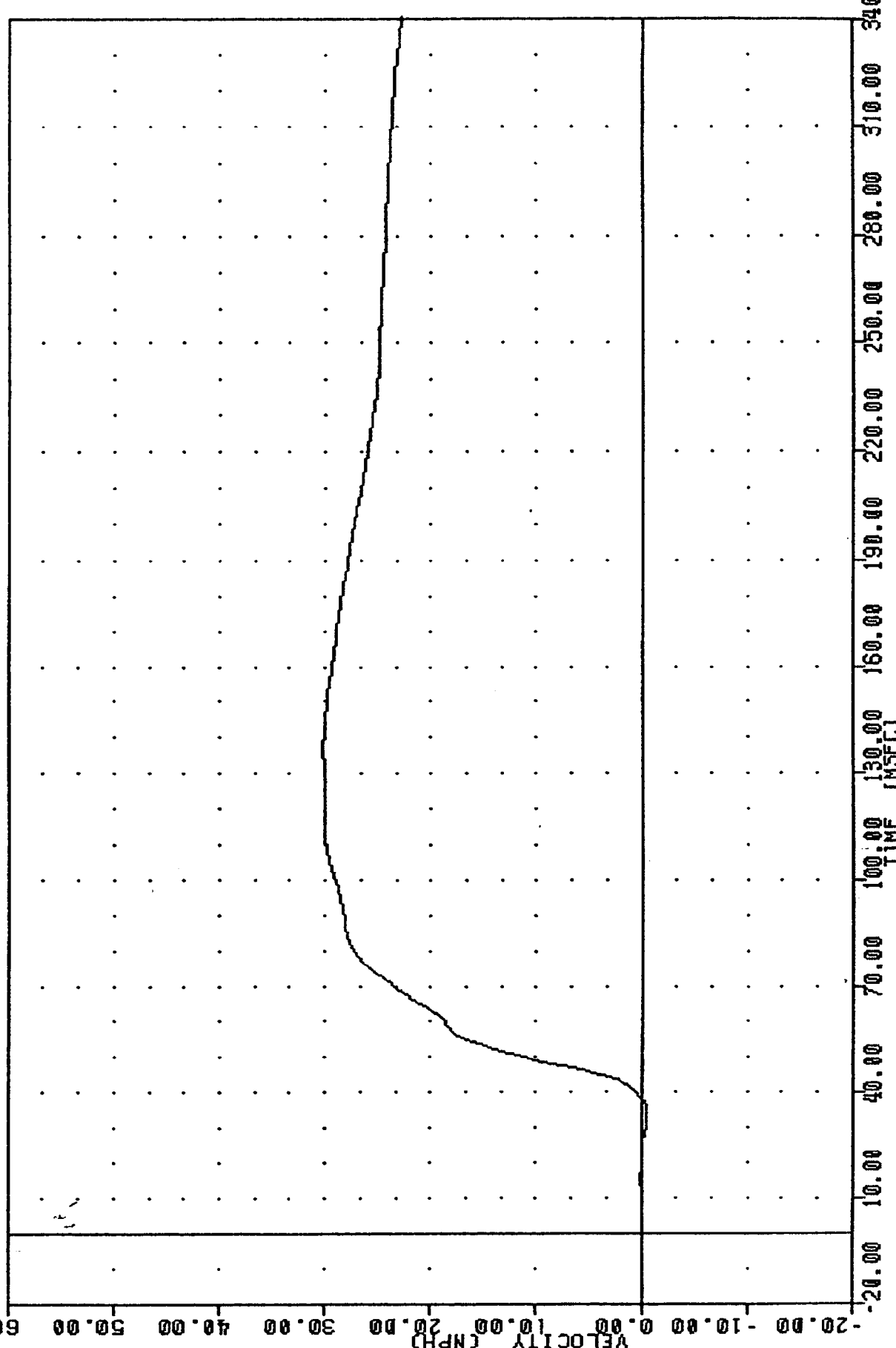


TAC 840621, 840621 PLUT DATE 17-JUL-84 08:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01YV3  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -0.49 34.38, 29.21 113.75



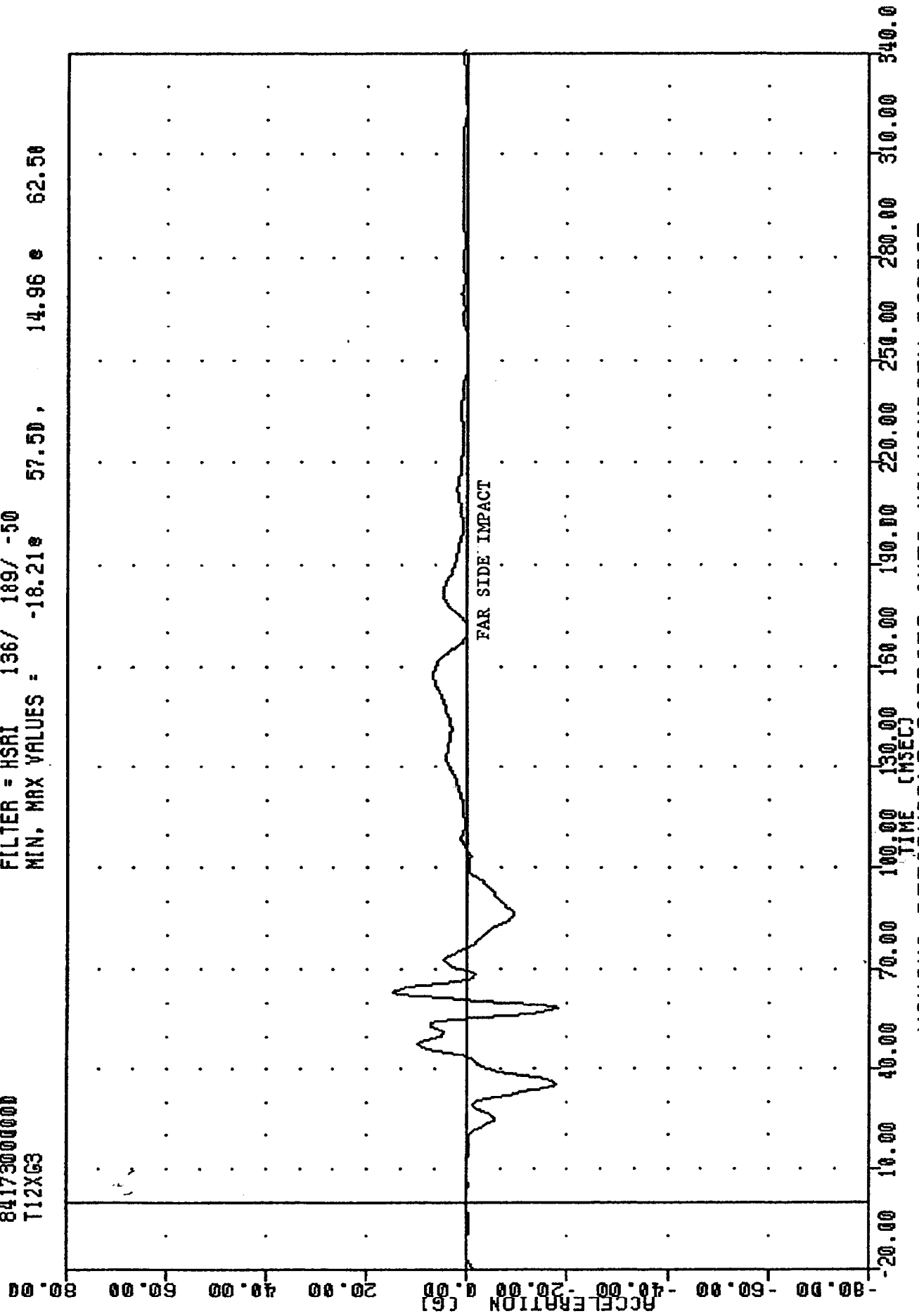
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T01YV3

TRC 840621 17-JUL-84 08:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T01YVC  
 FILTER = HSR1 136/ 189/ -50  
 MIN, MAX VALUES = -0.57 33.75, 30.16 135.62



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T01YGC

TRC 840621 17-JUL-84 08:12:19  
 SIDE AGGRESSIVE ATTRIBUTES  
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 T12XG3  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -18.21e 57.50, 14.96 e 62.50

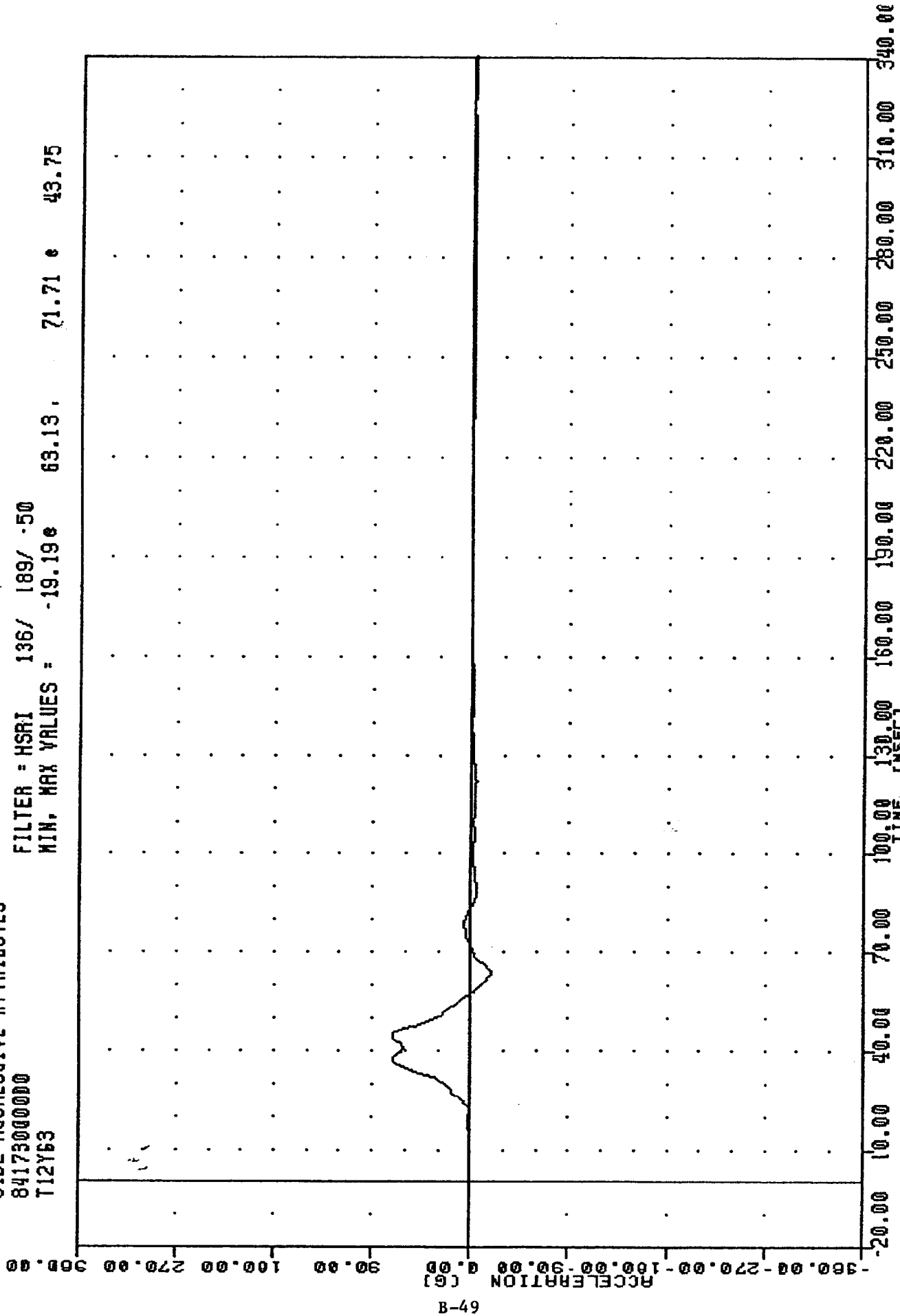


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LOWER SPINE ACCELERATION X AXIS

TMC 00621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12Y63

PLOT DATE 17 JUL 84 00:12:13

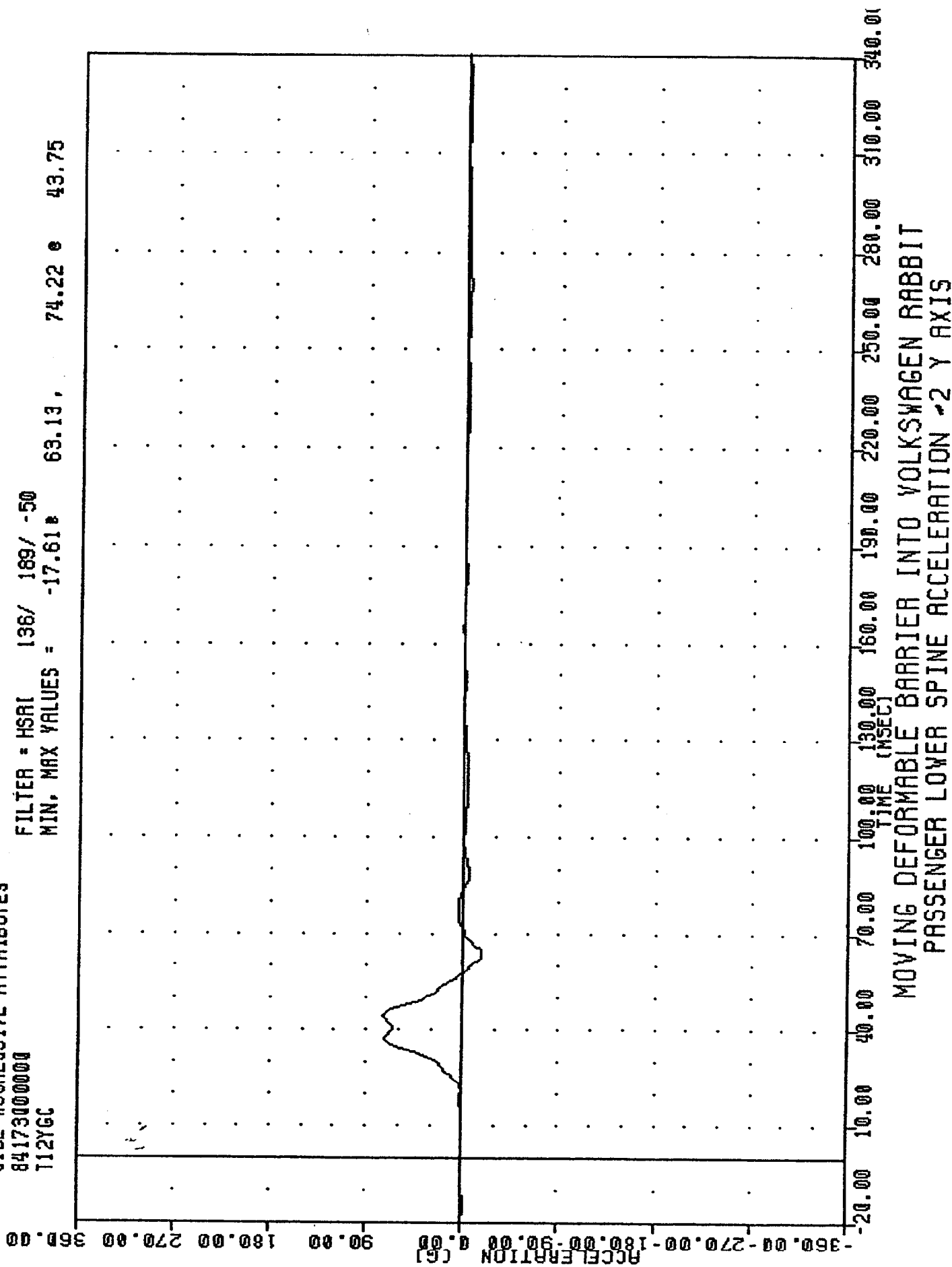
FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -19.19e 63.13, 71.71 e 43.75



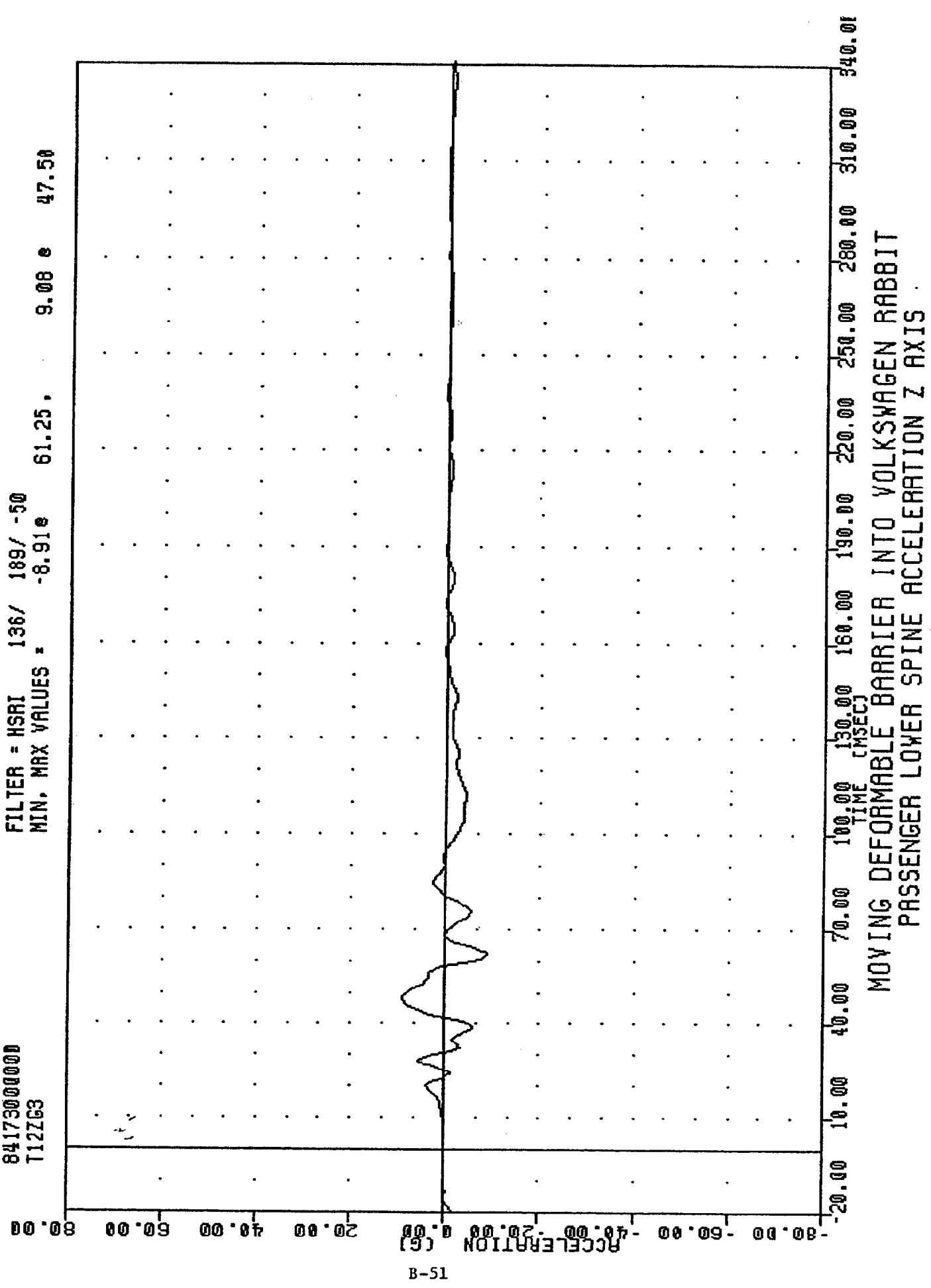
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LOWER SPINE ACCELERATION Y AXIS

17 JUL 84 08:12:19  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -17.61 63.13, 74.22 43.75

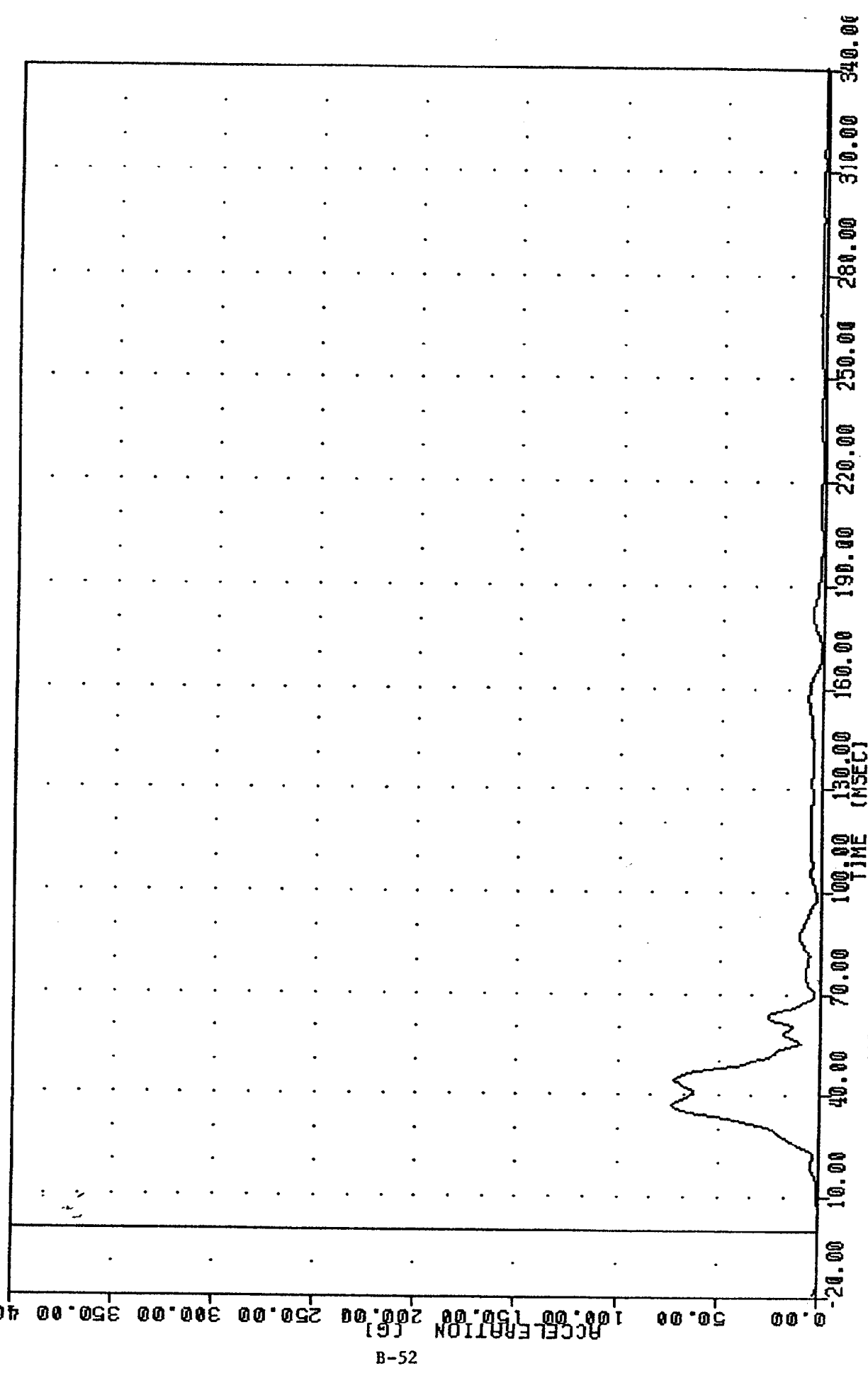
SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12YGC



TMC 040621 PLOT DATE 17 JUL 84 08:12:19  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12ZG3  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -8.91e 61.25. 9.08 e 47.50

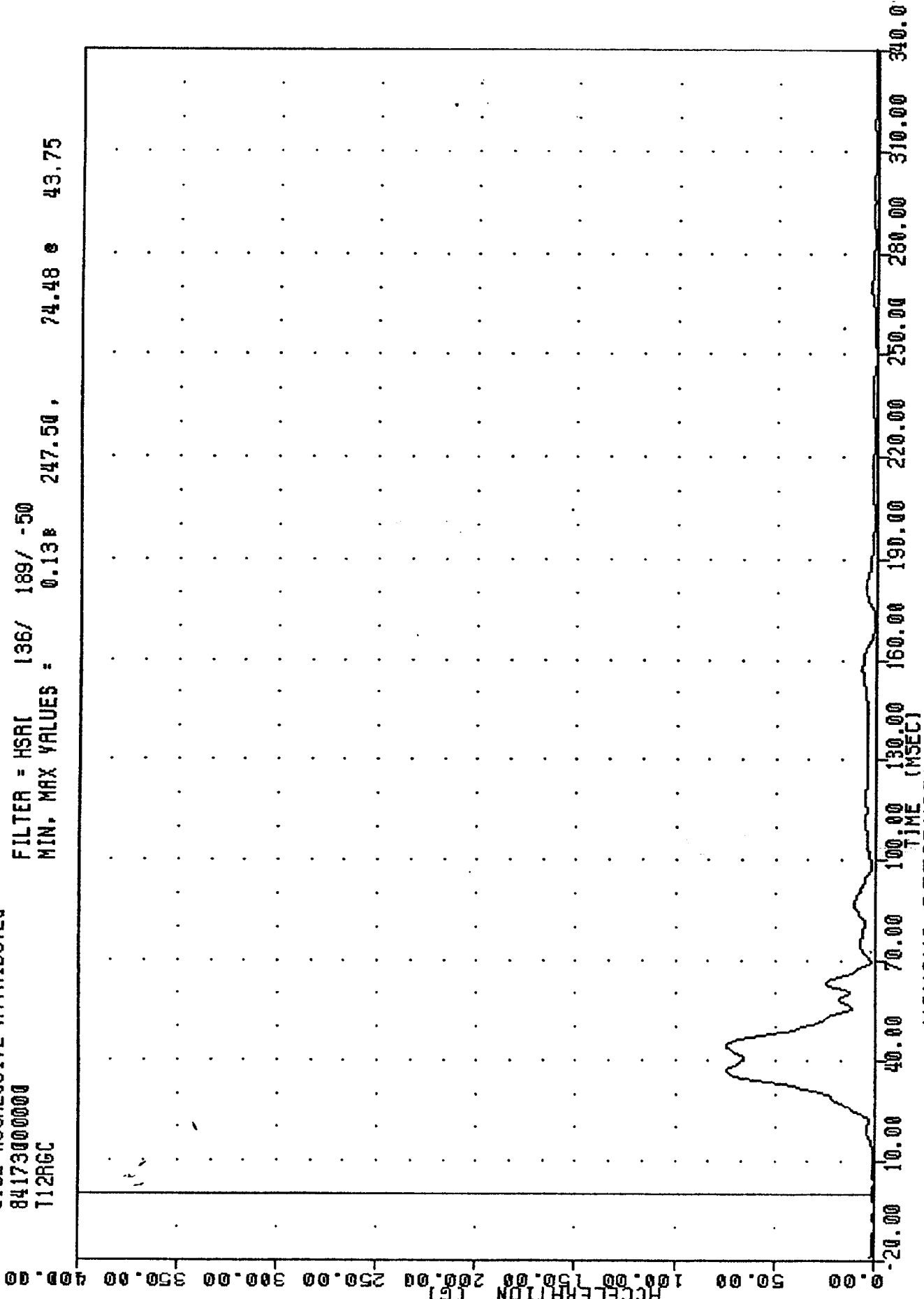


MC 7040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 112RG3  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = 0.10e -16.87. 72.51 e 36.25  
 PLOT DATE 17-JUL-84 08:12:19



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LOWER SPINE RESULTANT

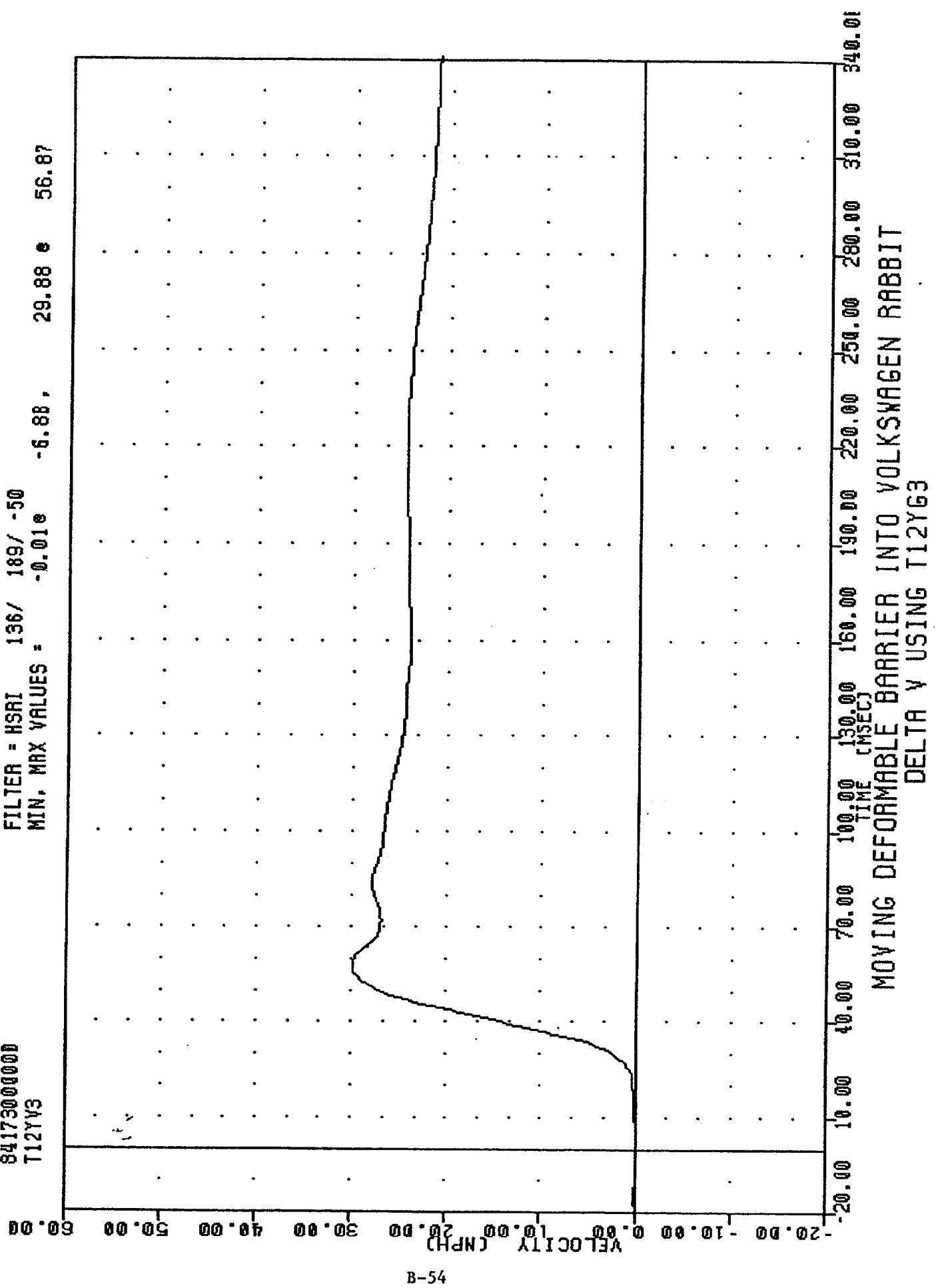
INC 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 T12RGC  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = 0.138 247.50, 74.48 43.75  
 PLOT DATE 17-JUL-84 08:13:17



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

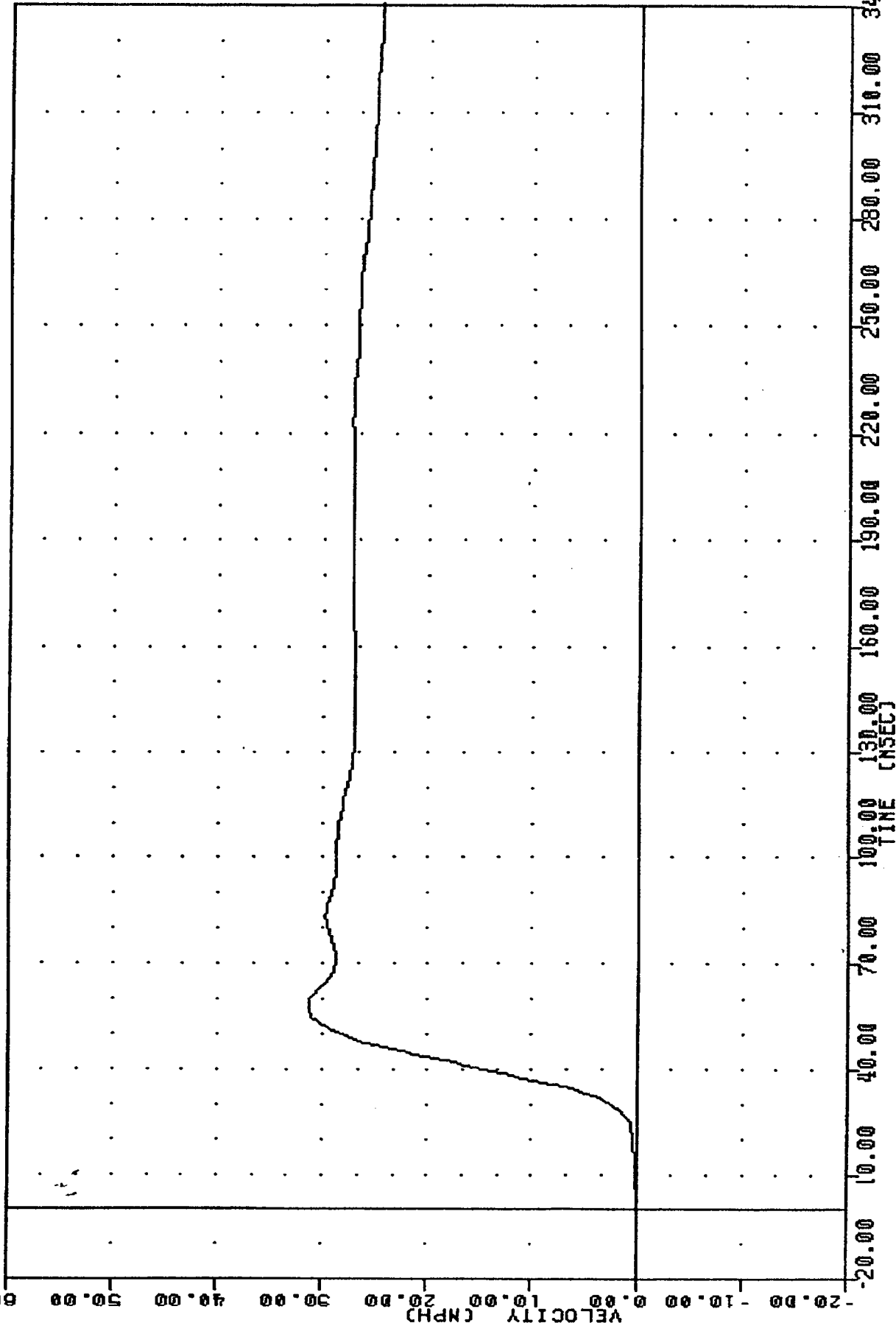


TMC 040621 17-JUL-84 08:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
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 T12YV3  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.01e -6.88, 29.88 e 56.87



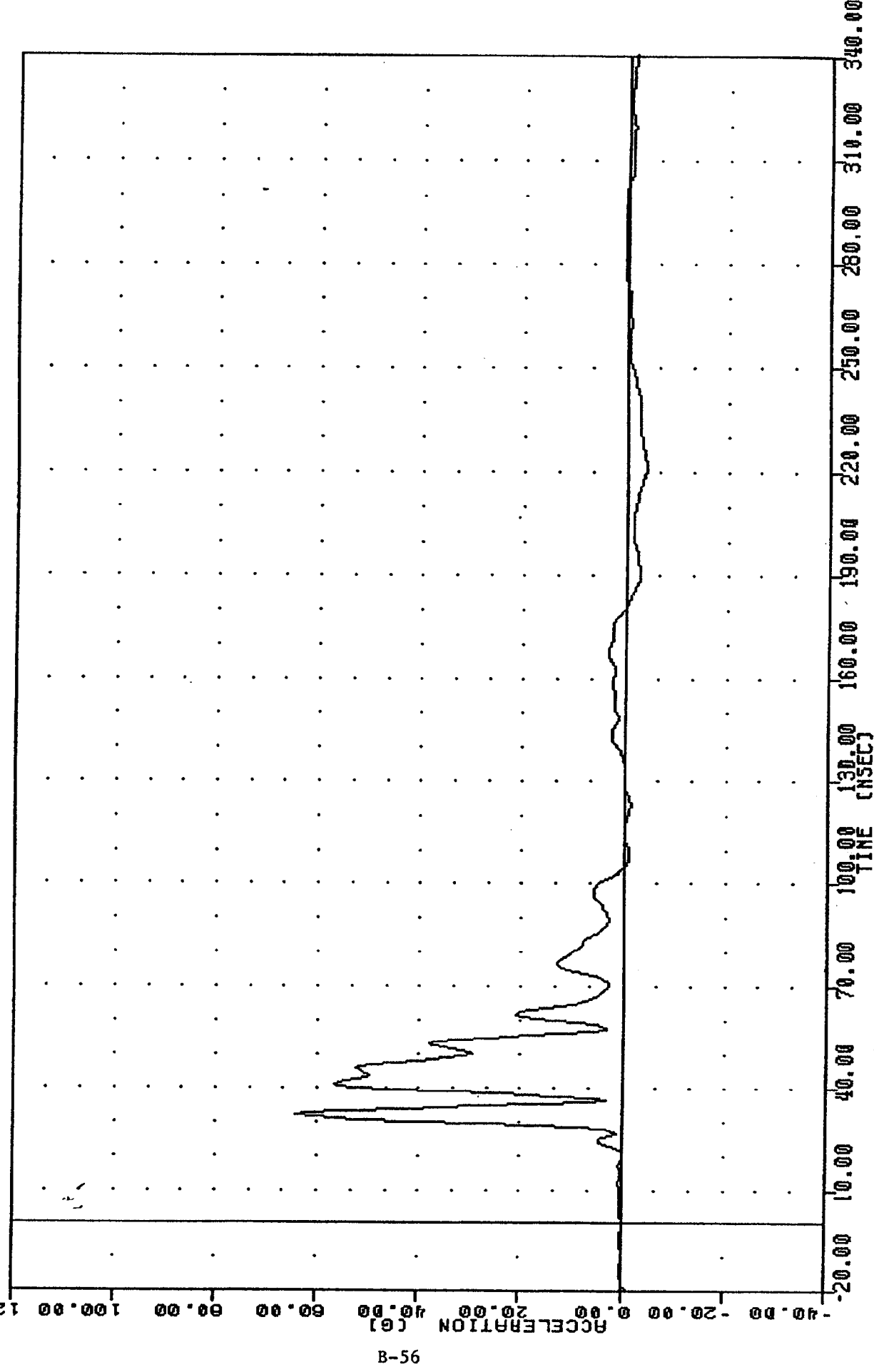
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T12YV3

TRC 840621 17-JUL-84 08:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
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 T12YVC  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.11e -10.63 31.38 e 57.50



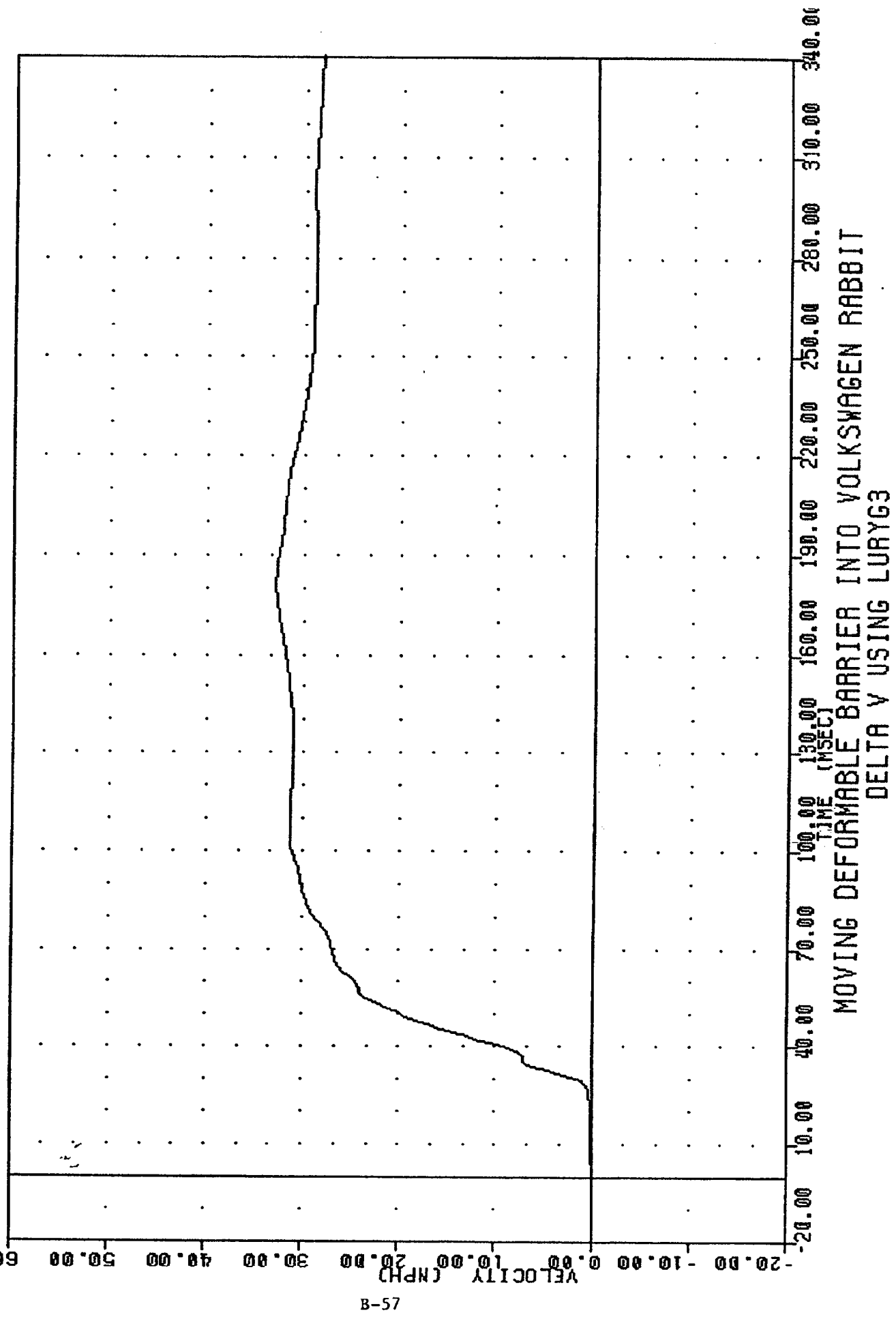
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T12YGC

THE 040621 17 JUL 84 08:12:19  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LURY63  
 FILTER = HSRI 136/ 189/ .50  
 MIN, MAX VALUES = -4.00e 220.63, 64.33 e 31.25



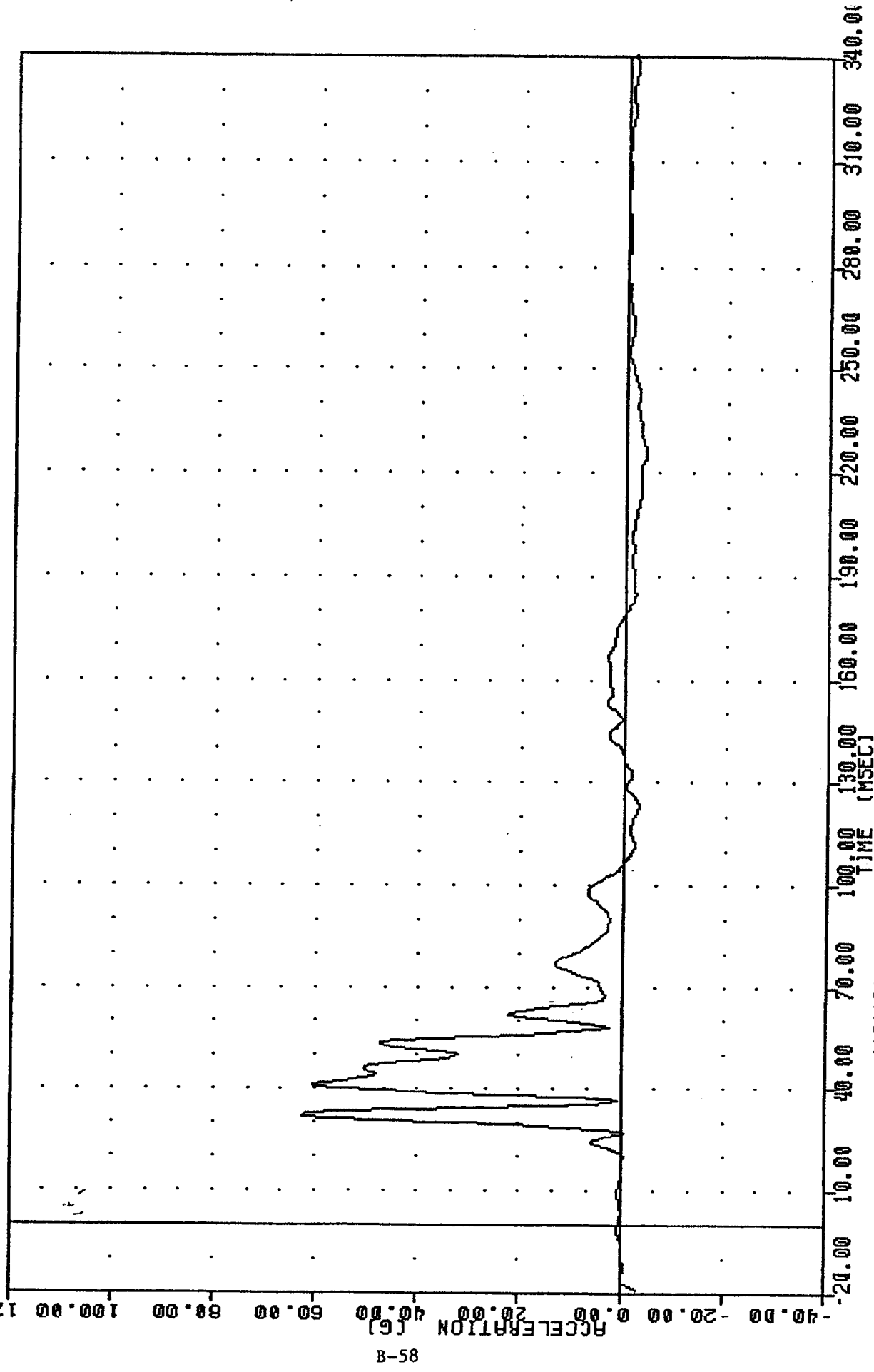
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

10061 17 JUL 84 06:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
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 LURYV3  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -0.02 32.92 e 180.00



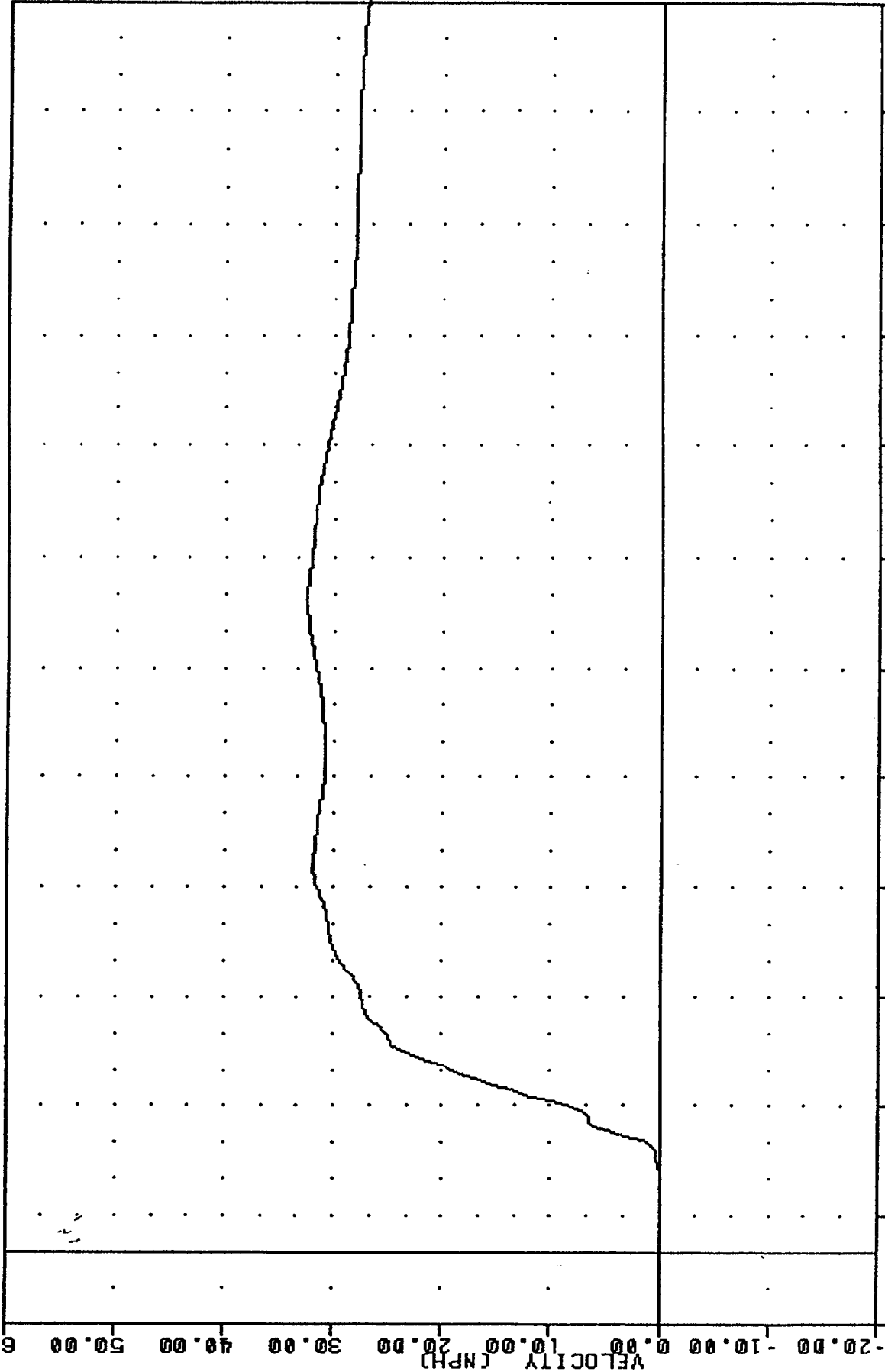
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LURYG3

1062  
 SIDE AGGRESSIVE ATTRIBUTES  
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 LURYGC  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -4.18 225.00, 52.38 31.25  
 PLOT DATE 17 JUL 04 00:12:13



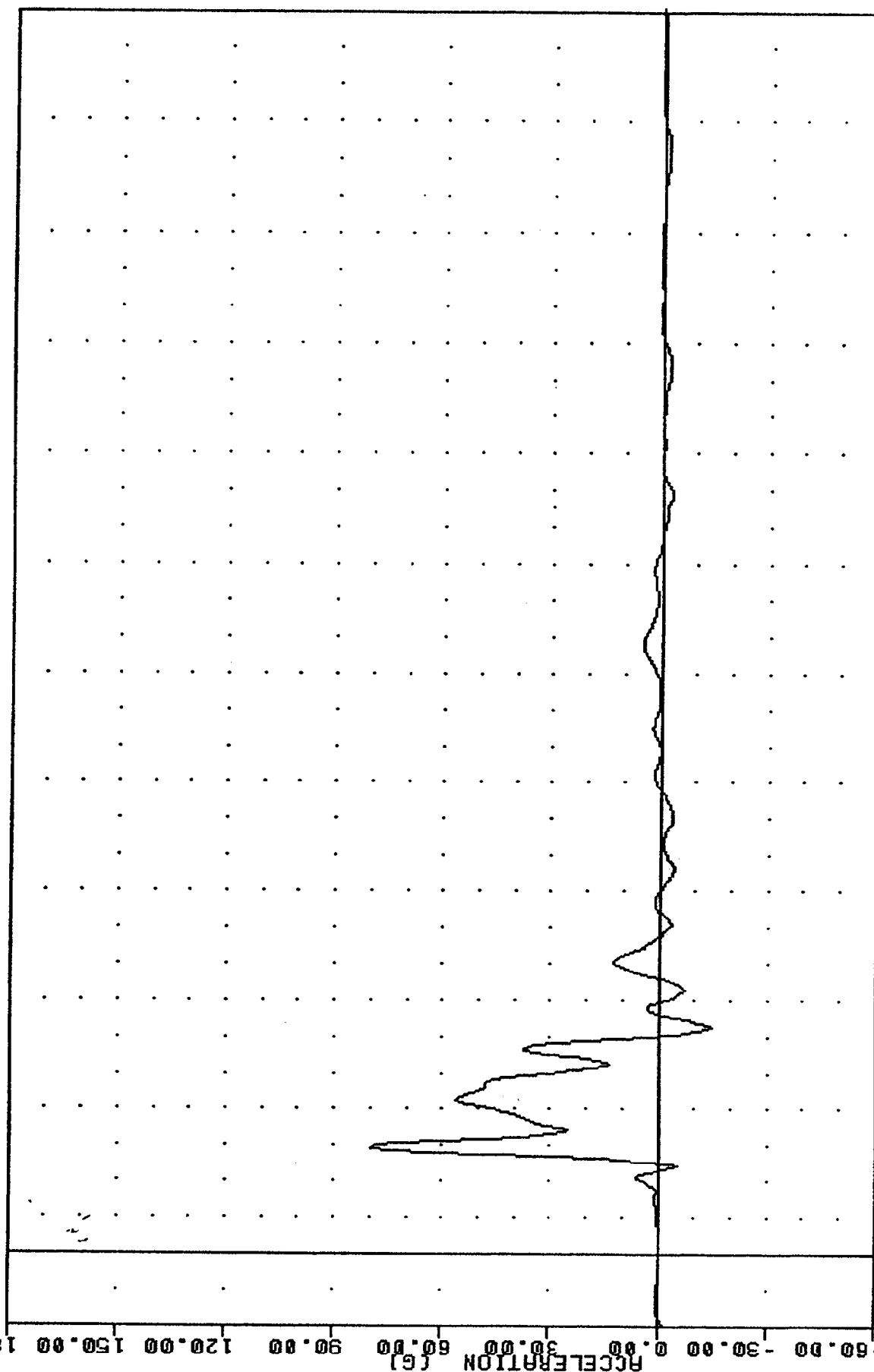
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LEFT UPPER RIB ACCELERATION -2 Y AXIS

THE 0621 17 JUL 04 00:13:57  
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 LURYVC  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -0.140 -5.00 32.52 177.50



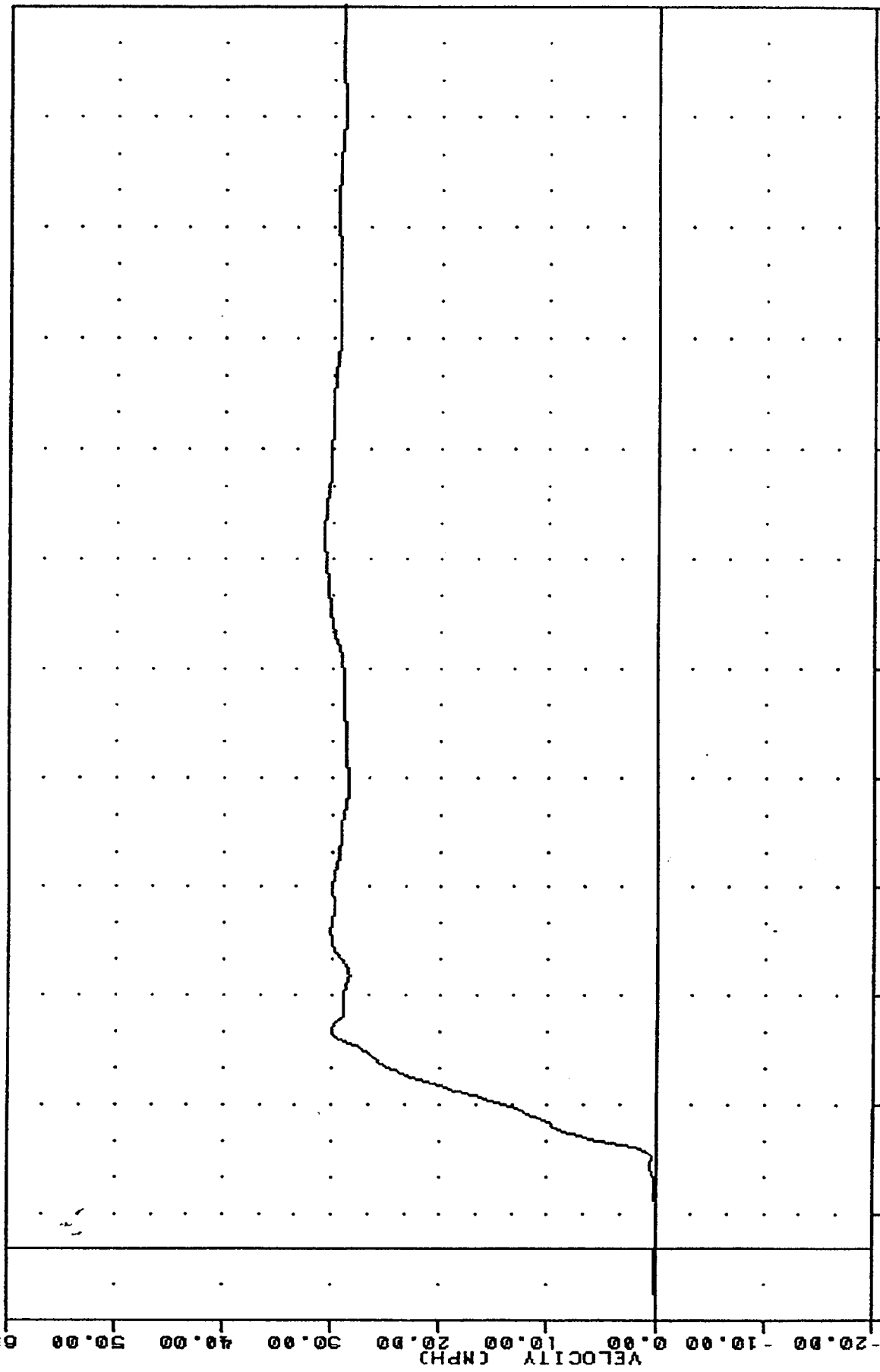
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LURYGC

8410621 17 JUL 63 00:12:13  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LLAG3  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -14.86g 61.87g 80.04g 28.75



-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LEFT LOWER RIB ACCELERATION Y AXIS

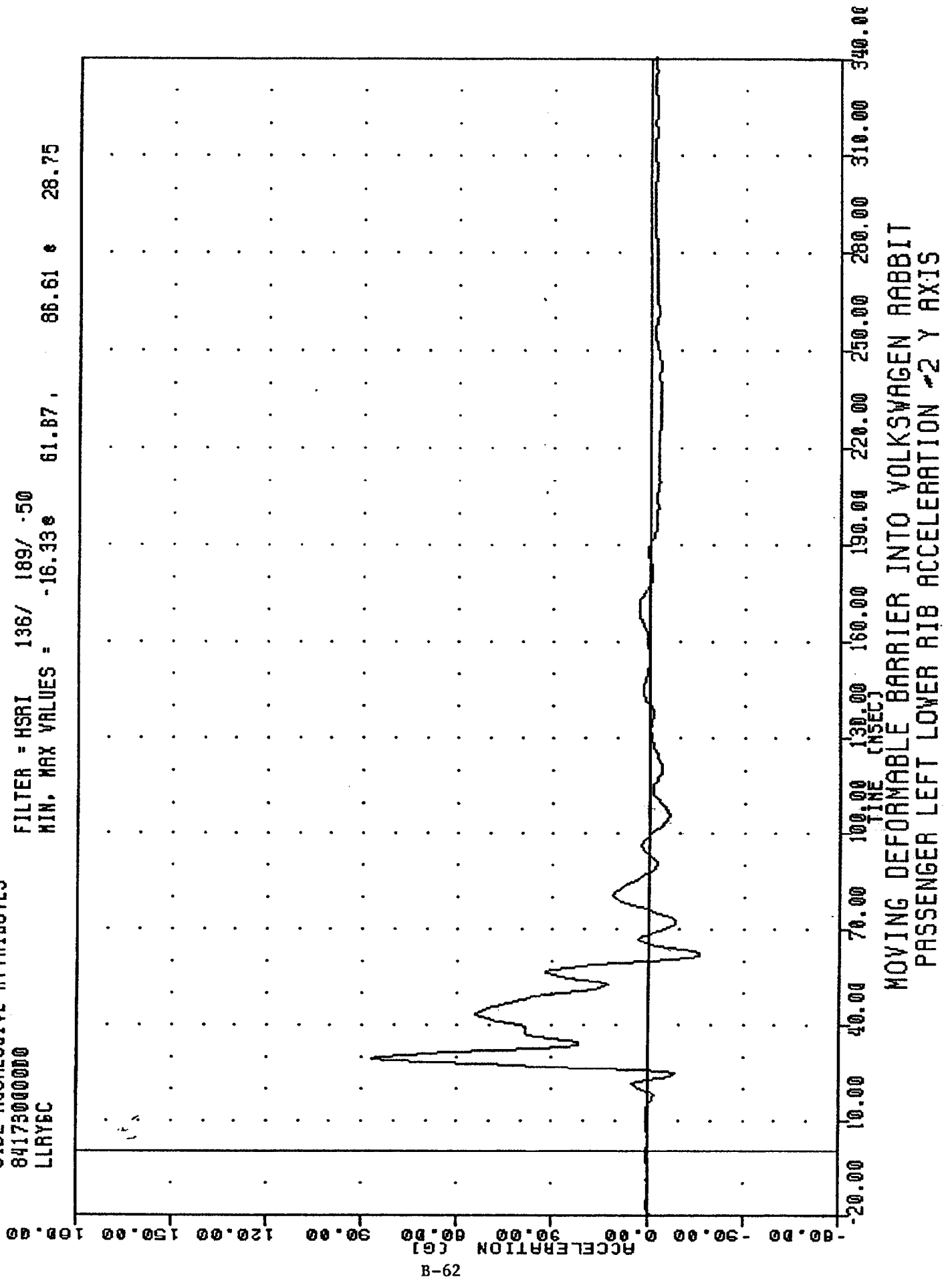
THE 0621 17 JUL 84 00:13:47  
 SIDE AGGRESSIVE ATTRIBUTES  
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 LLRYV3  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.03e -18.13, 30.80 e 195.00



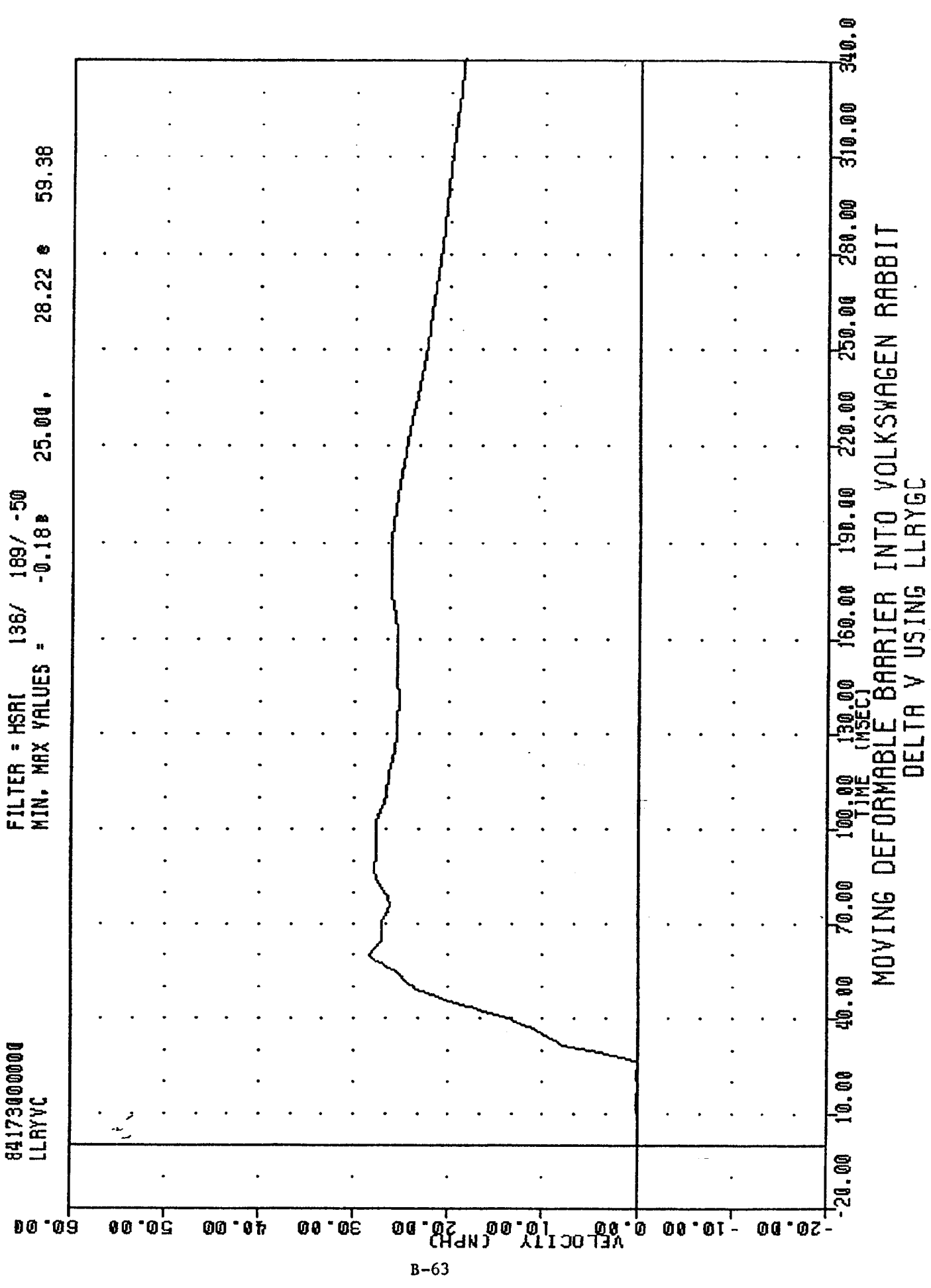
-20.00 10.00 20.00 30.00 40.00 50.00 60.00  
 VELOCITY (NPH)  
 19-B  
 -20.00 10.00 20.00 30.00 40.00 50.00 60.00  
 TIME (NSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LLRYG3



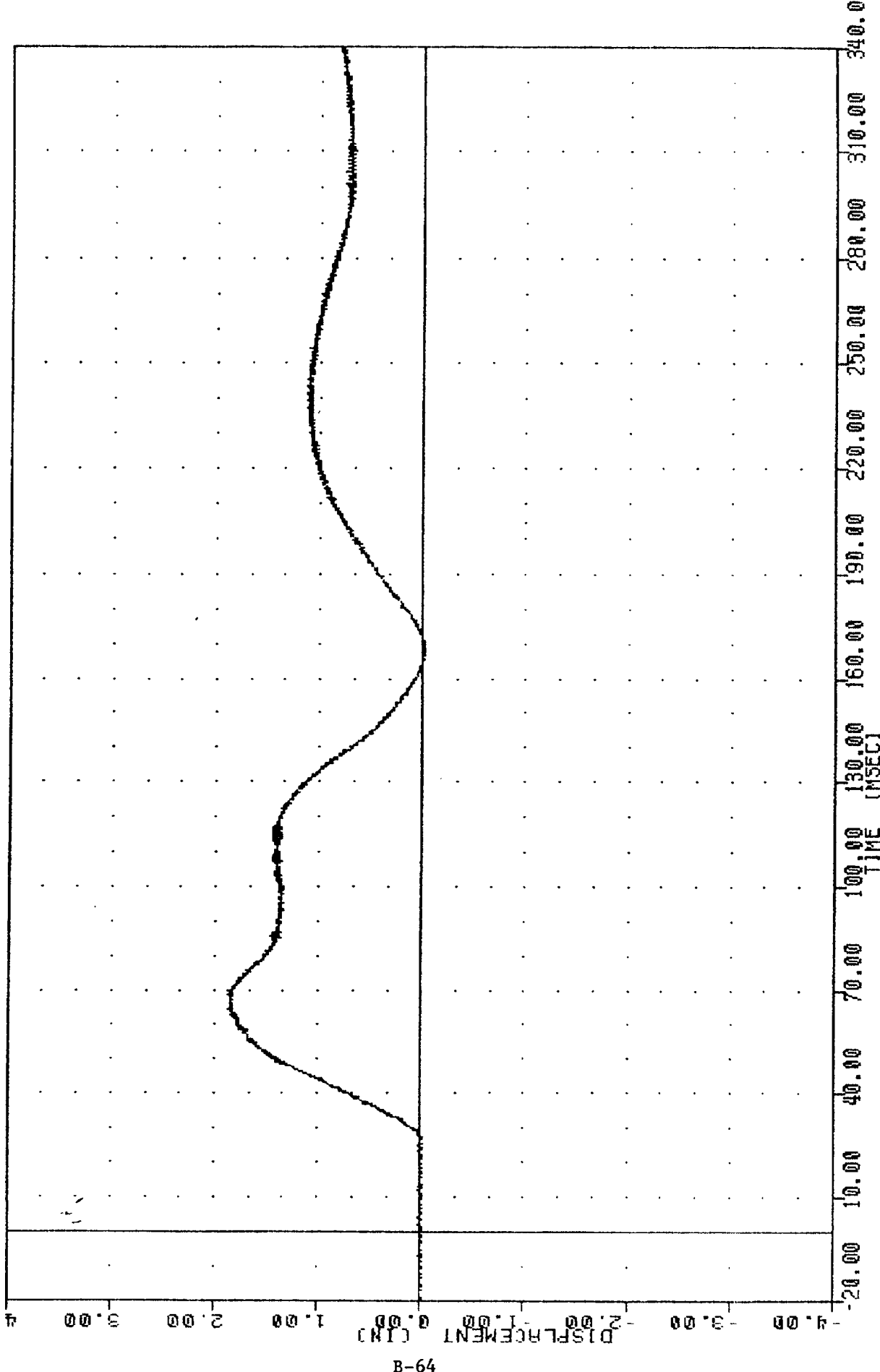
TMC 840621 PLUT DATE 17-JUL-84 08:12:19  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LLAYEC  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -16.33e 61.87, 86.61 e 28.75



INC 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LLRYVC  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -0.18 25.00 28.22 s 59.38  
 PLOT DATE 17-JUL-84 08:13:47



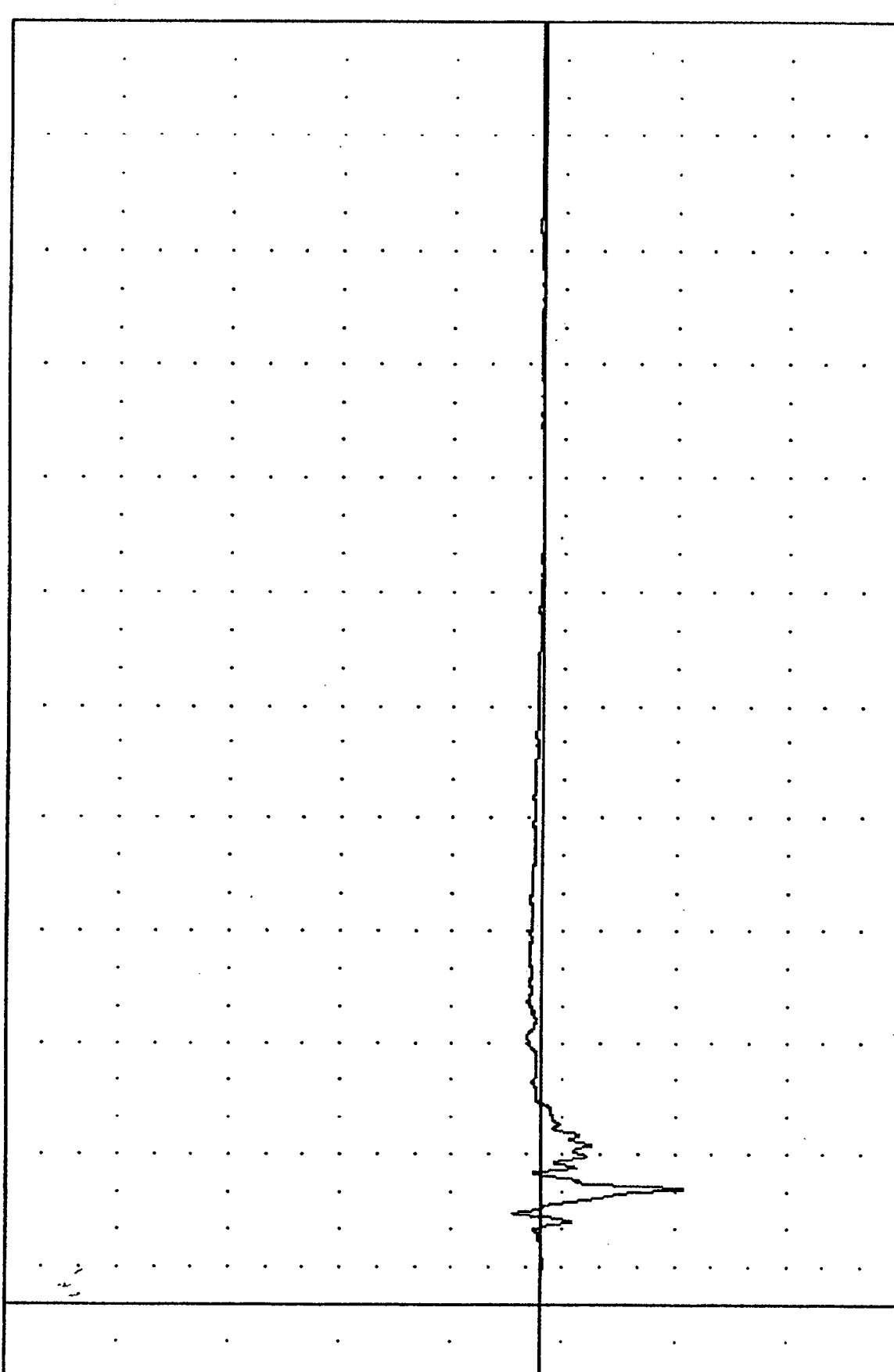
062000  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LRTYD3  
 FILTER = ALPF 1650/ 5217/ -40  
 MIN. MAX VALUES = -0.03e 27.50, 1.87 e 68.63  
 PLOT DATE 0 AUG 84 13:32:10



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

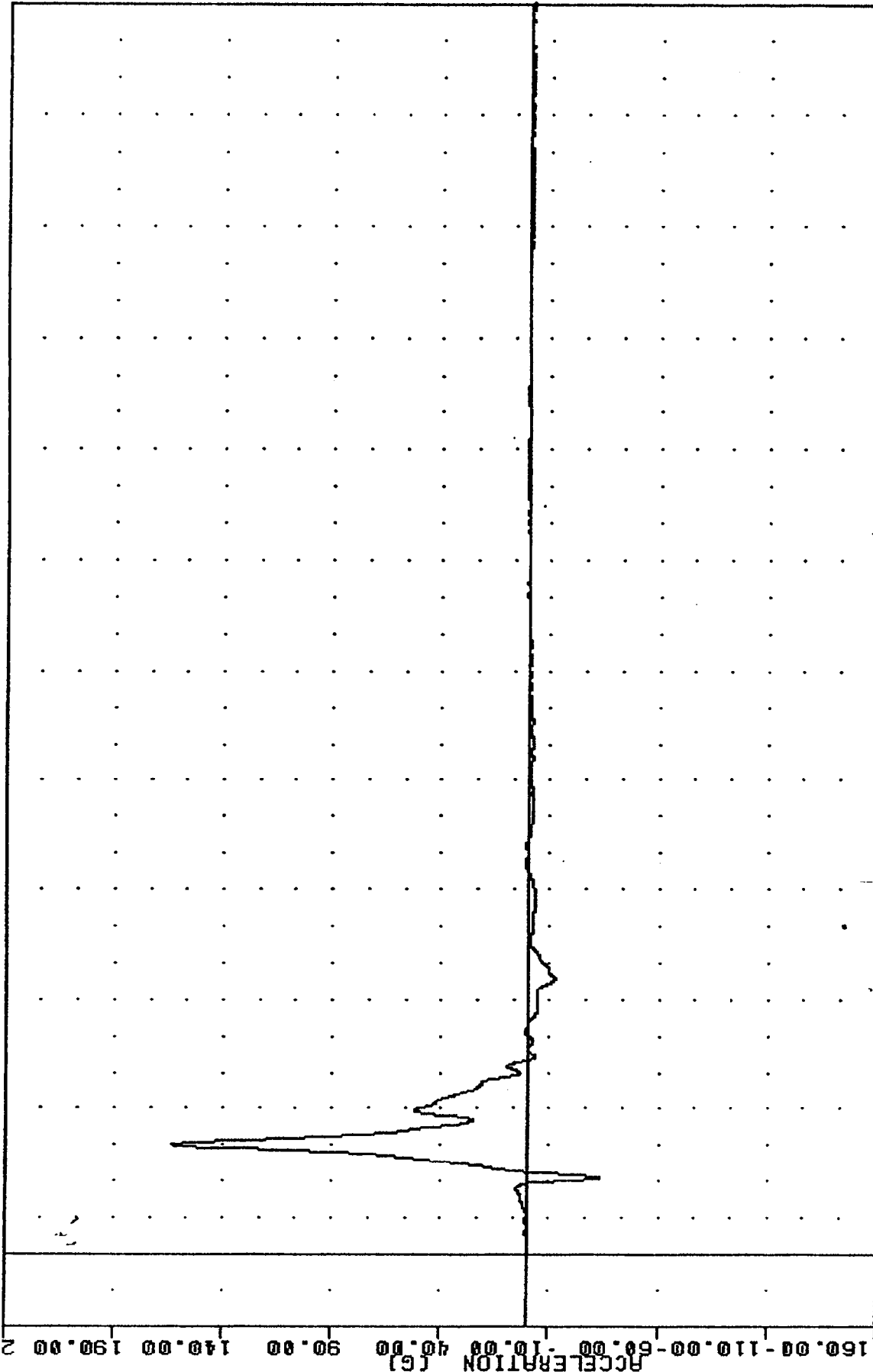
INC 840621 17-JUL-84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVXG3  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -63.70e 30.88, 12.39 e 24.00

ACCELERATION (G)  
 240.00  
 190.00  
 140.00  
 90.00  
 40.00  
 00.00  
 -10.00  
 -60.00  
 -110.00  
 -160.00



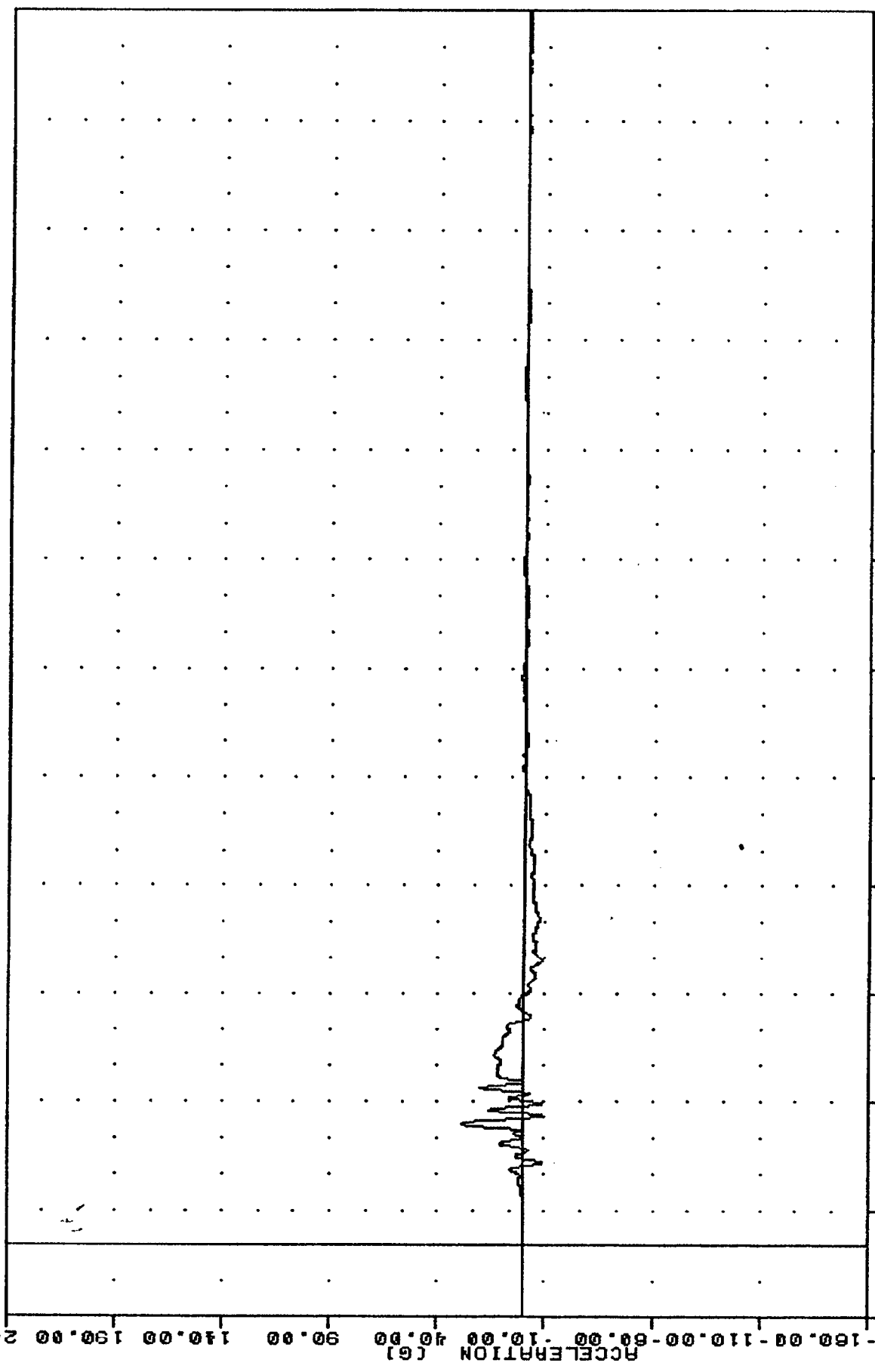
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER PELVIS ACCELERATION X AXIS

THE 040621 17 JUL 64 08:14:14  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEYVG3  
 FILTER = 8LPF 300/ 949/ -40  
 MIN, MAX VALUES = -33.13e 20.88, 162.84 e 29.88



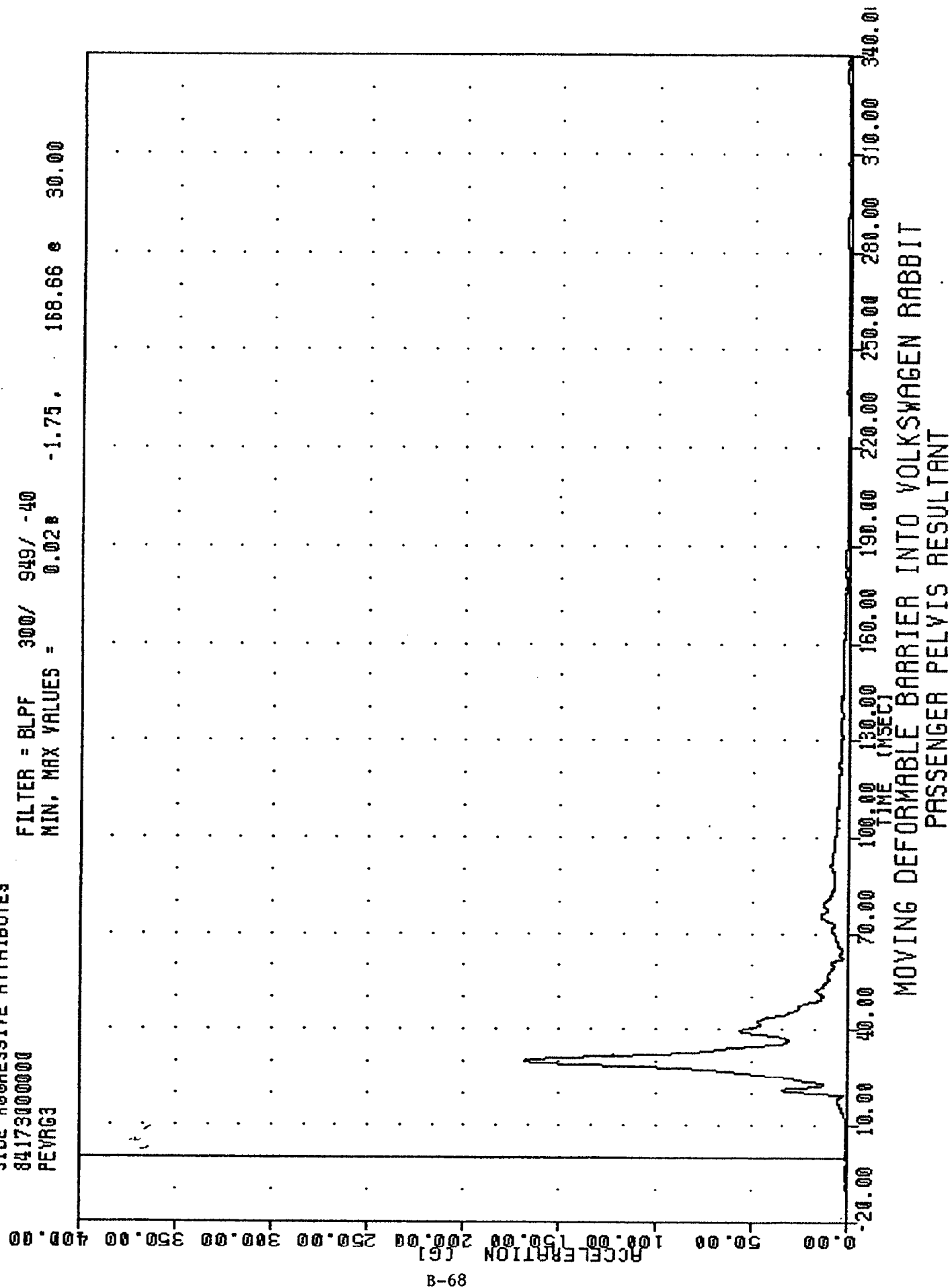
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME CMSEC  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER PELVIS ACCELERATION Y AXIS

TMO 0621 17 JUL 84 00:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVZ63  
 FILTER = BLPF 300/ 949/ .40  
 MIN, MAX VALUES = -9.18 35.75 28.88 33.50

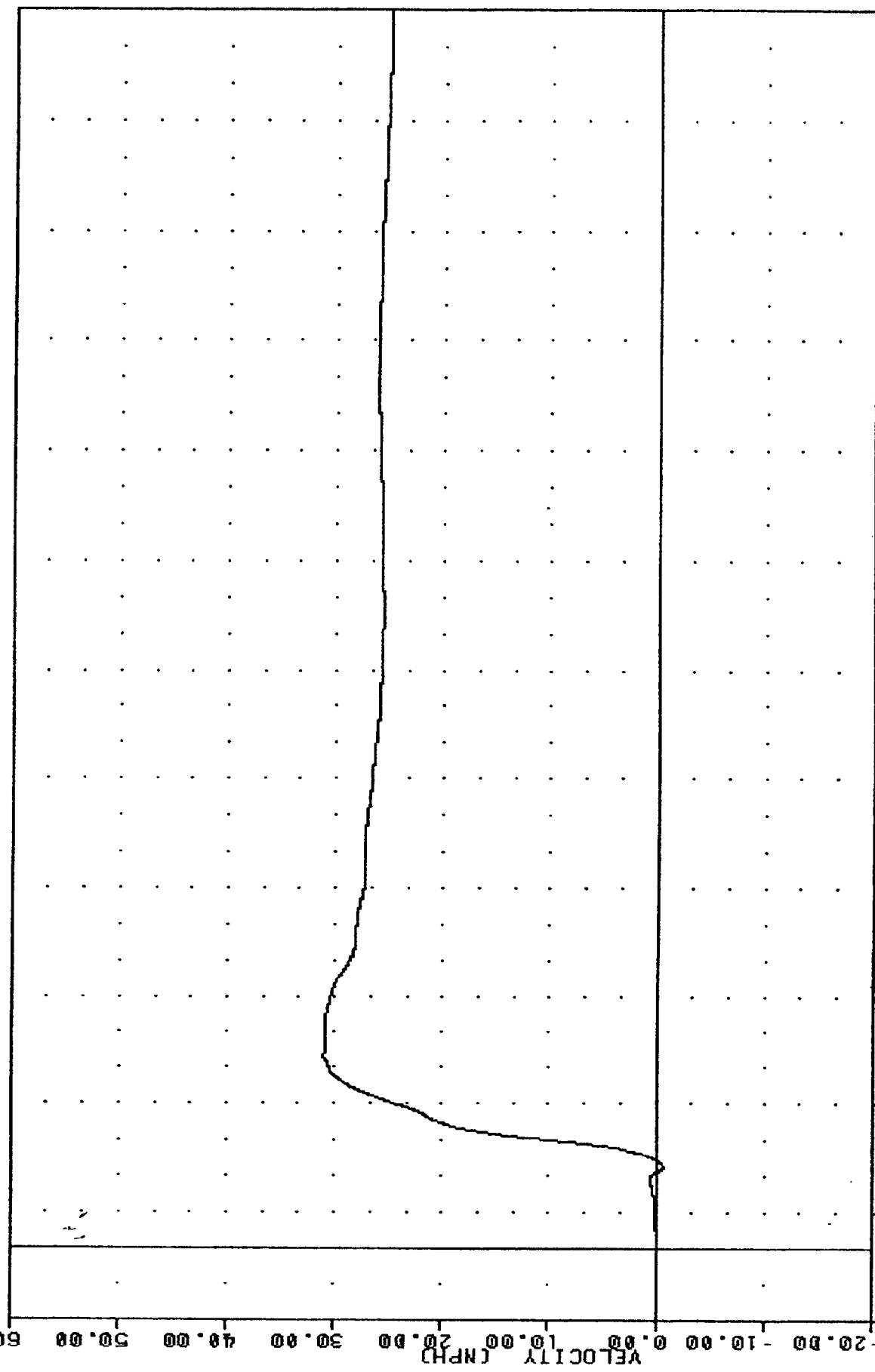


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (msec)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER PELVIS ACCELERATION Z AXIS

7810621 17 JUL 84 00:16:10  
SIDE AGGRESSIVE ATTRIBUTES  
84173000000  
PEVRG3  
FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = 0.028 -1.75. 168.66 e 30.00



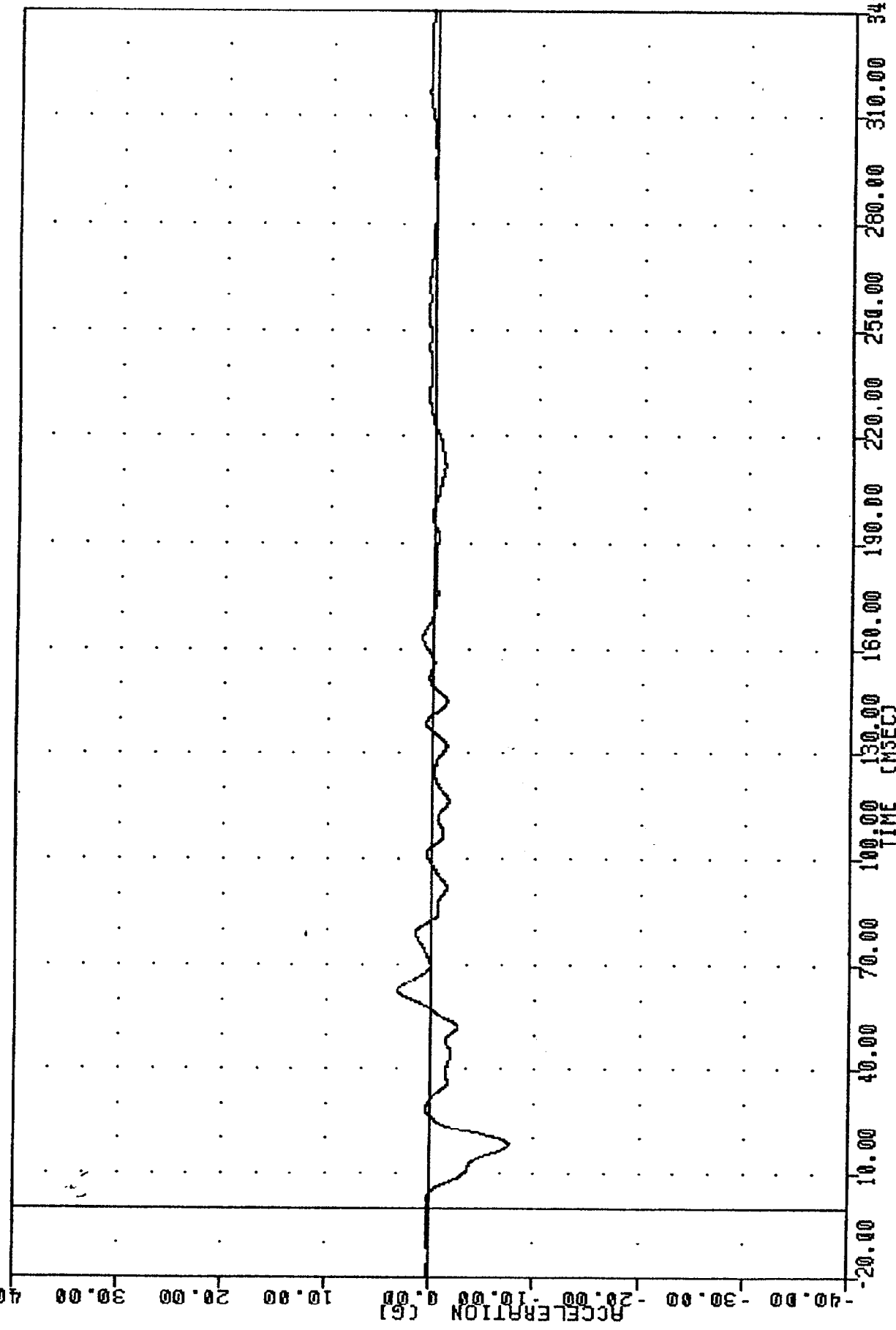
TMS 0621 17 JUL 84 00:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 PEVYV3  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -0.68 22.38 31.01 53.38



-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 PEVYV3



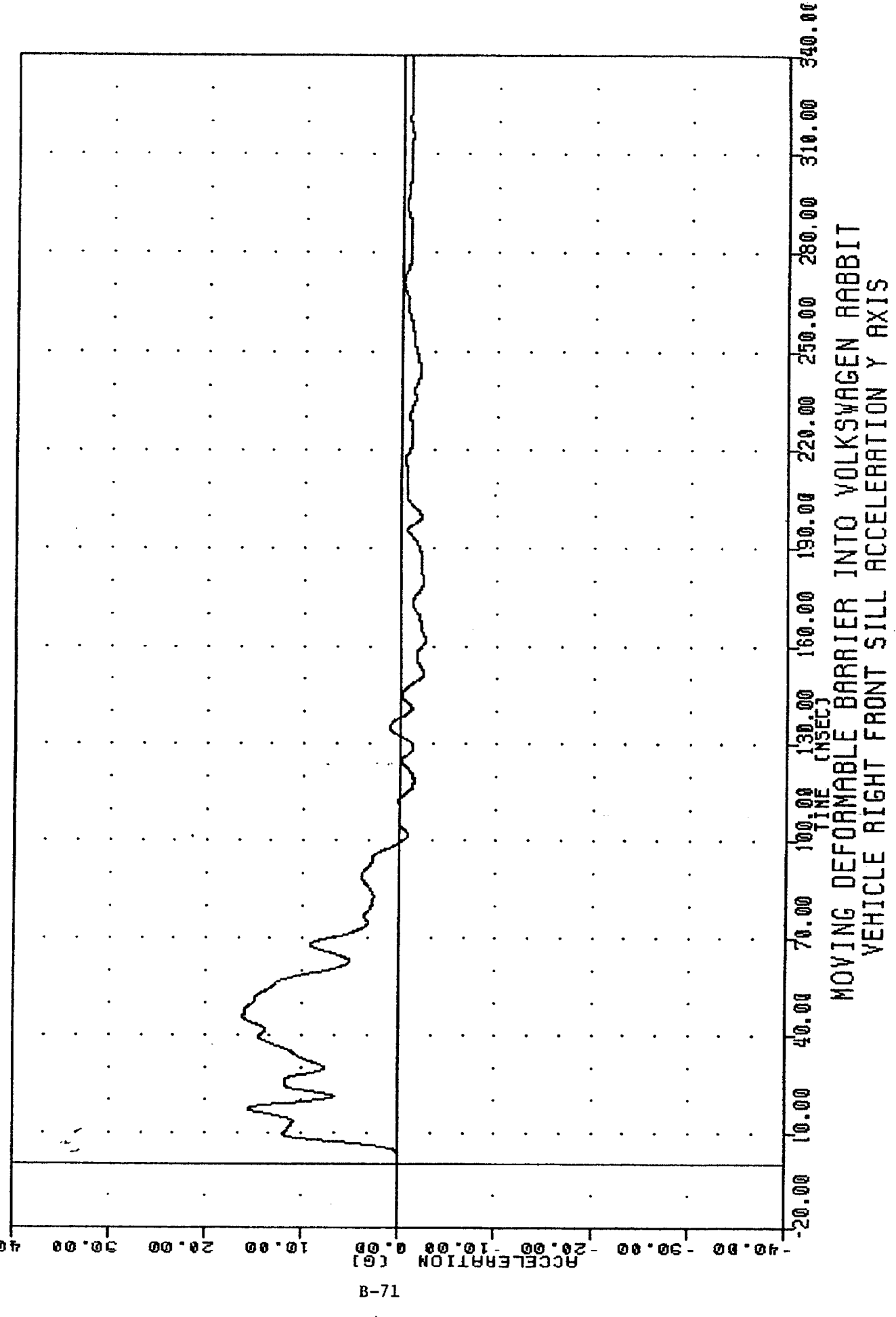
THE 040621 17 JUL 84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RFSXG1  
 FILTER = 8LPF 100/ 316/ -40  
 MIN. MAX VALUES = -7.53e 18.13, 3.24 e 62.50



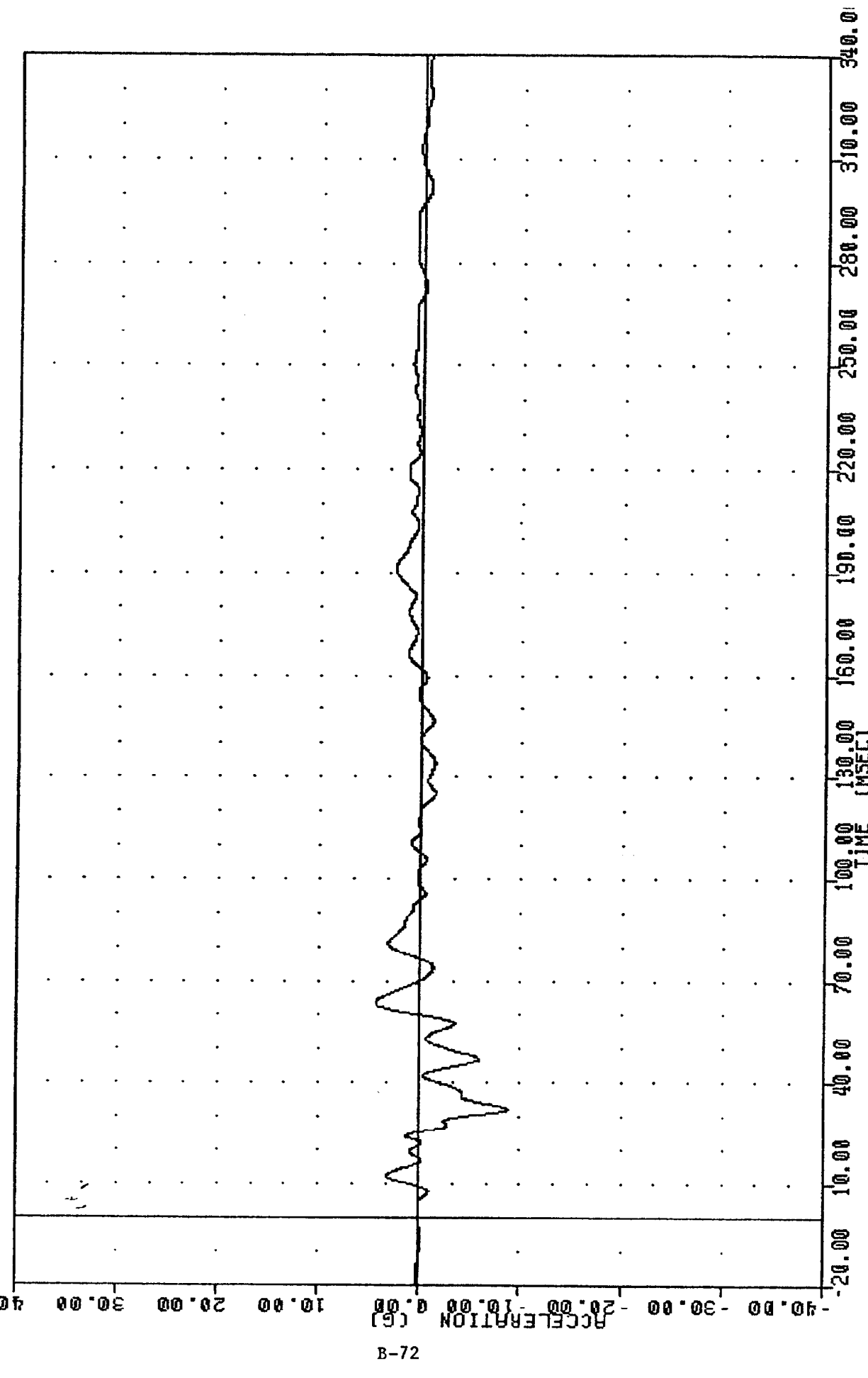
B-70

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

THE 0621 17 JUL 84 06:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RFSY61  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -2.45e 162.00, 16.11 e 45.63

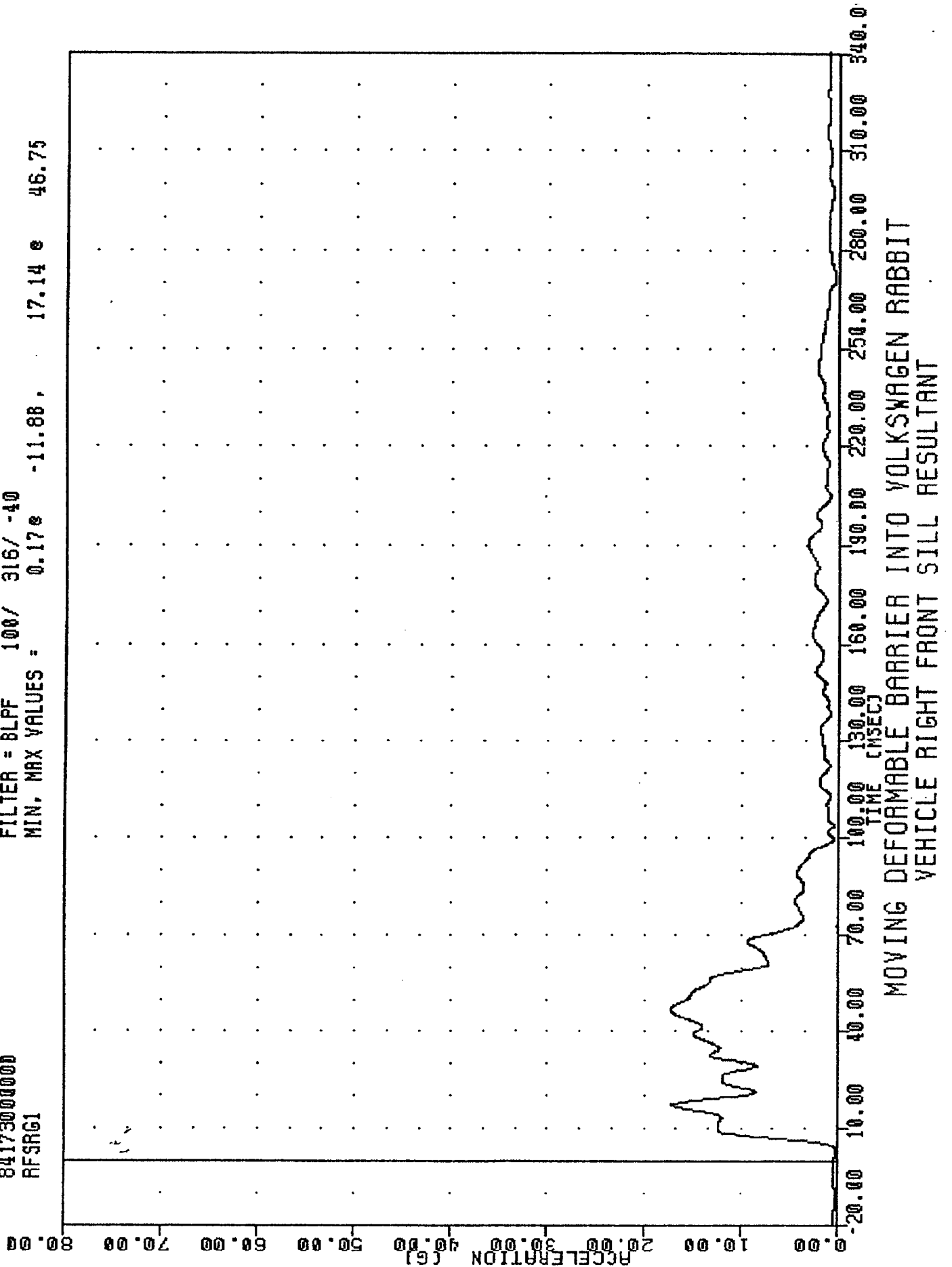


THE 040621 PLOT DATE 17-JUL-84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RFSZG1  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -8.78 32.13, 4.40 63.38

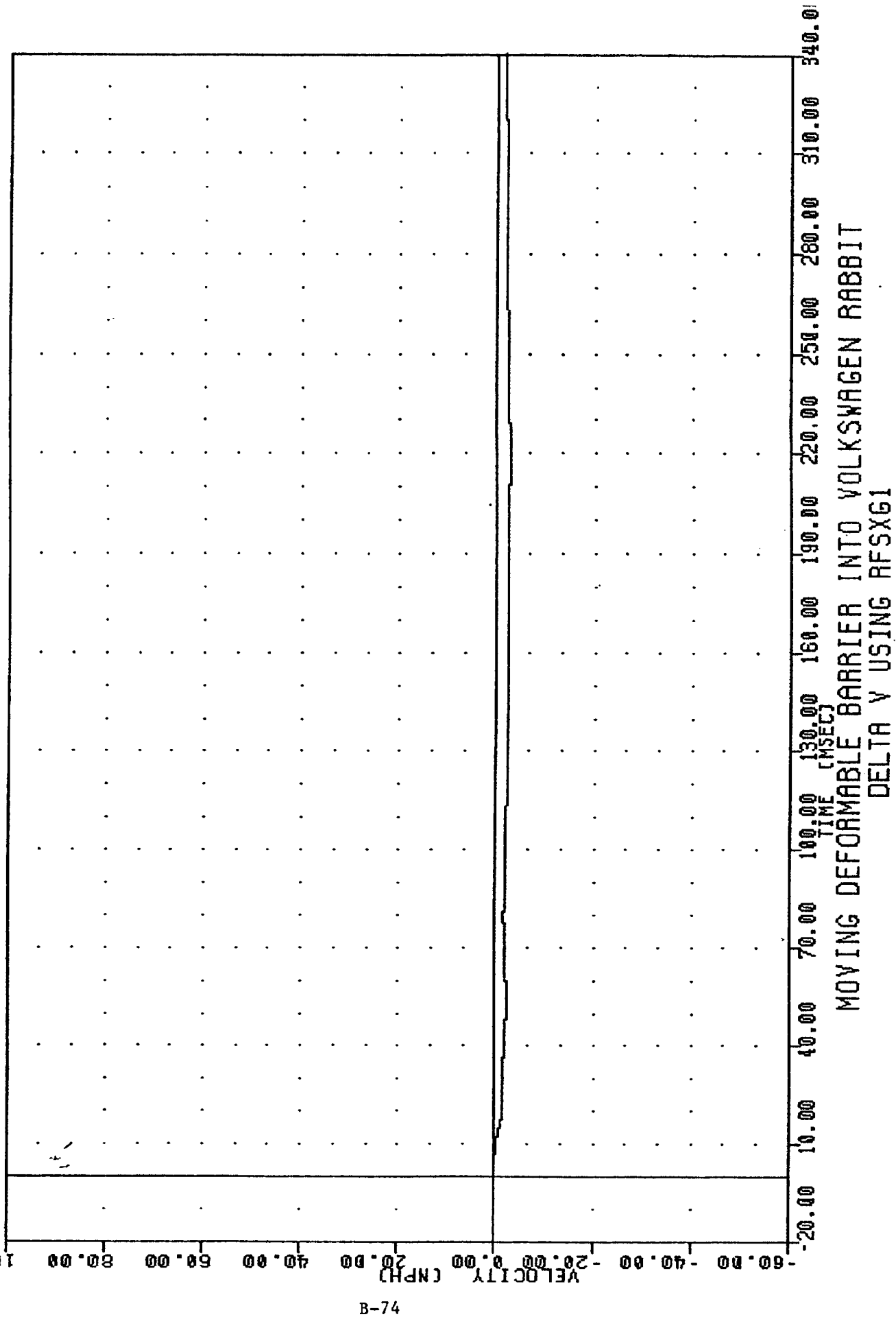


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE RIGHT FRONT SILL ACCELERATION Z AXIS

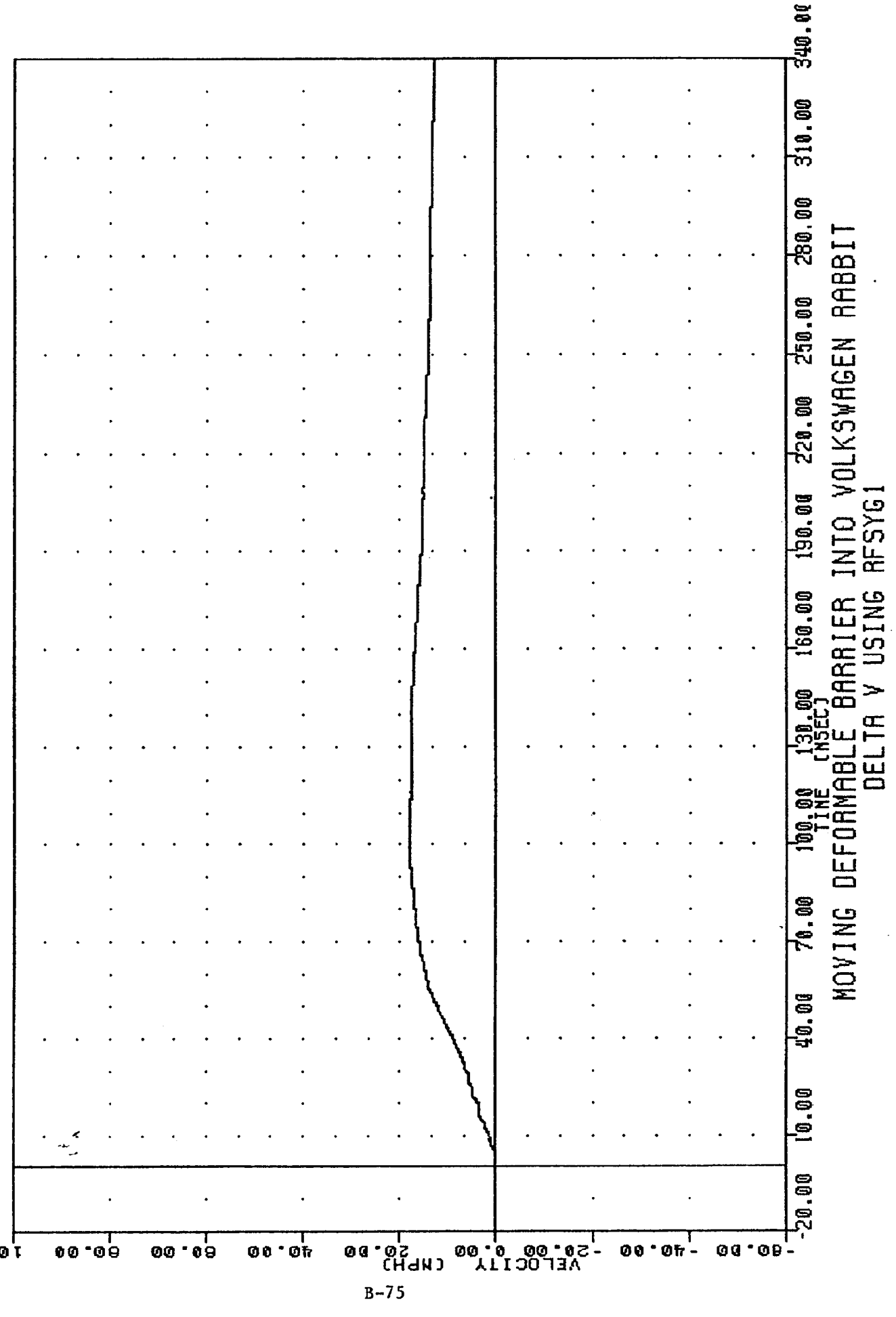
THE 040621 17 JUL 84 08:16:18  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RFSRG1  
 FILTER = 8LPF 100/ 316/ -40  
 MIN. MAX VALUES = 0.17e -11.88, 17.14 e 46.75



TRC 840621, 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RFSXV1  
 FILTER = 8LPF 300/ 949/ -40  
 MIN. MAX VALUES = -2.68e 219.50, 0.12 e 3.13

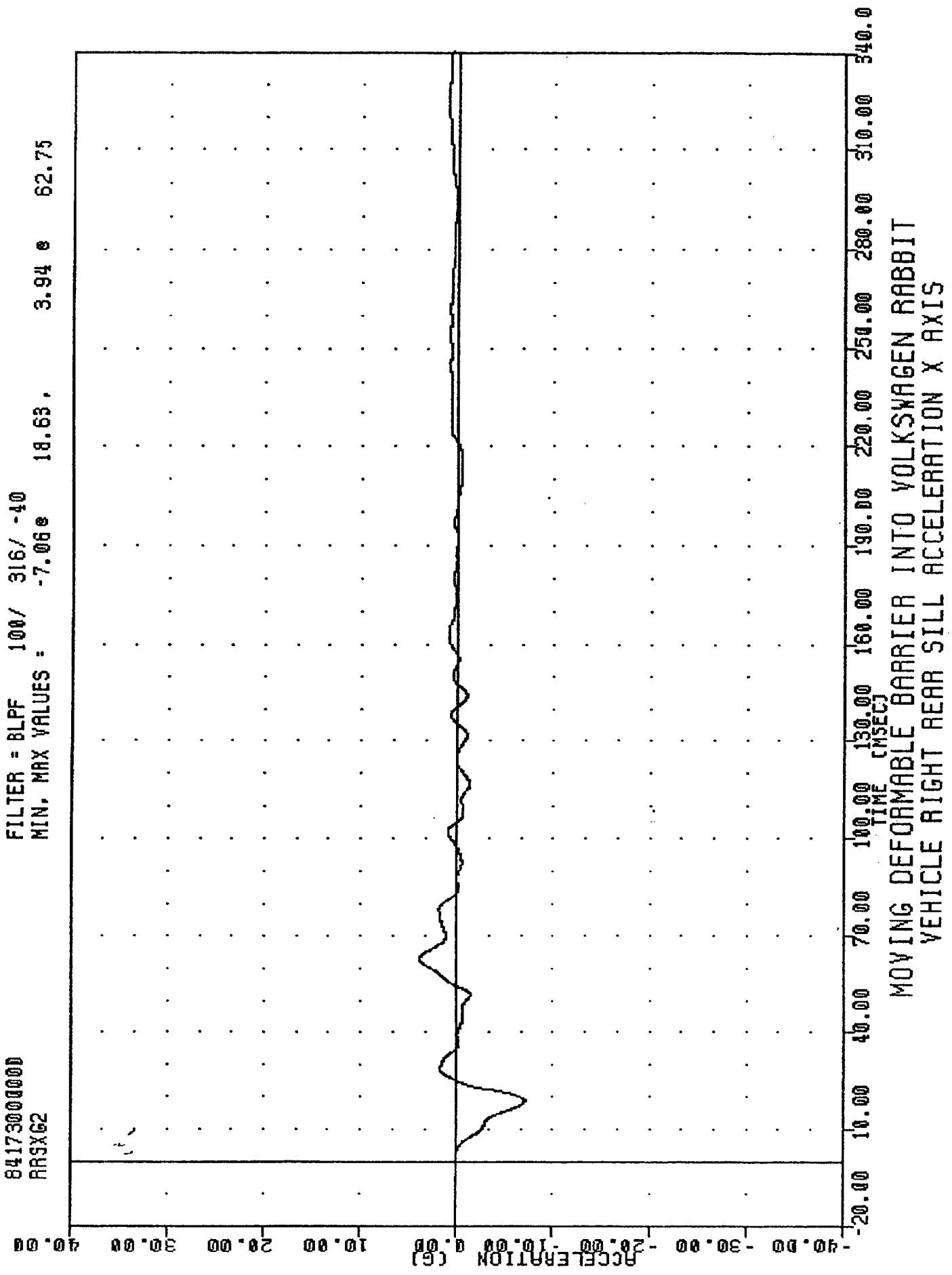


TMC 040621 17 JUL 84 00:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 841730000010  
 RFSYV1  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 0.00e -20.00, 17.94 e 95.00



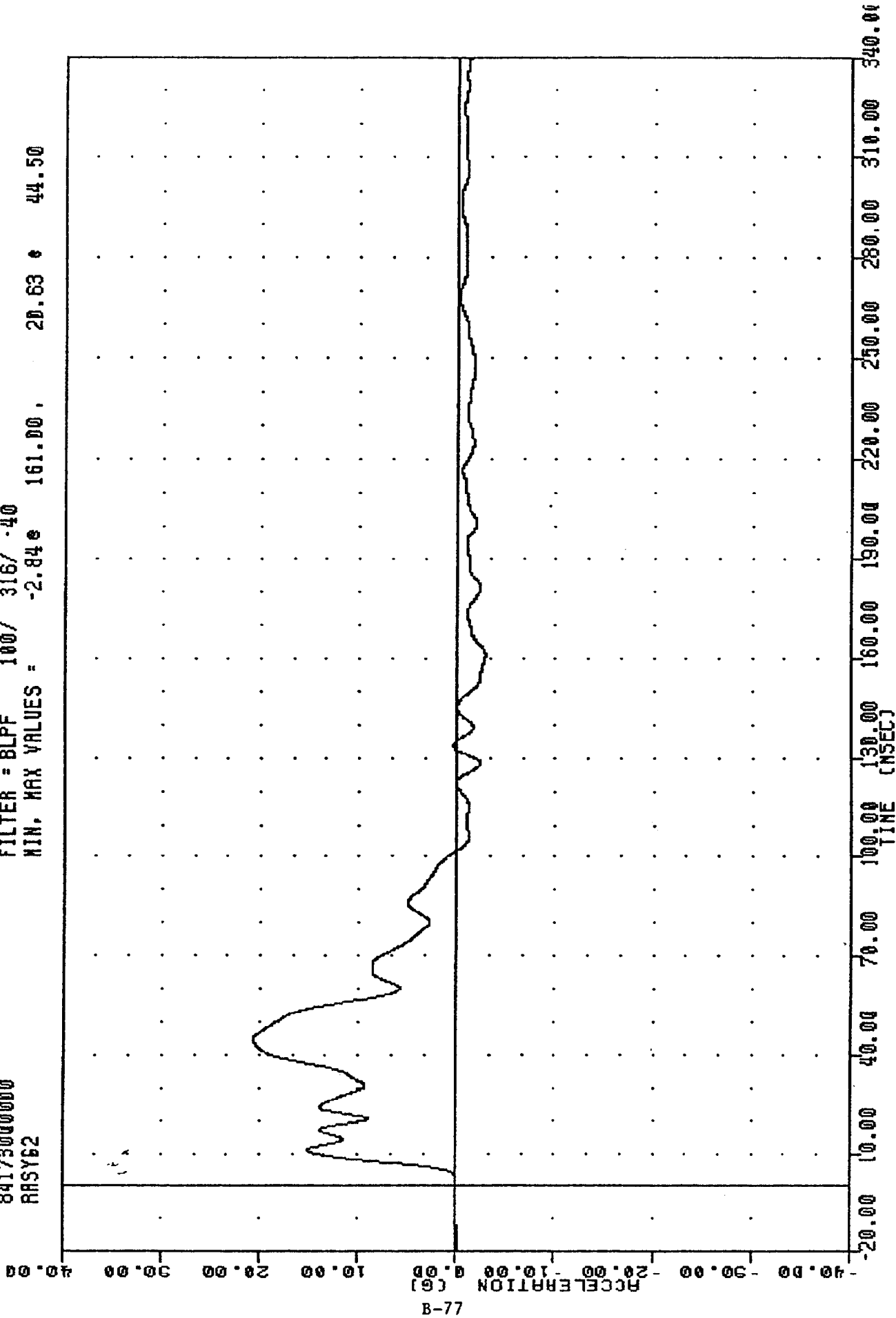
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING RFSYGI

TMC 040621 17 JUL 84 06:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RRSX62  
 FILTER = 8LPF 100/ 316/ -40  
 MIN, MAX VALUES = -7.06e 18.63, 3.94 e 62.75



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

THE 0621 PLUT DATE 17 JUL 84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RASY62  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -2.84e 161.00, 20.63 e 44.50

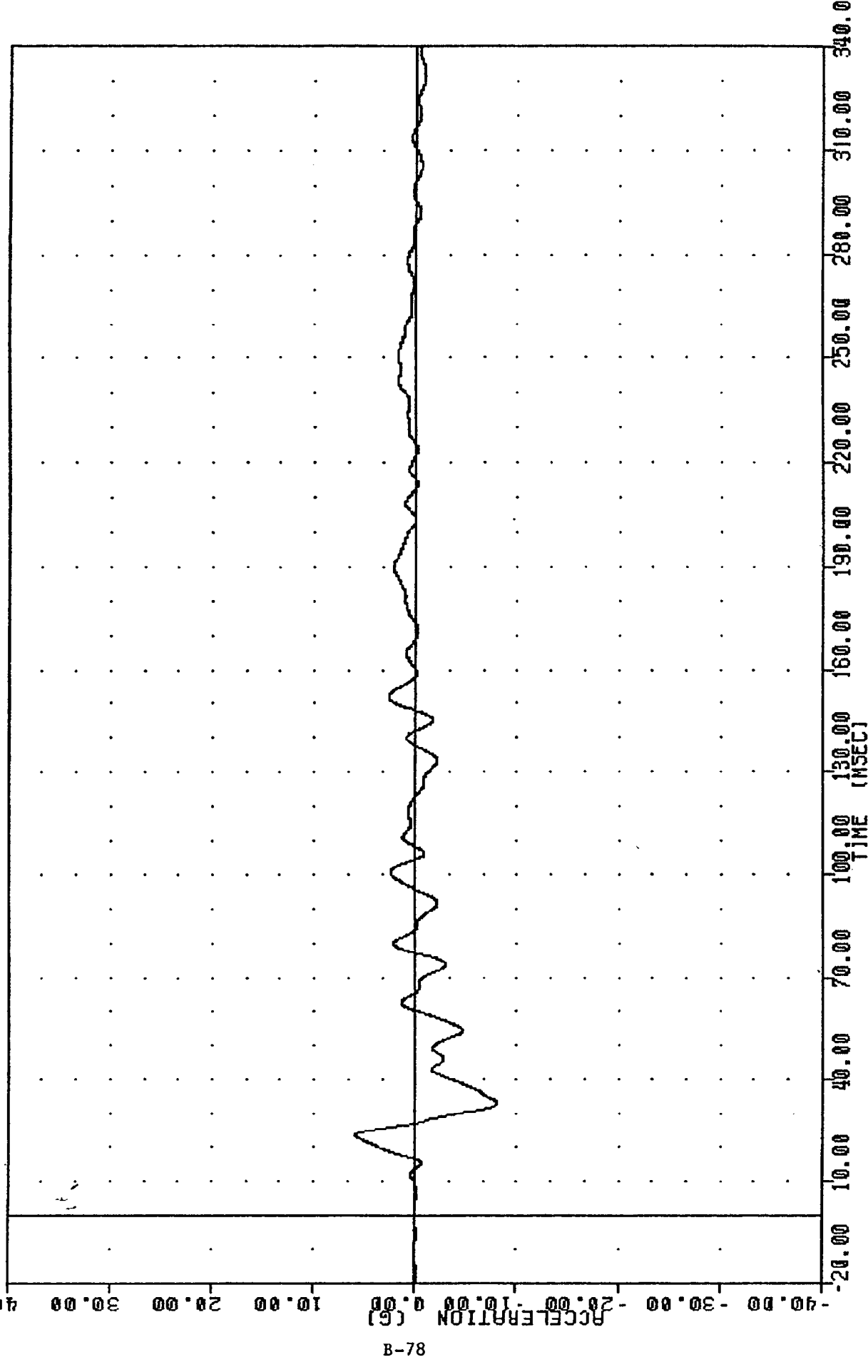


B-77

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



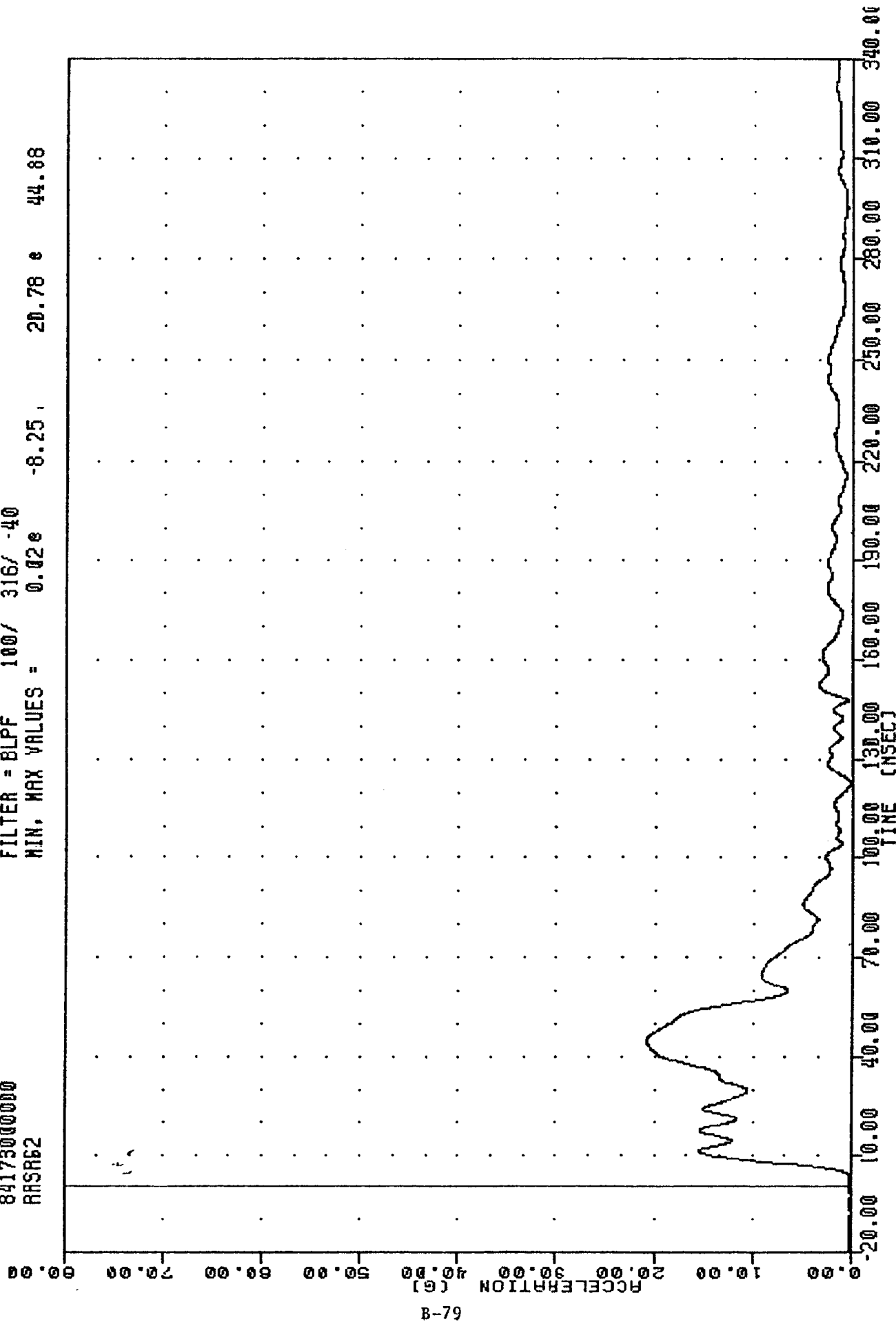
THE 040621 17 JUL 84 00:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RRSZG2  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -8.108 33.00, 5.92 23.25



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

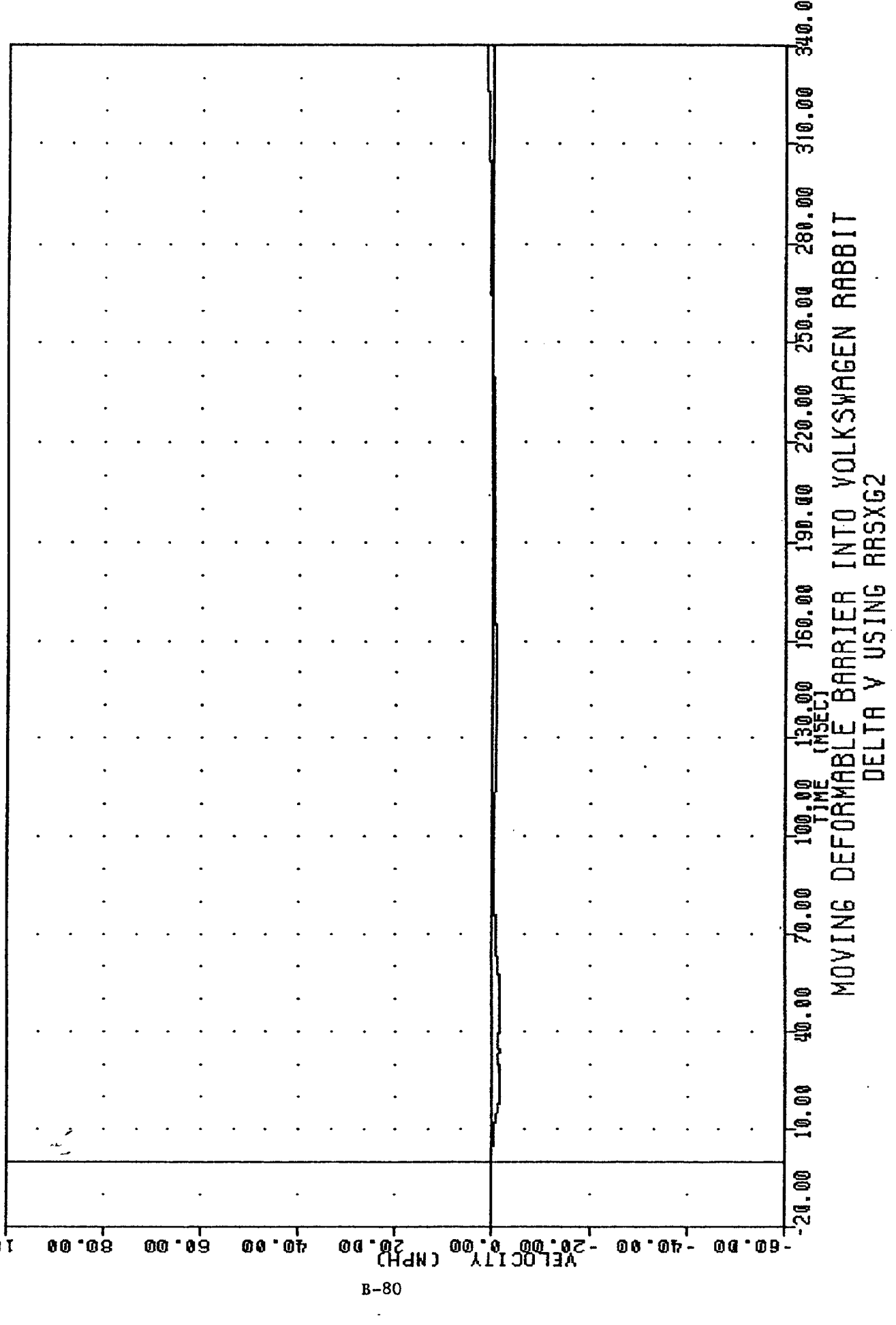
FILTER = BLPF 100/ 316/ -40  
MIN. MAX VALUES = 0.028

20.78 e 44.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE RIGHT REAR SILL RESULTANT

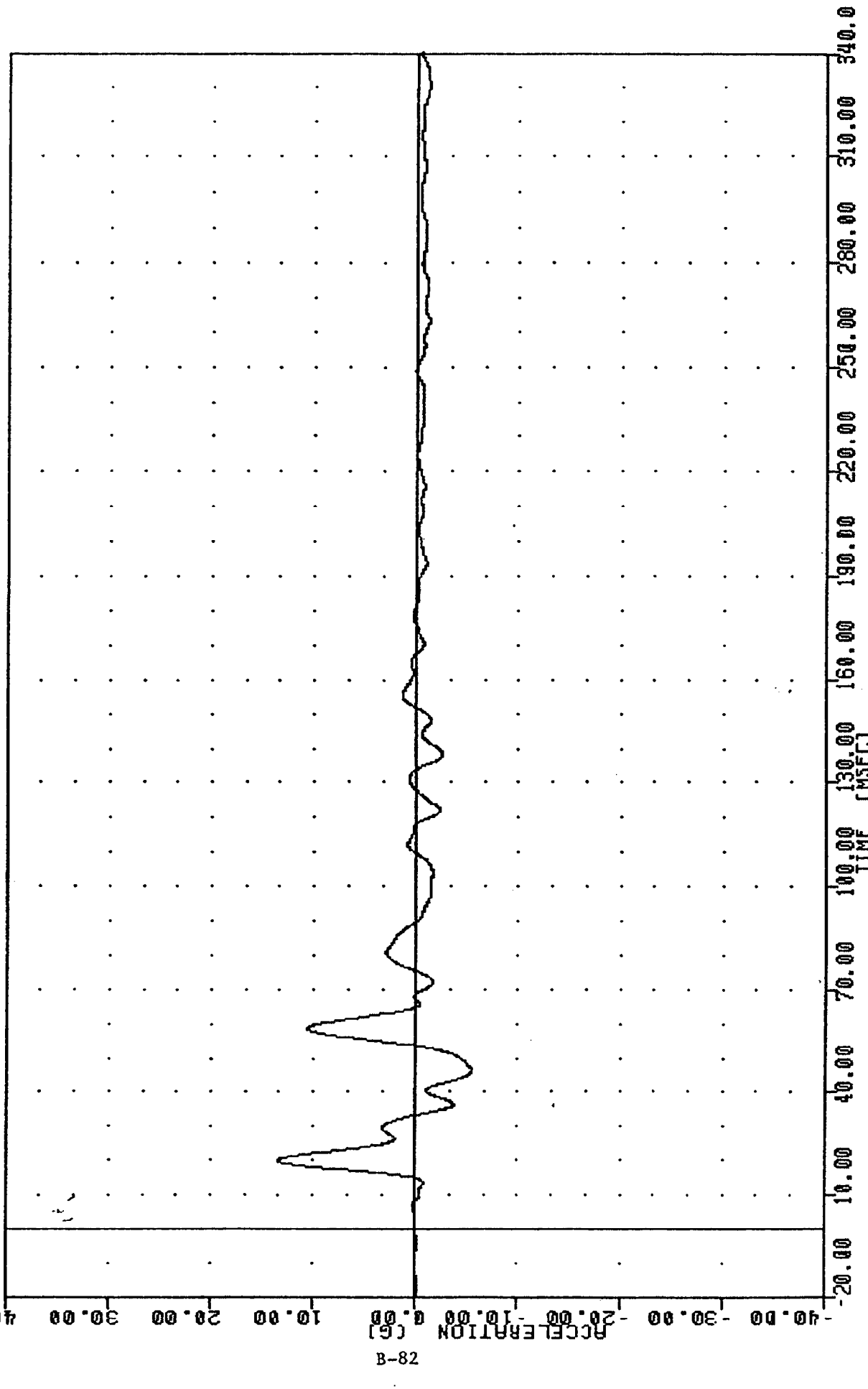
TRC 840621 17-JUL-84 08:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 RRSXY2  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -1.56 24.50, 1.51 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA Y USING RRSXG2



THE 840621 17 JUL 84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 ROKXG3  
 FILTER = 8LPF 100/ 316/ -40  
 MIN, MAX VALUES = -5.48e 46.00, 13.44 e 19.88



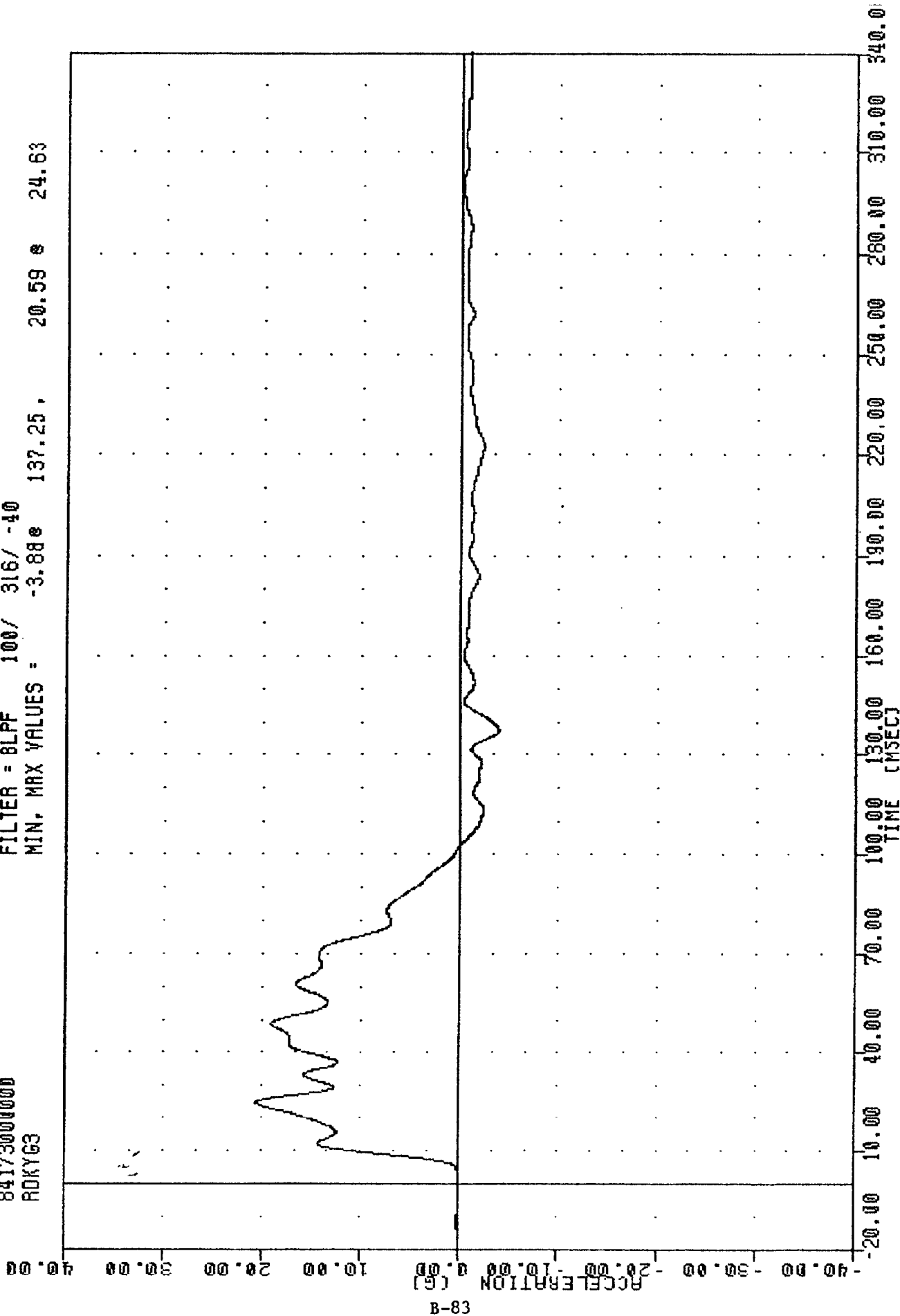
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE REAR DECK ACCELERATION X AXIS

T 062  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 ROKYG3

PUG-2

10:05:23

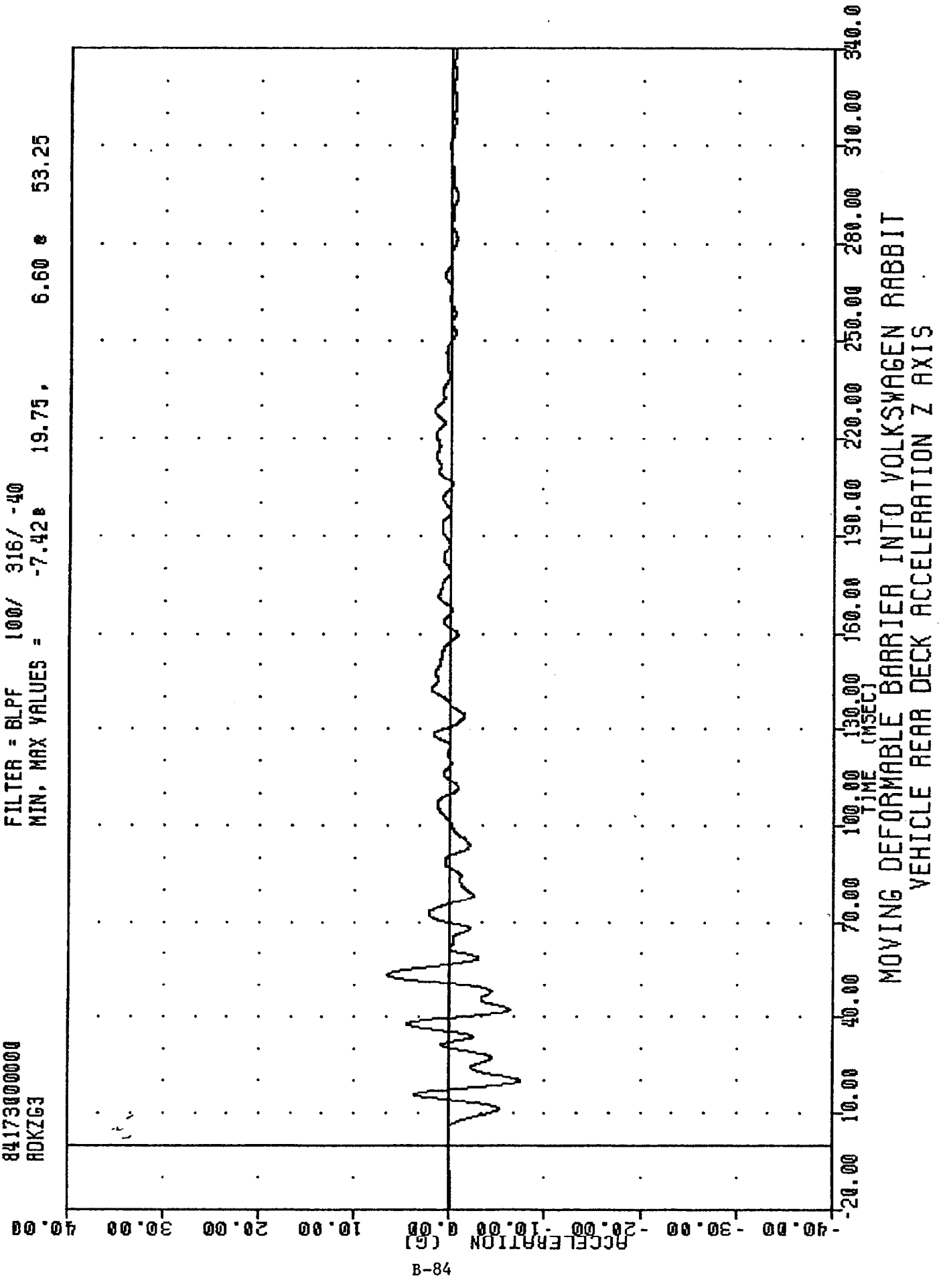
FILTER = 8LPP 100/ 316/ -40  
 MIN, MAX VALUES = -3.88e 137.25, 20.59 e 24.63



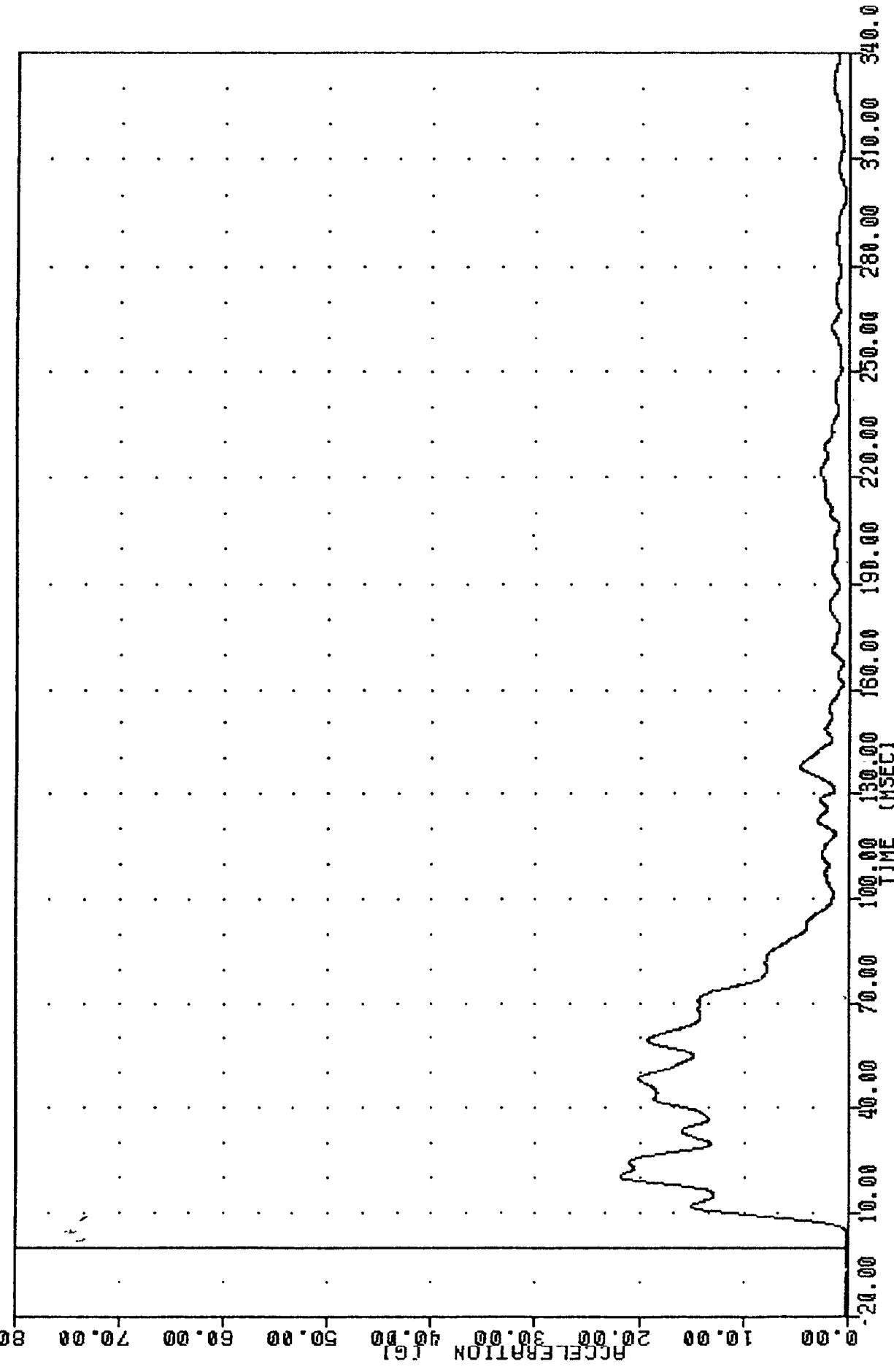
B-83

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

MIC 010621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 ROKZG3  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -7.42 19.75, 6.60 53.25  
 PLOT DATE 17 JUL 84 00:14:44



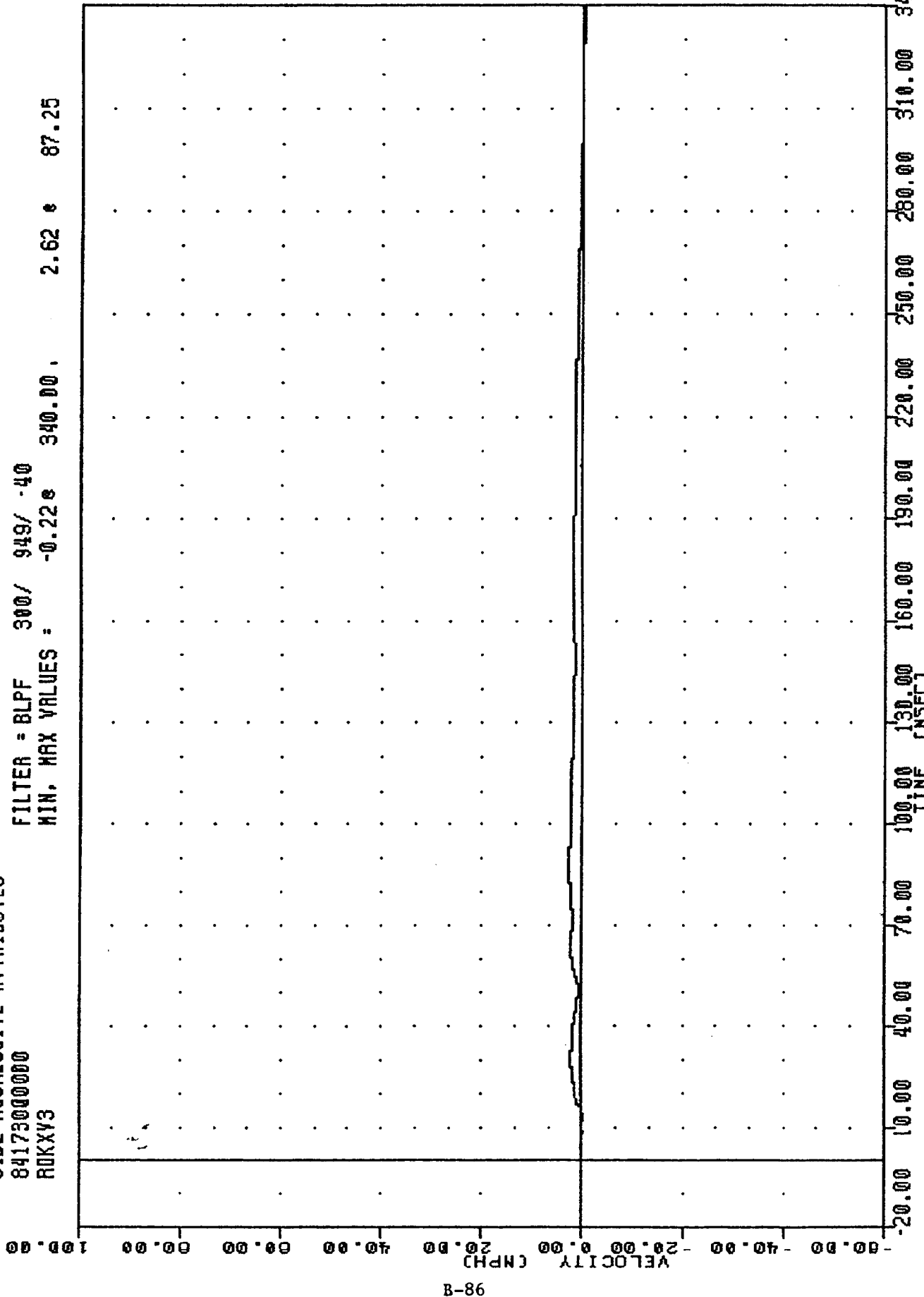
INC 040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 04173000000  
 RDKRG3  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = 0.048 -7.00, 21.87 e 20.13  
 PLOT DATE 17 JUL 84 00:16:10



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE REAR DECK RESULTANT



THE 040621 PLT DATE 17 JUL 84 00:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 ROKXY3  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -0.228 340.00, 2.62 87.25



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING RDKXG3

TRC 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 ADKYV3

PLOT DATE 2-AUG-84 16:00:18

FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 0.00 25.06 100.00

100.00

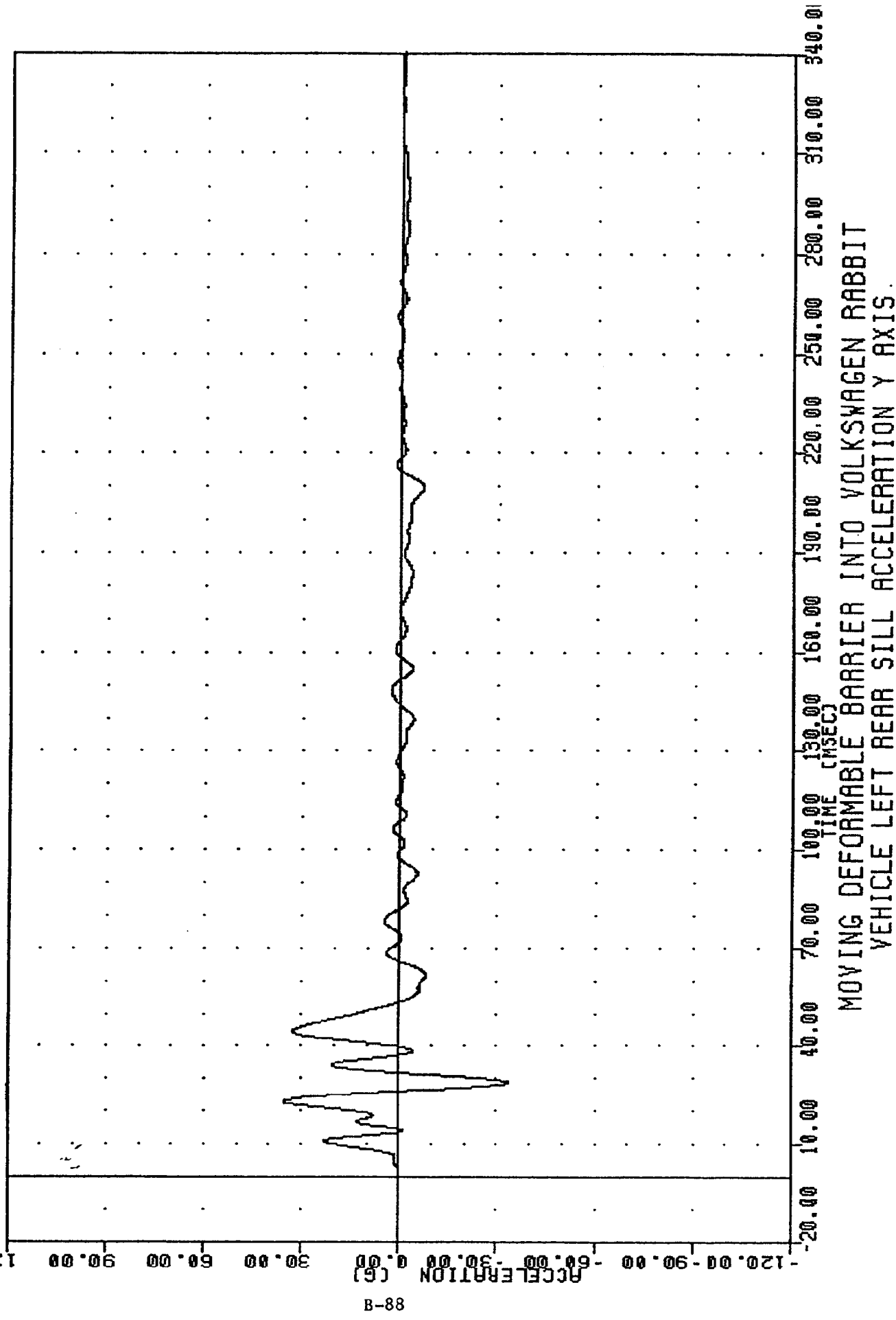


B-87

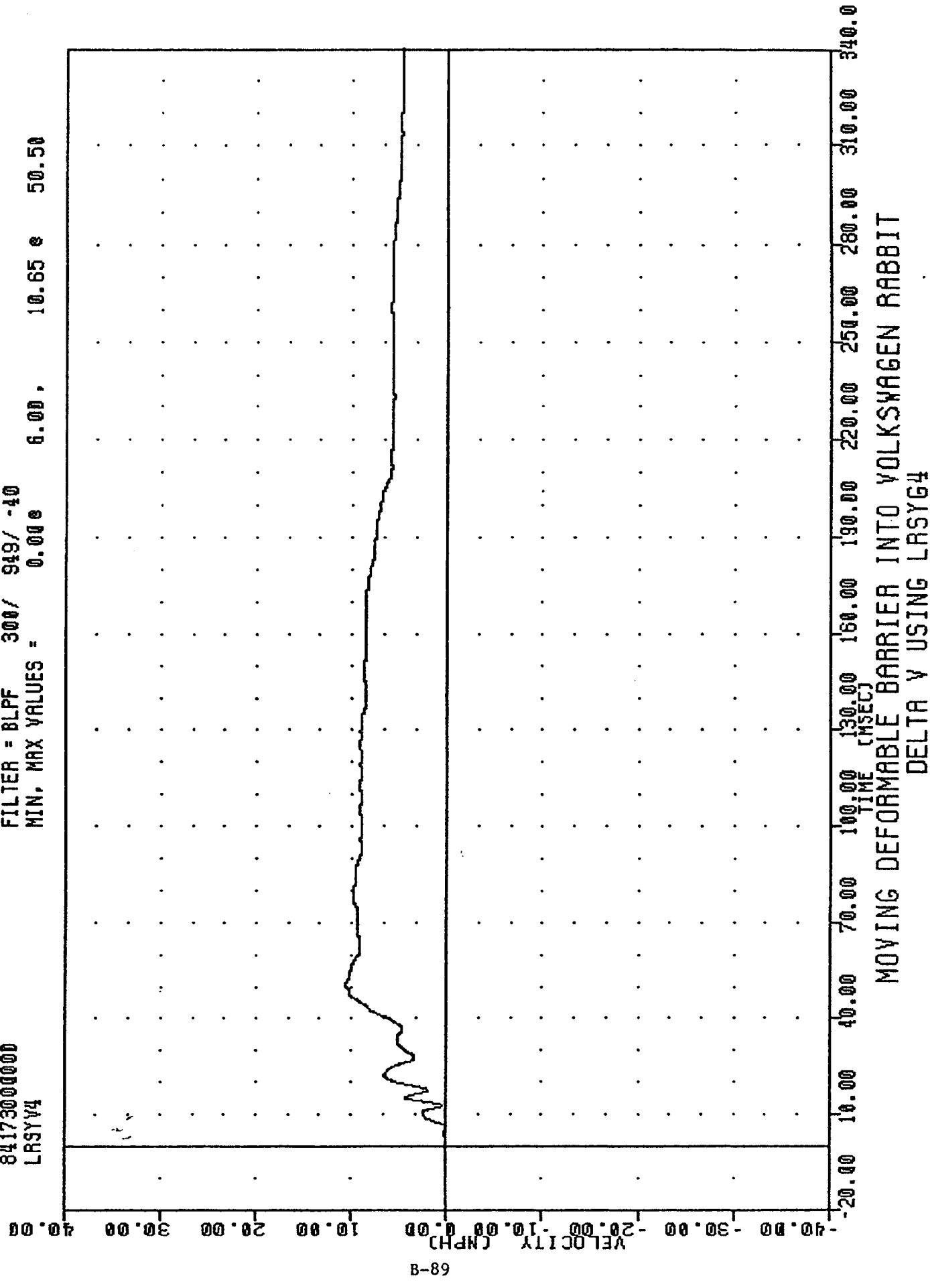
-60.00 -40.00 -20.00 0.00 20.00 40.00 60.00 80.00 100.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING ADKYG3

TEST NO. 0621 PLOT DATE 1 JUL 81 00:14:41  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LRSYG4  
 FILTER = 8LPF 100/ 316/ -40  
 MIN. MAX VALUES = -33.54e 28.63, 35.33 e 22.75

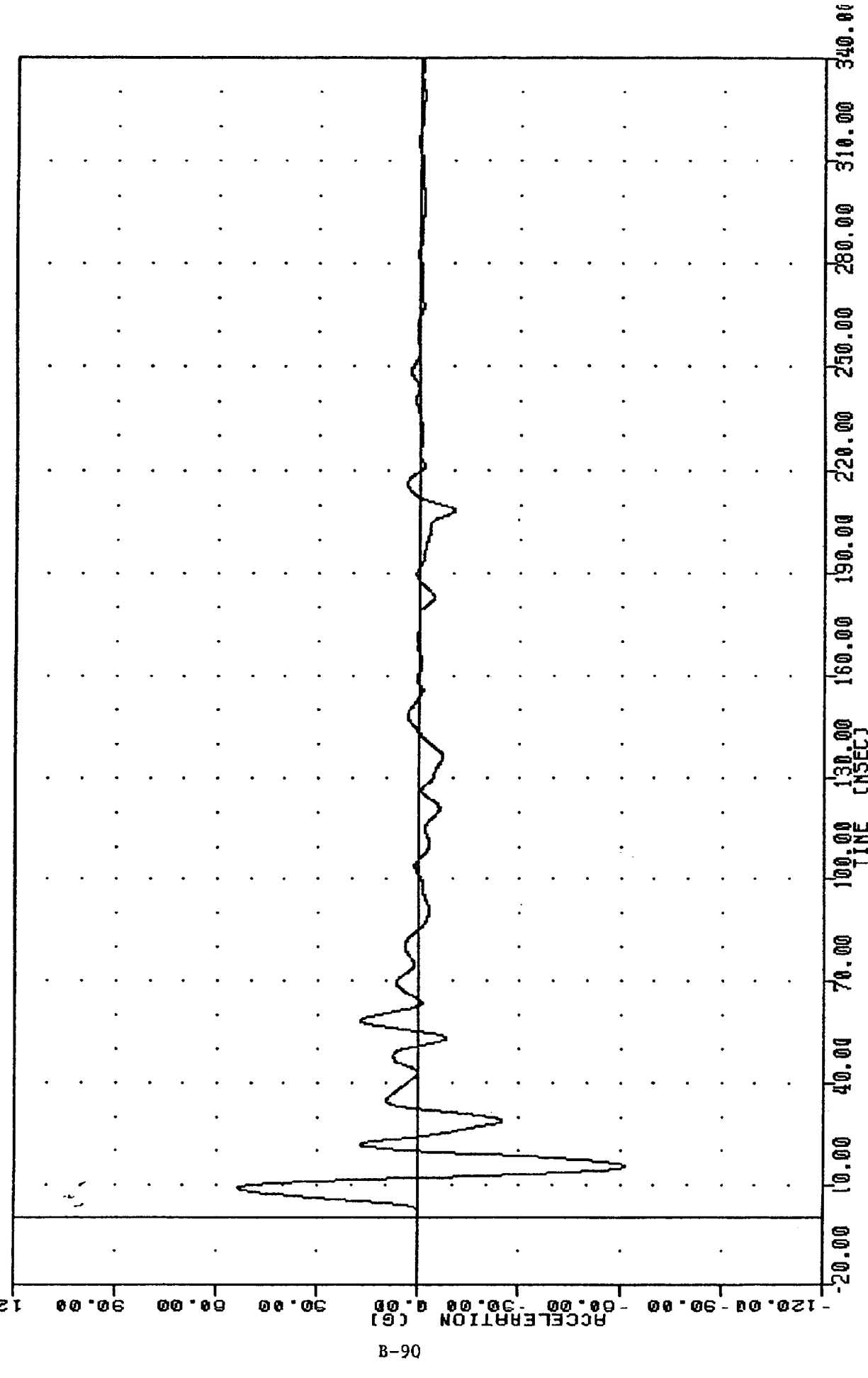


THE 810621 PLOT DATE 17 JUL 84 0016:12  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LRSYV4  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 0.000 6.00, 10.65 50.50



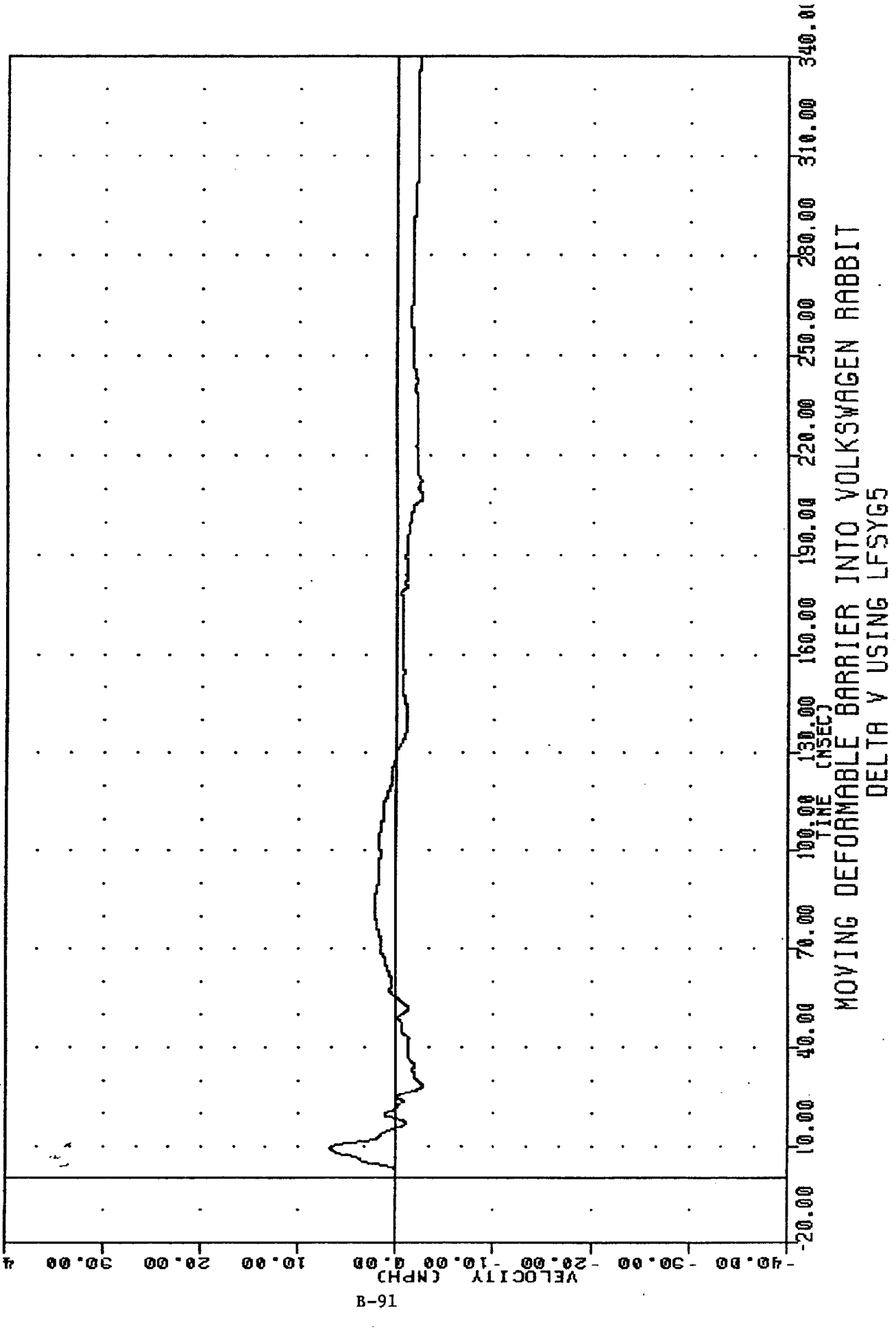
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LRSYV4

THE 040621 17 JUL 84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFSY65  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -61.71 15.13 53.61 8.75

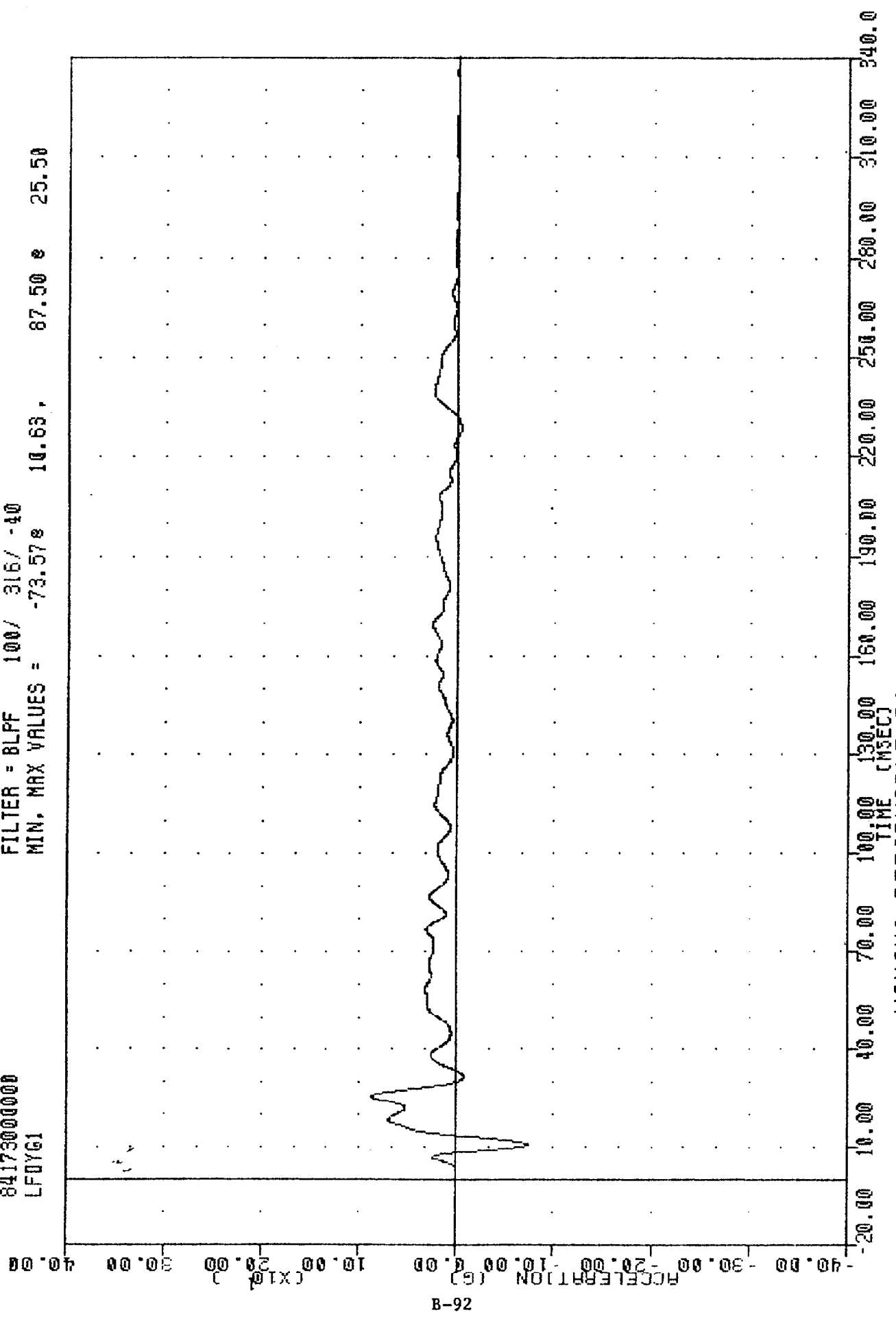


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS.

THE 040621 17 JUL 84 08:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFSY45  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -2.81e 28.13, 6.74 e 9.25

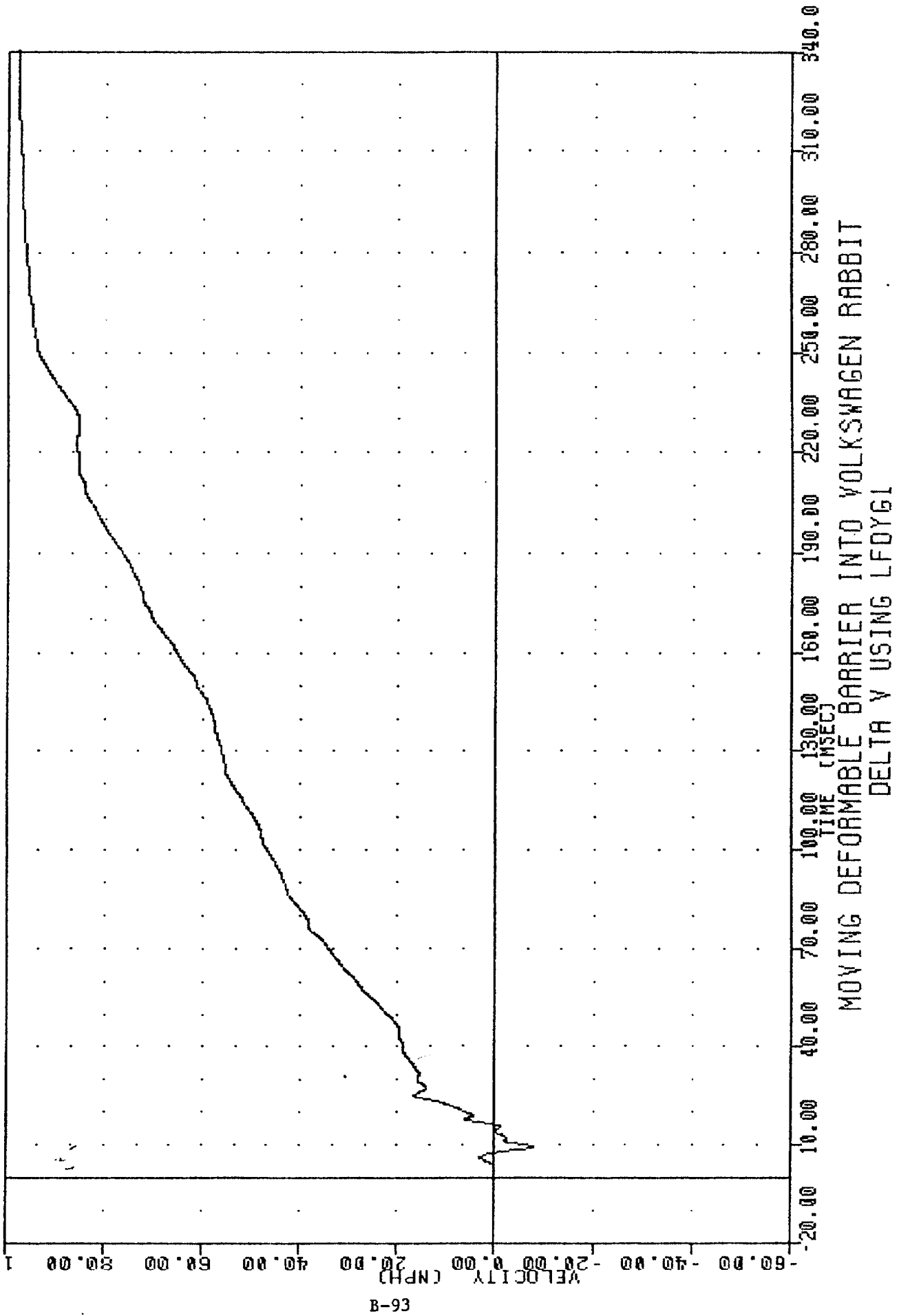


INC 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFOYG1  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -73.57 10.63, 87.50 25.50  
 PLOT DATE 3-AUG-84 13:52:18



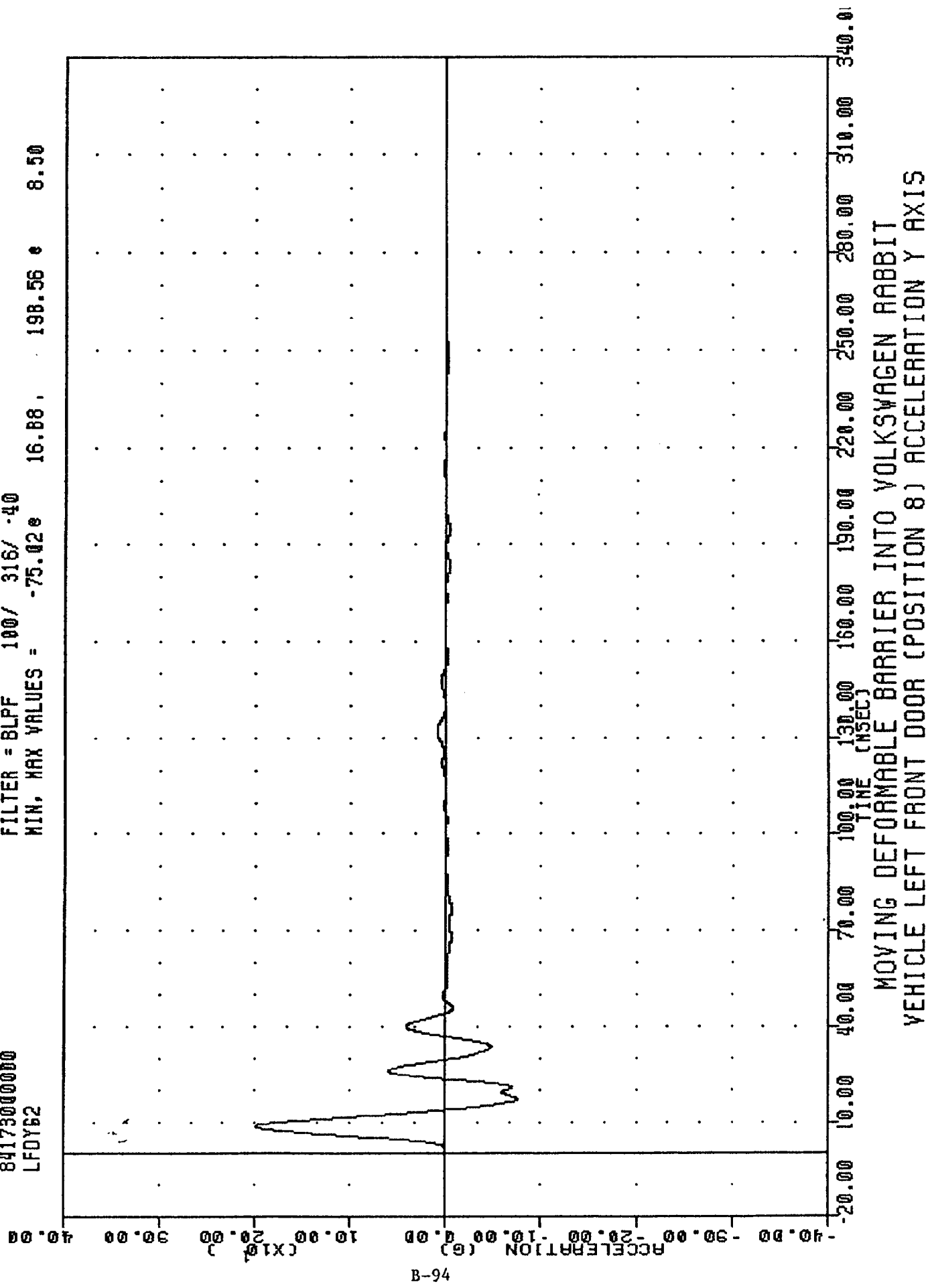
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE LEFT FRONT DOOR (POSITION 6) ACCELERATION Y AXIS

THE 040621 10:00:10  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFOYV1  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -7.868 9.13, 97.89 s 340.00

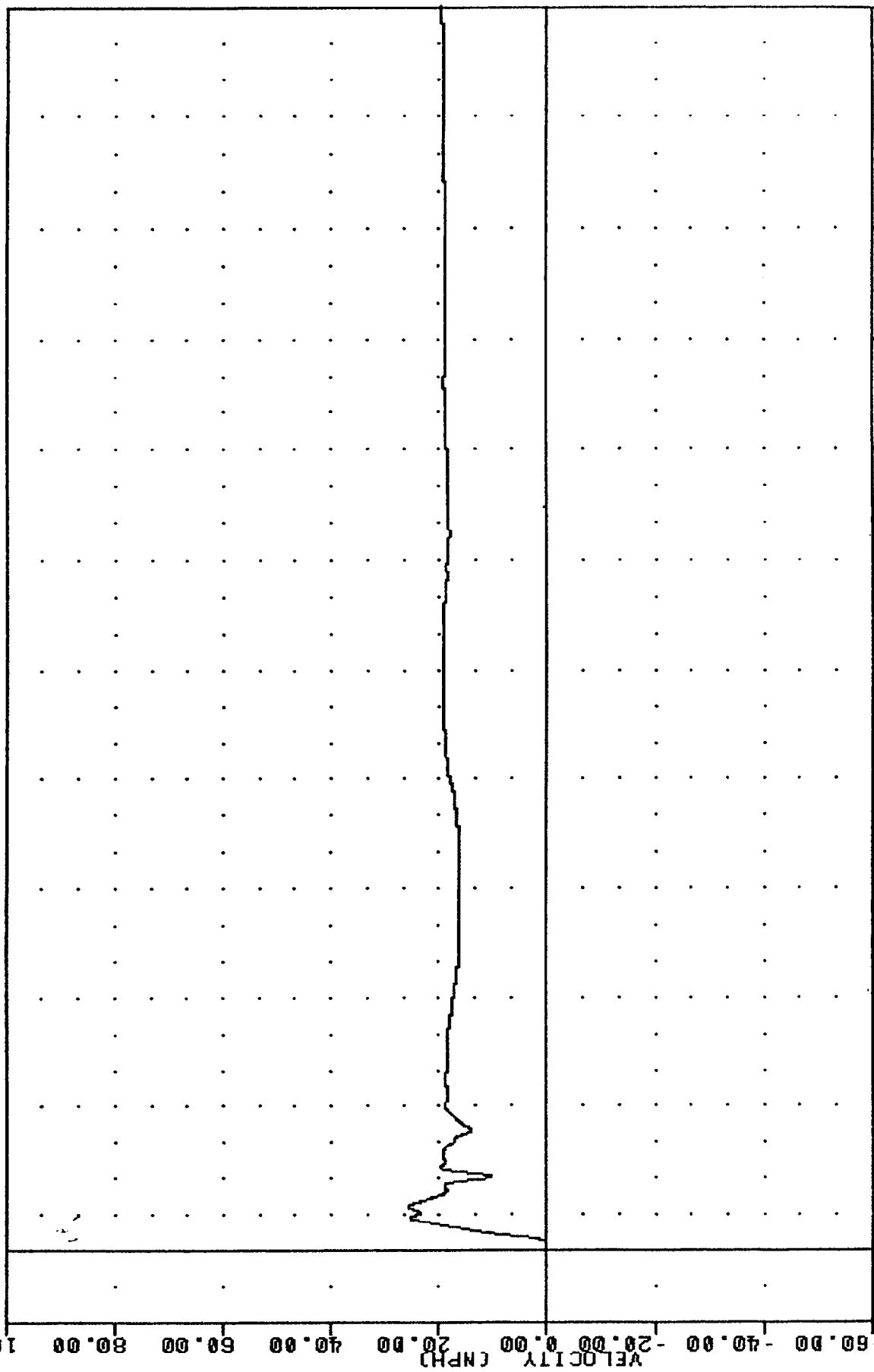




TMC 040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDY62  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -75.02 16.88 198.56 8.50  
 PLOT DATE 17 JUL 84 08:14:44

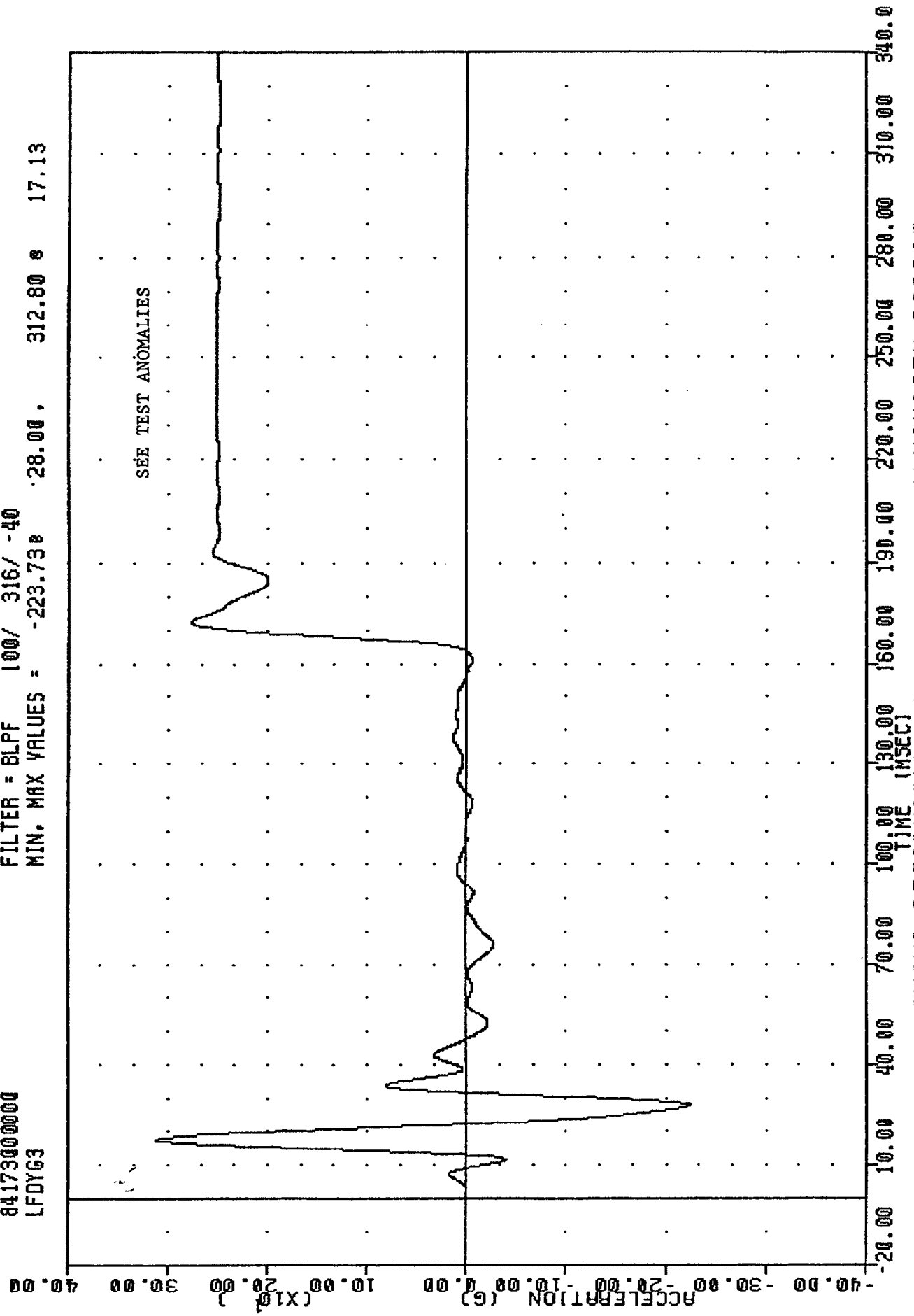


TRC 840621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDYV2  
 FILTER = BLPF 300/ 849/ -40  
 MIN, MAX VALUES = 0.00e -8.38; 25.65 e 12.00  
 PLOT DATE 17-JUL-84 08:16:42



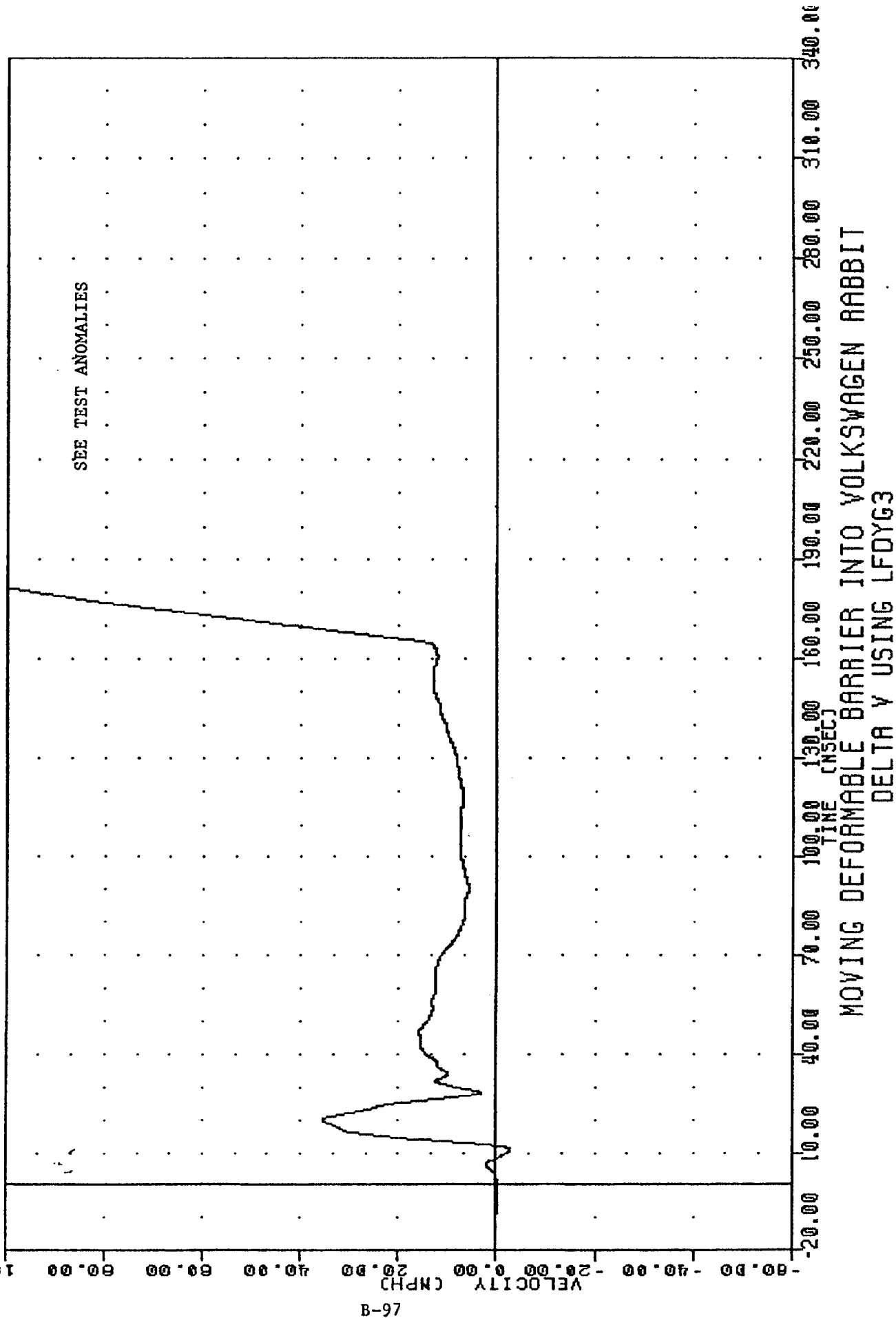
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LFDY62

TNC 840621 17 JUL 84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDY63  
 FILTER = 8LPF 100/ 316/ -40  
 MIN. MAX VALUES = -223.73 28.00 312.80 17.13

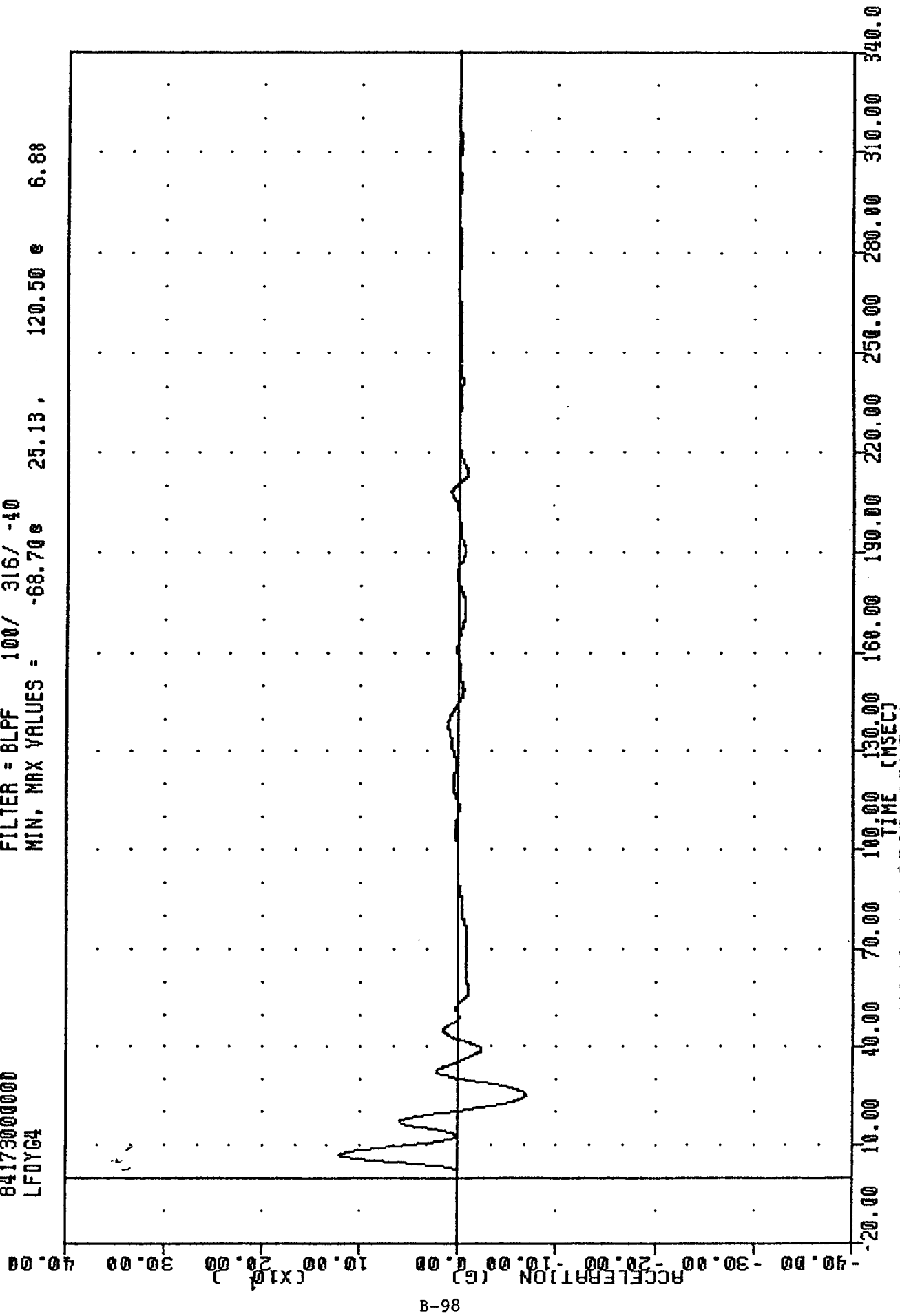


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE LEFT FRONT DOOR (POSITION 9) ACCELERATION Y AXIS

TRC 040621 17 JUL 84 00:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDYV3  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -2.90 10.75 965.01 340.00



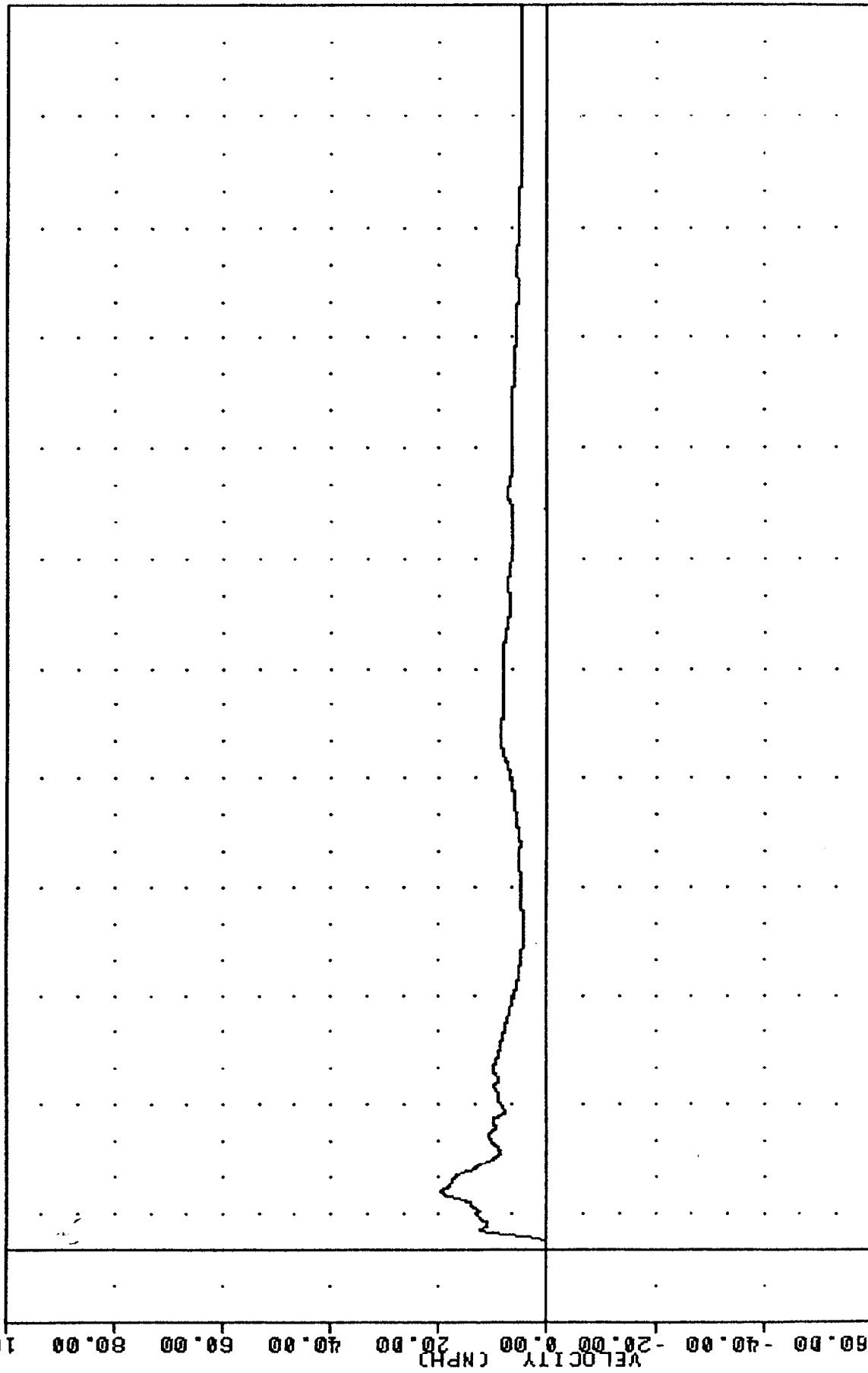
TAC 040621 PLOT DATE 17 JUL 84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDY64  
 FILTER = 8LPF 100/ 316/ -40  
 MIN. MAX VALUES = -68.70 25.13, 120.50 6.88



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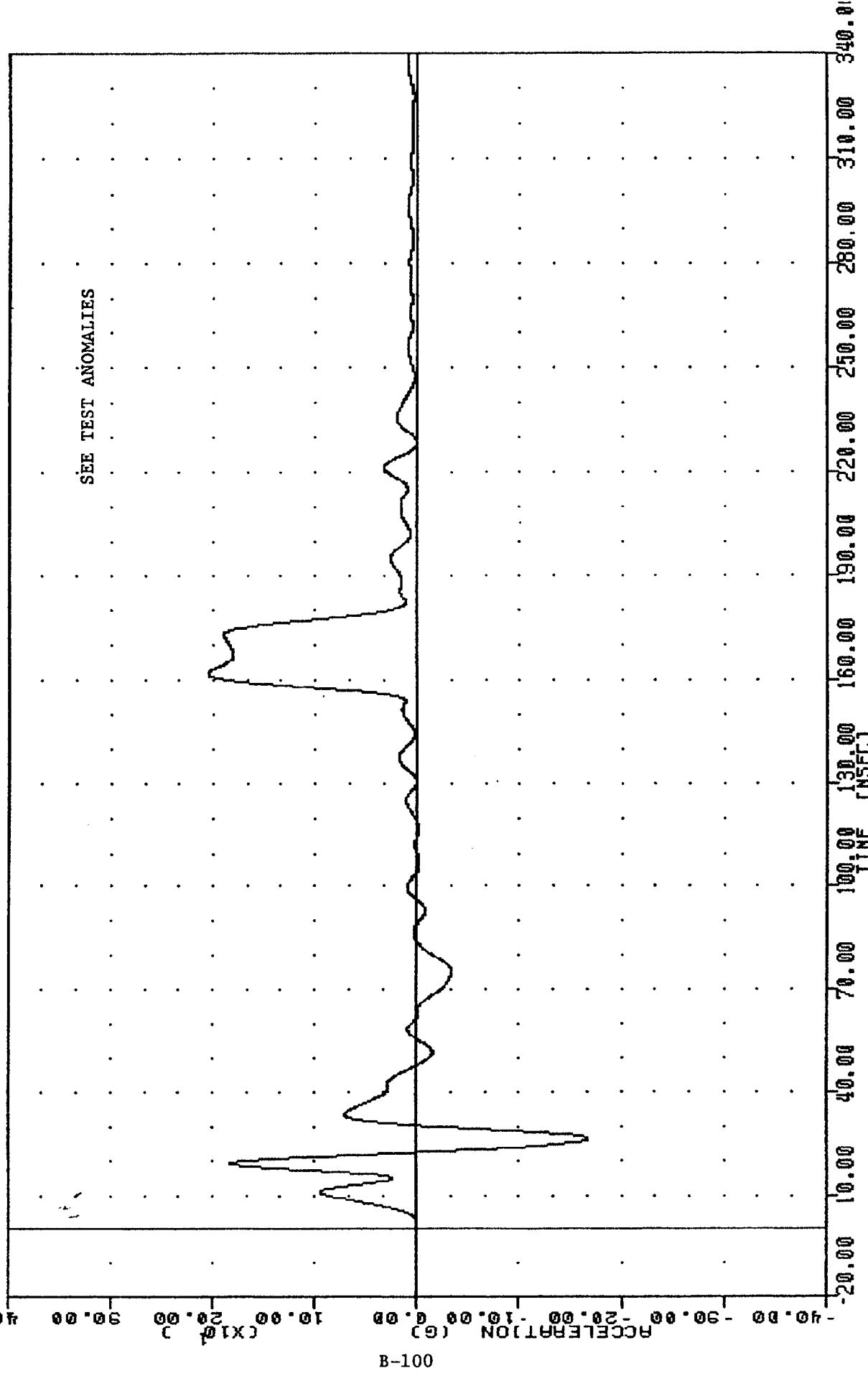
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE LEFT FRONT DOOR (POSITION 10) ACCELERATION Y AXIS

INC 840621 17 JUL 84 08:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDYV4  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 0.00# -20.00, 19.50# 15.88



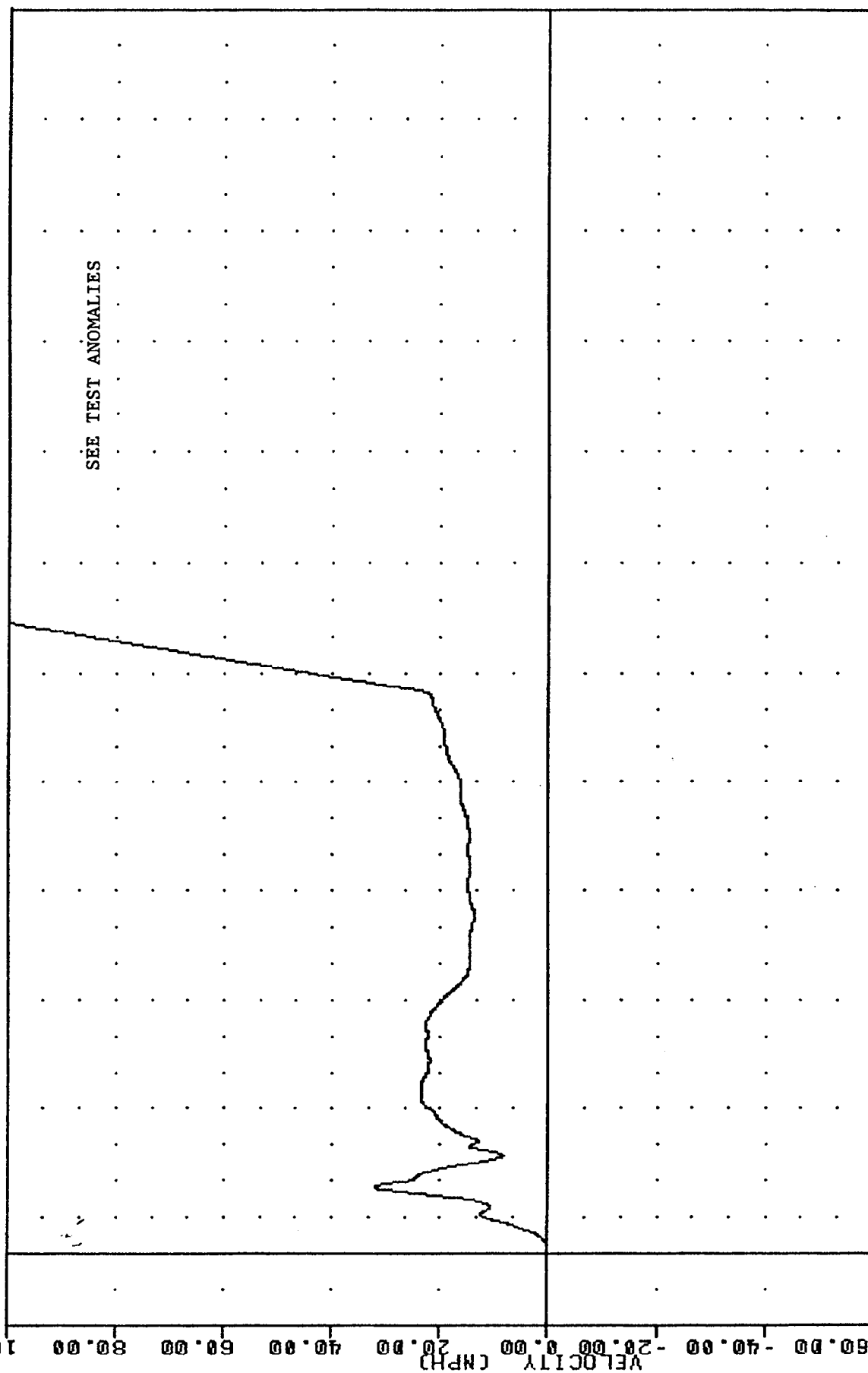
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LFDYV4

TAC 040621, 17 JUL 84 00:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDY65  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -167.59e 26.13, 204.90 e 161.88



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

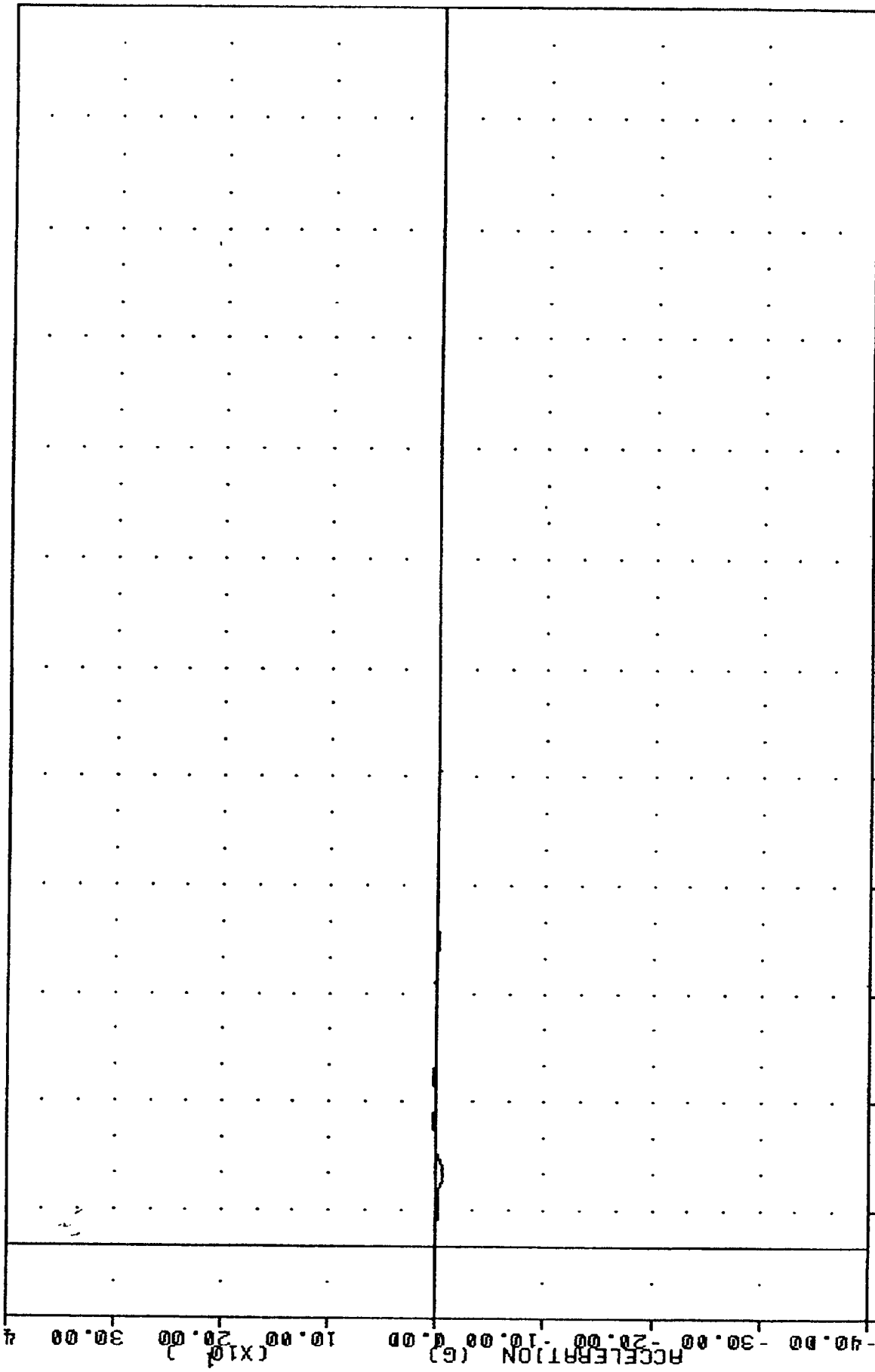
THE 040621 17 JUL 84 00:16:42  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 LFDYV5  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = 0.00s -20.00, 139.75 s 340.00



-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  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LFDY65

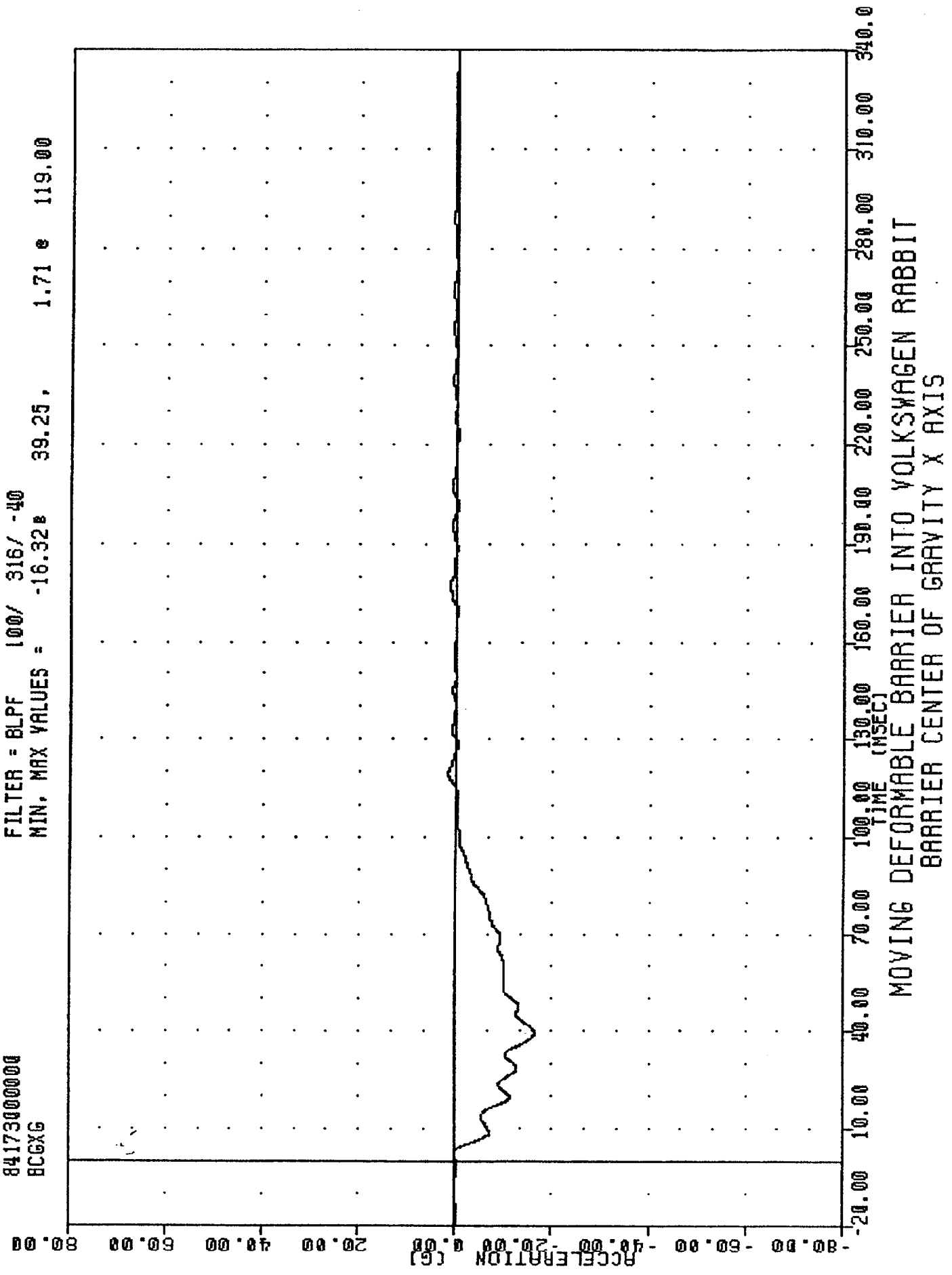


TMC 040621 17 JUL 84 06:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 TFRXG7  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -6.61 19.75, 2.48 46.63

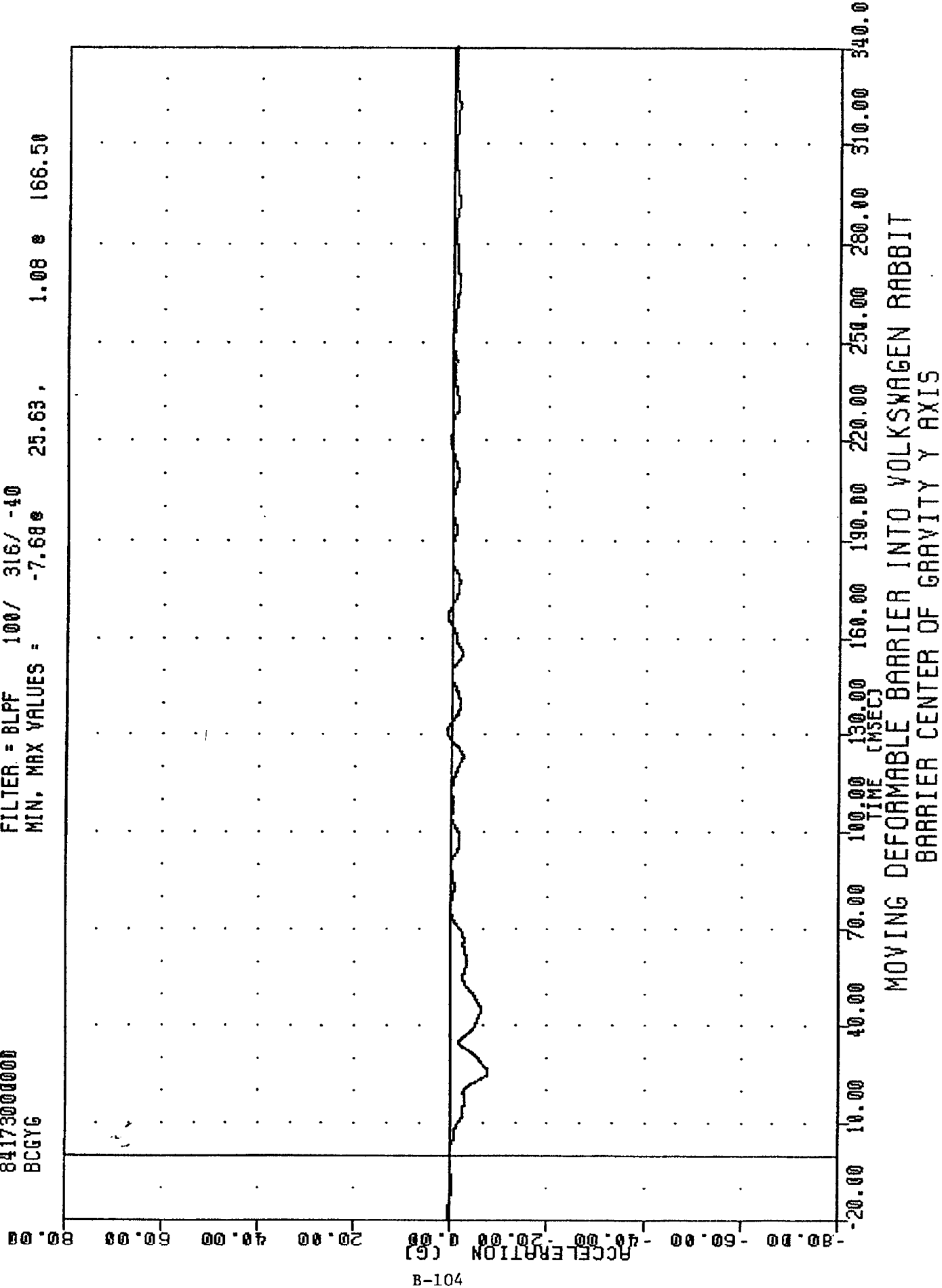


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE TRUNK FLOOR RIGHT ACCELERATION X AXIS

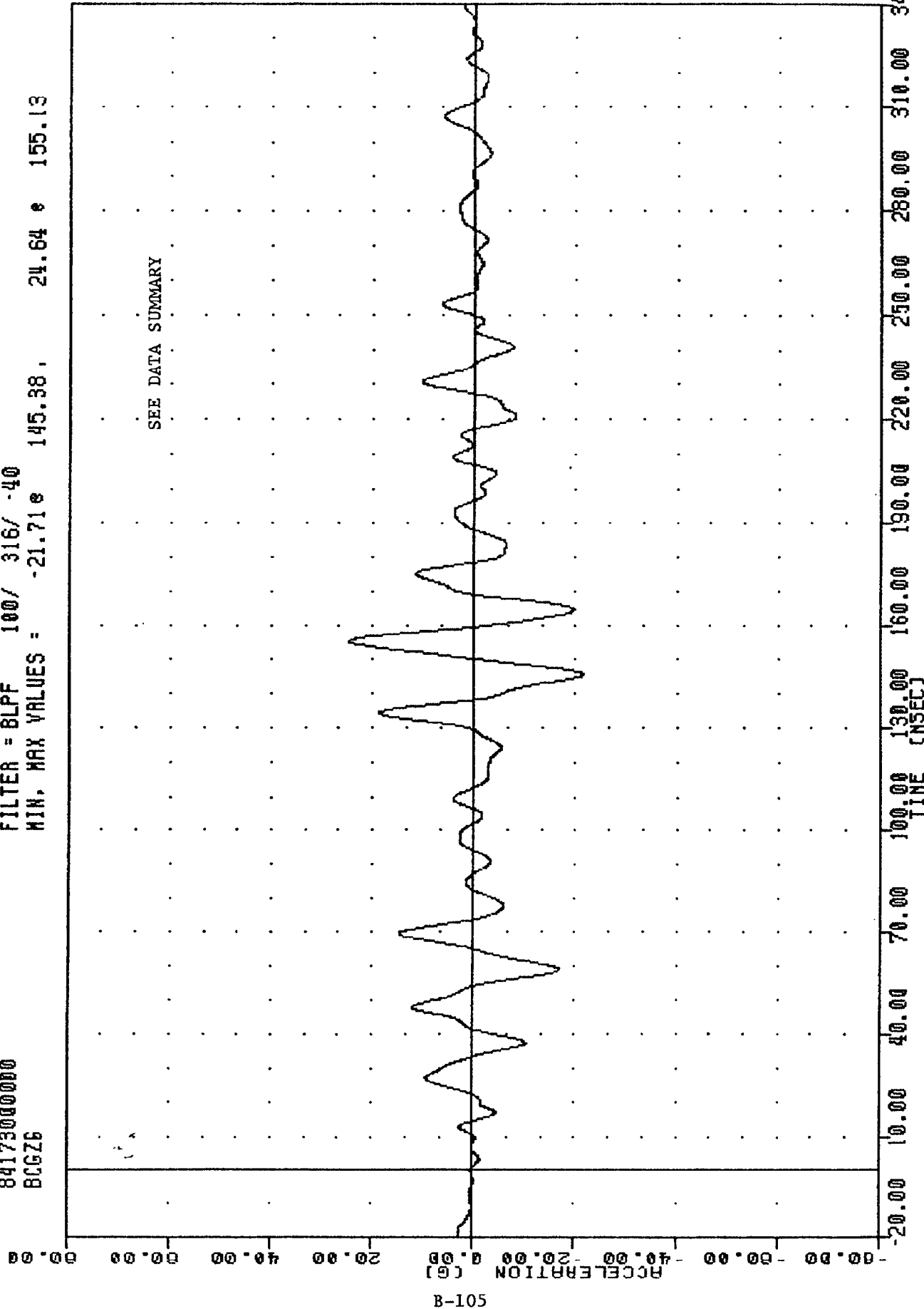
100621 17 JUL 84 00:14:54  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BCGXG  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -16.32 39.25, 1.71 e 119.00



THE 040621 17 JUL 64 00:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BCGYG  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -7.68e 25.63, 1.08 e 166.50

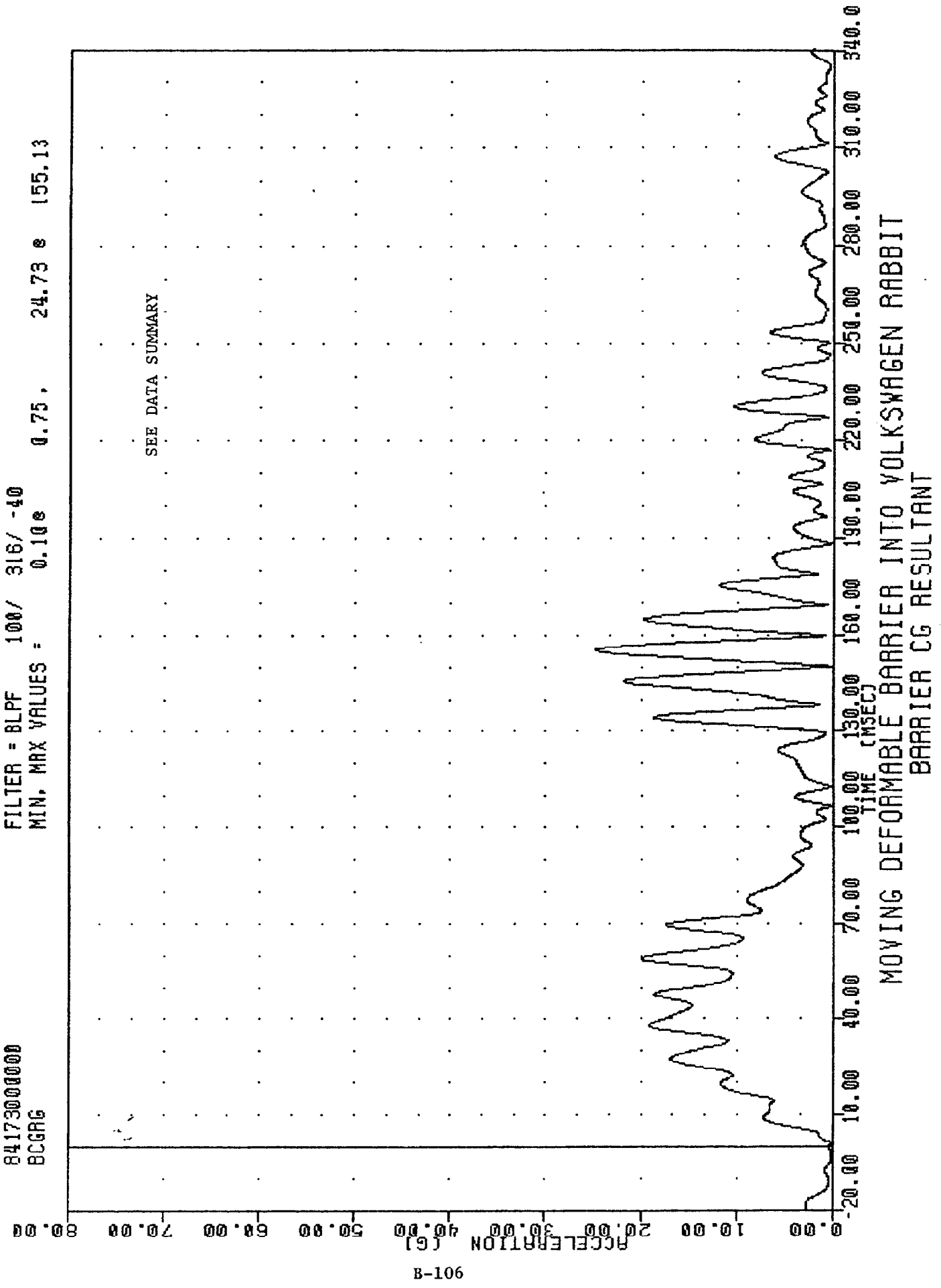


TMC 040621 17 JUL 84 08:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BCGZ6  
 FILTER = 8LPF 100/ 316/ -40  
 MIN, MAX VALUES = -21.71e 145.38, 24.64 e 155.13



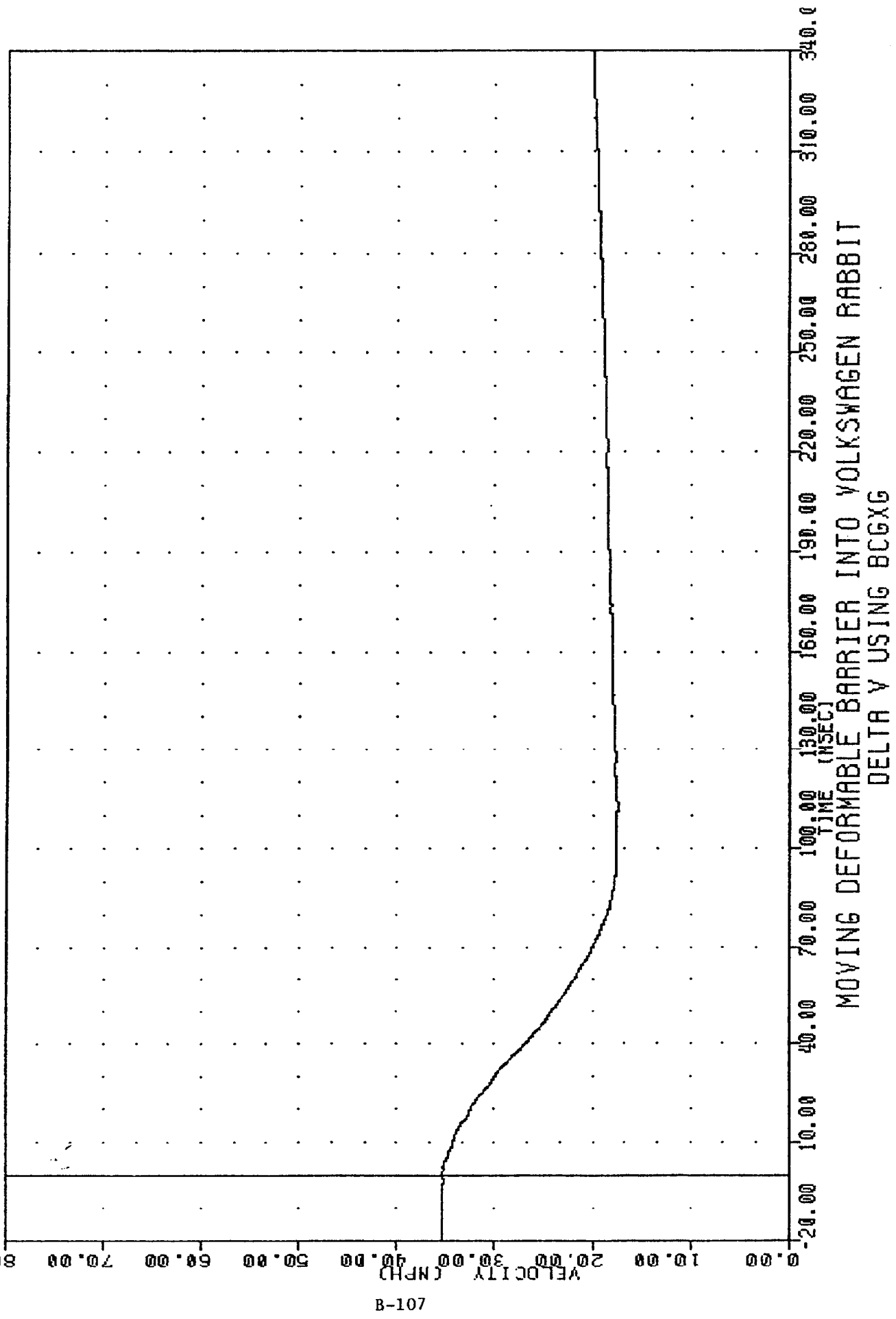
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 BARRIER CENTER OF GRAVITY Z AXIS

TMC 040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BCGRG  
 FILTER = 8LPF 100/ 316/ -40  
 MIN. MAX VALUES = 0.10 0.75, 24.73 155.13  
 PLOT DATE 17 JUL 84 00:16:18



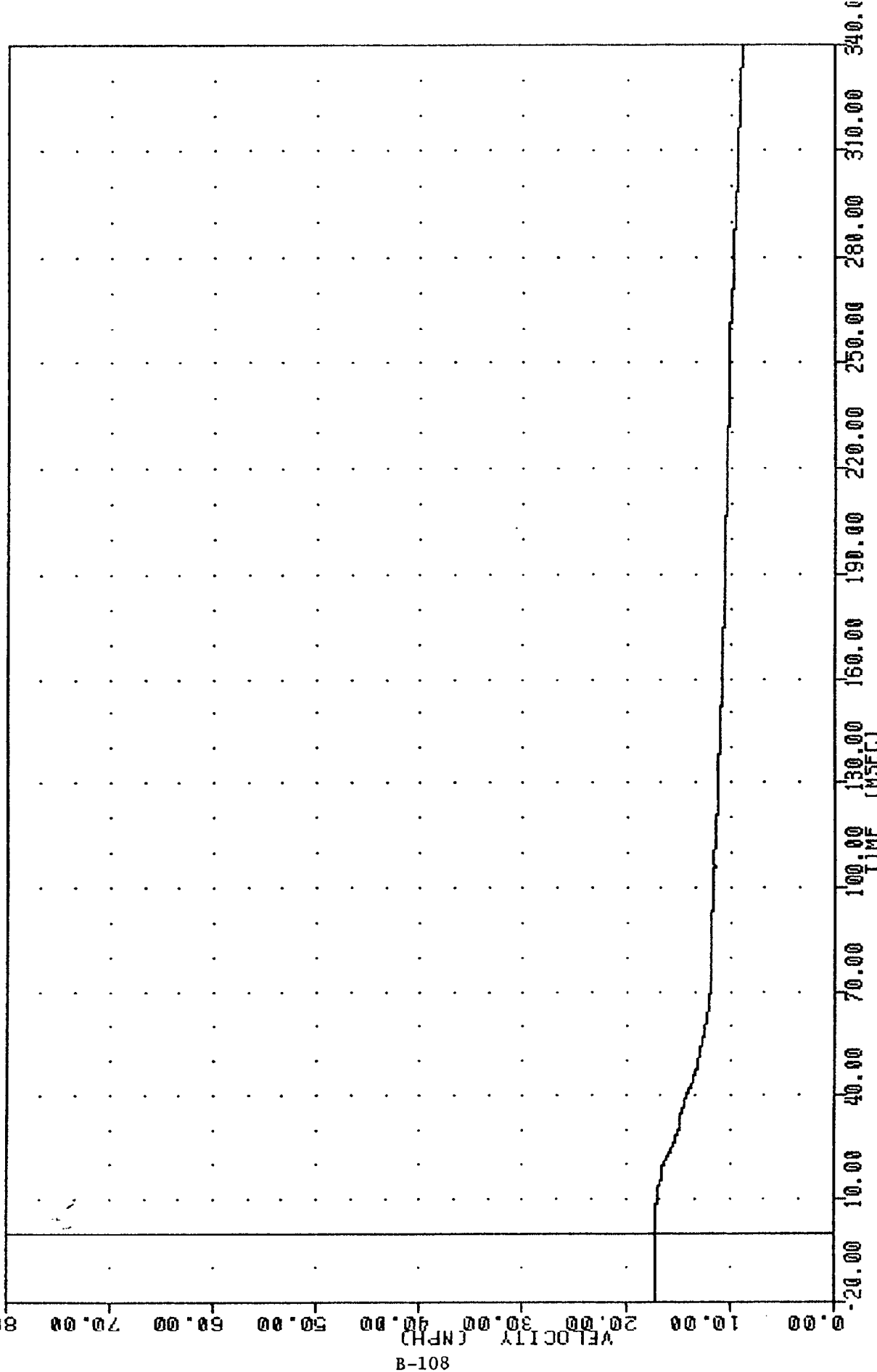
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 BARRIER CG RESULTANT

TRC 840621 8-HUG-84 10:42:00  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BCGXV  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = 17.45e 112.25, 35.32 e -20.00



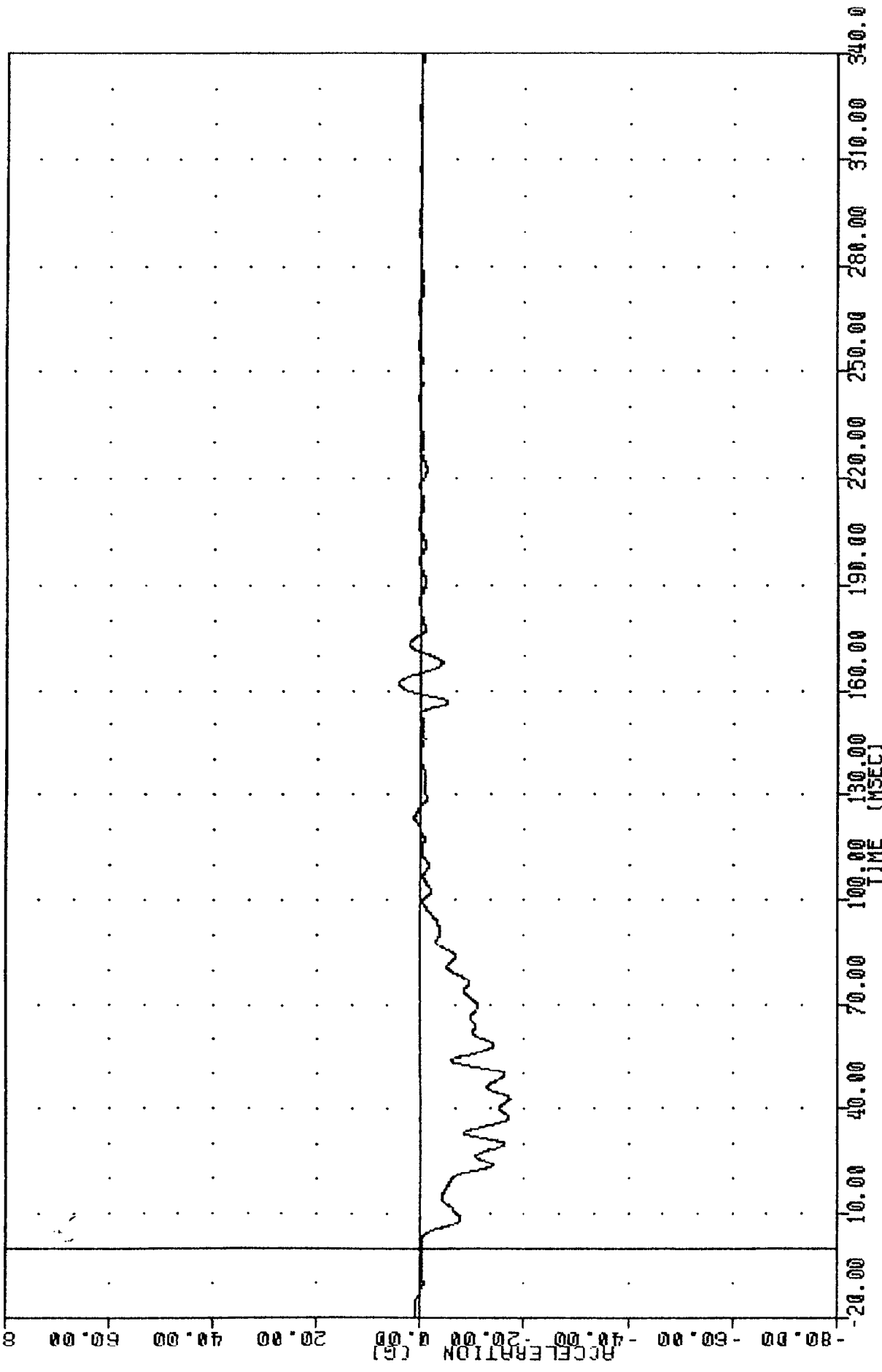
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING BCGXG

TRC 840621 9-AUG-84 11:02:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BCGYV  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 8.93e 340.00, 17.25 e -13.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING BCGYG

TRC 840621 PLOT DATE 17 JUL 84 06:14:44  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 8FCXG  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -17.098 42.88, 4.40 161.75

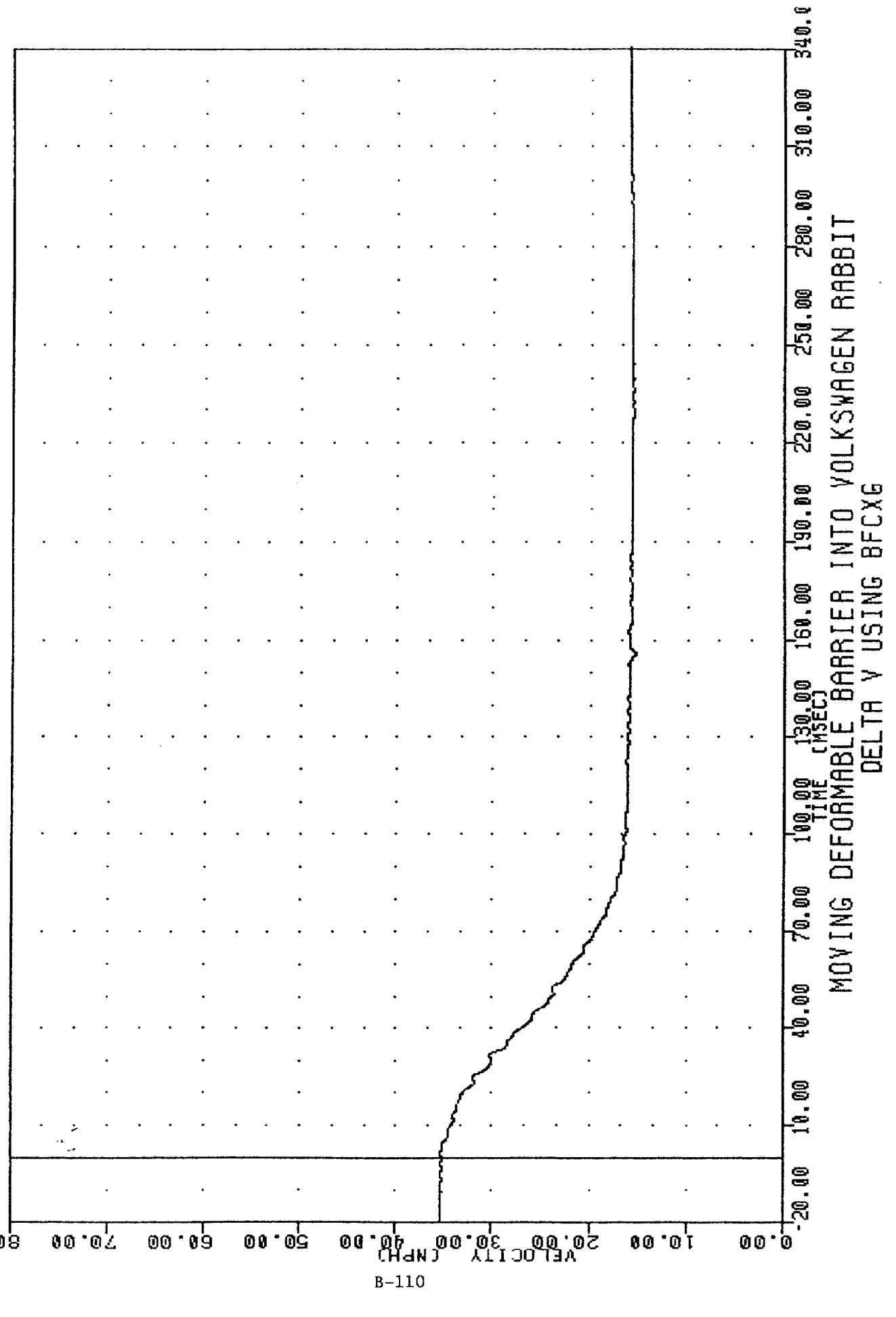


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 BARRIER FRONT CROSSMEMBER ACCELERATION X AXIS

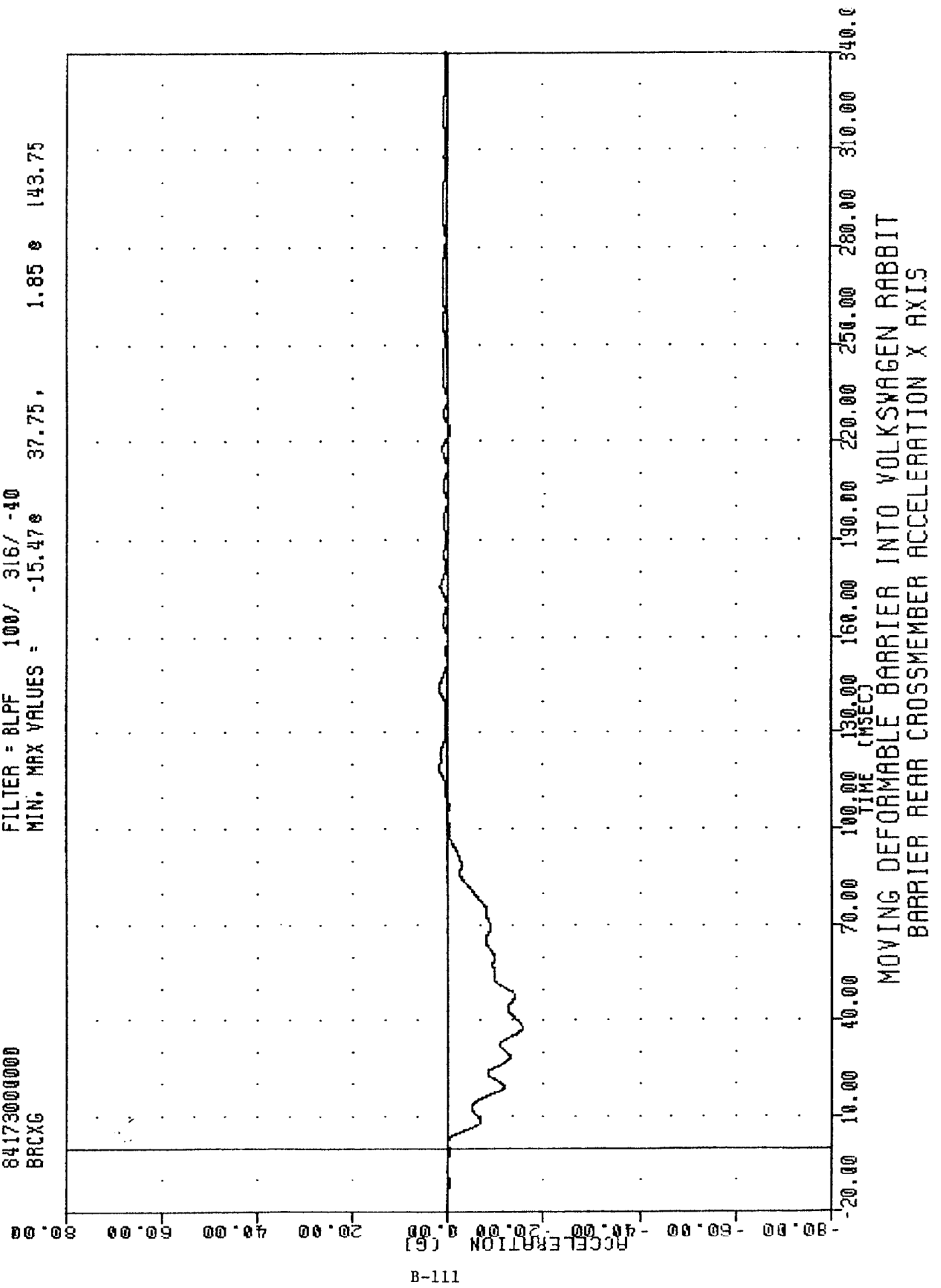


TMC 040621 040621 040621 040621 040621 040621 040621 040621 040621 040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BFCXY

FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 15.23e 155.50, 35.44 e -9.00



THE [REDACTED] 0621 [REDACTED] PLOT DATE 1 JUL 84 00:14:41  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BRCXG  
 FILTER = 8LPF 100/ 316/ -40  
 MIN. MAX VALUES = -15.478 37.75, 1.85 143.75



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

TAC 040621  
 SIDE AGGRESSIVE ATTRIBUTES  
 84173000000  
 BACXY  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = 18.14 106.50 35.33 -17.75  
 PLOT DATE 8-16-81

