522

# RESEARCH MIV
# Modified Integrated Vehicle

VOLKSWAGENWERK
Aktiengesellschaft
WOLFSBURG

Contract No. DTNH 22-81-C-17085

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Volume II/11 Side Impact
September 1983

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THE OPINIONS, FINDINGS, AND CONCLUSIONS EXPRESSED IN THIS PUBLICATION ARE NOT NECESSARILY THOSE OF THE

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15 Supplementary Notes

16 Abstract

Vehicle and vehicle occupant response data and technical data from side impact test No. 11 - Crabbed Citation / MIV at $60^{o}$ impact angle and v = 40 mph impact speed are summarized in this report.

Volume II/11

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THE TEST RESULTS RELATE SOLELY TO THE SPECIFIED NHTSA TEST CONFIGURATIONS FOR SIDE IMPACTS WITH THE CRABBED CHEVROLET CITATION AND THE NEW TEST DEVICES, DEFORMABLE CRABBED BARRIER AND HSRI SIDE IMPACT DUMMY (SID) BOTH OF WHICH ARE CURRENTLY UNDER DEVELOPMENT

NHTSA PROJECT DTNH 22-81-C-17085

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## 1. Introduction

The objective of the MIV project was to optimize two contradictory design considerations - the greatest possible reduction in dummy loadings at the lowest possible vehicle weight increase (max. increase 20 lbs./vehicle) with the precondition that the design be suited to mass production.

The MIV is by definition not a totally integrated concept as discussed and presented by Volkswagenwerk AG during the 8th ESV Conference or as demonstrated in the form of the Volkswagen Integrated Research Vehicles IRVW I and II. The MIV, in contrast, does not include consideration of special energy saving or special emission reduction engine/transmission concepts.

Because vehicle layout, according to established criteria and subsequent reinforcement for modified design criteria, always leads to substantial weight increases with commensurate limitations upon producebility, it was decided not to use the "add-on" strategy, but to develop an all new "Integrated Structure" for the 4 door MIV. This concept requires that the largest possible number of components be effective during the specified frontal and side impacts.

NHTSA's design goals were the 35 mph head-on fixed barrier impact and the 30 mph side impact with the new 1.565 kg (3,450 lbs) deformable 19° crabbed Barrier and the new HSRI Dummy which were specially developed for the side impact.

In addition to these tests, the effectiveness of the MIV vehicle layout was to be evaluated in vehicle-to-vehicle lateral impacts with the crabbed Chevrolet Citation striking the side of the MIV at 60° and 90° at 40 and 34 mph respectively.

A qualitative analysis of the force/deflection characteristics of front structure, mass and bumper heigt of the striking vehicle and their effect upon dummy loadings and side structure deformation of the struck vehicle was to be performed by computer simulation. To validate the computer program a 90° side impact test was to be run with the crabbed Citation and baseline vehicle at 34 mph simulating the bumper/sill engagement.

2. Method

2.1 Test Devices and Test Configuration

2.2 List of Accelerometer Location

2.2.1 Target Vehicle Intrumentation

2.2.2 Bullet Vehicle Instrumentation

2.2.3 Dummy Instrumentation

2.3 Camera Location and Frame Rate

FIGURE 1: 19° CRABBED CITATION TEST DEVICE

FIGURE 2: HSRI SIDE IMPACT DUMMY

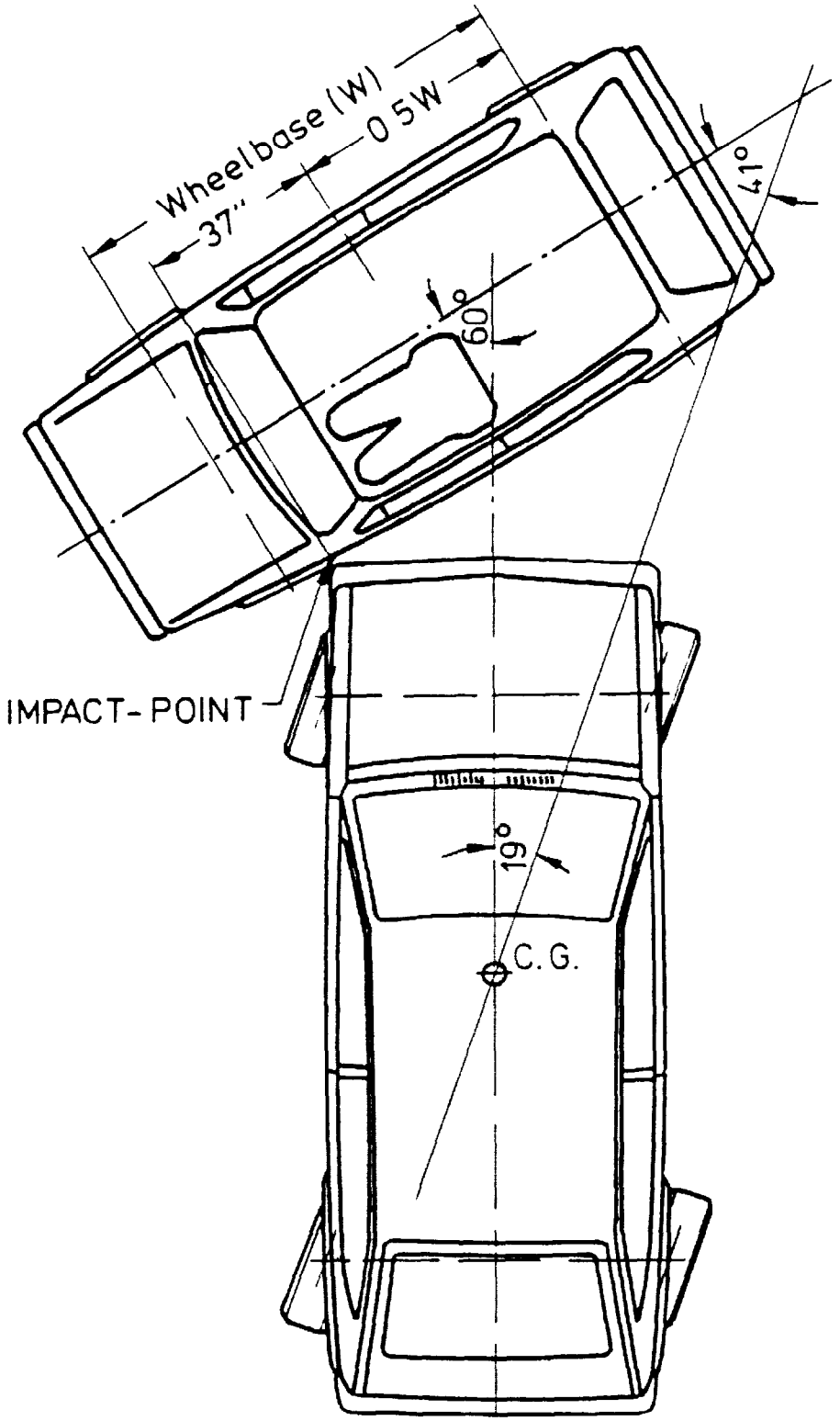



FIGURE 3 : TEST CONFIGURATION

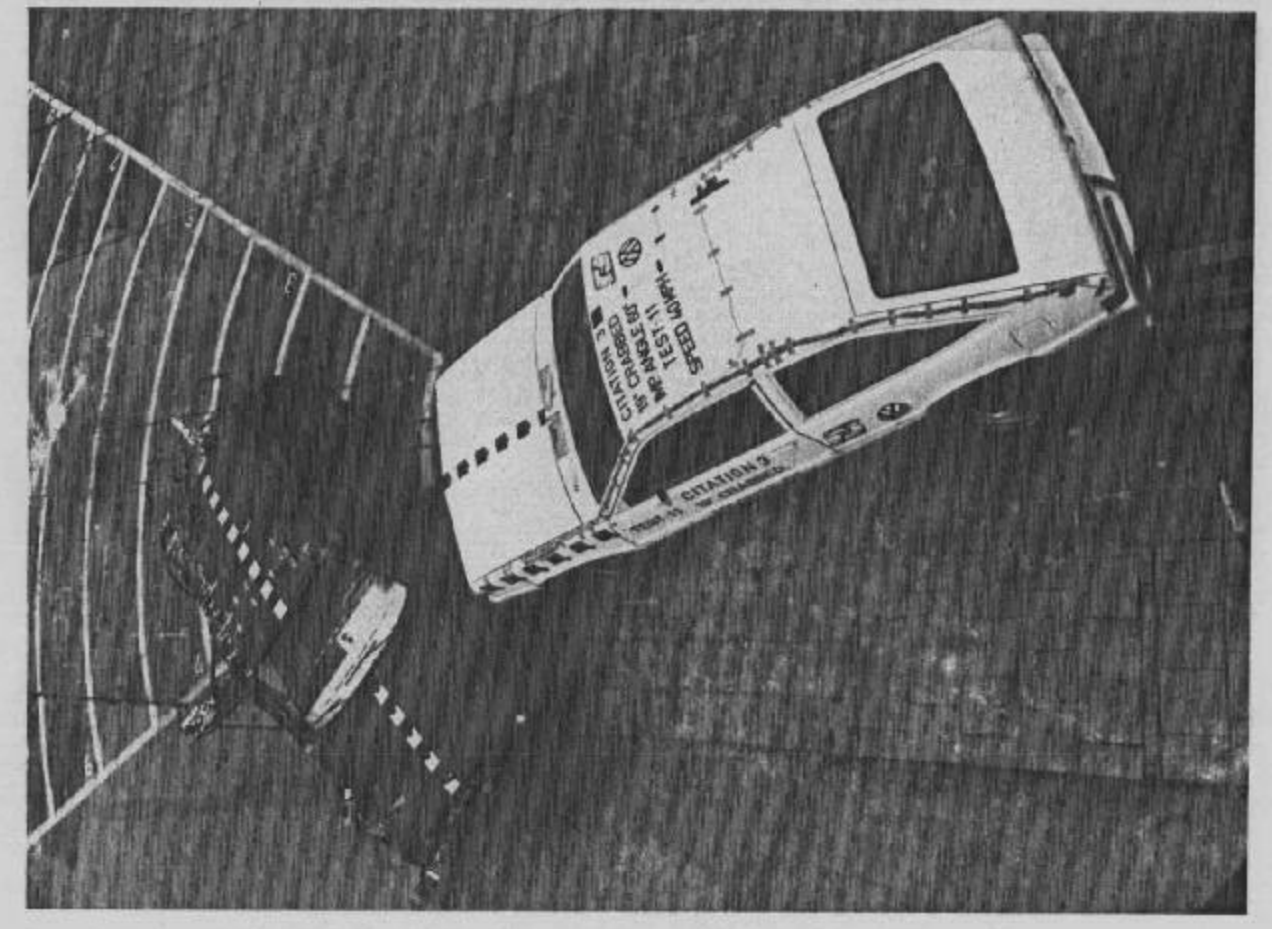



FIGURE 4: SIDE IMPACT TEST CONFIGURATION
CRABBED CITATION / MIV

## TARGET VEHICLE

| No. | Location | Shortend Form | Direction |
|---|---|---|---|
| 1 | Right Front-Doorsill | TSVR | Y |
| 2 | Left Front-Doorsill | TSVL | Y |
| 3 | Left Rear-Doorsill | SHHL | y |
| 4 | Rear Deck over Centerline | KOBO | X, Y, Z |
| 5 | Front Firewall over Centerline | SWMI | X, Y, Z |
| 6 | Mid-Front Edge of Left Front-Door | TTRV | Y |
| 7 | Middle of Front-Door | TTRM | Y |
| 7a | Middle of Left Front-Door-Doorbeam | TTRQ | Y |
| 8 | Shoulder Contact at Front-Door | SASL | Y |
| 9 | Pelvis Contact at Front-Door | BASL | Y |
| 10 | Left Front-Door on Windowsill | FBVL | Y |
| 11 | Right Front-Door on Windowsill directly across No. 10 | FBVR | Y |
| 12 | Left B-Pillar near Door-Latch | BSLL | Y |
| 13 | Right B-Pillar across No. 12 | BSLR | Y |
| 14 | Underneath Left Front-Seat attached to Seat | SGFA | Y |
| 15 | Vehicle Center of Gravity | RTMI | X, Y, Z |
| 16 | Left Front-Door Intrusion | FTWE | Y |
| 17 | B-Pillar Intrusion | THWE | Y |

## BULLET VEHICLE

| No. | Location | Shortend Form | Direction |
|---|---|---|---|
| 1 | Right Occupant Compartment near B-Pillar on Doorsill | TSMR | X |
| 2 | Left Occupant Compartment (across No.1) | TSML | X |
| 3 | Rear Deck over Vehicle Centerline | KOMI | X, Y, Z |
| 4 | Front Firewall over Vehicle Centerline | SPWM | X, Y, Z |
| 5 | Vehicle Center of Gravity | SPKT | X, Y, Z |
| 6 | Top of Engine Block | MOTO | X, Y, Z |
| 7 | Left Front Frame Rail | LTVL | X |

Declaration: X = Longitudinal ; Y = Lateral ; Z = Vertical

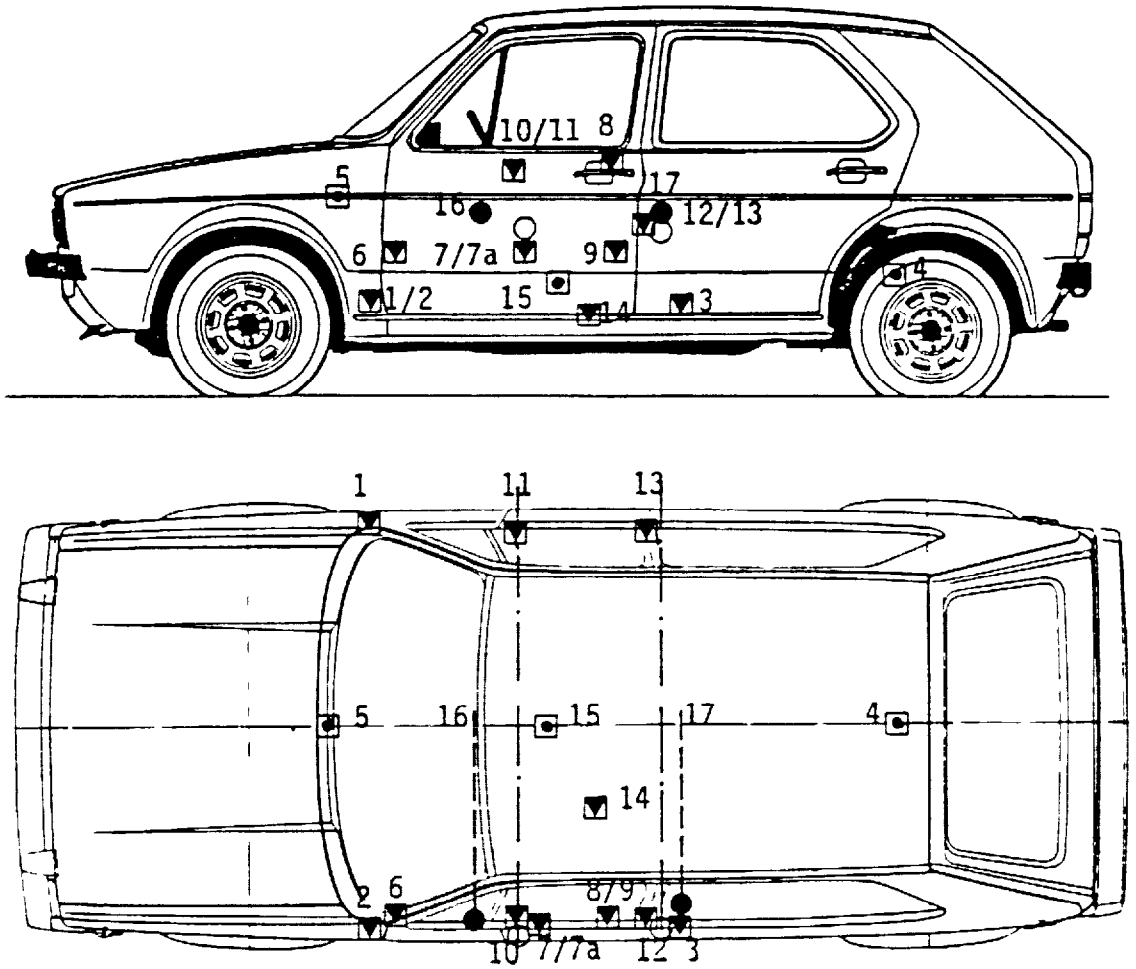
TABLE 1 : LIST OF VEHICLES-ACCELEROMETERS-LOCATION

## OCCUPANTS

| No. | Location | Shortened Form DRIVER | Shortened Form REAR LEFT | Direction |
|---|---|---|---|---|
| 1 | Head Triaxial | K001 | K003 | X, Y, Z |
| 2 | Upper Sternum | B001 | B003 | X |
| 3 | Lower Sternum | BU01 | BU03 | X |
| 4 | Left Upper Rib | L001 | L003 | Y |
| 5 | Left Lower Rib | LU01 | LU03 | Y |
| 6 | Right Upper Rib | R001 | R003 | Y |
| 7 | Right Lower Rib | RU01 | RU03 | Y |
| 8 | Upper Thorax (T 1) | T001 | T003 | X, Y, Z |
| 10 | Lower Thorax (T 12) | TU01 | TU03 | X, Y, Z |
| 11 | Pelvis Triaxial | BE01 | BE03 | X, Y, Z |
| 12 | Chest Deflection | WE01 | WE03 | Y |
| 13 | Shoulder Beltforce | GU01SA | GU03SA | |
| 14 | Pelvis Beltforce | GU01BA | GU03BA | |
| 15 | Shoulder Contact | SK01K | SK03K | |
| 16 | Pelvis Contact | BK01K | BK03K | |

Declaration: X = Longitudinal
Y = Lateral
Z = Vertical

TABLE 1A : LIST OF OCCUPANT ACCELEROMETERS-LOCATION




Axial Accelerometer ( Y - Direction)

Biaxial Accelerometer (X, Y - Direction)

Triaxial Accelerometer (X, Y, Z -Direction)

Displacement Tube

Displacement Transducer

Note: See Table for Additional Information

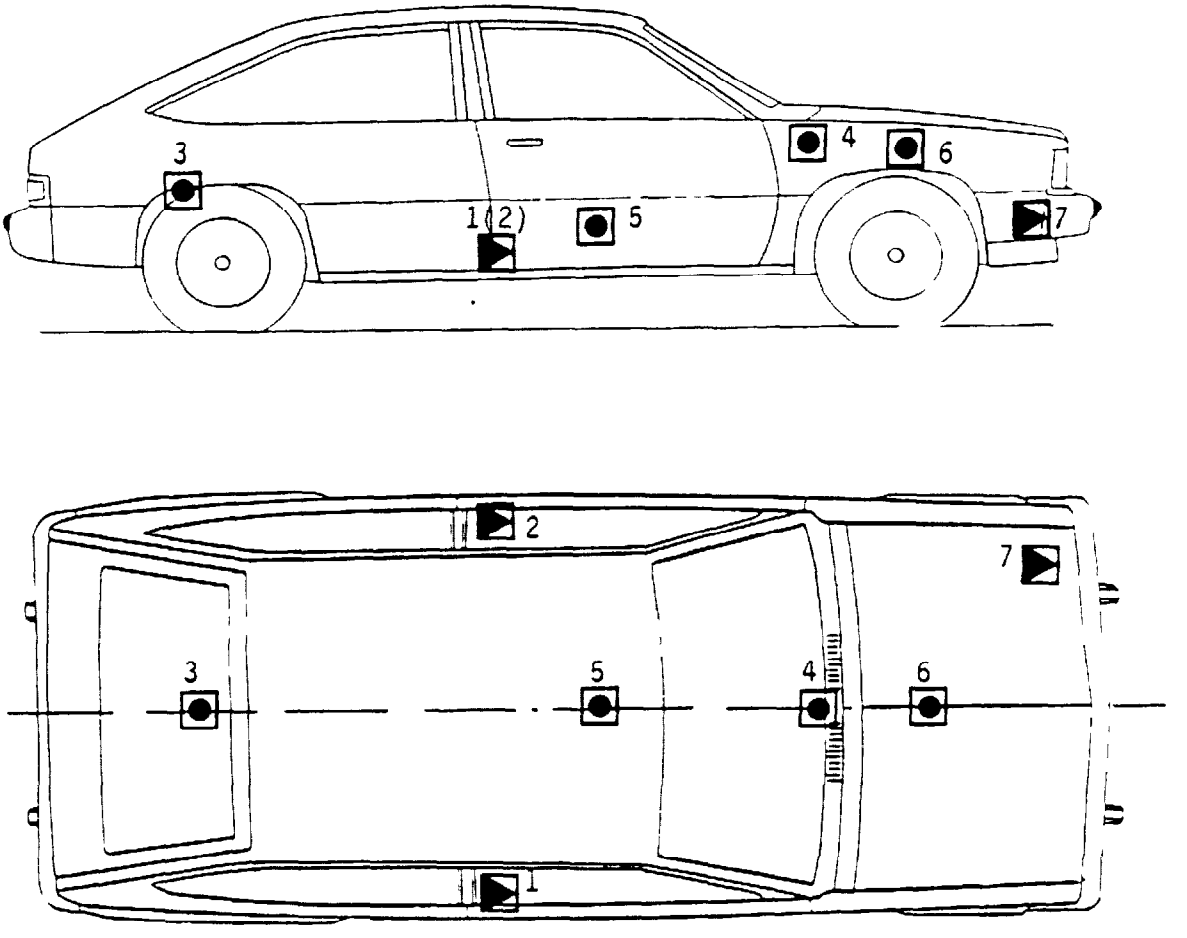
FIGURE 5 : TARGET VEHICLE INSTRUMENTATION

TEST NO.: 11

| No. | Accelerometer - Location | Coordinates (mm) X * | Y * | Z * | Results ($g_{max}$) X | Y | Z |
|---|---|---|---|---|---|---|---|
| 1 | Occupant Compartment, right Front-Doorsill | 2630 | 620 | 300 | | 28.8 | |
| 2 | Occupant Compartment, left Front-Doorsill | 2630 | -620 | 300 | | 115.2 | |
| 3 | Occupant Compartment, left Rear-Doorsill | 1410 | -560 | 290 | | 57.9 | |
| 4 | Rear Deck over Vehicle Centerline | 910 | 0 | 440 | 12.7 | 22.3 | 16.6 |
| 5 | Front Firewall over Vehicle Centerline | 2890 | 0 | 650 | 45.0 | 13.3 | 9.8 |
| 6 | Mid-front Edge of Left Front Door | 2550 | -620 | 457 | | 111.0 | |
| 7 | Middle of left Front Door | 2060 | -620 | 630 | | 54.2 | |
| 7a | Middle of Front Door Beam | 2060 | -700 | 457 | | 80.7 | |
| 8 | Shoulder Contact Front Door | 1775 | -665 | 850 | | 98.5 | |
| 9 | Pelvis Contact Front Door | 1840 | -660 | 480 | | 81.0 | |
| 10 | Left Front Door-Middle of Windowsill | 2050 | -650 | 850 | | 106.2 | |
| 11 | Right Front Door on Windowsill directly across from Nr. 10 | 2050 | 650 | 850 | | 190.0 | |
| 12 | Left B-Pillar near Door Lock | 1480 | -650 | 670 | | 135.9 | |
| 13 | Right B-Pillar across from Nr.12 | 1480 | 650 | 670 | | 56.1 | |
| 14 | Underneath Left Front Seat attached to Seat | 1960 | 325 | 285 | | 43.8 | |
| 15 | Vehicle Center of Gravity | | | | 9.3 | 42.8 | 14.2 |
| 16 | Displacement Transducer Front Door | 2235 | -- | 670 | | def. | |
| 17 | Displacement Transducer B-Pillar | 1415 | -- | 850 | | def. | |

* Reference Points: X - Rear Bumper
Y - Vehicle Centerline
Z - Ground Level

TABLE 2 : SUMMARY OF TARGET VEHICLE INSTRUMENTATION




AXIAL ACCELEROMETER ( X - DIRECTION )

TRIAXIAL ACCELEROMETER ( X, Y, Z - DIRECTION )

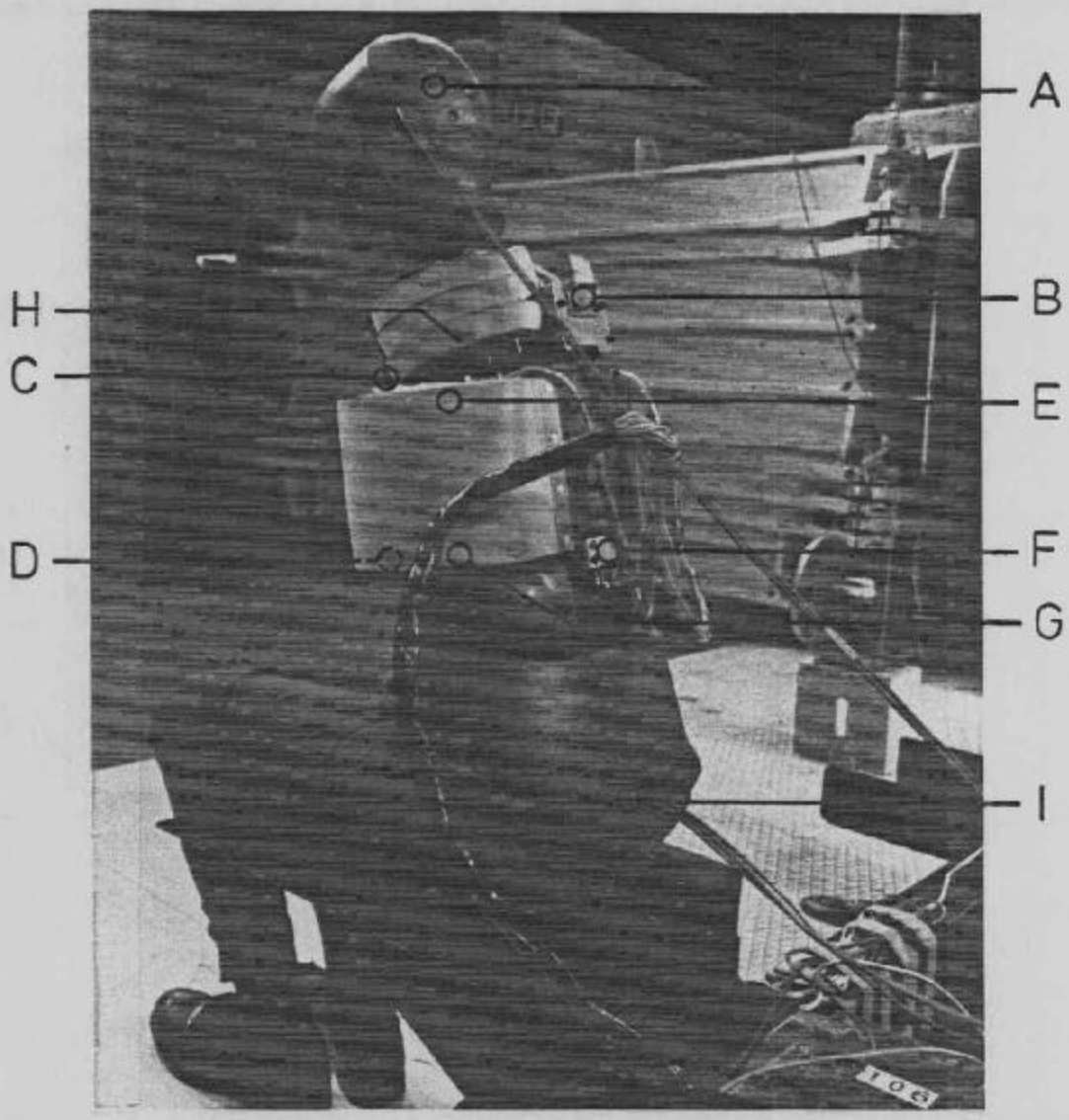
FIGURE 6 : BULLET VEHICLE INSTRUMENTATION

TEST NO.: 11

| No. | Accelerometer Location | Coordinates (mm) X * | Y * | Z * | Results ($g_{max}$) X | Y | Z |
|---|---|---|---|---|---|---|---|
| 1 | Right Occupant Compartment near B-Pillar on Doorsill | 1995 | 620 | 300 | 11.1 | | |
| 2 | Left Occupant Compartment near B-Pillar on Doorsill | 1995 | -620 | 300 | 10.3 | | |
| 3 | Rear Deck over Vehicle Centerline | 990 | 0 | 460 | 10.1 | 9.2 | 7.7 |
| 4 | Front Firewall over Vehicle Centerline | 3410 | 0 | 820 | 25.1 | 11.9 | 14.8 |
| 5 | Vehicle Center of Gravity | | | | 12.5 | 12.4 | 13.5 |
| 6 | Top of Engine Block | 3790 | 0 | 800 | 22.2 | def. | 6.6 |
| 7 | Left front Frame Rail near Impact Point | 4100 | -580 | 430 | 79.2 | | |

* Reference Points: X - Rear Bumper
Y - Vehicle Centerline
Z - Ground Level

TABLE 3 : SUMMARY OF BULLET VEHICLE INSTRUMENTATION




A. Head Triaxial
B. Upper Thorax (T1), Triaxial
C. Upper Sternum, Longitudinal
D. Lower Sternum, Longitudinal
E. Left Lower Rib, Lateral (also on right)
F. Lower Thorax (T12), Triaxial
G. Left Lower Rib, Lateral (also on right )
H. Displacement Transducer
I. Pelvis, Triaxial

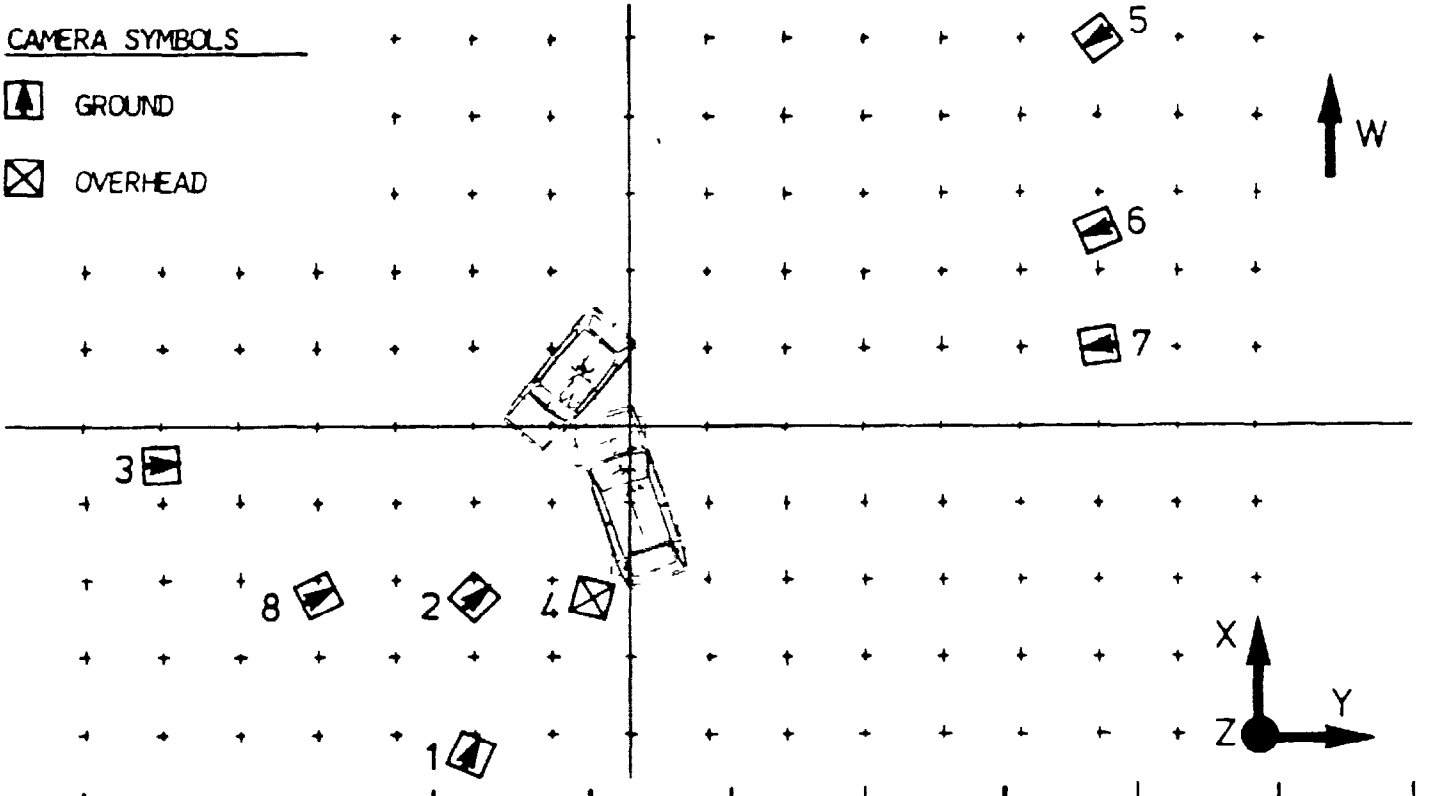
FIGURE 7 : LOCATION OF 18 ACCELEROMETER FOR SIDE IMPACT DUMMY

TEST NO : 11

TEST TYPE : 60° Side Impact

VEHICLE A : MIV with NHTSA - Side Padding

VEHICLE B : 19° Crabbed Citation




| CAM. NO. | LOCATION | TYPE | LENZ(MM) | TIMING SPEED | REAL FR FRAME R. | IMPACT DIST-X | C. L. DIST-Y | GROUND DIST-Z |
|---|---|---|---|---|---|---|---|---|
| 1 | NORTH SIDE-PARALLEL TO BULLET VEHICLE | Locam | 16 | 10 ms | 420 | -8.5 | -4.0 | 1.3 |
| 2 | NORTH SIDE-PARALLEL TO TARGET VEHICLE | Locam | 10 | 10 ms | 390 | -4.5 | -4.0 | 1.2 |
| 3 | NORTH SIDE-PERPEN-DICULAR TO BULLET V. | Locam | 26 | 10 ms | 410 | -1.0 | -12.0 | 1.3 |
| 4 | OVERHEAD | Locam | 10 | 10 ms | 360 | -4.5 | -1.0 | 8.0 |
| 5 | SOUTH SIDE-PARALLEL TO TARGED VEHICLE | Locam | 26 | defect | ~400 | 10.0 | 12.0 | 1.3 |
| 6 | SOUTH SIDE-PERPEN-DICULAR TO TARGED V. | Real Time | 17.5 | -- | 25 | 5.0 | 12.0 | 1.6 |
| 7 | SOUTH SIDE | Locam | 26 | 10 ms | 200 | 2.0 | 12.0 | 1.3 |
| 8 | NORTH SIDE | 35 MM-C. | 50 | — | 60 | -4.5 | -8.0 | 1.4 |

FIGURE 8 : CAMERA LOCATION - GROUND BASED

TEST NO. : 11

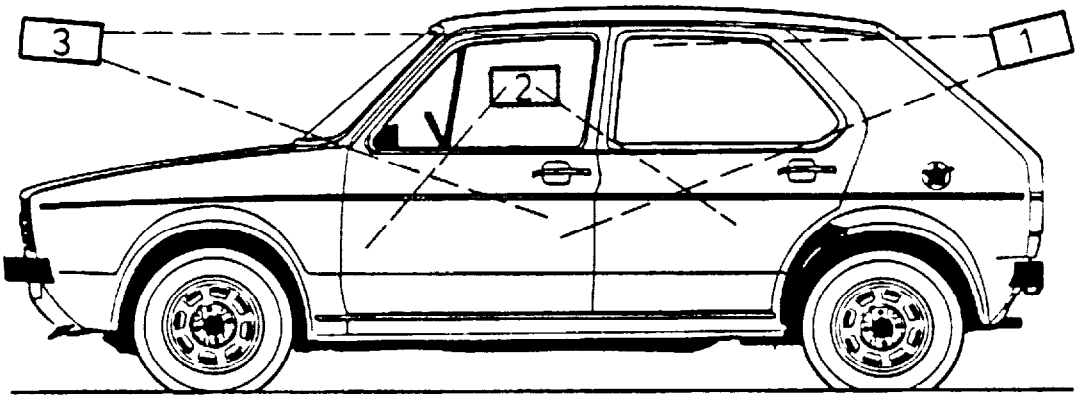
TEST TYPE : $60^{o}$ Side Impact

VEHICLE A : MIV with NHTSA - Side Padding

VEHICLE B : $19^{o}$ Crabbed Citation

CAMERA SYMBOLS

☐ ON BOARD




| CAM. NO. | LOCATION | TYPE | FIELD OF VIEW | LENZ (MM) | FRAME RATE | TIMING SPEED |
|---|---|---|---|---|---|---|
| 1 | VEHICLE REAR HATCH-BACK DOOR | STALEX | FRONT AND REAR OCCUPANT COMPARTMENT | 8 | 630 | 1 ms |
| 2 | VEHICLE RIGHT FRONT DOOR | PHOTO-SONICS | FRONT OCCUPANT COMPARTMENT | 8 | 820 | 1 ms |
| 3 | VEHICLE FRONT RIGHT SIDE | STALEX | FRONT AND REAR OCCUPANT COMPARTMENT | 8 | 990 | 1 ms |

FIGURE 9 : CAMERA LOCATIONS - ON BOARD

3. Test Parameter and Results
   - 3.1 Crash Test Summary
     - 3.1.1 Target Vehicle
     - 3.1.2 Bullet Vehicle
   - 3.2 Pre-Test Conditions
     - 3.2.1 Driver Pre-Test Position
     - 3.2.2 Rear Passenger Pre-Test Position
   - 3.3 Vehicle Pre- and Post-Test Position
   - 3.4 Post-Test Observations
   - 3.5 Dummy Test Response
     - 3.5.1 Dummy Test Response Summary - Driver
     - 3.5.2 Dummy Test Response Summary - Rear Passenger
     - 3.5.3 AIS and Coefficients - Driver
     - 3.5.4 AIS and Coefficients - Rear Passenger
   - 3.6 Target Vehicle Test Response
     - 3.6.1 Pre- and Post-Test Measurements
     - 3.6.2 Exterior and Interior Vehicle Measurement
     - 3.6.3 Exterior and Interior Static Crush (Top View)
     - 3.6.4 Exterior and Interior Static Crush (Front View)

3.7 Crabbed Citation Test Response
3.7.1 Vehicle Measurement
Frontal Profiles
3.7.2 Exterior Static Crush
3.7.3 Pre- and Post-Test Frontal Profiles
3.7.4 Vehicle Longitudinal Measurement
3.8 Dummy Calibration
3.8.1 Dummy Calibration - Driver
3.8.2 Dummy Calibration
Rear Passenger
3.8.3 SID Chest Deflection and
Impactor Deceleration

| VEHICLE DATA | TEST NO.: 11 | |
|---|---|---|
| TEST VEHICLE | MIV with NHTSA-Side Padding | |
| OVERALL LENGTH / OVERALL WIDTH (MM) | 3900 | 1610 |
| TOTAL WEIGHT (KP) | 1199 | |
| TEST WEIGHT BY WHEEL (KP) FRONT: | LEFT: 338 | RIGHT: 331 |
| REAR : | LEFT: 281 | RIGHT: 252 |
| WHEELBASE (MM) | 2400 | |
| LONGITUDINAL C.G. (FROM CENTER OF FRONT AXLE) (MM) | 1067 | |
| IMPACT ANGLE (WITH RESPECT TO BULLET VEHICLE) (DEG.) | 60 | |
| IMPACT SPEED (MPH) | 0 (stationary) | |
| MAXIMUM C.G. RESULTANT ACCELERATION | $G_{MAX}$ 49.2 | MSEC. AFTER IMPACT 58 |
| MAXIMUM DOOR ACCELERATION (AT MID-REAR EDGE OF LEFT FRONT DOOR) | $G_{MAX}$ 81.0 | MSEC. AFTER IMPACT 39 |
| MAXIMUM EXTERIOR STATIC CRUSH (MM) | | |
| LEVEL 4: 812 mm (32.0") | 297 | |
| LEVEL 3: 660 mm (26.0") | 339 | |
| LEVEL 2: 508 mm (20.0") | 298 | |
| LEVEL 1: 305 mm (12.0") | 163 | |
| MAXIMUM POST-TEST INTRUSION (MM) | 261 | |
| OCCUPANTS | | |
| TYPE | SID | SID |
| LOCATION | Driver | Left Rear Passeng. |
| RESTRAINTS | Restraint Automatic | Pelvis Belt |
| INSTRUMENTATION | | |
| NUMBER OF DATA CHANNELS | 68 | |
| NUMBER OF CAMERAS (ON BOARD) | 3 | |

TABLE 4 : CRASH TEST SUMMARY FOR TARGET VEHICLE

| VEHICLE DATA | TEST NO.: 11 |
|---|---|
| TEST VEHICLE | $19^{0}$ Crabbed Citation |
| OVERALL LENGTH (MM) | 4493 |
| OVERALL WIDTH (MM) | 1735 |
| TOTAL WEIGHT (KP) | 1566 |
| TEST WEIGHT BY WHEEL (KP) | |
| FRONT: | LEFT: 389 RIGHT: 410 |
| REAR : | LEFT: 385 RIGHT: 382 |
| WHEELBASE (MM) | 2664 |
| LONGITUDINAL C.G. (FROM CENTER OF FRONT AXLE) (MM) | 1304 |
| IMPACT ANGLE (DEG.) | 60 |
| IMPACT SPEED (MPH) | 39.83 |
| MAXIMUM C.G. RESULTANT ACCELERATION | G MAX 15.7 / MSEC. AFTER IMPACT 3 |
| MAXIMUM STATIC CRUSH (MM) | |
| LEVEL 1: 16.5" (420 mm) | 302 |
| LEVEL 2: 19.9" (480 mm) | 280 |
| LEVEL 3: 21.7" (550 mm) | 194 |
| LEVEL 4: 29.5" (750 mm) | 133 |
| **OCCUPANTS** | |
| TYPE | - |
| LOCATION | - |
| RESTRAINTS | - |
| **INSTRUMENTATION** | |
| NUMBER OF DATA CHANNELS | 16 |
| NUMBER OF CAMERAS (GROUND BASED) | 8 |

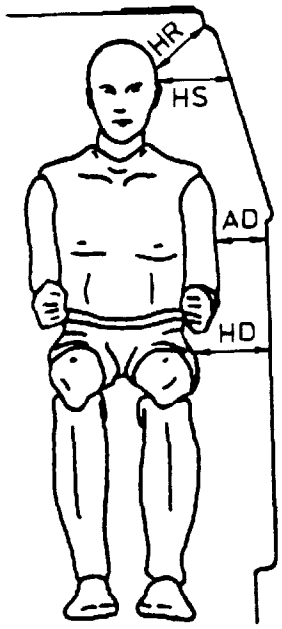
TABLE 5 : CRASH TEST SUMMARY FOR BULLET VEHICLE

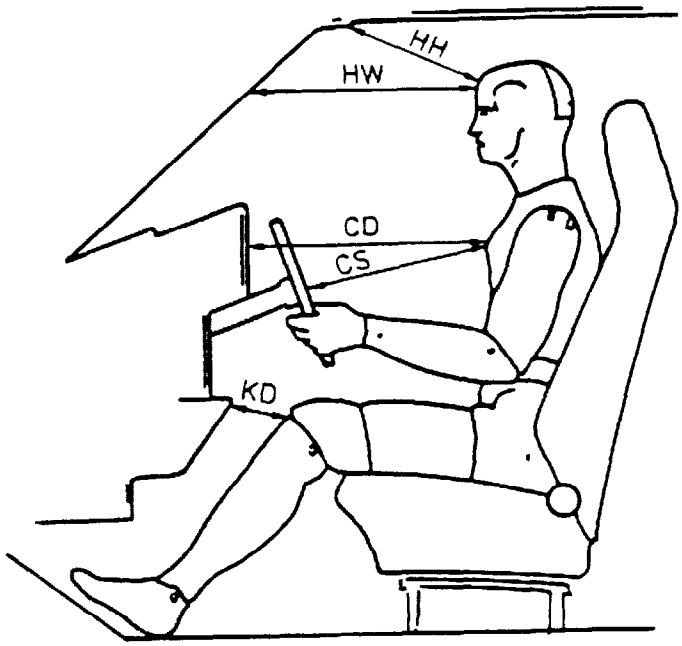
Test No.: 11 Vehicle: 705 118 LF 338 (kp) RF 331 (kp)
Test Date: 2/14/83 Total Test Weight: 1199 (kp) LR 281 (kp) RR 252 (kp)

HEAD RESTS - up down other none
FRONT SEAT - forward midpoint rearward latched welded
FRONT SEAT TILT - forward midpoint back none other: $25^{o}$
REAR SEAT - in place removed
STEERING WHEEL - up midpoint down not adjustable
SUN VISORS - up down removed
GLOVE COMPARTMENT - locked closed none
SEAT BELT - fastened unfastened removed none
SHOULDER HARNESSES - fastened unfastened removed none
VENT WINDOW - closed open removed
LEFT FRONT WINDOW - up down removed
RIGHT FRONT WINDOW - up down removed
LEFT REAR WINDOW - up down removed
RIGHT REAR WINDOW - up down removed
LEFT FRONT DOOR - closed locked removed
RIGHT FRONT DOOR - closed locked removed
LEFT REAR DOOR - closed locked removed
RIGHT REAR DOOR - closed locked removed
ENGINE - in place removed mounts modified
TRANSMISSION - neutral removed other: _____
DRIVESHAFT - in place removed
PARKING BRAKE - off on disconnected removed
FRONT BUMPER - in place removed none
REAR BUMPER - in place removed none
HOOD - in place removed
WINDSHIELD WIPERS - in place removed
FUEL TANK - 95 % full empty other: _____
RADIATOR - full empty none removed
BATTERY - in place removed drained
SPARE TIRE - in place removed none
BALLAST - none _____ kg
DUMMY LOCATION - LF RF LR RR none
DUMMY POSITIONING CRITERIA - FMVSS 208 side impact criteria other

TABLE 6 : PRE TEST CONDITIONS

TEST NO.: 11

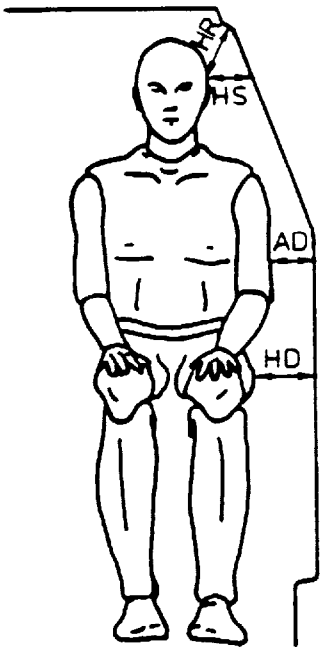


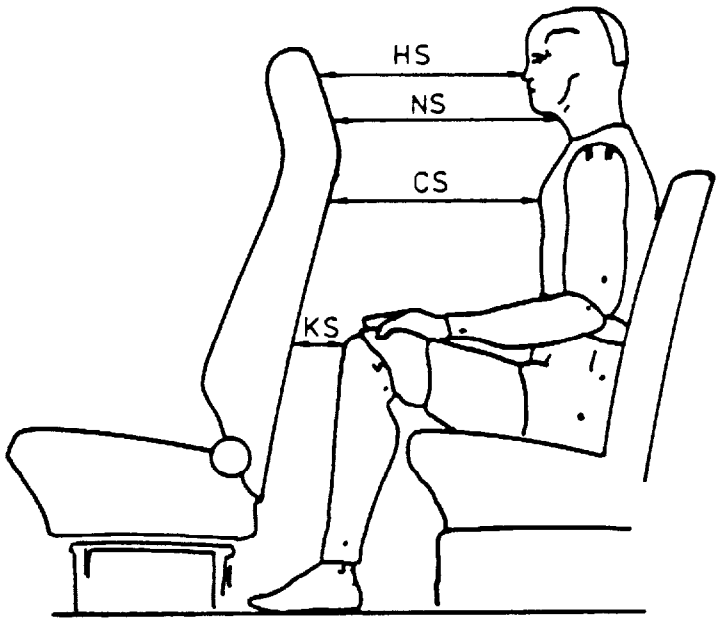




| | | | | | |
|---|---|---|---|---|---|
| HR = | 150 | mm | HH = | 375 | mm |
| HS = | 170 | mm | HW = | 530 | mm |
| AD = | 20 | mm | CD = | 515 | mm |
| HD = | 65 | mm | CS = | 310 | mm |
| | | | KD = | 90 | mm |

TABLE 7 : DRIVER PRE - TEST POSITION

TEST NO.: 11




| | | | | | |
|---|---|---|---|---|---|
| HR = | 160 | mm | HS = | 505 | mm |
| HS = | 170 | mm | NS = | 535 | mm |
| AD = | 40 | mm | CS = | 420 | mm |
| HD = | 70 | mm | KS = | 115 | mm |

TABLE 8 : REAR PASSENGER PRE - TEST POSITION

TEST NO 11

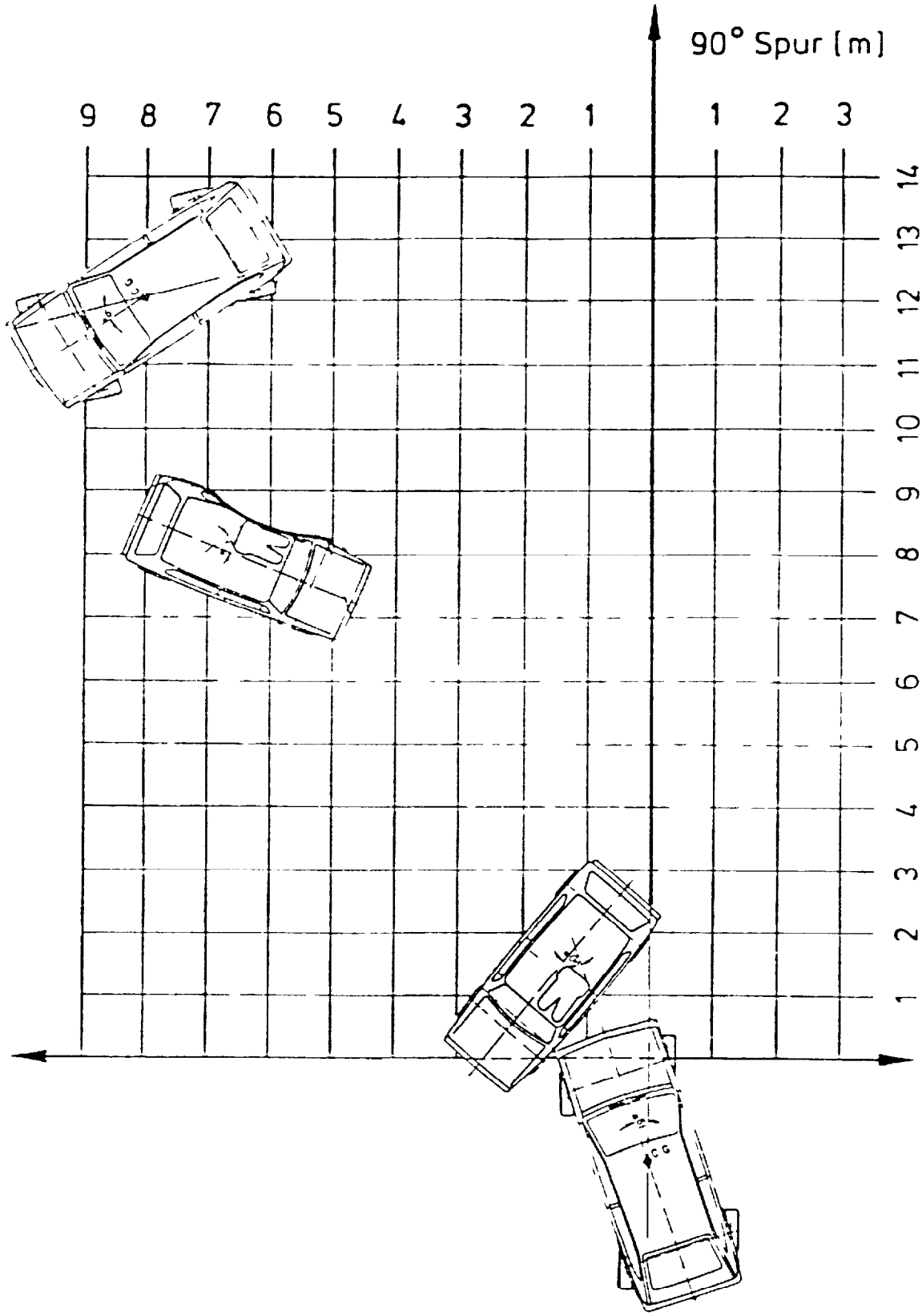



TABLE 9 : VEHICLE PRE- AND POST-TEST POSITION

VEHICLE: MIV with NHTSA - Side Padding

TEST NO.: (MOVING TEST DEVICE) 11

| DUMMY CONTACT POINTS: | LEFT FRONT | LEFT REAR |
|---|---|---|
| HEAD | Contact at Left Front Side Window | Contact at C-Pillar and Roof-Line |
| CHEST | Upper Door Panel and lower Window-Sill | Upper Door Panel and lower Window-Sill |
| KNEES/HIP | Lower Front-Door Panel | Lower Rear-Door Panel |

GLAZING: Left Vent Window shattered. Windshield cracked. Left Front Door and Rear Door Side-Window no damage.

DOORS: Left Front- and Rear Door damaged. Front Door would not open.

SEAT BELT ANCHORAGES: Left Seat Frame damaged, but Seat Anchorages remained intact.

RESTRAINTS: Driver (RA) and Left Rear (Lap-Belt) in use.

FUEL LEAKAGE: none

GENERAL OBSERVATIONS: Impact Point 260 mm from Front Axle. Citation Bumper impacted in Front of the A-Pillar into the Side Beam Level. A-Pillar and B-Pillar damaged and bended on the Levels of Window-Sill and Citation Bumper.

Modified Padding in the area of Front- and Rear Door Panel.

Driver Dummy : no damage

Left Rear Dummy : no damage

TABLE 10 : SUMMARY OF POST-TEST OBSERVATIONS

TEST NO.: 11

TEST CONFIGURATION:

TARGET VEHICLE MIV with NHTSA - Side Padding SPEED 0 (mph)

BULLET VEHICLE 19° Crabbed Citation SPEED 39.8 (mph)

IMPACT LOCATION BEHIND FRONT AXLE 260 (mm) ANGLE 60 (deg)

PASSENGER: D R I V E R

HEAD RESPONSE:

| LOCATION | | $g_{max}$ | ≥ 3ms (g) | HIC | TIME T1 (ms) | TIME T2 (ms) | |
|---|---|---|---|---|---|---|---|
| HEAD | $a_y$ | 126.4 | 87.5 | --- | --- | --- | |
| HEAD | $a_{res}$ | 132.0 | 88.4 | 609 | 64.6 | 77.8 | |

IMPACTED OBJECT: Left Front Side Window

CHEST RESPONSE:

| LOCATION | $g_{max}$ | ≥ 3ms (g) | SI | $\Delta v_y$ (mph) | IMP.TIME (ms) | TIME a-max (ms) |
|---|---|---|---|---|---|---|
| UPPER STERNUM (X) | 97.0 | 67.7 | --- | --- | 41 | 83.5 |
| LOWER STERNUM (X) | 50.2 | 35.8 | --- | --- | 42 | 90.5 |
| LUR (Y) | 64.4 | 58.9 | 342 | 26.5 | 38 | 55.5 |
| LLR (Y) | 73.3 | 57.1 | 399 | 26.3 | 33 | 55.5 |
| RUR (Y) | 75.3 | 65.9 | 417 | 25.8 | 41 | 66.0 |
| RLR (Y) | 87.7 | 72.3 | 662 | 28.3 | 40 | 81.5 |

CHEST DEFLECTION: DAMPER - DY 38 (mm)

VERTEBRAL COLUMN RESPONSE:

| LOCATION | | $g_{max}$ | ≥ 3ms (g) | SI | $\Delta v_y$ (mph) | IMP.TIME (ms) | TIME a-max (ms) |
|---|---|---|---|---|---|---|---|
| UPPER (T1) | (Y) | 81.2 | 77.5 | 633 | 28.3 | 42 | 67 |
| THORAX | (RES) | 81.7 | 78.9 | 705 | --- | 42 | 67 |
| LOWER (T12) | (Y) | 73.8 | 67.3 | 567 | 29.6 | 40 | 58.5 |
| THORAX | (RES) | 74.9(127) | 70.1 | 769 | --- | 40 | 58.5(175) |

PELVIS RESPONSE:

| LOCATION | | $g_{max}$ | ≥ 3ms (g) | SI | $\Delta v_y$ (mph) | IMP.TIME (ms) | TIME a-max (ms) |
|---|---|---|---|---|---|---|---|
| PEAK | $a_y$ | 92.1 | 71.0 | --- | 28.8 | 37 | 48.5 |
| PEAK | $a_{res}$ | 92.6 | 71.3 | 569 | --- | 20 | 48.5 |

TABLE 11 : SIDE IMPACT DUMMY TEST RESPONSE SUMMARY

TEST NO.: 11

TEST CONFIGURATION:

TARGET VEHICLE MIV with NHTSA-Padding SPEED 0 (mph)

BULLET VEHICLE 19° Crabbed Citation SPEED 39.8 (mph)

IMPACT LOCATION BEHIND FRONT AXLE 260 (mm) ANGLE 60 (deg)

PASSENGER: REAR LEFT

HEAD RESPONSE:

| LOCATION | $g_{max}$ | ≥ 3ms (g) | HIC | TIME T1 (ms) | TIME T2 (ms) | |
|---|---|---|---|---|---|---|
| HEAD $a_y$ | 85.6 | 70.6 | --- | --- | --- | |
| HEAD $a_{res}$ | 92.7 | 77.2 | 321 | 94.0 | 115.1 | |

IMPACTED OBJECT: C-Pillar and Roof-Line

CHEST RESPONSE:

| LOCATION | $g_{max}$ | ≥ 3ms (g) | SI | $\Delta v_y$ (mph) | IMP.TIME (ms) | TIME a-max (ms) |
|---|---|---|---|---|---|---|
| UPPER STERNUM (X) | 32.7 | 30.0 | --- | --- | 60 | 91.5 |
| LOWER STERNUM (X) | 36.4 | 25.7 | --- | --- | 66 | 106.0 |
| LUR (Y) | 45.0 | 38.0 | 122 | 23.4 | 53 | 92.0 |
| LLR (Y) | 51.8 | 44.3 | 183 | 23.8 | 64 | 80.5 |
| RUR (Y) | 58.3 | 48.4 | 224 | 30.2 | 67 | 93.0 |
| RLR (Y) | 63.9 | 53.0 | 233 | 25.9 | 67 | 84.5 |

CHEST DEFLECTION: DAMPER - DY 28 (mm)

VERTEBRAL COLUMN RESPONSE:

| LOCATION | $g_{max}$ | ≥ 3ms (g) | SI | $\Delta v_y$ (mph) | IMP.TIME (ms) | TIME a-max (ms) |
|---|---|---|---|---|---|---|
| UPPER (T1) (Y) | 44.5 | 37.7 | --- | 27.2 | 52 | 93.5 |
| THORAX (RES) | 52.7 | 46.5 | 297 | --- | 50 | 95.0 |
| LOWER (T12) (Y) | 41.7 | 40.0 | --- | 25.3 | 52 | 76.5 |
| THORAX (RES) | 45.3 | 42.4 | 220 | --- | 30 | 76.5 |

PELVIS RESPONSE:

| LOCATION | $g_{max}$ | ≥ 3ms (g) | SI | $\Delta v_y$ (mph) | IMP.TIME (ms) | TIME a-max (ms) |
|---|---|---|---|---|---|---|
| PEAK $a_y$ | 67.6 | 52.4 | --- | 22.3 | 45 | 84.5 |
| PEAK $a_{res}$ | 68.6 | 53.5 | 302 | --- | 40 | 84.5 |

TABLE 12 : SIDE IMPACT DUMMY TEST RESPONSE SUMMARY

TEST NO.: 11 OCCUPANT: DRIVER

## PREVIOUS AIS EVALUATION

| LOCATION OF ACCELEROMETER | AIS B-PARAMETER | AIS AV. POWER | PAP | TB / TE (ms) | B | Q | $V_{1050}$ | $V_{1090}$ | RVS |
|---|---|---|---|---|---|---|---|---|---|
| LEFT UPPER RIB L U R | 3.25 | 3.29 | 1538 | 44 / 66 | 6.6654 | 1166.3 | 10.62 | 36.88 | 3.4706 |
| LEFT LOWER RIB L L R | 3.39 | 3.64 | 2011 | 45 / 68 | 6.7593 | 1096.1 | 10.00 | 20.00 | 2.0000 |
| UPPER THORAX T 1 Y | 3.83 | 4.05 | 2872 | 58 / 74 | 7.0536 | 1237.4 | 10.00 | 17.50 | 1.7500 |
| LOWER THORAX T 12 Y | 3.66 | 4.12 | 2906 | 48 / 68 | 6.9412 | 1289.4 | 9.38 | 18.13 | 1.9333 |

## NEW AIS EVALUATION

| LOCATION OF ACCELEROMETER | ACCELERATION | AGE (YEARS) 20 | | 30 | | 40 | | 50 | | 60 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FAT. R. | AIS | FAT. R. | AIS | FAT. R. | AIS | FAT. R. | AIS | FAT. R. | AIS |
| L U R | 66.6 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 |
| L L R | 67.9 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 |
| T 1 Y | 78.5 | 0.0000 | 0 | 0.0000 | 0 | 0.0167 | 3 | 0.0488 | 4 | 0.0808 | 4 |
| T 12 Y | 70.6 | 0.0000 | 0 | 0.0000 | 0 | 0.0052 | 3 | 0.0412 | 4 | 0.0772 | 4 |

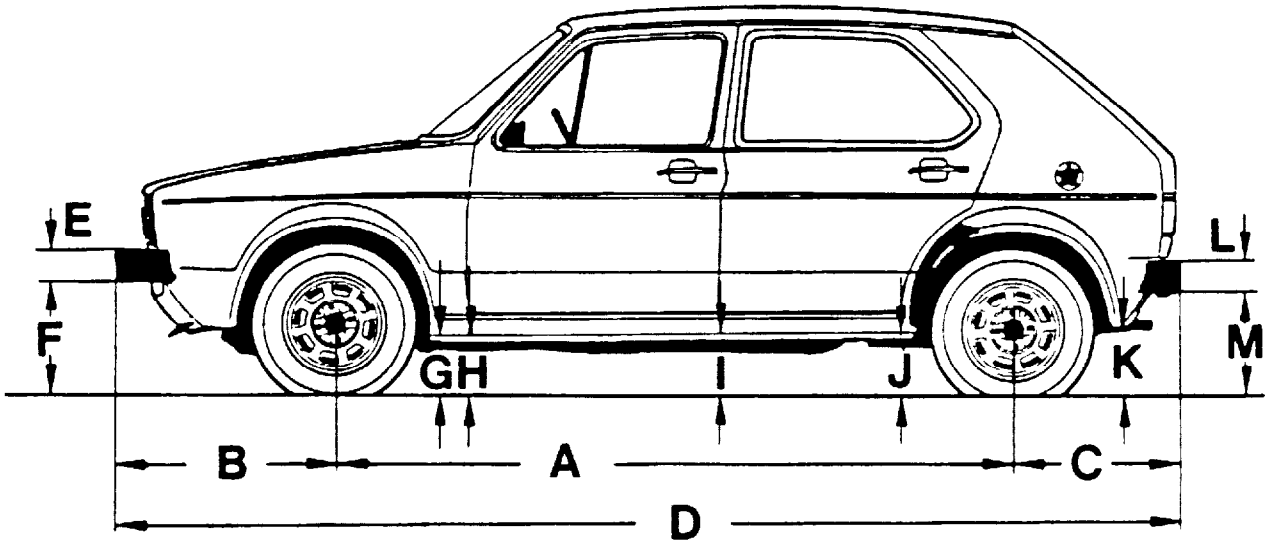
TABLE 13 : AIS AND COEFFICIENTS

TEST NO.: 11

| LOCATION OF ACCELEROMETER | AIS B-PARAMETER | AIS AV.POWER | PAP TB / TE (ms) | B | Q | $V_{1050}$ | $V_{1090}$ | RVS |
|---|---|---|---|---|---|---|---|---|
| LEFT UPPER RIB LUR | 2.67 | 3.11 | 894<br>69 / 109 | 6.2719 | 921.17 | 18.75 | 33.57 | 1.8000 |
| LEFT LOWER RIB LLR | 2.90 | 3.28 | 1199<br>71 / 104 | 6.4311 | 986.00 | 11.87 | 26.88 | 2.2632 |
| UPPER THORAX T 1 Y | 2.82 | 3.22 | 1088<br>74 / 121 | 6.3743 | 1139.9 | 20.00 | 40.00 | 2.0000 |
| LOWER THORAX T 12 Y | 2.90 | 3.28 | 1256<br>73 / 101 | 6.4278 | 1240.2 | 18.13 | 41.87 | 2.3103 |

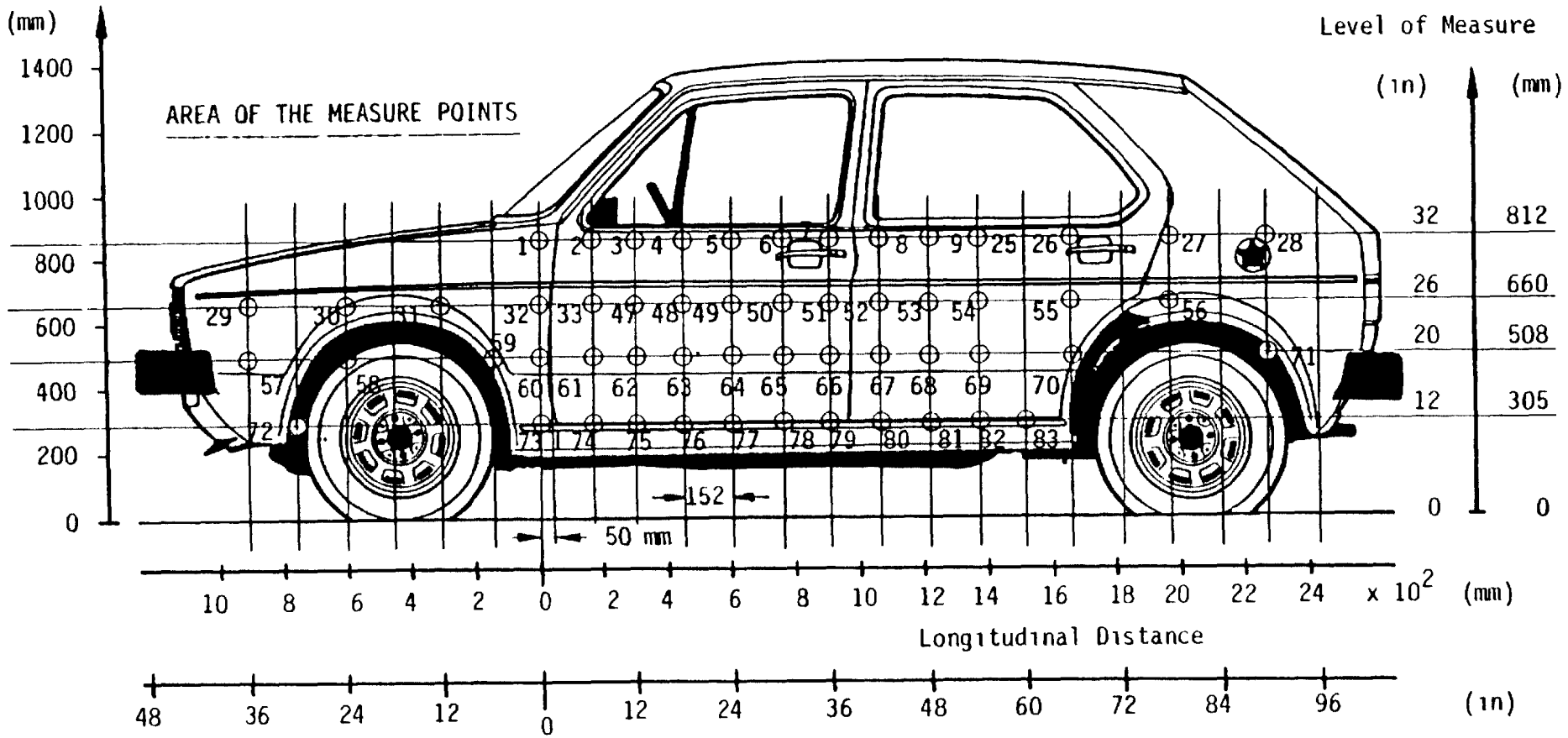
TABLE 14 : AIS AND COEFFICIENTS

TEST NO.: 11




| | PRE - TEST | POST - TEST | △ CHANGE |
|---|---|---|---|
| A | 2400 | 2340 | - 60 |
| B | 810 | 820 | 10 |
| C | 690 | 680 | - 10 |
| D | 3900 | 3840 | - 60 |
| E | 125 | 125 | 0 |
| F | 400 | 430 | 30 |
| G | 215 | 210 | - 5 |
| H | 200 | 195 | - 5 |
| I | 185 | 180 | - 5 |
| J | 185 | 200 | 15 |
| K | 195 | 210 | 15 |
| L | 125 | 125 | 0 |
| M | 305 | 325 | 20 |
| | | | |

TABLE 15 : PRE- AND POST-TEST DIMENSION MEASUREMENTS




TEST NO : 11

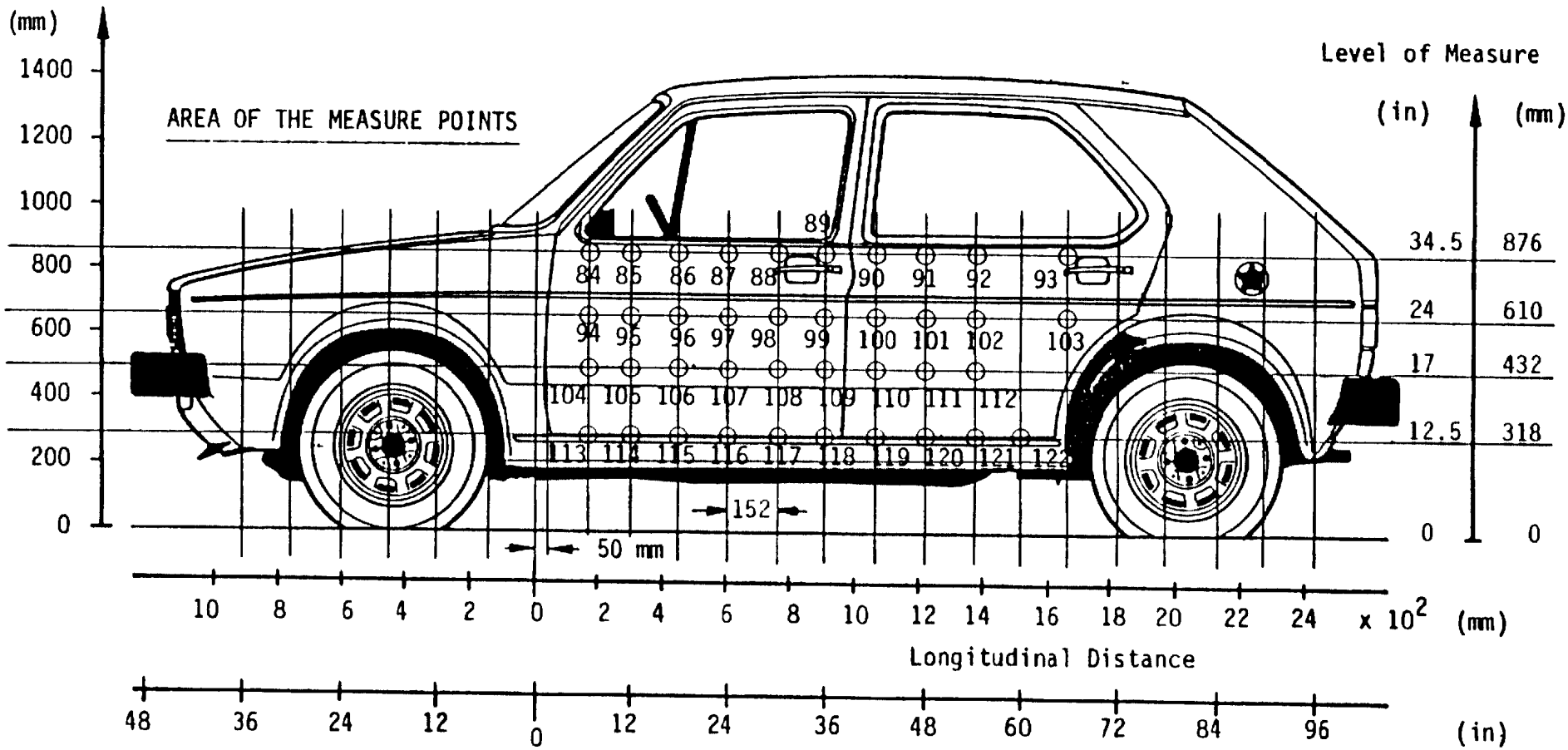
VEHICLE NO : 705 118

FIGURE 10 : VEHICLE MEASUREMENT SIDE (EXTERIOR)

TEST NO.: 11

| LOCATION | | | WINDOW - SILL LEVEL | BULLET VEHICLE HOOD LEVEL | MID - DOOR LEVEL | ROCKER-SILL LEVEL |
|---|---|---|---|---|---|---|
| HEIGHT ABOVE GROUND LEVEL (mm) | | | 812 | 660 | 508 | 305 |
| ZERO DISTANCE LOCATED AT DOOR (mm) | FRONT | 914 (762) | ● | + 33 | + 37 | (762) + 41 |
| | | 610 | ● | 7 | + 7 | |
| | | 457 | ● | ● | ● | |
| | | 305 | ● | 82 | ● | |
| | | 152 | ● | ● | 98 | |
| | | 0 | 63 | 115 | 156 | 35 |
| | REAR | 152 | 177 | 189 | 236 | 135 |
| | | 305 | 240 | 261 | 291 | 144 |
| | | 457 | 274 | 329 | 298 | 153 |
| | | 610 | 288 | 339 | 287 | 156 |
| | | 762 | 297 | 310 | 271 | 158 |
| | | 914 | 278 | 267 | 247 | 159 |
| | | 1067 | 253 | 248 | 239 | 163 |
| | | 1220 | 224 | 225 | 209 | 93 |
| | | 1372 | 165 | 196 | 168 | 48 |
| | | 1524 | ● | ● | ● | |
| | | 1676 | 27 | 40 | 122 | 20 |
| | | 1829 | ● | ● | ● | |
| | | 1981 | 19 | 25 | ● | |
| | | 2286 | + 8 | ● | + 14 | |

TABLE 16 : EXTERIOR STATIC CRUSH FOR TARGET VEHICLE




TEST NO : 11

VEHICLE NO : 705 118

FIGURE 11 : VEHICLE MEASUREMENT SIDE (INTERIOR)

TEST NO.: 11

| LOCATION | | WINDOWSILL LEVEL | MID - DOOR LEVEL | BULLET VEHICL BUMPER LEVEL | DOORSILL LEVEL |
|---|---|---|---|---|---|
| HEIGHT ABOVE GROUND LEVEL (mm) | | 876 | 610 | 432 | 318 |
| ZERO DISTANCE STARTING AT DOOR (mm) | 0 | ● | ● | ● | ● |
| | 152 | 125 | 171 | 180 | 58 |
| | 305 | 203 | 213 | 194 | 78 |
| | 457 | 244 | 236 | 188 | 91 |
| | 610 | 254 | 244 | 176 | 100 |
| | 762 | 255 | 239 9.4 | 187 | 106 |
| | 914 | 261 | 240 | 195 | 122 |
| | 1067 | 252 | 215 | 162 | 104 |
| | 1220 | 188 | 157 | 113 | 23 |
| | 1372 | 122 | 111 | --- | --- |
| | 1524 | ● | ● | ● | --- |
| | 1676 | + 6 | 32 | ● | |

TABLE 17 : STATIC INTRUSION FOR TARGET VEHICLE

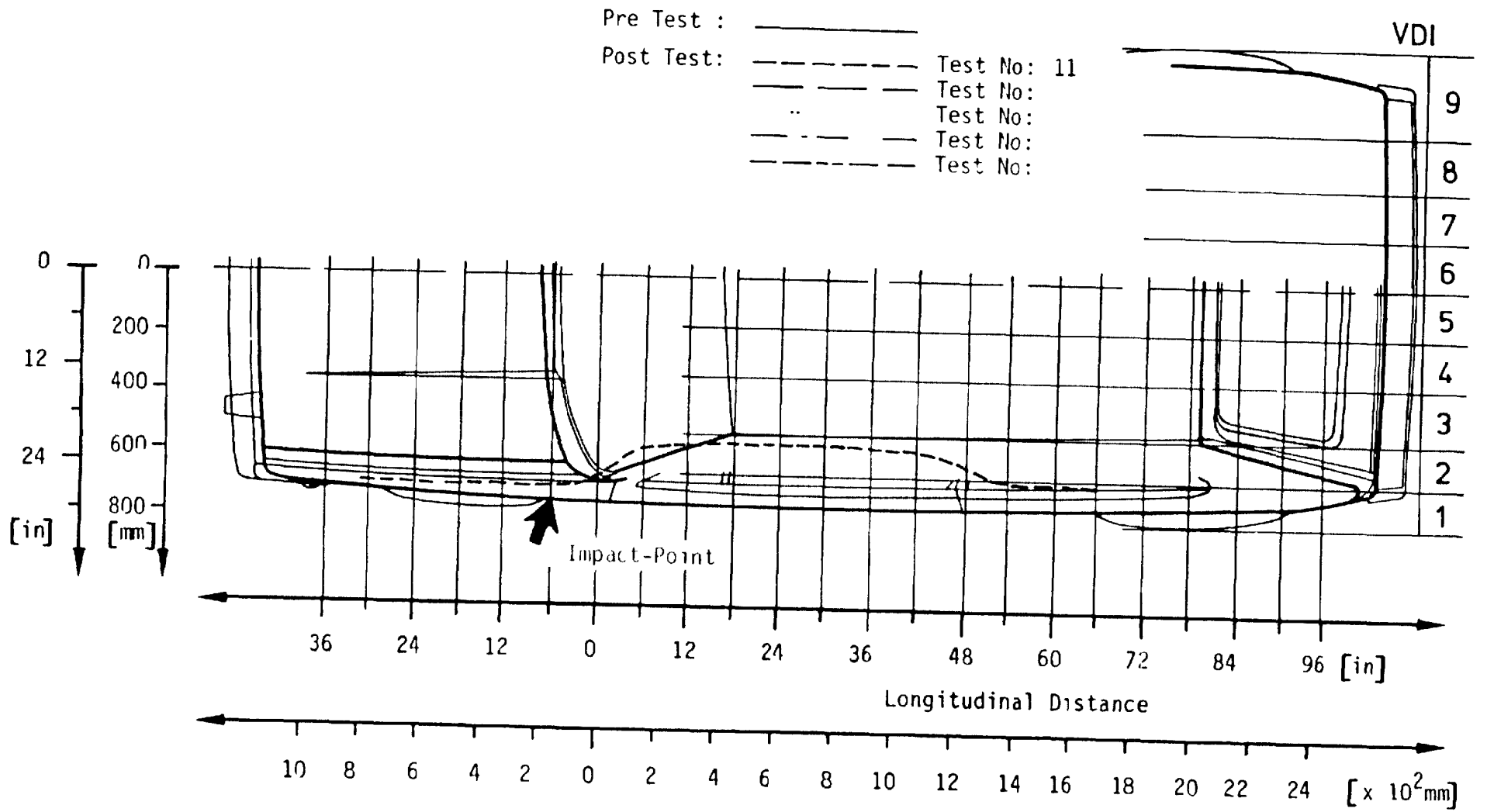



TABLE 18 : PRE- AND POST-TEST EXTERIOR PROFILES AT 305 MM ABOVE GROUND LEVEL

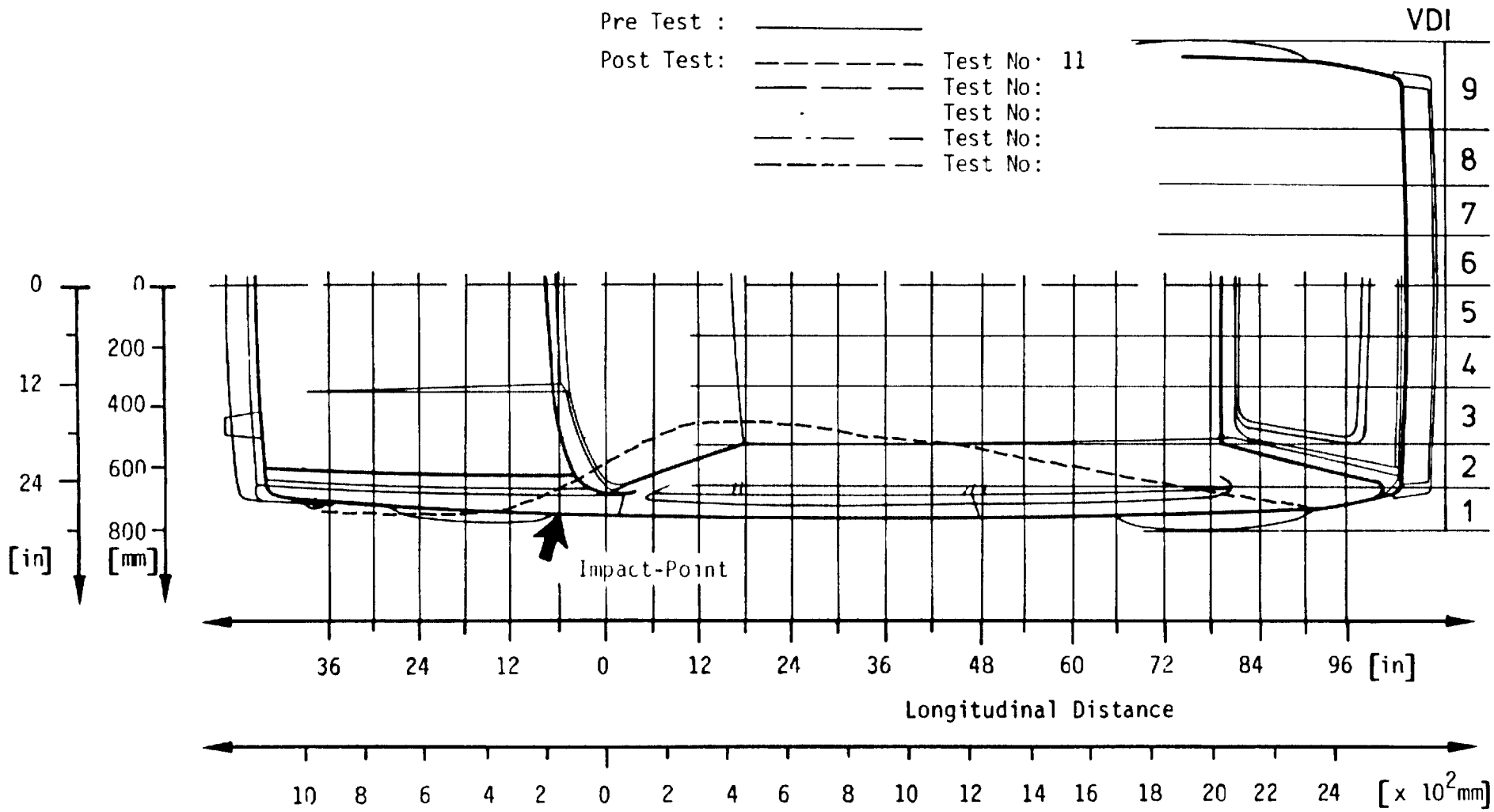



TABLE 19 : PRE- AND POST-TEST EXTERIOR PROFILES AT 508 MM ABOVE GROUND LEVEL

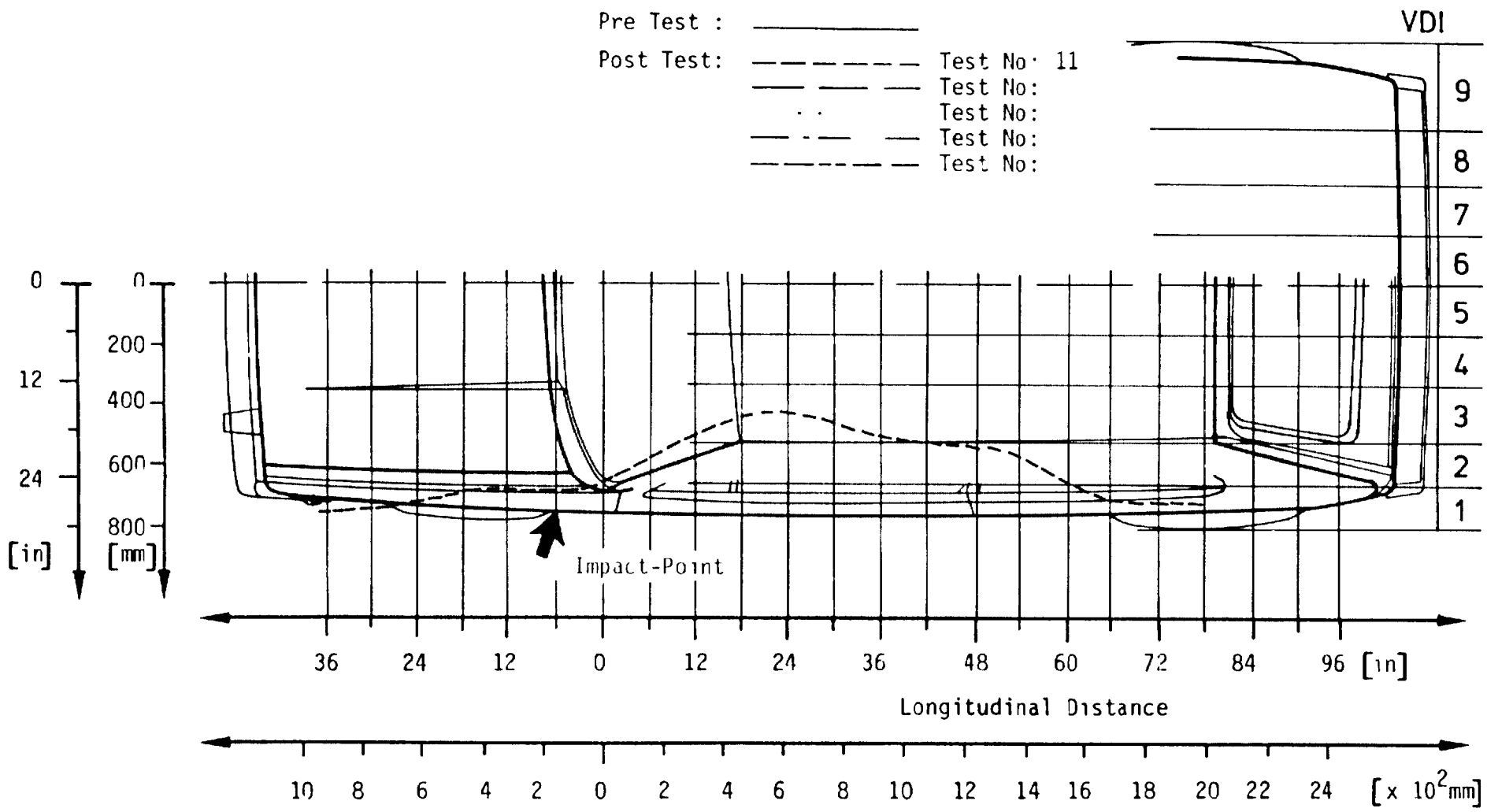



TABLE 20 : PRE- AND POST-TEST EXTERIOR PROFILES AT 660 MM ABOVE GROUND LEVEL

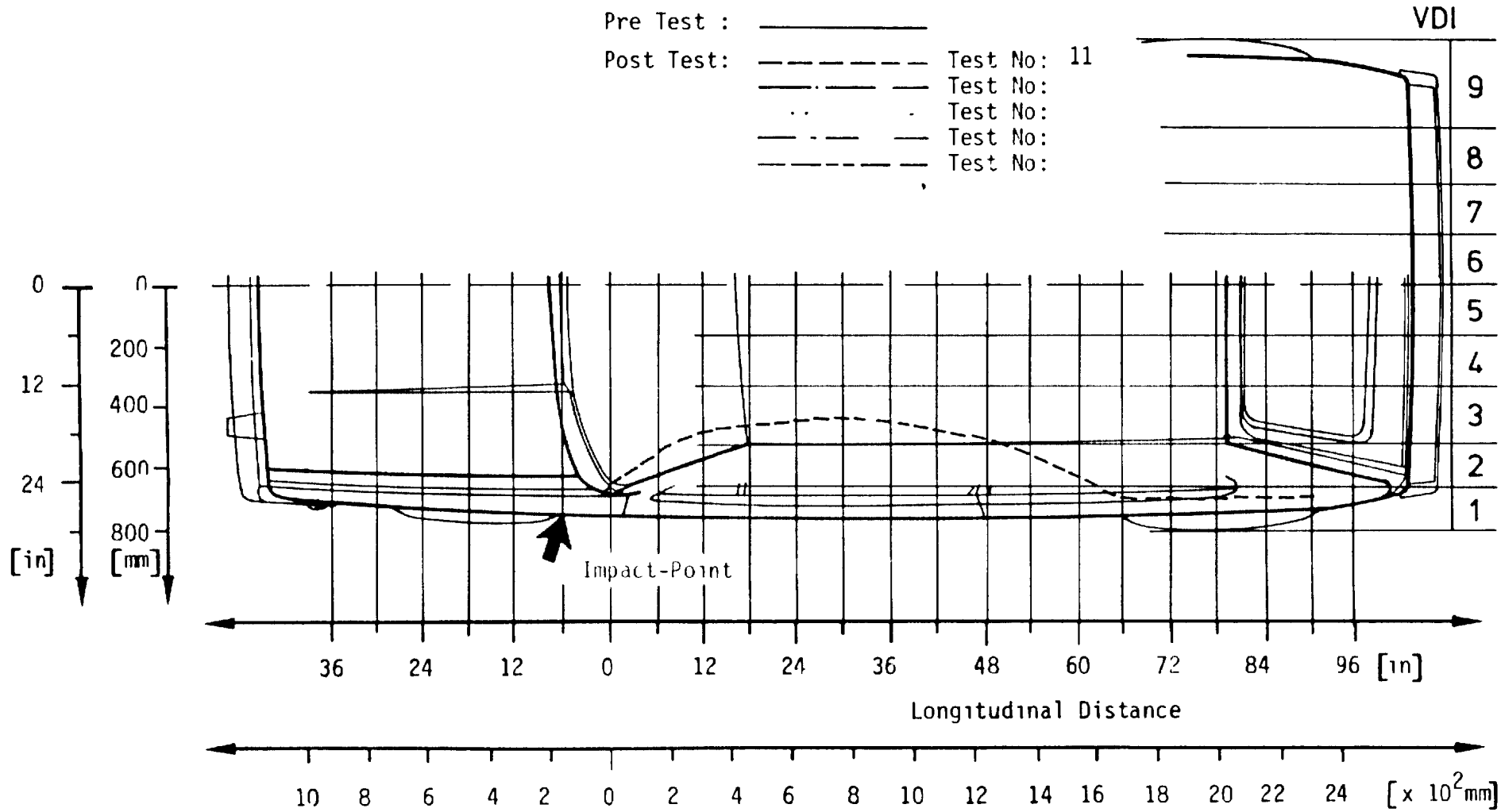



TABLE 21 : PRE- AND POST-TEST EXTERIOR PROFILES AT 812 MM ABOVE GROUND LEVEL

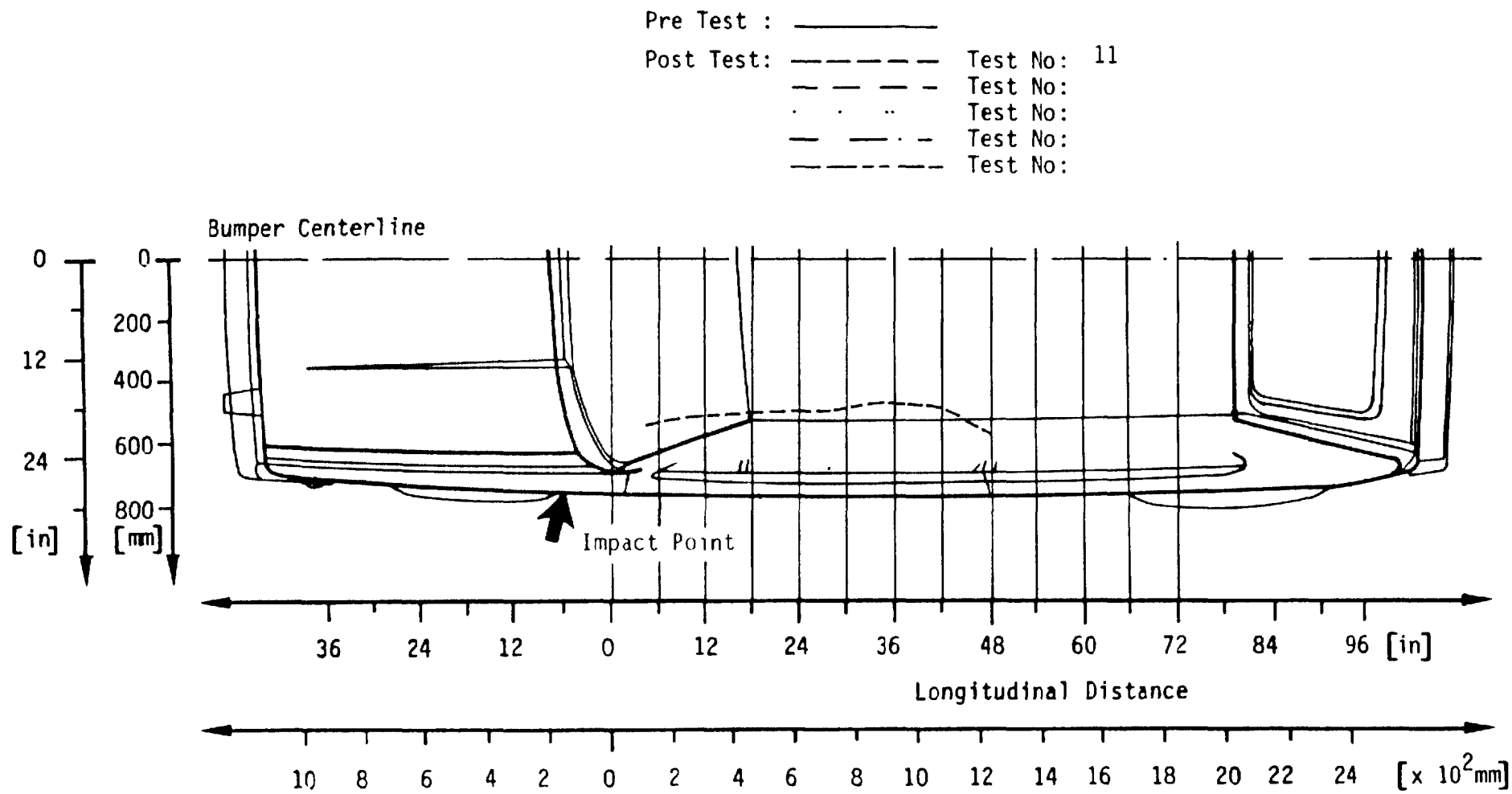



TABLE 22 : PRE- AND POST-TEST INTERIOR PROFILES AT 318 MM ABOVE GROUND LEVEL

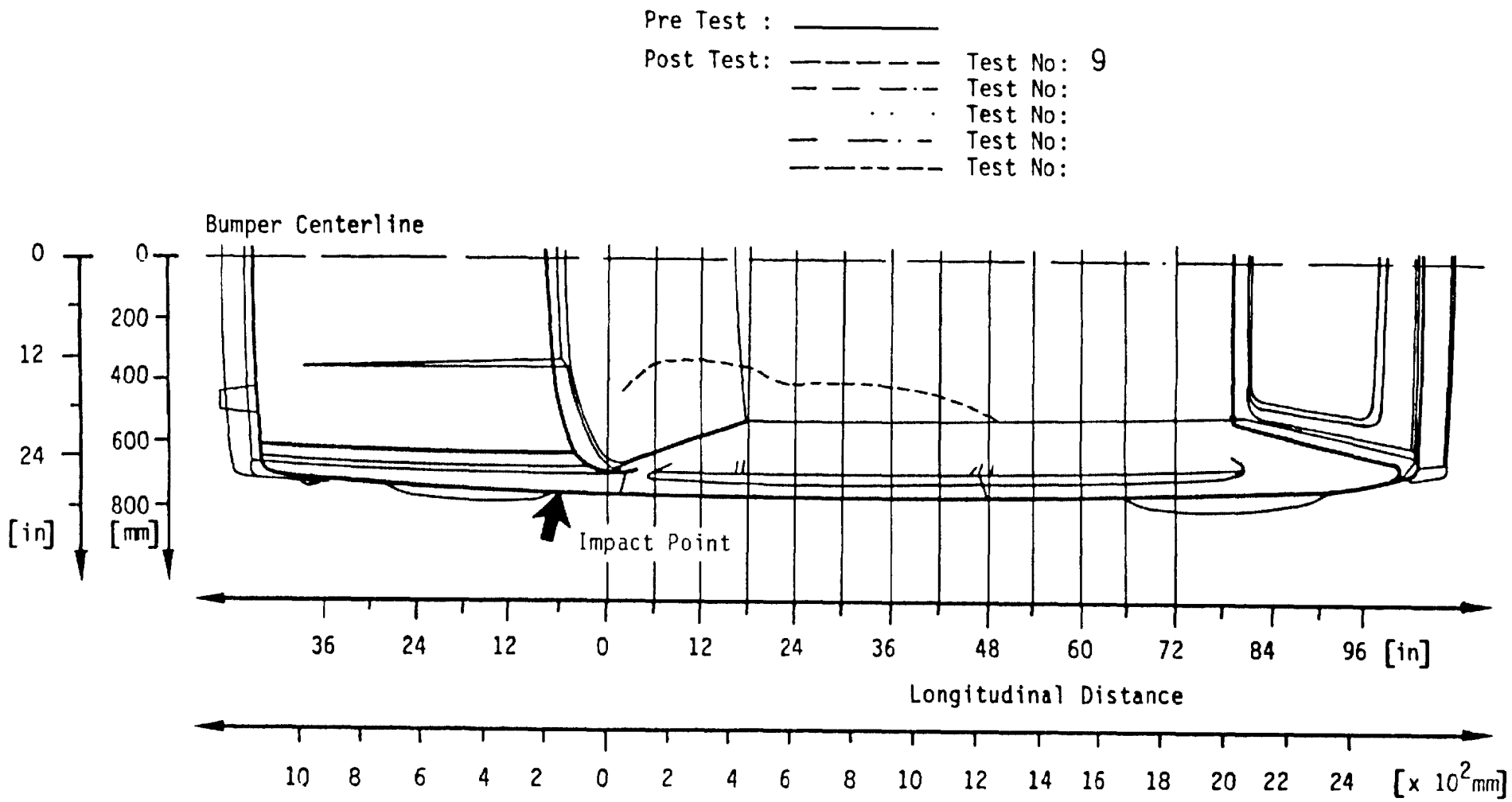



TABLE 23 : PRE- AND POST-TEST INTERIOR PROFILES AT 432 MM ABOVE GROUND LEVEL

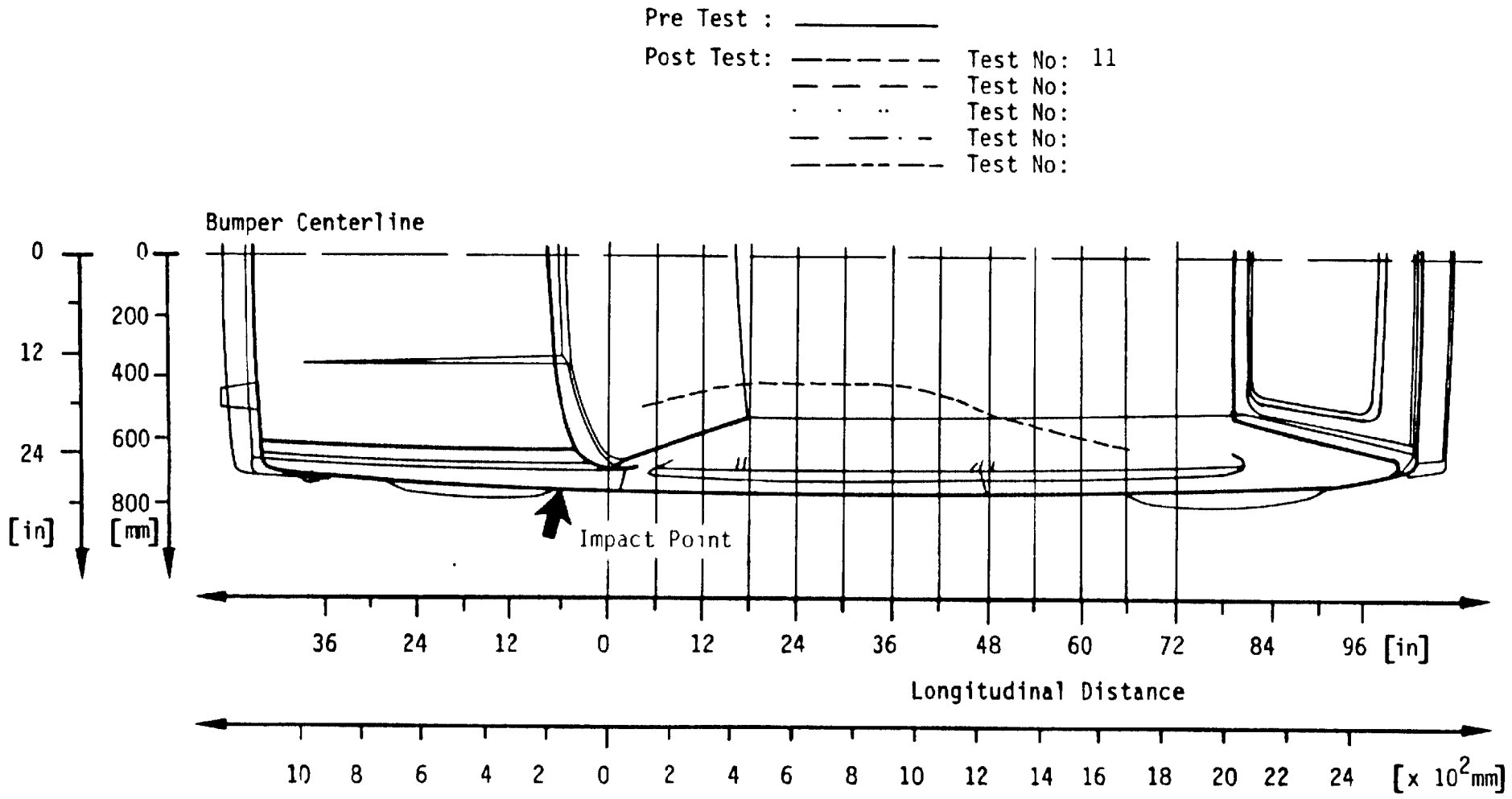



TABLE 24 : PRE- AND POST-TEST INTERIOR PROFILES AT 610 MM ABOVE GROUND LEVEL

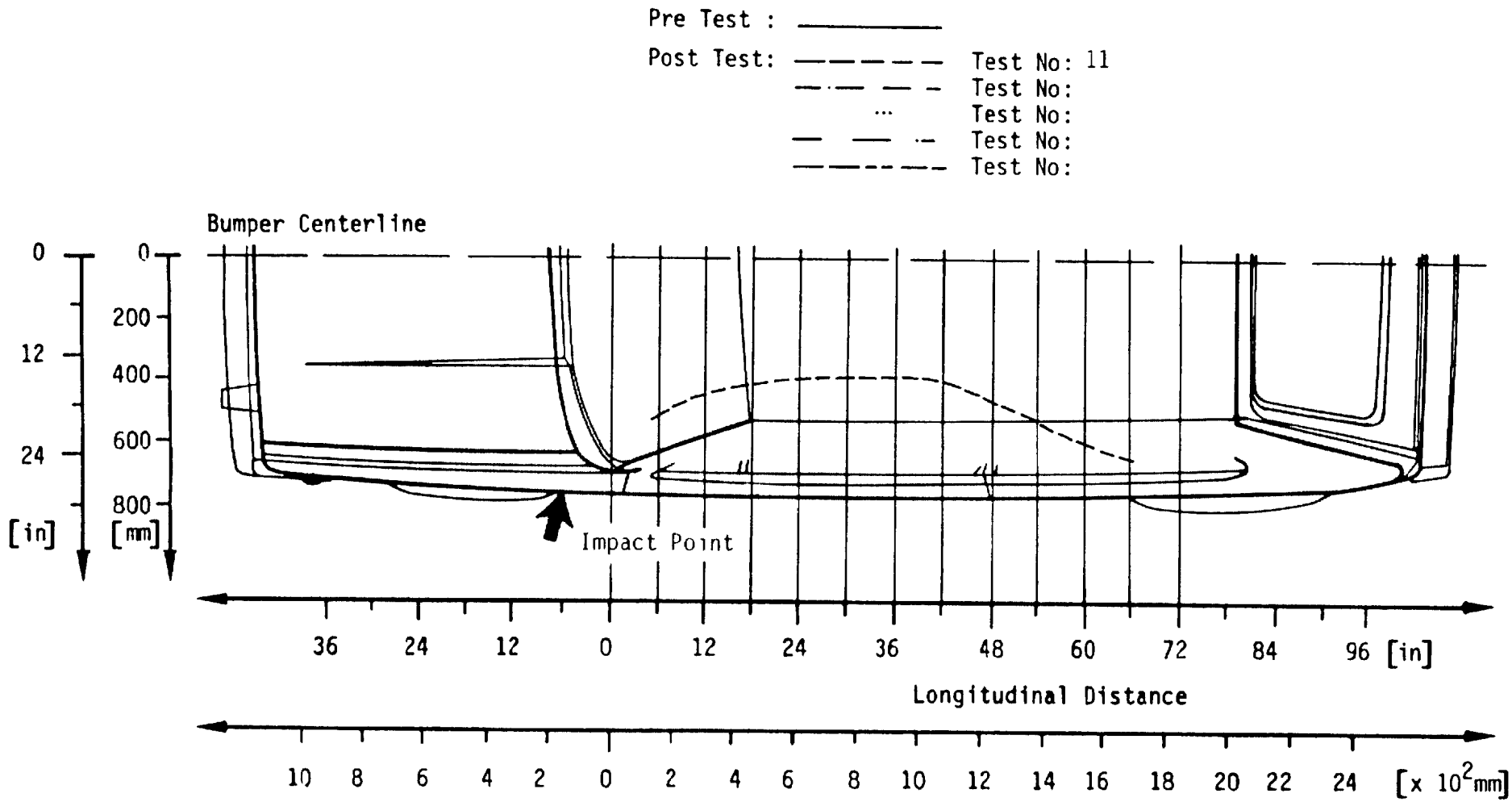



TABLE 25 : PRE- AND POST-TEST INTERIOR PROFILES AT 876 MM ABOVE GROUND LEVEL

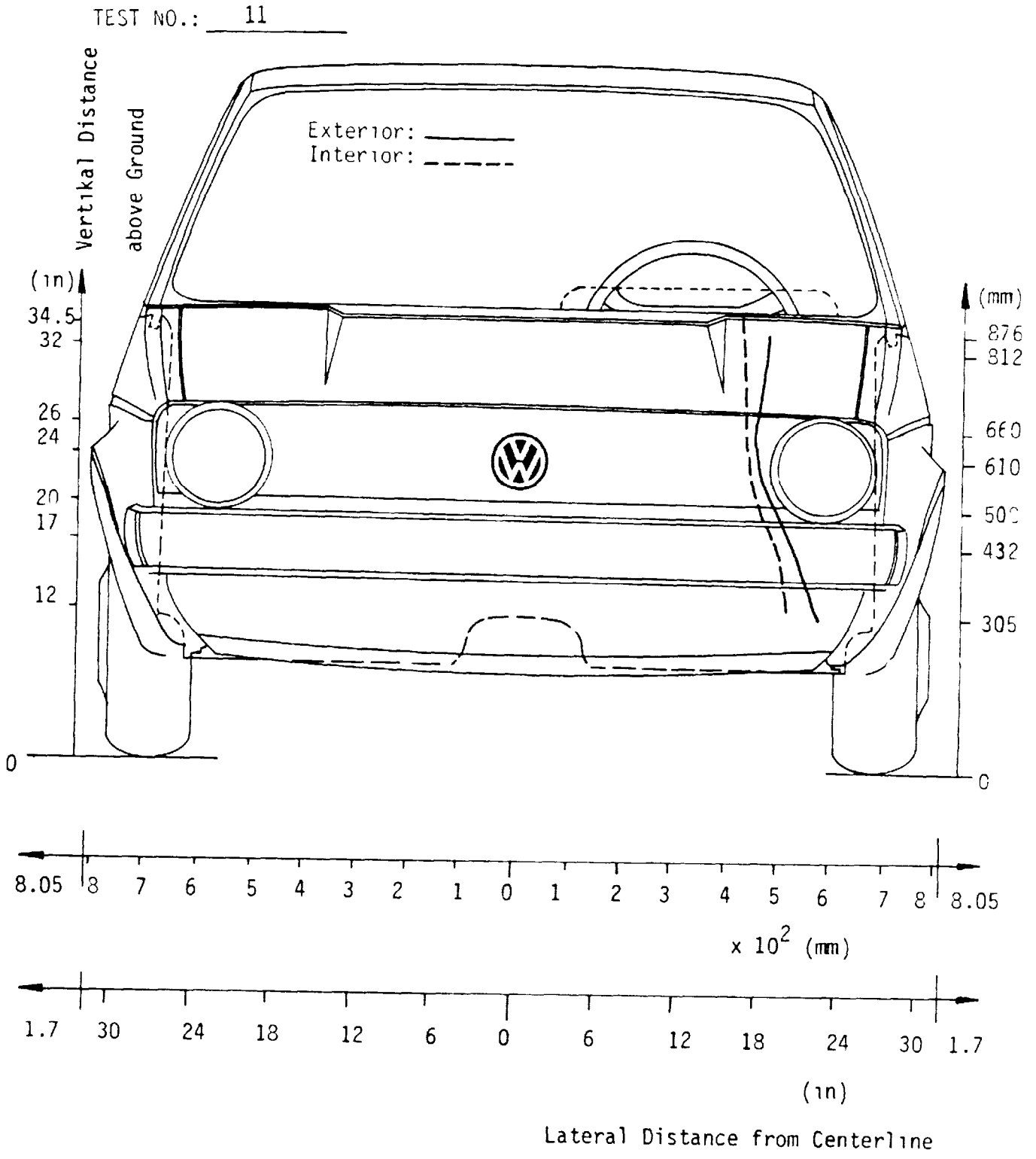



FIGURE 12 : EXTERIOR AND INTERIOR STATIC PROFILES AT THE LONGITUDINAL DISTANCE 610 MM FROM DOOR

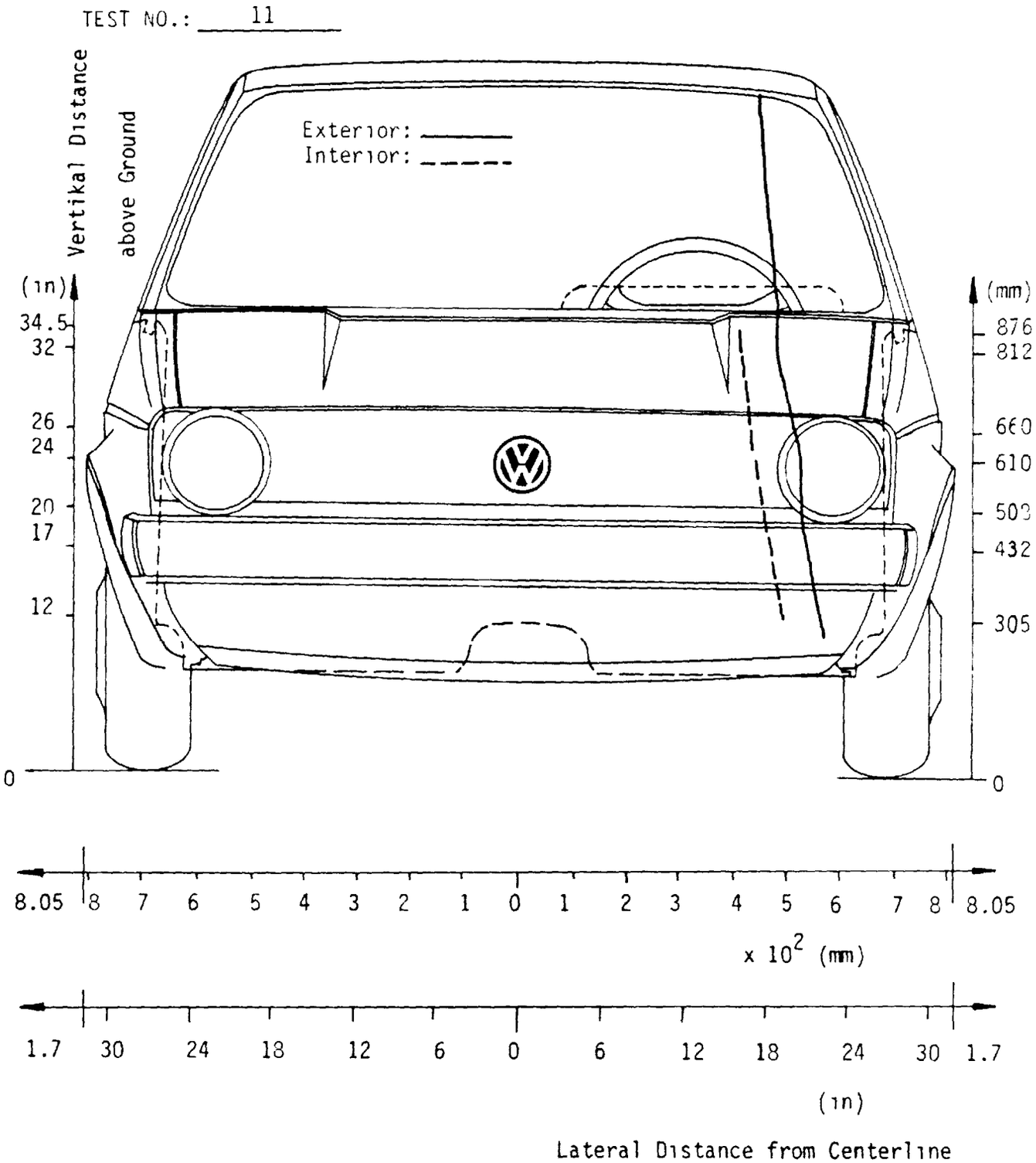



FIGURE 13 : EXTERIOR AND INTERIOR STATIC PROFILES AT THE LONGITUDINAL DISTANCE 914 MM FROM DOOR

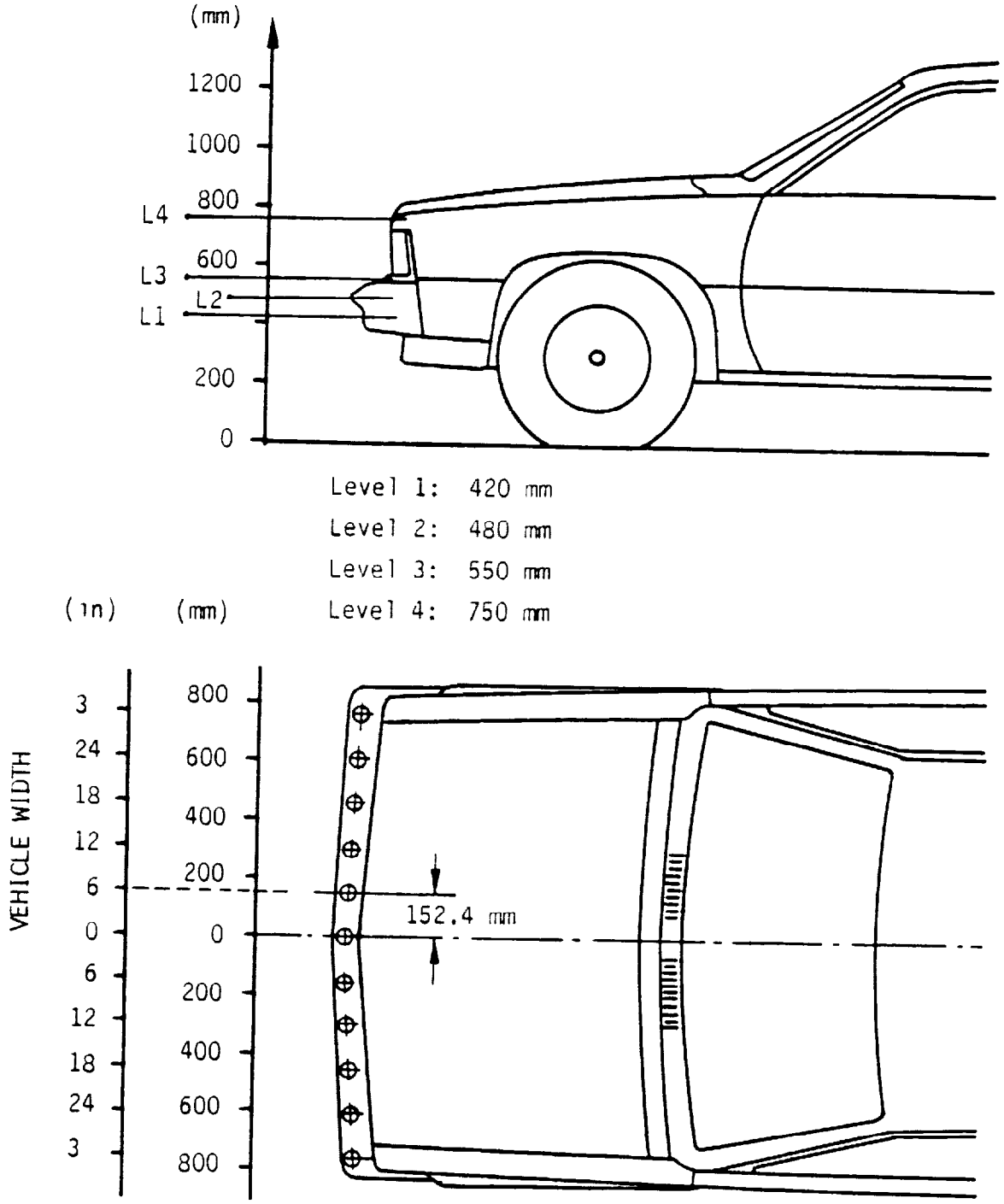



FIGURE 14 : VEHICLE MEASUREMENT FRONTAL PROFILES

TEST NO.: 11

| LOCATION | | | UPPER HOOD EDGE LEVEL | LOWER RADIATOR LEVEL | BUMPER UPPER SIDE | BUMPER LOWER SIDE |
|---|---|---|---|---|---|---|
| HEIGHT ABOVE GROUND LEVEL (mm) | | | 750 | 550 | 480 | 420 |
| DISTANCE OF CENTER (mm) | RIGHT | 762 | 4 | + 1 | 14 | 15 |
| | | 610 | 33 | 4 | 45 | 45 |
| | | 457 | 45 | 30 | 74 | 72 |
| | | 305 | 54 | 43 | 105 | 104 |
| | | 152 | 60 | 64 | 133 | 133 |
| | | 0 | 73 | 89 | 166 | 161 |
| | LEFT | 152 | 108 | 111 | 194 | 188 |
| | | 305 | 133 | 135 | 222 | 218 |
| | | 457 | 130 | 160 | 250 | 244 |
| | | 610 | 129 | 194 | 280 | 272 |
| | | 762 | 133 | 220 | 308 | 302 |

TABLE 26 : EXTERIOR STATIC CRUSH FOR BULLET VEHICLE

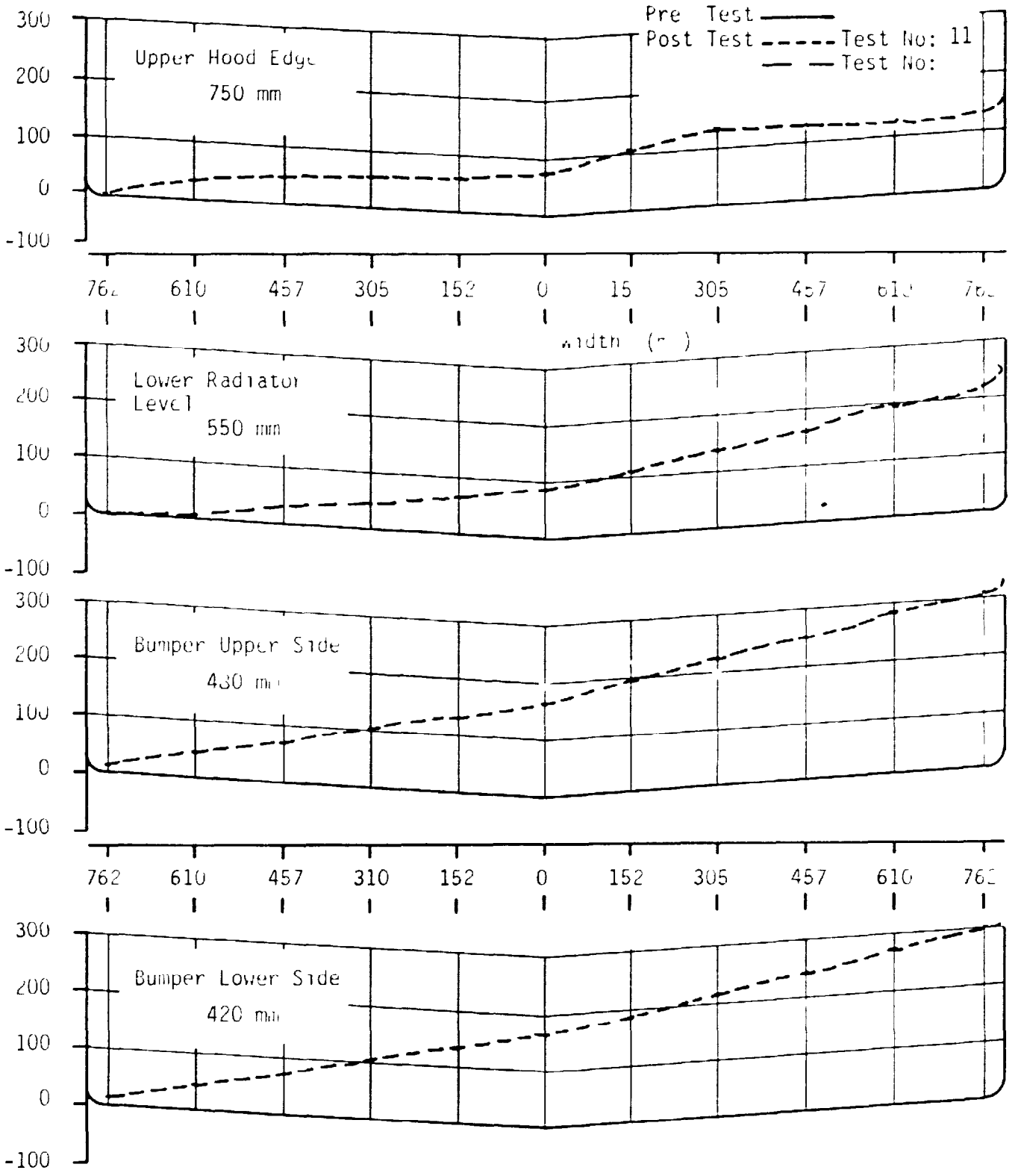



TABLE 27 : PRE- AND POST-TEST FRONTAL PROFILES FOR BULLET VEHICLE

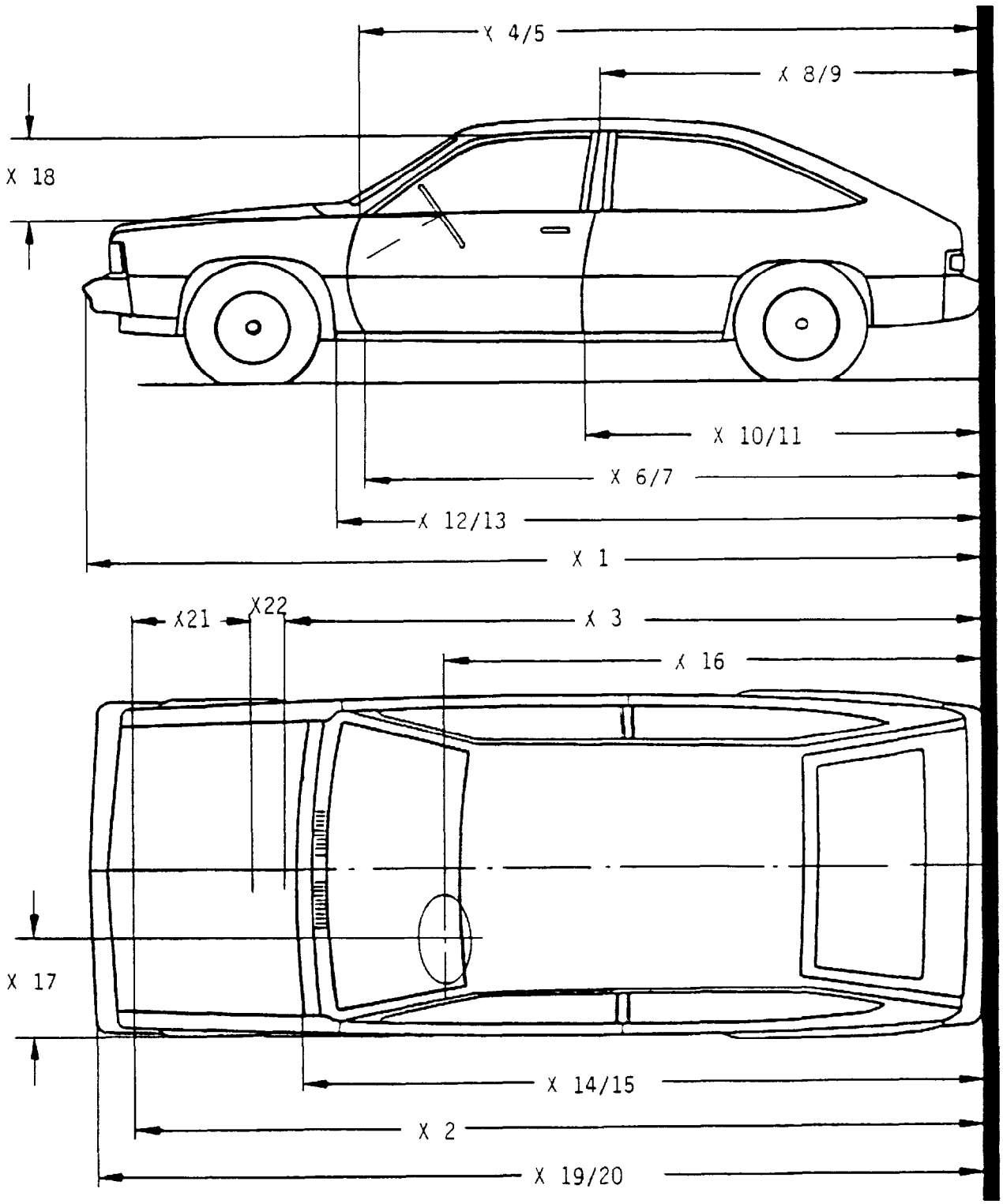



FIGURE 15 : PRE- AND POST MEASUREMENT POINTS

TEST NO : 11

| No. | Type of Measurement | Pre-Test | Change |
|---|---|---|---|
| X 1 | Total Lenght of Vehicle at Centerline | 4493 | -166 |
| X 2 | Rear Surface of Vehicle to Front of Engine | 4016 | - 14 |
| X 3 | Rear Surface of Vehicle to Firewall | 3351 | 0 |
| X 4 | Rear Surface of Vehicle to Upper Leading Edge of Right Door | 3070 | 0 |
| X 5 | " " " " " " " Left Door | 3077 | - 5 |
| X 6 | Rear Surface of Vehicle to Lower Leading Edge of Right Door | 3043 | 0 |
| X 7 | " " " " " " " Left Door | 3054 | - 2 |
| X 8 | Rear Surface of Vehicle to Upper Trailing Edge of Right Door | 1786 | 0 |
| X 9 | " " " " " " " Left Door | 1791 | - 4 |
| X 10 | Rear Surface of Vehicle to Lower Trailing Edge of Right Door | 1803 | 0 |
| X 11 | " " " " " " " Left Door | 1813 | 0 |
| X 12 | Rear Surface of Vehicle to Bottom of A-Pillar of Right Side | 3130 | 9 |
| X 13 | " " " " " " " Left Side | 3142 | 15 |
| X 14 | Rear Surface of Vehicle to Firewall - Right Side | 3363 | 0 |
| X 15 | " " " " " - Left Side | 3343 | 0 |
| X 16 | Rear Surface of Vehicle to Steering Column | 2650 | - 6 |
| X 17 | Center of Steering Column to A-Pillar | 242 | 3 |
| X 18 | Center of Steering Column to Headliner | 417 | 15 |
| X 19 | Rear Surface of Vehicle to Right Side of Front Bumper | 4412 | - 15 |
| X 20 | " " " " Left Side of Front Bumper | 4414 | -308 |
| X 21 | Lenght of Engine Block | 425 | 0 |
| X 22 | Engine to Firewall | 240 | - 12 |

TABLE 28 : VEHICLE MEASUREMENT

PART 572 DUMMY CALIBRATION TEST DATA

Dummy. Driver (Test 11)

| | | |
|---|---|---|
| Date of Dummy Calibration | 3 Feb. 83 | 16 Feb. 83 |
| Calibration Sequential Number for Dummy | | |
| Temperature in Lab. (Spec. = 66 to 78 °F) | 71.6 | 71.6 |
| Relative Humidity in Lab. (Spec. = 10 to 70%) | 45 | 50 |

| Test Parameter | | Specification | Pre - Test Calibration | Post - Test Calibration |
|---|---|---|---|---|
| 1. Head Drop Test: | | | | |
| a. Peak Resultant Accel. | | 210 - 260G | 220 | 220 |
| b. Peak Lateral Accel. | | <10G | | |
| c. Time above 100G | | 0.9 - 1.5 ms | 1.2 | 1.29 |
| 2. Neck Bending Test: | | | | |
| a. Pendulum Speed | | 21.5 - 25.5 fps | 21.6 | 21.6 |
| b. Pendulum Avg. Decel. (over $t_3 - t_2$) | | 20 - 24G | 23.0 | 23.5 |
| c. Peak Resultant Head Acceleration | | 26G Maximum | 22.0 | 22.0 |
| d. Pendulum Decel. ($t_2 - t_1$) | | ⩽ 3 ms | 2.5 | 2.0 |
| e. Pendulum Decel. ($t_3 - t_2$) | | 25 - 30 ms | 25.0 | 25.0 |
| f. Pendulum Decel. ($t_4 - t_3$) | | ⩽10 ms | 3.0 | 6.0 |
| g. Pendulum Direction Reversal Time | | ⩾123 ms | | |
| h. Maximum Head Rotation | | 63 to 73° | 71.0 | 73.0 |
| i. Chordal Displacement: | | | | |
| Head Rotation Angle | | | | |
| 0° | Time | -2 - 2 ms | 0 | 0 |
| | Displ. | -0.5 - 0.5 in. | 0 | 0 |
| 30° | Time | 25.6 - 34.4 ms | 27.0 | 26.5 |
| | Displ. | 2.1 - 3.1 in. | 2.95 | 2.96 |
| 60° | Time | 40.3 - 51.7 ms | 44.0 | 41.0 |
| | Displ. | 4.3 - 5.3 in. | 5.21 | 5.3 |
| Maximum (73°) | Time | 53.2 - 66.8 ms | 58.0 | 63.0 |
| | Displ. | 5.0 - 6.0 in. | 5.96 | 5.98 |
| 60° | Time | 67.0 - 83.0 ms | 78.0 | 81.0 |
| | Displ. | 4.3 - 5.3 in. | 5.26 | 5.08 |
| 30° | Time | 85.4 - 104.6 ms | 100.0 | 100.0 |
| | Displ. | 2.1 - 3.1 in. | 2.6 | 2.5 |
| 0° | Time | 101.0 - 123.0 ms | 116.0 | 115.0 |
| | Displ. | -0.5 - 0.5 in. | .11 | .11 |

TABLE 29: DUMMY CALIBRATION - DRIVER

PART 572 DUMMY CALIBRATION TEST DATA (CONTINUED)

Dummy: Driver (Test 11)

| Test Parameter | Specification | Pre-Test Calibration | Post-Test Calibration |
|---|---|---|---|
| 3. Abdominal Compression Test: (Preload = 10 pounds) | | | |
| a. Force at 0.5 in. | 14 - 26 lb | 20.3 | 23.1 |
| b. Force at 0.75 in. | 27 - 40 lb | 32.6 | 35.2 |
| c. Force at 1.0 in. | 40 - 53 lb | 46.1 | 51.5 |
| d. Force at 1.3 in. | 63 - 78 lb | 67.8 | 75.3 |
| 4. Lumbar Flexion Test: | | | |
| a. Force at 20° | 22 - 34 lb | 29.2 | 24.7 |
| b. Force at 30° | 34 - 46 lb | 38.2 | 34.9 |
| c. Force at 40° | 46 - 58 lb | 51.7 | 49.4 |
| c. Return Angle | 12° Maximum | 21.0 | 23.0 |
| 5. Chest Impact Tests: | | | |
| a. High Speed | | | |
| 1) Probe Speed | 21.78-22.22 fps | | |
| 2) Peak Deflection | 1.7 in. Maximum | | |
| 3) Peak Resistive Force | 2250 lb Maximum | | |
| 4) Internal Hysteresis | 50 - 70% | | |
| b. Low Speed: | | | |
| 1) Probe Speed | 13.86-14.14 fps | 13.98 | 13.98 |
| 2) Peak Deflection | 1.1 in. Maximum | 1.45 | 1.48 |
| 3) Peak Resistive Force | 1450 lb Maximum | 1159 | 1107 |
| 4) Internal Hysteresis | 50 - 70% | | |
| 6. Knee Impact Tests: | | | |
| a. Right Side | | | |
| 1) Probe Speed | 6.76 - 7.04 fps | | |
| 2) Maximum Force | 1850 - 2500 lb | | |
| 3) Time 1000 lb | 1.7 ms Minimum | | |
| b. Left Side | | | |
| 1) Probe Speed | 6.76 - 7.04 fps | | |
| 2) Maximum Force | 1850 - 2500 lb | | |
| 3) Time 1000 lb | 1.7 ms Minimum | | |

TABLE 29A: DUMMY CALIBRATION - DRIVER

PART 572 DUMMY CALIBRATION TEST DATA

Dummy. Passenger (Test 11)

| | | | |
|---|---|---|---|
| Date of Dummy Calibration | | 2 Feb. 83 | 17 Feb. 83 |
| Calibration Sequential Number for Dummy | | | |
| Temperature in Lab. (Spec. = 66 to 78 °F) | | 71.6 | 71.6 |
| Relative Humidity in Lab. (Spec. = 10 to 70%) | | 45 | 50 |
| Test Parameter | Specification | Pre - Test Calibration | Post - Test Calibration |
| 1. Head Drop Test: | | | |
| a. Peak Resultant Accel. | 210 - 260G | 218 | 214 |
| b. Peak Lateral Accel. | <10G | | |
| c. Time above 100G | 0.9 - 1.5 ms | 1.27 | 1.3 |
| 2. Neck Bending Test: | | | |
| a. Pendulum Speed | 21.5 - 25.5 fps | 21.6 | 21.6 |
| b. Pendulum Avg. Decel. (over $t_3 - t_2$) | 20 - 24G | 23.0 | 23.5 |
| c. Peak Resultant Head Acceleration | 26G Maximum | 20.0 | 23.0 |
| d. Pendulum Decel. ($t_2 - t_1$) | ⩽ 3 ms | 2.0 | 2.0 |
| e. Pendulum Decel. ($t_3 - t_2$) | 25 - 30 ms | 26.0 | 25.0 |
| f. Pendulum Decel. ($t_4 - t_3$) | ⩽10 ms | 4.5 | 3.5 |
| g. Pendulum Direction Reversal Time | ⩾123 ms | | |
| h. Maximum Head Rotation | 63 to 73° | 69.5 | 66.0 |
| i. Chordal Displacement: | | | |
| Head Rotation Angle | | | |
| 0° Time | -2 - 2 ms | 0 | 0 |
| Displ. | -0.5 - 0.5 in. | 0 | 0 |
| 30° Time | 25.6 - 34.4 ms | 26.0 | 26.0 |
| Displ. | 2.1 - 3.1 in. | 2.74 | 2.84 |
| 60° Time | 40.3 - 51.7 ms | 41.0 | 42.0 |
| Displ. | 4.3 - 5.3 in. | 4.95 | 5.11 |
| Maximum (73°) Time | 53.2 - 66.8 ms | 58.0 | 56.0 |
| Displ. | 5.0 - 6.0 in. | 5.73 | 5.64 |
| 60° Time | 67.0 - 83.0 ms | 73.0 | 69.0 |
| Displ. | 4.3 - 5.3 in. | 5.07 | 5.08 |
| 30° Time | 85.4 - 104.6 ms | 92.0 | 88.0 |
| Displ. | 2.1 - 3.1 in. | 2.4 | 2.5 |
| 0° Time | 101.0 - 123.0 ms | 109.0 | 105.0 |
| Displ. | -0.5 - 0.5 in. | .2 | .1 |

TABLE 30: DUMMY CALIBRATION - REAR LEFT

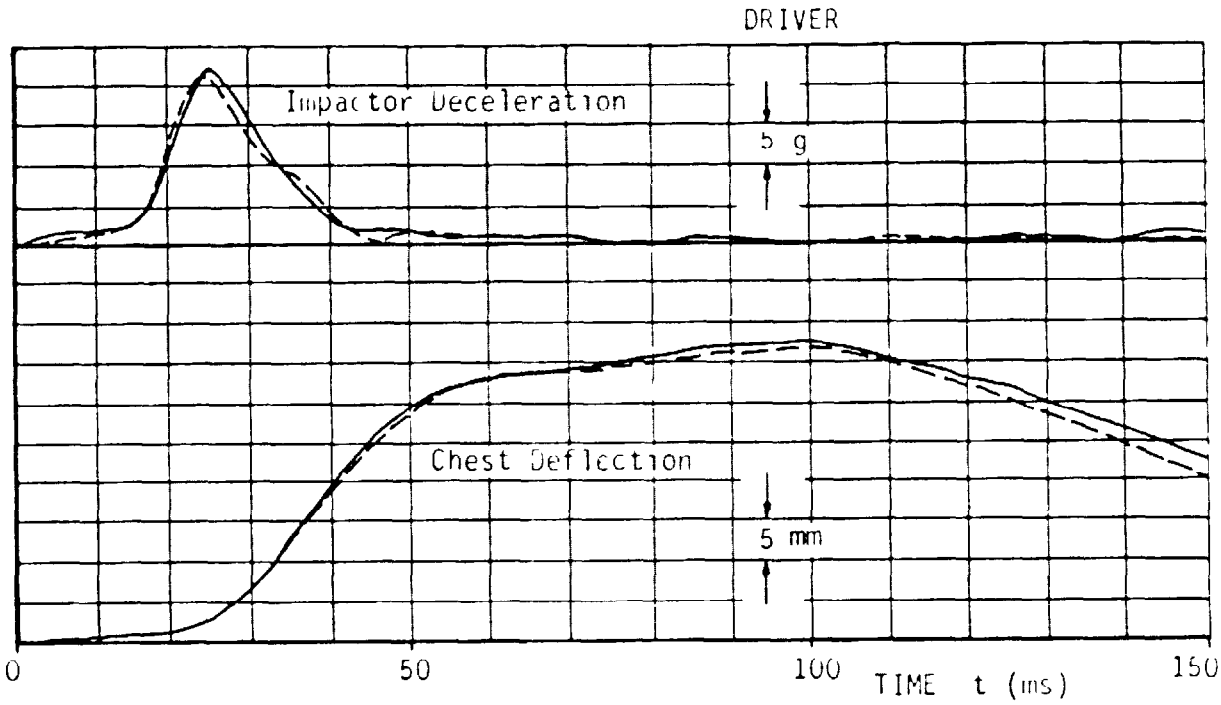
PART 572 DUMMY CALIBRATION TEST DATA (CONTINUED)

Dummy: Passenger (Test 11)

| Test Parameter | Specification | Pre - Test Calibration | Post - Test Calibration |
|---|---|---|---|
| 3. Abdominal Compression Test: (Preload = 10 pounds) | | | |
| a. Force at 0.5 in. | 14 - 26 lb | 23.1 | 23.1 |
| b. Force at 0.75 in. | 27 - 40 lb | 36.6 | 38.0 |
| c. Force at 1.0 in. | 40 - 53 lb | 52.2 | 52.9 |
| d. Force at 1.3 in. | 63 - 78 lb | 74.6 | 73.3 |
| 4. Lumbar Flexion Test: | | | |
| a. Force at 20° | 22 - 34 lb | 26.9 | 23.2 |
| b. Force at 30° | 34 - 46 lb | 36.0 | 34.8 |
| c. Force at 40° | 46 - 58 lb | 48.3 | 48.1 |
| c. Return Angle | 12° Maximum | 18.0 | 22.0 |
| 5. Chest Impact Tests: | | | |
| a. High Speed | | | |
| 1) Probe Speed | 21.78-22.22 fps | | |
| 2) Peak Deflection | 1.7 in. Maximum | | |
| 3) Peak Resistive Force | 2250 lb Maximum | | |
| 4) Internal Hysteresis | 50 - 70% | | |
| b. Low Speed: | | | |
| 1) Probe Speed | 13.86-14.14 fps | 14.0 | 14.0 |
| 2) Peak Deflection | 1.1 in. Maximum | 1.3 | 1.34 |
| 3) Peak Resistive Force | 1450 lb Maximum | 1262 | 1236 |
| 4) Internal Hysteresis | 50 - 70% | | |
| 6. Knee Impact Tests: | | | |
| a. Right Side | | | |
| 1) Probe Speed | 6.76 - 7.04 fps | | |
| 2) Maximum Force | 1850 - 2500 lb | | |
| 3) Time 1000 lb | 1.7 ms Minimum | | |
| b. Left Side | | | |
| 1) Probe Speed | 6.76 - 7.04 fps | | |
| 2) Maximum Force | 1850 - 2500 lb | | |
| 3) Time 1000 lb | 1.7 ms Minimum | | |

TABLE 30A: DUMMY CALIBRATION - REAR LEFT

TEST NO: 11




Pre Test

Post Test

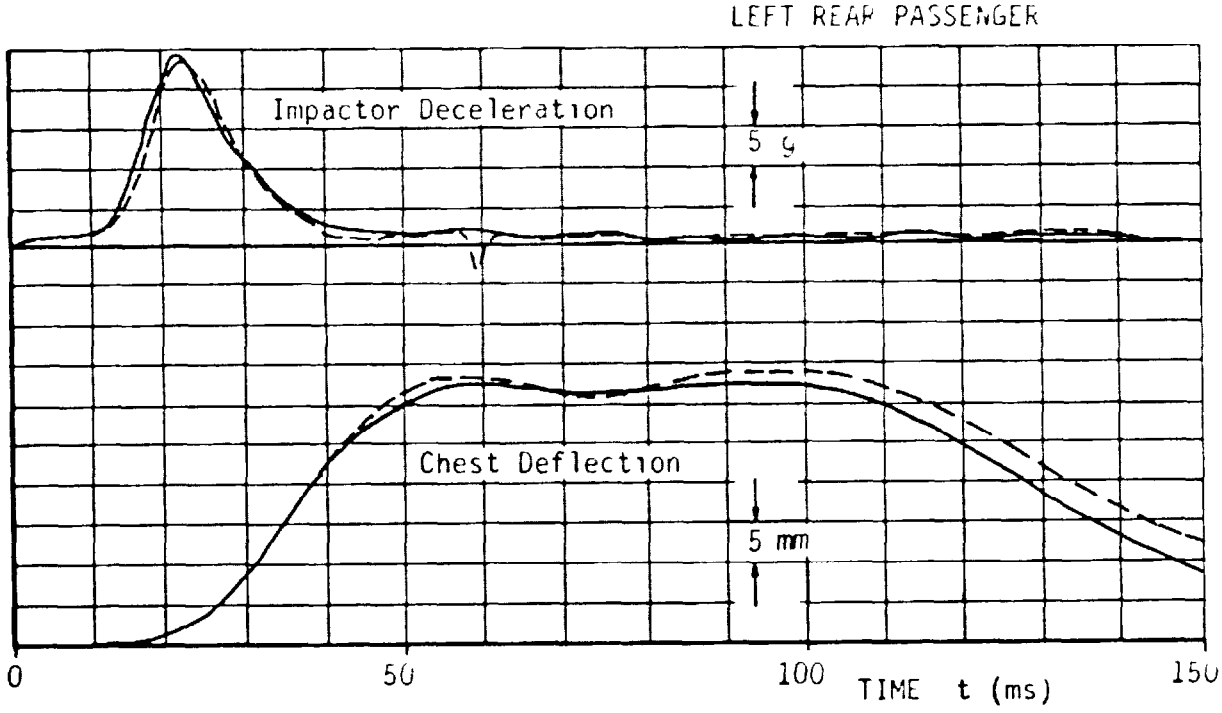



FIGURE 16 : SID CHEST DEFLECTION AND IMPACTOR DECELERATION

# A P P E N D I X  A

## Photographs

List of Illustrations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| A 1 | Crash Sequence Figures | A - 2/3 |
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| A 3 | Post Test 'Position' (Rear-Side Direction) Crabbed Citation and MIV | A - 5 |
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| A 6 | MIV Left Side Post Test View (Rear-Side Direction) | A - 8 |
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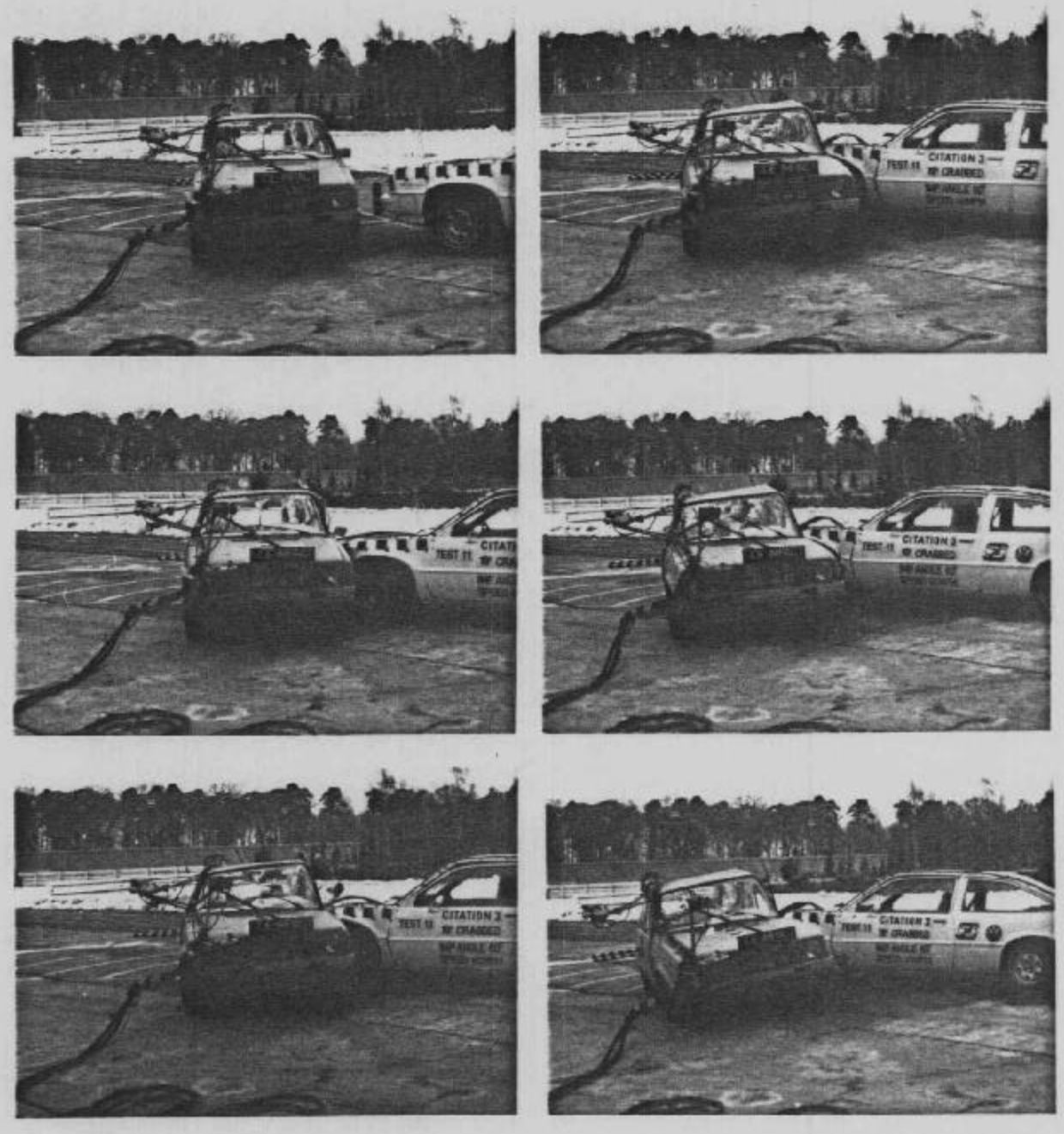
# FIGURE A1: CRASH SEQUENCE FIGURES

TEST NO: 11



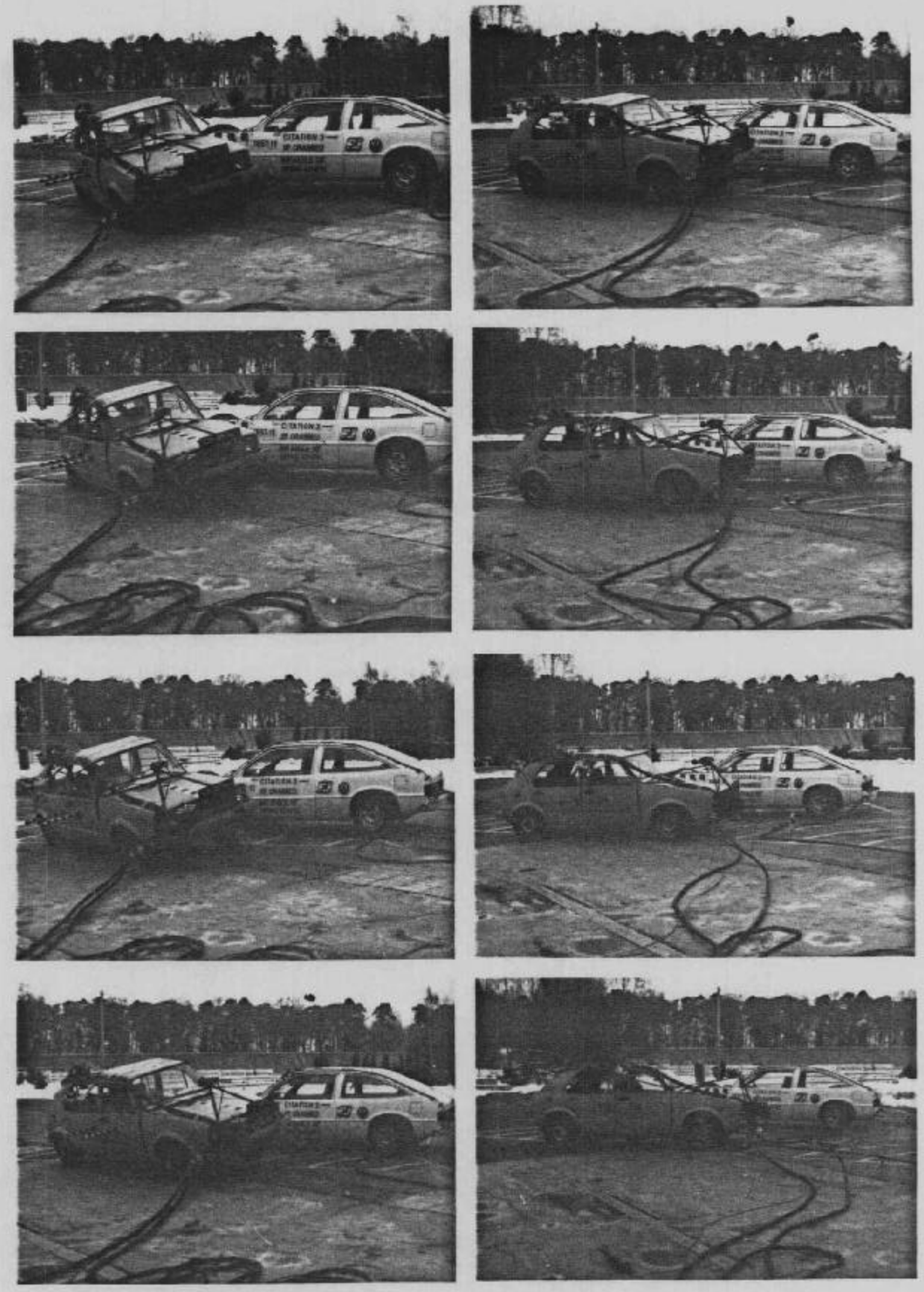


FIGURE A 2: POST TEST 'POSITION'

CRABBED CITATION AND MIV

FIGURE A 3: POST TEST 'POSITION'

CRABBED CITATION AND MIV

FIGURE A 4: MIV LEFT SIDE

POST TEST VIEW (FRONT-SIDE DIRECTION)

FIGURE A 5: MIV LEFT SIDE

POST TEST VIEW

FIGURE A 6: MIV LEFT SIDE

POST TEST VIEW (REAR-SIDE DIRECTION)

FIGURE A 7: CRABBED CITATION LEFT SIDE

POST TEST VIEW

FIGURE A 8: CRABBED CITATION RIGHT SIDE

POST TEST VIEW

FIGURE A 9: CRABBED CITATION FRONT

POST TEST VIEW

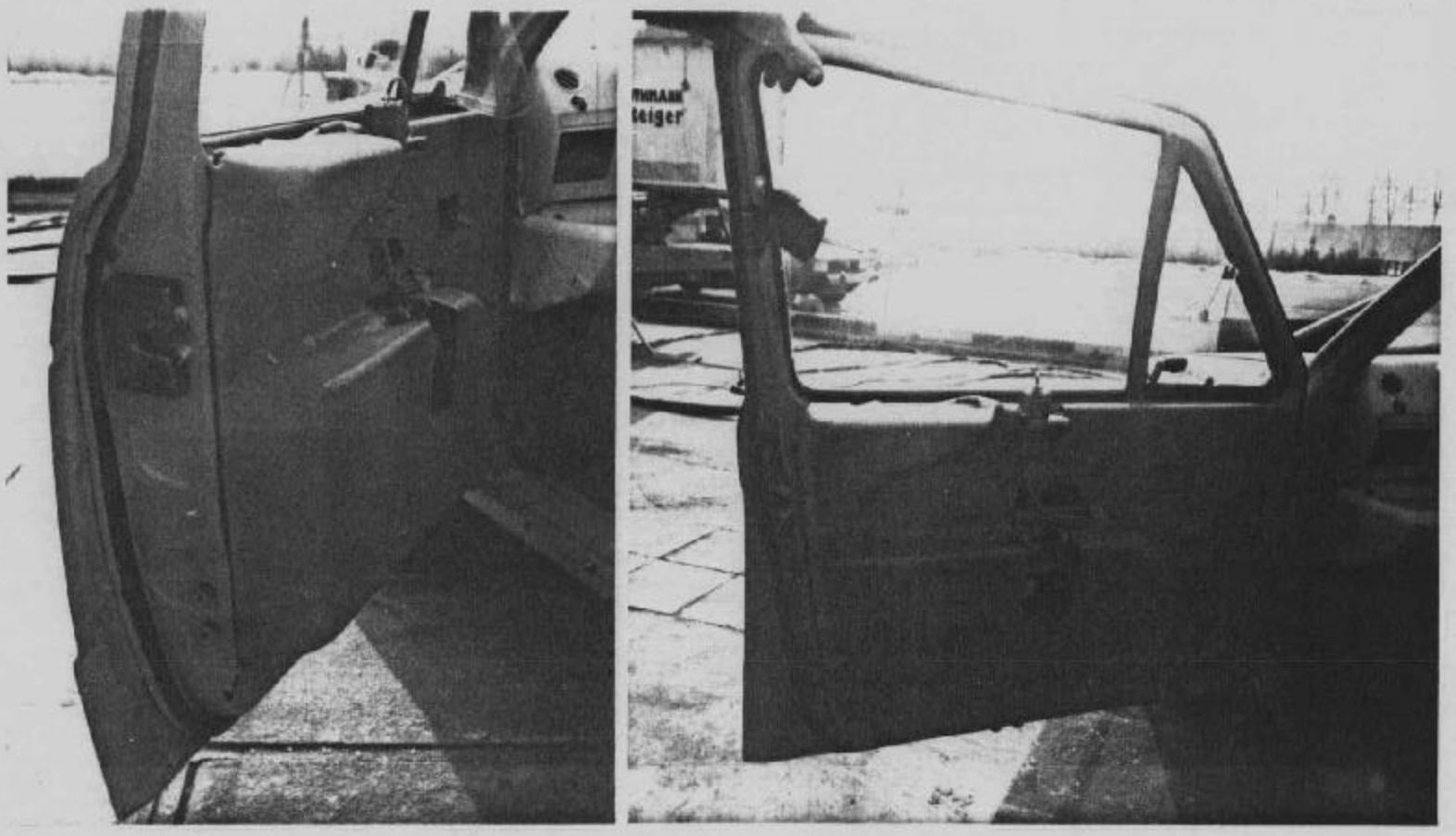


FIGURE A 10: FRONT DOOR PADDING

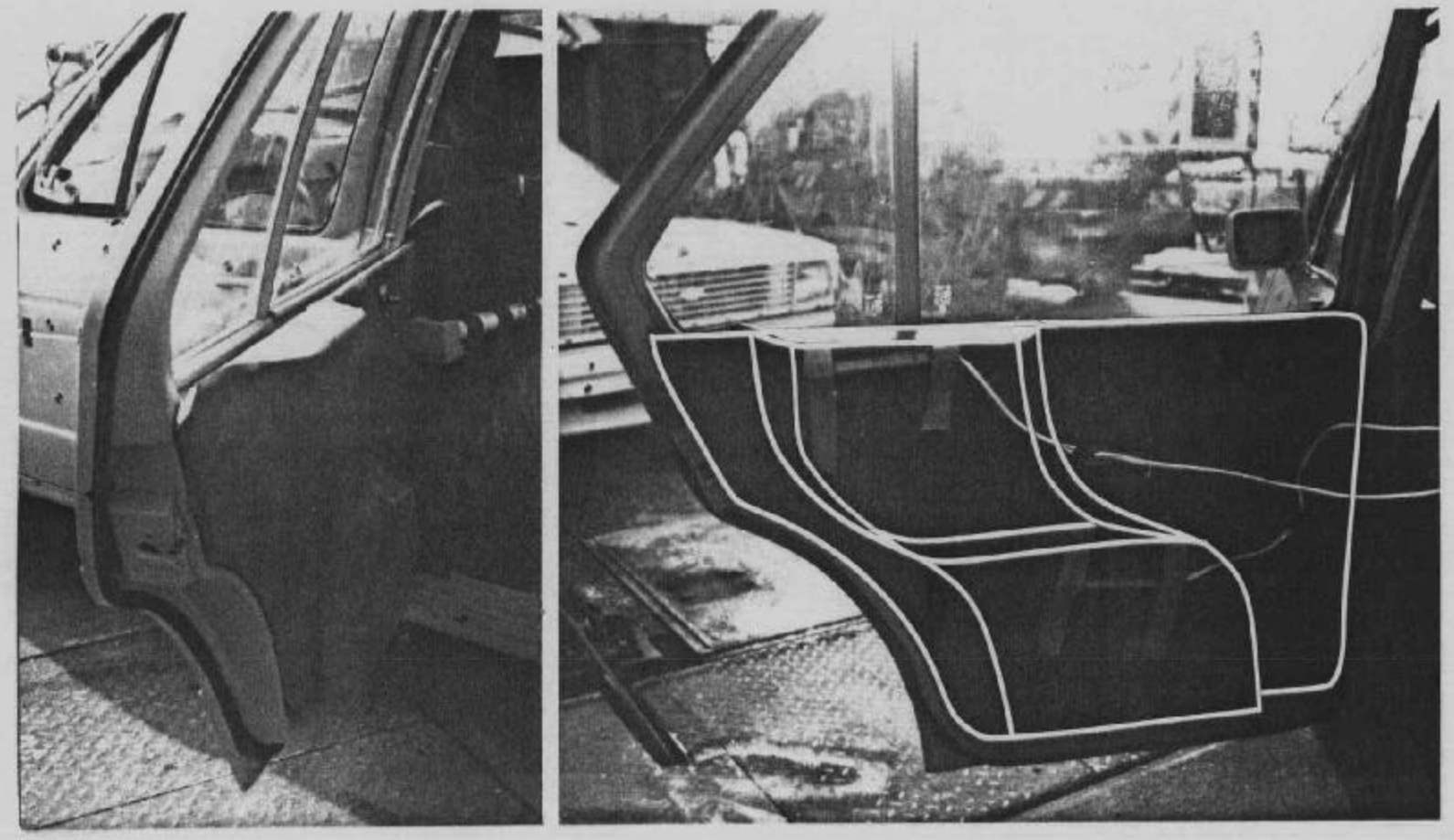


FIGURE A 11: REAR DOOR PADDING

# A P P E N D I X  B

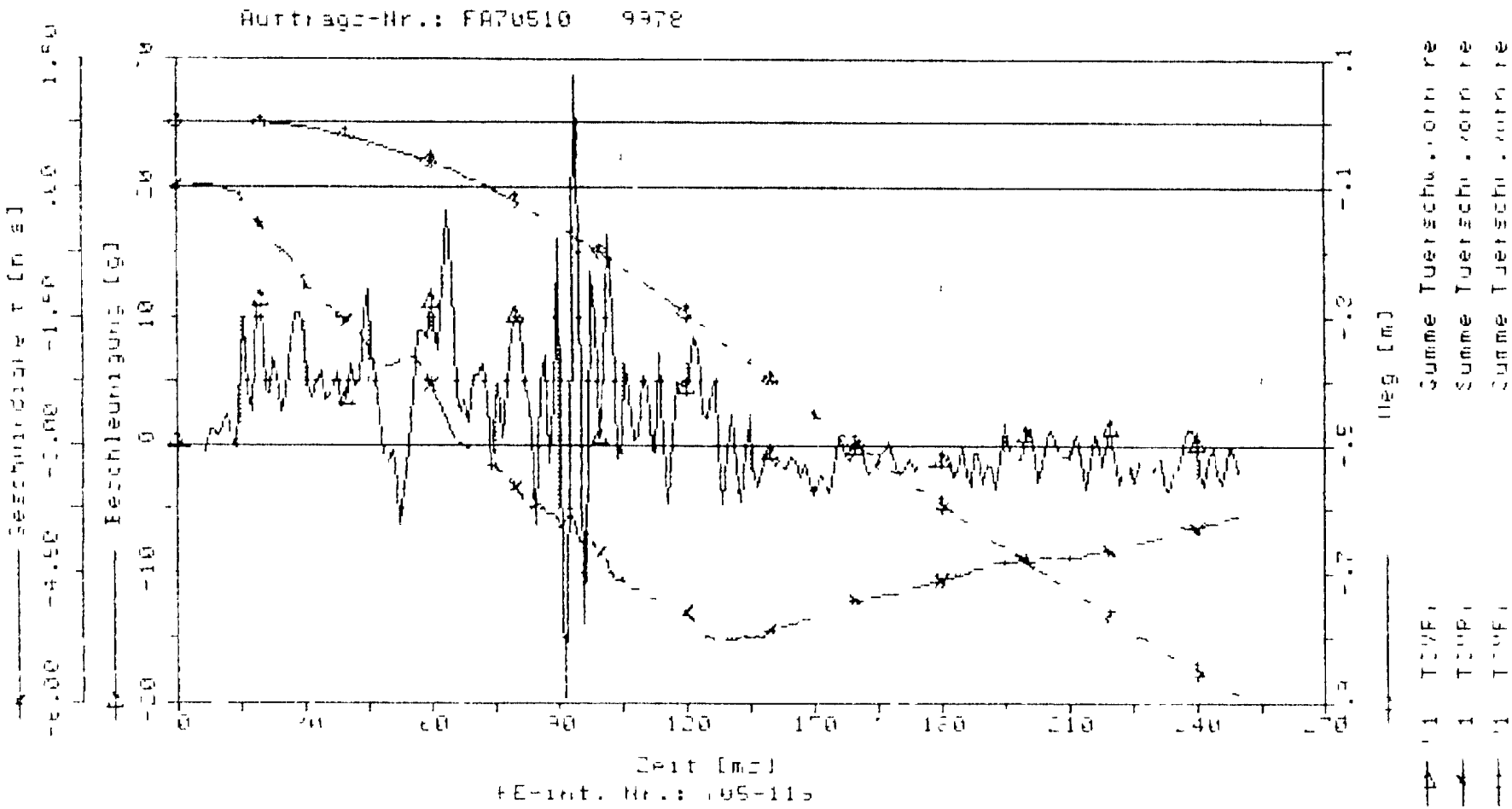
## Vehicle and Dummy Test Response Acceleration/ - and Velocity/Time History

- B.1 Vehicle Test Response
  - B.1.1 Target Vehicle
  - B.1.2 Bullet Vehicle
- B.2 Dummy Test Response
  - B.2.1 Driver
  - B.2.2 Rear Passenger

### B.1.1 Target Vehicle

[illegible] Auftrag Nr. FA 0510 Versuchs Nr. [illegible]
Fahrg. Nr. FE int. Nr. 705 116

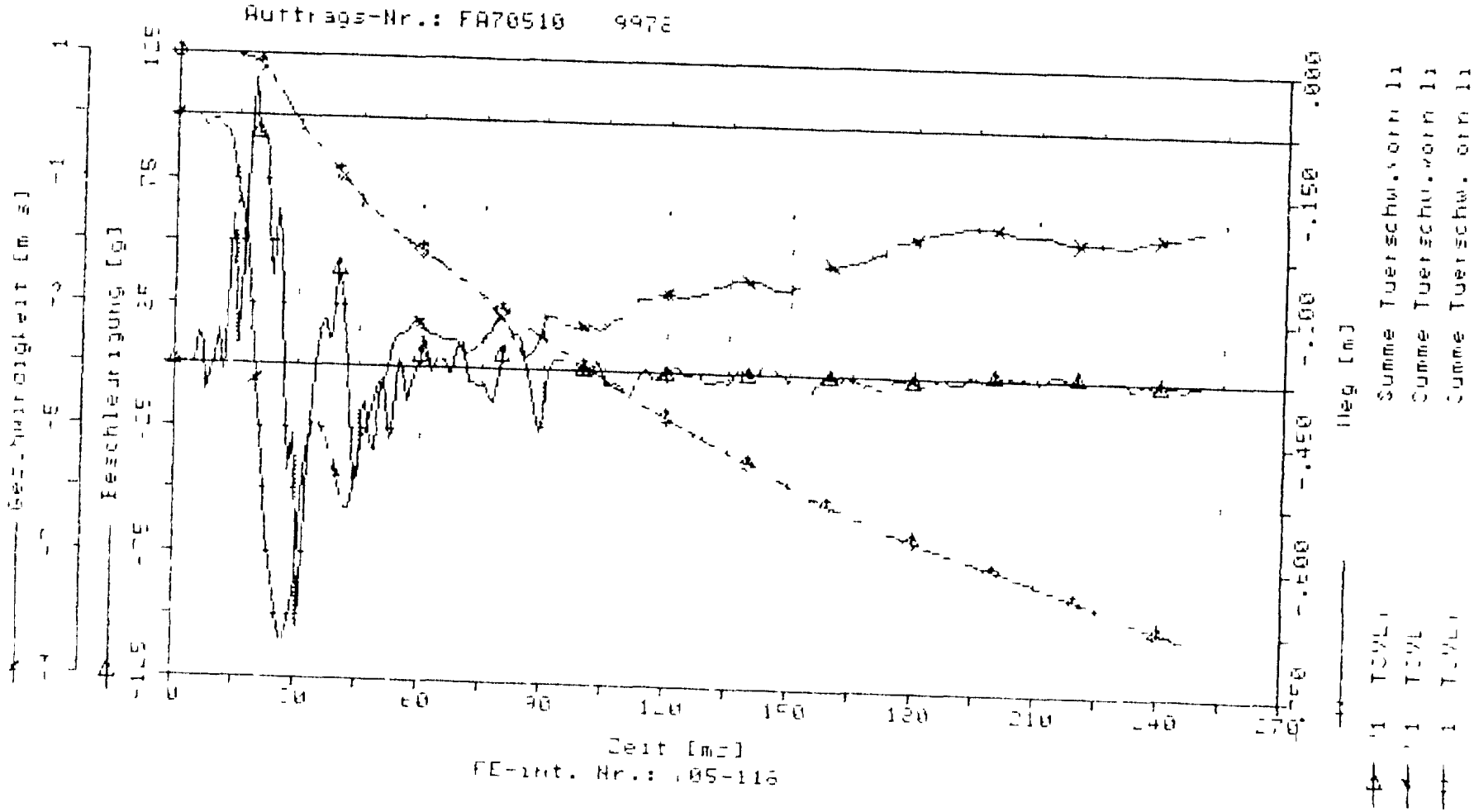
| HE | Nr. | Stelle | | ber Groesse | Extremum | t Extr | 3ms |
|---|---|---|---|---|---|---|---|
| V1 | TSVRY | | Summe Tuerschw vorn re | BE g | 28 781 | 94 0 | 16 46 |
| V1 | TSVRY | | Summe Tuerschw vorn re | GE m/s | 5 326 | 128 0 | 0 00 |
| V1 | TSVRY | | Summe Tuerschw vorn re | WE m | 888 | 250 0 | 0 00 |



Conn W [illegible] Auftrags-Nr FA70510 Versuchs Nr 9976
Fahrg Nr FE-int NR 705-118

UP Mess-Stelle

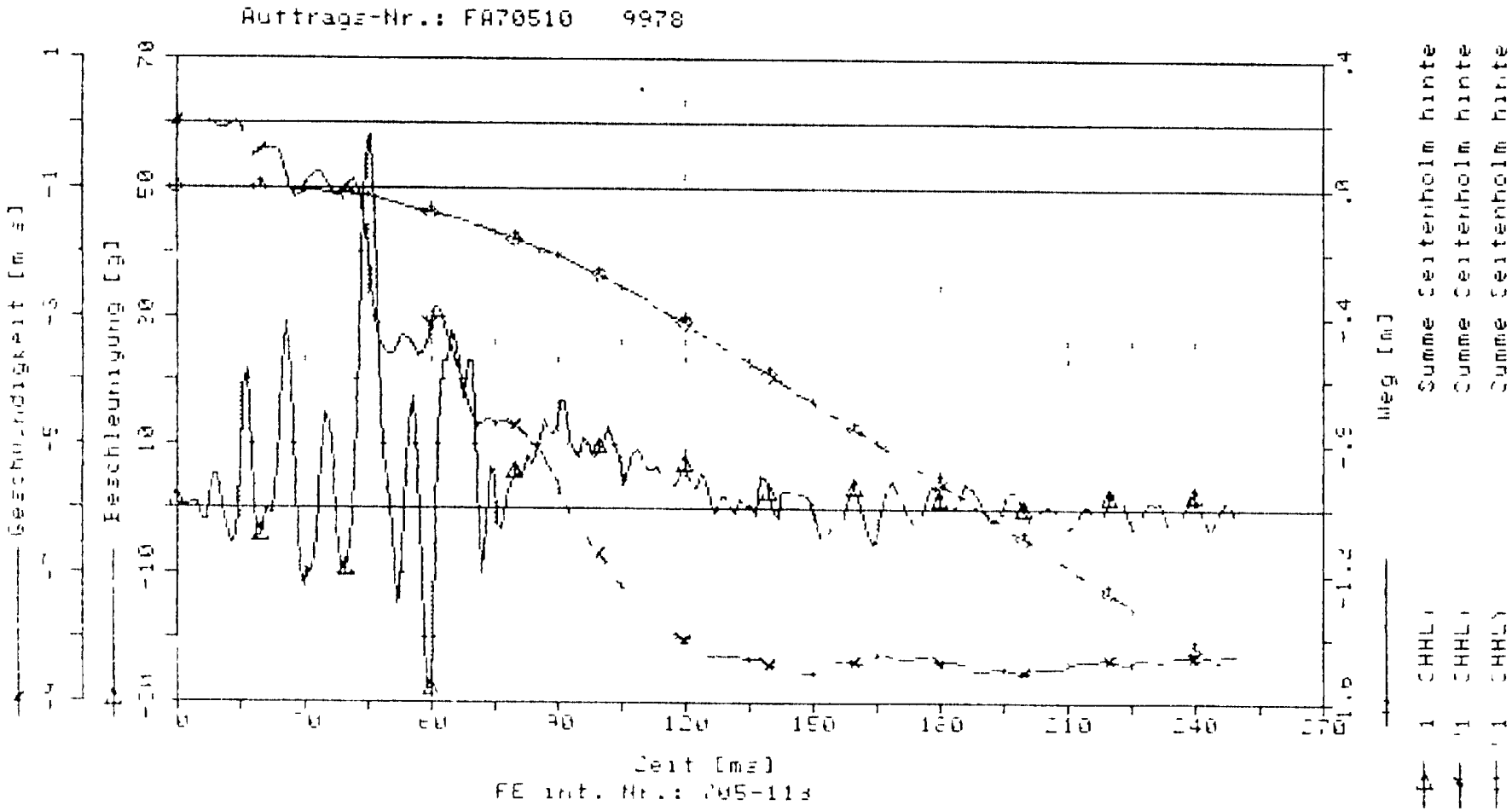
| | | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TSVLY | Summe Tuerschw vorn li | BE u | 115 211 | 19 0 | 42 60 |
| V1 | TSVLY | Summe Tuerschw vorn li | GE m/s | 8 458 | 27 0 | 0 00 |
| V1 | TSVLY | Summe Tuerschw vorn li | WE m | 688 | 250 0 | 0 00 |



Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE-int NR  705-118

| UI | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | SHHLY | Summe Seitenholm hinte | BE g | 57 944 | 46 0 | 46 05 |
| V1 | SHHLY | Summe Seitenholm hinte | GE m/s | -8 559 | 150 0 | 0 00 |
| V1 | SHHLY | Summe Seitenholm hinte | WE m | 1 507 | 250 0 | 0 00 |

Auftrags-Nr.: FA70510  9978

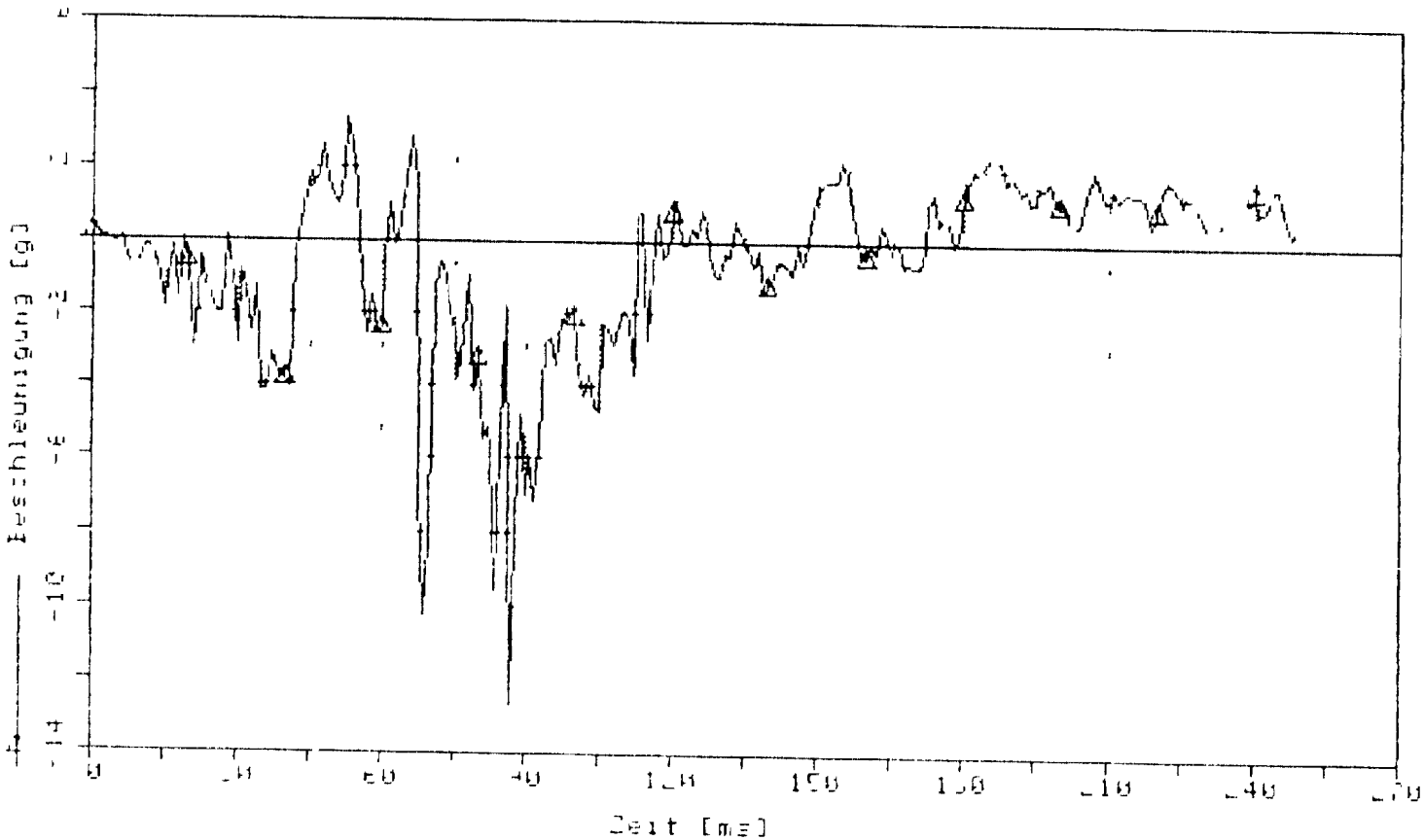



FE int. Nr.: 705-118

Lenn Werte  Auftrag- Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE int NR  705 118

Ul  Mess Stelle  ber  Extremum  t  3MS
Groesse  Extr
V1  FUBUZ  Summe Kofferboden mitt  PE g  -12 651  87 0  8 21

Auftrags-Nr.: FA70510  9975




FE-int. Nr.: 705-113

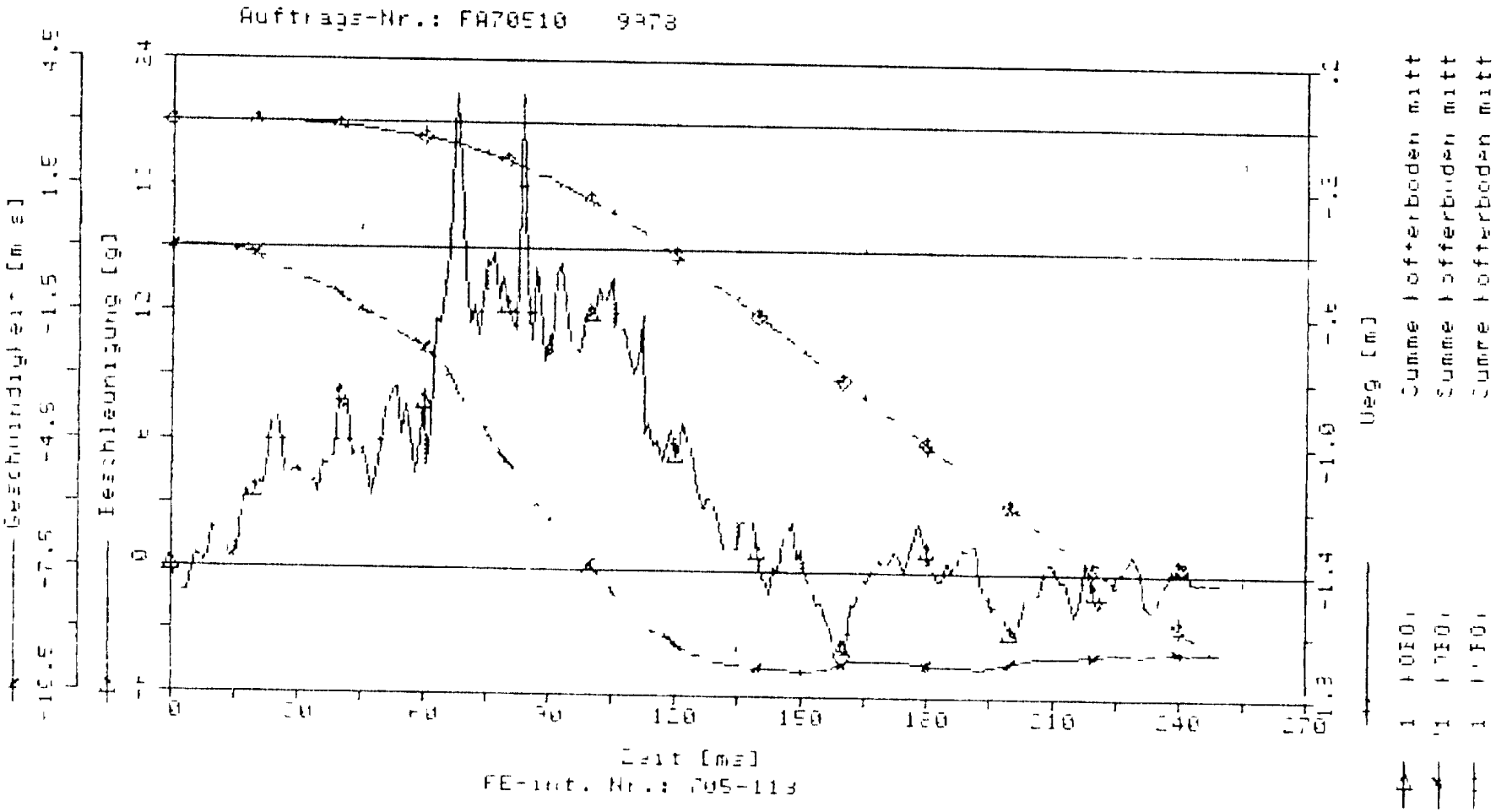
Summe Kofferboden mitt

V1 FUBUZ

Fehn Werte  Auftrags Nr  FA70510  Versuchs Nr  9978
Fahrg Nr  FE int NP  705 118

UF  Ross Stelle

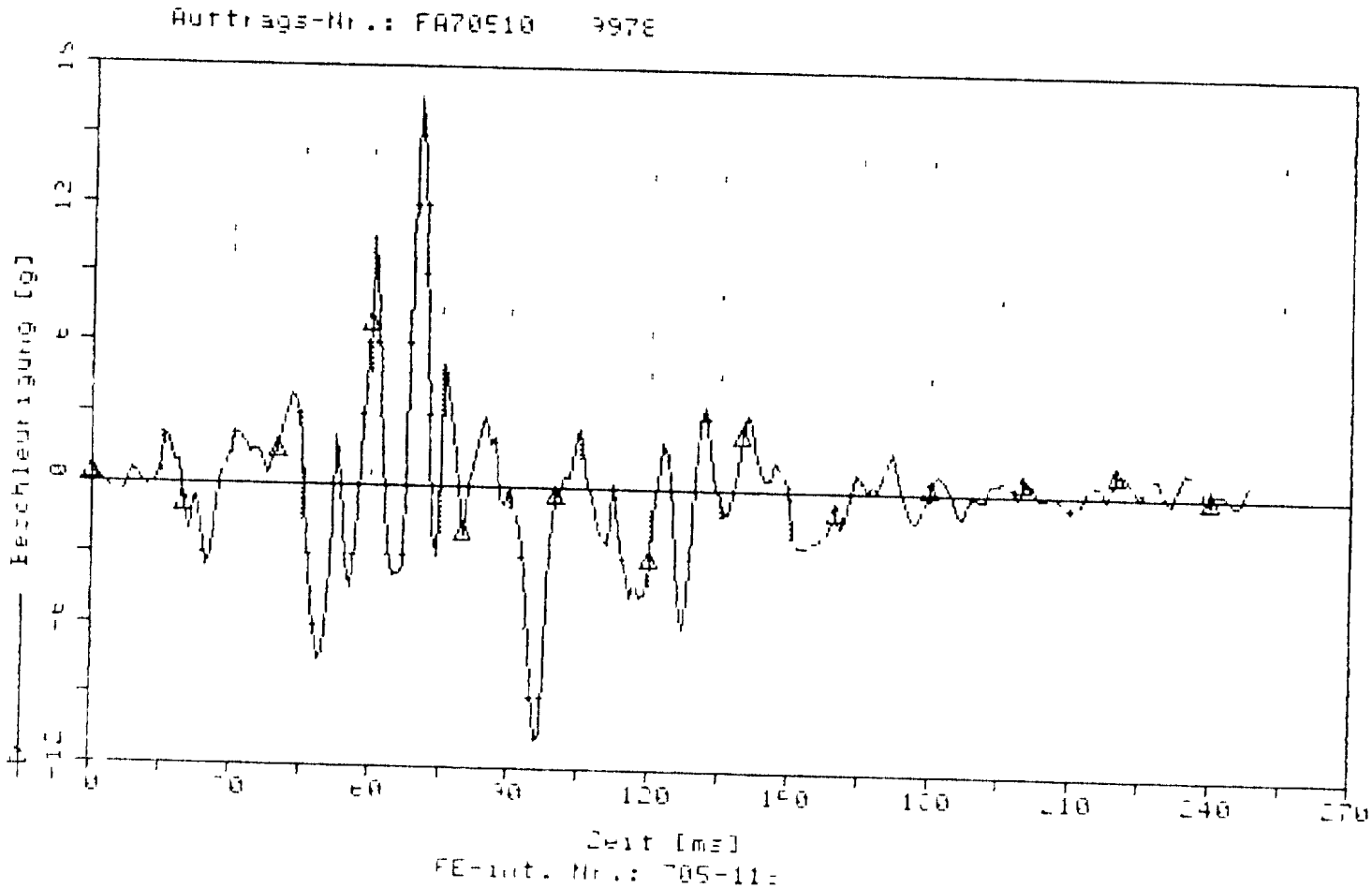
| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Ber Groesse | Extremum | t Extr | 3MS |
| V1 | FUBUY | Summe Kofferboden mitt | BE g | 22 316 | 68 0 | 16 88 |
| V1 | FUBUY | Summe Kofferboden mitt | GE m/s | 9 929 | 151 0 | 0 00 |
| V1 | FUBUY | Summe Kofferboden mitt | WE m | 1 667 | 250 0 | 0 00 |



Auftrags Nr FA70510 Versuchs-Nr 9978
FE-int NR 705 118

Summe Kofferboden mitt

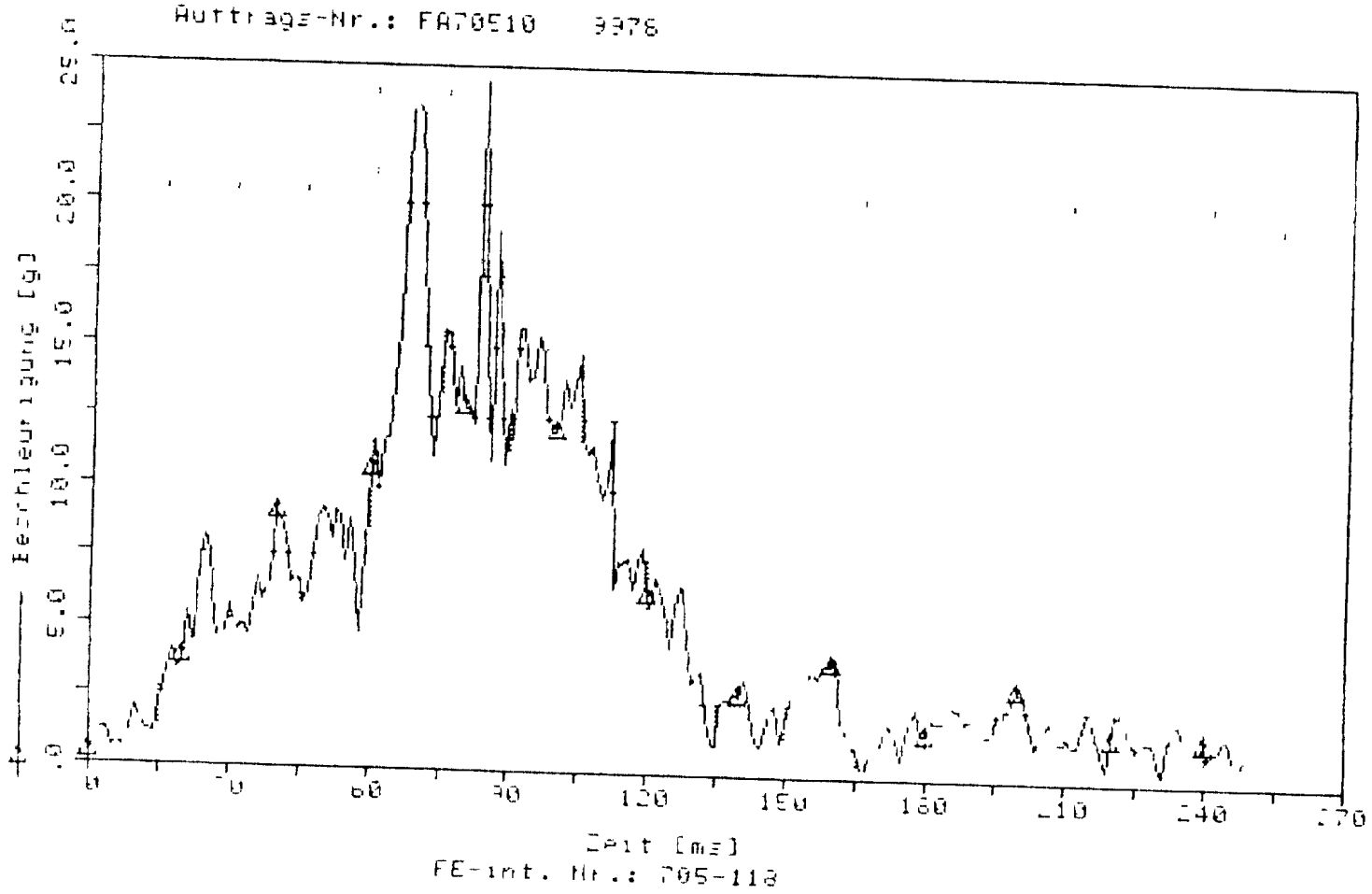
| | | | | |
|---|---|---|---|---|
| ber | Extremum | t | 3ms |
| Groesse | | Extr | |
| BE g | 16 631 | 70 0 | 10 58 |




Summe Kofferboden mitt

Auftrag Nr FA70510 Versuchs Nr 9978
FE int NP 705 118

| | | | | | |
|---|---|---|---|---|---|
| | | ber Groesse | Extremum | t Extr | 3MS |
| Summe Kofferboden mitt | BE g | 24 395 | 84'0 | 23 31 | |



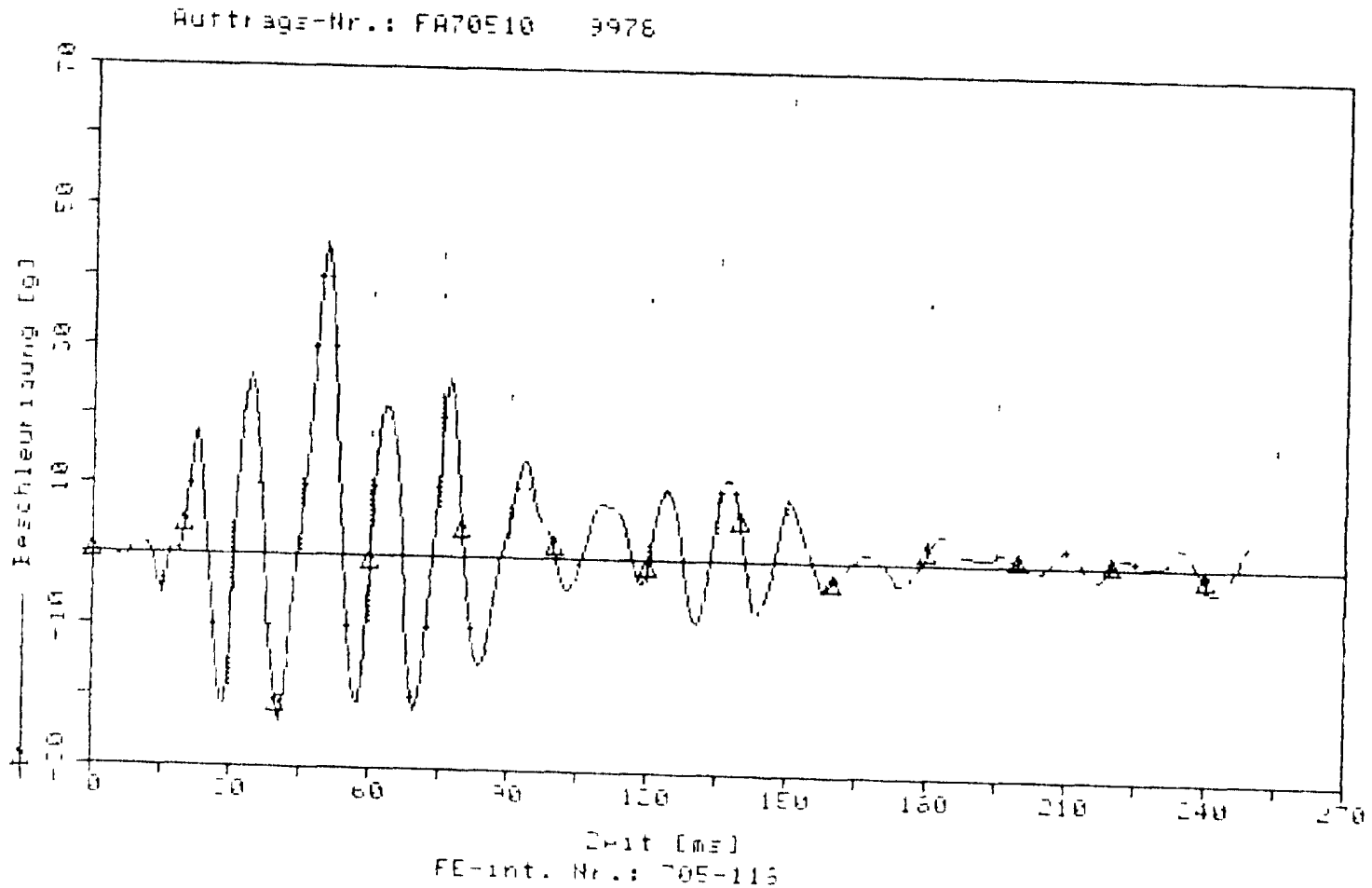

Summe Kofferboden mitt

Fenn Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9976
Fahrg  Nr  FE int  NR  705 118

UI  Mess Stelle

V1  SWMIX  Summe Spritzwand mitte

| ber | Extremum | t | 3MS |
|---|---|---|---|
| Groesse | | Extr | |
| BL g | 45 015 | 50 0 | 40 39 |

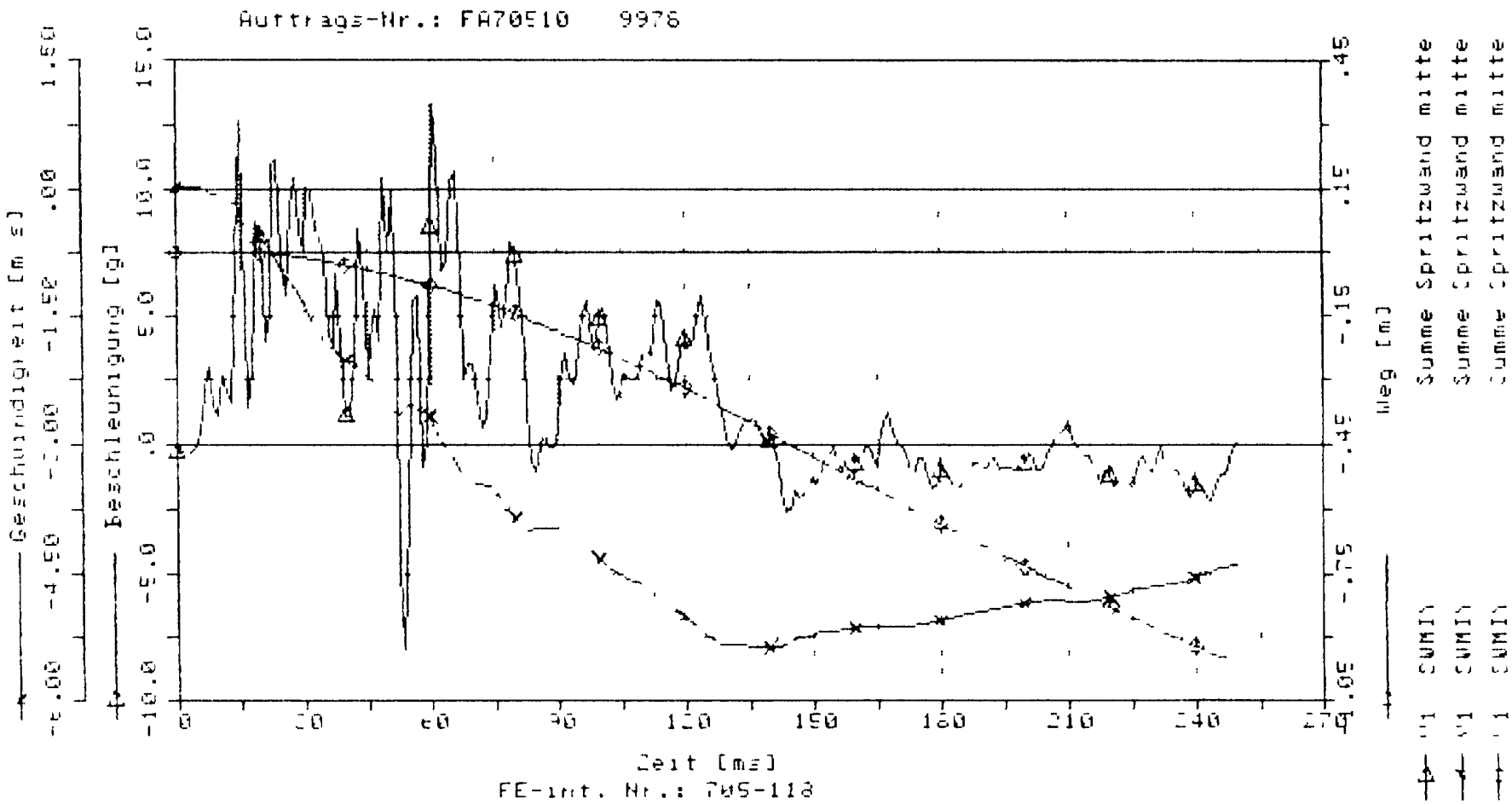



Summe Spritzwand mitte

SWMI

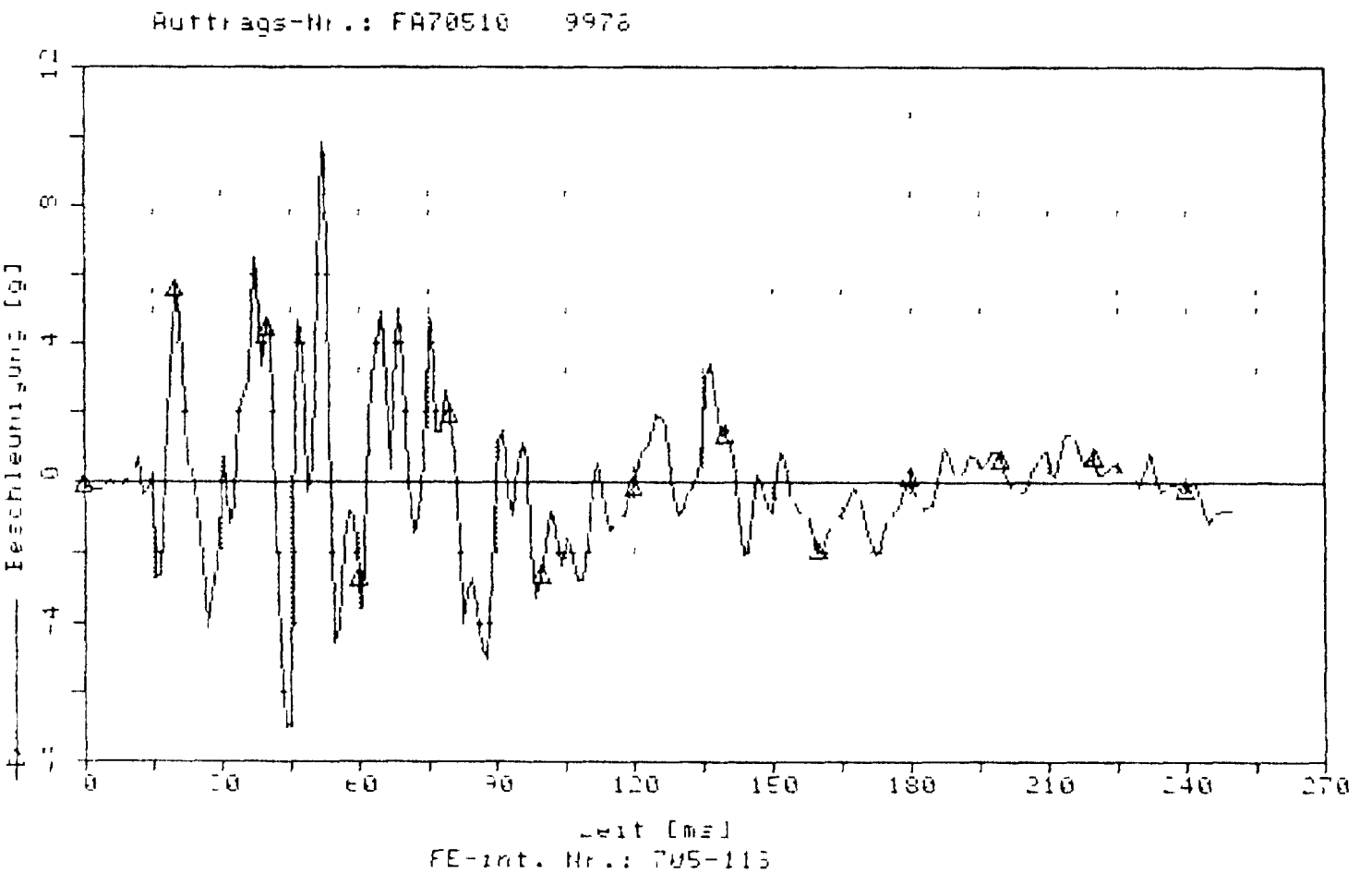
Kinn Werte  Auftrags Nr  FA70510  Versuchs Nr  9978
Fahrg Nr  FE int NR  705 118

| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | SWMIY | Summe Spritzwand mitte | BL g | 13 304 | 61 0 | 11 15 |
| V1 | SWMIY | Summe Spritzwand mitte | GE m/s | 5 376 | 140 0 | 0 00 |
| V1 | SWMIY | Summe Spritzwand mitte | WE m | - 965 | 250 0 | 0 00 |



Komm Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | SWM1Z | Summe Spritzwand mitte | BE g | 9 824 | 52 0 | 6 92 |



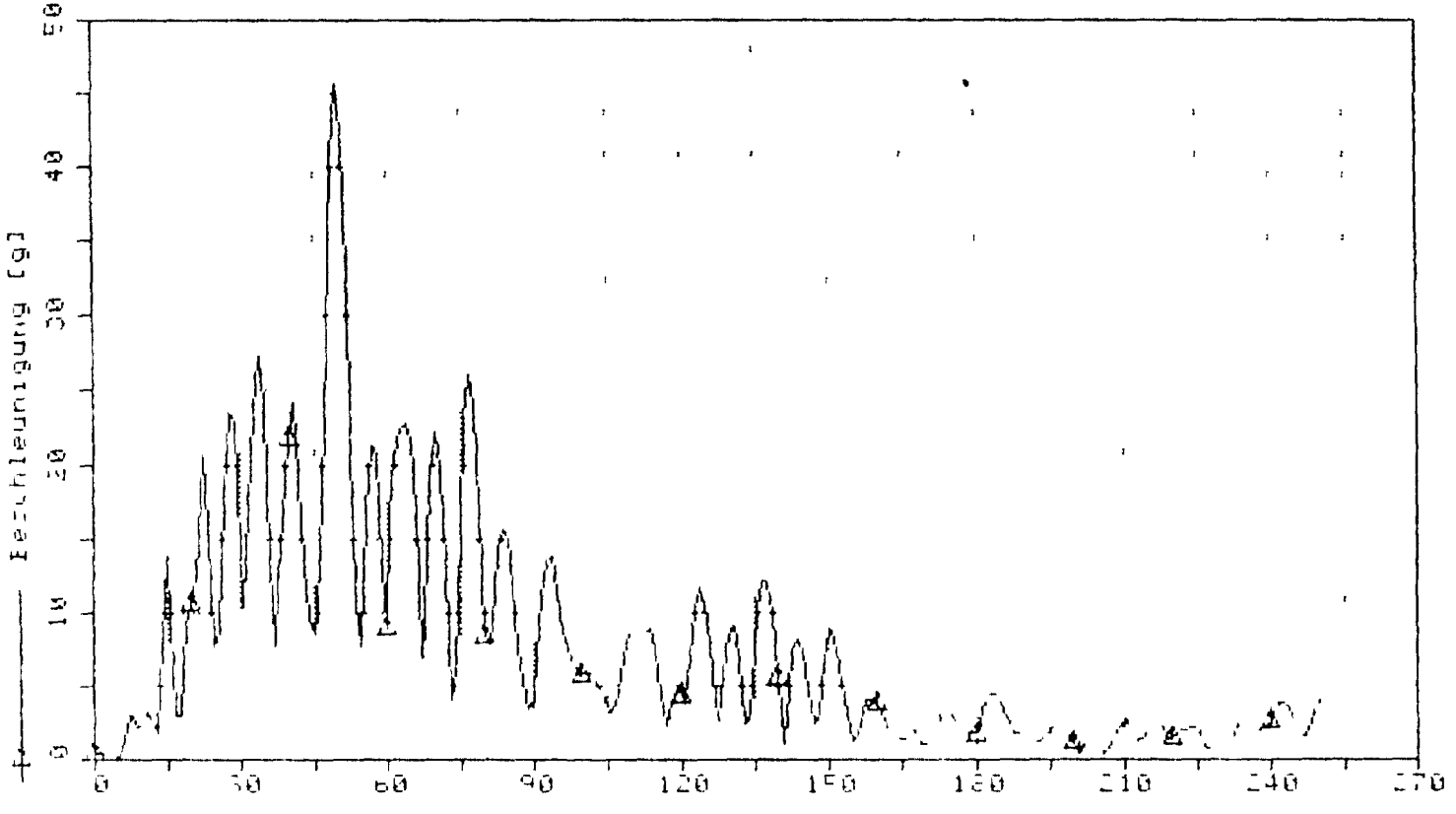

Summe Spritzwand mitte

SWM1Z

Lehn Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE-int NR  705-118

| | | | | | | |
|---|---|---|---|---|---|---|
| Ul | Mess Stelle | | ber Croesse | Extremum | t Extr | 3MS |
| Vi | SWM1 X Y Z | Summe Spritzwand mitte | BE g | 45 655 | 50 0 | 32 13 |

Auftrags-Nr.: FA70510  9978

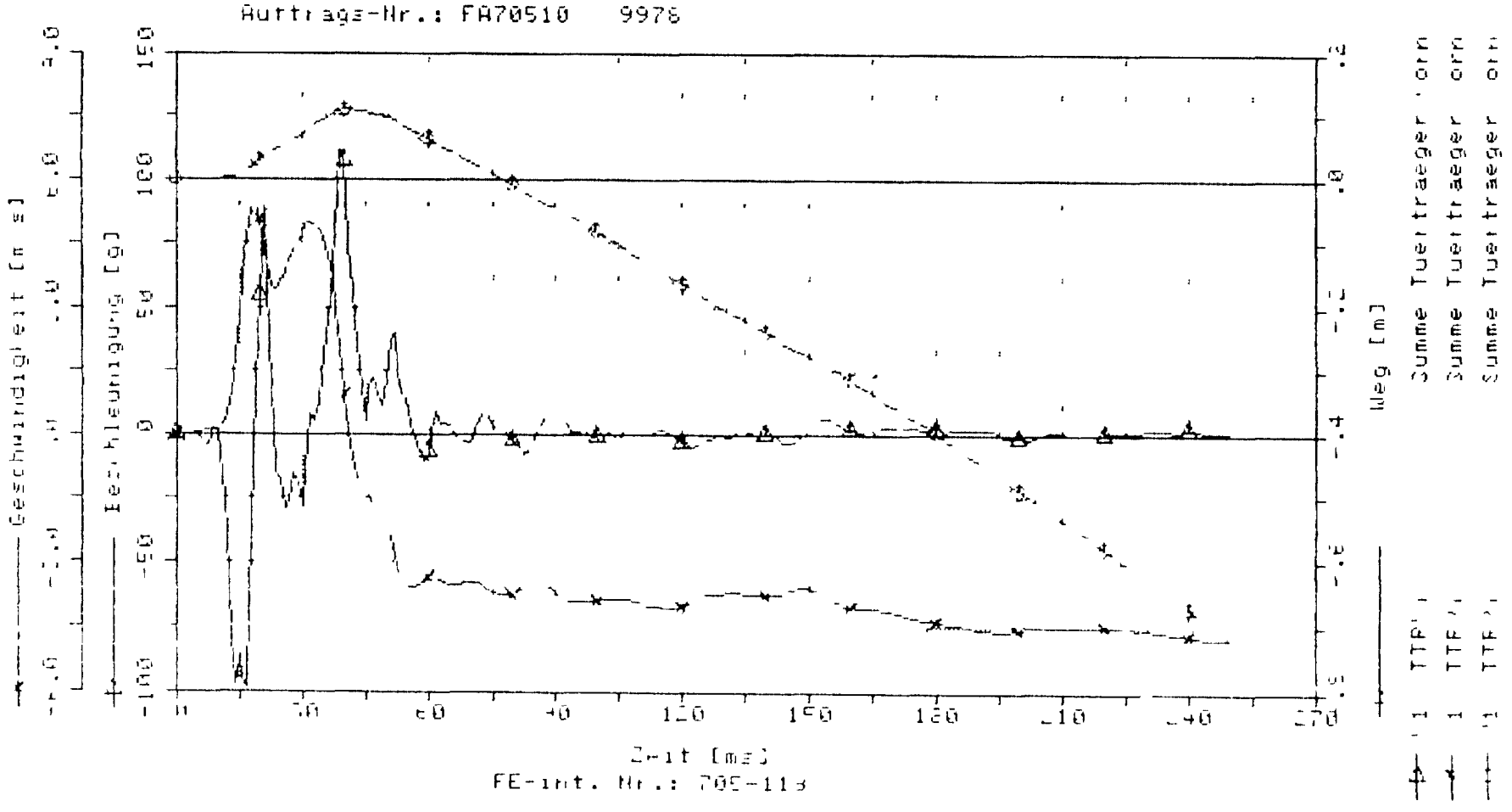



FE-int. Nr.: 705-118

Summe Spritzwand mitte

Kenn Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE int NR  705-118

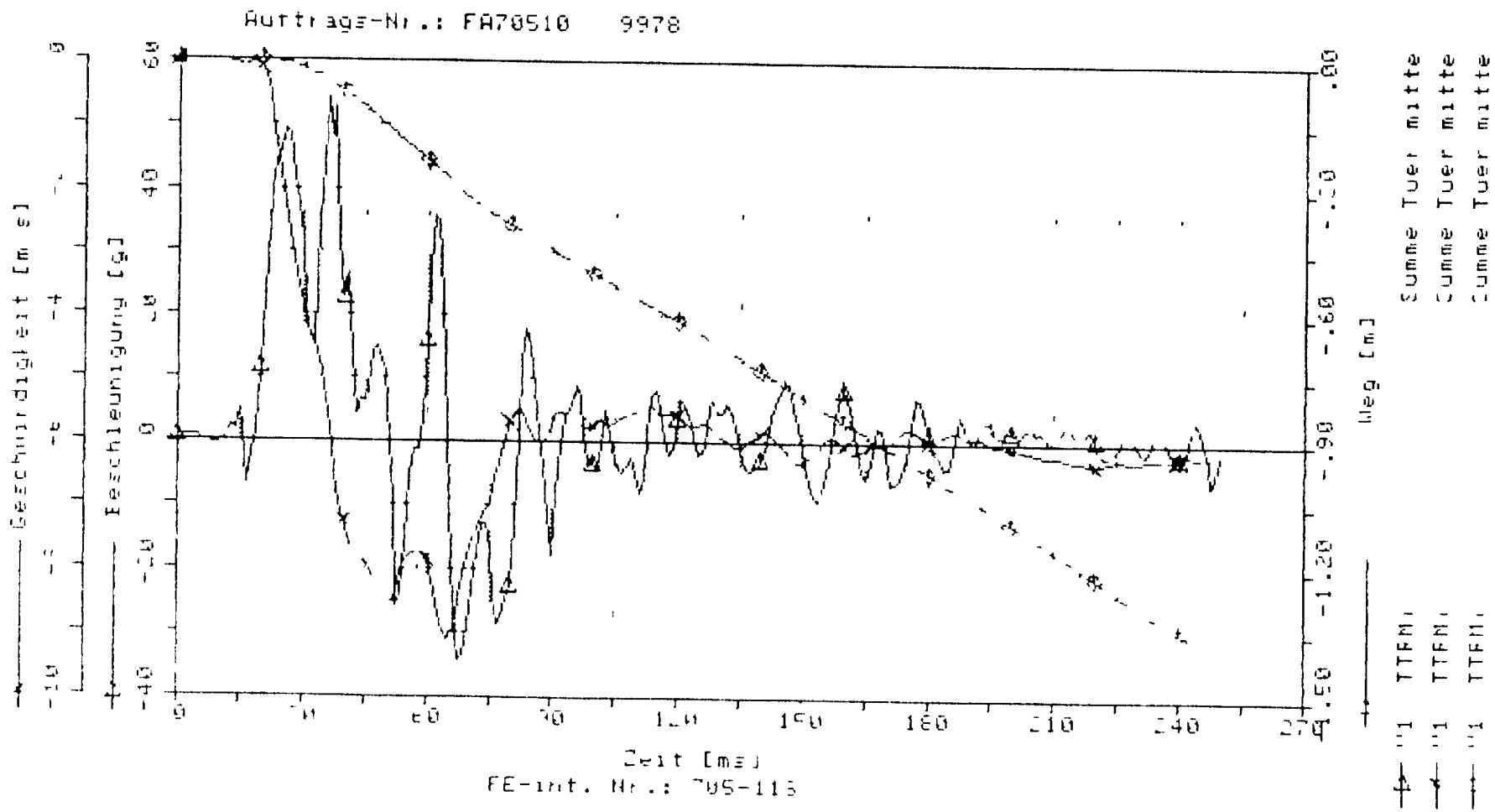
| UI | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TTRVY | Summe Tuertraeger vorn | BE g | 110 989 | 39 0 | 77 50 |
| V1 | TTRVY | Summe Tuertraeger vorn | GE m/s | 5 395 | 19 0 | 0 00 |
| V1 | TTRVY | Summe Tuertraeger vorn | WE m | 717 | 250 0 | 0 00 |



Fenn Werte  Auftrags Nr  FA70510  Versuchs Nr  9978
Fahrg Nr  FE int NR  705 118

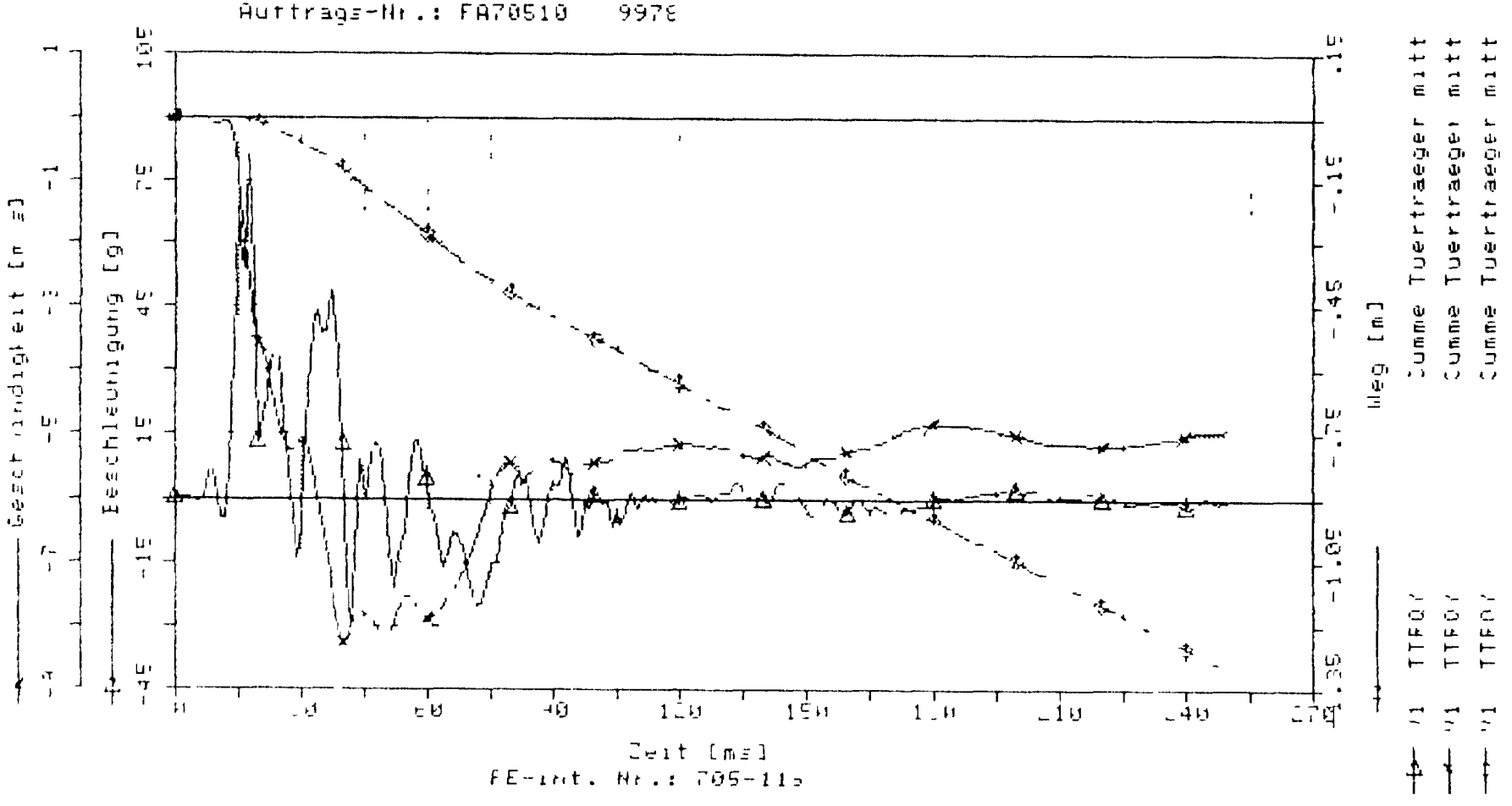
HP  Mess Stelle

| | | | ber Groesse | Extremum | t Extr | 2MS |
|---|---|---|---|---|---|---|
| V1 | TTRMY | Summe Tuer mitte | BE g | 54 201 | 36 0 | 48 35 |
| V1 | TTRMY | Summe Tuer mitte | GE m/s | -9 111 | 65 0 | 0 00 |
| V1 | TTRMY | Summe Tuer mitte | WE m | -1 403 | 250 0 | 0 00 |



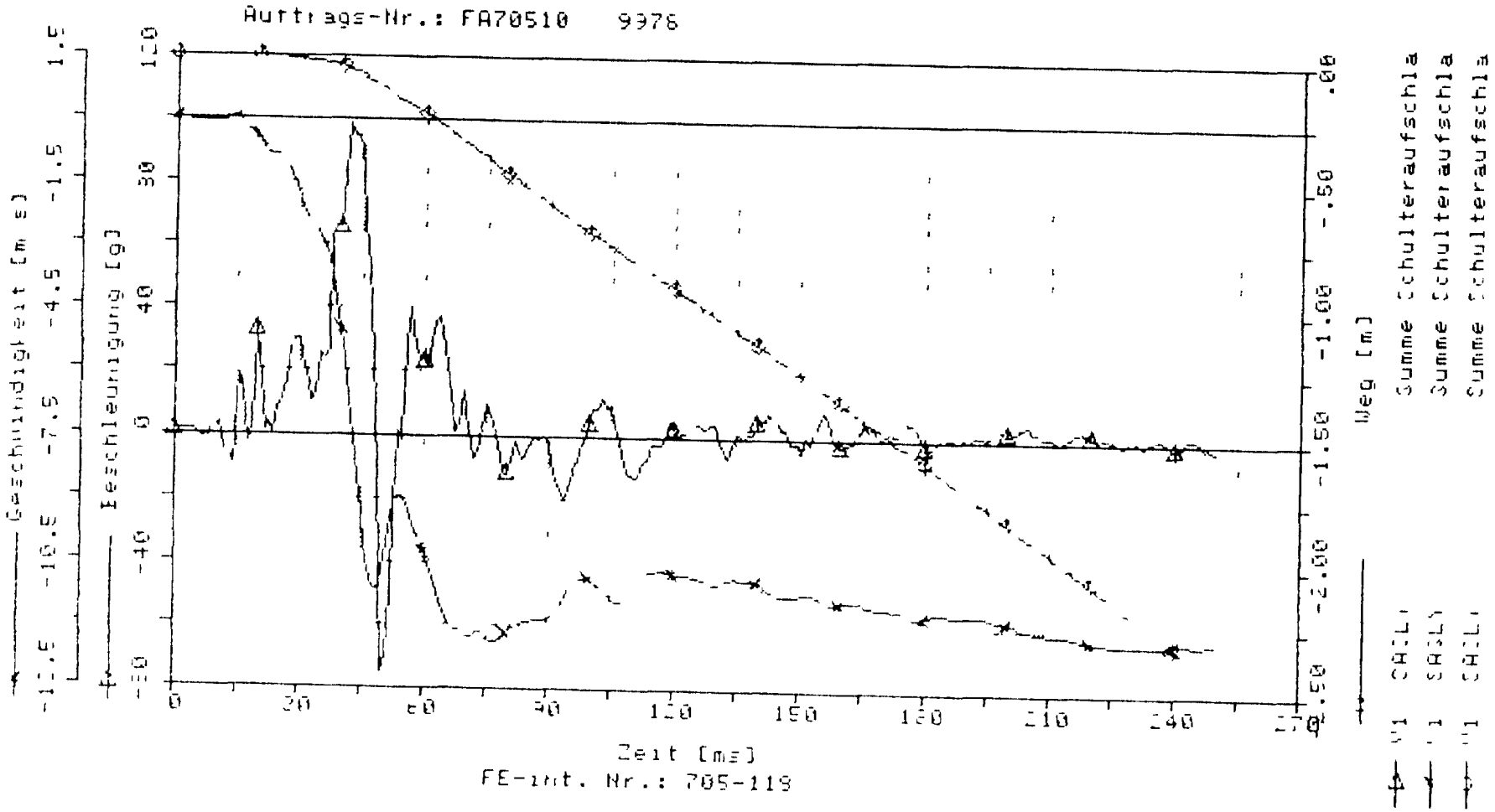
Kenn Worte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE int NR  705 118

| UP | Mess Stelle | | Ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TTRQY | Summe Tuertraeger mitt | BE g | 80 711 | 18 0 | 53 39 |
| V1 | TTRQY | Summe Tuertraeger mitt | GE m/s | -8 265 | 40 0 | 0 00 |
| V1 | TTRQY | Summe Tuertraeger mitt | WE m | 1 301 | 250 0 | 0 00 |



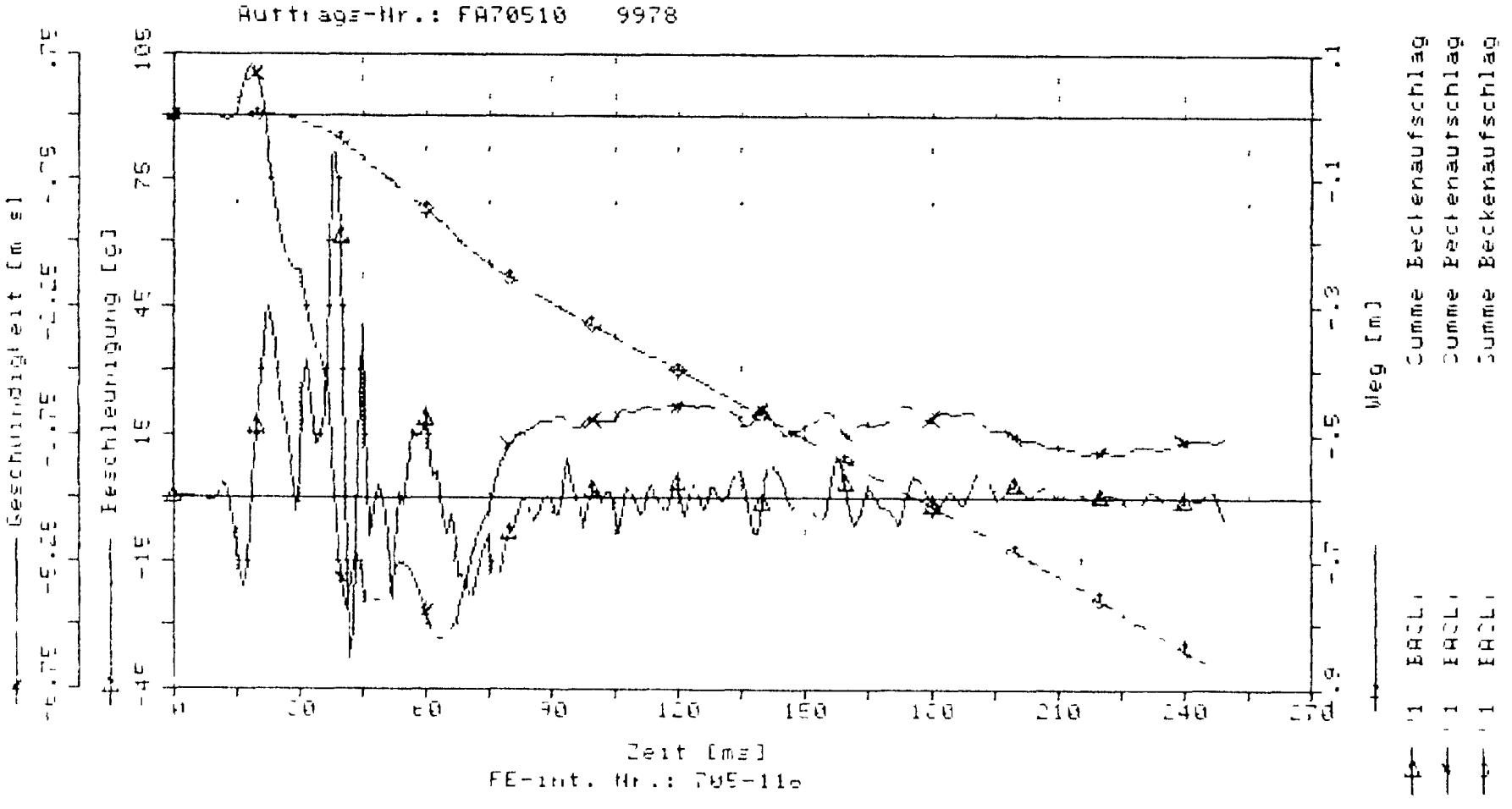
Lean Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE-int NR  705 118

| UI | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | SASLY | Summe Schulteraufschla | BE g | 98 488 | 42 0 | 83 98 |
| V1 | SASLY | Summe Schulteraufschla | GE m/s | -12 394 | 78 0 | 0 00 |
| V1 | SASLY | Summe Schulteraufschla | WE m | 2 434 | 250 0 | 0 00 |



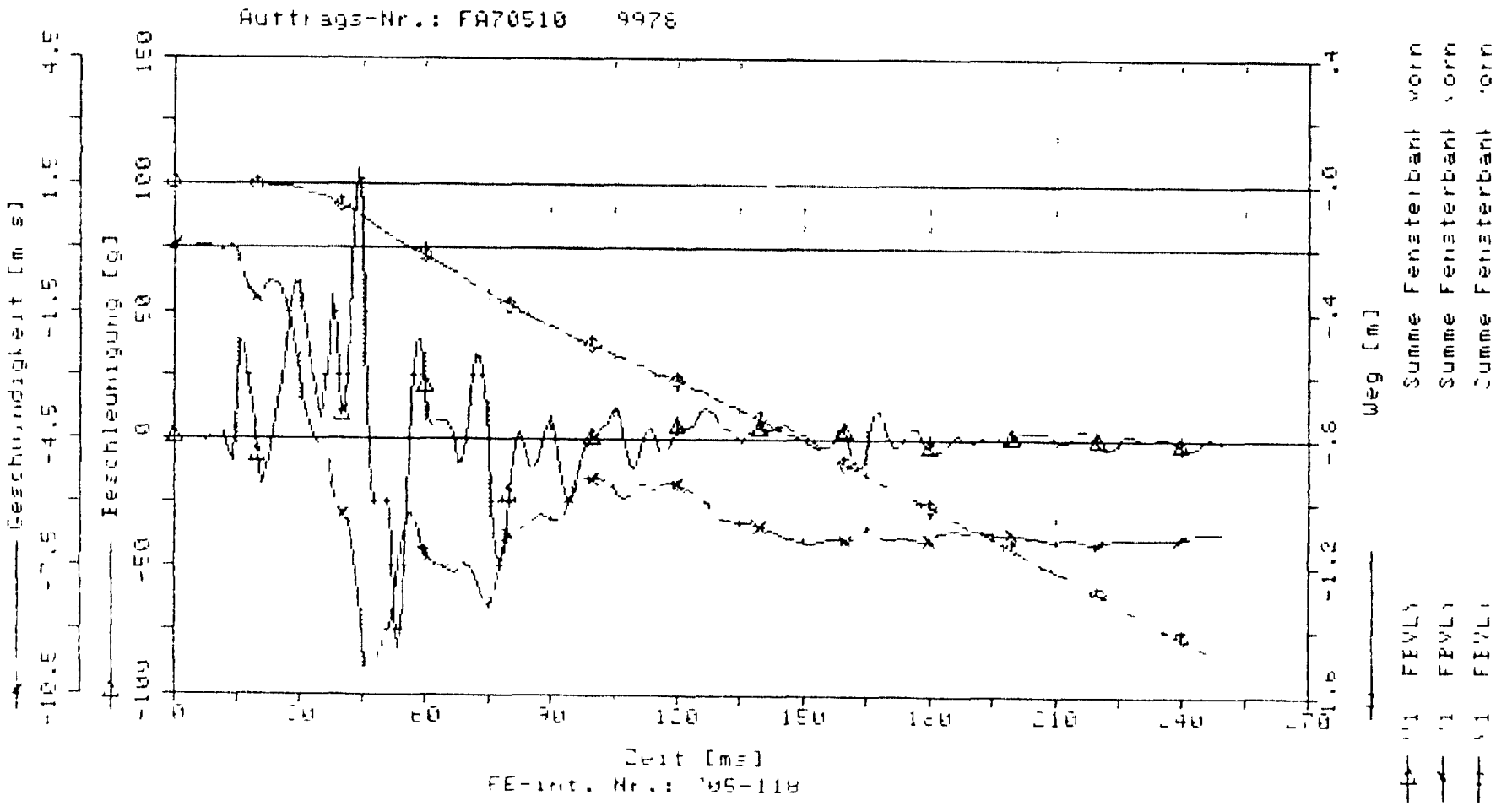
Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE int NR  705-116

| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BASLY | Summe Beckenaufschlag | BE g | 80 988 | 39 0 | 49 15 |
| V1 | BASLY | Summe Beckenaufschlag | GE m/s | -6 176 | 64 0 | 0 00 |
| V1 | BASLY | Summe Beckenaufschlag | WE m | 878 | 250 0 | 0 00 |



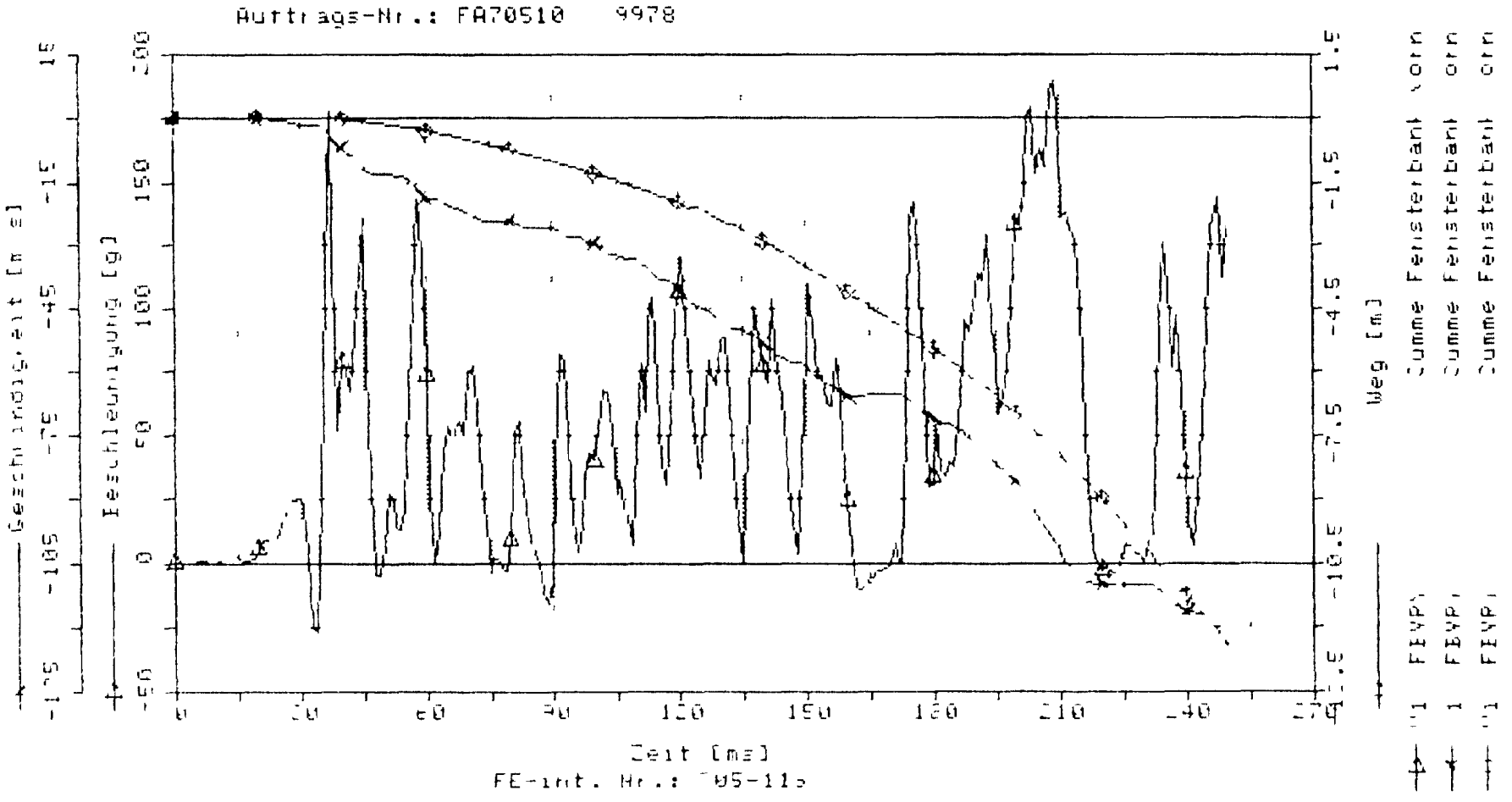
Kenn Werte  Auftrags Nr  FA/0510  Versuchs Nr  9978
Fahrg Nr  FE int NR  705-118

| UP | Mess Stelle | | ber Groesse | | Extremum | | t Extr | | 3MS | |
|---|---|---|---|---|---|---|---|---|---|---|
| V1 | FBVLY | Summe Fensterbank vorn | BE | g | 106 | 166 | 44 | 0 | 82 | 48 |
| V1 | FBVLY | Summe Fensterbank vorn | GE | m/s | -10 | 027 | 47 | 0 | 0 | 00 |
| V1 | FBVLY | Summe Fensterbank vorn | WE | m | -1 | 488 | 250 | 0 | 0 | 00 |



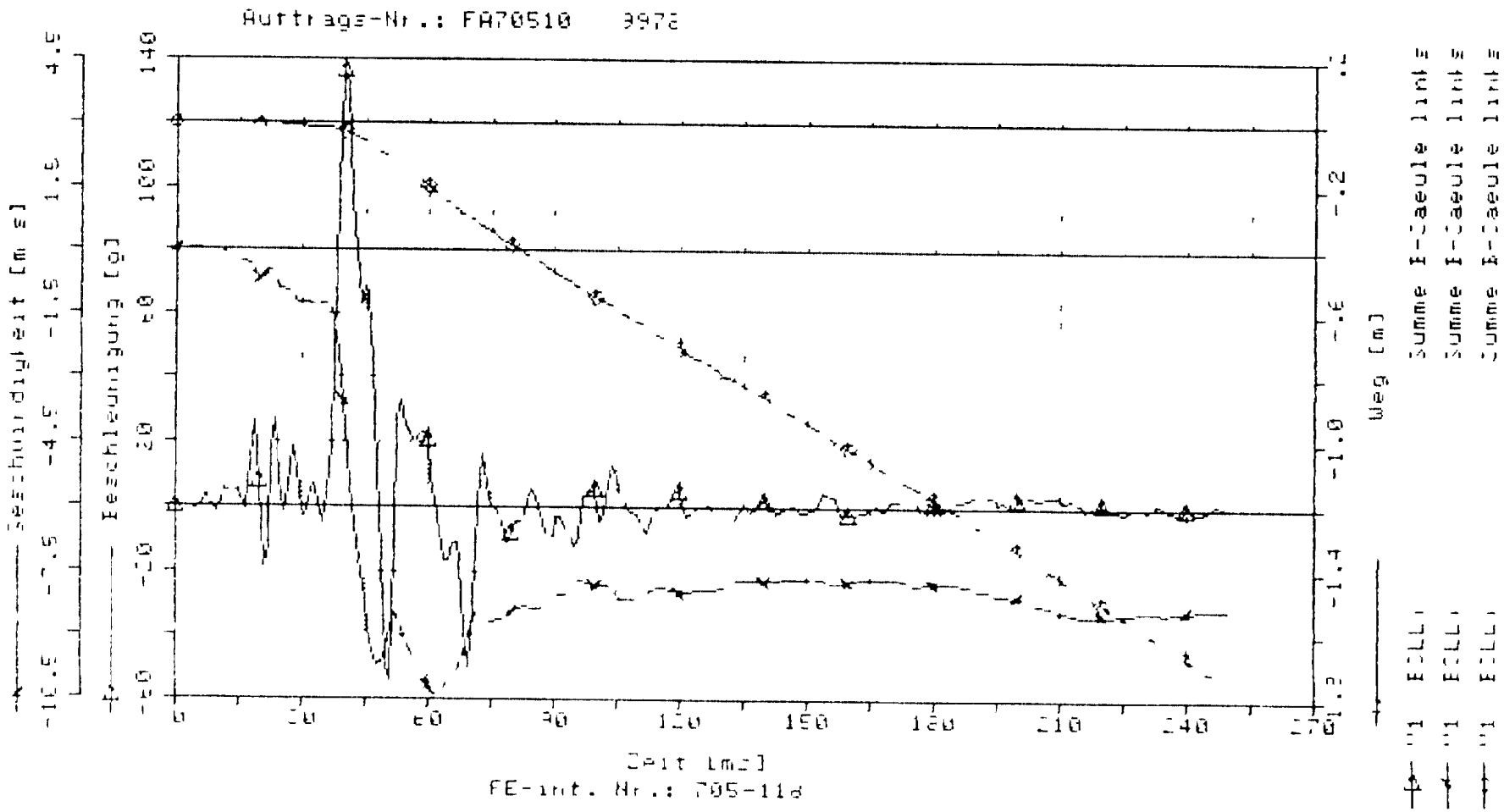
Fahrzeug Werk  Auftrags Nr  FA70510  Versuchs Nr  9978
Fahrzeug Nr  FE-int NR  705 116

| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | FBVRY | Summe Fensterbank vorn | BE g | 189 666 | 209 0 | 1 77 24 |
| V1 | FBVRY | Summe Fensterbank vorn | GE m/s | -124 11 | 250 0 | 0 00 |
| V1 | FBVRY | Summe Fensterbank vorn | WL m | 12 421 | 250 0 | 0 00 |



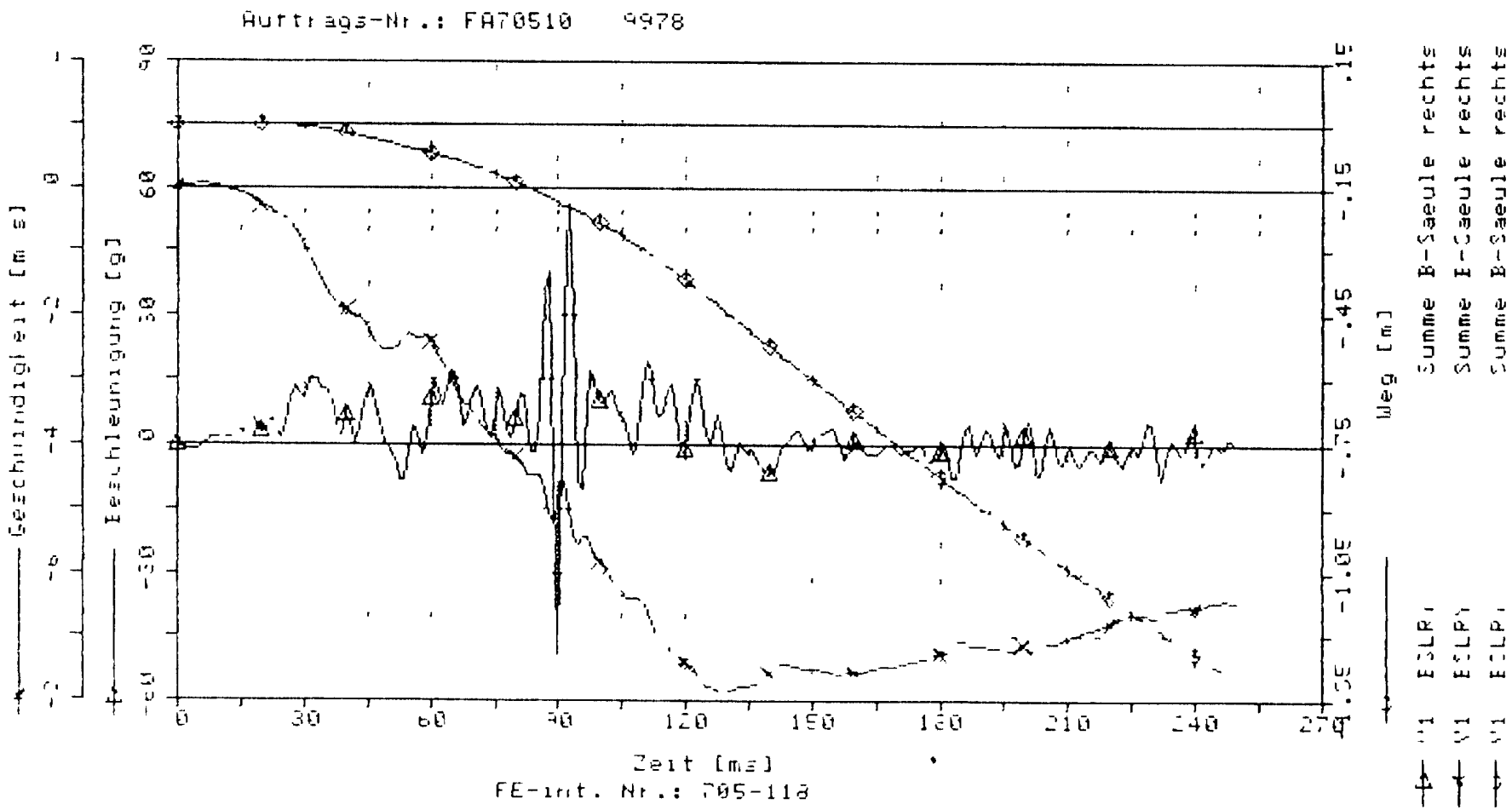
Kenn Werte  Auftrags Nr  FA70510  Versuchs Nr  9978
Fahrg Nr  FE int NR  705-118

| UI | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | ISELLY | Summe B Saeule links | BE g | 135 867 | 40 0 | 96 43 |
| V1 | ISELLY | Summe B Saeule links | GE m/s | -10 401 | 62 0 | 0 00 |
| V1 | ISELLY | Summe B-Saeule links | WE m | 1 750 | 250 0 | 0 00 |



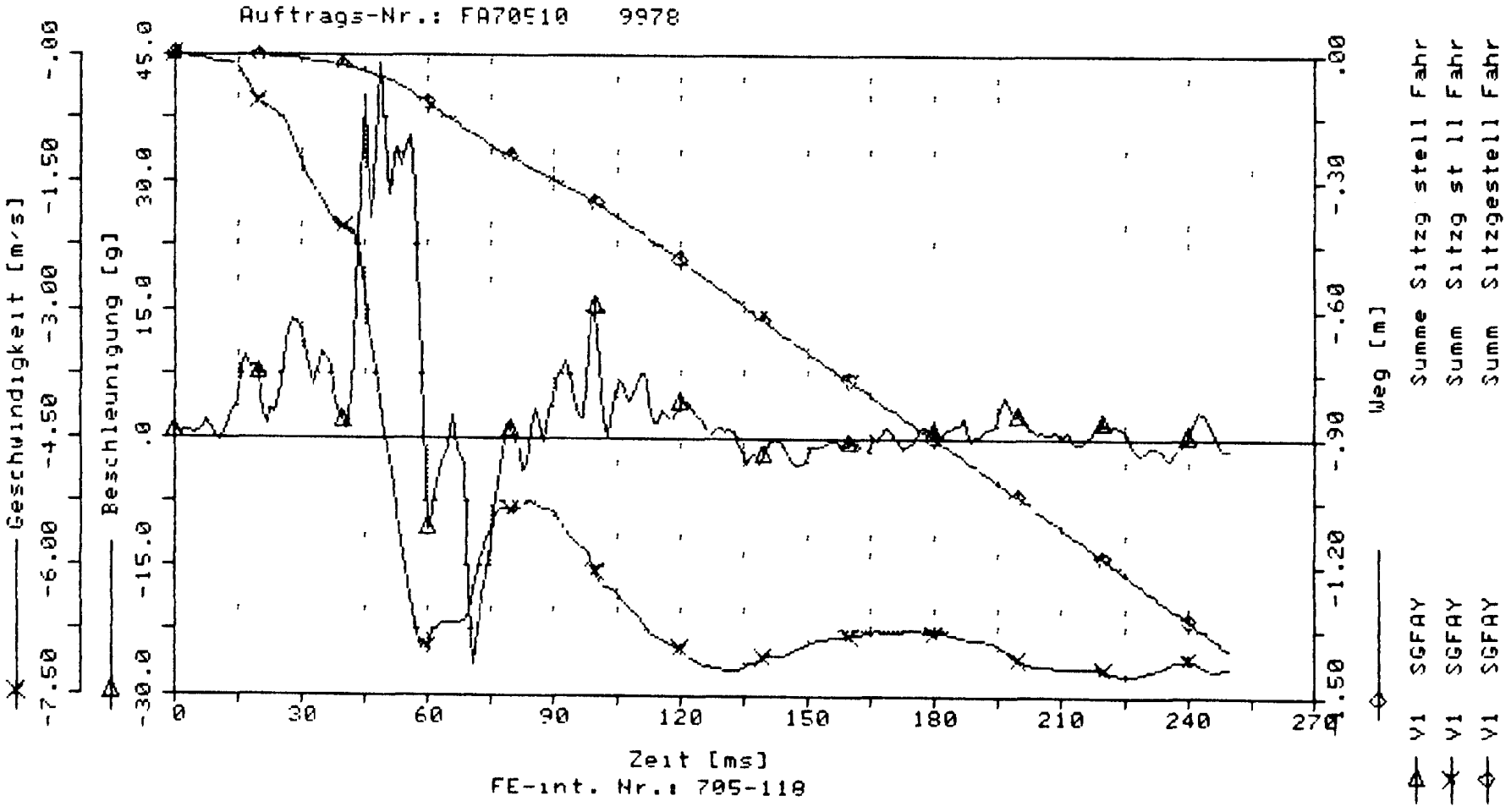
Lean Werte  Auftrag Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE-int NR  705-118

| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | ESLRY | Summe B-Saeule rechts | BE g | 56 101 | 93 0 | 35 60 |
| V1 | ESLRY | Summe B-Saeule rechts | GE m/s | 7 924 | 129 0 | 0 00 |
| V1 | ESLRY | Summe B-Saeule rechts | WE m | 1 305 | 250 0 | 0 00 |



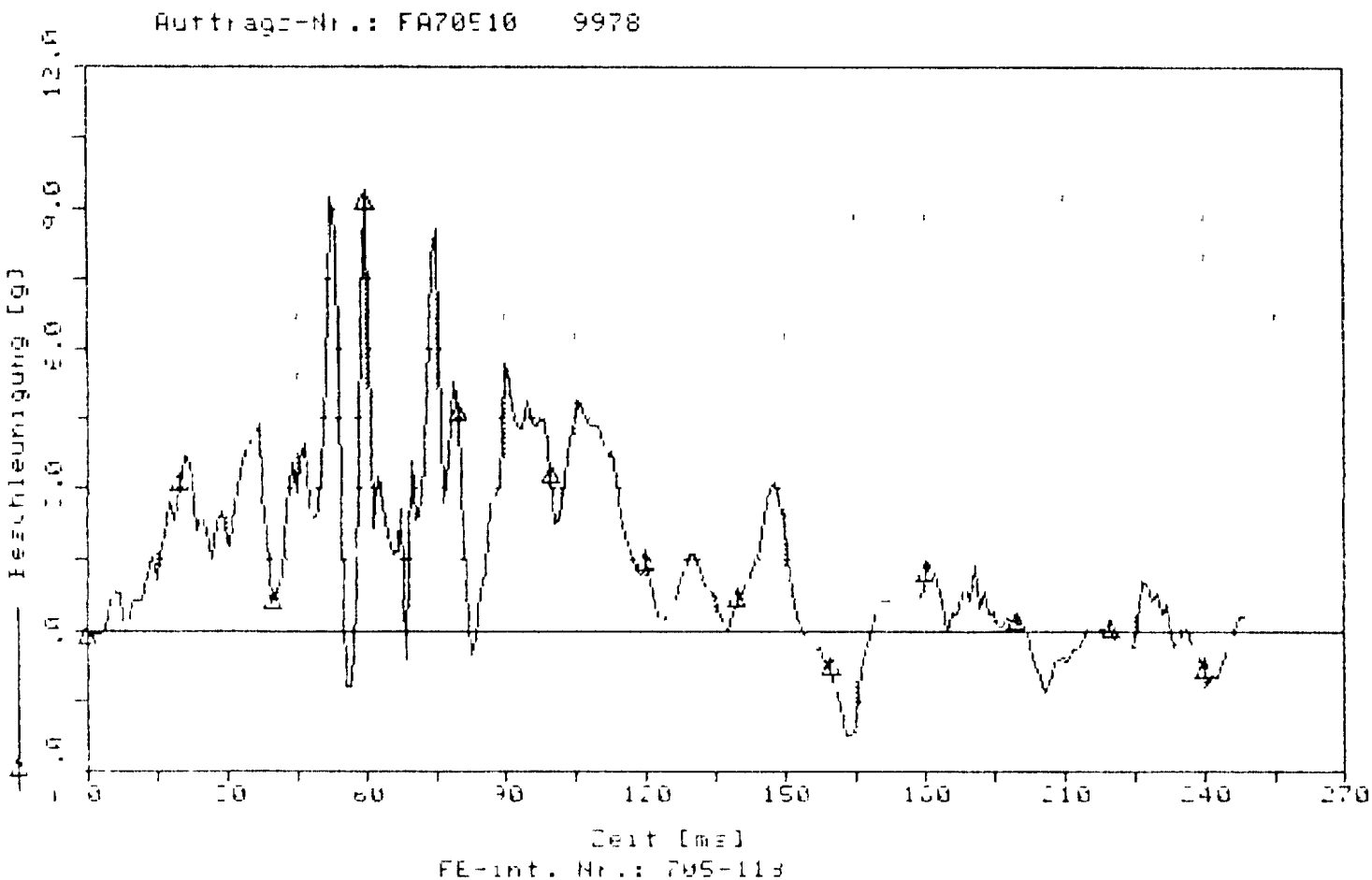
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  IE int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | SGFAY | Summe Sitzgestell Fahr | BE g | 43 939 | 49 0 | 35 29 |
| V1 | SGFAY | Summe Sitzgestell Fahr | GE m/s | -7 279 | 226 0 | 0 00 |
| V1 | SGFAY | Summe Sitzgestell Fahr | WE m | -1 397 | 250 0 | 0 00 |



Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE int NR  705-118

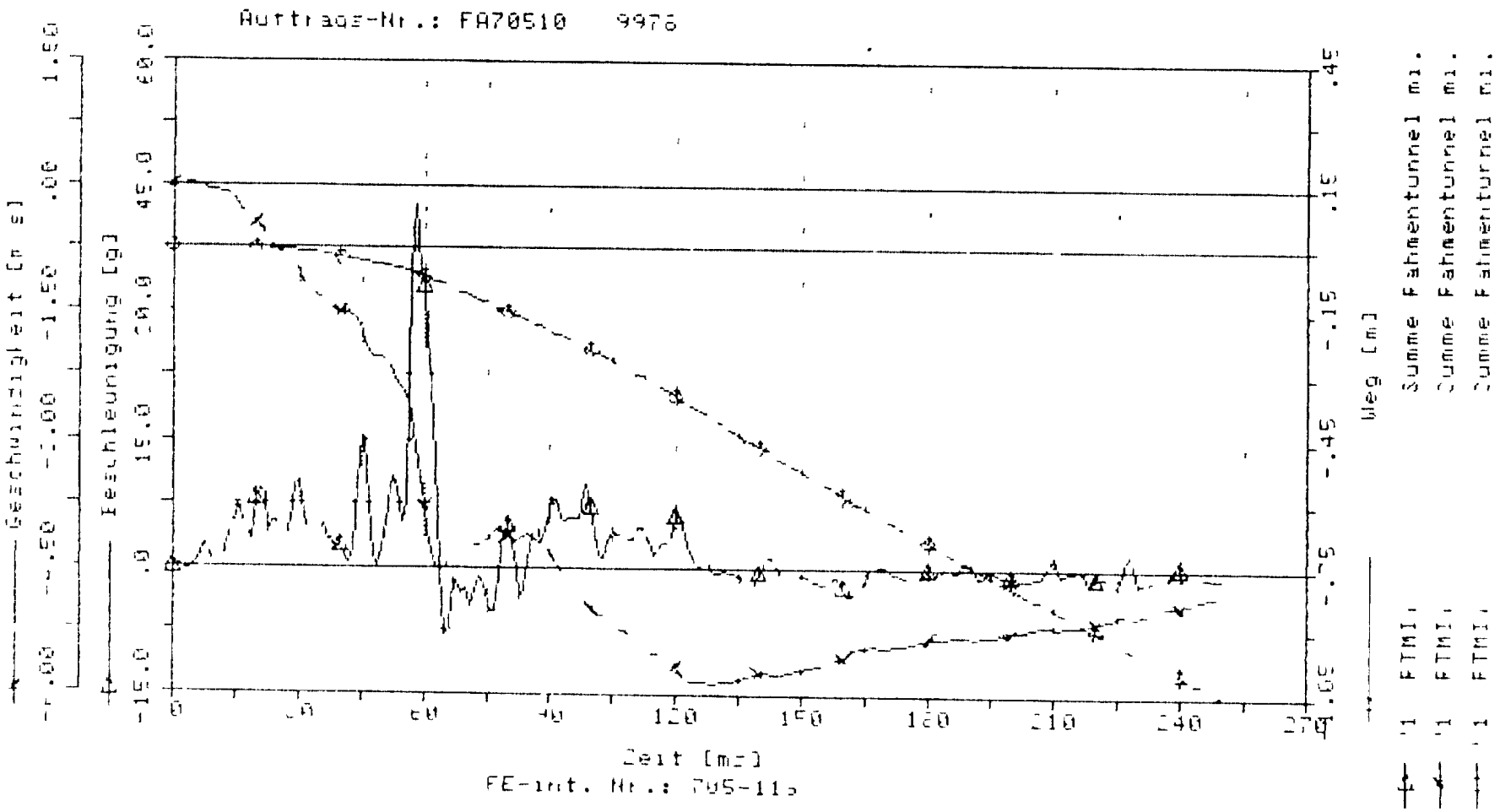
| | | | | | | |
|---|---|---|---|---|---|---|
| UF | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
| V1 | RTMIX | Summe Rahmentunnel mi | BE g | 9 25? | 53 0 | 8 46 |



Form Horte  Auftrags Nr  FA70510  Versuchs Nr  9978
Lang Nr  FE int Nr  705-118

UP  Mess Stelle

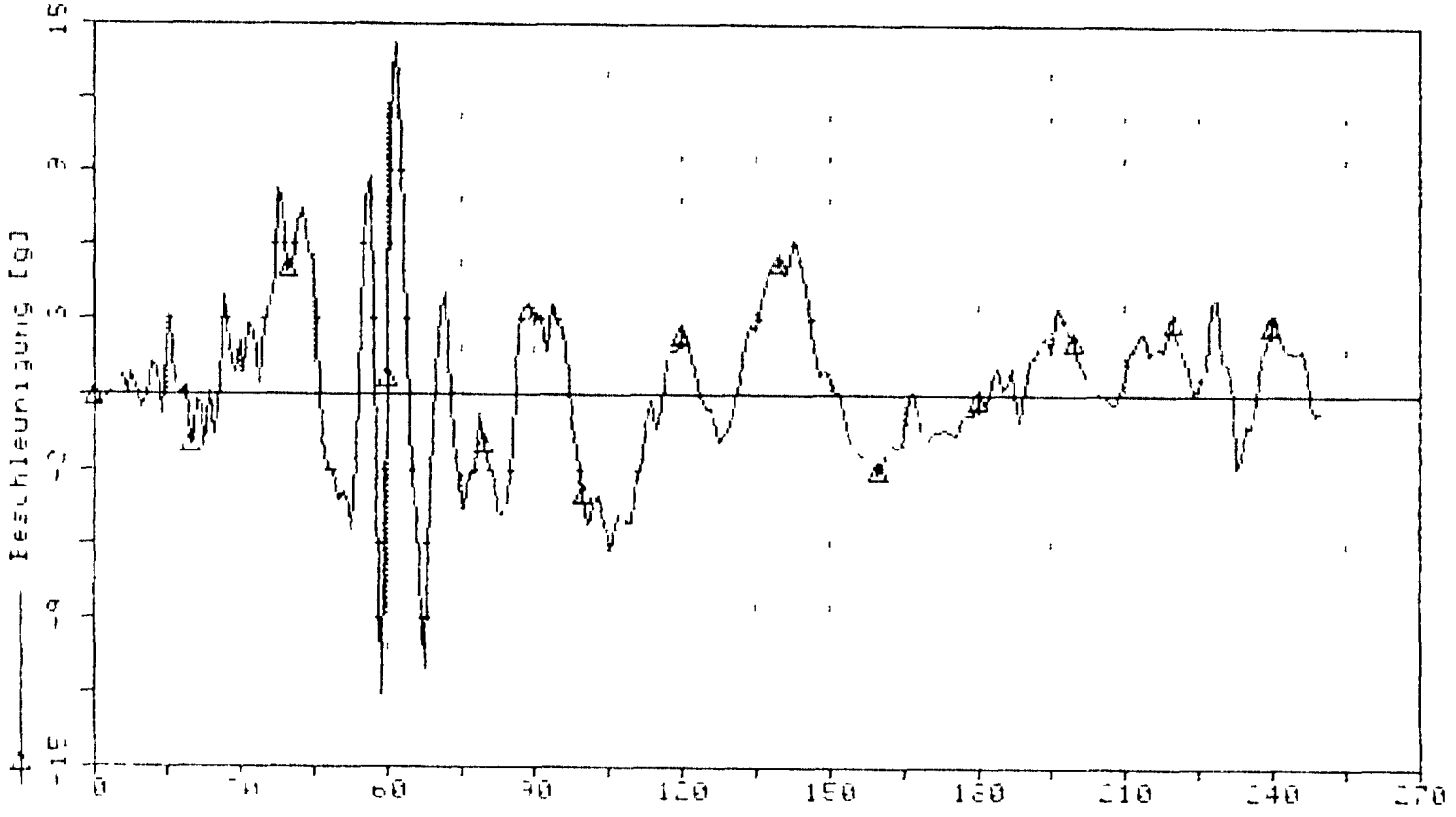
| | | | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|---|
| V1 | FTMIY | Summe Rahmentunnel mi | BL | g | 42 769 | 58 0 | 42 69 |
| V1 | FTMIY | Summe Rahmentunnel mi | GE | m/s | 5 866 | 129 0 | 0 00 |
| V1 | FTMIY | Summe Rahmentunnel mi | WE | m | -1 046 | 250 0 | 0 00 |



Lenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg  Nr  FE int  NR  705 118

| | | | | | | |
|---|---|---|---|---|---|---|
| Ur | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
| V1 | FTMIZ | Summe Rahmentunnel mi | BE g | 14 190 | 62 0 | 11 05 |

Auftrags-Nr.: FA70510  9978




FE-int. Nr.: 705-11:

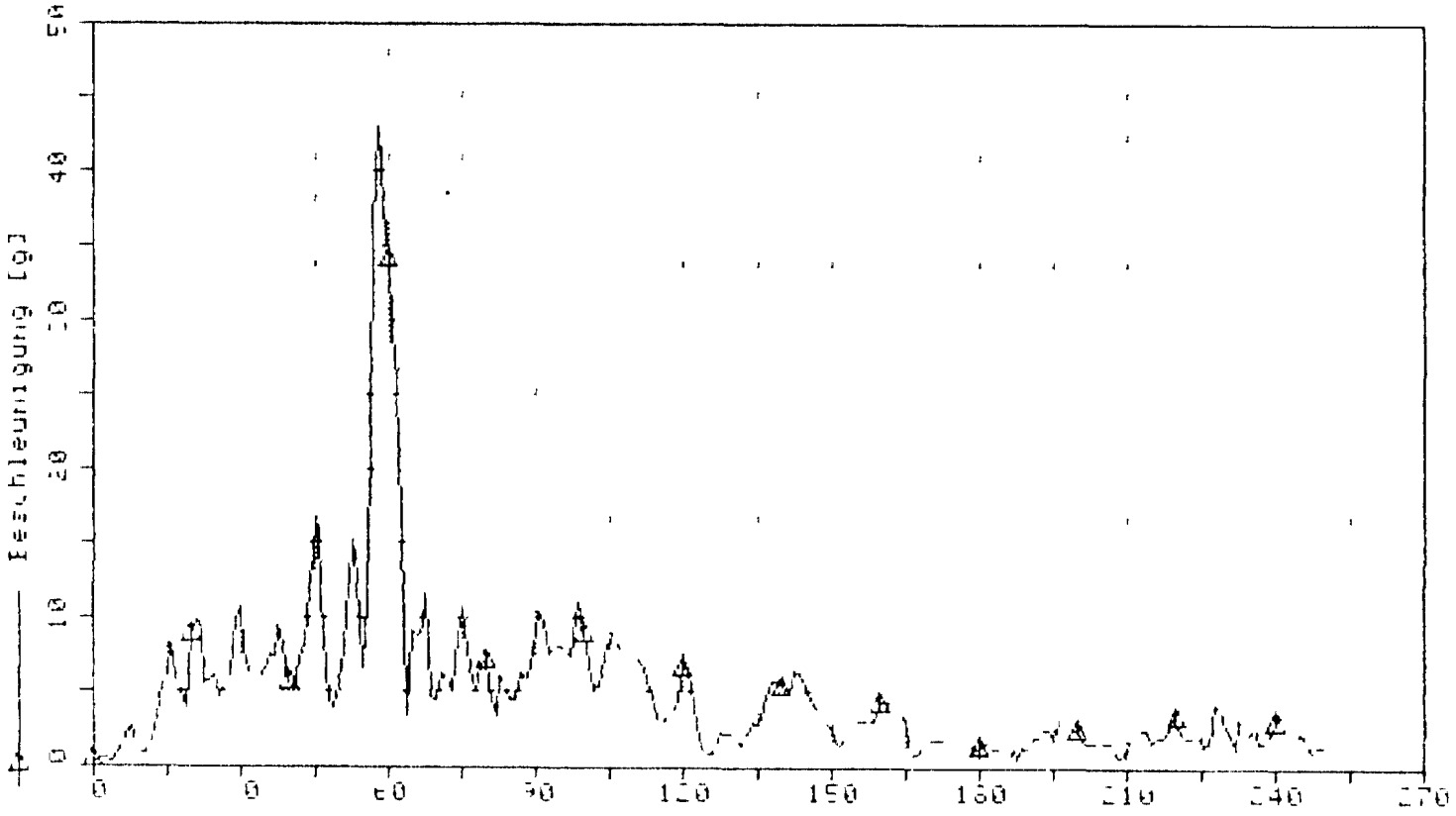
Summe Rahmentunnel mi.

V1 FTMIZ

Lenn Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg  Nr  FE int  NR  705 118

| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | 3M5 |
|---|---|---|---|---|---|---|
| V1 | RTMI X Y Z | Summe Rahmentunnel m1 | bE g | 42 931 | 58 0 | 33 94 |

Auftrage-Nr.: FA70510  9978



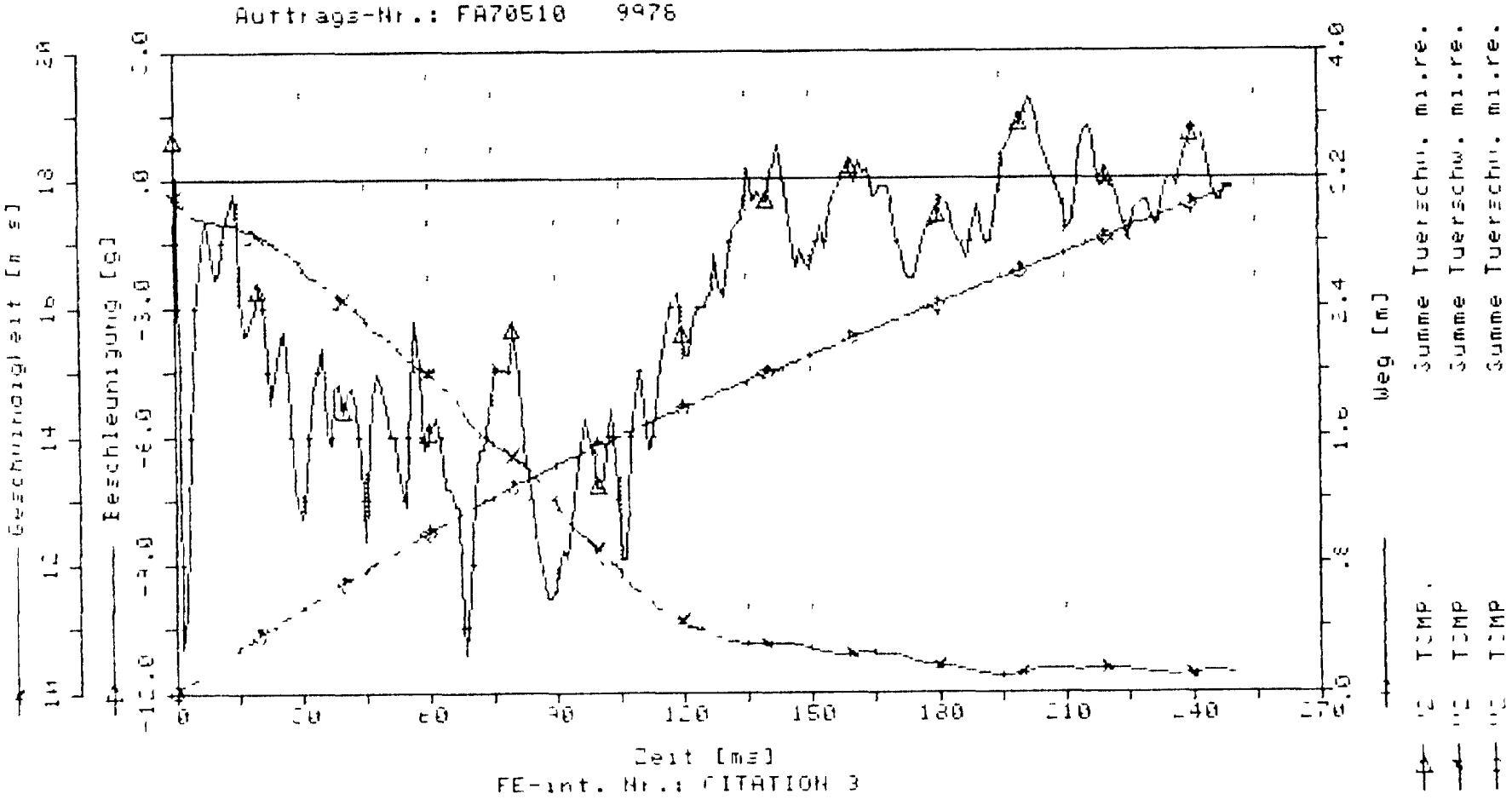

FE-Int. Nr.: 705-118

V1 RTMI X Y Z  Summe Rahmentunnel m1.

### B.1.2 Bullet Vehicle

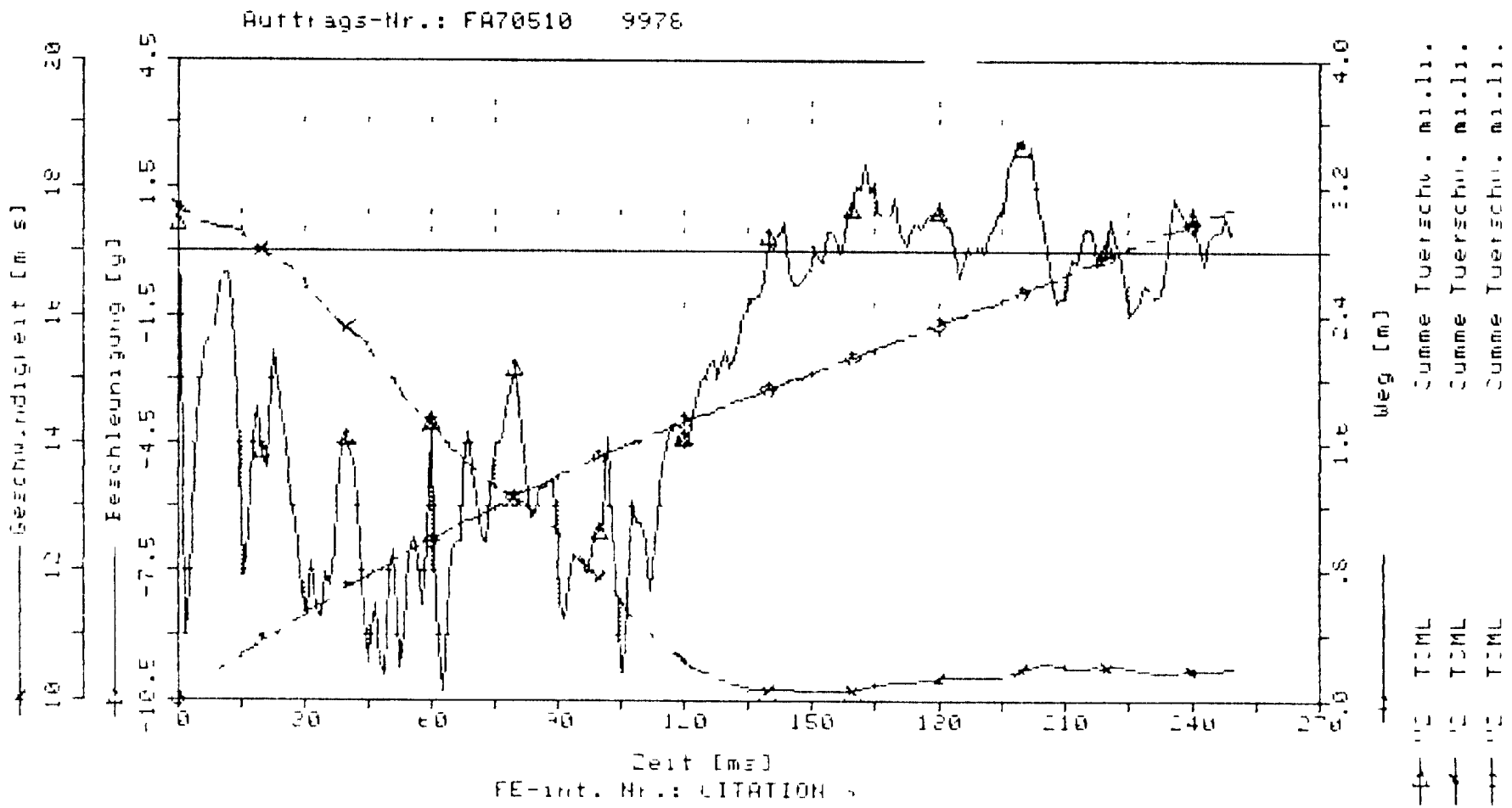
Fehn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int  NR  CITATION 3

| UP | Mess Stelle | | | Der Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|---|
| V2 | TSMPX | Summe Tuerschw | mi re | BE g | 11 136 | 69 0 | 9 80 |
| V2 | TSMRX | Summe Tuerschw | mi re | GE m/s | 17 703 | 1 0 | 0 00 |
| V2 | TSMRX | Summe Tuerschw | mi re | WE m | 3 130 | 250 0 | 0 00 |



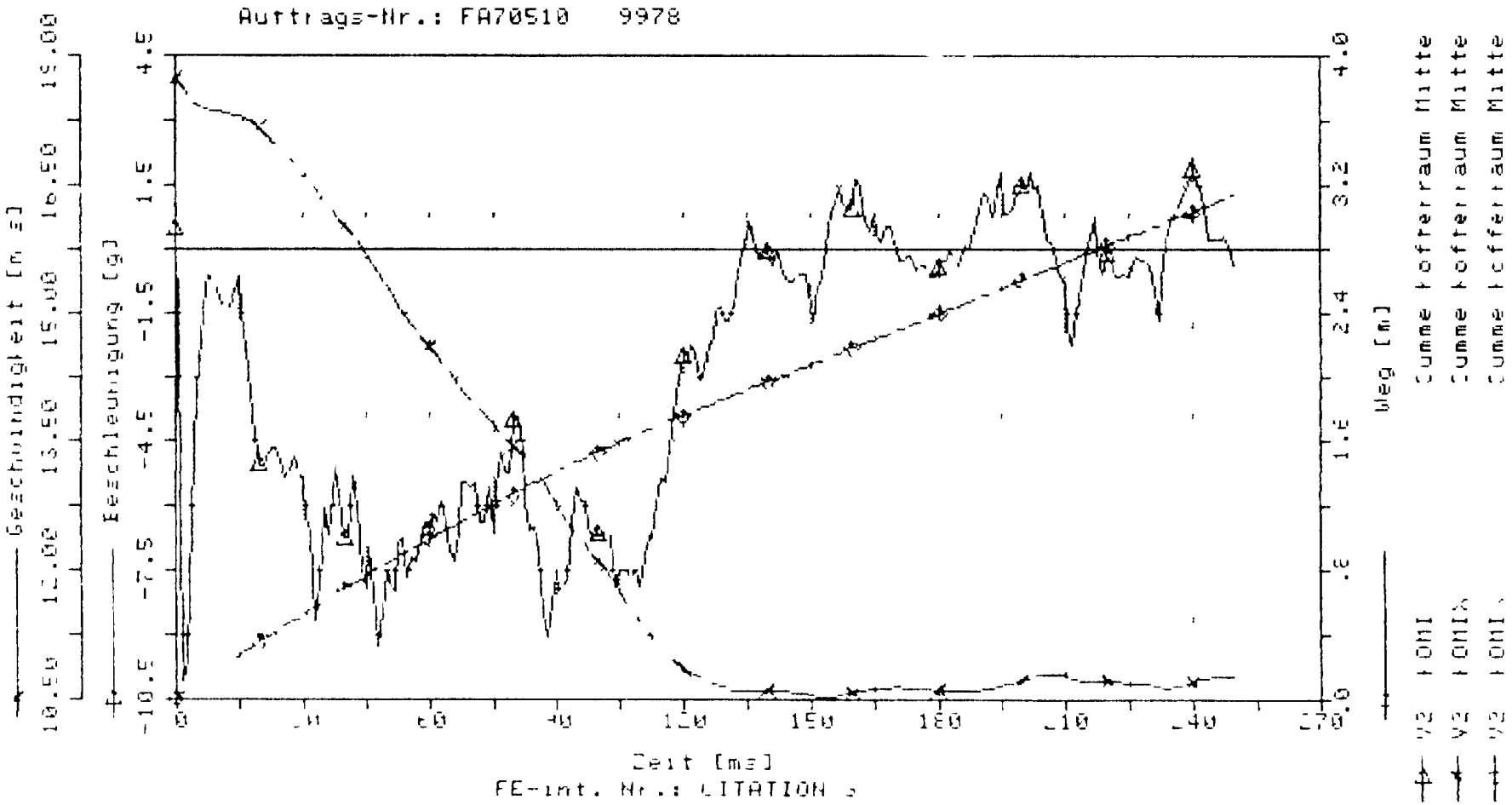
Kenn-Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg  Nr  FE-int  NR  CITATION 3

| UP | Mess-Stelle | | | | ber Groesse | | Extremum | t Extr | | 3MS |
|---|---|---|---|---|---|---|---|---|---|---|
| V2 | TSMLY | Summe Tuerschw | m1 | 11 | BE | g | 10 281 | 63 | 0 | 9 77 |
| V2 | TSMLX | Summe Tuerschw | m1 | 11 | GE | m/s | 17 703 | 1 | 0 | 0 00 |
| V2 | TSMLX | Summe Tuerschw | m1 | 11 | WE | m | 3 071 | 250 | 0 | 0 00 |



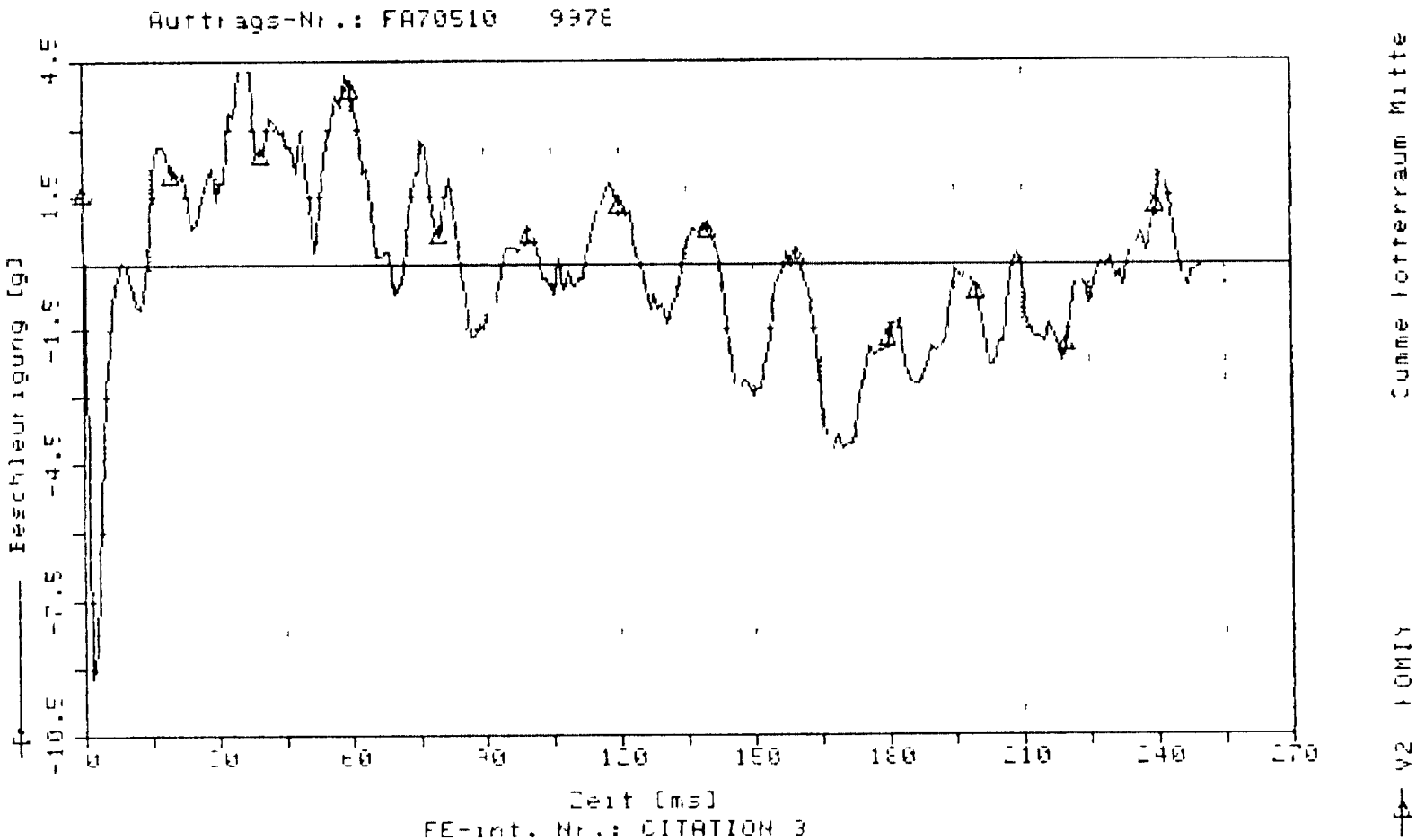
Lehr Werte  Auftrags Nr  FA70510  Versuchs Nr  9978
Fahrzg Nr  FE-int NR  CITATION 3

| Ul | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V2 | KUMIX | Summe Kofferraum Mitte | BE g | -10 094 | 2 0 | 9 09 |
| V2 | KUMIX | Summe Kofferraum Mitte | GE m/s | 17 703 | -1 0 | 0 00 |
| V2 | KUMIX | Summe Kofferraum Mitte | WE m | 3 136 | 250 0 | 0 00 |



Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  CITATION 3

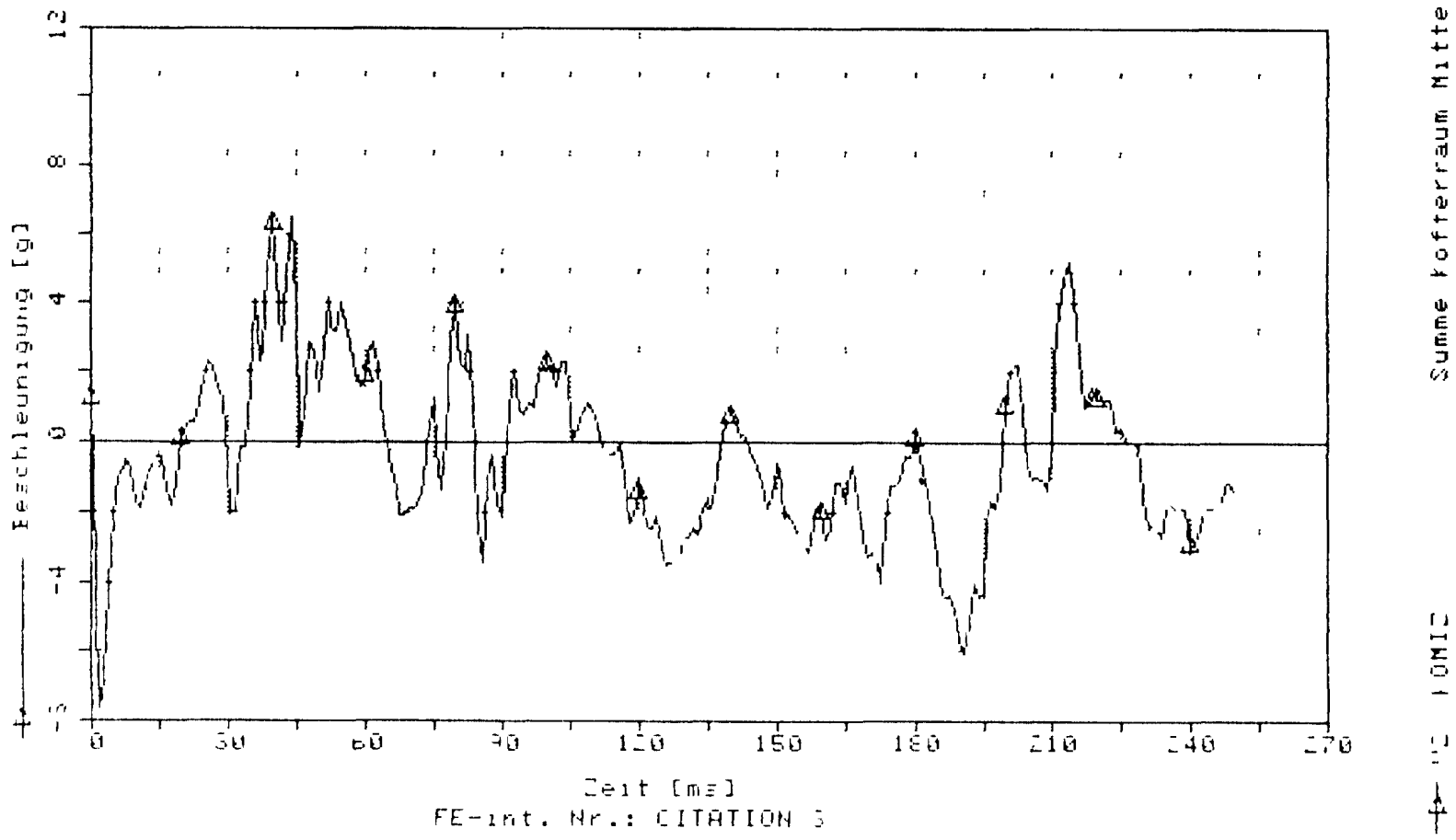
| | | | | | | |
|---|---|---|---|---|---|---|
| U1 | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
| V2 | KOMIY | Summe Kofferraum Mitte | BE g | -9 246 | 2 0 | 4 38 |



Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE int NR  CITATION 3

| | | | | | | |
|---|---|---|---|---|---|---|
| UP | Mess-Stelle | | Der Groesse | Extremum | t Extr | 3MS |
| V2 | KOMIZ | Summe Kofferraum Mitte | BE g | -7 664 | 2 0 | 6 31 |

Auftrags-Nr.: FA70510  9978

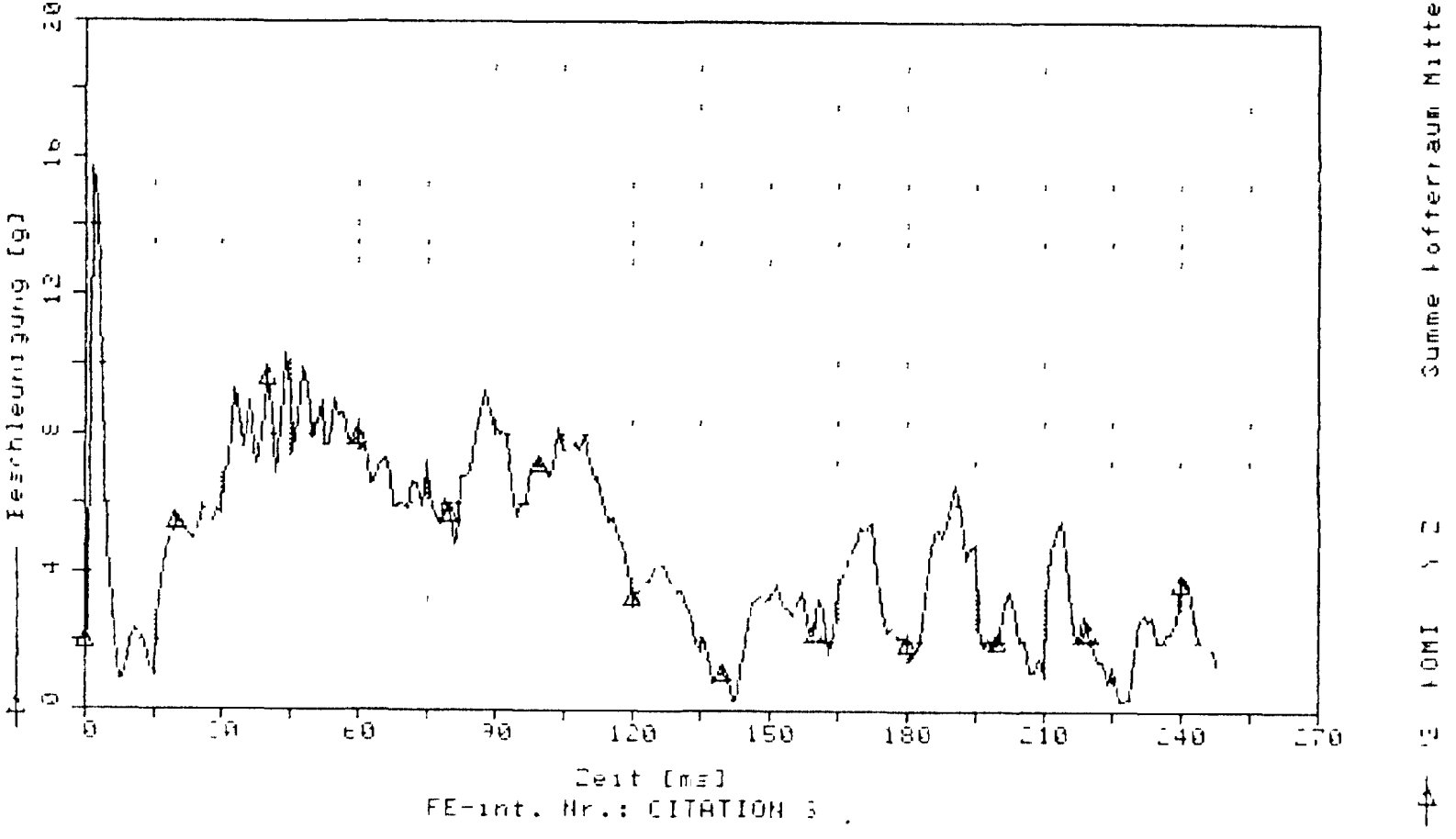



FE-int. Nr.: CITATION 3

Komm Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int  NR  CITATION 3

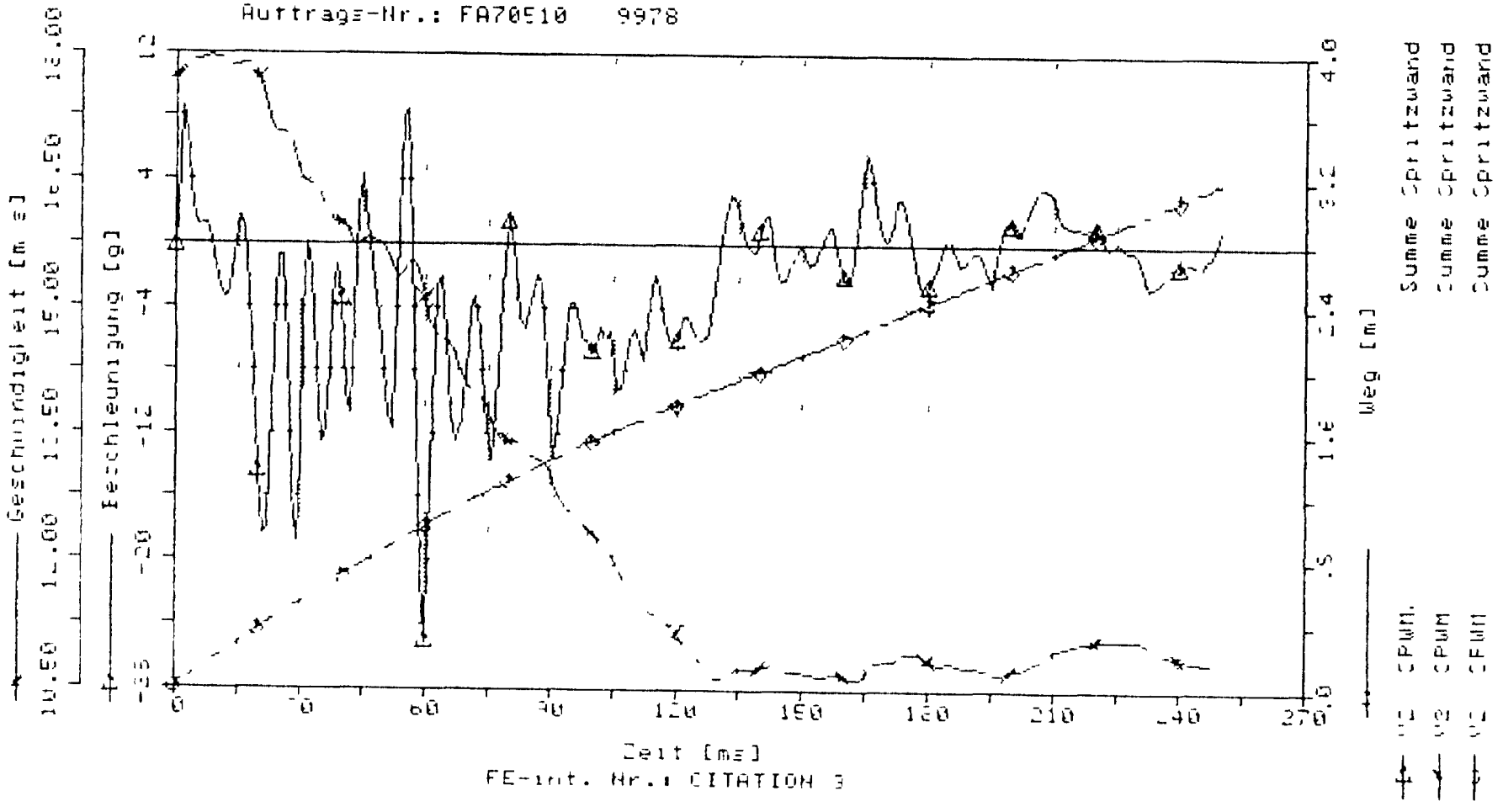
| UP | Mess Stelle | | der Groesse | Extremum | t Extr | SMS |
|---|---|---|---|---|---|---|
| V2 | KOMI X Y Z | Summe Kofferraum Mitte | BE g | 15 688 | 2 0 | 9 93 |

Auftrags-Nr.: FA70510  9978



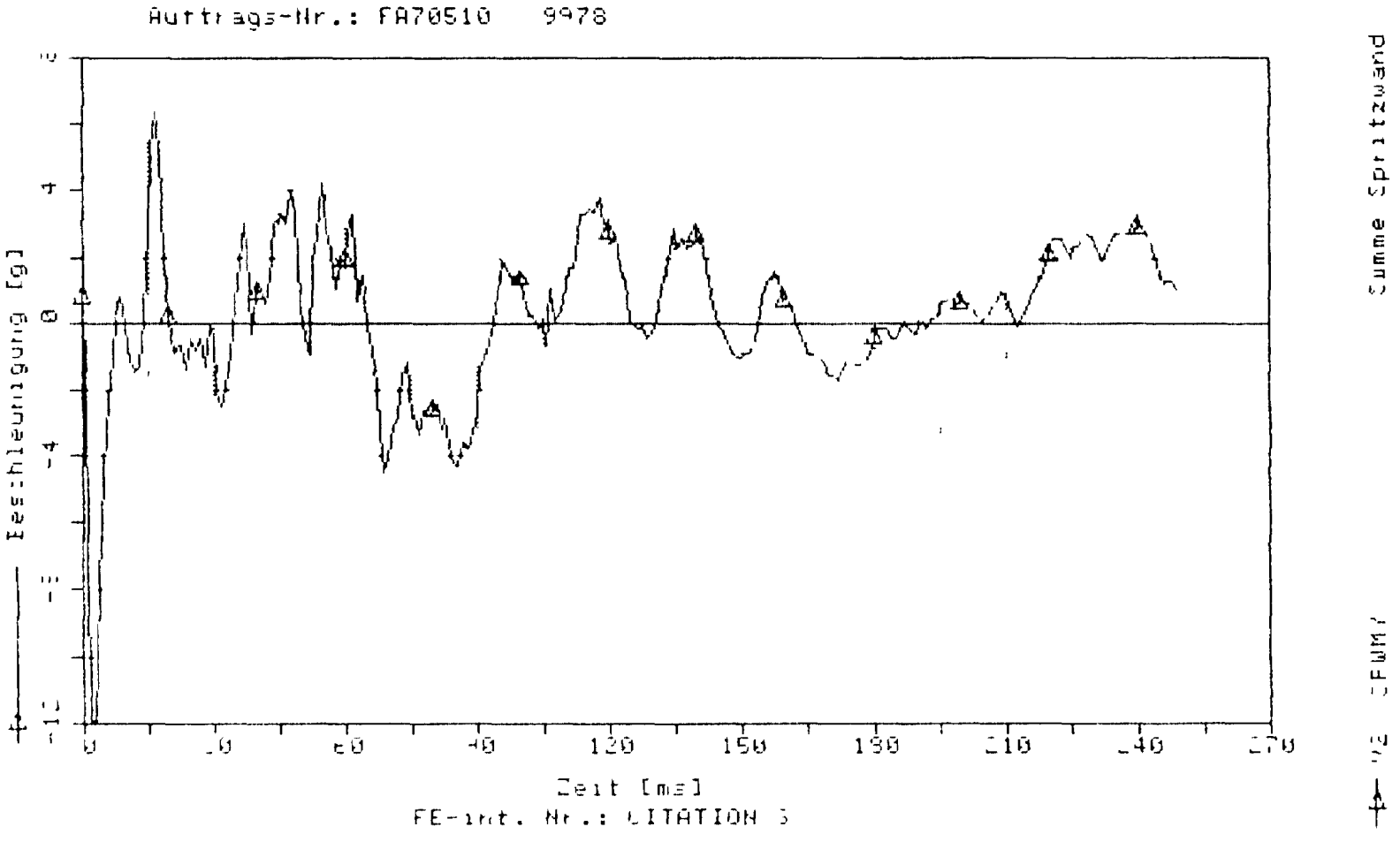
Fenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE-int NR  CITATION 3

| UP | Mess-Stelle | | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|---|
| V2 | CPWMX | Summe Spritzwand | BE | g | -25 125 | 60 0 | 18 96 |
| V2 | CPWMX | Summe Spritzwand | GE | m/s | 17 954 | 9 0 | 0 00 |
| V2 | CPWMX | Summe Spritzwand | WE | m | 3 187 | 250 0 | 0 00 |



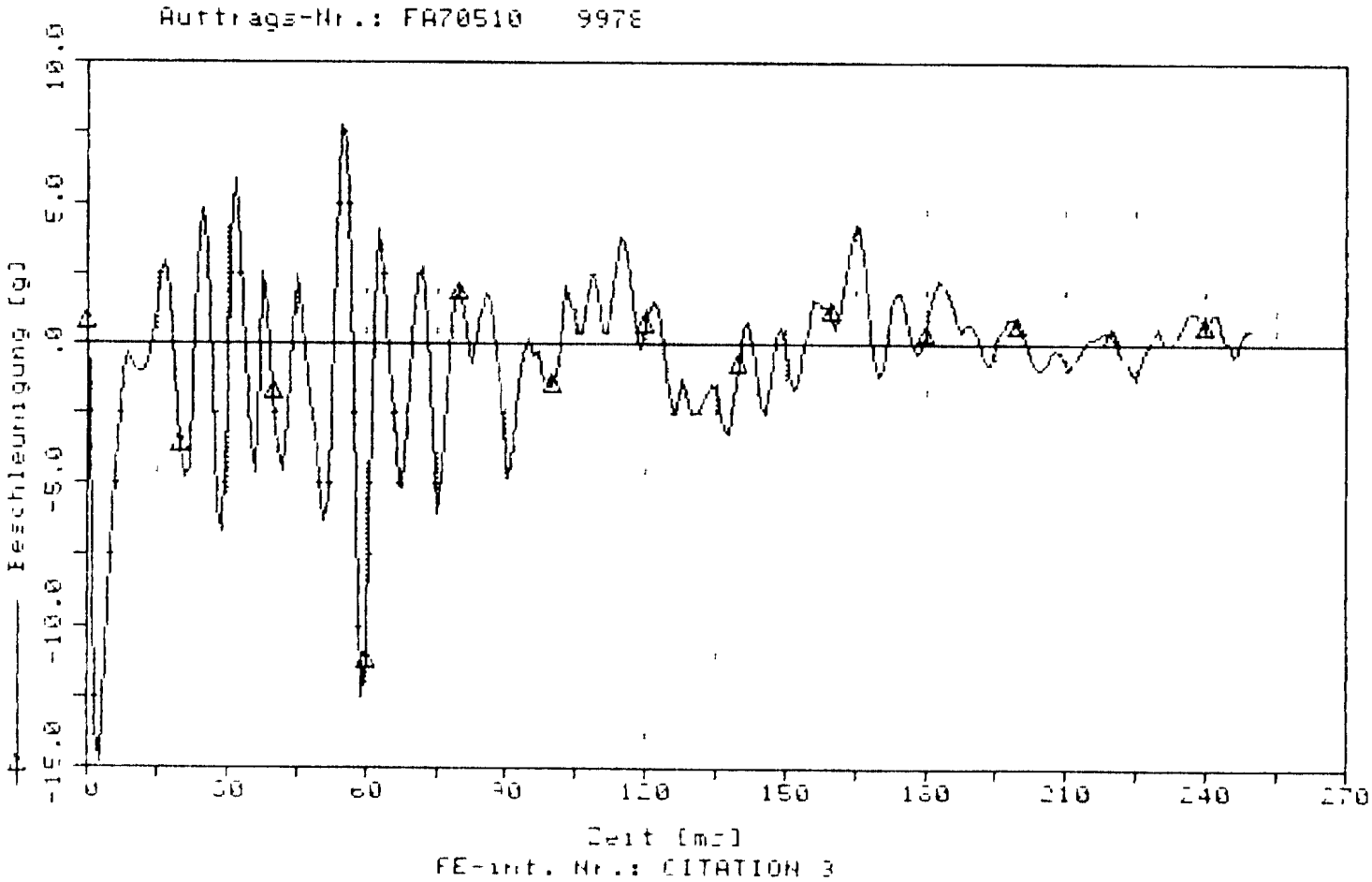
Kenn Werte  Auftrag, Nr  FA70510  Versuchs-Nr  9978
Fahrz Nr  FE int NR  CITATION 3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 01 | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
| 02 | SPWMY | Summe Spritzwand | BE g | -11 921 | 2 0 | 6 36 |



Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg  Nr  FE-int  NR  CITATION 3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
| V2 | SPWM2 | Summe Spritzwand | BE g | -14 827 | 3 0 | 11 23 |

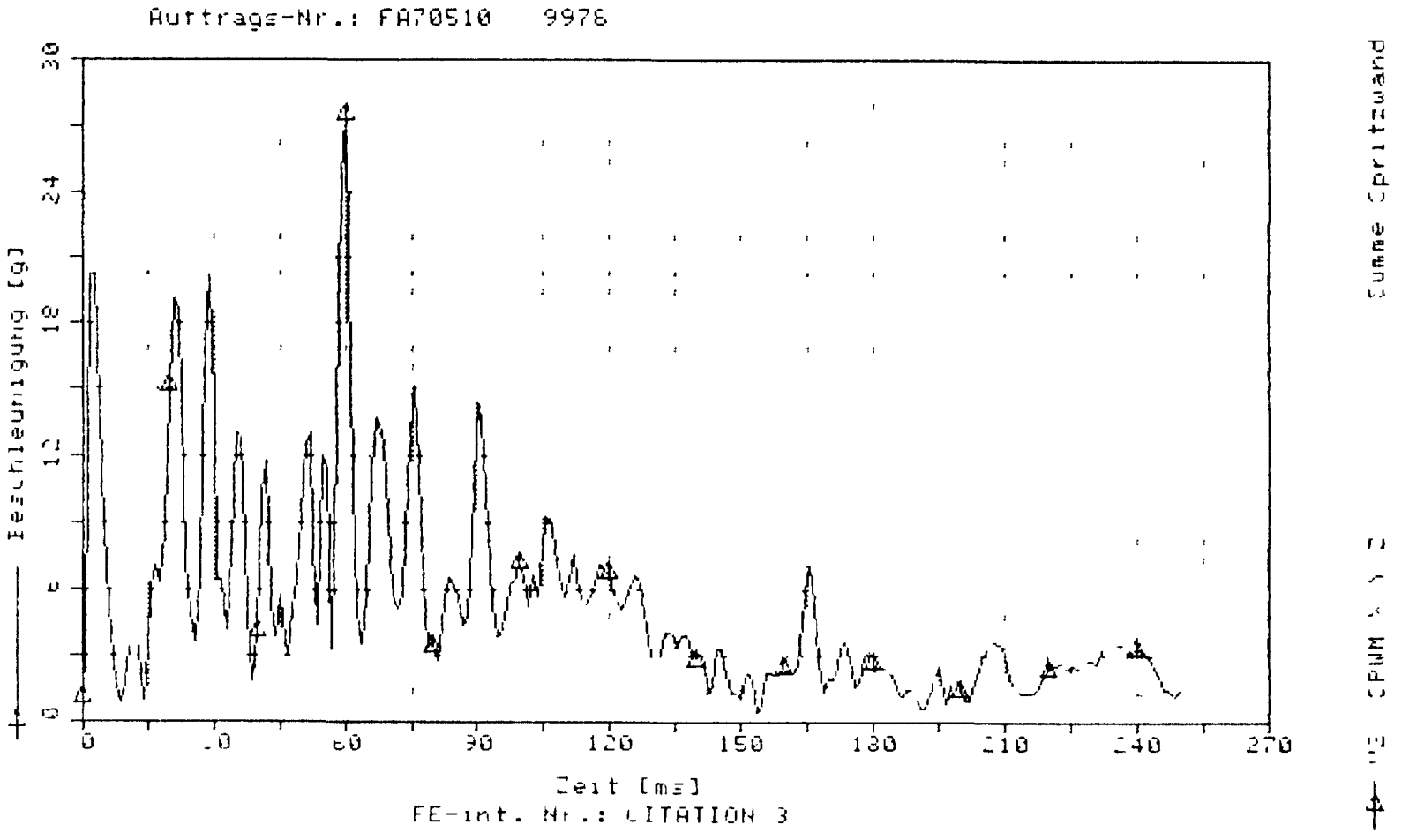



Summe Spritzwand

SPWM2

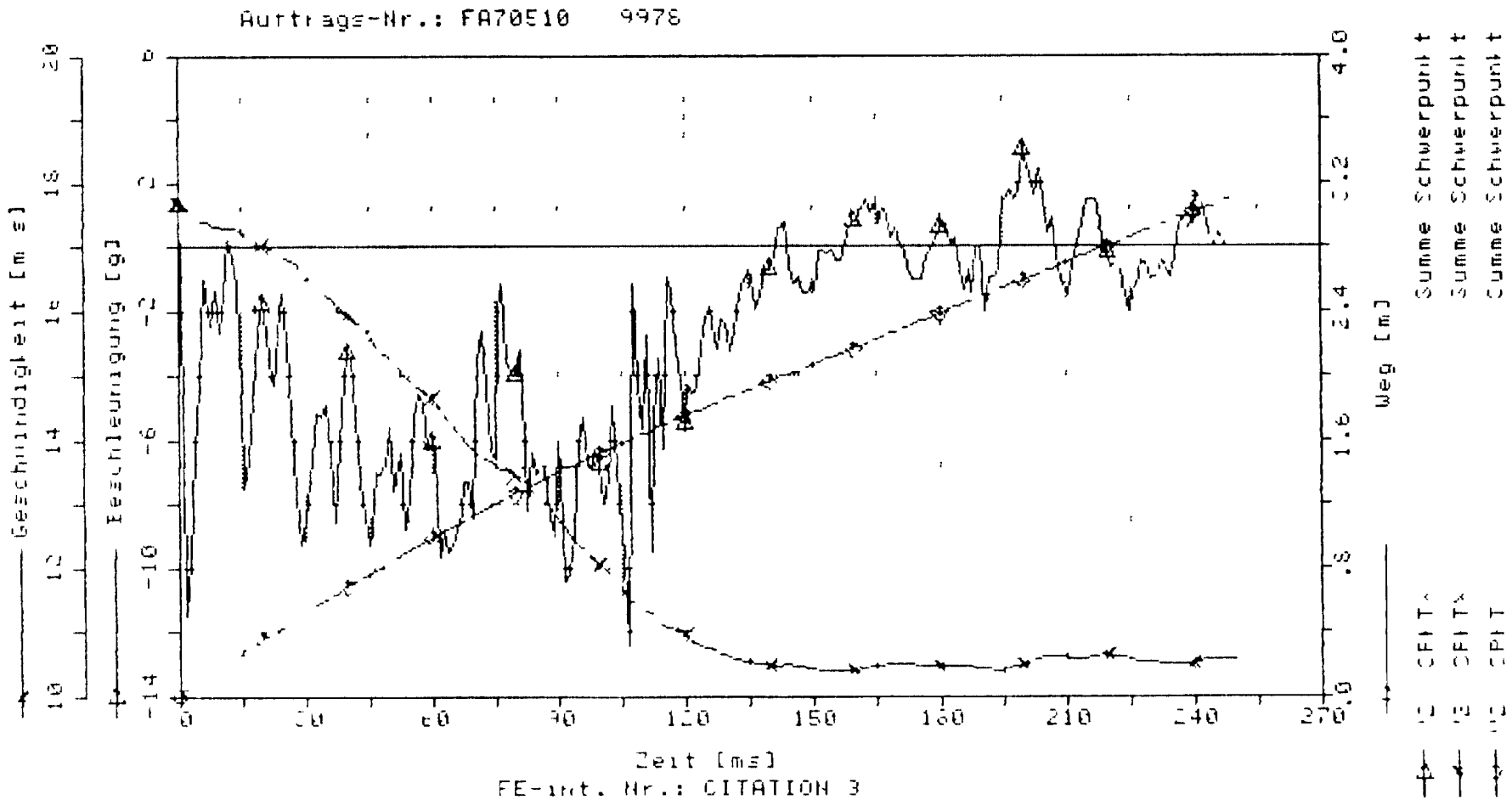
Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE int NR  CITATION 3

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| UP | Mess Stelle | | | ber Groesse | Extremum | t Extr | 3MS |
| V2 | SPWM X Y Z | Summe Spritzwand | BE | g | 27 586 | 60 0 | 20 24 |



Lenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrz Nr  FE-int  NK  CITATION 3

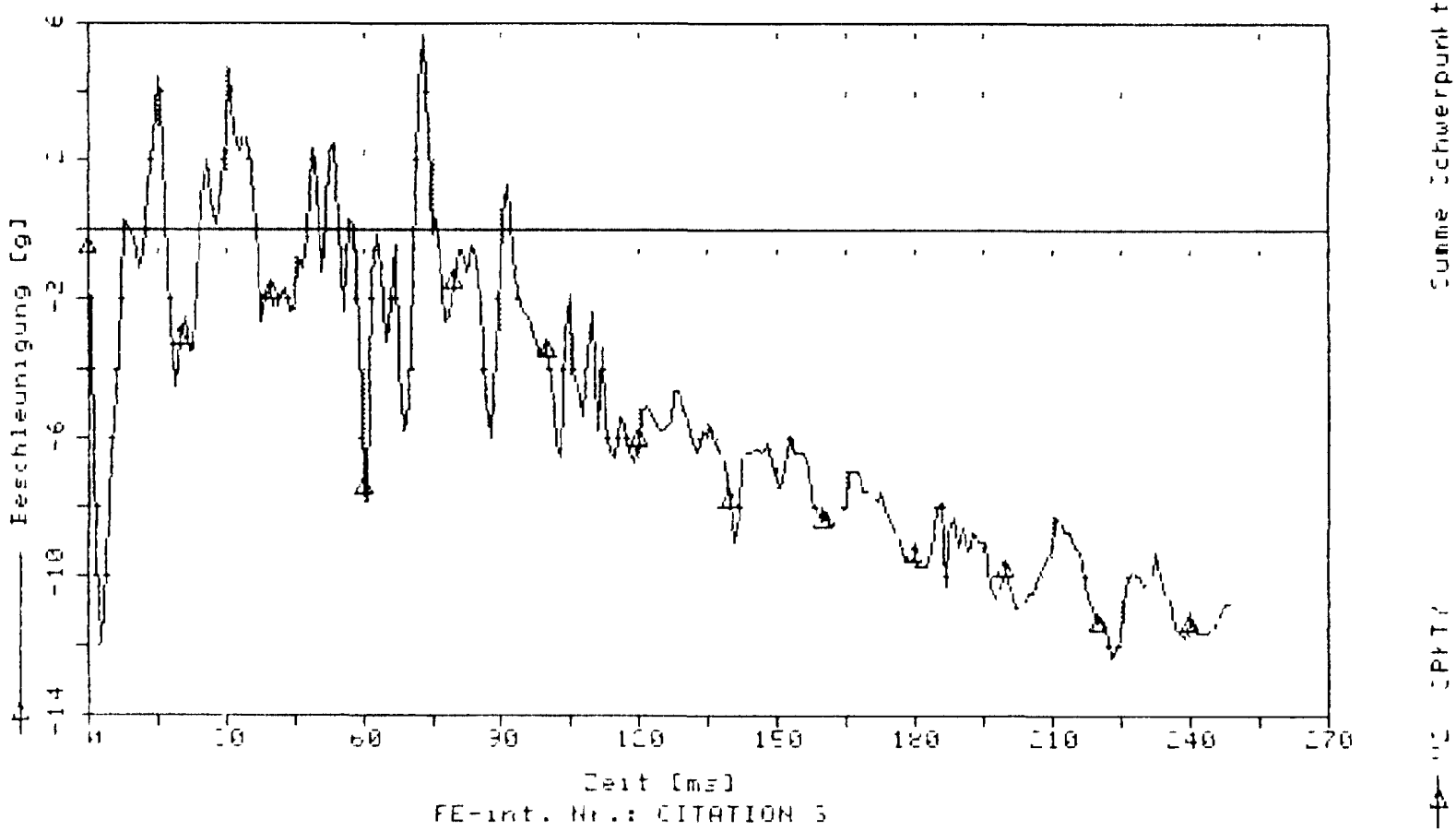
| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | SMS |
|---|---|---|---|---|---|---|
| V2 | SPKTZ | Summe Schwerpunkt | BE g | -12 466 | 107 0 | 10 14 |
| V2 | SPKTX | Summe Schwerpunkt | GE m/s | 17 704 | 1 0 | 0 00 |
| V2 | SPKTY | Summe Schwerpunkt | WE m | 3 112 | 250 0 | 0 00 |



Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  99/8
Fahrg Nr  FE int NR  CITATION 3

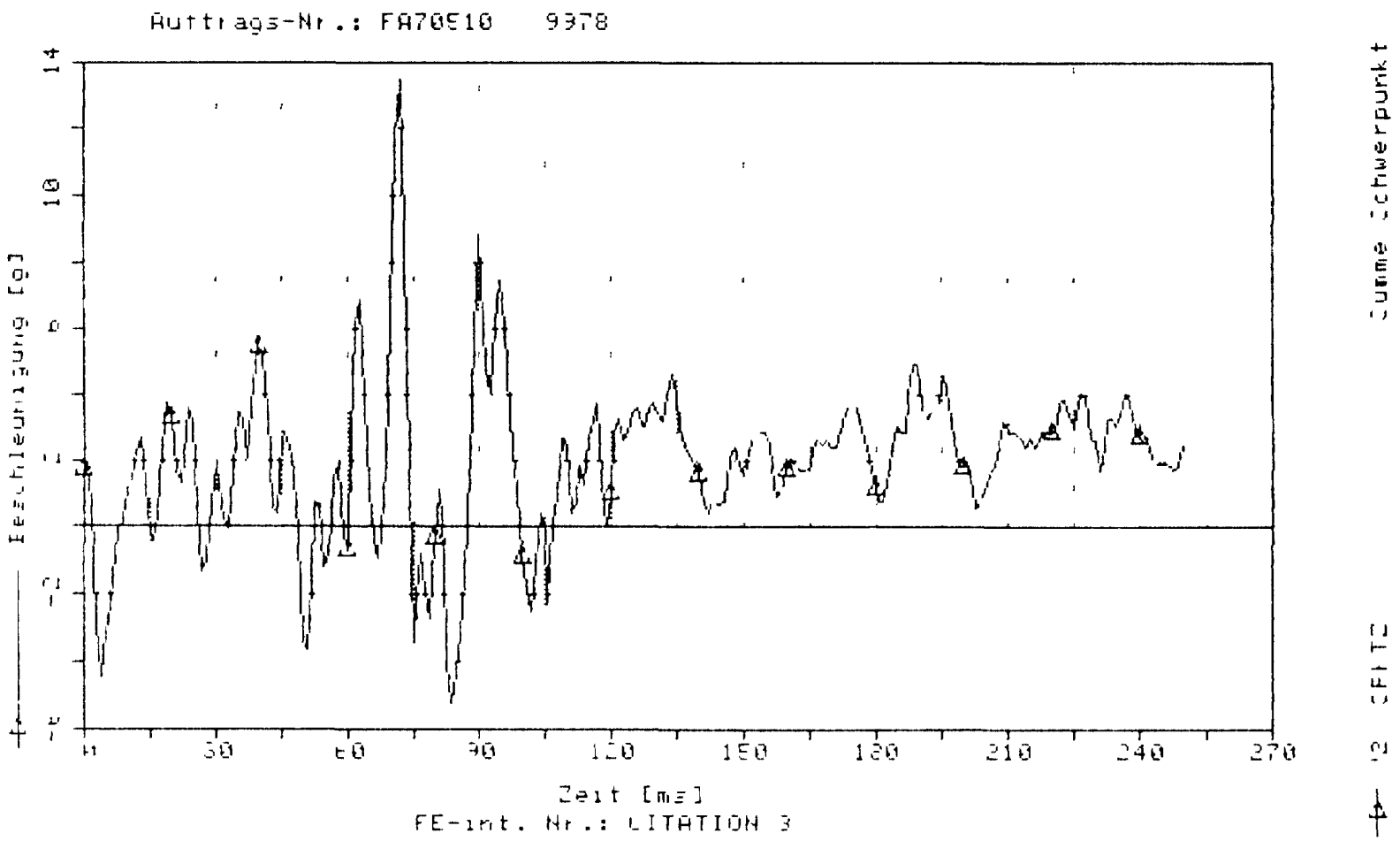
| UP | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V2 | SPKTY | Summe Schwerpunkt | BE g | -12 380 | 223 0 | 11 82 |

Auftrags-Nr.: FA70510  9978



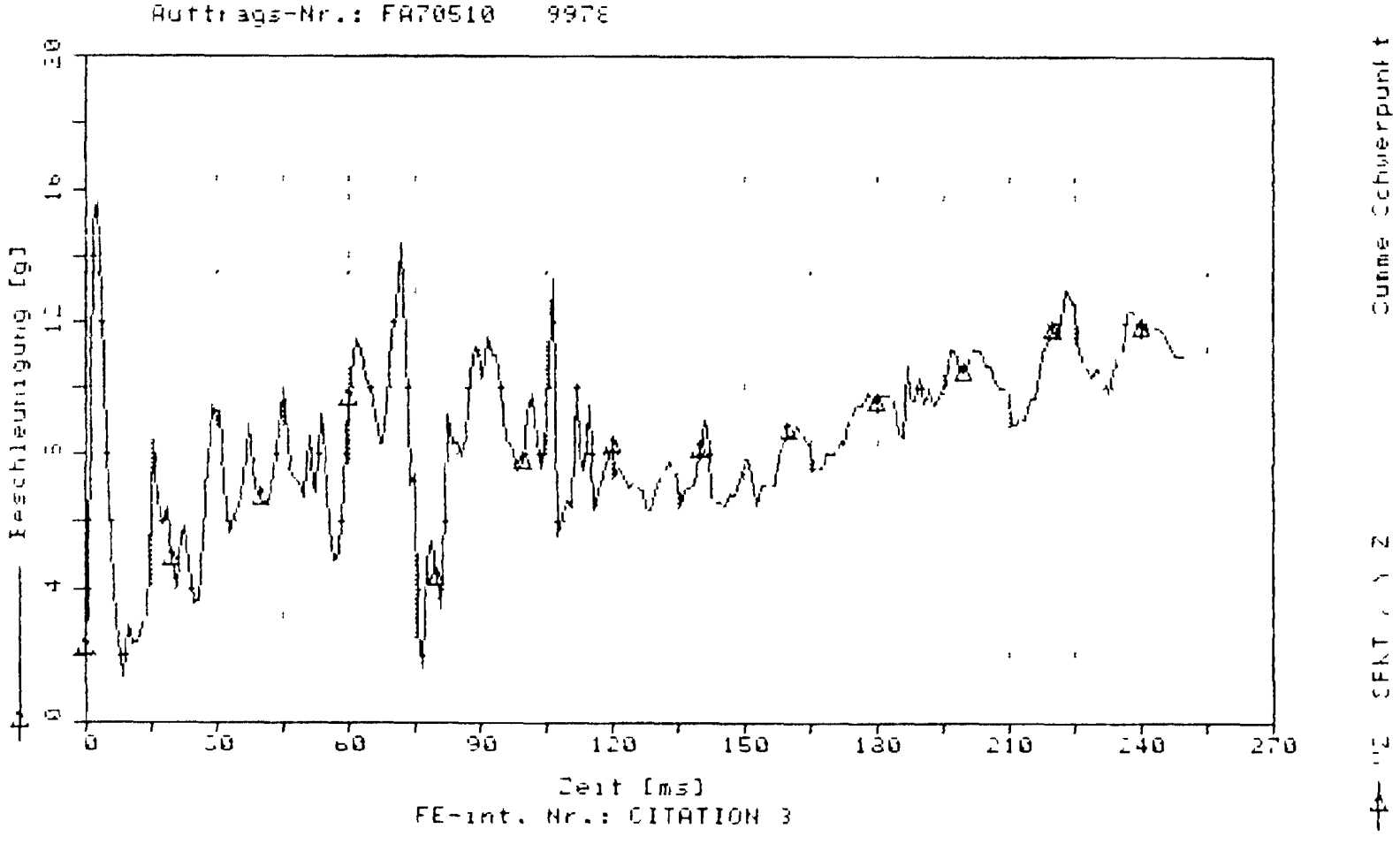
Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE-int NR  CITATION 3

| | | | | | | |
|---|---|---|---|---|---|---|
| 01 | Mess Stelle | | ber Groesse | Extremum | t Extr | 3MS |
| 02 | SITZ | Summe Schwerpunkt | BE g | 13 511 | 72 0 | 8 74 |



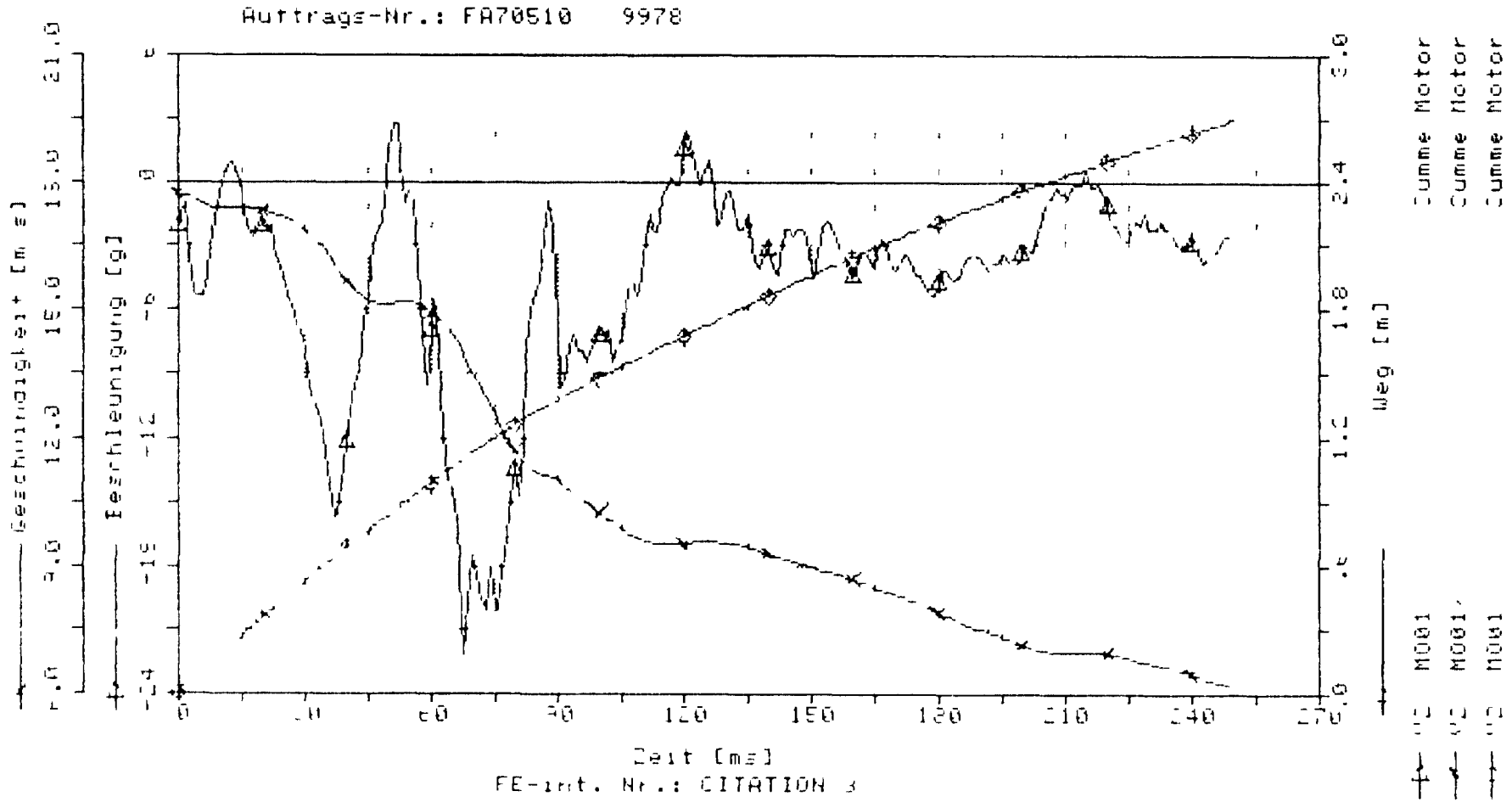
Kenn Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9976
Fahrg -Nr  FE-int NR  CITATION 3

| UH | meas Stelle | | ber Groesse | Extremum | t Extr | 3Mb |
|---|---|---|---|---|---|---|
| V/ | PKT x y z | Summe Schwerpunkt | BE g | 15 683 | 3 0 | 13 26 |



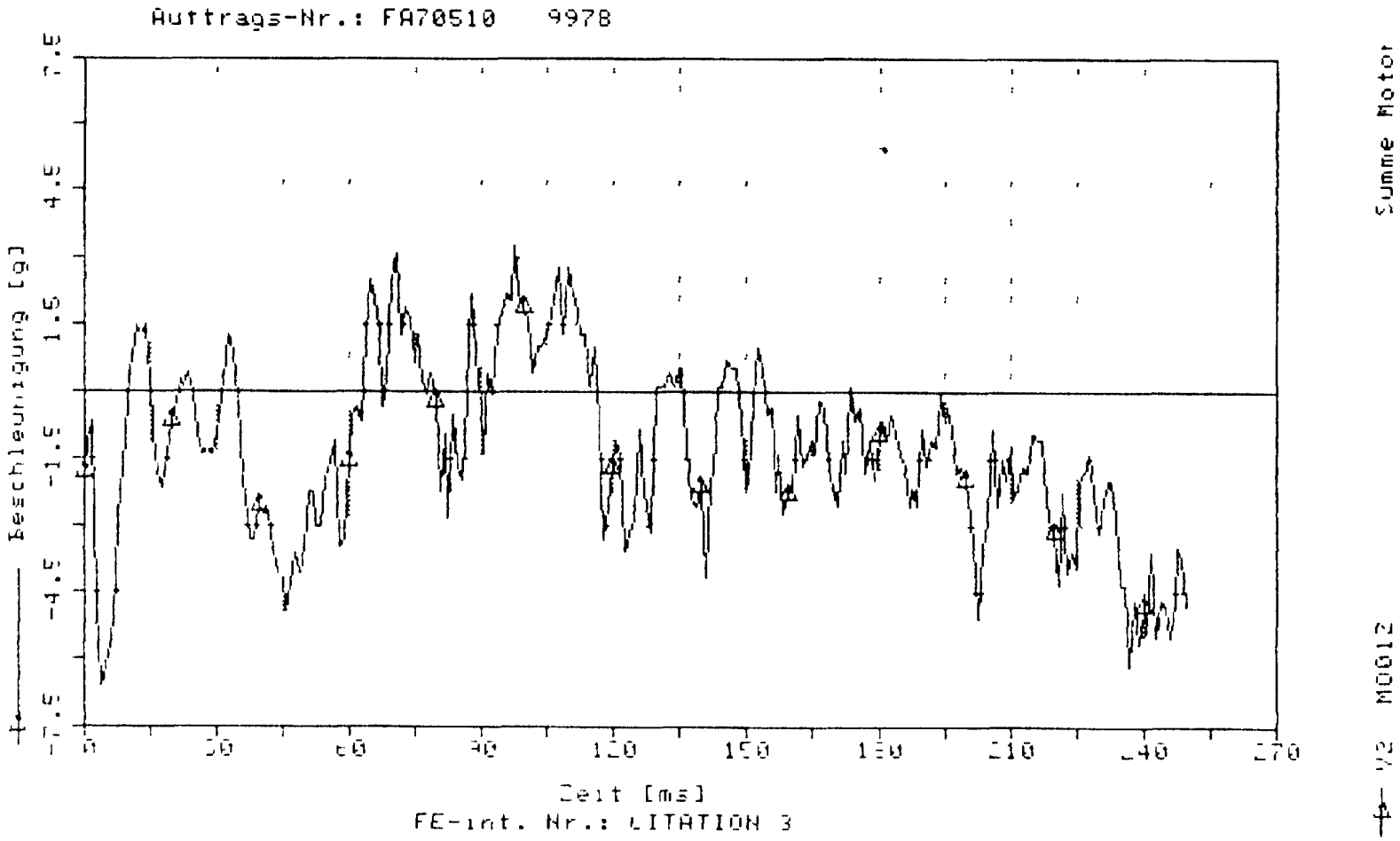
Comm Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg Nr  FE-int NR  CITATION 3

| UP | mess Stelle | | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|---|
| VZ | M001X | Summe Motor | BE | g | 22 234 | 68 0 | 19 96 |
| VZ | M001X | Summe Motor | GE | m/s | 17 703 | -1 0 | 0 00 |
| VZ | M001X | Summe Motor | WE | m | 2 693 | 250 0 | 0 00 |



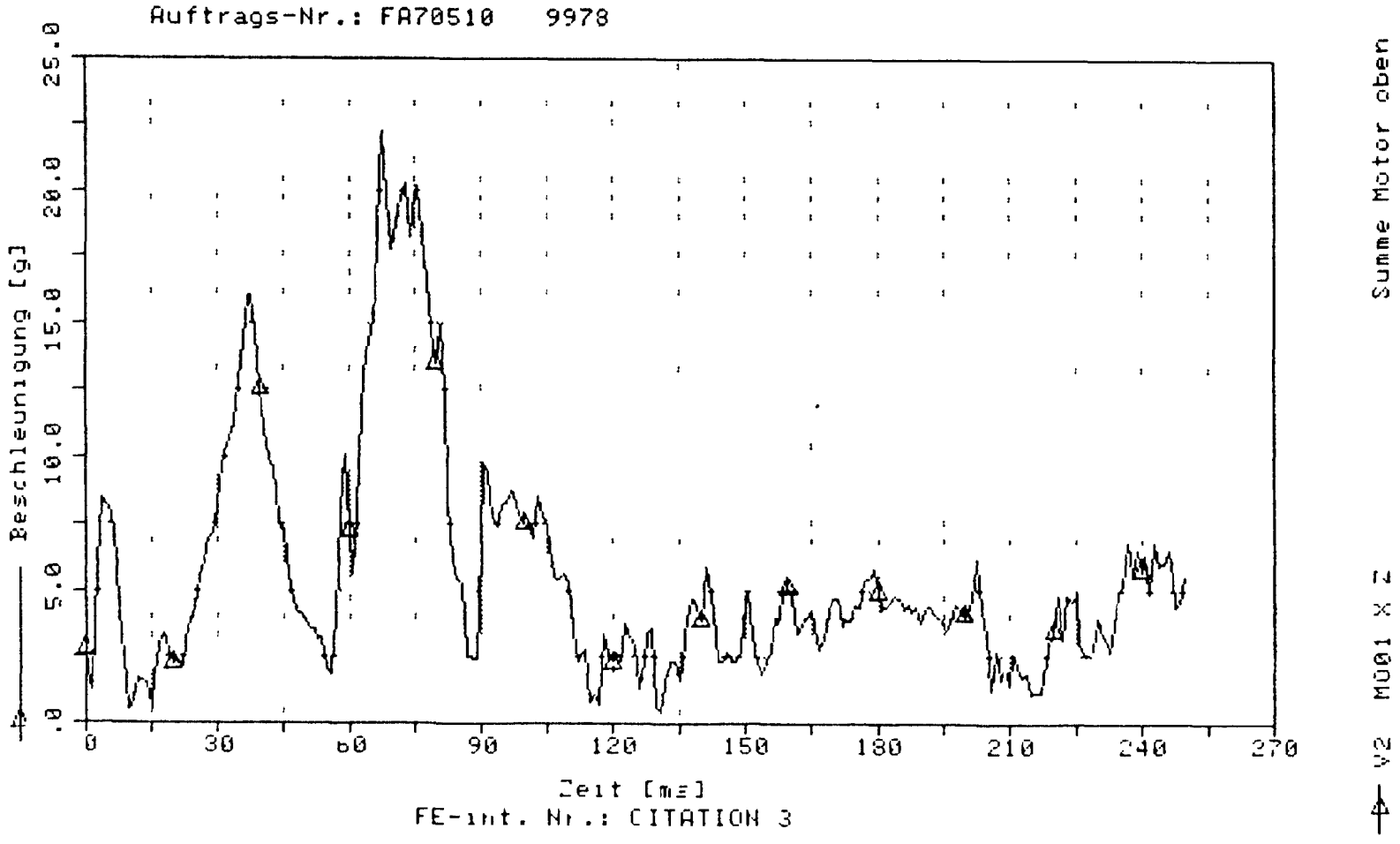
Kenn Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE int NR  CITATION 3

| | | | | | | |
|---|---|---|---|---|---|---|
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
| V2 | M001Z | Summe Motor | BE g | -6 603 | 4 0 | 5 71 |



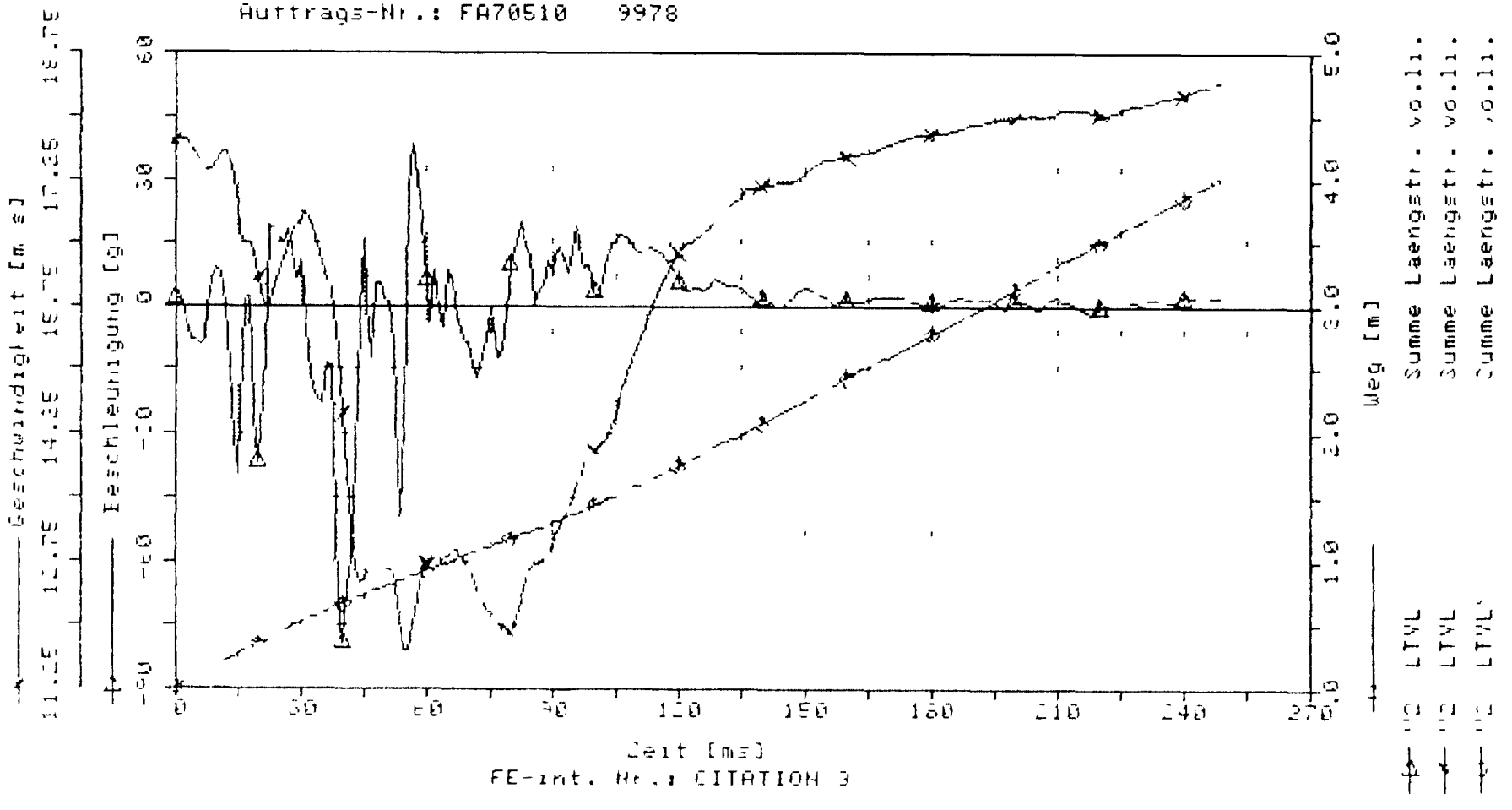
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  CITATION 3

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V2 | M001 X Z | Summe Motor oben | BE g | 22 237 | 68 0 | 20 16 |



Kenn Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg  Nr  FE-int  NR  CITATION 3

| UP | Mess-Stelle | | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|---|
| V2 | LTVLX | Summe Laengstr | vo li | BE g | -79 179 | 40 0 | 59 71 |
| V2 | LTVLX | Summe Laengstr | vo li | GE m/s | 18 418 | 250 0 | 0 00 |
| V2 | LTVLX | Summe Laengstr | vo li | WE m | 4 035 | 250 0 | 0 00 |

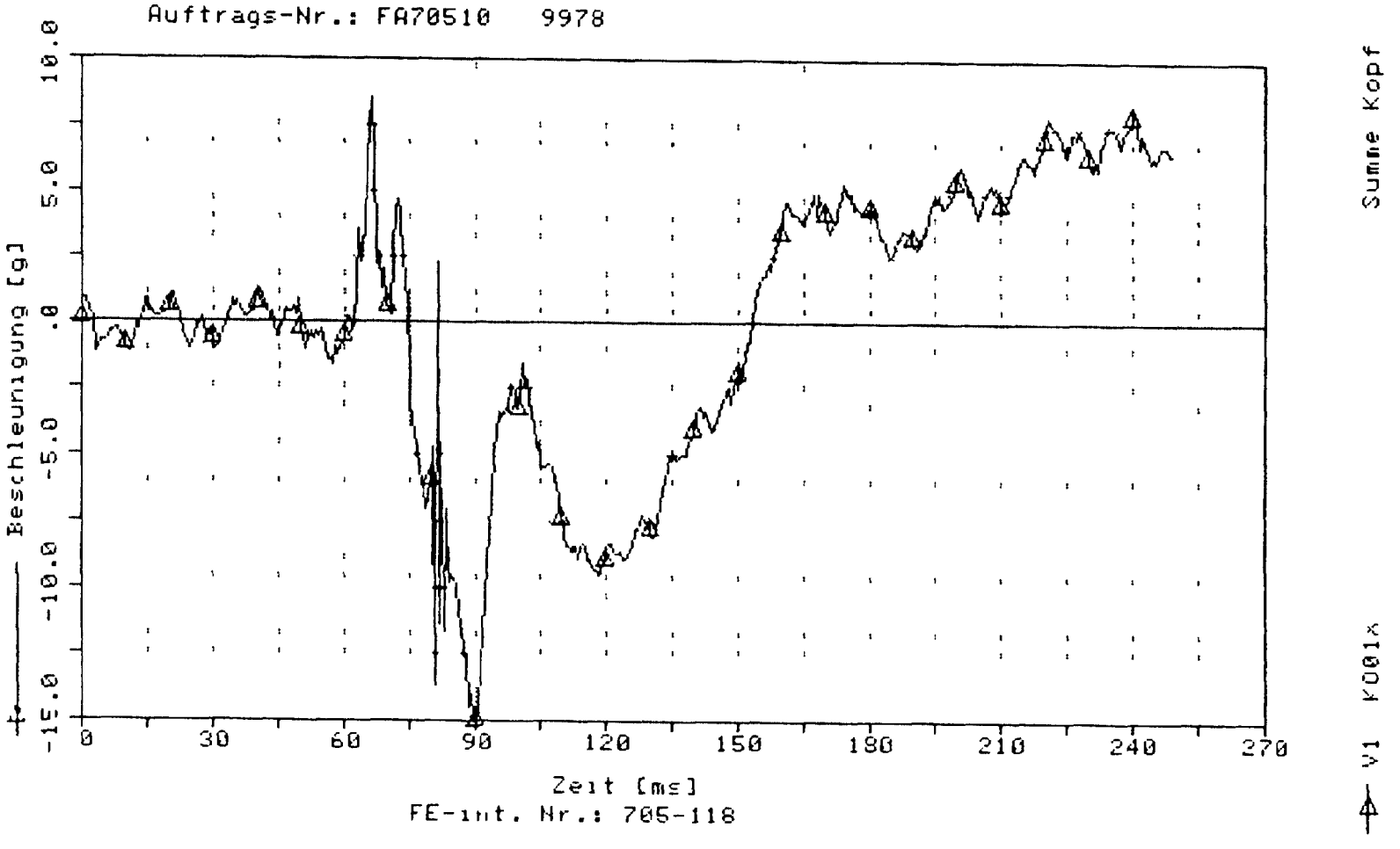


## B.2 Dummy Test Response

### B.2.1 Driver

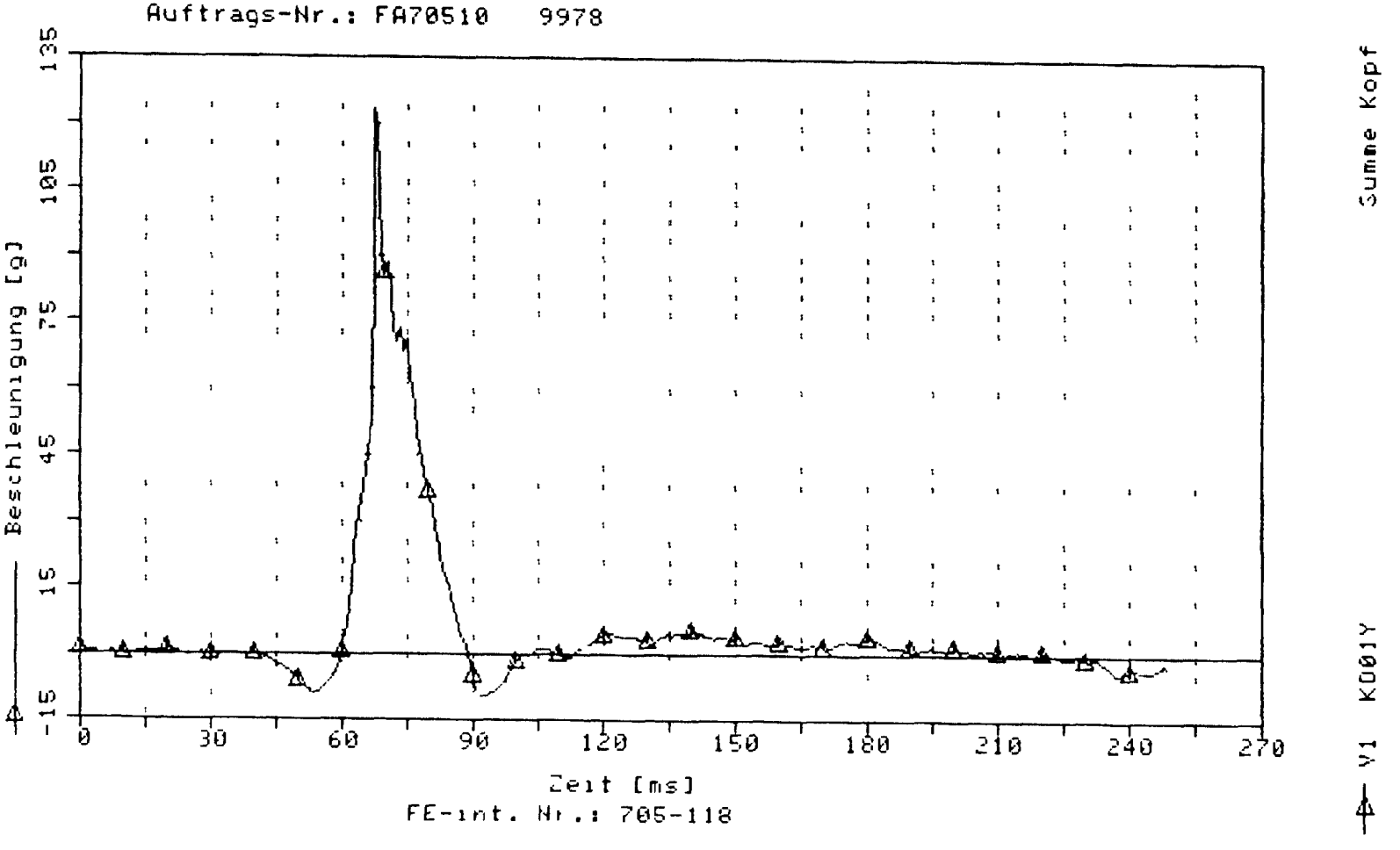
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | K001X | Summe Kopf | BE g | -15 472 | 89 6 | 13 81 |



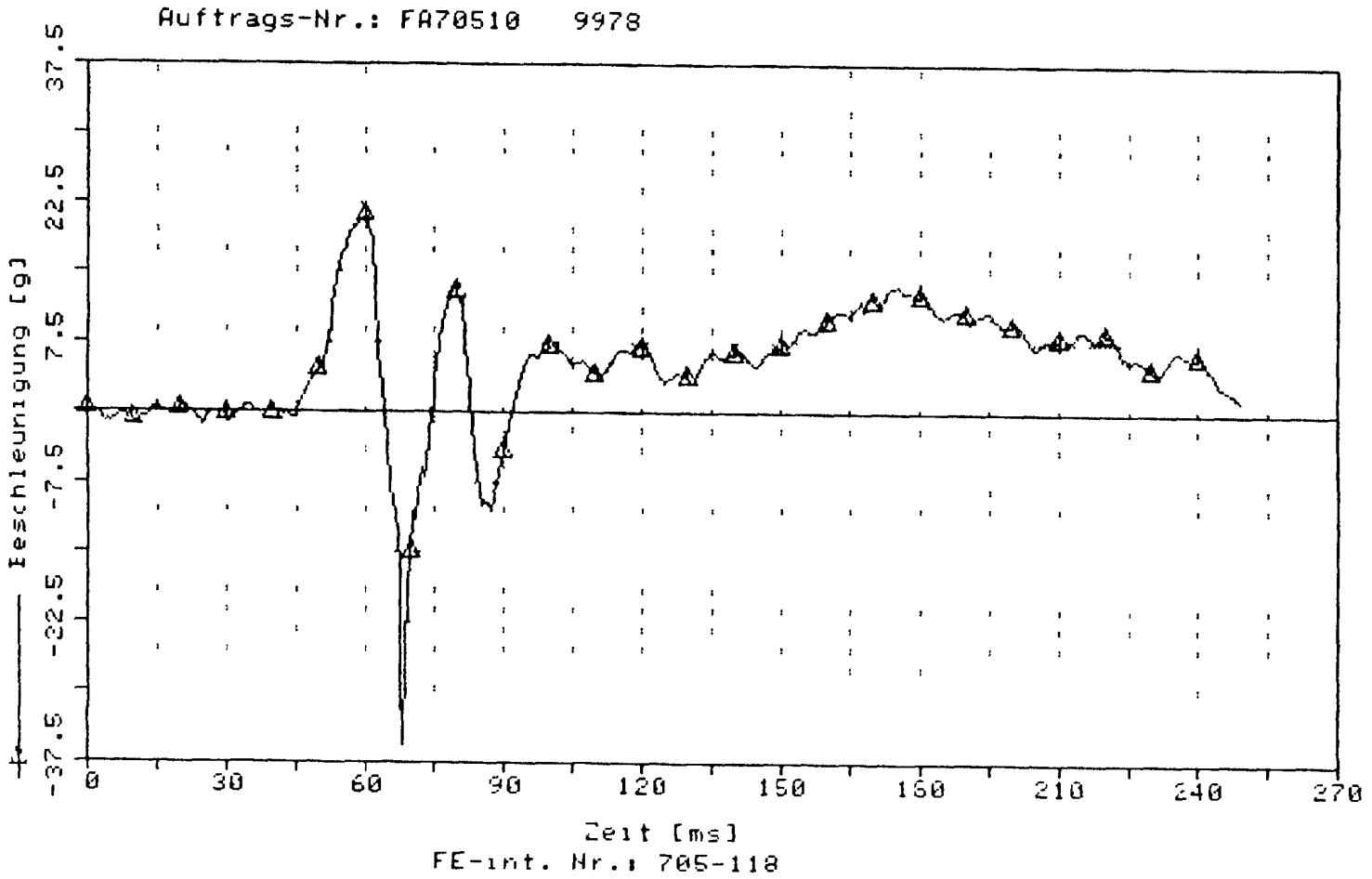
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | K001Y | Summe Kopf | BE g | 126 377 | 68 1 | 87 46 |



Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | K001Z | Summe Kopf | BE g | -37 975 | 68 1 | 20 74 |




Summe Kopf

V1 K001Z

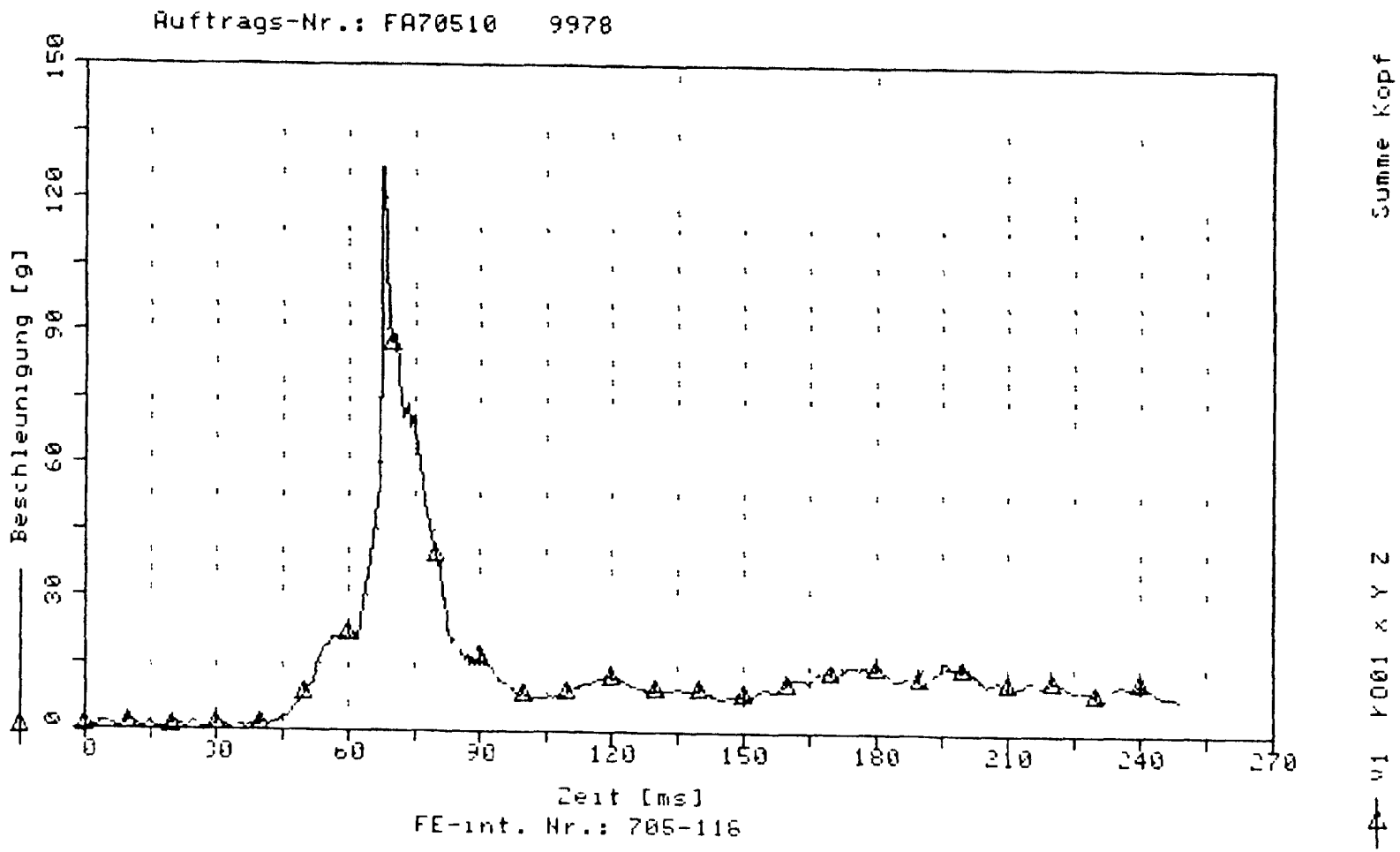
Konn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

UP Mess-Stelle

| | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|
| V1 K001 X Y Z | Summe Kopf | BE g | 132 048 | 68 1 | 88 38 |

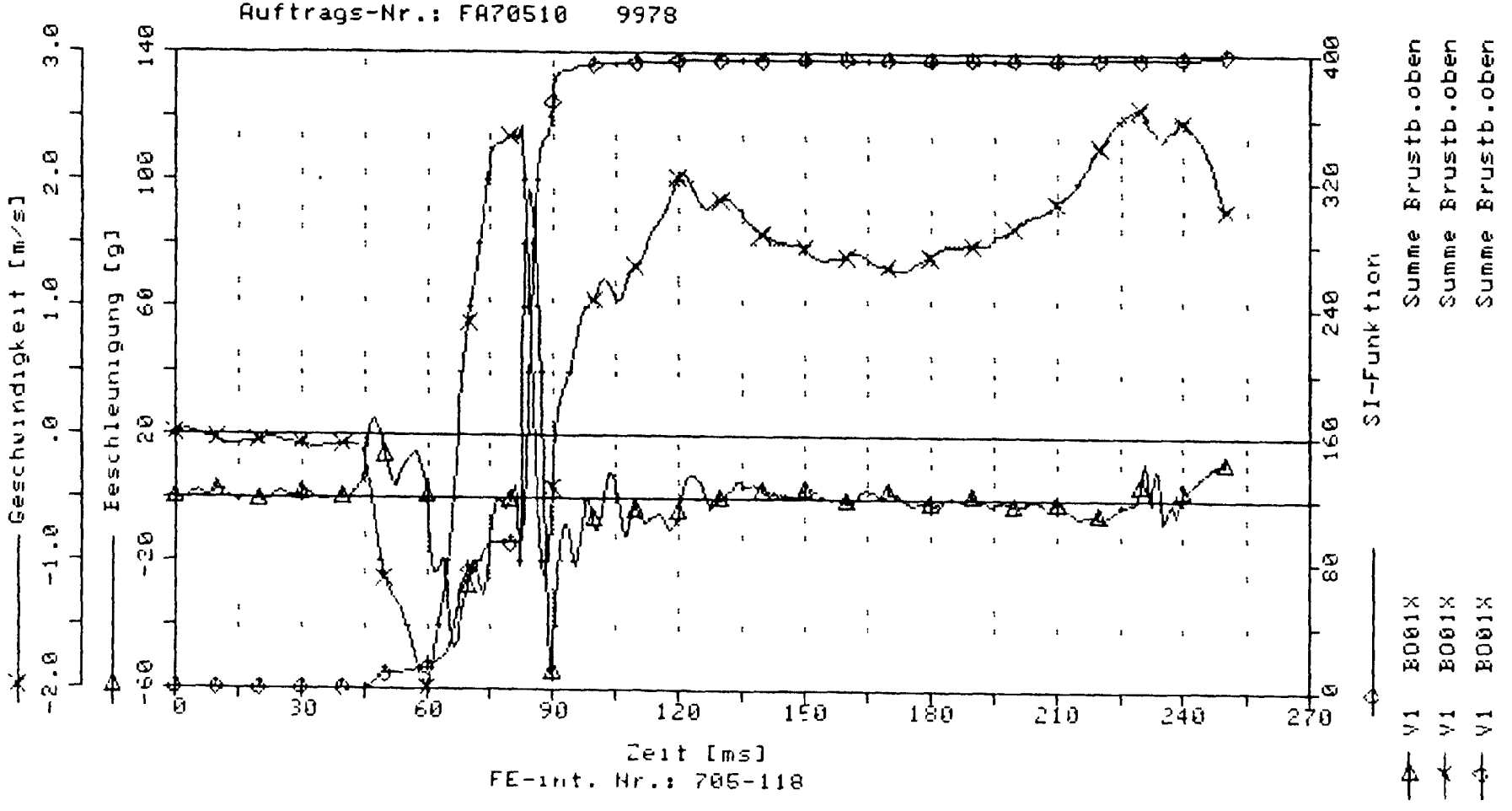
HIC,K001,0 250,0 05

HIC = 608 6 t0 = 65 60 t1 = 78 82



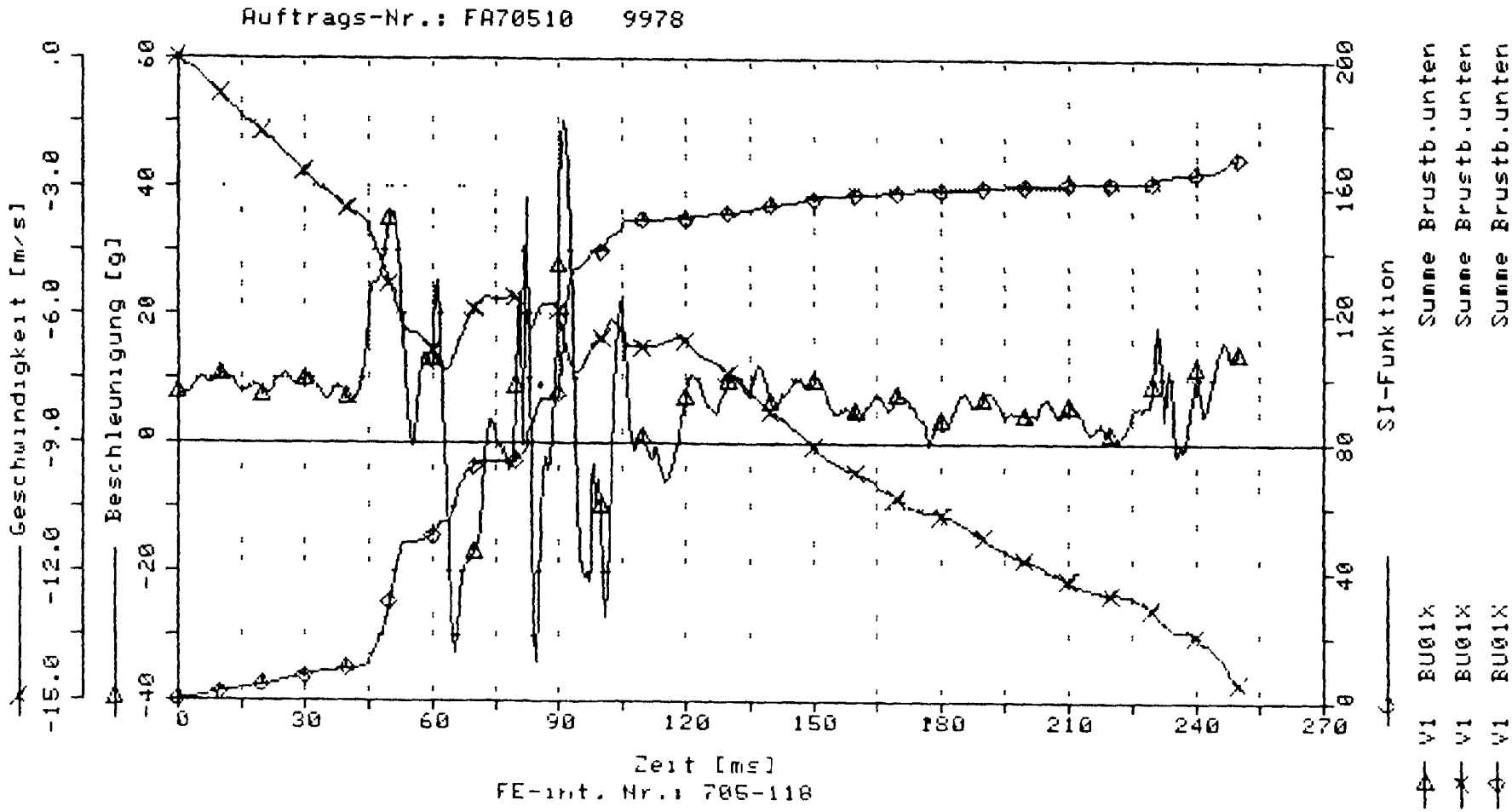
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | B001X | Summe Brustb oben | BE g | 96 965 | 84 5 | 67 74 |
| V1 | B001X | Summe Brustb oben | GE m/s | 2 576 | 229 5 | 0 00 |
| V1 | B001X | Summe Brustb oben | SI | 398 929 | 250 0 | 0 00 |



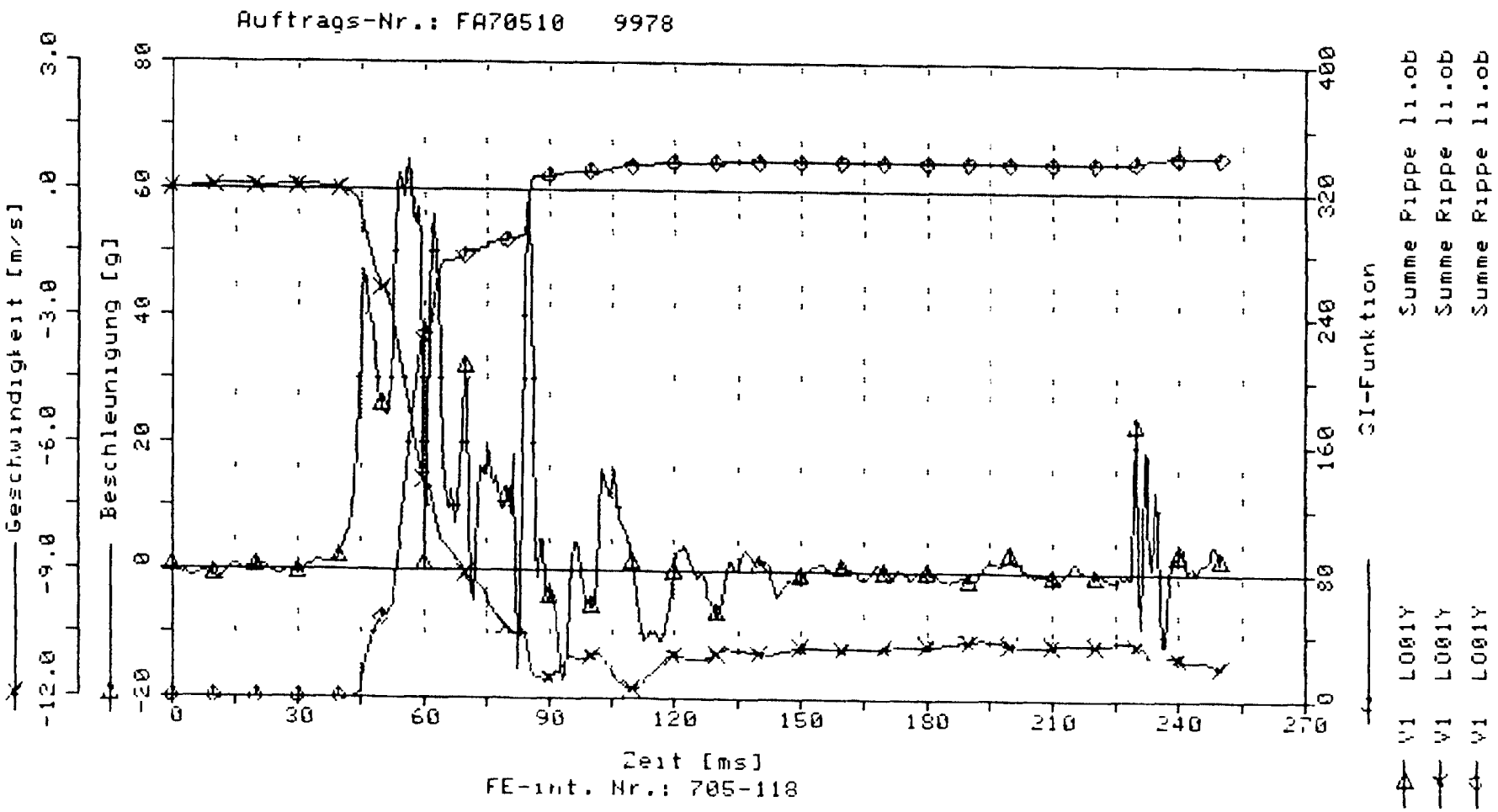
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BU01X | Summe Brustb unten | BE g | 50 183 | 91 5 | 35 80 |
| V1 | BU01X | Summe Brustb unten | GE m/s | -14 565 | 250 0 | 0 00 |
| V1 | BU01X | Summe Brustb unten | SI | 168 694 | 250 0 | 0 00 |



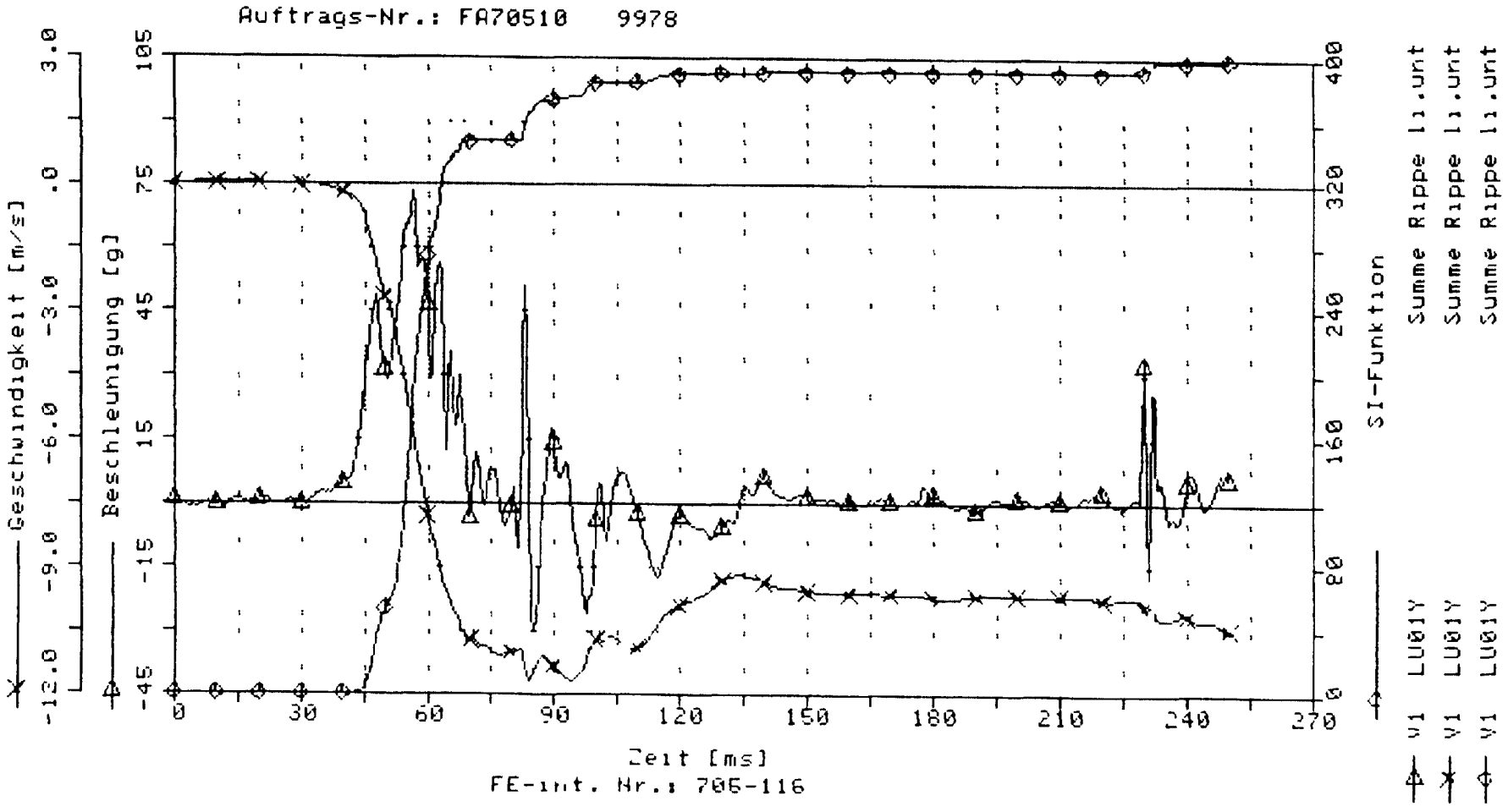
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | L001Y | Summe Rippe 11 ob | BE g | 64 363 | 56 5 | 58 89 |
| V1 | L001Y | Summe Rippe 11 ob | GE m/s | -11 792 | 110 5 | 0 00 |
| V1 | L001Y | Summe Rippe 11 ob | SI | 341 993 | 250 0 | 0 00 |



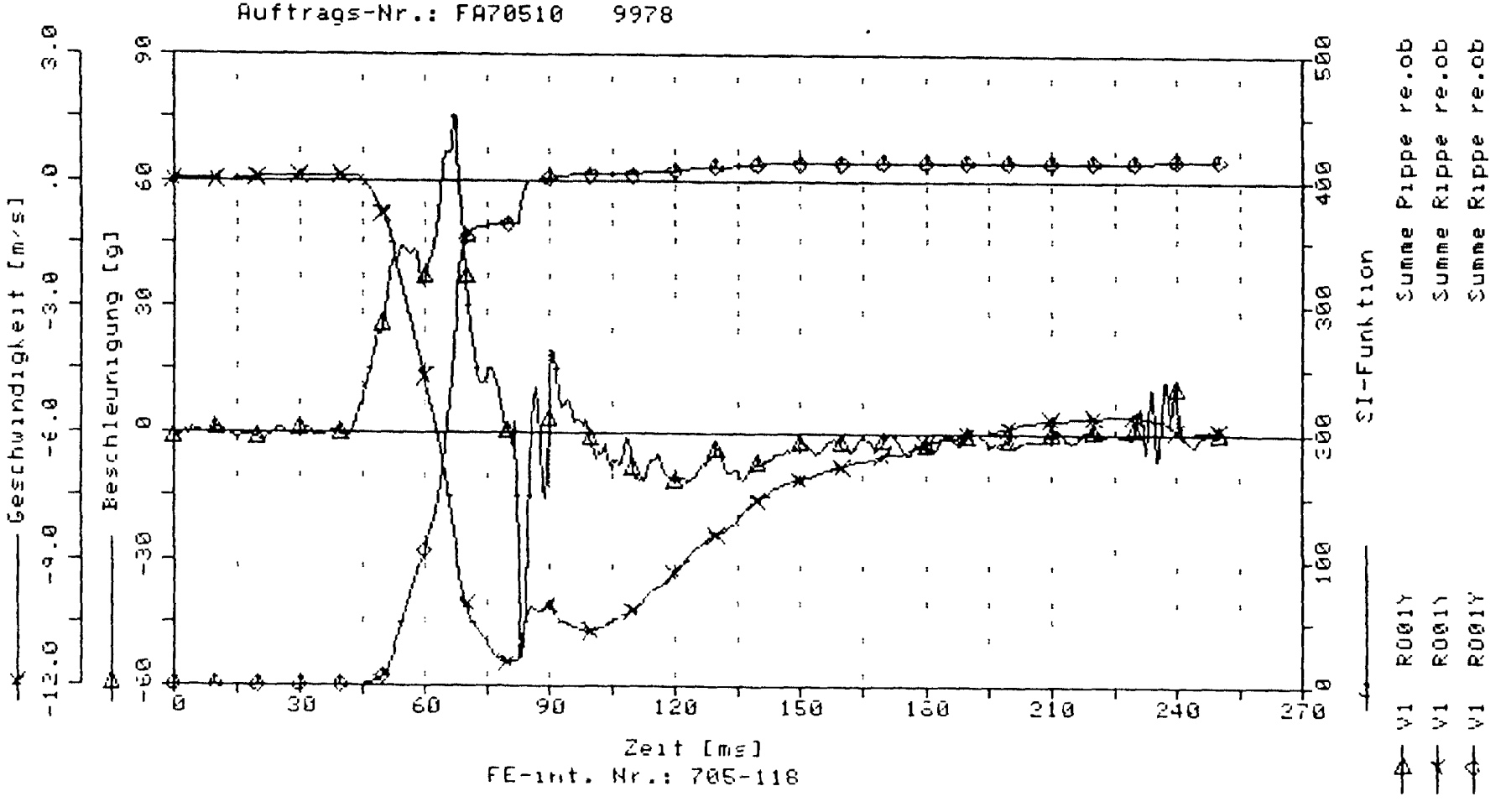
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | LU01Y | Summe Rippe li unt | BE g | 73 280 | 56 5 | 57 05 |
| V1 | LU01Y | Summe Rippe li unt | GE m/s | -11 694 | 94 0 | 0 00 |
| V1 | LU01Y | Summe Rippe li unt | SI | 398 543 | 250 0 | 0 00 |



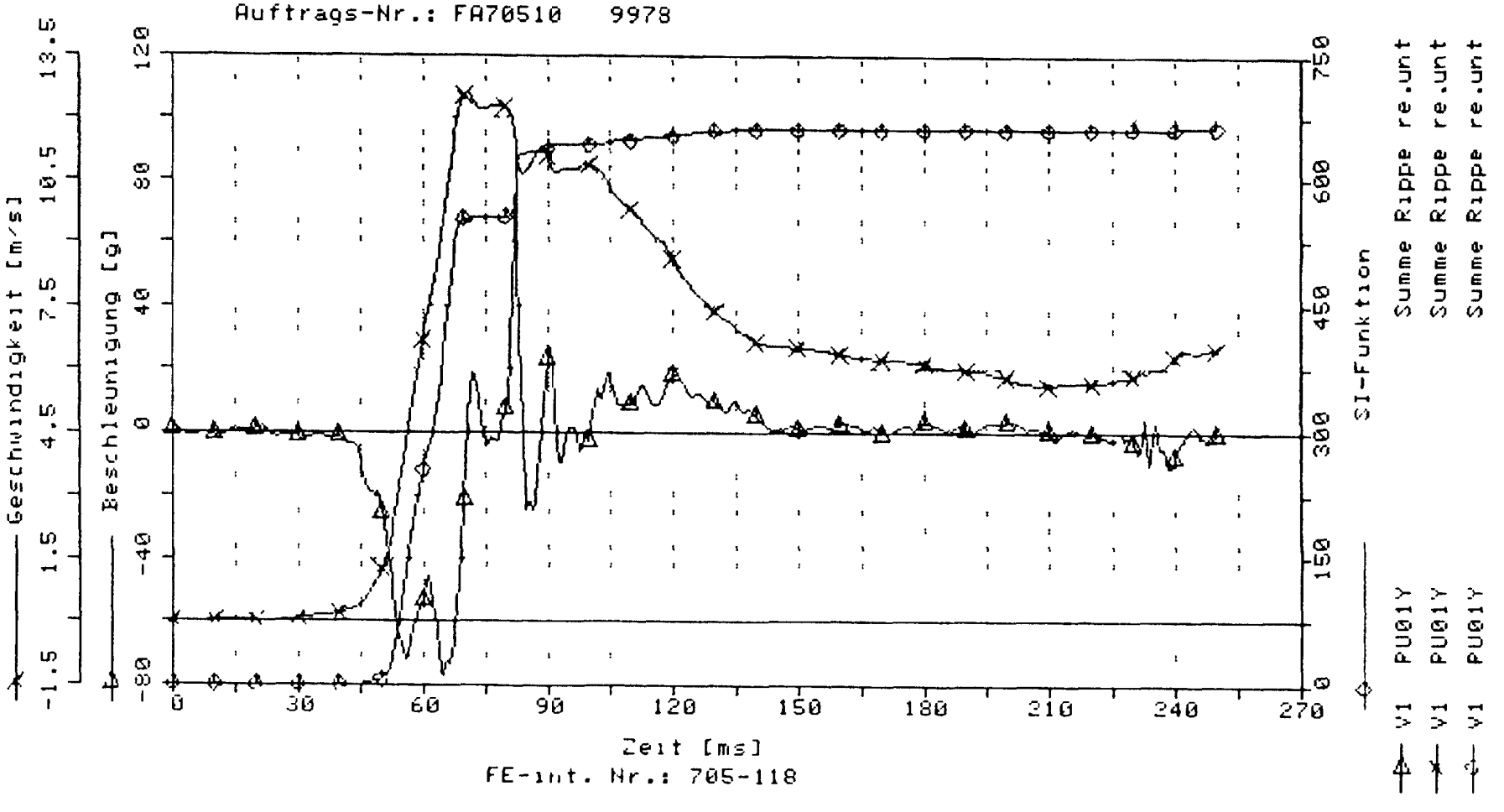
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | R001Y | Summe Rippe re ob | BE g | 75 168 | 67 0 | 65 83 |
| V1 | R001Y | Summe Rippe re ob | GE m/s | -11 443 | 80 0 | 0 00 |
| V1 | R001Y | Summe Rippe re ob | SI | 415 832 | 250 0 | 0 00 |



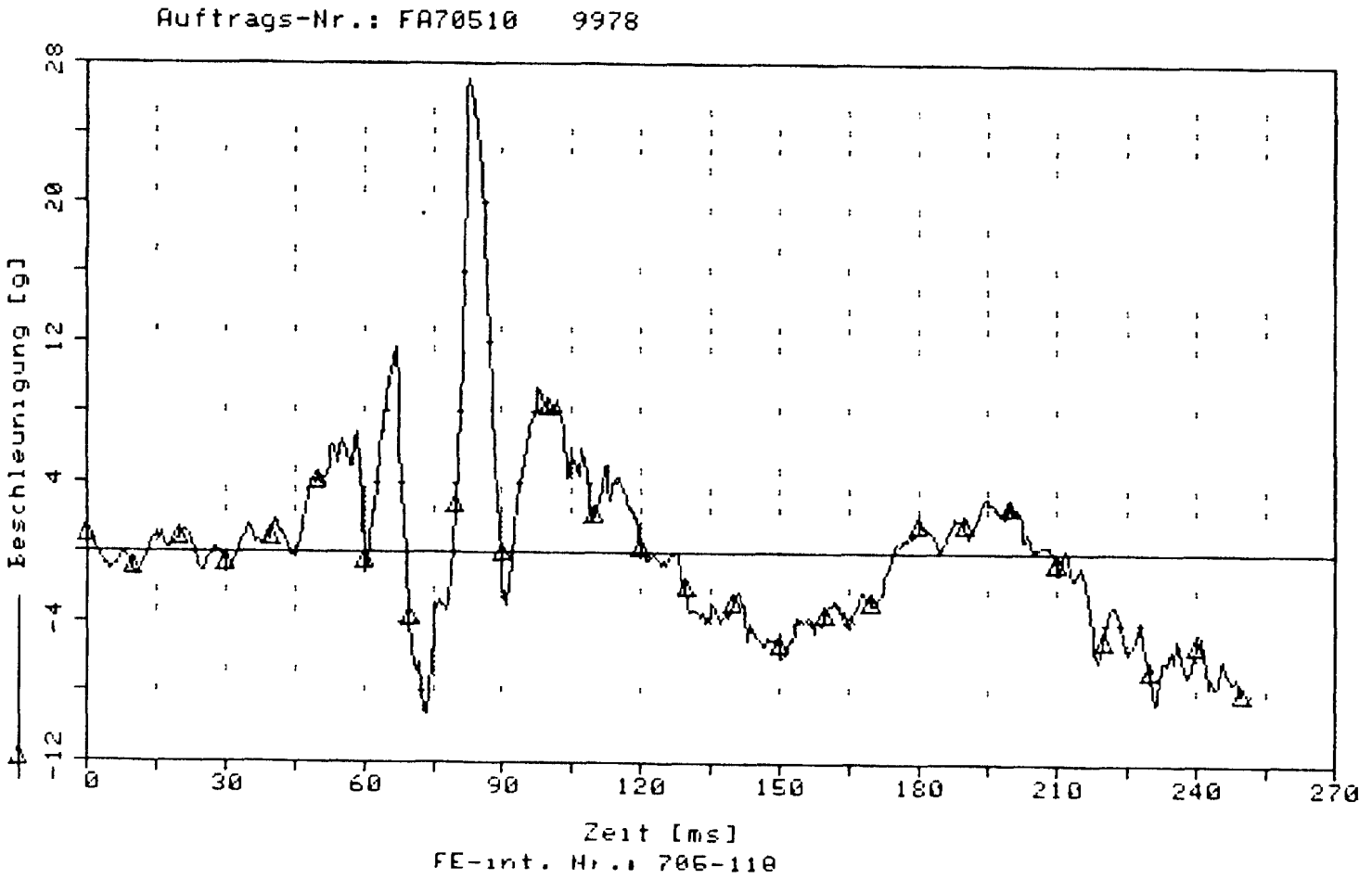
Konn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | RU01Y | Summe Rippe re unt | BE g | 87 668 | 82 5 | 72 32 |
| V1 | RU01Y | Summe Rippe re unt | GE m/s | 12 551 | 71 0 | 0 00 |
| V1 | RU01Y | Summe Rippe re unt | SI | 662 255 | 250 0 | 0 00 |



Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T001X | Summe Wirbels oben | BE g | 27 115 | 83 5 | 21 48 |

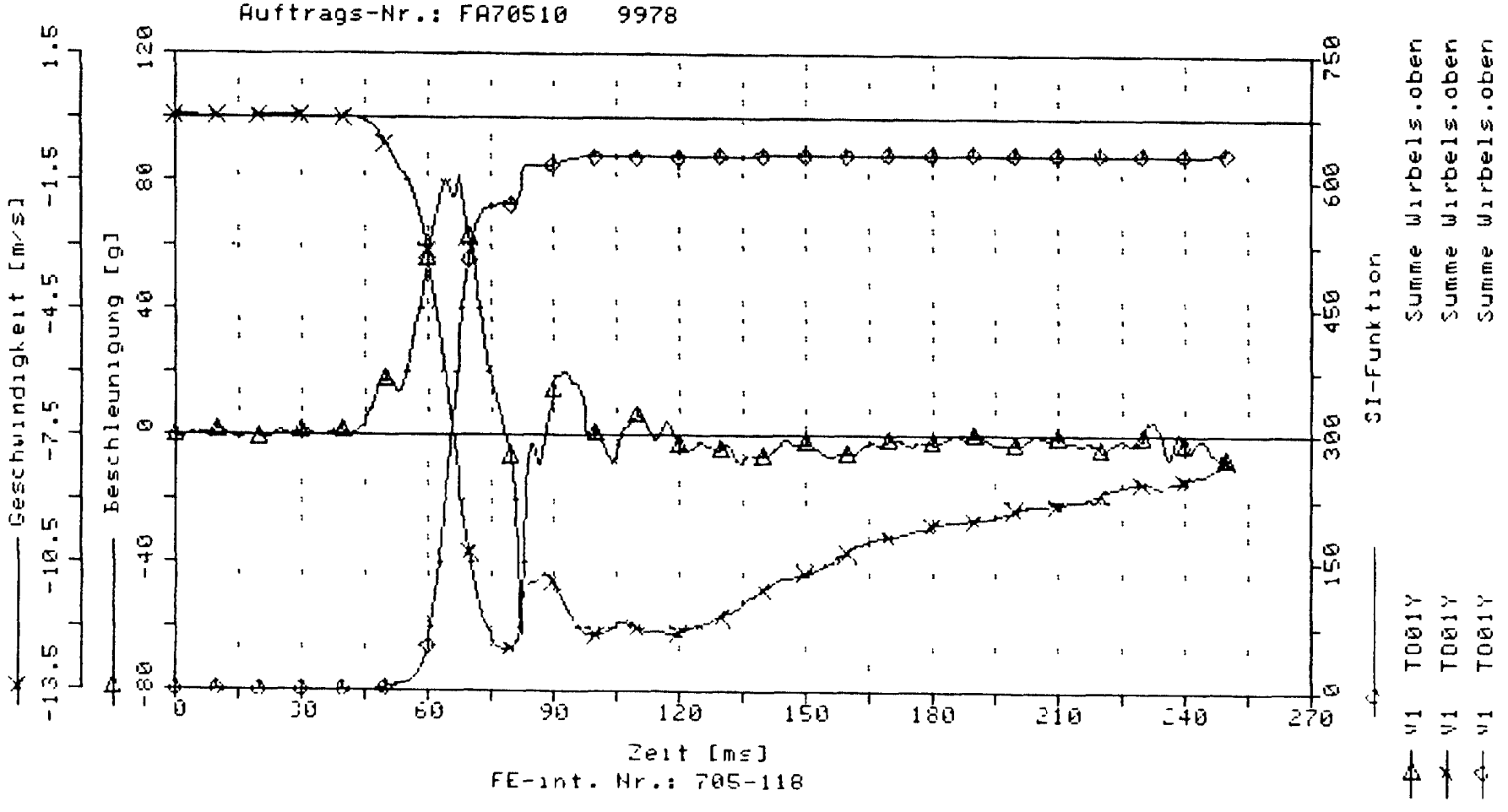



Summe Wirbels.oben

V1 T001X

Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

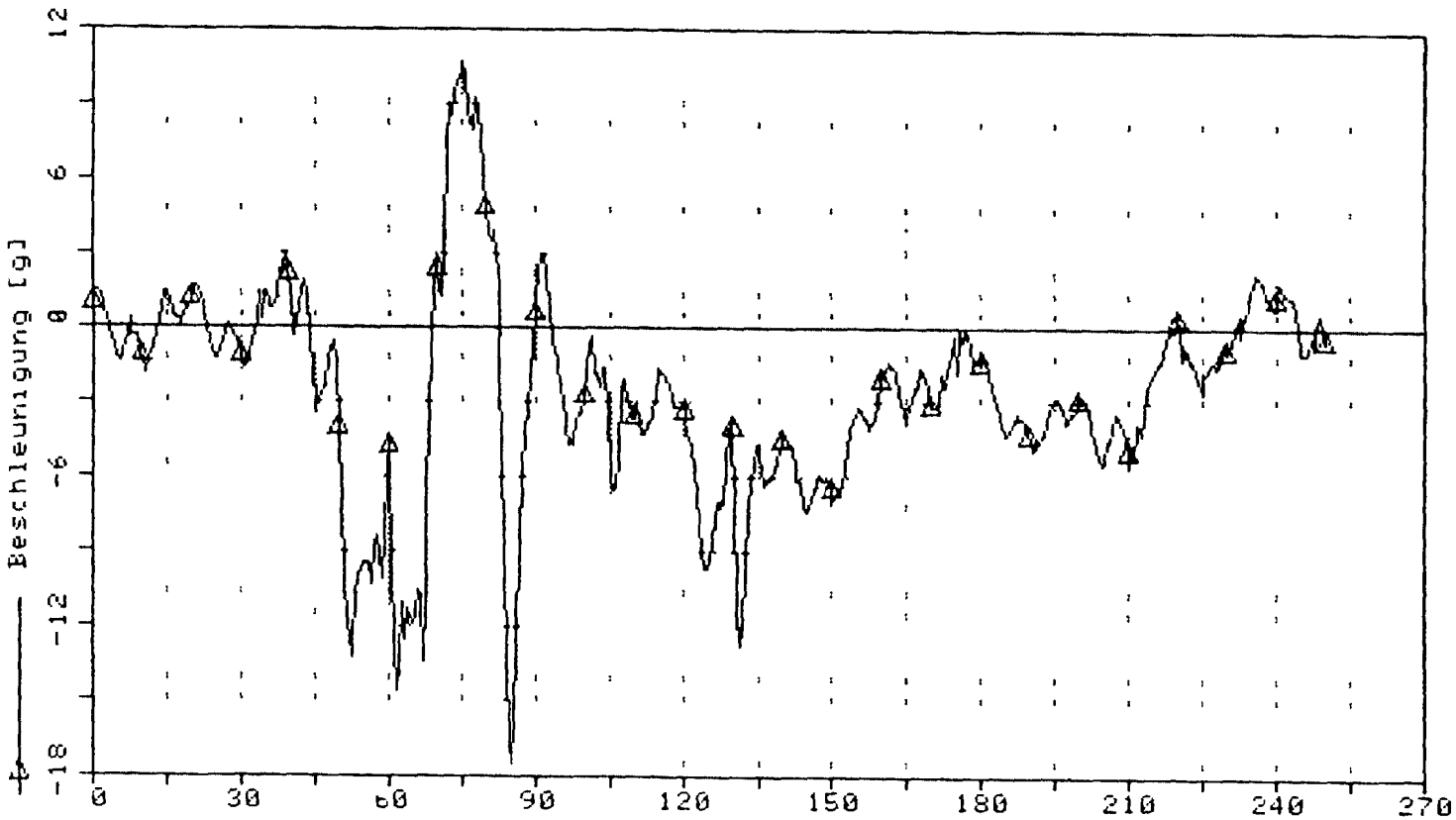
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T001Y | Summe Wirbels oben | BE g | 81 209 | 68 0 | 77 45 |
| V1 | T001Y | Summe Wirbels oben | GE m/s | -12 555 | 78 5 | 0 00 |
| V1 | T001Y | Summe Wirbels oben | SI | 633 025 | 250 0 | 0 00 |



Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T001Z | Summe Wirbels oben | BE g | -17 486 | 85 5 | 13 25 |

Auftrags-Nr.: FA70510 9978



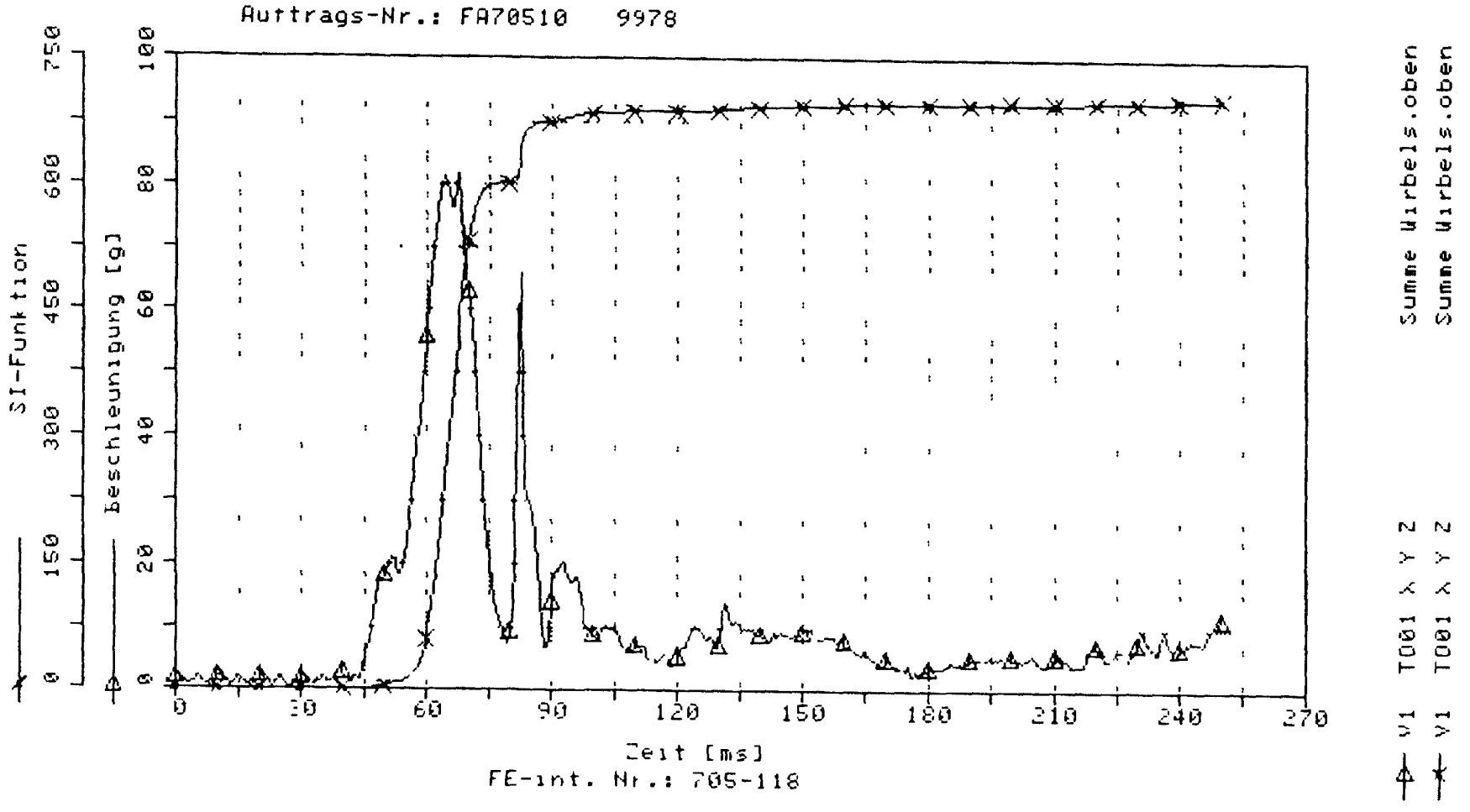

FE-int. Nr.: 705-118

Summe Wirbels.oben

V1 T001Z

Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

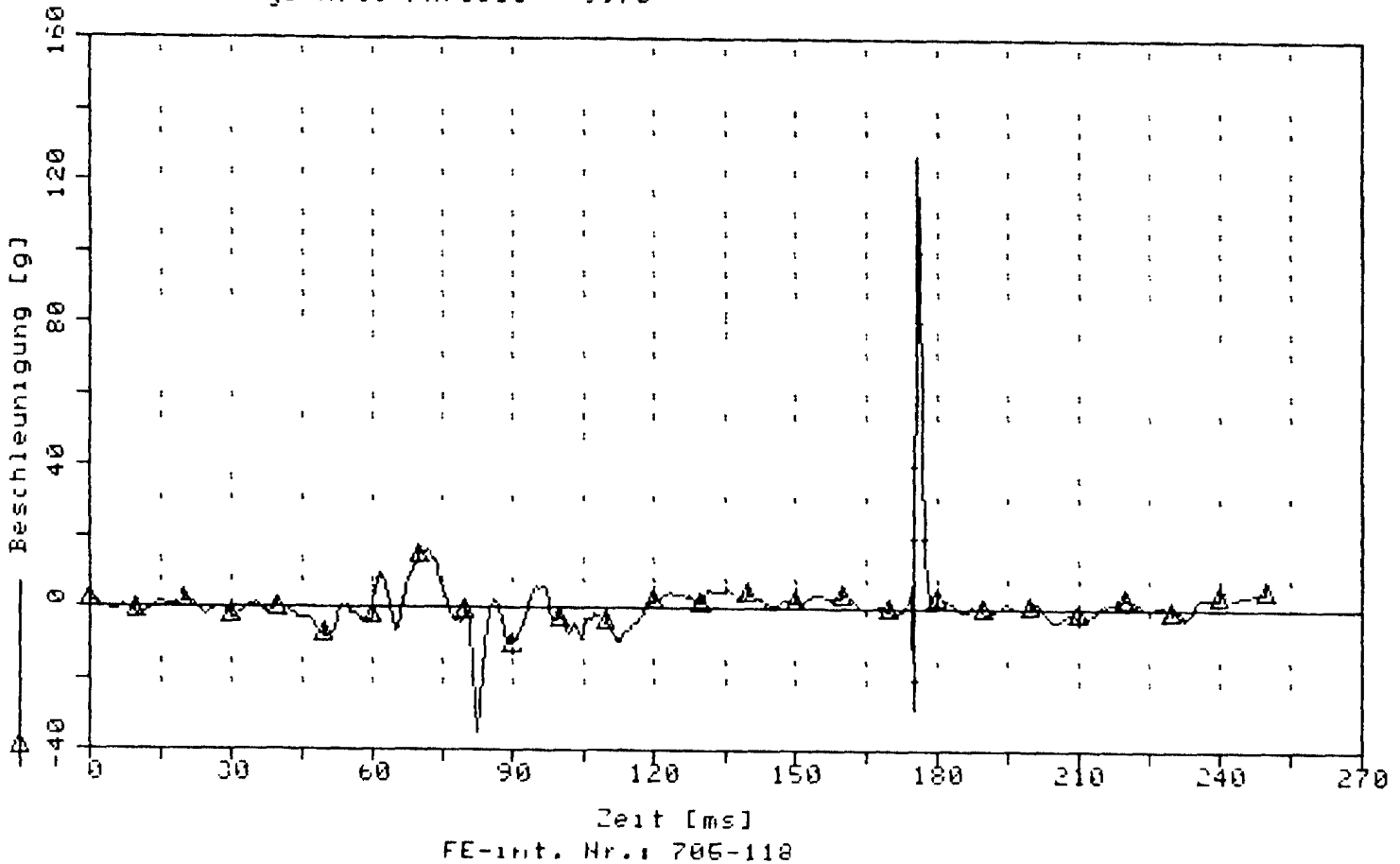
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T001 X Y Z | Summe Wirbels oben | BE g | 81 720 | 68 0 | 78 87 |
| V1 | T001 X Y Z | Summe Wirbels oben | SI | 704 386 | 250 0 | 0 00 |



Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU01X | Summe Wirbels unt | BE g | 127 047 | 176 0 | 28 04 |

Auftrags-Nr.: FA70510  9978



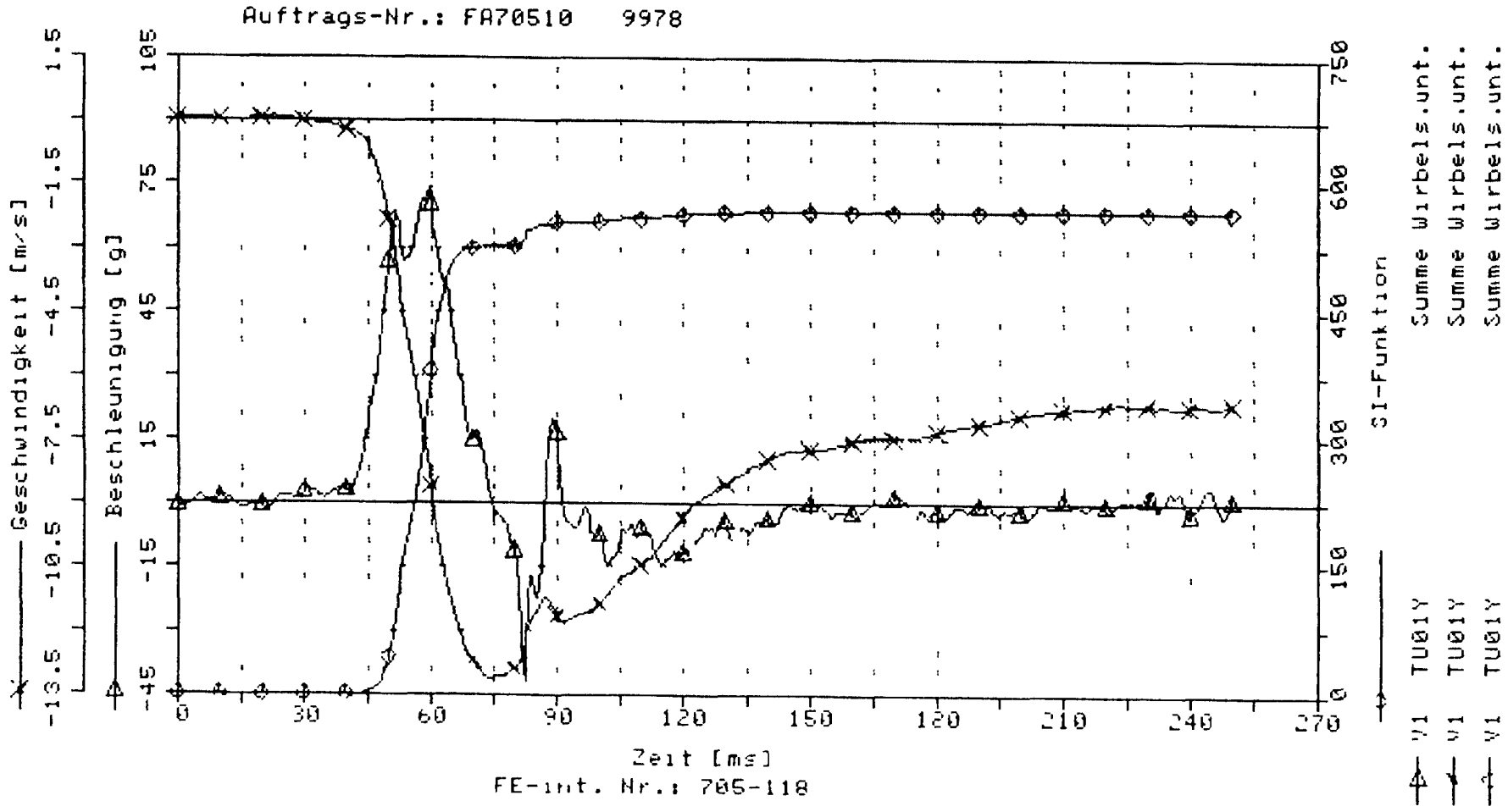

FE-int. Nr.: 706-118

Summe Wirbels.unt.

V1 TU01X

Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

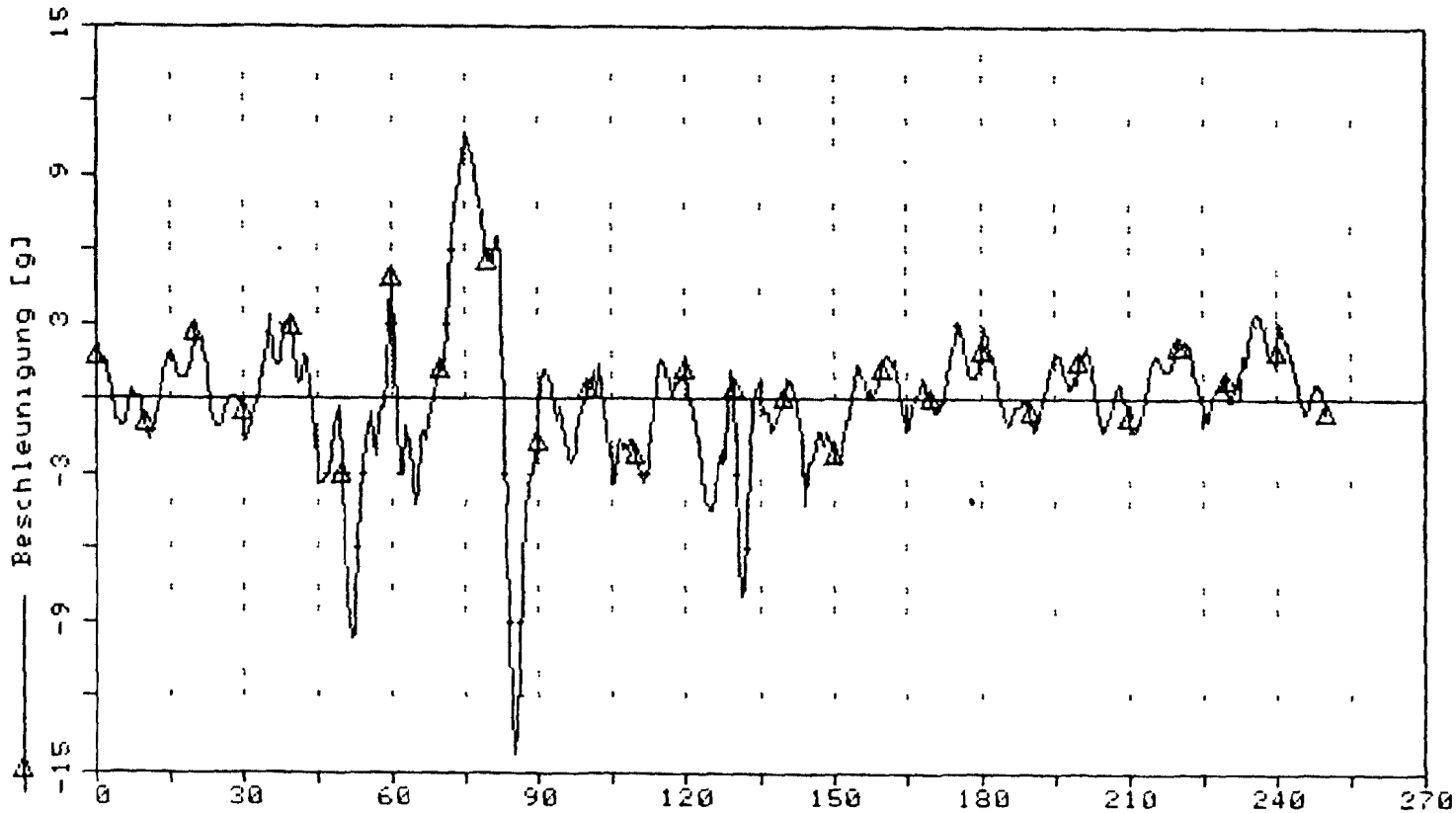
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU01Y | Summe Wirbels unt | BE g | 73 834 | 59 5 | 67 33 |
| V1 | TU01Y | Summe Wirbels unt | GE m/s | -13 149 | 74 5 | 0 00 |
| V1 | TU01Y | Summe Wirbels unt | SI | 566 850 | 250 0 | 0 00 |



Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU01Z | Summe Wirbels unt | BE g | -14 320 | 85 5 | 9 92 |

Auftrags-Nr.: FA70510 9978

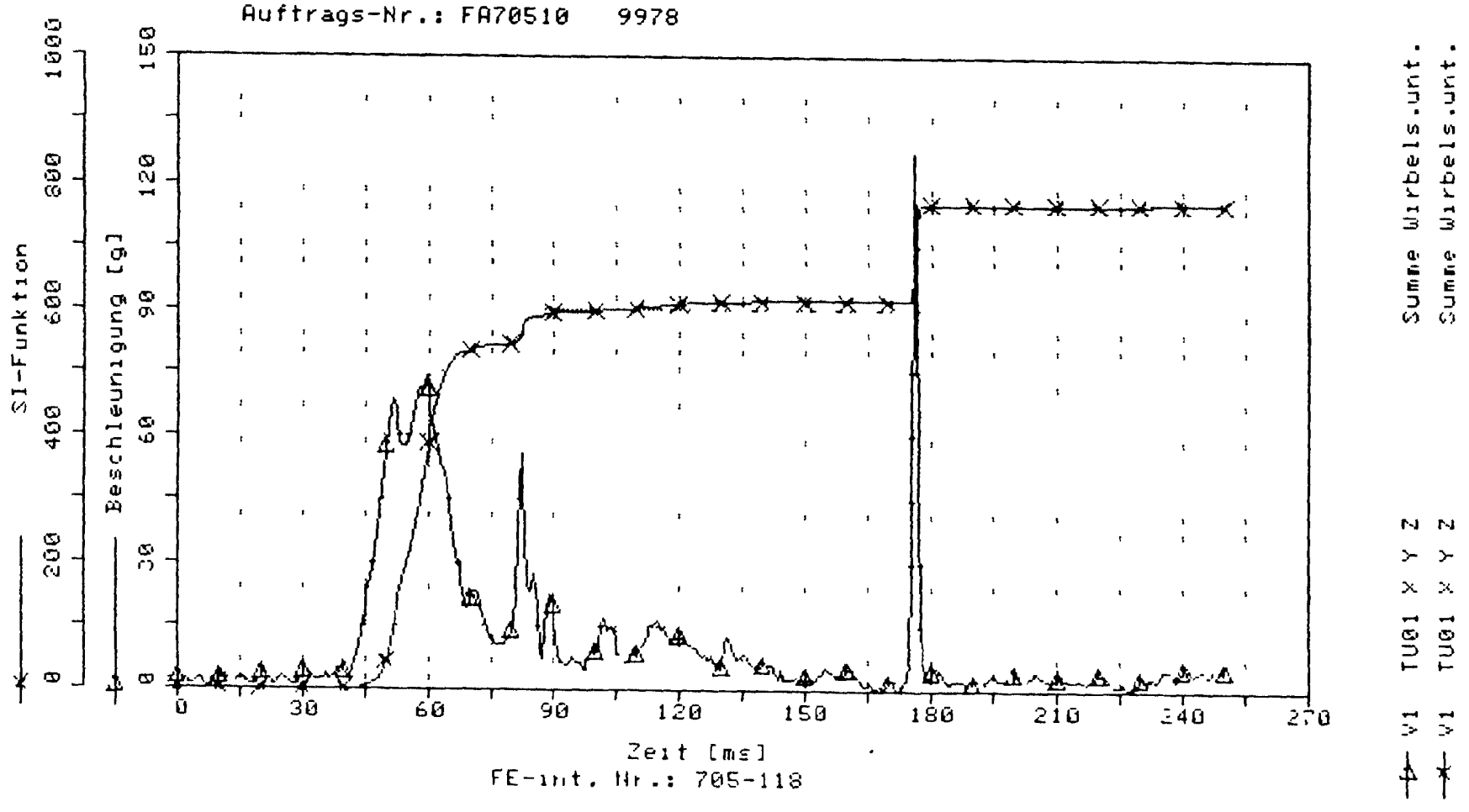



Summe Wirbels.unt.

V1 TU01Z

Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

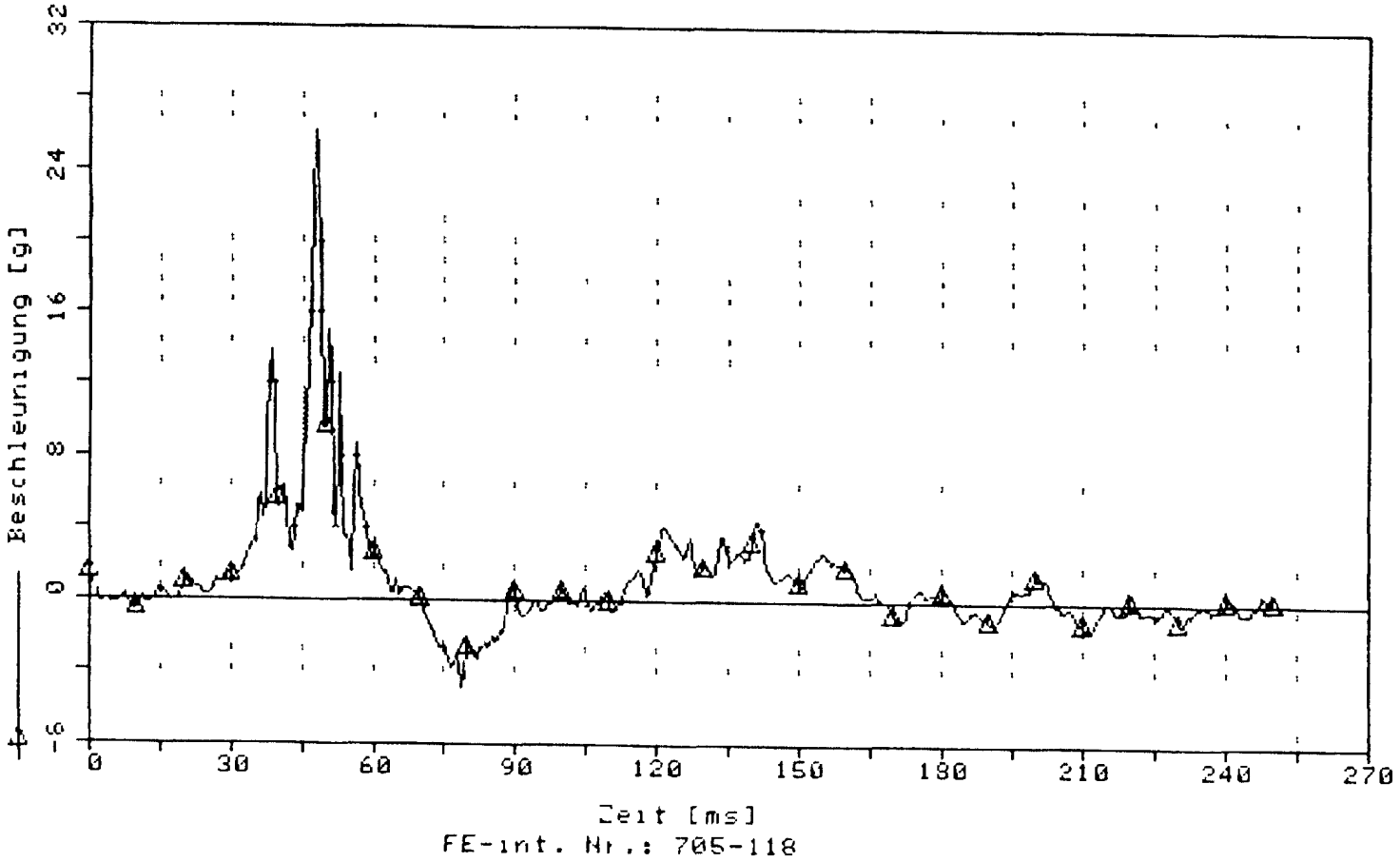
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU01 X Y Z | Summe Wirbels unt | BE g | 127 092 | 176 0 | 70 05 |
| V1 | TU01 X Y Z | Summe Wirbels unt | SI | 769 223 | 250 0 | 0 00 |



Konn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE01X | Summe Becken | BE g | 26 156 | 48 0 | 13 75 |

Auftrags-Nr.: FA70510 9978

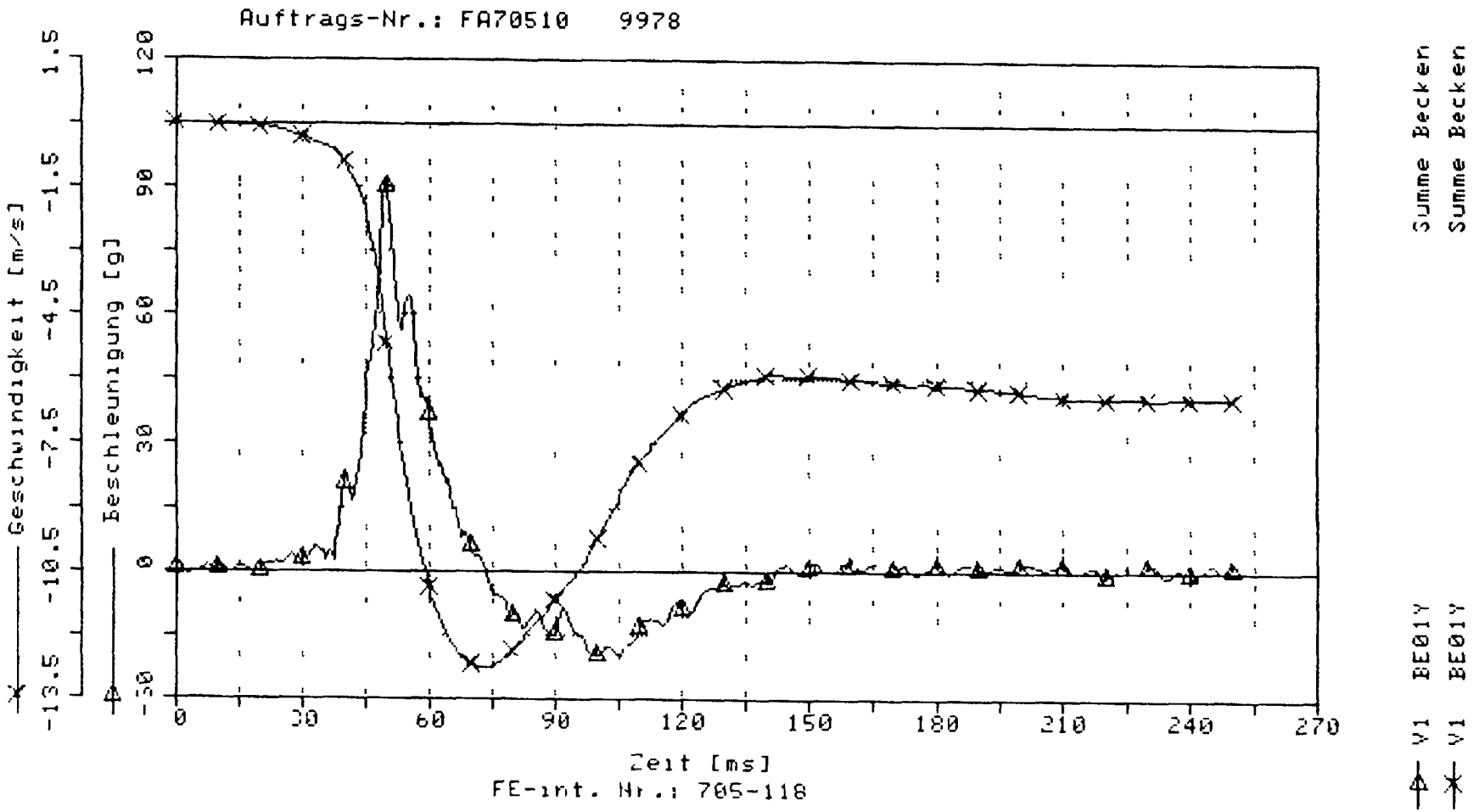



Summe Becken

V1 BE01X

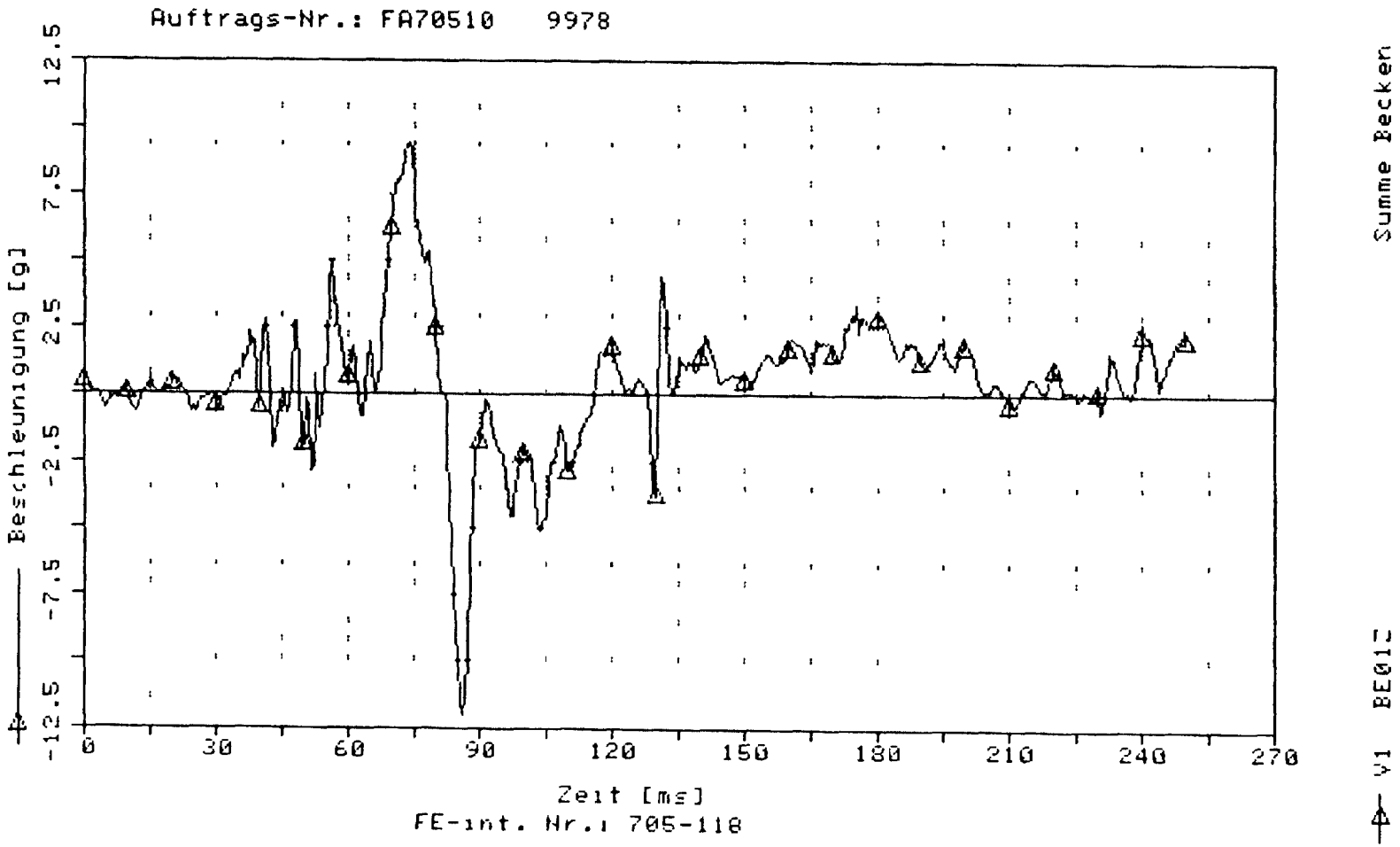
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE01Y | Summe Becken | BE g | 92 078 | 49 5 | 71 01 |
| V1 | BE01Y | Summe Becken | GE m/s | -12 792 | 73 5 | 0 00 |



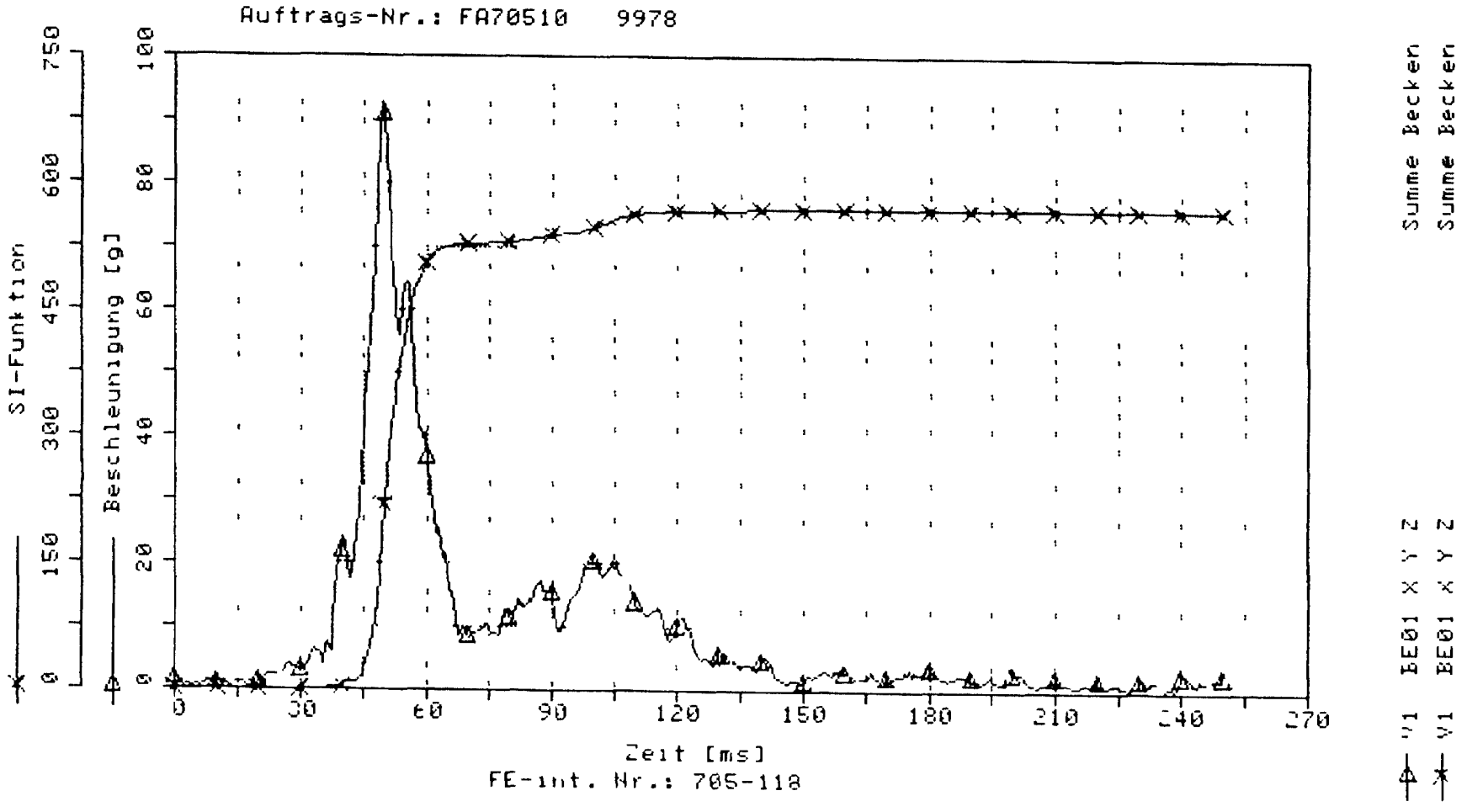
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE01Z | Summe Becken | BE g | -11 977 | 86 5 | 9 34 |



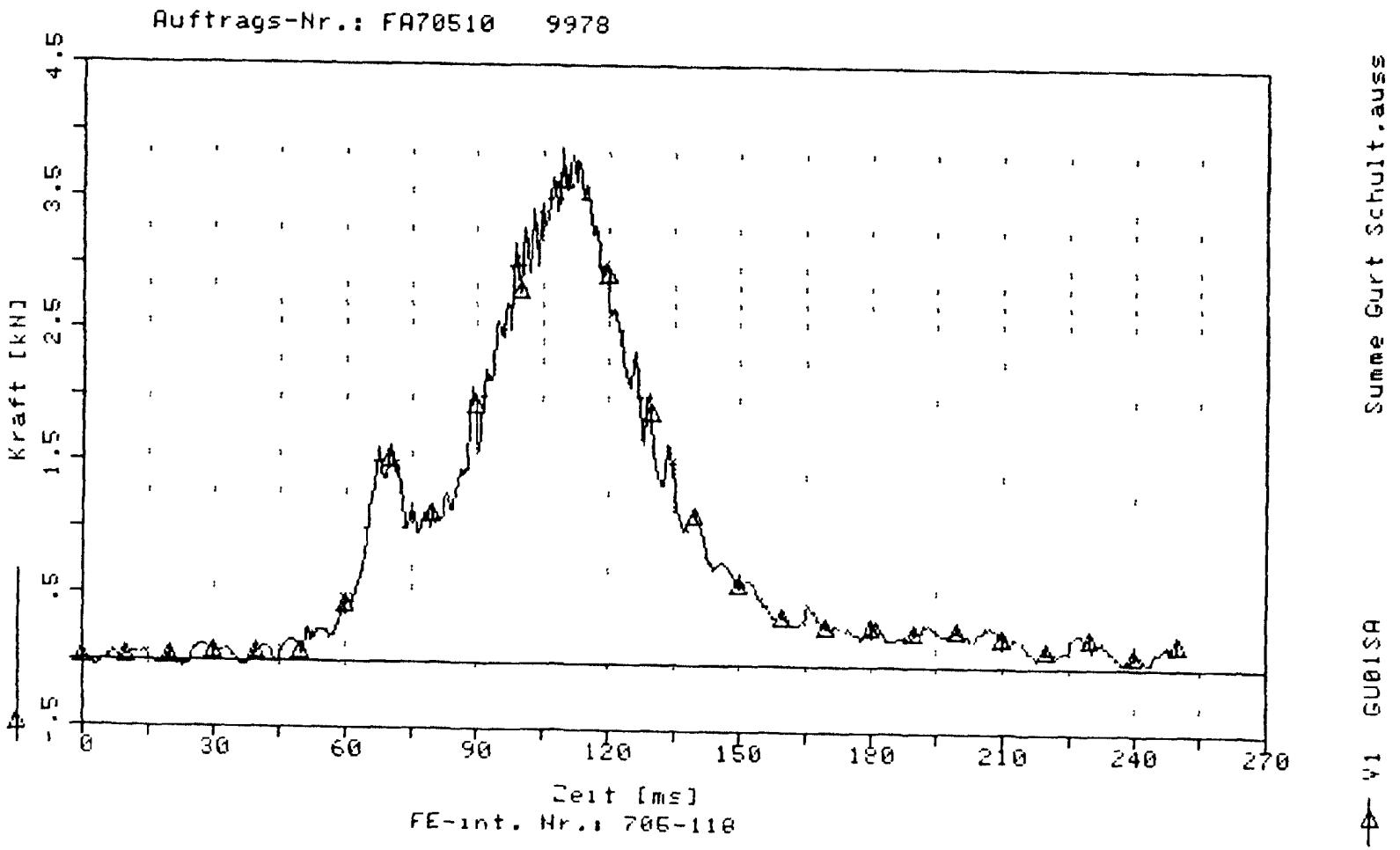
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE01 X Y Z | Summe Becken | BE g | 92 586 | 49 5 | 71 25 |
| V1 | BE01 X Y Z | Summe Becken | SI | 569 222 | 250 0 | 0 00 |



Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | GU01SA | Summe Gurt Schult auss | KR kN | 3 883 | 109 5 | 0 00 |



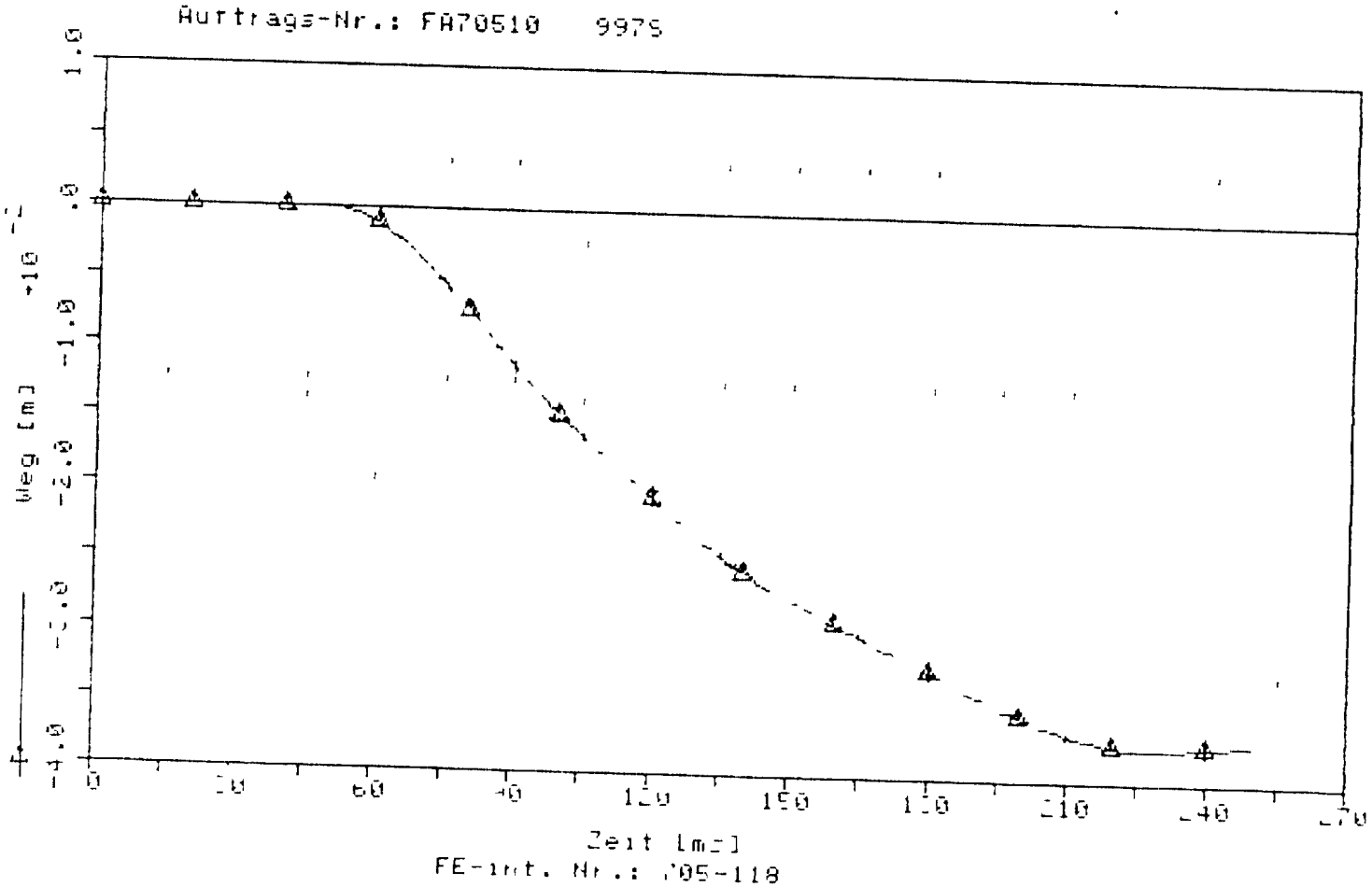

V1 GU01SA Summe Gurt Schult.auss

Kenn Werte  Auftrags-Nr  FA70510  Versuchs Nr  9978
Fahrg Nr  FE-int NR  705 118

UI  Moss-Stelle

V1  WE01Y  Summe Wegpoti Brust

| ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|
| WE m | 038 | 228 0 | 0 00 |




Summe Wegpoti.Brust

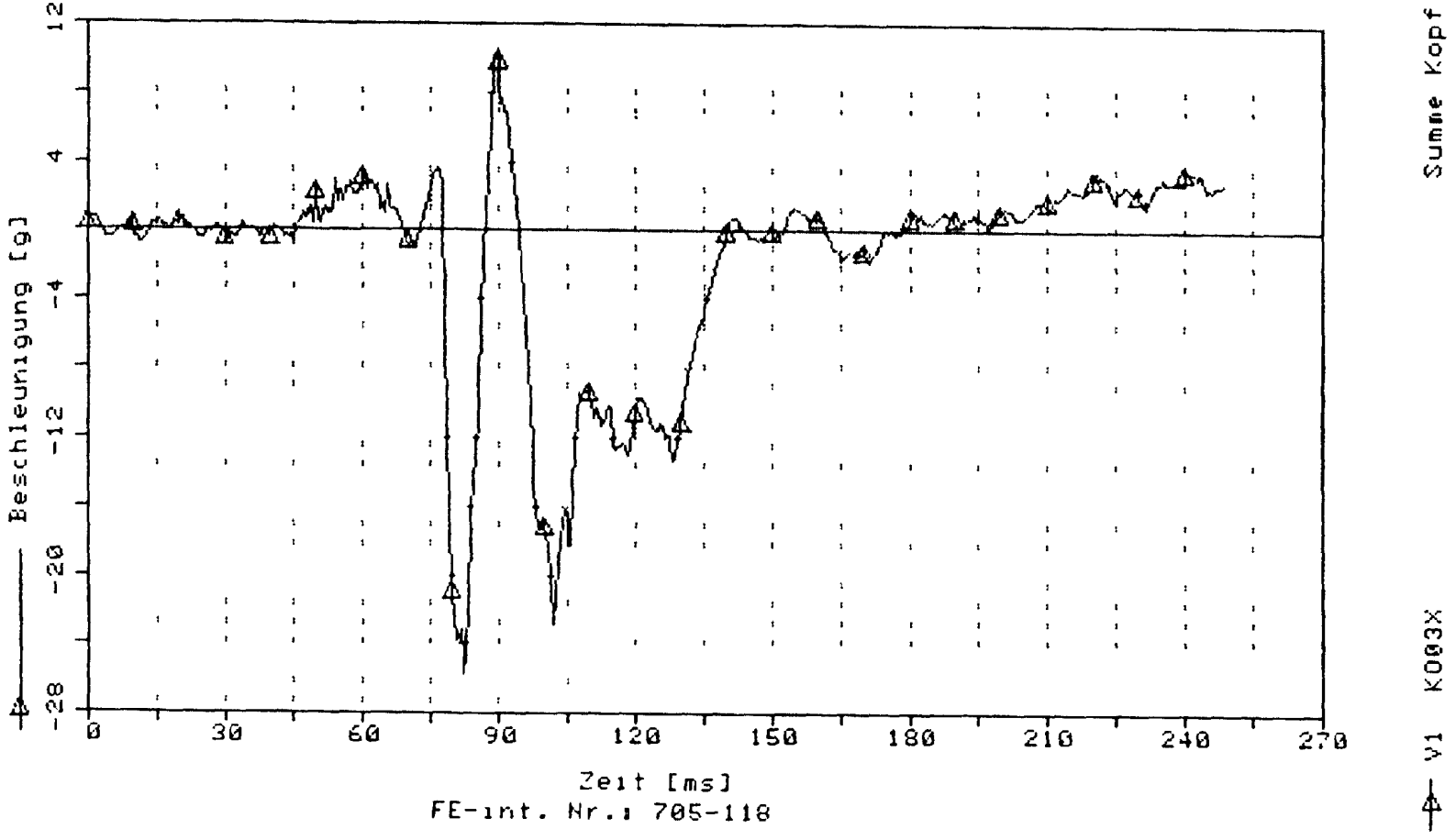
V1 WE01Y

### B.2.2 Rear Passenger

Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | K003X | Summe Kopf | BE g | -26 852 | 82 4 | 22 48 |

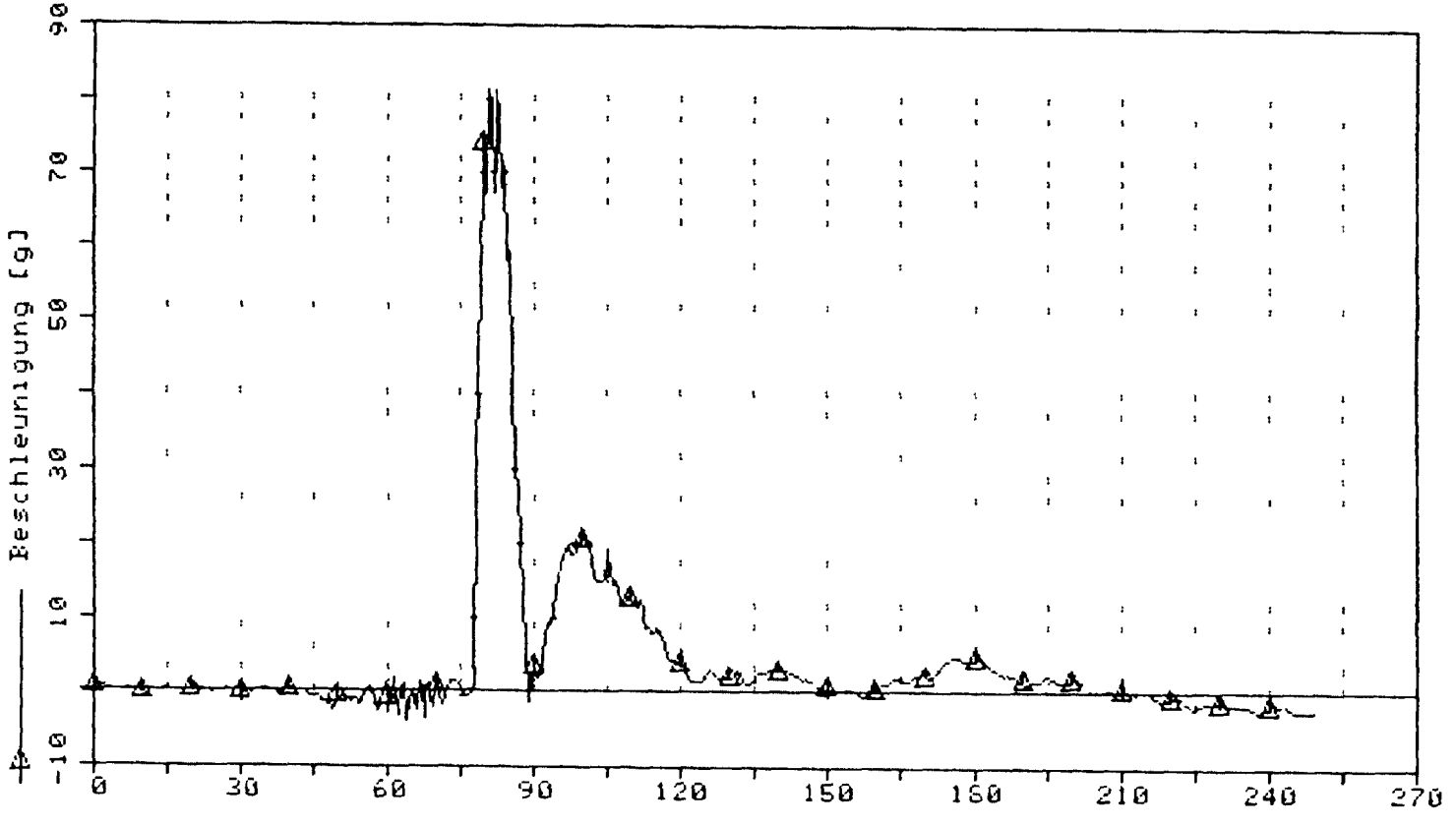
Auftrags-Nr.: FA70510 9978



Konn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | K003Y | Summe Kopf | BE g | 85 576 | 82 9 | 70 56 |

Auftrags-Nr.: FA70510  9978



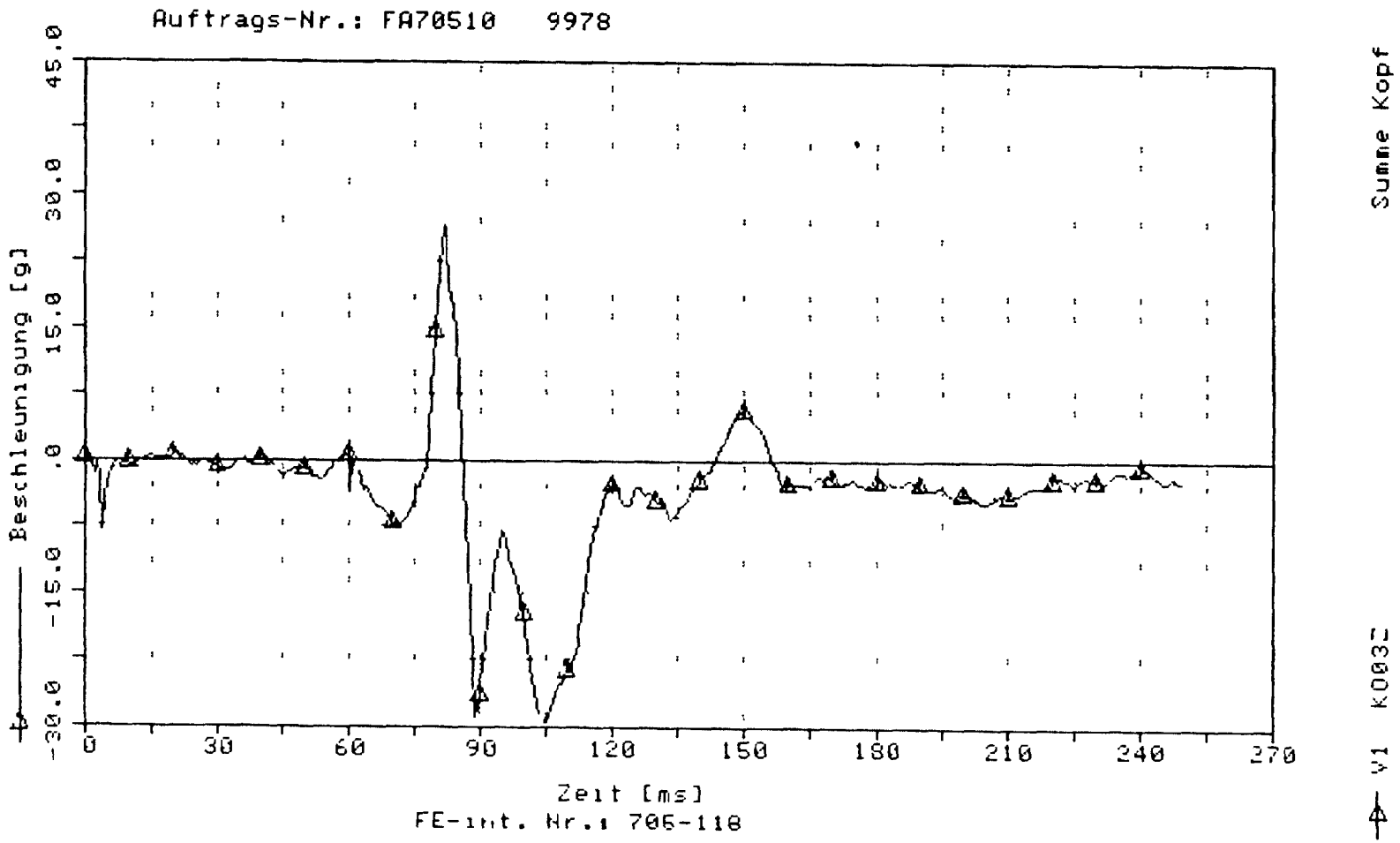

FE-int. Nr.: 705-118

Summe Kopf

V1 K003Y

Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | K003Z | Summe Kopf | BE g | -29 785 | 104 7 | 28 51 |

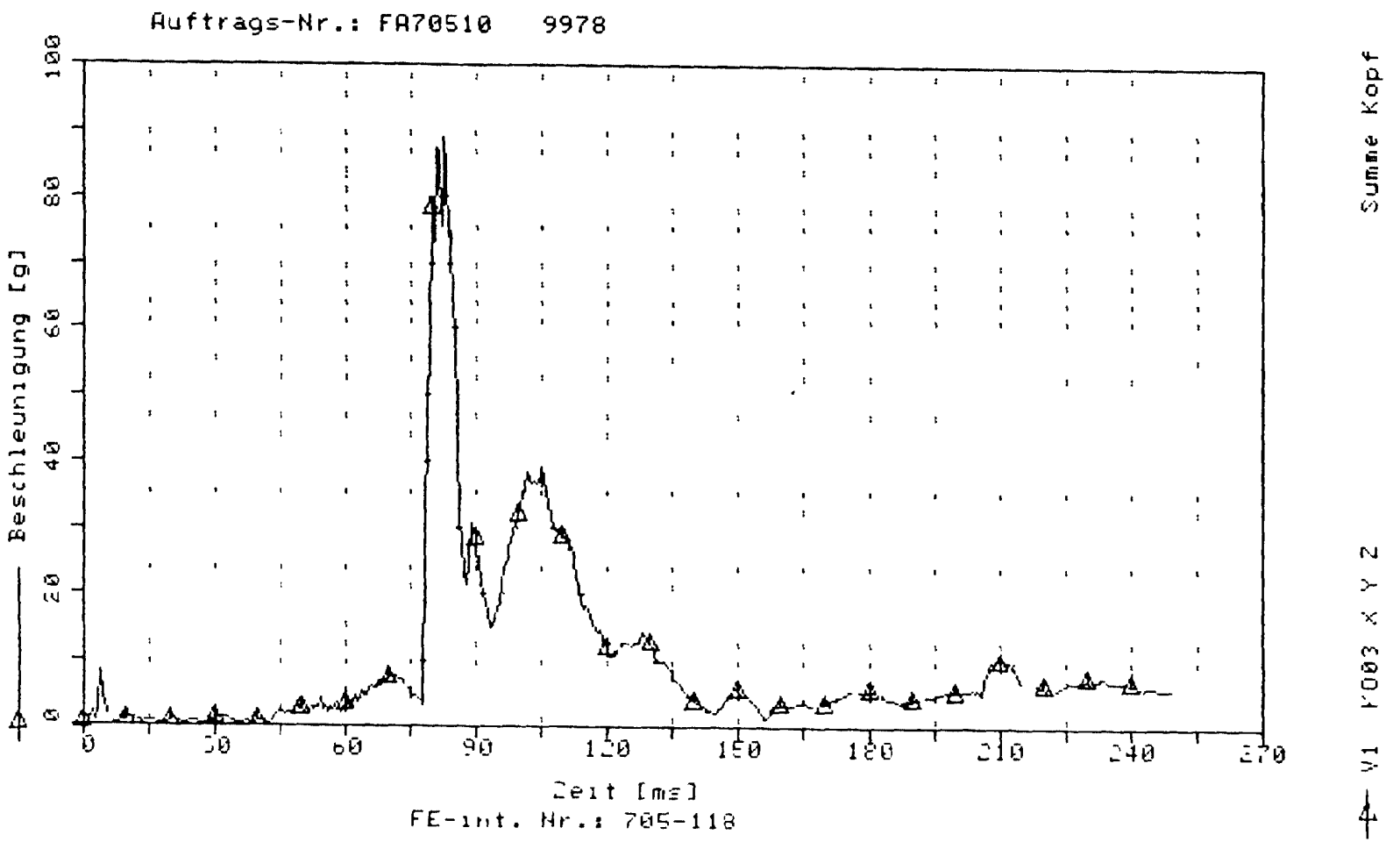


Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | K003 X Y Z | Summe Kopf | BE g | 92 742 | 82 9 | 77 24 |

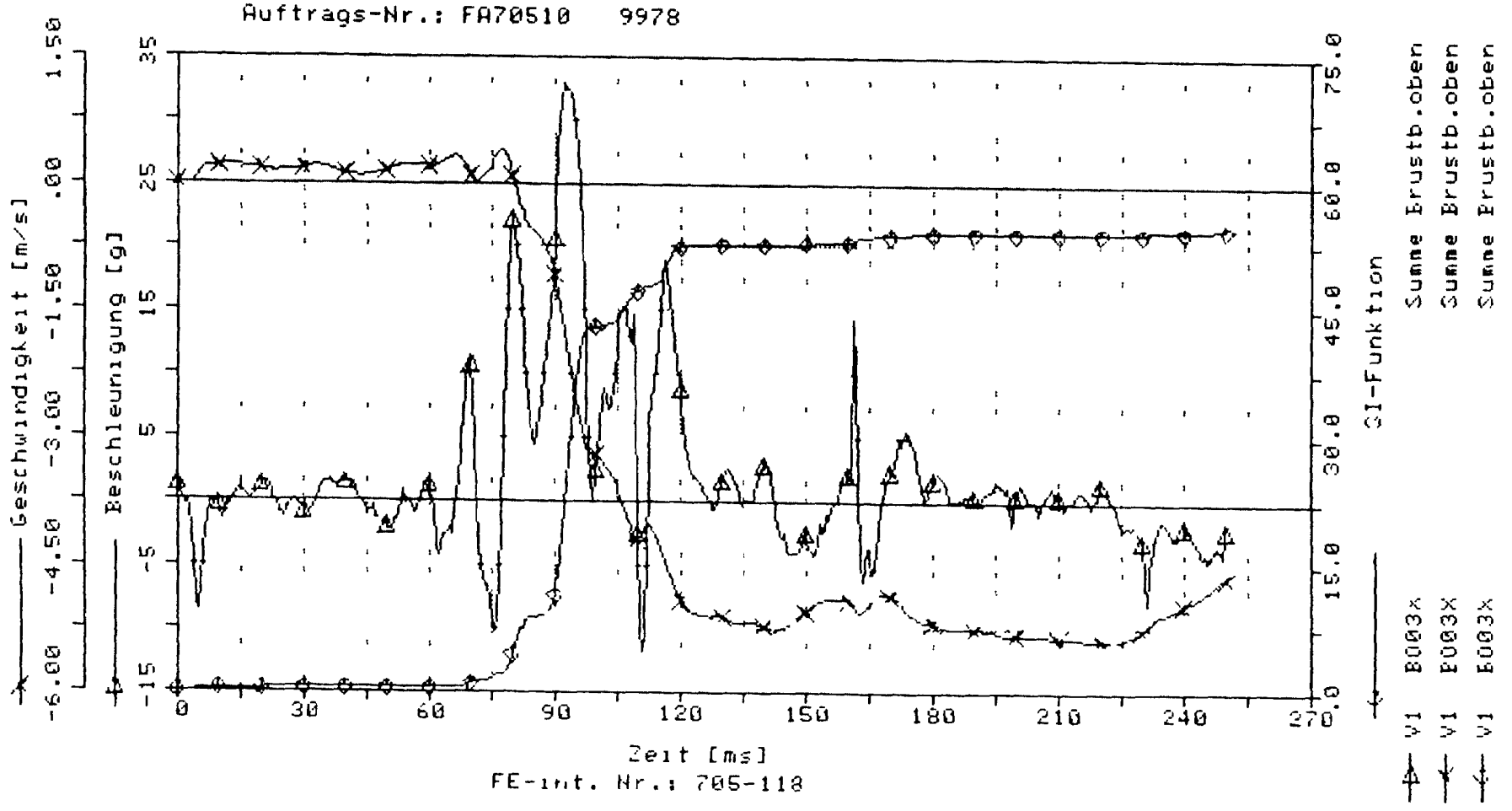
HIC,K003,0 250,0 05

HIC = 320 6 t0 = 94 96 t1 = 116 10



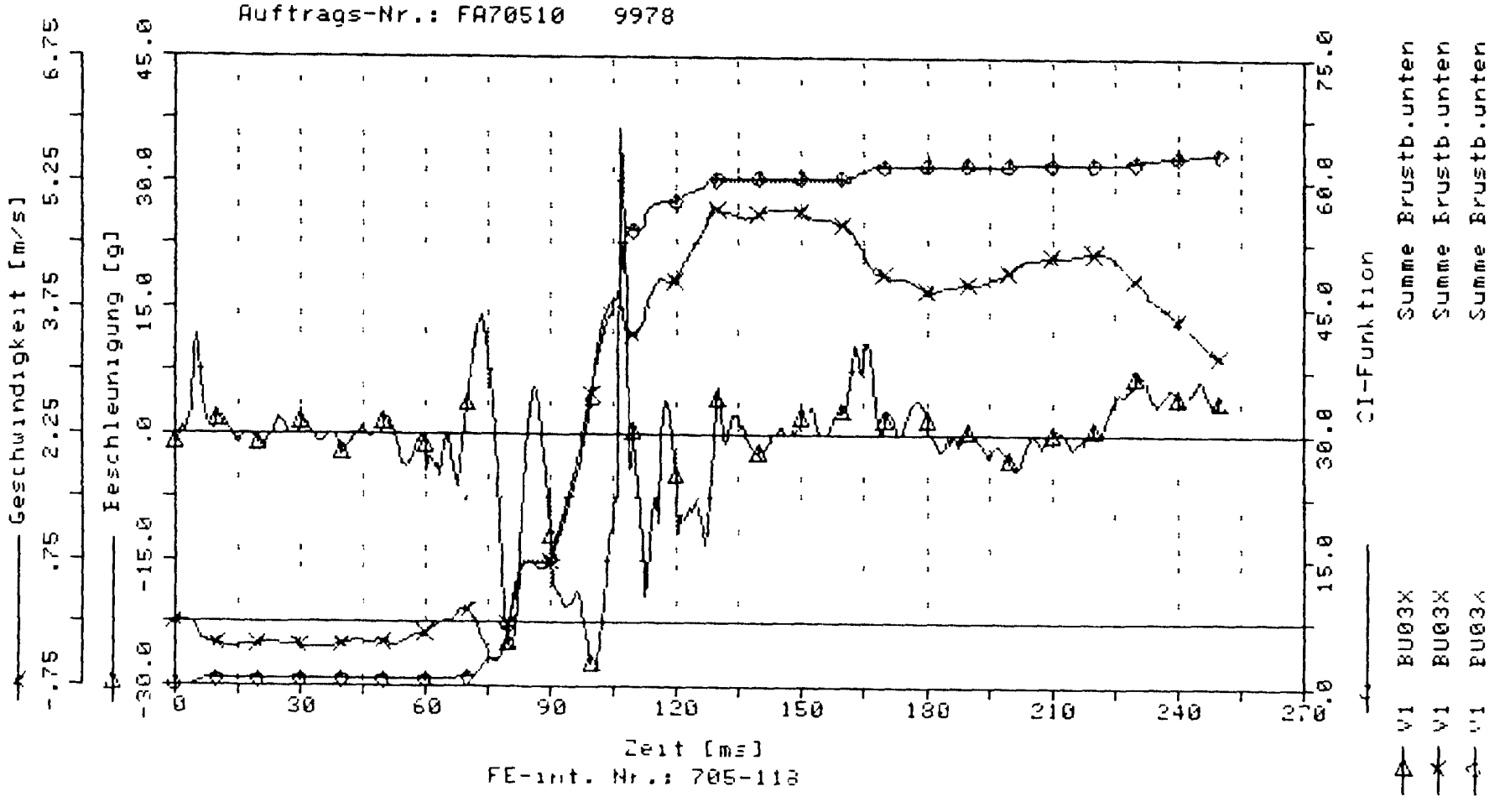
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | B003X | Summe Brustb oben | BE g | 32 739 | 92 5 | 30 01 |
| V1 | B003X | Summe Brustb oben | GE m/s | -5 407 | 223 0 | 0 00 |
| V1 | B003X | Summe Brustb oben | SI | 54 494 | 250 0 | 0 00 |



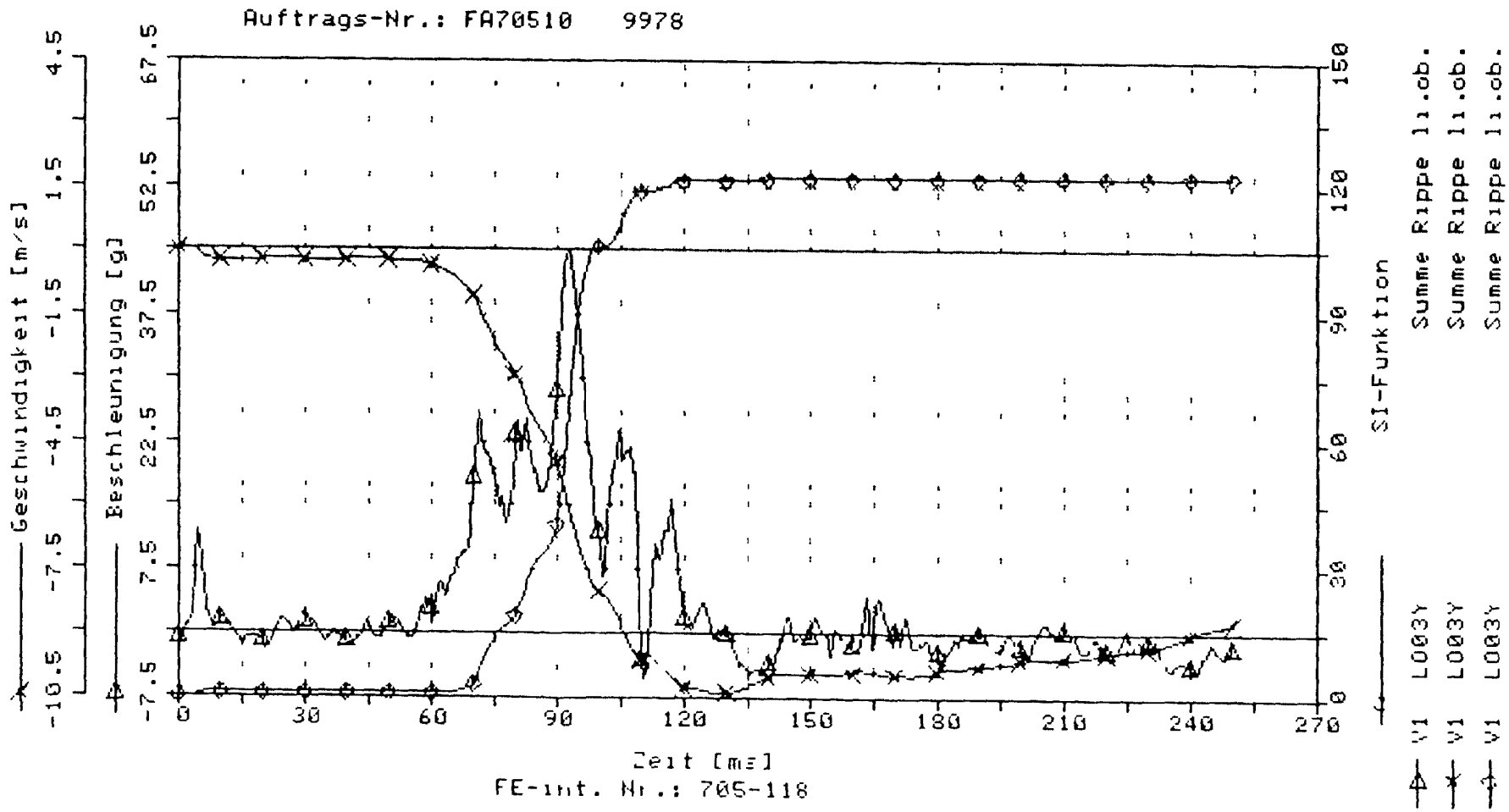
Kenn-Worte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BU03X | Summe Brustb unten | BE g | 36 352 | 107 0 | 25 74 |
| V1 | BU03X | Summe Brustb unten | GE m/s | 4 909 | 129 5 | 0 00 |
| V1 | BU03X | Summe Brustb unten | SI | 63 367 | 250 0 | 0 00 |



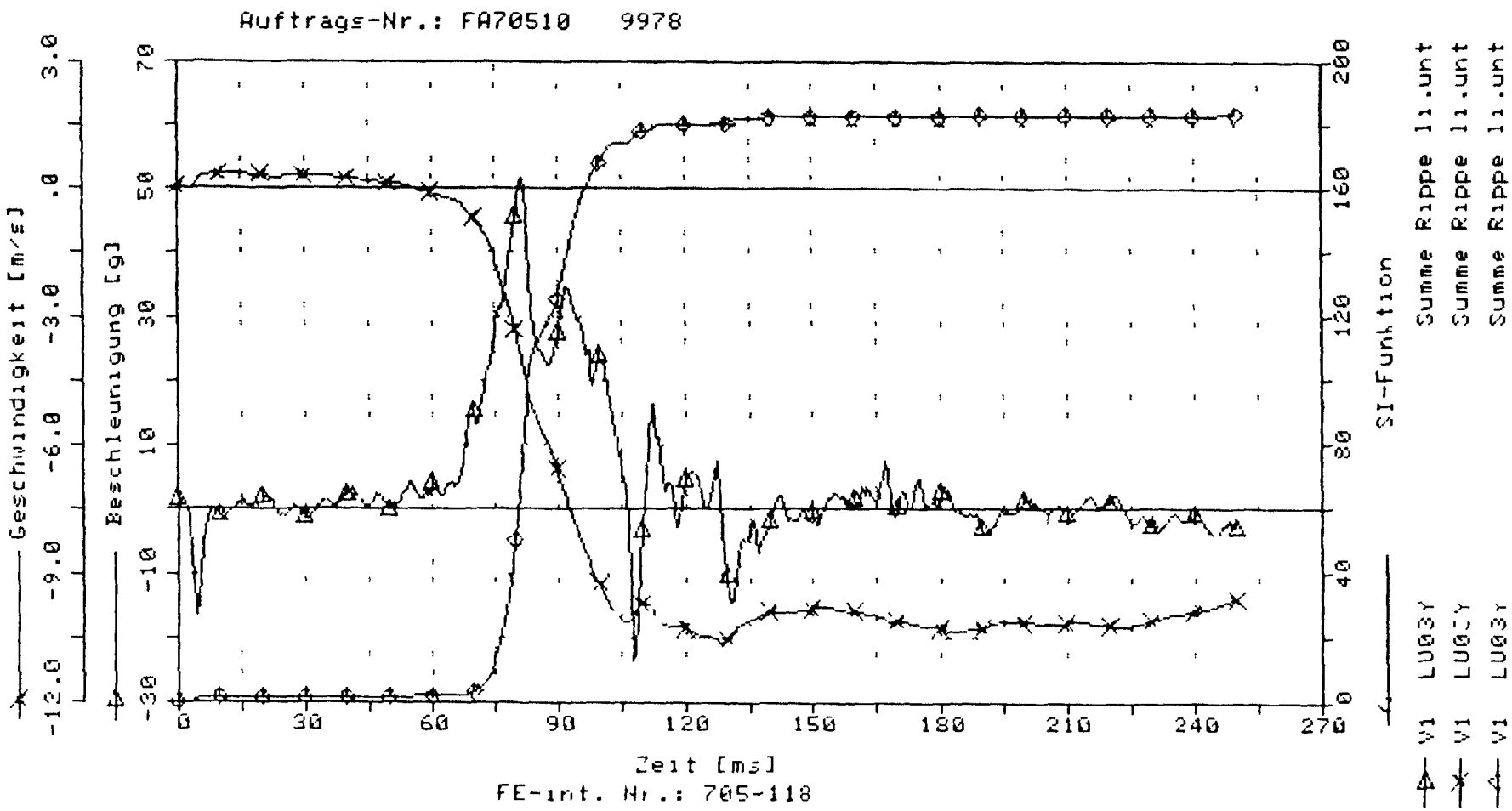
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | L003Y | Summe Rippe 11 ob | BE g | 44 972 | 93 0 | 37 99 |
| V1 | L003Y | Summe Rippe 11 ob | GE m/s | -10 396 | 127 0 | 0 00 |
| V1 | L003Y | Summe Rippe 11 ob | SI | 122 437 | 250 0 | 0 00 |



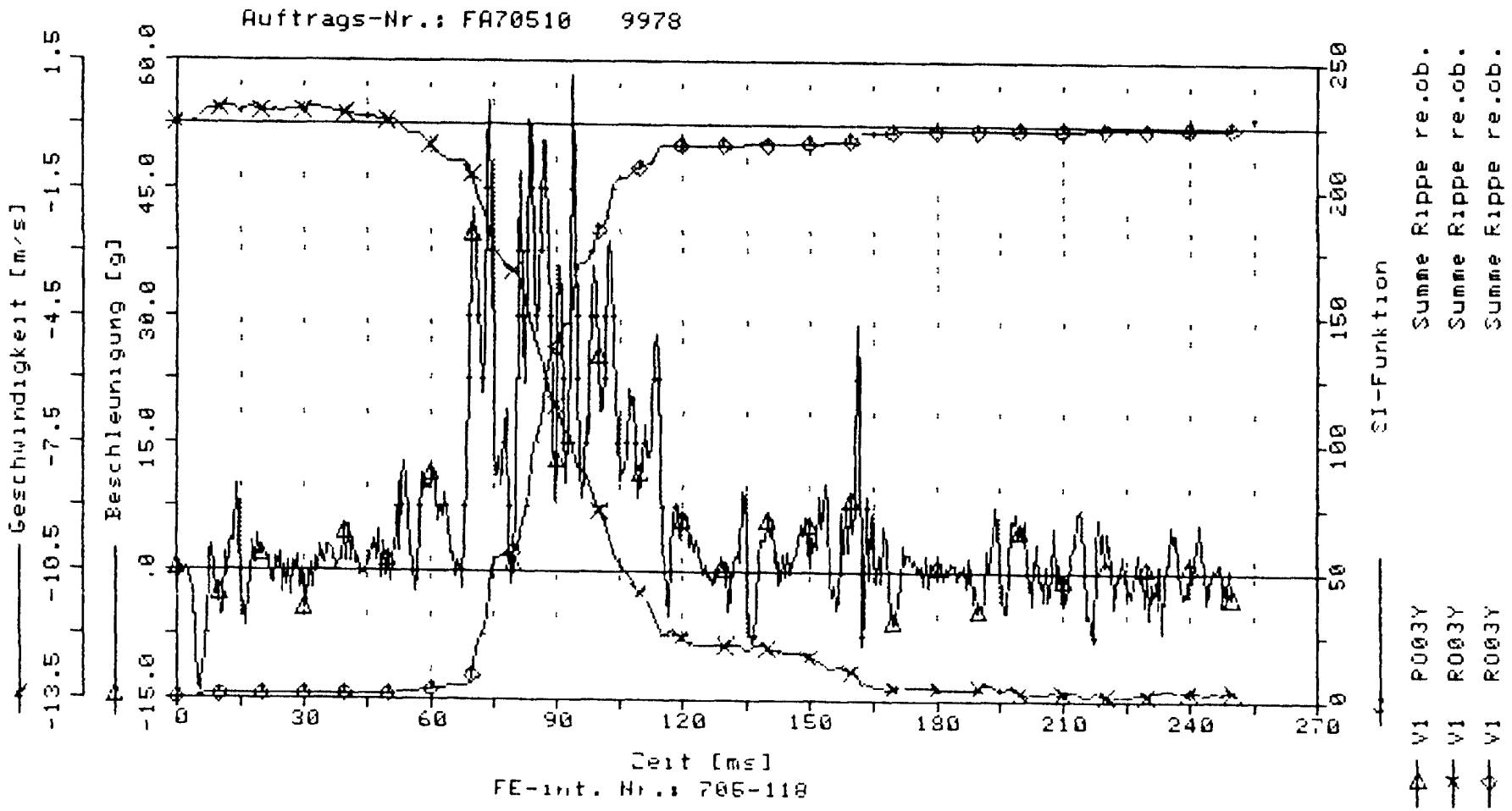
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | LU03Y | Summe Rippe 11 unt | BE g | 51 839 | 81 5 | 44 31 |
| V1 | LU03Y | Summe Rippe 11 unt | GE m/s | -10 602 | 128 5 | 0 00 |
| V1 | LU03Y | Summe Rippe 11 unt | SI | 183 053 | 250 0 | 0 00 |



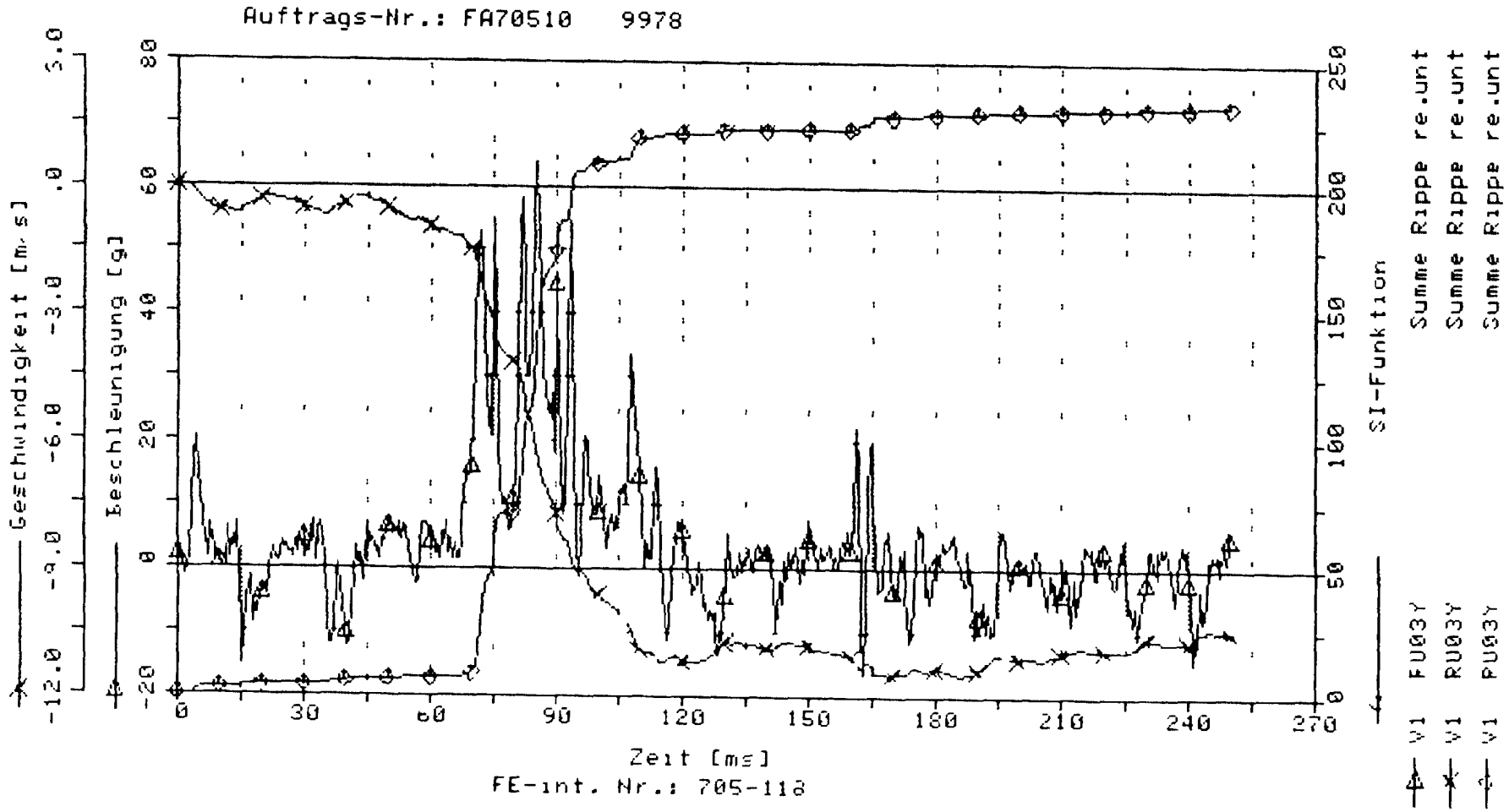
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | R003Y | Summe Rippe re ob | BE g | 58 309 | 94 0 | 48 36 |
| V1 | R003Y | Summe Rippe re ob | GE m/s | -13 442 | 221 5 | 0 00 |
| V1 | R003Y | Summe Rippe re ob | SI | 224 086 | 250 0 | 0 00 |



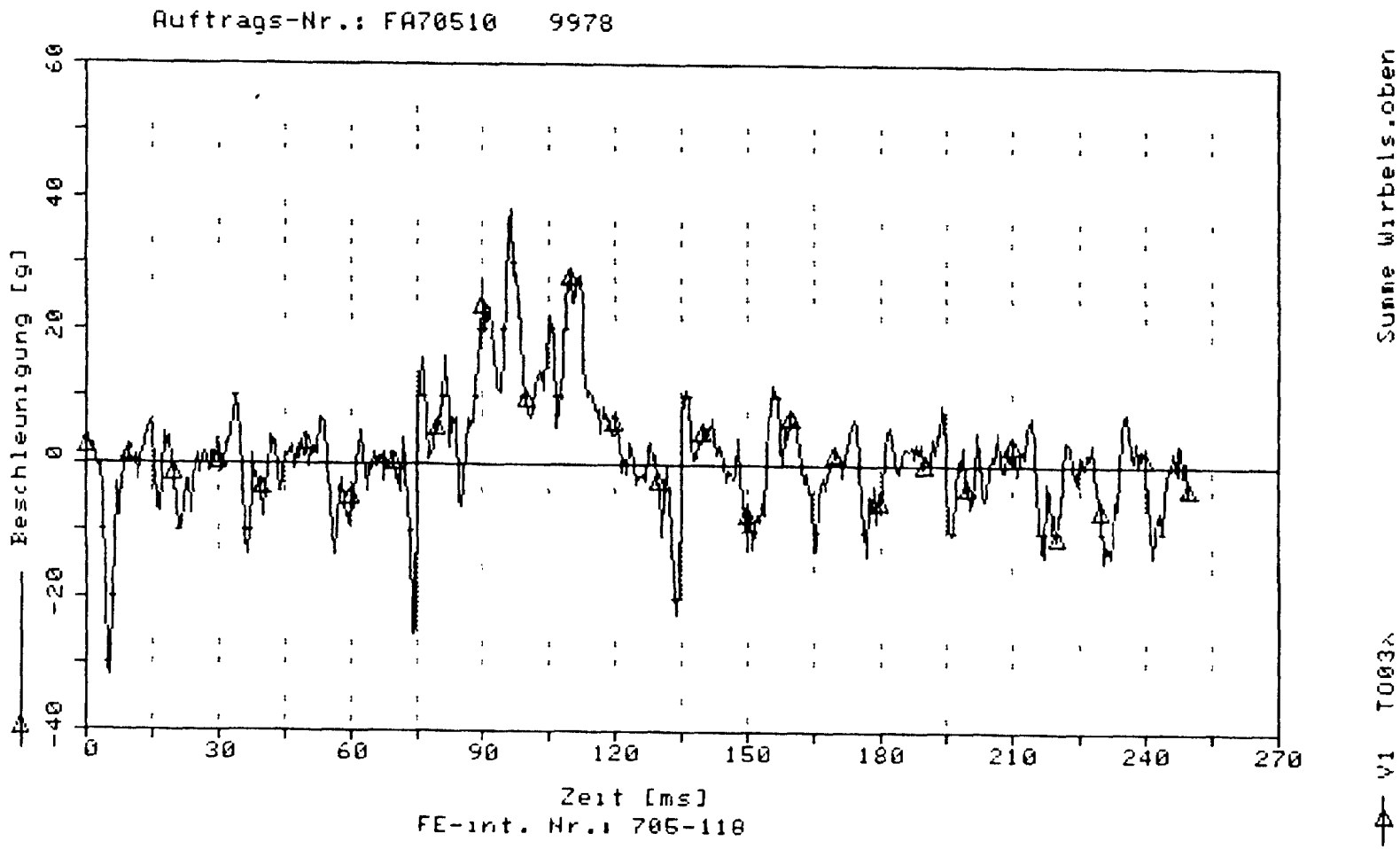
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | RU03Y | Summe Rippe re unt | BE g | 63 844 | 85 5 | 52 97 |
| V1 | RU03Y | Summe Rippe re unt | GE m/s | -11 533 | 169 5 | 0 00 |
| V1 | RU03Y | Summe Rippe re unt | SI | 232 713 | 250 0 | 0 00 |



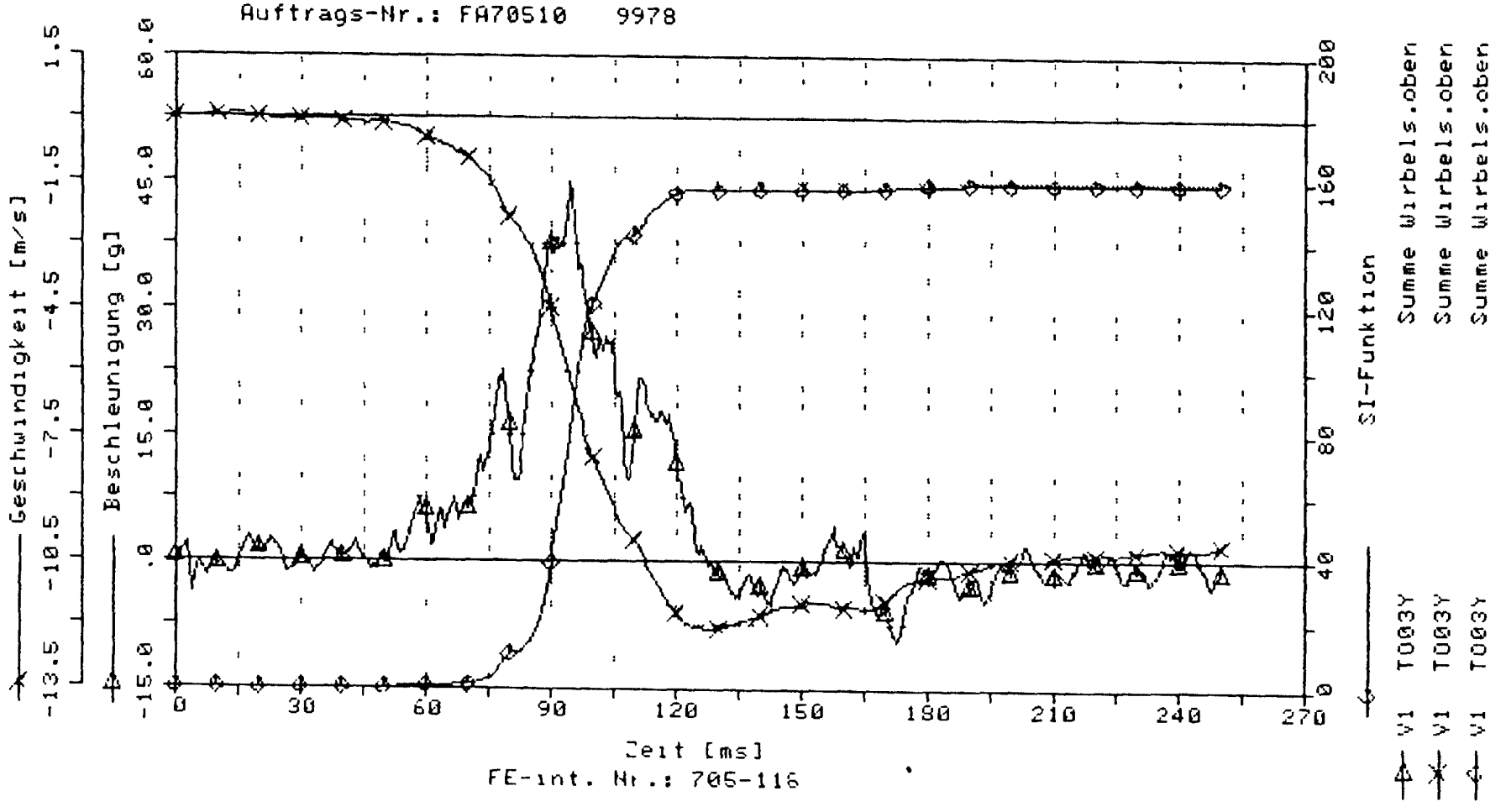
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T003X | Summe Wirbels oben | BE g | 38 075 | 96 5 | 28 28 |



Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

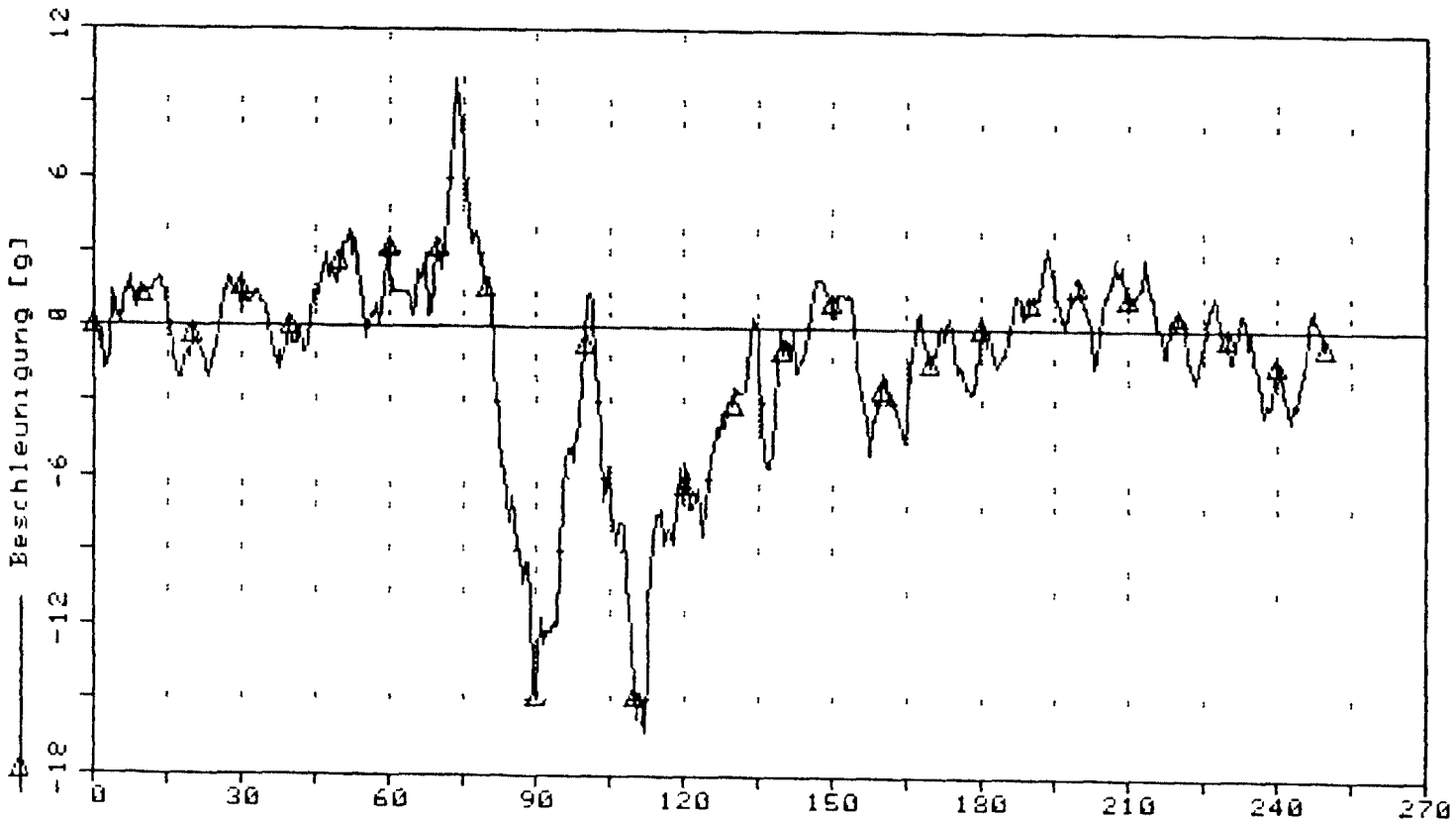
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T003Y | Summe Wirbels oben | BE g | 44 542 | 94 5 | 37 65 |
| V1 | T003Y | Summe Wirbels oben | GE m/s | -12 106 | 127 0 | 0 00 |
| V1 | T003Y | Summe Wirbels oben | SI | 159 038 | 250 0 | 0 00 |



Kenn-Worte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T003Z | Summe Wirbels oben | BE g | -16 343 | 112 0 | 14 42 |

Auftrags-Nr.: FA70510 9978



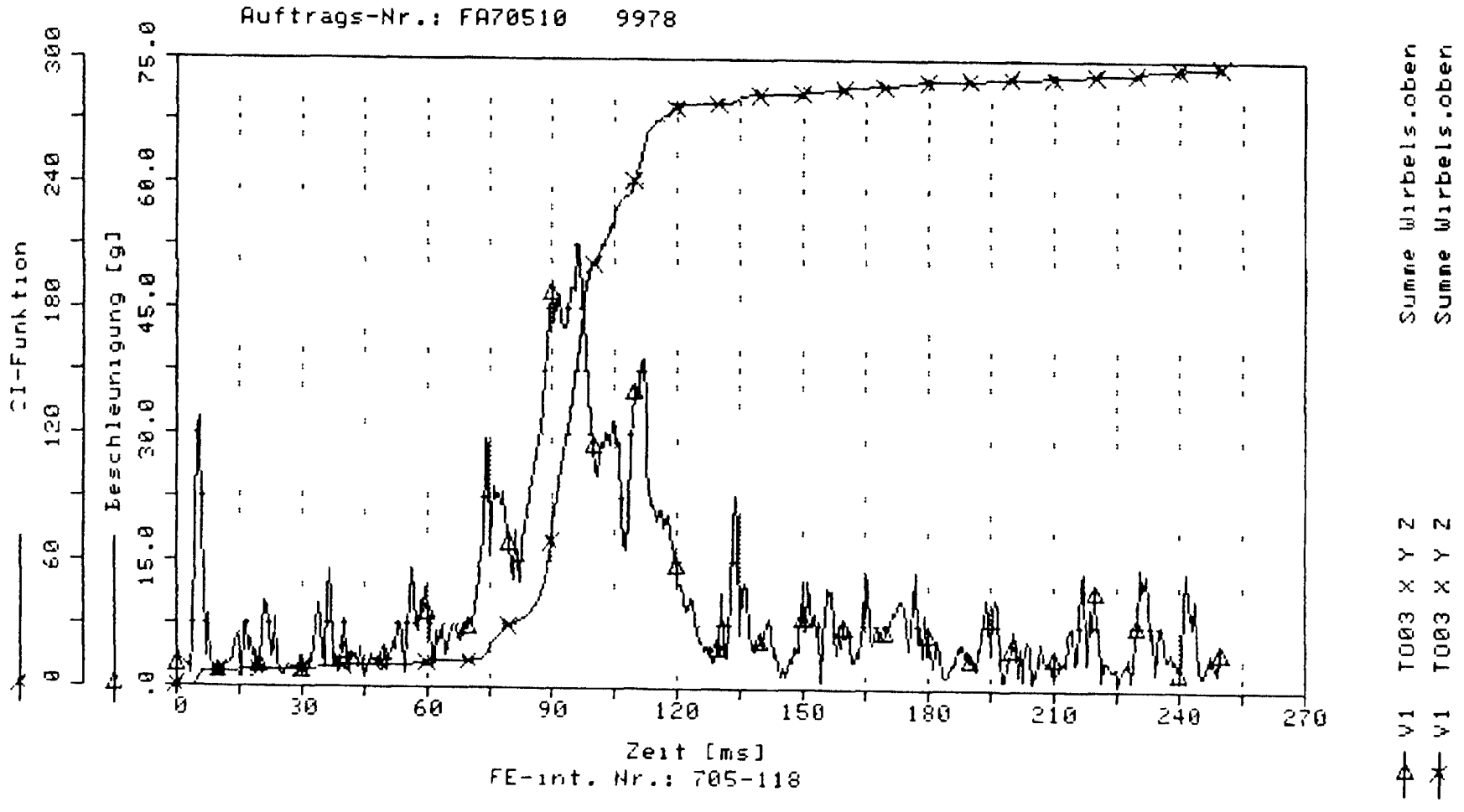

FE-int. Nr.: 705-118

Summe Wirbels.oben

V1 T003Z

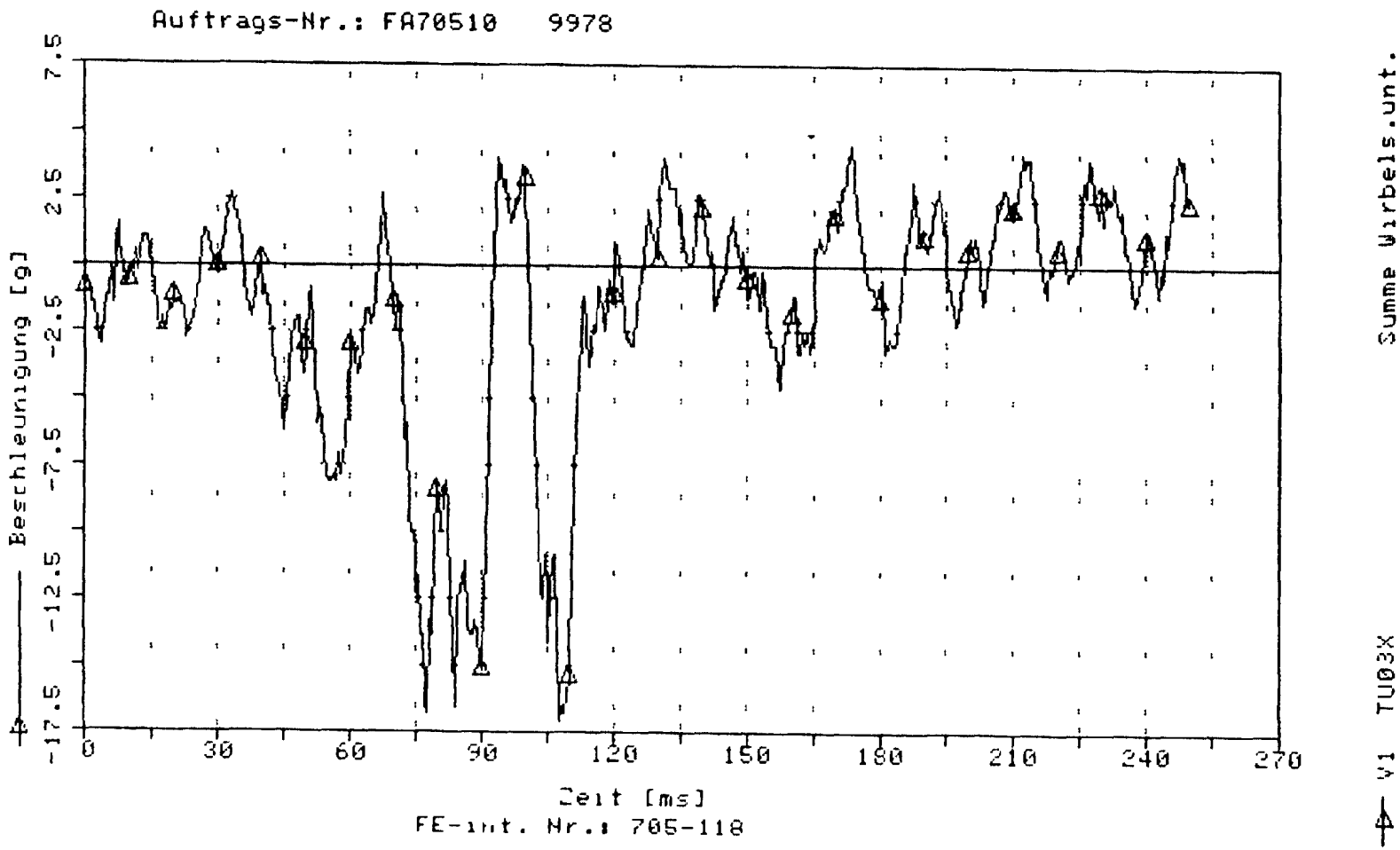
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | T003 X Y Z | Summe Wirbels oben | BE g | 52 703 | 96 0 | 46 50 |
| V1 | T003 X Y Z | Summe Wirbels oben | SI | 296 756 | 250 0 | 0 00 |



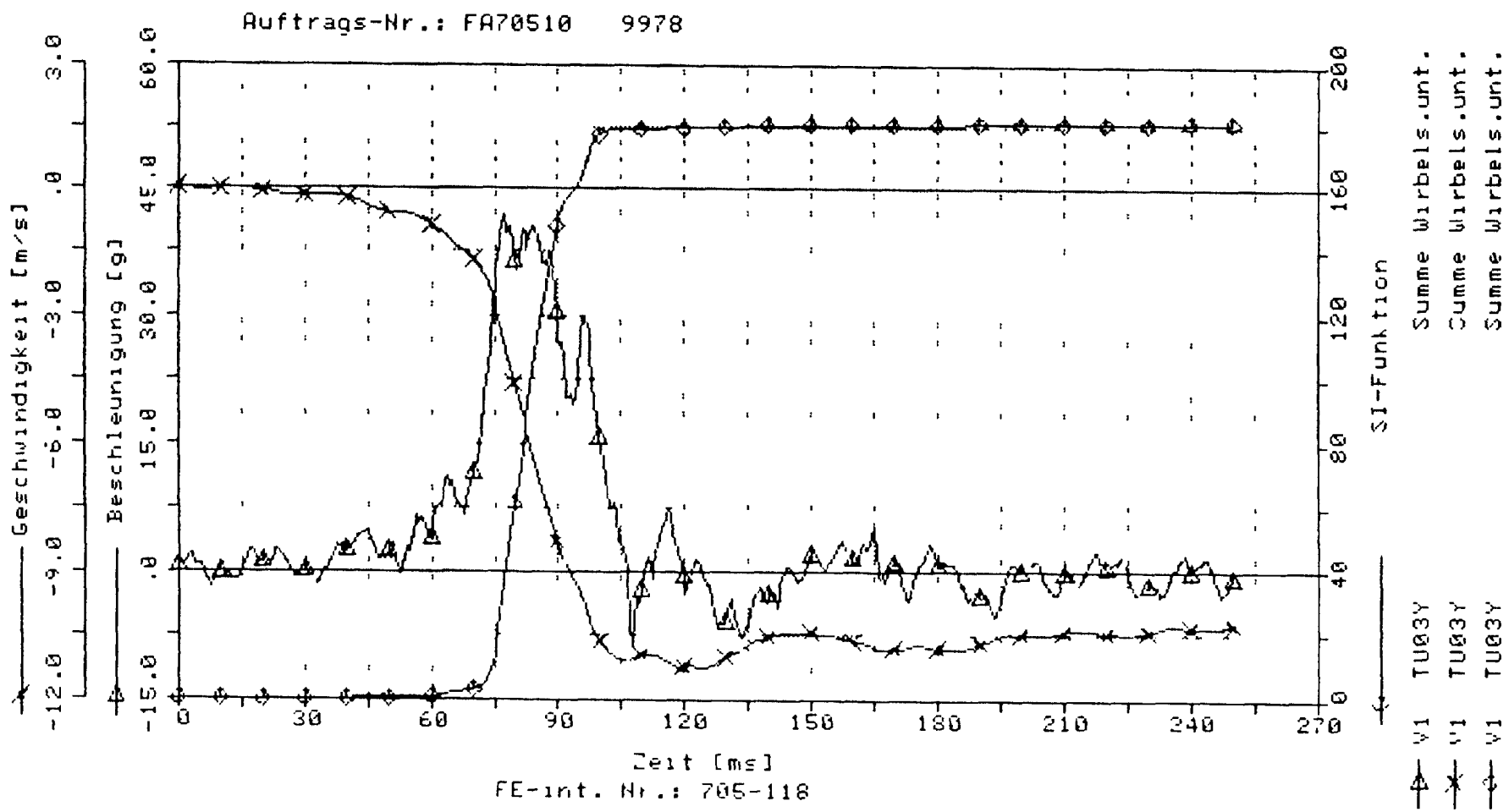
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU03X | Summe Wirbels unt | BE g | -17 085 | 108 0 | 16 00 |



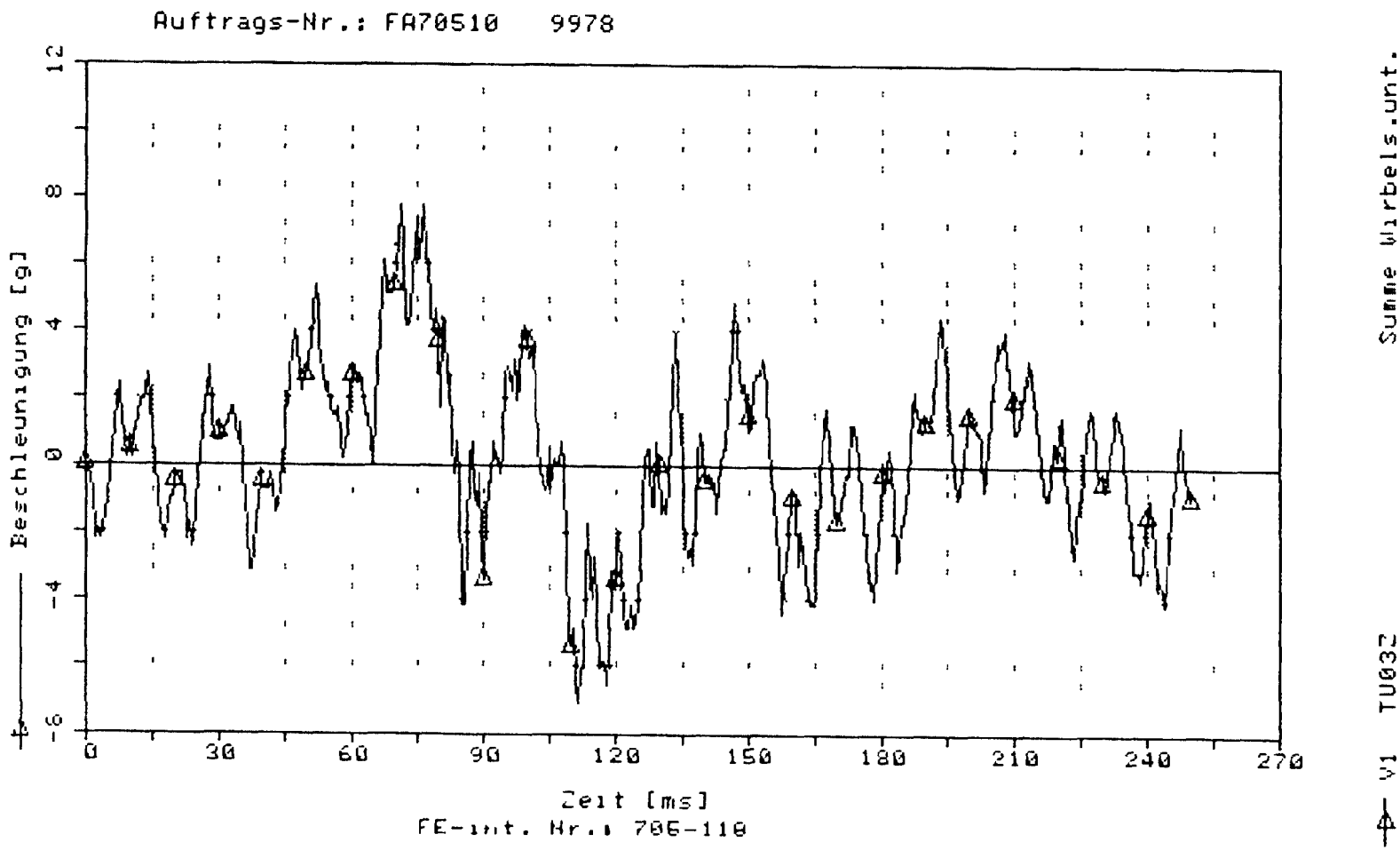
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU03Y | Summe Wirbels unt | BE g | 41 705 | 77 5 | 39 96 |
| V1 | TU03Y | Summe Wirbels unt | GE m/s | -11 260 | 120 0 | 0 00 |
| V1 | TU03Y | Summe Wirbels unt | SI | 181 289 | 250 0 | 0 00 |



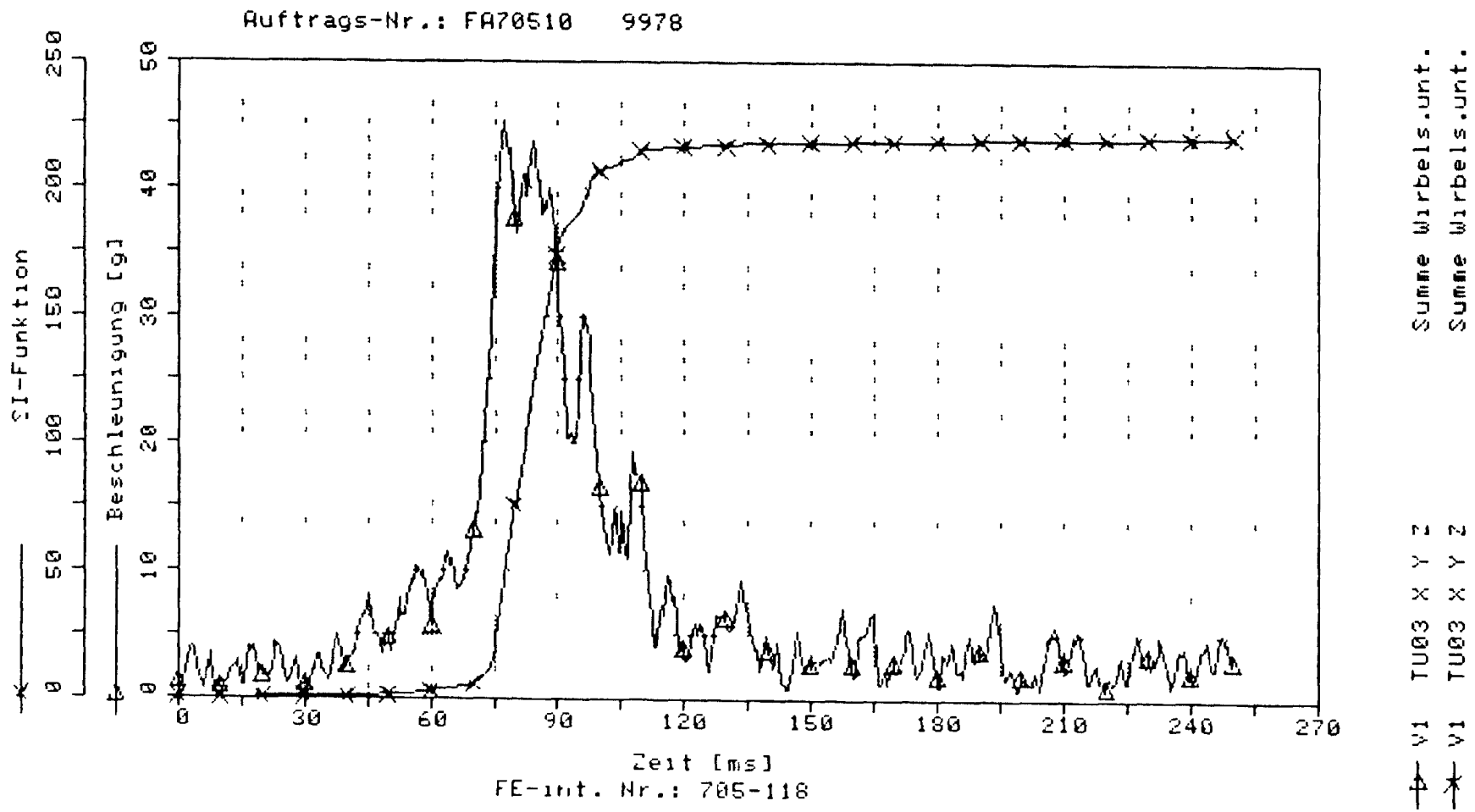
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU03Z | Summe Wirbels unt | BE g | 7 796 | 71 5 | 6 61 |



Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  FE-int NR  705-118

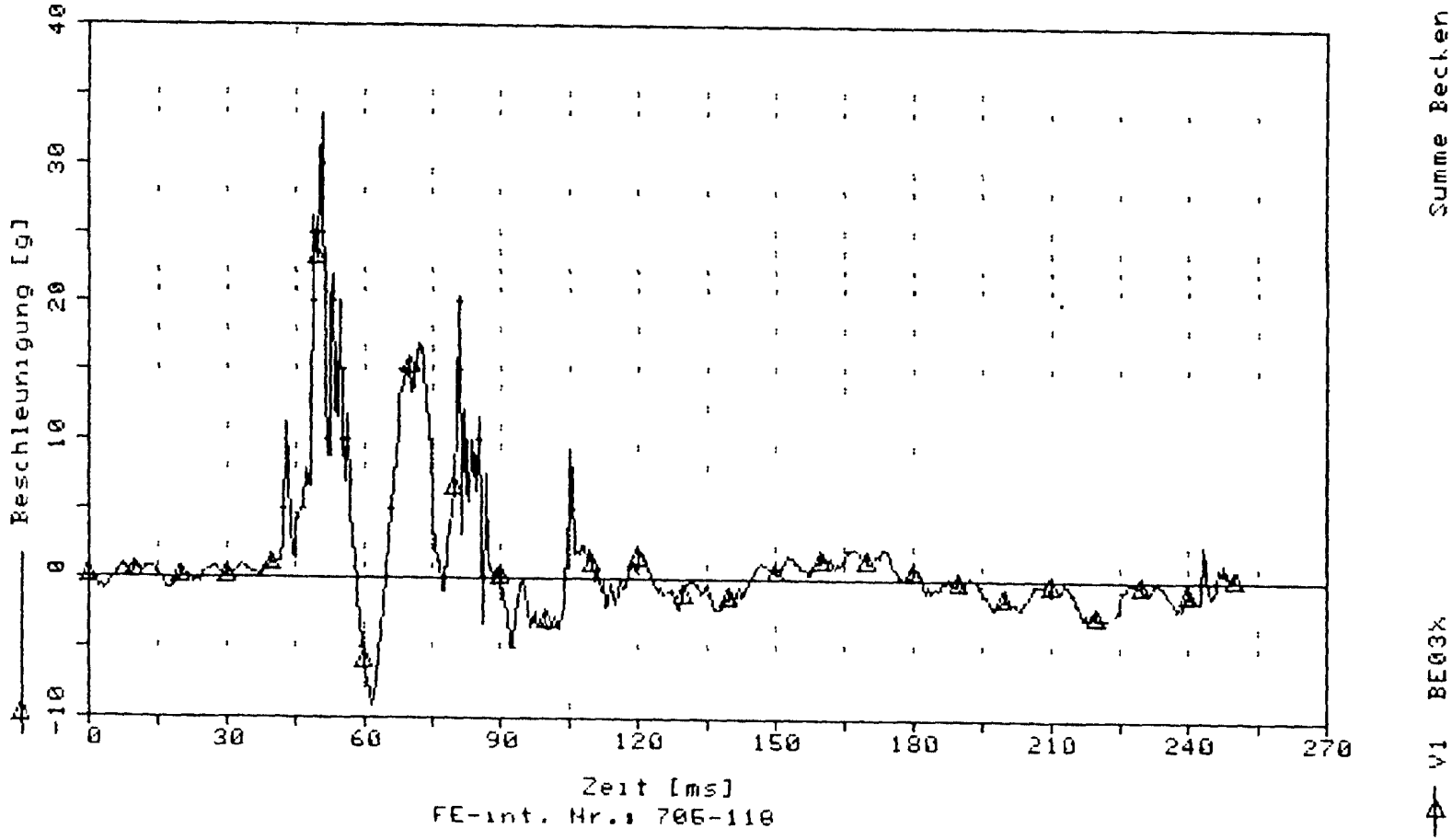
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | TU03 X Y Z | Summe Wirbels unt | BE g | 45 277 | 77 5 | 42 38 |
| V1 | TU03 X Y Z | Summe Wirbels unt | SI | 220 277 | 250 0 | 0 00 |



Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

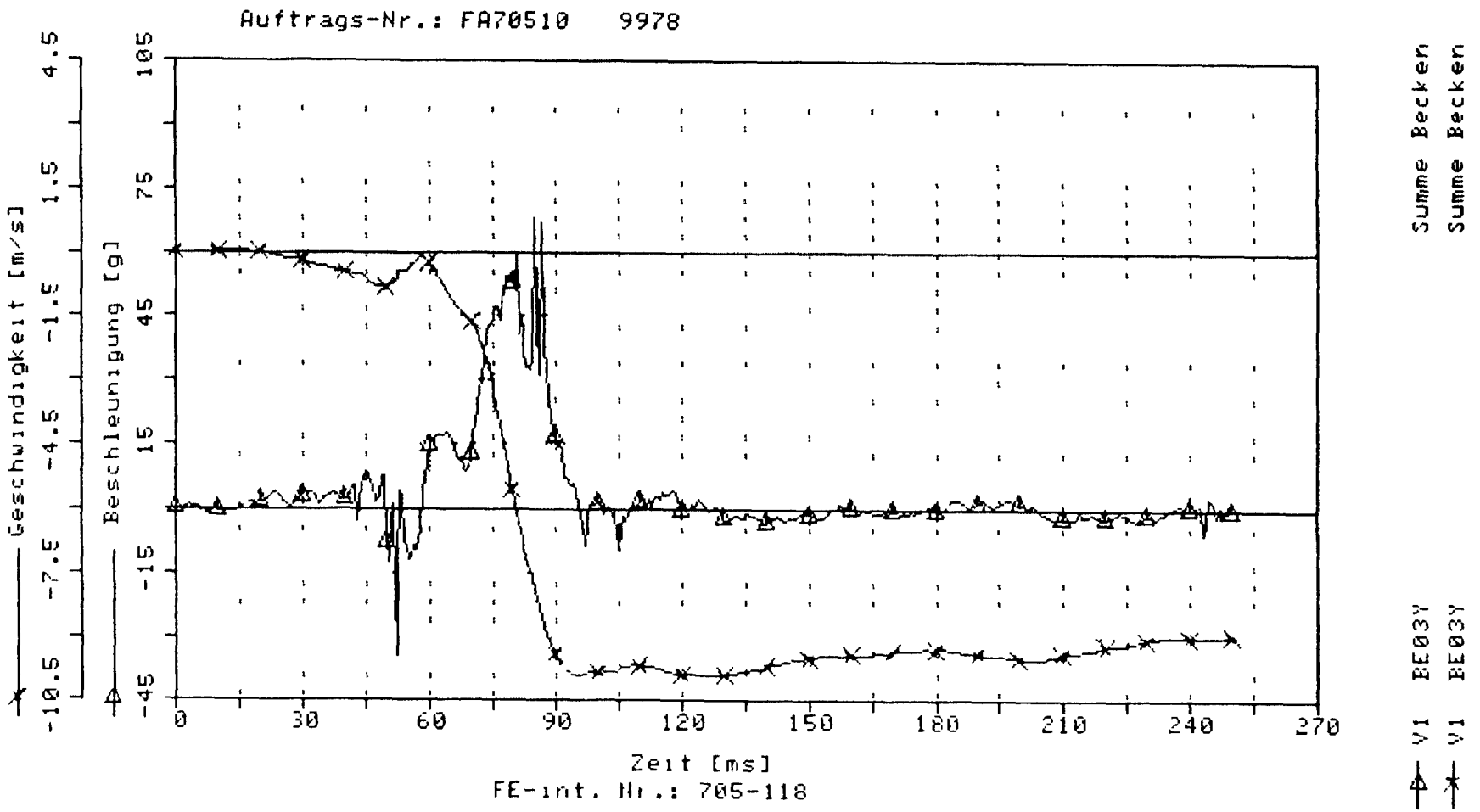
| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE03X | Summe Becken | BE g | 33 536 | 51 0 | 20 22 |

Auftrags-Nr.: FA70510 9978



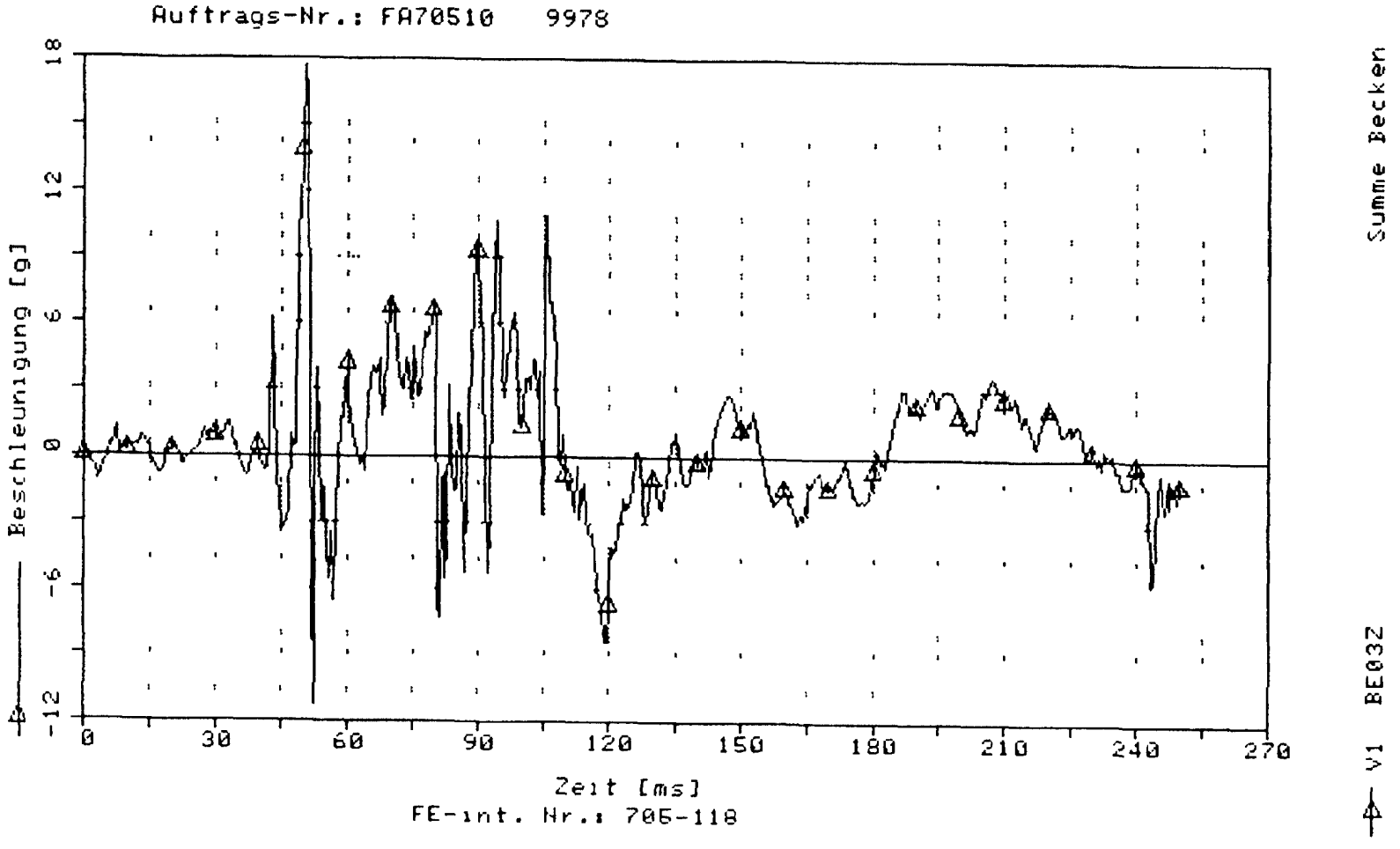
Kenn-Werte  Auftrags-Nr  FA70510  Versuchs-Nr  9978
Fahrg -Nr  RABBIT  FE-int NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE03Y | Summe Becken | BE g | 67 628 | 85 5 | 52 41 |
| V1 | BE03Y | Summe Becken | GE m/s | -9 932 | 125 5 | 0 00 |



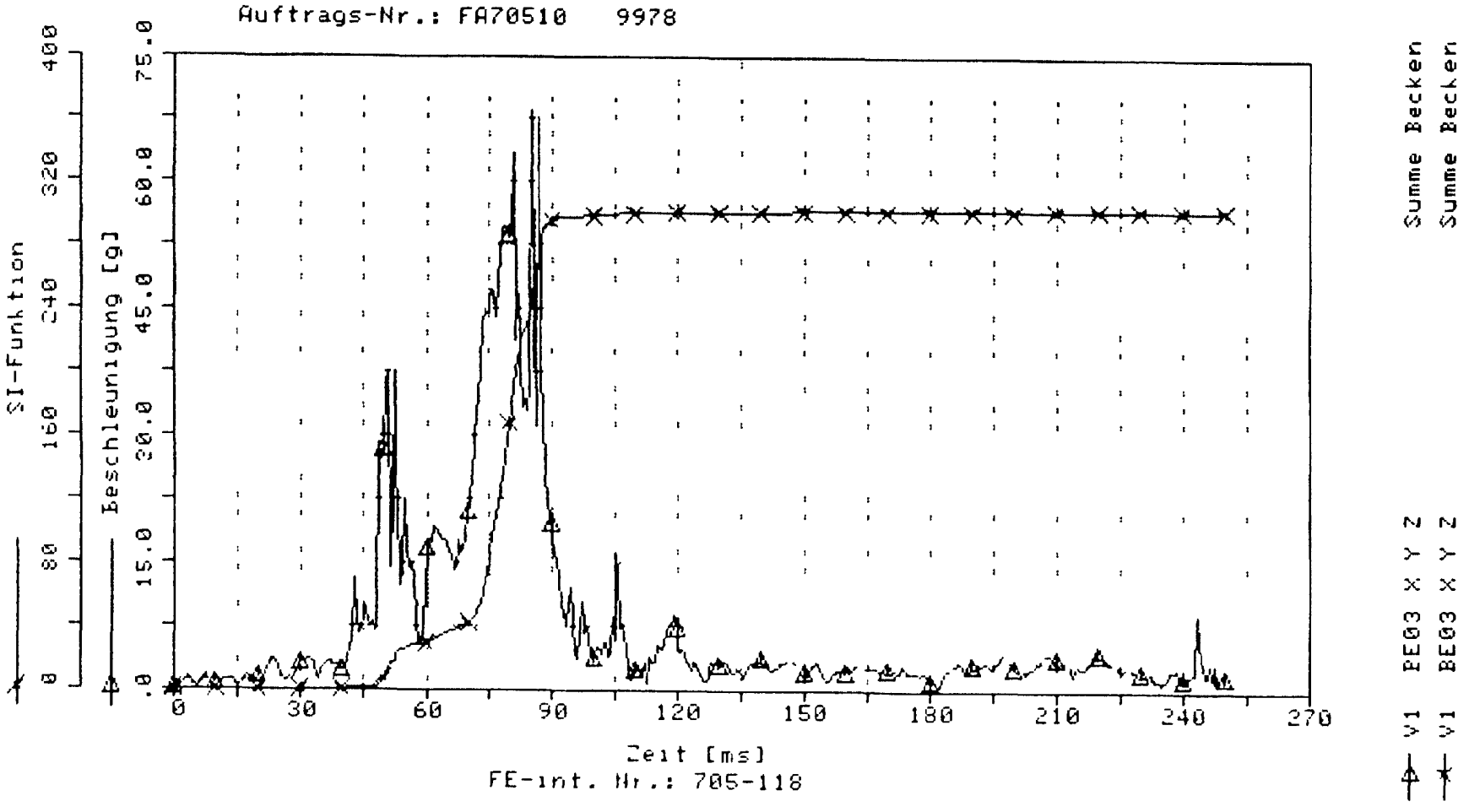
Kenn-Werte  Auftrags-Nr . FA70510  Versuchs-Nr  9978
Fahrg -Nr  RABBIT  FE-int  NR  705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE03Z | Summe Becken | BE g | 17 635 | 50 5 | 10 55 |



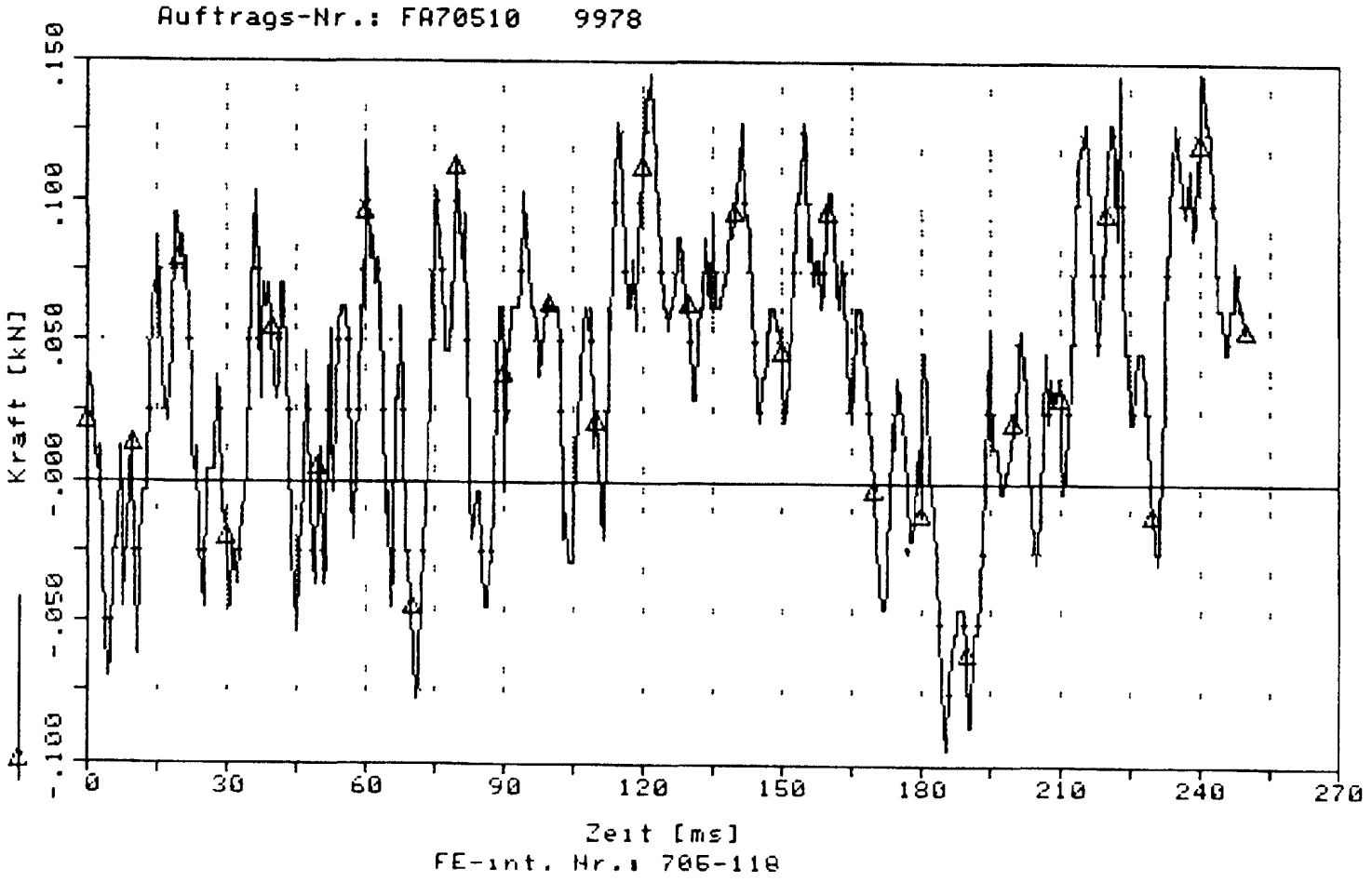
Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | BE03 X Y Z | Summe Becken | BE g | 68 610 | 85 5 | 53 48 |
| V1 | BE03 X Y Z | Summe Becken | SI | 301 617 | 250 0 | 0 00 |

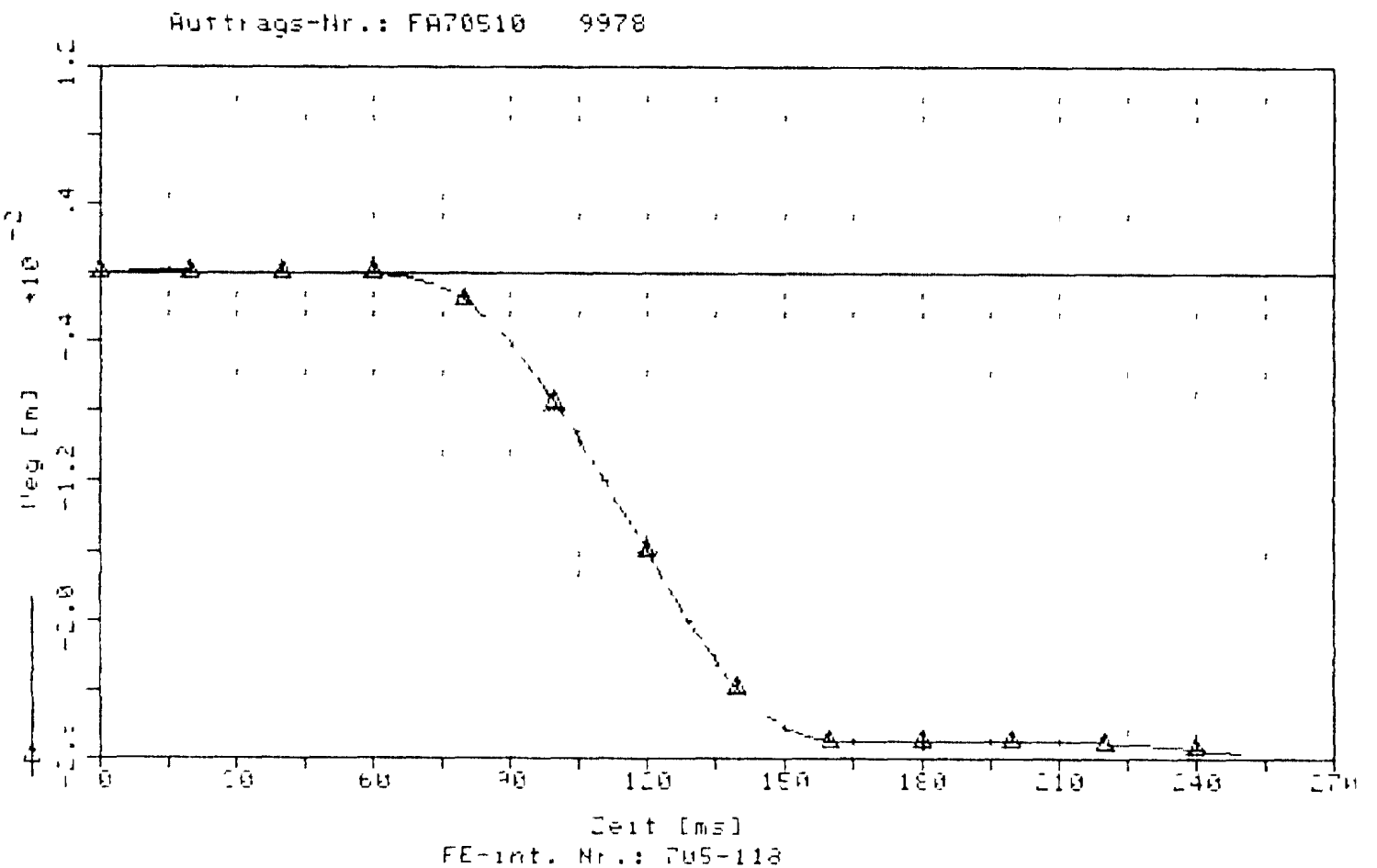


Kenn-Werte Auftrags-Nr FA70510 Versuchs-Nr 9978
Fahrg -Nr FE-int NR 705-118

| UP | Mess-Stelle | | ber Groesse | Extremum | t Extr | 3MS |
|---|---|---|---|---|---|---|
| V1 | GU03BA | Summe Gurt Becken auss | KR kN | 145 | 122 0 | 0 00 |




V1 GU03BA Summe Gurt Becken auss

Kenn Werte  Auftrags Nr  FA70510  Versuchs-Nr  9978
Fahrg  Nr  FE-int  NR  705-118

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| UI | Mess-Stelle | | ber | Extremum | t | 3MS |
| | | | Groesse | | Extr | |
| V1 | WE03Y | Summe Wegpoti Brust | WE m | 028 | 250 0 | 0 00 |