V2712

# REPORT NO. MGA-98-N04

## NEW CAR ASSESSMENT PROGRAM (NCAP)

## FRONTAL BARRIER IMPACT TEST

1998 HONDA ACCORD 4 DOOR
NHTSA NO. MW5300

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: November 11, 1997

Report Date: December 9, 1997

FINAL REPORT

Prepared For:

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
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| 15. Supplementary Notes | | |

16. Abstract

A 56 kph (35 mph) frontal barrier impact using a rigid barrier was conducted on a 1998 Honda Accord 4 Door in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure No. TP-NCAP090196 for the determination of vehicle crashworthiness on November 11, 1997.

The barrier impact velocity was 56.6 kph (35.2 mph), and the ambient temperature at the time of impact was 21.3 °C. The post-test maximum static crush was 541 mm.

The test vehicle appeared to comply with the requirements of the following Federal Motor Vehicle Safety Standards:

1. FMVSS 212, "Windshield Mounting"
2. FMVSS 219 (partial), "Windshield Zone Intrusion"
3. FMVSS 301, "Fuel System Integrity"

With regard to "Occupant Crash Protection" injury criteria, the driver's HIC was 631 and the 3 msec. Clip (Chest g's) was 49 g's. The left and right femur loads for the driver were 2453 and 2532 Newtons, respectively. The passenger's HIC was 596 and the 3 msec Clip was 52.0 g's. The left and right femur maximum loads were 2644 and 1912 Newtons respectively.

| 17. Key Words | 18. Distribution Statement |
|---|---|
| 35 mph Frontal Barrier Impact Test<br>New Car Assessment Program (NCAP)<br>FMVSS 212 Indicant Testing<br>FMVSS 219 (partial) Indicant Testing<br>FMVSS 301 Indicant Testing | Copies of this report are available from: Technical Ref. Division, NHTSA, NASSIF Building, Room 5108 400 Seventh Street, S.W. Washington, D.C. 20590 |

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SECTION 1

PURPOSE AND SUMMARY OF NCAP TEST

This 35 mph frontal barrier impact test is part of the Composite FY'98 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-96-D-12010. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48 kph (30 mph) FMVSS 208/212/219/301-75 requirements.

The 56 kph (35 mph) frontal barrier impact test was conducted in accordance with the National Highway Traffic Safety Administration (NHTSA) Indicant Test Procedure for New Car Assessment Program (NCAP) dated January 1, 1990. Data for FMVSS No. 212, "Windshield Mounting", FMVSS No. 219 (Partial), "Windshield Zone Intrusion", FMVSS No. 301-75, "Fuel System Integrity," as well as occupant performance data are provided herein.

A rigid barrier was impacted by a 1998 Honda Accord 4 Door at a velocity of 56.6 kph (35.2 mph). The test was performed at the MGA Proving Grounds and Crash Test Center on November 11, 1997. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 16 high speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs) were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head and chest primary and redundant triaxial accelerometers, pelvis triaxial accelerometers, a chest displacement transducer, a six axis neck

load cell, right/left femur load cells, right/left lower leg sensors, and right/left feet accelerometers. Seat belt load cells were also on the driver and passenger shoulder and lap belts to measure dummy torso and pelvic section loading. Calibrated ATDs, driver (Serial No. 066), and the right front passenger (Serial No. 065), were used for this test. Certification details, along with instrumentation calibration data, are found in Appendix C and D.

The 111 channels of data were recorded on 10 computers. Appendix B contains the vehicle and dummy response data traces.

The driver's head struck the inflated airbag. The driver HIC was 631 and the maximum chest (CLIP) deceleration over 3 milliseconds was 49 g's. The maximum chest compression was 36 mm. The left and right femur loads were 2453 and 2532 Newtons respectively.

The right front passenger's head struck the inflated airbag. The passenger HIC was 596 and maximum chest (CLIP) deceleration over 3 milliseconds was 52 g's. The maximum chest compression was 36.2 mm. The left and right femur loads were 2644 and 1912 Newtons respectively.

SECTION 2

OCCUPANT AND VEHICLE

INFORMATION/DATA SHEETS

DATA SHEET NO. 1

CRASH TEST SUMMARY

Vehicle Yr/Make/Model/Body Style: 1998/Honda/Accord/4 Door

NHTSA No.: MW5300 VIN.: 1HGCG5641WA029365

Vehicle Test Weight: 1594.9 kgs.

Impact Velocity: 56.6 kph Maximum Static Crush: 541 mm

Vehicle Rebound: 482 mm

| DUMMIES: | DRIVER | PASSENGER |
|---|---|---|
| Serial Number: | 066 | 065 |
| Restraint System: | Type II belt and front airbag | Type II belt and front airbag |
| No. Data Channels: | 36 | 36 |

Number of Cameras: 1 Real Time

16 High Speed

Door Opening Data: Opened LF Opened RF Opened LR Opened RR
(without use of tools)

| FRONT SEAT(S) DATA | DRIVER | FRONT PASSENGER |
|---|---|---|
| Seat Shift: | 3 mm forward; | 0 mm rearward |
| Seat Back Movement: | 0 | 0 |

VISIBLE DUMMY CONTACT POINTS:

| | DRIVER | PASSENGER |
|---|---|---|
| Head | to airbag | to airbag |
| Chest | to airbag | to airbag |
| Left Knee | to column & dash | to bolster & bottom of dash |
| Right Knee | to column & dash | to bolster & bottom of dash |

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

Vehicle Yr/Make/Model/Body Style: 1998/Honda/Accord/4 Door

NHTSA No.: MW5300 VIN.: 1HGCG5641WA029365

Body color: Green Date of Manufacture: 10/97

Engine: 4 Cylinders; ___ C.I.D.; 2.3 Liters;

X Gas; ___ Diesel; ___Turbocharged

___ Longitudinal; X Transverse

Transmission: 4 Speed; ___ Manual; X Automatic; ___ Overdrive

Final Drive: X Front Wheel; ___ Rear Wheel; ___ Four Wheel

Odometer Reading: 118 miles

Major Option:

X A/C; X P/S; X P/B; X P/wdo;

X P/locks; X Tilt Wheel; X Cruise Control; X ABS

Other: _____

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 206 kPa (30 Psi) Rear 206 kPa (30 Psi)

Recommended Tire Size: P195/65/R15

Recommended Cold Tire Pressure: Front 206 kPa (30 Psi) Rear 206 kPa (30 Psi)

Tires on Vehicle: P195/65R15 Manufacturer: Michlen

Number of Occupants: 2 Front; 3 Rear; 0 3rd Seat; 5 TOTAL

Type of Front Seats: X Bucket; ___ Bench; ___Split Bench

Type of Front Seat Back: ___Fixed; X Adj. With; ___ Power; X Lever

Vehicle Capacity Weight (VCW) = 385.6 kg. (A)

No. of Occupants x 68.0 kg. = 340.0 kg. (B)

Rated Cargo Weight (RCW) A-B = 45.6 kg.

GVWR 1809.9 kg. GAWR: Front 979.8 kg.; Rear 859.6 kg.

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

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

Right Front = 420.0 kg Right Rear = 279.0 kg

Left Front = 431.9 kg Left Rear = 265.3 kg

TOTAL FRONT WEIGHT = 851.9 kg ( 61.0 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 544.3 kg ( 39.0 % of Total Vehicle Weight)

TOTAL UNLOADED DELIVERED WEIGHT (UDW) = 1396.2 kg

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight 1396.2 kg

VCW = Vehicle Capacity Weight 385.6 kg

DSC = Designated Seating Capacity 340.2 RCW = VCW - 68 (DSC) = 45.6 kg*

Target Test Weight = UDW + RCW + (2 dummies x 78.0 kg/dummy)

Target Test Weight = 1597.8 kg

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND CARGO:

Right Front = 459.0 kg Right Rear = 328.0 kg

Left Front = 475.4 kg Left Rear = 332.5 kg

TOTAL FRONT WEIGHT = 934.4 kg ( 58.6 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 660.5 kg ( 41.4 % of Total Vehicle Weight)

TOTAL TEST WEIGHT = 1594.9 kg

Weight of ballast secured in vehicle trunk area = 0 kg

Vehicle components removed to meet target weight: Bumper and cover, muffler, all rear lights, spare tire jack, trunk interior, rear seat, rear door panels, both side mirrors

VEHICLE ATTITUDE (all dimensions in mm):

| | | | | |
|---|---|---|---|---|
| Delivered Attitude: | RF 704 | LF 698 | RR 693 | LR 699 |
| Test Attitude: | RF 684 | LF 675 | RR 666 | LR 664 |
| Post Test | RF 689 | LF 738 | RR 646 | LR 667 |

Wheel Base: 2720 mm; C.G. = 1126.4 mm rearward of front wheel C/L

Remarks: None

* light trucks and MPVs RCW is 136 kgs or manufacturer's value, whichever is less

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

Location of Vehicle's C.G. = _____ (if required)

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 64.8 liters

Usable Capacity Figure Furnished by COTR = 64.7 liters

Test Volume Range (92 to 94% of Usable Capacity) = 59.5 to 60.6 liters

ACTUAL TEST VOLUME = 60.2 liters

Test Fluid Type: Stoddard Solvent ; Spec. Grav. = 0.77

Kinematic Viscosity = 1.788 centistrokes; Color = Purple

Type of Fuel Pump; Electric X ; Mechanical _____

Does Electric Pump operate with ignition switch "ON" & engine "Off"?

Yes _____ No X

DATA SHEET NO. 3

POST-IMPACT DATA

Vehicle Yr/Make/Model/Body Style: 1998/Honda/Accord/4 Door

NHTSA No.: MW5300 VIN.: 1HCG5641WA029365

Type of Test: 35 mph Frontal Impact Impact Angle: 0°

Date of Test: November 11, 1997 Time of Test: 3:17 p.m.

Ambient Temperature: 21.3 °C (70°F) (Spec. Range = 18.8 to 25.6°C)

Temperature in Occupant Compartment: 21.3° C

Windshield Molding Temperature: 21.3° C

Required Impact Velocity Range: 55.5 to 57.1 kph

Impact Velocity: primary = 56.6 kph; secondary = 56.9 kph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 1304.8 mm

Exiting Speed Trap: 304.8 mm

VEHICLE REBOUND AND CRUSH ( mm ):

| | | | | |
|---|---|---|---|---|
| Vehicle Length: | Pre-test | = Right 4388 | C/L 4603 | Left 4386 |
| | Post-test | = Right 4014 | C/L 4063 | Left 3985 |
| | Crush | = Right 401 | C/L 540 | Left 401 |

Distance from front of test vehicle to point of impact (rebound):

R 547 mm $C_L$ 482 mm L 551 mm

Average = 527 mm

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

| | Front | | Rear | |
|---|---|---|---|---|
| Post-Test Door Opening | Left | Right | Left | Right |
| (without use of tools) | Yes | Yes | Yes | Yes |

| | Front | | Rear | |
|---|---|---|---|---|
| Seat Movement | Left | Right | Left | Right |
| Seat Back Movement | 0 | 0 | 0 | 0 |
| Seat Shift (mm) | 3 mm forward | | 0 mm forward | |

Glazing Damage

Backlight/Windshield None

Other Notable Impact Effects:

SECTION 3

SUMMARY OF RESULTS FOR-------

FMVSS 212, "Windshield Mounting"

FMVSS 219 (Partial), "Windshield Zone Intrusion"

FMVSS 301-75, "Fuel System Integrity"

DATA SHEET 5

FMVSS NO. 212, "WINDSHIELD MOUNTING", DATA SHEET

Details of windshield mounting such as retention method, trim type, etc.:

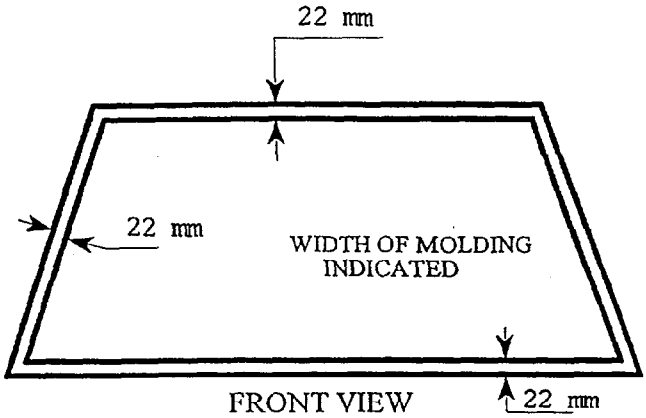
Windshield set in rubber molding with glue

FMVSS 212 Requirements: The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

| | WINDSHIELD PERIPHERY | | |
|---|---|---|---|
| | PRE-TEST (mm) | POST-TEST (mm) | PERCENT RETENTION |
| RIGHT SIDE | 2184 | 2184 | 100% |
| LEFT SIDE | 2184 | 2184 | 100% |
| TOTAL | 4368 | 4368 | 100% |

AREA OF RETENTION FAILURE: None



FRONT VIEW

FAILURE DETAILS: None

DATA SHEET 6

FMVSS NO. 219, "WINDSHIELD ZONE INTRUSION", DATA SHEET

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the surface of the instrument panel, including padding, and drawing the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contact points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and ½" distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

FMVSS 219 TEST DATA:

A= 1150 mm

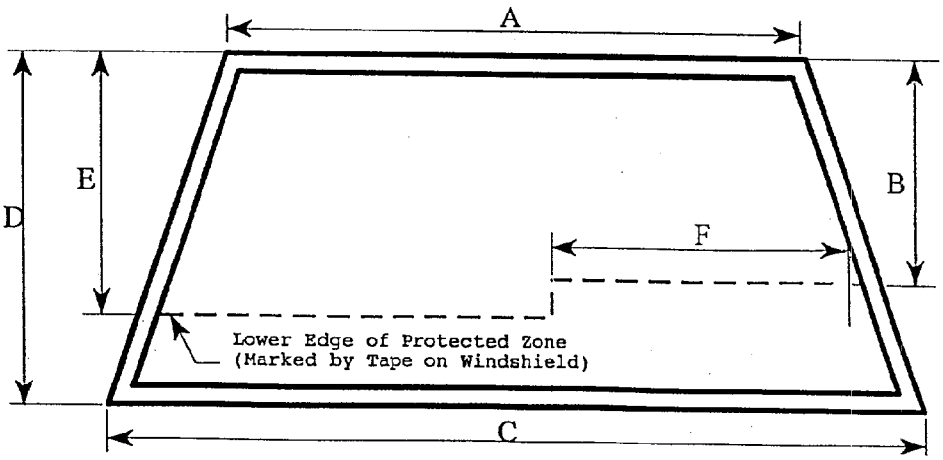
B= 572 mm

C= 1550 mm

D= 834 mm

E= 542 mm

F= 586 mm




FRONT VIEW

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":

(Show location of penetration)

NONE

DATA SHEET 7

FMVSS NO. 301-75, FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

FMVSS NO. 301

TEST VEHICLE NHTSA NO.: MW5300 Test Date: November 11, 1997

Vehicle Mfgr./Make/Model: 1998/Honda/Accord 4 Door Sedan

Usable Capacity of Vehicle's Fuel Tank: 64.8 Liters
(figure furnished by vehicle manufacturer)

TEST REQUIREMENTS:

Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

AMOUNT OF STODDARD SOLVENT ADDED TO VEHICLE'S FUEL TANK:

60.2 Liters which is 93.3 % of the stated USABLE CAPACITY.

TEST VEHICLE IMPACT TYPE: X Frontal (35 mph)

___ Oblique (30 mph) with __° barrier face first contacting (driver/passenger) side

___ Rear Moving Barrier (30 mph)

___ Side Impact MDB (33.2 mph)

FUEL SPILLAGE MEASUREMENT:

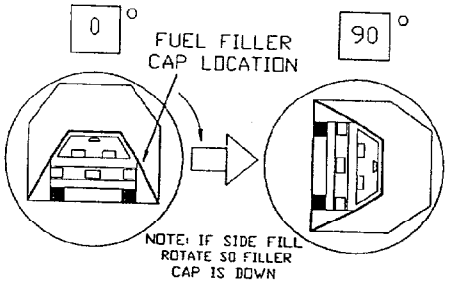
| | ACTUAL | MAX ALLOWED |
|---|---|---|
| 1. From impact until vehicle motion ceases | 0 | 1 OZ |
| 2. For 5 minute period after vehicle motion ceases | 0 | 5 OZ |
| 3. For next 25 minutes | 0 | 1 oz./1 MIN |

SOLVENT SPILLAGE DETAILS: None

DATA SHEET 8

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 0° - 90° Vehicle NHTSA ID No.: MW5300




I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 47 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 47 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

| First 5 min FROM onset of rotation | 6th min. | 7th min. | 8th min. if reqd. |
|---|---|---|---|

(2) Maximum Allowable Solvent Spillage

| 5 ounces | 1 ounce | 1 ounce | 1 ounce |
|---|---|---|---|

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

| 0 | 0 | 0 | 0 |
|---|---|---|---|

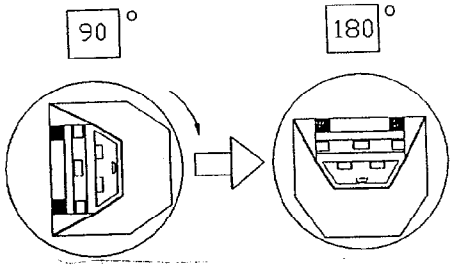
Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

DATA SHEET 8

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (Cont'd)

TEST PHASE: 90° - 180° Vehicle NHTSA ID No.: MW5300




I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 32 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 32 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

| First 5 min FROM onset of rotation | 6th min. | 7th min. | 8th min. if reqd. |
|---|---|---|---|

(2) Maximum Allowable Solvent Spillage

| 5 ounces | 1 ounce | 1 ounce | 1 ounce |
|---|---|---|---|

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

| 0 | 0 | 0 | 0 |
|---|---|---|---|

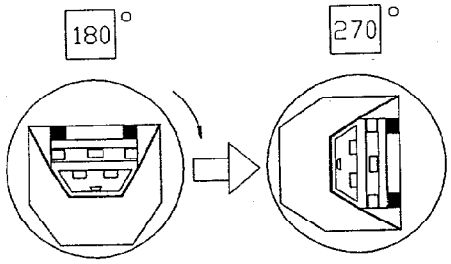
Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

DATA SHEET 8

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (Cont'd)

TEST PHASE: 180° - 270° Vehicle NHTSA ID No.: MW5300




I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 38 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 38 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

| First 5 min FROM onset of rotation | 6th min. | 7th min. | 8th min. if reqd. |
|---|---|---|---|

(2) Maximum Allowable Solvent Spillage

| 5 ounces | 1 ounce | 1 ounce | 1 ounce |
|---|---|---|---|

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

| 0 | 0 | 0 | 0 |
|---|---|---|---|

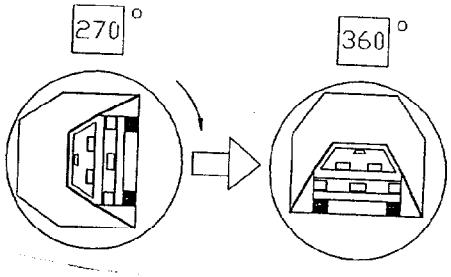
Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

DATA SHEET 8

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (Cont'd)

TEST PHASE: 270° - 360° Vehicle NHTSA ID No.: MW5300




I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 42 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 42 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

| First 5 min FROM onset of rotation | 6th min. | 7th min. | 8th min. if reqd. |
|---|---|---|---|

(2) Maximum Allowable Solvent Spillage

| 5 ounces | 1 ounce | 1 ounce | 1 ounce |
|---|---|---|---|

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

| 0 | 0 | 0 | 0 |
|---|---|---|---|

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

SECTION 4

OMI FINAL DATA

Occupant and Vehicle Information

I. OMI DATA

1. Dummy Injury Criteria Data Summary
2. Dummy Positioning Data
3. Seat Belt Positioning Data
4. Seat Belt Performance Assessment Data
5. Camera Locations
6. Vehicle Target Locations

II. OVR DATA

1. Vehicle Accelerometer Data
2. Post-Test Airbag Data
3. Test Vehicle Measurements

III. AID DATA

1. Accident Investigation Damage Data Summary

DATA SHEET 9

DUMMY INJURY CRITERIA VALUES DATA SHEET

VEH. YR./MAKE/MODEL/BODY STYLE: 1998/Honda/Accord/4 Door

VEH. NHTSA NO.: MW5300 TEST DATE: November 11, 1997

| **ACCELERATION VALUES: (g's)** | DRIVER #066 | | PASSENGER # 065 | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| Head Channel X | -67.4 @ 72 msec. | 2.9 @ 172 msec. | -53.8 @ 82 msec. | 2.3 @ 191 msec |
| Head Channel Y | -3.9 @ 49 msec. | 2.9 @ 54 msec. | -24.5 @ 83 msec. | 3.0 @ 29 msec. |
| Head Channel Z | -22.7 @ 60 msec. | 2.7 @ 21 msec. | -22.4 @ 68 msec. | 1.4 @ 14 msec. |
| HEAD RESULTANT | 68.3 @ 72 msec. | | 59.3 @ 81 msec. | |
| Chest Channel X | -49.8 @ 65 msec. | 2.2 @ 197 msec. | -53.9 @ 75 msec. | 3.8 @ 141 msec. |
| Chest Channel Y | -4.1 @ 110 msec. | 4.8 @ 46 msec. | -9.9 @ 72 msec. | 3.9 @ 94 msec. |
| Chest Channel Z | -6.1 @ 107 msec. | 15.9 @ 84 msec. | -7.4 @ 57 msec. | 13.4 @ 79 msec. |
| CLIP | 48.9 | | 52.0 | |
| TIME INTERVAL (msec) [3. msec. minimum] | $t_1$ = 62.8<br>$t_2$ = 65.9 | | $t_1$ = 73.4<br>$t_2$ = 76.4 | |

**HEAD INJURY CRITERIA (HIC) VALUES:**

| | | | | |
|---|---|---|---|---|
| HIC | 631.1 | | 596.1 | |
| $t_1$ = (msec) | 54.1 | | 58.9 | |
| $t_2$ = (msec) | 86.9 | | 94.9 | |
| Avg. Accel. $t_1$ to $t_2$ (g's) | 156.2 | | 142.2 | |

[The maximum time interval from $t_1$ to $t_2$ is 36 milliseconds.]

**COMPRESSIVE FEMUR FORCES:**

| | | | | |
|---|---|---|---|---|
| Left Side (N) | -2453 @ 57 msec. | 450 @ 86 msec. | 2644 @ 60 msec. | 716 @ 94 msec. |
| Right Side (N) | -2532 @ 55 msec. | 545 @ 97 msec. | -1912 @ 59 msec. | 267 @ 123 msec |

**SEAT BELT FORCES:**

| | | |
|---|---|---|
| Lap Belt (N) | 4409 @ 58 msec. | 4887 @ 58 msec. |
| Shoulder Belt (N) | 6865 @ 64 msec. | 8278 @ 71 msec. |

DATA SHEET 9

DUMMY INJURY CRITERIA VALUES DATA SHEET (Cont'd)

HYBRID III NECK, CHEST AND PELVIS DATA SHEET

| | DRIVER DUMMY #066 | | PASSENGER DUMMY #065 | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| Neck Load X (N) | -357.8 @ 100 msec. | 442.2 @ 73 msec. | -551.9 @ 59 msec. | 79.4 @ 192 msec. |
| Neck Load Y (N) | -178.1 @ 144 msec. | 146.9 @ 43 msec. | -288.1 @ 87 msec. | 87.5 @ 136 msec. |
| Neck Load Z (N) | -1819.8 @ 61 msec. | 106.3 @ 21 msec. | -1403.5 @ 59 msec. | 225.0 @ 25 msec. |
| Neck Moment X (NM) | -11.3 @ 77 msec. | 9.52 @ 54 msec. | -14.4 @ 84 msec. | 14.1 @ 109 msec. |
| Neck Moment Y (NM) | -38.1 @ 64 msec. | 11.9 @ 46 msec. | -39.6 @ 104 msec. | 39.1 @ 60 msec. |
| Neck Moment Z (NM) | -6.25 @ 76 msec. | 5.5 @ 43 msec. | -6.0 @ 154 msec. | 21.5 @ 89 msec. |
| Chest Deflection X (mm) | -35.5 @ 70 msec. | | -36.9 @ 82 msec. | |
| Pelvis X Acceleration (g's) | -50.4 @ 56 msec. | 7.2 @ 193 msec. | -54.1 @ 59 msec. | 6.7 @ 191 msec. |
| Pelvis Y Acceleration (g's) | -6.6 @ 55 msec. | 5.6 @ 38 msec. | -9.2 @ 57 msec. | 7.1 @ 85 msec. |
| Pelvis Z Acceleration (g's) | -31.2 @ 74 msec. | 5.1 @ 190 msec. | -28.2 @ 77 msec. | 4.9 @ 195 msec. |
| Pelvis Resultant (g's) | 53.9 @ 56 msec. | | 56.9 @ 59 msec. | |

DATA SHEET 10

DUMMY POSITIONING IN VEHICLE

Vehicle NHTSA No.: MW5300 Vehicle: 1998/Honda/Accord/4 Door

| SEAT TYPE: | ADJUSTER TYPE: | | BUCKET SEAT BACK TYPE: |
|---|---|---|---|
| ____Bench | Driver: | _X_ Manual | ____Fixed |
| _X_Bucket | | ____ Power | _X_Adjustable Reclining |
| ____Split Bench | | | |
| | Passenger: | _X_ Manual | ____Fixed |
| | | ____ Power | _X_Adjustable Reclining |

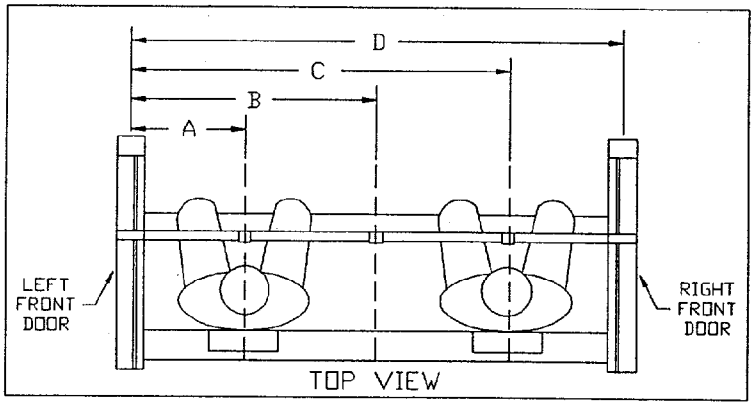
DRIVER SEAT POSITION
13th detent out of 25 detents

Seat back angle 22°

PASSENGER SEAT POSITION
13th detent of 25 detents

Seat back angle 23.5°

Steering column set to mid position. Steering column angle 26°




066 DUMMY ID 065

A = Left Door to Driver Centerline 398 mm

B = Left Door to Center Passenger Centerline 772 mm

C = Left Door to Right Passenger Centerline 1133 mm

D = Left Door to Right Door 1544 mm

DATA SHEET 10

DUMMY POSITIONING IN VEHICLE (Cont'd)

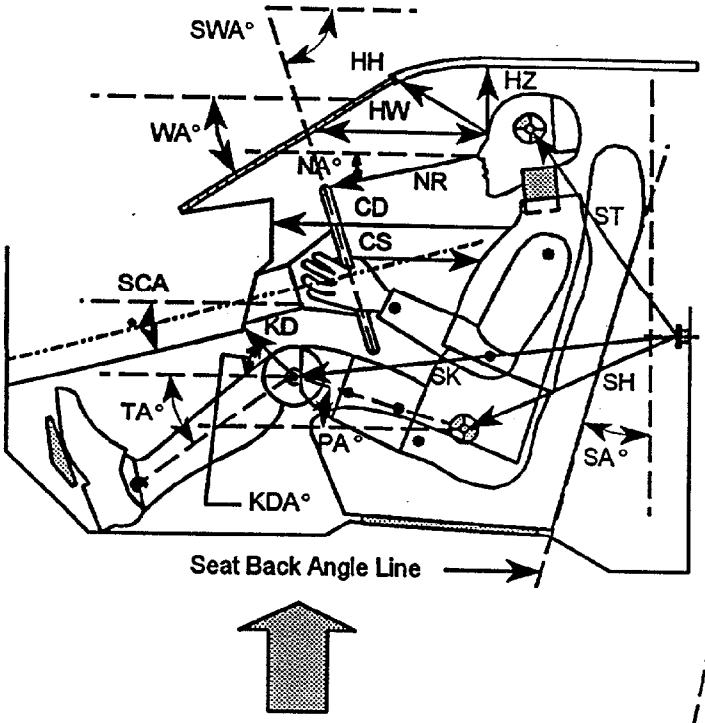
Units (mm)

| | DRIVER (Serial #066) | PASSENGER (Serial #065) |
|---|---|---|
| WA° | 27.9° | |
| SWA° | 26° | N/A |
| SCA° | 26° | N/A |
| SA° | 22° | 23.5° |
| HZ | 159 | 167 |
| HH | 300 | 298 |
| HW | 565 | 557 |
| HR | 230 | 240 |
| NR | 395 Angle 15.8° | N/A |
| CD | 522 | 588 |
| CS | 315 | N/A |
| RA | 170 | N/A |
| KDL | 140 Angle (KDA) 32.8° | 108 |
| KDR | 134 | 144 Angle 32° |
| PA° | 22.3° | 22.9° |
| TA° | 44.2° | 37.3° |
| KK | 340 | 298 |
| ST* | 532 Angle 8.7° | 547 Angle 12.8° |
| SK* | 585 Angle 0.0° | 589 Angle 5.0° |
| SH* | 270 Angle 120.0° | 250 Angle 37.6° |
| SHY | 248 | 248 |
| HS | 290 | 300 |
| HD | 120 | 130 |
| AD | 120 | 118 |

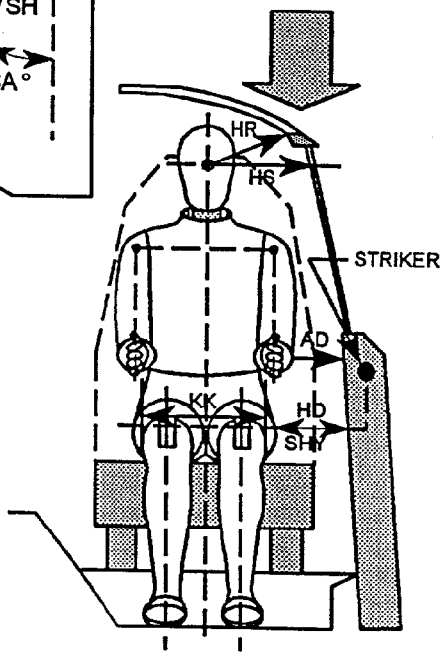
N/A = Not Applicable

* Angles measured from vertical

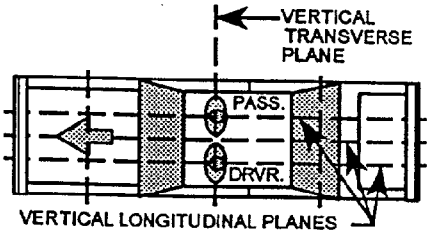
FRONT SEAT MEASUREMENTS




AD - Arm to Door
HD - H-Point to Door
HR - Head to Side Header
HS - Head to Side Window
KK - Knee to Knee
SHY- Striker to H-Point (Y Direction)

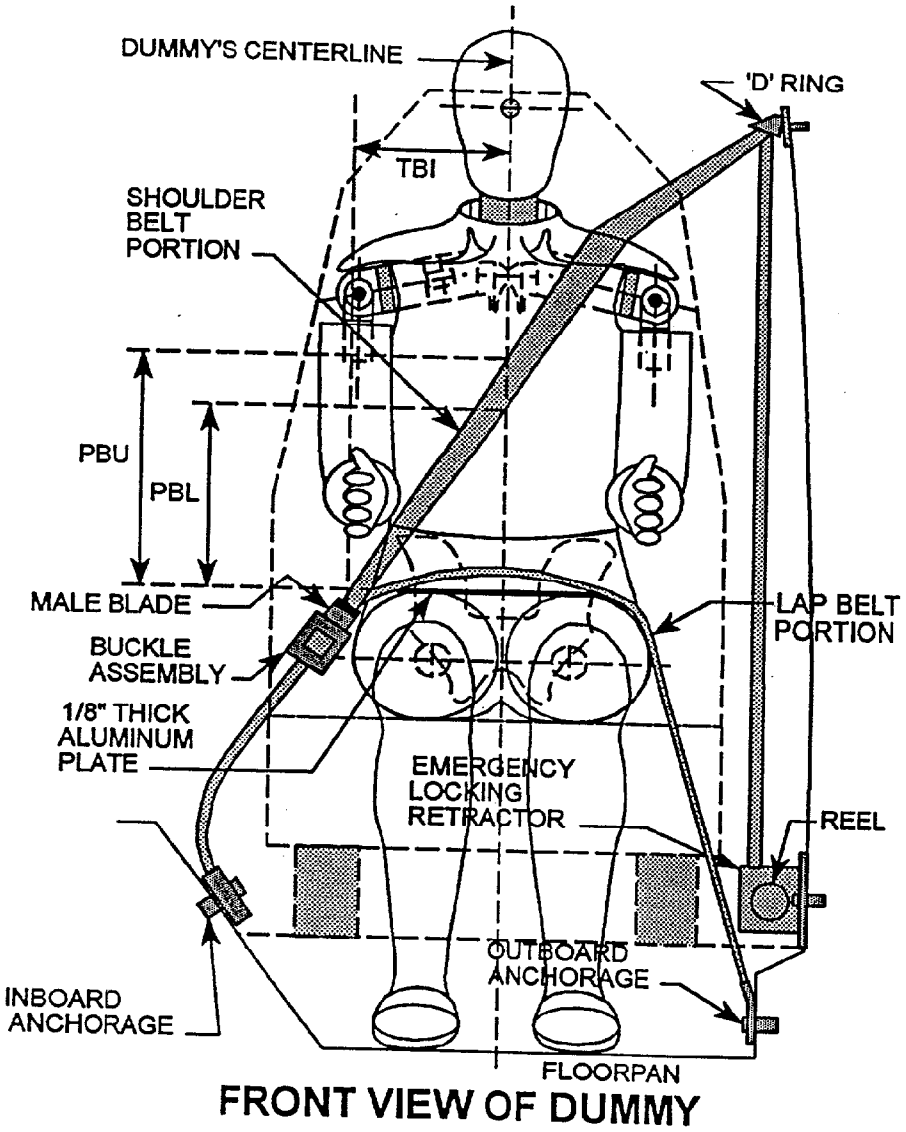



CD - Chest to Dash
CS - Steering Wheel to Chest
HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
KDA- Knee to Dash Angle
KDL- Left Knee to Dash
KDR - Right Knee to Dash
NA - Nose to Rim Angle
NR - Nose to Rim
PA - Pelvic Angle
RA - Rim to Abdomen
SA - Seat Back Angle
SCA- Steering Column Angle
SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
SWA- Steering Wheel Angle
TA - Tibial Angle
WA - Windshield Angle



DATA SHEET 11

SEAT BELT POSITIONING DATA




(illustration)

Dimension = mm

| | DRIVER DUMMY | PASSENGER DUMMY |
|---|---|---|
| PBU -- Top surface of alum. plate to upper edge | 324 | 334 |
| PBL -- Top surface of alum. plate to belt lower edge | 250 | 257 |

DATA SHEET 12

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

| BELT LENGTH DATA: | Driver | Passenger |
|---|---|---|
| Length from trim above retractor reel to "D" ring as measured on dummy. | 175 mm | 182 mm |
| Shoulder belt length as measured on Part 572 Dummy. | 842 mm | 895 mm |
| Lap belt length as measured on Part 572 Dummy. | 850 mm | 860 mm |
| **SHOULDER BELT SPOOL-OFF DATA:** | | |
| As determined by film analysis | 508 mm | 38.1 mm at shoulder |
| As determined mechanically | 43 mm | 47 mm at retractor |
| **BELT STRETCH DATA:** | | |
| Measured electronically between shoulder belt load cell and the "D" ring. | NR | NR |
| Measured mechanically | NR | NR |
| **RETRACTOR LOCK-UP TIME:** | | |
| As determined by shoulder belt spool-off observed in on-board cameras | 59.9 msec. | 55.6 msec. |

NR = Not Recorded

DATA SHEET 13

CAMERA LOCATIONS

Veh. NHTSA NO.: MW5300 ; Test Date: November 11, 1997

Veh. Year/Make/Model/Body Style: 1998/Honda/Accord/4 Door

| CAMERA POSITION NO. | VIEW | CAMERA POSITIONS (mm.)* | | | ANGLE (deg) | FILM PLANE TO HEAD TARGET (mm) | LENS (mm) | SPEED (fps) |
|---|---|---|---|---|---|---|---|---|
| | | X | Y | Z | | | | |
| 1 | Real-Time Left Side View | - | - | - | - | - | | |
| 2 | Left Front View | -1060 | -7710 | 1510 | 90 | 7270 | 25 | 948 |
| 3 | Steering Column Top | -2050 | -7620 | 1560 | 90 | 7180 | 25 | 1000 |
| 4 | Steering Column Bottom | -2040 | -7610 | 1030 | 90 | 7170 | 25 | 1183 |
| 5 | Driver Close-up | -1460 | -1015 | 1410 | 90 | 9710 | 75 | 1053 |
| 6 | Driver Angle | -4540 | -5000 | 2040 | | | 50 | 1000 |
| 7 | Onboard Driver | | | | | | | 1010 |
| 8 | Onboard Passenger | | | | | | | 870 |
| 9 | Right Overall | -2830 | 8700 | 1430 | 90 | 8270 | 13 | 948 |
| 10 | Right Passenger Half | -940 | 7930 | 1350 | 90 | 7500 | 25 | 930 |
| 11 | Right Close-up | -1820 | 10350 | 1380 | 90 | 9920 | 75 | 1075 |
| 12 | Right Angle | -5250 | 5520 | 1950 | | | 50 | 1143 |
| 13 | Top Overall | 380 | 0 | 2750 | | | 13 | 1047 |
| 14 | Top Driver | -100 | -445 | 1770 | | | 13 | 1000 |
| 15 | Top Passenger | -100 | 465 | 1760 | | | 13 | 840 |
| 16 | Pit Front | -1230 | 0 | -3165 | | | 13 | 1015 |
| 17 | Pit Rear | -3250 | 0 | -3175 | | | 13 | 928 |

* COORDINATES:

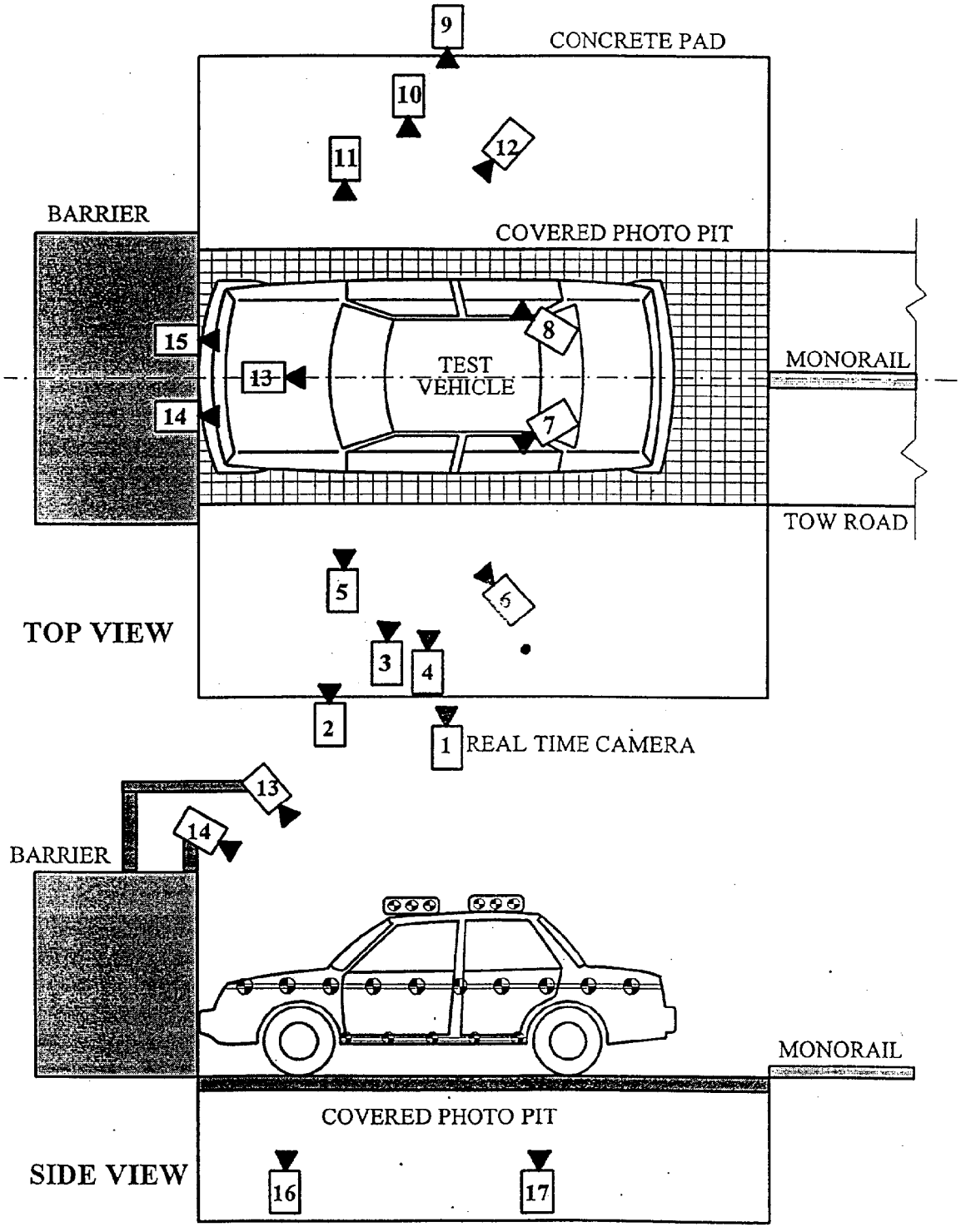
+X = film plane rearward of barrier

+Y = film plane to left of monorail centerline

+Z = film plane to above ground level

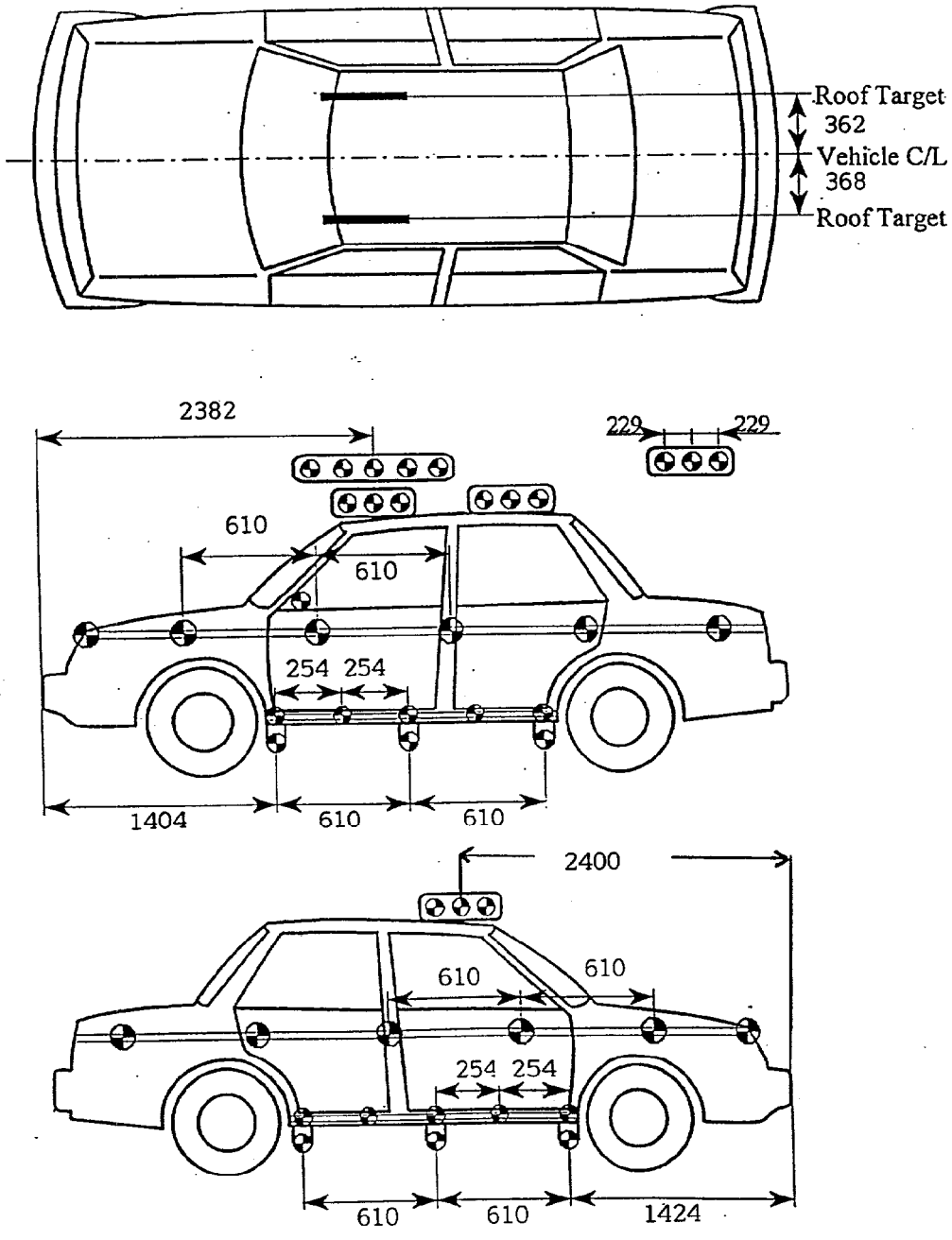
ORIGIN: For X and Y it is the Impact Point. For Z it is the Floor.

CAMERA LOCATIONS (Cont'd)



DATA SHEET 14

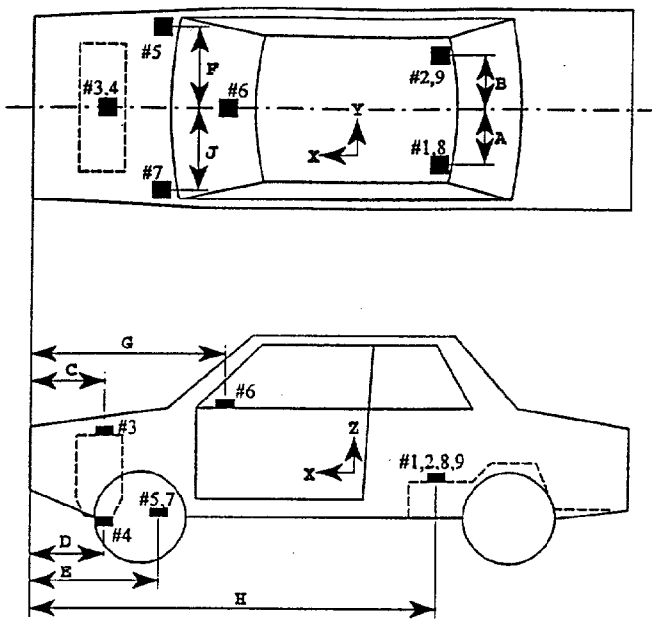
VEHICLE TARGET LOCATIONS




**(DIMENSIONS IN MM)**

DATA SHEET 15

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY




Units: (mm)

| Dimension | Length |
|---|---|
| A | 625 |
| B | 625 |
| C | 3751 |
| D | 3655 |
| E | 3723 |
| F | 695 |
| G | 3064 |
| H | 1698 |
| J | 695 |

| ACCEL. NO. | ACCELEROMETER | DIRECTION |
|---|---|---|
| 1 and 8 | Left Rear Seat Crossmember | X |
| 2 and 9 | Right Rear Seat Crossmember | X |
| 3 | Top of Engine | X |
| 4 | Bottom of Engine | X |
| 5 | Right Side Brake Caliper | X |
| 6 | Instrument Panel | X |
| 7 | Left Side Brake Caliper | X |

DATA SHEET 16

POST TEST AIRBAG DATA

A. Number of Vent Holes: Driver 2 ; Passenger 2

B. Size of Vent Holes: Driver 33 mm dia;. Passenger 55 mm dia;

C. Total Vent Area; Driver 17.2 $cm^2$ Passenger 47.6 $cm^2$

D. Deflated Airbag Length and Width Dimensions or, if Round, Diameter

Driver; Length____mm, Width____mm, Diameter 650 mm

Passenger; Length 700 mm, Width 730 mm, Diameter ____ mm

E. Is the Airbag Tethered?

Driver; X Yes; __ No; If yes, record length of tether 250 mm

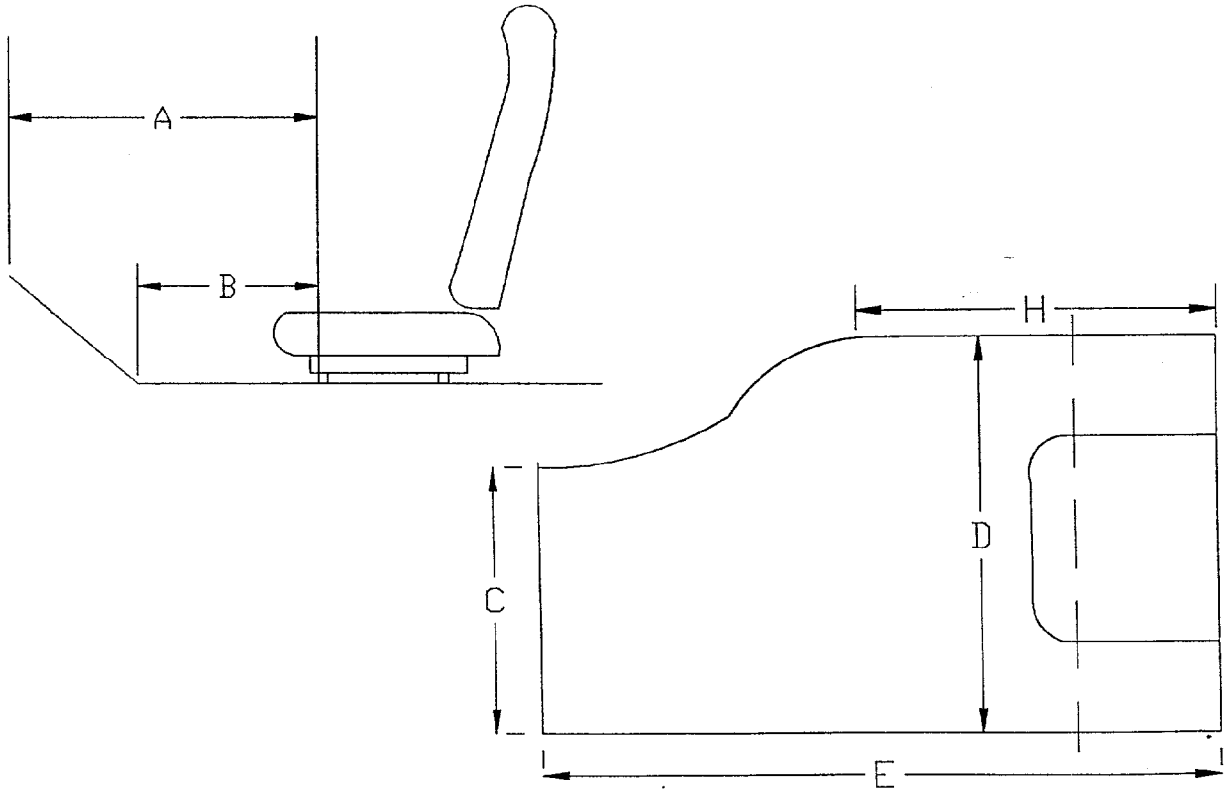
Passenger; __ Yes; X No, If yes, record length of tether____ mm

DATA SHEET 17

TEST VEHICLE MEASUREMENTS

STATIC FOOTWELL DEFORMATION

Driver's Side




Units = mm

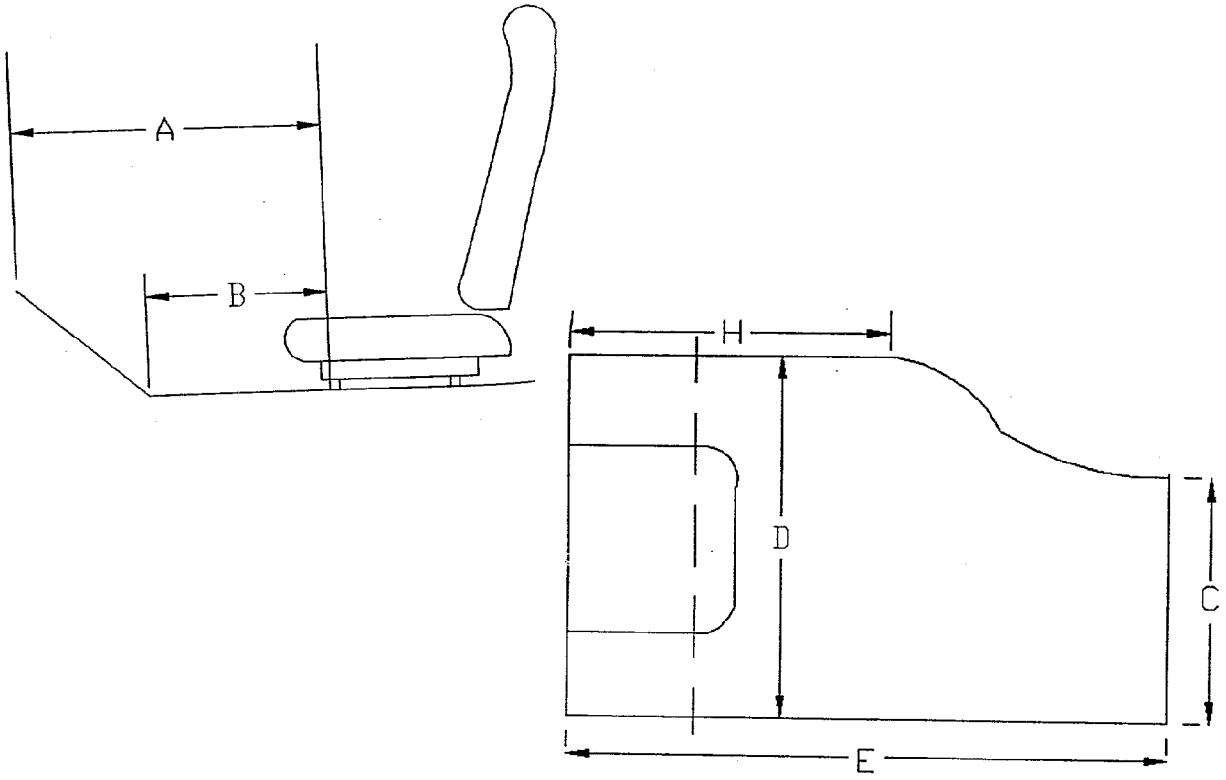
| MEASUREMENT | PRE TEST | POST TEST | DIFFERENCE |
|---|---|---|---|
| A | 800 | 664 | 136 |
| B | 549 | 331 | 218 |
| C | 439 | 430 | 9 |
| D | 464 | 470 | -6 |
| E | 1380 | 1377 | 3 |
| H | 1133 | 1128 | 5 |

DATA SHEET 17

TEST VEHICLE MEASUREMENTS (Cont'd)

STATIC FOOTWELL DEFORMATION

Passenger's Side



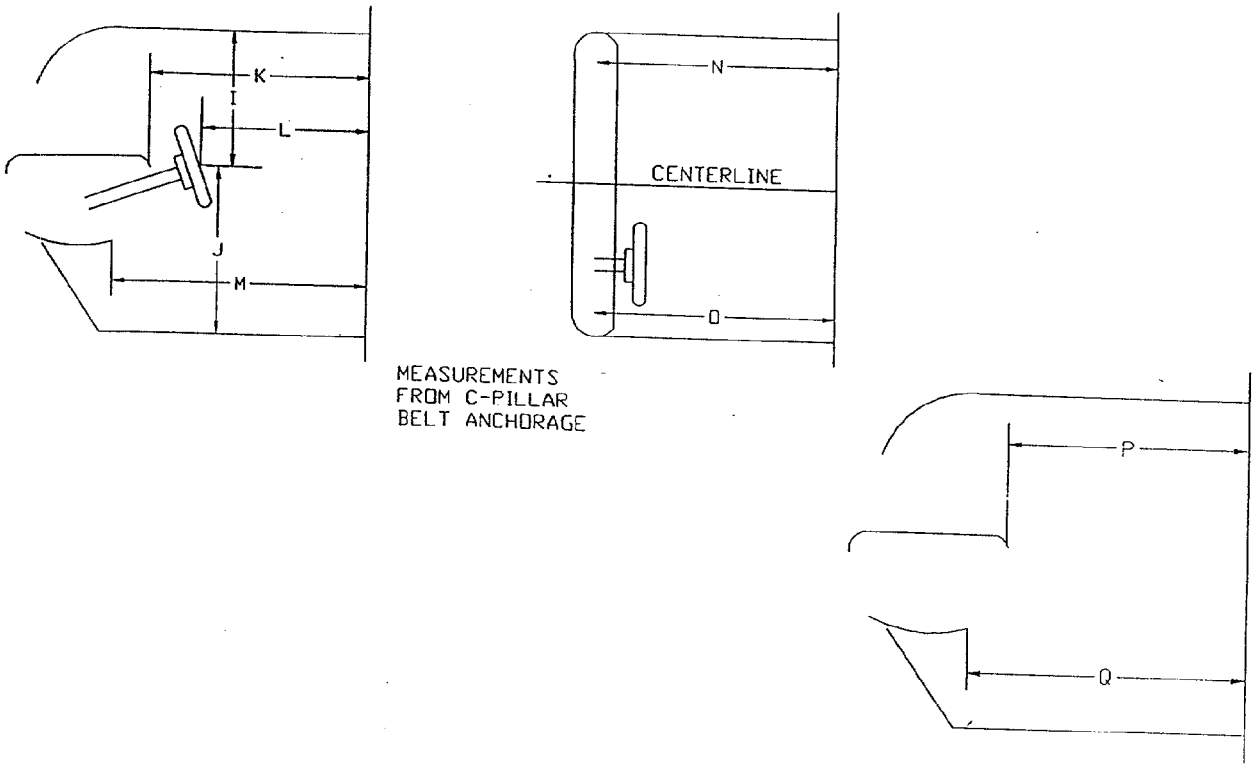

Units = mm

| MEASUREMENT | PRE TEST | POST TEST | DIFFERENCE |
|---|---|---|---|
| A | 772 | 680 | 92 |
| B | 558 | 558 | 0 |
| C | 415 | 416 | -1 |
| D | 464 | 468 | -4 |
| E | 1389 | 1400 | -11 |
| H | 1115 | 1139 | -24 |

DATA SHEET 17

TEST VEHICLE MEASUREMENTS (Cont'd)

STATIC PASSENGER COMPARTMENT INTRUSION



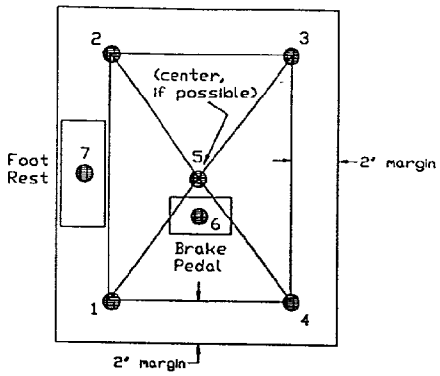

Units = mm

| MEASUREMENT | PRE TEST | POST TEST | DIFFERENCE |
|---|---|---|---|
| I | 497 | 466 | 31 |
| J | 610 | 663 | -53 |
| K | 1150 | 1122 | 28 |
| L | 910 | 905 | 5 |
| M | 1302 | 1298 | 4 |
| N | 1500 | 1518 | -18 |
| O | 1520 | 1513 | 7 |
| P | 1197 | 1222 | -25 |
| Q | 1153 | 1169 | -16 |

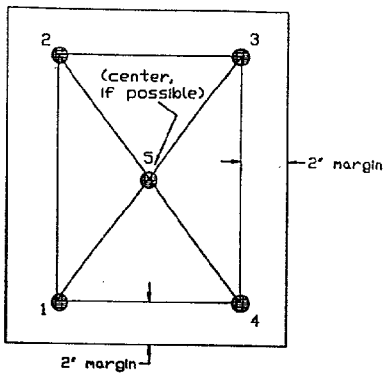
DATA SHEET 17

TEST VEHICLE MEASUREMENTS (Cont'd)

TOE PAN MEASUREMENTS




**DRIVER**




**PASSENGER**

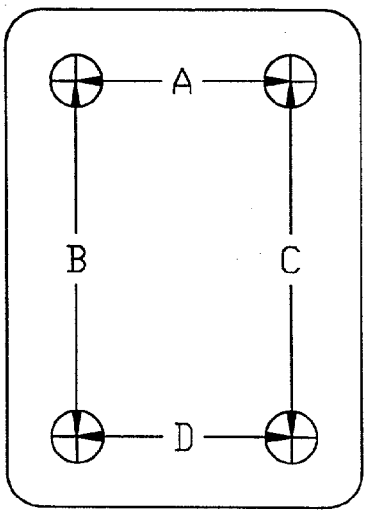
| **Driver** | | | | | | |
|---|---|---|---|---|---|---|
| Location | X | | | Z | | |
| | Pre-Test | Post-Test | Def. | Pre-Test | Post-Test | Def. |
| 1 | 616 | 610 | 6 | 28 | 28 | 0 |
| 2 | 798 | 664 | 134 | 225 | 215 | 10 |
| 3 | 781 | 639 | 142 | 227 | 192 | 35 |
| 4 | 591 | 562 | 29 | 15 | 53 | -38 |
| 5 | 708 | 580 | 128 | 125 | 84 | 41 |
| 6 | 614 | 554 | 60 | 135 | 142 | -7 |
| 7 | 647 | 628 | 19 | 72 | 76 | -4 |
| **Passenger** | | | | | | |
| Location | X | | | Z | | |
| | Pre-Test | Post-Test | Def. | Pre-Test | Post-Test | Def. |
| 1 | 612 | 537 | 75 | 20 | 25 | -5 |
| 2 | 775 | 605 | 170 | 210 | 198 | 12 |
| 3 | 758 | 687 | 71 | 223 | 196 | 27 |
| 4 | 612 | 610 | 2 | 0 | 26 | -26 |
| 5 | 747 | 604 | 143 | 125 | 94 | 31 |

DATA SHEET 17

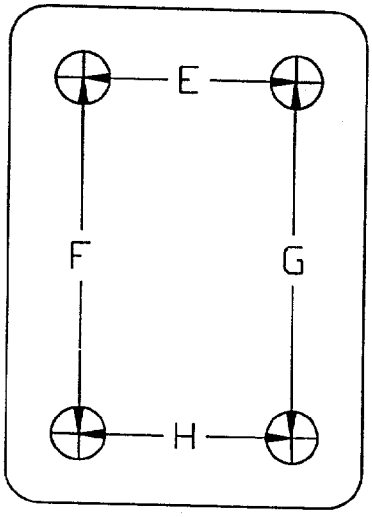
TEST VEHICLE MEASUREMENTS (Cont'd)

UNDERBODY FLOORBOARD DEFORMATION

DRIVER'S SIDE




PASSENGER'S SIDE




| MEASUREMENT | PRE TEST | POST TEST | DIFFERENCE |
|---|---|---|---|
| A | 348 | 314 | 34 |
| B | 448 | 444 | 4 |
| C | 457 | 456 | 1 |
| D | 370 | 374 | -4 |
| E | 312 | 294 | 18 |
| F | 465 | 463 | 2 |
| G | 452 | 453 | -1 |
| H | 370 | 369 | 1 |

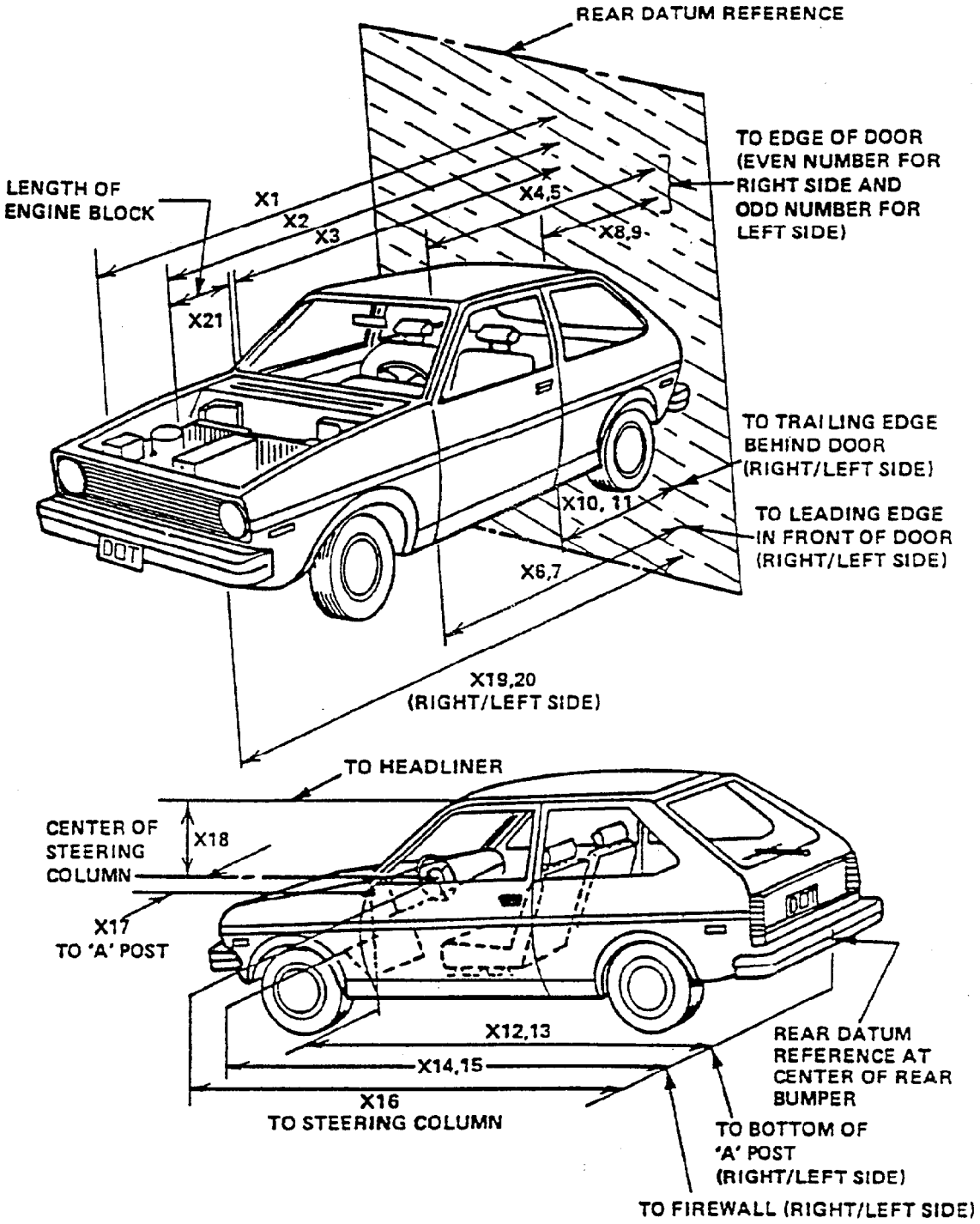
DATA SHEET 17

TEST VEHICLE MEASUREMENTS (Cont'd)

| No. | MEASUREMENT DESCRIPTION: | Pre-Test (mm) | Post-Test (mm) | Diff. (mm) |
|---|---|---|---|---|
| X1 | Total Length of Test Vehicle at Centerline | 4603 | 4063 | 540 |
| X2 | Rear Surface of Vehicle to Front of Engine | 3893 | 3679 | 214 |
| X3 | Rear Surface of Vehicle to Firewall | 3518 | 3467 | 51 |
| X4 | Rear Surface to Upr. Leading Edge of Rt. Door | 3129 | 3122 | 7 |
| X5 | Rear Surface to Upr. Leading Edge of Left Door | 3125 | 3116 | 9 |
| X6 | Rear Surface to Lwr. Leading Edge of Rt. Door | 3135 | 3124 | 11 |
| X7 | Rear Surface to Lwr. Leading Edge of Left Door | 3132 | 3117 | 15 |
| X8 | Rear Surface to Upr. Trailing Edge of Rt. Door | 2019 | 2014 | 5 |
| X9 | Rear Surface to Upr. Trailing Edge of Left Door | 2017 | 2012 | 5 |
| X10 | Rear Surface to Lwr. Trailing Edge of Rt. Door | 2031 | 2021 | 10 |
| X11 | Rear Surface to Lwr. Trailing Edge of Left Door | 2028 | 2015 | 13 |
| X12 | Rear Surface to Bottom of A-Post on Rt. Side | 3137 | 3104 | 33 |
| X13 | Rear Surface to Bottom of A-Post on Left Side | 3134 | 3096 | 38 |
| X14 | Rear Surface to Firewall on Right Side | 3467 | 3405 | 62 |
| X15 | Rear Surface to Firewall on Left Side | 3467 | 3412 | 55 |
| X16 | Rear Surface to Steering Column | 2602 | 2588 | 14 |
| X17 | Center of Steering Column to A-Post | 388 | 376 | 12 |
| X18 | Center of Steering Column to Headlining | 497 | 466 | 31 |
| X19 | Rear Surface to Right Side of Front Bumper | 4388 | 4014 | 374 |
| X20 | Rear Surface to Left Side of Front Bumper | 4386 | 3985 | 401 |
| X21 | Length of Engine Block | 500 | 500 | 0 |

DATA SHEET 17

TEST VEHICLE MEASUREMENTS (Cont'd)



DATA SHEET 18

ACCIDENT INVESTIGATION DIVISION DATA

FOR 35 MPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Honda/Accord/4 Door

Veh. NHTSA NO.: MW5300 ; VIN: 1HGCG5641WA029365

Model Year: 1998 ; Build Date: 10/97 ; Test Date: November 11, 1997

Veh. Size Category: Mid Size ; Test Weight: 1549.9 kg

Veh. Wheelbase: 2720 mm; Front Overhang: 980 mm; Overall Width: 1780 mm

ACCELEROMETER DATA:

Location: As per measurements on pages 4-13

Calibration Procedure: As per MGA Calibration Procedure

Linearity: >99.9% ; Integration Algorithm: Trapezoidal

Veh. Impact Speed: 56.6 kph ; Time Of Separation: 376.5 msec

Velocity Change: 56.6 kph

Collision Deformation Classification (CDC) Code: F (Frontal)

CRUSH DEPTH DIMENSIONS:

C1 = 401 mm

C2 = 539 mm

C3 = 541 mm

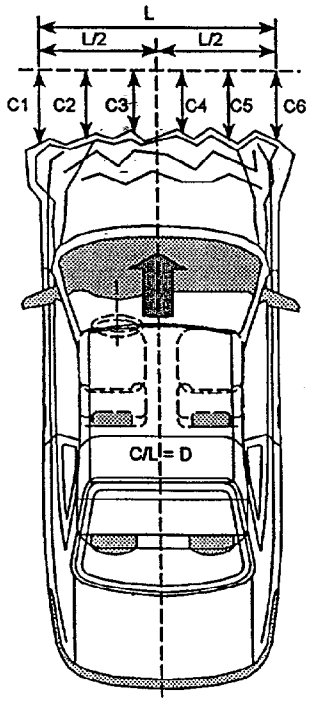
C4 = 456 mm

C5 = 447 mm

C6 = 374 mm

MIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitude)

LENGTH OF DAMAGED REGION: L = 1500 mm



# APPENDIX A

# PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (Cont'd)

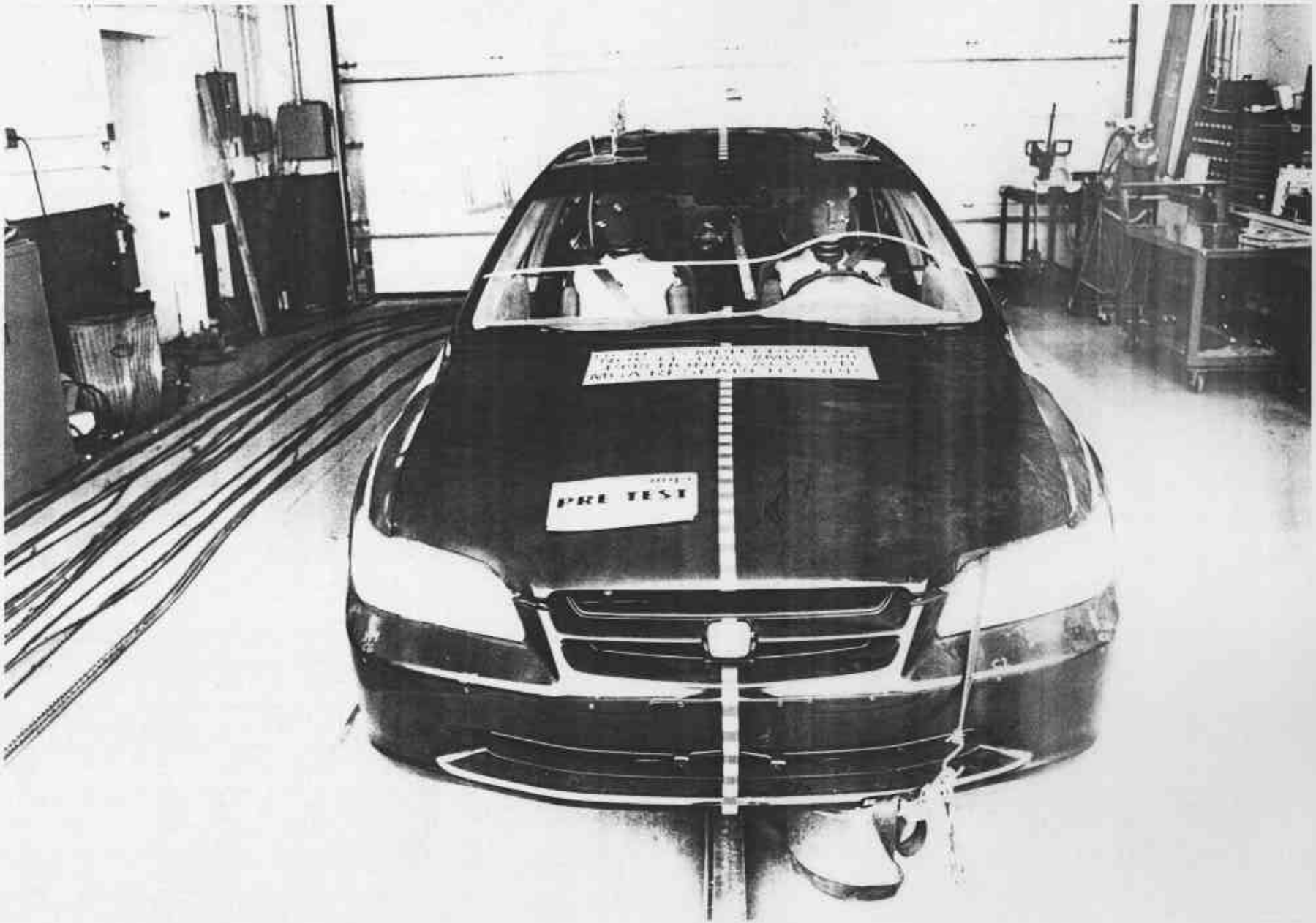



Photo No. A-1 - Pre-Test Front View of Test Vehicle


Photo No. A-2 - Post-Test Front View of Test Vehicle

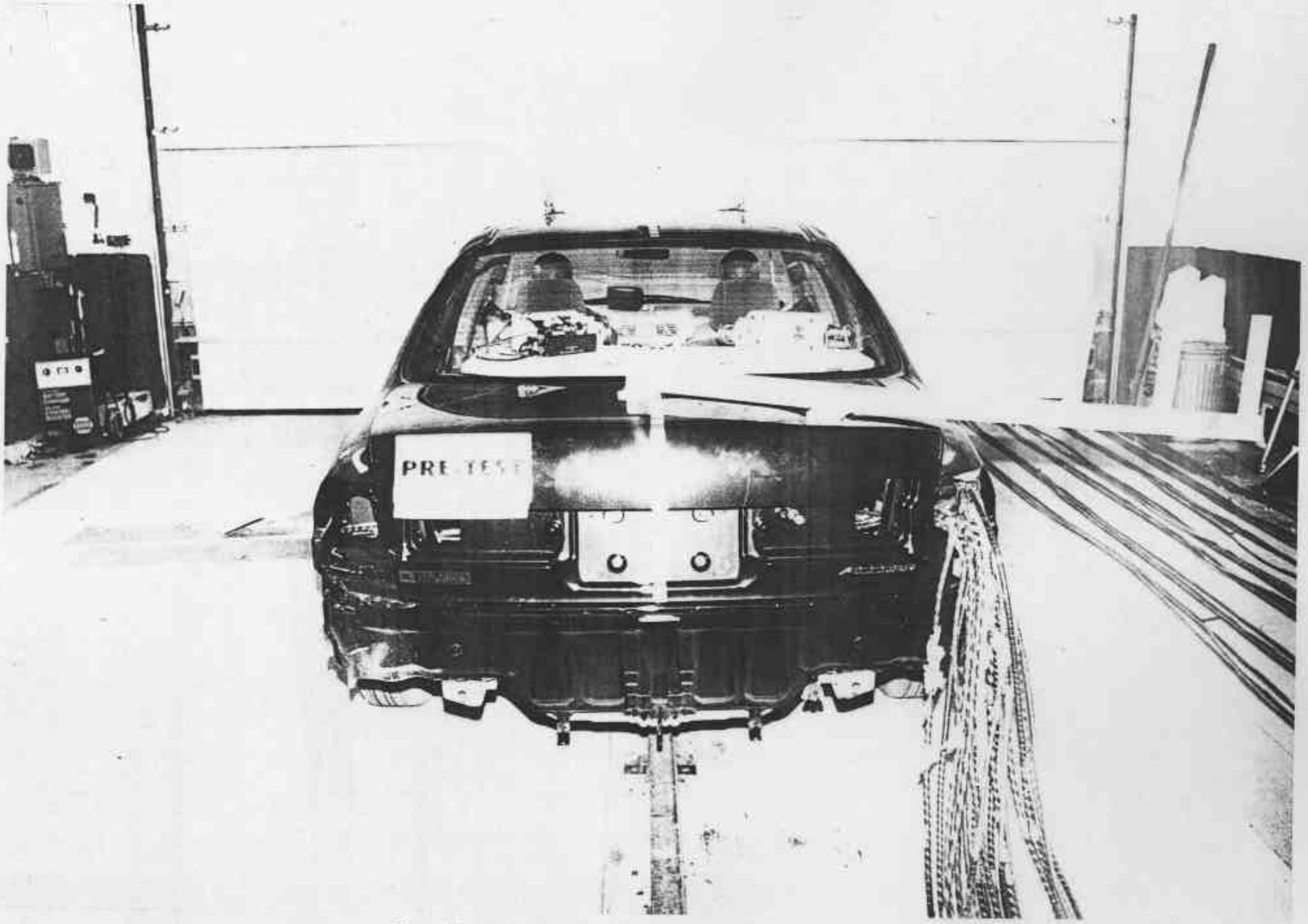
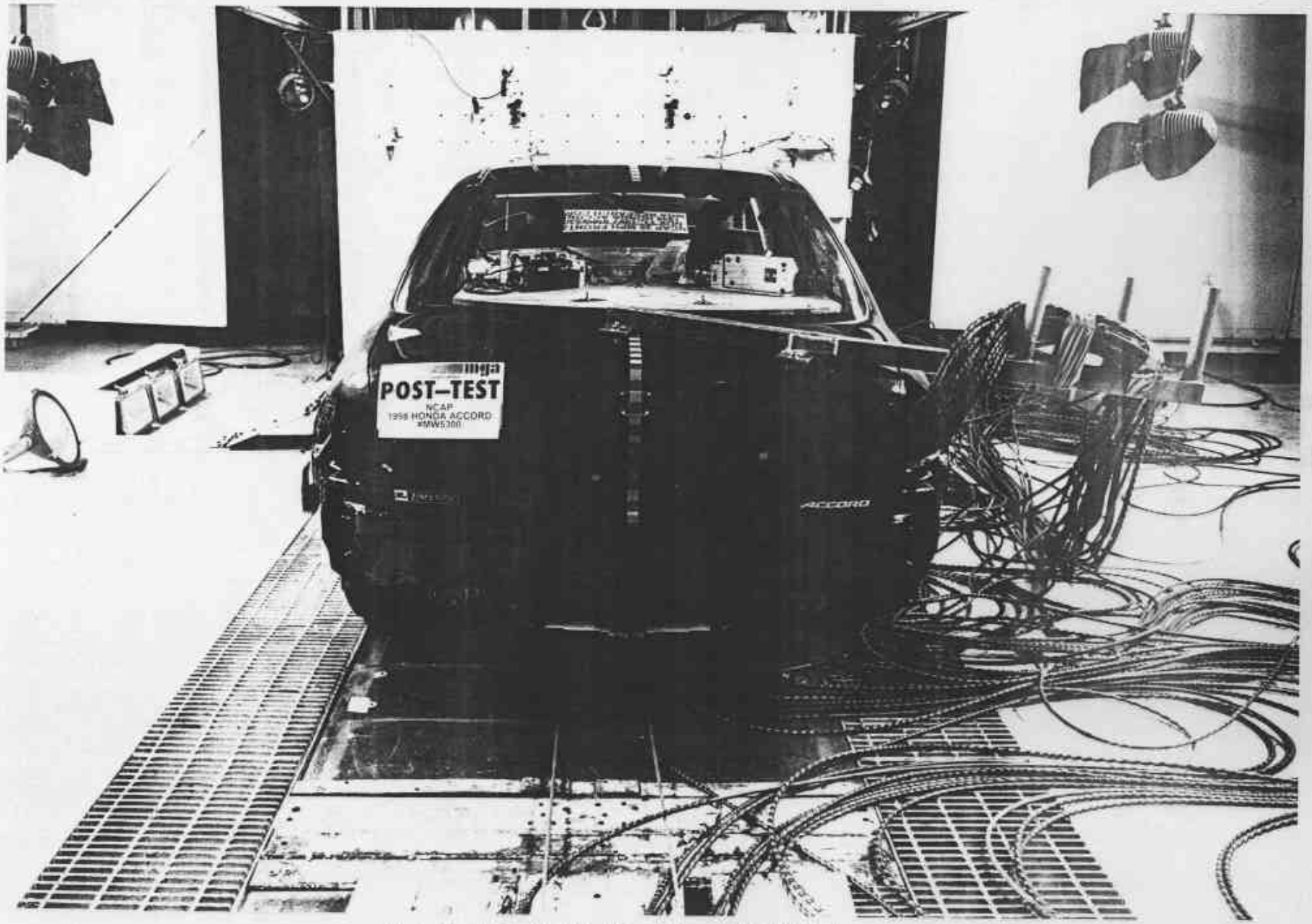



Photo No. A-3 - Pre-Test Rear View of Test Vehicle




A-4

Photo No. A-4 - Post-Test Rear View of Test Vehicle

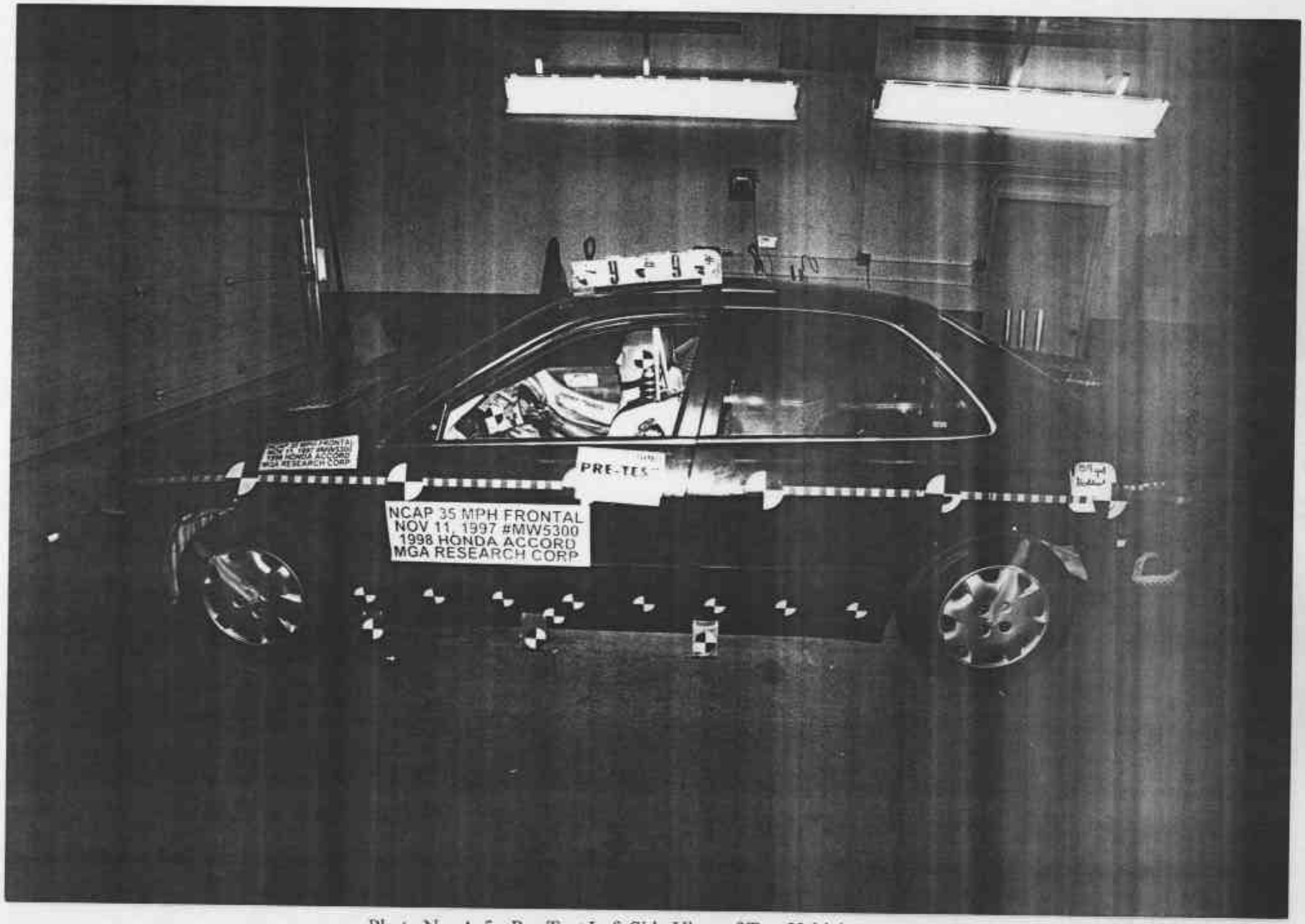



Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

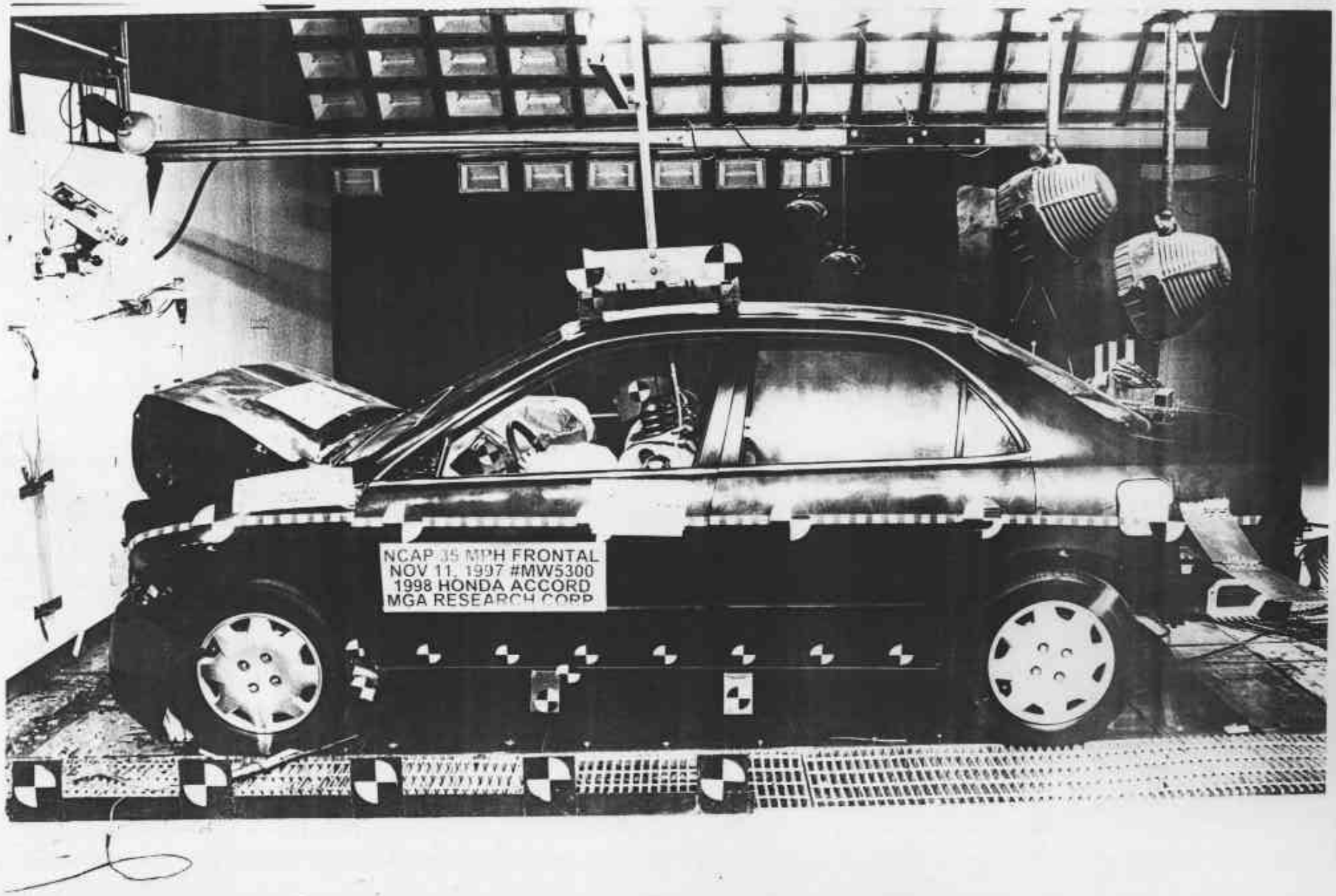



Photo No. A-6 - Post-Test Left Side View of Test Vehicle


A-7

Photo No. A-7 - Pre-Test Left Rear Three-Quarter View of Test Vehicle

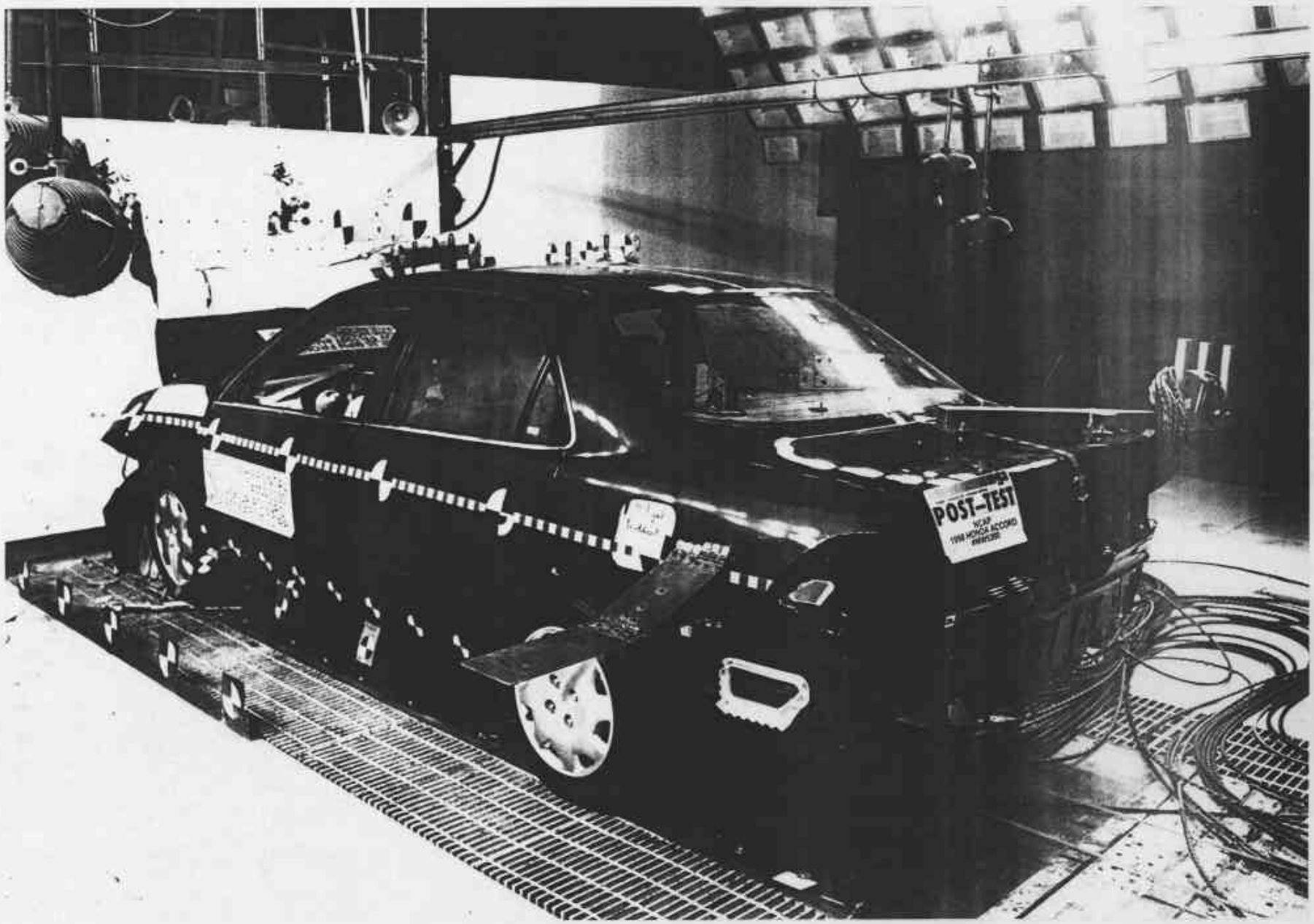



Photo No. A-8 - Post-Test Left Rear Three-Quarter View of Test Vehicle


Photo No. A-9 - Pre-Test Right Side View of Test Vehicle

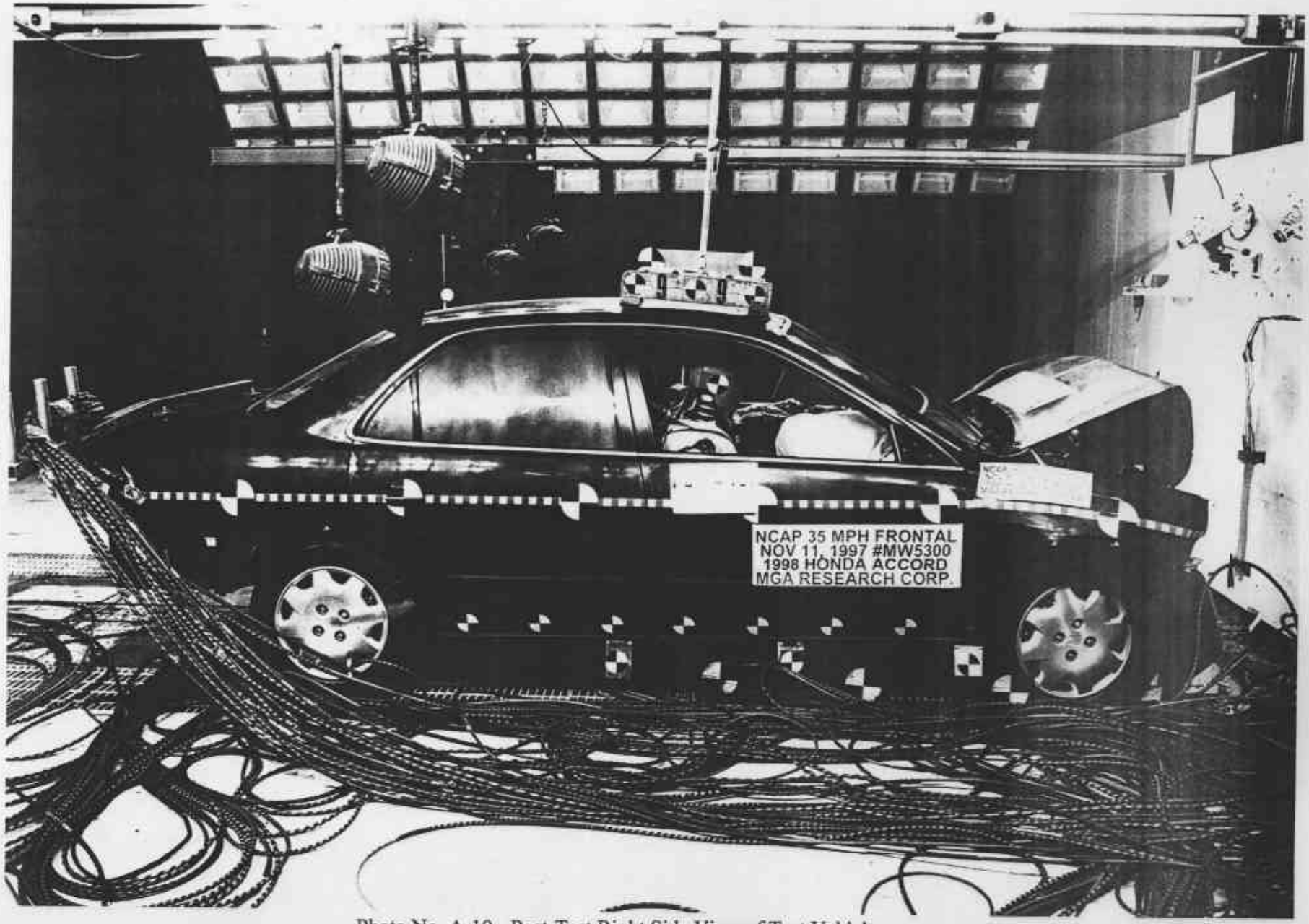



Photo No. A-10 - Post-Test Right Side View of Test Vehicle


Photo No. A-11 - Pre-Test Right Front Three-Quarter View of Test Vehicle


Photo No. A-12 - Post-Test Right Front Three-Quarter View of Test Vehicle


A-13

Photo No. A-13 - Pre-Test Fuel Filler Cap View

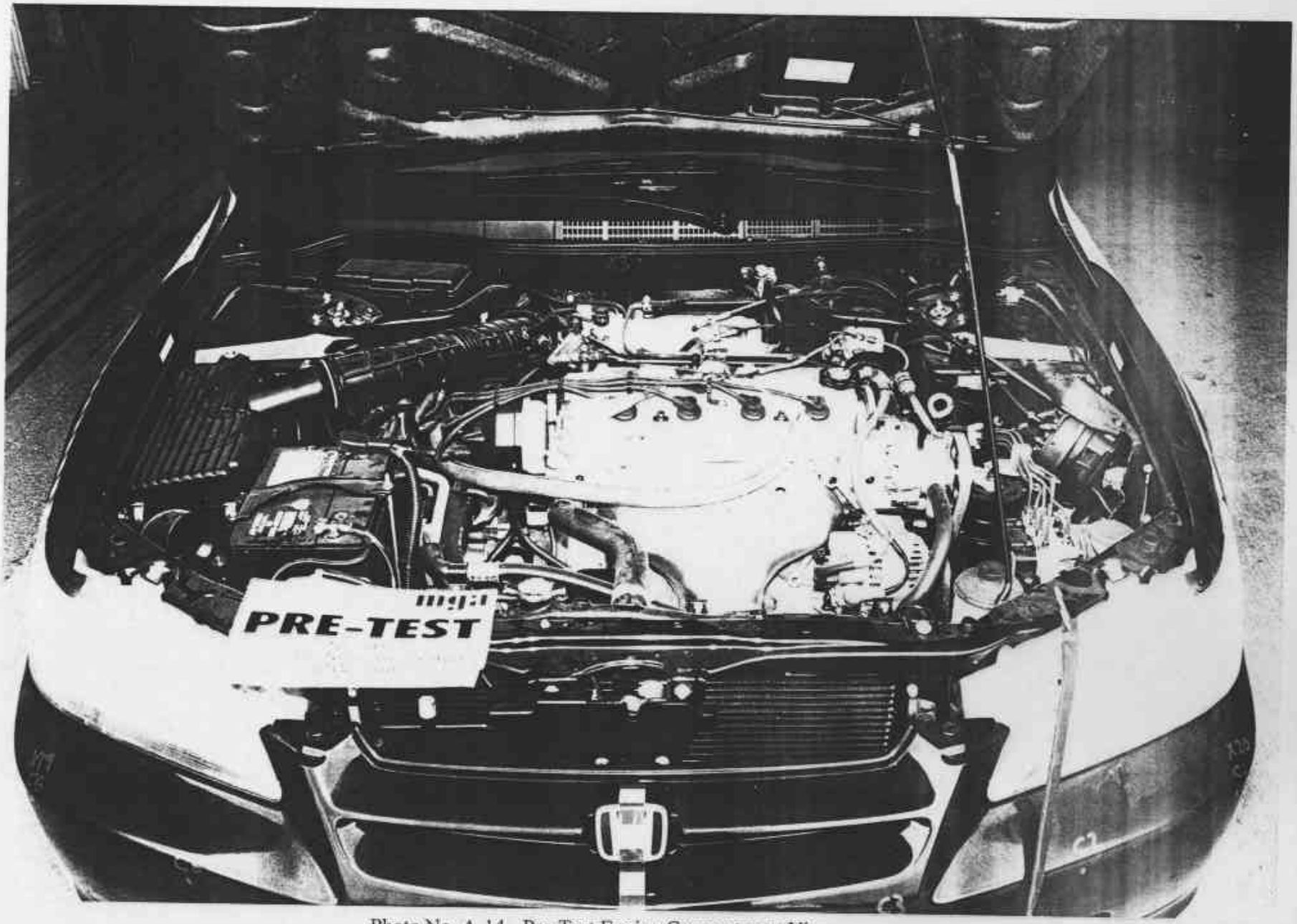



Photo No. A-14 - Pre-Test Engine Compartment View

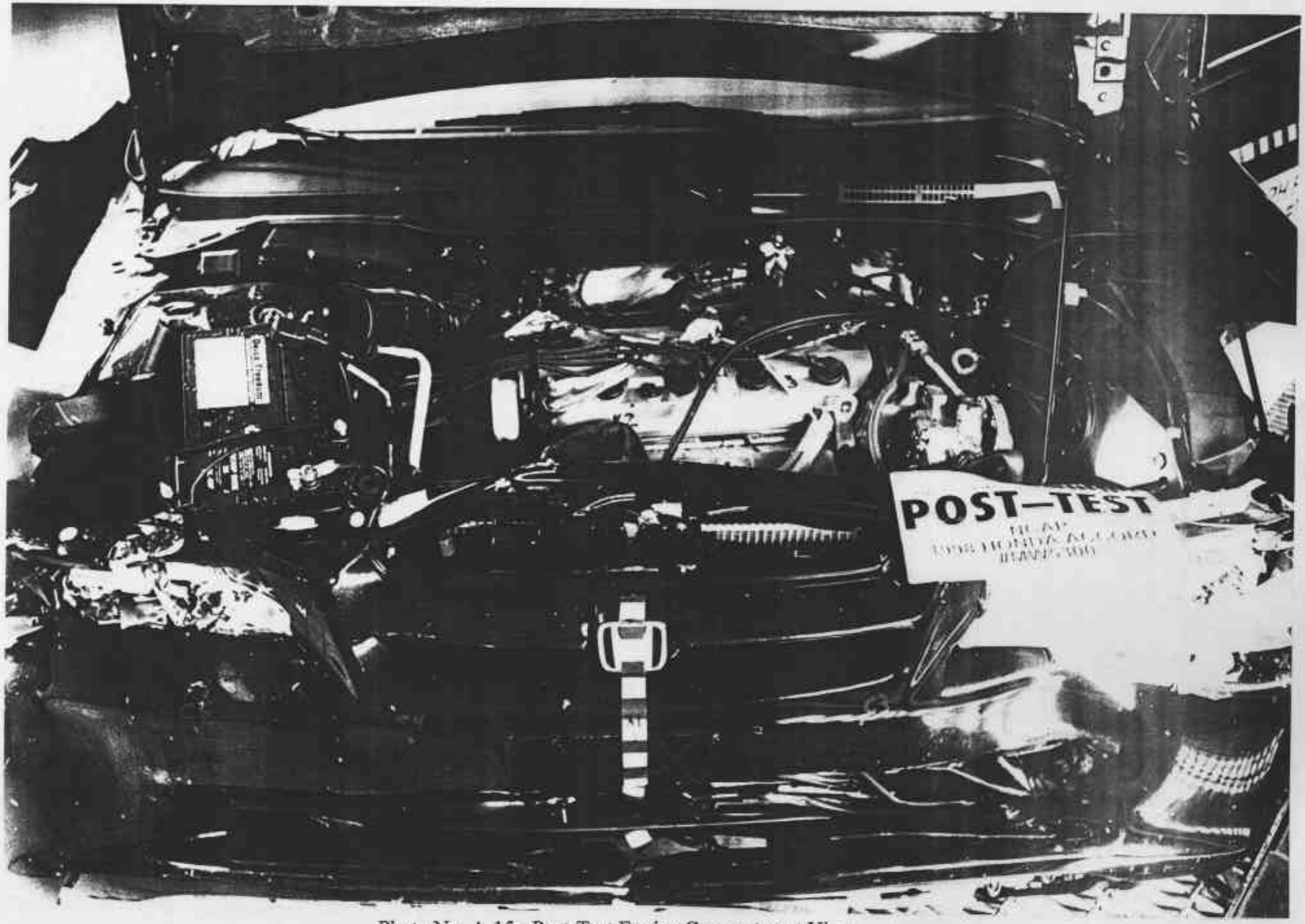



Photo No. A-15 - Post-Test Engine Compartment View

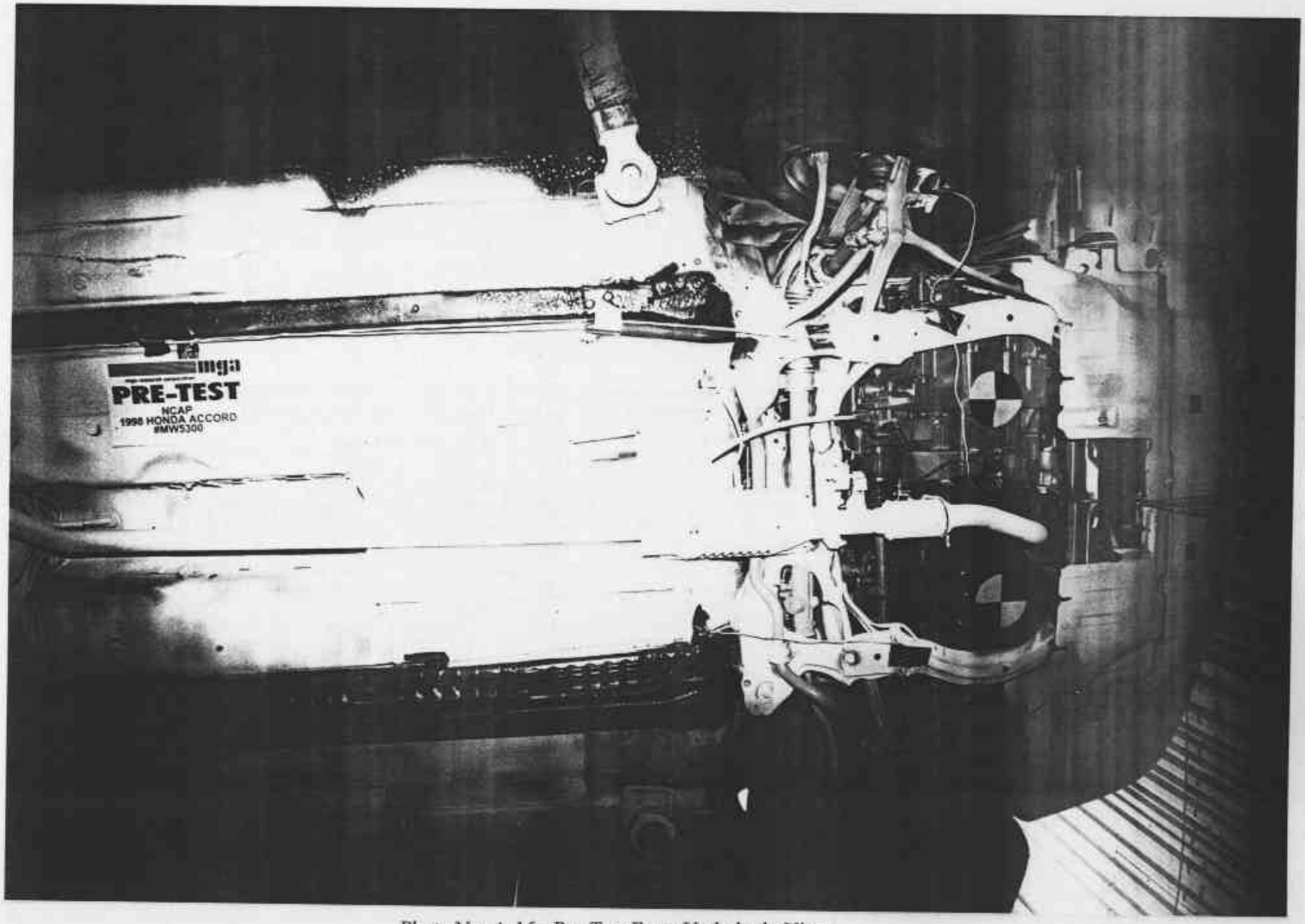



Photo No. A-16 - Pre-Test Front Underbody View

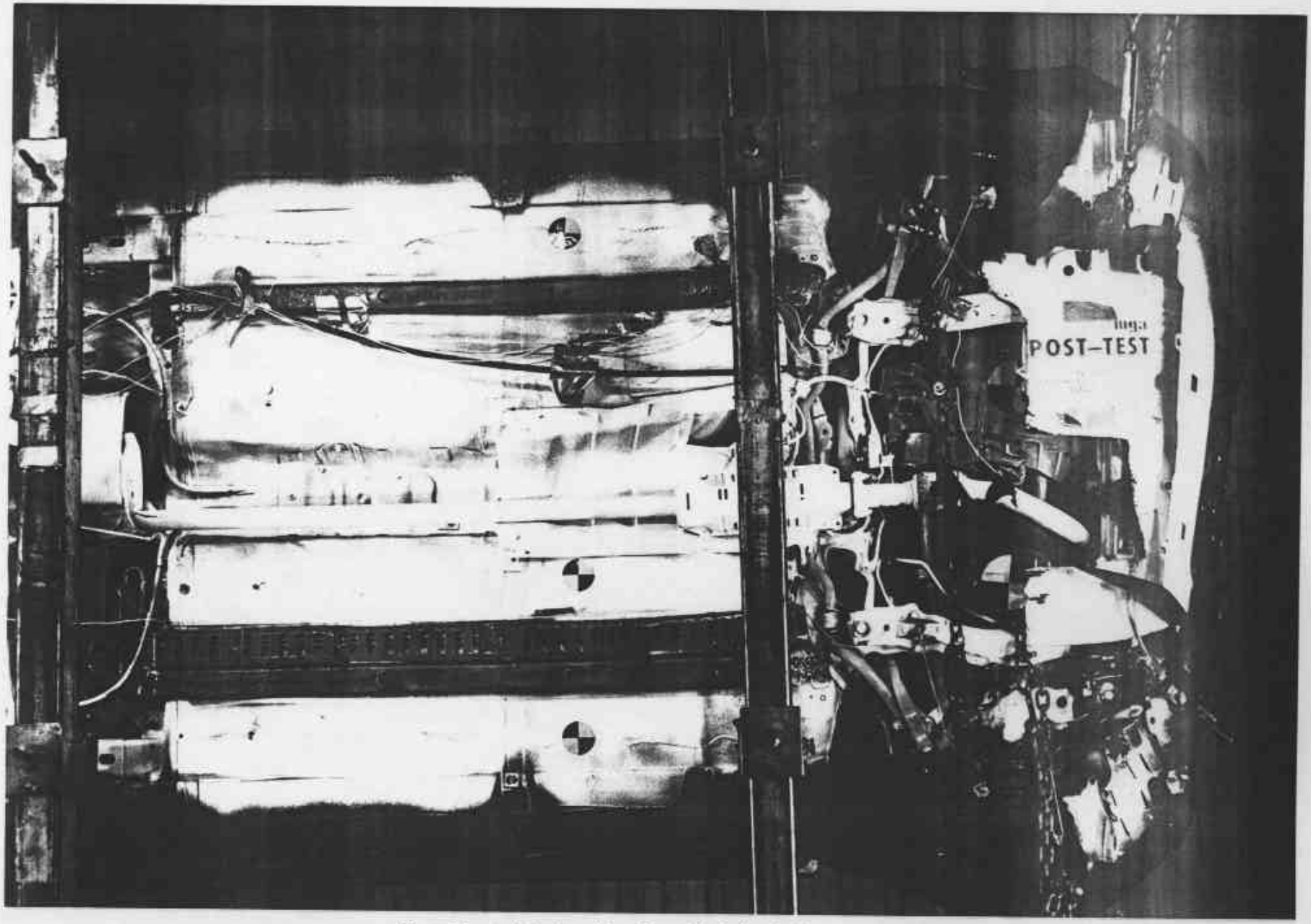





Photo No. A-17 - Post-Test Front Underbody View

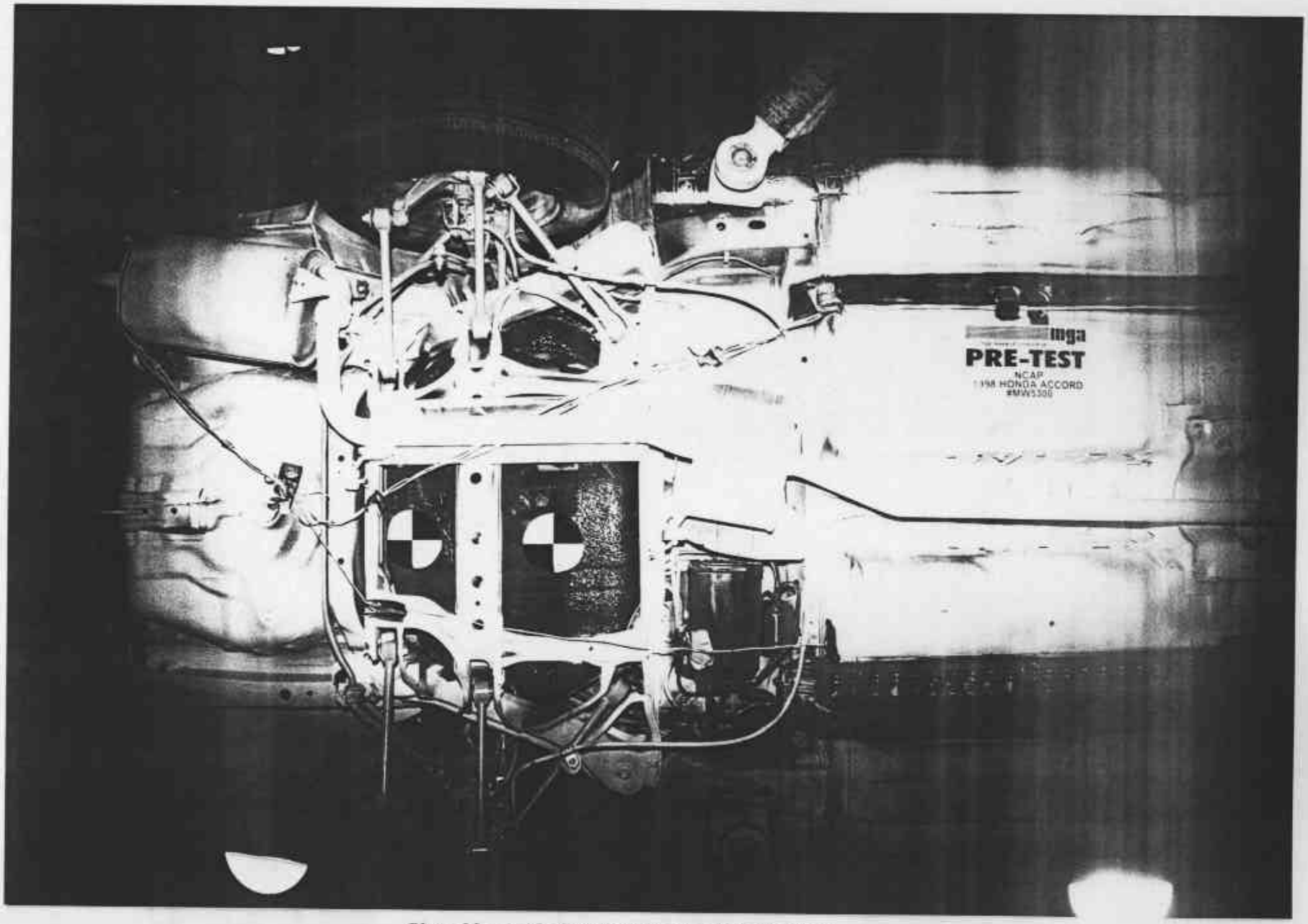



Photo No. A-18 - Pre-Test Rear Underbody View

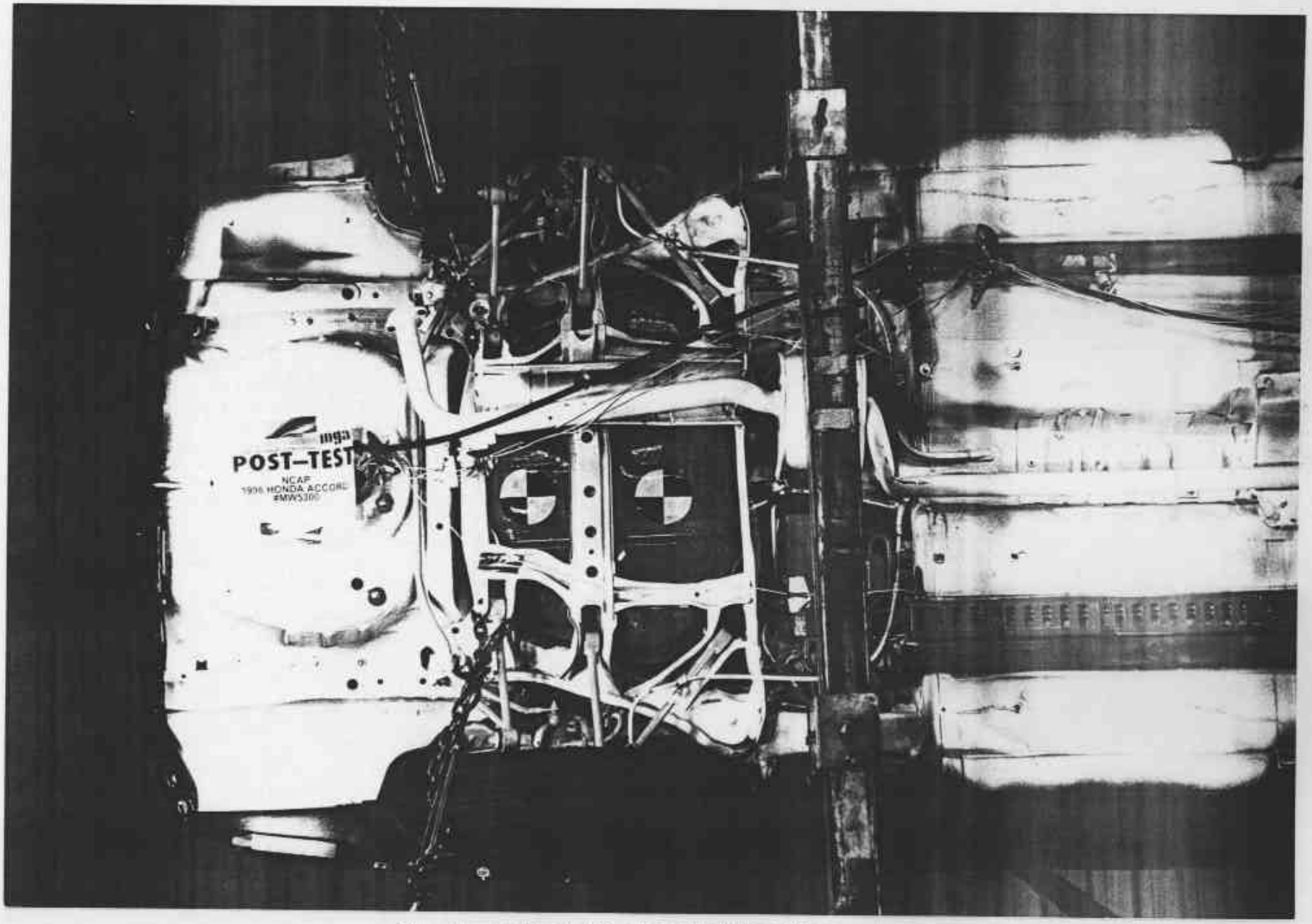



Photo No. A-19 - Post-Test Rear Underbody View


Photo No. A-20 - Pre-Test Windshield View

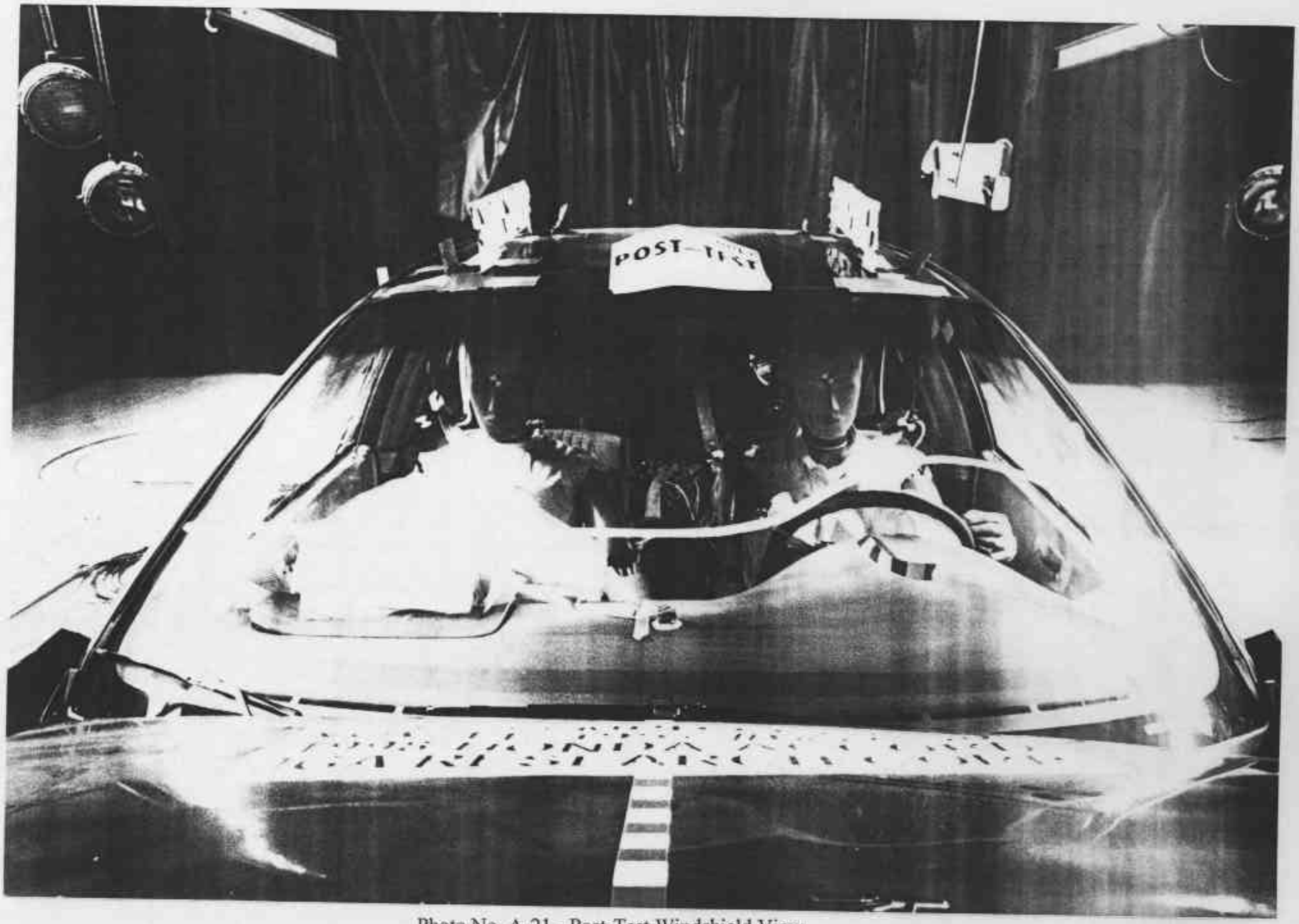



Photo No. A-21 - Post-Test Windshield View


A-22

Photo No. A-22 - Pre-Test Driver Dummy Position Left Side View


Photo No. A-23 - Post-Test Driver Dummy Position Left Side View


Photo No. A-24 - Pre-Test Driver Dummy Position Left Side View (Door Open)


Photo No. A-25 - Post-Test Driver Dummy Position Left Side View (Door Open)

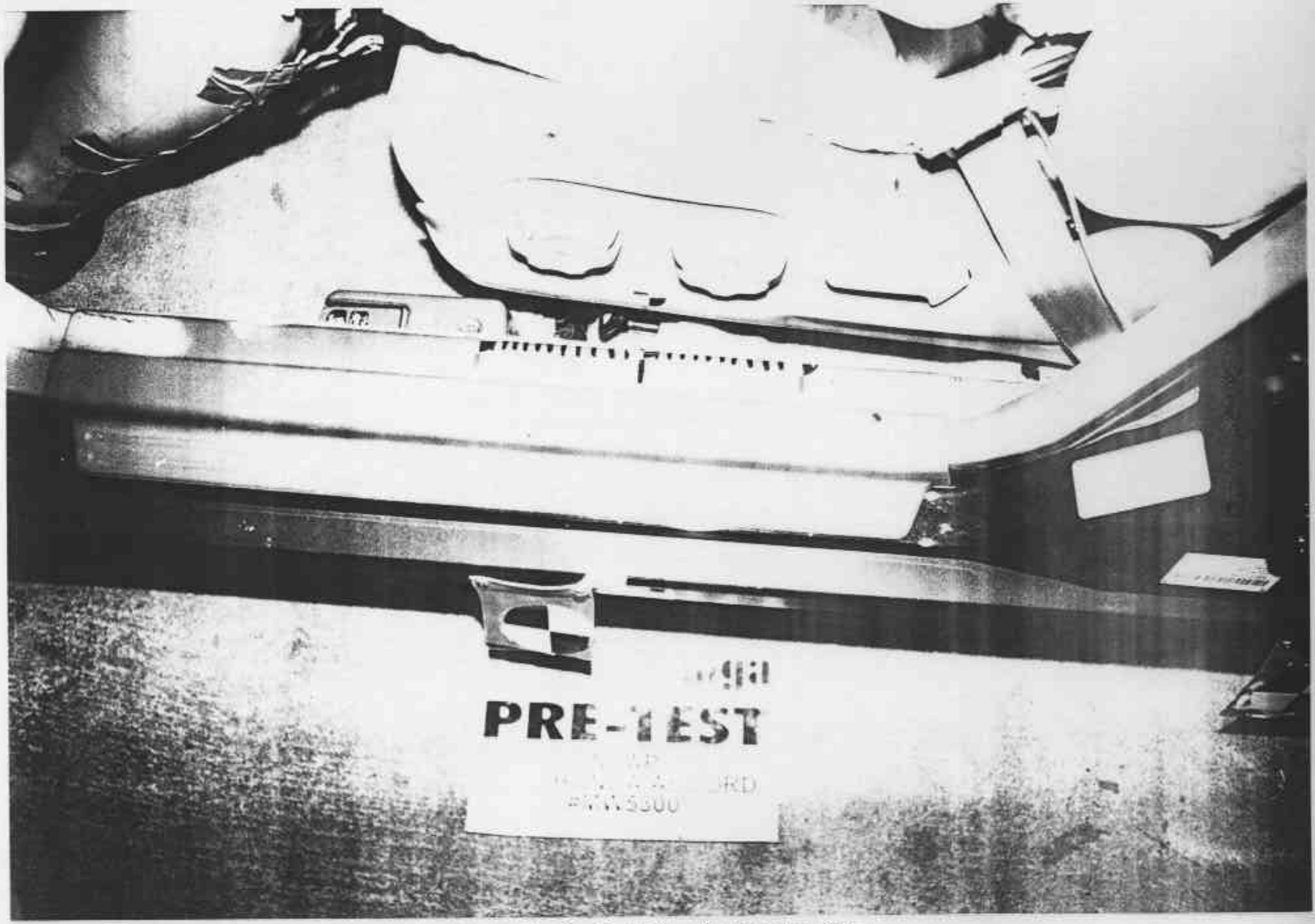



Photo No. A-26 - Pre-Test Driver Seat Position View


Photo No. A-27 - Post-Test Driver Seat Position View


A-28

Photo No. A-28 - Pre-Test Driver Dummy Knee Position


Photo No. A-29 - Post-Test Driver Dummy Knee Position

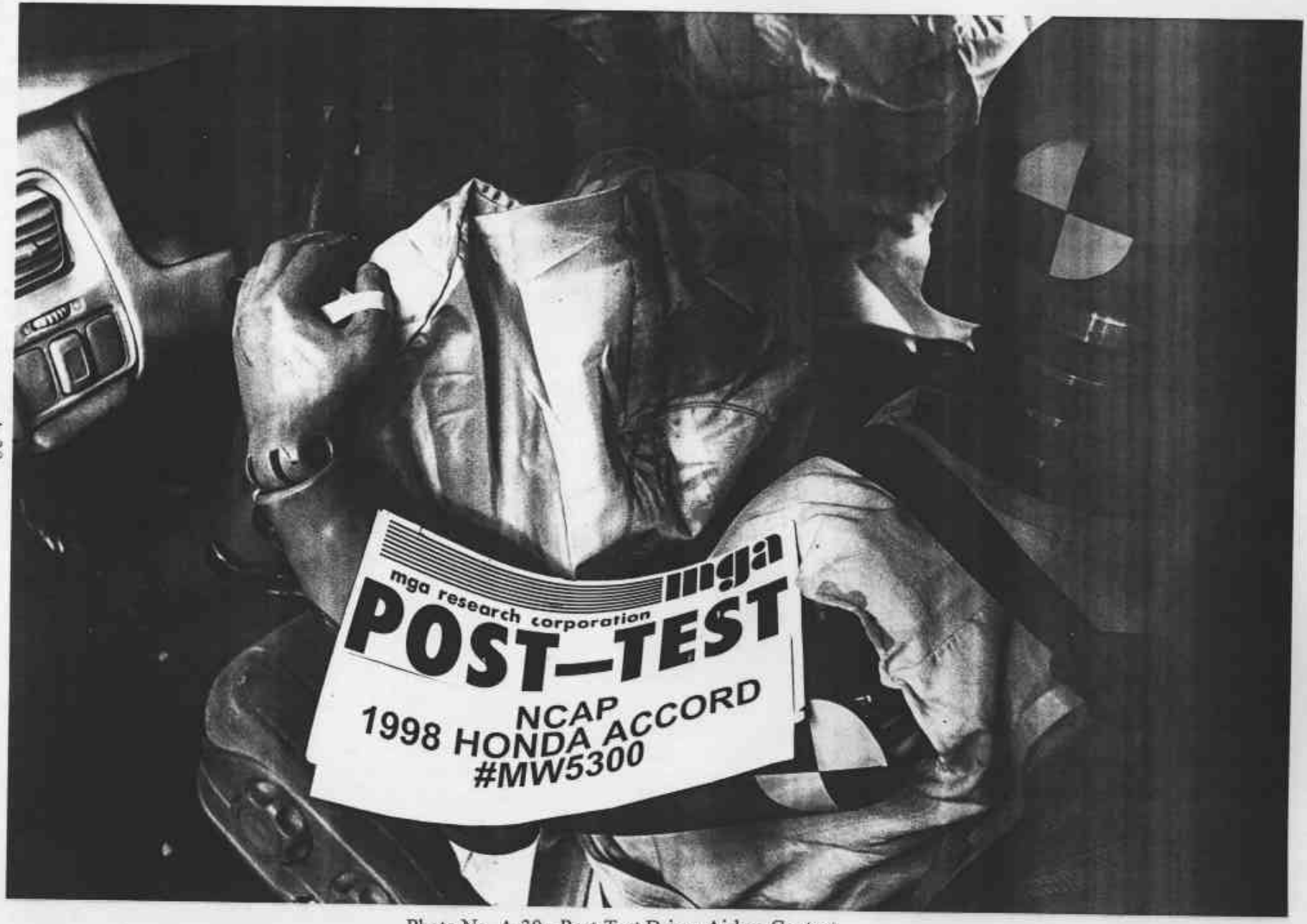



Photo No. A-30 - Post-Test Driver Airbag Contact


Photo No. A-31 - Post-Test Driver Knee Contact View

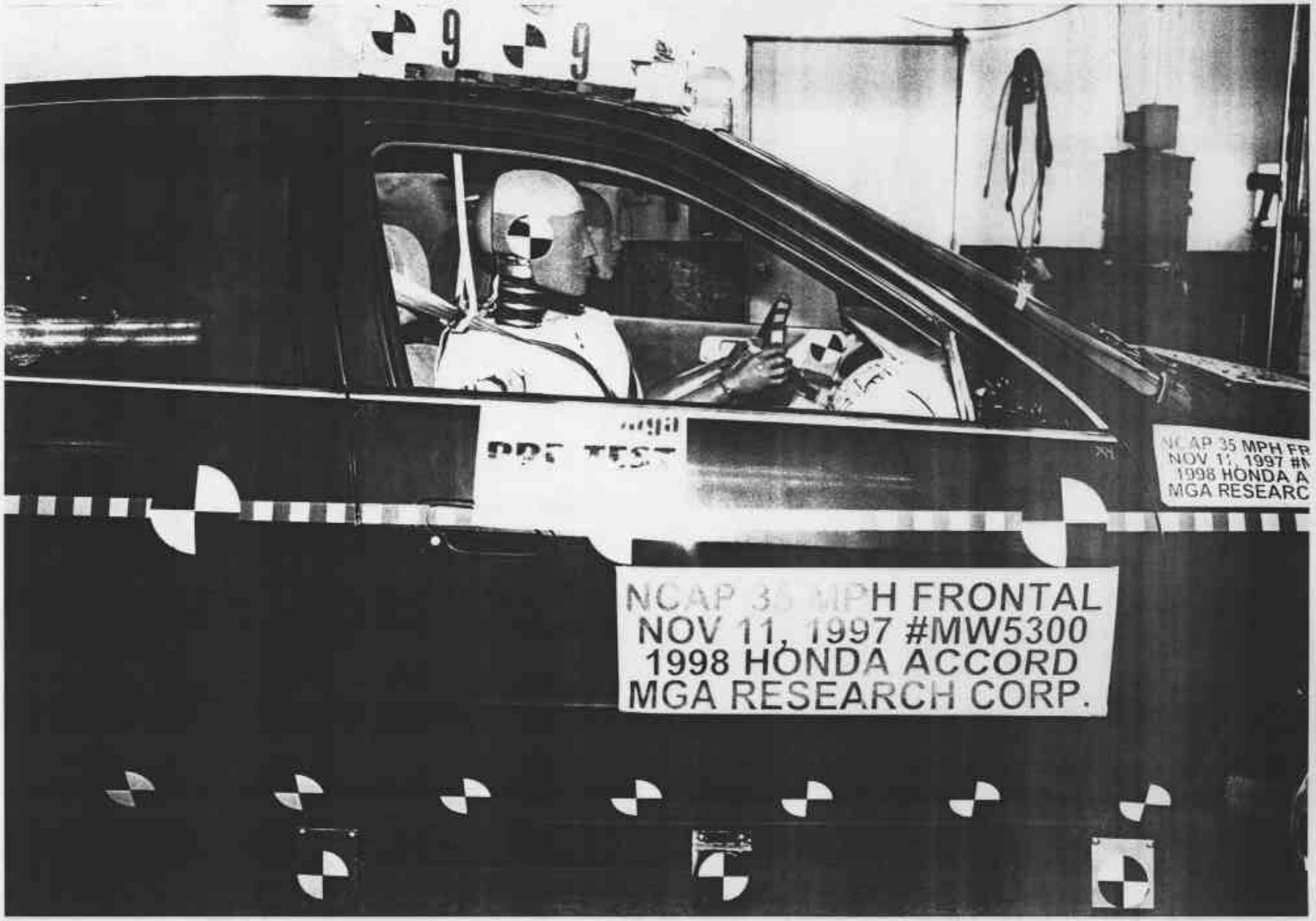
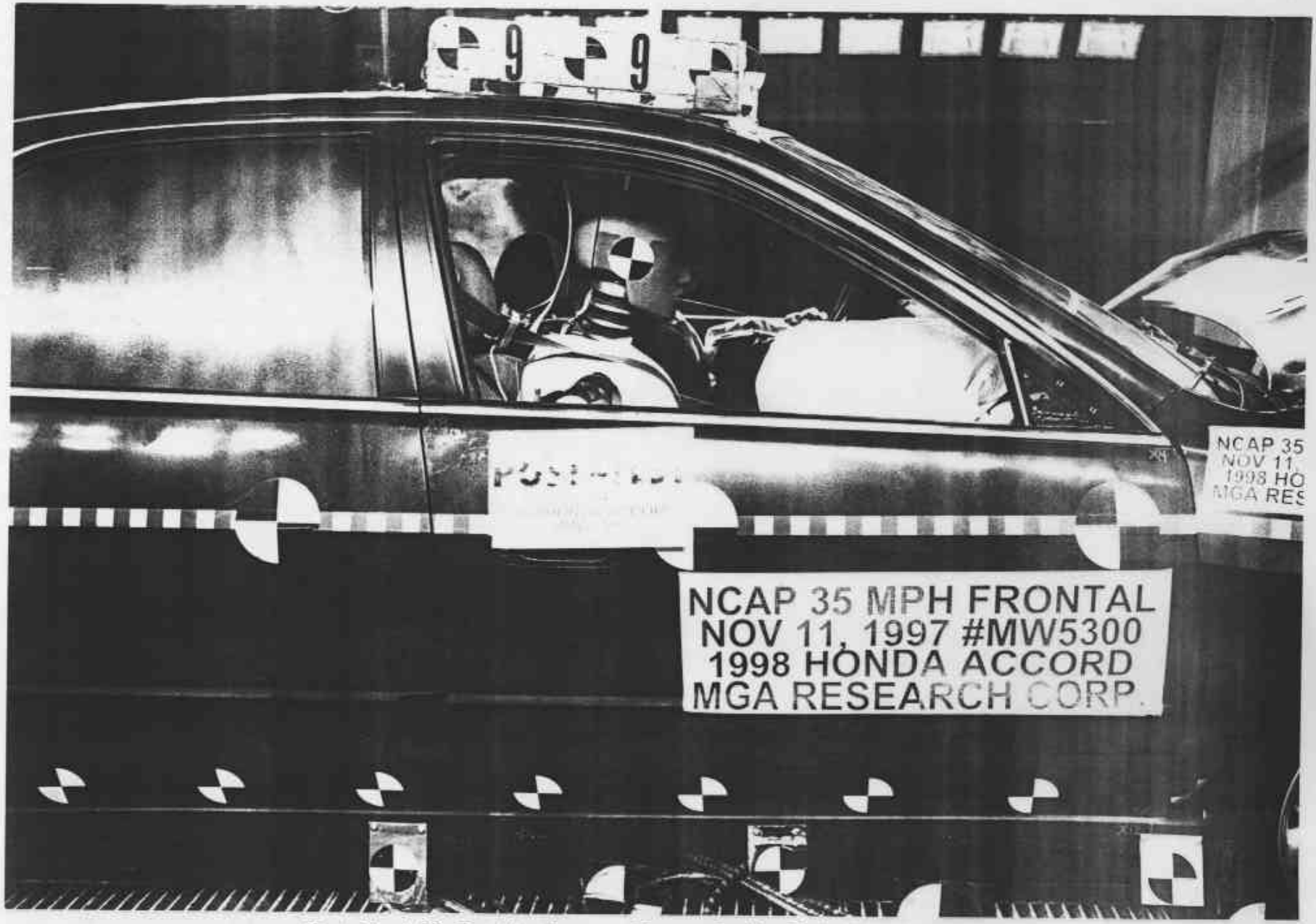



Photo No. A-32 - Pre-Test Passenger Dummy Position Right Side View




A-33

Photo No. A-33 - Post-Test Passenger Dummy Position Right Side View

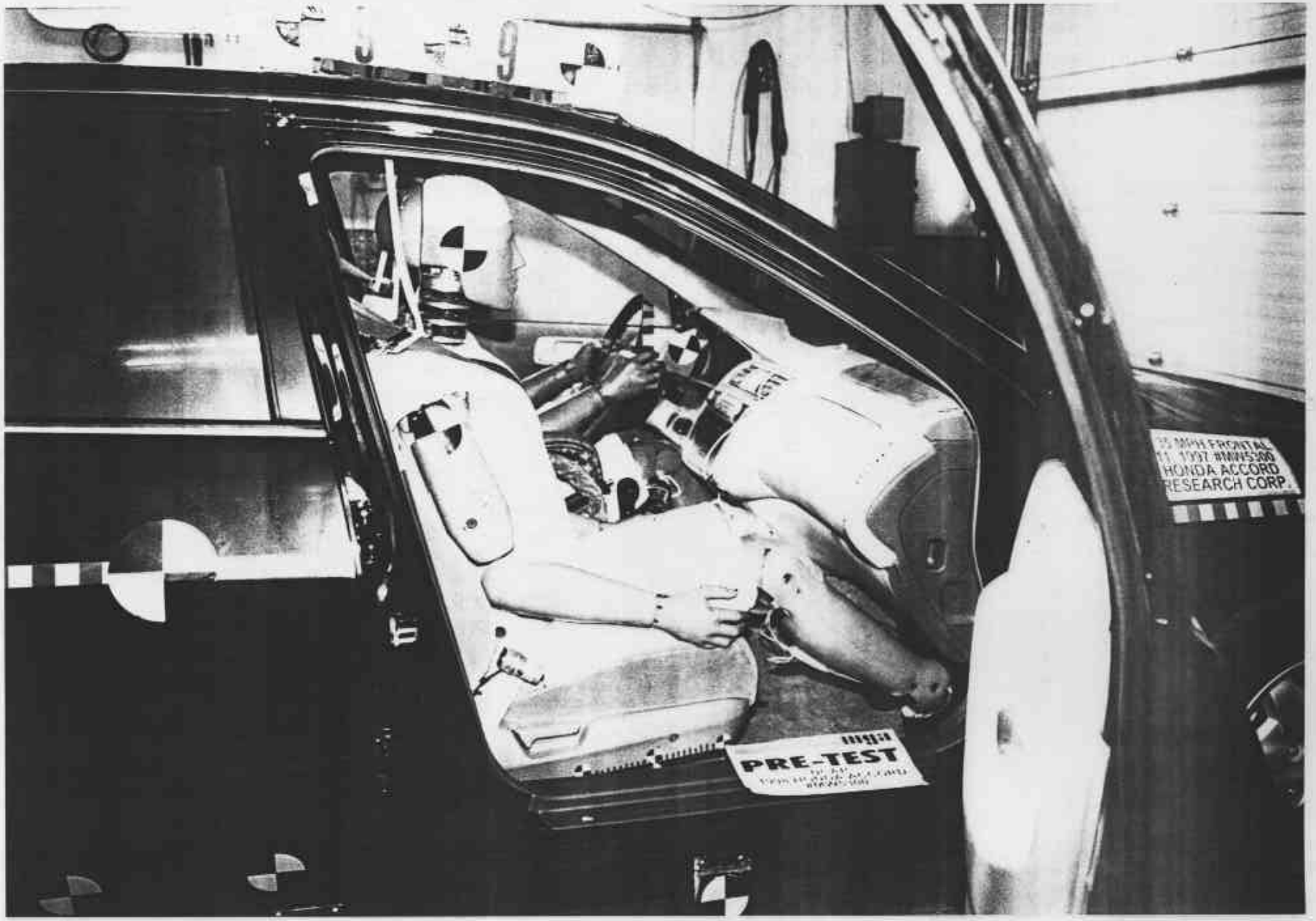



Photo No. A-34 - Pre-Test Passenger Dummy Position Right Side View (Door Open)

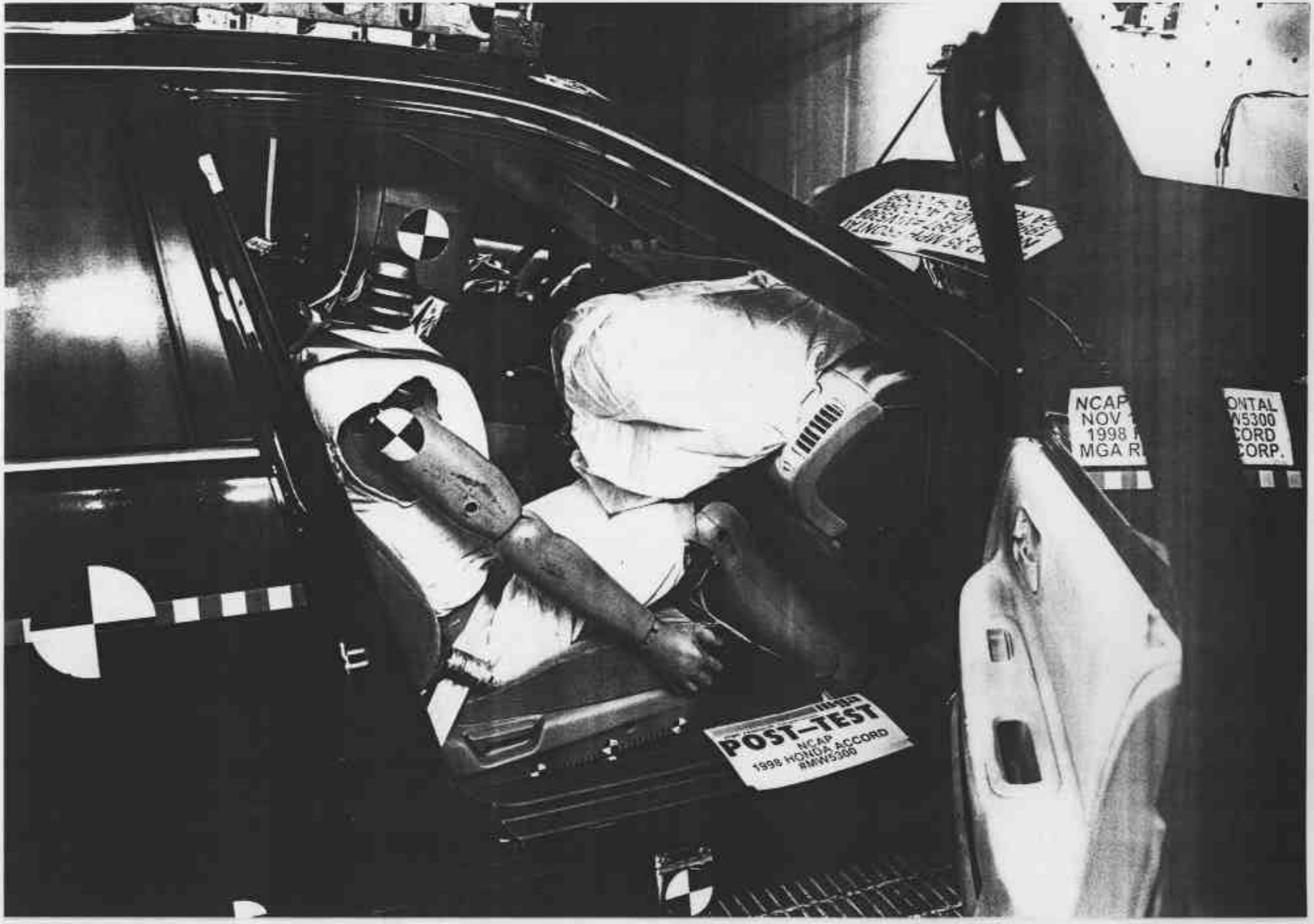



Photo No. A-35 - Post-Test Passenger Dummy Position Right Side View (Door Open)


Photo No. A-36 - Pre-Test Passenger Seat Position View


Photo No. A-37 - Post-Test Passenger Seat Position View


Photo No. A-38 - Pre-Test Passenger Dummy Knee Position


Photo No. A-39 - Post-Test Passenger Dummy Knee Position

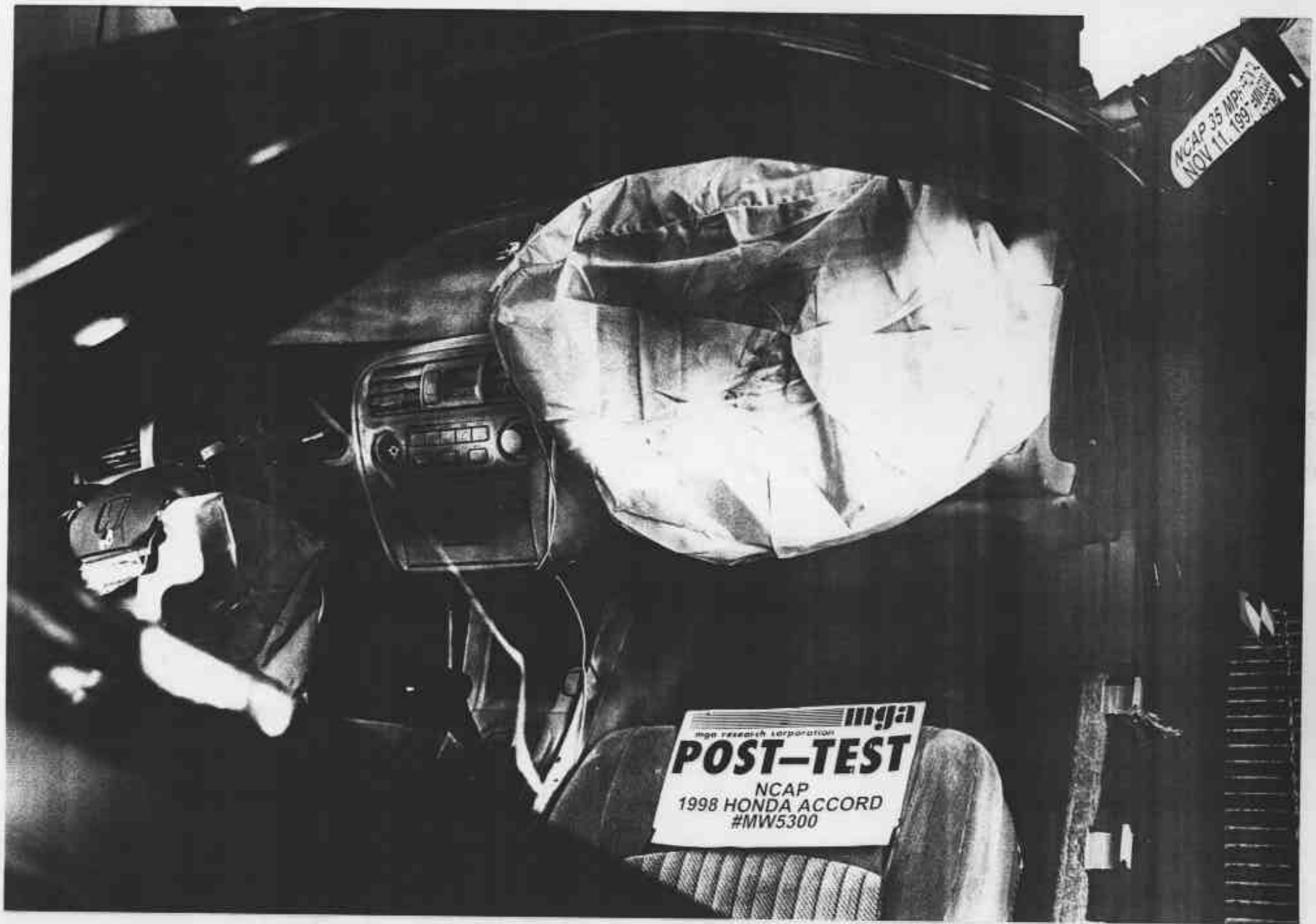



Photo No. A-40 - Post-Test Passenger Airbag Contact


Photo No. A-41 - Post-Test Passenger Knee Contact View


Photo No. A-42 - Vehicle Certification Label

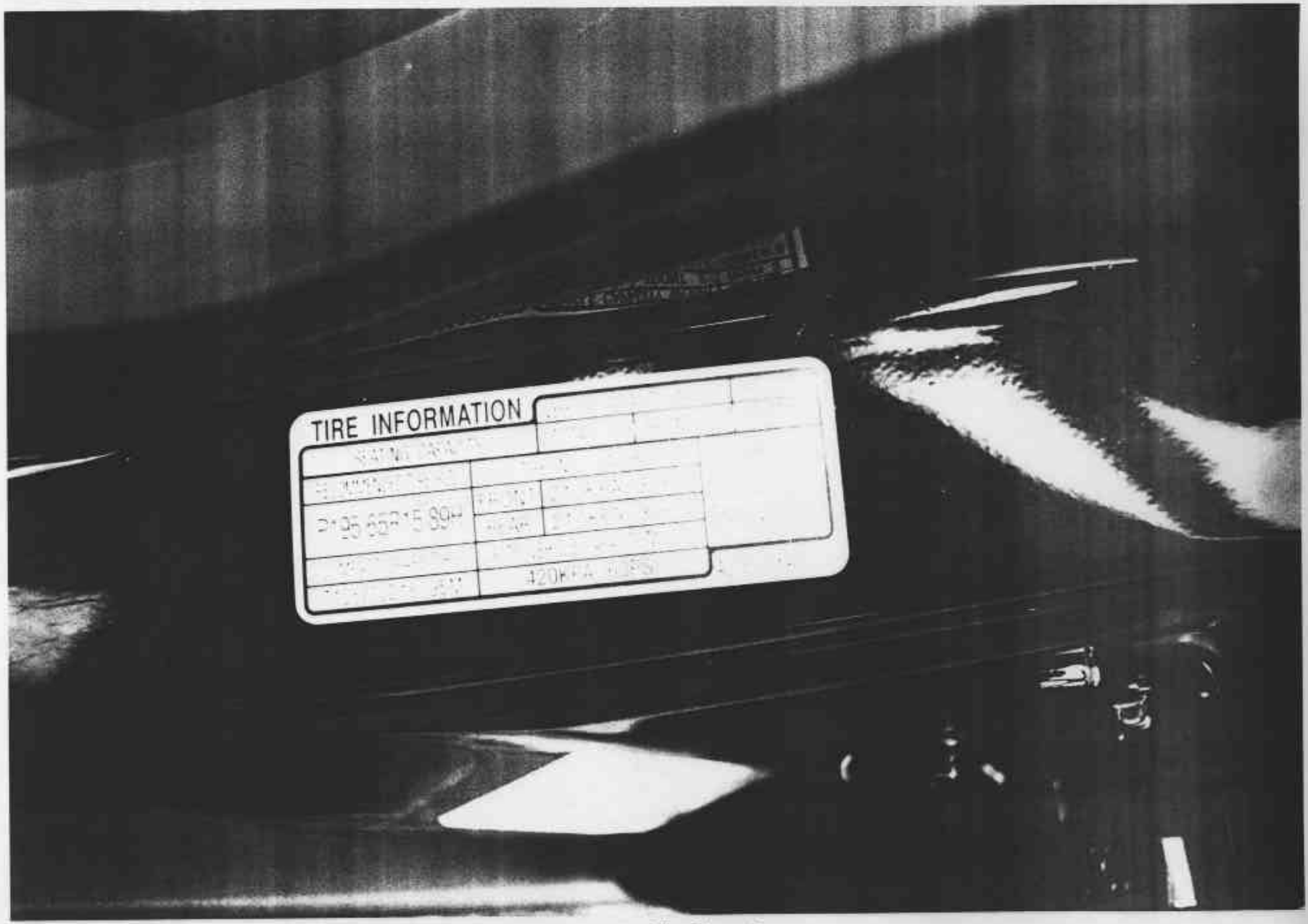



Photo No. A-43 - Tire Placard


Photo No. A-44 - Vehicle Impact

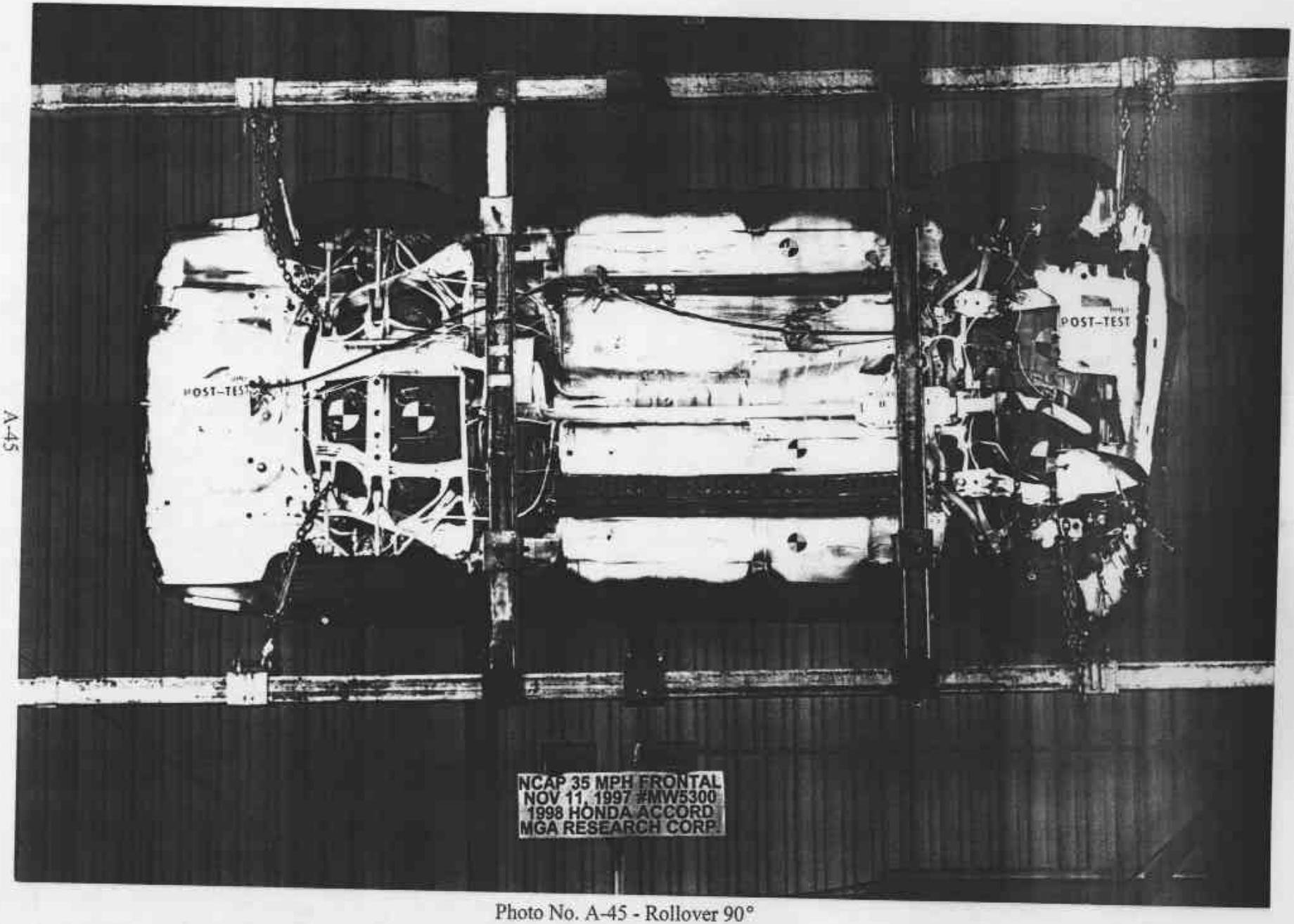
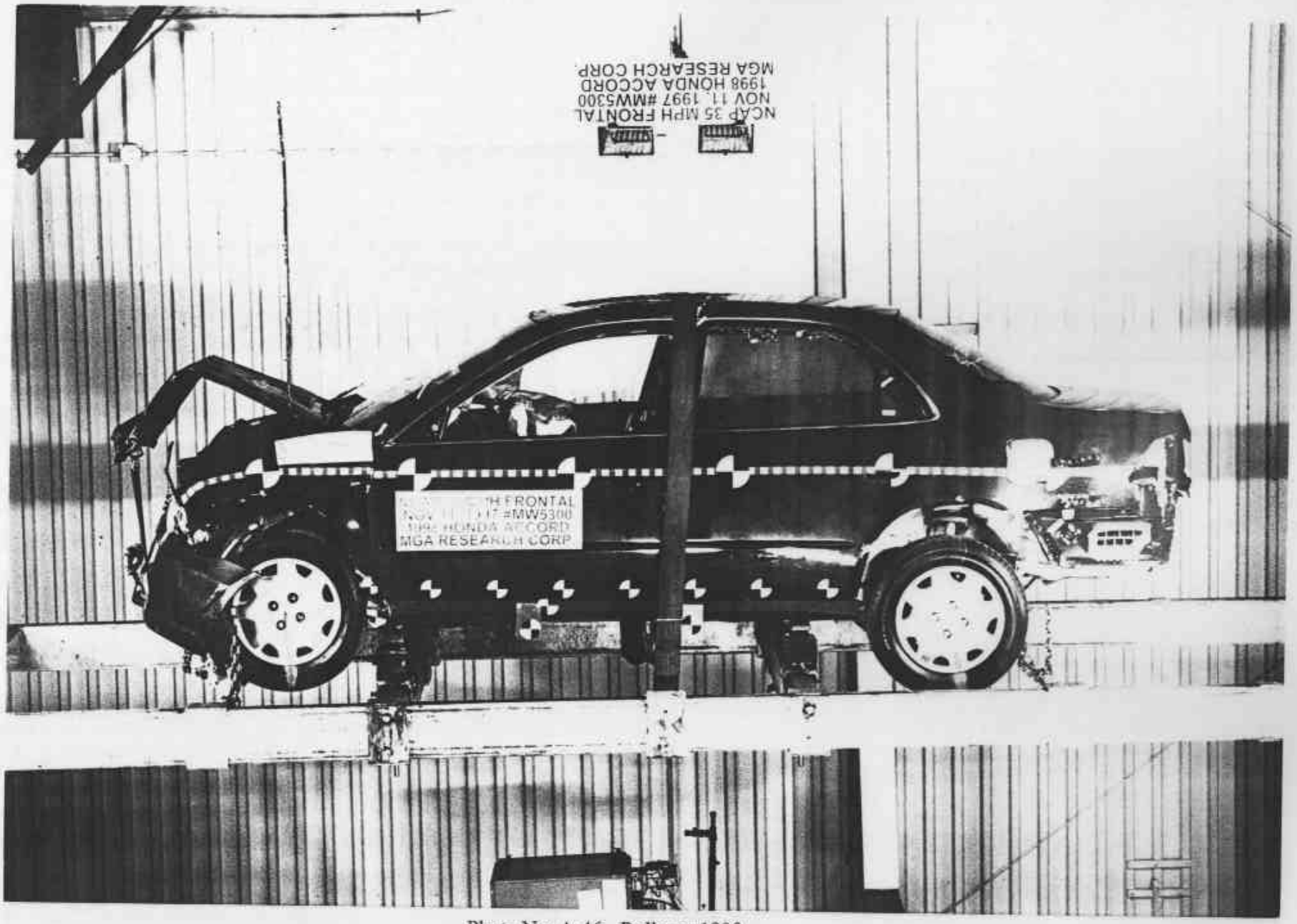



Photo No. A-45 - Rollover 90°




A-46

Photo No. A-46 - Rollover 180°

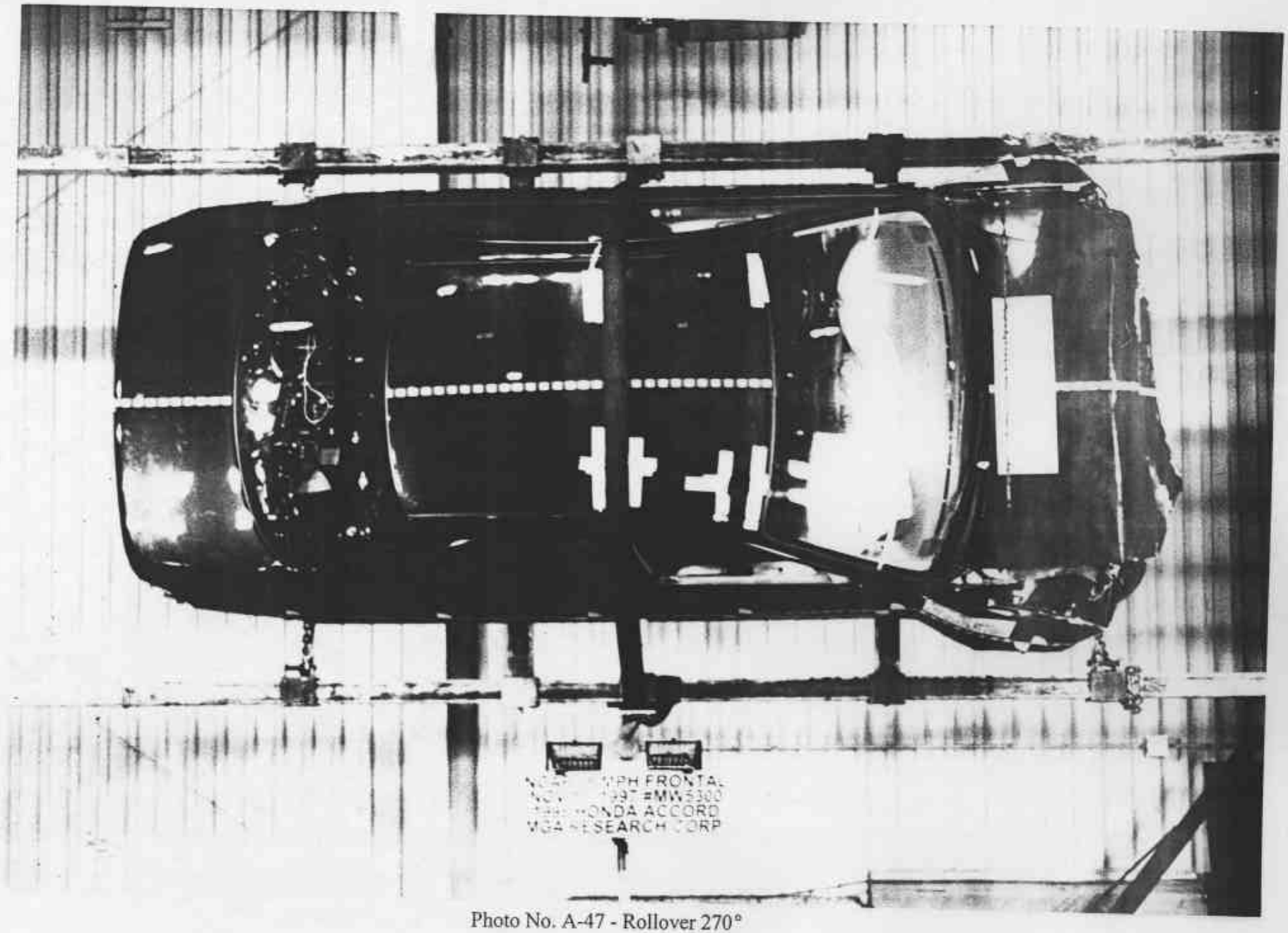



Photo No. A-47 - Rollover 270°

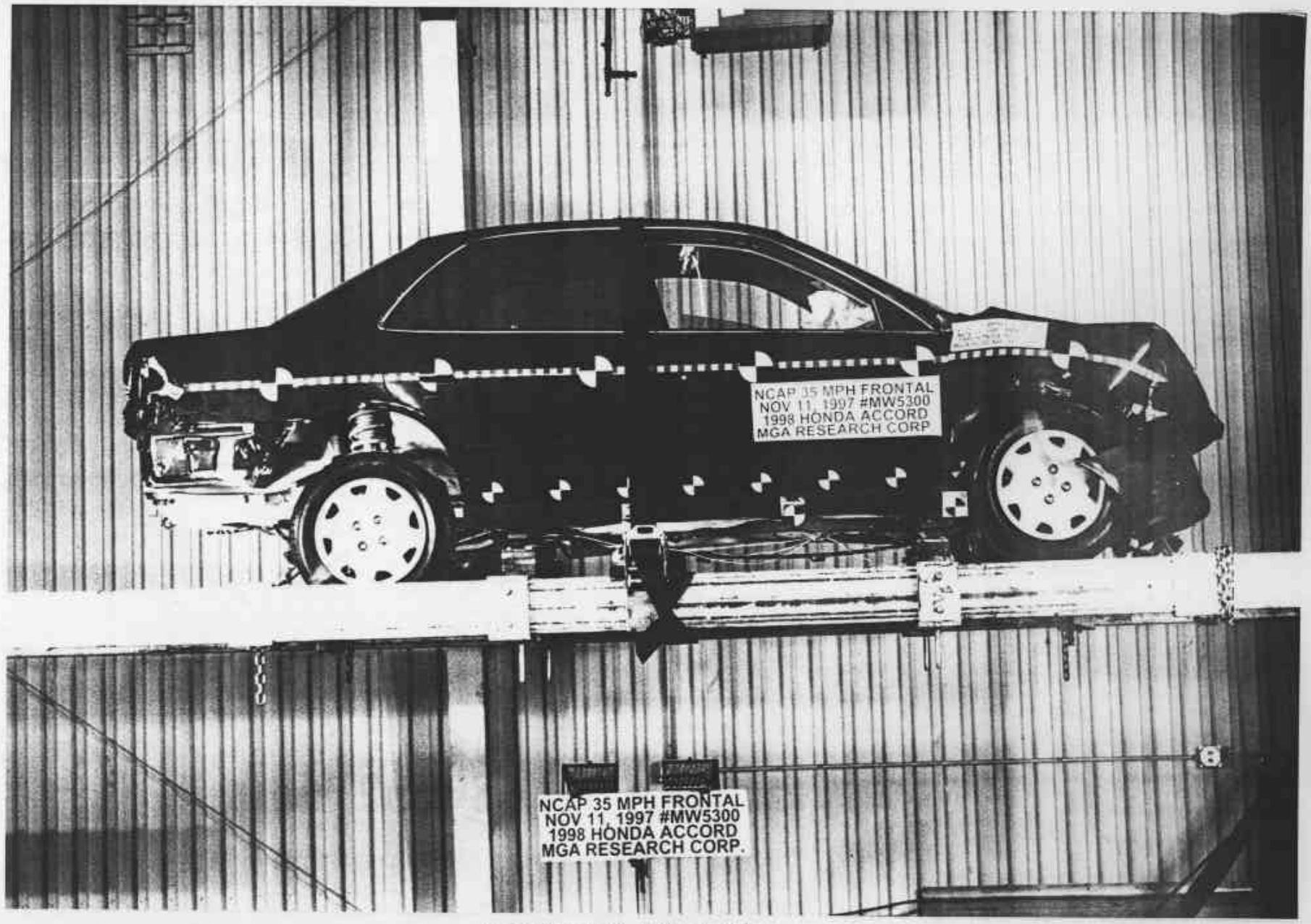



Photo No. A-48 - Rollover 360°

# APPENDIX B

## Vehicle and Dummy Response Data

1998 Honda Accord

NHTSA NO.: MW3500

VEHICLE DATA FILTER CHANNEL CLASS

Head Accelerations 1000 (1650 Hz)

Chest Accelerations 180 (300 Hz)

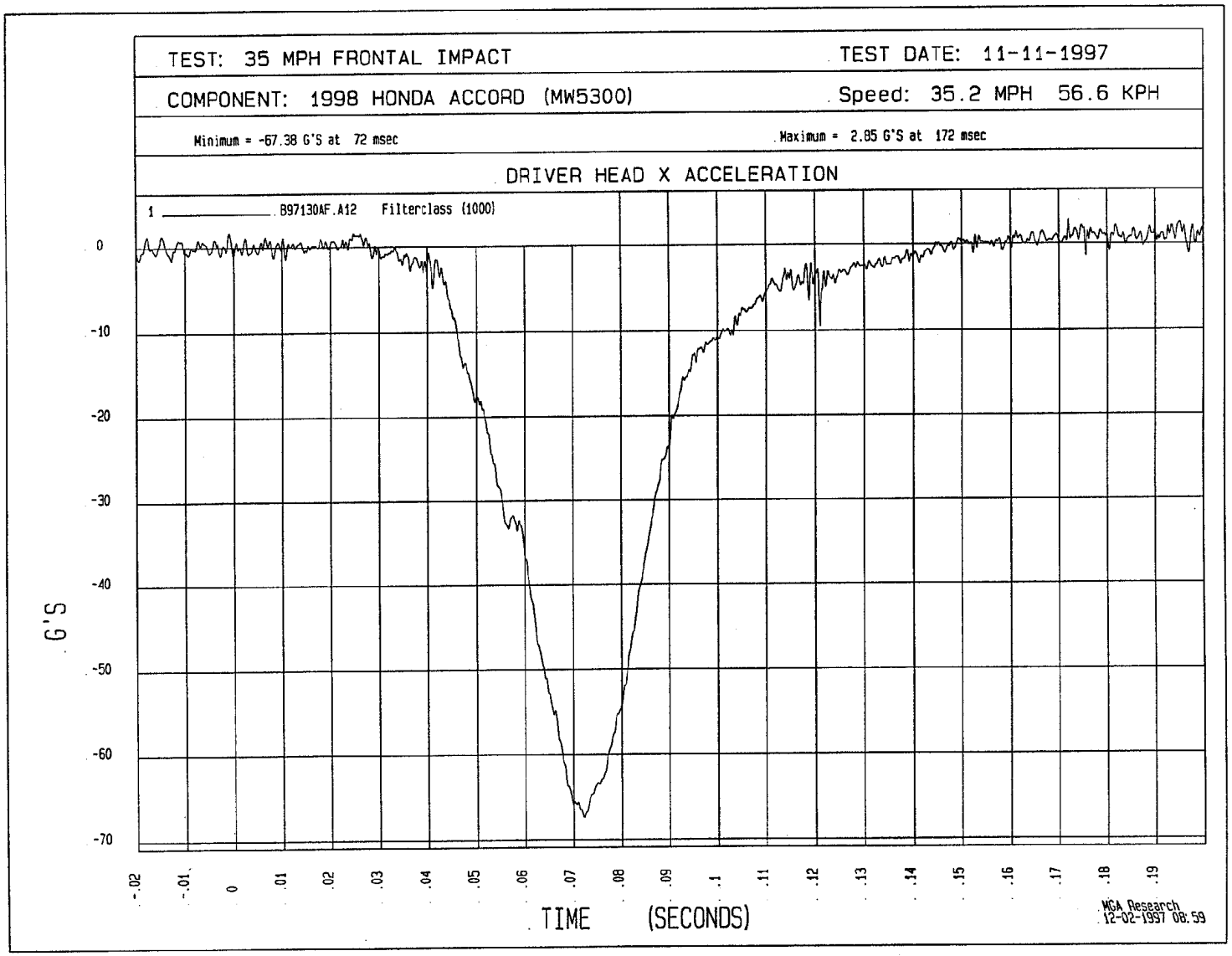
Vehicle Accelerations 60 (100 Hz)

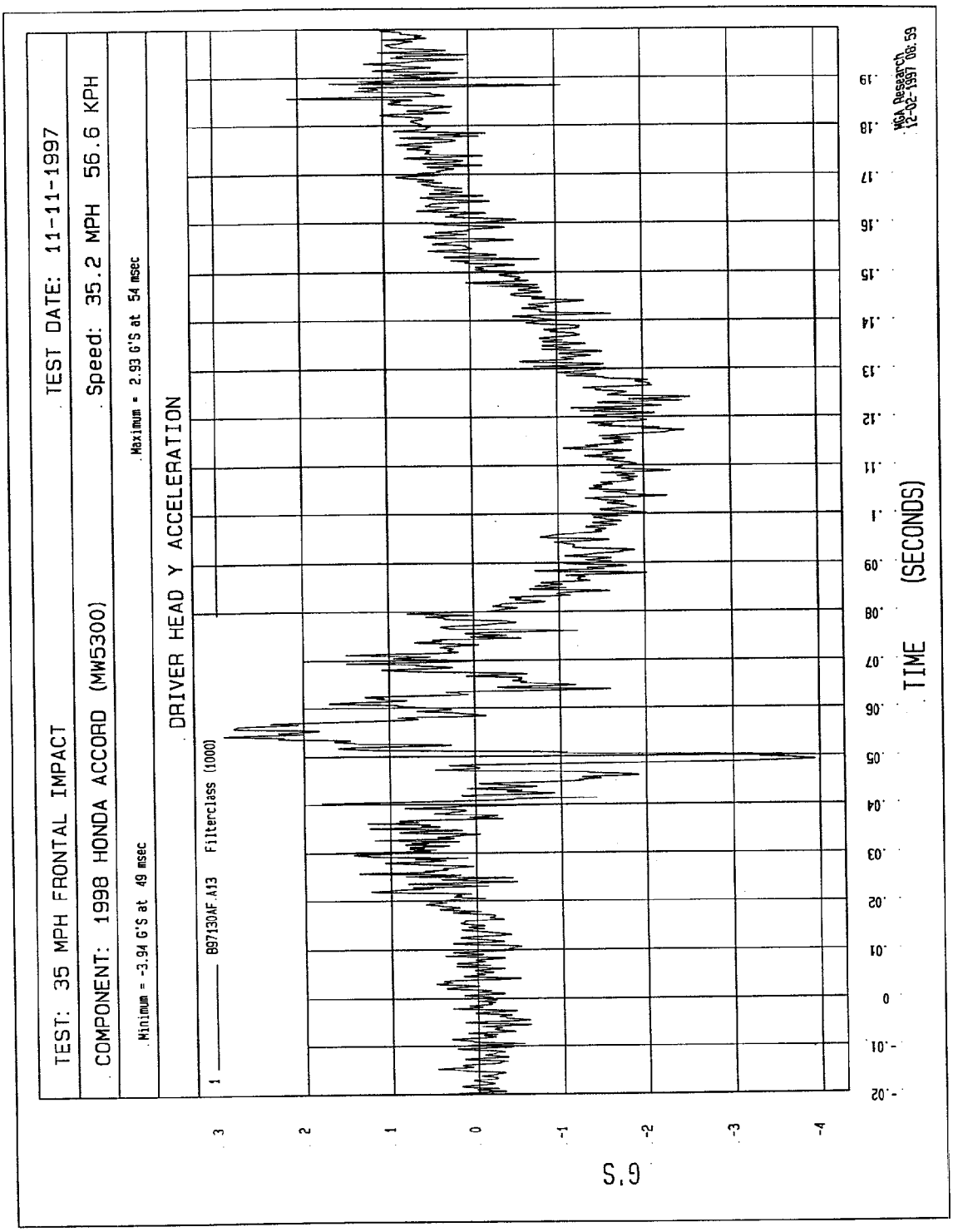
Barrier Load Cells 60 (100 Hz)

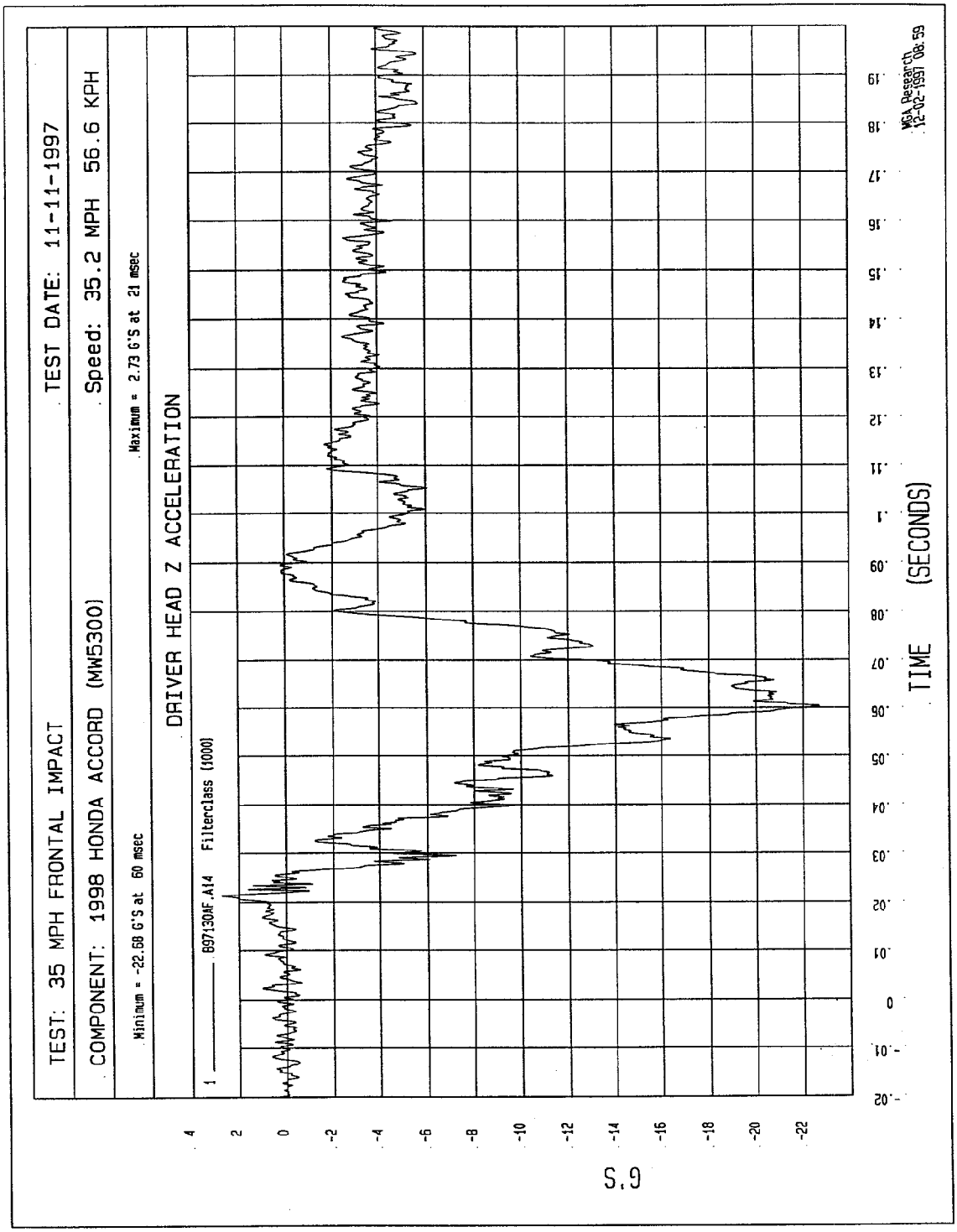
Femur Load Cells 600 (1000 Hz)

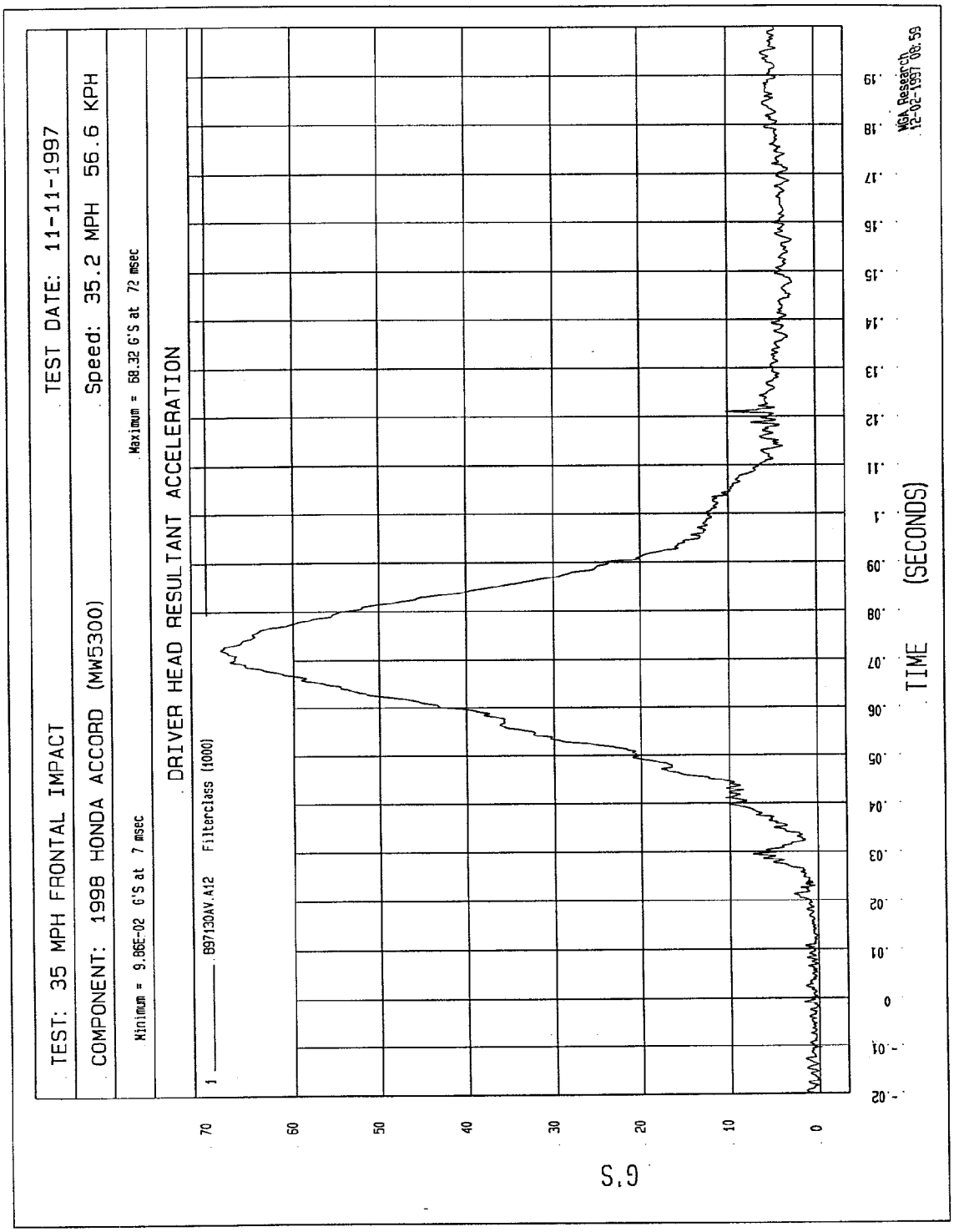
Lap and Torso Belts 60 (100 Hz)

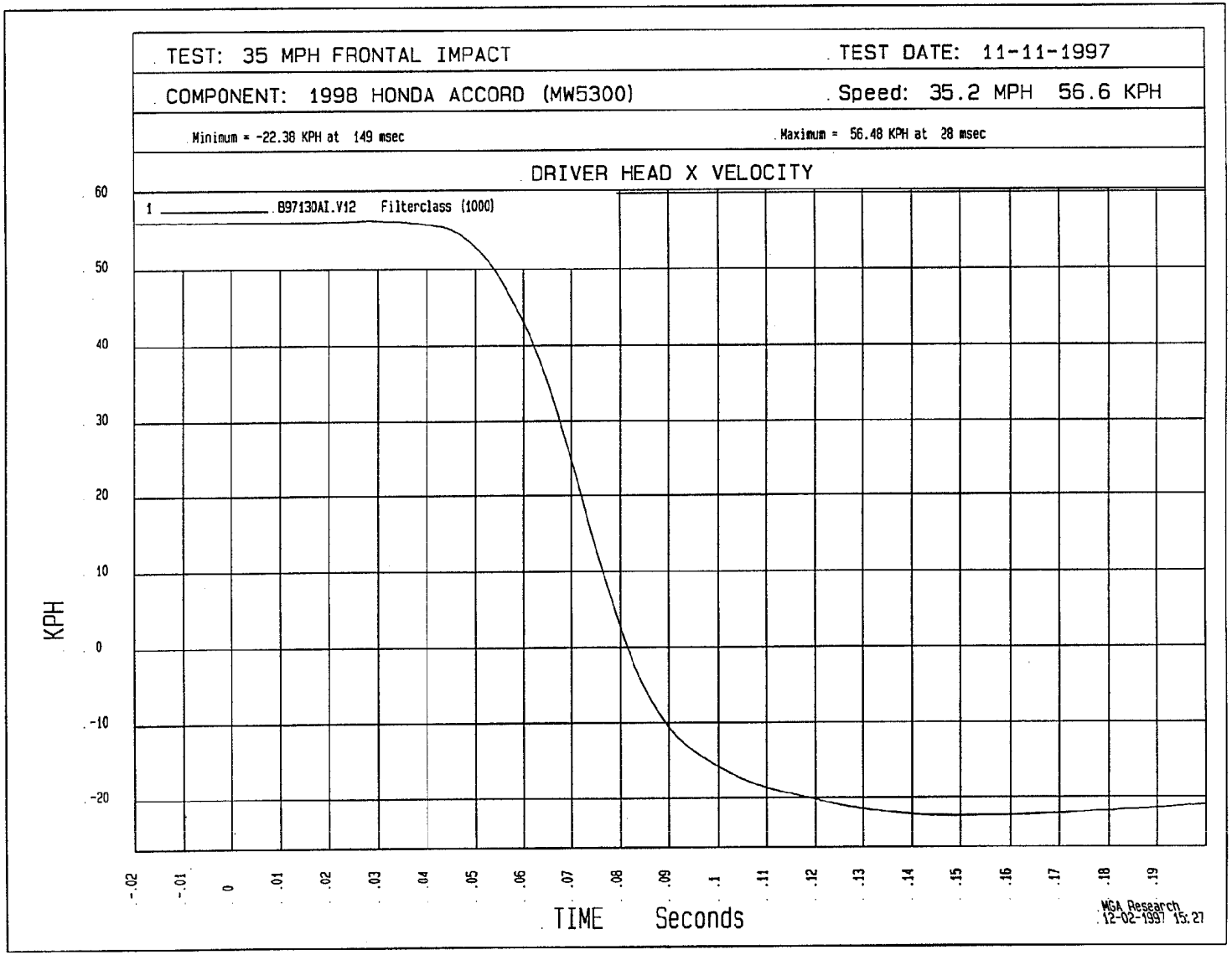
* No valid data collected

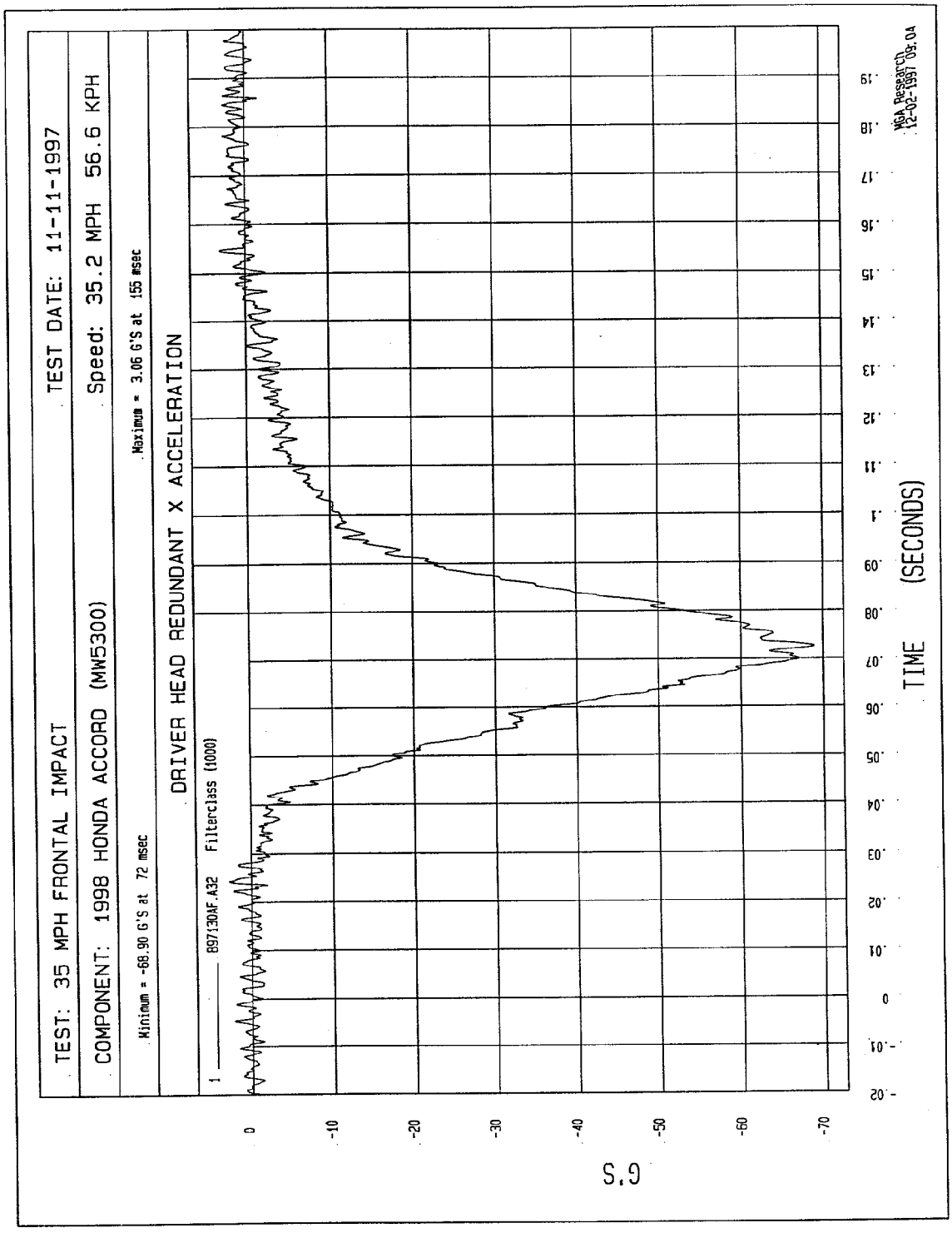

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -67.38 G'S at 72 msec
Maximum = 2.85 G'S at 172 msec
DRIVER HEAD X ACCELERATION
1 B97130AF.A12 Filterclass (1000)
0
-10
-20
-30
-40
-50
-60
-70
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 08:59

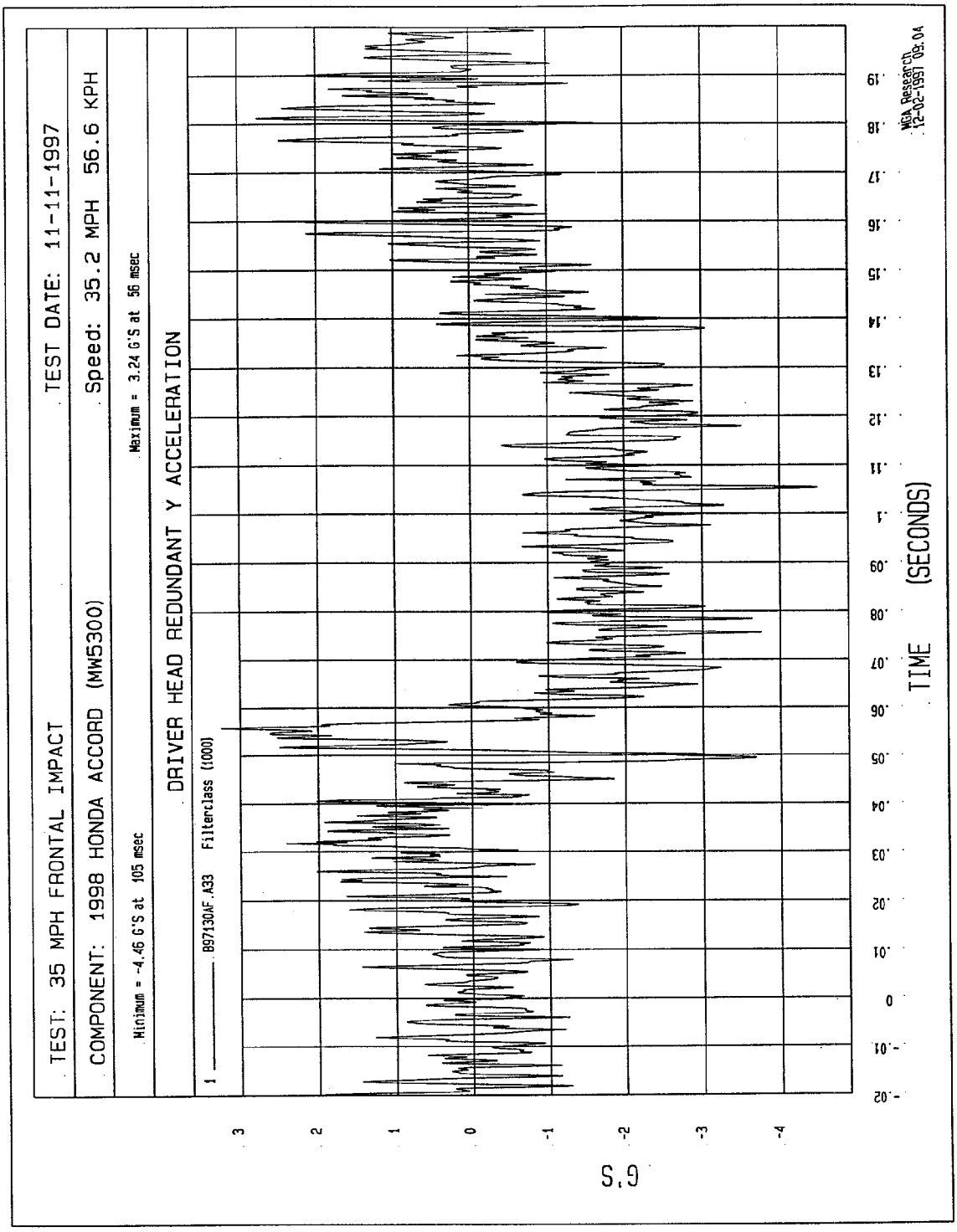

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -3.94 G'S at 49 msec
Maximum = 2.93 G'S at 54 msec
DRIVER HEAD Y ACCELERATION
1 ——— 897130AF A13 Filterclass (1000)
MGA Research
12-02-1997 08:59
G'S
TIME (SECONDS)

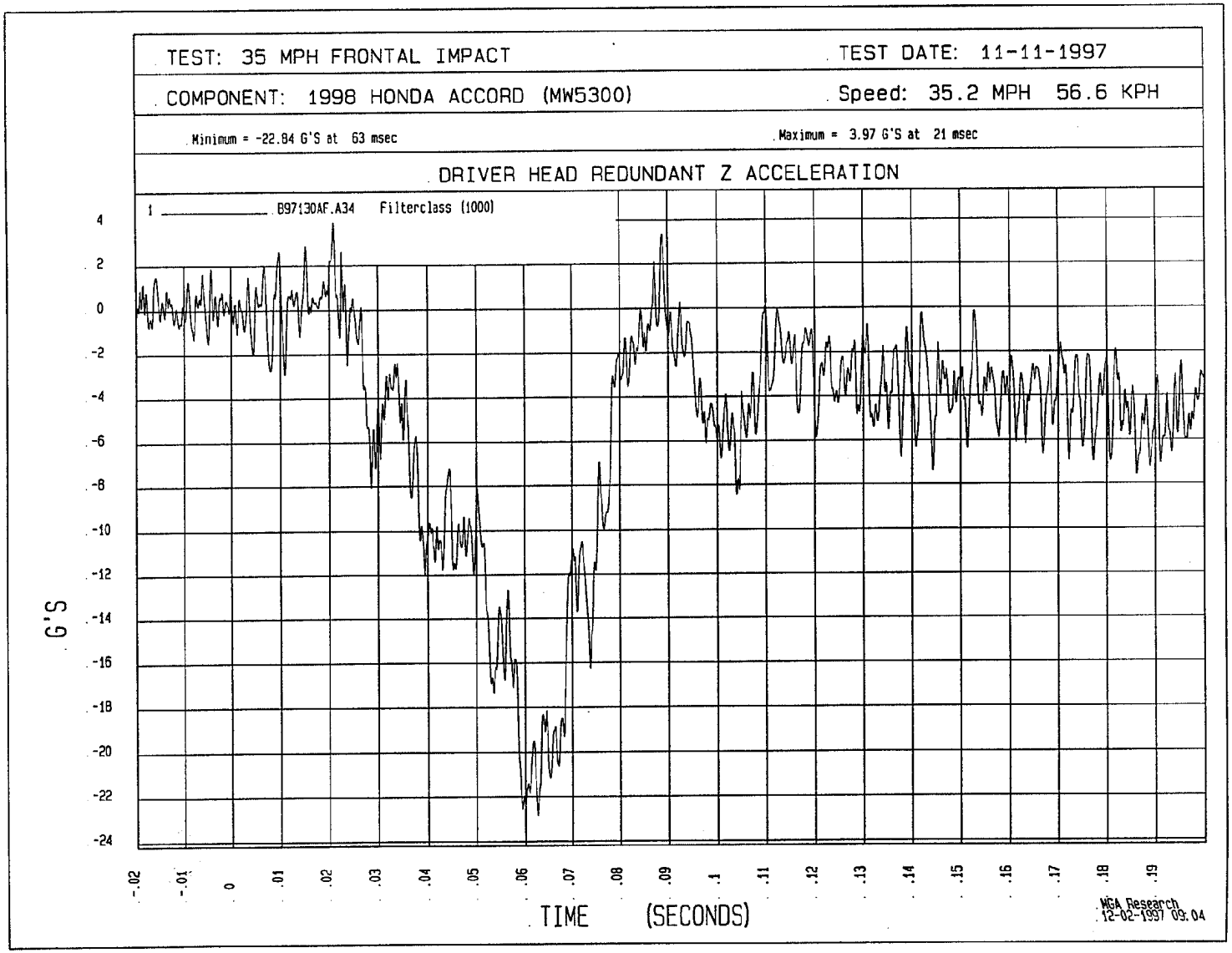

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -22.68 G'S at 60 msec
Maximum = 2.73 G'S at 21 msec
DRIVER HEAD Z ACCELERATION
1 B97130HF.A14 Filterclass (1000)
G's
TIME (SECONDS)
MGA Research
12-02-1997 08:59

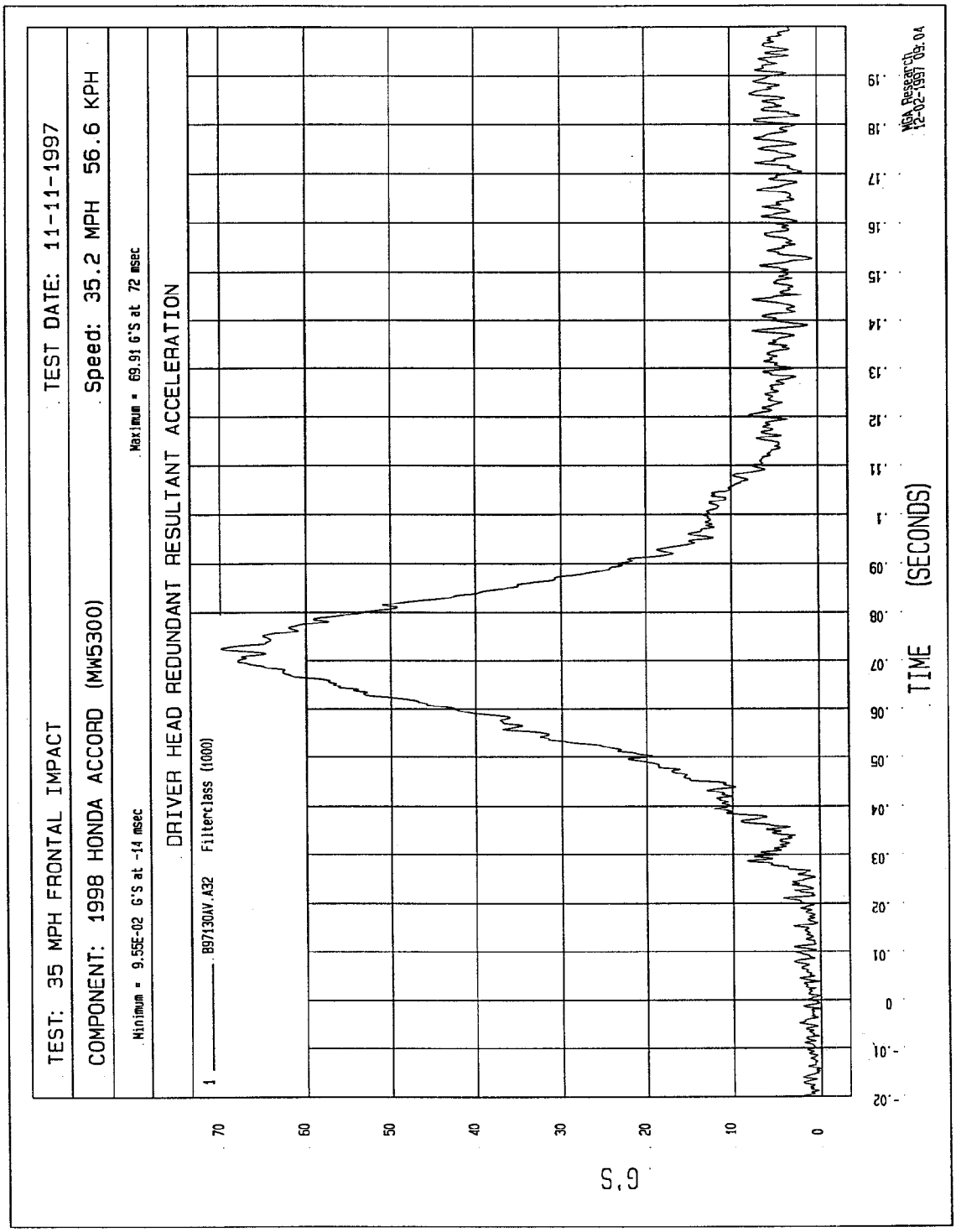

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 9.86E-02 G'S at 7 msec
Maximum = 68.32 G'S at 72 msec
DRIVER HEAD RESULTANT ACCELERATION
1 B97130AV.A12 Filterclass (1000)
G'S
TIME (SECONDS)
MGA Research
12-02-1997 08:59

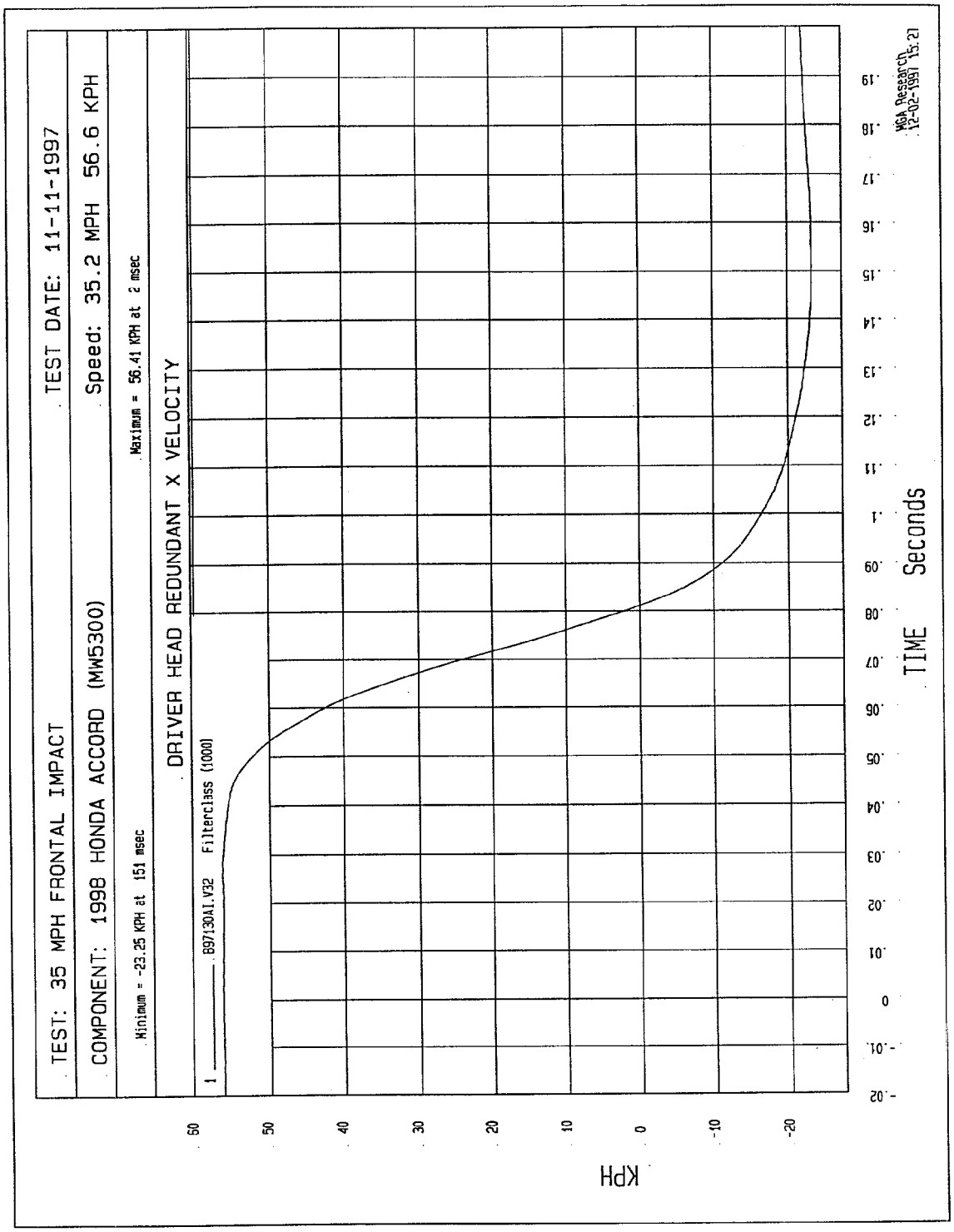

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -22.38 KPH at 149 msec
Maximum = 56.48 KPH at 28 msec
DRIVER HEAD X VELOCITY
1 B97130AI.V12 Filterclass (1000)
60
50
40
30
20
10
0
-10
-20
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 15:27

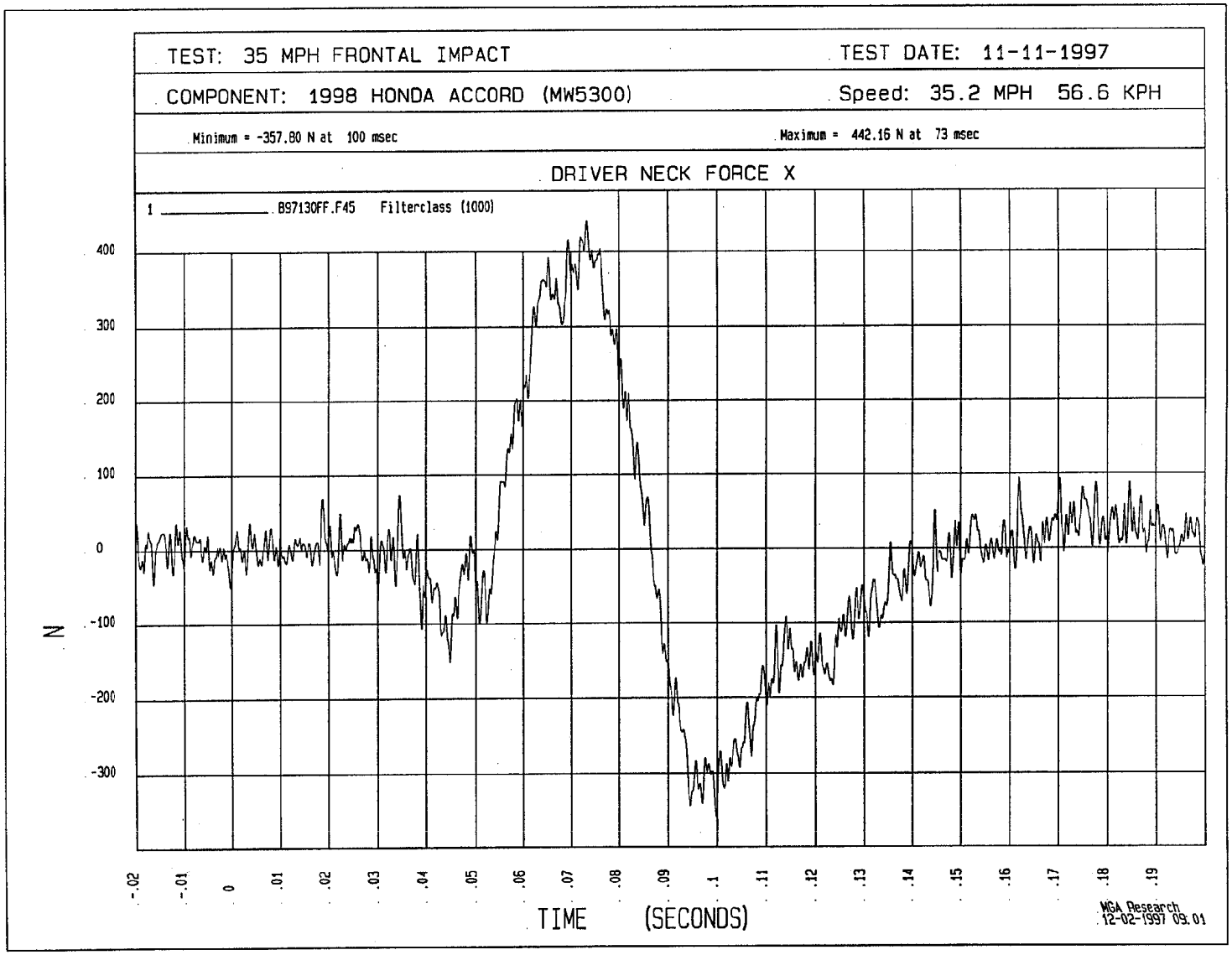

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -68.90 G'S at 72 msec
Maximum = 3.06 G'S at 155 msec
DRIVER HEAD REDUNDANT X ACCELERATION
1 _____ 897130AF.A32 Filterclass (1000)
0
-10
-20
-30
-40
-50
-60
-70
G'S
.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:04

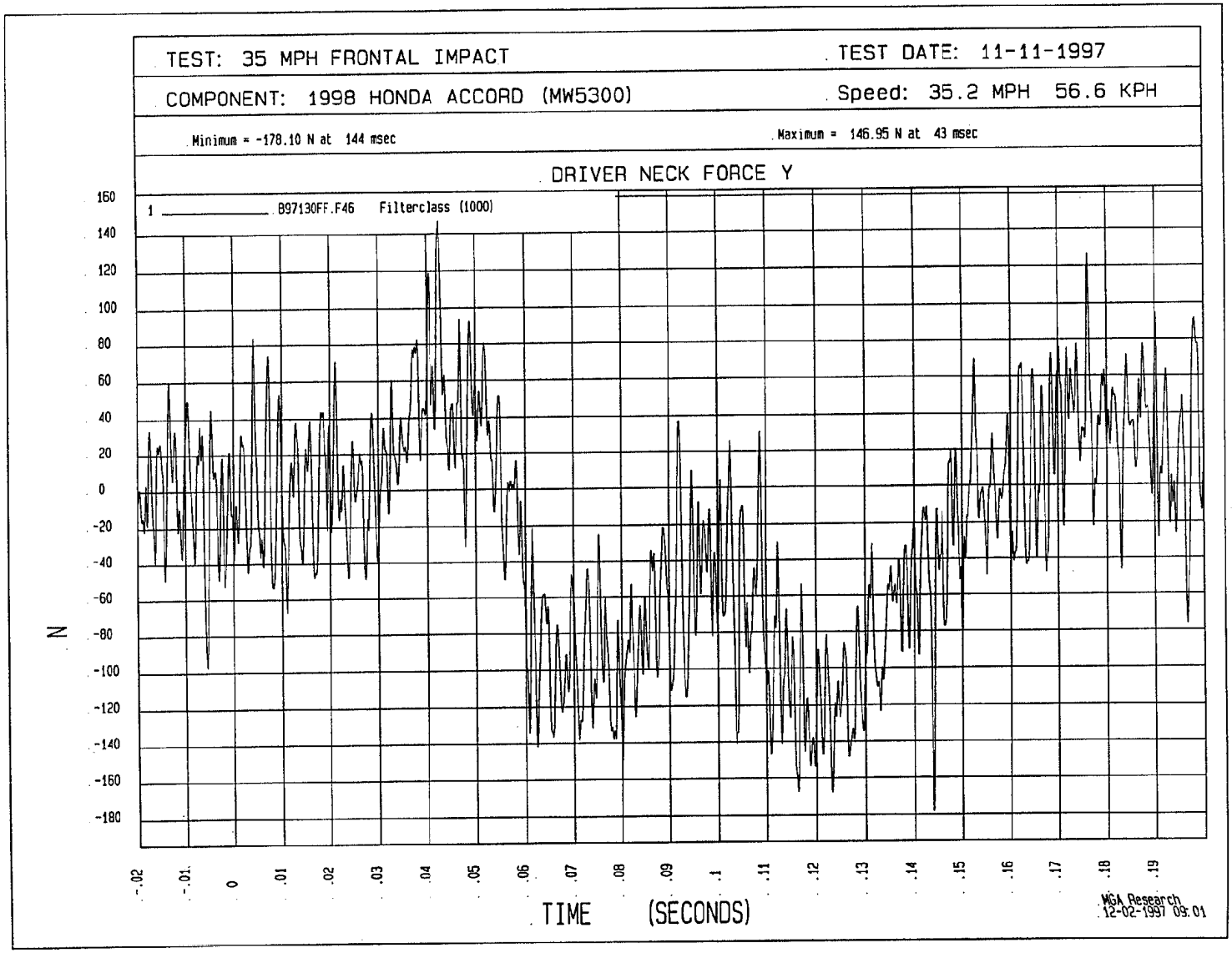

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -4.46 G'S at 105 msec
Maximum = 3.24 G'S at 56 msec
DRIVER HEAD REDUNDANT Y ACCELERATION
1 B97130AF.A33 Filterclass (1000)
G'S
TIME (SECONDS)
MGA Research
12-02-1997 09:04

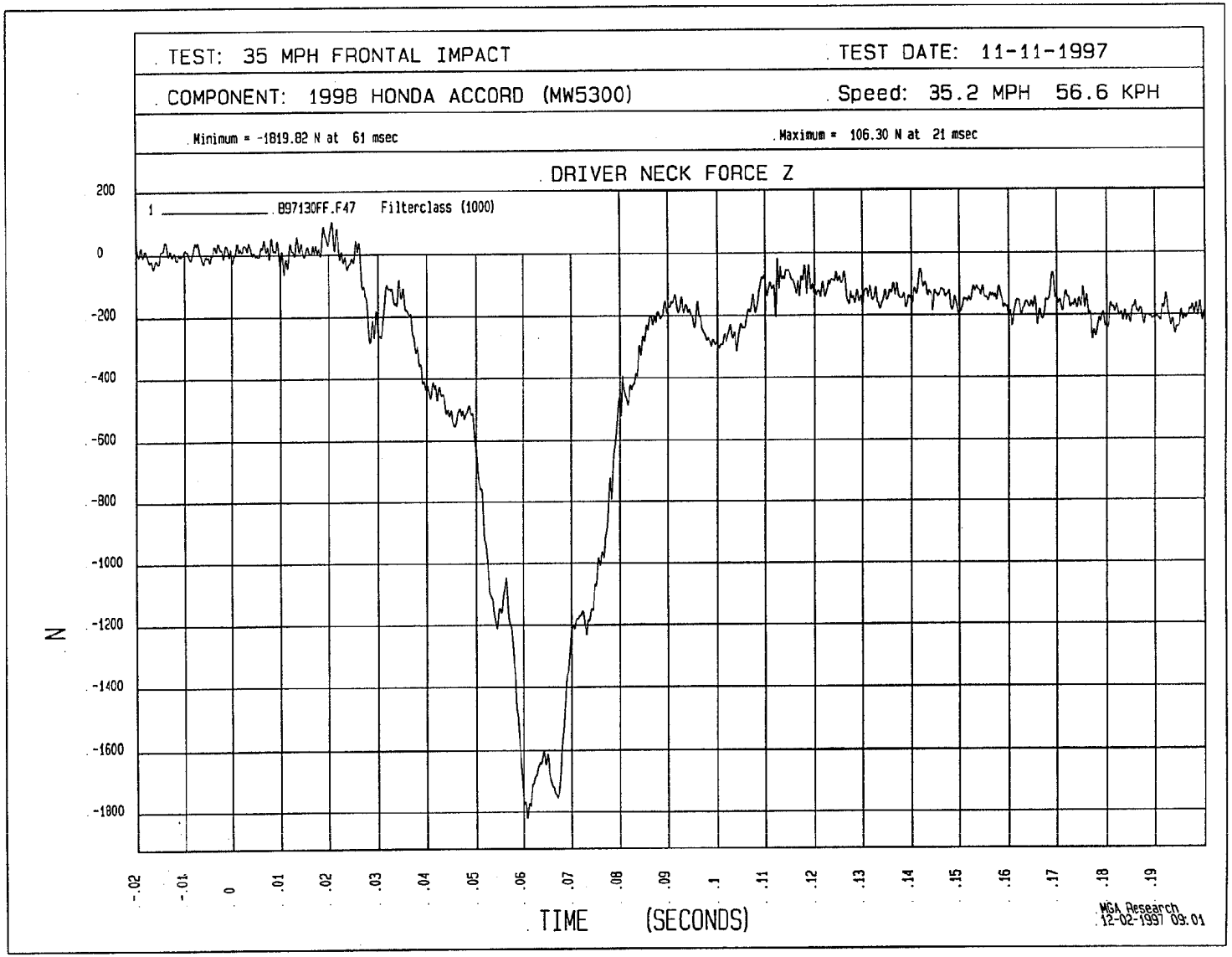

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -22.84 G'S at 63 msec
Maximum = 3.97 G'S at 21 msec
DRIVER HEAD REDUNDANT Z ACCELERATION
1 B97130AF.A34 Filterclass (1000)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:04

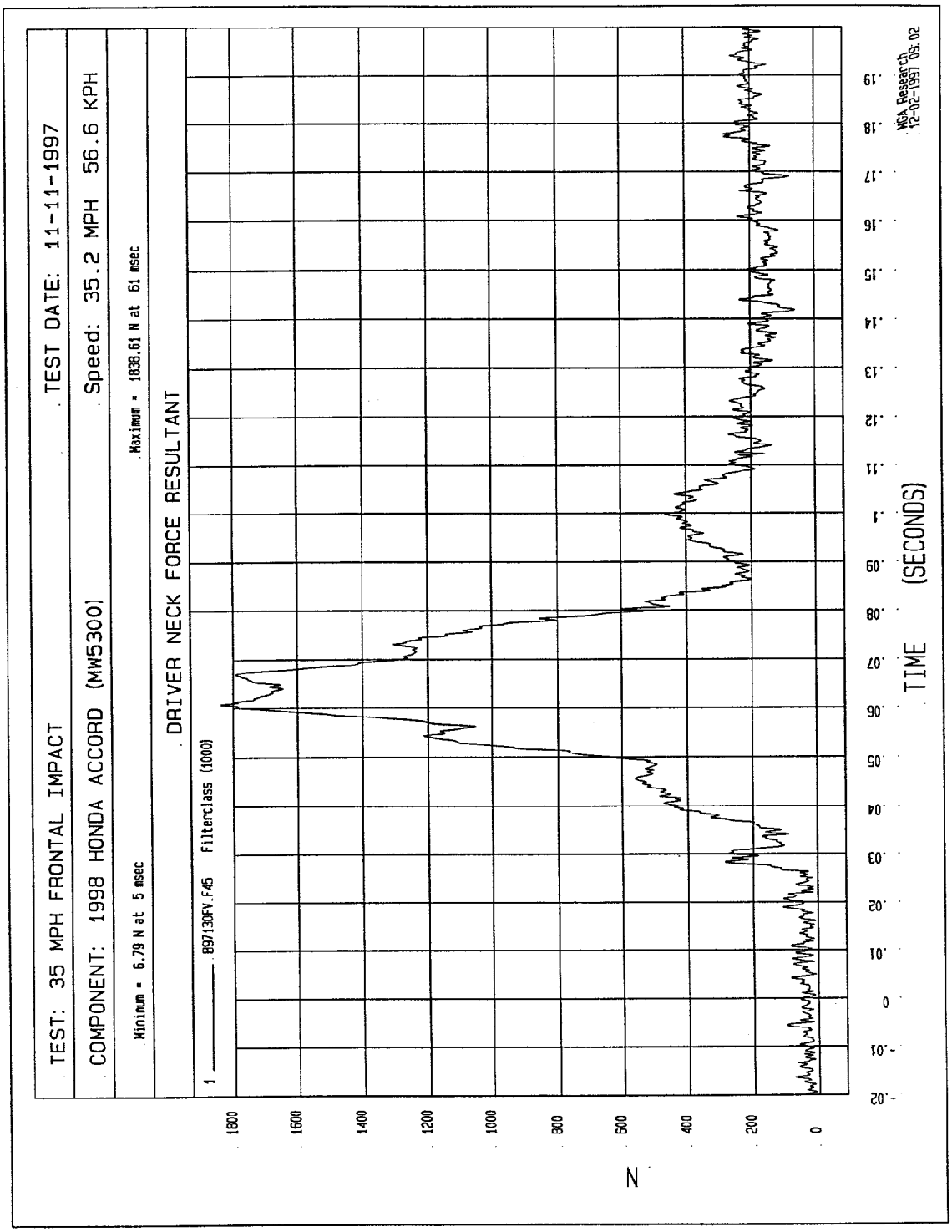

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 9.55E-02 G'S at -14 msec
Maximum = 69.91 G'S at 72 msec
DRIVER HEAD REDUNDANT RESULTANT ACCELERATION
1 B97130AV.A32 Filterclass (1000)
G'S
TIME (SECONDS)
MGA Research
12-02-1997 09:04

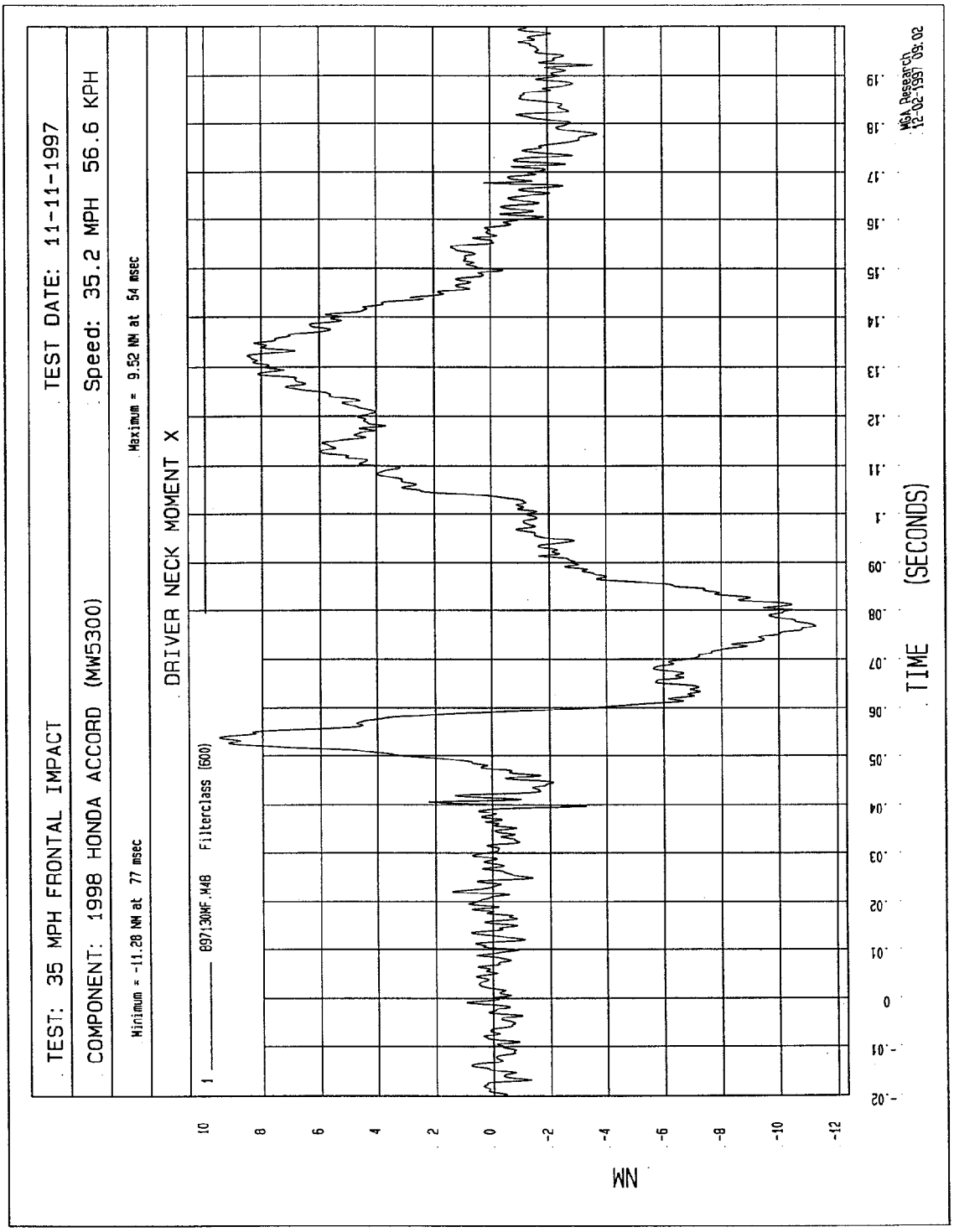

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -23.25 KPH at 151 msec
Maximum = 56.41 KPH at 2 msec
DRIVER HEAD REDUNDANT X VELOCITY
1 _____ B97130A1.V32 Filterclass (1000)
KPH
TIME Seconds
MGA Research
12-02-1997 15:21

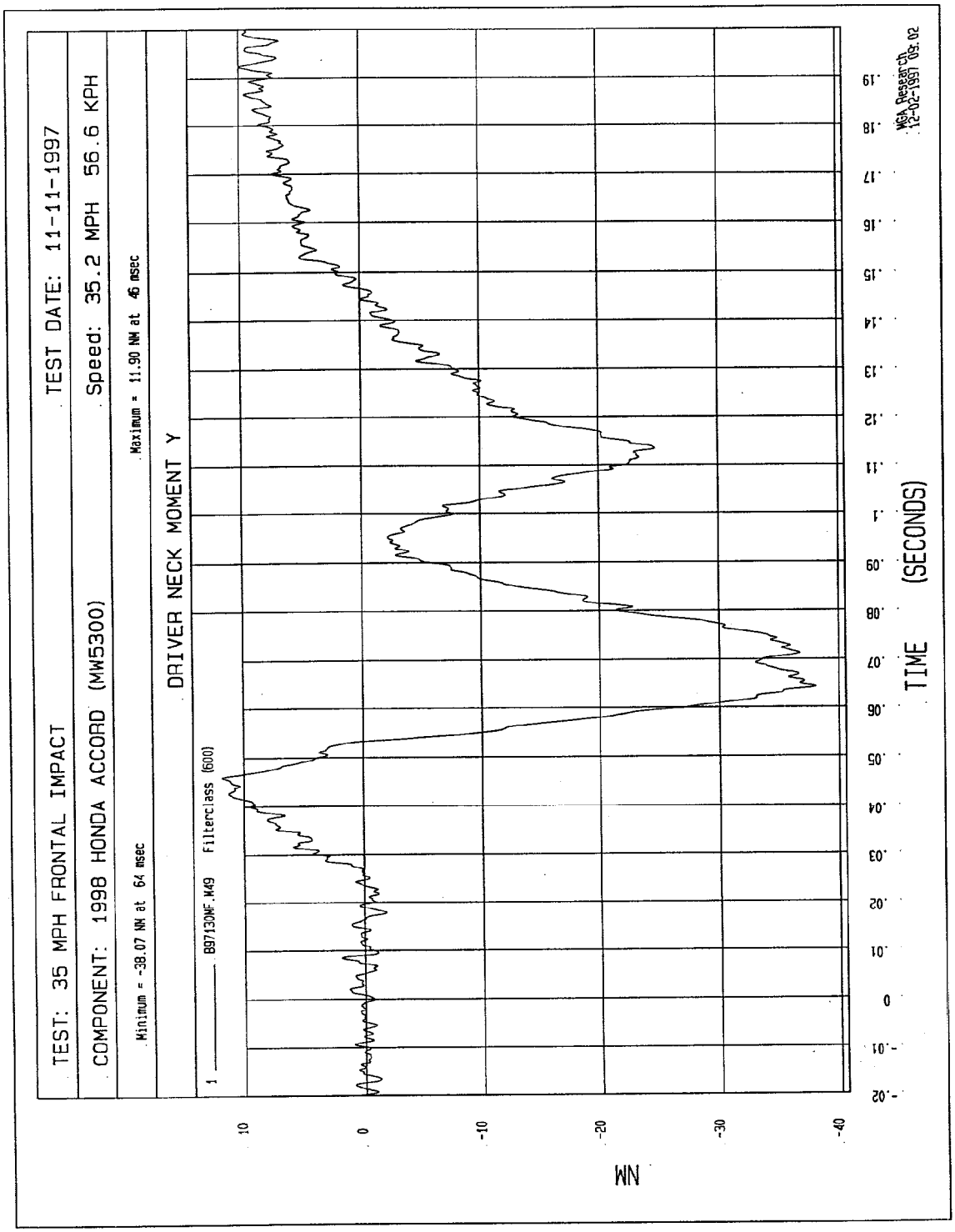

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -357.80 N at 100 msec
Maximum = 442.16 N at 73 msec
DRIVER NECK FORCE X
1 B97130FF.F45 Filterclass (1000)
400
300
200
100
0
-100
-200
-300
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:01

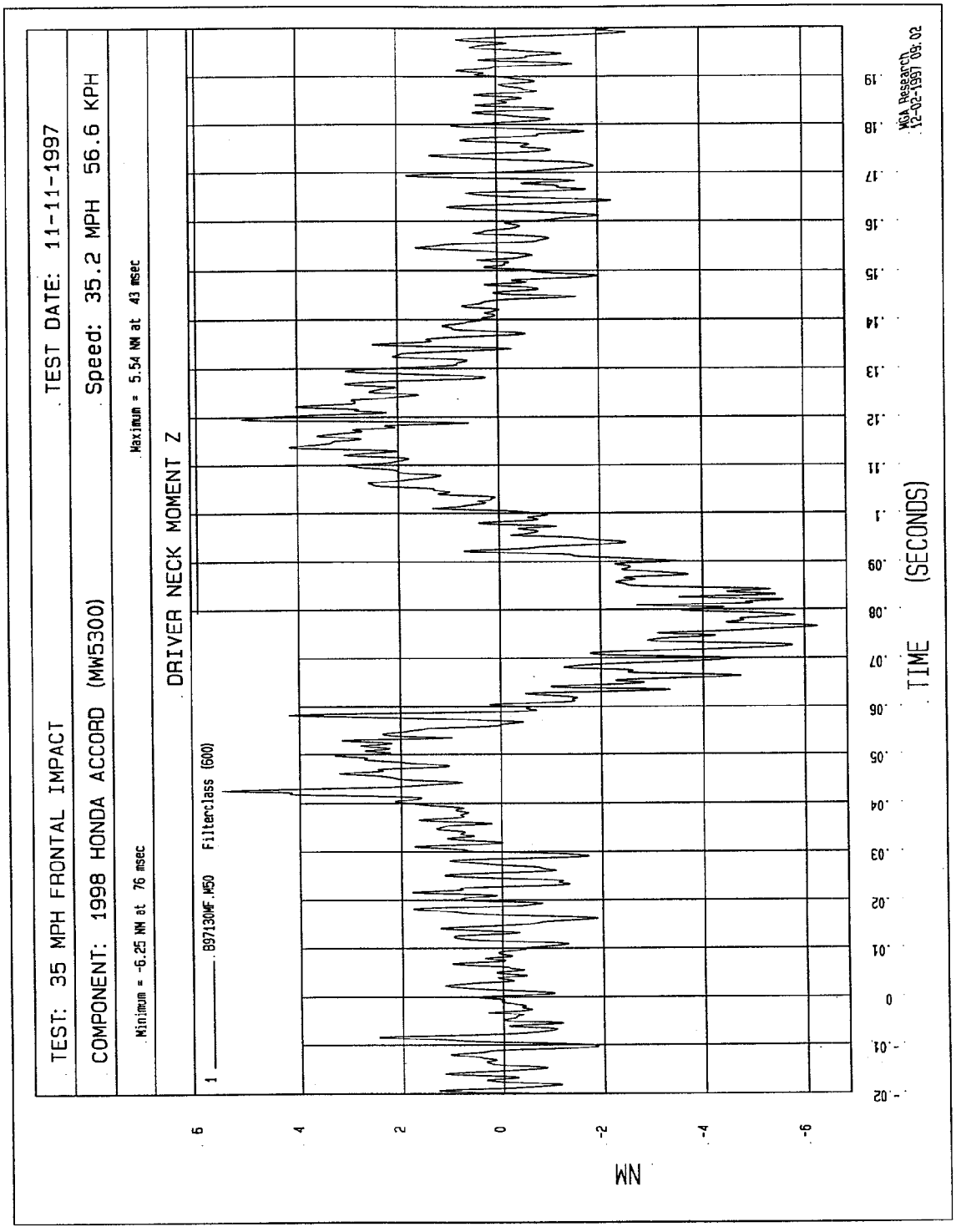

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -178.10 N at 144 msec
Maximum = 146.95 N at 43 msec
DRIVER NECK FORCE Y
1 B97130FF.F46 Filterclass (1000)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:01

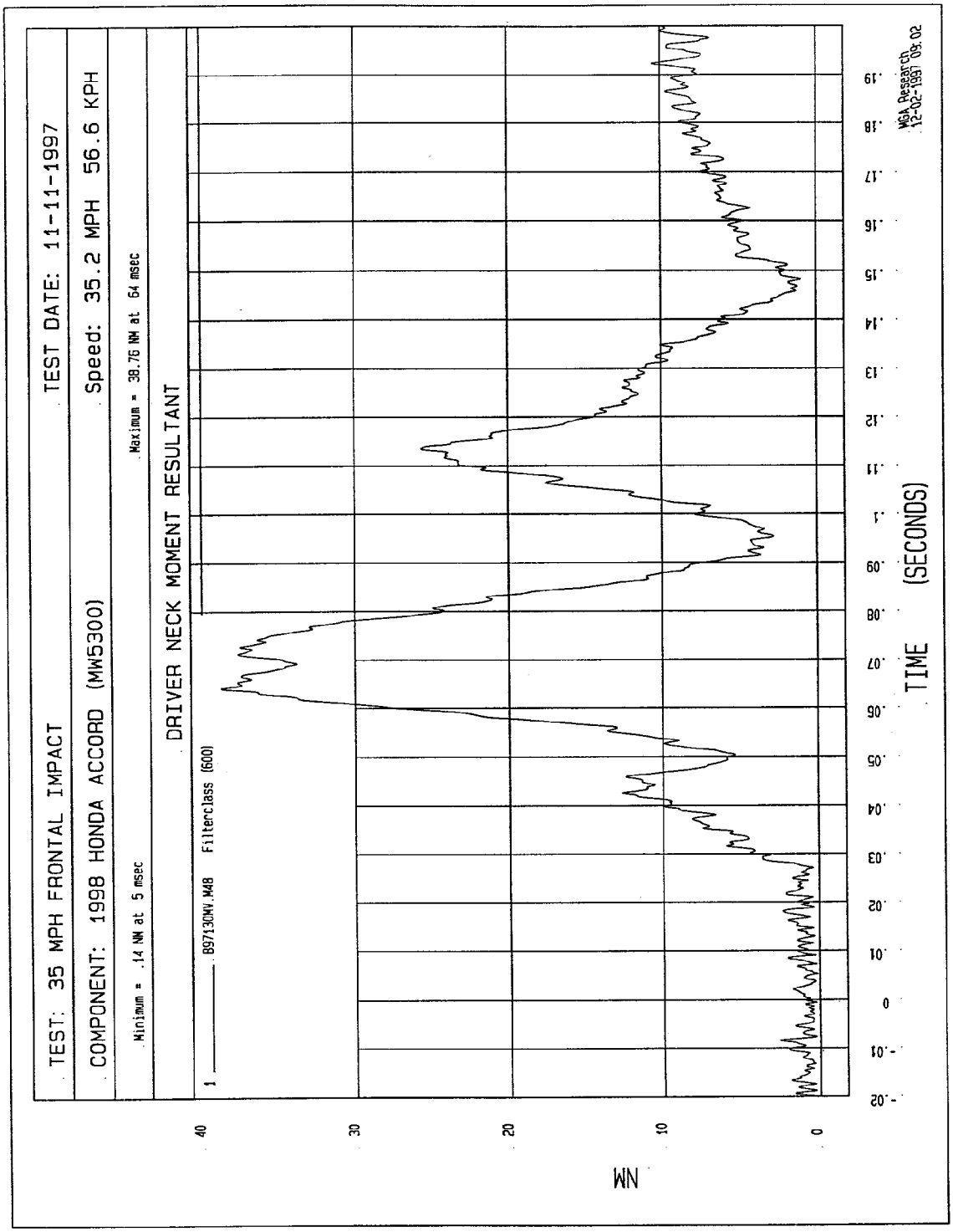

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -1819.82 N at 61 msec
Maximum = 106.30 N at 21 msec
DRIVER NECK FORCE Z
1 B97130FF.F47 Filterclass (1000)
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:01

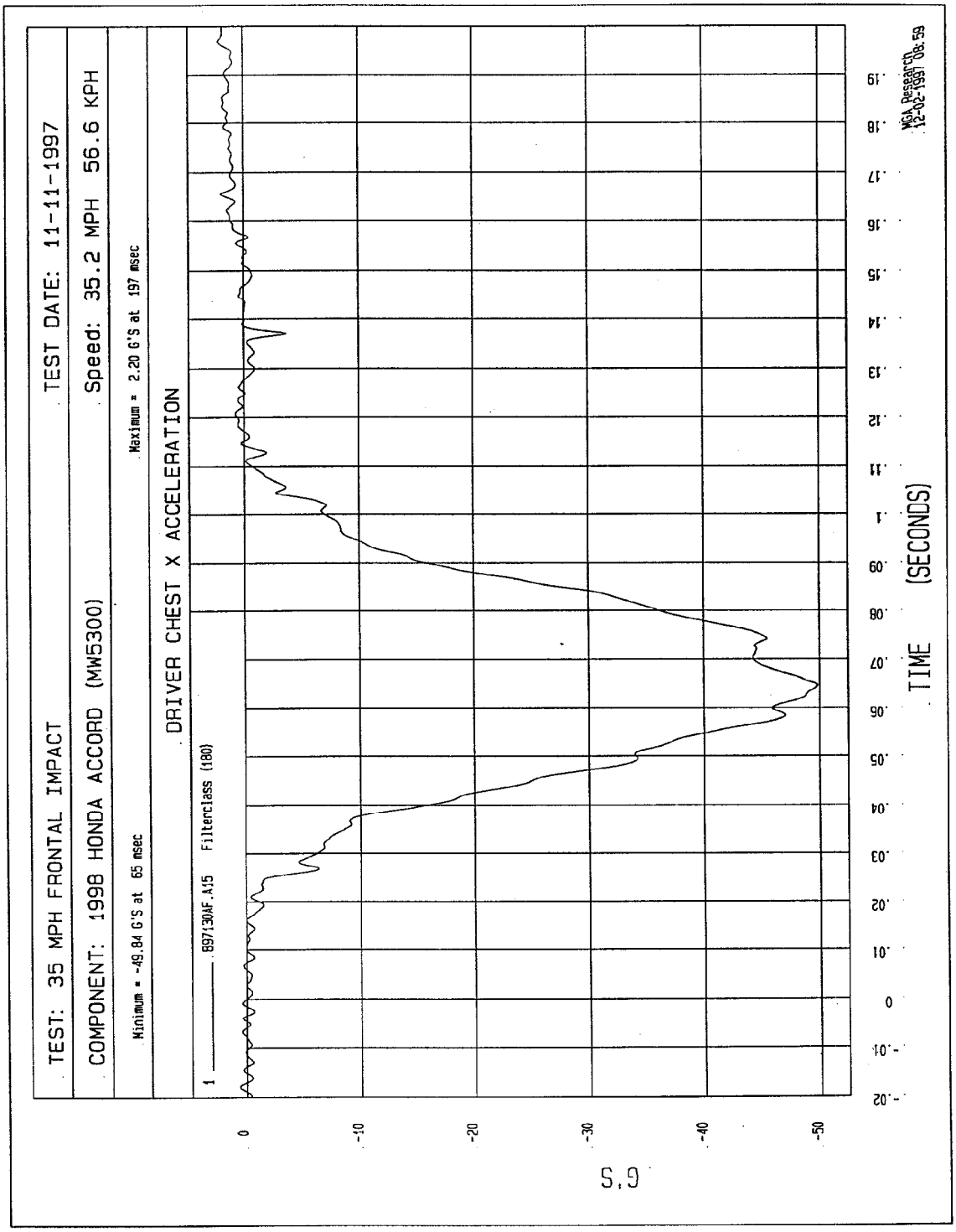

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 6.79 N at 5 msec
Maximum = 1838.61 N at 61 msec
DRIVER NECK FORCE RESULTANT
1 897130FV.F45 Filterclass (1000)
N
TIME (SECONDS)
MGA Research
12-02-1997 09:02

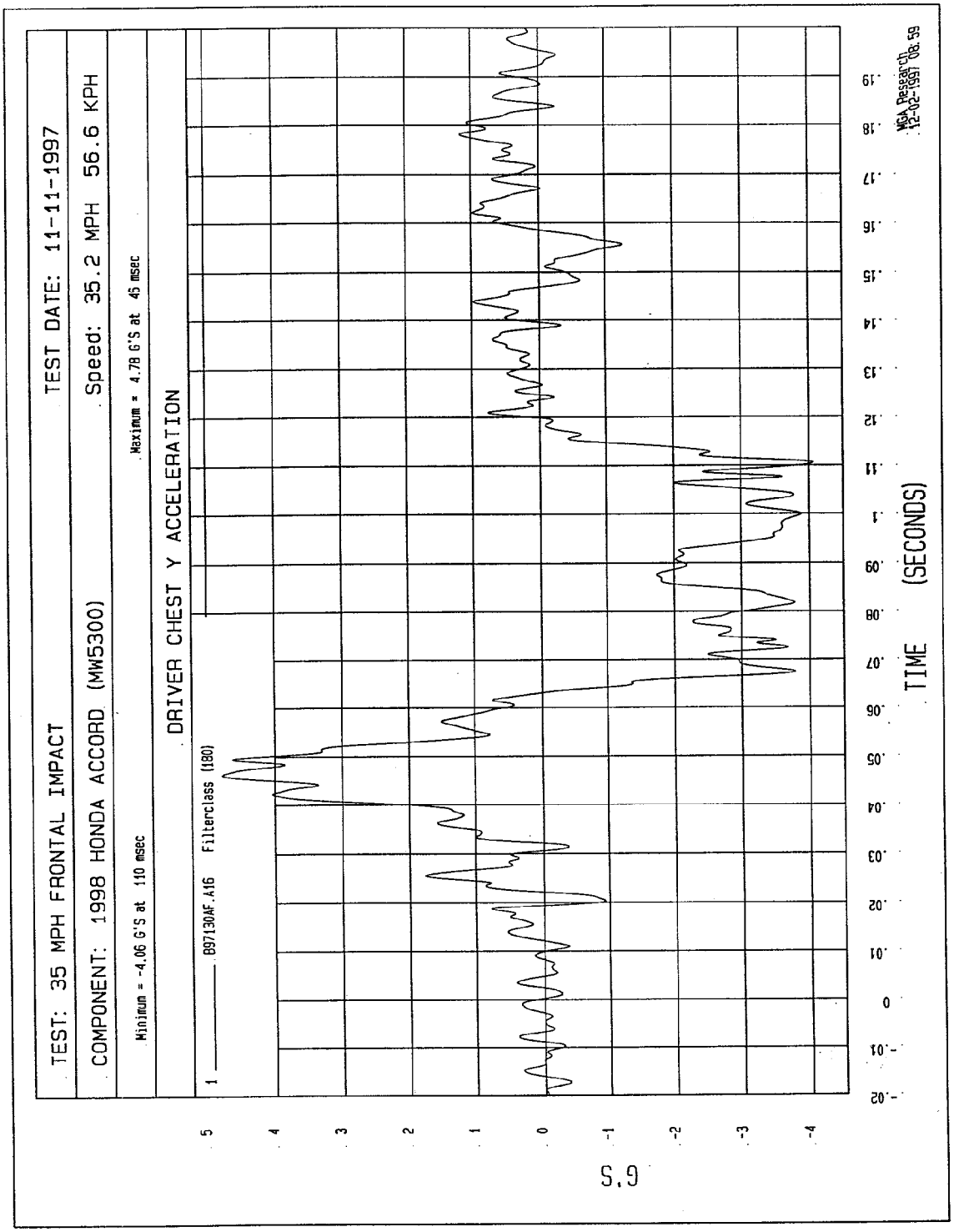

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -11.28 NM at 77 msec
Maximum = 9.52 NM at 54 msec
DRIVER NECK MOMENT X
1 _____ 897130HF.H48 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
12-02-1997 09:02

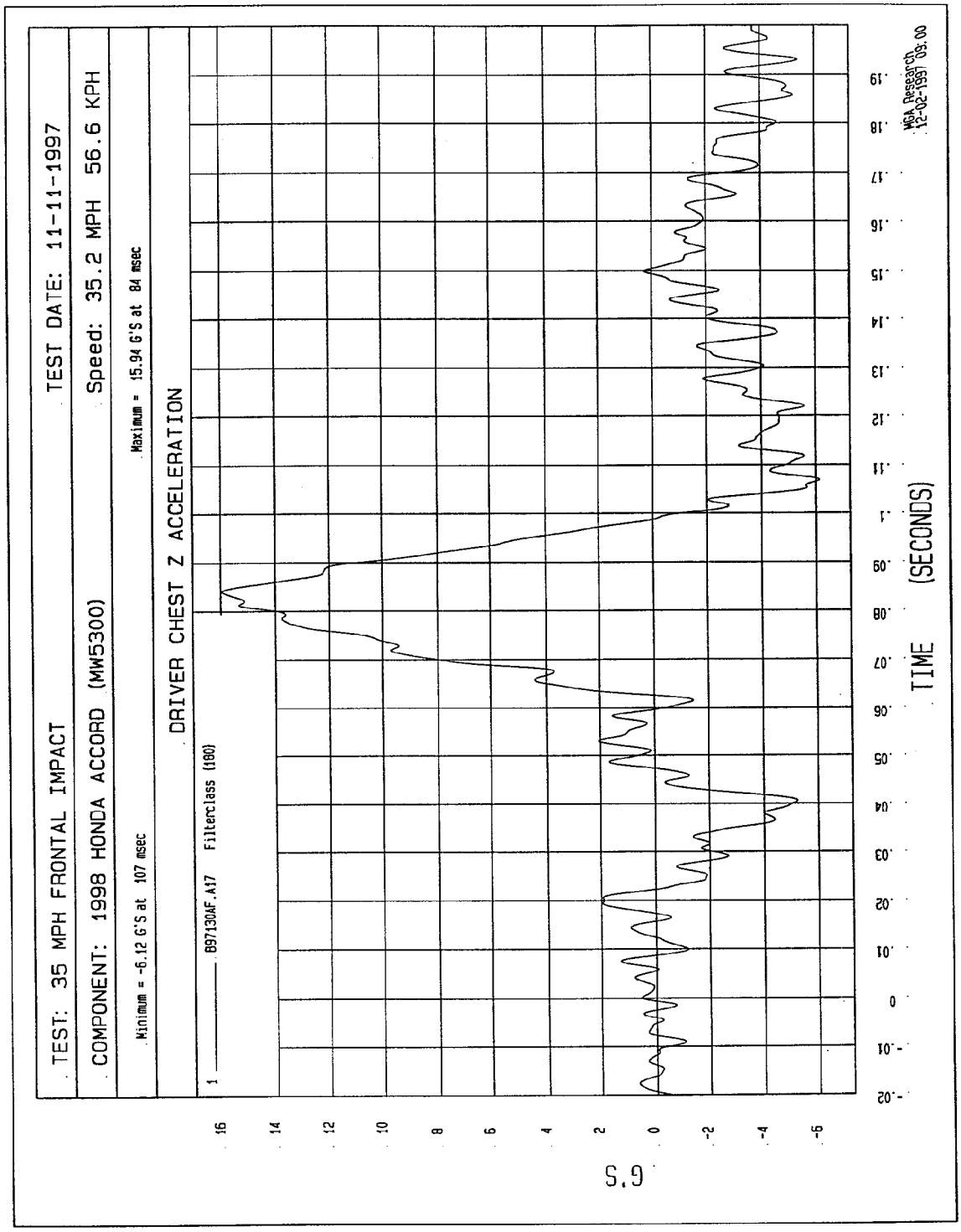

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -38.07 NM at 64 msec
Maximum = 11.90 NM at 46 msec
DRIVER NECK MOMENT Y
1 B9713DNF.M49 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
12-02-1997 09:02

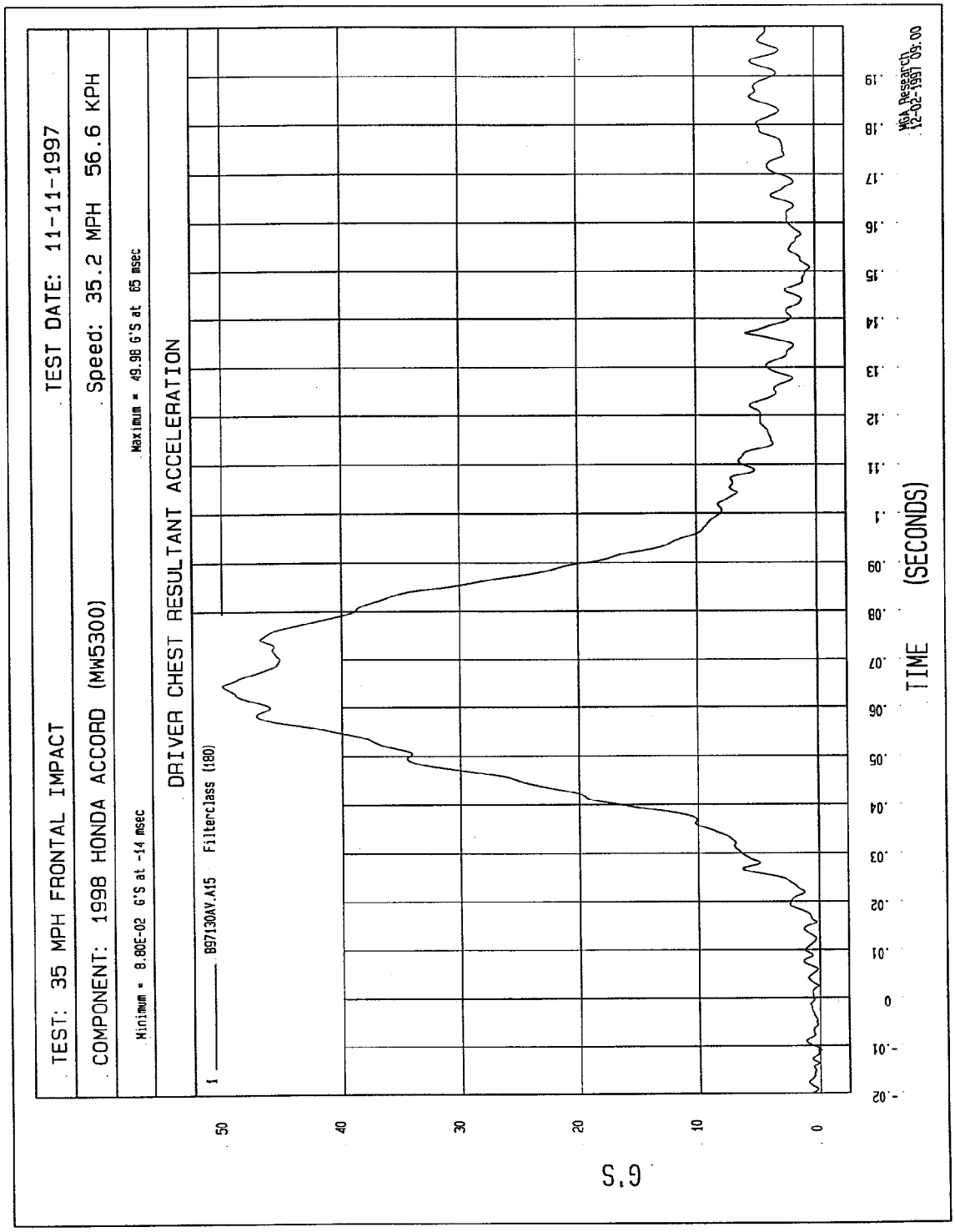

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -6.25 KN at 76 msec
Maximum = 5.54 KN at 43 msec
DRIVER NECK MOMENT Z
1 B97130MF.M50 Filterclass (600)
KN
TIME (SECONDS)
MGA Research
12-02-1997 09:02

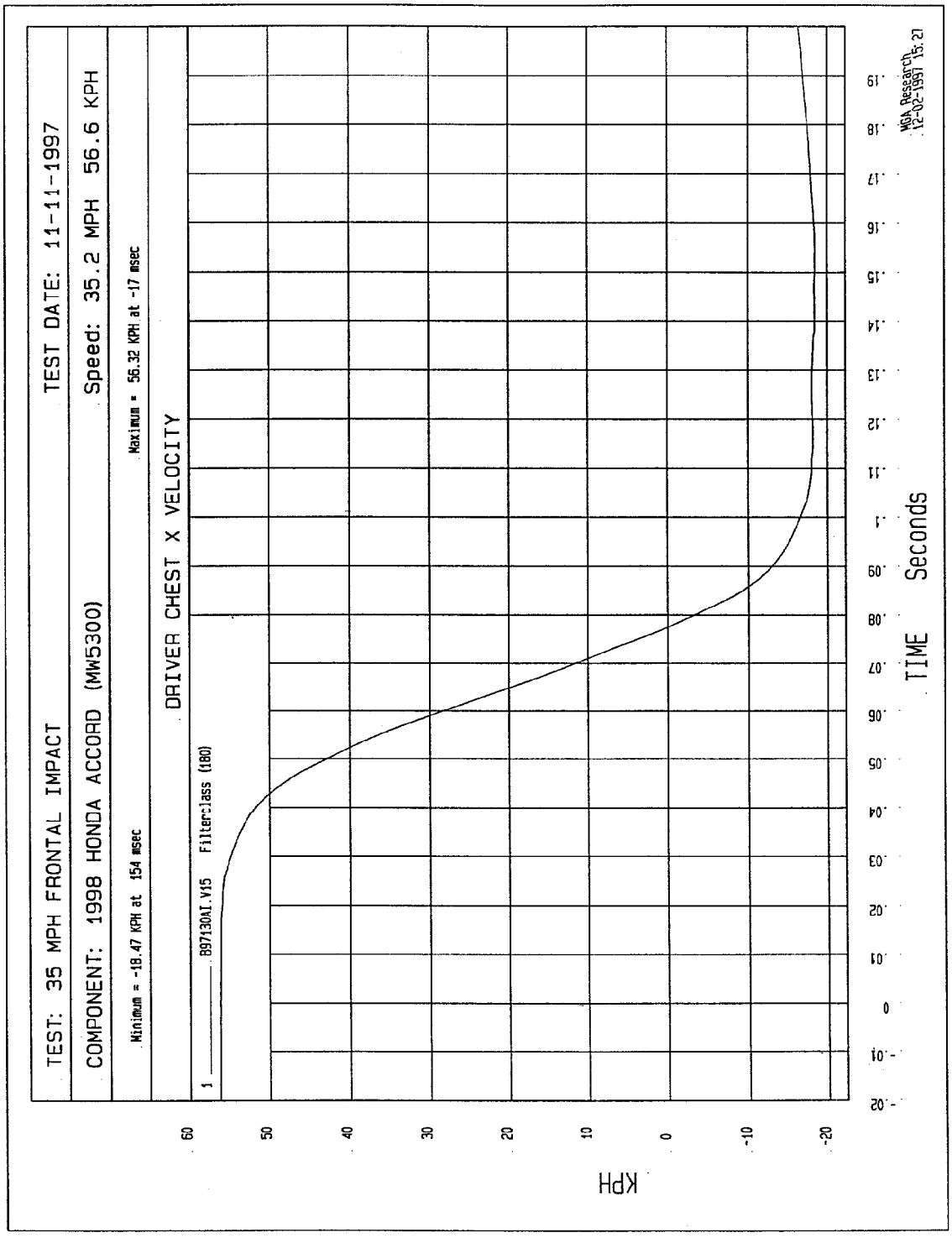

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = .14 NM at 5 msec
Maximum = 38.76 NM at 64 msec
DRIVER NECK MOMENT RESULTANT
1 ——— 897130MV.M48 Filterclass (600)
NM
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:02

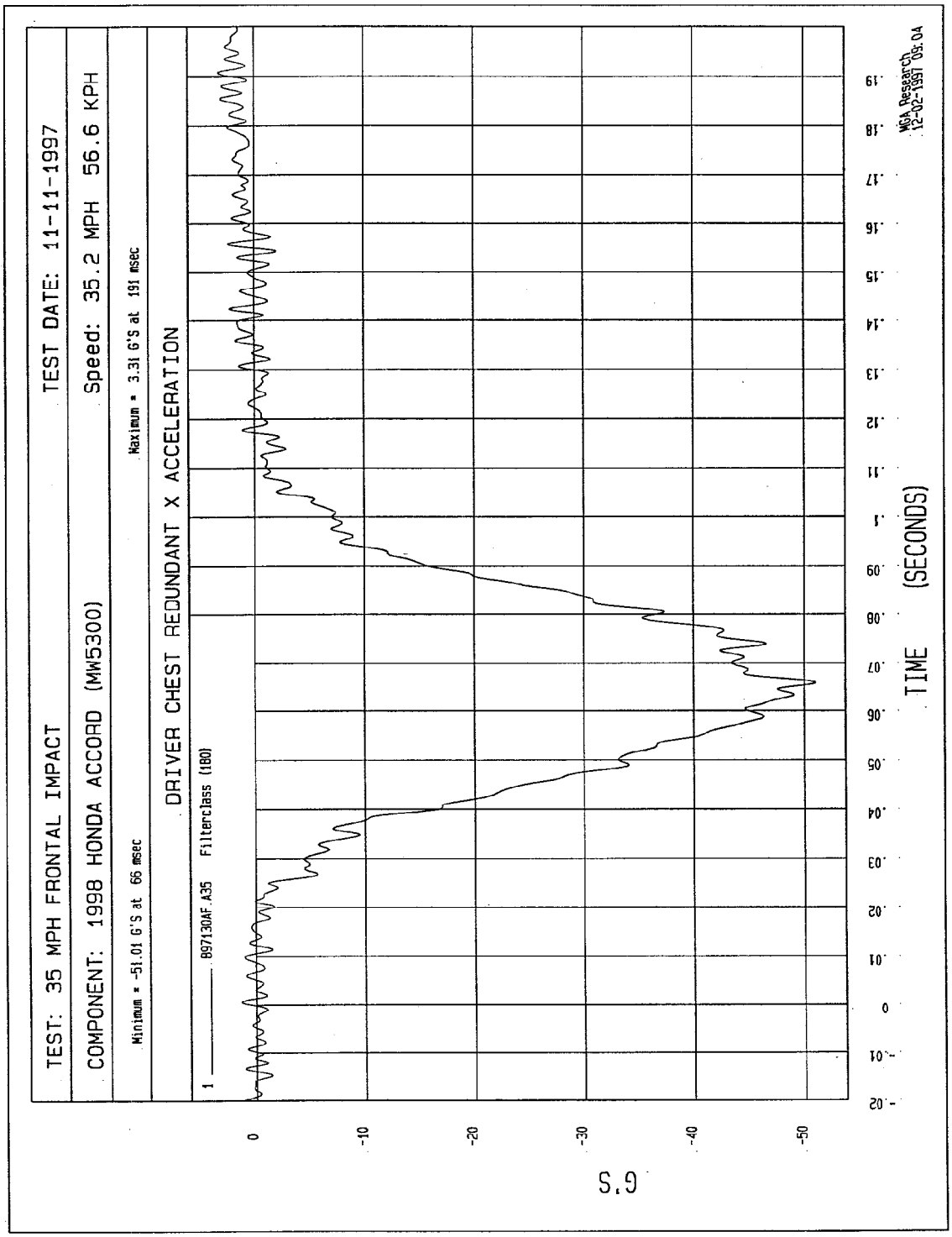

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -49.84 G'S at 65 msec
Maximum = 2.20 G'S at 197 msec
DRIVER CHEST X ACCELERATION
1 _____ 697130AF.A15 Filterclass (180)
0
-10
-20
-30
-40
-50
G'S
TIME (SECONDS)
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
MGA Research
12-02-1997 08:59

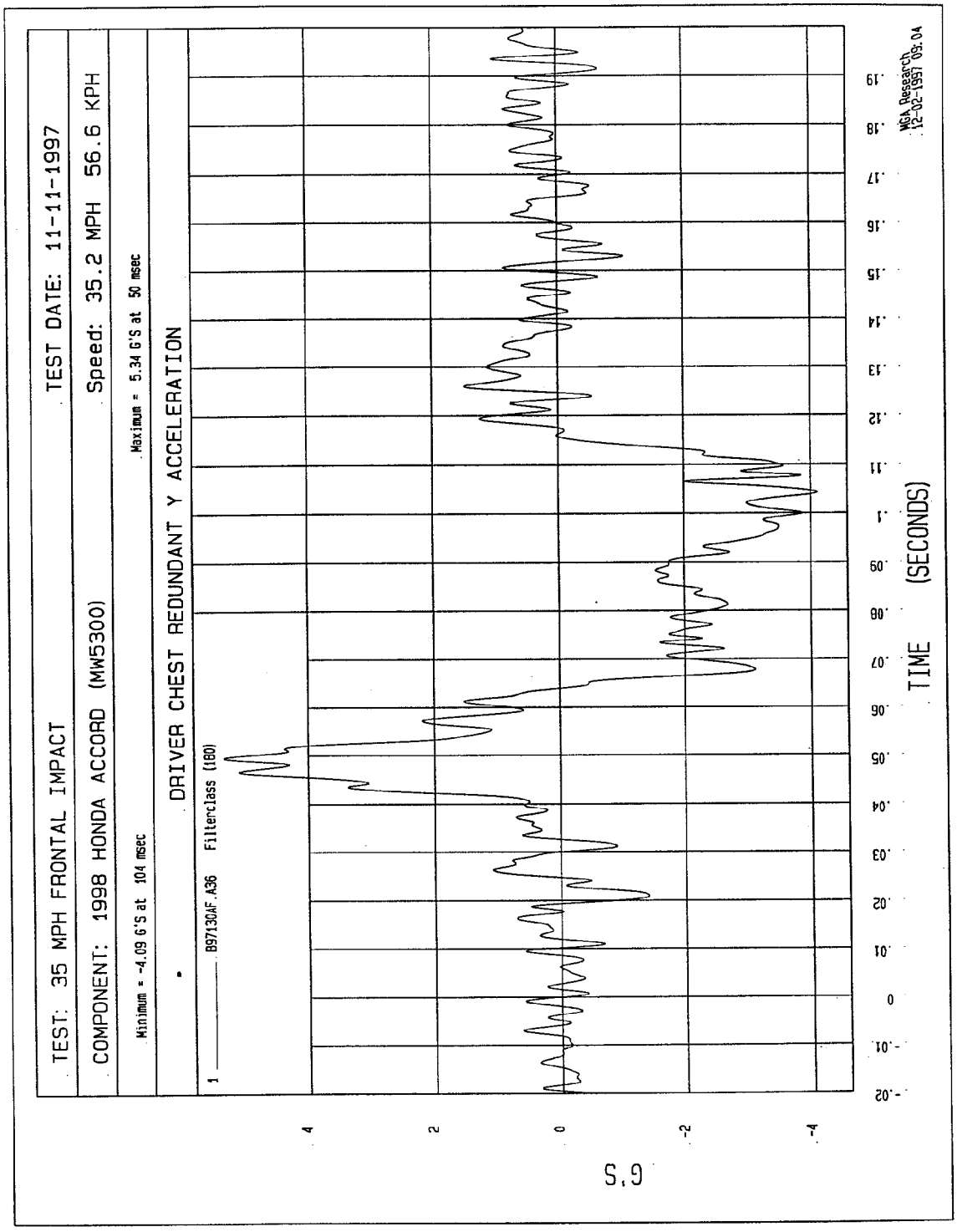

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -4.06 G'S at 110 msec
Maximum = 4.78 G'S at 45 msec
DRIVER CHEST Y ACCELERATION
1 B97130AF.A16 Filterclass (180)
5
4
3
2
1
0
-1
-2
-3
-4
.02
.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 08:59
S.9

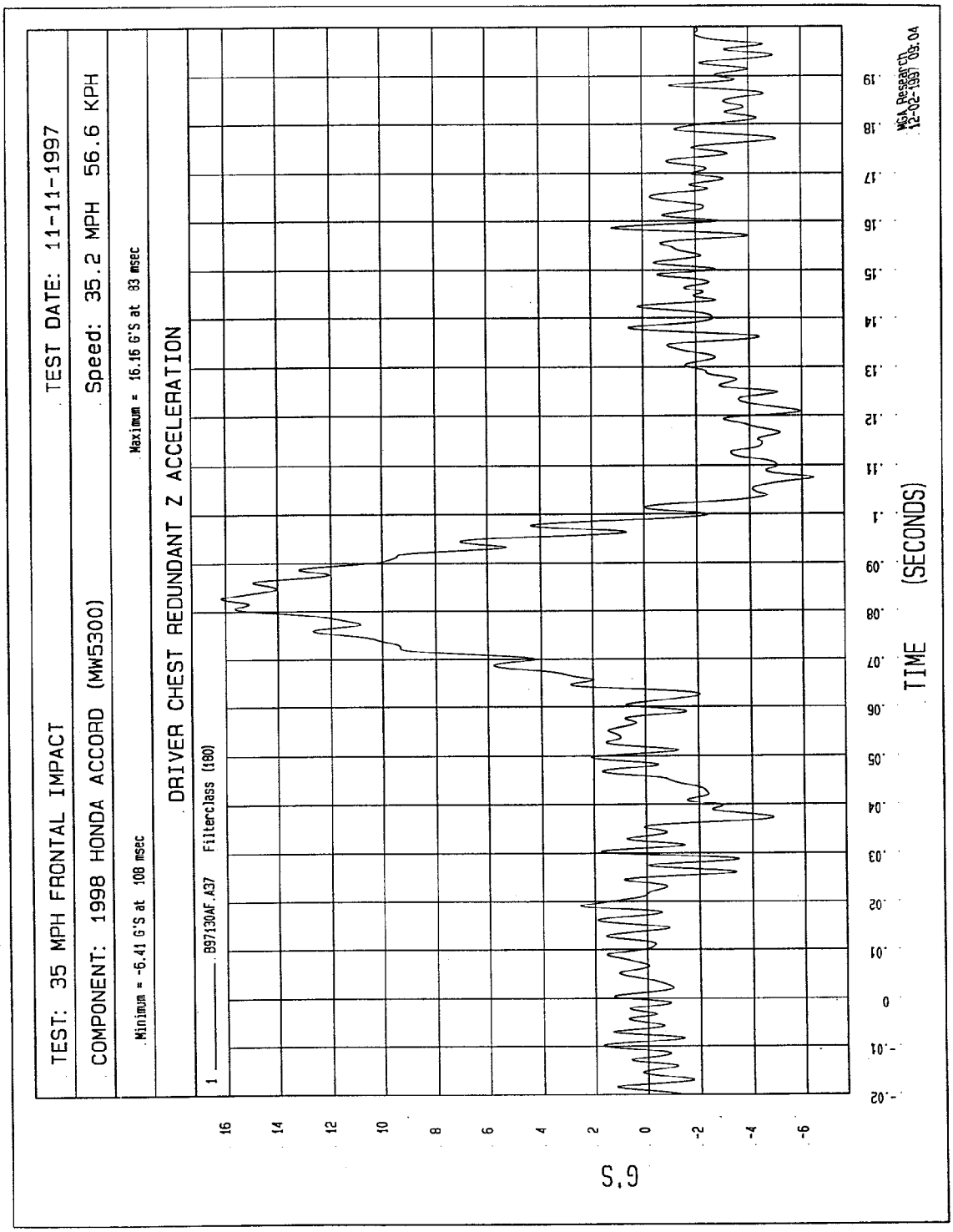

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -6.12 G'S at 107 msec
Maximum = 15.94 G'S at 84 msec
DRIVER CHEST Z ACCELERATION
1 _____ 897130AF.A17 Filterclass (180)
16
14
12
10
8
6
4
2
0
-2
-4
-6
G'S
.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 08:00

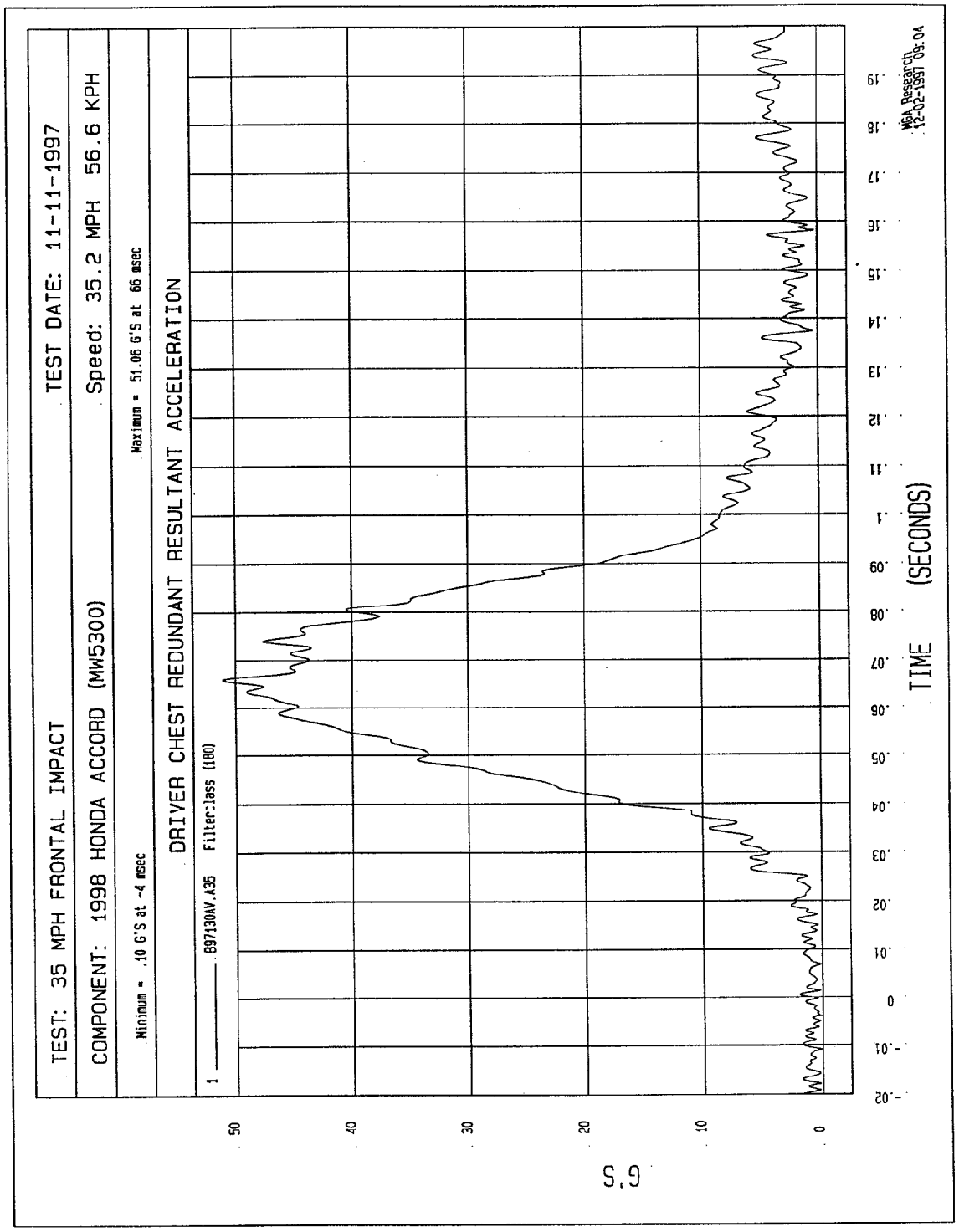

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 8.80E-02 G'S at -14 msec
Maximum = 49.98 G'S at 65 msec
DRIVER CHEST RESULTANT ACCELERATION
1 B97130AV.A15 Filterclass (180)
G'S
TIME (SECONDS)
MGA Research
12-02-1997 09:00

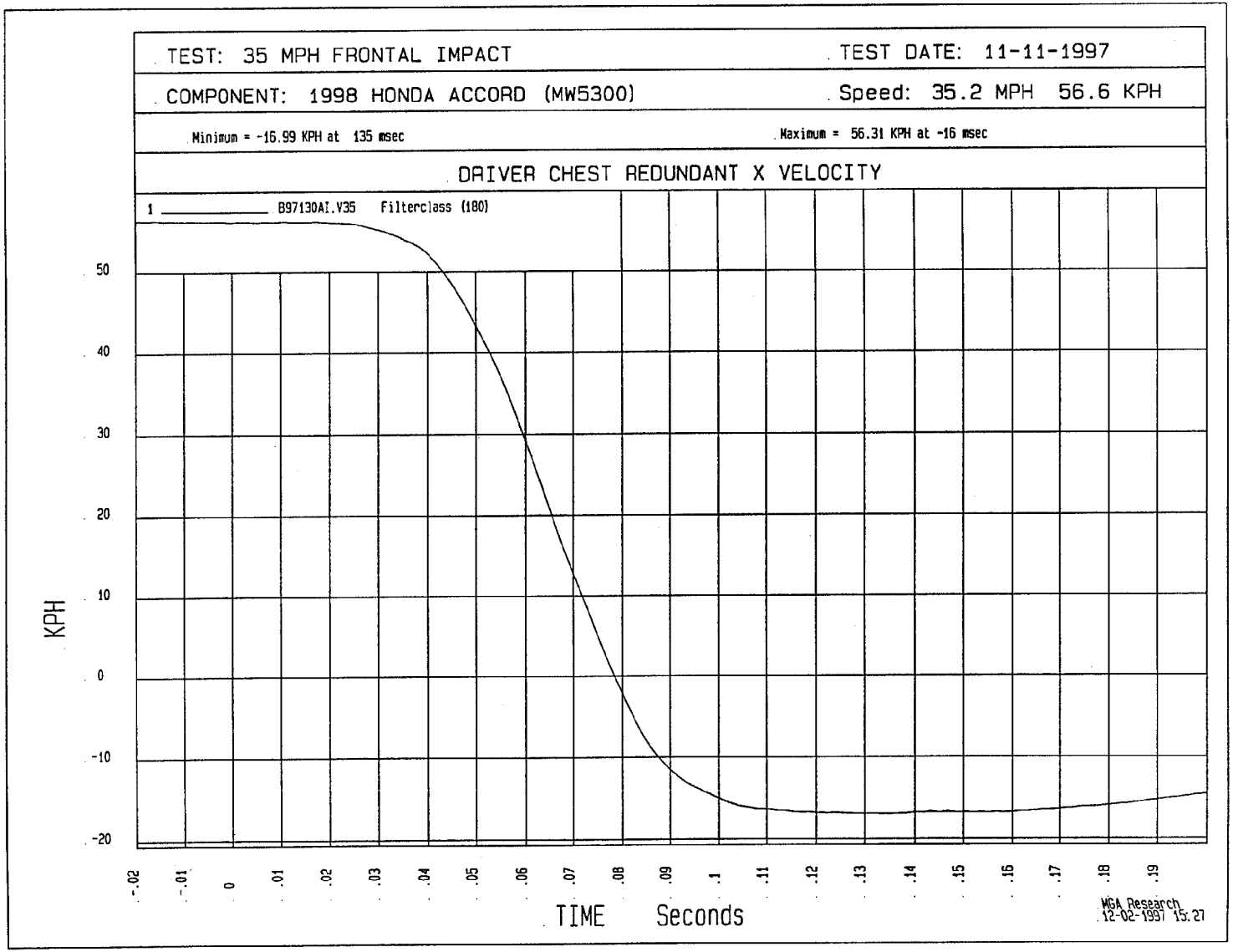

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -18.47 KPH at 154 msec
Maximum = 56.32 KPH at -17 msec
DRIVER CHEST X VELOCITY
1 B97130AI.V15 FilterClass (180)
KPH
TIME Seconds
MGA Research
12-02-1997 15:21

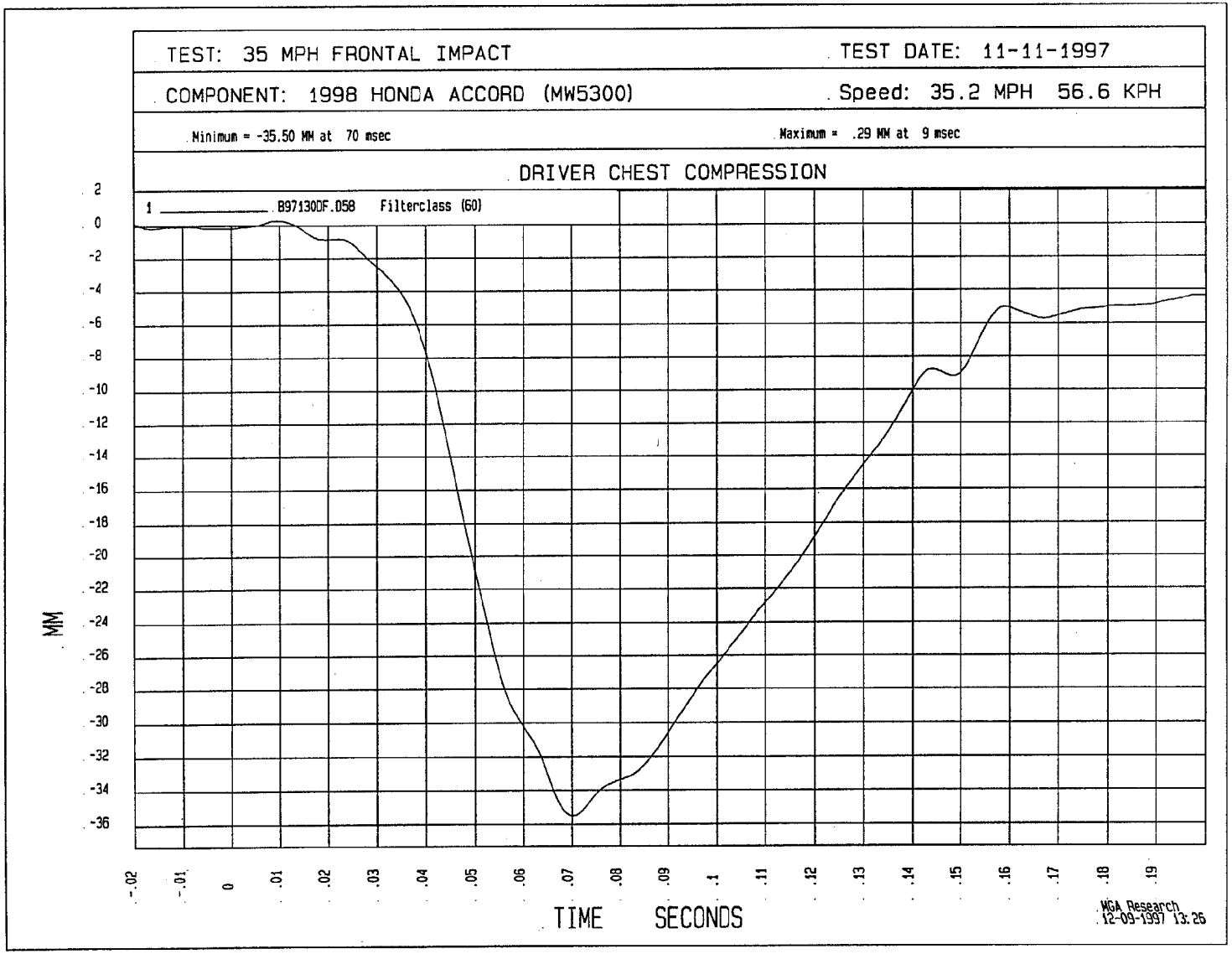

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -51.01 G'S at 66 msec
Maximum = 3.31 G'S at 191 msec
DRIVER CHEST REDUNDANT X ACCELERATION
1 B97130AF.A35 FilterClass (180)
0
-10
-20
-30
-40
-50
6.5
5.9
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
12-02-1997 09:04

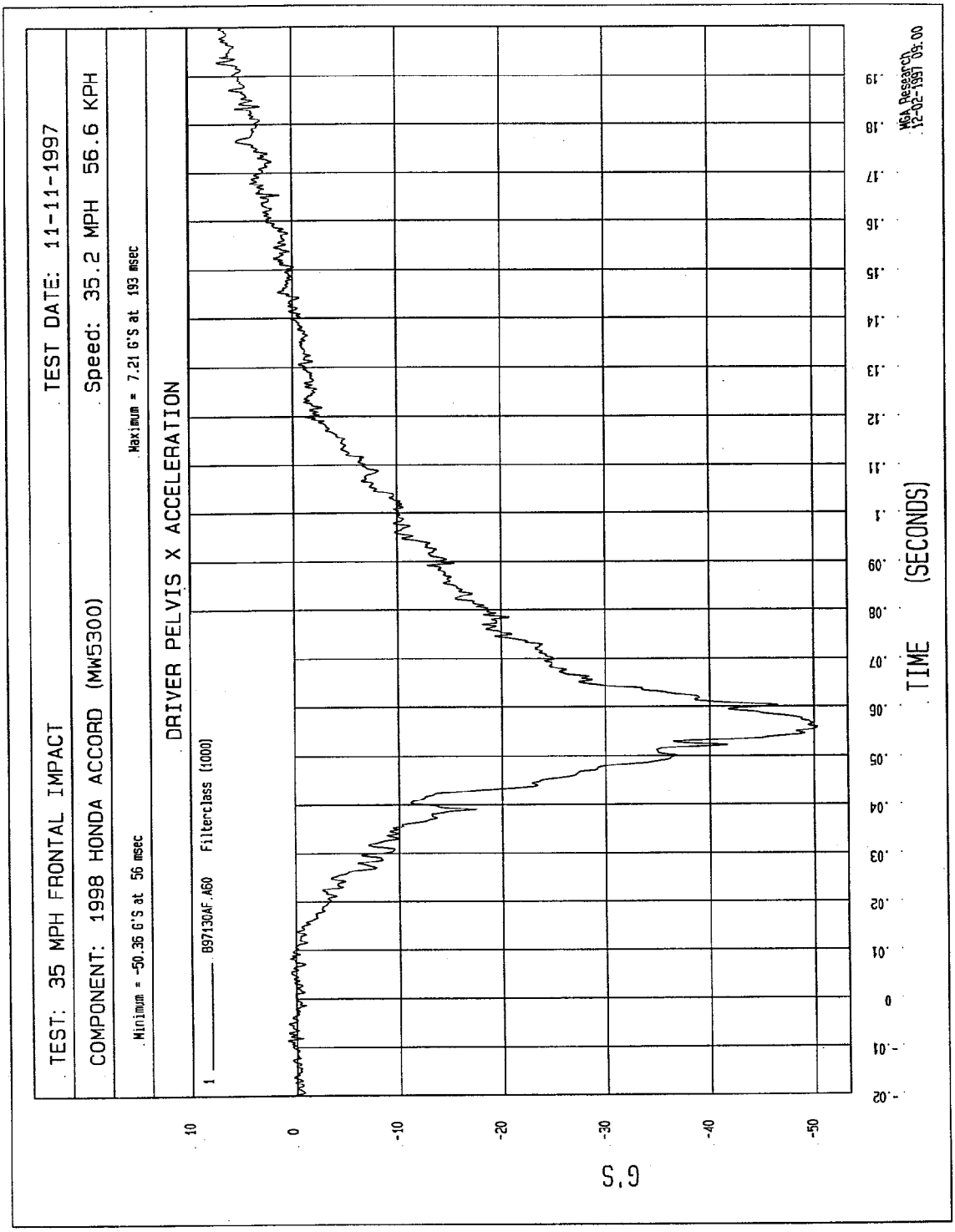

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -4.09 G'S at 104 msec
Maximum = 5.34 G'S at 50 msec
DRIVER CHEST REDUNDANT Y ACCELERATION
1 B97130AF.A36 Filterclass (180)
4
2
0
-2
-4
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
12-02-1997 09:04

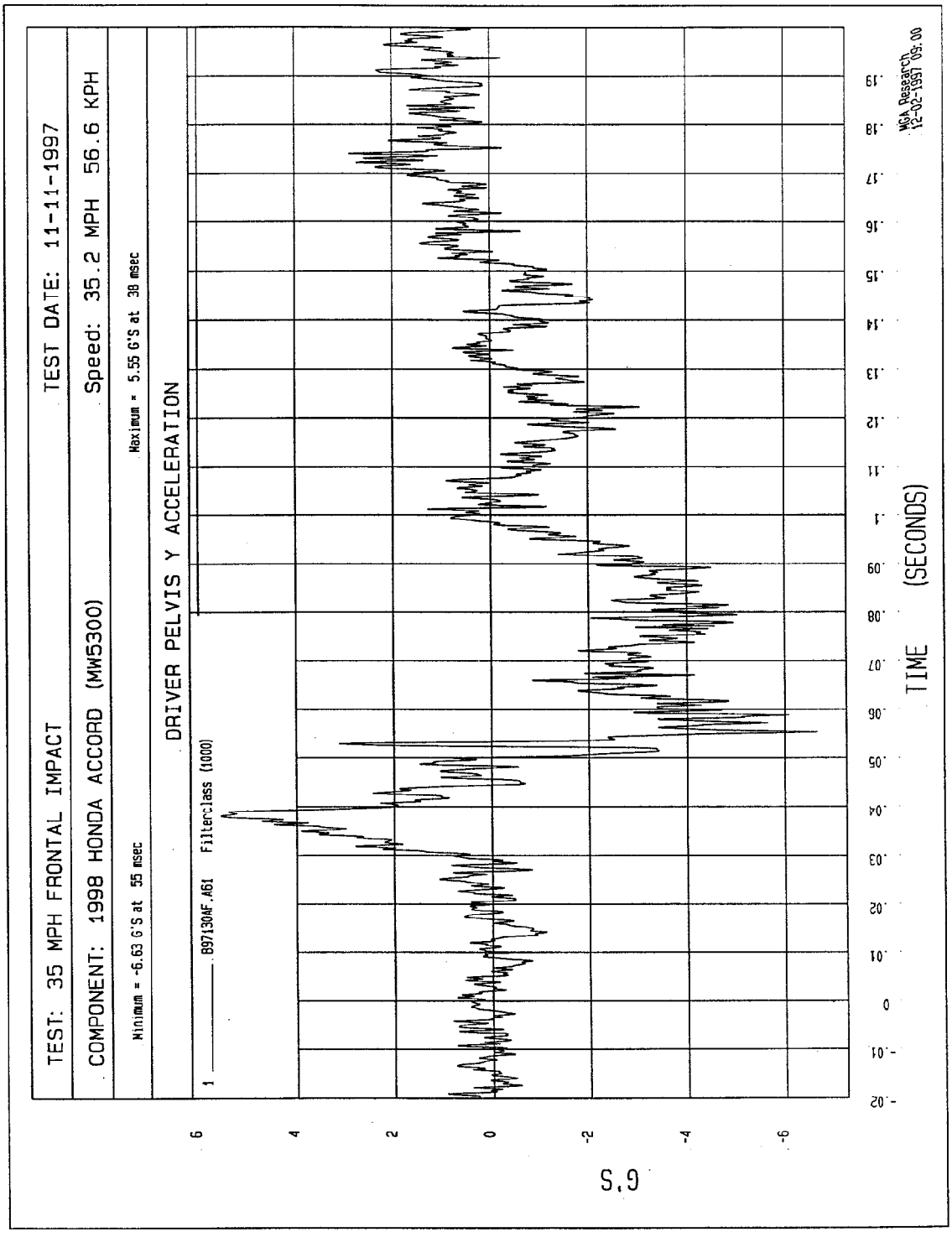

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -6.41 G'S at 108 msec
Maximum = 16.16 G'S at 83 msec
DRIVER CHEST REDUNDANT Z ACCELERATION
1 B97130AF.A37 Filterclass (180)
G's
TIME (SECONDS)
MGA Research
12-02-1997 09:04

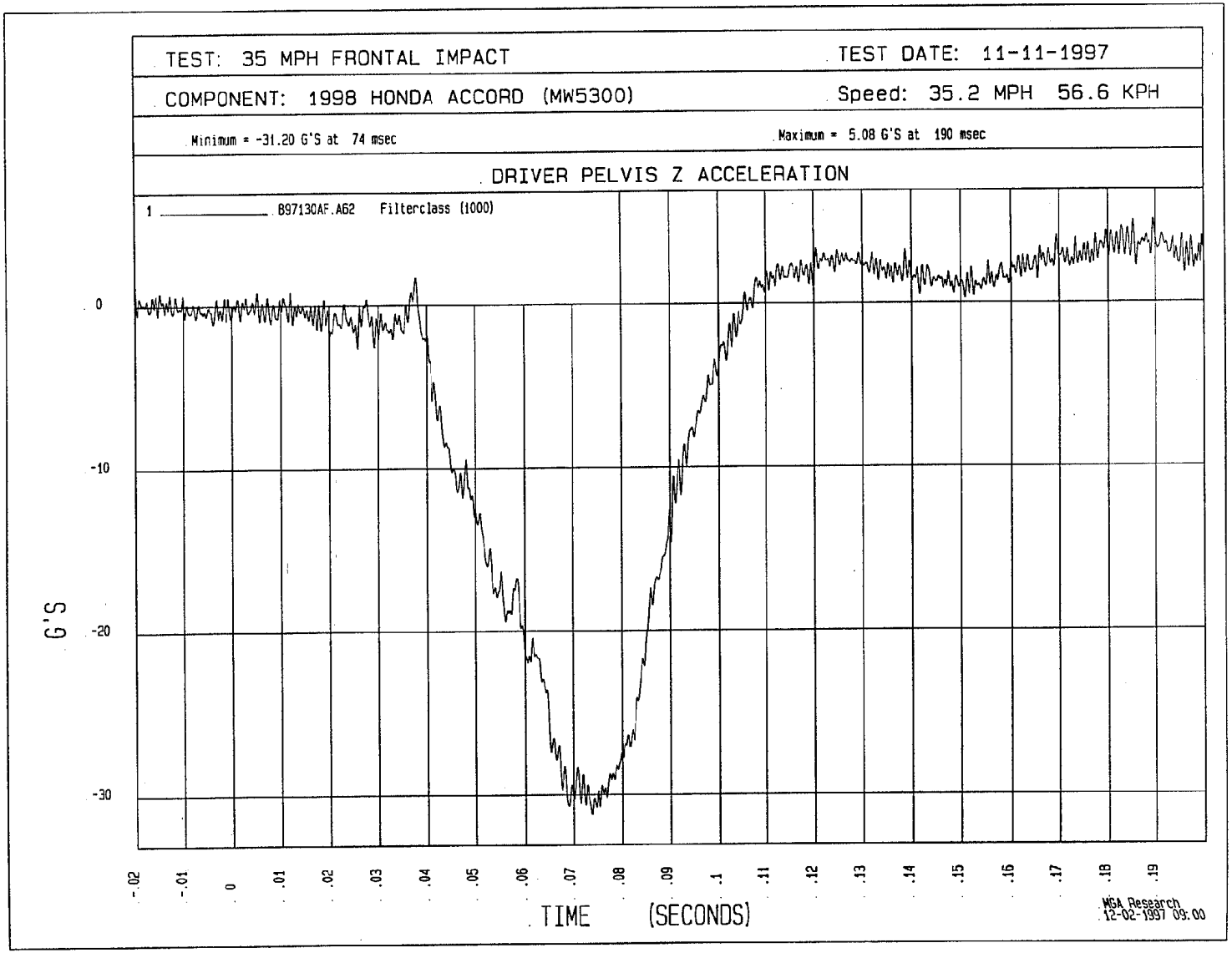

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = .10 G'S at -4 msec
Maximum = 51.06 G'S at 66 msec
DRIVER CHEST REDUNDANT RESULTANT ACCELERATION
1 B97130AV.A35 Filterclass (180)
G's
TIME (SECONDS)
MGA Research
12-02-1997 09:04

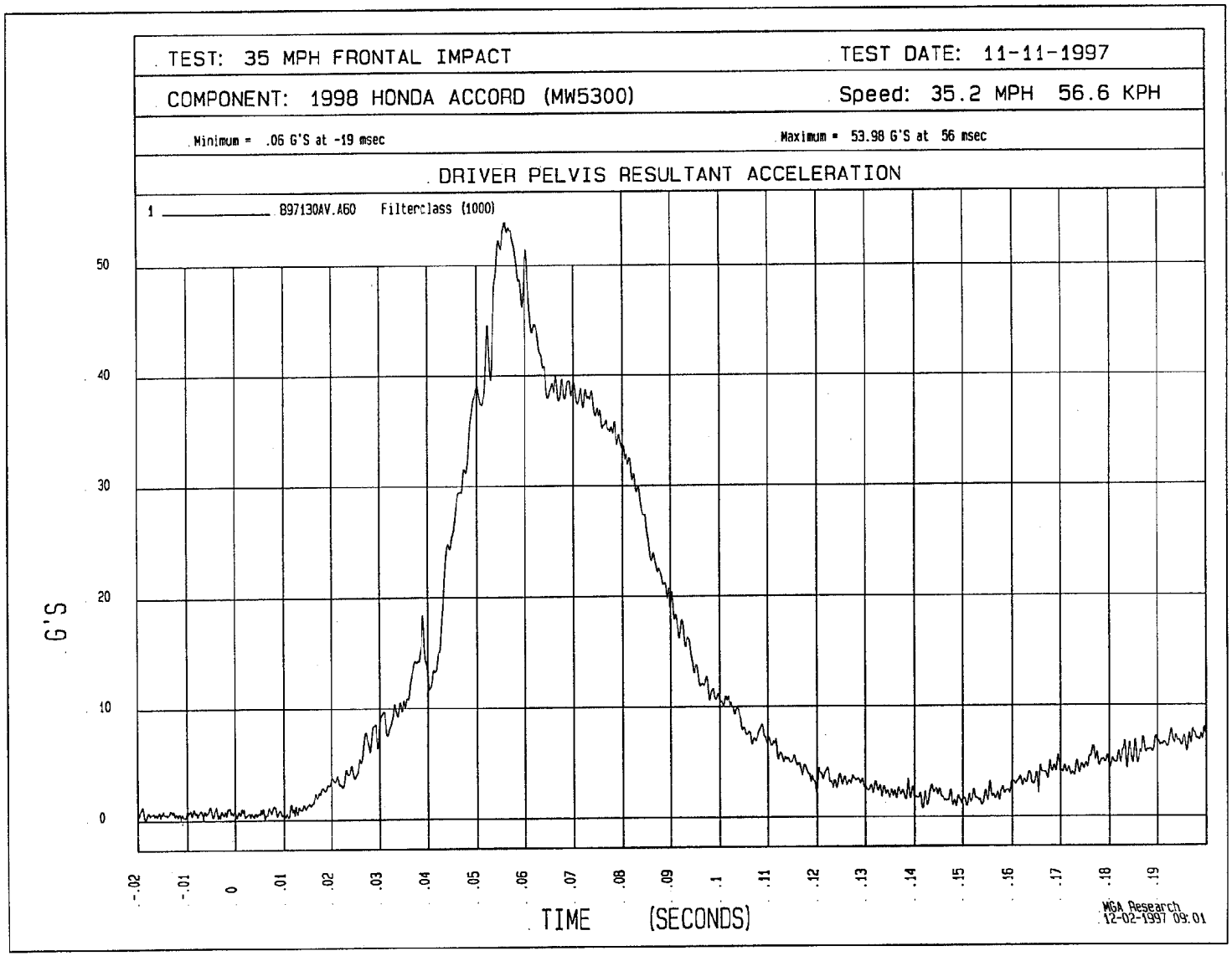

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -16.99 KPH at 135 msec
Maximum = 56.31 KPH at -16 msec
DRIVER CHEST REDUNDANT X VELOCITY
1 B97130AI.V35 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 15:27

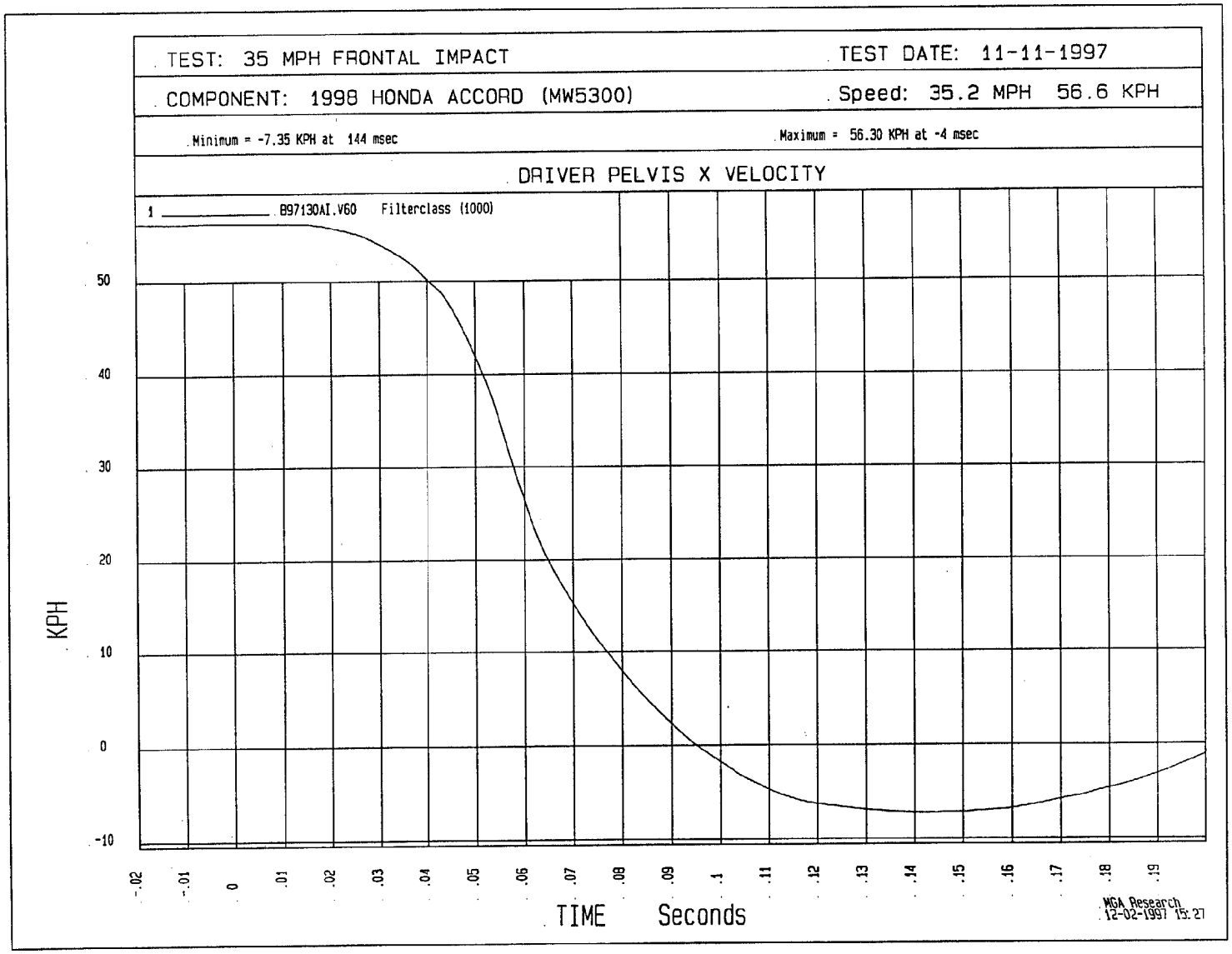

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -35.50 MM at 70 msec
Maximum = .29 MM at 9 msec
DRIVER CHEST COMPRESSION
1 B971300F.058 Filterclass (60)
MM
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
-36
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME SECONDS
MGA Research
12-09-1997 13:26

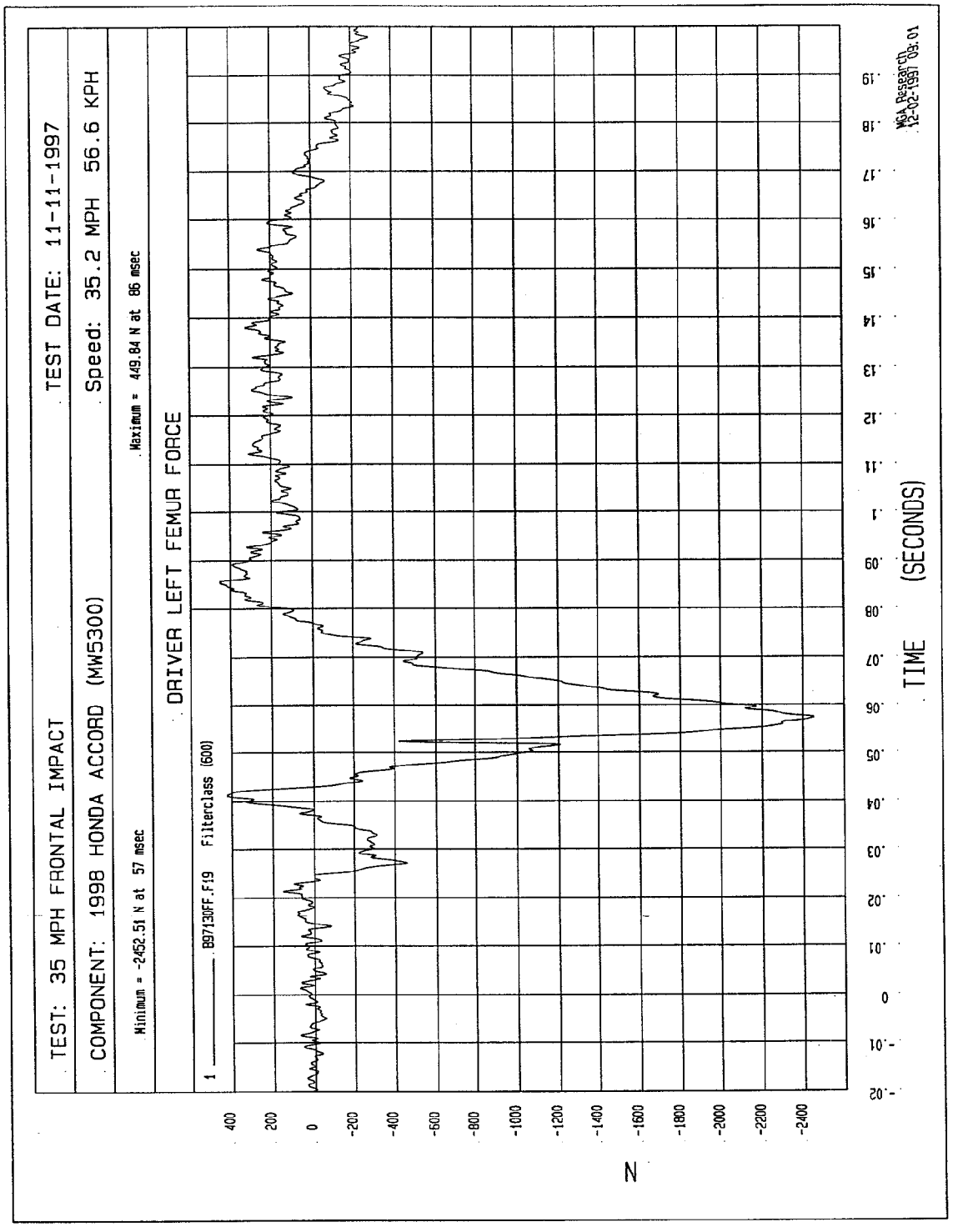

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -50.36 G'S at 56 msec
Maximum = 7.21 G'S at 193 msec
DRIVER PELVIS X ACCELERATION
1 B971304F.A60 Filterclass (1000)
10
0
-10
-20
-30
-40
-50
G'S
.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:00

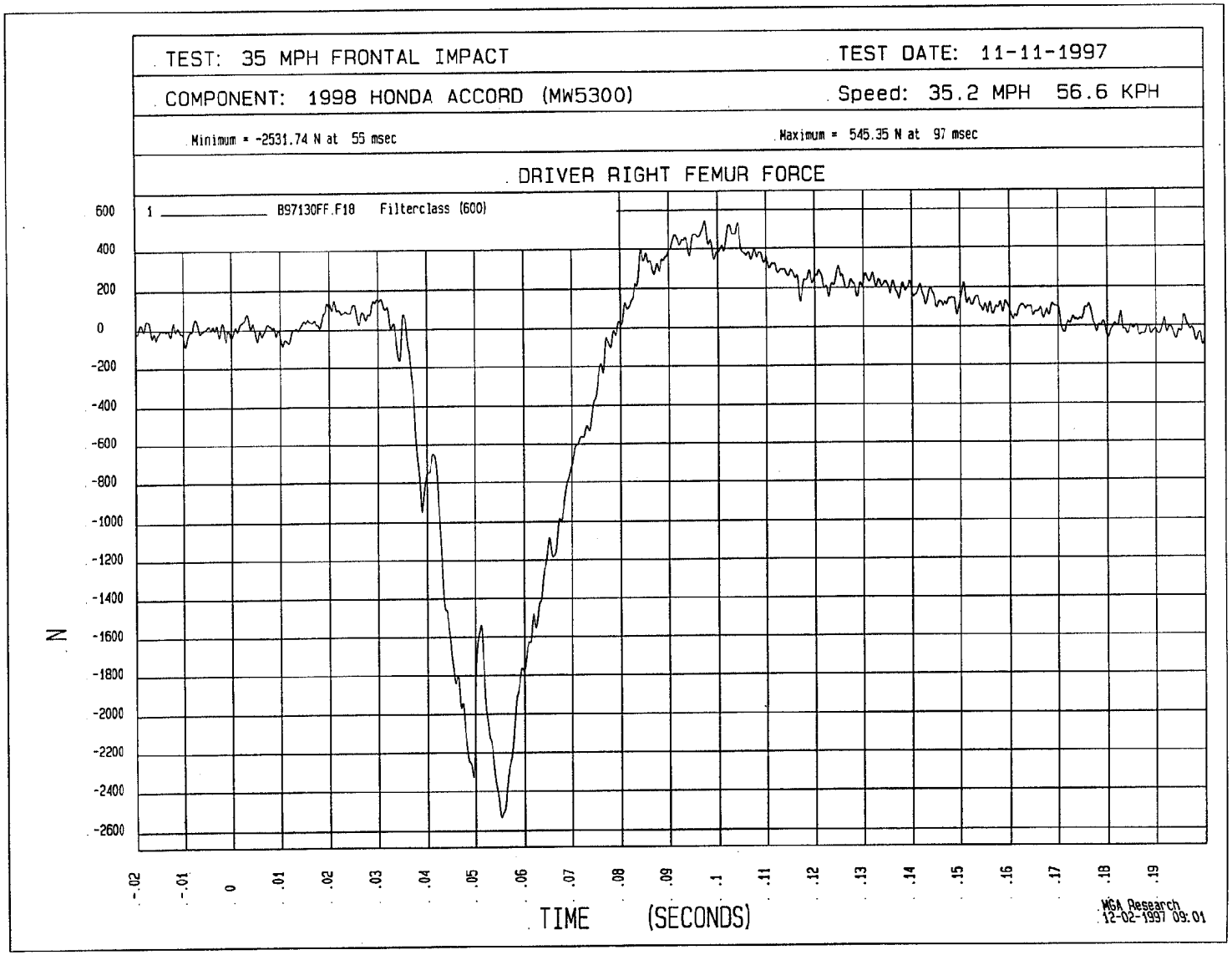

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -6.63 G'S at 55 msec
Maximum = 5.55 G'S at 38 msec
DRIVER PELVIS Y ACCELERATION
1 B97130AF.A61 Filterclass (1000)
6
4
2
0
-2
-4
-6
G'S
.02
.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09: 00

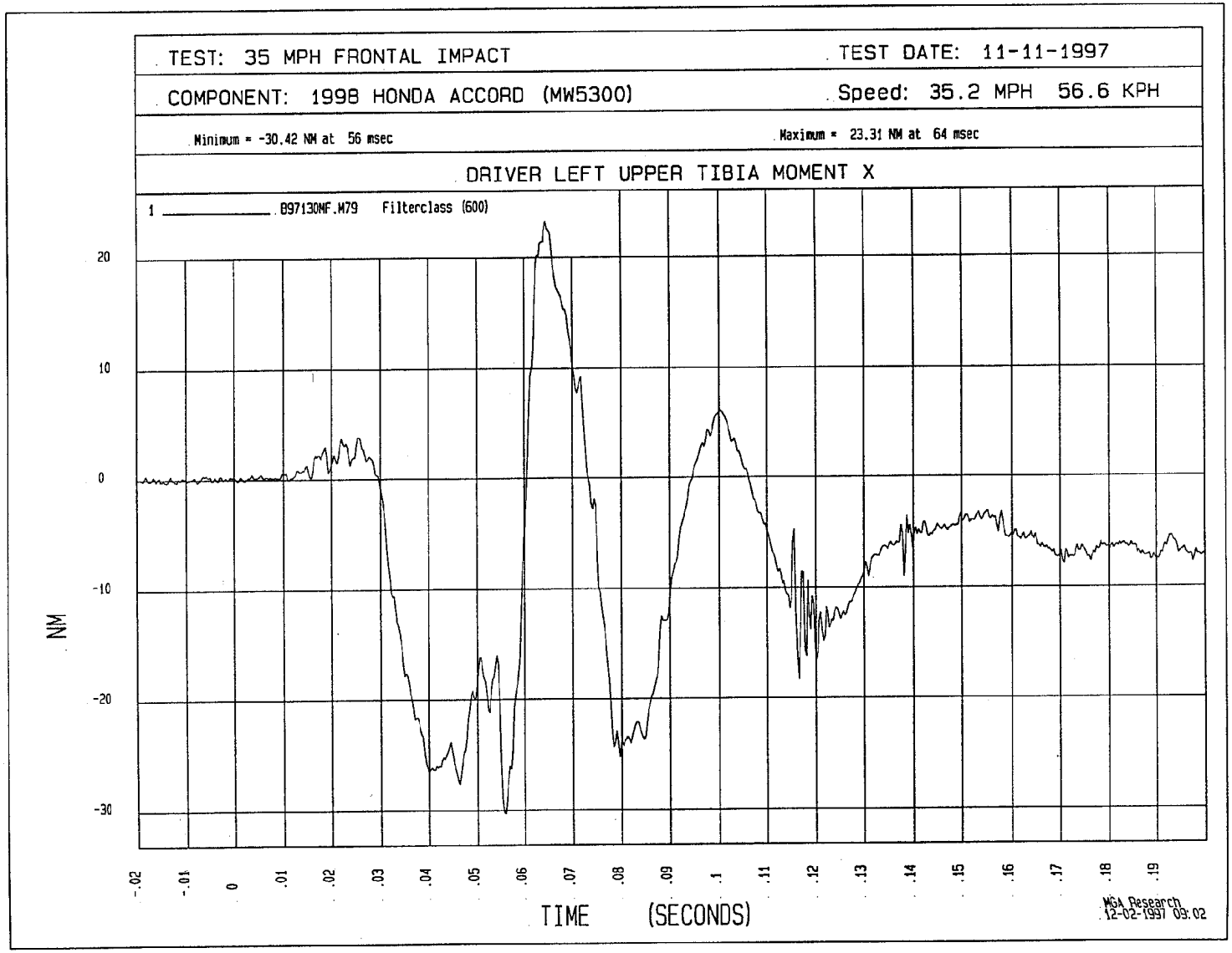

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -31.20 G'S at 74 msec
Maximum = 5.08 G'S at 190 msec
DRIVER PELVIS Z ACCELERATION
1 B97130AF.A62 Filterclass (1000)
0
-10
-20
-30
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:00

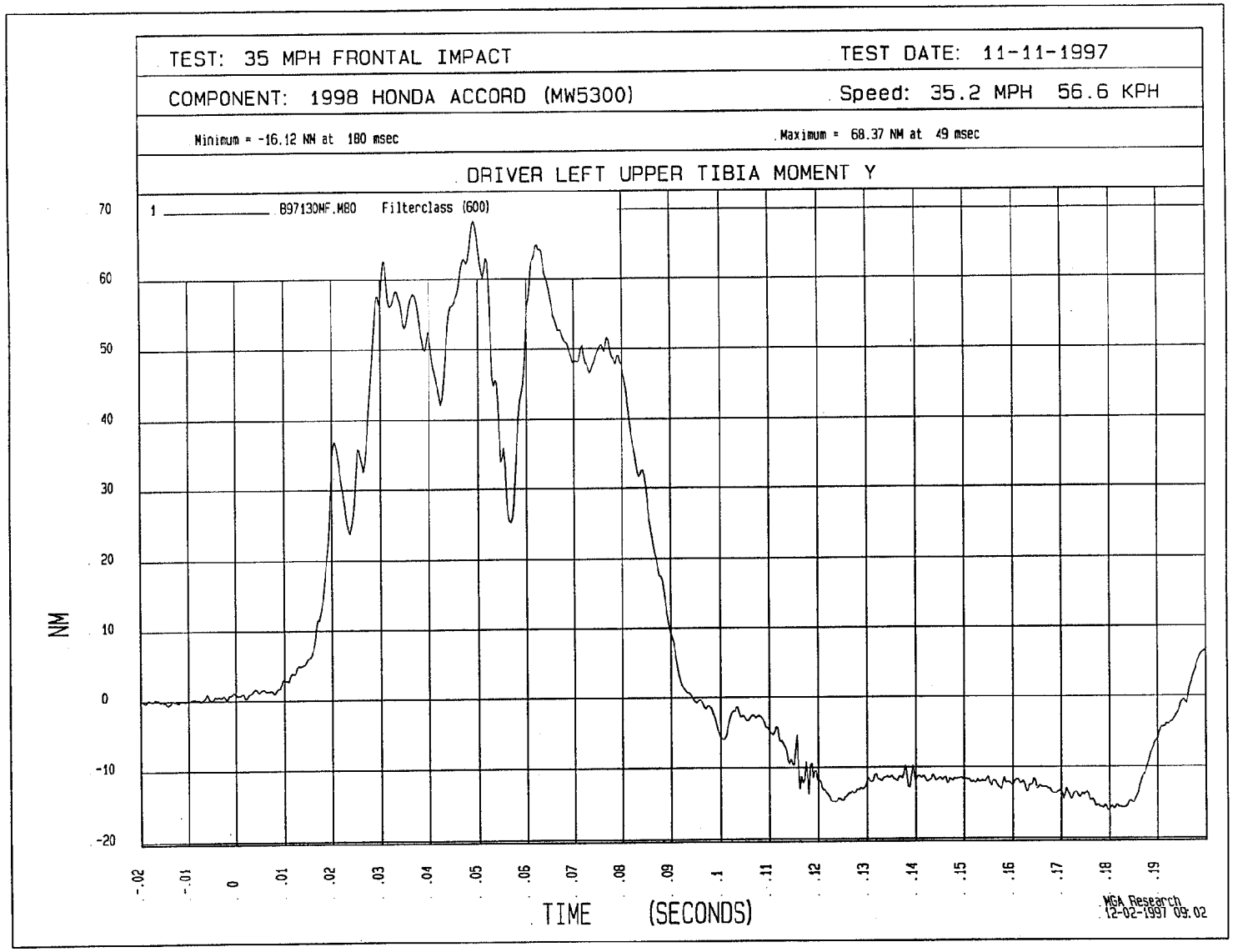

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = .06 G'S at -19 msec
Maximum = 53.98 G'S at 56 msec
DRIVER PELVIS RESULTANT ACCELERATION
1 B97130AV.A60 Filterclass (1000)
G'S
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:01

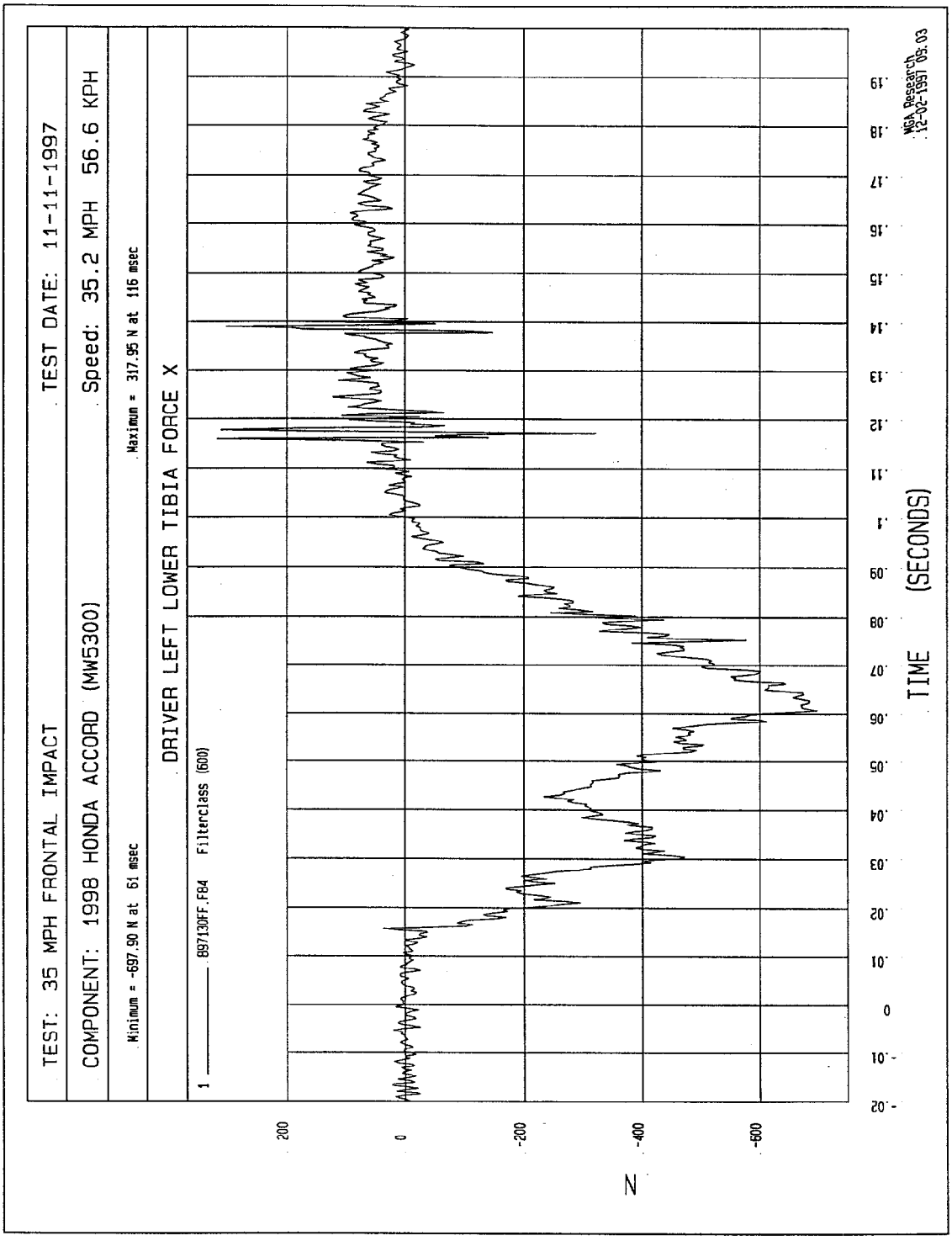

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -7.35 KPH at 144 msec
Maximum = 56.30 KPH at -4 msec
DRIVER PELVIS X VELOCITY
1 B97130AI.V60 Filterclass (1000)
KPH
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 15:27

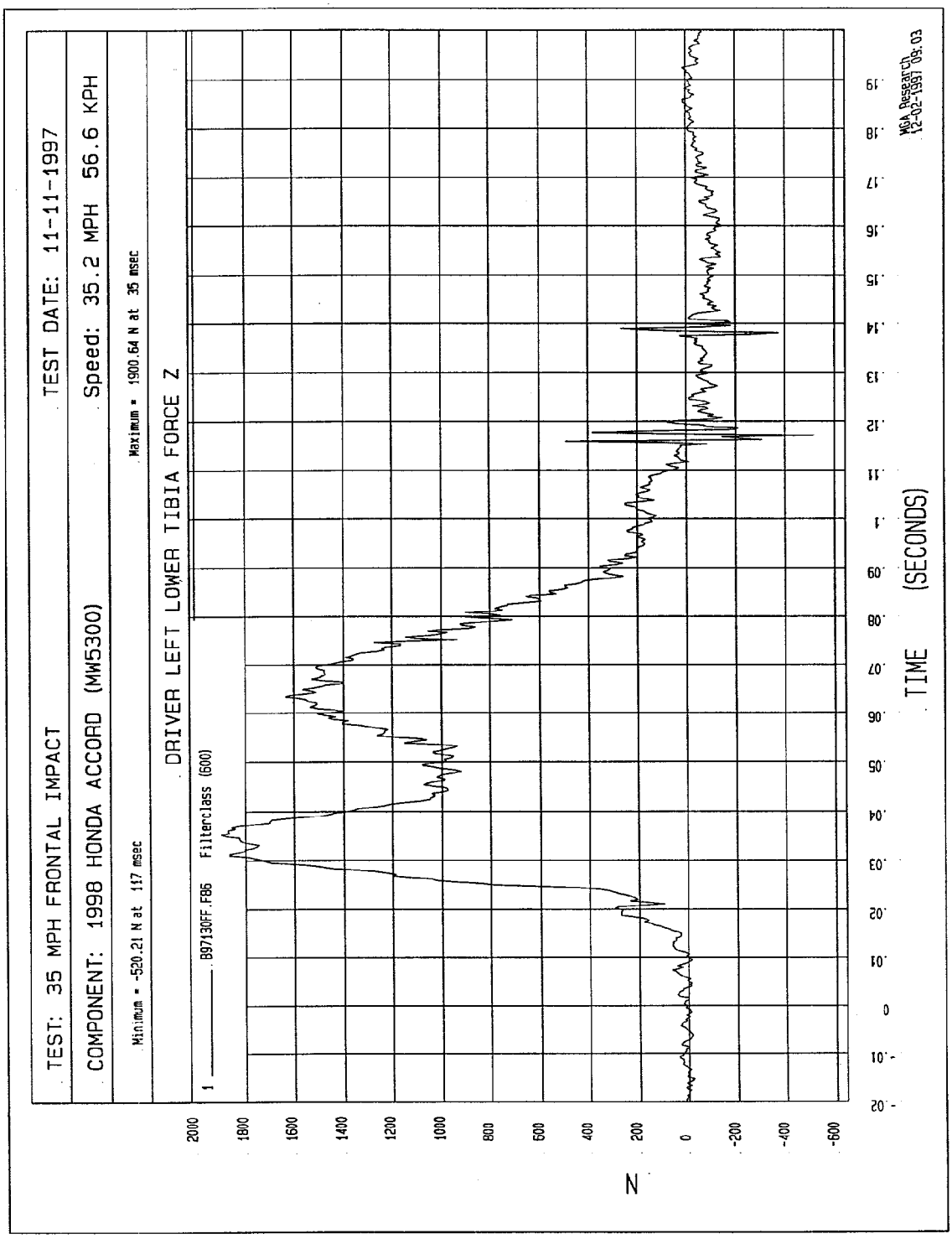

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -2452.51 N at 57 msec
Maximum = 449.84 N at 86 msec
DRIVER LEFT FEMUR FORCE
1 B97130FF.F19 Filterclass (600)
N
TIME (SECONDS)
MGA Research
12-02-1997 03:01


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -2531.74 N at 55 msec
Maximum = 545.35 N at 97 msec
DRIVER RIGHT FEMUR FORCE
1 B97130FF.F18 Filterclass (600)
600
400
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
-2200
-2400
-2600
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:01


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -30.42 NM at 56 msec
Maximum = 23.31 NM at 64 msec
DRIVER LEFT UPPER TIBIA MOMENT X
1 _____ 097130NF.M79 Filterclass (600)
NM
20
10
0
-10
-20
-30
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:02

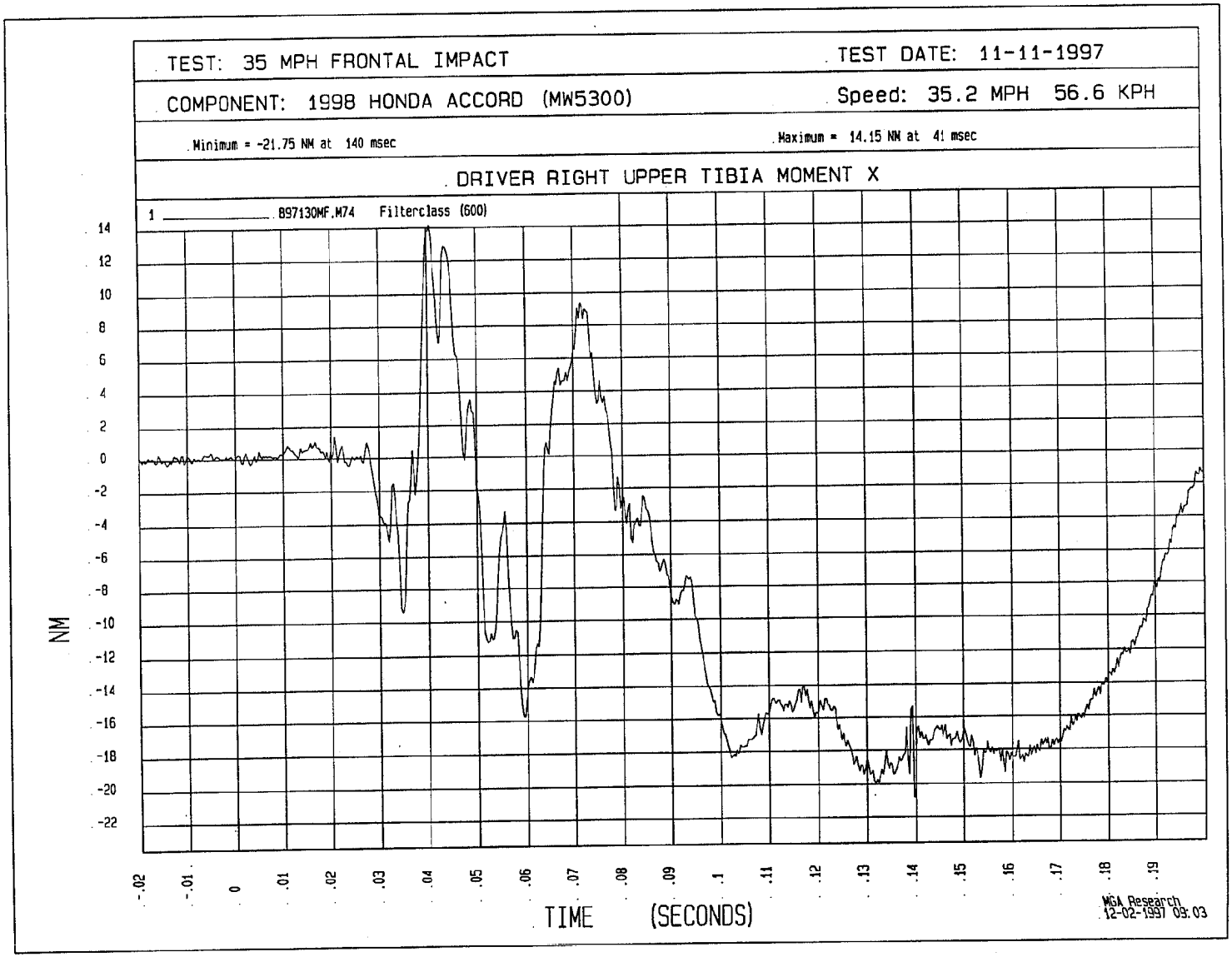

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -16.12 NM at 180 msec
Maximum = 68.37 NM at 49 msec
DRIVER LEFT UPPER TIBIA MOMENT Y
1 B97130MF.M80 Filterclass (600)
NM
70
60
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:02

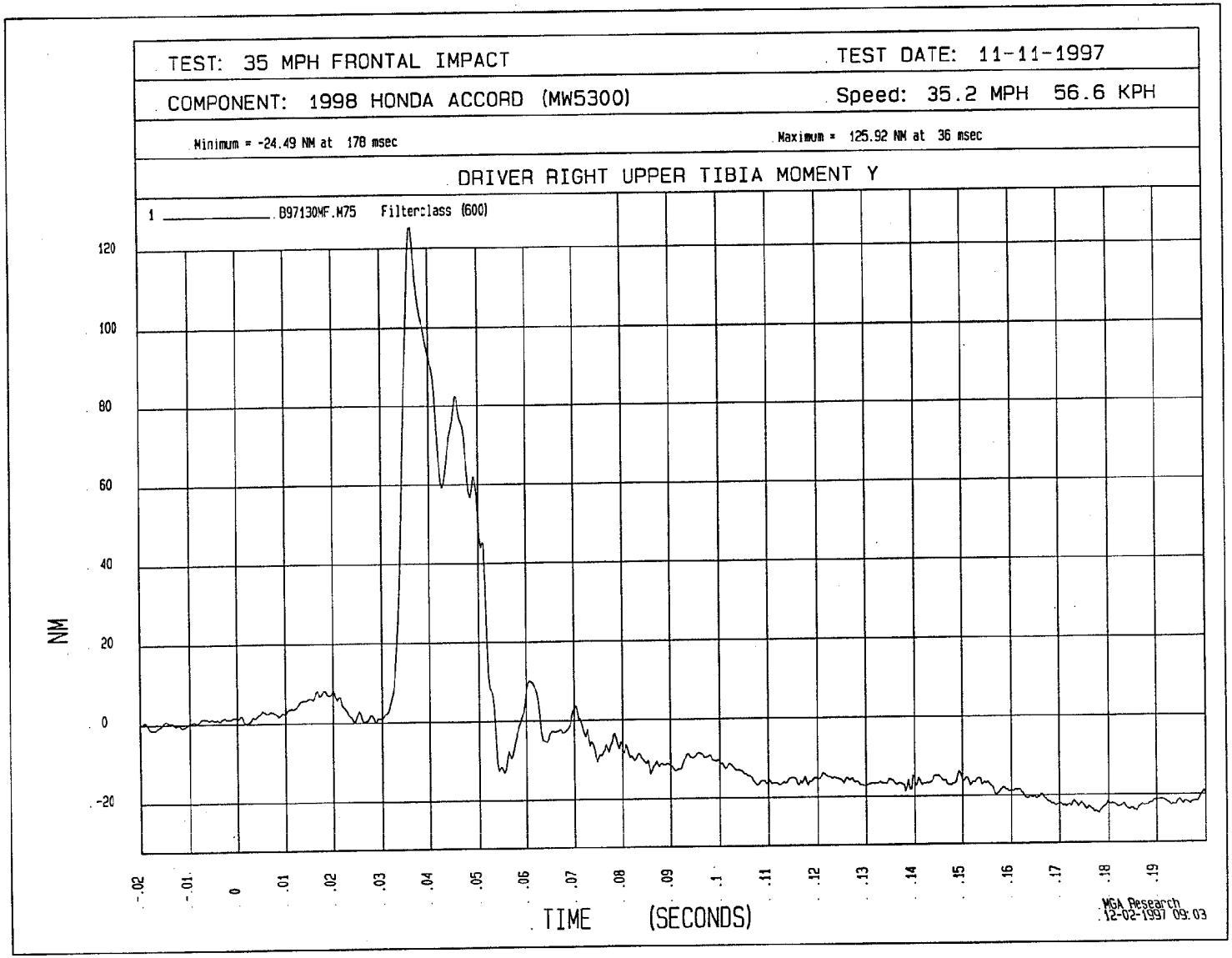

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -697.90 N at 61 msec
Maximum = 317.95 N at 116 msec
DRIVER LEFT LOWER TIBIA FORCE X
1 897130FF.F84 Filterclass (600)
200
0
-200
-400
-600
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:03

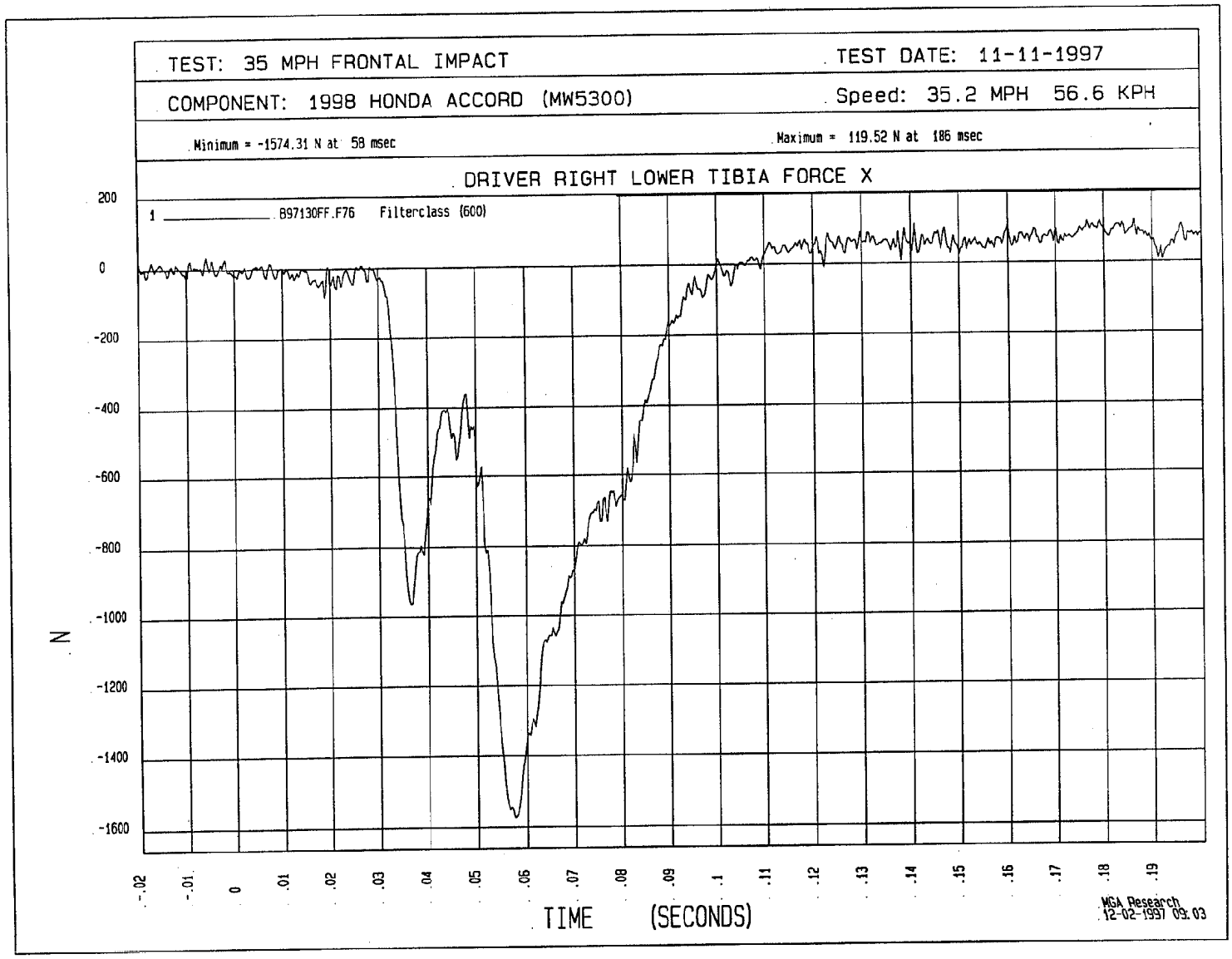

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -520.21 N at 117 msec
Maximum = 1900.64 N at 35 msec
DRIVER LEFT LOWER TIBIA FORCE Z
1 B97130FF.F86 Filterclass (600)
N
TIME (SECONDS)
MGA Research
12-02-1997 09:03

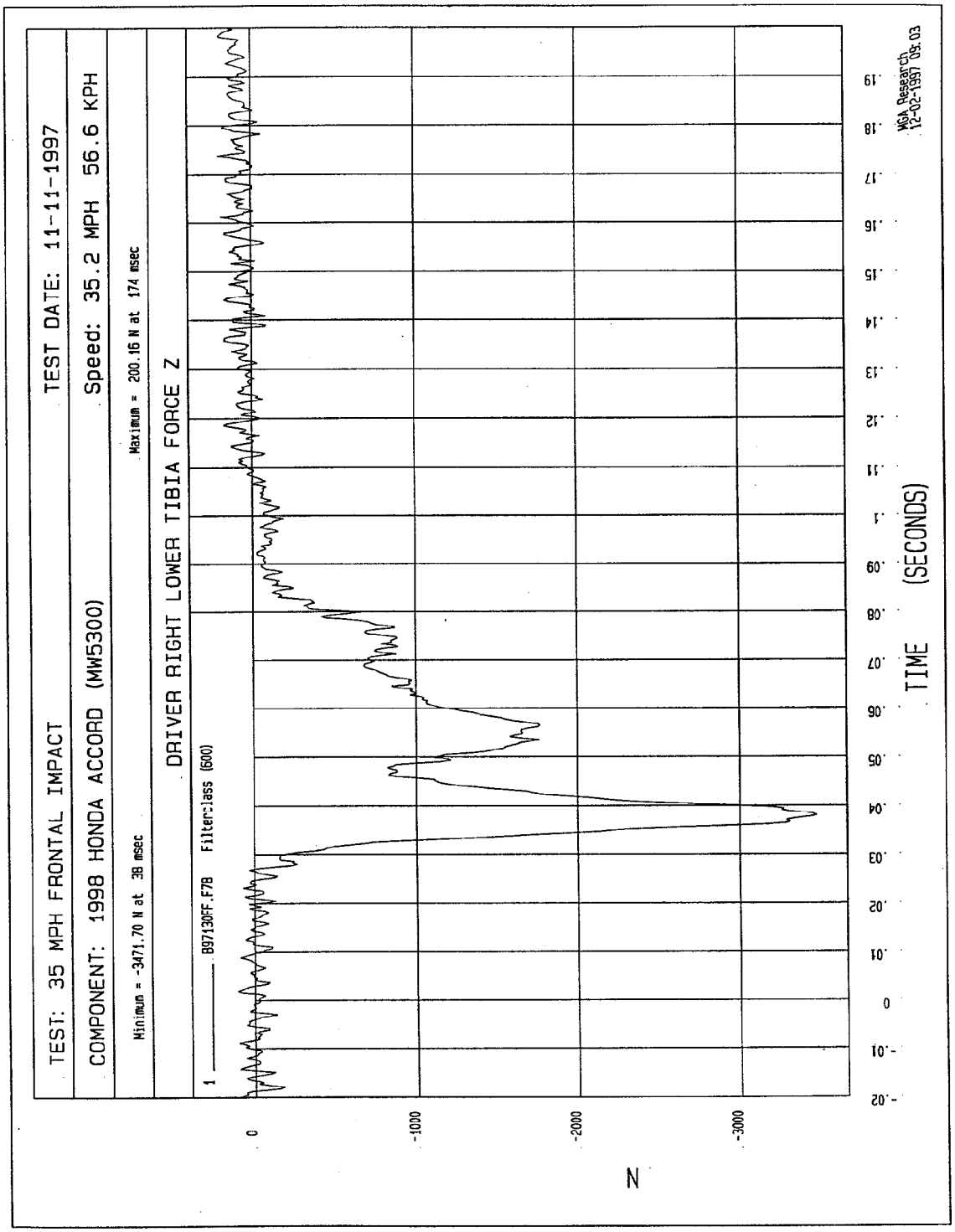
DRIVER LEFT LOWER TIBIA MOMENT Y VS. TIME

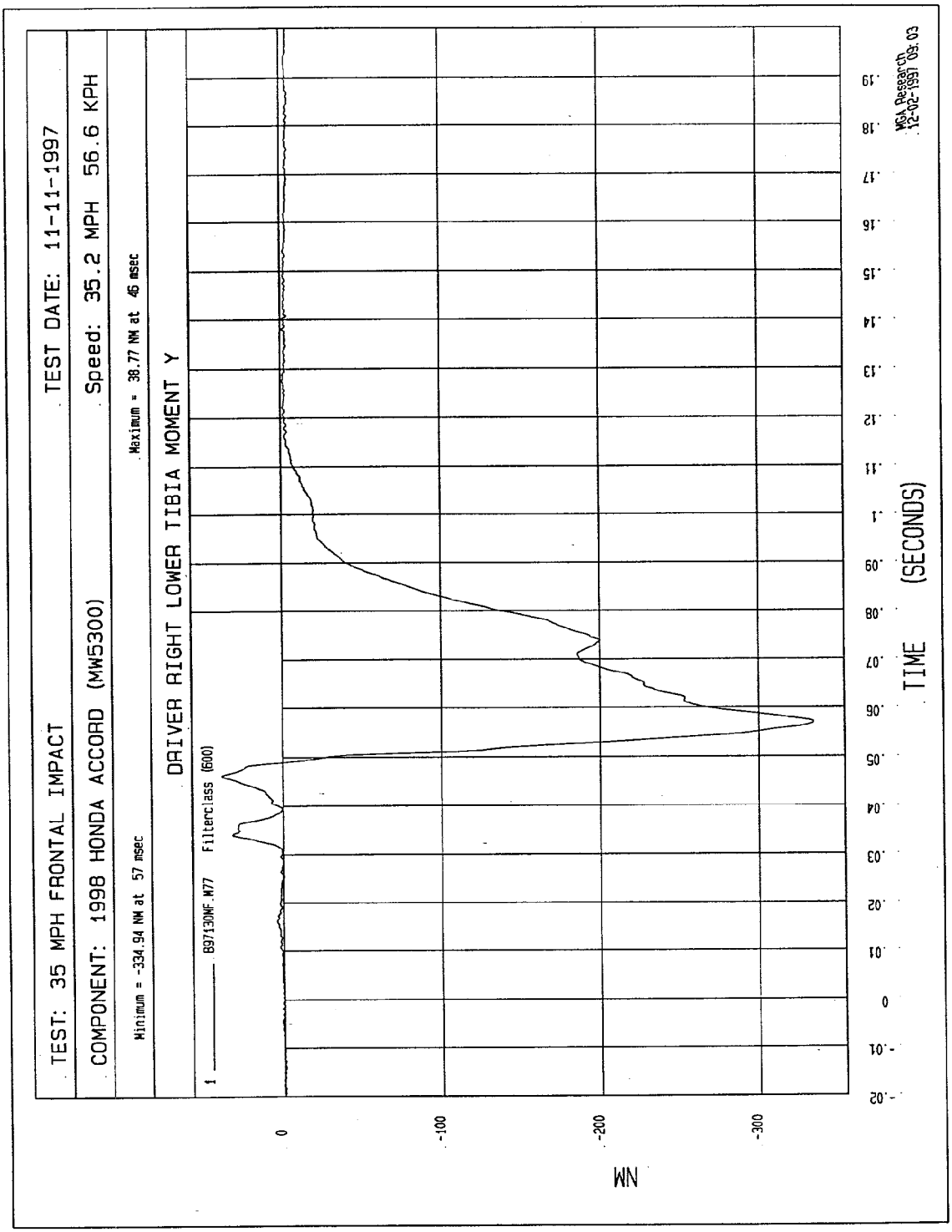
NO VALID DATA COLLECTED

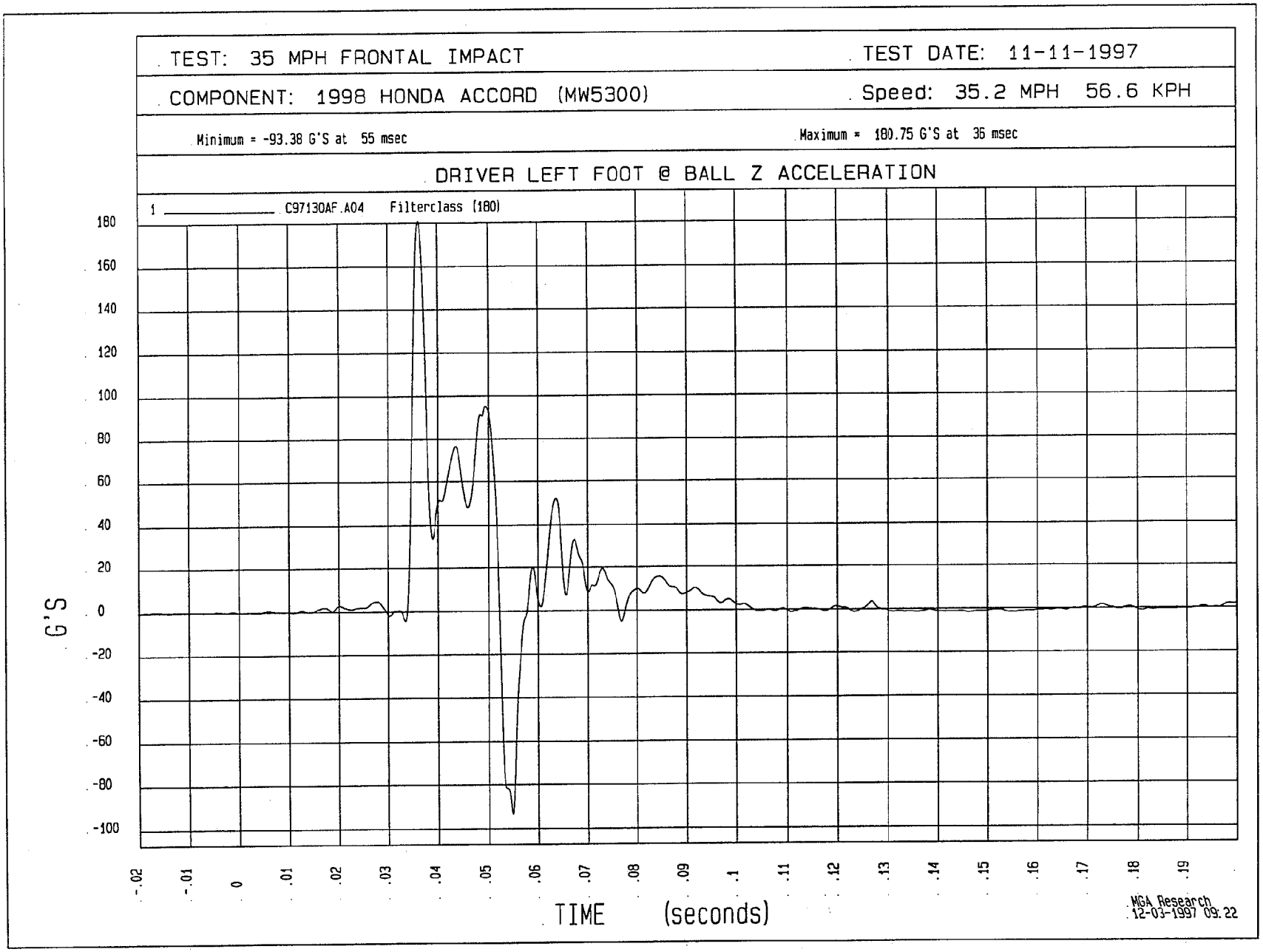

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -21.75 NM at 140 msec
Maximum = 14.15 NM at 41 msec
DRIVER RIGHT UPPER TIBIA MOMENT X
1 897130MF.M74 Filterclass (600)
NM
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:03

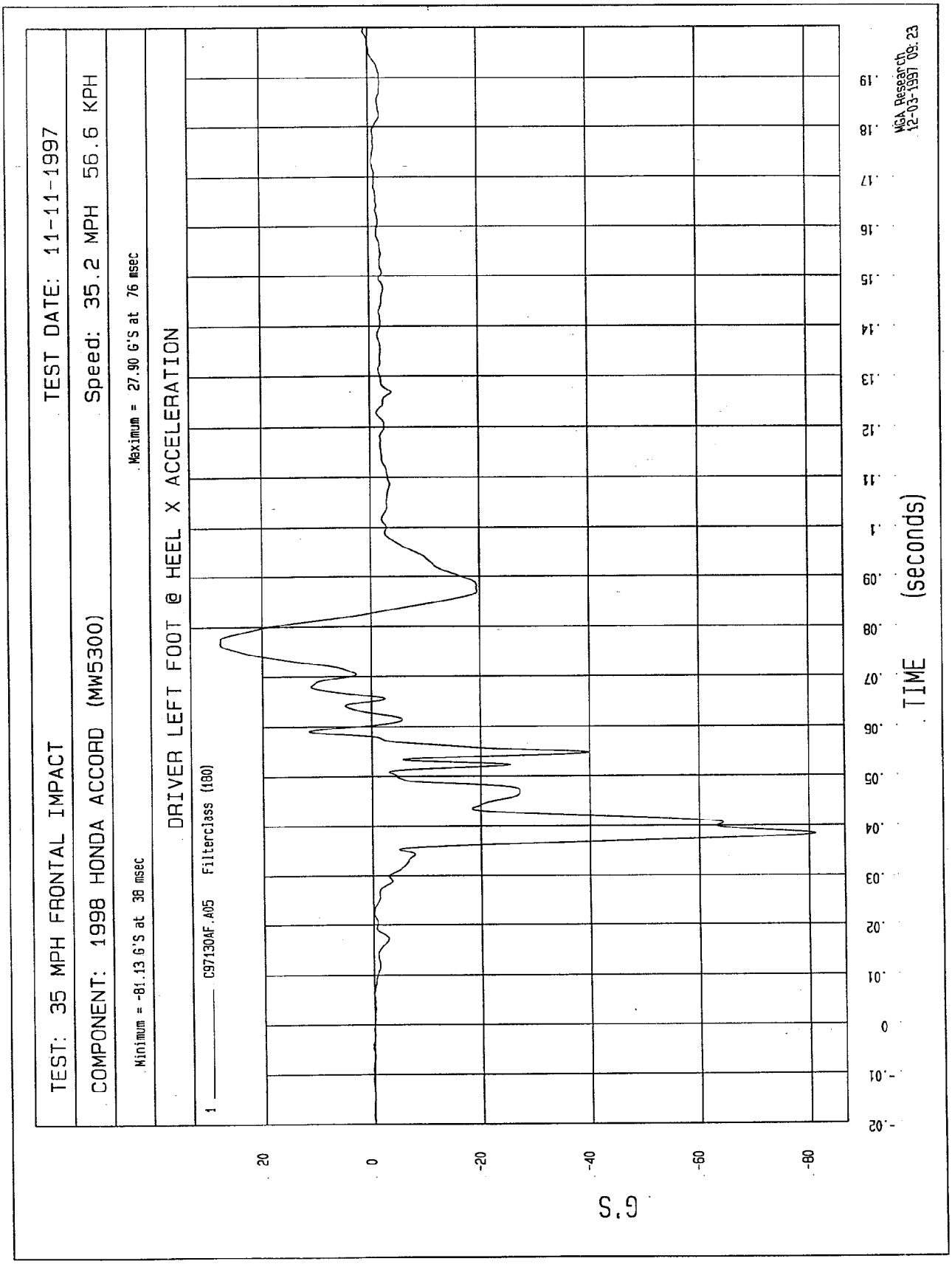

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -24.49 NM at 178 msec
Maximum = 125.92 NM at 36 msec
DRIVER RIGHT UPPER TIBIA MOMENT Y
1 B97130MF.M75 FilterClass (600)
NM
120
100
80
60
40
20
0
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:03

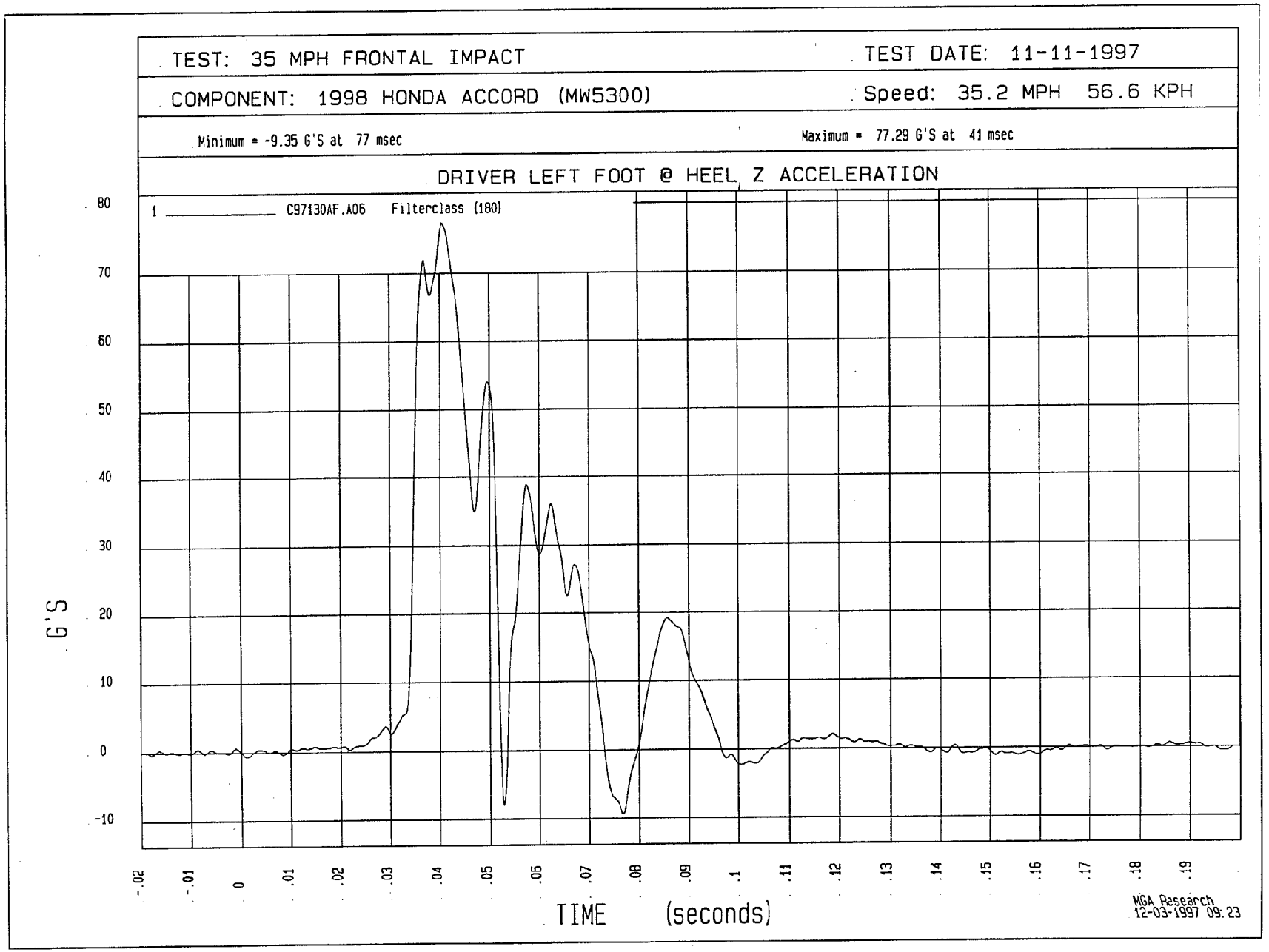

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -1574.31 N at 58 msec
Maximum = 119.52 N at 186 msec
DRIVER RIGHT LOWER TIBIA FORCE X
1 B97130FF.F76 Filterclass (600)
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:03

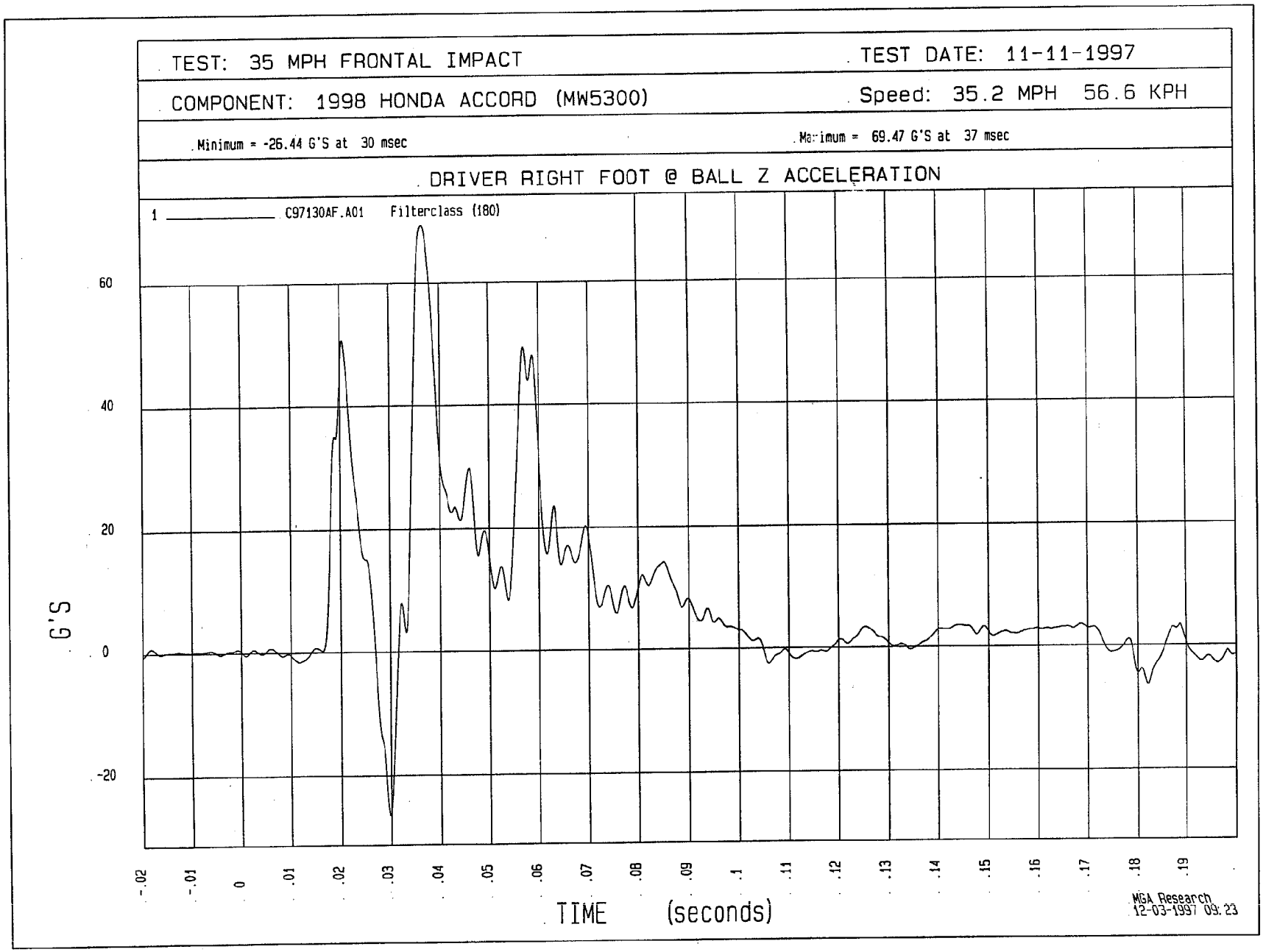

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -3471.70 N at 38 msec
Maximum = 200.16 N at 174 msec
DRIVER RIGHT LOWER TIBIA FORCE Z
1 B97130FF.F7B Filter:lass (600)
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 08:03

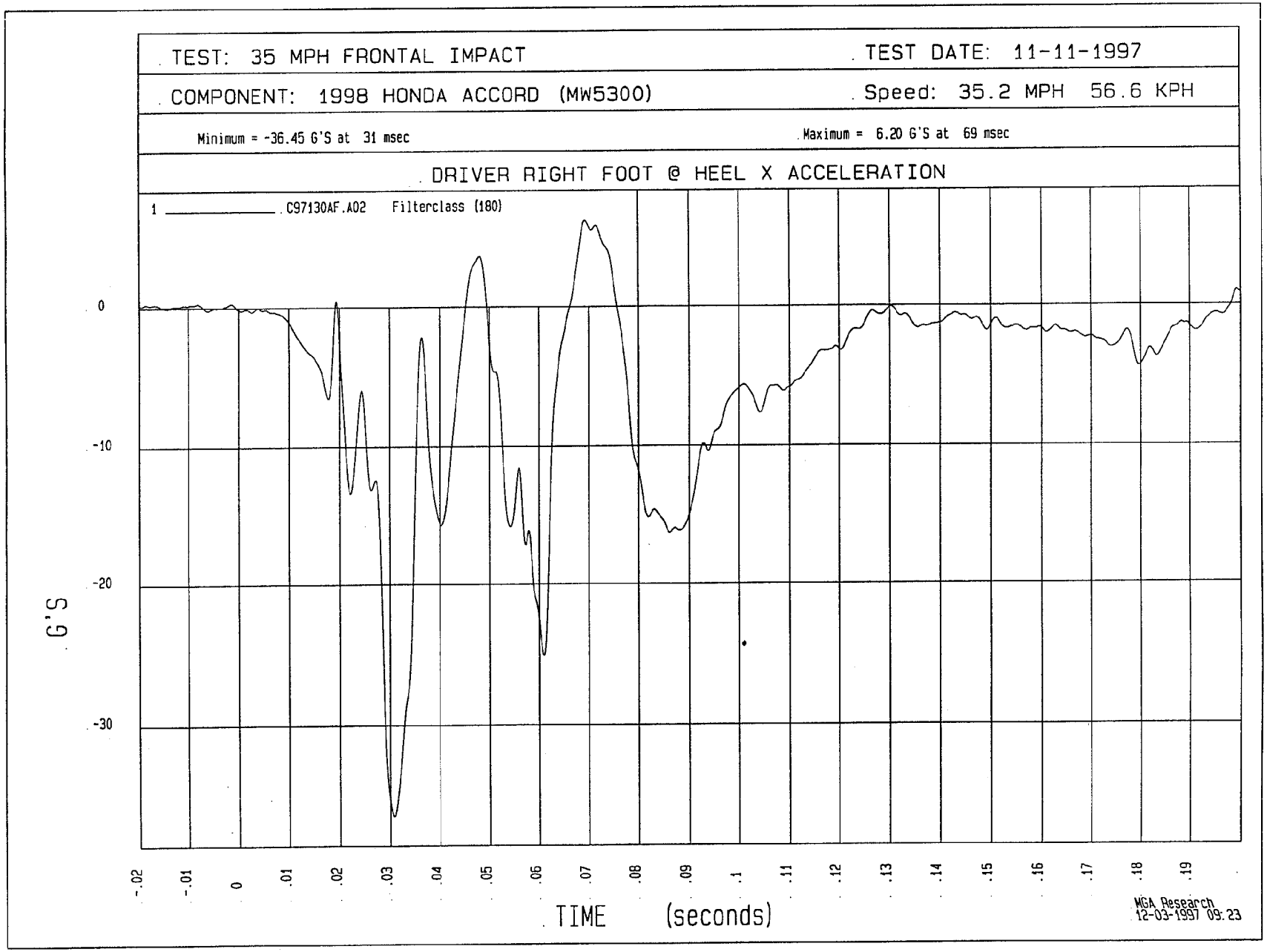

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -334.94 NM at 57 msec
Maximum = 38.77 NM at 45 msec
DRIVER RIGHT LOWER TIBIA MOMENT Y
1 B97130MF.M77 Filterclass (600)
NM
0
-100
-200
-300
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
12-02-1997 09: 03

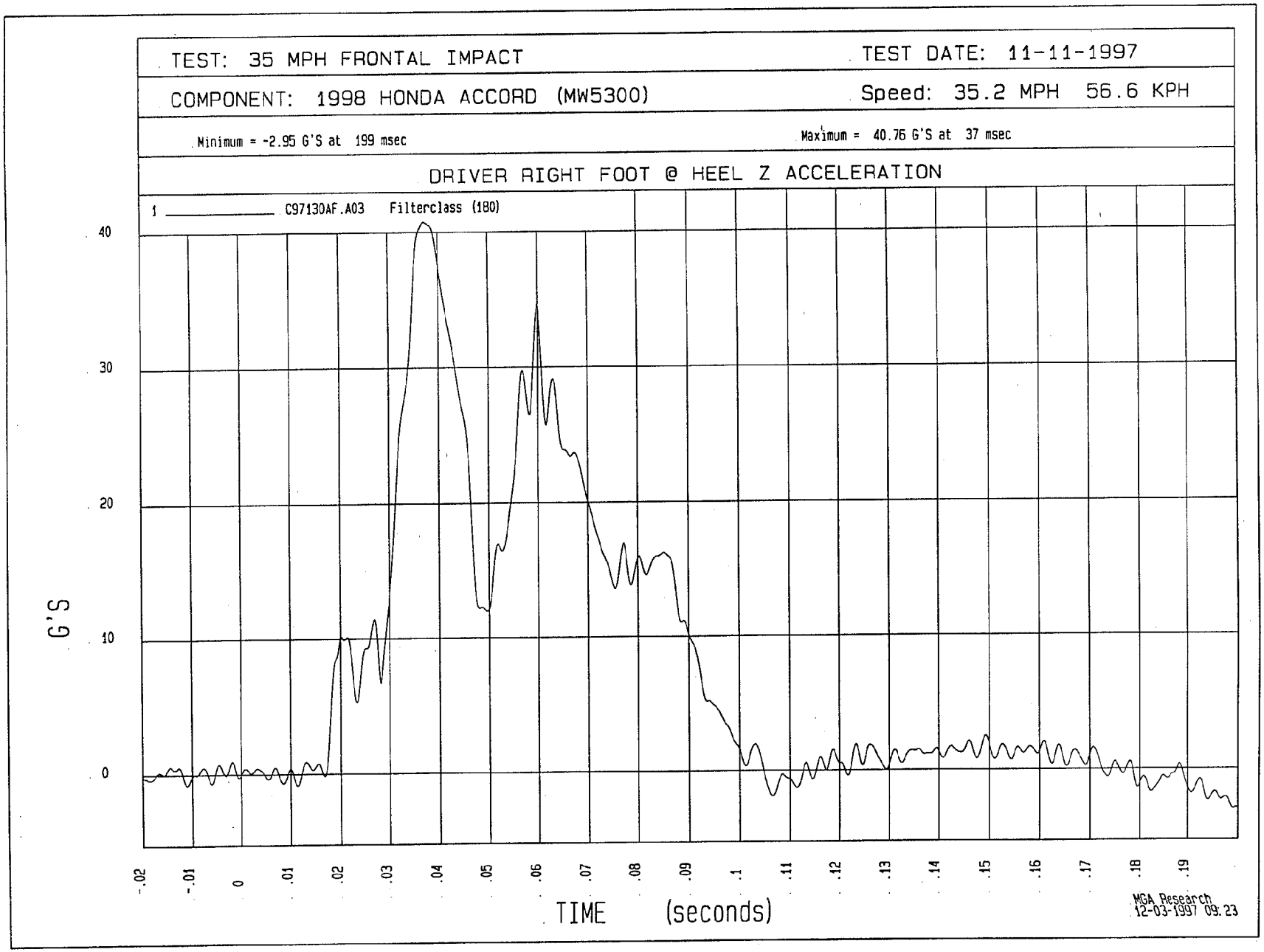

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -93.38 G'S at 55 msec
Maximum = 180.75 G'S at 36 msec
DRIVER LEFT FOOT @ BALL Z ACCELERATION
1 C97130AF.A04 Filterclass (180)
G'S
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:22

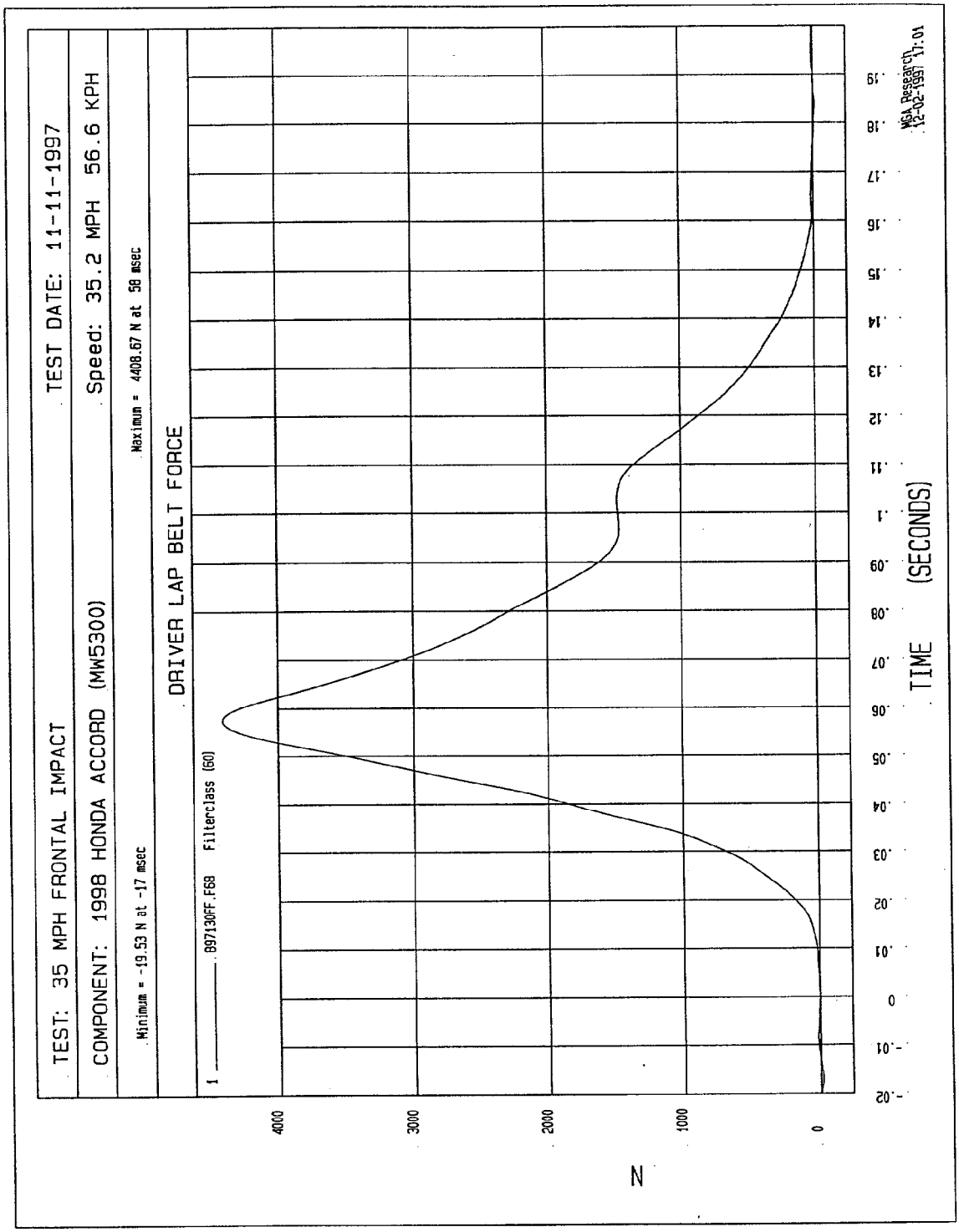

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -81.13 G'S at 38 msec
Maximum = 27.90 G'S at 76 msec
DRIVER LEFT FOOT @ HEEL X ACCELERATION
1 C97130AF.A05 Filterclass (180)
20
0
-20
-40
-60
-80
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
WGA Research
12-03-1997 09:23

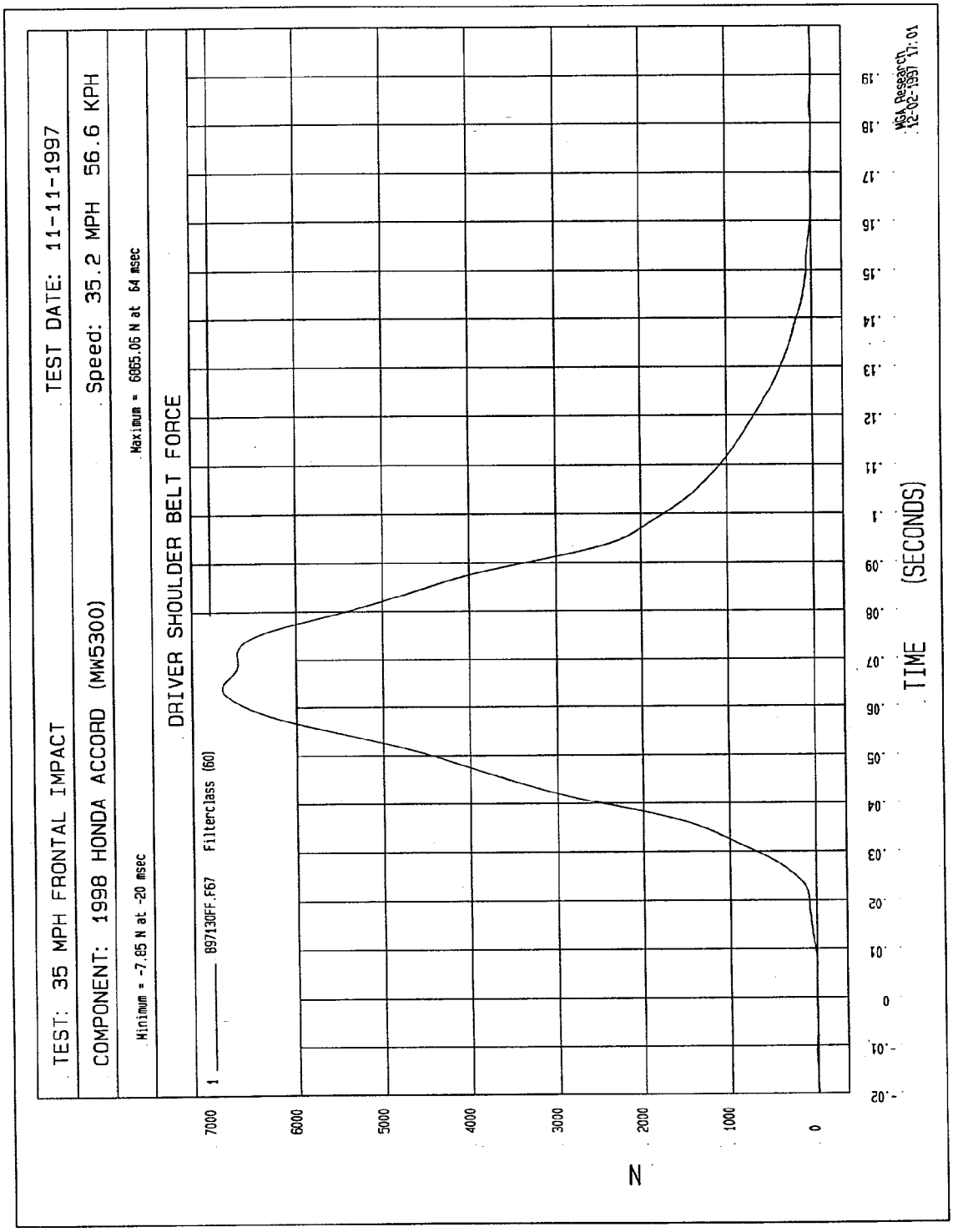

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -9.35 G'S at 77 msec
Maximum = 77.29 G'S at 41 msec
DRIVER LEFT FOOT @ HEEL Z ACCELERATION
1 C97130AF.A06 Filterclass (180)
G'S
80
70
60
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:23

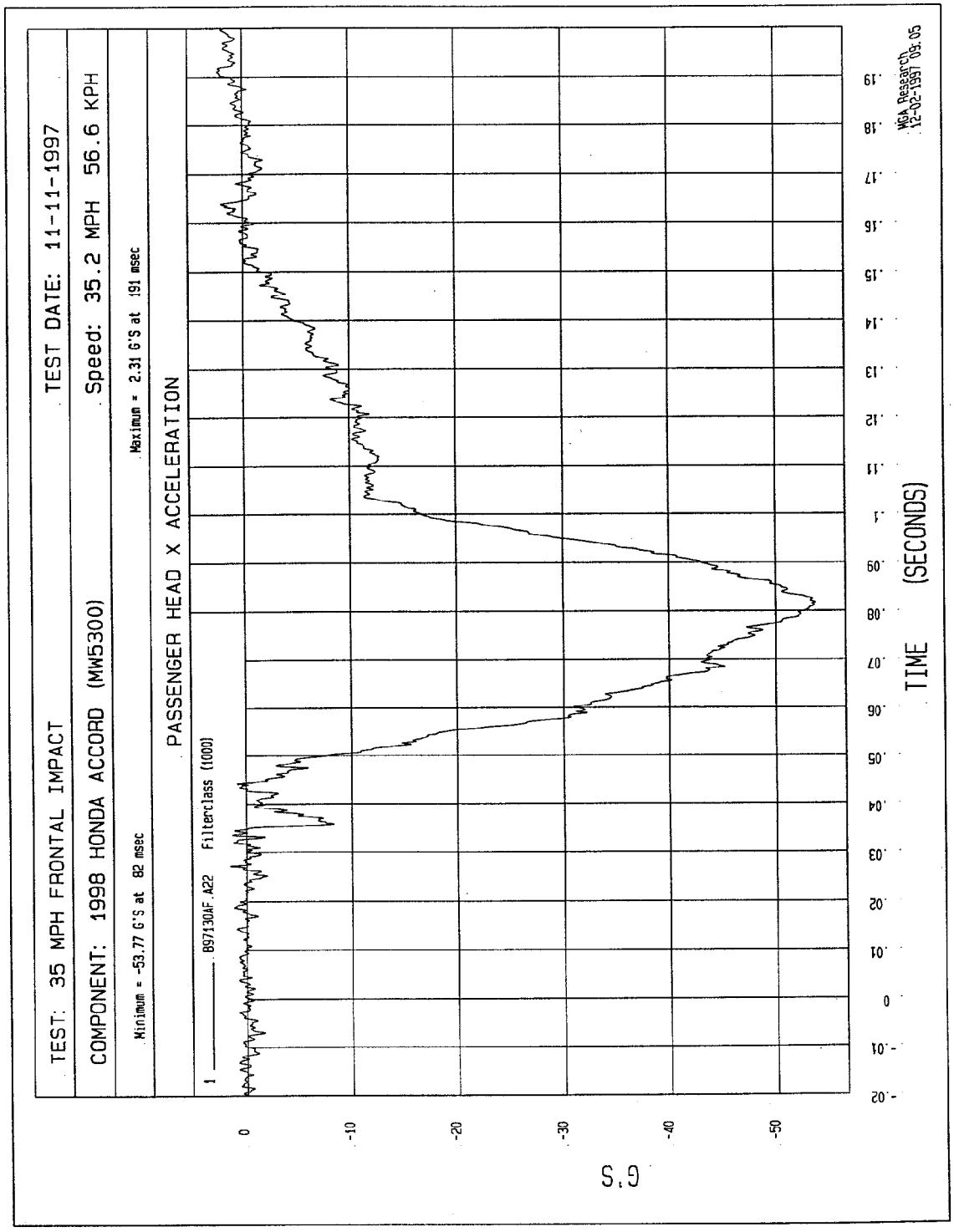

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -26.44 G'S at 30 msec
Maximum = 69.47 G'S at 37 msec
DRIVER RIGHT FOOT @ BALL Z ACCELERATION
1 C97130AF.A01 Filterclass (180)
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:23

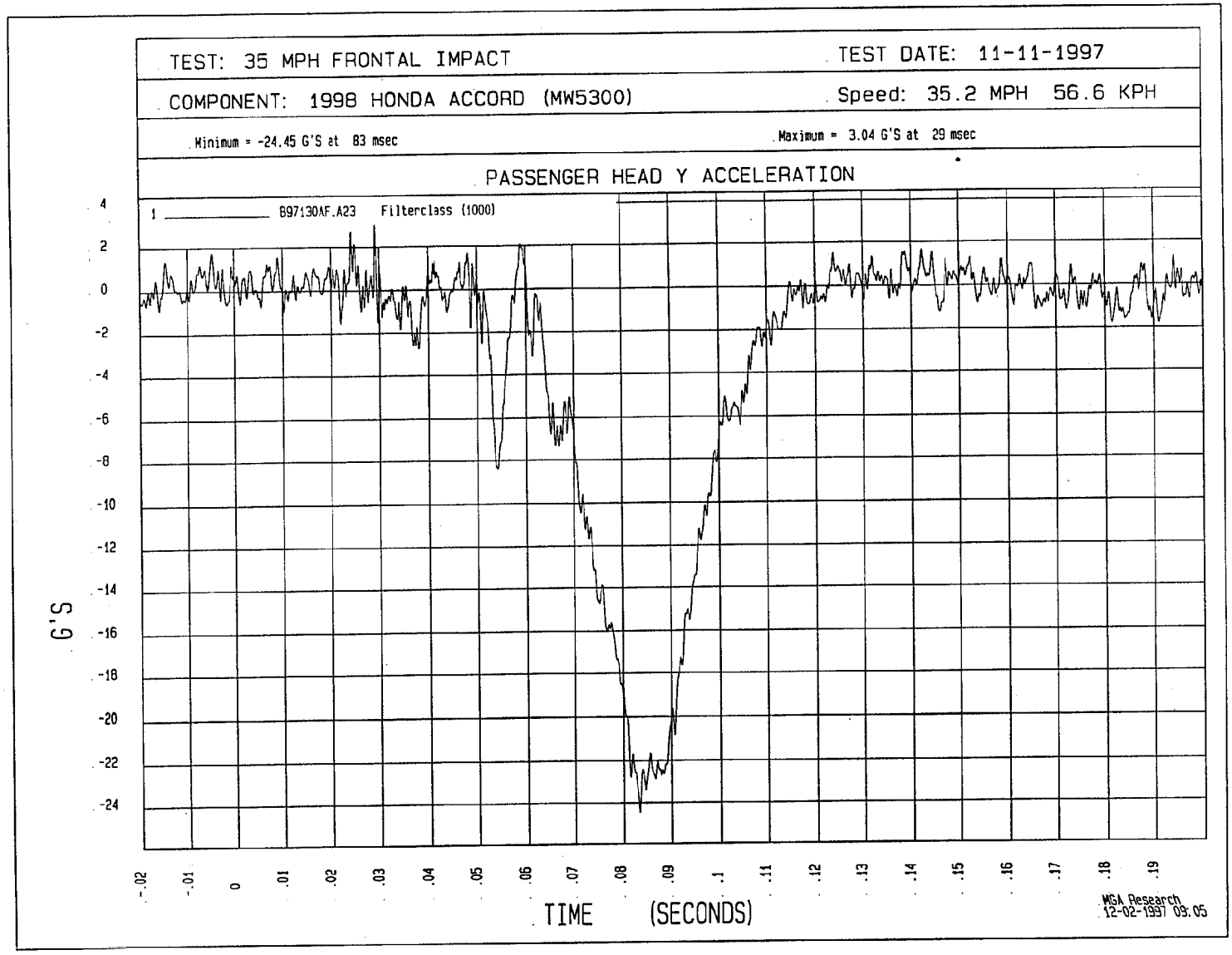

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -36.45 G'S at 31 msec
Maximum = 6.20 G'S at 69 msec
DRIVER RIGHT FOOT @ HEEL X ACCELERATION
1 C97130AF.A02 Filterclass (180)
0
-10
-20
-30
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:23

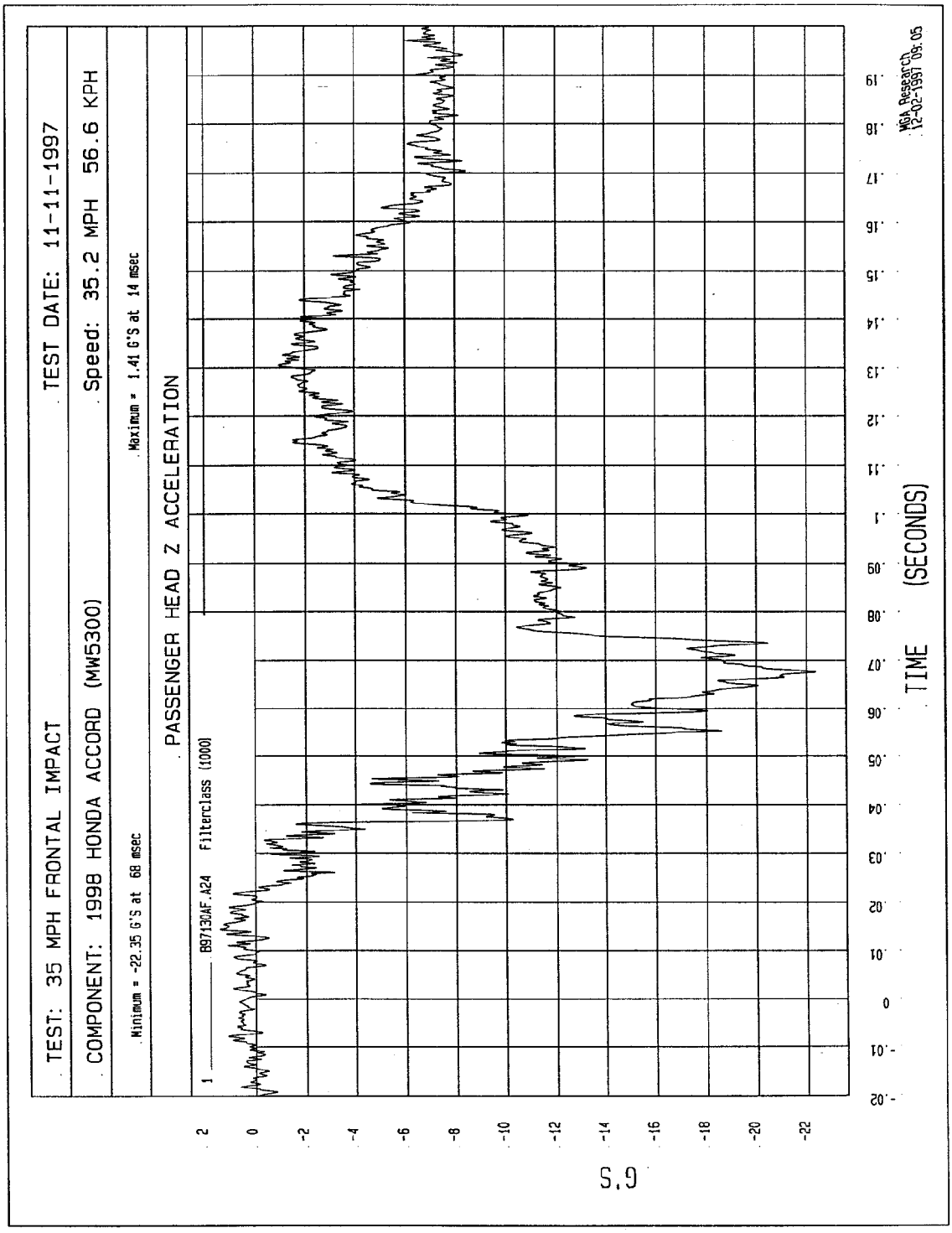

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -2.95 G'S at 199 msec
Maximum = 40.76 G'S at 37 msec
DRIVER RIGHT FOOT @ HEEL Z ACCELERATION
1 C97130AF.A03 Filterclass (180)
G'S
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:23

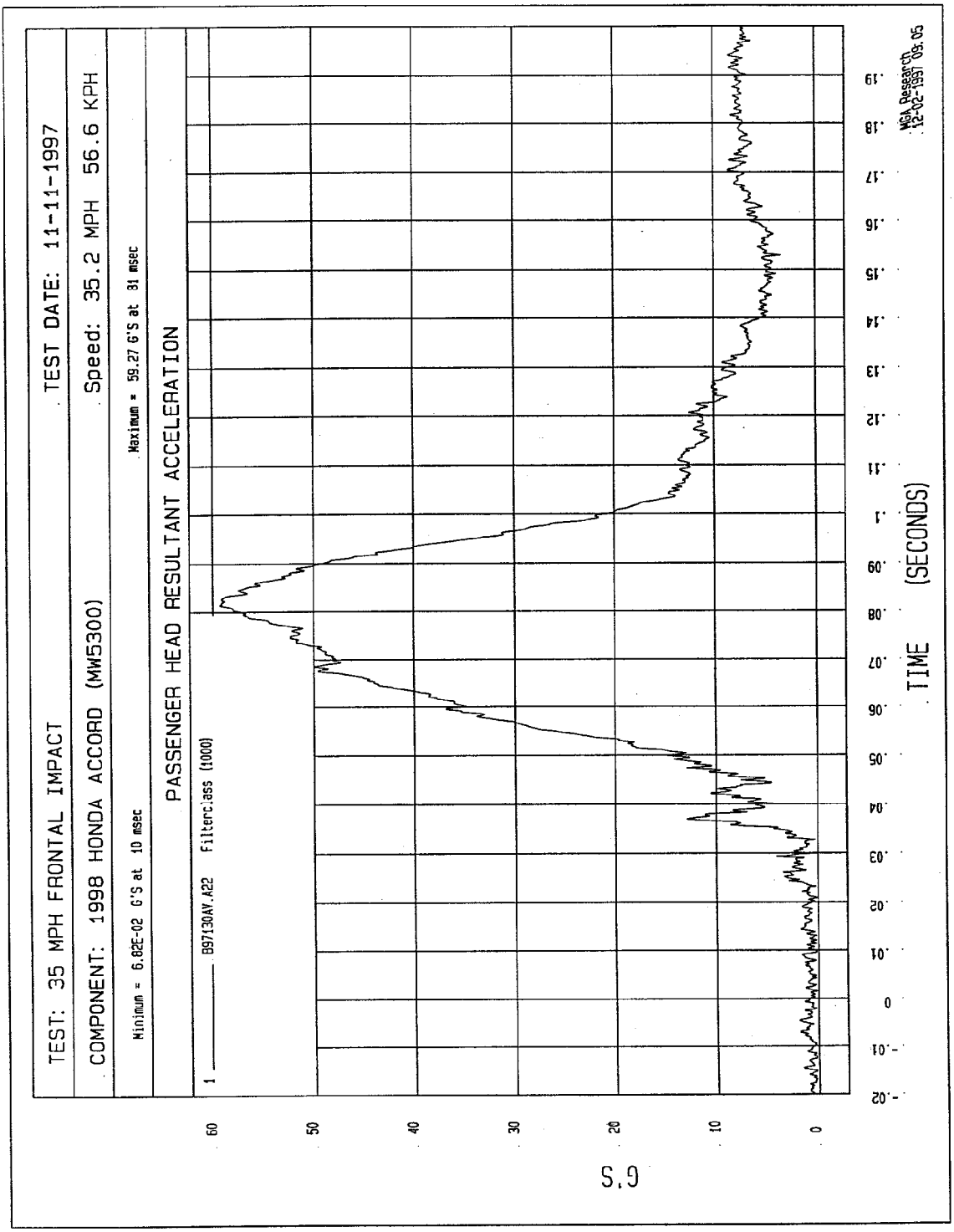

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -19.53 N at -17 msec
Maximum = 4408.67 N at 58 msec
DRIVER LAP BELT FORCE
1 B97130FF.F68 Filterclass (60)
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 11:01

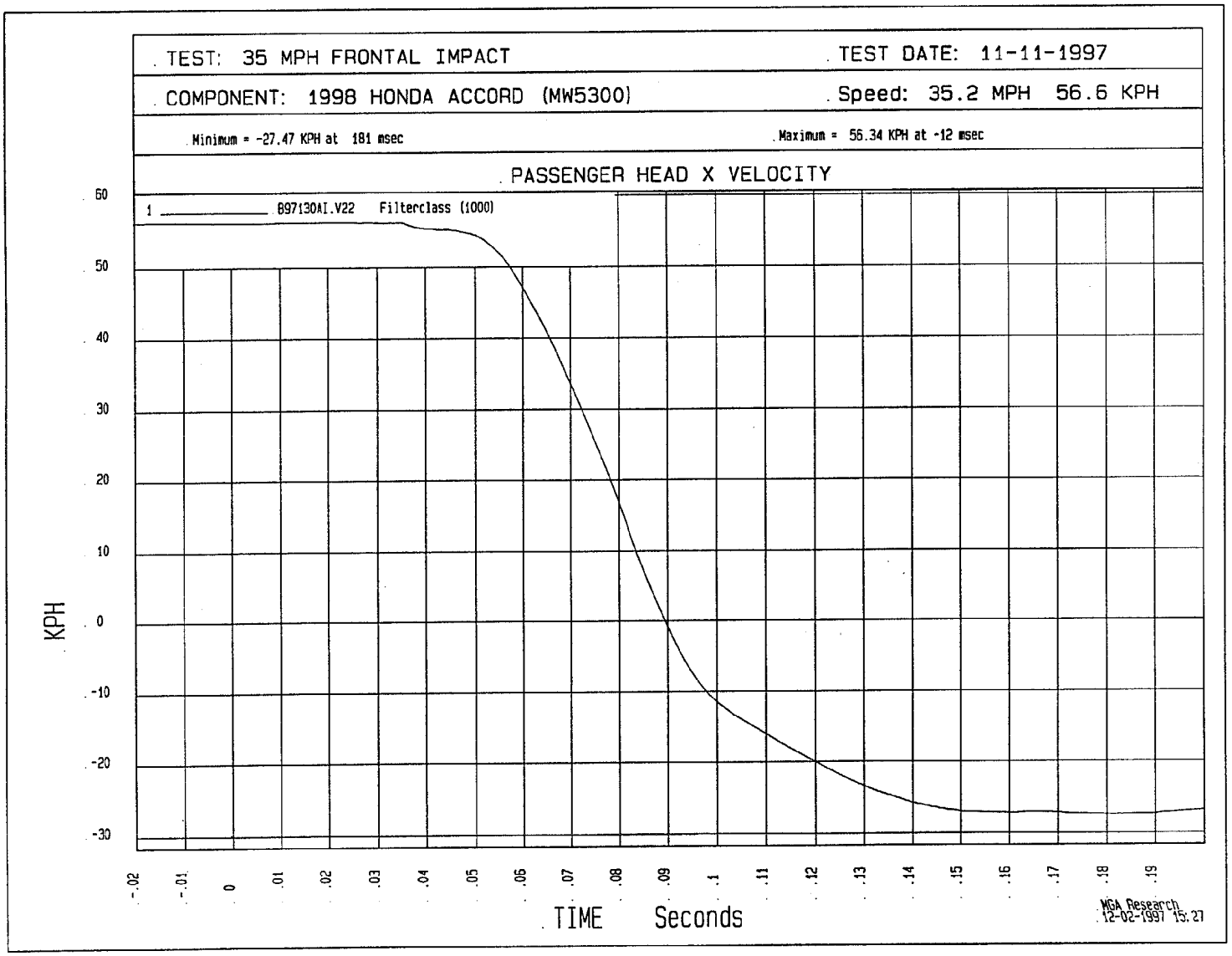

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -7.85 N at -20 msec
Maximum = 6865.05 N at 64 msec
DRIVER SHOULDER BELT FORCE
1 _____ 89713OFF.F67 Filterclass (60)
N
TIME (SECONDS)
MGA Research
12-02-1997 17:01

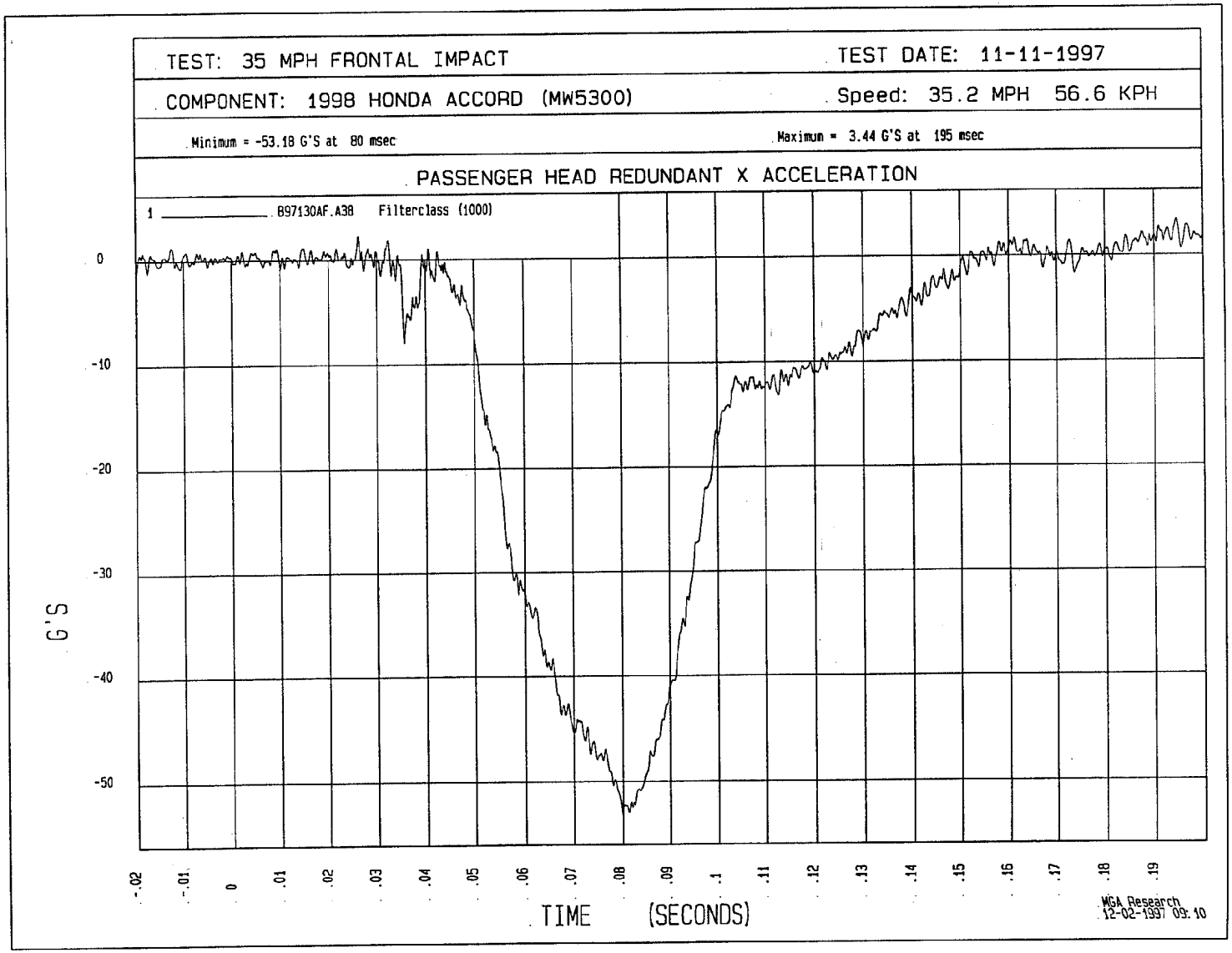

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -53.77 G'S at 82 msec
Maximum = 2.31 G'S at 191 msec
PASSENGER HEAD X ACCELERATION
1 B97130AF.A22 Filterclass (1000)
MGA Research
12-02-1997 09:05
G'S
TIME (SECONDS)
0
-10
-20
-30
-40
-50
.02
.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19

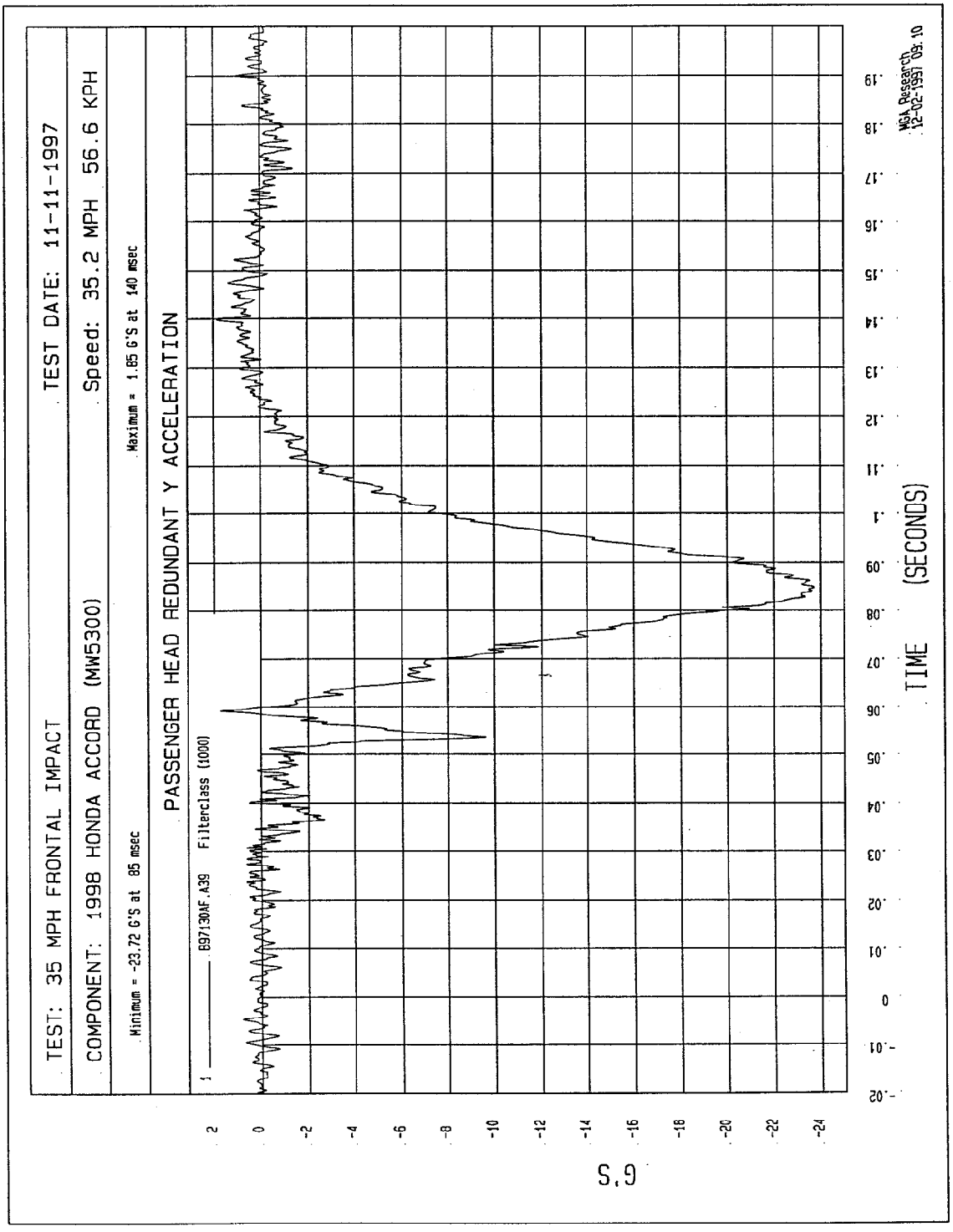

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -24.45 G'S at 83 msec
Maximum = 3.04 G'S at 29 msec
PASSENGER HEAD Y ACCELERATION
1 B97130AF.A23 Filterclass (1000)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:05

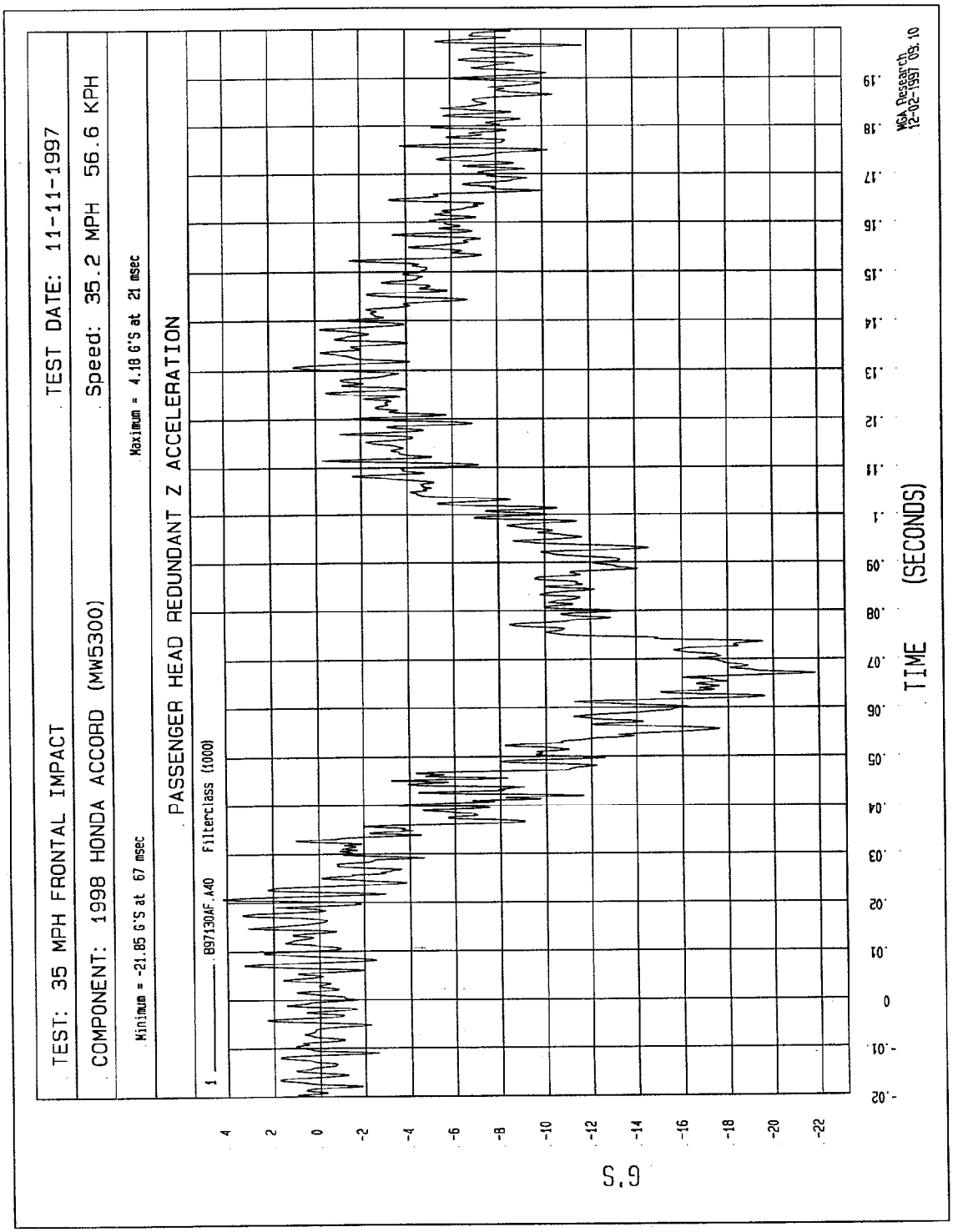

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -22.35 G'S at 68 msec
Maximum = 1.41 G'S at 14 msec
PASSENGER HEAD Z ACCELERATION
1 897130AF.A24 Filterclass (1000)
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
G'S
.02
.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:05

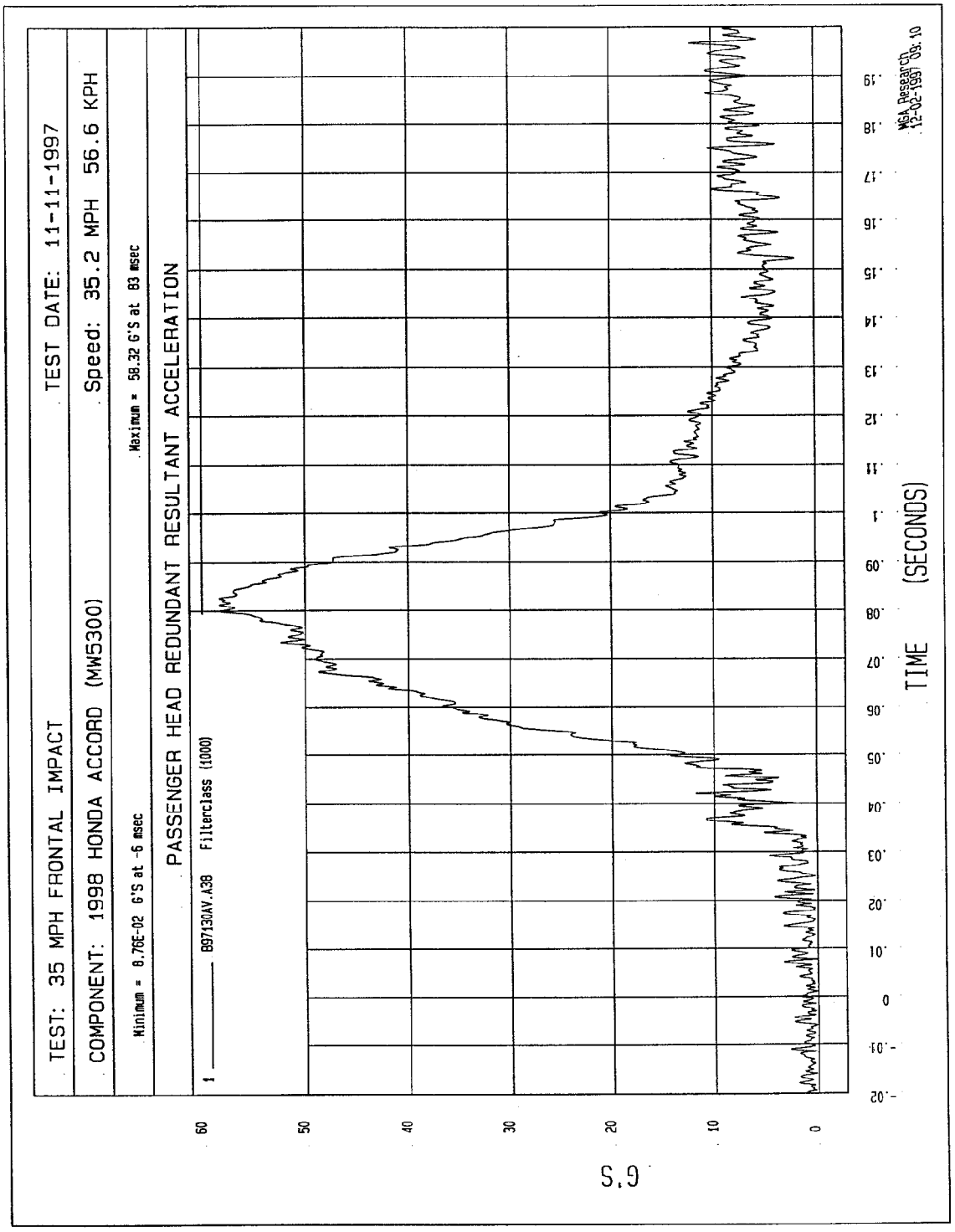

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 6.82E-02 G'S at 10 msec
Maximum = 59.27 G'S at 81 msec
PASSENGER HEAD RESULTANT ACCELERATION
1 B97130AY.A22 Filter Class (1000)
60
50
40
30
20
10
0
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:05

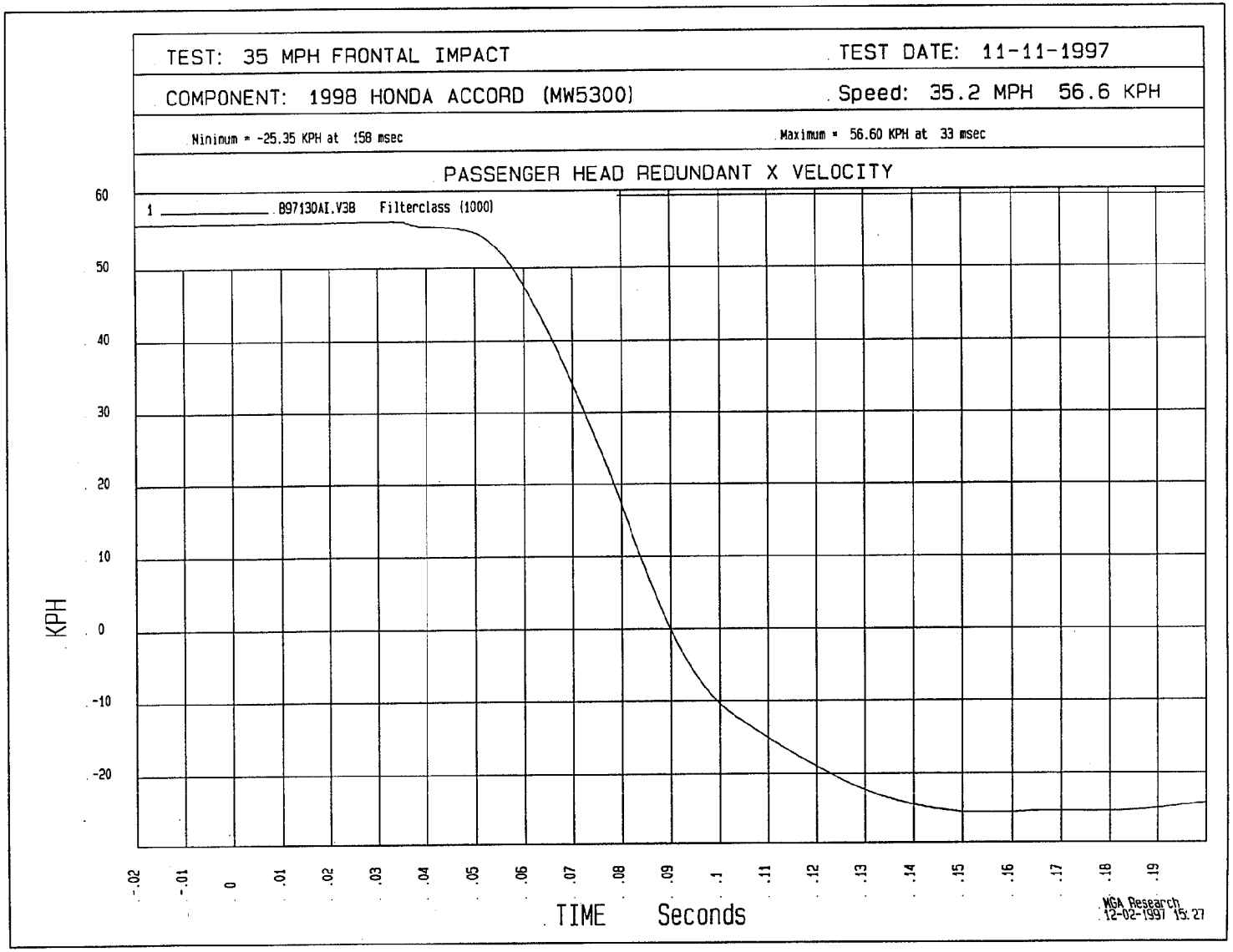

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -27.47 KPH at 181 msec
Maximum = 56.34 KPH at -12 msec
PASSENGER HEAD X VELOCITY
1 B97130AI.V22 Filterclass (1000)
KPH
60
50
40
30
20
10
0
-10
-20
-30
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 15:27

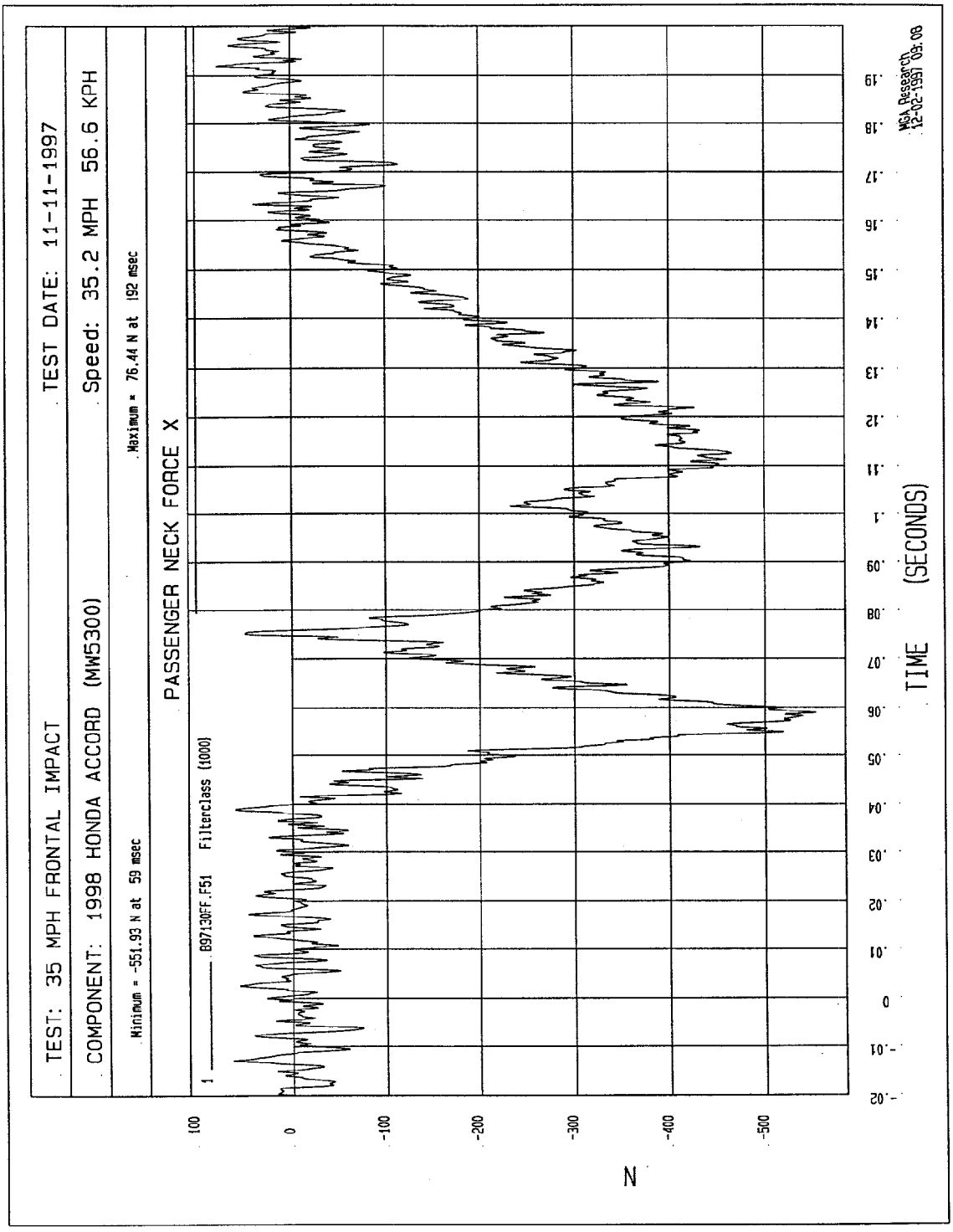

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -53.18 G'S at 80 msec
Maximum = 3.44 G'S at 195 msec
PASSENGER HEAD REDUNDANT X ACCELERATION
1 B97130AF.A38 Filterclass (1000)
0
-10
-20
-30
-40
-50
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:10

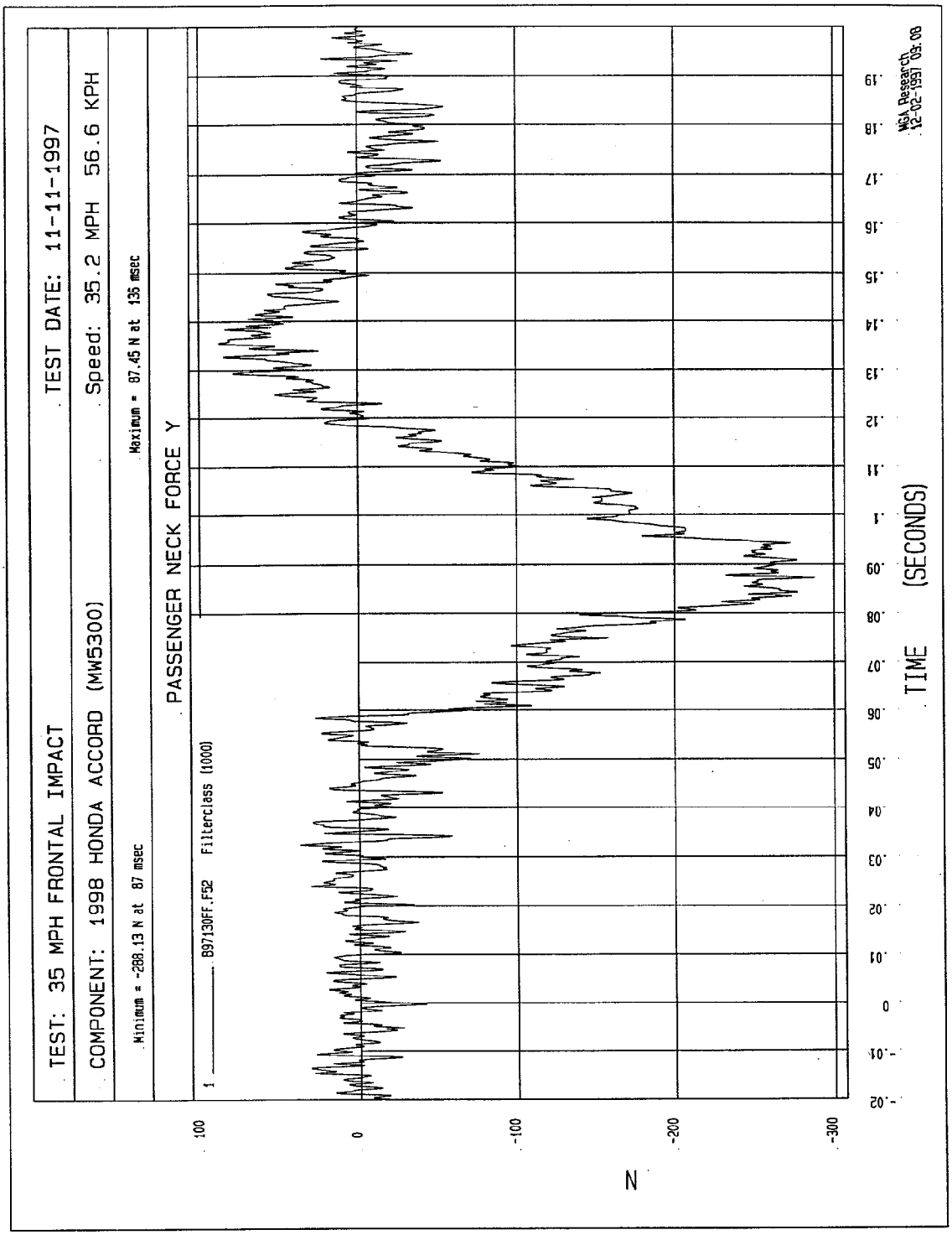

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -23.72 G'S at 85 msec
Maximum = 1.85 G'S at 140 msec
PASSENGER HEAD REDUNDANT Y ACCELERATION
1 B97130AF.A39 Filterclass (1000)
G'S
TIME (SECONDS)
MGA Research
12-02-1997 09:10

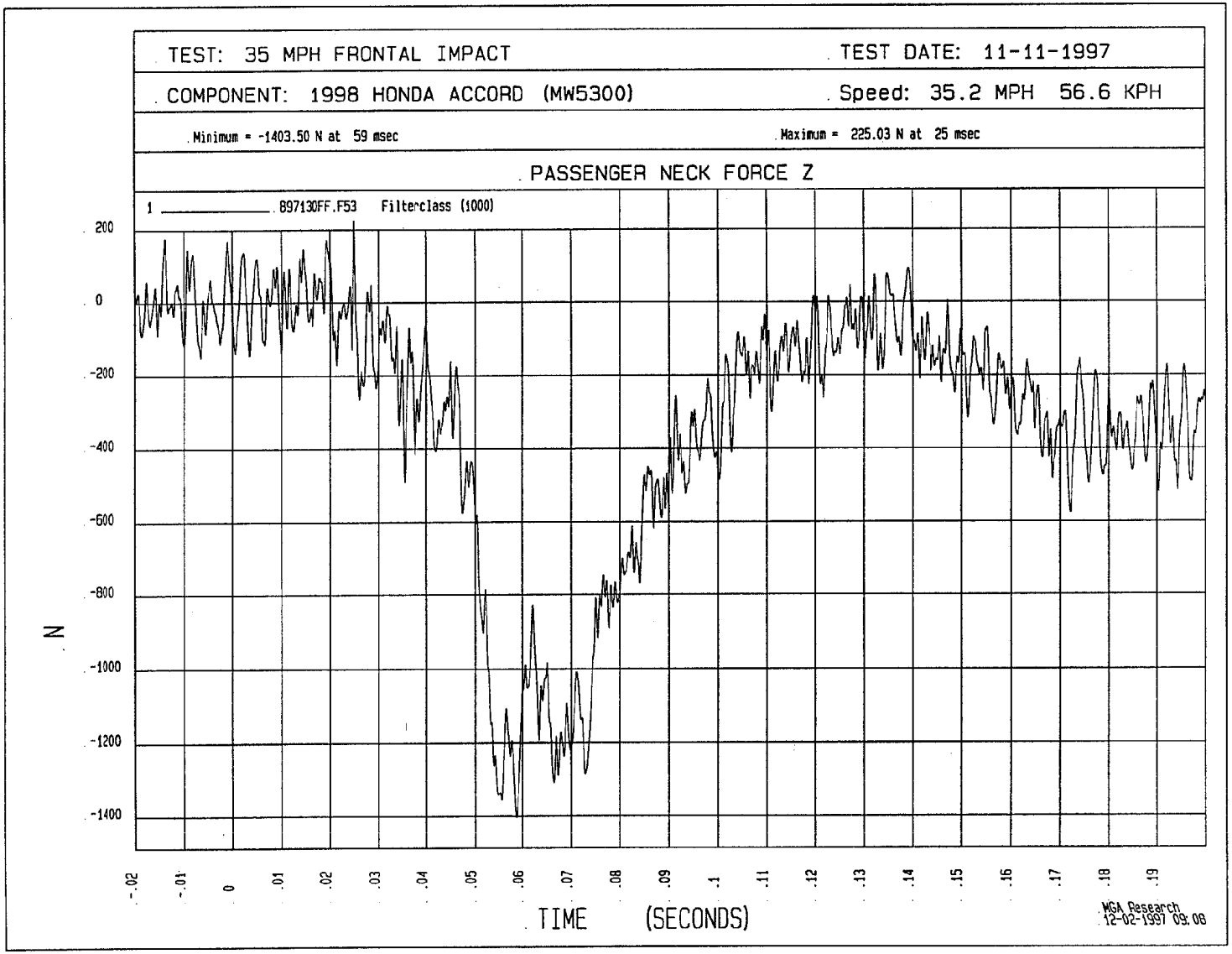

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -21.85 G'S at 67 msec
Maximum = 4.18 G'S at 21 msec
PASSENGER HEAD REDUNDANT Z ACCELERATION
1 B97130AF.A40 Filterclass (1000)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:10

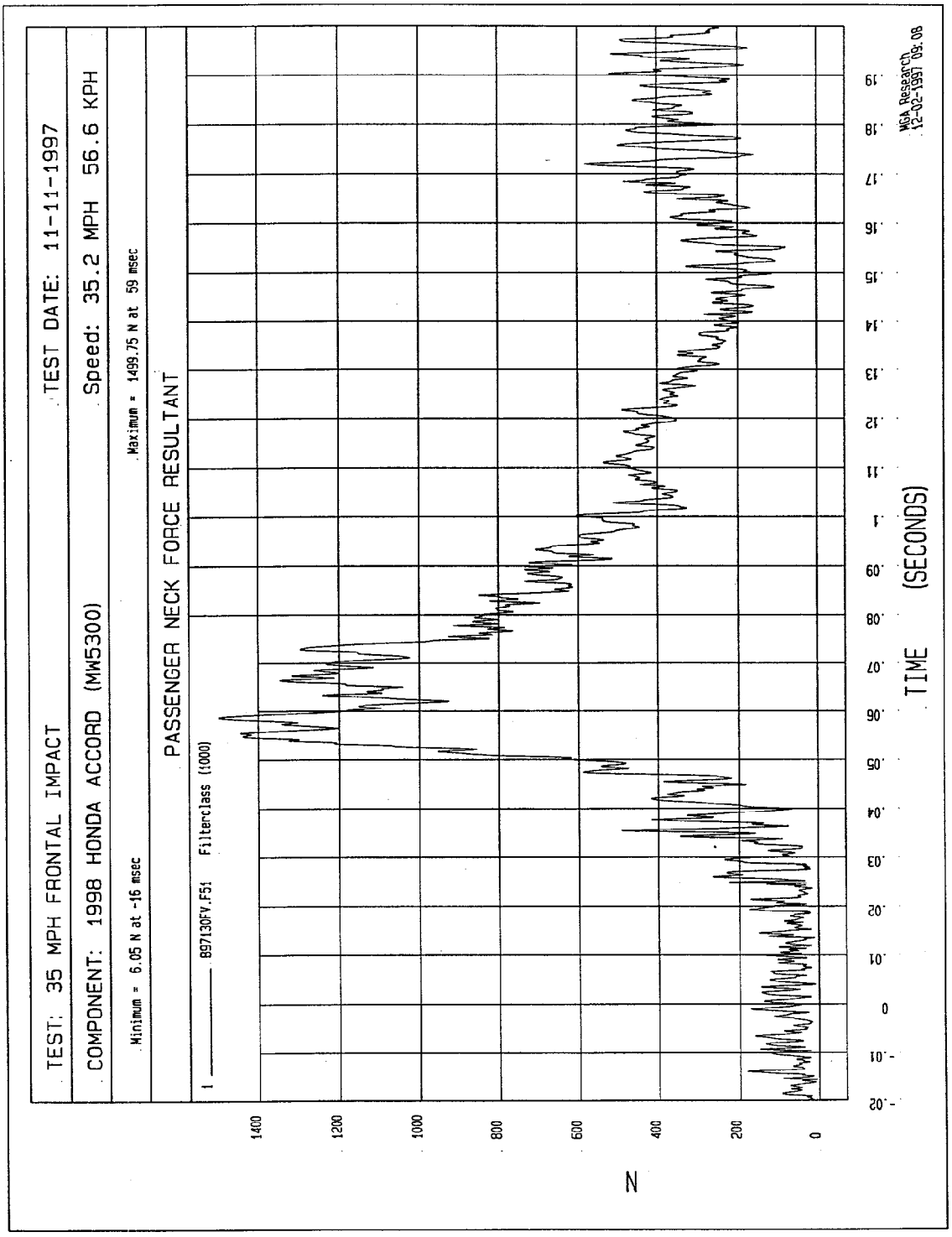

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 8.76E-02 G'S at -6 msec
Maximum = 58.32 G'S at 83 msec
PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION
1 B9713HAV.A3B Filterclass (1000)
60
50
40
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 08:10

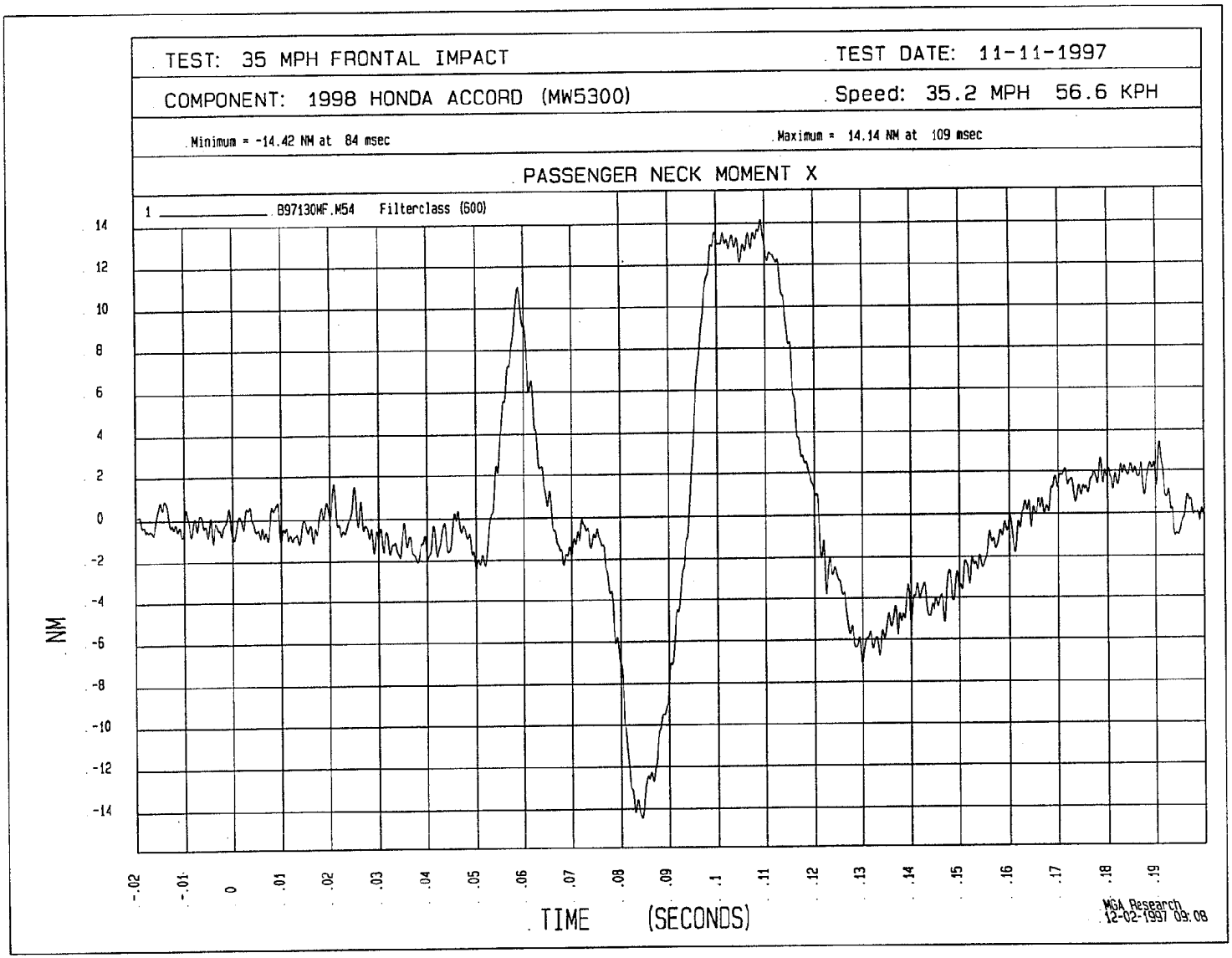

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -25.35 KPH at 158 msec
Maximum = 56.60 KPH at 33 msec
PASSENGER HEAD REDUNDANT X VELOCITY
1 B97130AI.V3B Filterclass (1000)
60
50
40
30
20
10
0
-10
-20
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
NGA Research
12-02-1997 15:27

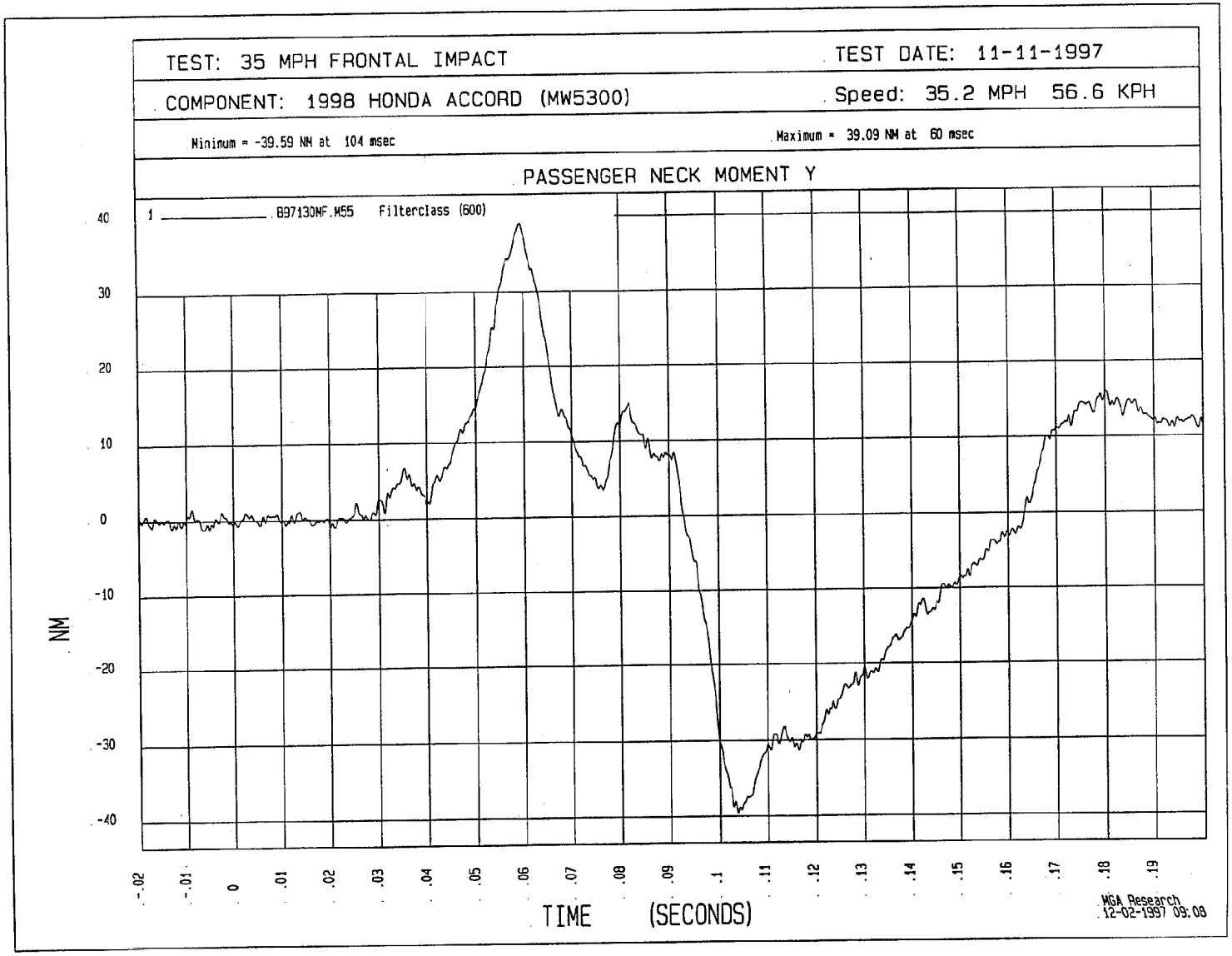

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -551.93 N at 59 msec
Maximum = 76.44 N at 192 msec
PASSENGER NECK FORCE X
1 B97130FF.F51 Filterclass (1000)
100
0
-100
-200
-300
-400
-500
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 03:08

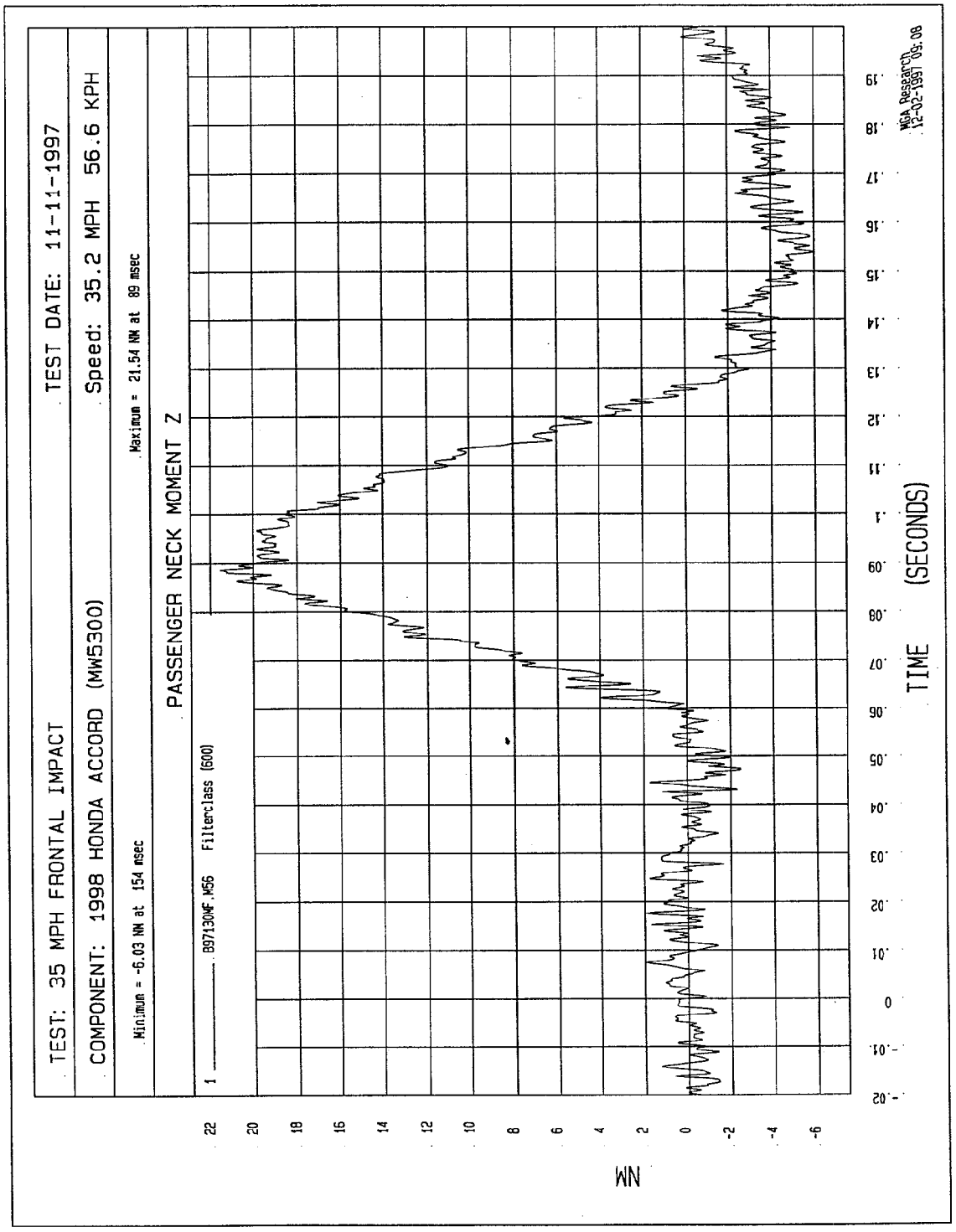

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -288.13 N at 87 msec
Maximum = 87.45 N at 135 msec
PASSENGER NECK FORCE Y
1 B97130FF.F52 Filterclass (1000)
100
0
-100
-200
-300
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:08

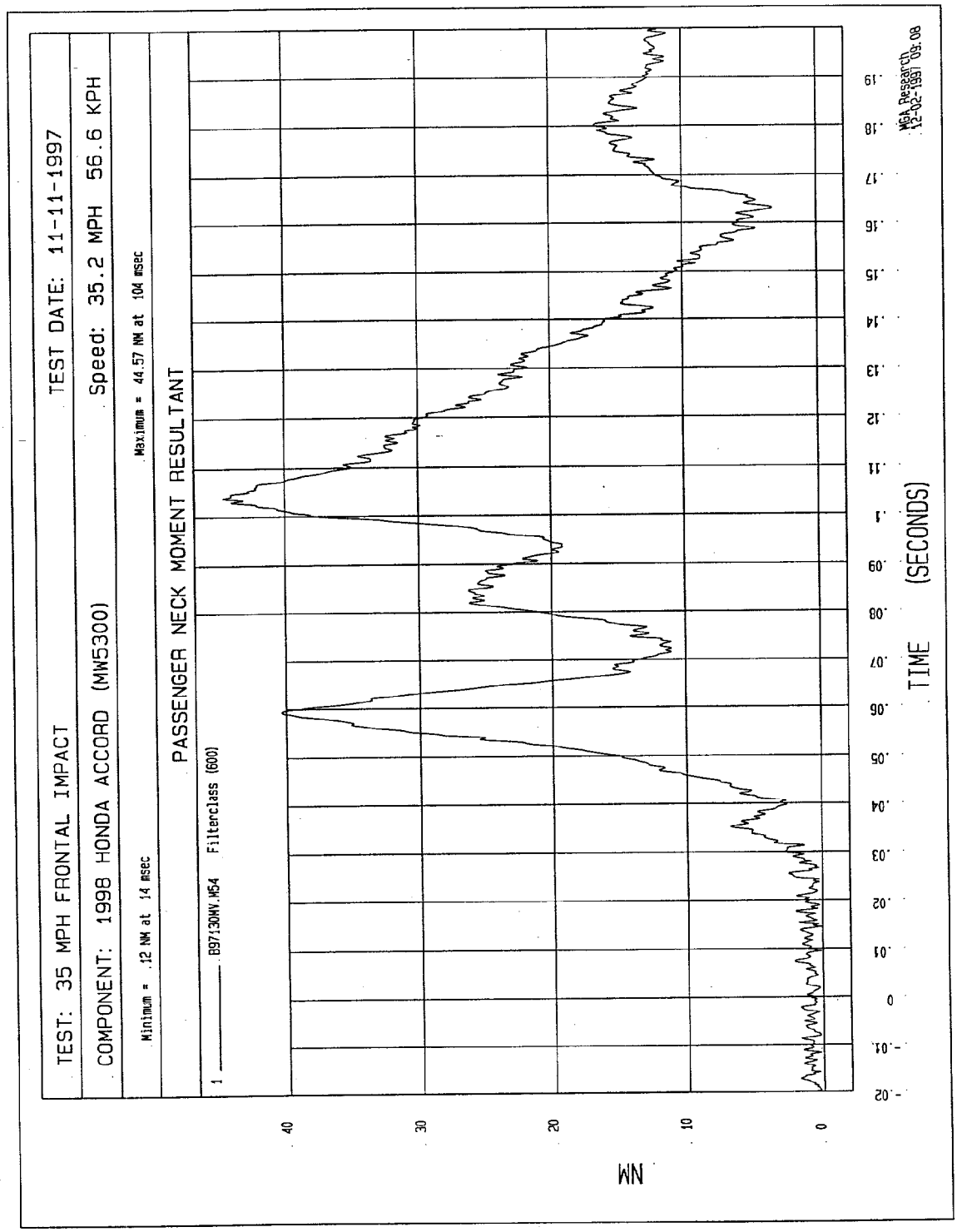

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -1403.50 N at 59 msec
Maximum = 225.03 N at 25 msec
PASSENGER NECK FORCE Z
1 897130FF.F53 Filterclass (1000)
200
0
-200
-400
-600
-800
-1000
-1200
-1400
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:08

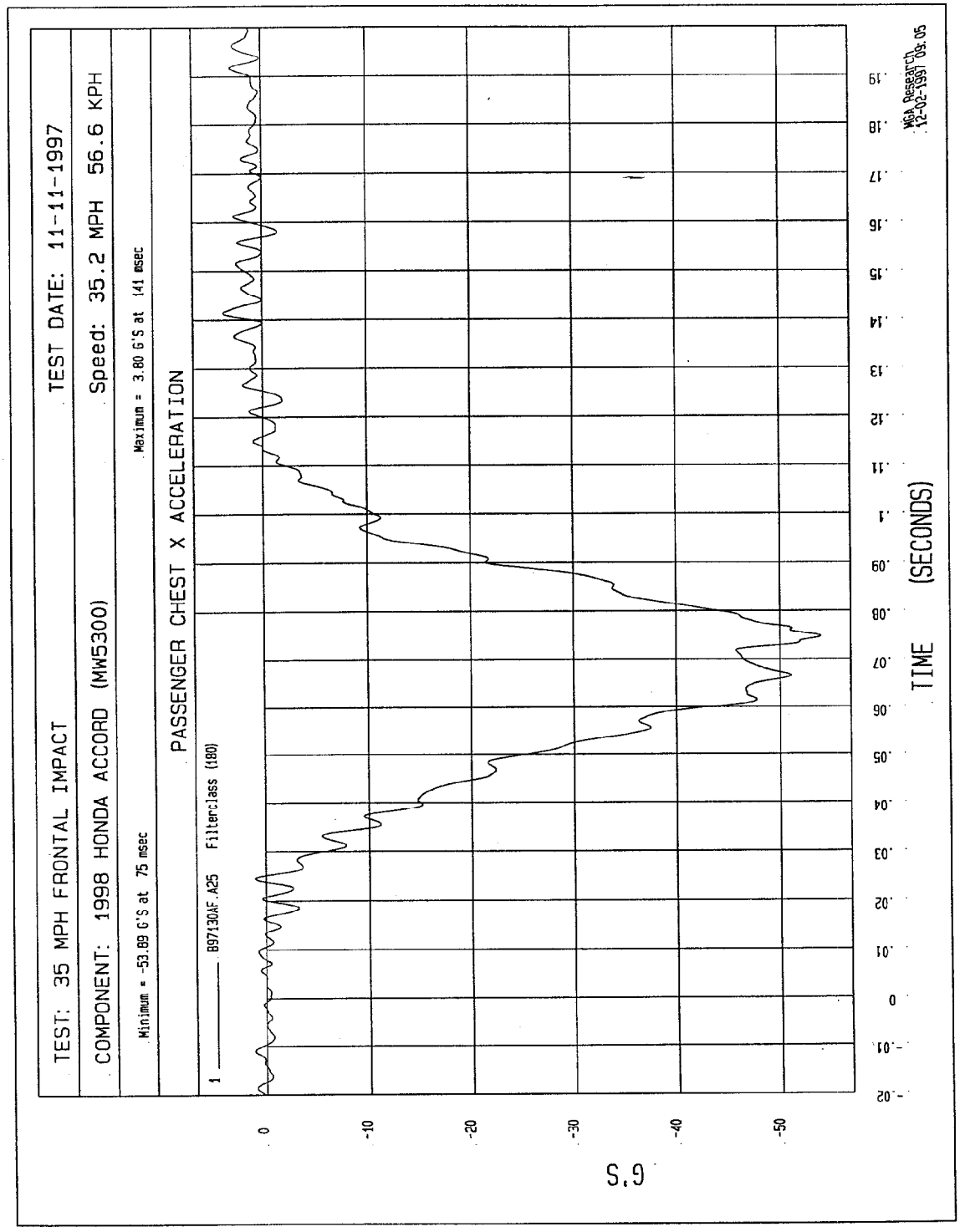

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 6.05 N at -16 msec
Maximum = 1499.75 N at 59 msec
PASSENGER NECK FORCE RESULTANT
1 _____ B97130FV.F51 Filterclass (1000)
N
TIME (SECONDS)
MGA Research
12-02-1997 09:08

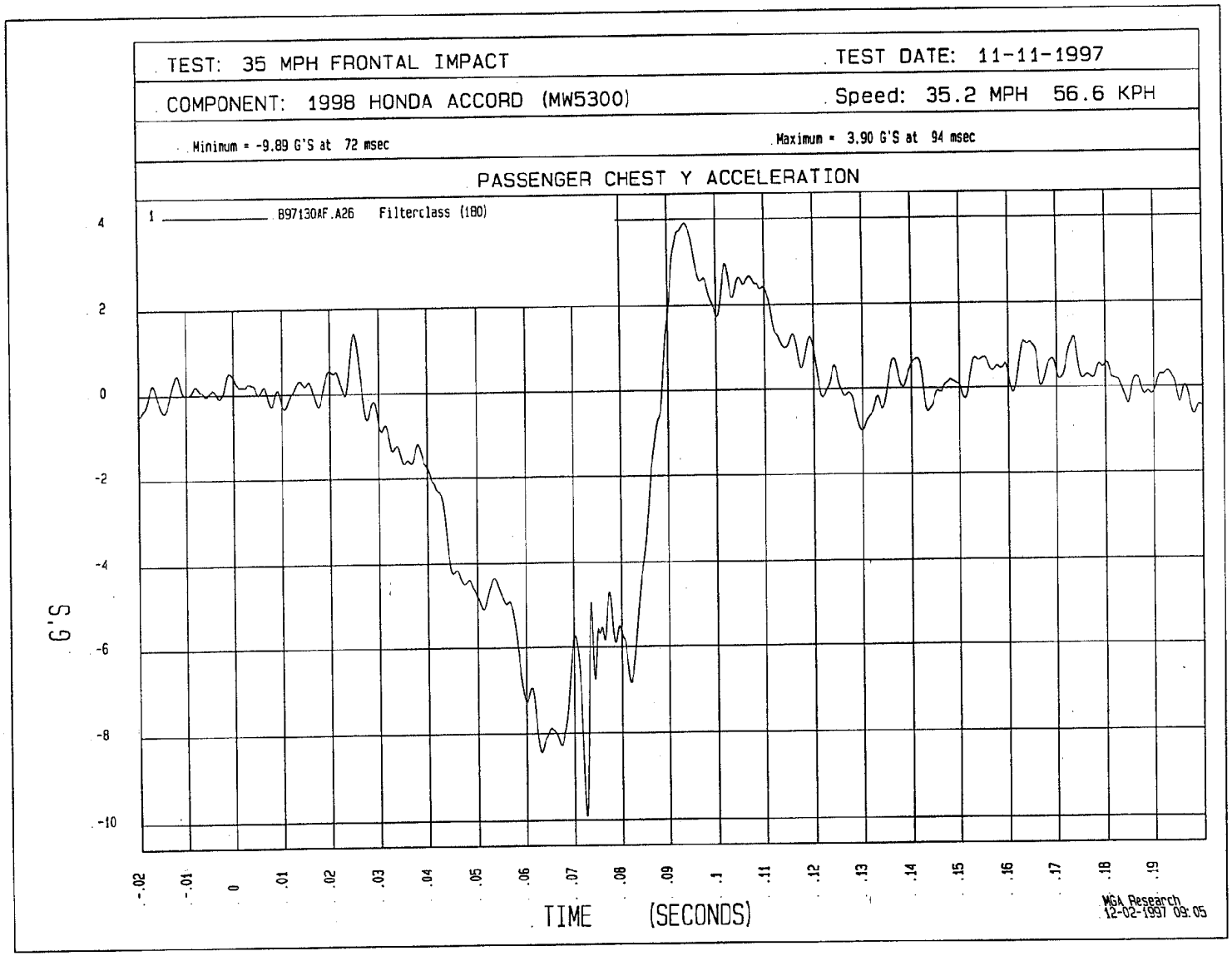

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -14.42 NM at 84 msec
Maximum = 14.14 NM at 109 msec
PASSENGER NECK MOMENT X
1 B97130MF.M54 Filterclass (600)
NM
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:08

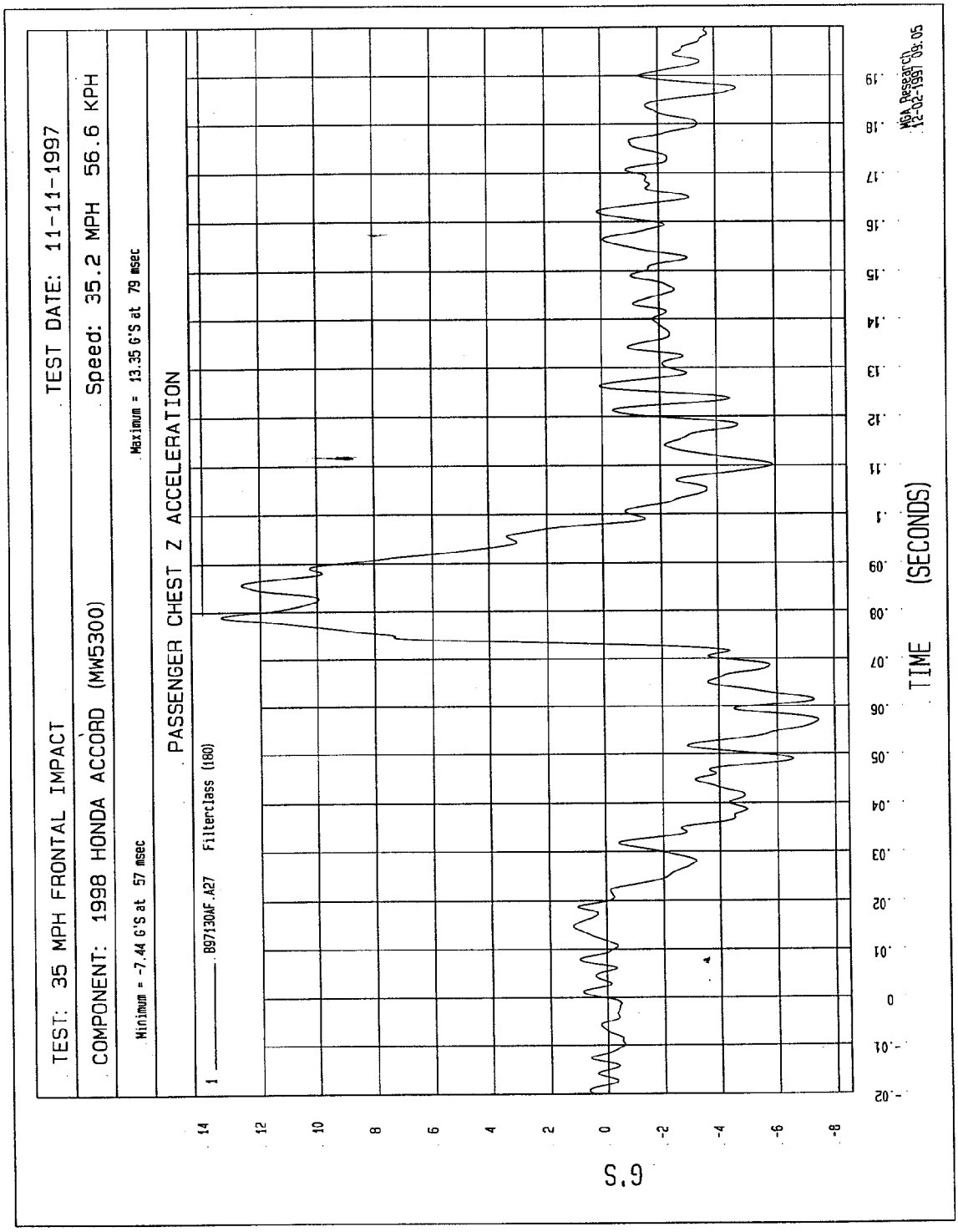

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -39.59 NM at 104 msec
Maximum = 39.09 NM at 60 msec
PASSENGER NECK MOMENT Y
1 B97130NF.M55 Filterclass (600)
NM
40
30
20
10
0
-10
-20
-30
-40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:08

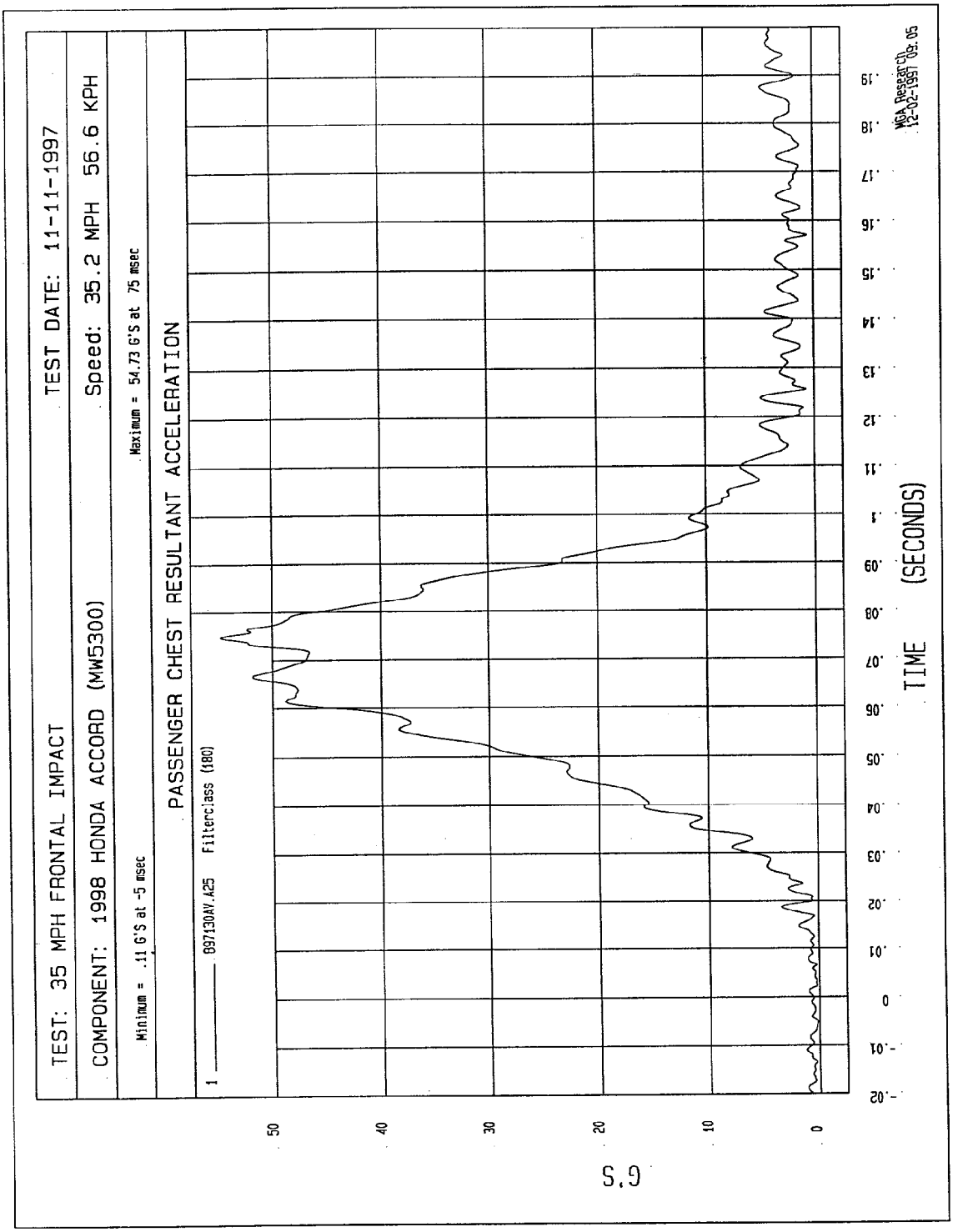

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -6.03 NN at 154 msec
Maximum = 21.54 NN at 89 msec
PASSENGER NECK MOMENT Z
1 B97130WF.M56 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
12-02-1997 09:08

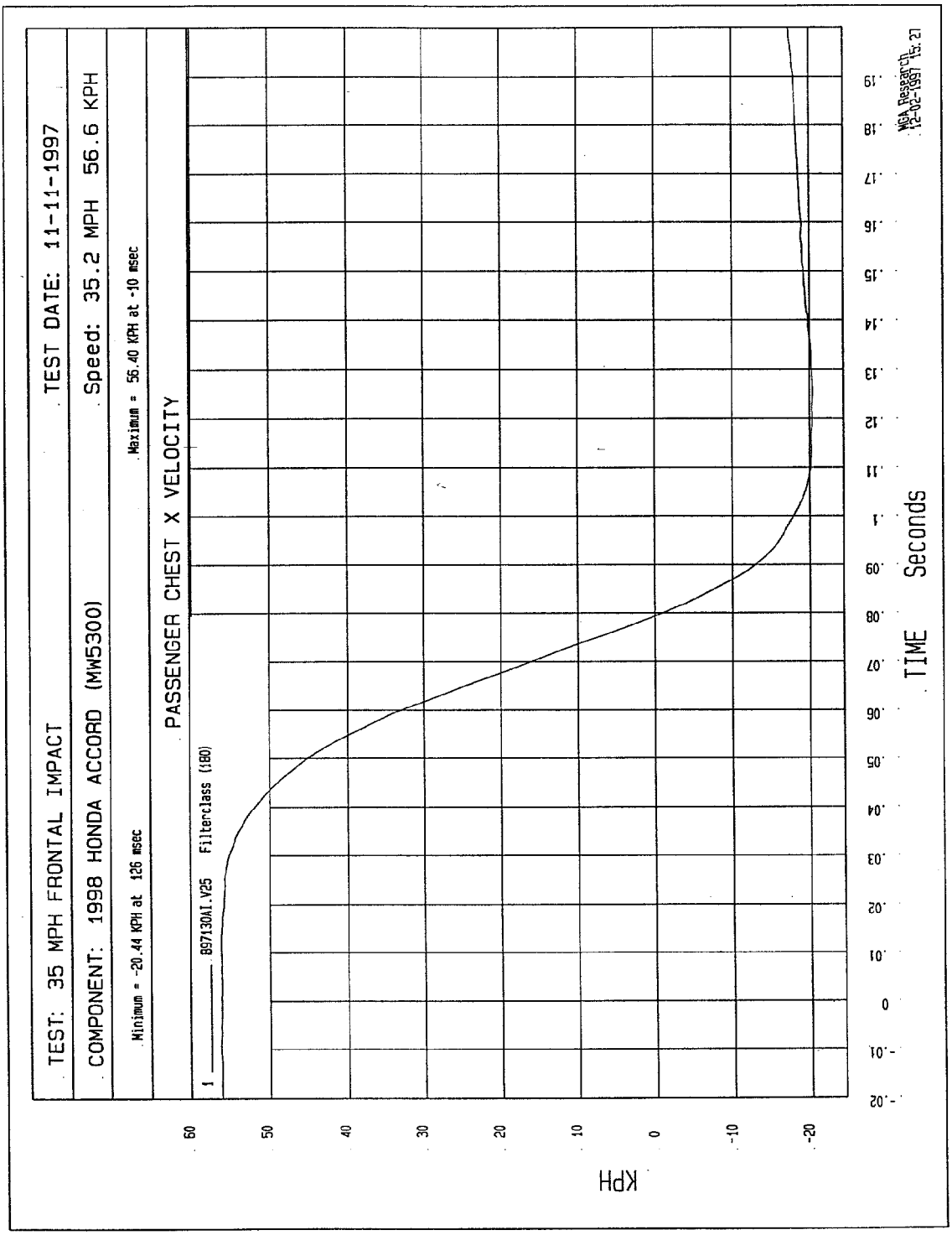

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = .12 NM at 14 msec
Maximum = 44.57 NM at 104 msec
PASSENGER NECK MOMENT RESULTANT
1 B97130MV.M54 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
12-02-1997 09:08

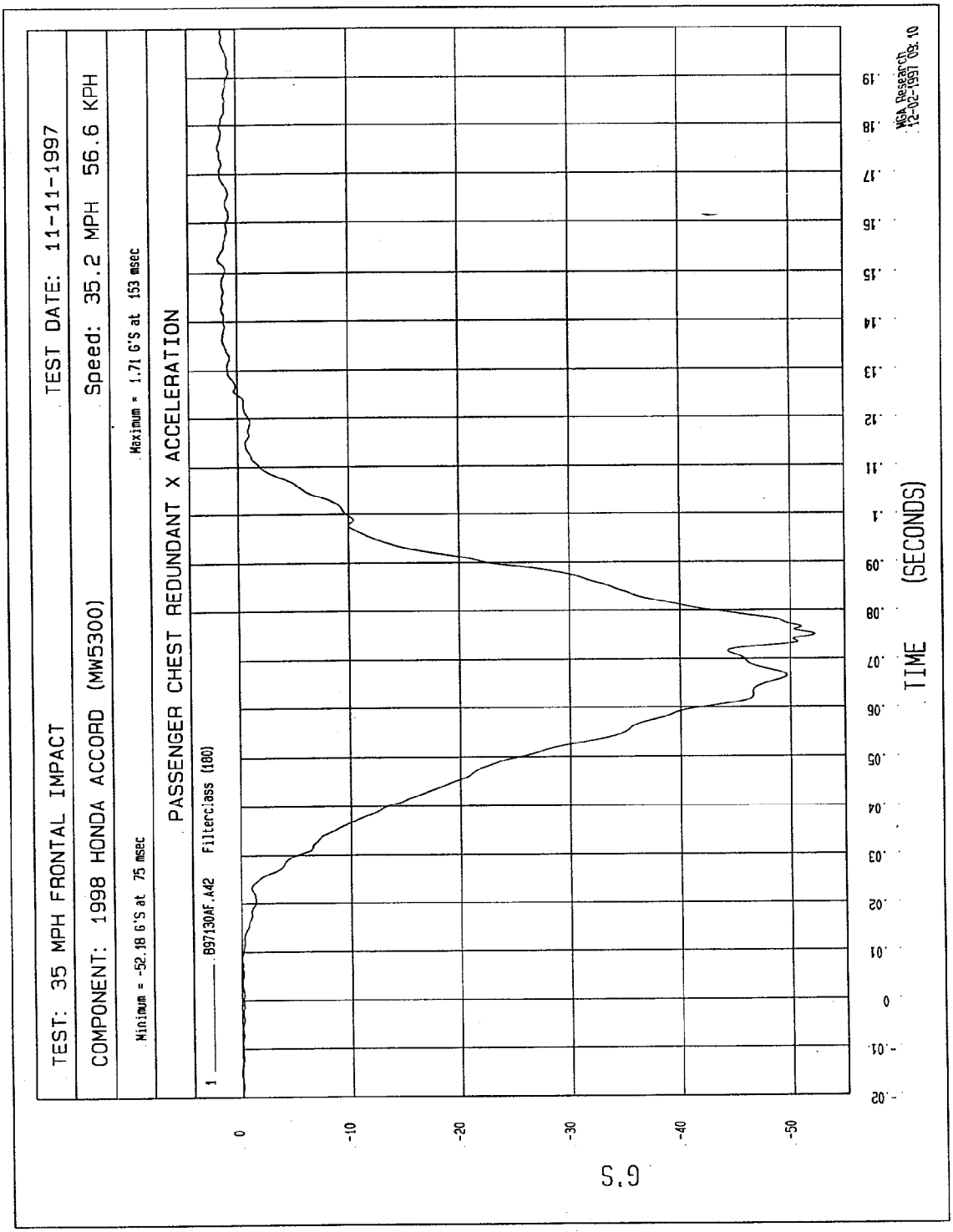

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -53.89 G'S at 75 msec
Maximum = 3.80 G'S at 141 msec
PASSENGER CHEST X ACCELERATION
1 B97130AF.A25 Filterclass (180)
0
-10
-20
-30
-40
-50
G's
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
12-02-1997 09:05

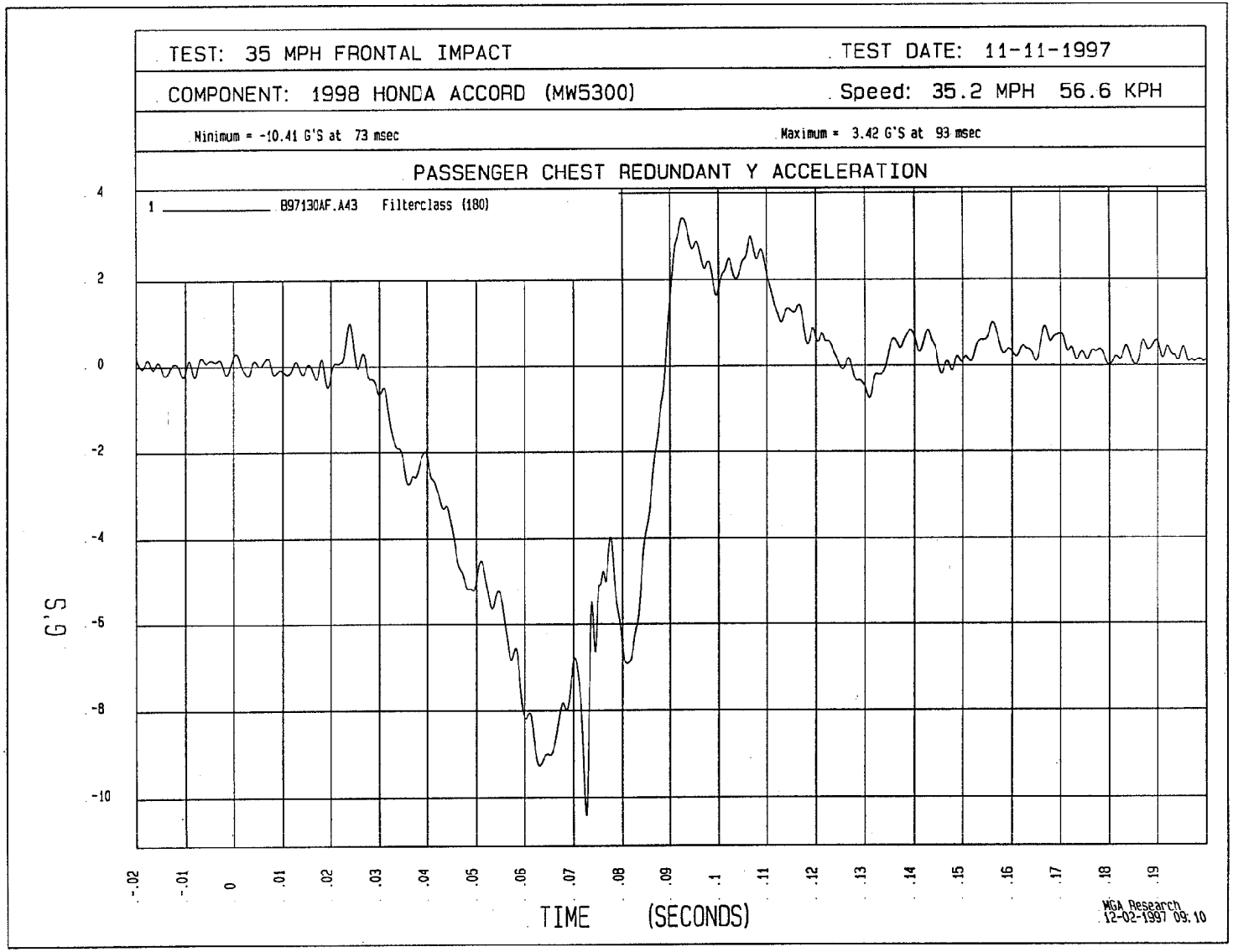

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -9.89 G'S at 72 msec
Maximum = 3.90 G'S at 94 msec
PASSENGER CHEST Y ACCELERATION
1 B97130AF.A26 Filterclass (180)
4
2
0
-2
-4
-6
-8
-10
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:05

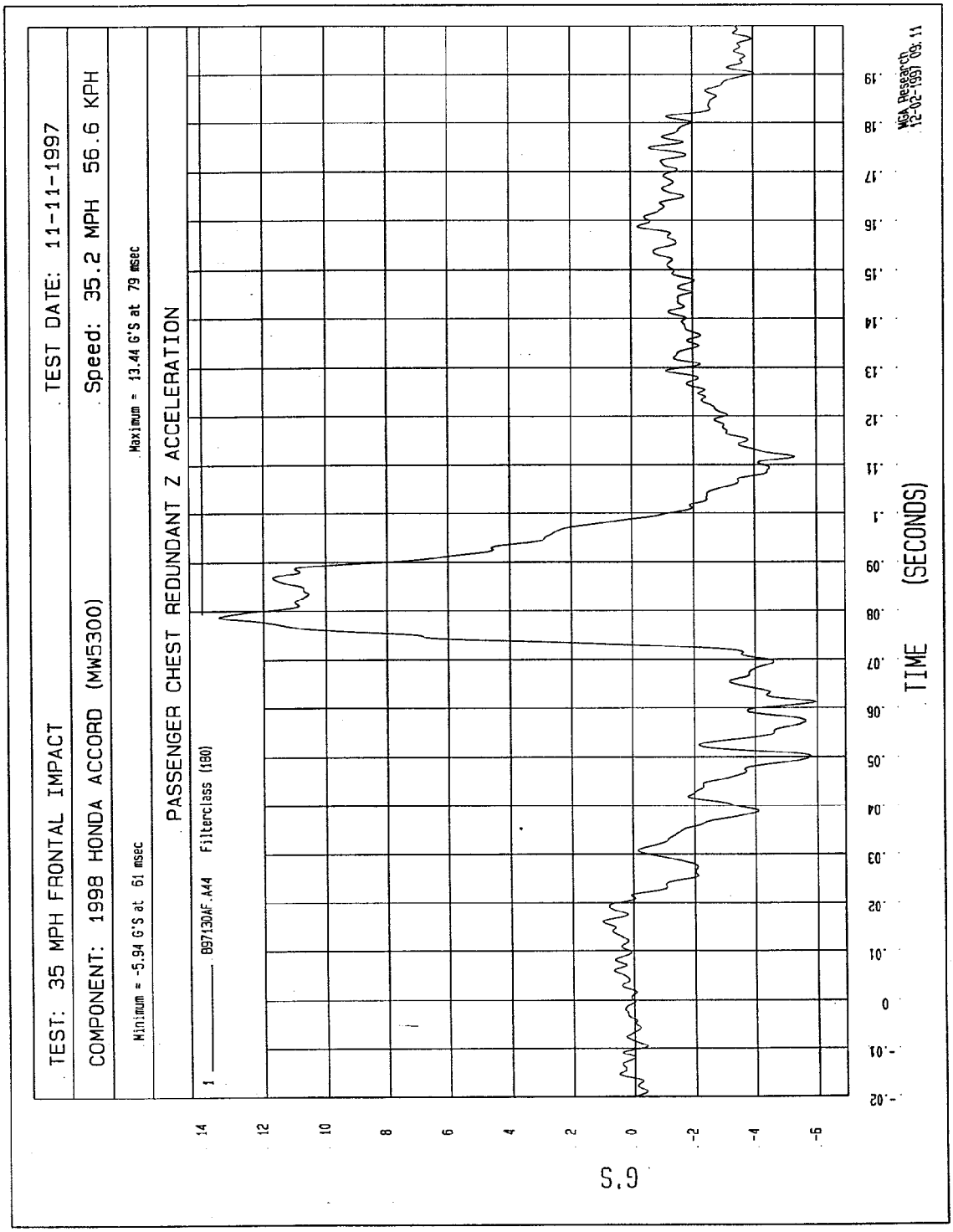

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -7.44 G'S at 57 msec
Maximum = 13.35 G'S at 79 msec
PASSENGER CHEST Z ACCELERATION
1 B97130AF.A27 Filterclass (180)
14
12
10
8
6
4
2
0
-2
-4
-6
-8
G'S
.02
.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
NGA Research
12-02-1997 09:05

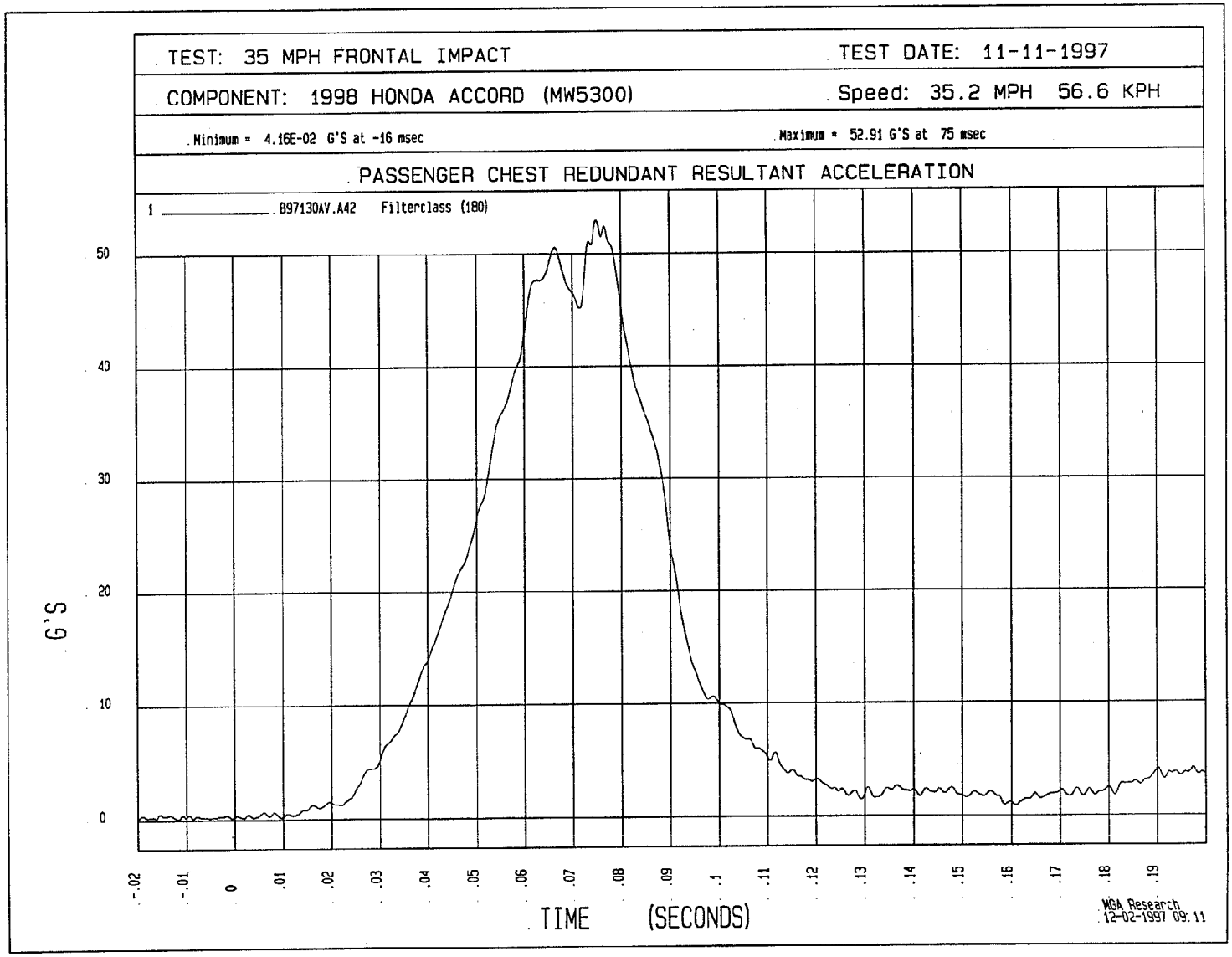

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = .11 G'S at -5 msec
Maximum = 54.73 G'S at 75 msec
PASSENGER CHEST RESULTANT ACCELERATION
1 _____ 097130AV.A25 Filterclass (180)
50
40
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research Co.
12-02-1997 09:05

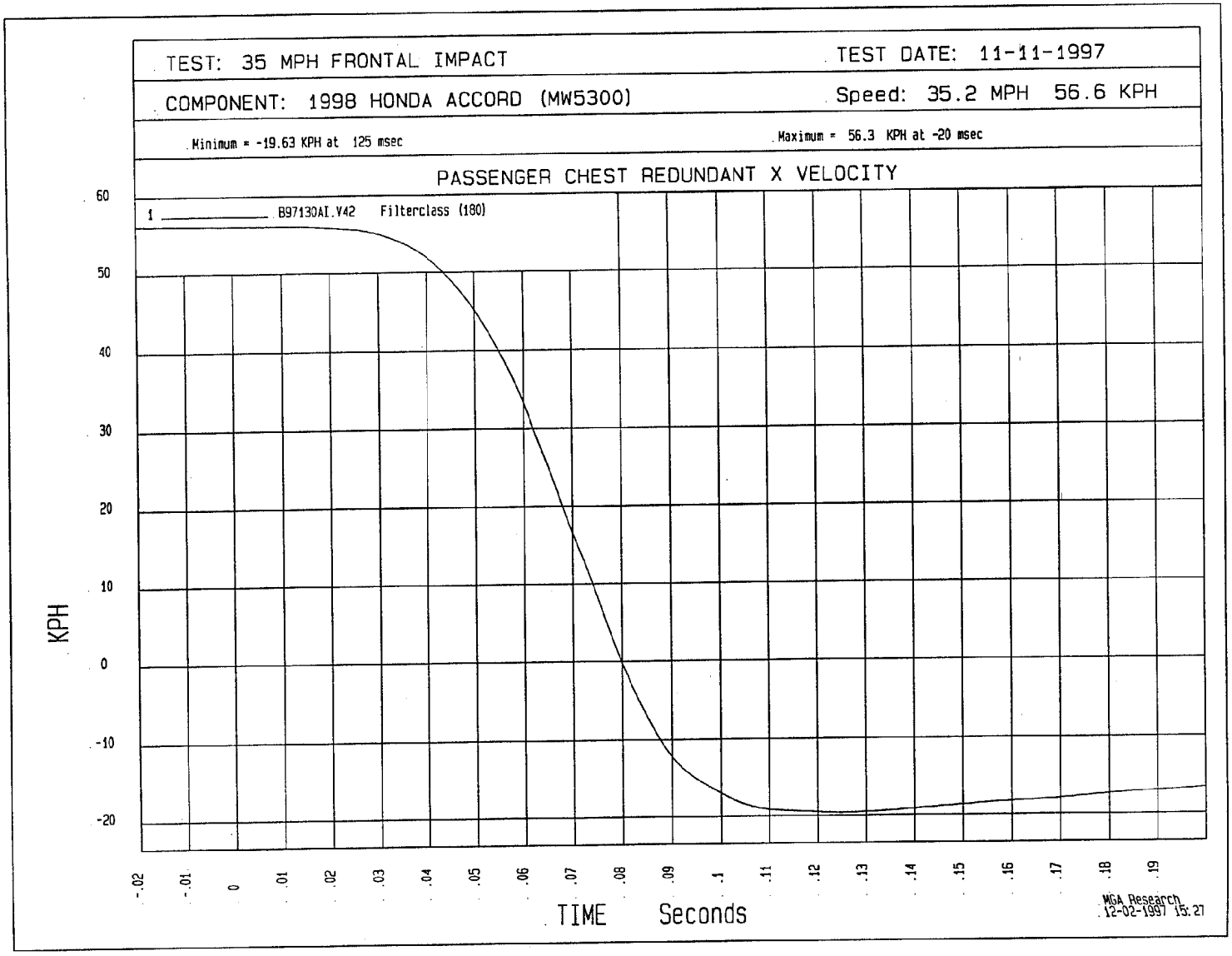

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -20.44 KPH at 126 msec
Maximum = 56.40 KPH at -10 msec
PASSENGER CHEST X VELOCITY
1 B97130AI.V25 Filterclass (180)
KPH
TIME Seconds
NGA Research
12-02-1997 15:27

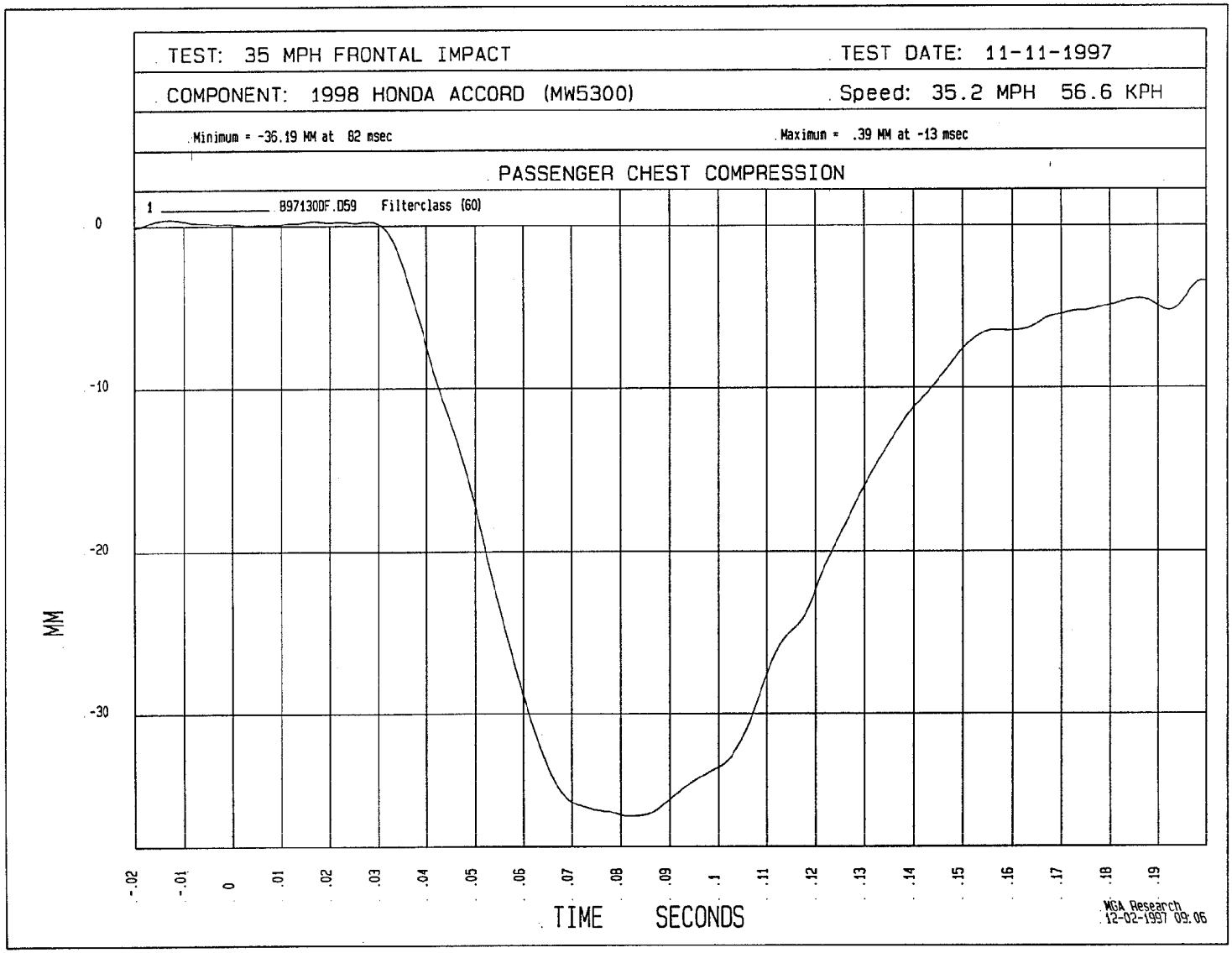

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -52.18 G'S at 75 msec
Maximum = 1.71 G'S at 153 msec
PASSENGER CHEST REDUNDANT X ACCELERATION
1 B97130AF.A42 Filterclass (180)
0
-10
-20
-30
-40
-50
G'S
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
12-02-1997 09: 10

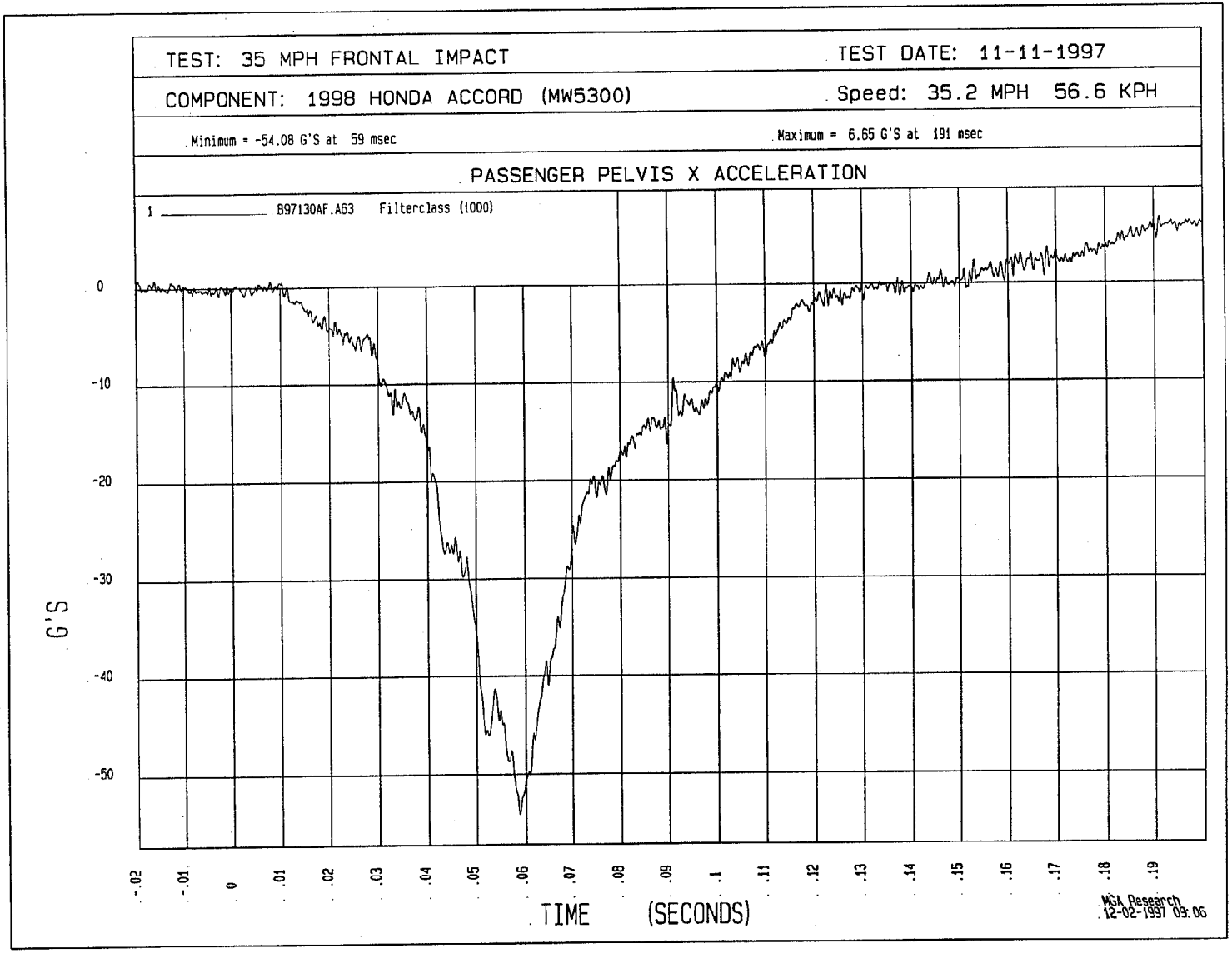

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -10.41 G'S at 73 msec
Maximum = 3.42 G'S at 93 msec
PASSENGER CHEST REDUNDANT Y ACCELERATION
1 B97130AF.A43 Filterclass (180)
G'S
4
2
0
-2
-4
-6
-8
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:10


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -5.94 G'S at 61 msec
Maximum = 13.44 G'S at 79 msec
PASSENGER CHEST REDUNDANT Z ACCELERATION
1 B97130AF.A44 Filterclass (180)
14
12
10
8
6
4
2
0
-2
-4
-6
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:11


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 4.16E-02 G'S at -16 msec
Maximum = 52.91 G'S at 75 msec
PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION
1 B97130AV.A42 Filterclass (180)
G'S
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:11


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -19.63 KPH at 125 msec
Maximum = 56.3 KPH at -20 msec
PASSENGER CHEST REDUNDANT X VELOCITY
1 B97130AI.V42 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 15:27


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -36.19 MM at 82 msec
Maximum = .39 MM at -13 msec
PASSENGER CHEST COMPRESSION
1 B971300F.D59 Filterclass (60)
0
-10
-20
-30
MM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME SECONDS
MGA Research
12-02-1997 09:06


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -54.08 G'S at 59 msec
Maximum = 6.65 G'S at 191 msec
PASSENGER PELVIS X ACCELERATION
1 B97130AF.A53 Filterclass (1000)
0
-10
-20
-30
-40
-50
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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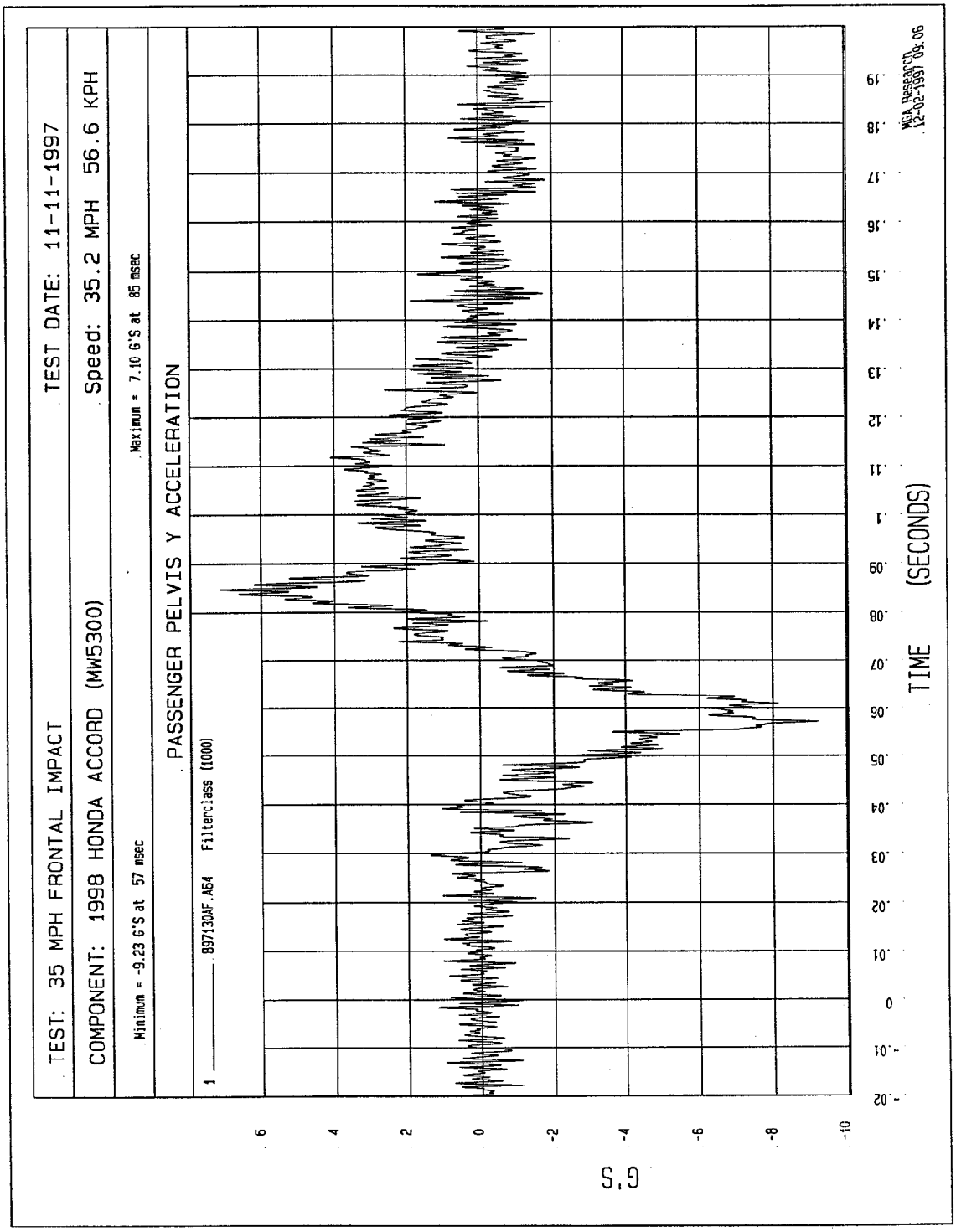
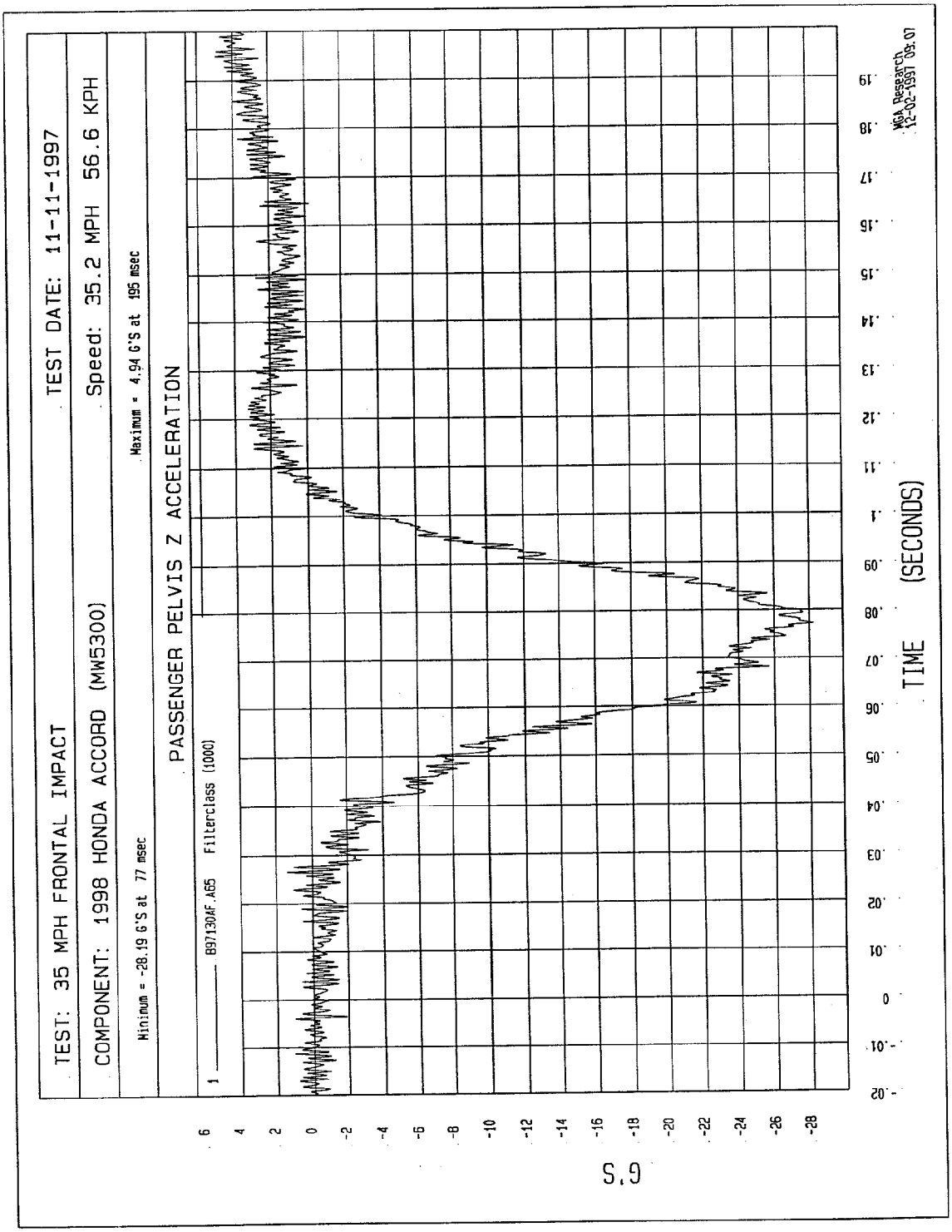
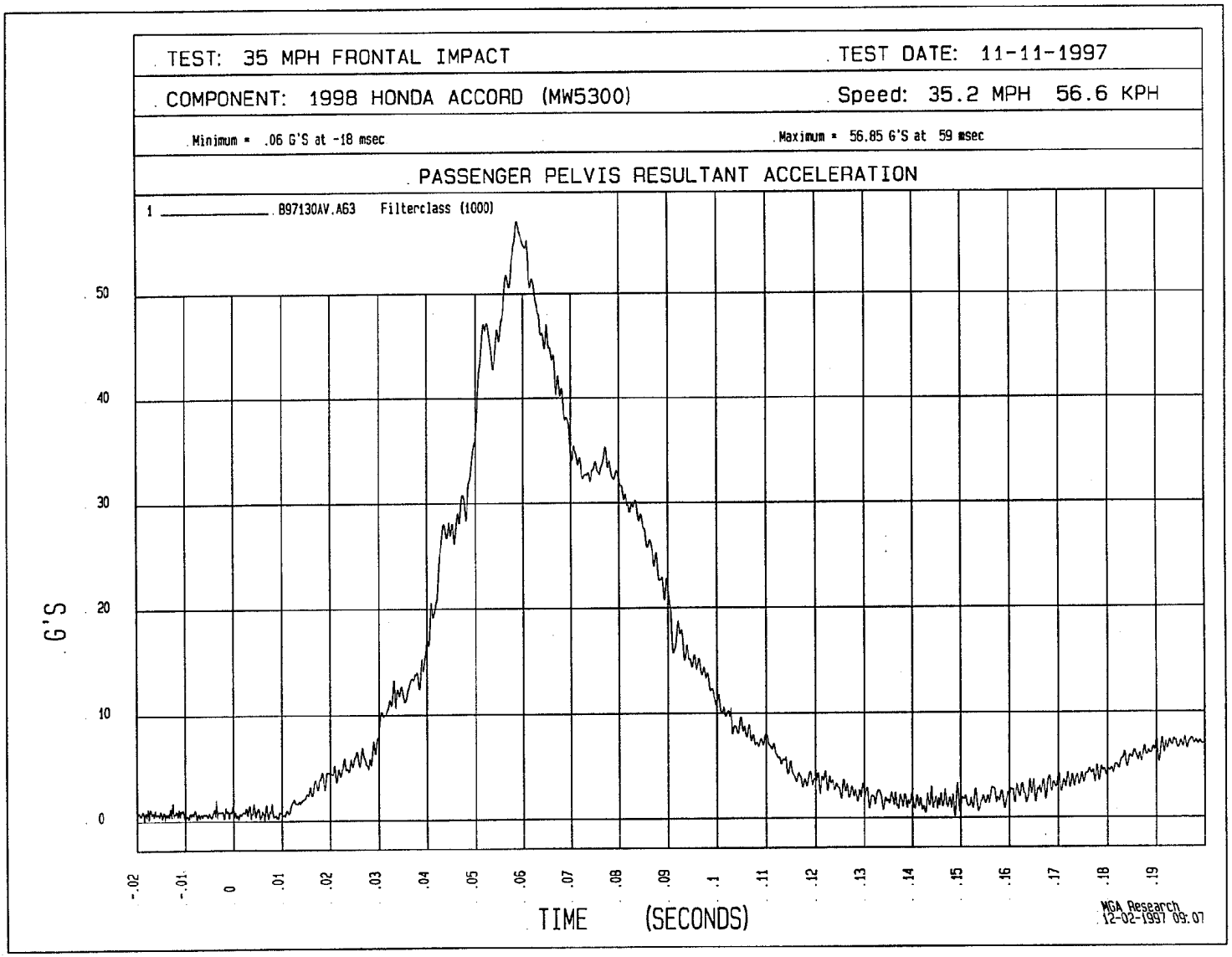
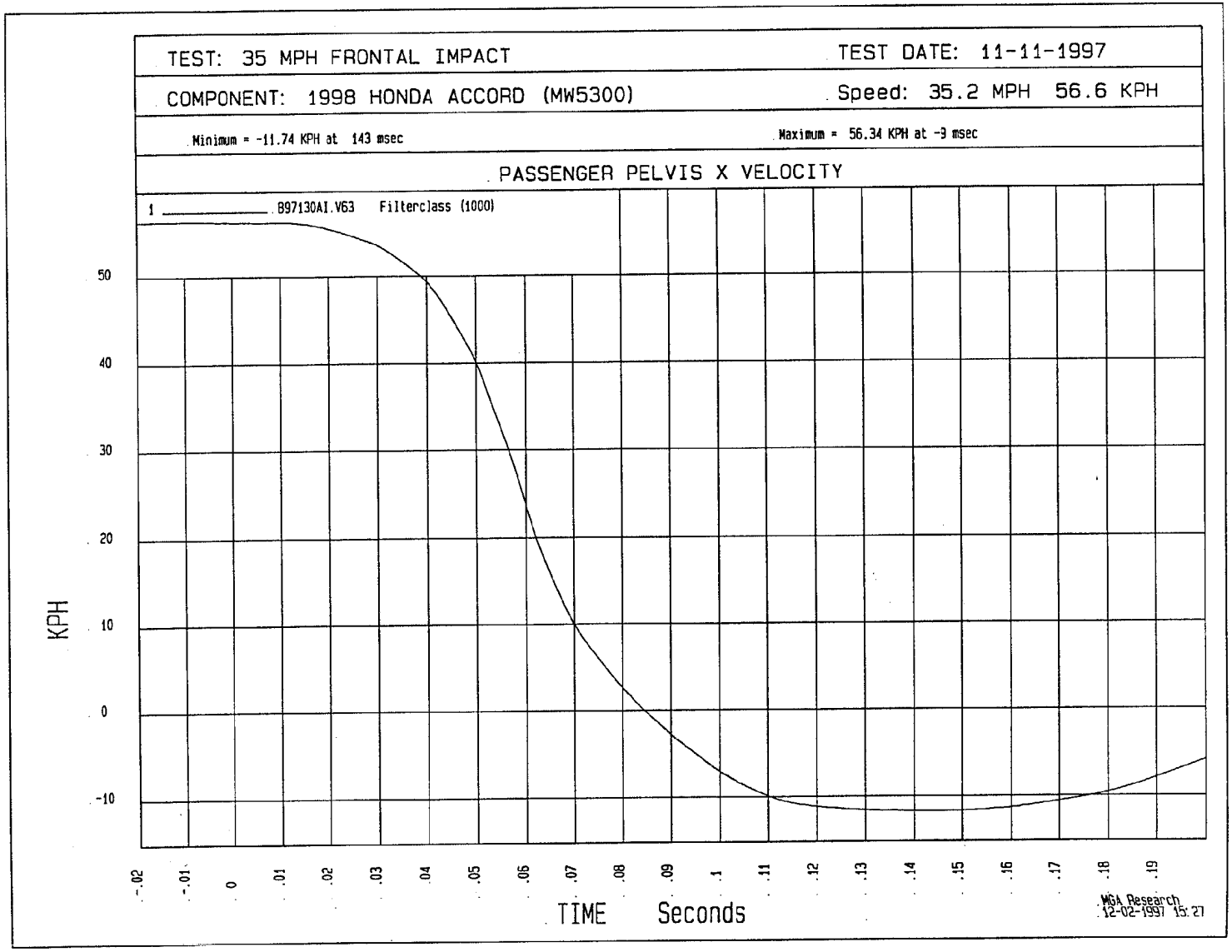
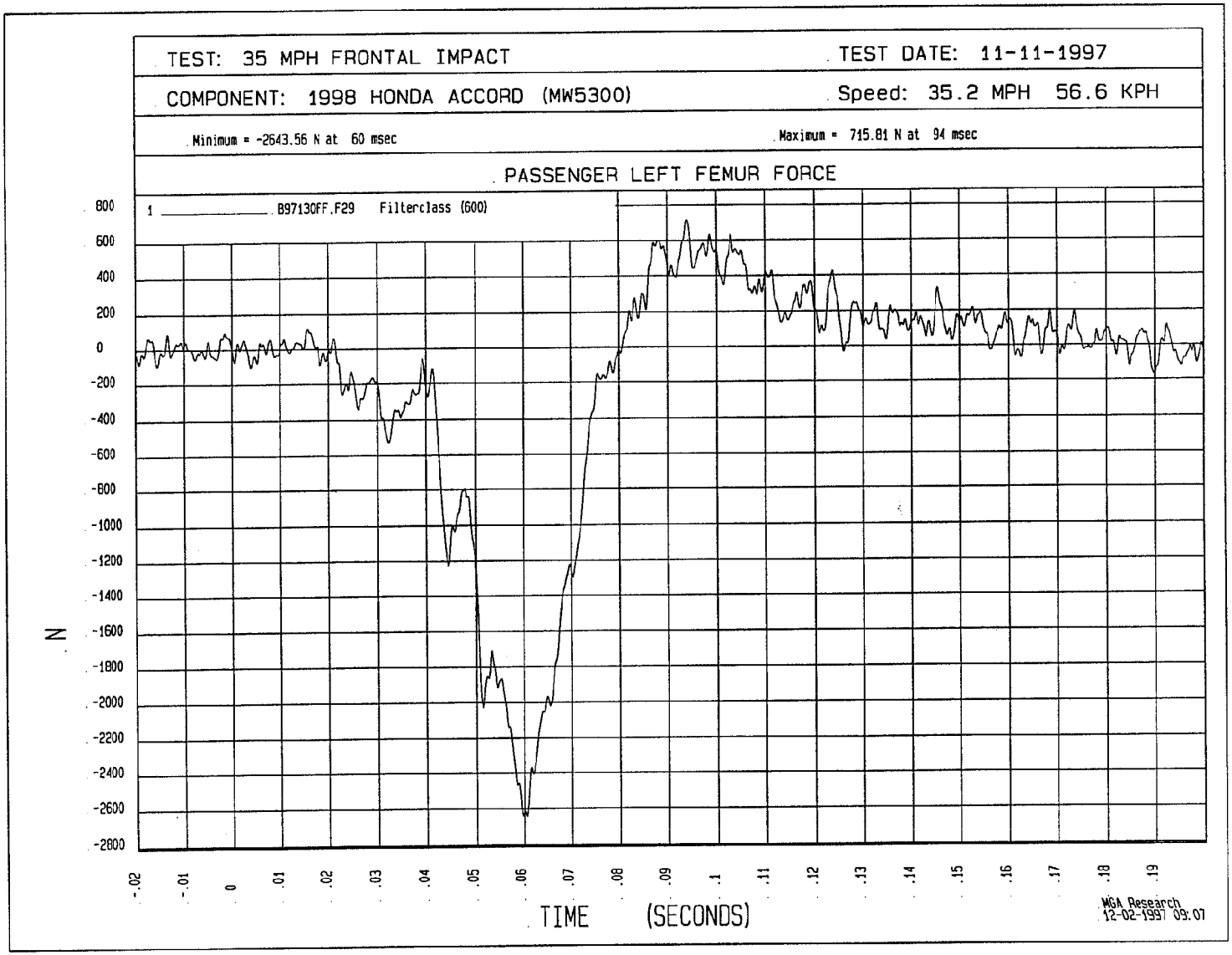
TIME (SECONDS)
MGA Research
12-02-1997 09:06

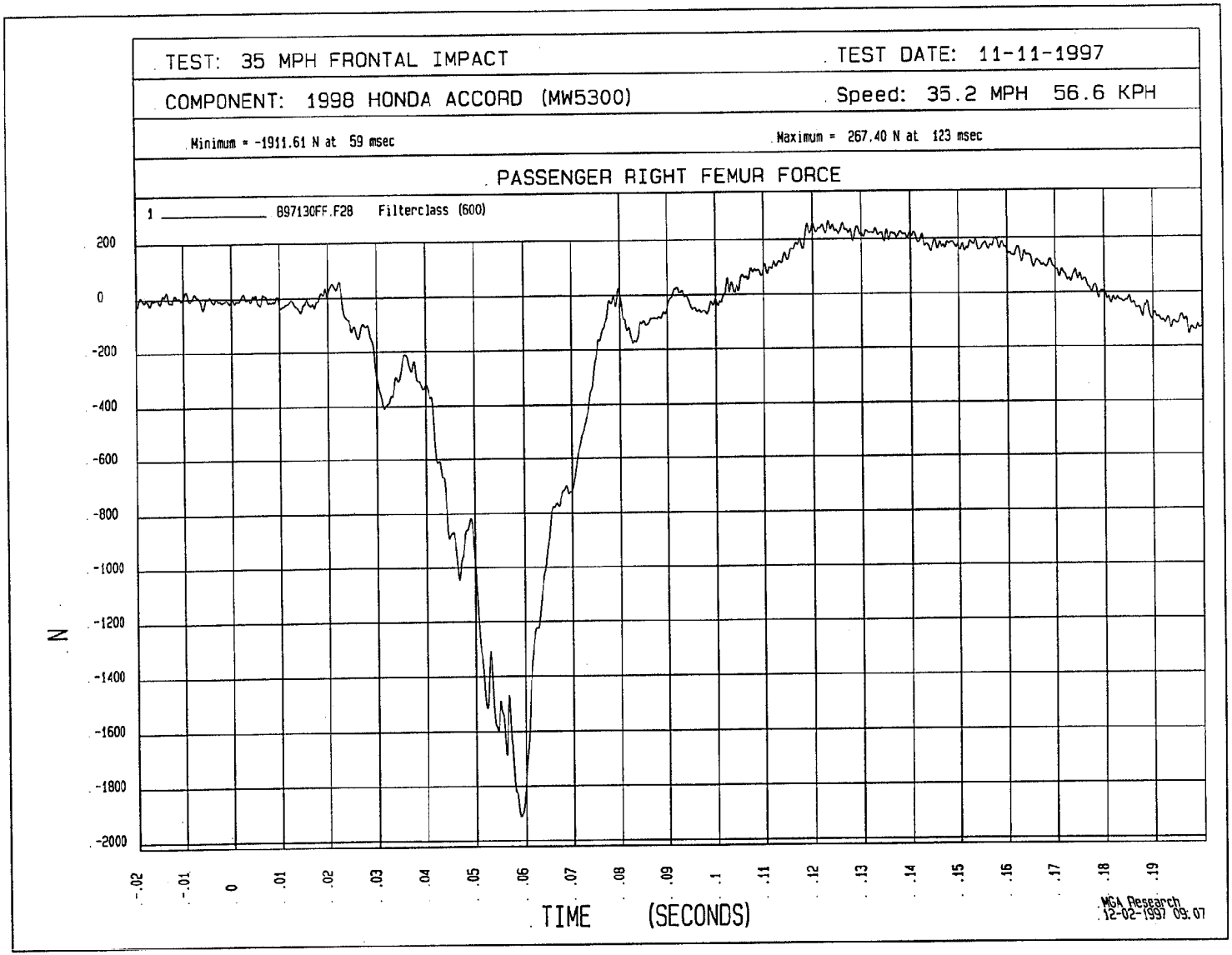

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -9.23 G'S at 57 msec
Maximum = 7.10 G'S at 85 msec
PASSENGER PELVIS Y ACCELERATION
1 B971304F.A54 Filter:Class (1000)
6
4
2
0
-2
-4
-6
-8
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09: 06

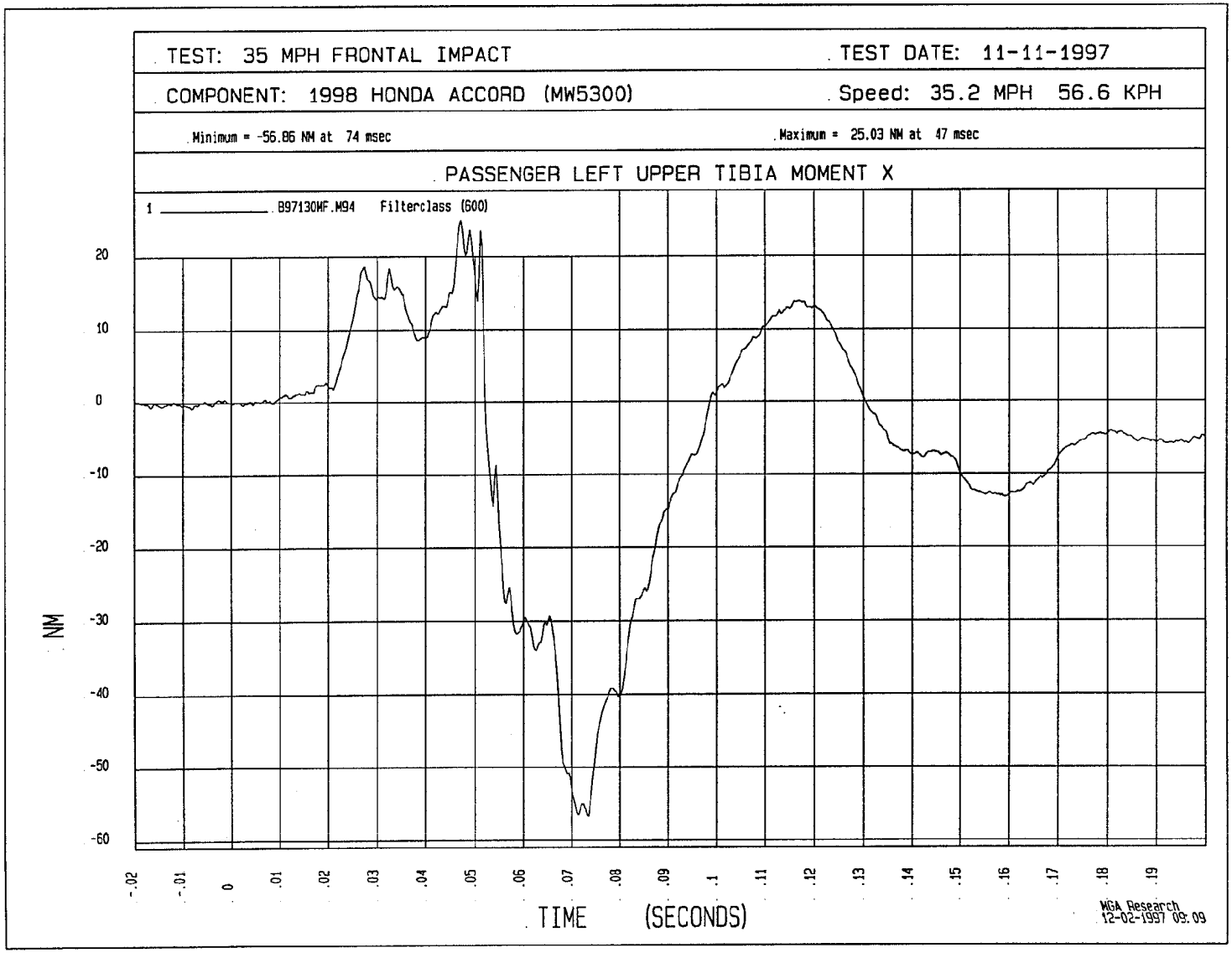

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -28.19 G'S at 77 msec
Maximum = 4.94 G'S at 195 msec
PASSENGER PELVIS Z ACCELERATION
1 B97130AF.A65 Filterclass (1000)
G's
TIME (SECONDS)
MGA Research
12-02-1997 09:07

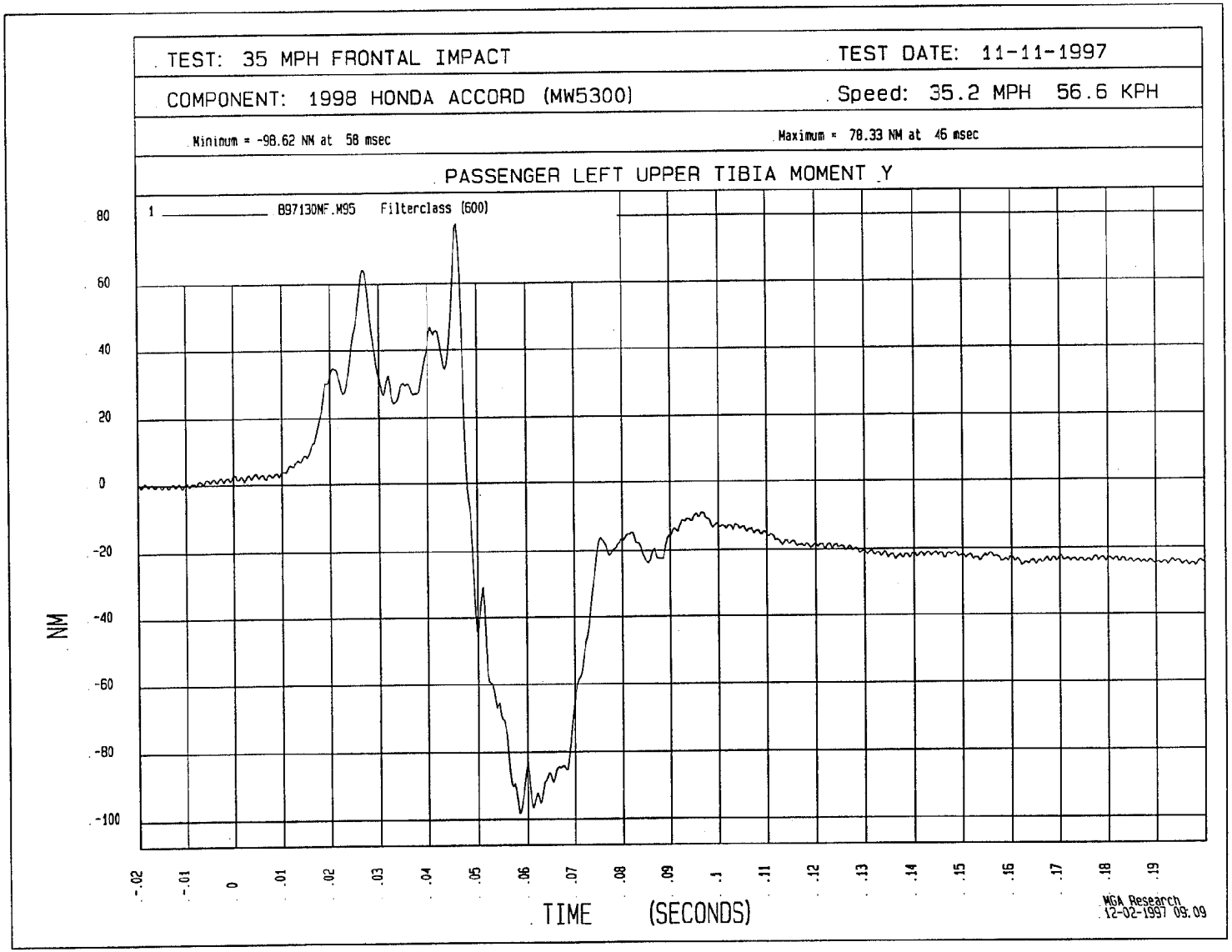

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = .06 G'S at -18 msec
Maximum = 56.85 G'S at 59 msec
PASSENGER PELVIS RESULTANT ACCELERATION
1 B97130AV.A63 Filterclass (1000)
G'S
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:07

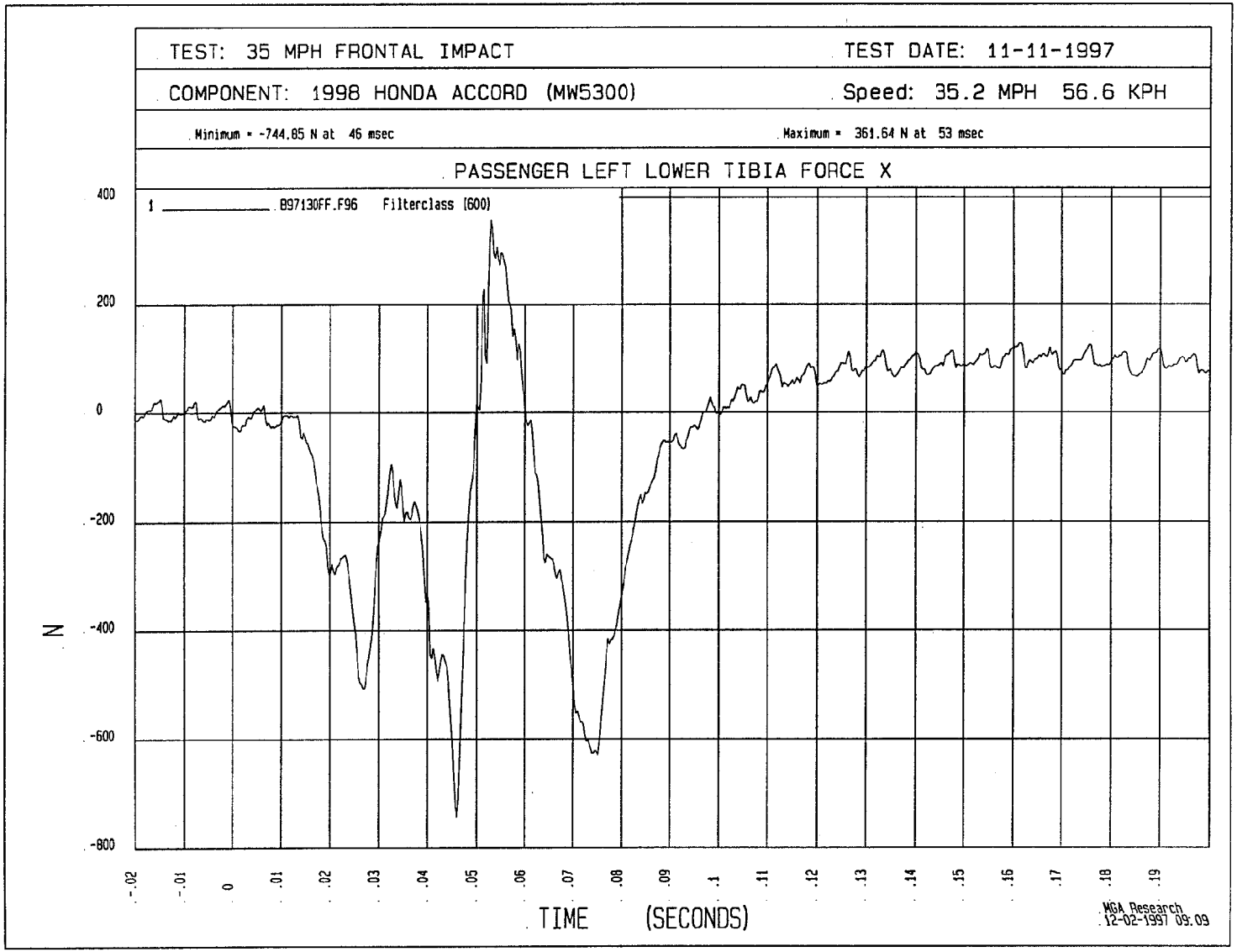

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -11.74 KPH at 143 msec
Maximum = 56.34 KPH at -3 msec
PASSENGER PELVIS X VELOCITY
1 B97130AI.V63 Filterclass (1000)
KPH
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 15:27

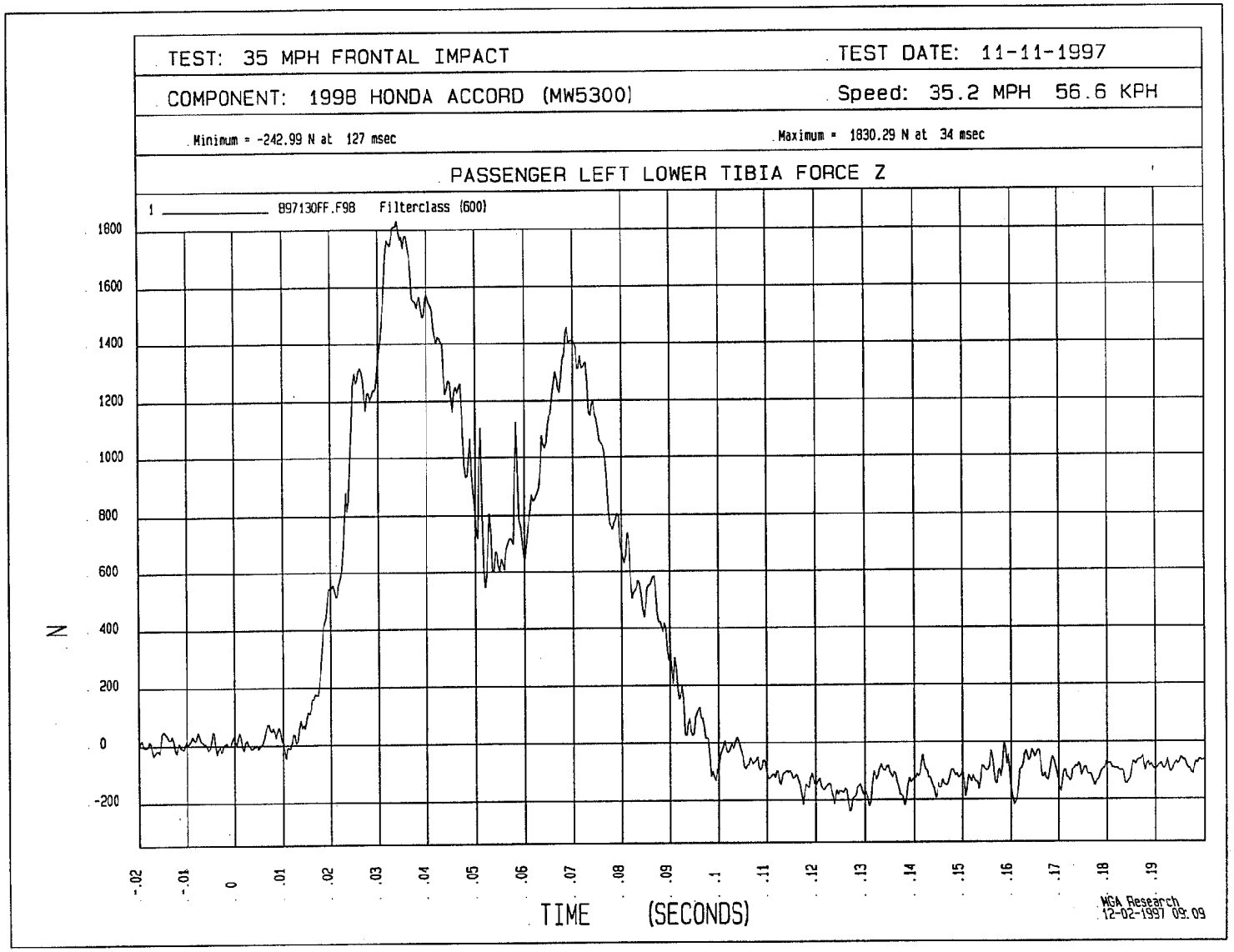

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -2643.56 N at 60 msec
Maximum = 715.81 N at 94 msec
PASSENGER LEFT FEMUR FORCE
1 B97130FF.F29 Filterclass (600)
800
600
400
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
-2200
-2400
-2600
-2800
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:07

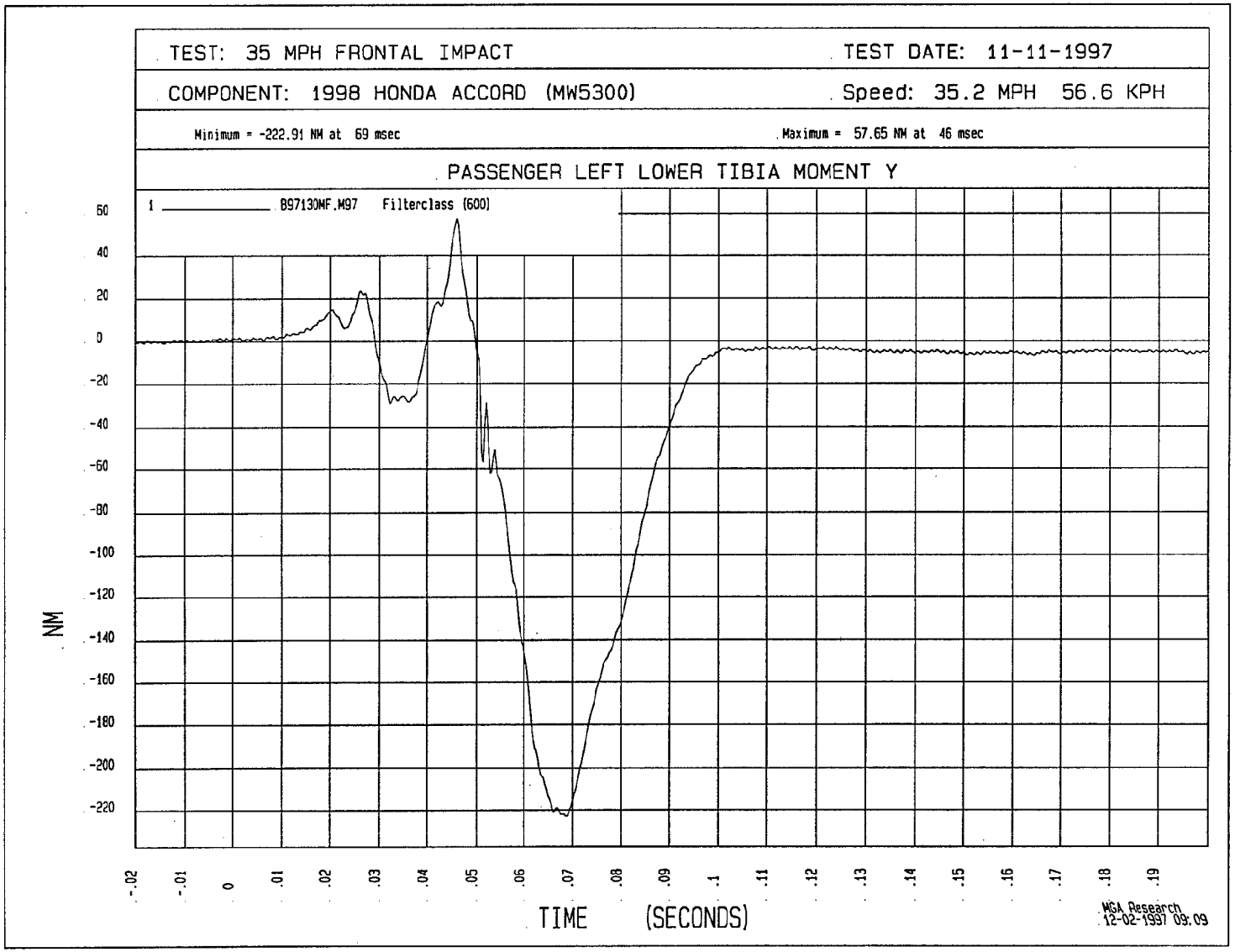

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -1911.61 N at 59 msec
Maximum = 267.40 N at 123 msec
PASSENGER RIGHT FEMUR FORCE
1 B97130FF.F28 Filterclass (600)
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:07

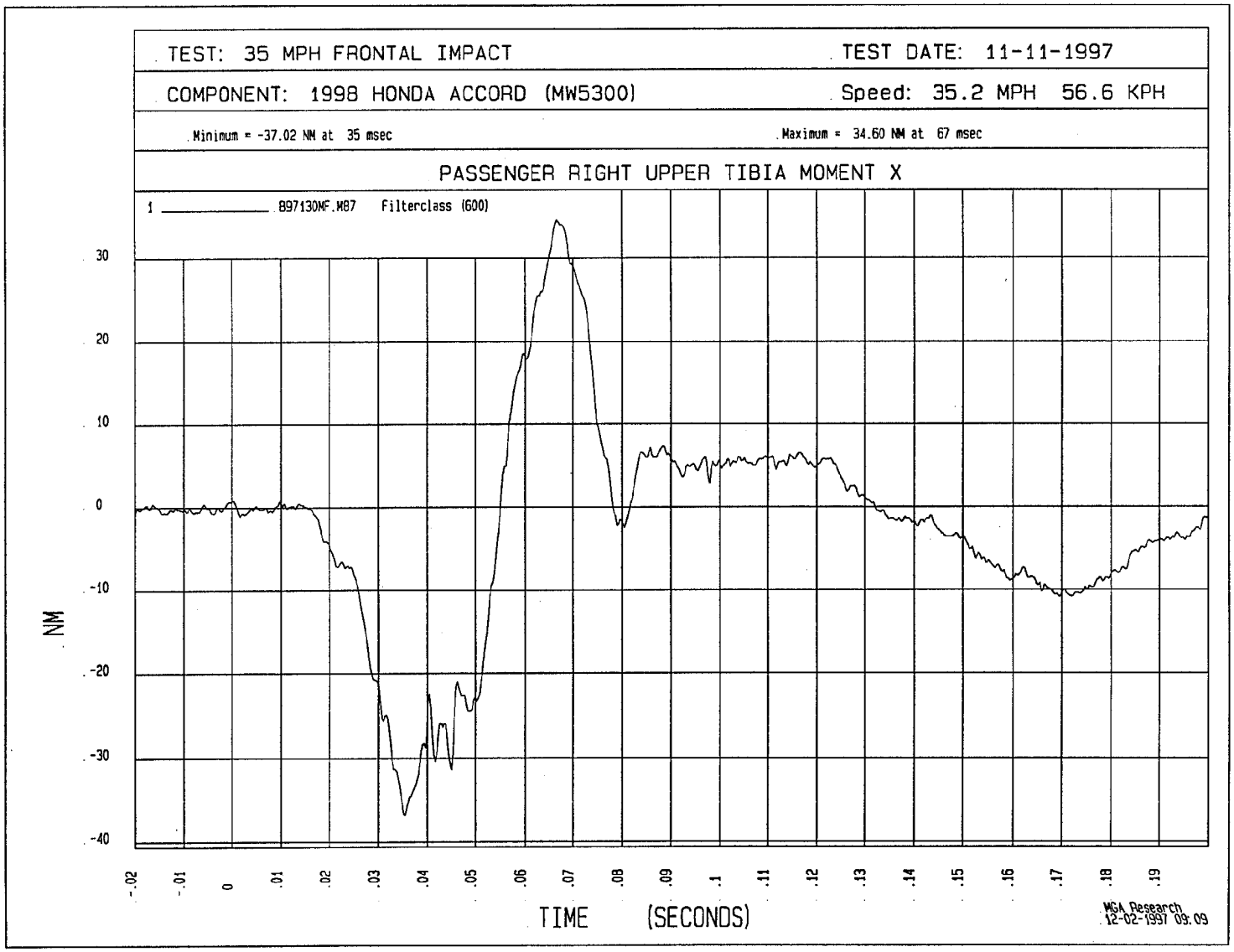

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -56.86 NM at 74 msec
Maximum = 25.03 NM at 47 msec
PASSENGER LEFT UPPER TIBIA MOMENT X
1 B97130MF.M94 Filterclass (600)
NM
20
10
0
-10
-20
-30
-40
-50
-60
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

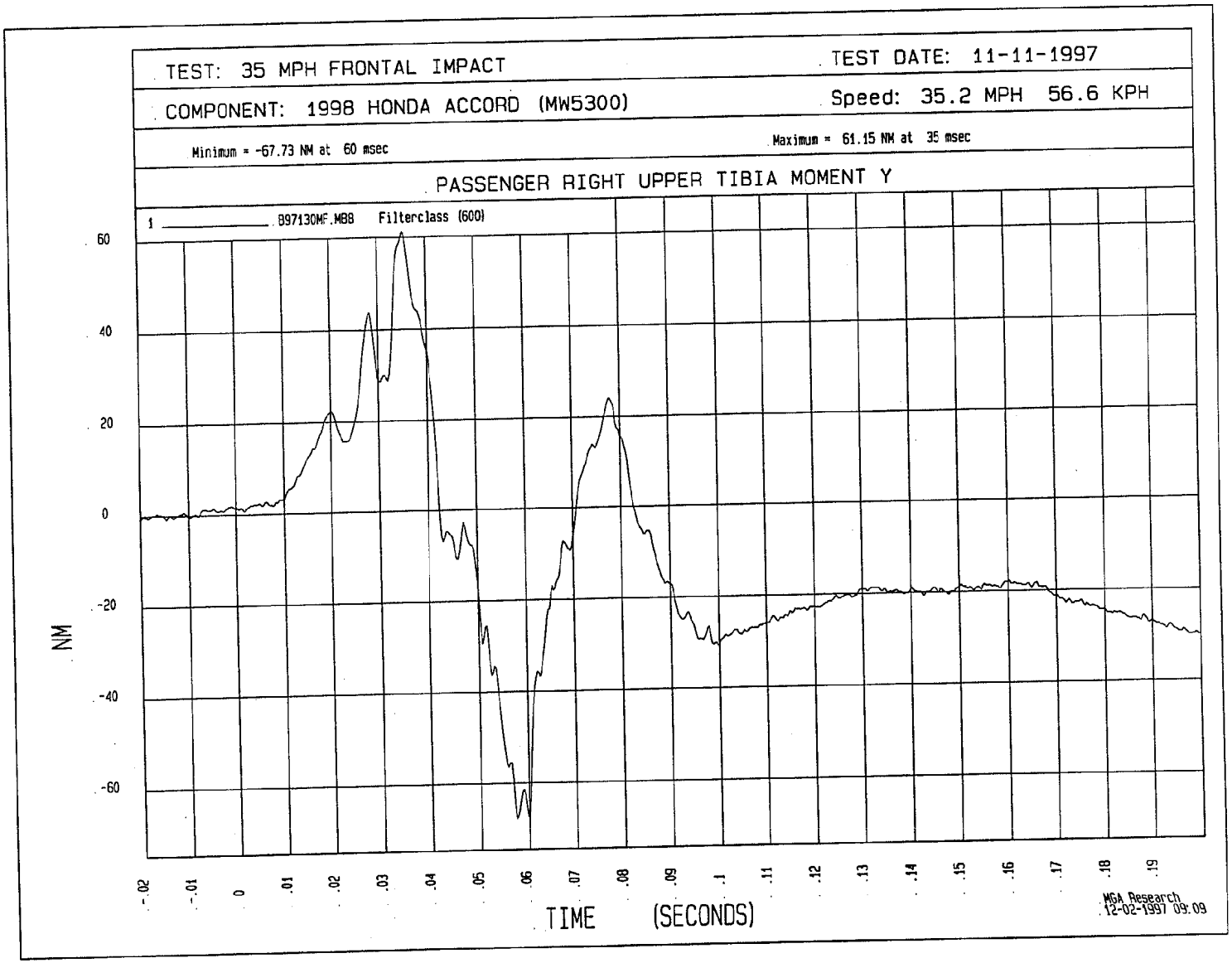

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -98.62 NM at 58 msec
Maximum = 78.33 NM at 46 msec
PASSENGER LEFT UPPER TIBIA MOMENT Y
1 B97130MF.M95 Filterclass (600)
80
60
40
20
0
-20
-40
-60
-80
-100
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

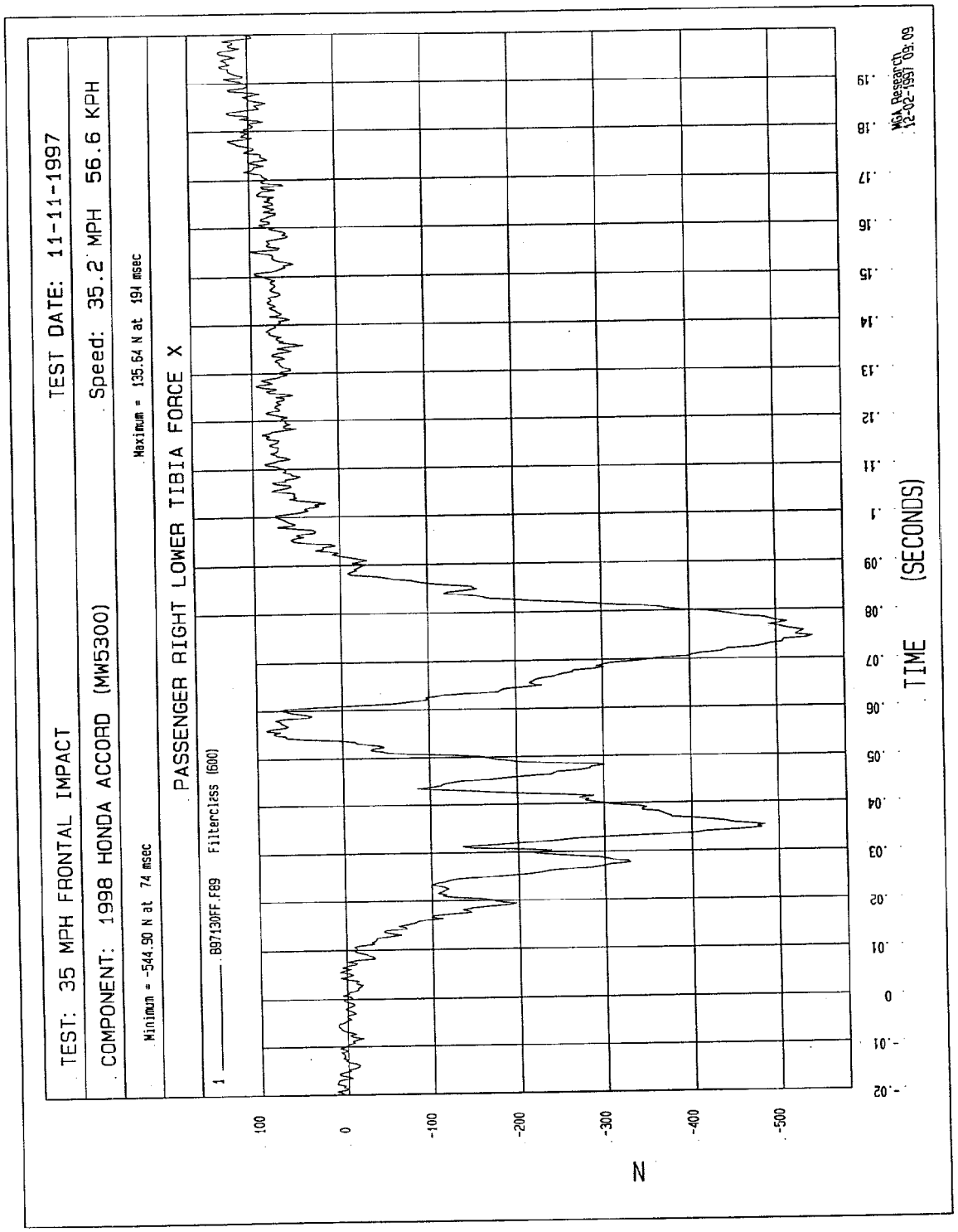

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -744.85 N at 46 msec
Maximum = 361.64 N at 53 msec
PASSENGER LEFT LOWER TIBIA FORCE X
1 897130FF.F96 Filterclass (600)
400
200
0
-200
-400
-600
-800
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

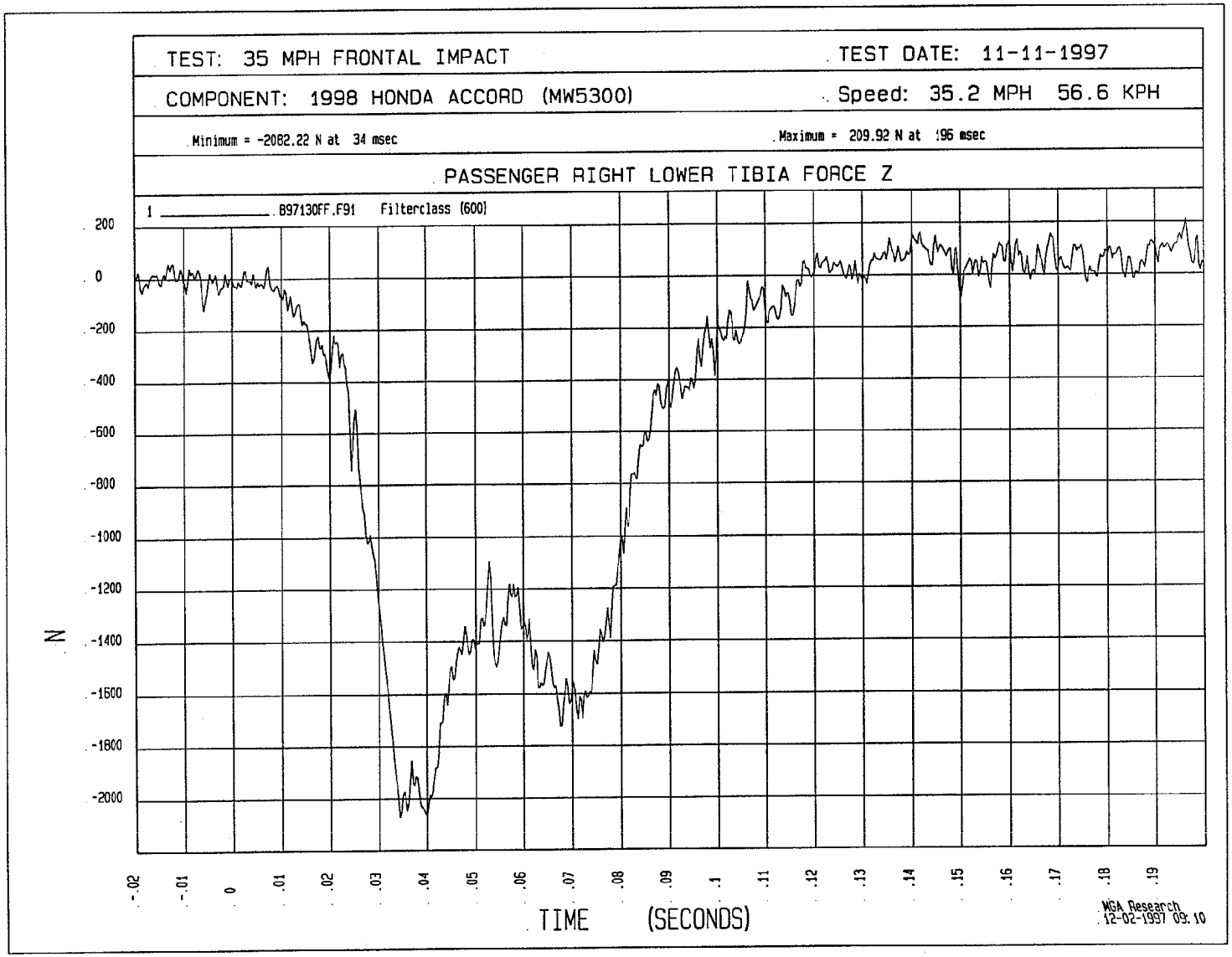

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -242.99 N at 127 msec
Maximum = 1830.29 N at 34 msec
PASSENGER LEFT LOWER TIBIA FORCE Z
1 897130FF.F98 Filterclass (600)
1800
1600
1400
1200
1000
800
600
400
200
0
-200
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

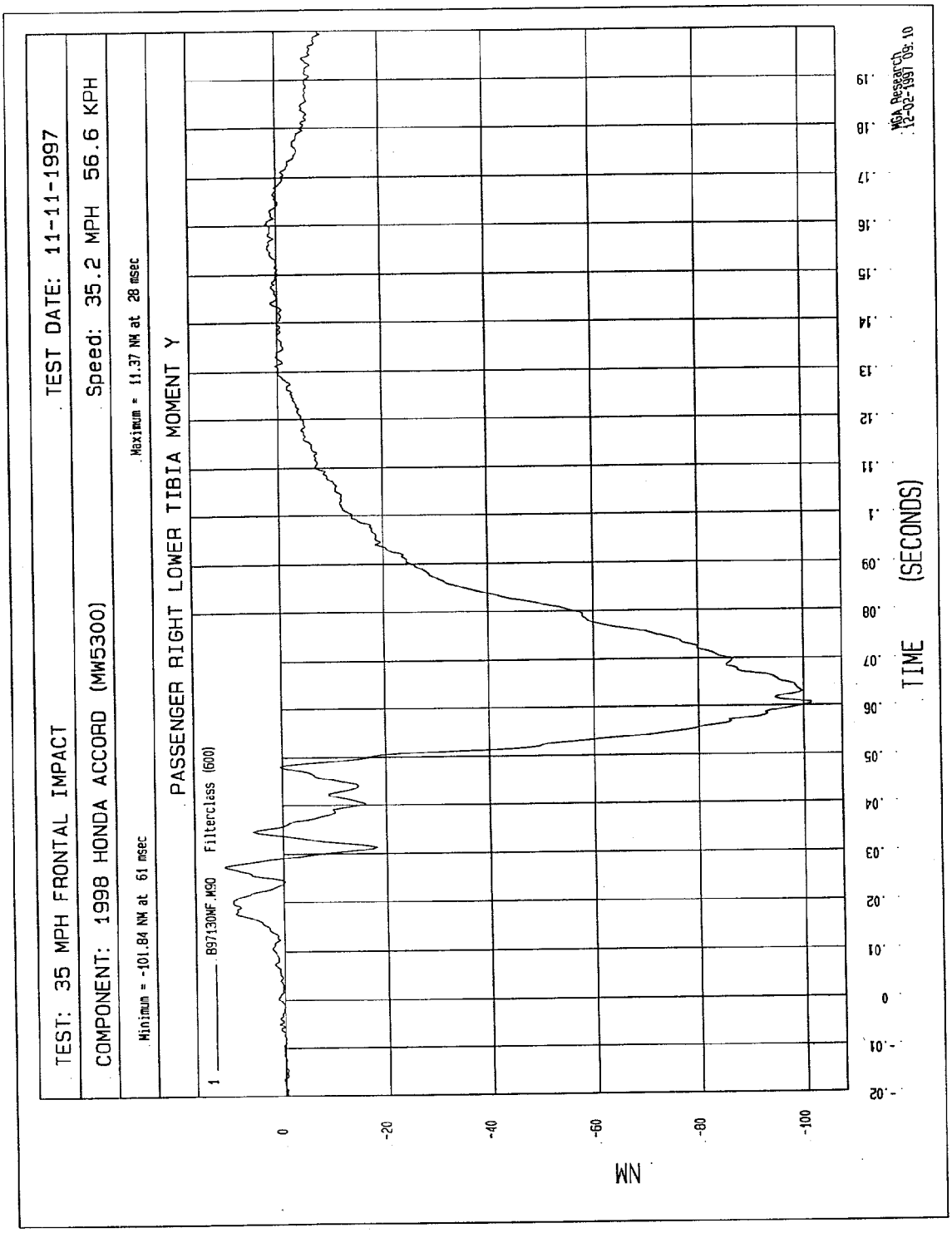

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -222.91 NM at 69 msec
Maximum = 57.65 NM at 46 msec
PASSENGER LEFT LOWER TIBIA MOMENT Y
1 B97130MF.M97 Filterclass (600)
NM
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

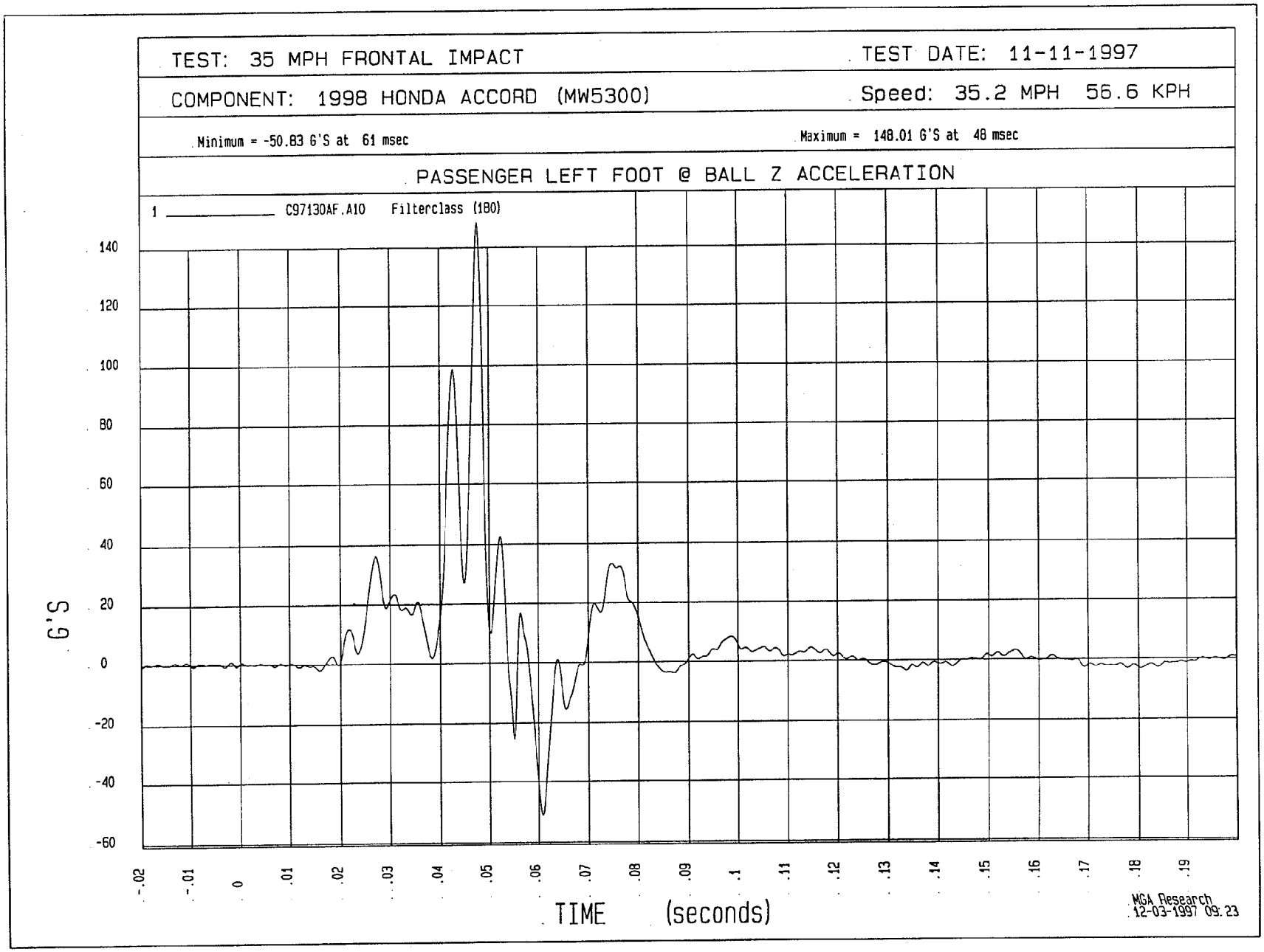

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -37.02 NM at 35 msec
Maximum = 34.60 NM at 67 msec
PASSENGER RIGHT UPPER TIBIA MOMENT X
1 B97130MF.M87 Filterclass (600)
NM
30
20
10
0
-10
-20
-30
-40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

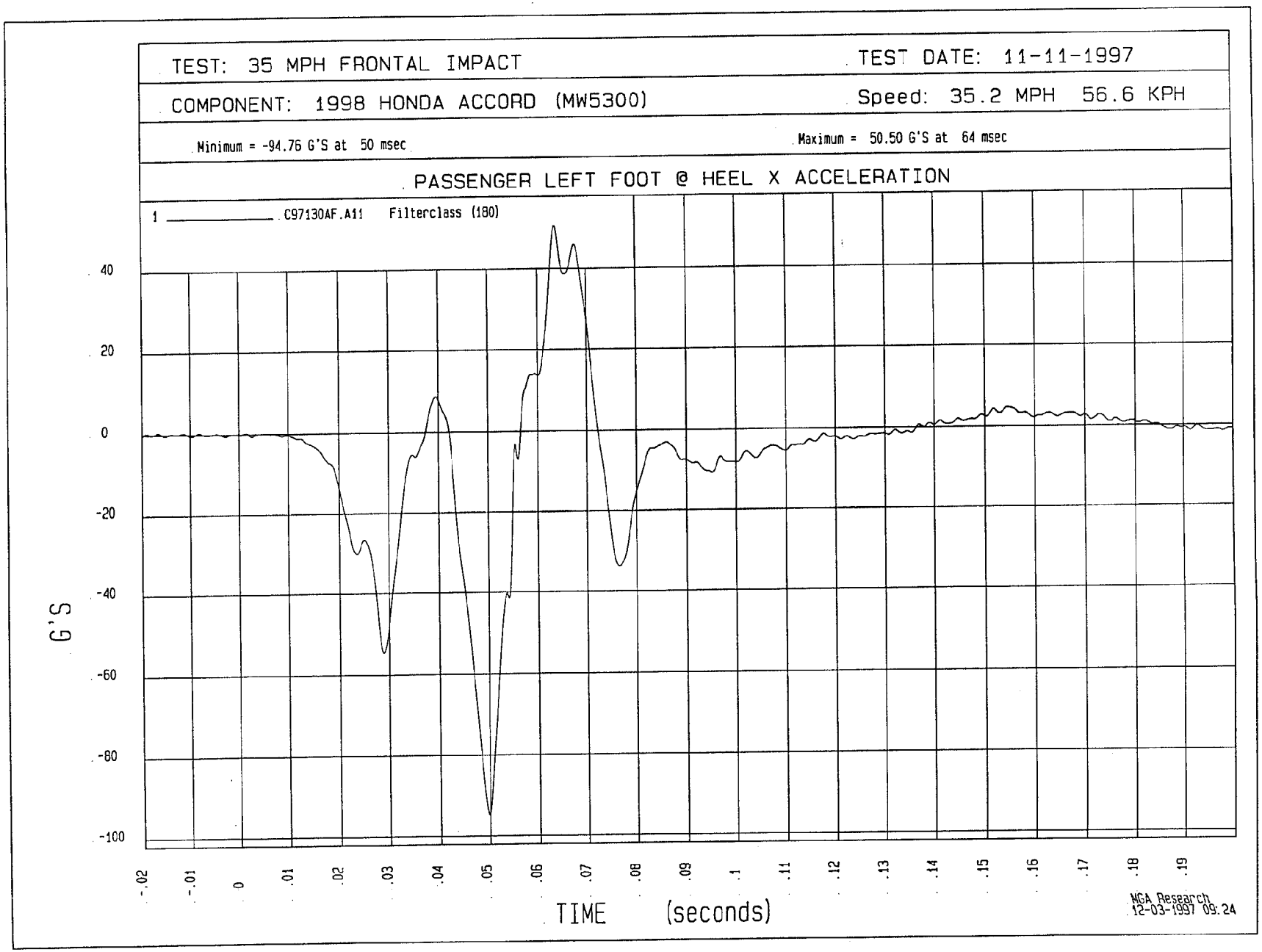

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -67.73 NM at 60 msec
Maximum = 61.15 NM at 35 msec
PASSENGER RIGHT UPPER TIBIA MOMENT Y
1 B97130MF.MB8 Filterclass (600)
NM
60
40
20
0
-20
-40
-60
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

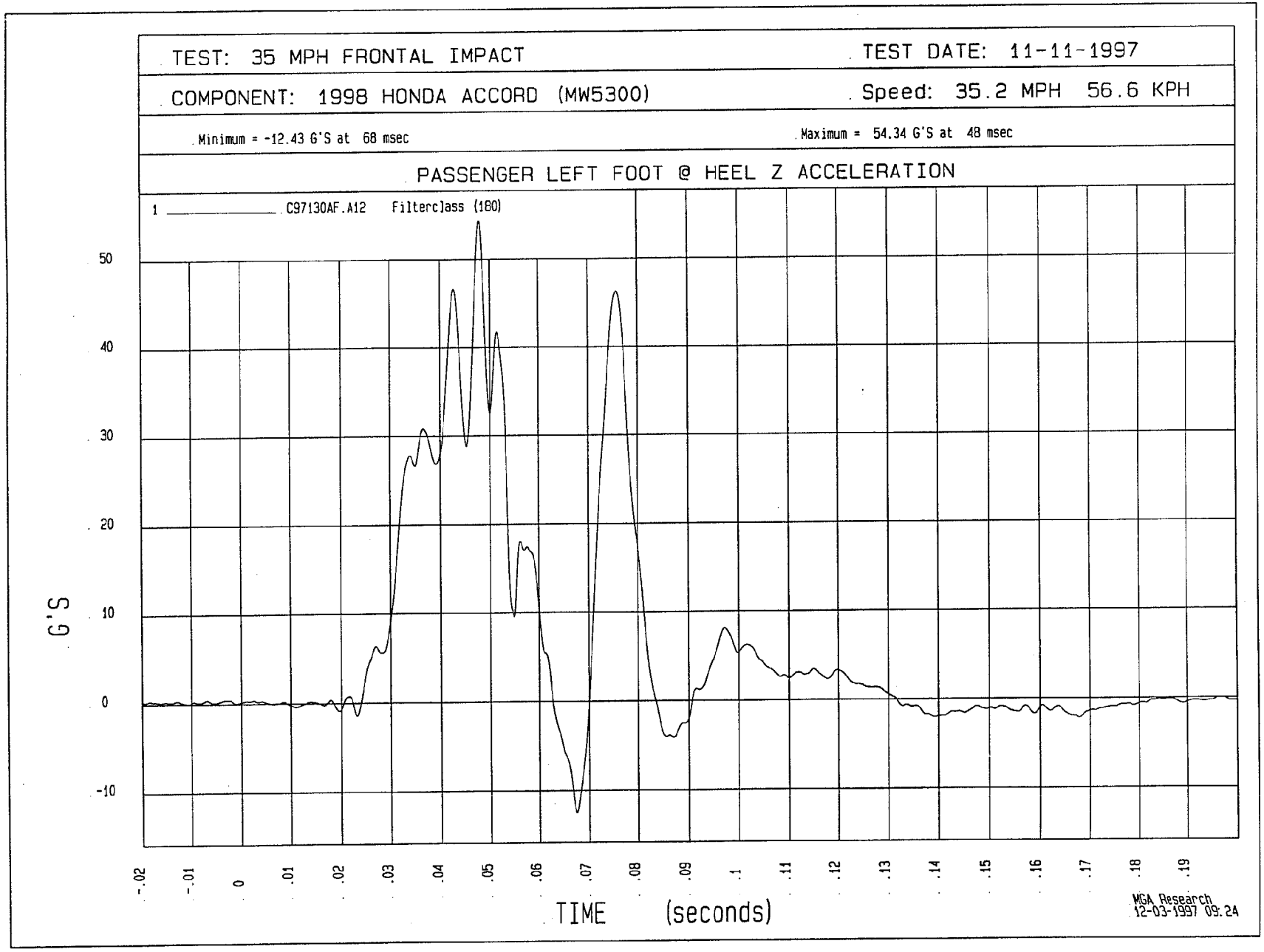

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -544.90 N at 74 msec
Maximum = 135.64 N at 194 msec
PASSENGER RIGHT LOWER TIBIA FORCE X
1 B97130FF.F69 Filterclass (600)
100
0
-100
-200
-300
-400
-500
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:09

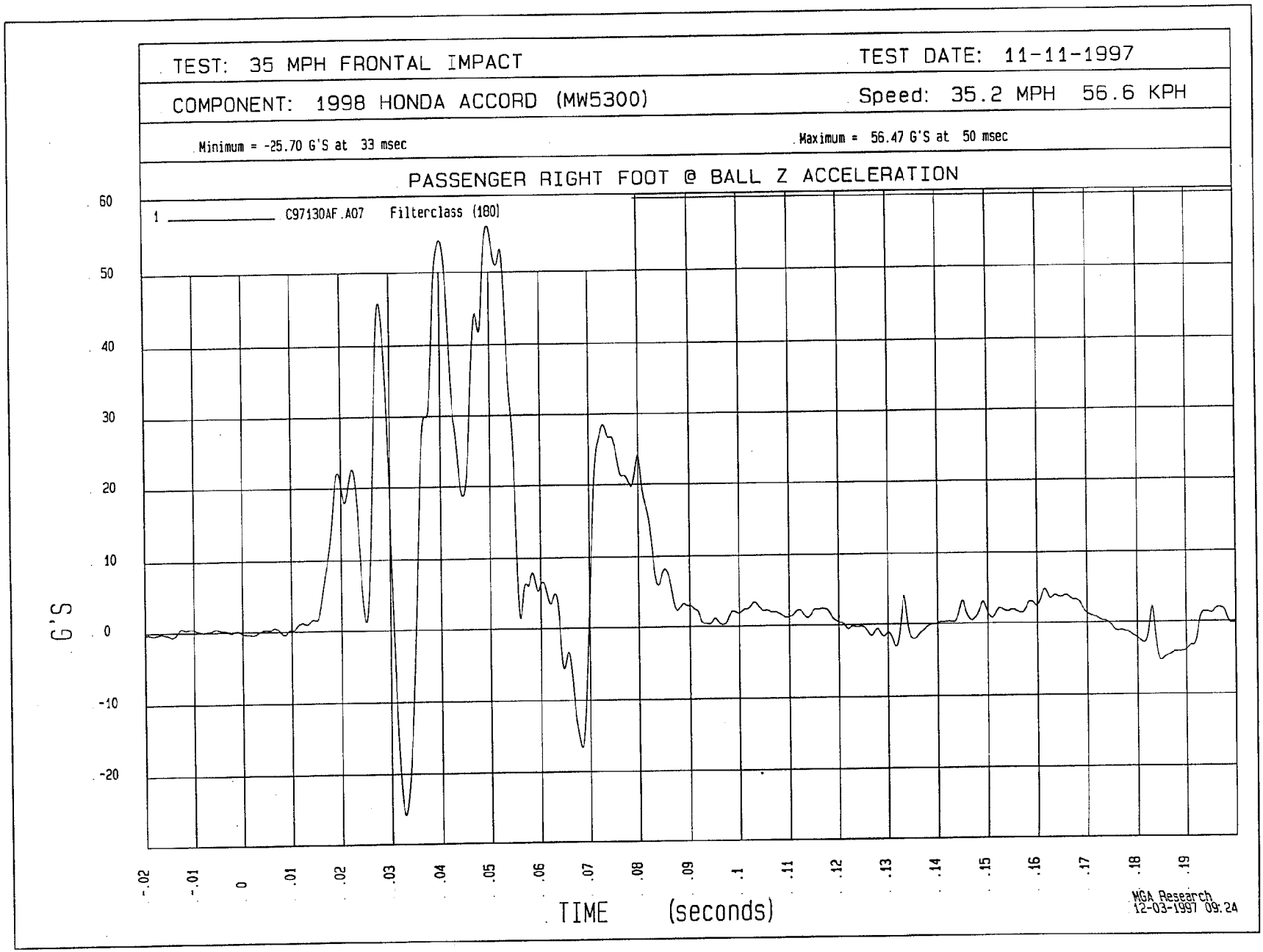

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -2082.22 N at 34 msec
Maximum = 209.92 N at 196 msec
PASSENGER RIGHT LOWER TIBIA FORCE Z
1 B97130FF.F91 Filterclass (600)
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 09:10

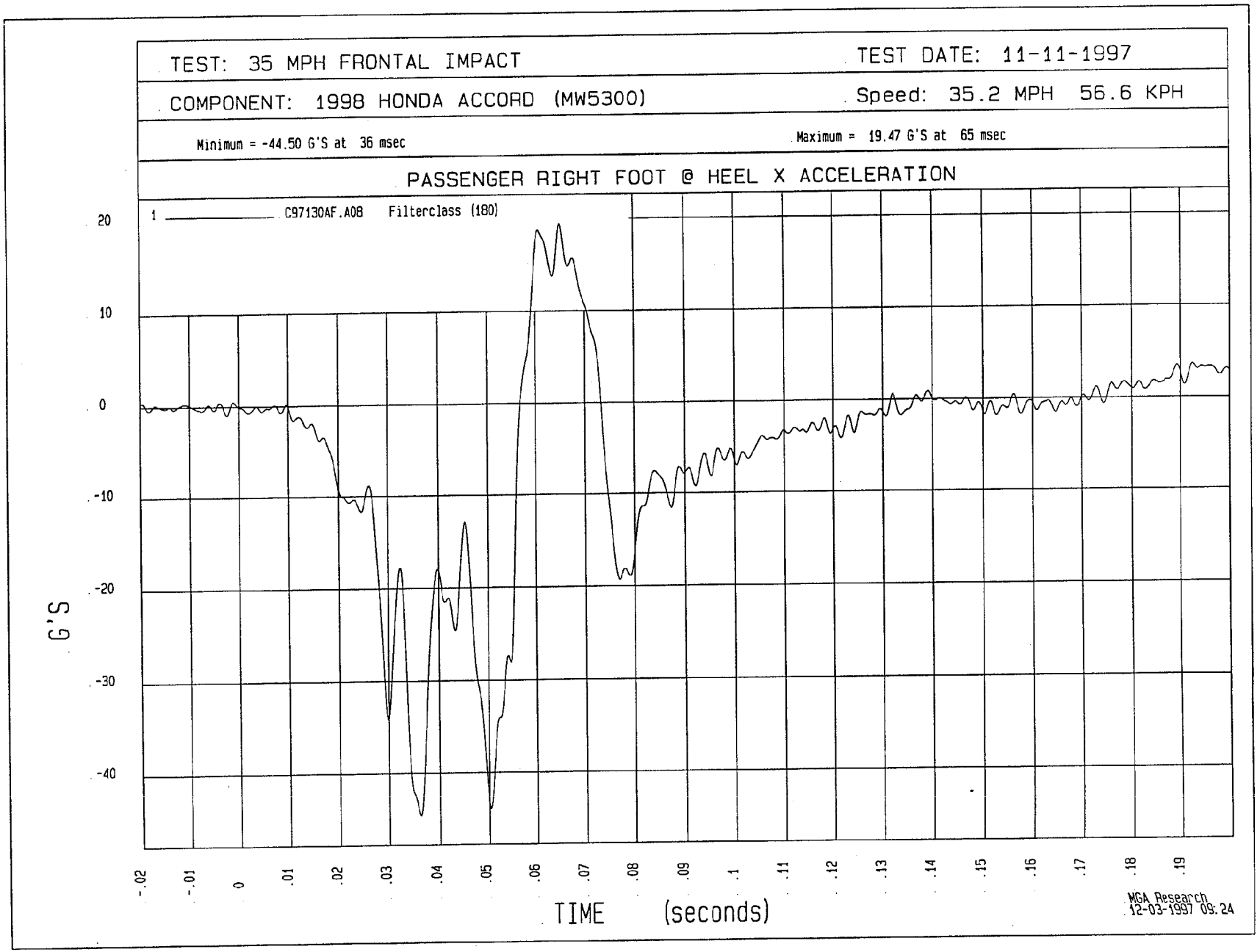

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -101.84 NM at 61 msec
Maximum = 11.37 NM at 28 msec
PASSENGER RIGHT LOWER TIBIA MOMENT Y
1 B97130NF MSO Filterclass (600)
NM
0
-20
-40
-60
-80
-100
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
12-02-1997 09:10

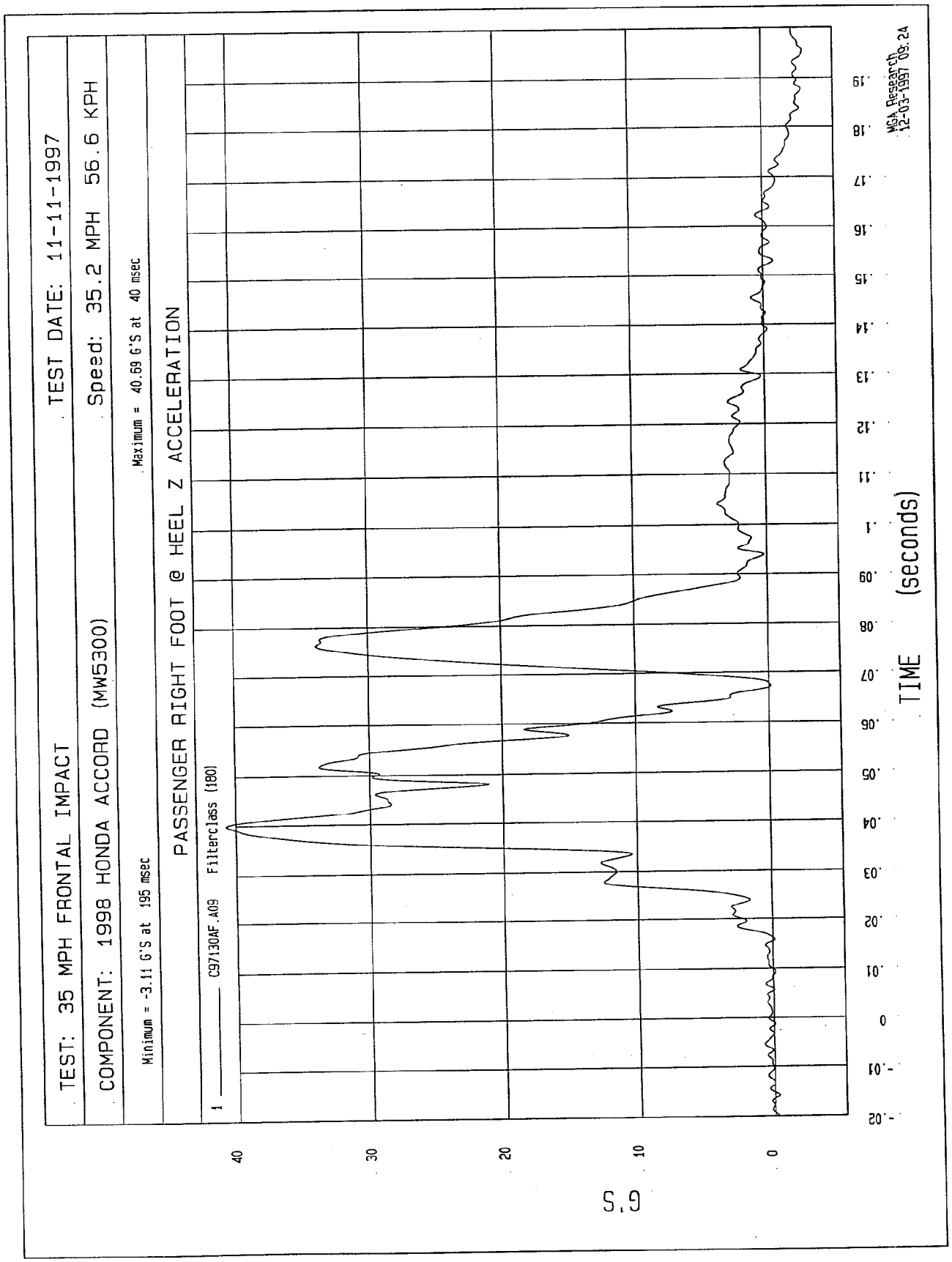

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -50.83 G'S at 61 msec
Maximum = 148.01 G'S at 48 msec
PASSENGER LEFT FOOT @ BALL Z ACCELERATION
1 C97130AF.A10 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:23

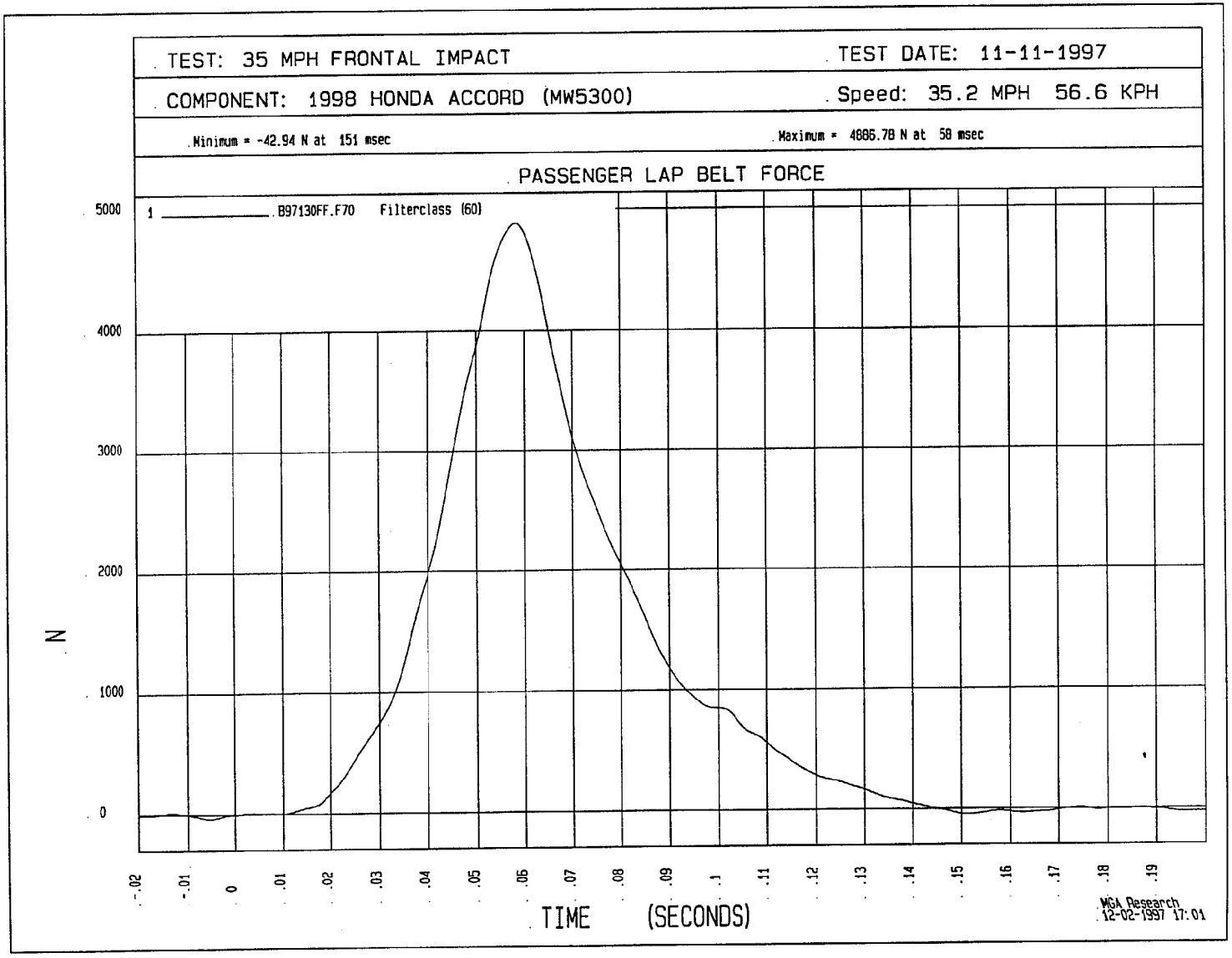

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -94.76 G'S at 50 msec
Maximum = 50.50 G'S at 64 msec
PASSENGER LEFT FOOT @ HEEL X ACCELERATION
1 C97130AF.A11 Filterclass (180)
G'S
40
20
0
-20
-40
-60
-80
-100
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:24

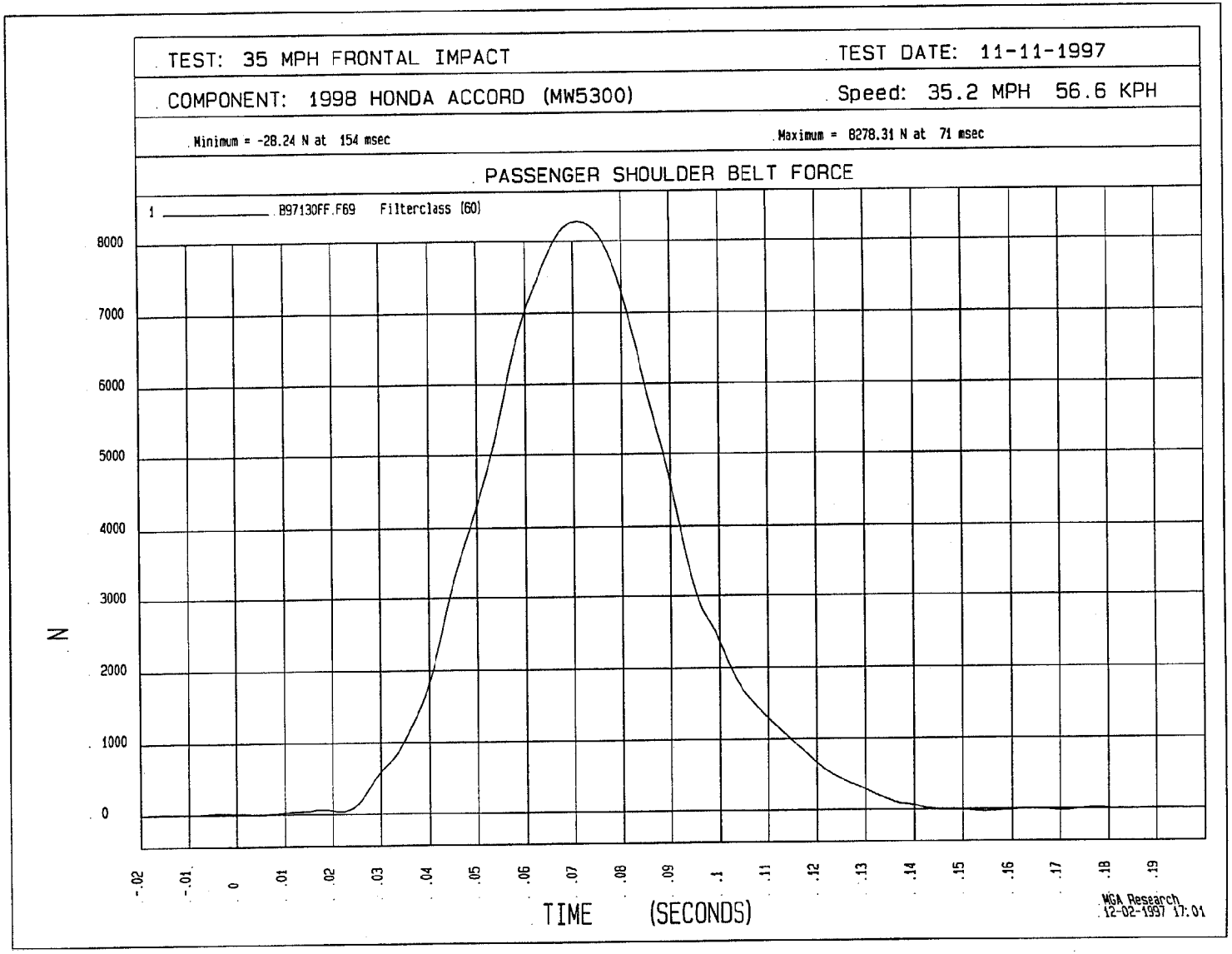

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -12.43 G'S at 68 msec
Maximum = 54.34 G'S at 48 msec
PASSENGER LEFT FOOT @ HEEL Z ACCELERATION
1 C97130AF.A12 Filterclass (180)
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:24

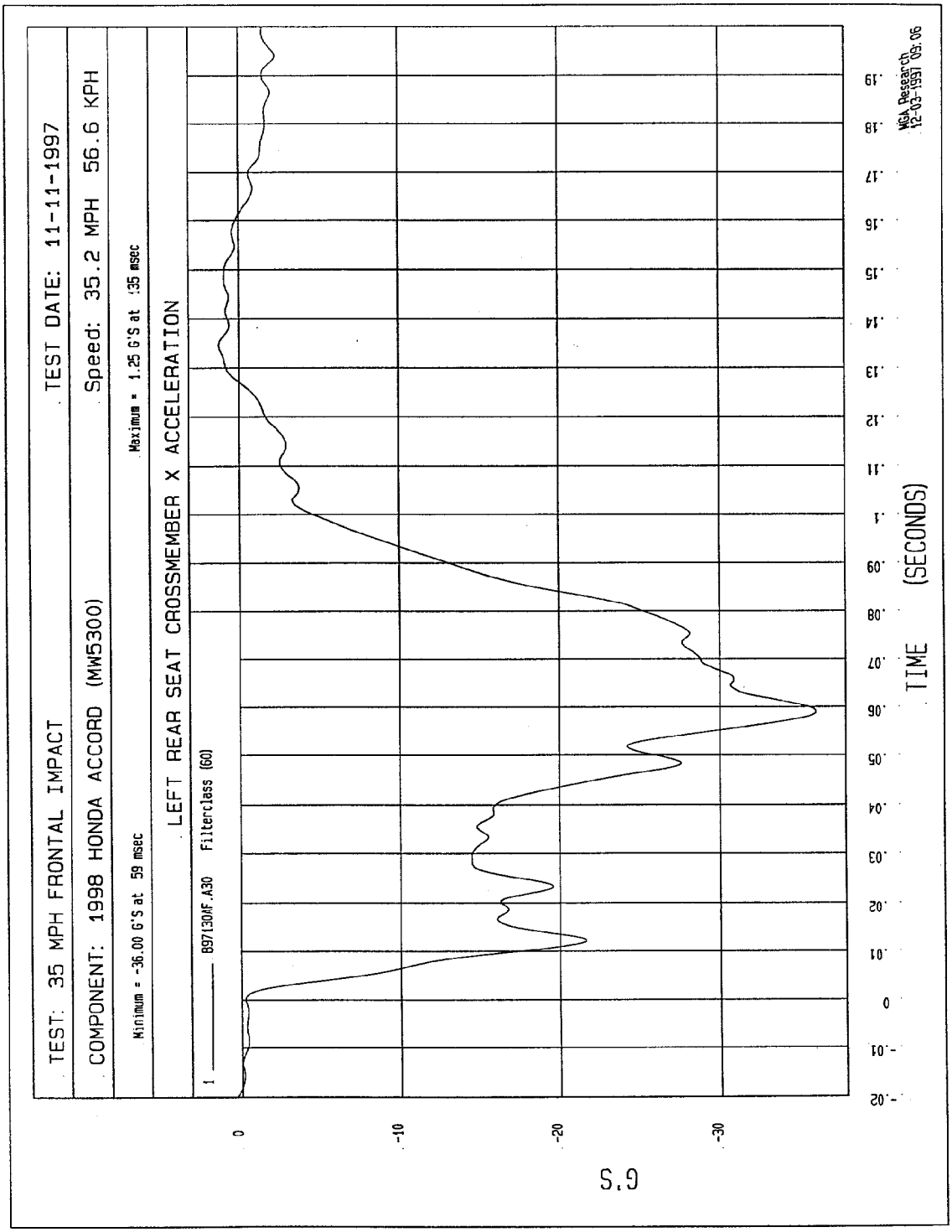

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -25.70 G'S at 33 msec
Maximum = 56.47 G'S at 50 msec
PASSENGER RIGHT FOOT @ BALL Z ACCELERATION
1 C97130AF.A07 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:24

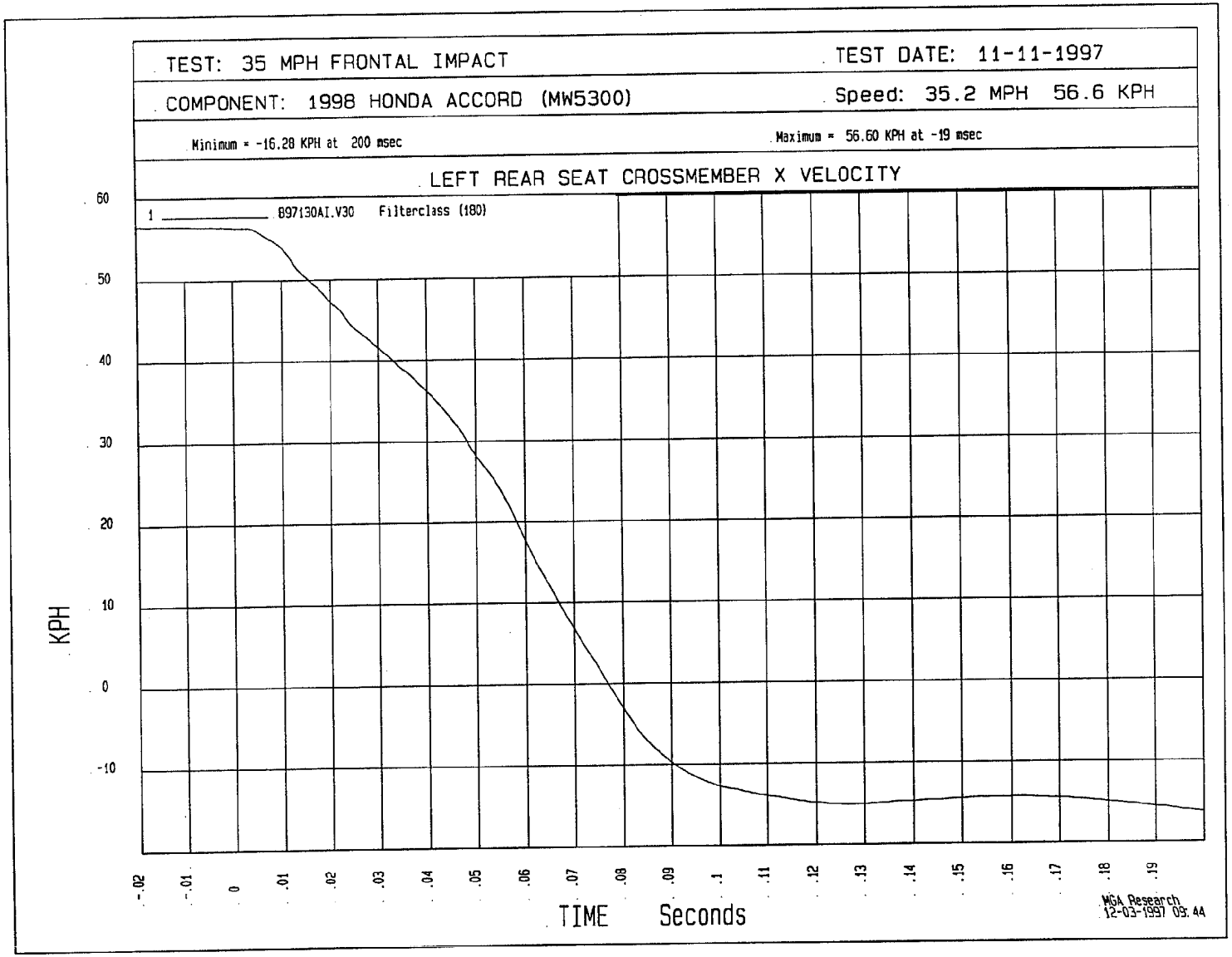

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -44.50 G'S at 36 msec
Maximum = 19.47 G'S at 65 msec
PASSENGER RIGHT FOOT @ HEEL X ACCELERATION
1 C97130AF.A08 Filterclass (180)
20
10
0
-10
-20
-30
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
12-03-1997 09:24

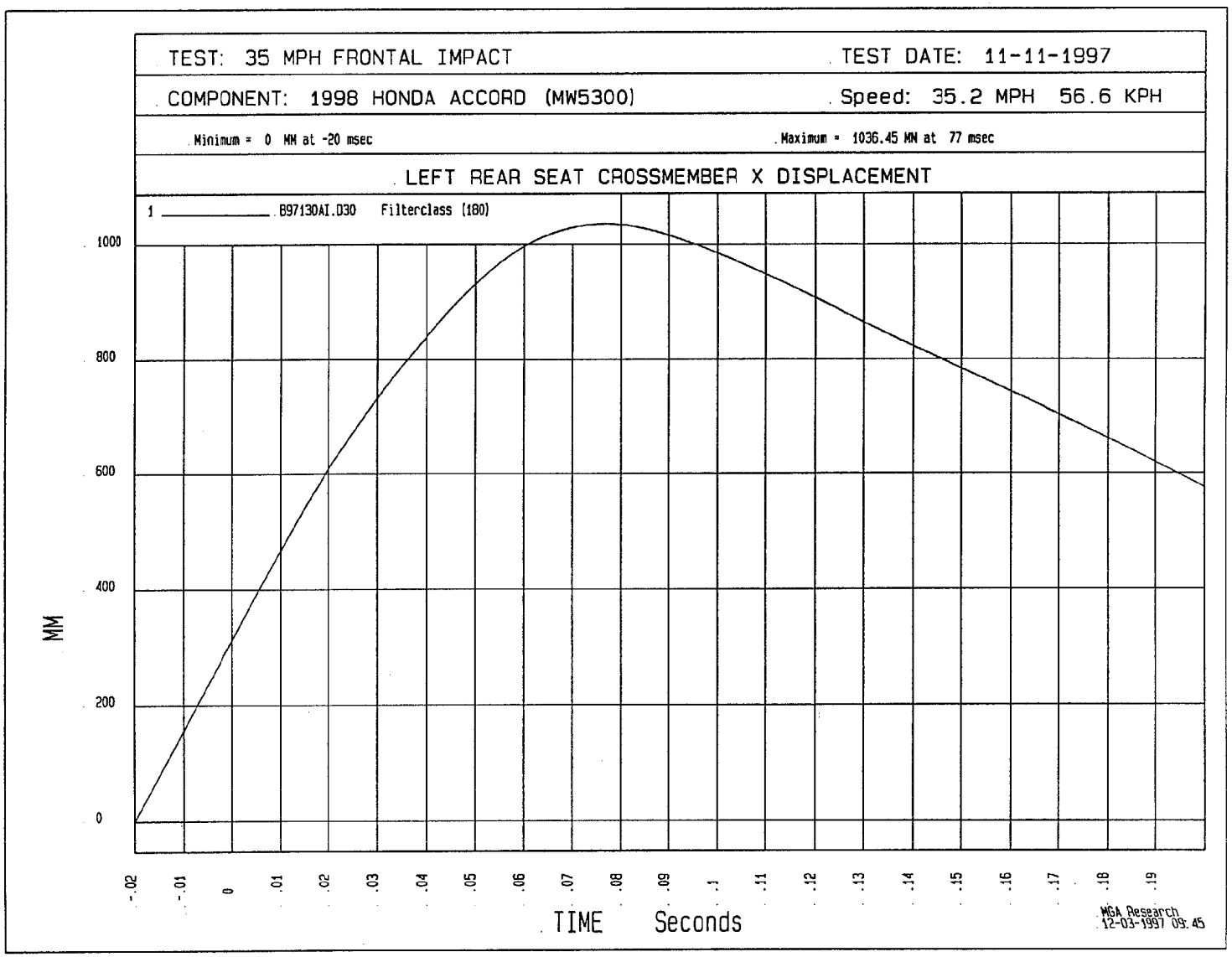

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -3.11 G'S at 195 msec
Maximum = 40.69 G'S at 40 msec
PASSENGER RIGHT FOOT @ HEEL Z ACCELERATION
1 C97130AF.A09 Filterclass (180)
G'S
TIME (seconds)
MGA Research
12-03-1997 09:24

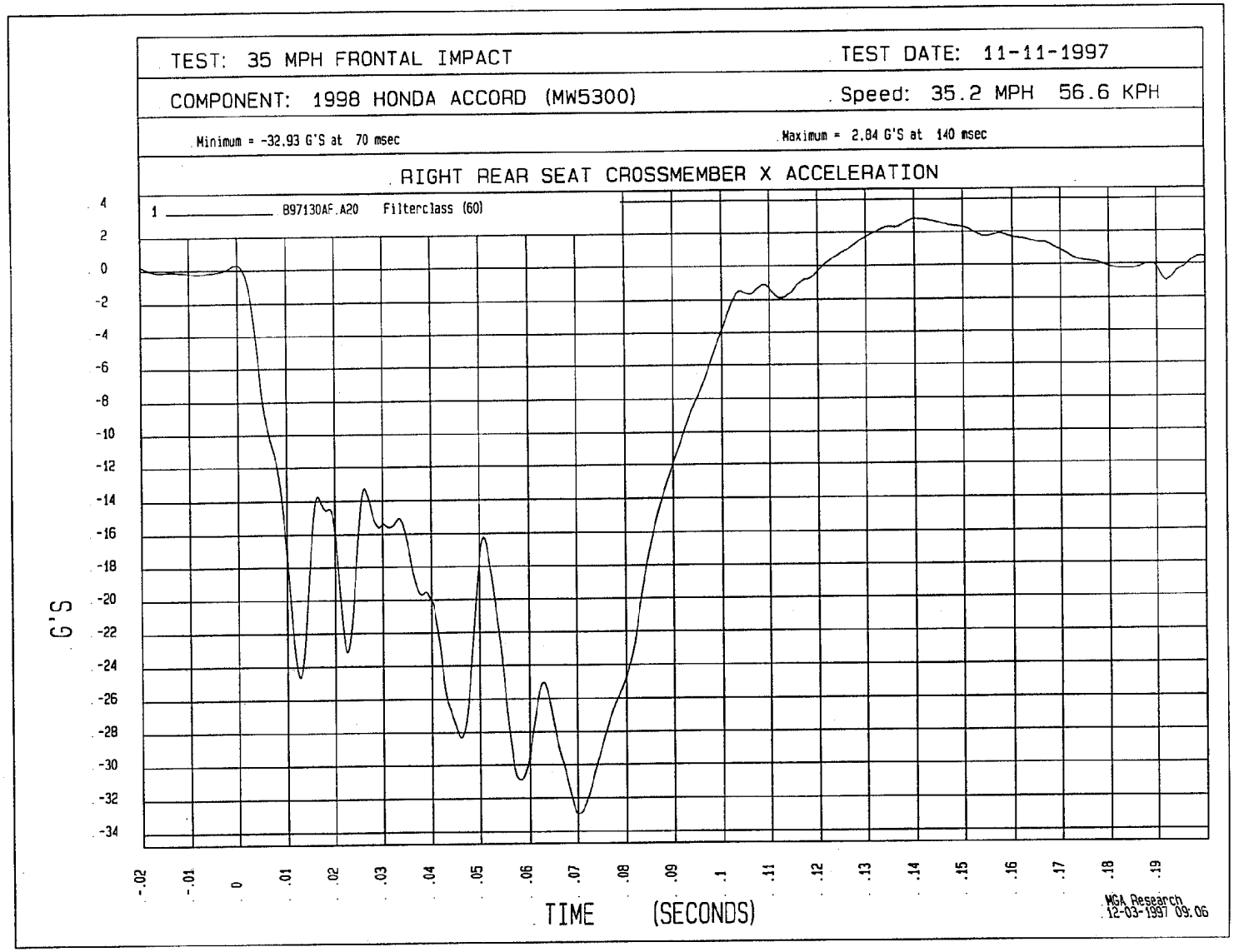

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -42.94 N at 151 msec
Maximum = 4886.78 N at 58 msec
PASSENGER LAP BELT FORCE
1 B97130FF.F70 Filterclass (60)
5000
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 17:01

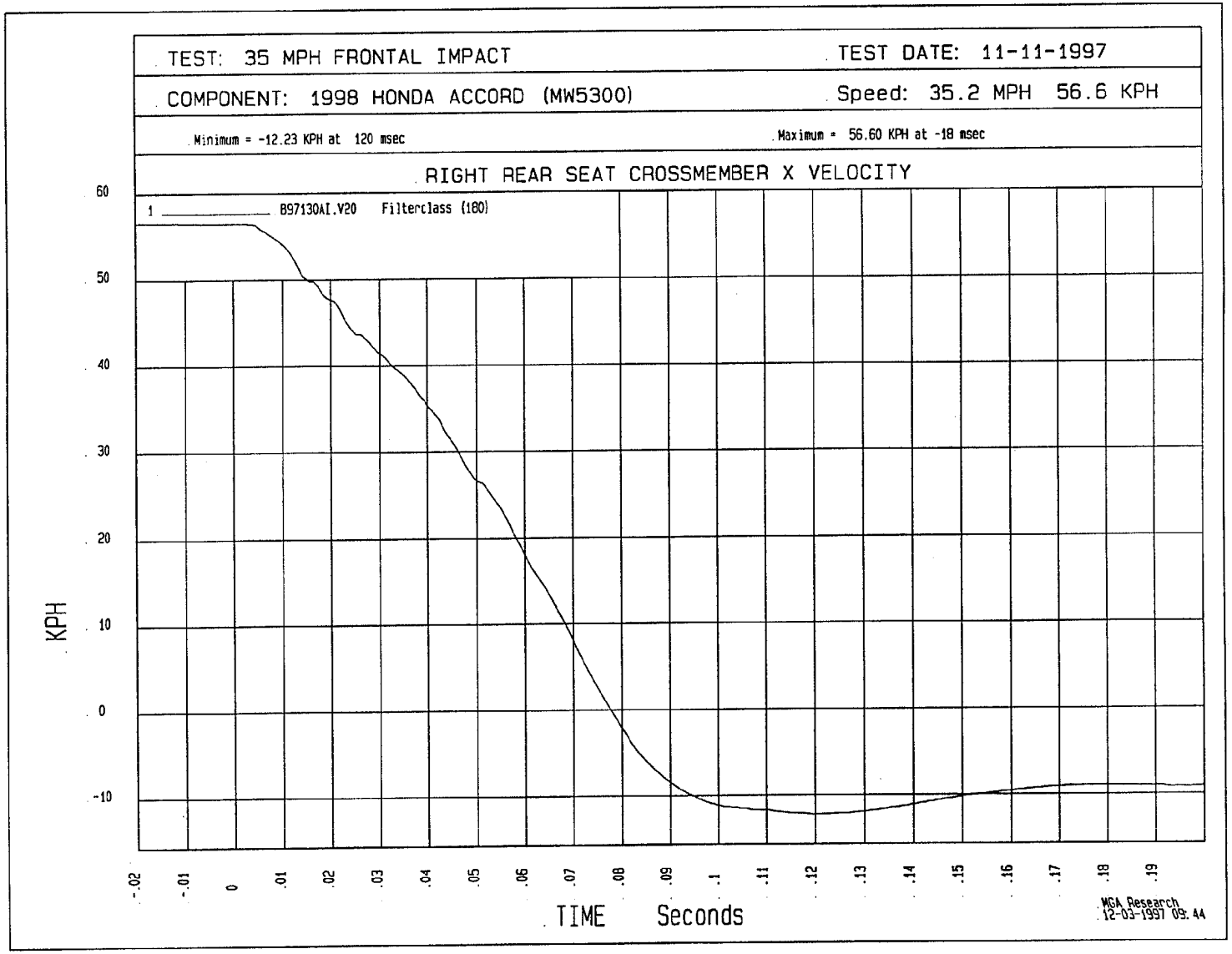

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -28.24 N at 154 msec
Maximum = 8278.31 N at 71 msec
PASSENGER SHOULDER BELT FORCE
1 B97130FF.F69 Filterclass (60)
8000
7000
6000
5000
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1997 17:01

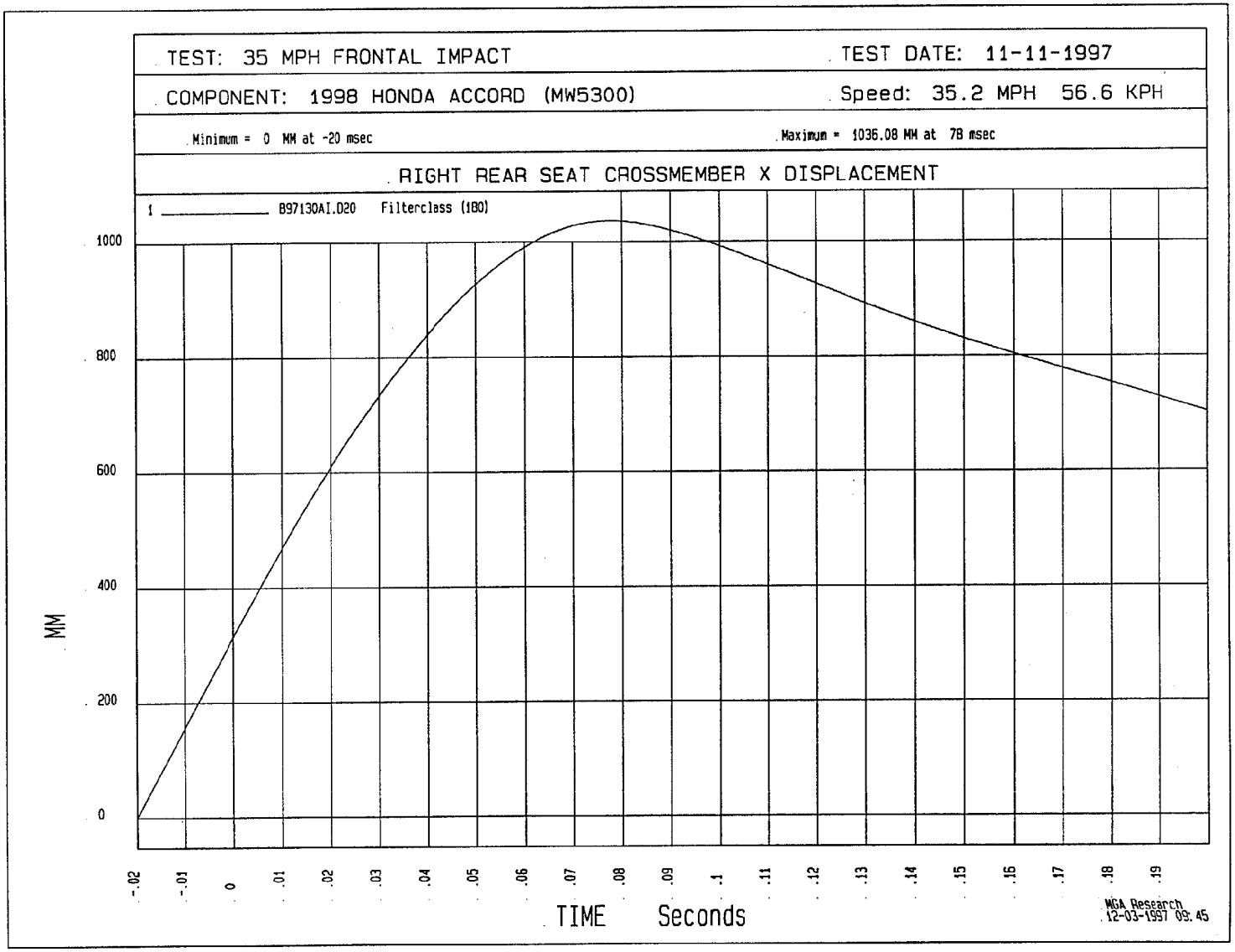

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -36.00 G'S at 59 msec
Maximum = 1.25 G'S at .35 msec
LEFT REAR SEAT CROSSMEMBER X ACCELERATION
1 B97130MF.A30 Filterclass (60)
0
-10
-20
-30
GS
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:06

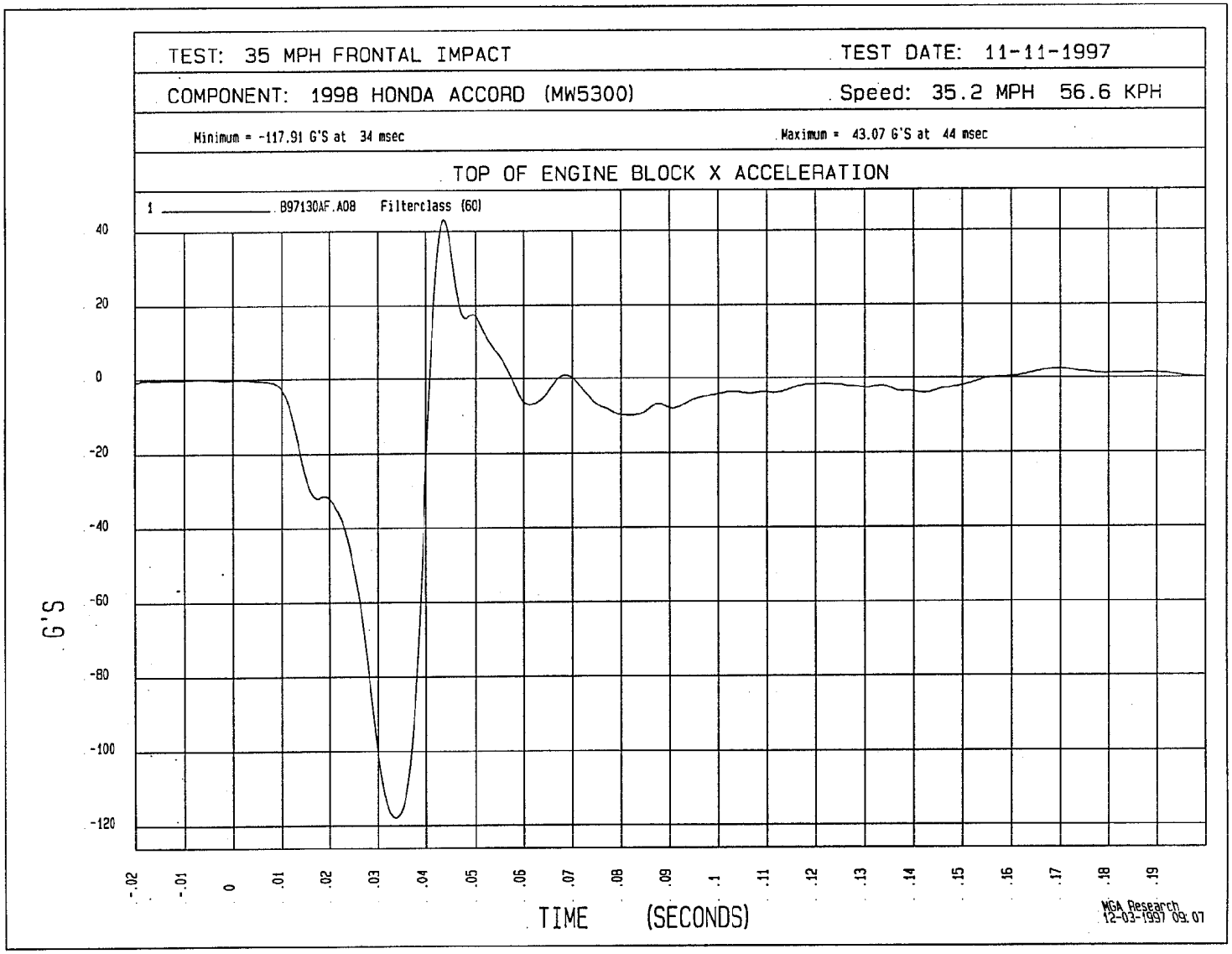

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -16.28 KPH at 200 msec
Maximum = 56.60 KPH at -19 msec
LEFT REAR SEAT CROSSMEMBER X VELOCITY
1 897130AI.V30 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:44

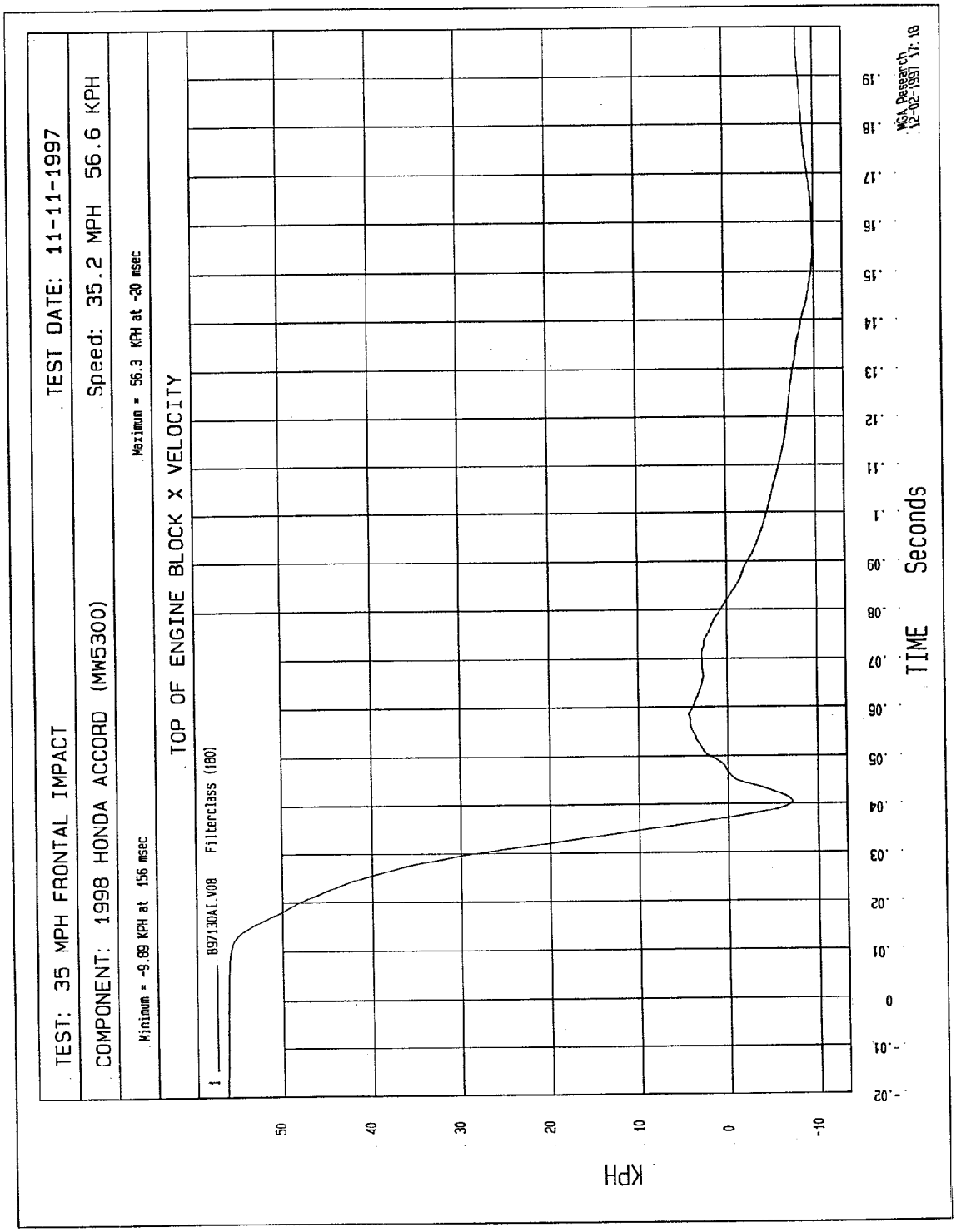

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MN at -20 msec
Maximum = 1036.45 MN at 77 msec
LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT
1 B97130AI.D30 Filterclass (180)
MM
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:45


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -32.93 G'S at 70 msec
Maximum = 2.84 G'S at 140 msec
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION
1 B97130AF.A20 Filterclass (60)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:06


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -12.23 KPH at 120 msec
Maximum = 56.60 KPH at -18 msec
RIGHT REAR SEAT CROSSMEMBER X VELOCITY
1 B97130AI.V20 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:44


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MM at -20 msec
Maximum = 1036.08 MM at 78 msec
RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT
1 B97130AI.D20 Filterclass (180)
1000
800
600
400
200
0
MM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:45


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -117.91 G'S at 34 msec
Maximum = 43.07 G'S at 44 msec
TOP OF ENGINE BLOCK X ACCELERATION
1 B97130AF.A08 Filterclass (60)
40
20
0
-20
-40
-60
-80
-100
-120
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:07


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Maximum = 56.3 KPH at -20 msec
Minimum = -9.89 KPH at 156 msec
TOP OF ENGINE BLOCK X VELOCITY
1 B97130A1.V08 Filterclass (180)
KPH
50
40
30
20
10
0
-10
TIME Seconds
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
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.16
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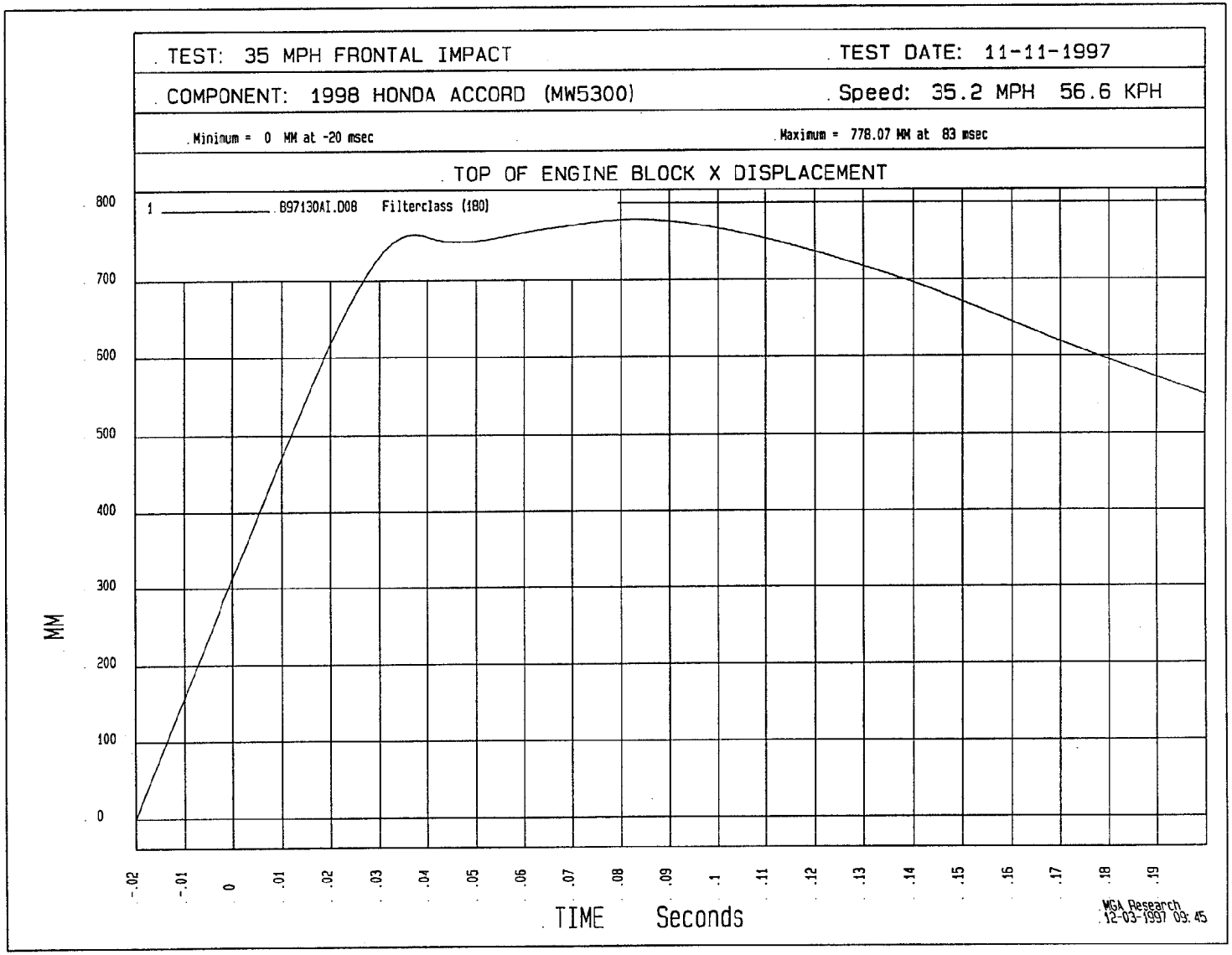
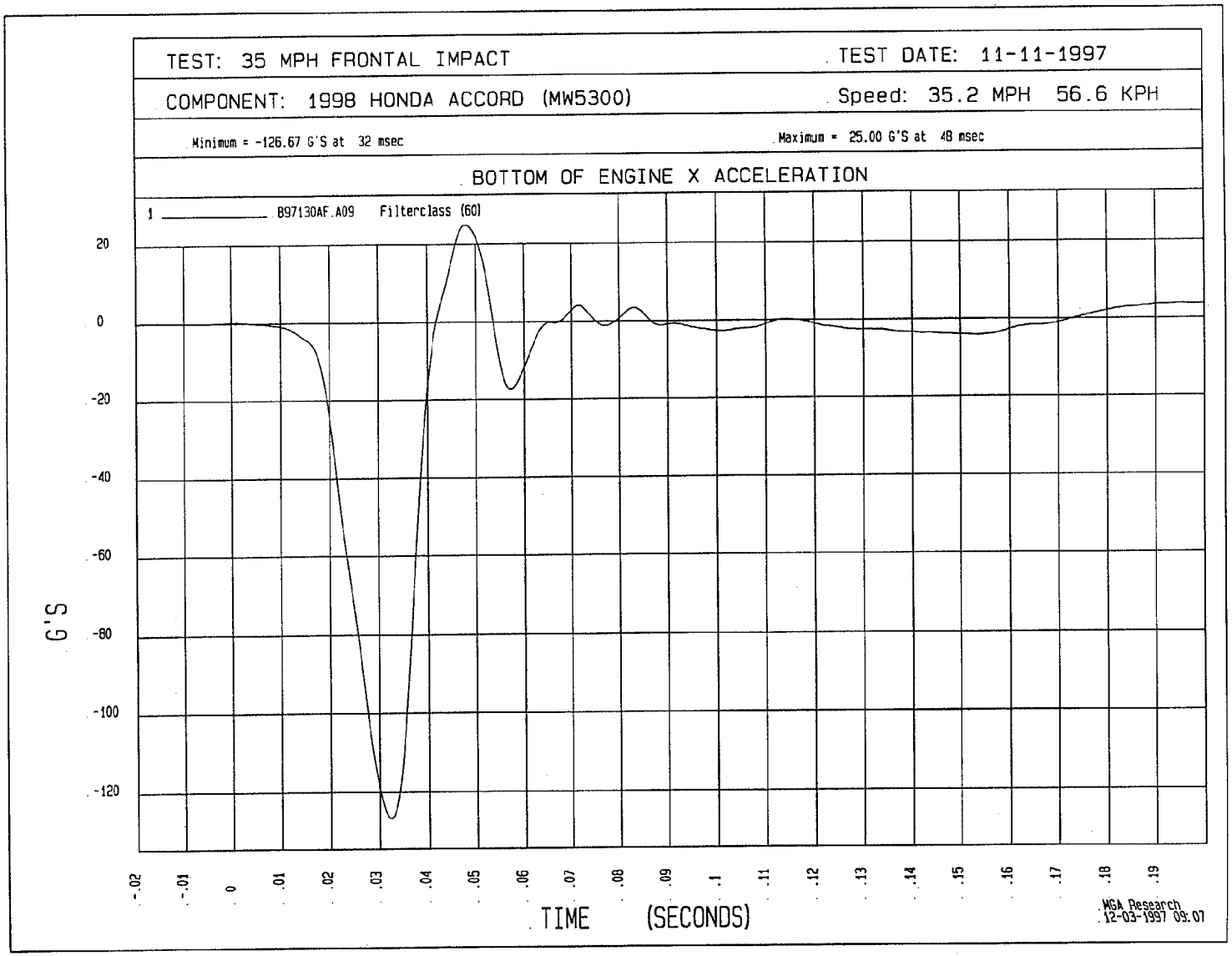
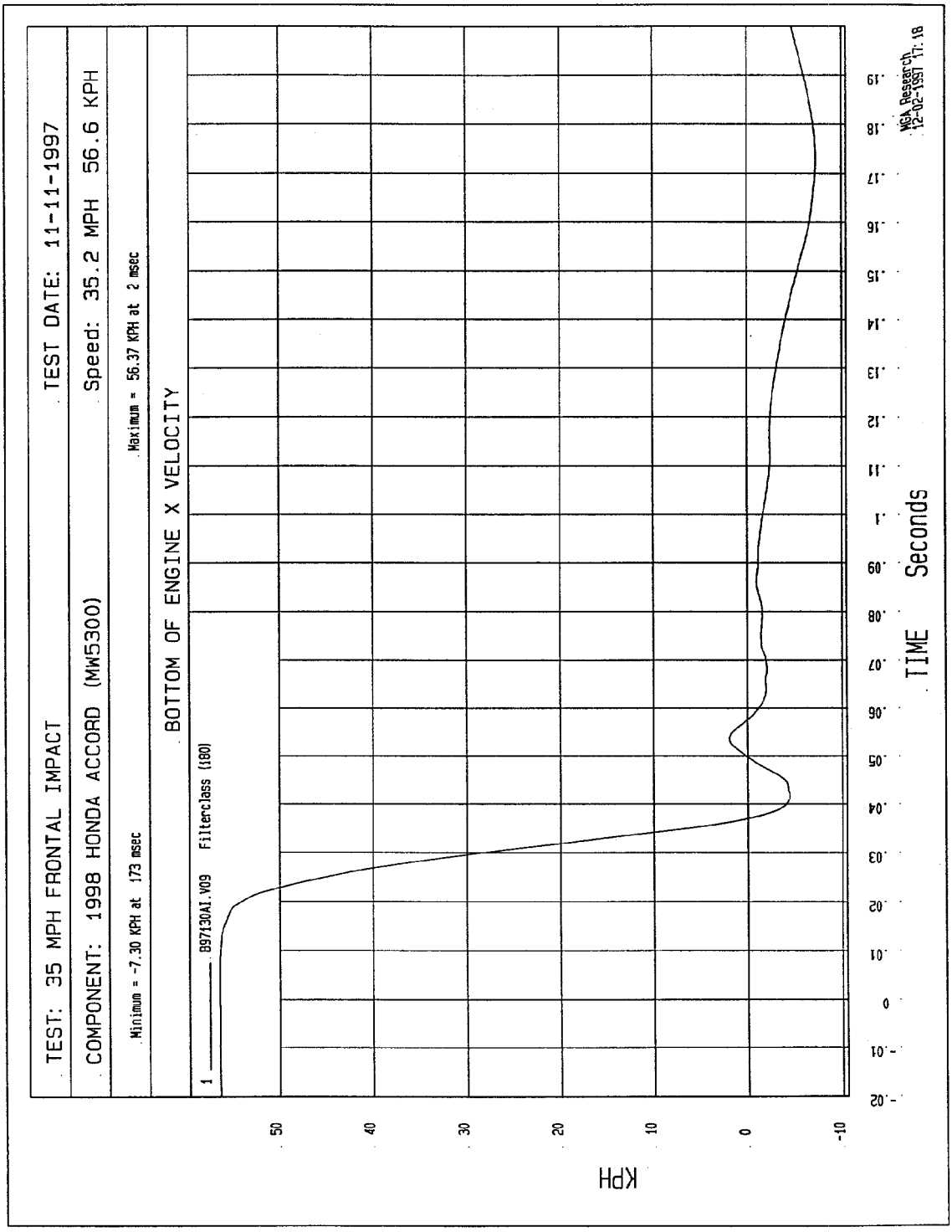
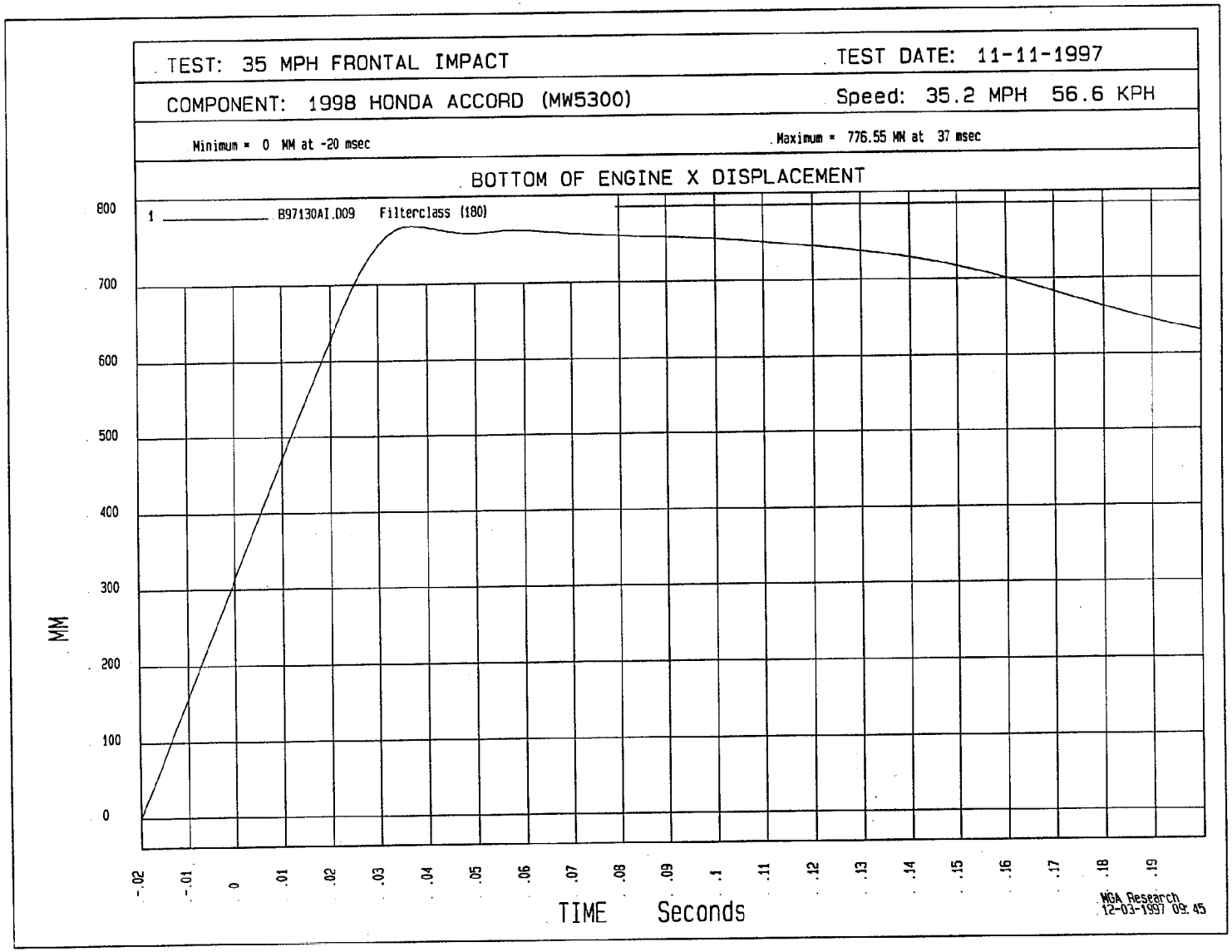
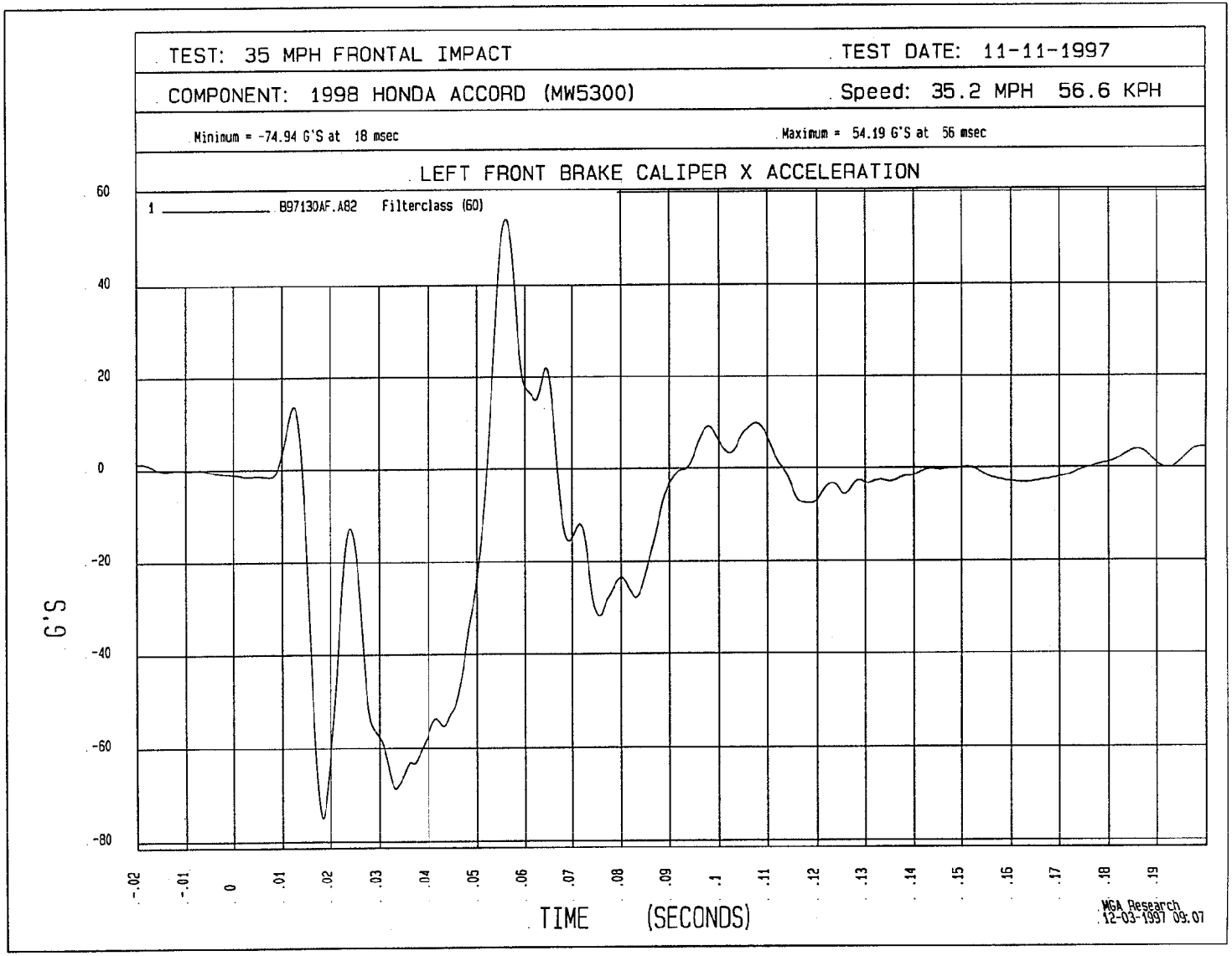
.18
.19
MGA Research
12-02-1997 17:18

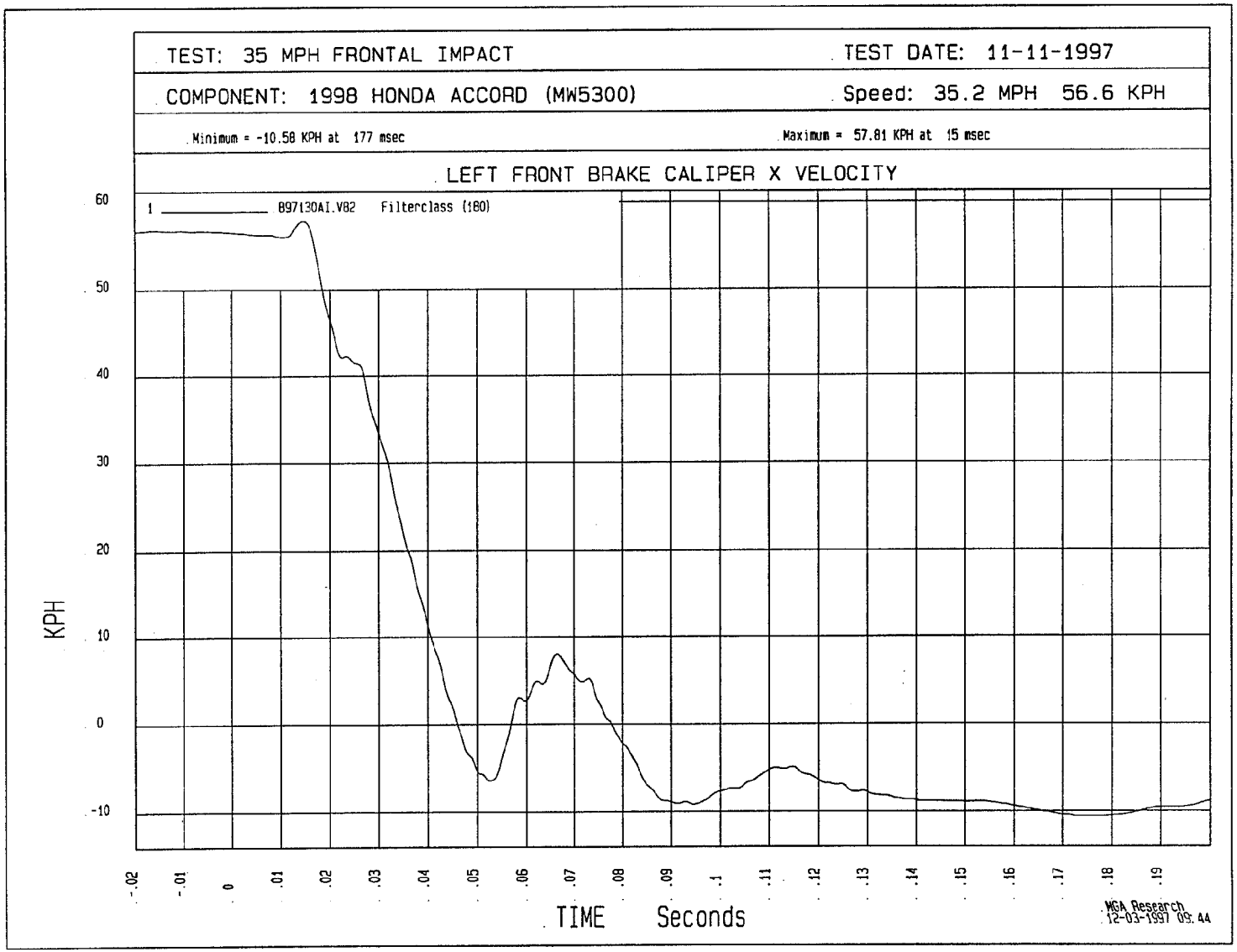

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MM at -20 msec
Maximum = 778.07 MM at 83 msec
TOP OF ENGINE BLOCK X DISPLACEMENT
1 B97130AI.D08 Filterclass (180)
MM
800
700
600
500
400
300
200
100
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:45

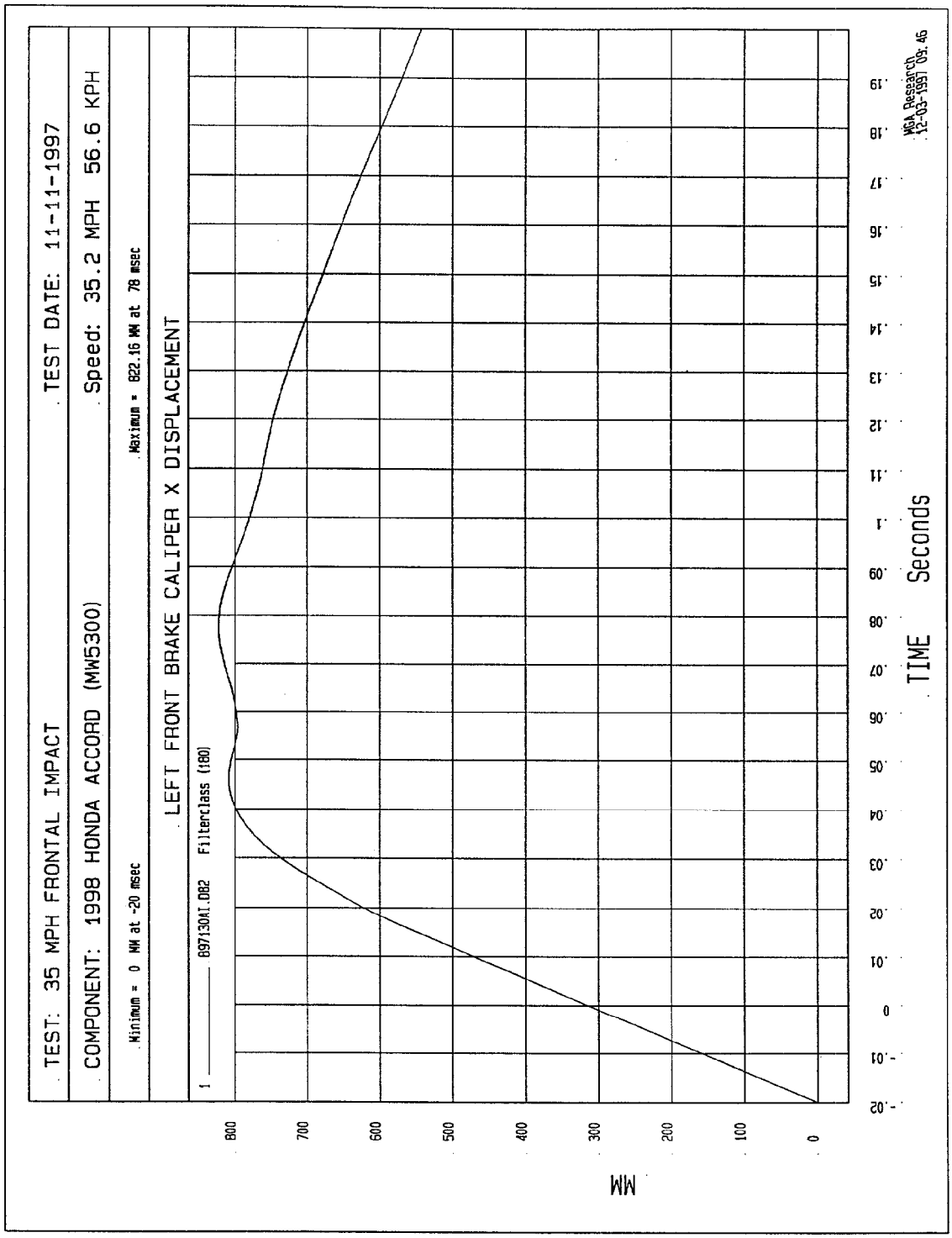

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -126.67 G'S at 32 msec
Maximum = 25.00 G'S at 48 msec
BOTTOM OF ENGINE X ACCELERATION
1 B97130AF.A09 Filterclass (60)
20
0
-20
-40
-60
-80
-100
-120
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:07

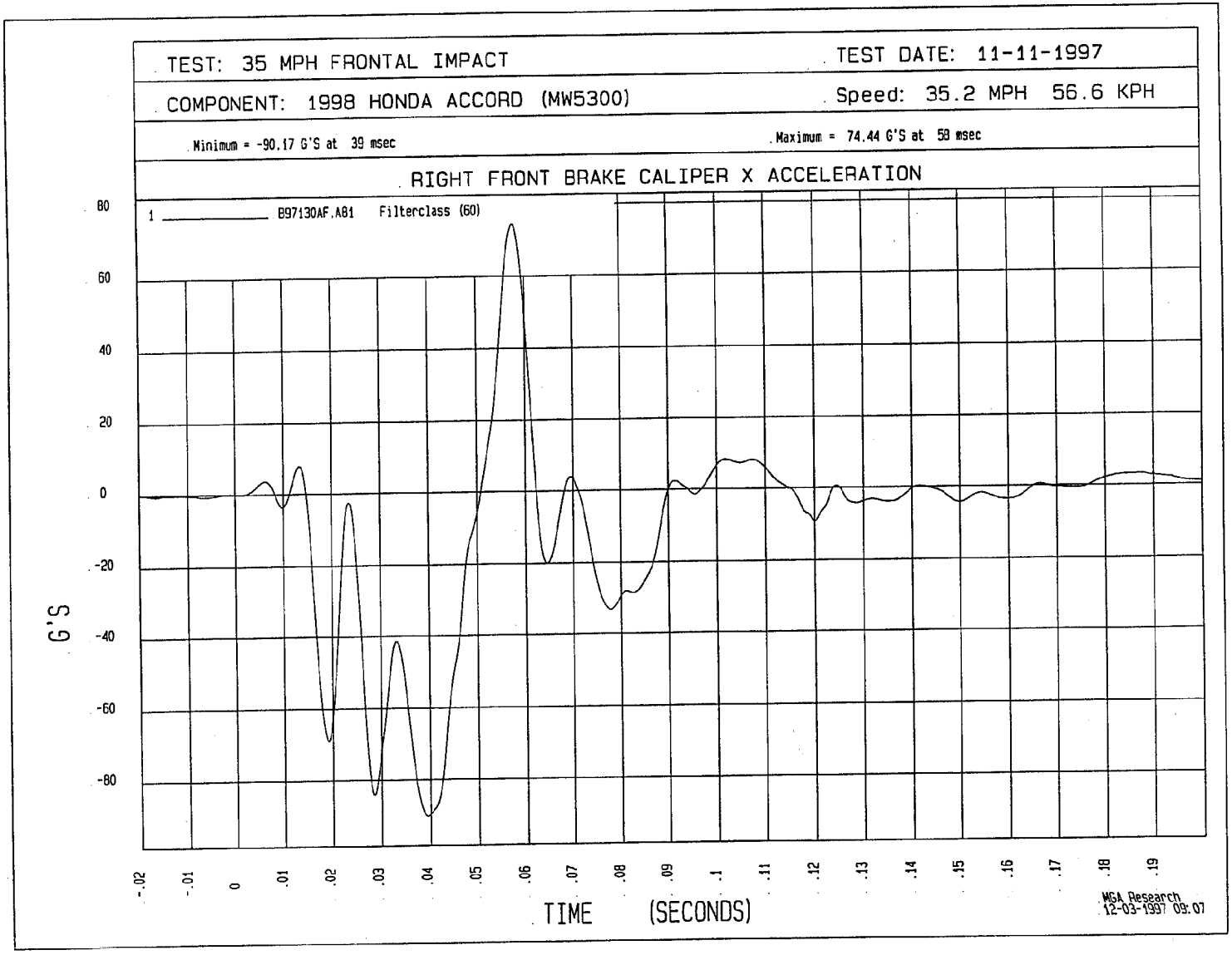

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -7.30 KPH at 173 msec
Maximum = 56.37 KPH at 2 msec
BOTTOM OF ENGINE X VELOCITY
1 B97130AI.V09 Filterclass (180)
KPH
50
40
30
20
10
0
-10
TIME Seconds
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
12-02-1997 17:18

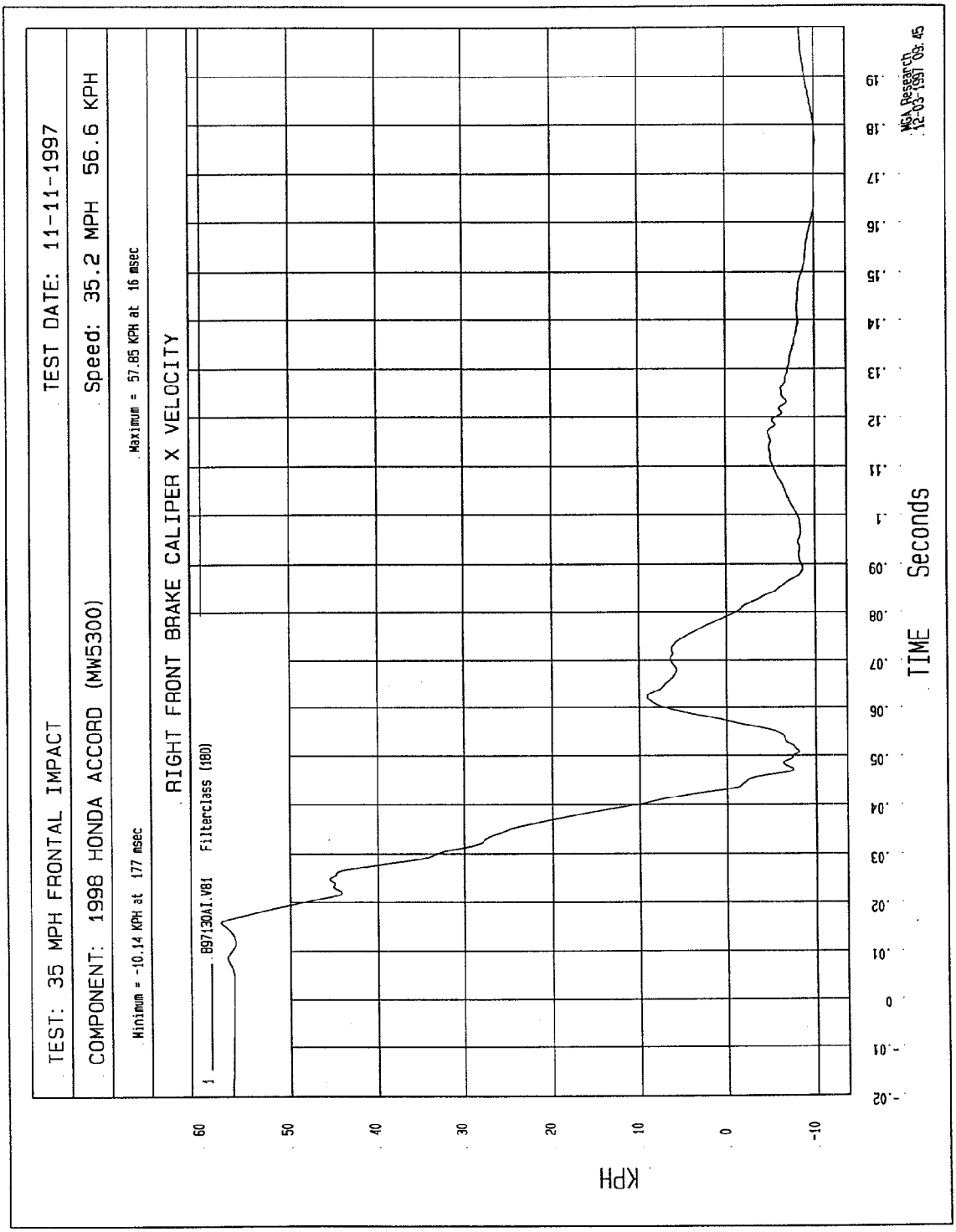

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MN at -20 msec
Maximum = 776.55 MN at 37 msec
BOTTOM OF ENGINE X DISPLACEMENT
1 B97130AI.009 Filterclass (180)
MN
800
700
600
500
400
300
200
100
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:45

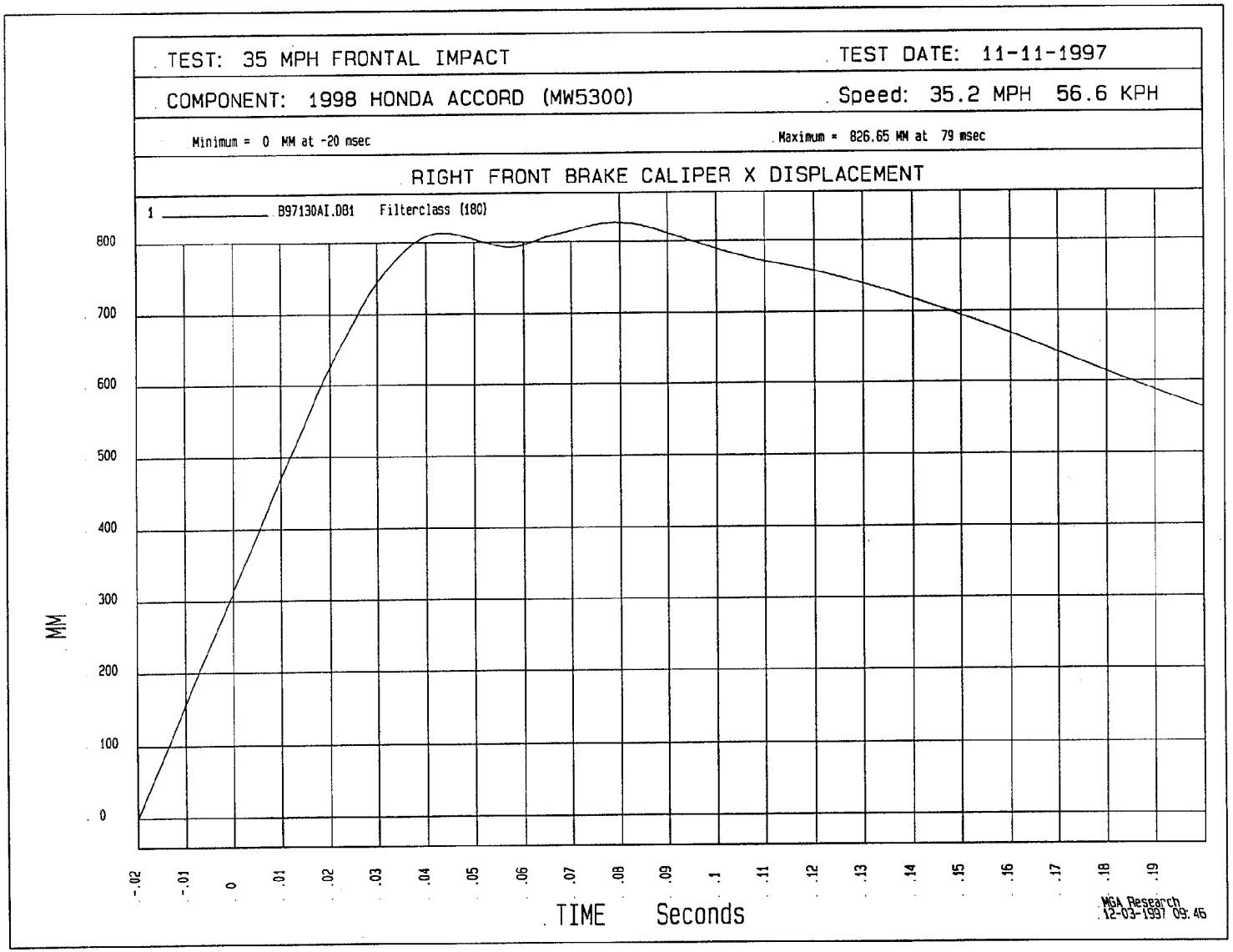

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -74.94 G'S at 18 msec
Maximum = 54.19 G'S at 56 msec
LEFT FRONT BRAKE CALIPER X ACCELERATION
1 B97130AF.A82 Filterclass (60)
60
40
20
0
-20
-40
-60
-80
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:07

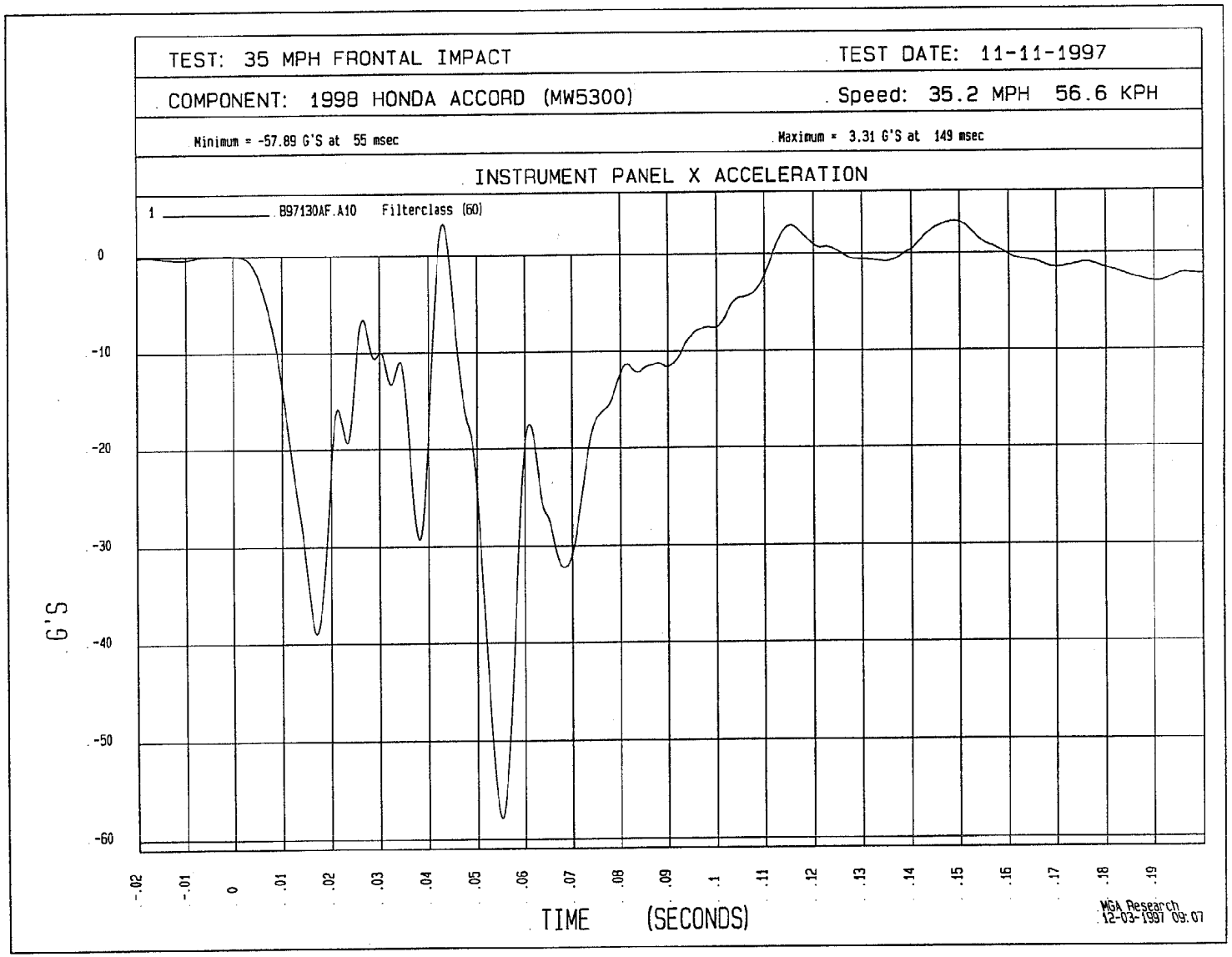

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -10.58 KPH at 177 msec
Maximum = 57.81 KPH at 15 msec
LEFT FRONT BRAKE CALIPER X VELOCITY
1 _____ 897130AI.V82 Filterclass (180)
60
50
40
30
20
10
0
-10
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:44

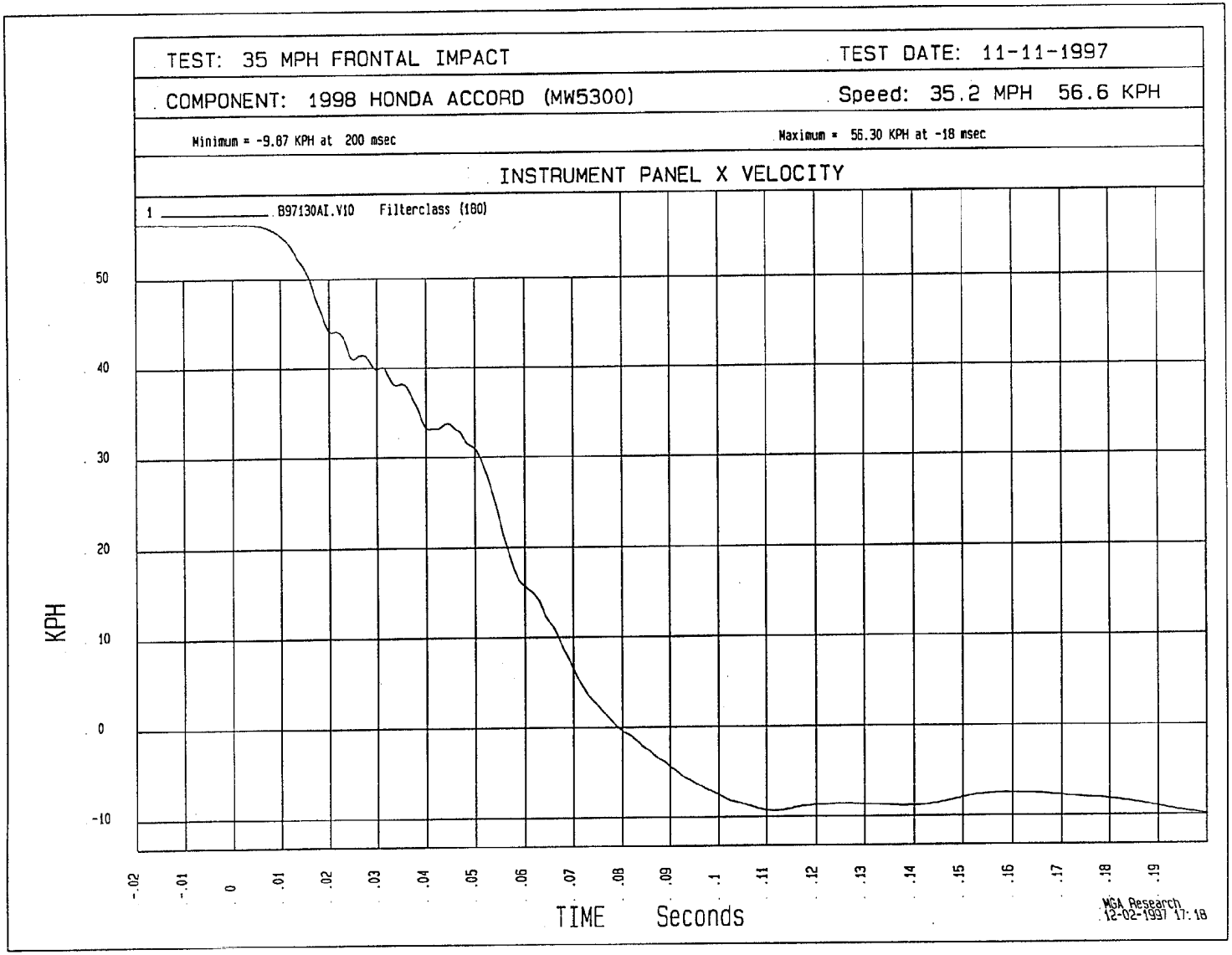

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MM at -20 msec
Maximum = 822.16 MM at 78 msec
LEFT FRONT BRAKE CALIPER X DISPLACEMENT
1 ——— 897130AI.D82 Filterclass (180)
MM
TIME Seconds
MGA Research
12-03-1997 09:46

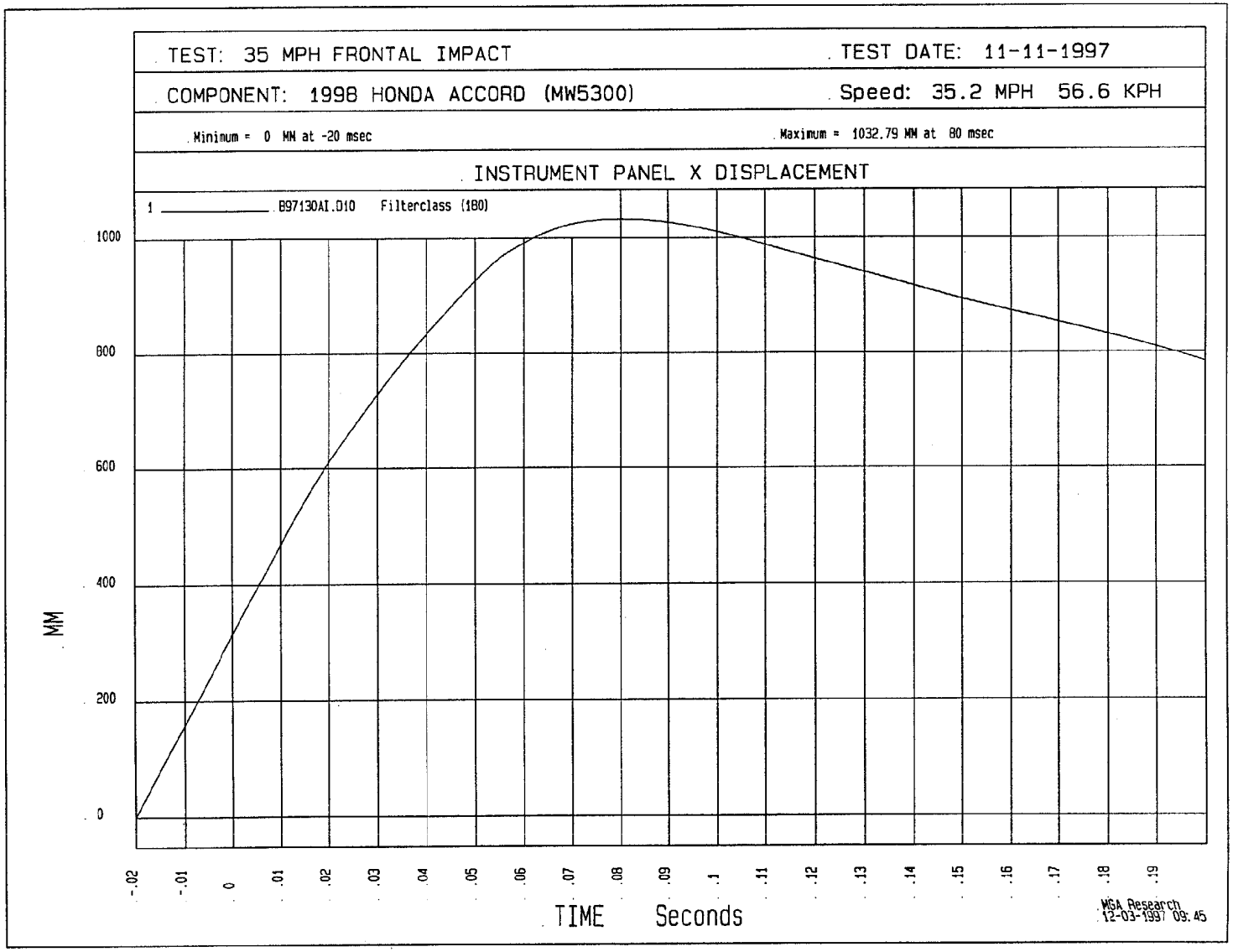

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -90.17 G'S at 39 msec
Maximum = 74.44 G'S at 58 msec
RIGHT FRONT BRAKE CALIPER X ACCELERATION
1 B97130AF.A81 Filterclass (60)
80
60
40
20
0
-20
-40
-60
-80
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:07

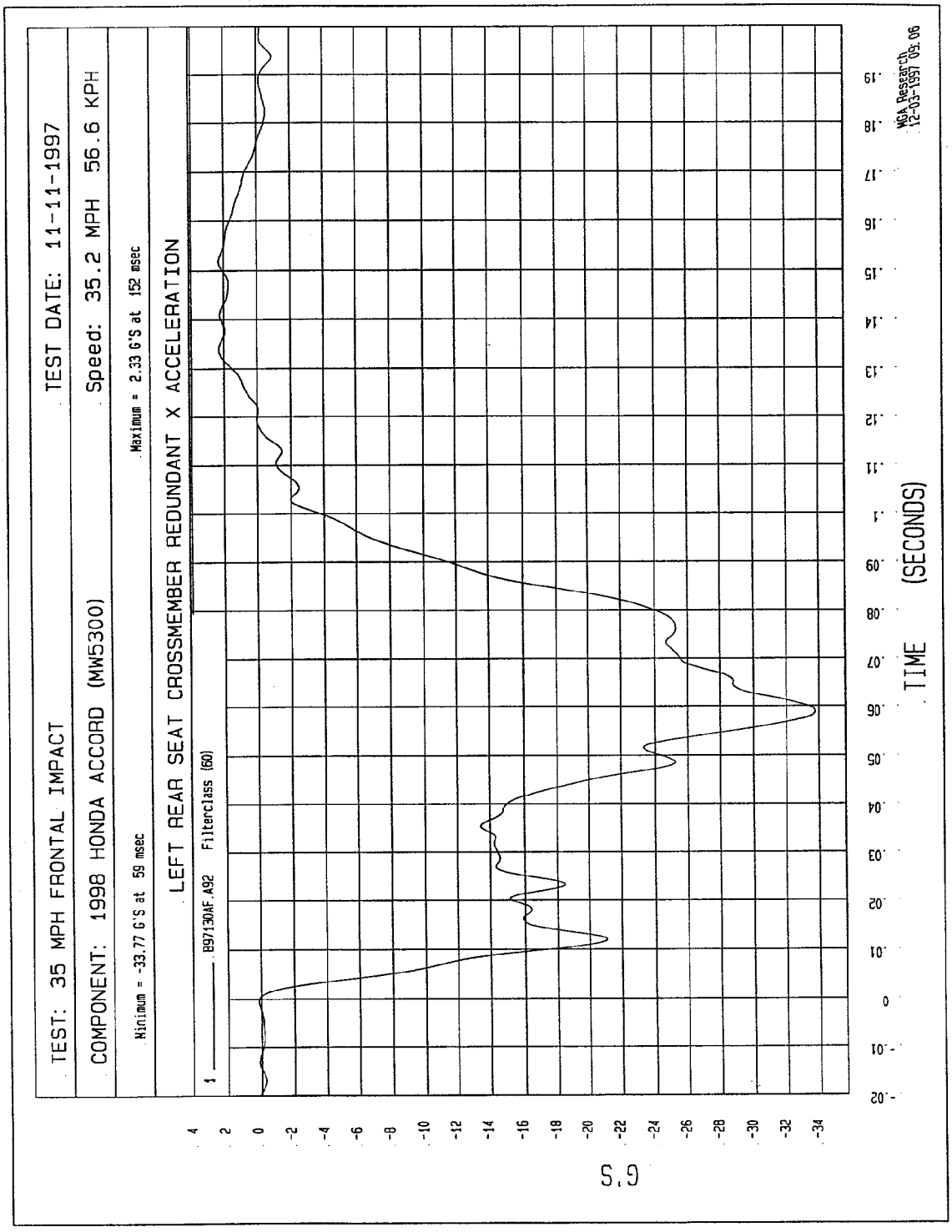

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -10.14 KPH at 177 msec
Maximum = 57.85 KPH at 16 msec
RIGHT FRONT BRAKE CALIPER X VELOCITY
1 B97130AI.V81 Filterclass (180)
KPH
TIME Seconds
MGA Research
12-03-1997 09:45

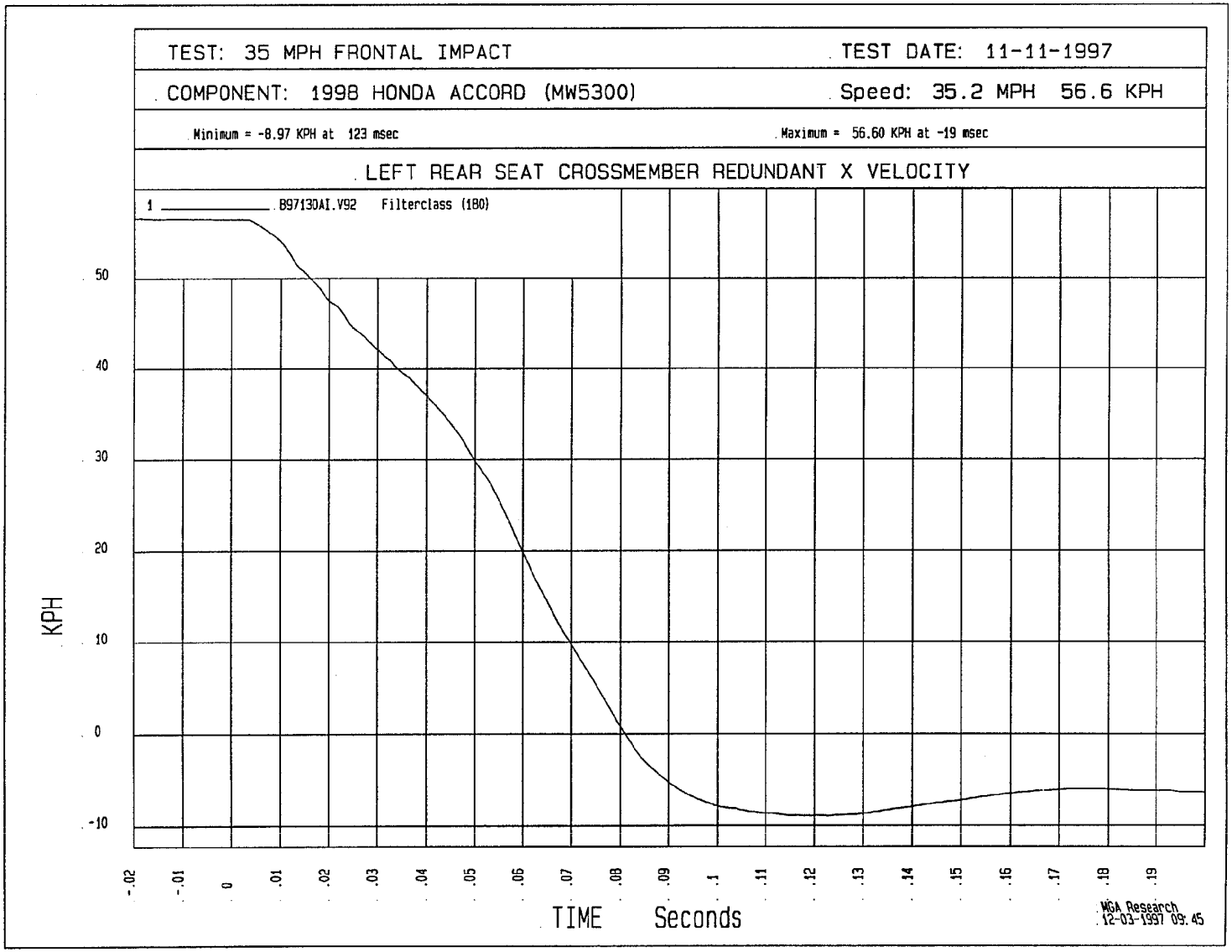

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MM at -20 msec
Maximum = 826.65 MM at 79 msec
RIGHT FRONT BRAKE CALIPER X DISPLACEMENT
1 B97130AI.D81 Filterclass (180)
MM
800
700
600
500
400
300
200
100
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:46

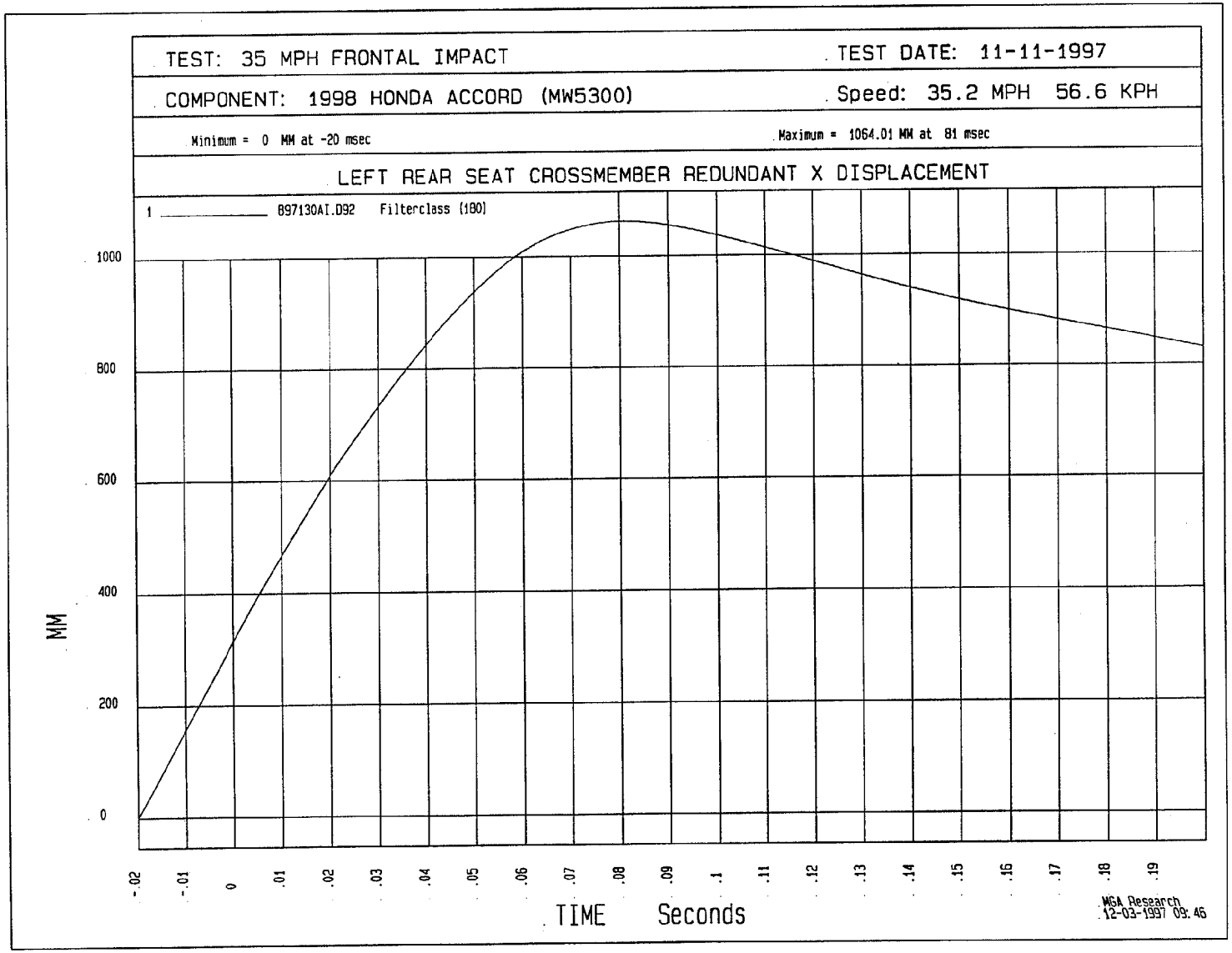

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -57.89 G'S at 55 msec
Maximum = 3.31 G'S at 149 msec
INSTRUMENT PANEL X ACCELERATION
1 B97130AF.A10 Filterclass (60)
0
-10
-20
-30
-40
-50
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:07

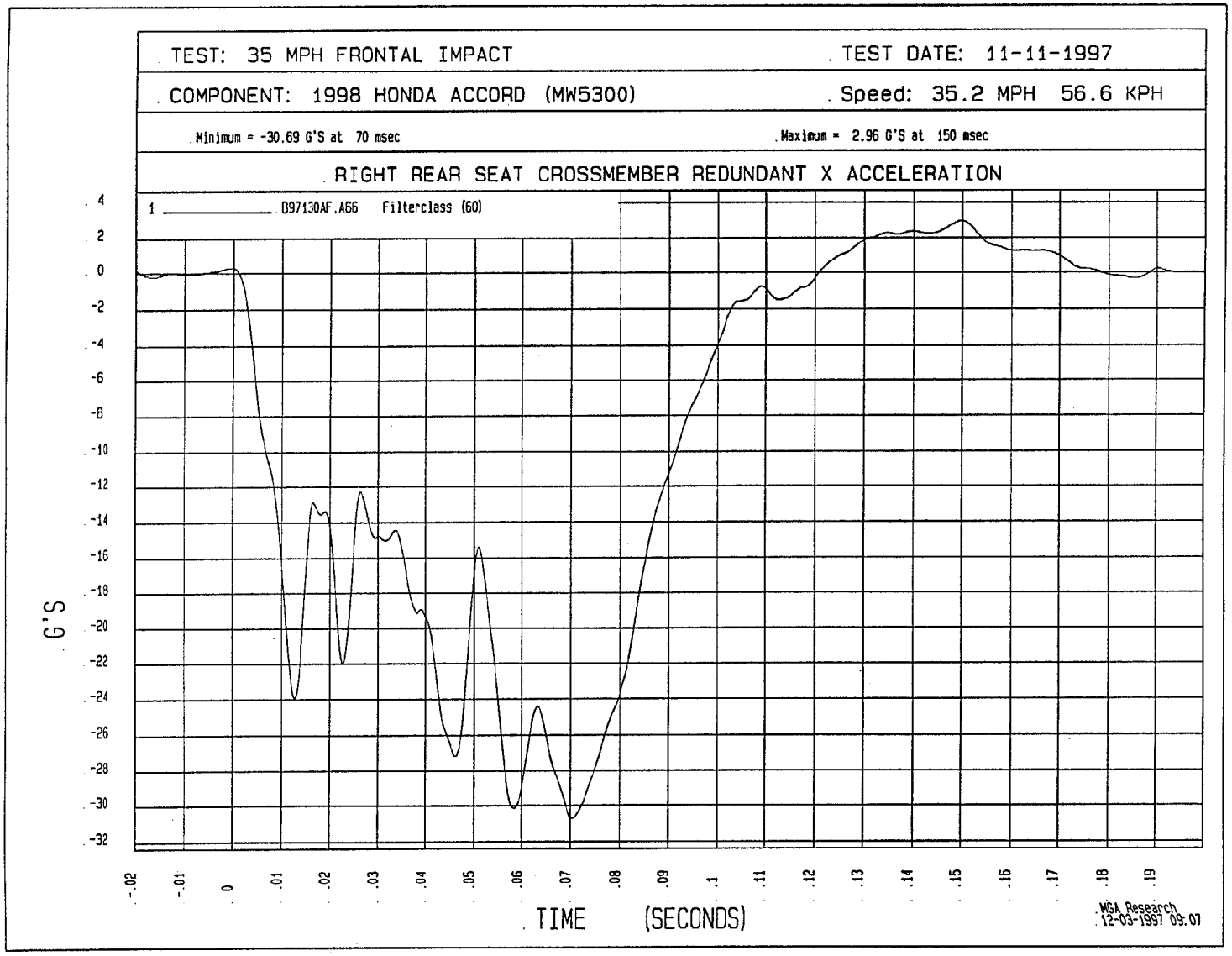

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -9.87 KPH at 200 msec
Maximum = 56.30 KPH at -18 msec
INSTRUMENT PANEL X VELOCITY
1 B97130AI.V10 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 17:18

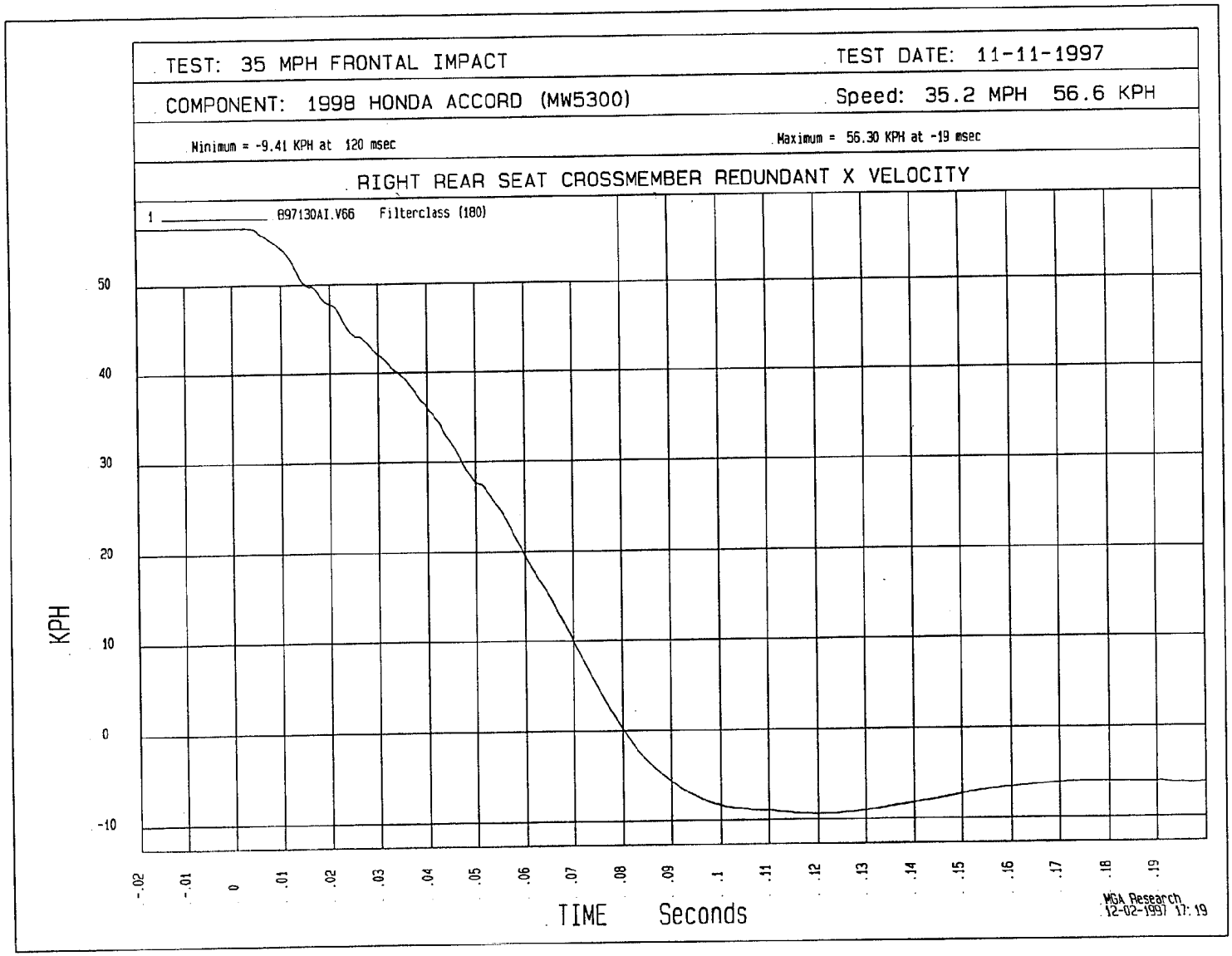

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MM at -20 msec
Maximum = 1032.79 MM at 80 msec
INSTRUMENT PANEL X DISPLACEMENT
1 B97130AI.D10 Filterclass (180)
MM
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:45

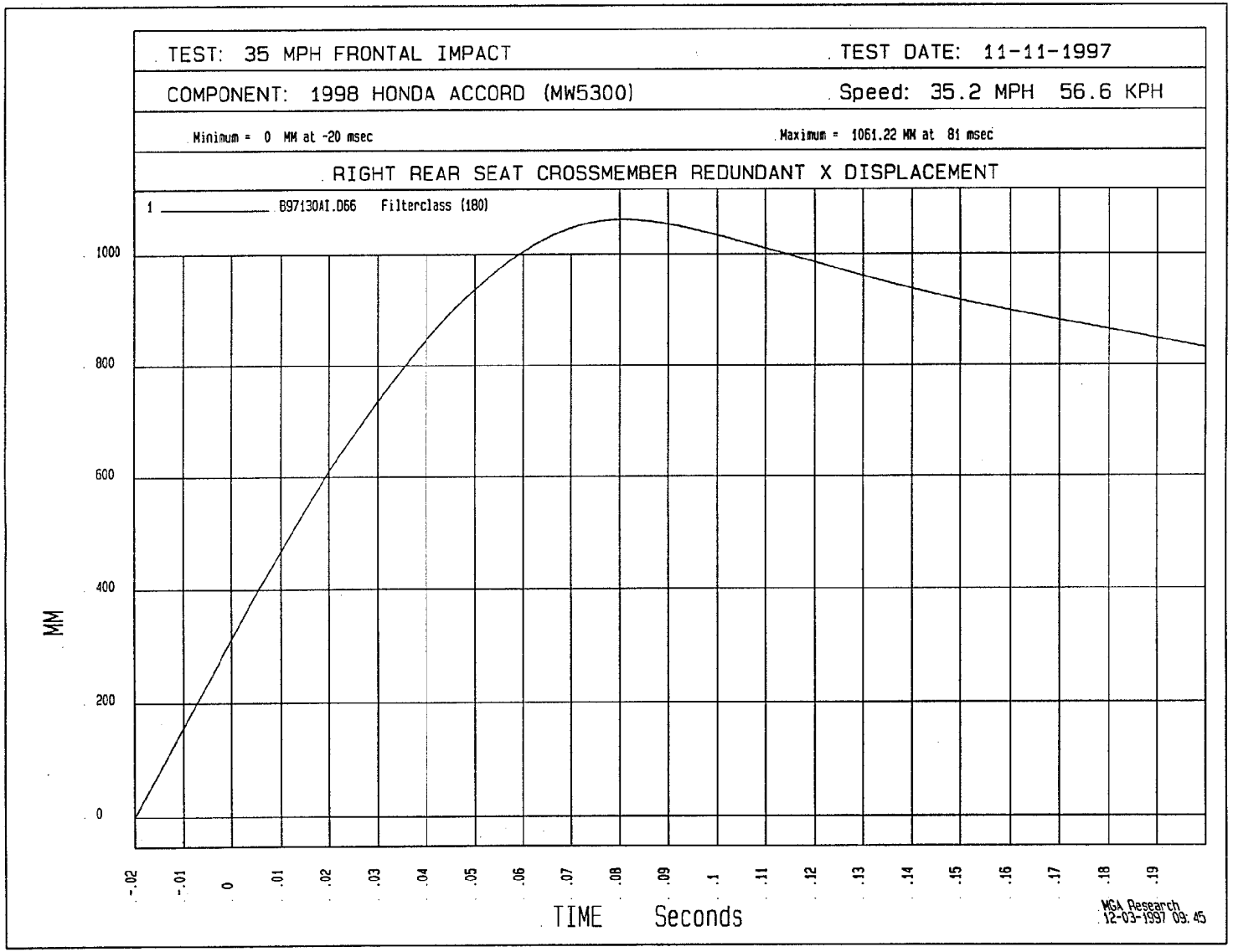

TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -33.77 G'S at 59 msec
Maximum = 2.33 G'S at 152 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION
1 B97130AF.A92 Filterclass (60)
G's
TIME (SECONDS)
MGA Research
12-03-1997 09: 06


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -8.97 KPH at 123 msec
Maximum = 56.60 KPH at -19 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY
1 B97130AI.V92 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:45


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MM at -20 msec
Maximum = 1064.01 MM at 81 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT
1 897130AI.D92 Filterclass (180)
MM
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:46


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -30.69 G'S at 70 msec
Maximum = 2.96 G'S at 150 msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION
1 B97130AF.A66 Filterclass (60)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-03-1997 09:07


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = -9.41 KPH at 120 msec
Maximum = 56.30 KPH at -19 msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY
1 B9713DAI.V66 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1997 17:19


TEST: 35 MPH FRONTAL IMPACT
TEST DATE: 11-11-1997
COMPONENT: 1998 HONDA ACCORD (MW5300)
Speed: 35.2 MPH 56.6 KPH
Minimum = 0 MM at -20 msec
Maximum = 1061.22 MM at 81 msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT
1 B97130AI.D66 Filterclass (180)
MM
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-03-1997 09:45

# APPENDIX C

## Dummy Configuration & Performance Verification Data

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 066 DUMMY CALIBRATION BY: Tim Michnay

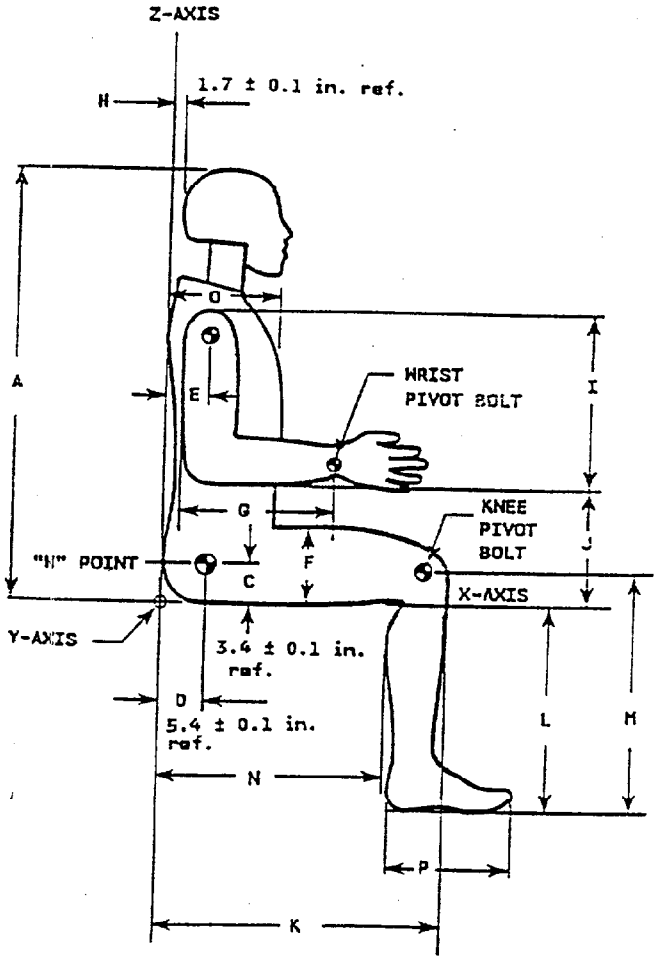
I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: November 10, 1997

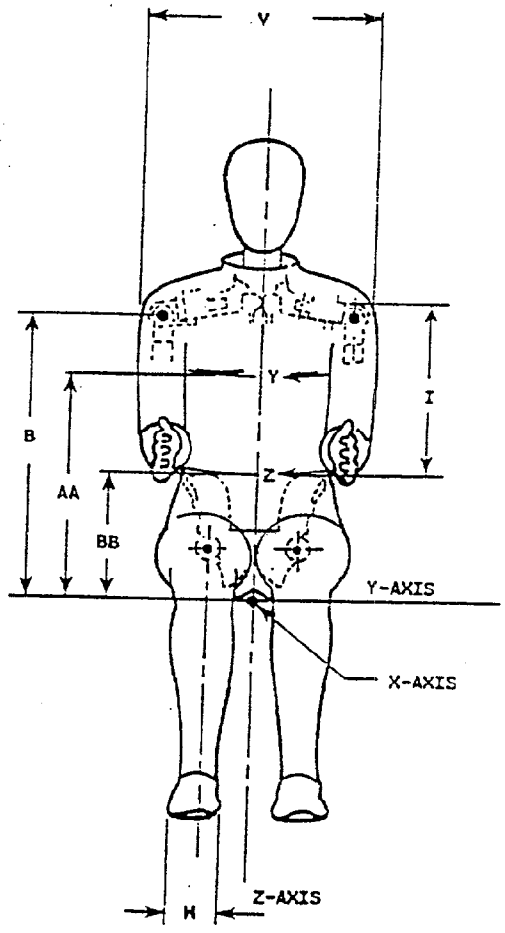
| DESCRIPTION | SPECIFICATION (Inches) | ACTUAL MEASUREMENT (inches) |
|---|---|---|
| A - Total Sitting Height | 34.6 - 35.0 | 34.8 |
| B - Shoulder Pivot Height | 19.9 - 20.5 | 20.5 |
| C - "H" Point Height | 3.3 - 3.5 | 3.5 |
| D - "H" Point from Seat Back | 5.3 - 5.5 | 5.5 |
| E - Shoulder Pivot From Backline | 3.3 - 3.7 | 3.5 |
| F - Thigh Clearance | 5.5 - 6.1 | 6.1 |
| G - Back of Elbow to Wrist Pivot | 11.4 - 12.0 | 11.5 |
| H - Skull Cap Skin to Backline | 1.6 - 1.8 | 1.7 |
| I - Shoulder Elbow Length | 13.0 - 13.6 | 13.0 |
| J - Elbow Rest Height | 7.5 - 8.3 | 8.0 |
| K - Buttock Knee Length | 22.8 - 23.8 | 23.5 |
| L - Popliteal Height | 16.9 - 17.9 | 17.0 |
| M - Knee Pivot Height | 19.1 - 19.9 | 19.5 |
| N - Buttock Popliteal Length | 17.8 - 18.8 | 18.5 |
| O - Chest Depth at 3rd Rib | 8.4 - 9.0 | 8.8 |
| P - Foot Length | 9.9 - 10.5 | 10.3 |
| V - Shoulder Breadth | 16.6 - 17.2 | 16.8 |
| W - Foot Breadth | 3.5 - 4.2 | 4.0 |
| Y - Chest Circumference | 38.2 - 39.4 | 39.0 |
| Z - Waist Circumference | 32.9 - 34.1 | 33.5 |

Note: (See next page for external dimensions)

HYBRID III EXTERNAL DIMENSIONS




SIDE VIEW




FRONT VIEW

Note: Figure is referenced to the erect seated position. The curved lumbar does not allow the hybrid III to be positioned in a perfect erect attitude.

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET

DUMMY NO.: 066 DUMMY CALIBRATION BY: Tim Michnay

VERIFICATION DATE: November 2, 1997

VERIFICATION LABORATORY TEMPERATURE (66° - 78°): 70°

1.0 HEAD DROP TEST

| | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Peak Resultant Acceleration | 225 - 275 G | 260.5 |
| Peak Lateral Acceleration | 15 G. MAX | 5 |
| Is Acceleration Curve Unimodel | within 10% of peak | Yes |

2.0 NECK FLEXION TEST

| | | SPECIFICATION | MEASUREMENT |
|---|---|---|---|
| Pendulum Speed | | 22.6 - 23.4 FT/SEC | 22.9 |
| Pendulum Deceleration | 10 MS | 22.50 - 27.50 G | 23.44 |
| | 20 MS | 17.60 - 22.60 G | 20.06 |
| | 30 MS | 12.50 - 18.50 G | 13.12 |
| Max. Pendulum G Above 30 MS | | 29.0 G MAX | 13.4 |
| Deceleration - Time Curve Decay Time to 5 G | | 34 - 42 MS | 39 |
| D Plane Rotation | MAX | 64 - 78 DEG. | 75 |
| | TIME | 57 - 64 MS | 59 |
| Rotation Angle - Time Curve Decay Time to Zero | | 113 - 128 MS | 116 |
| Moment About Occipital Condyle | MIN. | 65 - 80 FT.LBS | 70 |
| | TIME | 47 - 58 MS | 53 |
| Positive Moment - Time Curve Decay Time to Zero | | 97 - 107 MS | 105 |

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

3.0 NECK EXTENSION TEST

| | | SPECIFICATION | MEASUREMENT |
|---|---|---|---|
| Pendulum Speed | | 19.50 - 20.30 F/S | 20.68 |
| Pendulum Deceleration | 10 MS | 17.20 - 21.20 G | 19.69 |
| | 20 MS | 14.00 - 19.00 G | 17.05 |
| | 30 MS | 11.00 - 16.00 G | 12.01 |
| Max. Pendulum G Above 30 MS | | 22 G Max | 13 |
| Deceleration - Time Curve Decay Time to 5 G | | 38 - 46 MS | 41 |
| D Plane Rotation | MAX | 81 - 106 DEG. | 101 |
| | TIME | 72 - 82 MS | 73 |
| Rotation Angle - Time Curve Decay Time to Zero | | 147 - 174 MS | 155 |
| Moment About Occipital Condyle | MIN. | -59.0/-39.0 FT LBS | -51.4 |
| | TIME | 65 - 79 MS | 70 |
| Positive Moment - Time Curve Decay Time to Zero | | 120 - 148 MS | 138 |

4.0 CHEST IMPACT TESTS

| | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Probe Speed | 21.6 to 22.4 F/S | 30.0 |
| Peak Deflection | 2.50 to 2.86 IN. | 2.55 |
| Peak Resistive Force | 1160 to 1325 LBS. | 1240 |
| Internal Hysteresis | 69 to 85% | 71% |

5.0 KNEE IMPACT TESTS

| LEFT KNEE | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Probe Speed | 6.8 to 7.0 F/S | 7.0 |
| Maximum Force | 1060 - 1300 LBS. | 1182 |

| RIGHT KNEE | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Probe Speed | 6.8 to 7.0 F/S | 7.0 |
| Maximum Force | 1060 - 1300 LBS. | 1262 |

6.0 HIP JOINT-FEMUR FLEXION TEST

| LEFT KNEE | SPECIFICATION | MEASUREMENT | |
|---|---|---|---|
| | | LEFT | RIGHT |
| Relative Humidity | 10 - 70% | 27% | |
| Rotation Rate | 5-10 DEG/SEC. | Yes | Yes |
| 70 FT-LBF | 30 DEGREE MAX. ROTATION | 44 | 44 |
| 150 FT-LBF | 40-50 DEGREE MAX. ROTATION | 44 | 44 |

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 065 DUMMY CALIBRATION BY: Tim Michnay

I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: November 2, 1997

| DESCRIPTION | SPECIFICATION (inches) | ACTUAL MEASUREMENT (inches) |
|---|---|---|
| A - Total Sitting Height | 34.6 - 35.0 | 34.9 |
| B - Shoulder Pivot Height | 19.9 - 20.5 | 20.5 |
| C - "H" Point Height | 3.3 - 3.5 | 3.5 |
| D - "H" Point from Seat Back | 5.3 - 5.5 | 5.5 |
| E - Shoulder Pivot From Backline | 3.3 - 3.7 | 3.5 |
| F - Thigh Clearance | 5.5 - 6.1 | 6.1 |
| G - Back of Elbow to Wrist Pivot | 11.4 - 12.0 | 11.5 |
| H - Skull Cap Skin to Backline | 1.6 - 1.8 | 1.7 |
| I - Shoulder - Elbow Length | 13.0 - 13.6 | 13.0 |
| J - Elbow Rest Height | 7.5 - 8.3 | 8.0 |
| K - Buttock to Knee Length | 22.8 - 23.8 | 23.5 |
| L - Popliteal Height | 16.9 - 17.9 | 17.0 |
| M - Knee Pivot Height | 19.1 - 19.9 | 19.5 |
| N - Buttock Popliteal Length | 17.8 - 18.8 | 18.5 |
| O - Chest Depth at 3rd Rib | 8.4 - 9.0 | 8.8 |
| P - Foot Length | 9.9 - 10.5 | 10.3 |
| V - Shoulder Breadth | 16.6 - 17.2 | 16.8 |
| W - Foot Breadth | 3.6 - 4.2 | 4.0 |
| Y - Chest Circumference | 38.2 - 39.4 | 39.0 |
| Z - Waist Circumference | 32.9 - 34.1 | 33.5 |

Note: (See next page C-2 for external dimensions)

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

DUMMY NO.: 065 DUMMY CALIBRATION BY: Tim Michnay

VERIFICATION DATE: November 2, 1997

VERIFICATION LABORATORY TEMPERATURE (66° - 78°): 70°

1.0 HEAD DROP TEST

| | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Peak Resultant Acceleration | 225 - 275 G | 260 |
| Peak Lateral Acceleration | 15 G. MAX | -5 |
| Is Acceleration Curve Unimodal | within 10% of peak | Yes |

2.0 NECK FLEXION TEST

| | | SPECIFICATION | MEASUREMENT |
|---|---|---|---|
| Pendulum Speed | | 22.6 - 23.4 FT/SEC | 22.9 |
| Pendulum Deceleration | 10 MS | 22.50 - 27.50 G | 23.5 |
| | 20 MS | 17.60 - 22.60 G | 21.03 |
| | 30 MS | 12.50 - 18.50 G | 15.16 |
| Max. Pendulum G Above 30 MS | | 29.0 G MAX | 15.1 |
| Deceleration - Time Curve Decay Time to 5 G | | 34 - 42 MS | 37 |
| D Plane Rotation | MAX | 64 - 78 DEG. | 77 |
| | TIME | 57 - 64 MS | 59 |
| Rotation Angle - Time Curve Decay Time to Zero | | 113 - 128 MS | 115 |
| Moment About Occipital Condyle | MIN. | 65 - 80 FT.LBS | 71 |
| | TIME | 47 - 58 MS | 50 |
| Positive Moment - Time Curve Decay Time to Zero | | 97 - 107 MS | 104 |

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

3.0 NECK EXTENSION TEST

| | | SPECIFICATION | MEASUREMENT |
|---|---|---|---|
| Pendulum Speed | | 19.50 - 20.30 F/S | 20.04 |
| Pendulum Deceleration | 10 MS | 17.20 - 21.20 G | 19.38 |
| | 20 MS | 14.00 - 19.00 G | 17.23 |
| | 30 MS | 11.00 - 16.00 G | 12.74 |
| Max. Pendulum G Above 30 MS | | 22 G Max | 13.00 |
| Deceleration - Time Curve Decay Time to 5 G | | 38 - 46 MS | 40 |
| D Plane Rotation | MAX | 81 - 106 DEG. | 100 |
| | TIME | 72 - 82 MS | 77 |
| Rotation Angle - Time Curve Decay Time to Zero | | 147 - 174 MS | 155 |
| Moment About Occipital Condyle | MIN. | -59.0/-39.0 FT LBS | -53 |
| | TIME | 65 - 79 MS | 71 |
| Positive Moment - Time Curve Decay Time to Zero | | 120 - 148 MS | 140 |

4.0 CHEST IMPACT TESTS

| | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Probe Speed | 21.6 to 22.4 F/S | 22.0 |
| Peak Deflection | 2.50 to 2.86 IN. | 2.65 |
| Peak Resistive Force | 1160 to 1325 LBS. | 1269 |
| Internal Hysteresis | 69 to 85% | 70% |

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

5.0 KNEE IMPACT TESTS

| LEFT KNEE | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Probe Speed | 6.8 to 7.0 F/S | 7.0 |
| Maximum Force | 1060 - 1300 LBS. | 1125 |

| RIGHT KNEE | SPECIFICATION | MEASUREMENT |
|---|---|---|
| Probe Speed | 6.8 to 7.0 F/S | 7.0 |
| Maximum Force | 1060 - 1300 LBS. | 1194 |

6.0 HIP JOINT-FEMUR FLEXION TEST

| LEFT KNEE | SPECIFICATION | MEASUREMENT | |
|---|---|---|---|
| | | LEFT | RIGHT |
| Relative Humidity | 10 - 70% | 27% | |
| Rotation Rate | 5-10 DEG/SEC. | Yes | Yes |
| 70 FT-LBF | 30 DEGREE MAX. ROTATION | 53 | 50 |
| 150 FT-LBF | 40-50 DEGREE MAX. ROTATION | 44 | 42 |

# APPENDIX D

Dummy, Vehicle and Laboratory Calibration Data

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 066

| | DRIVER | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Head X | ACCY6 | Endevco | October 28, 1997 |
| Head Y | ACCH1 | Endevco | October 28, 1997 |
| Head Z | AAMW5 | Endevco | October 28, 1997 |
| Head X Redundant | AJ9D2 | Endevco | October 28, 1997 |
| Head Y Redundant | AH1E2 | Endevco | October 28, 1997 |
| Head Z Redundant | AJ7K3 | Endevco | October 28, 1997 |
| Chest X | ACCY1 | Endevco | October 29, 1997 |
| Chest Y | ACCC8 | Endevco | October 29, 1997 |
| Chest Z | ACCT7 | Endevco | October 29, 1997 |
| Chest X Redundant | AJ9D4 | Endevco | October 29, 1997 |
| Chest Y Redundant | AJ9F3 | Endevco | October 29, 1997 |
| Chest Z Redundant | AJ9D9 | Endevco | October 29, 1997 |
| Right Femur Load Cell | 261 | Denton | October 31, 1997 |
| Left Femur Load Cell | 262 | Denton | October 31, 1997 |
| Pelvis X | ALDY8 | Endevco | October 28, 1997 |
| Pelvis Y | ALEK9 | Endevco | October 28, 1997 |
| Pelvis Z | ALE80 | Endevco | October 28, 1997 |

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 066

| | DRIVER | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Upper Right Tibia Moment X | 040 | Denton | September 23, 1997 |
| Upper Right Tibia Moment Y | 040 | Denton | September 23, 1997 |
| Lower Right Tibia Moment Y | 034 | Denton | September 26, 1997 |
| Lower Right Tibia Force X | 034 | Denton | September 26, 1997 |
| Lower Right Tibia Force Z | 034 | Denton | September 26, 1997 |
| Upper Left Tibia Moment X | 023 | Denton | September 26, 1997 |
| Upper Left Tibia Moment Y | 023 | Denton | September 26, 1997 |
| Lower Left Tibia Moment Y | 019 | Denton | September 26, 1997 |
| Lower Left Tibia Force X | 019 | Denton | September 26, 1997 |
| Lower Left Tibia Force Z | 019 | Denton | September 26, 1997 |
| Right Foot Ball Z | J13652 | Endevco | October 30, 1997 |
| Right Foot Heel X | J14006 | Endevco | October 30, 1997 |
| Right Toe Z | J13628 | Endevco | October 30, 1997 |
| Left Foot Ball Z | J13650 | Endevco | October 30, 1997 |
| Left Foot Heel X | J13424 | Endevco | October 30, 1997 |
| Left Foot Heel Z | J14007 | Endevco | October 30, 1997 |

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 066

| | DRIVER | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Neck Load Cell X | 443 | Denton | September 22, 1997 |
| Neck Load Cell Y | 443 | Denton | September 22, 1997 |
| Neck Load Cell Z | 443 | Denton | September 22, 1997 |
| Neck Moment X | 443 | Denton | September 22, 1997 |
| Neck Moment Y | 443 | Denton | September 22, 1997 |
| Neck Moment Z | 443 | Denton | September 22, 1997 |
| Chest Deflection Gauge | 066 | Servo | October 30, 1997 |
| Lap Belt Load Cell | 212 | GSE | June 12, 1997 |
| Torso Belt Load Cell | 657 | GSE | June 3, 1997 |

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 065

| | PASSENGER | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Head X | AAMN8 | Endevco | October 28, 1997 |
| Head Y | ACC61 | Endevco | October 28, 1997 |
| Head Z | ACCW9 | Endevco | October 28, 1997 |
| Head X Redundant | AJ621 | Endevco | October 28, 1997 |
| Head Y Redundant | AJ619 | Endevco | October 28, 1997 |
| Head Z Redundant | AHY54 | Endevco | October 28, 1997 |
| Chest X | ACC78 | Endevco | October 28, 1997 |
| Chest Y | ACCE6 | Endevco | October 28, 1997 |
| Chest Z | ACCY3 | Endevco | October 28, 1997 |
| Chest X Redundant | AJ9J7 | Endevco | October 28, 1997 |
| Chest Y Redundant | AJ7A2 | Endevco | October 28, 1997 |
| Chest Z Redundant | AJ819 | Endevco | October 28, 1997 |
| Right Femur Load Cell | 259 | Denton | October 31, 1997 |
| Left Femur Load Cell | 260 | Denton | October 31, 1997 |
| Pelvis X | ALE80 | Endevco | October 28, 1997 |
| Pelvis Y | ALB87 | Endevco | October 28, 1997 |
| Pelvis Z | AHRP5 | Endevco | October 28, 1997 |

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 065

| | PASSENGER | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Neck Load Cell X | 442 | Denton | September 22, 1997 |
| Neck Load Cell Y | 442 | Denton | September 22, 1997 |
| Neck Load Cell Z | 442 | Denton | September 22, 1997 |
| Neck Moment X | 442 | Denton | September 22, 1997 |
| Neck Moment Y | 442 | Denton | September 22, 1997 |
| Neck Moment Z | 442 | Denton | September 22, 1997 |
| Chest Deflection Gauge | 065 | Servo | October 30, 1997 |
| Lap Belt Load Cell | 211 | GSE | June 12, 1997 |
| Torso Belt Load Cell | 624 | Lebow | June 12, 1997 |

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 065

| | PASSENGER | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Upper Right Tibia Moment X | 036 | Denton | September 23, 1997 |
| Upper Right Tibia Moment Y | 036 | Denton | September 23, 1997 |
| Lower Right Tibia Moment Y | 040 | Denton | September 26, 1997 |
| Lower Right Tibia Force X | 040 | Denton | September 26, 1997 |
| Lower Right Tibia Force Z | 040 | Denton | September 26, 1997 |
| Upper Left Tibia Moment X | 039 | Denton | September 23, 1997 |
| Upper Left Tibia Moment Y | 039 | Denton | September 23, 1997 |
| Lower Left Tibia Moment Y | 033 | Denton | September 23, 1997 |
| Lower Left Tibia Force X | 033 | Denton | September 26, 1997 |
| Lower Left Tibia Force Z | 033 | Denton | September 26, 1997 |
| Right Foot Ball Z | J11625 | Endevco | October 28, 1997 |
| Right Foot Heel X | J10730 | Endevco | October 28, 1997 |
| Right Foot Heel Z | J11014 | Endevco | October 28, 1997 |
| Left Foot Ball Z | J11784 | Endevco | October 28, 1997 |
| Left Foot Heel X | J11047 | Endevco | October 28, 1997 |
| Left Foot Heel Z | J11046 | Endevco | October 28, 1997 |

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

| | VEHICLE ACCELEROMETERS | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Left Rear Seat Crossmember X | H02-J05 | Entran | August 6, 1997 |
| Right Rear Seat Crossmember X | G08-B07 | Entran | July 11, 1997 |
| Top of Engine Block X | G01-J14 | Entran | August 7, 1997 |
| Bottom of Engine X | G01-J10 | Entran | August 7, 1997 |
| Left Brake Caliper X | D05-R05 | Entran | July 2, 1997 |
| Right Brake Caliper X | J06-022 | Entran | June 12, 1997 |
| Instrument Panel X | I25-J10 | Entran | August 7, 1997 |
| Redundant Left Rear Seat Crossmember X | F20-G03 | Entran | August 7, 1997 |
| Redundant Right Rear Seat Crossmember X | E10-F14 | Entran | August 7, 1997 |

| | LABORATORY INSTRUMENTS | | |
|---|---|---|---|
| | SERIAL NO. | MANUFACTURER | CALIBRATION DATE |
| Neck Bending Pendulum Accelerometer | C12871 | Endevco | October 27, 1997 |
| Neck Bending Head Rotary Potentiometer | 018 | Spectrol | August 7, 1997 |
| Neck Bending Pendulum Rotary Potentiometer | 019 | Spectrol | August 7, 1997 |
| Chest Probe Accelerometer | J13780 | Endevco | September 15, 1997 |
| Knee Impact Accelerometer | J13530 | Endevco | June 4, 1997 |

# APPENDIX E

## Vehicle Owner's Occupant Restraint System Instructions

You'll find many safety recommendations throughout this section, and throughout this manual. Following are a few recommendations we consider most important.

**Always Wear Your Seat Belt**
A seat belt is your best protection in all types of collisions. Airbags supplement seat belts, but airbags are designed to inflate only in a severe frontal collision. So even with airbags, make sure you and your passengers always wear your seat belts, and wear them properly. (See page 12 .)

**Restrain All Children**
Children are safest when they are properly restrained in the back seat, not the front seat. A child who is too small for a seat belt must be properly restrained in a child safety seat. (See page 17 .)

**Be Aware of Airbag Hazards**
While airbags save lives, they can cause serious or fatal injuries to occupants who sit too close to them, or are not properly restrained. Infants, young children, and short adults are at the greatest risk. Be sure to follow all instructions and warnings in this manual. (See page 5 .)

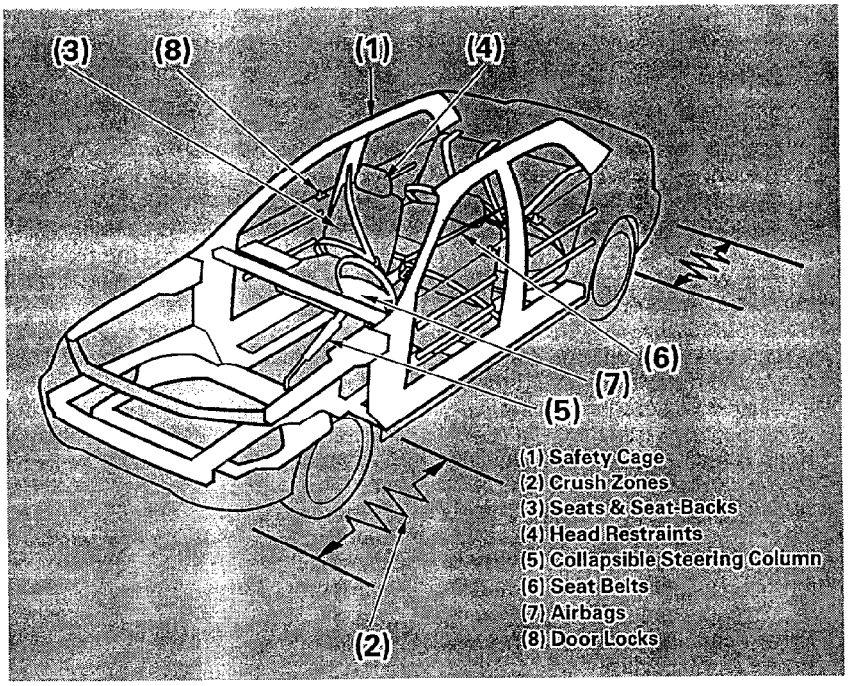
**Don't Drink and Drive**
Alcohol and driving don't mix. Even one drink can reduce your ability to respond to changing conditions. Reaction time gets worse with every additional drink. So don't drink and drive, and don't let your friends drink and drive, either.

**Control Your Speed**
Excessive speed is a major factor in crash injuries and deaths, Generally, the higher the speed the greater the risk, but serious accidents can also occur at lower speeds. Never drive faster than is safe for current conditions, regardless of the maximum speed posted.

**Keep Your Vehicle in Safe Condition**
Having a tire blowout or a mechanical failure can be extremely hazardous. To reduce the possibility of such problems, check your tire pressures and condition frequently, and perform all regularly scheduled maintenance. (See page 196 .)



## Your Vehicle's Safety Features




Your vehicle is equipped with many features that work together to protect you and your passengers during a crash.

Some safety features do not require any action on your part. These include a strong steel framework that forms a safety cage around the passenger compartment; front and rear crush zones that are designed to crumple and absorb energy during a crash; and a collapsible steering column.

These safety features are designed to reduce the severity of injuries in a crash. However, you and your passengers can't take full advantage of these safety features unless you remain sitting in a proper position and ***always wear your seat belts properly.*** In fact, some safety features can contribute to injuries if they are not used properly.

### Seat Belts

For your safety, and the safety of your passengers, your vehicle is equipped with seat belts in all seating positions.

Your seat belt system also includes a light on the instrument panel to remind you and your passengers to fasten your seat belts.

***Why Wear Seat Belts***

Seat belts are the single most effective safety device for adults and larger children. (Infants and smaller children must be properly restrained in child seats.)

Not wearing a seat belt properly increases the chance of serious injury or death in a crash, even though your vehicle has airbags.

In addition, most states and all Canadian provinces require you to wear seat belts.

**⚠WARNING**

Not wearing a seat belt properly increases the chance of serious injury or death in a crash, even if you have airbags.

Be sure you and your passengers always wear seat belts and wear them properly.

When properly worn, seat belts:

- Keep you connected to the vehicle so you can take advantage of the vehicle's built-in safety features.
- Help protect you in almost every type of crash, including side and rear impacts and rollovers. (Your airbags can only be helpful in severe frontal collisions.)
- Help keep you from being thrown against the inside of the car and against other occupants.
- Keep you from being thrown outside of the car.
- Help keep you in a good position should the airbags ever deploy. A good position reduces the risk of injury from an inflating airbag, and allows you to get the best advantage from the airbag.

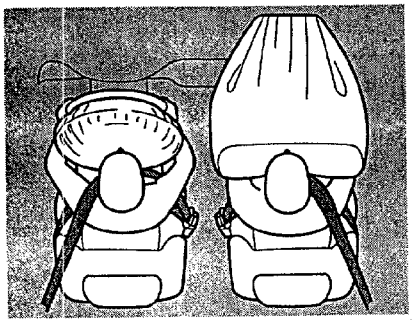
Of course, seat belts cannot completely protect you in every crash. But in most cases, seat belts can reduce your risk of serious injury.

***What you should do:*** Always wear your seat belt, and make sure you wear it properly.





### Airbags



Your vehicle has a Supplemental Restraint System (SRS) with frontal airbags to help protect the driver and a front seat passenger.

SRS This system also includes an indicator light on the instrument panel to alert you to a possible problem with the system.

Following are the most important things you need to know about your airbags.

- ***Airbags do not replace seat belts.*** They supplement seat belts by providing extra protection for the heads and chests of front seat occupants.
- ***Airbags offer no protection in side impacts, rear impacts, rollovers, or minor or moderate collisions.*** Airbags are designed to deploy only during a severe frontal collision (such as a 25 mph [40 km/h] crash into a parked car of similar size and weight).
- ***Airbags can pose serious hazards.*** To do their job, airbags must inflate with tremendous force and speed. So while airbags save lives, they can cause serious injuries to adults and larger children who are not wearing seat belts, are not wearing them properly, are sitting too close to the airbag, or are not sitting in a good position. Infants and small children are at an even greater risk of injury or death.

***What you should do:*** Always wear your seat belt properly and sit upright and as far back as possible from the steering wheel or dashboard.

**Seats & Seat-Backs**
Your vehicle seats are designed to keep you in a comfortable, upright position so you can take full advantage of the protection offered by seat belts and the seats' energy absorbing materials.

How you adjust your seats and seat-backs can also affect your safety. For example, sitting too close to the steering wheel or dashboard increases your risk of being injured by striking the inside of the vehicle or being injured by an inflating airbag.

Reclining a seat-back too far makes your seat belt less effective and increases your chance of sliding under the seat belt and being seriously injured in a crash.

***What you should do:*** Move the front seats as far back as possible, and keep adjustable seat-backs in an upright position whenever the vehicle is moving.

**Head Restraints**
Head restraints can help protect you from whiplash and other injuries. For maximum protection, the back of your head should rest against the center of the head restraint.

**Door Locks**
Keeping your doors locked reduces the chance of being thrown out of the vehicle during a crash. It also helps prevent occupants from accidentally opening a door and falling out, and outsiders from unexpectedly opening your doors.



Your Vehicle's Safety Features

**Pre-Drive Safety Checklist**
To make sure you and your passengers get the maximum protection from your vehicle's safety features, check the following each time before you drive away:

- All adults, and children who have outgrown child safety seats, are wearing their seat belts and wearing them properly (see page 12 ).
- Any infant or small child is properly restrained in a child seat in the back seat (see page 17 ).
- Front seat occupants are sitting as far back as possible from the steering wheel and dashboard (see page 10 ).
- Seat-backs are upright (see page 11 ).
- Head restraints are properly adjusted (see page 12 ).
- All doors are closed and locked (see page 10 ).
- All cargo is properly stored or secured (see page 163 ).

The rest of this section gives more detailed information about how you can maximize your safety.

Remember, however, that no safety system can prevent all injuries or deaths that can occur in severe crashes, even when seat belts are properly worn and the airbags deploy.

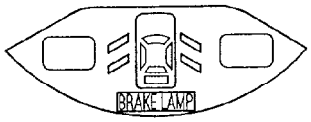
### Introduction

The following pages provide instructions on how to properly protect the driver and other adult occupants.

These instructions also apply to children who have outgrown child seats and are large enough to wear lap/shoulder belts. (See page 32 for important additional guidelines on how to properly protect larger children.)

### 1. Close and Lock the Doors

After everyone has entered the vehicle, be sure the doors are closed and locked.



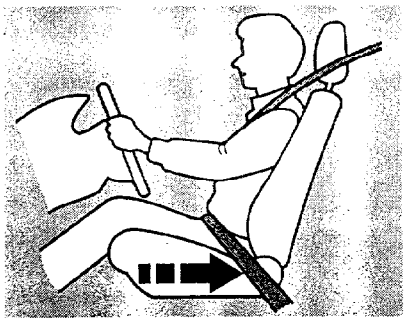

Your vehicle has a door monitor light on the instrument panel to indicate when a specific door is not tightly closed.

For safety, locking the doors reduces the chance of a passenger, especially a child, opening a door while the vehicle is moving and accidentally falling out. It also reduces the chance of someone being thrown out of the vehicle during a crash.

For security, locked doors can prevent an outsider from unexpectedly opening a door when you come to a stop.

See page 70 for how to lock the doors.

### 2. Adjust the Front Seats



Any driver who sits too close to the steering wheel is at risk of being seriously injured or killed by striking the steering wheel or being struck by an inflating airbag during a crash.





To reduce the chance of injury, wear your seat belt properly, sit upright with your back against the seat, and move the seat as far back as possible from the steering wheel while still maintaining full control of the car. Also make sure your front seat passenger moves their seat as far to the rear as possible.

**⚠WARNING**

Sitting too close to an airbag can result in serious injury or death if the airbags inflate.

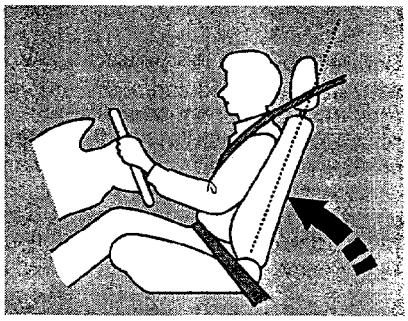
Always sit as far back from the airbags as possible.

Most shorter drivers can get far enough away from the steering wheel and still reach the pedals. However, if you are concerned about sitting too close, we recommend that you investigate whether some type of adaptive equipment may help.

Once your seat is adjusted correctly, rock it forward and back to make sure the seat is locked in position.

See page 82 for how to adjust the front seats.

### 3. Adjust the Seat-Backs



Adjust the driver's seat-back to a comfortable, upright position, leaving ample space between your chest and the airbag cover in the center of the steering wheel. If you sit too close to the steering wheel, you could be injured if the airbag inflates.

A front passenger should also adjust the seat-back to an upright position, as far from the dashboard as possible. If the passenger sits too close to the dashboard, they could be injured if the airbag inflates.

Reclining a seat-back so that the shoulder part of the belt no longer rests against an occupant's chest reduces the protective capability of the belt. It also increases the chance of sliding under the belt and being seriously injured in a crash. The farther a seat-back is reclined, the greater the risk of injury.

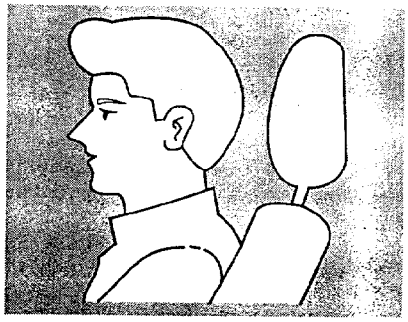
**⚠WARNING**

Reclining the seat-back too far can result in serious injury or death in a crash.

Adjust the seat-back to an upright position and sit well back in the seat.

See page 82 for how to adjust seat-backs.

**4.Adjust the Head Restraints**



Before driving, make sure everyone with an adjustable head restraint has properly positioned the head restraint. The restraint should be positioned so the back of the occupant's head rests against the center of the restraint. A taller person should adjust the restraint as high as possible.

**⚠WARNING**

Improperly positioning head restraints reduces their effectiveness and you can be seriously injured in a crash.

Make sure head restraints are in place and positioned properly before driving.

Properly adjusted head restraints will help protect you from whiplash and other crash injuries.

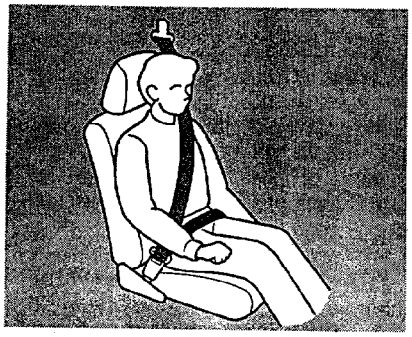
See page 86 for how to adjust the head restraints.

**5.Fasten and Position the Seat Belts**

Insert the latch plate into the buckle, then tug on the belt to make sure the belt is securely latched. Also check that the belt is not twisted, because a twisted belt can cause serious injuries in a crash.







Position the lap part of the belt as low as possible across your hips, then pull up on the shoulder part of the belt so the lap part fits snugly. This lets your strong pelvic bones take the force of a crash and reduces the chance of internal injuries.

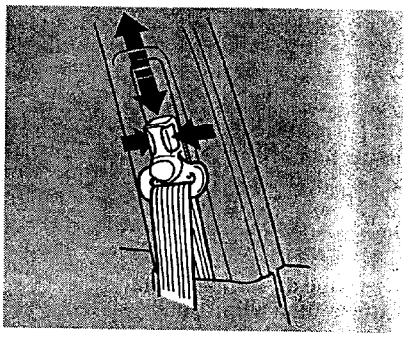
If necessary, pull up on the belt again to remove any slack from the shoulder part, then check that the belt rests across the center of your chest and over your shoulder. This spreads the forces of a crash over the strongest bones in your upper body.

**⚠WARNING**

Improperly positioning the seat belts can cause serious injury or death in a crash.

Make sure all seat belts are properly positioned before driving.

If the seat belt touches or crosses your neck, or if it crosses your arm instead of your shoulder, you need to adjust the seat belt anchor height. An improperly positioned seat belt can cause severe neck injuries if the belt is positioned too high, or serious chest or internal injuries if the belt is positioned too low.



To adjust the height of a front seat belt anchor, squeeze the two release buttons and slide the anchor up or down as needed (it has four positions).

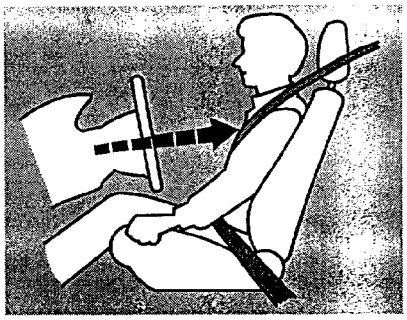
***Never place the shoulder portion of a lap/shoulder belt under your arm or behind your back.*** This could cause very serious injuries in a crash.

*CONTINUED*

***If a Seat Belt Doesn't Work Properly***
If your seat belt does not seem to work as it should, it may not protect you in a crash. Anyone using an inoperative seat belt can be seriously injured or killed. ***No one should sit in a seat with an inoperative seat belt.*** Have your Honda dealer check the belt as soon as possible.

See page 38 for additional information about your seat belt system and how to take care of your belts.

**6. Adjust the Steering Wheel**



Adjust the steering wheel, if needed, so that the wheel points toward your chest, not toward your face.

Pointing the steering wheel toward your face decreases the protective capability of the driver's airbag.

See page 63 for how to adjust the steering wheel.

**7. Maintain a Proper Sitting Position**
After all occupants have adjusted their seats and put on seat belts, it is very important that they continue to sit upright, with their bodies well back in their seats and both feet on the floor, until the car is parked and the engine is off.

Sitting improperly can increase the chance of injury during a crash. For example, if an occupant slouches, lies down, turns sideways, sits forward, leans forward, or puts one or both feet up, their chance of injury during a crash is greatly increased.

In addition, if an occupant is out of position in the front seat, they can be seriously or fatally injured by striking interior parts of the vehicle, or by being struck by an inflating airbag.





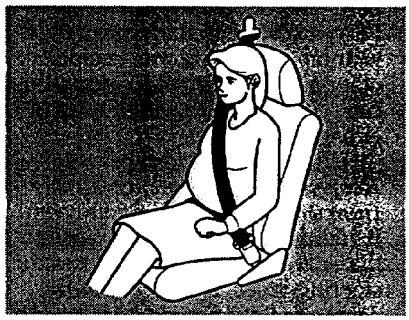
**⚠WARNING**

Sitting improperly or out of position can result in serious injury or death in a crash.

Always sit upright, well back in the seat, with your feet on the floor.

Remember, to get the best protection from your vehicle's airbags and other safety features, you must sit properly and wear your seat belt properly.

**Advice for Pregnant Women**



Because protecting the mother is the best way to protect her unborn child, a pregnant woman should always wear a seat belt whenever she drives or rides in a car.

Remember to keep the lap portion of the belt as low as possible across your hips.

Pregnant women should also sit as far back as possible from the steering wheel or dashboard. This will reduce the risk of injuries to both the mother and her unborn child that can be caused by a crash or an inflating airbag.

Each time you have a checkup, ask your doctor if it's okay for you to drive.

## Protecting Adults

### Additional Safety Precautions

- ***Two people should never use the same seat belt.*** If they do, they could be very seriously injured in a crash.

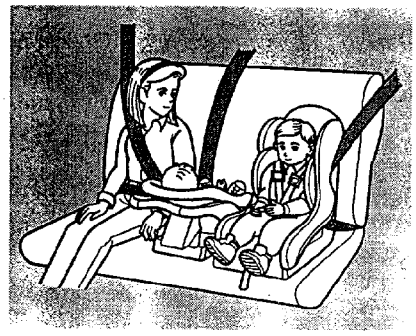
- ***Do not put any accessories on seat belts.*** Devices intended to improve occupant comfort, or reposition the shoulder part of a seat belt, can severely compromise the protective capability of seat belts and increase the chance of serious injury in a crash.

- ***Do not place hard or sharp objects between yourself and an airbag.*** Carrying hard or sharp objects on your lap, or driving with a pipe or other sharp object in your mouth, can result in injuries if your airbags inflate.

- ***Keep your hands and arms away from the airbag covers.*** If your hands or arms are close to the SRS covers in the center of the steering wheel and on top of the dashboard, they could be injured if the airbags inflate.



## Protecting Children



Children depend on adults to protect them. However, despite their best intentions, many parents and other adults do not know how to *properly* protect young passengers.

So if you have children, or if you ever need to drive with a grandchild or other children in your vehicle, be sure to read this section.

**⚠WARNING**

Children who are unrestrained or improperly restrained can be seriously injured or killed in a crash.

Any child too small for a seat belt should be properly restrained in a child seat. Larger children should be properly restrained with a seat belt.

### All Children Must Be Restrained

Each year, many children are injured or killed in vehicle crashes because they are either unrestrained or not properly restrained. In fact, vehicle accidents are the number one cause of death of children ages 12 and under.

To reduce the number of child deaths and injuries, every state and Canadian province requires that infants and children be restrained whenever they ride in a vehicle.

***Any child who is too small to wear a seat belt should be properly restrained in a child seat.*** (See page 21.)

***Larger children should always be restrained with a seat belt.*** (See page 32.)

### Children Should Sit in the Back Seat

According to accident statistics, children of all ages and sizes are safer when they are restrained in the back seat, not the front seat. The National Highway Traffic Safety Administration recommends that all children ages 12 and under ride in the back seat, properly restrained.

In the back seat, children are less likely to be injured by striking hard interior vehicle parts during a collision or hard braking. Also, children cannot be injured by an inflating airbag when they ride in the back.

### The Passenger's Airbag Poses Serious Risks to Children

Airbags have been designed to help protect adults in a severe frontal collision. To do this, the passenger's airbag is quite large, and it inflates with tremendous speed.

*Infants*

***Never put a rear-facing child seat in the front seat of a vehicle equipped with a passenger's airbag.*** If the airbag inflates, it can hit the back of the child seat with enough force to kill or very seriously injure an infant.

*Small Children*

***Placing a forward-facing child seat in the front seat of a vehicle equipped with a passenger's airbag can be hazardous.*** If the vehicle seat is too far forward, or the child's head is thrown forward during a collision, an inflating airbag can strike the child with enough force to kill or very seriously injure a small child.

*Larger Children*

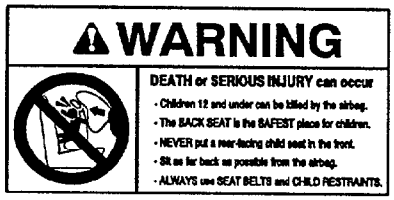
***Children who have outgrown child seats are also at risk of being injured or killed by an inflating passenger airbag.*** Whenever possible, larger children should sit in the back seat, properly restrained by a seat belt. (See page 32 for important information about protecting larger children.)

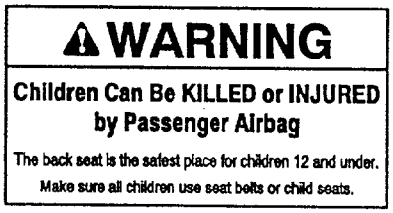




*U.S. Models*

To remind you of the passenger airbag hazards, and that children must be properly restrained in the back seat, your vehicle has warning labels on the dashboard and on the driver's and front passenger's visors. Please read and follow the instructions on these labels.




### If You Must Drive with Several Children

Your vehicle has three seating positions in the back seat where children can be properly restrained.

If you ever have to carry more than three children in your vehicle:

- Place the largest child in the front seat, provided the child is large enough to wear a seat belt properly (see page 32 ).
- Move the vehicle seat as far to the rear as possible (see page 10 ).
- Have the child sit upright and well back in the seat (see page 14 ).
- Make sure the seat belt is properly positioned and secured (see page 12 ).

### If a Child Requires Close Attention

Many parents say they prefer to put an infant or small child in the front passenger seat so they can watch the child, or because the child requires attention.

Placing a child in the front seat exposes them to hazards from the airbag, and paying close attention to a child distracts the driver from the important tasks of driving, creating serious safety risks.

If a child requires physical attention or frequent visual contact, we strongly recommend that another adult ride with the child in the back seat. The back seat is far safer for a child than the front.

### Additional Safety Precautions

- ***Use childproof door locks to prevent children from opening the doors.*** Using this feature will prevent children from opening the doors and accidentally falling out (see page 76 ).

- ***Use the main power window switch to prevent children from opening the rear windows.*** Using this feature will prevent children from playing with the windows, which could expose them to hazards or distract the driver (see page 91 ).

- ***Do not leave children alone in your vehicle.*** Leaving children without adult supervision is illegal in most states and can be very hazardous. For example, infants and small children left in a vehicle on a hot day can die from heatstroke. And children left alone with the key in the ignition can accidentally set the vehicle in motion, possibly injuring themselves or others.





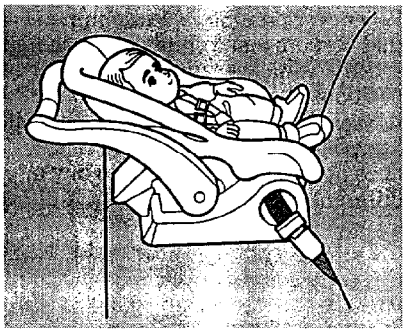
### General Guidelines for Using Child Seats

The following pages give general guidelines for selecting and installing child seats for infants and small children.

***Selecting a Child Seat***

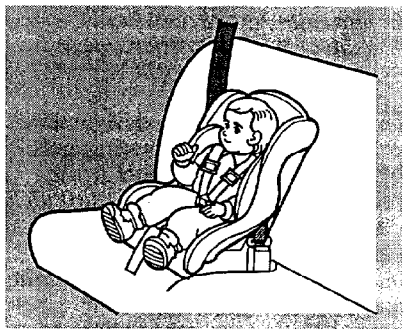
To provide proper protection, a child seat should meet three requirements:

1. ***The child seat should meet safety standards.*** The child seat should meet Federal Motor Vehicle Safety Standard 213 (FMVSS 213) or Canadian Motor Vehicle Safety Standards. Look for the manufacturer's statement of compliance on the box and seat.



2. ***The child seat should be of the proper type and size to fit the child.***

***Infants:*** Children up to about one year old should be restrained in a rear-facing, reclining child seat. Only rear-facing seats provide the support an infant needs to protect their head, neck, and back. See page 25 for additional information on protecting infants.



***Small Children:*** A child who is too large for a rear-facing child seat, and who can sit up without support, should be restrained in a forward-facing child seat. See page 29 for additional information on protecting small children.

*CONTINUED*

*3. The child seat should fit the vehicle seating position (or positions) where it will be used.*

Due to variations in the design of child seats, vehicle seats, and seat belts, all child seats will not fit all vehicle seating positions.

However, Honda is confident that one or more child seat models can fit and be properly installed in all recommended seating positions in your vehicle.

Whenever possible, we recommend that parents test a child seat in the specific vehicle seating position (or positions) where they intend to use the seat before making a purchase. If a previously purchased child seat does not fit, you may need to buy a different one that will fit.

Protecting Children

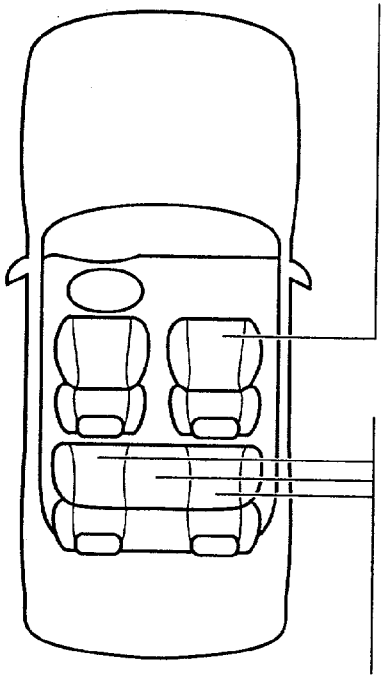
***Placing a Child Seat***
This page briefly summarizes Honda's recommendations on where to place rear-facing and forward-facing child seats in your vehicle.

**Airbags Pose Serious Risks to Children**

The passenger's airbag inflates with enough force to kill or seriously injure an infant in a rear-facing child seat.

A small child in a forward-facing child seat is also at risk. If the vehicle seat is too far forward, or the child's head is thrown forward during a collision, an inflating airbag can kill or seriously injure the child.

If a small child must ride in the front, follow the instructions provided.



***Front Passenger's Seat***
***Infants:*** Never in the front seat, due to the passenger airbag hazard.

***Small children:*** Not recommended, due to the passenger's airbag hazard. If a small child must ride in front, move the vehicle seat to the rear-most position and secure a front-facing child seat with the seat belt. (see page 30 ).

***Back Seats***
***Infants:*** Recommended positions. Secure a rear-facing child seat with the seat belt. (see page 26 ).

***Small children:*** Recommended positions. Secure a front-facing child seat with the seat belt. (see page 30 ).

*CONTINUED*

*Installing a Child Seat*
After selecting a proper child seat, and a good place to install the seat, there are three main steps in installing the seat:

1. ***Secure the child seat to the car with a seat belt.*** All child seats must be secured to the car with the lap part of a lap/shoulder belt. A child whose seat is not properly secured to the car can be endangered in a crash. See pages 26 and 30 for instructions on how to secure child seats in this car.

2. ***Make sure the child seat is firmly secured.*** After installing a child seat, push and pull the seat forward and from side to side to verify that it is secure.

To provide security during normal driving maneuvers, as well as during a collision, we recommend that parents secure a child seat as firmly as possible.

However, a child seat does not need to be "rock solid." In some vehicles or seating positions, it may be difficult to install a child seat so that it does not move at all. Some side-to-side or forward-and-backward movement can be expected and should not reduce the child seat's effectiveness.

If the child seat is not secure, try installing it in a different seating position, or use a different style of child seat that can be firmly secured in the desired seating position.

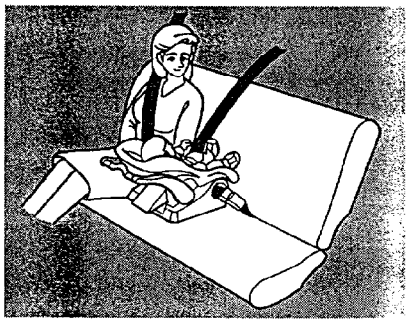
3. ***Secure the child in the child seat.*** Make sure the child is properly strapped in the child seat according to the child seat maker's instructions. A child who is not properly secured in a child seat can be thrown out of the seat and be seriously injured in a crash.

*Storing a Child Seat*
When you are not using a child seat, either remove it and store it in a safe place, or make sure it is properly secured. An unsecured child seat can be thrown around the vehicle during a crash or sudden stop and injure someone.





## Protecting Infants



*Child Seat Type*
To provide proper support for a baby's head, neck and back, infants up to about one year of age must be restrained in a rear-facing child seat.

Two types of seats may be used: a seat designed exclusively for infants, or a convertible seat used in the rear-facing, reclining mode.

**⚠ WARNING**

Placing a rear-facing child seat in the front seat can result in serious injury or death if the airbags inflate.

Always place a rear-facing child seat in the back seat, not the front.

We recommend that an infant stay in a rear-facing child seat as long as possible, until they reach the seat maker's weight or height limit and are able to sit up without support.

*Infant Seat Placement*
In this vehicle, a rear-facing child seat can be placed in any seating position in the back seat, but not in the front seat.

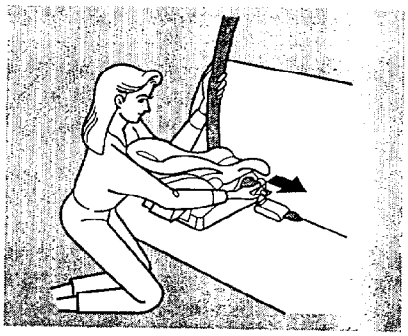
***Never put a rear-facing child seat in the front seat.*** If the passenger's airbag inflates, it can hit the back of the child seat with enough force to kill or seriously injure an infant. If an infant must be closely watched, we recommend that another adult sit in the back seat with the baby.

***Do not put a rear-facing child seat in a forward-facing position.*** If an infant faces forward, they could be very seriously injured during a frontal collision.

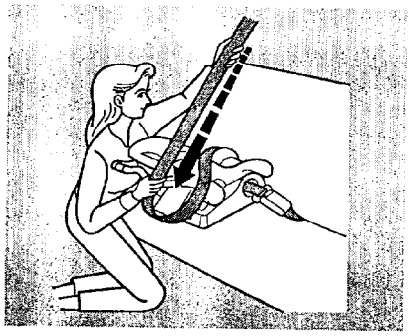
*CONTINUED*

*Infant Seat Installation*
The lap/shoulder belts in the back seats have a locking mechanism that must be activated to secure a child seat.

The following pages provide instructions on how to secure a rear-facing child seat with this type of seat belt.



1. With the child seat in the desired back seating position, route the belt through the child seat according to the seat maker's instructions, then insert the latch plate into the buckle.

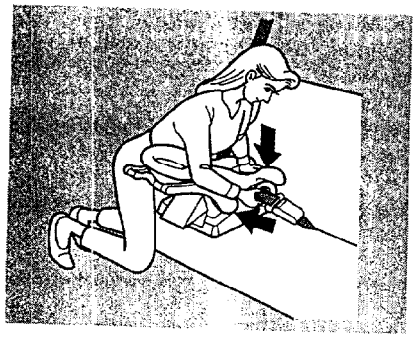


2. To activate the lockable retractor, slowly pull the shoulder part of the belt all the way out until it stops, then let the belt feed back into the retractor (you might hear a clicking noise as the belt retracts).

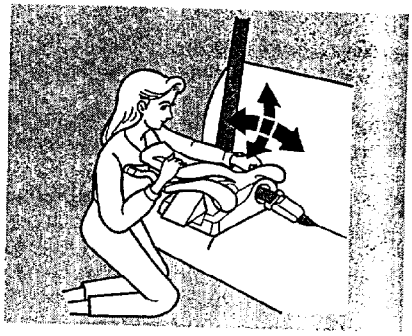
3. After the belt has retracted, tug on it. If the belt is locked, you will not be able to pull it out. If you can pull the belt out, it is not locked and you will need to repeat these steps.







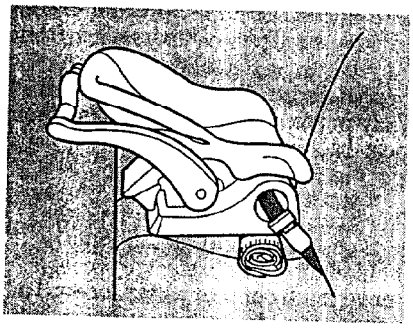
4. After confirming that the belt is locked, grab the shoulder part of the belt near the buckle and pull up to remove any slack from the lap part of the belt. Remember, if the lap part of the belt is not tight, the child seat will not be secure. To remove slack, it may help to put weight on the child seat, or push on the back of the seat while pulling up on the belt.



5. Push and pull the child seat forward and from side to side to verify that it is secure enough to stay upright during normal driving maneuvers. If the child seat is not secure, unlatch the belt, allow it to retract fully, then repeat these steps.

To deactivate the locking mechanism in order to remove a child seat, unlatch the buckle, unroute the seat belt, and let the belt fully retract.

*Infant Seat Installation Tips*



For proper protection, an infant must ride in a reclined, or semi-reclined position. To determine the proper reclining angle, check with the baby's doctor or follow the seat maker's recommendations.

To achieve the desired reclining angle, it may help to put a rolled up towel under the toe of the child seat, as shown above.

*CONTINUED*

When properly installed, a rear-facing child seat may prevent the driver or a front-seat passenger from moving their seat as far back as recommended (see page 10). Or it may prevent them from locking their seat-back in the desired upright position (see page 11).

In either case, we recommend that you place the child seat directly behind the front passenger seat, move the front seat as far forward as needed, and leave it unoccupied. You may also wish to get a smaller child seat that allows you to safely carry a front passenger.

*Additional Precautions for Infants*

- ***Never hold a baby on your lap.*** If you are not wearing a seat belt in a crash, you could be thrown forward into the dashboard and crush the child.

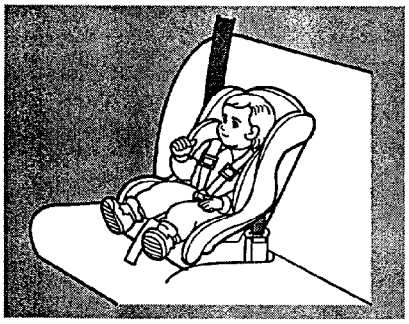
  If you are wearing a seat belt, the baby can be torn from your arms. For example, if the vehicle crashes into a parked vehicle at 30 mph (48 km/h), a 20 lbs (9 kg) baby will become a 600 lbs (275 kg) force, and you will not be able to hold it.

- ***Never put a seat belt over yourself and a baby.*** During a crash, the belt could press deep into the child and cause very serious injuries.





## Protecting Small Children



*Child Seat Type*
A child who can sit up without support, and who fits within the child seat maker's weight and height limits, should be restrained in a forward-facing, upright child seat.

Of the different seats available, we recommend those that have a five-point harness system as shown.

We also recommend that a small child stay in the child seat as long as possible, until they reach the weight or height limit for the seat.

*Child Seat Placement*
In this vehicle, the best place to install a forward-facing child seat is in one of the seating positions in the back seat.

***Placing a forward-facing child seat in the front seat of a vehicle equipped with a passenger airbag can be hazardous.*** If the vehicle seat is too far forward, or the child's head is thrown forward during a collision, an inflating passenger's airbag can strike the child with enough force to cause very serious or fatal injuries. If a small child must be closely watched, we recommend that another adult sit in the back seat with the child.

**⚠ WARNING**

Improperly placing a forward-facing child seat in the front seat can result in serious injury or death if the airbags inflate.

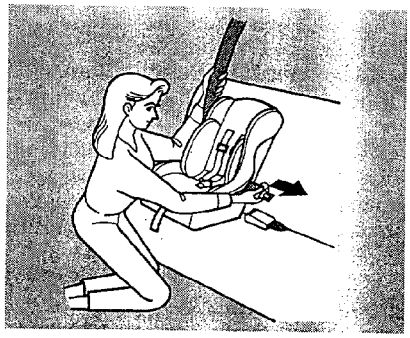
If you must place a forward-facing child seat in front, move the vehicle seat as far back as possible and properly restrain the child.

If it is necessary to put a forward-facing child seat in the front, move the vehicle seat as far to the rear as possible, be sure the child seat is firmly secured to the car, and that the child is properly strapped in the seat.

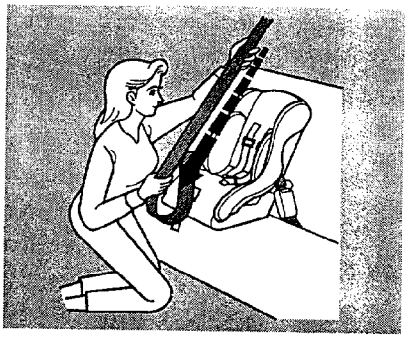
*CONTINUED*

*Child Seat Installation*
The lap/shoulder belts in the back and front passenger seating positions have a locking mechanism that must be activated to secure a child seat.

The following pages provide instructions on how to secure a forward-facing child seat with this type of seat belt.



1. With the child seat in the desired seating position, route the belt through the child seat according to the seat maker's instructions, then insert the latch plate into the buckle.

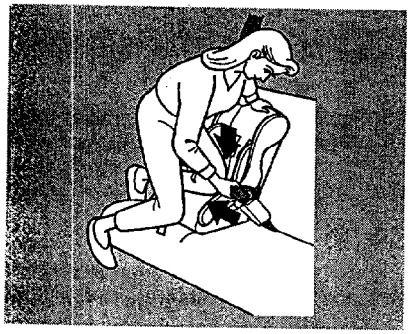


2. To activate the lockable retractor, slowly pull the shoulder part of the belt all the way out until it stops, then let the belt feed back into the retractor (you might hear a clicking noise as the belt retracts).

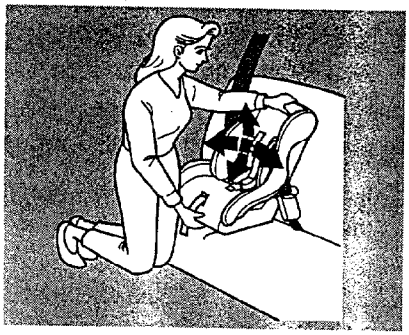
3. After the belt has retracted, tug on it. If the belt is locked, you will not be able to pull it out. If you can pull the belt out, it is not locked and you will need to repeat these steps.







4. After confirming that the belt is locked, grab the shoulder part of the belt near the buckle and pull up to remove any slack from the lap part of the belt. Remember, if the lap part of the belt is not tight, the child seat will not be secure. It may help to put weight on the child seat, or push on the back of the seat while pulling up on the belt.



5. Push and pull the child seat forward and from side to side to verify that it is secure enough to stay upright during normal driving maneuvers. If the child seat is not secure, unlatch the belt, allow it to retract fully, then repeat these steps.

To deactivate the locking mechanism in order to remove a child seat, unlatch the buckle, unroute the seat belt, and let the belt fully retract.

***Additional Precautions for Small Children***

- ***Never hold a small child on your lap.*** If you are not wearing a seat belt in a crash, you could be thrown forward into the dashboard and crush the child.

  If you are wearing a seat belt, the child can be torn from your arms during a crash. For example, if the vehicle crashes into a parked vehicle at 30 mph (48 km/h), a 30 lbs (14 kg) child will become a 900 lbs (410 kg) force, and you will not be able to hold it.

- ***Never put a seat belt over yourself and a child.*** During a crash, the belt could press deep into the child and cause very serious injuries.

### Protecting Larger Children

When a child reaches the recommended weight or height limit for a forward-facing child seat, the child should sit in the back seat and wear a lap/shoulder belt.

If a child is too short for the shoulder part of the belt to properly fit, we recommend that the child use a booster seat until they are tall enough to use the seat belt without a booster.

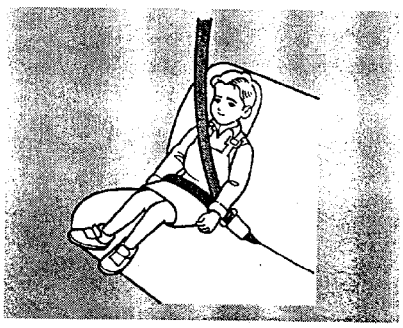
The following pages give instructions on how to check proper seat belt fit, what kind of booster seat to use if one is needed, and important precautions for children who must sit in the front seat.

**AWARNING**

Allowing a larger child to sit improperly in the front seat can result in injury or death if the airbags inflate.

If a larger child must sit in front, they should move the seat as far back as possible and wear their seat belt properly.

*Checking Seat Belt Fit*



To determine whether a lap/shoulder belt properly fits a child, first have the child put on the seat belt, following the instructions on page 13. Then check how the belt fits.

If the shoulder part of the belt rests over the child's collarbone and against the center of the chest, as shown above, the child is large enough to wear the seat belt.





However, if the belt touches or crosses the child's neck, the child needs to use a booster seat.

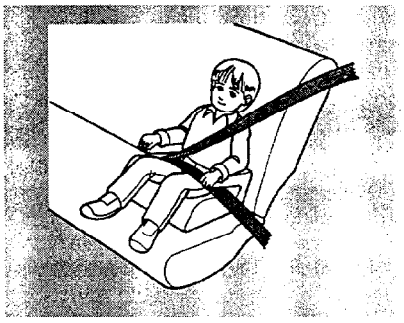
***Do not let a child wear a seat belt across their neck.*** This could result in serious neck injuries during a crash.

***Do not let a child put the shoulder part of a seat belt behind their back or under their arm.*** This could cause very serious injuries during a crash. It also increases the chance of a child sliding under the belt and being injured in a crash.

***Do not put any accessories on a seat belt.*** Devices intended to improve occupant comfort, or reposition the shoulder part of a seat belt, severely compromise the protective capability of seat belts and increase the chance of serious injury in a crash.

***Two children should never use the same seat belt.*** If they do, they could be very seriously injured in a crash.

*Using a Booster Seat*



If a child needs a booster seat, we recommend choosing a style that allows the child to use the lap/shoulder belt directly, without a shield, as shown above.

Whichever style you select, follow the booster seat maker's instructions.

*CONTINUED*

A child may continue using a booster seat until the tops of their ears are even with the top of the seat-back. When a child reaches this height, they should be tall enough to use the lap/shoulder belt without a booster.

*When Can a Larger Child Sit in Front*
The National Highway Traffic Safety Administration and Transport Canada recommend that all children ages 12 and under ride in the back seat, properly restrained.

The back seat is the safest place for a child of any age or size.

In addition, the passenger's airbag poses serious risks to children. If the seat is too far forward, or the child's head is thrown forward during a collision, or the child is unrestrained or out of position, an inflating airbag can kill or seriously injure the child.

Of course, children vary widely. And while age may be one indicator of when a child can safely ride in the front, there are other important factors you should consider.

*Physical Size*
Physically, a child must be large enough for the lap/shoulder belt to properly fit over their hips, chest, and shoulder (see page 13 ). If the seat belt does not fit properly, the child should not sit in the front.

*Maturity*
To safely ride in front, a child must be able to follow the rules, including sitting properly and wearing their seat belt properly throughout a ride.





If you decide that a child can safely ride up front, be sure to:

- Carefully read the owner's manual, and make sure you understand all seat belt instructions and all safety information.
- Move the vehicle seat to the rear-most position.
- Have the child sit up straight with their back against the seat and their feet on or near the floor.
- Check that the child's seat belt is properly positioned and secured.
- Closely supervise the child. Even mature children sometimes need to be reminded to fasten their seat belt or sit properly.

**Using Child Seats with Tethers**
Your car has three attachment points on the rear shelf for securing a tether-style child seat to the car.

Since a tether can provide additional security, we recommend using a tether whenever one is required or available. (Tethers are required in Canada. U.S. owners may check with the child seat maker to determine whether a tether is available for a particular child seat.)

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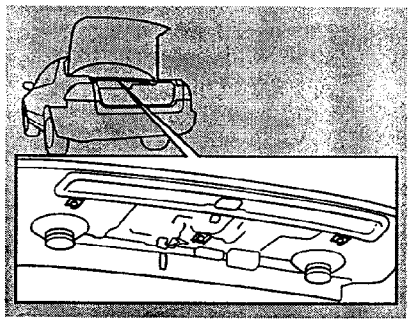
*U.S. Models*



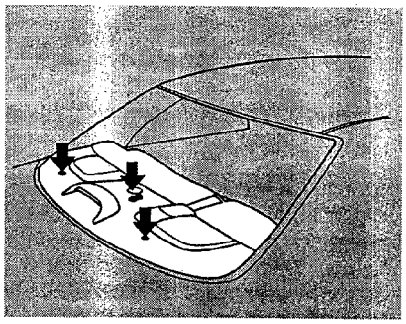
Locate the attachment points by looking in the trunk at the underside of the rear shelf. Select the attachment point you want to use. Take a thin, pointed object, such as an awl or ice pick, insert it into that attachment point, and poke a marker hole in the rear shelf fabric.

Working from inside the car, use a razor blade to cut a 7/8 inch (22 mm) diameter hole in the fabric at the marker hole you punched.

To attach the tether to the vehicle, you need to purchase the anchor plate and mounting hardware from your Honda dealer (Part Number 82410-SE3-C01).

To attach the tether to the child seat, follow the child seat maker's instructions.

*Canadian Models*

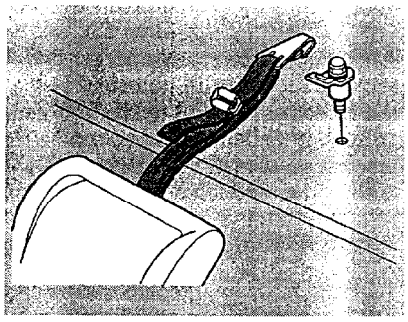


Select the attachment point you want to use and remove the plug with a small flat-tipped screwdriver or fingernail file.

Install the tether hardware that came with the child seat.







When installing tether hardware, make sure the toothed washer is on the bottom of the bolt. Tighten the bolt to:
16 lbf·ft (22 N·m , 2.2 kgf·m)

If a torque wrench was not used, see your Honda dealer as soon as possible to verify proper installation.

To attach the tether to the child seat, follow the child seat maker's instructions.

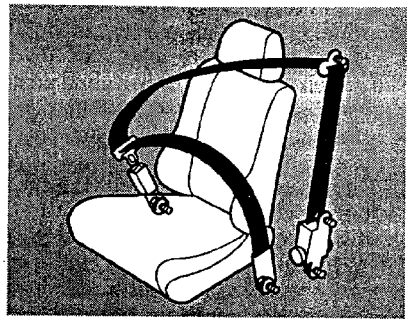
If you are not sure how to install the tether, or you need mounting hardware, contact your Honda dealer.

## Additional Information About Your Seat Belts

**Seat Belt System Components**
Your seat belt system includes lap/shoulder belts in all five seating positions.

The system also includes a light on the instrument panel to remind you and your passengers to fasten your belts. If the driver's seat belt is not fastened before the ignition is turned ON (II), the light will come on and a beeper will also sound. The beeper will stop after a few seconds, but the light will stay on until the driver's seat belt is fastened.

**Lap/Shoulder Belt**



This seat belt has a single belt that goes over your shoulder, across your chest and across your hips.
To fasten the belt, insert the latch plate into the buckle, then tug on the belt to make sure the buckle is latched.
To unlock the belt, push the red PRESS button on the buckle.
Guide the belt across your body to the door pillar. After exiting the vehicle, be sure the belt is out of the way and will not get closed in the door.

All seat belts have an emergency locking retractor. In normal driving, the retractor lets you move freely in your seat while it keeps some tension on the belt. During a collision or sudden stop, the retractor automatically locks the belt to help restrain your body.

The seat belts in all positions except the driver's have an additional locking mechanism that must be activated to secure a child seat. (See pages 26 and 30 for instructions on how to secure child seats with this type of seat belt.)

If the shoulder part of the belt is pulled all the way out, the locking mechanism will activate. The belt will retract, but it will not allow a passenger to move freely.



## Additional Information About Your Seat Belts

To deactivate the locking mechanism, unlatch the buckle and let the seat belt fully retract. To refasten the belt, pull it out only as far as needed.

See page 12 for instructions on how to wear the lap/shoulder belt properly.

**Seat Belt Maintenance**
For safety, you should check the condition of your seat belts regularly.

Pull each belt out fully and look for frays, cuts, burns, and wear. Check that the latches work smoothly and that the lap/shoulder belts retract easily. Any belt not in good condition or not working properly will not provide good protection and should be replaced as soon as possible.

Honda provides a lifetime warranty on seat belts. Honda will repair or replace any seat belt component that fails to function properly during normal use.
Please see your *Honda Warranty Information* booklet for details.

**WARNING**

Not checking or maintaining seat belts can result in serious injury or death if the seat belts do not work properly when needed.

Check your seat belts regularly and have any problem corrected as soon as possible.

If a seat belt is worn during a crash, you should have your dealer inspect the belt, and replace it if necessary. A belt that has been worn during a crash may not provide the same level of protection in a subsequent crash. The dealer should also inspect the anchors for damage and replace them if needed.

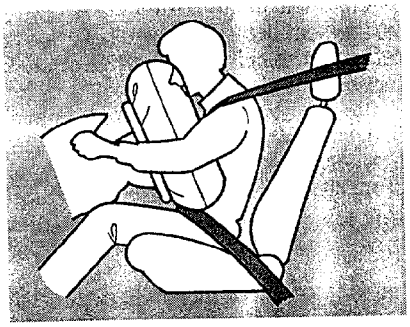
For information on how to clean your seat belts, see page 263.

## Additional Information About Your SRS

**SRS Components**
Your Supplemental Restraint System (SRS) includes:

- Two frontal airbags. The driver's airbag is stored in the center of the steering wheel; the front passenger's airbag is stored in the dashboard. Both are marked "SRS".
- Sensors that can detect a severe frontal collision.
- A sophisticated electronic system that continually monitors the sensors, control unit, the airbag activators, and all related wiring when the ignition is ON (II).
- An indicator light on the instrument panel to alert you to a possible problem with the system (see page 42 ).
- Emergency backup power in case your vehicle's electrical system is disconnected in a crash.

**How Your Airbags Work**



If you ever have a severe frontal collision, the sensors will detect rapid deceleration and signal the control unit to instantly inflate the airbags.

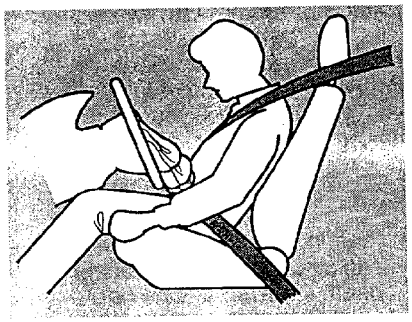
During a crash, your seat belt helps restrain your lower body and torso. Your airbag provides a cushion to help restrain and protect your head and chest.



## Additional Information About Your SRS

Since both airbags use the same sensors, both airbags normally inflate at the same time. However, it is possible for only one airbag to inflate.

This can occur when the severity of a collision is at the margin, or threshold, that determines whether or not the airbags will deploy. In such cases, the seat belt will provide sufficient protection, and the supplemental protection offered by the airbag would be minimal.



After inflating, the airbags immediately deflate, so they won't interfere with the driver's visibility, or the ability to steer or operate other controls.

The total time for inflation and deflation is approximately one-tenth of a second, so fast that most occupants are not aware that the airbags deployed until they see them lying in their laps.

After a crash, you may see what looks like smoke. This is actually powder from the airbag's surface. Although the powder is not harmful, people with respiratory problems may experience some temporary discomfort. If this occurs, get out of the car as soon as it is safe to do so.

*U.S. Owners*
For additional information on how your airbags work, see the booklet titled *SRS: What You Need to Know About Airbags,* that came with your owner's manual.

### How Your SRS Indicator Light Works

SRS The purpose of the SRS indicator light is to alert you to a potential problem with your Supplemental Restraint System.

When you turn the ignition ON (II), this indicator will light up briefly then go out. This tells you that the system is working properly.

However, if the light comes on at any other time, you should have your system checked by your dealer. For example:

- If the SRS indicator light does not come on after you turn the ignition ON (II).
- If the light stays on after the engine starts.
- If the light comes on or flashes on and off while you drive.

If you see any of these indications, your airbags may not deploy when you need them. See your Honda dealer as soon as possible.

**A WARNING**

Ignoring the SRS indicator light can result in serious injury or death if the airbags do not inflate when needed.

Have your vehicle checked by a dealer as soon as possible if the SRS light alerts you to a potential problem.

### SRS Service

Your Supplemental Restraint System is virtually maintenance-free, and there are no parts you can safely service. However, you must have your vehicle serviced if:

- ***Your airbags ever inflate.*** The airbags and the control unit must be replaced. Do not try to remove or replace the airbags yourself. This must be done by a Honda dealer or a knowledgeable body shop.
- ***The SRS indicator light alerts you to a problem.*** Take your vehicle to an authorized Honda dealer as soon as possible. If you ignore this indication, the airbags might not inflate when you need them.



Additional Information About Your SRS

### Additional Safety Precautions

- Do not attempt to deactivate your airbags. Together, airbags and seat belts provide the best protection in a severe frontal collision.
- Do not tamper with SRS components or wiring for any reason. Tampering could cause the airbags to deploy, possibly causing very serious injury.

See page 162 for further information and precautions relating to your SRS.