V2459

REPORT NO. MGA-96-N019

NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

TOYOTA MOTOR CORPORATION
1996 TOYOTA PASEO
NHTSA NO. MT5101

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: September 10, 1996

Report Date: October 1, 1996

FINAL REPORT

Prepared For:

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
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15. Supplementary Notes

16. Abstract

A 57 kph (35.45 mph) frontal barrier impact using a 30 load cell barrier was conducted on a 1996 Toyota Paseo at the MGA Proving Grounds and Crash Test Center in Burlington, WI. on September 10, 1996.

The barrier impact velocity was 57 kph (35.45 mph), and the ambient temperature at the time of impact was 22°C. The post-test maximum static crush was 550 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 FMVSS 208, "Occupant Crash Protection" injury criteria, the driver's HIC was 632 and the 3 msec. Clip (Chest g's) was 47.8 g's. The left and right femur loads for the driver were 2395 and 3886 Newtons, respectively. The passenger's HIC was 655 and the 3 msec Clip was 52.9 g's. The left and right femur maximum loads were 4750 and 3859 Newtons respectively.

17. Key Words	18. Distribution Statement
35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP) FMVSS 212 Indicant Testing FMVSS 219 (partial) Indicant Testing 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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Manager, New Car Assess. Program (NCAP)

6 December 1996
Date of Report Acceptance

_____
Contracting Officer's Tech. Rep. (COTR)

12/6/96
Date of Report Acceptance

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SECTION 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is part of the Composite FY'96 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-90-D-12121. 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.

SECTION 2

SUMMARY OF FRONTAL BARRIER IMPACT TEST

A load cell barrier consisting of 30 load cells was impacted by a 1996 Toyota Paseo at a velocity of 57 kph (35.45 mph). The test was performed at the MGA Proving Grounds and Crash Test Center on September 10, 1996. 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, chest displacement transducer, 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. 037), and the right front passenger (Serial No. 036), were used for this test. Certification details, along with instrumentation calibration data, are found in Appendix C and D.

The 97 channels of data were recorded on 10 computers. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

The driver's head struck the inflated airbag. The driver HIC was 632 and the maximum chest (CLIP) deceleration over 3 milliseconds was 47.8 g's. The maximum chest displacement was 31 mm. The left and right femur loads were 2395 and 3886 Newtons respectively.

The right front passenger's head struck the inflated airbag. The passenger HIC was 655 and maximum chest (CLIP) deceleration over 3 milliseconds was 52.9 g's. The maximum chest displacement was 47 mm. The left and right femur loads were 4750 and 3859 Newtons respectively.

Note the vehicle was run without onboard cameras in order to achieve the correct test weight.

GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Yr/Make/Model/Body Style: 1996/Toyota/Paseo

NHTSA No.: MT5101 VIN.: JT2CCS2H1T0024423

Body color: Red Date of Manufacture: 4/96

Engine: 4 Cylinders; __ C.I.D.; 1.5 Liters;

__ Gas; __ Diesel; ___Turbocharged

__ Longitudinal; X Transverse

Transmission: 5 Speed; X Manual; ___ Automatic; __ Overdrive

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

Odometer Reading: 110 miles

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

___P/seats; ___Tilt Wheel; X Cruise Control; X Abs

Type of Occupant Restraint: Driver and passenger airbags with type II belts.

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 177 kPa (26 Psi) Rear 177 kPa (26 Psi)

Recommended Tire Size: P185/60R14

Recommended Cold Tire Pressure: Front 177 kPa (26 Psi) Rear 177 kPa (26 Psi)

Tires on Vehicle: P185/60R14; Manufacturer: Yakahama

Number of Occupants: 2 Front; 2 Rear; __3rd Seat; 4 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) = 283.5 kg. (A)

No. of Occupants x 68.0 kg. = 275 kg. (B)

Rated Cargo Weight (RCW) A-B = 11.5 kg.

GVWR 1272.3 kg. GAWR: Front 722.6 kg.; Rear 572.9 kg.

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

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

Right Front = 307.5 kg Right Rear = 182.8 kg

Left Front = 300.3 kg Left Rear = 167.8 kg

TOTAL FRONT WEIGHT = 607.8 kg (63.4% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 350.6 kg (36.6% of Total Vehicle Weight)

TOTAL UNLOADED DELIVERED WEIGHT (UDW) = 958.4 kg

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight 958.4 kg

VCW = Vehicle Capacity Weight 283.5 kg

DSC = Designated Seating Capacity 4 RCW = VCW - 68 (DSC) = 11.5 kg

Target Test Weight = UDW + RCW + (2 dummies x 167 kg/dummy)

Target Test Weight = 1121.5 kg

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND CARGO:

Right Front = 343.4 kg Right Rear = 322.7 kg

Left Front = 341.6 kg Left Rear = 218.2 kg

TOTAL FRONT WEIGHT = 685.0 kg (60.8% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 440.9 kg (39.2% of Total Vehicle Weight)

TOTAL TEST WEIGHT = 1125.9 kg

Weight of ballast secured in vehicle trunk area = 0 kg

Vehicle components removed to meet target weight: Rear seat and belts, rear bumper and taillights, rear decklid, spare tire, rear window.

Onboard cameras were not installed to achieve the correct test weight

VEHICLE ATTITUDE (all dimensions in mm):

Delivered Attitude: RF 630 LF 628 RR 631 LR 630

Test Attitude: RF 613 LF 611 RR 604 LR 607

Post Test RF 631 LF 662 RR 595 LR 588

Wheel Base: 2377 mm; C.G. = 931 mm rearward of front wheel C/L

Remarks: None Noted

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

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

POST-IMPACT DATA:

Type of Test: 35 mph Frontal Impact Impact Angle: 90°

Date of Test: September 10, 1996 Time of Test: 2:50 p.m.

Ambient Temperature: 22 °C (Spec. Range = 18.8 to 25.6°C)

Temperature in Occupant Compartment: 22.° C

Windshield Molding Temperature: 22.° C

Required Impact Velocity Range: 57.0 to 57.1 kph

Impact Velocity: primary = 57.0 kph; secondary = 57.1 kph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 1400 mm

Exiting Speed Trap: 400 mm

VEHICLE REBOUND AND CRUSH (mm):

Vehicle Length:	Pre-test	= R	3826	C_L	3996	L 3834
	Post-test	= R	3443	C_L	3446	L 3356
	Crush	= R	383	C_L	550	L 478

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

R 442 mm C_L 351 mm L 458 mm

VISIBLE DUMMY CONTACT POINTS:

	Driver	Passenger
Head	Airbag	Airbag
Chest	Airbag	Airbag
Abdomen	None noted	None noted
Left Knee	Steering column & dash panel	Glovebox
Right Knee	Steering column & dash panel	Glovebox

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

POST TEST AIRBAG DATA

Vehicle Yr/Make/Model/Body Style: 1996/Toyota/Paseo

NHTSA No.: MT5101 VIN.: JT2CCS2H1T0024423

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

B. Size of Vent Holes: Driver 30 mm ; Passenger 72 mm

C. Total Vent Area; Driver 7.1 cm^2 Passenger 40.7 cm^2

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

Driver; Length____mm, Width____mm, Diameter 650 mm

Passenger; Length 720 mm, Width 705 mm, Diameter____ mm

E. Is the Airbag Tethered?

Driver; X Yes; ___ No; If yes, record length of tether 330 mm

Passenger; ___ Yes; X No, If yes, record length of tether ____ mm

SECTION 3

SUMMARY OF RESULTS FOR-------

FMVSS 212, "Windshield Mounting"

FMVSS 219 (Partial), "Windshield Zone Intrusion"

FMVSS 301-75, "Fuel System Integrity"

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

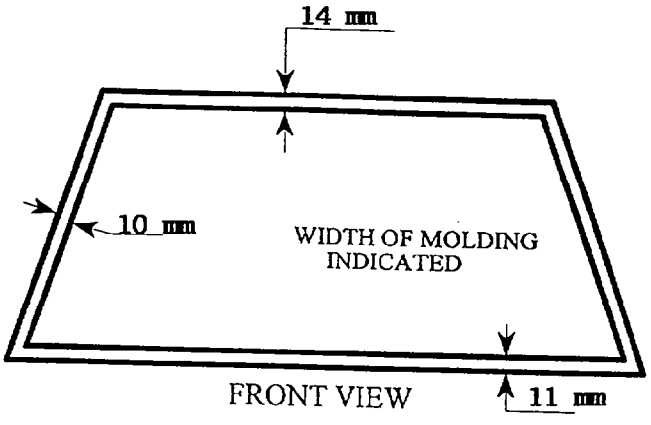
Details of windshield mounting such as retention method, trim type, etc.:
Windshield set in rubber molding with glue

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	1969	1968	100%
LEFT SIDE	1969	1968	100%
TOTAL	3938	3936	100%

AREA OF RETENTION FAILURE: None



FRONT VIEW

FAILURE DETAILS: None

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= 1074 mm

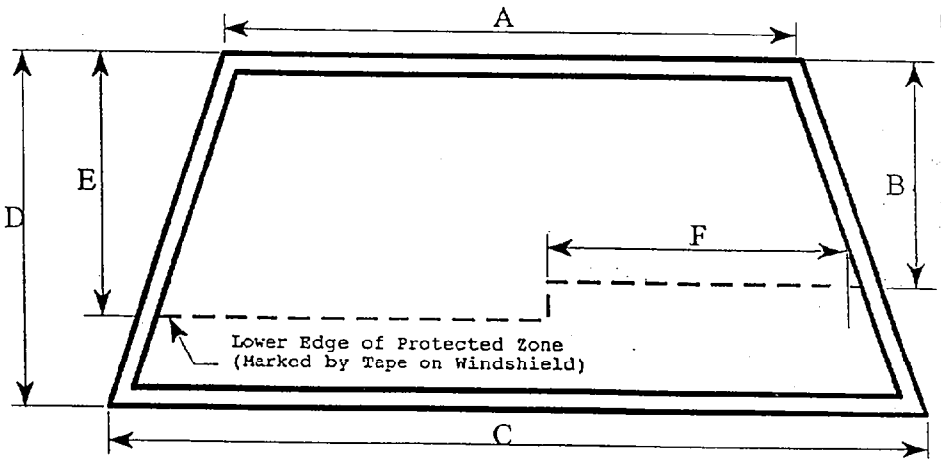
B= 510 mm

C= 1460 mm

D= 702 mm

E= 480 mm

F= 630 mm



FRONT VIEW

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":
(Show location of penetration)

6 mm hole made by the corner of the hood. 52 mm from the left edge
33 mm from the bottom edge

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

FMVSS NO. 301

TEST VEHICLE NHTSA NO.: MT5101 Test Date: September 10, 1996

Vehicle Mfgr./Make/Model: 1996/Toyota/Paseo

Usable Capacity of Vehicle's Fuel Tank: 45 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:

41.6 Liters which is 92.4 % 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)

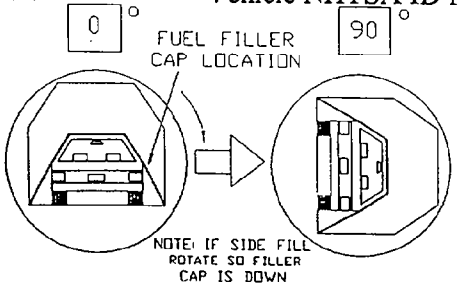
FUEL SPILLAGE MEASUREMENT:

	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

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 0° - 90° Vehicle NHTSA ID No.: MT5101



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 45 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 45 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:

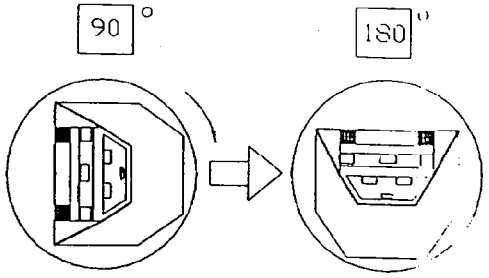
0	0	0	0

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

IV. SOLVENT SPILLAGE LOCATIONS(S): None

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 90° - 180° Vehicle NHTSA ID No.: MT5101



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 26 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 26 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:

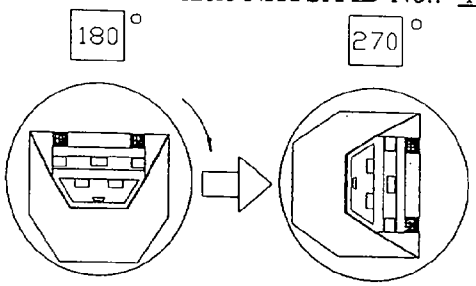
0	0	0	0

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

IV. SOLVENT SPILLAGE LOCATIONS(S): None

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 180° - 270° Vehicle NHTSA ID No.: MT5101



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 24 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 24 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:

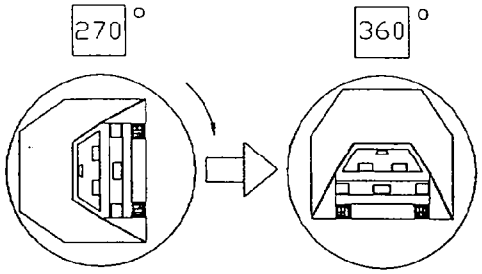
0	0	0	0

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

IV. SOLVENT SPILLAGE LOCATIONS(S): None

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 270° - 360° Vehicle NHTSA ID No.: MT5101



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 51 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 51 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. Load Cell Barrier Data
2. Vehicle Accelerometer Data
3. Test Vehicle Measurements

III. AID DATA

1. Accident Investigation Damage Data Summary

FMVSS NO. 208, "OCCUPANT CRASH PROTECTION", DATA SHEET

VEH. YR./MAKE/MODEL/BODY STYLE: 1996/Toyota/Paseo
VEH. NHTSA NO.: MT5101 TEST DATE: September 10, 1996

MAX. ACCELERATION VALUES: (g's)	DRIVER #037	PASSENGER #036
Head Channel X	-60.9 @ 74 msec.	-55.0 @ 75 msec.
Head Channel Y	-6.3 @ 82 msec.	4.6 @ 59 msec.
Head Channel Z	-21.0 @ 54 msec.	-36.4 @ 68 msec.
HEAD RESULTANT	61.1 @ 74 msec.	64.4 @ 75 msec.
Chest Channel X	-47.8 @ 66 msec.	-55.1 @ 75 msec.
Chest Channel Y	-5.3 @ 84 msec.	-5.2 @ 70 msec.
Chest Channel Z	15.0 @ 88 msec.	-12.8 @ 67 msec.
CLIP	47.8	52.9
TIME INTERVAL (msec) [3. msec. minimum]	$t_1 = 64.3$ $t_2 = 67.4$	$t_1 = 73.4$ $t_2 = 76.5$

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	632	655
t_1 = (msec)	53.7	57.6
t_2 = (msec)	89.7	93.6
Avg. Accel. t_1 to t_2 (g's)	49.9	50.6

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

MAX. COMPRESSIVE FEMUR FORCES:

Left Side (N)	2395	4750
Right Side (N)	3886	3859

MAXIMUM SEAT BELT FORCES:

Lap Belt (N)	5904	3322
Shoulder Belt (N)	6737	7820

HYBRID III NECK, CHEST AND PELVIS DATA SHEET

VEHICLE YR./MAKE/MODEL/BODY STYLE: 1996/Toyota/Paseo

VEHICLE NHTSA NO.: MT5101 TEST DATE: September 10, 1996

MAXIMUM VALUES	DRIVER DUMMY #037	PASSENGER DUMMY #036
Neck Load X (N)	*	-747 @ 129 msec.
Neck Load Y (N)	-158 @ 73 msec.	202 @ 154 msec.
Neck Load Z (N)	-1982 @ 63 msec.	-1997 @ 68 msec.
Neck Moment X (NM)	11.9 @ 129 msec.	-15.0 @ 42 msec.
Neck Moment Y (NM)	-19.2 @ 140 msec.	-45.6 @ 130 msec.
Neck Moment Z (NM)	17.2 @ 93 msec.	20.2 @ 54 msec.
Chest Deflection X (mm)	31	47
Time of Max. Occurrence	76 msec.	81 msec.
Pelvis X Acceleration (g's)	-48.6 @ 60 msec.	-55.6 @ 62 msec.
Pelvis Y Acceleration (g's)	-8.8 @ 49 msec.	-13.5 @ 55 msec.
Pelvis Z Acceleration (g's)	34.7 @ 75 msec.	25.5 @ 78 msec.
Pelvis Resultant (g's)	57.1 @ 60 msec.	57.8 @ 62 msec.

* No valid data recorded

PART 572 DUMMY IN-VEHICLE POSITION

Vehicle NHTSA No.: MT5101 Vehicle: 1996 Toyota Paseo

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

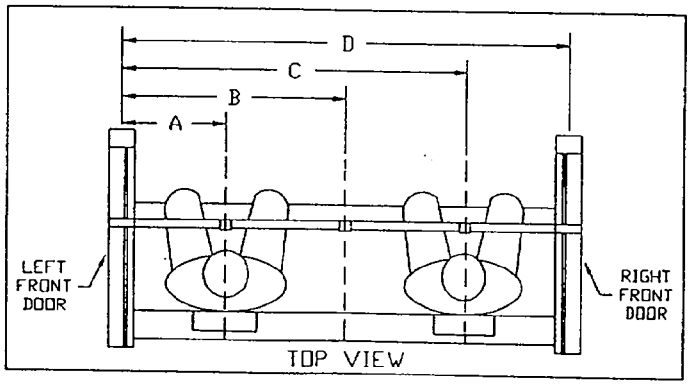
DRIVER SEAT POSITION
8th detent rearward out of 15 detents

Seat back was set in the
6th notch

PASSENGER SEAT POSITION
8th detent rearward of 15 detents

Seat back was set in the
6th notch

Steering column angle 24.5°



037 DUMMY ID 036

A = Left Door to Driver Centerline 415 mm

B = Left Door to Center Passenger Centerline 725 mm

C = Left Door to Right Passenger Centerline 1068 mm

D = Left Door to Right Door 1450 mm

FRONT SEAT MEASUREMENT TABLE

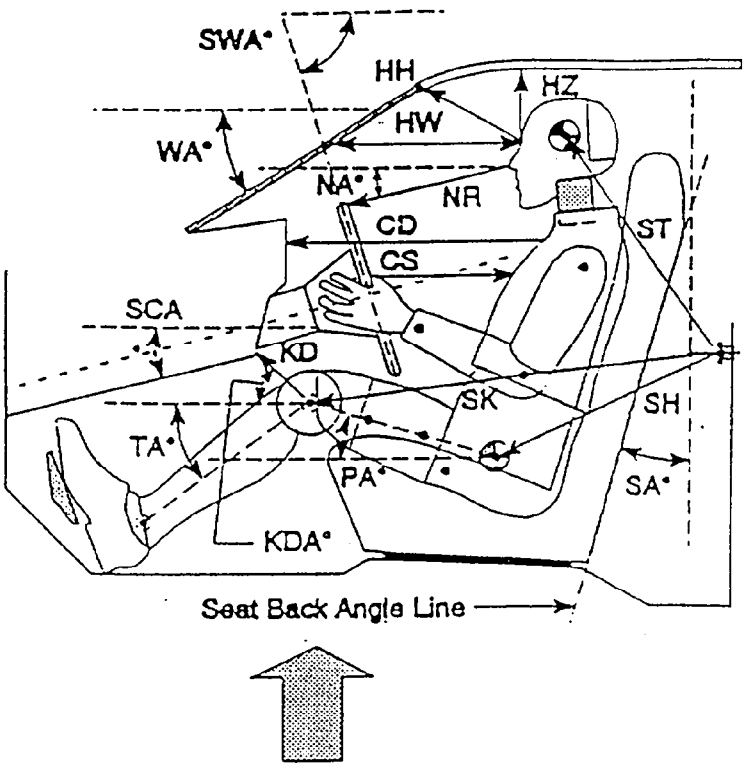
Units (mm)

	DRIVER (Serial #037)	PASSENGER (Serial #036)
WA°	27.1°	
SWA°	65.5°	N/A
SCA°	24.5°	N/A
SA°	Set in 6th notch	Set in 6th notch
HZ	174	149
HH	323	330
HW	543	497
HR	253	235
NR	407 Angle (NA) 9.2°	N/A
CD	537	600
CS	316	N/A
RA	200	N/A
KDL	162 Angle (KDA) 26.9°	201
KDR	159	178 Angle 40.5°
PA°	24.2°	23.5°
TA°	47.7°	39.3°
KK	283	251
ST*	499 Angle 35.1°	508 Angle 32.1°
SK*	801 Angle 95.1°	817 Angle 99.3°
SH*	465 Angle 118.5°	456 Angle 121.4°
SHY	262	259
HS	336	294
HD	129	104
AD	125	109

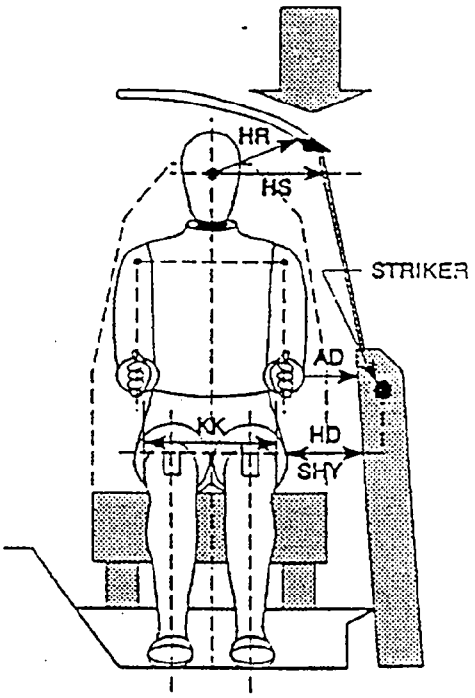
N/A = Not Applicable

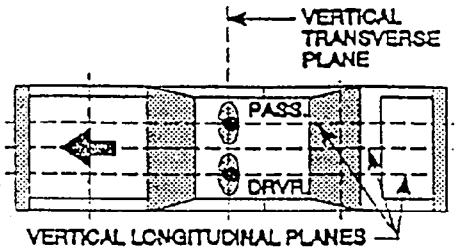
* Angles measured from vertical

FRONT SEAT MEASUREMENTS



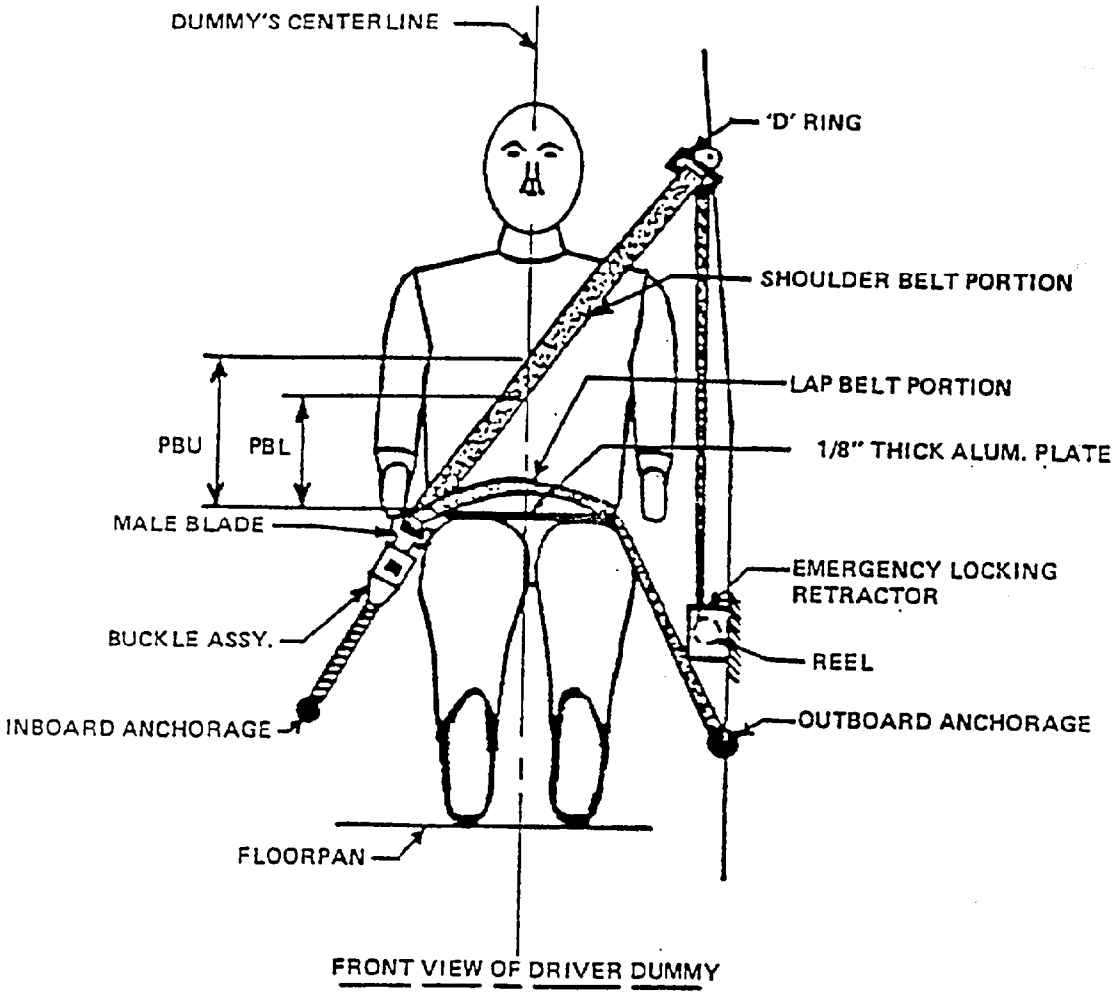
AD - Arm to Door
HD - H-Point to Door
HR - Head to Side Header
HS - Head to Side Window
KK - Knee to Knee
SHY - Striker to H-Point (Y-Direction)





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

SEAT BELT POSITIONING DATA



(illustration)

Dimension = mm

	DRIVER DUMMY	PASSENGER DUMMY
PBU -- Top surface of alum. plate to upper edge	339	359
PBL -- Top surface of alum. plate to belt lower edge	260	272

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:	Driver	Passenger
Length from trim above retractor reel to "D" ring as measured on dummy.	135 mm	155 mm
Shoulder belt length as measured on Part 572 Dummy.	997 mm	1040 mm
Lap belt length as measured on Part 572 Dummy.	804 mm	815 mm

SHOULDER BELT SPOOL-OFF DATA:			
*As determined by film analysis	N/R mm	N/R mm	at shoulder
	N/R mm	N/R mm	at lap
As determined mechanically	46 mm	71 mm	at retractor
	57 mm	79 mm	at shoulder
	N/R mm	N/R mm	at lap

BELT STRETCH DATA:		
Measured electronically between shoulder belt load cell and the "D" ring.	N/R	N/R
Measured mechanically	N/R	N/R

RETRACTOR LOCK-UP TIME:		
*As determined by shoulder belt spool-off observed in on-board cameras	N/R	N/R

N/R Not Recorded

* Onboard cameras were not mounted on the vehicle in order to achieve the correct test weight.

CAMERA LOCATIONS

VEH. NHTSA NO.: MT5101 ; TEST DATE: September 10, 1996

VEH. YEAR/MAKE/MODEL/BODY STYLE: 1996/Toyota/Paseo

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	-970	-7740	1390	90	7340	25	980
3	Steering Column Top	-1650	-7980	1555	90	7580	25	1000
4	Steering Column Bottom	-1650	-7990	1030	90	7590	25	980
5	Driver Close-up	-1280	-9220	1475	90	8820	75	1064
6	Driver Angle	-5000	-5700	1985			50	702
7	Onboard Driver							N/A
8	Onboard Passenger							N/A
9	Right Overall	-1910	6980	1155	90	6570	13	N/R
10	Right Passenger Half	-1540	6410	1200	90	6000	25	1053
11	Right Close-up	-1270	5860	1210	90	5450	50	1005
12	Right Angle	-4470	5400	1930			50	1111
13	Top Windshield	330	0	2750			13	1042
14	Top Driver	-80	-460	1620			13	935
15	Top Passenger	-100	460	1620			13	948
16	Pit Front	-1105	0	-3155			13	1020
17	Pit Rear	-2700	0	-3125			13	1010

* COORDINATES:

+X = film plane rearward of barrier

+Y = film plane to left of monorail centerline

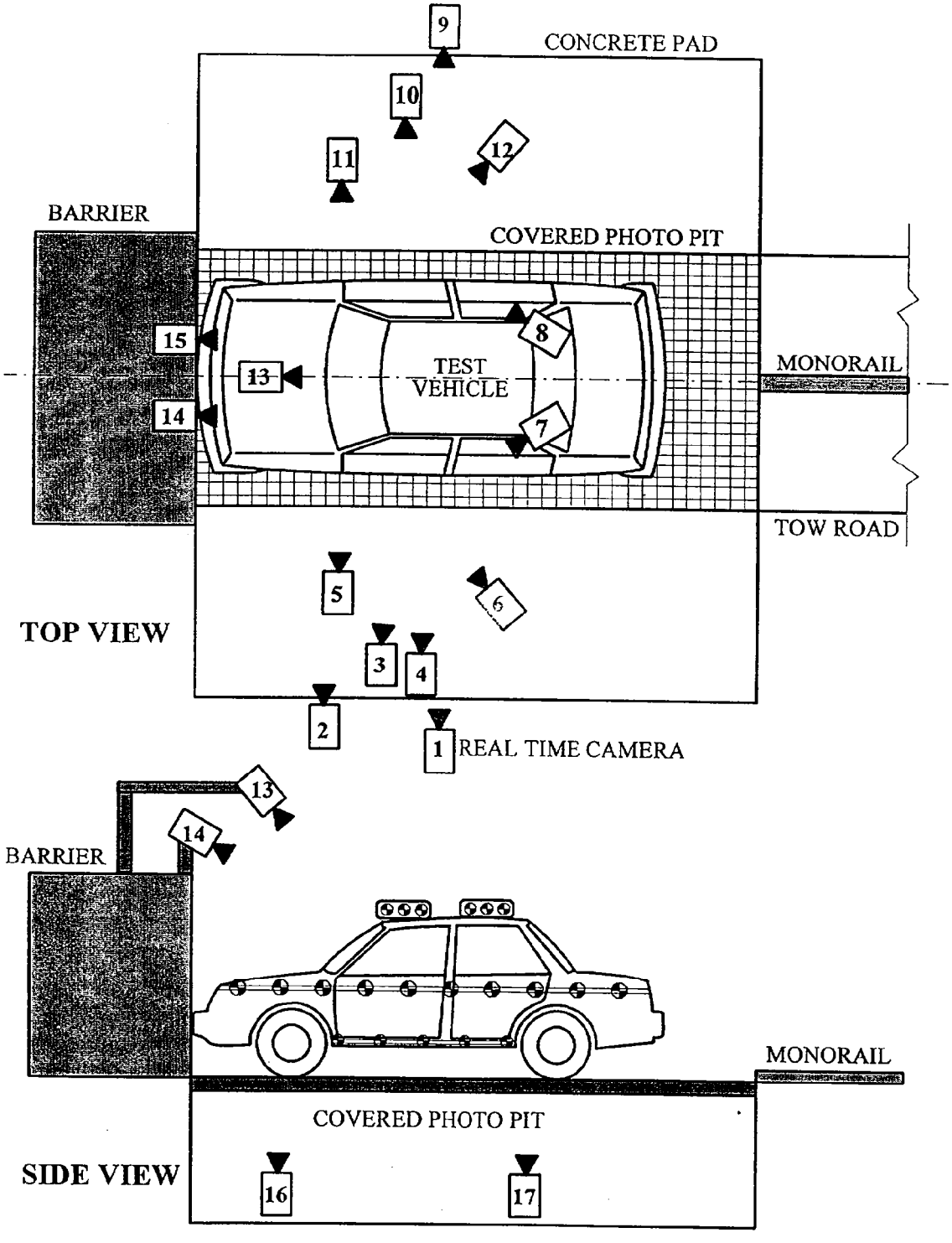
+Z = film plane to above ground level

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

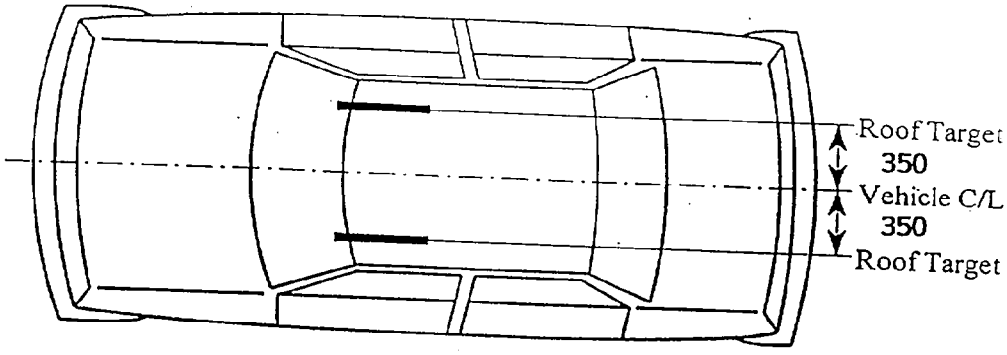
N/R = No Run

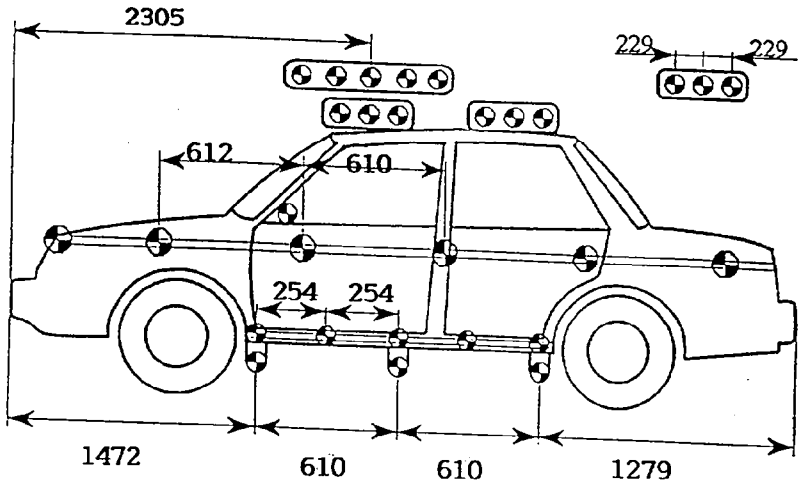
N/A = Not Applicable

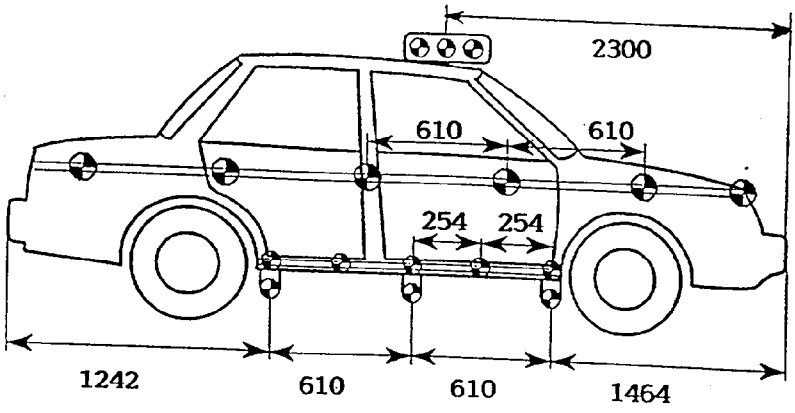
CAMERA LOCATIONS (Cont'd)



VEHICLE TARGET LOCATIONS







(DIMENSIONS IN MM)

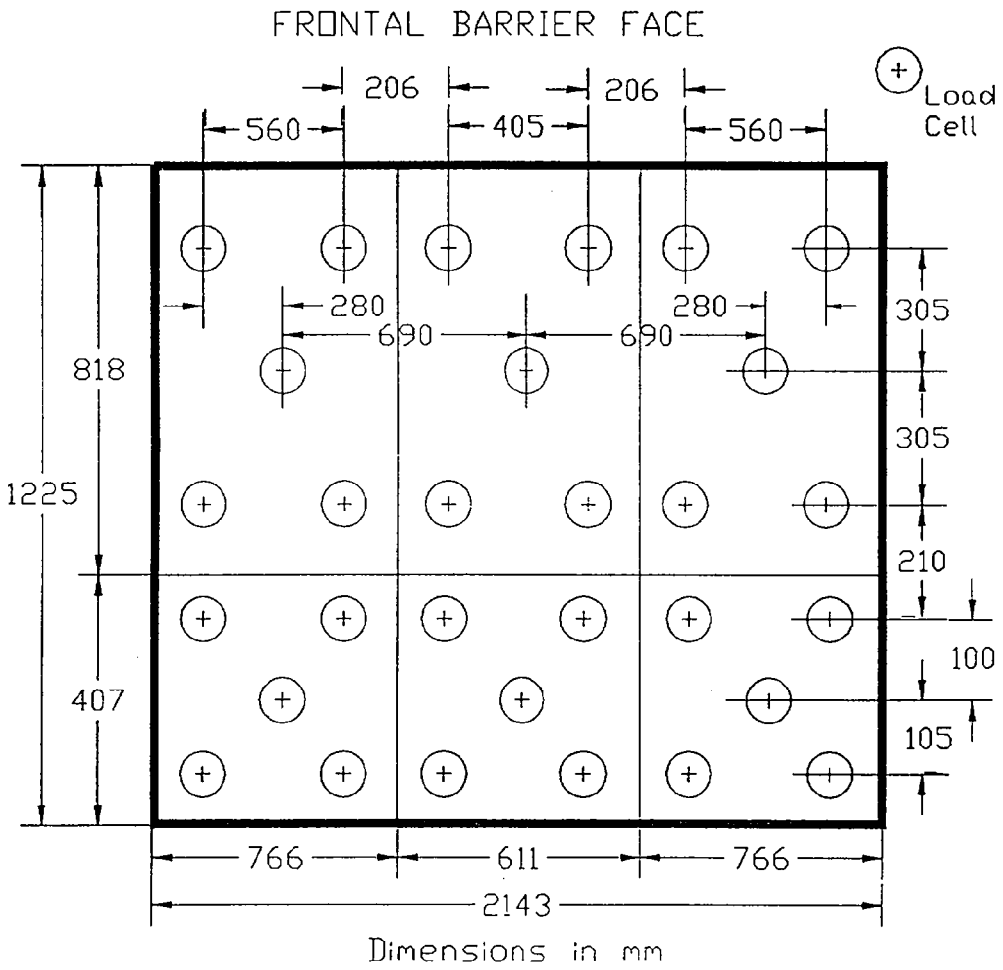
LOAD CELL LOCATIONS ON FIXED BARRIER

30 Load Cells

6 Rows

9 Columns

6 Groupings (5 cells/group)

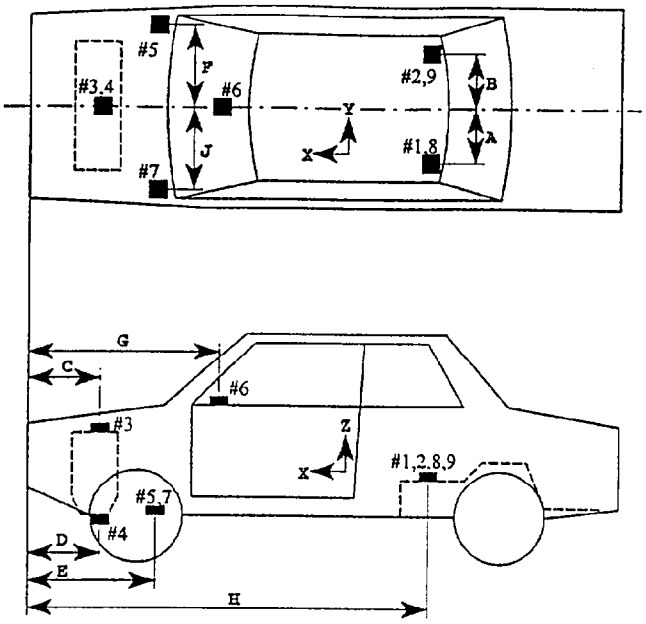


The following data is presented in Appendix B:

(1) Total or Sum of 30 individual load cells

(2) Data from 6 Groupings shown above (5 cells/group)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



Units: (mm)

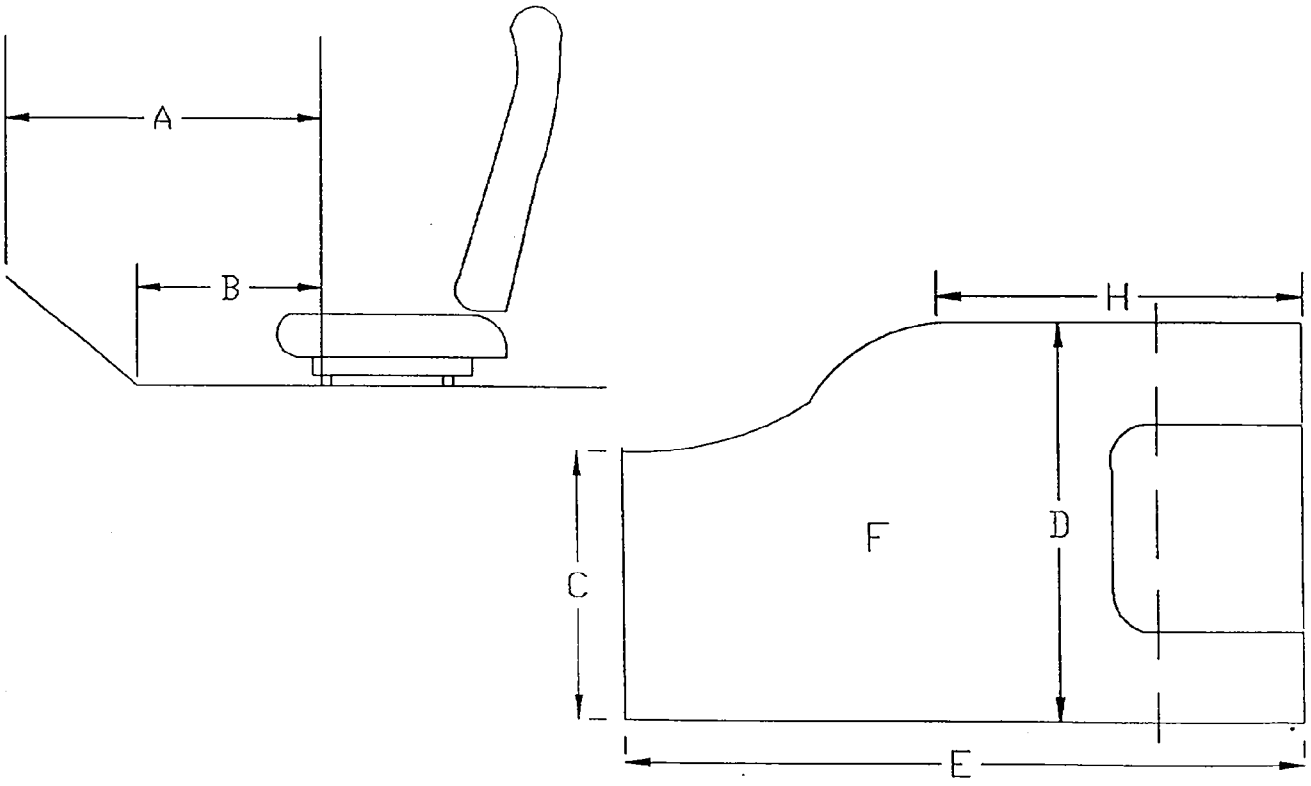
Dimension	Length
A	410
B	410
C	3314
D	3302
E	3176
F	590
G	2512
H	1320
J	590

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 Disc Brake Caliper	X

TEST VEHICLE MEASUREMENTS

STATIC FOOTWELL DEFORMATION

Driver's Side



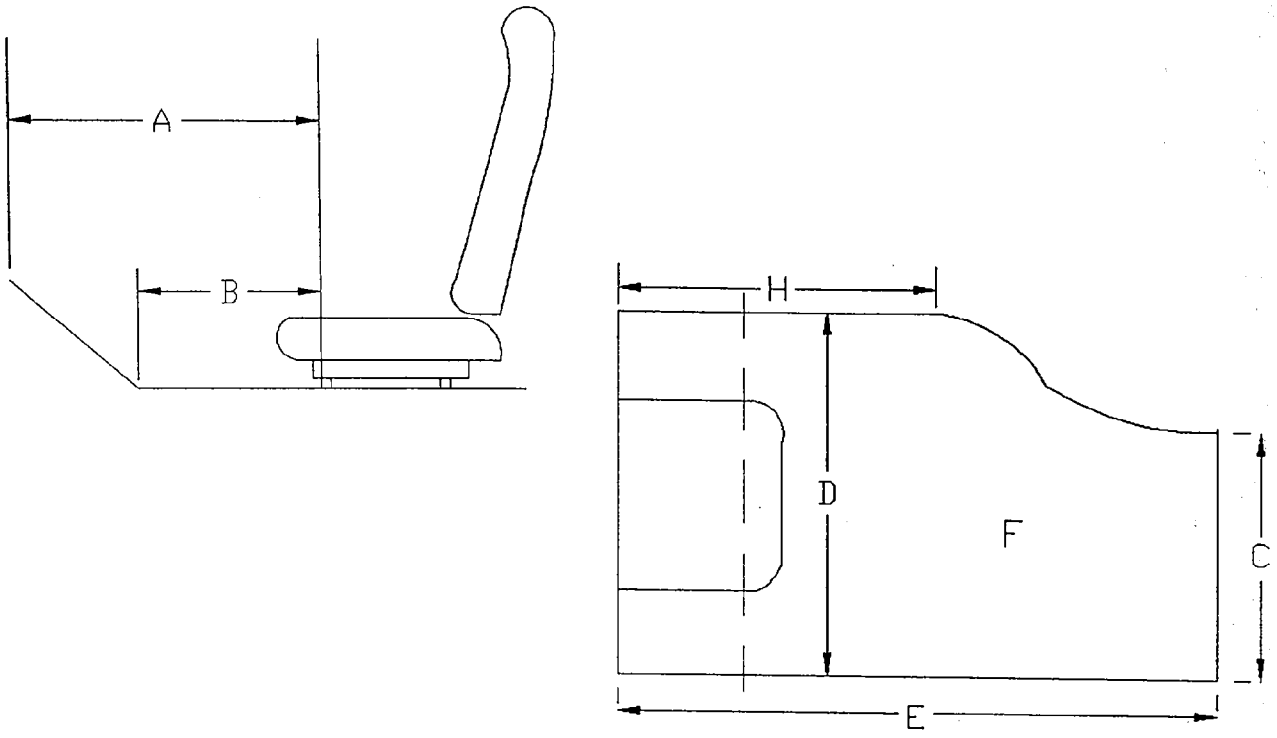
Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	694	638	56
B	512	443	69
C	502	519	-17
D	430	435	-5
E	1872	2048	-76
H	1762	1912	-150
F (cm^2)	8166	9080	-914

TEST VEHICLE MEASUREMENTS (Cont'd)

STATIC FOOTWELL DEFORMATION

Passenger's Side

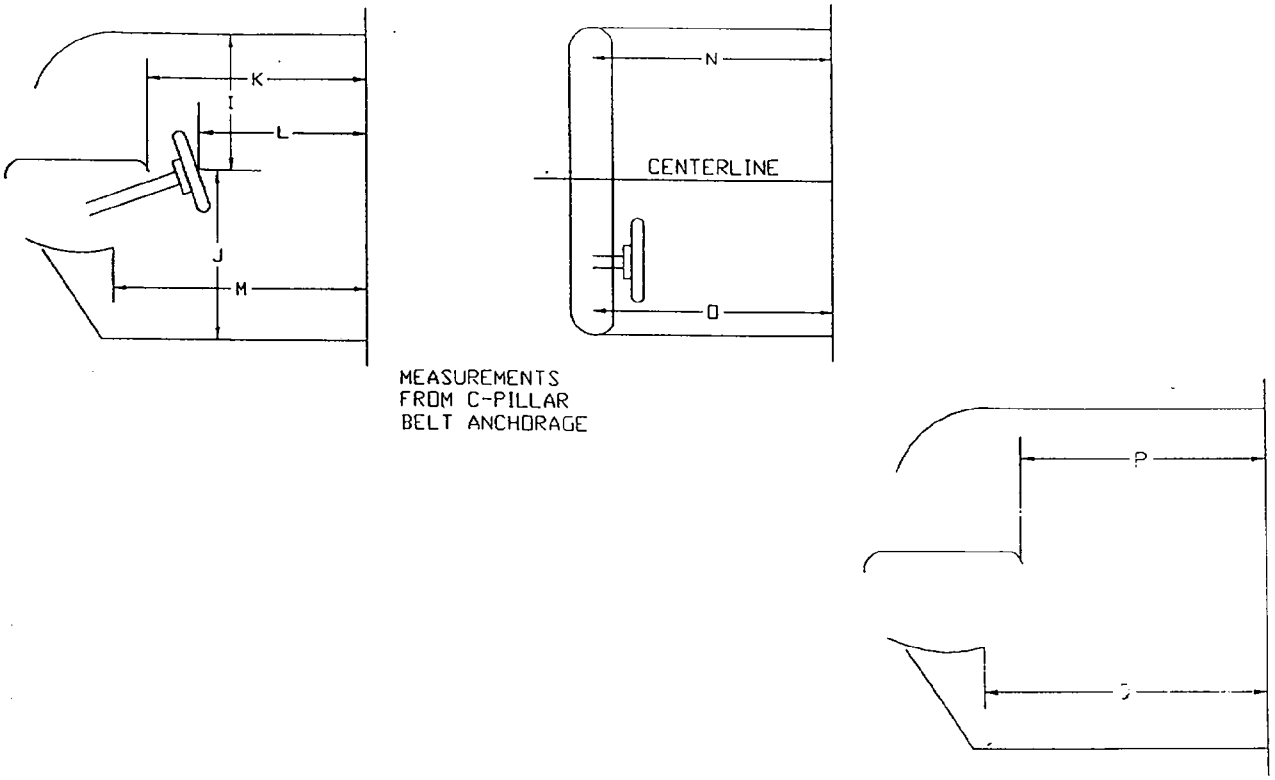


Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	748	539	209
B	523	498	25
C	464	470	-6
D	446	457	-11
E	1890	2070	-180
H	1728	1896	-168
F (cm^2)	8444	9471	-1027

TEST VEHICLE MEASUREMENTS (Cont'd)

STATIC PASSENGER COMPARTMENT INTRUSION



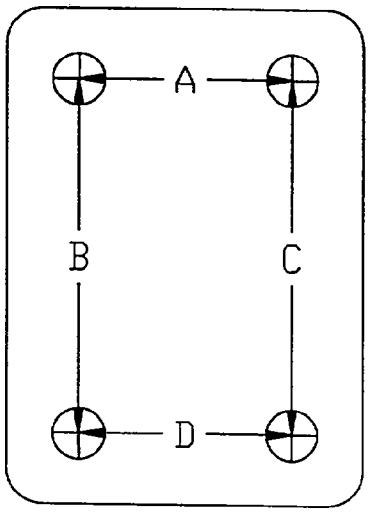
Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
I	406	307	99
J	611	664	-53
K	1689	1720	-31
L	1380	1558	-178
M	1870	2071	-201
N	1891	2058	-167
O	1914	2031	-117
P	1767	1796	-29
Q	1886	1937	-51

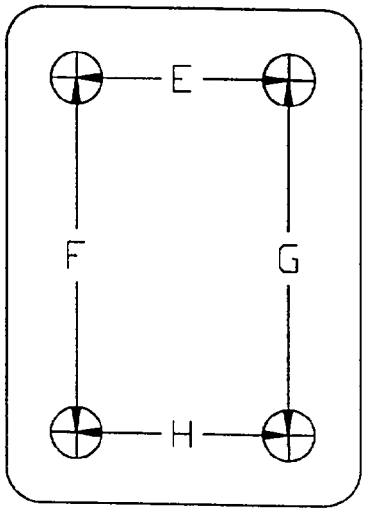
TEST VEHICLE MEASUREMENTS (Cont'd)

UNDERBODY FLOORBOARD DEFORMATION

DRIVER'S SIDE



PASSENGER'S SIDE

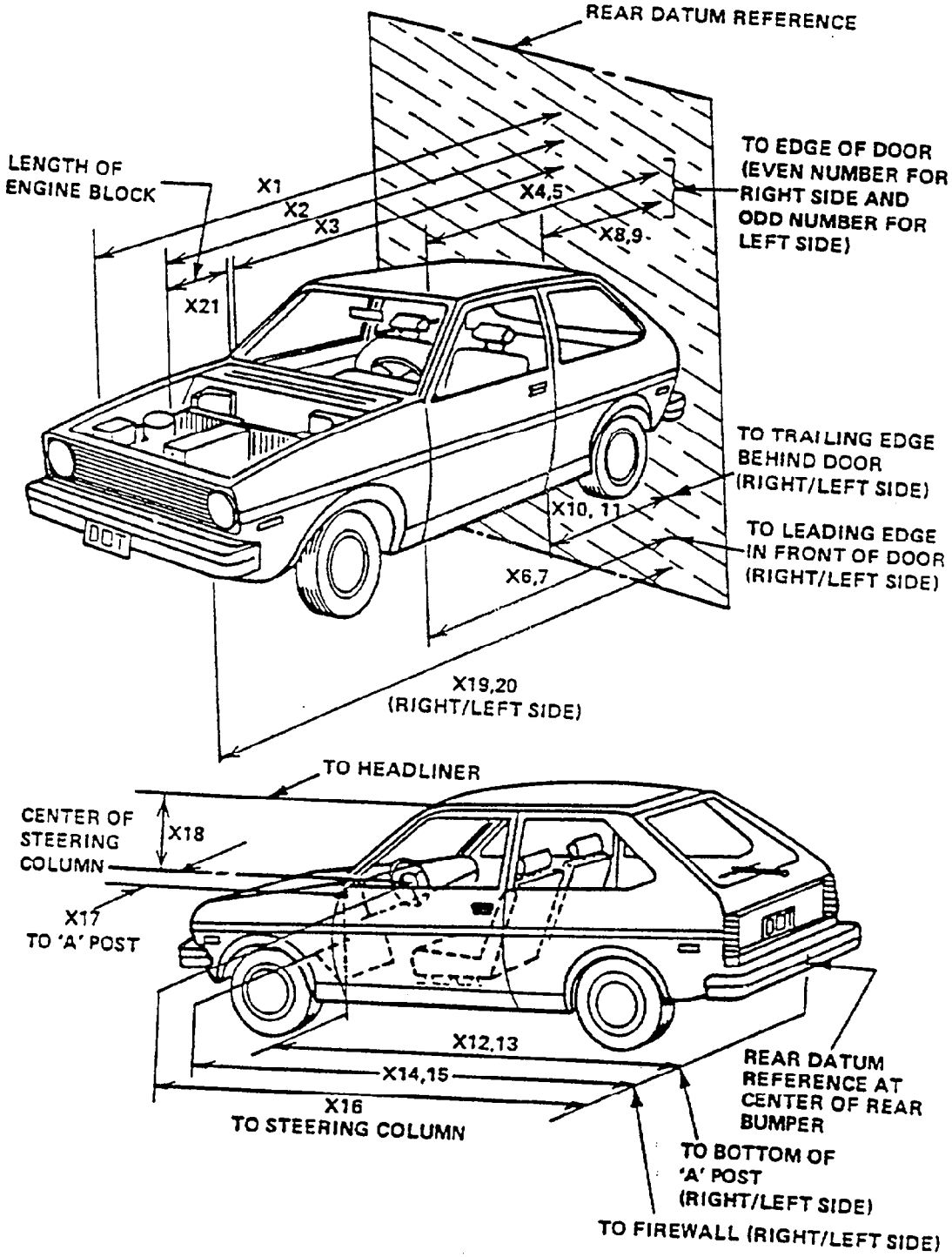


MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	294	296	-2
B	438	412	26
C	412	342	70
D	369	360	9
E	355	348	7
F	364	318	46
G	356	346	10
H	351	352	-1

TEST VEHICLE MEASUREMENTS (Cont'd)

No.	MEASUREMENT DESCRIPTION:	Pre-Test (mm)	Post-Test (mm)	Diff. (mm)
X1	Total Length of Test Vehicle at Centerline	3996	3446	550
X2	Rear Surface of Vehicle to Front of Engine	3349	3032	317
X3	Rear Surface of Vehicle to Firewall	2926	2642	284
X4	Rear Surface to Upr. Leading Edge of Rt. Door	2582	2599	-17
X5	Rear Surface to Upr. Leading Edge of Left Door	2578	2588	-10
X6	Rear Surface to Lwr. Leading Edge of Rt. Door	2602	2581	21
X7	Rear Surface to Lwr. Leading Edge of Left Door	2608	2576	32
X8	Rear Surface to Upr. Trailing Edge of Rt. Door	1391	1394	-3
X9	Rear Surface to Upr. Trailing Edge of Left Door	1394	1392	2
X10	Rear Surface to Lwr. Trailing Edge of Rt. Door	1397	1379	18
X11	Rear Surface to Lwr. Trailing Edge of Left Door	1403	1383	20
X12	Rear Surface to Bottom of A-Post on Rt. Side	2602	2579	23
X13	Rear Surface to Bottom of A-Post on Left Side	2606	2579	27
X14	Rear Surface to Firewall on Right Side	2892	2816	76
X15	Rear Surface to Firewall on Left Side	2877	2809	68
X16	Rear Surface to Steering Column	2137	2142	-5
X17	Center of Steering Column to A-Post	385	311	74
X18	Center of Steering Column to Headlining	405	300	105
X19	Rear Surface to Right Side of Front Bumper	3826	3443	383
X20	Rear Surface to Left Side of Front Bumper	3834	3356	478
X21	Length of Engine Block	440	440	0

TEST VEHICLE MEASUREMENTS (Cont'd)



ACCIDENT INVESTIGATION DIVISION DATA

FOR 35 MPH FRONTAL BARRIER IMPACT

VEHICLE MAKE/MODEL/BODY STYLE: 1996/Toyota/Paseo

VEH. NHTSA NO.: MT5101 ; VIN: JT2CCS2H1T0024423

MODEL YEAR: 1996 ; BUILD DATE: 4/96 ; TEST DATE: September 10, 1996

VEH. SIZE CATEGORY: _____; TEST WEIGHT: 1125.9 kg

VEH. WHEELBASE: 2377 mm; FRONT OVERHANG: 904 mm; OVERALL WIDTH: 1644 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: 57.0 kph ; TIME OF SEPARATION: ____msec

VELOCITY CHANGE: 65.0 kph

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE: F (Frontal)

CRUSH DEPTH DIMENSIONS:

C1 = 478 mm

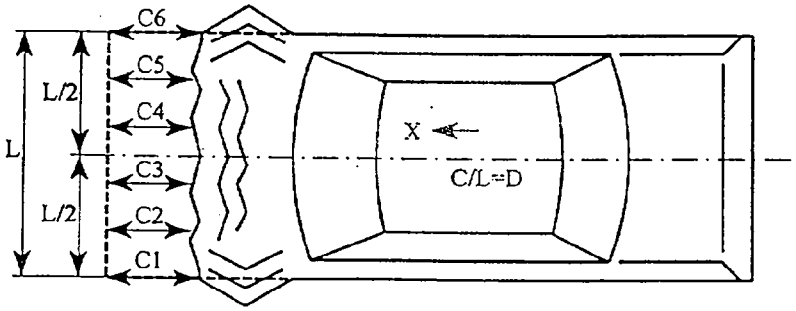
C2 = 469 mm

C3 = 508 mm

C4 = 447 mm

C5 = 427 mm

C6 = 383 mm



MIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitude)

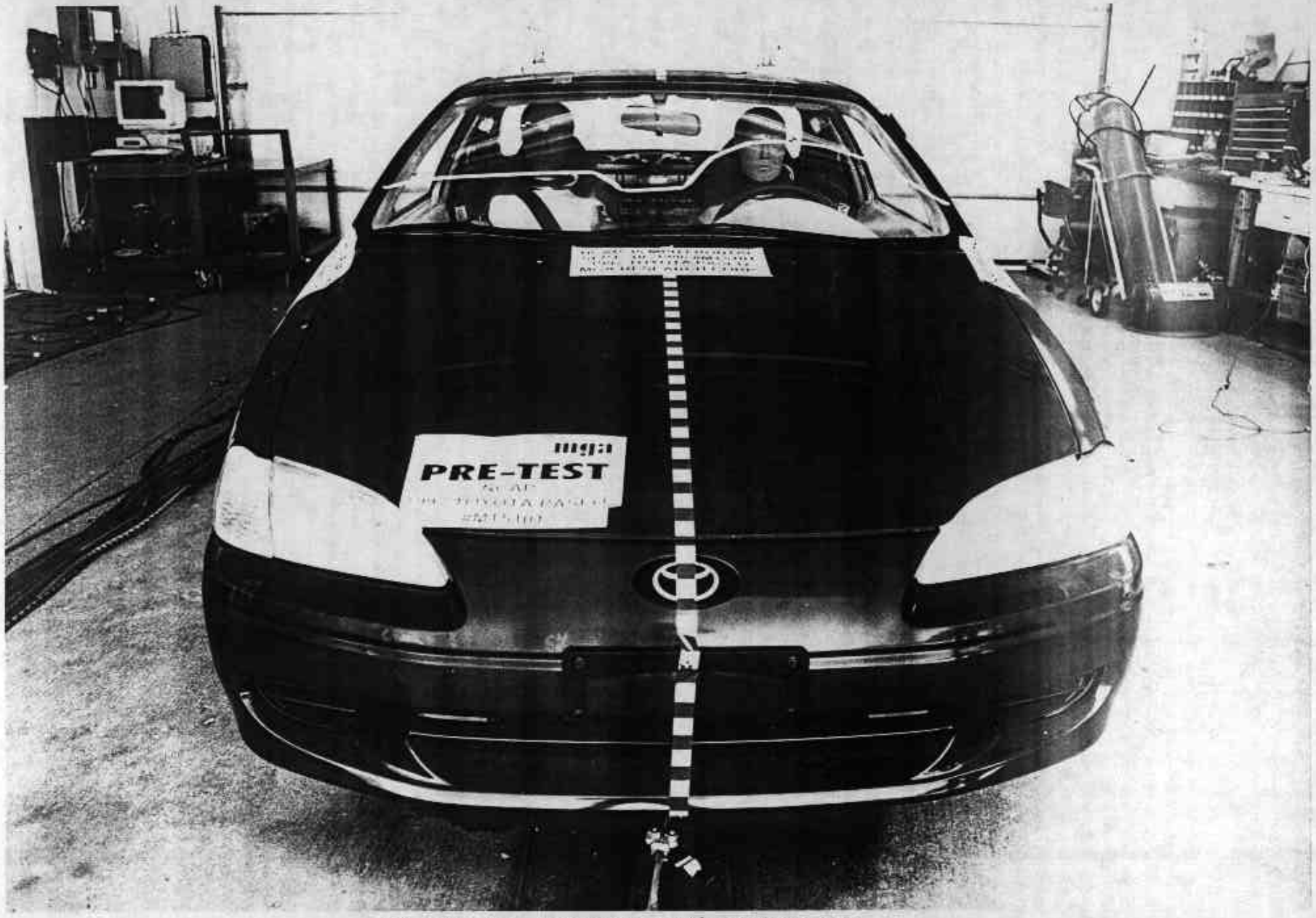
LENGTH OF DAMAGED REGION: L = 1336 mm

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (Cont'd)



A-1

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

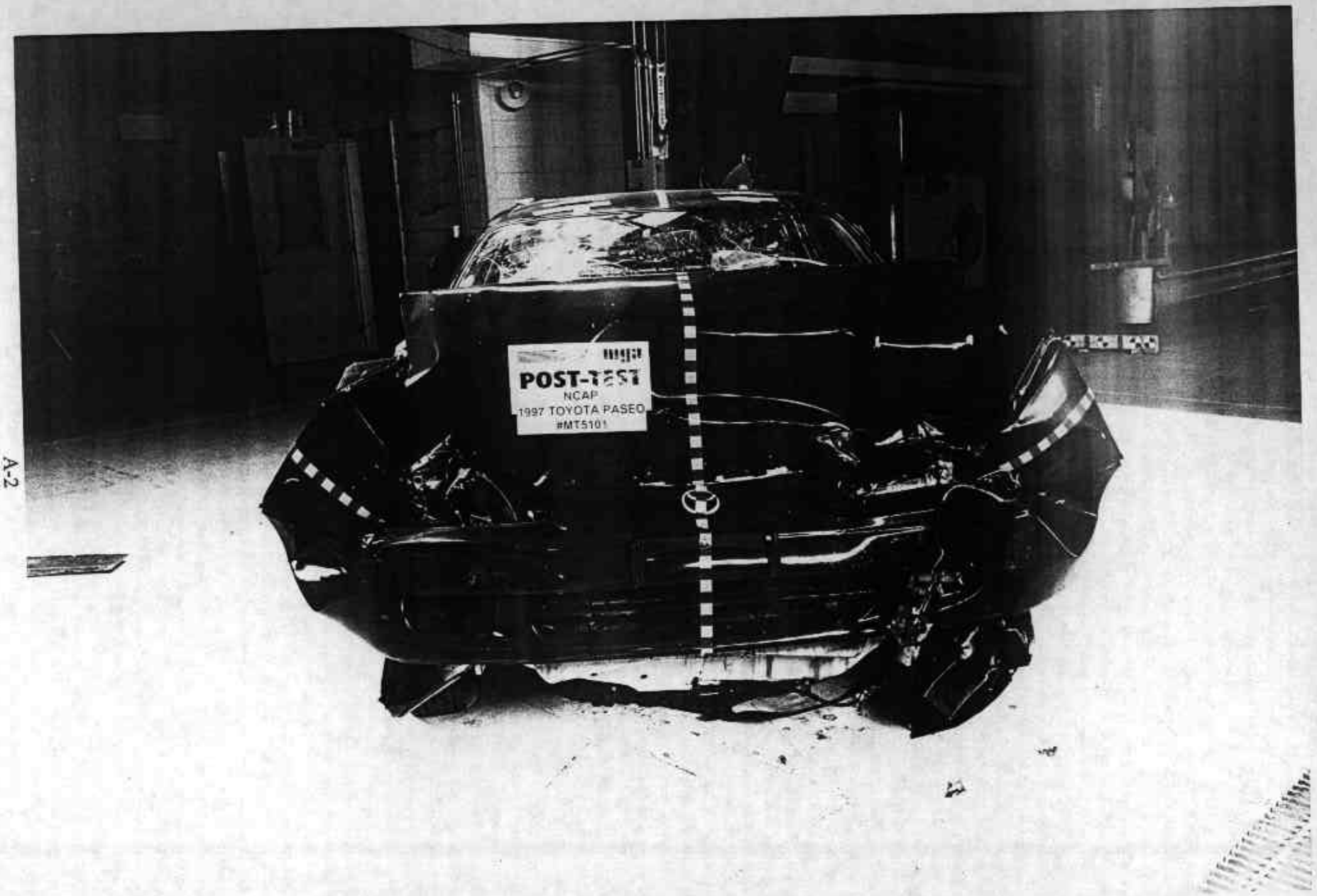


Photo No. A-2 - Post-Test Front View of Test Vehicle

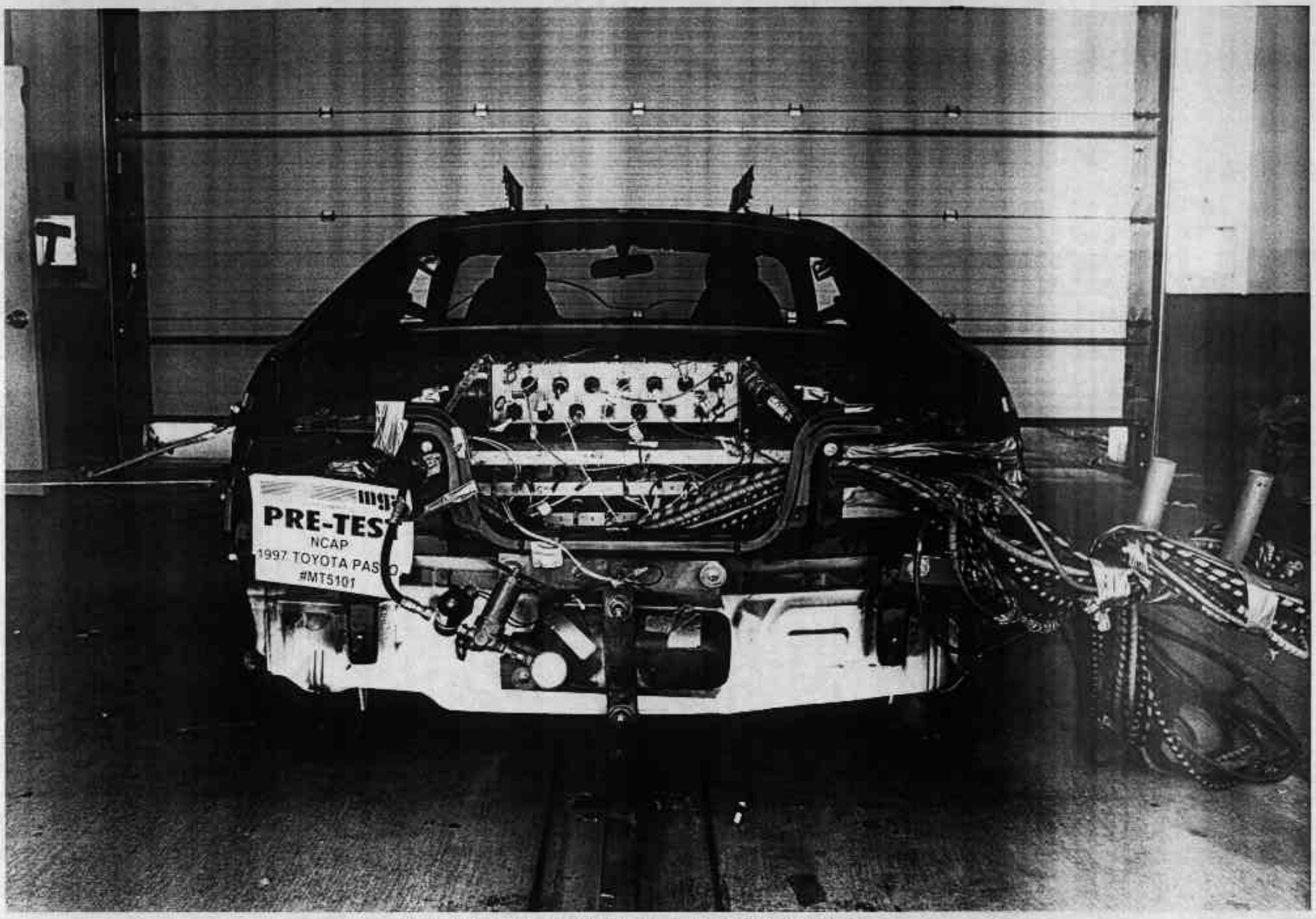
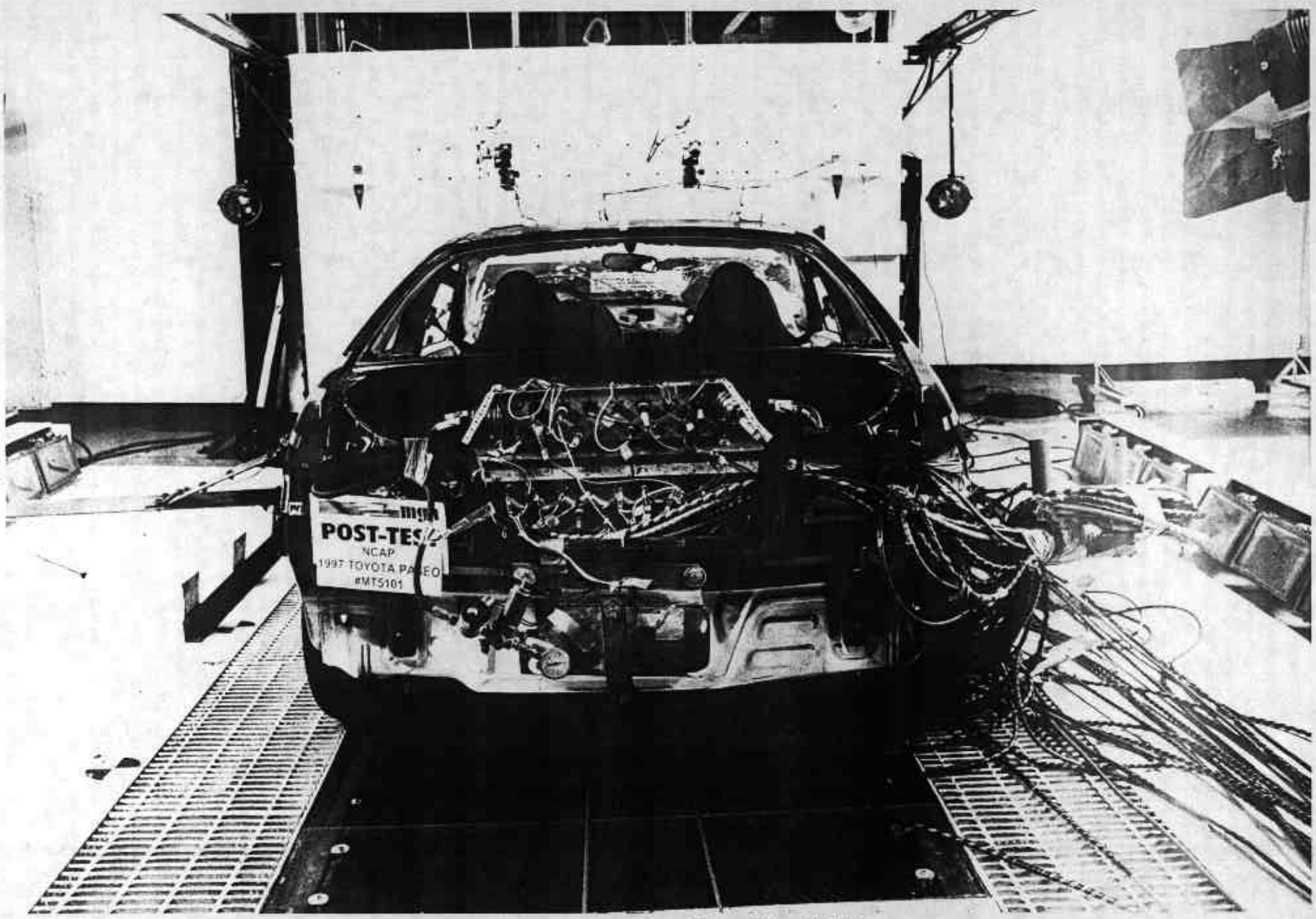
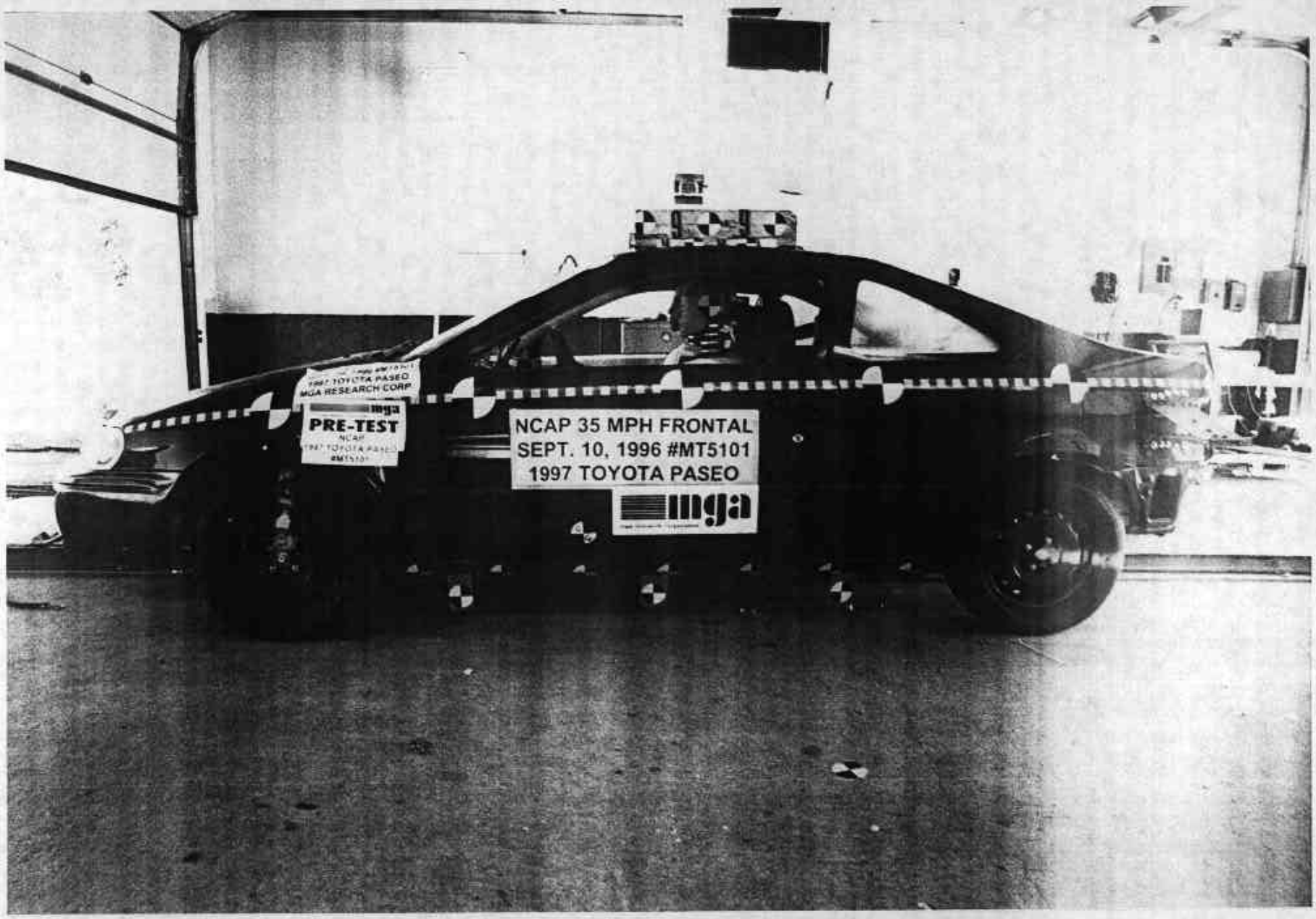


Photo No. A-3 - Pre-Test Rear View of Test Vehicle



A-4

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



A-5

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

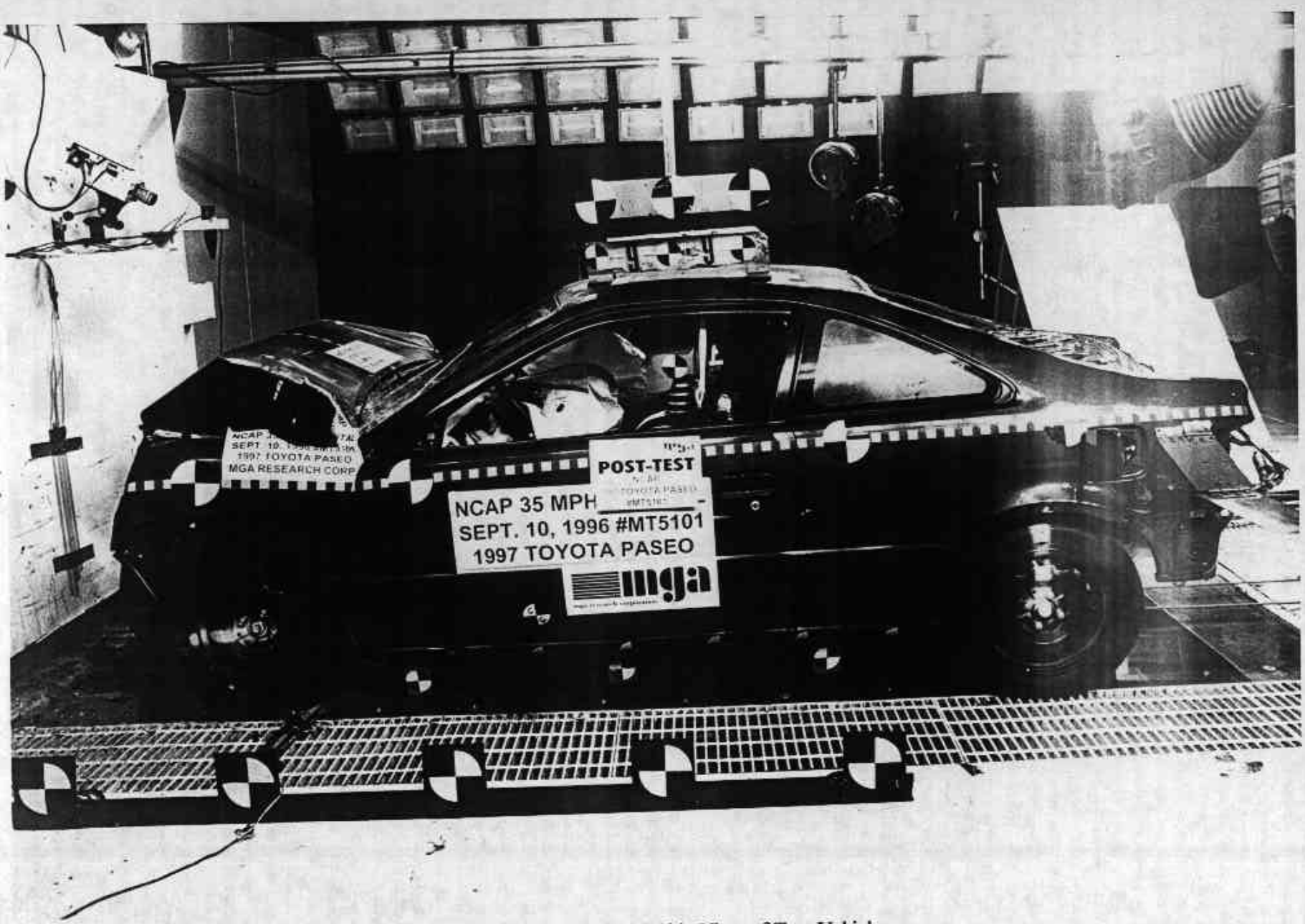
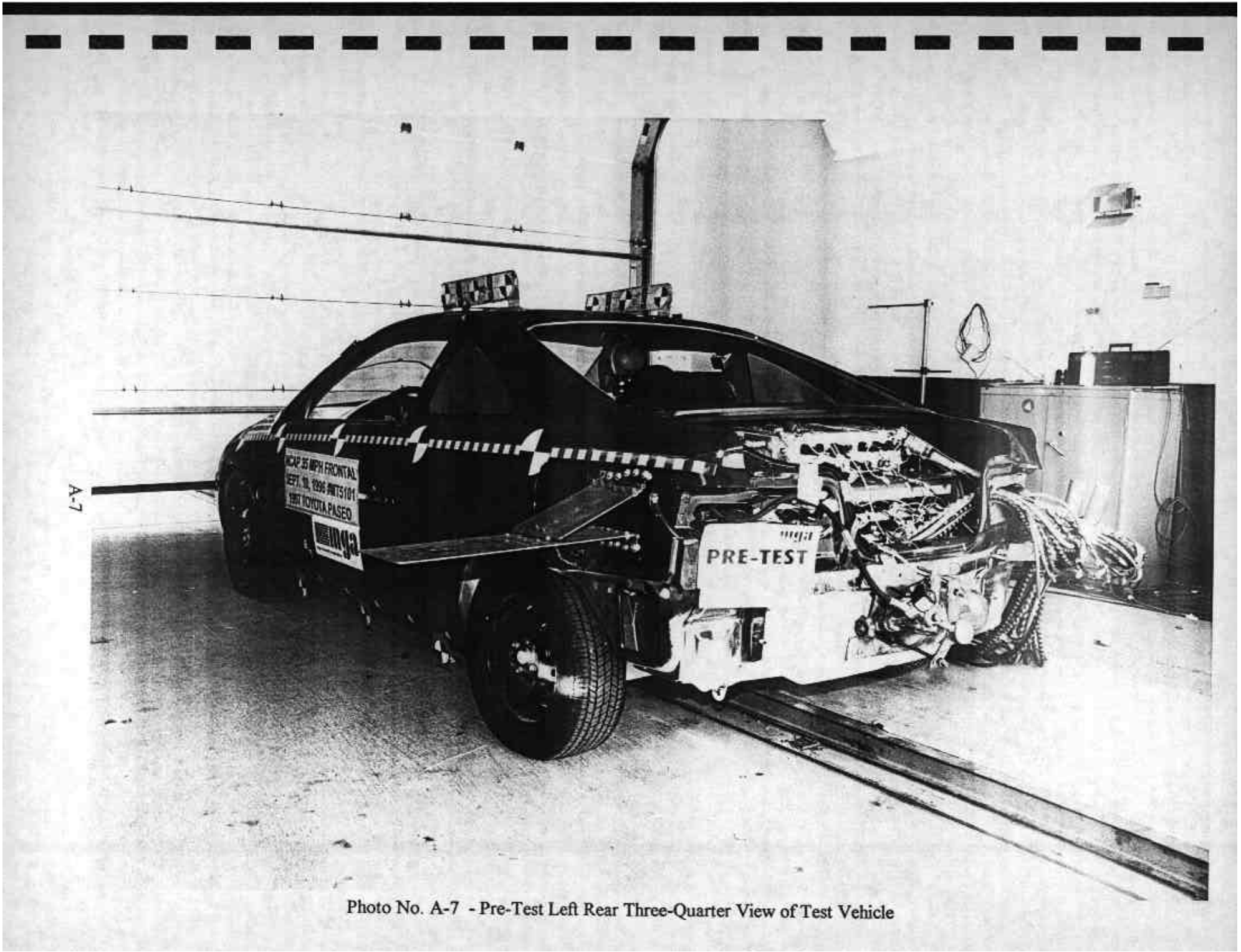
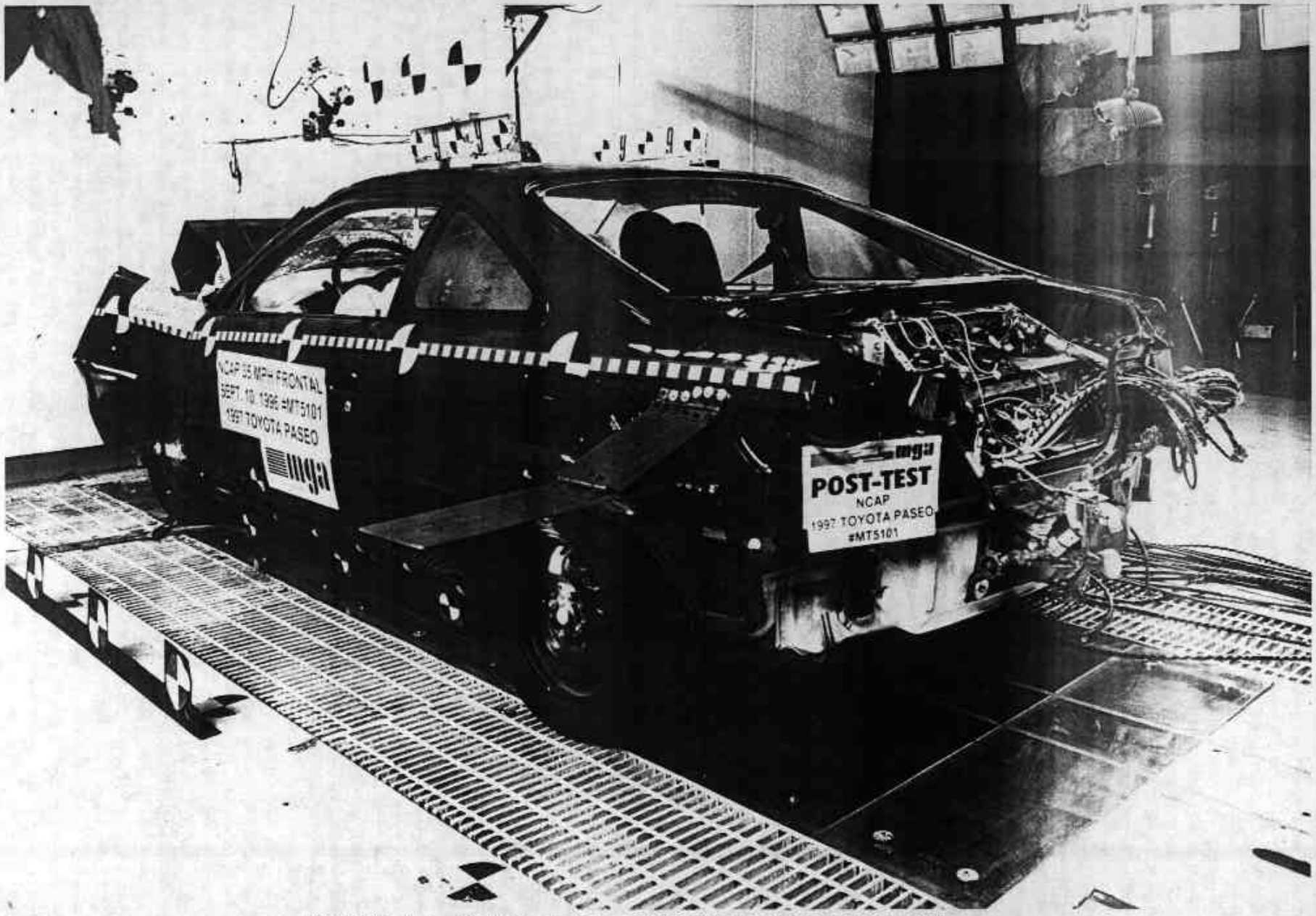


Photo No. A-6 - Post-Test Left Side View of Test Vehicle



A-7

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



A-8

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

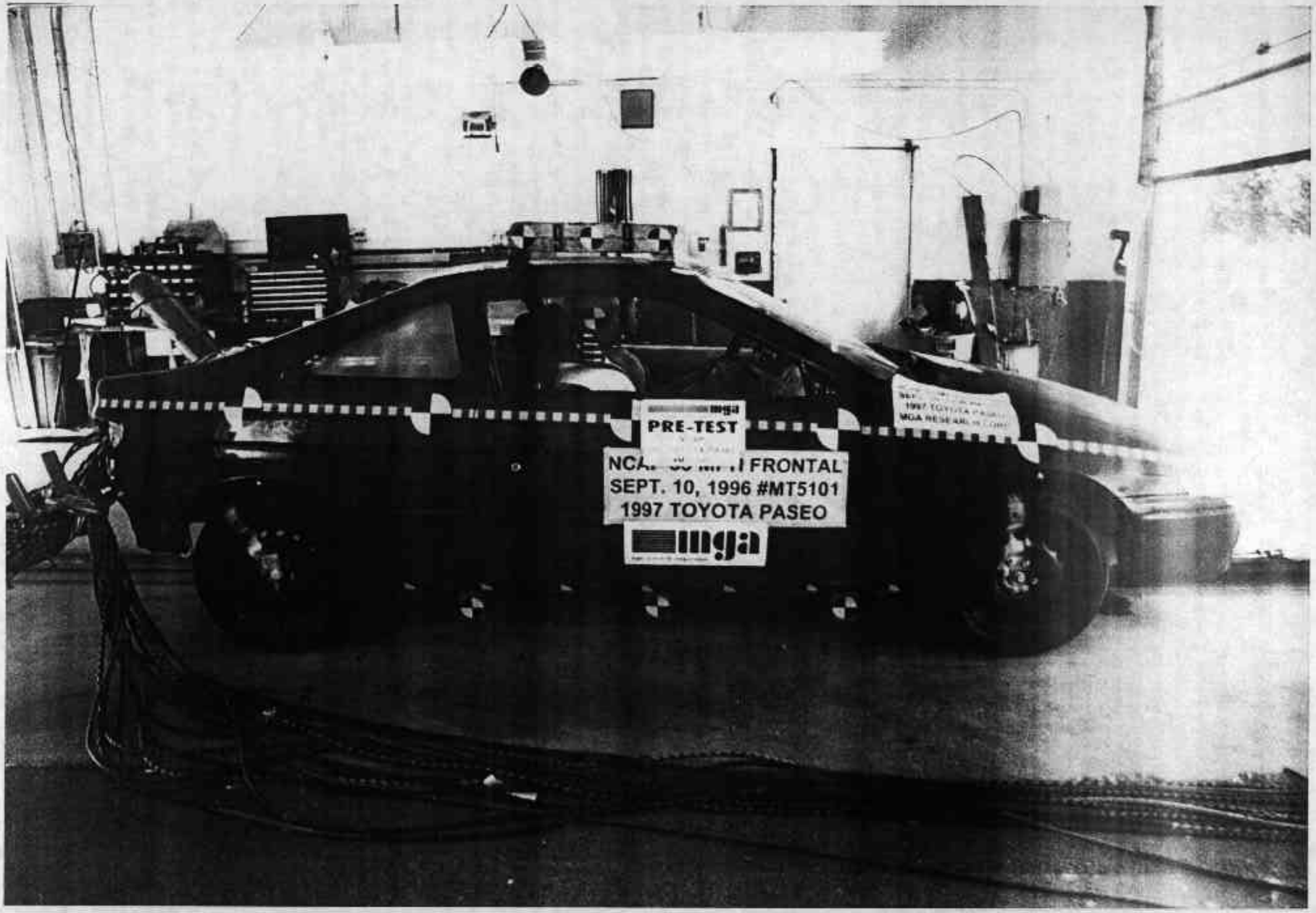


Photo No. A-9 - Pre-Test Right Side View of Test Vehicle

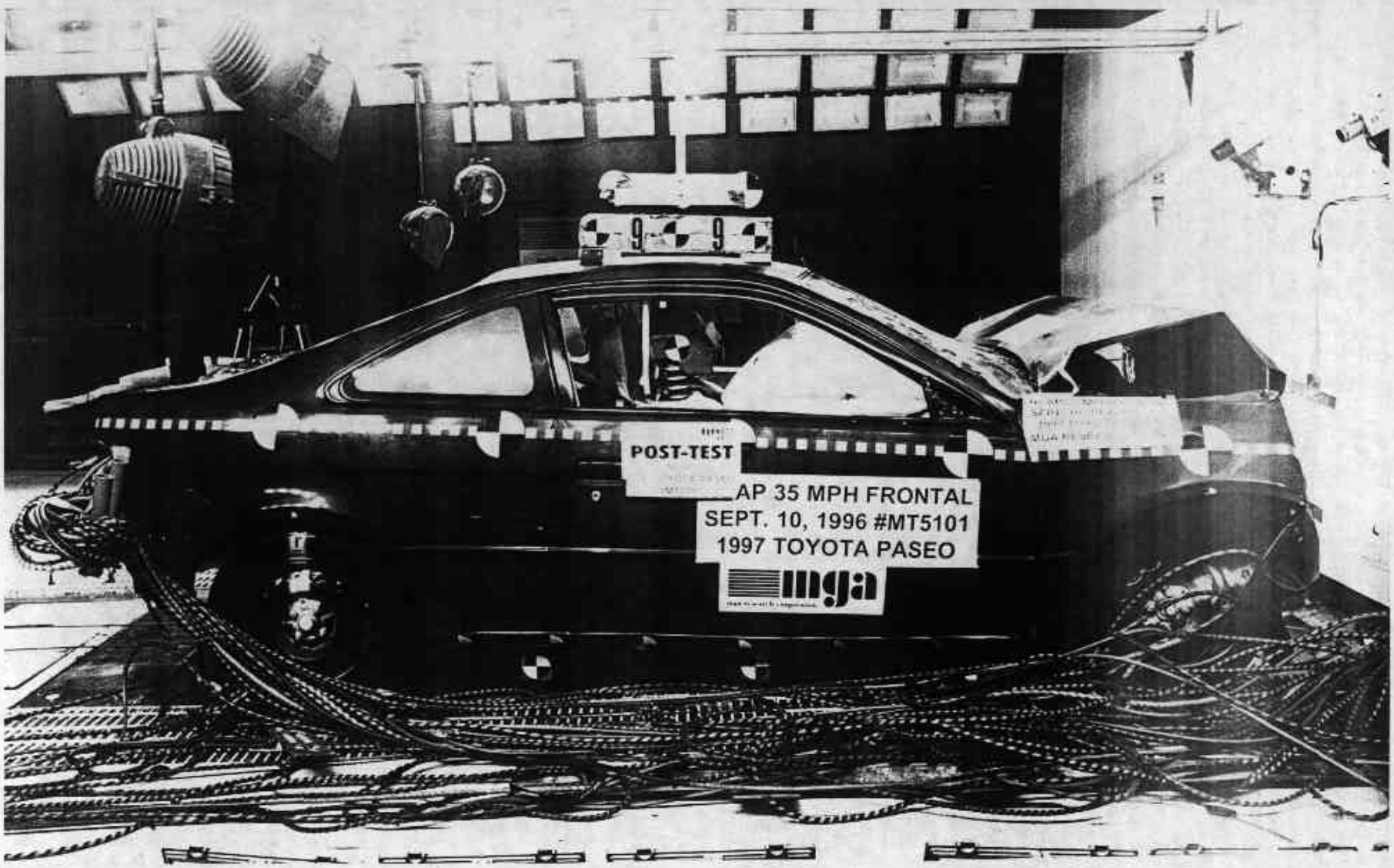


Photo No. A-10 - Post-Test Right Side View of Test Vehicle

A-11

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

A-12

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

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

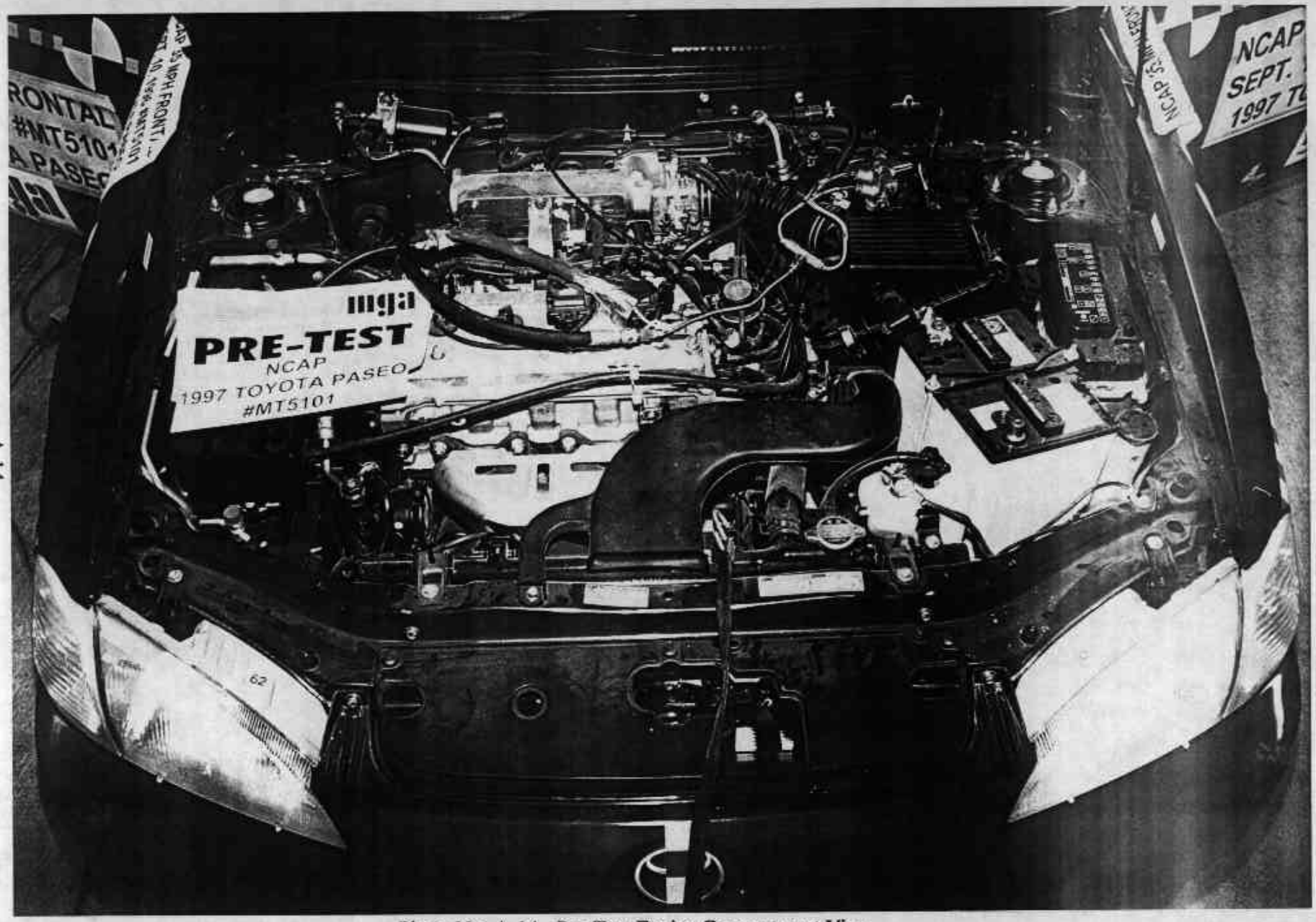
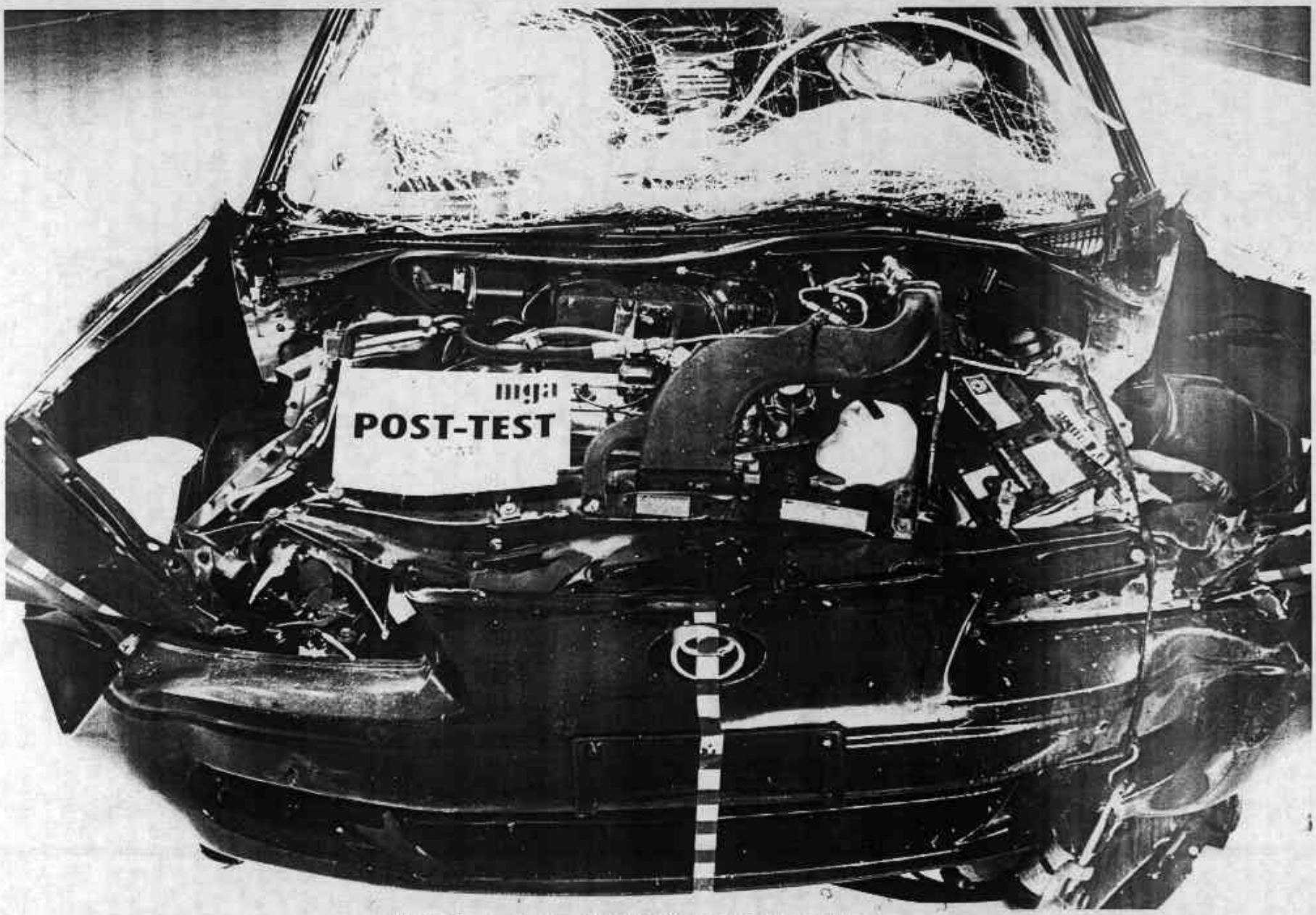


Photo No. A-14 - Pre-Test Engine Compartment View



A-15

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

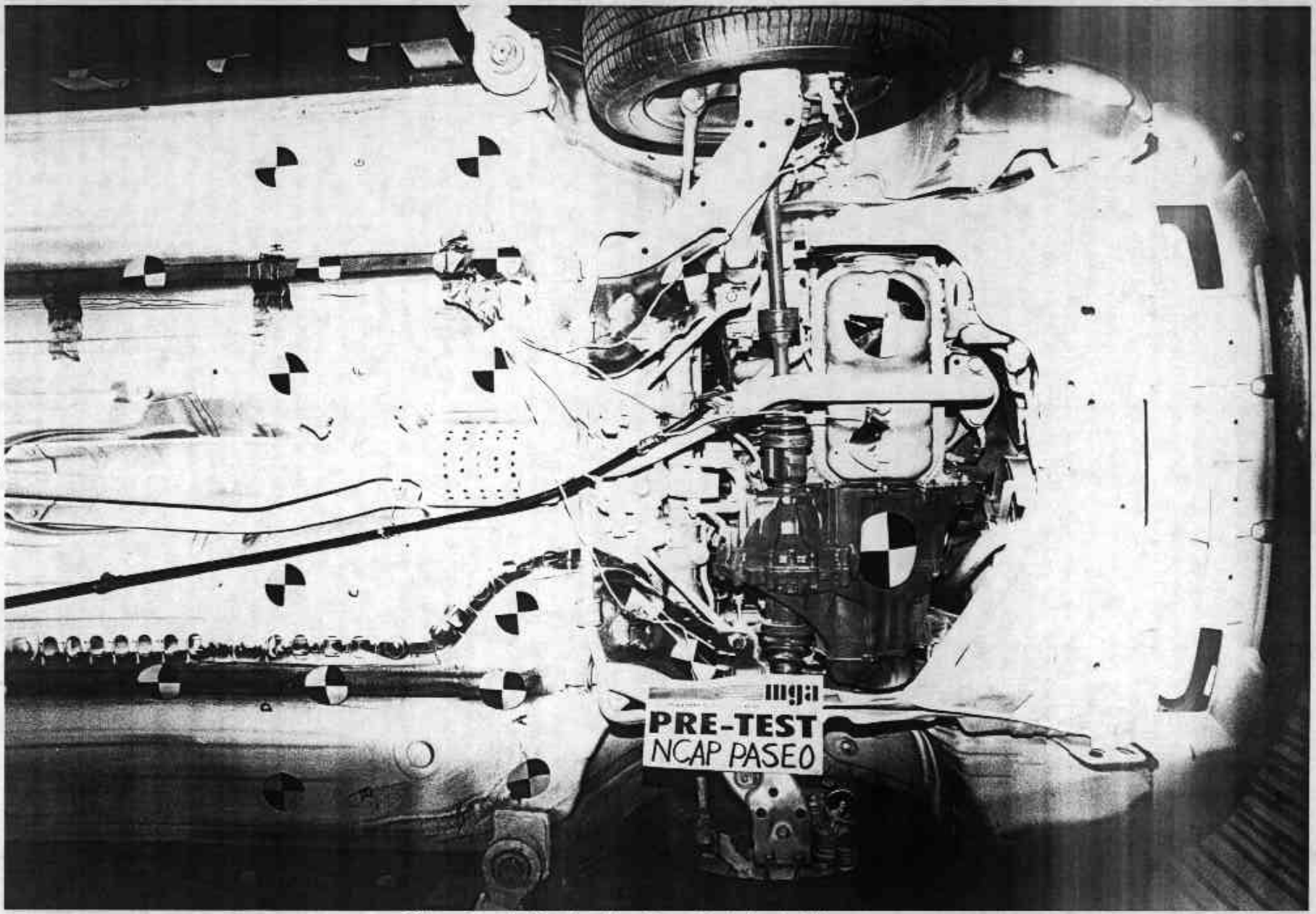


Photo No. A-16 - Pre-Test Front Underbody View

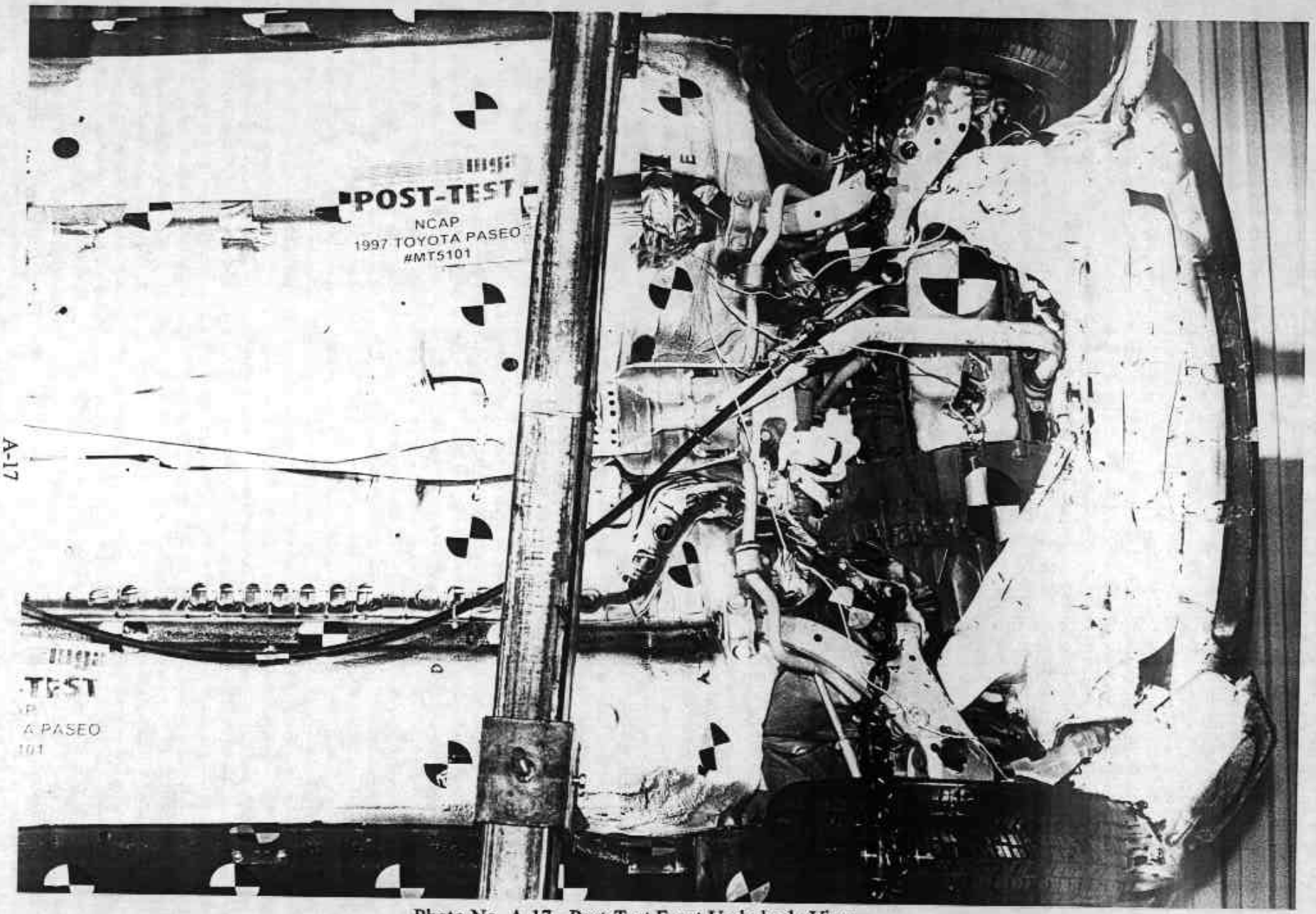


Photo No. A-17 - Post-Test Front Underbody View

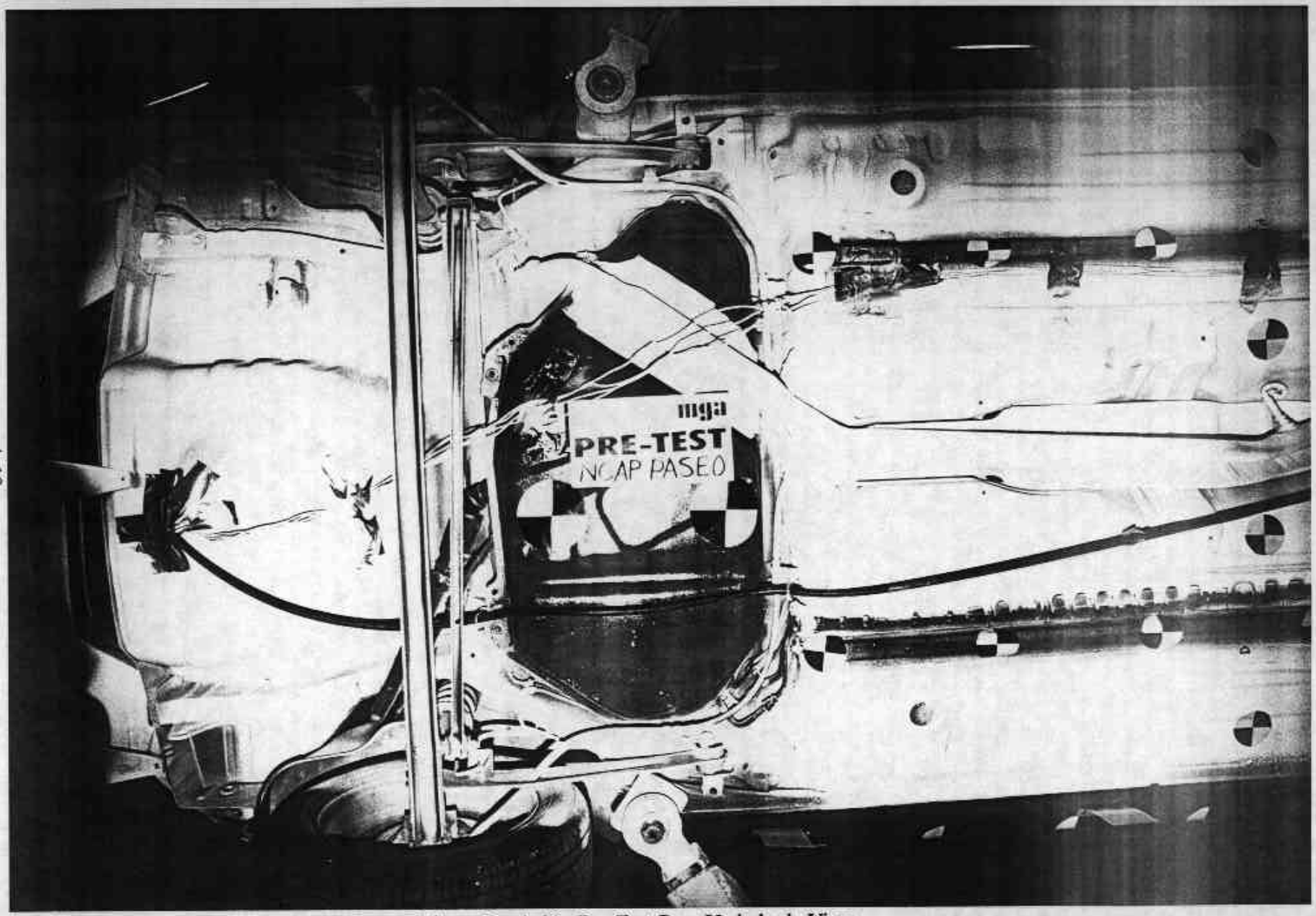


Photo No. A-18 - Pre-Test Rear Underbody View

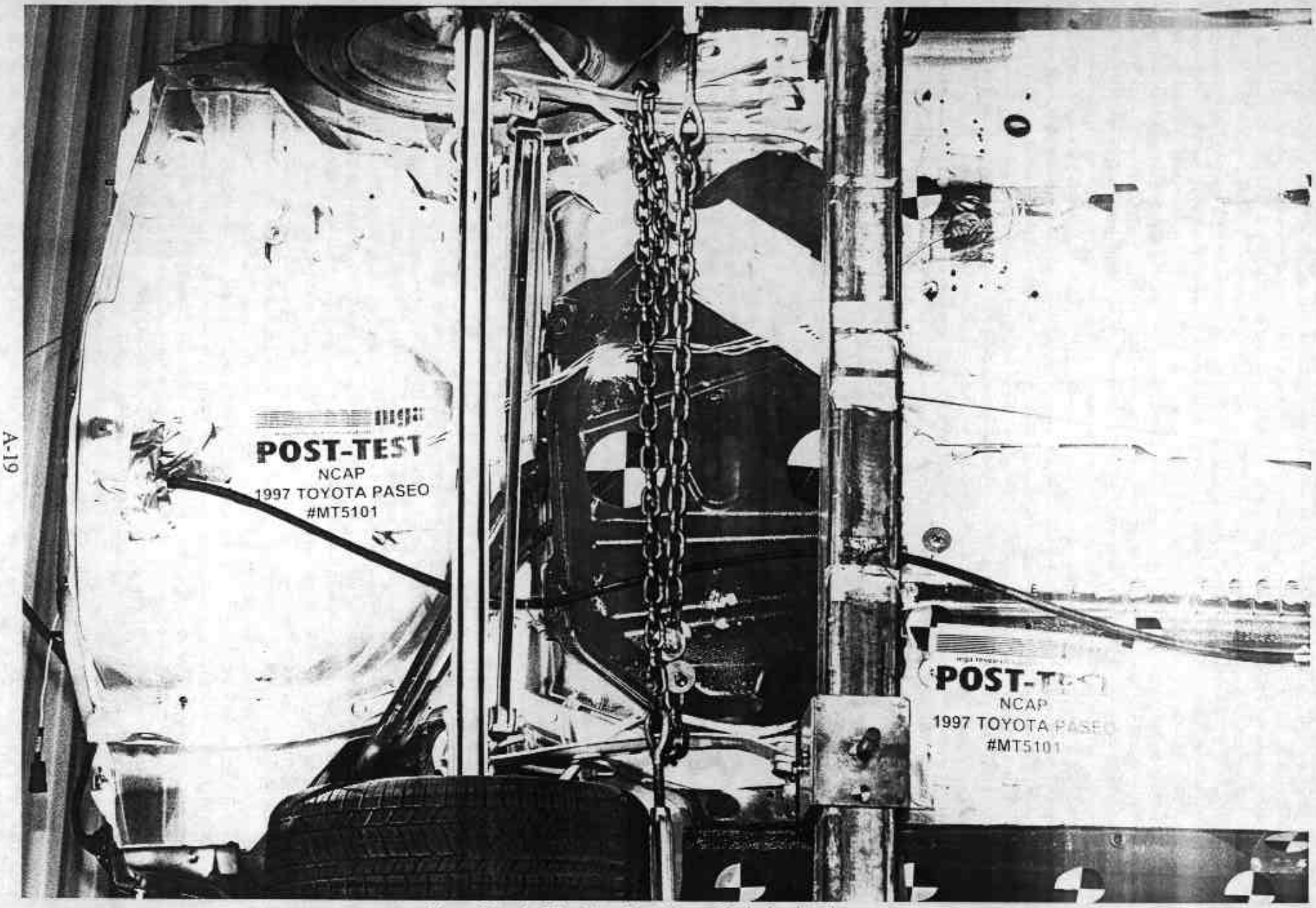
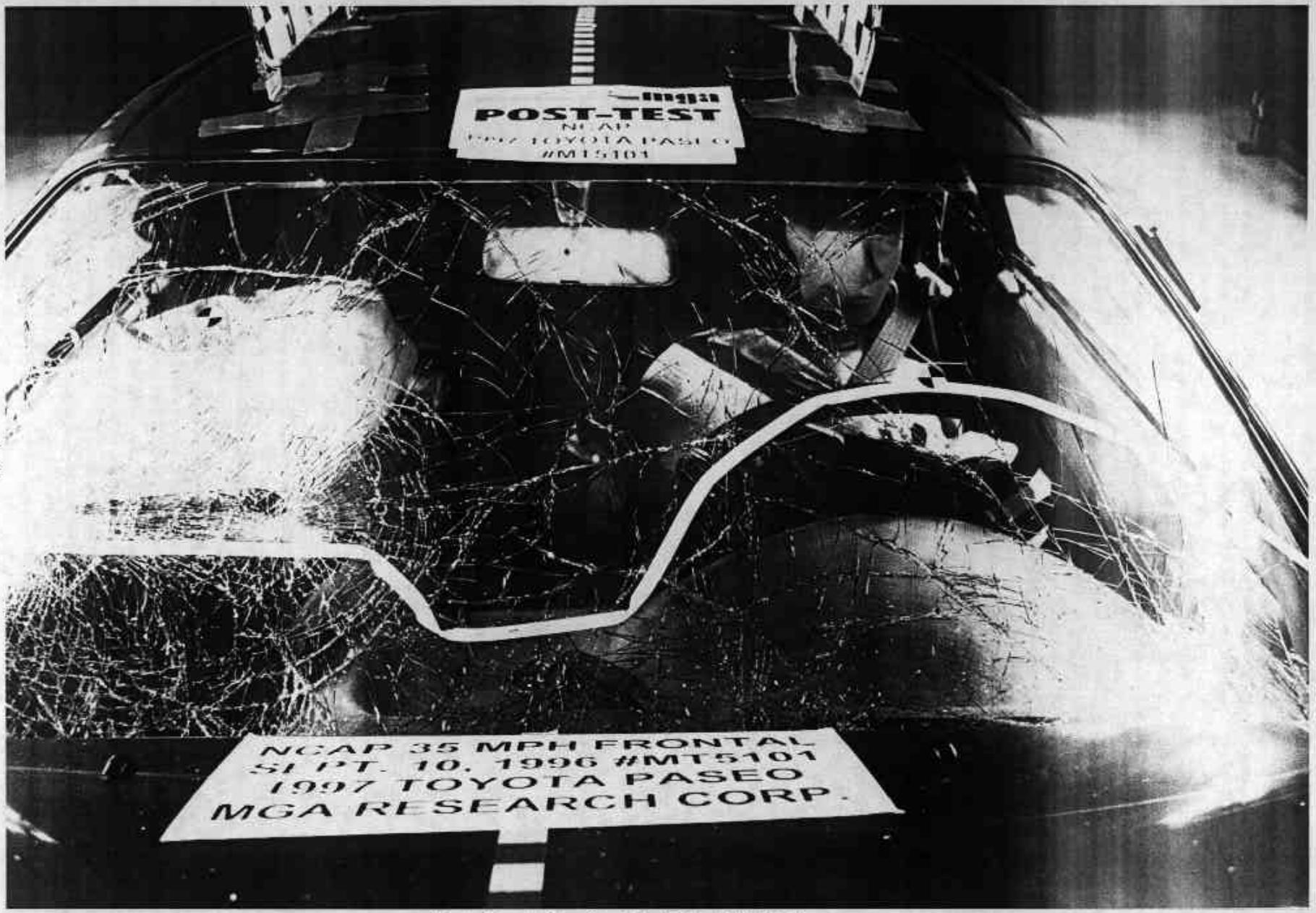


Photo No. A-19 - Post-Test Rear Underbody View

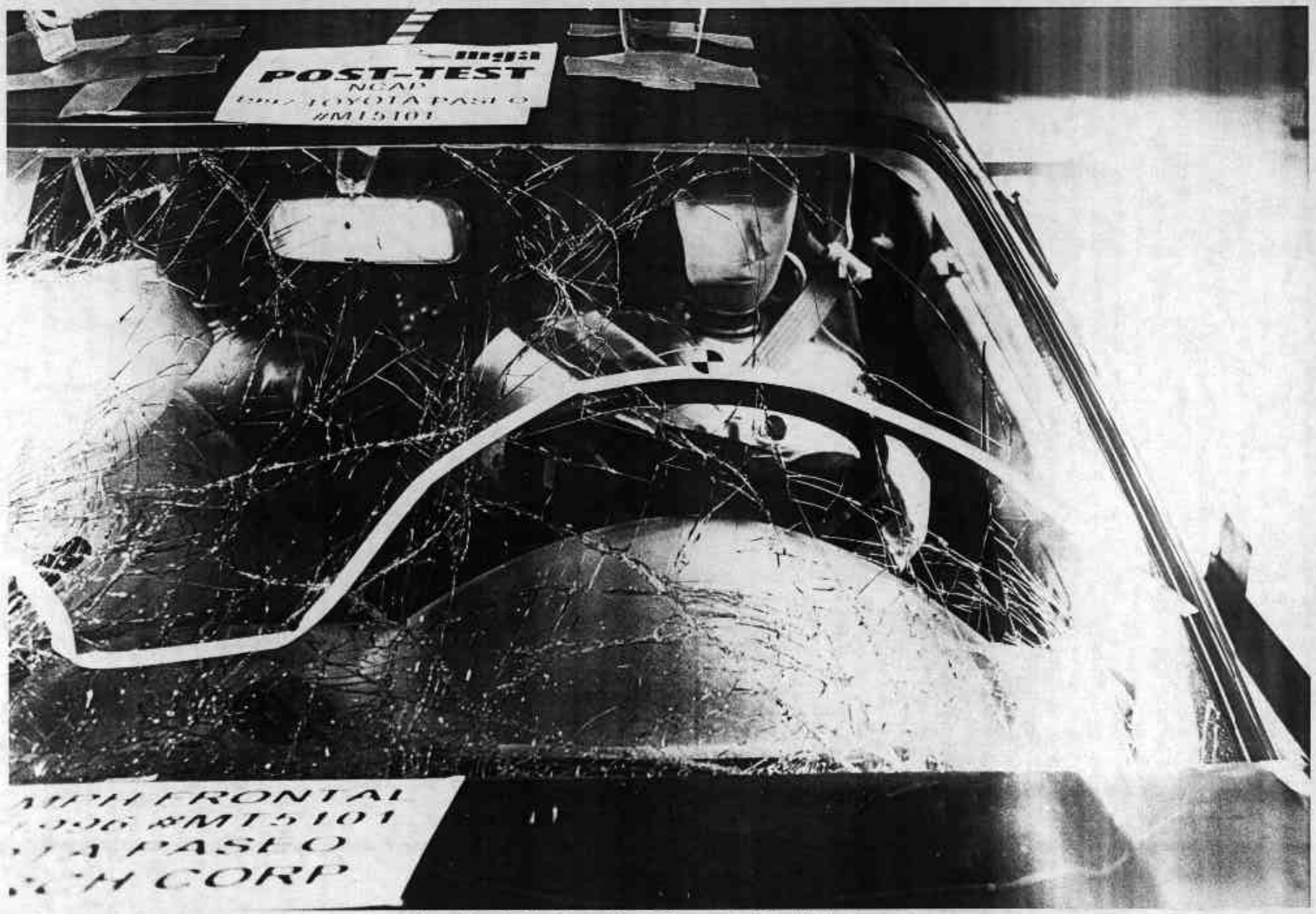
Photo No. A-20 - Pre-Test Windshield View



A-21

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

Photo No. A-22 - Pre-Test Driver Windshield View



A-23

Photo No. A-23 - Post-Test Driver Windshield View

Photo No. A-24 - Pre-Test Passenger Windshield View

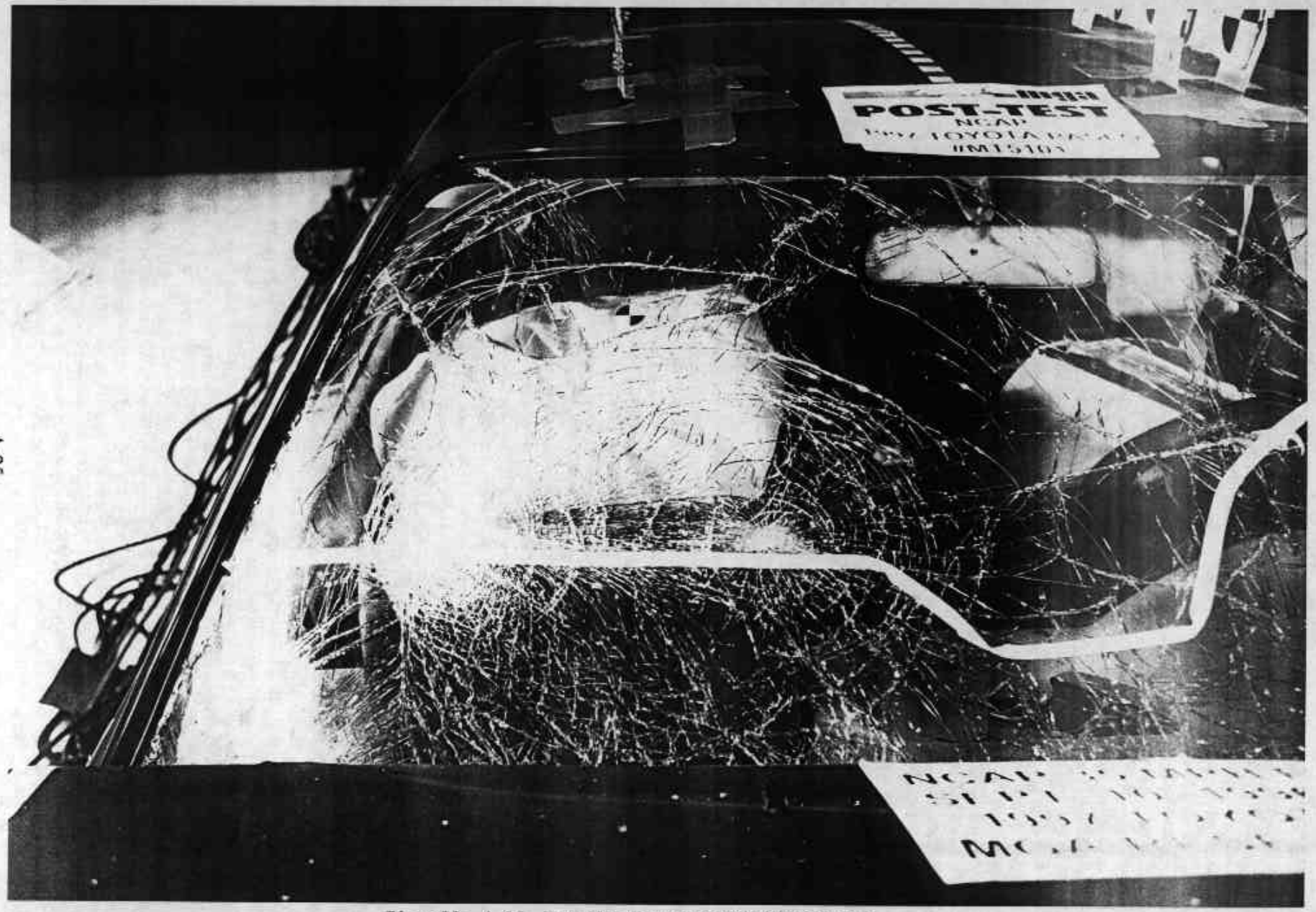


Photo No. A-25 - Post-Test Passenger Windshield View

Photo No. A-26 - Pre-Test Driver Dummy Position Left Side View

A-27

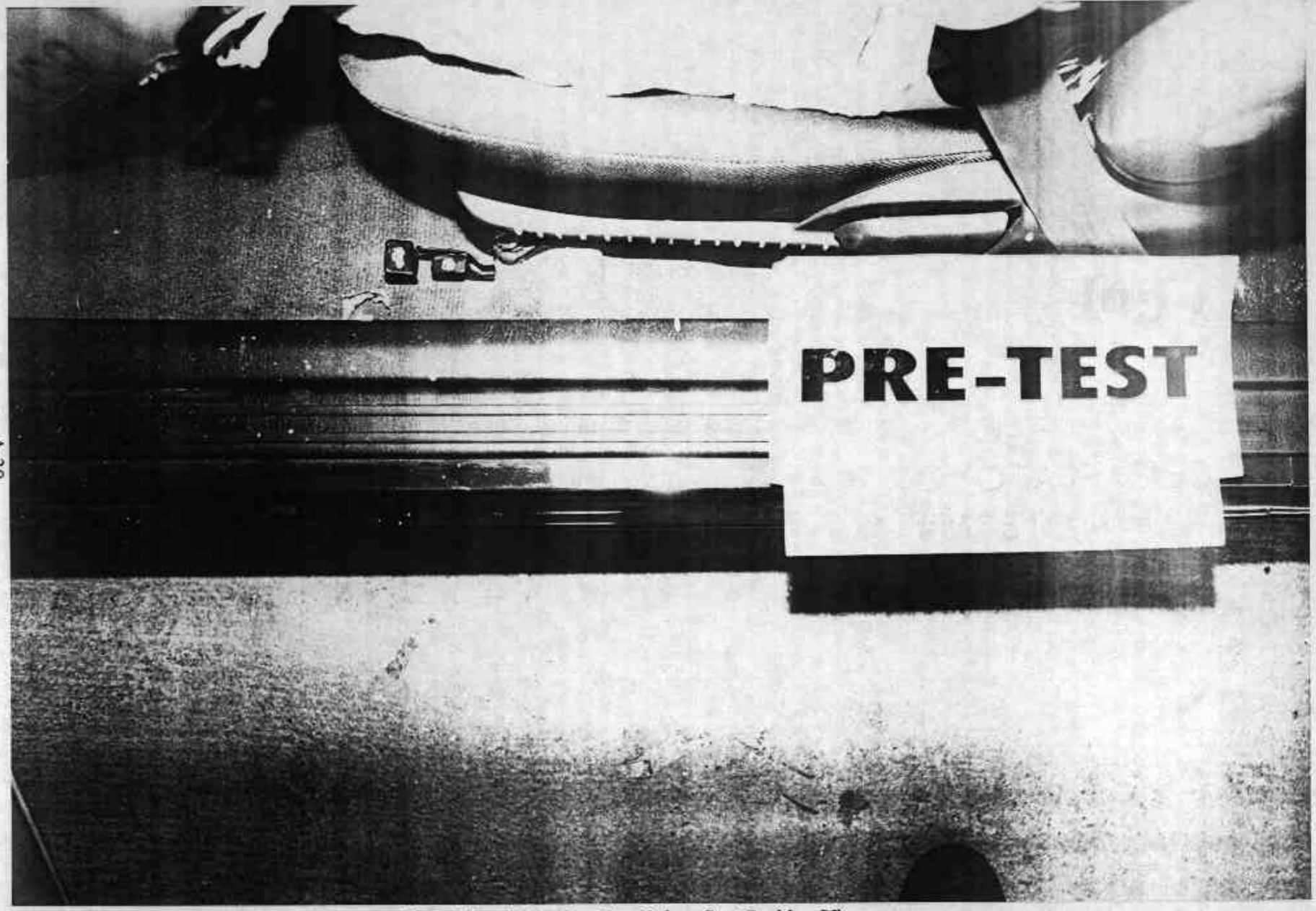
Photo No. A-27 - Post-Test Driver Dummy Position Left Side View

A-28

Photo No. A-28 - Pre-Test Driver Dummy Position Left Side View
(Door Open)

A-29

Photo No. A-29 - Post-Test Driver Dummy Position Left Side View
(Door Open)



A-30

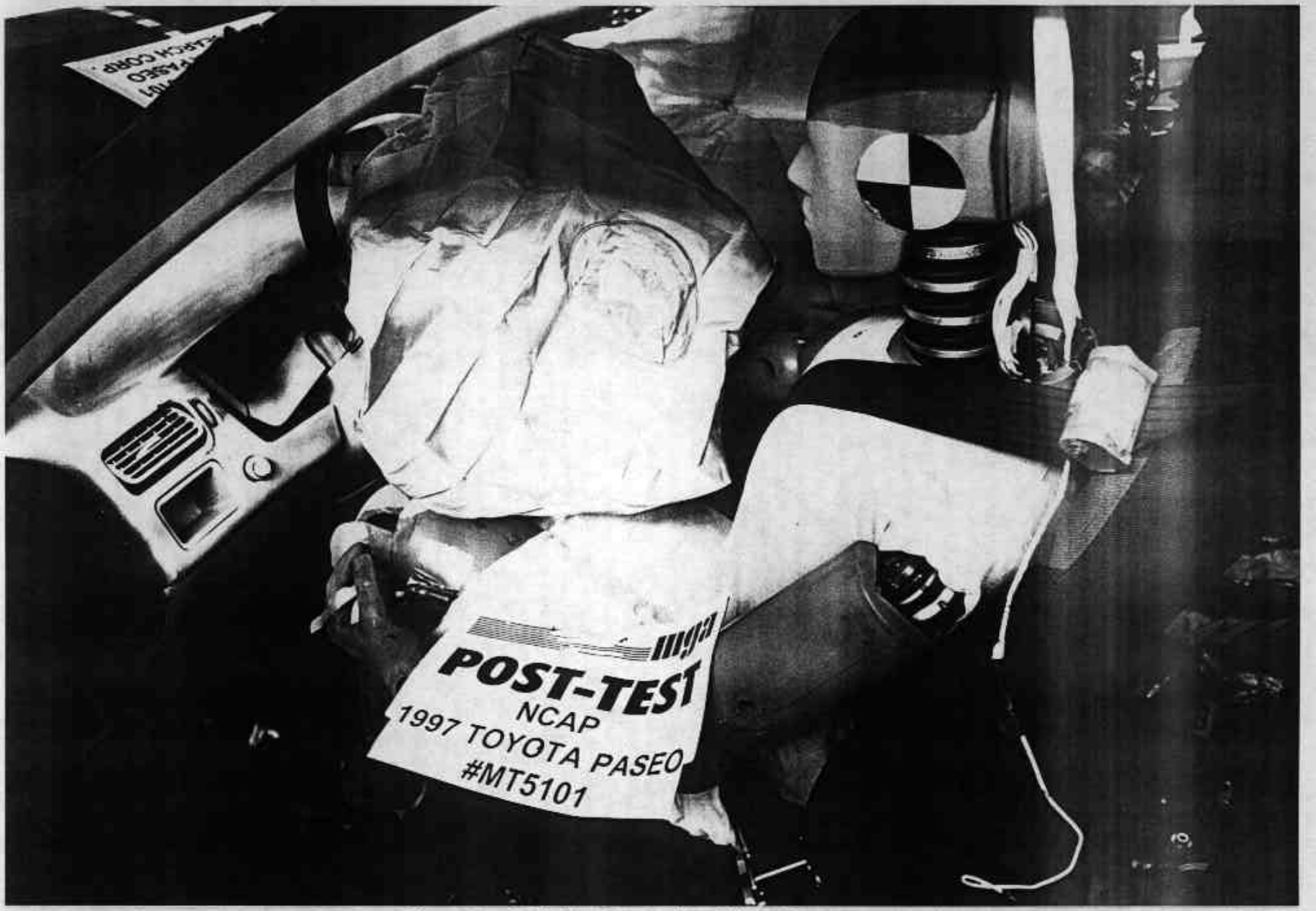
Photo No. A-30 - Pre-Test Driver Seat Position View

Photo No. A-31 - Post-Test Driver Seat Position View

A-32

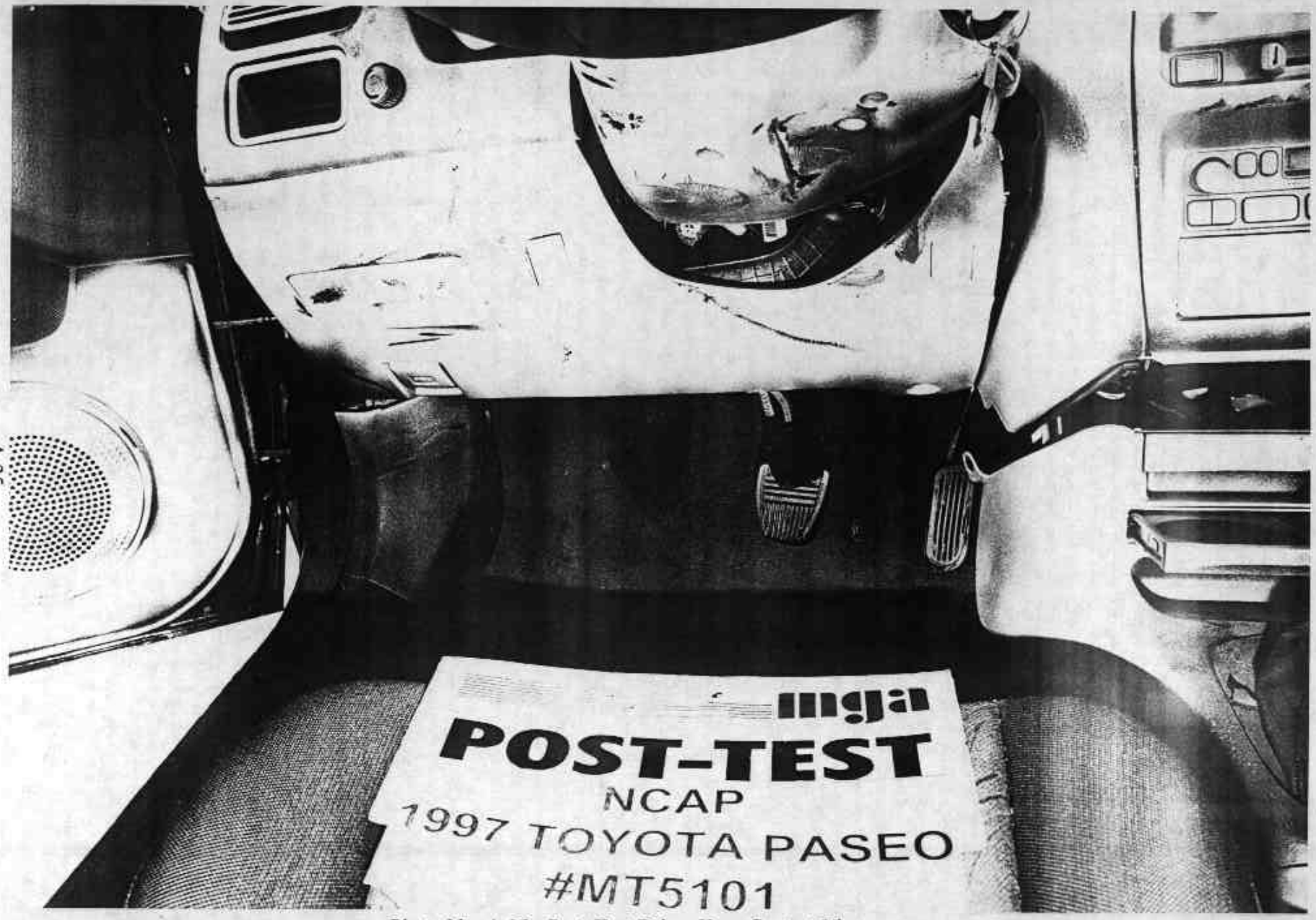
Photo No. A-32 - Pre-Test Driver Dummy Knee Position

Photo No. A-33 - Post-Test Driver Dummy Knee Position



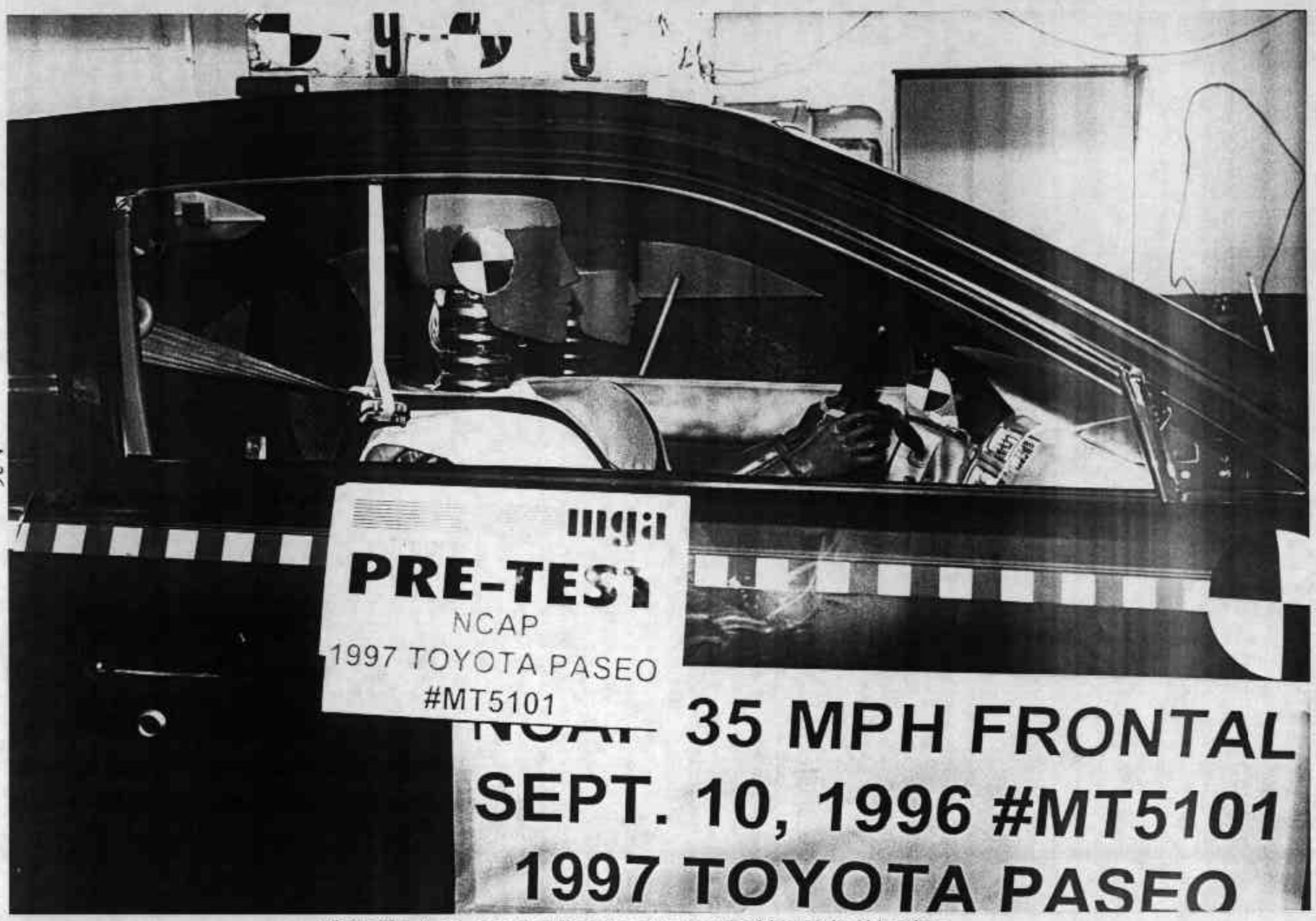
A-34

Photo No. A-34 - Post-Test Driver Airbag Contact



A-35

Photo No. A-35 - Post-Test Driver Knee Contact View



A-36

Photo No. A-36 - Pre-Test Passenger Dummy Position Right Side View

A-37

Photo No. A-37 - Post-Test Passenger Dummy Position Right Side View

Photo No. A-38 - Pre-Test Passenger Dummy Position Right Side View
(Door Open)

Photo No. A-39 - Post-Test Passenger Dummy Position Right Side View
(Door Open)

A-40

Photo No. A-40 - Pre-Test Passenger Seat Position View

Photo No. A-41 - Post-Test Passenger Seat Position View

A-42

Photo No. A-42 - Pre-Test Passenger Dummy Knee Position

A-43

Photo No. A-43 - Post-Test Passenger Dummy Knee Position

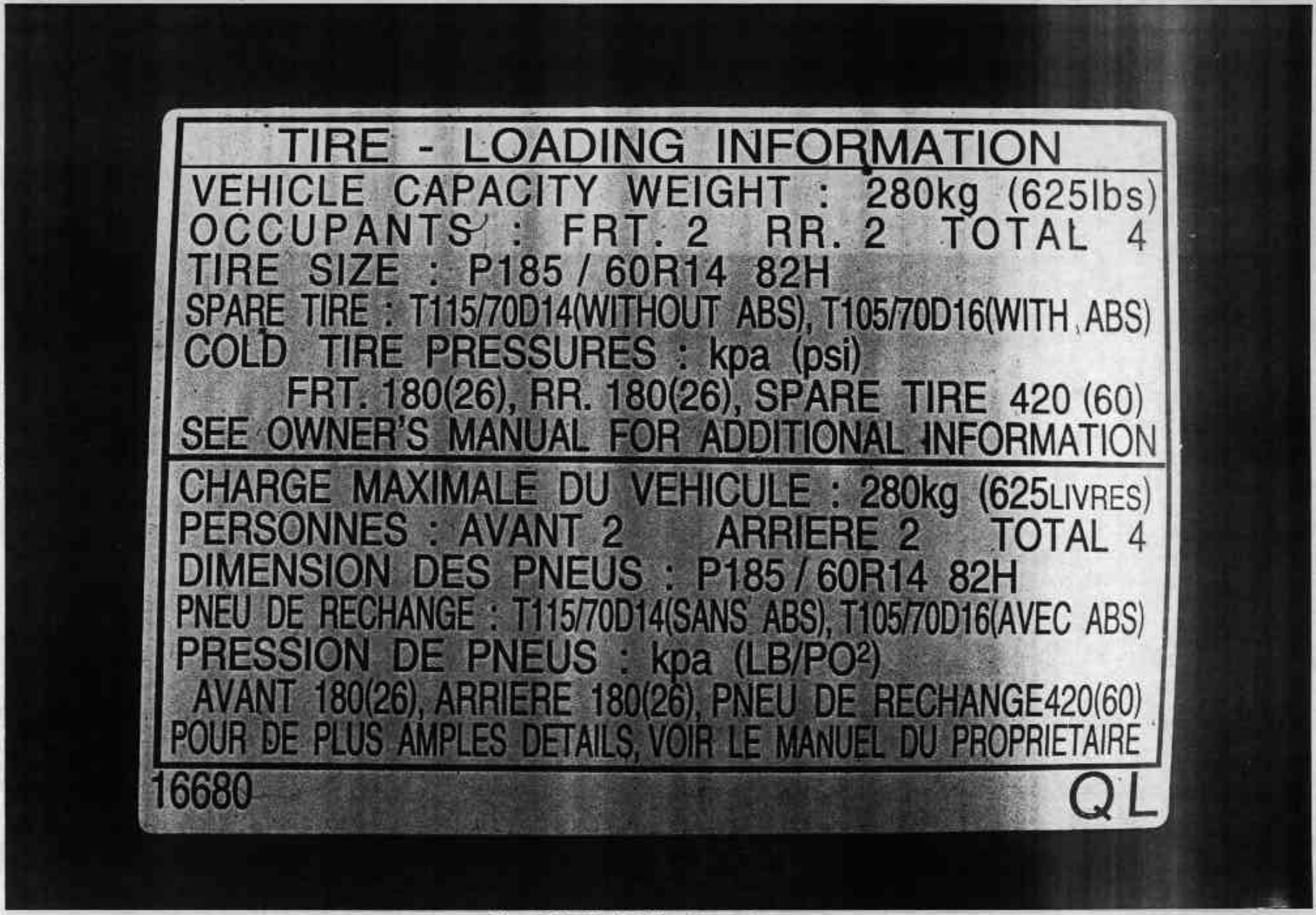
A-44

Photo No. A-44 - Post-Test Passenger Airbag Contact

A-45

Photo No. A-45 - Post-Test Passenger Knee Contact View

Photo No. A-46 - Vehicle Certification Label



A-47

Photo No. A-47 - Tire Placard

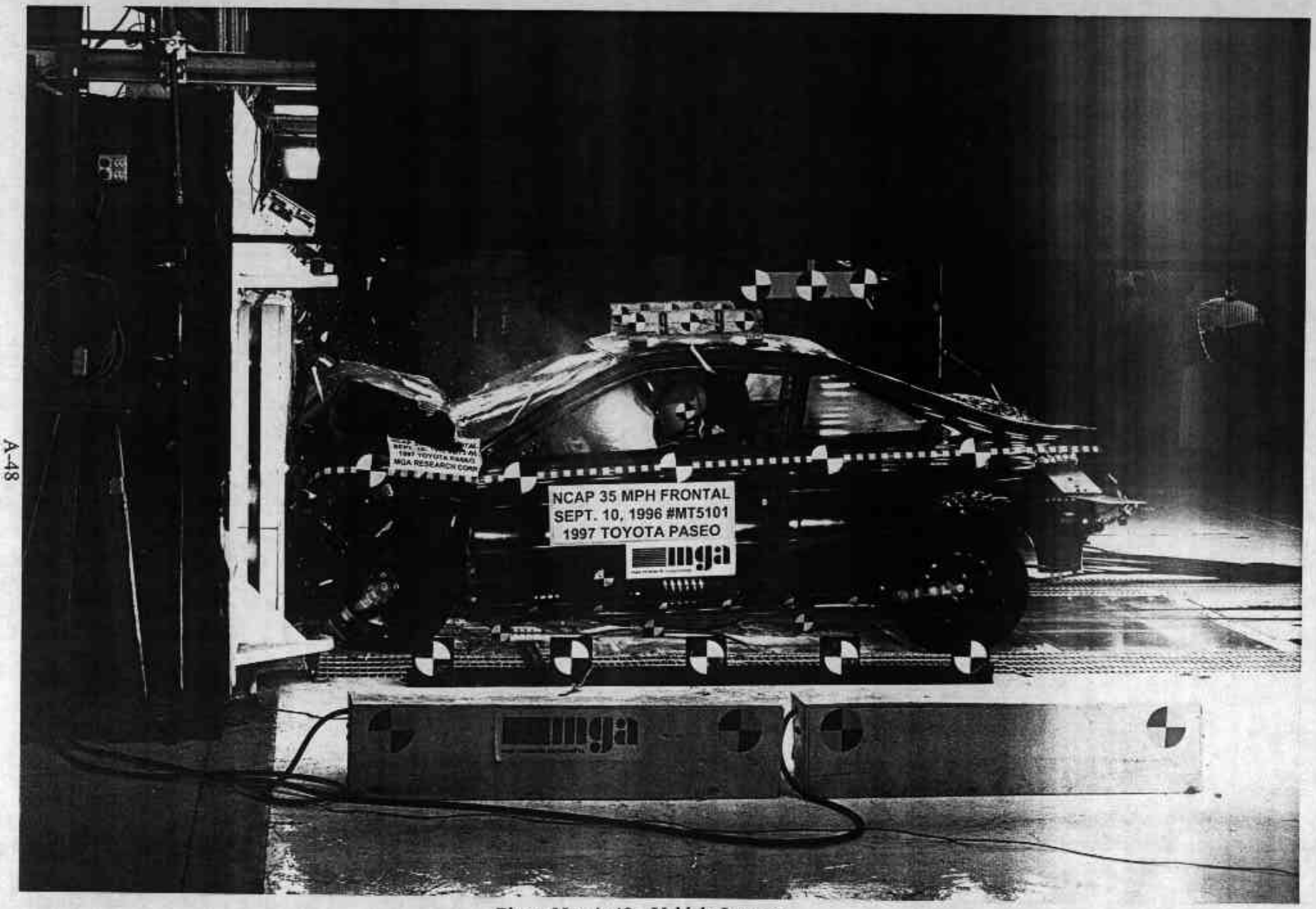


Photo No. A-48 - Vehicle Impact

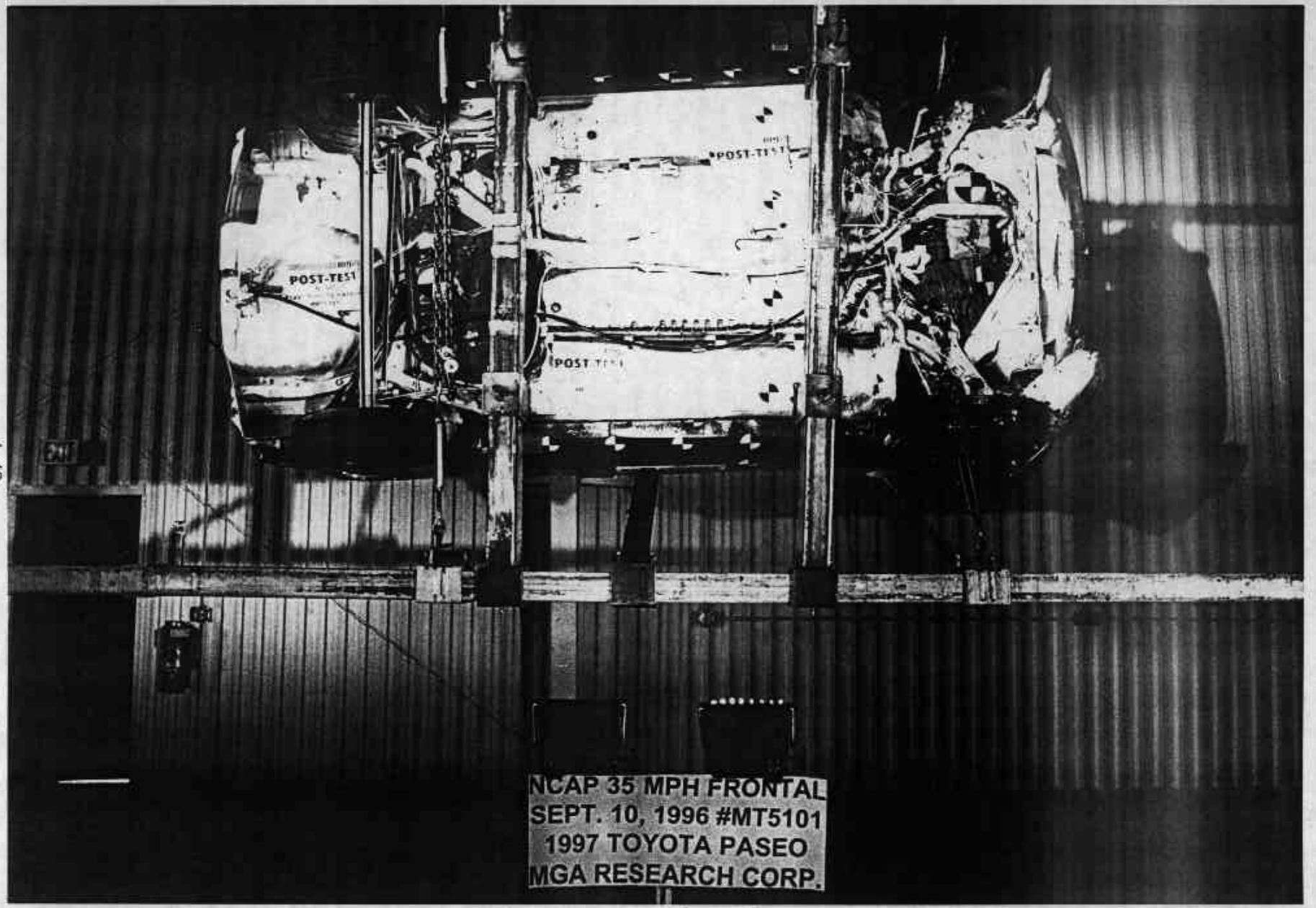
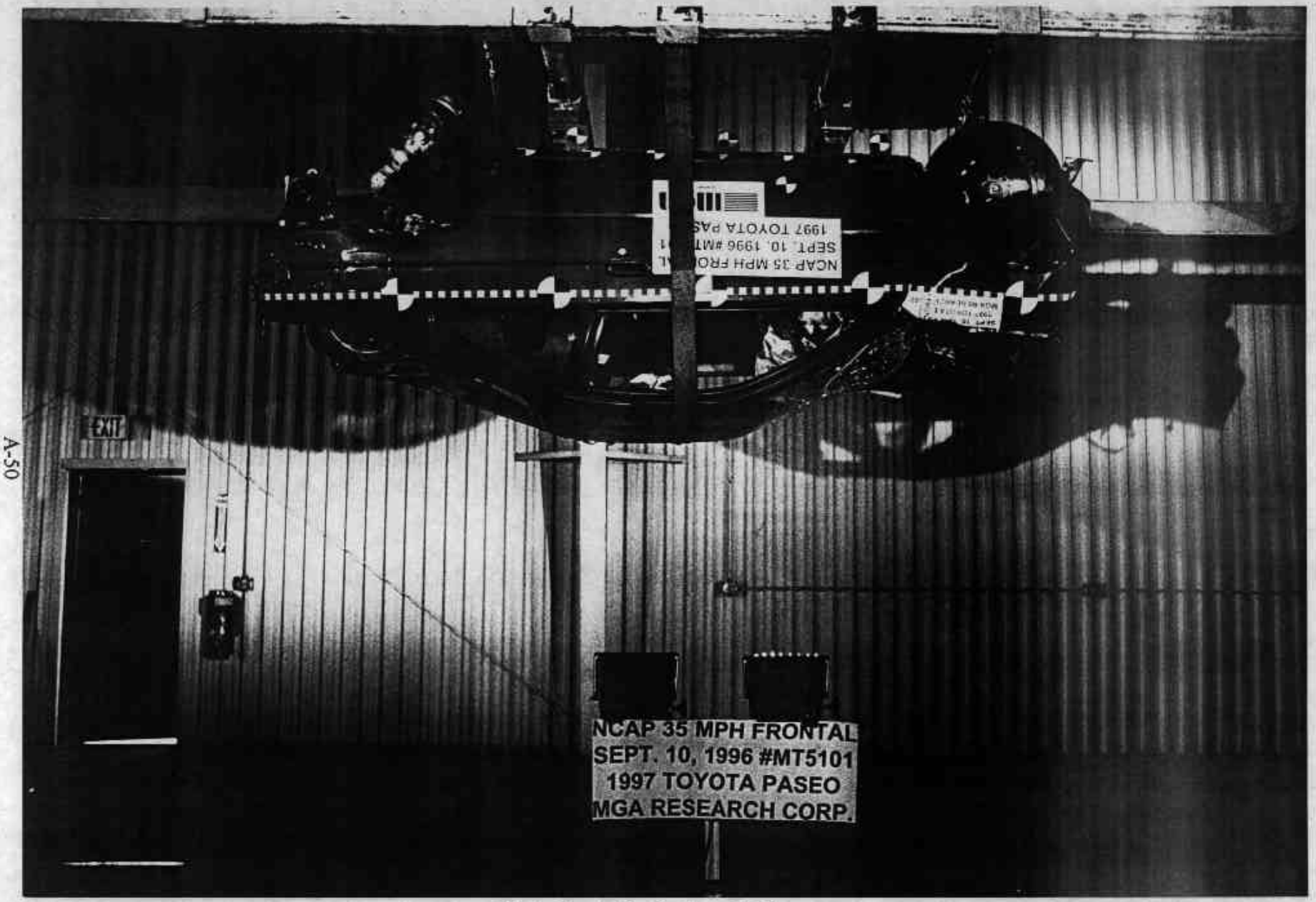


Photo No. A-49 - Rollover 90°



A-50

Photo No. A-50 - Rollover 180°

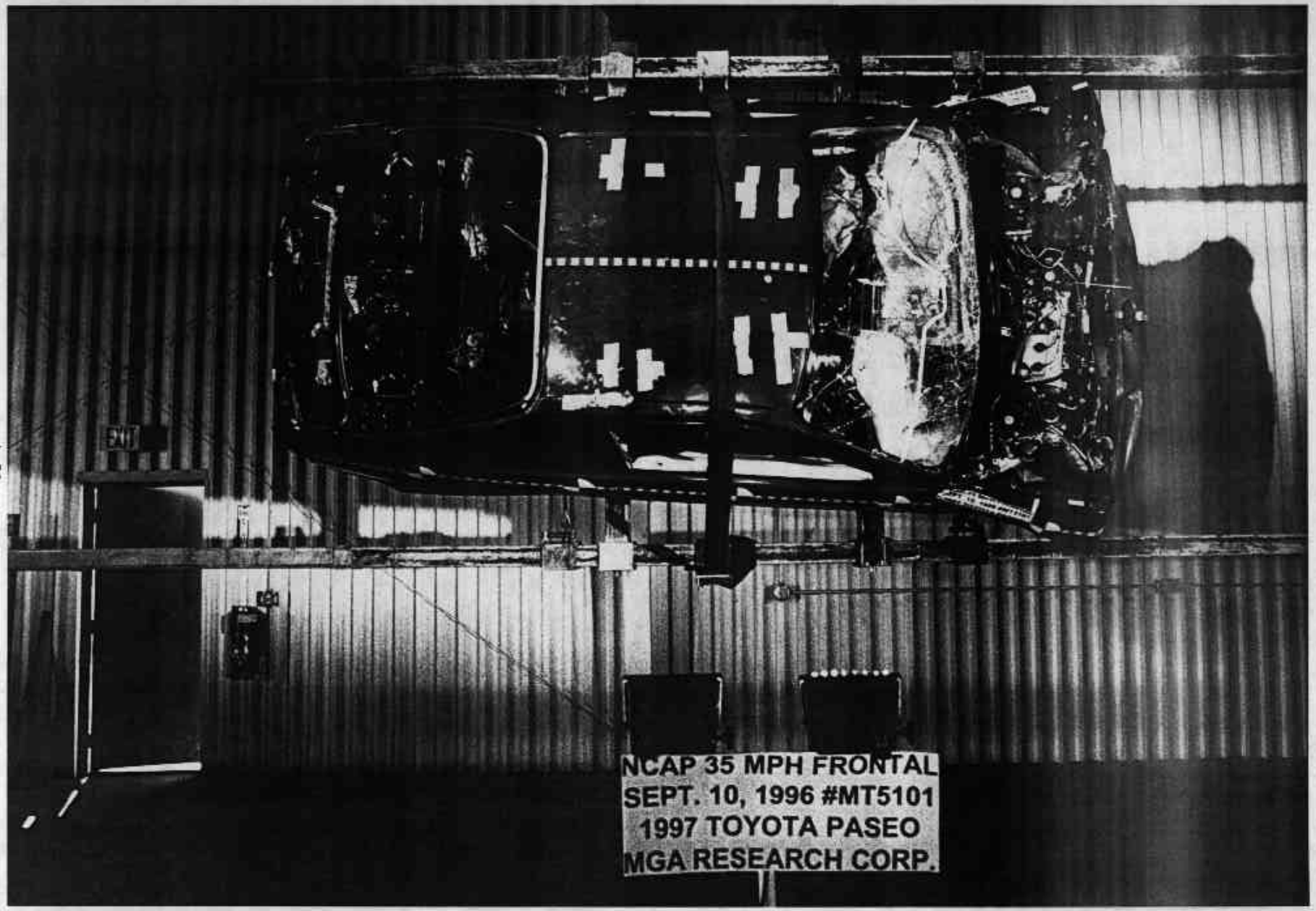
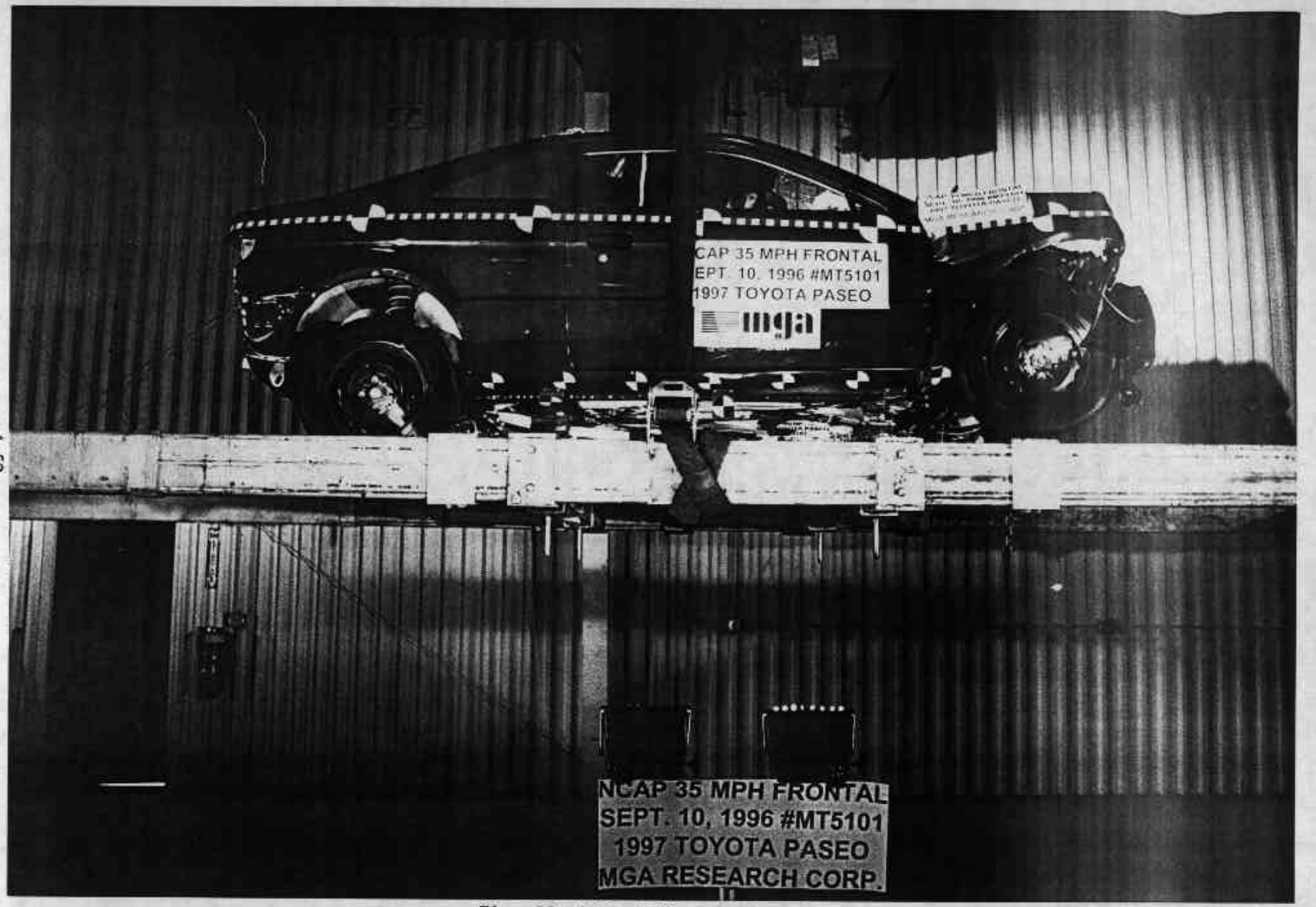


Photo No. A-51 - Rollover 270°



A-52

Photo No. A-52 - Rollover 360°

A-53

Photo No. A-53 - Windshield Intrusion

APPENDIX B

Vehicle, Load Cell Barrier and Dummy Response Data

1996 Toyota Paseo

NHTSA NO.: MT5101

VEHICLE DATA FILTER CHANNEL CLASS

Head Accelerations 1000 (1650 Hz)

Chest Accelerations 180 (300 Hz)

Vehicle Accelerations 60 (100 Hz)

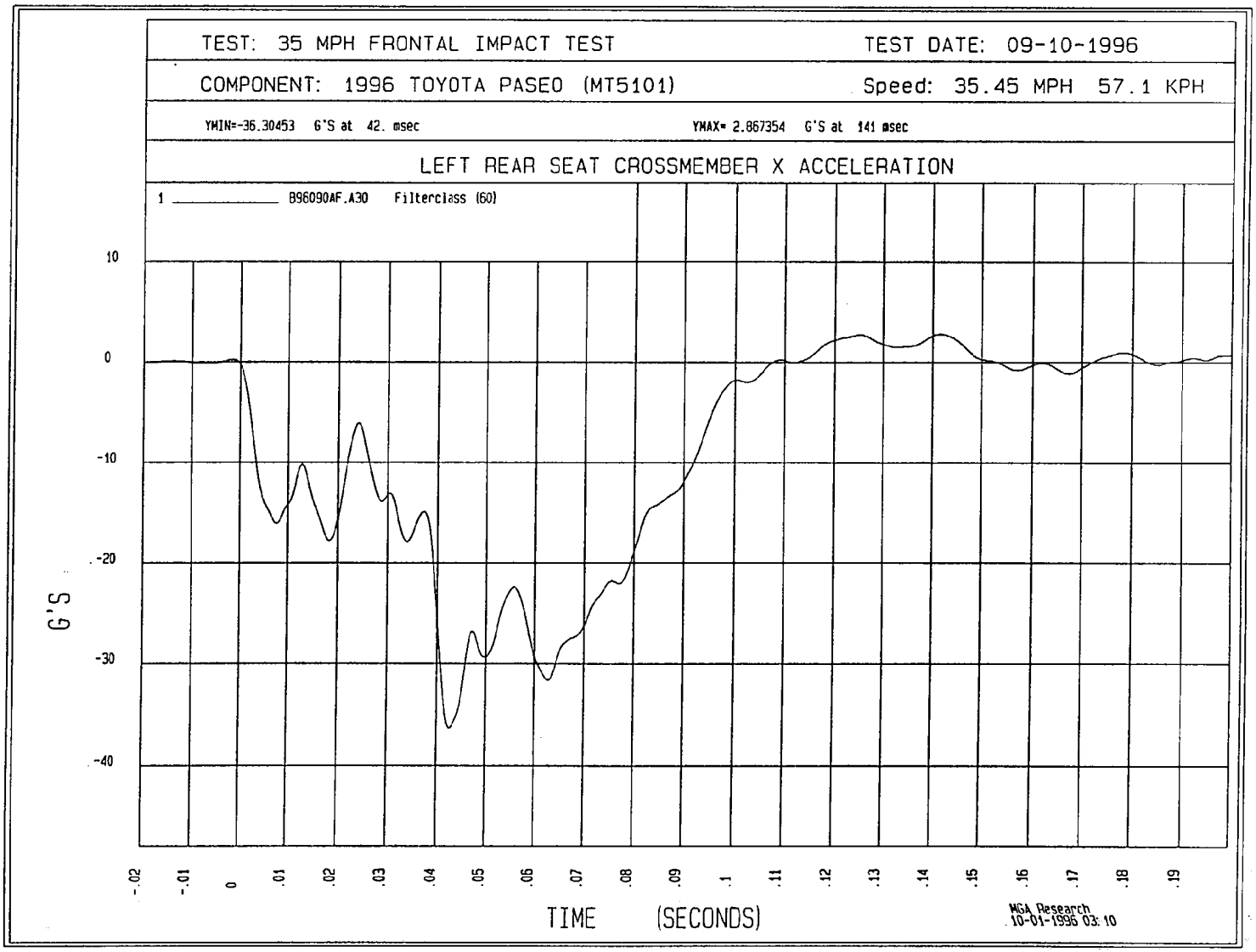
Barrier Load Cells 60 (100 Hz)

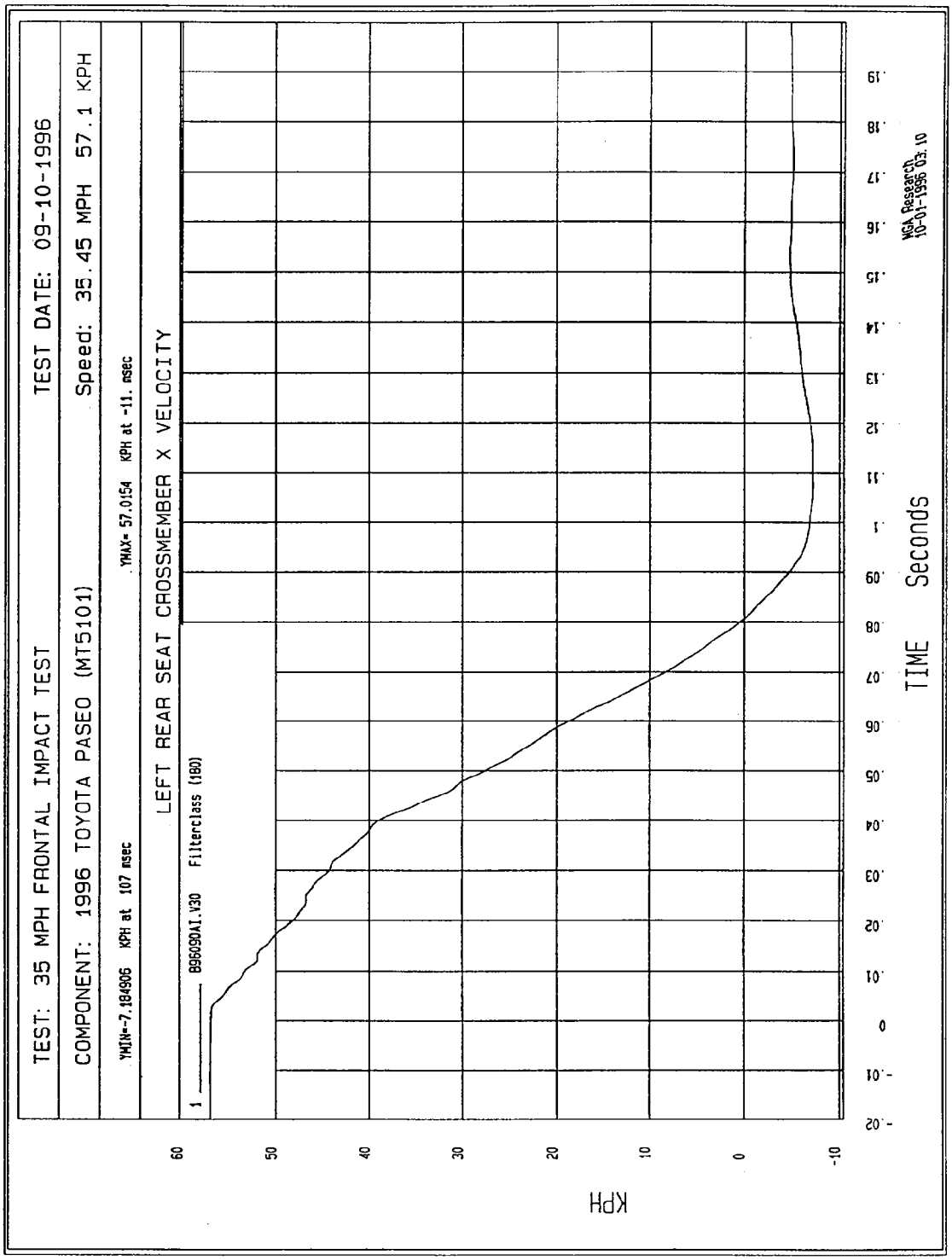
Femur Load Cells 600 (1000 Hz)

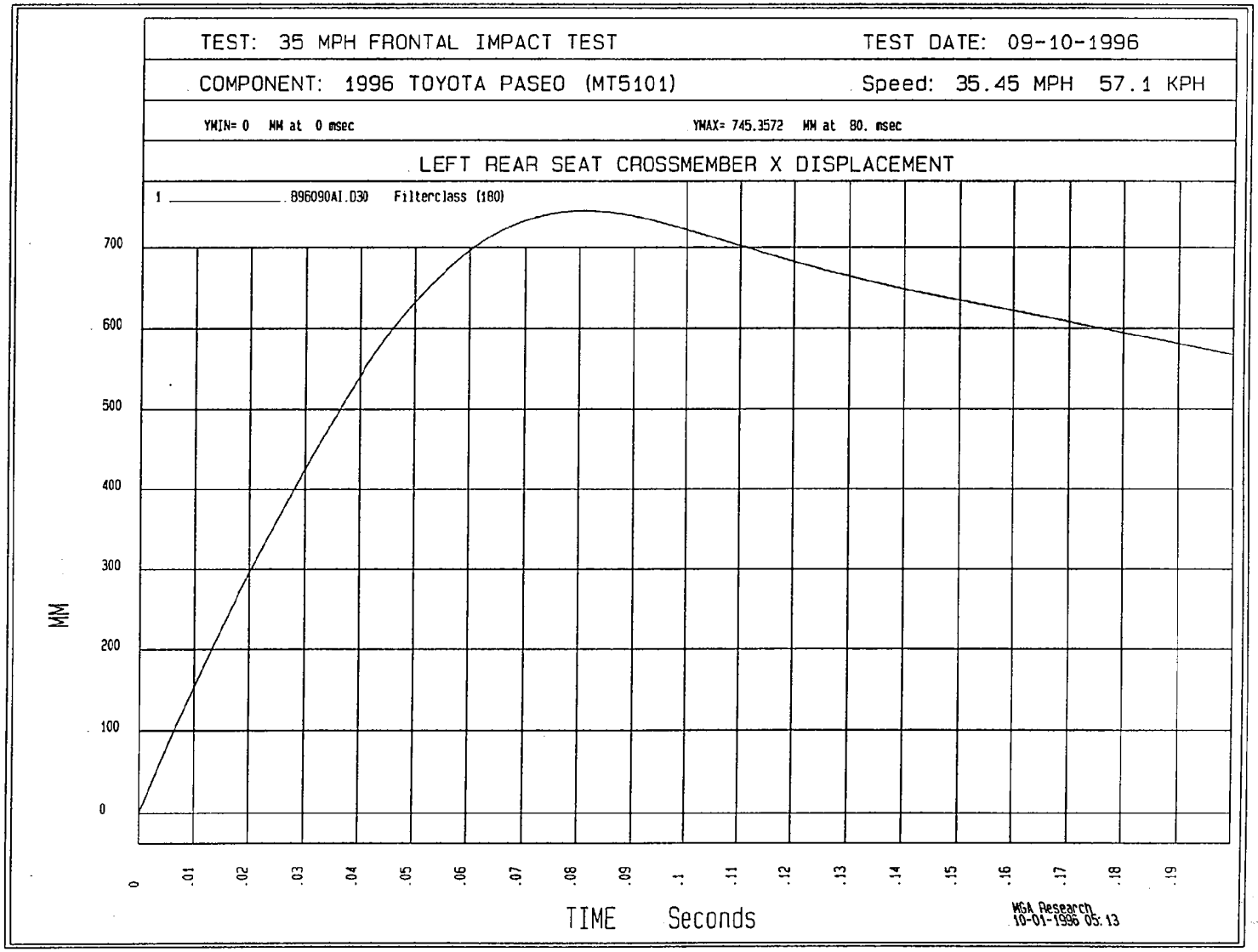
Lap and Torso Belts 60 (100 Hz)

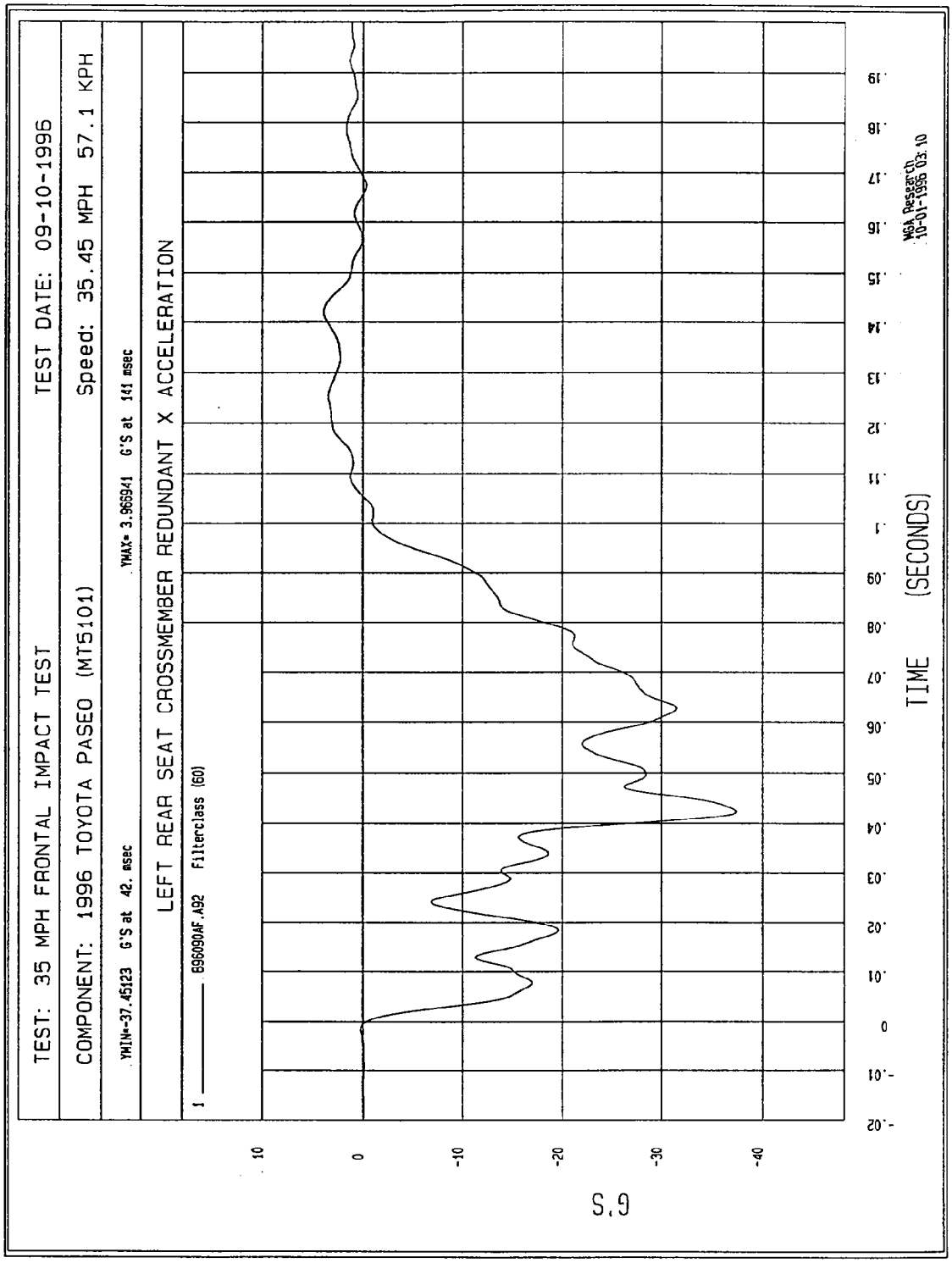
* No Valid Data Collected

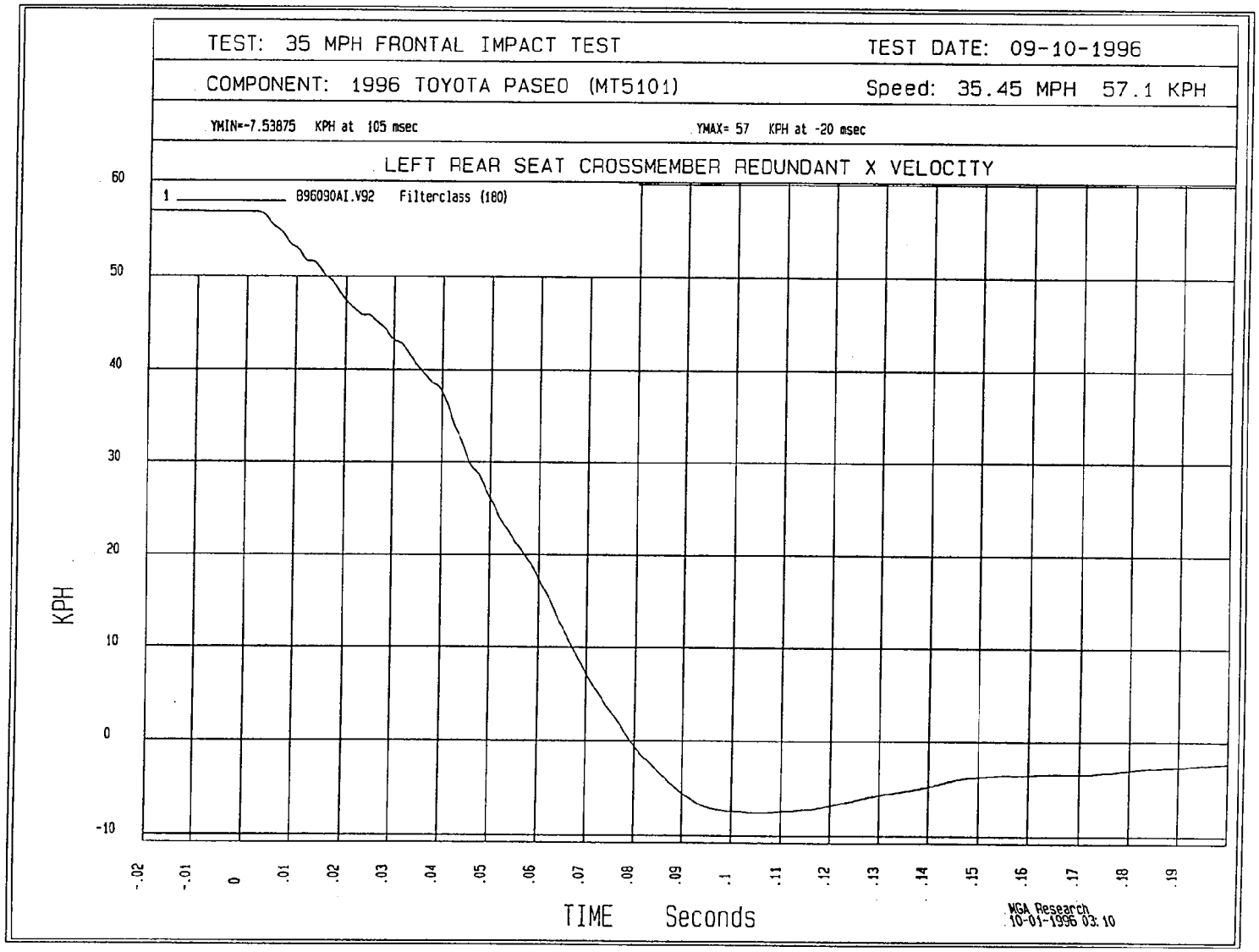
* No Valid Data Collected

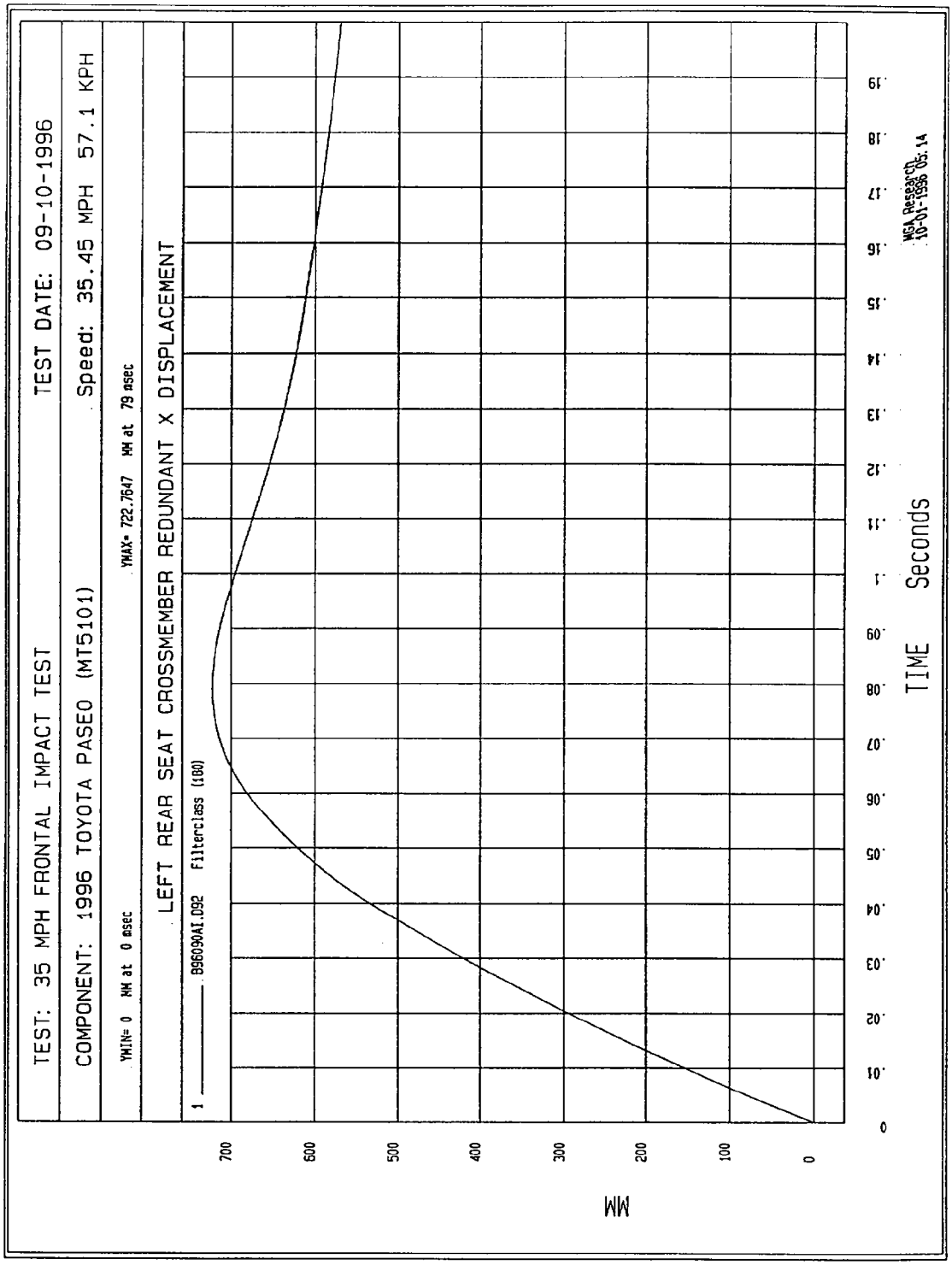

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-36.30453 G'S at 42. msec
YMAX= 2.867354 G'S at 141 msec
LEFT REAR SEAT CROSSMEMBER X ACCELERATION
1 B96090AF.A30 Filterclass (60)
10
0
-10
-20
-30
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 03:10

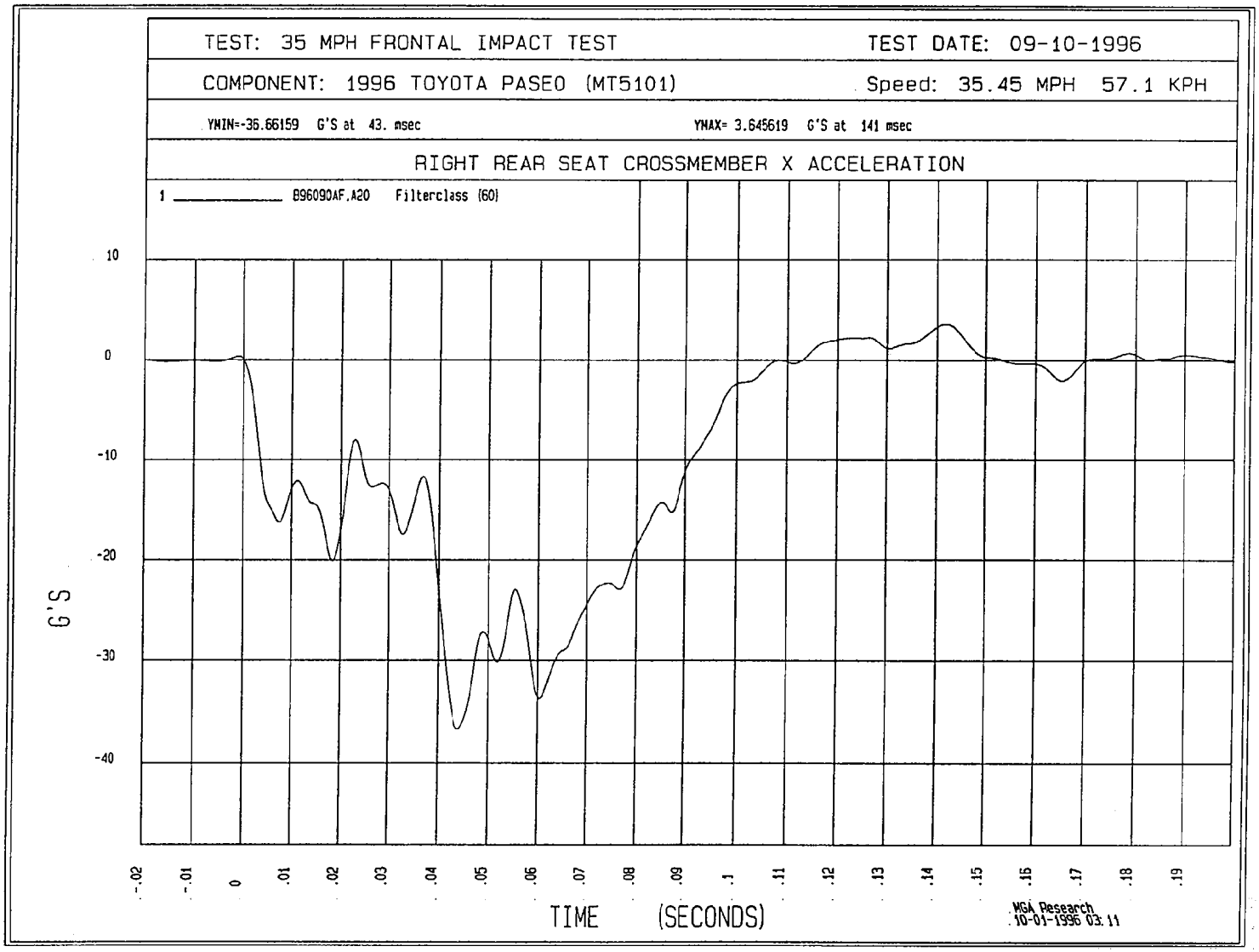

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-7.184906 KPH at 107 msec
YMAX= 57.0154 KPH at -11. msec
LEFT REAR SEAT CROSSMEMBER X VELOCITY
1 B96090AI.V30 Filterclass (180)
KPH
TIME Seconds
NGA Research
10-01-1996 03:10

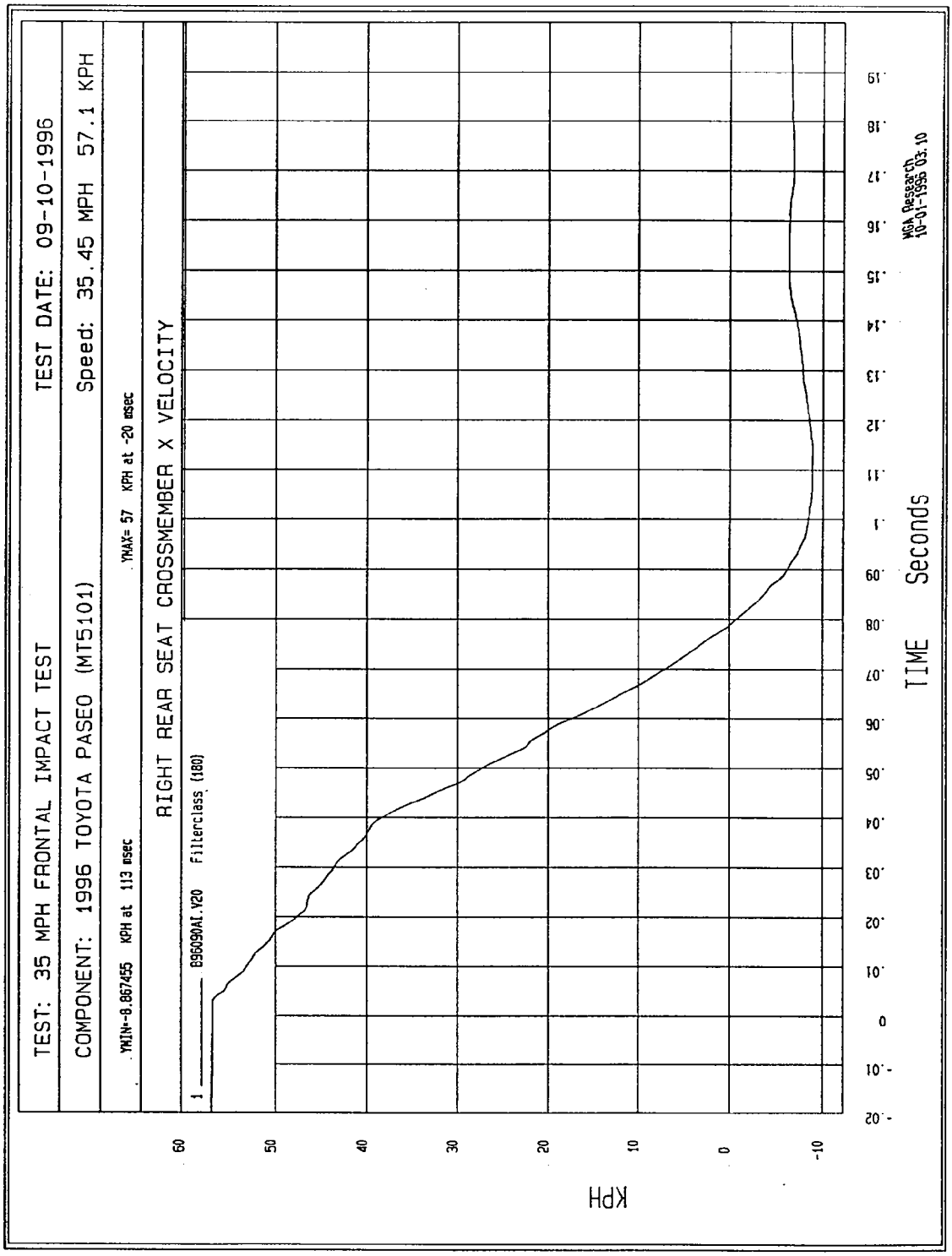

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0 MM at 0 msec
YMAX= 745.3572 MM at 80. msec
LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT
1 B96090AI.D30 Filterclass (180)
MM
0
100
200
300
400
500
600
700
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
10-01-1996 05:13

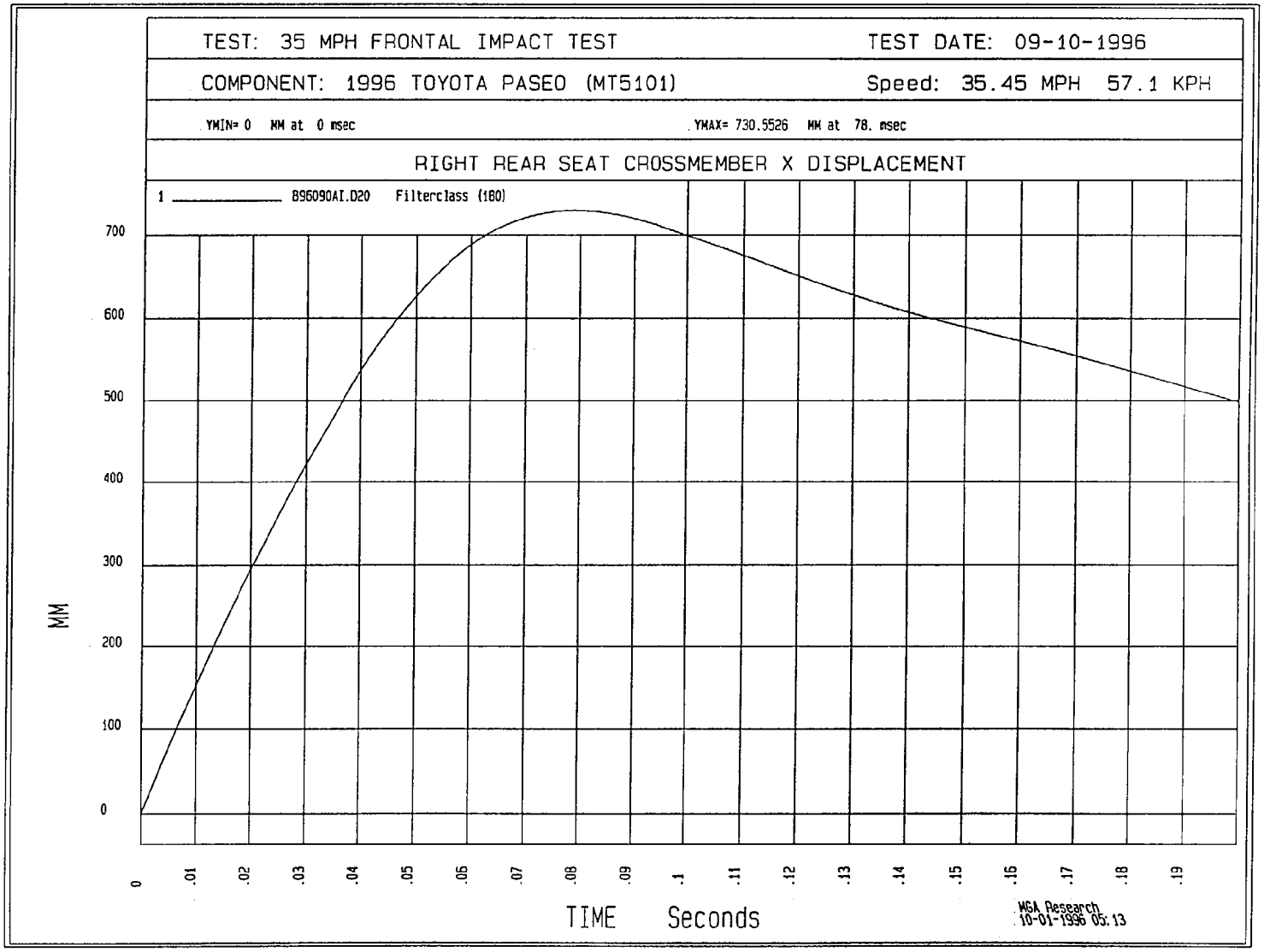

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-37.45123 G'S at 42. msec
YMAX= 3.966941 G'S at 141 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION
1 _____ 696090AF.A92 Filterclass (60)
10
0
-10
-20
-30
-40
G'S
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
10-01-1996 03:10

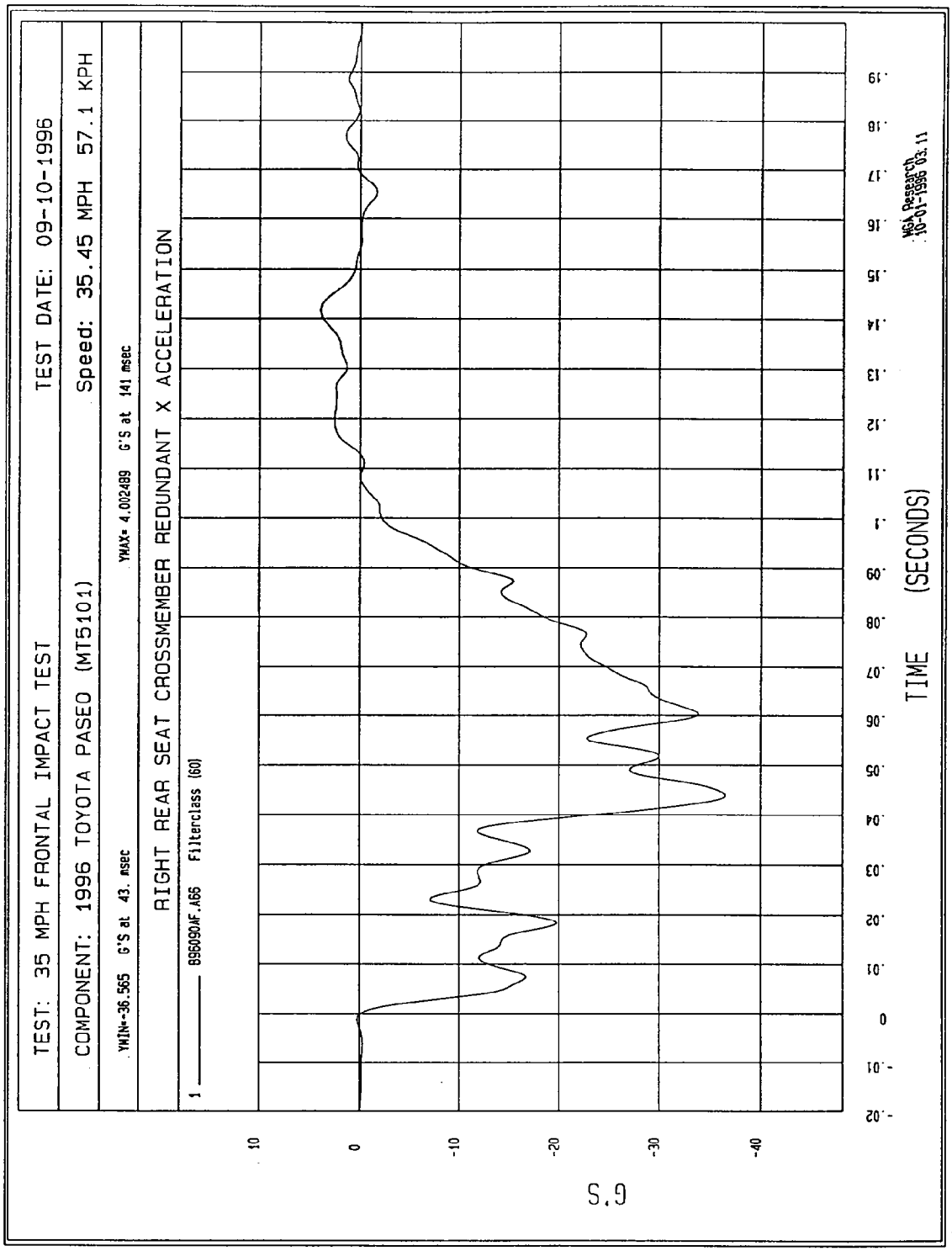

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-7.53875 KPH at 105 msec
YMAX= 57 KPH at -20 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY
1 B96090AI.V92 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
10-01-1996 03:10

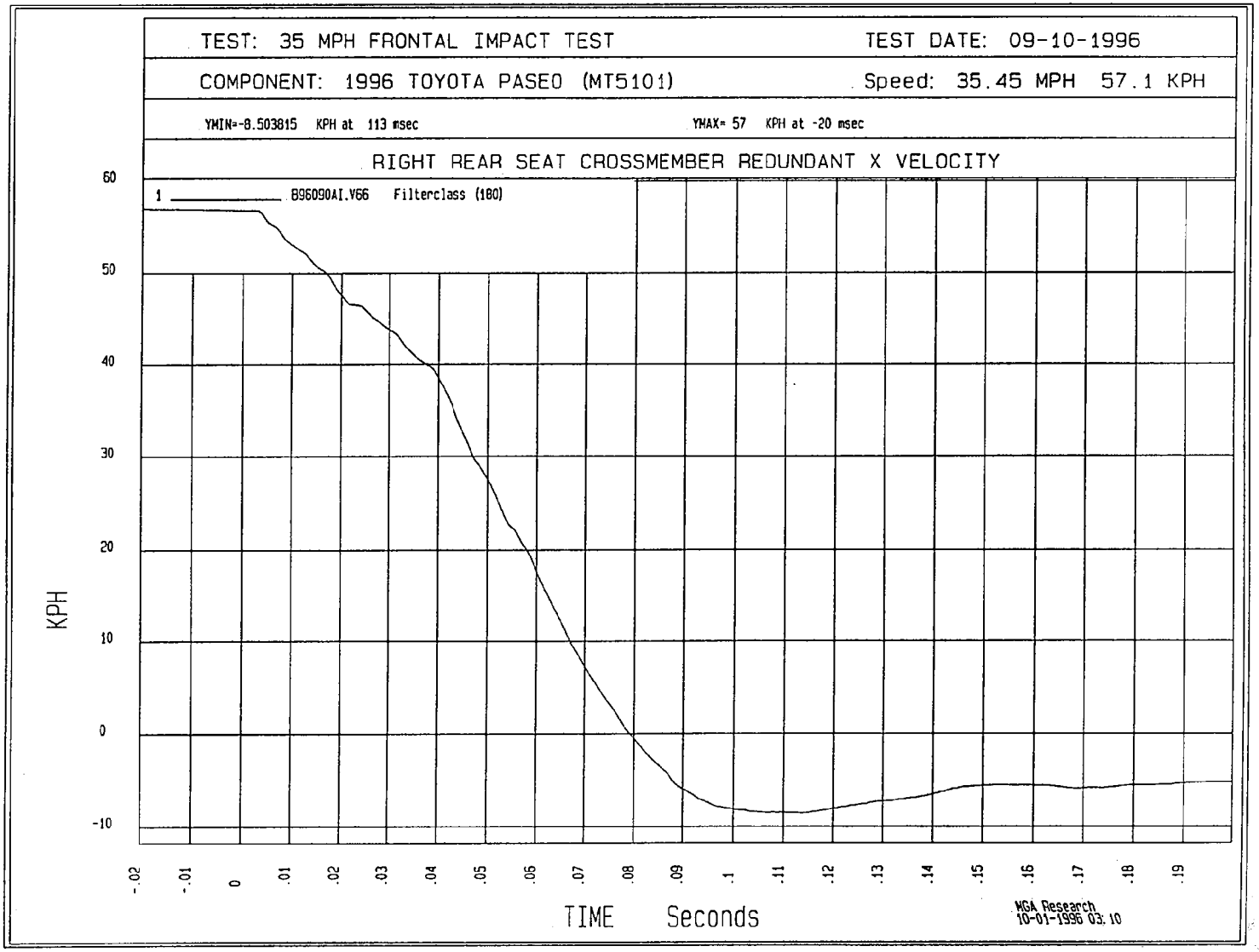

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0 MM at 0 msec
YMAX= 722.7647 MM at 79 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT
1 B96090AI.092 Filterclass (180)
MM
TIME Seconds
MGA Research
10-01-1996 05:14

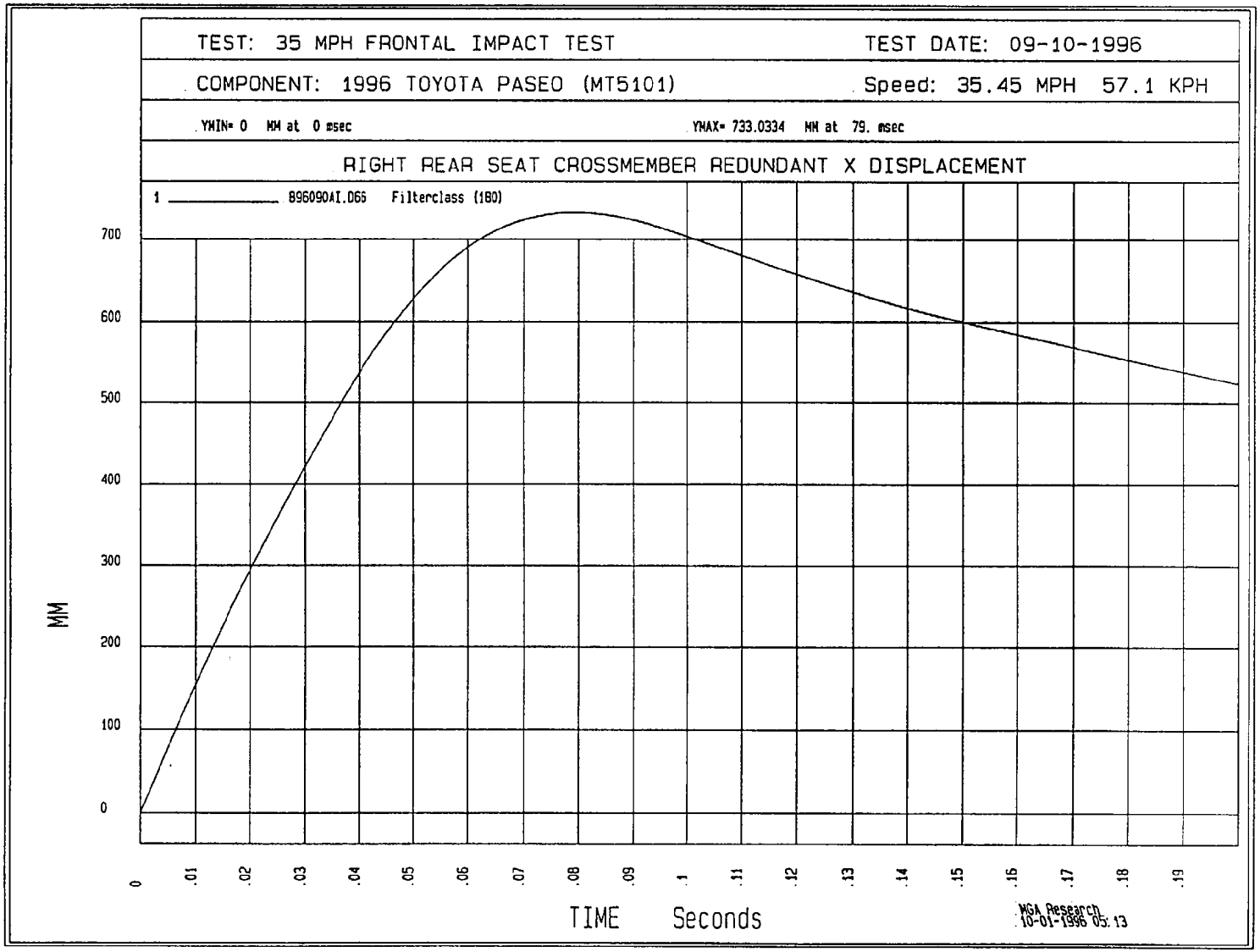

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-36.66159 G'S at 43. msec
YMAX= 3.645619 G'S at 141 msec
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION
1 B96090AF.A20 Filterclass (60)
10
0
-10
-20
-30
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 03:11

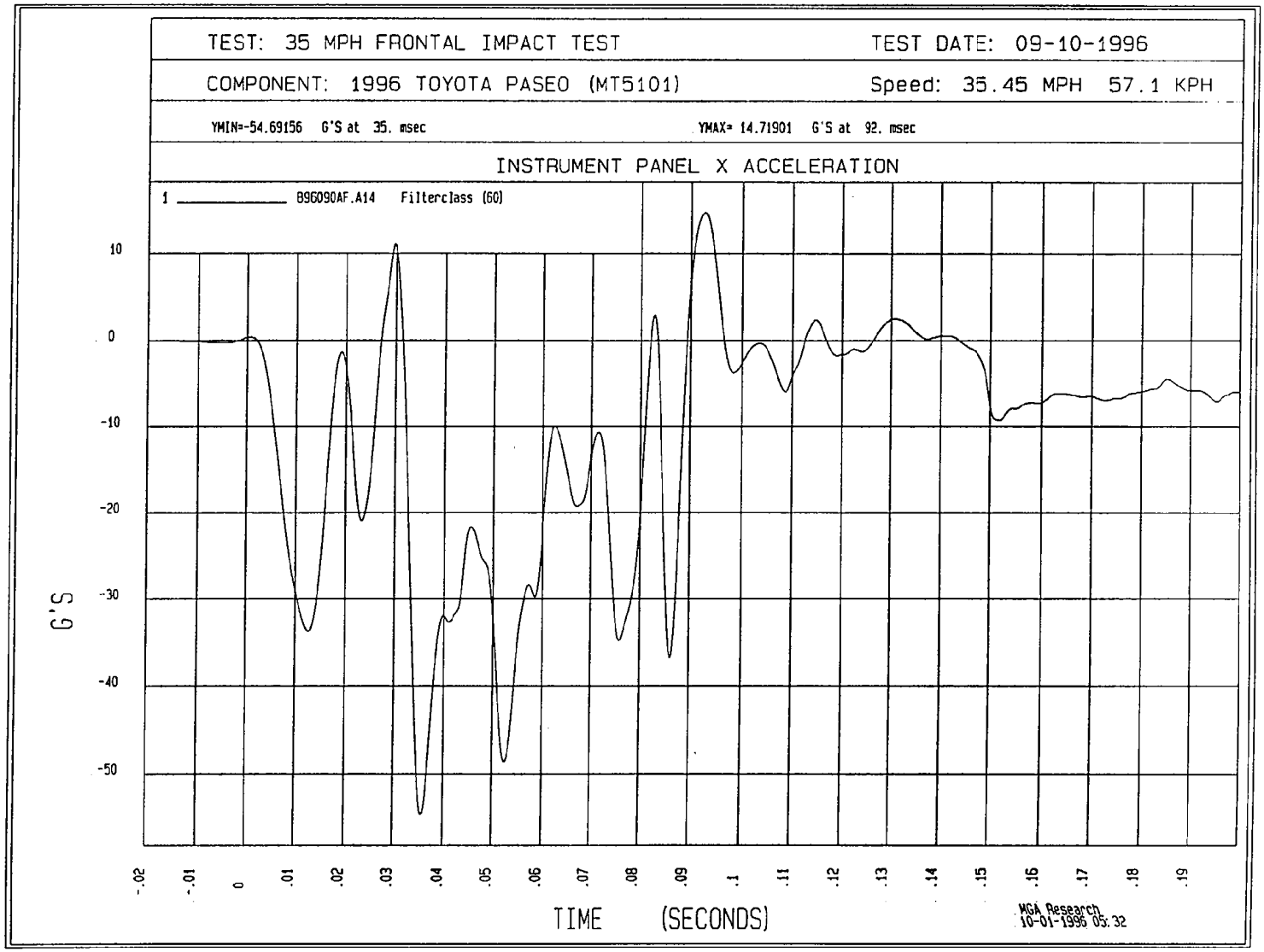

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-8.867455 KPH at 113 msec
YMAX= 57 KPH at -20 msec
RIGHT REAR SEAT CROSSMEMBER X VELOCITY
1 ——— 896090AI.Y20 Filterclass (180)
KPH
TIME Seconds
MGA Research
10-01-1996 03:10

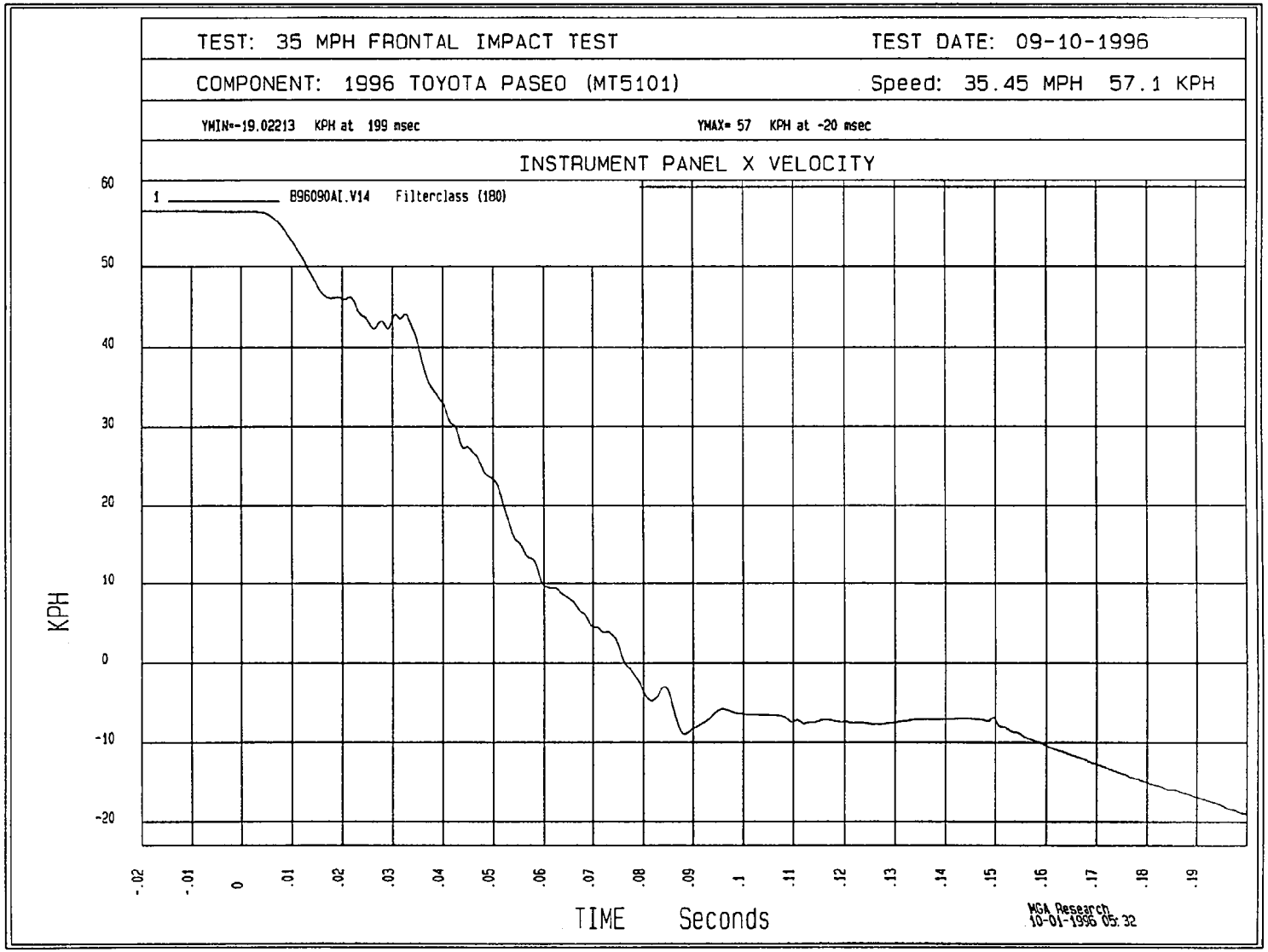

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0 MM at 0 msec
YMAX= 730.5526 MM at 78. msec
RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT
1 B96090AI.D20 Filterclass (180)
MM
0
100
200
300
400
500
600
700
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
10-01-1996 05:13

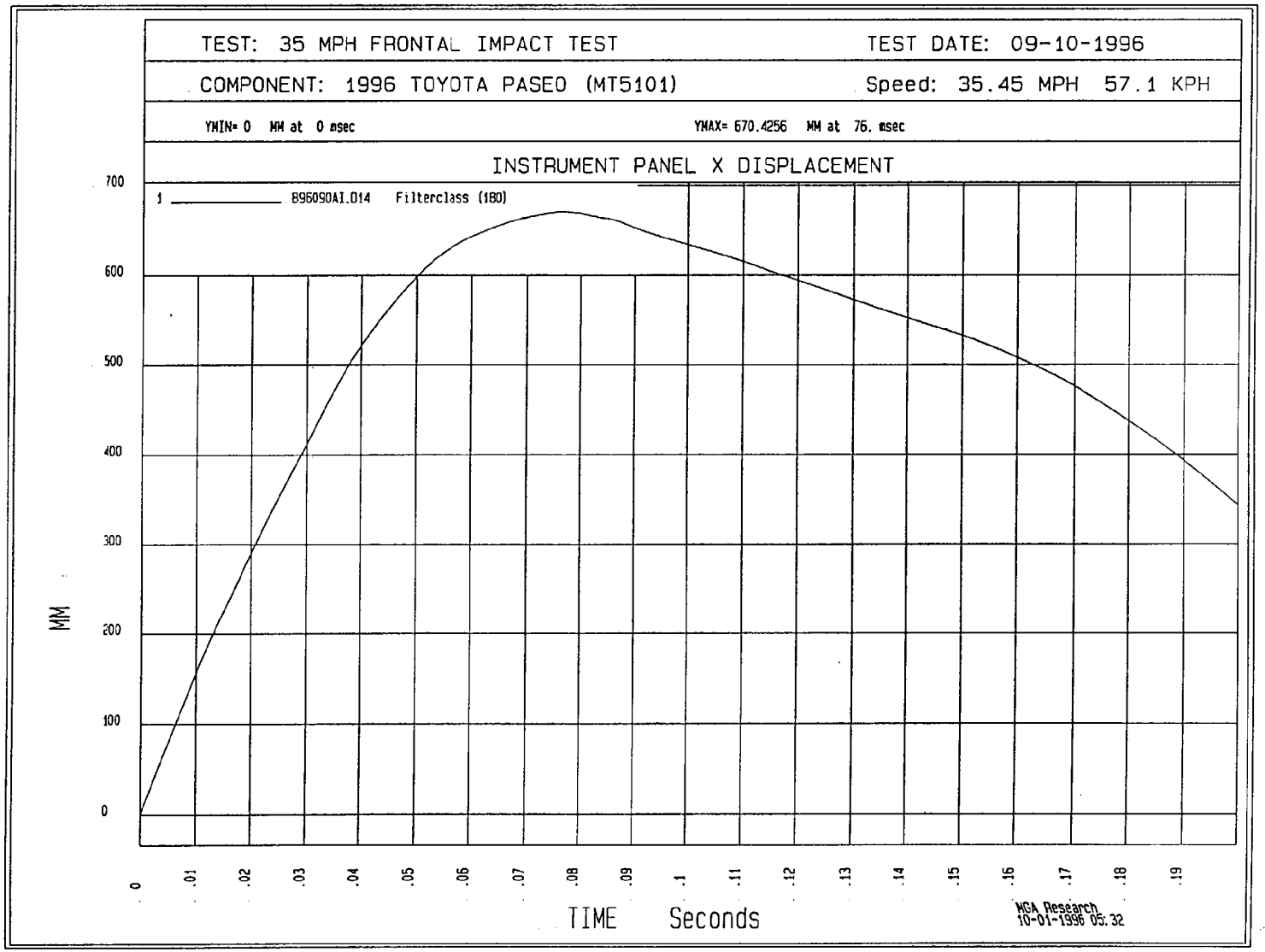

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-36.565 G'S at 43. msec
YMAX= 4.002489 G'S at 141 msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION
1 B96090AF.A66 Filterclass (60)
10
0
-10
-20
-30
-40
G'S
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
10-01-1996 03:11

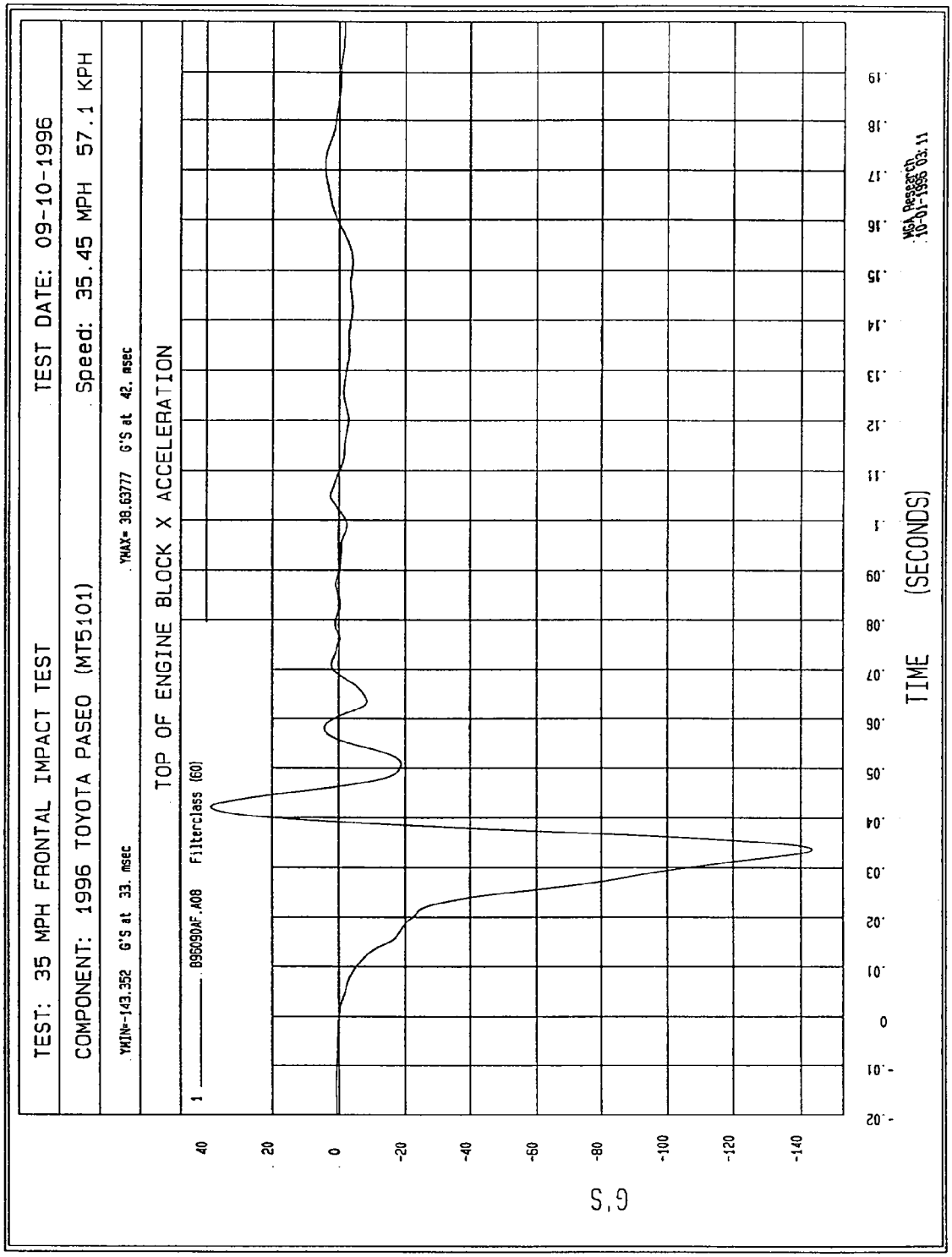

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-8.503815 KPH at 113 msec
YMAX= 57 KPH at -20 msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY
1 B96090AI.V66 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
10-01-1996 03:10

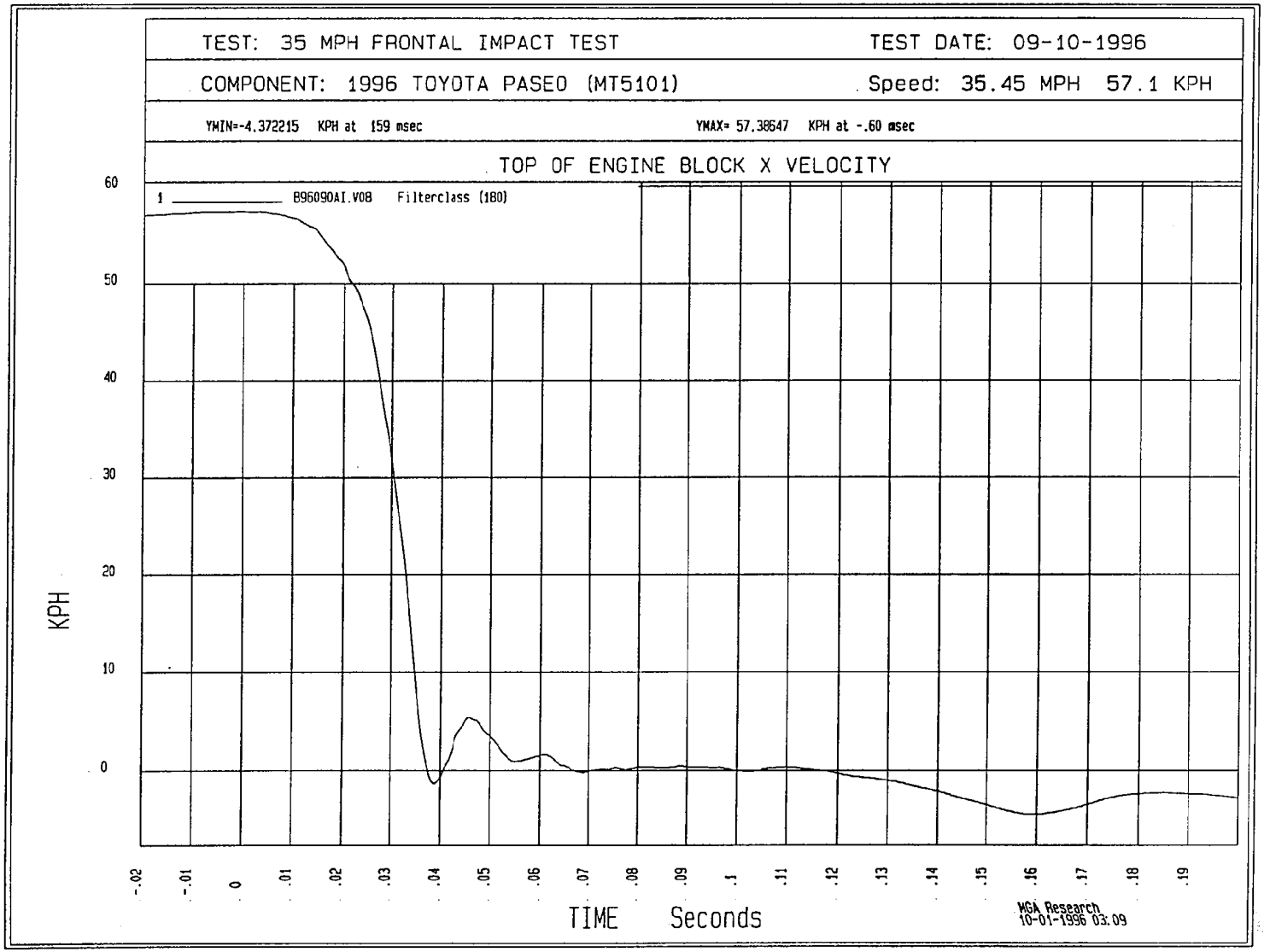

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0 MM at 0 msec
YMAX= 733.0334 MM at 79. msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT
1 896090AI.D65 Filterclass (180)
MM
700
600
500
400
300
200
100
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
10-01-1996 05:13

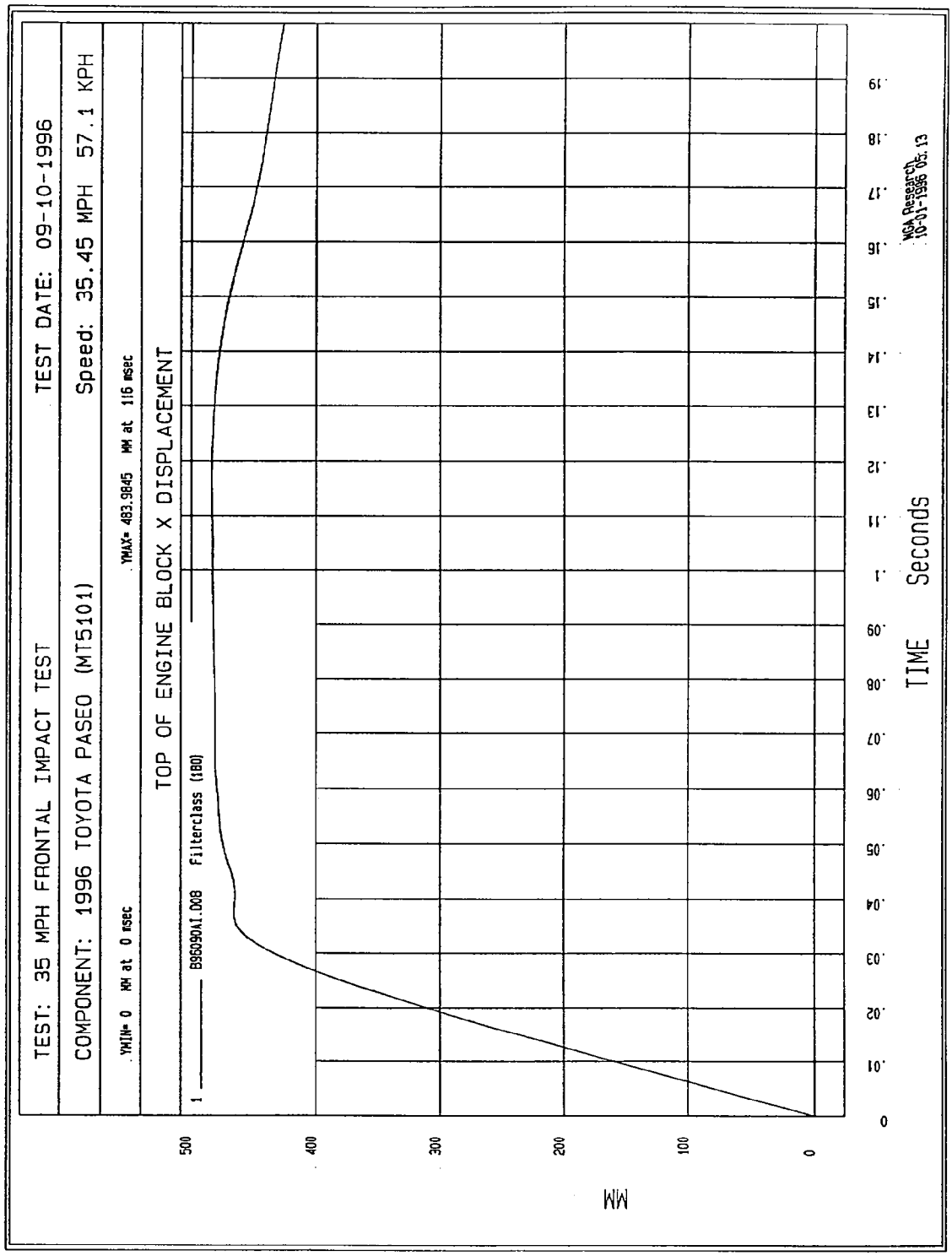

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-54.69156 G'S at 35. msec
YMAX= 14.71901 G'S at 92. msec
INSTRUMENT PANEL X ACCELERATION
1 B96090AF.A14 Filterclass (60)
10
0
-10
-20
-30
-40
-50
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 05:32

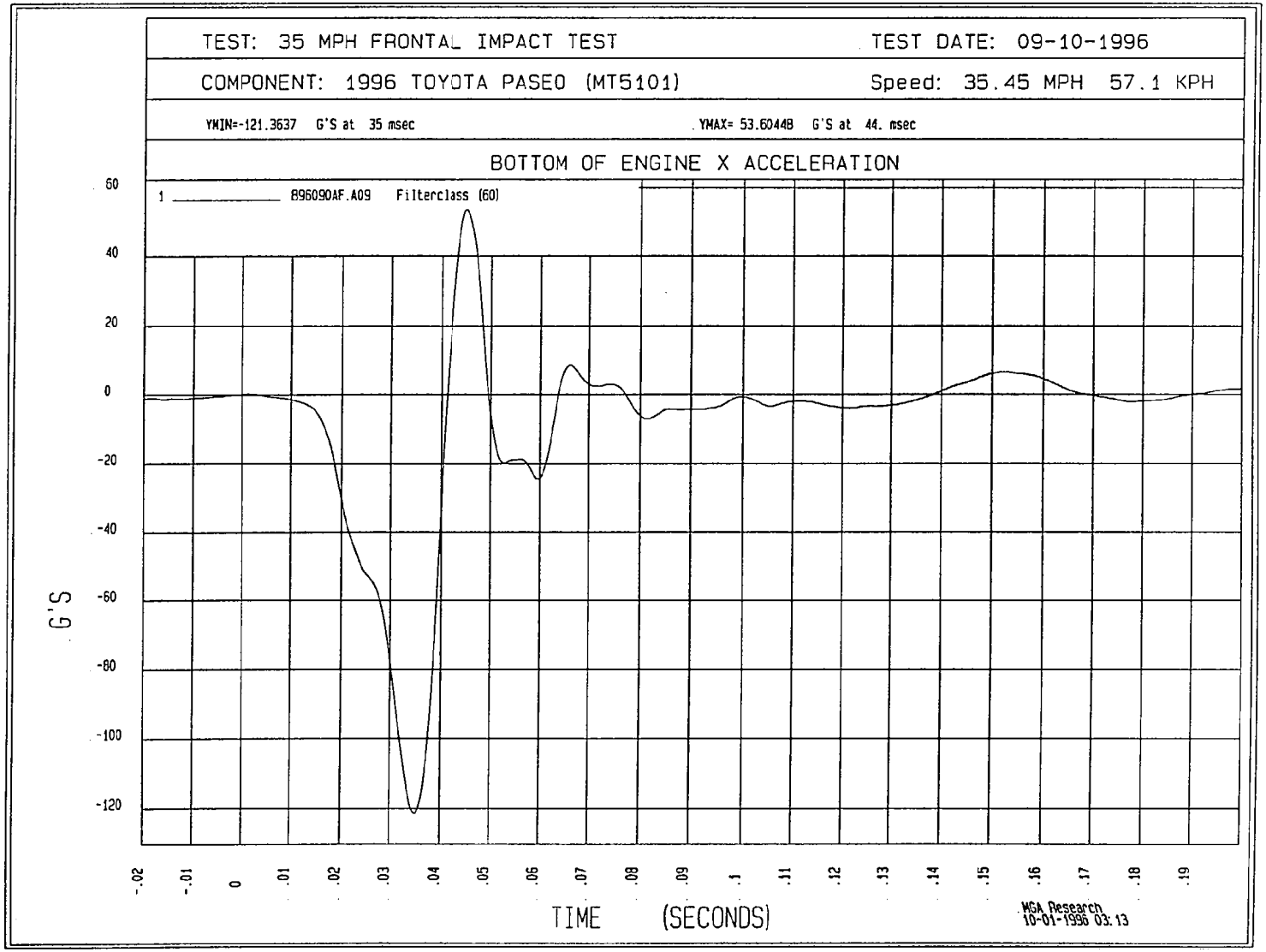

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-19.02213 KPH at 199 msec
YMAX= 57 KPH at -20 msec
INSTRUMENT PANEL X VELOCITY
1 B96090AI.V14 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
10-01-1996 05:32


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0 MM at 0 msec
YMAX= 670.4256 MM at 76. msec
INSTRUMENT PANEL X DISPLACEMENT
1 B960S0AI.014 Filterclass (180)
MM
700
600
500
400
300
200
100
0
0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19
TIME Seconds
MGA Research
10-01-1996 05:32


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-143.352 G'S at 33. msec
YMAX= 38.63777 G'S at 42. msec
TOP OF ENGINE BLOCK X ACCELERATION
1 ——— 960908AF.A08 Filterclass (60)
40
20
0
-20
-40
-60
-80
-100
-120
-140
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
10-01-1996 03:11


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-4.372215 KPH at 159 msec
YMAX= 57.38647 KPH at -.60 msec
TOP OF ENGINE BLOCK X VELOCITY
1 B96090AI.V08 Filterclass (180)
KPH
60
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
10-01-1996 03:09


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0 MM at 0 msec
YMAX= 483.9845 MM at 116 msec
TOP OF ENGINE BLOCK X DISPLACEMENT
1 B96090A1.00B Filterclass (180)
MM
TIME Seconds
NGA Research
10-01-1996 05:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-121.3637 G'S at 35 msec
YMAX= 53.6044B G'S at 44. msec
BOTTOM OF ENGINE X ACCELERATION
1 896090AF.A09 Filterclass (60)
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
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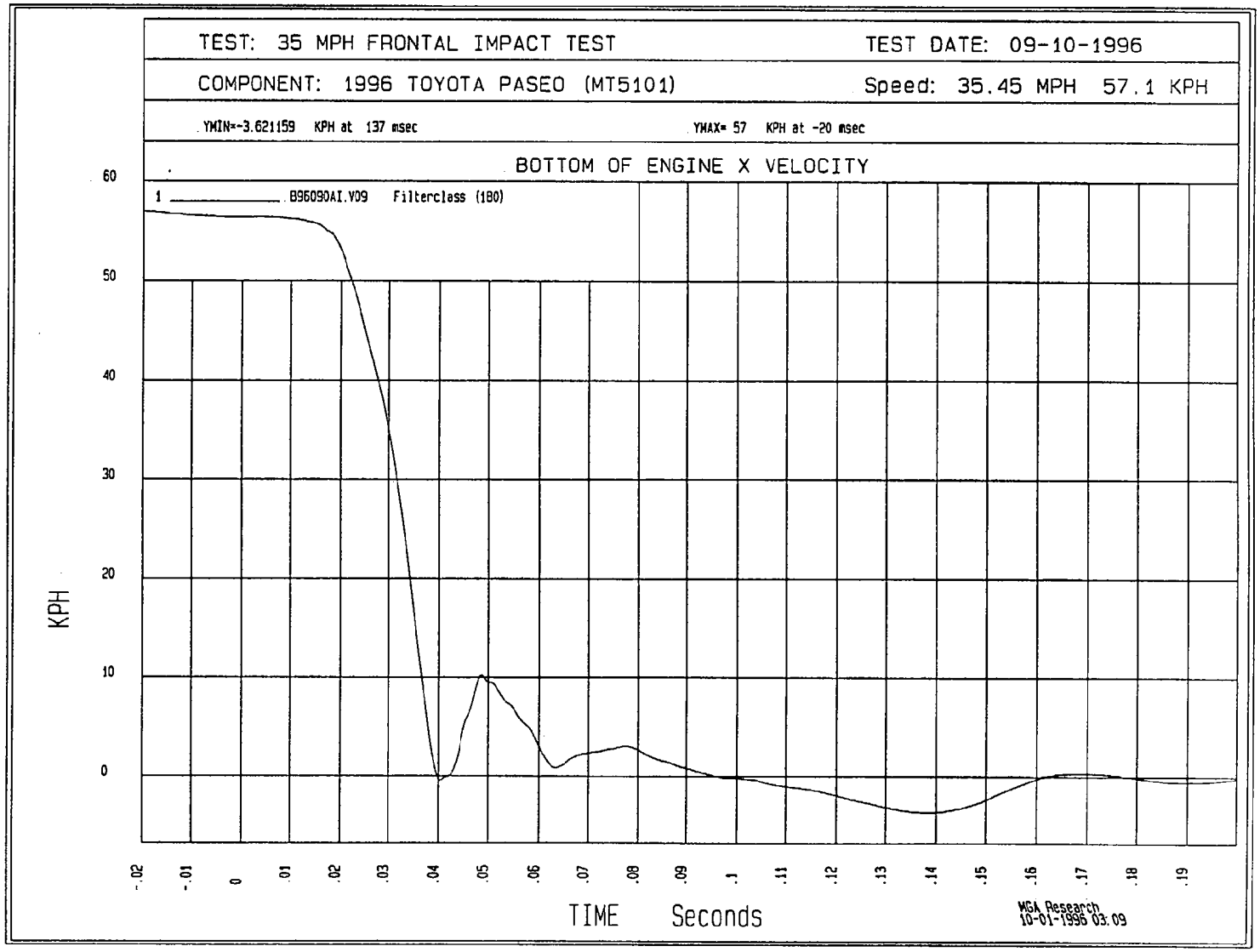
.17
.18
.19
TIME (SECONDS)
NGA Research
10-01-1996 03:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-3.621159 KPH at 137 msec
YMAX= 57 KPH at -20 msec
BOTTOM OF ENGINE X VELOCITY
1 B96090AI.V09 Filterclass (180)
KPH
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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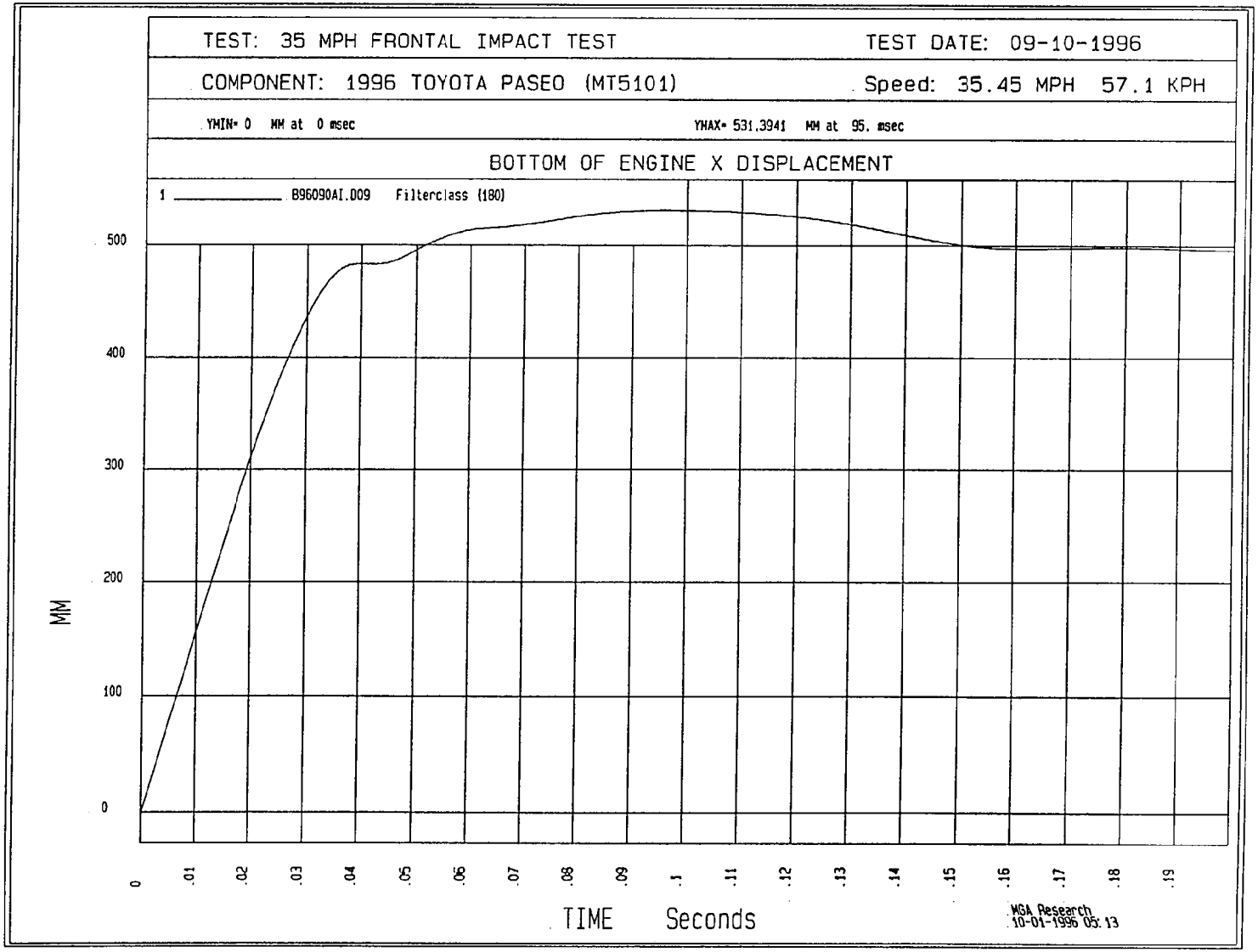
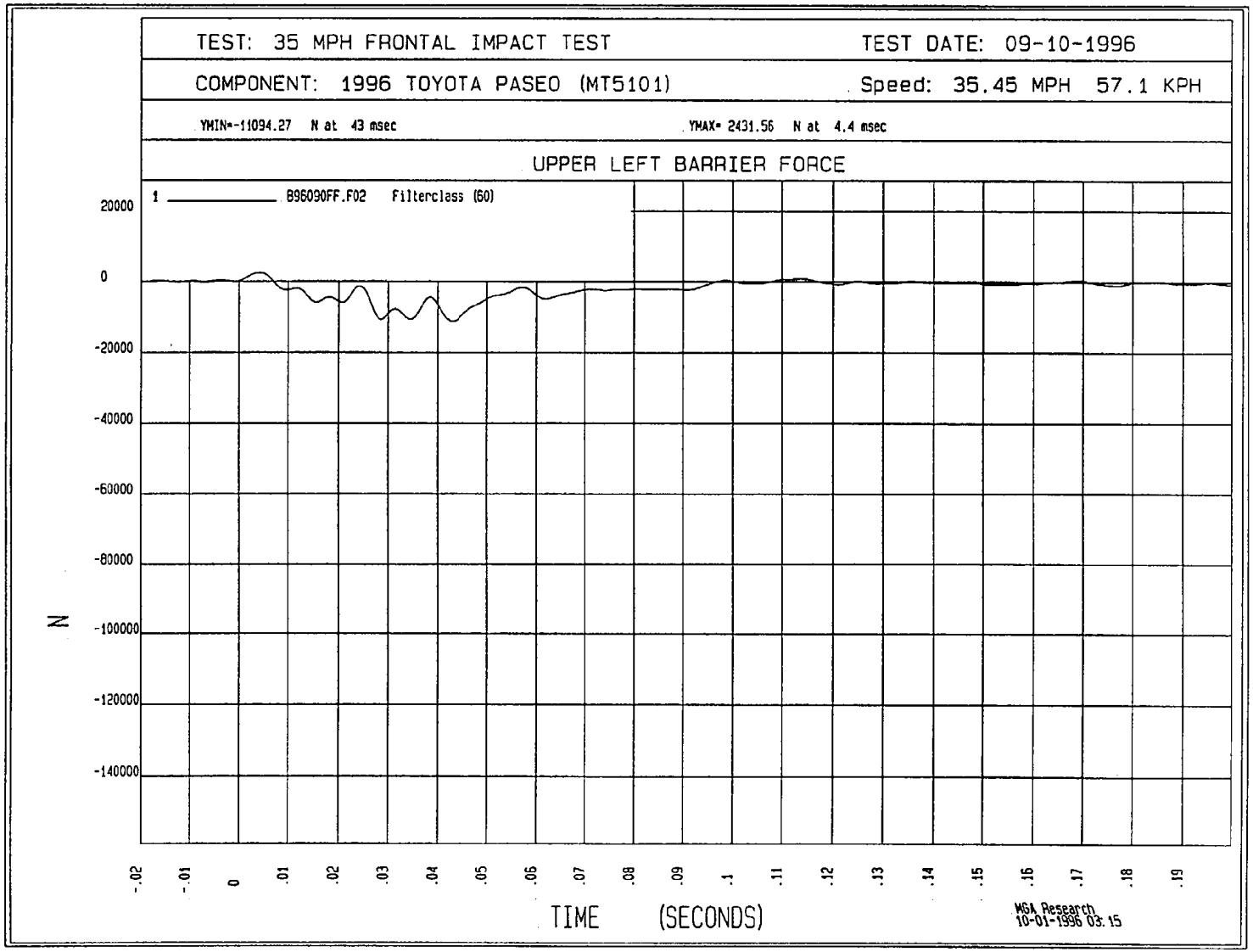
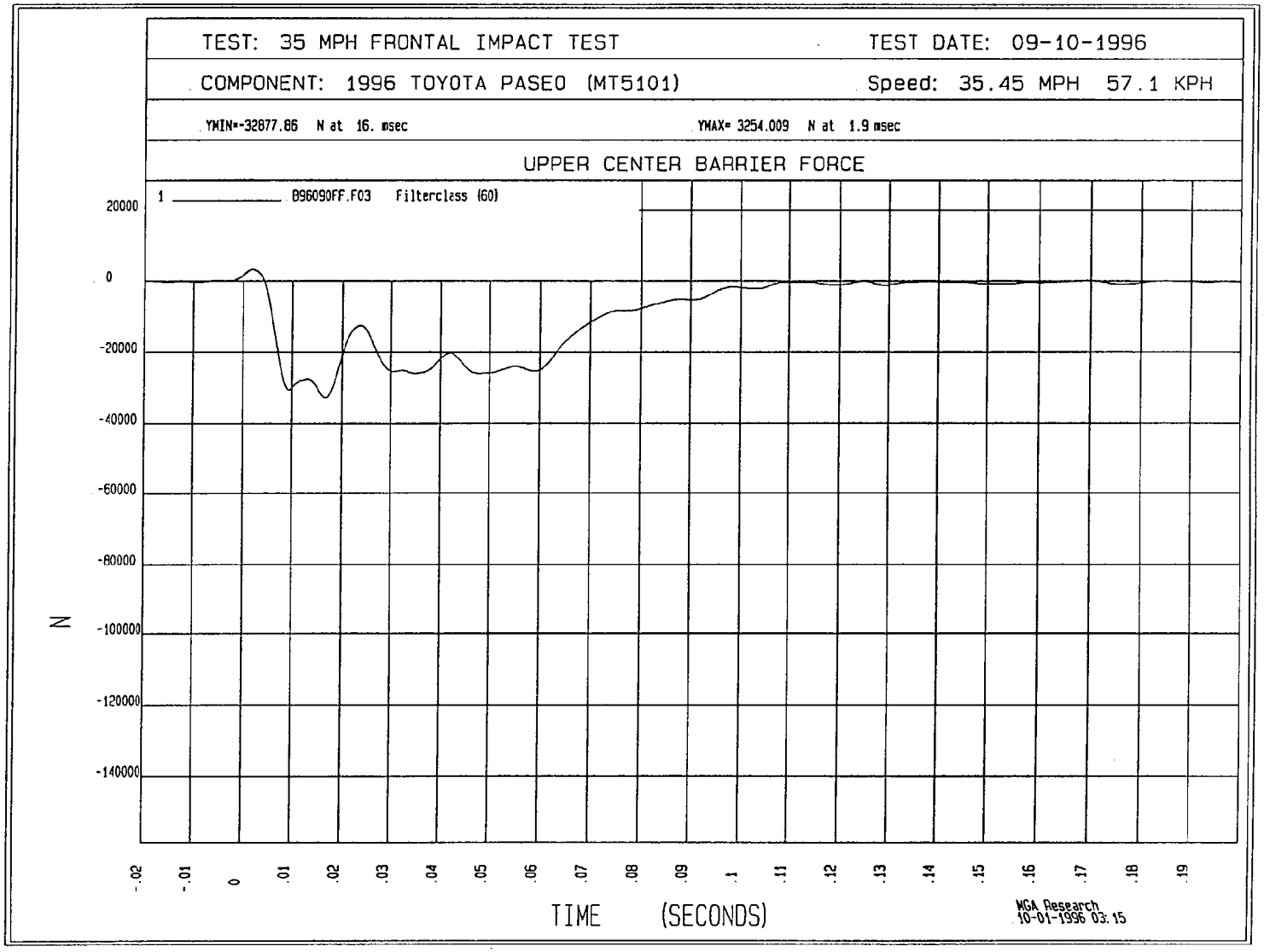
TIME Seconds
MGA Research
10-01-1996 03:09


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0 MM at 0 msec
YMAX= 531.3941 MM at 95. msec
BOTTOM OF ENGINE X DISPLACEMENT
1 B960904I.D09 Filterclass (180)
MM
500
400
300
200
100
0
0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19
TIME Seconds
MGA Research
10-01-1996 05:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-11094.27 N at 43 msec
YMAX= 2431.56 N at 4.4 msec
UPPER LEFT BARRIER FORCE
1 B96090FF.F02 Filterclass (60)
20000
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
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
10-01-1996 03:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-32877.86 N at 16. msec
YMAX= 3254.009 N at 1.9 msec
UPPER CENTER BARRIER FORCE
1 B96090FF.F03 Filterclass (60)
20000
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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.08
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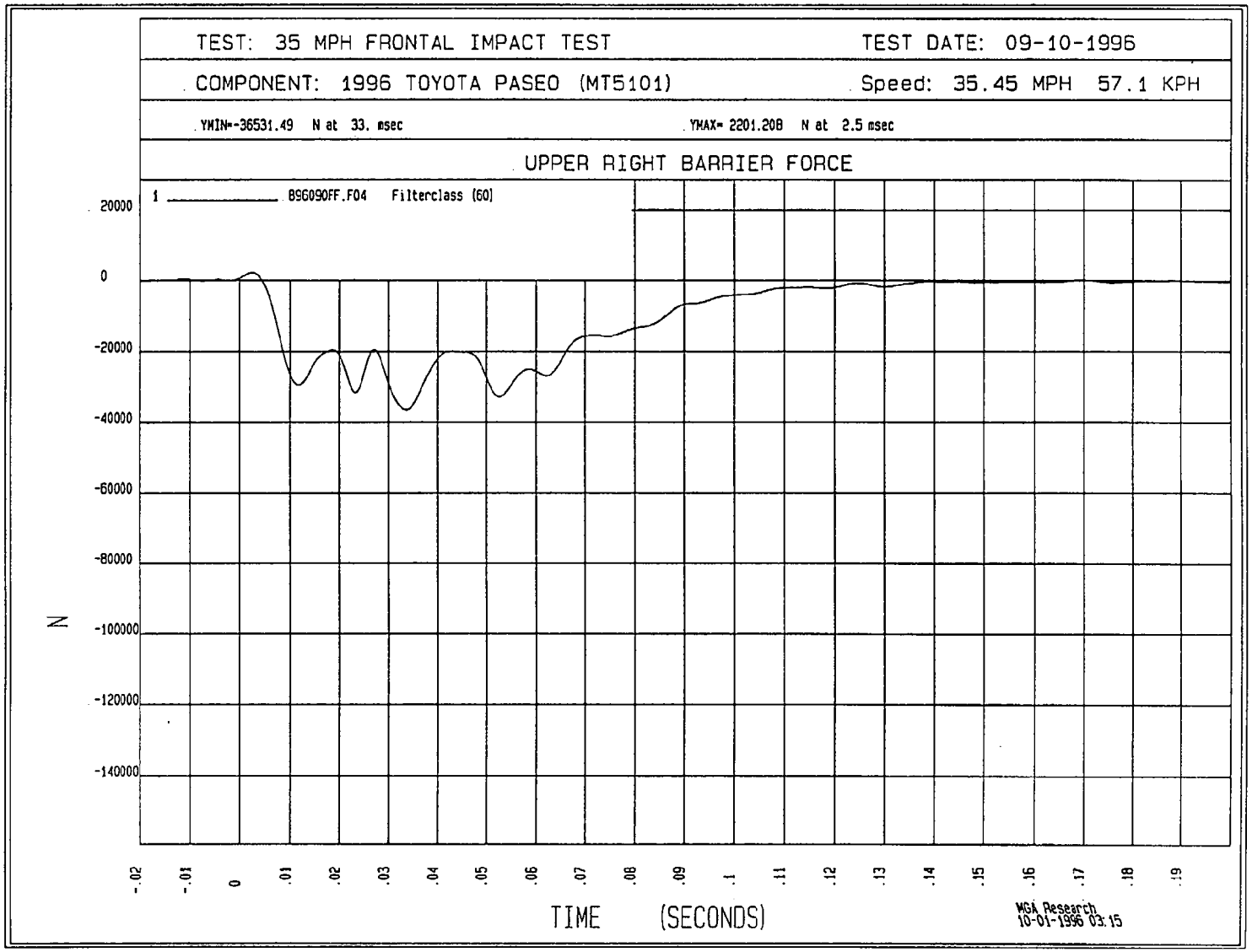
TIME (SECONDS)
MGA Research
10-01-1996 03:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-36531.49 N at 33. msec
YMAX= 2201.208 N at 2.5 msec
UPPER RIGHT BARRIER FORCE
1 89G090FF.F04 Filterclass (60)
20000
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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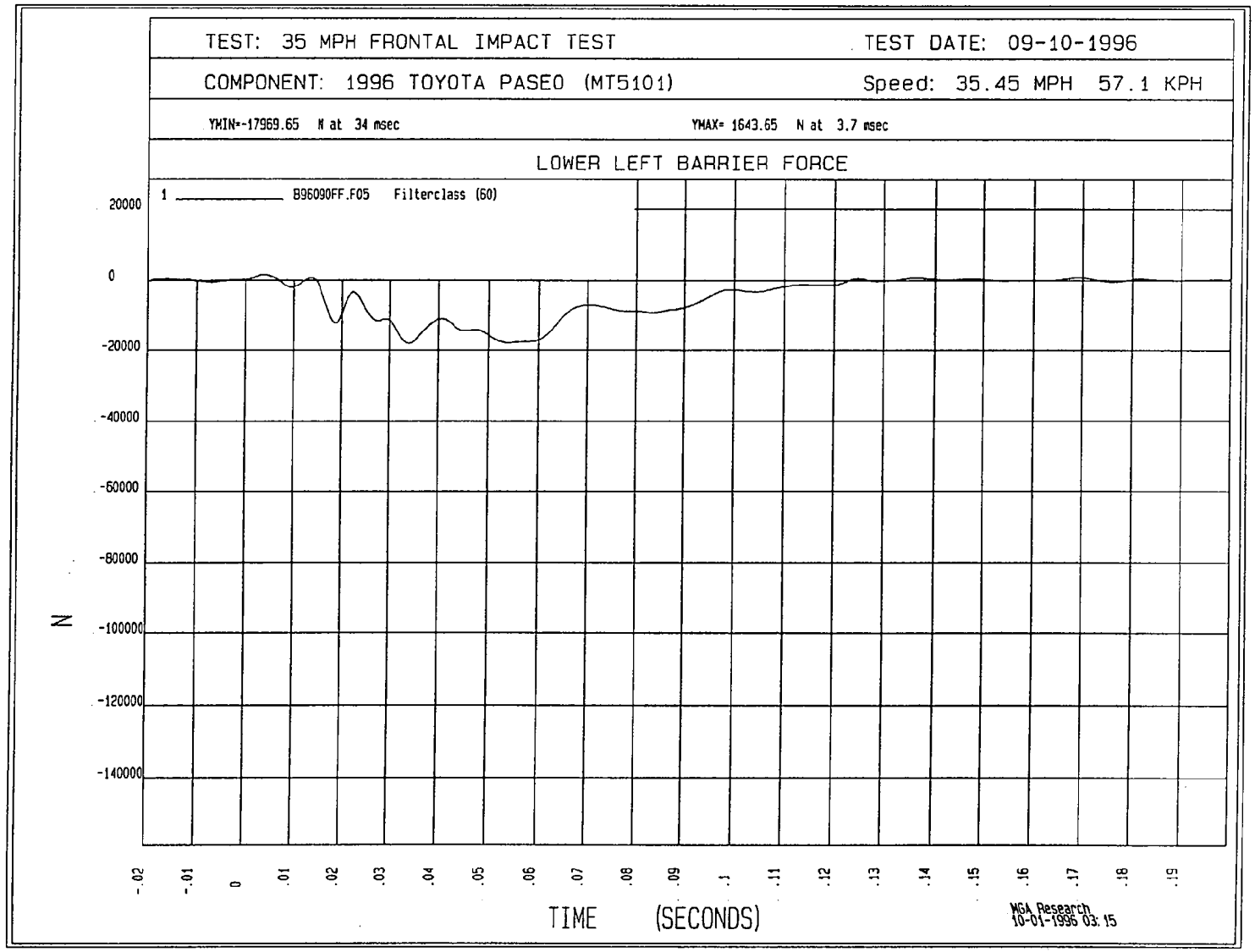
TIME (SECONDS)
MGA Research
10-01-1996 03:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-17969.65 N at 34 msec
YMAX= 1643.65 N at 3.7 msec
LOWER LEFT BARRIER FORCE
1 B96090FF.F05 Filterclass (60)
20000
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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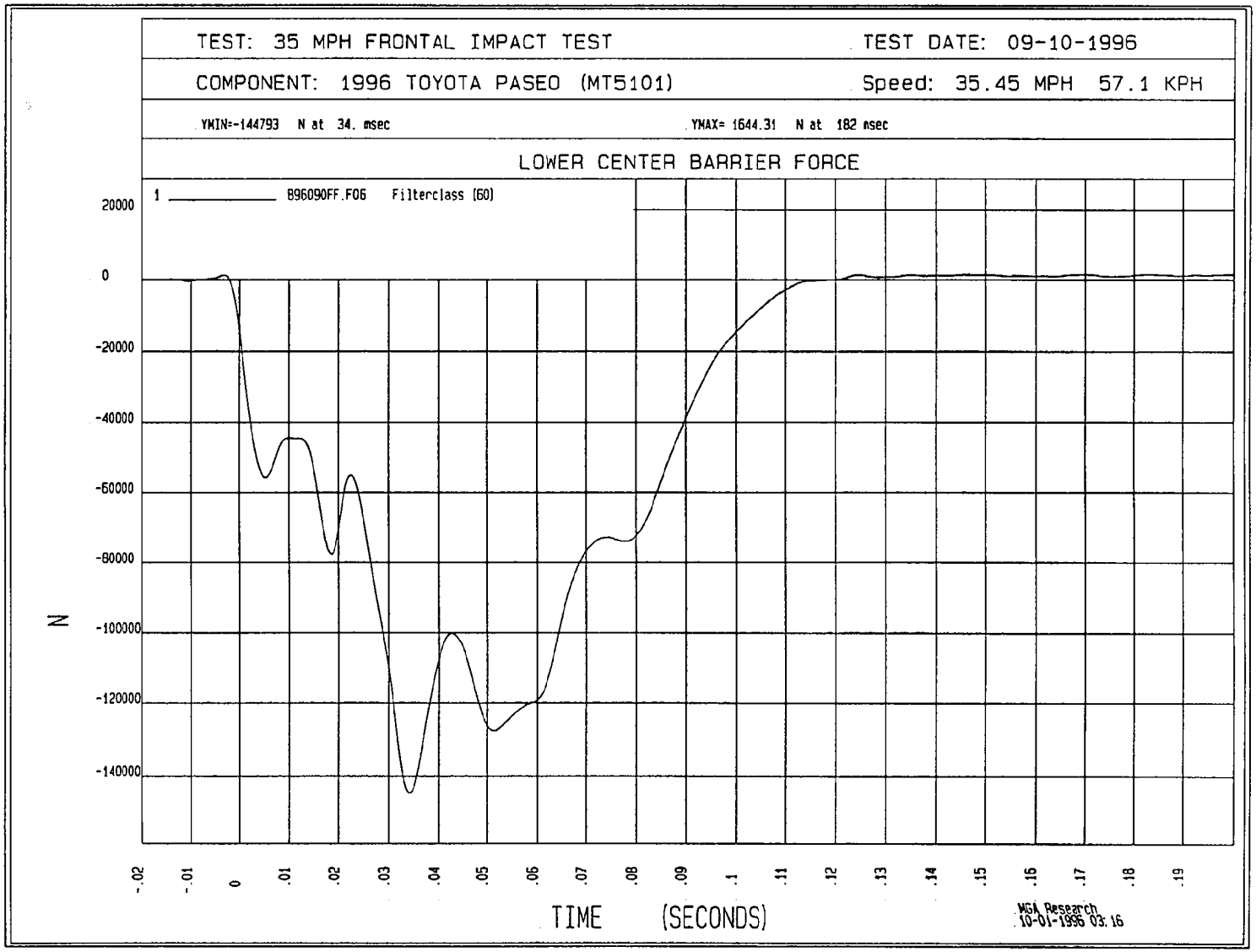
TIME (SECONDS)
MGA Research
10-01-1996 03:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-144793 N at 34. msec
YMAX= 1644.31 N at 182 msec
LOWER CENTER BARRIER FORCE
1 B96090FF.F06 Filterclass (60)
20000
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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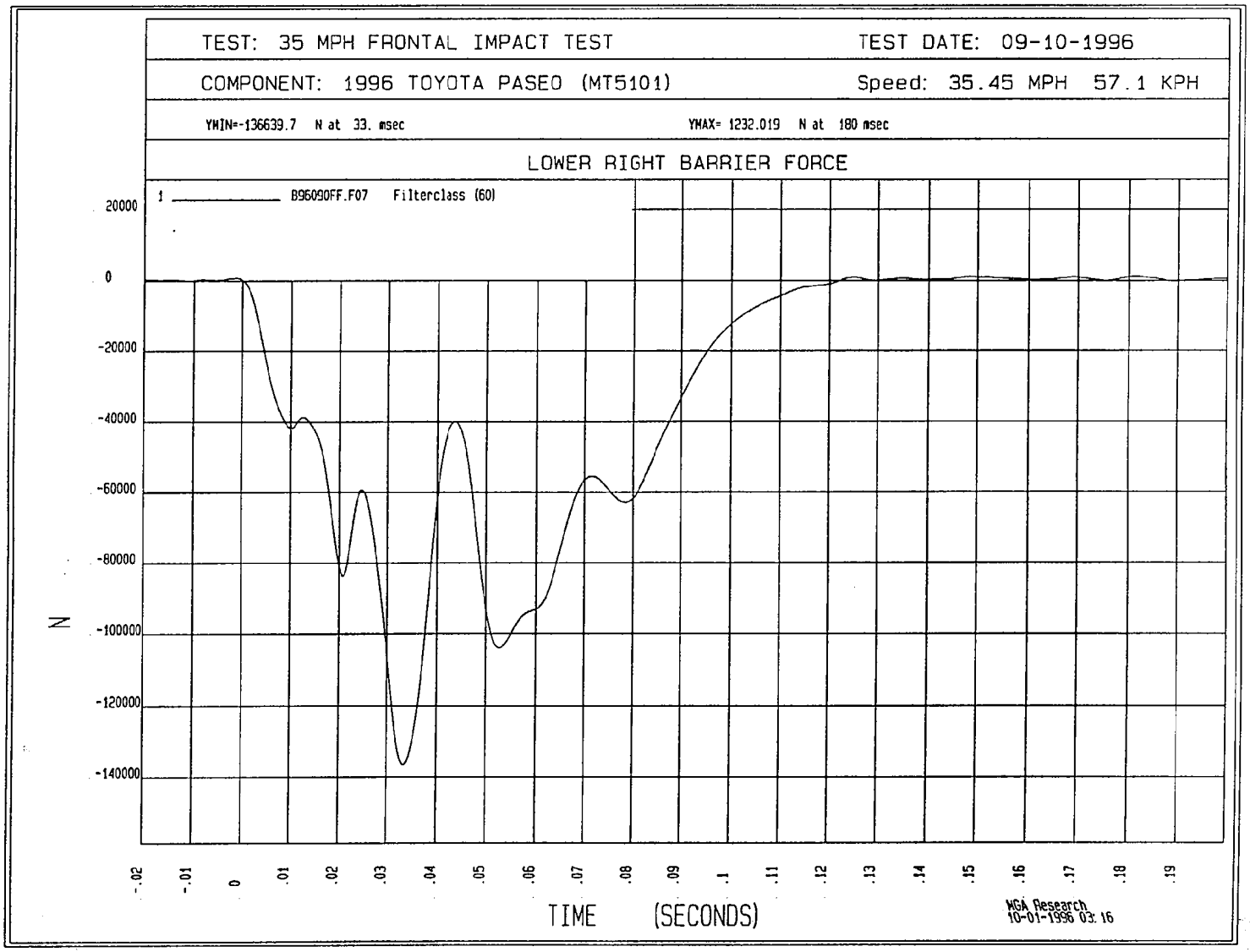
TIME (SECONDS)
MGA Research
10-01-1996 03:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-136639.7 N at 33. msec
YMAX= 1232.019 N at 180 msec
LOWER RIGHT BARRIER FORCE
1 B96090FF.F07 Filterclass (60)
20000
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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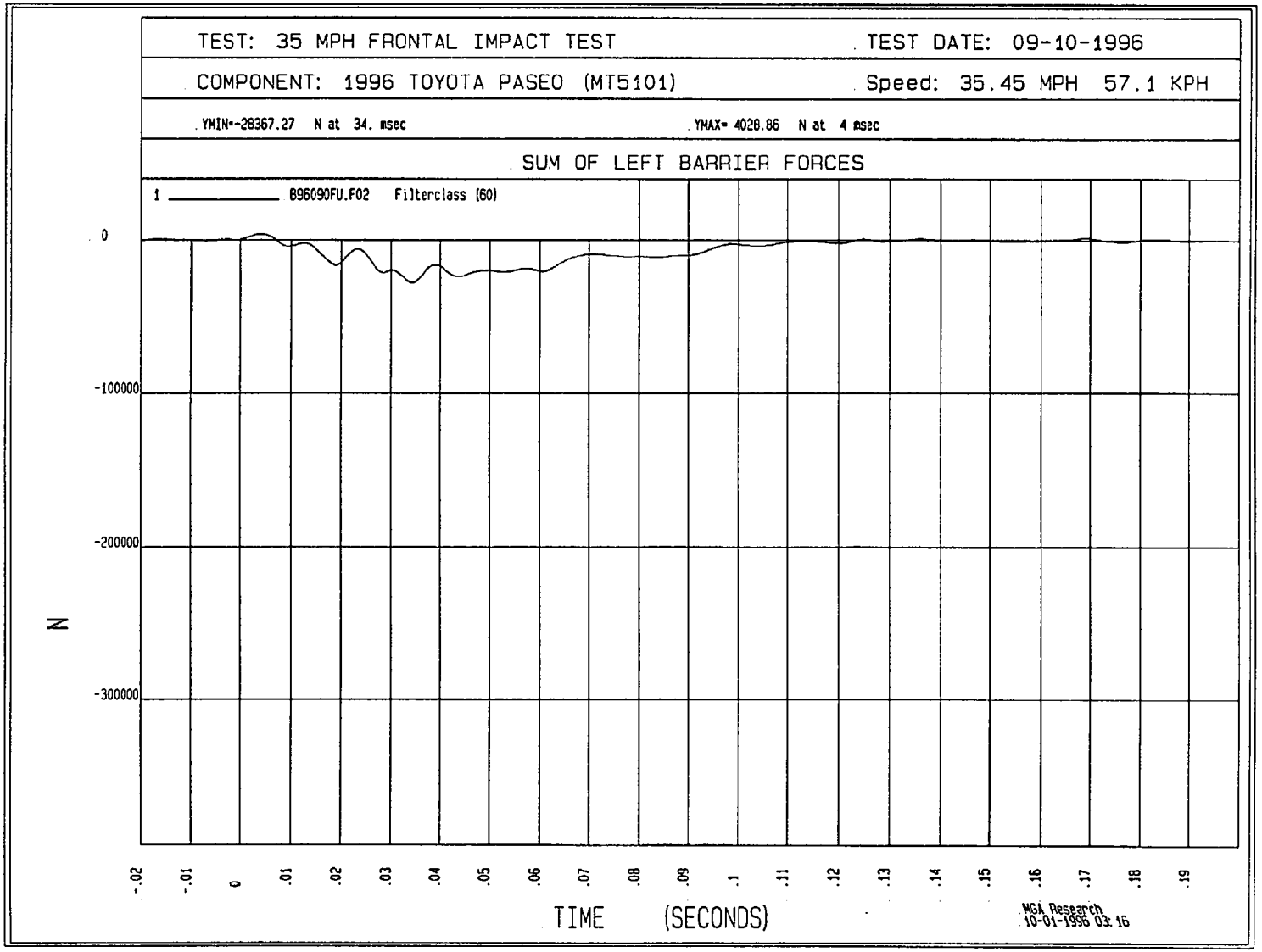
TIME (SECONDS)
MGA Research
10-01-1996 03:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-28367.27 N at 34. msec
YMAX= 4028.86 N at 4 msec
SUM OF LEFT BARRIER FORCES
1 B96090FU.F02 Filterclass (60)
0
-100000
-200000
-300000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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.13
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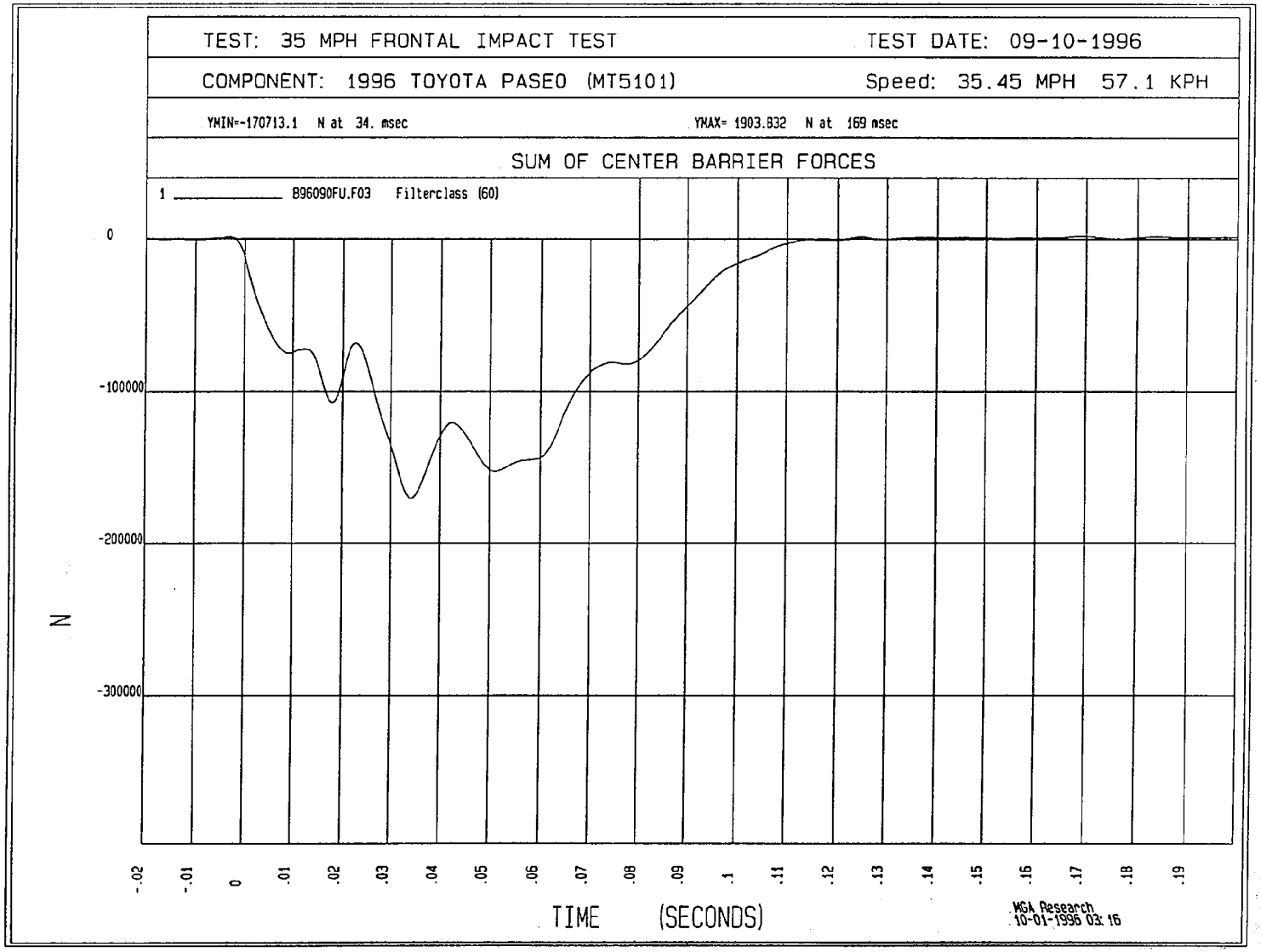
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 03:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-170713.1 N at 34. msec
YMAX= 1903.832 N at 169 msec
SUM OF CENTER BARRIER FORCES
1 B96090FU.F03 Filterclass (60)
0
-100000
-200000
-300000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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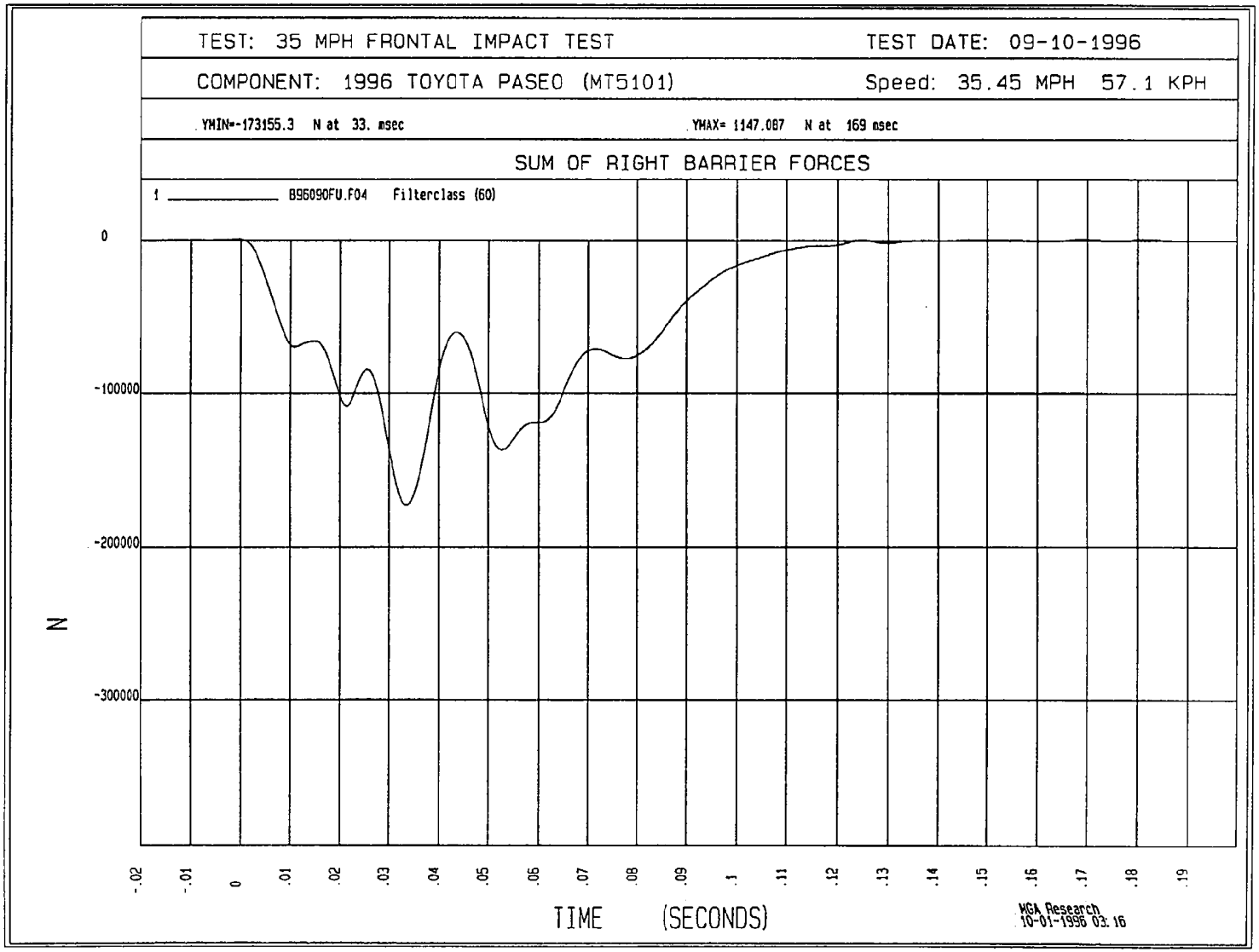
TIME (SECONDS)
MGA Research
10-01-1996 03:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-173155.3 N at 33. msec
YMAX= 1147.087 N at 169 msec
SUM OF RIGHT BARRIER FORCES
1 B96090FU.F04 Filterclass (60)
0
-100000
-200000
-300000
N
-.02
-.01
0
.01
.02
.03
.04
.05
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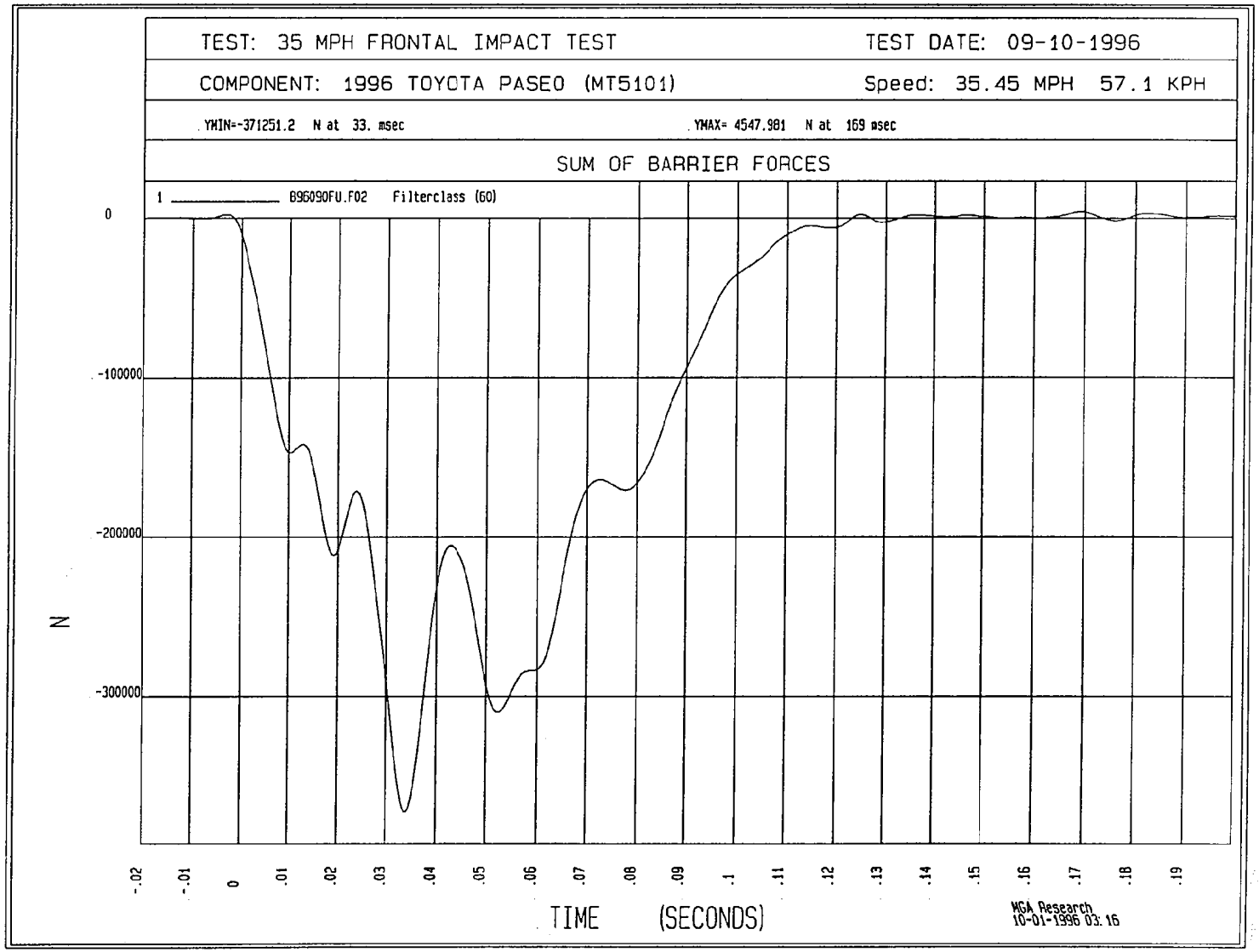
TIME (SECONDS)
MGA Research
10-01-1996 03:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYCTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-371251.2 N at 33. msec
YMAX= 4547.981 N at 169 msec
SUM OF BARRIER FORCES
1 B96090FU.F02 Filterclass (60)
0
-100000
-200000
-300000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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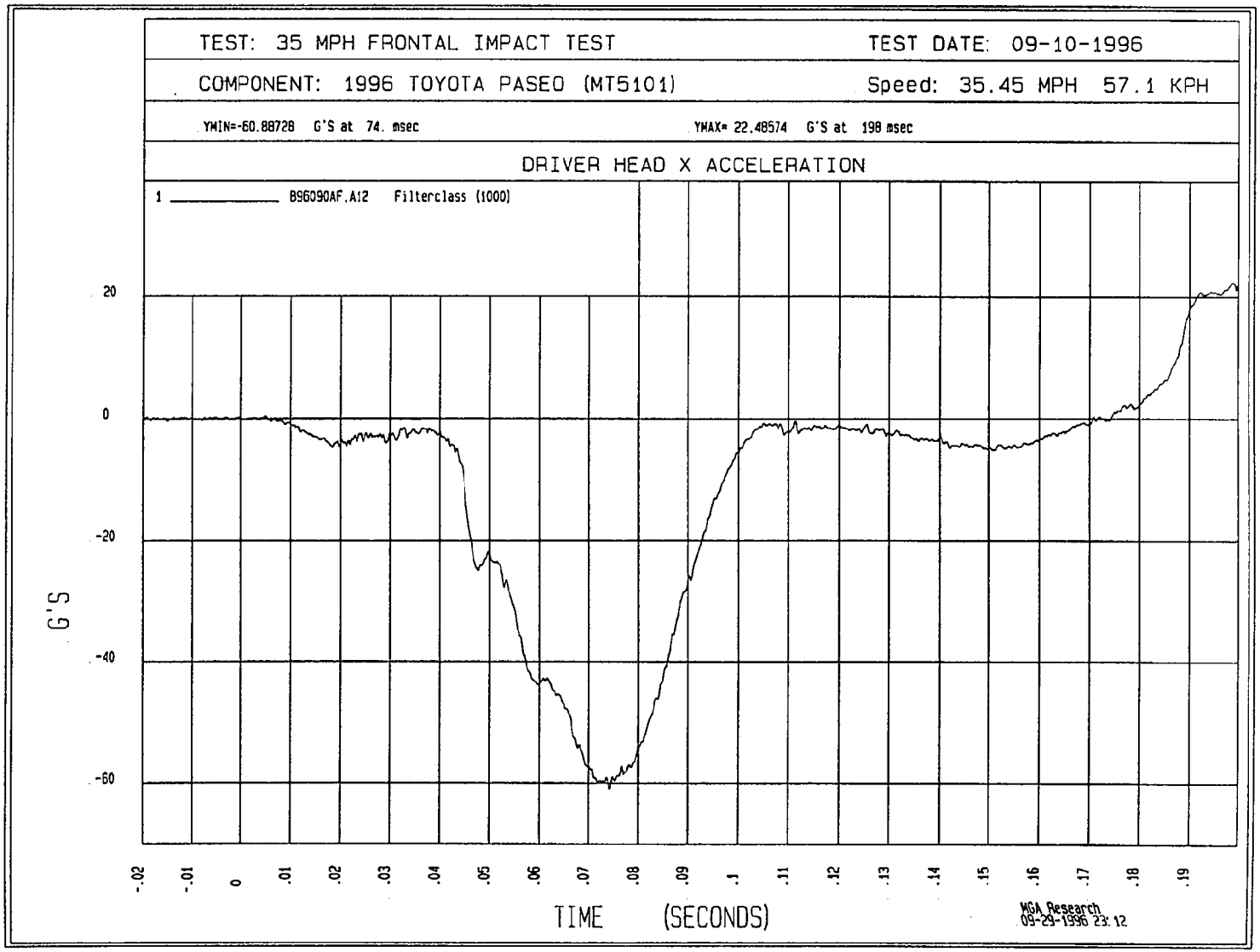
TIME (SECONDS)
MGA Research
10-01-1996 03:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-60.88728 G'S at 74. msec
YMAX= 22.48574 G'S at 198 msec
DRIVER HEAD X ACCELERATION
1 B96090AF.A12 Filterclass (1000)
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
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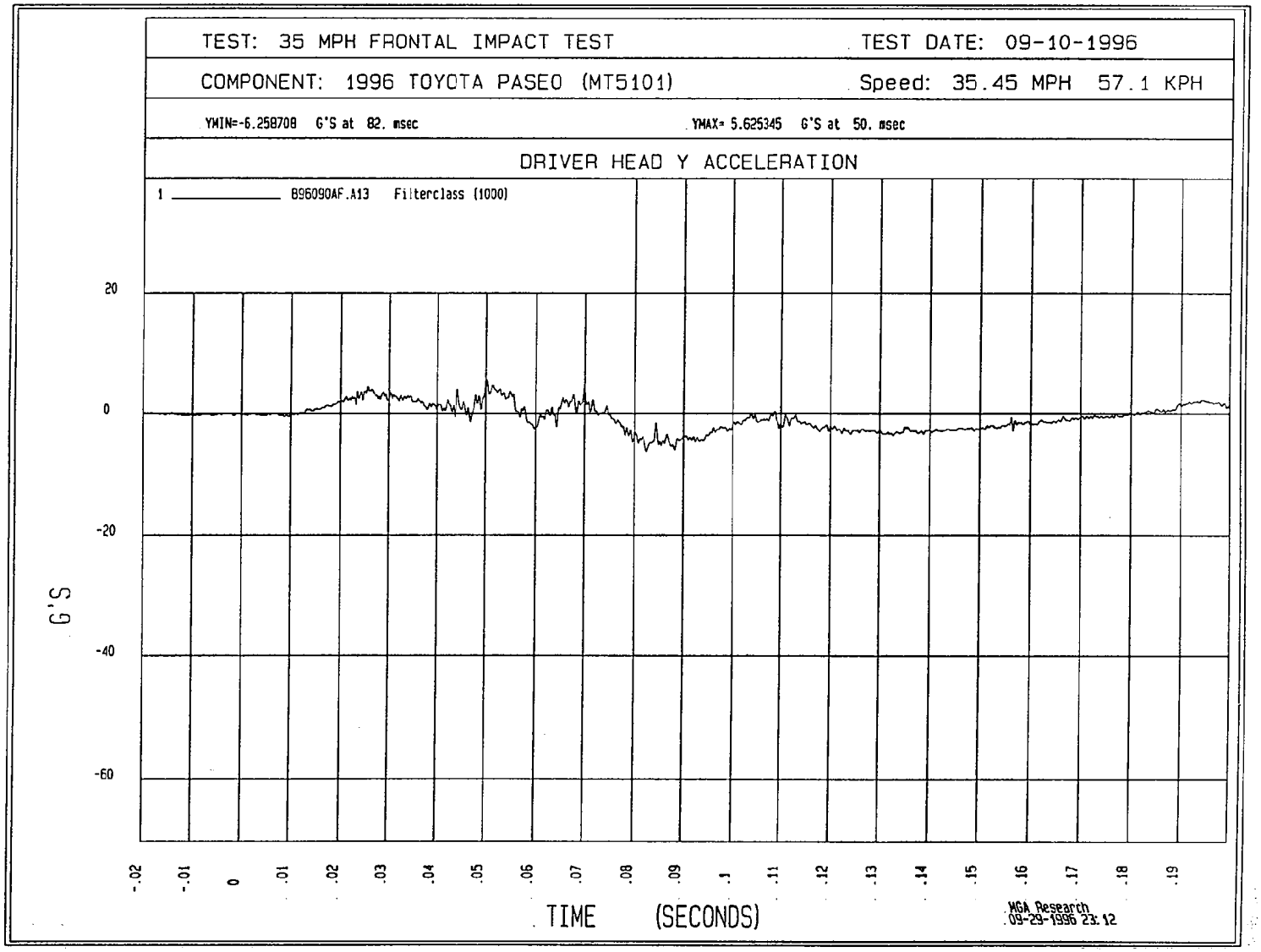
.18
.19
TIME (SECONDS)
MGA Research
09-29-1996 23:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-6.258708 G'S at 82. msec
YMAX= 5.625345 G'S at 50. msec
DRIVER HEAD Y ACCELERATION
1 B96090AF.A13 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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.13
.14
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.18
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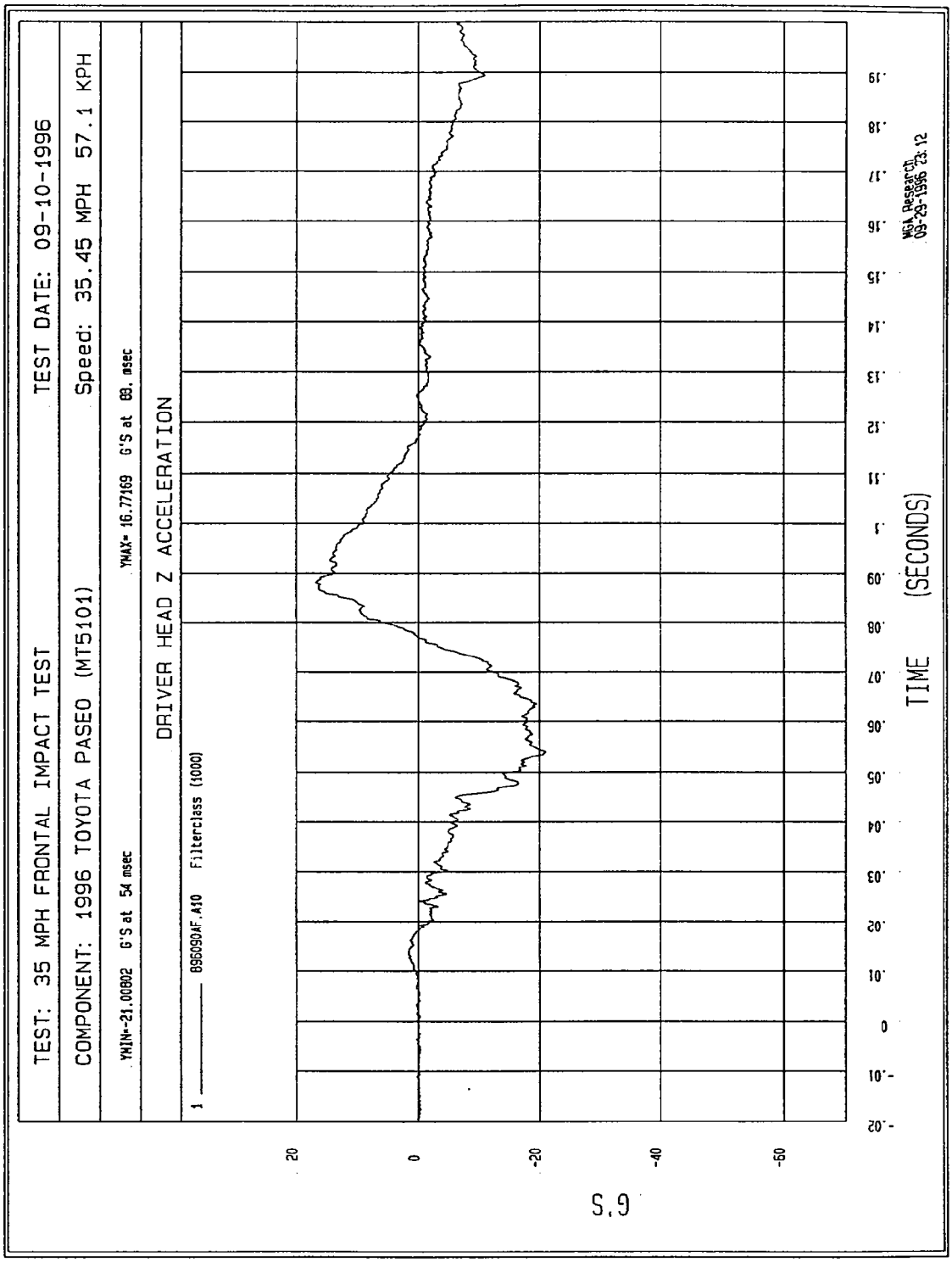
TIME (SECONDS)
MGA Research
09-29-1996 23:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-21.00802 G'S at 54 msec
YMAX= 16.77169 G'S at 68. msec
DRIVER HEAD Z ACCELERATION
1 ——— 896090AF.A10 Filterclass (1000)
20
0
-20
-40
-60
G'S
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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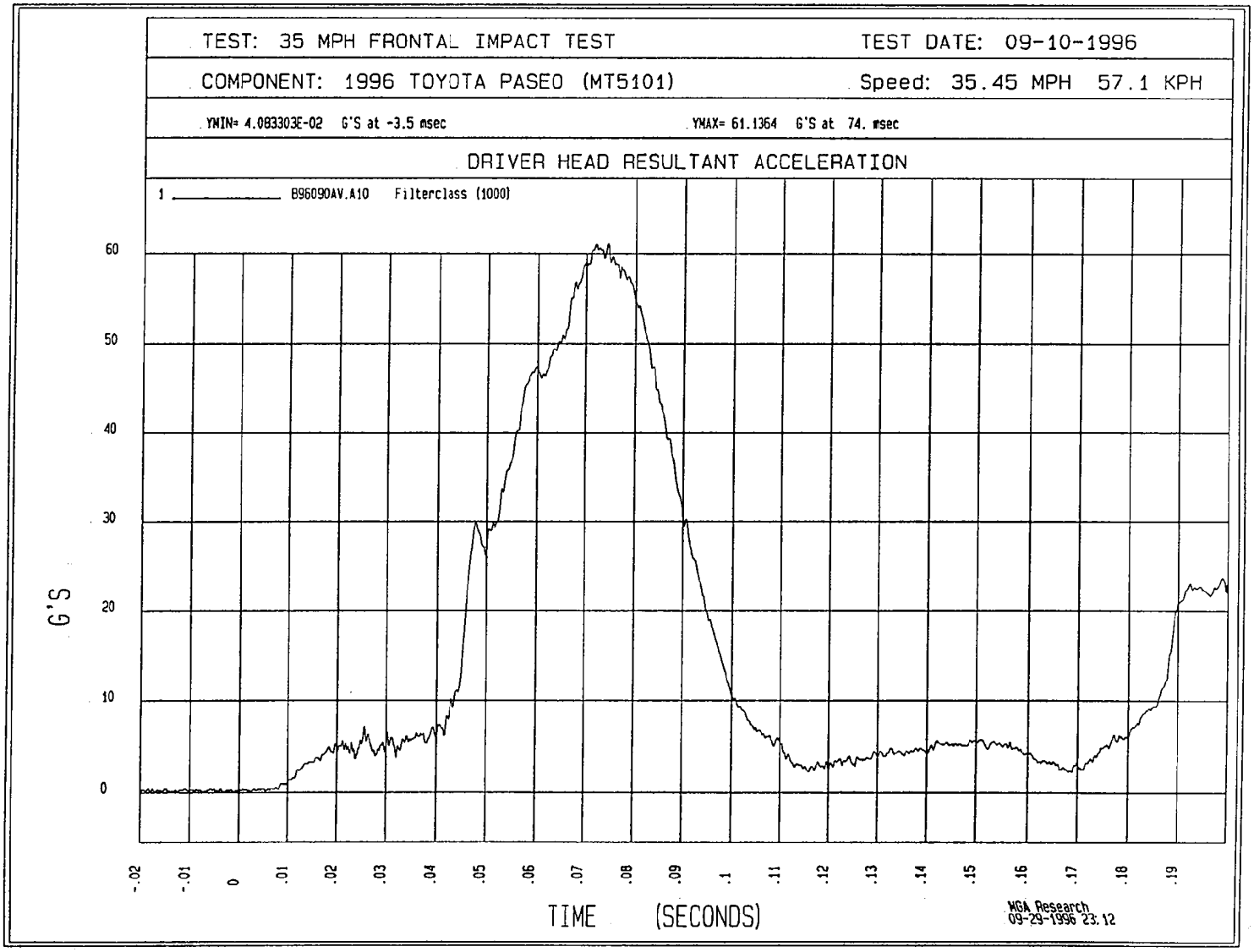
MGA Research
09-29-1996 23:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 4.083303E-02 G'S at -3.5 msec
YMAX= 61.1364 G'S at 74. msec
DRIVER HEAD RESULTANT ACCELERATION
1 B96090AV.A10 Filterclass (1000)
G'S
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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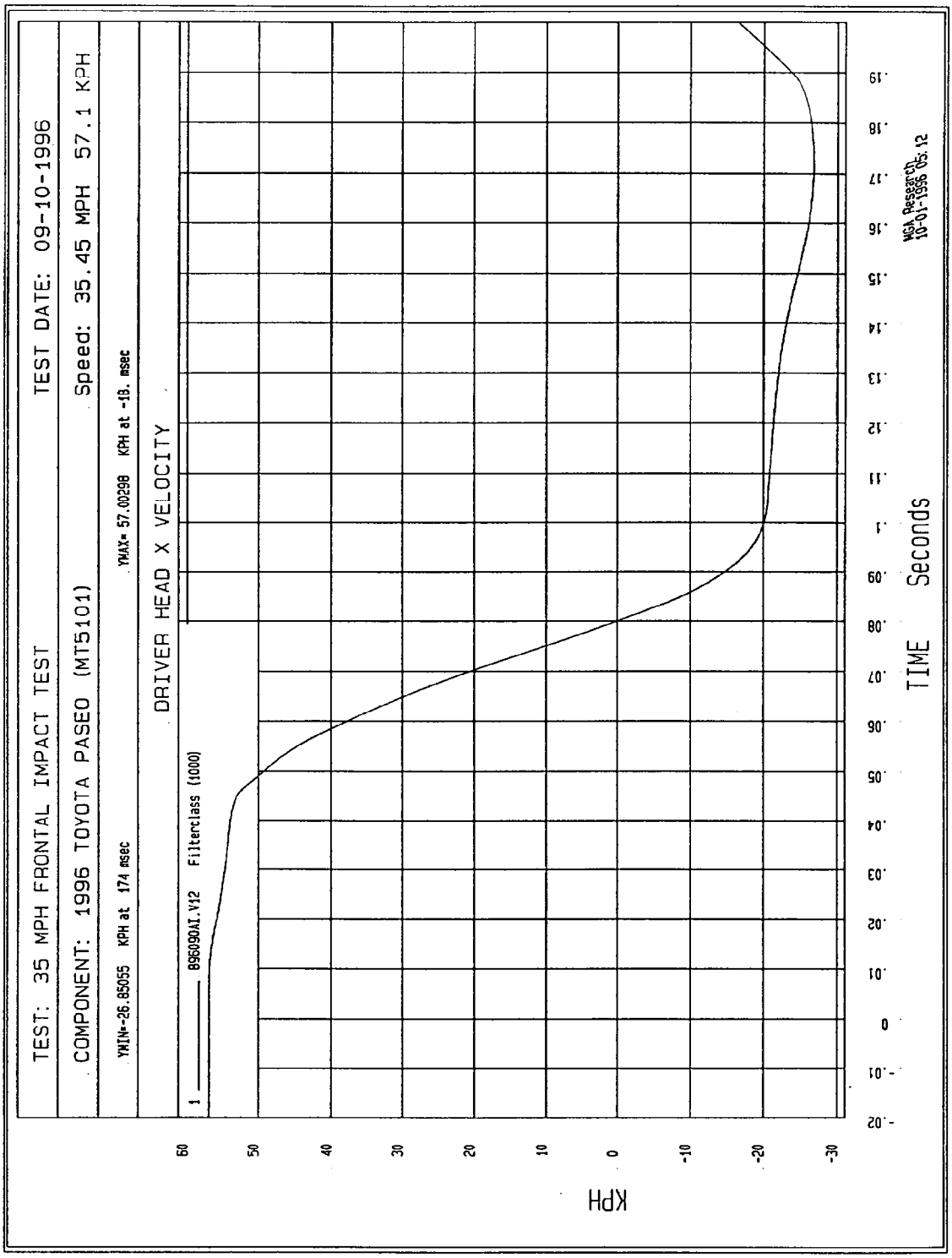
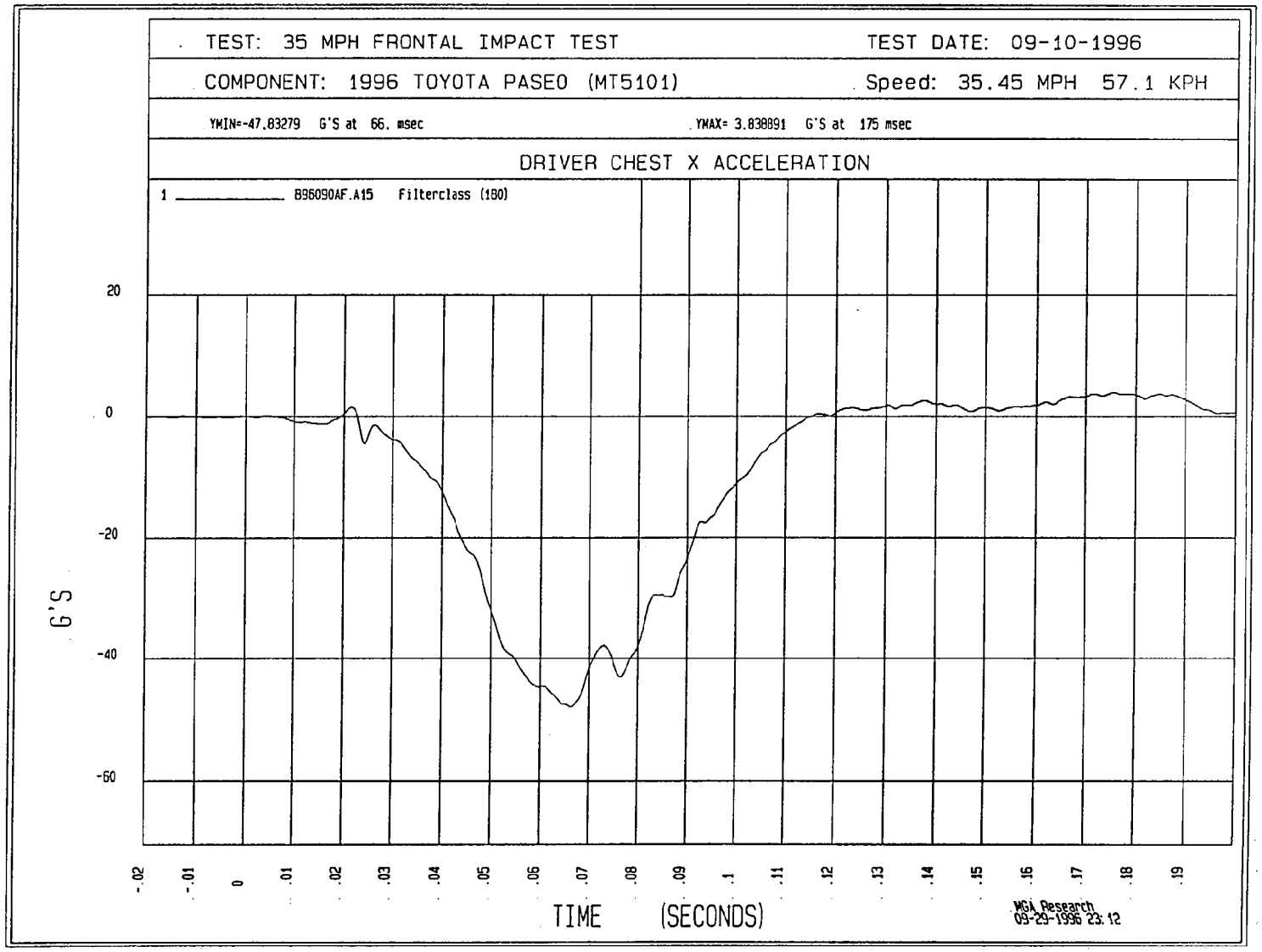
TIME (SECONDS)
NGA Research
09-29-1996 23:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-26.85055 KPH at 174 msec
YMAX= 57.00298 KPH at -18. msec
DRIVER HEAD X VELOCITY
1 ——— 896090AI.V12 Filterclass (1000)
KPH
TIME Seconds
MGA Research
10-01-1996 05:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-47.83279 G'S at 66. msec
YMAX= 3.838891 G'S at 175 msec
DRIVER CHEST X ACCELERATION
1 B96090AF.A15 Filterclass (180)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.18
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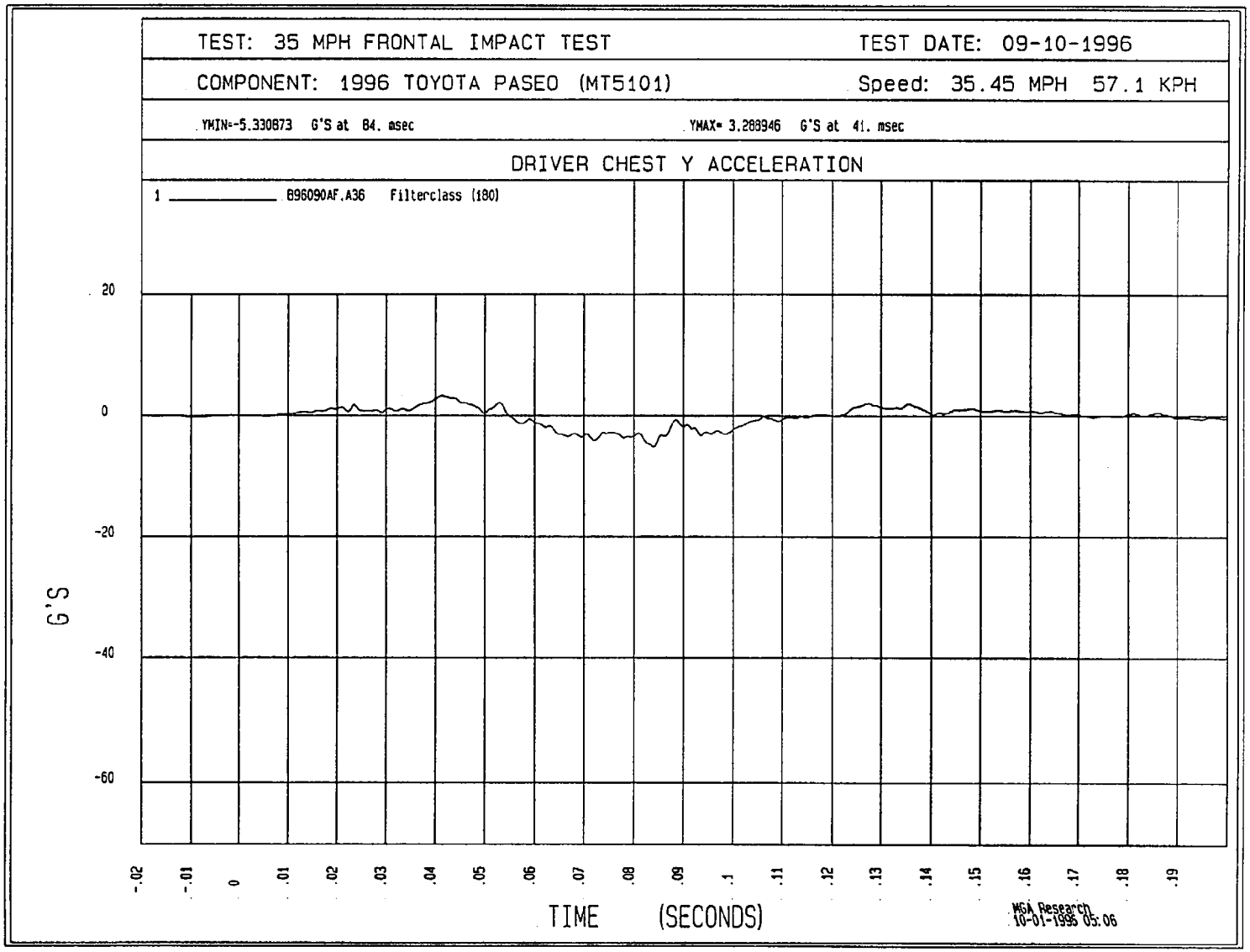
TIME (SECONDS)
MGA Research
09-29-1996 23:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-5.330873 G'S at 84. msec
YMAX= 3.288946 G'S at 41. msec
DRIVER CHEST Y ACCELERATION
1 B96090AF.A36 Filterclass (180)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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.07
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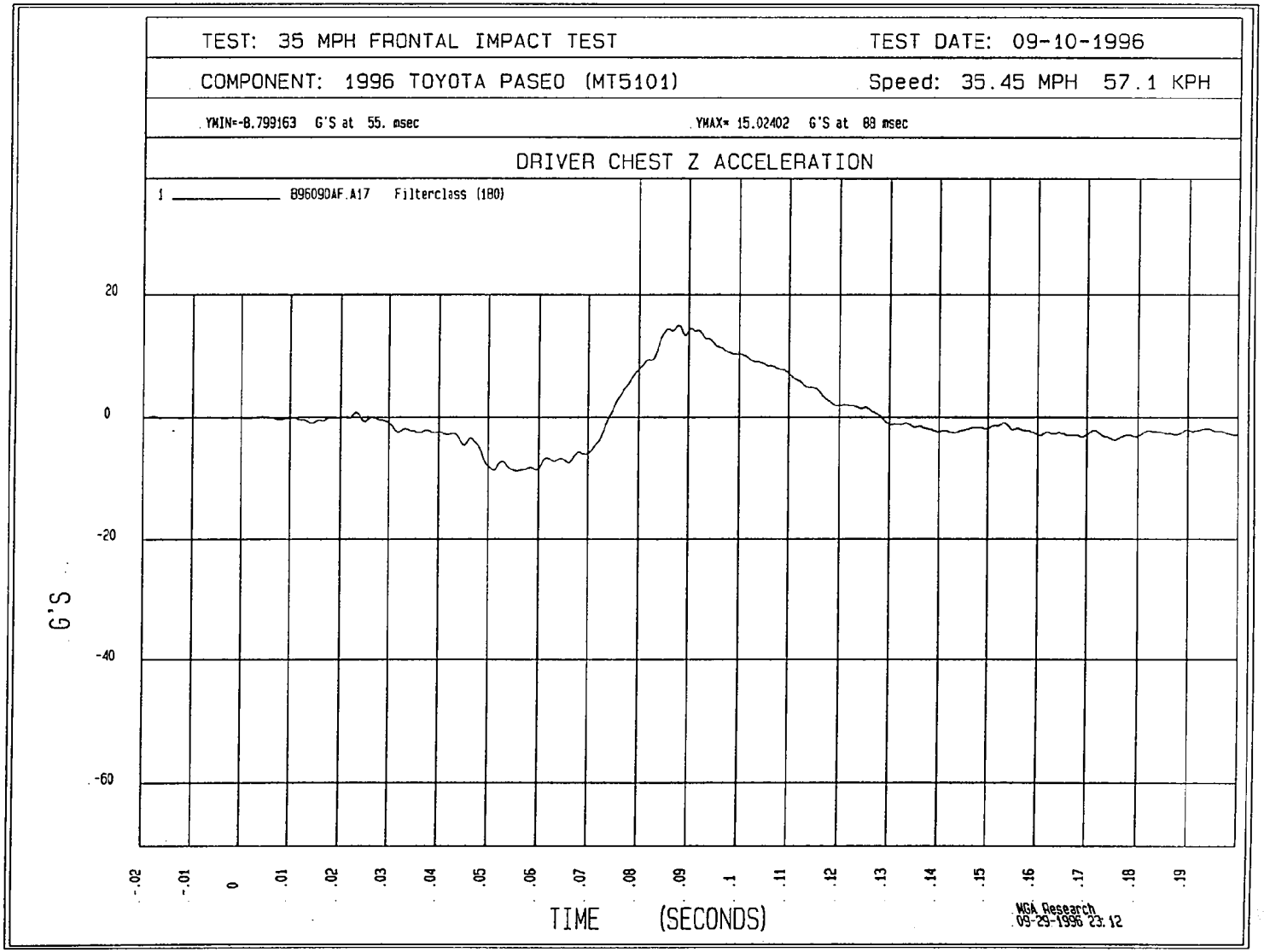
TIME (SECONDS)
MGA Research
10-01-1996 05:06


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-8.799163 G'S at 55. msec
YMAX= 15.02402 G'S at 88 msec
DRIVER CHEST Z ACCELERATION
1 89609DAF.A17 Filterclass (180)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
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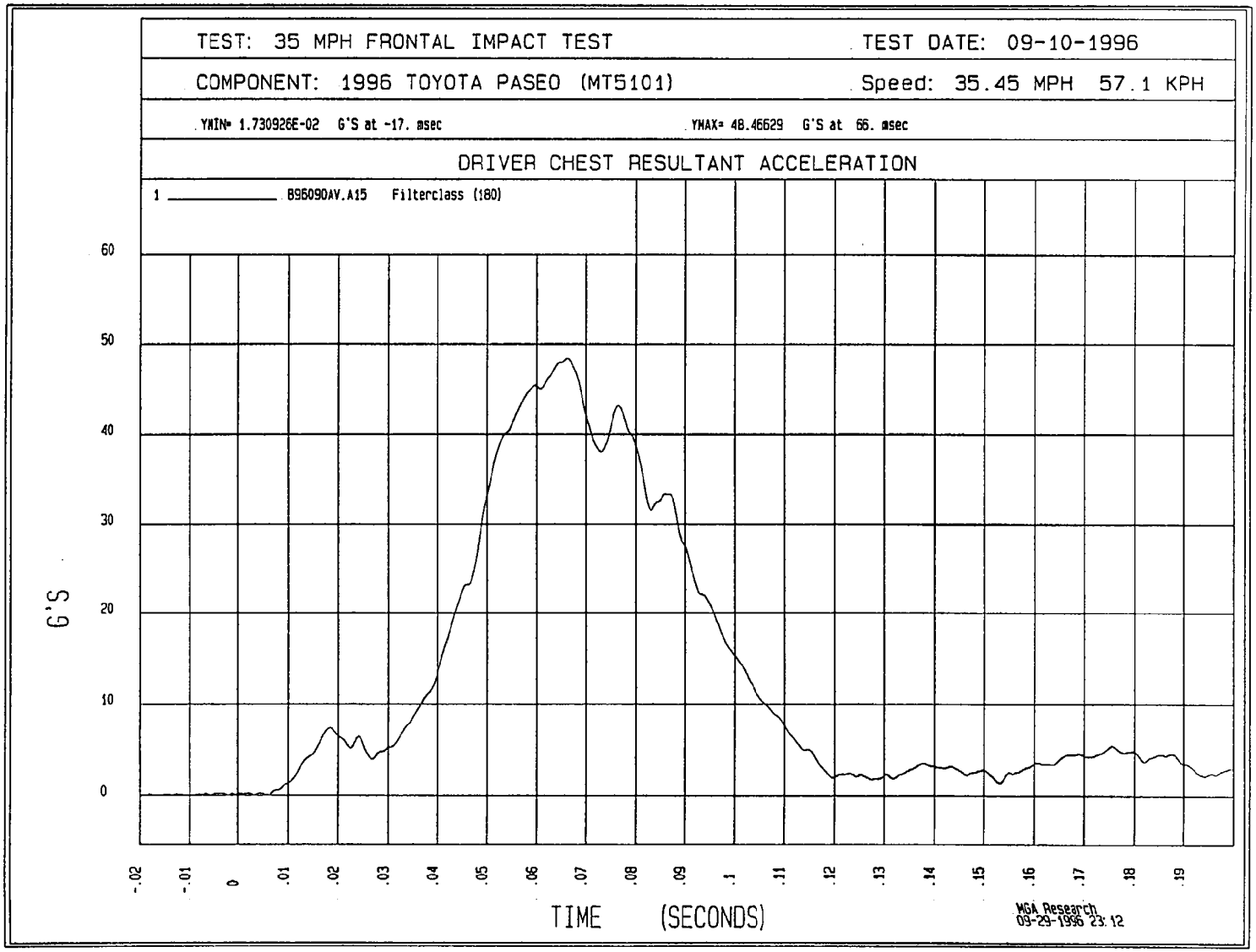
TIME (SECONDS)
MGA Research
09-29-1996 23:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 1.730926E-02 G'S at -17. msec
YMAX= 48.46629 G'S at 66. msec
DRIVER CHEST RESULTANT ACCELERATION
1 B95090AV.A15 Filterclass (180)
G'S
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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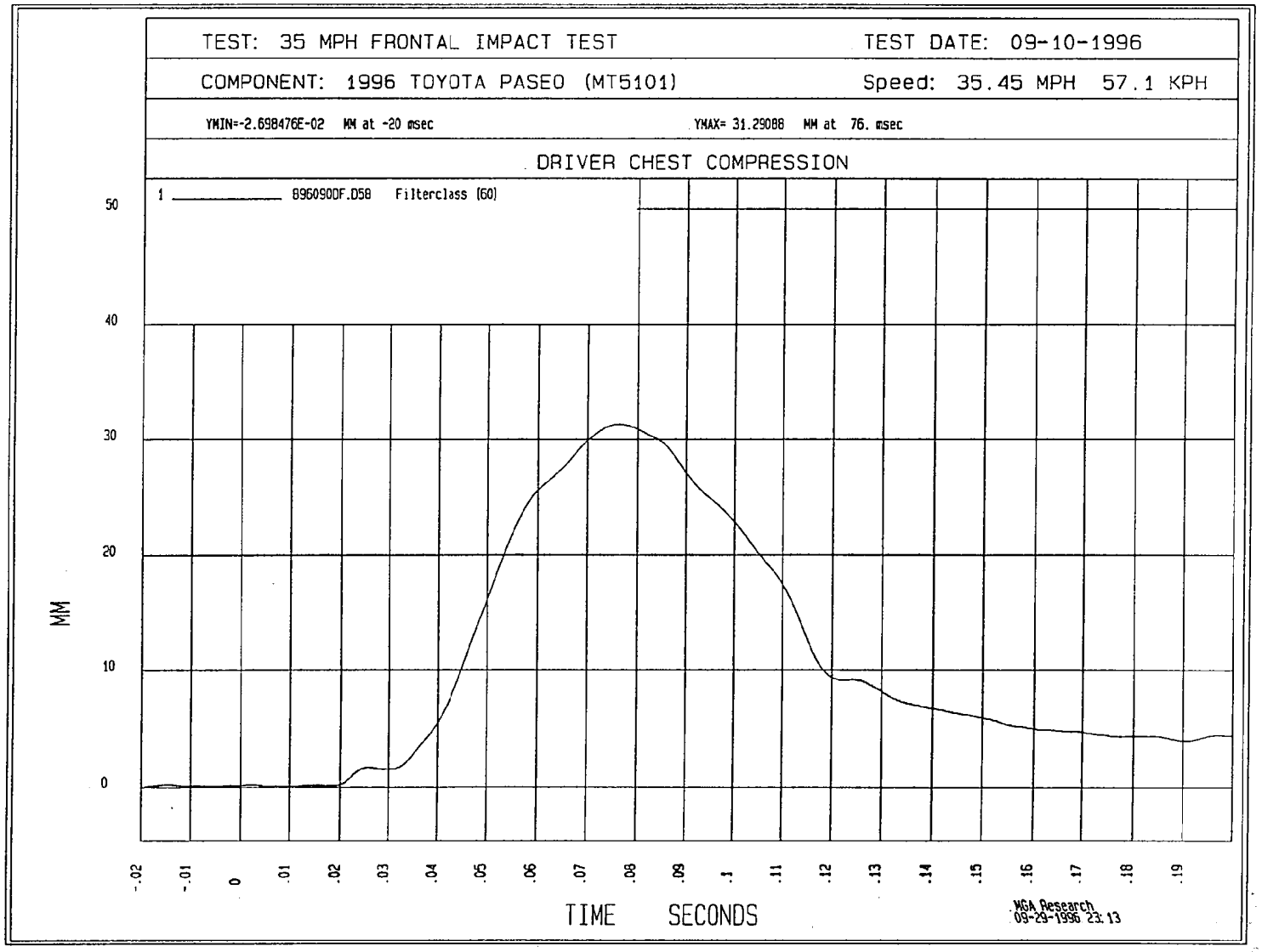
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
09-29-1996 23:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-2.698476E-02 MM at -20 msec
YMAX= 31.29088 MM at 76. msec
DRIVER CHEST COMPRESSION
1 8960900F.D58 Filterclass (60)
MM
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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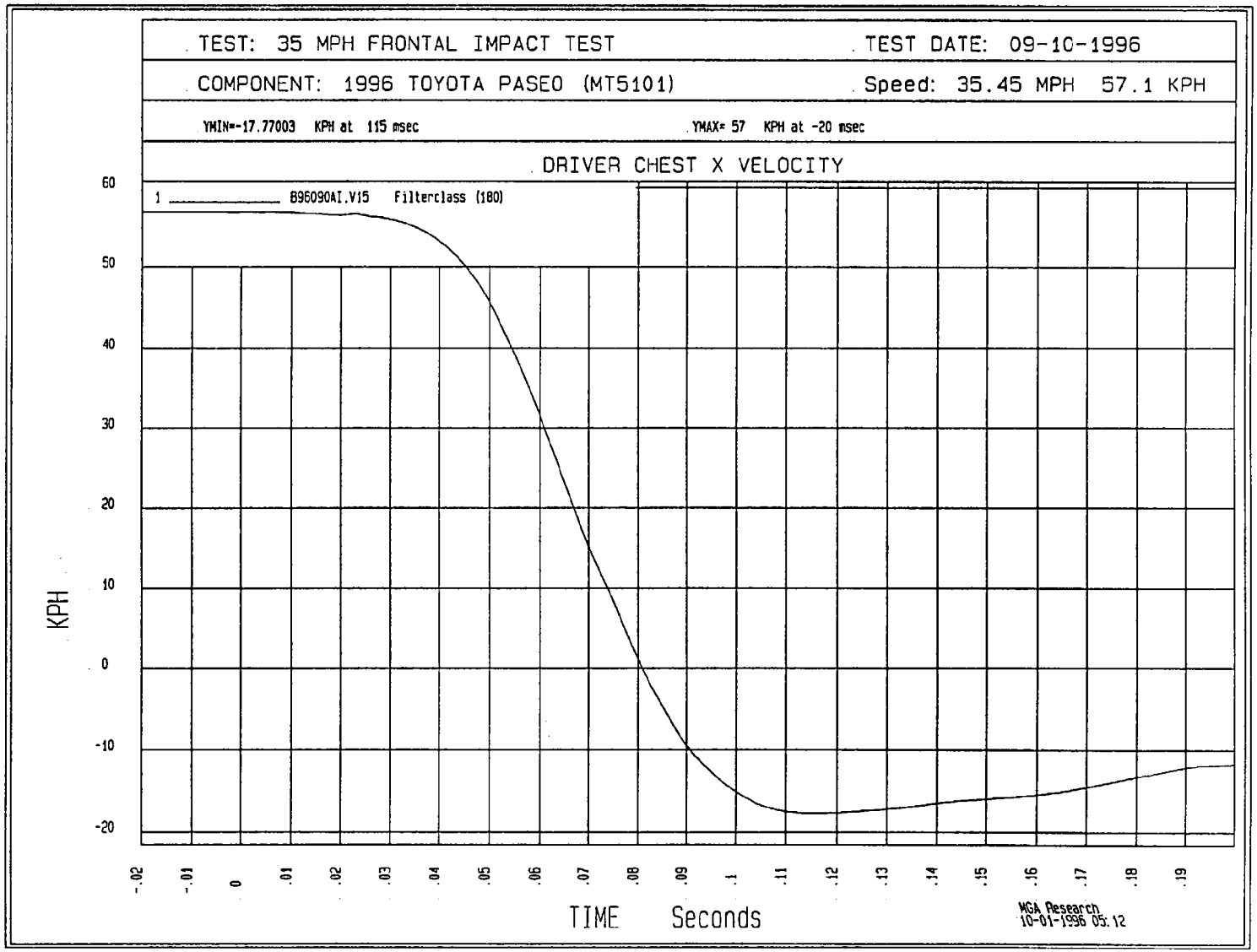
TIME SECONDS
MGA Research
09-29-1996 23:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-17.77003 KPH at 115 msec
YMAX= 57 KPH at -20 msec
DRIVER CHEST X VELOCITY
1 B96090AI.V15 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.12
.13
.14
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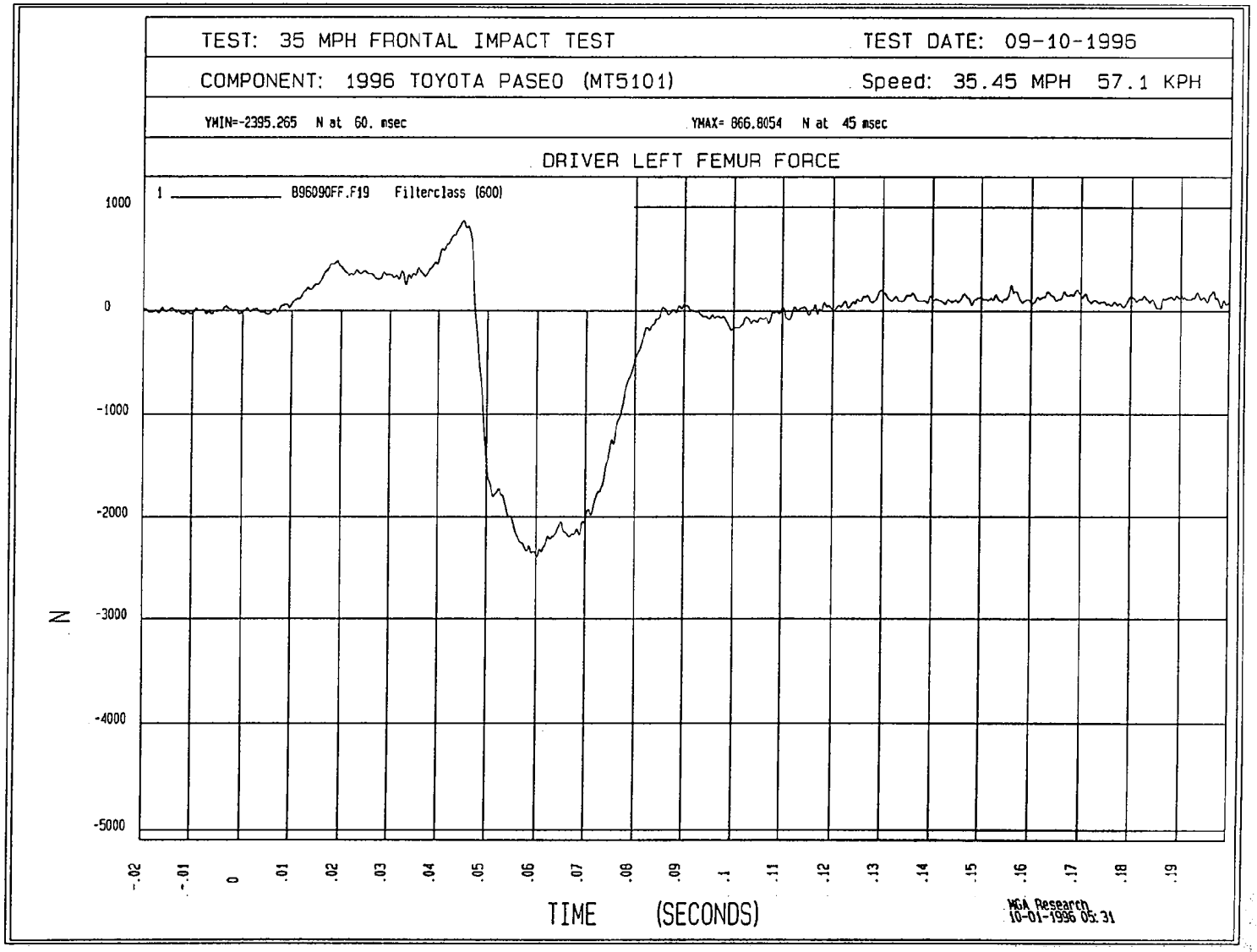
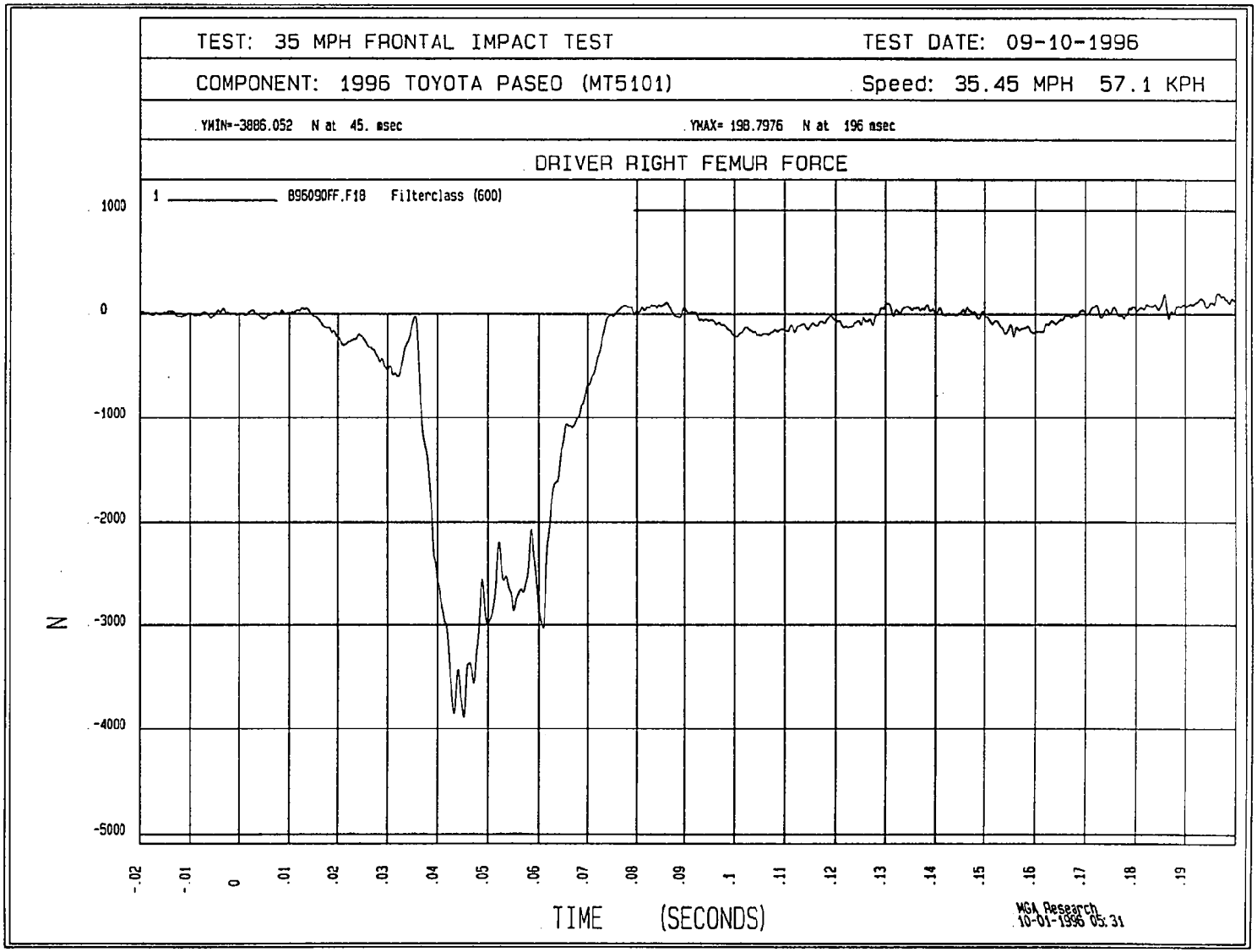
.16
.17
.18
.19
TIME Seconds
MGA Research
10-01-1996 05:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-2395.265 N at 60. msec
YMAX= 866.8054 N at 45 msec
DRIVER LEFT FEMUR FORCE
1 B96090FF.F19 Filterclass (600)
1000
0
-1000
-2000
-3000
-4000
-5000
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
10-01-1996 05:31


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-3886.052 N at 45. msec
YMAX= 198.7976 N at 196 msec
DRIVER RIGHT FEMUR FORCE
1 B95090FF.F18 Filterclass (600)
1000
0
-1000
-2000
-3000
-4000
-5000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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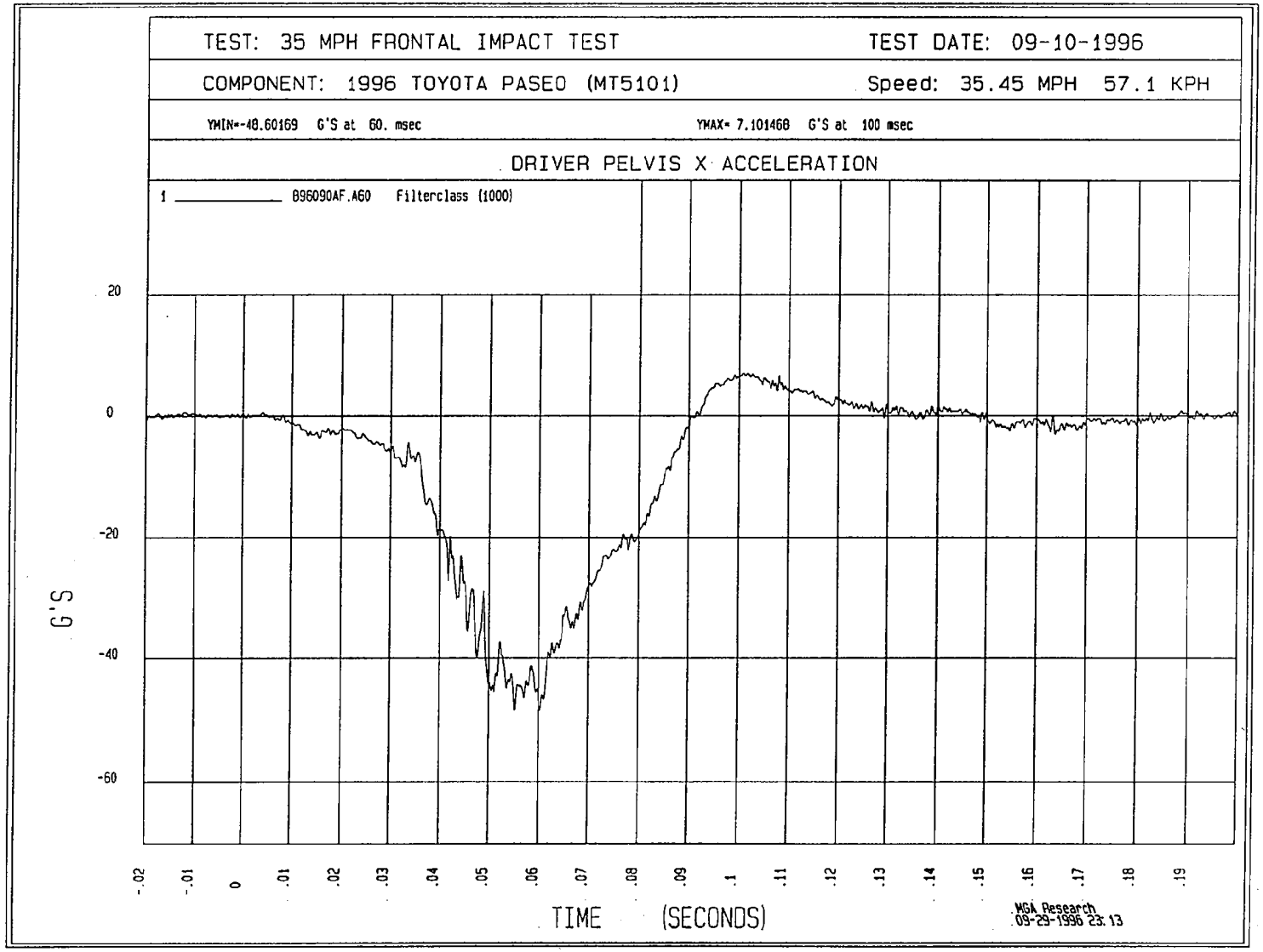
TIME (SECONDS)
MGA Research
10-01-1996 05:31


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-48.60169 G'S at 60. msec
YMAX= 7.101468 G'S at 100 msec
DRIVER PELVIS X ACCELERATION
1 B96090AF.A60 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
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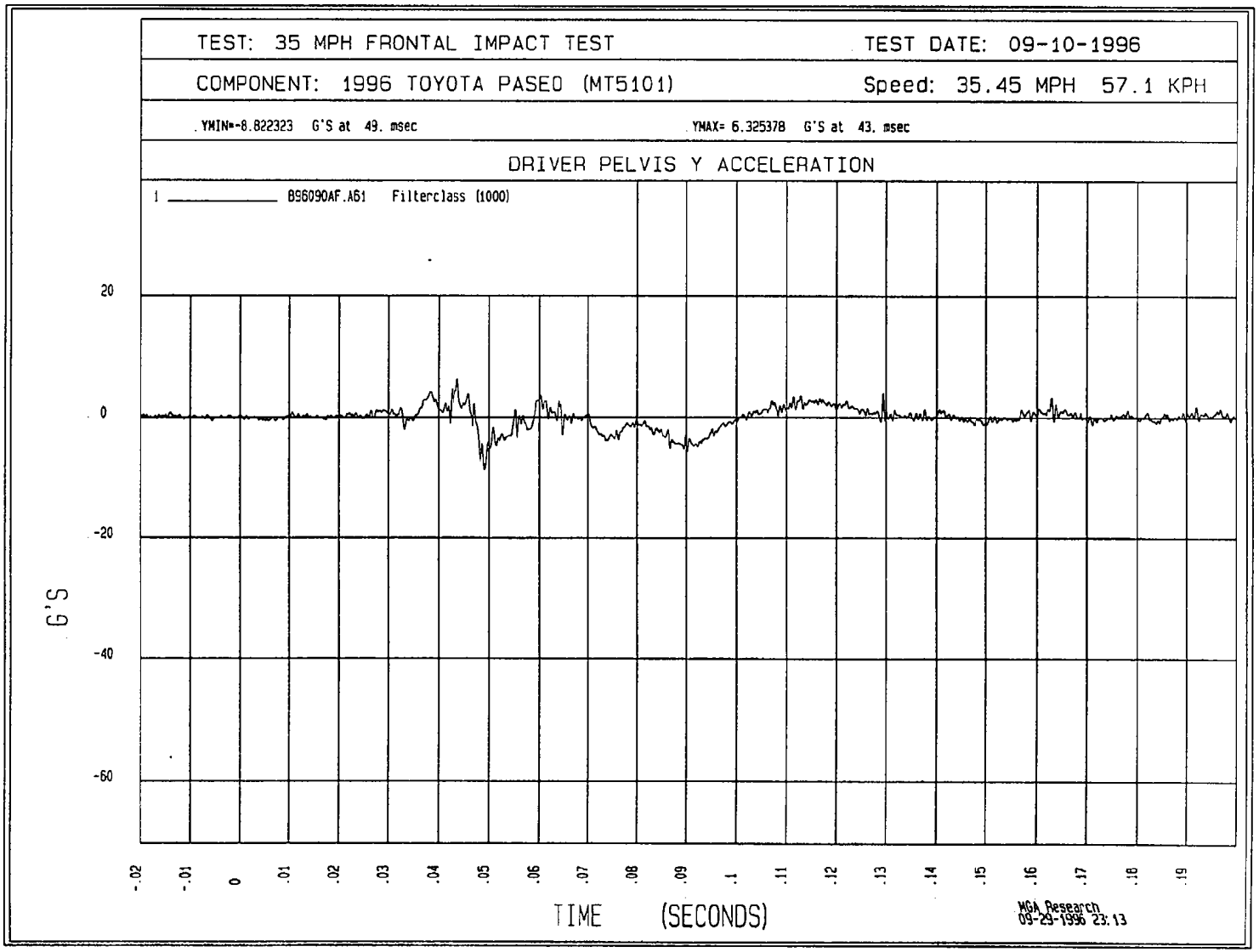
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
09-29-1996 23:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-8.822323 G'S at 49. msec
YMAX= 6.325378 G'S at 43. msec
DRIVER PELVIS Y ACCELERATION
1 B96090AF.A61 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.18
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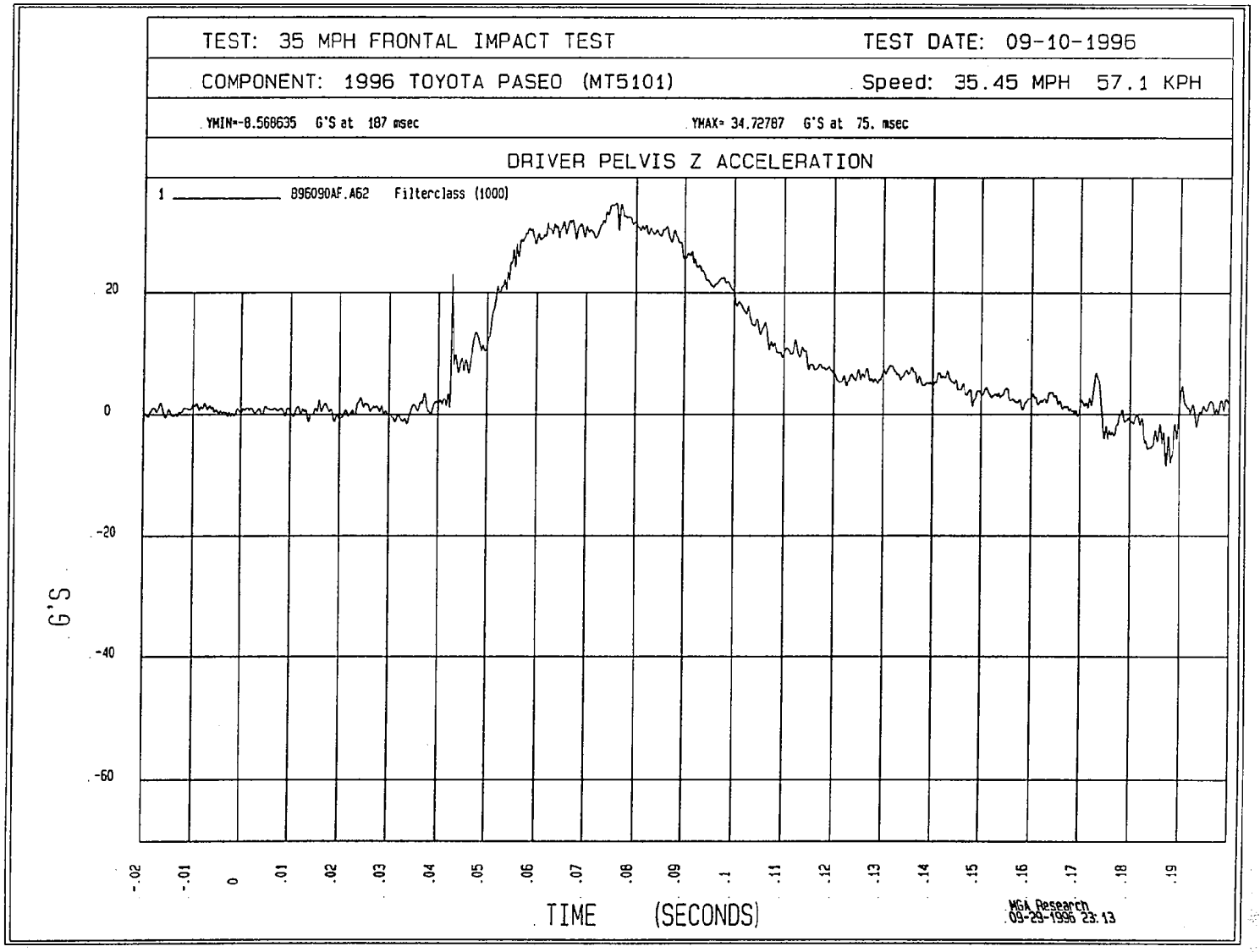
TIME (SECONDS)
MGA Research
09-23-1996 23:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-8.568635 G'S at 187 msec
YMAX= 34.72787 G'S at 75. msec
DRIVER PELVIS Z ACCELERATION
1 896090AF.A62 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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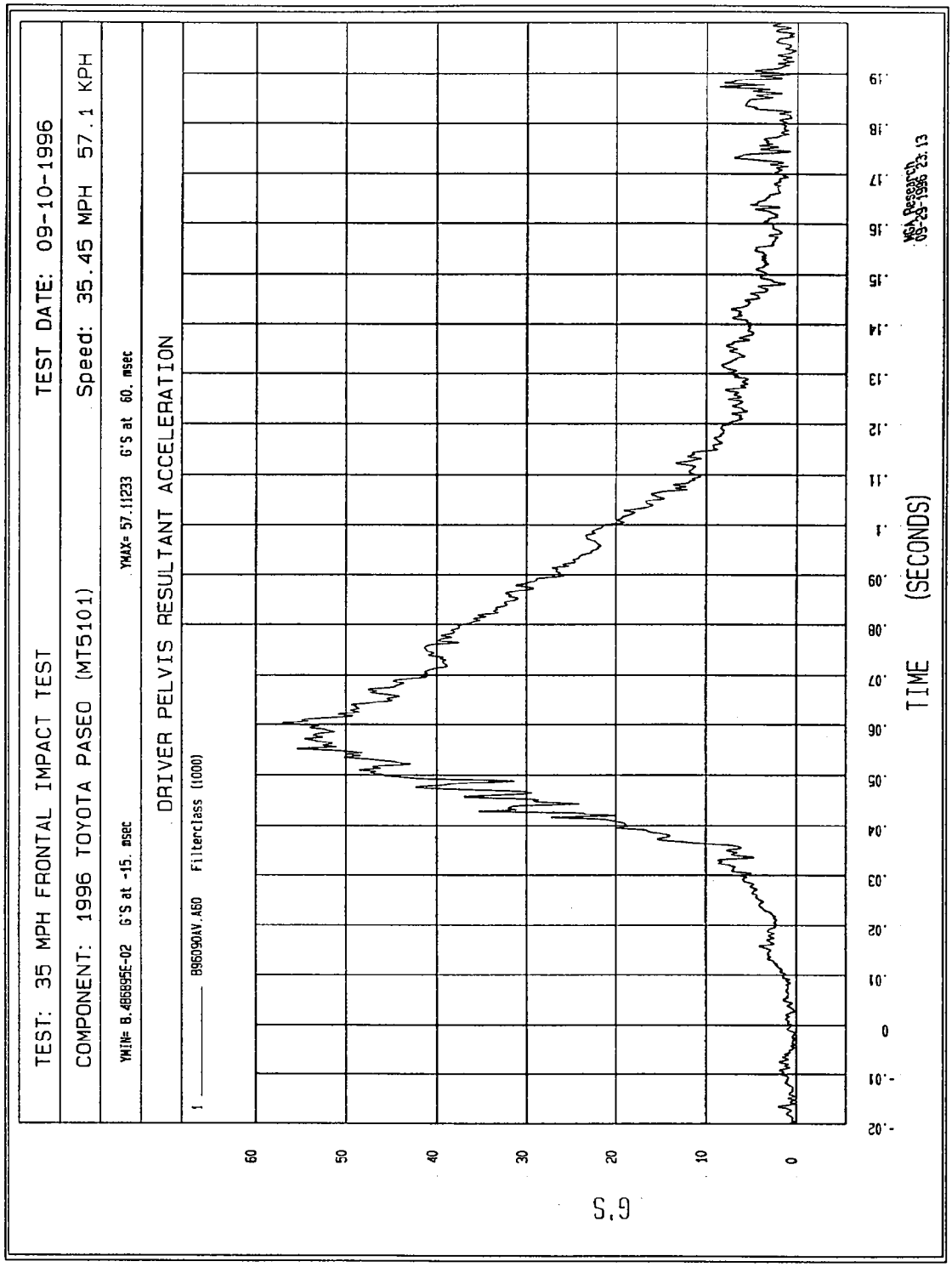
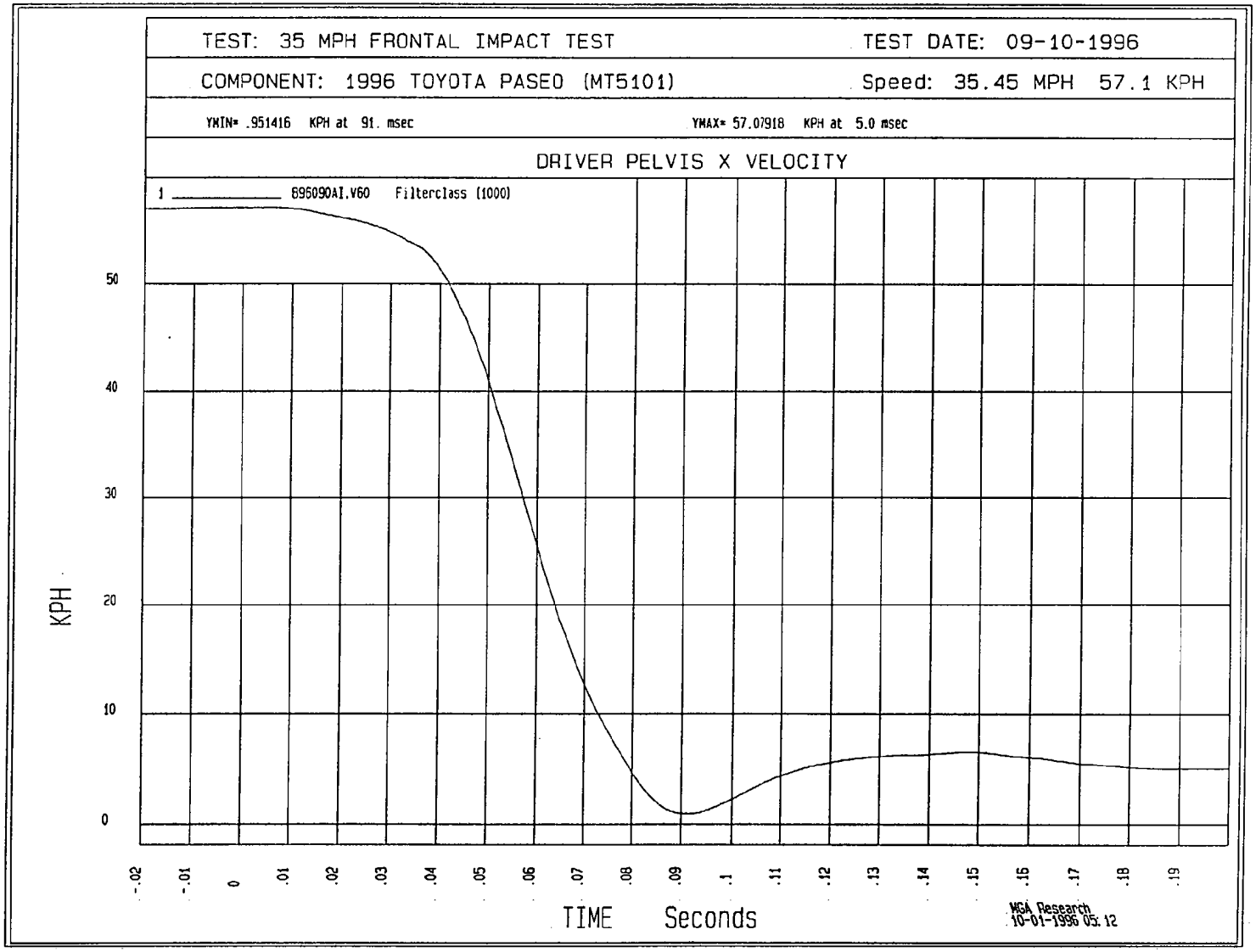
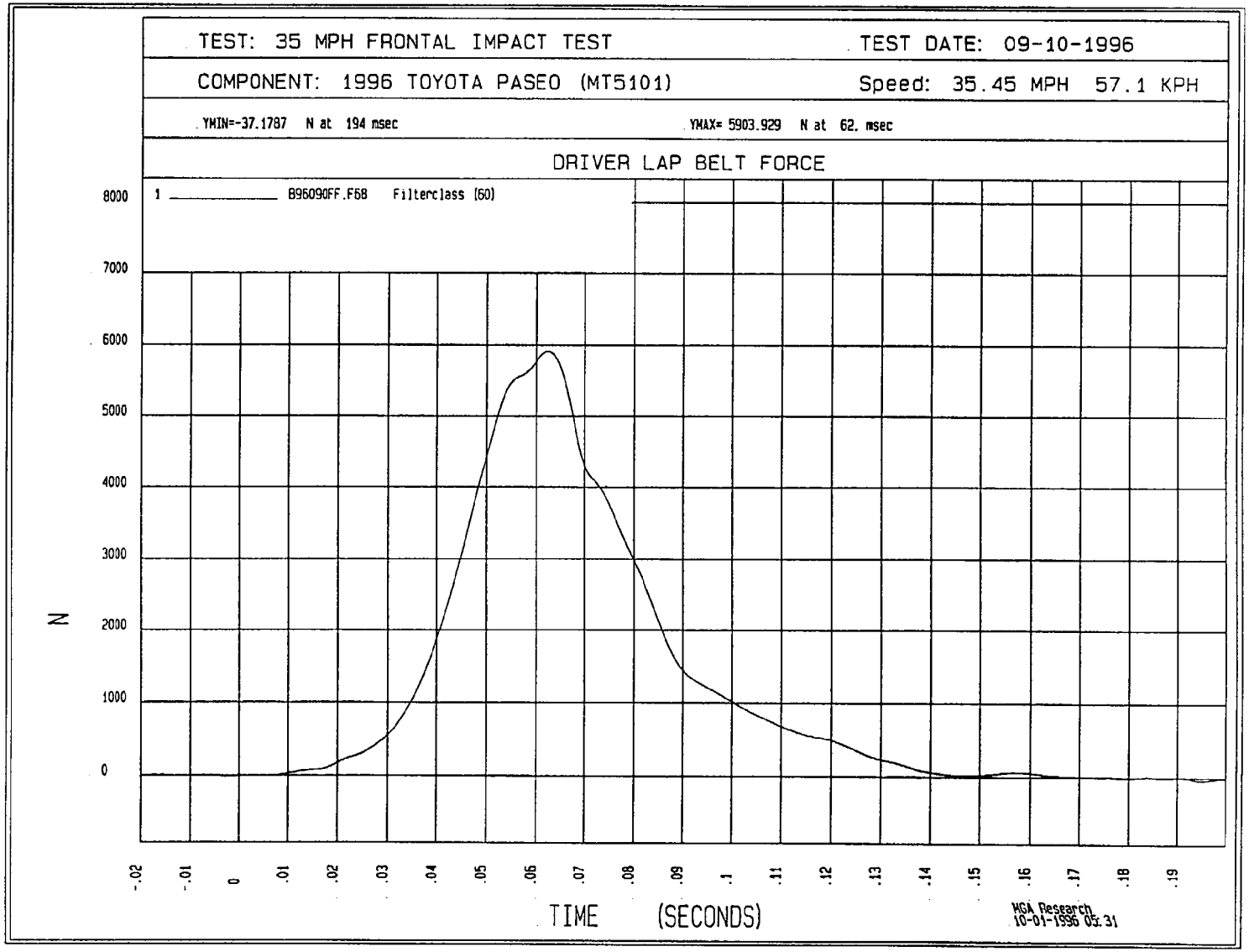
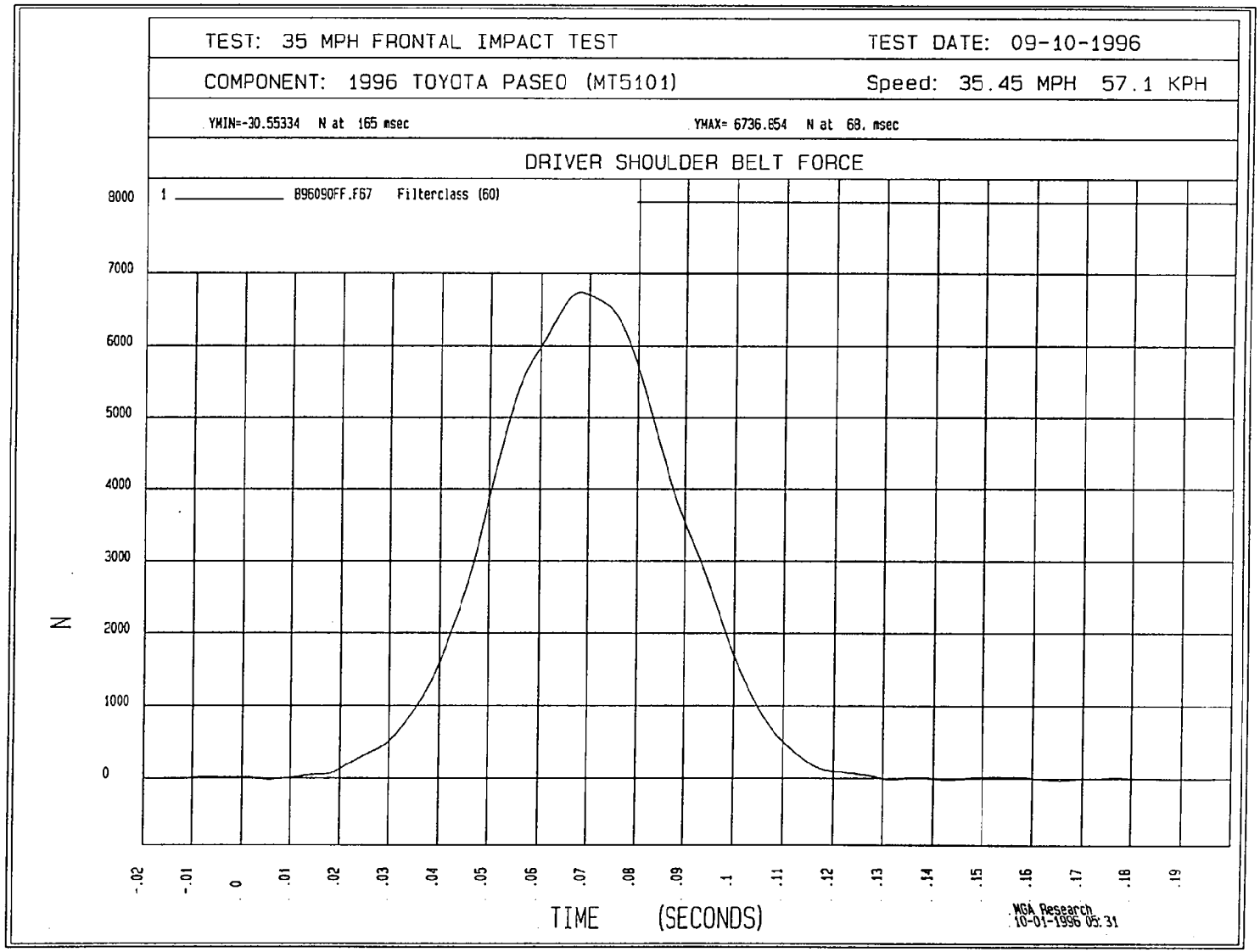
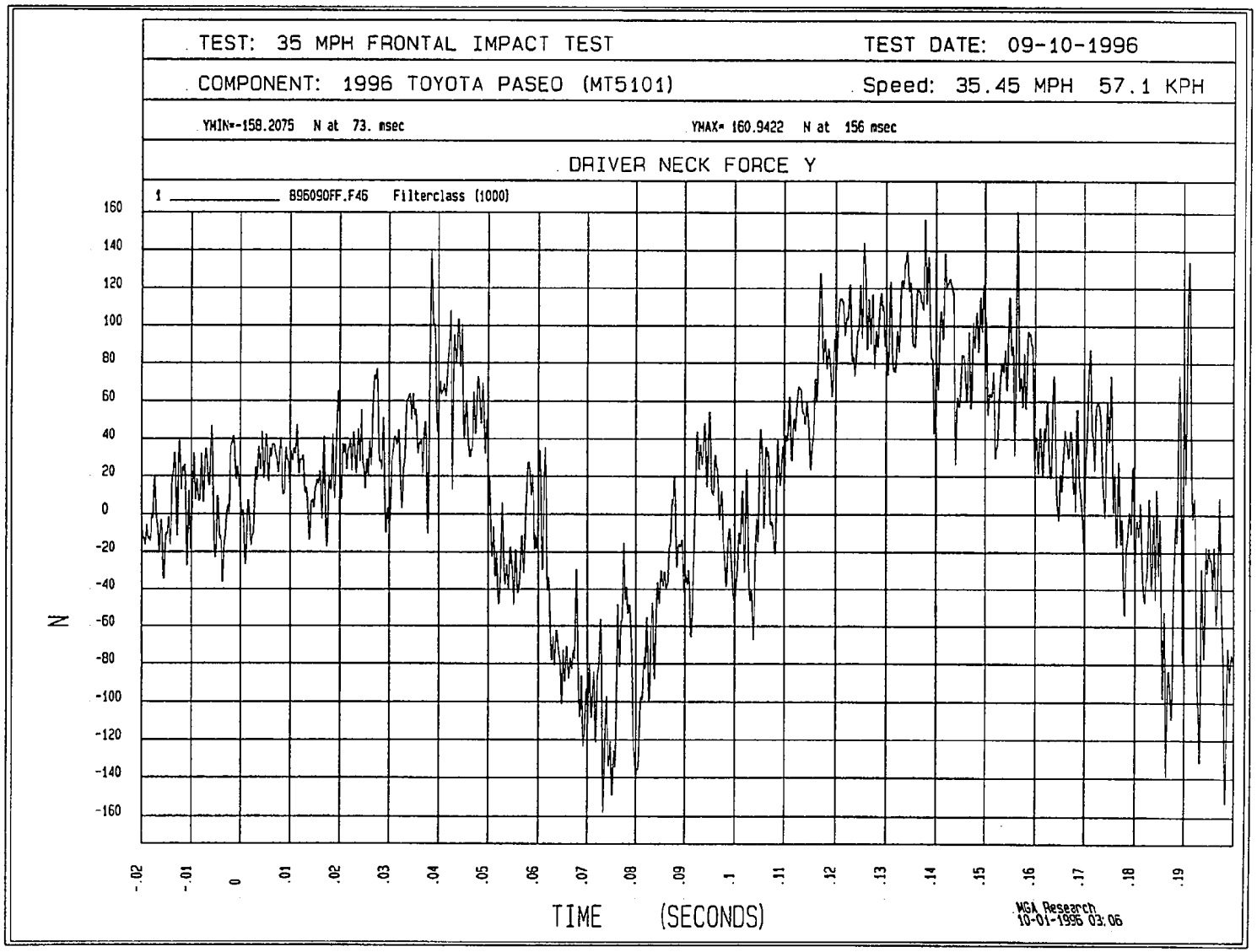
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
09-29-1996 23:13

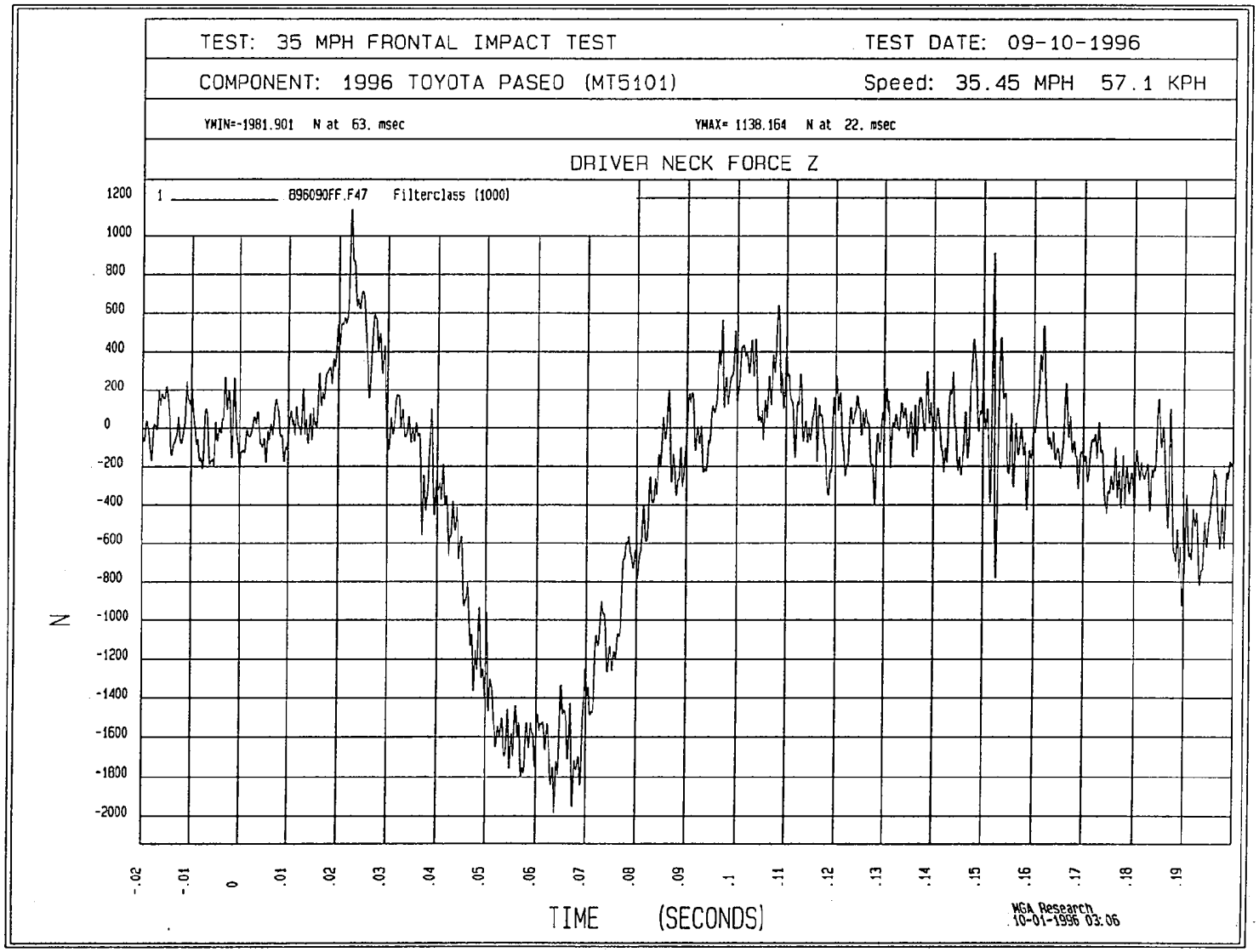

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 0.486895E-02 G'S at -15. msec
YMAX= 57.1233 G'S at 60. msec
DRIVER PELVIS RESULTANT ACCELERATION
1 _____ B96090AV.A6D Filterclass (1000)
60
50
40
30
20
10
0
G'S
TIME (SECONDS)
MGA Research
05-29-1996 23:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= .951416 KPH at 91. msec
YMAX= 57.07918 KPH at 5.0 msec
DRIVER PELVIS X VELOCITY
1 _____ 695090AI.V60 Filterclass (1000)
KPH
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
10-01-1996 05:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-37.1787 N at 194 msec
YMAX= 5903.929 N at 62. msec
DRIVER LAP BELT FORCE
1 B96090FF.F68 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
10-01-1996 05:31

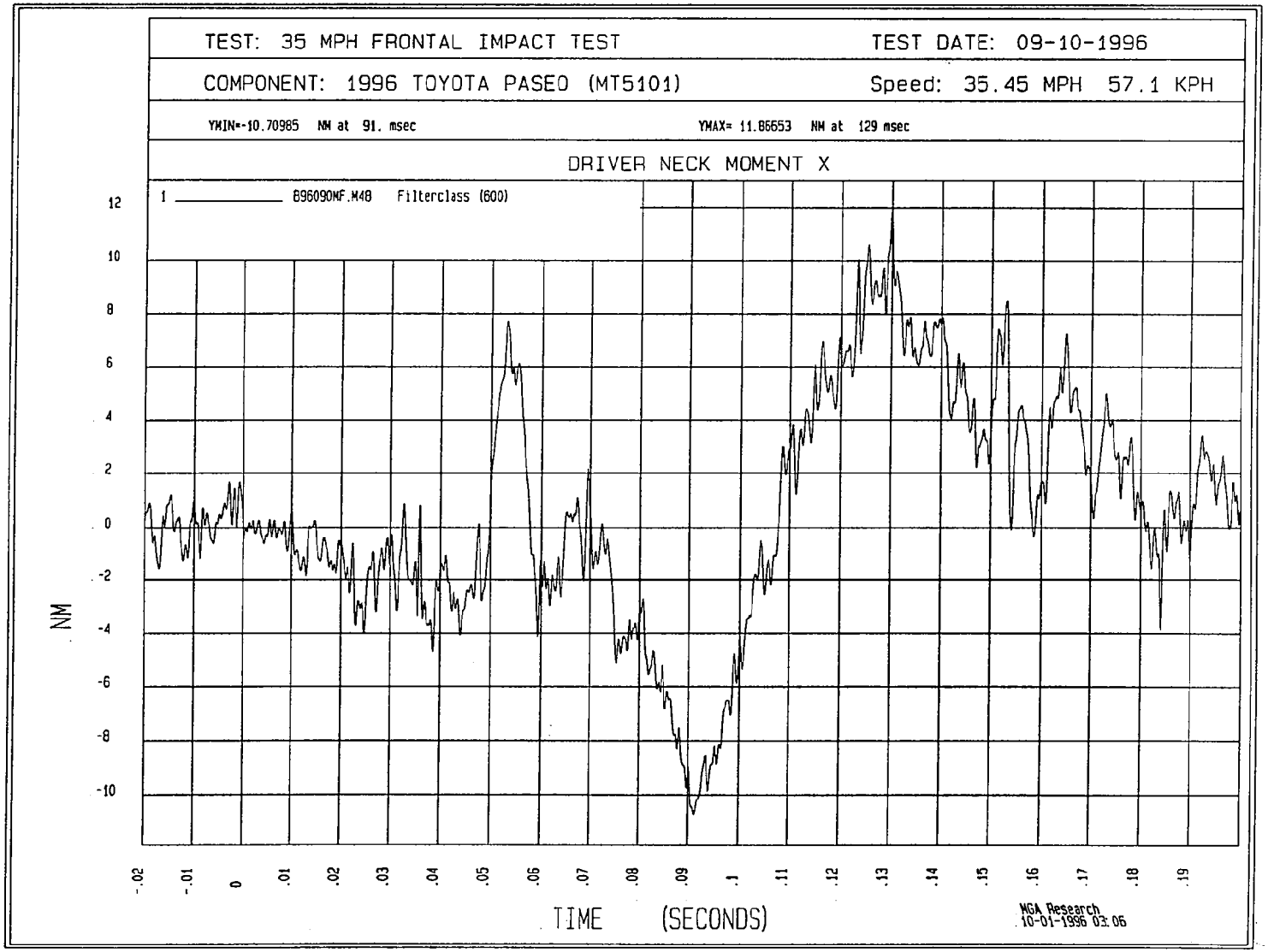

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-30.55334 N at 165 msec
YMAX= 6736.854 N at 68. msec
DRIVER SHOULDER BELT FORCE
1 B96090FF.F67 Filterclass (60)
8000
7000
6000
5000
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 05:31

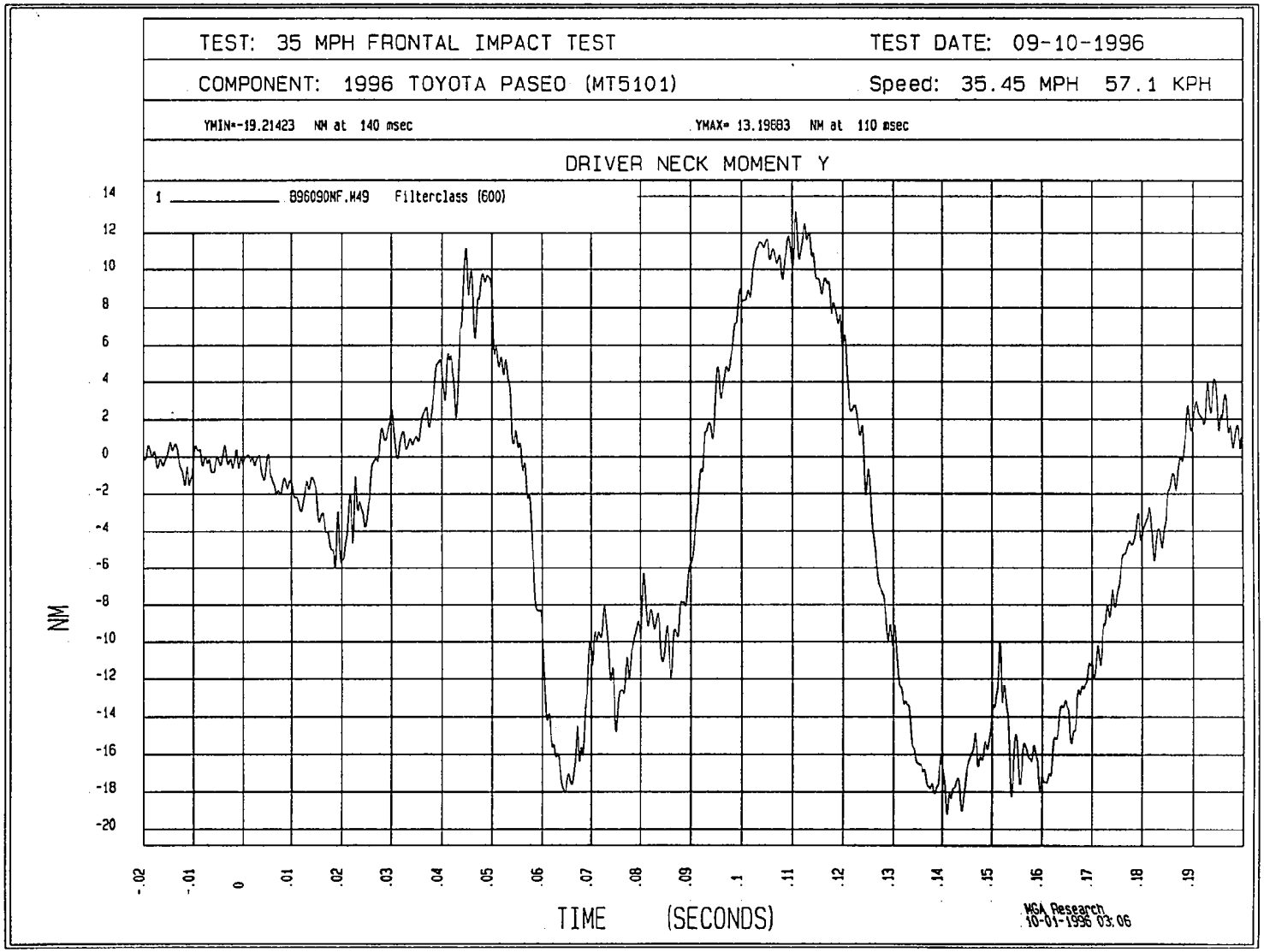

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-158.2075 N at 73. msec
YMAX= 160.9422 N at 156 msec
DRIVER NECK FORCE Y
1 B9609OFF.F46 Filterclass (1000)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
N
-.02
-.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
10-01-1996 03:06

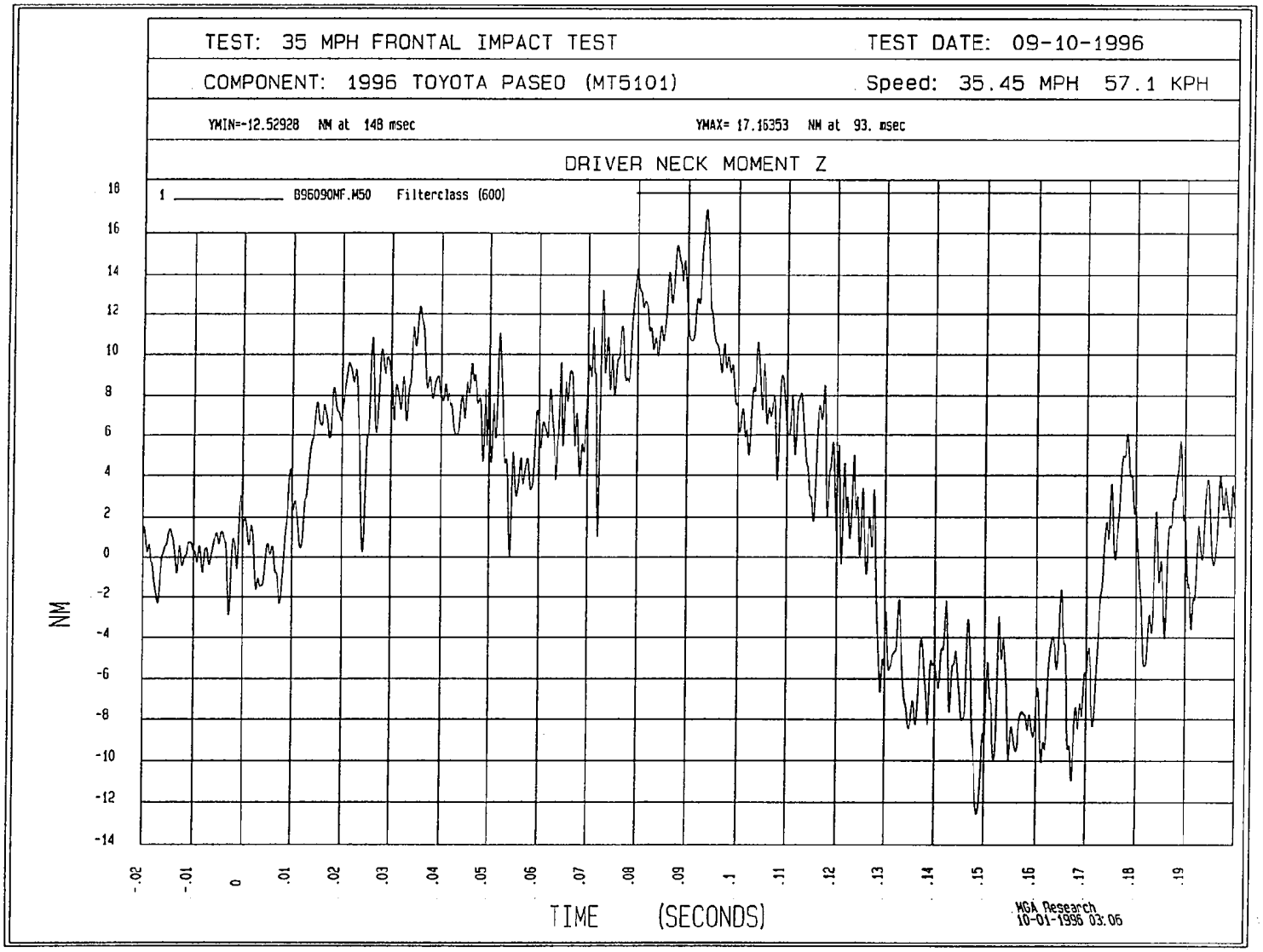

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-1981.901 N at 63. msec
YMAX= 1138.164 N at 22. msec
DRIVER NECK FORCE Z
1 896090FF.F47 Filterclass (1000)
1200
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-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
10-01-1996 03:06

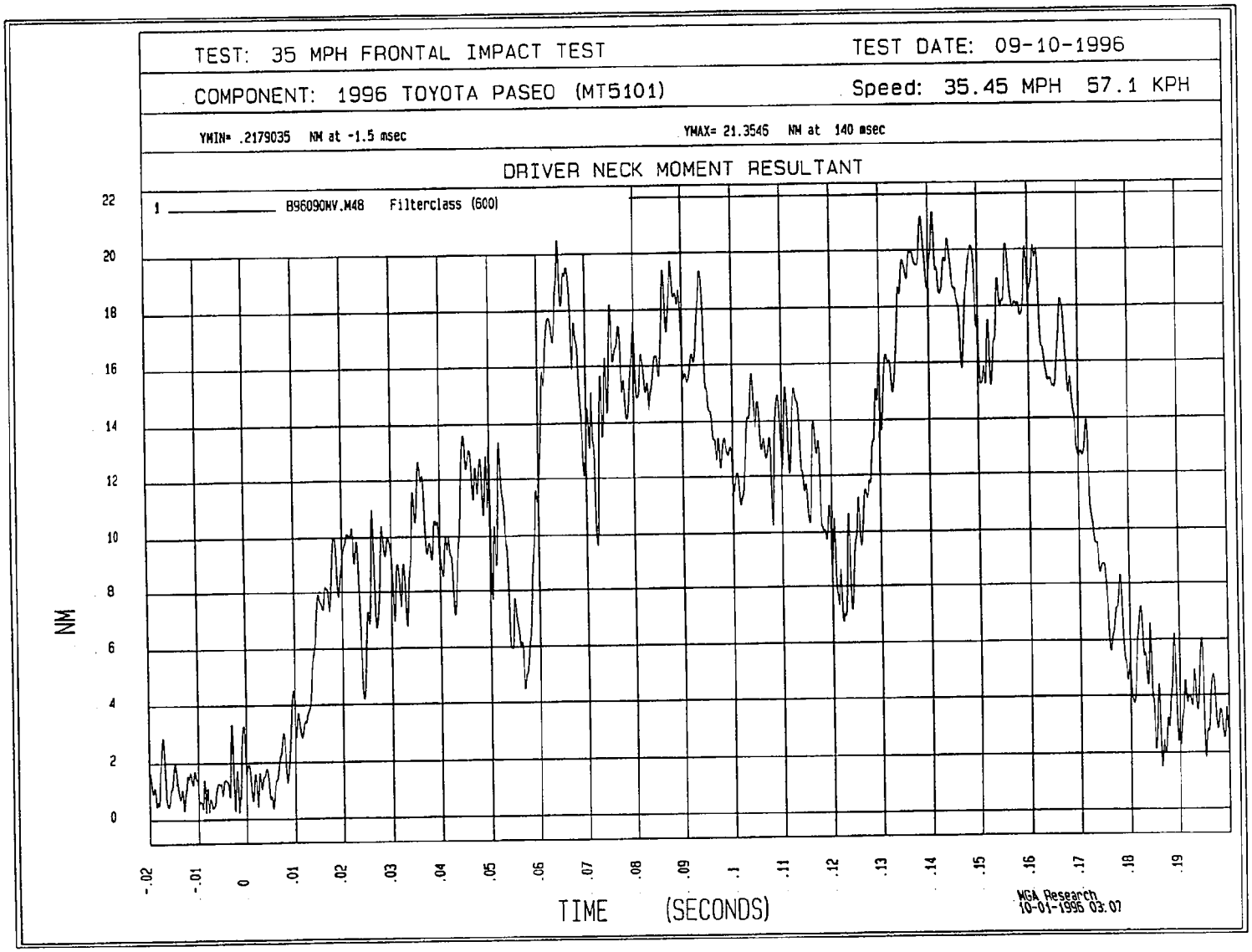
DRIVER NECK FORCE RESULTANT VS. TIME

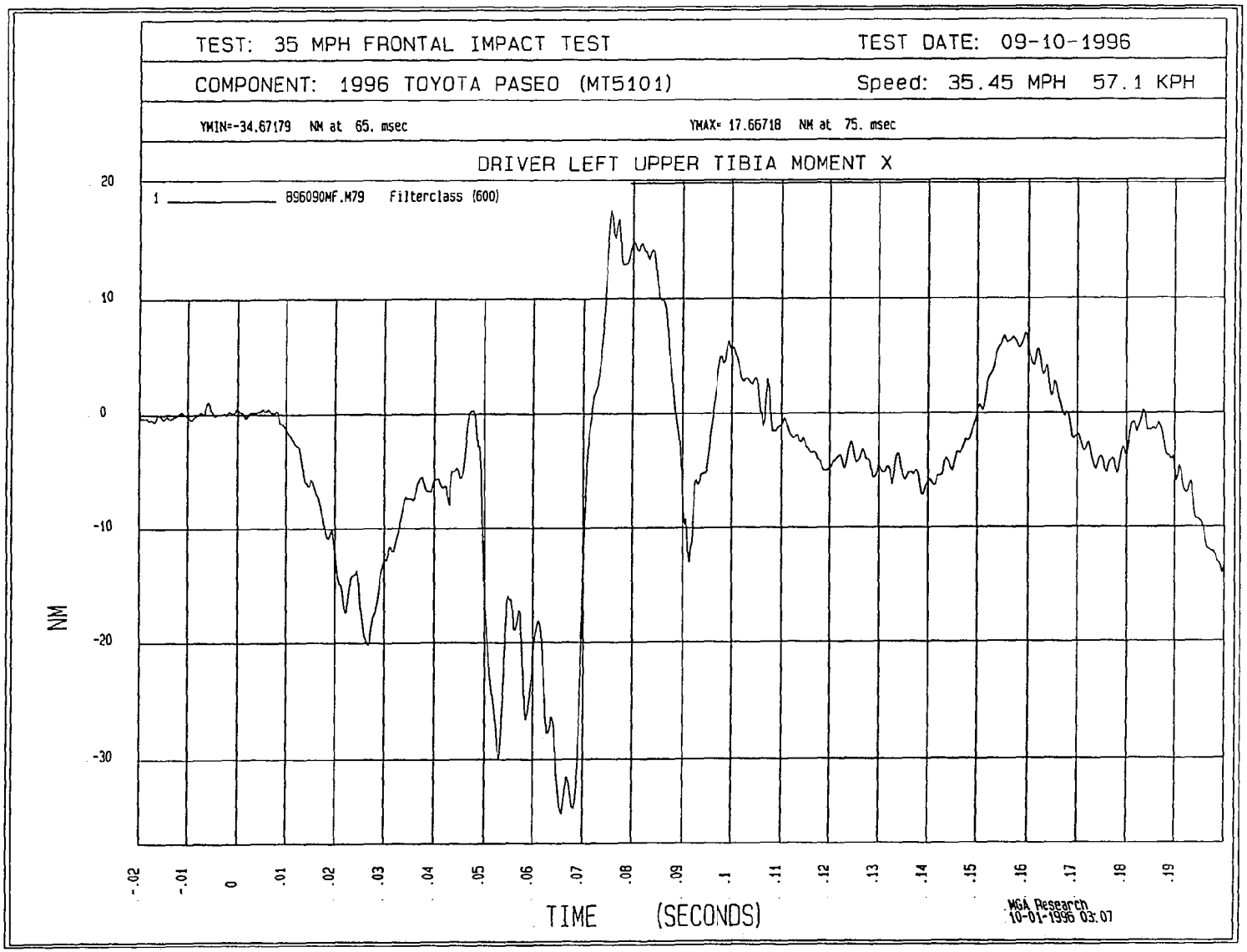
NO VALID DATA COLLECTED


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-10.70985 NM at 91. msec
YMAX= 11.86653 NM at 129 msec
DRIVER NECK MOMENT X
1 896090MF.M48 Filterclass (600)
NM
12
10
8
6
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)
NGA Research
10-01-1996 03:06


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-19.21423 NM at 140 msec
YMAX= 13.19883 NM at 110 msec
DRIVER NECK MOMENT Y
1 B960901NF.M49 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
10-01-1996 03:06


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-12.52928 NM at 148 msec
YMAX= 17.16353 NM at 93. msec
DRIVER NECK MOMENT Z
1 B96090NF.M50 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
10-01-1996 03:06


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= .2179035 NM at -1.5 msec
YMAX= 21.3546 NM at 140 msec
DRIVER NECK MOMENT RESULTANT
1 B96090NV.M48 Filterclass (600)
NM
22
20
18
16
14
12
10
8
6
4
2
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
10-01-1996 03:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-34.67179 NM at 65. msec
YMAX= 17.66718 NM at 75. msec
DRIVER LEFT UPPER TIBIA MOMENT X
1 _____ BS6090MF.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
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.18
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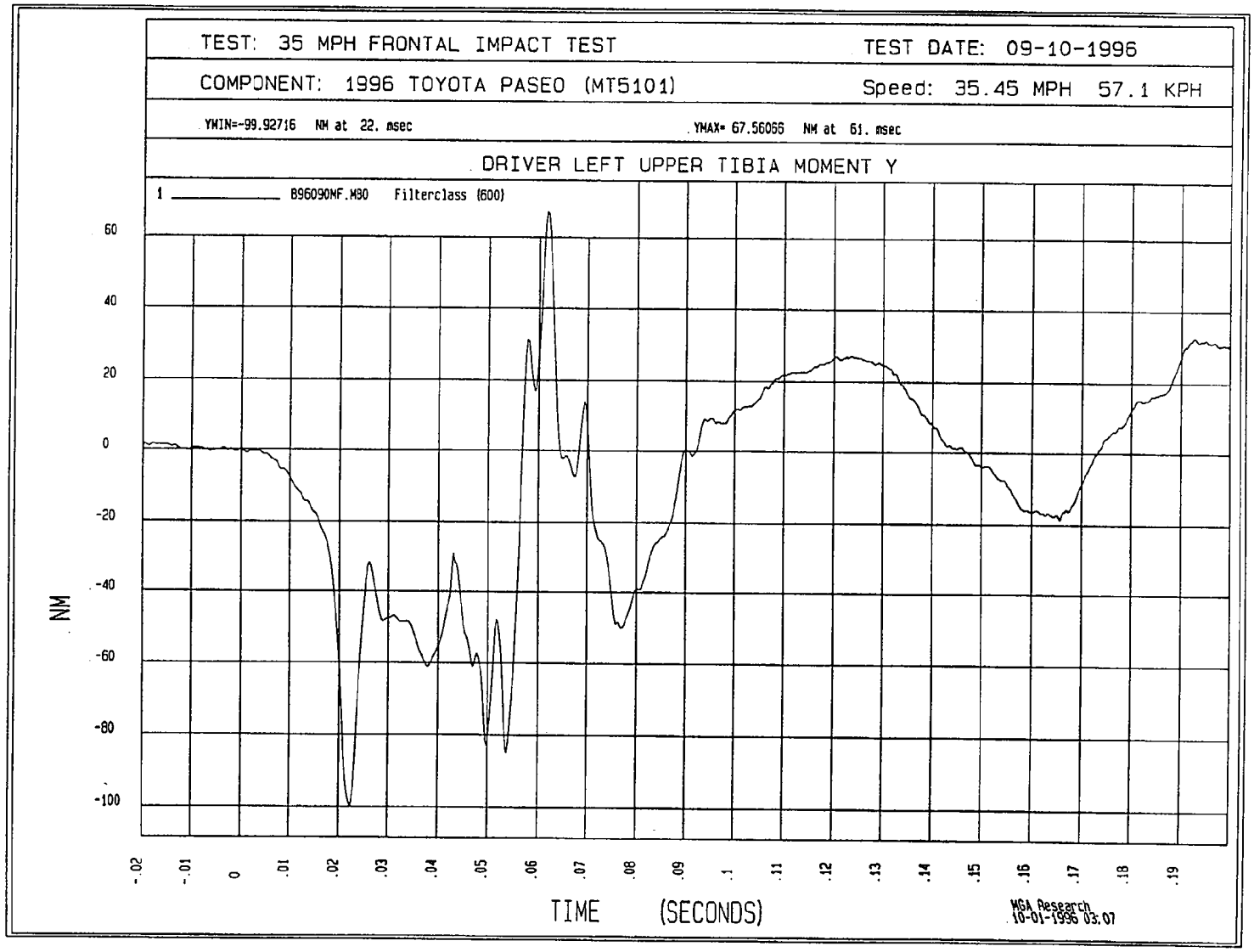
TIME (SECONDS)
MGA Research
10-01-1996 03:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-99.92716 NM at 22. msec
YMAX= 67.56055 NM at 61. msec
DRIVER LEFT UPPER TIBIA MOMENT Y
1 B96090MF.M80 Filterclass (600)
60
40
20
0
-20
-40
-60
-80
-100
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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.14
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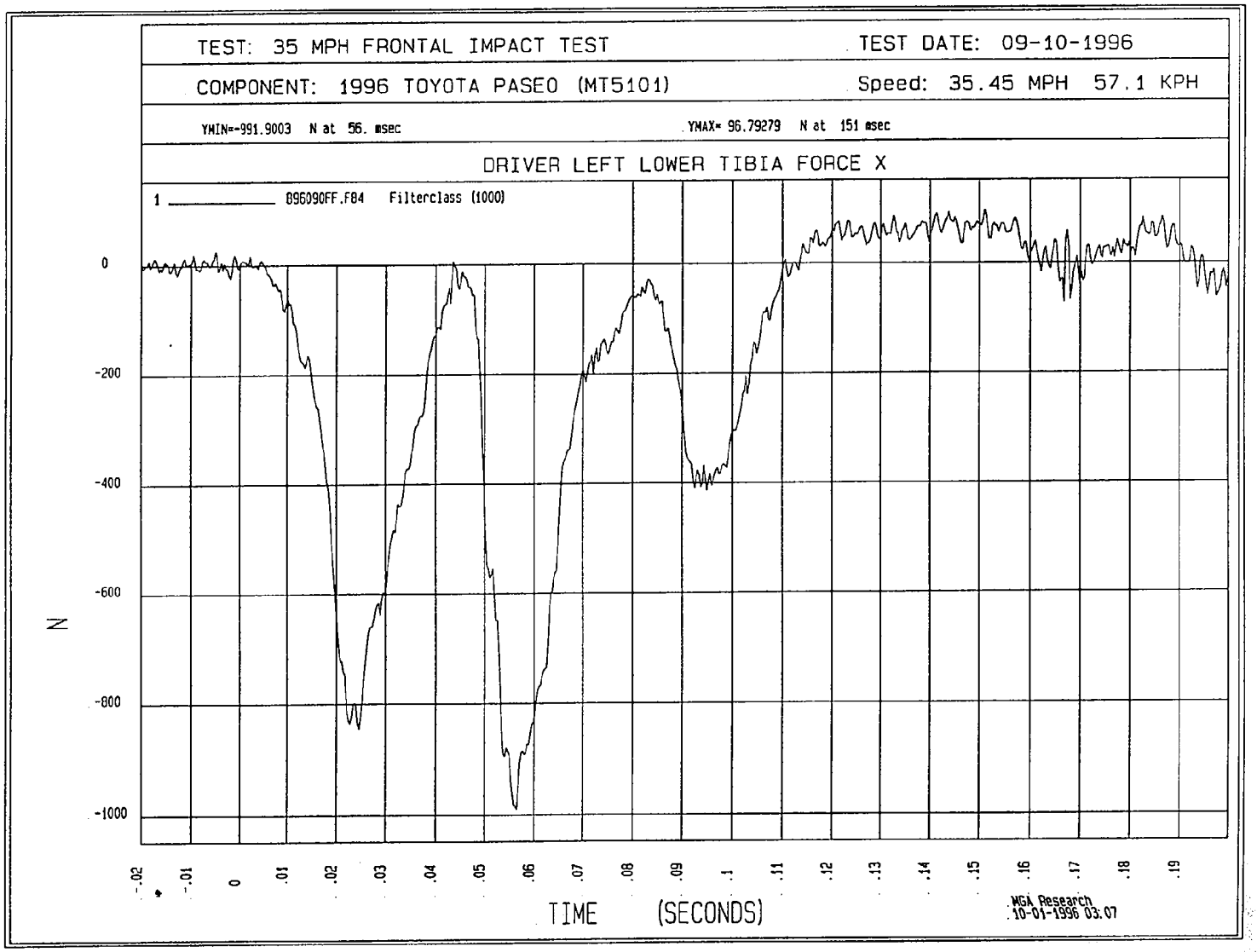
TIME (SECONDS)
MGA Research
10-01-1996 03:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-991.9003 N at 56. msec
YMAX= 96.79279 N at 151 msec
DRIVER LEFT LOWER TIBIA FORCE X
1 896090FF.F84 Filterclass (1000)
0
-200
-400
-600
-800
-1000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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.14
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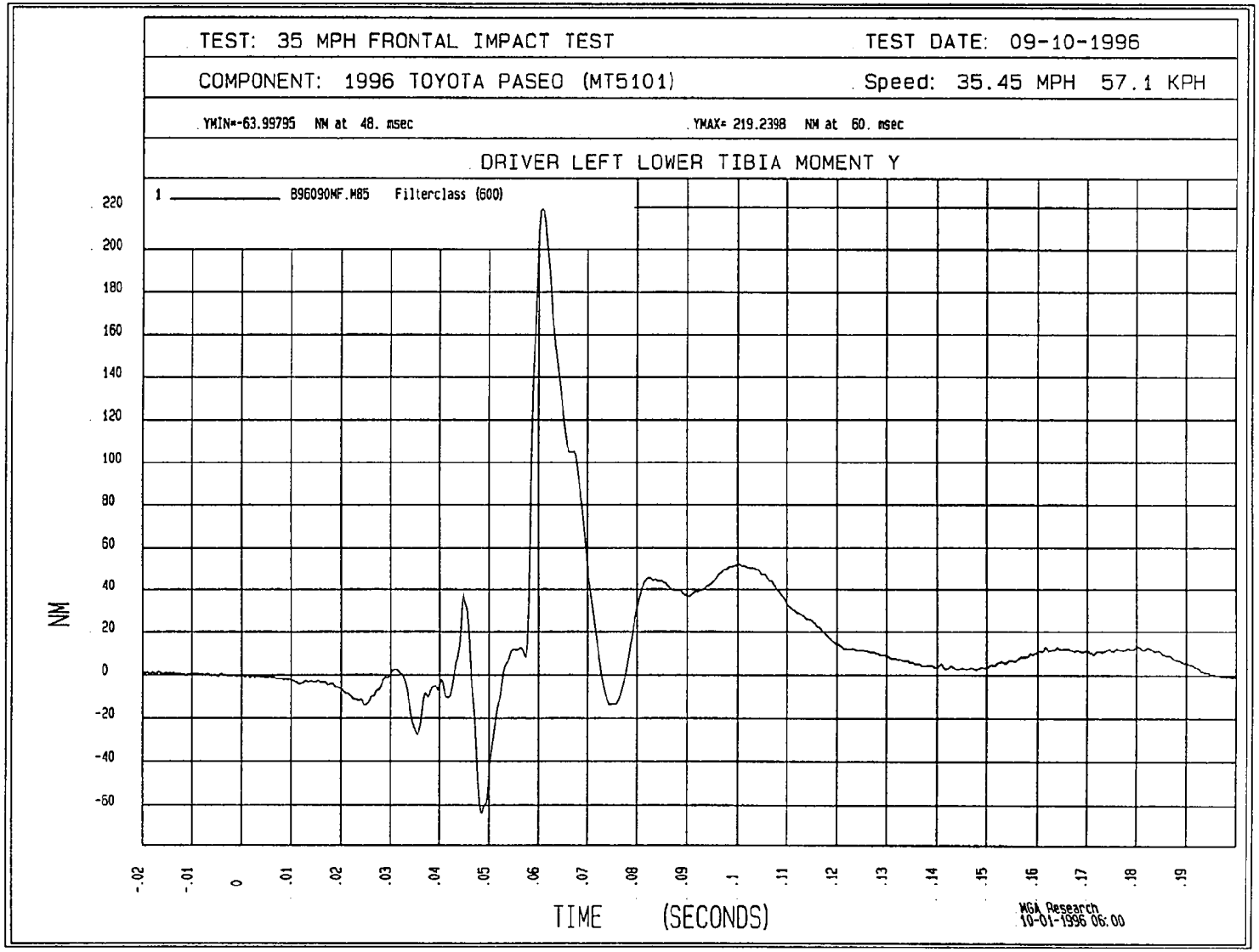
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 03:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-63.99795 NM at 48. msec
YMAX= 219.2398 NM at 60. msec
DRIVER LEFT LOWER TIBIA MOMENT Y
1 B96090MF.M85 Filterclass (600)
NM
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-.02
-.01
0
.01
.02
.03
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.18
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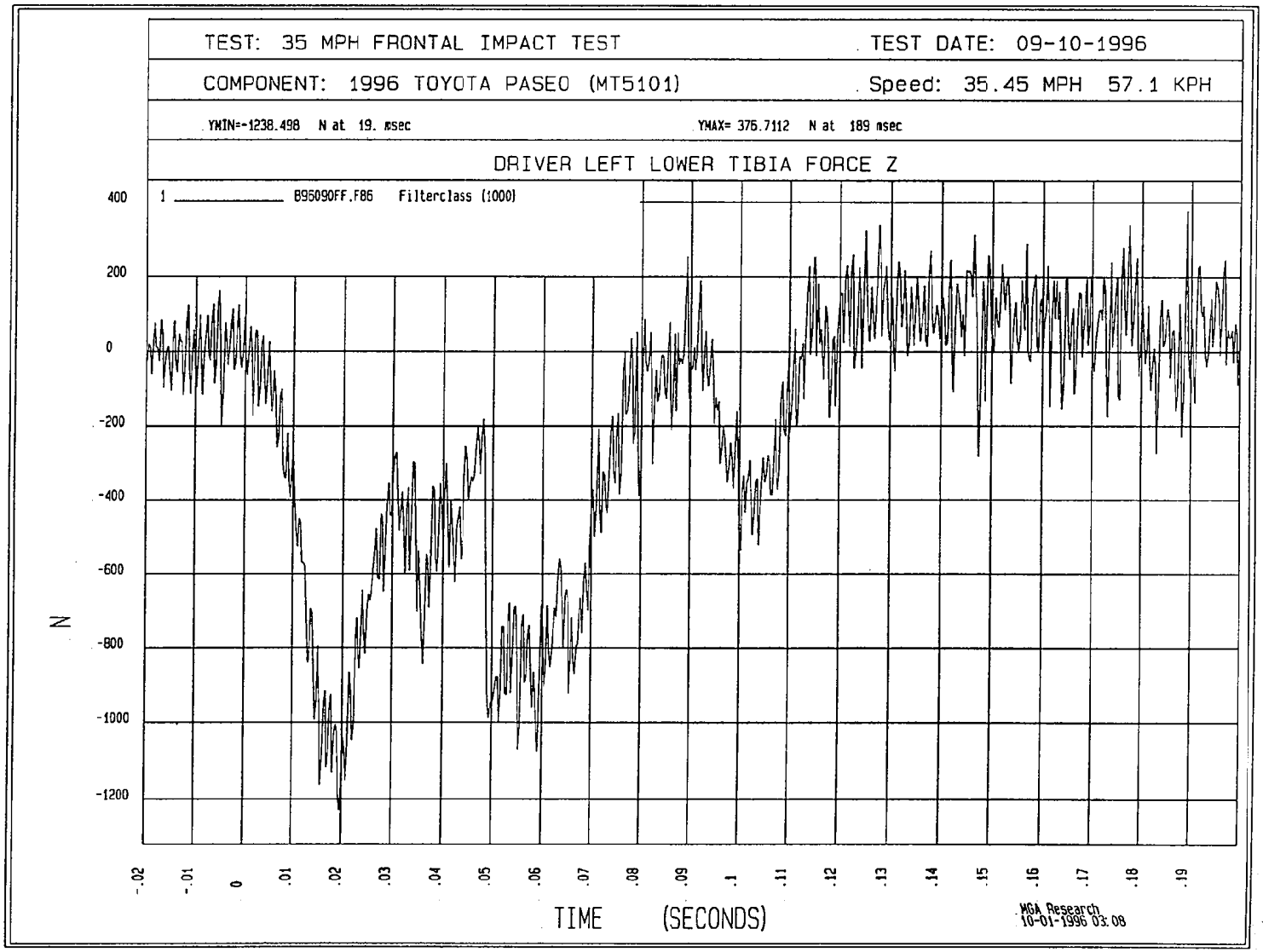
TIME (SECONDS)
MGA Research
10-01-1996 06:00


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-1238.498 N at 19. msec
YMAX= 376.7112 N at 189 msec
DRIVER LEFT LOWER TIBIA FORCE Z
1 B96090FF.F86 Filterclass (1000)
400
200
0
-200
-400
-600
-800
-1000
-1200
N
-.02
-.01
0
.01
.02
.03
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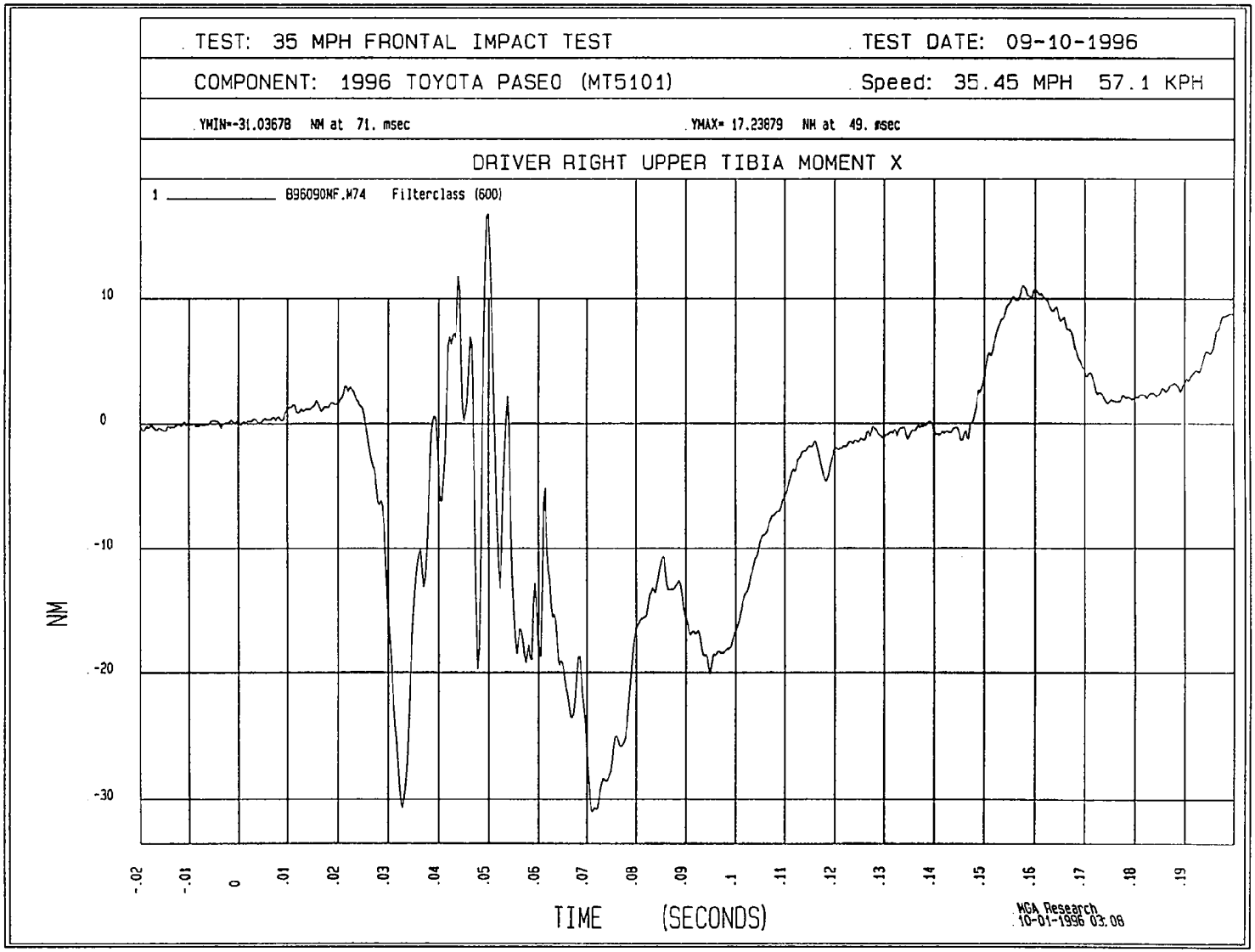
TIME (SECONDS)
MGA Research
10-01-1996 03:08


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-31.03678 NM at 71. msec
YMAX= 17.23879 NM at 49. msec
DRIVER RIGHT UPPER TIBIA MOMENT X
1 B96090NF.M74 Filterclass (600)
10
0
-10
-20
-30
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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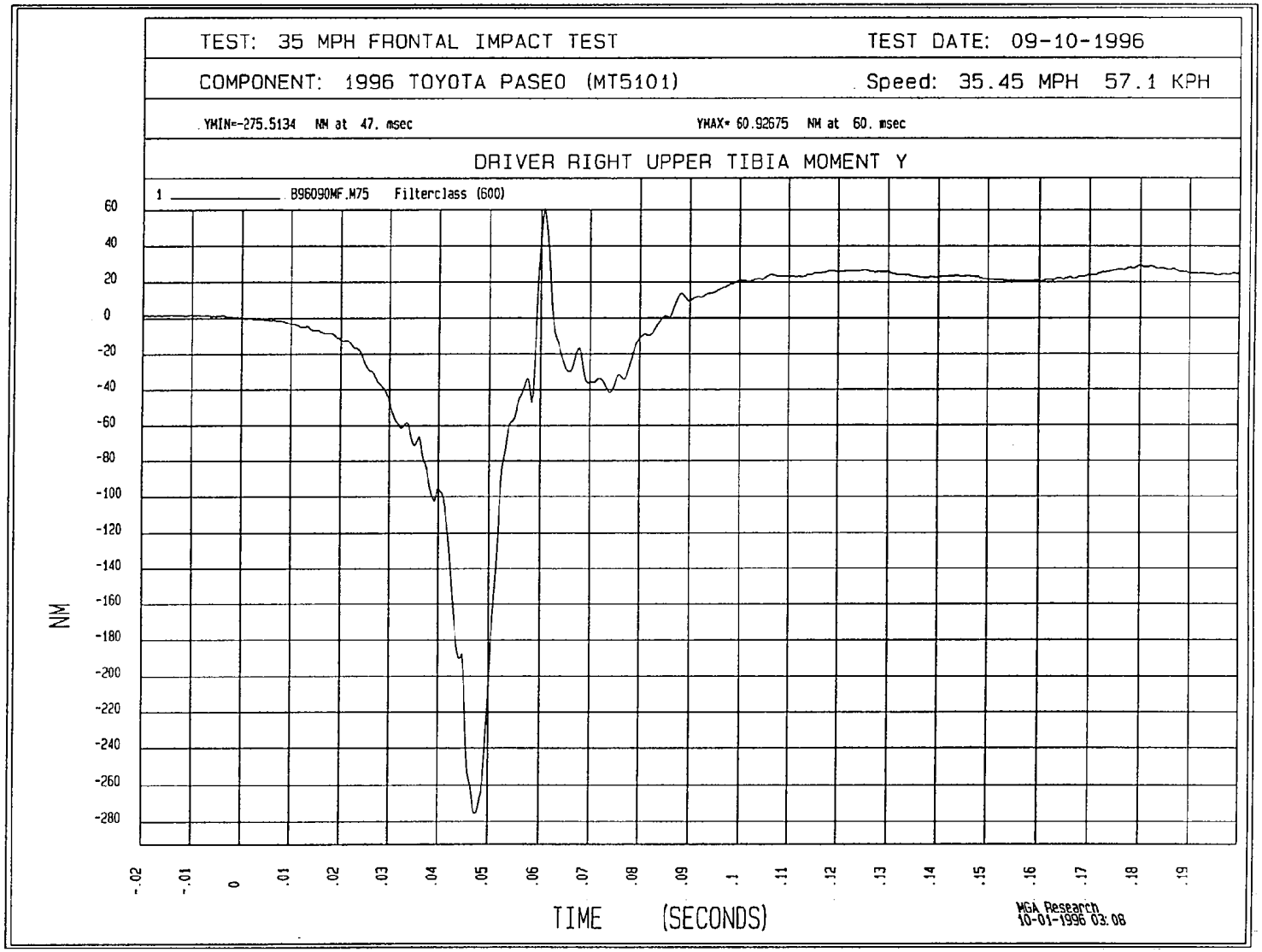
TIME (SECONDS)
MGA Research
10-01-1996 03:08


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-275.5134 NM at 47. msec
YMAX= 60.92675 NM at 60. msec
DRIVER RIGHT UPPER TIBIA MOMENT Y
1 B96090MF.M75 Filterclass (600)
NM
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
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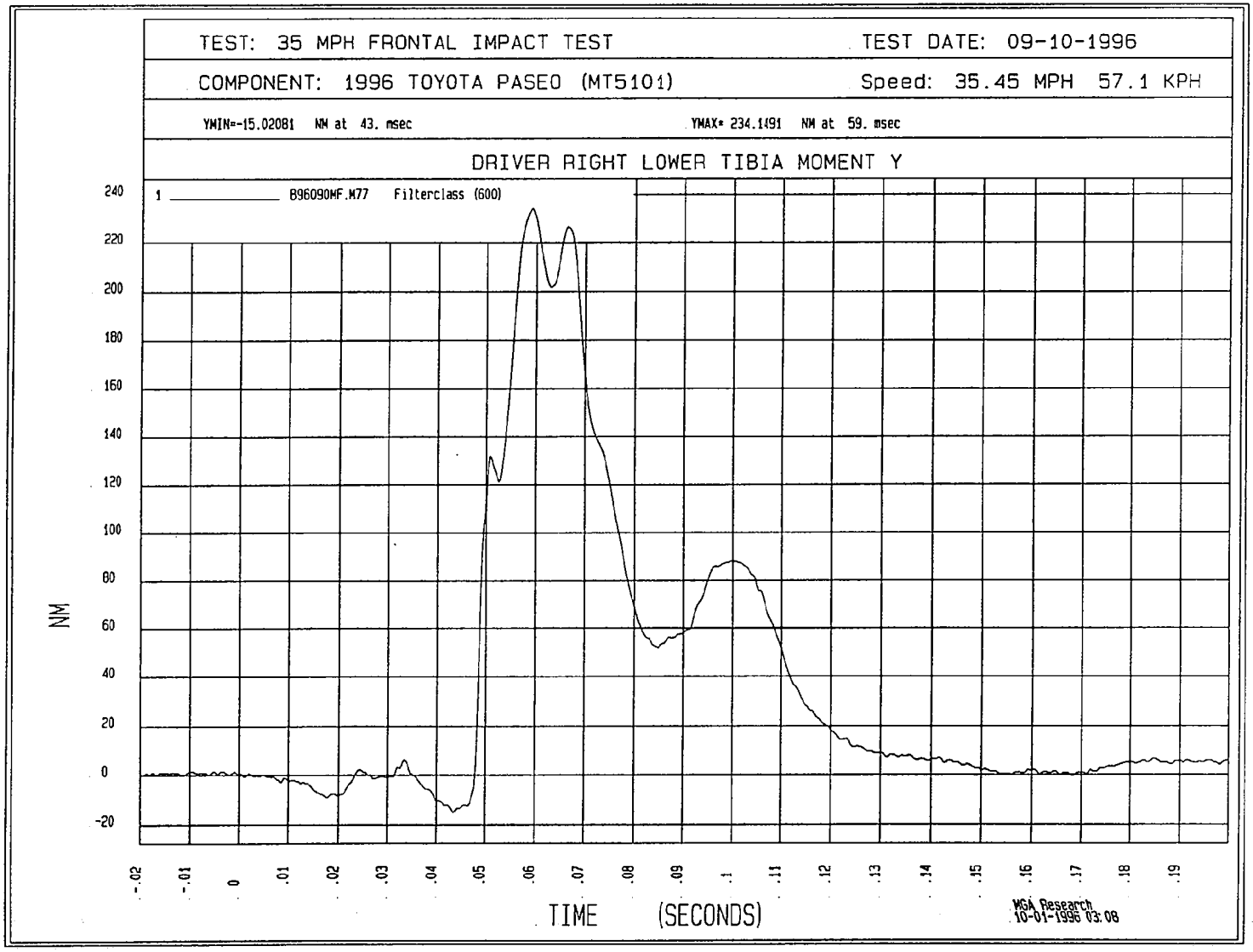
.19
TIME (SECONDS)
MGA Research
10-01-1996 03:08

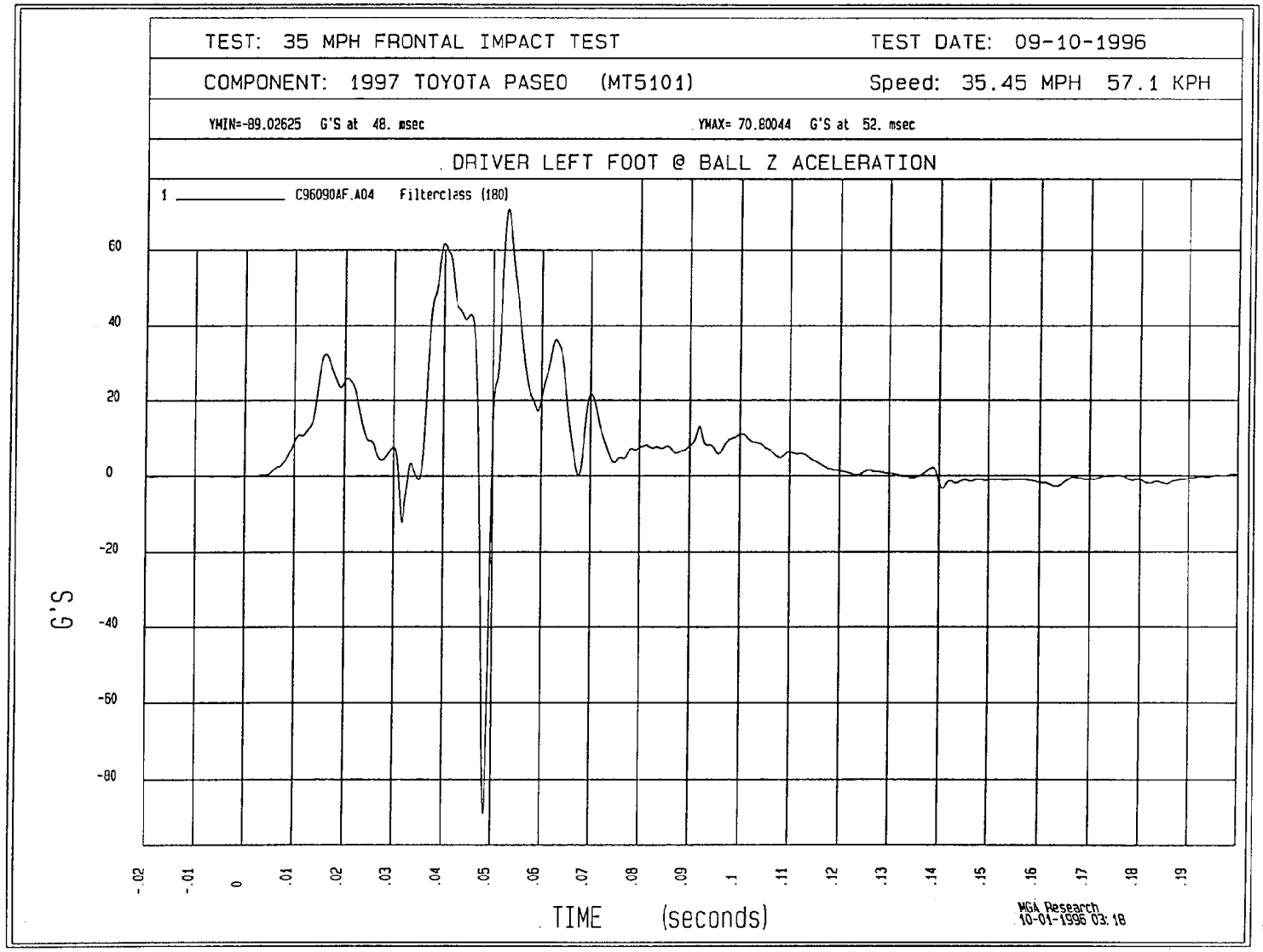
DRIVER RIGHT LOWER TIBIA FORCE X VS. TIME

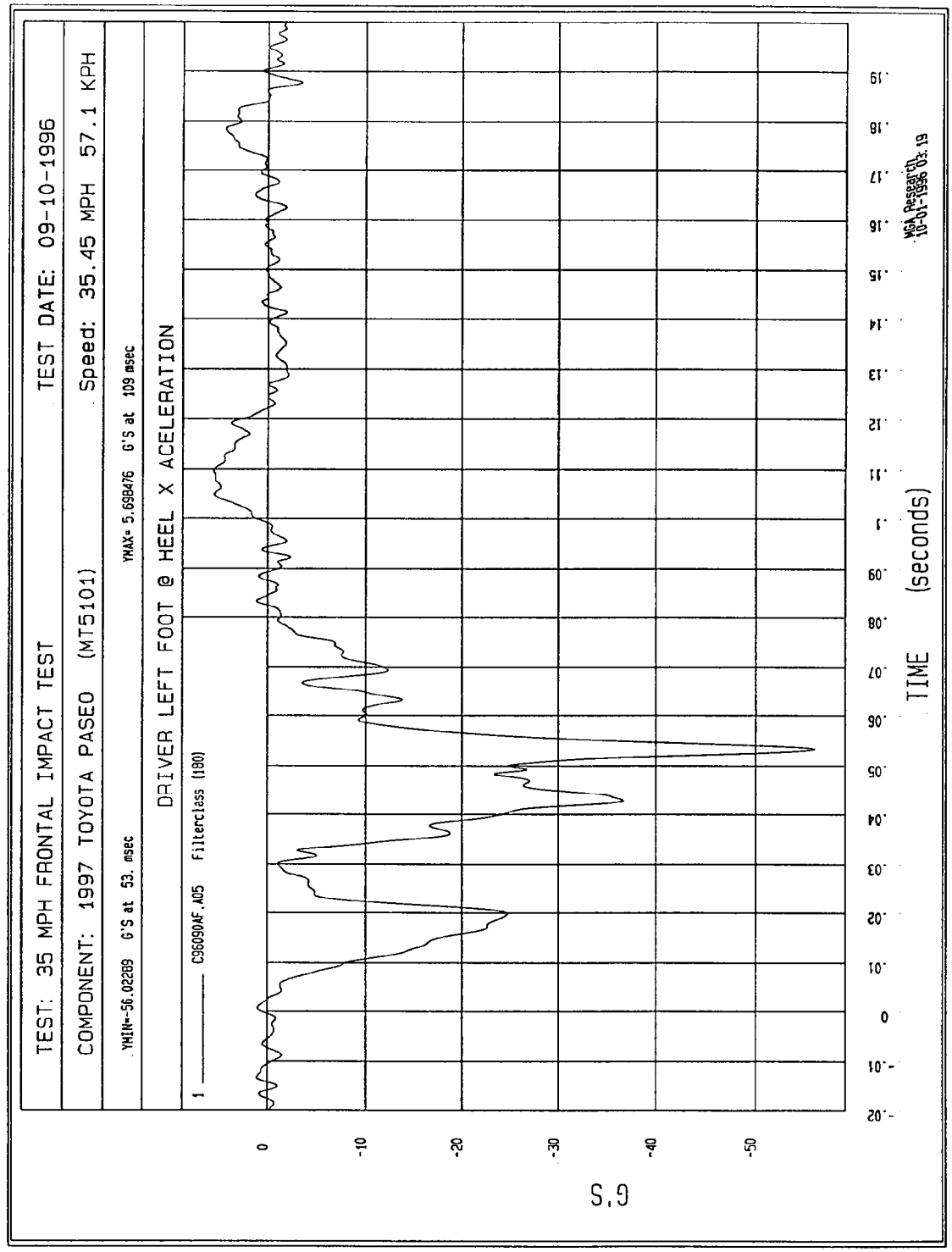
NO VALID DATA COLLECTED

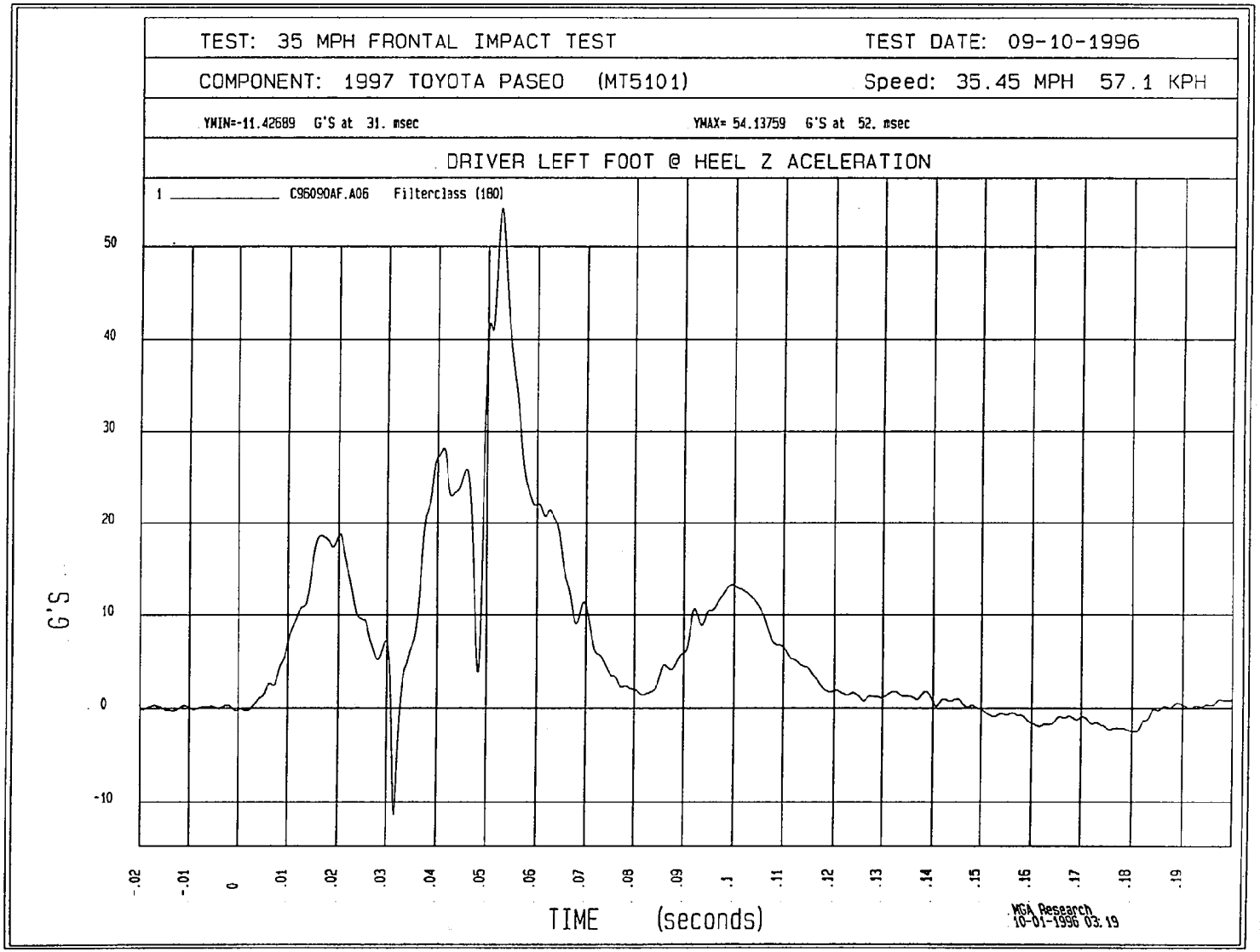

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-15.02081 NM at 43. msec
YMAX= 234.1491 NM at 59. msec
DRIVER RIGHT LOWER TIBIA MOMENT Y
1 B96090MF.M77 Filterclass (600)
NM
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-.02
-.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
10-01-1996 03:08

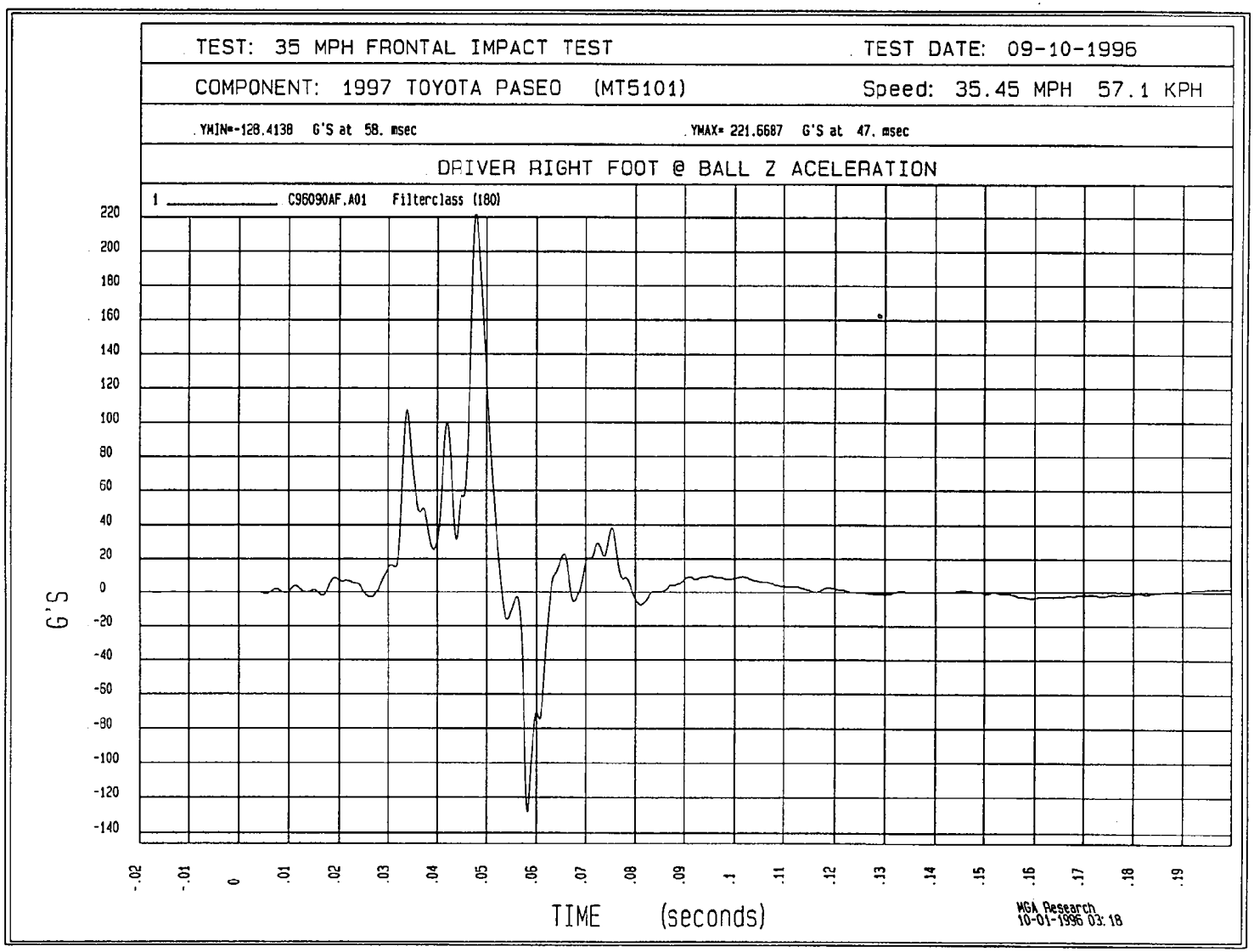
DRIVER RIGHT LOWER TIBIA FORCE Z VS. TIME

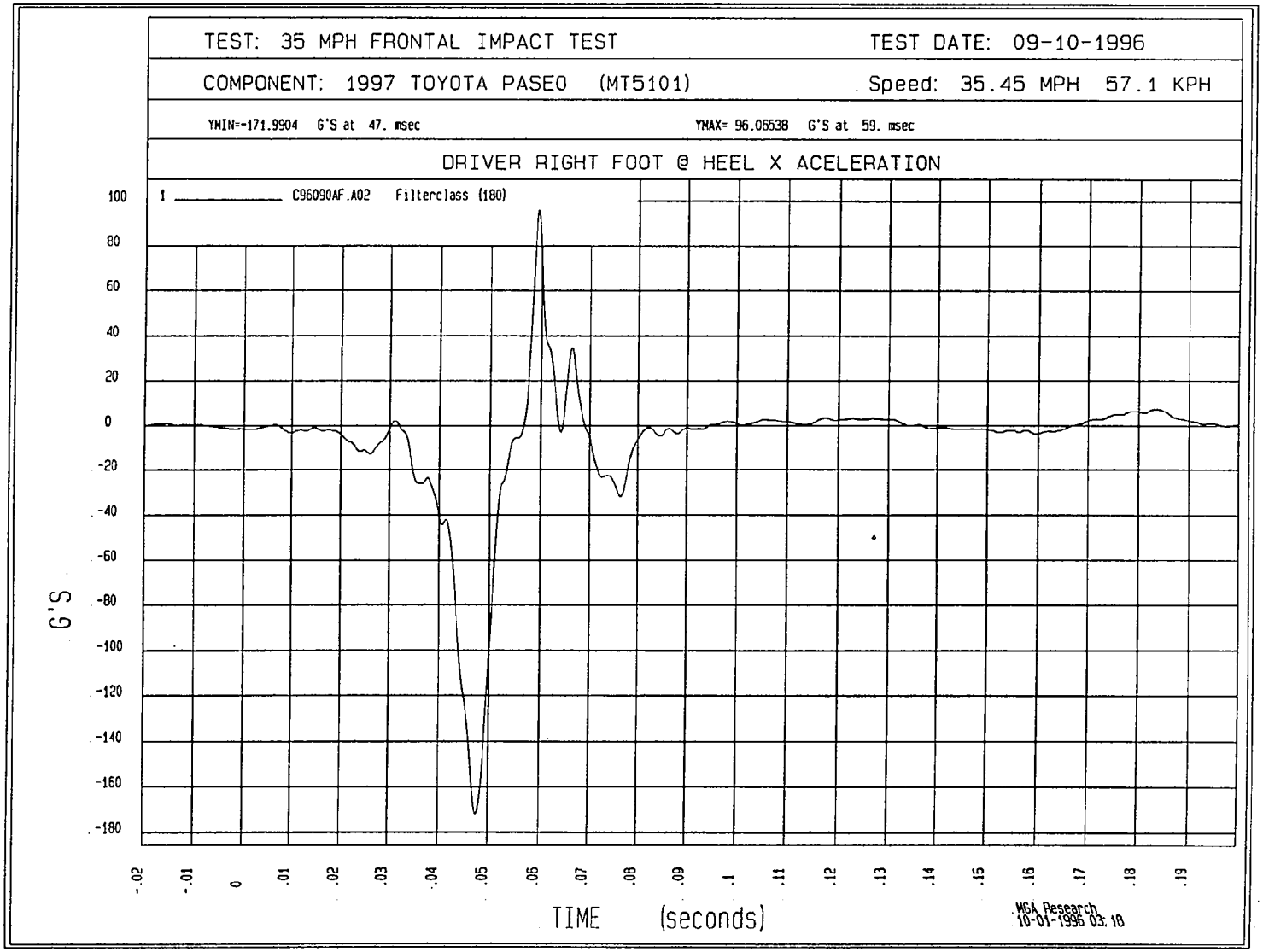
NO VALID DATA COLLECTED


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-89.02625 G'S at 48. msec
YMAX= 70.80044 G'S at 52. msec
DRIVER LEFT FOOT @ BALL Z ACELERATION
1 C96090AF.A04 Filterclass (180)
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
10-01-1996 03:18


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-56.02289 G'S at 53. msec
YMAX= 5.698476 G'S at 109 msec
DRIVER LEFT FOOT @ HEEL X ACCELERATION
1 _____ C96090AF.A05 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
10-01-1996 03:19


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-11.42689 G'S at 31. msec
YMAX= 54.13759 G'S at 52. msec
DRIVER LEFT FOOT @ HEEL Z ACELERATION
1 C96090AF.A06 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
10-01-1996 03:19


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-128.4138 G'S at 58. msec
YMAX= 221.6687 G'S at 47. msec
DRIVER RIGHT FOOT @ BALL Z ACELERATION
1 C96090AF.A01 Filterclass (180)
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
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
10-01-1996 03:18


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-171.9904 G'S at 47. msec
YMAX= 96.05538 G'S at 59. msec
DRIVER RIGHT FOOT @ HEEL X ACELERATION
1 C96090AF.A02 Filterclass (180)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
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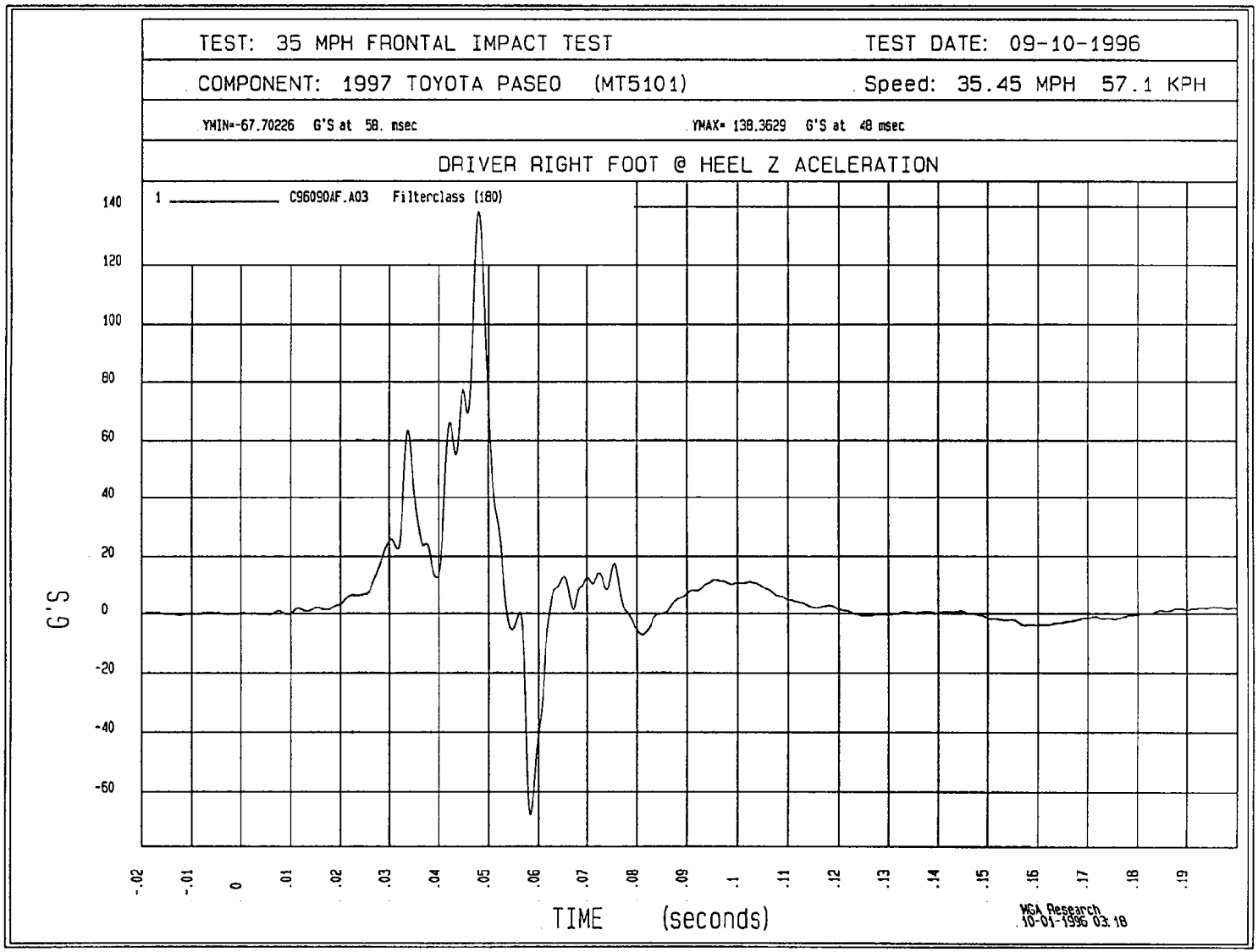
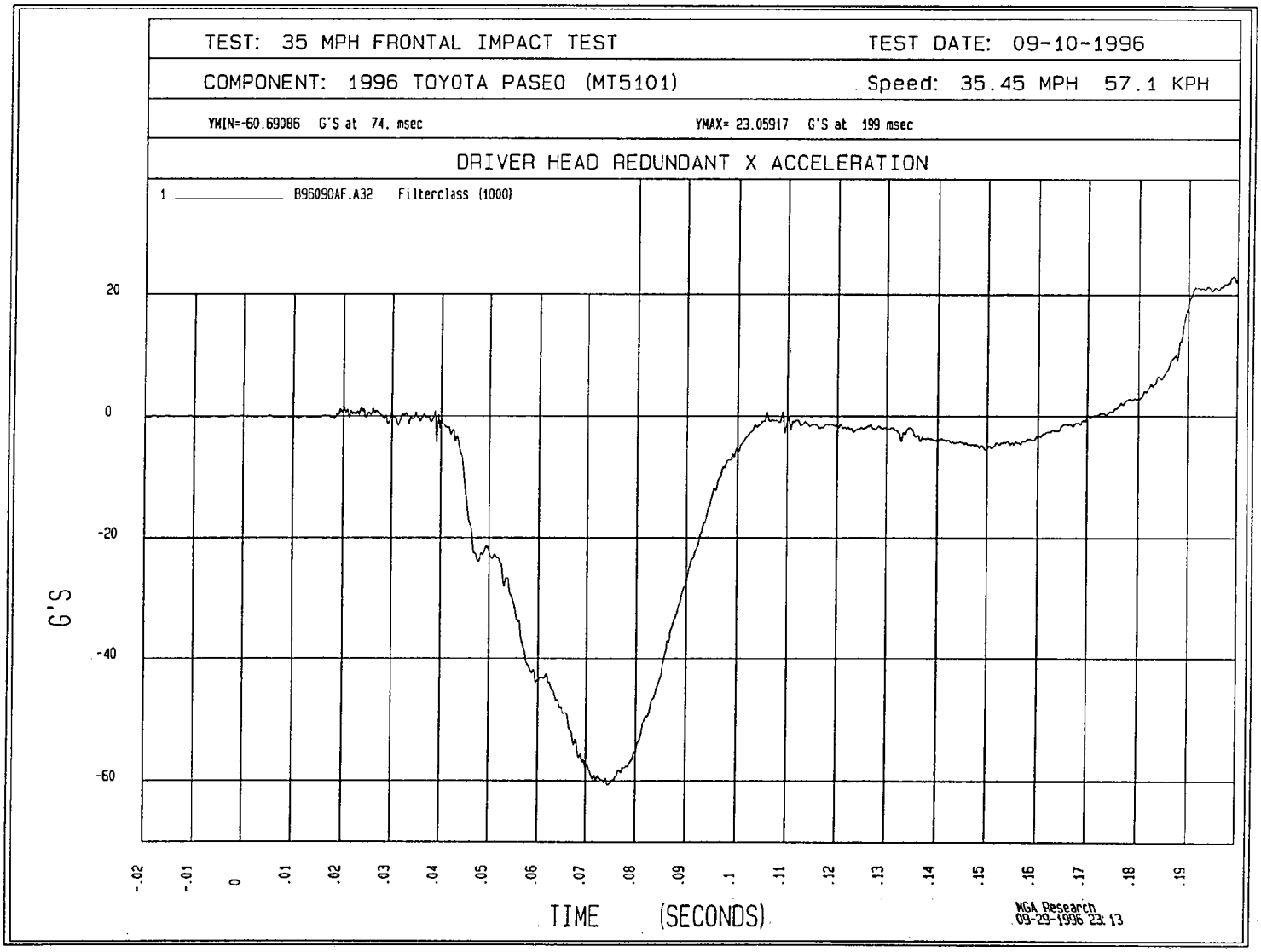
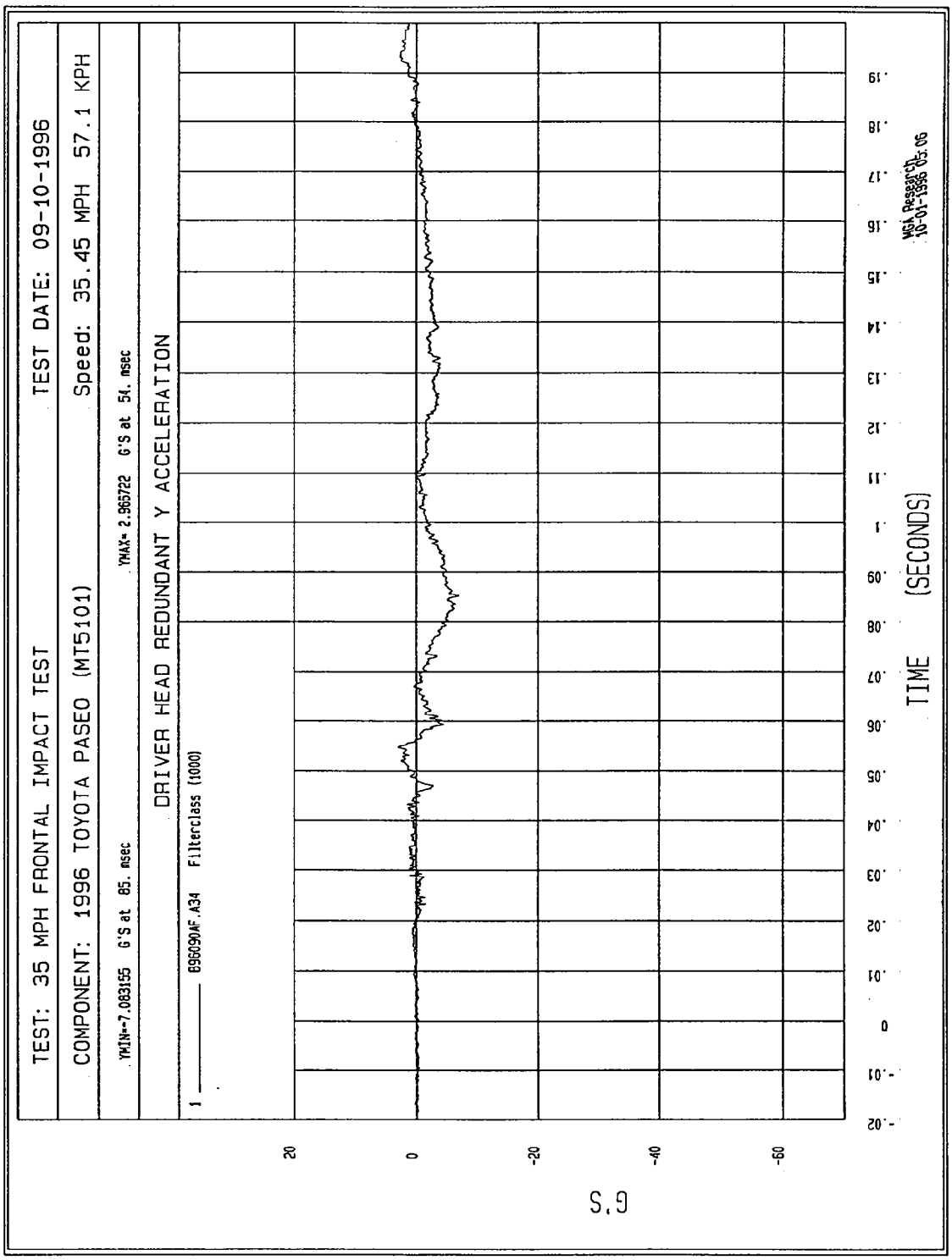
TIME (seconds)
MGA Research
10-01-1996 03:18


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-67.70226 G'S at 58. msec
YMAX= 138.3629 G'S at 48 msec
DRIVER RIGHT FOOT @ HEEL Z ACELERATION
1 C960S0AF.A03 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
10-01-1996 03:18


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-60.69086 G'S at 74. msec
YMAX= 23.05917 G'S at 199 msec
DRIVER HEAD REDUNDANT X ACCELERATION
1 B96090AF.A32 Filterclass (1000)
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
09-29-1996 23:13


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-7.083155 G'S at 85. msec
YMAX= 2.965722 G'S at 54. msec
DRIVER HEAD REDUNDANT Y ACCELERATION
1 _____ 896090AF.A34 Filterclass (1000)
20
0
-20
-40
-60
G'S
.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
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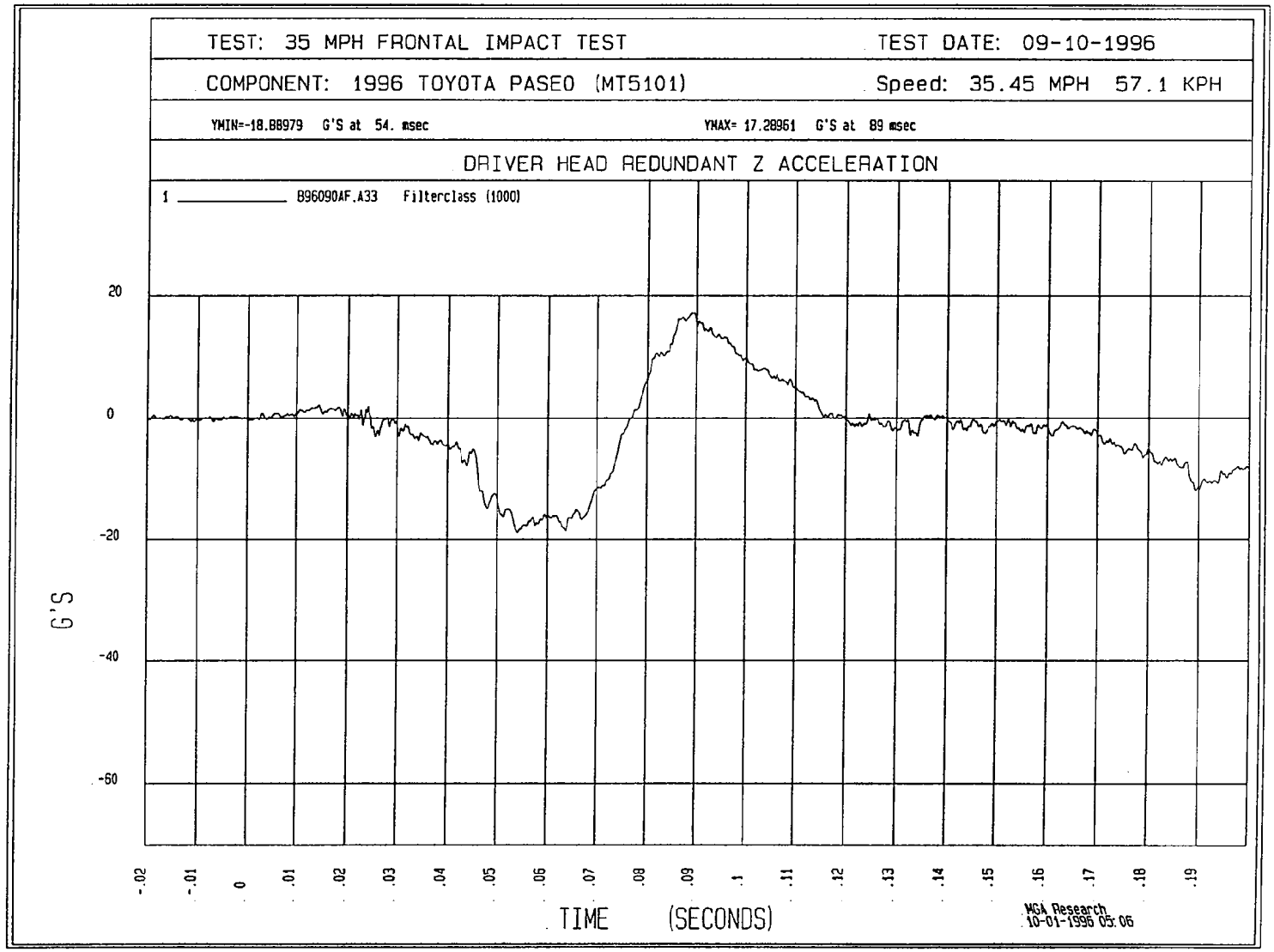
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 08:06


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-18.88979 G'S at 54. msec
YMAX= 17.28961 G'S at 89 msec
DRIVER HEAD REDUNDANT Z ACCELERATION
1 B96090AF.A33 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
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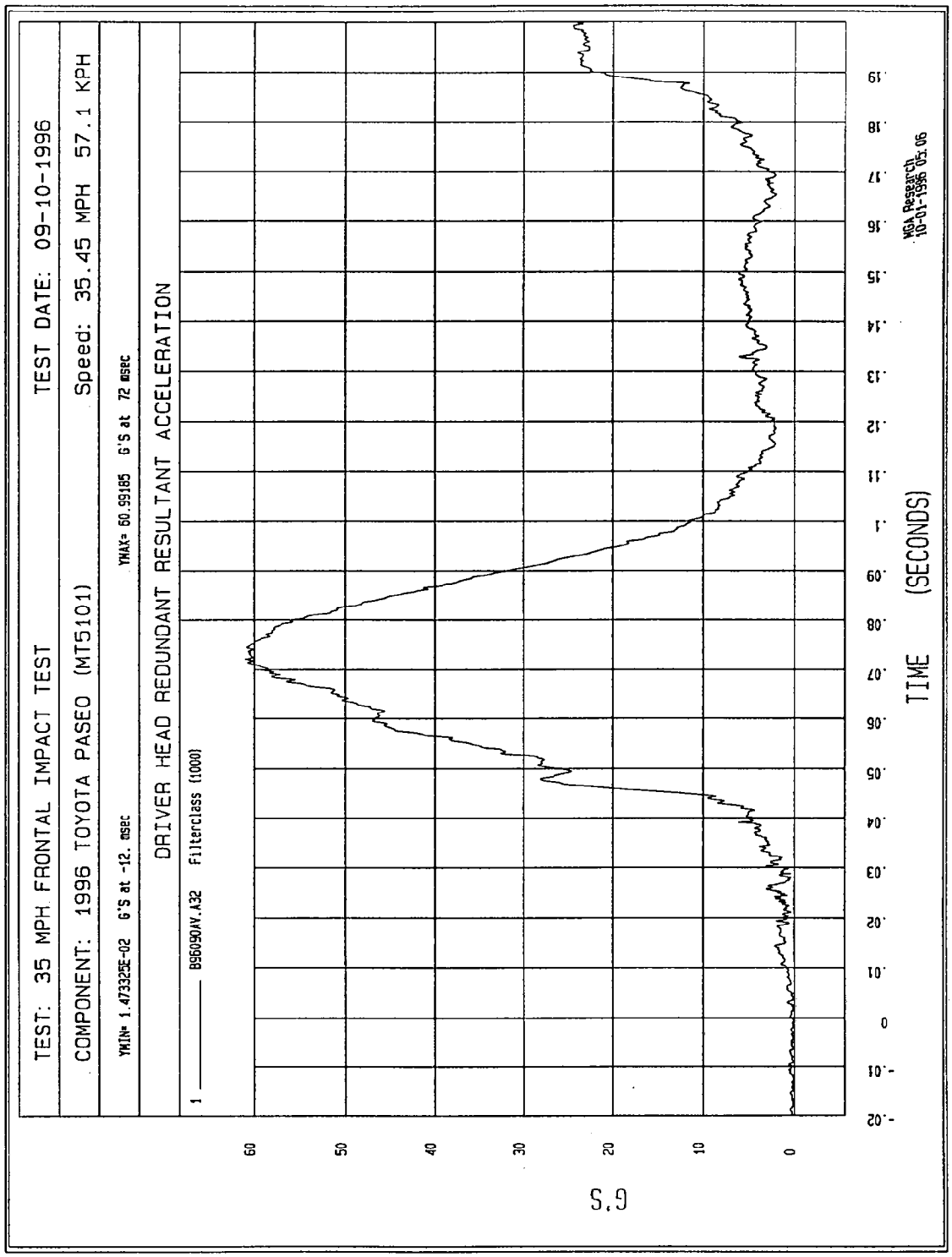
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 05:06


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 1.47325E-02 G'S at -12. msec
YMAX= 60.99185 G'S at 72 msec
DRIVER HEAD REDUNDANT RESULTANT ACCELERATION
1 B96090AV.A32 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
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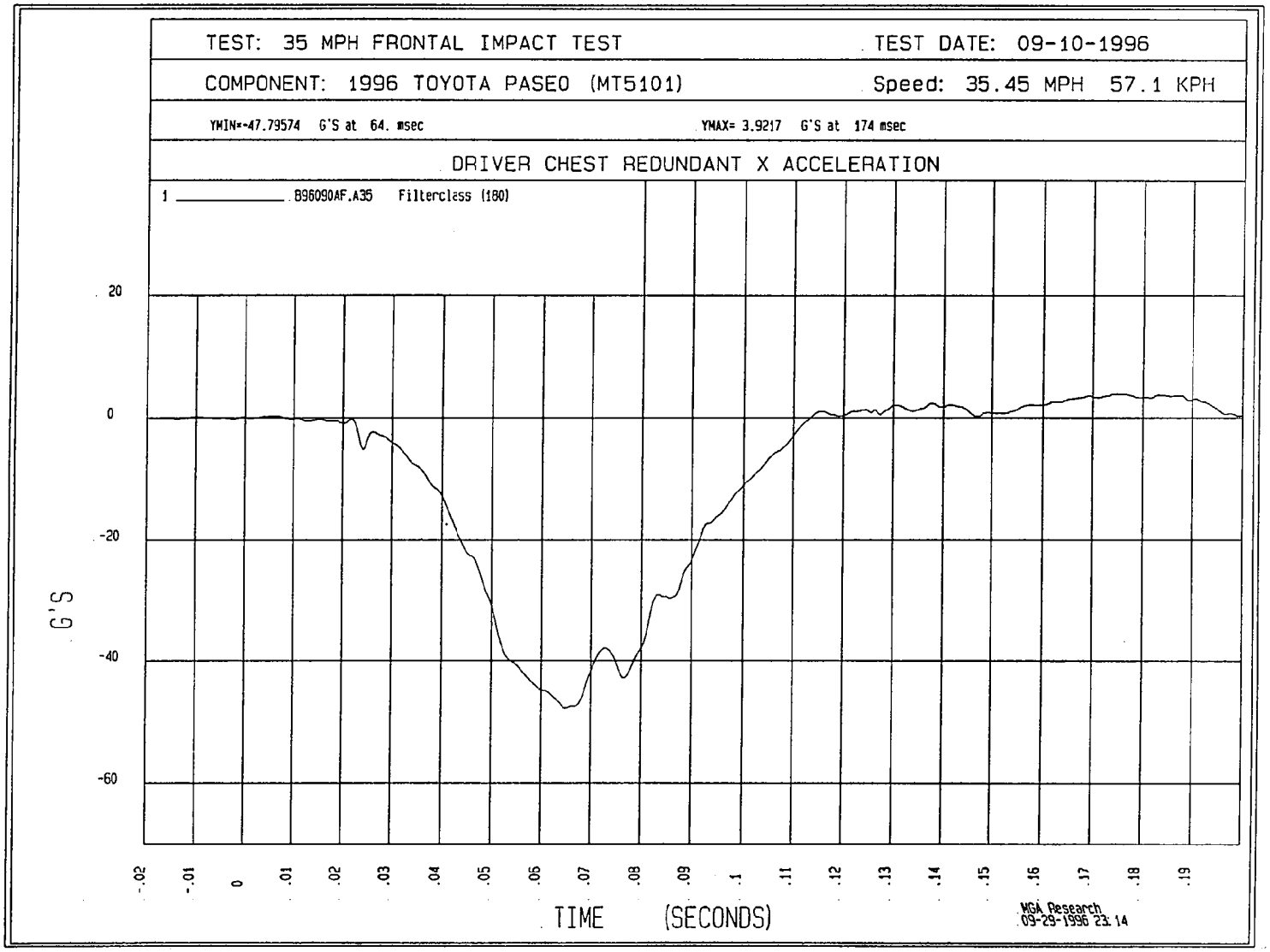
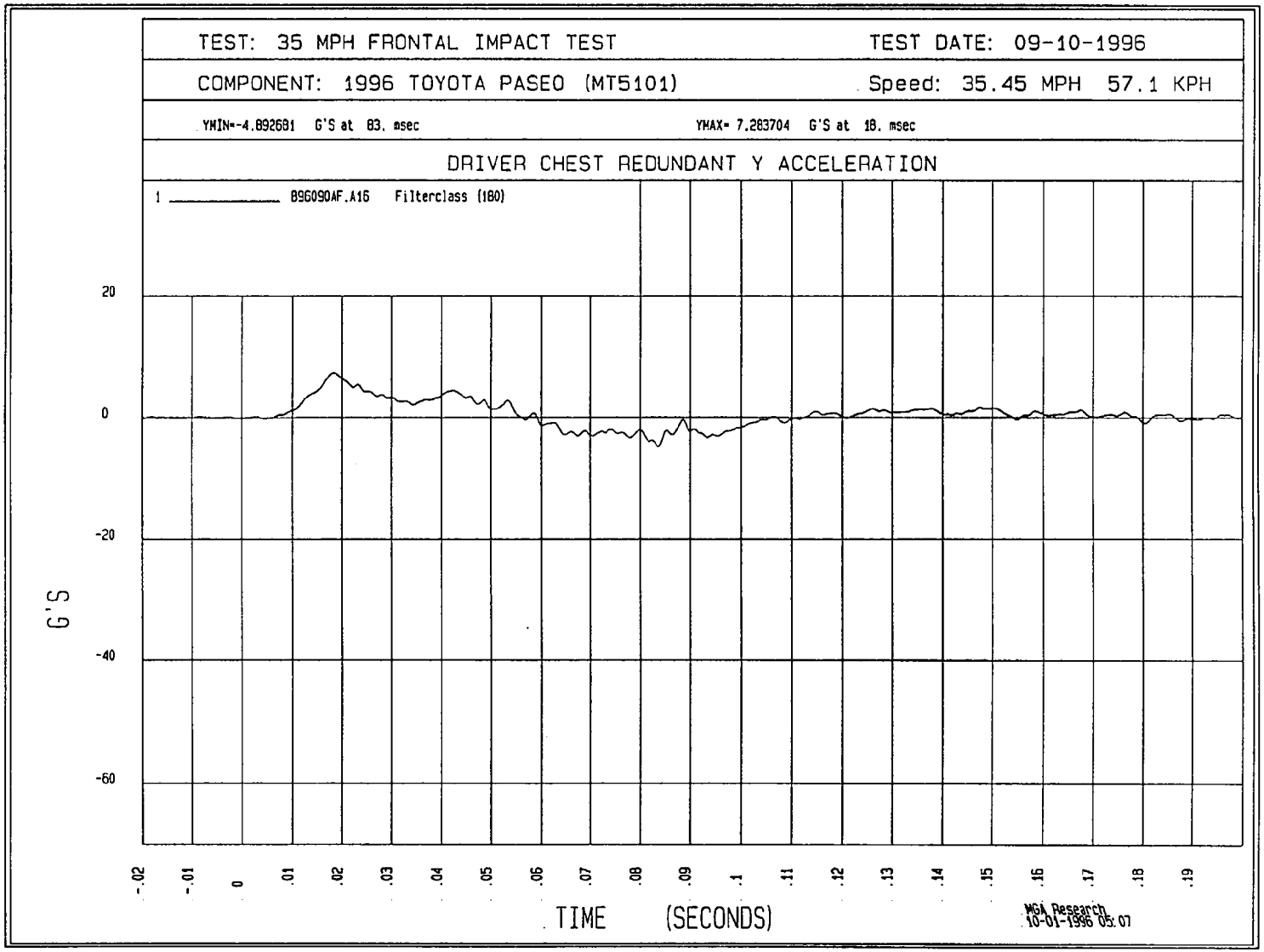
17
18
19
TIME (SECONDS)
MGA Research
10-01-1996 05:06


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-47.79574 G'S at 64. msec
YMAX= 3.9217 G'S at 174 msec
DRIVER CHEST REDUNDANT X ACCELERATION
1 B96090AF.A35 Filterclass (180)
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
09-29-1996 23:14


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-4.892681 G'S at 83. msec
YMAX= 7.283704 G'S at 18. msec
DRIVER CHEST REDUNDANT Y ACCELERATION
1 B96090AF.A16 Filterclass (180)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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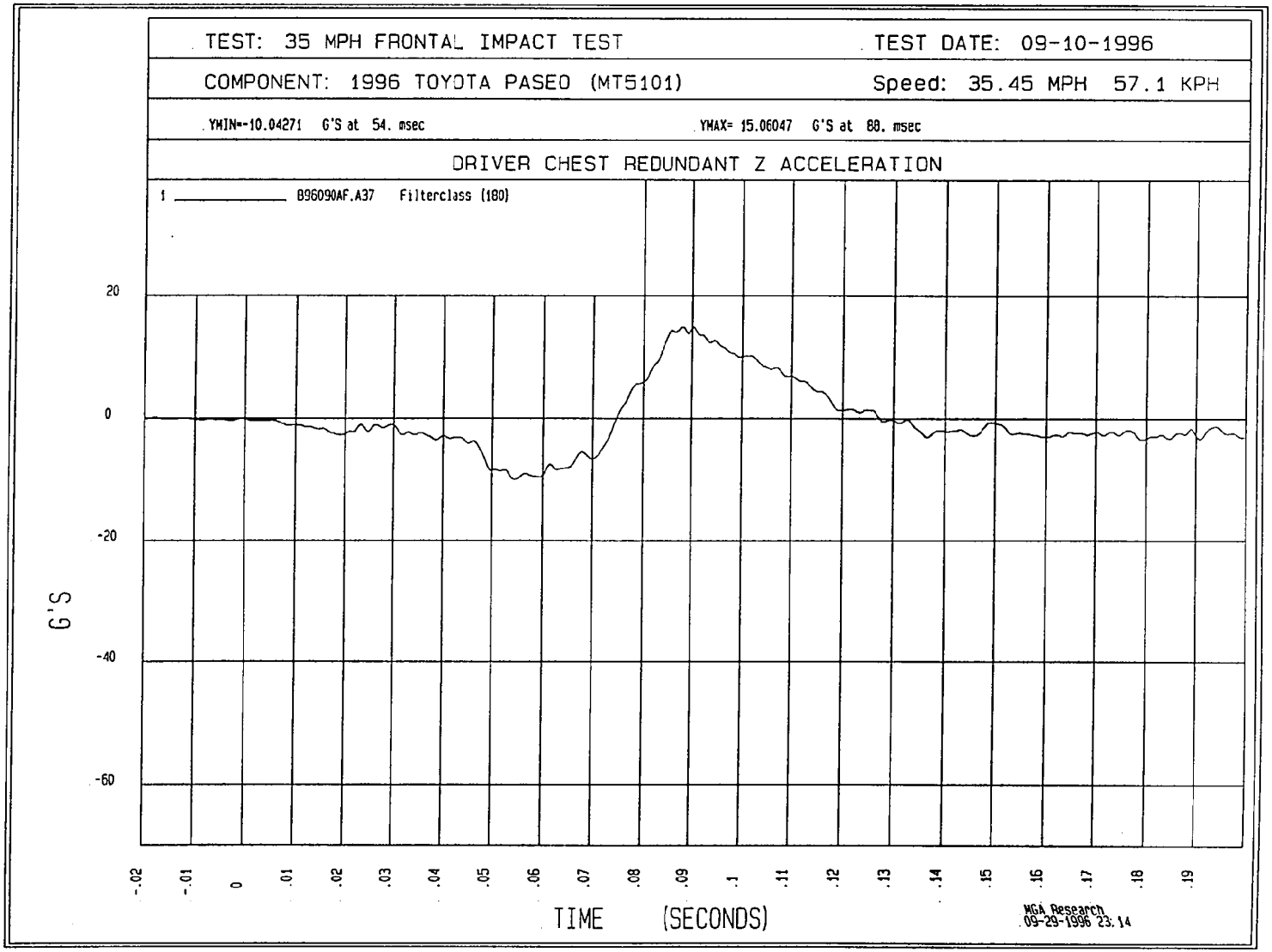
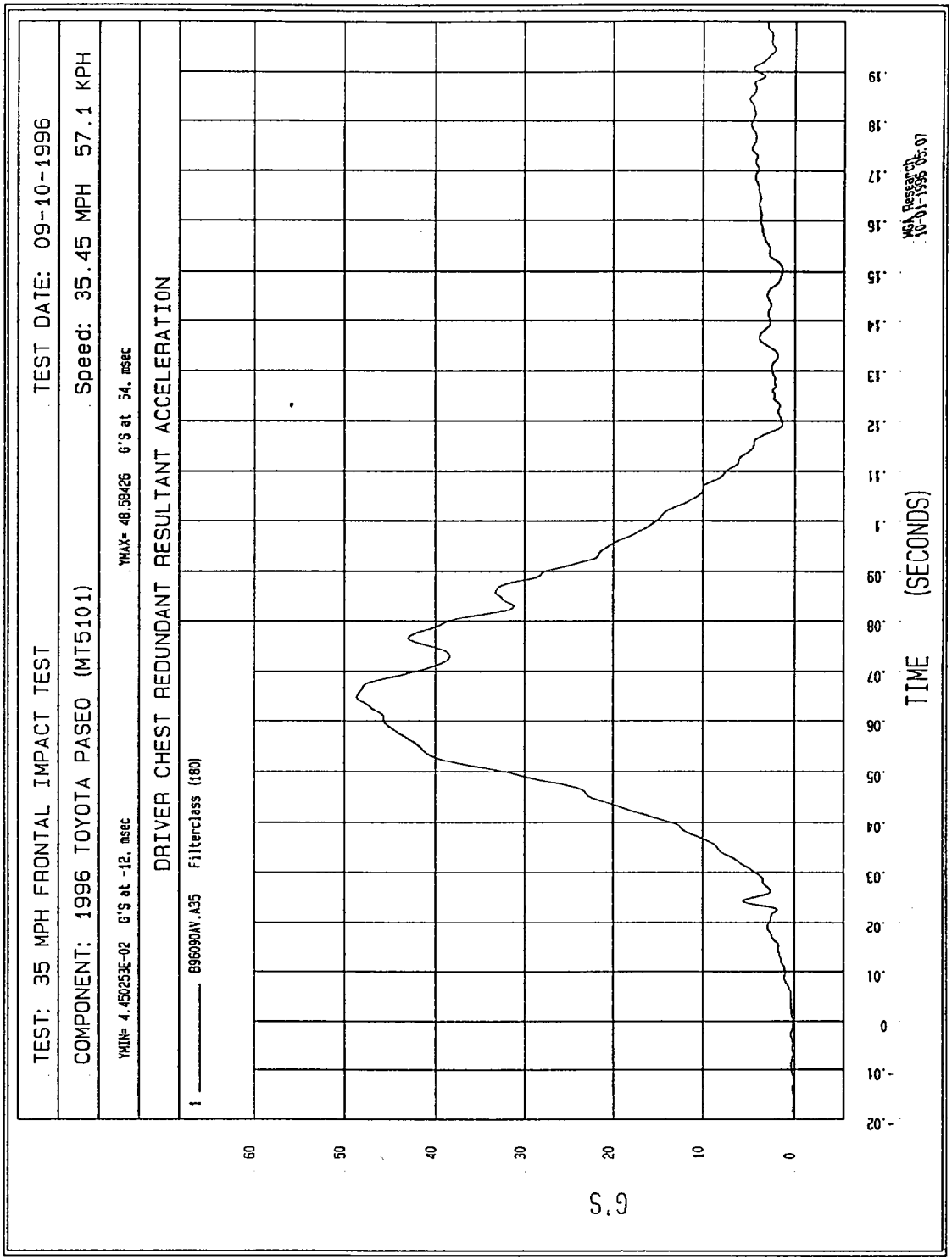
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 05:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-10.04271 G'S at 54. msec
YMAX= 15.06047 G'S at 88. msec
DRIVER CHEST REDUNDANT Z ACCELERATION
1 B96090AF.A37 Filterclass (180)
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
09-29-1996 23:14


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 4.450253E-02 G'S at -12. msec
YMAX= 48.58426 G'S at 64. msec
DRIVER CHEST REDUNDANT RESULTANT ACCELERATION
1 _____ B96090AV.A35 Filterclass (180)
60
50
40
30
20
10
0
G'S
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
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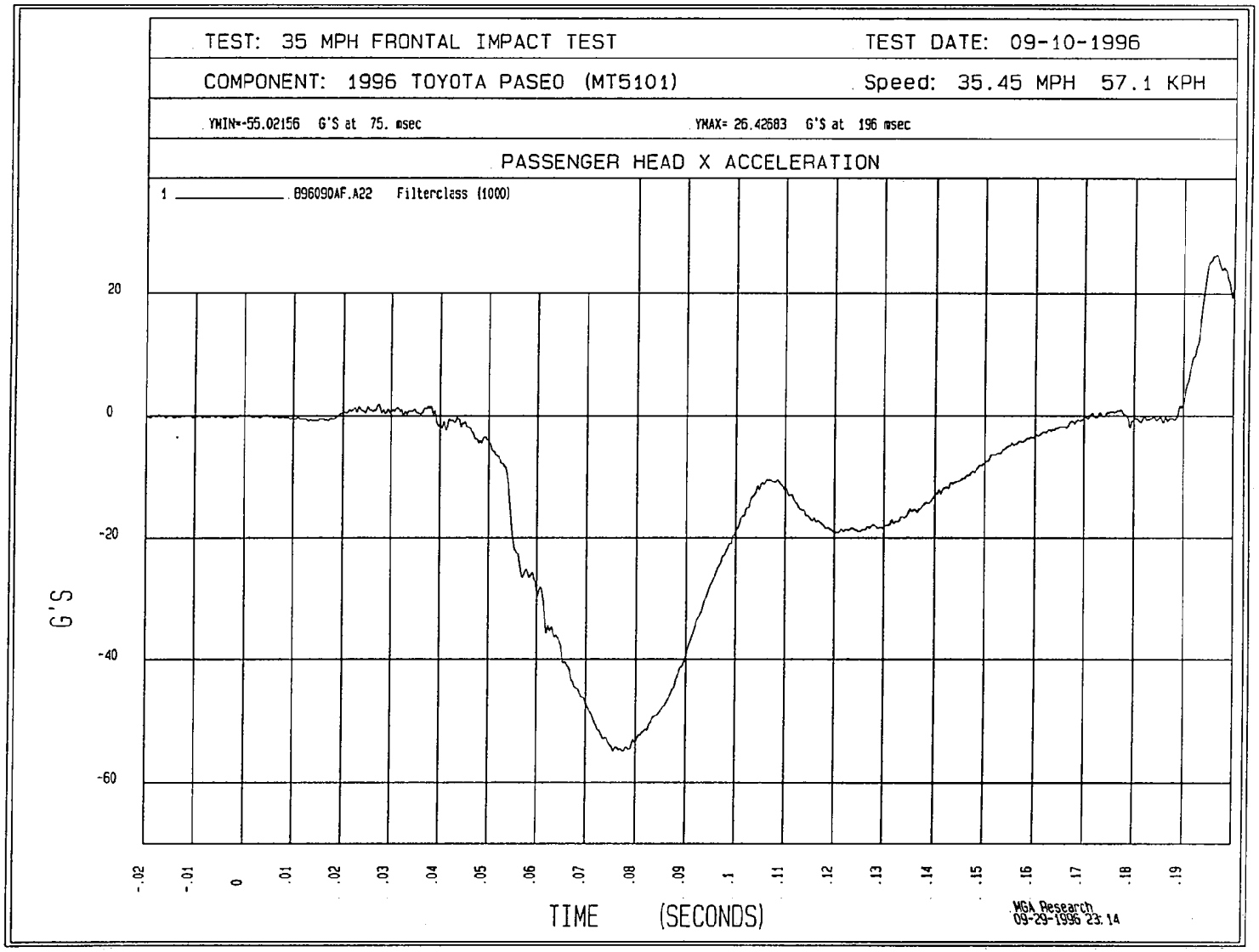
.18
.19
MGA Research
10-01-1996 05:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-55.02156 G'S at 75. msec
YMAX= 26.42683 G'S at 196 msec
PASSENGER HEAD X ACCELERATION
1 _____ 89609DAF.A22 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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.07
.08
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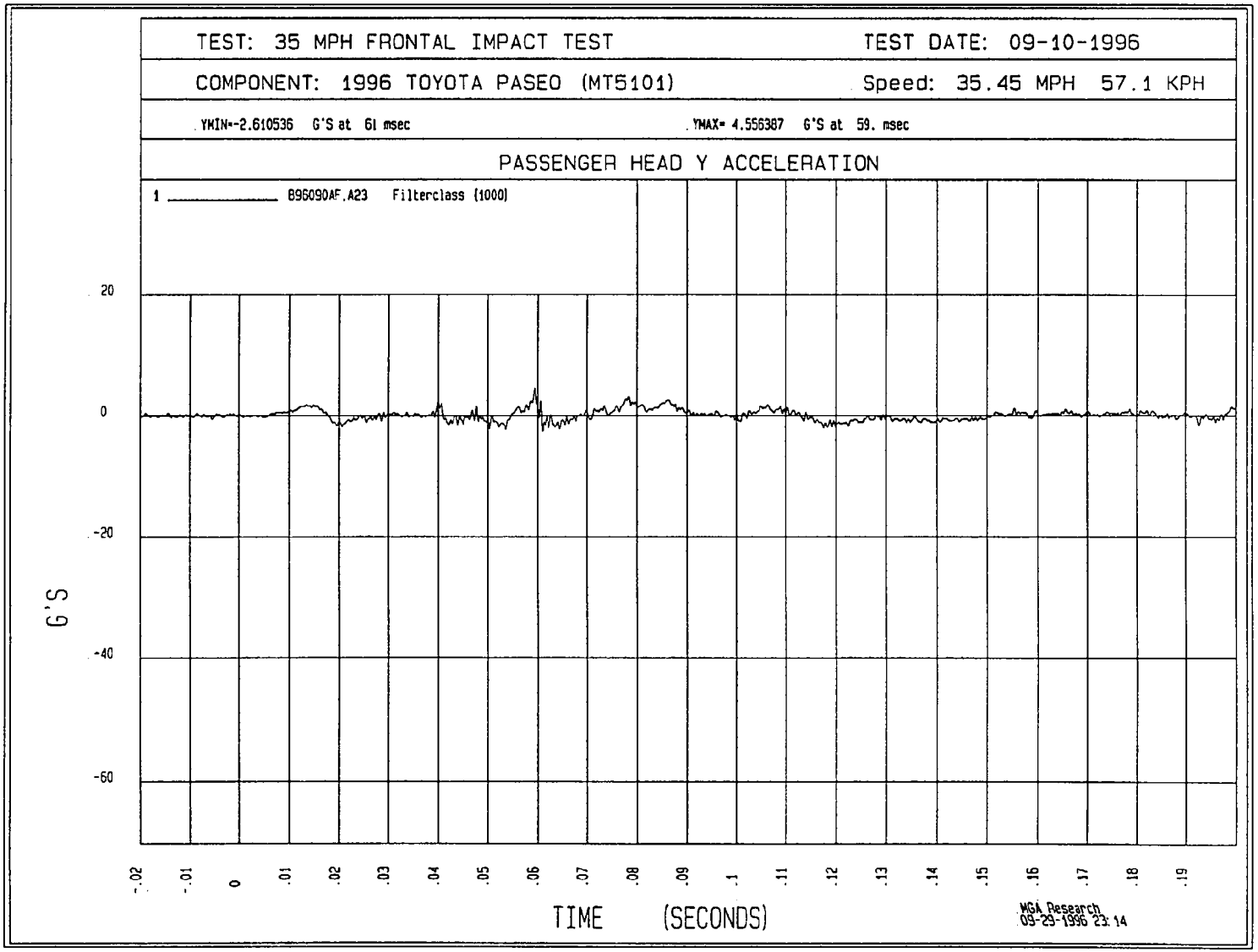
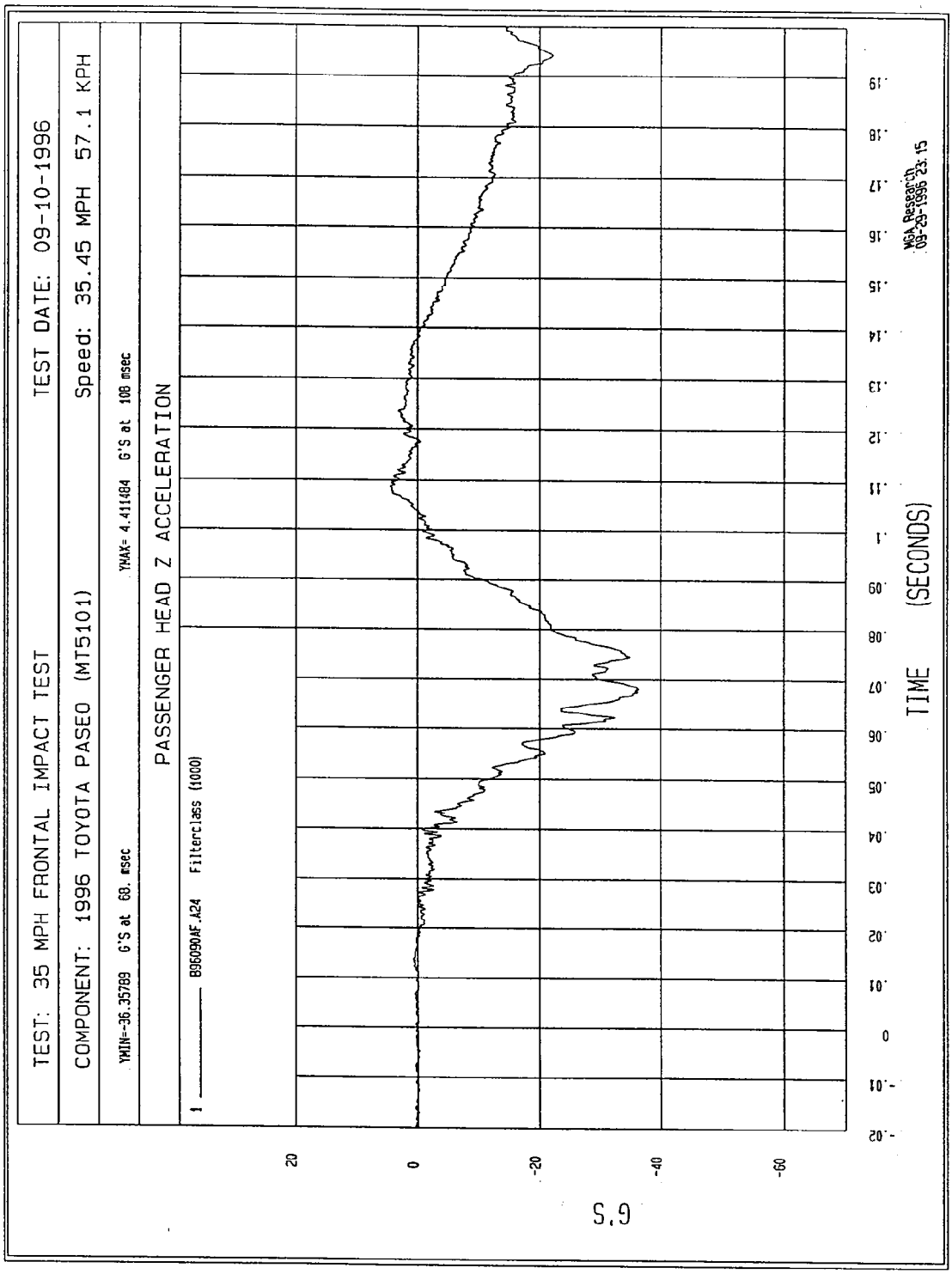
.17
.18
.19
TIME (SECONDS)
MGA Research
09-29-1995 23:14


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-2.610536 G'S at 61 msec
YMAX= 4.556387 G'S at 59. msec
PASSENGER HEAD Y ACCELERATION
1 B96090AF.A23 Filterclass (1000)
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
09-29-1996 23:14


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-36.35789 G'S at 68. msec
YMAX= 4.411484 G'S at 108 msec
PASSENGER HEAD Z ACCELERATION
1 B96090AF.A24 Filterclass (1000)
20
0
-20
-40
-60
G'S
.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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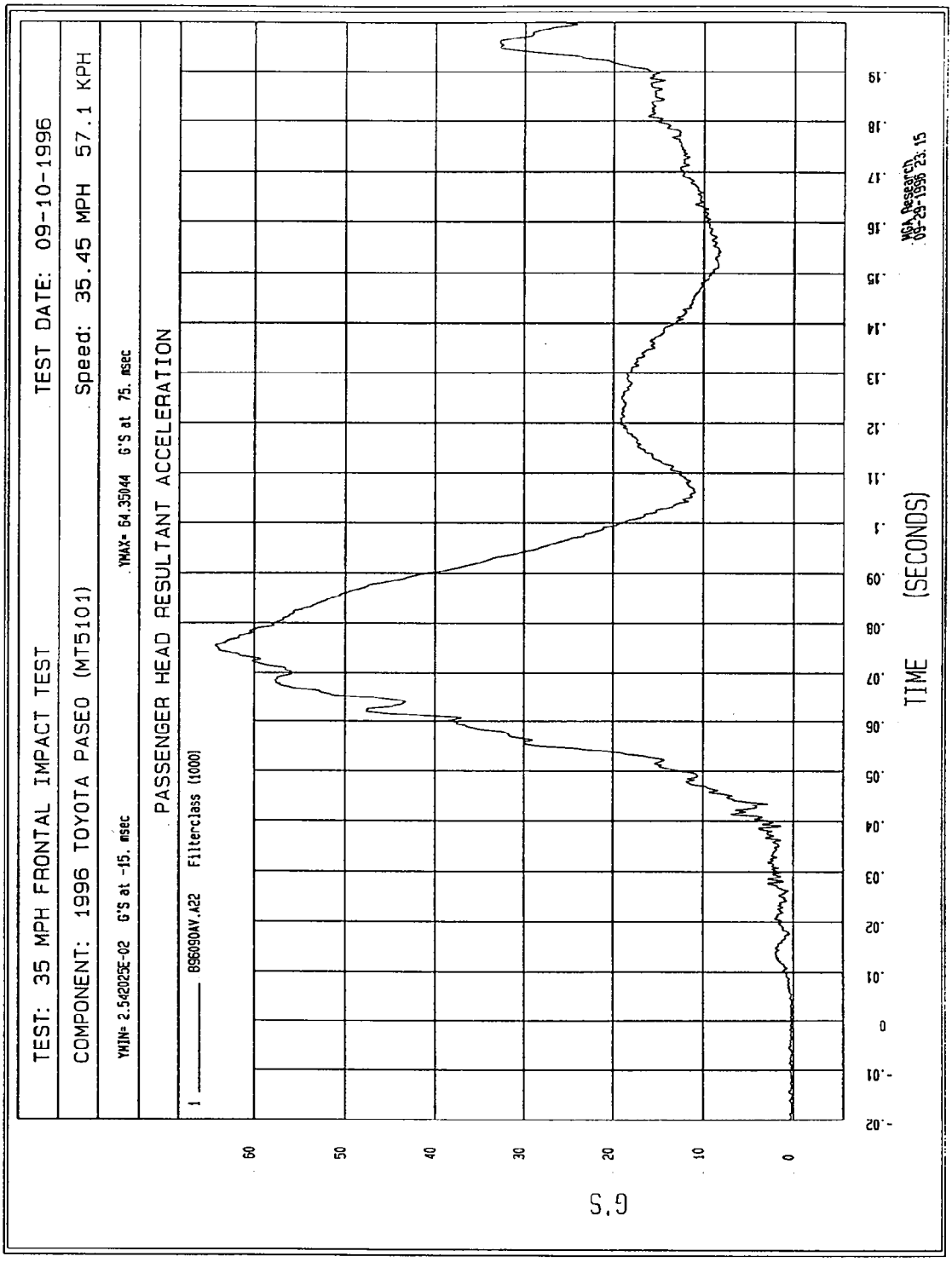
TIME (SECONDS)
MGA Research
09-29-1996 23:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 2.542025E-02 G'S at -15. msec
YMAX= 64.35044 G'S at 75. msec
PASSENGER HEAD RESULTANT ACCELERATION
1 _____ 896090AV.A22 Filterclass (1000)
60
50
40
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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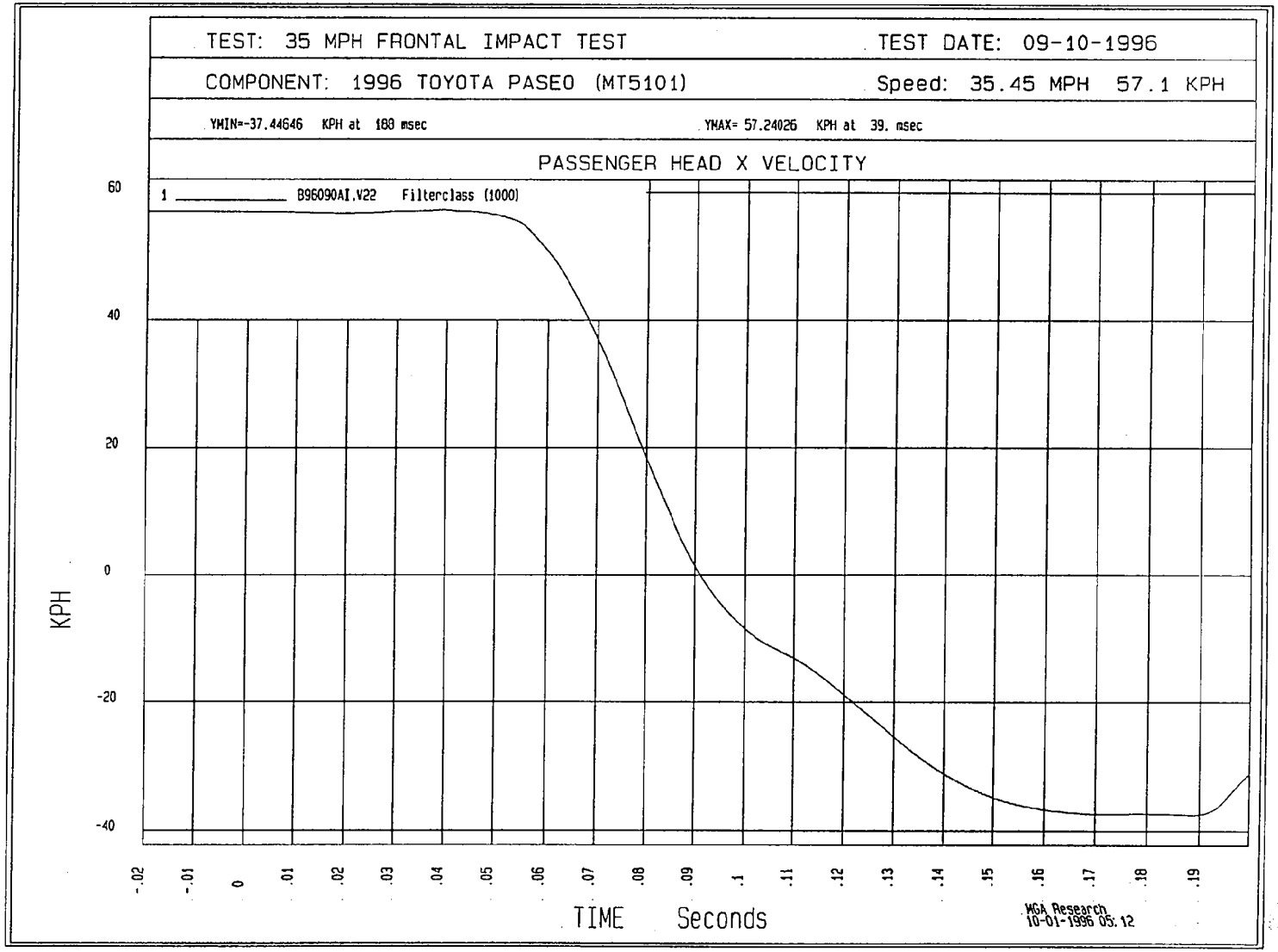
TIME (SECONDS)
NGA Research
05-29-1996 23:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-37.44646 KPH at 188 msec
YMAX= 57.24026 KPH at 39. msec
PASSENGER HEAD X VELOCITY
1 B96090AI.V22 Filterclass (1000)
60
40
20
0
-20
-40
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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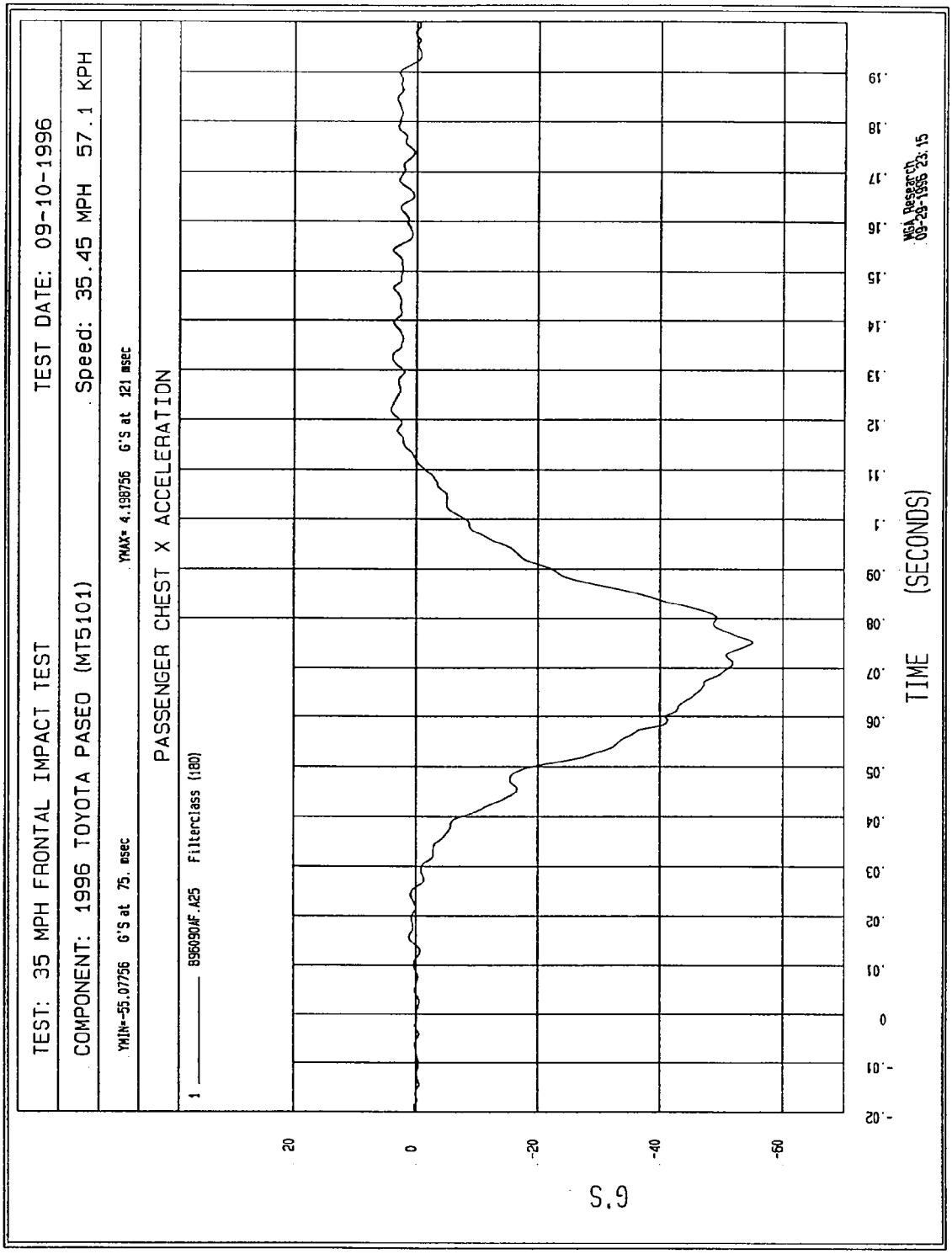
TIME Seconds
MGA Research
10-01-1996 05:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-55.07756 G'S at 75. msec
YMAX= 4.198756 G'S at 121 msec
PASSENGER CHEST X ACCELERATION
1 _____ 896090AF.A25 Filterclass (180)
20
0
-20
-40
-60
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
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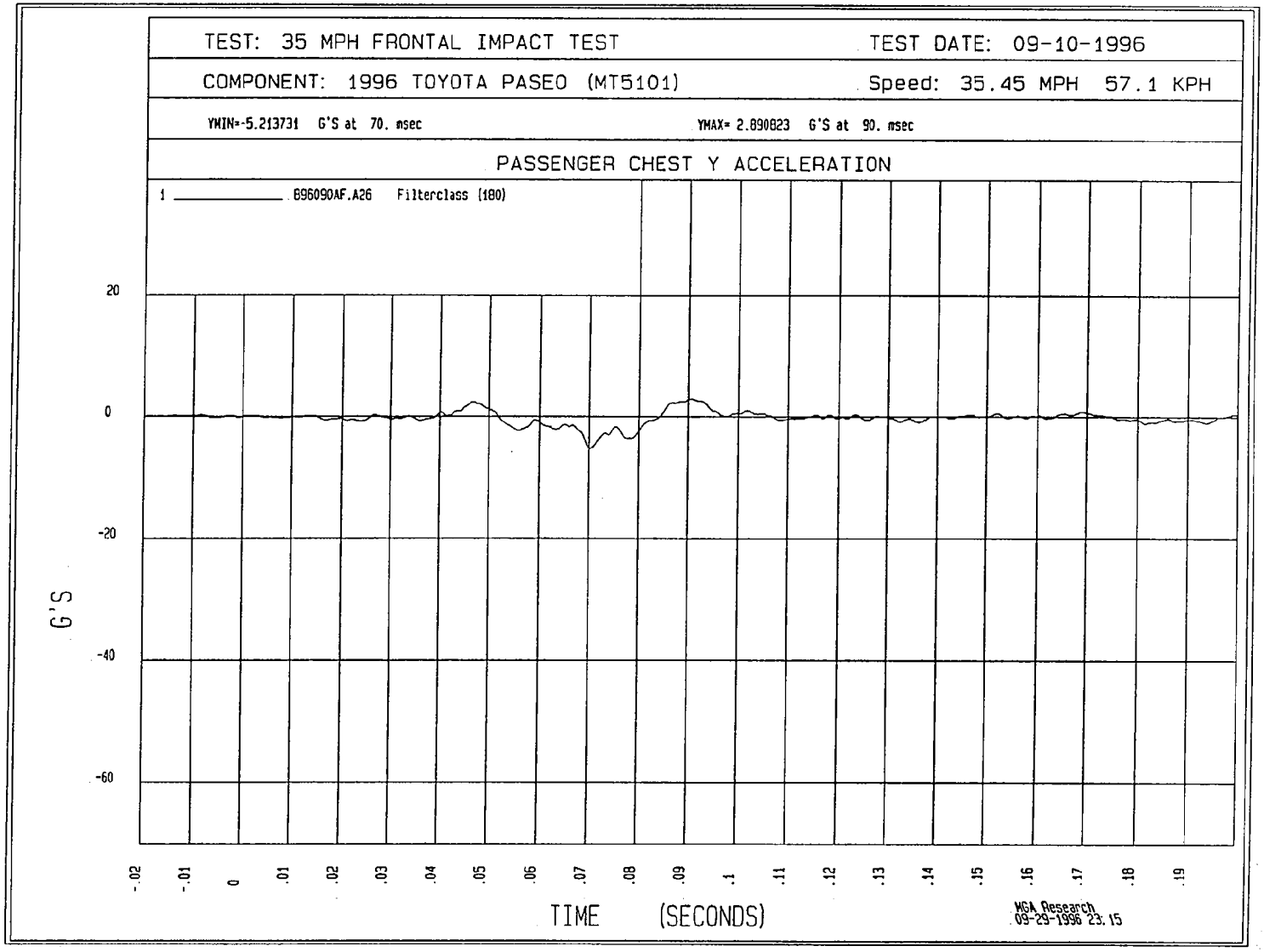
MGA Research
09-29-1995 23:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-5.213731 G'S at 70. msec
YMAX= 2.890823 G'S at 90. msec
PASSENGER CHEST Y ACCELERATION
1 896090AF.A26 Filterclass (180)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
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.14
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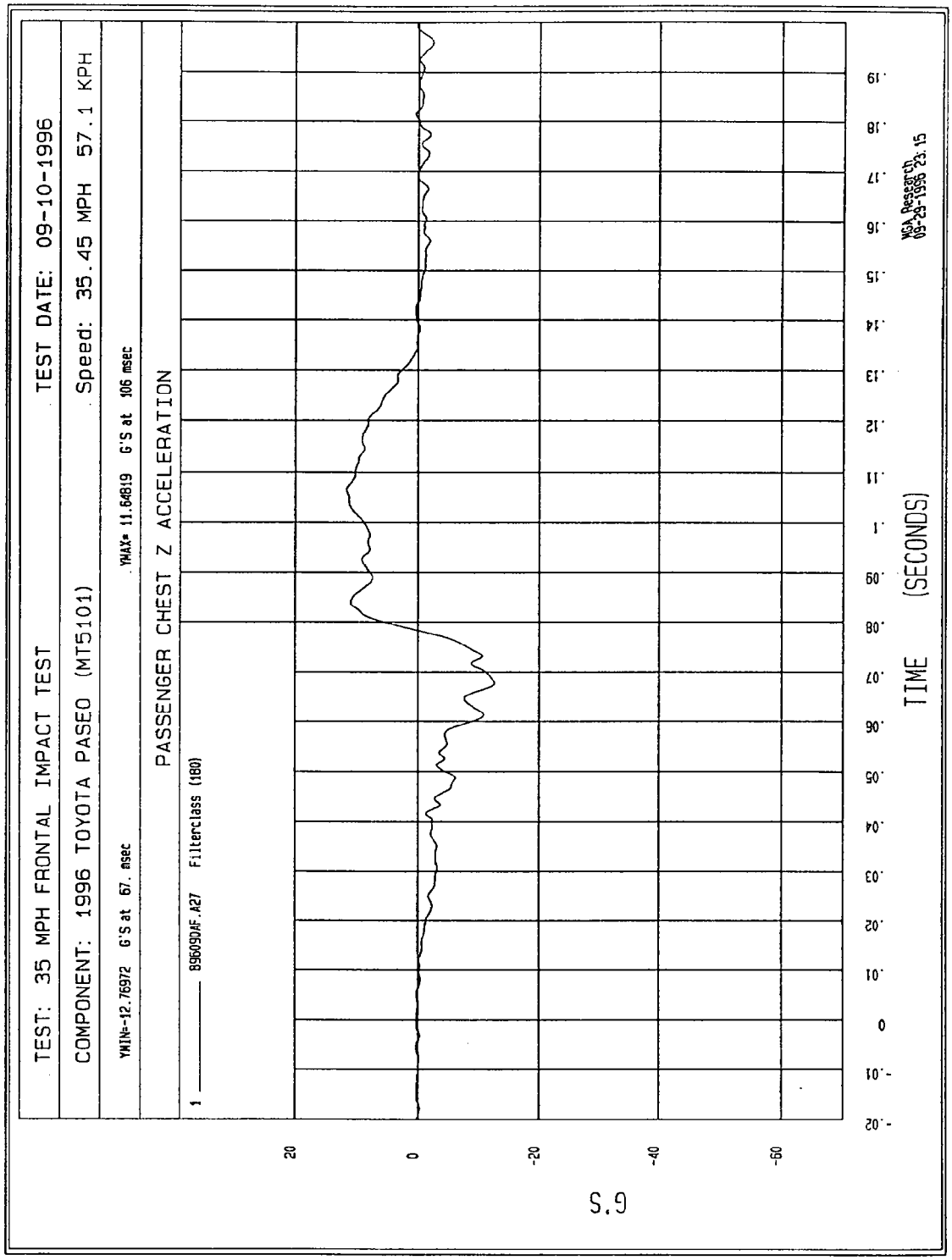
.18
.19
TIME (SECONDS)
MGA Research
09-29-1996 23:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-12.76972 G'S at 67. msec
YMAX= 11.64819 G'S at 106 msec
PASSENGER CHEST Z ACCELERATION
1 ——— 896090AF.A27 Filterclass (180)
20
0
-20
-40
-60
G'S
.02
-.01
0
.01
.02
.03
.04
.05
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.07
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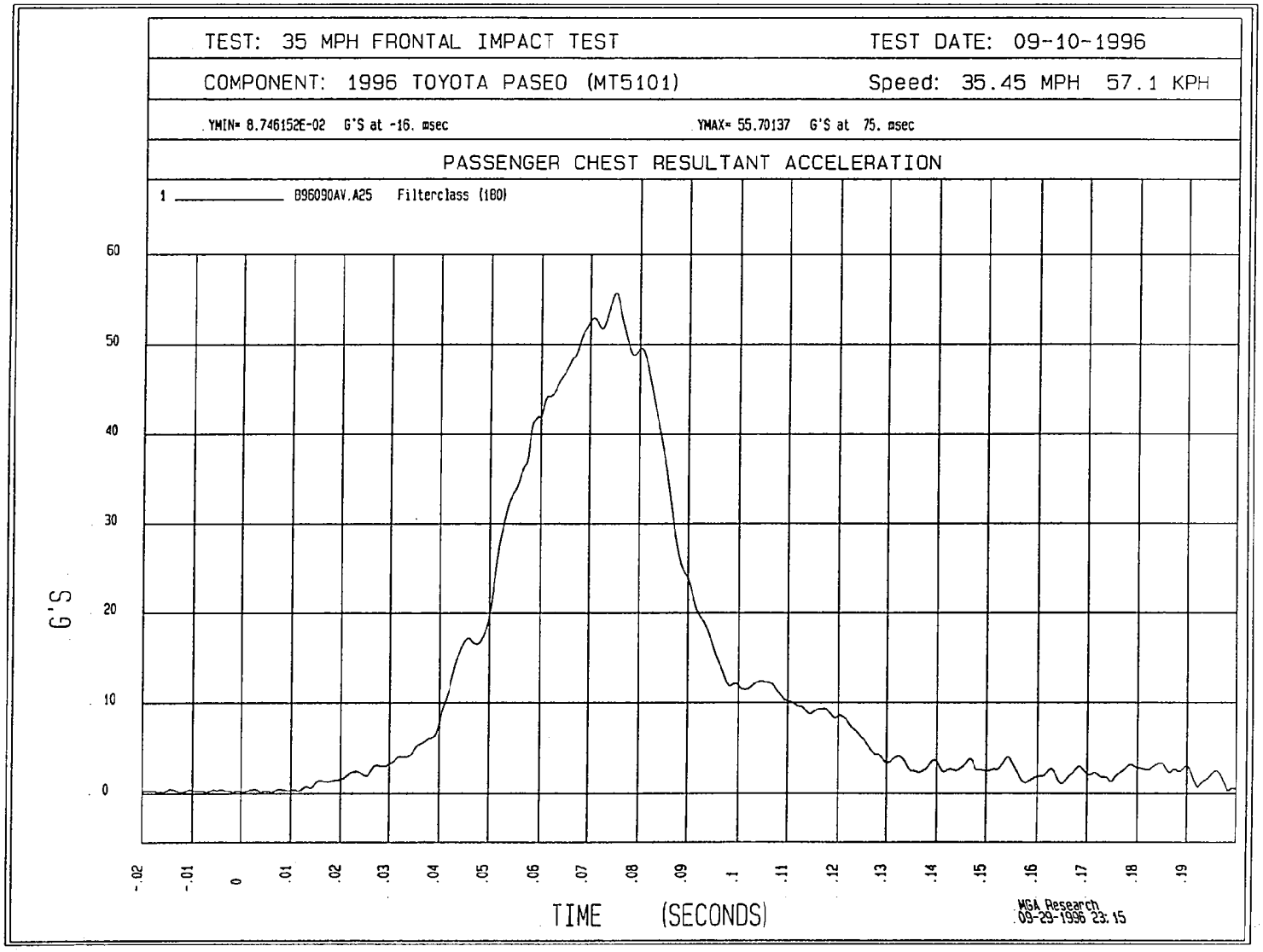
TIME (SECONDS)
MGA Research
09-29-1995 23:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 8.746152E-02 G'S at -16. msec
YMAX= 55.70137 G'S at 75. msec
PASSENGER CHEST RESULTANT ACCELERATION
1 B96090AV.A25 Filterclass (180)
60
50
40
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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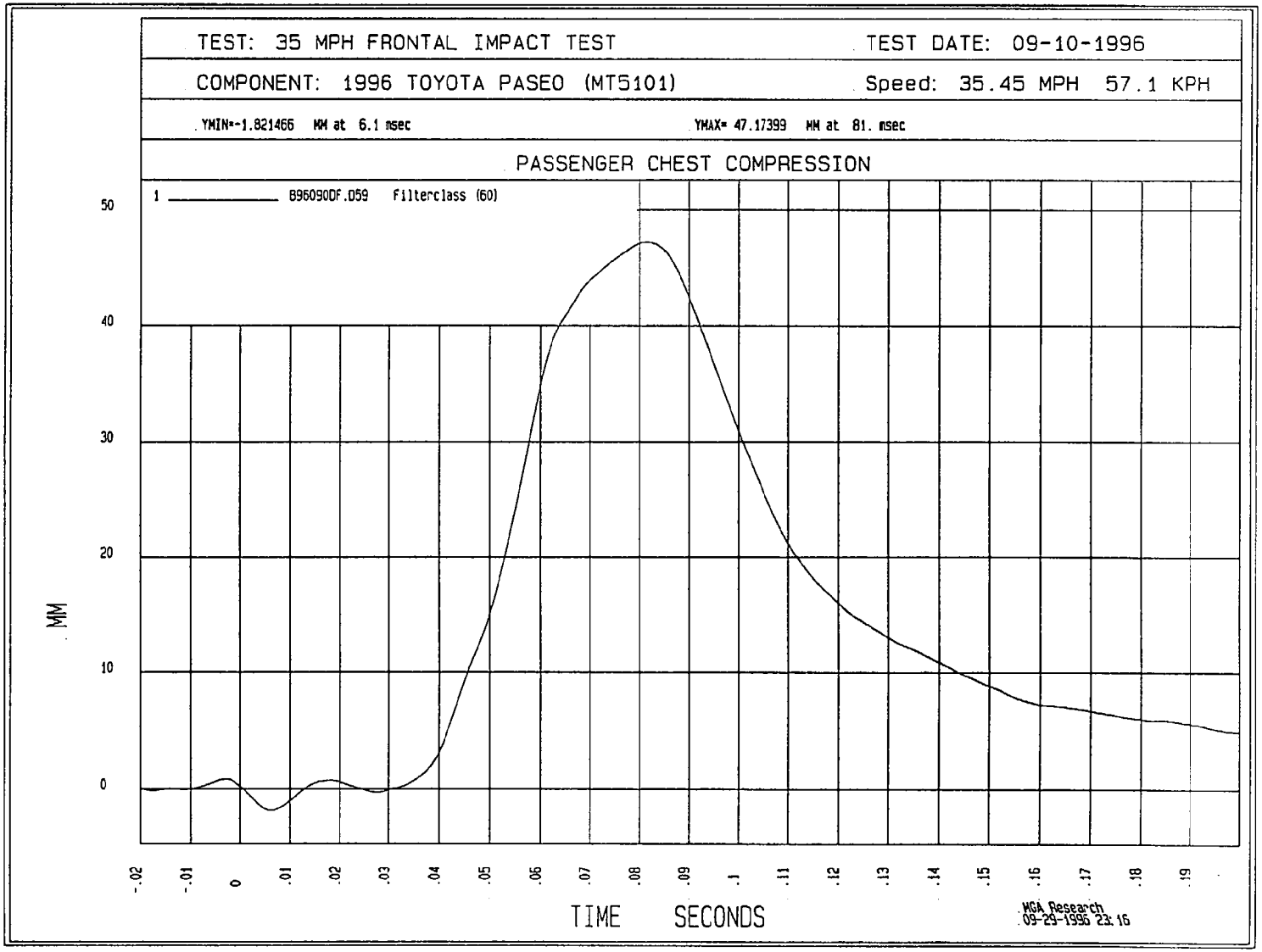
TIME (SECONDS)
MGA Research
09-29-1996 23:15


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-1.821466 MM at 6.1 msec
YMAX= 47.17399 MM at 81. msec
PASSENGER CHEST COMPRESSION
1 B960900F.059 filterclass (60)
MM
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
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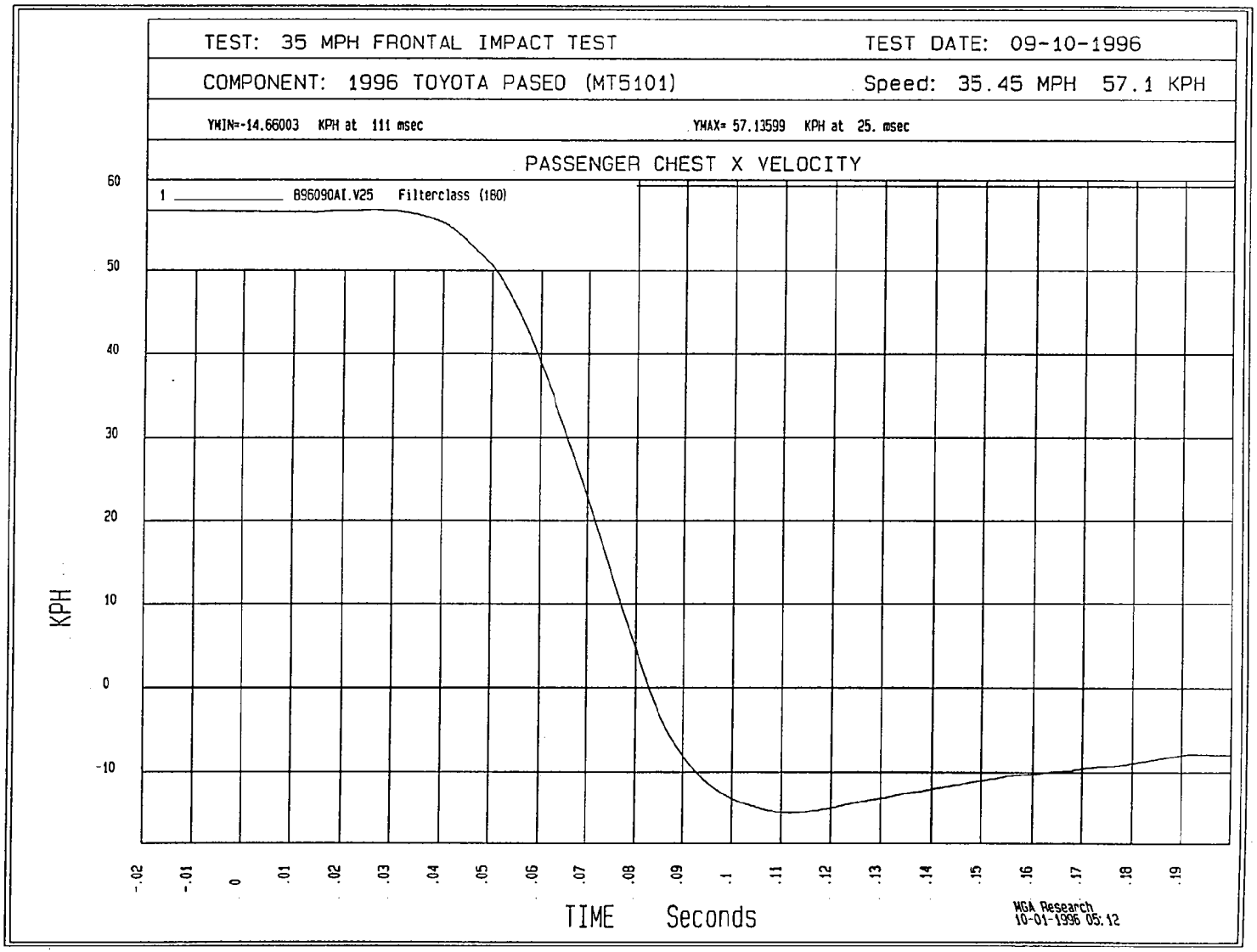
TIME SECONDS
MGA Research
09-29-1996 23:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-14.66003 KPH at 111 msec
YMAX= 57.13599 KPH at 25. msec
PASSENGER CHEST X VELOCITY
1 _____ 896090AI.V25 Filterclass (180)
60
50
40
30
20
10
0
-10
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
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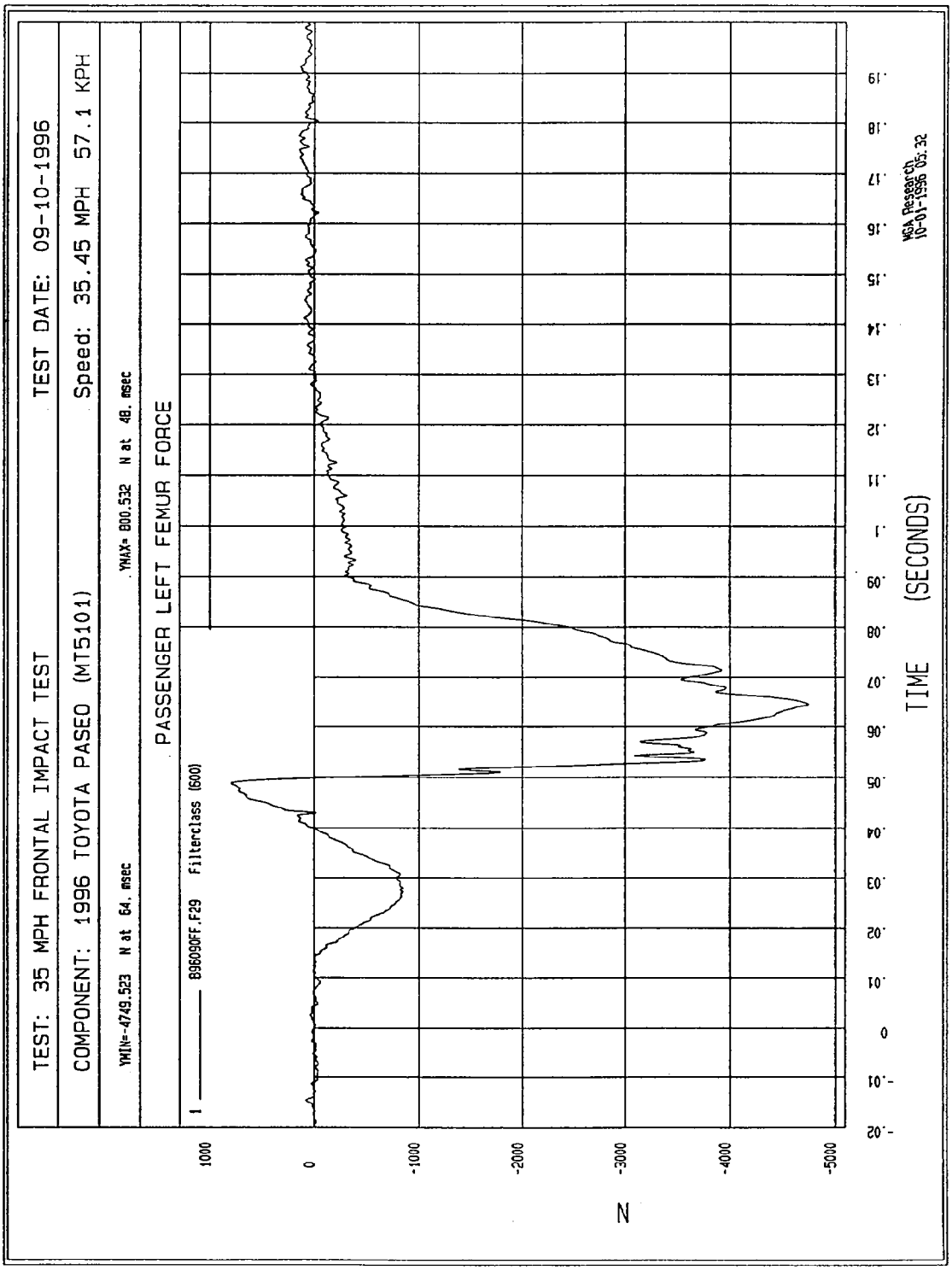
TIME Seconds
MGA Research
10-01-1996 05:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-4749.523 N at 64. msec
YMAX= 800.532 N at 48. msec
PASSENGER LEFT FEMUR FORCE
1 _____ 896090FF.F29 Filterclass (600)
1000
0
-1000
-2000
-3000
-4000
-5000
N
.19
.18
.17
.16
.15
.14
.13
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.04
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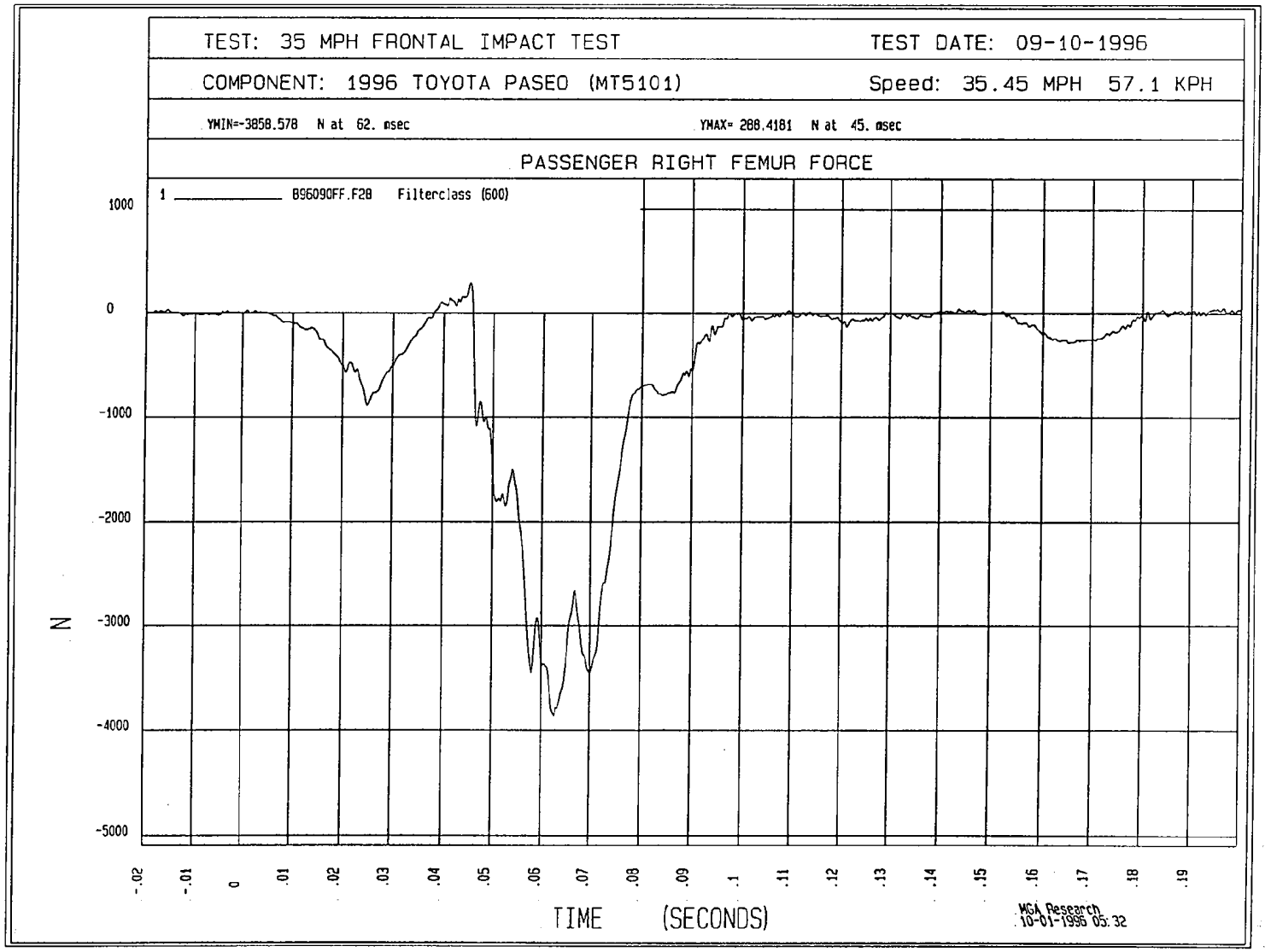
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
10-01-1996 05:32


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-3858.578 N at 62. msec
YMAX= 288.4181 N at 45. msec
PASSENGER RIGHT FEMUR FORCE
1 B96090FF.F28 Filterclass (600)
1000
0
-1000
-2000
-3000
-4000
-5000
N
-.02
-.01
0
.01
.02
.03
.04
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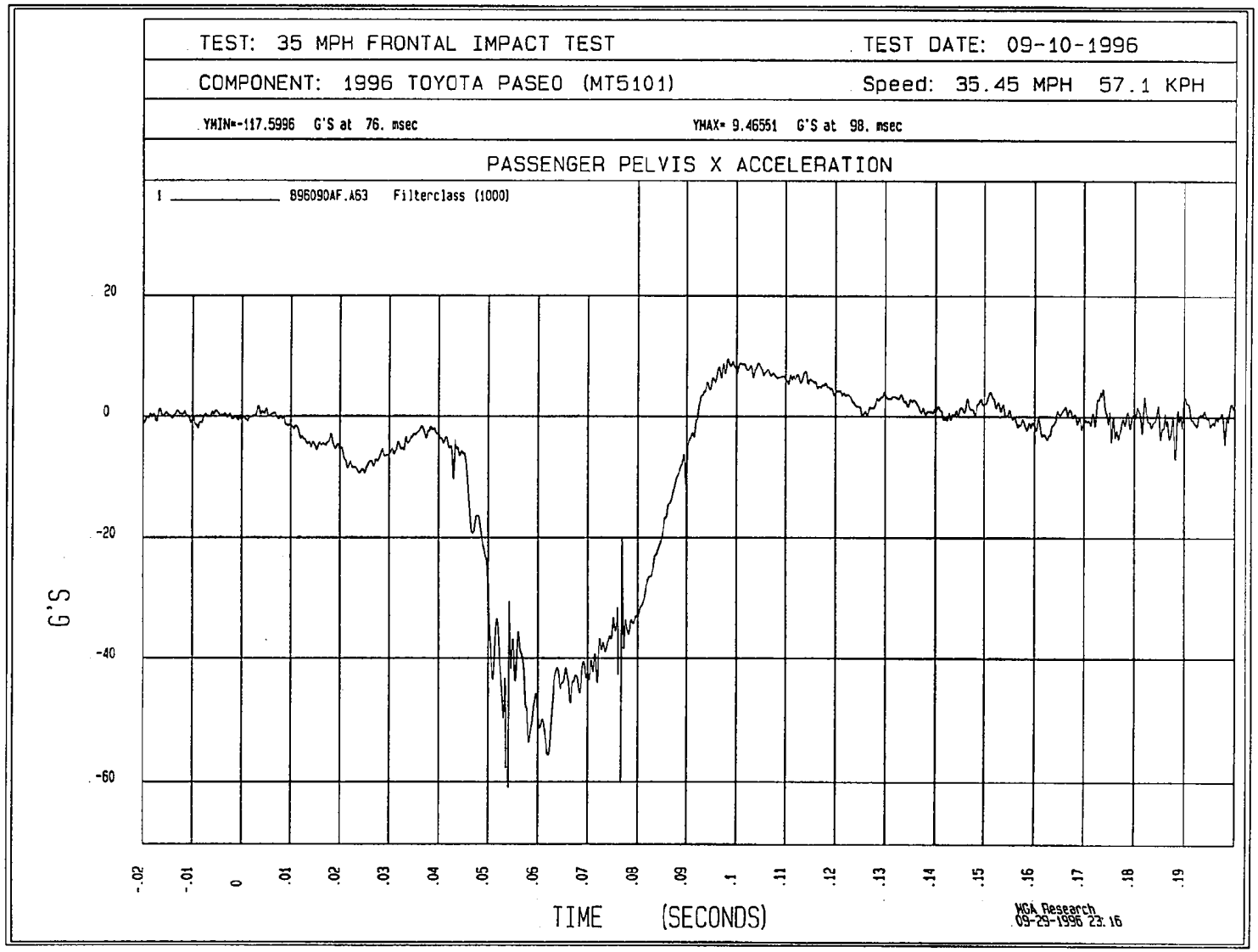
TIME (SECONDS)
MGA Research
10-01-1996 05:32


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-117.5996 G'S at 76. msec
YMAX= 9.46551 G'S at 98. msec
PASSENGER PELVIS X ACCELERATION
I 896090AF.A63 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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.07
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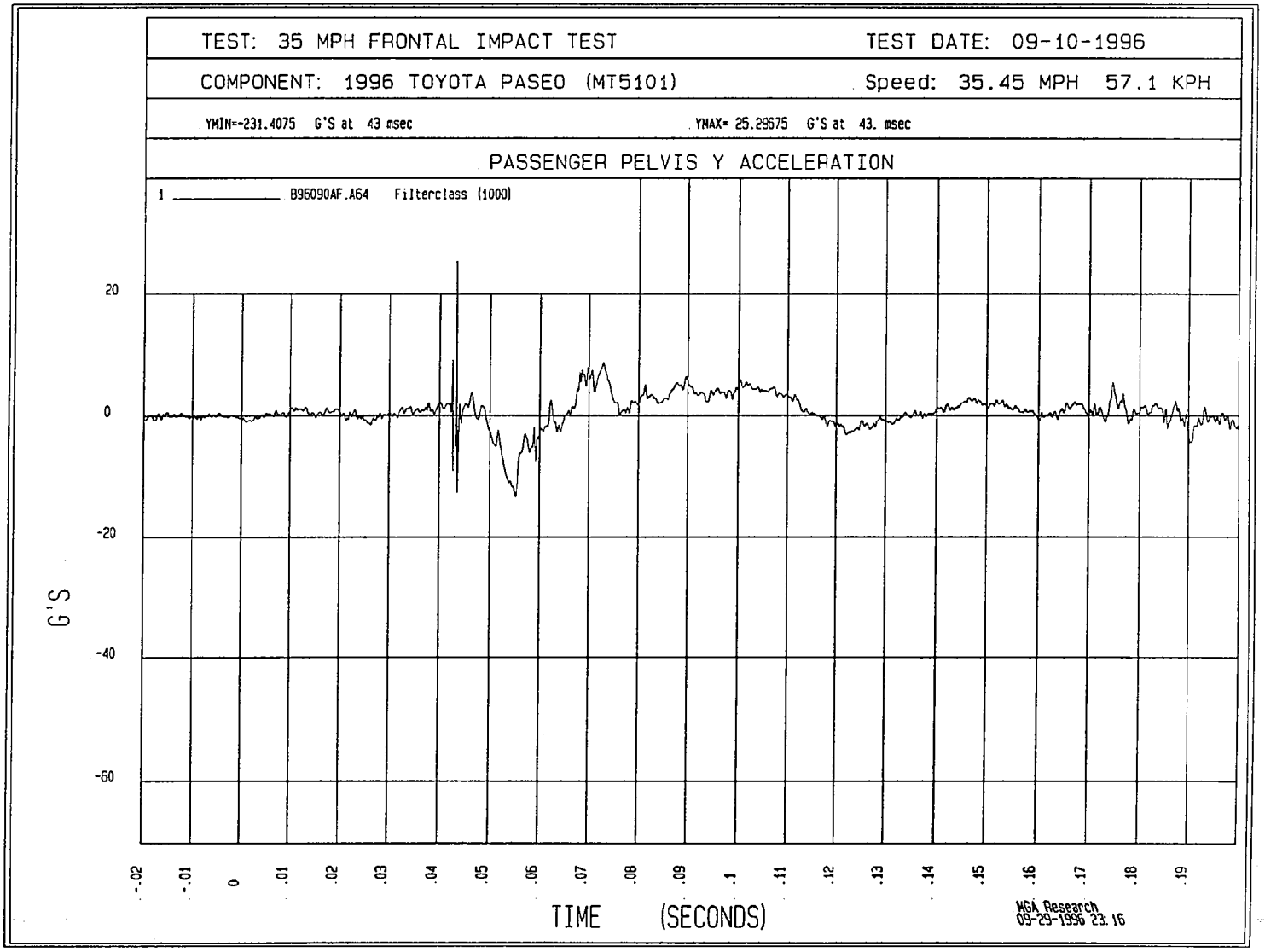
TIME (SECONDS)
MGA Research
09-29-1996 23:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-231.4075 G'S at 43 msec
YMAX= 25.29675 G'S at 43. msec
PASSENGER PELVIS Y ACCELERATION
1 B96090AF.A64 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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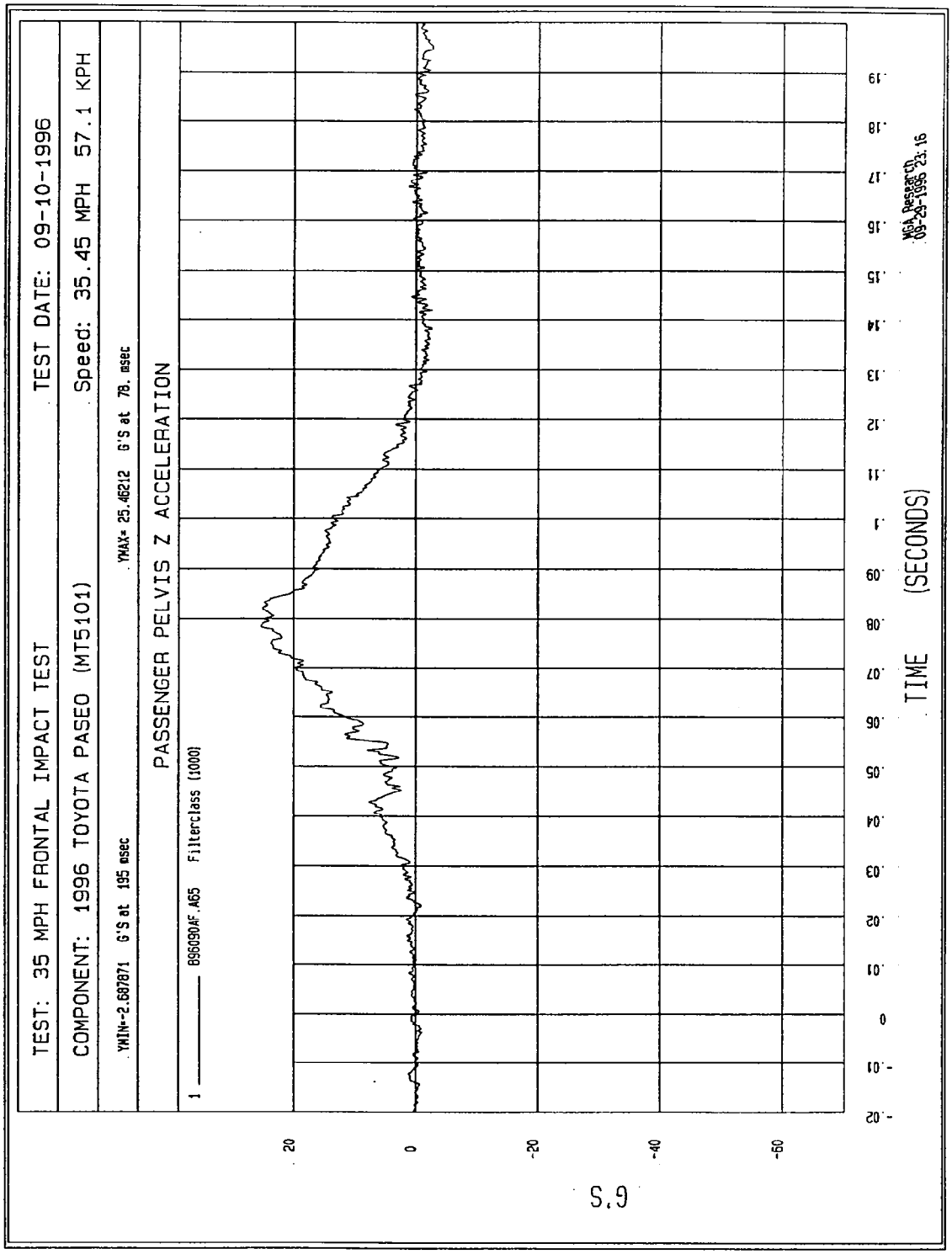
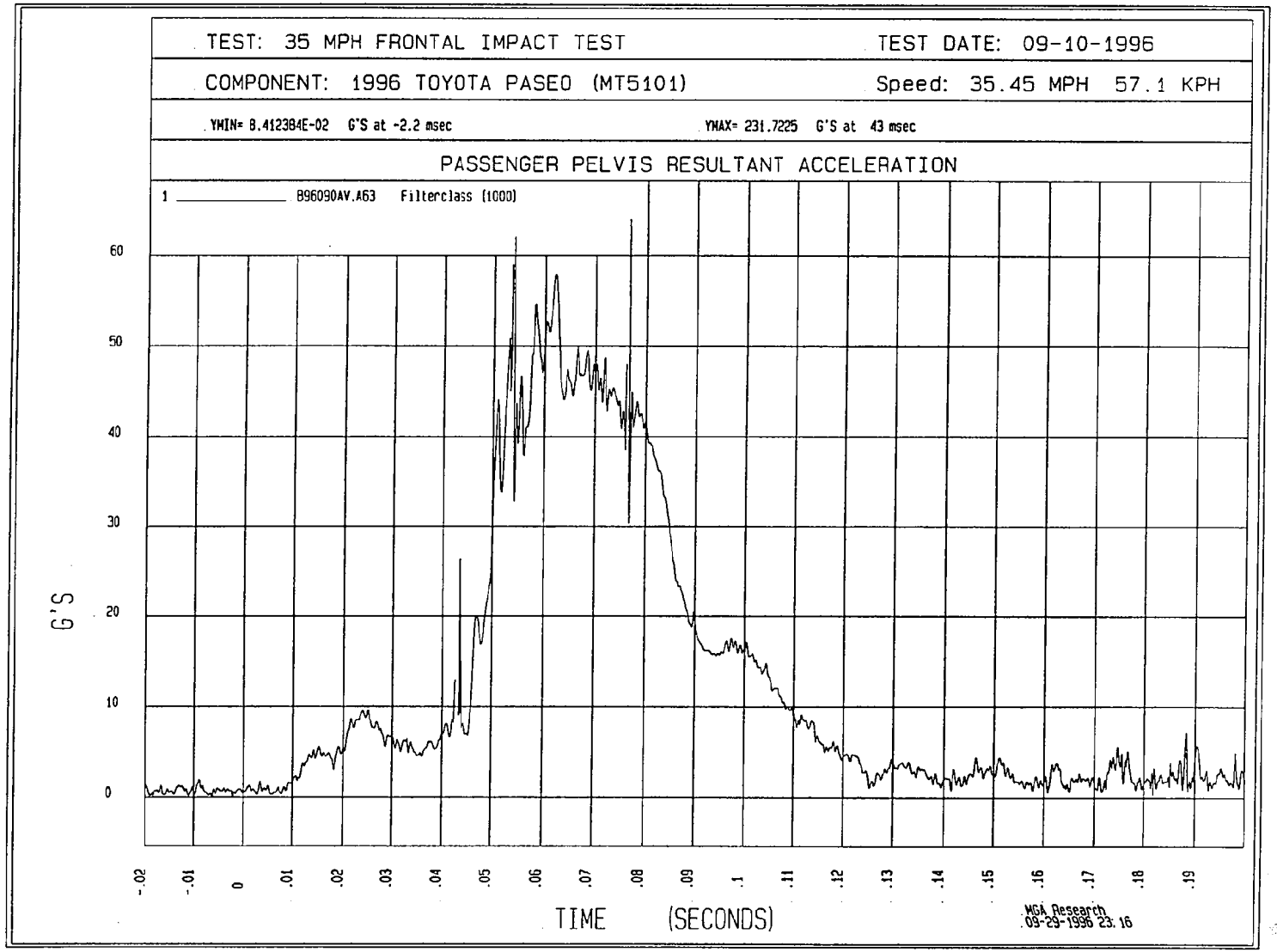
TIME (SECONDS)
MGA Research
09-29-1996 23:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-2.687871 G'S at 195 msec
YMAX= 25.46212 G'S at 78. msec
PASSENGER PELVIS Z ACCELERATION
1 ——— 896090AF.A65 Filterclass (1000)
20
0
-20
-40
-60
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
09-29-1996 23:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 8.412384E-02 G'S at -2.2 msec
YMAX= 231.7225 G'S at 43 msec
PASSENGER PELVIS RESULTANT ACCELERATION
1 B96090AV.A63 Filterclass (1000)
G'S
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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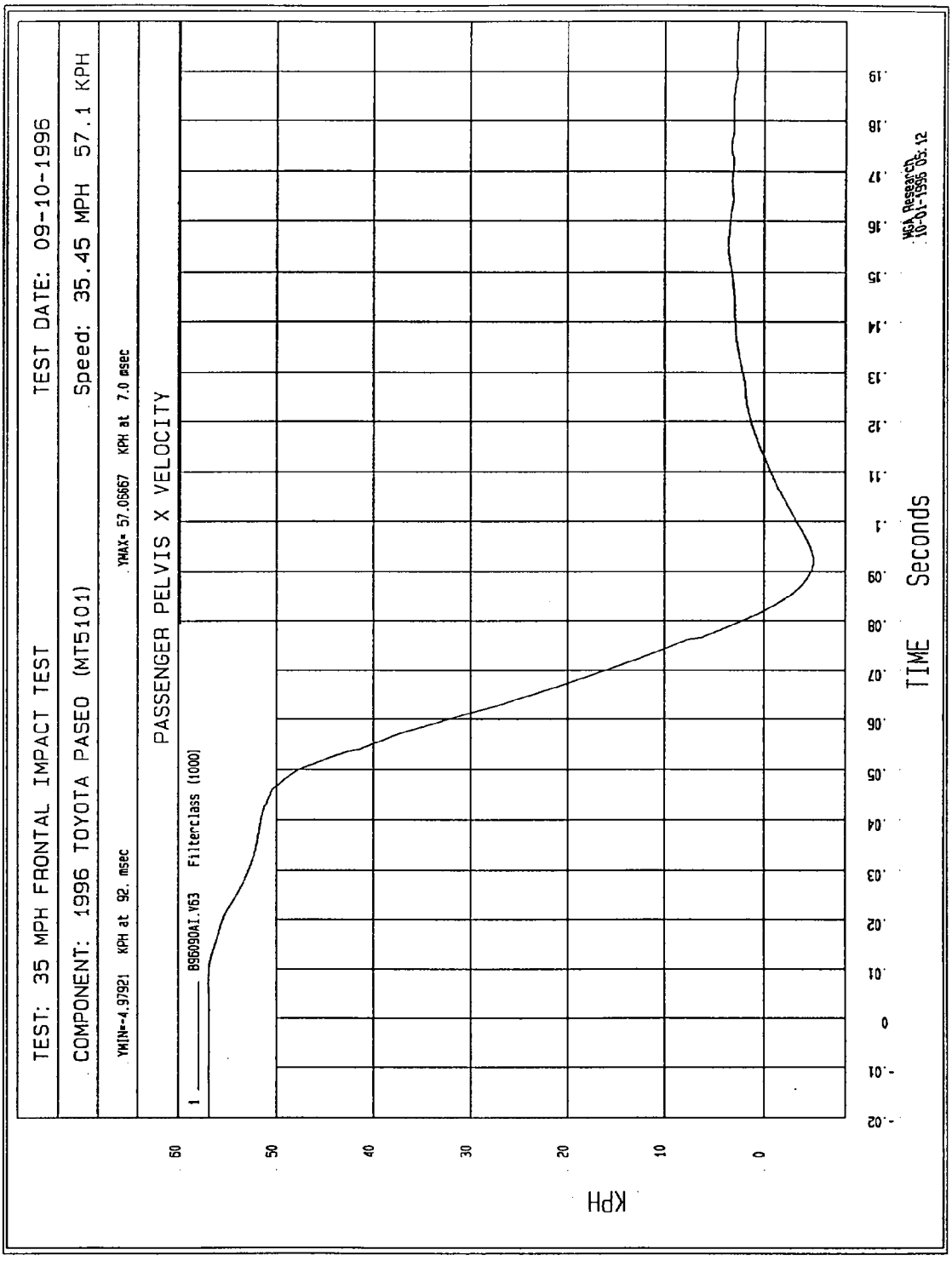
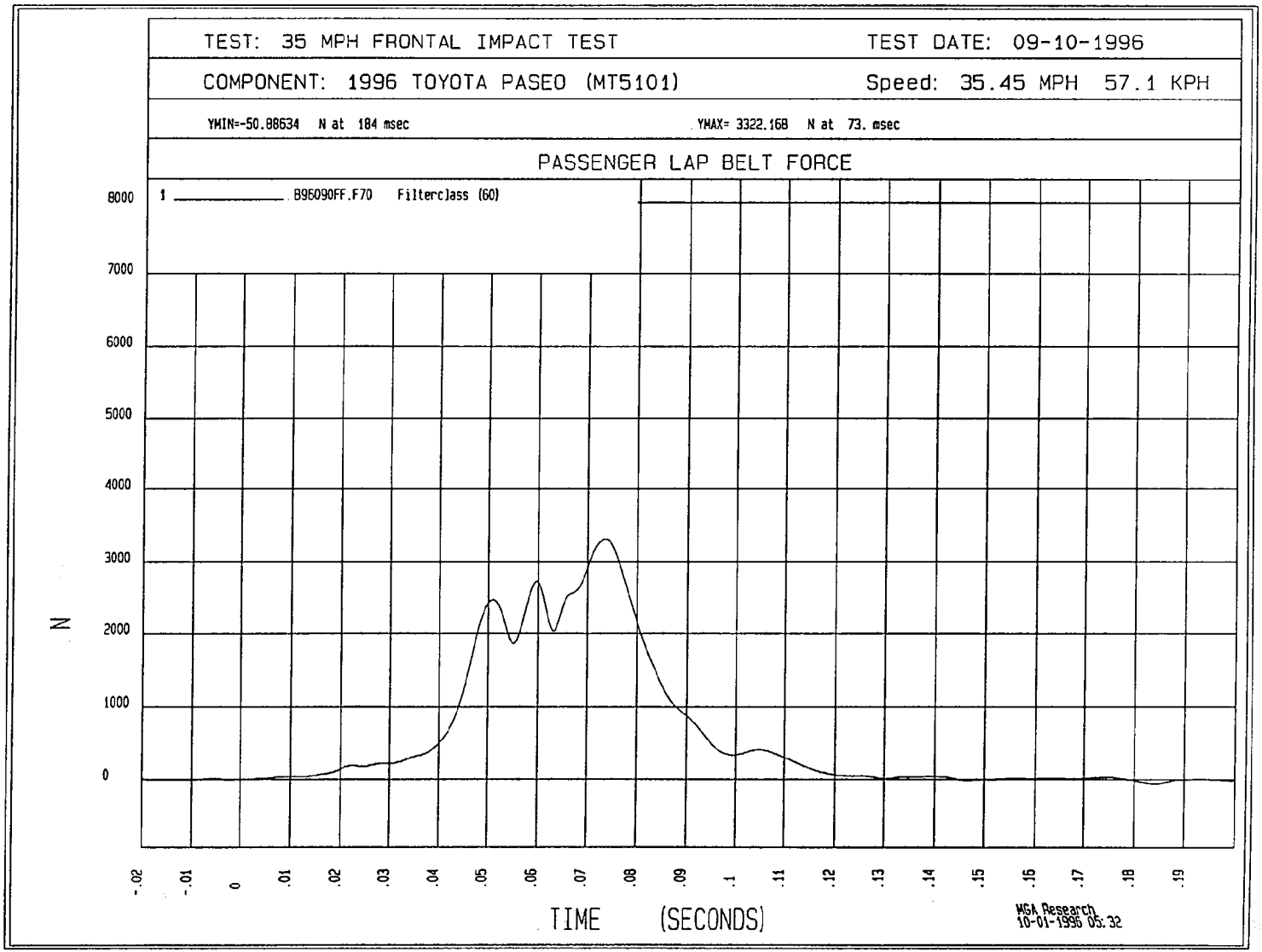
TIME (SECONDS)
MGA Research
09-29-1996 23:16


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-4.97921 KPH at 92. msec
YMAX= 57.05667 KPH at 7.0 msec
PASSENGER PELVIS X VELOCITY
1 B96090AI.Y63 Filterclass (1000)
KPH
TIME Seconds
MGA Research
10-01-1996 05:12


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-50.88634 N at 184 msec
YMAX= 3322.168 N at 73. msec
PASSENGER LAP BELT FORCE
1 B96090FF.F70 Filterclass (60)
8000
7000
6000
5000
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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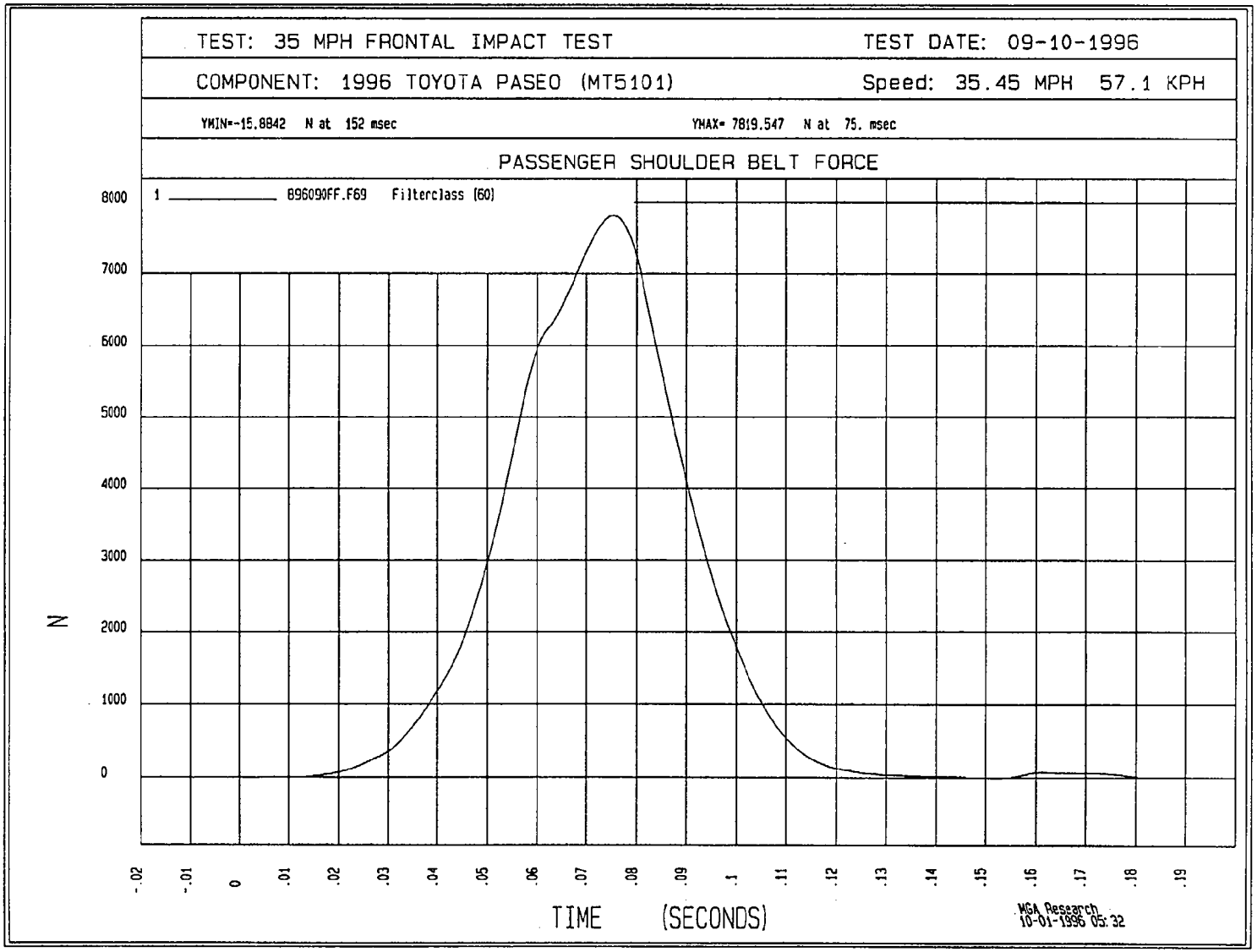
.19
TIME (SECONDS)
MGA Research
10-01-1996 05:32


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-15.8842 N at 152 msec
YMAX= 7819.547 N at 75. msec
PASSENGER SHOULDER BELT FORCE
1 B96090FF.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
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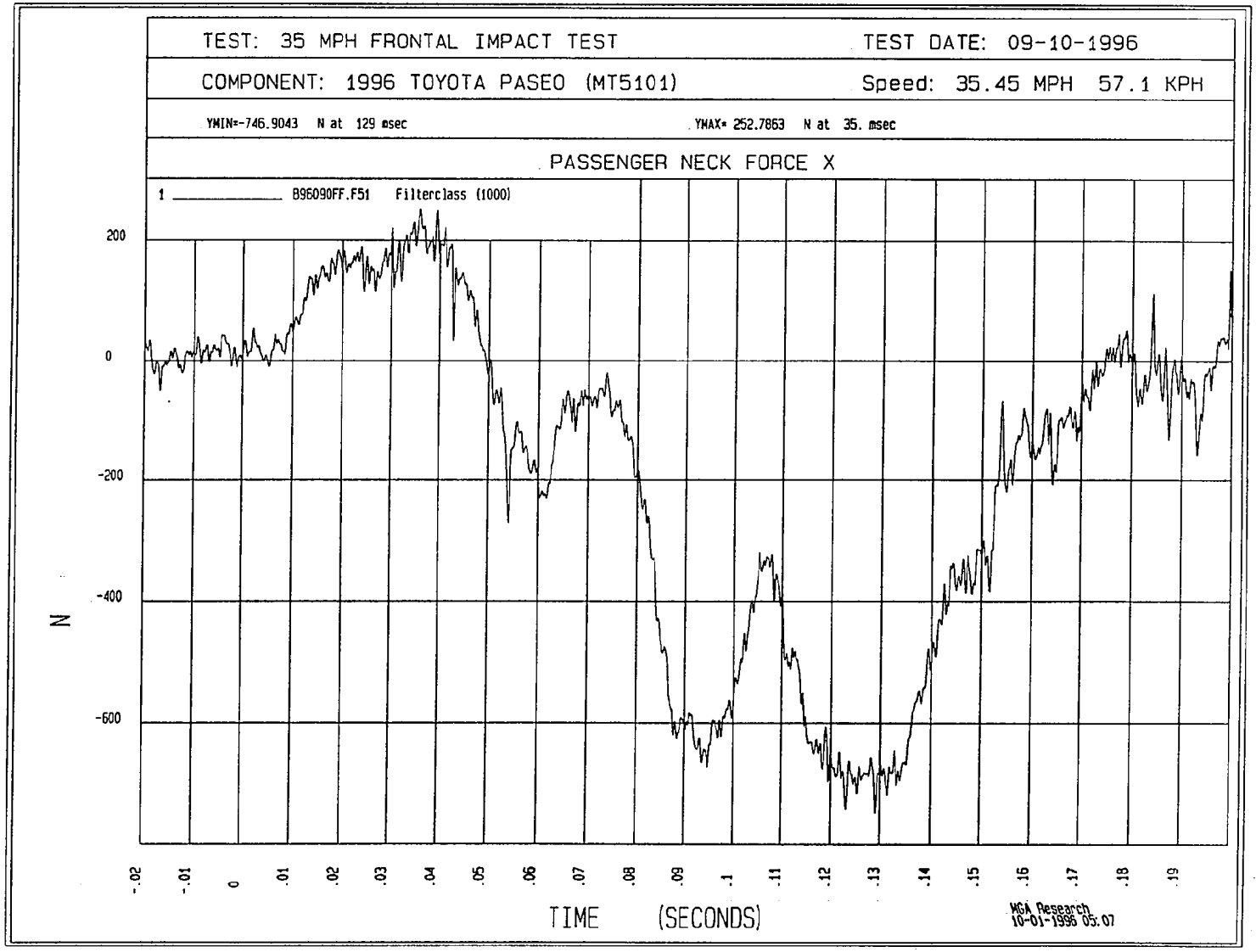
TIME (SECONDS)
MGA Research
10-01-1996 05:32


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-746.9043 N at 129 msec
YMAX= 252.7863 N at 35. msec
PASSENGER NECK FORCE X
1 B96090FF.F51 Filterclass (1000)
200
0
-200
-400
-600
N
-.02
-.01
0
.01
.02
.03
.04
.05
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.09
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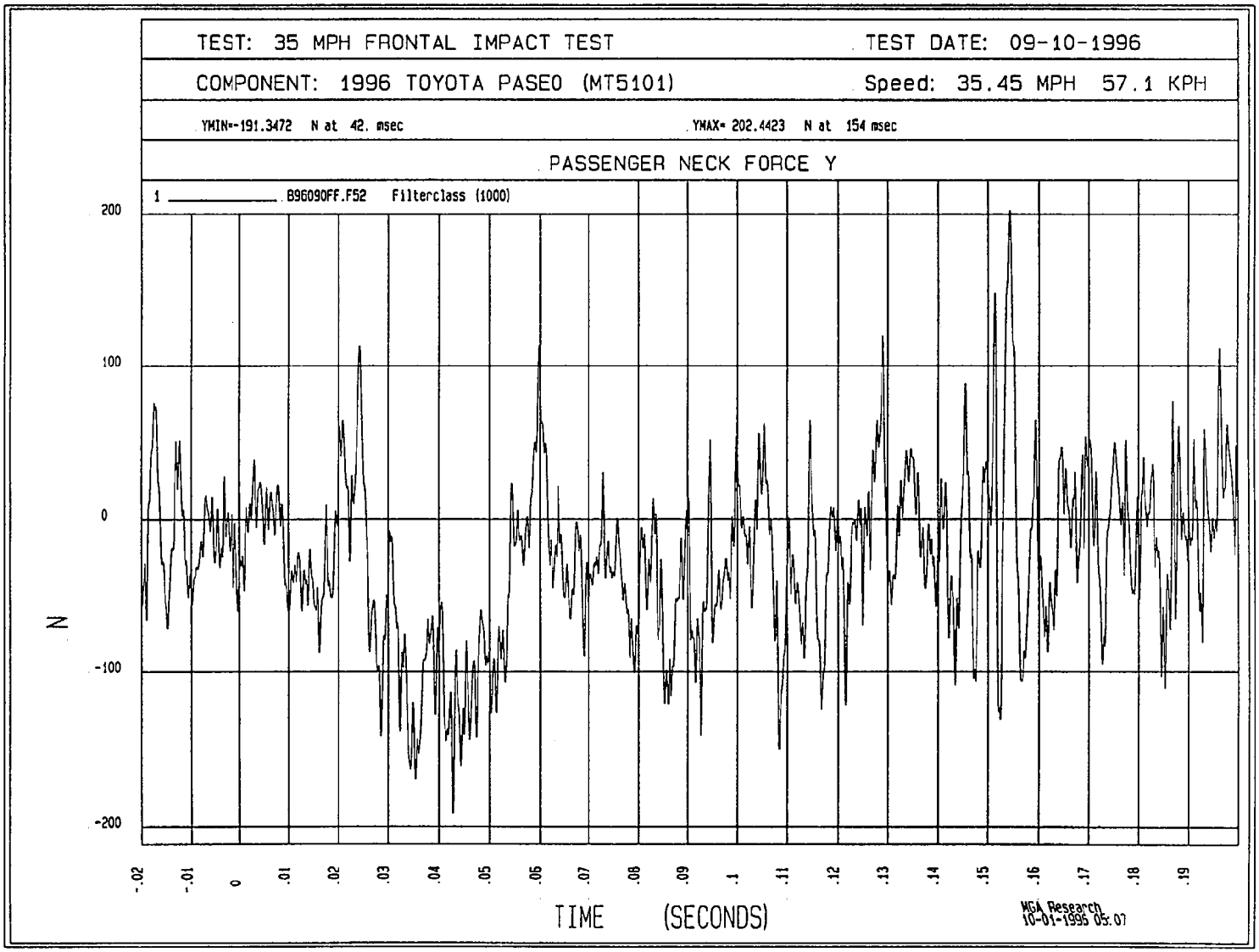
TIME (SECONDS)
MGA Research
10-01-1996 05:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-191.3472 N at 42. msec
YMAX= 202.4423 N at 154 msec
PASSENGER NECK FORCE Y
1 B96090FF.F52 Filterclass (1000)
200
100
0
-100
-200
N
-.02
-.01
0
.01
.02
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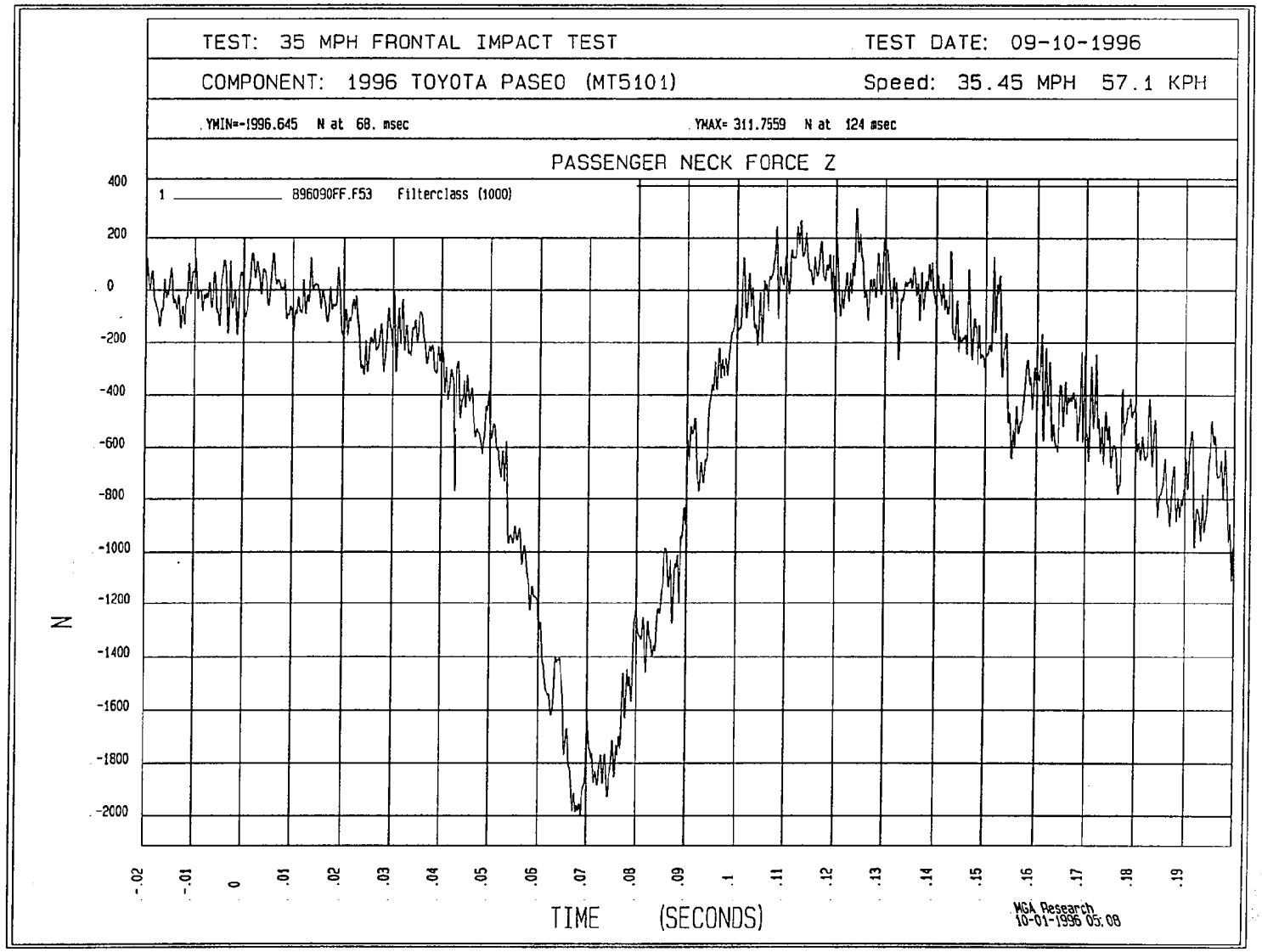
TIME (SECONDS)
MGA Research
10-01-1996 05:07


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-1996.645 N at 68. msec
YMAX= 311.7559 N at 124 msec
PASSENGER NECK FORCE Z
1 896090FF.F53 Filterclass (1000)
400
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
N
-.02
-.01
0
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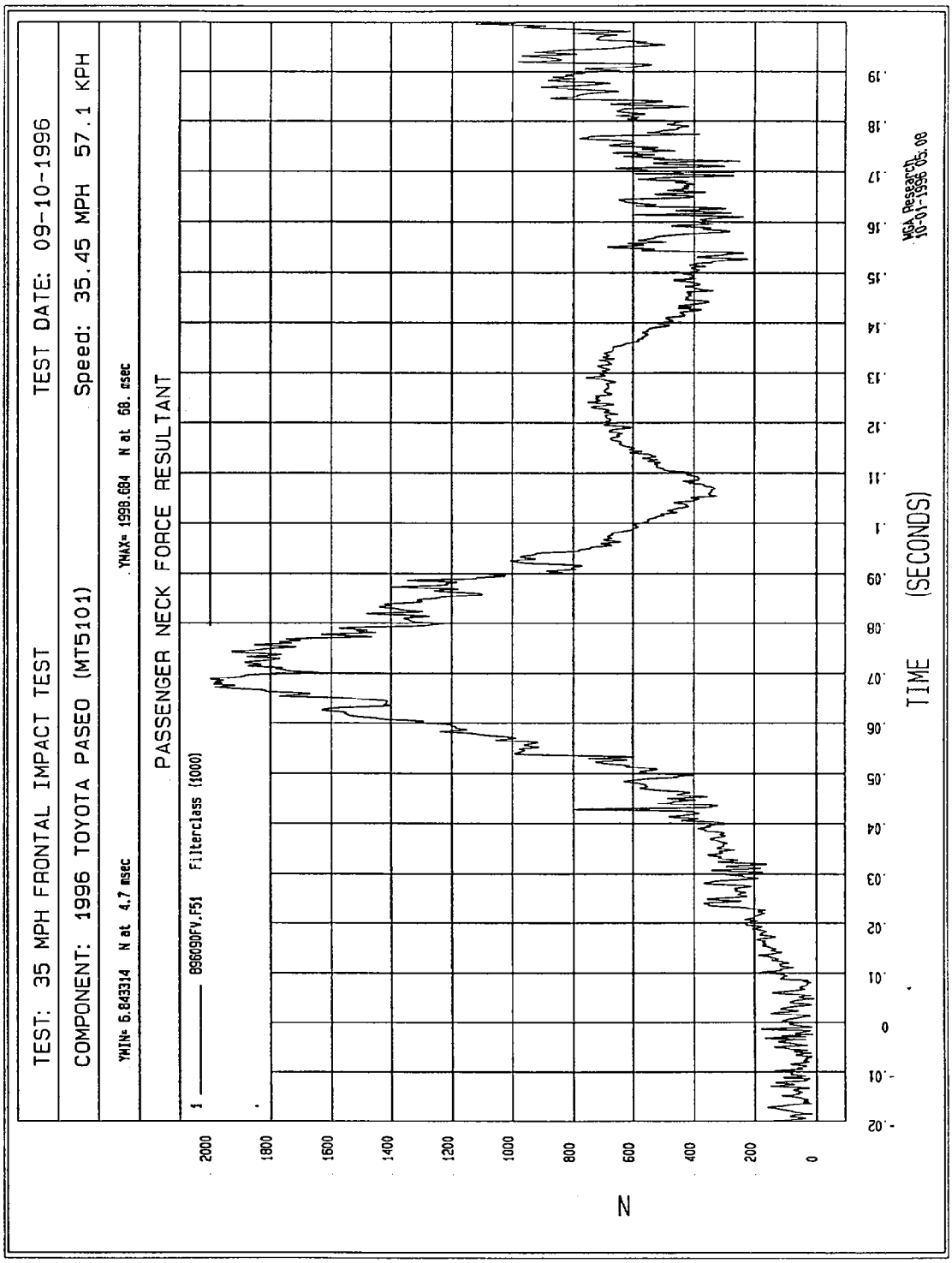
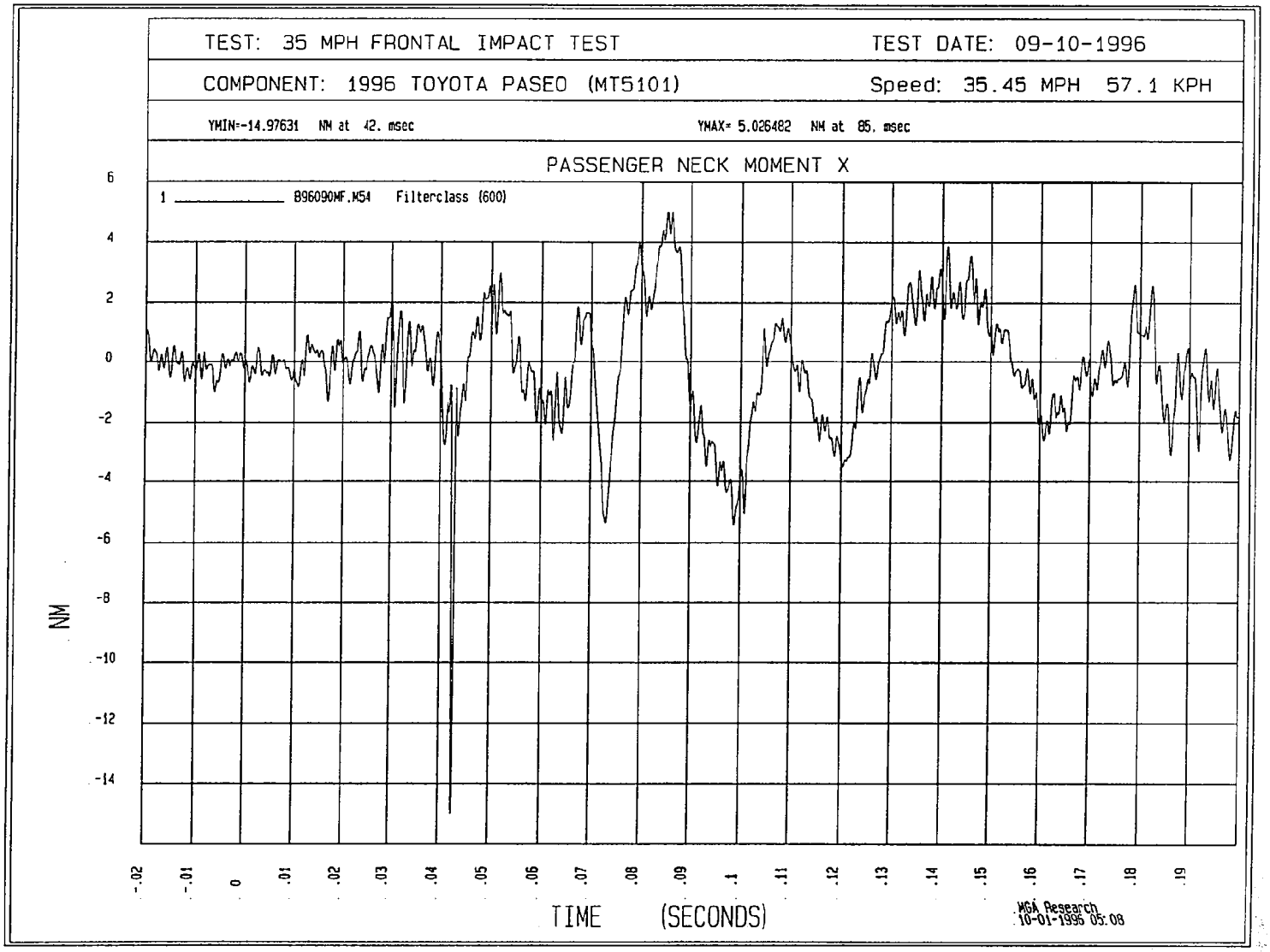
TIME (SECONDS)
MGA Research
10-01-1996 05:08


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 6.843314 N at 4.7 msec
YMAX= 1998.684 N at 68. msec
PASSENGER NECK FORCE RESULTANT
1 _____ 896090FV.F51 Filterclass (1000)
N
TIME (SECONDS)
MGA Research
10-01-1996 05:08


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-14.97631 NM at 42. msec
YMAX= 5.026482 NM at 85. msec
PASSENGER NECK MOMENT X
1 896090MF.M54 Filterclass (600)
NM
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-.02
-.01
0
.01
.02
.03
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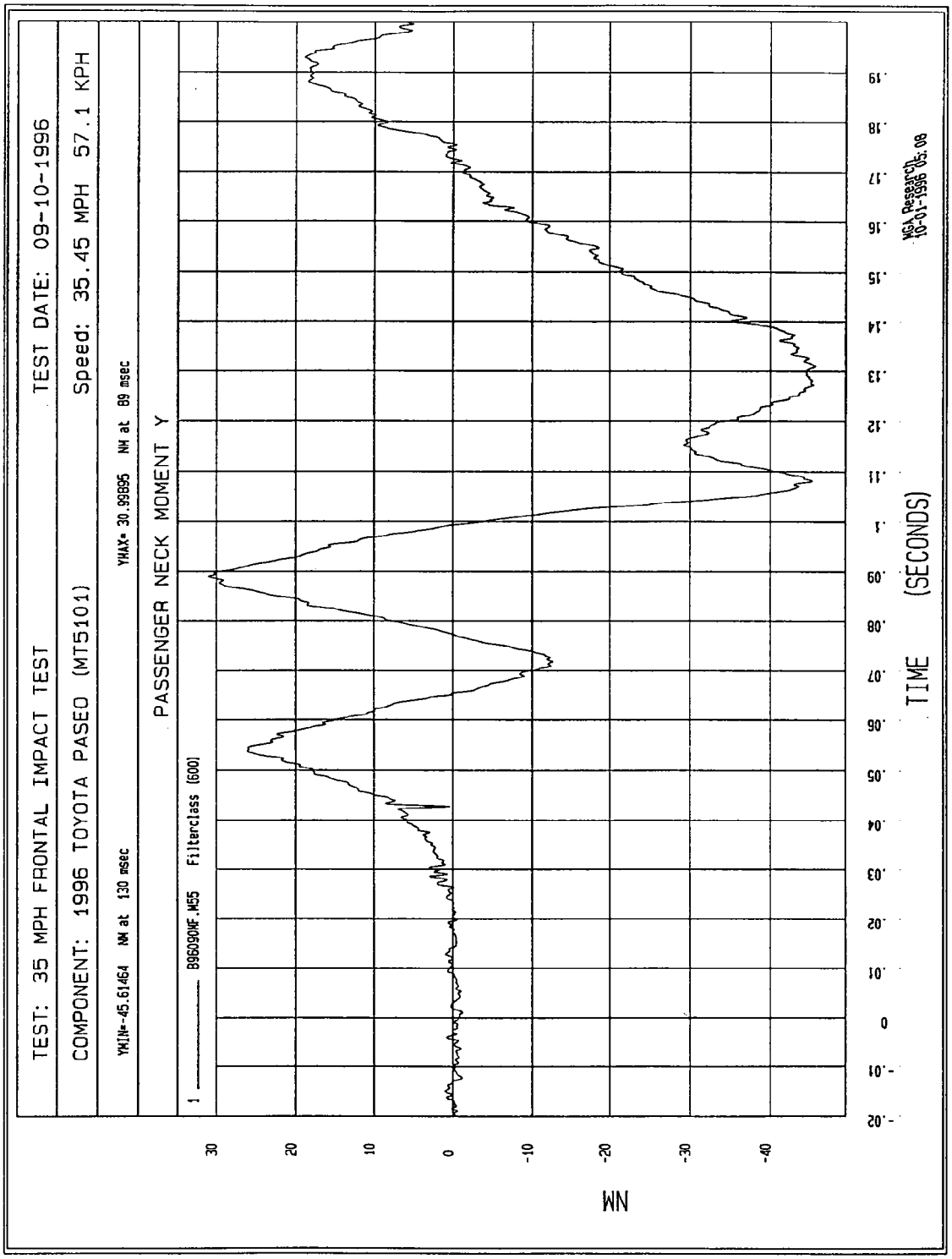
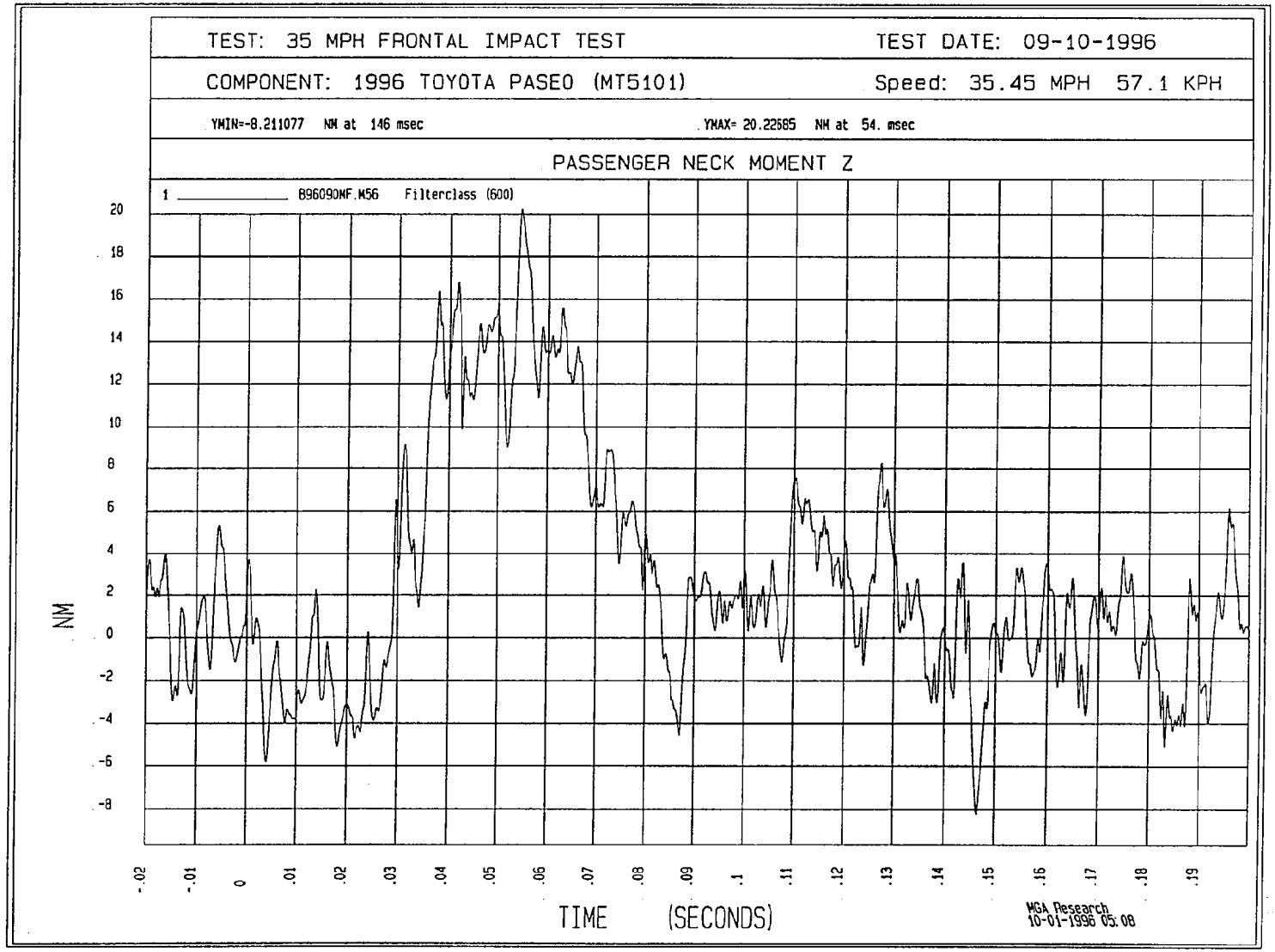
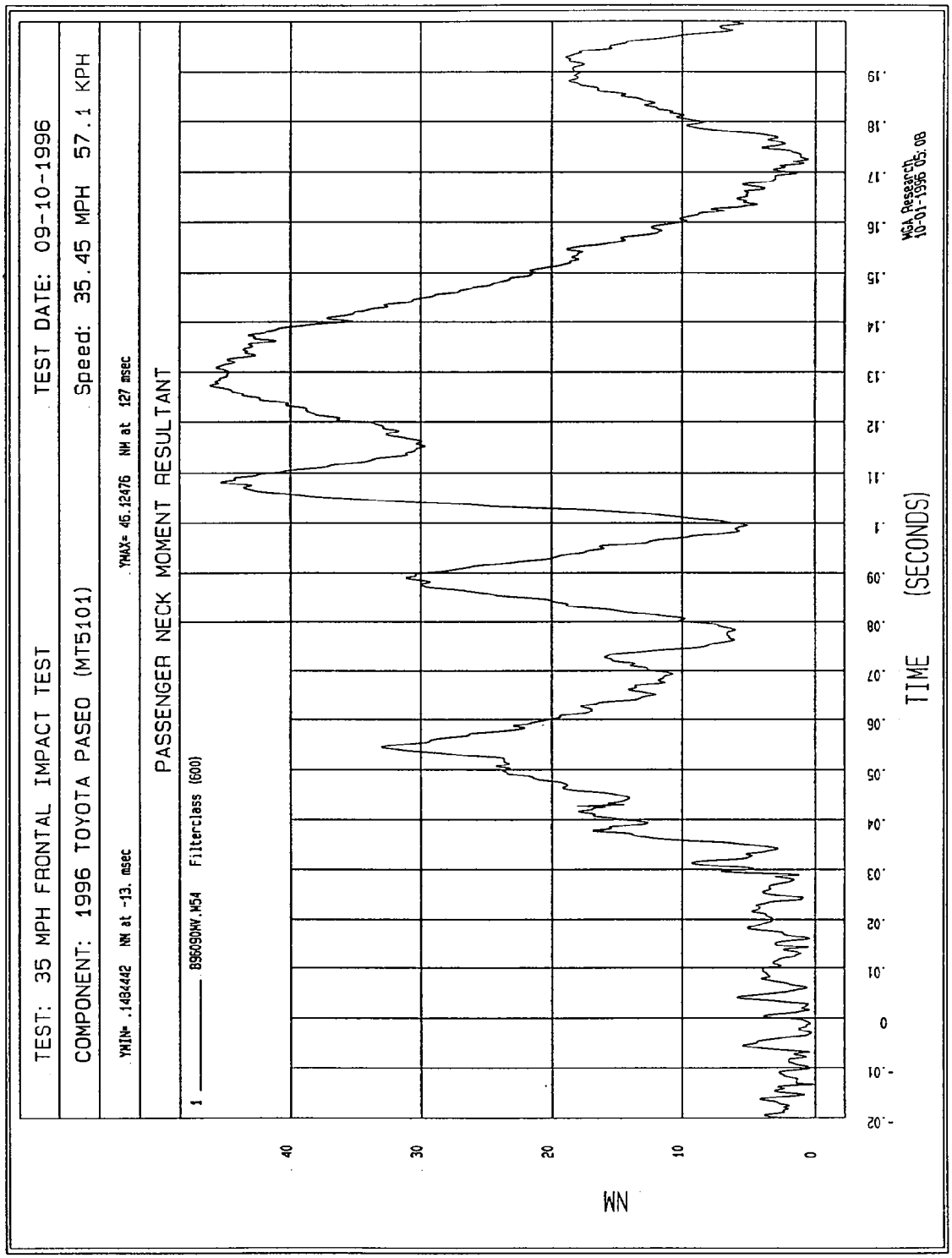
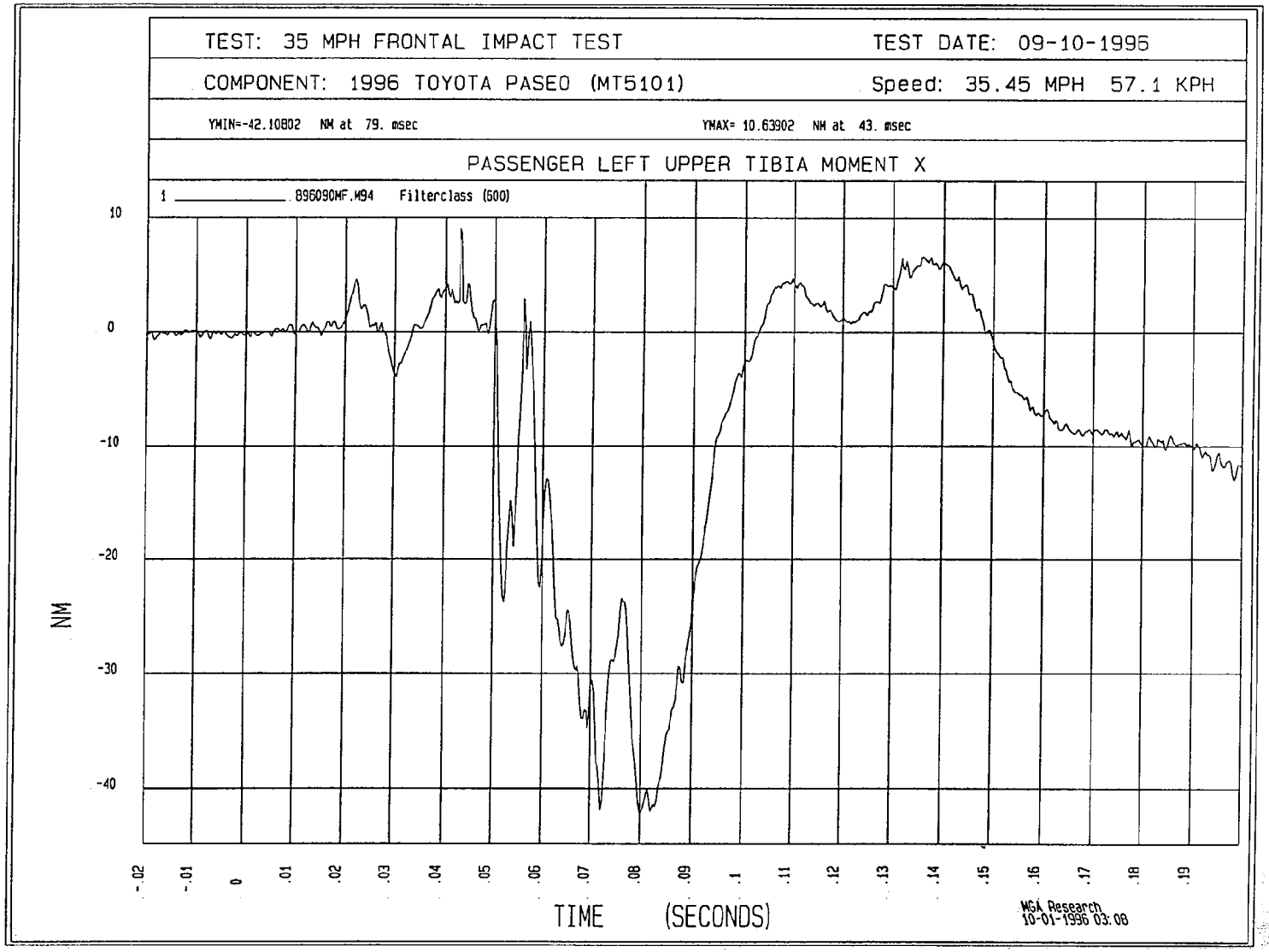
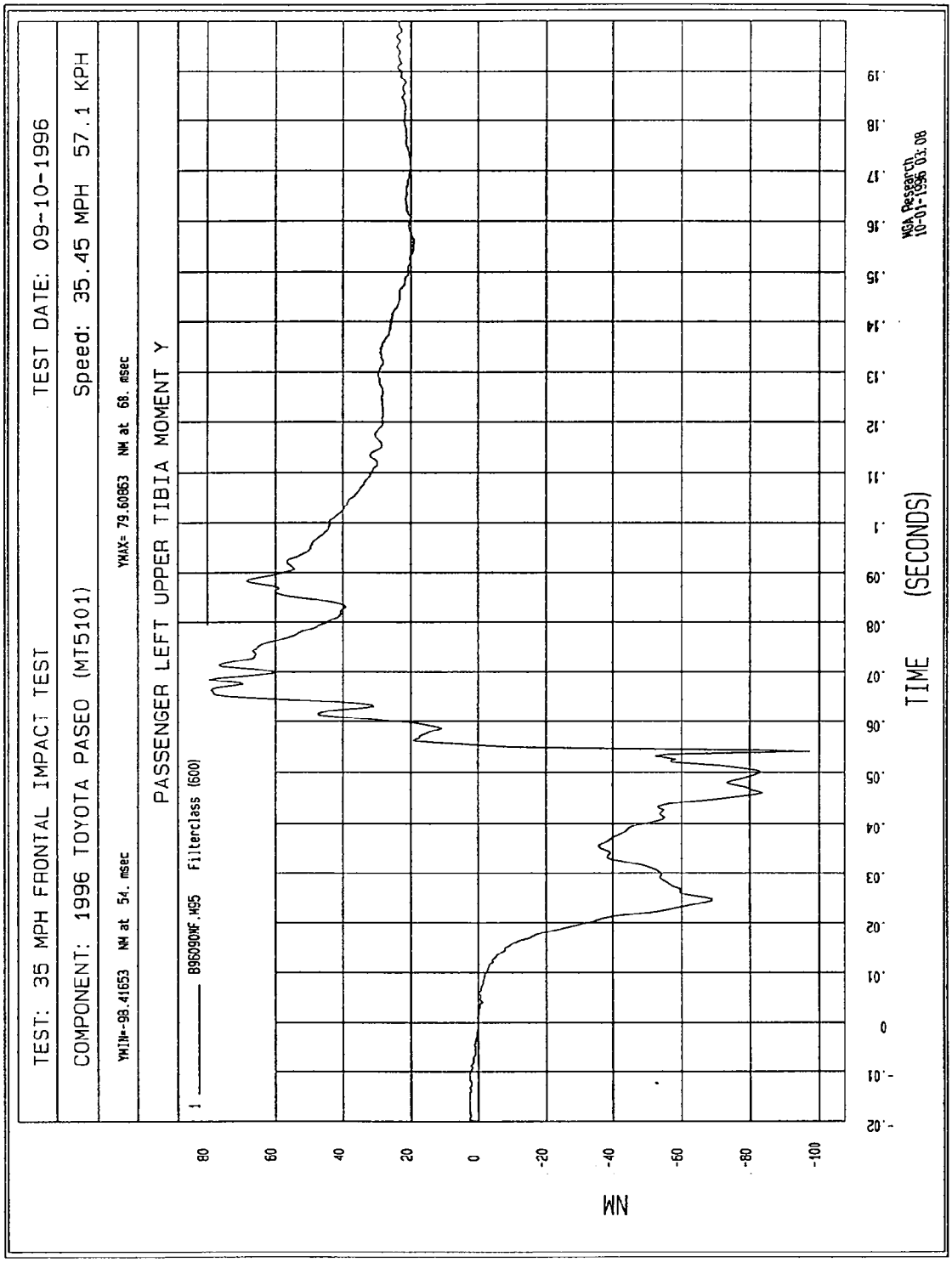
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 05:08

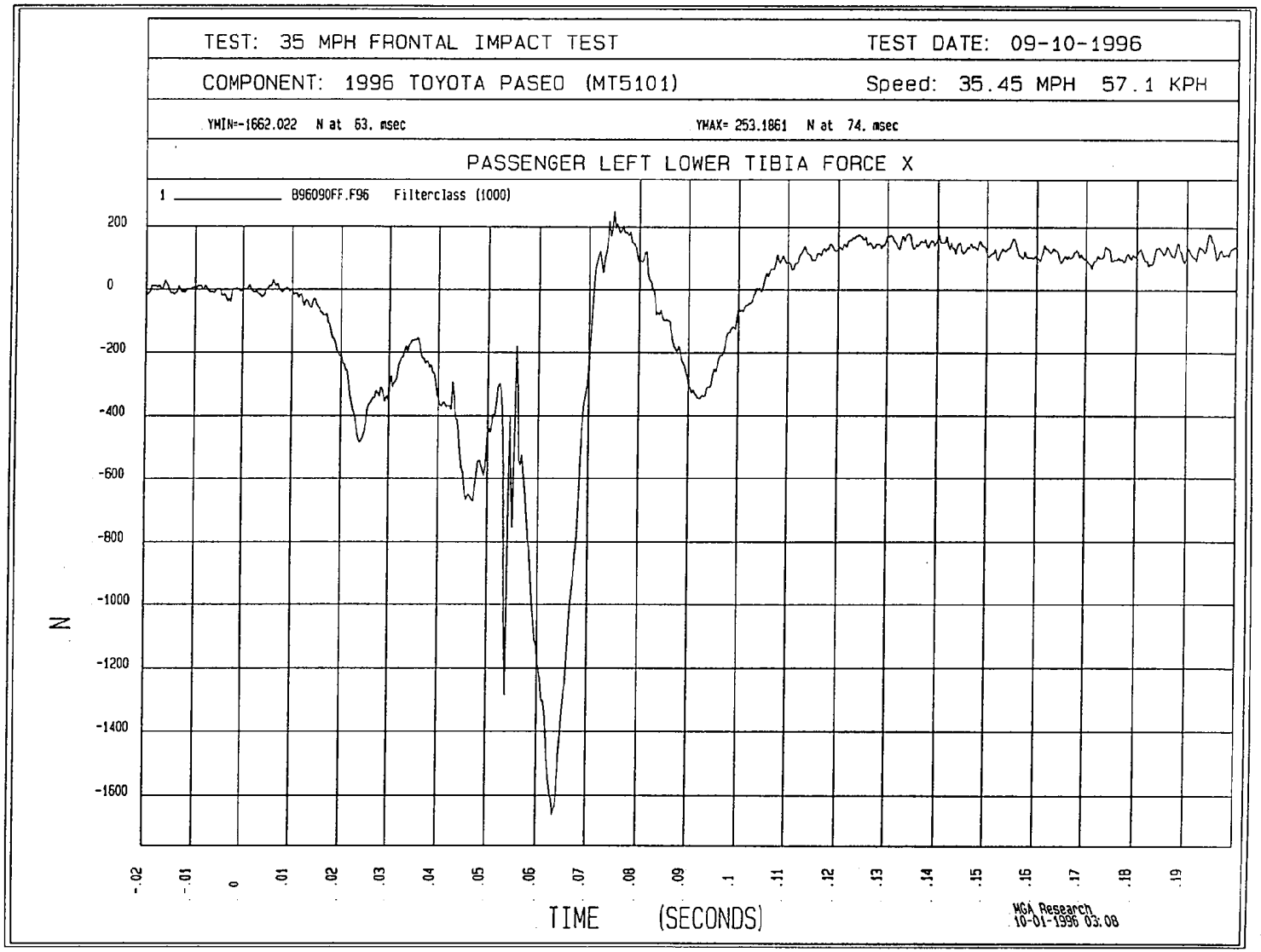

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-45.61464 NM at 130 msec
YMAX= 30.99895 NM at 89 msec
PASSENGER NECK MOMENT Y
1 B96090NF.M55 Filterclass (600)
NM
TIME (SECONDS)
NGA Research
10-01-1996 05:08

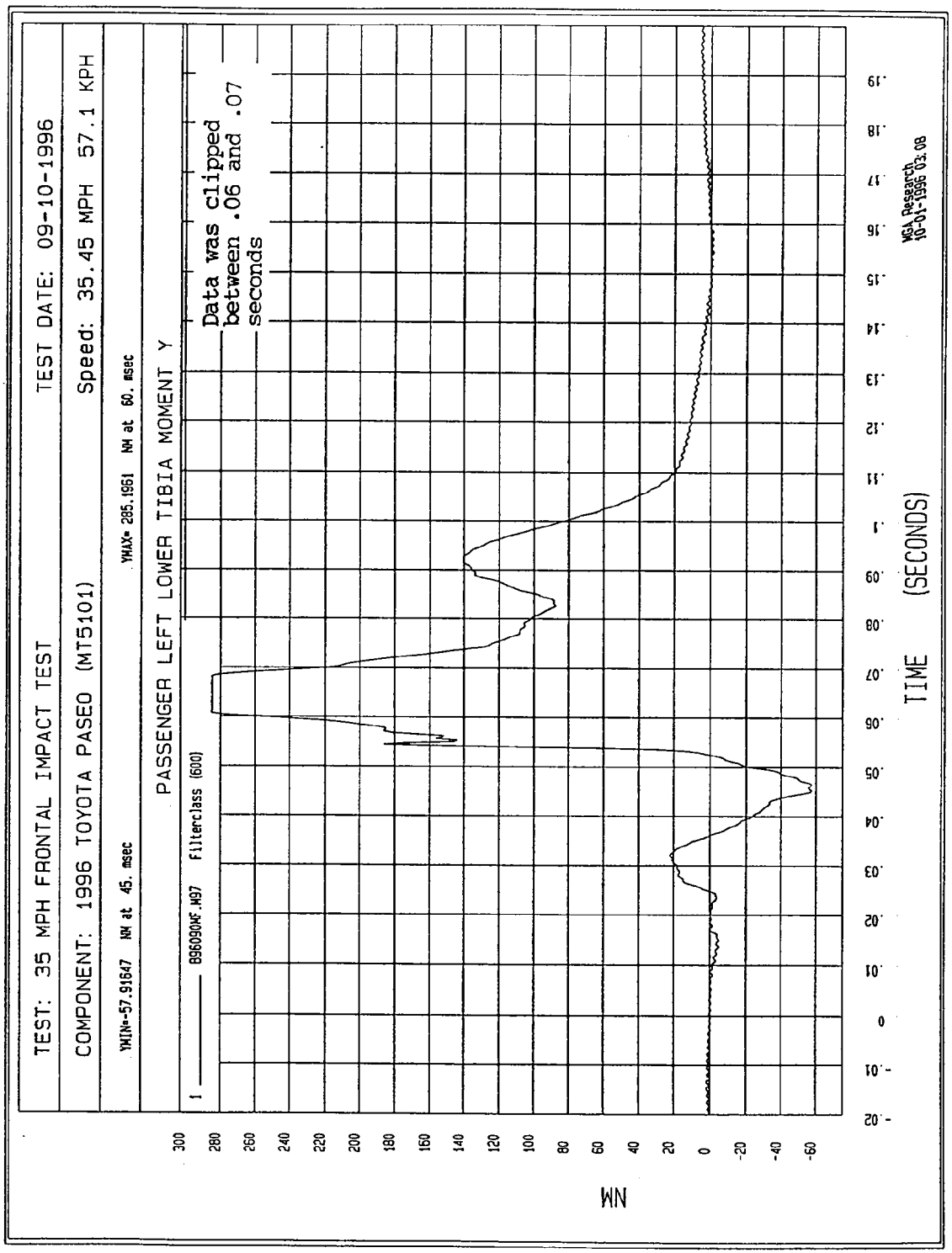

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-8.211077 NM at 146 msec
YMAX= 20.22685 NM at 54. msec
PASSENGER NECK MOMENT Z
1 B96090NF.M56 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
10-01-1996 05:08

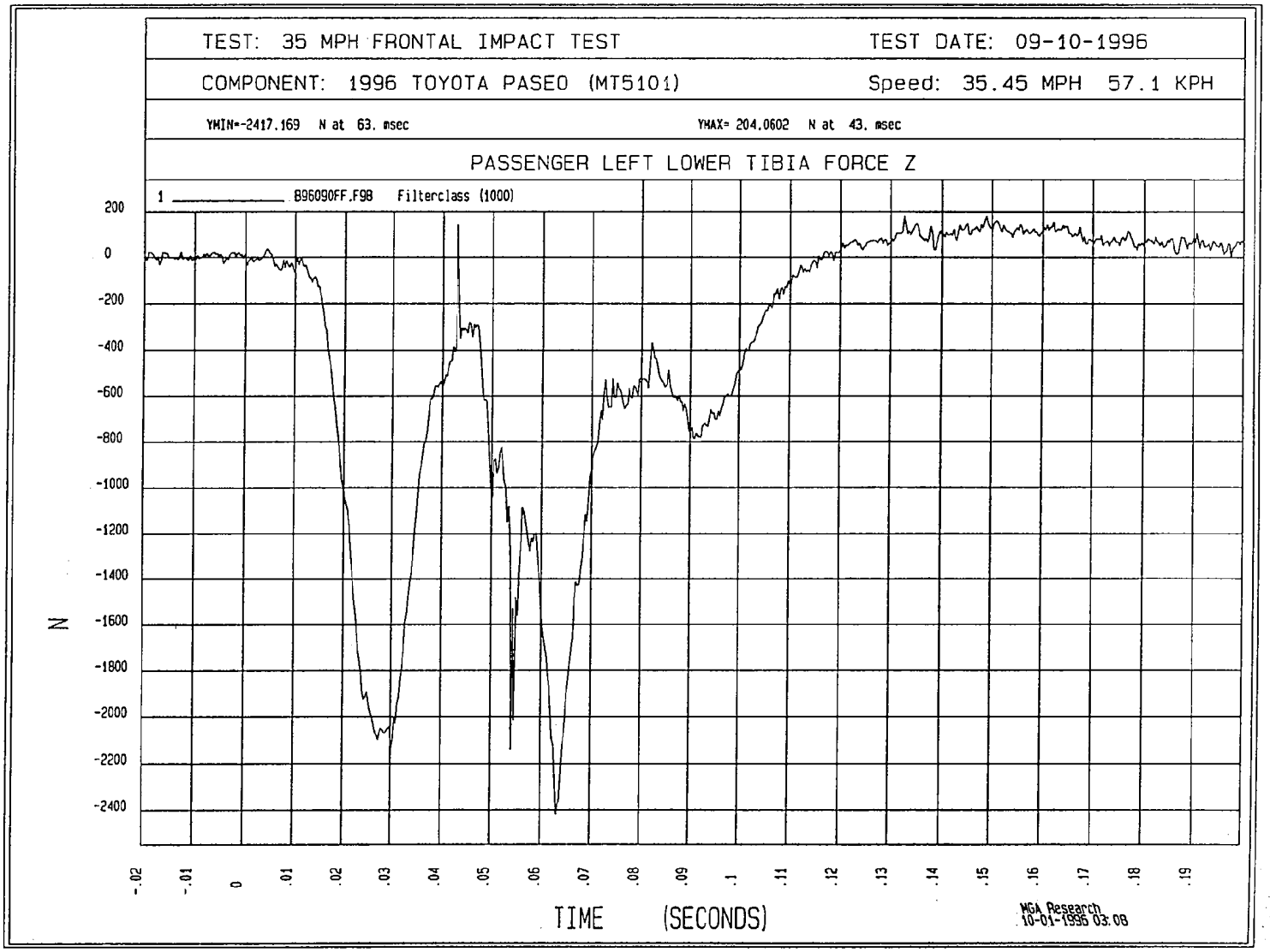

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= .1484442 NM at -13. msec
YMAX= 46.12476 NM at 127 msec
PASSENGER NECK MOMENT RESULTANT
1 ——— 896090NW.M54 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
10-01-1996 05:08

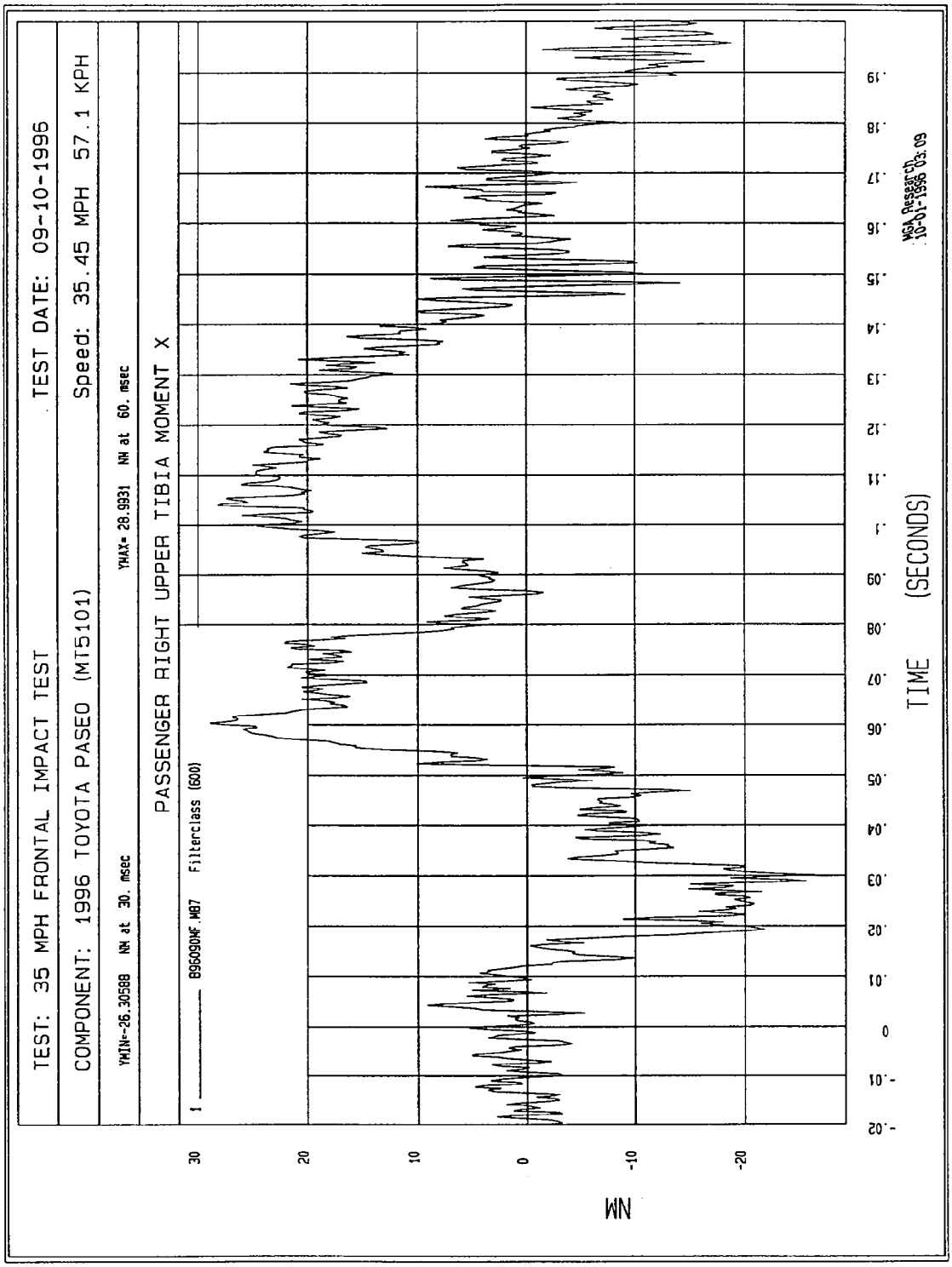

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1995
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-42.10802 NM at 79. msec
YMAX= 10.63902 NM at 43. msec
PASSENGER LEFT UPPER TIBIA MOMENT X
1 _____ .896090MF.M94 Filterclass (600)
10
0
-10
-20
-30
-40
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 03:08

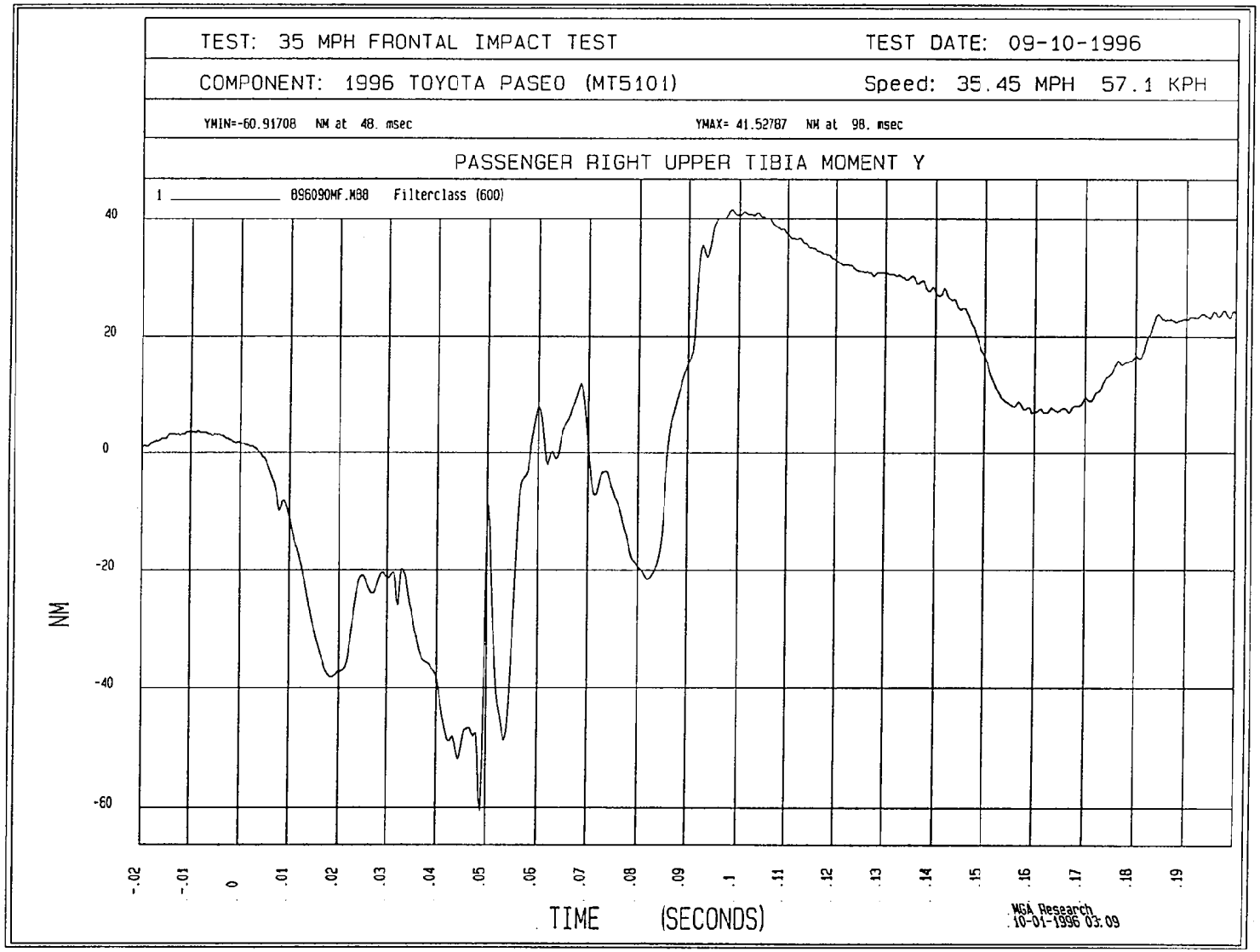

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-93.41653 NM at 54. msec
YMAX= 79.60863 NM at 68. msec
PASSENGER LEFT UPPER TIBIA MOMENT Y
1 B96090WF.M95 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
10-01-1996 03:08

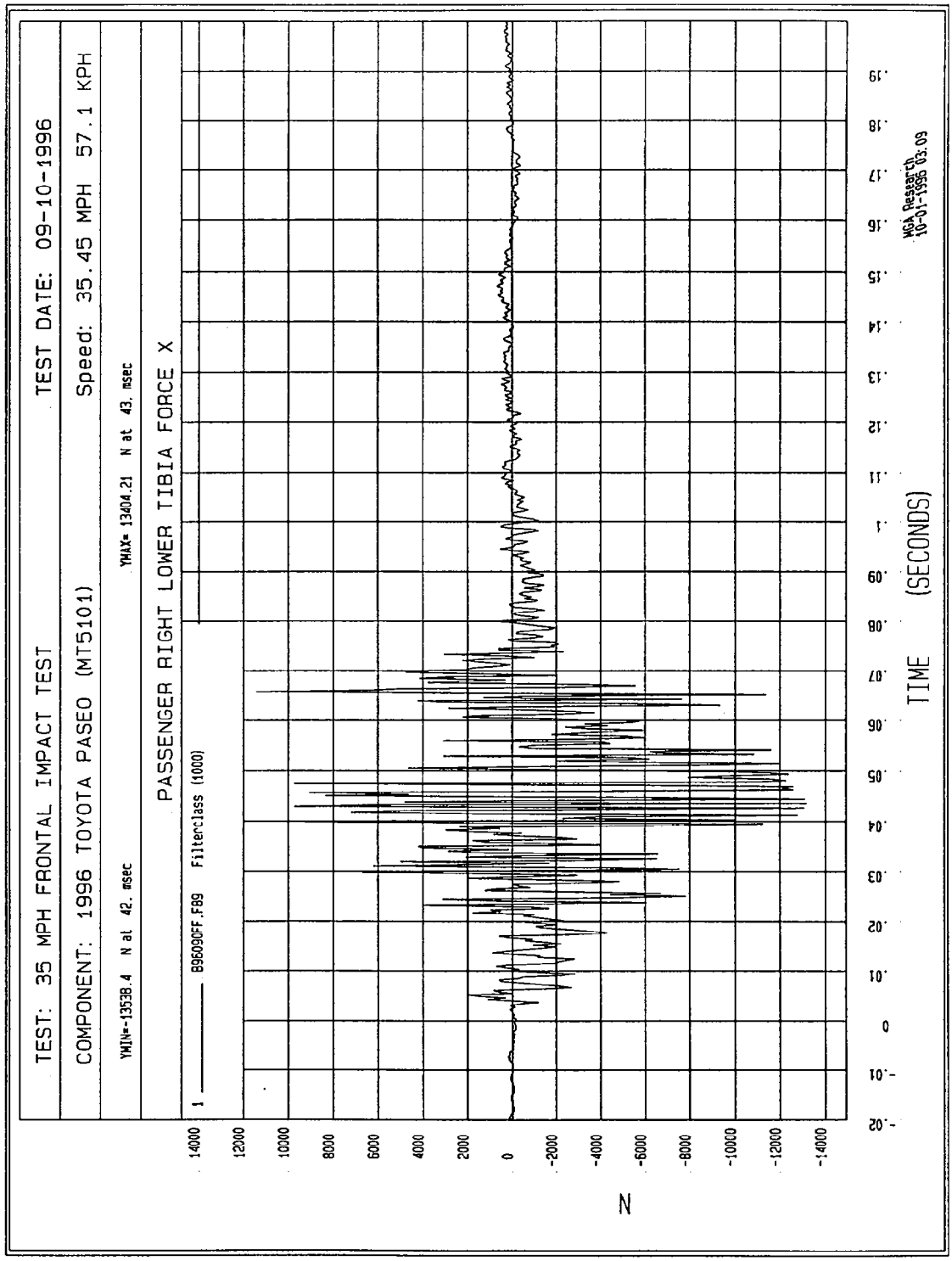

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-1662.022 N at 63. msec
YMAX= 253.1861 N at 74. msec
PASSENGER LEFT LOWER TIBIA FORCE X
1 B96090FF.F96 Filterclass (1000)
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
N
-.02
-.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
10-01-1996 03:08

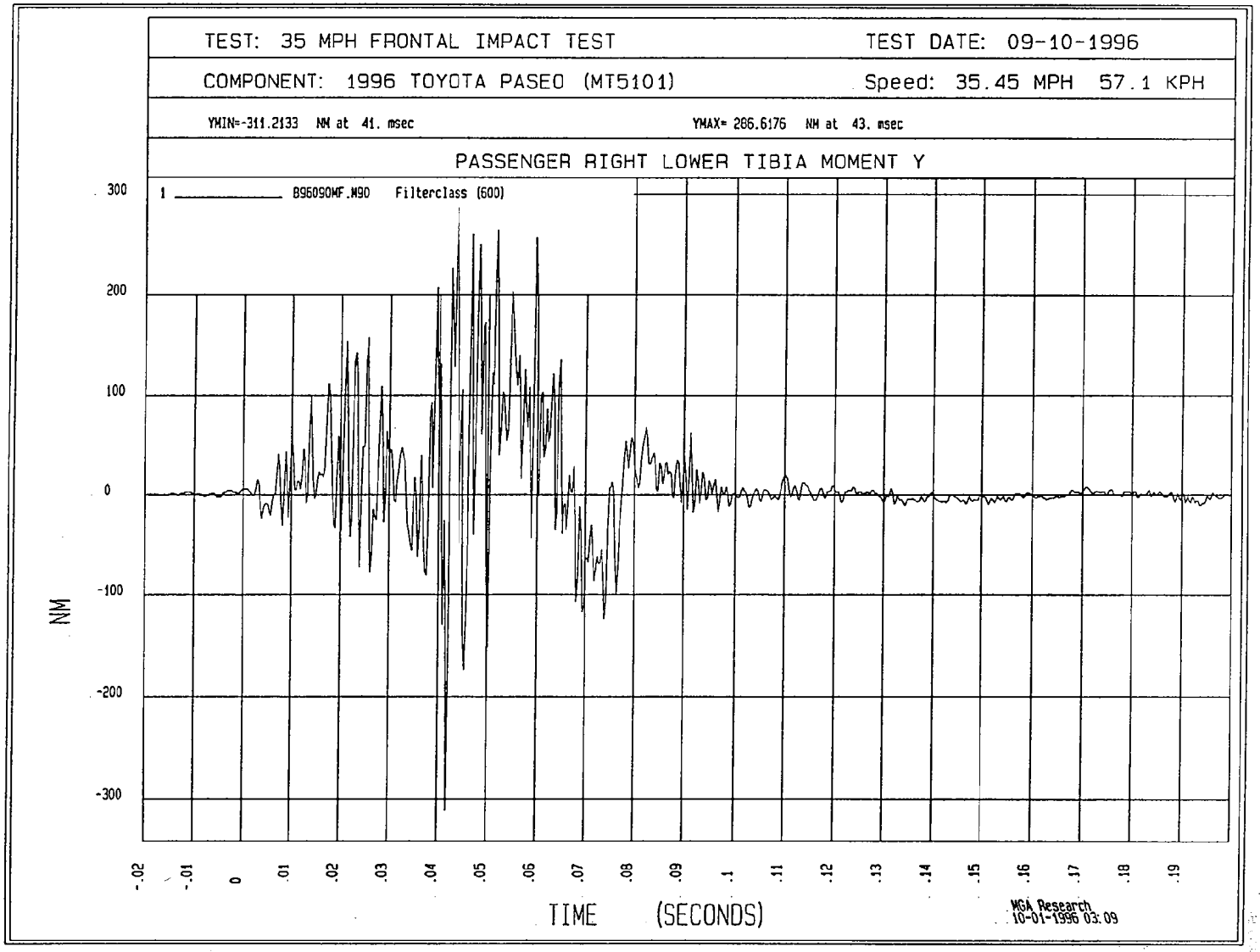

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-57.91647 NM at 45. msec
YMAX= 285.1951 NM at 60. msec
PASSENGER LEFT LOWER TIBIA MOMENT Y
1 B96090MF.M97 Filterclass (600)
Data was clipped between .06 and .07 seconds
NM
TIME (SECONDS)
MGA Research 10-01-1996 03:08

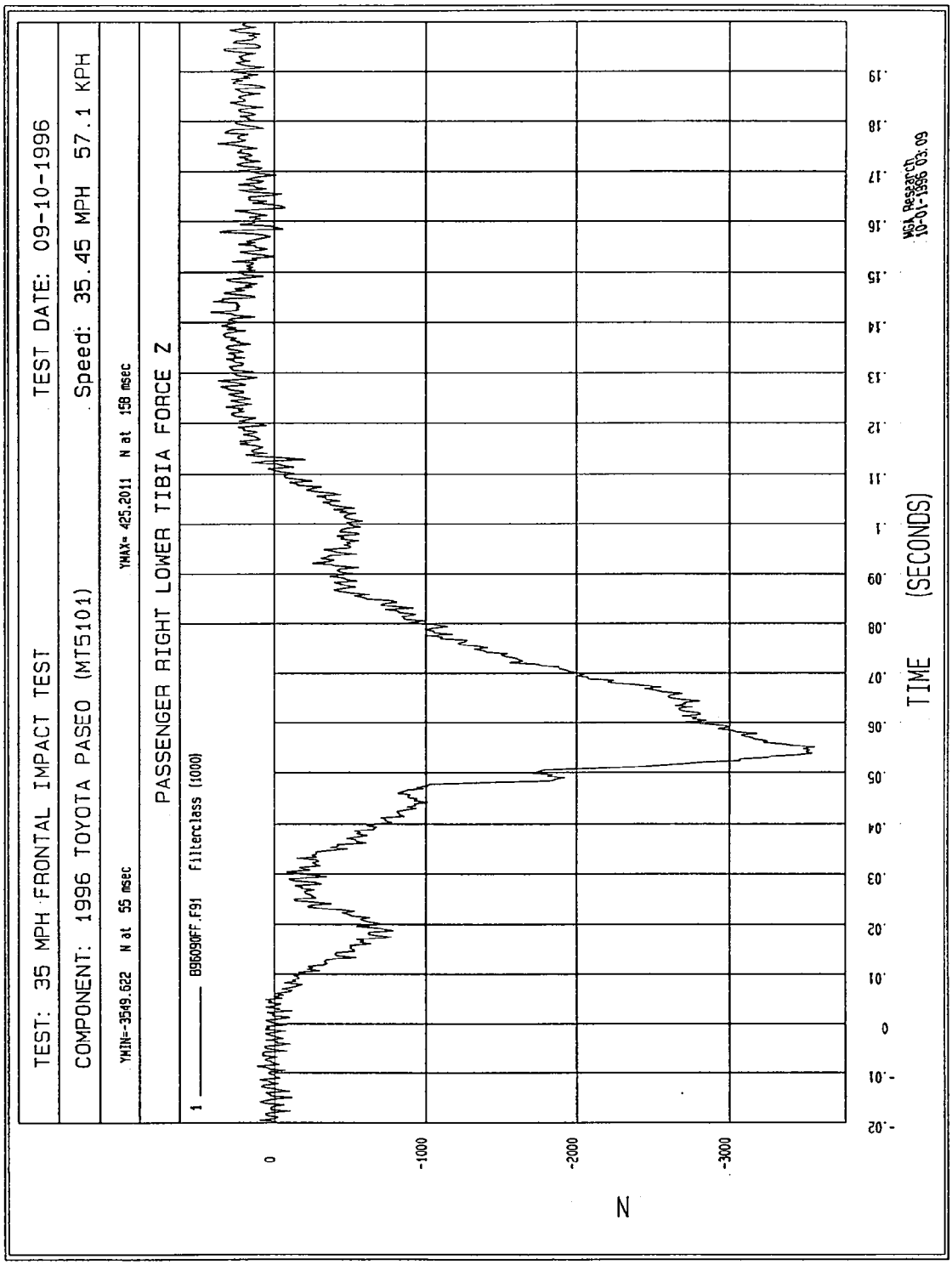

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-2417.169 N at 63. msec
YMAX= 204.0602 N at 43. msec
PASSENGER LEFT LOWER TIBIA FORCE Z
1 B96090FF.F98 Filterclass (1000)
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
-2200
-2400
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
10-01-1996 03:08

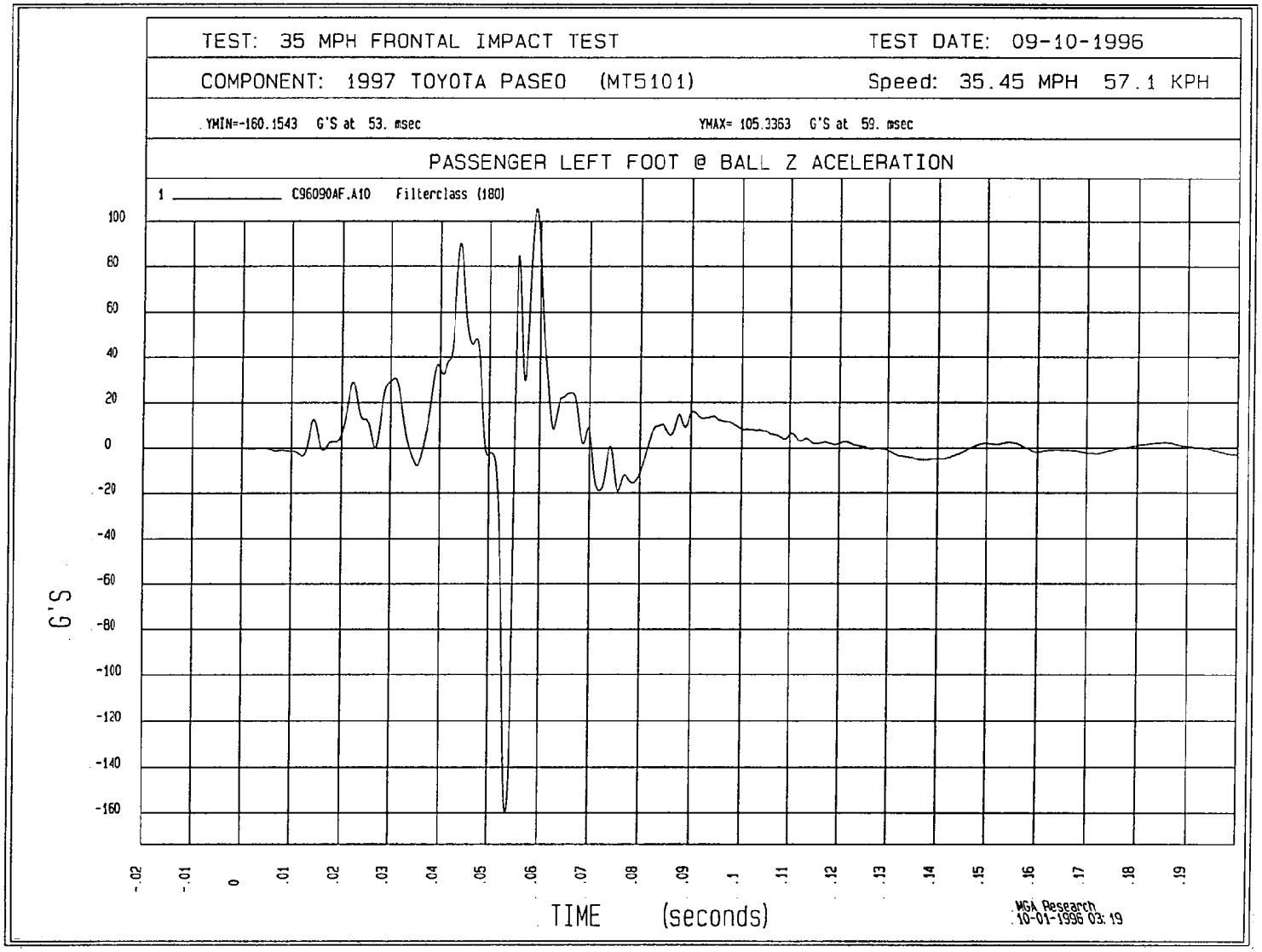

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-26.30588 NM at 30. msec
YMAX= 28.9931 NM at 60. msec
PASSENGER RIGHT UPPER TIBIA MOMENT X
1 B9609DMF.MG7 Filterclass (600)
NM
TIME (SECONDS)
MGA Research
10-01-1996 03:09


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-60.91708 NM at 48. msec
YMAX= 41.52787 NM at 98. msec
PASSENGER RIGHT UPPER TIBIA MOMENT Y
1 _____ 896090MF.M88 Filterclass (600)
40
20
0
-20
-40
-60
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
10-01-1996 03:09


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-1353B.4 N at 42. msec
YMAX= 13404.21 N at 43. msec
PASSENGER RIGHT LOWER TIBIA FORCE X
1 B96090FF.F89 Filterclass (1000)
14000
12000
10000
8000
6000
4000
2000
0
-2000
-4000
-6000
-8000
-10000
-12000
-14000
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
10-01-1996 03:09

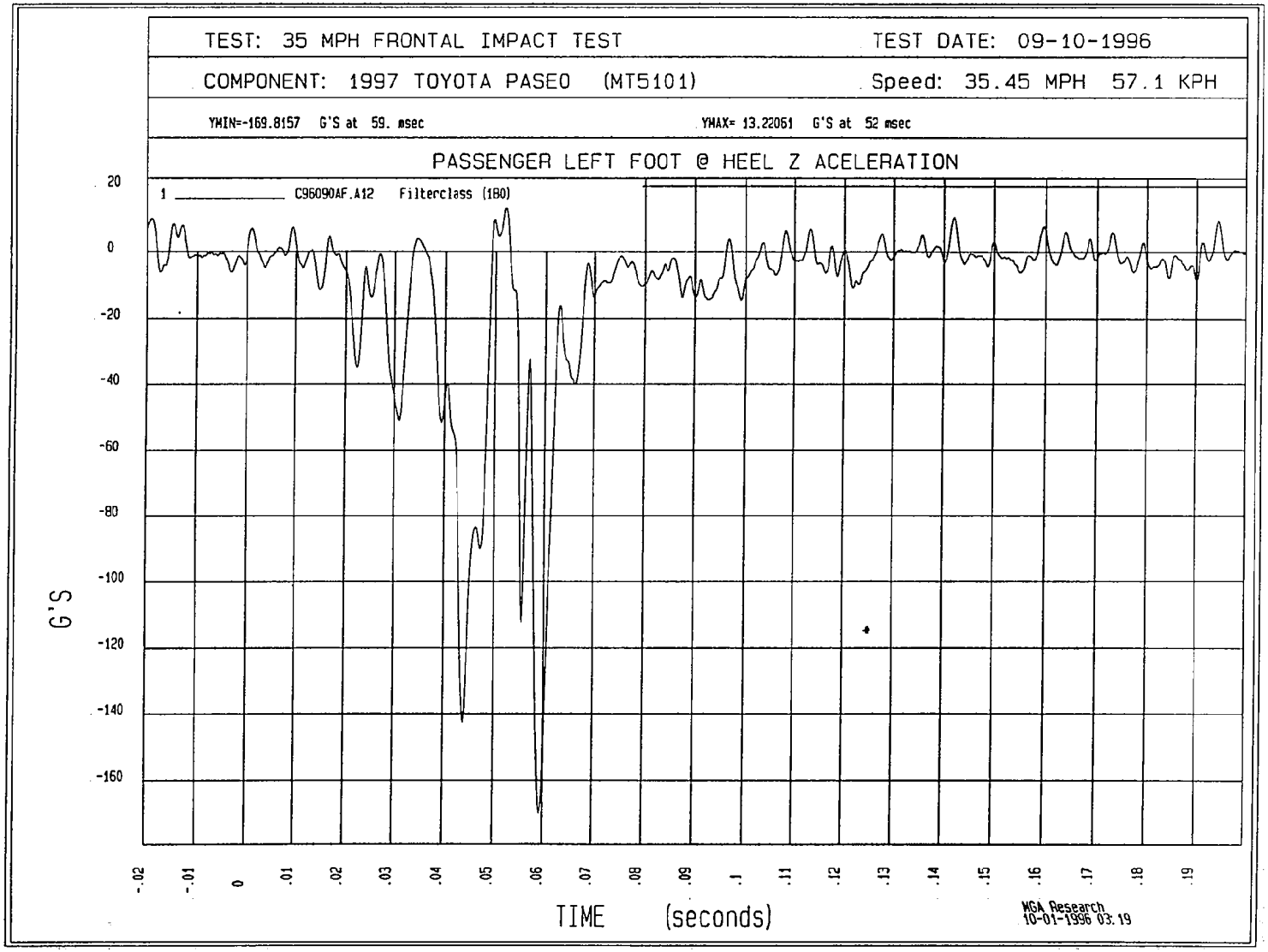

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-311.2133 NM at 41. msec
YMAX= 266.6176 NM at 43. msec
PASSENGER RIGHT LOWER TIBIA MOMENT Y
1 B96090MF.M90 Filterclass (600)
300
200
100
0
-100
-200
-300
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-01-1996 03:09

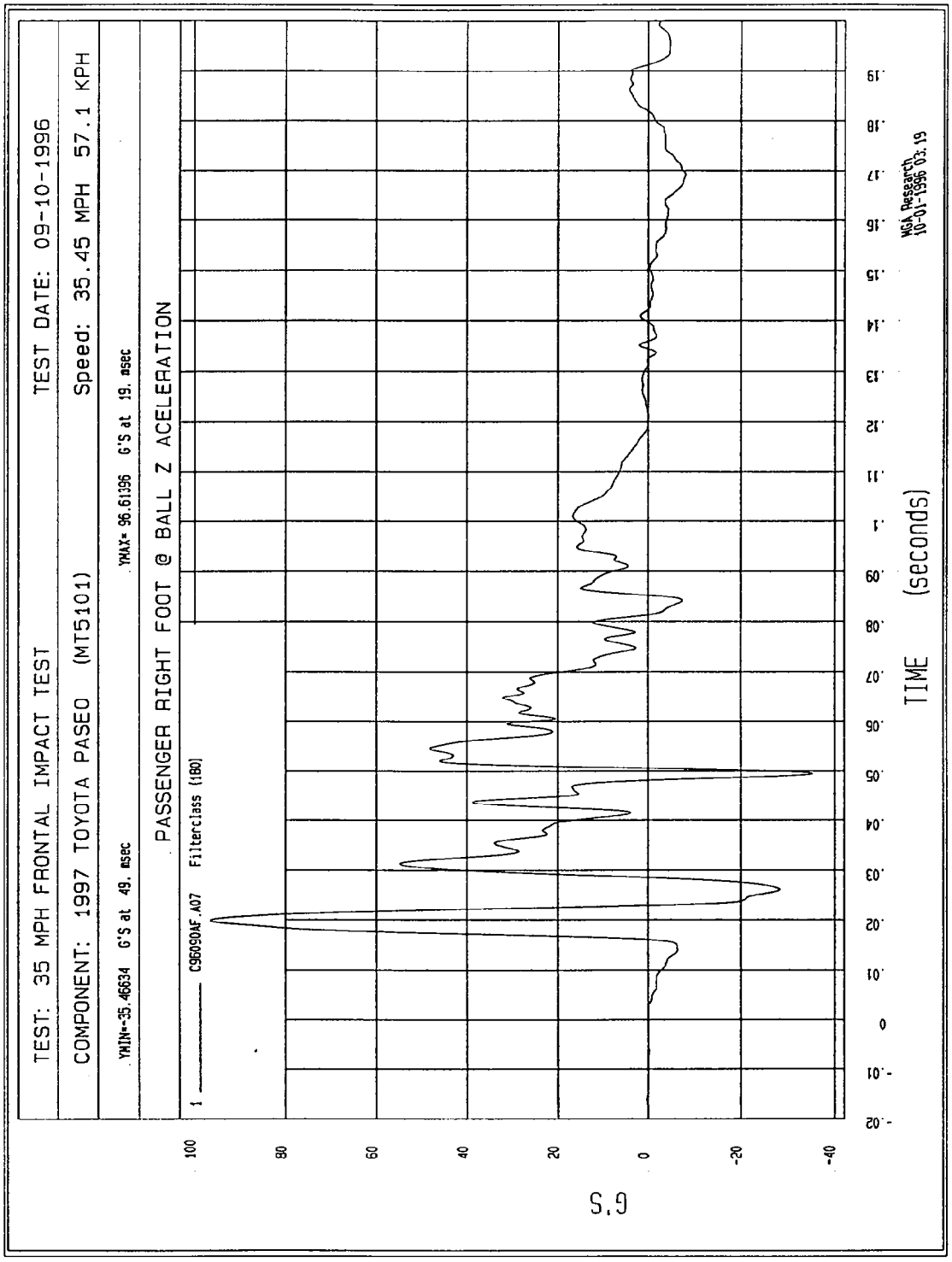

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-3549.622 N at 55 msec
YMAX= 425.2011 N at 158 msec
PASSENGER RIGHT LOWER TIBIA FORCE Z
1 B96090FF.F91 Filterclass (1000)
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
NCA Research
10-01-1996 03:09

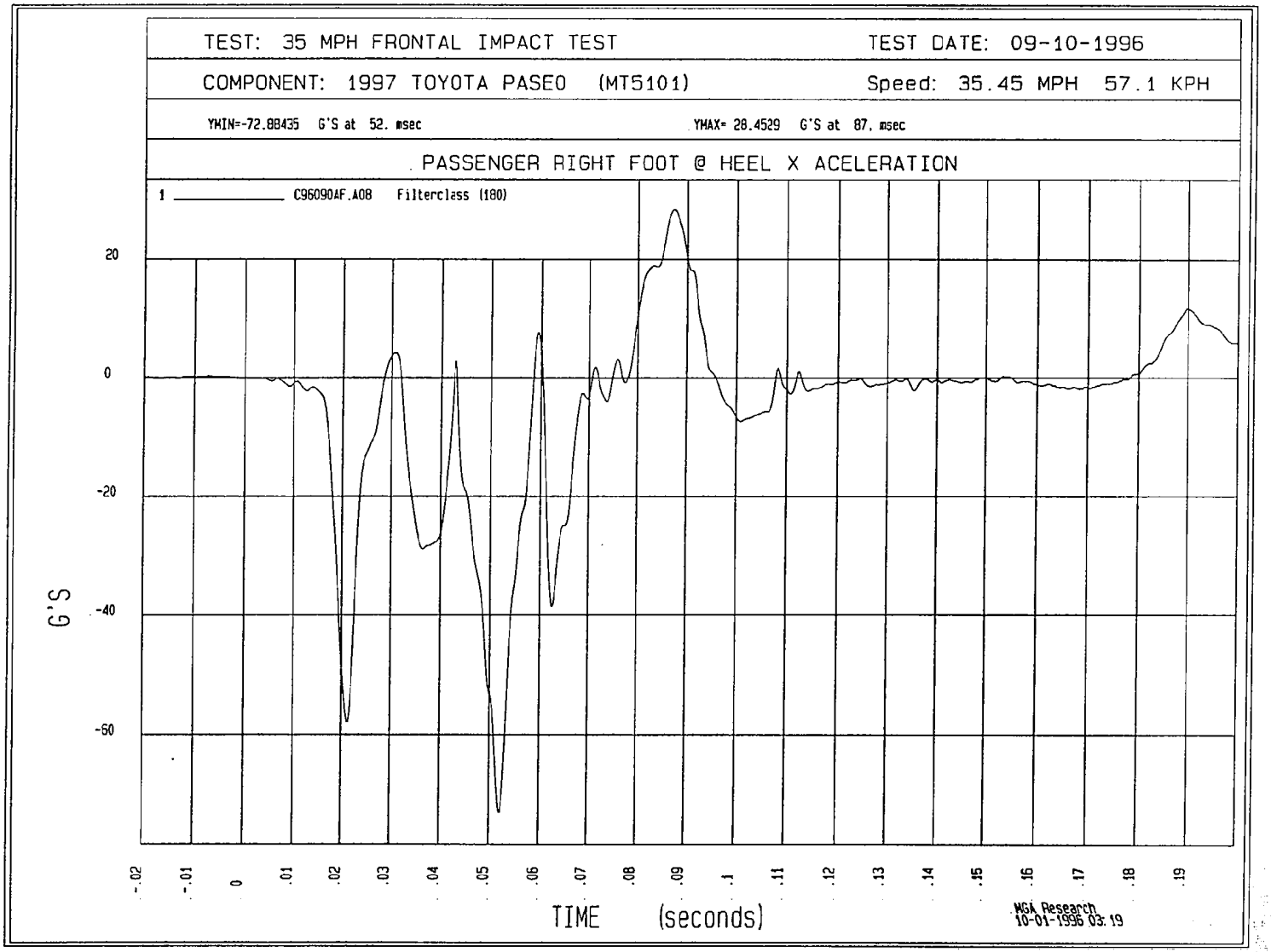

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-160.1543 G'S at 53. msec
YMAX= 105.3363 G'S at 59. msec
PASSENGER LEFT FOOT @ BALL Z ACELERATION
1 C96090AF.A10 Filterclass (180)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
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
10-01-1996 03:19

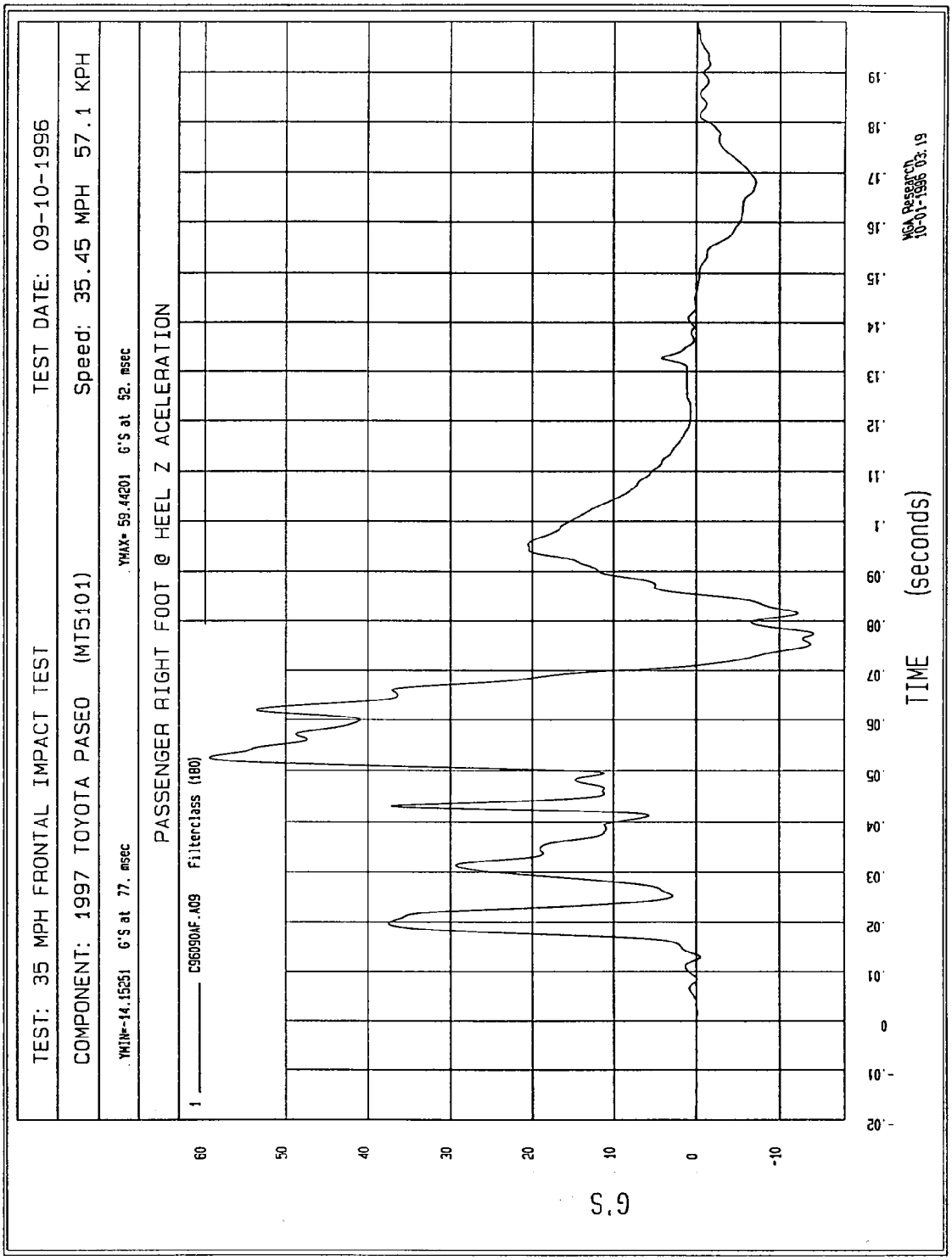
PASSENGER LEFT FOOT @ HEEL X ACCELERATION VS. TIME

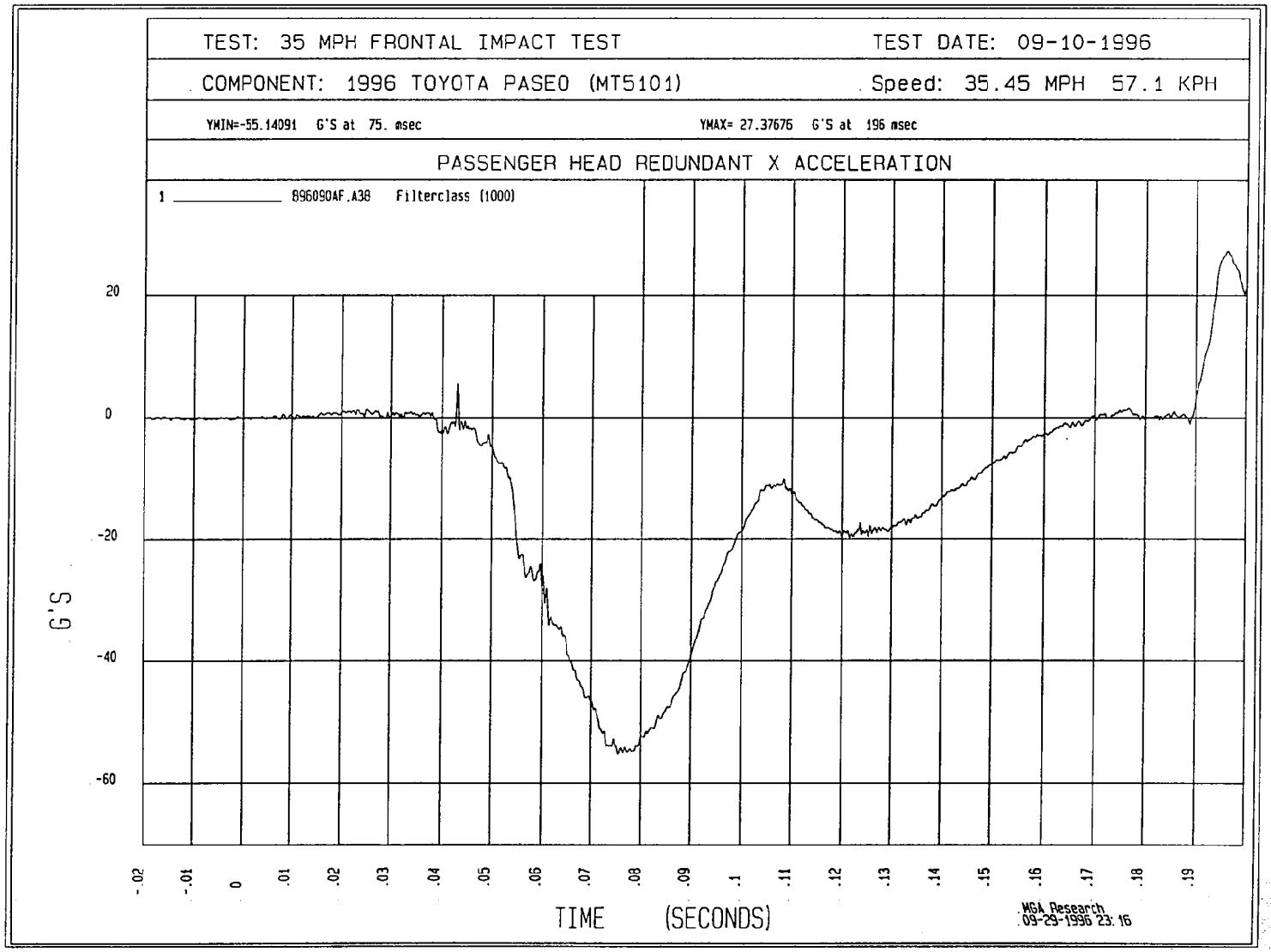
NO VALID DATA COLLECTED

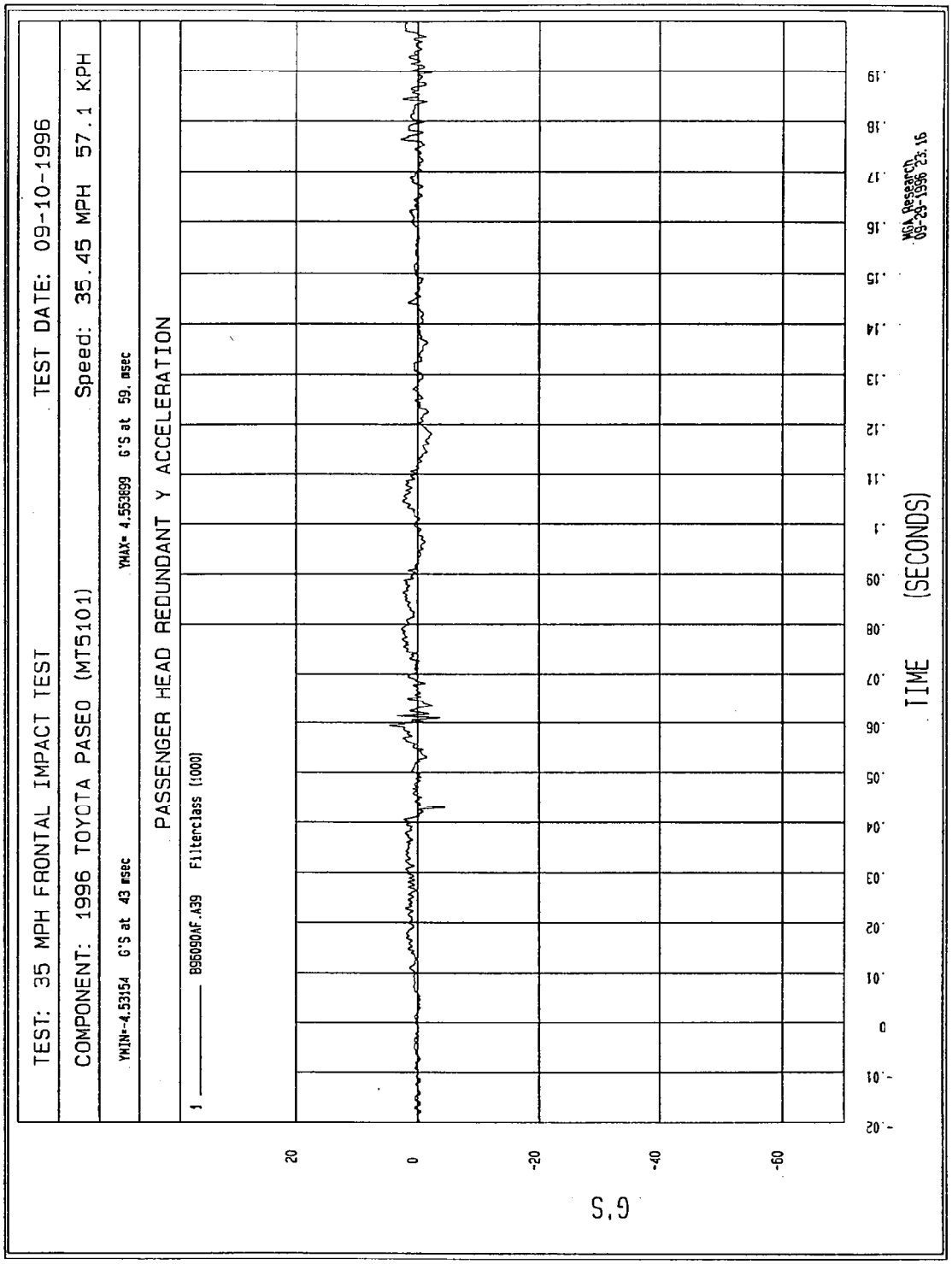

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-169.8157 G'S at 59. msec
YMAX= 13.22061 G'S at 52 msec
PASSENGER LEFT FOOT @ HEEL Z ACELERATION
1 C96090AF.A12 Filterclass (180)
20
0
-20
-40
-60
-80
-100
-120
-140
-160
G'S
-.02
-.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
10-01-1996 03:19

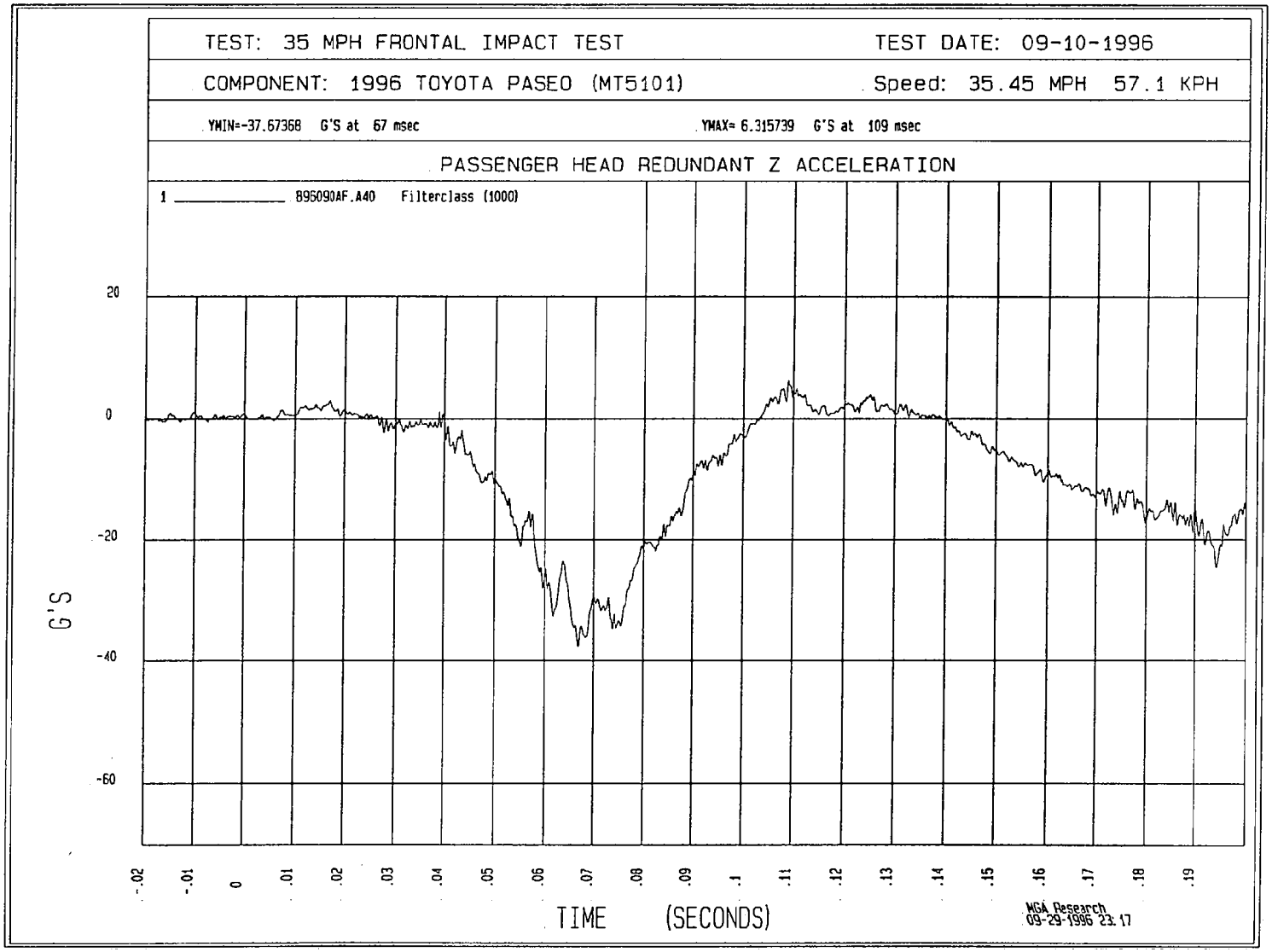

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-35.46634 G'S at 49. msec
YMAX= 96.61396 G'S at 19. msec
PASSENGER RIGHT FOOT @ BALL Z ACELERATION
1 C960904F.A07 Filterclass (180)
100
80
60
40
20
0
-20
-40
G'S
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (seconds)
MGA Research
10-01-1996 03:19

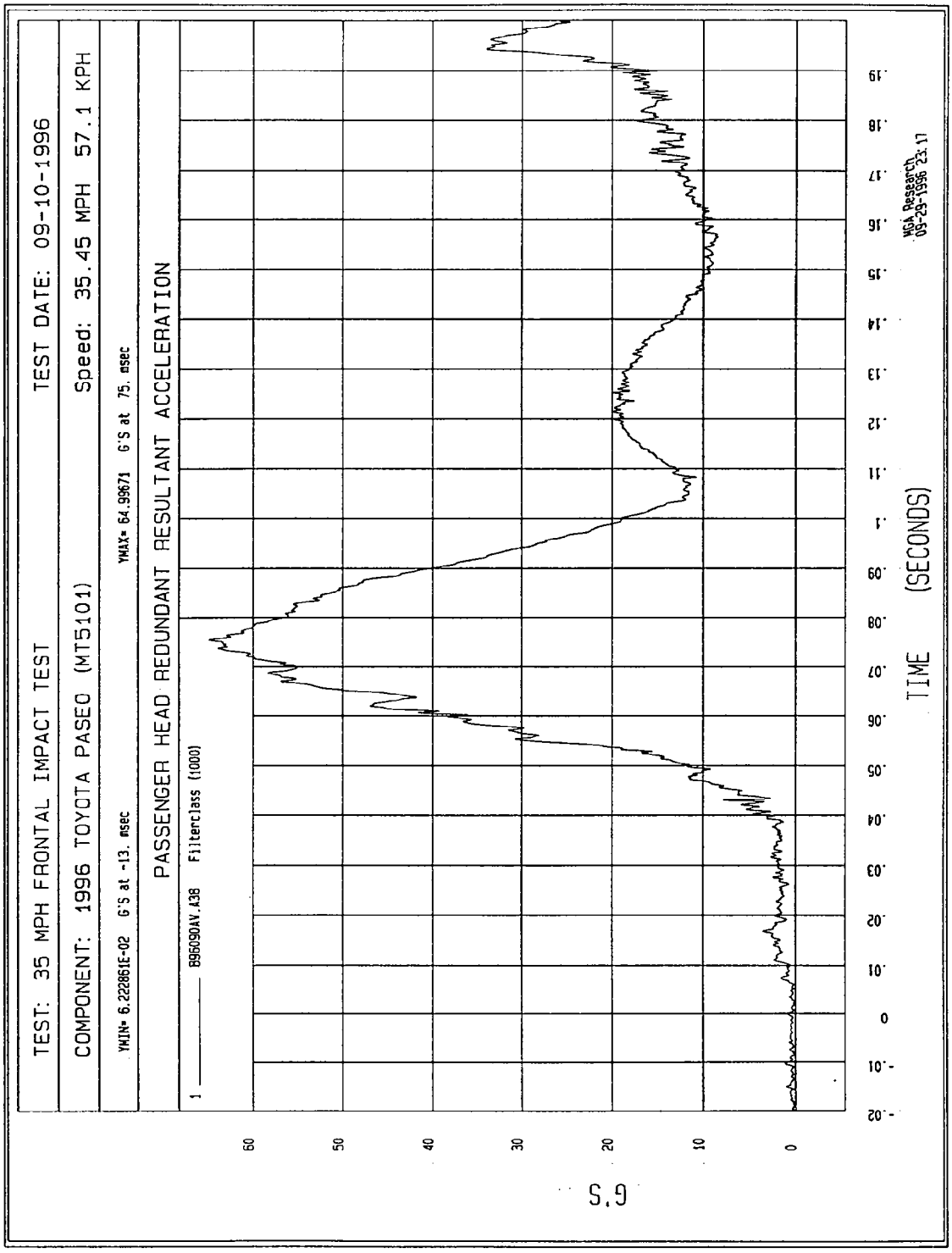

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-72.88435 G'S at 52. msec
YMAX= 28.4529 G'S at 87. msec
PASSENGER RIGHT FOOT @ HEEL X ACELERATION
1 C96090AF.A08 Filterclass (180)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
10-01-1996 03:19

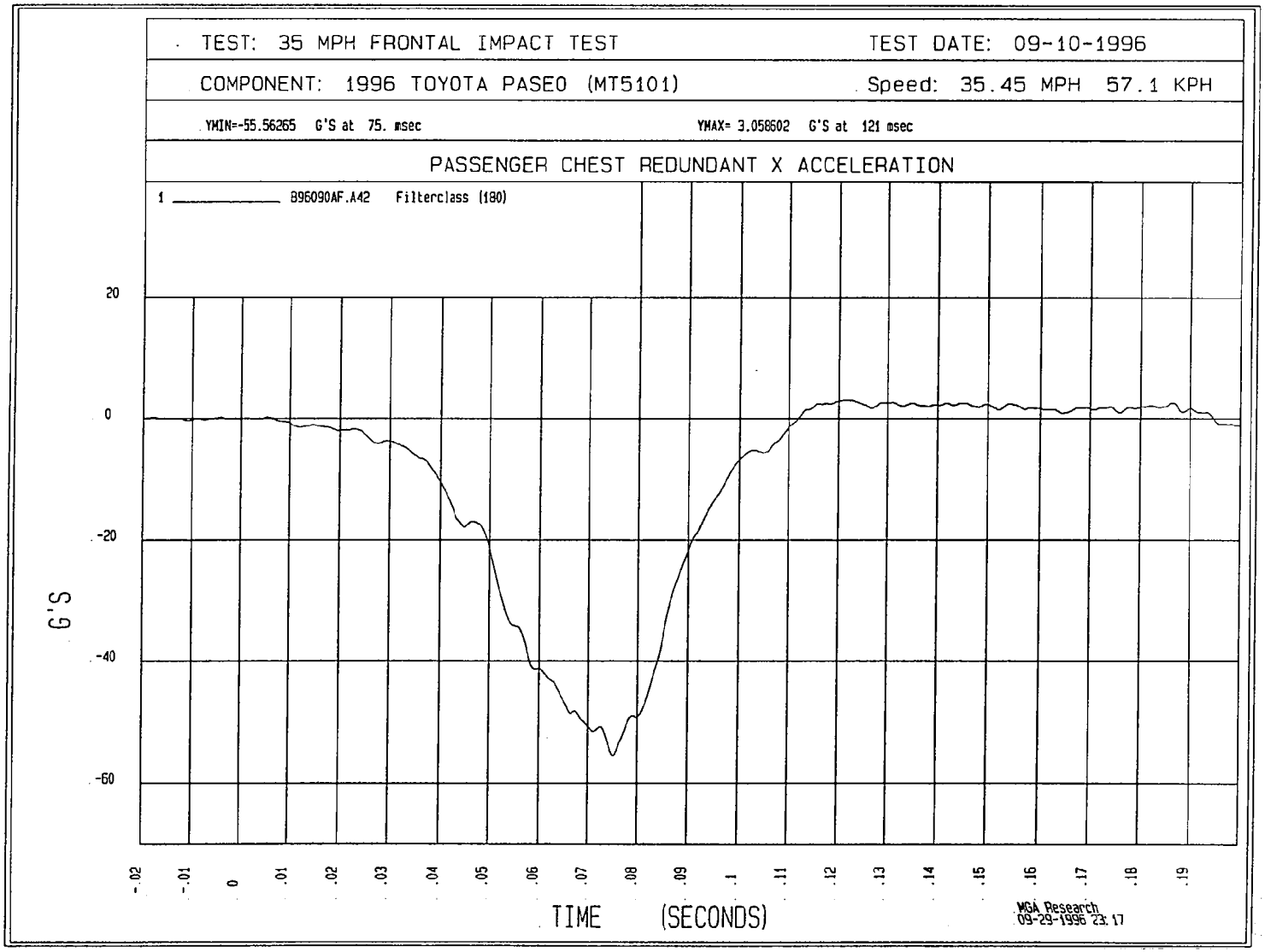

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1997 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-14.15251 G'S at 77. msec
YMAX= 59.44201 G'S at 52. msec
PASSENGER RIGHT FOOT @ HEEL Z ACELERATION
1 C96090AF.A09 Filterclass (180)
G'S
TIME (seconds)
NGA Research
10-01-1996 03:19

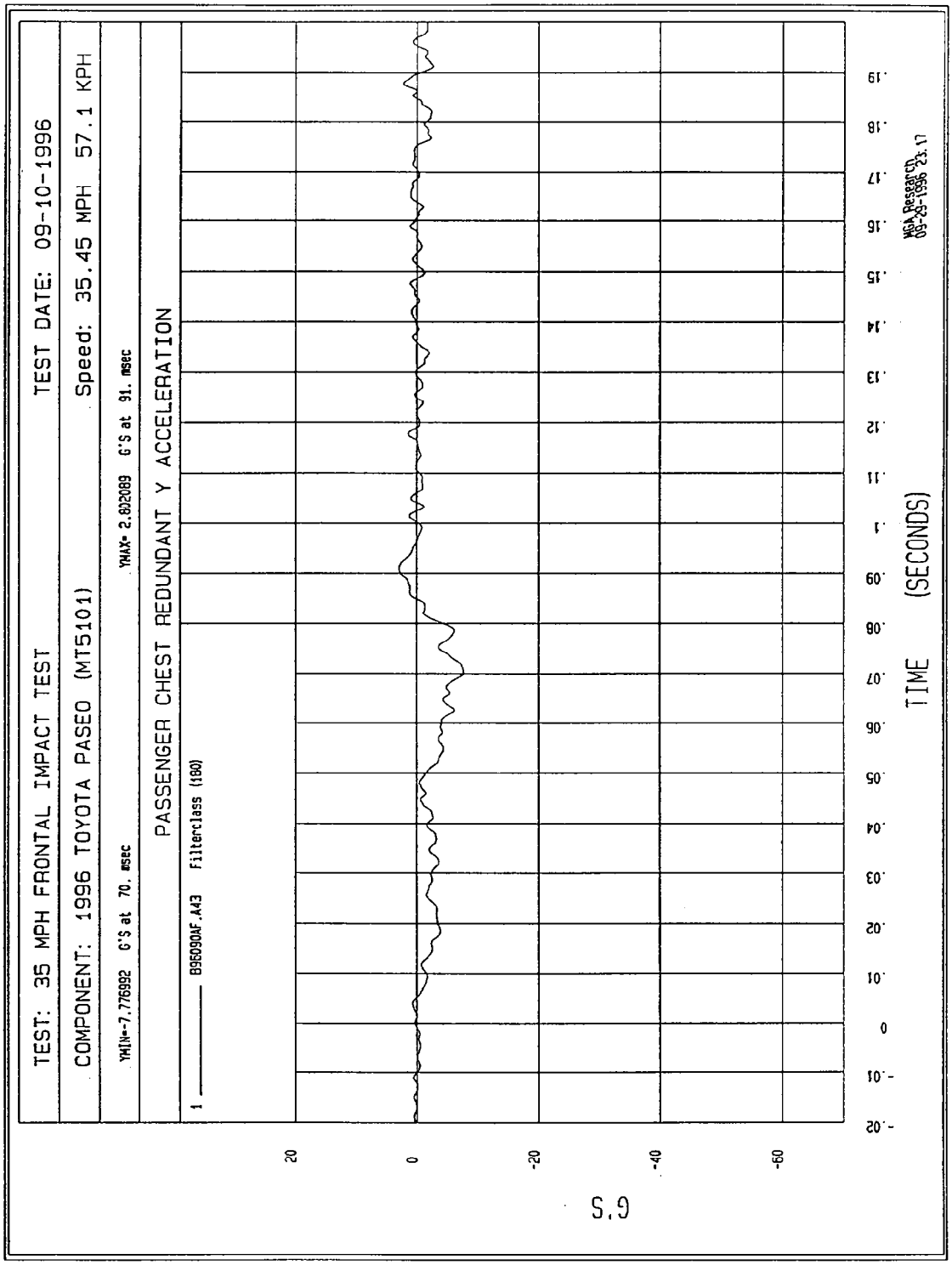

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-55.14091 G'S at 75. msec
YMAX= 27.37676 G'S at 196 msec
PASSENGER HEAD REDUNDANT X ACCELERATION
1 8960904F.A38 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
09-29-1996 23:16

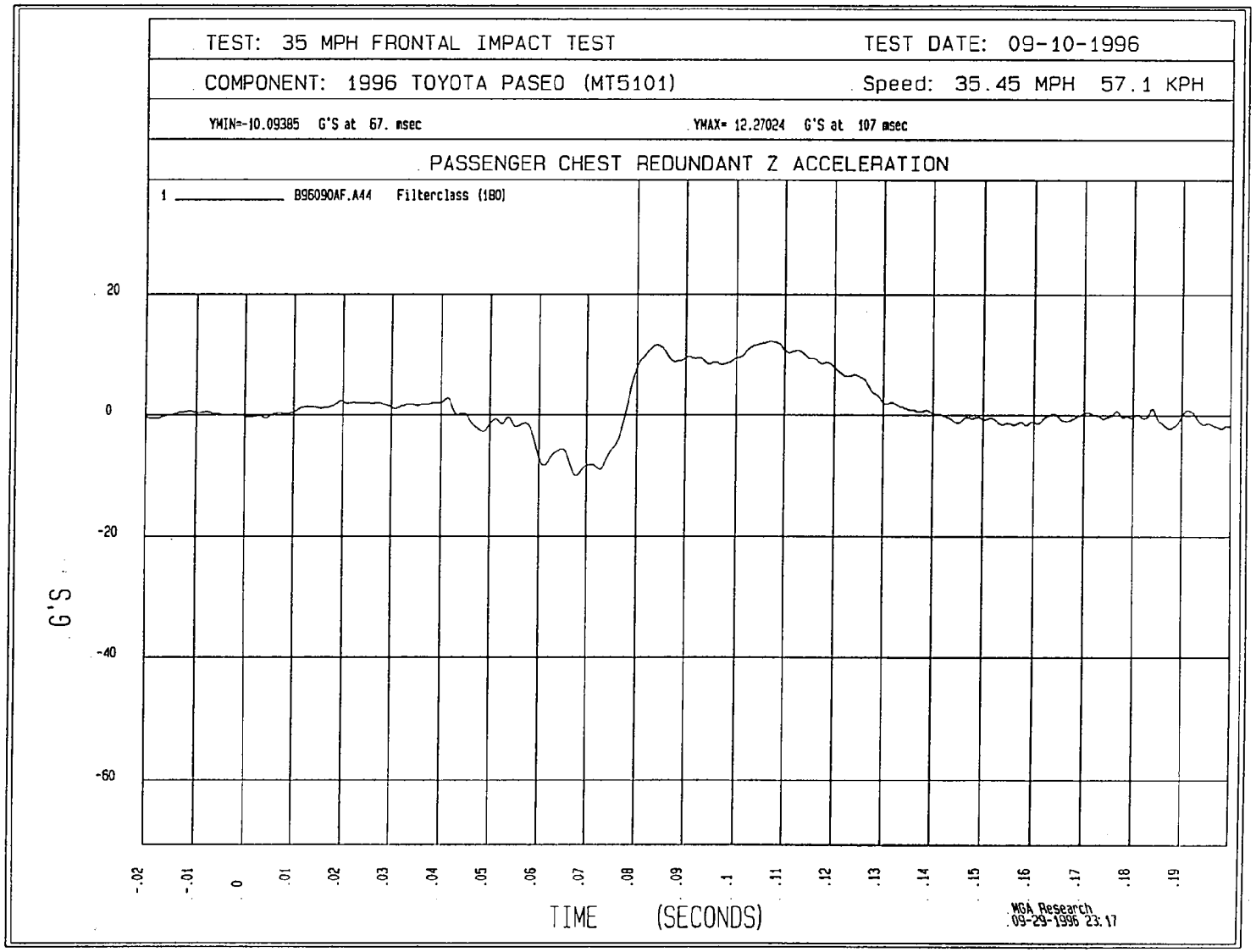

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-4.53154 G'S at 43 msec
YMAX= 4.553899 G'S at 59. msec
PASSENGER HEAD REDUNDANT Y ACCELERATION
1 B95090AF.A39 Filterclass (1000)
G'S
20
0
-20
-40
-60
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
09-23-1996 23:15

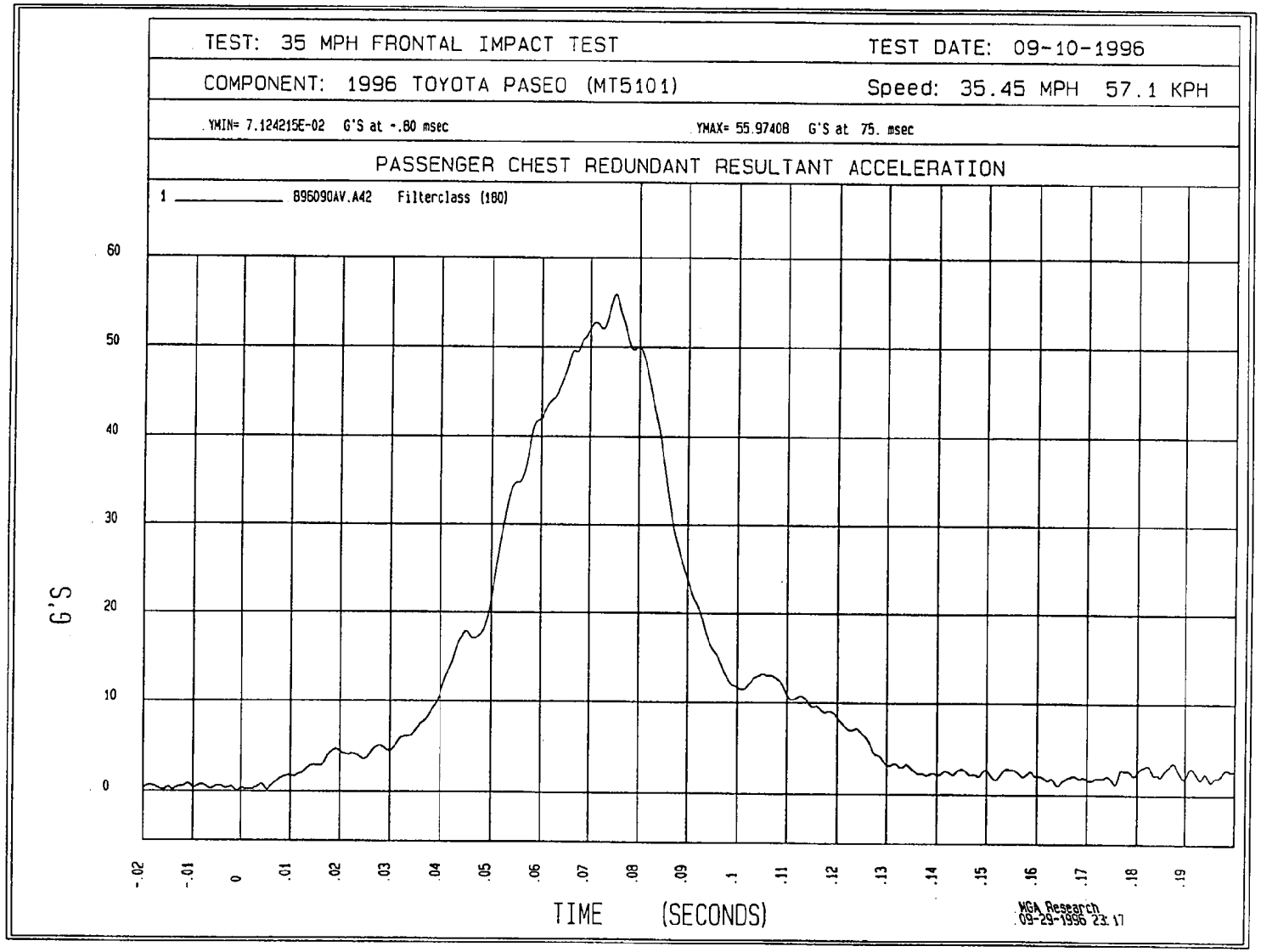

TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-37.67368 G'S at 67 msec
YMAX= 6.315739 G'S at 109 msec
PASSENGER HEAD REDUNDANT Z ACCELERATION
1 _____ 895090AF.A40 Filterclass (1000)
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
09-29-1996 23:17


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 6.222861E-02 G'S at -13. msec
YMAX= 64.99671 G'S at 75. msec
PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION
1 _____ B96090AV.A38 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
09-29-1996 23:17


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-55.56265 G'S at 75. msec
YMAX= 3.058602 G'S at 121 msec
PASSENGER CHEST REDUNDANT X ACCELERATION
1 B96090AF.A42 Filterclass (180)
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
09-29-1996 23:17


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-7.776992 G'S at 70. msec
YMAX= 2.802089 G'S at 91. msec
PASSENGER CHEST REDUNDANT Y ACCELERATION
1 B960904F.A43 Filterclass (180)
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 Corp
09-25-1996 23:17


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN=-10.09385 G'S at 67. msec
YMAX= 12.27024 G'S at 107 msec
PASSENGER CHEST REDUNDANT Z ACCELERATION
1 B96090AF.A44 Filterclass (180)
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
09-29-1996 23:17


TEST: 35 MPH FRONTAL IMPACT TEST
TEST DATE: 09-10-1996
COMPONENT: 1996 TOYOTA PASEO (MT5101)
Speed: 35.45 MPH 57.1 KPH
YMIN= 7.124215E-02 G'S at -.80 msec
YMAX= 55.97408 G'S at 75. msec
PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION
1 B96090AV.A42 Filterclass (180)
G'S
60
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)
WGA Research
09-29-1996 23:17

APPENDIX C

Dummy Configuration & Performance Verification Data

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 037 DUMMY CALIBRATION BY: Al Chalmers

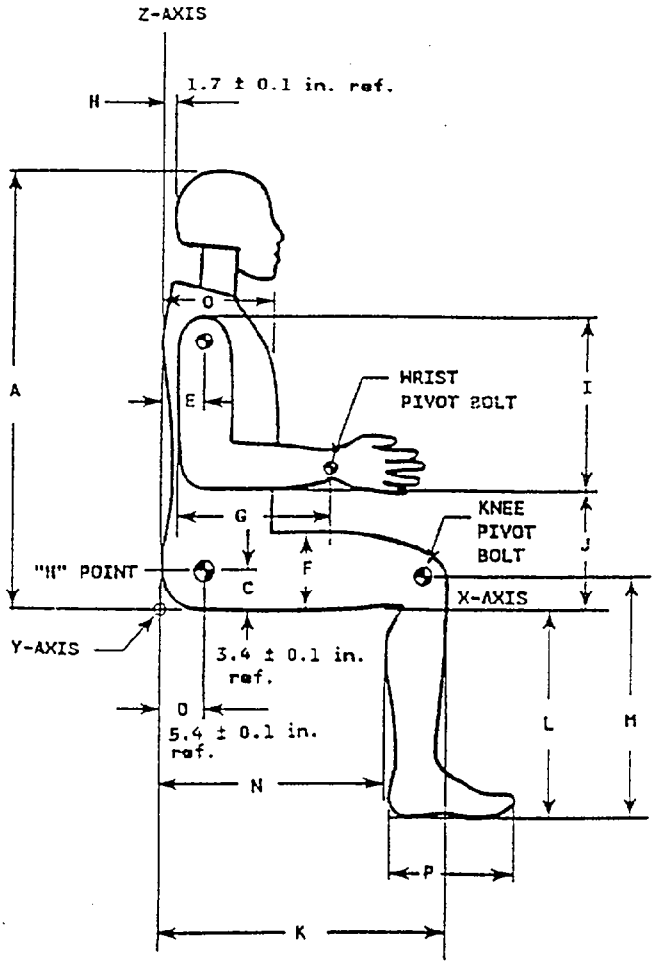
I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: 5-8-96

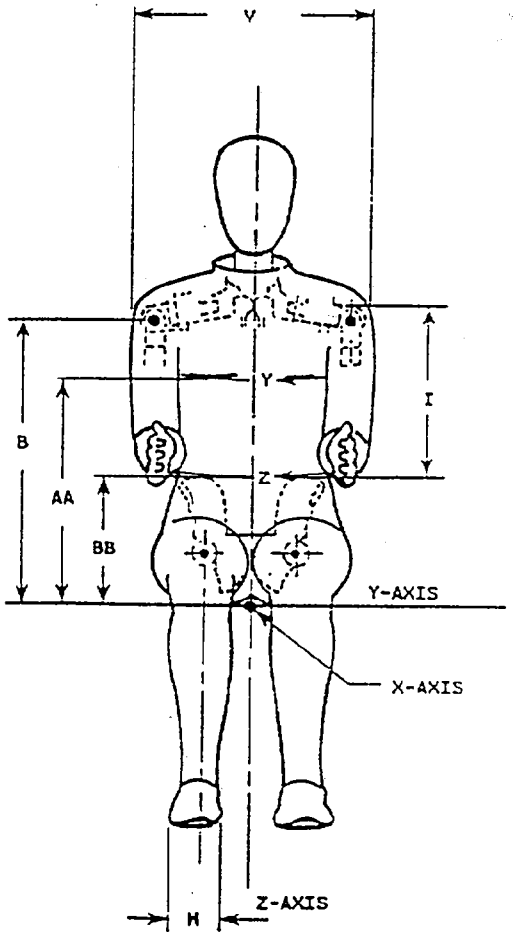
DESCRIPTION	SPECIFICATION (inches)	ACTUAL MEASUREMENT (inches)
A - Total Sitting Height	34.6 - 35.0	34.9
B - Shoulder Pivot Height	19.9 - 20.5	20.5
C - "H" Point Height	3.3 - 3.5	3.5
D - "H" Point from Seat Back	5.3 - 5.5	5.5
E - Shoulder Pivot From Backline	3.3 - 3.7	3.5
F - Thigh Clearance	5.5 - 6.1	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 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.: 037 DUMMY CALIBRATION BY: Al Chalmers

VERIFICATION DATE: 5-8-96

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

1.0 HEAD DROP TEST

	SPECIFICATION	MEASUREMENT
Peak Resultant Acceleration	225 - 275 G	256
Peak Lateral Acceleration	15 G. MAX	12
Is Acceleration Curve Unimodel	within 10% of peak	Yes

2.0 NECK FLEXION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		22.6 - 23.4 FT/SEC	23.0
Pendulum Deceleration	10 MS	22.50 - 27.50 G	23.07
	20 MS	17.60 - 22.60 G	21.27
	30 MS	12.50 - 18.50 G	16.77
Max. Pendulum G Above 30 MS		29.0 G MAX	16.2
Deceleration - Time Curve Decay Time to 5 G		34 - 42 MS	38
D Plane Rotation	MAX	64 - 78 DEG.	71
	TIME	57 - 64 MS	59
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 MS	114
Moment About Occipital Condyle	MIN.	65 - 80 FT.LBS	66
	TIME	47 - 58 MS	50
Positive Moment - Time Curve Decay Time to Zero		97 - 107 MS	103

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

3.0 NECK EXTENSION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		19.50 - 20.30 F/S	20.00
Pendulum Deceleration	10 MS	17.20 - 21.20 G	17.76
	20 MS	14.00 - 19.00 G	16.22
	30 MS	11.00 - 16.00 G	13.12
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	78
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 MS	158
Moment About Occipital Condyle	MIN.	-59.0/-39.0 FT LBS	-45.0
	TIME	65 - 79 MS	73
Positive Moment - Time Curve Decay Time to Zero		120 - 148 MS	142

4.0 CHEST IMPACT TESTS

	SPECIFICATION	MEASUREMENT
Probe Speed	21.6 to 22.4 F/S	21.8
Peak Deflection	2.50 to 2.86 IN.	2.50
Peak Resistive Force	1160 to 1325 LBS.	1312
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.	1175

RIGHT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	7.0
Maximum Force	1060 - 1300 LBS.	1083

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 036 DUMMY CALIBRATION BY: Al Chalmers

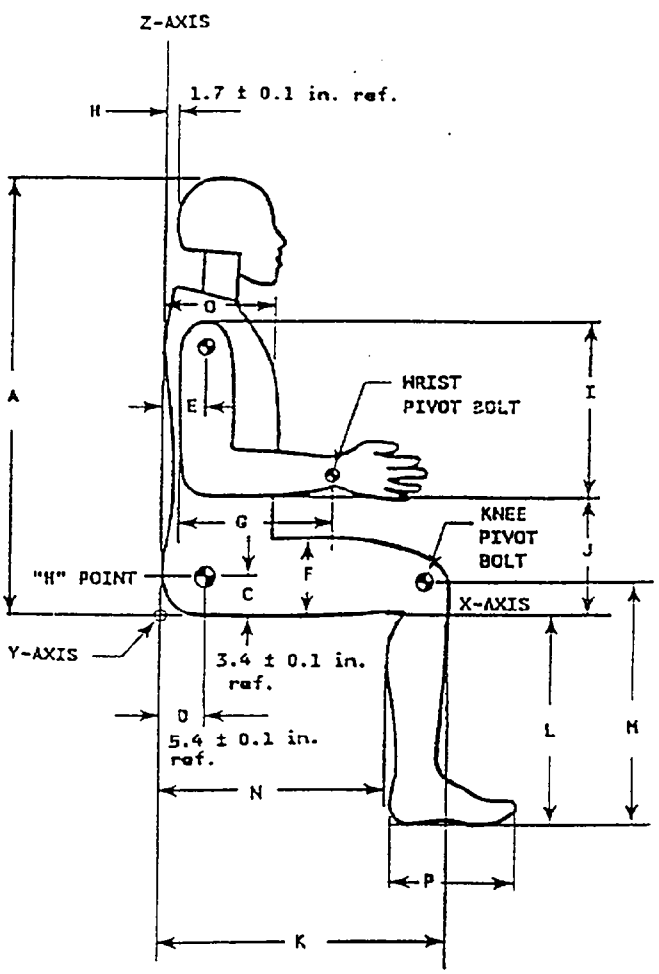
I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: 5-30-96

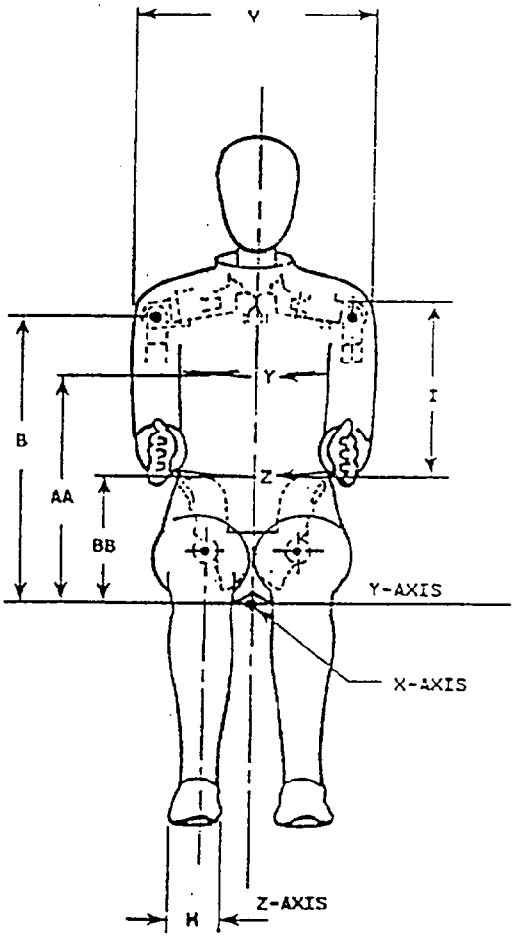
DESCRIPTION	SPECIFICATION (Inches)	ACTUAL MEASUREMENT (inches)
A - Total Sitting Height	34.6 - 35.0	34.8
B - Shoulder Pivot Height	19.9 - 20.5	20.5
C - "H" Point Height	3.3 - 3.5	3.5
D - "H" Point from Seat Back	5.3 - 5.5	5.5
E - Shoulder Pivot From Backline	3.3 - 3.7	3.5
F - Thigh Clearance	5.5 - 6.1	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 (CONT.)

DUMMY NO.: 036 DUMMY CALIBRATION BY: Al Chalmers

VERIFICATION DATE: 5-30-96

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	7
Is Acceleration Curve Unimodal	within 10% of peak	Yes

2.0 NECK FLEXION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		22.6 - 23.4 FT/SEC	23.0
Pendulum Deceleration	10 MS	22.50 - 27.50 G	24.17
	20 MS	17.60 - 22.60 G	21.54
	30 MS	12.50 - 18.50 G	16.74
Max. Pendulum G Above 30 MS		29.0 G MAX	16.7
Deceleration - Time Curve Decay Time to 5 G		34 - 42 MS	36
D Plane Rotation	MAX	64 - 78 DEG.	77
	TIME	57 - 64 MS	58
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 MS	113
Moment About Occipital Condyle	MIN.	65 - 80 FT.LBS	80
	TIME	47 - 58 MS	48
Positive Moment - Time Curve Decay Time to Zero		97 - 107 MS	100

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

3.0 NECK EXTENSION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		19.50 - 20.30 F/S	19.99
Pendulum Deceleration	10 MS	17.20 - 21.20 G	18.83
	20 MS	14.00 - 19.00 G	17.23
	30 MS	11.00 - 16.00 G	13.76
Max. Pendulum G Above 30 MS		22 G Max	14
Deceleration - Time Curve Decay Time to 5 G		38 - 46 MS	39
D Plane Rotation	MAX	81 - 106 DEG.	101
	TIME	72 - 82 MS	76
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 MS	158
Moment About Occipital Condyle	MIN.	-59.0/-39.0 FT LBS	-49.9
	TIME	65 - 79 MS	72
Positive Moment - Time Curve Decay Time to Zero		120 - 148 MS	143

4.0 CHEST IMPACT TESTS

	SPECIFICATION	MEASUREMENT
Probe Speed	21.6 to 22.4 F/S	21.8
Peak Deflection	2.50 to 2.86 IN.	2.64
Peak Resistive Force	1160 to 1325 LBS.	1280
Internal Hysteresis	69 to 85%	69

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	6.9
Maximum Force	1060 - 1300 LBS.	1161

RIGHT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.9
Maximum Force	1060 - 1300 LBS.	1127

APPENDIX D

Dummy, Vehicle and Laboratory Calibration Data

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 037

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	ACCY6	Endevco	6/07/96
Head Y	ACCH1	Endevco	6/07/96
Head Z	AAMW5	Endevco	6/07/96
Head X Redundant	AJ902	Endevco	6/07/96
Head Y Redundant	AH1E2	Endevco	6/07/96
Head Z Redundant	AJ7K3	Endevco	6/07/96
Chest X	ACCY1	Endevco	6/06/96
Chest Y	ACCC8	Endevco	6/06/96
Chest Z	ACCT7	Endevco	6/06/96
Chest X Redundant	AJ904	Endevco	6/06/96
Chest Y Redundant	AJ9f3	Endevco	6/06/96
Chest Z Redundant	AJ909	Endevco	6/06/96
Right Femur Load Cell	261	Denton	8/28/96
Left Femur Load Cell	262	Denton	8/28/96
Pelvis X	ALDY8	Endevco	6/06/96
Pelvis Y	ALEK9	Endevco	6/06/96
Pelvis Z	ALE80	Endevco	6/06/96

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 037

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Load Cell X	443	Denton	6/18/96
Neck Load Cell Y	443	Denton	6/18/96
Neck Load Cell Z	443	Denton	6/18/96
Neck Moment X	443	Denton	6/18/96
Neck Moment Y	443	Denton	6/18/96
Neck Moment Z	443	Denton	6/18/96
Chest Deflection Gauge	037	Servo	7/10/96
Lap Belt Load Cell	212	GSE	6/18/96
Torso Belt Load Cell	211	GSE	6/18/96

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 037

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	436	Denton	6/18/96
Upper Right Tibia Moment Y	436	Denton	6/18/96
Lower Right Tibia Moment Y	424	Denton	6/14/96
Lower Right Tibia Force X	424	Denton	6/14/96
Lower Right Tibia Force Z	424	Denton	6/14/96
Upper Left Tibia Moment X	438	Denton	6/18/96
Upper Left Tibia Moment Y	438	Denton	6/18/96
Lower Left Tibia Moment Y	426	Denton	6/14/96
Lower Left Tibia Force X	426	Denton	6/14/96
Lower Left Tibia Force Z	426	Denton	6/14/96
Right Foot Ball Z	AP042	Endevco	6/06/96
Right Foot Heel X	AP2C4	Endevco	6/06/96
Right Foot Heel Z	AP120	Endevco	6/06/96
Left Foot Ball Z	APOE1	Endevco	6/06/96
Left Foot Heel X	AHY99	Endevco	6/06/96
Left Foot Heel Z	AN8M6	Endevco	6/06/96

INSTRUMENTS FOR DUMMY NO. 036

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	AAMN8	Endevco	6/06/96
Head Y	ACCG1	Endevco	6/06/96
Head Z	ACCW9	Endevco	6/06/96
Head X Redundant	AJ621	Endevco	6/06/96
Head Y Redundant	AJ619	Endevco	6/06/96
Head Z Redundant	AHY54	Endevco	6/06/96
Chest X	ACC78	Endevco	6/06/96
Chest Y	ACCE6	Endevco	6/06/96
Chest Z	ACCY3	Endevco	6/06/96
Chest X Redundant	AJ9J7	Endevco	6/06/96
Chest Y Redundant	AJ7A2	Endevco	6/06/96
Chest Z Redundant	AJ819	Endevco	6/06/96
Right Femur Load Cell	259	Denton	8/28/96
Left Femur Load Cell	260	Denton	8/28/96
Pelvis X	ALB87	Endevco	6/06/96
Pelvis Y	AGNB3	Endevco	6/06/96
Pelvis Z	AJ834	Endevco	6/06/96

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 036

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Load Cell X	442	Denton	6/18/96
Neck Load Cell Y	442	Denton	6/18/96
Neck Load Cell Z	442	Denton	6/18/96
Neck Moment X	442	Denton	6/18/96
Neck Moment Y	442	Denton	6/18/96
Neck Moment Z	442	Denton	6/18/96
Chest Deflection Gauge	036	Servo	5/08/96
Lap Belt Load Cell	624	Lebow	6/18/96
Torso Belt Load Cell	657	Lebow	6/18/96

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 036

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	040	Denton	4/16/96
Upper Right Tibia Moment Y	040	Denton	4/16/96
Lower Right Tibia Moment Y	034	Denton	4/17/96
Lower Right Tibia Force X	034	Denton	4/17/96
Lower Right Tibia Force Z	034	Denton	4/17/96
Upper Left Tibia Moment X	023	Denton	4/16/96
Upper Left Tibia Moment Y	023	Denton	4/16/96
Lower Left Tibia Moment Y	019	Denton	4/17/96
Lower Left Tibia Force X	019	Denton	4/17/96
Lower Left Tibia Force Z	019	Denton	4/17/96
Right Foot Ball Z	AP122	Endevco	6/6/96
Right Foot Heel X	AP0T3	Endevco	6/06/96
Right Foot Heel Z	AP0P6	Endevco	6/06/96
Left Foot Ball Z	AMT88	Endevco	6/06/96
Left Foot Heel X	AP1Y1	Endevco	6/06/96
Left Foot Heel Z	ACC81	Endevco	6/06/96

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	J23-E02	Entran	1/22/96
Right Rear Seat Crossmember X	J10-E16	Entran	1/22/96
Top of Engine Block X	H07-A06	Entran	10/23/95
Bottom of Engine X	J10-E04	Entran	1/22/96
Left Brake Caliper X	H16-X15	Entran	1/31/96
Right Brake Caliper X	L14-D14	Entran	10/24/95
Instrument Panel X	L14-D10	Entran	10/28/95
Redundant Left Rear Seat Crossmember X	J06-D20	Entran	1/22/96
Redundant Right Rear Seat Crossmember X	L15-G03	Entran	2/02/96

	LABORATORY INSTRUMENTS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Bending Pendulum Accelerometer	AH5N9	Endevco	5/08/95
Neck Bending Head Rotary Potentiometer	018	Spectrol	3/13/95
Neck Bending Pendulum Rotary Potentiometer	019	Spectrol	3/13/95
Chest Probe Accelerometer	AN8A4	Endevco	6/12/95
Knee Impact Accelerometer	MGA001	Entran	4/21/95

APPENDIX E

Vehicle Owner's Occupant Restraint System Instructions

Seat belts—
—Seat belt precautions

Toyota recommends that the driver and passengers in the vehicle be properly restrained at all times with the seat belts provided. Failure to do so could increase the chance of injury and/or the severity of injury in accidents.

Baby or small child. Use a child restraint system which fits your vehicle. See "Child restraint" for details.

Child. If a child is too large for a child restraint system, the child should sit in the rear seat and must be restrained using the vehicle's seat belt. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat. Do not allow the child to stand up or kneel on either rear or front seats If the shoulder belt falls across the child's neck or face, have the child sit slightly closer to the center of the vehicle so that the belt lays across the shoulder.

Pregnant woman. Toyota recommends the use of a seat belt. Ask your doctor for specific recommendations. The lap belt should be worn securely and as low as possible over the hips and not on the waist.

Injured person. Toyota recommends the use of a seat belt. Depending on the injury, first check with your doctor for specific recommendations.

CAUTION

When returning the seatback to the upright position:

- **Make sure the seat belts are not twisted or caught in the seatback and are arranged in their proper position for ready use.**
- **Make sure the seatback is securely locked by pushing forward and rearward on the top of the seatback.**

CAUTION

Persons should ride in their seats properly wearing their seat belts whenever the vehicle is moving. Otherwise, they are much more likely to suffer serious bodily injury in the event of sudden braking or a collision.

When using the seat belts, observe the following:

- **Use the belt for only one person at a time. Do not use a single belt for two or more people—even children.**
- **Avoid reclining the seatbacks too much. The seat belts provide maximum protection when the seatbacks are in the upright position. (See the seat adjustment instructions.)**
- **Be careful not to damage the belt webbing or hardware. Take care that they do not get caught or pinched in the seat or side doors.**
- **Inspect the belt system periodically. Check for cuts, fraying, and loose parts. Damaged parts should be replaced. Do not disassemble or modify the system.**

- **Keep the belts clean and dry. If they need cleaning, use a mild soap solution or lukewarm water. Never use bleach, dye, or abrasive cleaners—they may severely weaken the belts.**
- **Replace the belt assembly (including bolts) if it has been used in a severe impact. The entire assembly should be replaced even if damage is not obvious.**

CAUTION

Persons should ride in their seats properly wearing their seat belts whenever the vehicle is moving. Otherwise, they are much more likely to suffer serious bodily injury in the event of sudden braking or a collision.

When using the seat belts, observe the following:

- Use the belt for only one person at a time. Do not use a single belt for two or more people—even children.
- Avoid reclining the seatbacks too much. The seat belts provide maximum protection when the seatbacks are in the upright position. (See the seat adjustment instructions.)
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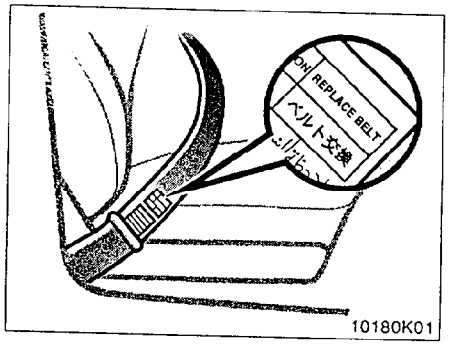
- Inspect the belt system periodically. Check for cuts, fraying, and loose parts. Damaged parts should be replaced. Do not disassemble or modify the system.

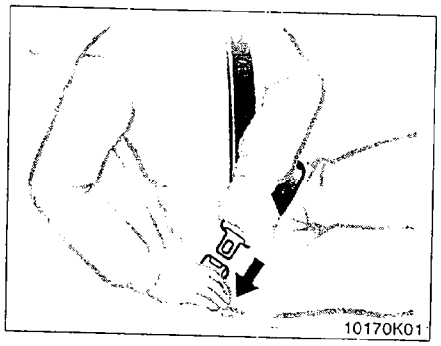
- Keep the belts clean and dry. If they need cleaning, use a mild soap solution or lukewarm water. Never use bleach, dye, or abrasive cleaners—they may severely weaken the belts.
- Replace the belt assembly (including bolts) if it has been used in a severe impact. The entire assembly should be replaced even if damage is not obvious.

—Seat belts



10180K01

- Front passenger's seat only—Replace the belt if the warning label under the sleeve can be seen. The warning label, "REPLACE BELT", will appear if the belt receives a severe impact or other force.


10170K01

Adjust the seat as needed (front seats only) and sit up straight and well back in the seat. To fasten your belt, pull it out of the retractor and insert the tab into the buckle.

You will hear a click when the tab locks into the buckle.

The seat belt length automatically adjusts to your size and the seat position.

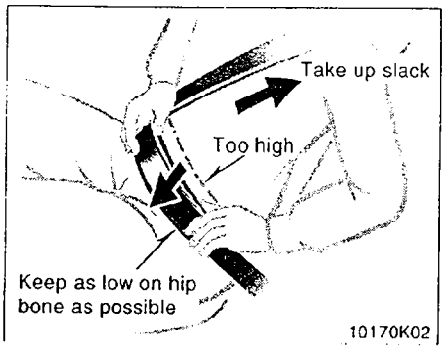
The retractor will lock the belt during a sudden stop or on impact. It also may lock if you lean forward too quickly. A slow, easy motion will allow the belt to extend, and you can move around freely.

If the seat belt cannot be pulled out of t retractor, firmly pull the belt and relea it. You will then be able to smoothly pull the belt out of the retractor.

When a passenger's shoulder belt is co pletely extended and is then retract even slightly, the belt is locked in that position and cannot be extended. This fe ture is used to hold the child restra system securely. (For details, see "Ch restraint" in this chapter.) To free the belt again, fully retract the belt and then p the belt out once more.

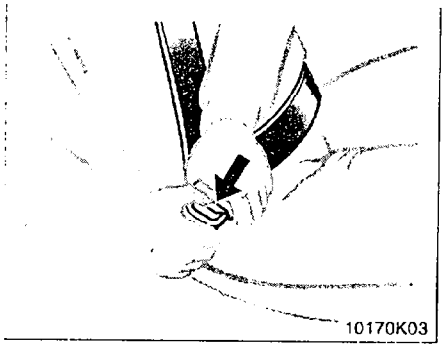
CAUTION

- After inserting the tab, make sur the tab and buckle are locked an that the belt is not twisted.
- Do not insert coins, clips, etc. i the buckle as this may prevent yo from properly latching the tab an buckle.
- If the seat belt does not functio normally, immediately contact you Toyota dealer.



Adjust the position of the lap and shoulder belts.

Position the lap belt as low as possible on your hips—not on your waist, then adjust it to a snug fit by pulling the shoulder portion upward through the latch plate.

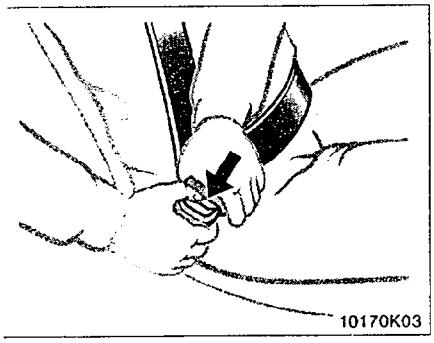


To release the belt, press the buckle–release button and allow the belt to retract.

If the belt does not retract smoothly, pull it out and check for kinks or twists. Then make sure it remains untwisted as it retracts.

CAUTION

- **High–positioned lap belts and loose–fitting belts both could increase the chance of injury due to sliding under the lap belt during an accident. Keep the lap belt as low on your hip bone as possible.**
- **For your safety, do not place the shoulder belt under your arm.**



To release the belt, press the buckle–release button and allow the belt to retract.

If the belt does not retract smoothly, pull it out and check for kinks or twists. Then make sure it remains untwisted as it retracts.

CAUTION

- **High–positioned lap belts and loose–fitting belts both could increase the chance of injury due to sliding under the lap belt during an accident. Keep the lap belt as low on your hip bone as possible.**
- **For your safety, do not place the shoulder belt under your arm.**

—Seat belt extender

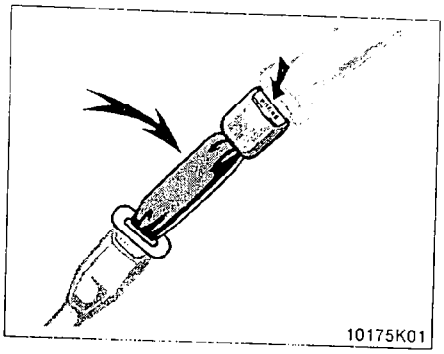
If your seat belt cannot be fastened securely because it is not long enough, a personalized seat belt extender is available from your Toyota dealer free of charge.

Please contact your local Toyota dealer so that the dealer can order the proper required length for the extender. Bring the heaviest coat you expect to wear for proper measurement and selection of length. Additional ordering information is available at your Toyota dealer.

CAUTION

When using the seat belt extender, observe the following. Failure to follow these instructions could result in less effectiveness of the seat belt restraint system in case of vehicle accident, increasing the chance of personal injury.

- **Never use the seat belt extender if you can fasten the seat belt without it.**
- **Remember that the extender provided for you may not be safe when used on a different vehicle, or for another person or at a different seating position than the one originally intended for.**



To connect the extender to the seat belt, insert the tab into the seat belt buckle so that the "PRESS" signs on the buckle-release buttons of the extender and the seat belt are both facing outward as shown.

You will hear a click when the tab locks into the buckle.

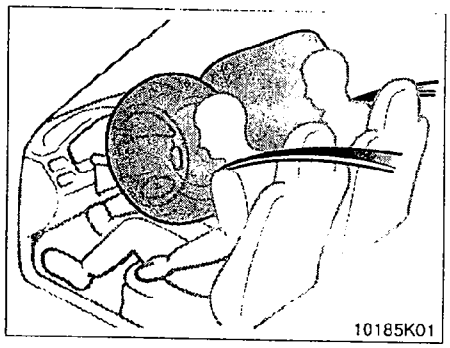
When releasing the seat belt, press on the buckle-release button on the extender, not on the seat belt. This helps prevent damage to the vehicle interior and extender itself.

When not in use, remove the extender and store in the vehicle for future use.

CAUTION

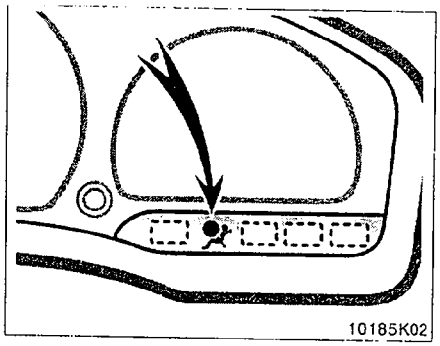
- **After inserting the tab, make sure the tab and buckle are locked and that the seat belt extender is not twisted.**
- **Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.**
- **If the seat belt does not function normally, immediately contact your Toyota dealer.**

SRS airbags (for U.S.A.)



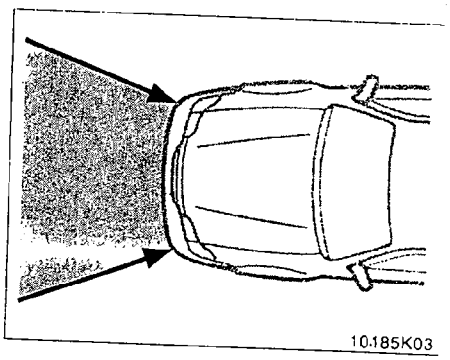
The SRS (Supplemental Restraint System) airbags are designed to provide further protection to the driver and front passenger when added to the primary protection provided by the seat belts.

In response to a severe frontal impact, the SRS airbags work together with the seat belts to prevent or reduce injury by inflating, in order to decrease the likelihood of the driver's or front passenger's head or chest directly hitting the steering wheel or dashboard. The passenger airbag is activated even with no passenger in the front seat.



This indicator comes on when the ignition key is turned to the "ACC" or "ON" position. It goes off after about 6 seconds. This means the SRS airbags are operating properly.

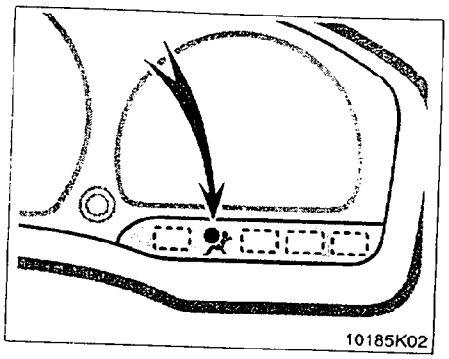
The SRS airbag warning light system monitors the airbag sensor assembly, inflators, warning light, interconnecting wiring and power sources.



The SRS airbag system is designed to activate in response to a severe frontal impact within the shaded area between the arrows in the illustration.

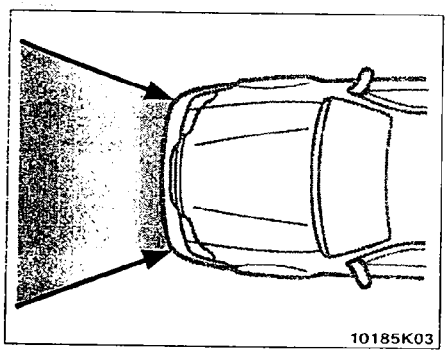
The SRS airbags will deploy if the severity of the impact is above the designed threshold level, comparable to an approximate 20 km/h (14 mph) collision when impacting straight into a fixed barrier that does not move or deform.

If the severity of the impact is below the above threshold level, the SRS airbags may not deploy.



This indicator comes on when the ignition key is turned to the "ACC" or "ON" position. It goes off after about 6 seconds. This means the SRS airbags are operating properly.

The SRS airbag warning light system monitors the airbag sensor assembly, inflators, warning light, interconnecting wiring and power sources.



The SRS airbag system is designed to activate in response to a severe frontal impact within the shaded area between the arrows in the illustration.

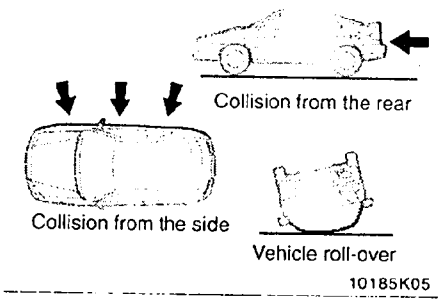
The SRS airbags will deploy if the severity of the impact is above the designed threshold level, comparable to an approximate 20 km/h (14 mph) collision when impacting straight into a fixed barrier that does not move or deform.

If the severity of the impact is below the above threshold level, the SRS airbags may not deploy.

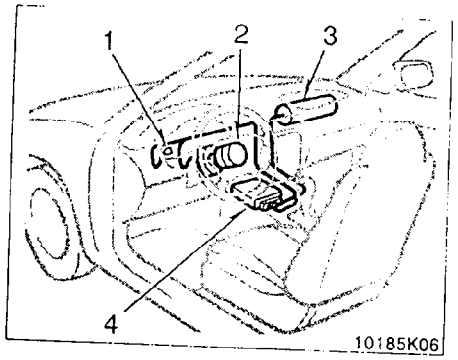
However, this threshold velocity will be considerably higher if the vehicle strikes an object, such as a parked vehicle or sign pole, which can move or deform on impact, or if it is involved in an underride collision (e.g a collision in which the nose of the vehicle "underrides", or goes under, the bed of a truck).

It is possible with collision severity at the marginal level of airbag sensor detection and activation that only one of your vehicle's two airbags will deploy.

For the safety of all occupants, be sure to always wear seat belts.



The SRS airbags are not designed to inflate if the vehicle is subjected to a side or rear impact, if it rolls over, or if it is involved in a low-speed frontal collision.



The SRS airbag system mainly consists of the following components and their locations are shown in the illustration.

1. SRS airbag warning light
2. Steering wheel pad (airbag and inflator)
3. Passenger airbag module (airbag and inflator)
4. Airbag sensor assembly

The airbag sensor assembly consists of a safing sensor and airbag sensor.

In a severe frontal impact, sensors detect deceleration and the system triggers the airbag inflators. Then a chemical reaction in the inflators momentarily fills the airbags with non-toxic nitrogen gas to help restrain the forward motion of the occupants.

When the airbags inflate, they produce a fairly loud noise and release some smoke along with the nitrogen gas. This is not harmful and does not indicate a fire. Be sure to wash off any residue as soon as possible to prevent minor skin irritation.

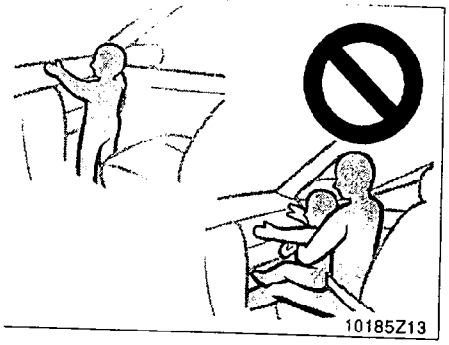
Deployment of the airbags happen in a fraction of a second, so the airbags must inflate with considerable force. While the system is designed to reduce serious injuries, it may also cause minor burns or abrasions and swellings.

Parts of the airbag module (steering wheel hub, dashboard) may be hot for several minutes, but the airbags themselves will not be hot. The airbags are designed to inflate only once.

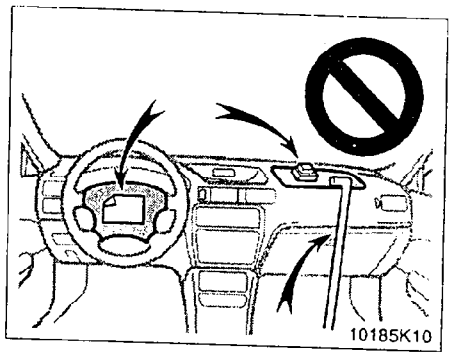
A crash severe enough to inflate the airbags may break the windshield as the vehicle buckles. In vehicles with a passenger airbag the windshield may also be damaged by absorbing some of the force of the inflating airbag.

CAUTION

- **The SRS airbag system is designed only as a supplement to the primary protection of the seat belt systems of the driver and front passenger. The front seat occupants are particularly susceptible to injury if they do not wear their seat belts when sudden braking or a collision occurs, they may be thrown forward. To obtain further protection in an accident, the driver and all passengers in the vehicle should always wear their seat belts when driving. For instructions and precautions concerning the seat belt system, see "Seat belts" in this chapter.**
- **A baby or small child who is too small to use a seat belt should be properly secured in a rear seat using a child restraint system.**



- **Do not allow a child to stand up or kneel on the front passenger seat. The airbag inflates with considerable speed and force; the child may be severely injured.**
- **Do not hold a child on your lap or in your arms. Use a child restraint system in the rear seat. For instructions concerning the installation of a child restraint system, see "Child restraint" in this chapter.**



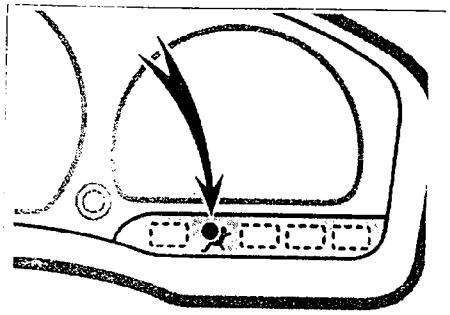
- **Do not put objects on or in front of the dashboard or steering wheel pad that houses the airbag system. They might restrict inflation or cause personal injury as they are projected rearward.**
- **Do not modify, remove or open any component or wiring, such as the steering wheel, column cover, front passenger airbag cover, front passenger airbag, airbag sensor assembly. Doing any of these may cause sudden SRS airbag inflation or disable the system, which could result in personal injury.**

Failure to follow these instructions can result in severe injuries.

NOTICE

Do not perform any of the following changes without consulting your Toyota dealer. Such changes can interfere with proper operation of the SRS airbag system in some cases.

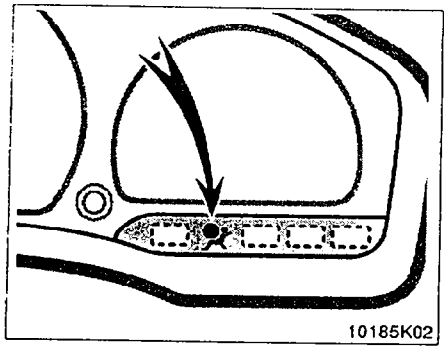
- ***Installation of electronic items such as a mobile two-way radio, cassette tape player or compact disc player***
- ***Modification of the suspension system***
- ***Modification of the front end structure***
- ***Attachment of a grille guard (bull bar, kangaroo bar, etc.), snowplow, winches or any other equipment to the front end***
- ***Repairs made on or near the front console, steering column, steering wheel or dashboard near the front passenger airbag***



10185K02

This SRS airbag system has a service reminder indicator to inform the driver of operating problems. If either of the following conditions occurs, this indicates a malfunction of the airbags. Contact your Toyota dealer as soon as possible to service the vehicle.

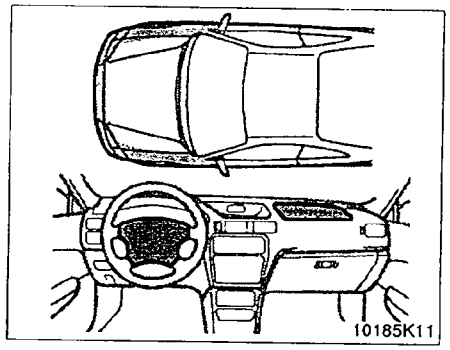
- The light does not come on when the ignition key is turned to the "ACC" or "ON" position, or remains on.
- The light comes on while driving.



10185K02

This SRS airbag system has a service reminder indicator to inform the driver of operating problems. If either of the following conditions occurs, this indicates a malfunction of the airbags. Contact your Toyota dealer as soon as possible to service the vehicle.

- The light does not come on when the ignition key is turned to the "ACC" or "ON" position, or remains on.
- The light comes on while driving.

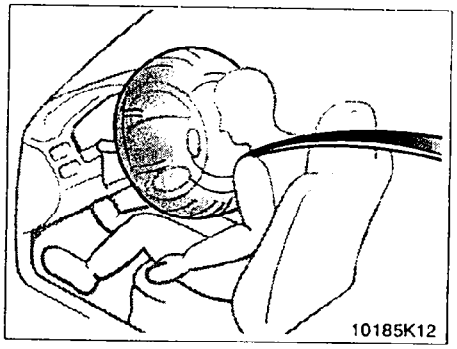


10185K11

In the following cases, contact your Toyota dealer as soon as possible:

- The SRS airbags have been inflated.
- The front part of the vehicle (shaded in the illustration) was involved in an accident not of the extent to cause the SRS airbags to inflate.
- The pad section of the steering wheel or front passenger airbag cover (shaded in the illustration) is scratched, cracked, or otherwise damaged.

SRS airbag (for Canada)



10185K12

The SRS (Supplemental Restraint System) airbag is designed to provide further protection to the driver when added to the primary protection provided by the seat belt.

In response to a severe frontal impact, the SRS airbag works together with the seat belt to prevent or reduce injury by inflating, in order to decrease the likelihood of the driver's head or chest directly hitting the steering wheel.

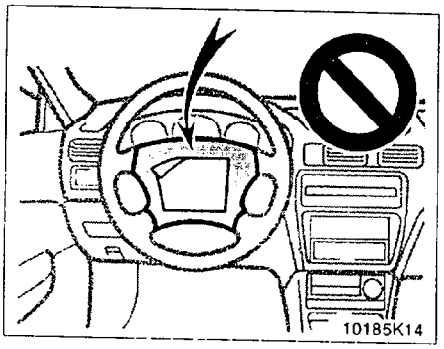
CAUTION

The SRS airbag system is designed only as a supplement to the primary protection of the seat belt system of the driver. The driver is particularly susceptible to injury if he/she does not wear his/her seat belt; when sudden braking or a collision occurs, he/she may be thrown forward. To obtain further protection in an accident, the driver and all passengers in the vehicle should always wear their seat belts when driving. For instructions and precautions concerning the seat belt system, see "Seat belts" in this chapter.

NOTICE

Do not perform any of the following changes without consulting your Toyota dealer. Such changes can interfere with proper operation of the SRS airbag system in some cases.

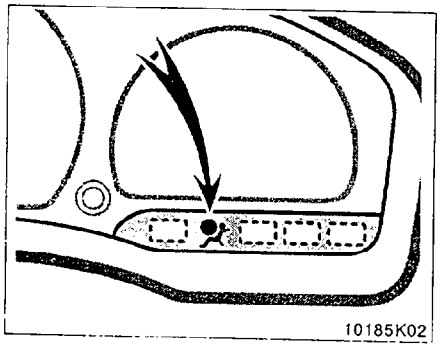
- *Installation of electronic items such as a mobile two–way radio, cassette tape player or compact disc player*
- *Modification of the suspension system*
- *Modification of the front end structure*
- *Attachment of a grille guard (bull bar, kangaroo bar, etc.), snowplow, winches or any other equipment to the front end*
- *Repairs made on or near the front console, steering column or steering wheel*



CAUTION

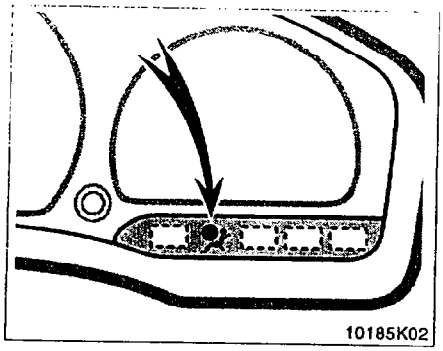
- Do not put objects on the steering wheel pad. They might restrict inflation or cause personal injury as they are projected rearward.
- Do not modify, remove or open any component or wiring, such as the steering wheel, column cover, airbag sensor assembly. Doing any of these may cause sudden SRS airbag inflation or disable the system, which could result in personal injury.

Failure to follow these instructions can result in severe injuries.



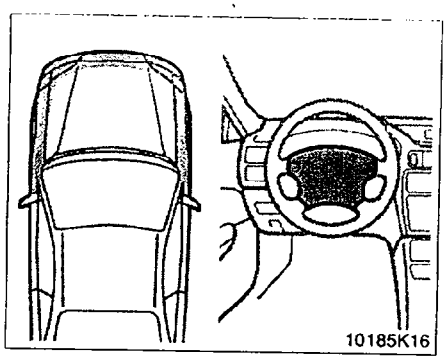
This SRS airbag system has a service reminder indicator to inform the driver of operating problems. If either of the following conditions occurs, this indicates a malfunction of the airbag. Contact your Toyota dealer as soon as possible to service the vehicle.

- The light does not come on when the ignition key is turned to the "ACC" or "ON" position, or remains on.
- The light comes on while driving.



This SRS airbag system has a service reminder indicator to inform the driver of operating problems. If either of the following conditions occurs, this indicates a malfunction of the airbag. Contact your Toyota dealer as soon as possible to service the vehicle.

- The light does not come on when the ignition key is turned to the "ACC" or "ON" position, or remains on.
- The light comes on while driving.



In the following cases, contact your Toyota dealer as soon as possible:

- The SRS airbag has been inflated.
- The front part of the vehicle (shaded in the illustration) was involved in an accident not of the extent to cause the SRS airbag to inflate.
- The pad section of the steering wheel (shaded in the illustration) is scratched, cracked, or otherwise damaged.