636073

REPORT NO. 208-MGA-2002-005

SAFETY COMPLIANCE SLED TESTING FOR FMVSS 208 OCCUPANT CRASH PROTECTION

Ford Motor Company
2002 Ford Mustang 2 Door
NHTSA NO. C20209

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: April 3, 2002

Report Date: April 12, 2002

FINAL REPORT

Prepared For:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ASSURANCE
OFFICE OF VEHICLE SAFETY COMPLIANCE
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6/11/02
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TECHNICAL REPORT STANDARD TITLE PAGE

1 Report No 208-MGA-2002-005	2 Government Accession No	3 Recipient's Catalog No
4 Title and Subtitle Final Report for FMVSS 208 Compliance Sled Testing of a 2002 Ford Mustang 2 Door NHTSA No C20209		5 Report Date April 12, 2002 6 Performing Organization Code MGA
7 Author(s) Chad Gadberry		8 Performing Organization Report No MGA-DOT-208-005
9 Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10 Work Unit No 11 Contract or Grant No DTNH22-98-D-11055
12 Sponsoring Agency Name and Address U S Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (Mail Code NSA-30) 400 Seventh St , S W , Room 6115 Washington, D C 20590		13 Type of Report and Period Covered Final Report April 3-12, 2002 14 Sponsoring Agency Code NSA-30
15 Supplementary Notes		
16 Abstract A compliance test (sled test) was conducted on the subject 2002 Ford Mustang 2 Door in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No TP208S-01 for the determination of FMVSS 208 compliance Test failures identified were as follows NONE		
17 Key Words Compliance Testing Safety Engineering FMVSS 208S Sled Test		18 Distribution Statement Copies of this report are available from NHTSA Technical Reference Division, Room 5108, (NAD-40) 400 Seventh Street, S W Washington, D C 20590 Telephone No (202) 366-4946
19 Security Classif (of this report) Unclassified	20 Security Classif (of this page) Unclassified	21 No of Pages 149 / 22 Price

Form DOT F 1700 7 (8-69)

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Purpose

This FMVSS 208 compliance sled test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-98-D-11055. The purpose of this test was to determine if the subject vehicle, a 2002 Ford Mustang 2 Door, NHTSA No. C20209, meets the performance requirements of FMVSS 208, "Occupant Crash Protection," in the impact simulation sled test mode.

Test Procedure

This test was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No TP-208S-01 dated January 15, 1998. Data was obtained relative to FMVSS 208, "Occupant Crash Protection," performance

The test vehicle was instrumented with four (4) accelerometers to measure longitudinal axis accelerations.

The test vehicle contained two (2) Part 572 E 50th percentile adult male anthropomorphic test devices (dummies). The dummies were positioned in the front outboard seating positions according to the dummy placement procedures specified in Appendix B of the Laboratory Test Procedure The dummies were not restrained by seat belts.

Both dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations; chest deflection potentiometers; left and right femur load cells to measure axial forces; and upper neck load cells to measure longitudinal, lateral, and vertical forces and moments.

The thirty-eight (38) data channels were digitally sampled at 10,000 samples per second and processed per Sections 11.7 through 11.9 of the Laboratory Test Procedure.

The crash event was recorded by six (6) high-speed motion picture cameras The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera

Test Results Summary

This FMVSS 208 compliance sled test was conducted at MGA Research Corporation on April 3, 2002

The test vehicle, a 2002 Ford Mustang 2 Door, NHTSA No C20209, appeared to comply with the performance requirements of FMVSS 208 in the impact simulation sled test mode as measured by Hybrid III 50th percentile male dummies.

	FMVSS 208 Max Allowable Injury Assessment Values	Driver (Serial #403)	Passenger (Serial #401)
HIC	1000	191	119
Chest g	60 g	40.2 g	31 6 g
Chest displacement	3 in.	0 8 in	0.6 in.
Left Femur	2250 lb	1048 lb	991 lb
Right Femur	2250 lb	1132 lb	969 lb
Neck Extension	57 Nm	34.0 Nm	21.7 Nm
Neck Flexion	190 Nm	19 1 Nm	40.9 Nm
Neck Tension	3300 N	1011 N	366 N
Neck Compression	4000 N	1274 N	1747 N
Neck Shear	3100 N	819 N	857 N

The vehicle also appears to meet the other FMVSS 208 requirements for which it was tested. These results are shown in the data sheets that are included in this report.

The test vehicle was equipped with air bags at the driver and passenger seating positions. The dummies were not restrained by seat belts. The sled carriage was accelerated to 16 8 g with an integrated velocity change of 28.6 mph After filtering the acceleration signal to Channel Class 60, the airbag system was triggered 18 6 milliseconds after 0 5 g acceleration.

Test Anomalies:

The airbag warning label on the dash was removed prior to receiving the vehicle. It is not known whether the label was removed by the dealer, by a potential customer, or not installed at all.

Sled Test Summary

Vehicle NHTSA No.: C20209 Test Mode. FMVSS 208 SLED TEST

Vehicle Yr/Make/Model/Body Style. 2002/Ford/Mustang/2 Door

Test Date: April 3, 2002 Time: 12:20 p m Temp: 72°F

Vehicle Test Weight: 3571 lbs.

DUMMY INFO.	**DRIVER**	**PASSENGER**
Dummy Type	Part 572E	Part 572E
Serial Number	403	401
Restraint System	Frontal airbag	Frontal airbag
No Data Channels	15	15

Number of Cameras: 1 Real Time

6 High Speed

Door Opening Data: yes Left Front

yes Right Front

FRONT SEAT(S) DATA	**DRIVER**	**PASSENGER**
Seat Track Failure -	0.0 inches shift;	0.2 inches shift forward
Seat Back Failure -	no	no

VISIBLE DUMMY CONTACT POINTS:	**DRIVER**	**PASSENGER**
Head	Airbag/windshield/ sunvisor	Airbag/sunvisor
Chest	Airbag	Airbag
Left Knee	Knee bolster	Glove box
Right Knee	Knee bolster	Glove box

General Test And Vehicle Parameter Data

Vehicle Yr/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

Vehicle NHTSA No : C20209 VIN: 1FAFP40422F130738 Color: Red

Engine Data:

No. Cylinders: 6 ; CID:____; Liters: 3 8 ; CCs._____

Placement: Longitudinal/Inline: X ; Transverse/Lateral _____

Transmission Data:

Speeds. 5 , Manual. X , Automatic:____; Overdrive: X

Final Drive:

Rear Wheel Drive: X ; Front Wheel Drive:____; Four Wheel Drive:____

Major Options:

A/C. X , Pwr. Strg.. X , Pwr. Brakes. X , Pwr. Windows: X

Pwr. Dr. Locks. X ; Other: Power seats, cruise control, rear defogger, tilt wheel

Date Received: 2/18/02 ; Odometer Reading: 42 miles

Selling Dealer: Lyons-Ryan Ford, 104 Rt. 173, Antioch, IL 60002

REMARKS None

General Test And Vehicle Parameter Data (Cont.)

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By. Ford Motor Company

Date of Manufacture. 11/01, VIN: 1FAFP40422F130738

GVWR. 4365 lbs; GAWR Front: 2306 lbs

GAWR Rear: 2117 lbs.

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT 35 psi REAR: 35 psi

Recommended Tire Size P225/55R16 94T or P205/65R15 92T

Recommended Cold Tire Pressure:

FRONT: 35 psi REAR: 35 psi

Size of Tires on Test Vehicle. P225/55R16 94T

Type of Spare Tire: T125/90R15 96M ; Space Saver: X ; Standard: ____

Vehicle Capacity Data:

Type of Front Seats. X Bucket, __Bench, __Split Bench

Number of Occupants: 2 Front; 2 Rear, __3rd Seat; 4 TOTAL

REMARKS: None

VEHICLE CAPACITY WEIGHT (VCW) = 700 lbs.

No. Of Occupants x 150 lbs = 600 lbs

Rated Cargo/Luggage Weight (RCWL) = 100 lbs (Difference)

General Test And Vehicle Parameter Data (Cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED AT LABORATORY (with maximum fluids)

Right Front =	876 lbs.	Right Rear =	664 lbs
Left Front =	905 lbs.	Left Rear =	682 lbs.
TOTAL FRONT =	1781 lbs.	TOTAL REAR =	1346 lbs.
% Total Weight =	57.0 %	% Total Weight =	43.0 %

TOTAL DELIVERED WEIGHT = 3127 lbs

WEIGHT OF FULLY LOADED TEST VEHICLE WITH TWO DUMMIES (344 LB) AND 100 POUNDS OF CARGO WEIGHT·

Right Front =	952 lbs.	Right Rear =	812 lbs.
Left Front =	978 lbs.	Left Rear =	829 lbs.
TOTAL FRONT =	1930 lbs	TOTAL REAR =	1641 lbs
% Total Weight =	54 0 %	% Total Weight =	46 0 %

TOTAL WEIGHT = 3571 lbs.

TEST VEHICLE ATTITUDE. (all measurements in degrees)

AS DELIVERED DOOR SILL ANGLE.	0.6° nose down
AS TESTED DOOR SILL ANGLE·	0 4° nose down
FULLY LOADED DOOR SILL ANGLE·	0.1° nose down

FUEL SYSTEM DATA·

Fuel System Capacity From Owner's Manual = 15.7 gallons

Usable Capacity Figure Furnished by COTR = 15.7 gallons

REMARKS. None

Post-Impact Data

Test number·	HT02040301
NHTSA number·	C20209
Test date	April 3, 2002
Test time.	12.20 p.m.
Test type:	FMVSS 208 Compliance Sled Test
Impact angle:	0°
Ambient Temperature at Impact Area	72°F
Temperature in Occupant Compartment.	72°F

Impact Velocity.

Integrated velocity from the integration of the entire sled acceleration:	28 6 mph
Specified integrated velocity range·	28 to 30 mph

Sled Carriage Acceleration:

Acceleration:	16.8 g
Specified Acceleration Range	16.0 - 18 2 g

Sled Carriage Acceleration Duration:

Time from T-0 (-0.5 g) to 0 0 g·	121.6 msec
Specified Acceleration Duration·	120 0 to 130.0 msec

The sled acceleration corridor was achieved.

Seat and Steering Column Positioning Data

Vehicle Yr/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

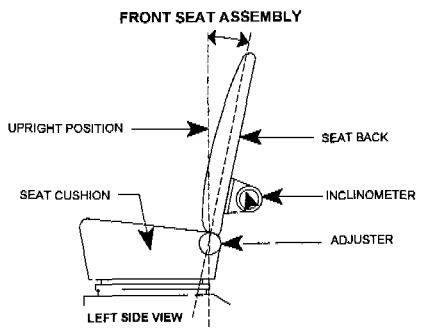
Vehicle NHTSA No.: C20209 Test Date: April 3, 2002

NOMINAL DESIGN RIDING POSITION:

Driver Seat. Seat Back Angle = 20.4°*

Passenger Seat. Seat Back Angle = 20.1°*

* - Measured at seat frame



SEAT FORE AND AFT POSITIONS:

Driver Seat. The seat track had a total position movement of 216 mm and was positioned 108 mm rearward from the foremost position.

Passenger Seat: The seat track had a total position movement of 15 notches and was positioned 7 notches rearward from the foremost position with the forward most locking position as zero.

STEERING COLUMN ADJUSTMENTS:

The steering column was placed in the mid position (3rd of 5).

Dummy Positioning Measurement Table

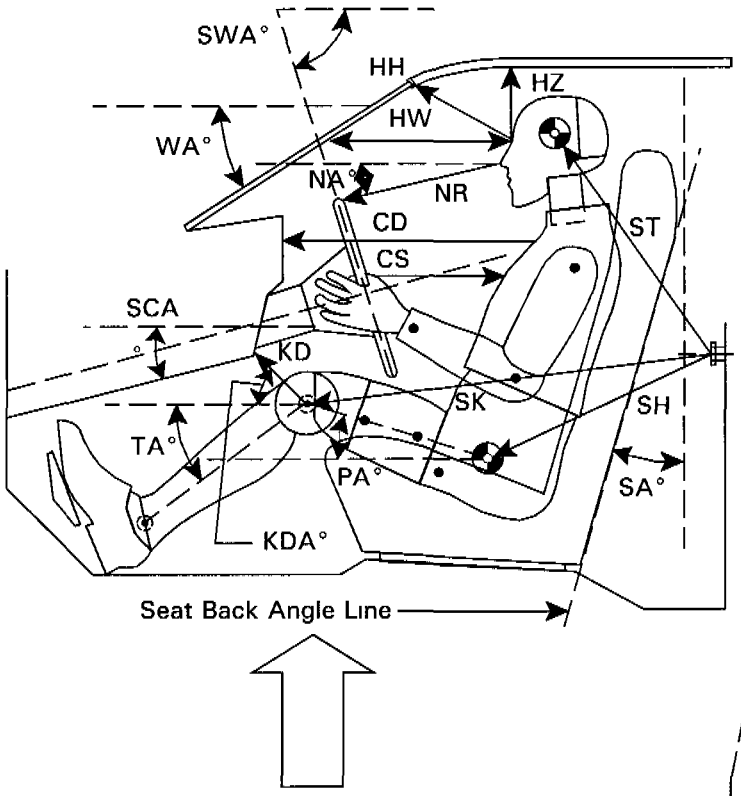
Vehicle Year/Make/Model/Body Style. 2002/Ford/Mustang/2 Door

Vehicle NHTSA No C20209 Test Date· April 3, 2002

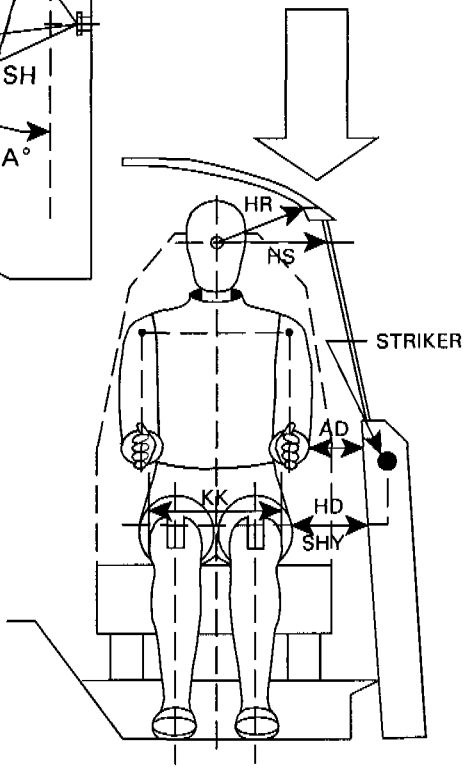
	DRIVER (Serial #403)	PASSENGER (Serial #401)
WA°	26.2°	
SWA°	69.7°	
SCA°	20 5°	
SA°	20.4°	20.1°
HZ	5.9	5 7
HH	10 4	10 2
HW	19 4	18 3
HR	7.1	6.1
NR	13.6 Angle (NA°) 14 0°	
CD	19.9	22 0
CS	10 7	
RA	6 1	
KDL	7.9 Angle (KDA°) 0 0°	6 9
KDR	7 5	6.7 Angle (KDA°) 0.0°
PA°	23.4°	24.9°
TA°	38 2°	35.9°
KK	11.7	9.1
ST	25 8 Angle 38 4°	25.2 Angle 40.2°
SK	34 9 Angle 91.5°	35.3 Angle 90.8°
SH	21.1 Angle 104.2°	21.1 Angle 107.0°
SHY	9 6	9 6
HS	10.7	9.8
HD	4.9	3 5
AD	3.3	3.0

Dummy Positioning Measurement Locations

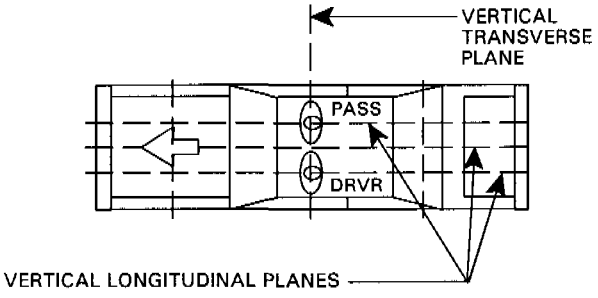
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



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



Description of Dummy Measurements

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

* HH Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header

* HW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield Use a level.

HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.

* CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.

* CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Then measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See photograph.

RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.

NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA)

*[1] KDL, KDR Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA) See photograph.

* Measurement used in Data Tape Reference Guide
[1] Only outboard measurement is referenced in Data Tape Reference Guide

Description of Dummy Measurements (Cont.)

SH, SK, ST Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level The angles of these measurements with respect to the horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See photograph.

The following measurements are to be made within a vertical transverse plane.

HS Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height which allows a level measurement. Use a level. See photograph

* AD Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.

* HD H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.

* HR Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.

SHY Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See photograph

KK Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse)

* Measurement used in Data Tape Reference Guide

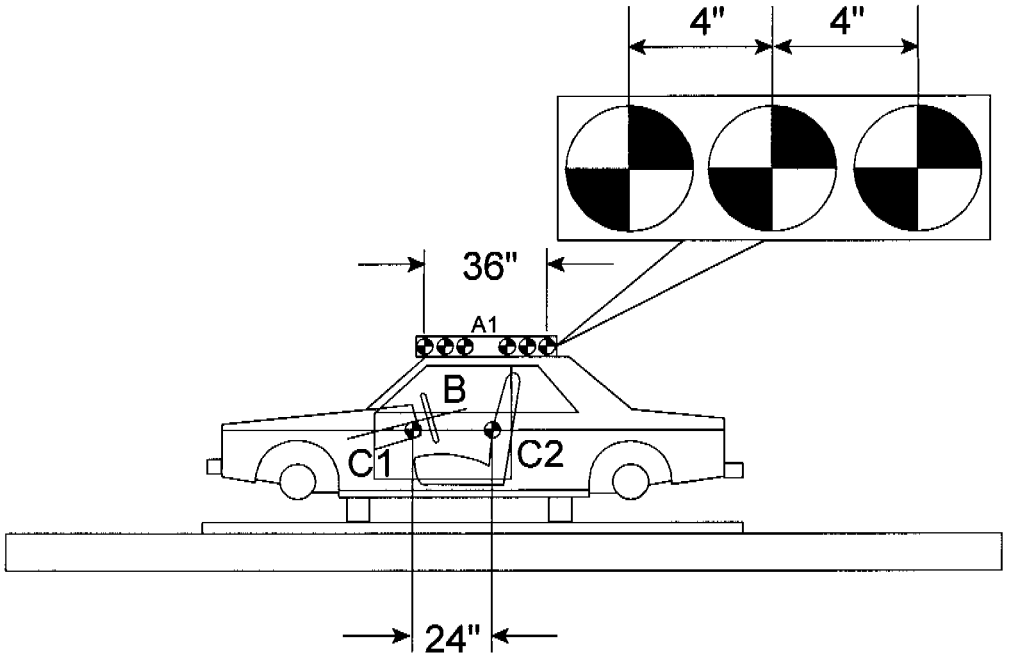
Description of Dummy Measurements (Cont.)

Angles

SA	Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.
PA	Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
SWA	Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.
SCA	Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
NA	Measure the angle made when taking the measurement NR with respect to the horizontal.
KDA	Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See photograph.
WA	Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal)
TA	Tibial Angle, use a straight edge to connect the dummy's knee and ankle bolts Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

Vehicle Targeting Measurements

REFERENCE PHOTO TARGETS

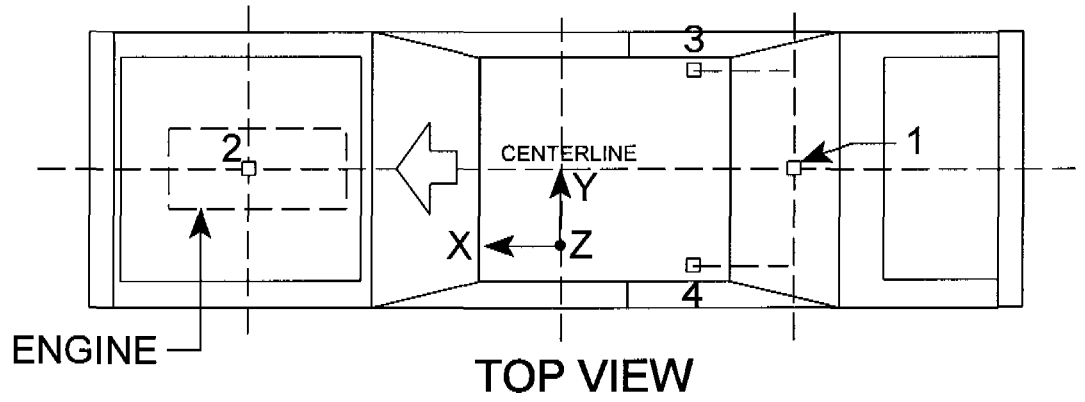


LEFT SIDE VIEW

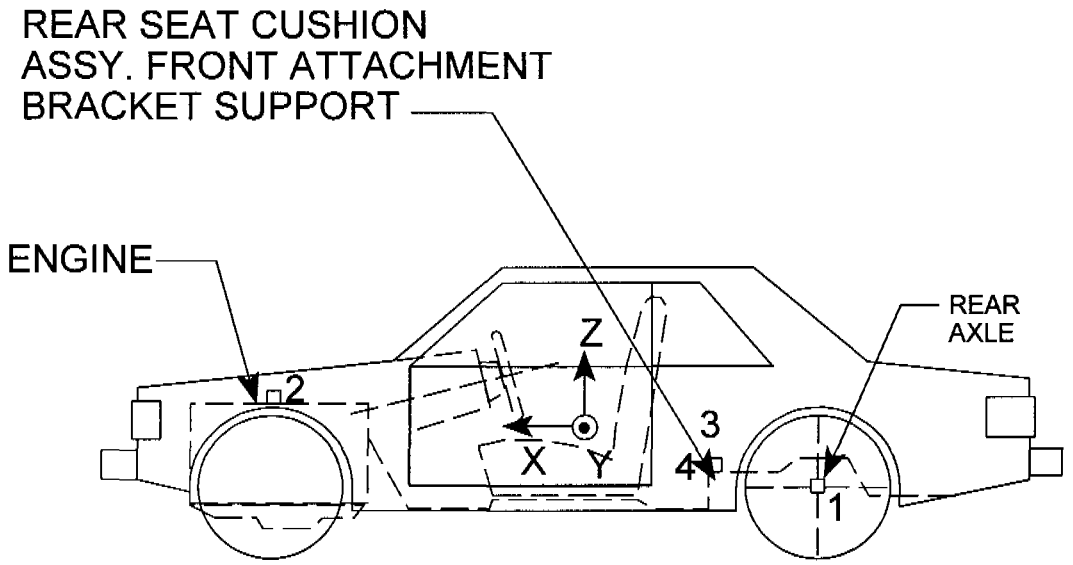
Vehicle Accelerometer Placement and Data Summary

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

Vehicle NHTSA No C20209 Test Date: April 3, 2002



TOP VIEW



LEFT SIDE VIEW

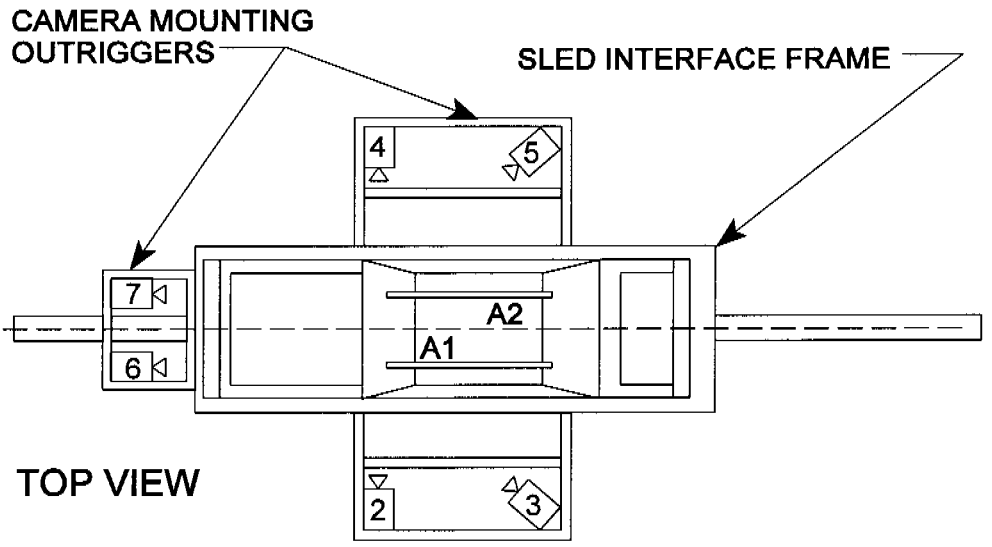
Vehicle Accelerometer Location Measurements and Data Summary

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

Vehicle NHTSA No. C20209 Test Date April 3, 2002

No	Location	X (in)	Y (in)	Positive Direction		Negative Direction	
				Value	Time (msec)	Value	Time (msec)
	Sled Primary Longitudinal	67.0	0	16 8 g	47	-1.2 g	125
	Sled Redundant Longitudinal	67 0	4 0	16 8 g	47	-1 2 g	125
	Sled Velocity Measured Integrated	67 0	0	28 6 mph	121	--	--
1	Rear Axle Longitudinal	36 0	0	17 0 g	62	-1.1 g	125
2	Top Engine Longitudinal	136.0	0	21.8 g	50	-2.1 g	151
3	Right Rear Seat Member Longitudinal	67.0	20 0	18.4 g	62	0.0 g	157
4	Left Rear Seat Member Longitudinal	67.0	20.0	16.8 g	63	-1 5 g	124

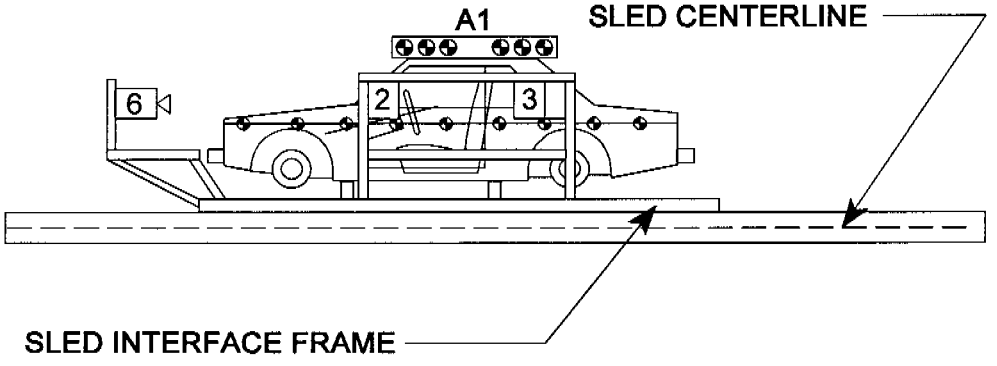
Camera Positions



TOP VIEW

CAMERA FRAME RATES·
#1 = 24 fps
All Others = 1,000 fps

1 REAL TIME CAMERA



LEFT SIDE VIEW

Camera Location Measurements

Camera No.	VIEW	Camera Positions (inches)*			Angle (deg)	Film Plane To Head Target	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real-Time (Pre and Post)						10	24
2	Onboard Driver	70.6	88.6	38.4	90	72 4	13	952
3	Onboard Driver Angle	150.9	91.1	47 8			13	1005
4	Onboard Passenger	71.8	89.6	38 5	90	71 1	13	1010
5	Onboard Passenger Angle	146.7	88.5	47 9			13	952
6	Onboard Windshield Driver	18 3	14 1	42 9			13	1000
7	Onboard Windshield Passenger	18.3	13.9	42.9			13	803

Reference* X = Front of sled carriage

Y = Center of sled carriage

Z = Top of sled carriage

Occupant Injury Data

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

Vehicle NHTSA No · C20209 Test Date. April 3, 2002

MAXIMUM ACCELERATION VALUES: (g's)	DRIVER DUMMY #403	PASSENGER DUMMY #401
Head Channel X	-43 8	-32.8
Head Channel Y	-7 9	-17.9
Head Channel Z	-22.5	21 4
HEAD RESULTANT	46.1	36 7
Chest Channel X	-40.6	-30 2
Chest Channel Y	7.4	-4 1
Chest Channel Z	12.3	10 8
CHEST RESULTANT	41 1	32.0

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	191	119
t_1 = (msec)	100.0	68 1
t_2 = (msec)	123 8	92.3

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

CHEST INJURY CRITERIA (CLIP) VALUES: (g's)

CLIP	40.2	31.6
t_1 = (msec)	82.8	94.1
t_2 = (msec)	85.8	97 1
CHEST DEFLECTION (in)	0 8	0.6

Occupant Injury Data (Cont)

MAX COMPRESSIVE FEMUR FORCES:	DRIVER DUMMY #403	PASSENGER DUMMY #401
Left Side (lbs)	1048	991
Right Side (lbs)	1132	969

NECK INJURY CRITERIA:

Peak Flexion Bending Moment about the Occipital Condyle (N-m)	19.1	40 9
Peak Extension Bending Moment about the Occipital Condyle (N-m)	34.0	21.7
Peak Axial Tension (N)	1011	366
Peak Axial Compression (N)	1274	1747
Peak Fore Shear (N)	819	857
Peak Aft Shear (N)	175	295

Seat Belt Warning System Data

Vehicle Year/Make/Model/Body Style. 2002/Ford/Mustang/2 Door

NHTSA No.. C20209 , Technician: Chad Gadberry ; Date February 28, 2002

Complete the following to determine which seat belt warning system option (S7.3(a)(1) or S7 3 (a)(2)) is used. (Manufacturers may use either option)

A. With occupant in driver's position and lap belt in stowed position and ignition switch placed in "Start/On" position·

A.1 S7.3(a)(1)
Time duration of audible warning signal = 6 seconds
(4 to 8 seconds)

Time duration of reminder light operation = 66 seconds
(no less than 60 seconds)

A.2 S7.3(a)(2)
Time duration of audible warning signal = ____ seconds
(4 to 8 seconds)(see 49 USCS @ 30124)

Time duration of reminder light operation = ____ seconds
(4 to 8 seconds)

B. With occupant in driver's position and lap belt in use and ignition switch placed in "Start/On" position·

B.1 S7.3(a)(1)
Time duration of audible warning signal = 0 seconds
(audible warning not required)

Time duration of reminder light operation = 3 seconds
(reminder light not required)

B 2 S7.3(a)(2)
Time duration of audible warning signal = ____ seconds
(audible warning not required)

Time duration of reminder light operation = ____ seconds
(4 to 8 seconds)

C Note wording of visual warning.
Fasten seat belt _____
Fasten Belt _____
Symbol 101 X

Readiness Indicator

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

NHTSA No.: C20209 ; Technician Chad Gadberry ; Date: February 28, 2002

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement. (11/8/94 legal interpretation)

1. Is the system totally mechanical? ( )Yes (X)No
(If YES this Data Sheet is complete.)

2. Describe the location of the readiness indicator: Lower left of instrument panel

3. Is the readiness indicator clearly visible to the driver?
(X)Yes-Pass ( )**No-FAIL**

4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided?
(X)Yes-Pass ( )**No-FAIL**

Air Bag Labels Data

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

NHTSA No.: C20209 ; Technician: Chad Gadberry ; Date. February 28, 2002

1. Air bag maintenance label and owner's manual instructions (S4 5.1(a)).

1 1 Does the manufacturer recommend periodic maintenance or replacement of the airbag? ( )Yes, go to 1.2 (X) No, go to 2

1.2. Does the vehicle have a maintenance or replacement label?
( )Yes-Pass ( ) **No-FAIL**

1.3. Does the label contain one of the following?
( )Yes-Pass ( ) **No-FAIL**
( ) Schedule on label specifies month and year (Date:_____)
( ) Schedule on label specifies vehicle mileage (Mileage:_____)
( ) Schedule on label specifies interval measured from date on certification label (Date:_____)

1 4 Is the label permanently affixed within the passenger compartment?
( )Yes-Pass ( ) **No-FAIL**

1 5 Is the label lettered in English?
( )Yes-Pass ( ) **No-FAIL**

1 6 Is the label in block capitals and numerals?
( )Yes-Pass ( ) **No-FAIL**

1.7. Are the letters and numerals at least 3/32 inches high?
( )Yes-Pass ( ) **No-FAIL**

1.8. Does the owner's manual set forth the recommended schedule for maintenance or replacement? ( )Yes-Pass ( ) **No-FAIL**

2. Does the owner's manual (S4.5.1(f)).

2 1 Include a description of the vehicle's airbag system in an easily understandable format? (X)Yes-Pass ( ) **No-FAIL**

2.2 Include a statement that the vehicle is equipped with an airbag and a lap/shoulder belt at the front outboard seating positions?
(X)Yes-Pass ( ) **No-FAIL**

Air Bag Labels Data (Cont)

2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?

(X)Yes-Pass ( ) **No-FAIL**

2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an airbag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?

(X)Yes-Pass ( ) **No-FAIL**

2 5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to insure maximum safety protection for those occupants?

(X)Yes-Pass ( ) **No-FAIL**

2 6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?

(X)Yes-Pass ( ) **No-FAIL**

3. Does the vehicle:

3.1. Provide an automatic means to ensure that the airbag does not deploy when a child seat or child with a total mass of 30 kg or less is present on the front outboard passenger? ( )Yes (X) No

3 2 Incorporate sensors, other than or in addition to weight sensors, which automatically prevent the passenger air bag from deploying in situations in which it might have an adverse effect on infants in rear-facing child seats, and unbelted or improperly belted children? ( )Yes (X) No

3.3. Have a passenger air bag designed to deploy in a manner that does not create a risk of serious injury to infants in rear-facing child seats, and unbelted or improperly belted children? ( )Yes (X) No

If yes to 3 1, or 3.2, or 3.3, the vehicle is not required to have a sunvisor warning label (S4.5.1(6)), an airbag alert label (S4 5 1(c)) or a label on the dash (S4.5.2(e)) and this check sheet is complete (S4.5.1). If no to 3.1, 3.2, and 3.3, go to 4.

4. Sun Visor Warning Label

4.1. Is the label permanently affixed (may be permanent marking or molding) to either side of the sunvisor at each front outboard seating position with an airbag? (S4.5.1(b)(2))

Driver Side - (X)Yes-Pass ( ) **No-FAIL**
Passenger Side - ( ) N/A (X)Yes-Pass ( ) **No-FAIL**

Air Bag Labels Data (Cont.)

4.2. Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children.") (S4.5.1(b)(2)(v))) to either label shown on the next page as appropriate at each front outboard seating position with an air bag? (S4.5.1(b)(2))

4 2 1 **Dual air bags:** ( ) Not Applicable
Driver Side - (X)Yes-Pass ( ) **No-FAIL**
Passenger Side - (X)Yes-Pass ( ) **No-FAIL**

4.2.2 **Vehicle with driver air bag ONLY - either 4.2.2.1 or 4.2.2.2 is applicable, not both.** (S4 5 1(b)(2)(iv))

4 2.2.1 Does the label conform in content to either label shown on the following page as appropriate?
(X) Not Applicable
Driver Side - ( )Yes-Pass ( ) **No-FAIL**

4.2.2.2 Does the label conform in content to the first label shown on the following page where the label can be modified to omit the pictogram and the message text may read.

DEATH or SERIOUS INJURY can occur
• Sit as far back as possible from the air bag.
• ALWAYS use SEAT BELTS and CHILD RESTRAINTS
• The BACK SEAT is the SAFEST place for children

(X) Not Applicable
Driver Side - ( )Yes-Pass ( ) **No-FAIL**

Air Bag Labels Data (Cont.)

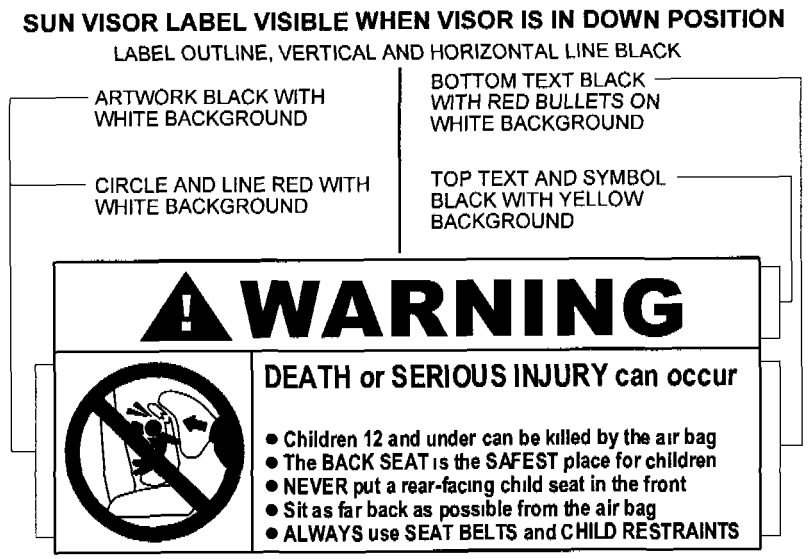


Figure 6a (S4 5 1(b)(2))

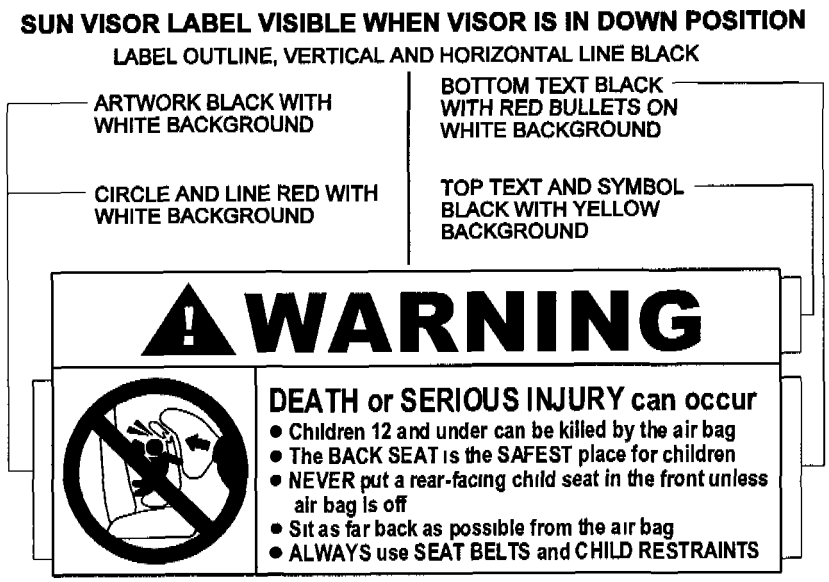


Figure 6b (S4 5 1(b)(2))

4.3 Is the label heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1(b)(2)(i)) Driver Side - (X)Yes-Pass ( ) **No-FAIL**
Passenger Side - ( ) No air bag (X)Yes-Pass ( ) **No-FAIL**

4.4 Is the message white with black text? (S4.5.1(b)(2)(ii))
Driver Side - (X)Yes-Pass ( ) **No-FAIL**
Passenger Side - ( ) No air bag (X)Yes-Pass ( ) **No-FAIL**

Air Bag Labels Data (Cont)

4.5 Is the message area at least 30 cm^2? (S4.5.1(b)(2)(ii))
Actual message area: 46 cm^2

Driver Side -		(X)Yes-Pass	( ) **No-FAIL**
Passenger Side -	( ) No air bag	(X)Yes-Pass	( ) **No-FAIL**

4 6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(iii) & (S4.5 1(b)(2)(iv))
For vehicles with driver side air bag ONLY ( ) Not Applicable

Driver Side -		(X)Yes-Pass	( ) **No-FAIL**
Passenger Side -	( ) No air bag	(X)Yes-Pass	( ) **No-FAIL**

4.7 Is the pictogram at least 30 mm in diameter? (S4 5 1(b)(2)(iii))
Actual diameter 30 mm
For vehicles with driver side air bag ONLY ( ) Not Applicable

Driver Side -		(X)Yes-Pass	( ) **No-FAIL**
Passenger Side -	( ) No air bag	(X)Yes-Pass	( ) **No-FAIL**

4.8 Is the same side of the sun visor to which the sun visor label is affixed free of other information with the exception of an air bag maintenance label? (S4.5.1(b)(3))

Driver Side -		(X)Yes-Pass	( ) **No-FAIL**
Passenger Side -	( ) No air bag	(X)Yes-Pass	( ) **No-FAIL**

4.9 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label or the utility vehicle label? (S4.5 1(b)(3))

Driver Side -		(X)Yes-Pass	( ) **No-FAIL**
Passenger Side -	( ) No air bag	(X)Yes-Pass	( ) **No-FAIL**

5 Air Bag Alert Label

5 1 Is the Sun Visor Warning Label visible when the sunvisor is in the stowed position?

Driver Side -		(X)Yes, go to 6	( ) No
Passenger Side -	( )No air bag	(X)Yes	( ) No

5 2 Does the label conform in content to the label shown below? (S4 5.1(c)(2))

Driver Side -		( )Yes	( ) **No-FAIL**
Passenger Side -	( )No air bag	( )Yes-Pass	( ) **No-FAIL**

5.3 Is the message area black with yellow text? (S4.5 1(c)(2)(i))

Driver Side -		( )Yes-Pass	( ) **No-FAIL**
Passenger Side -	( )No air bag	( )Yes-Pass	( ) **No-FAIL**

Air Bag Labels Data (Cont.)

5.4 Is the message area at least 20 cm^2? (S4.5.1(c)(2)(i))
Actual message area: _____ cm^2
Driver Side - ( )Yes-Pass ( ) **No-FAIL**
Passenger Side - ( )No air bag ( )Yes-Pass ( ) **No-FAIL**

5.5 Is the pictogram black with a red circle and slash on a white background? (S4 5 1(c)(2)(ii))
For vehicles with driver side air bag ONLY ( ) Not Applicable
( )Yes-Pass ( ) **No-FAIL**

5.6 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2)(ii))
Actual diameter _____ mm
For vehicles with driver side air bag ONLY ( ) Not Applicable
( )Yes-Pass ( ) **No-FAIL**

Figure 6c (S4.5.1(c)(2))

6 Label On the Dash

6.1 Does the vehicle have a passenger side air bag?
(X)Yes ( ) No, check sheet is complete.

6 2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e))
( )Yes-Pass **(X) No**

Note: The airbag warning label on the dash was removed prior to receiving the vehicle. It is not known whether the label was removed by the dealer, by a potential customer, or not installed at all.

Air Bag Labels Data (Cont)

6 3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." (S4.5.1(e)(iii)) to the label shown below. (S4.5.1(e))
( )Yes-Pass ( ) **No-FAIL**

6 4 Is the heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1(e)(i)) ( )Yes-Pass ( ) **No-FAIL**

6.5 Is the message white with black text? (S4.5.1(e)(ii))
( )Yes-Pass ( ) **No-FAIL**

6.6 Is the message area at least 30 cm^2? (S4.5.1(e)(ii))
Actual message area ___ cm^2
( )Yes-Pass ( )**No-FAIL**

REMOVABLE LABEL ON DASH

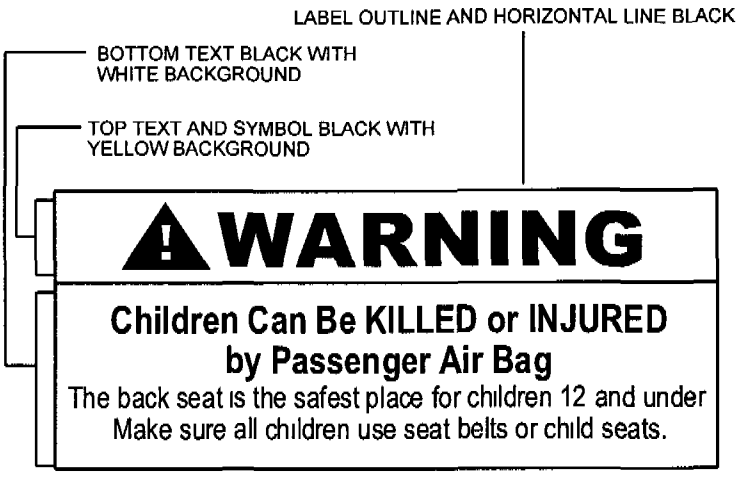


Figure 7 (S4.5.1(e))

Rear Outboard Seating Position Seat Belt Data

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

NHTSA No : C20209 , Technician: Chad Gadberry ; Date. February 28, 2002

Do all rear outboard seating positions have type 2 seat belts?

(X)Yes ( )No

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 belt was not installed.

_____

_____

Lap Belt Lockability Data

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

NHTSA No.: C20209 ; Technician: Chad Gadberry , Date: February 28, 2002

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic locking retractors. (S7.1.1.5(c))

Designated Seating Position (DSP): Right Front

1. Record the seating position Fully rearward
(S7 1 1.5(c)(1))
(Any position is acceptable.)

2. Buckle the seat belt. (S7.1.1.5(c)(1))

3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

4 Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5(a))

(X)Yes-Pass ( ) **No-FAIL**

5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5(a))

(X)Yes-Pass ( ) **No-FAIL**

6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing? (X)Yes, go to 6.1 ( ) No, go to 7.

6 1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))

(X)Yes-Pass ( ) **No-FAIL**

7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

Lap Belt Lockability Data (Cont.)

8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7 1 1 5(c)(2))

9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system (S7 1 1 5(c)(2))

10 Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7 1 1 5(c)(2))

Measured distance between A and B is 68.0 inches.

11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing (S7.1.1.5(c)(3))

12 To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7 1 1 5(c)(4))

The measured force application angle = 10 (spec. 5-15 degrees)

WEBBING TENSION PULL DEVICE

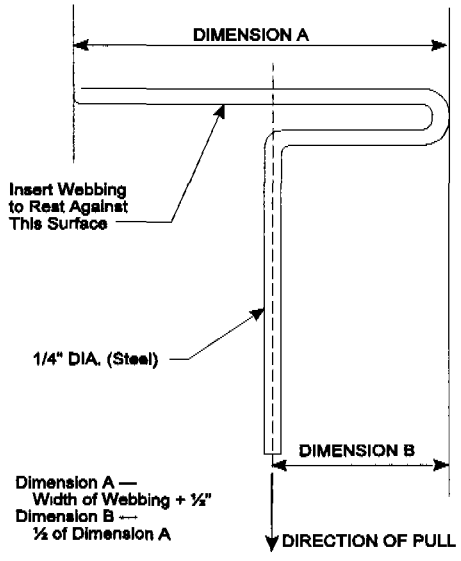


Figure 5 (S7.1.1.5(c)(4))

Lap Belt Lockability Data (Cont)

13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))

Measured distance between A and B is 24.6 inches.

14 Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 10 lb/sec (Spec. 10 to 50 lb/sec)

Measure distance between points A and B 25 9 inches (S7 1 1 5(c)(6))

15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5(c)(7))

14-13 = 1.3 inches (X)Yes-Pass ( ) **No-FAIL**

16 Subtract the measurement in 14 from the measurement in 10 Is the difference 3 inches or more?

10-14 = 42 1 inches (X)Yes-Pass ( ) **No-FAIL**

REMARKS: None

Lap Belt Lockability Data (Cont)

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

NHTSA No · C20209 ; Technician: Chad Gadberry ; Date. February 28, 2002

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic locking retractors. (S7 1 1 5(c))

Designated Seating Position (DSP). Left Rear

1 Record the seating position. Non-adjustable
(S7.1.1.5(c)(1))
(Any position is acceptable)

2. Buckle the seat belt. (S7.1.1.5(c)(1))

3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5(a))

(X)Yes-Pass ( ) **No-FAIL**

5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5(a))

(X)Yes-Pass ( ) **No-FAIL**

6 Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing? (X)Yes, go to 6.1 ( ) No, go to 7

6 1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system (S7.1.1.5(b))

(X)Yes-Pass ( ) **No-FAIL**

7. Locate a reference point A on the seat belt buckle (S7 1.1.5(c)(2))

Lap Belt Lockability Data (Cont)

8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

9 Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system (S7 1 1 5(c)(2))

10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly (S7 1 1 5(c)(2))

Measured distance between A and B is 57.2 inches.

11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

12 To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))

The measured force application angle = 10 (spec. 5-15 degrees)

WEBBING TENSION PULL DEVICE

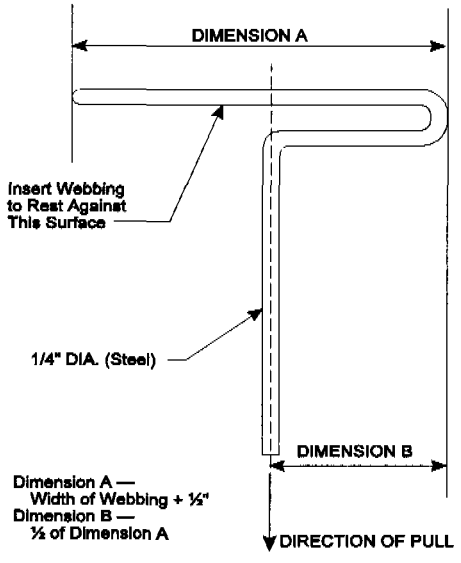


Figure 5 (S7 1.1.5(c)(4))

Lap Belt Lockability Data (Cont.)

13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied (S7 1 1 5(c)(4))

Measured distance between A and B is 26.3 inches.

14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer) Maintain the load for at least 5 seconds Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate. 10 lb/sec (Spec. 10 to 50 lb/sec)

Measure distance between points A and B 27.3 inches (S7 1 1 5(c)(6))

15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1 1 5(c)(7))

14-13 = 1.0 inches (X)Yes-Pass ( ) **No-FAIL**

16. Subtract the measurement in 14 from the measurement in 10 Is the difference 3 inches or more?

10-14 = 29 9 inches (X)Yes-Pass ( ) **No-FAIL**

REMARKS: None

Lap Belt Lockability Data (Cont.)

Vehicle Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

NHTSA No.. C20209 ; Technician: Chad Gadberry ; Date: February 28, 2002

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1 1 5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic locking retractors. (S7 1 1 5(c))

Designated Seating Position (DSP): Right Rear

1. Record the seating position Non-adjustable
(S7.1.1 5(c)(1))
(Any position is acceptable.)

2. Buckle the seat belt. (S7.1 1 5(c)(1))

3 Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle (S7 1 1 5(a))

(X)Yes-Pass ( ) **No-FAIL**

5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing (S7.1.1.5(a))

(X)Yes-Pass ( ) **No-FAIL**

6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing? (X)Yes, go to 6 1 ( ) No, go to 7.

6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))

(X)Yes-Pass ( ) **No-FAIL**

7 Locate a reference point A on the seat belt buckle. (S7.1.1 5(c)(2))

Lap Belt Lockability Data (Cont)

8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7 1 1 5(c)(2))

9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system (S7 1 1 5(c)(2))

10 Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

Measured distance between A and B is 57.2 inches.

11 Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7 1 1 5(c)(3))

12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1 1 5(c)(4))

The measured force application angle = 10 (spec 5-15 degrees)

WEBBING TENSION PULL DEVICE

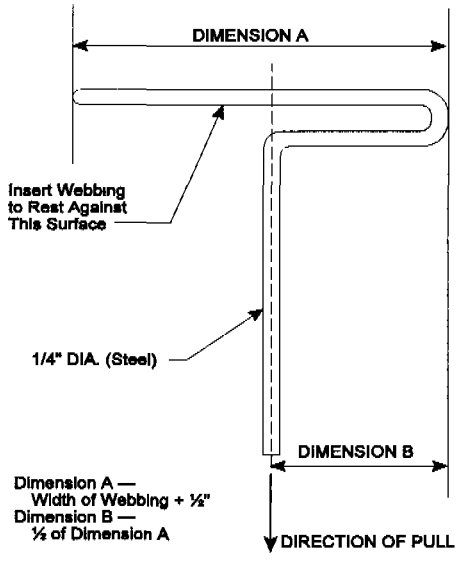


Figure 5 (S7.1.1.5(c)(4))

Lap Belt Lockability Data (Cont.)

13 Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))

Measured distance between A and B is 25.5 inches

14 Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 10 lb/sec (Spec. 10 to 50 lb/sec)

Measure distance between points A and B 26.4 inches (S7.1.1.5(c)(6))

15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1 1.5(c)(7))

14-13 = 0.9 inches (X)Yes-Pass ( ) **No-FAIL**

16 Subtract the measurement in 14 from the measurement in 10 Is the difference 3 inches or more?

10-14 = 30.8 inches (X)Yes-Pass ( ) **No-FAIL**

REMARKS: None

Seat Belt Comfort and Convenience Data

1 **BELT CONTACT FORCE (S7.4.3)**

Test Vehicle NHTSA No ·C20209

Vehicle Model Year/Make/Model/Body Style. 2002/Ford/Mustang/2 Door

Designated Seating Position Tested· Left Rear

Date of Comfort/Convenience Check· February 28, 2002

Technician Performing Check: Chad Gadberry

GVWR: 4365 lb

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars Complete a form for each applicable seat belt.

1.1 Does the vehicle incorporate a webbing tension-relieving device?
( ) Yes - go to latchplate access
(X) No - continue with this check sheet

1.2 Adjustable seats are in adjustment position midway between the forward most and rearmost positions If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)
( ) Check
(X) N/A

1 3 If separately adjustable in a vertical direction, the seats are at the lowest position.
( ) Check
(X) N/A

1.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer
( ) Check
(X) N/A

1 5 Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant This information will be furnished by the COTR
( ) Check
(X) N/A

1 6 Place each adjustable head restraint in its highest adjustment position.
( ) Check
(X) N/A

Seat Belt Comfort and Convenience Data (Cont.)

1.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

( ) Check
(X) N/A

1.8 Position the test dummies according to dummy position placement instructions in Appendix B.

(X) Check

1.9 Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10 8) Measure the contact force exerted by the belt webbing on the dummy's chest Contact the COTR if the contact force exceeds 0.7 pounds.

Contact Force 0.7 lb.

(X) 0.0 to 0.7 pounds - Pass
( ) greater than 0.7 pounds - FAIL*

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

Seat Belt Comfort and Convenience Data (Cont.)

1. **BELT CONTACT FORCE (S7.4.3)**

Test Vehicle NHTSA No C20209

Vehicle Model Year/Make/Model/Body Style. 2002/Ford/Mustang/2 Door

Designated Seating Position Tested. Right Rear

Date of Comfort/Convenience Check. February 28, 2002

Technician Performing Check: Chad Gadberry

GVWR 4365 lb

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars Complete a form for each applicable seat belt.

1.1 Does the vehicle incorporate a webbing tension-relieving device?
( ) Yes - go to latchplate access
(X) No - continue with this check sheet

1.2 Adjustable seats are in adjustment position midway between the forward most and rearmost positions If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)
( ) Check
(X) N/A

1.3 If separately adjustable in a vertical direction, the seats are at the lowest position.
( ) Check
(X) N/A

1.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.
( ) Check
(X) N/A

1.5 Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant This information will be furnished by the COTR.
( ) Check
(X) N/A

1.6 Place each adjustable head restraint in its highest adjustment position.
( ) Check
(X) N/A

Seat Belt Comfort and Convenience Data (Cont.)

1.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

( ) Check
(X) N/A

1.8 Position the test dummies according to dummy position placement instructions in Appendix B.

(X) Check

1.9 Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest (S10 8) Measure the contact force exerted by the belt webbing on the dummy's chest Contact the COTR if the contact force exceeds 0 7 pounds

Contact Force 0 7 lb.

(X) 0.0 to 0.7 pounds - Pass
( ) greater than 0 7 pounds - FAIL*

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

Seat Belt Comfort and Convenience Data (Cont.)

2 LATCHPLATE ACCESS (S7.4.4)

Test Vehicle NHTSA No ·C20209

Vehicle Model Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

Designated Seating Position Tested: **Not applicable - passenger car**

Date of Comfort/Convenience Check·_____

Technician Performing Check·_____

GVWR· _____

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

2.1 Position the seat in its forward most adjustment position.
( ) Check

2.2 Position the test dummy using the procedures in Appendix B (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position.)
( ) Check

2.3 Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
( ) Check

2 4 Attach the inboard and outboard reach string following the instructions on Figure 1C.
( ) Check

2 5 Place the latch plate in the stowed position.
( ) Check

2.6 Extend each line backward and outboard to generate arcs of the reach envelop of the test dummy's arms. Is the latch plate within the reach envelope?
( )Yes-Pass ( ) **No-FAIL**

2.7 Using the clearance test block, specified in Figure 2C, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
( )Yes-Pass ( ) **No-FAIL**

Seat Belt Comfort and Convenience Data (Cont)

3. **RETRACTION (S7.4.5)**

Test Vehicle NHTSA No ·C20209

Vehicle Model Year/Make/Model/Body Style: 2002/Ford/Mustang/2 Door

Designated Seating Position Tested **Not applicable - passenger car**

Date of Comfort/Convenience Check _____

Technician Performing Check·_____

GVWR: _____

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

3.1 Is the vehicle a passenger car or walk-in van-type vehicle?

( )Yes If yes, go to seat belt guides and hardware
( ) No

3.2 Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

( ) Check

3 3 If separately adjustable in a vertical direction, the seats are at the lowest position.

( ) Check

3.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer

( ) Check

3.5 Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

( ) Check

3.6 Place each adjustable head restraint in its highest adjustment position

( ) Check

3 7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position (S8.1.3)

( ) Check

Seat Belt Comfort and Convenience Data (Cont.)

3 8 Use anthropomorphic test dummies whose arms have been removed and position the dummies in the front outboard designated seating positions according to instructions in Appendix B

( ) Check

3 9 Restrain the dummies using the belt systems for the position being tested.

( ) Check

3.10 Stow outboard armrests which are capable of being stowed.

( ) Check

3.11 Check the statement that applies to this test vehicle:

(A) The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released.

( ) Pass

(B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released.

( ) Pass

(C) Neither A or B apply.

( ) **FAIL**

3.12 With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?

( )Yes - Pass

( ) **No - FAIL**

3.13 If this test vehicle has an open body (without doors) and has a seat belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?

( ) N/A

( ) Yes - Pass

( ) **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

4 **SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

Test Vehicle NHTSA No..C20209

Vehicle Model Year/Make/Model/Body Style. 2002/Ford/Mustang/2 Door

Designated Seating Position Tested· Left Rear

Date of Comfort/Convenience Check· February 28, 2002

Technician Performing Check: Chad Gadberry

GVWR: 4365 lb

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars Complete a form for each applicable seat belt.

The requirements for accessibility **DO NOT APPLY** to.

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4 6 1(b))

B. Seats which are removable.

C. Seats which are movable so that the space formerly occupied by the seat can be used for a secondary function

If the seats in this vehicle are different than the criteria above determine the following.

4.1 Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?

(X)Yes - Go to 4.2.
( ) No - this form is complete

4 2 Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)?

(X)Yes - Pass
( ) **No - FAIL**

4.3 Are the remaining two seat belt parts accessible under normal conditions?

(X)Yes - Pass
( ) **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

4.4 The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

(A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched (X) Check

(B) The seat is moved to any position to which it is designed to be adjusted
(X) Check

(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position
(X) Check

(X)Yes - Pass
( ) **No - FAIL**

4.5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
(X) Yes - Pass
( ) **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont)

4. **SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

Test Vehicle NHTSA No..C20209

Vehicle Model Year/Make/Model/Body Style· 2002/Ford/Mustang/2 Door

Designated Seating Position Tested. Right Rear

Date of Comfort/Convenience Check: February 28, 2002

Technician Performing Check· Chad Gadberry

GVWR· 4365 lb

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

The requirements for accessibility **DO NOT APPLY** to:

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7 4 6 1(b))

B Seats which are removable

C. Seats which are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above determine the following·

4 1 Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?

(X)Yes - Go to 4.2.
( ) No - this form is complete

4.2 Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)?

(X)Yes - Pass
( ) **No - FAIL**

4 3 Are the remaining two seat belt parts accessible under normal conditions?

(X)Yes - Pass
( ) **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont)

4.4 The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

(A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched (X) Check

(B) The seat is moved to any position to which it is designed to be adjusted.
(X) Check

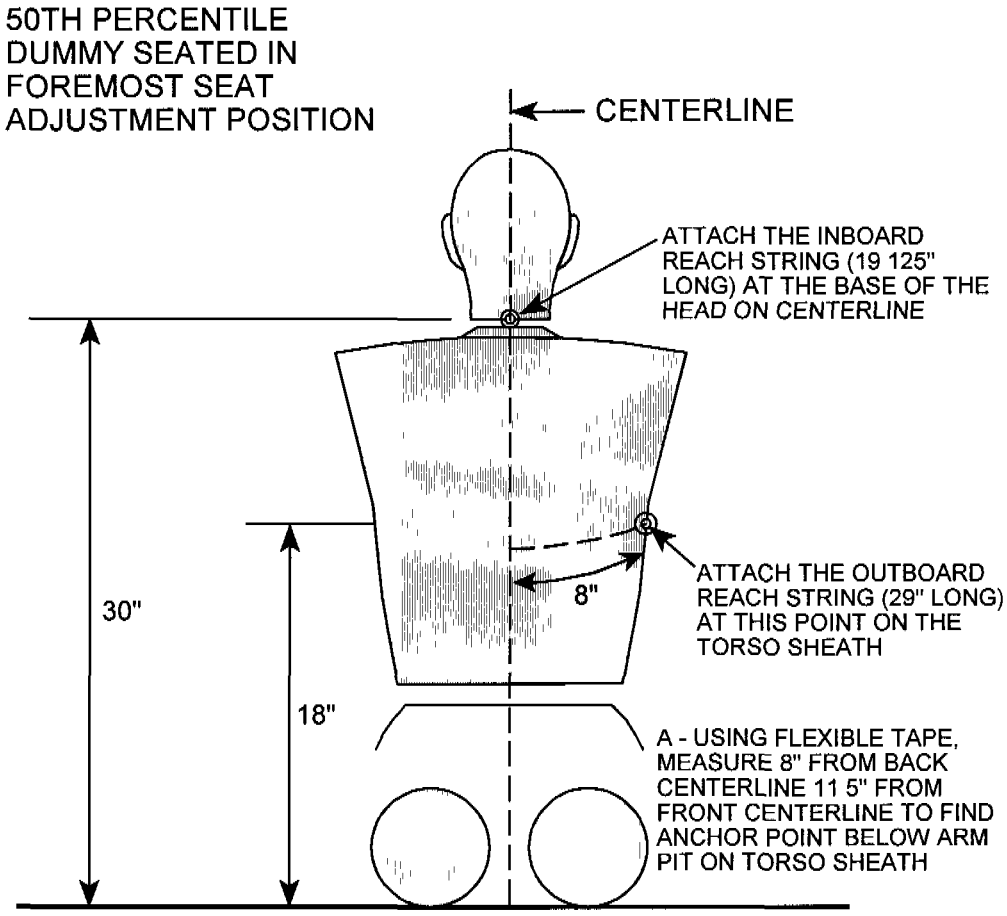
(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position
(X) Check

(X)Yes - Pass
( ) **No - FAIL**

4.5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
(X) Yes - Pass
( ) **No - FAIL**

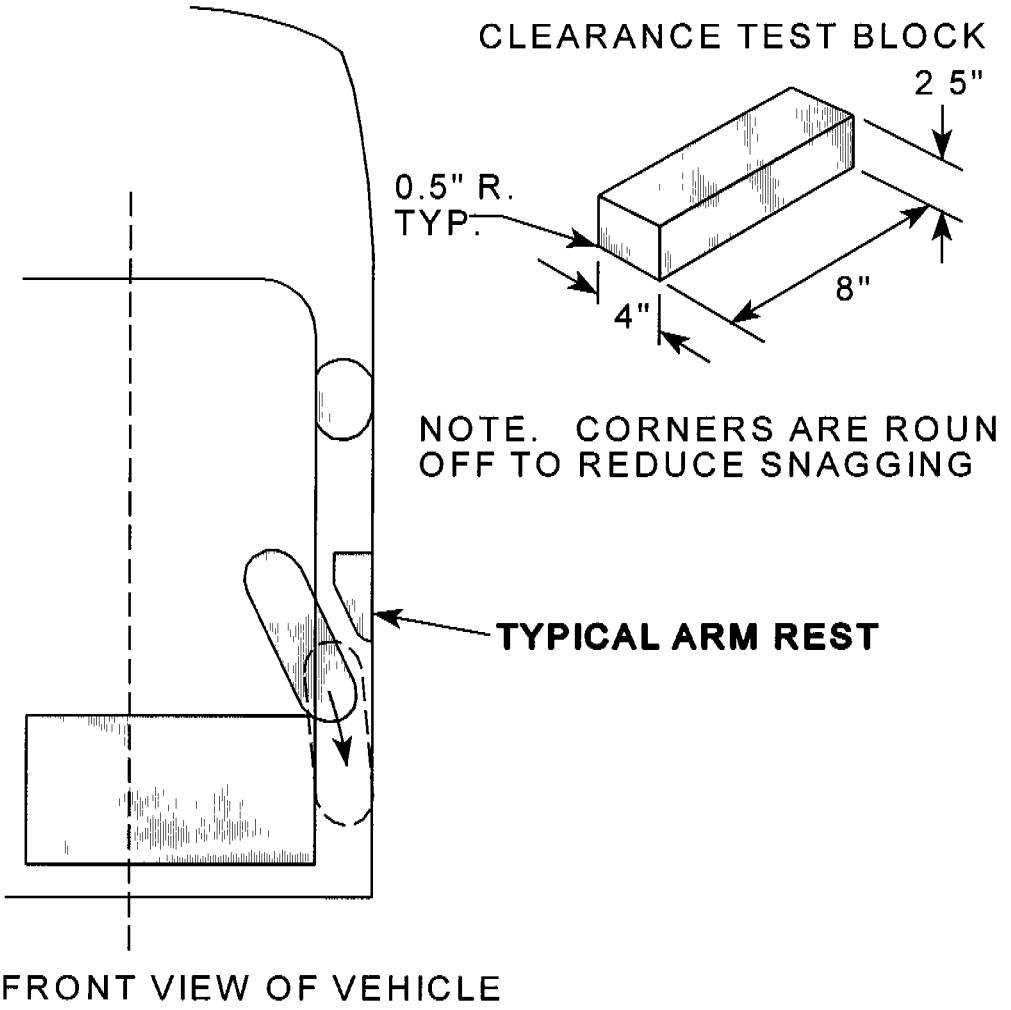
LOCATION OF ANCHORING POINTS FOR LATCHPLATE REACH LIMITING CHAINS OR STRINGS TO TEST FOR LATCHPLATE ACCESSIBILITY

PART 572E DUMMY



REAR VIEW

USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

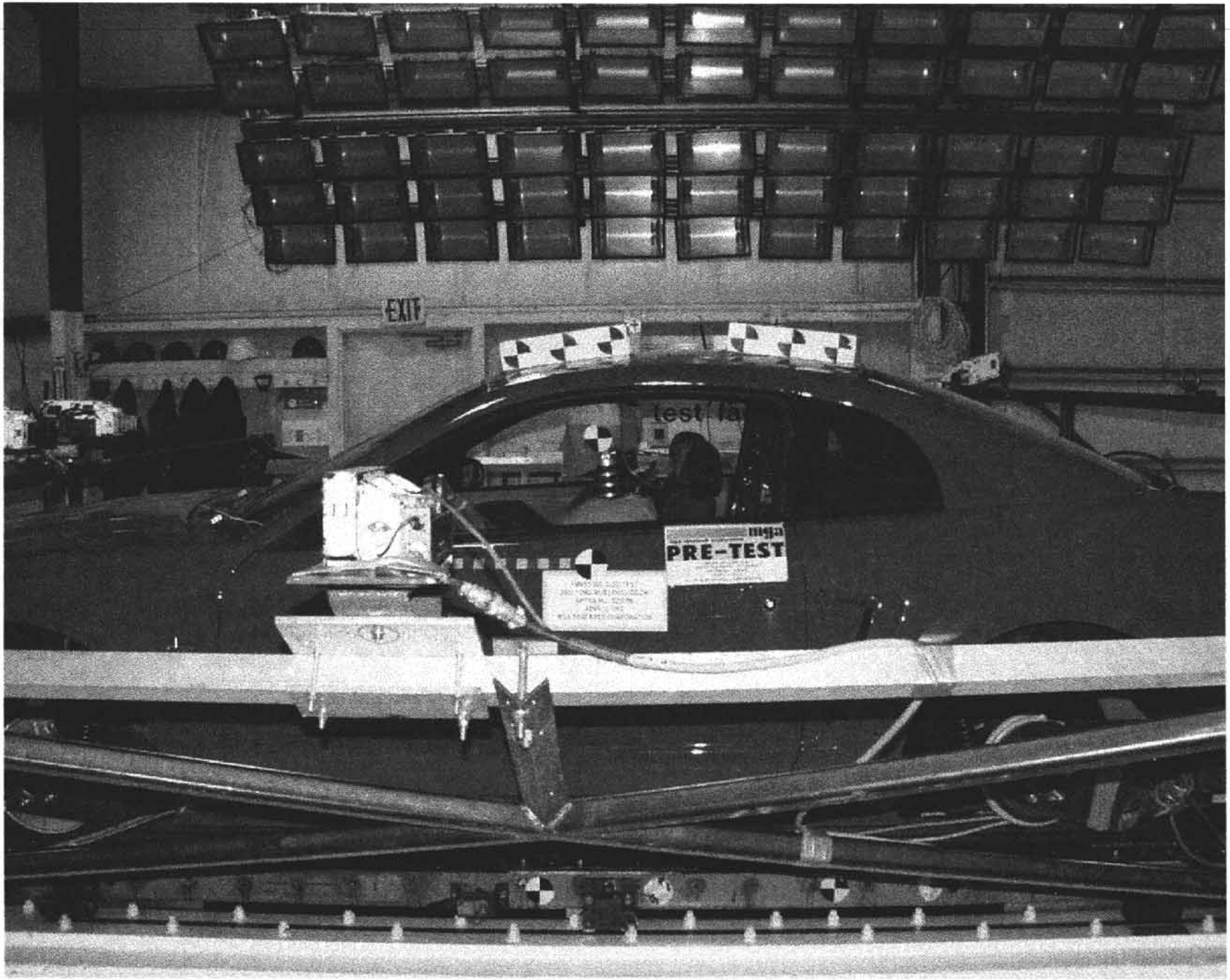


Photo No. A-1 - Pre-Test Left Side View

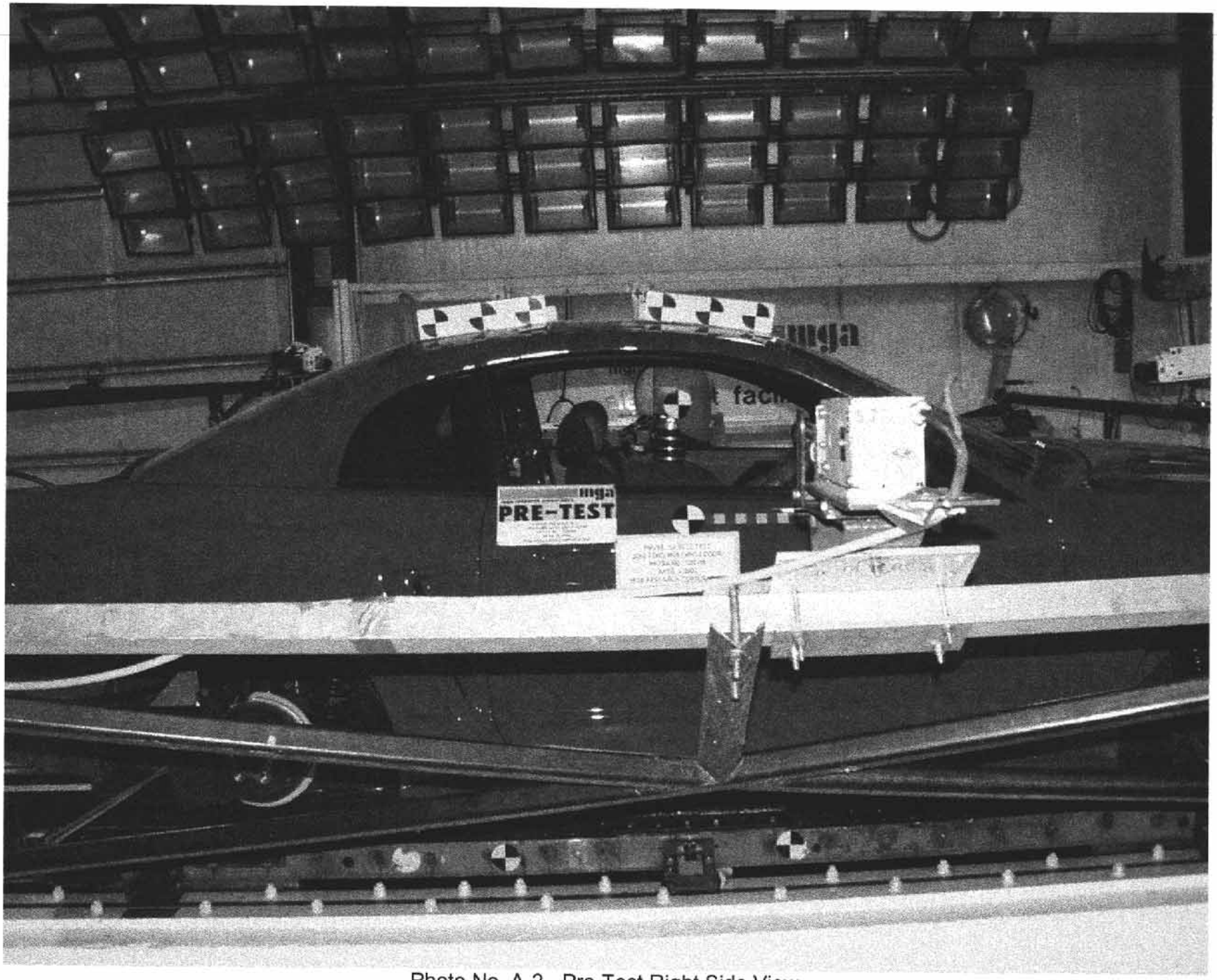


Photo No. A-2 - Pre-Test Right Side View

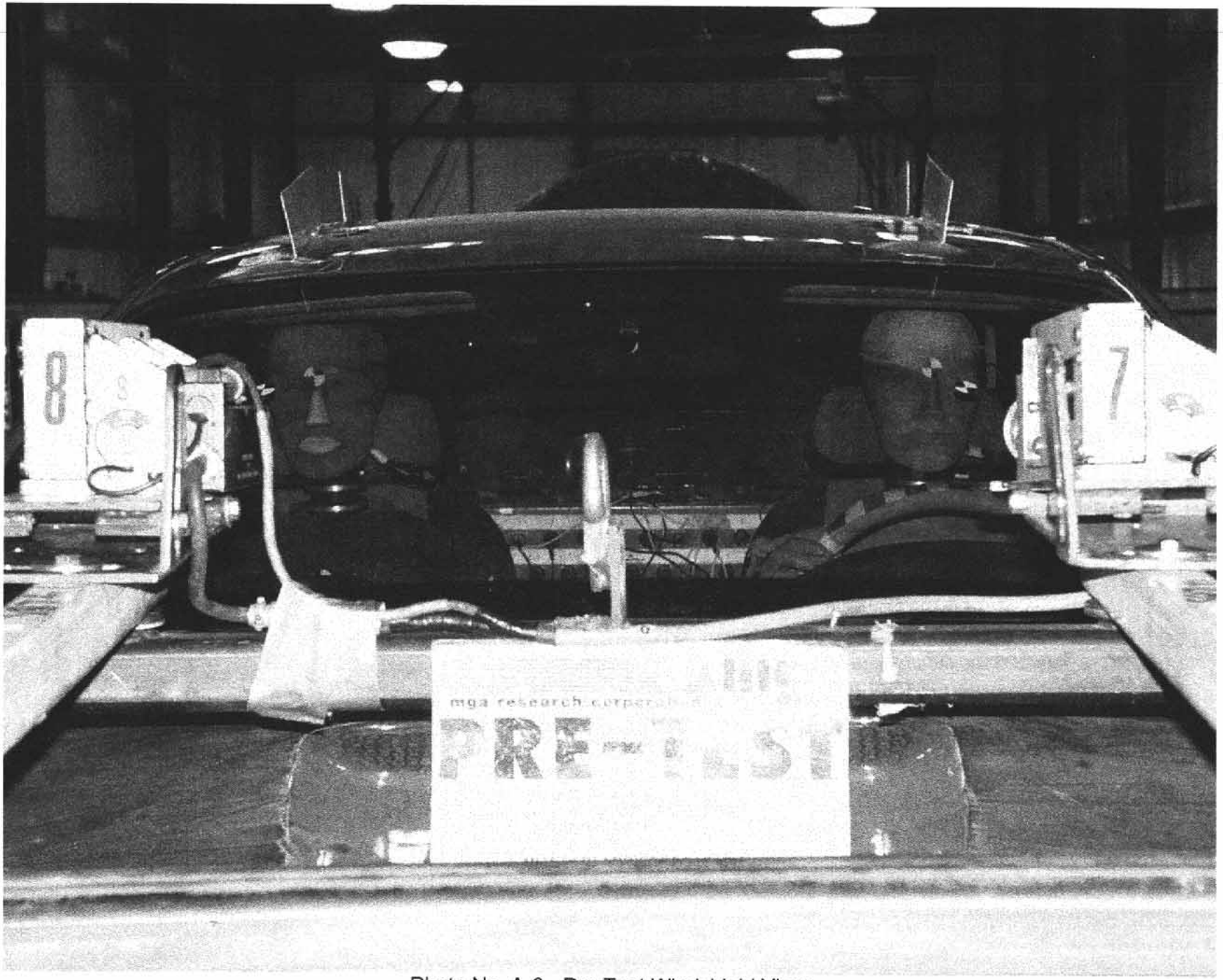


Photo No. A-3 - Pre-Test Windshield View

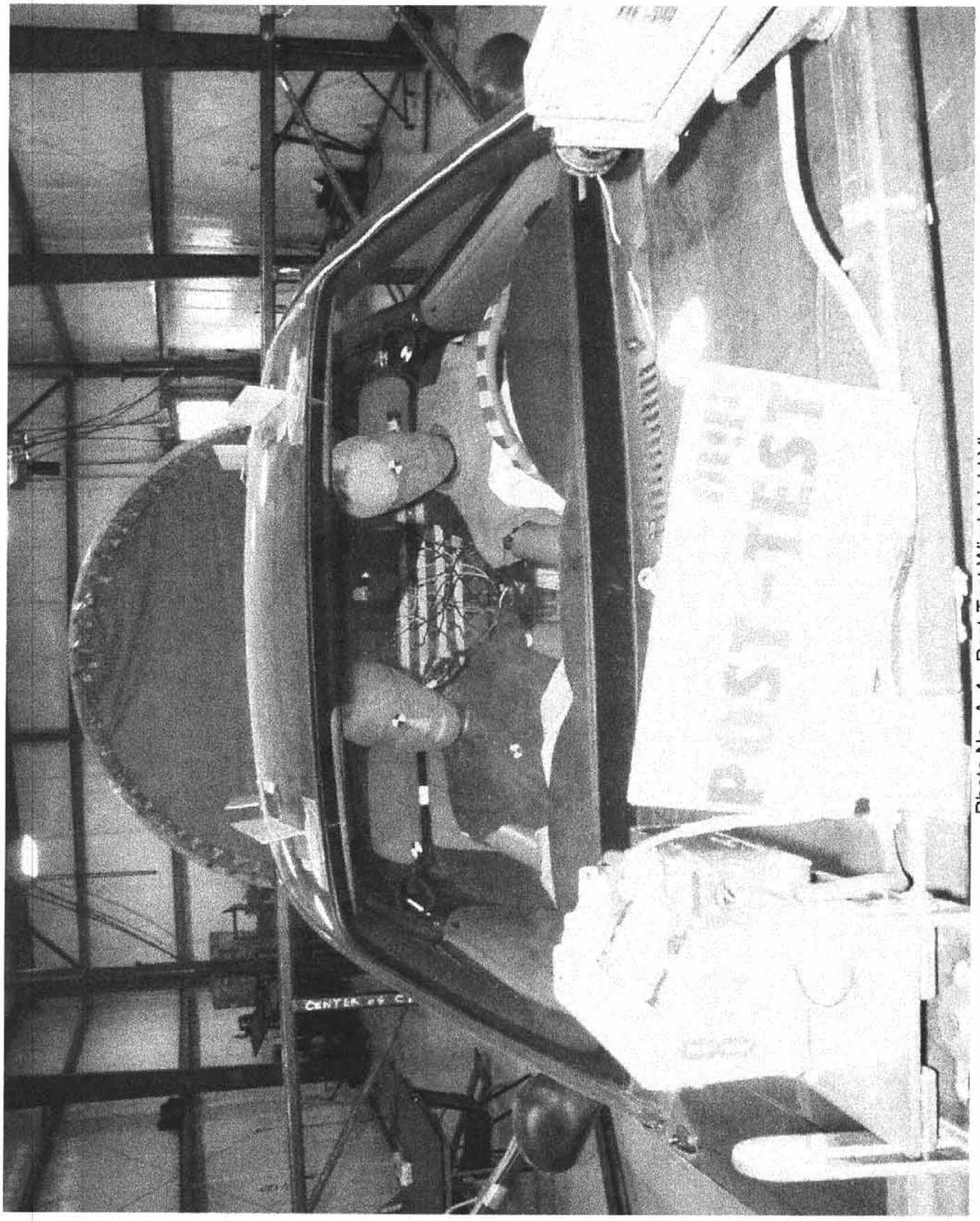


Photo No. A-4 - Post-Test Windshield View

Photo No. A-5 - Pre-Test Driver Dummy Position View (Door Open)

Photo No. A-6 - Post-Test Driver Dummy Position View (Door Open)

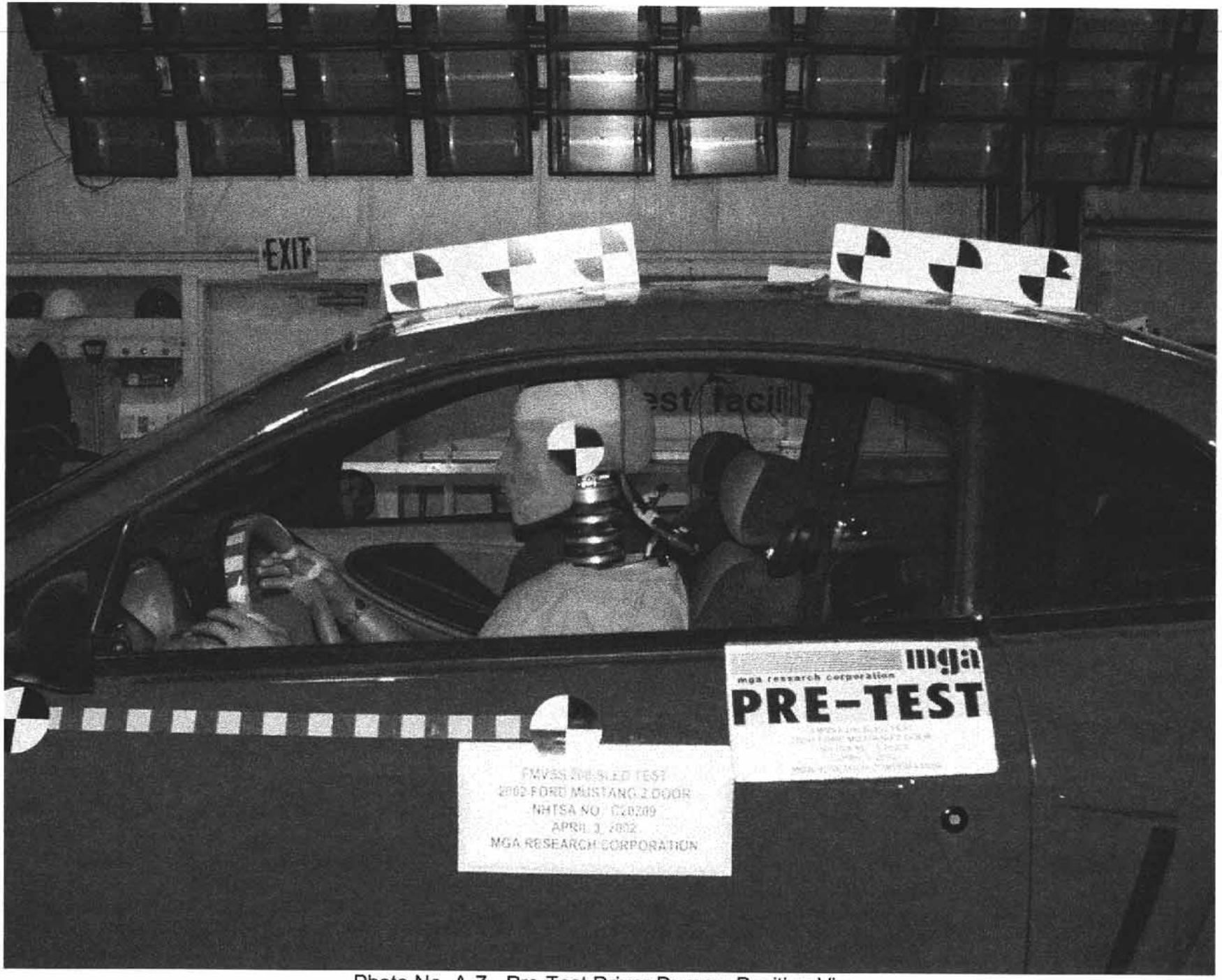


Photo No. A-7 - Pre-Test Driver Dummy Position View

Photo No. A-8 - Post-Test Driver Dummy Position View

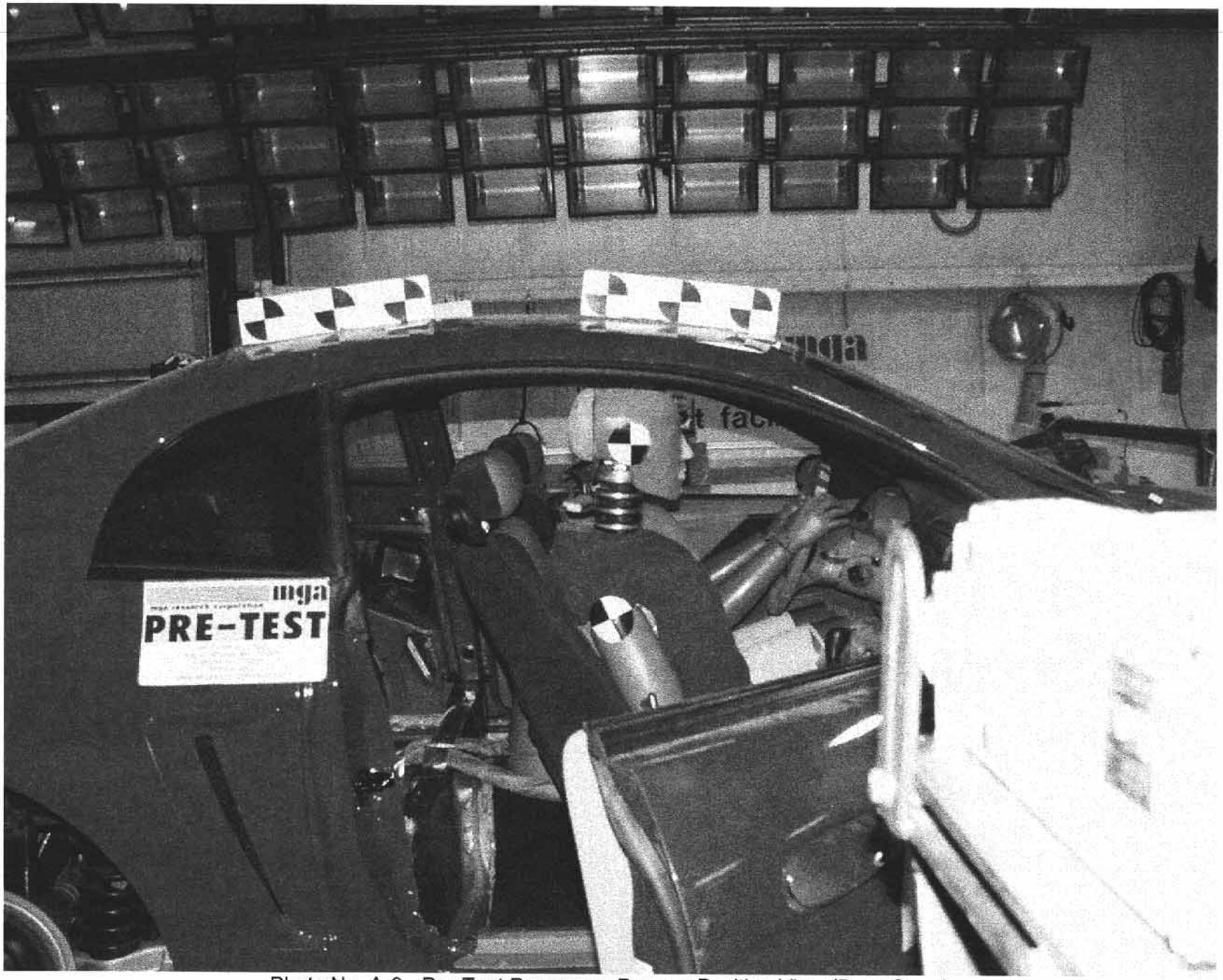


Photo No. A-9 - Pre-Test Passenger Dummy Position View (Door Open)

Photo No. A-10 - Post-Test Passenger Dummy Position View (Door Open)

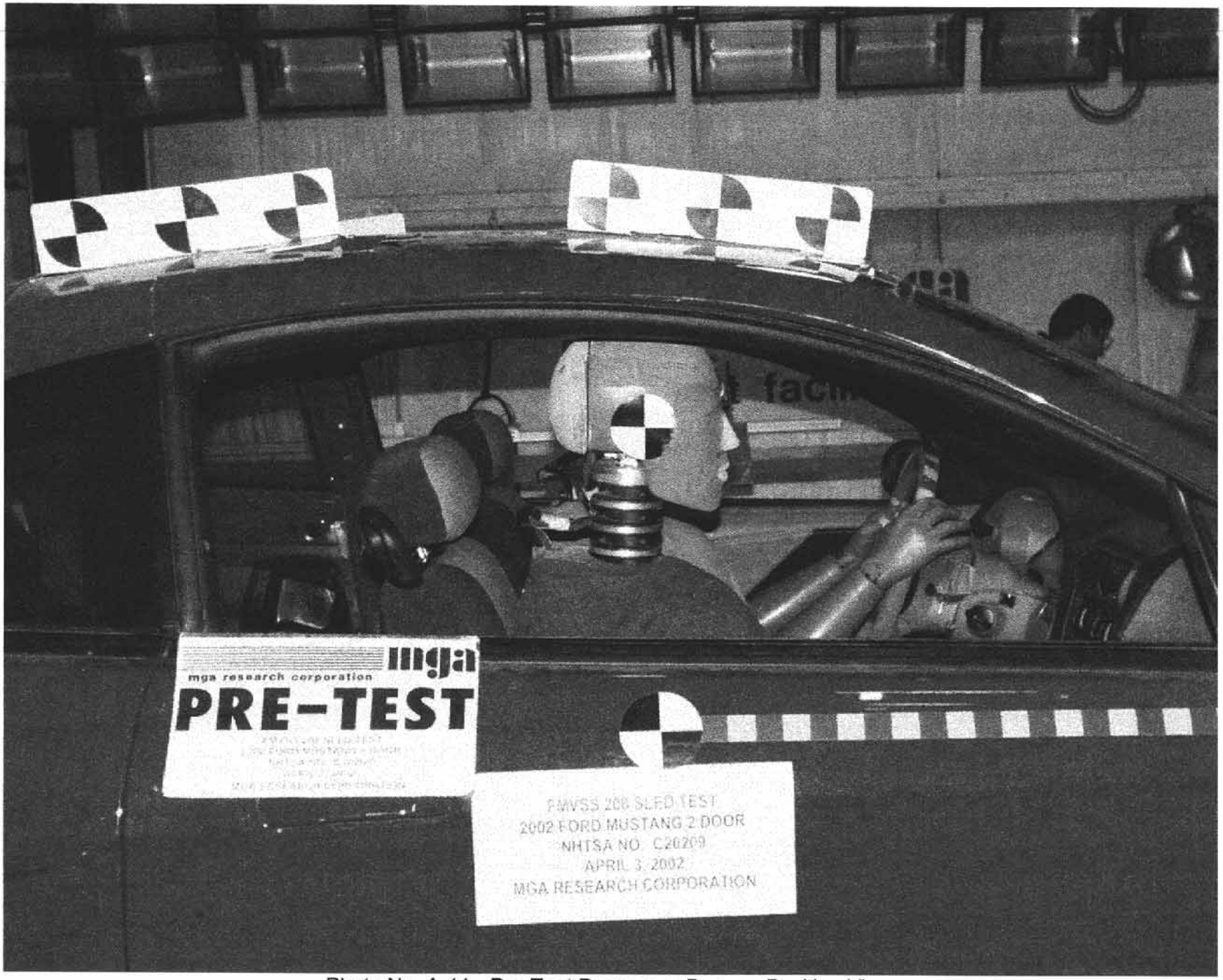


Photo No. A-11 - Pre-Test Passenger Dummy Position View

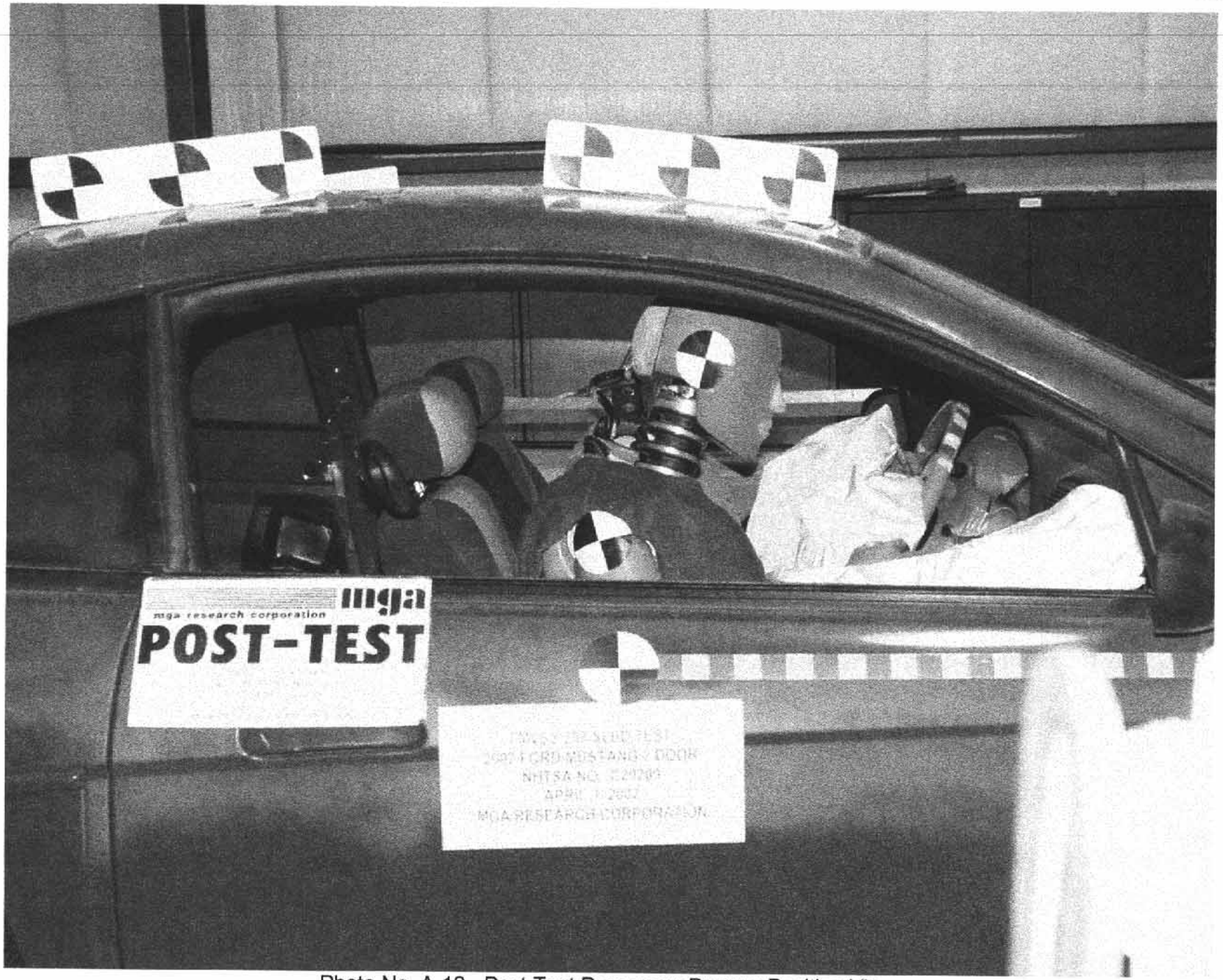


Photo No. A-12 - Post-Test Passenger Dummy Position View

Photo No. A-13 - Post-Test Driver Airbag View

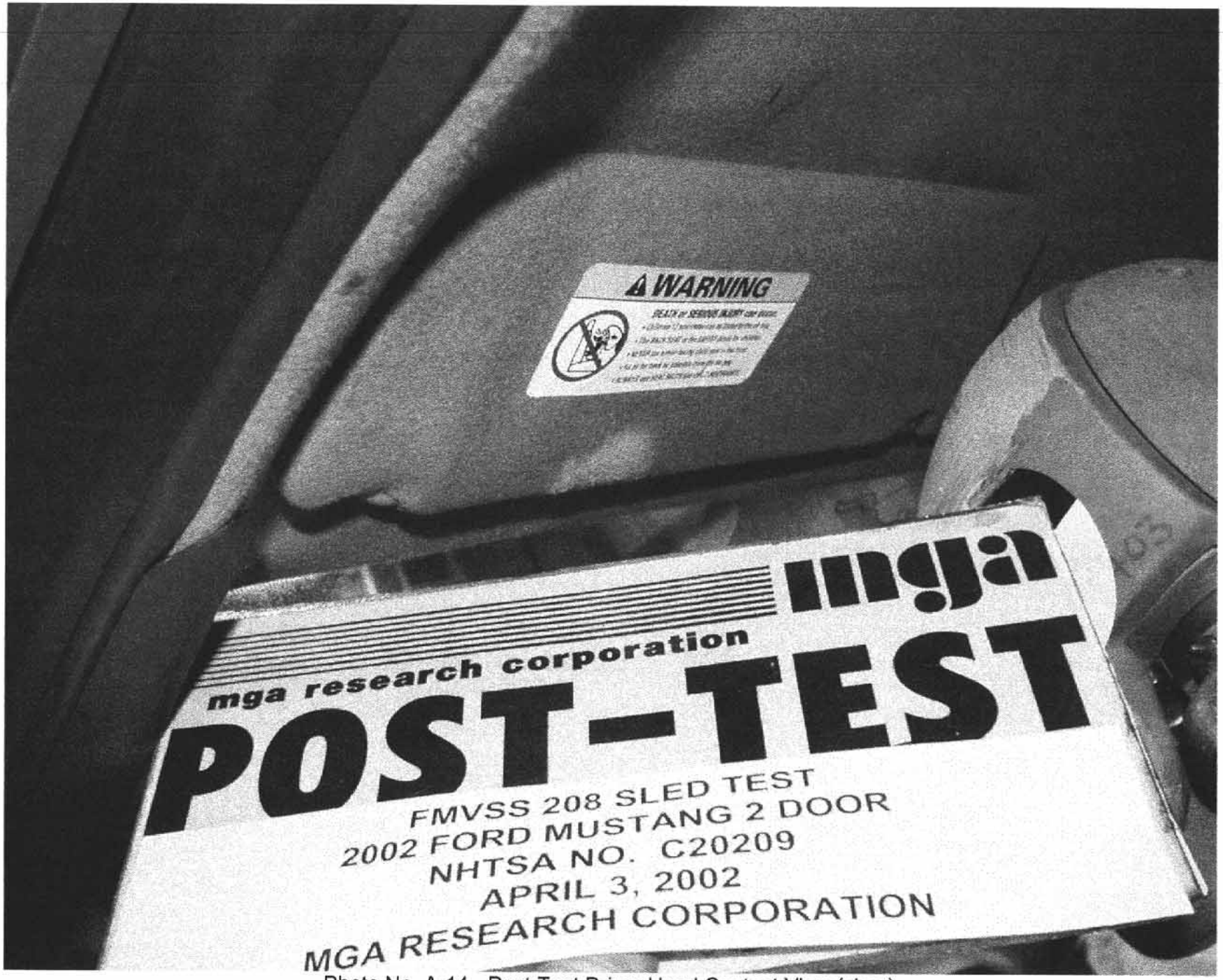


Photo No. A-14 - Post-Test Driver Head Contact View (visor)

Photo No. A-15 - Post-Test Driver Head Contact View (windshield)

Photo No. A-16 - Post-Test Passenger Dummy Airbag View

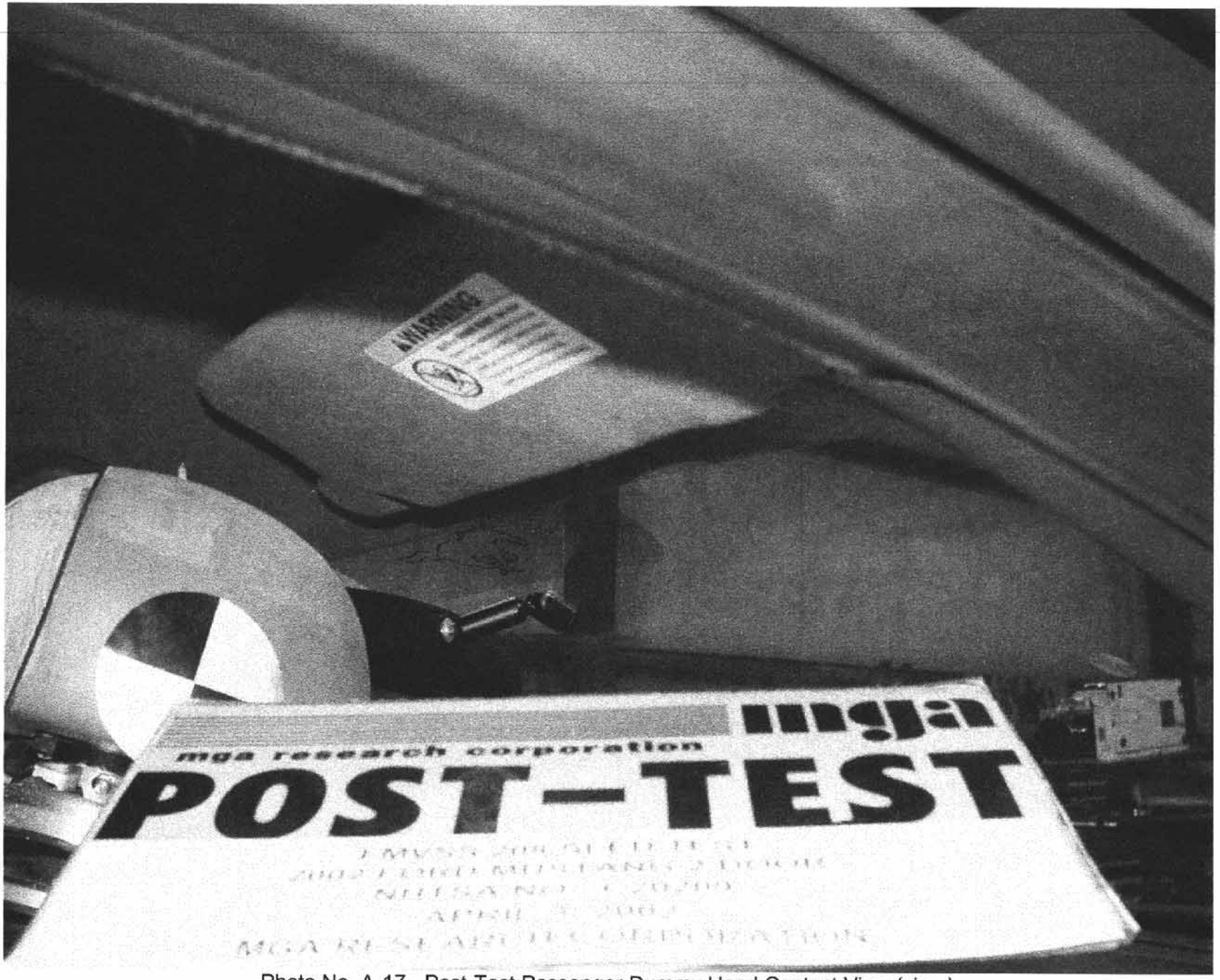


Photo No. A-17 - Post-Test Passenger Dummy Head Contact View (visor)

Photo No. A-18 - Pre-Test Driver Knee Bolster View

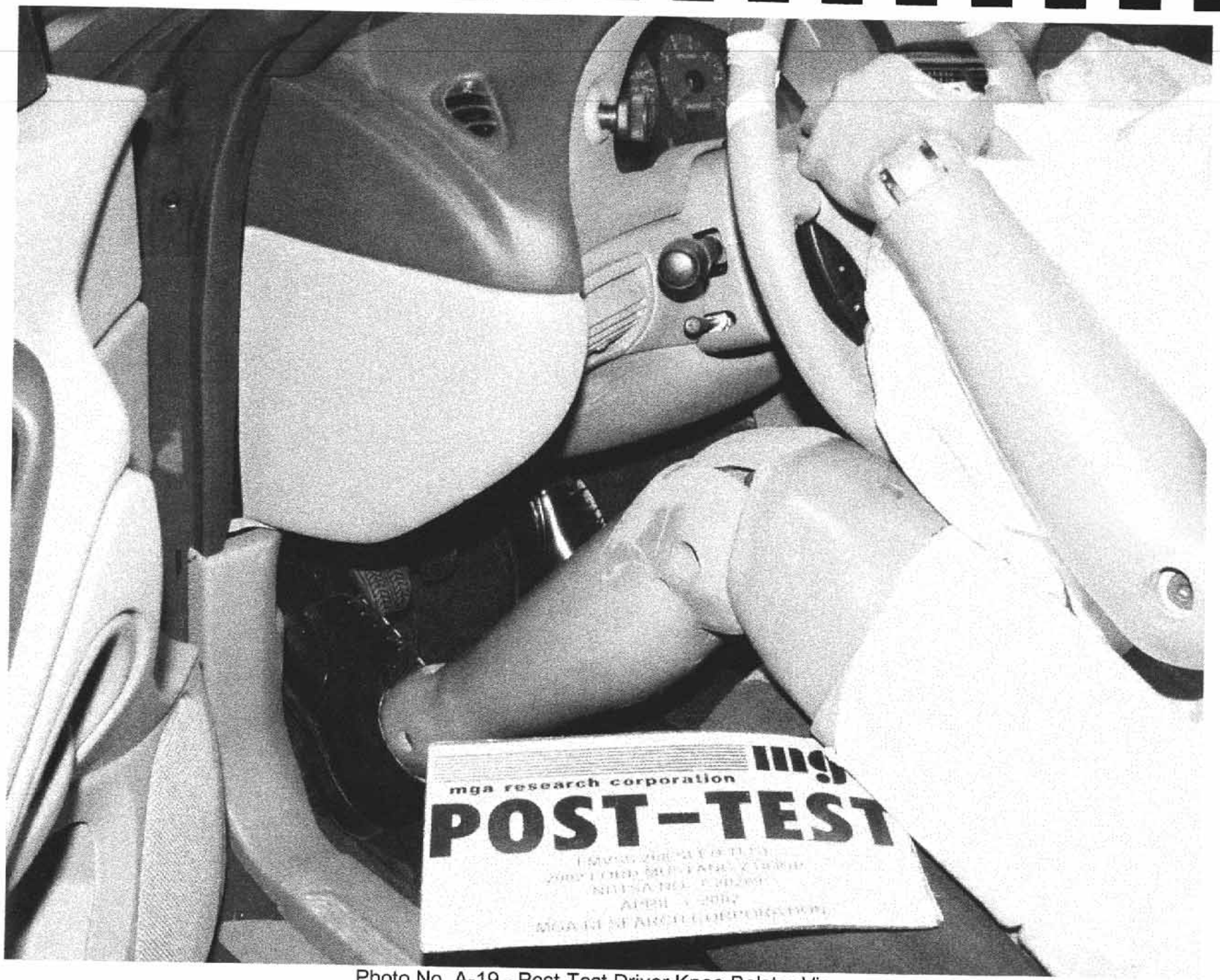


Photo No. A-19 - Post-Test Driver Knee Bolster View

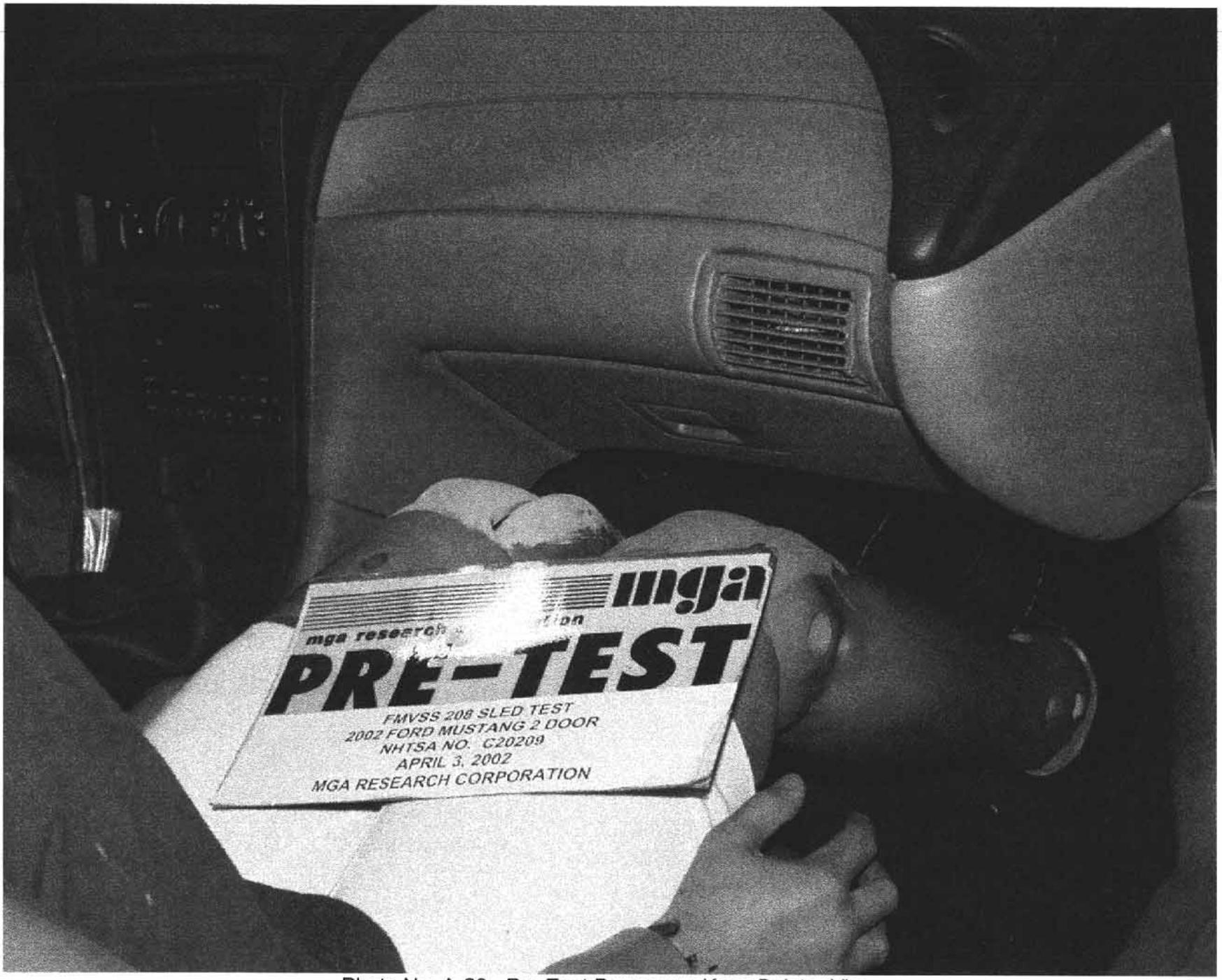


Photo No. A-20 - Pre-Test Passenger Knee Bolster View

Photo No. A-21 - Post-Test Passenger Knee Bolster View

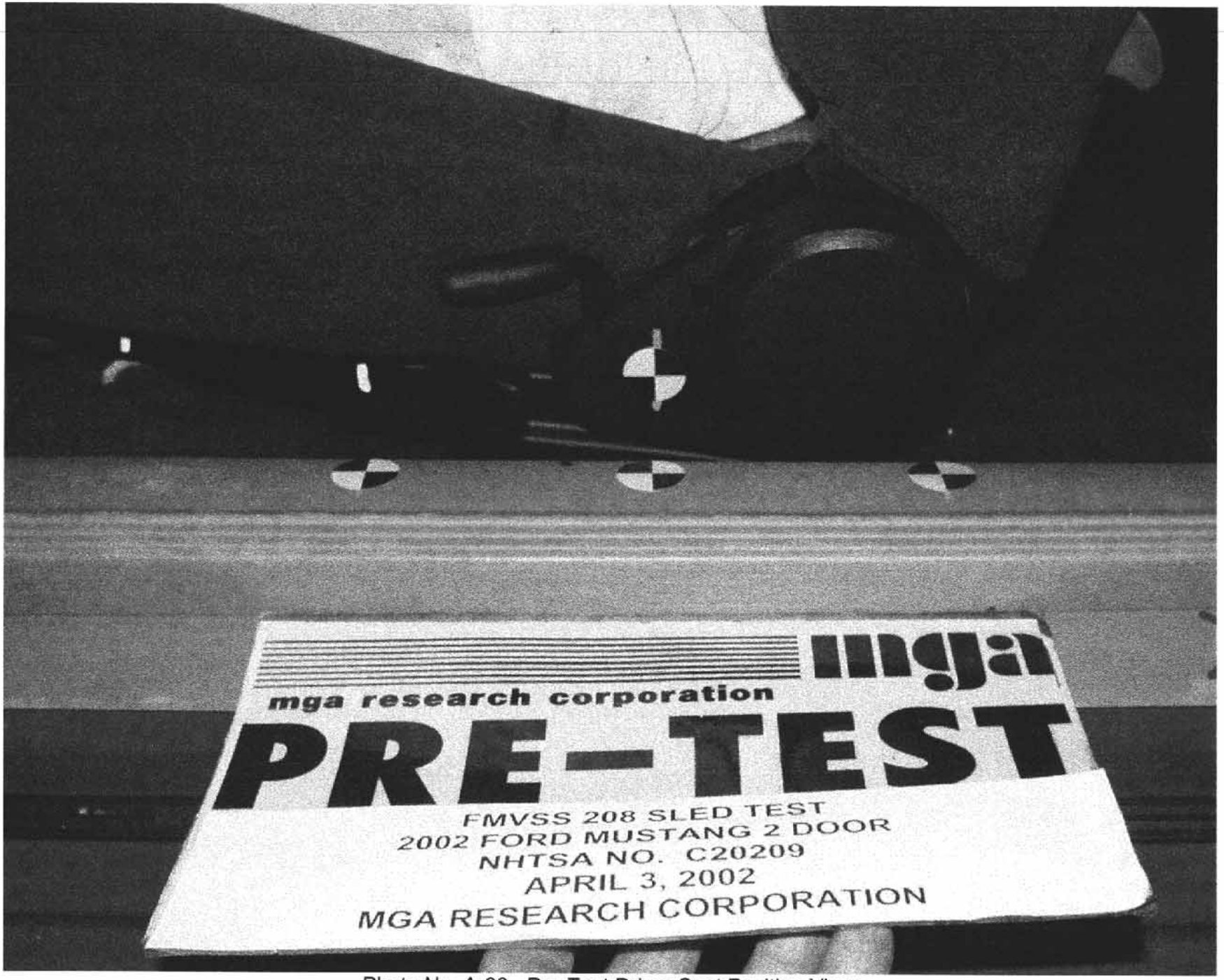


Photo No. A-22 - Pre-Test Driver Seat Position View

Photo No. A-23 - Post-Test Driver Seat Position View

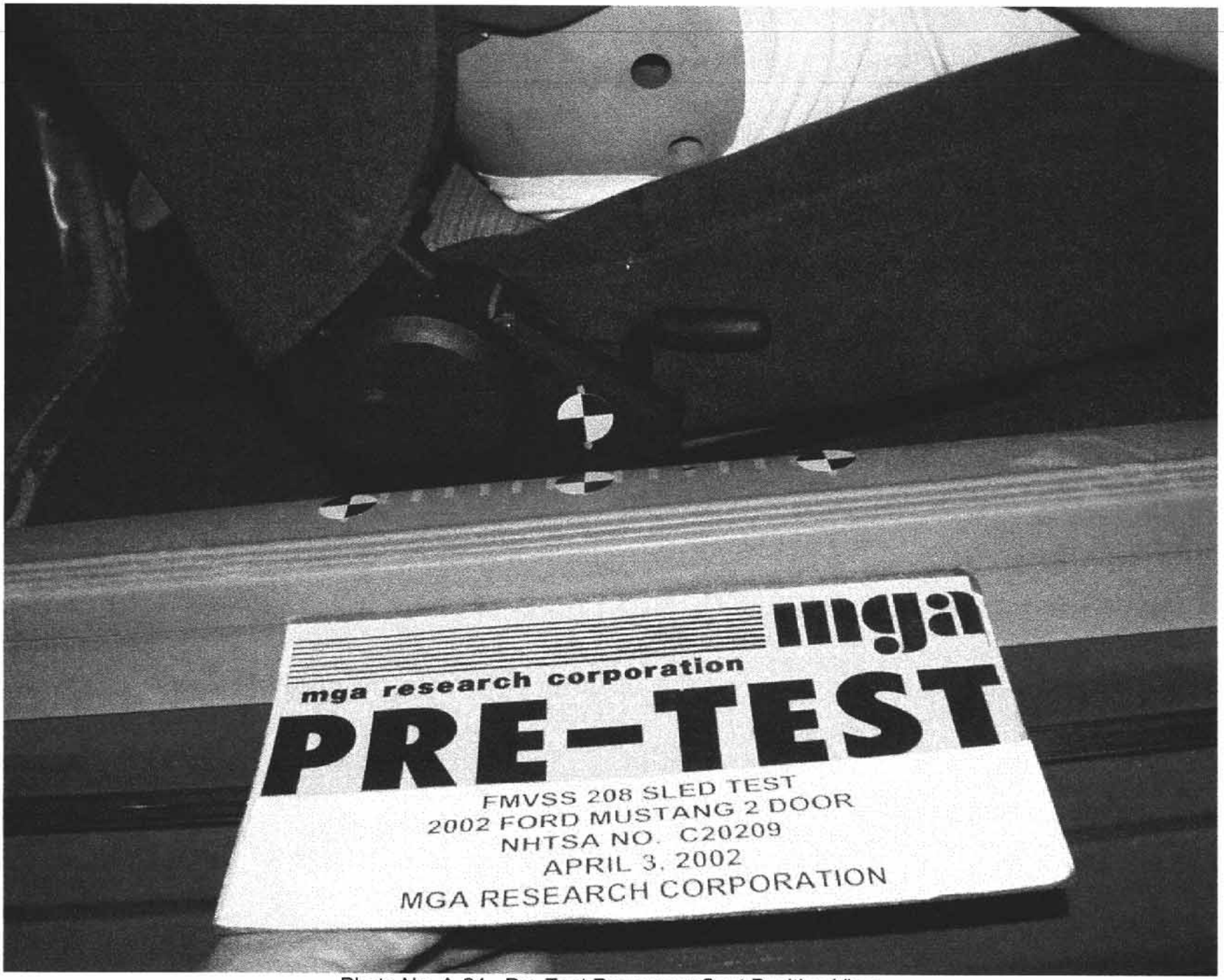


Photo No. A-24 - Pre-Test Passenger Seat Position View

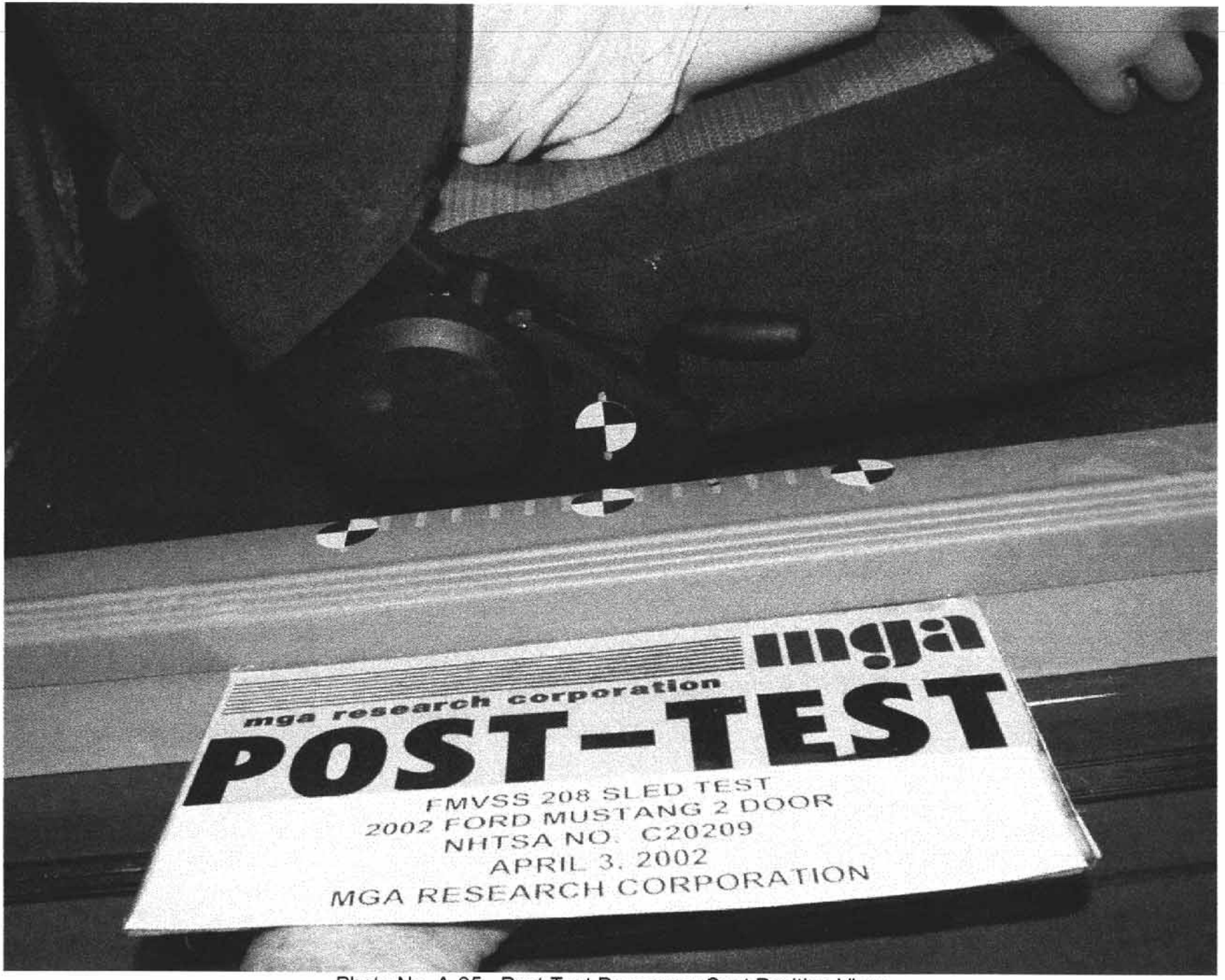


Photo No. A-25 - Post-Test Passenger Seat Position View

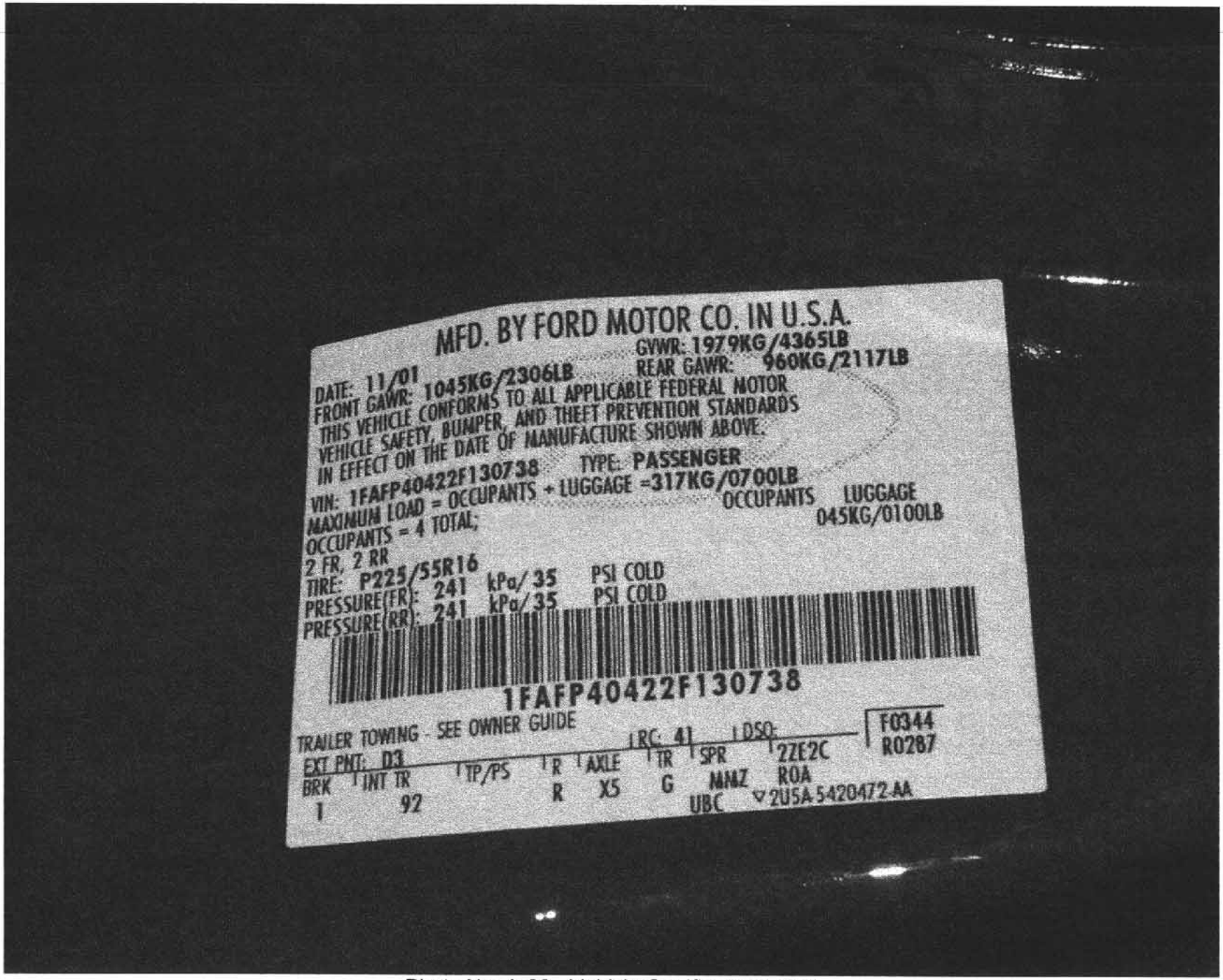


Photo No. A-26 - Vehicle Certification Label

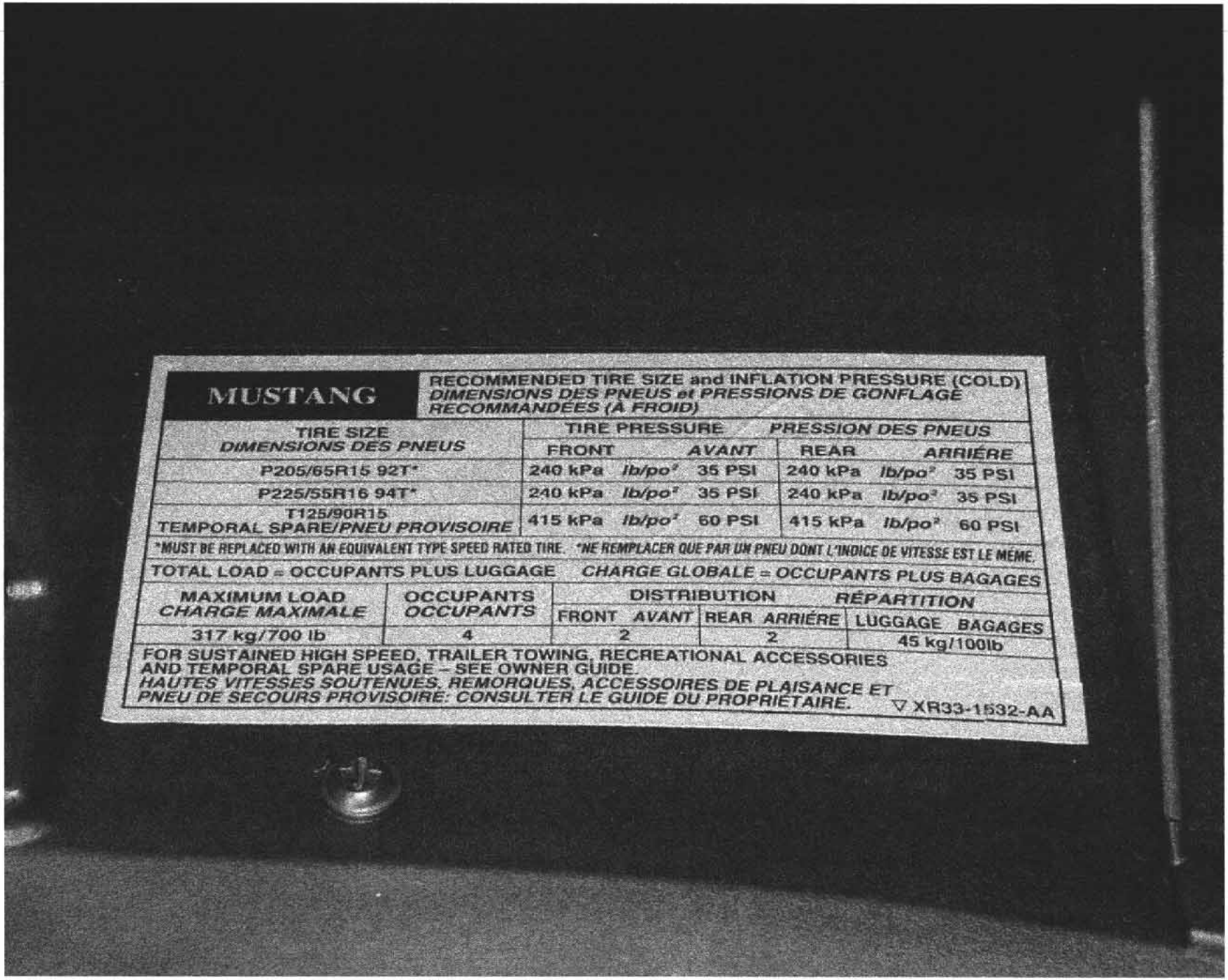
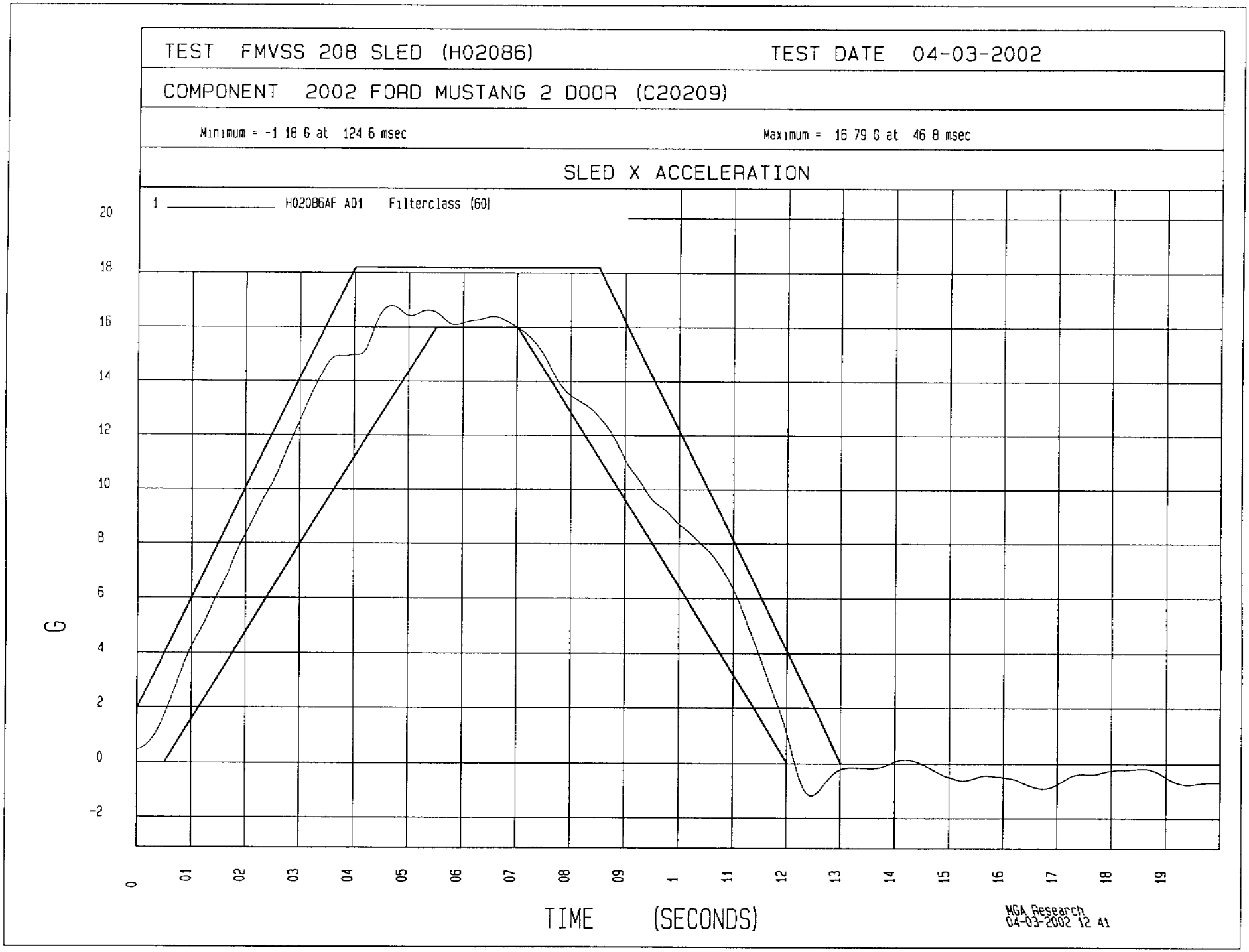


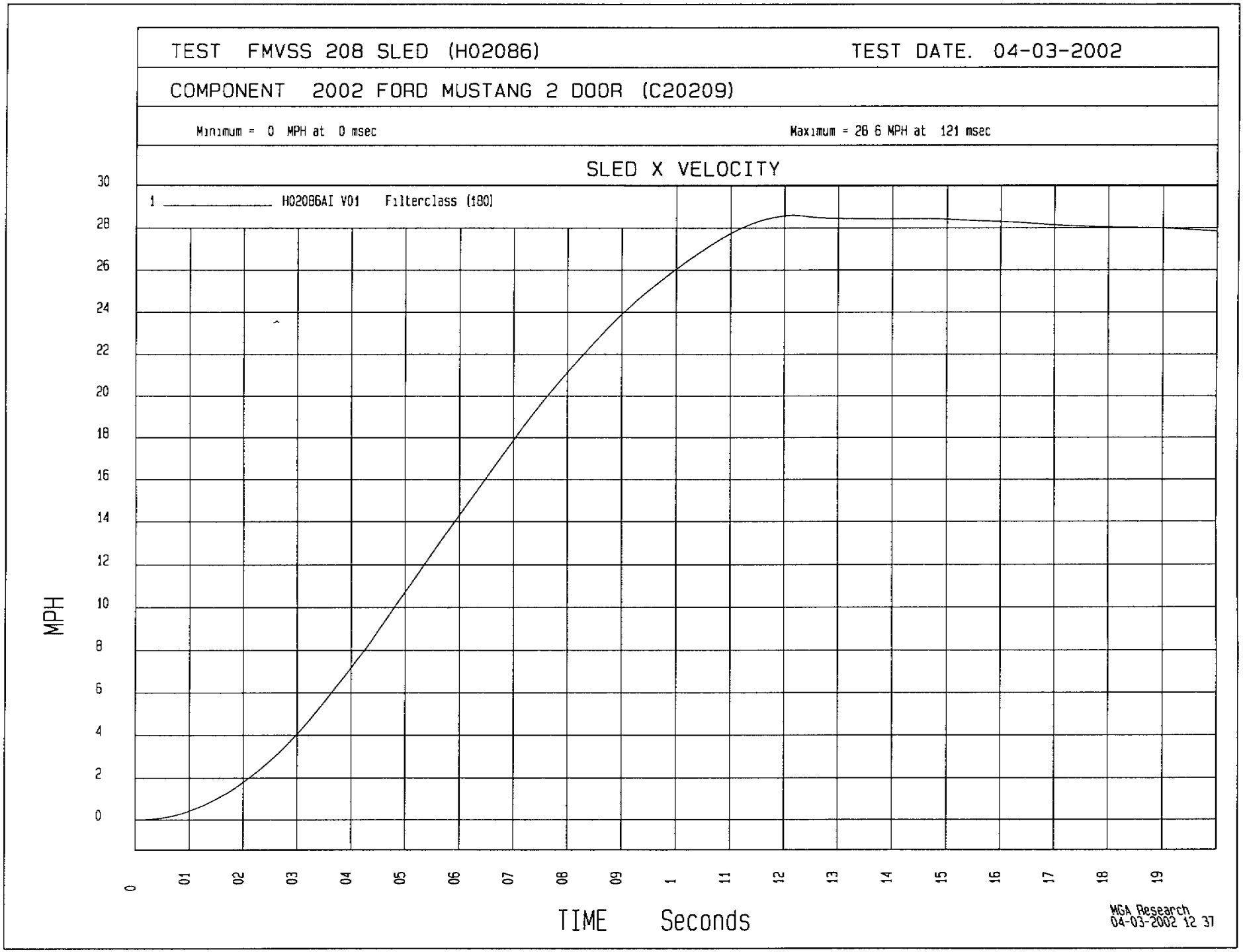
Photo No. A-27 - FMVSS 110 Label

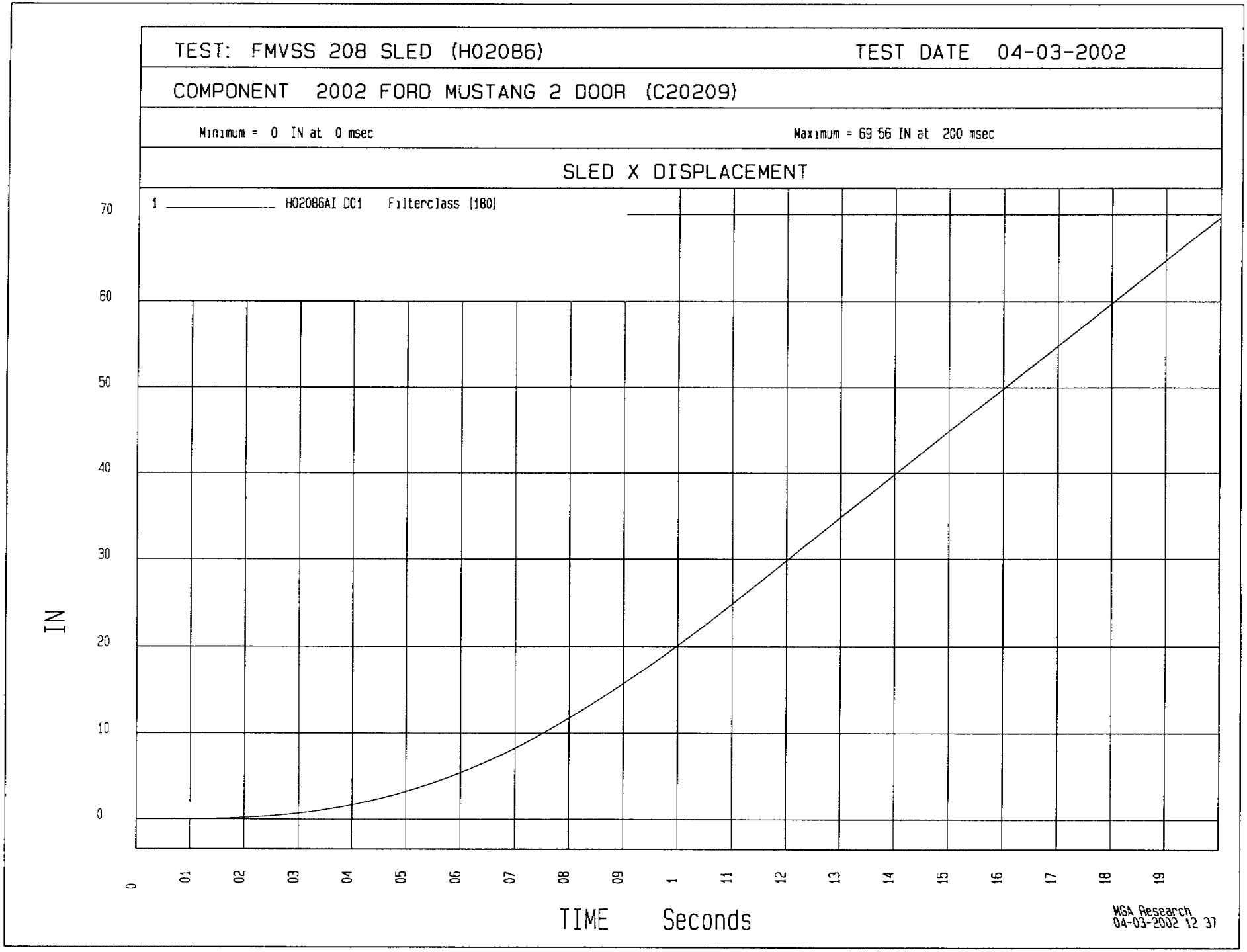
APPENDIX B
DATA PLOTS

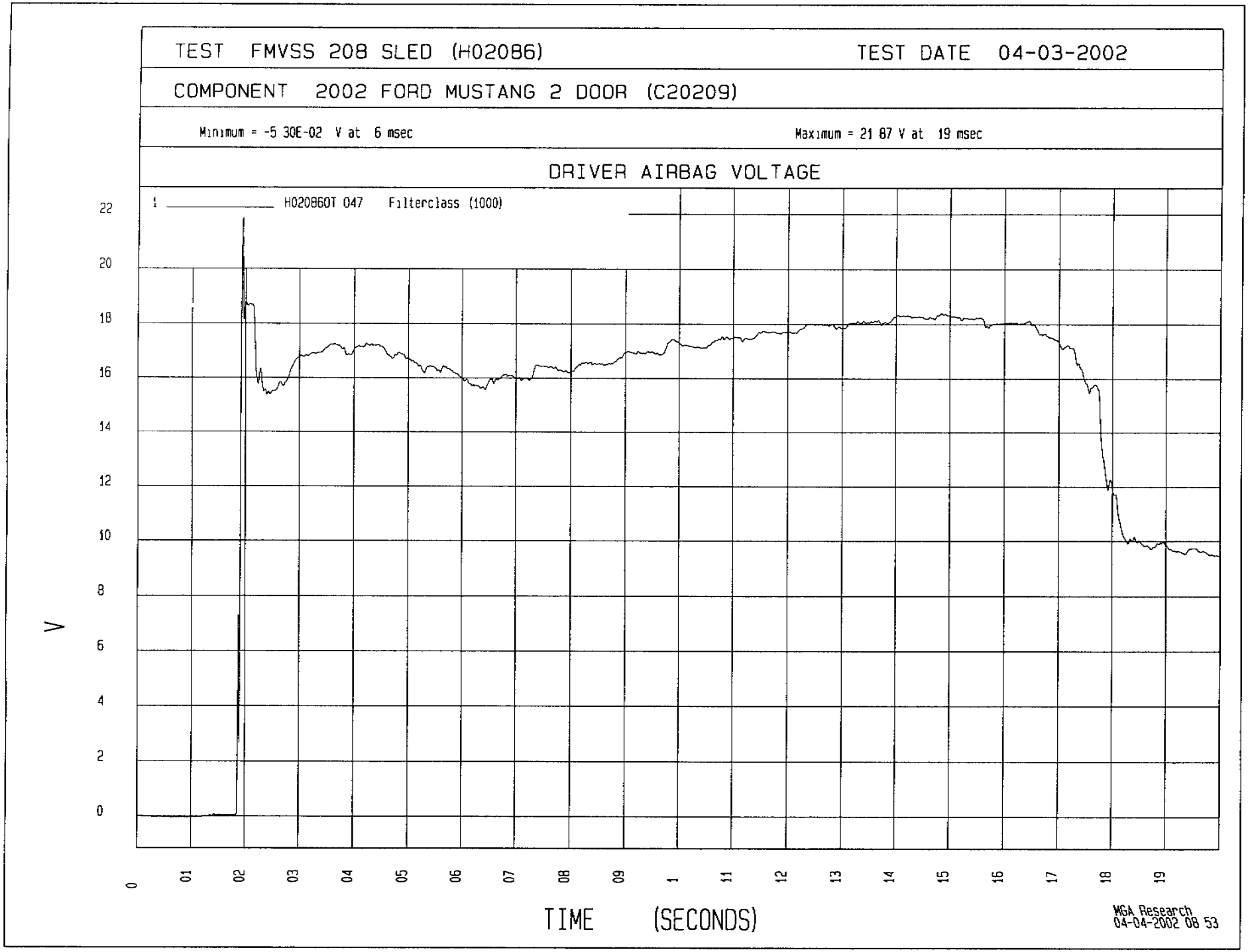
TABLE OF DATA PLOTS

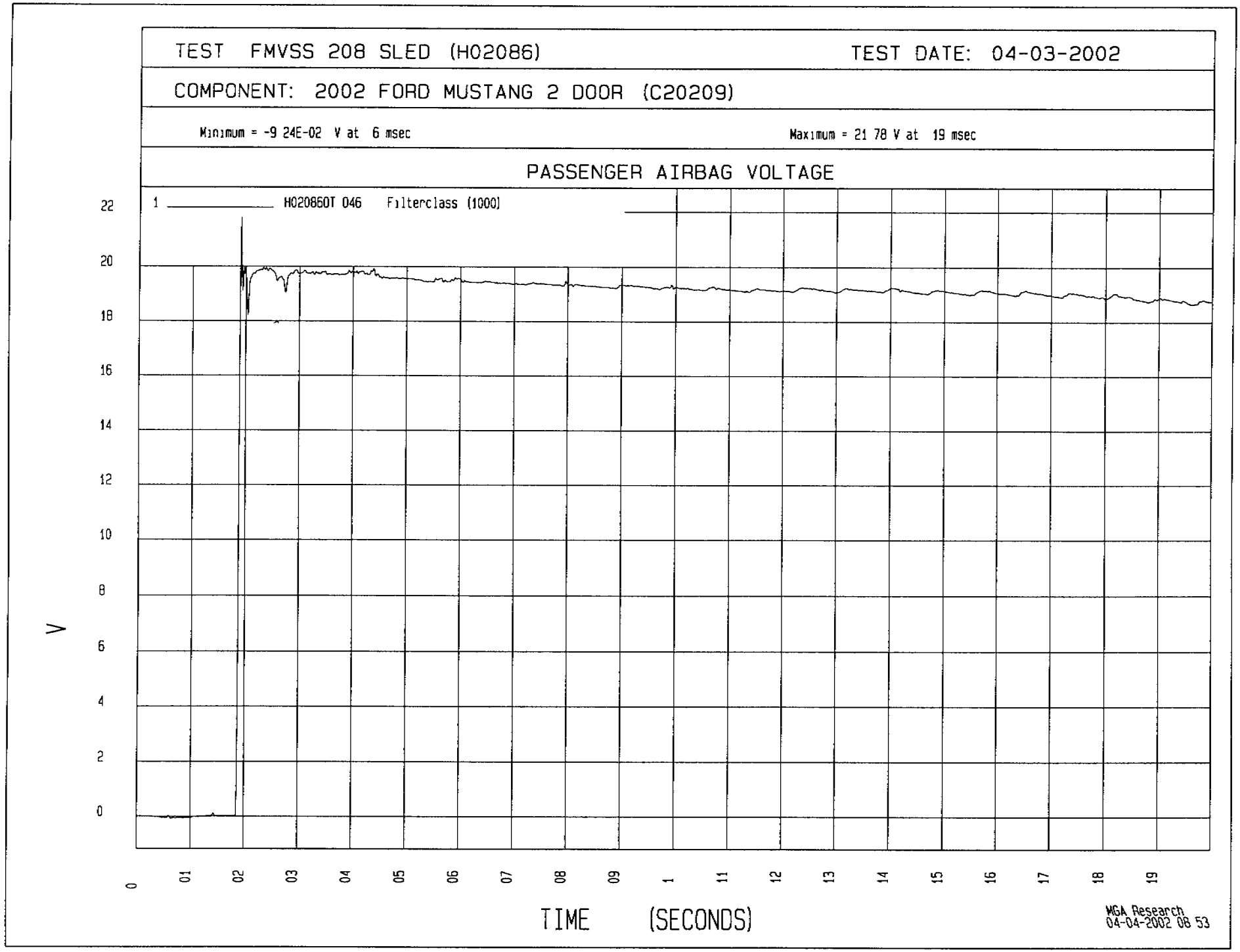
TABLE OF DATA PLOTS (Cont.)

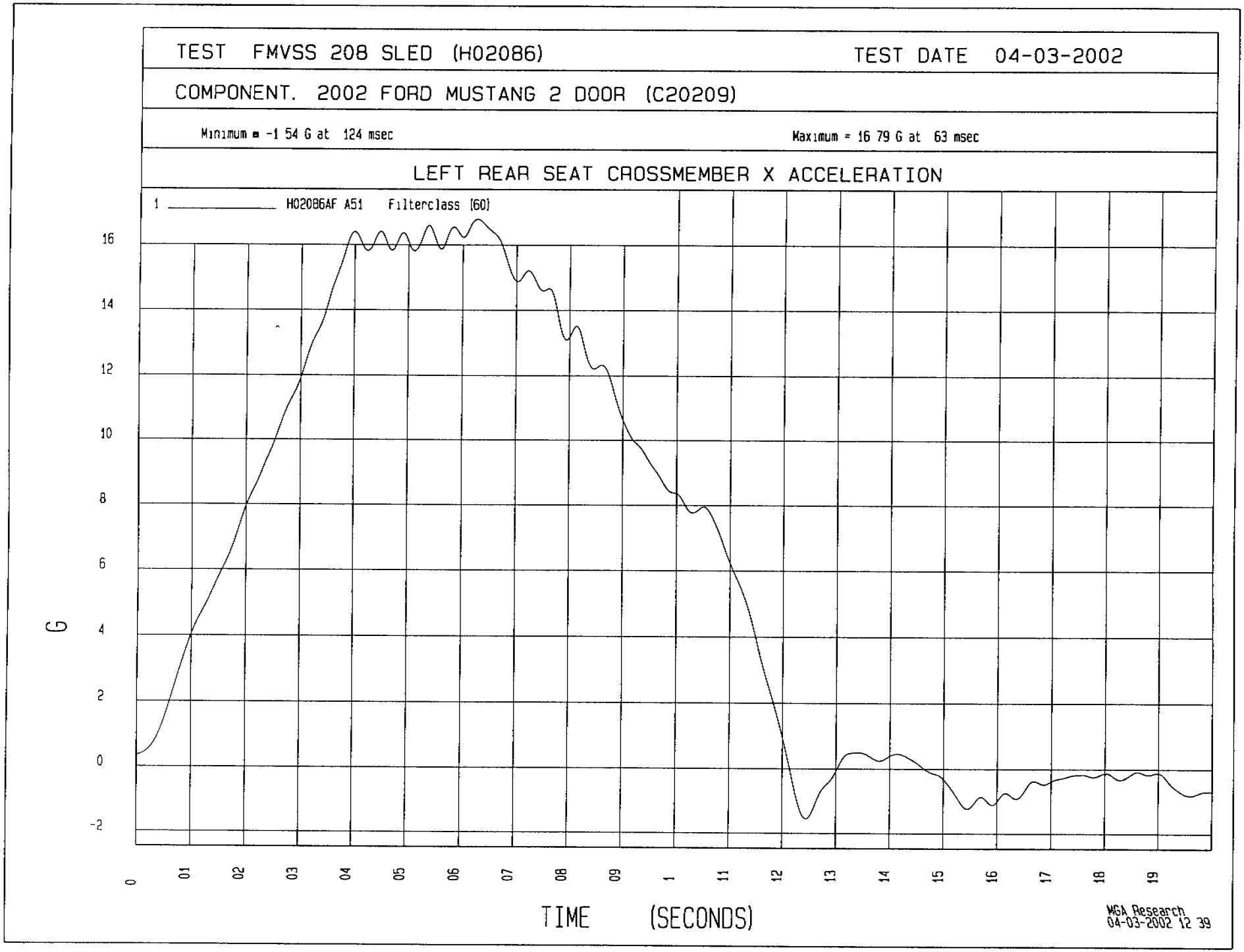

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -1 18 G at 124 6 msec
Maximum = 16 79 G at 46 8 msec
SLED X ACCELERATION
1 H02086AF A01 Filterclass (60)
20
18
16
14
12
10
8
6
4
2
0
-2
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 41

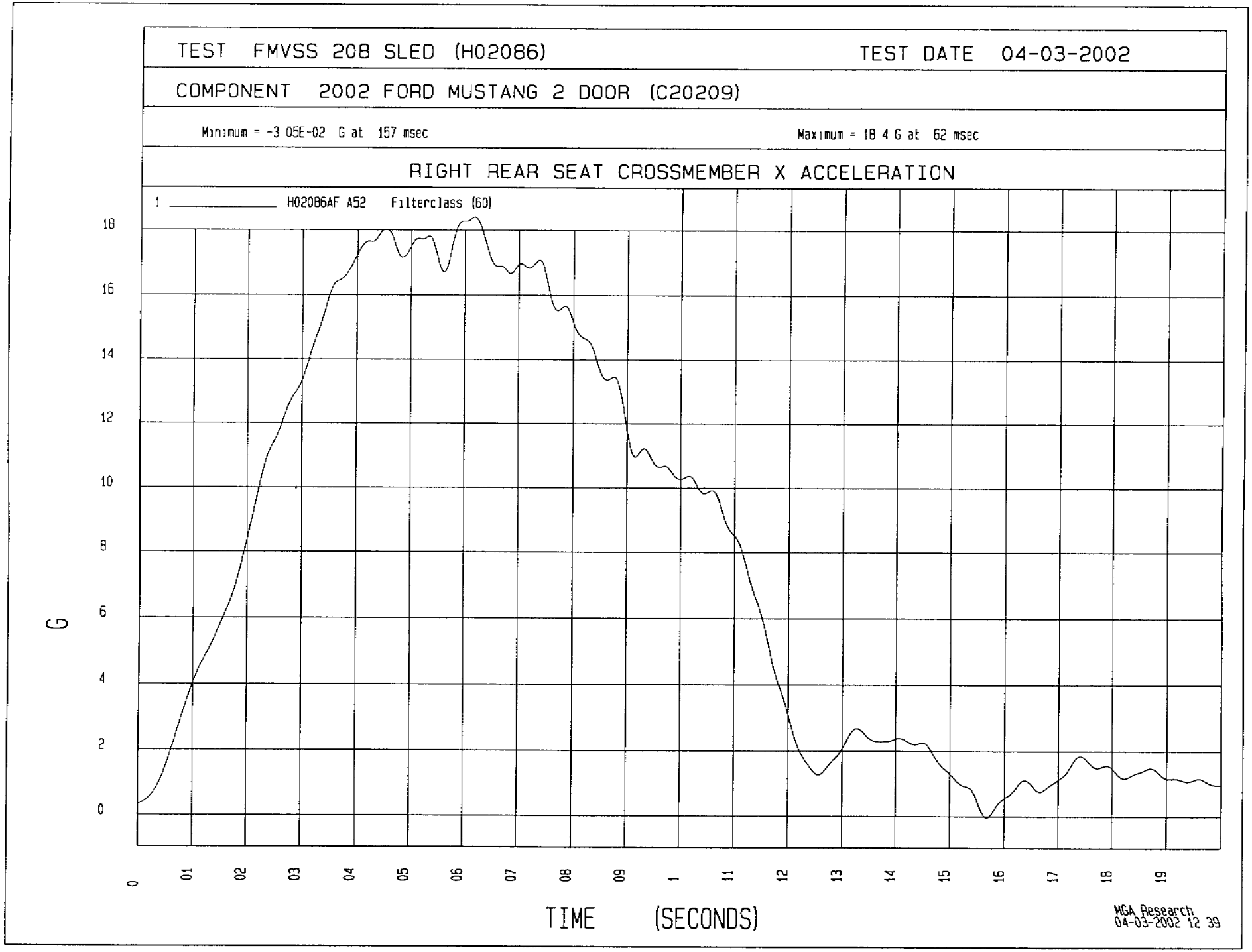

TEST FMVSS 208 SLED (H02086)
TEST DATE. 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = 0 MPH at 0 msec
Maximum = 28 6 MPH at 121 msec
SLED X VELOCITY
1 H0208GAI V01 Filterclass (180)
MPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
04-03-2002 12 37

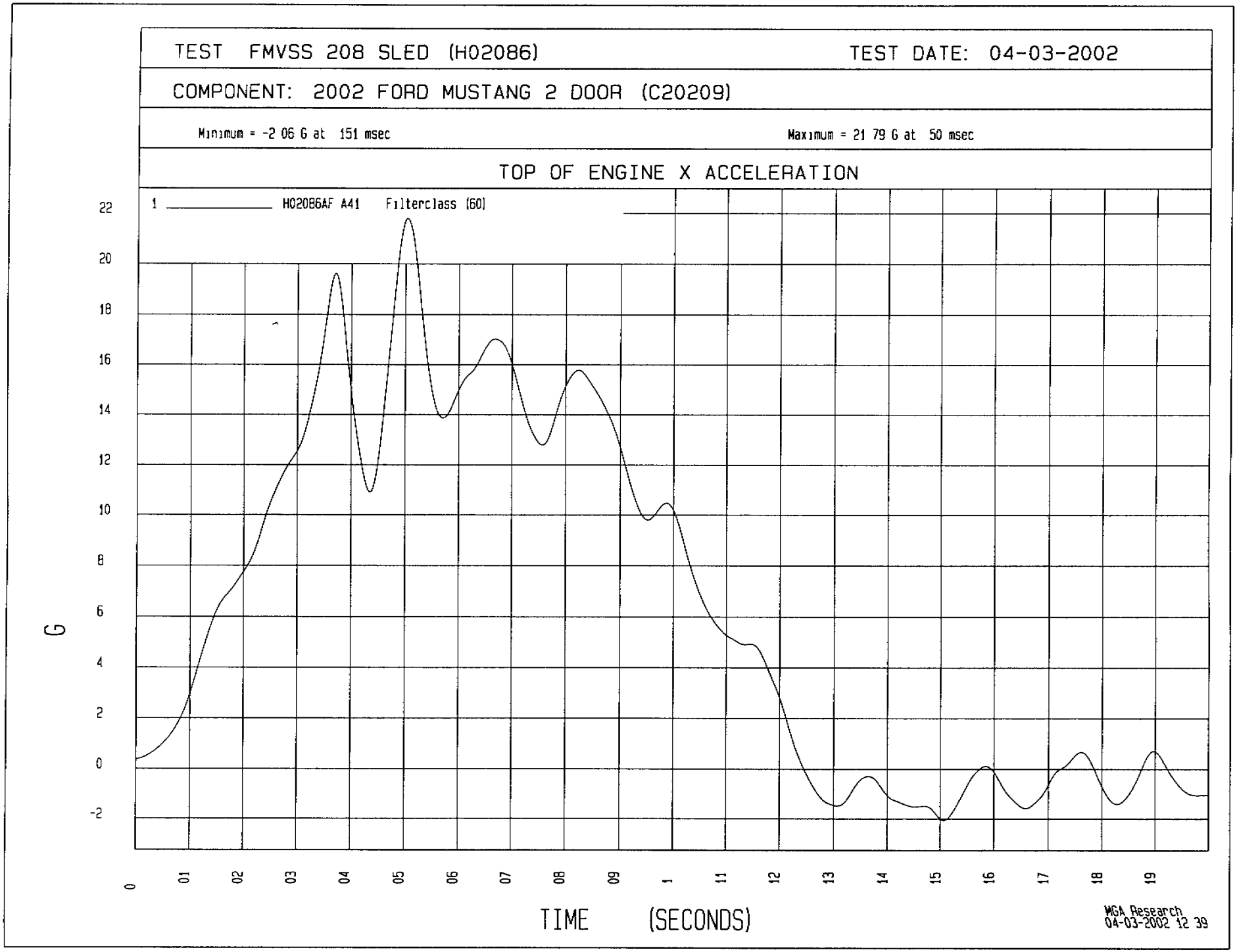

TEST: FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = 0 IN at 0 msec
Maximum = 69.56 IN at 200 msec
SLED X DISPLACEMENT
1 H02086AI D01 Filterclass (180)
IN
70
60
50
40
30
20
10
0
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
04-03-2002 12 37

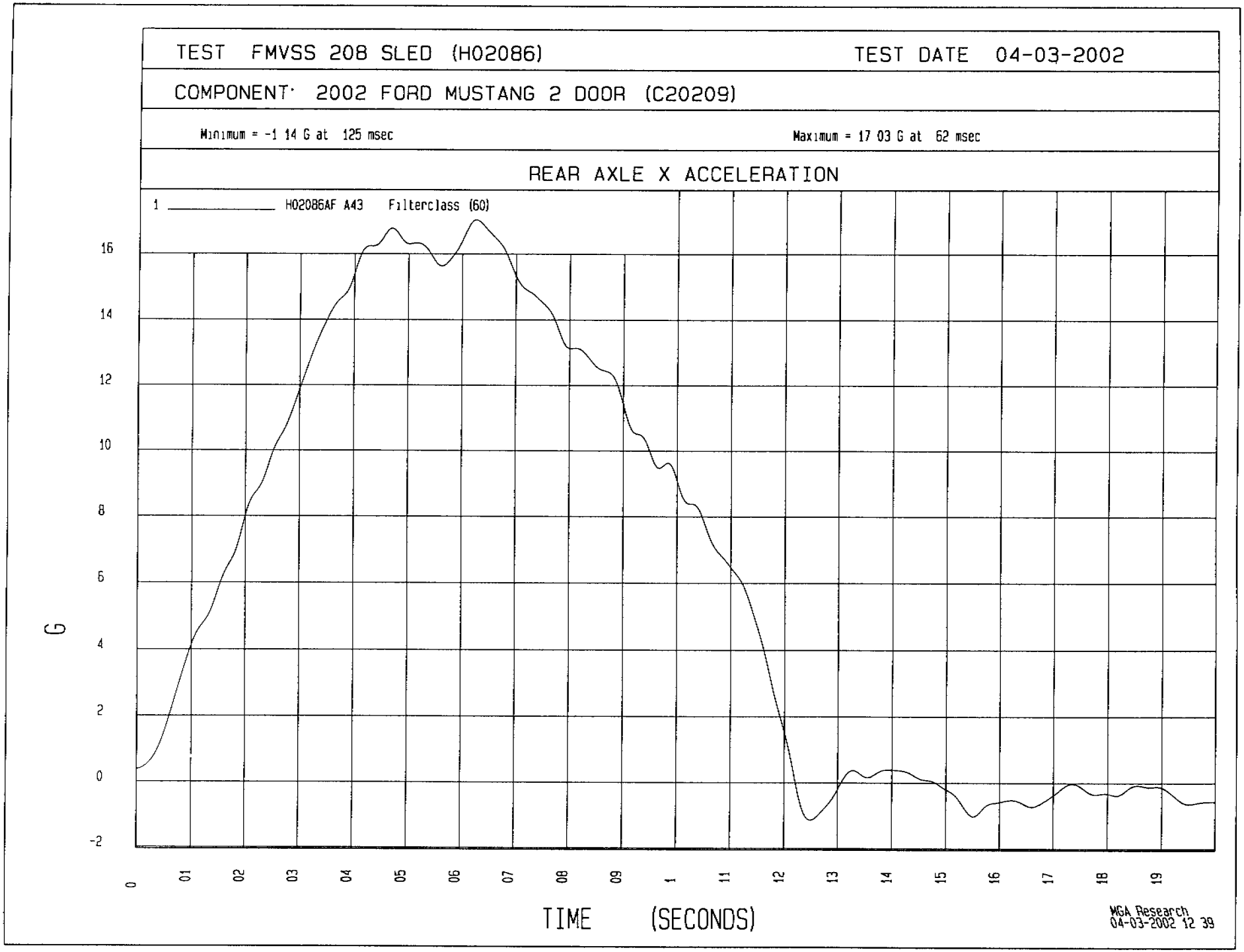

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -5 30E-02 V at 6 msec
Maximum = 21 87 V at 19 msec
DRIVER AIRBAG VOLTAGE
1 H0208601 047 Filterclass (1000)
V
TIME (SECONDS)
MGA Research
04-04-2002 08 53

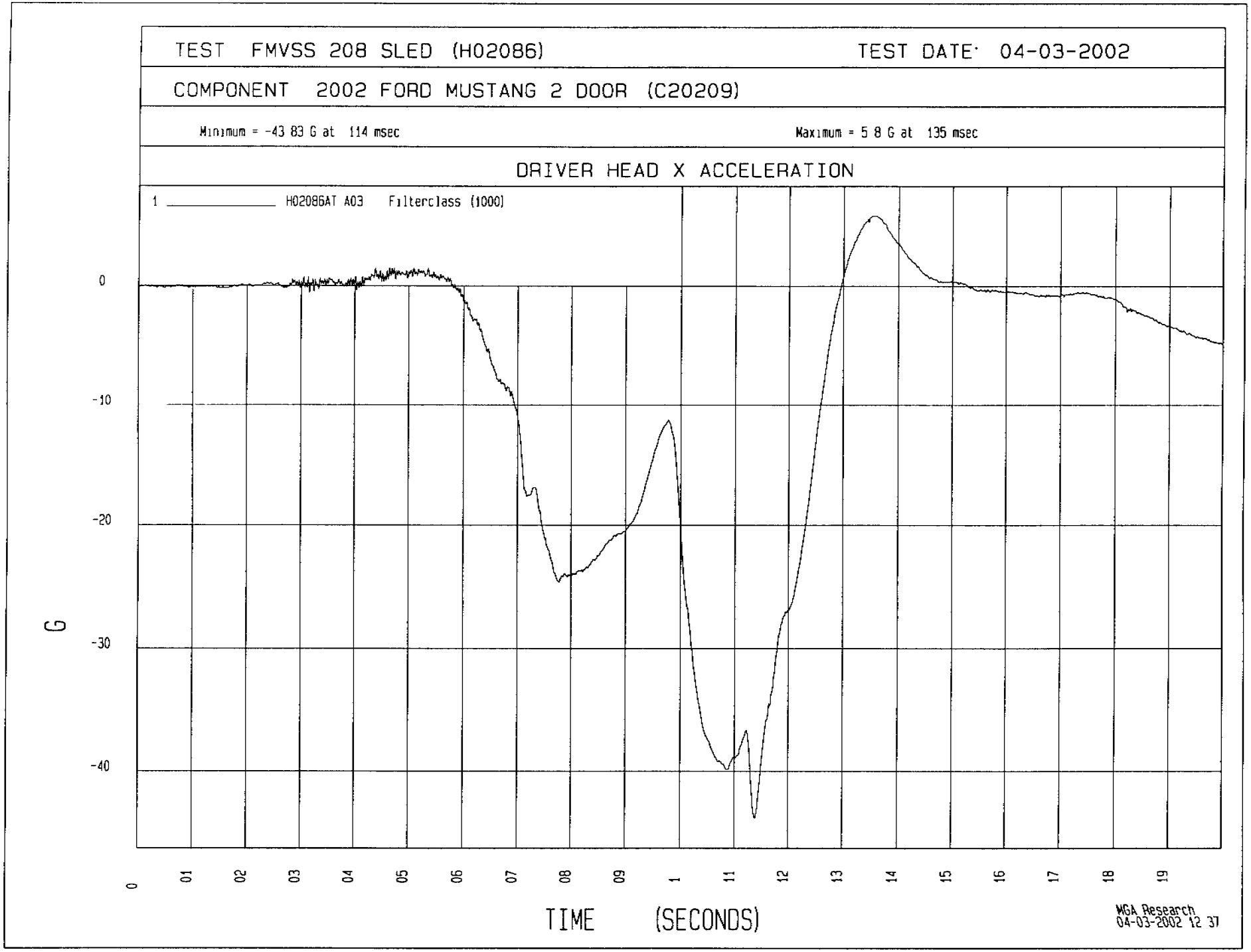

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -9 24E-02 V at 6 msec
Maximum = 21 78 V at 19 msec
PASSENGER AIRBAG VOLTAGE
1 H020860T 046 Filterclass (1000)
V
22
20
18
16
14
12
10
8
6
4
2
0
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-04-2002 08 53

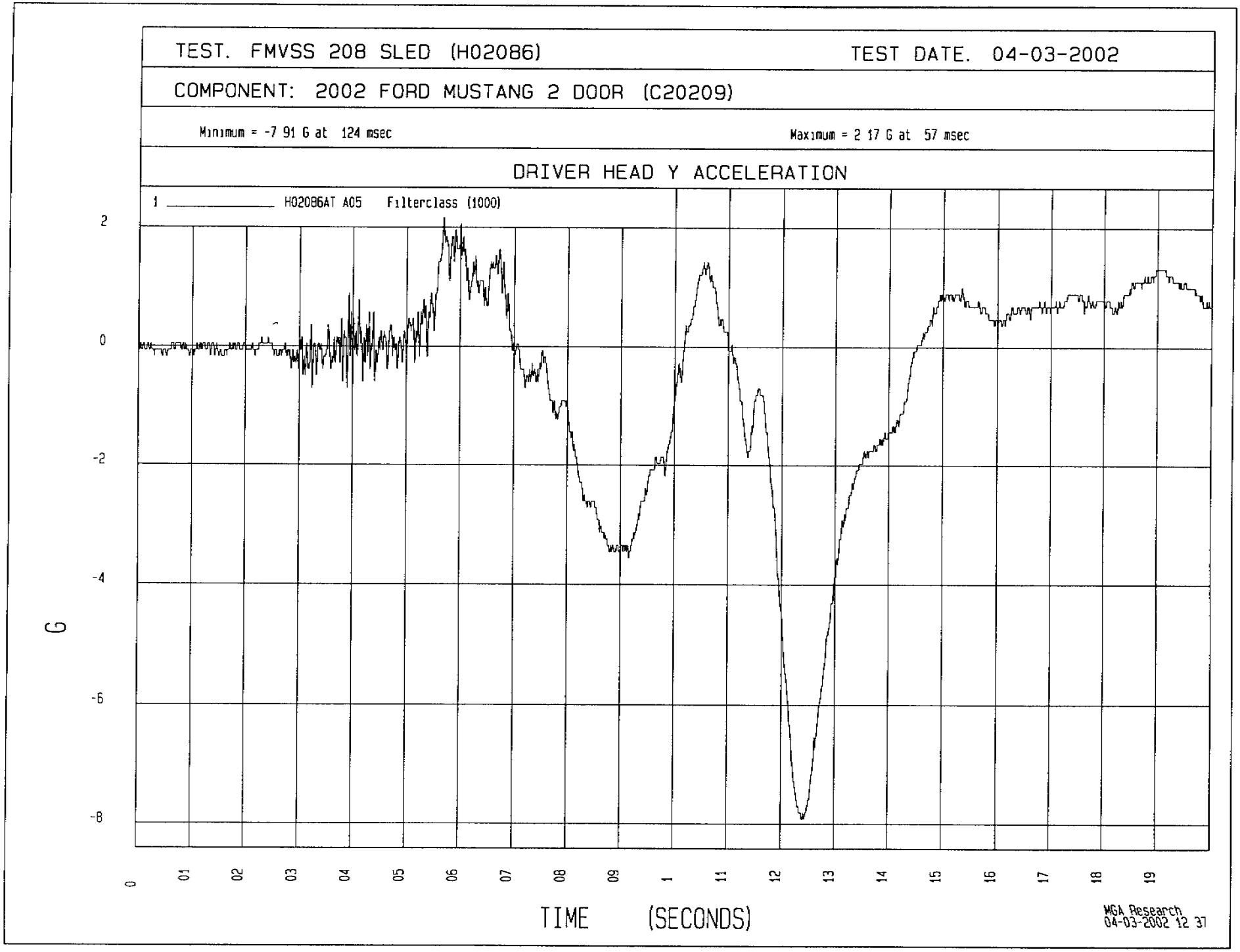

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT. 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -1 54 G at 124 msec
Maximum = 16 79 G at 63 msec
LEFT REAR SEAT CROSSMEMBER X ACCELERATION
1 H02086AF A51 Filterclass (60)
16
14
12
10
8
6
4
2
0
-2
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39

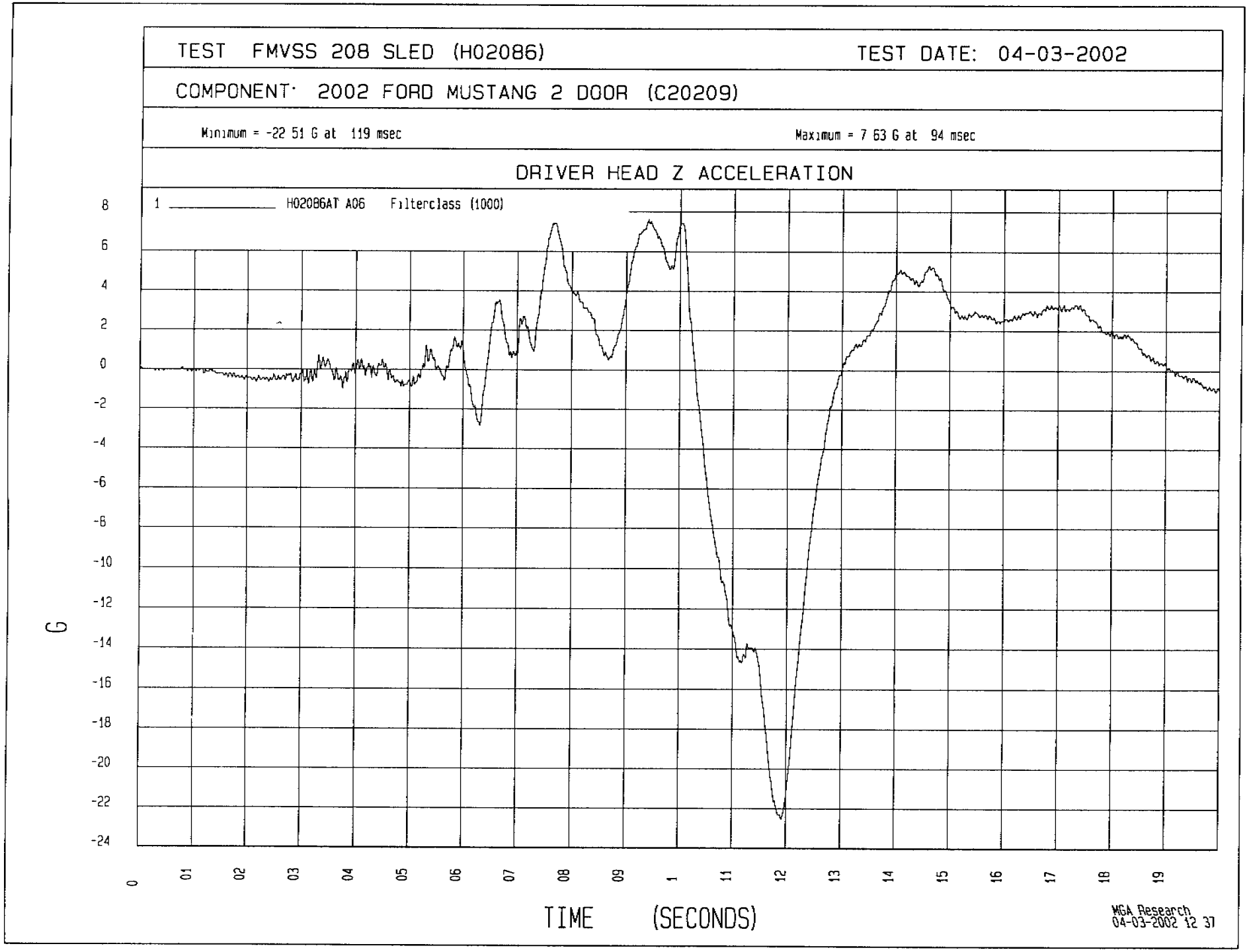

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -3 05E-02 G at 157 msec
Maximum = 18 4 G at 62 msec
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION
1 H02086AF A52 Filterclass (60)
G
18
16
14
12
10
8
6
4
2
0
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39

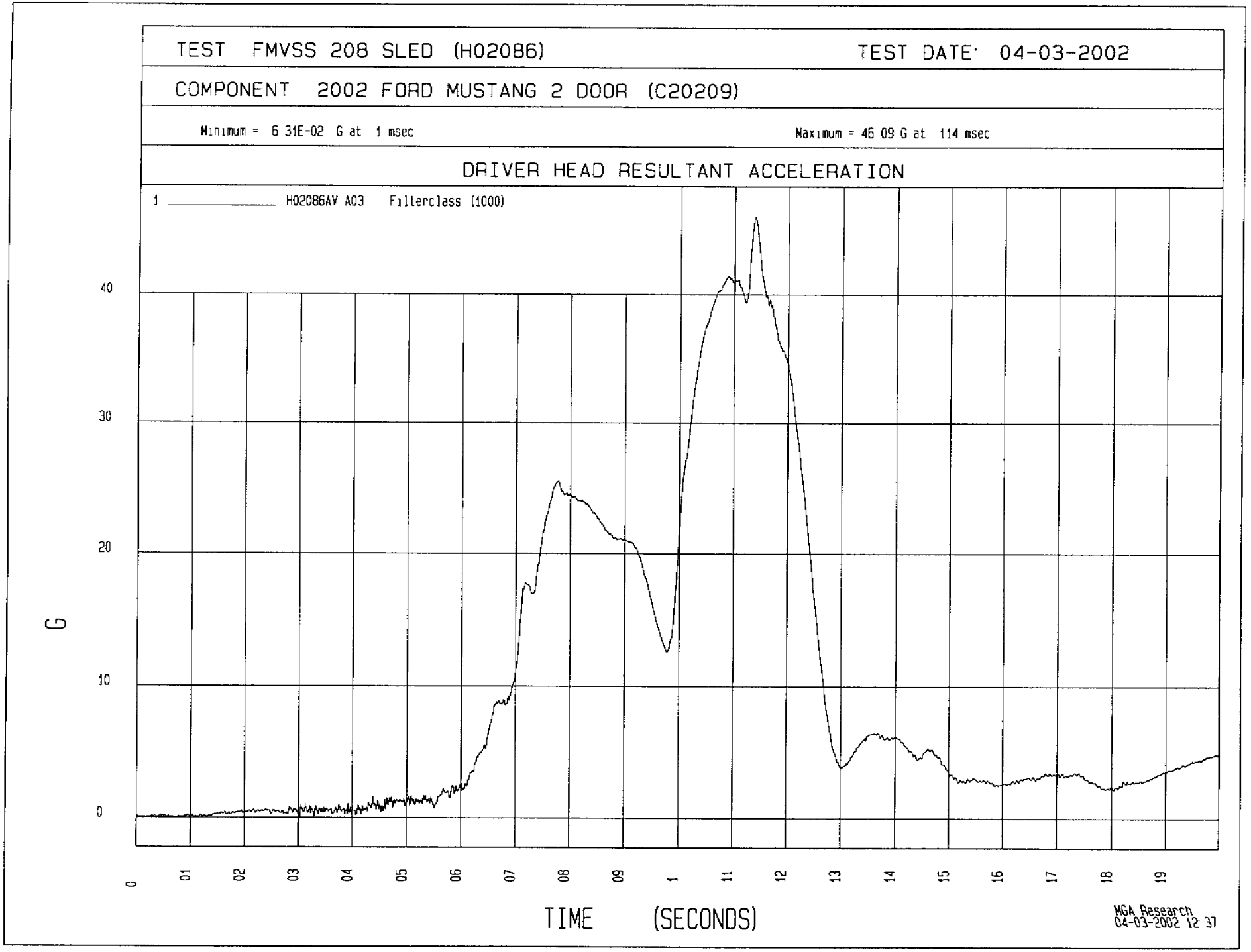

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -2 06 G at 151 msec
Maximum = 21 79 G at 50 msec
TOP OF ENGINE X ACCELERATION
1 H02086AF A41 Filterclass (60)
G
22
20
18
16
14
12
10
8
6
4
2
0
-2
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39

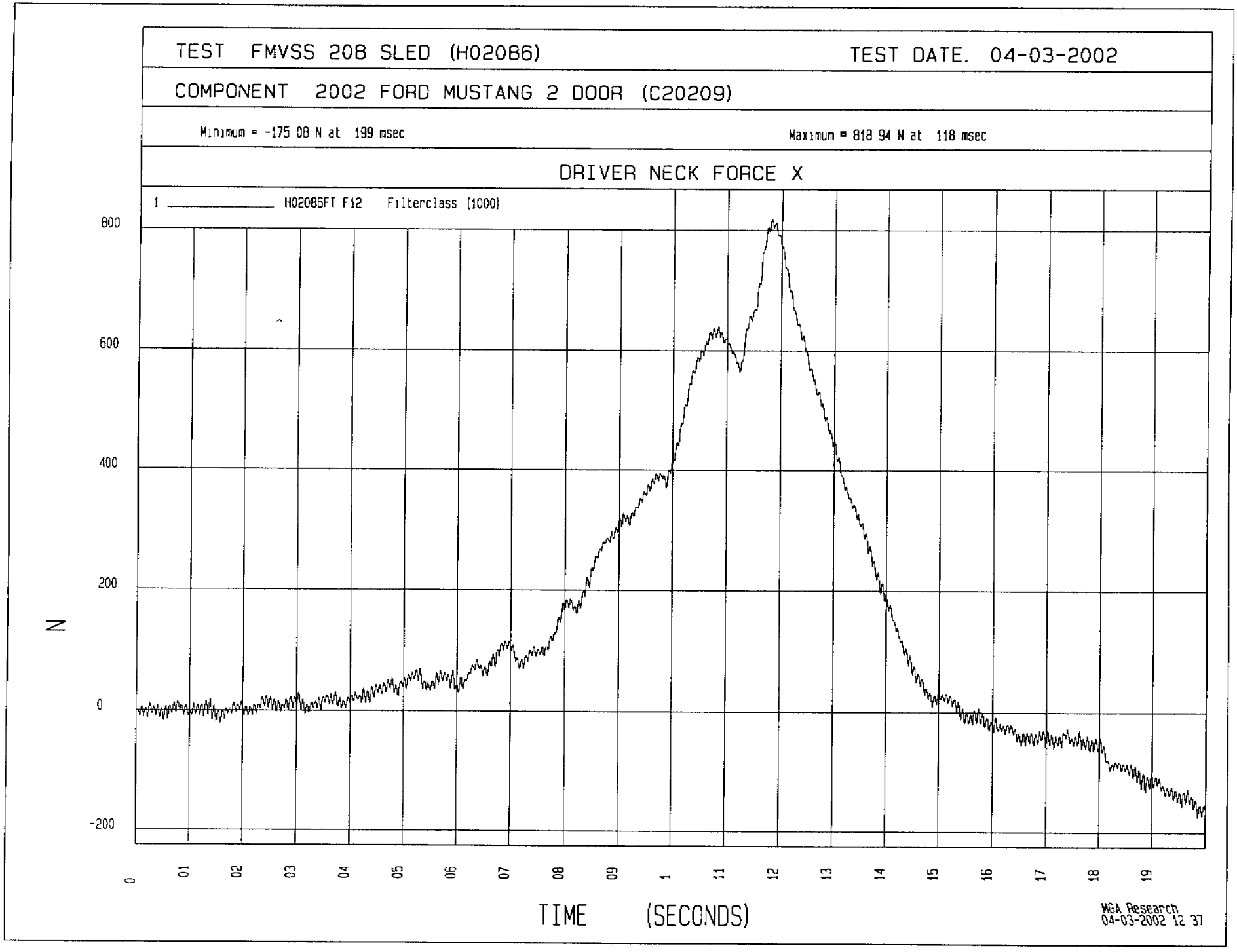

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -1 14 G at 125 msec
Maximum = 17 03 G at 62 msec
REAR AXLE X ACCELERATION
1 _____ H02086AF A43 Filterclass (60)
16
14
12
10
8
6
4
2
0
-2
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39

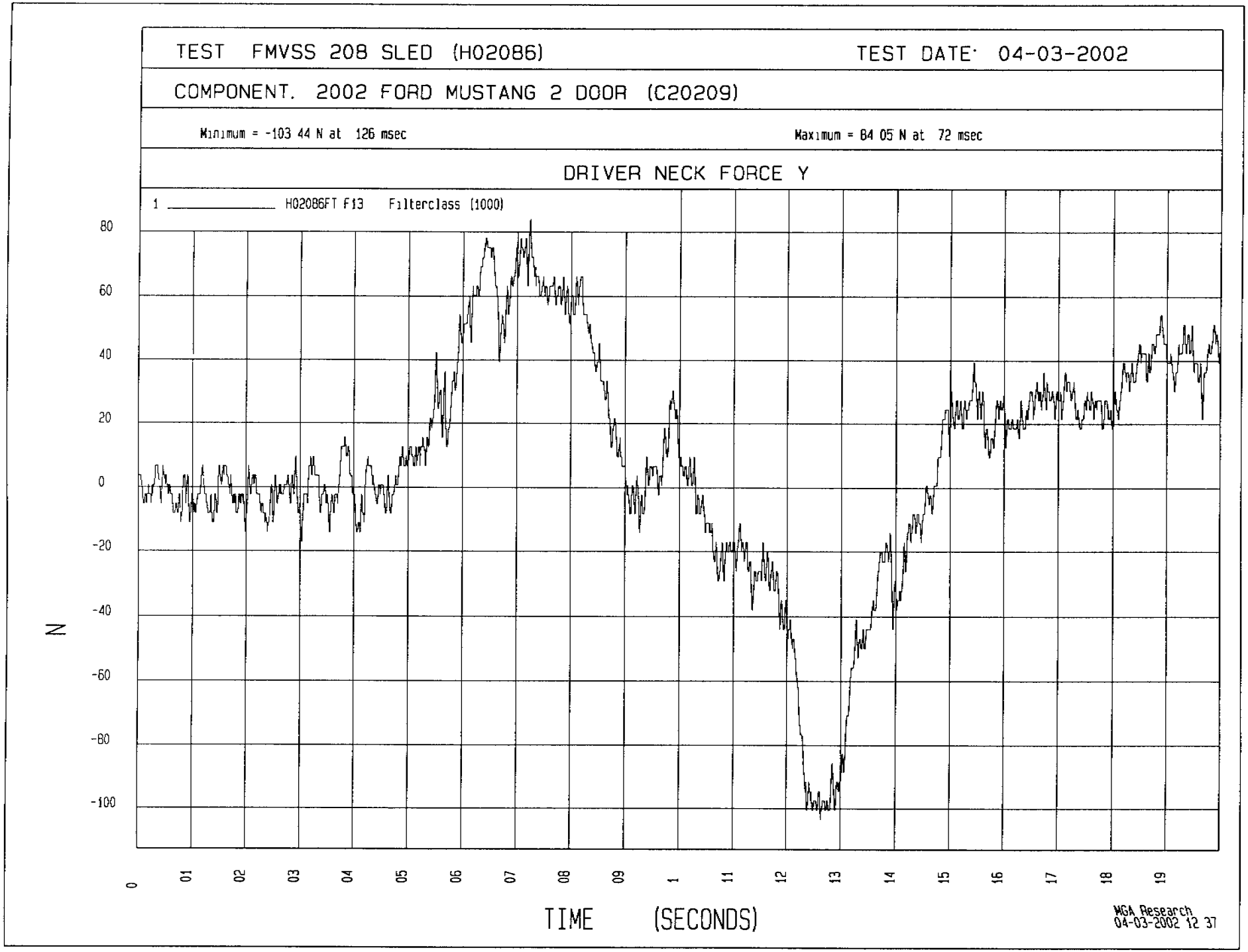

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -43 83 G at 114 msec
Maximum = 5 8 G at 135 msec
DRIVER HEAD X ACCELERATION
1 H02086AT A03 Filterclass (1000)
0
-10
-20
-30
-40
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

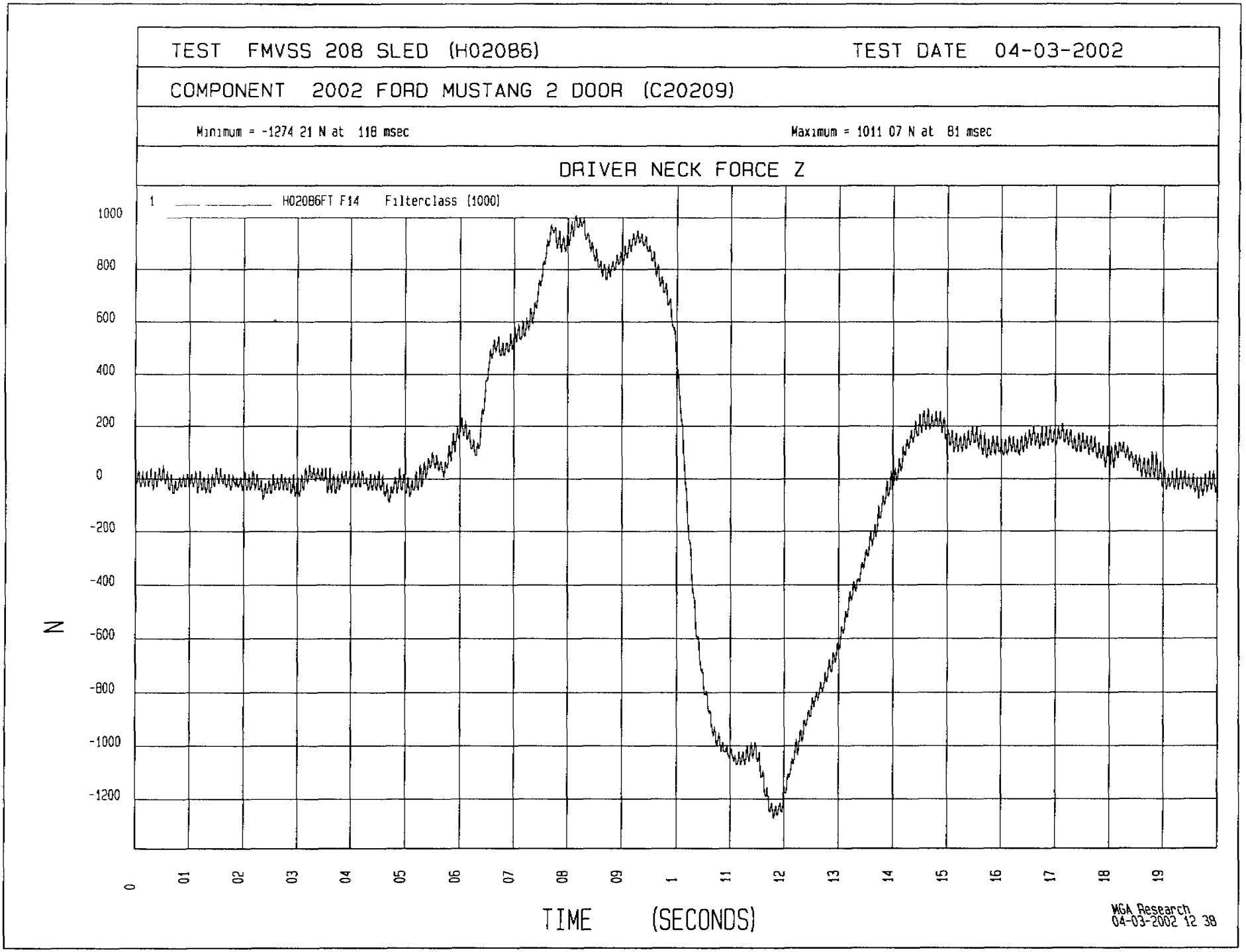

TEST. FMVSS 208 SLED (H02086)
TEST DATE. 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -7 91 G at 124 msec
Maximum = 2 17 G at 57 msec
DRIVER HEAD Y ACCELERATION
1 H02086AT A05 Filterclass (1000)
2
0
-2
-4
-6
-8
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

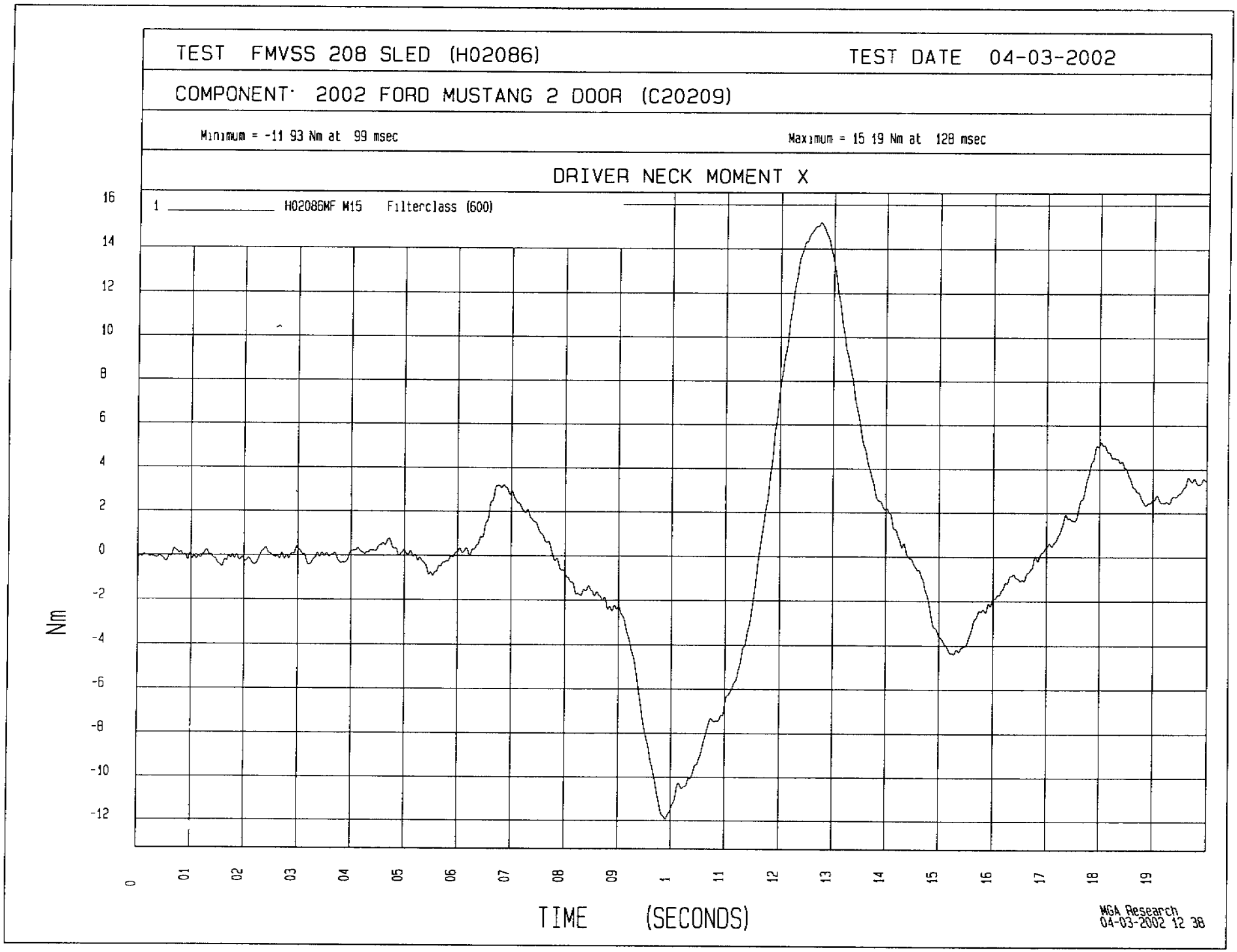

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -22.51 G at 119 msec
Maximum = 7.63 G at 94 msec
DRIVER HEAD Z ACCELERATION
1 H02086AT A06 Filterclass (1000)
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12:37

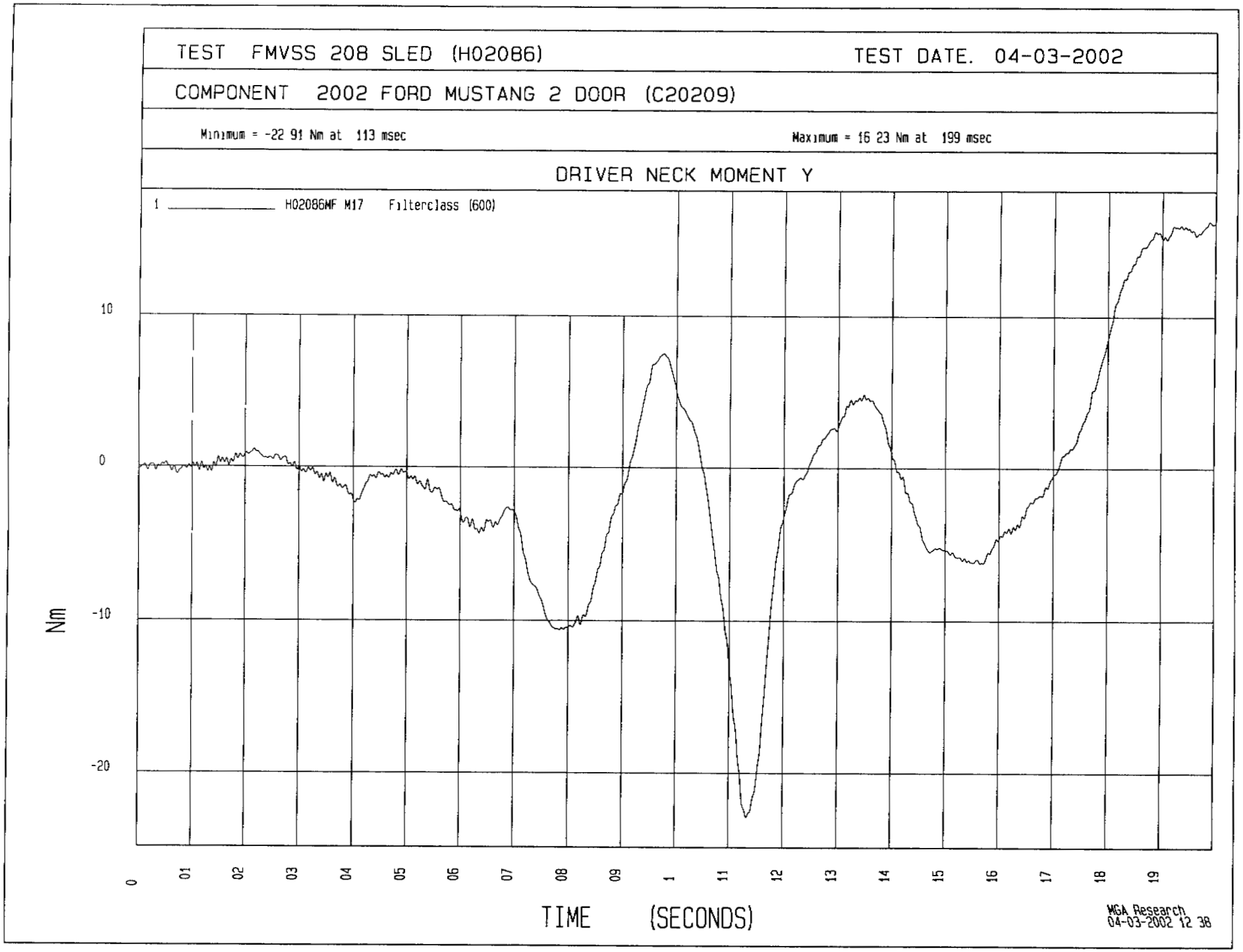

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = 6 31E-02 G at 1 msec
Maximum = 46 09 G at 114 msec
DRIVER HEAD RESULTANT ACCELERATION
1 H02086AV A03 Filterclass (1000)
G
40
30
20
10
0
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

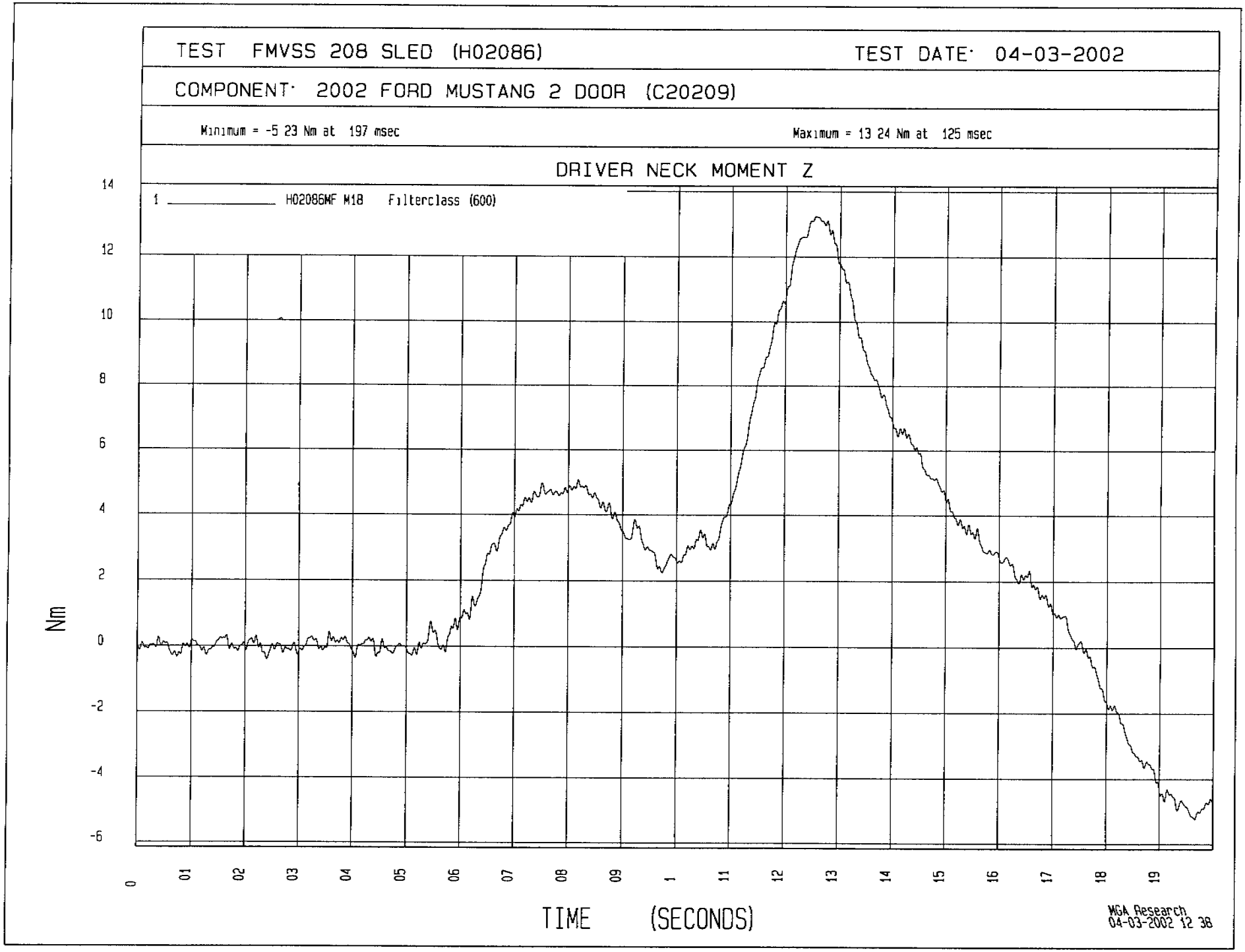

TEST FMVSS 208 SLED (H02086)
TEST DATE. 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -175 08 N at 199 msec
Maximum = 818 94 N at 118 msec
DRIVER NECK FORCE X
H02086FT F12 Filterclass (1000)
800
600
400
200
0
-200
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

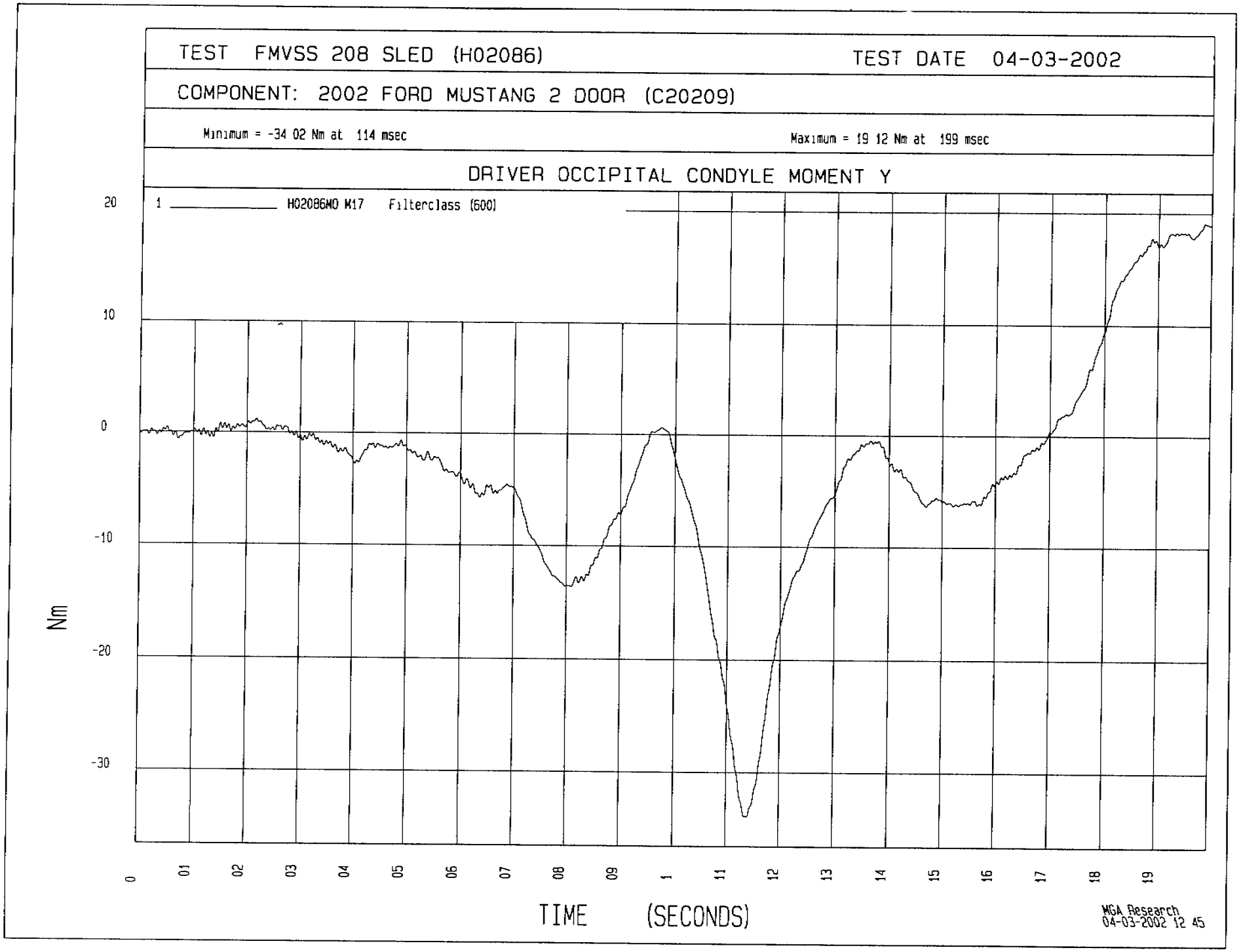

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT. 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -103 44 N at 126 msec
Maximum = 84 05 N at 72 msec
DRIVER NECK FORCE Y
1 H02086FT F13 Filterclass (1000)
80
60
40
20
0
-20
-40
-60
-80
-100
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

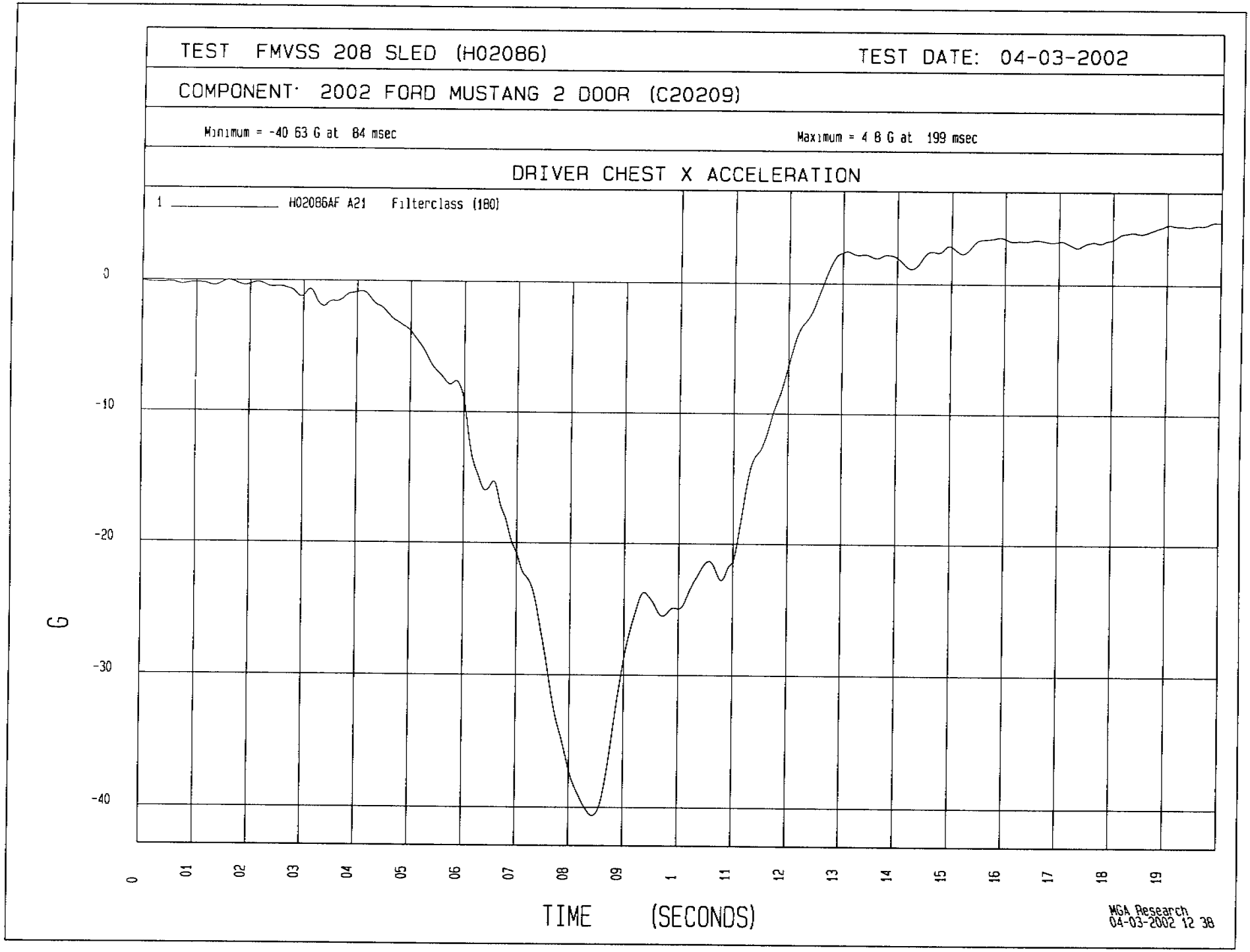

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -1274 21 N at 118 msec
Maximum = 1011 07 N at 81 msec
DRIVER NECK FORCE Z
1 H02086FT F14 Filterclass (1000)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-1200
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

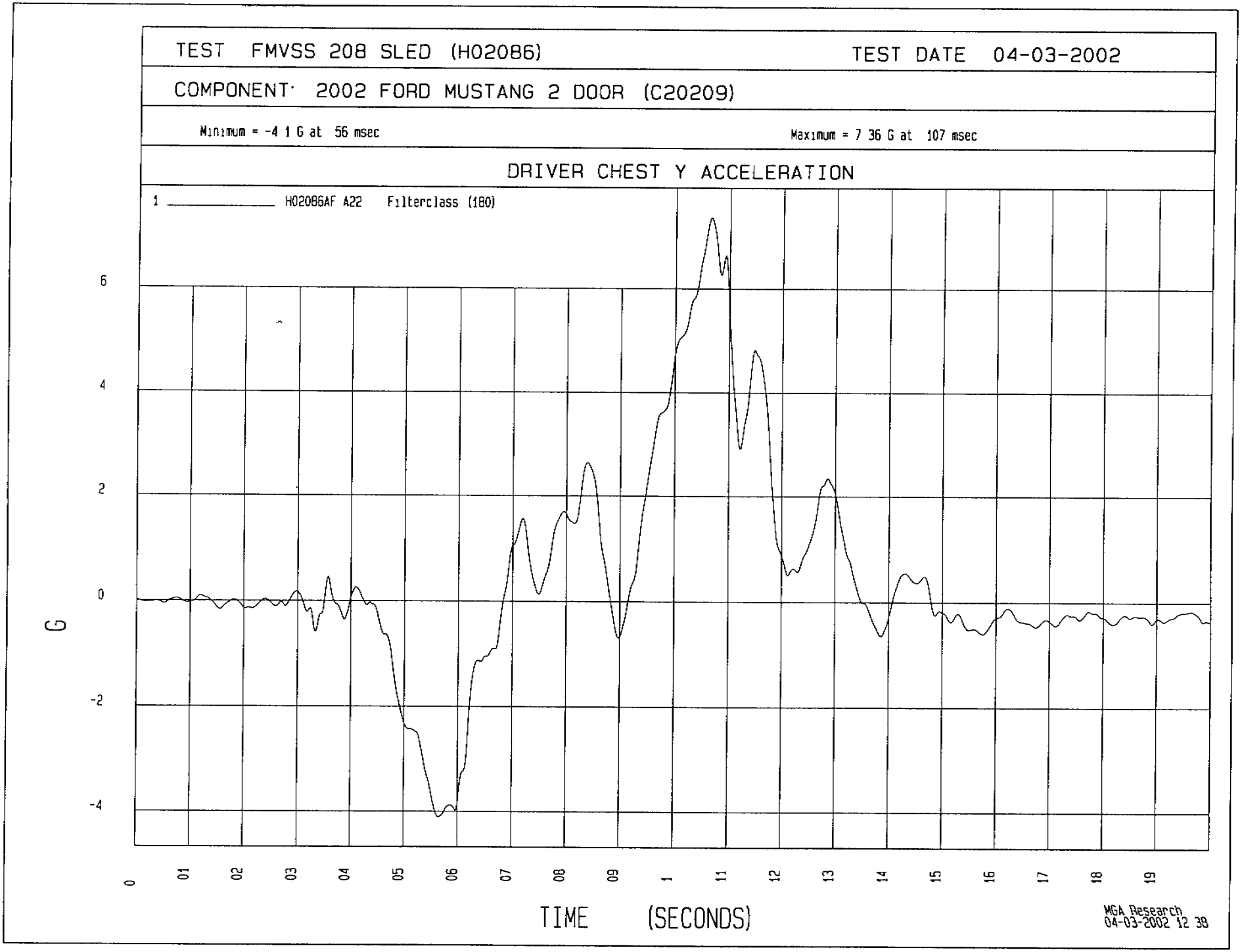

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT· 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -11 93 Nm at 99 msec
Maximum = 15 19 Nm at 128 msec
DRIVER NECK MOMENT X
1 H02086MF M15 Filterclass (600)
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

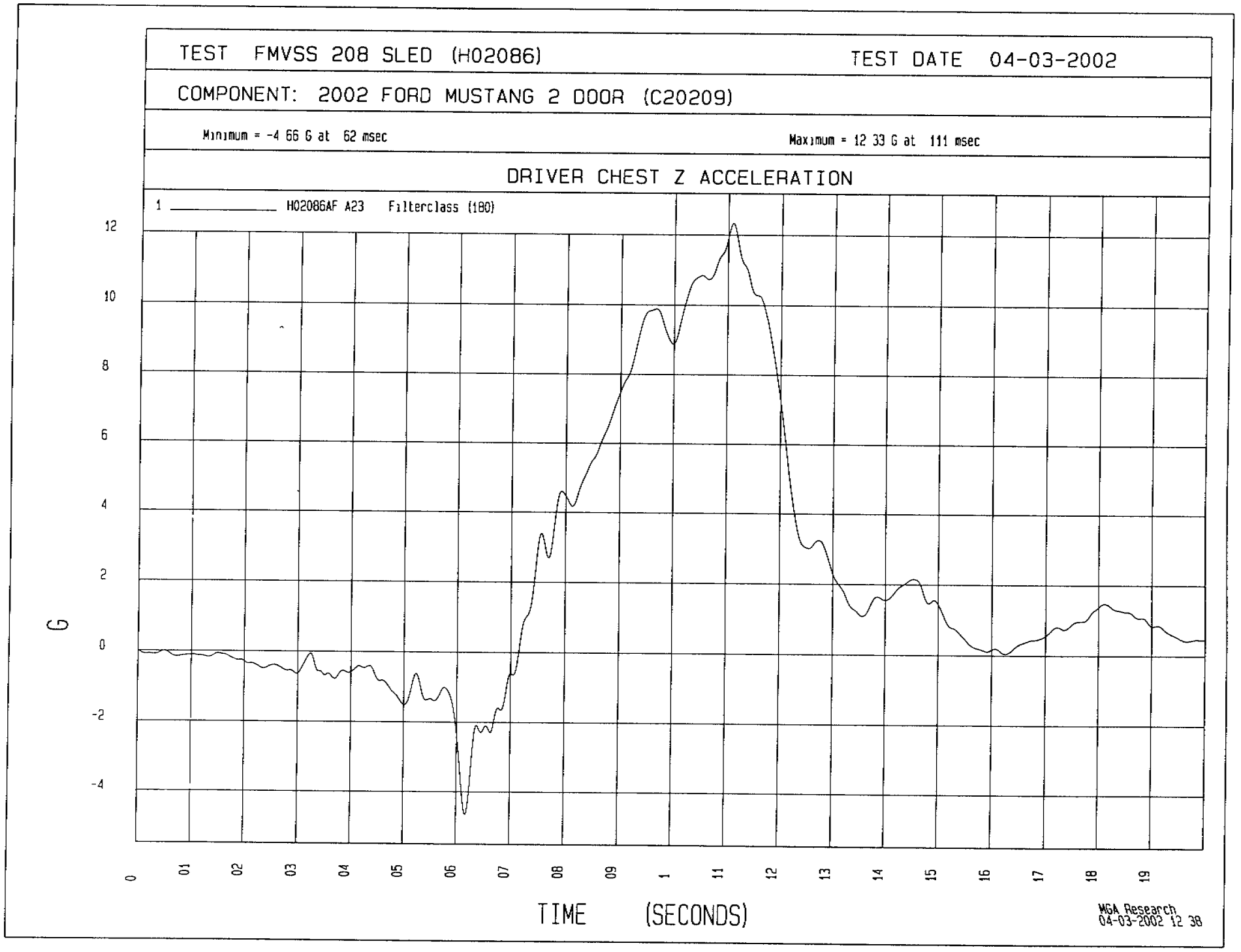

TEST FMVSS 208 SLED (H02086)
TEST DATE. 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -22 91 Nm at 113 msec
Maximum = 16 23 Nm at 199 msec
DRIVER NECK MOMENT Y
1 H02086MF M17 Filterclass (600)
10
0
-10
-20
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

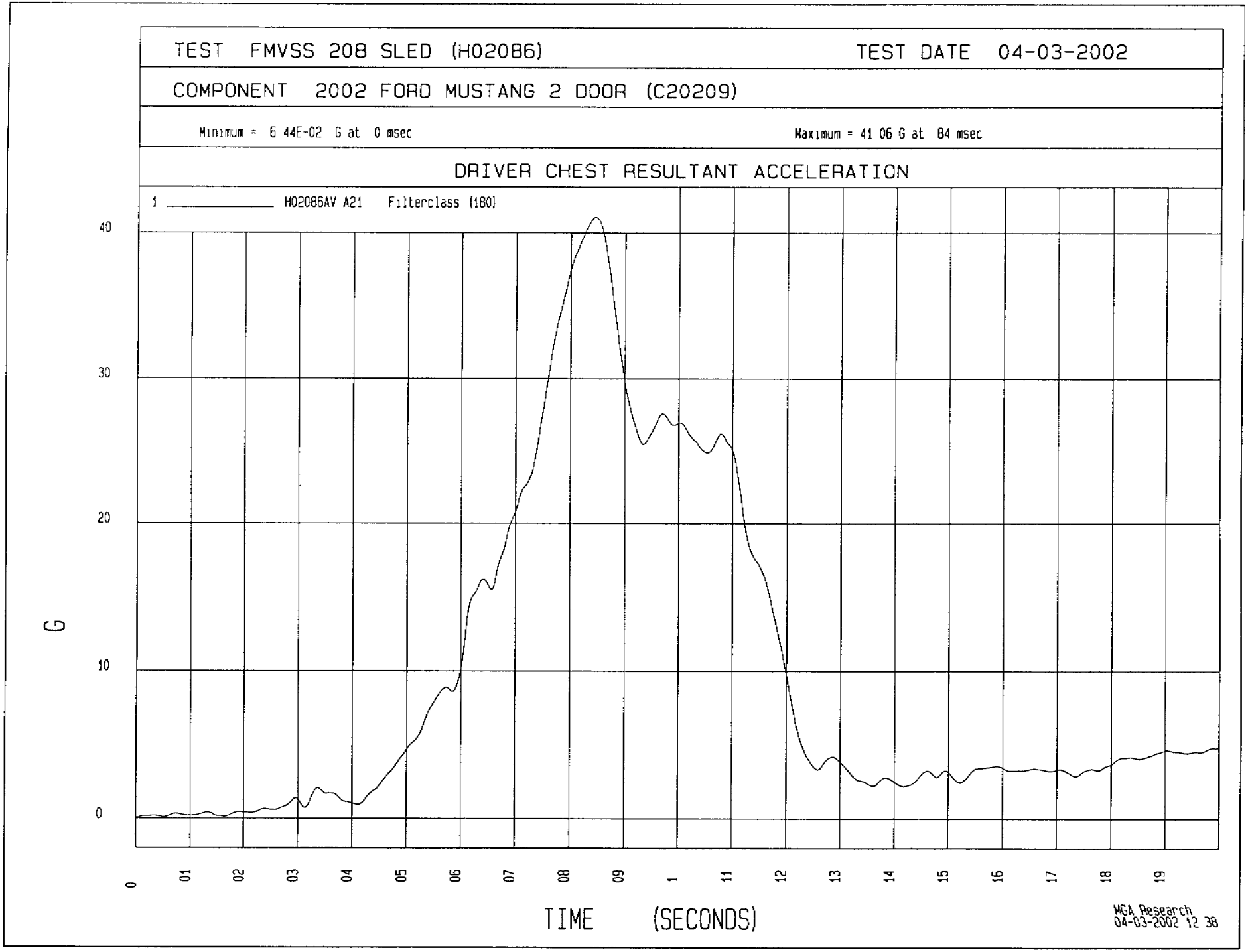

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -5 23 Nm at 197 msec
Maximum = 13 24 Nm at 125 msec
DRIVER NECK MOMENT Z
1 H02086MF M18 Filterclass (600)
14
12
10
8
6
4
2
0
-2
-4
-6
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

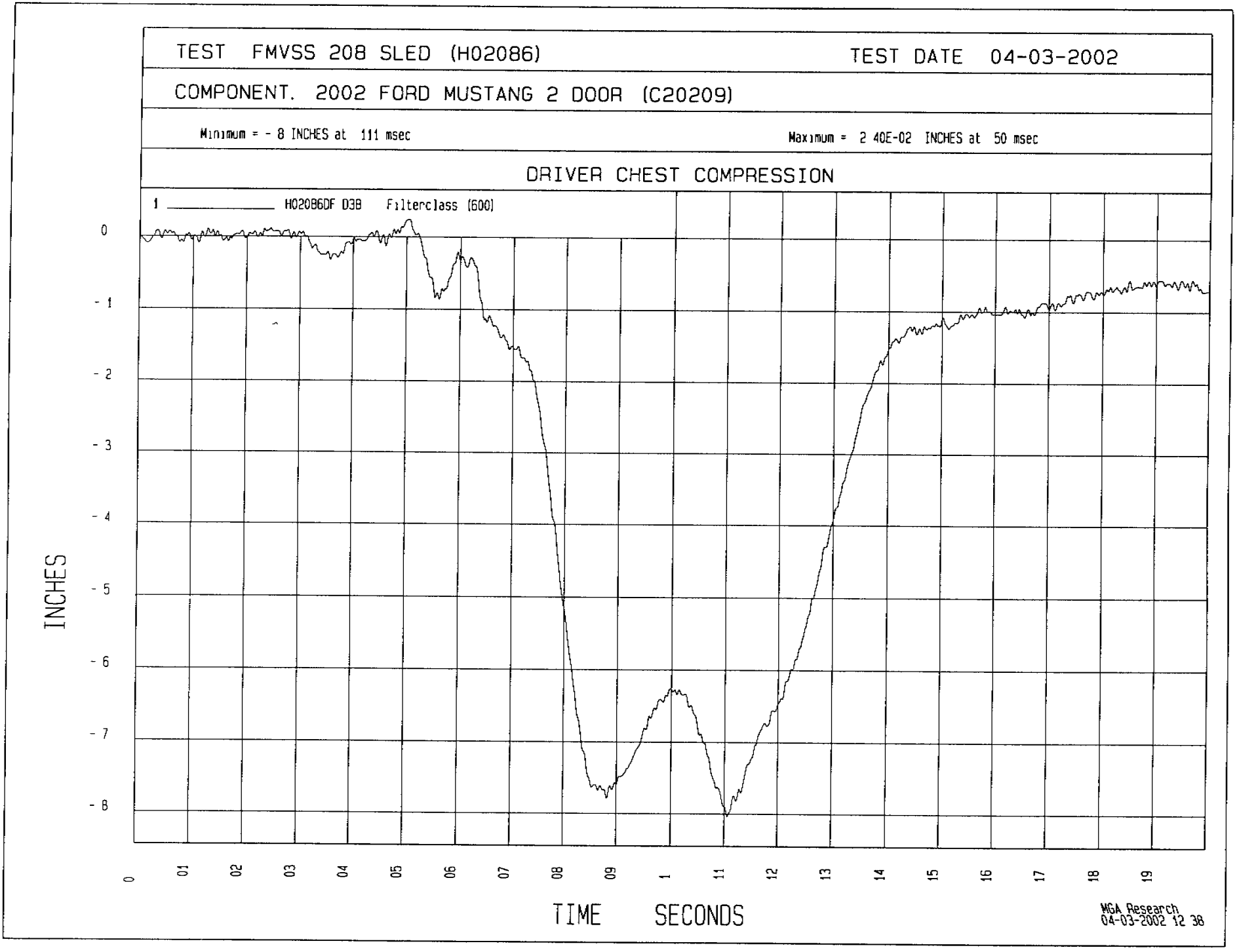

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -34 02 Nm at 114 msec
Maximum = 19 12 Nm at 199 msec
DRIVER OCCIPITAL CONDYLE MOMENT Y
1 H02086MO M17 Filterclass (600)
20
10
0
-10
-20
-30
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 45

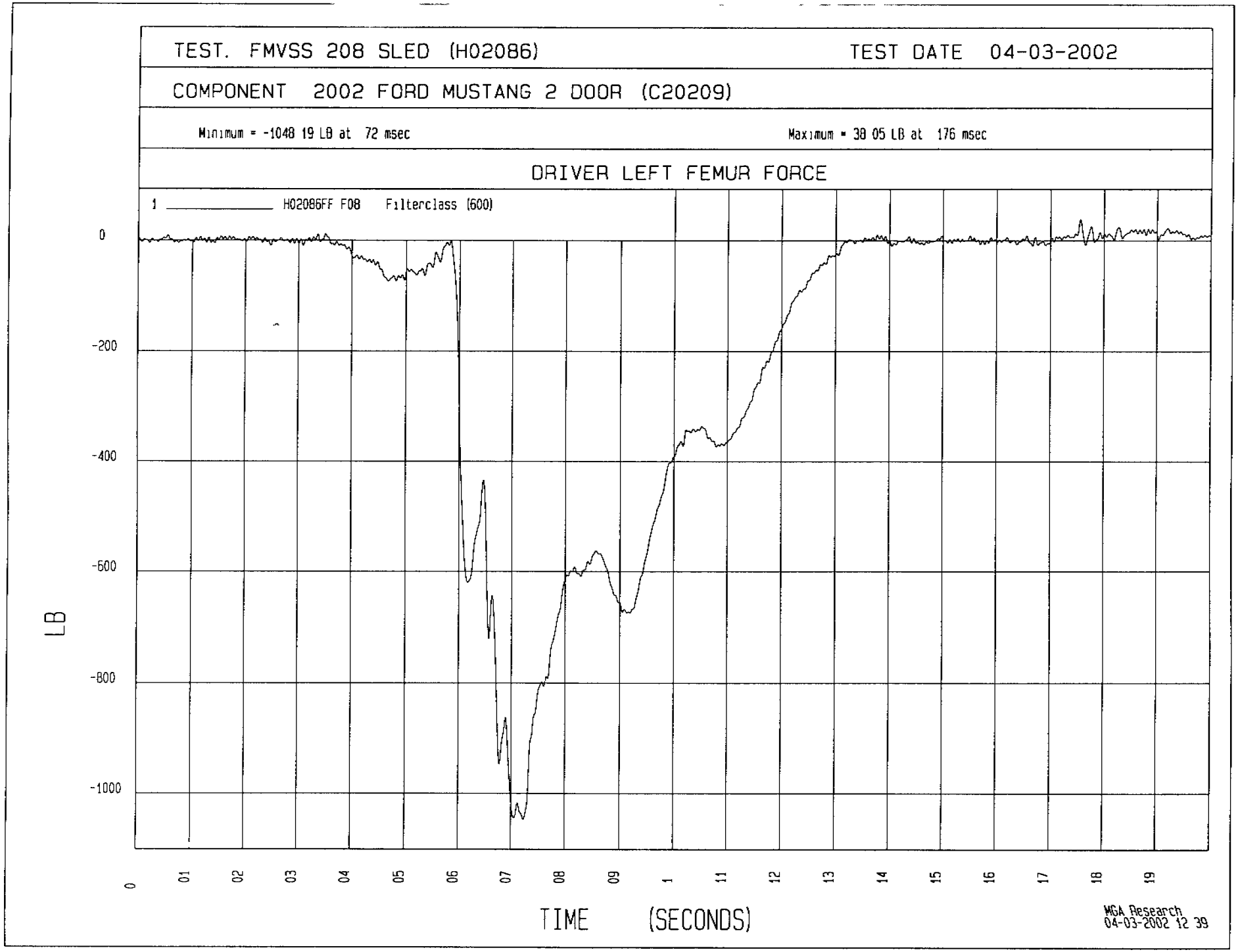

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -40 63 G at 84 msec
Maximum = 4 8 G at 199 msec
DRIVER CHEST X ACCELERATION
1 H02086AF A21 Filterclass (180)
0
-10
-20
-30
-40
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

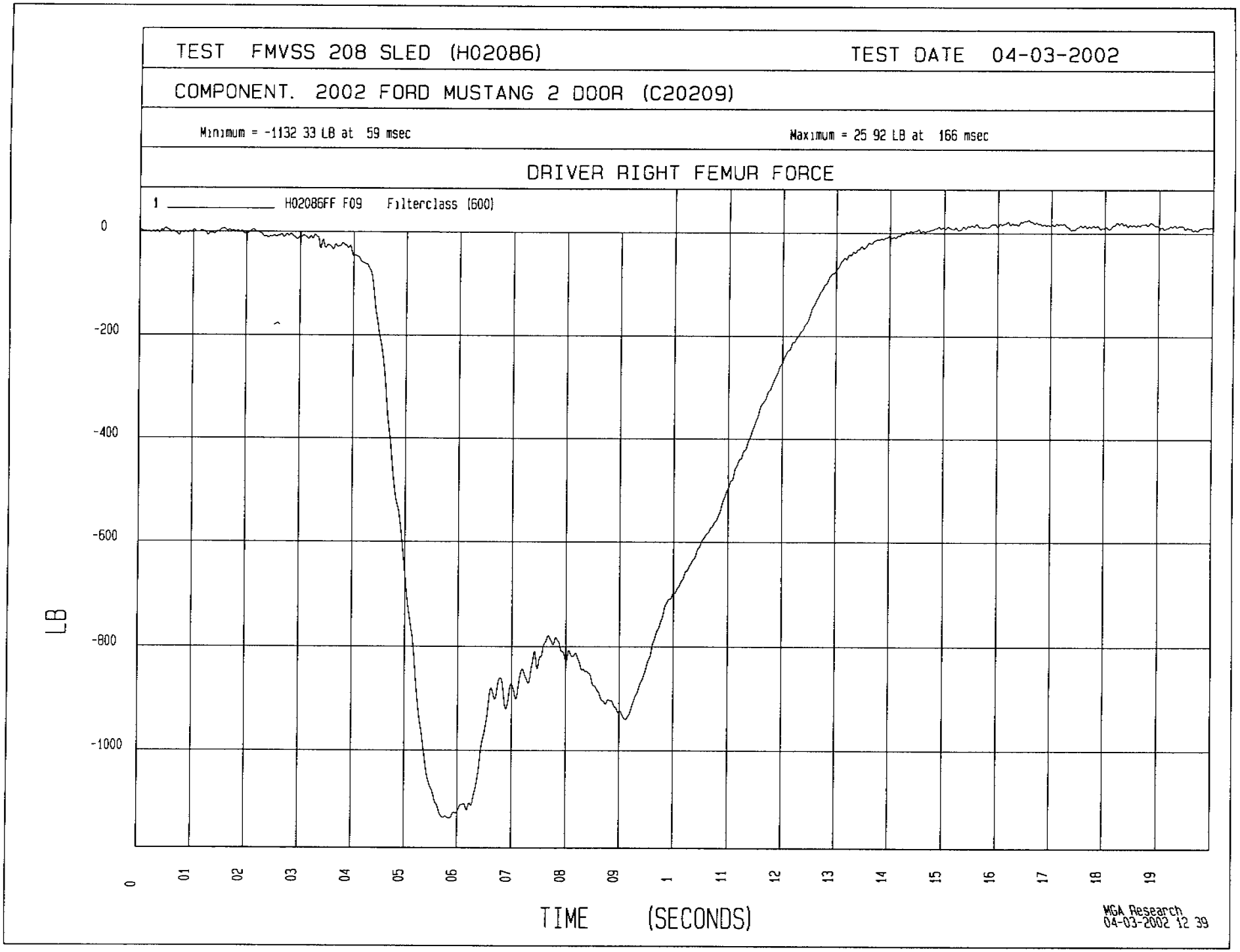

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -4 1 G at 56 msec
Maximum = 7 36 G at 107 msec
DRIVER CHEST Y ACCELERATION
1 H02086AF A22 Filterclass (180)
G
6
4
2
0
-2
-4
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

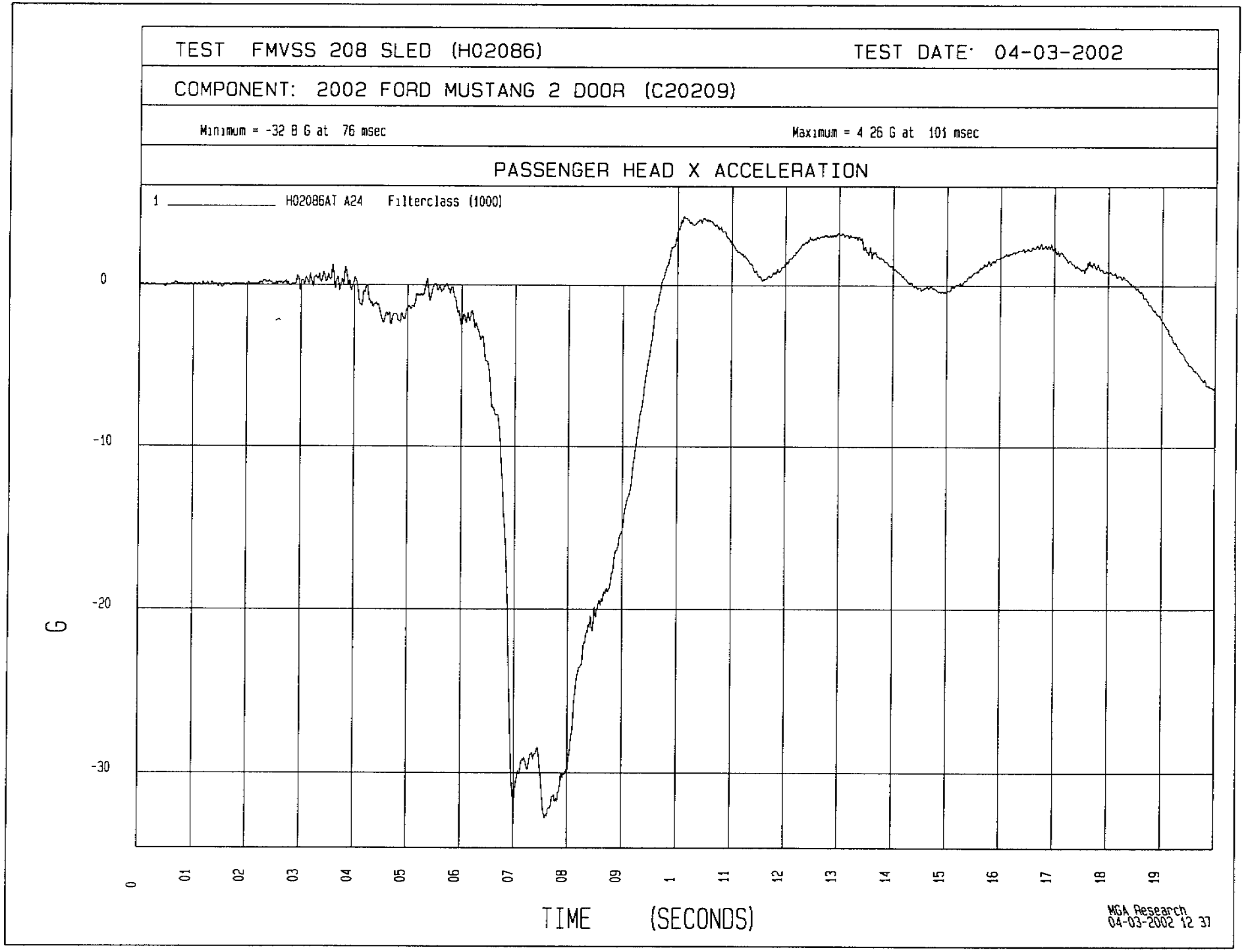

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -4 66 G at 62 msec
Maximum = 12 33 G at 111 msec
DRIVER CHEST Z ACCELERATION
1 H02086AF A23 Filterclass (180)
12
10
8
6
4
2
0
-2
-4
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

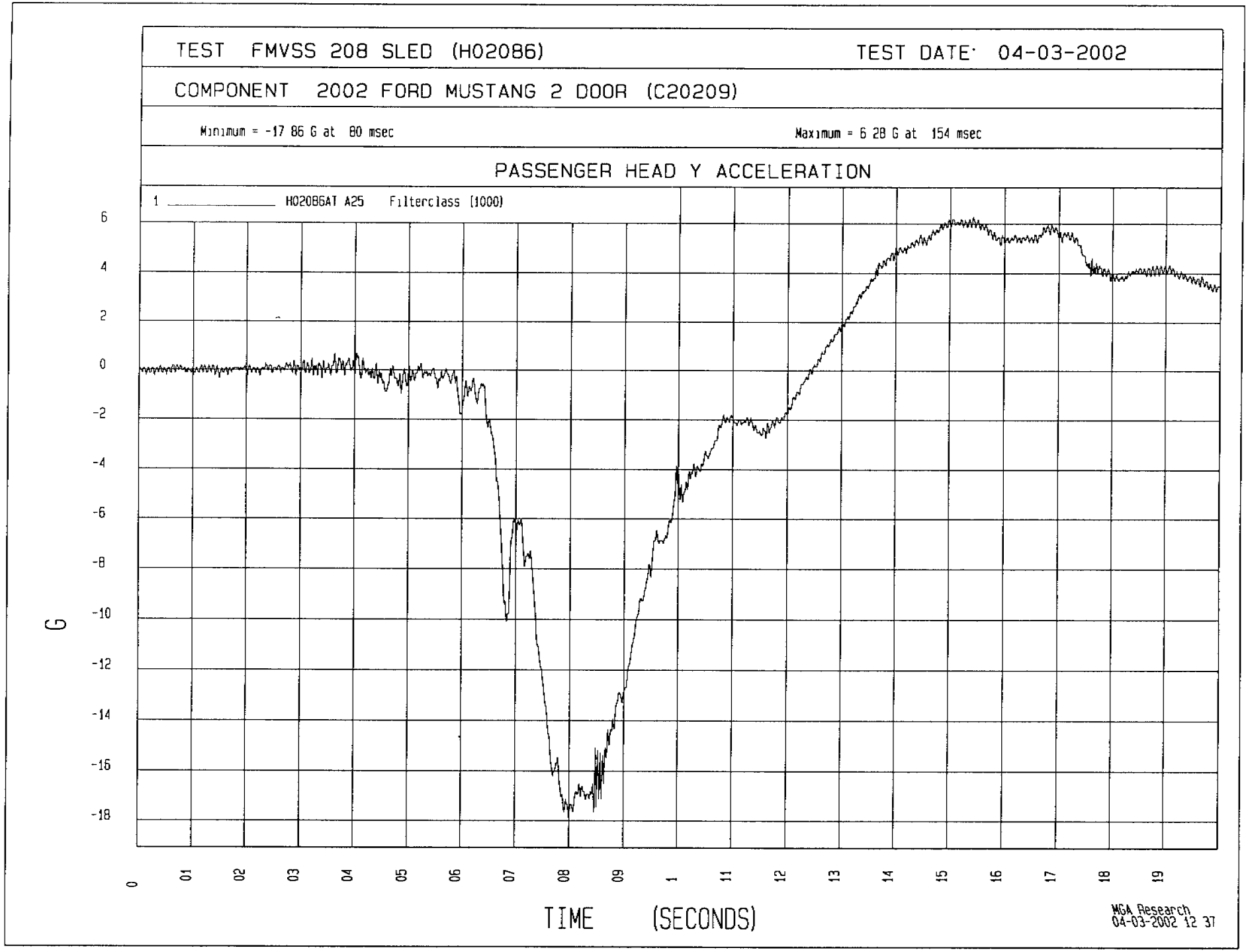

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = 6 44E-02 G at 0 msec
Maximum = 41 06 G at 84 msec
DRIVER CHEST RESULTANT ACCELERATION
1 H02086AV A21 Filterclass (180)
40
30
20
10
0
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

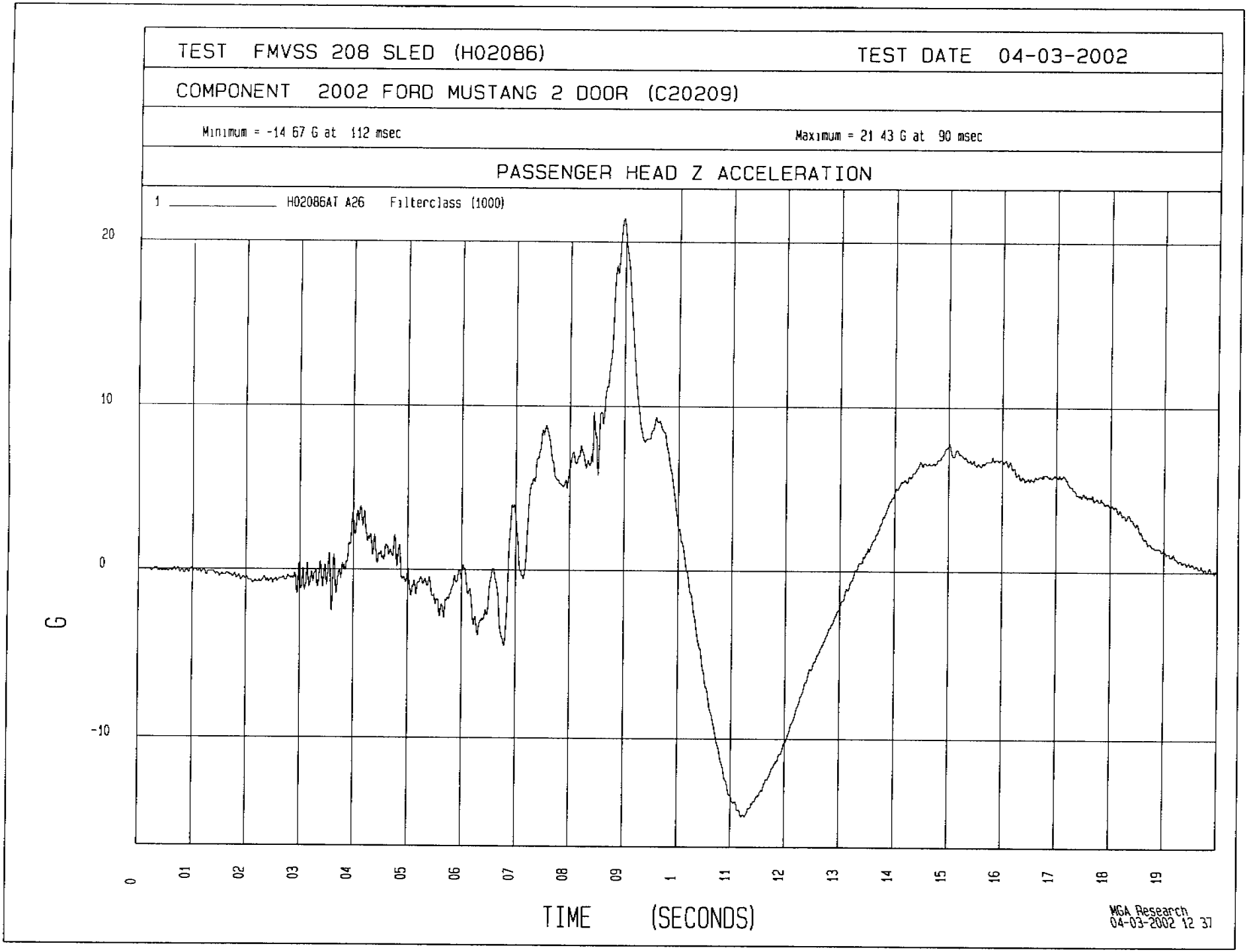

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT. 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = - 8 INCHES at 111 msec
Maximum = 2 40E-02 INCHES at 50 msec
DRIVER CHEST COMPRESSION
1 H02086DF D3B Filterclass (600)
INCHES
0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME SECONDS
MGA Research
04-03-2002 12 38

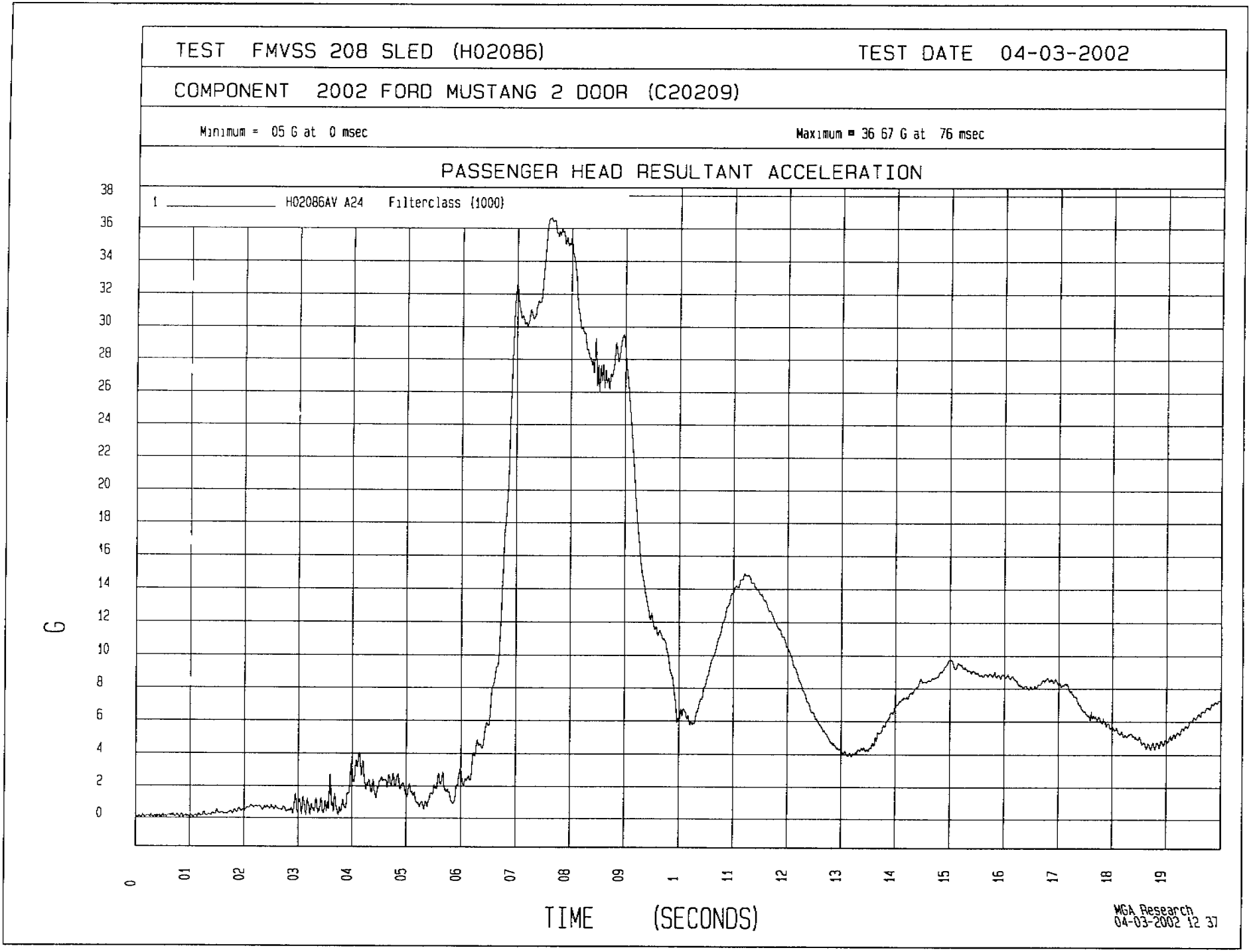

TEST. FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -1048 19 LB at 72 msec
Maximum = 38 05 LB at 176 msec
DRIVER LEFT FEMUR FORCE
1 H02086FF F08 Filterclass (600)
0
-200
-400
-600
-800
-1000
LB
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39

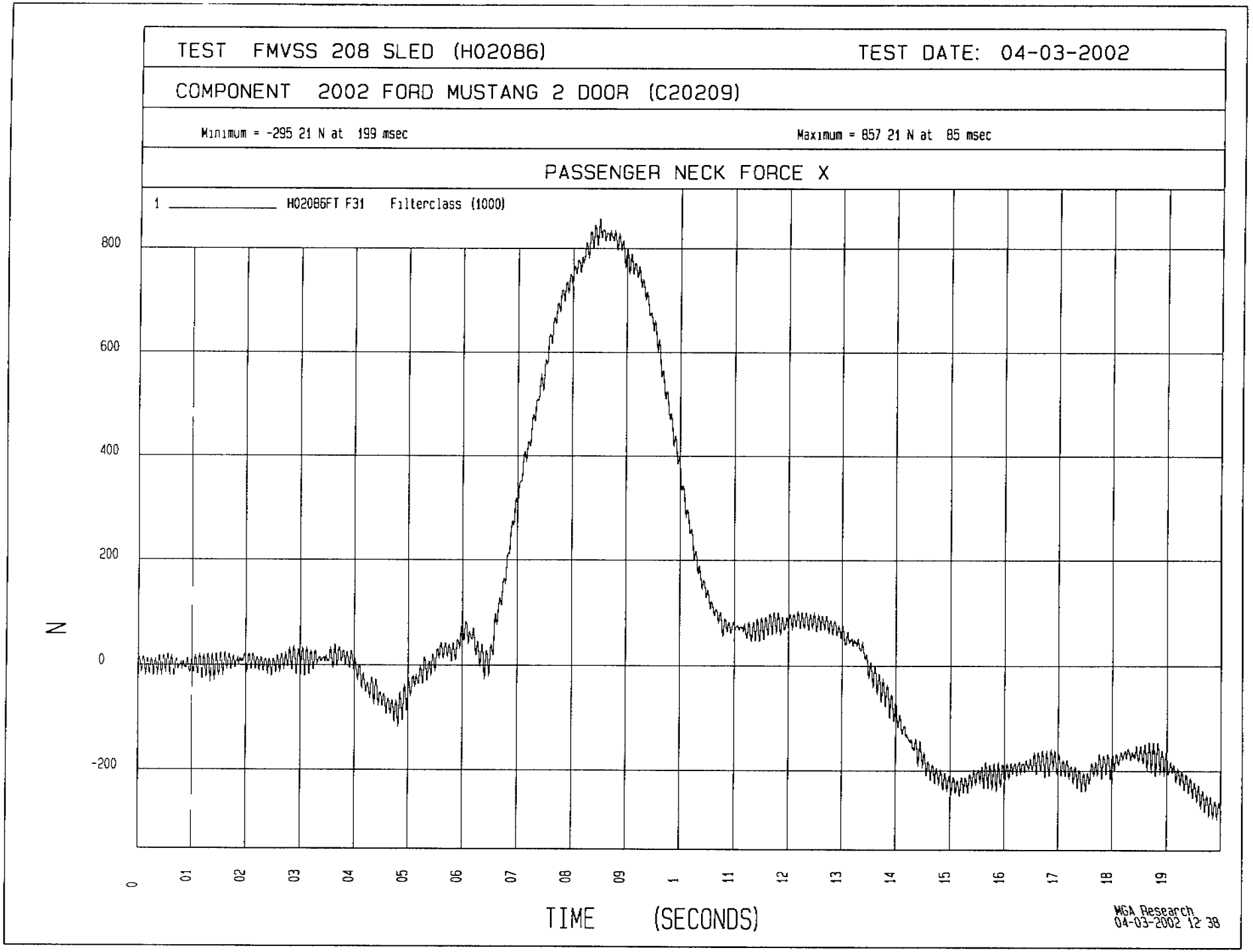

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT. 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -1132 33 LB at 59 msec
Maximum = 25 92 LB at 166 msec
DRIVER RIGHT FEMUR FORCE
1 H02086FF F09 Filterclass (600)
0
-200
-400
-600
-800
-1000
LB
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39

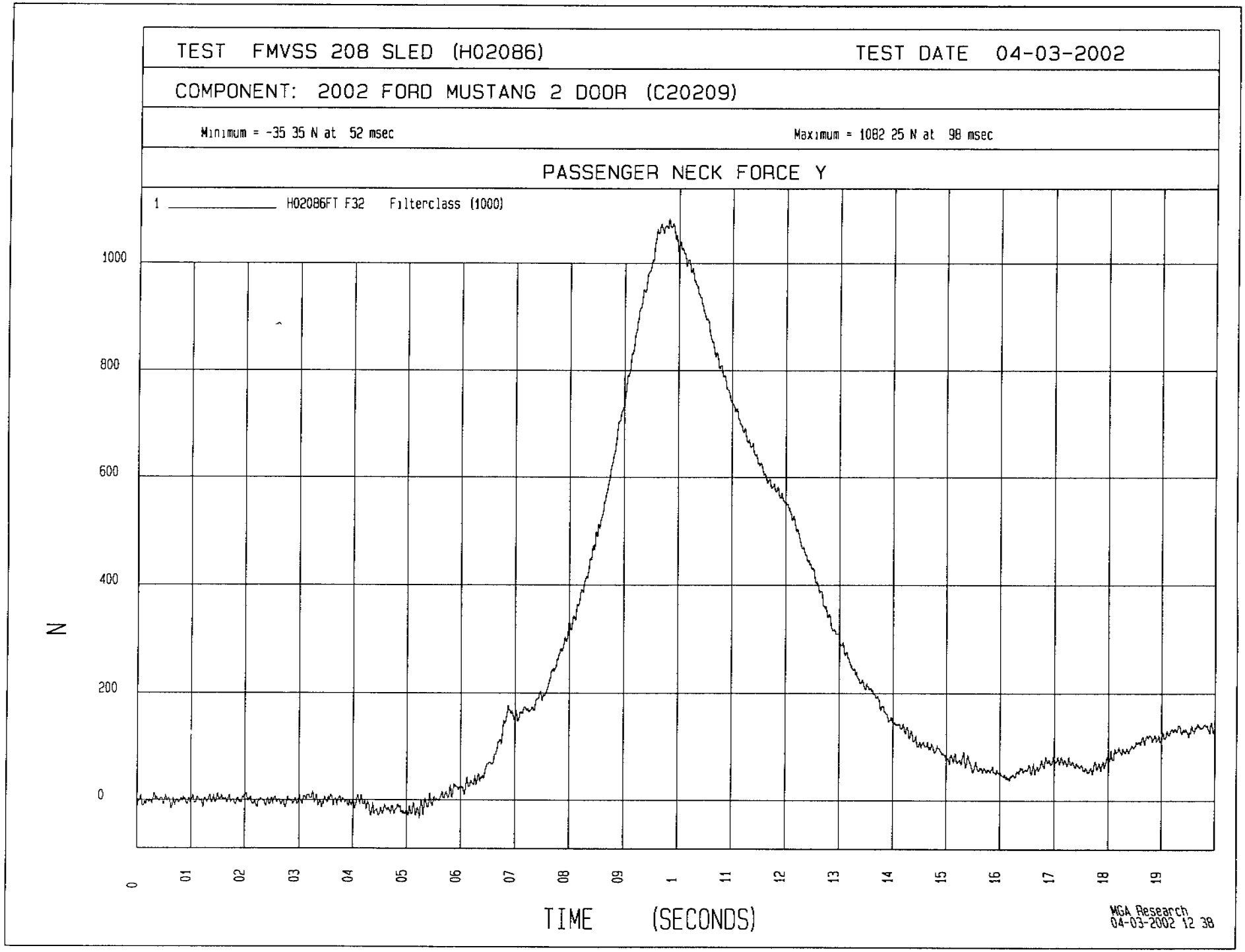

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -32 8 G at 76 msec
Maximum = 4 26 G at 101 msec
PASSENGER HEAD X ACCELERATION
1 H02086AT A24 Filterclass (1000)
0
-10
-20
-30
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

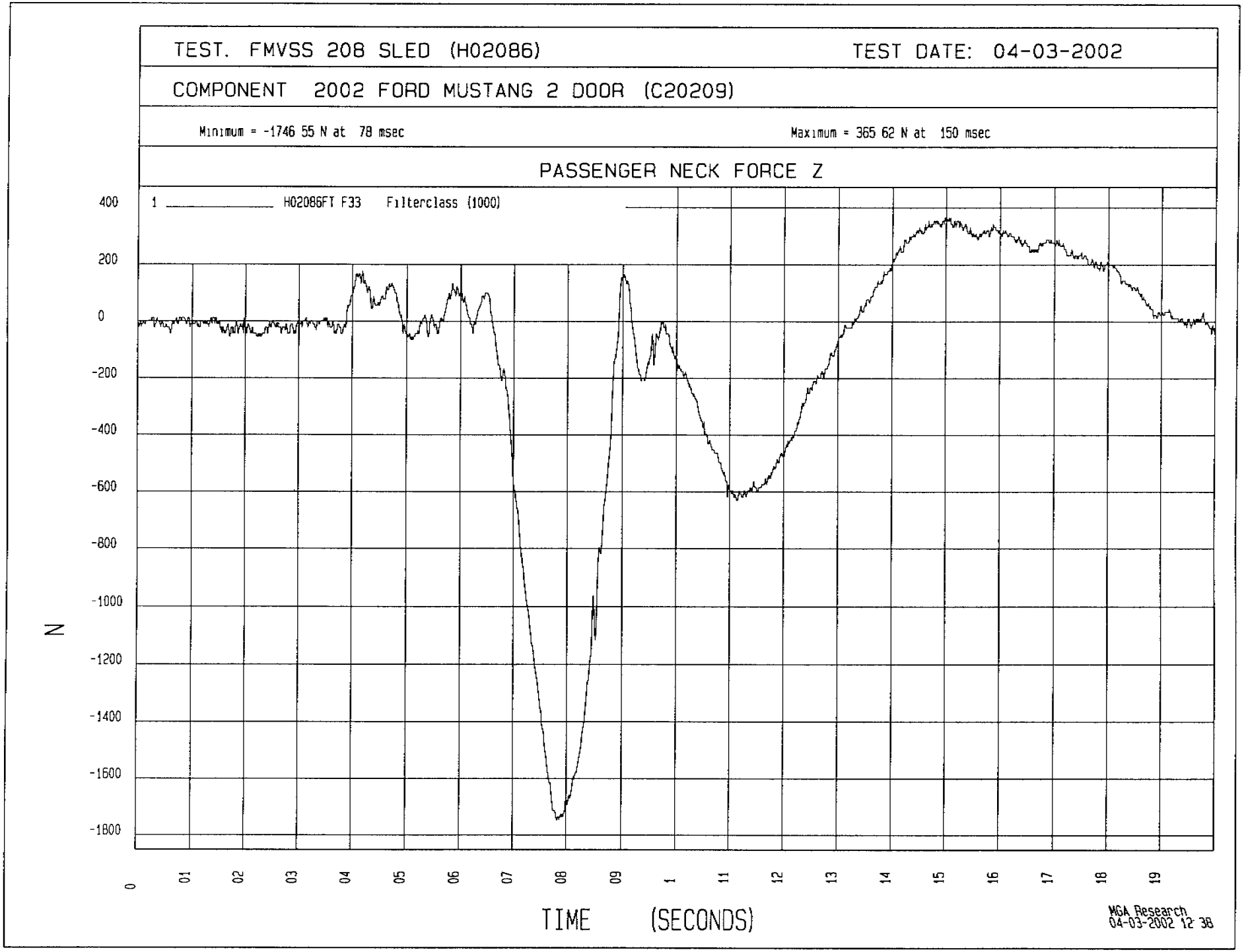

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -17 86 G at 80 msec
Maximum = 6 28 G at 154 msec
PASSENGER HEAD Y ACCELERATION
1 H02086AT A25 Filterclass (1000)
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

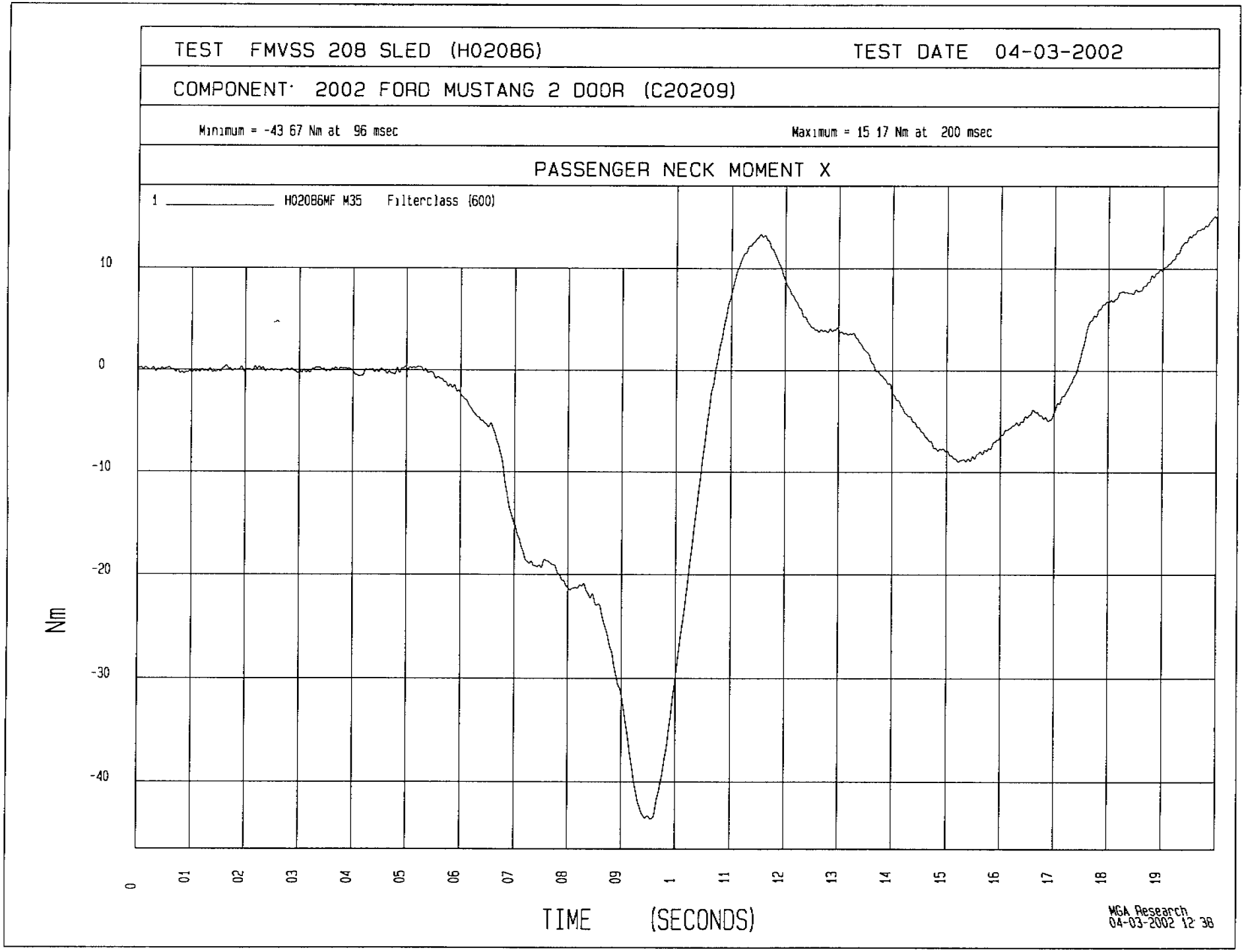

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -14 67 G at 112 msec
Maximum = 21 43 G at 90 msec
PASSENGER HEAD Z ACCELERATION
1 H02086AT A26 Filterclass (1000)
20
10
0
-10
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 37

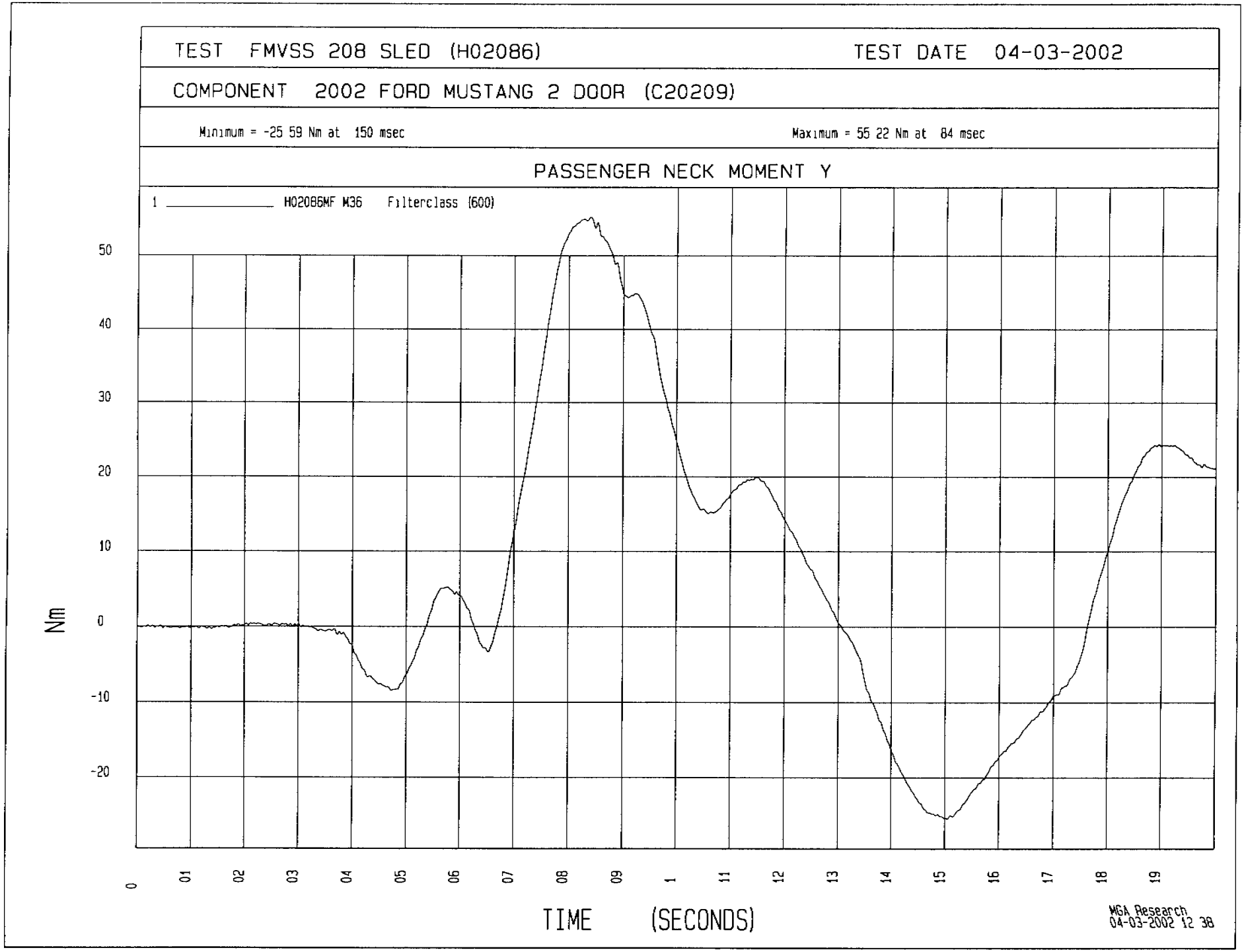

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = 05 G at 0 msec
Maximum = 36 67 G at 76 msec
PASSENGER HEAD RESULTANT ACCELERATION
1 H02086AV A24 Filterclass (1000)
G
TIME (SECONDS)
MGA Research
04-03-2002 12 37

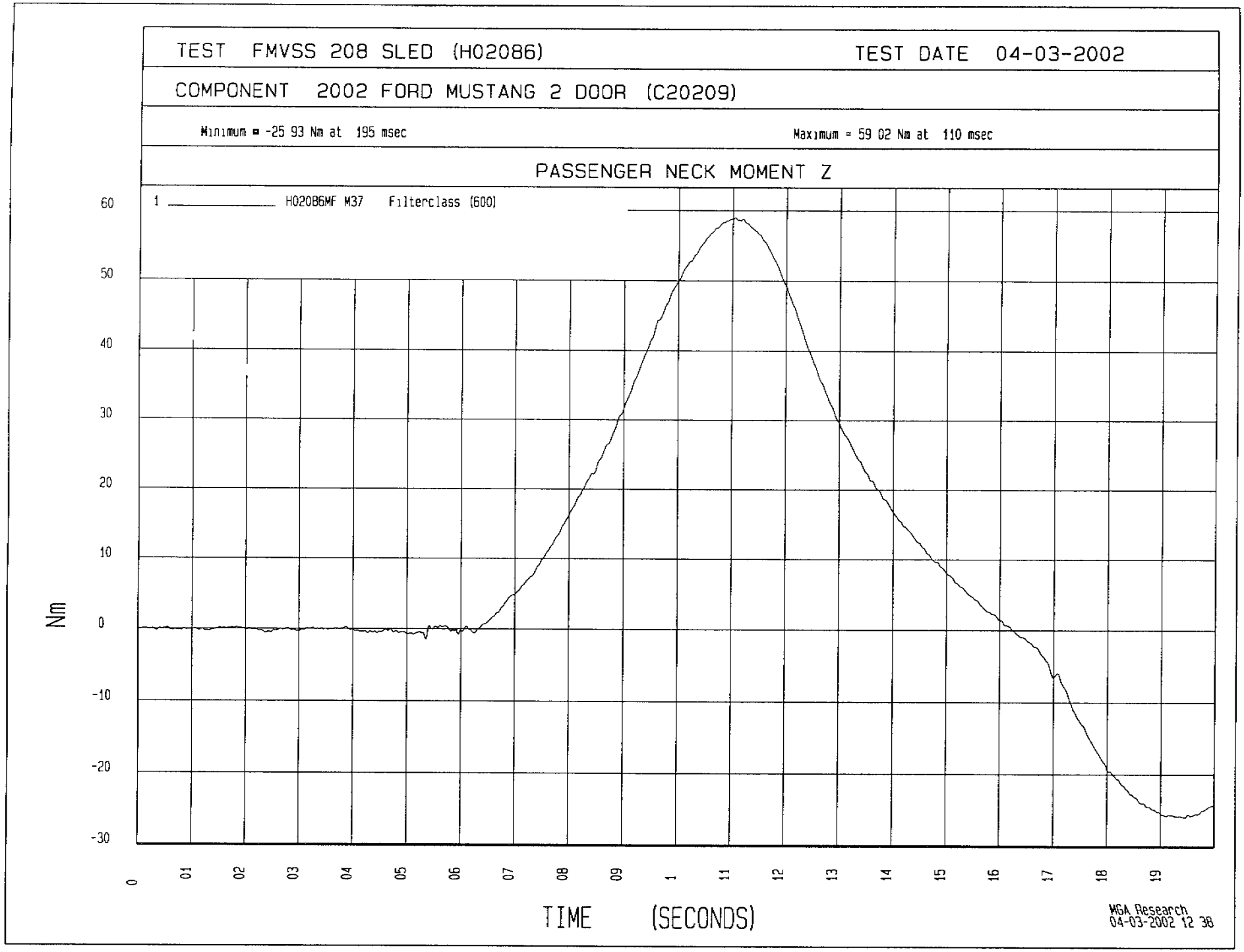

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -295 21 N at 199 msec
Maximum = 857 21 N at 85 msec
PASSENGER NECK FORCE X
1 H02086FT F31 Filterclass (1000)
800
600
400
200
0
-200
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

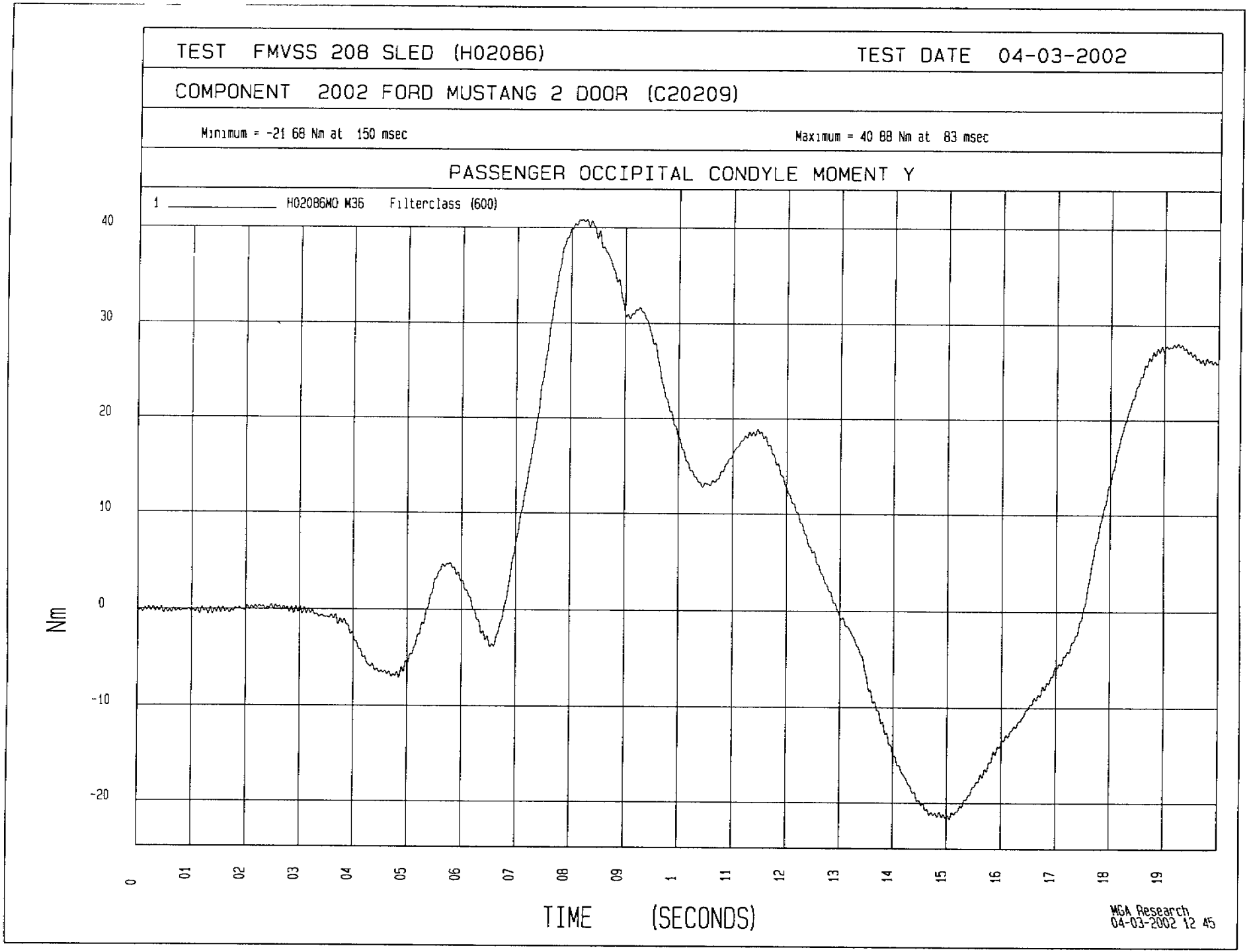

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -35 35 N at 52 msec
Maximum = 1082 25 N at 98 msec
PASSENGER NECK FORCE Y
1 H02086FT F32 Filterclass (1000)
1000
800
600
400
200
0
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

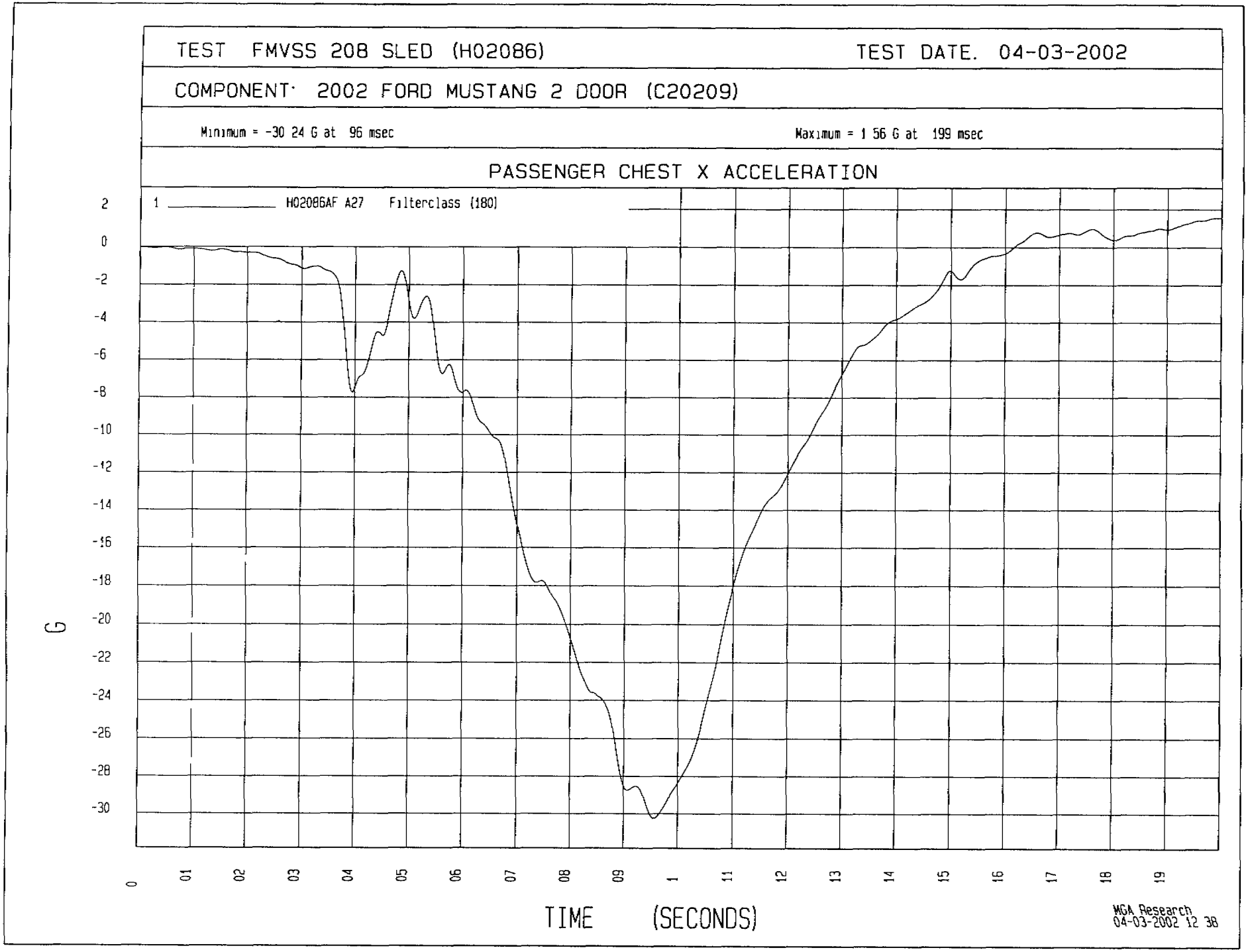

TEST. FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -1746 55 N at 78 msec
Maximum = 365 62 N at 150 msec
PASSENGER NECK FORCE Z
1 H02086FT F33 Filterclass (1000)
400
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
N
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

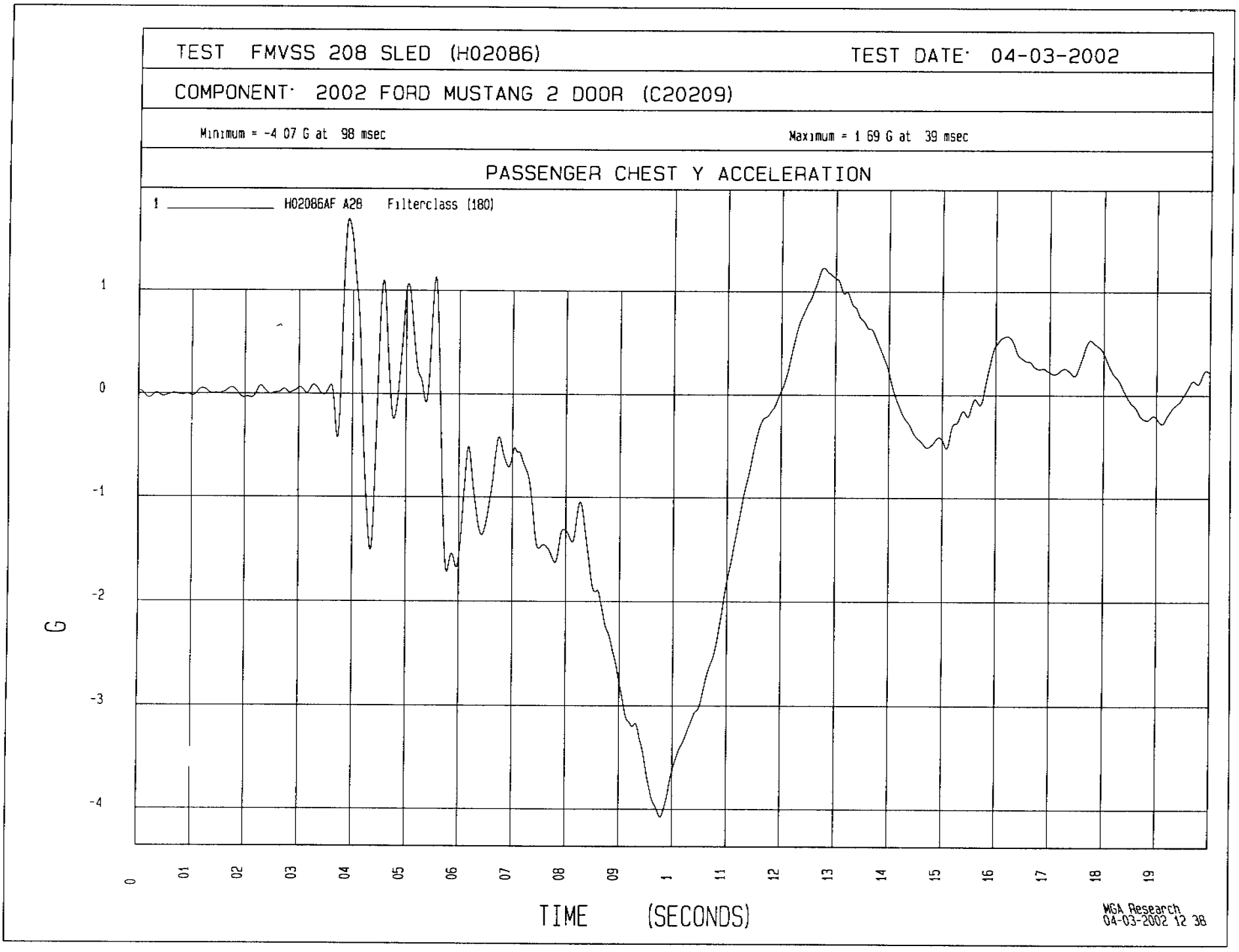

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT· 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -43 67 Nm at 96 msec
Maximum = 15 17 Nm at 200 msec
PASSENGER NECK MOMENT X
1 H02086MF M35 Filterclass (600)
10
0
-10
-20
-30
-40
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

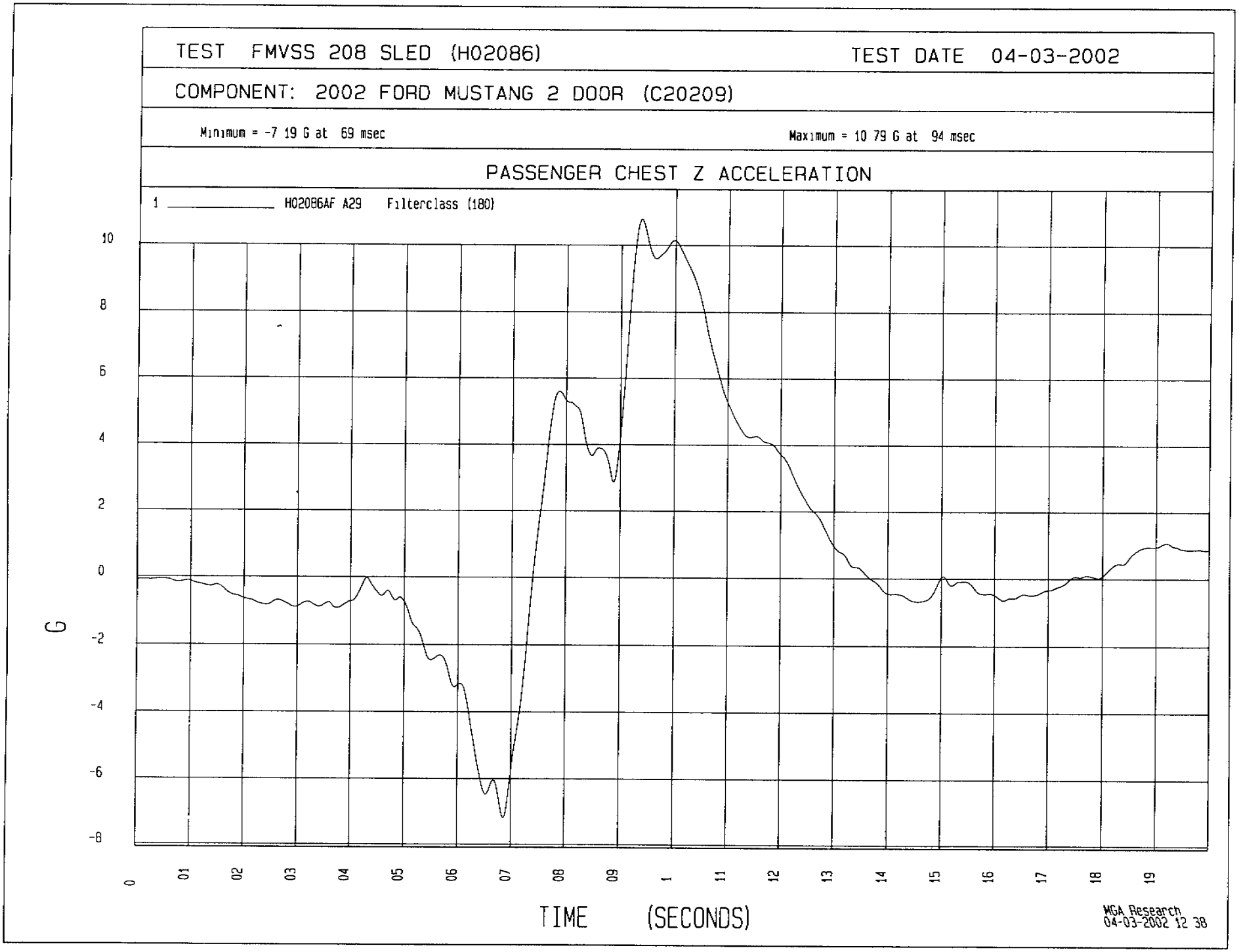

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -25 59 Nm at 150 msec
Maximum = 55 22 Nm at 84 msec
PASSENGER NECK MOMENT Y
1 H02086MF M36 Filterclass (600)
50
40
30
20
10
0
-10
-20
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

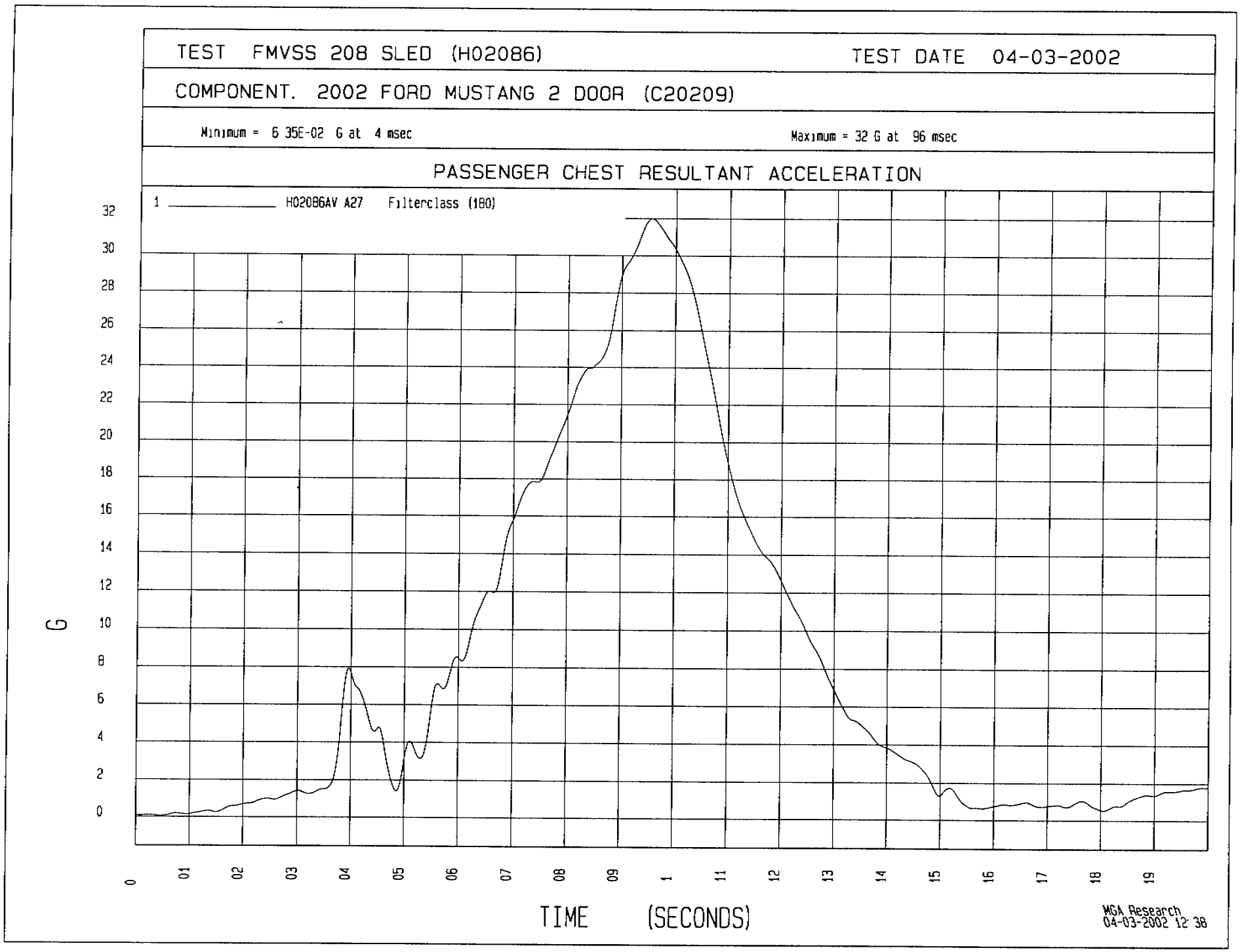

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -25 93 Nm at 195 msec
Maximum = 59 02 Nm at 110 msec
PASSENGER NECK MOMENT Z
1 H02086MF M37 Filterclass (600)
60
50
40
30
20
10
0
-10
-20
-30
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

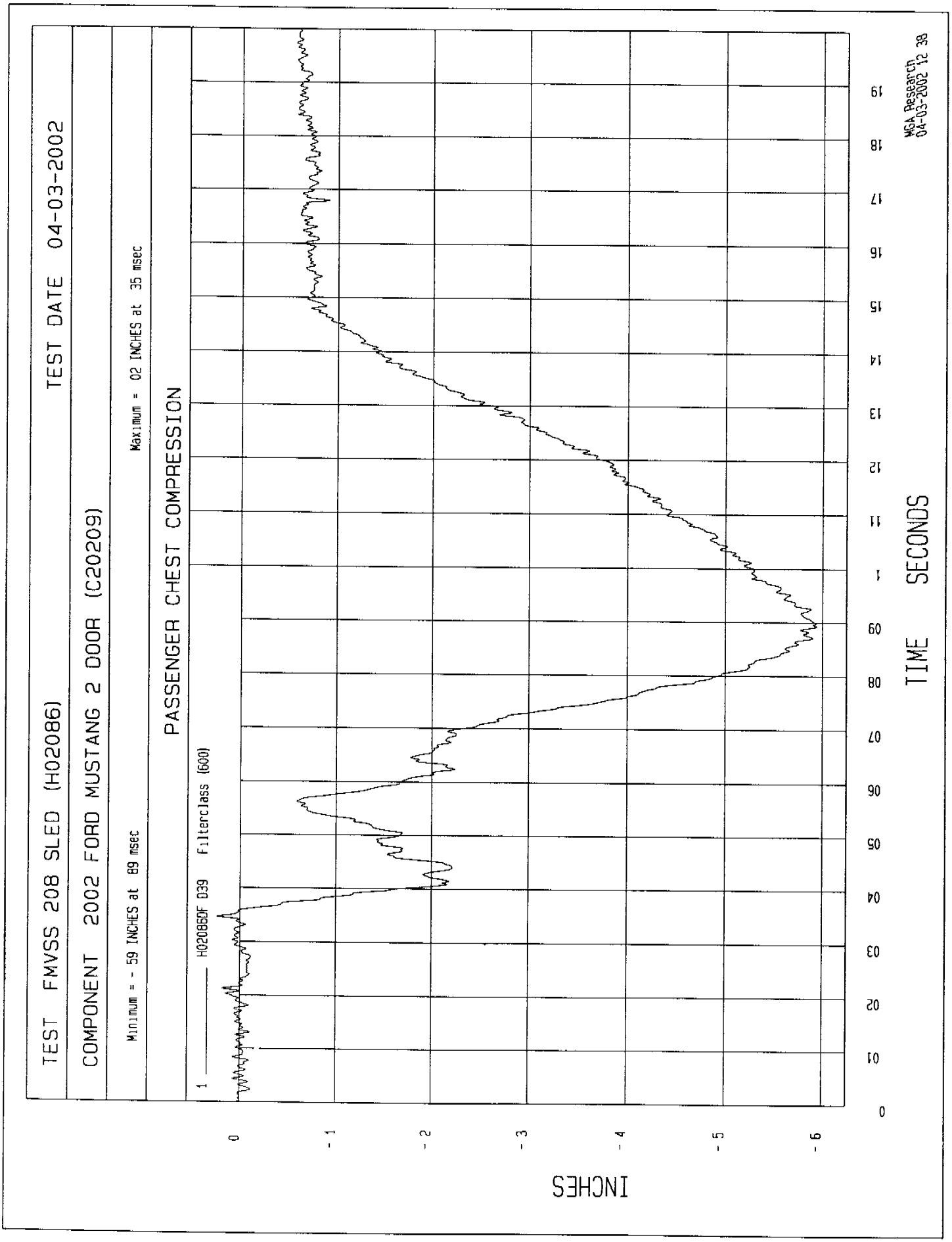

TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -21 68 Nm at 150 msec
Maximum = 40 88 Nm at 83 msec
PASSENGER OCCIPITAL CONDYLE MOMENT Y
1 H02086MO M36 Filterclass (600)
40
30
20
10
0
-10
-20
Nm
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 45

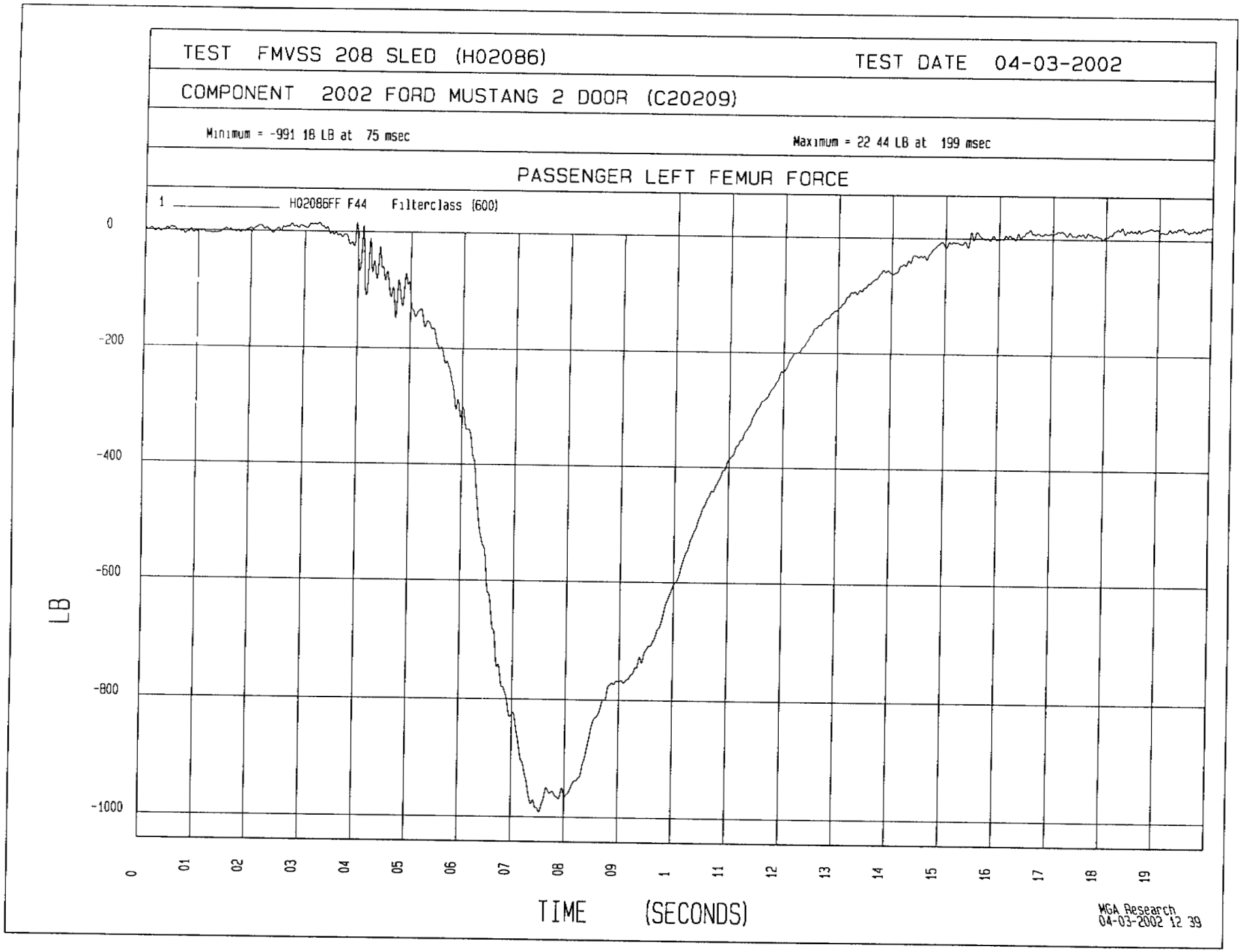

TEST FMVSS 208 SLED (H02086)
TEST DATE. 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -30 24 G at 96 msec
Maximum = 1 56 G at 199 msec
PASSENGER CHEST X ACCELERATION
1 H02086AF A27 Filterclass (180)
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38

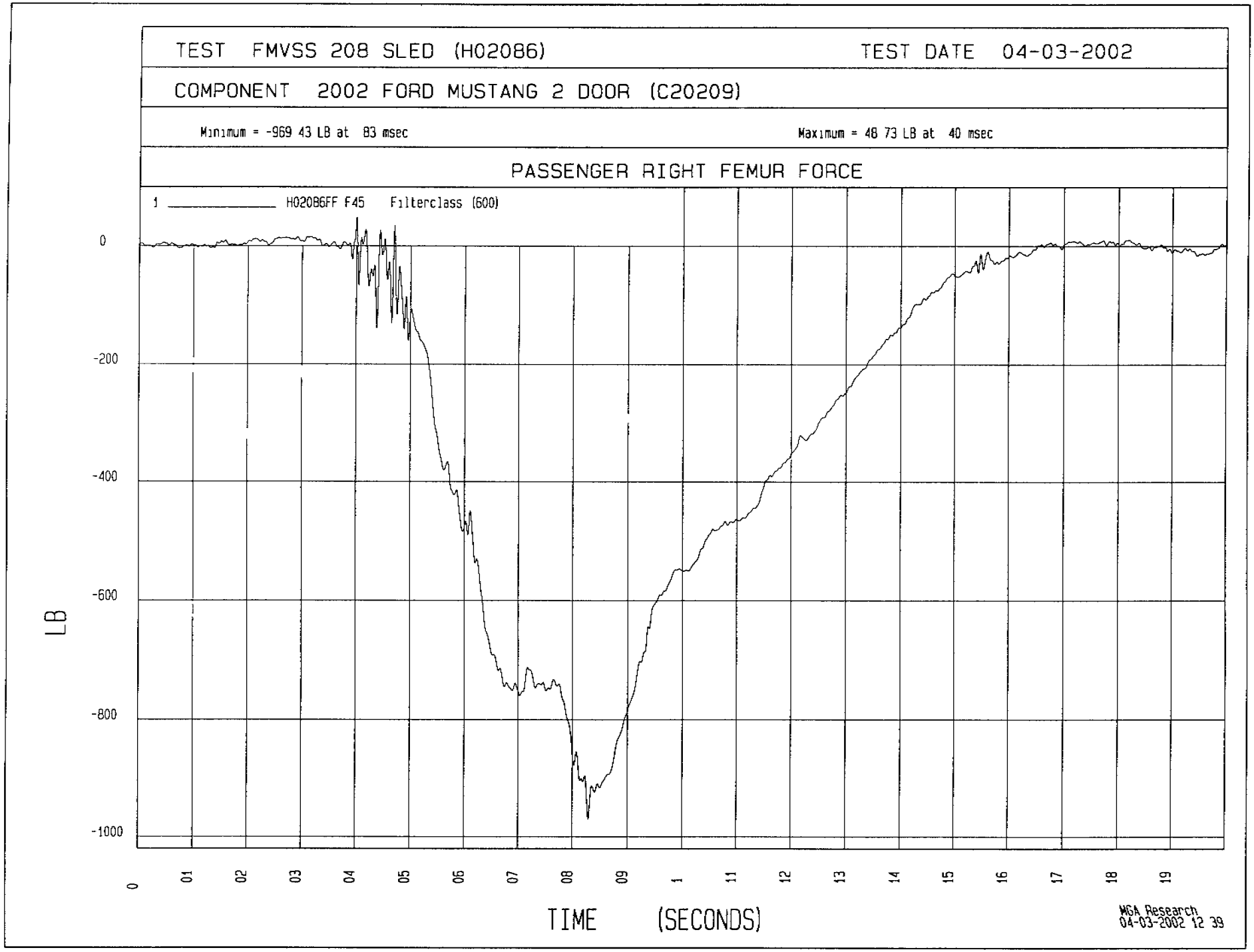

TEST FMVSS 208 SLED (H02086)
TEST DATE: 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -4 07 G at 98 msec
Maximum = 1 69 G at 39 msec
PASSENGER CHEST Y ACCELERATION
1 H02086AF A28 Filterclass (180)
G
1
0
-1
-2
-3
-4
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38


TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT: 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -7 19 G at 69 msec
Maximum = 10 79 G at 94 msec
PASSENGER CHEST Z ACCELERATION
1 H02086AF A29 Filterclass (180)
10
8
6
4
2
0
-2
-4
-6
-8
G
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 38


TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT. 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = 6 35E-02 G at 4 msec
Maximum = 32 G at 96 msec
PASSENGER CHEST RESULTANT ACCELERATION
1 H02086AV A27 Filterclass (180)
G
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
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
04-03-2002 12:38


TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = - 59 INCHES at 89 msec
Maximum = 02 INCHES at 35 msec
PASSENGER CHEST COMPRESSION
1 H02086DF 039 Filterclass (600)
0
- 1
- 2
- 3
- 4
- 5
- 6
INCHES
0 01 02 03 04 05 06 07 08 09 1 11 12 13 14 15 16 17 18 19
TIME SECONDS
MGA Research
04-03-2002 12 38


TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -991 18 LB at 75 msec
Maximum = 22 44 LB at 199 msec
PASSENGER LEFT FEMUR FORCE
1 H02086FF F44 Filterclass (600)
0
-200
-400
-600
-800
-1000
LB
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39


TEST FMVSS 208 SLED (H02086)
TEST DATE 04-03-2002
COMPONENT 2002 FORD MUSTANG 2 DOOR (C20209)
Minimum = -969 43 LB at 83 msec
Maximum = 48 73 LB at 40 msec
PASSENGER RIGHT FEMUR FORCE
1 H02086FF F45 Filterclass (600)
0
-200
-400
-600
-800
-1000
LB
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
04-03-2002 12 39

APPENDIX C

MANUFACTURER'S VEHICLE INFORMATION

Ford Motor Company

James P. Vondale, Director
Automotive Safety Office
Environmental & Safety Engineering

October 29, 2001

Ms Marilynne Jacobs, Director
Office of Vehicle Safety Compliance
National Highway Traffic Safety Administration
400 Seventh Street, S. W
Washington, D C 20590

Dear Ms Jacobs

Subject FMVSS 208 Compliance Test Information Request – 2002 Ford Mustang

Reference: OA-208-010924-H/ NSA-31CCa

This is in response to your letter of September 28, 2001 requesting information for compliance surveillance testing of the 2002 Model Year Ford Mustang to the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 208, "Occupant Crash Protection."

Ford Motor Company (Ford) is listing each request followed by our response to it

Request No 1

> Please inform OVSC to which sections of FMVSS No. 208 the subject vehicle is certified with respect to dynamic tests in which seat belts are fastened and seat belts are unfastened Provide a copy of the certification test reports for all the applicable impact tests and sled tests with respect to these sections.

Answer

The subject vehicle was certified to meet the requirements of S5 1 1(a) (belted barrier) and S13 (unbelted sled) of FMVSS 208 Appendix I contains a copy of those portions of Crash Test No 11269 including raw data plots, relevant to the requirements of S5 1 1(a) of FMVSS 208 The test is a 90 degree front fixed barrier impact test for the automatic restraint system with the manual safety belts fastened Appendix II contains a summary of those portions of the final test report number TA3273, including raw data plots relevant to the requirements of S13 of FMVSS 208, for Sled Test Number H18399 This is a dynamic sled test of a full vehicle using only the automatic restraint system.

Ford relied on the information provided in Appendices I and II of this response to demonstrate compliance of the 2002 Model Year Ford Mustang equipped with driver and right

front passenger airbag restraint systems with the requirements of S5 1 1(a) and S13 of FMVSS 208

Request No 2

Provide the following (1) describe the difference between the MY 2002 air bag system and the MY 2001 air bag system, (2) explain what other restraint changes have been made, (3) explain what other vehicle changes have been made that might have affected FMVSS No 208 performance, and (4) describe any features that might affect performance with respect to children and out of position occupants

Answer

(1) and (2): The 2002 model year air bag system and restraint system is entirely carryover as compared to the 2001 model year system Note that in 2001 model year, the Mustang was equipped with a new energy management retractor designed to pay out webbing in a controlled manner.

(3) There have been no other vehicle changes for 2002 model year that might affect FMVSS 208 performance.

(4) There are no other features for 2002 model year that affect performance with respect to children and out of position occupants

Request No 3

If the vehicle was certified with unrestrained dummies to meet the requirements of S13, describe how to disconnect air bags from the vehicle sensors and connect them to the triggering mechanism used in the sled test Describe the method used in certification to determine when to trigger the air bag and the system used to trigger the air bag

For air bags with dual stage or multistage inflators describe when the stages are triggered and provide data to show that this is similar to what would occur in a crash of similar severity See the enclosed interpretation

Answer

The process followed by the Ford test facility is described below.

Each of the air bags is disconnected by locating the squib wires going into the air bag, and then unhooking the connector between the vehicle wiring harness and the air bag The squib wires are then connected to an extension cable that supplies the firing current from the Programmable Time Fire Unit located in the HYGE sled control room The system has an arming circuit and variable time delay (adjustable to 0 1 msec) which starts counting once time zero (T=0) has been triggered At 20 msec after T=0 the Programmable Time Fire Unit sends current through the extension cable and into the air bag squib Ford's data acquisition system automatically checks for continuity with the air bags prior to the test If continuity is not sensed the test cannot continue Appendix III contains schematics of the air bag electrical system components and connections

The Programmable Time Fire Unit has the capability of supplying between 12.0 and 12 5 volts with a momentary peak current draw of 20 amps In testing conducted by Ford, the typical current draw is 3 to 6 amps. The time delay between T=0 and air bag deployment has been determined to be 20 msec (An accelerometer is used on the sled to actually trigger T=0 when an acceleration of 0 5g is attained on the sled)

2002 Mustang vehicles are not equipped with dual stage or multistage inflators

Request No 4

State for any safety belt system in this vehicle whether or not it is equipped with a tension-relieving device Provide a copy of the information furnished in accordance with S7 4 2 if the tension-relieving device is used

Answer

Tension-relieving devices are not used in 2002 Mustang safety belt systems

Request No 5

FMVSS No. 208, S8.1 5, allows the manufacturer the option of having movable vehicle windows and vents placed in the closed position State whether the vehicle's movable windows and vents were opened or closed for the certification tests.

Answer

The moveable windows were fully open in the fixed barrier crash test No.11269 and in the HYGE sled test No H18399 to facilitate photography However, Ford prefers that the windows be in the closed (up) position for NHTSA's surveillance testing

Request No 6

Submit dummy placement measurements, including diagrams or photographs which show exactly where each measurements was taken. Enclosed is a diagram of some of OVSC's dummy measurements Where possible, use each dimension shown in the diagram to provide the individual dummy placement measurements

Answer

Appendix IV contains dummy placement measurements applicable to the 2002 model year Ford Mustang

Request No 7

State whether the vehicle has a foot rest for the driver

Answer

The 2002 Ford Mustang has a foot rest for the driver

Request No 8

Provide the seat positioning, steering column positioning, and fuel tank data on the enclosed form If more than one front seating, steering column or fuel tank configuration are available on this vehicle, provide separate information for each In addition, provide the seating reference point for each seat for the lockable seat belt requirement in S7 1 1 5

Answer

Appendix V contains the completed NHTSA form containing seat positioning, steering column positioning, and fuel tank data

Appendix VI contains seating reference point dimensional data

Request No 9

If the vehicle is equipped with adjustable seat belt anchorages, provide the manufacturer's nominal design position for a 50th percentile adult male occupant

Answer

The 2002 Mustang is not equipped with adjustable seat belt anchorages

Request No. 10

For all certification barrier tests, provide the speed at impact, vehicle test weight, and resulting injury criteria (i e , HIC, chest acceleration, chest compression, femur loads, and where applicable neck moments and forces) For all certification sled tests, provide the resulting injury criteria (i e , HIC, chest acceleration, chest compression, femur loads, and neck moments and forces)

Answer

Appendix VII contains summaries of the requested information

Request No 11

When vehicle components must be removed to obtain the proper test weight for the barrier test, what components do you recommend for removal and in what priority order do you recommend removal?

Answer

The following is a suggested list of items that may be removed from the test vehicle for the barrier test. The list below is in order of removal priority

- Spare tire and jack
- Rear bumper

Request No 12

If the vehicle uses a pressure vessel to inflate the air bag, provide a copy of the test reports, or engineering analysis to demonstrate that it meets all the requirements of S9 1

Answer

The vehicle does not use pressure vessels to inflate the air bags

Request No 13

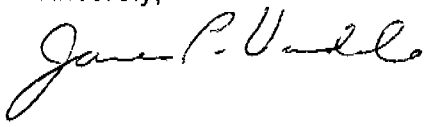
If the vehicle uses an explosive device to inflate the air bag, provide a copy of the test report or engineering analysis to demonstrate that it meets all the requirements of S9 2

Answer

Both the driver and passenger side air bag systems utilize explosive devices to inflate the air bags Test reports demonstrating that the driver and passenger air bag systems meet all the requirements of S9 2 are provided as Appendices VIII and IX, respectively

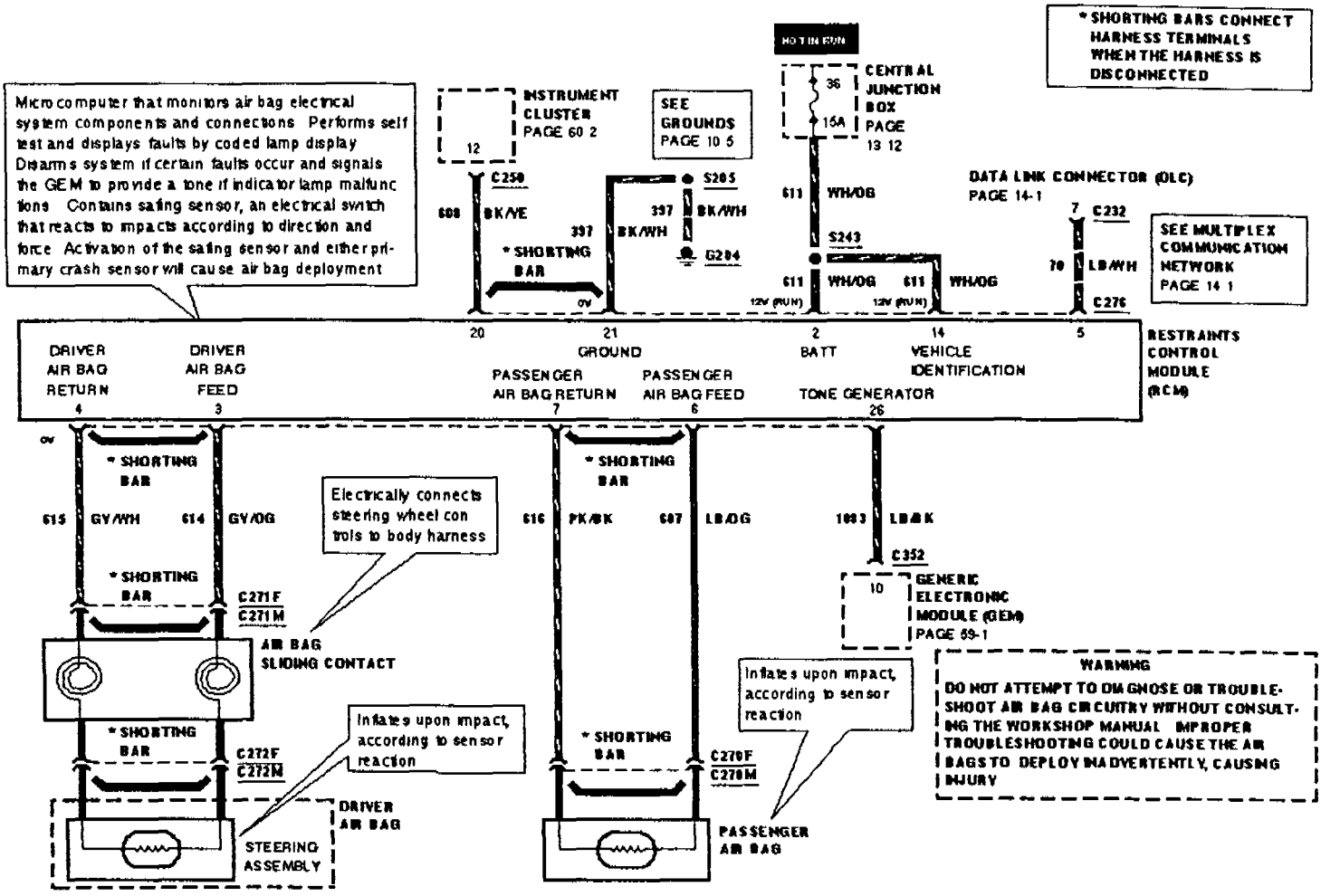
If you have any further questions, please contact me.

Sincerely,



46-1 Air Bag Restraint System

➲ Component ➲ Connector ➲ Ground ➲ Splice ➲ Page ➲ Harness



DUMMY MEASUREMENT REPORT
CRASH BARRIER

RUN NUMBER 11269 DUMMY POSITION LEFT FRONT
T[illegible]T ORDER NUMBER TA9675 DUMMY ABBREV 50H3

ABSOLUTE MEASUREMENTS (INCH)	MEASUREMENT
LEG (HYB II)/KNEE (HYB III) TO INST PANEL LEFT	2.90
LEG (HYB II)/KNEE (HYB III) TO INST PANEL RIGHT	1.50
ROCKER TARGETS TO GROUND FRONT	7.20
ROCKER TARGETS TO GROUND REAR	7.00
NOSE TO STEERING WHEEL	13.80
NOSE TO INSTRUMENT PANEL	
INSTRUMENT PANEL TO TORSO	
STEERING WHEEL TO TORSO	6.40
STEERING WHEEL TOP LEGS	1.80
KNEE SPREAD OS-OS (HYB II)/CL-CL (HYB III)	9.00
SEAT BACK ANGLE	21.20
PELVIC ANGLE	23.90
HEAD ANGLE	-0.20
ROCKER ANGLE	0.20
NECK BRACKET ANGLE	0.00
BUMPER TARGET TO GROUND	

RELATIVE MEASUREMENTS (INCH)	WRT FRT RKR TGT
HEAD LAT	14.80
HEAD VERT	36.80
HEAD LONG	16.20
SHOULDER LAT	
SHOULDER VERT	
SHOULDER LONG	
H-POINT LAT	9.80
H-POINT VERT	11.20
H-POINT LONG	9.60
O/S KNEE BOLT LAT	11.30
O/S KNEE BOLT VERT	16.00
O/S KNEE BOLT LONG	-4.10

DUMMY MEASUREMENT REPORT
CRASH BARRIER

RUN NUMBER 11269 DUMMY POSITION RIGHT FRONT
TEST ORDER NUMBER TA9675 DUMMY ABBREV 50H3

ABSOLUTE MEASUREMENTS(INCH)	MEASUREMENT
LEG(HYB II)/KNEE(HYB III) TO INST PANEL LEFT	4.10
LEG(HYB II)/KNEE(HYB III) TO INST PANEL RIGHT	3.80
ROCKER TARGETS TO GROUND FRONT	7.60
ROCKER TARGETS TO GROUND REAR	7.20
NOSE TO STEERING WHEEL	
NOSE TO INSTRUMENT PANEL	23.60
INSTRUMENT PANEL TO TORSO	19.40
STEERING WHEEL TO TORSO	
STEERING WHEEL TOP LEGS	
KNEE SPREAD OS-OS(HYB II)/CL-CL(HYB III)	7.80
SEAT BACK ANGLE	21.60
PELVIC ANGLE	22.90
HEAD ANGLE	0.20
ROCKER ANGLE	0.50
NECK BRACKET ANGLE	0.00
BUMPER TARGET TO GROUND	

RELATIVE MEASUREMENTS(INCH)	WRT FRT RKR TGT
HEAD LAT	15.20
HEAD VERT	36.90
HEAD LONG	16.50
SHOULDER LAT	
SHOULDER VERT	
SHOULDER LONG	
H-POINT LAT	10.40
H-POINT VERT	11.60
H-POINT LONG	10.40
O/S KNEE BOLT LAT	12.00
O/S KNEE BOLT VERT	15.00
O/S KNEE BOLT LONG	-4.40

TA# TA3273 · Run H 18399 Date 5/15/97 Matrix

Target no.'s are WRT Veh Front Rckr Tgt
Buck # LIVE

Reference: H16903
H
H

Left		Right	Center
50H3	DUMMY TYPE	50H3	
½" Rear of MID	SEAT POSITION	½" Rear of MID	
	DUMMY NUMBER		

POSITIONING	ACTUAL LEFT	TARGET LEFT	TARGET RIGHT	ACTUAL RIGHT	TOLERANCE (± mm) 1st RUN	TOLERANCE (± mm) ADD'L
Seat Back Angle (13" above pivot)	23	21	21	22	0	+/-1 notch
Pelvic Angle (+/- 2.5 deg.; +/-1.0 for 5%ile)	24	22.5	22.5	23	at left	at left
H-Point Longitudinal	263	263	261	256	12	6
H-Point Vertical	305	301	309	305		6
H-Point Lateral	180	179	-179	170	12	6
Knee Longitudinal	145	-139	-141	140		
Knee Vertical	410	400	408	410		
Knee Lateral	230	230	-230	230	6	6
Head Longitudinal	390	385	383	385	level	6
Head Vertical	965	955	953	965	level	6
Head Lateral	285	284	-284	284	level	6
Dummy Neck Adjustment (first run only)	1			1		
Knee Centerline to Knee Centerline (max)	230	228	208	206		
Left Knee to Bolster	95	75	90	90		6
Right Knee to Bolster	65	65	90	88		6
Nose to Steering Wheel Upper Rim or I/P	365	380	805	600		6
Torso to Steering Wheel Lower Rim	170	150				6
Reference Target to Seat Bolt Longitudinal						
Reference Target to Seat Bolt Vertical						
Reference Target to Seat Bolt Lateral						
Reference Target Absolute Longitudinal	2720			2720		
Reference Target Absolute Vertical	358			358		
Reference Target Absolute Lateral (pinch flange)	-737			737		

FILM ANALYSIS						
Knee (target) Lateral						
Thigh Lateral						
Phantom Lateral						
Shoulder Lateral						
Other						
Other						
Other						
Knee to H-Point						
Knee to Phantom						
Knee to Thigh						
Distance Between A or B Pillar Targets						
Upper or Forward Reference Target						
Lower or Rearward Reference Target						
Reference Bar to Film Plane						
Camera Angle					< 5 deg.	< 5 deg.

Notes:

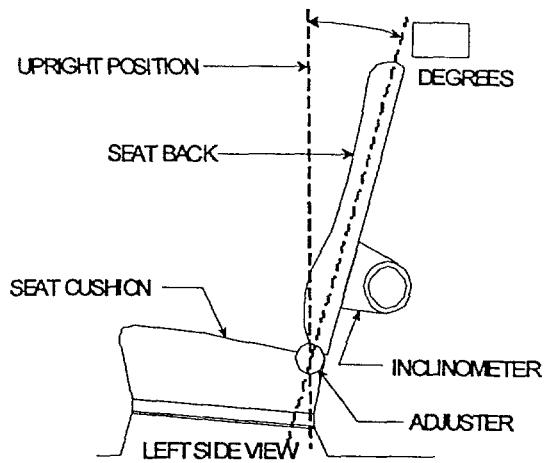
Appendix V
Page 1 of 2

TEST VEHICLE INFORMATION

Vehicle Model Year and Make: 2002 Ford
Vehicle Model and Body Style: Mustang Coupe and Convertible

1. NOMINAL DESIGN RIDING POSITION –
For adjustable driver and passenger seat backs, describe how to position the inclinometer to measure the seat back angle Include description of the location of the adjustment latch detent if applicable

Seat back angle for driver's seat = 21°.
Measurement Instructions
The seat back angle is measured relative to the rocker sill. Remove the seat back panel and position inclinometer as shown in the drawing 13 inches above the back pivot point on the rear outboard seat frame (remove small piece of seat material and foam if needed) Avoid taking the measurement on reinforcing plate



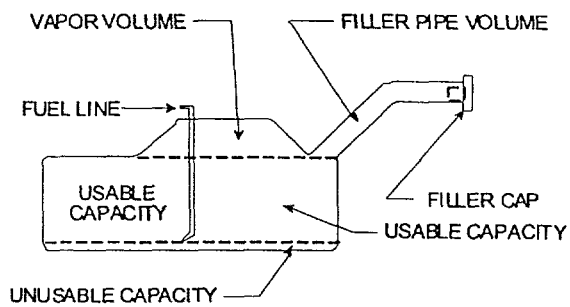
Seat back angle for passenger's seat = 21°.
Measurement Instructions:
Same instructions as the driver's seat

2. SEAT FORE AND AFT POSITIONS –
Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, provide information to locate the detent in which the seat track is to be locked.
Adjustable seats were tested in the mid-track position.
Position of the driver's seat:
To determine mid-track position the seat is placed in the full down position. A reference mark is made on the seat near the floor of the vehicle The seat is then moved to its full forward and full rear positions, and these positions are marked (with respect to the reference mark on the vehicle seat) on the vehicle sill The mid-point of the full forward to full rearward excursion is calculated and marked on the sill, and the seat is positioned for/aft such that the reference mark on the seat is aligned with the mid excursion point of the sill

Position of the passenger's seat (if applicable):
For the front passenger manual seat, position at the mid-point or the closest to the rear of the mid-point travel

3. FUEL TANK CAPACITY DATA –

VEHICLE FUEL TANK ASSEMBLY



3.1 A. "Usable Capacity" of standard equipment fuel tank = 15.7 gallons.

B. "Usable Capacity" of optional equipment fuel tank = N/A gallons.

C. Capacity used when certification testing to requirements of FMVSS 301 = 15.7 gallons.

Operational Instructions:
None

3.2 Amount of Stoddard solvent added to vehicle for certification test = 14.9 gallons.

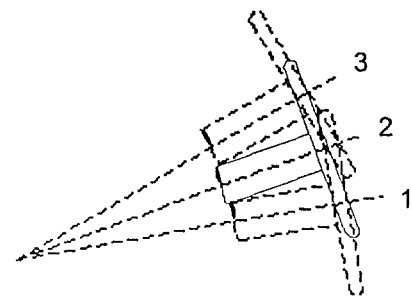
3.3 Is vehicle equipped with electric fuel pump? __X__ YES _____ NO

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

The electric fuel pump operates for 2 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 2 seconds following ignition actuation the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls the fuel pump is deactivated. Also, a fuel pump shut-off switch is provided, designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude

4. STEERING COLUMN ADJUSTMENTS –

STEERING COLUMN ASSEMBLY



LEFT SIDE VIEW

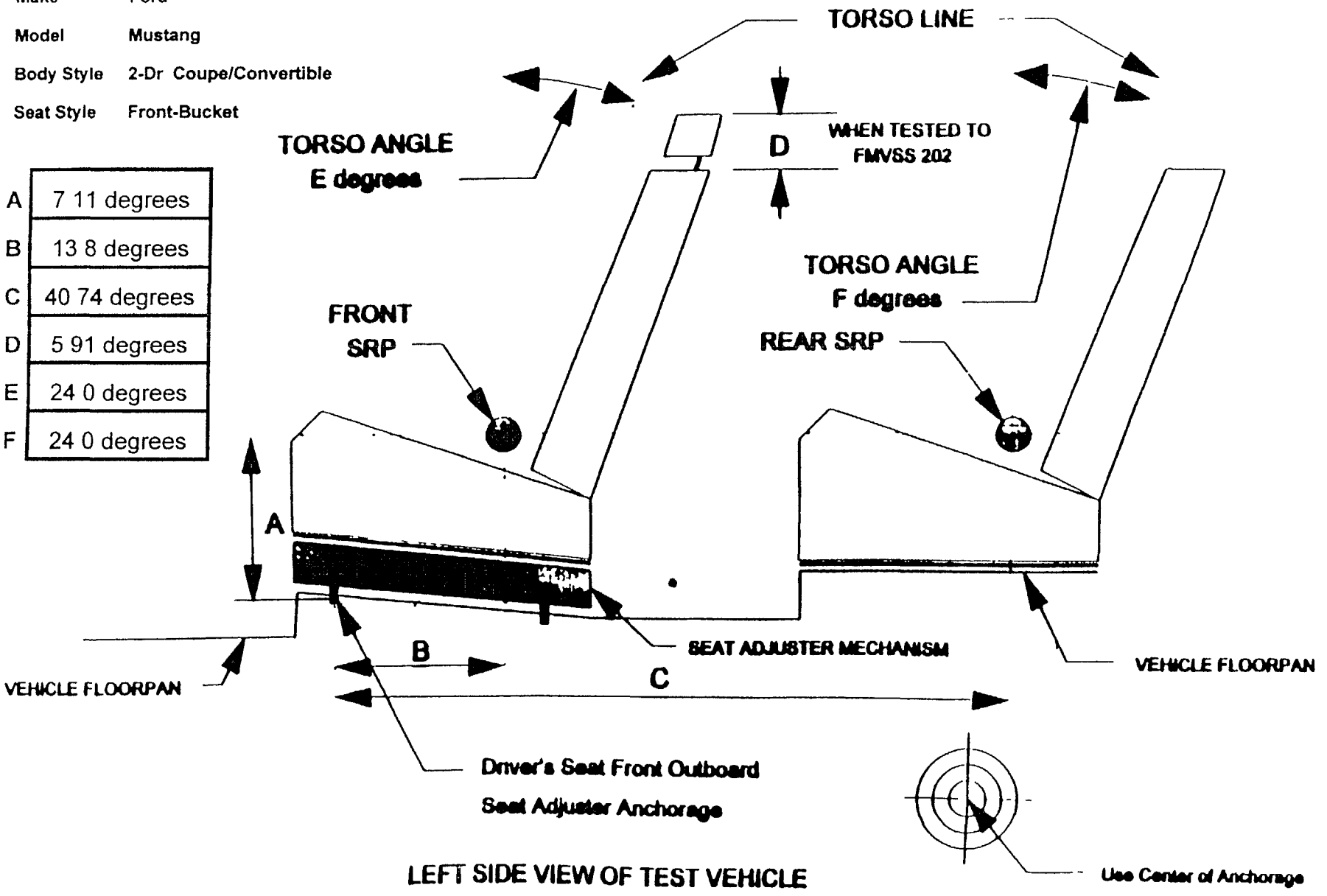
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions
If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center
Operational Instructions
Adjust column to center detent position

SEATING REFERENCE POINT (SRP) AND TORSO ANGLE DATA FOR FMVSS 201, 202, 203, 207 & 210

(All Dimensions in Inches)

Model Year	2002
Make	Ford
Model	Mustang
Body Style	2-Dr Coupe/Convertible
Seat Style	Front-Bucket

A	7 11 degrees
B	13 8 degrees
C	40 74 degrees
D	5 91 degrees
E	24 0 degrees
F	24 0 degrees



LEFT SIDE VIEW OF TEST VEHICLE

SEATING REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 201, 202, 203, 207 & 210

(All Dimensions in Inches)

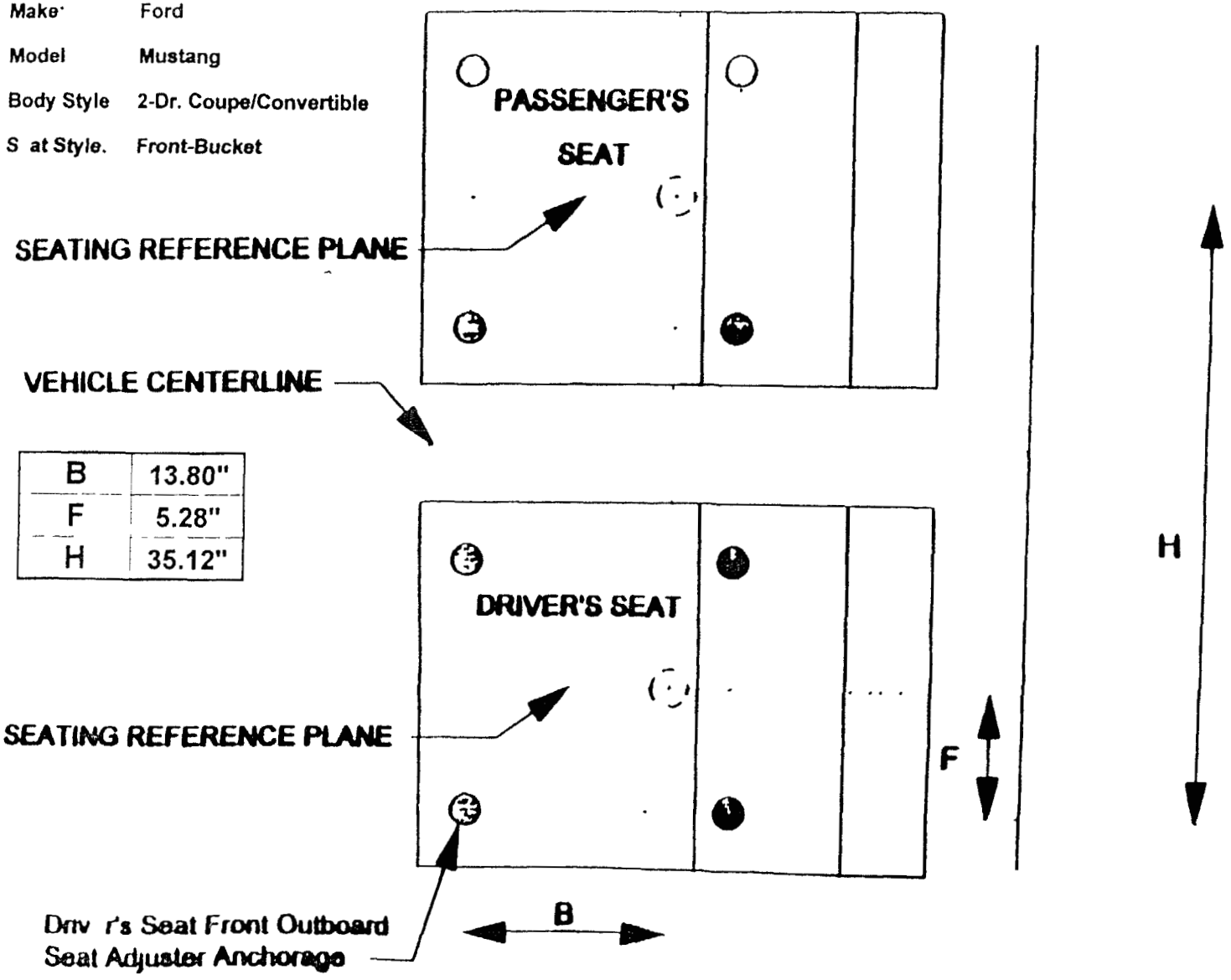
Model Year 2002

Make Ford

Model Mustang

Body Style 2-Dr. Coupe/Convertible

S at Style. Front-Bucket



B	13.80"
F	5.28"
H	35.12"

PLAN VIEW OF TEST VEHICLE