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REPORT NO. 208-MGA-2000-09

SAFETY COMPLIANCE SLED TESTING FOR FMVSS 208 OCCUPANT CRASH PROTECTION

Ford Motor Company
2000 Ford Taurus 4 Door
NHTSA NO. CY0203

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: July 19, 2000

Report Date: August 20, 2000

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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15. Supplementary Notes		
16. Abstract A compliance test (sled test) was conducted on the subject 2000 Ford Taurus 4 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:		
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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 2000 Ford Taurus 4 Door, NHTSA No. CY0203, 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-seven (37) 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 July 19, 2000.

The test vehicle, a 2000 Ford Taurus 4 Door, NHTSA No. CY0203, 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	423	390
Chest g	60 g	45.0 g	41.0 g
Chest displacement	3 inches	1.6 in.	0.1 in.
Left Femur	2250 lb	649 lb	1118 lb
Right Femur	2250 lb	899 lb	804 lb
Neck Extension	57 Nm	20.6 Nm	26.3 Nm
Neck Flexion	190 Nm	36.5 Nm	42.9 Nm
Neck Tension	3300 N	1197 N	823 N
Neck Compression	4000 N	3573 N	1032 N
Neck Shear	3100 N	1433 N	1790 N

The vehicle also appears to meet the other FMVSS 208 requirements for which it was tested except for the absence of a removable airbag warning label on the dash or steering wheel hub. 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 17.1 g with an integrated velocity change of 29.2 mph. After filtering the acceleration signal to Channel Class 60, the first stage of the airbag system was triggered 19.5 milliseconds after 0.5 g acceleration. The second stage was triggered 119.0 milliseconds after 0.5 g acceleration.

INCLUDE DISCUSSION OF LOST CHANNELS OR OTHER TEST ISSUES.

No valid data was collected on the Passenger Neck Moment X channel.

Sled Test Summary

Vehicle NHTSA No.: CY0203 Test Mode: FMVSS 208 SLED TEST

Vehicle Yr/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Test Date: July 19, 2000 Time: 2:20 p.m. Temp: 70°F

Vehicle Test Weight: 3891 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 inches shift;	2.5 inches shift (rearward)
Seat Back Failure -	no	no

VISIBLE DUMMY CONTACT POINTS:	**DRIVER**	**PASSENGER**
Head	airbag/windshield	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: 2000/Ford/Taurus/4 Door

Vehicle NHTSA No.: CY0203 VIN: 1FAFP55U9YG110942 Color: Red

Engine Data:

No. Cylinders: 6 ; CID:____; Liters: 3.0 ; CCs:_____

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

Transmission Data:

Speeds: 3 ; Manual:____; Automatic: X ; Overdrive: X

Final Drive:

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

Major Options:

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

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

Date Received: 12/3/99 ; Odometer Reading: 140 miles

Selling Dealer: Hults Chrysler/Ford Inc., 1411 Highway 5, Stoughton, WI 53589

REMARKS: None

General Test And Vehicle Parameter Data (Cont.)

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Ford Motor Company

Date of Manufacture: 10/99 ; VIN: 1FAFP55U9YG110942

GVWR: 4675 lbs; GAWR Front: 2564 lbs.

GAWR Rear: 2136 lbs.

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 30 psi REAR: 30 psi

Recommended Tire Size: P215/60TR16 ;

Recommended Cold Tire Pressure:

FRONT: 30 psi REAR: 30 psi

Size of Tires on Test Vehicle: P215/60TR16

Type of Spare Tire: Space Saver: X ; Standard: ____

Vehicle Capacity Data:

Type of Front Seats: X Bucket; __ Bench; __ Split Bench

Number of Occupants: 3 Front; 3 Rear; __ 3rd Seat; 6 TOTAL

REMARKS: None

VEHICLE CAPACITY WEIGHT (VCW) = 1100 lbs.

No. Of Occupants x 150 lbs = 900 lbs.

Rated Cargo/Luggage Weight (RCWL) = 200 lbs. (Difference)

General Test And Vehicle Parameter Data (Cont.)

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

Right Front =	1098 lbs.	Right Rear =	568 lbs.
Left Front =	1052 lbs.	Left Rear =	629 lbs.
TOTAL FRONT =	2150 lbs.	TOTAL REAR =	1197 lbs.
% Total Weight =	64.2 %	% Total Weight =	35.8 %

TOTAL DELIVERED WEIGHT = 3347 lbs.

WEIGHT OF FULLY LOADED TEST VEHICLE WITH TWO DUMMIES AND 200 POUNDS OF CARGO WEIGHT:

Right Front =	1190 lbs.	Right Rear =	745 lbs.
Left Front =	1154 lbs.	Left Rear =	802 lbs.
TOTAL FRONT =	2344 lbs.	TOTAL REAR =	1547 lbs.
% Total Weight =	60.2 %	% Total Weight =	39.8 %

TOTAL WEIGHT = 3891 lbs.

TEST VEHICLE ATTITUDE: (all measurements in degrees)

AS DELIVERED DOOR SILL ANGLE:	0.1° nose down
AS TESTED DOOR SILL ANGLE:	0.1° nose up
FULLY LOADED DOOR SILL ANGLE:	0.4° nose up

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 15.2 gallons

Usable Capacity Figure Furnished by COTR = 16 gallons

REMARKS: None

Post-Impact Data

Test number:	HT00071901
NHTSA number:	CY0203
Test date:	July 19, 2000
Test time:	2:20 p.m.
Test type:	FMVSS 208 Compliance Sled Test
Impact angle:	0°
Ambient Temperature at Impact Area:	70°F
Temperature in Occupant Compartment:	70°F

Impact Velocity:

Integrated velocity from the integration of the entire sled acceleration:	29.2 mph
Specified integrated velocity range:	28 to 30 mph

Sled Carriage Acceleration:

Acceleration:	17.1 g
Specified Acceleration Range:	16.0 - 18.2 g

Sled Carriage Acceleration Duration:

Time from T-0 (-0.5 g) to 0.0 g:	122.1 msec
Specified Acceleration Duration:	120.0 to 130.0 msec

The sled acceleration corridor was achieved.

Seat and Steering Column Positioning Data

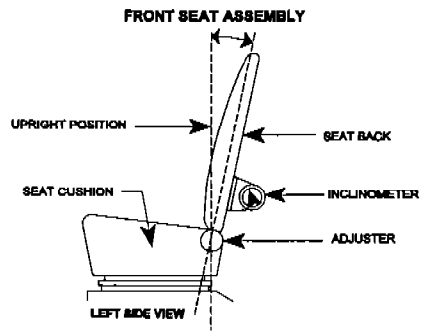
Vehicle Yr/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Vehicle NHTSA No.: CY0203 Test Date: July 19, 2000

NOMINAL DESIGN RIDING POSITION:

Driver Seat: Seat Back Angle = 28.2°

Passenger Seat: Seat Back Angle = 28.4°



SEAT FORE AND AFT POSITIONS:

Driver Seat: The seat track had a total position movement of 13 notches and was positioned 6 notches rearward from the foremost position with the forward most locking position as zero.

Passenger Seat: The seat track had a total position movement of 13 notches and was positioned 6 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 position of 5).

Dummy Positioning Measurement Table

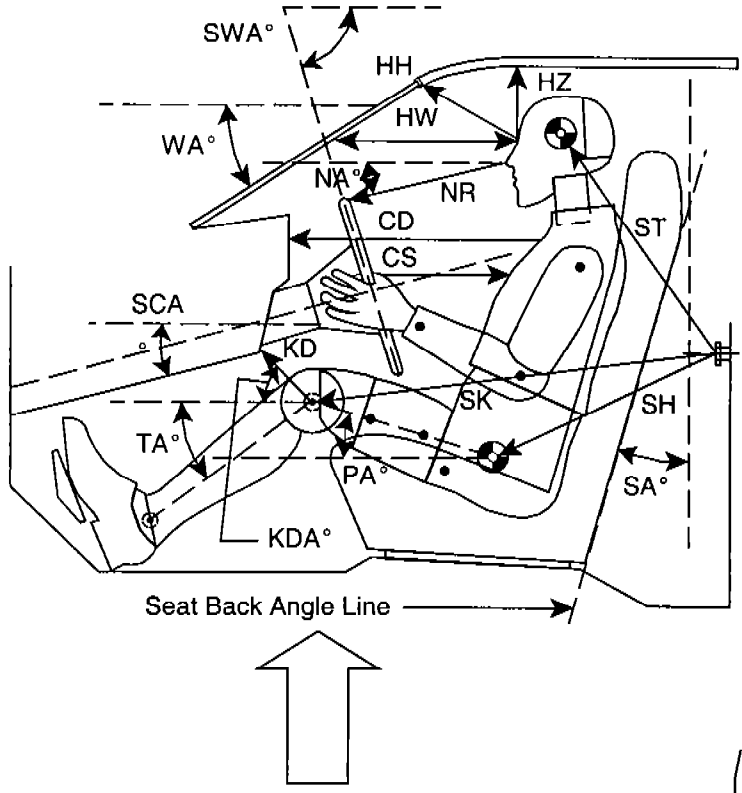
Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Vehicle NHTSA No.: CY0203 Test Date: July 19, 2000

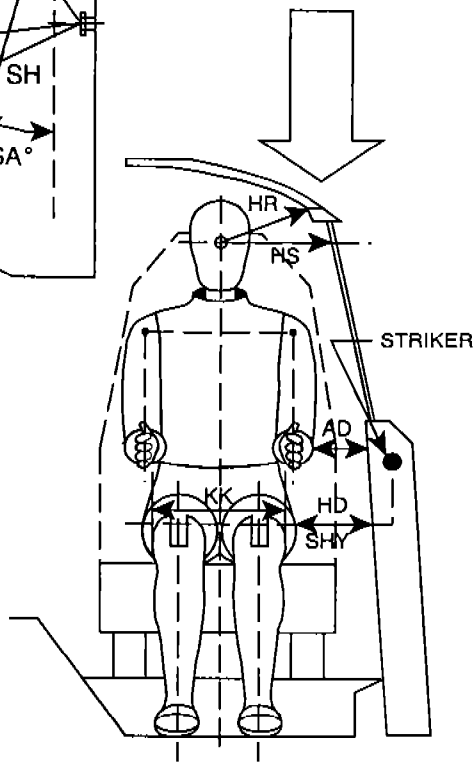
	DRIVER (Serial #403)	PASSENGER (Serial #401)
WA°	26.2°	
SWA°	23.2°	
SCA°	21.7°	
SA°	28.2°	28.4°
HZ	6.6	5.7
HH	12.9	12.4
HW	24.4	23.3
HR	8.3	8.2
NR	15.7 Angle (NA°) 12.3°	
CD	21.3	18.3
CS	12.2	
RA	8.2	
KDL	8.8 Angle (KDA°) 0.0°	5.5
KDR	7.7	5.4 Angle (KDA°) 25.0°
PA°	23.3°	24.5°
TA°	42.4°	46.1°
KK	12.1	11.3
ST	20.4 Angle 7.3°	21.5 Angle 9.5°
SK	22.1 Angle 94.0°	23.7 Angle 88.5°
SH	8.4 Angle 124.7°	9.1 Angle 122.0°
SHY	11.4	10.7
HS	12.3	12.2
HD	6.3	6.1
AD	4.1	4.6

Dummy Positioning Measurement Locations

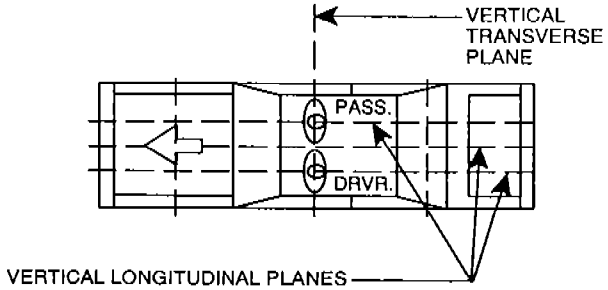
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



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

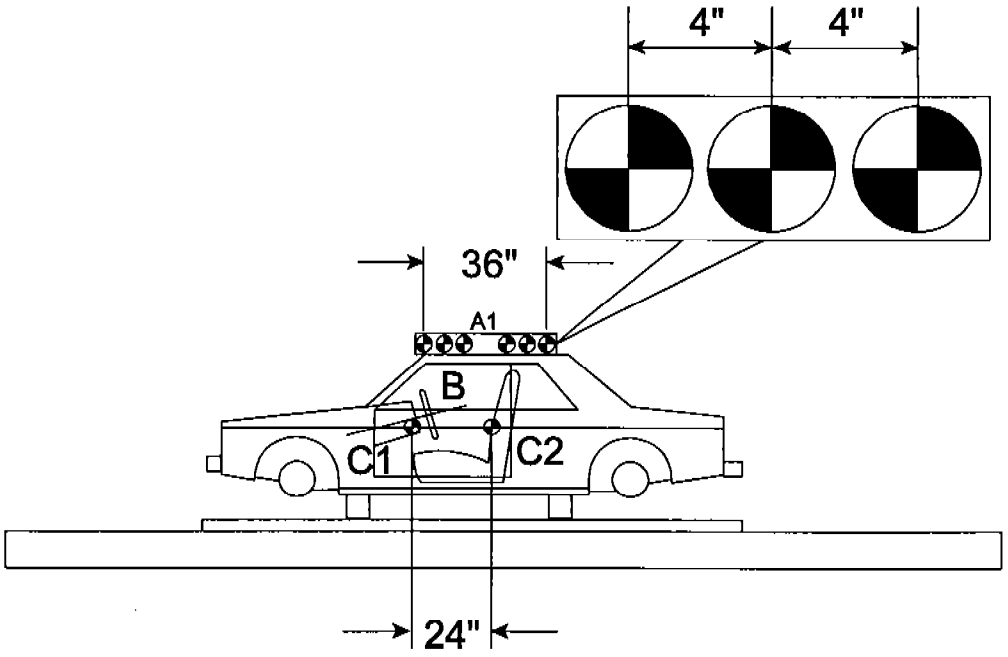
Description of Dummy Measurements (Cont.)

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

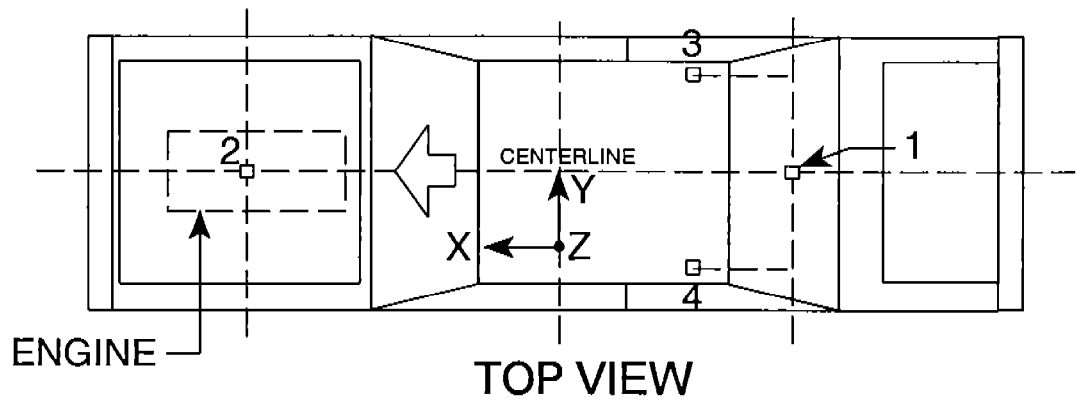


LEFT SIDE VIEW

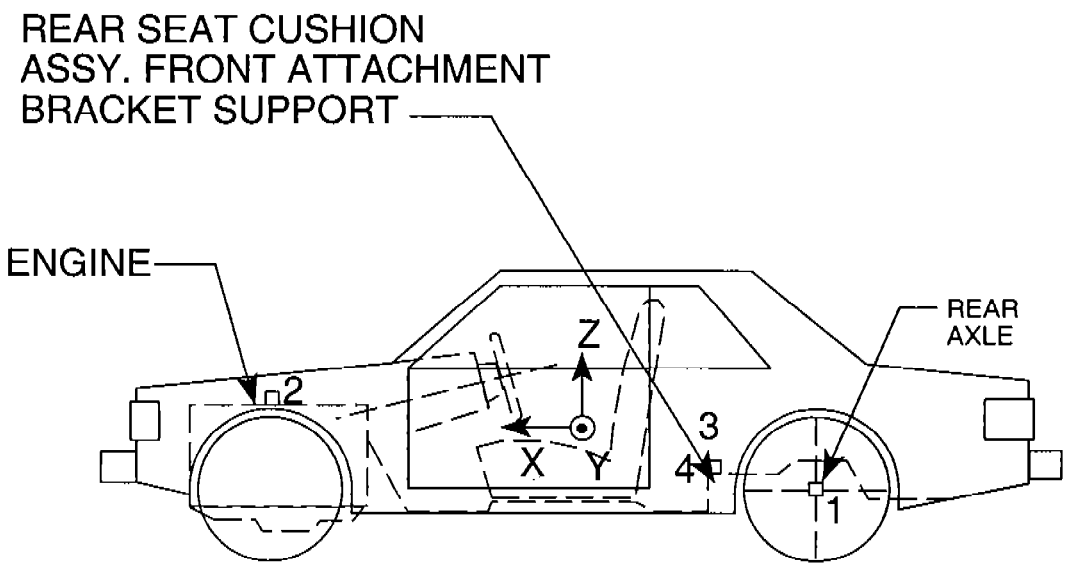
Vehicle Accelerometer Placement and Data Summary

Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Vehicle NHTSA No.: CY0203 Test Date: July 19, 2000



TOP VIEW



LEFT SIDE VIEW

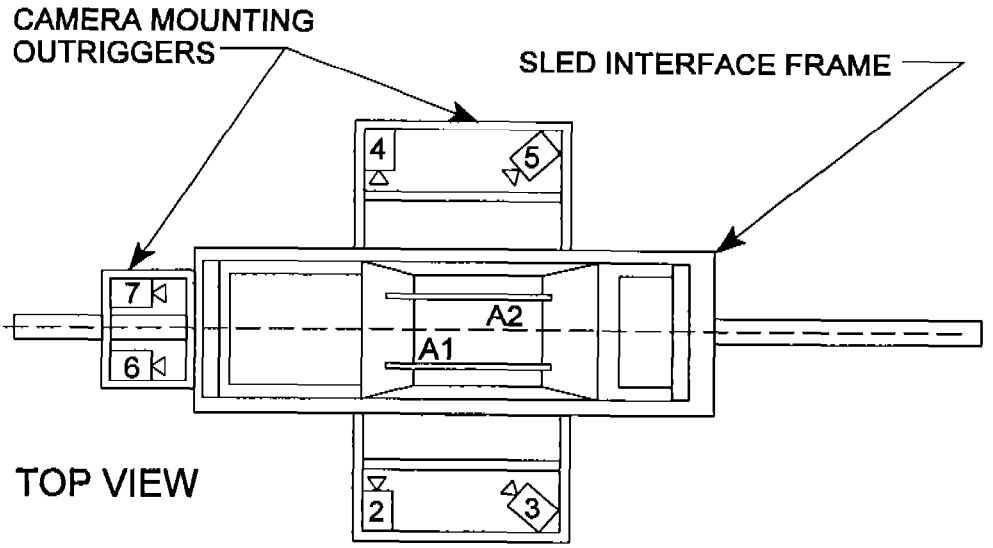
Vehicle Accelerometer Location Measurements and Data Summary

Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Vehicle NHTSA No.: CY0203 Test Date: July 19, 2000

No.	Location	X (in)	Y (in)	Positive Direction		Negative Direction	
				Value	Time (msec)	Value	Time (msec)
	Sled Primary Longitudinal	67.0	0	17.1 g	55	-1.8 g	126
	Sled Redundant Longitudinal	114.0	0	17.1 g	55	-1.9 g	126
	Sled Velocity Measured Integrated	67.0	0	29.2 mph	123	--	--
1	Rear Axle Longitudinal	53.0	0	17.7 g	69	-1.6 g	127
2	Top Engine Longitudinal	168.0	0	18.1 g	60	-3.1 g	131
3	Right Rear Seat Member Longitudinal	80.0	22.5	17.6 g	52	-1.8 g	127
4	Left Rear Seat Member Longitudinal	80.0	22.5	17.5 g	53	-1.7 g	127

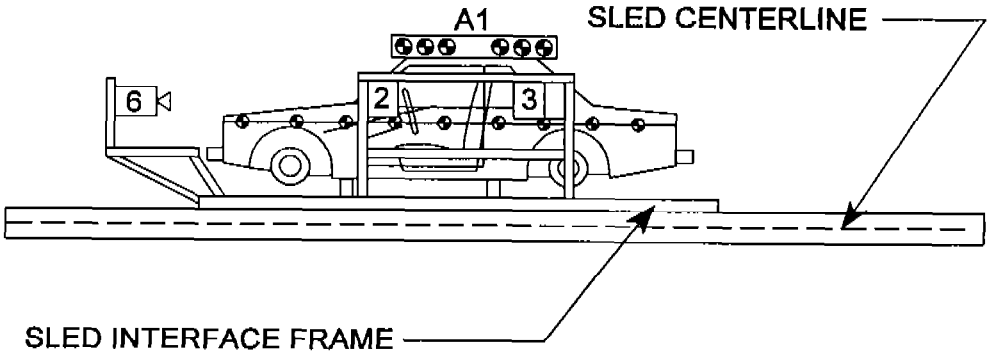
Camera Positions



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	71.5	88.3	38.2	90	72.1	13	714
3	Onboard Driver Angle	148.1	88.0	48.7			13	1000
4	Onboard Passenger	72.5	89.3	39.6	90	72.8	13	1000
5	Onboard Passenger Angle	149.1	89.2	48.7			13	1000
6	Onboard Windshield Driver	21.1	12.5	44.1			13	1005
7	Onboard Windshield Passenger	21.1	14.3	43.0			13	769

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: 2000/Ford/Taurus/4 Door

Vehicle NHTSA No.: CY0203 Test Date: July 19, 2000

MAXIMUM ACCELERATION VALUES: (g's)	DRIVER DUMMY #403	PASSENGER DUMMY #401
Head Channel X	-70.8	-40.5
Head Channel Y	25.9	-9.2
Head Channel Z	52.3	-37.4
HEAD RESULTANT	82.0	52.5
Chest Channel X	-33.6	-34.9
Chest Channel Y	5.9	-6.7
Chest Channel Z	34.6	24.5
CHEST RESULTANT	48.1	41.4

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	423	390
t_1 = (msec)	97.7	101.1
t_2 = (msec)	112.6	137.1

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

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

CLIP	45.0	41.0
t_1 = (msec)	101.5	103.2
t_2 = (msec)	104.6	106.3
CHEST DEFLECTION (in)	1.6	0.1

Occupant Injury Data (Cont.)

MAX. COMPRESSIVE FEMUR FORCES:	DRIVER DUMMY #403	PASSENGER DUMMY #401
Left Side (lbs)	649	1118
Right Side (lbs)	899	804

NECK INJURY CRITERIA:

Peak Flexion Bending Moment about the Occipital Condyle (N-m)	36.5	42.9
Peak Extension Bending Moment about the Occipital Condyle (N-m)	20.6	26.3
Peak Axial Tension (N)	1197	823
Peak Axial Compression (N)	3573	1032
Peak Fore Shear (N)	1433	1790
Peak Aft Shear (N)	178	9

Seat Belt Warning System Data

Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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 = 60 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: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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: upper-right 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: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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.)

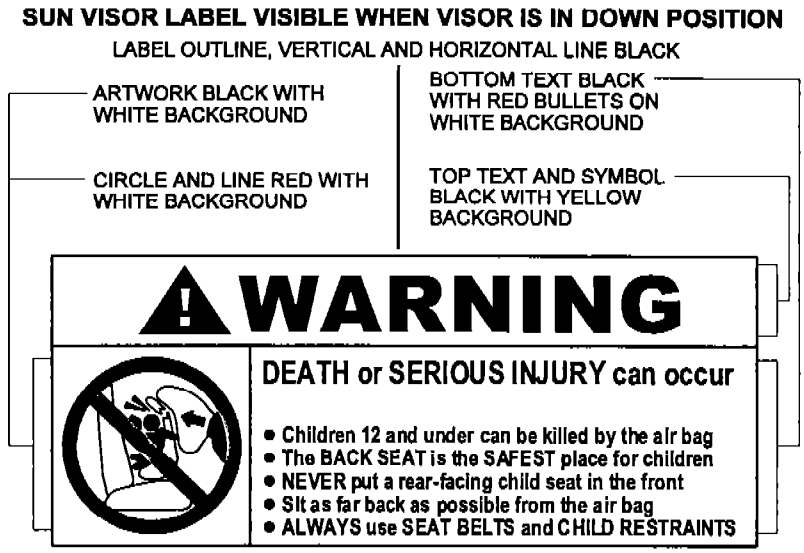


Figure 6a (S4.5.1(b)(2))

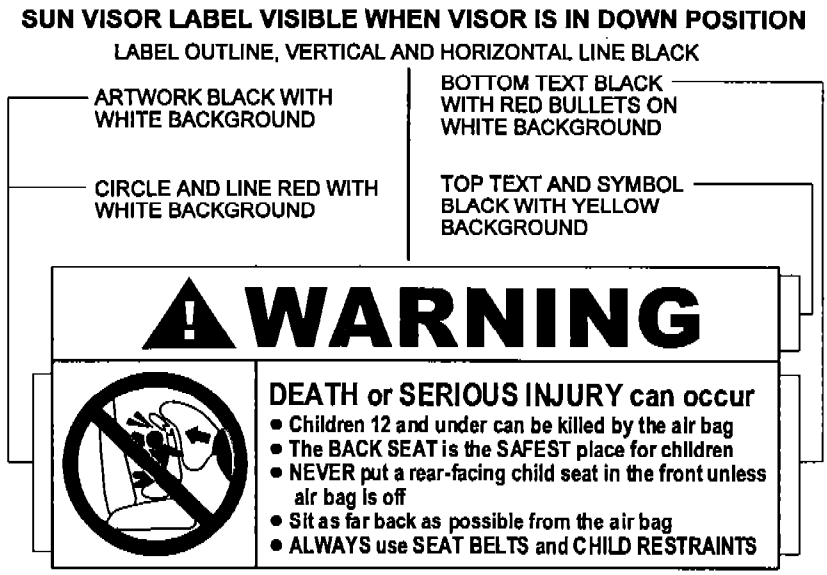


Figure 6b (S4.5.1(b)(2))

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: 48 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: 31 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-Pass	( ) **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 ( ) **No-FAIL**

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**

* 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.)

6.4 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

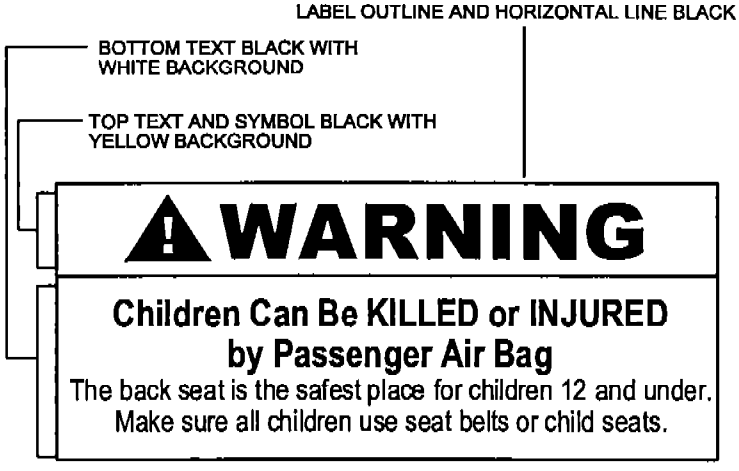


Figure 7 (S4.5.1(e))

Rear Outboard Seating Position Seat Belt Data

Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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 66 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

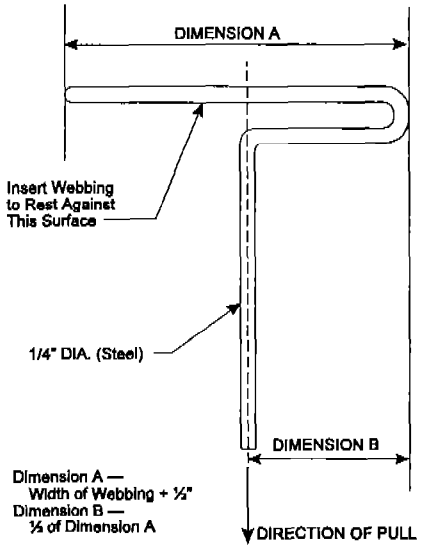


Figure 5 (S7.1.1.5(c)(4))

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 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 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 inch (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 = 40 inches (X)Yes-Pass ( ) **No-FAIL**

REMARKS: None

Lap Belt Lockability Data

Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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. not 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 65 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

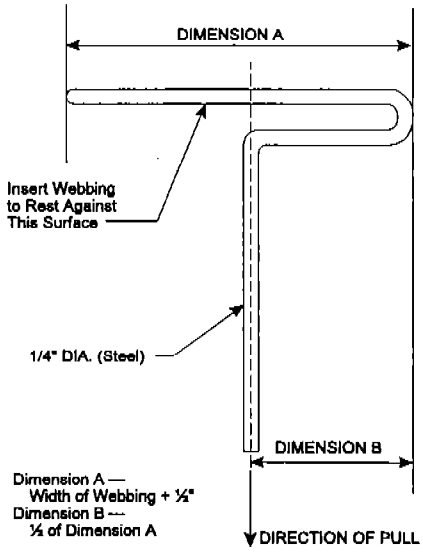


Figure 5 (S7.1.1.5(c)(4))

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 20 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 20 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 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 = 45 inches (X)Yes-Pass ( ) **No-FAIL**

REMARKS: None

Lap Belt Lockability Data

Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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): Center rear

1. Record the seating position. not 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 60 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

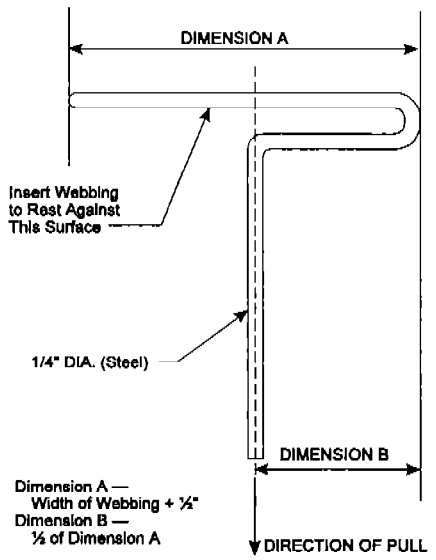


Figure 5 (S7.1.1.5(c)(4))

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 12 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 12.5 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 = 0.5 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 = 47.5 inches (X)Yes-Pass ( ) **No-FAIL**

REMARKS: None

Lap Belt Lockability Data

Vehicle Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

NHTSA No.: CY0203 ; Technician: Chad Gadberry ; Date: December 20, 1999

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. not 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 65 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)

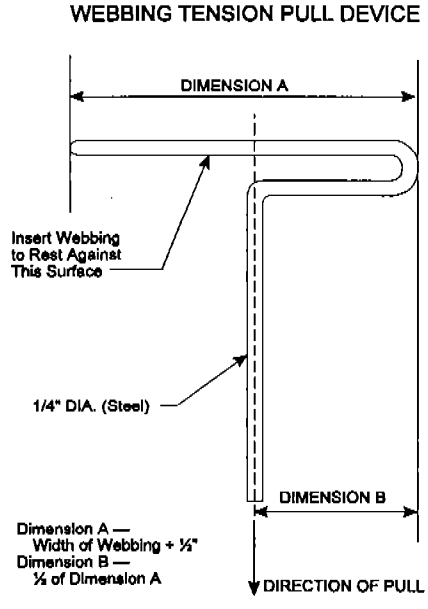


Figure 5 (S7.1.1.5(c)(4))

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 20 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 20 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 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 = 45 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.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Designated Seating Position Tested: Left rear

Date of Comfort/Convenience Check: December 20, 1999

Technician Performing Check: Chad Gadberry

GVWR: 4675 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 0.2 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

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

Test Vehicle NHTSA No.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Designated Seating Position Tested: Center rear

Date of Comfort/Convenience Check: December 20, 1999

Technician Performing Check: Chad Gadberry

GVWR: 4675 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 0.4 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

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

Test Vehicle NHTSA No.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Designated Seating Position Tested: Right rear

Date of Comfort/Convenience Check: December 20, 1999

Technician Performing Check: Chad Gadberry

GVWR: 4675 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 _0.2_ 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.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 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.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 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.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Designated Seating Position Tested: Left Rear

Date of Comfort/Convenience Check: December 20, 1999

Technician Performing Check: Chad Gadberry

GVWR: 4675 lbs

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.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Designated Seating Position Tested: Center Rear

Date of Comfort/Convenience Check: December 20, 1999

Technician Performing Check: Chad Gadberry

GVWR: 4675 lbs

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.:CY0203

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Taurus/4 Door

Designated Seating Position Tested: Right Rear

Date of Comfort/Convenience Check: December 20, 1999

Technician Performing Check: Chad Gadberry

GVWR: 4675 lbs

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

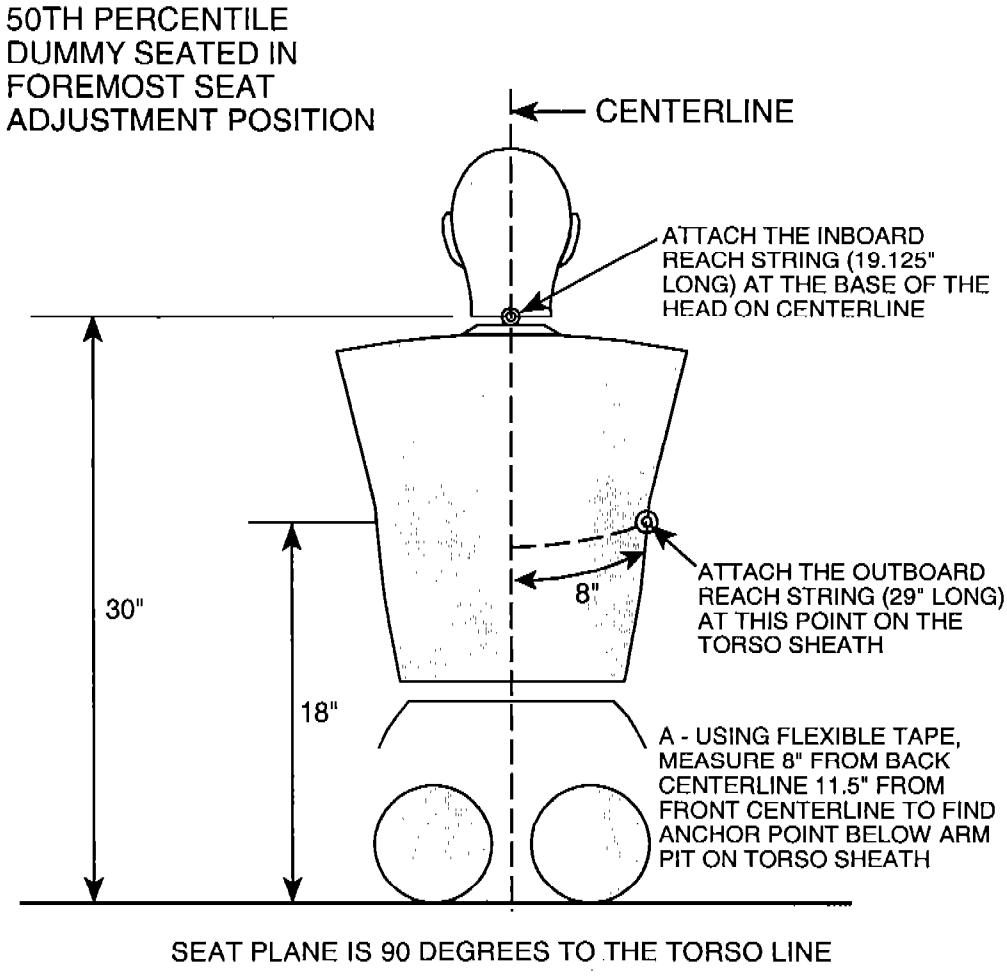
(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position.
(X) Check

(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**

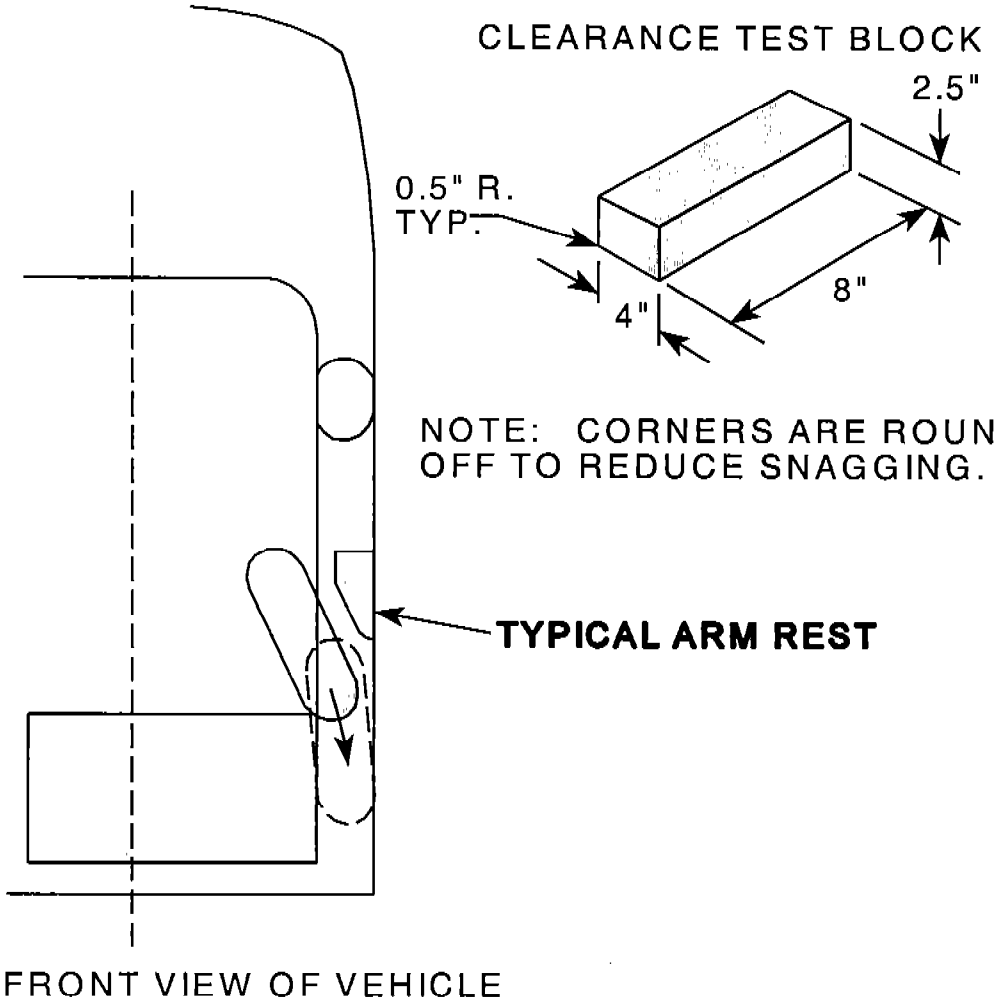
LOCATION OF ANCHORING POINTS FOR LATCHPLATE REACH LIMITING CHAINS OR STRINGS TO TEST FOR LATCHPLATE ACCESSIBILITY

PART 572E DUMMY



REAR VIEW

USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS



APPENDIX A

PHOTOGRAPHS

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TABLE OF PHOTOGRAPHS

Photo No. A-1 - Pre-Test Frontal View

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

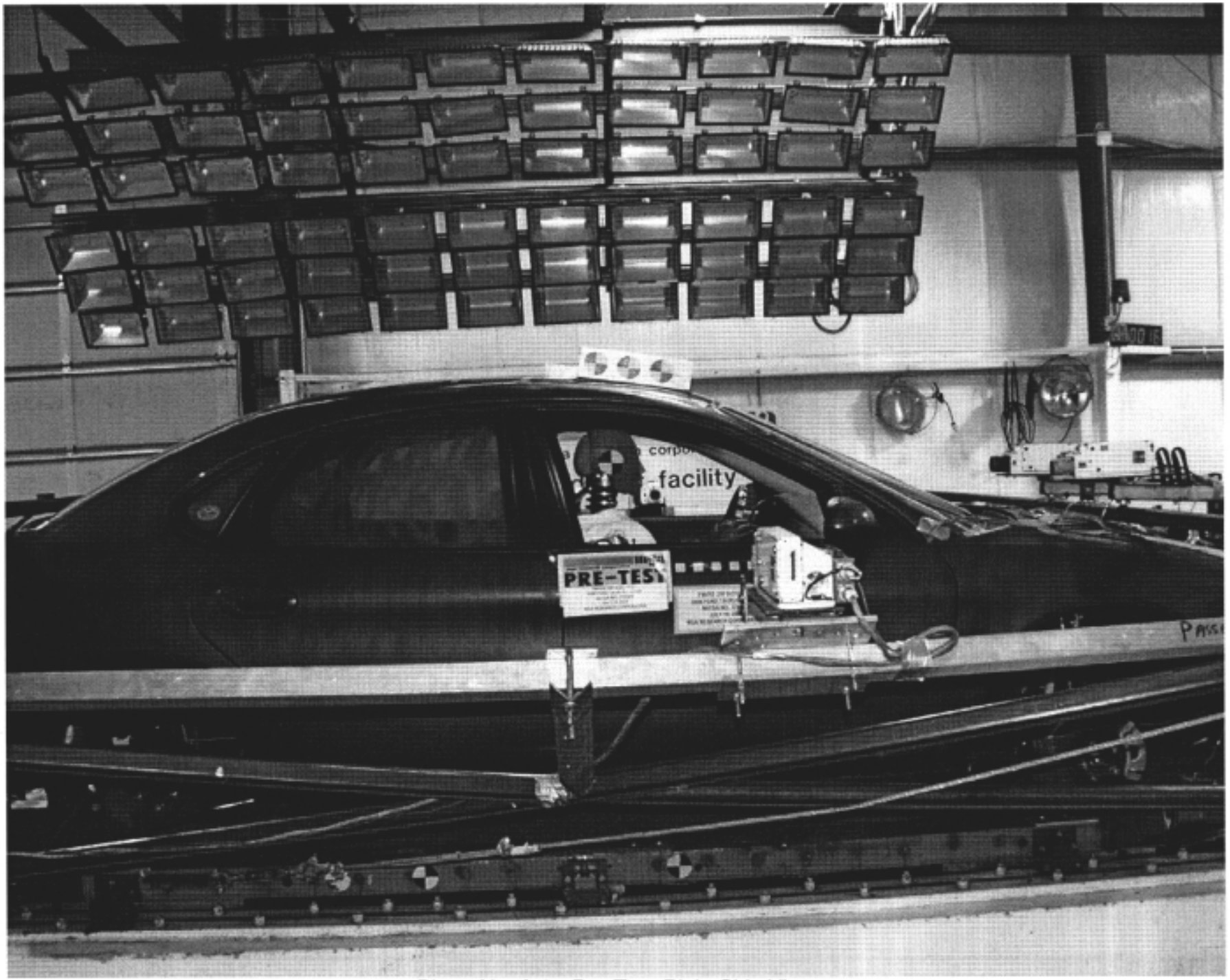


Photo No. A-3 - Pre-Test Right Side View

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

Photo No. A-5 - Post-Test Windshield View

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

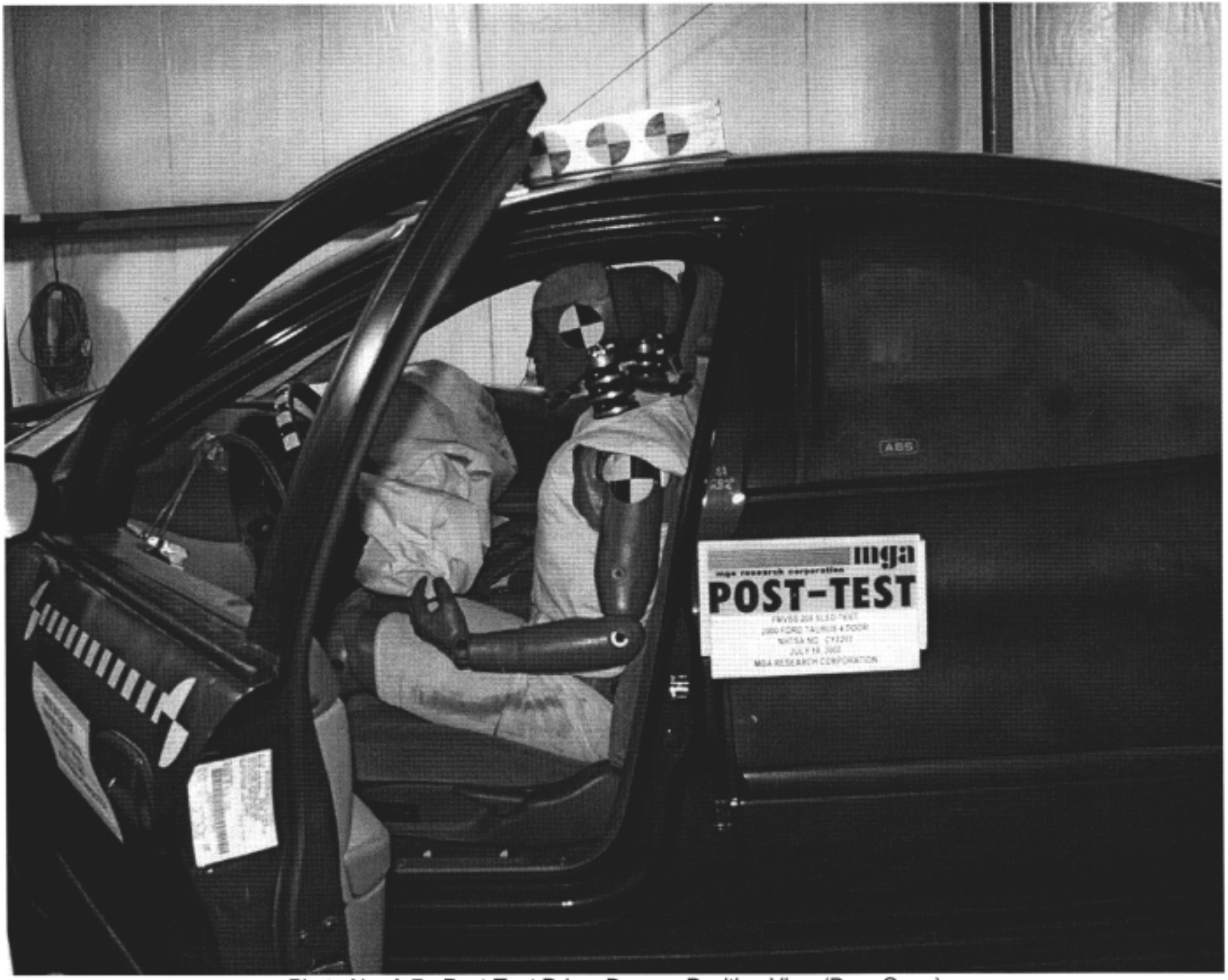


Photo No. A-7 - Post-Test Driver Dummy Position View (Door Open)

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

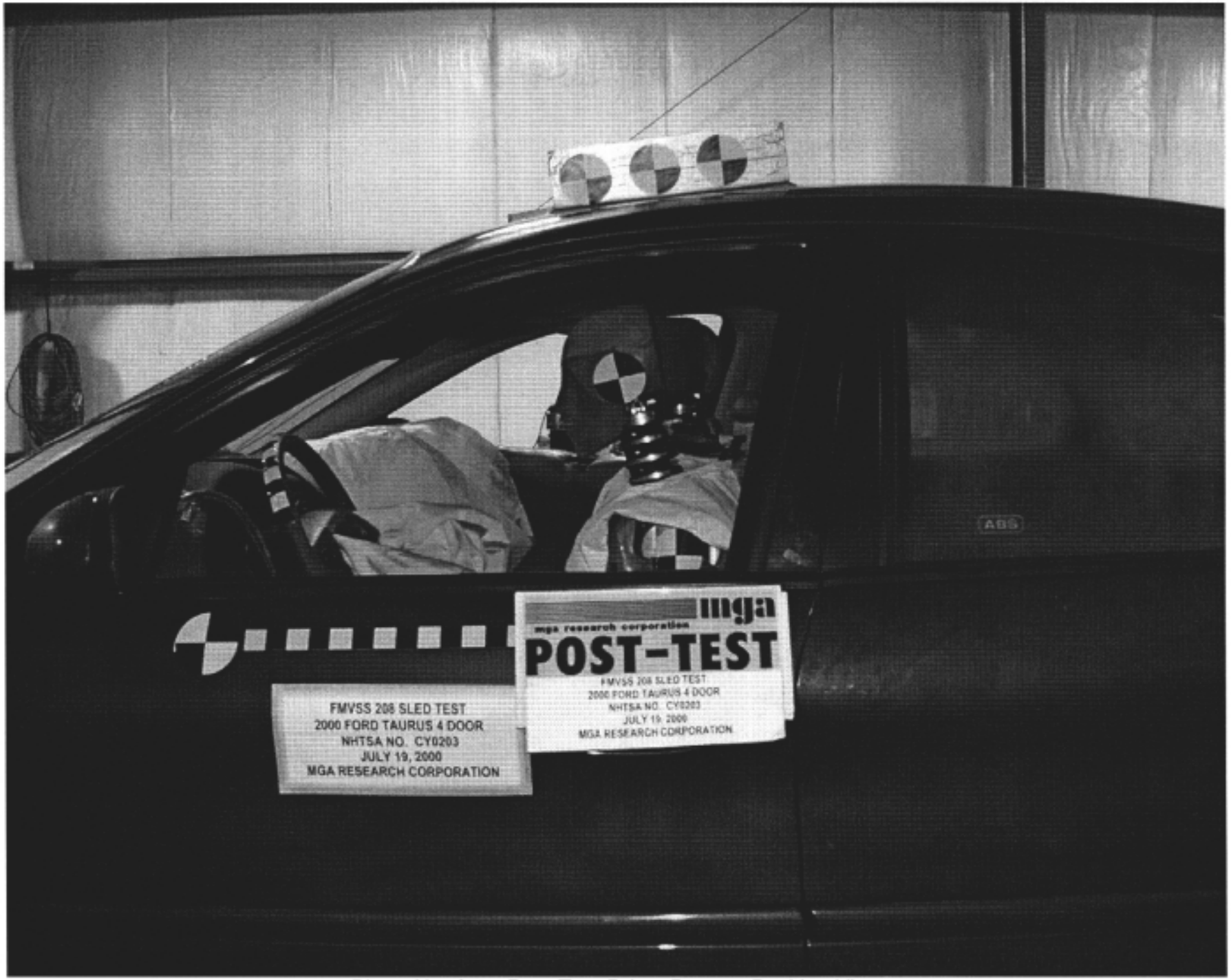


Photo No. A-9 - Post-Test Driver Dummy Position View

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

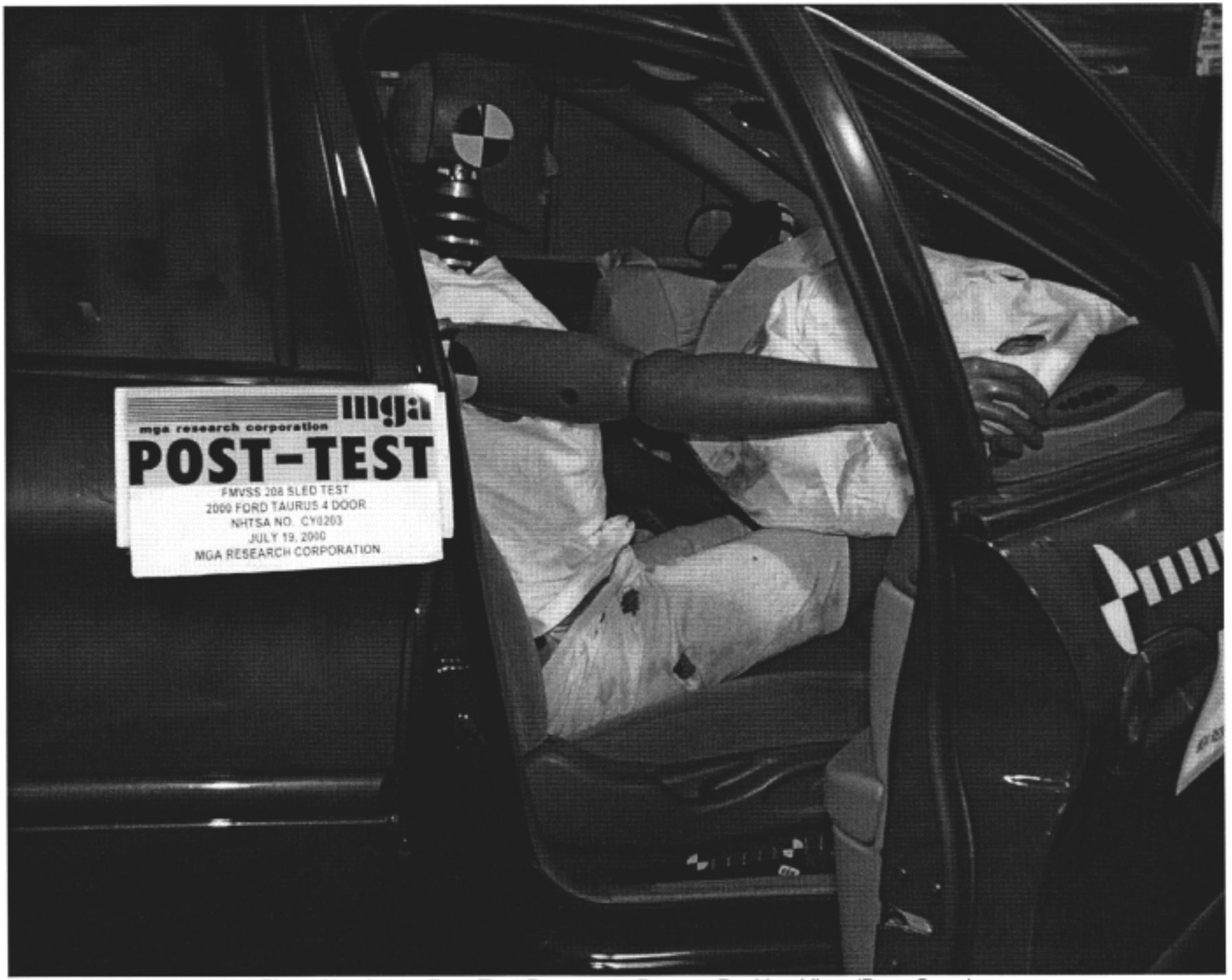


Photo No. A-11 - Post-Test Passenger Dummy Position View (Door Open)

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

Photo No. A-13 - Post-Test Passenger Dummy Position View

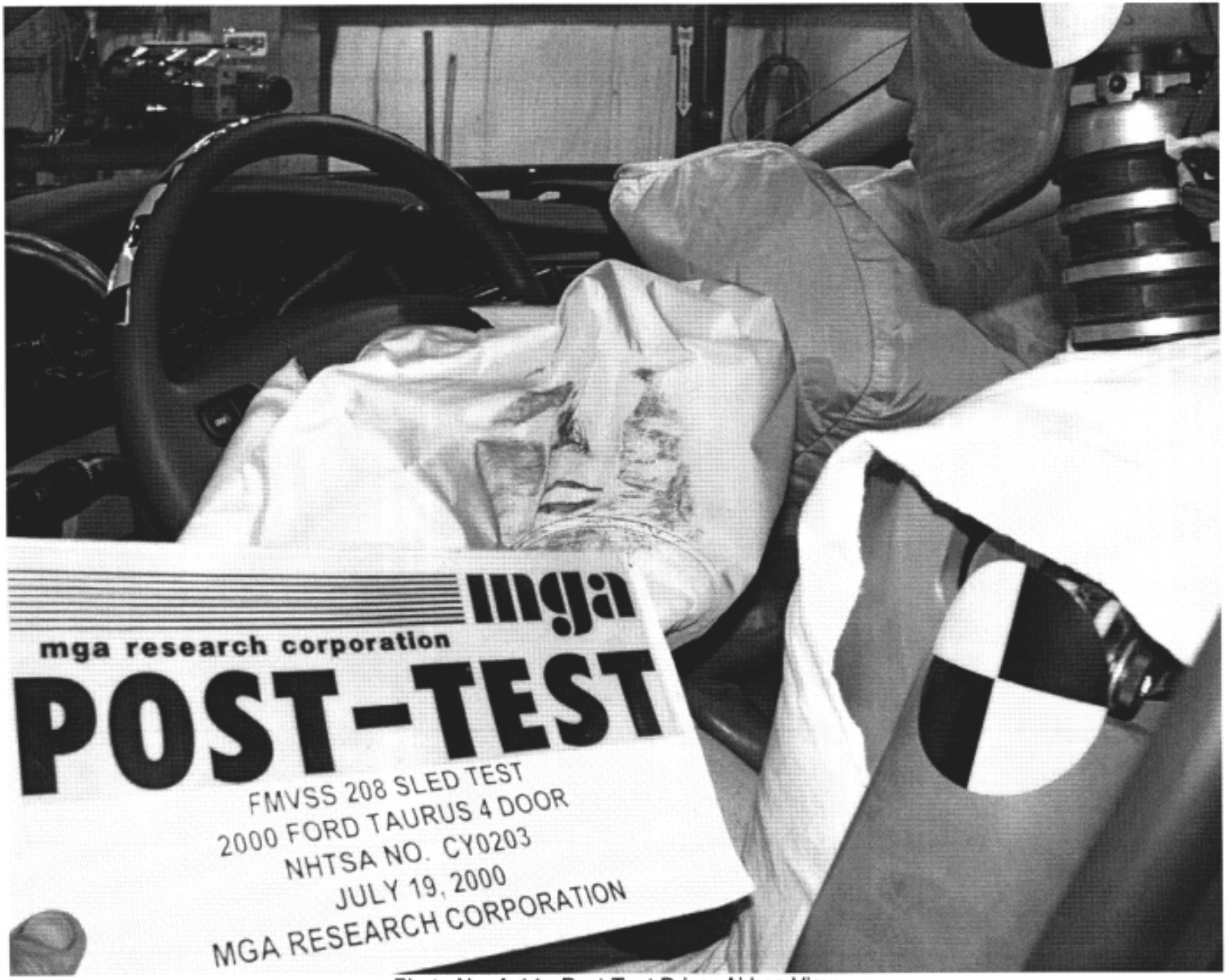


Photo No. A-14 - Post-Test Driver Airbag View

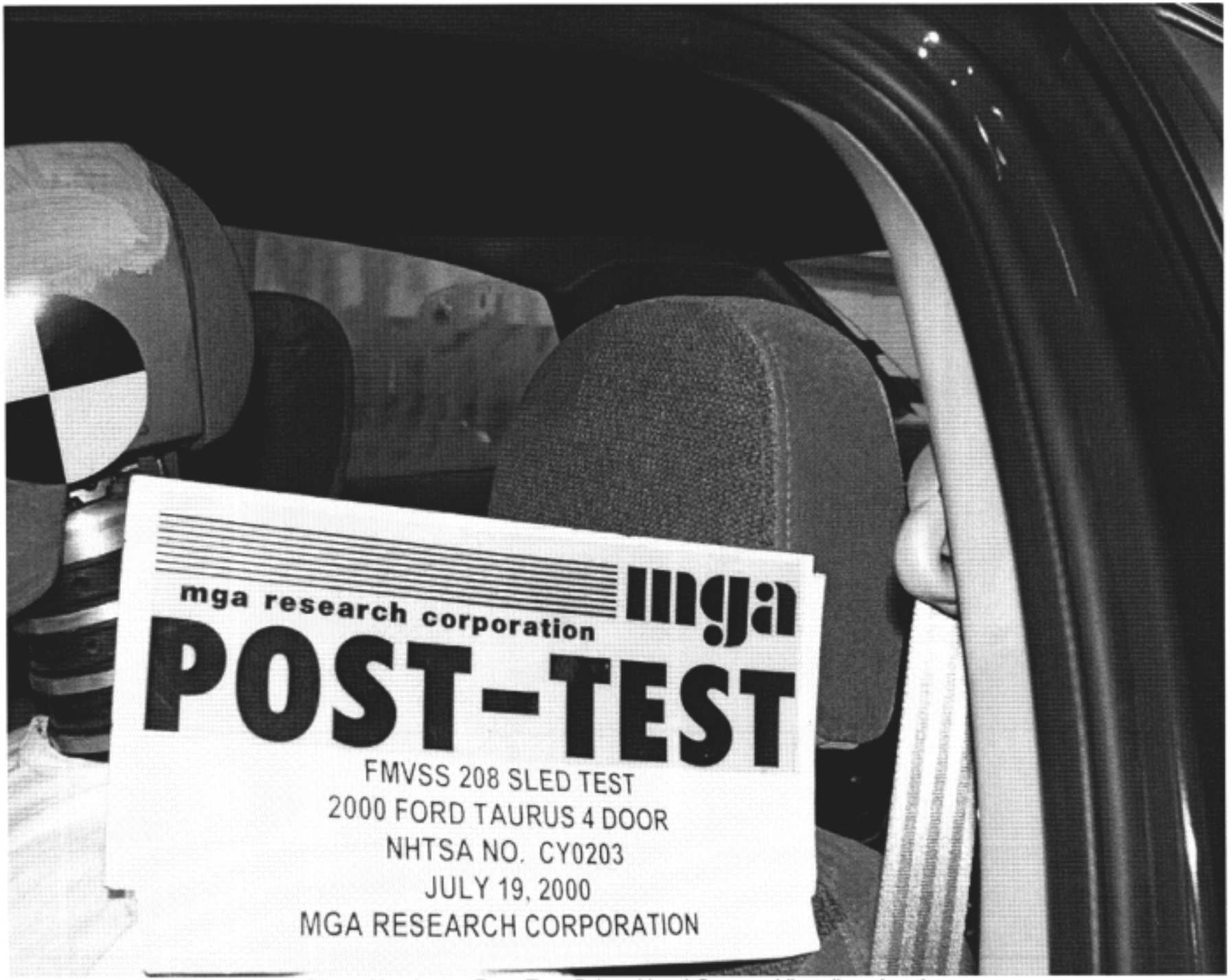


Photo No. A-15 - Post-Test Driver Head Contact View (headrest)

Photo No. A-16 - Post-Test Driver Head Contact View (windshield)

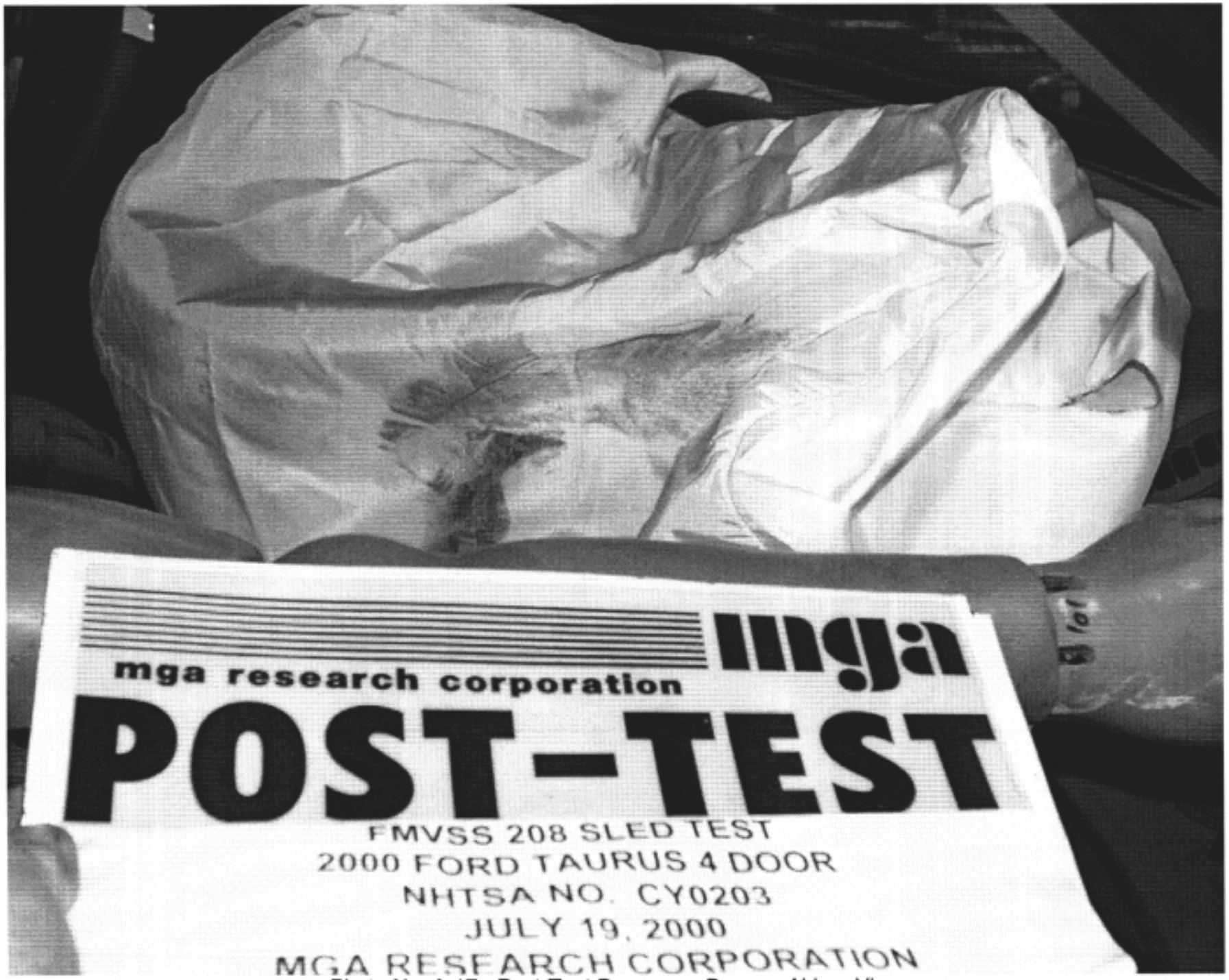


Photo No. A-17 - Post-Test Passenger Dummy Airbag View

Photo No. A-18 - Post-Test Passenger Dummy Head Contact View (headrest)

Photo No. A-19 - Post-Test Passenger Dummy Head Contact View (visor)

Photo No. A-20 - Pre-Test Driver Seat Position View

Photo No. A-21 - Post-Test Driver Seat Position View

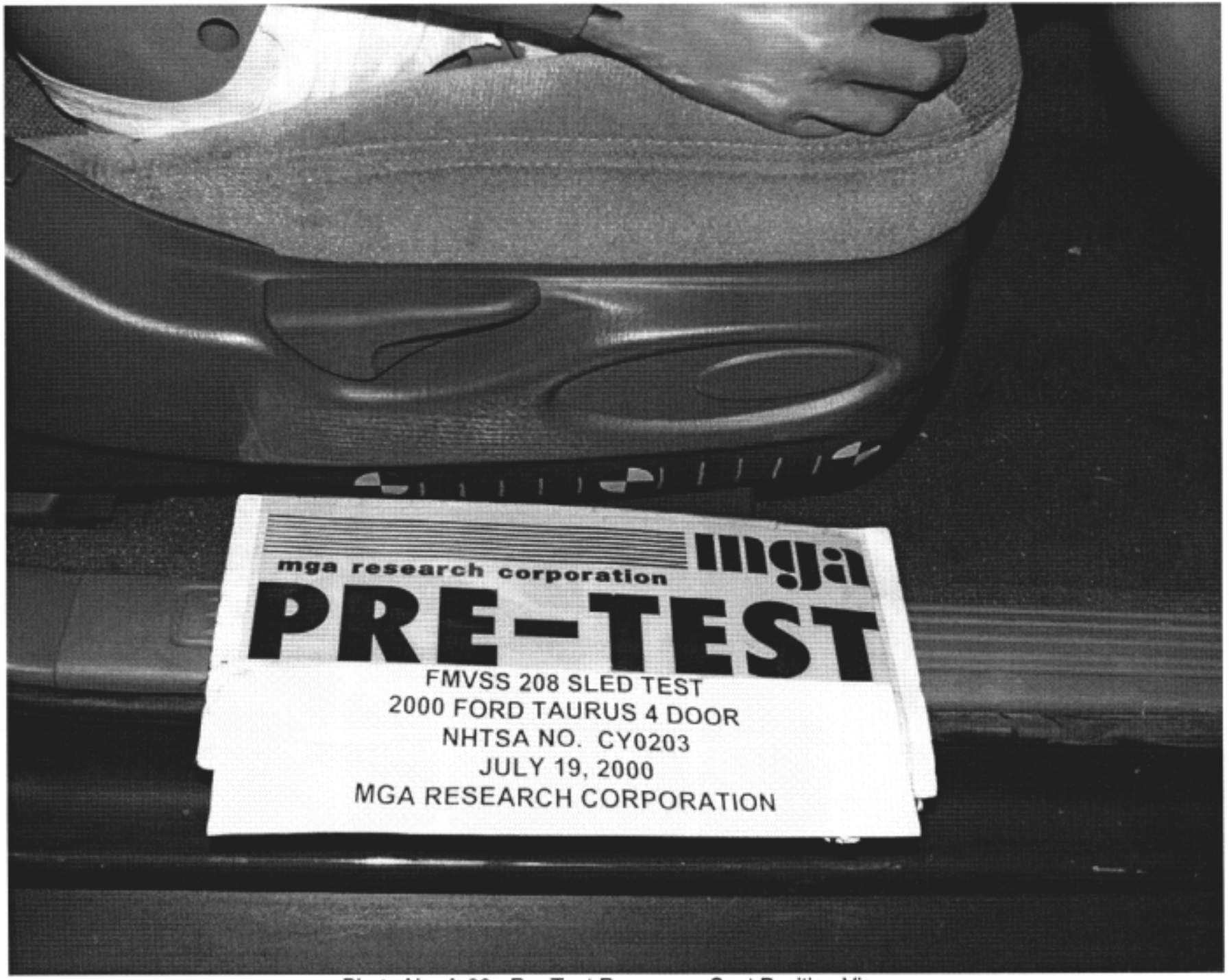


Photo No. A-22 - Pre-Test Passenger Seat Position View

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

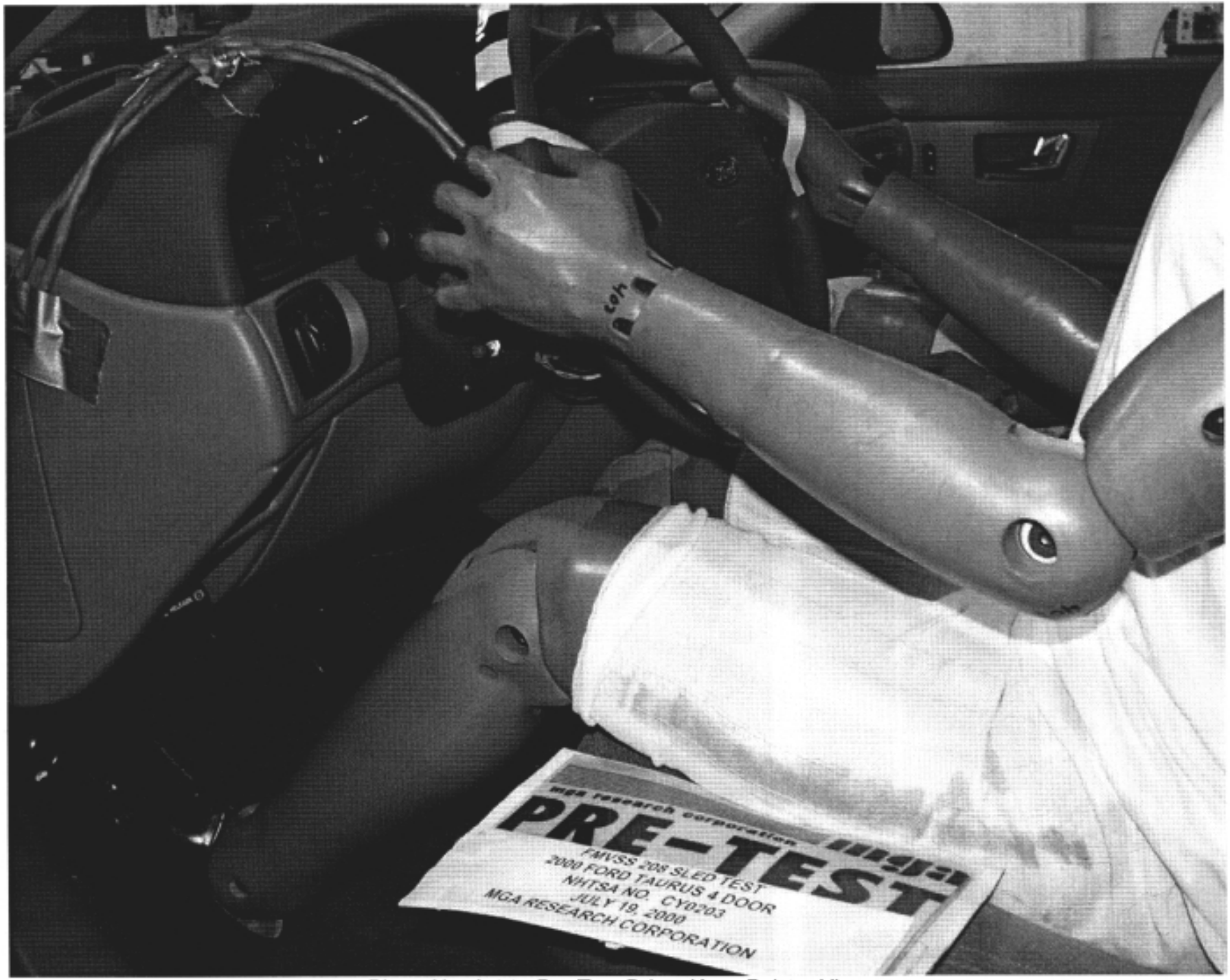


Photo No. A-24 - Pre-Test Driver Knee Bolster View

Photo No. A-25 - Post-Test Driver Knee Bolster View

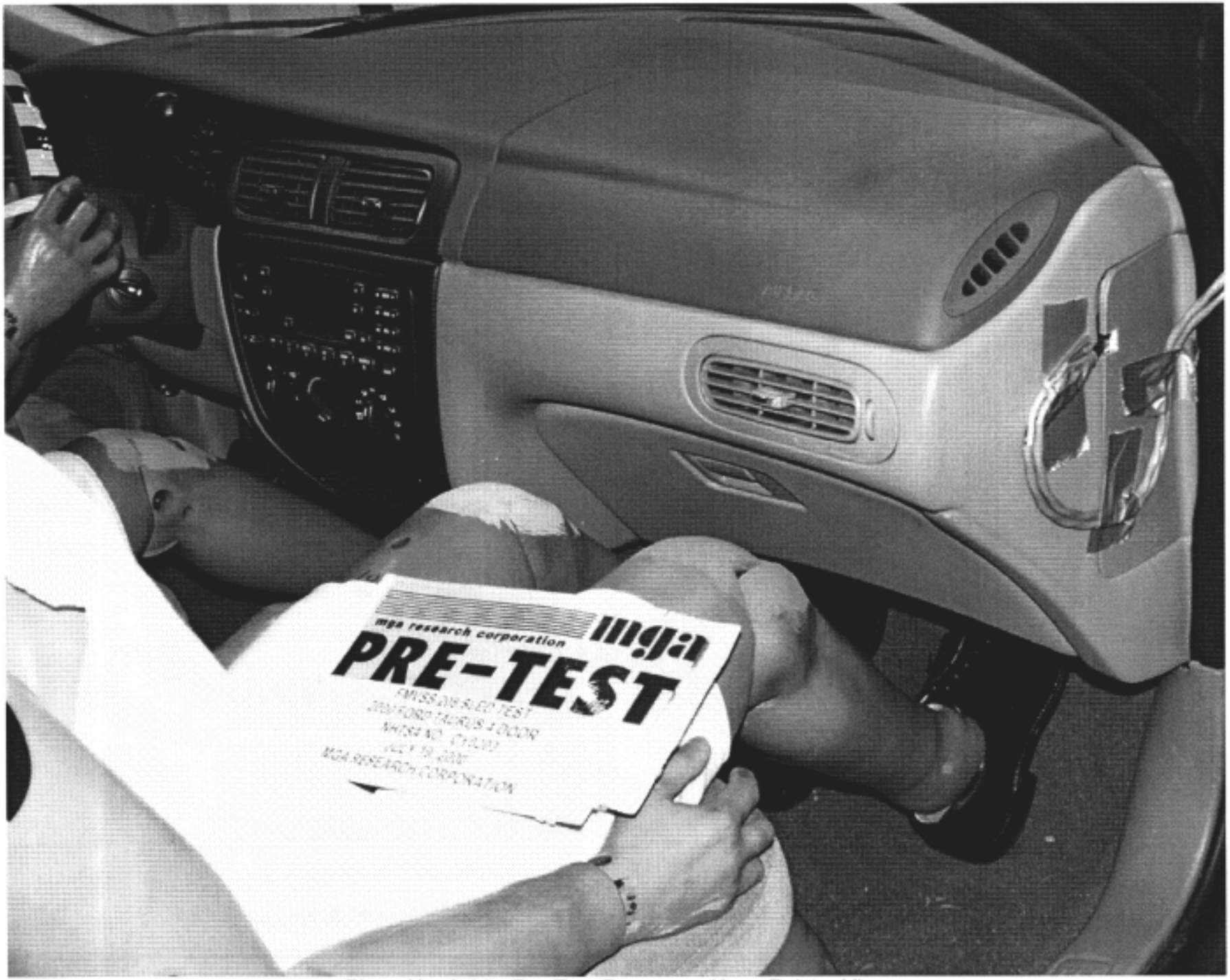


Photo No. A-26 - Pre-Test Passenger Knee Bolster View

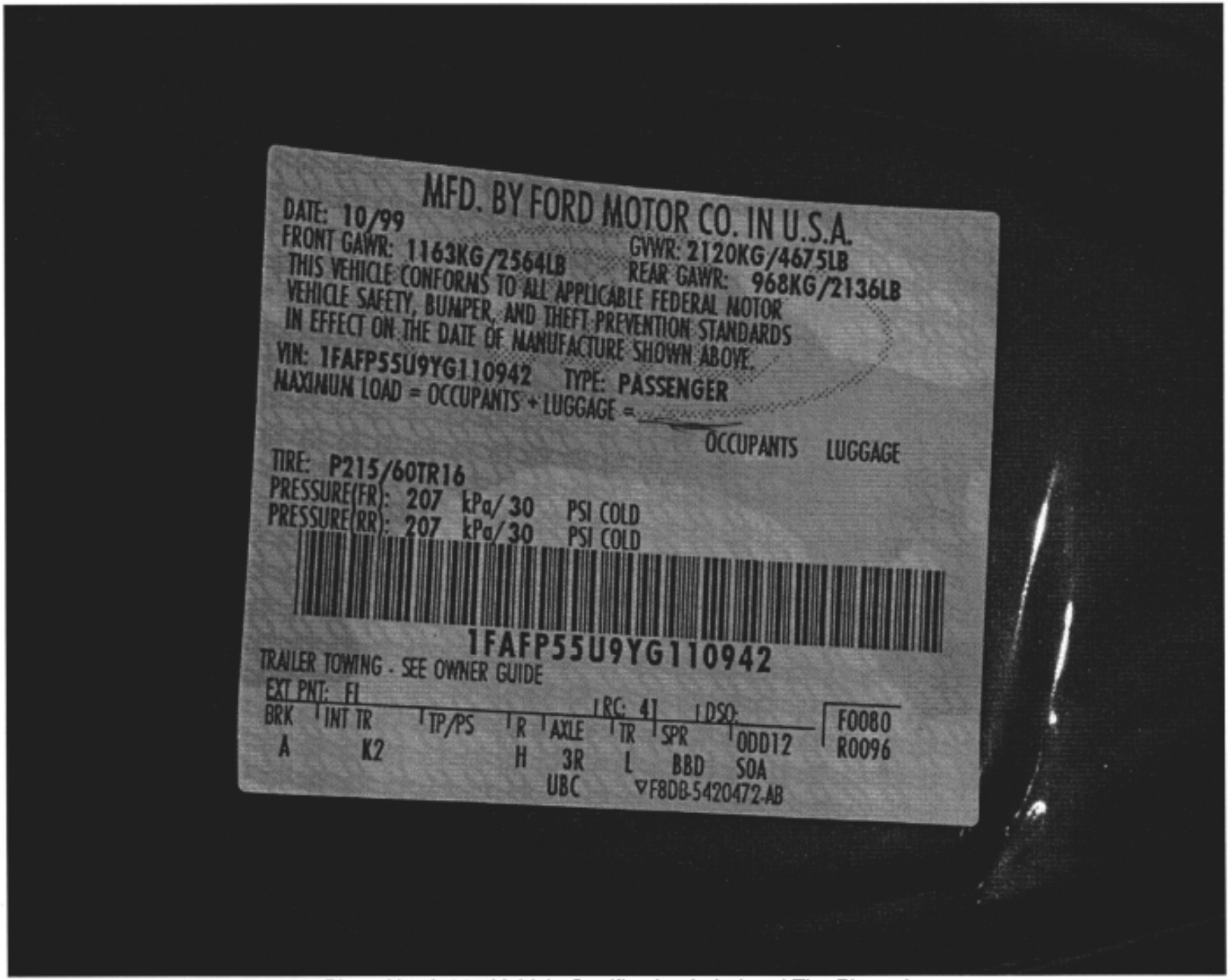
Photo No. A-27 - Post-Test Passenger Knee Bolster View

Photo No. A-28 - Pre-Test Driver Windshield View

Photo No. A-29 - Post-Test Driver Windshield View

Photo No. A-30 - Pre-Test Passenger Windshield View

Photo No. A-31 - Post-Test Passenger Windshield View



A-32

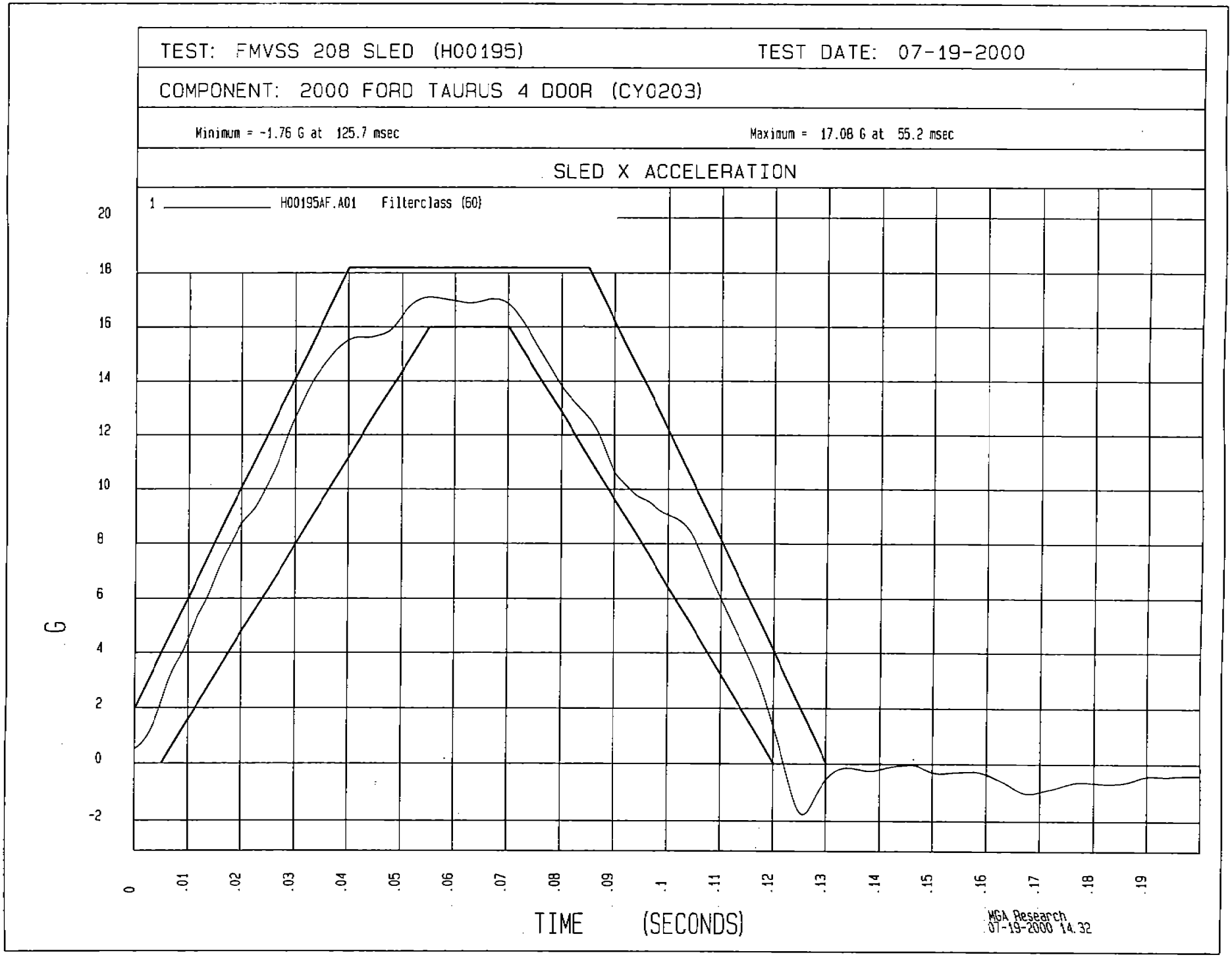
Photo No. A-32 - Vehicle Certification Label and Tire Placard

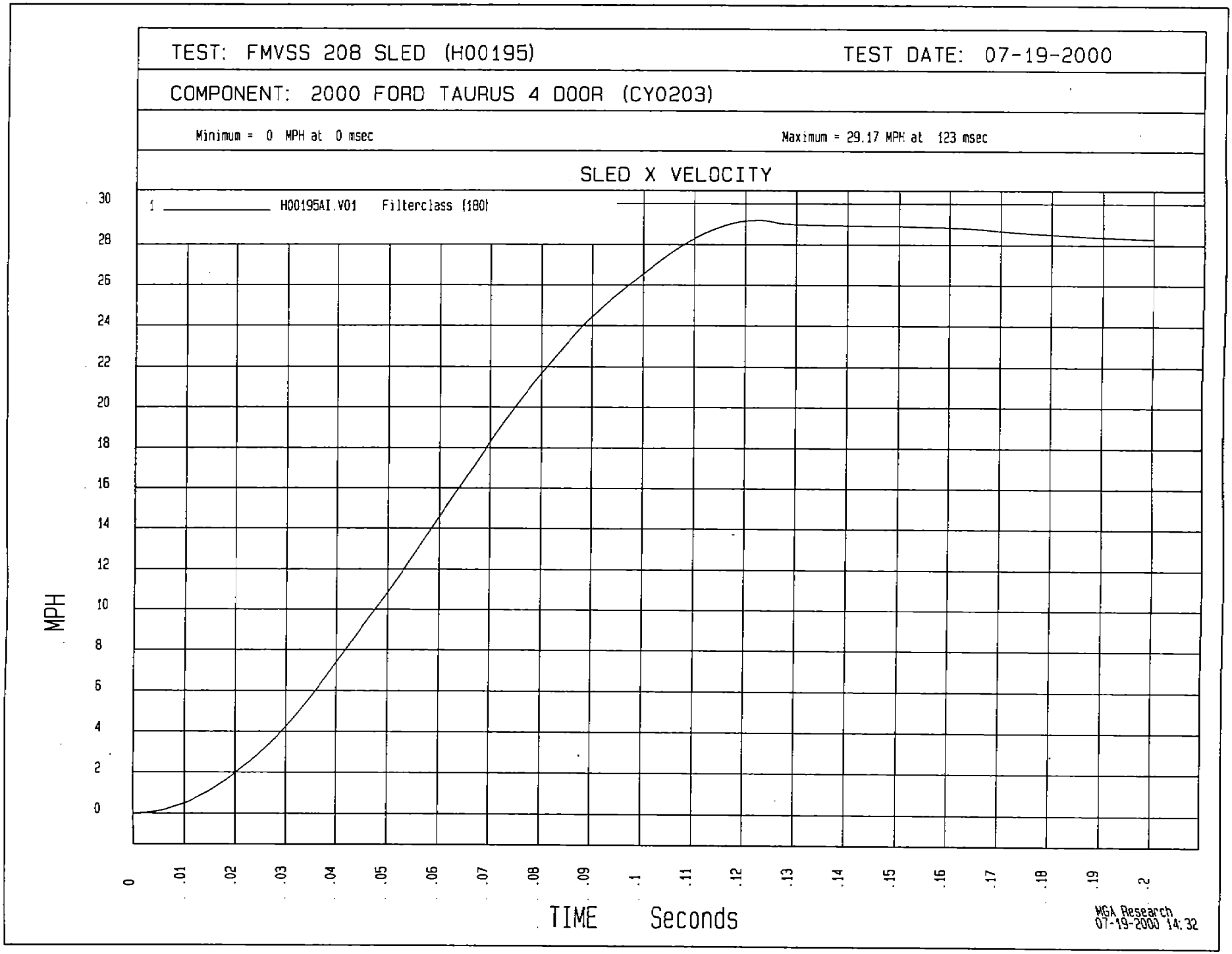
APPENDIX B
DATA PLOTS

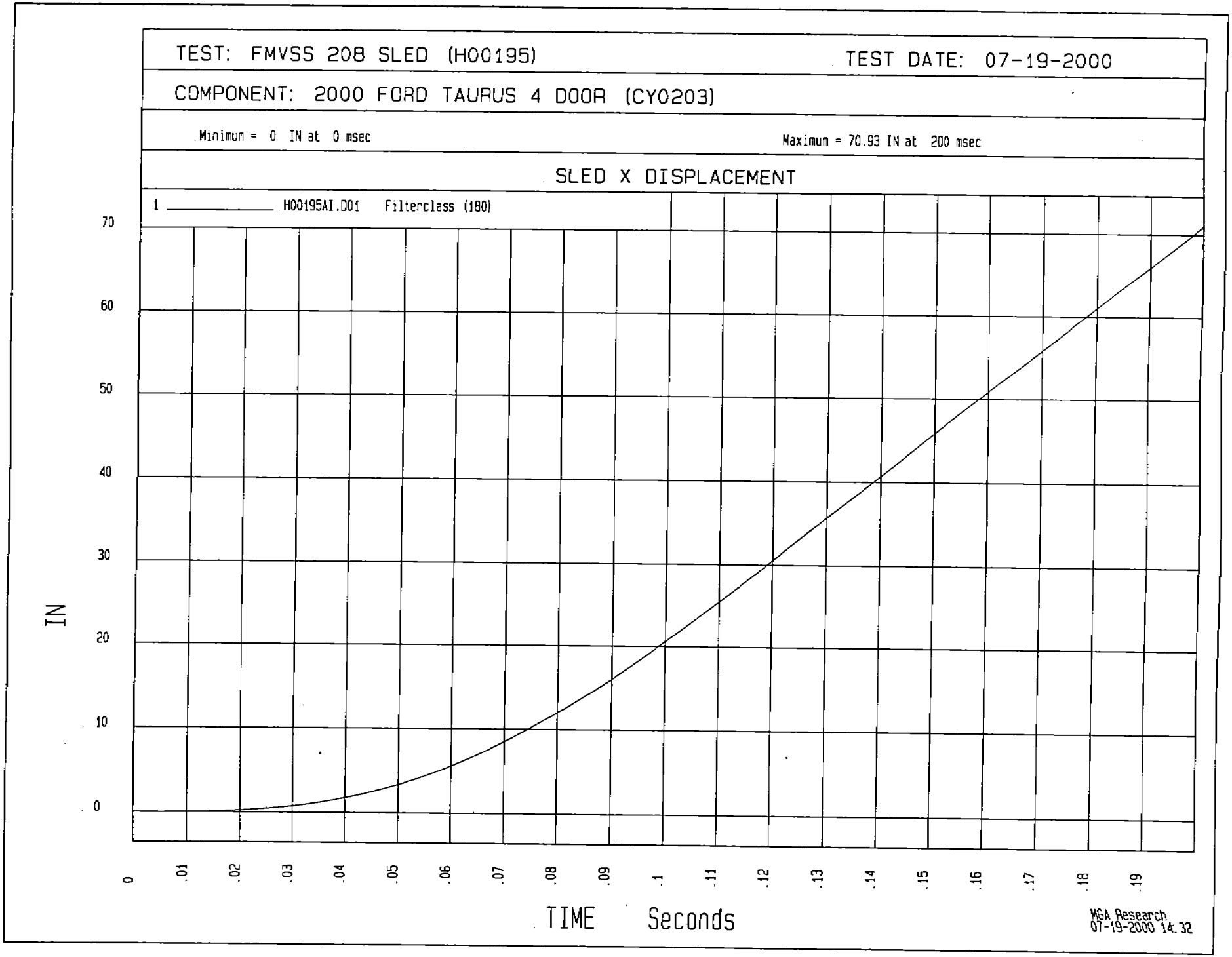
TABLE OF DATA PLOTS

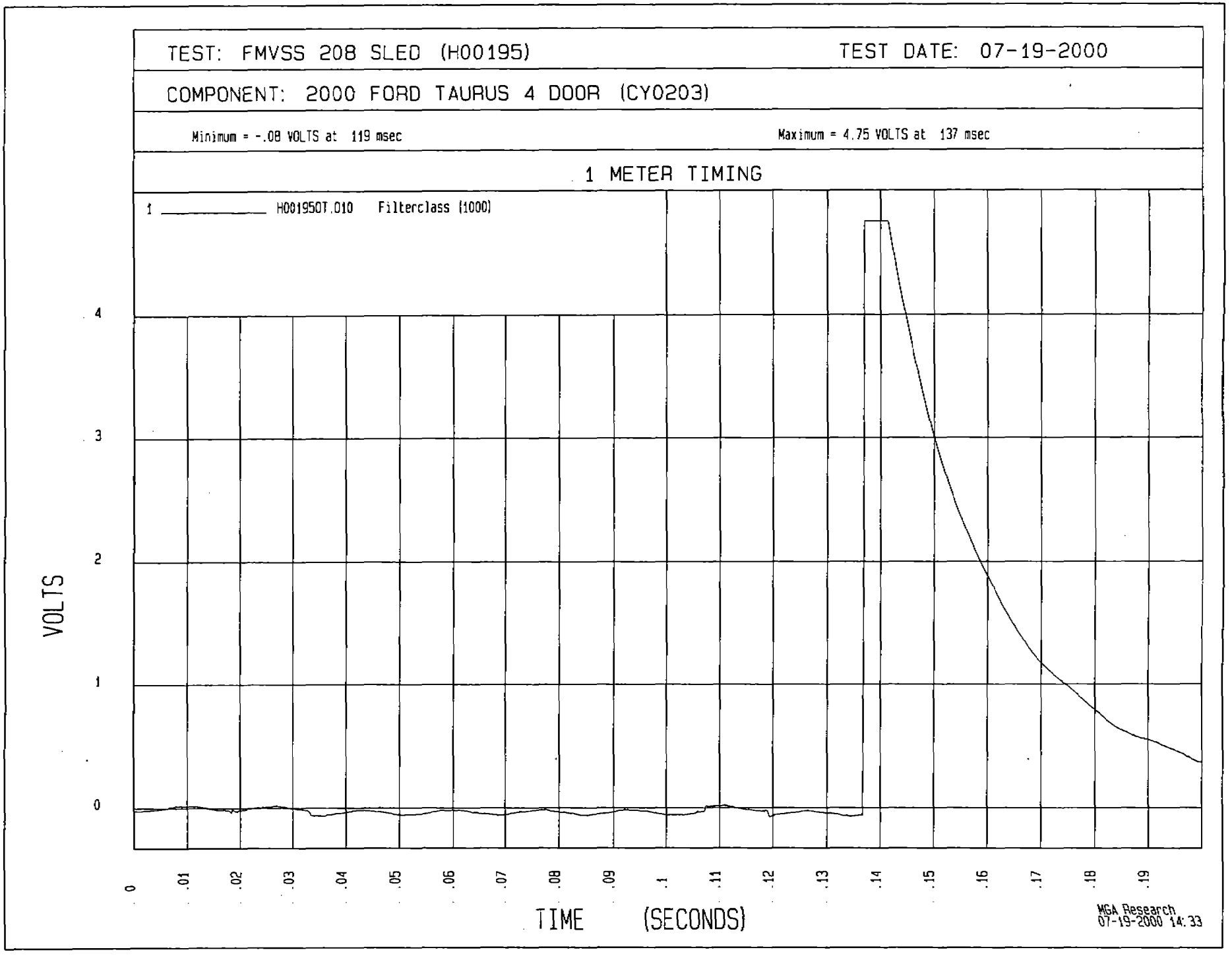
TABLE OF DATA PLOTS (Cont.)

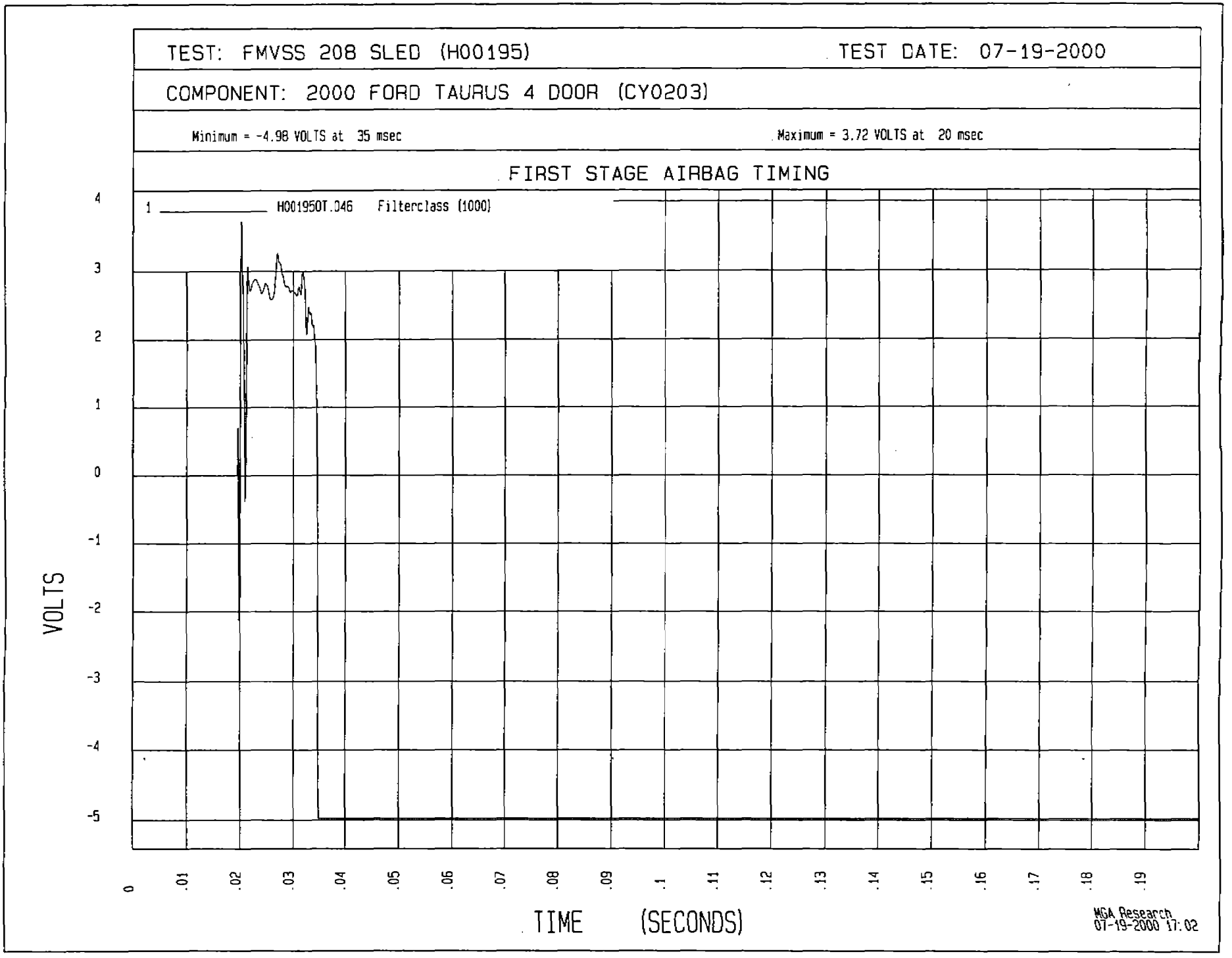
* No Valid Data Collected

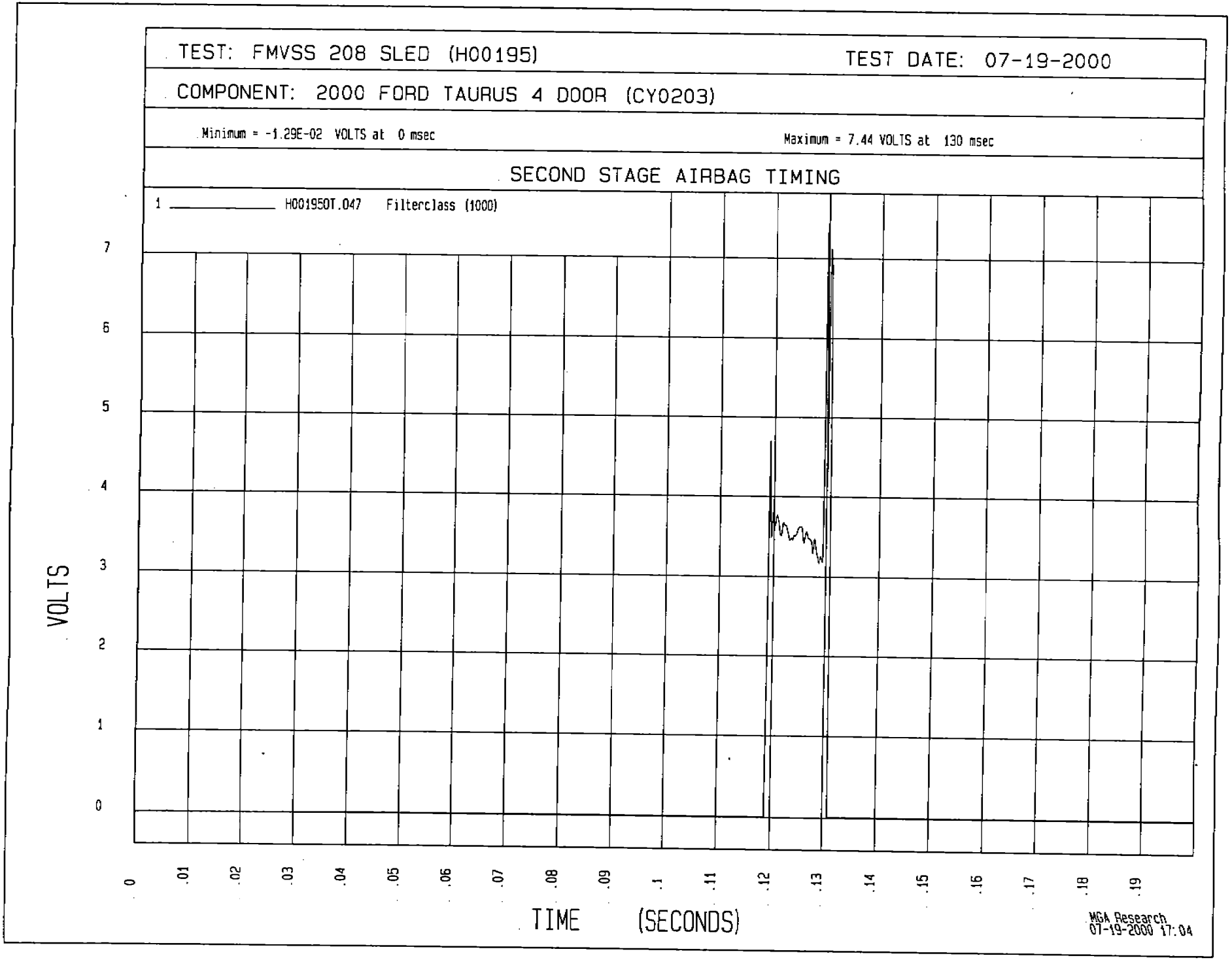

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1.76 G at 125.7 msec
Maximum = 17.08 G at 55.2 msec
SLED X ACCELERATION
1 H00195AF.A01 Filterclass (60)
G
20
18
16
14
12
10
8
6
4
2
0
-2
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14.32

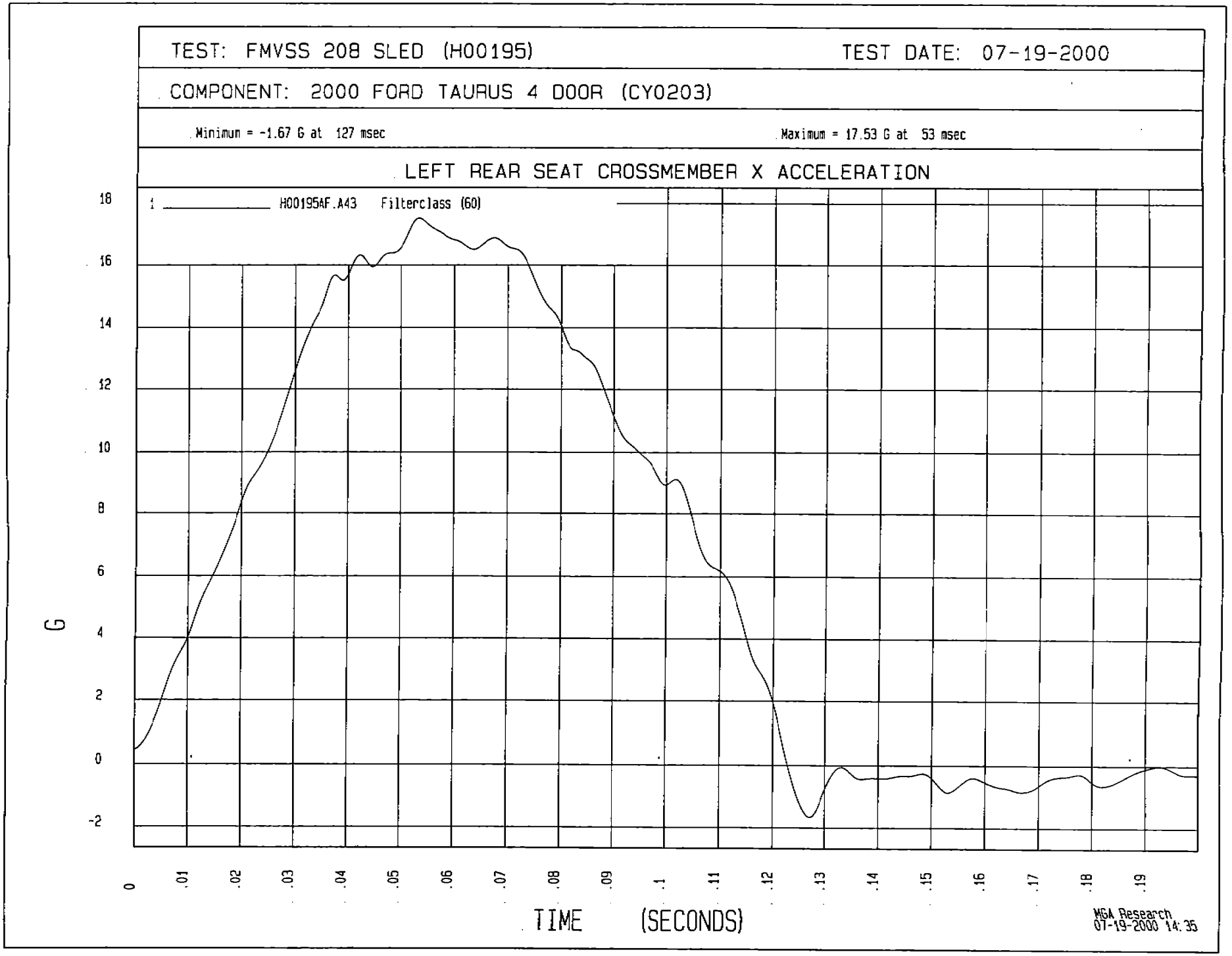

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = 0 MPH at 0 msec
Maximum = 29.17 MPH at 123 msec
SLED X VELOCITY
1 H00195AI.V01 Filterclass (180)
MPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
.2
TIME Seconds
MGA Research
07-19-2000 14:32

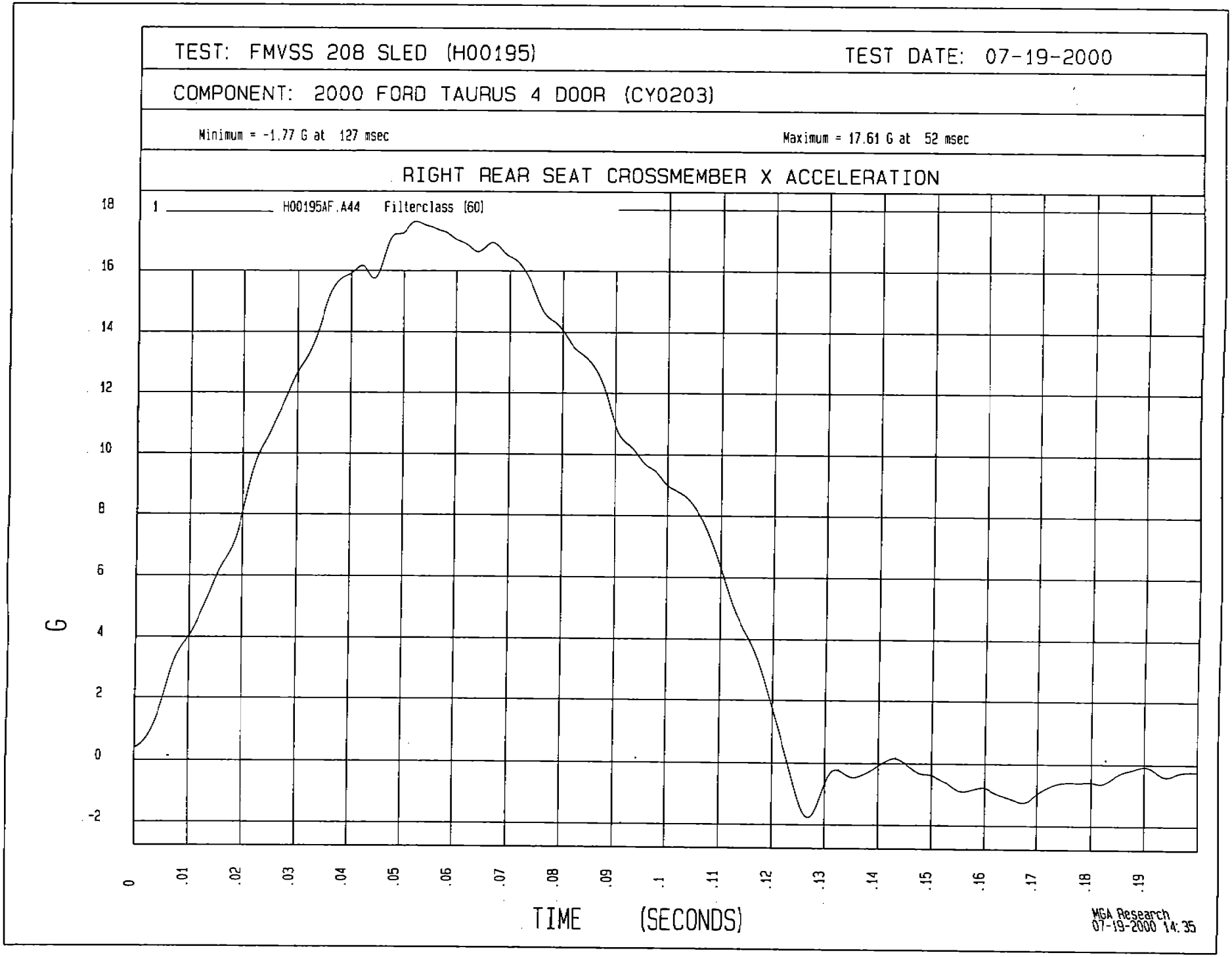

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = 0 IN at 0 msec
Maximum = 70.93 IN at 200 msec
SLED X DISPLACEMENT
1 H00195AI.D01 Filterclass (180)
IN
70
60
50
40
30
20
10
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
07-19-2000 14:32

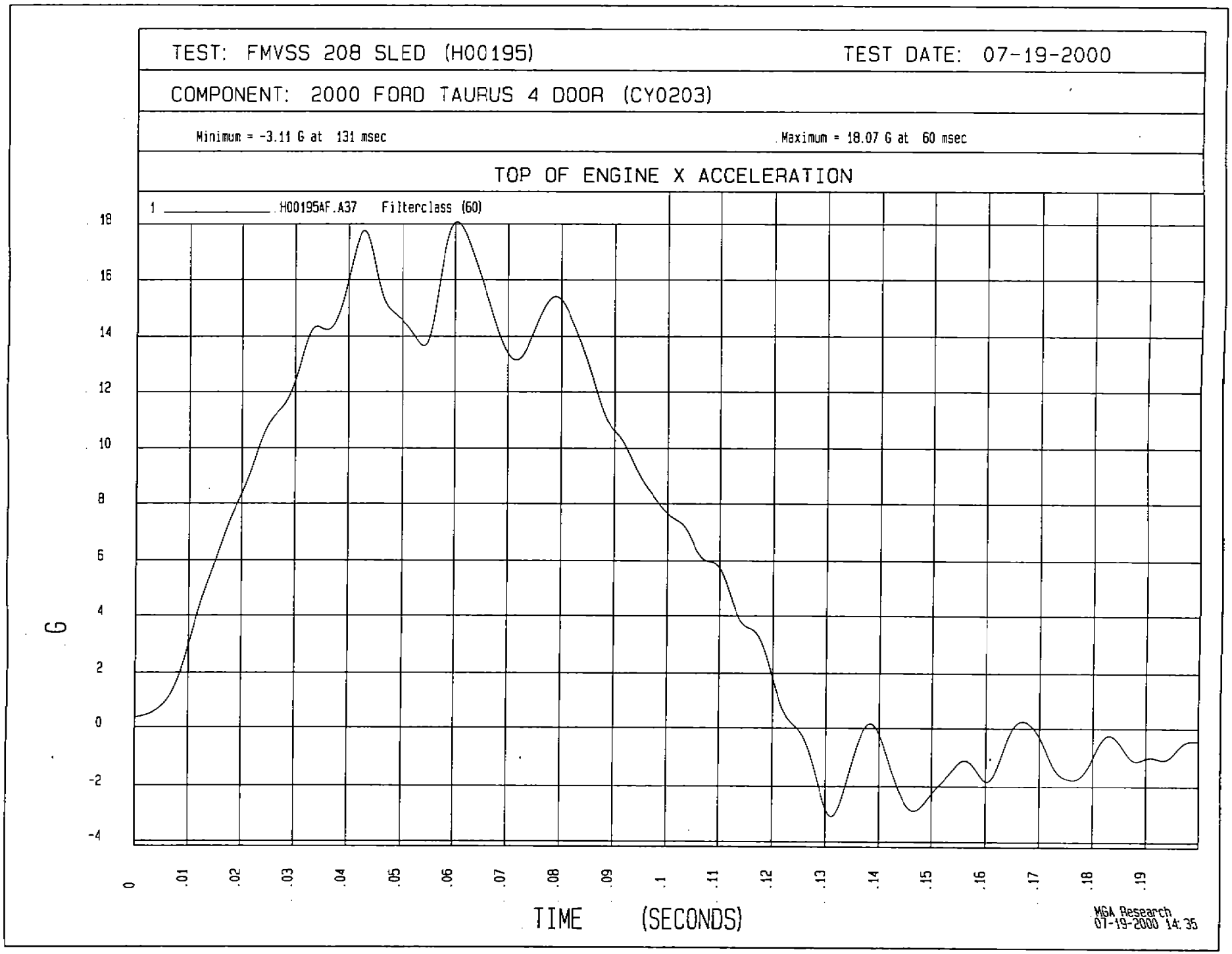

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -.08 VOLTS at 119 msec
Maximum = 4.75 VOLTS at 137 msec
1 METER TIMING
1 _____ H00195OT.010 Filterclass (1000)
VOLTS
4
3
2
1
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:33

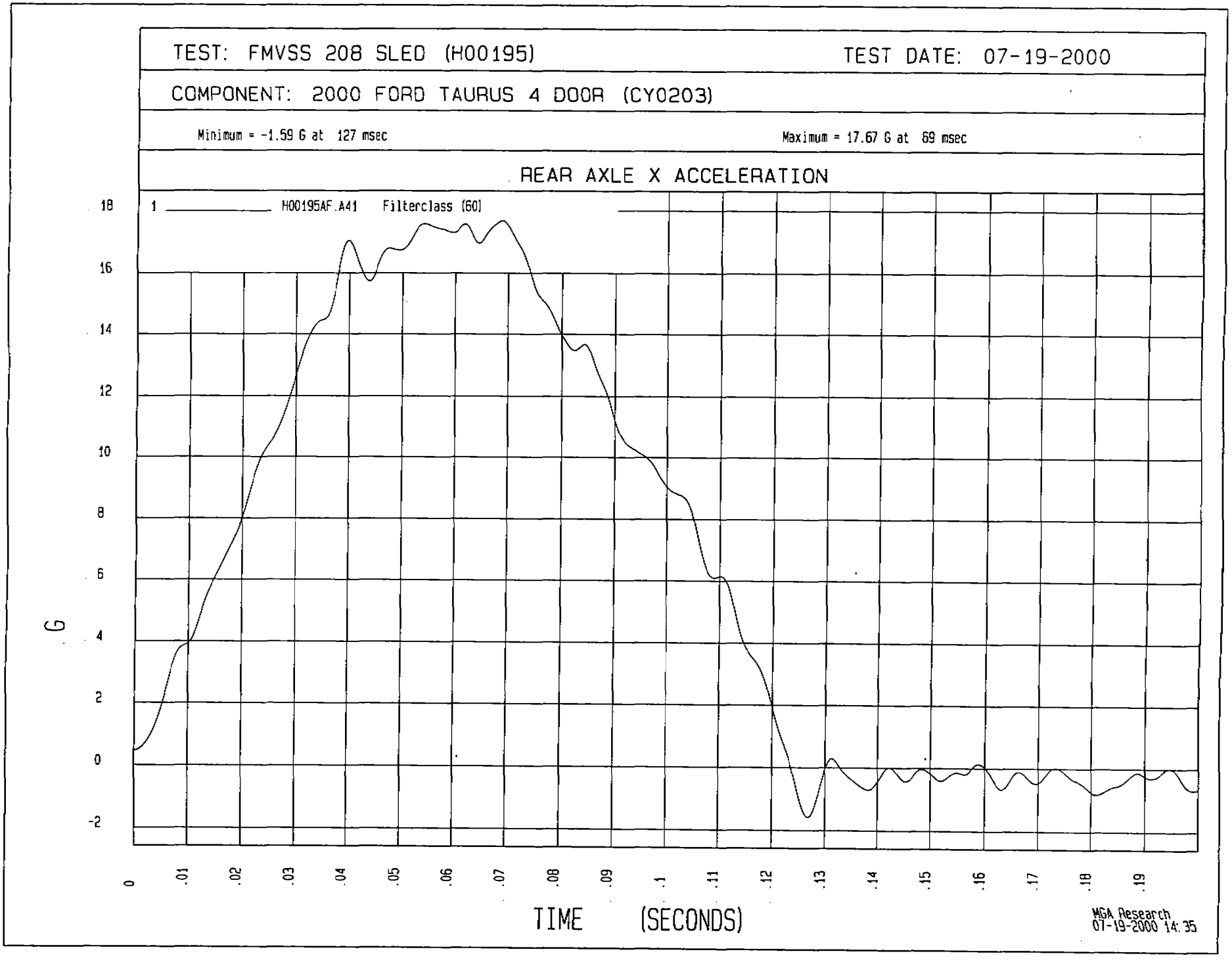

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -4.98 VOLTS at 35 msec
Maximum = 3.72 VOLTS at 20 msec
FIRST STAGE AIRBAG TIMING
1 H00195OT.046 Filterclass (1000)
VOLTS
4
3
2
1
0
-1
-2
-3
-4
-5
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 17:02

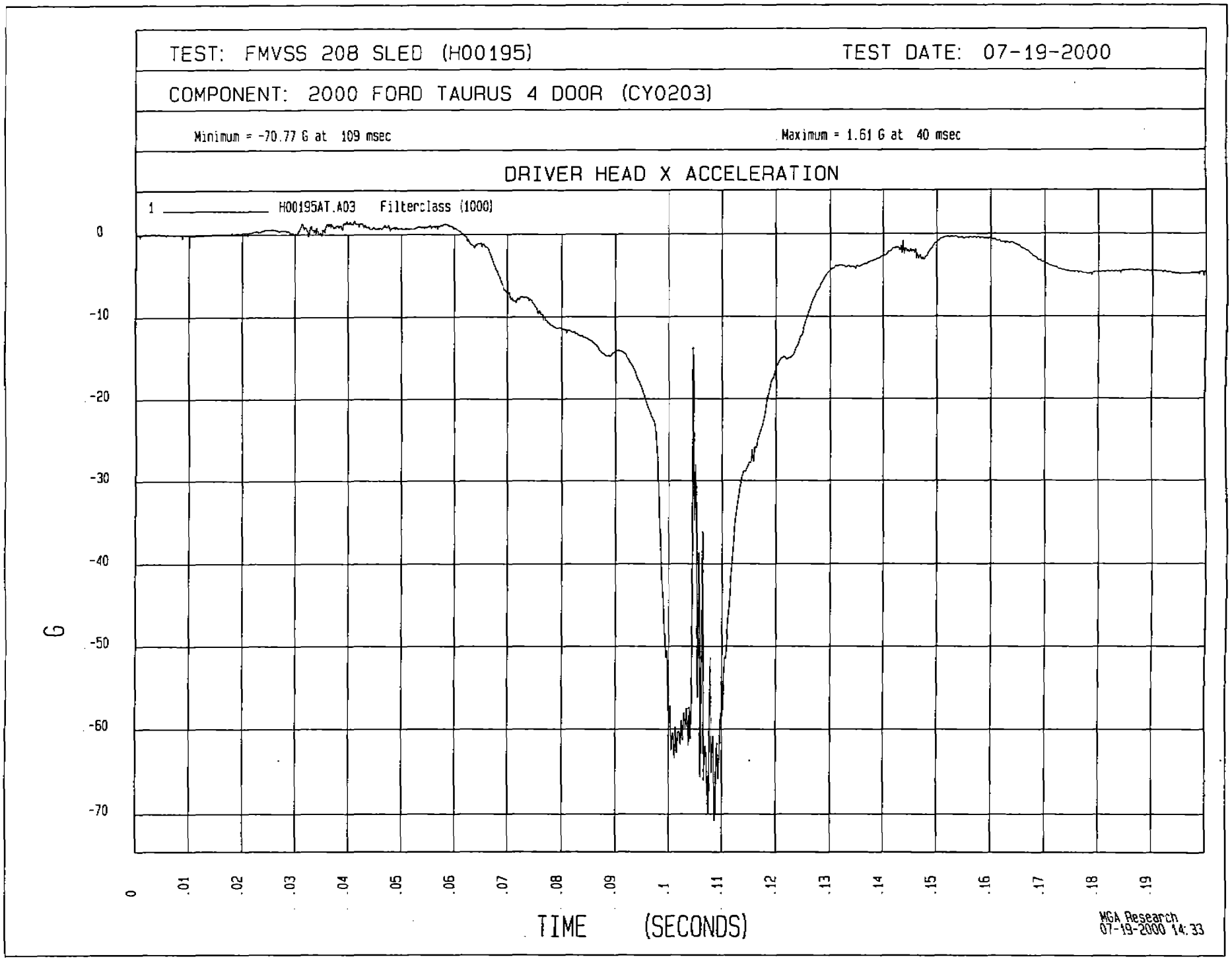

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1.29E-02 VOLTS at 0 msec
Maximum = 7.44 VOLTS at 130 msec
SECOND STAGE AIRBAG TIMING
1 H001950T.047 Filterclass (1000)
VOLTS
7
6
5
4
3
2
1
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 17:04

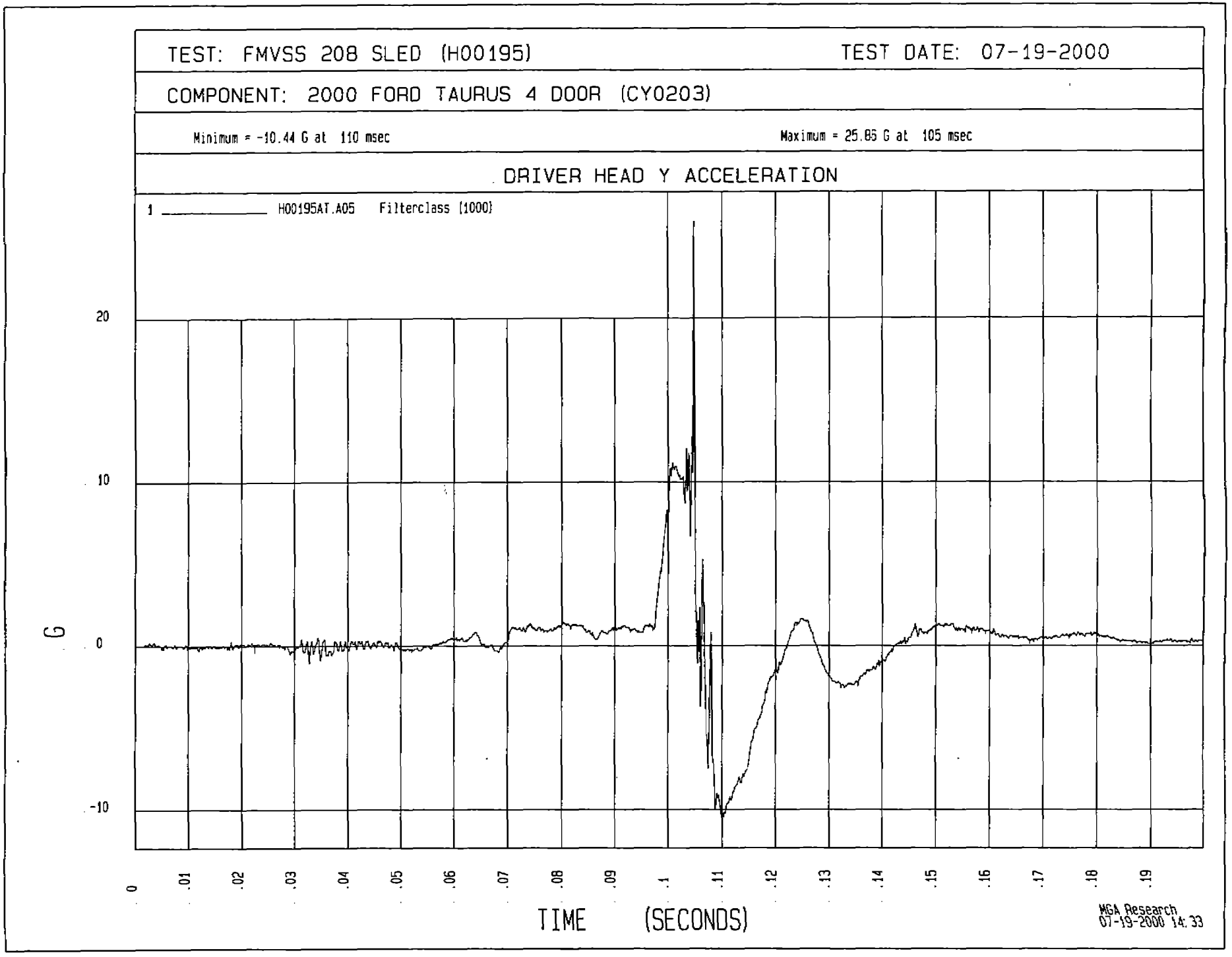

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1.67 G at 127 msec
Maximum = 17.53 G at 53 msec
LEFT REAR SEAT CROSSMEMBER X ACCELERATION
1 H00195AF.A43 Filterclass (60)
18
16
14
12
10
8
6
4
2
0
-2
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:35

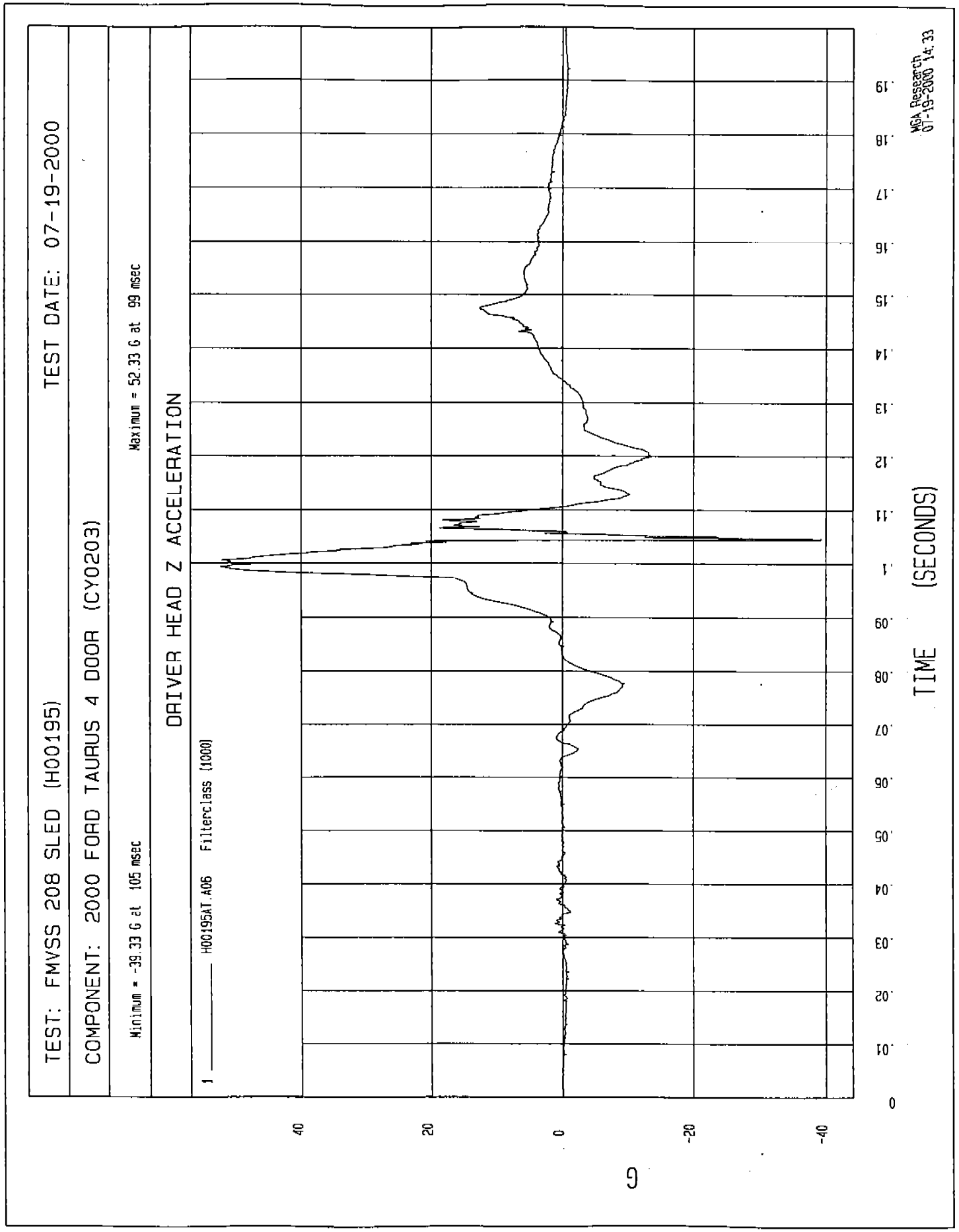

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1.77 G at 127 msec
Maximum = 17.61 G at 52 msec
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION
1 H00195AF.A44 Filterclass (60)
18
16
14
12
10
8
6
4
2
0
-2
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:35

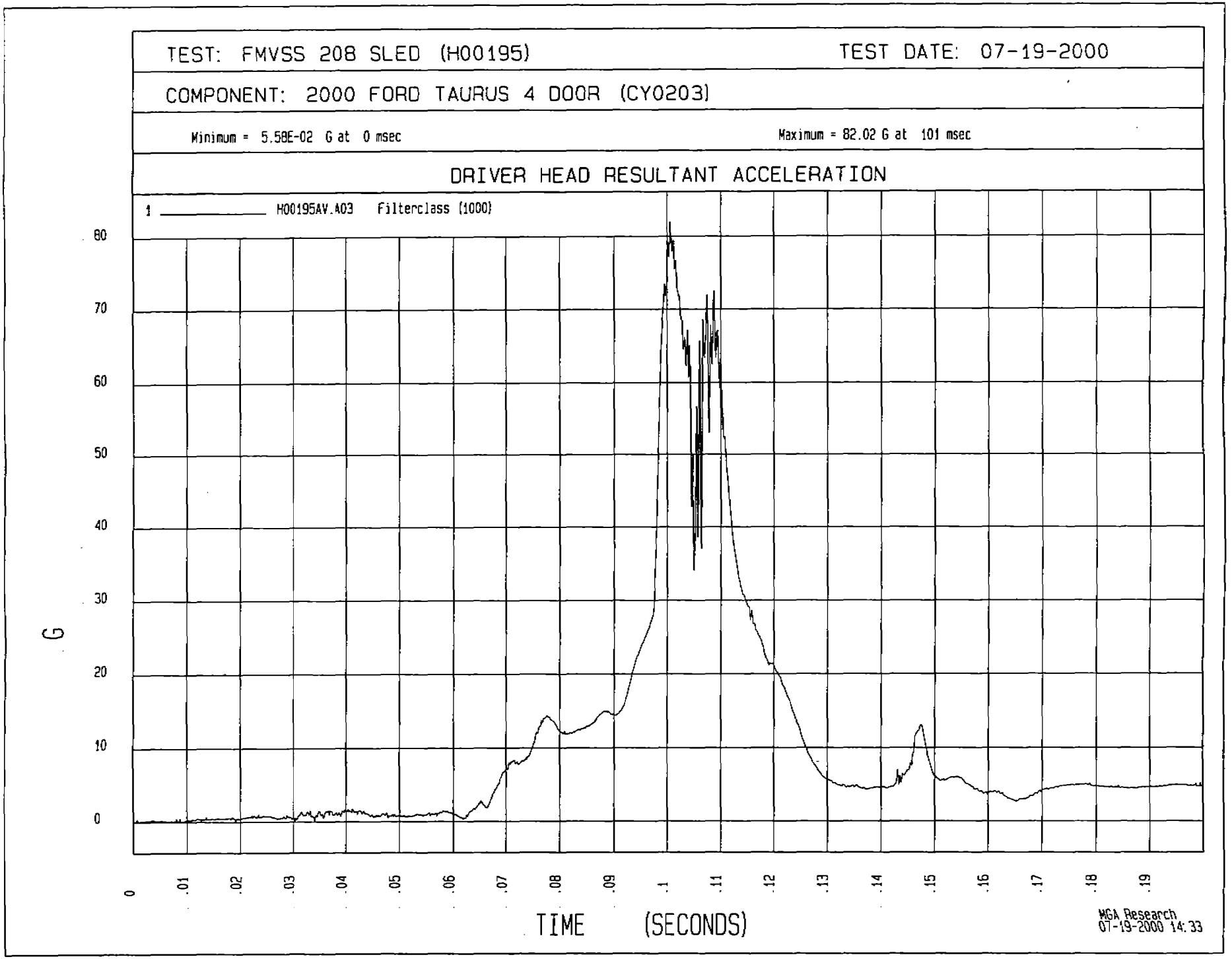

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -3.11 G at 131 msec
Maximum = 18.07 G at 60 msec
TOP OF ENGINE X ACCELERATION
1 H00195AF.A37 Filterclass (60)
18
16
14
12
10
8
6
4
2
0
-2
-4
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:35

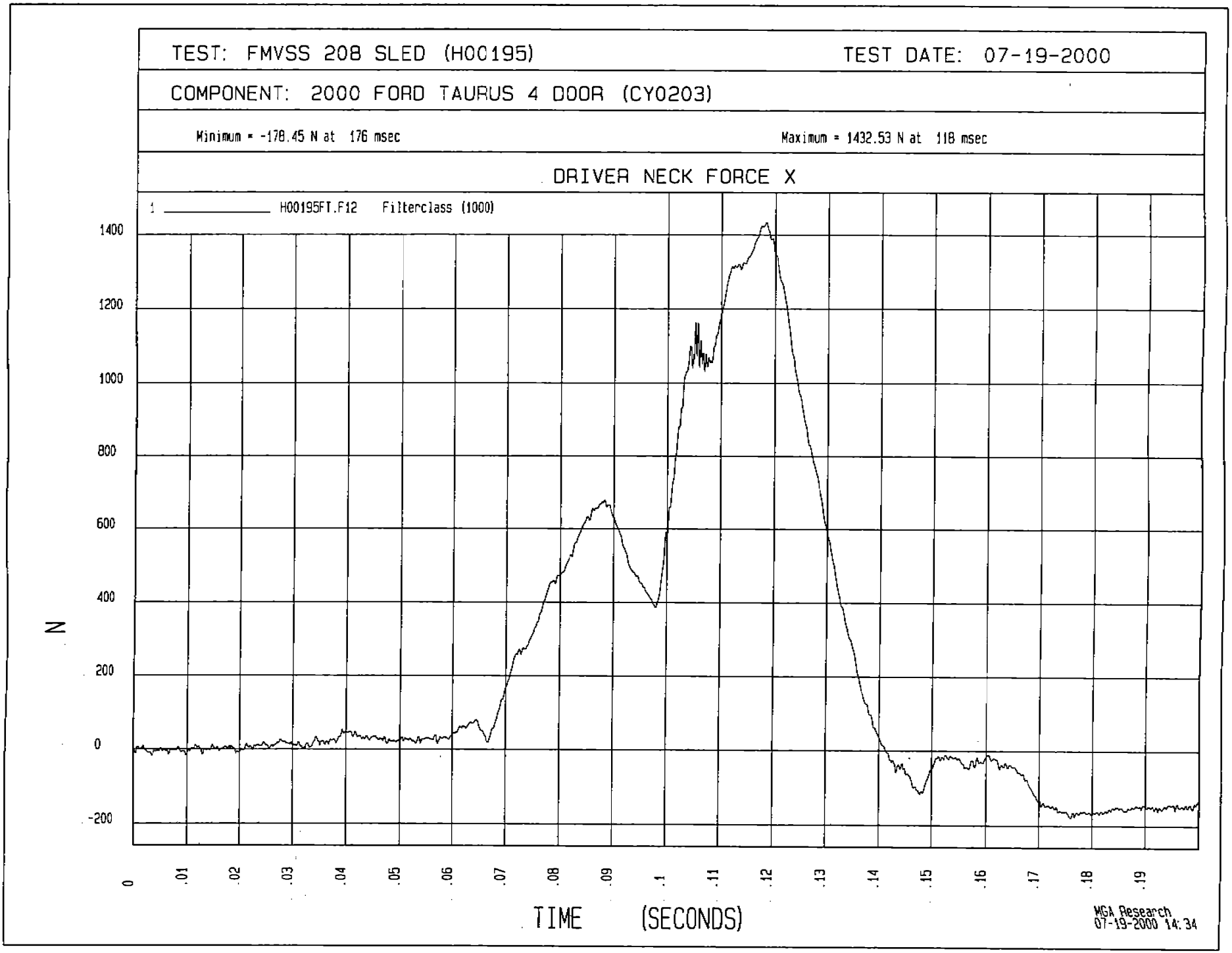

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1.59 G at 127 msec
Maximum = 17.67 G at 69 msec
REAR AXLE X ACCELERATION
1 H00195AF.A41 Filterclass (60)
G
18
16
14
12
10
8
6
4
2
0
-2
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:35

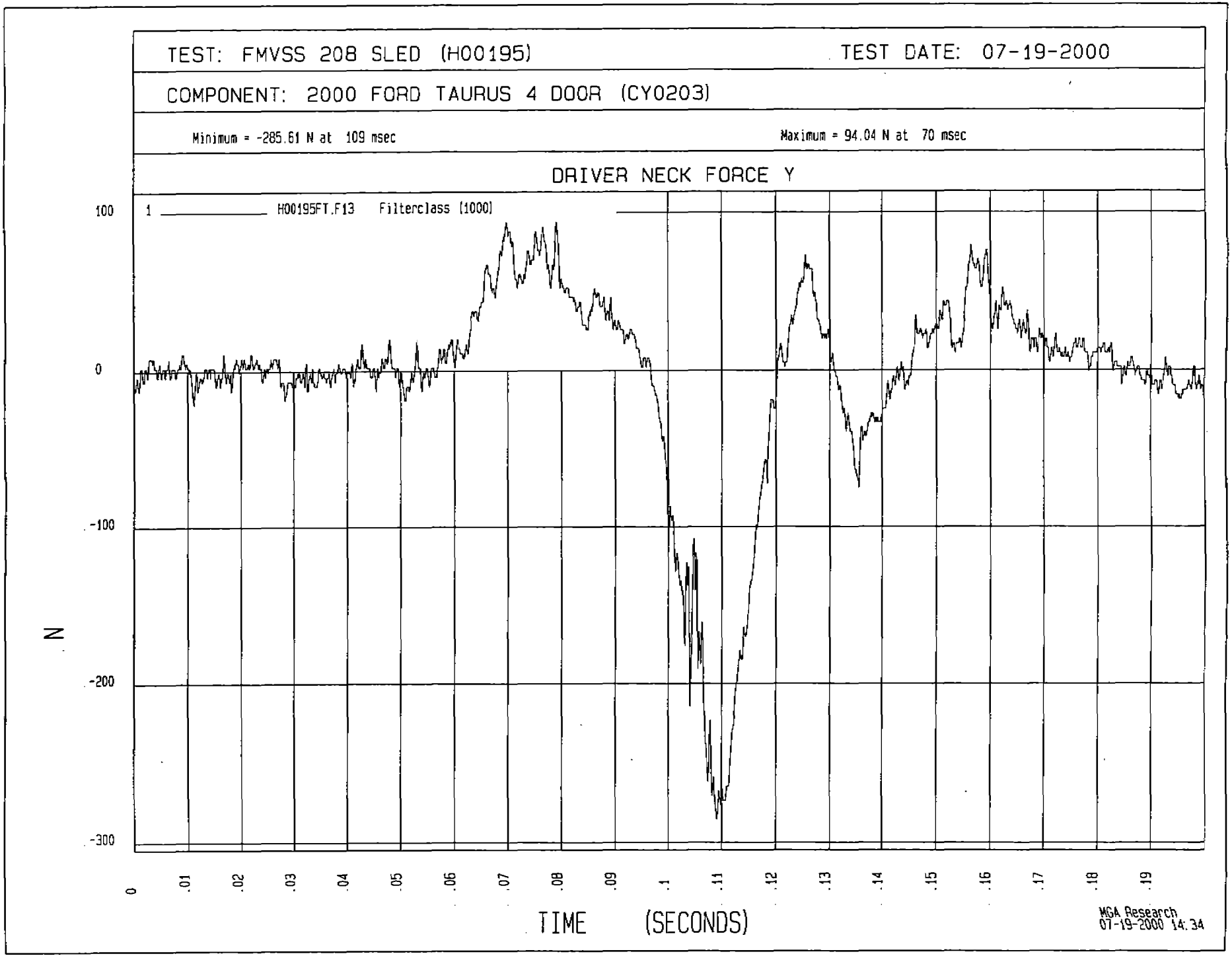

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -70.77 G at 109 msec
Maximum = 1.61 G at 40 msec
DRIVER HEAD X ACCELERATION
1 H00195AT.A03 Filterclass (1000)
0
-10
-20
-30
-40
-50
-60
-70
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:33

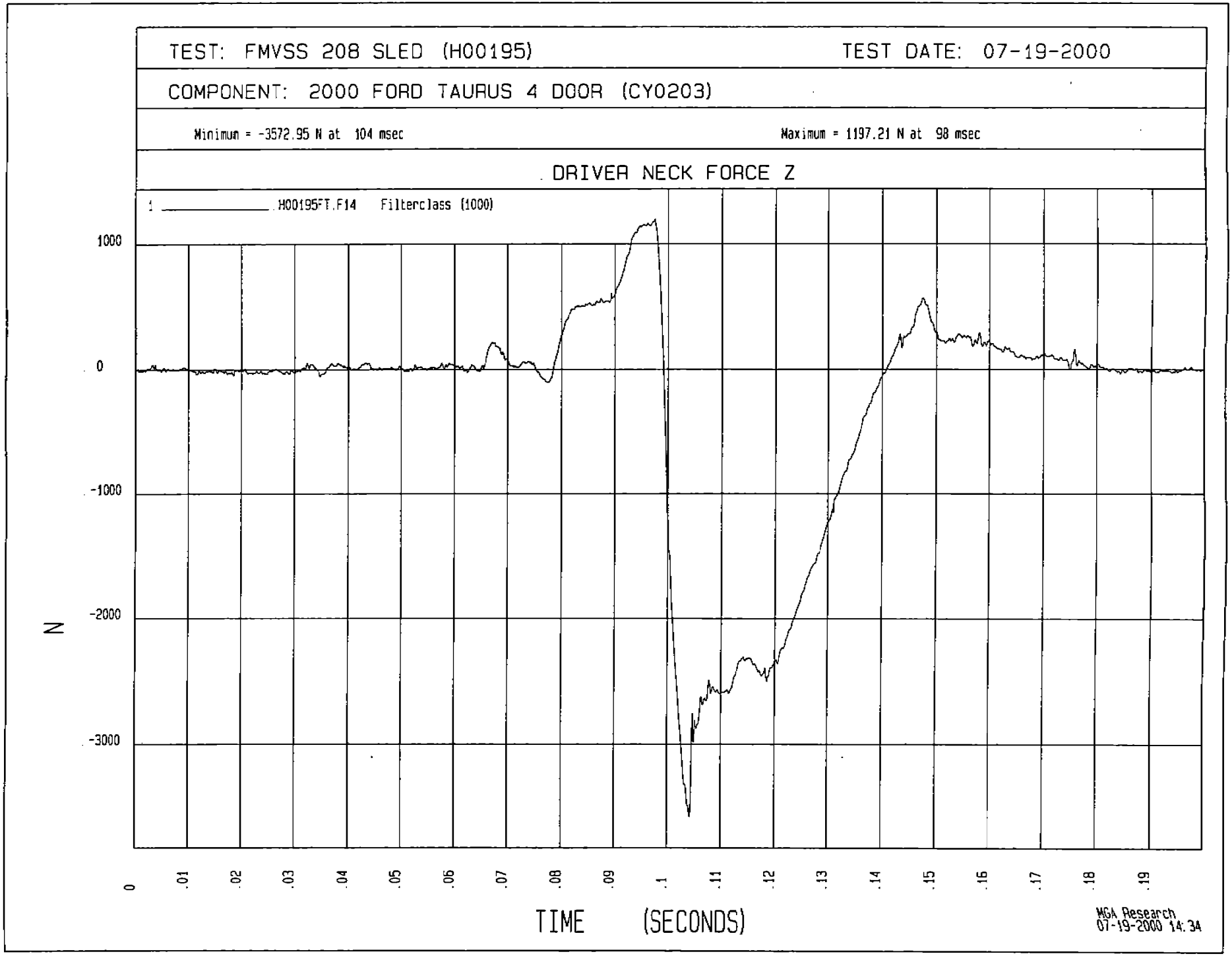

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -10.44 G at 110 msec
Maximum = 25.85 G at 105 msec
DRIVER HEAD Y ACCELERATION
1 H00195AT.A05 Filterclass (1000)
20
10
0
-10
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:33

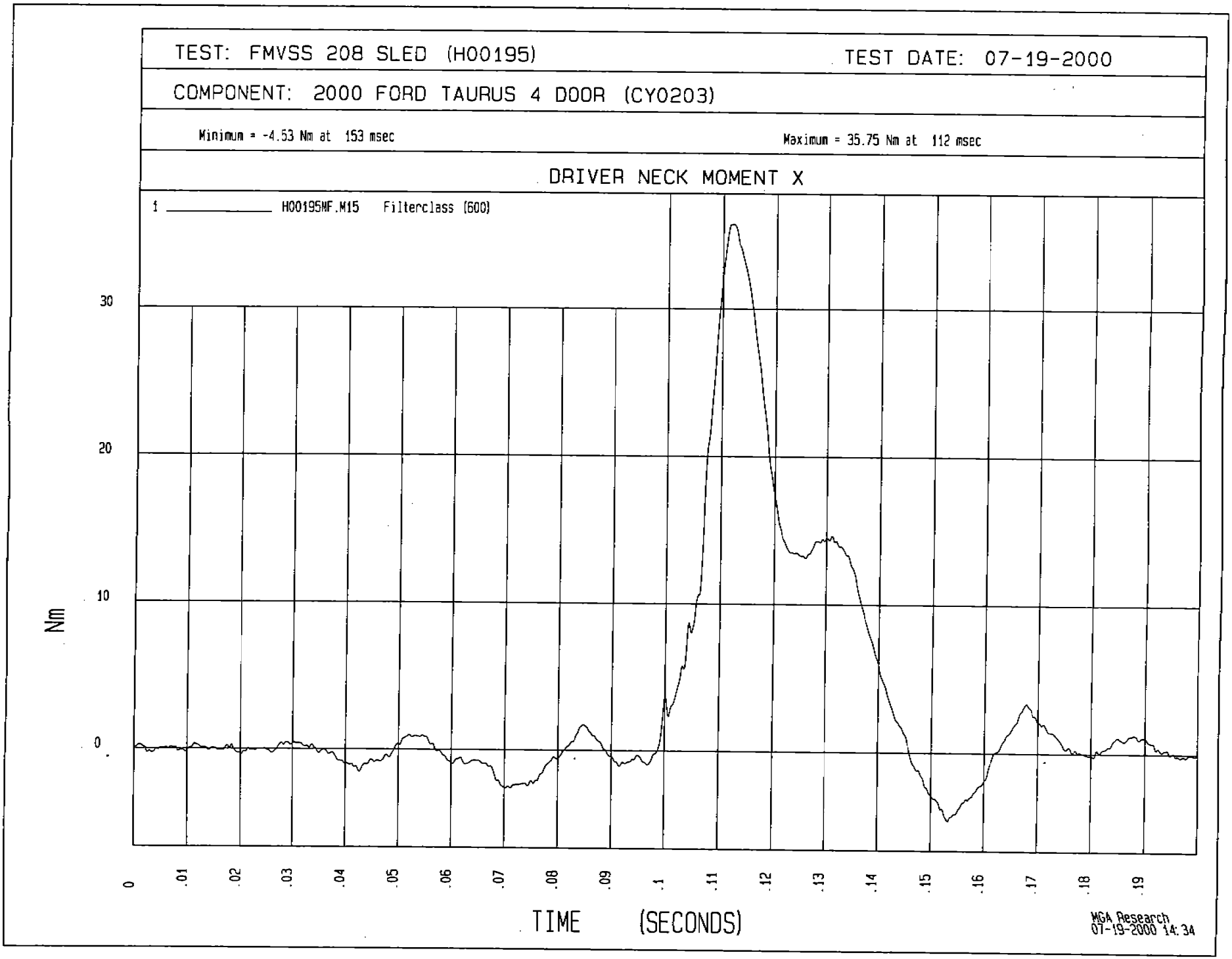

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -39.33 G at 105 msec
Maximum = 52.33 G at 99 msec
DRIVER HEAD Z ACCELERATION
1 H00195AT.A06 Filterclass (1000)
40
20
0
-20
-40
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
07-19-2000 14:33

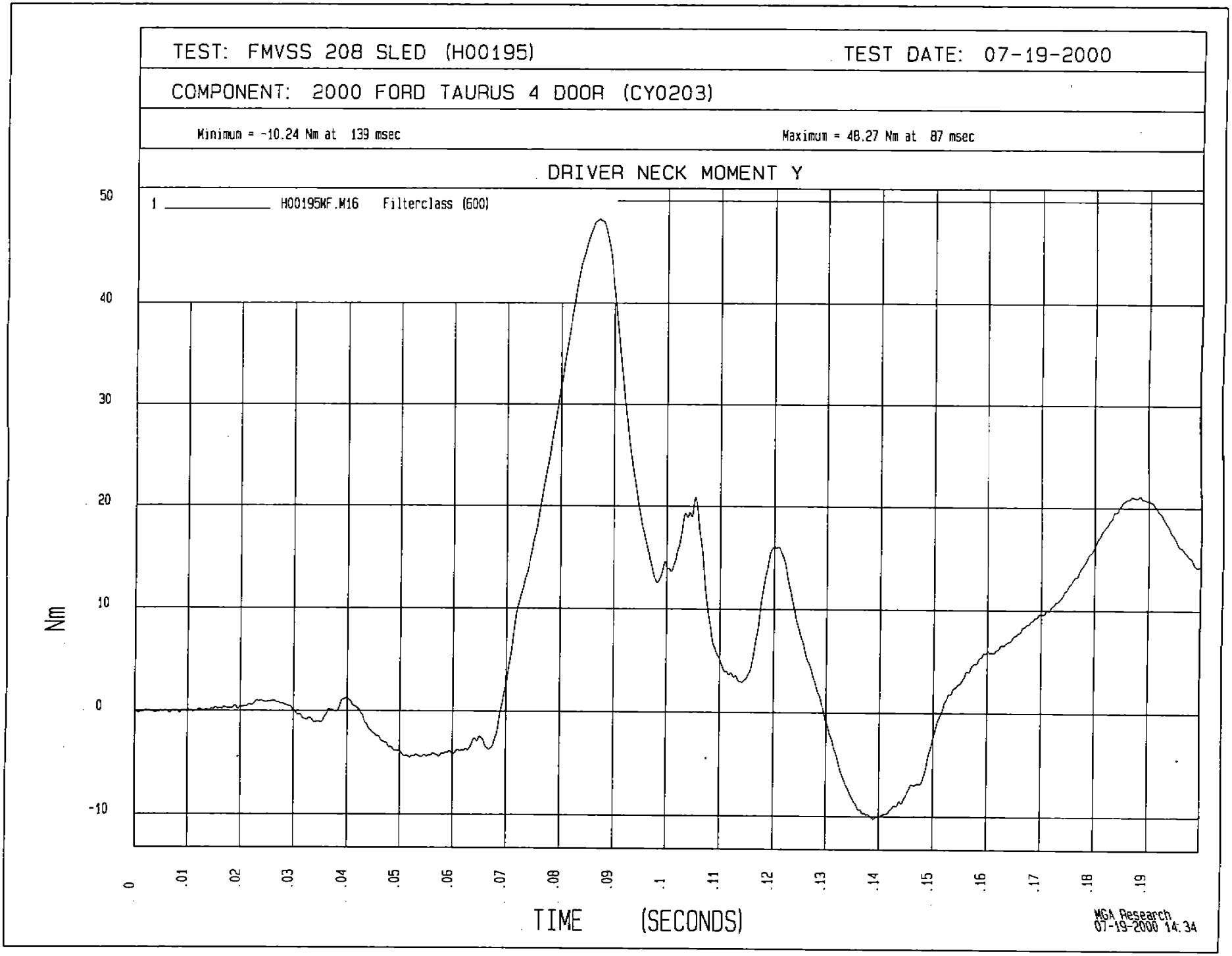

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = 5.58E-02 G at 0 msec
Maximum = 82.02 G at 101 msec
DRIVER HEAD RESULTANT ACCELERATION
1 H00195AV.A03 Filterclass (1000)
G
80
70
60
50
40
30
20
10
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:33

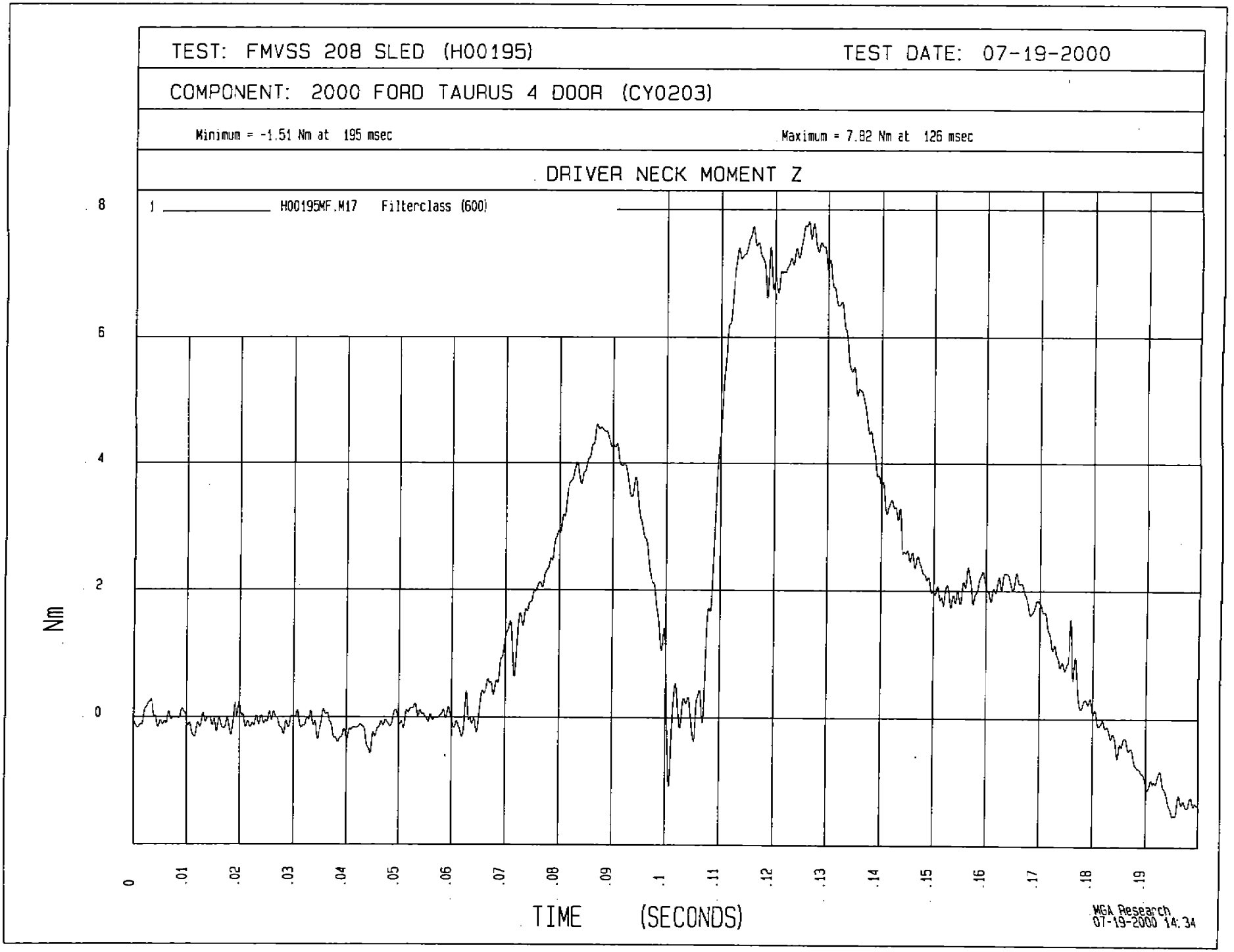

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -178.45 N at 176 msec
Maximum = 1432.53 N at 118 msec
DRIVER NECK FORCE X
1 H00195FT.F12 Filterclass (1000)
1400
1200
1000
800
600
400
200
0
-200
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

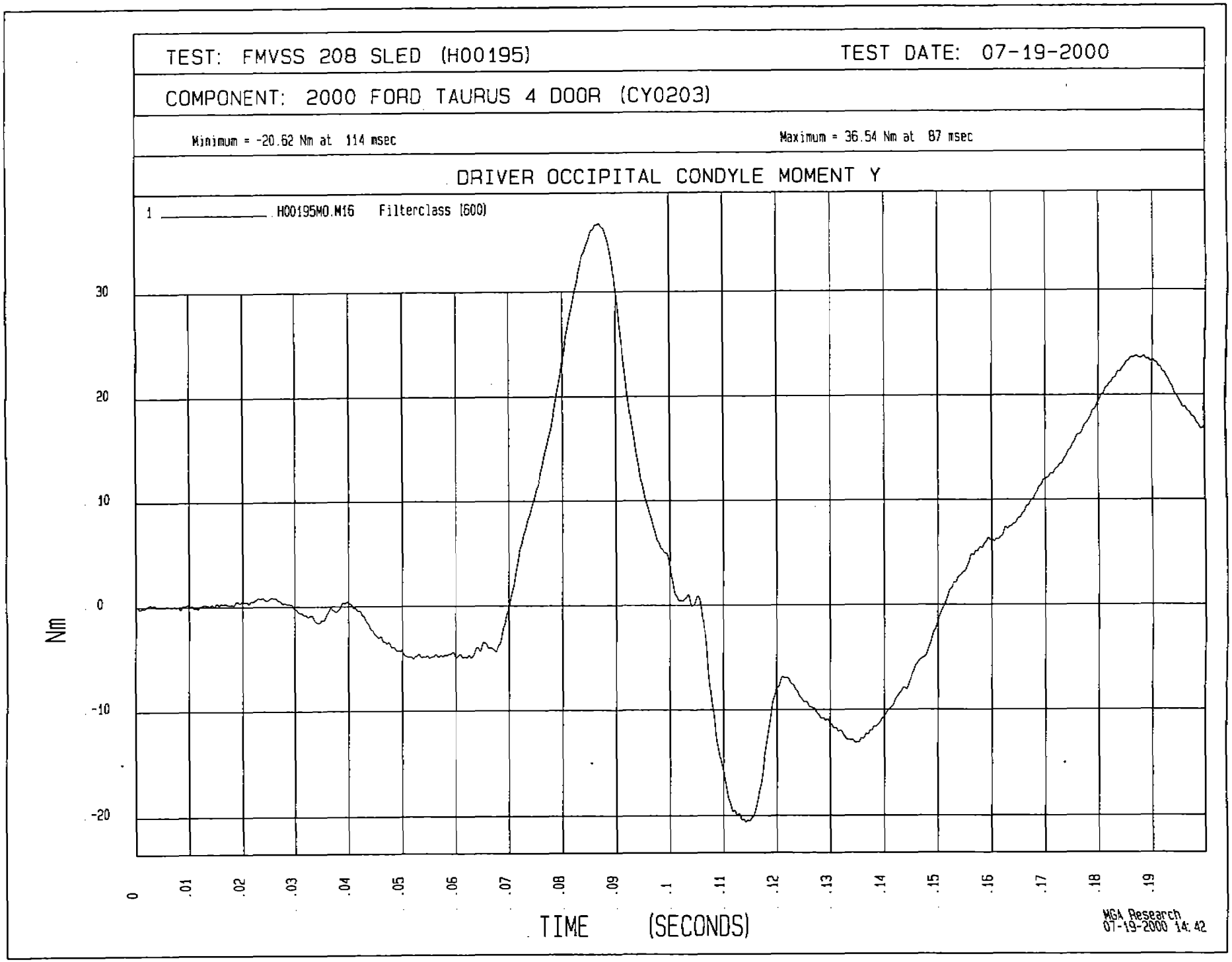

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -285.61 N at 109 msec
Maximum = 94.04 N at 70 msec
DRIVER NECK FORCE Y
1 H00195FT.F13 Filterclass (1000)
100
0
-100
-200
-300
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

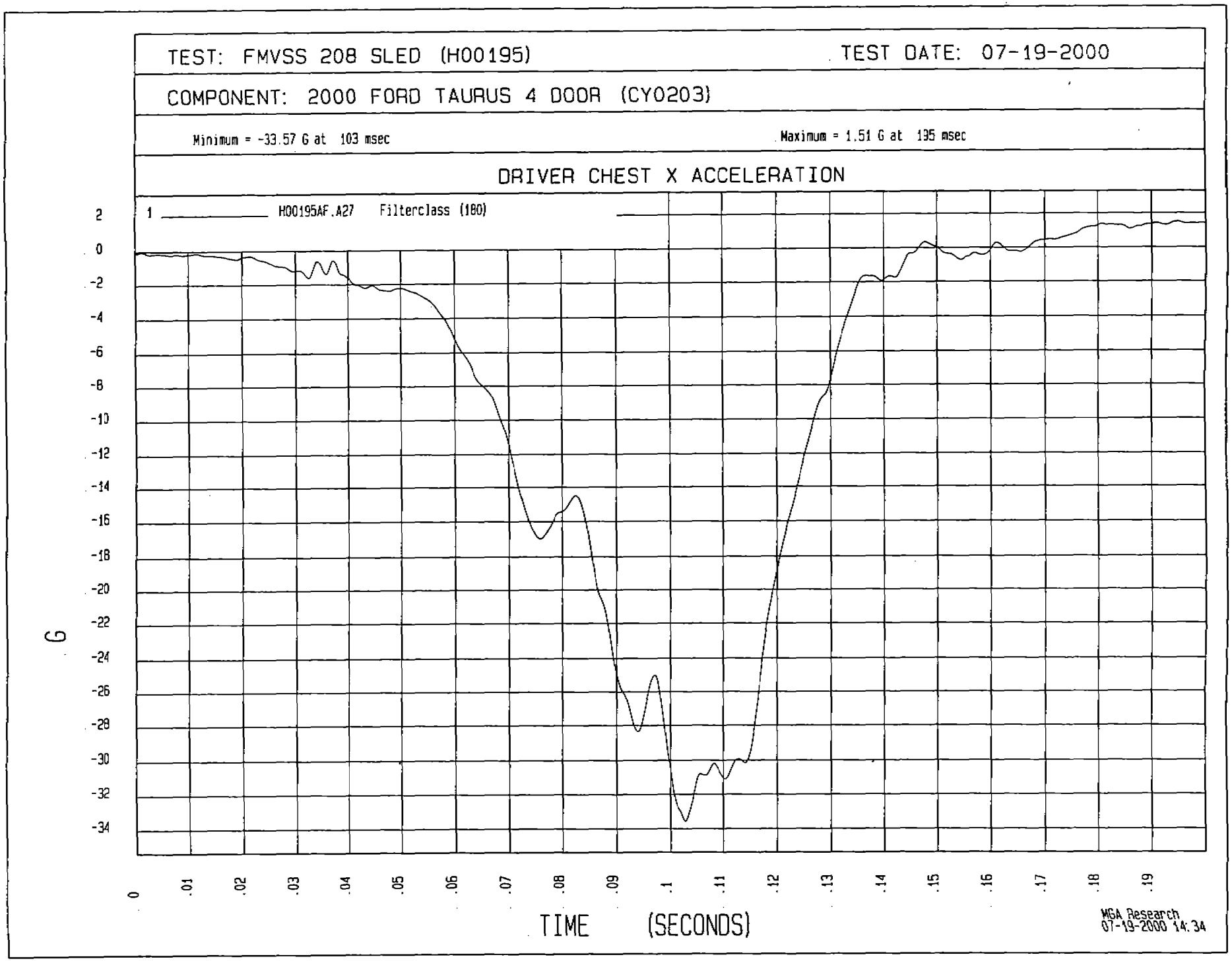

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -3572.95 N at 104 msec
Maximum = 1197.21 N at 98 msec
DRIVER NECK FORCE Z
1 _____ H00195FT.F14 Filterclass (1000)
1000
0
-1000
-2000
-3000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

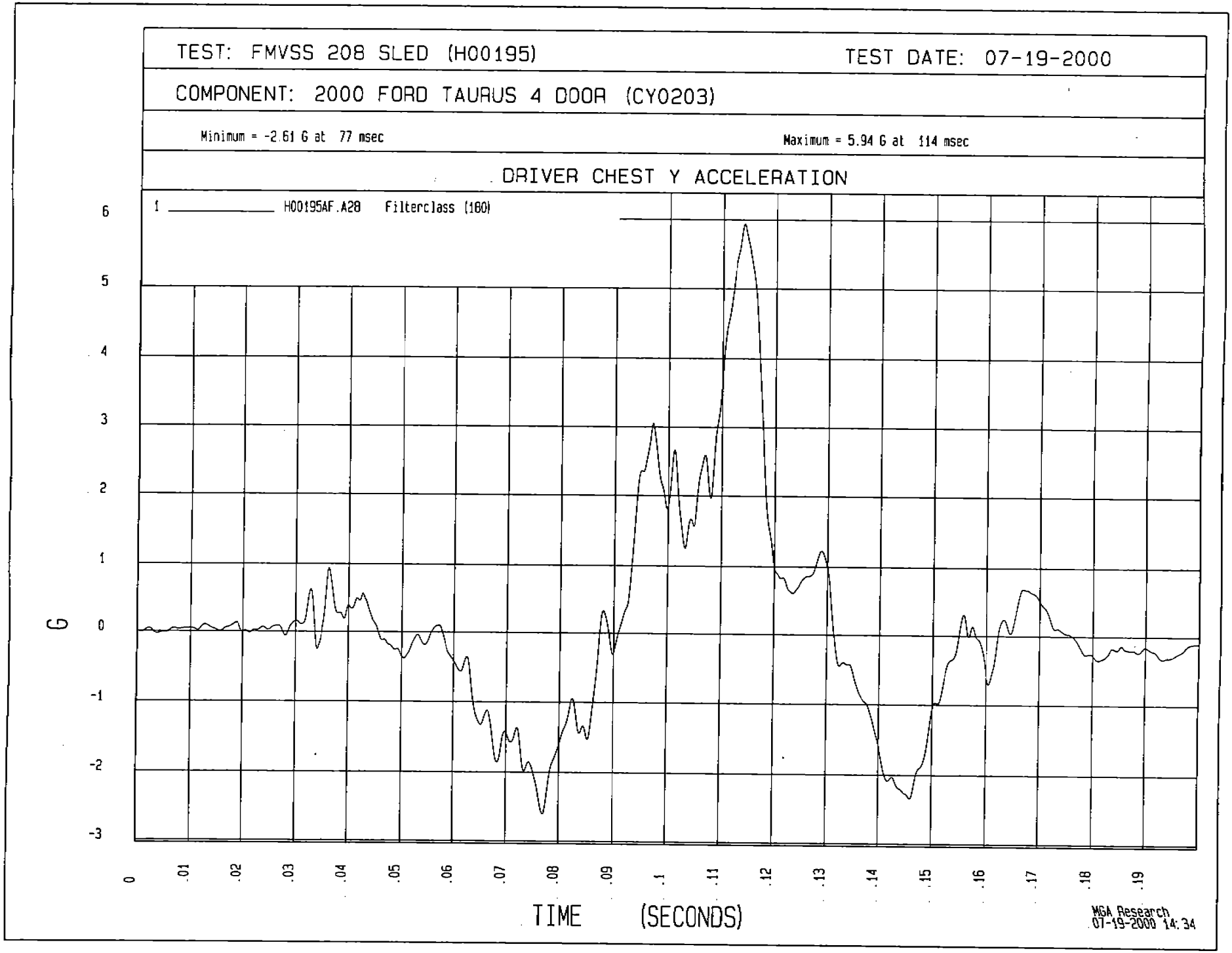

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -4.53 Nm at 153 msec
Maximum = 35.75 Nm at 112 msec
DRIVER NECK MOMENT X
1 H00195MF.M15 Filterclass (600)
30
20
10
0
Nm
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

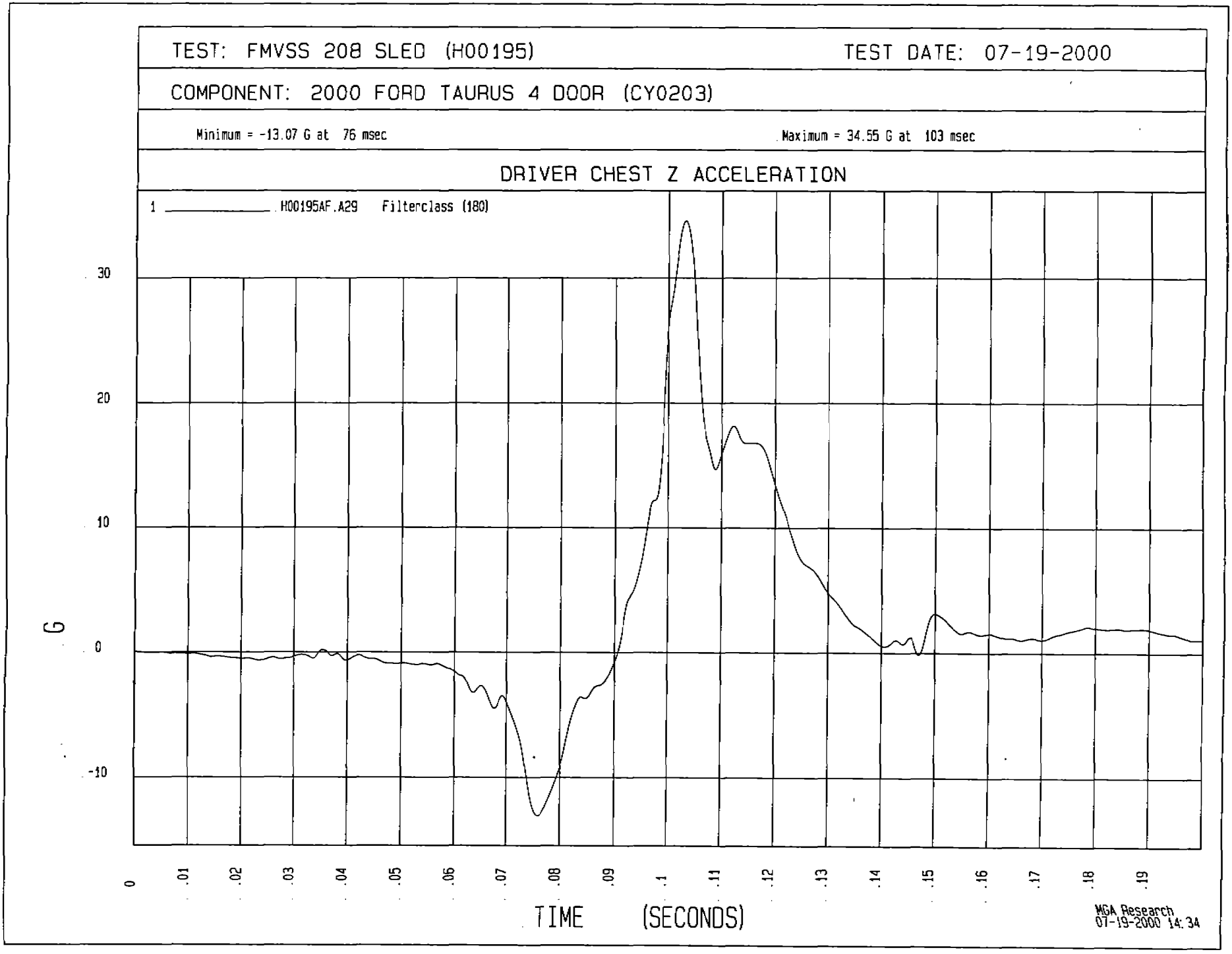

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -10.24 Nm at 139 msec
Maximum = 48.27 Nm at 87 msec
DRIVER NECK MOMENT Y
1 H00195MF.M16 Filterclass (600)
50
40
30
20
10
0
-10
Nm
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

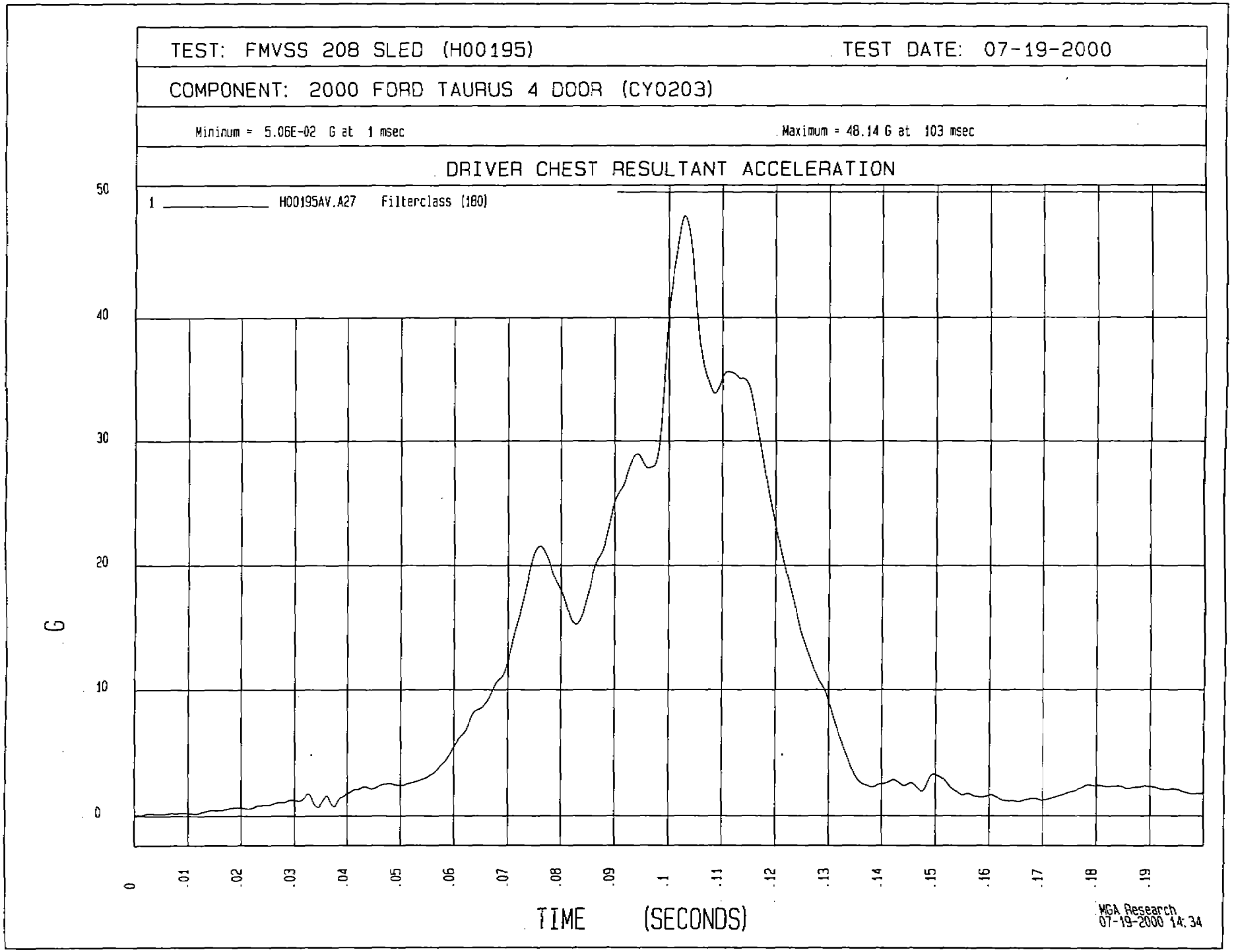

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1.51 Nm at 195 msec
Maximum = 7.82 Nm at 126 msec
DRIVER NECK MOMENT Z
1 H00195MF.M17 Filterclass (600)
Nm
8
6
4
2
0
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

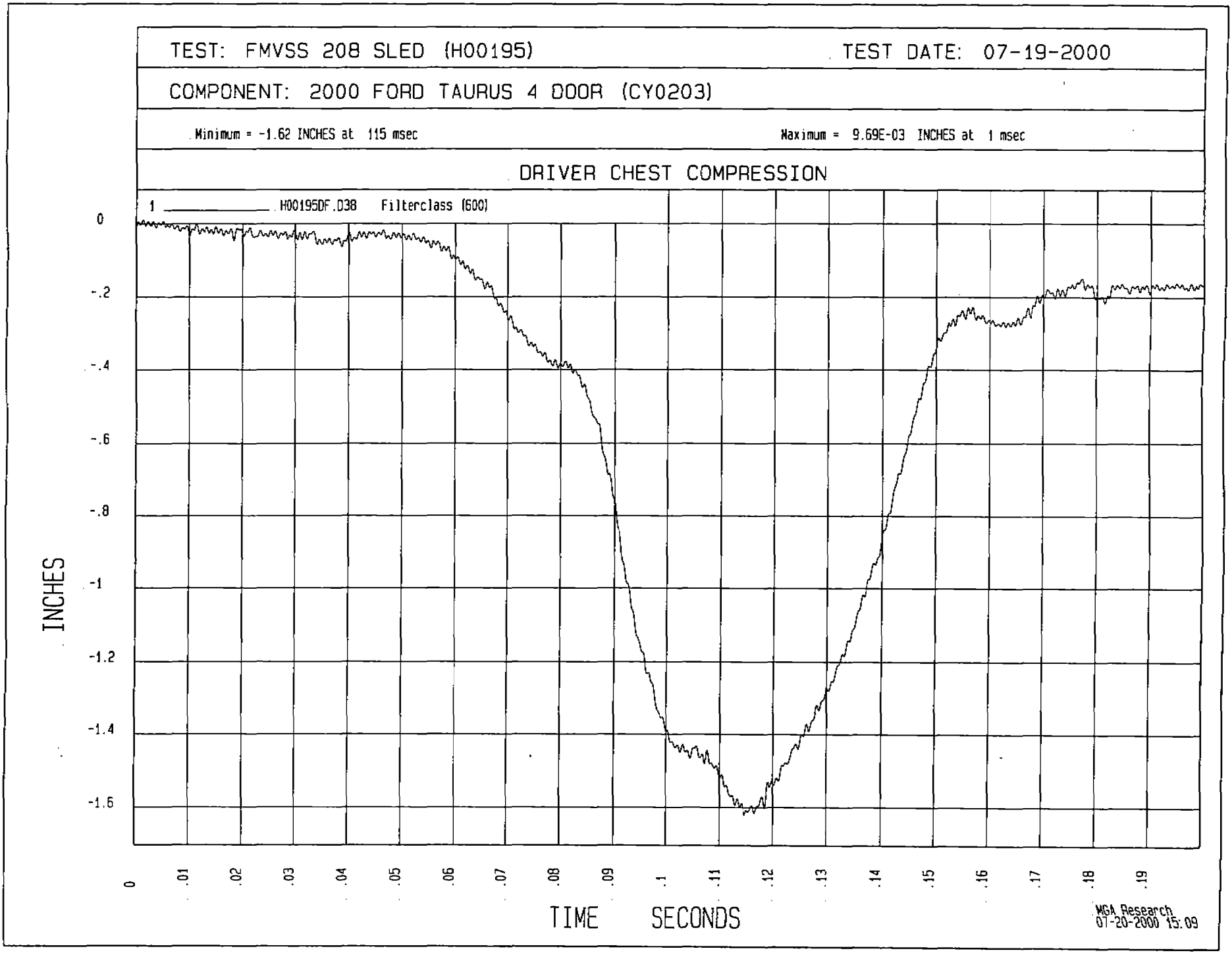

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -20.62 Nm at 114 msec
Maximum = 36.54 Nm at 87 msec
DRIVER OCCIPITAL CONDYLE MOMENT Y
1 H00195MO.M16 Filterclass (600)
Nm
30
20
10
0
-10
-20
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:42

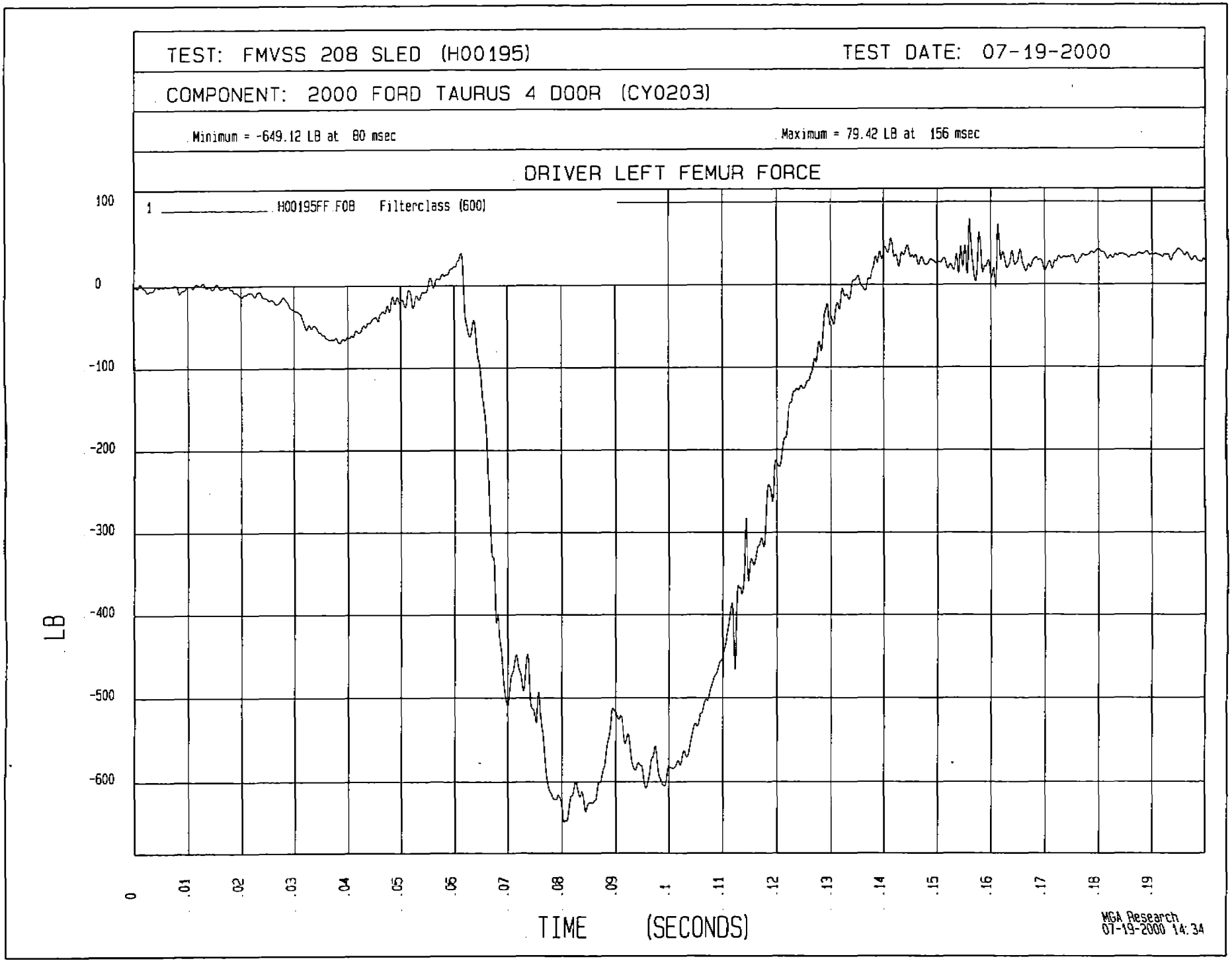

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -33.57 G at 103 msec
Maximum = 1.51 G at 195 msec
DRIVER CHEST X ACCELERATION
1 H00195AF.A27 Filterclass (180)
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

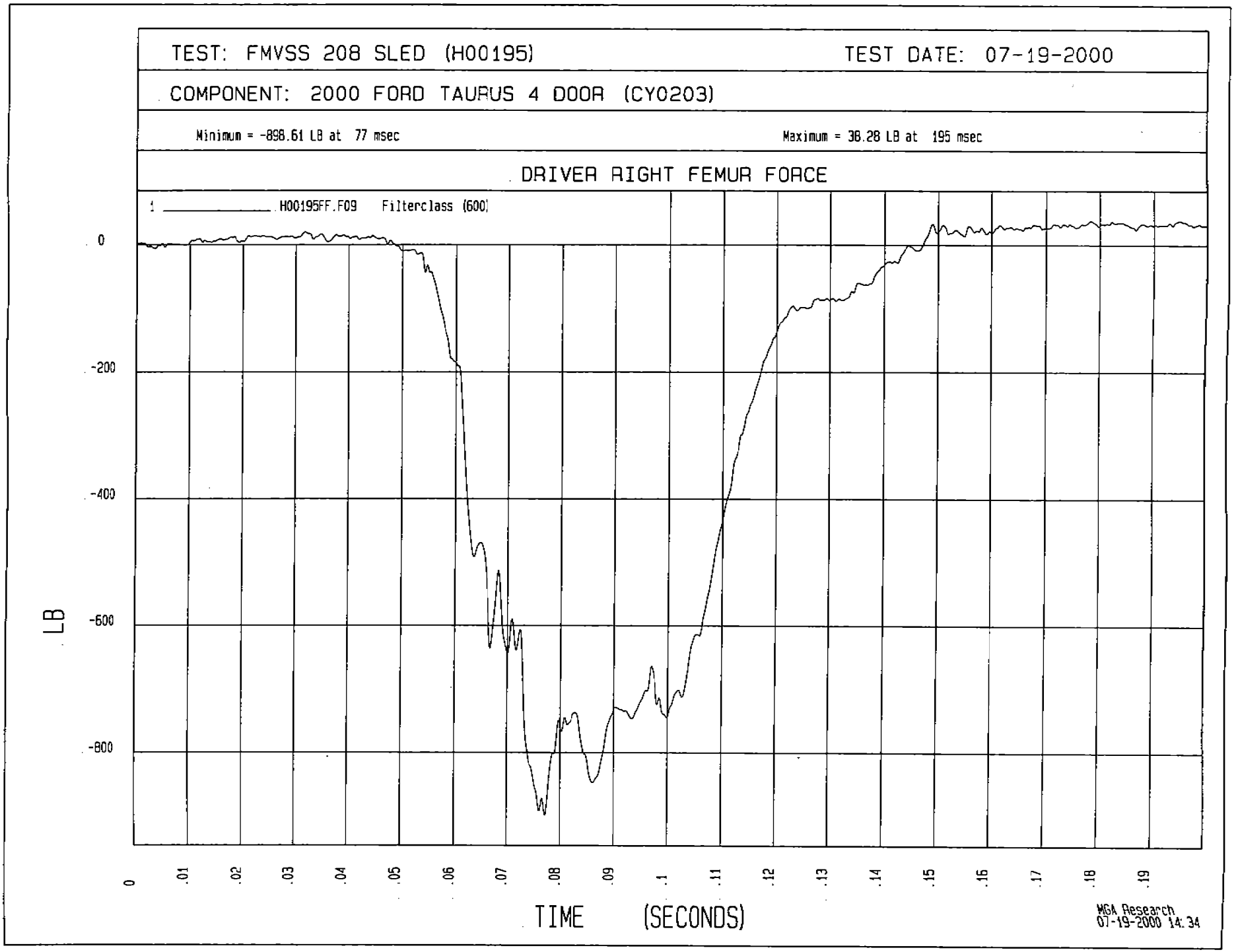

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -2.61 G at 77 msec
Maximum = 5.94 G at 114 msec
DRIVER CHEST Y ACCELERATION
1 H00195AF.A28 Filterclass (180)
6
5
4
3
2
1
0
-1
-2
-3
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

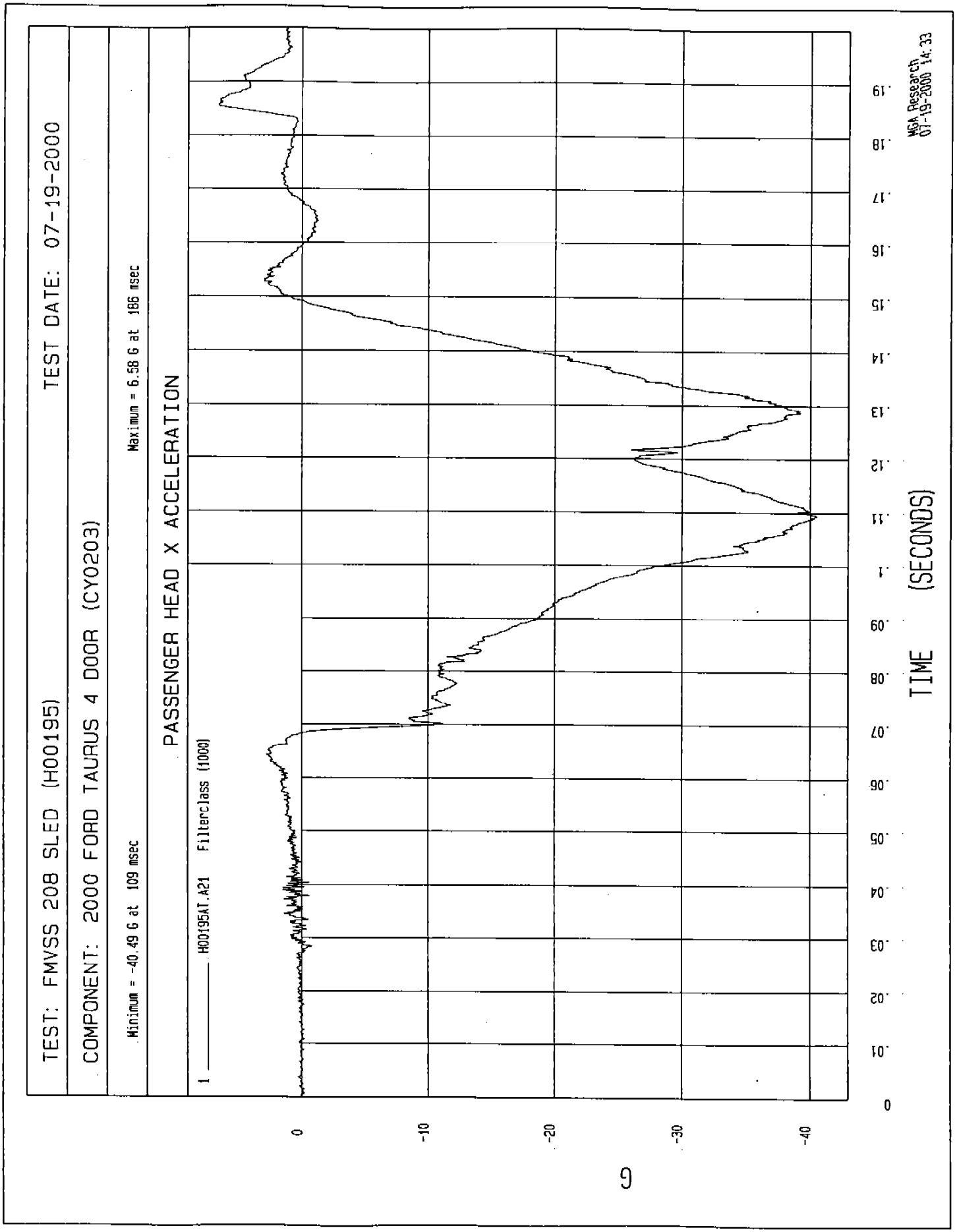

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -13.07 G at 76 msec
Maximum = 34.55 G at 103 msec
DRIVER CHEST Z ACCELERATION
1 H00195AF.A29 Filterclass (180)
30
20
10
0
-10
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

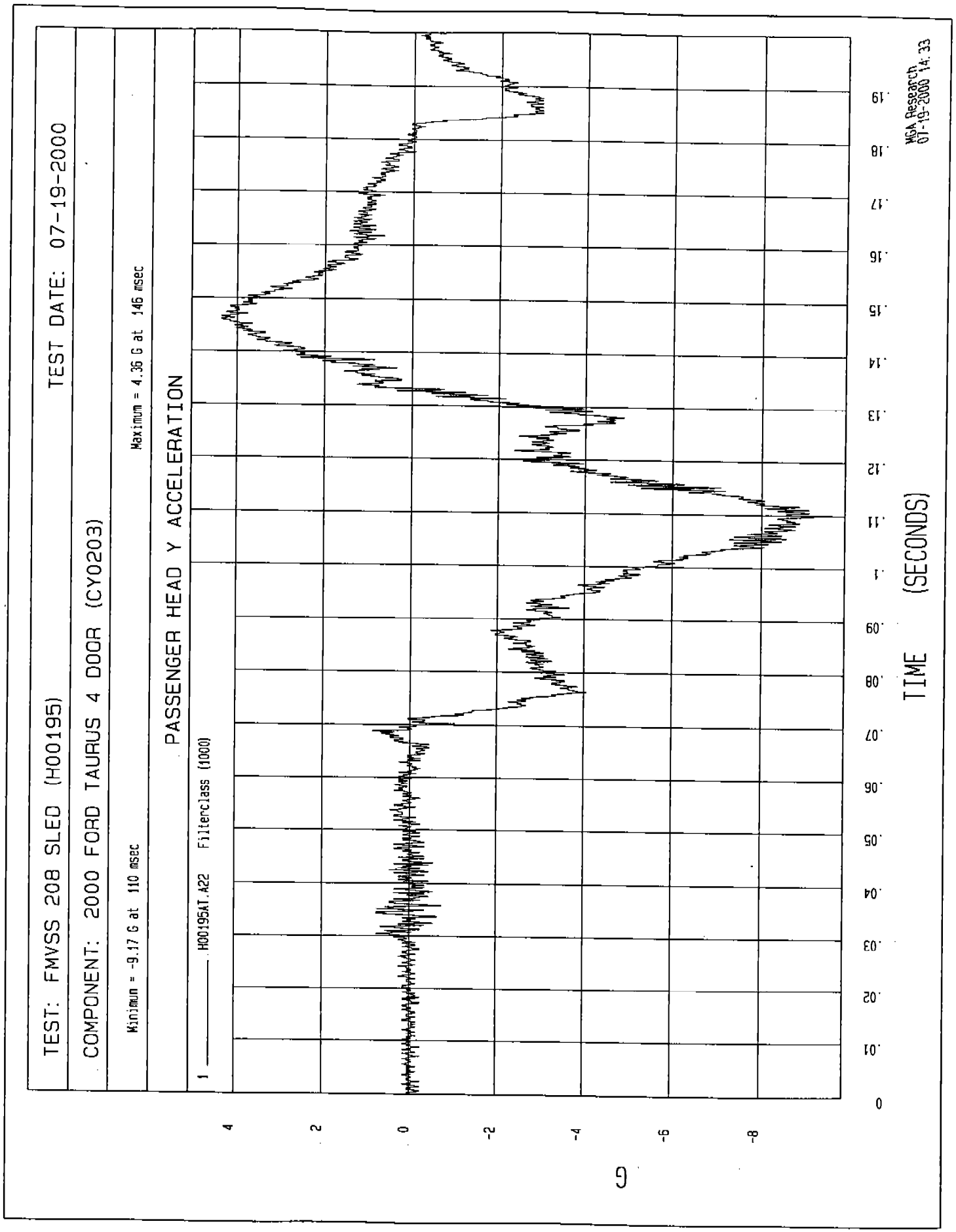

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = 5.06E-02 G at 1 msec
Maximum = 48.14 G at 103 msec
DRIVER CHEST RESULTANT ACCELERATION
1 H00195AV.A27 Filterclass (180)
G
50
40
30
20
10
0
0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

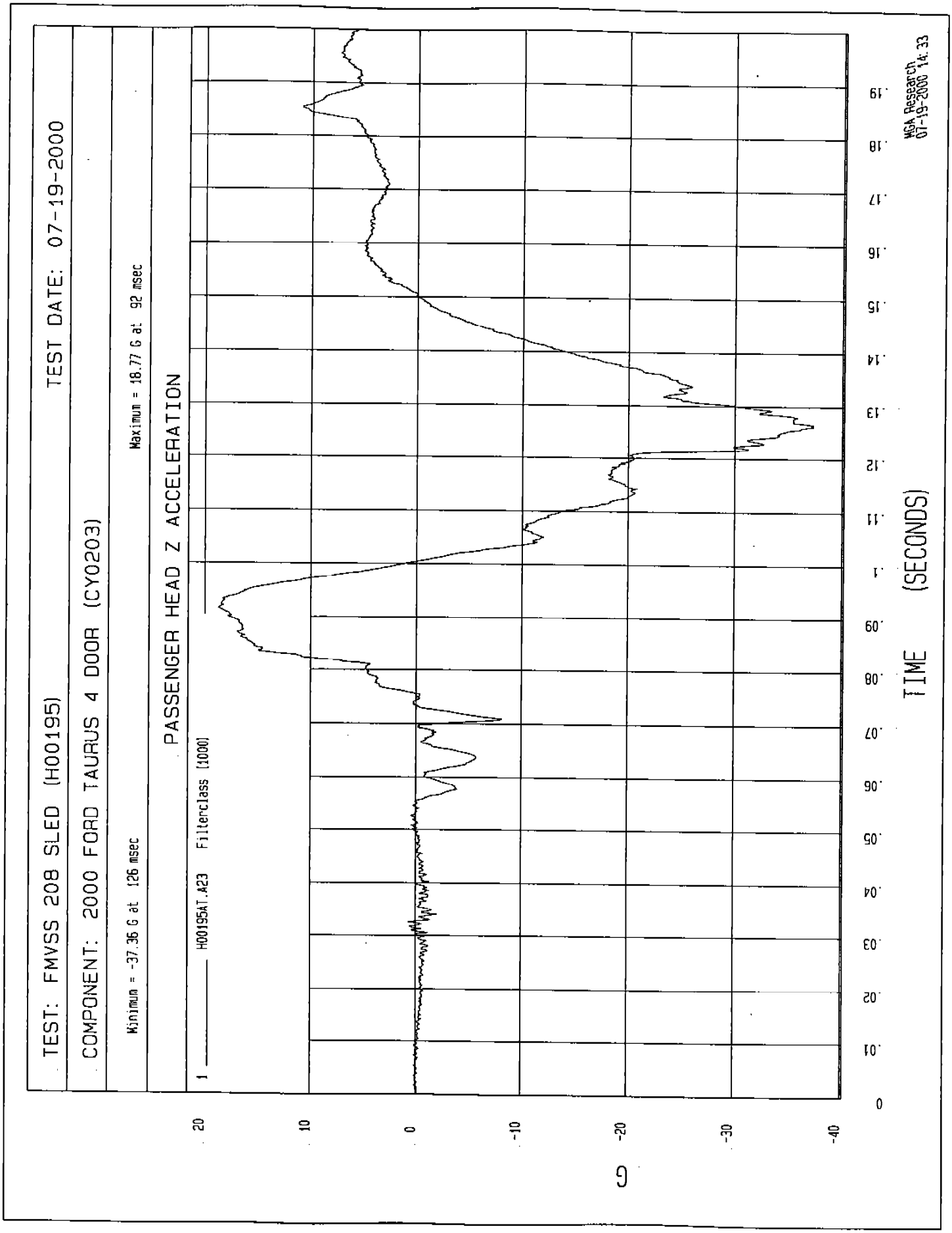

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1.62 INCHES at 115 msec
Maximum = 9.69E-03 INCHES at 1 msec
DRIVER CHEST COMPRESSION
1 H00195DF.D38 Filterclass (600)
INCHES
0
-.2
-.4
-.6
-.8
-1
-1.2
-1.4
-1.6
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME SECONDS
MGA Research
07-20-2000 15:09

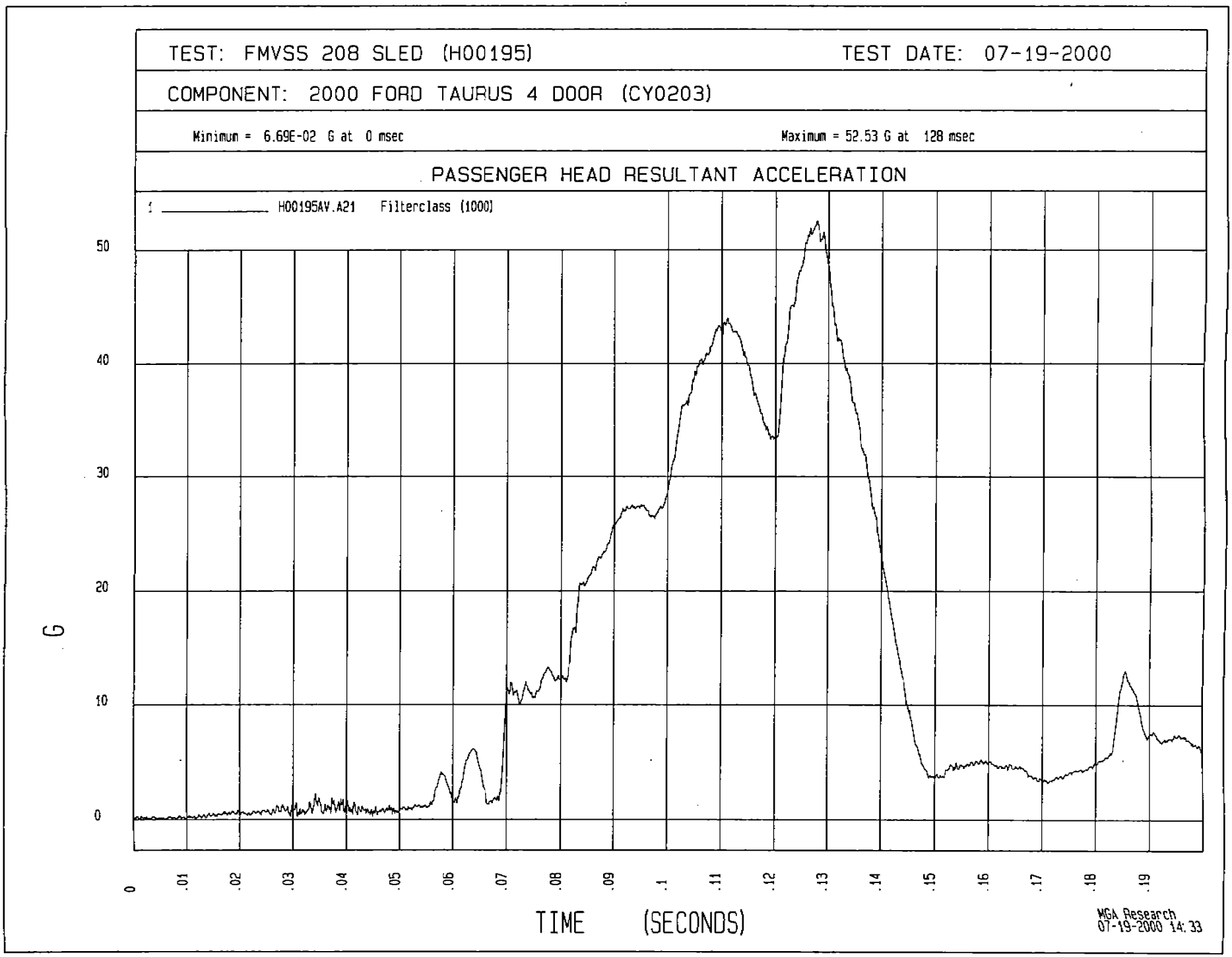

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -649.12 LB at 80 msec
Maximum = 79.42 LB at 156 msec
DRIVER LEFT FEMUR FORCE
1 H00195FF.F08 Filterclass (600)
100
0
-100
-200
-300
-400
-500
-600
LB
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

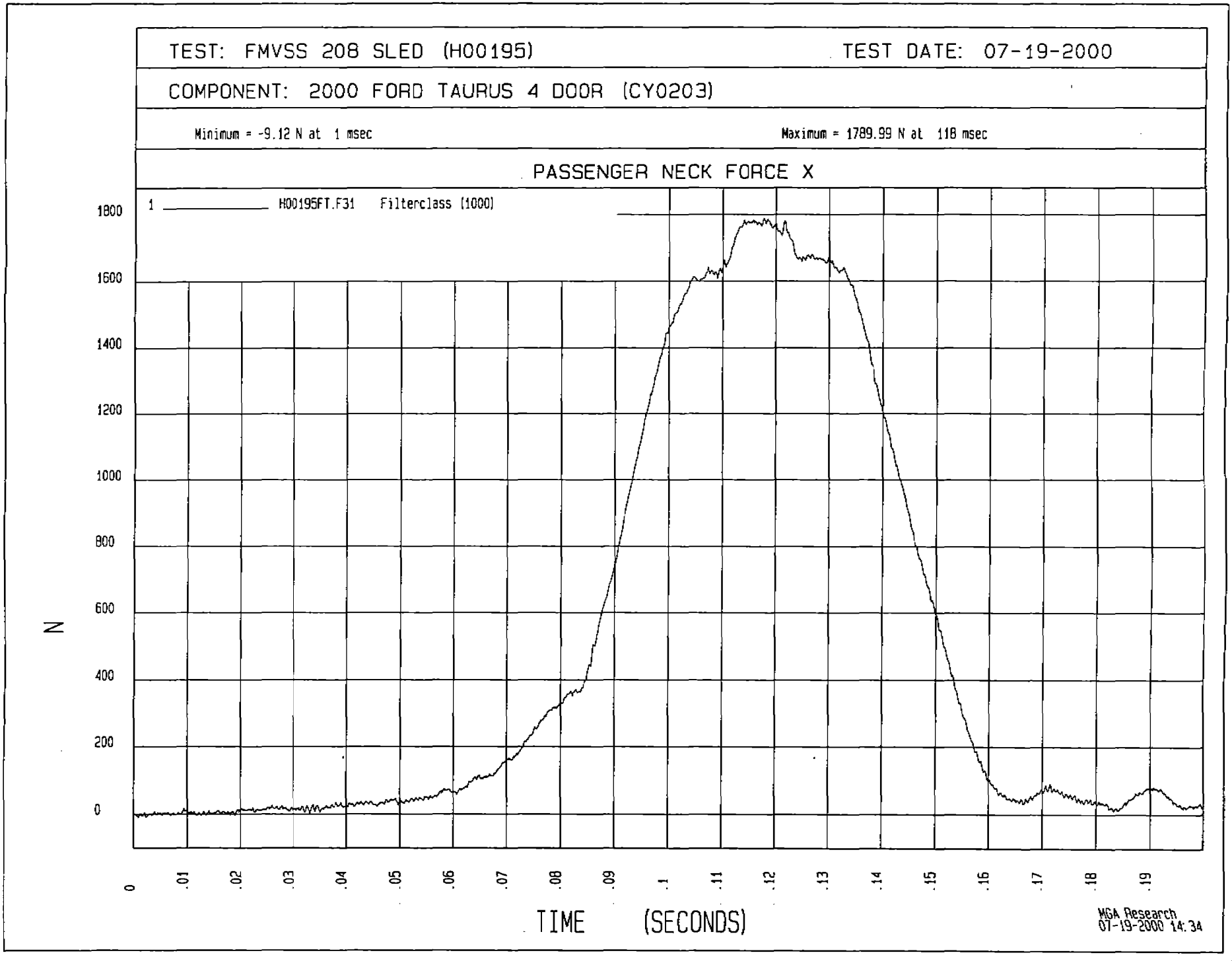

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -898.61 LB at 77 msec
Maximum = 38.28 LB at 195 msec
DRIVER RIGHT FEMUR FORCE
1 H00195FF.F09 Filterclass (600)
0
-200
-400
-600
-800
LB
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

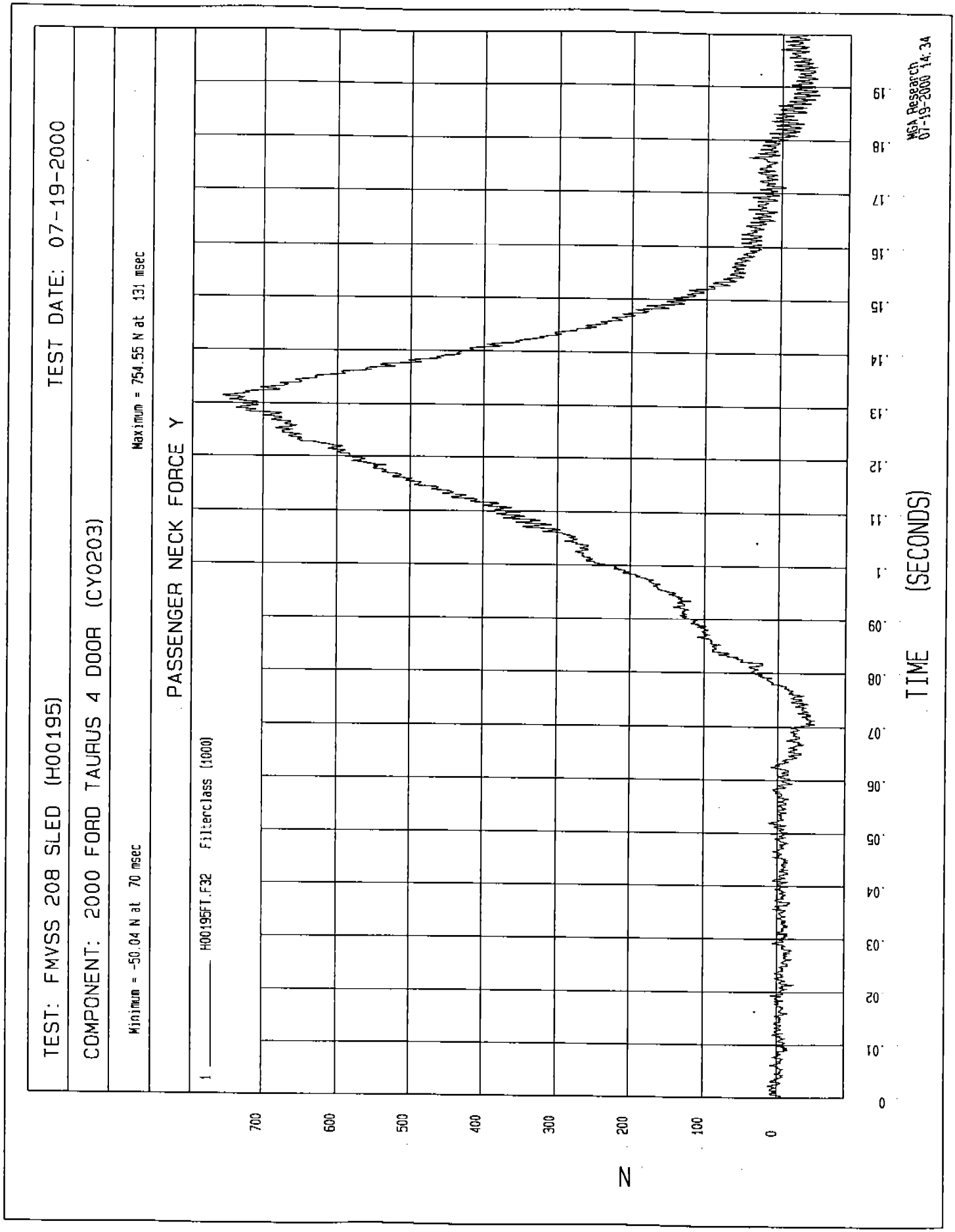

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -40.49 G at 109 msec
Maximum = 6.58 G at 186 msec
PASSENGER HEAD X ACCELERATION
1 _____ H00195AT.A21 Filterclass (1000)
0
-10
-20
-30
-40
TIME (SECONDS)
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
1
11
12
13
14
15
16
17
18
19
MGA Research
07-19-2000 14:33

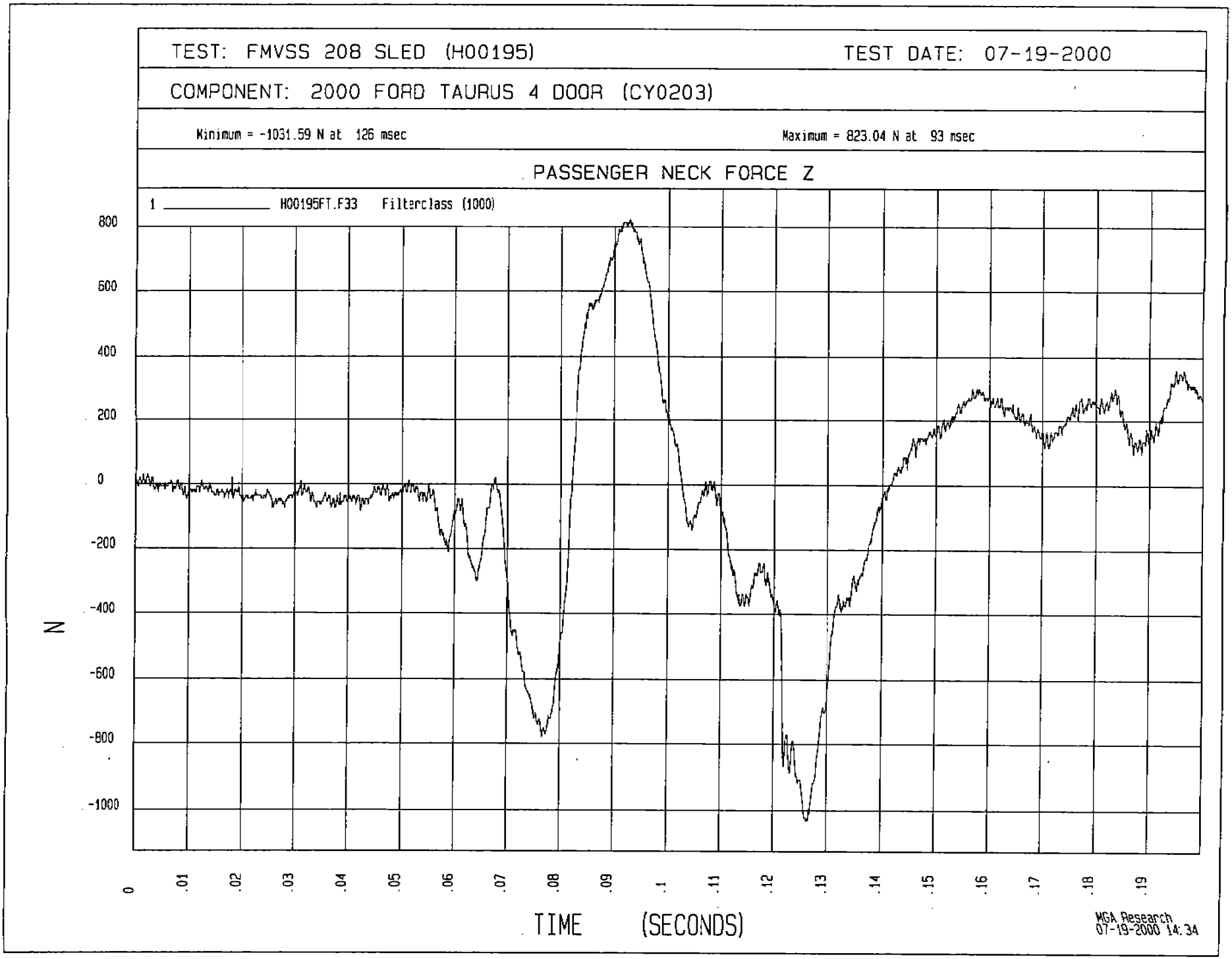

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -9.17 G at 110 msec
Maximum = 4.36 G at 146 msec
PASSENGER HEAD Y ACCELERATION
1 _____ H00195AT.A22 Filterclass (1000)
MGA Research
07-19-2000 14:33
G
4
2
0
-2
-4
-6
-8
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)


TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -37.36 G at 126 msec
Maximum = 18.77 G at 92 msec
PASSENGER HEAD Z ACCELERATION
1 H00195A1.A23 Filterclass (1000)
MGA Research
07-19-2000 14:33
G
TIME (SECONDS)
20
10
0
-10
-20
-30
-40
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19


TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = 6.69E-02 G at 0 msec
Maximum = 52.53 G at 128 msec
PASSENGER HEAD RESULTANT ACCELERATION
1 H00195AV.A21 Filterclass (1000)
G
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
07-19-2000 14:33

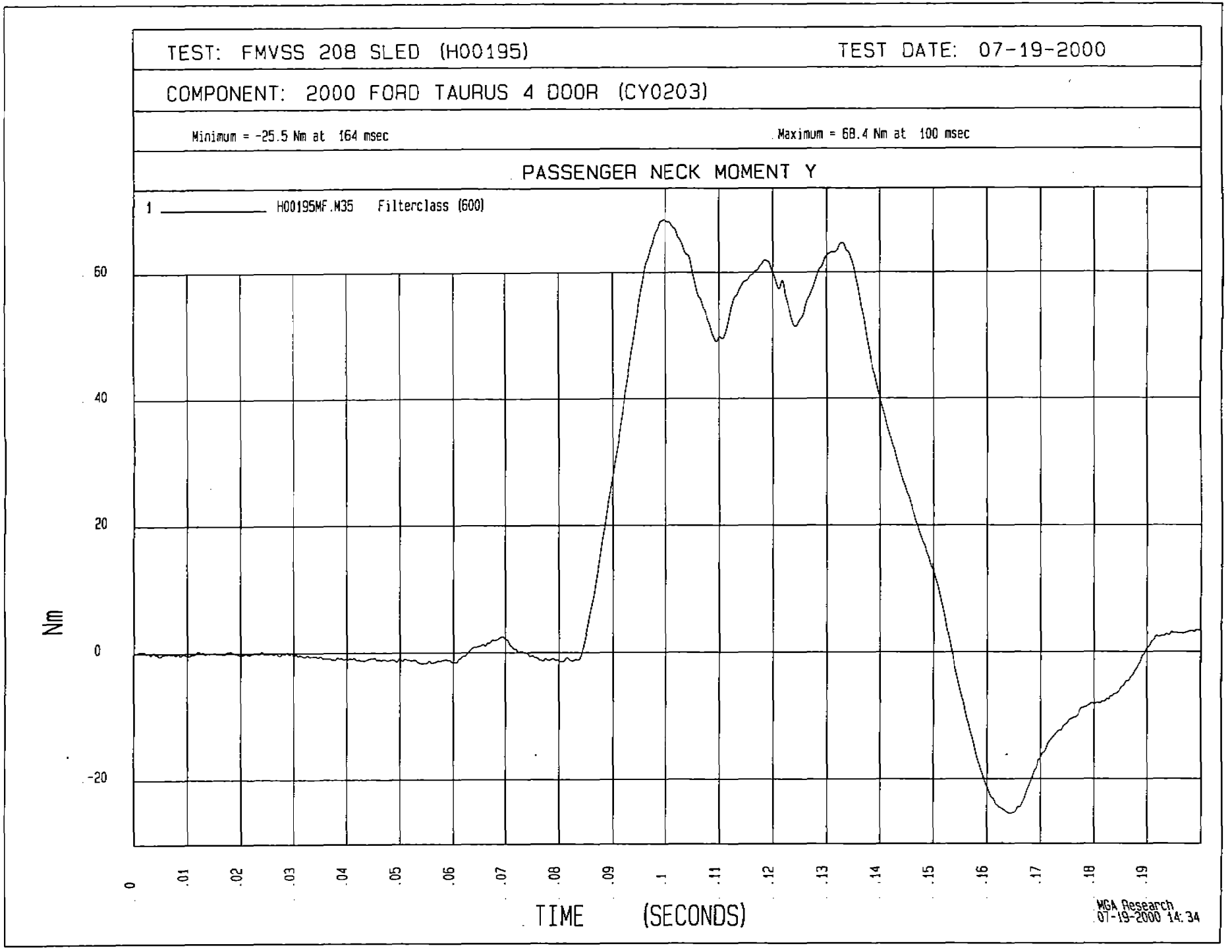

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -9.12 N at 1 msec
Maximum = 1789.99 N at 118 msec
PASSENGER NECK FORCE X
1 H00195FT.F31 Filterclass (1000)
1800
1600
1400
1200
1000
800
600
400
200
0
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

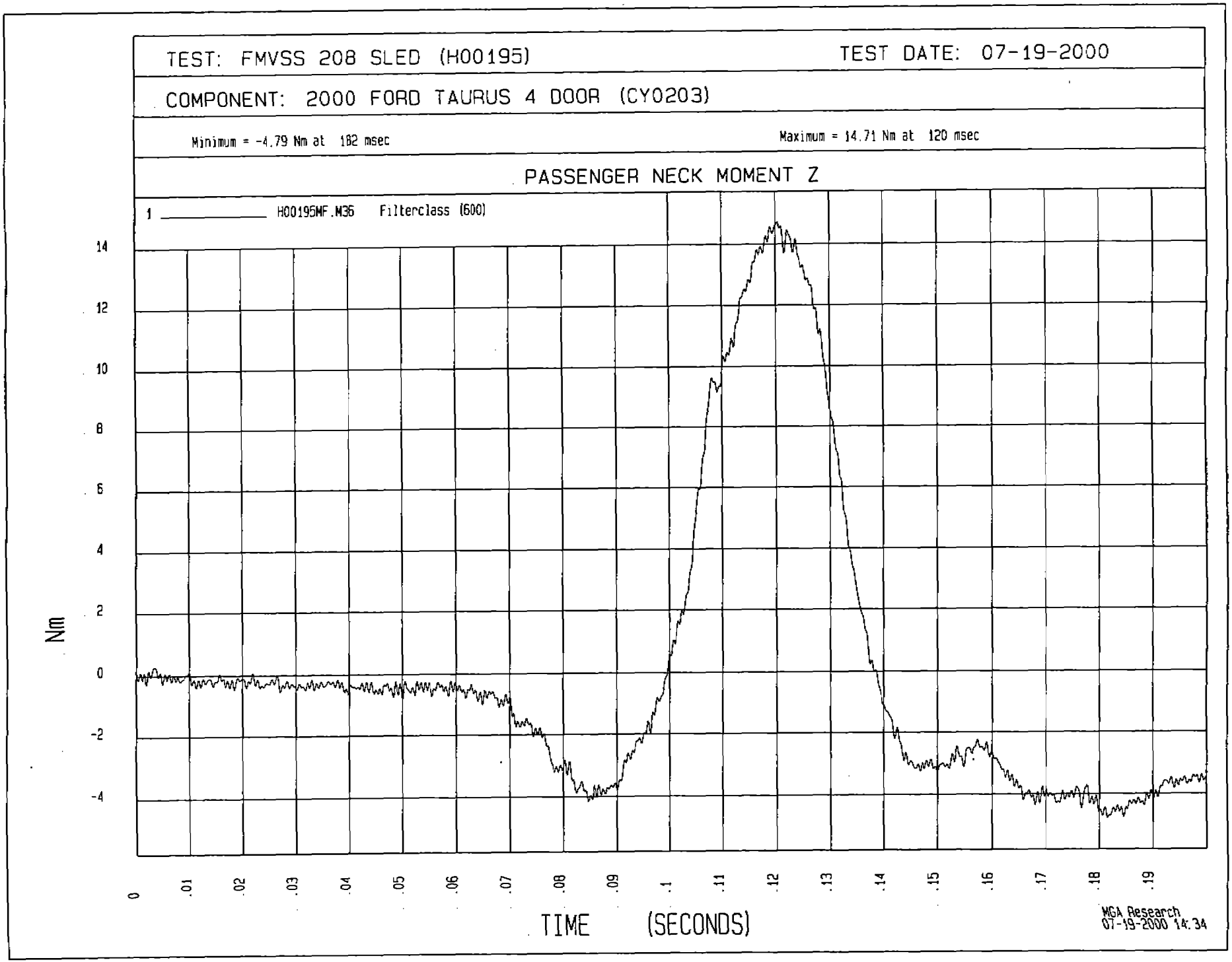

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -50.04 N at 70 msec
Maximum = 754.55 N at 131 msec
PASSENGER NECK FORCE Y
1 H00195FT.F32 Filterclass (1000)
700
600
500
400
300
200
100
0
N
0
.01
02
.03
04
.05
06
.07
08
.09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

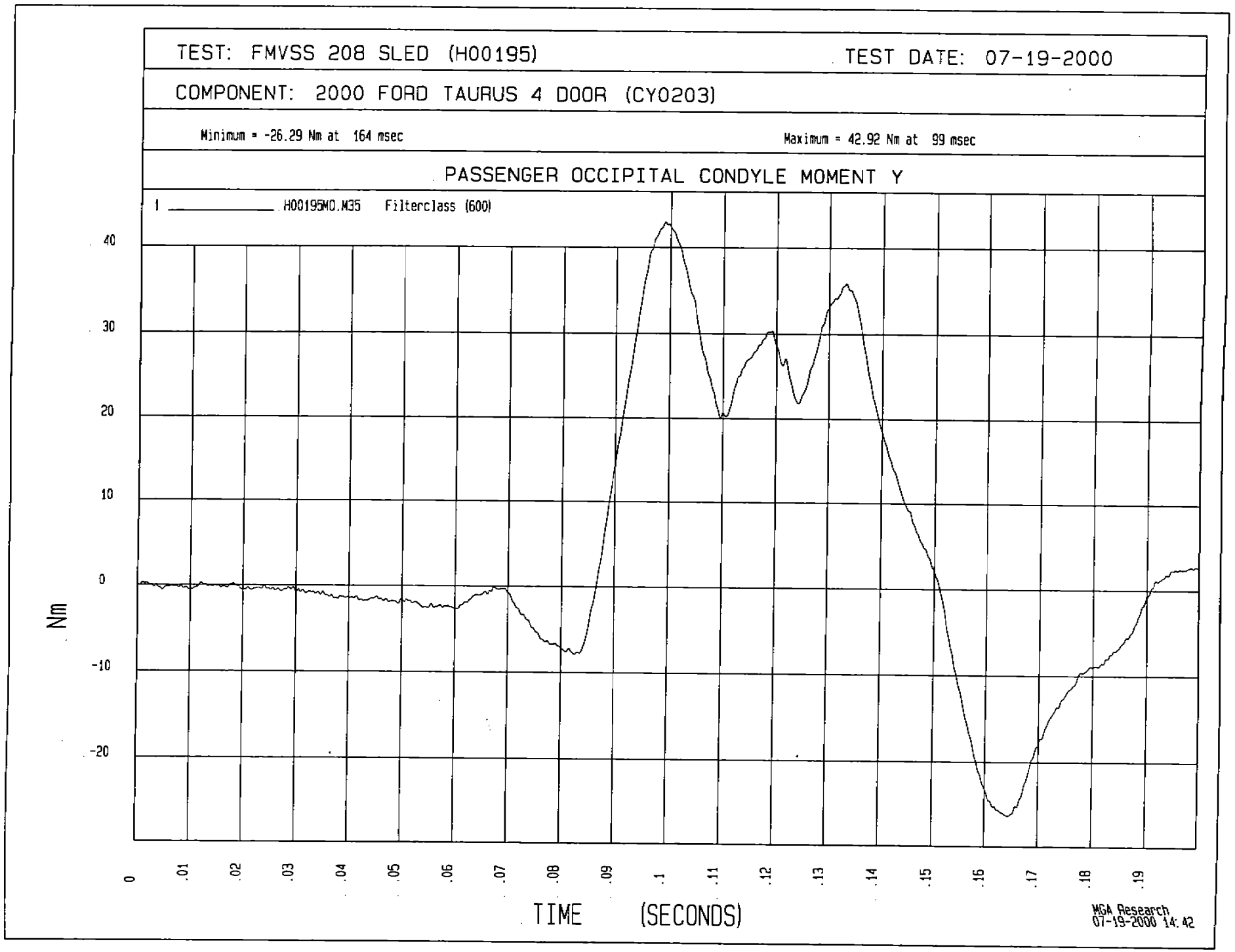

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1031.59 N at 126 msec
Maximum = 823.04 N at 93 msec
PASSENGER NECK FORCE Z
1 H00195FT.F33 Filterclass (1000)
800
600
400
200
0
-200
-400
-600
-800
-1000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

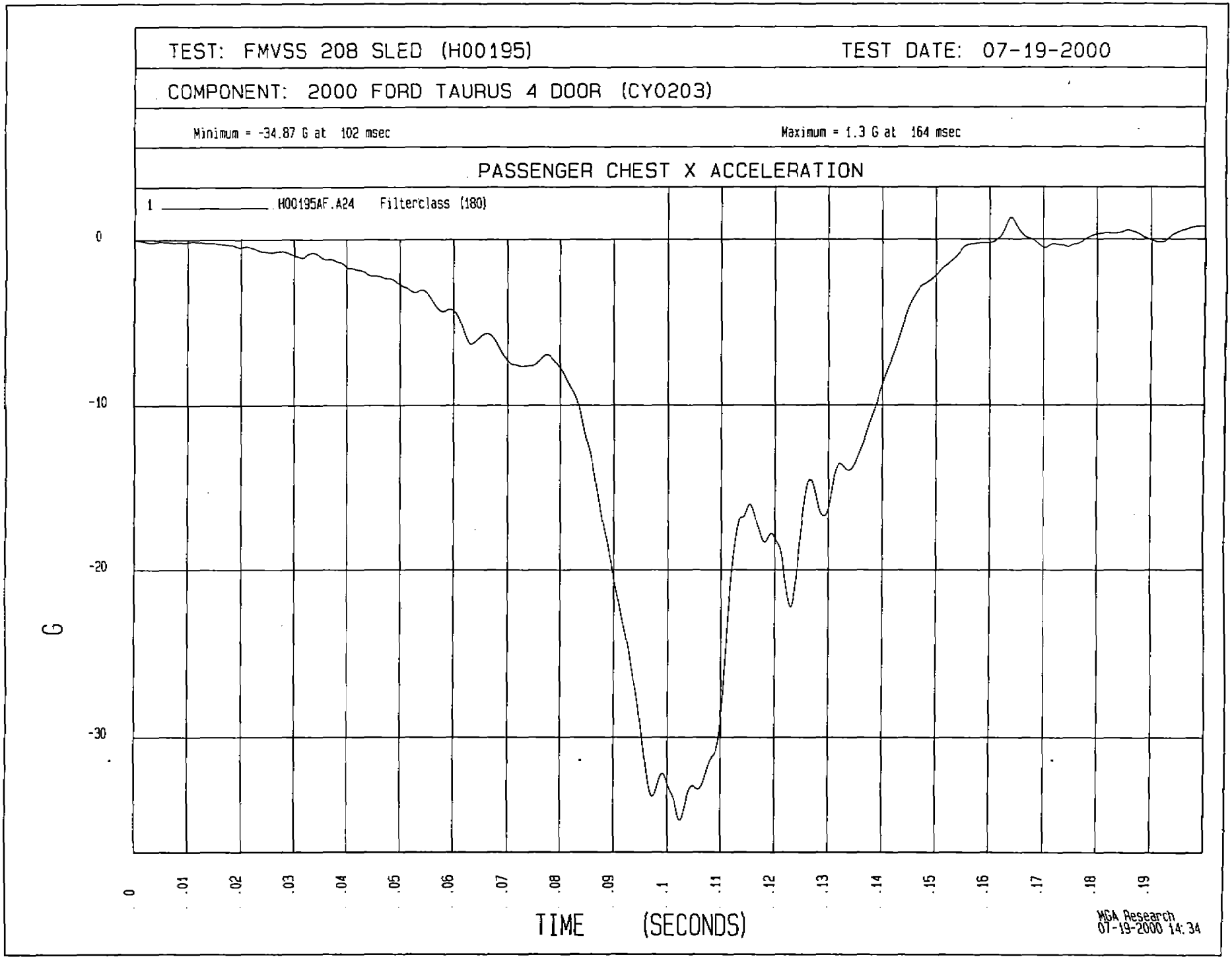
PASSENGER NECK MOMENT X

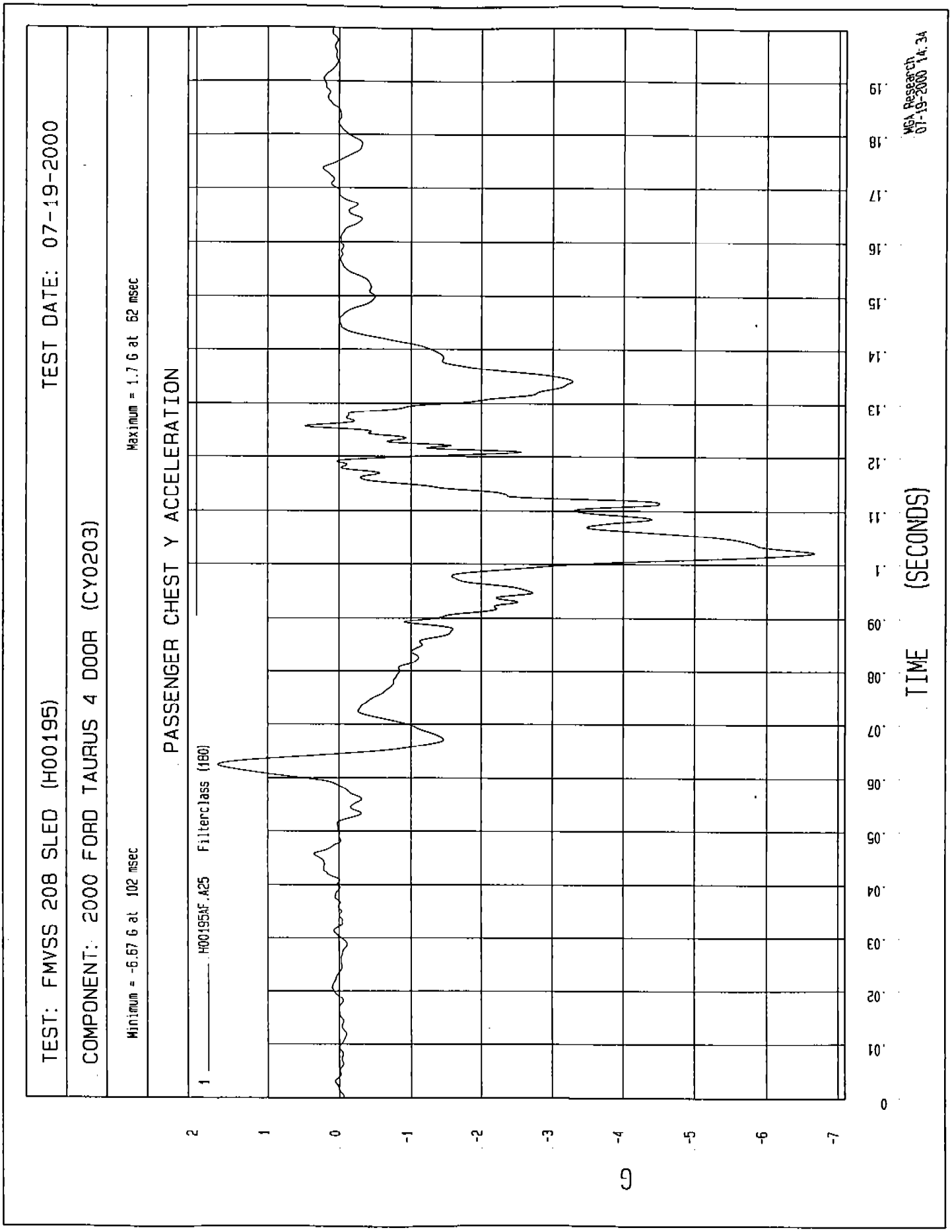
NO VALID DATA COLLECTED

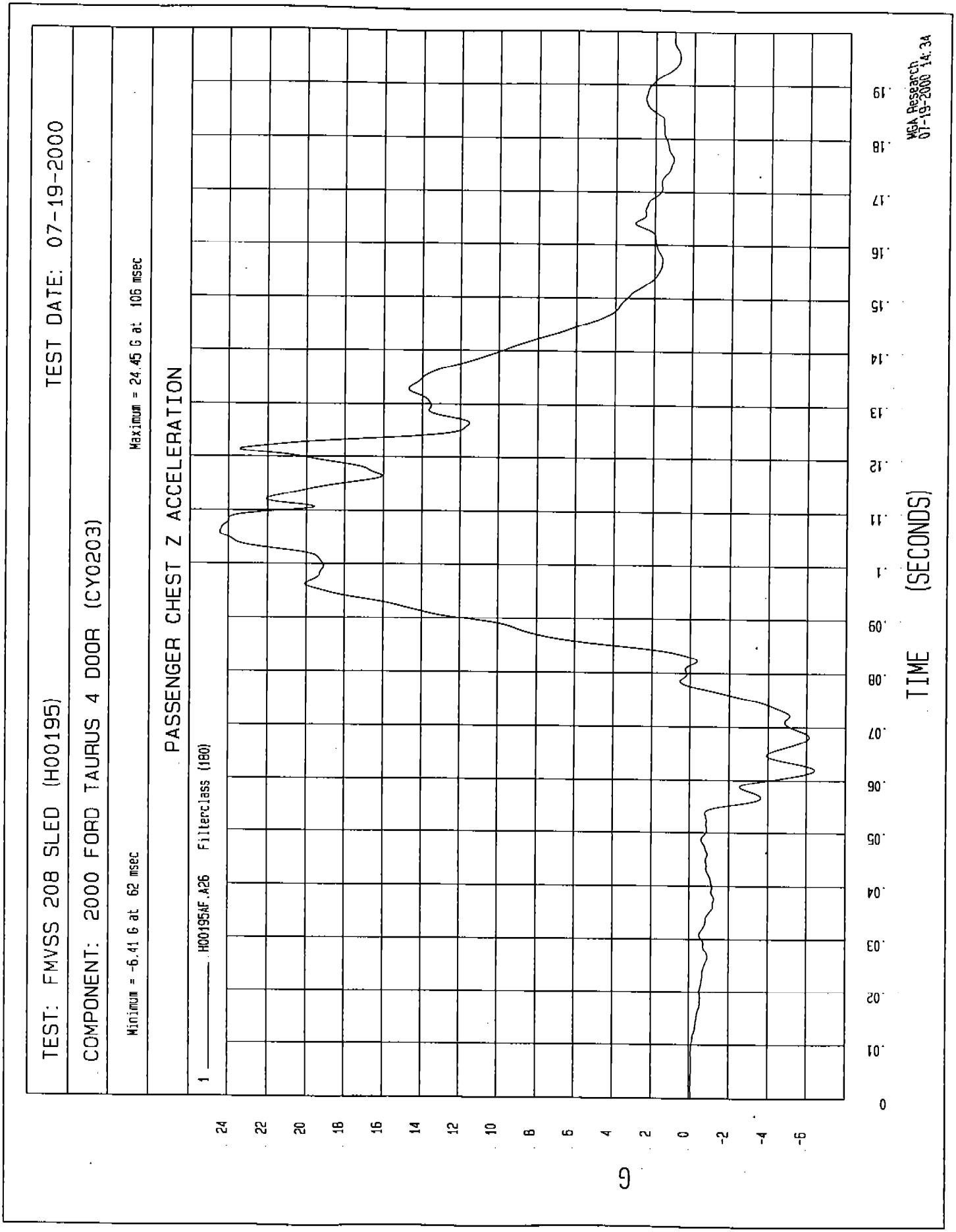

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -25.5 Nm at 164 msec
Maximum = 68.4 Nm at 100 msec
PASSENGER NECK MOMENT Y
1 H00195MF.M35 Filterclass (600)
60
40
20
0
-20
Nm
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

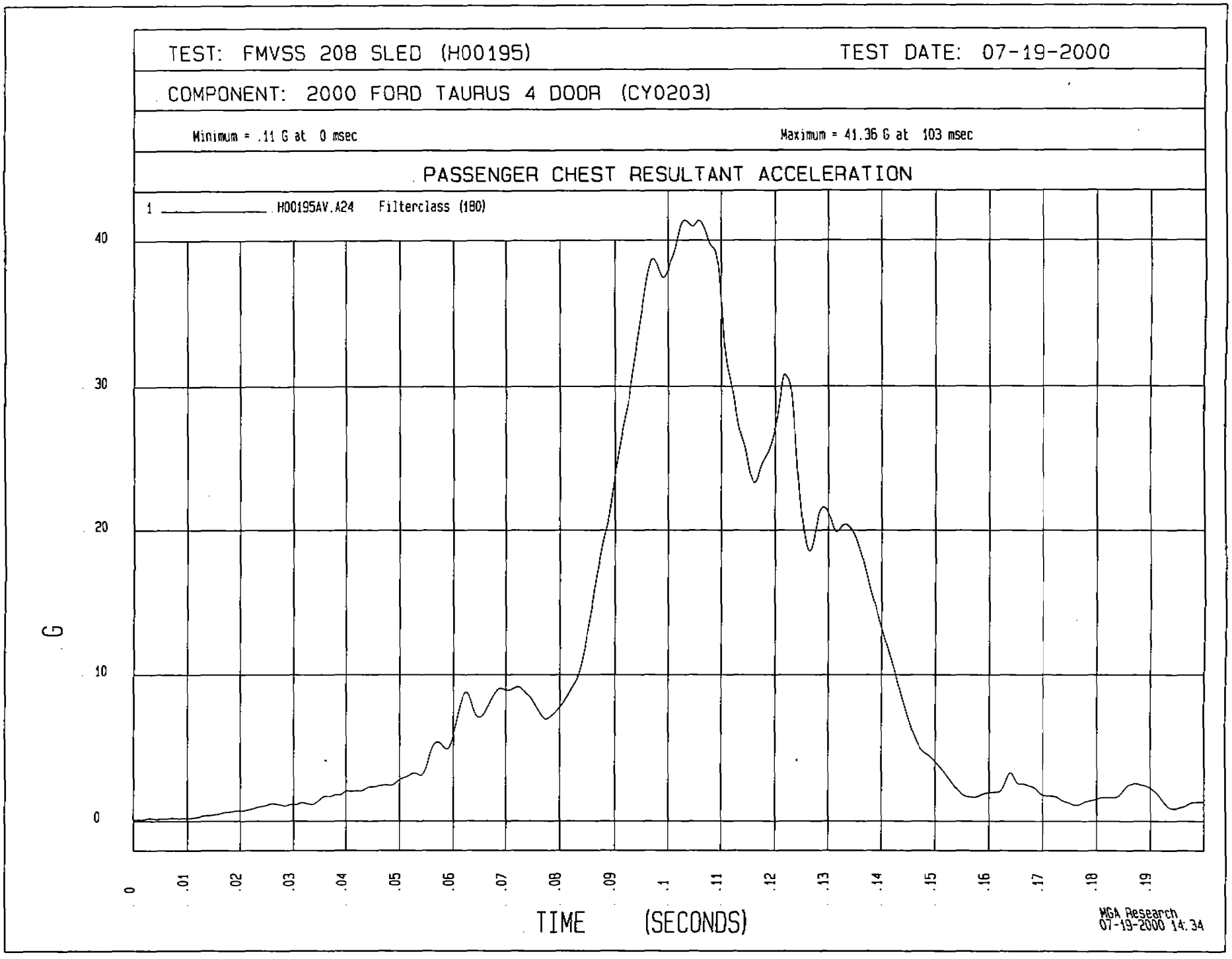

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -4.79 Nm at 182 msec
Maximum = 14.71 Nm at 120 msec
PASSENGER NECK MOMENT Z
1 H00195MF.M36 Filterclass (600)
Nm
14
12
10
8
6
4
2
0
-2
-4
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

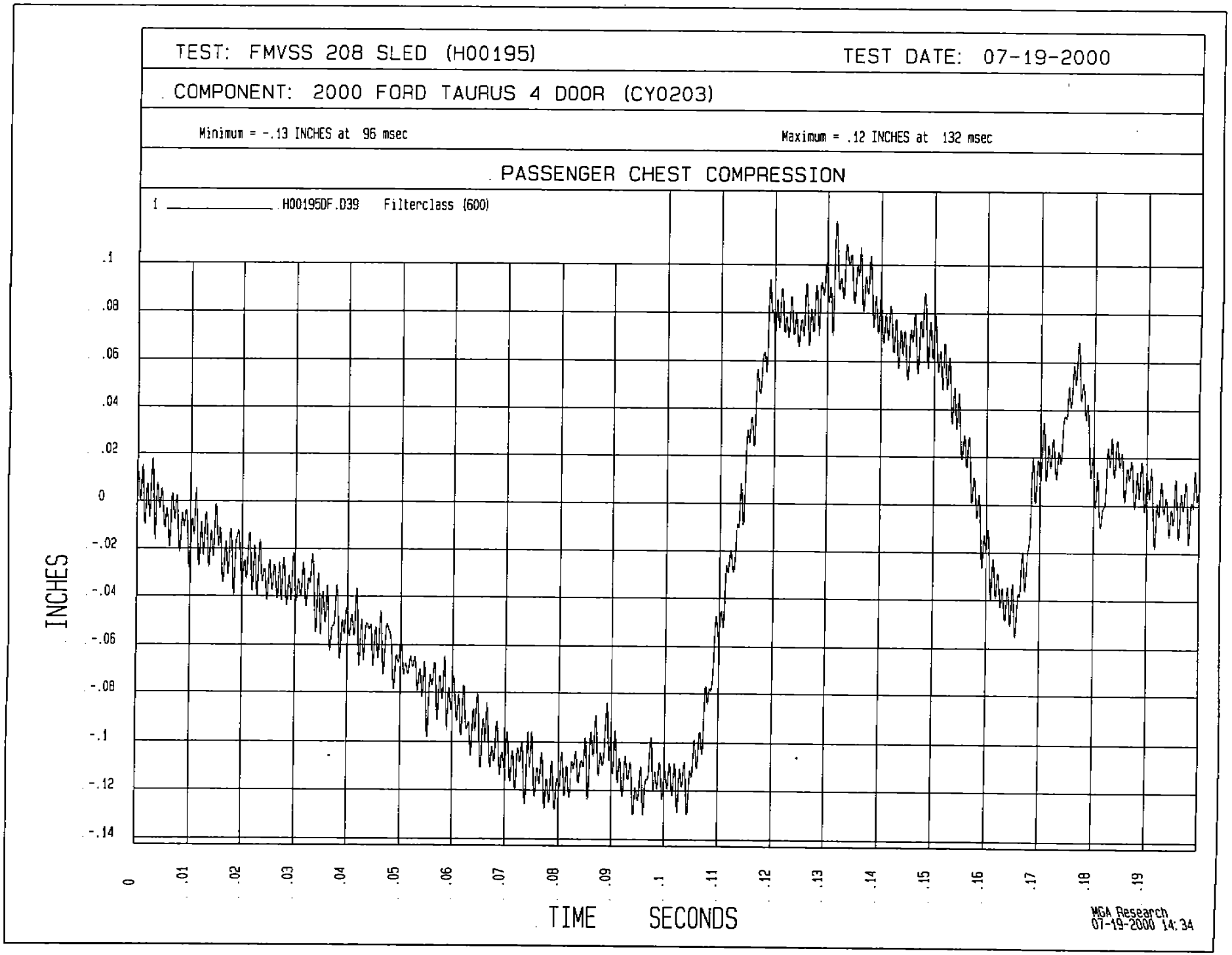

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -26.29 Nm at 164 msec
Maximum = 42.92 Nm at 99 msec
PASSENGER OCCIPITAL CONDYLE MOMENT Y
1 H00195MO.M35 Filterclass (600)
40
30
20
10
0
-10
-20
Nm
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:42

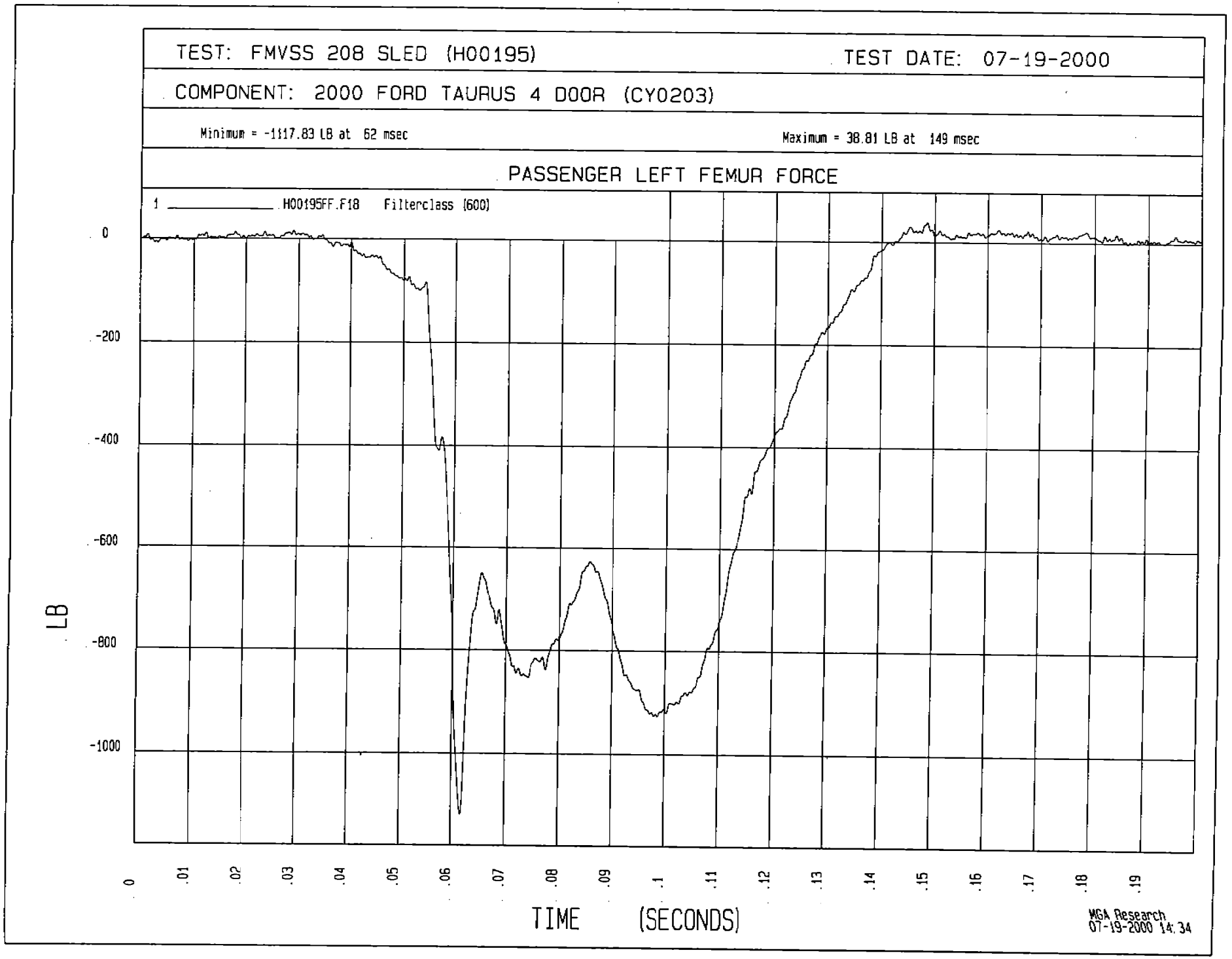

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -34.87 G at 102 msec
Maximum = 1.3 G at 164 msec
PASSENGER CHEST X ACCELERATION
1 H00195AF.A24 Filterclass (180)
0
-10
-20
-30
G
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
07-19-2000 14:34

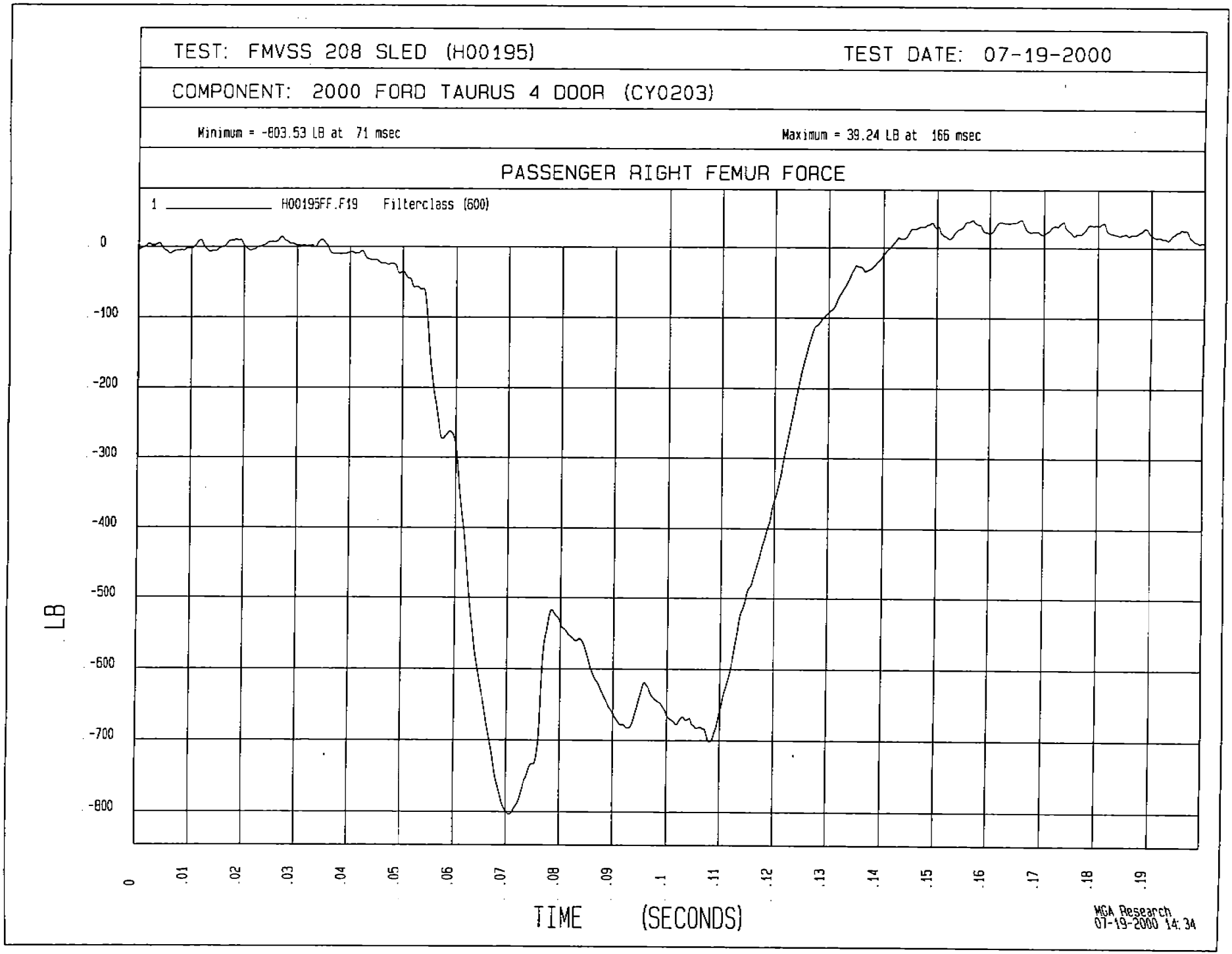

TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -6.67 G at 102 msec
Maximum = 1.7 G at 62 msec
PASSENGER CHEST Y ACCELERATION
1 H00195AF.A25 Filterclass (180)
MGA Research
07-19-2000 14:34
G
TIME (SECONDS)
2
1
0
-1
-2
-3
-4
-5
-6
-7
.01
.02
.03
.04
.05
.06
.07
.08
.09
1
11
12
13
14
15
16
17
18
19


TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -6.41 G at 62 msec
Maximum = 24.45 G at 106 msec
PASSENGER CHEST Z ACCELERATION
1 _____ H00195AF.A26 Filterclass (180)
MGA Research
07-19-2000 14:34
TIME (SECONDS)
G


TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = .11 G at 0 msec
Maximum = 41.36 G at 103 msec
PASSENGER CHEST RESULTANT ACCELERATION
1 H00195AV.A24 Filterclass (180)
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
07-19-2000 14:34


TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -.13 INCHES at 96 msec
Maximum = .12 INCHES at 132 msec
PASSENGER CHEST COMPRESSION
1 H00195DF.D39 Filterclass (600)
INCHES
.1
.08
.06
.04
.02
0
-.02
-.04
-.06
-.08
-.1
-.12
-.14
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME SECONDS
MGA Research
07-19-2000 14:34


TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -1117.83 LB at 62 msec
Maximum = 38.81 LB at 149 msec
PASSENGER LEFT FEMUR FORCE
1 H00195FF.F18 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
07-19-2000 14:34


TEST: FMVSS 208 SLED (H00195)
TEST DATE: 07-19-2000
COMPONENT: 2000 FORD TAURUS 4 DOOR (CY0203)
Minimum = -803.53 LB at 71 msec
Maximum = 39.24 LB at 166 msec
PASSENGER RIGHT FEMUR FORCE
1 H00195FF.F19 Filterclass (600)
0
-100
-200
-300
-400
-500
-600
-700
-800
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
07-19-2000 14:34

APPENDIX C

MANUFACTURER'S VEHICLE INFORMATION

L. W. Camp
Director
Automotive Safety Office
Environmental And Safety Engineering

Ford Motor Company
330 Town Center Drive
Dearborn, Michigan 48126 USA

January 10, 1999

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: NSA-31CCa/OA:208991029F for FMVSS 208
Information on a 2000 Model Year Ford Taurus

This is in response to your letter of November 5, 1999, requesting information for possible compliance surveillance testing of the 2000 Model Year Ford Taurus to the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 208, "Occupant Crash Protection".

The 2000 Model Year Ford Taurus passenger car incorporates new "Advanced Restraints System" airbags for the 2000 Model Year. Ford Motor Company is listing each request followed by our response to it.

Request No. 1

"Please inform OVSC if the air bag restraint system is certified to meet the requirements of S4.1.5.1(a)(1)or S13.

If the air bags were installed to meet the requirements of S4.1.5.1(a)(1) please provide a copy of the certification test reports for the frontal/angular barrier impact tests of the automatic restraint system with the manual safety belts unfastened and fastened.

If the air bags were installed to meet the requirements of S13 please provide a copy of the certification test reports

for the frontal/angular barrier impact tests of the automatic restraint system with the manual safety belts fastened and the certification test reports for the sled test using only the automatic restraint system."

Response

The air bag restraint systems for all 2000 Model Year Ford Taurus vehicles meet the requirements of S13 of FMVSS 208.

A Test Report Data Summary of the frontal barrier and sled tests is provided as Attachment I. Attachment II contains a copy of those portions of the final test report, relevant to the requirements of FMVSS No. 208, for Crash Test Number 11353: a 90 degree front fixed barrier impact test for these Second Generation air bag equipped vehicles for the automatic restraint system with the manual safety belts fastened. Attachment III contains copies of those portions of the final test reports, relevant to the requirements of FMVSS No. 208, for Sled Test Numbers H19559 and H19825: dynamic sled tests utilizing a rigid sled test of a "body-in-white" simulating the Ford Taurus and using only the automatic restraint system.

Ford relied on the information provided in Attachments I, II and III of this response to demonstrate compliance of the 2000 Ford Taurus equipped with Second Generation driver and right front passenger air bag restraint systems with the requirements of S13 of FMVSS No. 208.

Request No. 2

"If this is a new design vehicle/model, describe any features that might affect performance with respect to children and out of position occupants.

If this is not a new design vehicle/model provide the following (1) state when the air bag was depowered, (2) describe the difference between the MY 2000 air bag system and the MY 1999 air bag system, (3) explain what other restraint changes have been made, and (4) explain what other vehicle changes have been made that might have affected FMVSS 208 performance. Explain which changes might affect performance with respect to children and out of position occupants."

Response

As stated previously, the 2000 Model Year Ford Taurus incorporates new "Advanced Restrains System" airbags.

(1) A Depowered Driver and Passenger Air Bags were installed beginning with Job #1 for the 1998 Model Year Ford Taurus.

(2) The 2000 MY Taurus incorporates new "Advanced Restraint System" which consists of:

- Dual stage passenger and driver airbag inflators
- Seatbelt usage sensor
- Crash severity sensor
- Driver seat position sensor

(3) & (4) There have been no other restraint system changes or other vehicle changes that would affect FMVSS 208 performance since the Ford FMVSS 208 tests conducted for the 1998 Model Year Ford Taurus. Additionally, there were no changes that affect performance with respect to children and out of position occupants.

Request No. 3

"State if these vehicles have crash event recorders. If yes, explain any procedures needed for the sled or barrier crash event to be recorded. In addition, explain how to retrieve the crash event data from the recorder."

Response

The 2000 Model Year Ford Taurus vehicles utilize an Electronic Crash Sensor (ECS) module which, as one of its functions, records crash acceleration data. To accomplish this function, electrical power must be maintained to the ECS throughout the crash event. Currently, the ECS would need to be returned to Ford for retrieval of the acceleration data.

Request No. 4

"If the vehicle was certified with unrestrained dummies to meet the requirements of S 13, describe how to disconnect the 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 more advanced air bag systems, explain how the triggering of the air bag system in the sled test is different from the triggering of the air bag in a crash, For example, if a multistage inflator is used, explain whether

the stages are fired simultaneously in the sled test but fired in a staggered sequence in a similar crash situation."

Response

The 2000 Model Year Ford Taurus contains an advanced air bag system. 2000 Model Year Ford Taurus "Advanced Restraint System" senses the severity of the crash, seatbelt usage and the position of the driver seat and determines whether to fire only the first stage or to sequentially fire stage one followed by stage two of the dual stage airbag igniters.

Under the conditions of the FMVSS 208 sled test only the first stage of the airbag ignites would be fired.

Attachment IV is an illustration showing the connections for stage one and stage two of the dual stage Autoliv airbag system. For the sled test the air bag was disconnected by locating the squib wires going into the air bag and unhooking the connector between the vehicle wiring harness and the air bag. The squib wires, for stage one only, were then connected to an extension cable that supplies the firing current from the Programmable Time Fire Unit located in the Hyge sled control room. This 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.

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.)

Request No. 5

"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."

Response

Tension-relieving devices are not used in 2000 MY Ford Taurus safety belt systems.

Request No. 6

"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."

Response

The positions of moveable windows in fixed barrier crash impact tests, which were relied upon as a basis for certification to FMVSS 208 of 2000 MY Ford Taurus vehicles, were with all moveable windows and vents fully open for 90 degree perpendicular frontal impacts to facilitate photography. Ford prefers that the windows be in the closed (up) position for NHTSA testing.

Request No. 7

"Submit dummy placement measurements, including diagrams or photographs which show exactly where measurements were taken. Enclosed is a diagram of some of OVSC's dummy measurements. Where possible, use the dimension shown in the diagram to provide the individual dummy placement measurements.
State whether the vehicle has a foot rest for the driver."

Response

Attachment V contains dummy placement measurements applicable to the 2000 Model Year Ford Taurus.

The 2000 Model Year Ford Taurus 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."

Response

Attachment VI contains the NHTSA form 1 enclosed with your letter, completed with the requested seat positioning, steering column positioning, and fuel tank data applicable to FMVSS No. 208 testing of the 2000 Model Year Ford Taurus vehicles.

Attachment VII contains copies of drawings showing the requested seating reference point information for the 2000 Model Year Ford Taurus.

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. "

Response

The 2000 MY Ford Taurus vehicles are equipped with adjustable seat belt anchorages. The nominal design position of the D-ring for the 50th percentile adult male occupant is in the mid position.

Request No. 10

> "For barrier tests provide the speed at impact, vehicle test weight, and resulting injury criteria (i.e., HIC, chest acceleration, chest compression, and femur loads) recorded for all certification tests conducted to meet the requirements of S4.1.5.1(a)(1). For sled tests provide the resulting injury criteria (i.e., HIC, chest acceleration, chest compression, femur loads, and neck moments and forces) recorded for all certification test conducted to meet the requirements of S13."

Response

This information is included in a Test Report Summary found in Attachment I.

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?"

Response

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

- ◊ Spare Tire
- ◊ Deck lid
- ◊ Back seat
- ◊ Rear Bumper
- ◊ Interior trim from B-pillar rearward
- ◊ Exhaust system from the "Y" pipe rearward

All onboard instrumentation should be included in the vehicle test weight.

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.

Response

The 2000 Model Year Ford Taurus vehicles do not use pressure vessels to inflate the air bags.

Request No. 13

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

Response

Attachment VIII contains the engineering analyses and the related Autoliv test reports demonstrating compliance to S9.2 of FMVSS No. 208 for the 2000 MY Ford Taurus driver and passenger air bag systems.

Request No. 14

"Explain any leakage that has occurred from the onboard vapor recovery system pressure relief valve during any frontal impact development or certification testing

performed by or for Ford Motor Company. If any leakage occurred, include the amount. Describe the method used to collect fluid from the onboard vapor recovery system pressure relief valve for the period from impact until motion of the vehicle has ceased."

Response

A review of frontal impact barrier crash test reports used both for the development and demonstration of certification of the 2000 Model Year Ford Taurus indicate that two tests using the 18 gallon Flex Fuel tank produced fuel system spillage estimated to be 0.06 and 0.146 ounces from the flex fuel sensor and pressure relief valve during impact. There was no fuel system spillage during the post-crash static rollover test.

We believe the information and test reports contained in the referenced Ford responses along with the information presented above are fully responsive to your request. If you have any questions, please call me.

Very truly yours,

L. W. Camp

Attachments

2000 MY Ford Taurus FMVSS 208
SUMMARY OF TEST 11353

Occupant Injury Data (FMVSS 208)

90 Degree Front Fixed Barrier Impact at 34.8 +/- 0.4 mph

	L. F. Dummy	R. F. Dummy
Head Injury Criteria (HIC)	265	221
Interval t1	61 ms	59 ms
t2	97 ms	95 ms
Chest resultant acceleration level at 3 ms cumulative duration	42 g	43 g
Chest Deflection (Hybrid III)	1.1 in	1.0 in
Peak axial compression load:		
Left femur	336 lb	1093 lb
Right femur	889 lb	633 lb
Peak axial tension load:		
Left femur	325 lb	158 lb
Right femur	142 lb	139 lb
Dummy contained within the vehicle during the crash	Yes	Yes

2000 MY Ford Taurus FMVSS 208
SUMMARY OF TESTS H19559 & H19825

Occupant Injury Data (FMVSS 208)

HYGE Sled Tests Unbelted	H19599 L. F. Dummy	H19825 R. F. Dummy
Head Injury Criteria (HIC)	455	267
Chest resultant acceleration level	43.9 g	37.1 g
Chest Deflection (Hybrid III)	2.1 in	0.18 in
Peak Femur Load:		
Left	768 lb	1011 lb
Right	917 lb	749 lb

FINAL TEST REPORT

CONFIDENTIAL

Global Test Operations
Advanced Vehicle Technology

Test Order No.
T-B3904
Work Task W. O. No. F09
Test Date

TO: A. Taub
2/26/99

Date Reported
4/16/99
Sheet 1 of
100

SUBJECT: Crash Test 11353 (90° Front Fixed Barrier Impact at 34.8 ± 0.4 mph, 56.0 ± 0.6 km/h) - 2000 Taurus (D186) 4-Door Wagon

REQUESTED BY: Vehicle Safety and CAE Department, Advanced Vehicle Technology -
D. Perrigo

OBJECT: To obtain development data relative to FMVSS 208 and 301.

SUMMARY OF TEST RESULTS:

- See Section 1.0 for injury criteria data.
- See Section 2.0 for fuel spillage data.

C. Pecoraro
Product Test Engineer

Concur: S. Lesh
Section Supervisor
Operations Engineering Section

VEHICLE DATA:

Make and Model	2000 Taurus (D186) 4-Door Wagon
ID Numbers	1FALP5704YS100580, 579-W-790, DC040004
Power Train	3.0L, EFI, Automatic (AX4N) Transaxle
Fuel Tank(s) with 3.0 gallons	Usable Capacity: 18.0 gal. (68.1L) Test Condition: The "run dry" tank was filled (11.4L) of red-dyed Stoddard solvent.
Front Seat(s) Mid and Down	Type: Bucket Cover: Cloth Tracks/Position: LF: 6-Way Power/Mechanical RF: Manual/Mechanical Mid Seat Backs/Position: Adjustable/LF: 27.6° Rear of Vertical, RF: 27.5° Rear of Vertical Head Restraints/Position: Adjustable/Up Lumbar Support/Position: Power/LF: Deflated
Restraint System	LF: 3-Point Continuous Loop Active Belt with Pyrotechnic Belt and Steering Wheel Air Bag RF: 3-Point Continuous Loop Active Belt with Pyrotechnic Belt and Instrument Panel Air Bag
Occupants	LF & RF: 50th Percentile Male, Hybrid III, Instrumented
Test Weight	Front: 2250 lb (1021 kg) Rear: 1605 lb (728 kg) Total: 3855 lb (1749 kg)
Tires	Front: P215/60R16 30 psi (207 kPa) Rear: P215/60R16 30 psi (207 kPa) Spare: Removed
Significant Content or Accessories:	Air Conditioning, Power Steering, Power Brakes, Tilt Steering Wheel

GENERAL TEST COMMENTS:

1. Test Procedure

The test was performed according to the following Corporate test procedure(s):

- Fixed Barrier Collision, T657-ST-14 dated July 17, 1996.
- EFI Fuel System Stoddard Solvent Fill, ST-11 REF. 4.
- Occupant Crash Protection, T657-ST-25 dated July 17, 1996.

2. Remarks

Crash movies, pre- and post- crash still images of the test vehicle and copies of this report are available through the Operations Engineering Section, Safety Laboratories Department, GTO. The crash still images are stored and archived on CD ROMs. The file names of the still images are listed under crash number and a three digit sequence number which are 11353001 through 11353083.

TEST RESULTS:

1.0 Occupant Injury Data (FMVSS 208)

		L. F. Dummy	R. F. Dummy
Head Injury Criteria (HIC)		265	221
Interval	t1	61 ms	59 ms
	t2	97 ms	95 ms
Chest resultant acceleration level at 3 ms cumulative duration		42 g	43 g
Chest Deflection (Hybrid III)		1.1 in	1.0 in
Peak axial compression load:			
	Left femur	336 lb	1093 lb
	Right femur	889 lb	633 lb
Peak axial tension load:			
	Left femur	325 lb	158 lb
	Right femur	142 lb	139 lb
Dummy contained within the vehicle during the crash		Yes	Yes

Time histories of the dummy instrumentation are included in this report.

Time histories of the dummy dynamic displacements obtained from Film Analysis are included in this report.

Time histories of the air bag/sensor(s) are included in this report.

Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

2.0 Fuel System Integrity (FMVSS 301)

. There was no fuel system spillage during or for thirty minutes following impact.

. The fuel system held pressure during a post-crash pressure check.

3.0 Vehicle Crush, Film Analysis and/or Instrumentation Data

	Maximum Dynamic Longitudinal Crush	
	in.	(mm)
Left Side	29.2	(742)
Right Side	29.7	(754)

Time histories of the vehicle accelerations and other instrumentation are included in this report.

Time histories of vehicle dynamic displacements obtained from Film Analysis are included in this report.

Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

Final Test Report
Confidential

Advanced Vehicle Technology

Test Order No.:	TA5847
Subject:	2000 D186 FRONT BELT/BAG EVALUATION HYGE SLED SERIES 'K'
Requested By:	D. PERRIGO
(Dept.):	T551
Date Received:	10/22/98
Work Task No.:	F09
Test Facility:	HYGE
Test Dates:	12/2 - 12/4/98
Run Numbers:	H19556 - 566
Procedure(s):	T657-100, T657-106
Date Reported:	12/21/98
Page:	1 of 31

2003
7-4-2

Objective:

To conduct design verification testing on the front row restraint system in the D186.

Summary:

Nine tests were conducted on the Hyge sled using two instrumented 50% Hybrid III test dummies and up to two instrumented 5% Hybrid III test dummies. The testing was conducted using the new D186 rigid body buck (#418). The test data is retained at the Safety Laboratories Department as specified by record retention guidelines. A copy of the high speed film and test data have been given to the requester for evaluation. The still photographs are in digital format and are stored on the Safety Laboratories Department intranet home page under http://www-safetylab.ford.com/.

Attachments:

I. Sled Pulse
II. Sled Parameters
III. Test Authorization
IV. Matrix
V. Post Test Observations
VI. Dummy Positioning Sheets

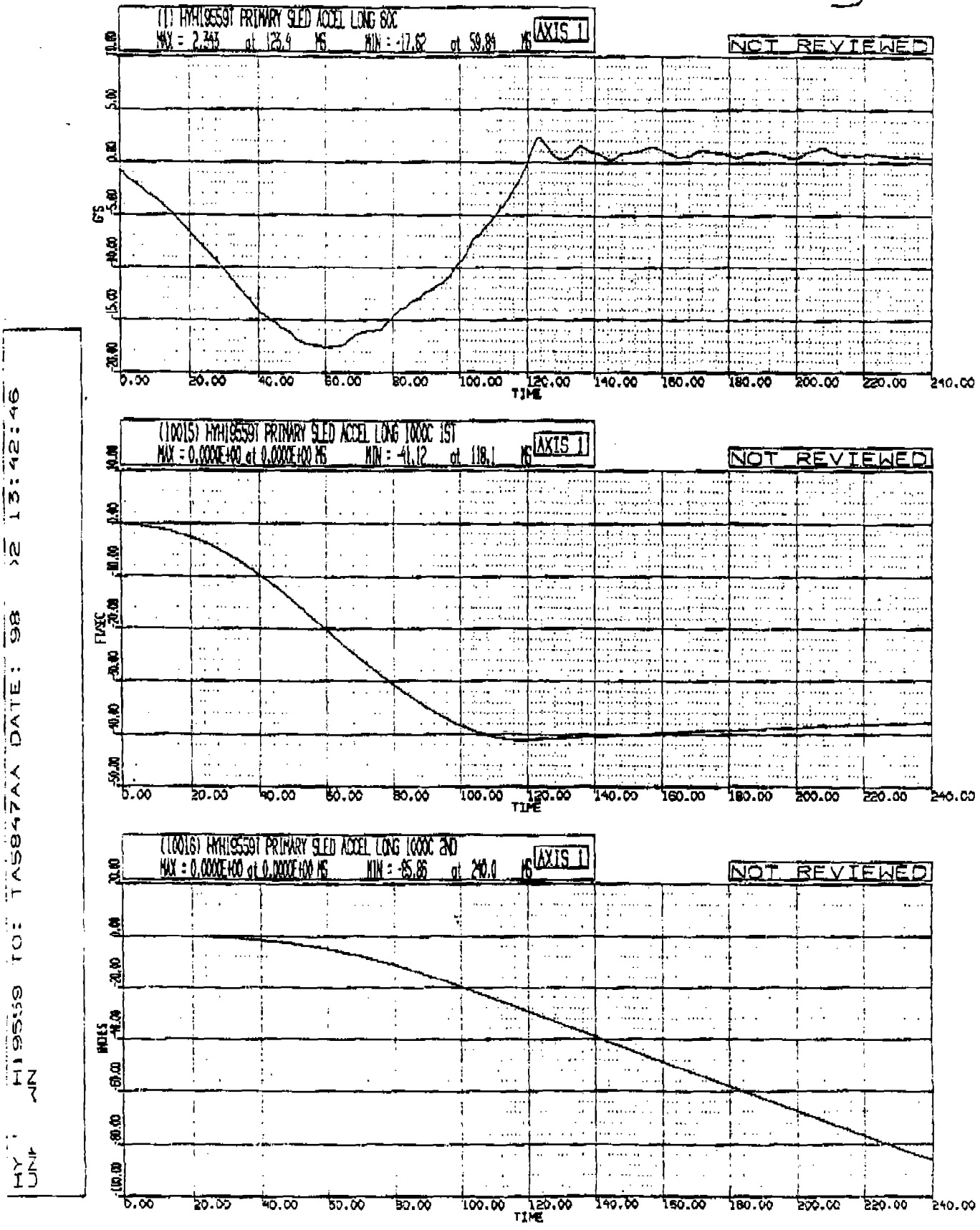
Concur:

12/21/98

R. N. BURNS
Section Supervisor
HYGE/Impact Simulation Test Section
Safety Laboratories Department

M. T. DORAN
Test Development Engineer
HYGE Test Section
Safety Laboratories Department

CASDAS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, GTO-PL TA5847A
CREATED: 2-DEC-98 14:24:56 PLOT PAGE 27 SHEET 3



HY H195559 TO: TA5847AA DATE: 98 12 13:42:46
UNF

ATTACHMENT III

TA5847

GTO Test Request

Requester/Coordinator (PROFS ID): Sheet 12
DPERRIGO

DALE PERRIGO

Testing Activity:	Date Submitted:	Requested Completion Date:	Requestor Reference Number:
HYGE and VIA Sled	22-OCT-98	22-JUL-98	

Test Procedure Number	Test Title and / or Subject of Test:
HYG-00	D186 Hyge Sled Series K

Billable Requestors Dept No.:	Worktask/Work Order Number:	Test conducted to certify control item compliance with Government Regulations:
T551 AV2215A	F09	
Billable Requestors PROF'S I.D.:	**Billable Requestors Name:**	Yes: ☐ No: ☒
DPERRIGO	DALE PERRIGO	

Complete the following two questions as indicated

1 - Rational for not replacing this test by CAE Analysis:

- ☒ No CAE Methodology or process available
- ☐ For CAE Correlation
- ☐ Insufficient confidence in CAE
- ☐ To obtain basic data for CAE
- ☐ Replacement or improvement of existing Test
- ☐ Testing is Quicker
- ☐ Mandatory or Regulatory
- ☐ Certification
- ☐ Development test for FSS
- ☐ Not applicable

Other:

(Check appropriate boxes)

2 - What is the expected Test Outcome:

- ☐ Results will meet DVP/WCR requirements
- ☐ System Component will not meet Test specification
- ☒ Unknown
- ☐ Above is Based on CAE?

Other:

(Check appropriate boxes)

Test Purpose/Test Procedure or Description of Test:

Evaluate dual stage
HYGE Test Procedure T657-110

Signature Approvals (As Required for Control Purposes)

Requesting Engineer DALE PERRIGO Testing Engineer _____

Requesting Supervisor/Manager ALAN TAUB Testing Supervisor _____

HYGE Sled Test Summary

Initiator: Dale Perrigo
Phone: x56018

HYGE Run H 19559 Run Date 12/2/98
Test Engineer: Wim Van Glabbeek Test Auth # TA5847
Requester: Dale Perrigo BUCK # 405
2 MATRIX #
Test Title/Description: Driver/Passenger Belt/Bag Evaluation
Crash/HYGE Pulse Ref: Simulated Speed: 30 Pln # 93

FIRE TIMES

LEFT Airbag: 20/AUTO ms Pyro Buckle: N/A ms

RIGHT Airbag: 20/AUTO ms Pyro Buckle: N/A ms

PARTS DESCRIPTION PRE-TEST OBSERVATIONS

LEFT	CENTER	RIGHT
Dummy 50TH	Dummy	Dummy 50TH
A/B D-12	Belt	A/B P-17
Belt N/A		Belt N/A
Seat S-1	Dr. A/B FM#	Seat S-1
Tracks: power (manual)	Pass. FM#	Tracks: power (manual)
Position: MID Welded? (Y) N		Position: MID Welded? (Y) N

Instrument Panel: 18
Steering Column: SC3
Pre-Test OBSERVATIONS:

POST-TEST OBSERVATIONS & CHECKLIST Comment (if needed) below:

LEFT (Upright) I/B O/B (On Seat) Off Seat
CTR Upright Left Right On Seat Off Seat
RIGHT (Upright) I/B O/B (On Seat) Off Seat

LEFT SIDE

A/B Intact (No Holes) (Y) / N
Face to A/B Contact Location: I/B (Center) O/B High (Mid) Low
A/B Cover Attached to Can./Cover: Y / N
~~Adj. D-ring Remain in Position: Y / N~~
~~Retractor Intact: Y / N Locked: Y / N~~
~~Buckle Held: Y / N Webbing Intact: Y / N~~
Seat Tracks Held: (Y) / N
Cracks in I/P: (Y) / N
Steering Wheel Deformed: (Y) / N
Column Stroked w/o Interferance: (Y) / N

RIGHT SIDE

A/B Intact (No Holes) (Y) / N
Face to A/B Contact Location: I/B (Center) O/B High (Mid) Low
A/B Cover Attached to Can./Cover (Y) / N
~~Adj. D-ring Remain in Position: Y / N~~
~~Retractor Intact: Y / N Locked: Y / N~~
~~Buckle Held: Y / N Webbing Intact: Y / N~~
Seat Tracks Held: (Y) / N
Cracks in I/P: Y (N)

Column Stroke: Left: Right:

Post Test COMMENTS: * BOTH DUMMIES HIT THE WINDSHIELD
* TEST LOOKED NORMAL

DATA REVIEWED
* CH 25

OBSERVER:

HYGE - DUMMY POSITIONING and F/A TARGETING Sheet

Initiator: Dale Perrigo
Phone: x56018

TA5847 Run 19559 Date 12-2-98

1 2

Driver/Passenger Belt/Bag Evaluation

Buck # 418

Reference: H
H
H

Left		Right	Center
50% Hill	DUMMY TYPE	50% Hill	
Mid	SEAT POSITION	Mid	
337	DUMMY NUMBER	339	

POSITIONING			ACTUAL LEFT	TARGET LEFT	TARGET RIGHT	ACTUAL RIGHT	TOLERANCE (± mm) 1st RUN	ADD'L
Seat Back Angle (13" above pivot)			28	27.8	27.8	28	0	+/-1 notch
Pelvic Angle (+/- 2.5 deg.; +/-1.0 for 5%ile)			23	22.5	22.5	21		
Column Angle							at left	at left
H-Point Longitudinal	Laser #	4	2960	2980	2980	2959	12	6
H-Point Vertical	Laser #	4	668	668	668	673		6
H-Point Lateral			314	313	-314	312	12	6
Knee Longitudinal	Laser #	2	2577	2577	2568	2568		
Knee Vertical	Laser #	2	763	763	761	761		
Knee Lateral			366	387	-368	365	6	6
Head Longitudinal	Laser #	5	3077	3077	3107	3107	level	6
Head Vertical	Laser #	5	1309	1309	1308	1309	level	6
Head Lateral			425	426	-427	426	level	6
Dummy Neck Adjustment (first run only)								
Knee Centerline to Knee Centerline (max)			194	194	194	194		
Left Knee to Bolster			82	87	87	83		6
Right Knee to Bolster			78	82	82	83		6
Nose to Steering Wheel Upper Rim or I/P			371	371	553	352		6
Torso to Steering Wheel Lower Rim			187	186				6
Reference Target to Seat Bolt Longitudinal								
Reference Target to Seat Bolt Vertical								
Reference Target to Seat Bolt Lateral								
Reference Target Absolute Longitudinal			2739			2739		
Reference Target Absolute Vertical			808			807		
Reference Target Absolute Lateral			-872			873		

FILM ANALYSIS								
Knee (target) Lateral			335			330		
Thigh Lateral			330			311		
Phantom Lateral			321			310		
Shoulder Lateral			257			262		
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: _____

Final Test Report
Confidential

Advanced Vehicle Technology

Test Order No.:	TB4763
Subject:	2000 D186 Series N D186 Passenger Inflator Evaluation
Requested By:	Dale Perrigo
Requesting Dept.:	T551
Work Task No.:	F09
Test Facility:	Hyge
Date Received:	3/12/1999
Date Reported:	6/16/1999
Test Dates:	4/13/1999 to 4/14/1999
Run Numbers:	[redacted] H19825
Procedure(s):	T657-110
Page:	1 of 20
Date:	6/17/99

[redacted] Thru: 2005

7-4-2

Objective:

Passenger side airbag inflator evaluation.

Summary:

One 35 MPH, two 31 MPH, and two 30 MPH (Generic pulse) tests were conducted on the Hyge sled using either one 5% or one 50% instrumented hybrid III test dummy. The testing was conducted using the D186 rigid full body buck (#418). The test data is retained at the Safety Laboratories Department as specified by record retention guidelines. A copy of the high speed film and test data have been given to the requester for evaluation. The still photographs are in digital format and are stored on the Safety Laboratories Department intranet home page under http://www-safetylab.ford.com/.

Attachments:

I. Test Authorization
II. Test Matrix
III. Sled Parameters
IV. Post Test Observations
V. Dummy Positioning

Concur:

Steve Lesh
Section Supervisor
Operations Engineering
Safety Laboratories Department

Wim Van Glabbeek
Product Test Engineer
Operations Engineering
Safety Laboratories Department

GTO Test Request

Requester / Coordinator (PROFS):
DPERRIGO
DALE PERRIGO

Performing Activity:	Date Submitted:	Requested Completion Date:	Requester Reference Number:
HYGE and VIA Sled	12-MAR-1999	26-MAR-1999	

Procedure Number:	Request Title and / or Subject of Request:
108	D186 HYGE INFLATOR EVAL. OF 5TH FEMALE UPRIGHT

Billable Requester's Dept No.:	Work Task / Work Order Number:	Request conducted to certify control item compliance with Government Regulations:
T551 AV2216A	F09	
Billable Requester's (PROFS): DPERRIGO	Billable Requester's Name: DALE PERRIGO	Yes: ☐ No: ☒

Complete the following two questions as indicated

1 - Rational for not replacing this test by CAE Analysis:

- ☐ No CAE Methodology or process available
- ☐ For CAE Correlation
- ☐ Insufficient confidence in CAE
- ☐ To obtain basic data for CAE
- ☐ Replacement or improvement of existing Test
- ☐ Testing is Quicker
- ☐ Mandatory or Regulatory
- ☐ Certification
- ☒ Development test for FSS
- ☐ Not applicable

Other:

(Check appropriate boxes)

2 - What is the expected Test Outcome:

- ☐ Results will meet DVP/WCR requirements (Sign-Off)
- ☐ System Component will not meet Test specification
- ☒ Unknown
- ☐ Above is Based on CAE?

Other:

(Check appropriate boxes)

Request Purpose / Request Procedure or Description of Request:

T567-108 Hyge Sled Back Upright Adult Hybrid III Dummy Positioning Procedure

Test Objects:	Reference Object	Reference Description
	N/A	N/A

Sample #	Object ID	Object Description
1	D186 PSGR RESTRAINTS	BELTS, AIRBAGS, ETC.

ature Approvals (As Required for Control Purposes)

Testing Engineer	DALE PERRIGO	Assigned Coordinator	WIM VAN GLABBEEK
Request Authorized by	Not Required	Assigned Supervisor	STEPHEN LESH

HYGE Sled Test Summary

Initiator: Dale Perrigo
Phone: x56018

HYGE Run H 19825 Run Date 4/14/99
Test Engineer: Wim Van Glabbeek Test Auth # TB4763
Requester: Dale Perrigo BUCK # 418

2 MATRIX #

Test Title/Description: D186 Passenger Inflator Evaluation
Crash/HYGE Pulse Ref: Simulated Speed: 30 Pin # 33

FIRE TIMES

LEFT Airbag: ms Pyro Buckle: ms
RIGHT Airbag: 30/130 ms Pyro Buckle: ms

PARTS DESCRIPTION PRE-TEST OBSERVATIONS

LEFT: Dummy / A/B / Belt / Seat / Tracks: power manual / Position: / Welded? Y N
CENTER: Dummy / Belt / Dr. A/B FM# / Pass. FM#
RIGHT: Dummy 50TH / A/B F-18 / Belt 211A / Seat 3-4 / Tracks: (power) manual / Position: DRIVER / Welded? Y (N)

Instrument Panel:
Steering Column:
Pre-Test OBSERVATIONS:

POST-TEST OBSERVATIONS & CHECKLIST Comment (if needed) below:

LEFT: Upright I/B O/B On Seat Off Seat
CNTR: Upright Left Right On Seat Off Seat
RIGHT: (Upright) I/B O/B (On Seat) Off Seat

LEFT SIDE

A/B Intact (No Holes): Y / N
Face to A/B Contact Location: I/B Center O/B High Mid Low
A/B Cover Attached to Can./Cover: Y / N
Adj. D-ring Remain in Position: Y / N
Retractor Intact: Y / N Locked: Y / N
Buckle Held: Y / N Webbing Intact: Y / N
Seat Tracks Held: Y / N
Cracks in I/P: Y / N
Steering Wheel Deformed: Y / N
Column Stroked w/o Interference: Y / N

RIGHT SIDE

A/B Intact (No Holes): (Y) / N
Face to A/B Contact Location: I/B Center (O/B) High (Mid) Low
A/B Cover Attached to Can./Cover (Y) / N
~~Adj. D-ring Remain in Position: Y / N~~
Retractor Intact: Y / N Locked: Y / N
Buckle Held: Y / N Webbing Intact: (Y) / N
Seat Tracks Held: (Y) / N
Cracks in I/P: Y / (N)

Column Stroke: Left: Right:

Post Test COMMENTS: * WINDSHIELD CRACKED

DATA REVIEWED

* CH 14 Questionable Data

OBSERVER:

HYGE - DUMMY POSITIONING and F/A TARGETING Sheet

Initiator: Dale Perrigo
Phone: x5601x

TB4763 Run 19895 Date 4-14-99

D186 Passenger Inflator Evaluation

2

Buck # 418

Reference: H
H
H

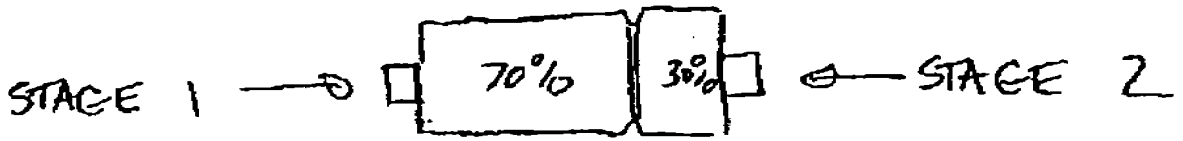
Left		Right	Center
	DUMMY TYPE	50% Hill	
	SEAT POSITION	MID	
	DUMMY NUMBER	331	

POSITIONING			ACTUAL LEFT	TARGET LEFT	TARGET RIGHT	ACTUAL RIGHT	TOLERANCE (± mm) 1st RUN	TOLERANCE (± mm) ADD'L
Seat Back Angle (13" above pivot)					27.8	22	0	+/-1 notch
Pelvic Angle (+/- 2.5 deg.; +/-1.0 for 5%ile)					22.5	21		
Column Angle							at left	at left
H-Point Longitudinal	Laser #	4			2987	2987	12	6
H-Point Vertical	Laser #	4			662	668		6
H-Point Lateral					313	312	12	6
Knee Longitudinal	Laser #	2			2565	2565		
Knee Vertical	Laser #	2			735	735		
Knee Lateral					373	373	6	6
Head Longitudinal	Laser #	5			3101	3101	level	6
Head Vertical	Laser #	5			1301	1301	level	6
Head Lateral					432	432	level	6
Dummy Neck Adjustment (first run only)								
Knee Centerline to Knee Centerline (max)					194	194		
Left Knee to Bolster					89	84		6
Right Knee to Bolster					92	94		6
Nose to Steering Wheel Upper Rim or I/P					563	553		6
Torso to Steering Wheel Lower Rim								6
Reference Target to Seat Bolt Longitudinal								
Reference Target to Seat Bolt Vertical								
Reference Target to Seat Bolt Lateral								
Reference Target Absolute Longitudinal			2739			2739		
Reference Target Absolute Vertical			808			807		
Reference Target Absolute Lateral			-872			873		

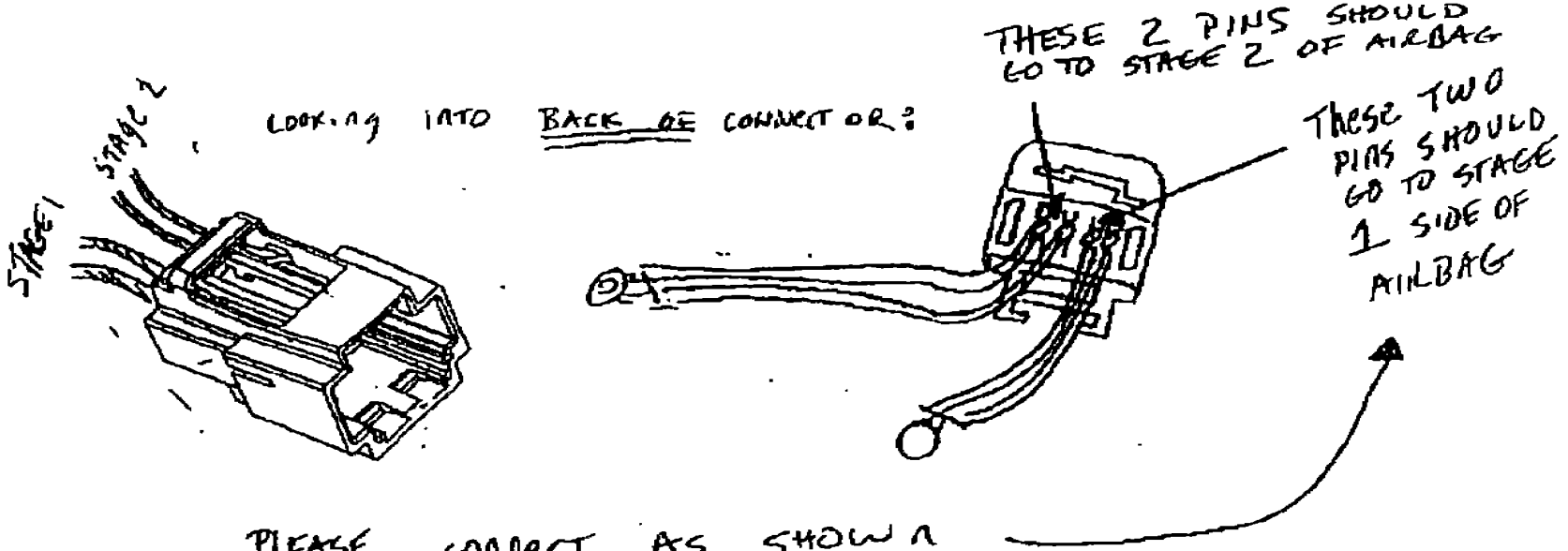
FILM ANALYSIS							
Knee (target) Lateral					348		
Thigh Lateral					334		
Phantom Lateral					327		
Shoulder Lateral					250		
Other							
Other							
Other							
Knee to H-Point							
Knee to Phantom							
Knee to Thigh							
Distance Between A or B Pillar Targets							
Upper or Forward Reference Target							
Lower or Rearward Reference Target							
Reference Bar to Film Plane							
Camera Angle						< 5 deg.	< 5 deg.

Notes:

AUTOLIV WHEEL AIRBAG INFLATOR



ALL WIRE HARNESSES RECEIVED ARE AS FOLLOWS:



PLEASE CONNECT AS SHOWN REGARDLESS OF WIRE LENGTH.

2000 Model Year Taurus Dummy Positioning Spreadsheet

HYGE - DUMMY POSITIONING and F/A TARGETING Sheet

TCXX Run H Date

0

Initials: 0
Phone: 0

Buck # 0
eference: H
H
H

	Left		Right	Center
		DUMMY TYPE		
		SEAT POSITION		
		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)		27.8	27.8		0	+/-1 notch
Pelvic Angle (+/- 2.5 deg.; +/-1.0 for 5%ile)		22.5	22.5			
Column Angle					at left	at left
H-Point Longitudinal Laser # 4		2960	2960		12	6
H-Point Vertical Laser # 4		668	668			6
H-Point Lateral		331	-314		12	6
Knee Longitudinal Laser # 2		2577	2568			
Knee Vertical Laser # 2		763	761			
Knee Lateral		367	-368		6	6
Head Longitudinal Laser # 5		3077	3107		level	6
Head Vertical Laser # 5		1309	1309		level	6
Head Lateral		428	-427		level	6
Dummy Neck Adjustment (first run only)						
Knee Centerline to Knee Centerline (max)		194	194			
Left Knee to Bolster		87	87			6
Right Knee to Bolster		82	82			6
Nose to Steering Wheel Upper Rim or I/P		371	553			6
Torso to Steering Wheel Lower Rim		188				6
Reference Target to Seat Bolt Longitudinal						
Reference Target to Seat Bolt Vertical						
Reference Target to Seat Bolt Lateral						
Reference Target Absolute Longitudinal	2739			2739		
Reference Target Absolute Vertical	606			607		
Reference Target Absolute Lateral	-872			873		

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:

FORM 1
Page 1 of 2

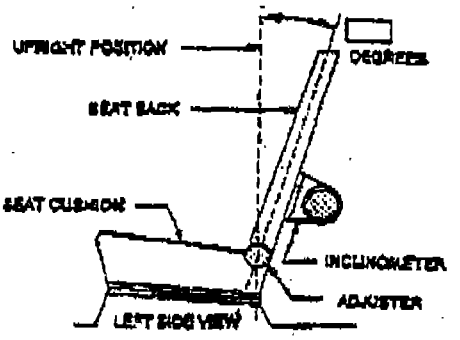
TEST VEHICLE INFORMATION

Vehicle Model Year & Make: 2000 Ford Taurus
Vehicle Model & Body Style: Taurus Sedan SE

1. NOMINAL DESIGN RIDING POSITION –
For adjustable driver and passenger seat backs.

Please 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 = 28.1 Degrees.
Measurement instructions:
Seat back angle is measured relative to the rocker sill. Remove back panel and position inclinometer as shown in drawing13 inches above back pivot point on rear outboard seat frame. Avoid taking measurement on reinforced plate.



Seat back angle for passenger's seat = 28.1 Degrees.
Measurement instructions:
Same as driver.

2. SEAT FORE & 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.
Positioning of the driver's seat:
For all seats (driver & pass., power & manual.): Position in the mechanical mid-position. Reference points are chosen on the seat and the seat track, total seat travel is measured, and the seat is then positioned in the center of seat travel. On manual seats, position at the mid-point (if possible) or the closest position to the rear of the mid-point travel.

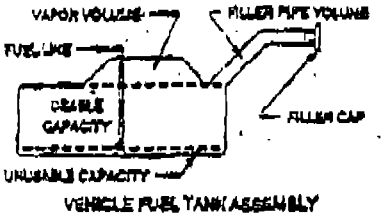
Positioning of the passenger's seat (if applicable):
Same as driver.

3. FUEL TANK CAPACITY DATA - -

3.1 A. "Usable Capacity" of standard equipment fuel tank = 16 gallons.

B. "Usable Capacity" of optional equipment fuel tank = 18 gallons - for Flex Fuel Vehicle

C Capacity used when certification testing to requirements of FMVSS 301 = 15.2 gallons.
17.1 gallons- for Flex Fuel Vehicle



VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

3.2 Amount of Stoddard solvent added to vehicle for certification test = _____gallons

3.3 Is vehicle equipped with electric fuel pump? __X__YES _____NO

If YES, does pump normally operate when vehicle's electrical system is activated?

___X___YES _____NO

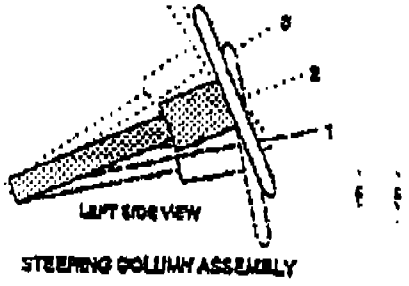
If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

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 inactivated. 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 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.



STEERING COLUMN ASSEMBLY

Operational Instructions:

Adjust column to center detent.

SRP Drawings
(SK-YF12-011001-54563)

for

Manual Seat

and

Power Seats

Included in a separate enclosure