V3358

REPORT NUMBER: 301-CAL-00-5

SAFETY COMPLIANCE TESTING FOR FMVSS 301
FUEL SYSTEM INTEGRITY

DAIMLERCHRYSLER CORPORATION
2000 DODGE NEON
4-DOOR SEDAN

NHTSA NUMBER: CY0305

VERIDIAN TEST NUMBER: 8480-15

VERIDIAN ENGINEERING
P.O. BOX 400
BUFFALO, NEW YORK 14225

May 23, 2000

FINAL REPORT

PREPARED FOR:

U. S. Department of Transportation
National Highway Traffic Safety Administration
ENFORCEMENT
Office of Vehicle Safety Compliance
400 Seventh Street, S. W.
Room No. 6115 (NEF-30)
Washington, DC 20590

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Approval Date: June 5, 2000

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: _____

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Final Report of FMVSS 301 Compliance Testing of a 2000 Dodge Neon 4-Door Sedan NHTSA No. CY0305	May 23, 2000
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7. Author(s): Lawrence Q. Valvo, Project Engineer; David J. Travale, Program Manager	8. Performing Organization Report No.: 8480-15
9. Performing Organization Name and Address: Veridian Engineering, 4455 Genesee Street, Buffalo, New York 14225	10. Work Unit No.
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15. Supplementary Notes

16. Abstract

Compliance tests were conducted on the subject 2000 Dodge Neon 4-Door Sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-301-01 for the determination of FMVSS 301 compliance. Test failures identified were as follows:

The test vehicle appeared to comply with all requirements of FMVSS 301 "Fuel System Integrity."

17. Key Words	18. Distribution Statement
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Section 1

PURPOSE OF COMPLIANCE TEST

This 30 mph rear moving barrier impact test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 301 Compliance Test Program conducted for the National Highway Traffic Safety Administration (NHTSA) by Veridian Engineering under Contract No. DTNH22-95-D-11000. The purpose of this test was to determine if the subject vehicle, a 2000 Dodge Neon 4-Door Sedan, meets the performance requirements of FMVSS No. 301, "Fuel System Integrity." This compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-301-01, dated March 28, 1994.

Section 2

COMPLIANCE TEST RESULTS SUMMARY

A 3122 pound 2000 Dodge Neon 4-Door Sedan was impacted from the rear by a 3961 pound moving barrier at a velocity of 28.9 mph. The test was performed by Veridian Engineering on May 23, 2000.

One instrumented Part 572 E and one non-instrumented Part 572 B, 50th percentile male Anthropomorphic Test Device (ATD) were placed in the driver and right-front passenger seating positions respectively. Additional ballast (30 pounds) was secured in the vehicle rear seat area.

The crash event was recorded by one real-time and eight high-speed cameras. Camera locations and other pertinent camera information are found on pages 3-9 and 3-10 of this report. Pre- and post-test photographs of the vehicle can be found in Appendix A. Vehicle and ATD electronic data plots are presented in Appendix B.

The 12.5 gallon fuel tank was filled to 92 percent capacity with orange Stoddard fluid prior to the impact. After the impact, there was no fluid leakage for the first 30 minutes nor during any phase of the rollover test. Average vehicle longitudinal crush was 11.8 inches. The vehicle appeared to comply with all the requirements of FMVSS No. 301 "Fuel System Integrity." Section 3 presents the results of these tests.

Table 1

CRASH TEST SUMMARY

Vehicle NHTSA No.: CY0305 Test Mode: 30 mph Rear Barrier

Test Date: May 23, 2000 Time: 10:39 Temperature : 67 °F

Vehicle Make/Model/Body Style: 2000 Dodge Neon 4-Door Sedan

Vehicle Test Weight: 3122 lbs Impact Velocity: 28.9 mph

Static Crush: Left Side = 10.3 inches

Right Side = 11.3 inches

Centerline = 13.9 inches

Average Crush: 11.8 inches

TYPE OF FRONT OCCUPANT RESTRAINT SYSTEM INSTALLED IN TEST VEHICLE:

Driver's DSP: 3-Point Seatbelt, Airbag, Knee Bolster

Right Passenger's DSP: 3-Point Seatbelt, Airbag, Knee Bolster

VISIBLE DUMMY CONTACT POINTS:

Driver: Back of head to center of head restraint, back to center of seat back, left and right knees to lower edge of steering wheel rim.

Passenger: Back of head to center of head restraint, back to center of seat back.

DOOR OPENING DATA: Closed / Operable - Left Front

Closed / Operable - Right Front

Stoddard Solvent Spillage from Vehicle's Fuel System: None

Remarks: Rear window shattered during the impact. Driver and passenger seat backs bent rearward approximately 38 degrees.

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2000 Dodge Neon 4-Door Sedan

NHTSA No.: CY0305 ; VIN: 1B3ES46CXYD716967 ; Color: Black

Engine Data: 4 cylinders; - CID; 2.0 Liters; - cc

Placement: - Longitudinal or In-Line; X Transverse or Lateral

Transmission Data: 3 speeds; - Manual; X Automatic; - Overdrive

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

Major Options: X A/C; X Pwr.Strg.; X Pwr. Brakes

X Pwr. Windows; X Pwr. Door Locks; X Tilt Wheel

Date Received: 4/26/00 ; Odometer Reading 37 miles

Selling Dealer: Bruce Campbell Dodge Inc.

& Address: 14875 Telegraph Road, Redford MI 48239

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: DaimlerChrysler Corporation

Date of Manufacture: 11-99

GVWR: 3616 lbs.; GAWR: 1980 lbs. FRONT; 1686 lbs. REAR

DATA FROM TIRE PLACARD:

Location of Placard on Vehicle: Driver Door

Tire Pressure with Maximum Capacity Vehicle Load: 44 psi FRONT 44 psi REAR

Recommended Tire Size: P185/65 R14 or P185/60 R15

* Recommended Cold Tire Pressure: 32 psi FRONT; 32 psi REAR

Size of Tires on Test Vehicle: P185/60 R15

Type of Spare Tire: Temporary

Vehicle Capacity Data:

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

Number of Occupants: 2 Front; 3 Rear; 5 Total

Vehicle Capacity Weight (VCW) = 865 lbs.

No. of Occupants x 150 lbs. = 750 lbs.

Rated Cargo/Luggage Weight (RCLW) = 115 lbs.

*Tire pressure used for test

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW:

Right Front =	855 lbs.	Right Rear =	490 lbs.
Left Front =	849 lbs.	Left Rear =	496 lbs.
TOTAL FRONT =	1,704 lbs.	TOTAL REAR =	986 lbs.

TOTAL DELIVERED WEIGHT = 2,690 lbs.

% of Total Front of Vehicle Weight = 63 % of Total Rear Weight = 37 %

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight	=	2,690 lbs.
Rated Cargo/Luggage Weight (RCLW)	=	115 lbs.
Weight of 2 p.572 Dummies, 167 & 164 lbs	=	331 lbs.
TARGET TEST WEIGHT	=	3,136 lbs.

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 101 POUNDS OF CARGO WEIGHT:

Right Front =	972 lbs.	Right Rear =	580 lbs.
Left Front =	982 lbs.	Left Rear =	588 lbs.
TOTAL FRONT =	1,954 lbs.	TOTAL REAR =	1,168 lbs.

TOTAL TEST WEIGHT = 3,122 lbs.

% of Total Front Weight = 62.6 % % of Total Rear Weight = 37.4 %

* Weight of Ballast Secured in Vehicle Rear Seat Area = 30 lbs.

Type of Ballast: Lead Shot

Method of Securing Ballast: Rear seat belt anchorages

Vehicle Components Removed for Weight Reduction: None

VEHICLE ATTITUDE (all dimension in inches):

AS DELIVERED:	RF	26.6	LF	26.5	RR	27.5	LR	27.1
AS TESTED:	RF	25.7	LF	25.4	RR	26.8	LR	26.2

Vehicle's Wheel Base: 104.9 in.

Location of Vehicle's C.G.: 39.2 inches rearward of front wheel center.

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 12.5 gallons

Usable Capacity Figure Furnished by COTR = 12.5 gallons

Test Volume Range (91 to 94% of Usable Capacity) = 11.4 to 11.8 gallons

ACTUAL TEST VOLUME= 11.5 gallons (with entire fuel system filled)

* Ballast weight includes the RCLW, the weight of drained vehicle fluids and the weight of any removed vehicle components less the weight of onboard instrumentation, cameras, and hardware.

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

FUEL SYSTEM DATA (continued):

Test Fluid Type: Stoddard Solution

Test Fluid Specific Gravity: 0.764

Test Fluid Kinematic Viscosity: 0.96 centistokes

Test Fluid Color: Orange ("red" is preferred)

Type of Vehicle Fuel Pump: Electric

Electric Fuel Pump Operation with Ignition Switch ON and Engine OFF - Fuel pump operated.

Details of Fuel System: Fuel filler is located on the right rear quarter panel aft of the rear axle; Fuel tank is located on the vehicle underbody beneath the rear seat and forward of the rear axle; Fuel lines are routed along the inboard side of the right frame rail.

Table 3

MOVING BARRIER PARAMETER DATA

WEIGHT OF MOVING BARRIER:

Right Front	=	1113	lbs.	Right Rear =	868 lbs.
Left Front	=	1102	lbs.	Left Rear =	878 lbs.
TOTAL FRONT	=	2,215	lbs.	TOTAL REAR =	1,746 lbs.

TOTAL BARRIER WEIGHT = 3,961 lbs.

MOVING BARRIER DIMENSIONS:

Barrier Face Height: 60.0 in.

Barrier Face Width: 78.0 in.

Barrier Face

Ground Clearance: 5.0 in.

Tread Width: 59.5 in.

Wheel Base: 120.0 in.

Location of C.G.:

X: 52.9 inches rearward of front wheel center.

Y: 0.0 inches from longitudinal-vertical plane of symmetry.

Z: 16.3 inches above ground.

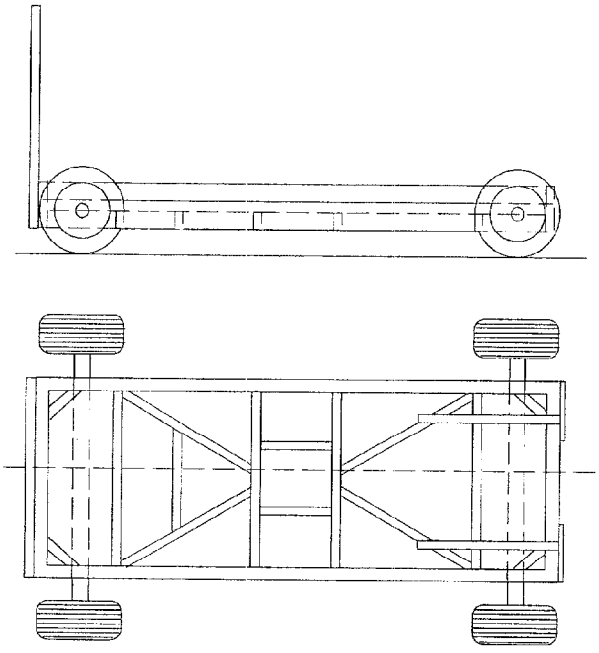


Table 4

POST IMPACT DATA

TYPE OF TEST:

Type of Test: Rear Barrier Impact Angle: 0°

Test Date: May 23, 2000 Time: 10:39 Temperature: 67 °F

Vehicle NHTSA No.: CY0305

Required Impact Velocity Range: 28.9 to 29.9 mph

BARRIER IMPACT VELOCITY: (Speed traps within 5 feet of impact plane.)

Trap No. 1 = 28.9 mph; Trap No. 2 = 28.9 mph

Average Impact Speed = 28.9 mph

VEHICLE STATIC CRUSH: (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test	Right =	168.9	; C/L =	174.5	;Left =	169.0
Post-Test	Right =	157.6	; C/L =	160.6	;Left =	158.7
Crush	Right =	11.3	; C/L =	13.9	;Left =	10.3
AVERAGE	=	11.8	inches			

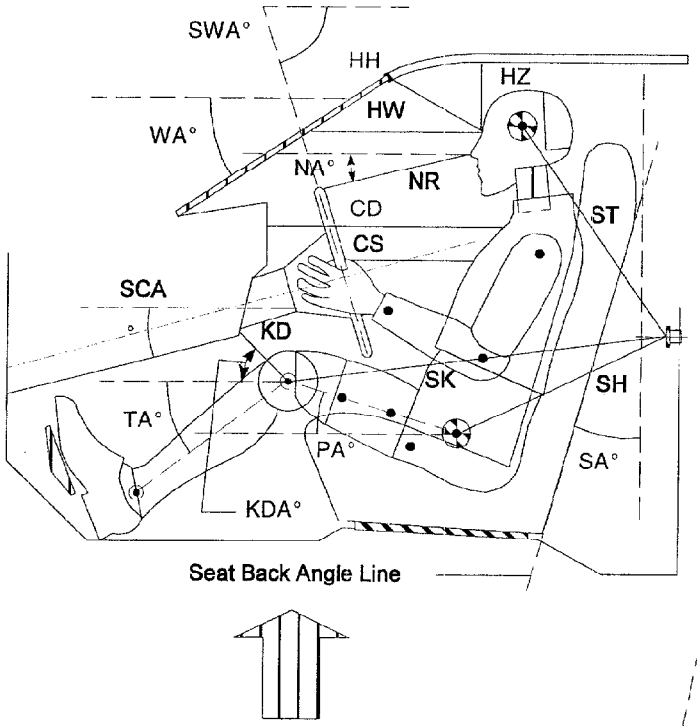
Section 3

COMPLIANCE TEST DATA

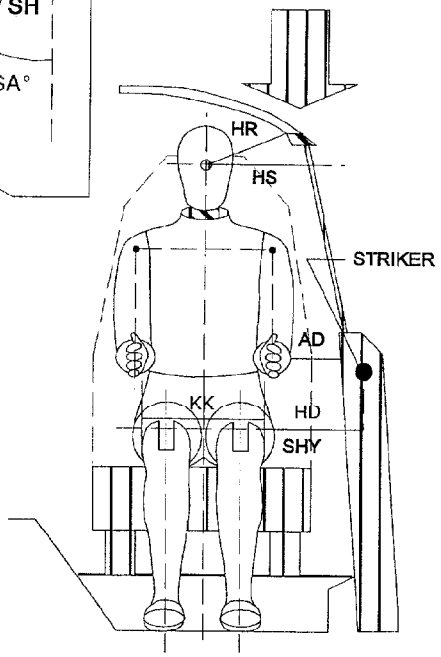
Figure 1

PART 572 DUMMY IN-VEHICLE POSITION
(FOR REAR IMPACTS ONLY)

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

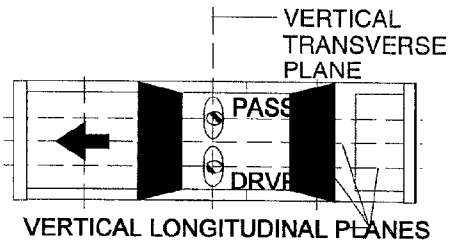


Table 5

FRONT SEAT OCCUPANT MEASUREMENTS
(FOR REAR IMPACT ONLY)

	DRIVER (Serial #152)		
WA°	25 deg.		
SWA°	66 deg.		
SCA°	24 deg.		
SA°	24 deg.		
HZ	7.2		
HH	13.6		
HW	26.3		
HR	6.6 (to grab rail)		
NR	15.6	Angle	12 deg.
CD	24.5		
CS	11.5		
RA	7.4		
KDL	6.1	Angle (KDA)	38 deg.
KDR	5.7		
PA°	25 deg.		
TA°	37 deg.		
KK	12.2		
ST	19.9	Angle	3 deg.
SK	22.1	Angle	91 deg.
SH	8.3	Angle	127 deg.
SHY	8.7		
HS	11.9		
HD	7.9		
AD	3.4		

(Measurements in inches)

Table 6
FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

FMVSS NO. 301

TEST VEHICLE NHTSA NO.: CY0305 TEST DATE: May 23, 2000

Vehicle Mfgr./Make/Model: 2000 Dodge Neon 4-Door Sedan

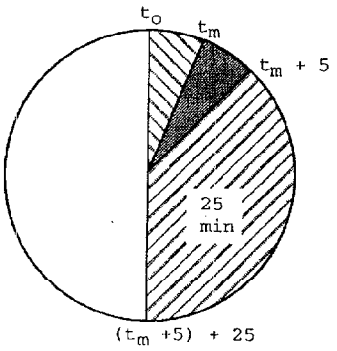
Test vehicle fuel tank filled to 91% to 94% of manufacturer's "usable" capacity and with electric fuel pump operating (if it will operate without engine operation). Part 572 test dummies located at each front designated seating position.

****

TEST VEHICLE IMPACT TYPE:

- \- Frontal (30 mph)
- \- Oblique (30 mph) with - ° barrier face first contacting - (driver/passenger) side
- X Rear Moving Barrier (30 mph)
- \- Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0	1 oz.
0	5 oz.
0	1 oz./1 min.

SOLVENT SPILLAGE DETAILS:

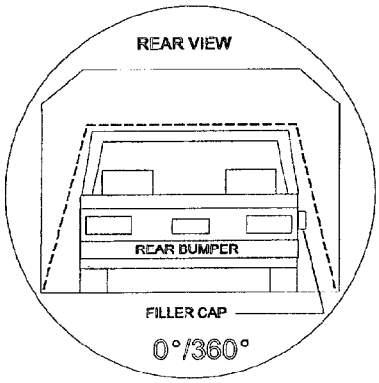
None

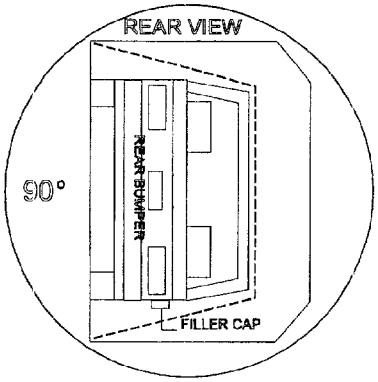
Table 7

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE :
0-90 Deg.

Vehicle NHTSA ID No. :
CY0305





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	1	minutes	13	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	6	minutes	13	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

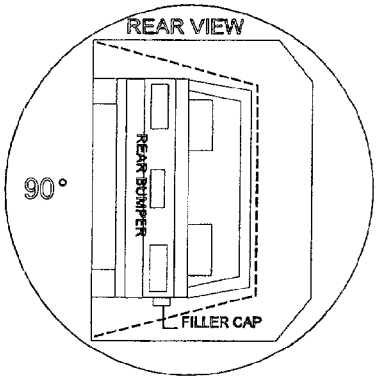
None

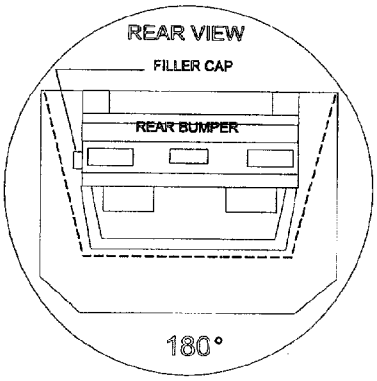
Table 7

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
90-180 Deg.

Vehicle NHTSA ID No. :
CY0305





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)		1	minutes	7	seconds
FMVSS 301 Position Hold Time +		5	minutes	00	seconds
	TOTAL	6	minutes	7	seconds
Next whole minute interval		7	minutes		

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

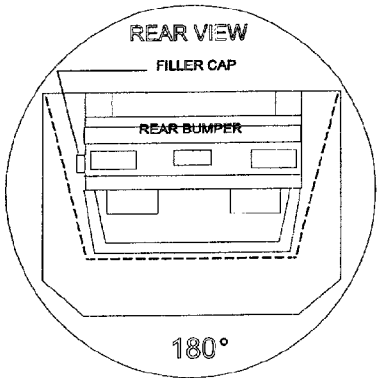
None

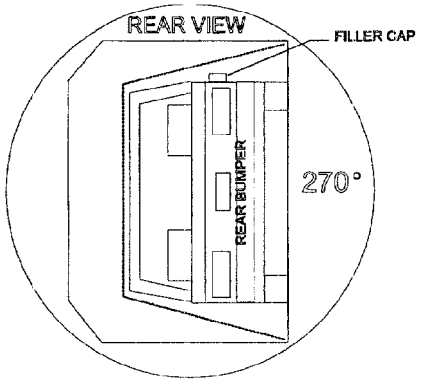
Table 7

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
180-270 Deg.

Vehicle NHTSA ID No. :
CY0305





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)		1	minutes	2	seconds
FMVSS 301 Position Hold Time +		5	minutes	00	seconds
	TOTAL	6	minutes	2	seconds
Next whole minute interval		7	minutes		

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

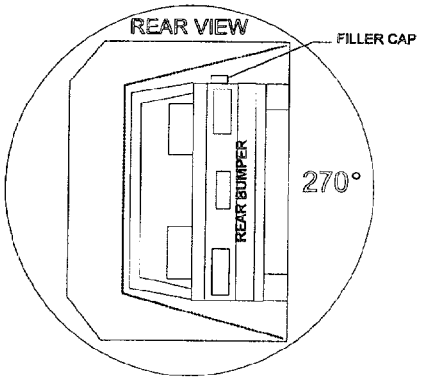
None

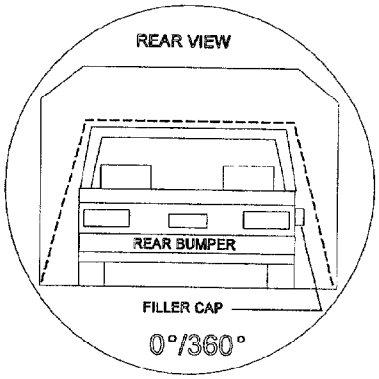
Table 7

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
270-360 Deg.

Vehicle NHTSA ID No. :
CY0305





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)		1	minutes	8 seconds
FMVSS 301 Position Hold Time +		5	minutes	00 seconds
	TOTAL	6	minutes	8 seconds
Next whole minute interval		7	minutes	

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

None

Figure 2

CAMERA POSITIONS FOR REAR IMPACTS

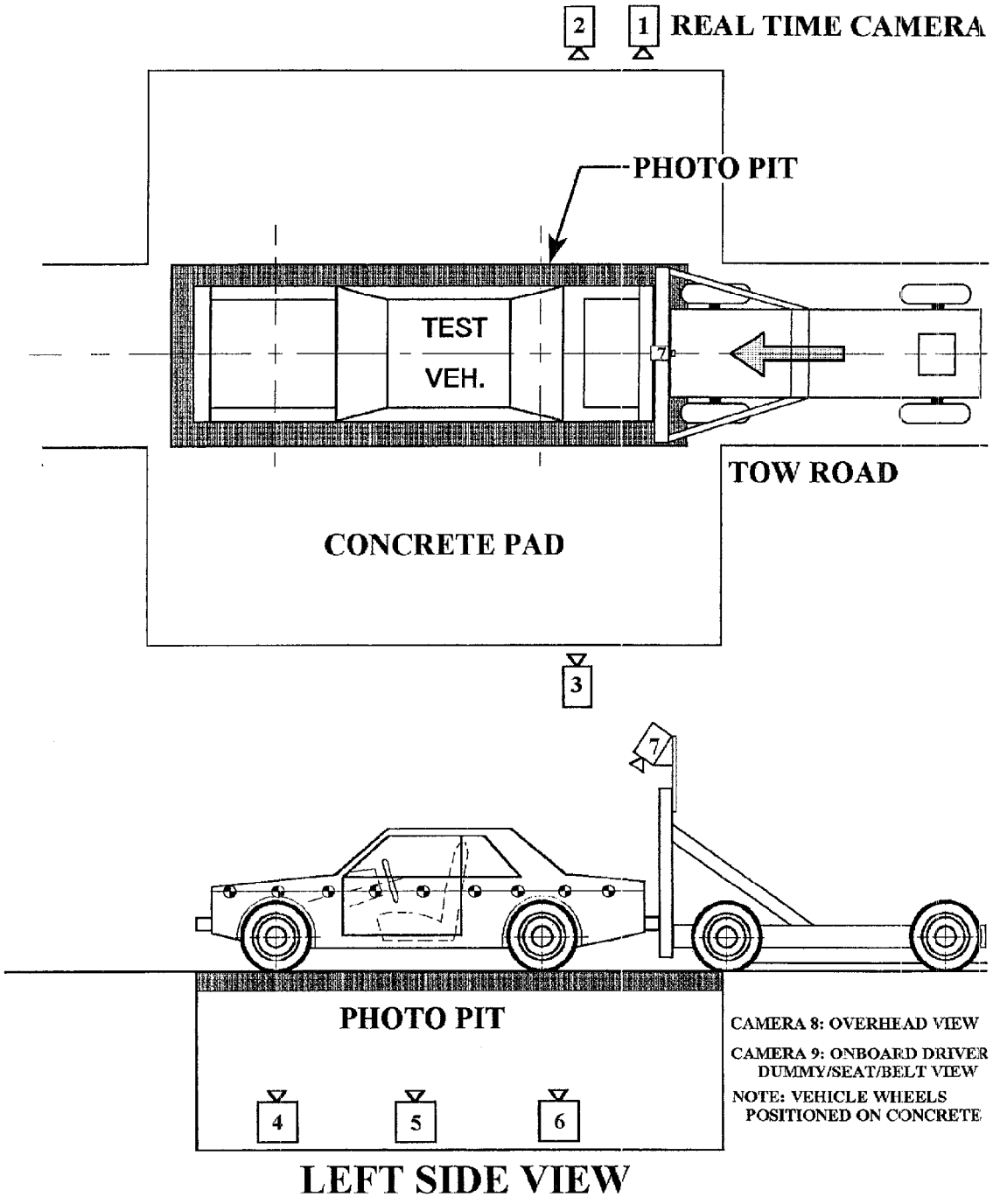


Table 8

HIGH-SPEED CAMERA LOCATIONS

NHTSA No. : CY0305 Vehicle : 2000 Dodge Neon 4-Door Sedan

CAMERA NO.	VIEW	CAMERA POSITIONS (inches)*			ANGLE** (degrees)	LENS (mm)	SPEED (fps)
		X	Y	Z			
1	Real-Time Camera	-	-	-	-	-	24
2	Right Side View	484.5	70.5	42.7	-1	35	500
3	Left Side View	491.0	80.5	51.3	-2	35	500
4	Vehicle Front Underbody View	0	138.1	-77	90	13	775
5	Vehicle Mid-Section Underbody View	0	72.0	-77	90	13	750
6	Vehicle Rear Underbody View	0	30.5	-77	90	13	750
7	Moving Barrier View	0	0	99	-105	13	500
8	Overhead Overall View	-20	0	386	-90	13	500
9	Onboard Driver Dummy/Seat/Belt View	-	-	-	-	8	500

* X = film plant to monorail centerline (+ to left of rail)
Y = film plane to impact location (+ ahead of impact location)
Z = film plane to ground (+ above ground)
** = referenced to horizontal plane

Appendix A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

Figure	Photograph Title	Page No.
A-1	PRE-TEST FRONT VIEW	A-3
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A-4	POST-TEST LEFT SIDE VIEW	A-6
A-5	PRE-TEST RIGHT SIDE VIEW	A-7
A-6	POST-TEST RIGHT SIDE VIEW	A-8
A-7	PRE-TEST REAR VIEW	A-9
A-8	POST-TEST REAR VIEW	A-10
A-9	PRE-TEST LEFT FRONT THREE-QUARTER VIEW	A-11
A-10	POST-TEST LEFT FRONT THREE-QUARTER VIEW	A-12
A-11	PRE-TEST RIGHT REAR THREE-QUARTER VIEW	A-13
A-12	POST-TEST RIGHT REAR THREE-QUARTER VIEW	A-14
A-13	PRE-TEST FRONT UNDERBODY VIEW	A-15
A-14	POST-TEST FRONT UNDERBODY VIEW	A-16
A-15	PRE-TEST REAR UNDERBODY VIEW	A-17
A-16	POST-TEST REAR UNDERBODY VIEW	A-18
A-17	CERTIFICATION PLACARD	A-19
A-18	TIRE PLACARD	A-20
A-19	ROLLOVER 90°	A-21
A-20	ROLLOVER 180°	A-22
A-21	ROLLOVER 270°	A-23
A-22	ROLLOVER 360°	A-24

Figure A-1: PRE-TEST FRONT VIEW

Figure A-2: POST-TEST FRONT VIEW

Figure A-3: PRE-TEST LEFT SIDE VIEW

Figure A-4: POST-TEST LEFT SIDE VIEW

Figure A-5: PRE-TEST RIGHT SIDE VIEW

Figure A-6: POST-TEST RIGHT SIDE VIEW

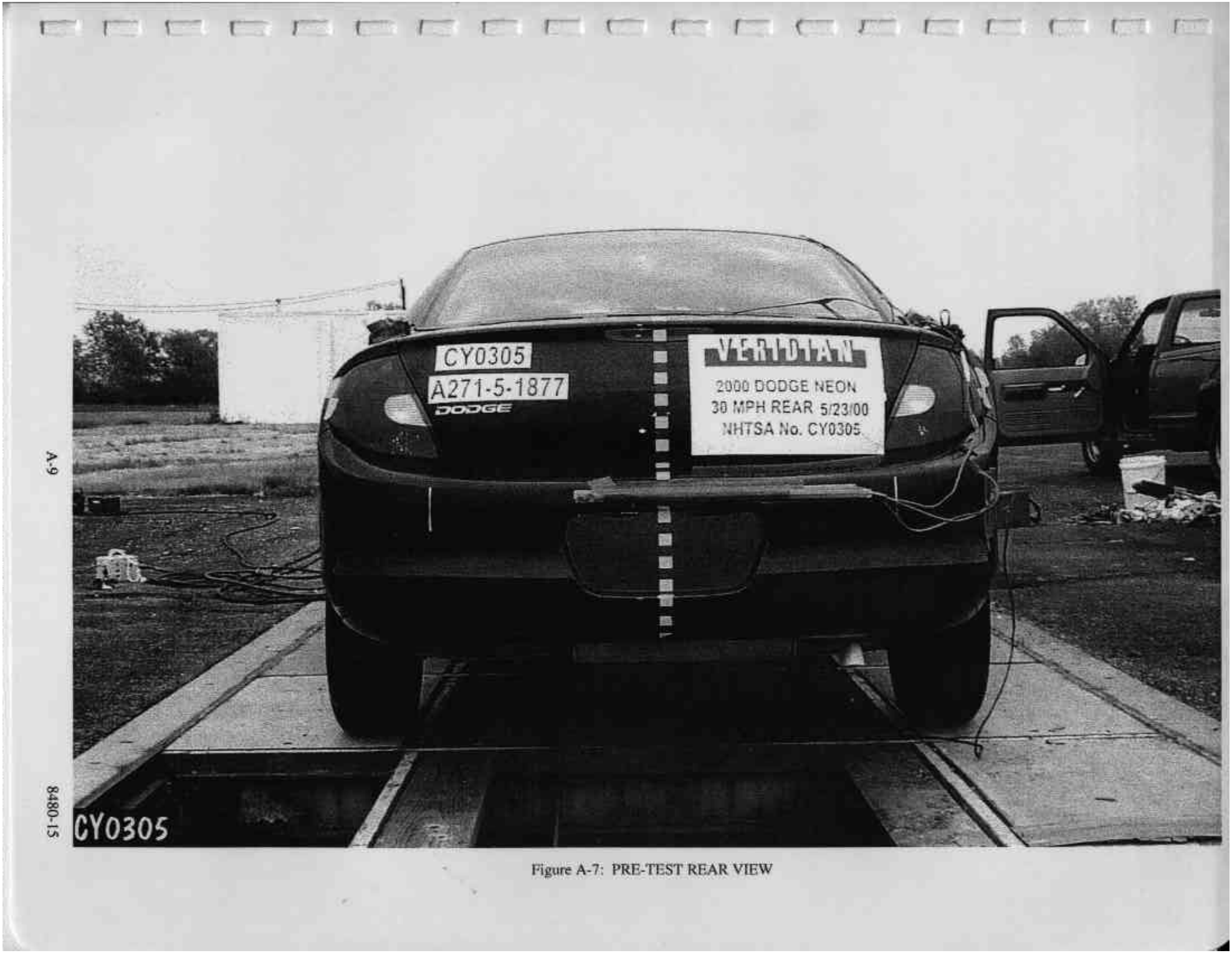


Figure A-7: PRE-TEST REAR VIEW

Figure A-8: POST-TEST REAR VIEW

Figure A-9: PRE-TEST LEFT FRONT THREE-QUARTER VIEW

Figure A-10: POST-TEST LEFT FRONT THREE-QUARTER VIEW

Figure A-11: PRE-TEST RIGHT REAR THREE-QUARTER VIEW

Figure A-12: POST-TEST RIGHT REAR THREE-QUARTER VIEW

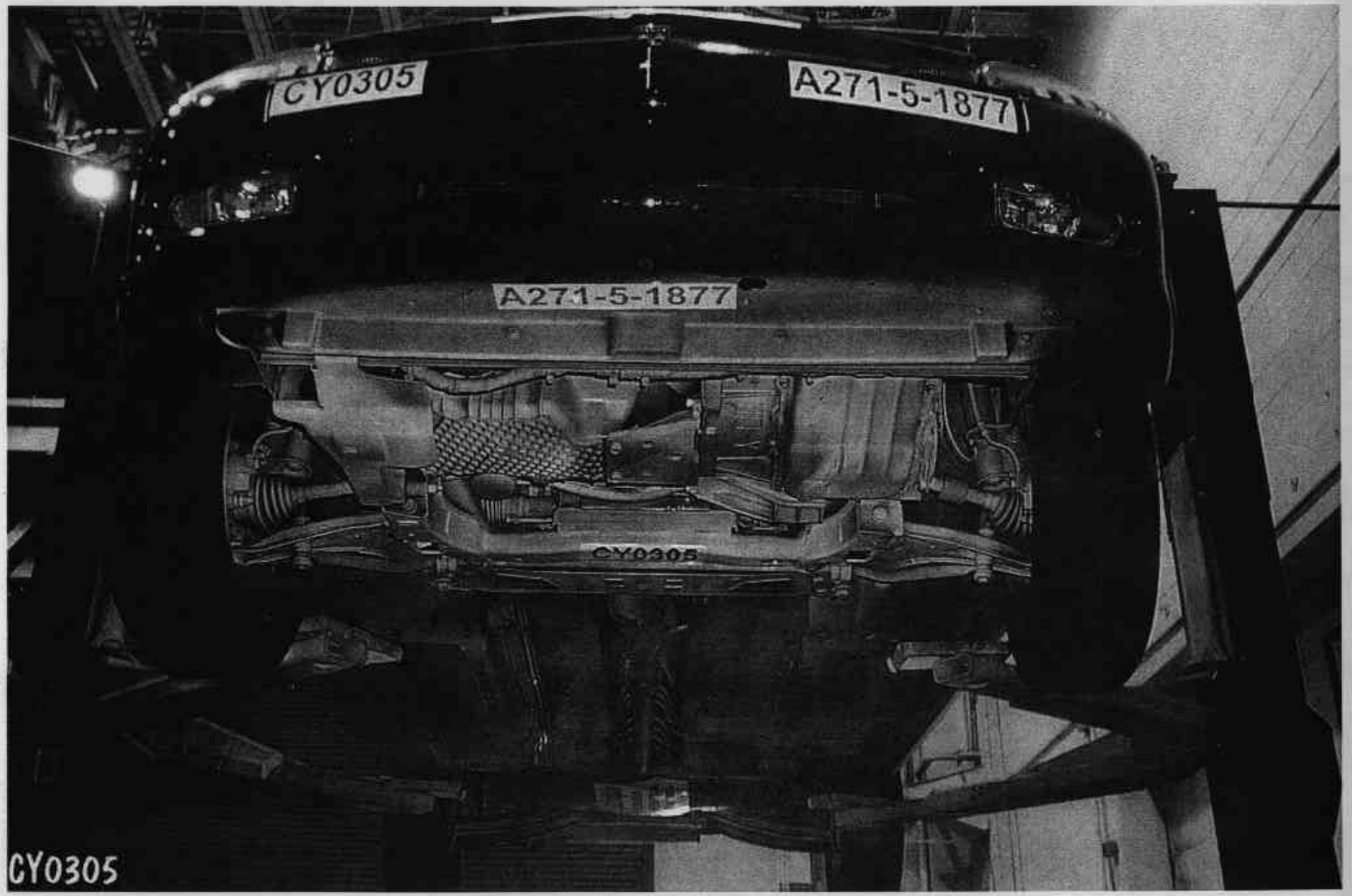


Figure A-13: PRE-TEST FRONT UNDERBODY VIEW

Figure A-14: POST-TEST FRONT UNDERBODY VIEW

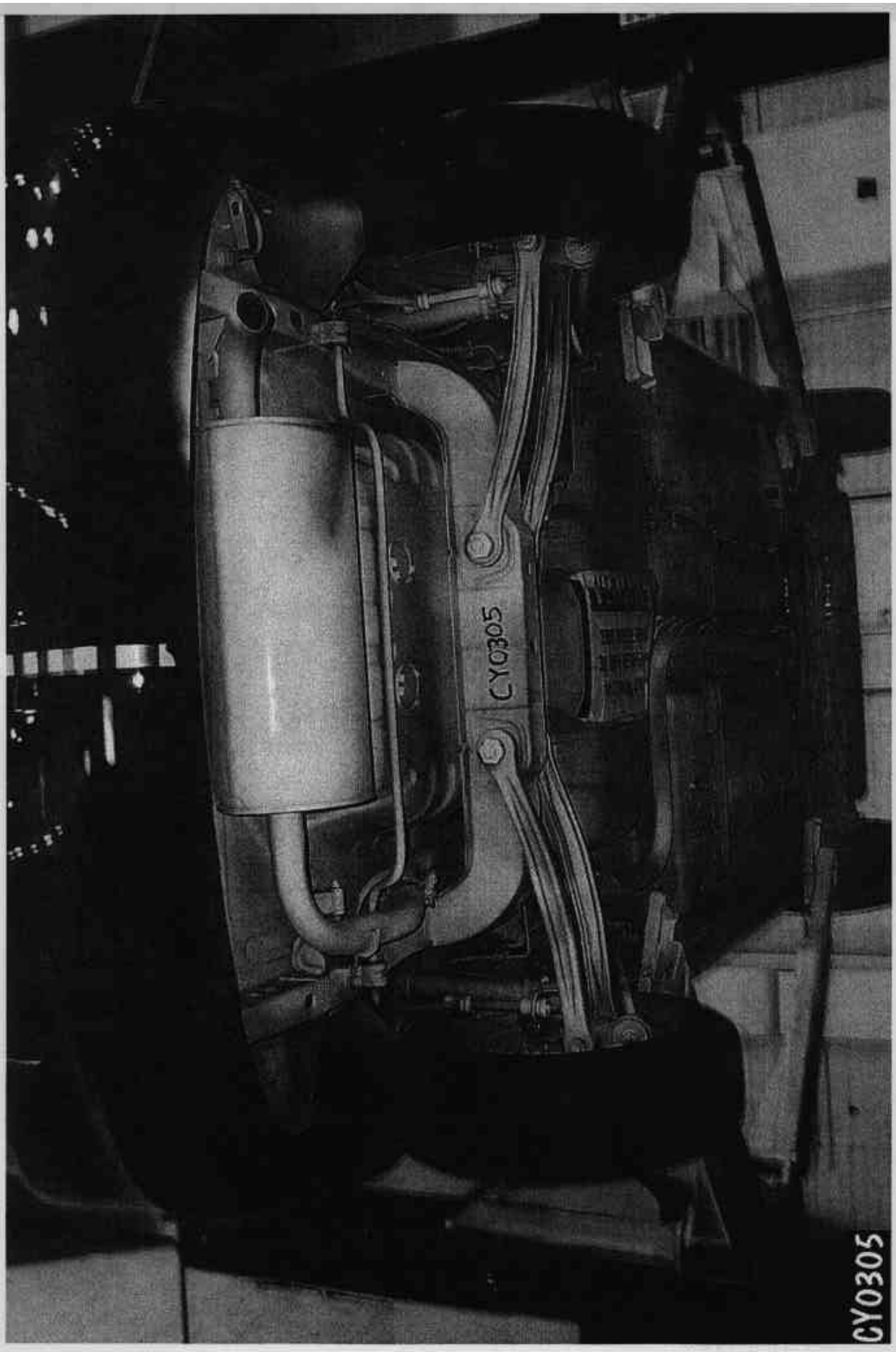


Figure A-15: PRE-TEST REAR UNDERBODY VIEW

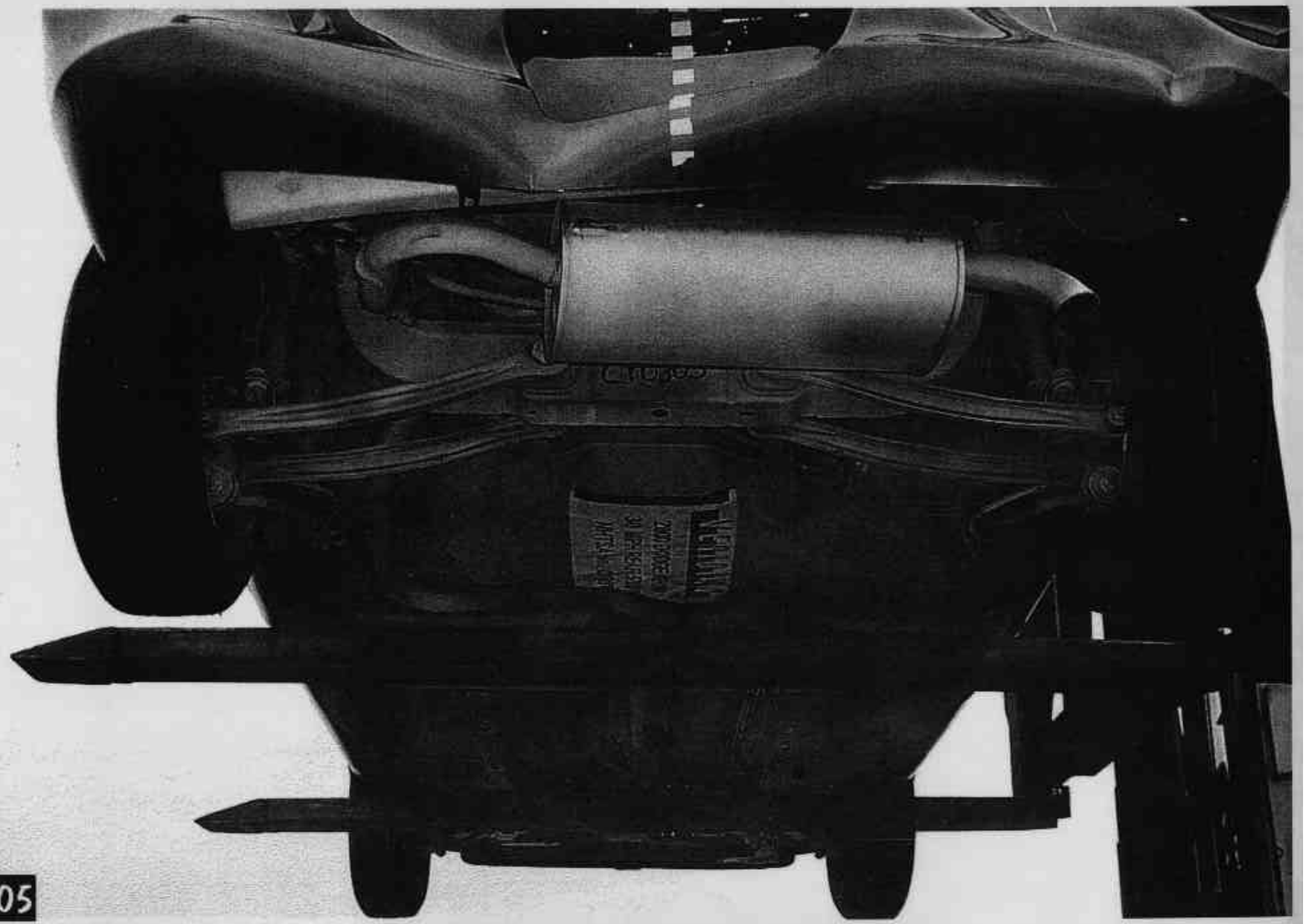


Figure A-16: POST-TEST REAR UNDERBODY VIEW

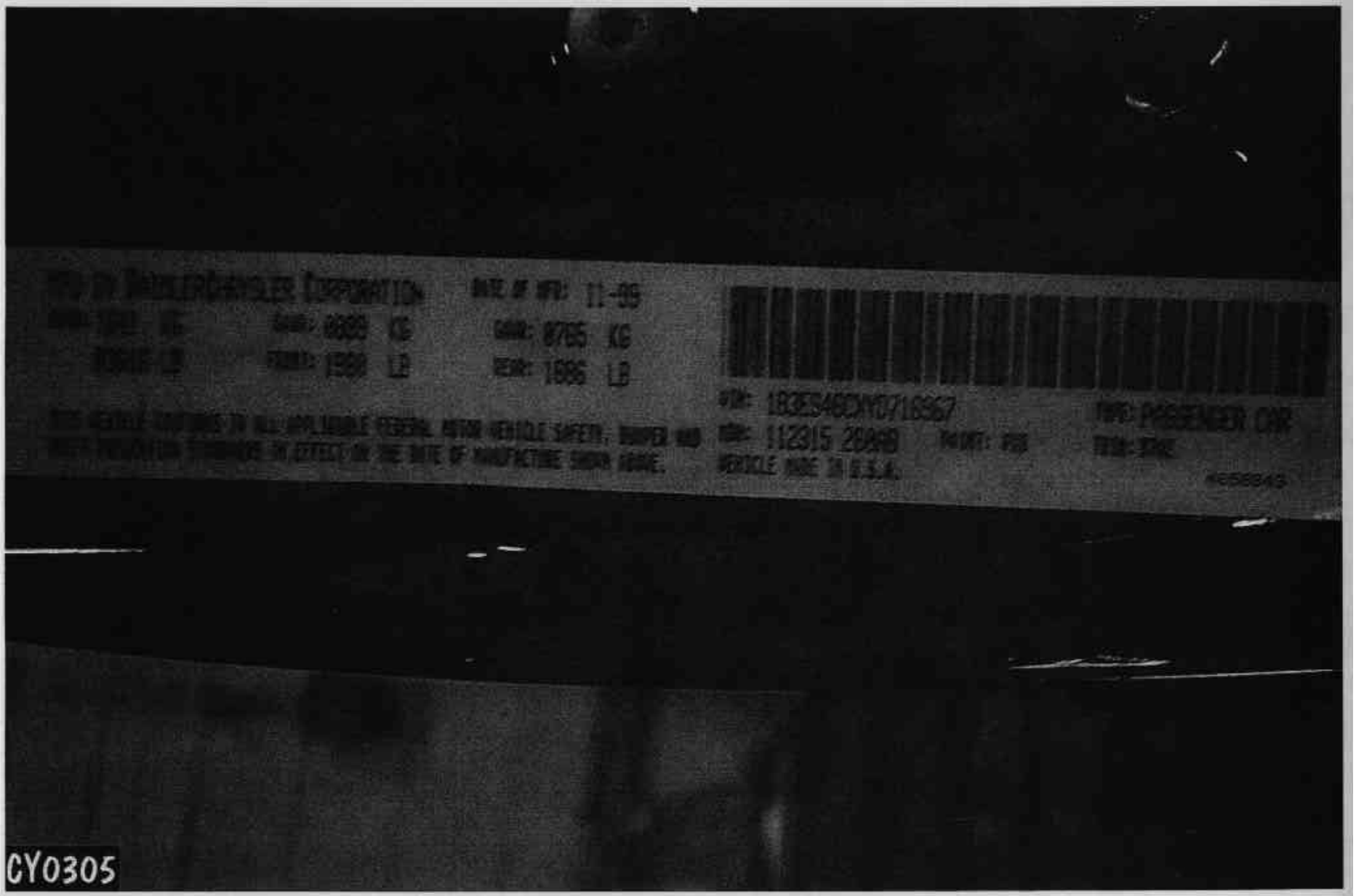


Figure A-17: CERTIFICATION PLACARD

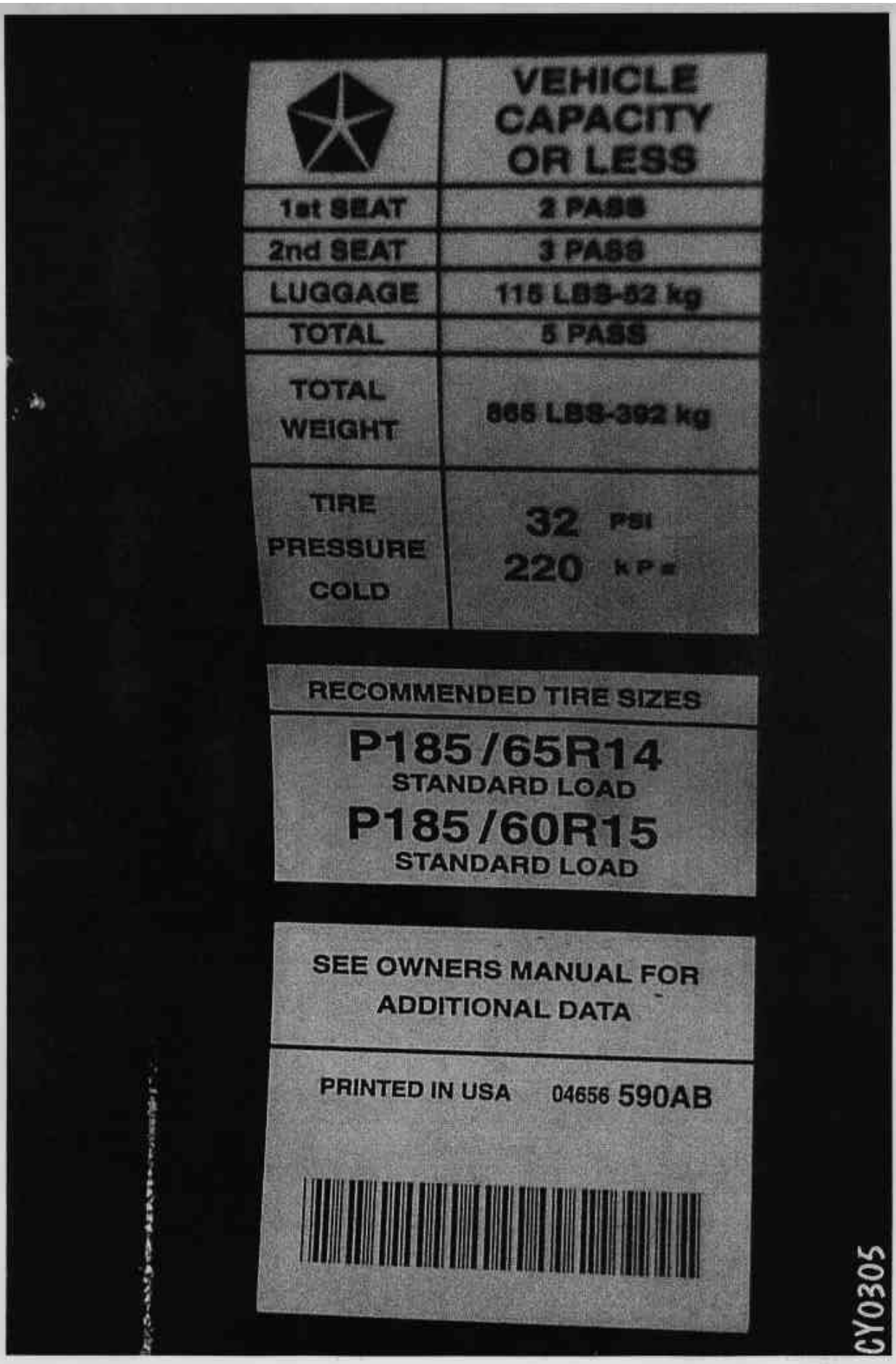


Figure A-18: TIRE PLACARD

Figure A-19: ROLLOVER 90°

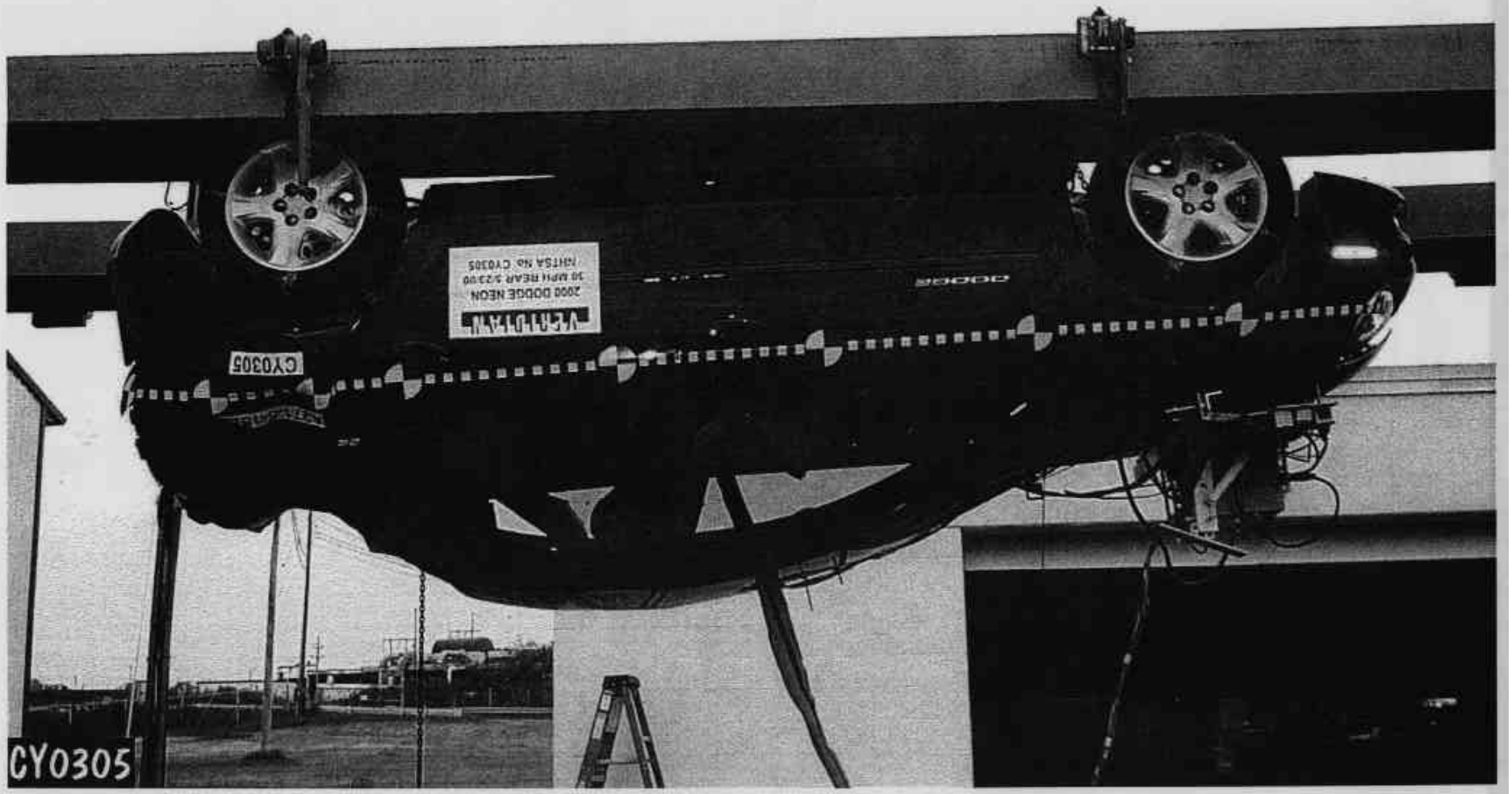


Figure A-20: ROLLOVER 180°

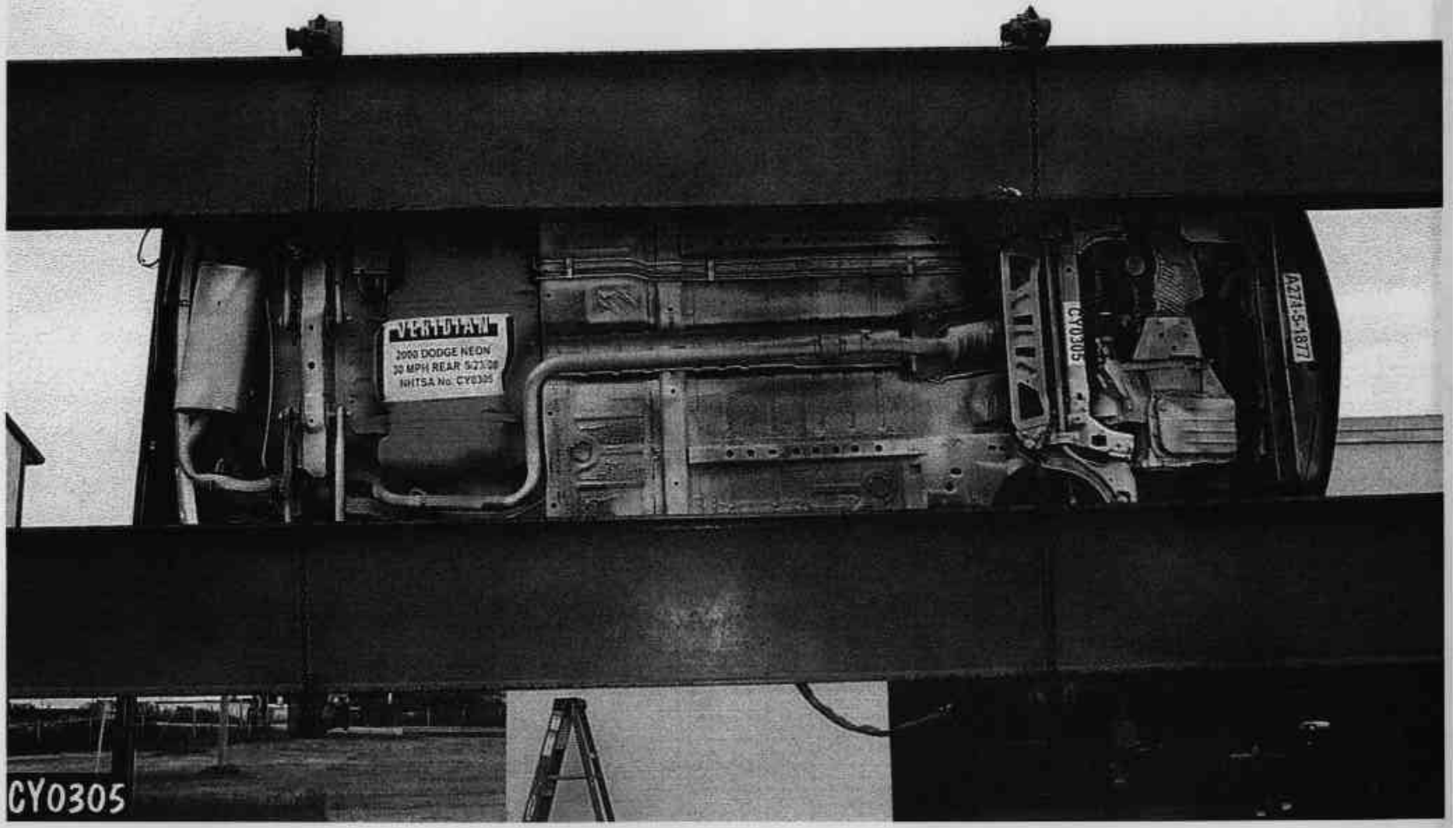


Figure A-21: ROLLOVER 270°

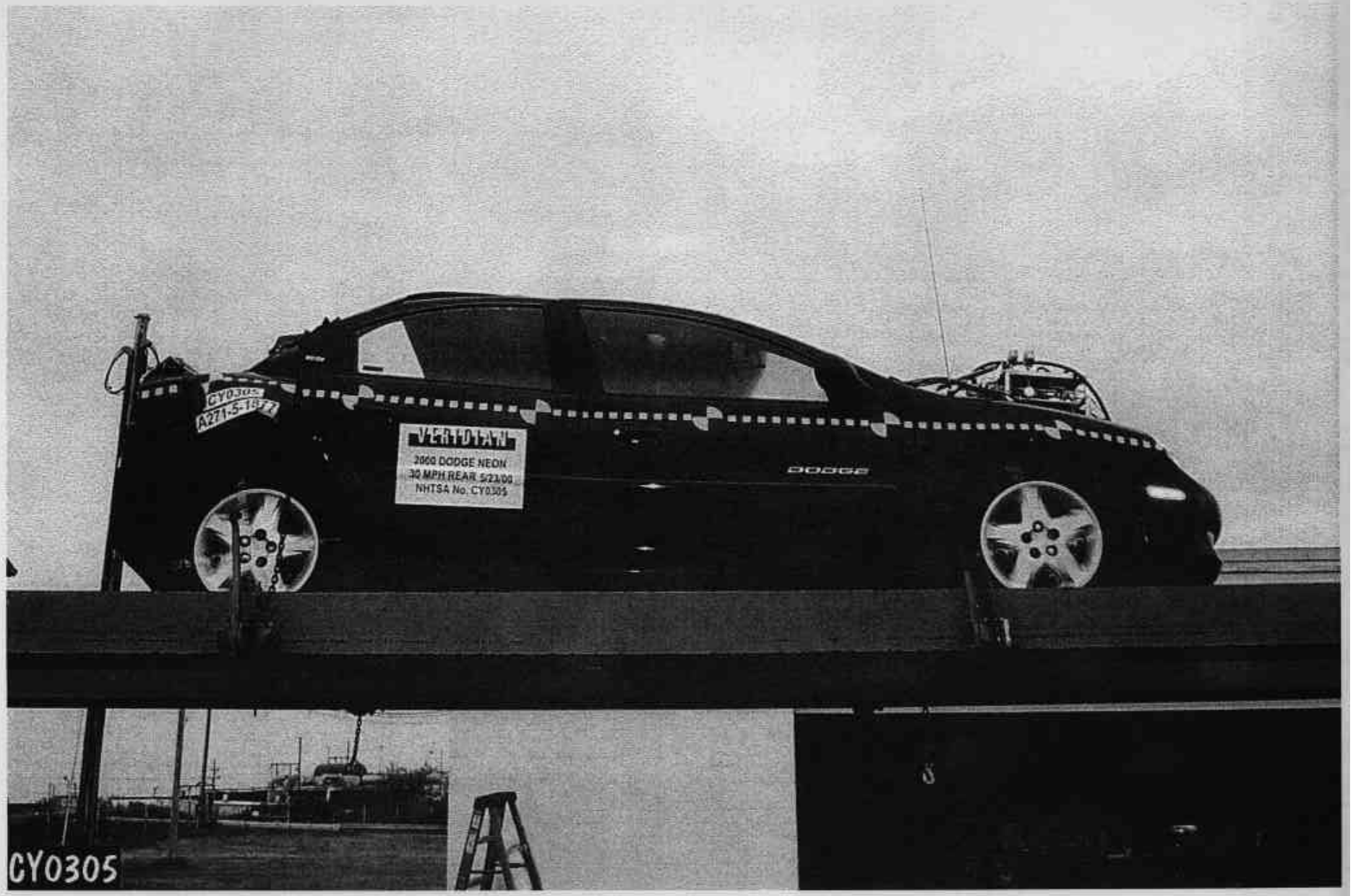


Figure A-22: ROLLOVER 360°

Appendix B

VEHICLE AND DUMMY RESPONSE DATA

(REAR IMPACT ONLY)

FACILITY: VERF DATE: May 23, 2000
TEST#: A271-5-1877
TITLE: NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon CY0305

CHN	NAME	Unit	Max	msec	Min	msec	Filt
24	Acc #3 Upper Seatback X	g	17.6	29.0	-12.5	24.6	CFC_60
25	Acc #4 Lower Seatback X	g	12.7	7.7	-7.4	135.9	CFC_60
28	Seatback Angular Position	deg	42.7	173.4	-0.0	2.8	CFC_180
29	Acc #1 Left Rear Xmember X	g	20.2	32.5	-10.6	20.7	CFC_60
31	Acc #1 Left Rear Xmember X Displacem	in	104.0	399.9	-0.0	-10.0	CFC_180
32	Acc #2 Right Rear Xmember X	g	17.9	4.3	-9.9	18.6	CFC_60
34	Acc #2 Right Rear Xmember X Displace	in	106.2	399.9	-0.0	-10.0	CFC_180
35	P1 Head x	g	30.5	140.4	-2.1	73.1	CFC_1000
36	P1 Head y	g	2.9	135.6	-3.5	162.6	CFC_1000
37	P1 Head z	g	21.9	127.6	-0.7	339.0	CFC_1000
38	P1 Head Resultant	g	34.6	139.8	0.0	-41.4	CFC_1000
39	P1 Upper Neck Fx	lbf	32.2	157.5	-55.6	144.3	CFC_1000
40	P1 Upper Neck Fy	lbf	28.2	136.6	-4.5	256.2	CFC_1000
41	P1 Upper Neck Fz	lbf	6.5	338.6	-349.0	136.4	CFC_1000
42	P1 Upper Neck F Resultant	lbf	350.4	136.4	0.0	-46.4	CFC_1000
43	P1 Upper Neck Mx	in-lb	112.4	150.6	-19.4	98.5	CFC_600
44	P1 Upper Neck My	in-lb	238.2	159.3	-123.9	93.0	CFC_600
45	P1 Upper Neck Mz	in-lb	53.9	171.8	-14.2	68.2	CFC_600
46	P1 Upper Neck M Resultant	in-lb	247.7	159.1	0.0	-28.7	CFC_600
47	P1 Chest x	g	8.8	87.4	-2.8	139.3	CFC_180
48	P1 Chest y	g	1.4	152.4	-1.5	180.7	CFC_180
49	P1 Chest z	g	6.3	68.8	-0.8	352.9	CFC_180
50	P1 Chest Resultant	g	10.3	68.8	0.0	-26.4	CFC_180
51	P1 Chest Compression	in	0.0	145.1	-0.0	122.2	CFC_600
52	P1 Pelvic x	g	17.8	61.5	-2.7	157.0	CFC_1000
53	P1 Pelvic y	g	1.6	154.8	-1.1	84.9	CFC_1000
54	P1 Pelvic z	g	9.0	64.7	-0.9	291.4	CFC_1000
55	P1 Pelvic Resultant	g	19.6	64.8	0.0	4.1	CFC_1000
56	P1 Lap Belt	lbf	6.9	86.7	-18.8	48.6	CFC_60
57	P1 Belt Spoolout	in	0.0	9.7	-6.1	368.8	CFC_180

==========

P1 HIC(36 ms): 119.9
t1: 115.7 msec
t2: 151.6 msec
Duration: 36.0 msec
Average Acceleration: 25.6 g
Input channels: P1 Head x (2) CFC_1000
P1 Head y (3) CFC_1000
P1 Head z (4) CFC_1000

P1 CLIP(3 ms): 10.2 g
t1: 67.4 msec
t2: 70.4 msec
Duration: 3.0 msec
P1 CSI: 22.2
Input channels: P1 Chest x (11) CFC_180
P1 Chest y (12) CFC_180
P1 Chest z (13) CFC_180

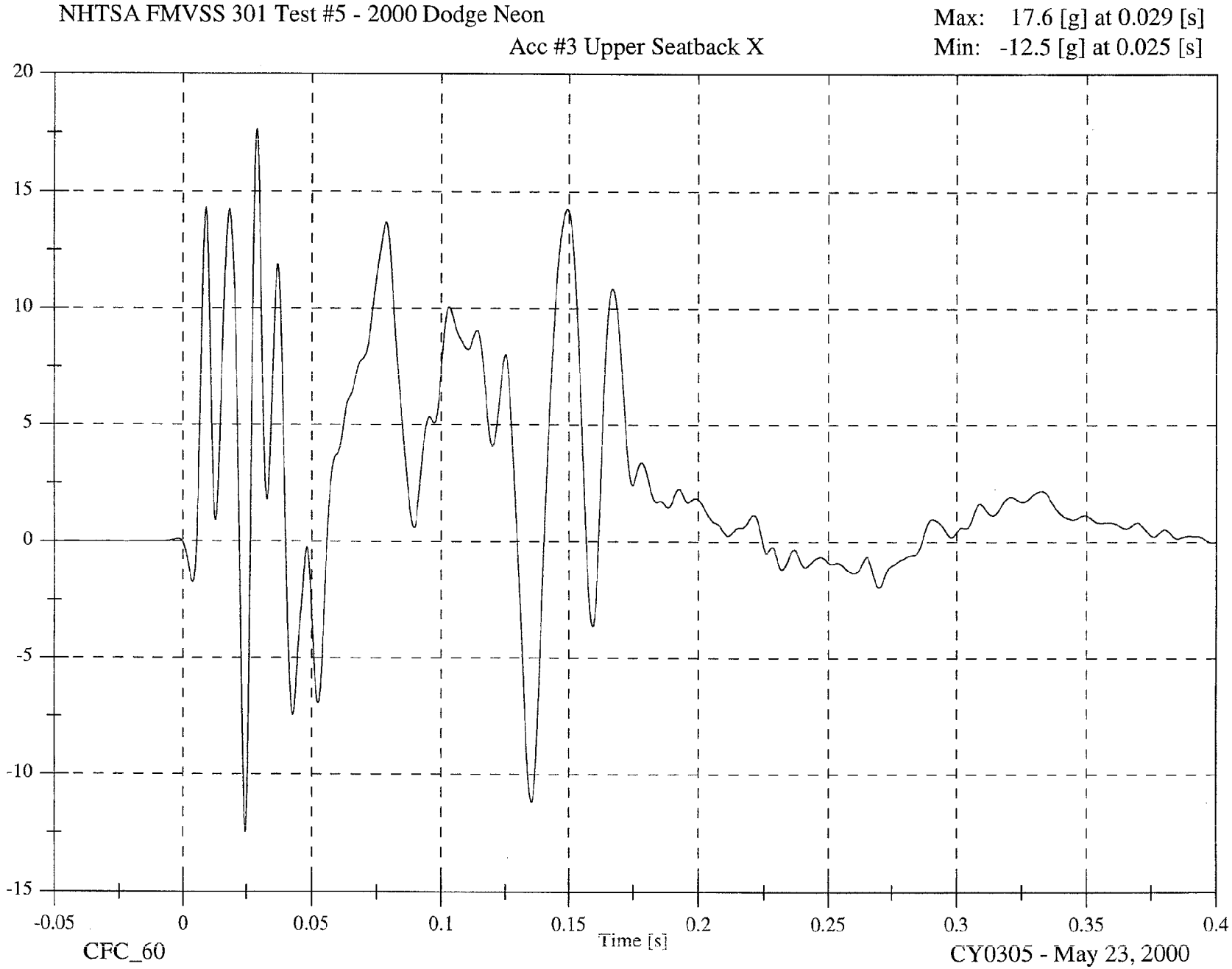
P1 CHEST DISP: Max: 0.0 in 145.1 msec
Min: -0.0 in 122.2 msec
Input channel: P1 Chest Compression (14) CFC_600

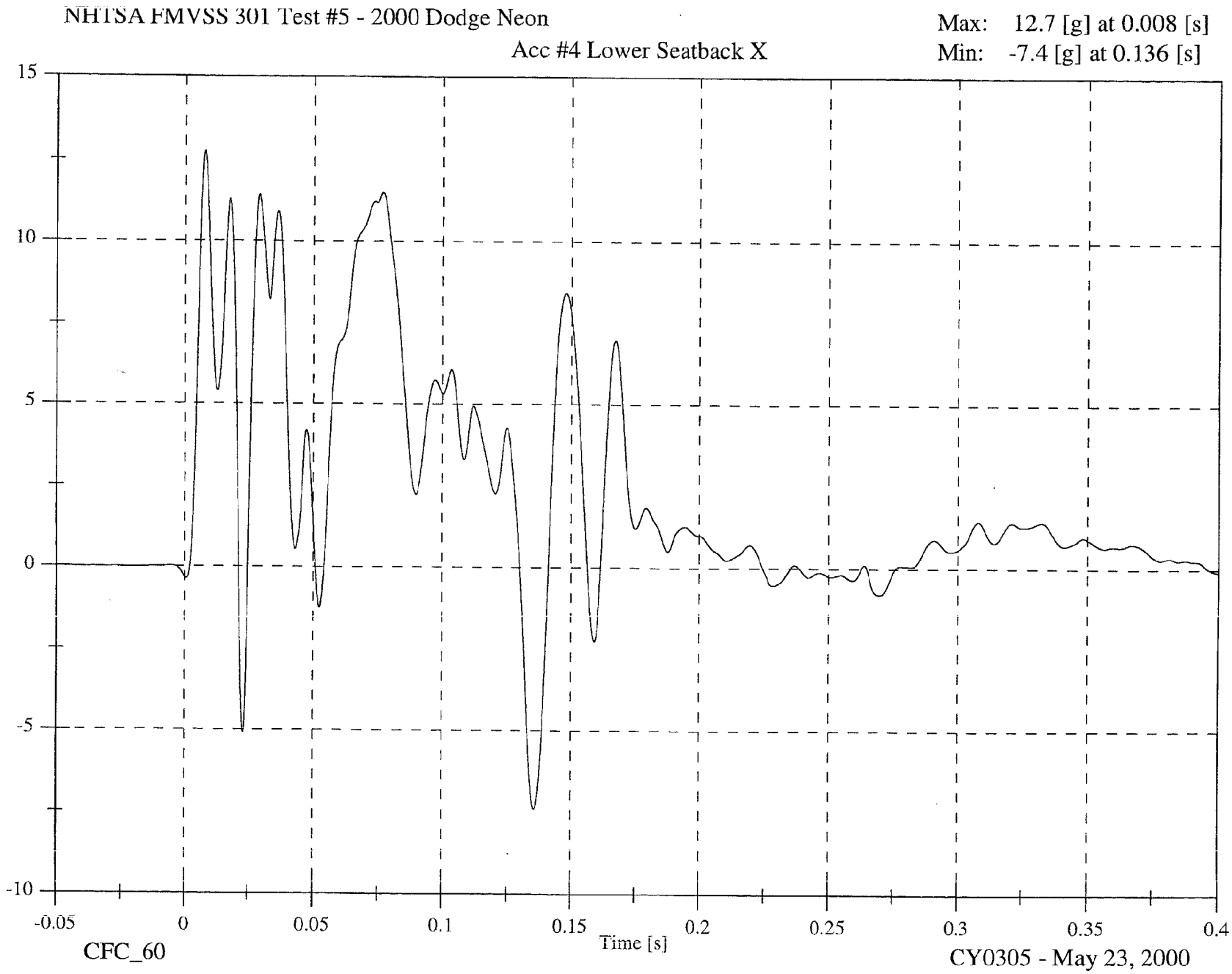
==========

TEST NO. CY0305

VEHICLE	SAE FILTER CHANNEL CLASS
	60

Note: Angular seatback position is measured in degrees of rotation from the initial (design) position.


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Acc #3 Upper Seatback X
Max: 17.6 [g] at 0.029 [s]
Min: -12.5 [g] at 0.025 [s]
20
15
10
5
0
-5
-10
-15
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_60
CY0305 - May 23, 2000

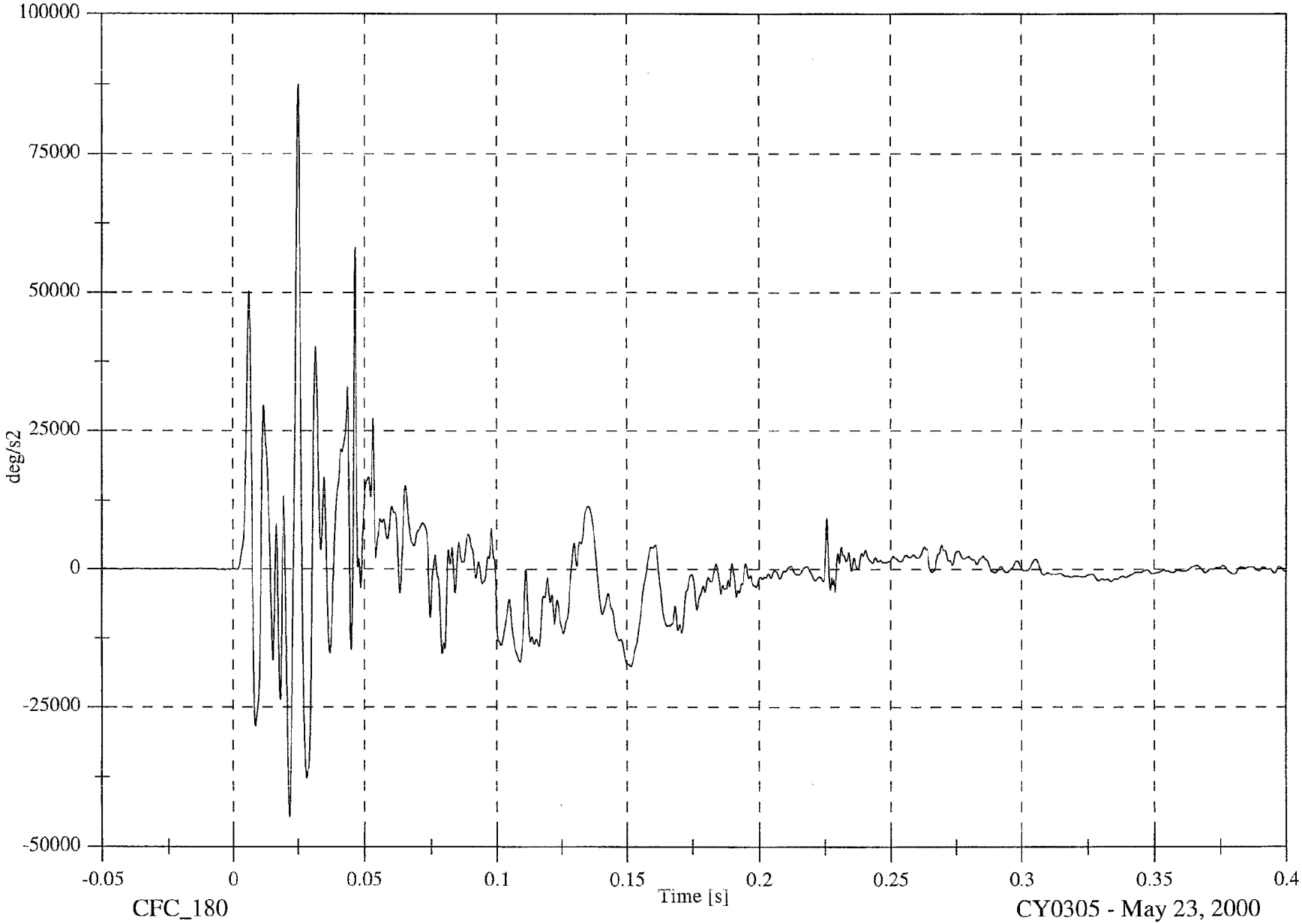

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Acc #4 Lower Seatback X
Max: 12.7 [g] at 0.008 [s]
Min: -7.4 [g] at 0.136 [s]
15
10
5
0
-5
-10
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_60
CY0305 - May 23, 2000

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon

Seatback Angular Acceleration

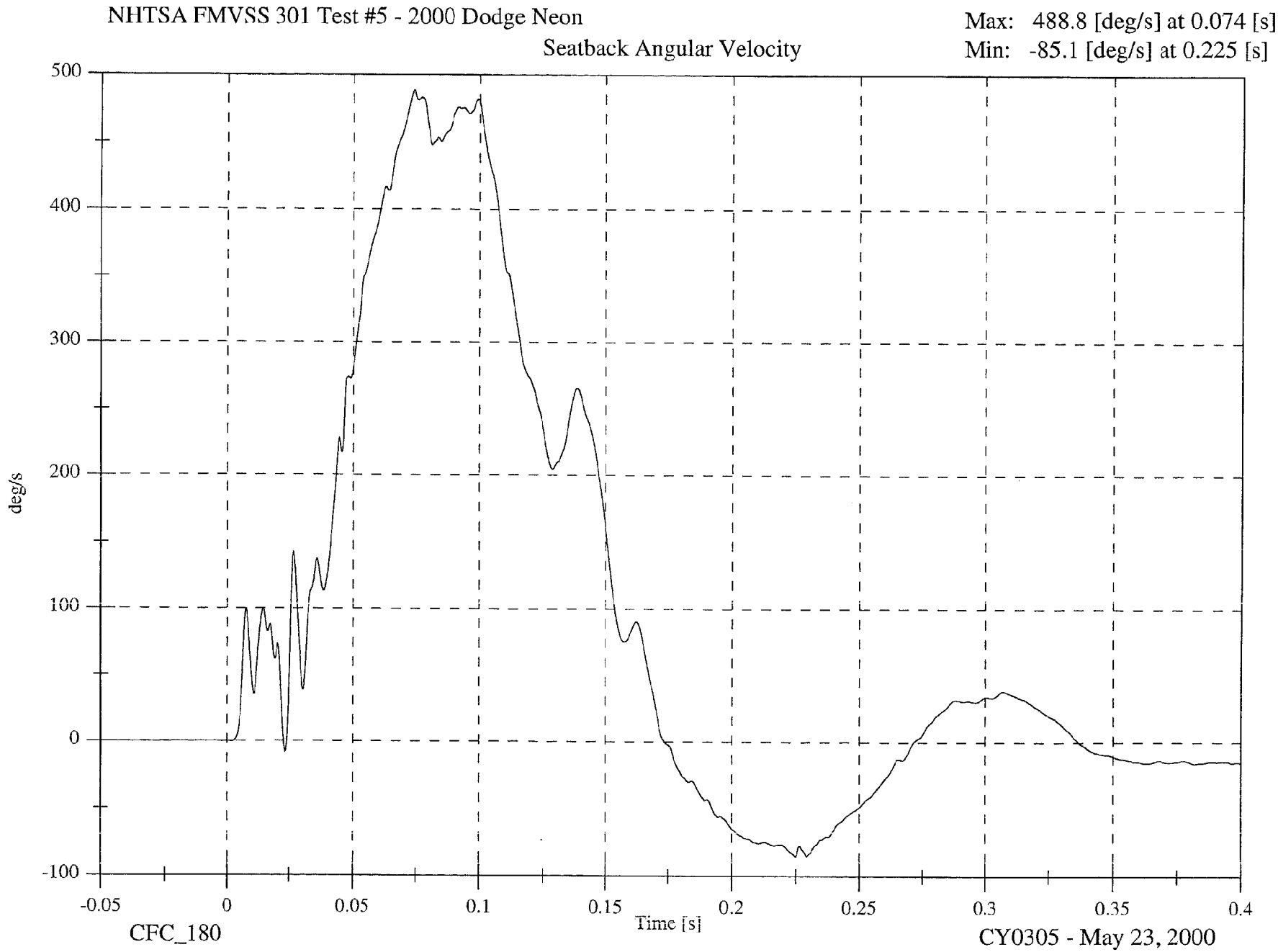
Max: 87465.2 [deg/s2] at 0.025 [s]

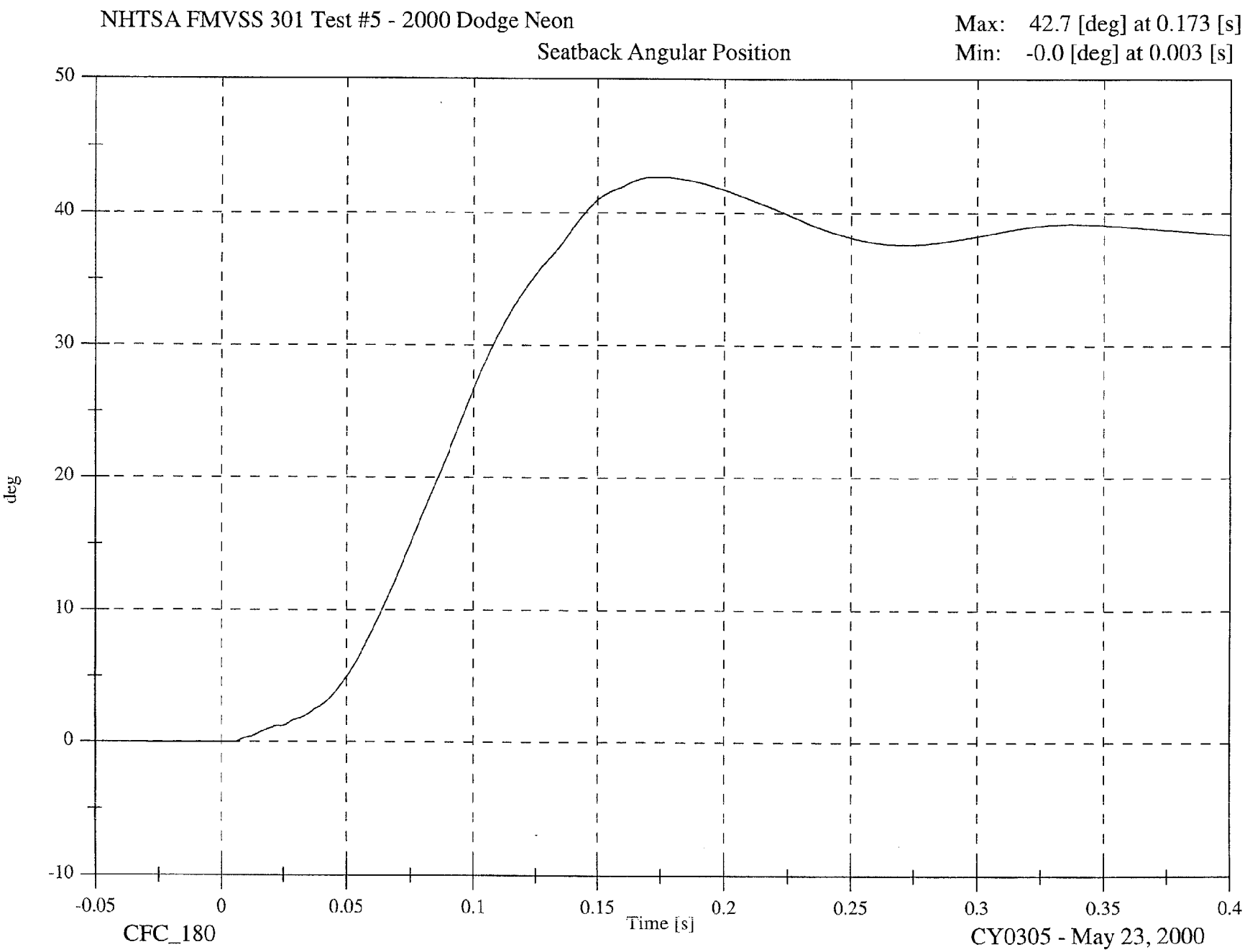
Min: -44578.8 [deg/s2] at 0.022 [s]

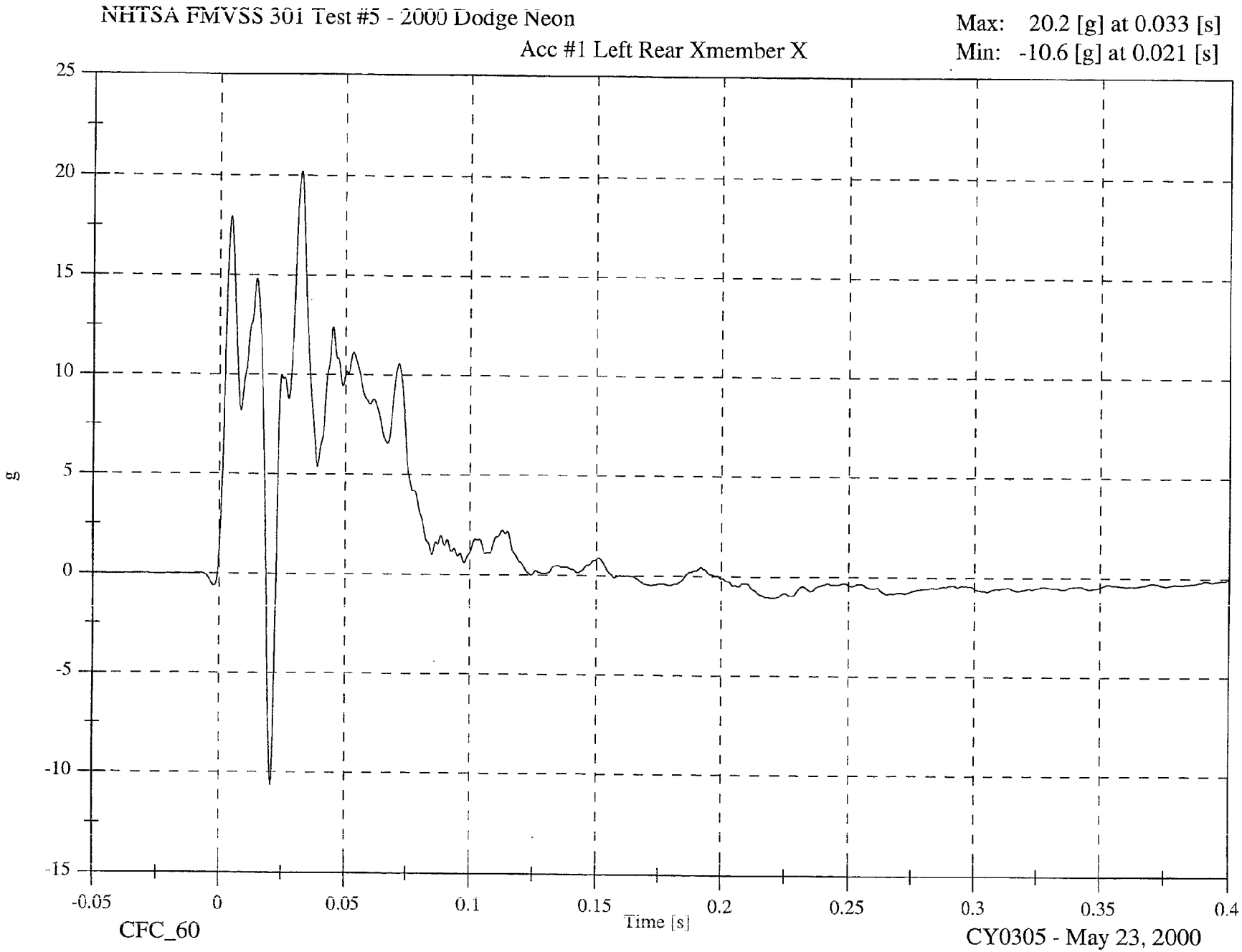


CFC_180

CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Seatback Angular Velocity
Max: 488.8 [deg/s] at 0.074 [s]
Min: -85.1 [deg/s] at 0.225 [s]
500
400
300
200
100
0
-100
deg/s
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Seatback Angular Position
Max: 42.7 [deg] at 0.173 [s]
Min: -0.0 [deg] at 0.003 [s]
50
40
30
20
10
0
-10
deg
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

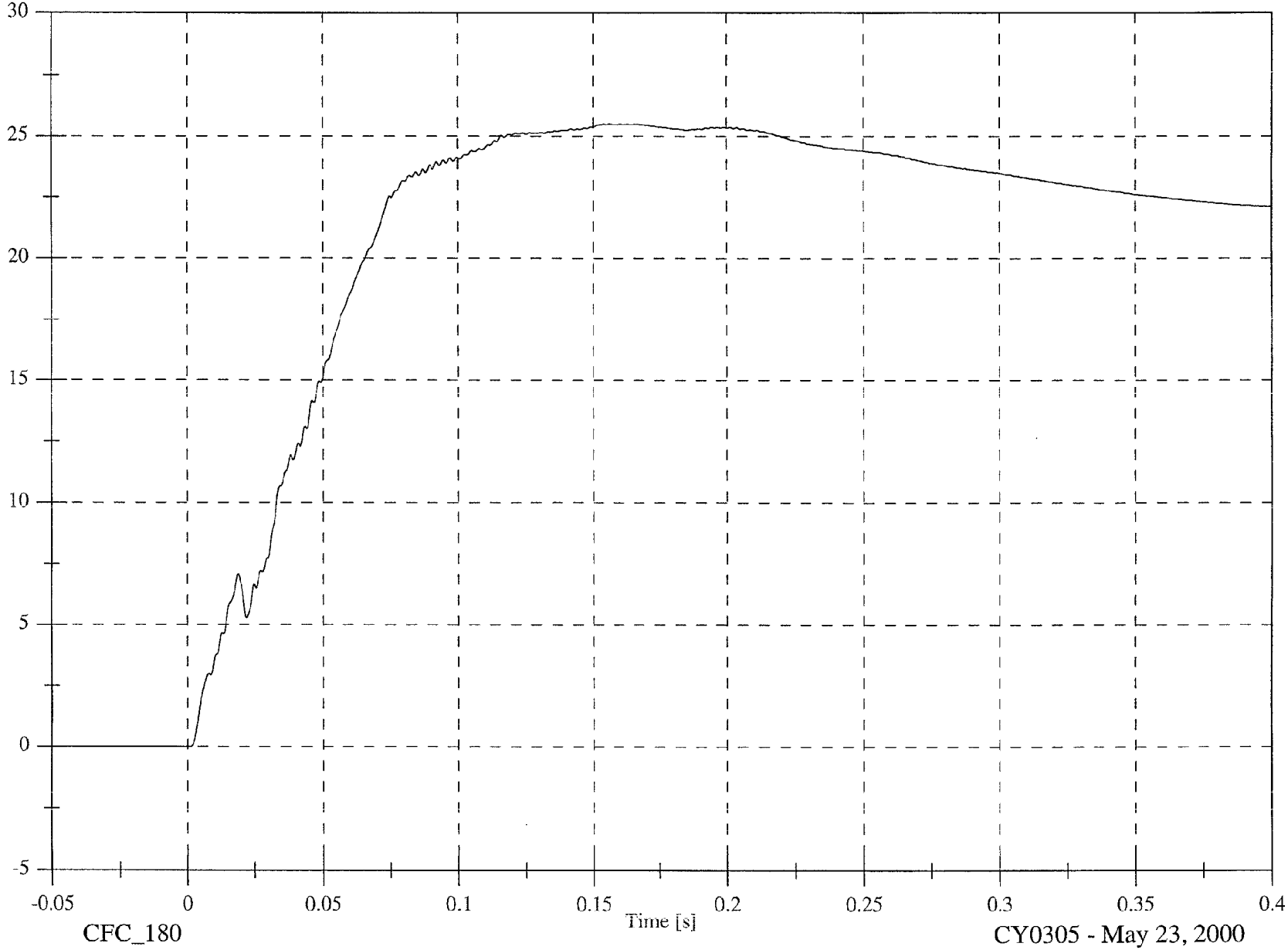

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Acc #1 Left Rear Xmember X
Max: 20.2 [g] at 0.033 [s]
Min: -10.6 [g] at 0.021 [s]
g
25
20
15
10
5
0
-5
-10
-15
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_60
CY0305 - May 23, 2000

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon

Acc #1 Left Rear Xmember X Velocity

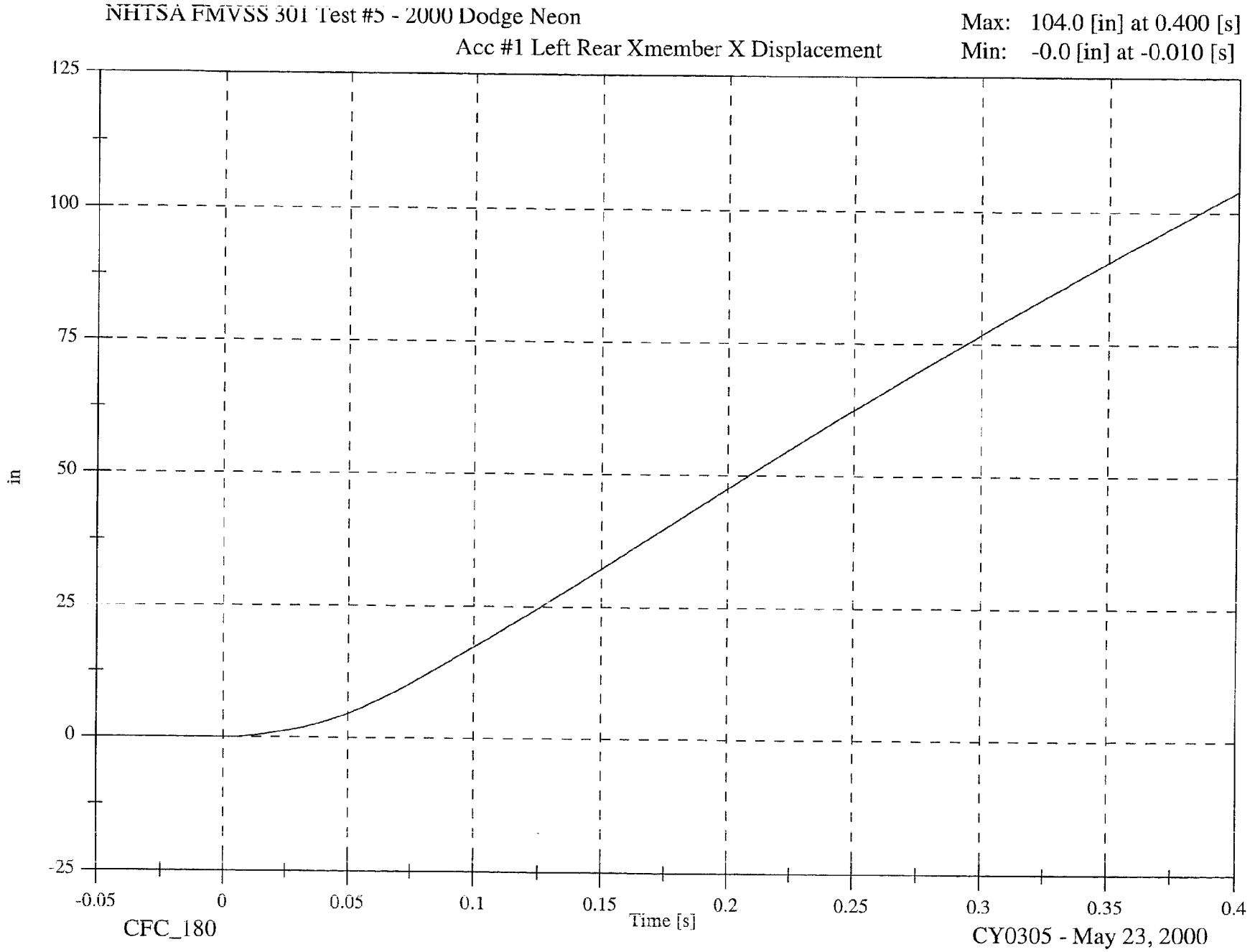
Max: 25.5 [ft/s] at 0.156 [s]

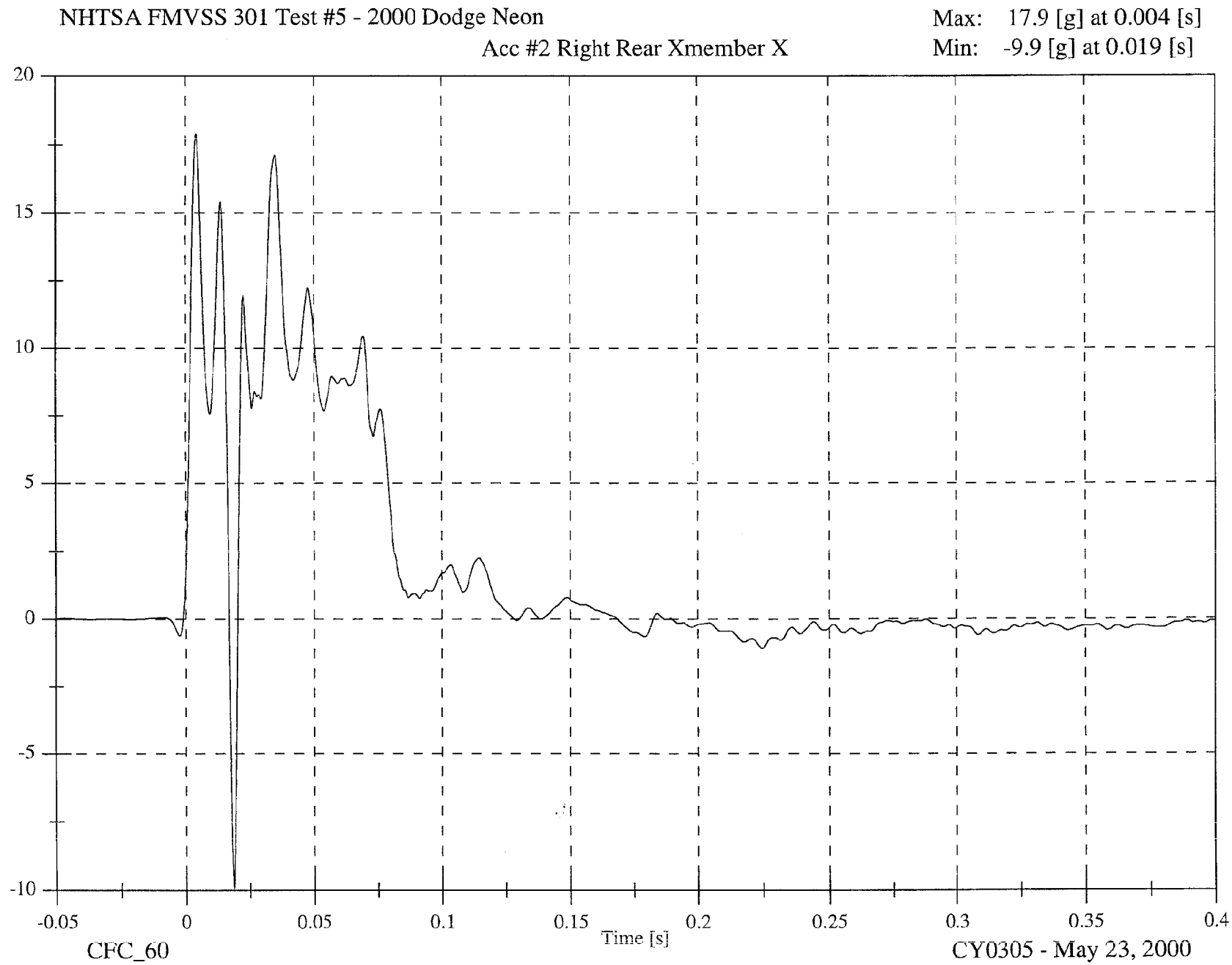
Min: -0.0 [ft/s] at -0.021 [s]

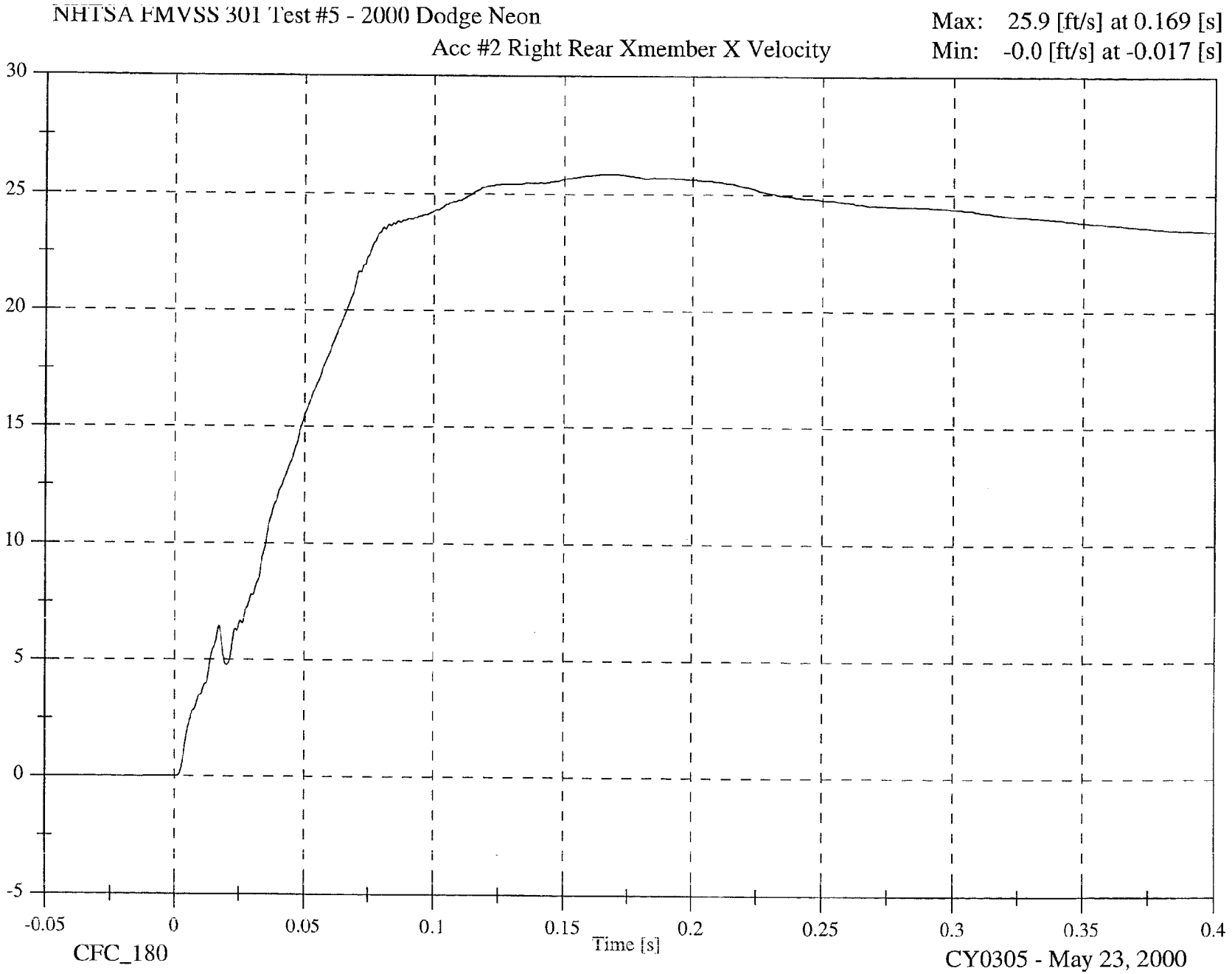


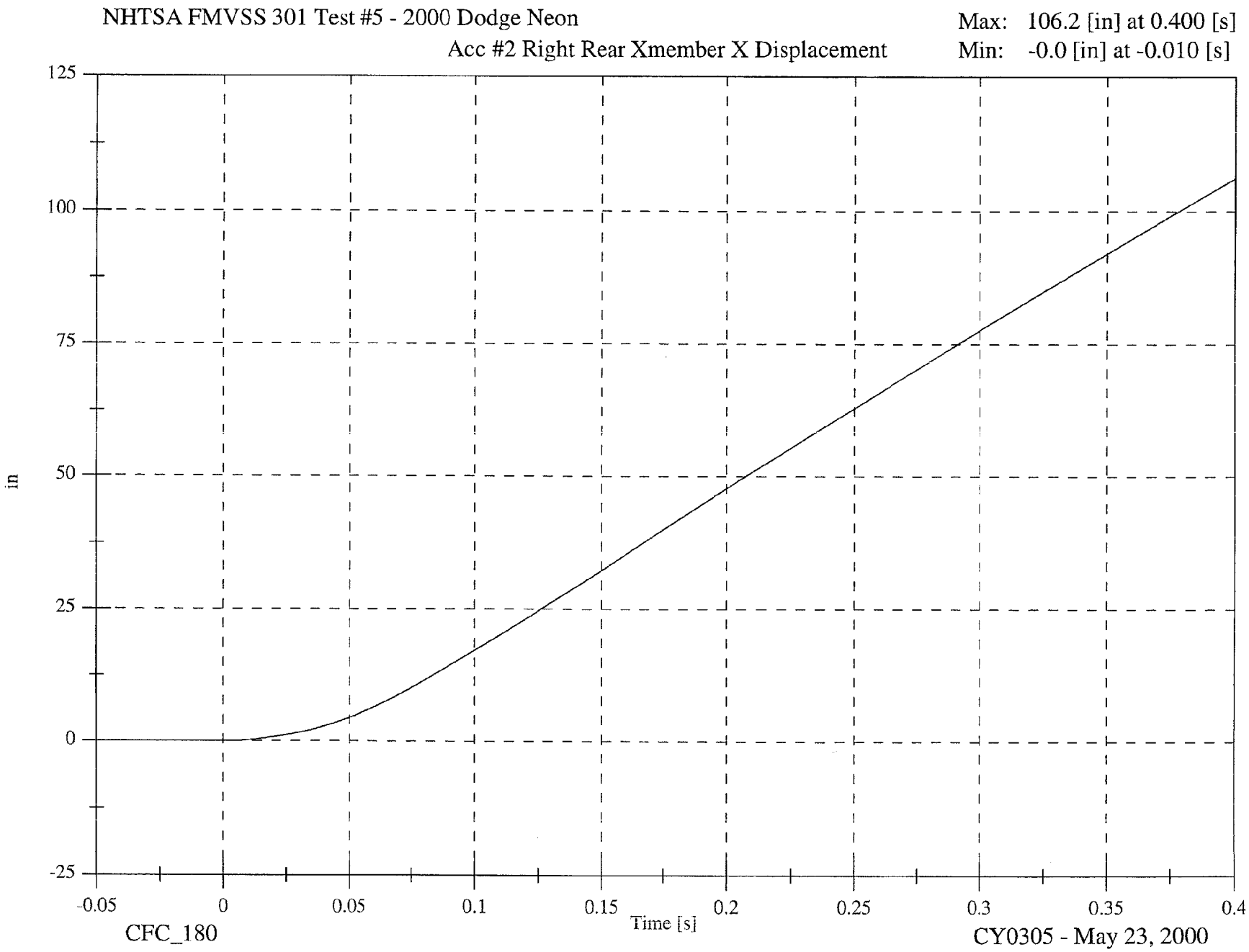
CFC_180

CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Acc #1 Left Rear Xmember X Displacement
Max: 104.0 [in] at 0.400 [s]
Min: -0.0 [in] at -0.010 [s]
125
100
75
50
25
0
-25
in
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

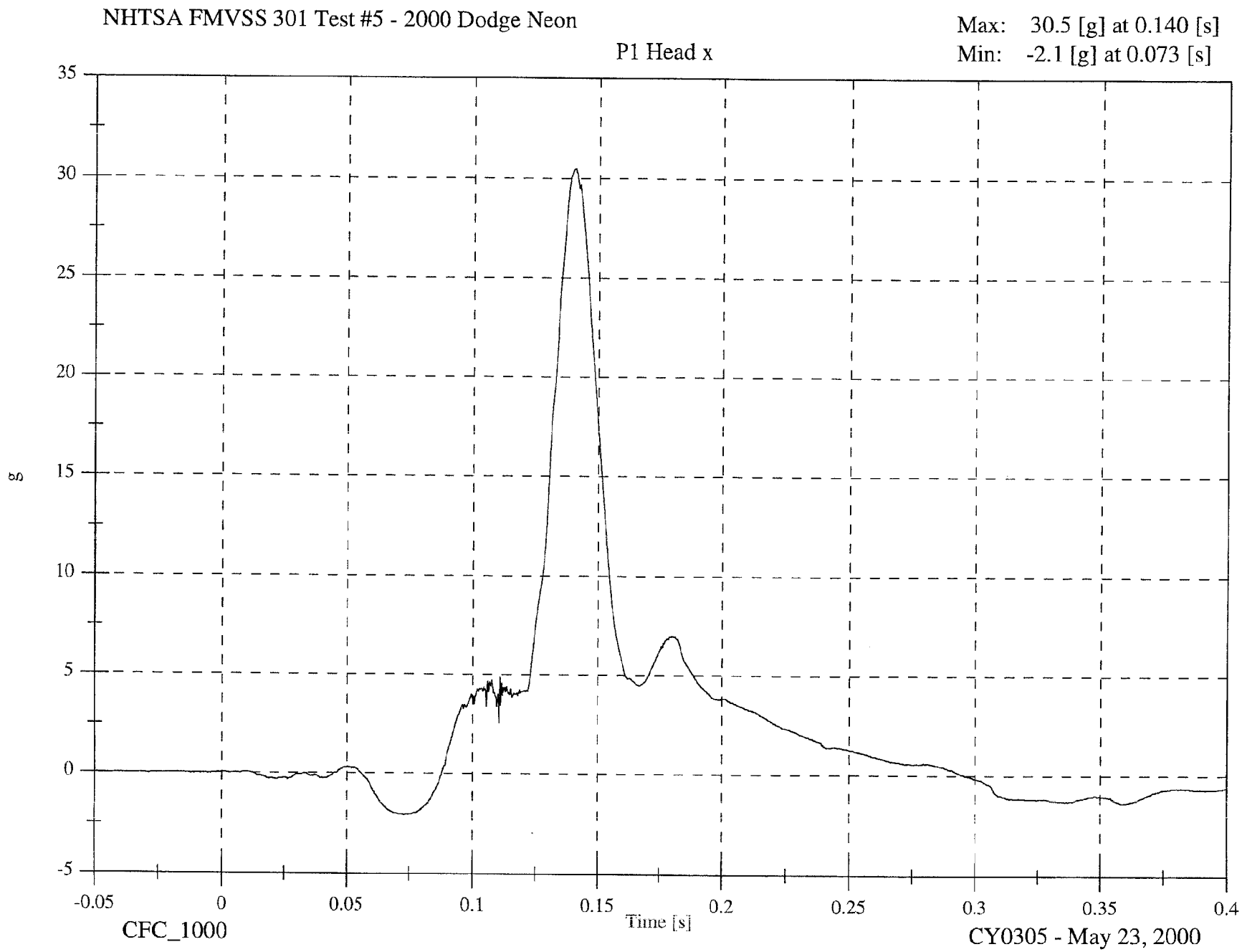

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Acc #2 Right Rear Xmember X
Max: 17.9 [g] at 0.004 [s]
Min: -9.9 [g] at 0.019 [s]
20
15
10
5
0
-5
-10
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_60
CY0305 - May 23, 2000

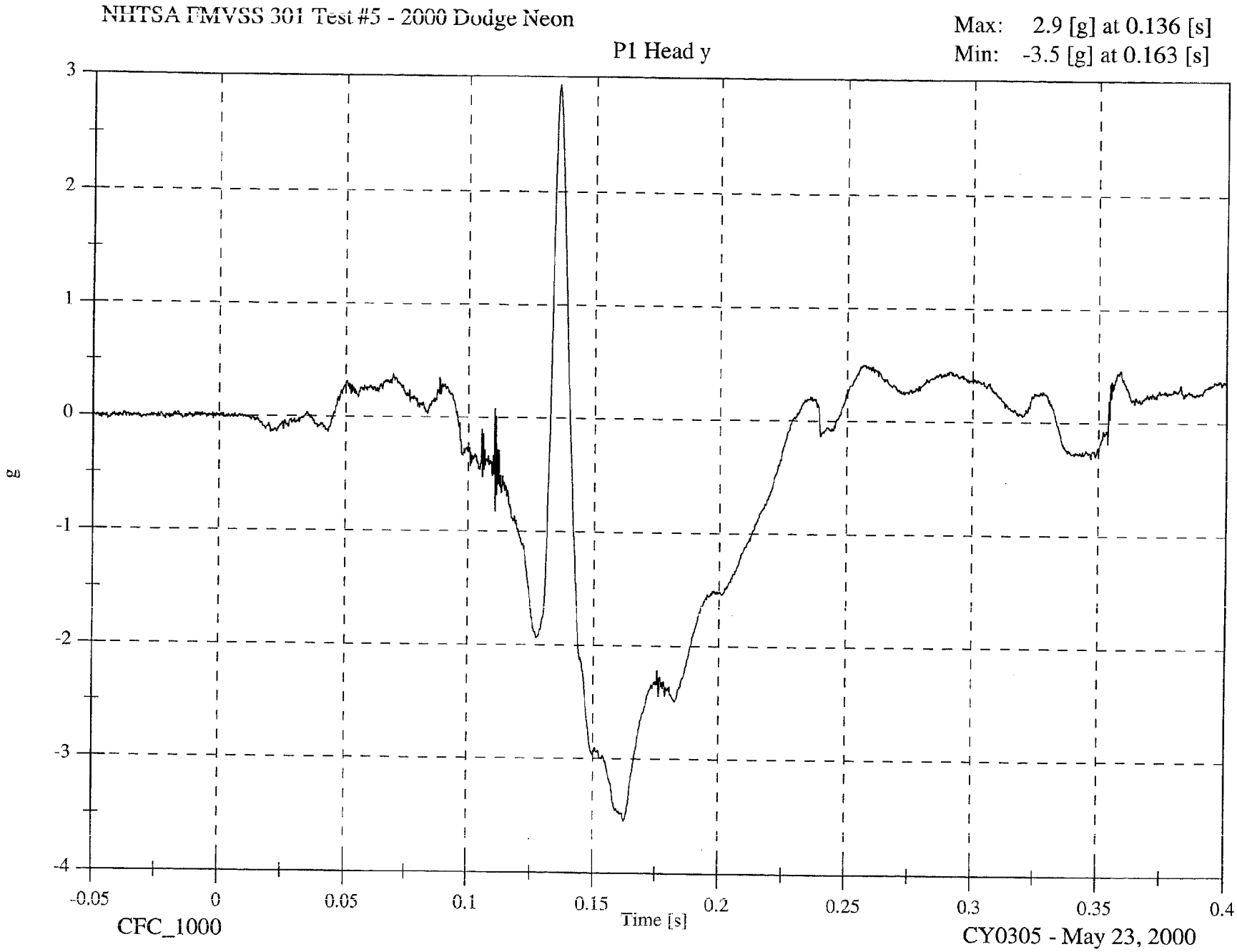

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Acc #2 Right Rear Xmember X Velocity
Max: 25.9 [ft/s] at 0.169 [s]
Min: -0.0 [ft/s] at -0.017 [s]
ft/s
30
25
20
15
10
5
0
-5
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

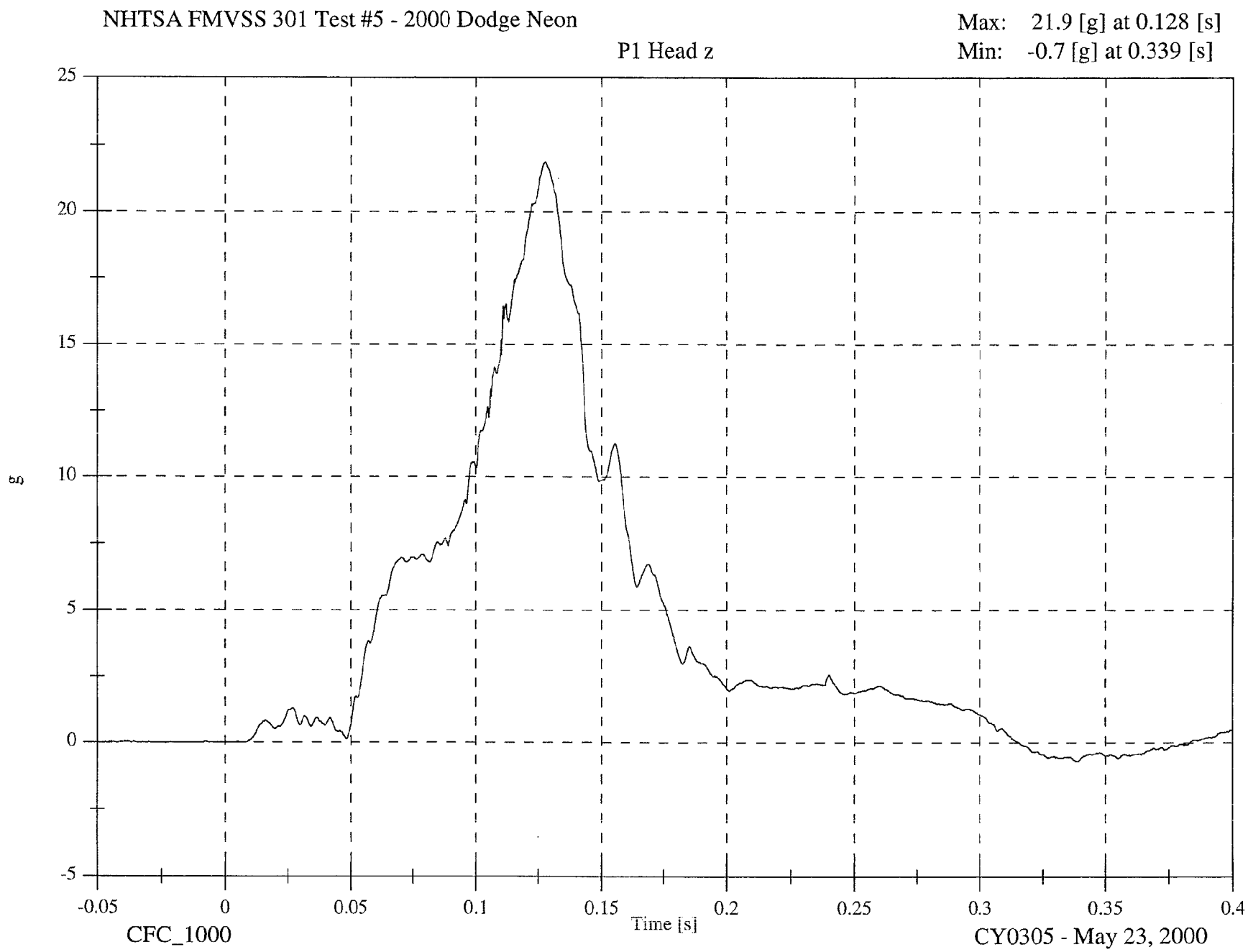

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
Acc #2 Right Rear Xmember X Displacement
Max: 106.2 [in] at 0.400 [s]
Min: -0.0 [in] at -0.010 [s]
125
100
75
50
25
0
-25
in
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

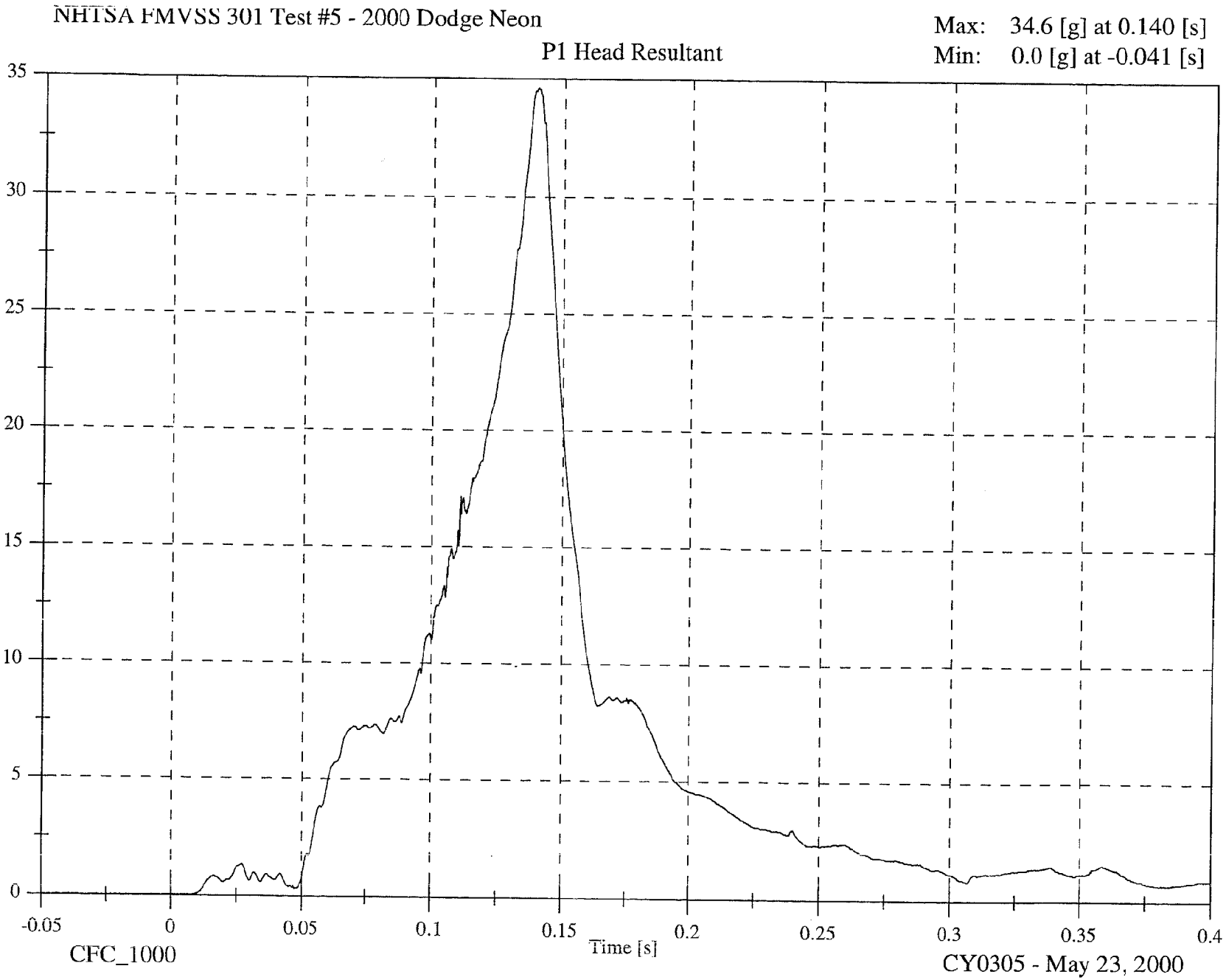
TEST NO. CY0305

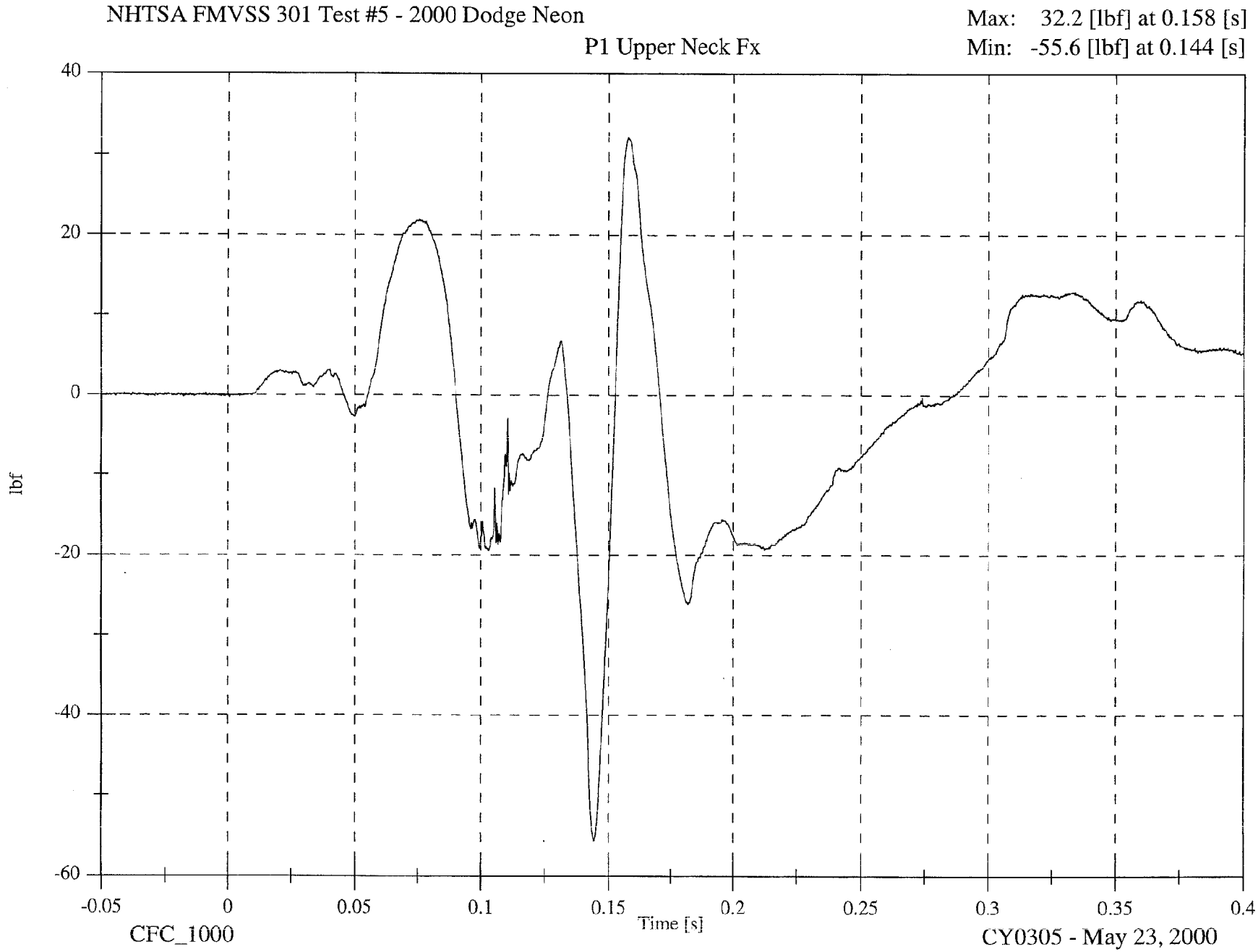
DRIVER DUMMY (Pos. 1)	SAE FILTER CHANNEL CLASS
Head Accelerations	1000
Chest Accelerations	180
Pelvic Accelerations	1000
Upper Neck Forces	1000
Upper Neck Moments	600
Belt Forces	60
Belt Spoolout	60

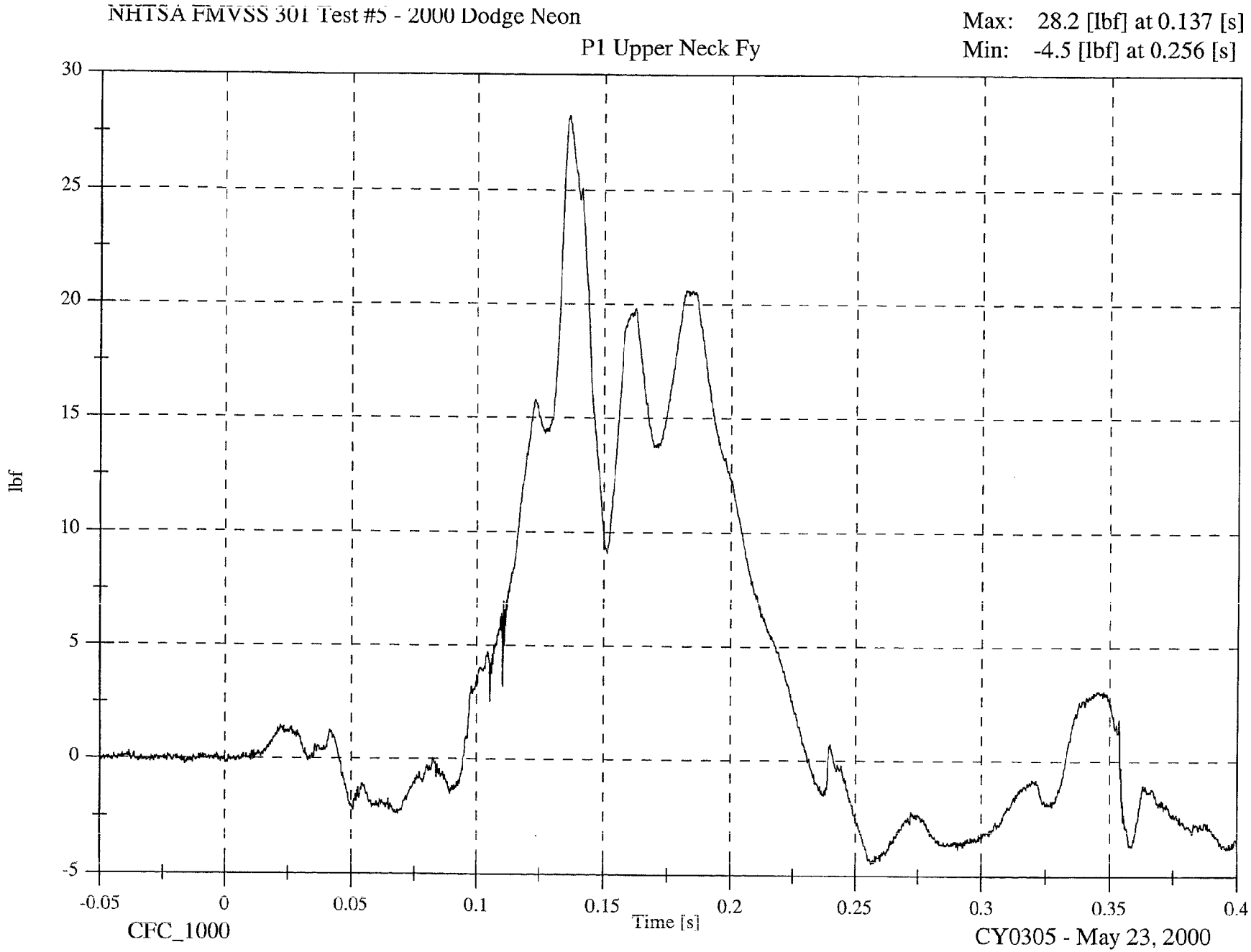

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Head x
Max: 30.5 [g] at 0.140 [s]
Min: -2.1 [g] at 0.073 [s]
g
35
30
25
20
15
10
5
0
-5
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

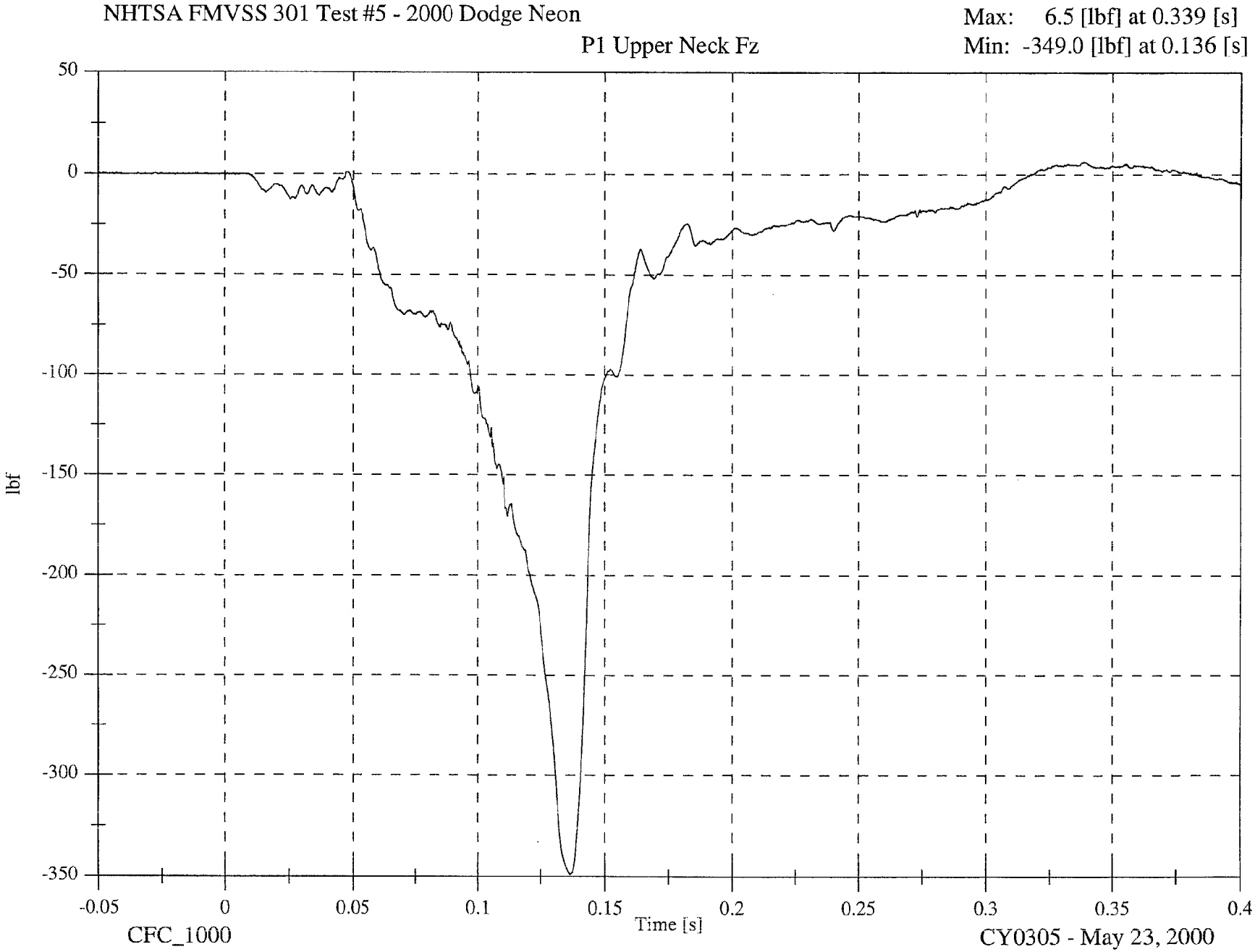

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Head y
Max: 2.9 [g] at 0.136 [s]
Min: -3.5 [g] at 0.163 [s]
3
2
1
0
-1
-2
-3
-4
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

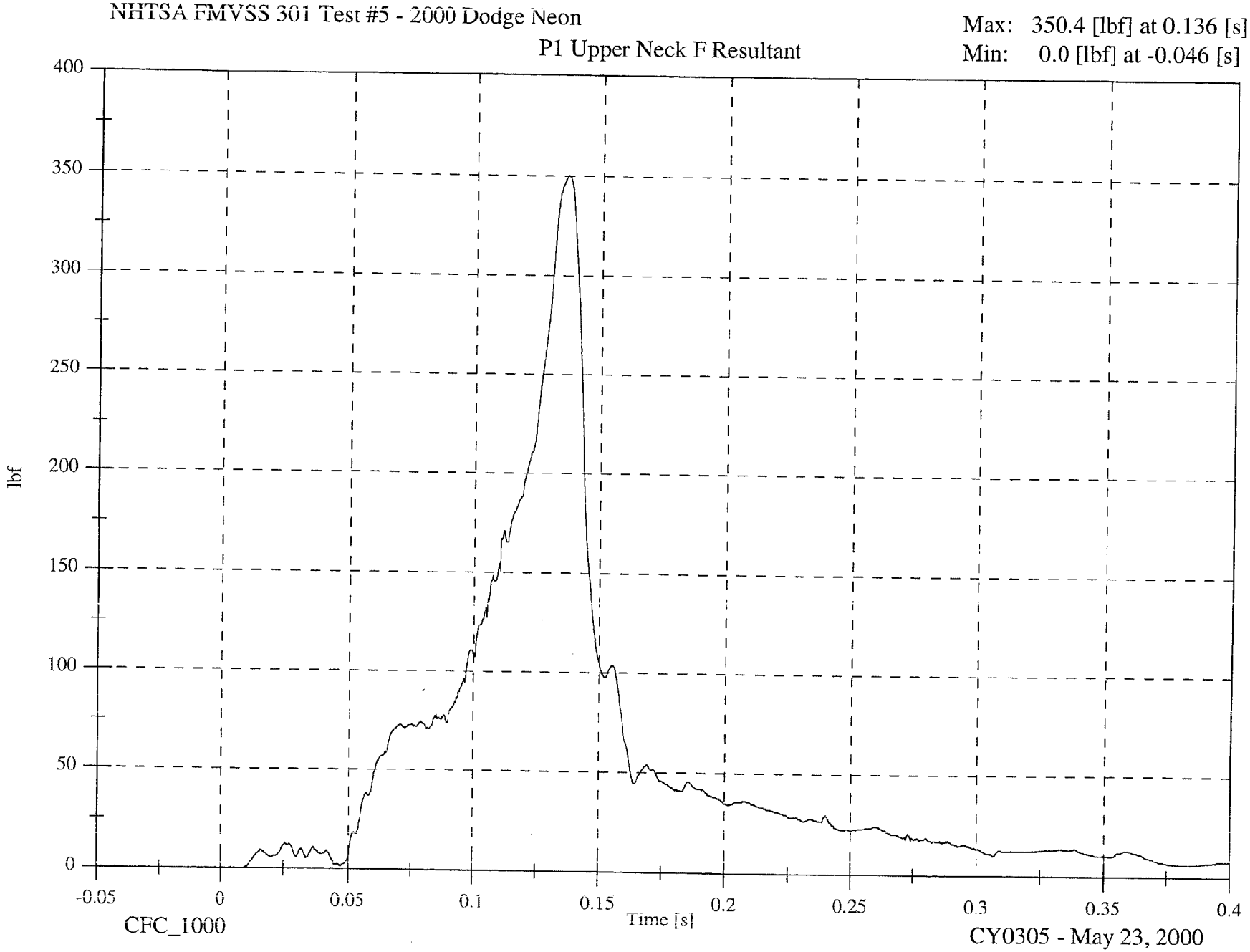

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Head z
Max: 21.9 [g] at 0.128 [s]
Min: -0.7 [g] at 0.339 [s]
g
25
20
15
10
5
0
-5
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

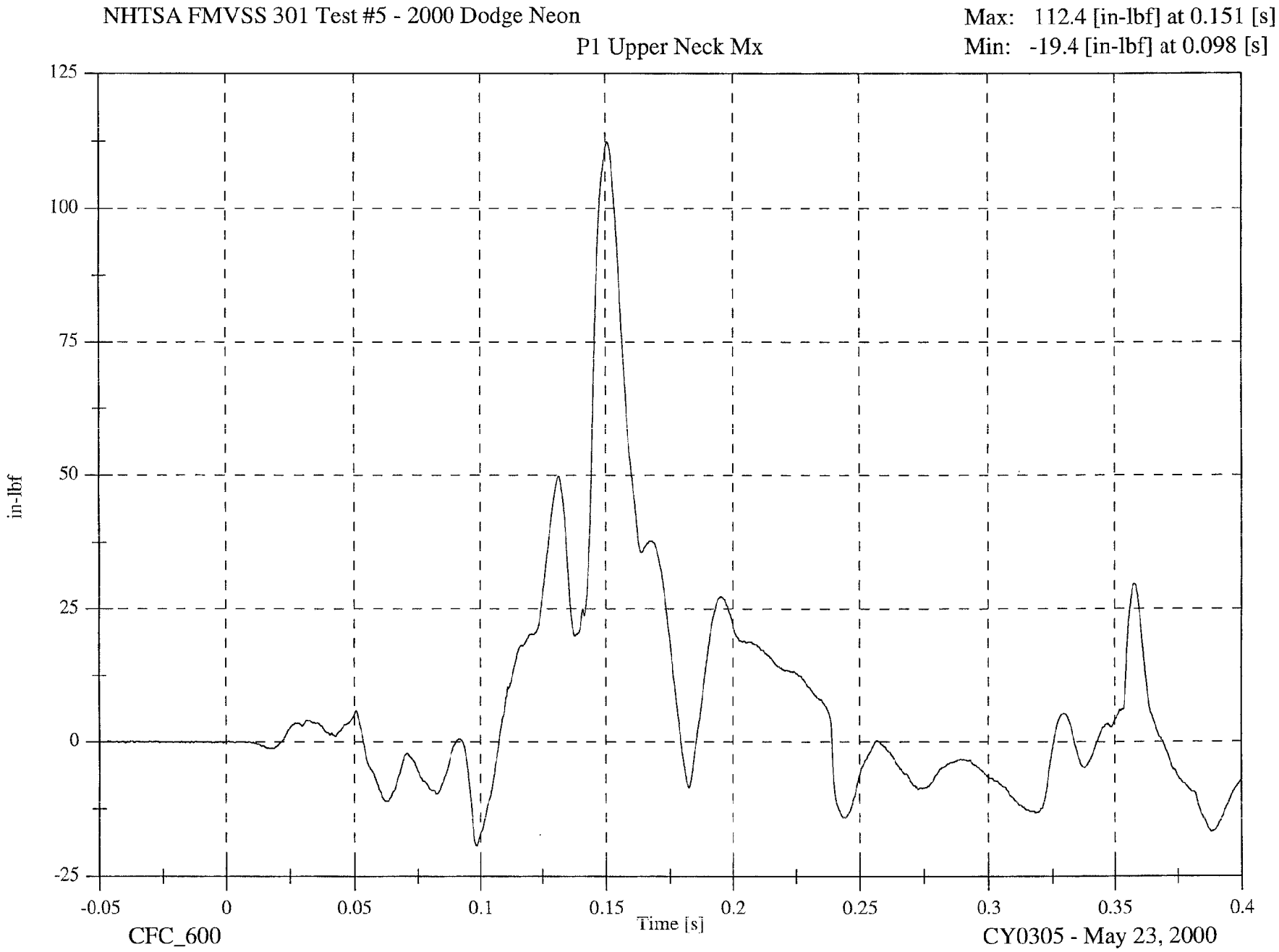

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Head Resultant
Max: 34.6 [g] at 0.140 [s]
Min: 0.0 [g] at -0.041 [s]
g
35
30
25
20
15
10
5
0
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

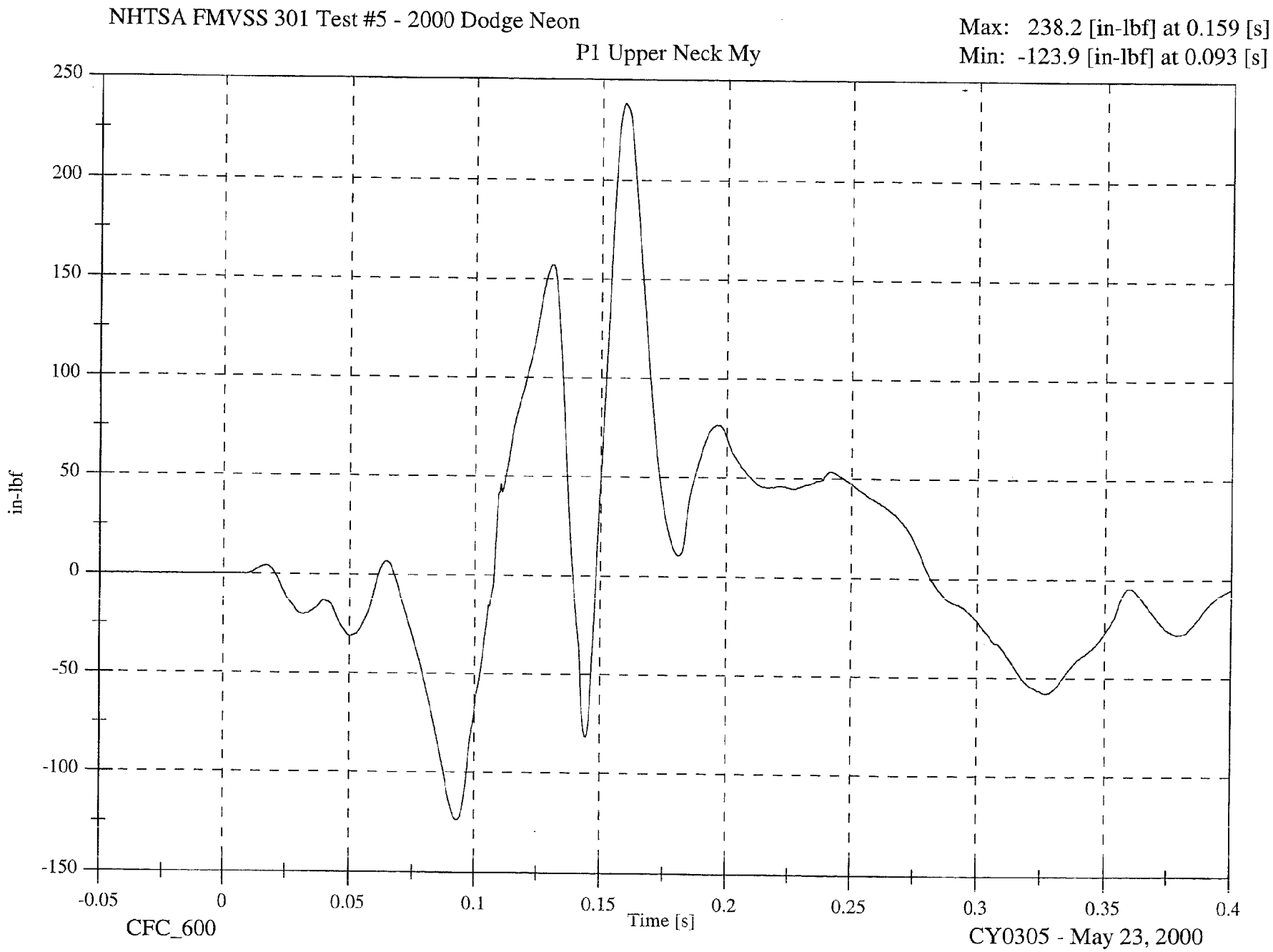

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck Fx
Max: 32.2 [lbf] at 0.158 [s]
Min: -55.6 [lbf] at 0.144 [s]
40
20
0
-20
-40
-60
lbf
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

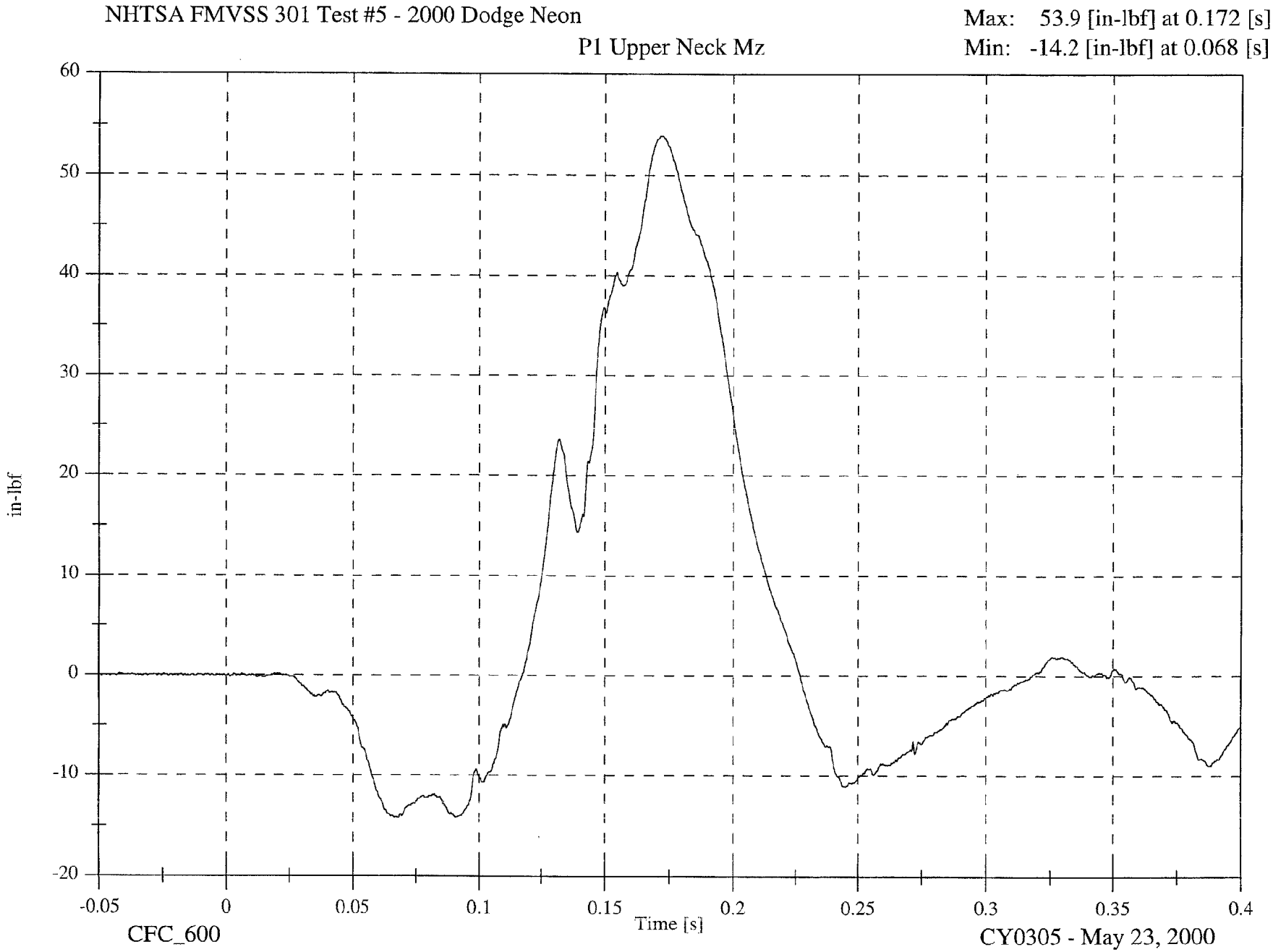

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck Fy
Max: 28.2 [lbf] at 0.137 [s]
Min: -4.5 [lbf] at 0.256 [s]
lbf
30
25
20
15
10
5
0
-5
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

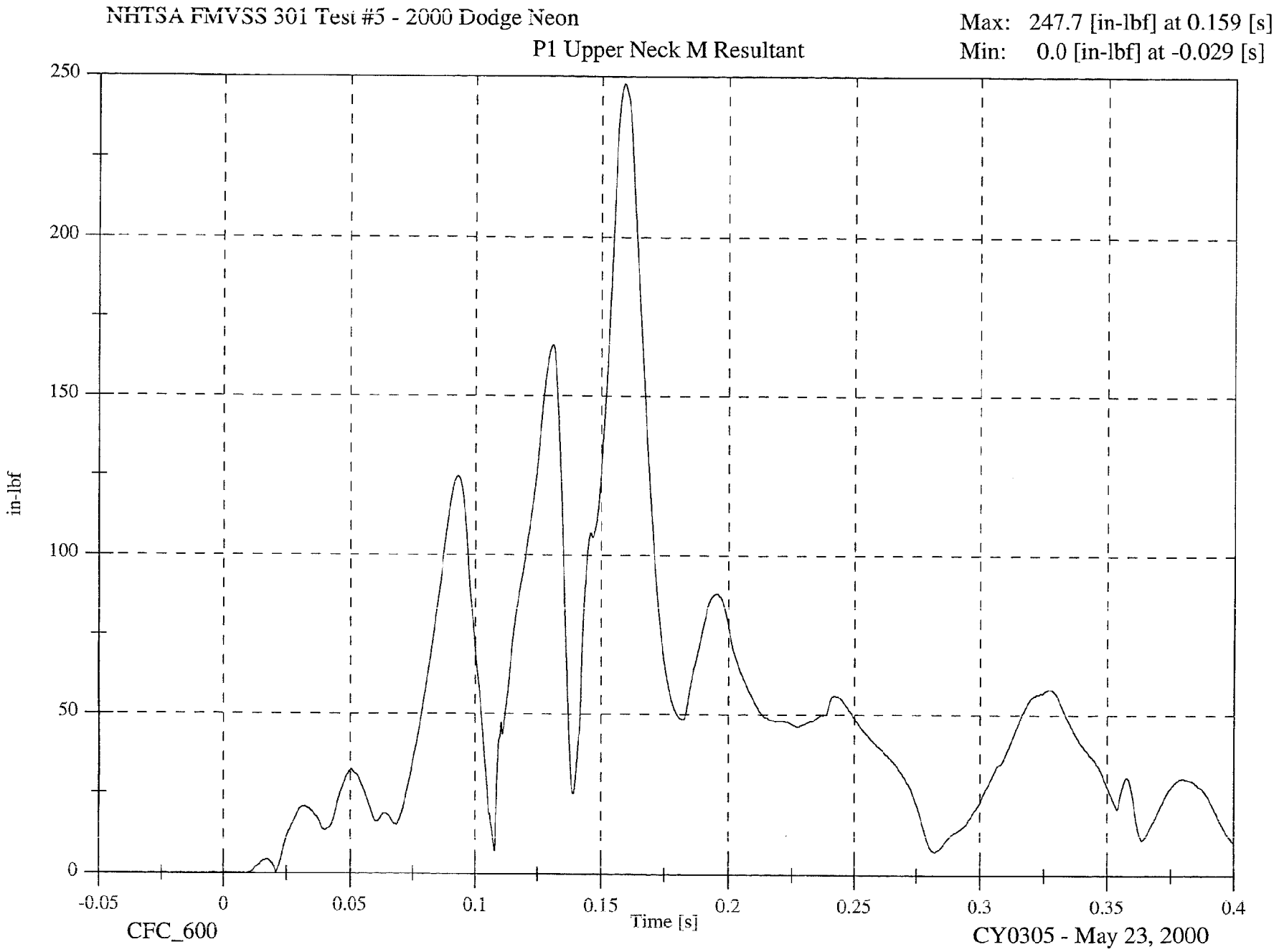

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck Fz
Max: 6.5 [lbf] at 0.339 [s]
Min: -349.0 [lbf] at 0.136 [s]
50
0
-50
-100
-150
-200
-250
-300
-350
lbf
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

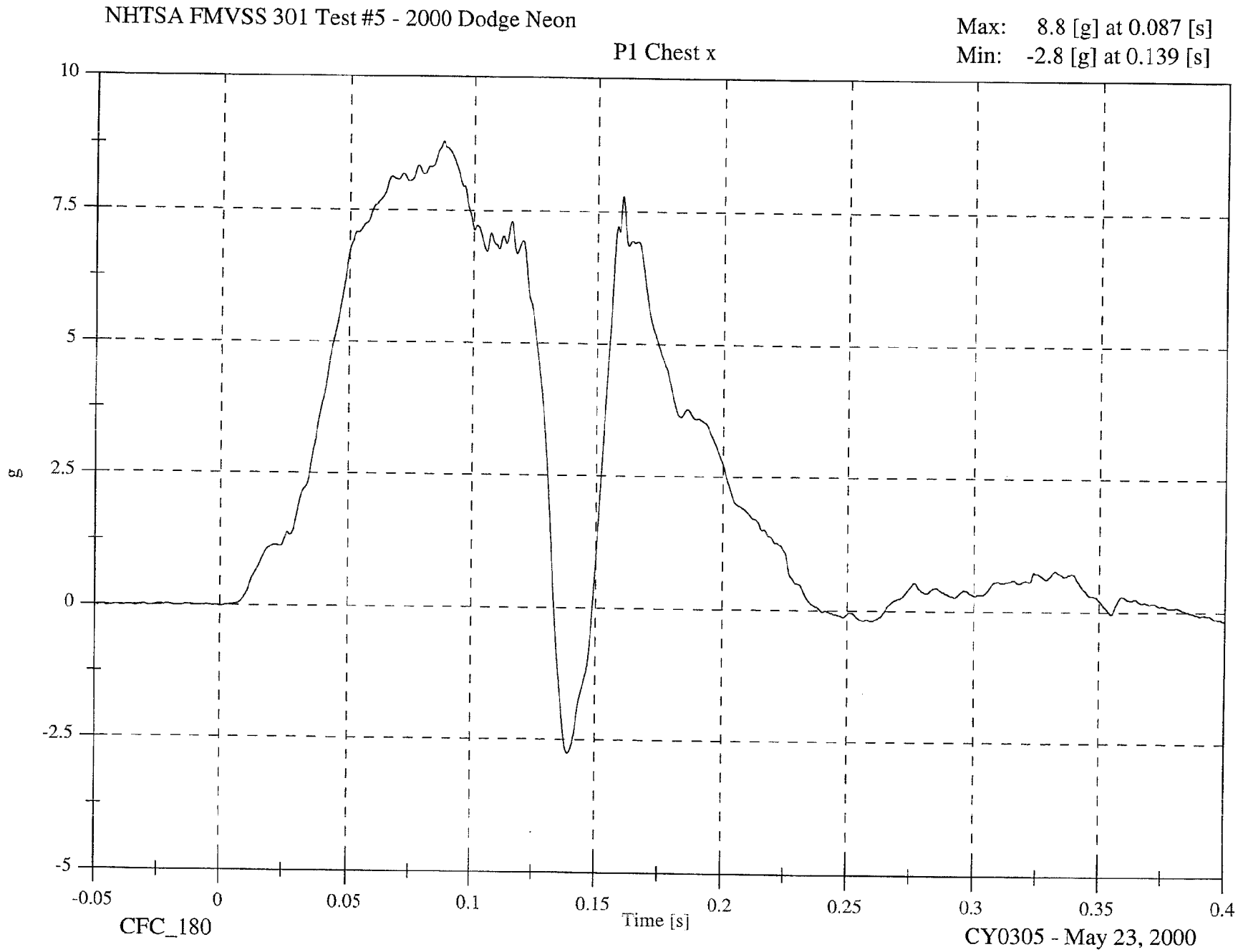

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck F Resultant
Max: 350.4 [lbf] at 0.136 [s]
Min: 0.0 [lbf] at -0.046 [s]
lbf
400
350
300
250
200
150
100
50
0
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000

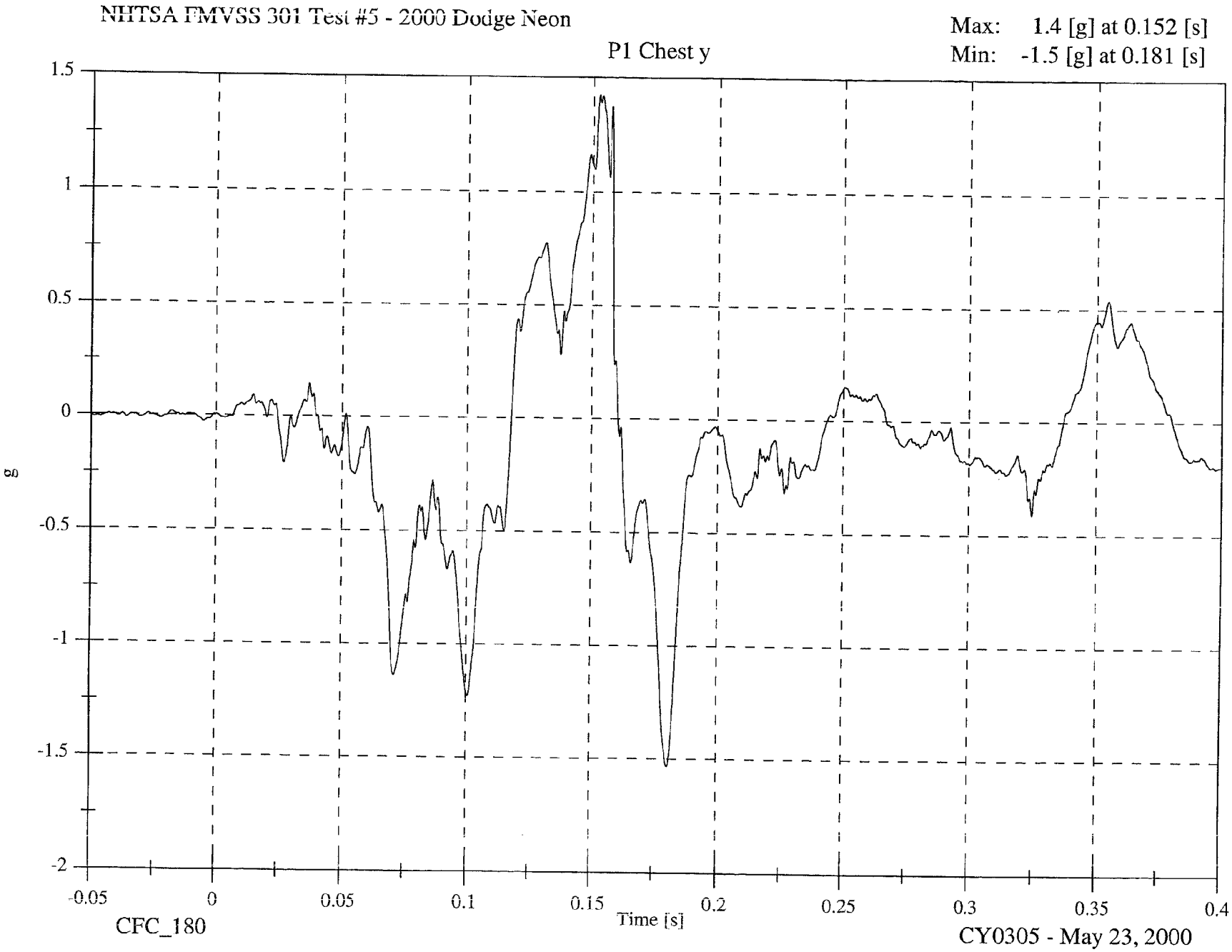

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck Mx
Max: 112.4 [in-lbf] at 0.151 [s]
Min: -19.4 [in-lbf] at 0.098 [s]
125
100
75
50
25
0
-25
in-lbf
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_600
CY0305 - May 23, 2000

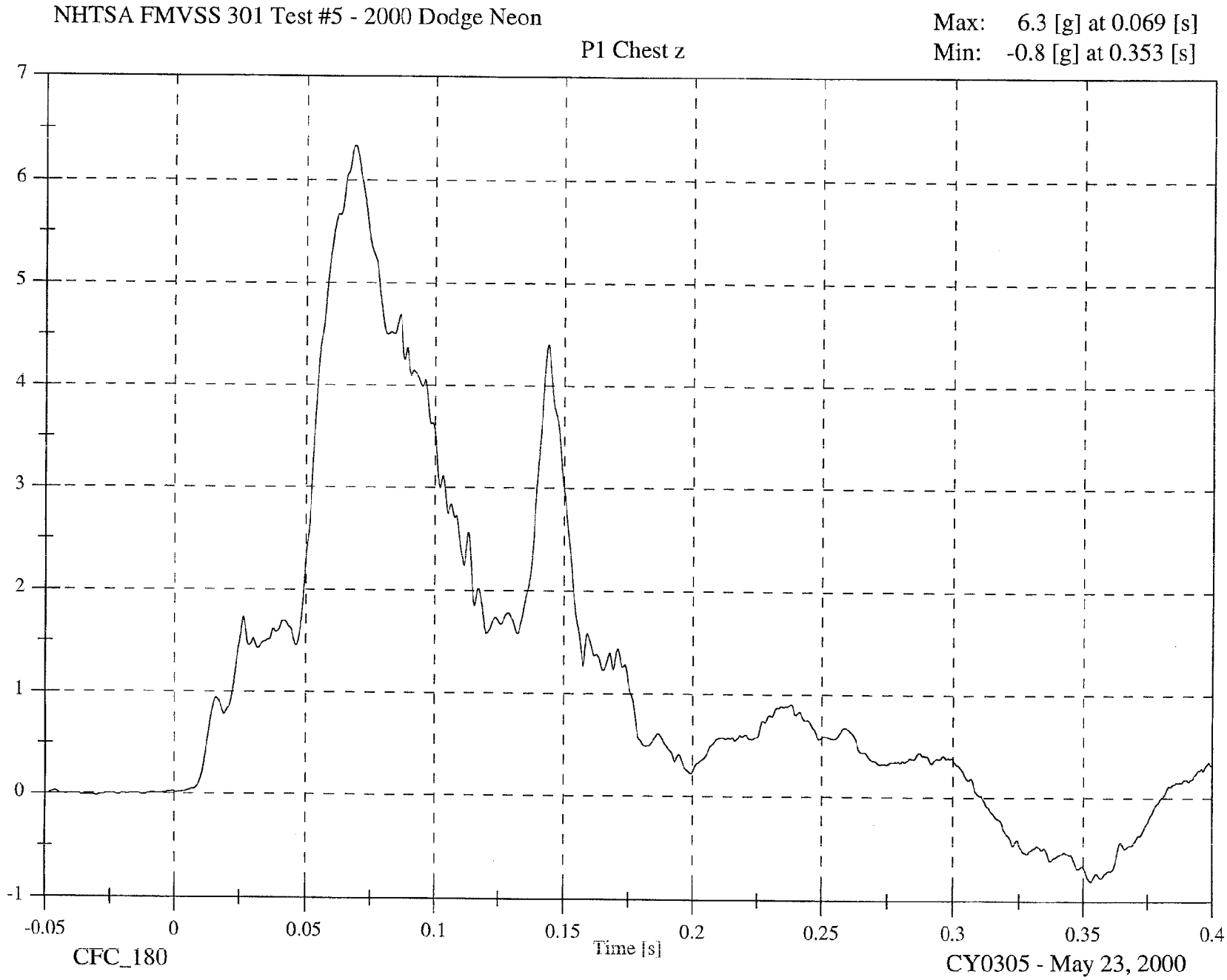

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck My
Max: 238.2 [in-lbf] at 0.159 [s]
Min: -123.9 [in-lbf] at 0.093 [s]
250
200
150
100
50
0
-50
-100
-150
in-lbf
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_600
CY0305 - May 23, 2000

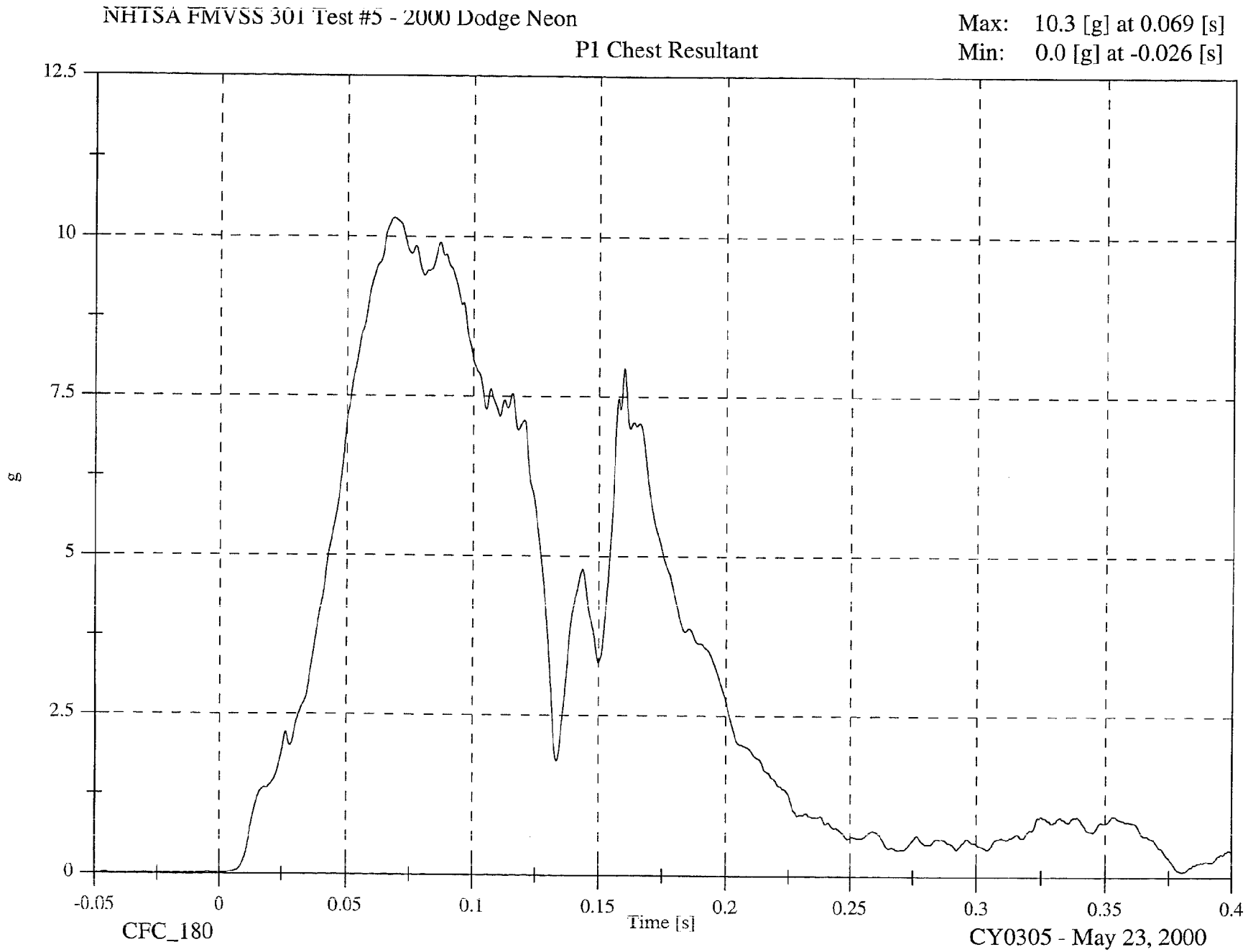

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck Mz
Max: 53.9 [in-lbf] at 0.172 [s]
Min: -14.2 [in-lbf] at 0.068 [s]
in-lbf
60
50
40
30
20
10
0
-10
-20
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_600
CY0305 - May 23, 2000

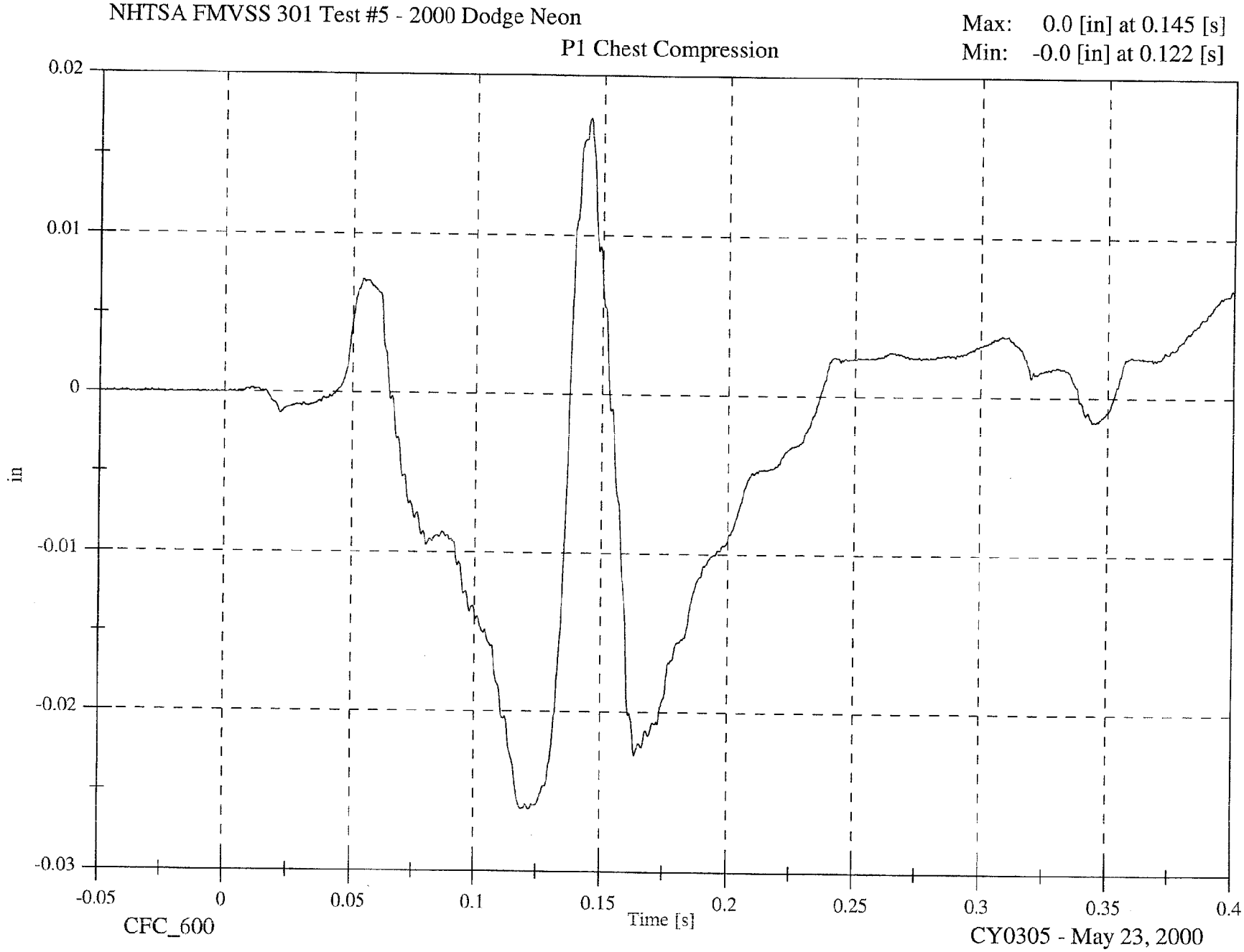

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Upper Neck M Resultant
Max: 247.7 [in-lbf] at 0.159 [s]
Min: 0.0 [in-lbf] at -0.029 [s]
in-lbf
250
200
150
100
50
0
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_600
CY0305 - May 23, 2000

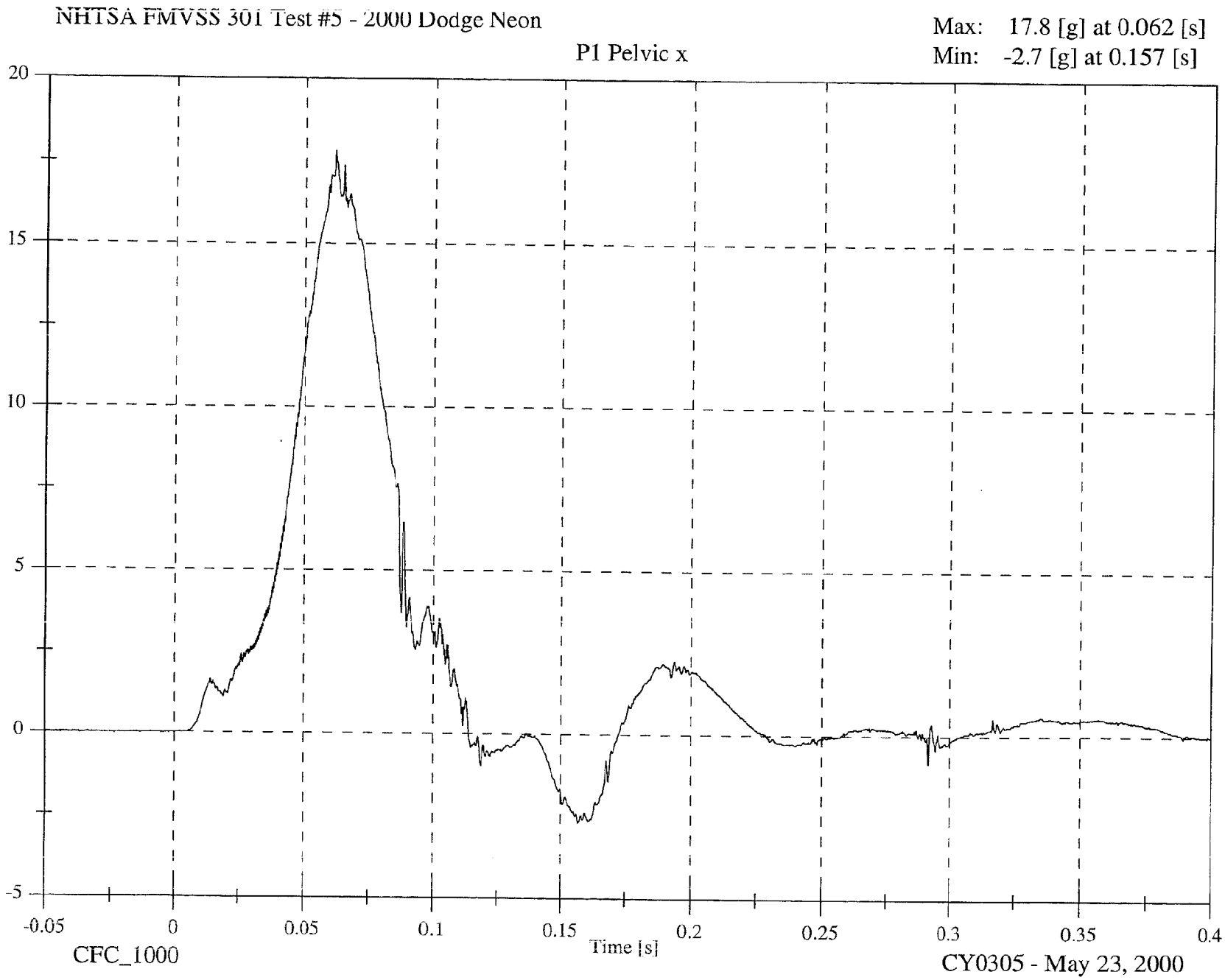

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Chest x
Max: 8.8 [g] at 0.087 [s]
Min: -2.8 [g] at 0.139 [s]
10
7.5
5
2.5
0
-2.5
-5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

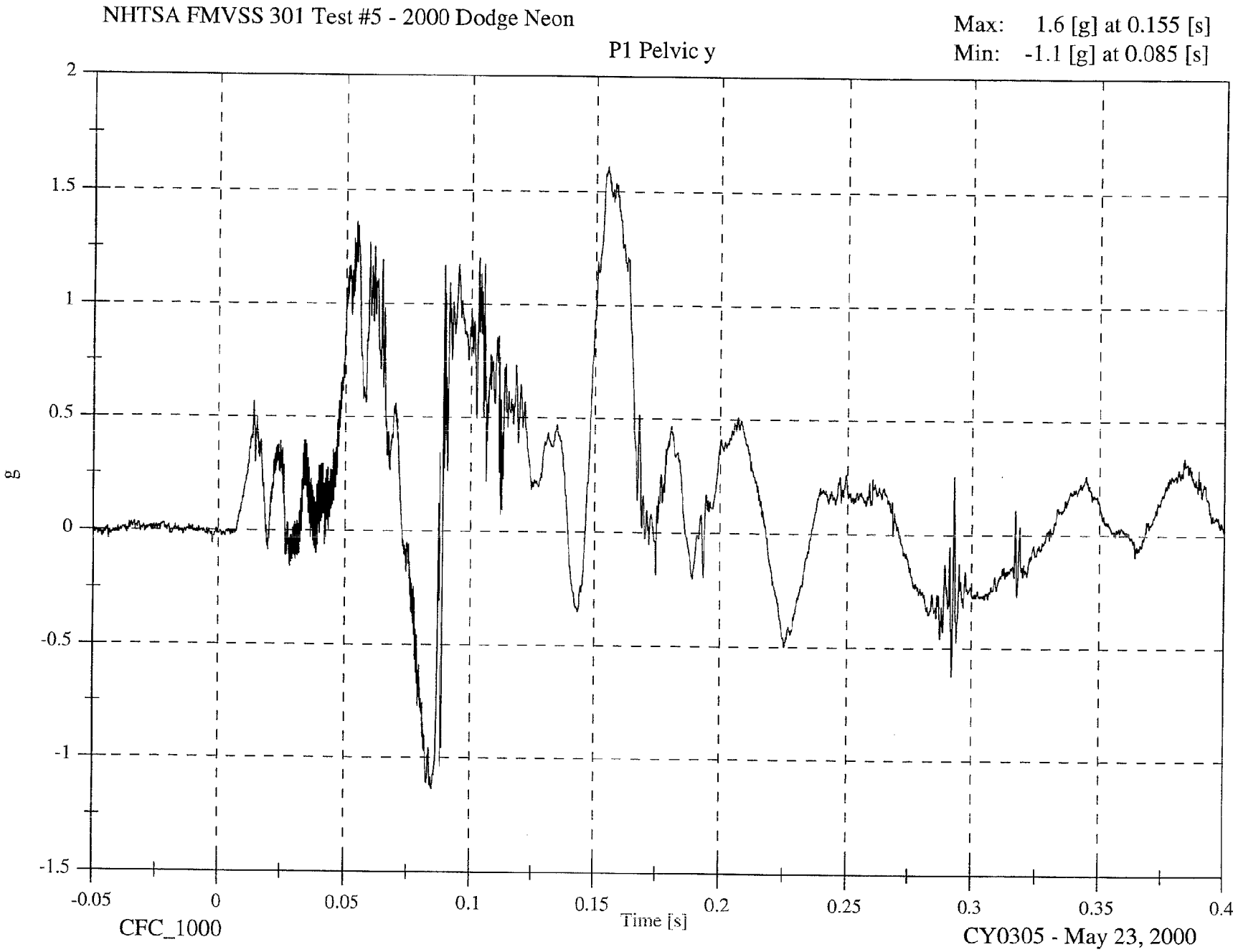

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Chest y
Max: 1.4 [g] at 0.152 [s]
Min: -1.5 [g] at 0.181 [s]
1.5
1
0.5
0
-0.5
-1
-1.5
-2
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

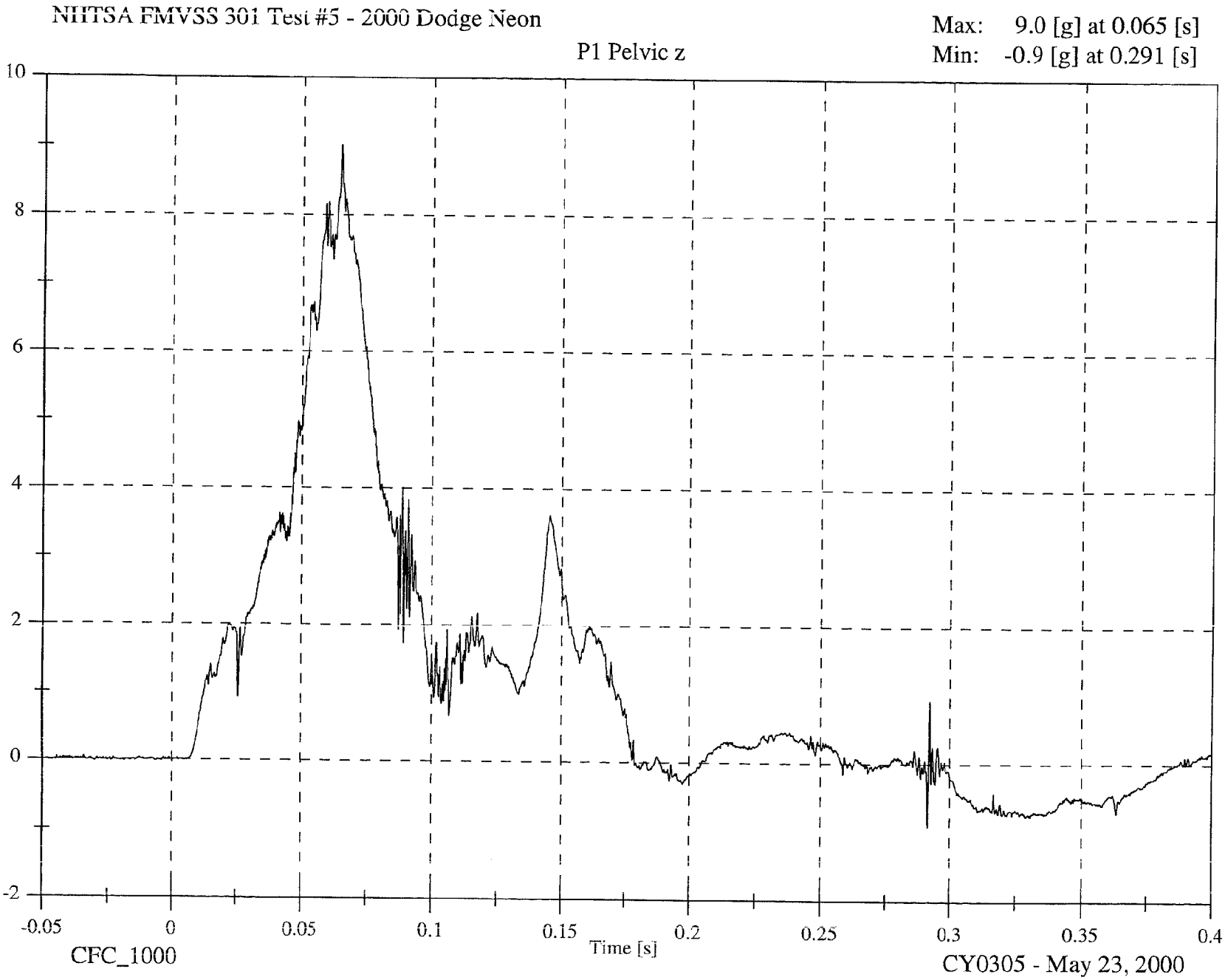

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Chest z
Max: 6.3 [g] at 0.069 [s]
Min: -0.8 [g] at 0.353 [s]
g
7
6
5
4
3
2
1
0
-1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

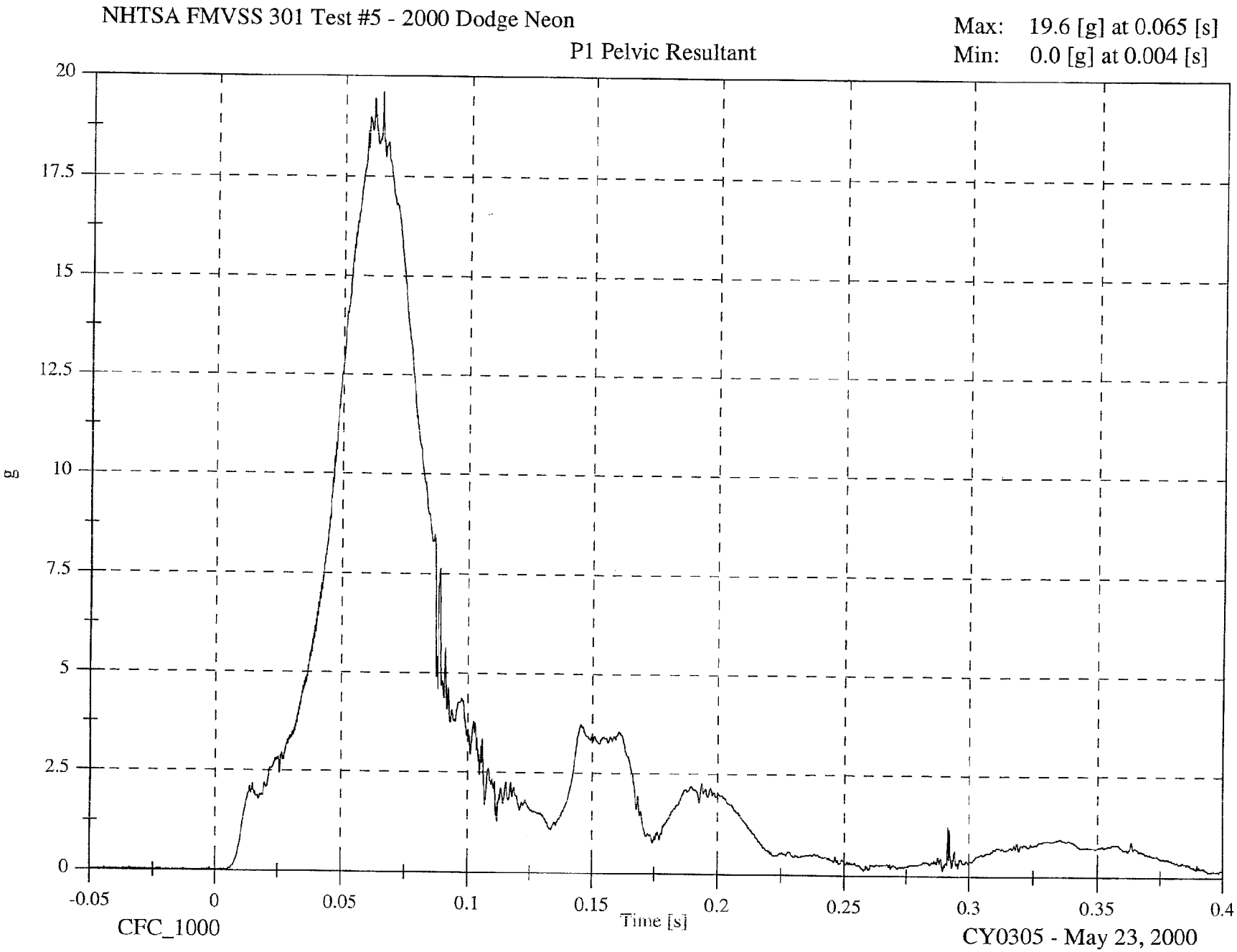

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Chest Resultant
Max: 10.3 [g] at 0.069 [s]
Min: 0.0 [g] at -0.026 [s]
12.5
10
7.5
5
2.5
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_180
CY0305 - May 23, 2000

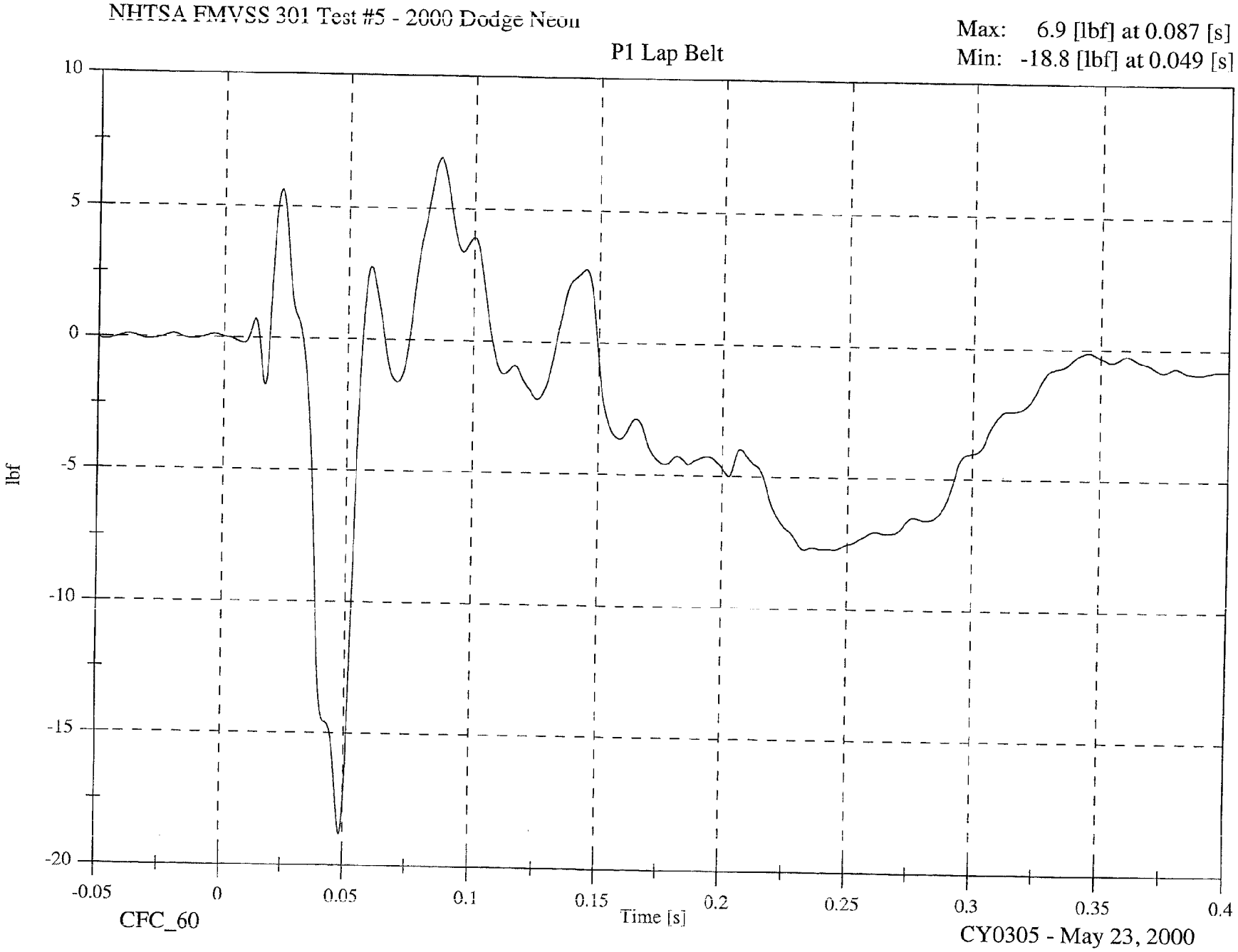

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Chest Compression
Max: 0.0 [in] at 0.145 [s]
Min: -0.0 [in] at 0.122 [s]
0.02
0.01
0
-0.01
-0.02
-0.03
in
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_600
CY0305 - May 23, 2000

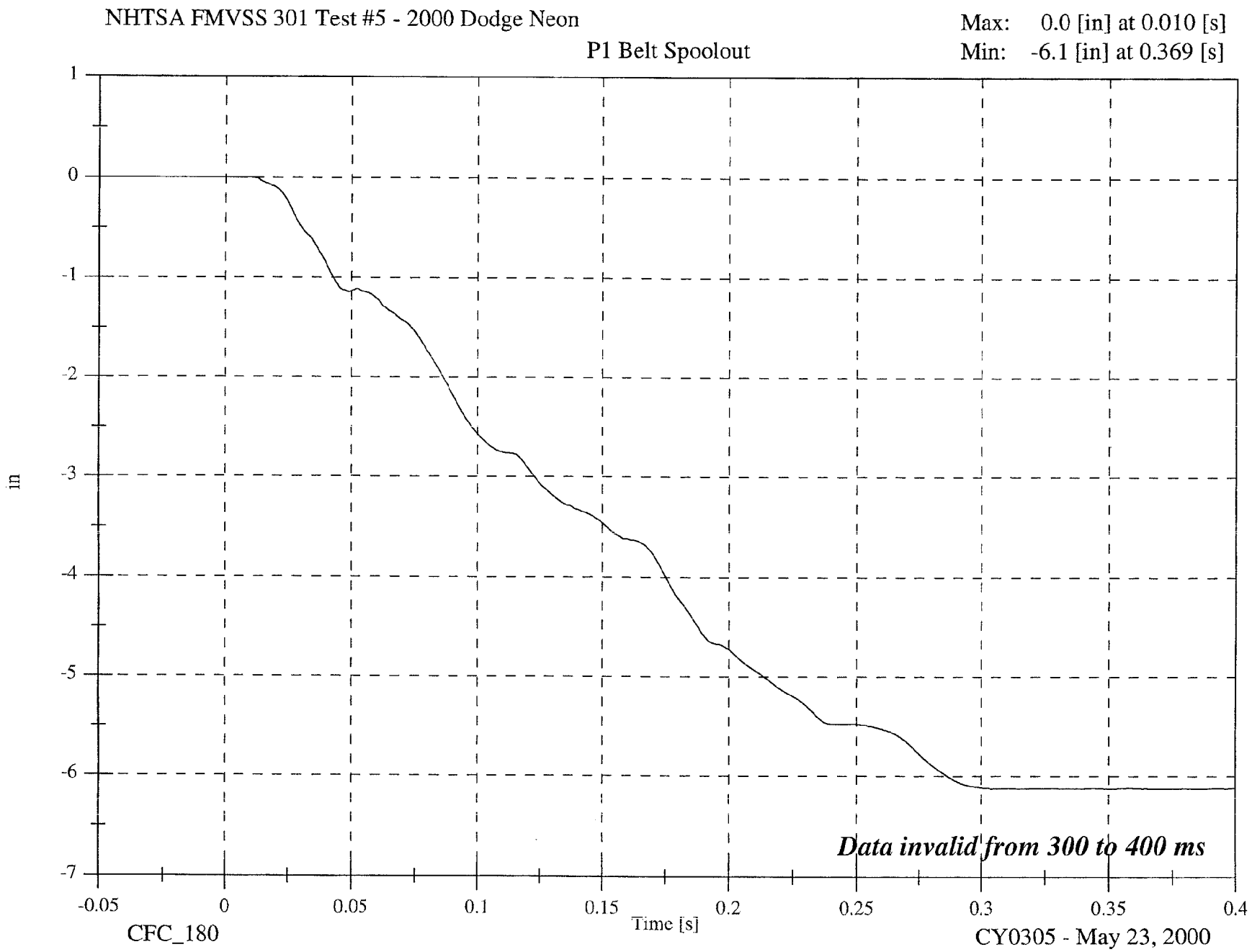

NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Pelvic x
Max: 17.8 [g] at 0.062 [s]
Min: -2.7 [g] at 0.157 [s]
20
15
10
5
0
-5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Pelvic y
Max: 1.6 [g] at 0.155 [s]
Min: -1.1 [g] at 0.085 [s]
2
1.5
1
0.5
0
-0.5
-1
-1.5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Pelvic z
Max: 9.0 [g] at 0.065 [s]
Min: -0.9 [g] at 0.291 [s]
10
8
6
4
2
0
-2
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Pelvic Resultant
Max: 19.6 [g] at 0.065 [s]
Min: 0.0 [g] at 0.004 [s]
g
20
17.5
15
12.5
10
7.5
5
2.5
0
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_1000
CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Lap Belt
Max: 6.9 [lbf] at 0.087 [s]
Min: -18.8 [lbf] at 0.049 [s]
lbf
10
5
0
-5
-10
-15
-20
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
CFC_60
CY0305 - May 23, 2000


NHTSA FMVSS 301 Test #5 - 2000 Dodge Neon
P1 Belt Spoolout
Max: 0.0 [in] at 0.010 [s]
Min: -6.1 [in] at 0.369 [s]
in
1
0
-1
-2
-3
-4
-5
-6
-7
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Time [s]
Data invalid from 300 to 400 ms
CFC_180
CY0305 - May 23, 2000