

*Failure Analysis Associates
Test and Engineering Center*

3953

Exponent[®]

**Frontal Offset
Oblique Crash Test**

**2001 Ford F-150 at 95.2 kph
into a Stationary 2001 Dodge Neon
Positioned at a 17° Angle
with an Impact Overlap of 45%**

Exponent Test Number: 092401

Report Number: PH06608/ESG0/0202/R074

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March 5, 2002

Final Report

Prepared for:

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13	Type of Report and Period Covered Final Report September 2001	14	Sponsoring Agency Code	15	Supplemental Notes
16	Abstract A frontal offset oblique crash test of a 2001 Ford F-150 pickup into a stationary 2001 Dodge Neon was conducted at the Exponent Failure Analysis Associates Test and Engineering Center on September 24, 2001. The Ford F-150's velocity was 95.2 kph. The Ford F-150's test weight was 2020 kg and that of the Dodge Neon was 1486 kg. The Dodge Neon's maximum crush was 563 mm measured on the left side of the hood. The ambient temperature was 37°C. A THOR dummy was placed in the driver position of the Neon. The driver's Head Injury Criteria (HIC36) was 203.5. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 42.5 g. The driver's maximum upper neck injury criteria was 0.52 (N_{te}). The driver's chest maximum deflection was -24.6 mm and viscous response was 0.18 m/s. The driver's left and right femur maximum axial forces were -6146.3 N and -4452.1 N, respectively. A Hybrid III dummy was placed in the passenger position of the Neon. The passenger's Head Injury Criteria (HIC36) was 637.3. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 32.3 g. The passenger's maximum upper neck injury criteria was 0.38 (N_{te}). The passenger's chest maximum deflection was -23.4 mm and viscous response was 0.15 m/s. The passenger's left and right femur maximum axial forces were -3880.5 N and -1571.7 N, respectively.				
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	meters	m
yd	yards	0.9	kilometers	km
mi	miles	1.6		
AREA				
in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons	0.9	tonnes	t
VOLUME				
tsp	teaspoons	5	milliliters	ml
tblsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
fl ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³
TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

1 in = 2.54 (exact). For other exact conversions and more detailed tables, see NIST Mon. Publ. 280, *Units of Weights and Measures*. Price \$2.25. SO Catalog No. C13 110 286

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
km	kilometers	1.1	miles	mi
		0.6	miles	mi
AREA				
cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares (10,000 m ²)	2.5	acres	
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
		1.06	quarts	qt
m ³	cubic meters	0.26	gallons	gal
		35	cubic feet	ft ³
		1.3	cubic yards	yd ³
TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

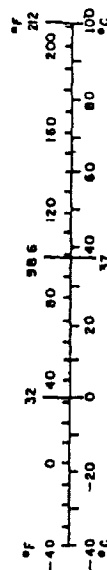


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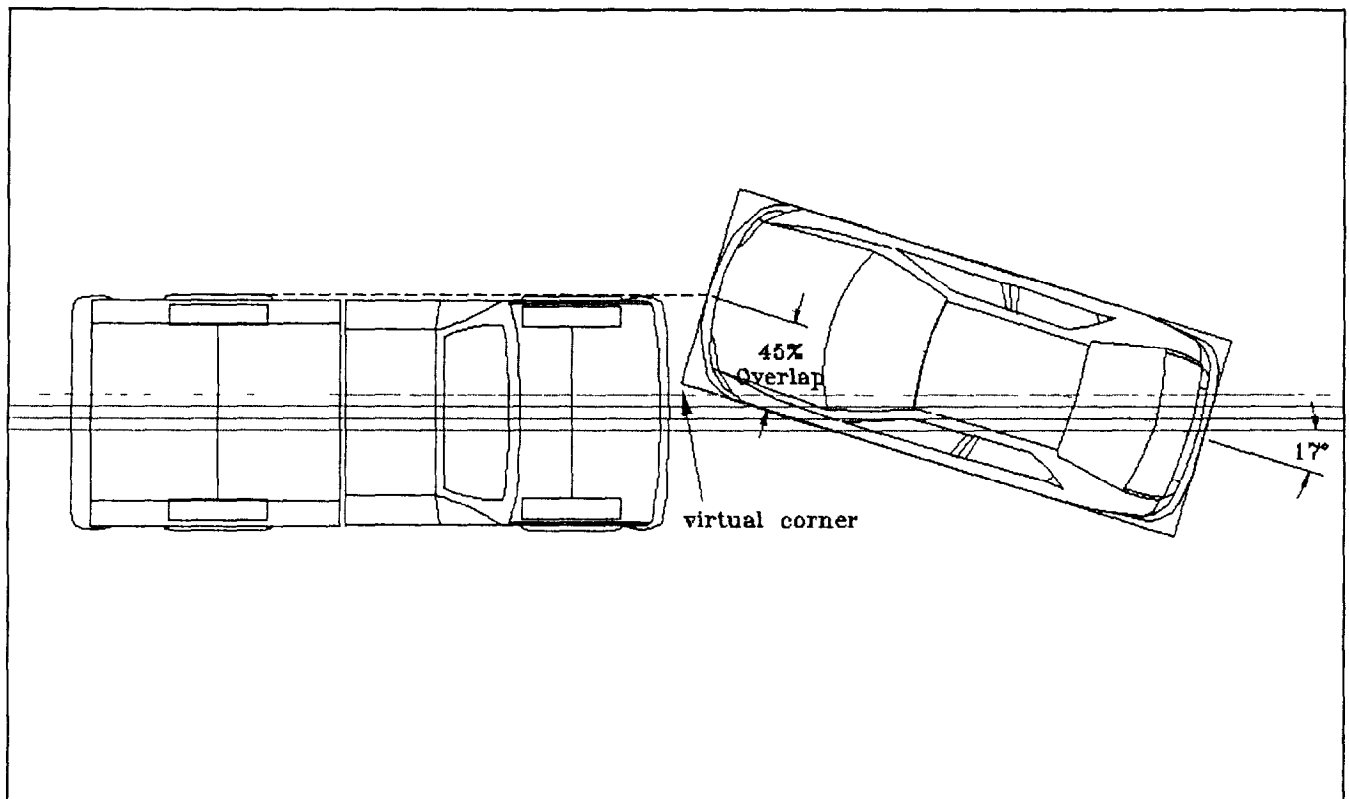
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Section 1.0

Purpose and Test Procedure

Purpose

This crash test was conducted to determine vehicle and occupant response in a 95 kph frontal impact with the longitudinal centerline of the stationary vehicle at a +17 degree angle from the longitudinal centerline and velocity vector of the moving vehicle, and an impact overlap of 45%. The moving vehicle was a 2001 Ford F-150, and the stationary vehicle was a 2001 Dodge Neon.



Test Procedure

This test was conducted per Contract No DTRS57-98-D-00040, Task Order 1, "Frontal Full-Scale Crash Testing for Upgrade of FMVSS 208 Frontal Test Procedure."

The target vehicle, a 2001 Dodge Neon, was instrumented with 23 accelerometers. Ten of the accelerometers were oriented to measure longitudinal axis accelerations, eight of the accelerometers were oriented to measure lateral axis accelerations, and five of the accelerometers were oriented to measure vertical axis accelerations. Additionally, the target vehicle was instrumented with an angular rate sensor oriented to measure yaw rate.

The target vehicle contained one THOR (Test Device for Human Occupant Restraint) advanced frontal impact anthropomorphic test device (dummy), positioned in the driver seat, and one Hybrid III 50th-percentile adult male dummy, positioned in the front passenger seat. The test dummies were positioned in the seats according to the FMVSS 208 dummy placement procedure.

The THOR dummy was configured with 117 channels of instrumentation. The instruments were head vertex biaxial accelerometers; head temporal biaxial accelerometers, head occipital biaxial accelerometers, head center of gravity triaxial accelerometers, left and right eye uniaxial load cells, left and right cheek uniaxial load cells, chin uniaxial load cell; upper neck 6-axis load cell, lower neck 6-axis load cell, front neck spring uniaxial load cell; rear neck spring uniaxial load cell, head rotation potentiometer, upper left thorax 3D compression (CRUX) system (3 potentiometers); upper right thorax CRUX system (3 potentiometers), lower left thorax CRUX system (3 potentiometers), lower right thorax CRUX system (3 potentiometers), chest triaxial accelerometers, upper abdomen uniaxial accelerometer, upper abdomen displacement potentiometer, lower left abdomen double gimbaled string potentiometer (DGSP) system (3 potentiometers), lower right abdomen DGSP system (3 potentiometers); T12 thoracic spine 5-axis load cell; T12 spine triaxial accelerometers, pelvis left acetabular 3-axis load cell, pelvis right acetabular 3-axis load cell, pelvis triaxial accelerometers, left and right femur 6-axis load cells, left and right knee displacement potentiometers, left and right upper tibia 4-axis load cells, left and right lower tibia 5-axis load cells; left and right tibia biaxial accelerometers; left and right ankle rotation (3 potentiometers each), and left and right foot triaxial accelerometers.

The Hybrid III (HIII) dummy was configured with 44 channels of instrumentation. The instruments were: head center of gravity triaxial accelerometers, upper neck 6-axis load cell; chest triaxial accelerometers, chest deflection potentiometer, pelvis triaxial accelerometers, left and right femur uniaxial load cells, left and right knee load cells (2 each) and displacement potentiometers, and left and right upper and lower tibia 5-axis load cells.

The bullet vehicle, a 2001 Ford F-150, was instrumented with eight accelerometers. Four of the accelerometers were oriented to measure longitudinal axis accelerations, three of the accelerometers were oriented to measure lateral axis accelerations, and one of the accelerometers was oriented to measure vertical axis acceleration. The bullet vehicle contained one Hybrid II 50th-percentile adult male anthropomorphic test device, positioned in the driver seat. The test dummy was not instrumented.

The specified impact velocity range of the bullet vehicle was 95.0 ± 1.5 kph.

In total, 193 data channels were digitally sampled at 10,000 samples per second. Data acquisition and post-processing were conducted per FMVSS 208 and SAE J211 MAR 95 specifications. Head Injury Criterion (HIC), Chest Injury Criterion (CIC), Chest Deflection Viscous Criterion (VC), and Neck Injury Criterion (Nij) were calculated for the HIII dummy. Post-processing of the THOR upper neck, CRUX, and DGSP data was performed using THORTEST software supplied by GESAC, and then Head Injury Criterion (HIC), Chest Injury Criterion (CIC), Chest Deflection Viscous Criterion (VC), and Neck Injury Criterion (Nij) were calculated for the THOR dummy following guidelines provided by GESAC.

The crash event was documented by 12 off-board, high-speed film cameras and one ground-based, real-time, panning video camera.

The vehicle and occupant data are summarized in Section 2.0. The test data is presented in Section 3.0. The camera, occupant, and vehicle measurements are presented in Section 4.0. Appendix A contains the still photographic images. Appendix B contains the vehicle and dummy data plots.

Section 2 0

Test Summary and Forms

Test Results Summary

A frontal offset oblique crash test of a 2001 Ford F-150 pickup into a stationary 2001 Dodge Neon was conducted at the Exponent Failure Analysis Associates Test and Engineering Center on September 24, 2001. The Ford F-150's velocity was 95.2 kph. The Ford F-150's test weight was 2020 kg and that of the Dodge Neon was 1486 kg. The Dodge Neon's maximum crush was 563 mm measured on the left side of the hood. The ambient temperature was 37°C.

A THOR dummy was placed in the driver position of the Neon. The driver's Head Injury Criteria (HIC₃₆) was 203.5. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 42.5 g. The driver's maximum upper neck injury criteria was 0.52 (N_{te}). The driver's chest maximum deflection was -24.6 mm and viscous response was 0.18 m/s. The driver's left and right femur maximum axial forces were -6146.3 N and -4452.1 N, respectively.

A Hybrid III dummy was placed in the passenger position of the Neon. The passenger's Head Injury Criteria (HIC₃₆) was 637.3. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 32.3 g. The passenger's maximum upper neck injury criteria was 0.38 (N_{te}). The passenger's chest maximum deflection was -23.4 mm and viscous response was 0.15 m/s. The passenger's left and right femur maximum axial forces were -3880.5 N and -1571.7 N, respectively.

Data Acquisition Explanations

THOR Upper Abdomen Displacement – transducer dropout from 120 to 147 ms; transducer verified as functioning properly in post-test checkout

Dodge Neon Left Shock Tower Acceleration (Az) – transducer failure after 40 ms.

Dodge Neon Left Shock Tower Resultant Acceleration (Ar) – calculated resultant erroneous due to Az transducer failure after 40 ms

Dodge Neon Center Rear Compartment Acceleration (Ax) – transducer malfunction, data unreliable, transducer verified as functioning properly in post-test checkout.

Data spike recorded that affects the maximum and/or minimum value (and corresponding resultant calculation if applicable) for the following channels

THOR Head Occipital Acceleration (Ay)

THOR Right Eye Compression Load

THOR Left Eye Compression Load

THOR Right Cheek Compression Load

THOR Upper Neck Force (Fx) - pre-THORTEST

THOR Upper Neck Force (Fy) - pre-THORTEST

THOR Upper Neck Force (Fz) - pre-THORTEST

THOR Upper Neck Moment (Mx) - pre-THORTEST

THOR Upper Neck Moment (My) - pre-THORTEST

THOR Neck Front Spring Compression - pre-THORTEST

THOR Neck Rear Spring Compression - pre-THORTEST

THOR Upper Neck Force (Fy) - post-THORTEST

THOR Upper Neck Moment (Mx) - post-THORTEST

THOR Lower Neck Force (Fx)

THOR Lower Neck Force (Fy)

THOR Lower Neck Moment (Mx)

THOR Lower Neck Moment (My)

THOR Lower Neck Moment (Mz)

THOR T12 Thoracic Force (Fx)

THOR T12 Thoracic Force (Fy)

THOR T12 Thoracic Moment (My)

THOR T12 Thoracic Acceleration (Az)

THOR Pelvis Left Acetabular Force (Fx)

THOR Pelvis Left Acetabular Force (Fy)

THOR Pelvis Left Acetabular Force (Fz)

THOR Pelvis Right Acetabular Force (Fx)

THOR Pelvis Right Acetabular Force (Fy)

THOR Pelvis Right Acetabular Force (Fz)

THOR Left Upper Tibia Force (Fx)

THOR Left Upper Tibia Force (Fz)

THOR Left Lower Tibia Force (Fy)

THOR Right Tibia Acceleration (Ax)
THOR Right Tibia Acceleration (Ay)

HIII Left Knee Left Force
HIII Right Knee Left Force
HIII Right Knee Right Force
HIII Left Lower Tibia Force (Fx)
HIII Left Lower Tibia Force (Fz)
HIII Right Upper Tibia Force (Fx)
HIII Right Upper Tibia Force (Fz)
HIII Right Lower Tibia Force (Fx)
HIII Right Lower Tibia Force (Fy)
HIII Right Lower Tibia Force (Fz)

Data spikes recorded that do not effect the maximum and/or minimum value for the following channels

THOR Chin Compression Load
THOR Upper Neck Moment (Mz) - pre-THORTEST
THOR Upper Neck Force (Fx) - post-THORTEST
THOR Upper Neck Force (Fz) - post-THORTEST
THOR Upper Neck Moment (My) - post-THORTEST
THOR Upper Neck Moment (Mz) - post-THORTEST
THOR Upper Neck Injury Predictor (Nij)
THOR Lower Neck Force (Fz)
THOR T12 Thoracic Force (Fz)
THOR T12 Thoracic Moment (Mx)
THOR T12 Thoracic Acceleration (Ar)
THOR Left Femur Force (Fx)
THOR Left Femur Force (Fy)
THOR Left Femur Force (Fz)
THOR Right Femur Force (Fx)
THOR Right Femur Force (Fy)
THOR Right Femur Force (Fz)
THOR Left Upper Tibia Moment (Mx)
THOR Left Upper Tibia Moment (My)
THOR Left Lower Tibia Force (Fx)
THOR Left Lower Tibia Force (Fz)
THOR Left Lower Tibia Moment (My)
THOR Right Upper Tibia Force (Fx)
THOR Right Upper Tibia Force (Fz)
THOR Right Lower Tibia Force (Fx)
THOR Right Lower Tibia Force (Fy)
THOR Right Lower Tibia Force (Fz)

HIII Left Femur Force
HIII Right Femur Force
HIII Left Knee Right Force
HIII Left Upper Tibia Force (Fz)

HIII Left Lower Tibia Force (Fy)
HIII Left Lower Tibia Moment (My)
HIII Right Upper Tibia Force (Fy)
HIII Right Upper Tibia Moment (Mx)
HIII Right Upper Tibia Moment (My)
HIII Right Lower Tibia Moment (Mx)
HIII Right Lower Tibia Moment (My)

VEHICLE RECEIVING SUMMARY

VEHICLE FILE NUMBER	4689		DATE RECEIVED	9/17/01		
PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1			
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON	
VEHICLE BODY STYLE	4-DOOR SEDAN			VEHICLE COLOR	WHITE	
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391			DATE OF MANUFACTURE	5/01	
GVWR (kgs)	1667	FRONT GAWR (kgs)	910	REAR GAWR (kgs)	780	
RECOMMENDED TIRE SIZE F/R	P185/65R14		RECOMMENDED TIRE PRESSURE F/R (kPa)	220		
ENGINE TYPE	4-CYLINDER TRANSVERSE		ENGINE DISPLACEMENT	2.0 LITER	ODOMETER (mi)	264
TRANSMISSION TYPE	AUTOMATIC		SHIFT LEVER LOCATION	FLOOR	FUEL CAPACITY (L)	47
FUEL TANK LOC	CENTER FORWARD OF REAR AXLE			FILLER CAP LOC	RIGHT REAR QUARTER PANEL	
DESIGNATED SEATING	FRONT	2	REAR	3	TOTAL	5
FRONT SEAT TYPE	BUCKET					

RESTRAINT SYSTEM DESCRIPTION

DRIVER	3-PT ACTIVE BELT	CENTER FRONT	---	RIGHT FRONT	3-PT ACTIVE BELT
LEFT REAR	3-PT ACTIVE BELT	CENTER REAR	3-PT ACTIVE BELT	RIGHT REAR	3-PT ACTIVE BELT

VEHICLE EQUIPMENT & CONDITION

AIR CONDITIONING	Y	POWER STEERING	Y	POWER BRAKES	Y	POWER WINDOWS	N	POWER SEATS	N
POWER DOOR LOCKS	N	CRUISE CONTROL	N	SPACE SAVER SPARE	Y	FRONT WHEEL DRIVE	Y	4 WHEEL DRIVE	N
TELESCOPING WHEEL	N	TILT WHEEL	Y	FRONT DISK BRAKES	Y	REAR DISK BRAKES	N	ANTI LOCK BRAKES F	N
DRIVER AIRBAG	Y	RF PASSENGER AIRBAG	Y	SIDE AIRBAGS	N	PRE TENSIONERS	N	ANTI LOCK BRAKES R	N
ADDITIONAL SIGNIFICANT OPTIONS/ACCESSORIES	NONE								
SIGNIFICANT BODY DAMAGE/CORROSION	NONE								

VEHICLE WEIGHTS AS RECEIVED (WITH MAX. FLUIDS/kgs)

LEFT FRONT	380	RIGHT FRONT	386	TOTAL FRONT	766	PERCENT FRONT	63%
LEFT REAR	226	RIGHT REAR	219	TOTAL REAR	445	PERCENT REAR	37%
				TOTAL WEIGHT	1211		

VEHICLE ATTITUDE MEASUREMENTS AS RECEIVED (WITH MAX. FLUIDS/mm)

LEFT FRONT	656 AT WHL WELL @ AXLE	RIGHT FRONT	655 AT WHL WELL @ AXLE
LEFT REAR	676 AT WHL WELL @ AXLE	RIGHT REAR	685 AT WHL WELL @ AXLE

VEHICLE EXTERIOR DIMENSIONS (mm)

OVERALL LENGTH	4414	OVERALL WIDTH	1727	OVERALL HEIGHT	1415
WHEELBASE	2670	FRONT TRACK	1477	REAR TRACK	1475
REAR OVERHANG	890	OTHER	NONE		
COMMENTS	NONE				
EIGHT POINT PHOTOS TAKEN? (Y/N)	Y	FORM COMPLETED BY	SL	CHECKED BY	MK

VEHICLE RECEIVING SUMMARY

VEHICLE FILE NUMBER	4699	DATE RECEIVED	9/20/01
PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1
VEHICLE YEAR	2001	VEHICLE MAKE	FORD
VEHICLE BODY STYLE	2-DOOR PICKUP	VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831	DATE OF MANUFACTURE	5/01
GVWR (kgs)	2744	FRONT GAWR (kgs)	1270
		REAR GAWR (kgs)	1587
RECOMMENDED TIRE SIZE F/R	P235/60R17 SL	RECOMMENDED TIRE PRESSURE F/R (kPa)	179 / 221
ENGINE TYPE	V-8	ENGINE DISPLACEMENT	4.6 LITER
		ODOMETER (mi)	237
TRANSMISSION TYPE	AUTOMATIC W/OVERDRIVE	SHIFT LEVER LOCATION	COLUMN
		FUEL CAPACITY (L)	94.6
FUEL TANK LOC	CENTER FORWARD OF REAR AXLE	FILLER CAP LOC	LEFT REAR QUARTER PANEL
DESIGNATED SEATING FRONT	3	REAR	0
TOTAL	3	FRONT SEAT TYPE	60 / 40 BENCH

RESTRAINT SYSTEM DESCRIPTION

DRIVER	3-PT ACTIVE BELT	CENTER FRONT	2-PT ACTIVE BELT	RIGHT FRONT	3-PT ACTIVE BELT
LEFT REAR	N/A	CENTER REAR	N/A	RIGHT REAR	N/A

VEHICLE EQUIPMENT & CONDITION

AIR CONDITIONING	Y	POWER STEERING	Y	POWER BRAKES	Y	POWER WINDOWS	Y	POWER SEATS	N
POWER DOOR LOCKS	Y	CRUISE CONTROL	Y	SPACE SAVER SPARE	N	FRONT WHEEL DRIVE	N	4 WHEEL DRIVE	N
TELESCOPING WHEEL	N	TILT WHEEL	Y	FRONT DISK BRAKES	Y	REAR DISK BRAKES	Y	ANTI LOCK BRAKES F	Y
DRIVER AIRBAG	Y	RF PASSENGER AIRBAG	Y	SIDE AIRBAGS	N	PRE TENSIONERS	N	ANTI LOCK BRAKES R	Y

ADDITIONAL SIGNIFICANT OPTIONS/ACCESSORIES

RECEIVED WITH P235/70R16 SIZE TIRES

SIGNIFICANT BODY DAMAGE/CORROSION

NONE

VEHICLE WEIGHTS AS RECEIVED (WITH MAX. FLUIDS/kgs)

LEFT FRONT	562	RIGHT FRONT	534	TOTAL FRONT	1096	PERCENT FRONT	57%
LEFT REAR	404	RIGHT REAR	409	TOTAL REAR	813	PERCENT REAR	43%
				TOTAL WEIGHT	1909		

VEHICLE ATTITUDE MEASUREMENTS AS RECEIVED (WITH MAX. FLUIDS/mm)

LEFT FRONT	855 AT WHL WELL @ AXLE	RIGHT FRONT	850 AT WHL WELL @ AXLE
LEFT REAR	915 AT WHL WELL @ AXLE	RIGHT REAR	917 AT WHL WELL @ AXLE

VEHICLE EXTERIOR DIMENSIONS (mm)

OVERALL LENGTH	5251	OVERALL WIDTH	1987	OVERALL HEIGHT	1840
WHEELBASE	3040	FRONT TRACK	1653	REAR TRACK	1655
REAR OVERHANG	1220	OTHER	NONE		
COMMENTS	NONE				
EIGHT POINT PHOTOS TAKEN? (Y/N)	Y	FORM COMPLETED BY	SL	CHECKED BY	MK

VEHICLE CRASH TEST CONDITION

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE BODY STYLE	4-DOOR SEDAN			VEHICLE COLOR	WHITE
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391			ODOMETER (mi)	264
INSTALLED TIRES	LEFT - SIZE / PRESSURE (kPa)		RIGHT SIZE / PRESSURE (kPa)		
FRONT	P185/65R14 / 220 kPa		P185/65R14 / 220 kPa		
REAR	P185/65R14 / 220 kPa		P185/65R14 / 220 kPa		

VEHICLE TEST WEIGHT (kgs)					
LEFT FRONT	419	RIGHT FRONT	438	TOTAL FRONT	857
LEFT REAR	320	RIGHT REAR	309	TOTAL REAR	629
				TOTAL WEIGHT	1486
PERCENT FRONT 58%					
PERCENT REAR 42%					

VEHICLE TEST ATTITUDE MEASUREMENTS (mm)					
LEFT FRONT	632	AT	WHL WELL @ AXLE	RIGHT FRONT	641
LEFT REAR	634	AT	WHL WELL @ AXLE	RIGHT REAR	626
SUSPENSION ADJUSTMENTS		NONE			
OTHER MEASUREMENTS		NONE			

VEHICLE MODIFICATIONS & ADDITIONS	
TOW SHOE LOCATION(S)	NONE
BRAKE ABORT SYSTEM	NONE
ONBOARD CAMERA LOCATION(S)	NONE
EVENT FLASH LOCATION(S)	LEFT & RIGHT UPPER A-PILLAR, LEFT & RIGHT FRONT FENDER
TARGET LOCATION(S)	LEFT & RIGHT SIDES, HOOD, ROOF, & TRUNK CENTERLINE/12" CENTER-TO-CENTER/SEE VEHICLE TARGET LOCATION PAGE
INSTALLED TRANSDUCER(S)	SEE VEHICLE TRANSDUCER LOCATION RECORD
INSTRUMENTATION PACKAGE LOCATION	TRUNK/REAR PASSENGER COMPARTMENT
OTHER	NONE

VEHICLE CONDITION			
TRANSMISSION GEAR	NEUTRAL	WINDOW POSITION	F/OPEN, R/CLOSED
FUEL TANK LEVEL	93% OF CAPACITY	FLUID TYPE	STODDARD
DOOR LOCKS		UNLOCKED	
BRAKES		PARKING BRAKE OFF	
OTHER NONE			

ANTHROPOMORPHIC DUMMIES / RESTRAINTS			
LEFT FRONT	THOR / 3-PT ACTIVE BELT	LEFT REAR	NONE
CENTER FRONT	NONE	CENTER REAR	NONE
RIGHT FRONT	HIH / 3-PT ACTIVE BELT	RIGHT REAR	NONE

COMMENTS
NONE
FORM COMPLETED BY MK
CHECKED BY JS

VEHICLE CRASH TEST CONDITION

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150
VEHICLE BODY STYLE	2-DOOR PICKUP			VEHICLE COLOR	SILVER
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831			ODOMETER (mi)	237
INSTALLED TIRES	LEFT SIZE / PRESSURE (kPa)		RIGHT - SIZE / PRESSURE (kPa)		
BF GOODRICH FRONT	P235/70R16 / 241 kPa		P235/70R16 / 241 kPa		
GENERAL REAR	P235/70R16 / 241 kPa		P235/70R16 / 241 kPa		

VEHICLE TEST WEIGHT (kgs)					
LEFT FRONT	589	RIGHT FRONT	527	TOTAL FRONT	1116
LEFT REAR	457	RIGHT REAR	447	TOTAL REAR	904
				TOTAL WEIGHT	2020
PERCENT FRONT 55%					
PERCENT REAR 45%					

VEHICLE TEST ATTITUDE MEASUREMENTS (mm)					
LEFT FRONT	843	AT	WHL WELL @ AXLE	RIGHT FRONT	850
LEFT REAR	895	AT	WHL WELL @ AXLE	RIGHT REAR	900
SUSPENSION ADJUSTMENTS		NONE			
OTHER MEASUREMENTS		NONE			

VEHICLE MODIFICATIONS & ADDITIONS			
TOW SHOE LOCATION(S)	FRAME RAILS FORWARD OF STABILIZER BAR		
BRAKE ABORT SYSTEM	AUTOMATIC AND REMOTE MANUAL	TIME DELAY (sec)	0 2
ONBOARD CAMERA LOCATION(S)	NONE		
EVENT FLASH LOCATION(S)	DRIVER SIDE UPPER AND LOWER A-PILLAR		
TARGET LOCATION(S)	LEFT & RIGHT SIDES, HOOD & ROOF CENTERLINE/12" CENTER-TO-CENTER/SEE VEHICLE TARGET LOCATION PAGE		
INSTALLED TRANSDUCER(S)	SEE VEHICLE TRANSDUCER LOCATION RECORD		
INSTRUMENTATION PACKAGE LOCATION	CARGO BOX OF PICKUP		
OTHER	REMOVED SPARE TIRE (30 kg)		

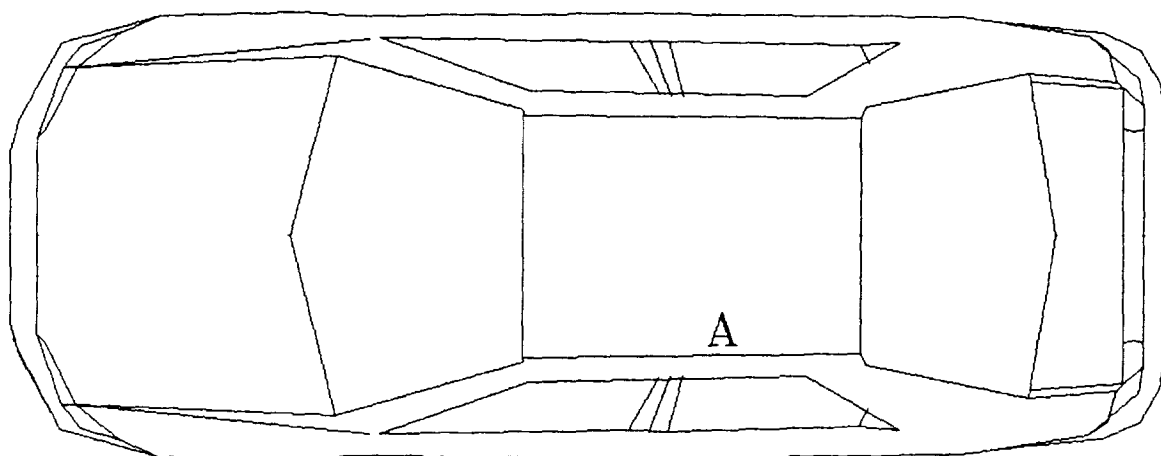
VEHICLE CONDITION			
TRANSMISSION GEAR	NEUTRAL	WINDOW POSITION	OPEN
FUEL TANK LEVEL	93% OF CAPACITY	FLUID TYPE	STODDARD
DOOR LOCKS		UNLOCKED	
BRAKES		PARKING BRAKE OFF	
OTHER NONE			

ANTHROPOMORPHIC DUMMIES / RESTRAINTS			
LEFT FRONT	H-II / 3-PT ACTIVE BELT	LEFT REAR	NONE
CENTER FRONT	NONE	CENTER REAR	NONE
RIGHT FRONT	NONE	RIGHT REAR	NONE

COMMENTS	
NONE	FORM COMPLETED BY MK CHECKED BY JS

TEST VEHICLE BALLAST RECORD

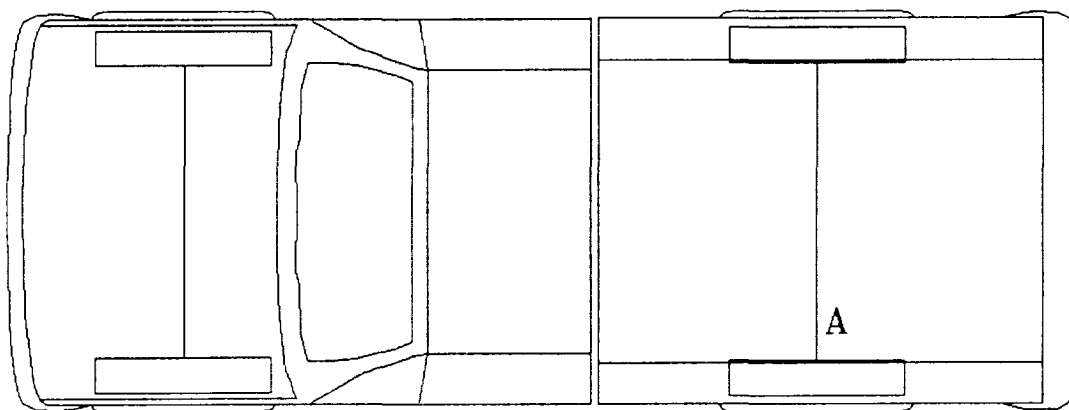
PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391				



LOCATION (Shown on sketch)	TYPE	AMOUNT (kg)	SECURING METHOD
A LEFT REAR COMPARTMENT FLOOR BOARD	LEAD	19	BOLTED

TEST VEHICLE BALLAST RECORD

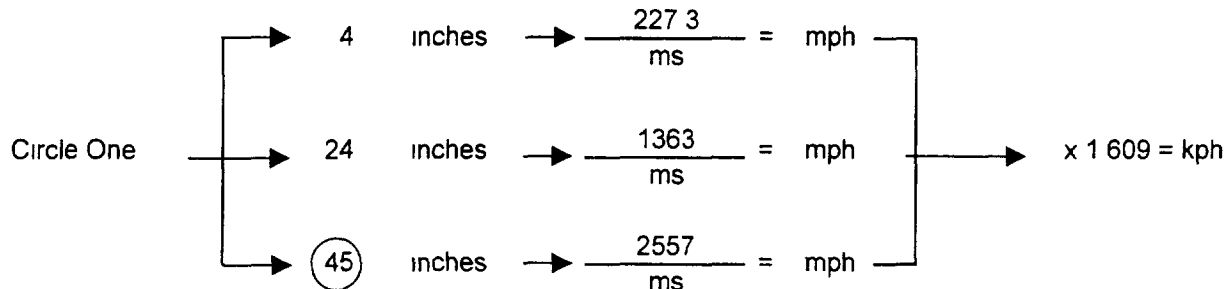
PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831				



	LOCATION (Shown on sketch)	TYPE	AMOUNT (kg)	SECURING METHOD
A	CARGO BOX, INSIDE LEFT FENDER WELL	LEAD	17	BOLTED

SPEED TRAP COUNTER LOG

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
OPERATOR	MK	SPEED COUNTER S/N	031588	CALIBRATION DUE DATE	3/31/02
COMMENTS	NONE				



Test ID		Time [ms]	Speed [mph]	Speed [kph]	Checked By
1	Channel 1	43 25	59 1		JS
	Channel 2	43 20	59 2		
	Average	--	59 2	95 2	
	Channel 1				
	Channel 2				
	Average	--			
	Channel 1				
	Channel 2				
	Average	--			
	Channel 1				
	Channel 2				
	Average	--			
	Channel 1				
	Channel 2				
	Average	--			

POST TEST INSPECTION SUMMARY

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1		TEST DATE	9/24/01
TARGET VEHICLE						
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON	
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391			DATE OF MANUFACTURE	5/01	
TEST DESCRIPTION						
TEST TYPE	OBLIQUE OFFSET FRONTAL IMPACT TESTING					
TEST TIME	1 15 PM	AMBIENT TEMPERATURE (°C)	37	MEASUREMENT LOCATION	73 m NORTH OF CRASH RAIL	
VISIBLE DUMMY CONTACT POINTS						
	DRIVER DUMMY			PASSENGER DUMMY		
HEAD	WINDOW FRAME, HEADLINER, AIRBAG			AIRBAG, INSTRUMENT PANEL		
CHEST	STEERING WHEEL			NO PAINT		
ABDOMEN	NO PAINT			NO PAINT		
LEFT KNEE	INSTRUMENT PANEL			AIRBAG, INSTRUMENT PANEL		
RIGHT KNEE	INSTRUMENT PANEL			INSTRUMENT PANEL		
OTHER	NONE			NONE		
VEHICLE DOOR OPENING INFORMATION						
	LEFT SIDE DOORS			RIGHT SIDE DOORS		
FRONT	TOOLS NEEDED			EASY		
REAR	EASY			EASY		
VEHICLE SEAT CONDITION						
	LEFT SIDE			RIGHT SIDE		
SEAT TRACK FAILURE	NONE			NONE		
SEAT BACK FAILURE	NONE			NONE		
GLAZING DAMAGE						
BACKLIGHT/WINDSHIELD	WINDSHIELD BROKEN					
COMMENTS & OBSERVATIONS						
NONE						
				FORM COMPLETED BY	MK	CHECKED BY JS

POST TEST INSPECTION SUMMARY

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1		TEST DATE	9/24/01
BULLET VEHICLE						
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150	
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831			DATE OF MANUFACTURE	5/01	
TEST DESCRIPTION						
TEST TYPE	OBLIQUE OFFSET FRONTAL IMPACT TESTING					
TEST TIME	1 15PM	AMBIENT TEMPERATURE (°C)	37	MEASUREMENT LOCATION	73 m NORTH OF CRASH RAIL	
VISIBLE DUMMY CONTACT POINTS						
	DRIVER DUMMY			PASSENGER DUMMY		
HEAD	NO PAINT			NO PAINT		
CHEST	NO PAINT			NO PAINT		
ABDOMEN	NO PAINT			NO PAINT		
LEFT KNEE	NO PAINT			NO PAINT		
RIGHT KNEE	NO PAINT			NO PAINT		
OTHER	NO PAINT			NO PAINT		
VEHICLE DOOR OPENING INFORMATION						
	LEFT SIDE DOORS			RIGHT SIDE DOORS		
FRONT	TOOLS NEEDED			EASY		
REAR	N/A			N/A		
VEHICLE SEAT CONDITION						
	LEFT SIDE			RIGHT SIDE		
SEAT TRACK FAILURE	NONE			NONE		
SEAT BACK FAILURE	NONE			NONE		
GLAZING DAMAGE						
BACKLIGHT/WINDSHIELD	WINDSHIELD BROKEN					
COMMENTS & OBSERVATIONS						
NONE						
				FORM COMPLETED BY	MK	CHECKED BY JS

Section 3 0

Test Data Summary

Test Data Summary

Description	Units	Filter	Maximum	Time@Max	Minimum	Time@Min	*
THOR, Driver Position (2001 Dodge Neon)							
<i>THEAD (results calculated between -0.1 and 0.4)</i>							
THOR Head Vertex Acceleration (Ax)	g	1650 Hz	12.7	0.136	-46.3	0.101	
THOR Head Vertex Acceleration (Ay)	g	1650 Hz	39.4	0.100	-7.9	0.237	
THOR Head Temporal Acceleration (Ax)	g	1650 Hz	9.1	0.367	-58.9	0.101	
THOR Head Temporal Acceleration (Az)	g	1650 Hz	101.6	0.095	-19.1	0.134	
THOR Head Occipital Acceleration (Ay)	g	1650 Hz	37.7	0.101	13.6	0.077	1
THOR Head Occipital Acceleration (Az)	g	1650 Hz	56.5	0.103	-6.6	0.141	
THOR Head C G Acceleration (Ax)	g	1650 Hz	17.5	0.367	-87.9	0.101	
THOR Head C G Acceleration (Ay)	g	1650 Hz	25.8	0.108	-6.0	0.242	
THOR Head C G Acceleration (Az)	g	1650 Hz	25.2	0.102	-1.8	0.175	
THOR Head C G Resultant Acceleration (Ar)	g	1650 Hz	89.9	0.101	0.0	0.031	
THOR HIC (36 ms) 203.5 from 0.095 to 0.112 sec							
THOR HIC (15 ms) 198.1 from 0.096 to 0.111 sec							
<i>TFACE (results calculated between -0.1 and 0.4)</i>							
THOR Right Eye Compression Load	N	1000 Hz	20.6	0.030	-87.3	0.107	1
THOR Left Eye Compression Load	N	1000 Hz	15.6	0.137	-76.6	0.107	1
THOR Right Cheek Compression Load	N	1000 Hz	28.2	0.077	-81.7	0.107	1
THOR Left Cheek Compression Load	N	1000 Hz	1473.7	0.102	-25.9	0.077	
THOR Chin Compression Load	N	1000 Hz	361.5	0.108	-34.0	0.094	
<i>UNCK PRE (results calculated between -0.1 and 0.4)</i>							
THOR Upper Neck Force (Fx) - pre-THORTEST	N	(unfiltered)	477.8	0.147	-512.5	0.248	1
THOR Upper Neck Force (Fy) - pre-THORTEST	N	(unfiltered)	767.3	0.126	-957.7	0.247	1
THOR Upper Neck Force (Fz) - pre-THORTEST	N	(unfiltered)	4136.7	0.102	-758.7	0.017	1
THOR Upper Neck Moment (Mx) - pre-THORTEST	N-m	(unfiltered)	58.7	0.102	-60.6	0.248	1
THOR Upper Neck Moment (My) - pre-THORTEST	N-m	(unfiltered)	15.8	0.099	-17.7	0.147	1
THOR Upper Neck Moment (Mz) - pre-THORTEST	N-m	(unfiltered)	8.6	0.225	-46.1	0.130	
THOR Neck Front Spring Compression - pre-THORTEST	N	(unfiltered)	349.4	0.152	-185.0	0.247	1
THOR Neck Rear Spring Compression - pre-THORTEST	N	(unfiltered)	773.4	0.111	-125.9	0.077	1
THOR Head Rotation at O C - pre-THORTEST	deg	(unfiltered)	149.8	0.113	138.4	0.098	
<i>TUNCK (results calculated between -0.1 and 0.4)</i>							
THOR Upper Neck Force (Fx) - post-THORTEST	N	1650 Hz	1265.8	0.101	-698.9	0.267	
THOR Upper Neck Force (Fy) - post-THORTEST	N	1650 Hz	764.9	0.126	-813.9	0.247	1
THOR Upper Neck Force (Fz) - post-THORTEST	N	1650 Hz	3490.2	0.101	-588.0	0.372	
THOR Upper Neck Moment (Mx) - post-THORTEST	N-m	1000 Hz	48.1	0.102	-51.6	0.247	1
THOR Upper Neck Moment (My) - post-THORTEST	N-m	1000 Hz	18.4	0.157	-45.8	0.122	
THOR Upper Neck Moment (Mz) - post-THORTEST	N-m	1000 Hz	20.5	0.239	-57.5	0.130	
THOR Upper Neck Force (Fz) - post-THORTEST	N	1000 Hz	3476.0	0.101	-587.6	0.371	
THOR NIJ Nte 0.52 @ 0.101 sec							
Ntf 0.49 @ 0.100 sec							
Nce 0.32 @ 0.125 sec							
Ncf 0.13 @ 0.372 sec							
<i>TLNECK (results calculated between -0.1 and 0.4)</i>							
THOR Lower Neck Force (Fx)	N	1650 Hz	467.5	0.247	-804.1	0.098	1
THOR Lower Neck Force (Fy)	N	1650 Hz	328.2	0.248	-900.8	0.099	1
THOR Lower Neck Force (Fz)	N	1650 Hz	3282.4	0.101	-501.0	0.372	
THOR Lower Neck Moment (Mx)	N-m	1000 Hz	69.9	0.147	-48.3	0.247	1
THOR Lower Neck Moment (My)	N-m	1000 Hz	45.4	0.099	-21.7	0.380	1
THOR Lower Neck Moment (Mz)	N-m	1000 Hz	13.7	0.102	-21.8	0.125	1
<i>CRUX PRE (results calculated between -0.1 and 0.4)</i>							
THOR Crux Upper Left Base Rotation - pre-THORTEST	deg	300 Hz	138.6	0.164	126.4	0.089	
THOR Crux Upper Left Mid Rotation - pre-THORTEST	deg	300 Hz	199.7	0.094	181.8	0.079	
THOR Crux Upper Left Elbow Rotation - pre-THORTEST	deg	300 Hz	179.5	0.077	145.1	0.095	
THOR Crux Upper Right Base Rotation - pre-THORTEST	deg	300 Hz	177.7	0.086	165.9	0.115	
THOR Crux Upper Right Mid Rotation - pre-THORTEST	deg	300 Hz	130.0	0.077	109.0	0.380	
THOR Crux Upper Right Elbow Rotation - pre-THORTEST	deg	300 Hz	173.1	0.134	136.4	0.078	
THOR Crux Lower Left Base Rotation - pre-THORTEST	deg	300 Hz	210.1	0.128	146.7	0.072	
THOR Crux Lower Left Mid Rotation - pre-THORTEST	deg	300 Hz	140.8	0.071	113.8	0.118	
THOR Crux Lower Left Elbow Rotation - pre-THORTEST	deg	300 Hz	140.4	0.087	117.6	0.124	
THOR Crux Lower Right Base Rotation - pre-THORTEST	deg	300 Hz	173.5	0.101	158.8	0.155	
THOR Crux Lower Right Mid Rotation - pre-THORTEST	deg	300 Hz	176.8	0.032	155.1	0.079	
THOR Crux Lower Right Elbow Rotation - pre-THORTEST	deg	300 Hz	190.5	0.076	145.8	0.377	

Description	Units	Filter	Maximum	Time@Max	Minimum	Time@Min	±
<i>CRUX (results calculated between -0.1 and 0.4)</i>							
THOR Crux Upper Right Deflection (Dx) - post-THORTEST	mm	300 Hz	6.6	0.140	-31.0	0.080	
THOR Crux Upper Right Deflection (Dy) - post-THORTEST	mm	300 Hz	10.1	0.075	-9.1	0.221	
THOR Crux Upper Right Deflection (Dz) - post-THORTEST	mm	300 Hz	5.8	0.115	-9.1	0.132	
THOR Crux Upper Right Endpoint Length - post-THORTEST	mm	300 Hz	9.2	0.134	-25.6	0.078	
THOR Crux Upper Left Deflection (Dx) - post-THORTEST	mm	300 Hz	2.3	0.317	-29.7	0.078	
THOR Crux Upper Left Deflection (Dy) - post-THORTEST	mm	300 Hz	8.9	0.120	-12.2	0.230	
THOR Crux Upper Left Deflection (Dz) - post-THORTEST	mm	300 Hz	3.7	0.156	-19.8	0.095	
THOR Crux Upper Left Endpoint Length - post-THORTEST	mm	300 Hz	7.2	0.095	-23.7	0.077	
THOR Crux Lower Left Deflection (Dx) - post-THORTEST	mm	300 Hz	0.5	0.377	-36.9	0.076	
THOR Crux Lower Right Deflection (Dy) - post-THORTEST	mm	300 Hz	7.4	0.155	-16.6	0.101	
THOR Crux Lower Right Deflection (Dz) - post-THORTEST	mm	300 Hz	14.9	0.075	-10.0	0.384	
THOR Crux Lower Right Endpoint Length - post-THORTEST	mm	300 Hz	5.8	0.377	-39.3	0.076	
THOR Crux Lower Left Deflection (Dx) - post-THORTEST	mm	300 Hz	0.1	0.033	-67.6	0.125	
THOR Crux Lower Left Deflection (Dy) - post-THORTEST	mm	300 Hz	14.2	0.072	-59.5	0.104	
THOR Crux Lower Left Deflection (Dz) - post-THORTEST	mm	300 Hz	45.1	0.123	-7.2	0.069	
THOR Crux Lower Left Endpoint Length - post-THORTEST	mm	300 Hz	0.9	0.087	-24.0	0.123	
<i>TVC (results calculated between -0.1 and 0.4)</i>							
THOR Chest Deflection (Dx)	mm	1000 Hz	0.2	0.038	-24.6	0.078	
THOR Chest Compression (Dx)	mm	1000 Hz	24.6	0.078	-0.2	0.038	
THOR VC = 0.18 m/s at 0.072 sec							
<i>TTHORAX (results calculated between -0.1 and 0.4)</i>							
THOR Thorax C G Acceleration (Ax)	g	300 Hz	12.6	0.093	-36.1	0.078	
THOR Thorax C G Acceleration (Ay)	g	300 Hz	44.2	0.102	-8.4	0.149	
THOR Thorax C G Acceleration (Az)	g	300 Hz	26.9	0.074	-13.1	0.110	
THOR Thorax C G Resultant Acceleration (Ar)	g	300 Hz	48.5	0.102	0.0	-0.034	
THOR Upper Abdomen Acceleration (Ax)	g	1650 Hz	556.7	0.044	-223.4	0.045	
THOR Upper Abdomen Displacement	mm	1650 Hz	8.7	0.147	-107.2	0.122	1
THOR CIC 42.5 from 0.095 to 0.103 sec							
<i>DGSP PRE (results calculated between -0.1 and 0.4)</i>							
THOR DGSP Left Displacement - pre-THORTEST	mm	300 Hz	53.1	0.083	25.4	0.003	
THOR DGSP Left Yaw - pre-THORTEST	deg	300 Hz	168.3	0.195	161.9	0.125	
THOR DGSP Left Pitch - pre-THORTEST	deg	300 Hz	206.2	0.049	199.8	0.082	
THOR DGSP Right Displacement - pre-THORTEST	mm	300 Hz	34.9	0.091	18.7	-0.070	
THOR DGSP Right Yaw - pre-THORTEST	deg	300 Hz	166.0	0.111	161.3	0.074	
THOR DGSP Right Pitch - pre-THORTEST	deg	300 Hz	160.2	0.080	158.0	0.138	
<i>DGSP (results calculated between -0.1 and 0.4)</i>							
THOR DGSP Right Displacement (Dx) - post-THORTEST	mm	300 Hz	0.1	0.036	-8.4	0.080	
THOR DGSP Right Displacement (Dy) - post-THORTEST	mm	300 Hz	5.0	0.074	-8.0	0.111	
THOR DGSP Right Displacement (Dz) - post-THORTEST	mm	300 Hz	15.8	0.093	0.0	0.002	
THOR DGSP Left Displacement (Dx) - post-THORTEST	mm	300 Hz	0.1	0.012	-18.3	0.080	
THOR DGSP Left Displacement (Dy) - post-THORTEST	mm	300 Hz	15.4	0.125	-1.2	0.195	
THOR DGSP Left Displacement (Dz) - post-THORTEST	mm	300 Hz	0.1	0.030	-25.0	0.082	
<i>TSPINE (results calculated between -0.1 and 0.4)</i>							
THOR T12 Thoracic Force (Fx)	N	1000 Hz	14154.5	0.359	-14331.6	0.076	1
THOR T12 Thoracic Force (Fy)	N	1000 Hz	2311.0	0.096	-341.8	0.152	1
THOR T12 Thoracic Force (Fz)	N	1000 Hz	2952.5	0.096	-604.1	0.161	
THOR T12 Thoracic Moment (Mx)	N-m	1000 Hz	132.8	0.120	-11.5	0.339	
THOR T12 Thoracic Moment (My)	N-m	1000 Hz	43.0	0.190	-130.3	0.077	1
THOR T12 Thoracic Acceleration (Ax)	g	1000 Hz	17.4	0.090	-52.5	0.075	
THOR T12 Thoracic Acceleration (Ay)	g	1000 Hz	49.5	0.107	-8.0	0.154	
THOR T12 Thoracic Acceleration (Az)	g	1000 Hz	29.5	0.095	-23.4	0.113	1
THOR T12 Thoracic Resultant Acceleration (Ar)	g	1000 Hz	53.3	0.075	0.0	-0.041	
<i>TLPELVIS (results calculated between -0.1 and 0.4)</i>							
THOR Pelvis Left Acetabular Force (Fx)	N	1650 Hz	70.8	0.018	-6798.8	0.081	1
<i>TPELVL (results calculated between -0.1 and 0.4)</i>							
THOR Pelvis Left Acetabular Force (Fy)	N	1650 Hz	4685.9	0.152	-1531.1	0.081	1
THOR Pelvis Left Acetabular Force (Fz)	N	1650 Hz	2878.2	0.073	-291.9	0.018	1
THOR Pelvis Right Acetabular Force (Fx)	N	1650 Hz	2173.4	0.081	-2296.7	0.152	1
THOR Pelvis Right Acetabular Force (Fy)	N	1650 Hz	656.6	0.150	-5280.1	0.152	1
THOR Pelvis Right Acetabular Force (Fz)	N	1650 Hz	1805.1	0.097	-1578.6	0.152	1
<i>TPELVA (results calculated between -0.1 and 0.4)</i>							
THOR Pelvis Acceleration (Ax)	g	1650 Hz	20.5	0.096	-43.0	0.070	
THOR Pelvis Acceleration (Ay)	g	1650 Hz	50.3	0.085	-16.8	0.067	
THOR Pelvis Acceleration (Az)	g	1650 Hz	23.8	0.071	-23.4	0.111	
THOR Pelvis Resultant Acceleration (Ar)	g	1650 Hz	51.3	0.085	0.2	-0.001	

Description	Units	Filter	Maximum	Time@Max	Minimum	Time@Min	±
<i>TLFEMR (results calculated between -0.1 and 0.4)</i>							
THOR Left Femur Force (Fx)	N	1000 Hz	2306.1	0.075	-62.0	0.318	
THOR Left Femur Force (Fy)	N	1000 Hz	2792.1	0.083	-269.9	0.064	
THOR Left Femur Force (Fz)	N	1000 Hz	55.6	0.034	-6146.3	0.079	
THOR Left Femur Moment (Mx)	N-m	1000 Hz	10.9	0.389	-381.5	0.076	
THOR Left Femur Moment (My)	N-m	1000 Hz	254.2	0.072	-37.7	0.060	
THOR Left Femur Moment (Mz)	N-m	1000 Hz	27.6	0.068	-252.0	0.107	
<i>TRFEMR (results calculated between -0.1 and 0.4)</i>							
THOR Right Femur Force (Fx)	N	1000 Hz	714.9	0.056	-451.6	0.096	
THOR Right Femur Force (Fy)	N	1000 Hz	646.5	0.071	-581.6	0.096	
THOR Right Femur Force (Fz)	N	1000 Hz	1611.4	0.085	-4452.1	0.066	
THOR Right Femur Moment (Mx)	N-m	1000 Hz	146.8	0.096	-136.5	0.060	
THOR Right Femur Moment (My)	N-m	1000 Hz	142.9	0.106	-27.6	0.061	
THOR Right Femur Moment (Mz)	N-m	1000 Hz	40.8	0.058	-38.7	0.099	
<i>TKNEED (results calculated between -0.1 and 0.4)</i>							
THOR Left Knee Displacement	mm	300 Hz	0.1	-0.014	-15.2	0.092	
THOR Right Knee Displacement	mm	300 Hz	0.7	0.088	-8.0	0.070	
<i>TLUTIB (results calculated between -0.1 and 0.4)</i>							
THOR Left Upper Tibia Force (Fx)	N	1000 Hz	374.1	0.100	-980.6	0.076	1
THOR Left Upper Tibia Force (Fz)	N	1000 Hz	1076.8	0.069	-2976.0	0.048	1
THOR Left Upper Tibia Moment (Mx)	N-m	1000 Hz	167.5	0.108	-132.0	0.068	
THOR Left Upper Tibia Moment (My)	N-m	1000 Hz	61.5	0.170	-68.4	0.047	
<i>TLLTIB (results calculated between -0.1 and 0.4)</i>							
THOR Left Lower Tibia Force (Fx)	N	1000 Hz	21.0	-0.079	-970.7	0.067	
THOR Left Lower Tibia Force (Fy)	N	1000 Hz	680.6	0.068	-520.2	0.107	1
THOR Left Lower Tibia Force (Fz)	N	1000 Hz	35.6	0.009	-4163.5	0.048	
THOR Left Lower Tibia Moment (Mx)	N-m	1000 Hz	94.3	0.120	-73.9	0.067	
THOR Left Lower Tibia Moment (My)	N-m	1000 Hz	64.8	0.121	-68.2	0.046	
<i>TLANKL (results calculated between -0.1 and 0.4)</i>							
THOR Left Ankle Rotation (X Axis)	deg	300 Hz	139.1	0.123	102.0	0.069	
THOR Left Ankle Rotation (Y Axis)	deg	300 Hz	187.5	0.154	135.3	-0.052	
THOR Left Ankle Rotation (Z Axis)	deg	300 Hz	226.8	0.082	211.8	-0.093	
<i>TRUTIB (results calculated between -0.1 and 0.4)</i>							
THOR Right Upper Tibia Force (Fx)	N	1000 Hz	498.5	0.086	-593.1	0.057	
THOR Right Upper Tibia Force (Fz)	N	1000 Hz	521.3	0.086	-3563.7	0.096	
THOR Right Upper Tibia Moment (Mx)	N-m	1000 Hz	92.5	0.096	-162.3	0.052	
THOR Right Upper Tibia Moment (My)	N-m	1000 Hz	63.2	0.096	-94.3	0.051	
<i>TRLTIB (results calculated between -0.1 and 0.4)</i>							
THOR Right Lower Tibia Force (Fx)	N	1000 Hz	451.3	0.105	-929.4	0.051	
THOR Right Lower Tibia Force (Fy)	N	1000 Hz	1022.2	0.053	-810.9	0.097	
THOR Right Lower Tibia Force (Fz)	N	1000 Hz	124.3	0.090	-4216.7	0.055	
THOR Right Lower Tibia Moment (Mx)	N-m	1000 Hz	3.2	0.371	-144.7	0.052	
THOR Right Lower Tibia Moment (My)	N-m	1000 Hz	49.3	0.059	-80.6	0.050	
<i>TRANKL (results calculated between -0.1 and 0.4)</i>							
THOR Right Ankle Rotation (X Axis)	deg	300 Hz	181.0	0.108	155.1	0.051	
THOR Right Ankle Rotation (Y Axis)	deg	300 Hz	206.3	0.065	163.9	0.021	
THOR Right Ankle Rotation (Z Axis)	deg	300 Hz	218.2	0.067	191.1	0.154	
<i>TLTIBA (results calculated between -0.1 and 0.4)</i>							
THOR Left Tibia Acceleration (Ax)	g	1000 Hz	16.6	0.085	-50.5	0.046	
THOR Left Tibia Acceleration (Ay)	g	1000 Hz	51.9	0.069	-29.4	0.117	
<i>TRTIBA (results calculated between -0.1 and 0.4)</i>							
THOR Right Tibia Acceleration (Ax)	g	1000 Hz	1149.4	0.049	-84.9	0.048	1
THOR Right Tibia Acceleration (Ay)	g	1000 Hz	107.8	0.051	-63.6	0.097	1
<i>TLFOOT (results calculated between -0.1 and 0.4)</i>							
THOR Left Foot Acceleration (Ax)	g	1000 Hz	49.4	0.082	-87.6	0.042	
THOR Left Foot Acceleration (Ay)	g	1000 Hz	48.5	0.060	-37.0	0.096	
THOR Left Foot Acceleration (Az)	g	1000 Hz	30.3	0.072	-131.9	0.044	
THOR Left Foot Resultant Acceleration (Ar)	g	1000 Hz	141.2	0.044	0.0	-0.070	
<i>TRFOOT (results calculated between -0.1 and 0.4)</i>							
THOR Right Foot Acceleration (Ax)	g	1000 Hz	60.8	0.059	-111.9	0.047	
THOR Right Foot Acceleration (Ay)	g	1000 Hz	108.7	0.049	-49.0	0.059	
THOR Right Foot Acceleration (Az)	g	1000 Hz	51.1	0.059	-84.6	0.048	
THOR Right Foot Resultant Acceleration (Ar)	g	1000 Hz	144.6	0.047	0.1	-0.014	

Description	Units	Filter	Maximum	Time@Max	Minimum	Time@Min	±
HIII, Passenger Position (2001 Dodge Neon)							
<i>H3HEAD (results calculated between -0.1 and 0.4)</i>							
HIII Head Acceleration (Ax)	g	1650 Hz	10.6	0.169	-96.6	0.099	
HIII Head Acceleration (Ay)	g	1650 Hz	70.1	0.100	-6.0	0.227	
HIII Head Acceleration (Az)	g	1650 Hz	41.3	0.100	-7.3	0.163	
HIII Head Resultant Acceleration (Ar)	g	1650 Hz	120.7	0.099	0.2	-0.072	
HIII HIC (36 ms) 637.3 from 0.099 to 0.134 sec							
HIII HIC (15 ms) 409.6 from 0.115 to 0.130 sec							
<i>H3UNCK (results calculated between -0.1 and 0.4)</i>							
HIII Upper Neck Force (Fx)	N	1650 Hz	397.9	0.111	-553.6	0.096	
HIII Upper Neck Force (Fy)	N	1650 Hz	319.5	0.098	-246.1	0.152	
HIII Upper Neck Force (Fz)	N	1650 Hz	1509.2	0.096	-276.8	0.123	
HIII Upper Neck Moment (Mx)	N-m	1000 Hz	46.0	0.107	-16.3	0.227	
HIII Upper Neck Moment (My)	N-m	1000 Hz	49.5	0.112	-23.4	0.097	
HIII Upper Neck Moment (Mz)	N-m	1000 Hz	8.7	0.101	-27.0	0.131	
HIII Upper Neck Force (Fx)	N	1000 Hz	394.8	0.111	-541.3	0.096	
HIII Upper Neck Force (Fz)	N	1000 Hz	1492.6	0.096	-271.9	0.123	
HIII Upper Neck Moment (My)	N-m	1000 Hz	49.5	0.112	-23.3	0.097	
HIII NIJ Nte 0.38 @ 0.096 sec							
Ntf 0.28 @ 0.111 sec							
Nce 0.07 @ 0.174 sec							
Ncf 0.15 @ 0.123 sec							
<i>H3CHST (results calculated between -0.1 and 0.4)</i>							
HIII Chest Acceleration (Ax)	g	300 Hz	1.7	-0.058	-29.2	0.094	
HIII Chest Acceleration (Ay)	g	300 Hz	31.6	0.093	-1.7	-0.053	
HIII Chest Acceleration (Az)	g	300 Hz	12.7	0.090	-7.8	0.159	
HIII Chest Resultant Acceleration (Ar)	g	300 Hz	38.8	0.093	0.0	-0.050	
HIII CIC 32.3 from 0.092 to 0.102 sec							
<i>H3CHDF (results calculated between -0.1 and 0.4)</i>							
HIII Chest Deflection (Dx)	mm	1000 Hz	0.2	-0.022	-23.4	0.094	
HIII Chest Compression (Dx)	mm	1000 Hz	23.4	0.094	-0.2	-0.022	
HIII VC 0.15 m/s at 0.064 sec							
<i>H3PELV (results calculated between -0.1 and 0.4)</i>							
HIII Pelvis Acceleration (Ax)	g	1650 Hz	7.9	0.381	-53.1	0.072	
HIII Pelvis Acceleration (Ay)	g	1650 Hz	28.2	0.069	-10.5	0.156	
HIII Pelvis Acceleration (Az)	g	1650 Hz	10.3	0.001	-13.6	0.150	
HIII Pelvis Resultant Acceleration (Ar)	g	1650 Hz	57.4	0.072	0.4	-0.033	
<i>H3FEMR (results calculated between -0.1 and 0.4)</i>							
HIII Left Femur Force	N	1000 Hz	566.2	0.113	-3880.5	0.074	
HIII Right Femur Force	N	1000 Hz	552.6	0.083	-1571.7	0.073	
<i>H3KNEE (results calculated between -0.1 and 0.4)</i>							
HIII Left Knee Displacement	mm	300 Hz	0.9	0.062	-0.9	0.074	
HIII Right Knee Displacement	mm	300 Hz	0.2	0.060	-1.0	0.074	
HIII Left Knee Left Force	N	1000 Hz	1368.8	0.075	-2663.3	0.107	1
HIII Left Knee Right Force	N	1000 Hz	2017.1	0.115	-2679.2	0.074	
HIII Right Knee Left Force	N	1000 Hz	845.7	0.071	-2948.0	0.116	1
HIII Right Knee Right Force	N	1000 Hz	2252.1	0.107	-2449.2	0.072	1
<i>H3LUTB (results calculated between -0.1 and 0.4)</i>							
HIII Left Upper Tibia Force (Fx)	N	1000 Hz	177.2	0.073	-598.3	0.059	
HIII Left Upper Tibia Force (Fy)	N	1000 Hz	1085.3	0.073	-527.5	0.055	
HIII Left Upper Tibia Force (Fz)	N	1000 Hz	126.9	0.100	-2696.6	0.058	
HIII Left Upper Tibia Moment (Mx)	N-m	1000 Hz	163.6	0.115	-192.4	0.075	
HIII Left Upper Tibia Moment (My)	N-m	1000 Hz	24.8	0.305	-120.6	0.073	
<i>H3LLTB (results calculated between -0.1 and 0.4)</i>							
HIII Left Lower Tibia Force (Fx)	N	1000 Hz	154.1	0.102	-786.3	0.073	1
HIII Left Lower Tibia Force (Fy)	N	1000 Hz	791.1	0.076	-577.0	0.058	
HIII Left Lower Tibia Force (Fz)	N	1000 Hz	468.5	0.224	-2230.6	0.058	1
HIII Left Lower Tibia Moment (Mx)	N-m	1000 Hz	59.3	0.113	-99.9	0.054	
HIII Left Lower Tibia Moment (My)	N-m	1000 Hz	17.7	0.059	-50.6	0.054	
<i>H3RUTB (results calculated between -0.1 and 0.4)</i>							
HIII Right Upper Tibia Force (Fx)	N	1000 Hz	573.8	0.099	-499.0	0.150	1
HIII Right Upper Tibia Force (Fy)	N	1000 Hz	550.8	0.065	-1408.4	0.074	
HIII Right Upper Tibia Force (Fz)	N	1000 Hz	1072.7	0.152	-2314.5	0.067	1
HIII Right Upper Tibia Moment (Mx)	N-m	1000 Hz	208.1	0.113	-225.4	0.073	
HIII Right Upper Tibia Moment (My)	N-m	1000 Hz	33.0	0.108	-145.2	0.063	
<i>H3RLTB (results calculated between -0.1 and 0.4)</i>							
HIII Right Lower Tibia Force (Fx)	N	1000 Hz	455.7	0.099	-1291.9	0.065	1
HIII Right Lower Tibia Force (Fy)	N	1000 Hz	869.9	0.073	-825.9	0.099	1
HIII Right Lower Tibia Force (Fz)	N	1000 Hz	1023.0	0.152	-2514.3	0.076	1
HIII Right Lower Tibia Moment (Mx)	N-m	1000 Hz	121.2	0.113	-212.1	0.074	
HIII Right Lower Tibia Moment (My)	N-m	1000 Hz	12.5	0.076	-117.2	0.062	

Description	Units	Filter	Maximum	Time@Max	Minimum	Time@Min	*
2001 Dodge Neon							
<i>TENG (results calculated between -0.1 and 0.4)</i>							
Top of Engine Acceleration (Ax)	g	100 Hz	5.6	0.115	-42.1	0.052	
Top of Engine Acceleration (Ay)	g	100 Hz	20.7	0.058	-13.6	0.043	
<i>BENG (results calculated between -0.1 and 0.4)</i>							
Bottom of Engine Acceleration (Ax)	g	100 Hz	2.6	0.256	-59.1	0.036	
Bottom of Engine Acceleration (Ay)	g	100 Hz	27.5	0.027	-20.9	0.041	
<i>LST (results calculated between -0.1 and 0.4)</i>							
Left Shock Tower Acceleration (Ax)	g	100 Hz	24.5	0.023	-91.5	0.034	
Left Shock Tower Acceleration (Ay)	g	100 Hz	58.1	0.042	-9.6	0.048	
Left Shock Tower Acceleration (Az)	g	100 Hz	30.8	0.037	-103.7	0.048	1
Left Shock Tower Resultant Acceleration (Ar)	g	100 Hz	111.6	0.059	0.0	-0.088	1
<i>RST (results calculated between -0.1 and 0.4)</i>							
Right Shock Tower Acceleration (Ax)	g	100 Hz	6.1	0.155	-37.4	0.045	
Right Shock Tower Acceleration (Ay)	g	100 Hz	36.5	0.039	-10.7	0.116	
Right Shock Tower Acceleration (Az)	g	100 Hz	25.7	0.061	-22.0	0.112	
Right Shock Tower Resultant Acceleration (Ar)	g	100 Hz	40.2	0.053	0.0	-0.059	
<i>LAP (results calculated between -0.1 and 0.4)</i>							
Left A-Pillar Top Hinge Acceleration (Ax)	g	100 Hz	28.7	0.086	-79.8	0.067	
<i>TOEP (results calculated between -0.1 and 0.4)</i>							
Driver Side Toe Pan Acceleration (Ax)	g	100 Hz	101.1	0.047	-113.8	0.043	
Driver Side Toe Pan Acceleration (Ay)	g	100 Hz	143.0	0.041	-14.9	0.106	
Driver Side Toe Pan Acceleration (Az)	g	100 Hz	119.1	0.046	-82.1	0.041	
Driver Side Toe Pan Resultant Acceleration (Ar)	g	100 Hz	170.6	0.041	0.0	-0.031	
<i>BP (results calculated between -0.1 and 0.4)</i>							
Brake Pedal Acceleration (Ax)	g	100 Hz	201.2	0.052	-164.1	0.059	
Brake Pedal Acceleration (Ay)	g	100 Hz	177.3	0.064	-114.7	0.049	
Brake Pedal Acceleration (Az)	g	100 Hz	173.8	0.052	-156.4	0.059	
Brake Pedal Acceleration (Ar)	g	100 Hz	265.9	0.052	0.0	-0.034	
<i>LRC (results calculated between -0.1 and 0.4)</i>							
Left Rear Compartment Acceleration (Ax)	g	100 Hz	2.7	0.283	-19.7	0.054	
Left Rear Compartment Acceleration (Ay)	g	100 Hz	14.1	0.041	-0.8	0.280	
<i>CRC (results calculated between -0.1 and 0.4)</i>							
Center Rear Compartment Acceleration (Ax)	g	100 Hz	4.7	0.390	-5.5	0.056	1
Center Rear Compartment Acceleration (Az)	g	100 Hz	10.2	0.078	-7.7	0.059	
<i>RRC (results calculated between -0.1 and 0.4)</i>							
Right Rear Compartment Acceleration (Ax)	g	100 Hz	1.9	0.280	-24.4	0.056	
Right Rear Compartment Acceleration (Ay)	g	100 Hz	13.7	0.041	-0.9	0.280	
<i>CARYAW (results calculated between -0.1 and 0.4)</i>							
Vehicle Yaw Rate	deg/s	300 Hz	147.8	0.060	-50.2	0.163	
2001 Ford F-150							
<i>TTENG (results calculated between -0.1 and 0.4)</i>							
Top of Engine Acceleration (Ax)	g	100 Hz	3.4	0.087	-40.5	0.051	
Top of Engine Acceleration (Ay)	g	100 Hz	26.0	0.048	-26.7	0.075	
<i>TBENG (results calculated between -0.1 and 0.4)</i>							
Bottom of Engine Acceleration (Ax)	g	100 Hz	1.4	0.265	-52.8	0.051	
Bottom of Engine Acceleration (Ay)	g	100 Hz	9.6	0.047	-7.4	0.097	
<i>TCRC (results calculated between -0.1 and 0.4)</i>							
Center Rear Compartment Acceleration (Ax)	g	100 Hz	2.0	0.265	-21.3	0.077	
Center Rear Compartment Acceleration (Ay)	g	100 Hz	9.2	0.082	-7.6	0.113	
Center Rear Compartment Acceleration (Az)	g	100 Hz	2.8	0.150	-13.0	0.090	
Center Rear Compartment Resultant Acceleration (Ar)	g	100 Hz	23.0	0.077	0.1	0.351	
<i>TCRC2 (results calculated between -0.1 and 0.4)</i>							
Center Rear Compartment Acceleration (Ax) - Secondary	g	100 Hz	1.6	0.237	-21.0	0.077	

* Comments

1 - See Data Acquisition Explanations p 2-3

Notes for electronic files

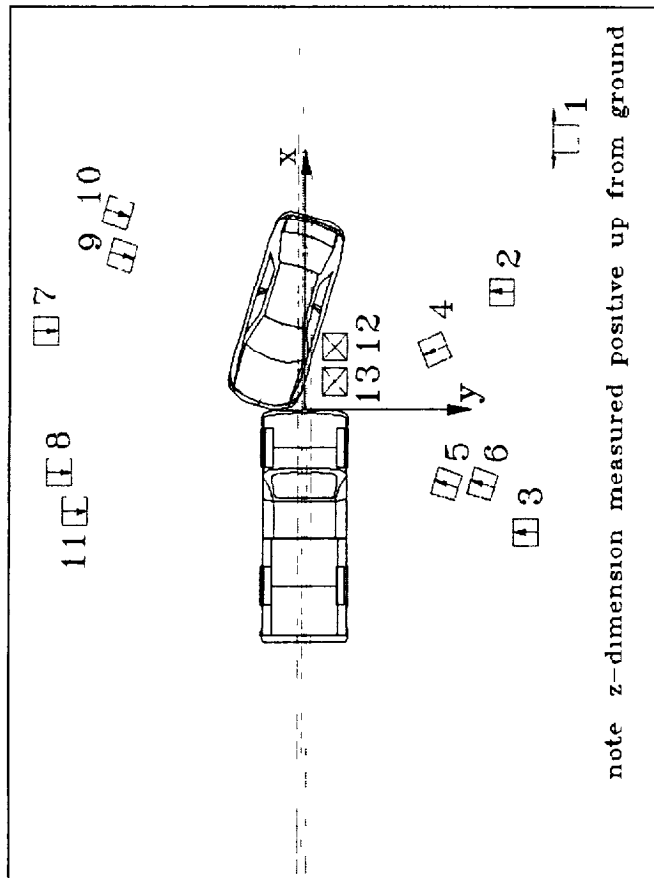
- File root names are listed above (e.g. H3HEAD H3UNCK) all have extension FEU (formatted engrg units) unless otherwise noted
- Files with extension PRE indicate Pre-Thortest Software Processing
- Each file has time (seconds) in the first column followed by the data listed above in the order listed (excluding HIC NIJ CIC VC)

Section 4 0

Camera, Occupant, and Vehicle Measurements

CAMERA SET-UP RECORD

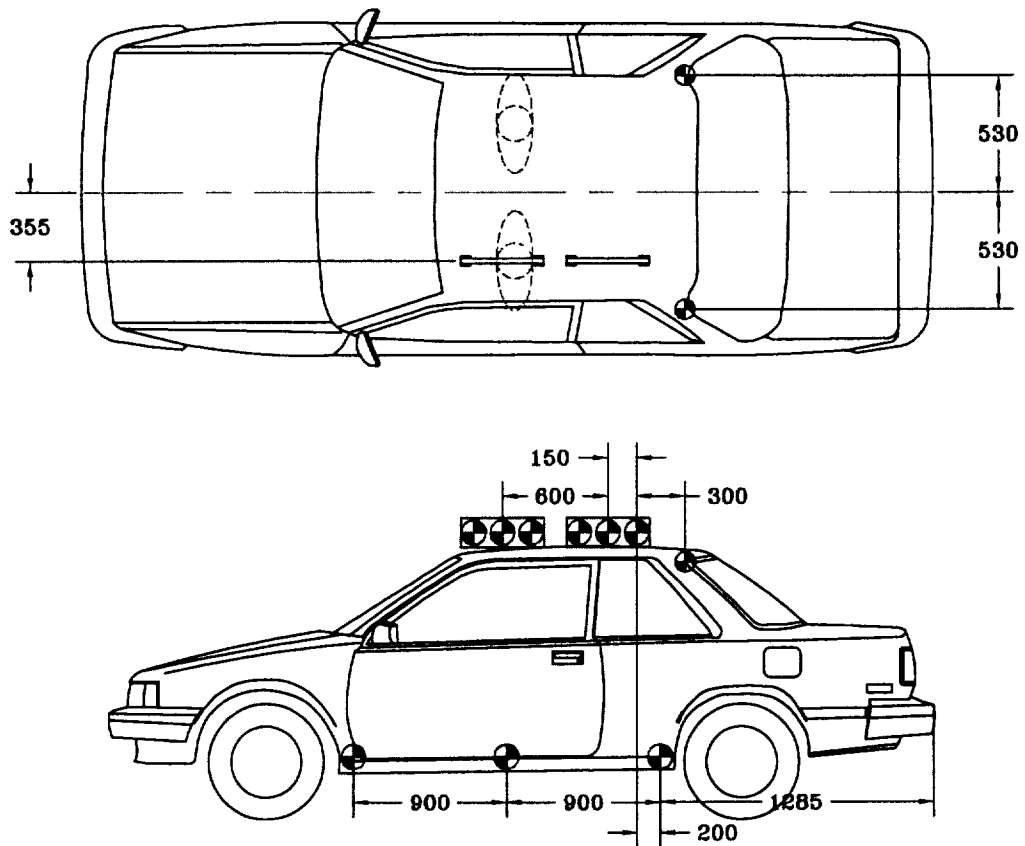
PROJECT NO	PH06608	TEST DATE	9/24/01
PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1		
TEST TYPE	FRONTAL OFFSET OBLIQUE CRASH TEST		
TARGET VEHICLE (T)	2001 DODGE NEON		
BULLET VEHICLE (B)	2001 FORD F-150		
APPROX TEST SPEEDS (T)	0	(B)	95.2 KPH
COMMENTS	MEASUREMENT ORIGIN ON CRASH-RAIL CENTERLINE		
AT POINT OF IMPACT ALL MEASUREMENTS IN MILLIMETERS			
GROUND-BASED TARGET LOCATIONS			
TARGET 1 X = 660, Y = 3120, Z = 920			
TARGET 2 X = 4260, Y = -3150, Z = 920			



NOTE ALL DIMENSIONS IN MILLIMETERS

LOC NO	CAMERA TYPE	FIELD OF VIEW	IMPACT DISTANCE (X)	CENTERLINE DISTANCE (Y)	CAMERA HEIGHT (Z)	SET SPEED (fps)	LENS SIZE (mm)
1	VIDEO	PANNING EVENT	9600	28000	1370	RT	--
2	LOCAM	FULL VIEW OF TARGET VEHICLE DRIVER SIDE	3830	17400	940	500	25
3	PS	FULL VIEW OF BULLET VEHICLE PASSENGER SIDE	-2290	18150	1370	1000	25
4	PS	CLOSE-UP OF IMPACT POINT	970	10350	1630	1000	50
5	PS	FILM ANALYSIS VIEW OF TARGET VEHICLE DRIVER SIDE	-1430	11040	1250	1000	25
6	LOCAM	CLOSE-UP OF TARGET VEHICLE DRIVER DUMMY	-1430	12000	1310	500	75
7	LOCAM	FULL VIEW OF TARGET VEHICLE PASSENGER SIDE	2160	-18250	1320	500	25
8	LOCAM	FULL VIEW OF BULLET VEHICLE DRIVER SIDE	-1120	-18080	1270	500	25
9	LOCAM	FILM ANALYSIS VIEW OF TARGET VEHICLE PASSENGER SIDE	5870	-13350	1220	500	25
10	LOCAM	CLOSE-UP OF TARGET VEHICLE PASSENGER DUMMY	6510	-13720	1450	500	75
11	LOCAM	CLOSE-UP OF BULLET VEHICLE DRIVER DUMMY	-1730	-16750	1450	500	75
12	PS	WIDE OVERHEAD VIEW OF IMPACT POINT	600	-390	7630	500	13
13	PS	CLOSE-UP OVERHEAD VIEW OF IMPACT POINT	310	-390	7630	1000	25

Vehicle Target Locations – 2001 Dodge Neon



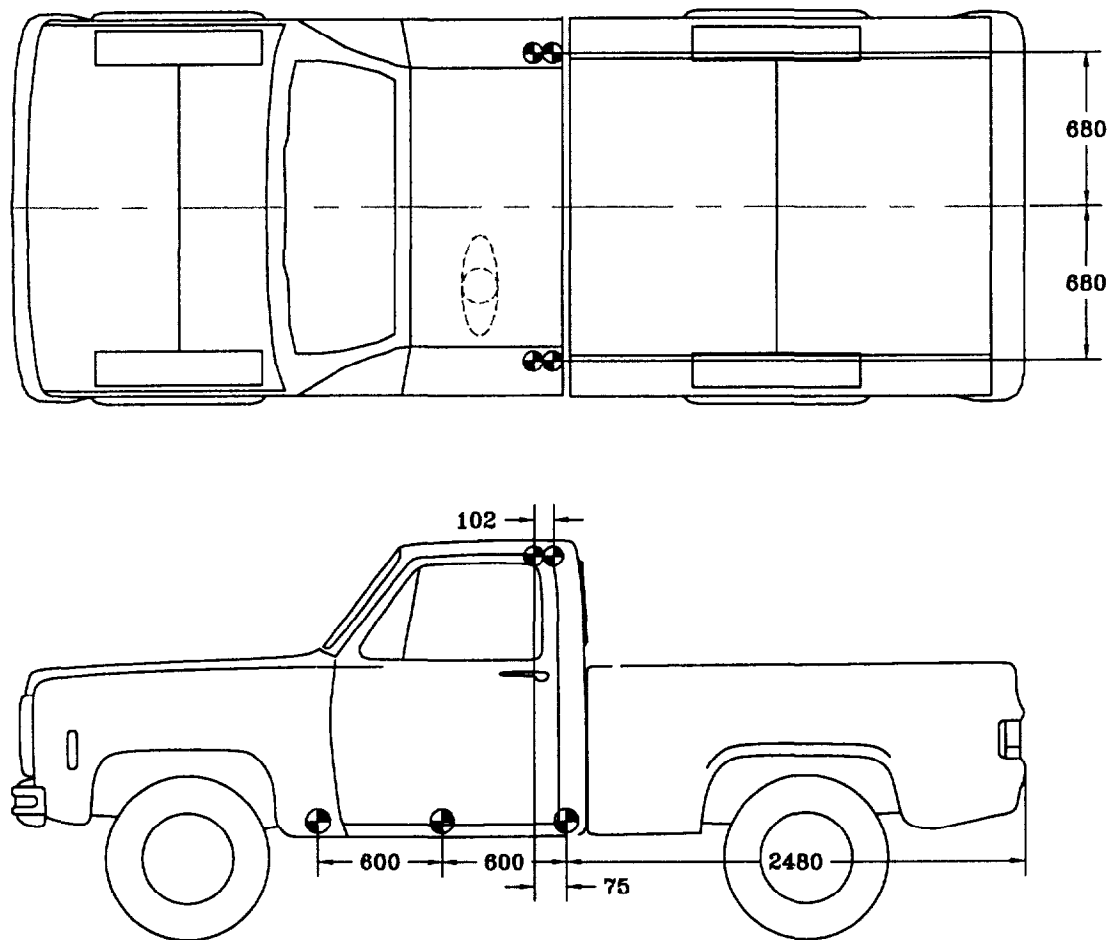
Notes

All dimensions in millimeters

Right side targets positioned symmetrically to left side

At impact, center rearmost point of 2001 Dodge Neon is 218 mm left of the crash rail centerline (positive y direction on Camera Set-Up Record)

Vehicle Target Locations – 2001 Ford F-150



Notes

All dimensions in millimeters

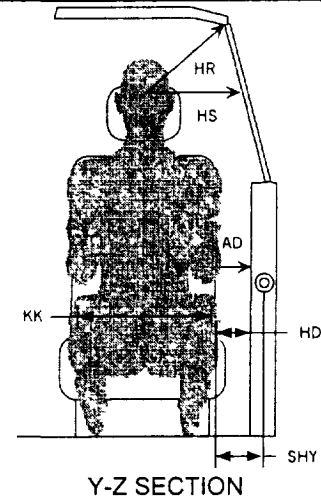
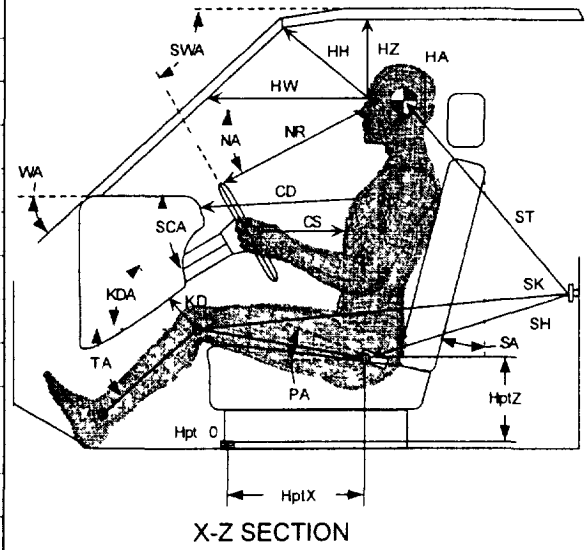
Right side targets positioned symmetrically to left side

At impact, center rearmost point of 2001 Ford F-150 is directly over the crash rail centerline

OCCUPANT INTERIOR CLEARANCE SUMMARY

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE BODY STYLE	4-DOOR SEDAN	VEHICLE COLOR	WHITE		
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391				

FORE / AFT CLEARANCE MEASUREMENTS			VEHICLE MEASUREMENTS	
	DRIVER DUMMY	PASSENGER DUMMY	DRIVER	PASSENGER
CD = CHEST TO DASH	535 mm	485 mm	SA = SEAT BACK ANGLE	22 5 deg
CS = STEERING WHEEL TO CHEST	265 mm	N/A	SCA = STEERING COLUMN ANGLE	23 0 deg
HZ = HEAD TO ROOF	143 mm	168 mm	SWA = STEERING WHEEL ANGLE	67 0 deg
HH = HEAD TO HEADER	360 mm	323 mm	WA = WINDSHIELD ANGLE	25 0 deg
HW = HEAD TO WINDSHIELD	620 mm	605 mm		
NR = NOSE TO RIM	464 mm	N/A		
NA = NOSE TO RIM ANGLE	22 0 deg	N/A		
HA = HEAD ANGLE	0 0 deg	0 0 deg		
KDL = LEFT KNEE TO DASH	129 mm	94 mm		
KDR = RIGHT KNEE TO DASH	126 mm	130 mm		
KDA = KNEE (outboard) TO DASH ANGLE	38 0 deg	38 0 deg		
PA = PELVIS ANGLE	*N/A deg	23 2 deg		
TA = TIBIA ANGLE	37 0 deg	38 0 deg		
SH = STRIKER TO Hpt	263 mm	262 mm		
SHA = STRIKER TO Hpt ANGLE (wrt horiz)	23 0 deg	25 0 deg		
SK = STRIKER TO KNEE	613 mm	620 mm		
SKA = STRIKER TO KNEE ANGLE (wrt horiz)	1 0 deg	2 0 deg		
ST = STRIKER TO HEAD	580 mm	538 mm		
STA = STRIKER TO HEAD ANGLE (wrt horiz)	80 0 deg	80 0 deg		
HptX = Hpt X (to seat mount bolt)	190 mm	193 mm		
HptZ = Hpt Z (to seat mount bolt)	225 mm	228 mm		
LATERAL CLEARANCE MEASUREMENTS				
	DRIVER DUMMY	PASSENGER DUMMY		
AD = ARM TO DOOR	93 mm	102 mm		
HD = Hpt TO DOOR	203 mm	200 mm		
HR = HEAD TO SIDE HEADER	179 mm	195 mm		
HS = HEAD TO SIDE WINDOW	N/A mm	N/A mm		
KK = KNEE TO KNEE (OUTER FLANGES)	269 mm	269 mm		
SHY = STRIKER TO Hpt (Y)	213 mm	210 mm		



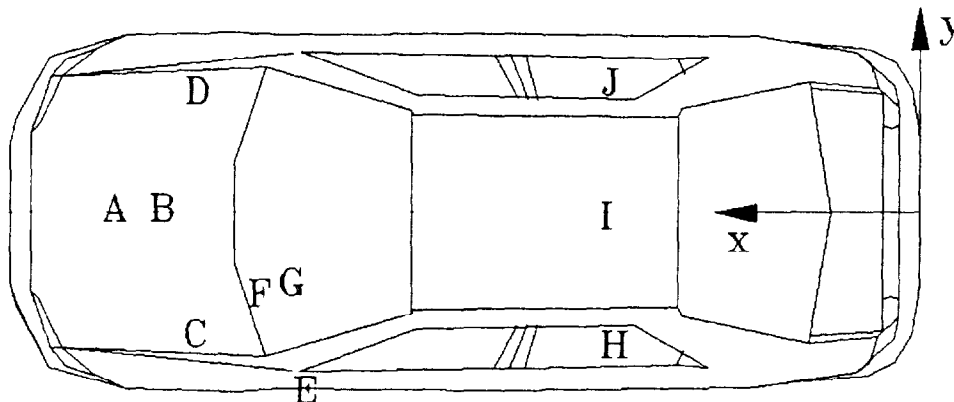
COMMENTS	
DRIVER THOR / PASSENGER HIII-50TH PERCENTILE	
*FEMUR ANGLE 17 0°	FORM COMPLETED BY BN CHECKED BY MK

OCCUPANT INTERIOR CLEARANCE SUMMARY

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1		TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150	
VEHICLE BODY STYLE	2-DOOR PICKUP			VEHICLE COLOR	SILVER	
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831					
FORE / AFT CLEARANCE MEASUREMENTS				VEHICLE MEASUREMENTS		
	DRIVER DUMMY	PASSENGER DUMMY	DRIVER		PASSENGER	
CD = CHEST TO DASH	577 mm	N/A mm	SA = SEAT BACK ANGLE	25 0 deg	N/A deg	
CS = STEERING WHEEL TO CHEST	297 mm	N/A	SCA = STEERING COLUMN ANGLE		20 0 deg	
HZ = HEAD TO ROOF	211 mm	N/A mm	SWA = STEERING WHEEL ANGLE		69 0 deg	
HH = HEAD TO HEADER	382 mm	N/A mm	WA = WINDSHIELD ANGLE		34 0 deg	
HW = HEAD TO WINDSHIELD	590 mm	N/A mm	X-Z SECTION			
NR = NOSE TO RIM	395 mm	N/A				
NA = NOSE TO RIM ANGLE	20 0 deg	N/A				
HA = HEAD ANGLE	0 0 deg	N/A deg				
KDL = LEFT KNEE TO DASH	160 mm	N/A mm				
KDR = RIGHT KNEE TO DASH	170 mm	N/A mm				
KDA = KNEE (outboard) TO DASH ANGLE	26 0 deg	N/A deg				
PA = PELVIS ANGLE (FEMUR)	10 0 deg	N/A deg				
TA = TIBIA ANGLE	49 0 deg	N/A deg				
SH = STRIKER TO Hpt	NR* mm	N/A mm				
SHA = STRIKER TO Hpt ANGLE (wrt horiz)	NR* deg	N/A deg				
SK = STRIKER TO KNEE	755 mm	N/A mm				
SKA = STRIKER TO KNEE ANGLE (wrt horiz)	5 0 deg	N/A deg				
ST = STRIKER TO HEAD	670 mm	N/A mm				
STA = STRIKER TO HEAD ANGLE (wrt horiz)	75 0 deg	N/A deg				
HptX = Hpt X (to seat mount bolt)	NR* mm	N/A mm				
HptZ = Hpt Z (to seat mount bolt)	NR* mm	N/A mm				
LATERAL CLEARANCE MEASUREMENTS				Y-Z SECTION		
	DRIVER DUMMY	PASSENGER DUMMY				
AD = ARM TO DOOR	132 mm	N/A mm				
HD = Hpt TO DOOR	NR* mm	N/A mm				
HR = HEAD TO SIDE HEADER	240 mm	N/A mm				
HS = HEAD TO SIDE WINDOW	N/A mm	N/A mm				
KK = KNEE TO KNEEF (OUTER FLANGES)	269 mm	N/A mm				
SHY = STRIKER TO Hpt (Y)	NR* mm	N/A mm				
COMMENTS						
*H-PT MEASUREMENTS NOT POSSIBLE ON HII-50TH PERCENTILE						
FORM COMPLETED BY				CCR	CHECKED BY	MK

VEHICLE TRANSDUCER LOCATION RECORD

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391				

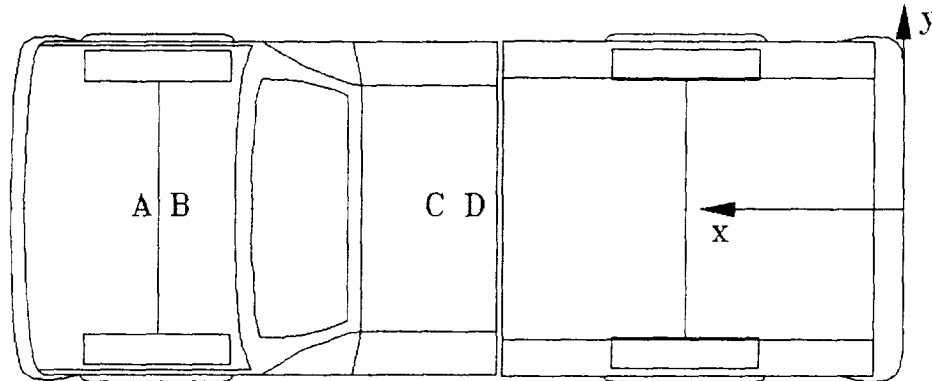


NOTE Z-DIMENSION MEASURED POSITIVE UP FROM GROUND

TRANSDUCER LOCATION									
TRANSUCER LOCATION DESCRIPTION	X (mm)			Y (mm)			Z (mm)		
	PRE TEST	POST TEST	DIFFERENCE	PRE TEST	POST TEST	DIFFERENCE	PRE TEST	POST TEST	DIFFERENCE
A Top of Engine - Ax, Ay	3721	3555	-166	121	155	34	723	796	73
B Bottom of Engine - Ax, Ay	3681	3521	-160	-58	-64	-6	250	337	87
C Left Shock Tower - Ax, Ay, Az	3537	3170	-367	-486	-385	101	768	856	88
D Right Shock Tower - Ax Ay, Az	3546	3496	-50	483	491	8	768	805	37
E Left A-Pillar, Top Hinge - Ax	3070	2780	-290	-741	-645	96	757	736	-21
F Driver Side Toe Pan - Ax, Ay, Az	3195	2981	-214	-302	-237	65	271	318	47
G Brake Pedal - Ax, Ay, Az	3113	2884	-229	-322	-280	42	386	426	40
H Left Rear Compart - Ax Ay	1655	1651	-4	-596	-593	3	301	287	-14
I Center Rear Compart - Ax, Az	1693	1692	-1	-8	-5	3	335	332	-3
J Right Rear Compart - Ax, Ay	1662	1657	-5	605	603	-2	298	297	-1
K									
L									

VEHICLE TRANSDUCER LOCATION RECORD

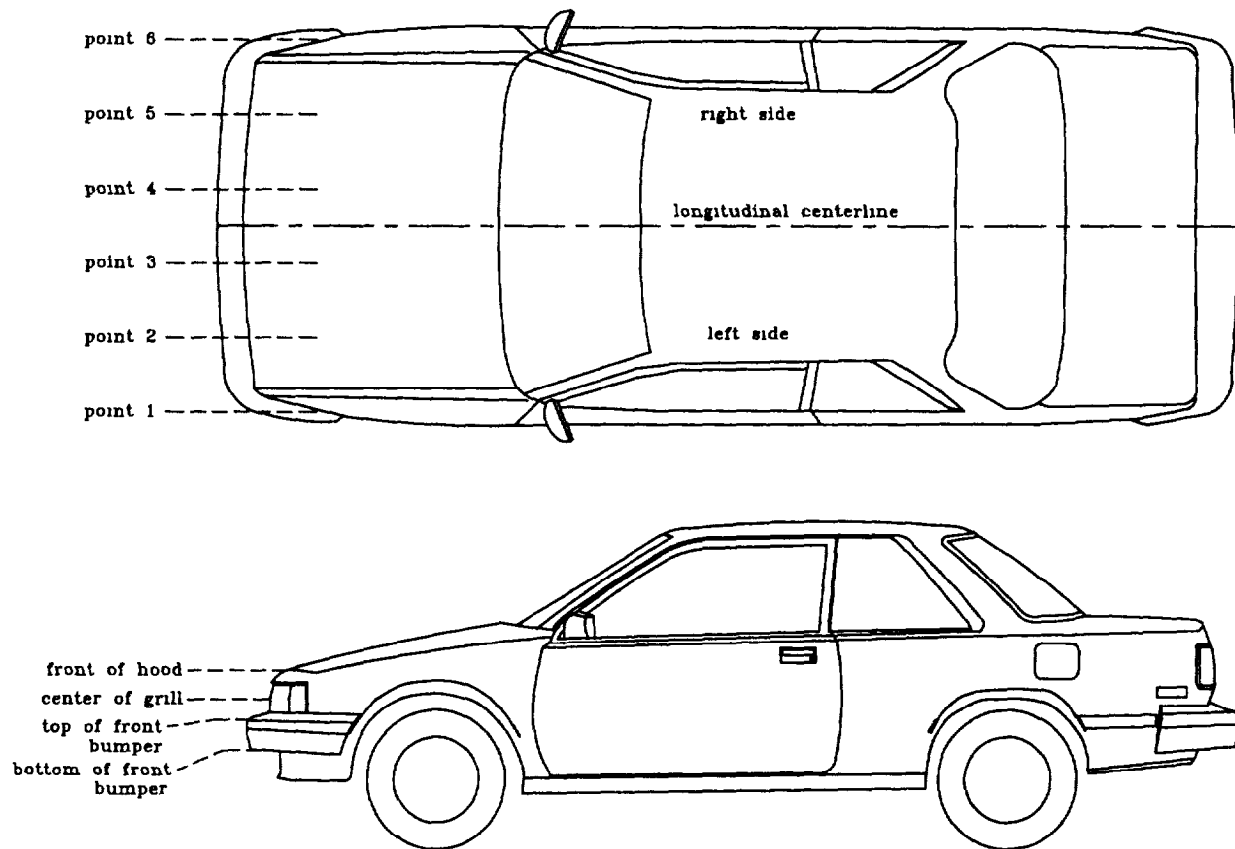
PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831				



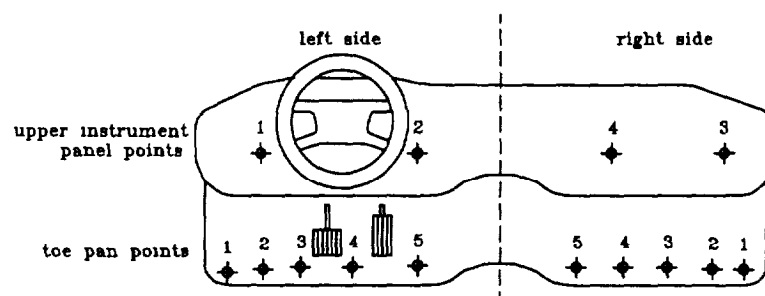
NOTE Z-DIMENSION MEASURED POSITIVE UP FROM GROUND

TRANSDUCER LOCATION									
TRANSDUCER LOCATION DESCRIPTION		X (mm)			Y (mm)			Z (mm)	
		PRE TEST	POST TEST	DIFFERENCE	PRE TEST	POST TEST	DIFFERENCE	PRE TEST	POST TEST
A	Top of Engine - Ax, Ay	4219	4210	-9	123	107	-16	1010	1037
B	Bottom of Engine - Ax, Ay	3919	3879	-40	-191	-215	-24	541	591
C	Center Rear Compartment - Ax, Ay, Az	2452	2453	1	-5	1	6	669	679
D	Center Rear Compartment - Ax (redundant)	2361	2362	1	-4	3	7	672	670
E									
F									
G									
H									
I									
J									
K									
L									

Vehicle Frontal Crush and Intrusion Measure Point Locations



Frontal Crush Profile Measurement Locations



Intrusion Measurement Locations

VEHICLE FRONTAL CRUSH PROFILE
(page 1 of 2)

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391				

REFERENCE COMMENTS

NOTE POSITIVE X-AXIS MEASUREMENTS ARE FORWARD OF THE REAR BUMPER CENTER POSITIVE Y-AXIS MEASUREMENTS ARE RIGHT OF THE PRE-TEST VEHICLE CENTERLINE POSITIVE Z-AXIS (HEIGHT) MEASUREMENTS ARE UP FROM THE GROUND

NM - NOT MEASURED DUE TO DAMAGE

PRE-TEST PROFILE MEASUREMENTS

		VEHICLE LEFT (mm)			VEHICLE RIGHT (mm)		
		PT 1	PT 2	PT 3	PT 4	PT 5	PT 6
BOTTOM OF FRONT BUMPER	X	4254	4342	4392	4394	4349	4263
	Y	-641	-387	-132	117	370	627
	Z	248	248	246	246	245	243
TOP OF FRONT BUMPER	X	4260	4347	4395	4398	4352	4270
	Y	-639	-384	-131	116	371	628
	Z	479	476	476	474	474	473
CENTER OF GRILL	X	4183	4273	4317	4318	4276	4187
	Y	-638	-382	-129	119	372	631
	Z	555	553	548	549	551	546
FRONT OF HOOD	X	4043	4266	4316	4317	4271	4047
	Y	-636	-384	-129	119	373	632
	Z	715	590	588	590	590	716

POST-TEST PROFILE MEASUREMENTS

		VEHICLE LEFT (mm)			VEHICLE RIGHT (mm)		
		PT 1	PT 2	PT 3	PT 4	PT 5	PT 6
BOTTOM OF FRONT BUMPER	X	3903	4059	4185	4264	4299	4289
	Y	-676	-461	-235	0	255	526
	Z	266	297	318	333	344	351
TOP OF FRONT BUMPER	X	3854	3993	4148	4248	4283	4260
	Y	-675	-438	-232	-5	251	520
	Z	491	521	547	565	579	581
CENTER OF GRILL	X	NM	NM	NM	NM	4220	4175
	Y	NM	NM	NM	NM	267	535
	Z	NM	NM	NM	NM	692	664
FRONT OF HOOD	X	3480	3739	3937	4055	4113	3981
	Y	-462	-332	-172	42	294	621
	Z	965	780	821	853	862	954

VEHICLE FRONTAL CRUSH PROFILE
(pag 2 of 2)

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1			TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE			VEHICLE MODEL	NEON
VEHICLE IDENTIFICATION NUMBER		1B3ES46C31D288391					

MEASUREMENT CHANGE							
		VEHICLE LEFT (mm)			VEHICLE RIGHT (mm)		
		PT 1	PT 2	PT 3	PT 4	PT 5	PT 6
BOTTOM OF FRONT BUMPER	X	-351	-283	-207	-130	-50	26
	Y	-35	-74	-103	-117	-115	-101
	Z	18	49	72	87	99	108
TOP OF FRONT BUMPER	X	-406	-354	-247	-150	-69	-10
	Y	-36	-54	-101	-121	-120	-108
	Z	12	45	71	91	105	108
CENTER OF GRILL	X	NM	NM	NM	NM	-56	-12
	Y	NM	NM	NM	NM	-105	-96
	Z	NM	NM	NM	NM	141	118
FRONT OF HOOD	X	-563	-527	-379	-262	-158	-66
	Y	174	52	-43	-77	-79	-11
	Z	250	190	233	263	272	238

COMMENTS	
NM - NOT MEASURED DUE TO DAMAGE	
FORM COMPLETED BY JS CHECKED BY MK	

VEHICLE FRONTAL CRUSH PROFILE
(page 1 of 2)

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831				

REFERENCE COMMENTS

NOTE POSITIVE X-AXIS MEASUREMENTS ARE FORWARD OF THE REAR BUMPER CENTER POSITIVE Y-AXIS MEASUREMENTS ARE RIGHT OF THE PRE-TEST VEHICLE CENTERLINE POSITIVE Z-AXIS (HEIGHT) MEASUREMENTS ARE UP FROM THE GROUND

PRE-TEST PROFILE MEASUREMENTS

		VEHICLE LEFT (mm)			VEHICLE RIGHT (mm)		
		PT 1	PT 2	PT 3	PT 4	PT 5	PT 6
BOTTOM OF FRONT BUMPER	X	5070	5193	5232	5231	5187	5056
	Y	-763	-458	-154	161	468	774
	Z	524	527	528	531	532	534
TOP OF FRONT BUMPER	X	5067	5185	5234	5233	5180	5053
	Y	-764	-459	-154	161	466	773
	Z	611	614	616	617	618	621
CENTER OF GRILL	X	4940	5093	5101	5100	5089	4934
	Y	-770	-460	-161	167	466	774
	Z	775	778	773	775	780	784
FRONT OF HOOD	X	4873	5043	5094	5091	5039	4867
	Y	-765	-461	-155	160	465	771
	Z	977	987	994	998	995	985

POST-TEST PROFILE MEASUREMENTS

		VEHICLE LEFT (mm)			VEHICLE RIGHT (mm)		
		PT 1	PT 2	PT 3	PT 4	PT 5	PT 6
BOTTOM OF FRONT BUMPER	X	4423	4633	4777	4944	5148	5296
	Y	-803	-584	-328	-94	138	438
	Z	484	547	534	545	569	569
TOP OF FRONT BUMPER	X	4445	4617	4753	4927	5123	5272
	Y	-845	-578	-314	-86	154	450
	Z	557	622	621	631	651	652
CENTER OF GRILL	X	4536	4661	4799	4922	5055	4953
	Y	-820	-515	-350	-48	259	591
	Z	673	678	694	733	787	793
FRONT OF HOOD	X	4705	4899	4983	5031	5023	4891
	Y	-911	-629	-332	-20	289	616
	Z	1069	1007	991	998	1006	1014

VEHICLE FRONTAL CRUSH PROFILE
(page 2 of 2)

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1			TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD			VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER		1FTRF17W91KB46831					

MEASUREMENT CHANGE							
		VEHICLE LEFT (mm)			VEHICLE RIGHT (mm)		
		PT 1	PT 2	PT 3	PT 4	PT 5	PT 6
BOTTOM OF FRONT BUMPER	X	-647	-560	-455	-287	-39	240
	Y	-40	-126	-174	-255	-330	-336
	Z	-40	20	6	14	37	35
TOP OF FRONT BUMPER	X	-622	-568	-481	-306	-57	219
	Y	-81	-119	-160	-247	-312	-323
	Z	-54	8	5	14	33	31
CENTER OF GRILL	X	-404	-432	-302	-178	-34	19
	Y	-50	-55	-189	-215	-207	-183
	Z	-102	-100	-79	-42	7	9
FRONT OF HOOD	X	-168	-144	-111	-60	-16	24
	Y	-146	-168	-177	-180	-176	-155
	Z	92	20	-3	0	11	29

COMMENTS	
FORM COMPLETED BY	JS
CHECKED BY	MK

VEHICLE INTRUSION MEASUREMENTS
(page 1 of 2)

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391				

REFERENCE COMMENTS

NOTE POSITIVE X-AXIS MEASUREMENTS ARE FORWARD OF THE REAR BUMPER CENTER POSITIVE Y-AXIS MEASUREMENTS ARE RIGHT OF THE PRE-TEST VEHICLE CENTERLINE POSITIVE Z-AXIS (HEIGHT) MEASUREMENTS ARE UP FROM THE GROUND
NM - NOT MEASURED DUE TO DAMAGE

TOE PAN - LEFT SIDE (mm)

		PT 1	PT 2	PT 3	PT 4	PT 5
PRE-TEST	X	3163	3188	3269	3263	3272
	Y	-573	-512	-445	-297	-136
	Z	232	248	299	297	292
POST-TEST	X	3029	3013	3046	NM	3129
	Y	-495	-431	-348	NM	-137
	Z	275	288	349	NM	338
DIFFERENCE	X	-134	-175	-223	NM	-143
	Y	78	81	97	NM	-1
	Z	43	40	50	NM	46

MEASUREMENT COMMENTS

TOE PAN - RIGHT SIDE (mm)

		PT 1	PT 2	PT 3	PT 4	PT 5
PRE-TEST	X	3164	3204	3261	3257	3254
	Y	546	486	420	321	212
	Z	241	262	301	300	298
POST-TEST	X	3154	3192	3245	3245	3223
	Y	563	500	433	336	233
	Z	257	280	321	313	328
DIFFERENCE	X	-10	-12	-16	-12	-31
	Y	17	14	13	15	21
	Z	16	18	20	13	30

MEASUREMENT COMMENTS

VEHICLE INTRUSION MEASUREMENTS

(page 2 of 2)

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391				

UPPER INSTRUMENT PANEL MEASUREMENTS (mm)					
		LEFT SIDE		RIGHT SIDE	
		PT 1	PT 2	PT 3	PT 4
PRE-TEST	X	2776	2766	2782	2768
	Y	-546	-161	497	195
	Z	690	696	691	697
POST-TEST	X	2549	2590	2740	2687
	Y	-407	-26	594	303
	Z	657	670	676	689
DIFFERENCE	X	-227	-176	-42	-81
	Y	139	135	97	108
	Z	-33	-26	-15	-8
MEASUREMENT COMMENTS					
NOTE: MEASUREMENT TAKEN ON UPPER IP ABOVE WHERE DUMMY'S KNEES CONTACT DASH					

MISCELLANEOUS MEASUREMENTS (mm)				
		BRAKE	A PILLAR HINGE TO DOOR STRIKER*	
		PEDAL	TOP	BOTTOM
PRE-TEST	X	3113	-977	-964
	Y	-322	10	18
	Z	386	-138	221
POST-TEST	X	2884	-722	-816
	Y	-280	-88	-43
	Z	426	-155	190
DIFFERENCE	X	-229	255	148
	Y	42	-98	-61
	Z	40	-17	-31
MEASUREMENT COMMENTS * DRIVER SIDE				

[illegible]

VEHICLE INTRUSION MEASUREMENTS
(page 1 of 2)

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831				

REFERENCE COMMENTS

NOTE POSITIVE X-AXIS MEASUREMENTS ARE FORWARD OF THE REAR BUMPER CENTER POSITIVE Y-AXIS MEASUREMENTS ARE RIGHT OF THE PRE-TEST VEHICLE CENTERLINE POSITIVE Z-AXIS (HEIGHT) MEASUREMENTS ARE UP FROM THE GROUND

TOE PAN - LEFT SIDE (mm)

		PT 1	PT 2	PT 3	PT 4	PT 5
PRE-TEST	X	3745	3790	3747	3745	3745
	Y	-696	-590	-478	-374	-269
	Z	543	561	541	540	541
POST-TEST	X	3581	3637	3632	3681	3680
	Y	-662	-565	-449	-395	-293
	Z	600	635	604	570	586
DIFFERENCE	X	-164	-153	-115	-64	-65
	Y	34	25	29	-21	-24
	Z	57	74	63	30	45

MEASUREMENT COMMENTS

TOE PAN - RIGHT SIDE (mm)

		PT 1	PT 2	PT 3	PT 4	PT 5
PRE-TEST	X	3742	3783	3740	3741	3740
	Y	690	579	474	376	270
	Z	542	565	546	550	550
POST-TEST	X	3768	3804	3756	3748	3740
	Y	635	521	420	324	217
	Z	561	581	558	567	576
DIFFERENCE	X	26	21	16	7	0
	Y	-55	-58	-54	-52	-53
	Z	19	16	12	17	26

MEASUREMENT COMMENTS

VEHICLE INTRUSION MEASUREMENTS (page 2 of 2)

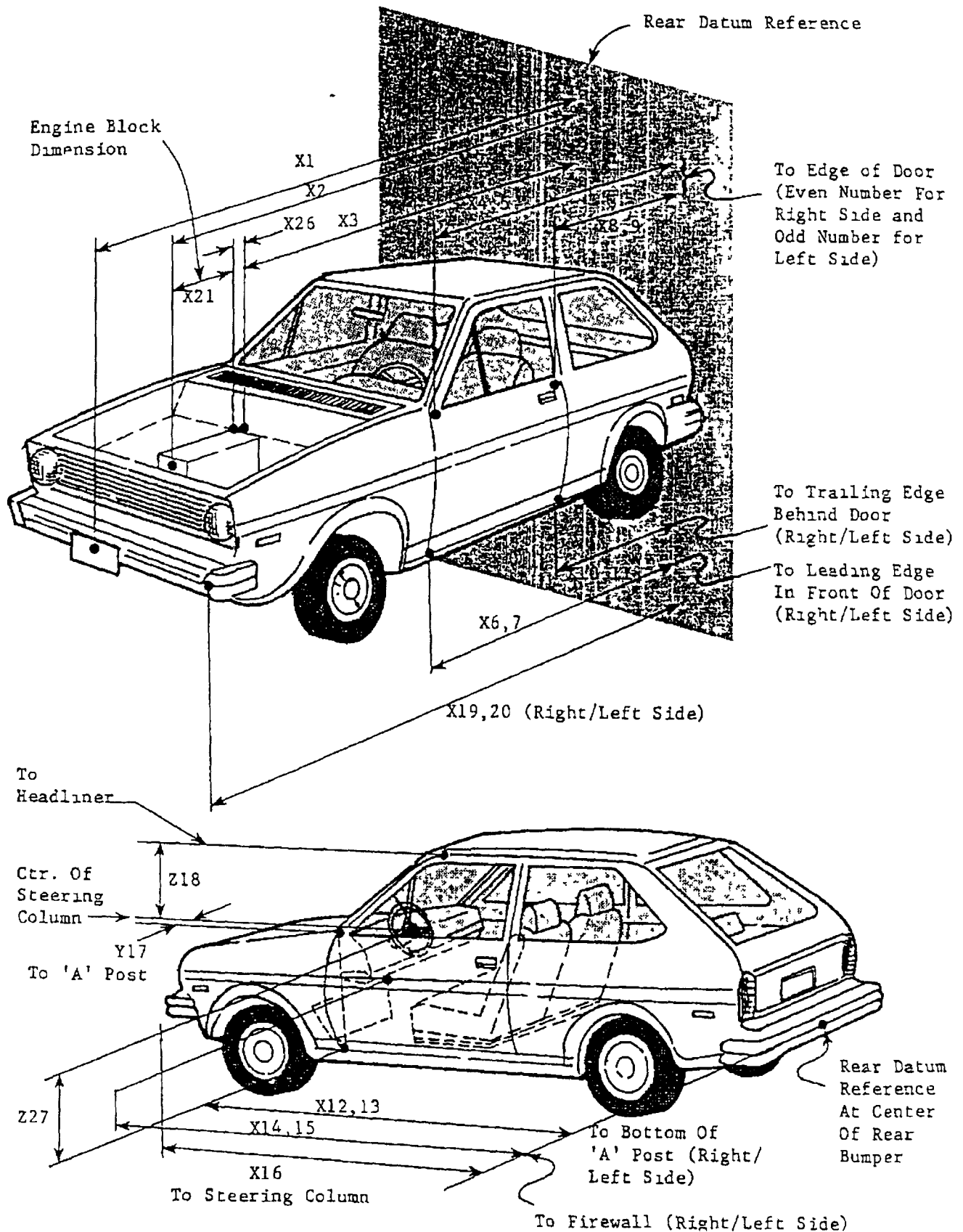
PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831				

UPPER INSTRUMENT PANEL MEASUREMENTS (mm)					
		LEFT SIDE		RIGHT SIDE	
		PT 1	PT 2	PT 3	PT 4
PRE-TEST	X	3373	3377	NM	NM
	Y	-610	-279	NM	NM
	Z	1079	1080	NM	NM
POST-TEST	X	3289	3319	NM	NM
	Y	-632	-301	NM	NM
	Z	1163	1143	NM	NM
DIFFERENCE	X	-84	-58	NM	NM
	Y	-22	-22	NM	NM
	Z	84	63	NM	NM
MEASUREMENT COMMENTS NM - NOT MEASURED					
NOTE MEASUREMENT TAKEN ON UPPER IP ABOVE WHERE DUMMY S KNEES CONTACT DASH					

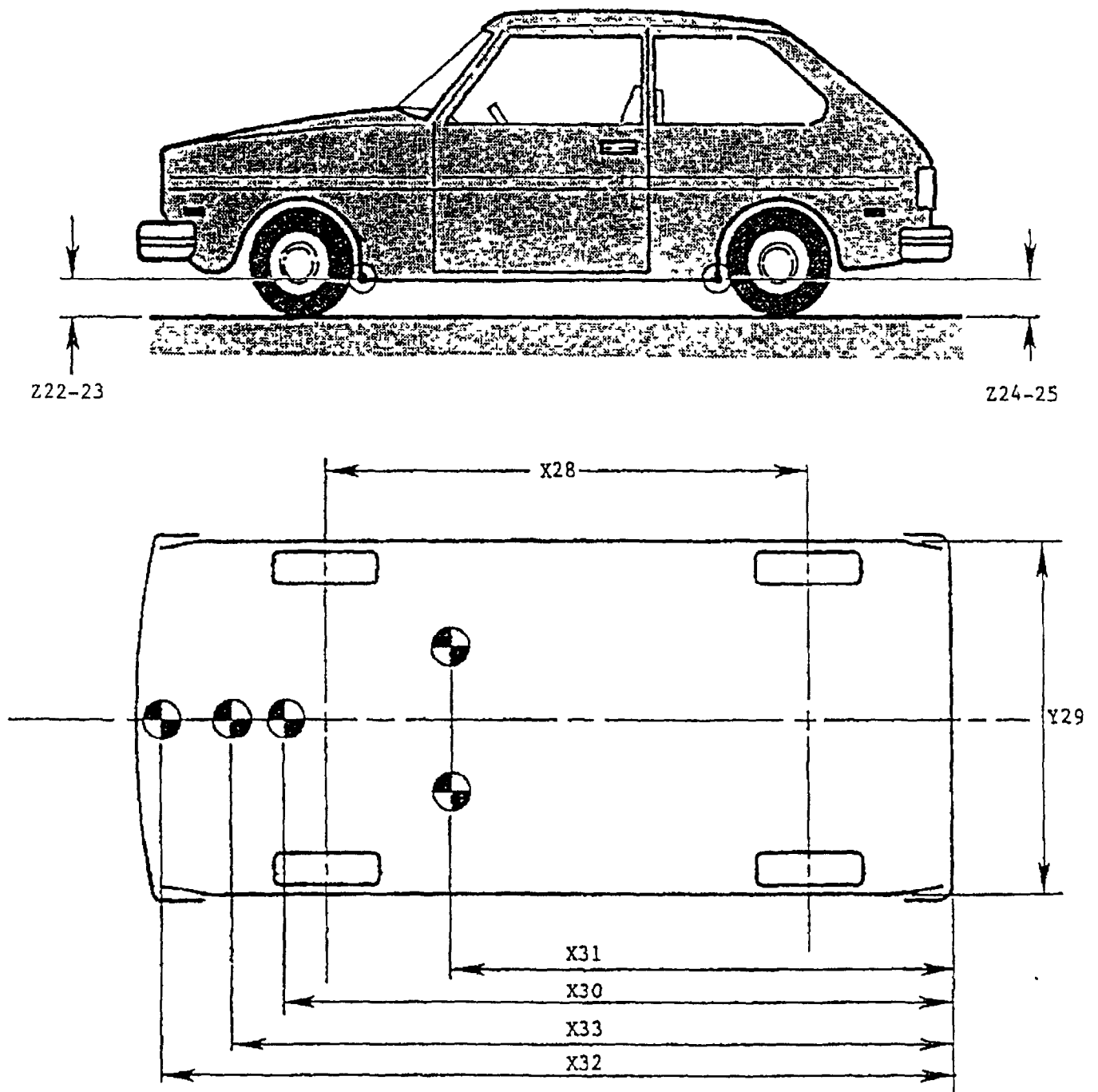
MISCELLANEOUS MEASUREMENTS (mm)				
		BRAKE PEDAL	A PILLAR HINGE TO DOOR STRIKER*	
			TOP	BOTTOM
PRE-TEST	X	3646	-1180	-1143
	Y	-446	9	35
	Z	686	-140	255
POST-TEST	X	3535	-1152	-1091
	Y	-466	71	88
	Z	748	-155	238
DIFFERENCE	X	-111	28	52
	Y	-20	62	53
	Z	62	-15	-17
MEASUREMENT COMMENTS * DRIVER SIDE				

COMMENTS
FORM COMPLETED BY MK
CHECKED BY JS

Impacted Vehicle Measurement Points



Impacted Vehicle Measurement Points, Cont'd



IMPACTED VEHICLE MEASUREMENTS

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	DODGE	VEHICLE MODEL	NEON
VEHICLE IDENTIFICATION NUMBER	1B3ES46C31D288391				
REFERENCE POINT COMMENTS	POSITIVE Z-AXIS MEASUREMENTS ARE UP FROM GROUND				

MEASUREMENTS				
NO	TYPE OF MEASUREMENT	PRE IMPACT (mm)	POST IMPACT (mm)	DIFFERENCE (mm)
X1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	4414	4248	-166
X2	REAR SURFACE OF VEHICLE TO ENGINE AT CENTERLINE	3639	3438	-201
X3	REAR SURFACE OF VEHICLE TO FIREWALL	3342	3256	-86
X4	REAR SURFACE OF VEHICLE TO LEADING EDGE OF RIGHT DOOR	3112	3097	-15
X5	REAR SURFACE OF VEHICLE TO LEADING EDGE OF LEFT DOOR	3105	2800	-305
X6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	3100	3096	-4
X7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	3096	2946	-150
X8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	2016	2006	-10
X9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	2009	2049	40
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	2017	2012	-5
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF LEFT DOOR	2012	1901	-111
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST OF RIGHT SIDE	3055	3048	-7
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST OF LEFT SIDE	3044	2933	-111
X14	REAR SURFACE OF VEHICLE TO FIREWALL RIGHT SIDE	3330	3304	-26
X15	REAR SURFACE OF VEHICLE TO FIREWALL LEFT SIDE	3313	3044	-269
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	2733	2525	-208
Y17	STEERING COLUMN TO "A" POST	-310	-319	-9
Z18	STEERING COLUMN TO HEAD LINER	479	591	112
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	4270	4260	-10
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	4260	3854	-406
X21	WIDTH OF ENGINE BLOCK	220	229	9
Z22	RIGHT FRONT SILL TO GROUND PLANE	142	157	15
Z23	LEFT FRONT SILL TO GROUND PLANE	140	179	39
Z24	RIGHT REAR SILL TO GROUND PLANE	163	163	0
Z25	LEFT REAR SILL TO GROUND PLANE	162	157	-5
X26	FIREWALL TO ENGINE OR TRANSAXLE	297	182	-115
Z27	VERTICAL DIMENSION FROM DOOR SILL TO CENTERLINE OF STEERING COLUMN	-181	-208	-27
X28	WHEELBASE OF VEHICLE	2670	2373	-297
Y29	WIDTH OF VEHICLE AT MAXIMUM WIDTH POINT	1727	1718	-9
X30	REAR SURFACE OF VEHICLE TO ENGINE TARGET	3803	3665	-138
X31	REAR SURFACE OF VEHICLE TO COMPARTMENT TARGET	2866	2780	-86
X32	REAR SURFACE OF VEHICLE TO BUMPER TARGET	4256	4067	-189
X33	REAR SURFACE OF VEHICLE TO FRAME CROSSMEMBER	3448	3348	-100

COMMENTS

* LEFT SIDE

FORM COMPLETED BY JS

CHECKED BY MK

IMPACTED VEHICLE MEASUREMENTS

PROJECT NO	PH06608	PROJECT NAME	VOLPE CRASH TESTING TASK ORDER 1	TEST DATE	9/24/01
VEHICLE YEAR	2001	VEHICLE MAKE	FORD	VEHICLE MODEL	F-150
VEHICLE IDENTIFICATION NUMBER	1FTRF17W91KB46831				
REFERENCE POINT COMMENTS	POSITIVE Z-AXIS MEASUREMENTS ARE UP FROM GROUND				

MEASUREMENTS				
NO	TYPE OF MEASUREMENT	PRE IMPACT (mm)	POST IMPACT (mm)	DIFFERENCE (mm)
X1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	5251	4819	-432
X2	REAR SURFACE OF VEHICLE TO ENGINE AT CENTERLINE	4147	4133	-14
X3	REAR SURFACE OF VEHICLE TO FIREWALL	3956	3886	-70
X4	REAR SURFACE OF VEHICLE TO LEADING EDGE OF RIGHT DOOR	3666	3698	32
X5	REAR SURFACE OF VEHICLE TO LEADING EDGE OF LEFT DOOR	3674	3603	-71
X6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	3586	3635	49
X7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	3597	3537	-60
X8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	2408	2444	36
X9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	2420	2350	-70
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	2466	2518	52
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF LEFT DOOR	2477	2416	-61
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST OF RIGHT SIDE	3568	3605	37
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST OF LEFT SIDE	3573	3444	-129
X14	REAR SURFACE OF VEHICLE TO FIREWALL RIGHT SIDE	3821	3811	-10
X15	REAR SURFACE OF VEHICLE TO FIREWALL LEFT SIDE	3943	3809	-134
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	3337	3292	-45
Y17	STEERING COLUMN TO "A" POST	-339	-371	-32
Z18	STEERING COLUMN TO HEAD LINER	537	530	-7
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	5053	5272	219
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	5067	4445	-622
X21	WIDTH OF ENGINE BLOCK	419	414	-5
Z22	RIGHT FRONT SILL TO GROUND PLANE	349	365	16
Z23	LEFT FRONT SILL TO GROUND PLANE	341	420	79
Z24	RIGHT REAR SILL TO GROUND PLANE	372	371	-1
Z25	LEFT REAR SILL TO GROUND PLANE	372	401	29
X26	FIREWALL TO ENGINE OR TRANSAXLE	0	61	61
Z27	VERTICAL DIMENSION FROM DOOR SILL TO CENTERLINE OF STEERING COLUMN	-100	-86	14
X28	WHEELBASE OF VEHICLE	3040	2662	-378
Y29	WIDTH OF VEHICLE AT MAXIMUM WIDTH POINT	1987	1979	-8
X30	REAR SURFACE OF VEHICLE TO ENGINE TARGET	3976	3941	-35
X31	REAR SURFACE OF VEHICLE TO COMPARTMENT TARGET	3557	3448	-109
X32	REAR SURFACE OF VEHICLE TO BUMPER TARGET	5103	4578	-525
X33	REAR SURFACE OF VEHICLE TO FRAME CROSSMEMBER	4301	4207	-94

COMMENTS

* LEFT SIDE

FORM COMPLETED BY JS

CHECKED BY MK

Appendix A

Photographs

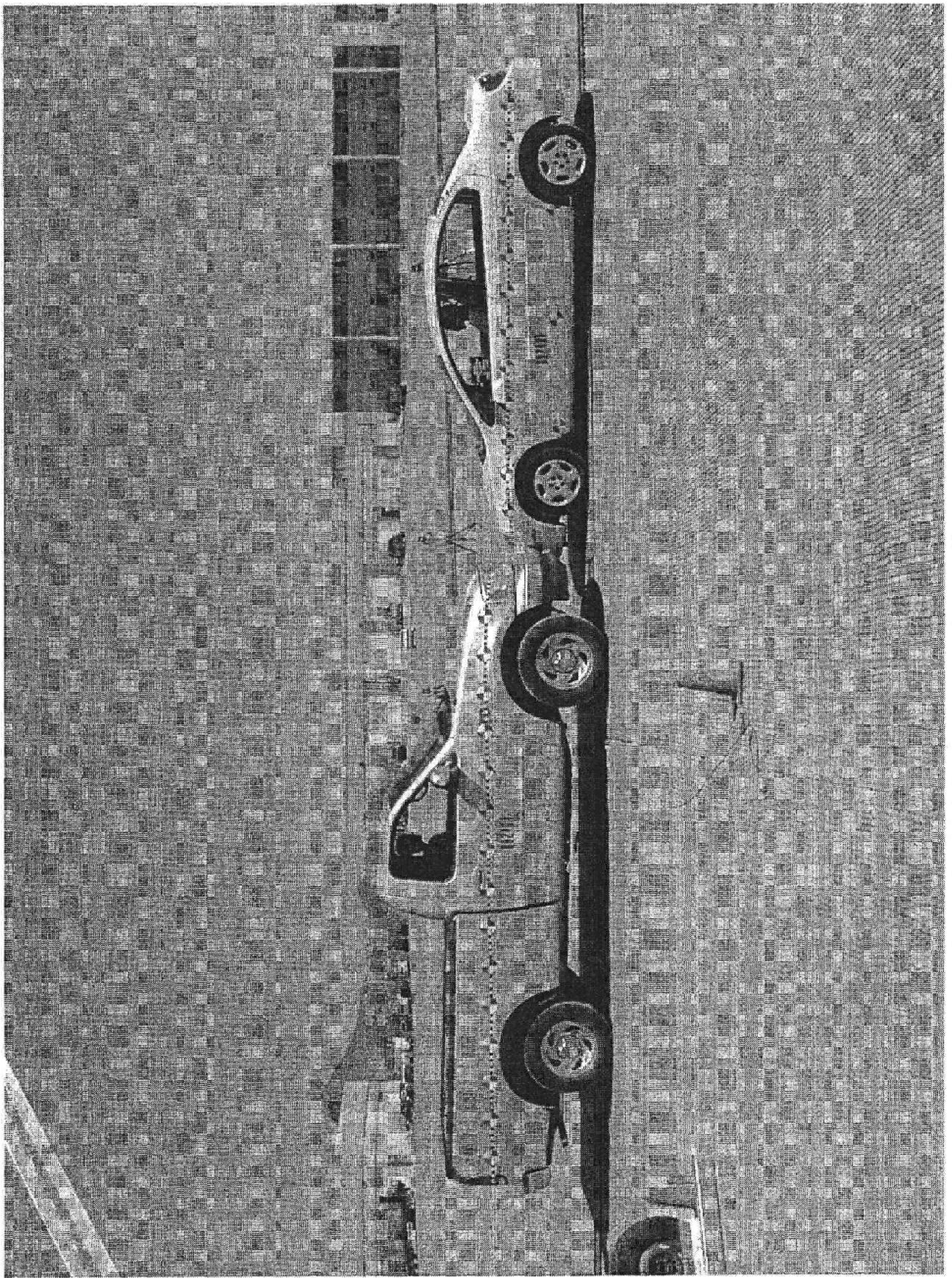


Figure A-1. Impact Configuration Left Side View

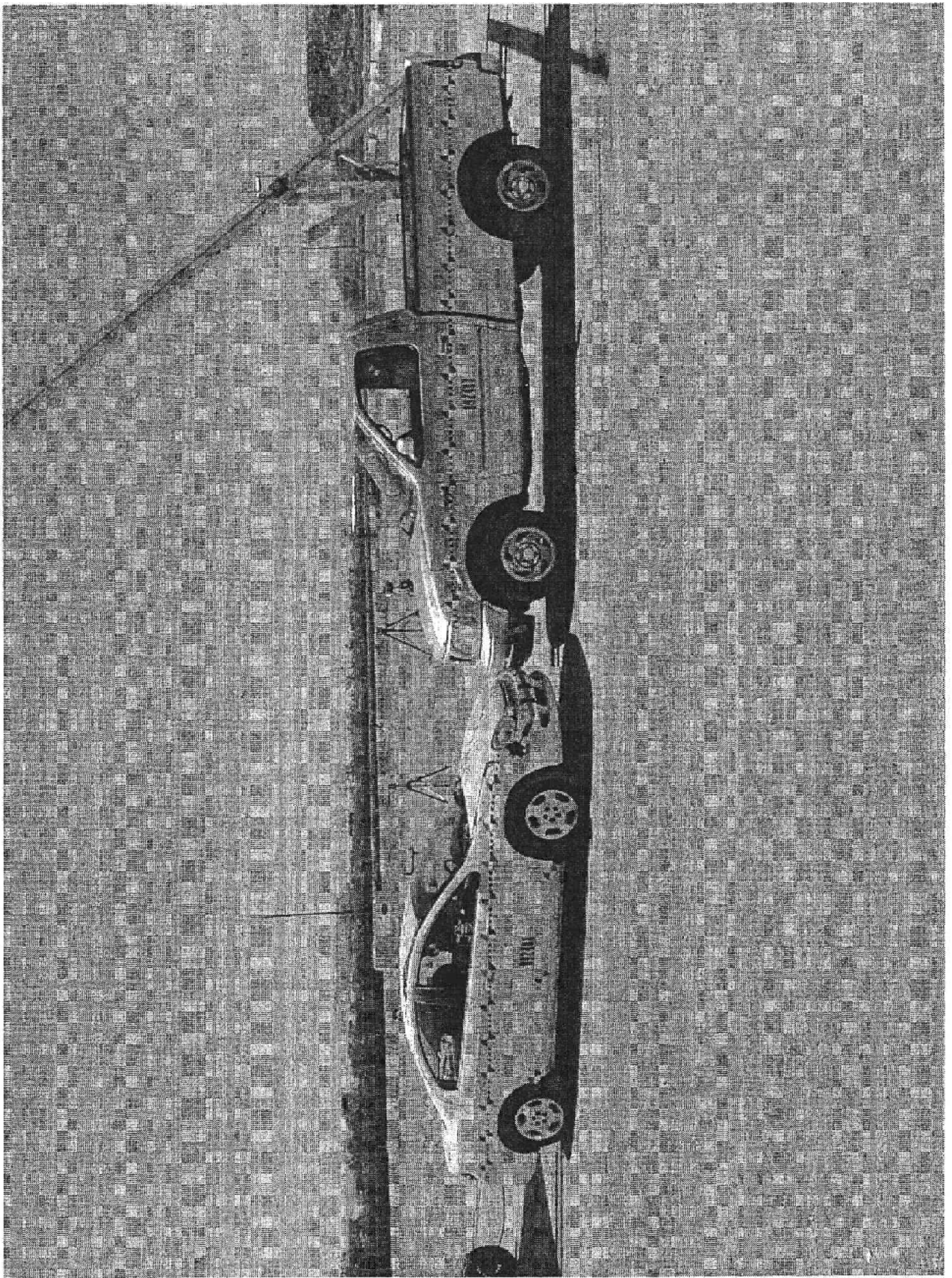


Figure A-2. Impact Configuration Right Side View

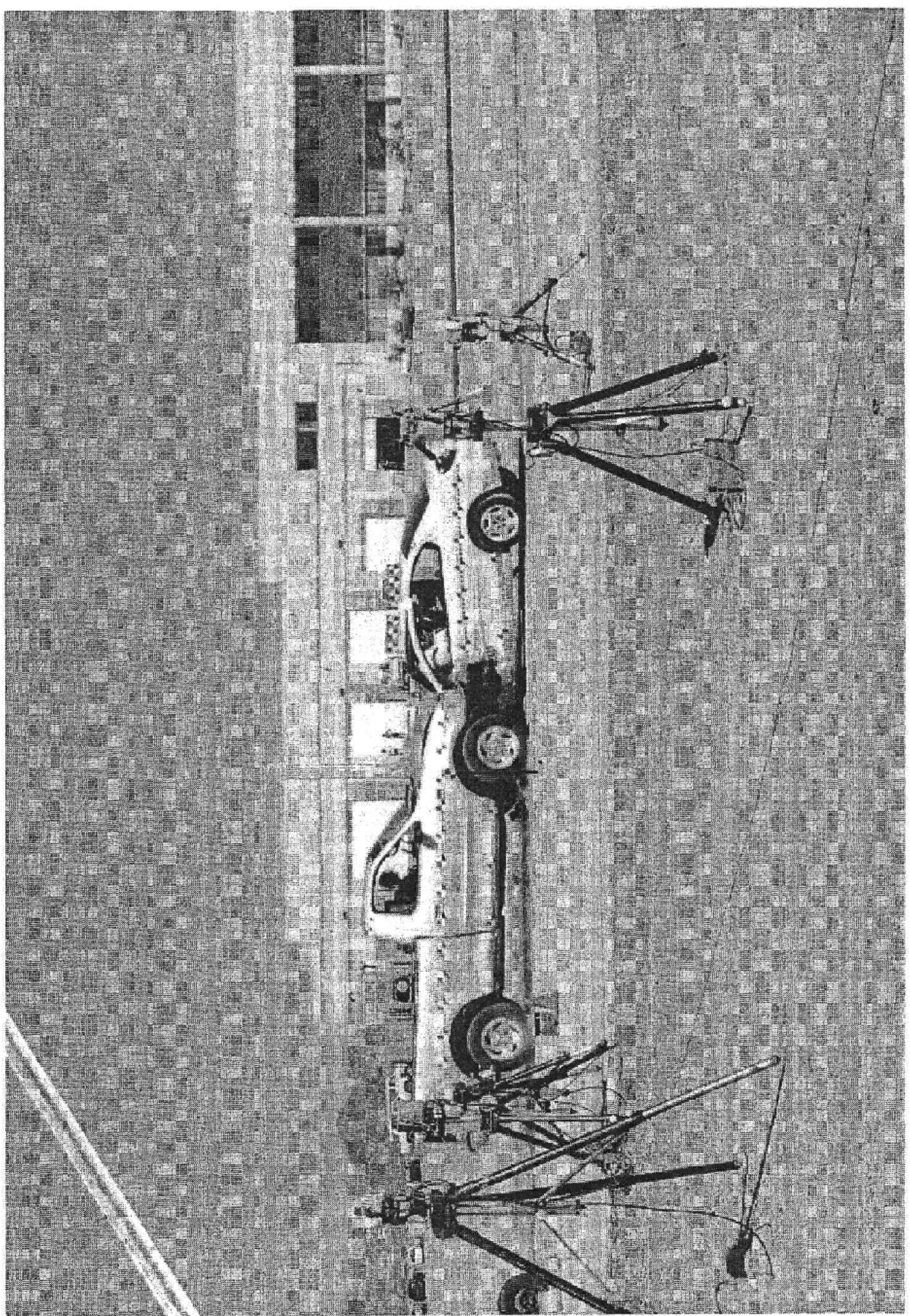


Figure A-3. Moment of Impact

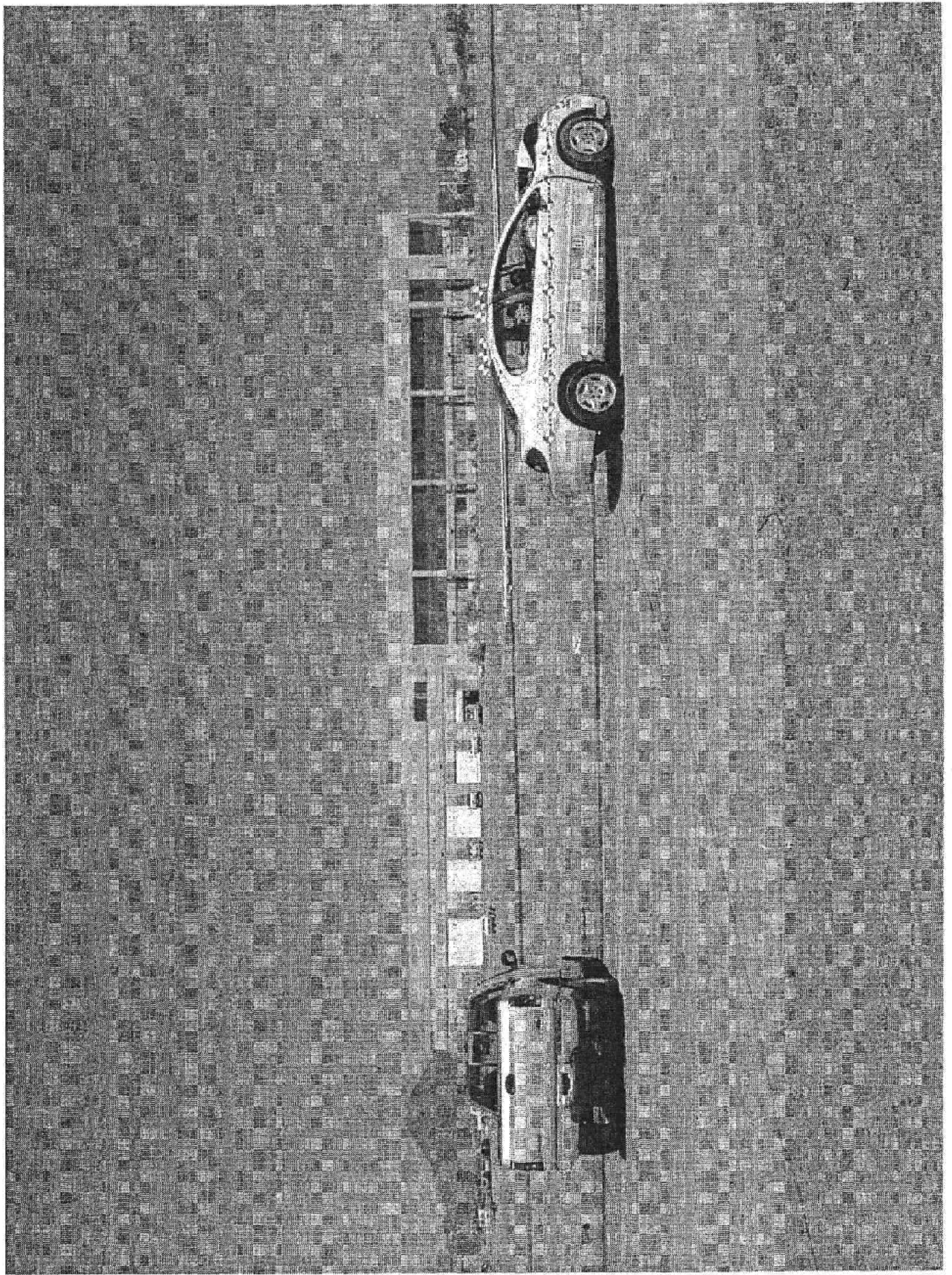


Figure A-4. Post-Test Rest Position Left Side View

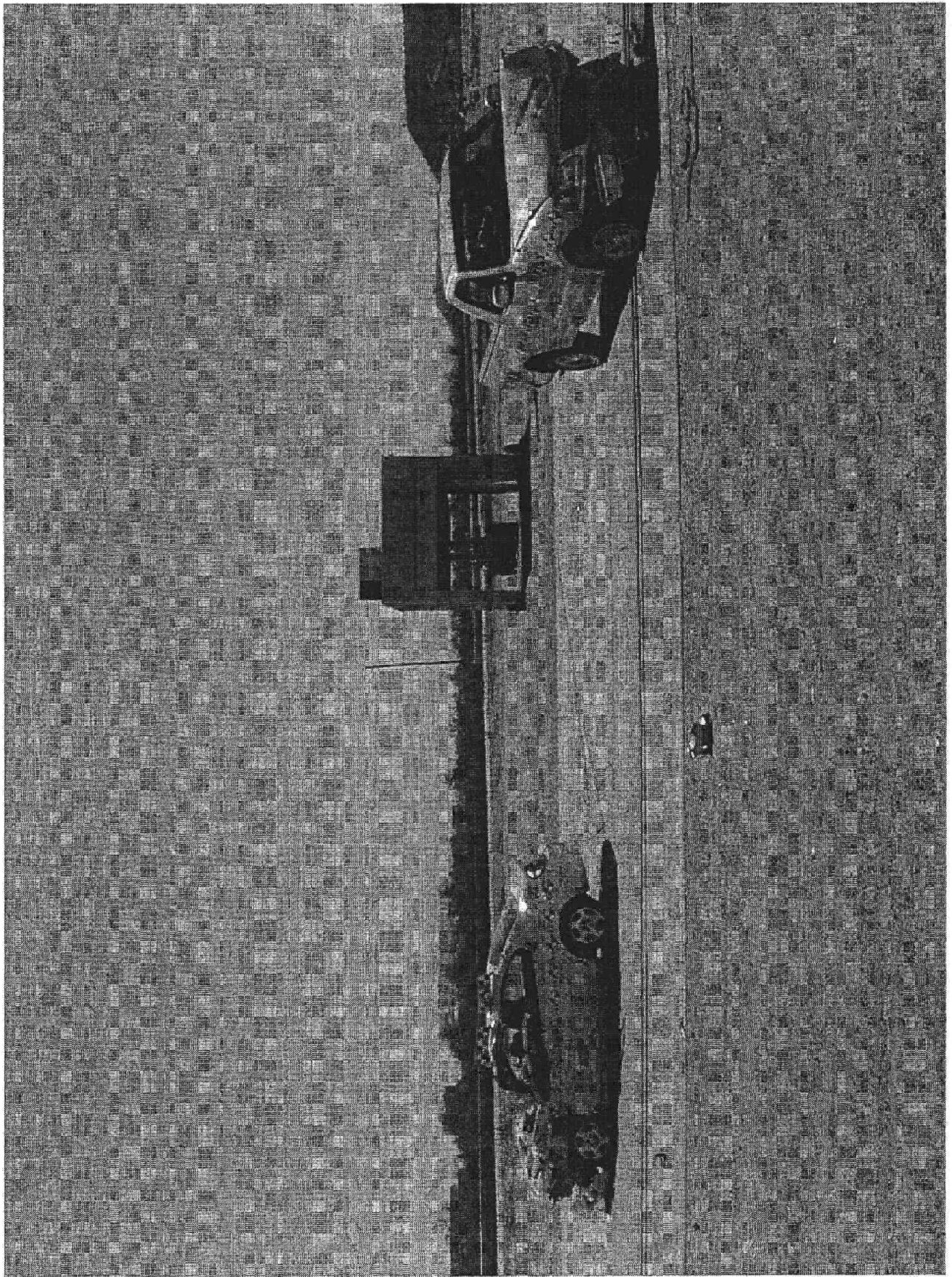


Figure A-5. Post-Test Rest Position Right Side View

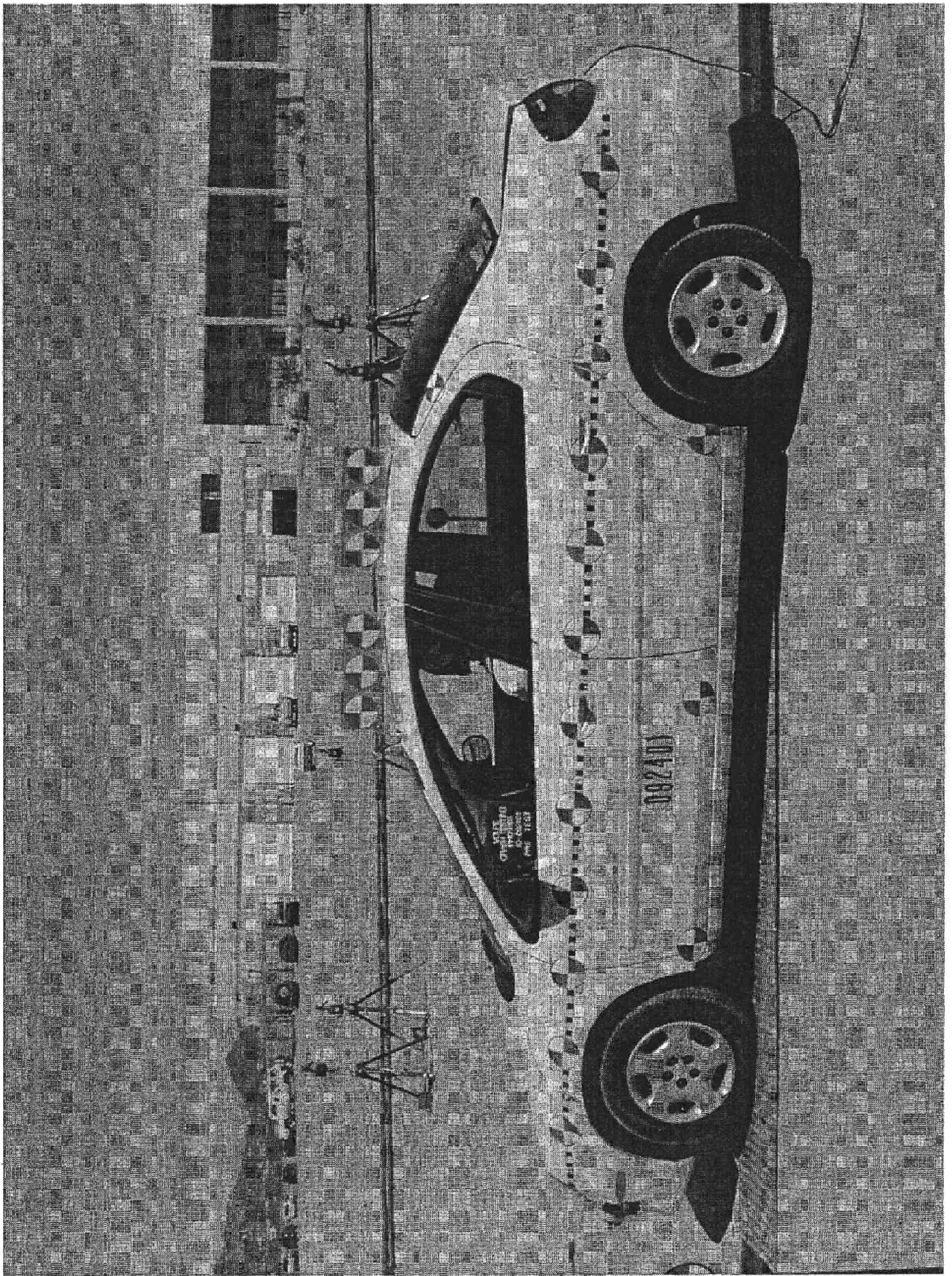


Figure A-6. Pre-Test Left Side View – 2001 Dodge Neon

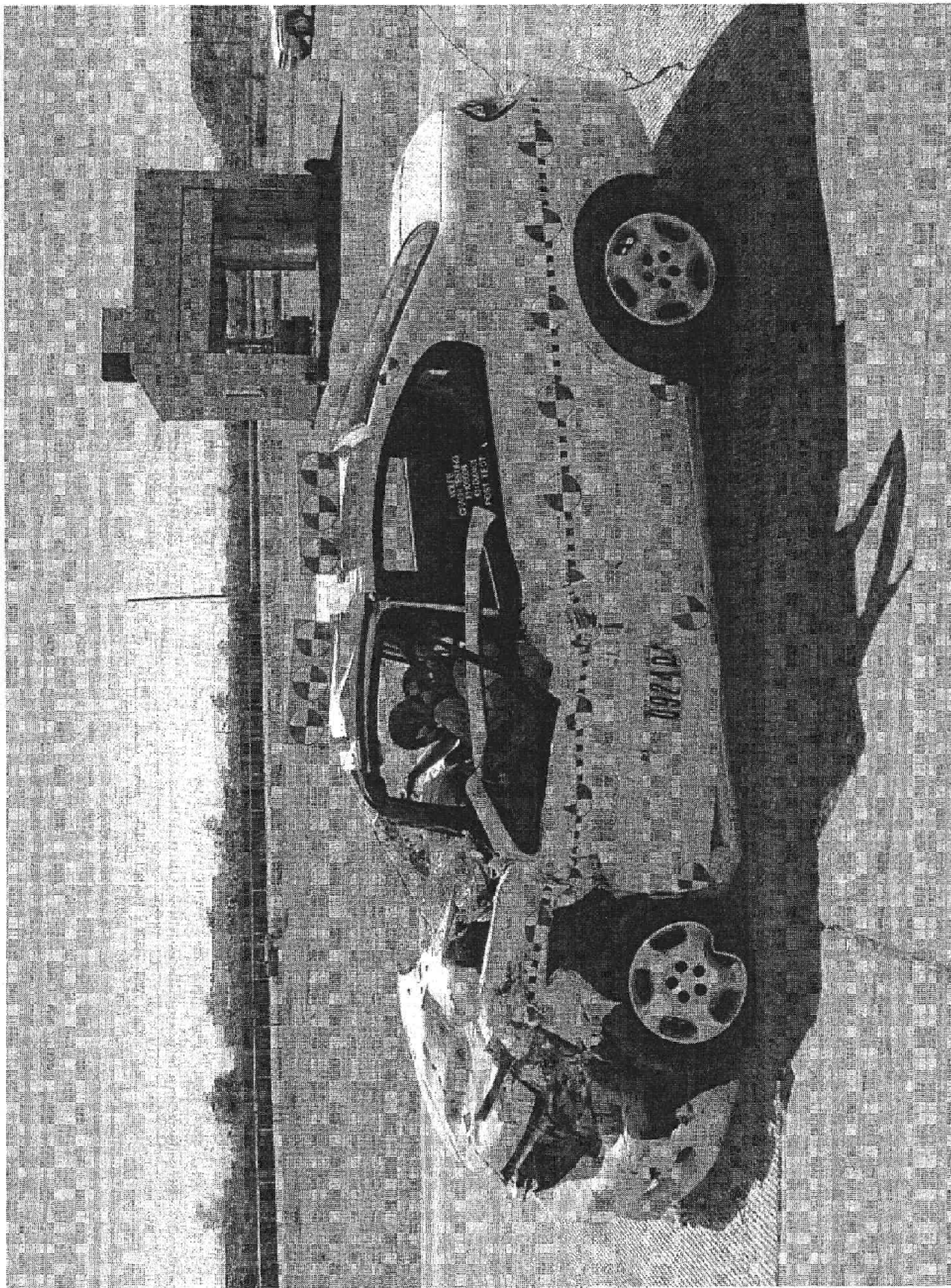


Figure A-7. Post-Test Left Side View – 2001 Dodge Neon

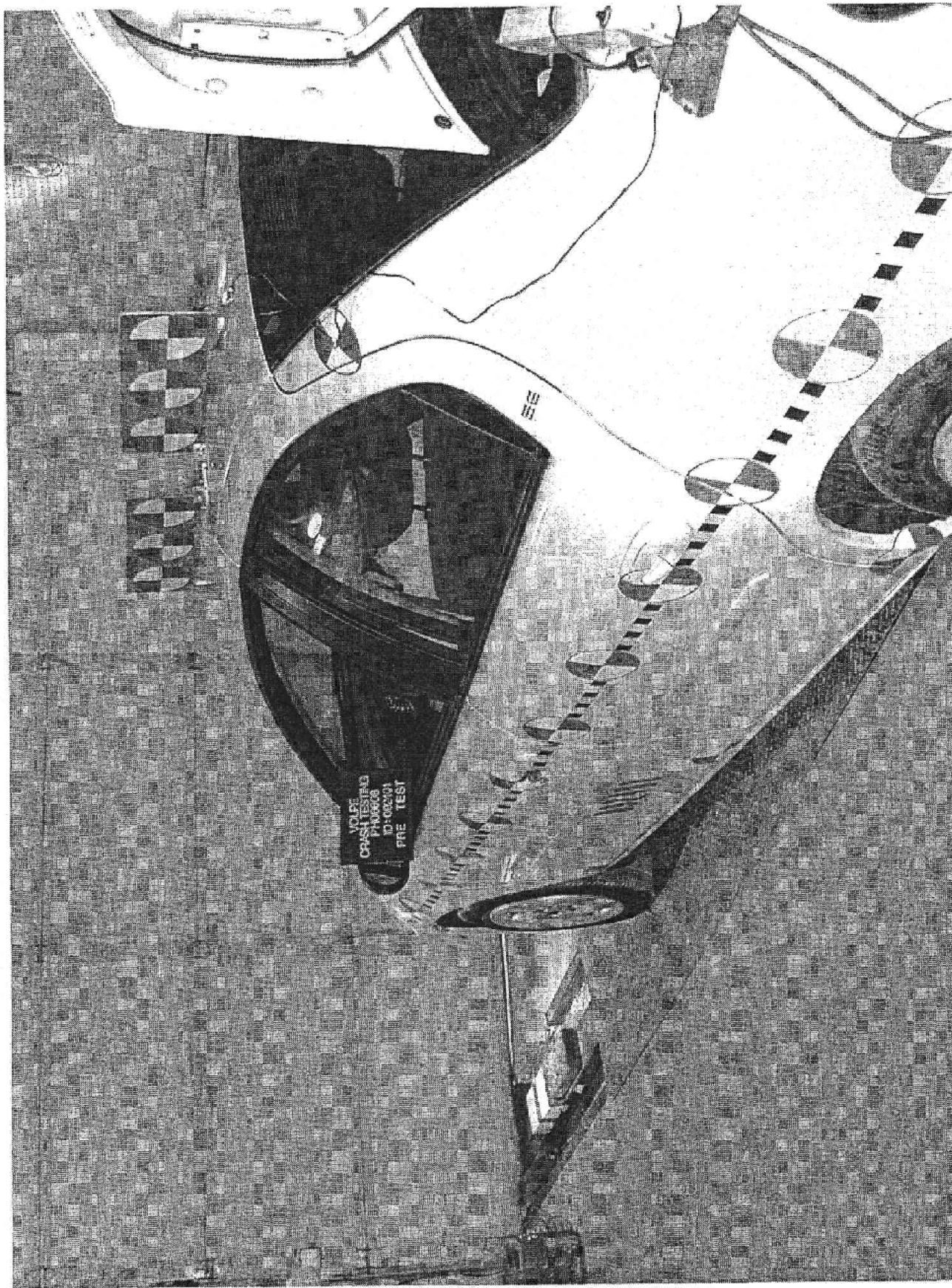


Figure A-8. Pre-Test Driver Close-up with Door Closed – 2001 Dodge Neon



Figure A-9. Post-Test Driver Close-up with Door Closed – 2001 Dodge Neon



Figure A-10. Pre-Test Driver Close-up with Door Open – 2001 Dodge Neon



Figure A-11. Post-Test Driver Close-up with Door Open – 2001 Dodge Neon

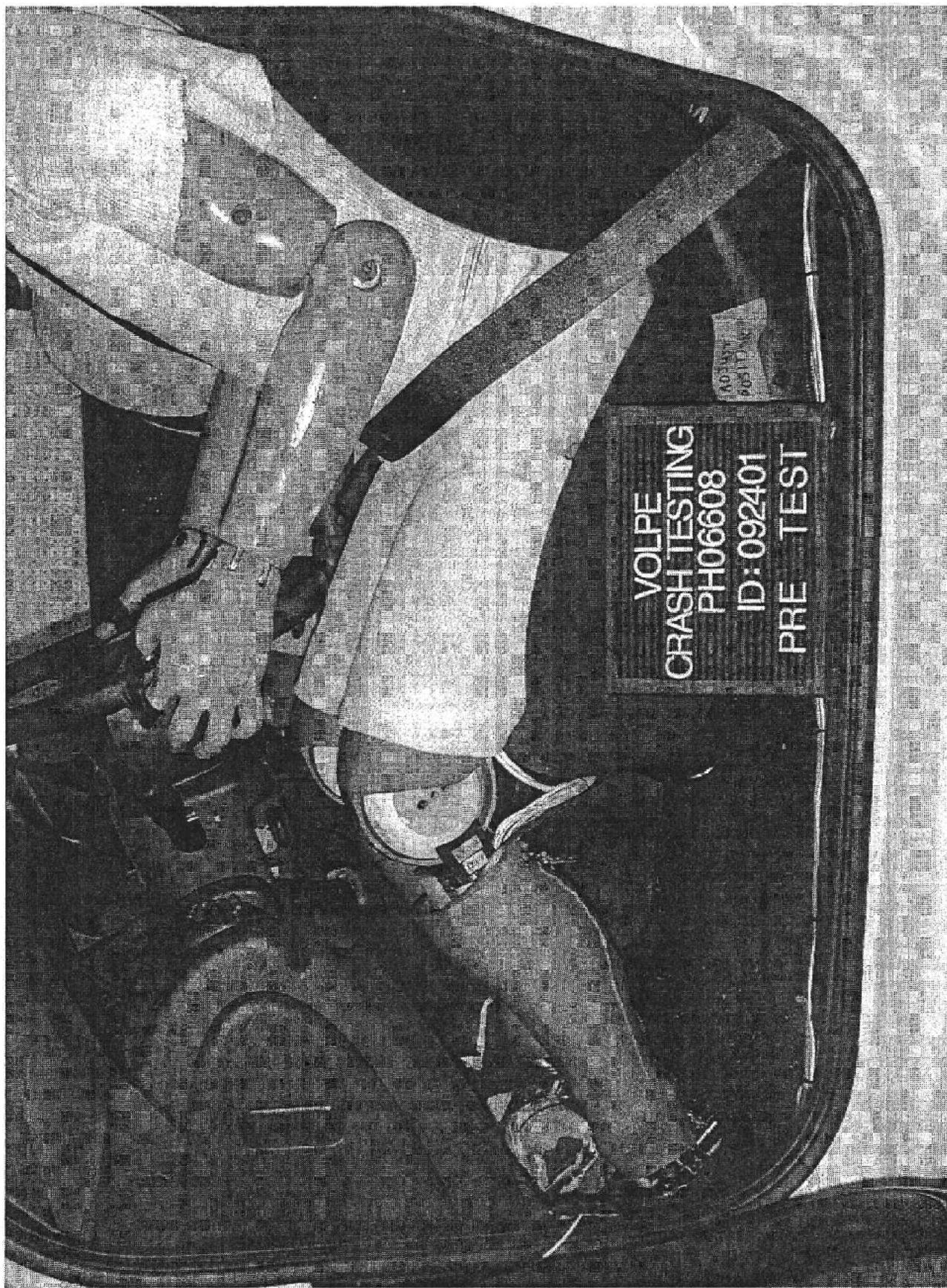


Figure A-12. Pre-Test Driver Foot/Leg Close-up with Door Open – 2001 Dodge Neon

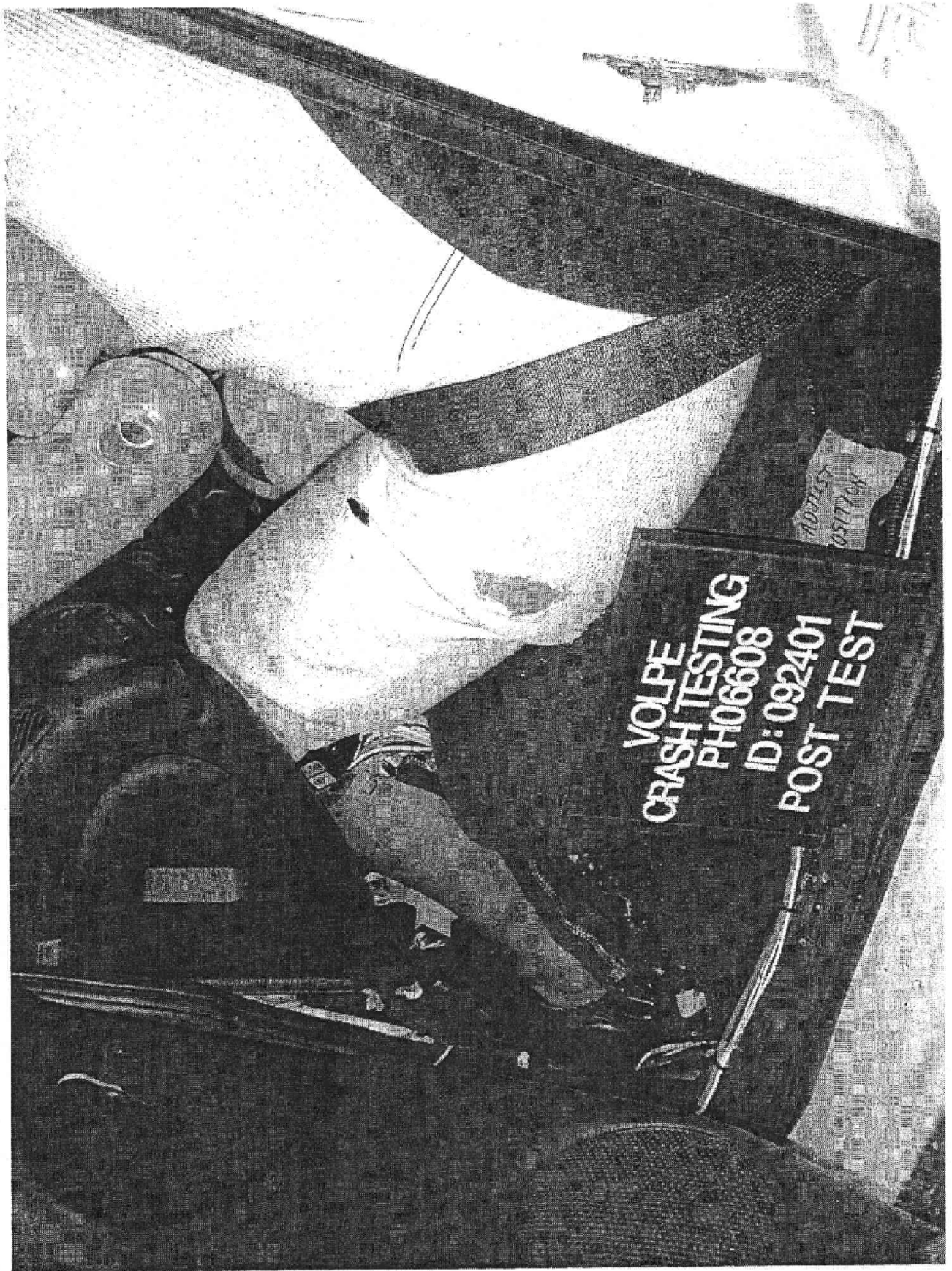


Figure A-13. Post-Test Driver Foot/Leg Close-up with Door Open – 2001 Dodge Neon

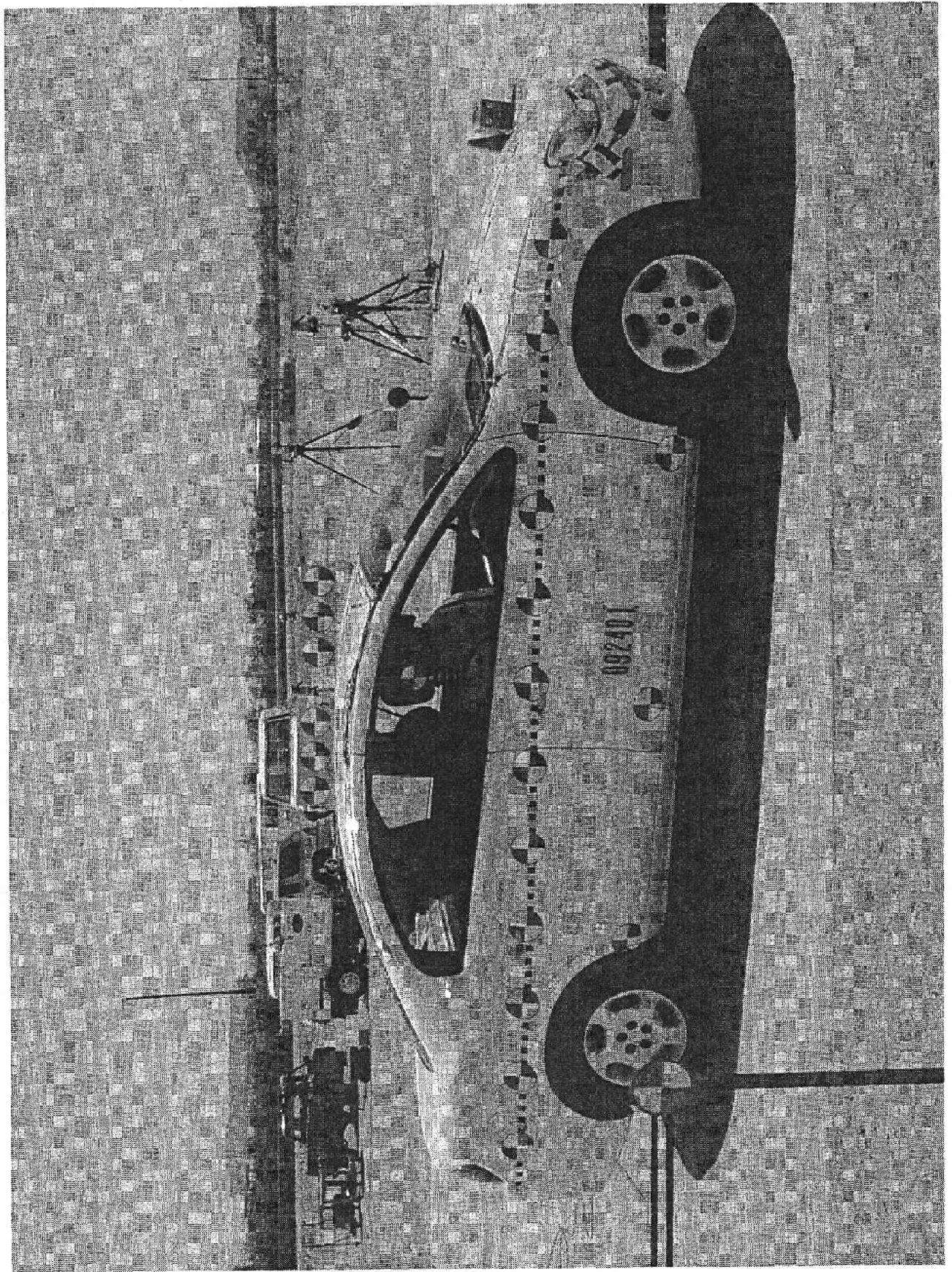


Figure A-14. Pre-Test Right Side View – 2001 Dodge Neon

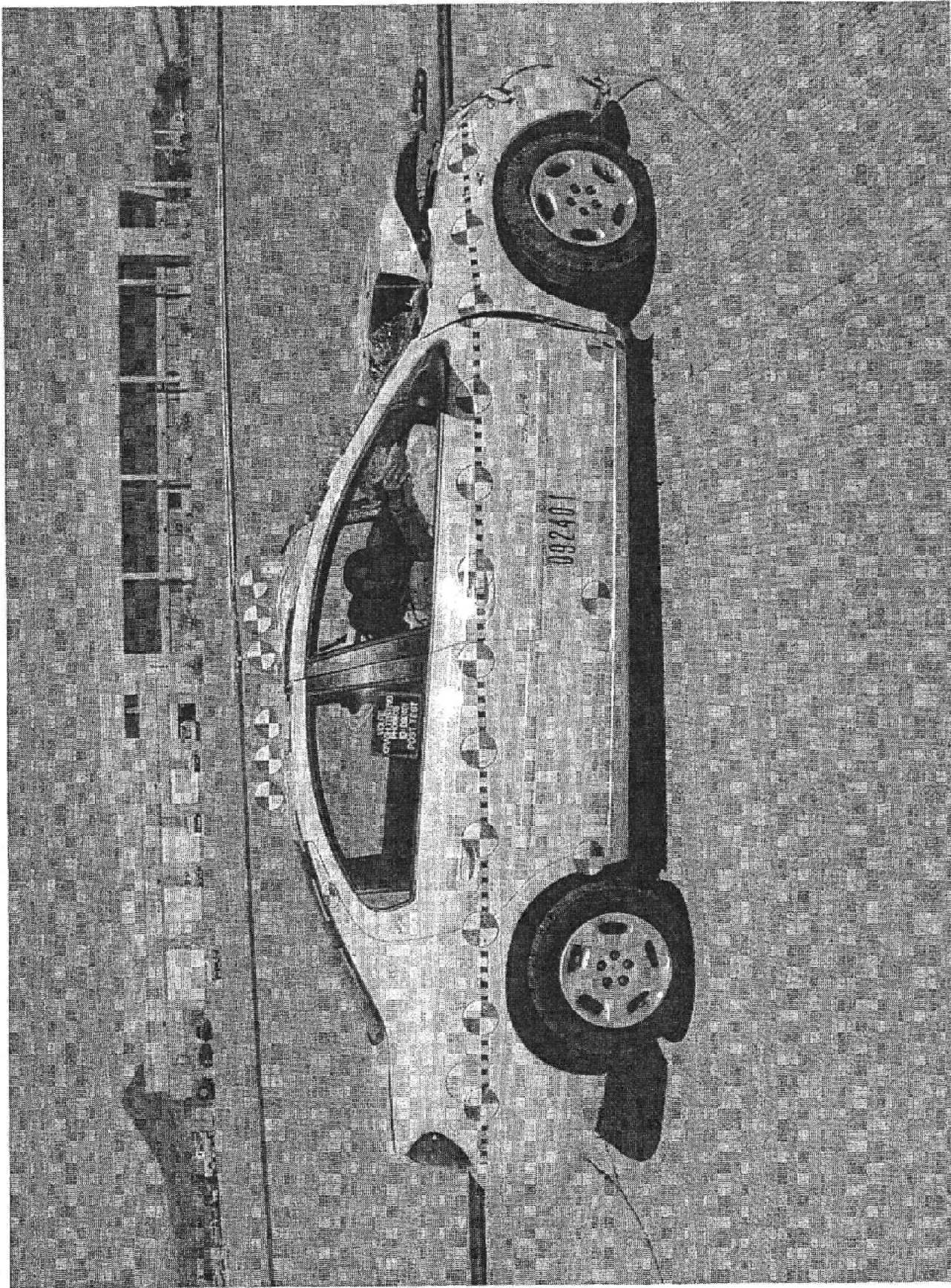


Figure A-15. Post-Test Right Side View – 2001 Dodge Neon

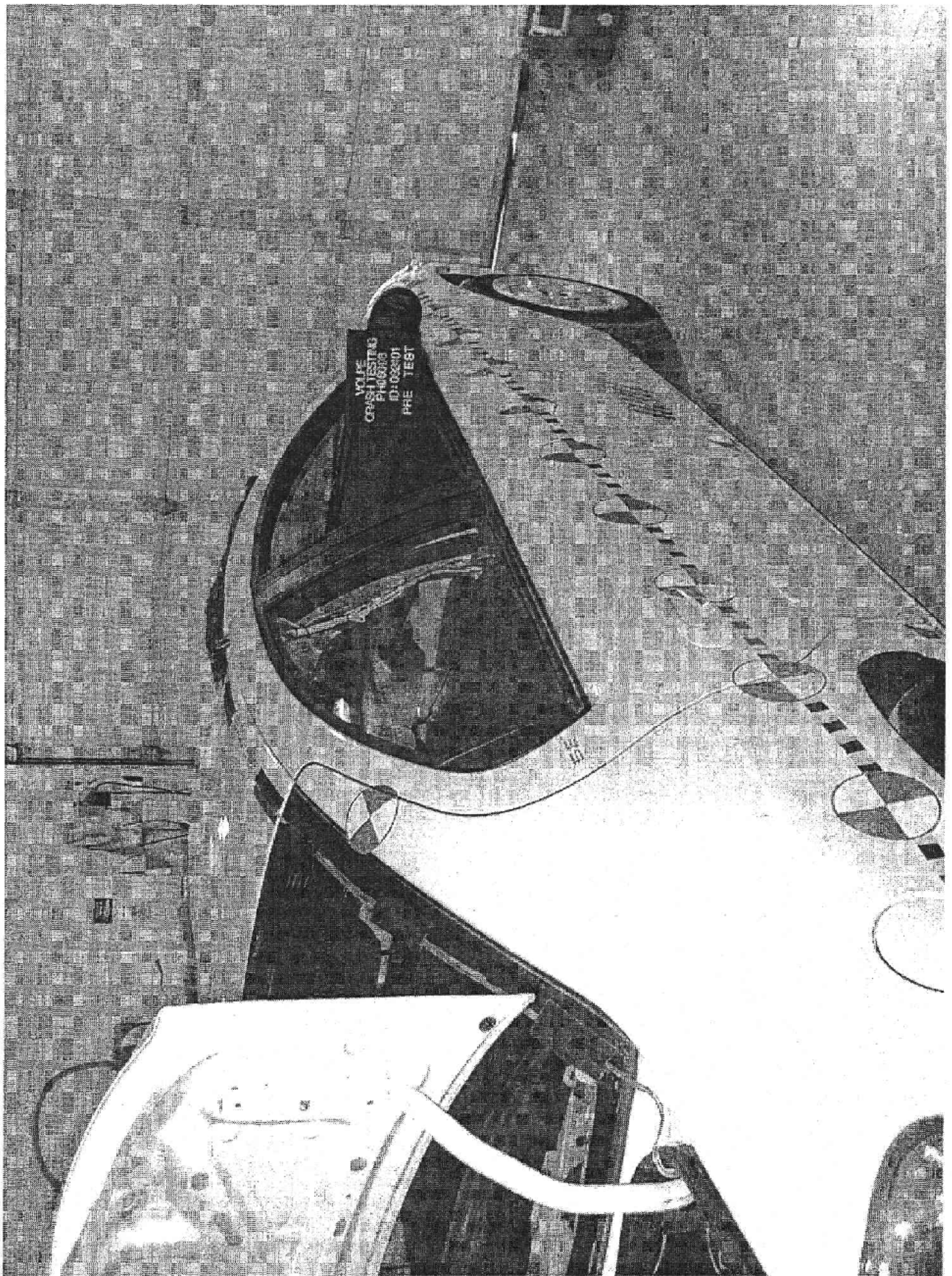


Figure A-16. Pre-Test Passenger Close-up with Door Closed – 2001 Dodge Neon

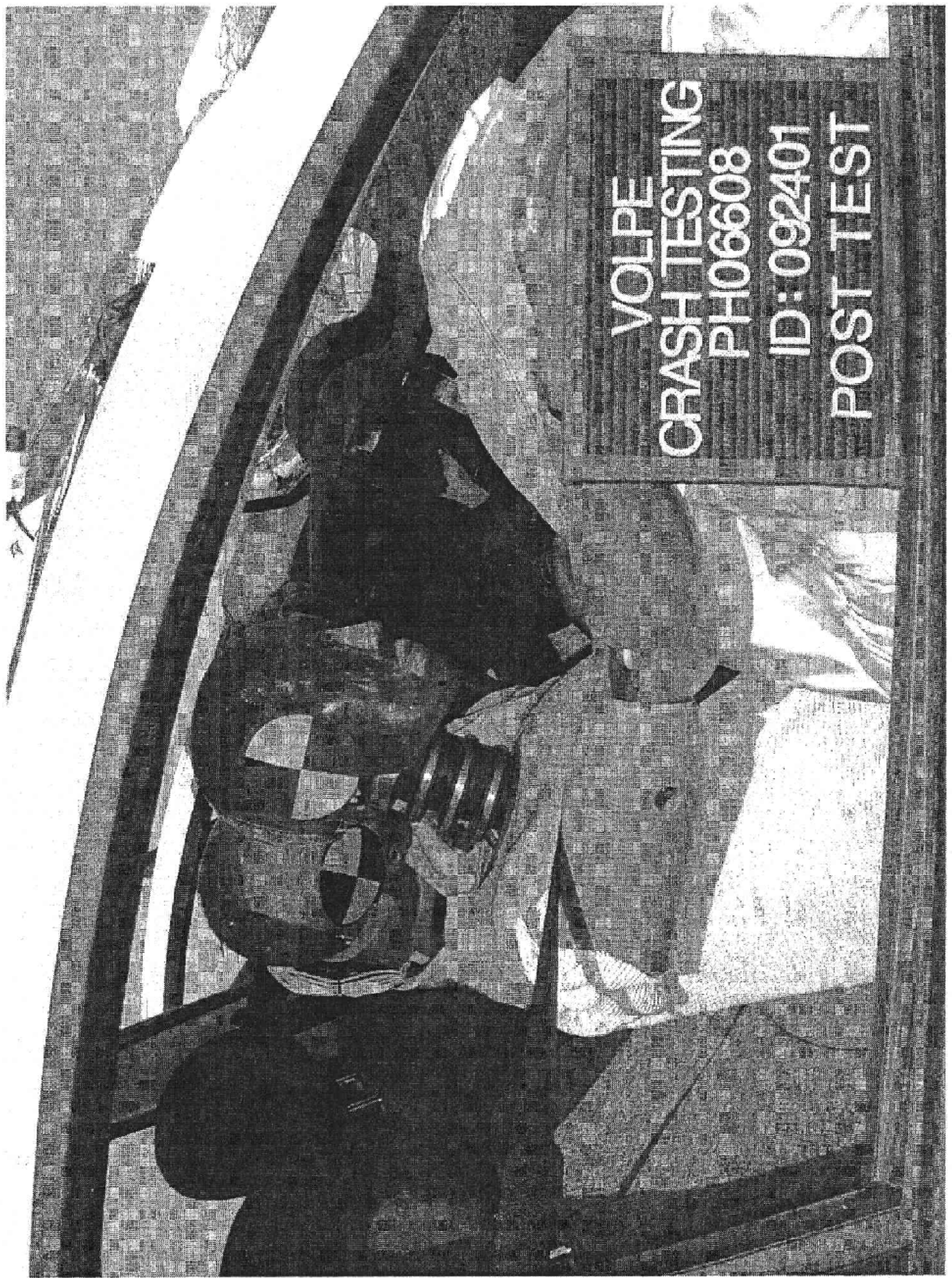


Figure A-17. Post-Test Passenger Close-up with Door Closed – 2001 Dodge Neon



Figure A-18. Pre-Test Passenger Close-up with Door Open – 2001 Dodge Neon

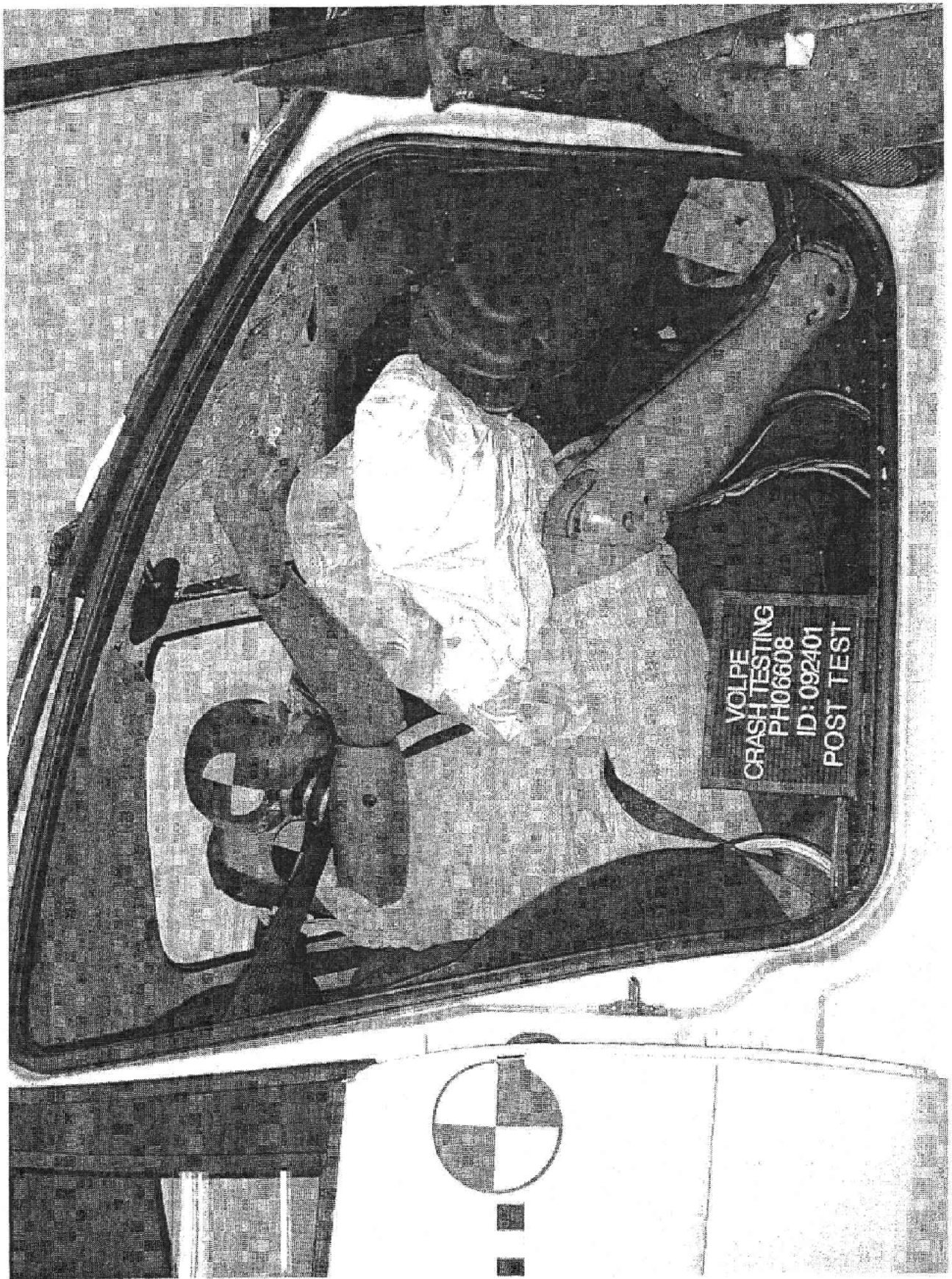


Figure A-19. Post-Test Passenger Close-up with Door Open – 2001 Dodge Neon

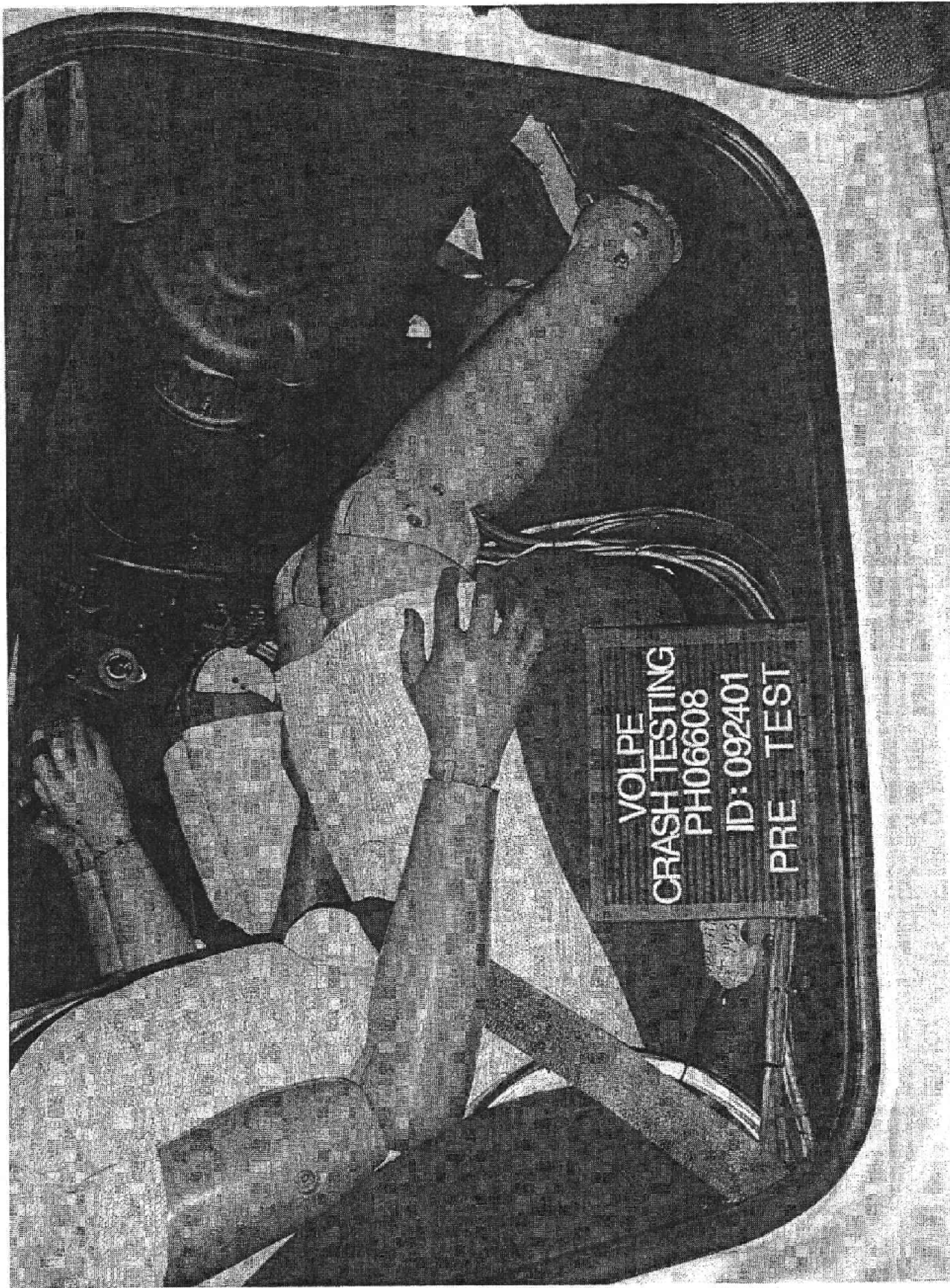


Figure A-20. Pre-Test Passenger Foot/Leg Close-up with Door Open – 2001 Dodge Neon

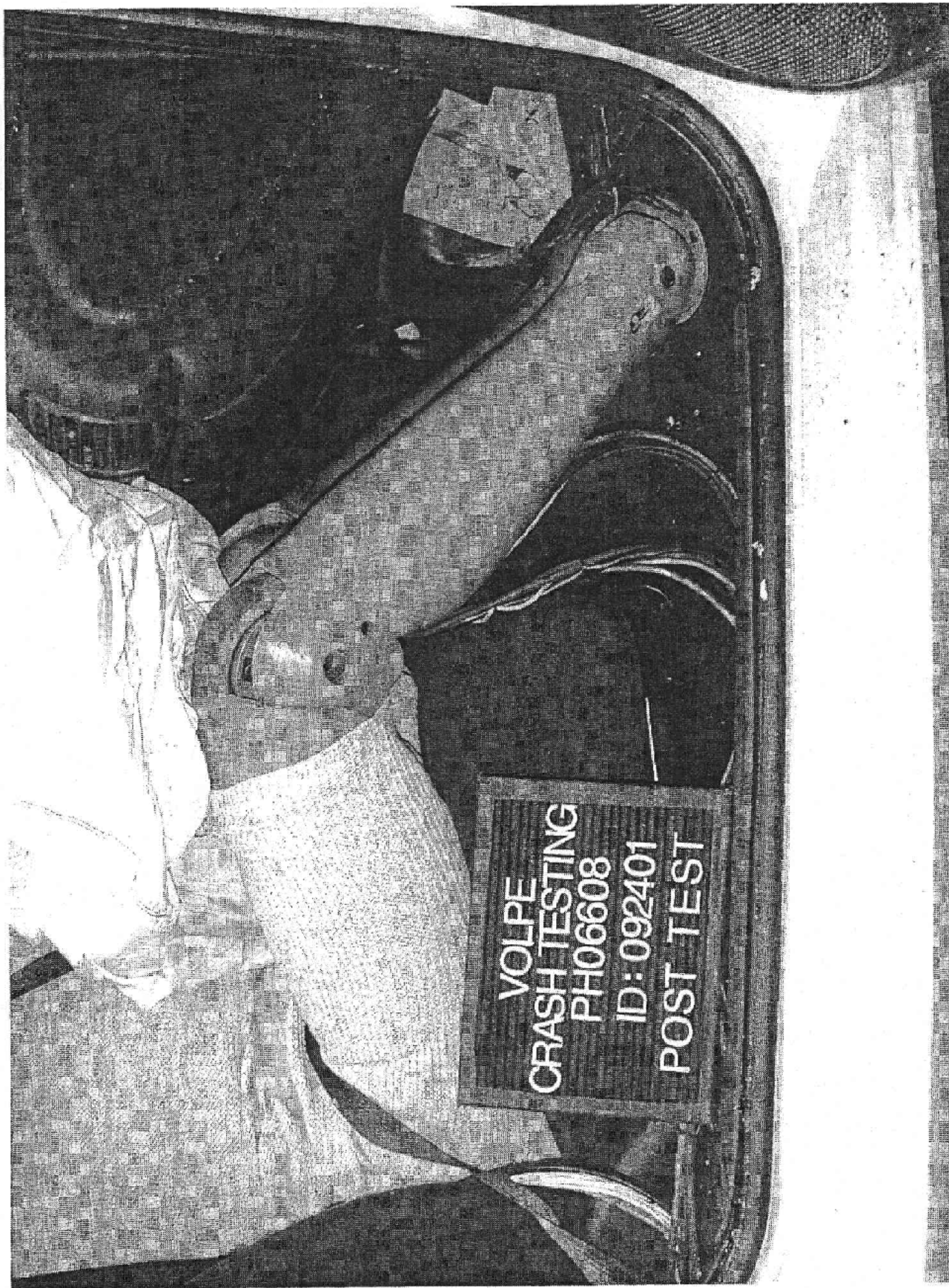


Figure A-21. Post-Test Passenger Foot/Leg Close-up with Door Open – 2001 Dodge Neon

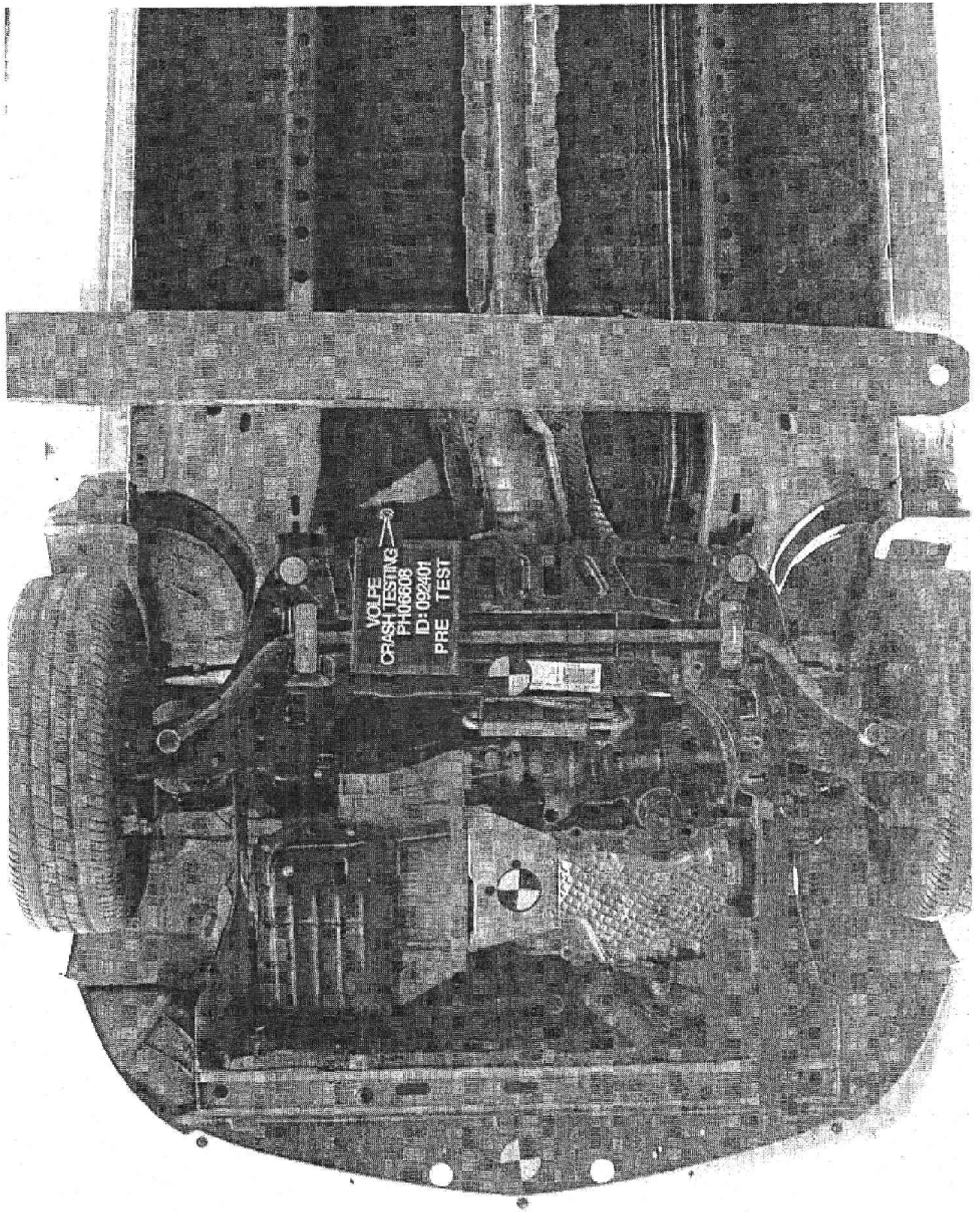


Figure A-22. Pre-Test Underbody View #1 – 2001 Dodge Neon

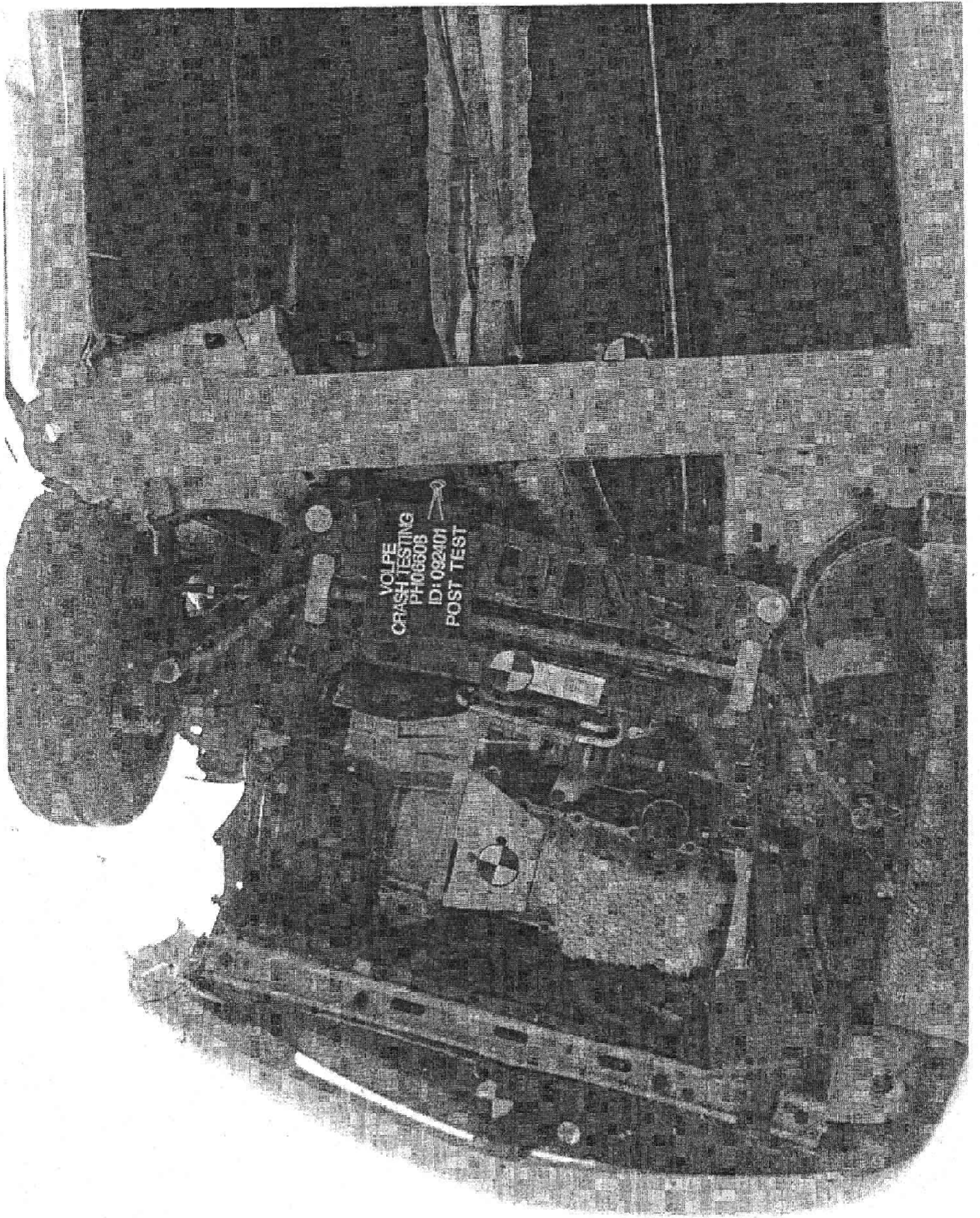


Figure A-23. Post-Test Underbody View #1 – 2001 Dodge Neon

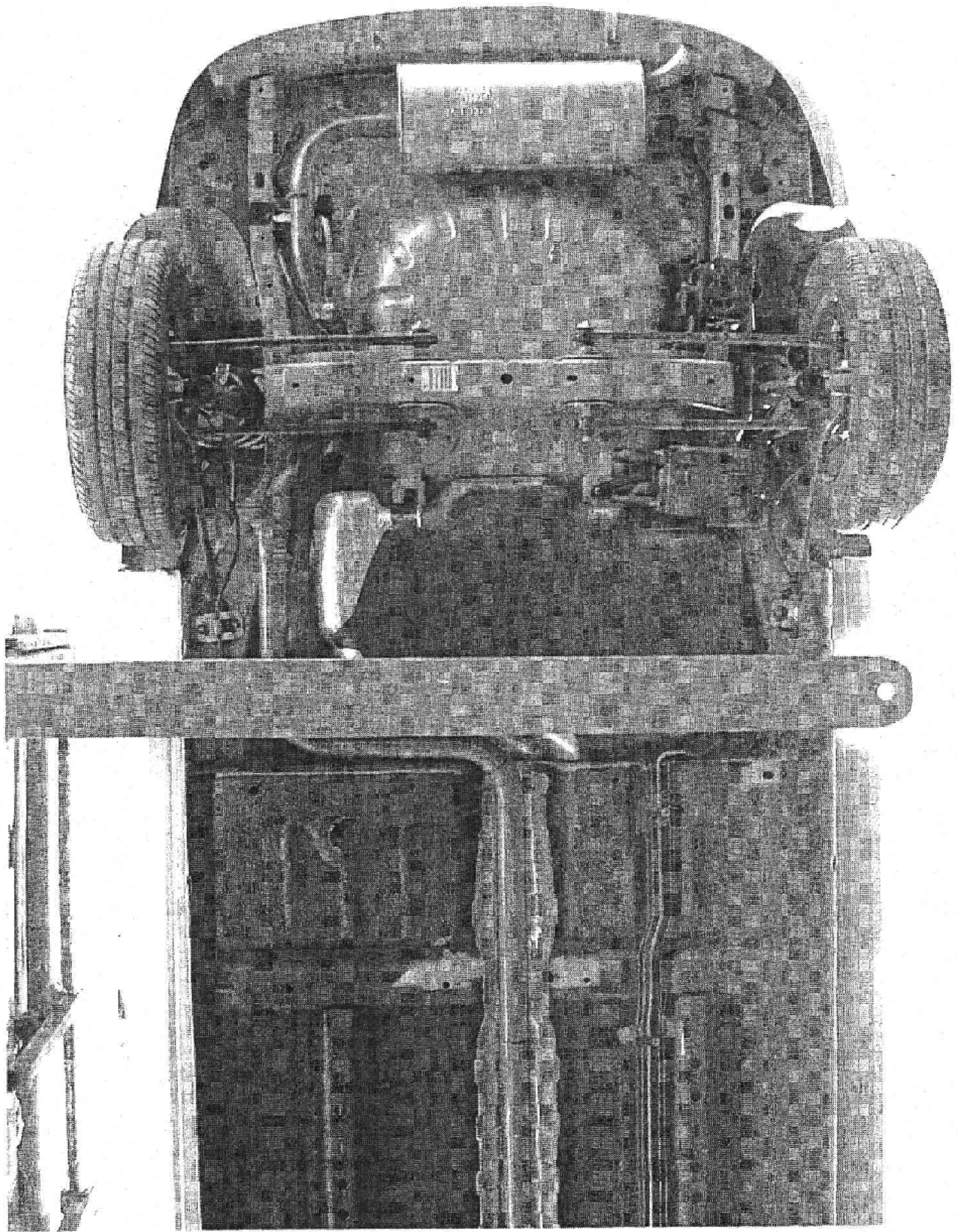


Figure A-24. Pre-Test Underbody View #2 – 2001 Dodge Neon

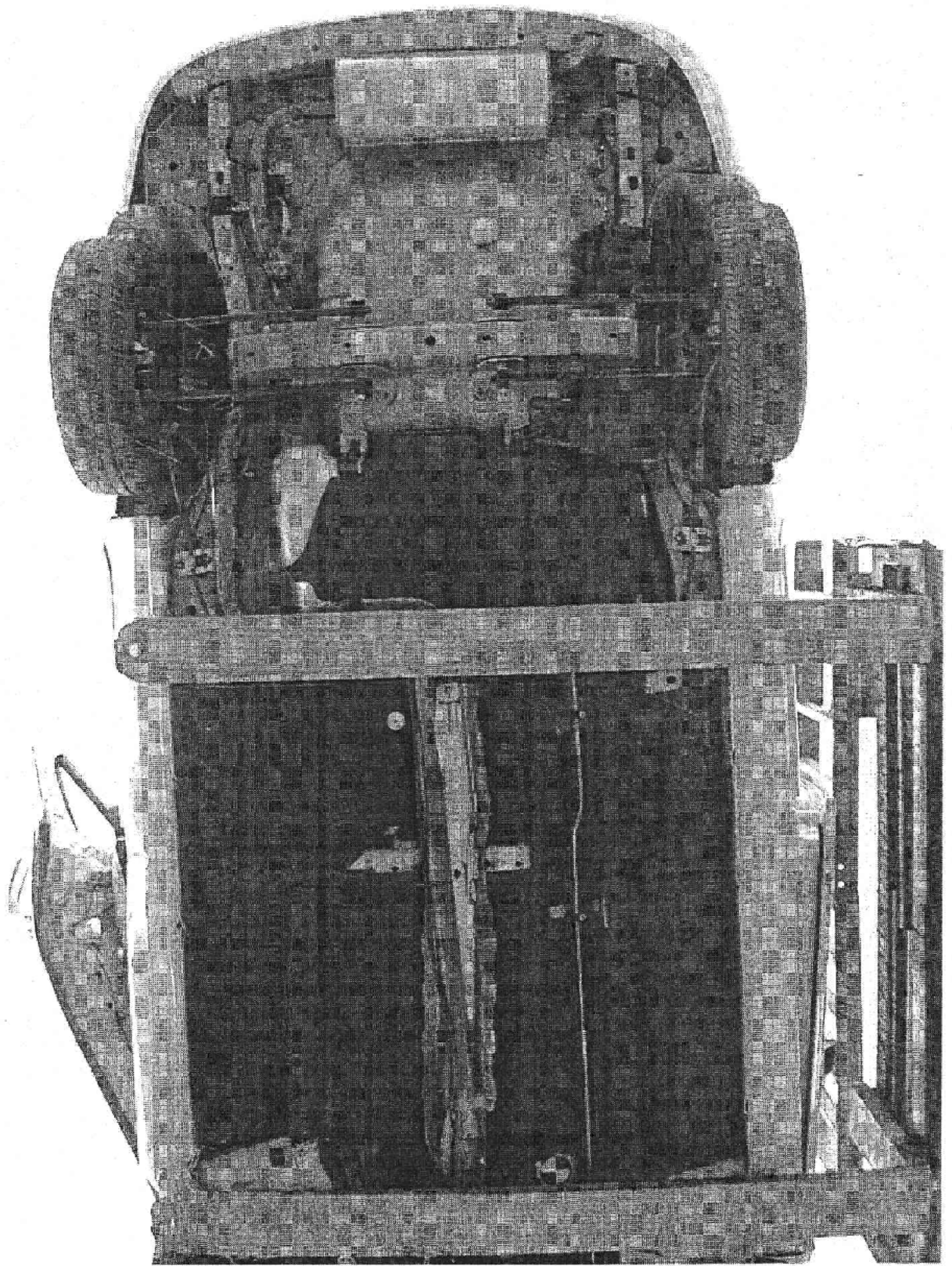


Figure A-25. Post-Test Underbody View #2 – 2001 Dodge Neon

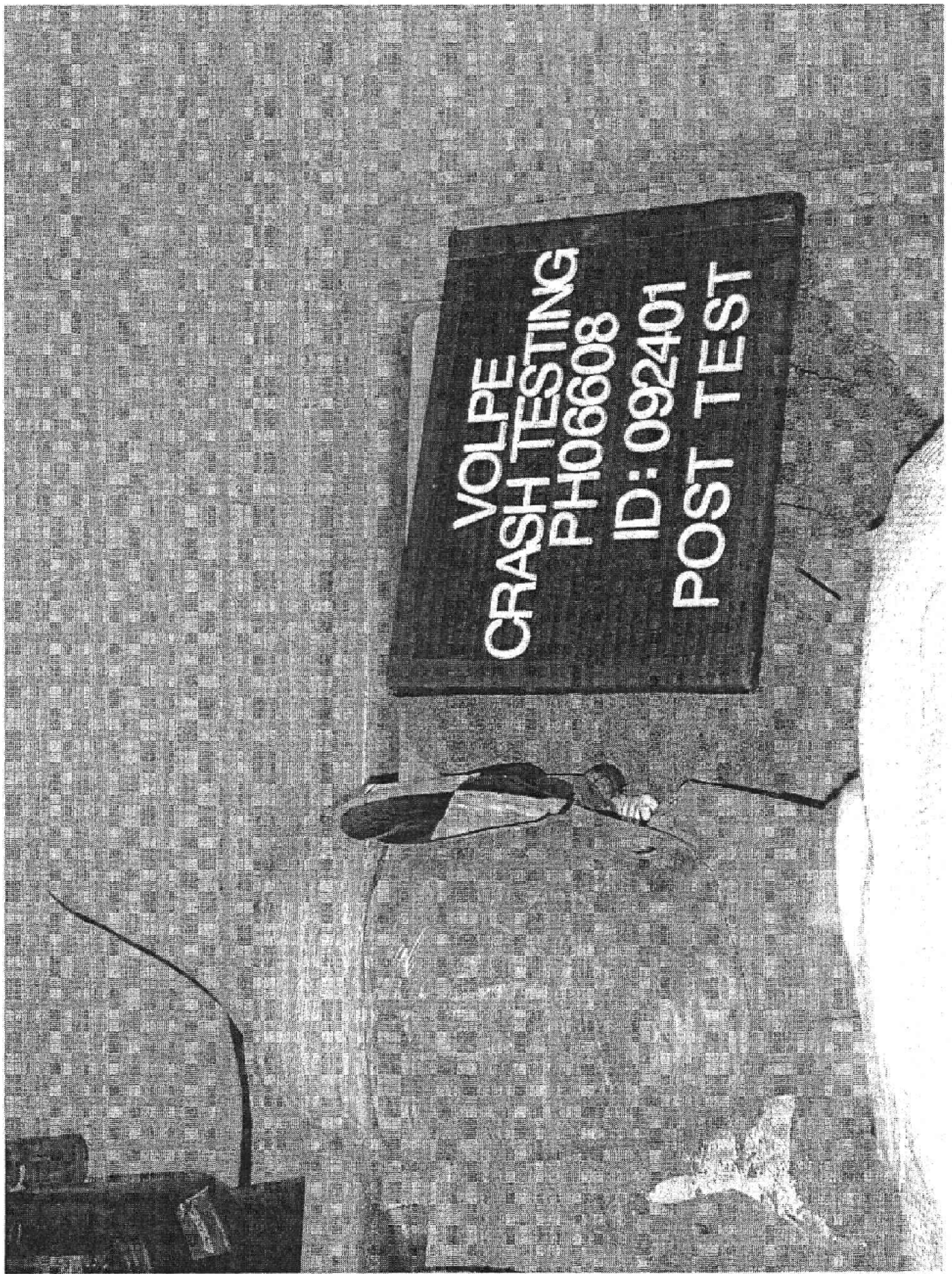


Figure A-26. Post-Test Driver Dummy Contact View #1 – 2001 Dodge Neon

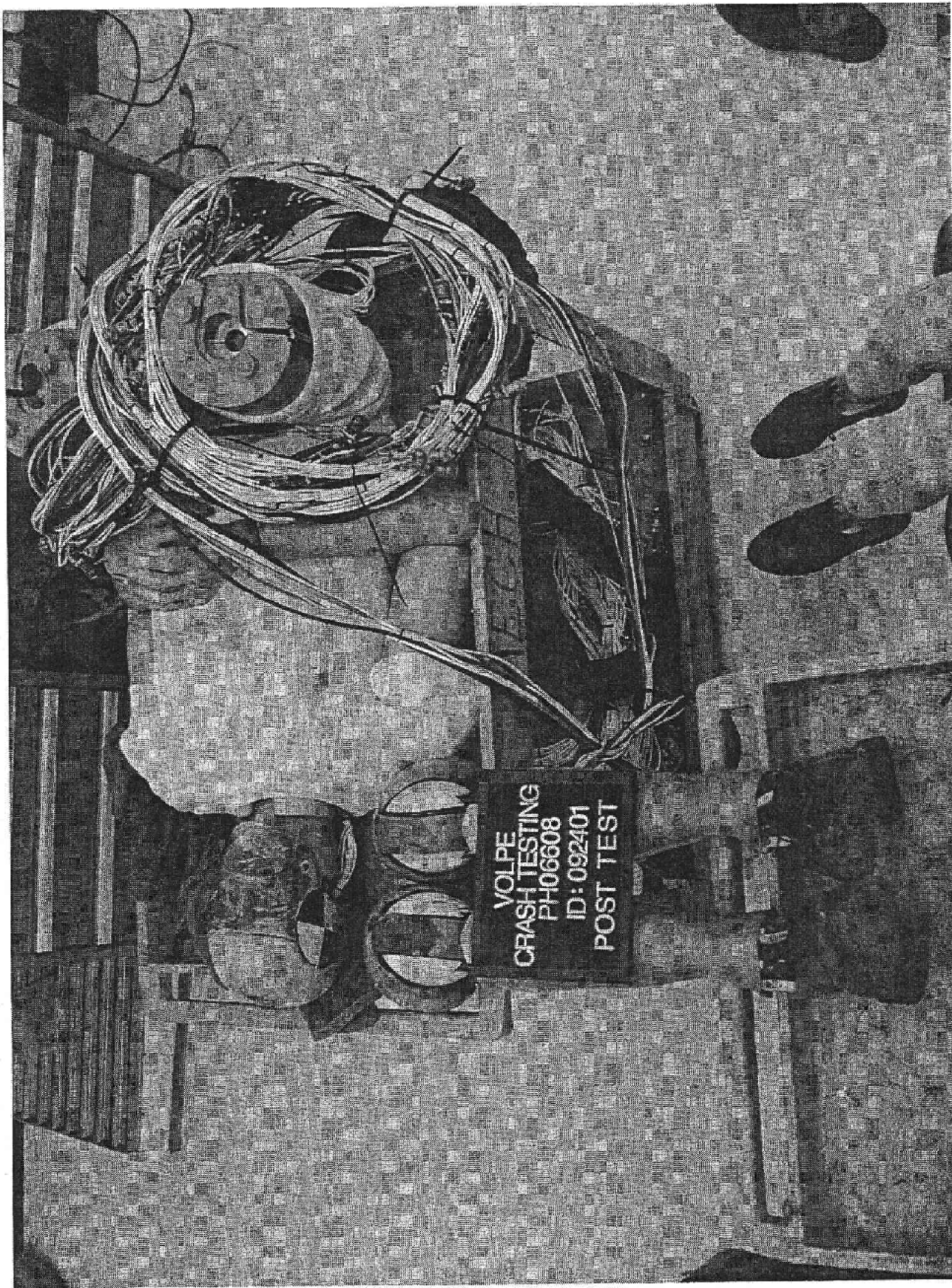


Figure A-27. Post-Test Driver Dummy Contact View #2 – 2001 Dodge Neon

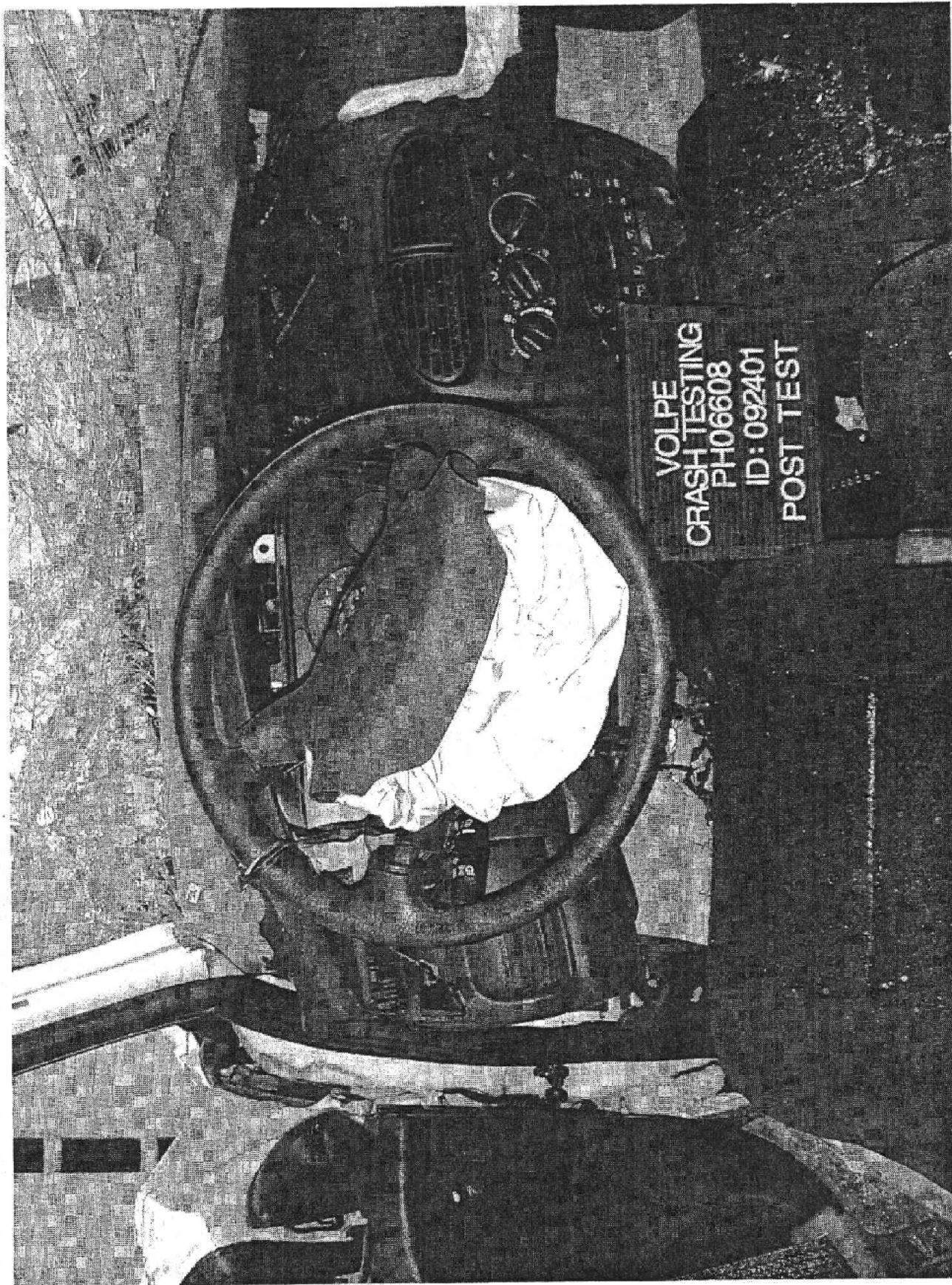


Figure A-28. Post-Test Driver Dummy Contact View #3 – 2001 Dodge Neon

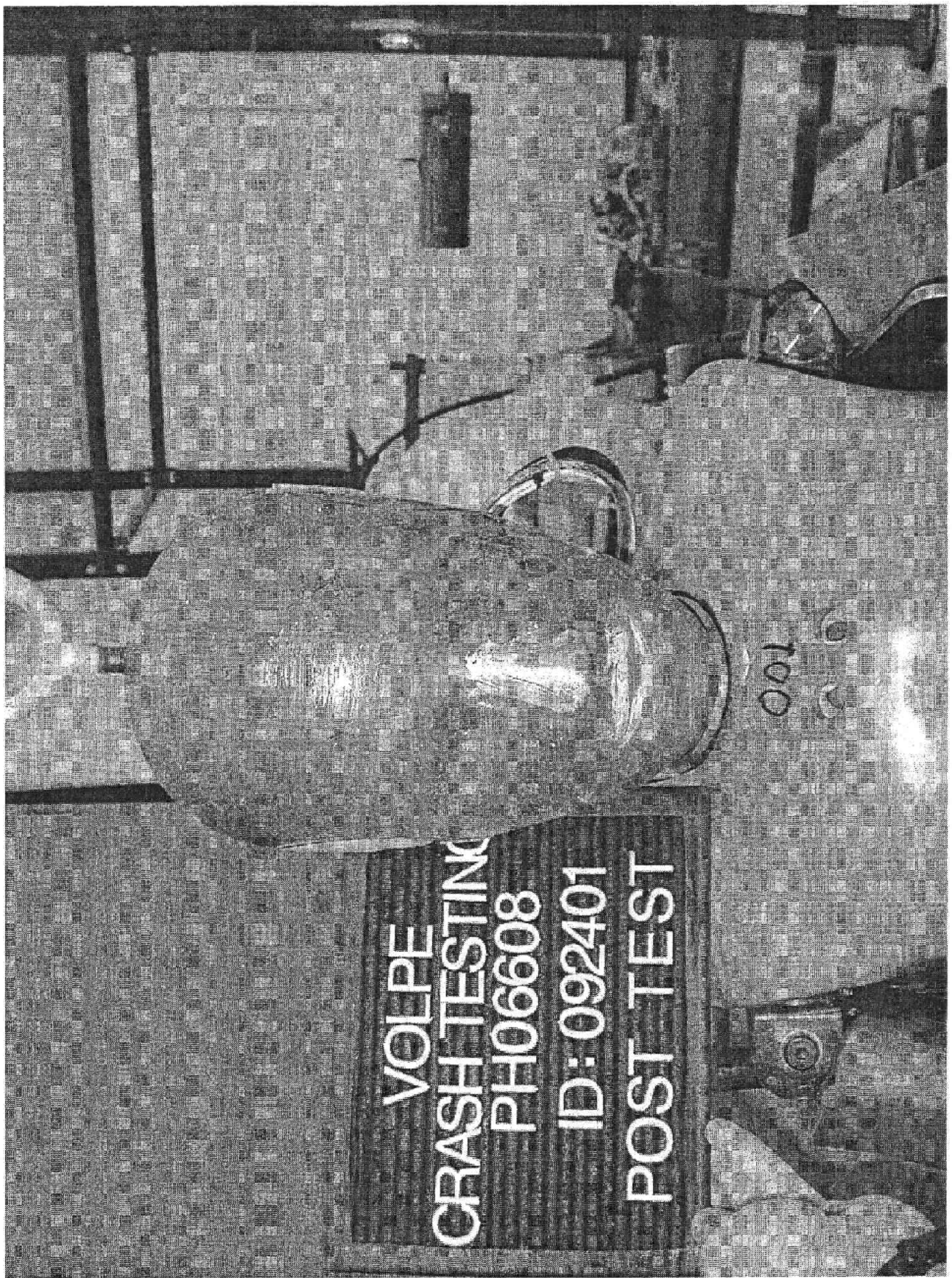


Figure A-29. Post-Test Passenger Dummy Contact View #1 – 2001 Dodge Neon

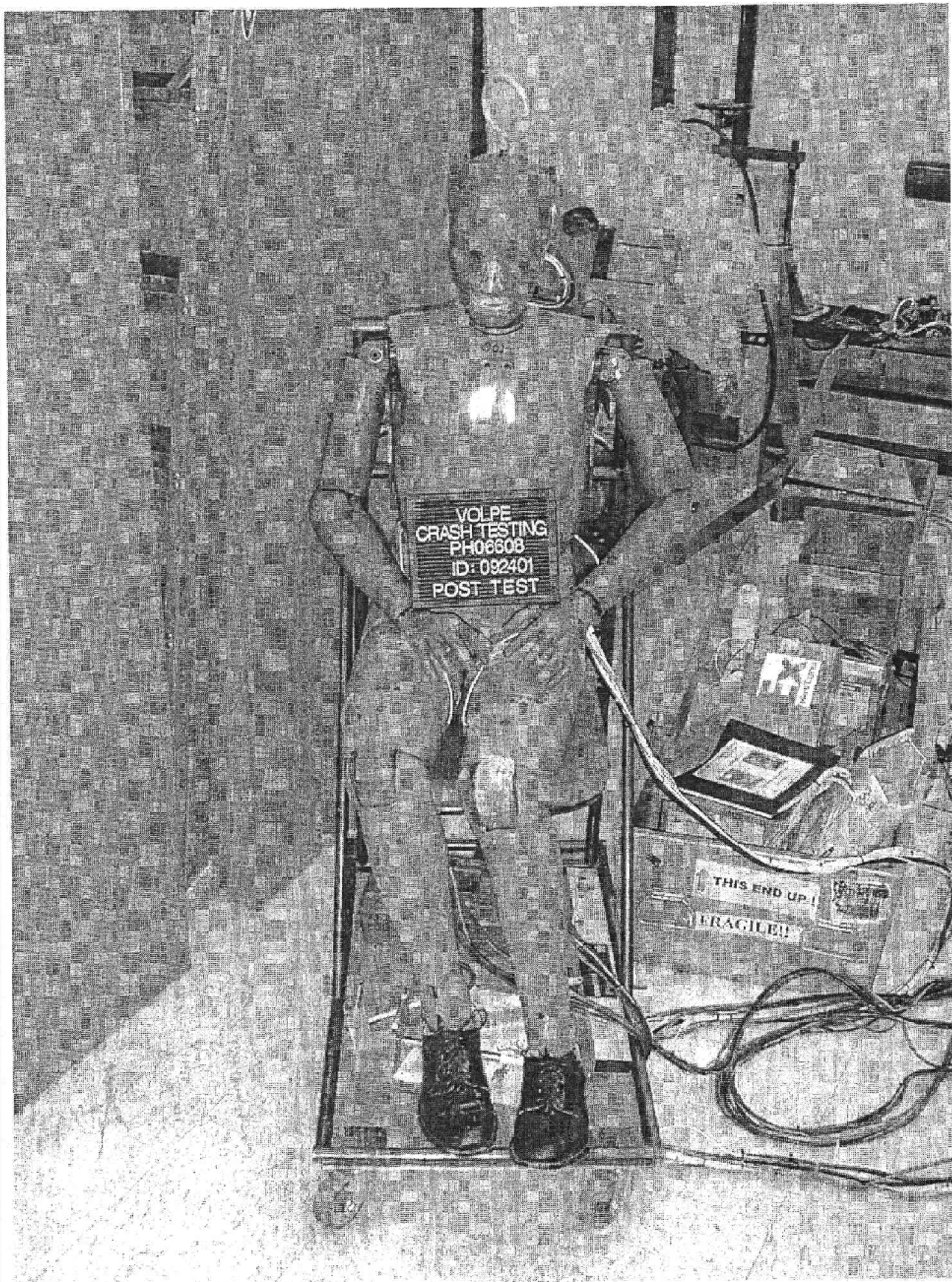


Figure A-30. Post-Test Passenger Dummy Contact View #2 – 2001 Dodge Neon

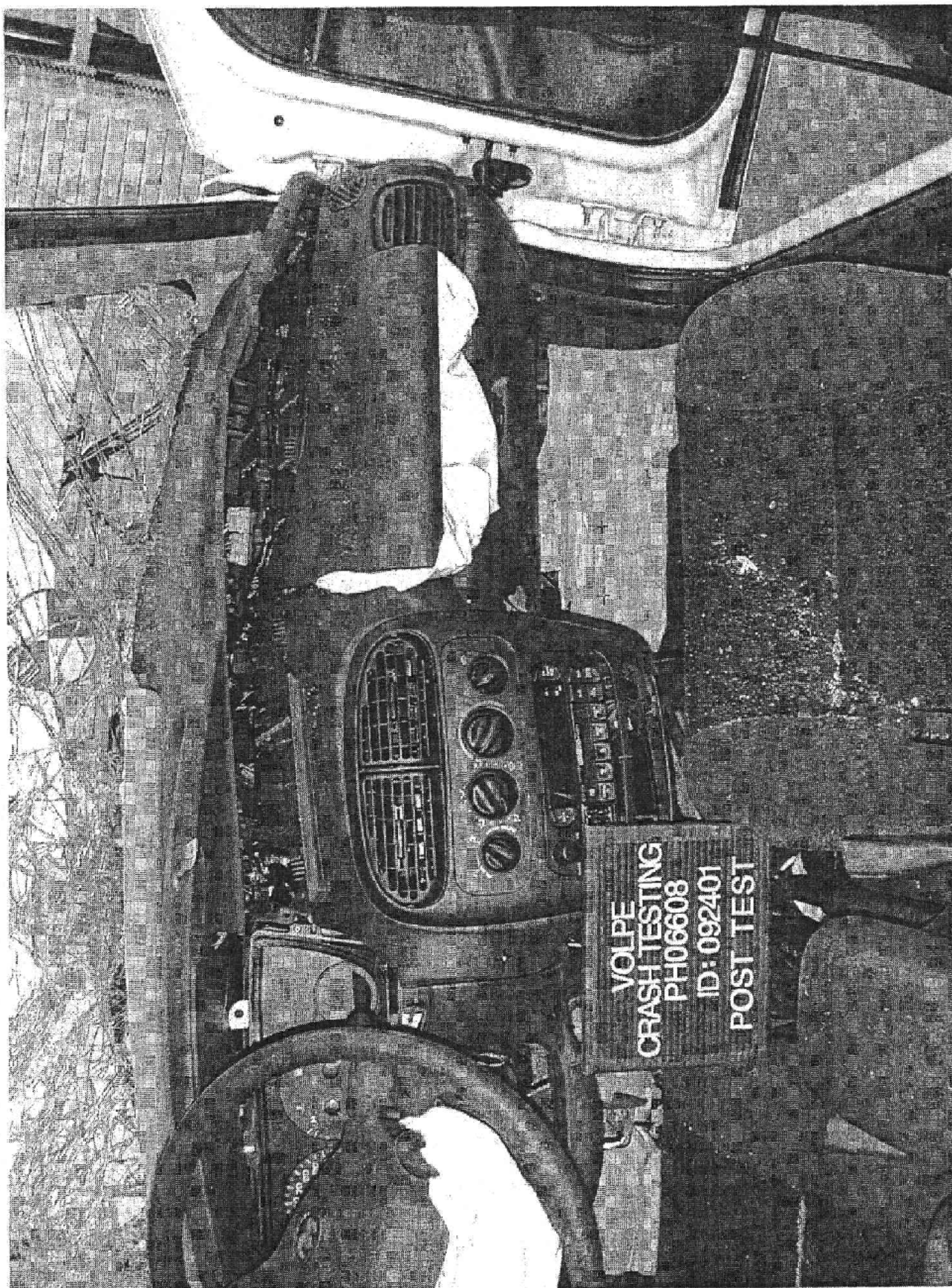


Figure A-31. Post-Test Passenger Dummy Contact View #3 – 2001 Dodge Neon

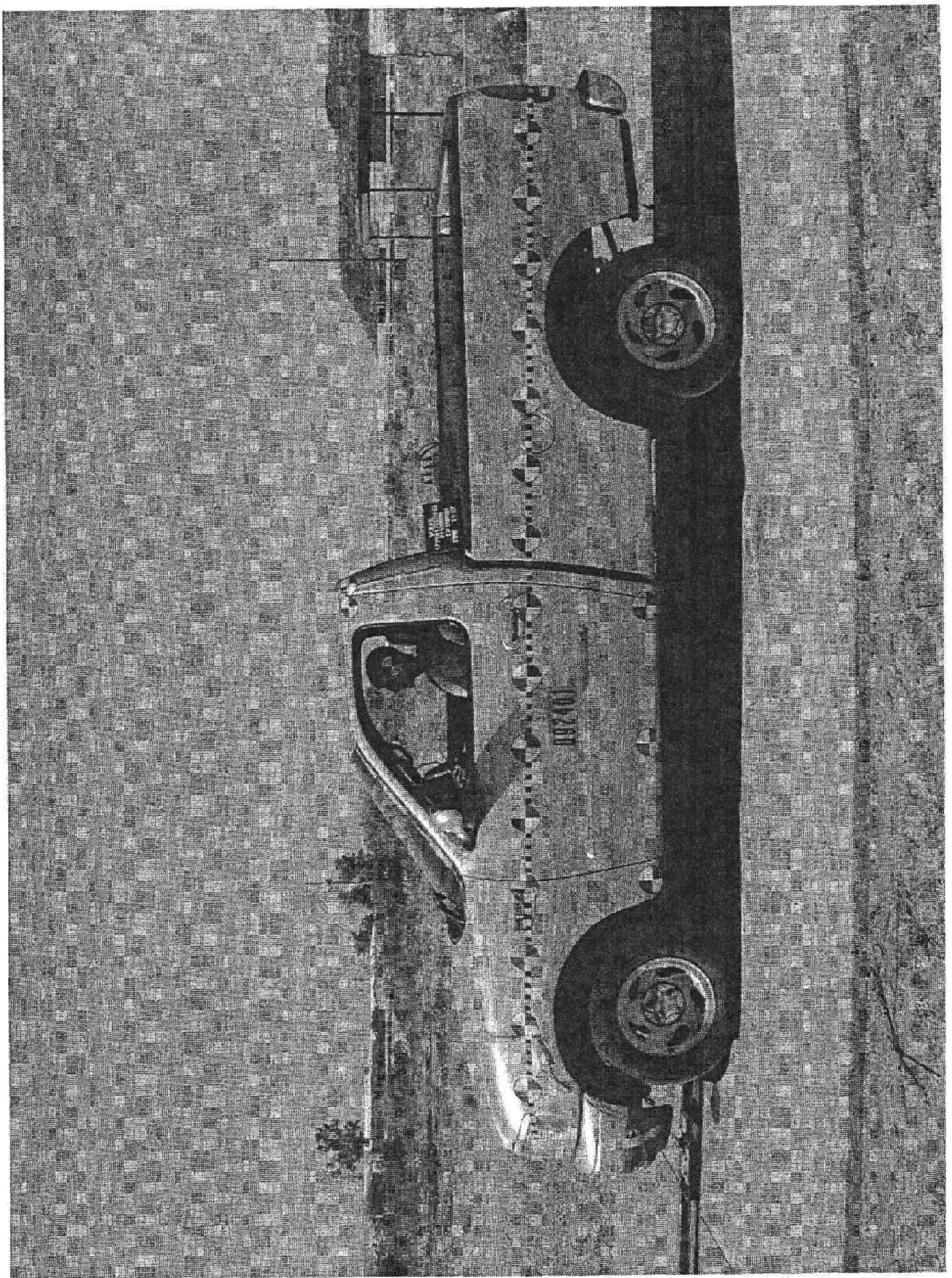


Figure A-32. Pre-Test Left Side View – 2001 Ford F-150

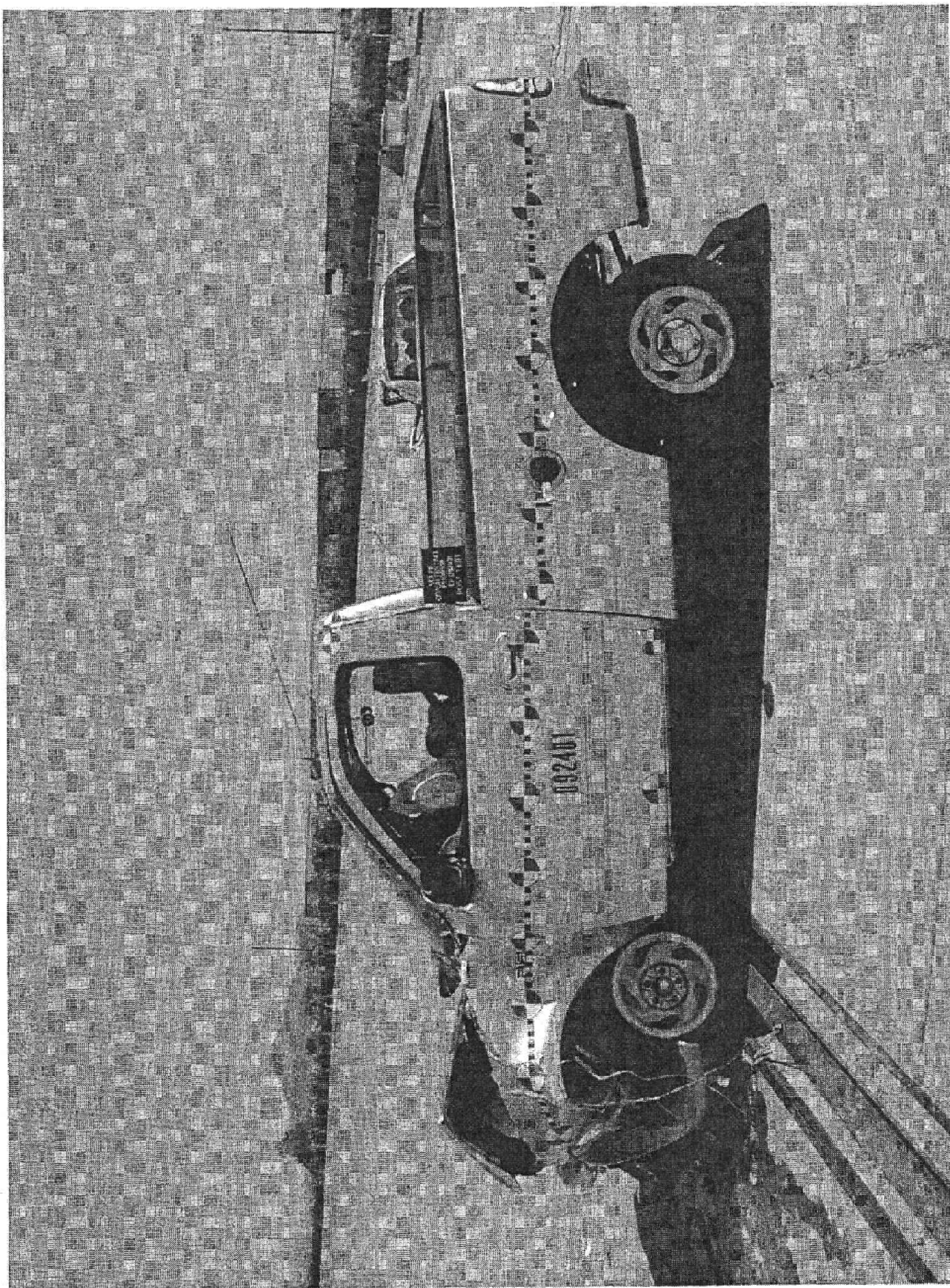


Figure A-33. Post-Test Left Side View – 2001 Ford F-150

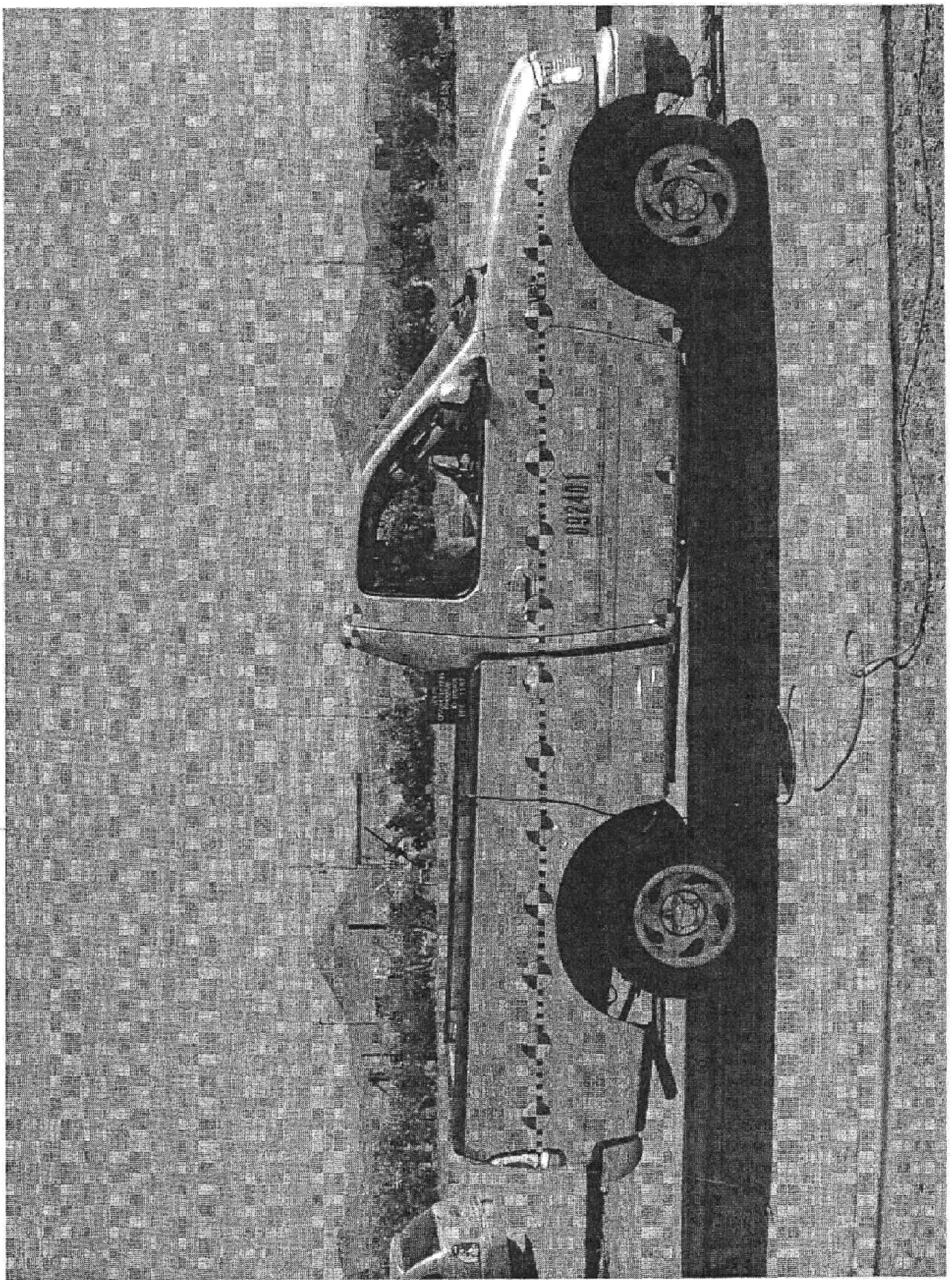


Figure A-34. Pre-Test Right Side View – 2001 Ford F-150

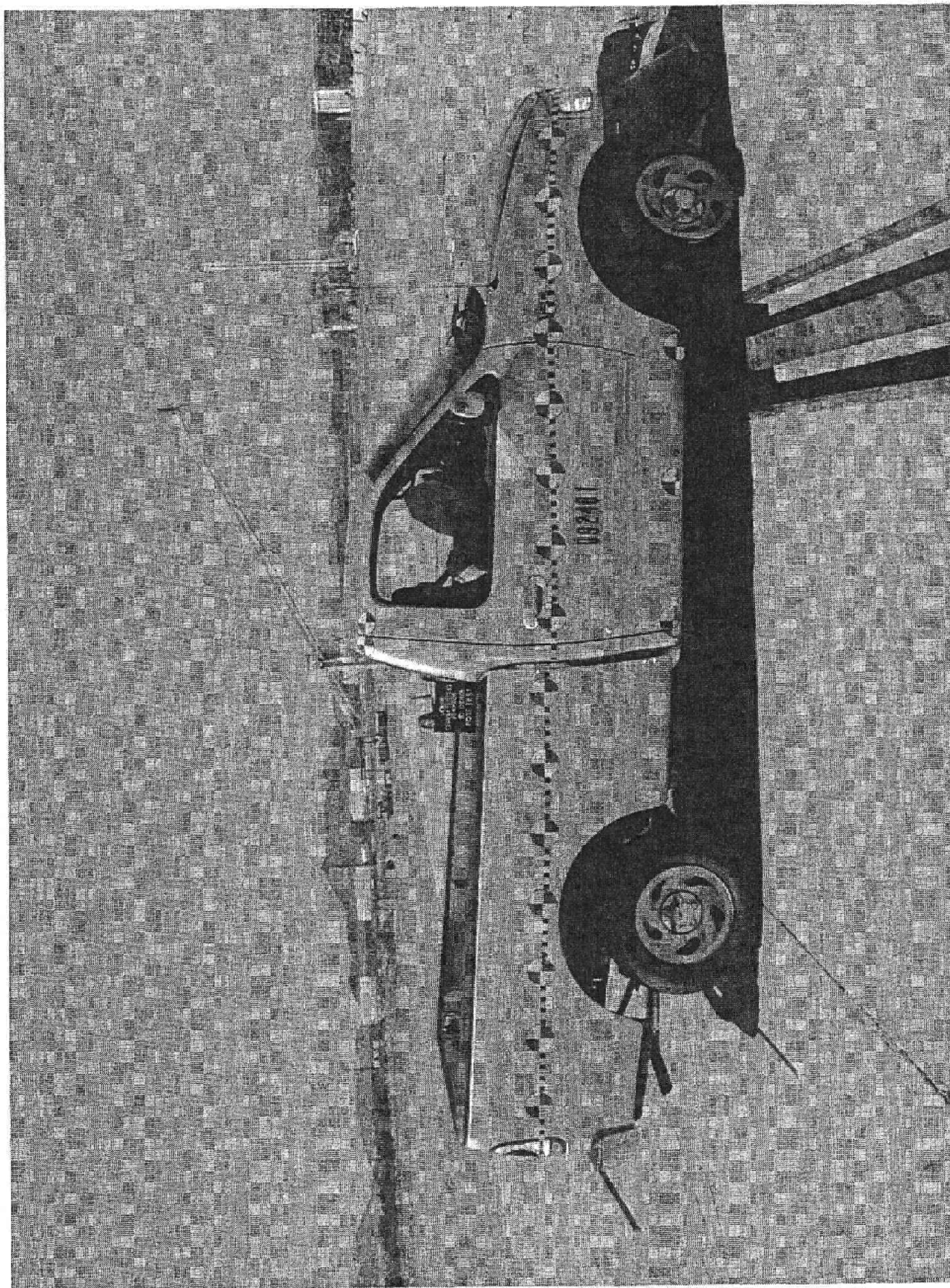


Figure A-35. Post-Test Right Side View – 2001 Ford F-150

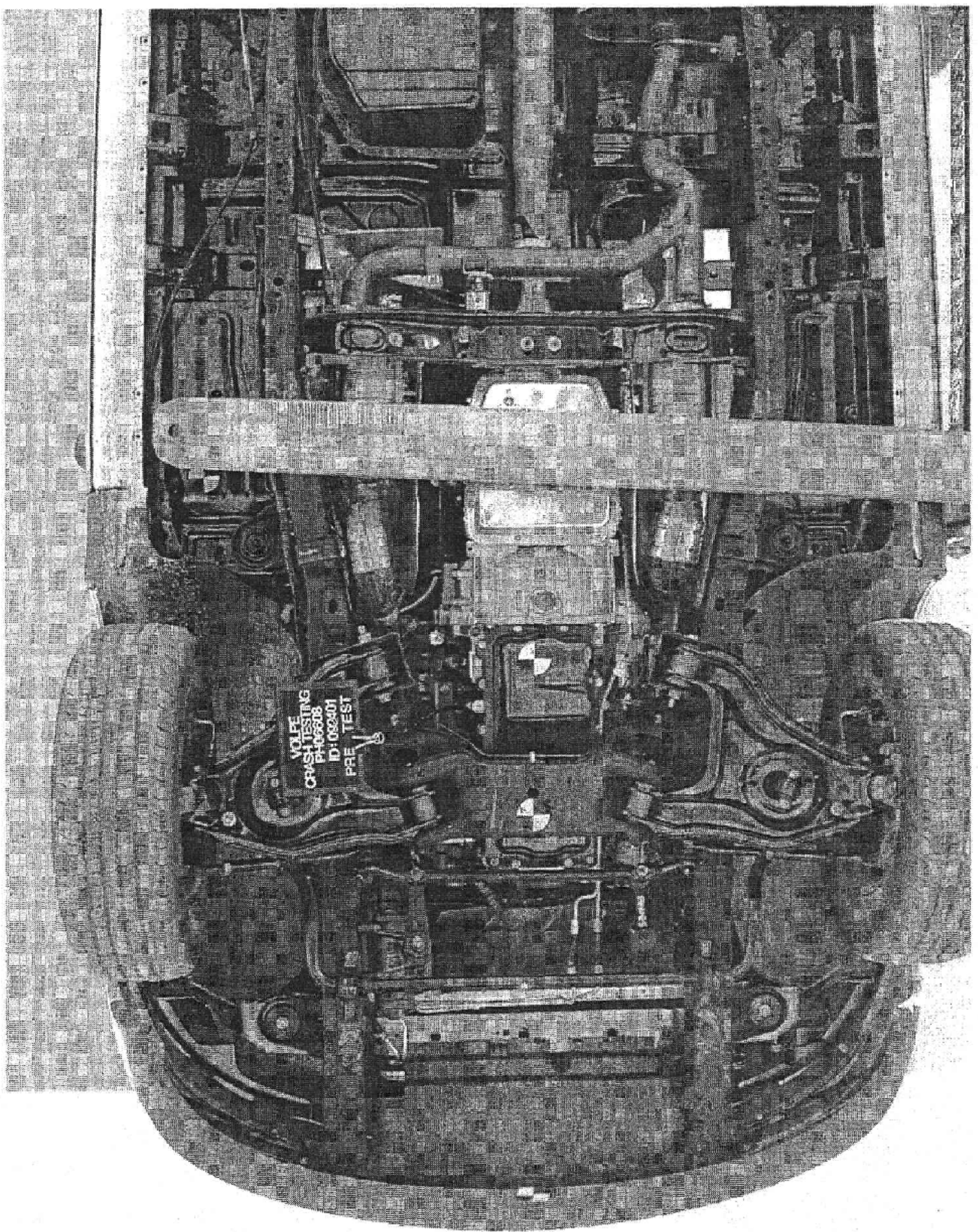


Figure A-36. Pre-Test Underbody View #1 – 2001 Ford F-150

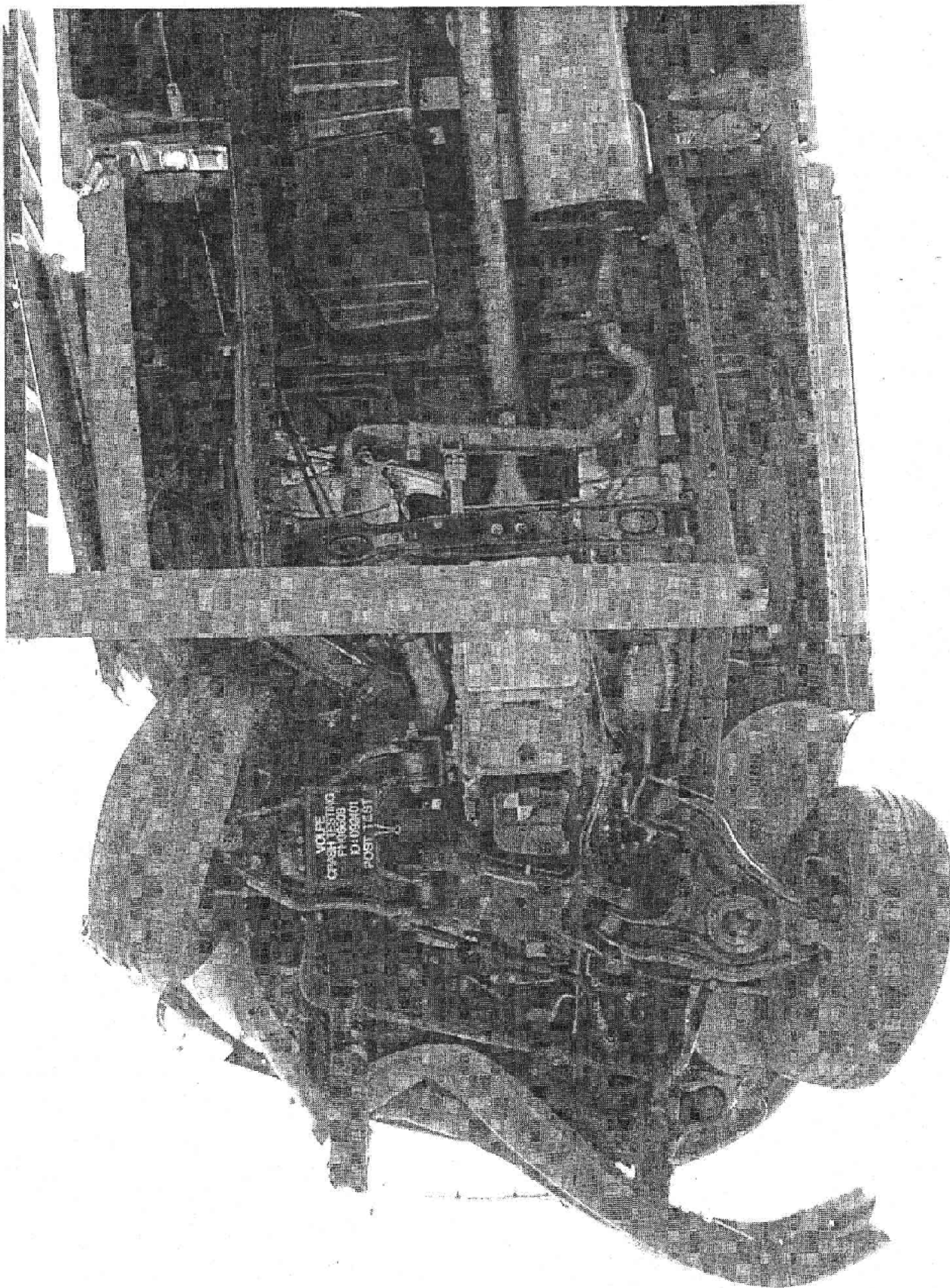


Figure A-37. Post-Test Underbody View #1 – 2001 Ford F-150

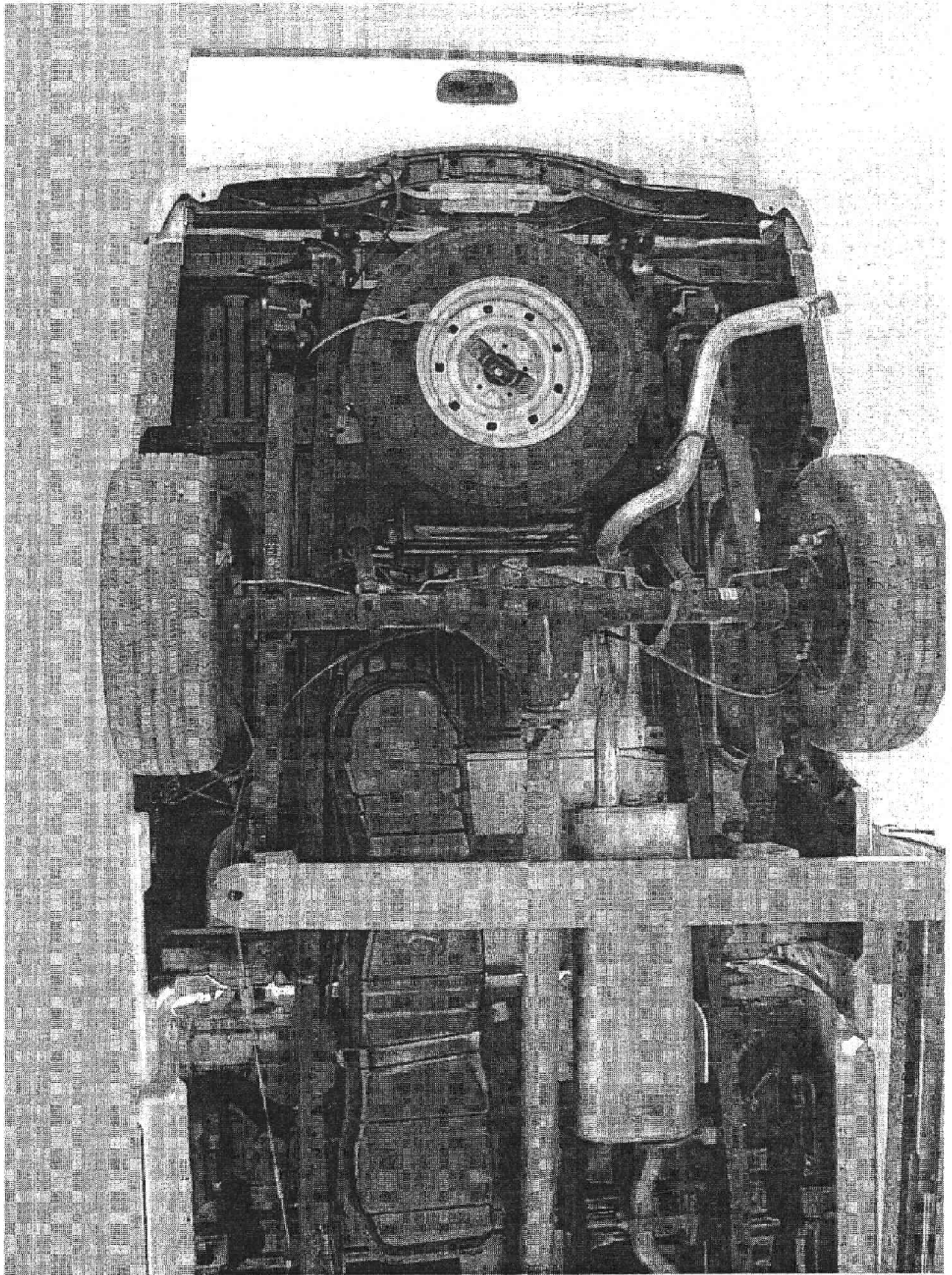


Figure A-38. Pre-Test Underbody View #2 – 2001 Ford F-150

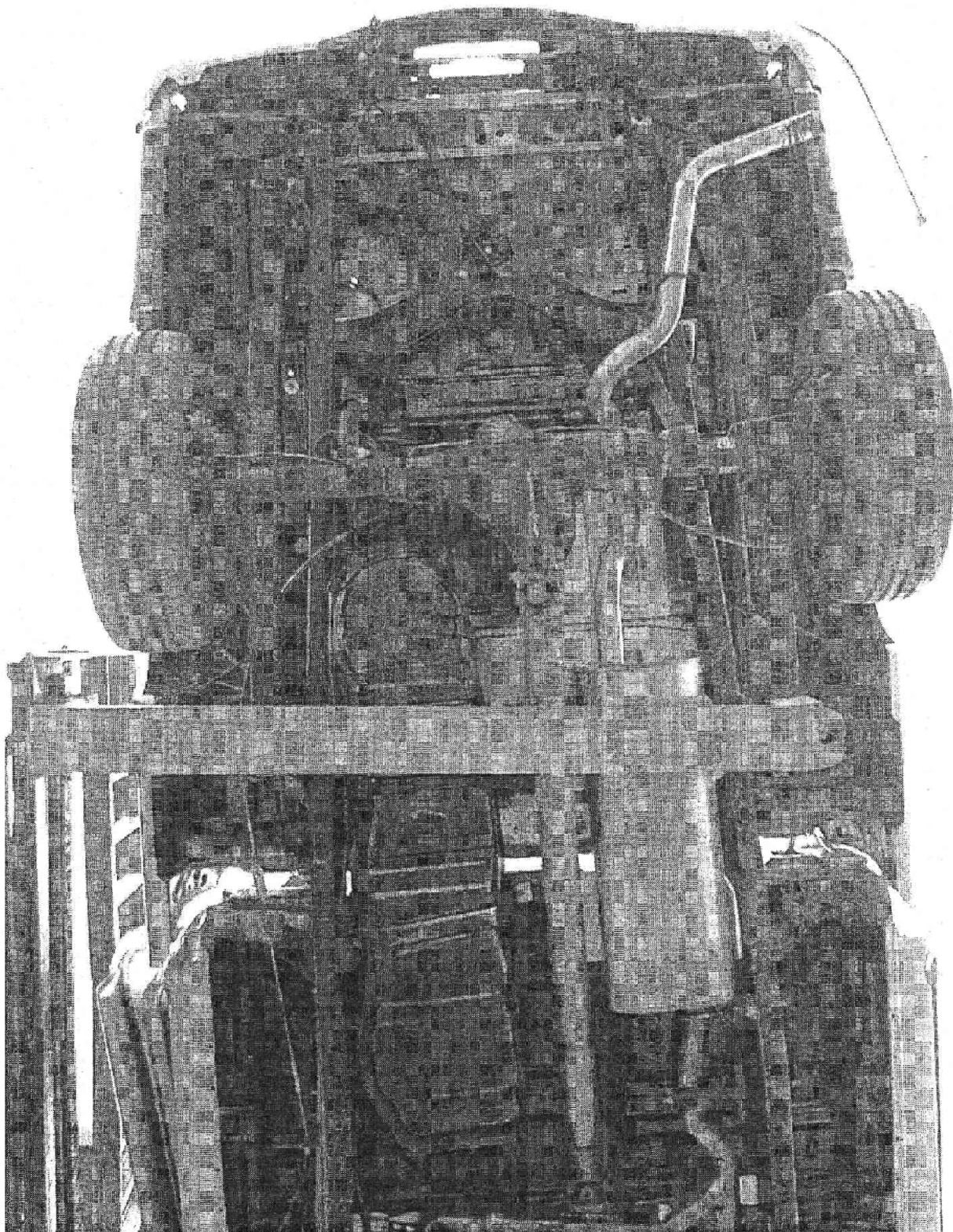


Figure A-39. Post-Test Underbody View #2 – 2001 Ford F-150

Appendix B

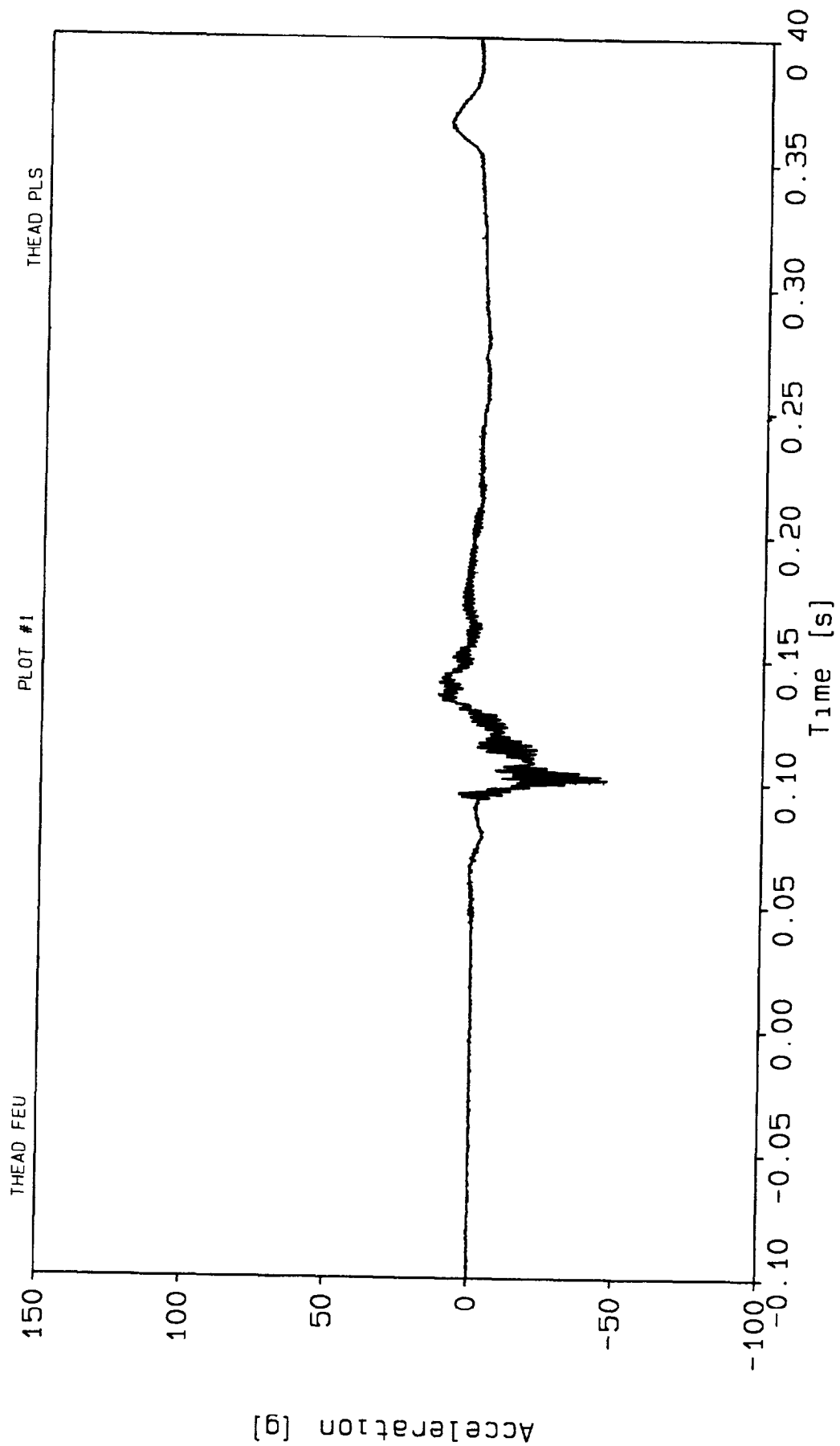
Data Plots

Head Vertex Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Voipe Crash Testing
PH06608

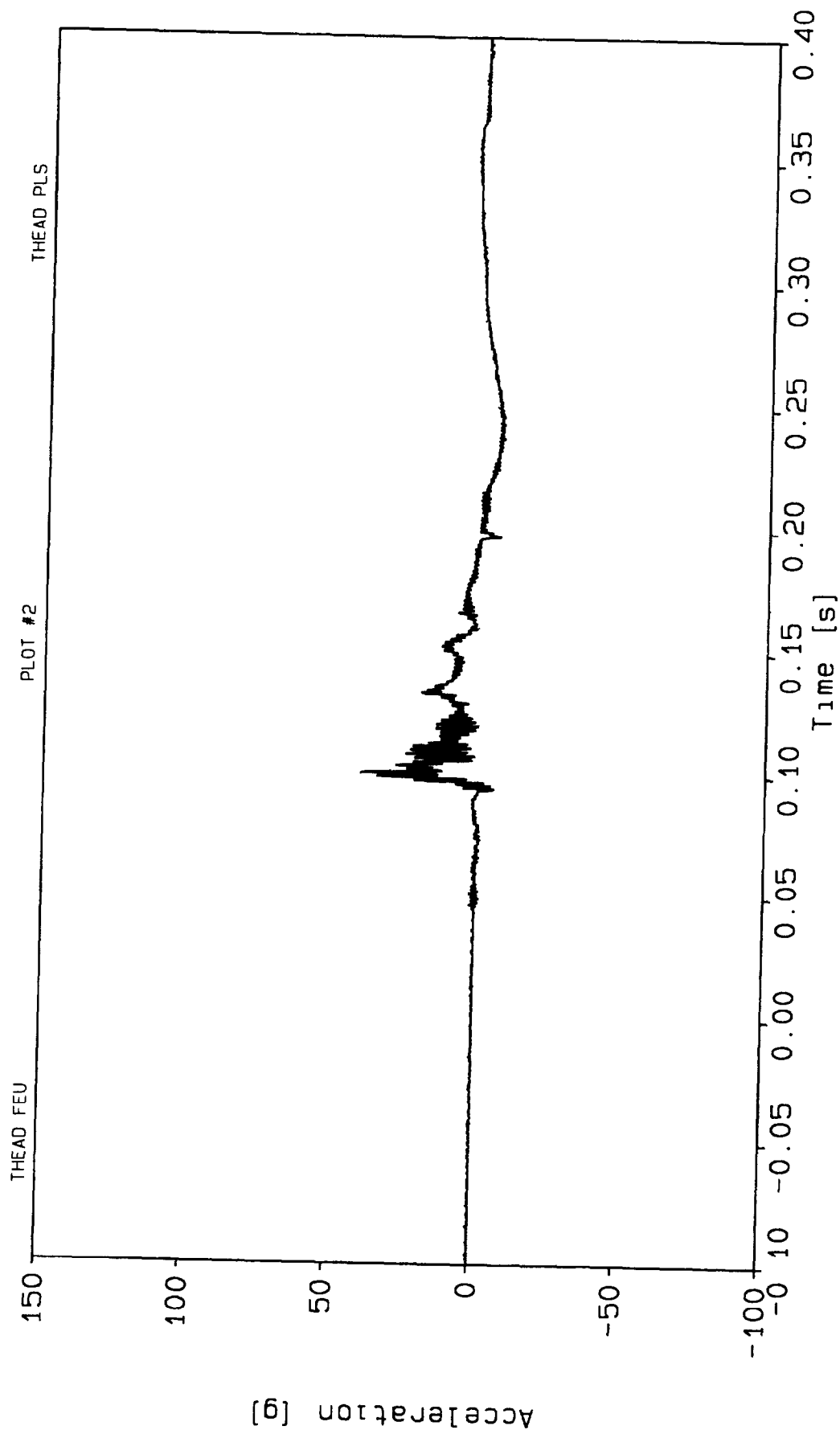
Exponent
Failure
Analysis
Associates

Head Vertex Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
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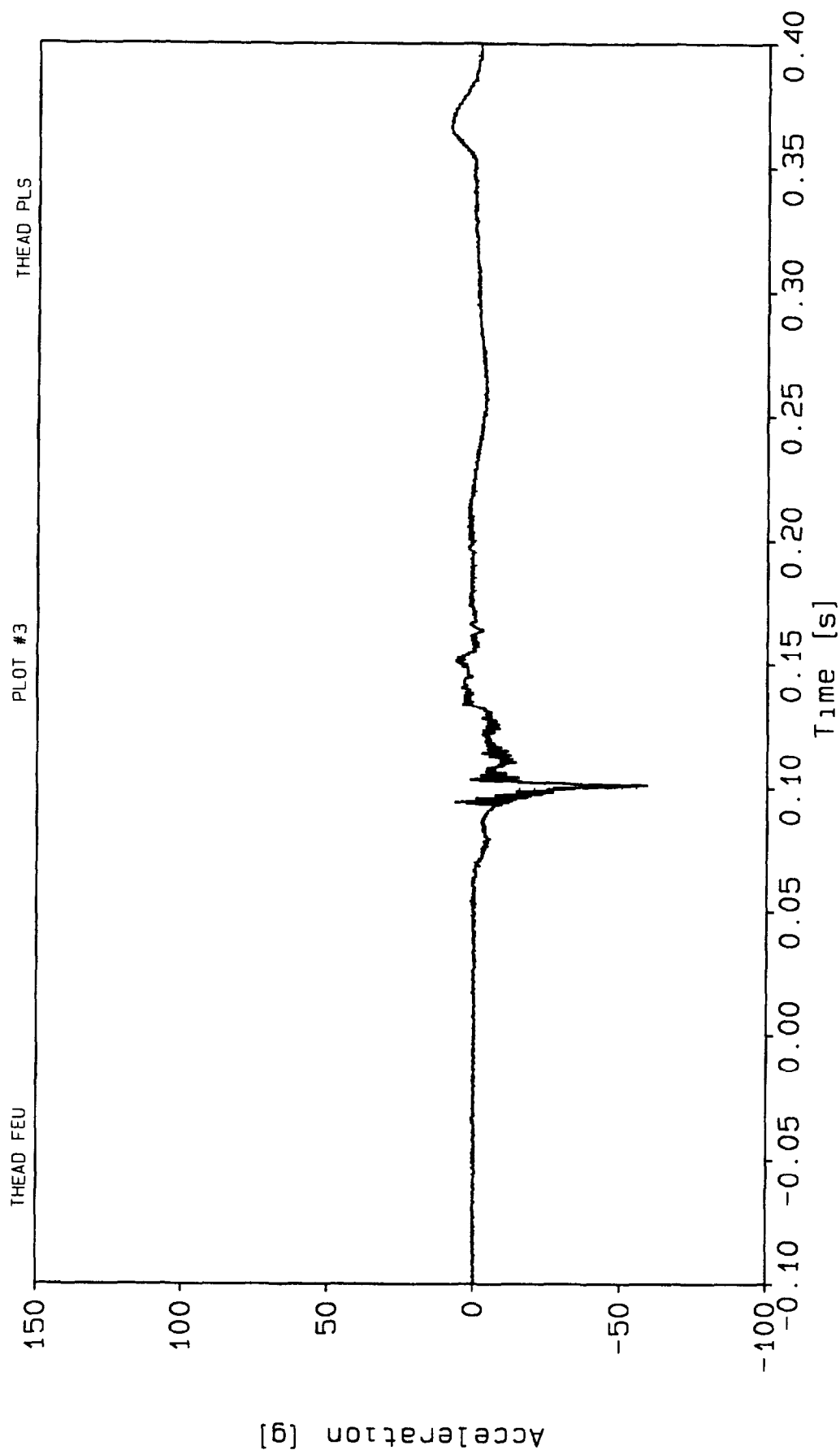
Exponent
Failure
Analysis
Associates

Head Temporal Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

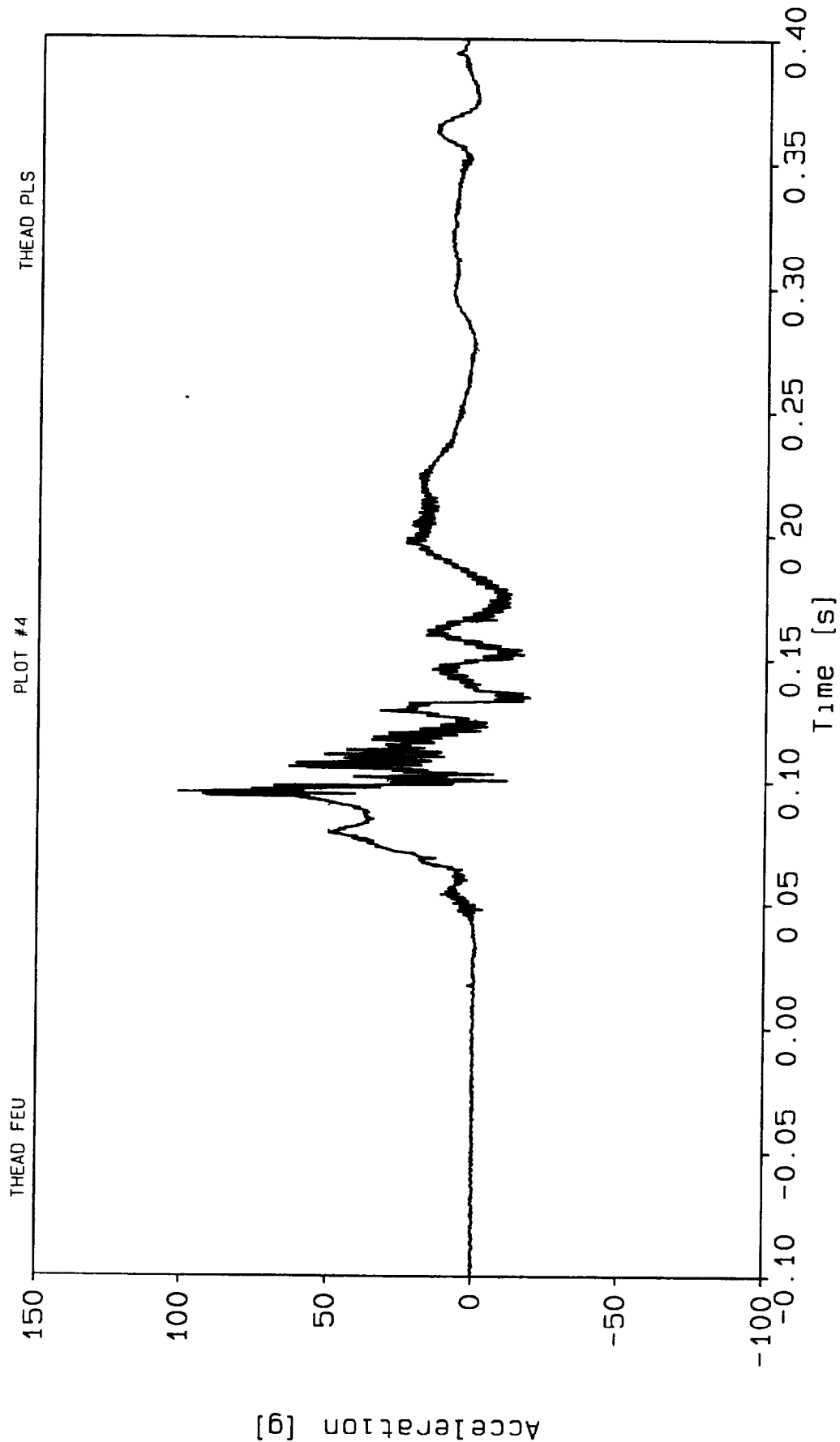
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Volpe Crash Testing
PH06608

Head Temporal Acceleration (Az) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

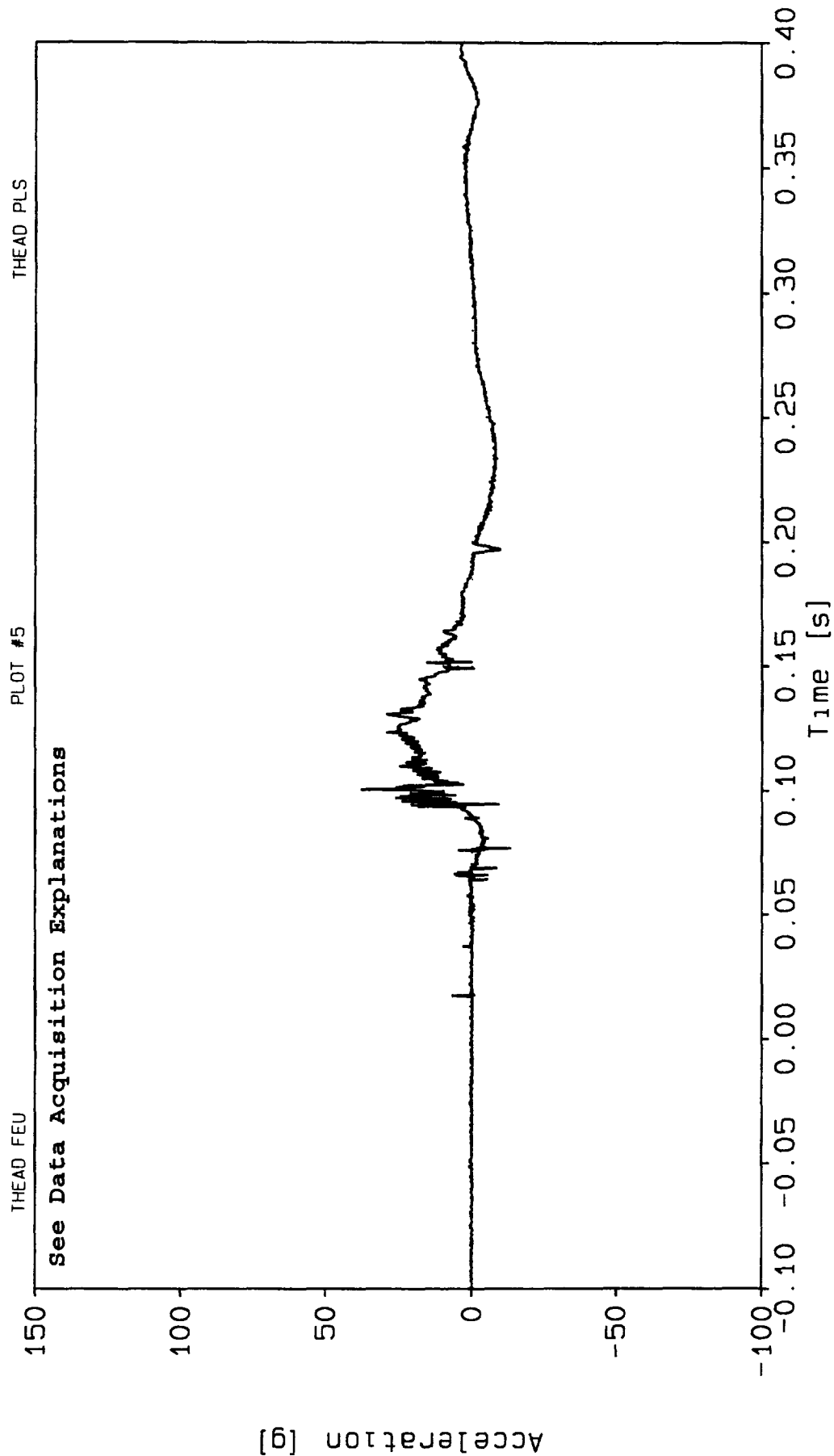
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Head Occipital Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



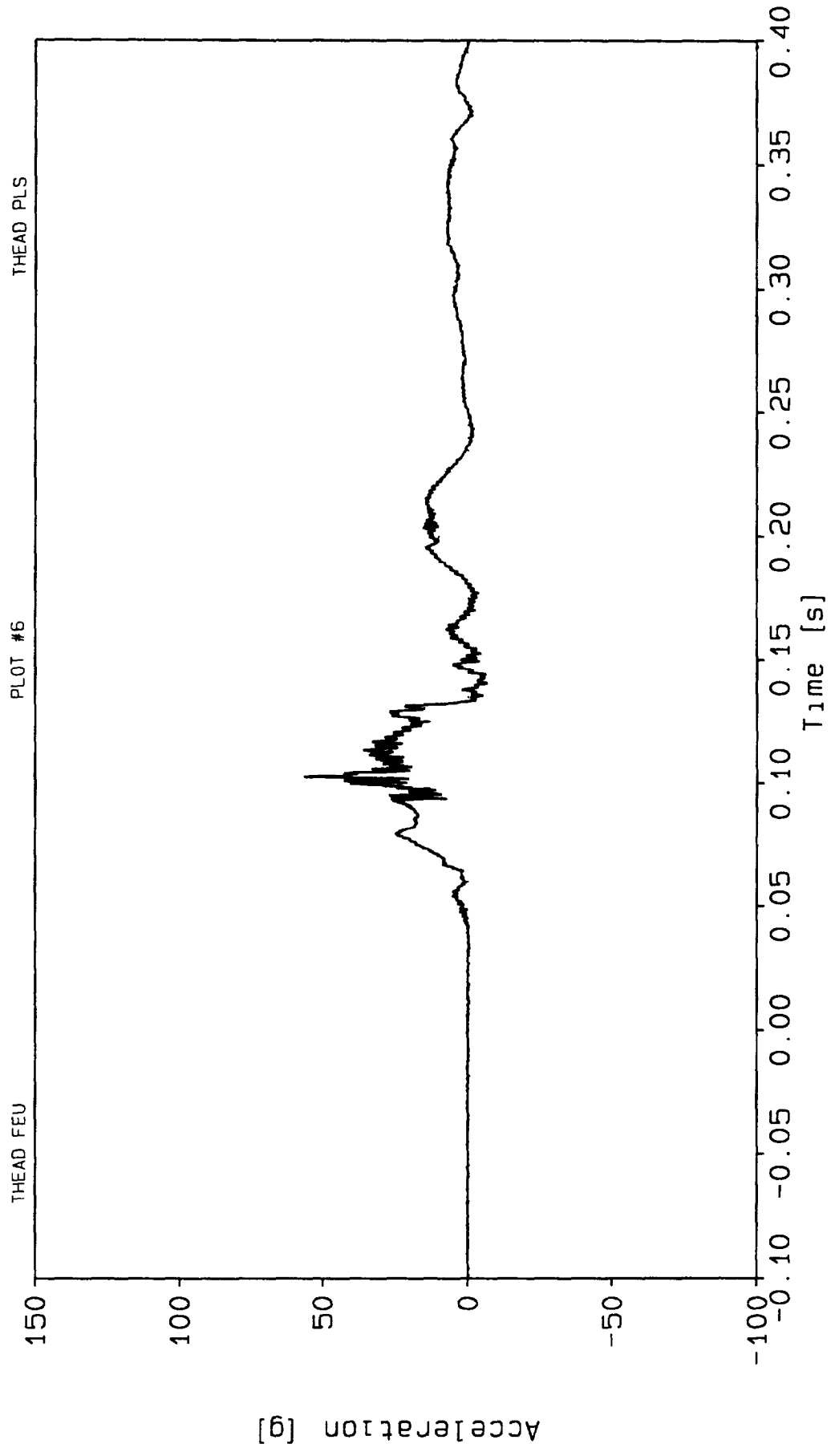
Exponent
Failure
Analysis
Associates

Filter Class 1000
Volpe Crash Testing
PH06608

Head Occipital Acceleration (Az) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH05608

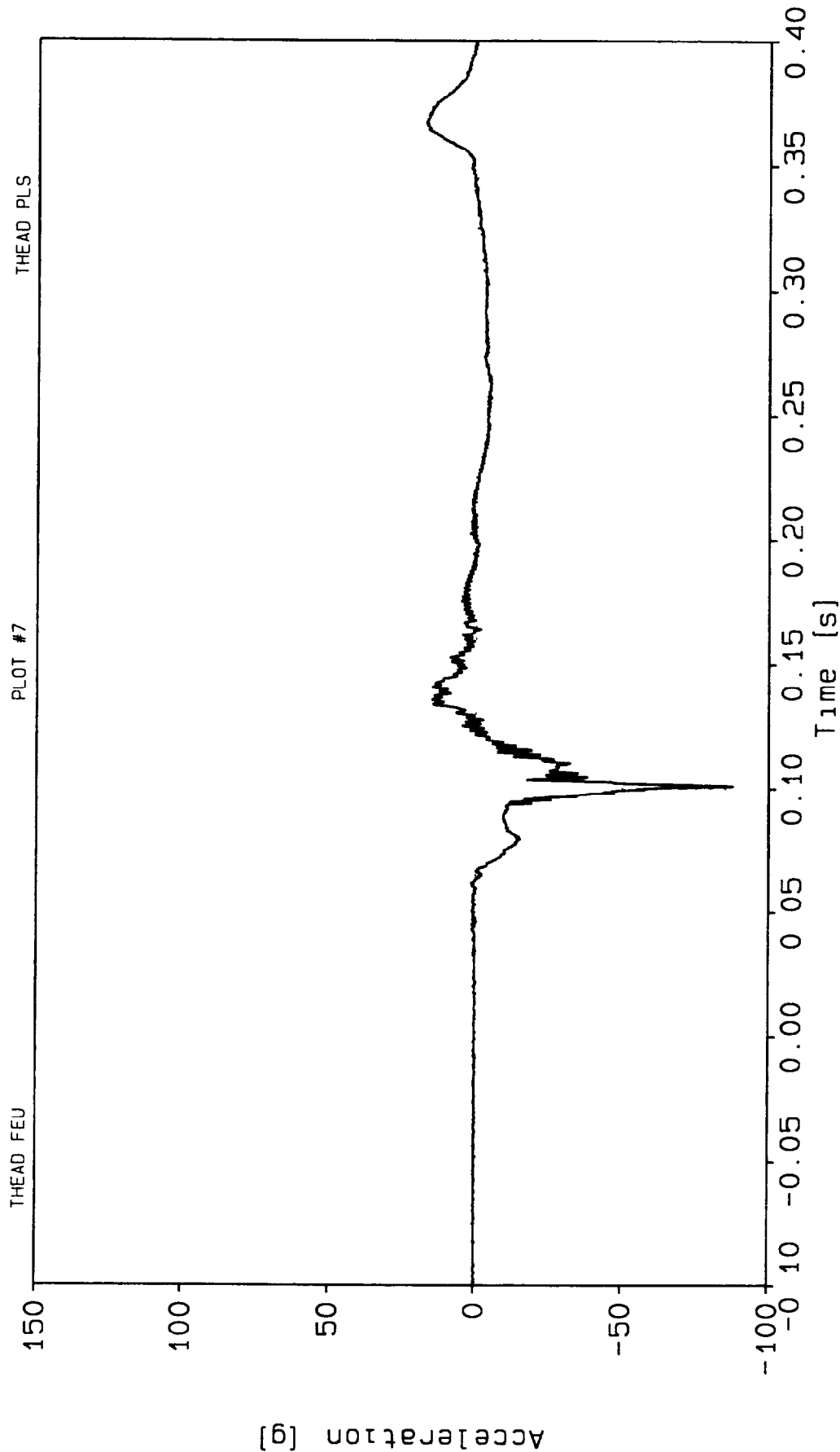
Exponent
Failure
Analysis
Associates

Head C.G. Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

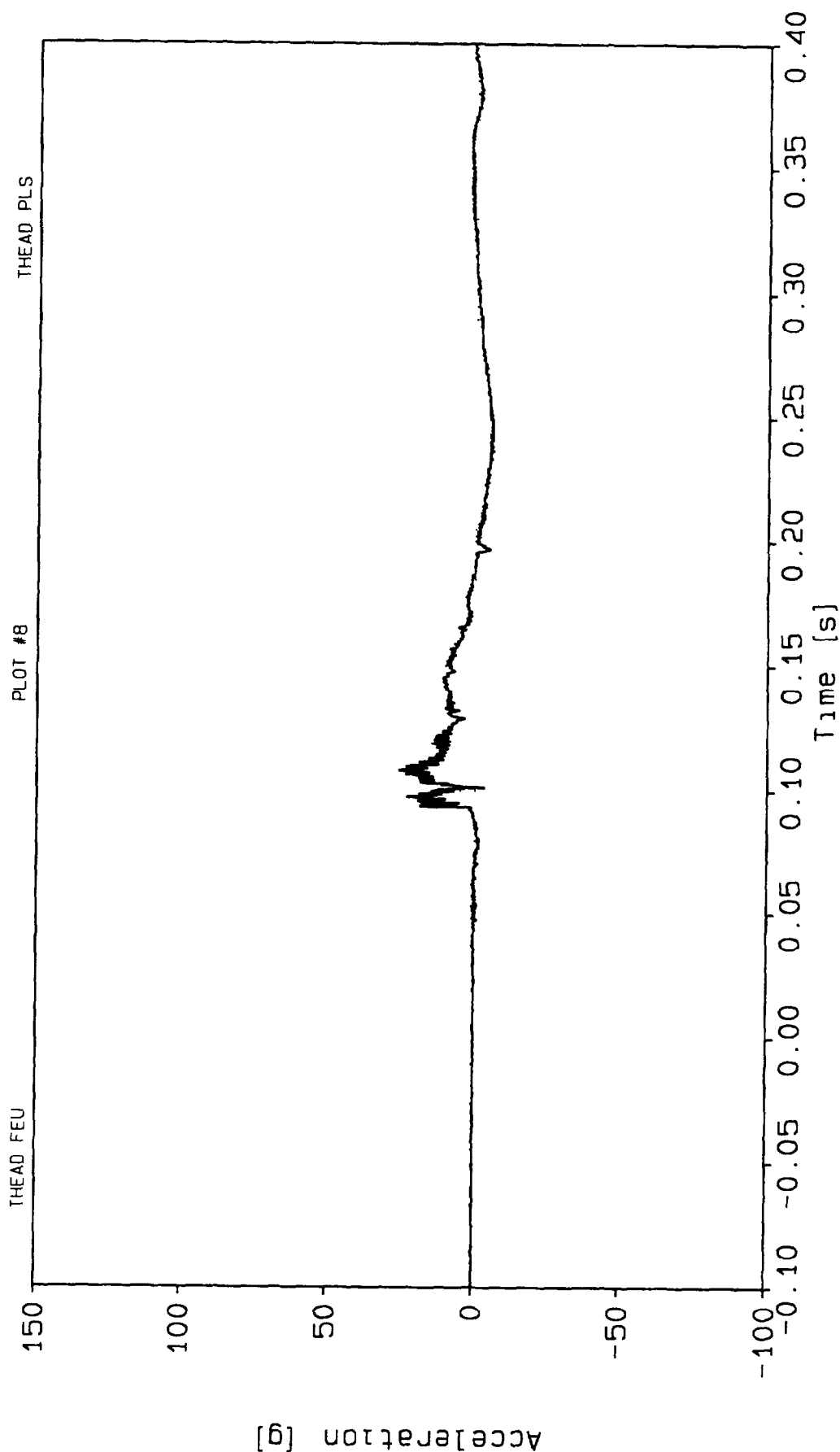
Exponent
Failure
Analysis
Associates

Head C.G. Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

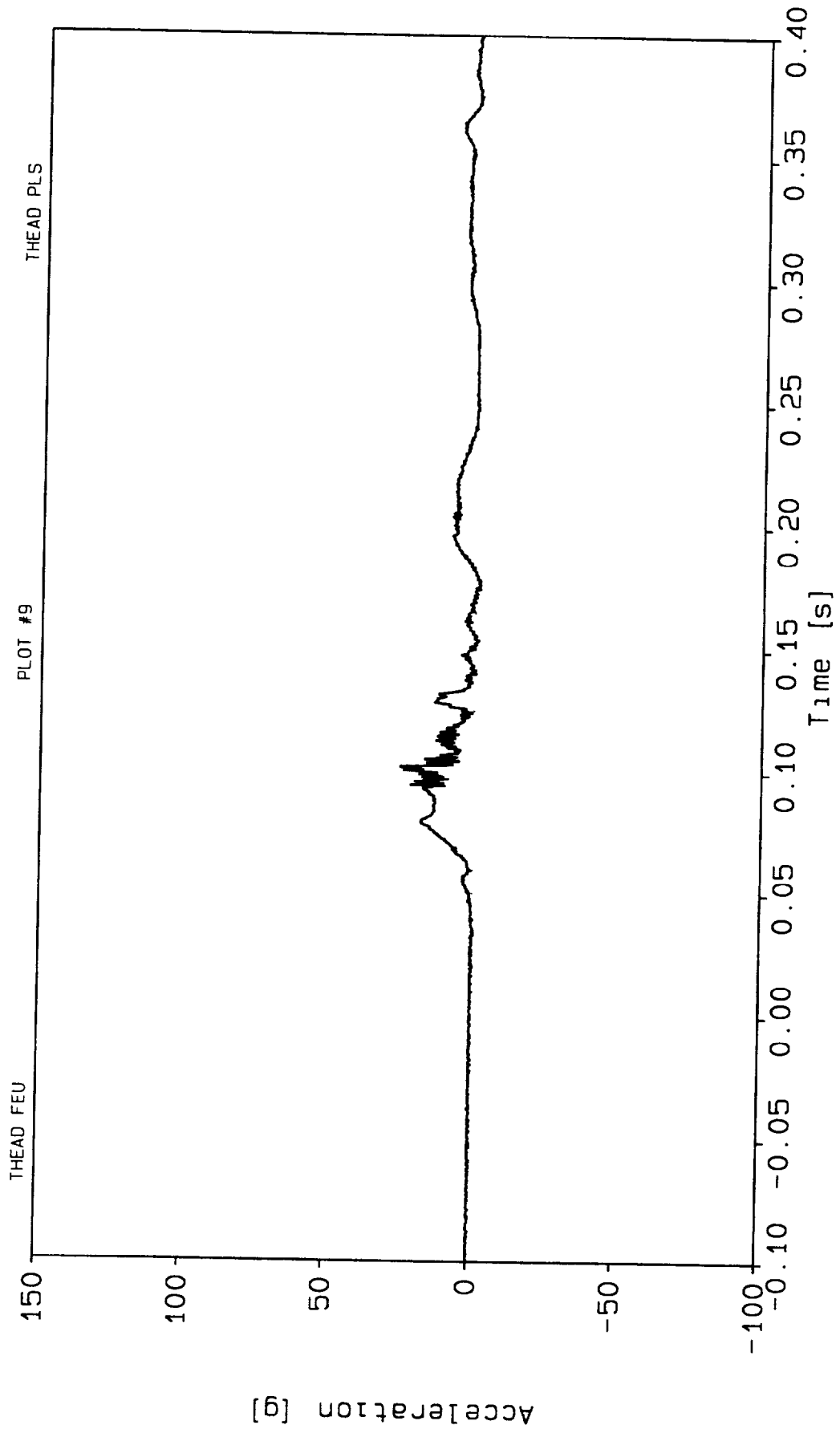
Filter Class 1000
Volpe Crash Testing
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Head C.G. Acceleration (Az) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

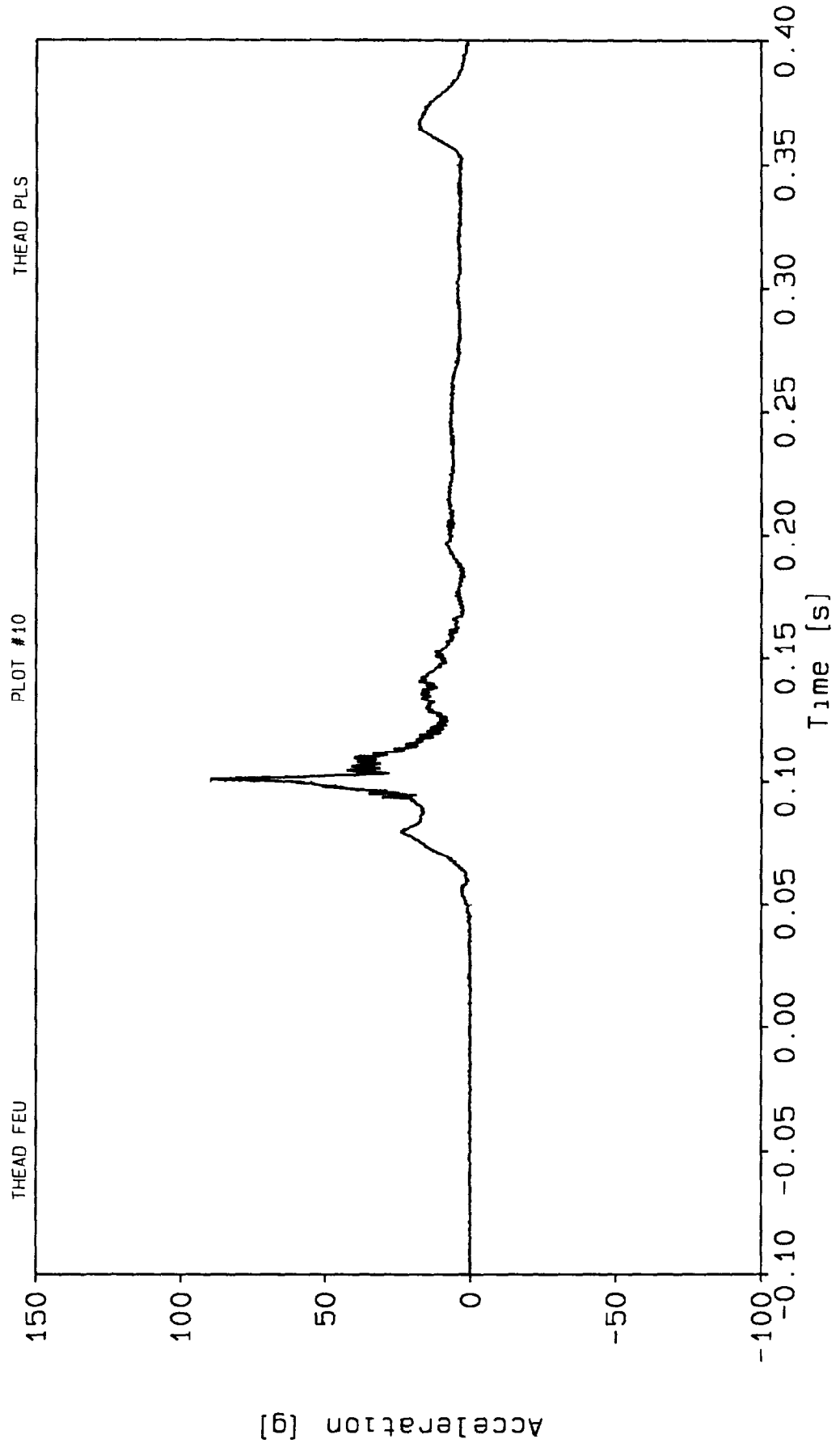


Filter Class 1000
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Head C.G. Resultant Acceleration (Ar) v Time

Driver Dummy - THOR
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



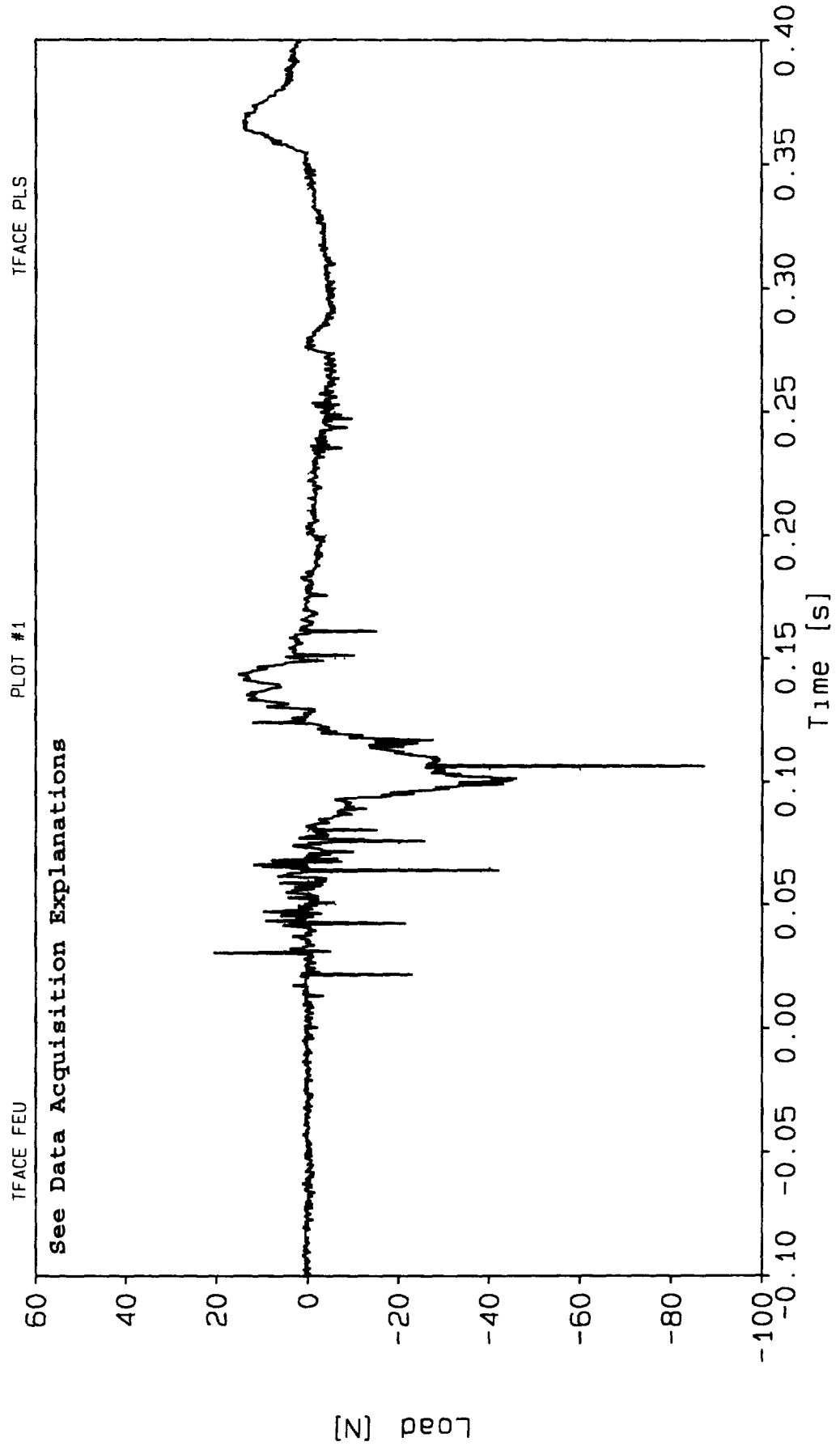
Exponent
Failure
Analysis
Associates

Filter Class 1000
Volpe Crash Testing
PH06608

Right Eye Uniax Compression Load v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



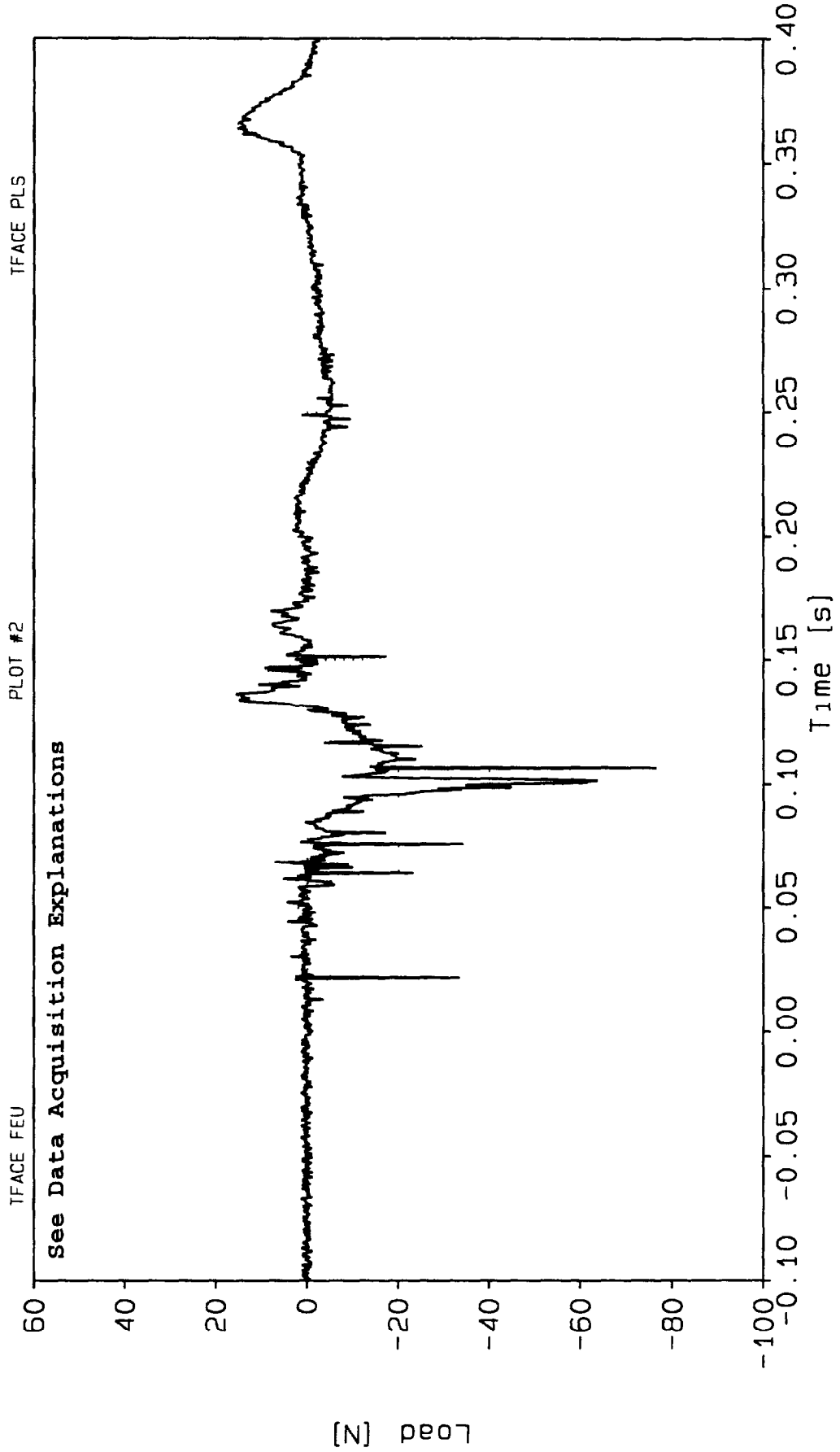
Filter Class 600
Volpe Crash Testing
PH05608

Exponent
Failure
Analysis
Associates

Left Eye Uniax Compression Load v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

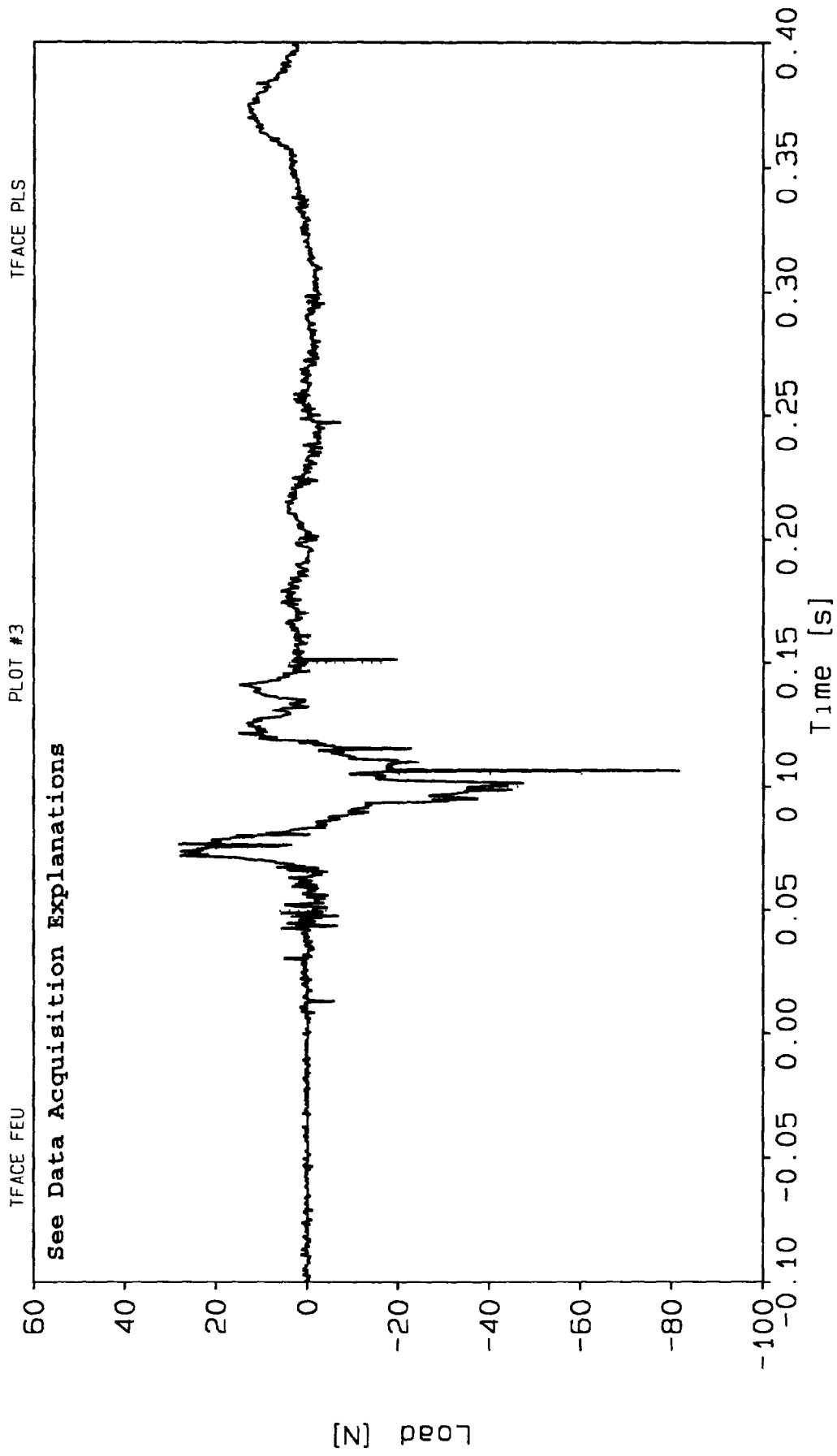


Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Right Cheek Uniax Compression Load v Time

Driver Dummy - THOR
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

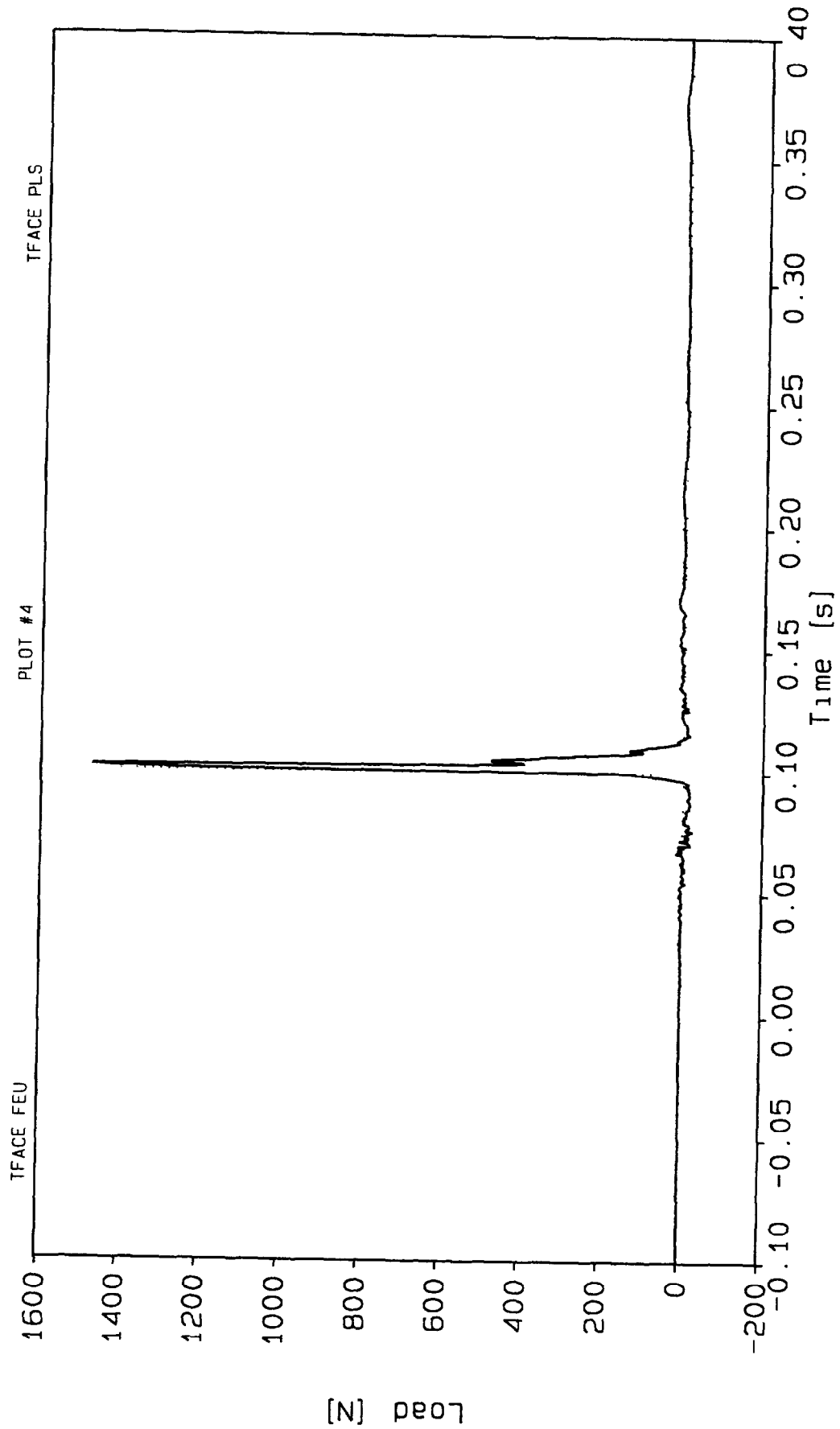
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Volpe Crash Testing
PH06508

Left Cheek Uniax Compression Load v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

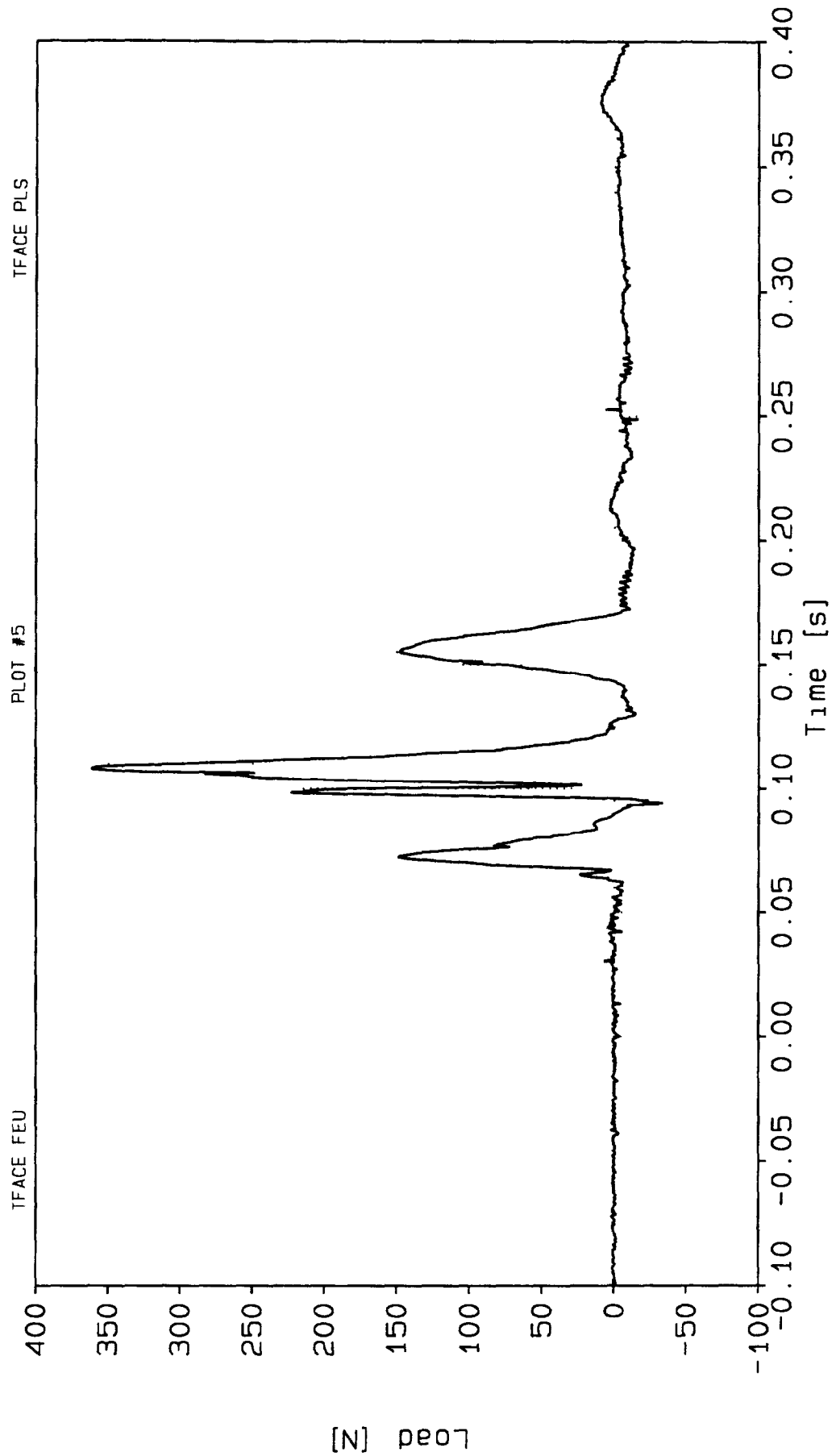
Exponent
Failure
Analysis
Associates

Chin Uniax Compression Load v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

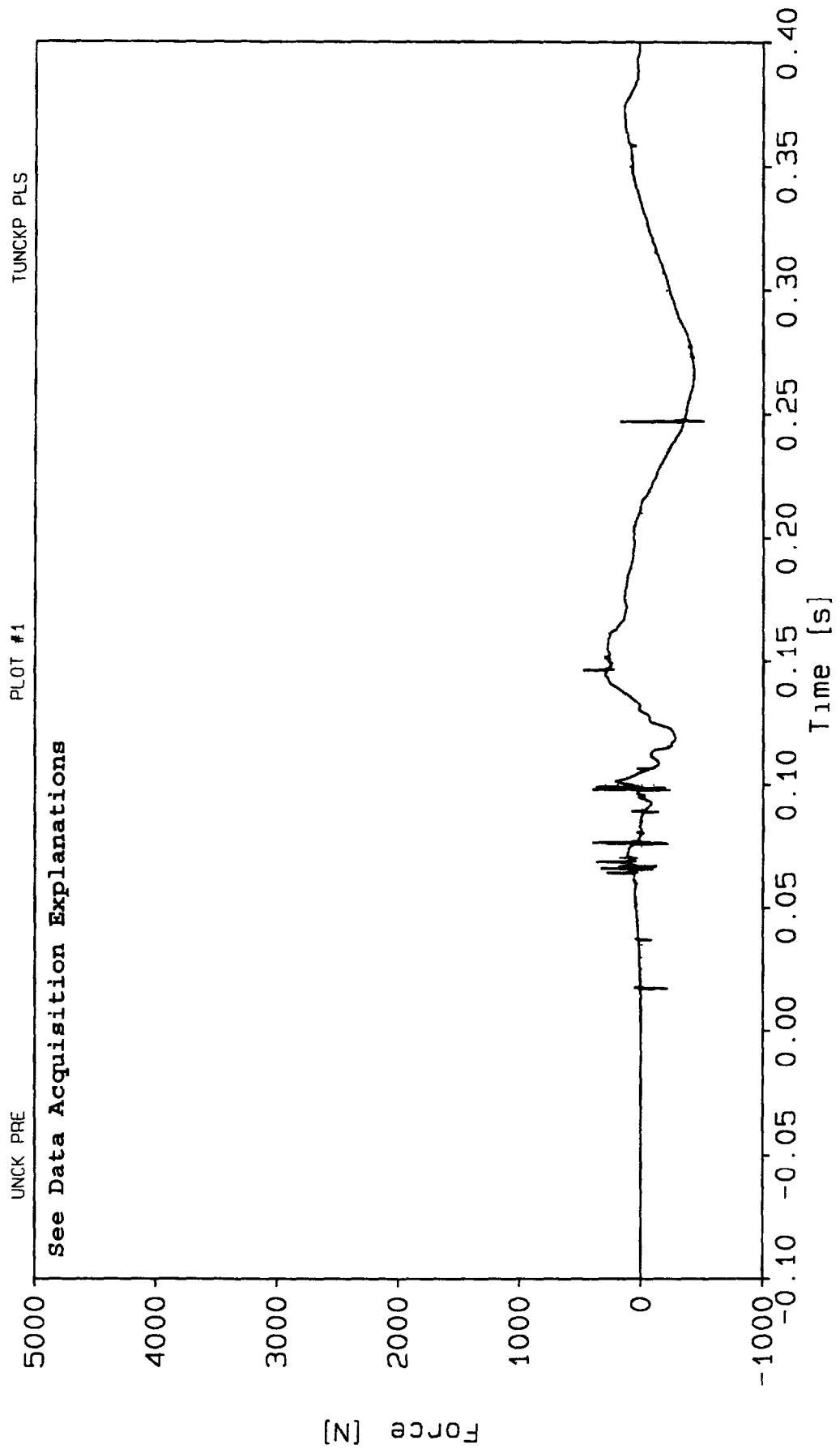
Exponent
Failure
Analysis
Associates

Upper Neck Force (Fx) v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

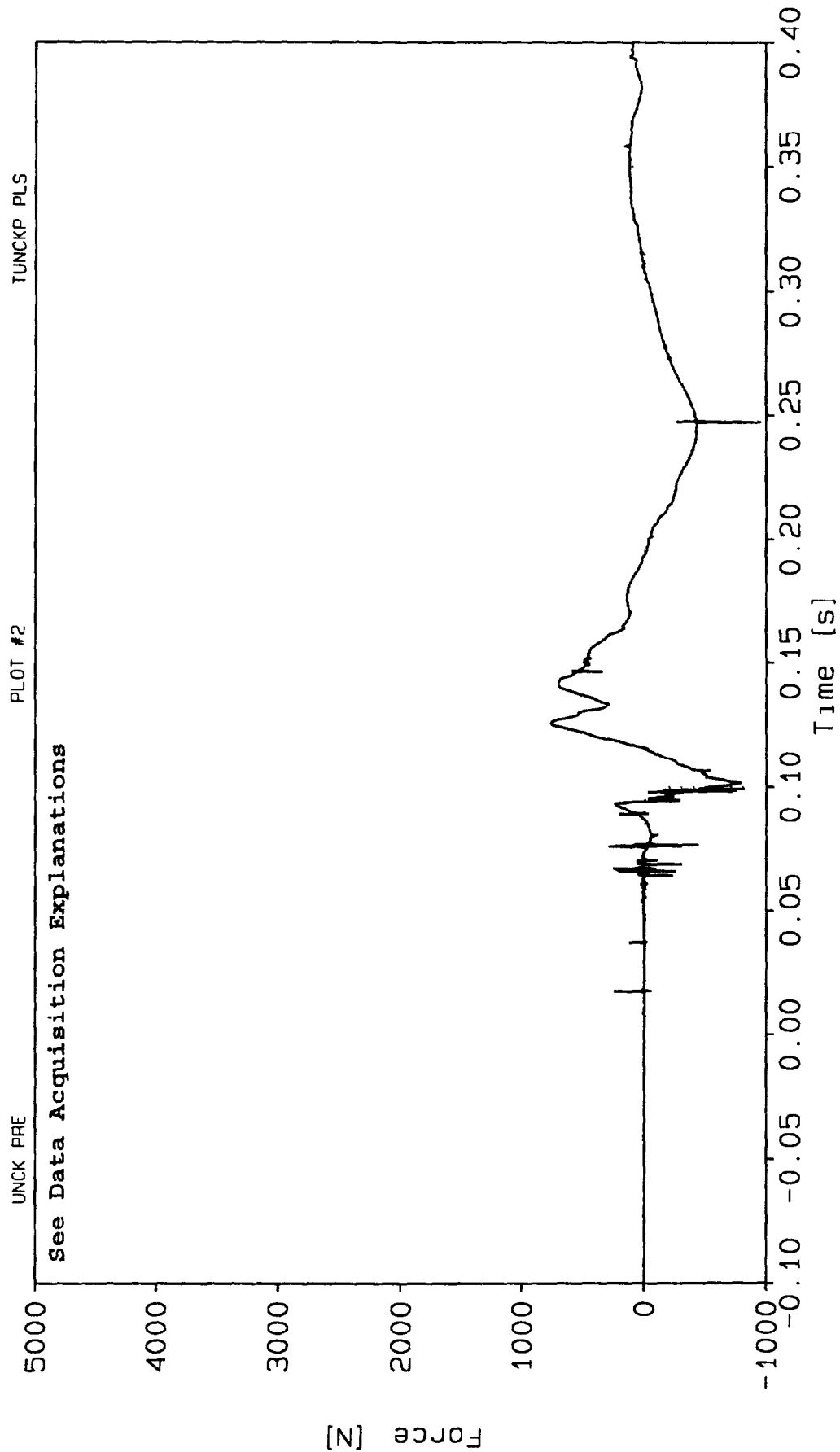
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Unfiltered
Volpe Crash Testing
PH06608

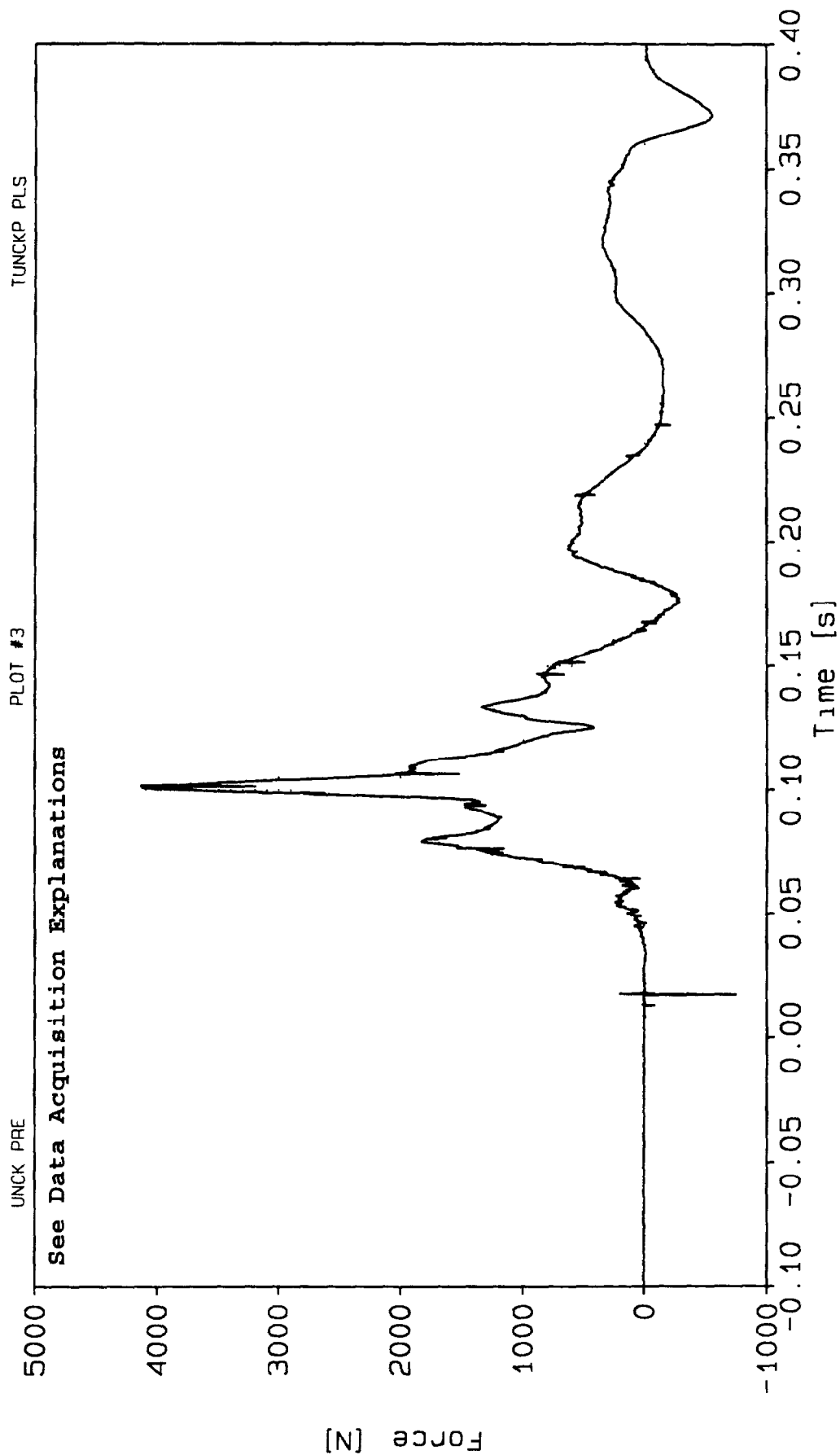
Upper Neck Force (Fy) v Time
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Unfiltered
Volpe Crash Testing
PH06608

Upper Neck Force (Fz) v Time
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

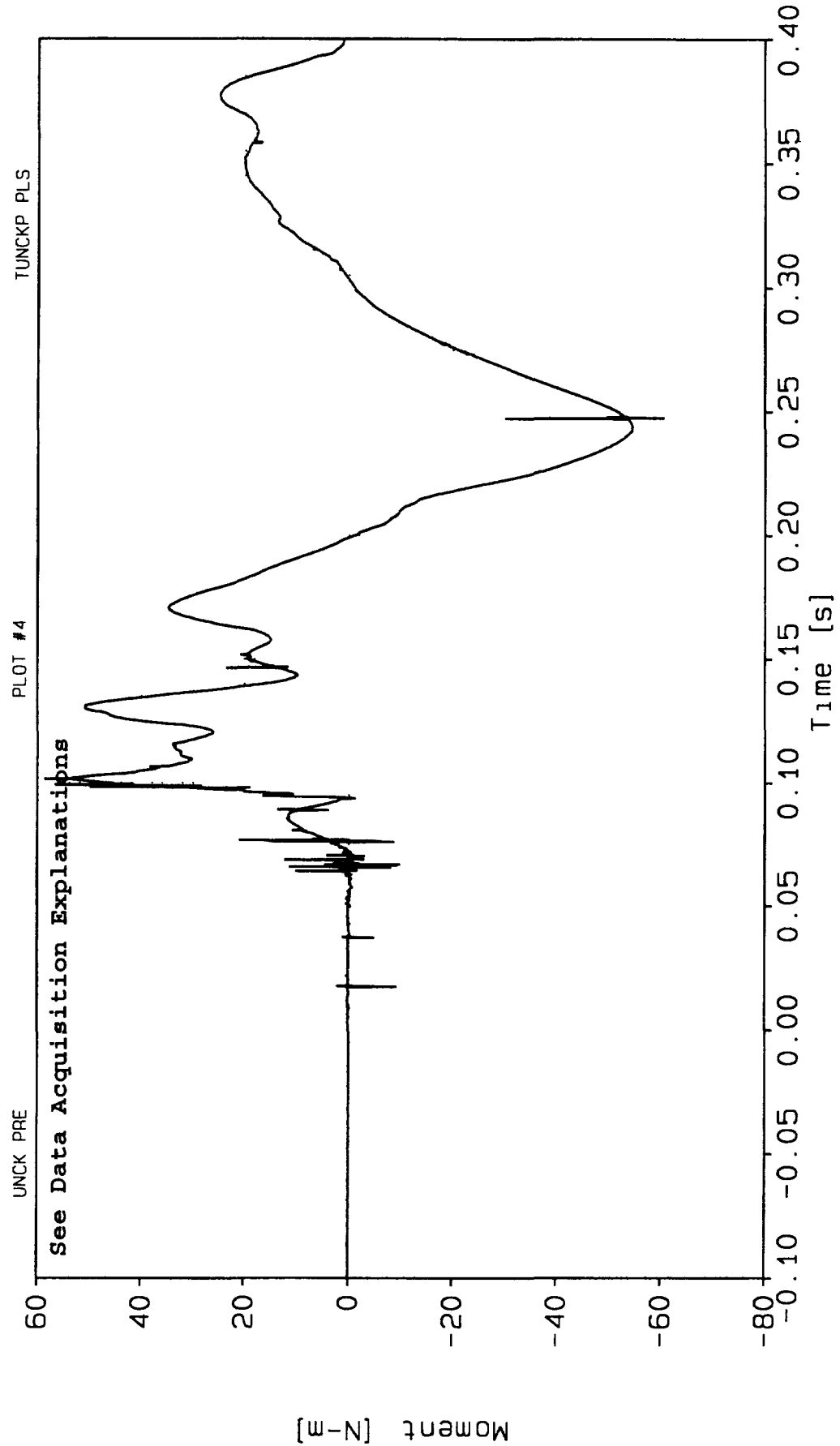
Unfiltered
Volpe Crash Testing
PH06608

Upper Neck Moment (Mx) v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

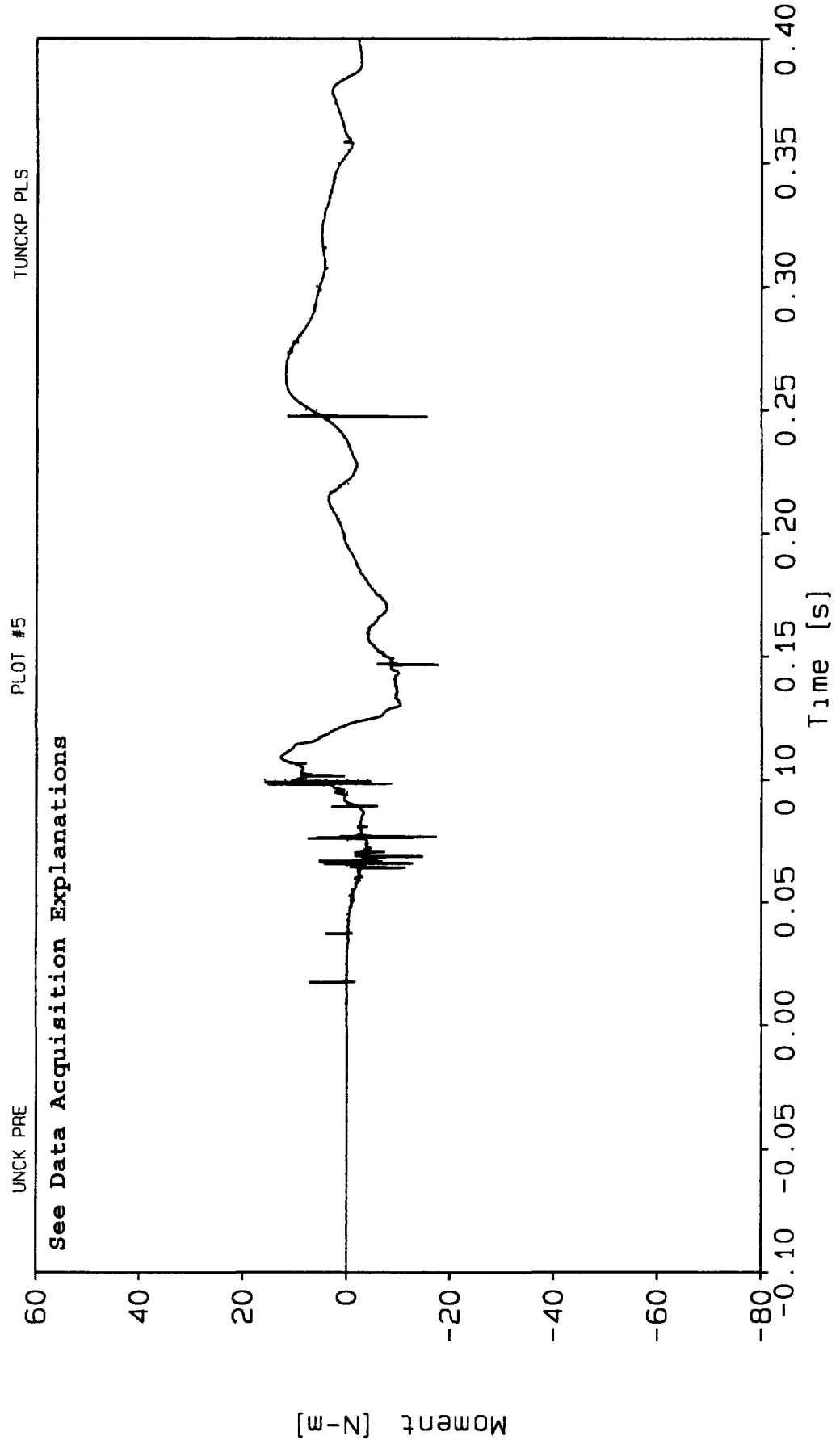
Unfiltered
Volpe Crash Testing
PH05508

Upper Neck Moment (My) v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

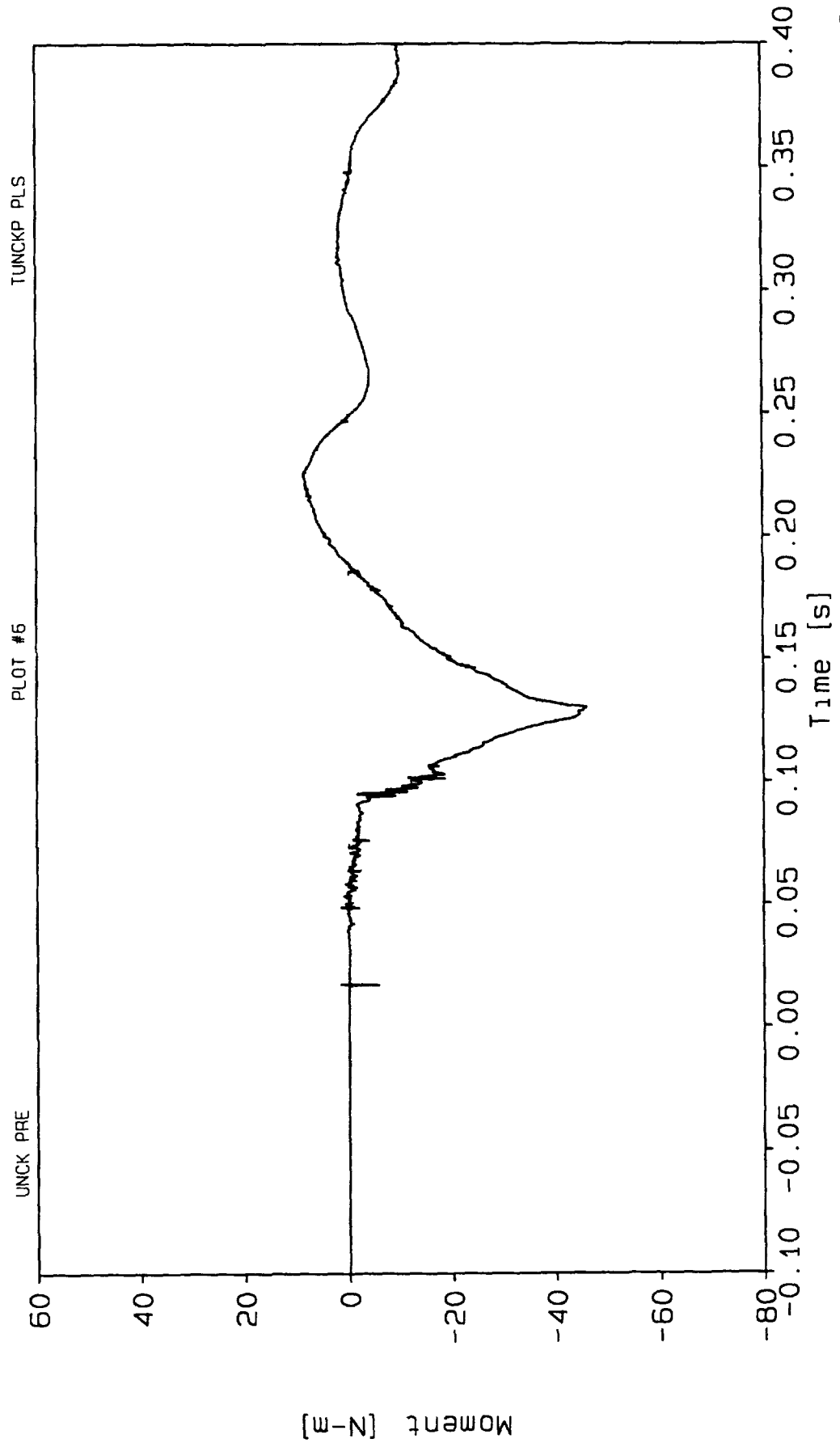
Unfiltered
Volpe Crash Testing
PH06608

Upper Neck Moment (Mz) v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

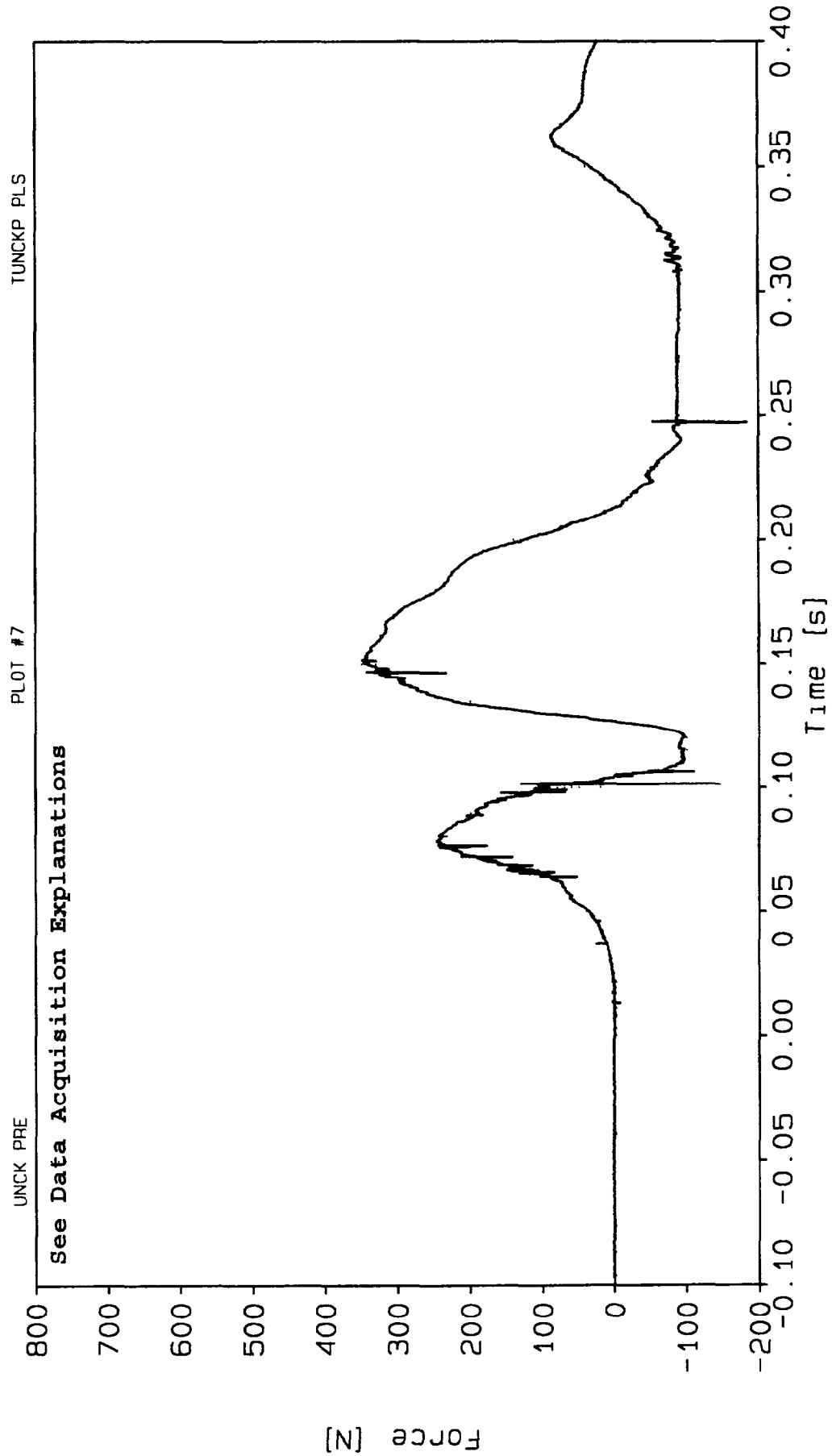
Unfiltered
Volpe Crash Testing
PH06608

Neck Front Spring Compression v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

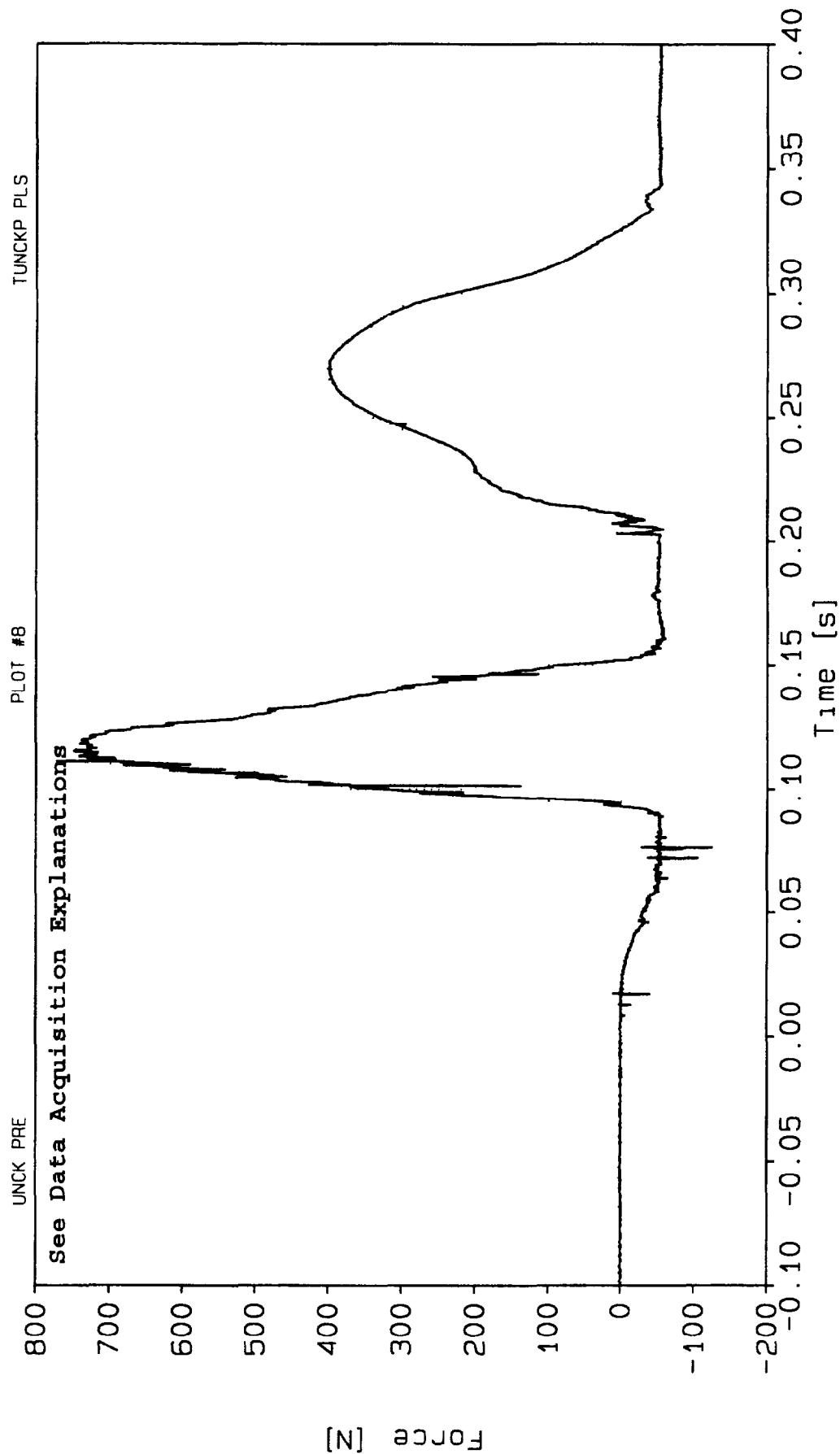
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Unfiltered
Volpe Crash Testing
PH06608

Neck Rear Spring Compression v Time
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

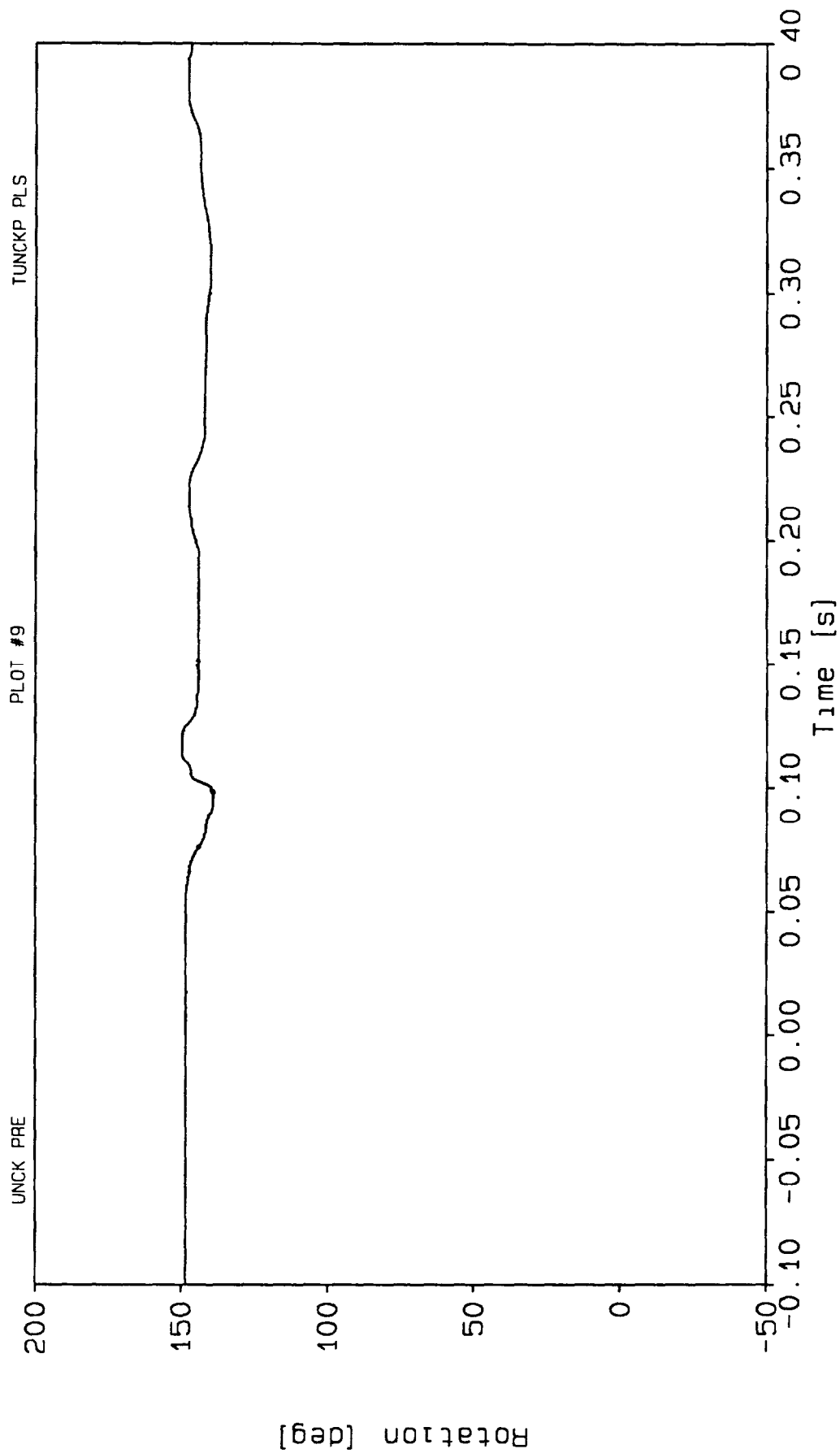


Exponent
Failure
Analysis
Associates

Unfiltered
Volpe Crash Testing
PH06608

Head Rotation at Occipital Condyle v Time

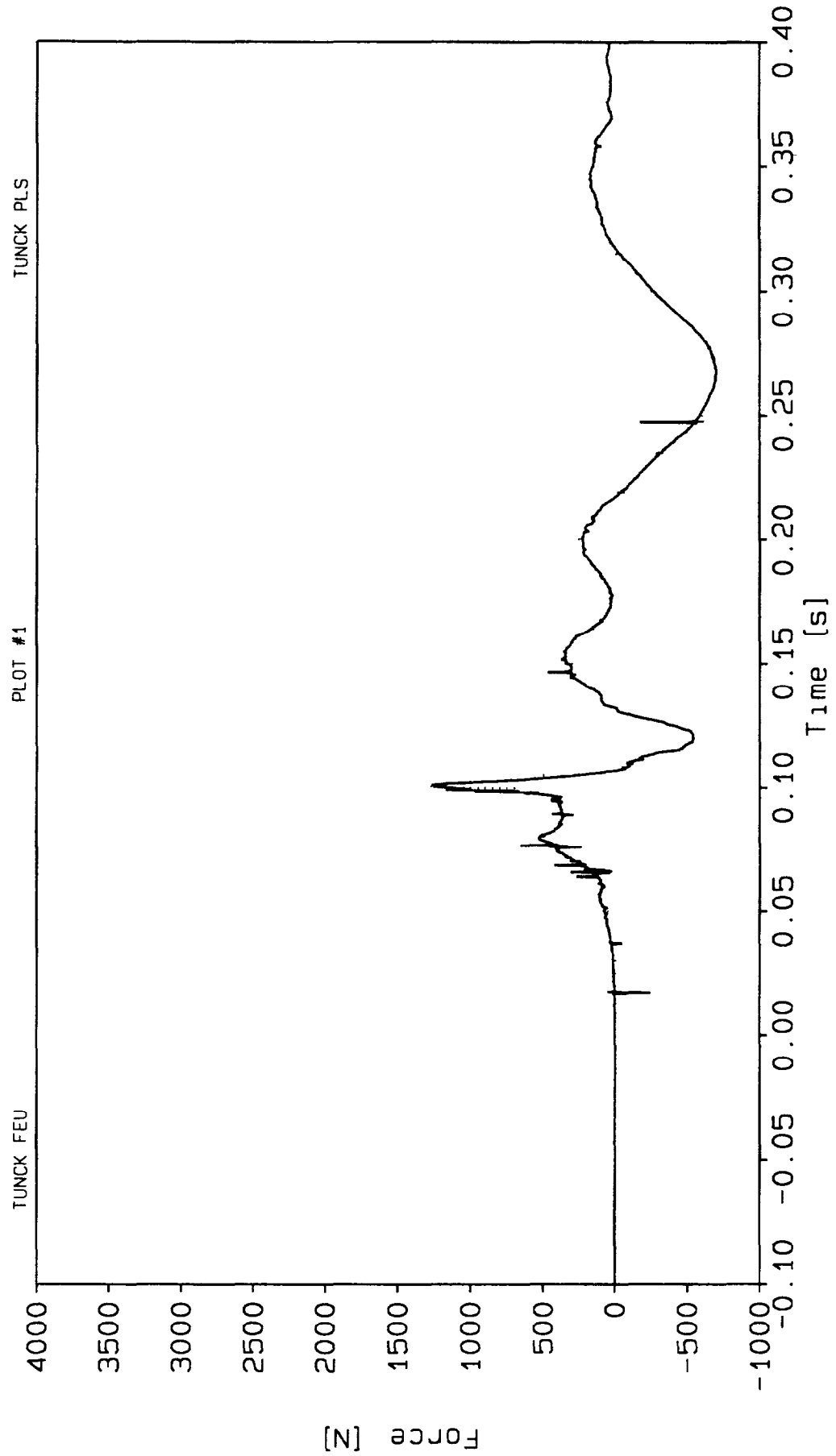
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Unfiltered
Volpe Crash Testing
PH06608

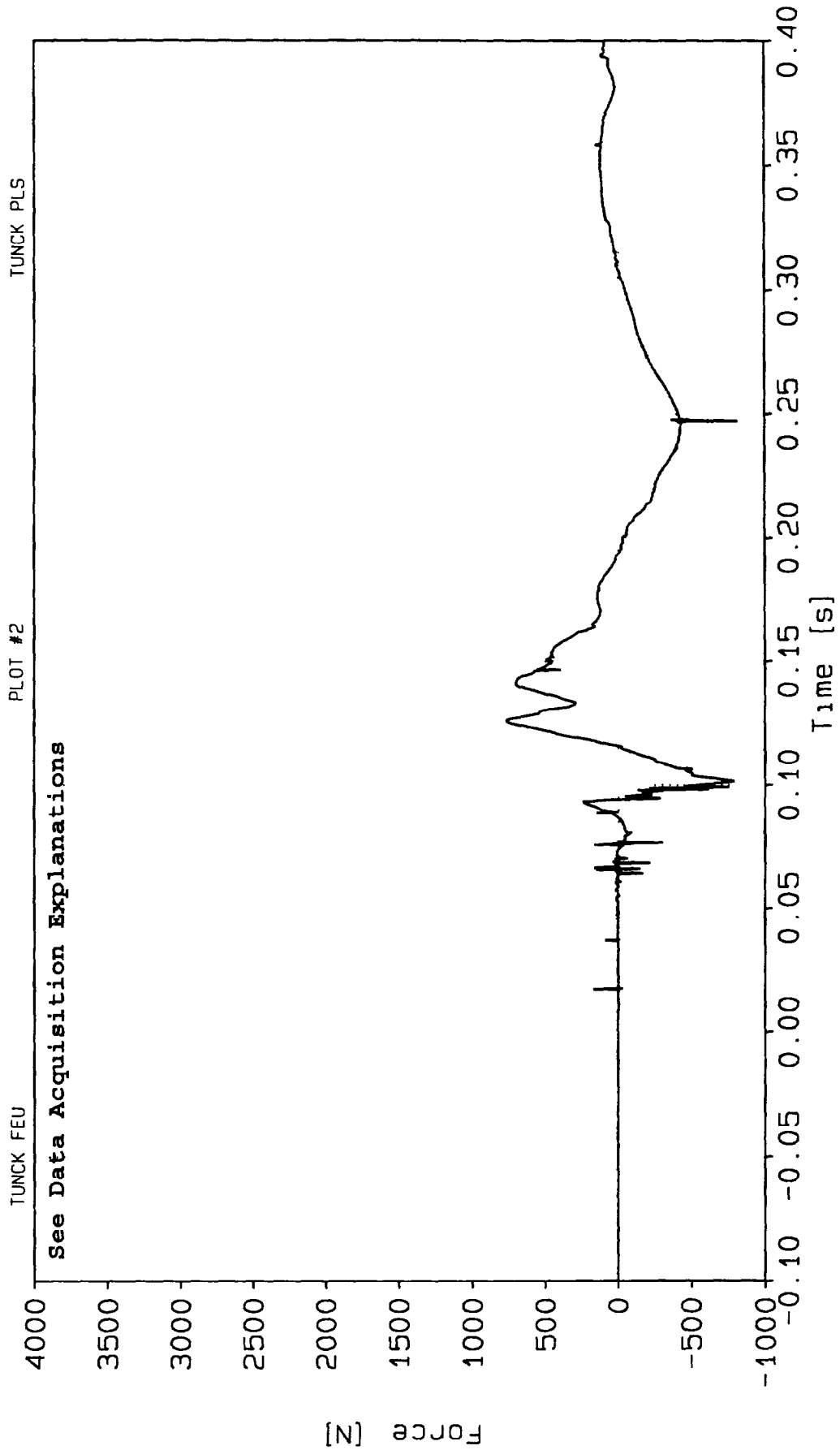
Upper Neck Force (Fx) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 1000
Volpe Crash Testing
PH06608

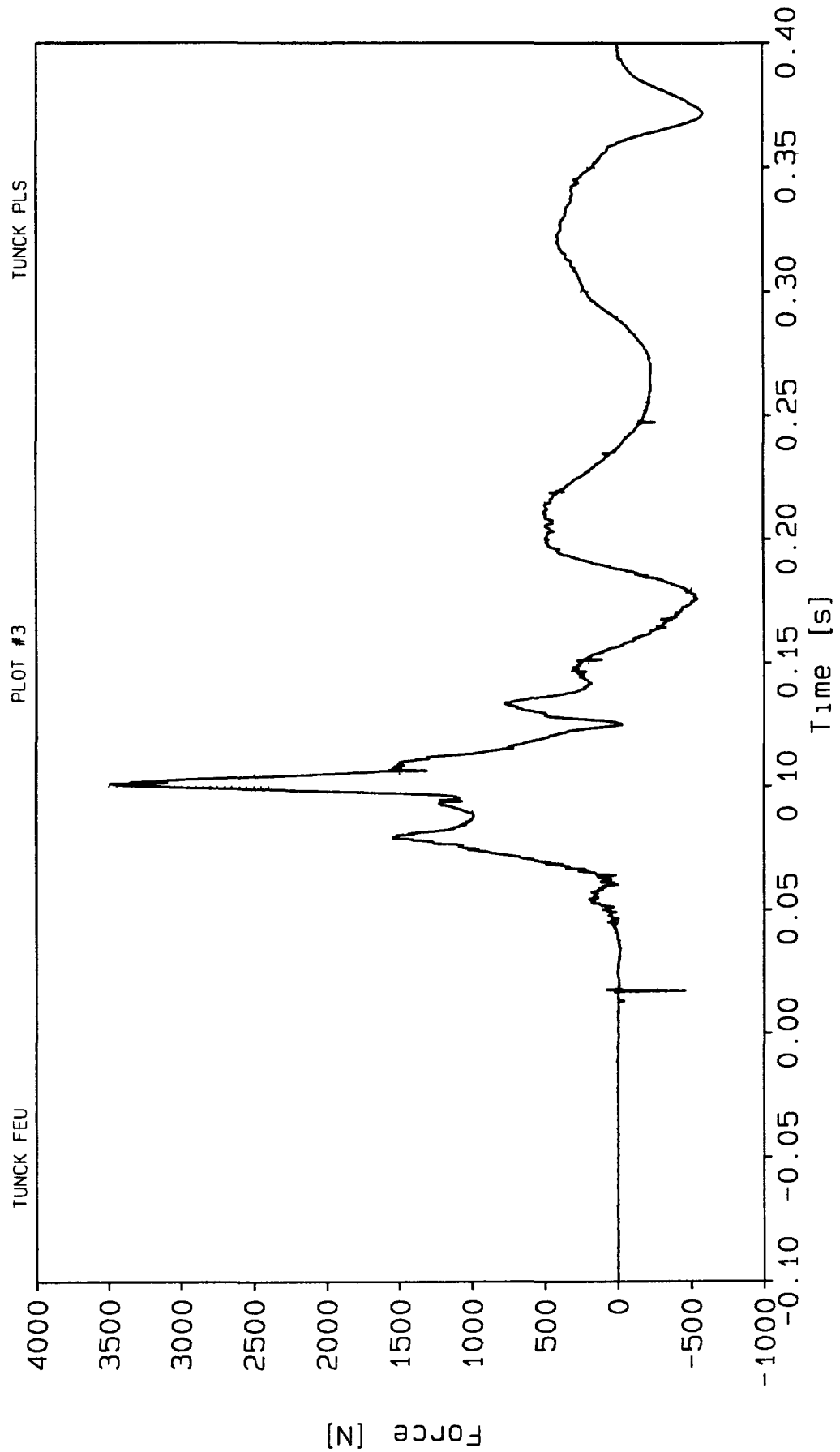
Upper Neck Force (Fy) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

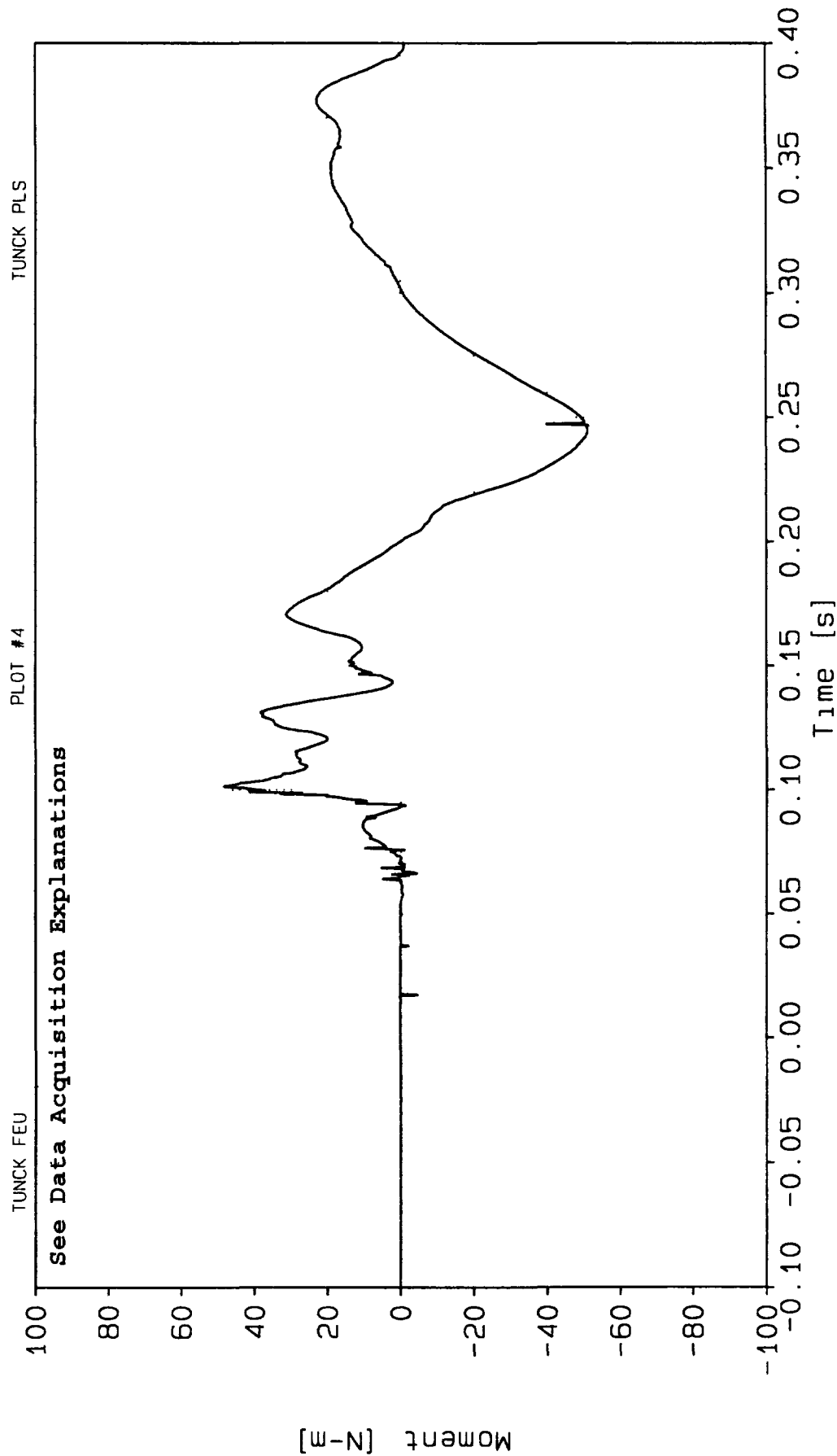
Upper Neck Force (Fz) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

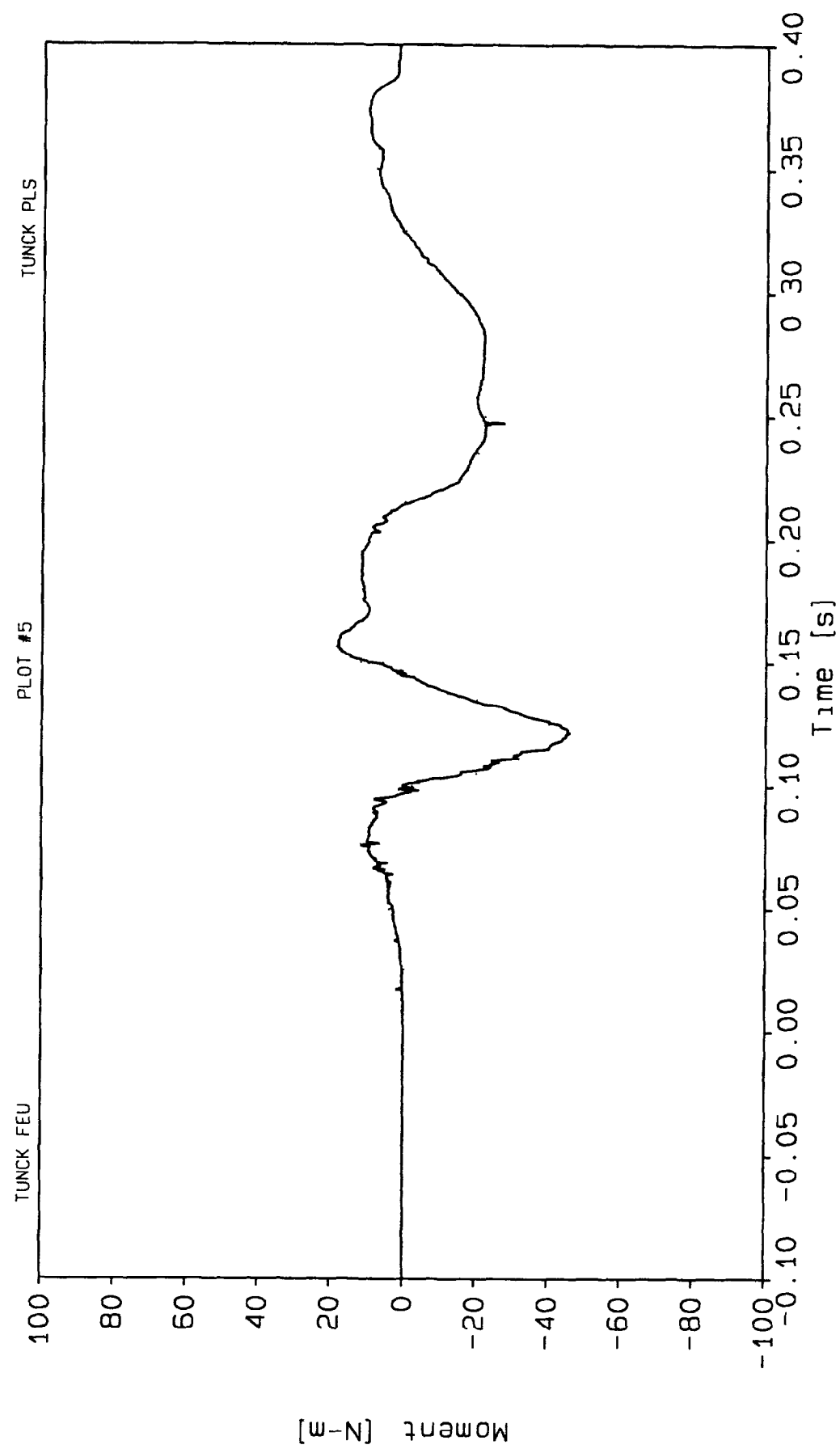
Upper Neck Moment (Mx) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

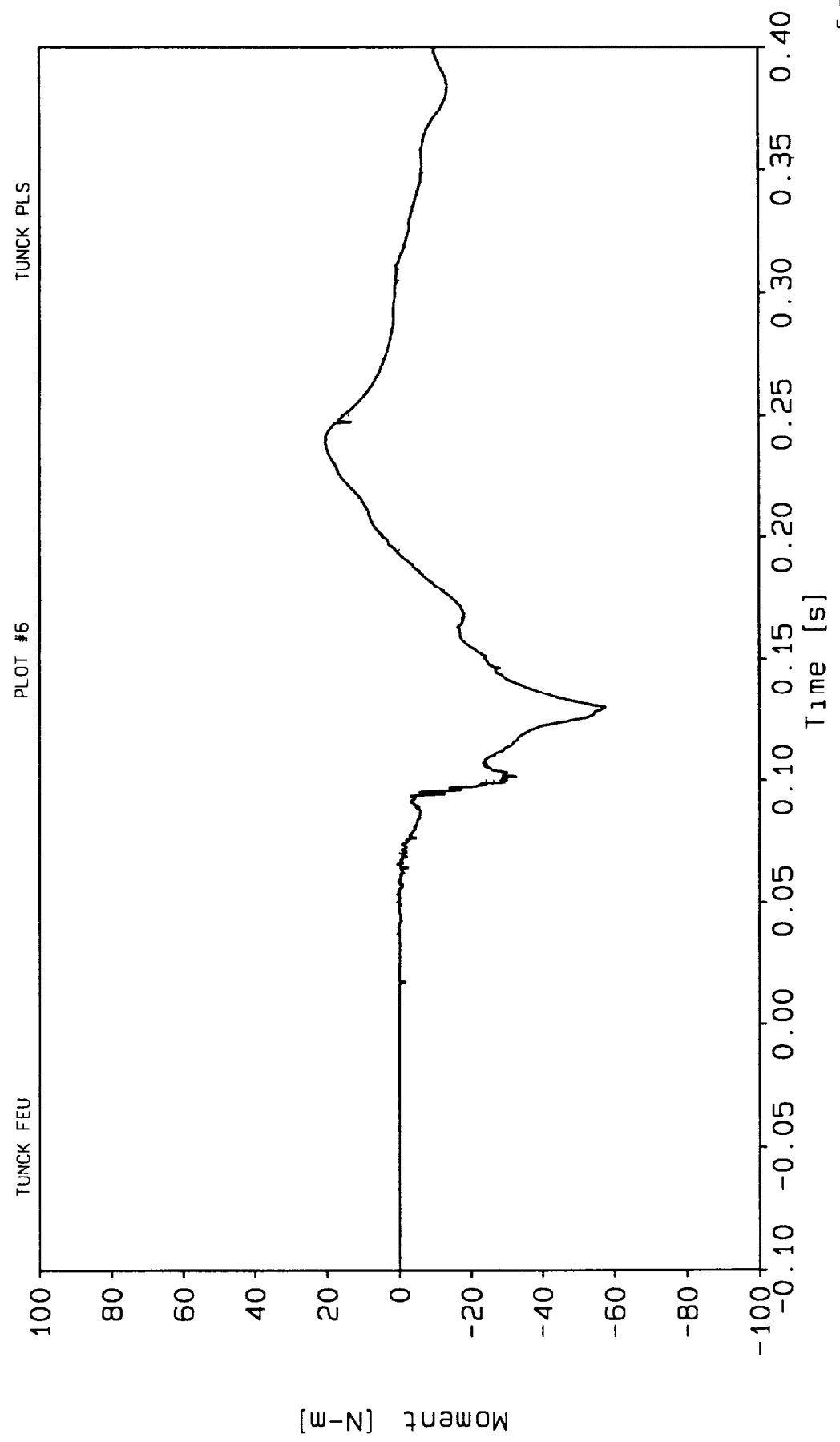
Upper Neck Moment (My) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Upper Neck Moment (Mz) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



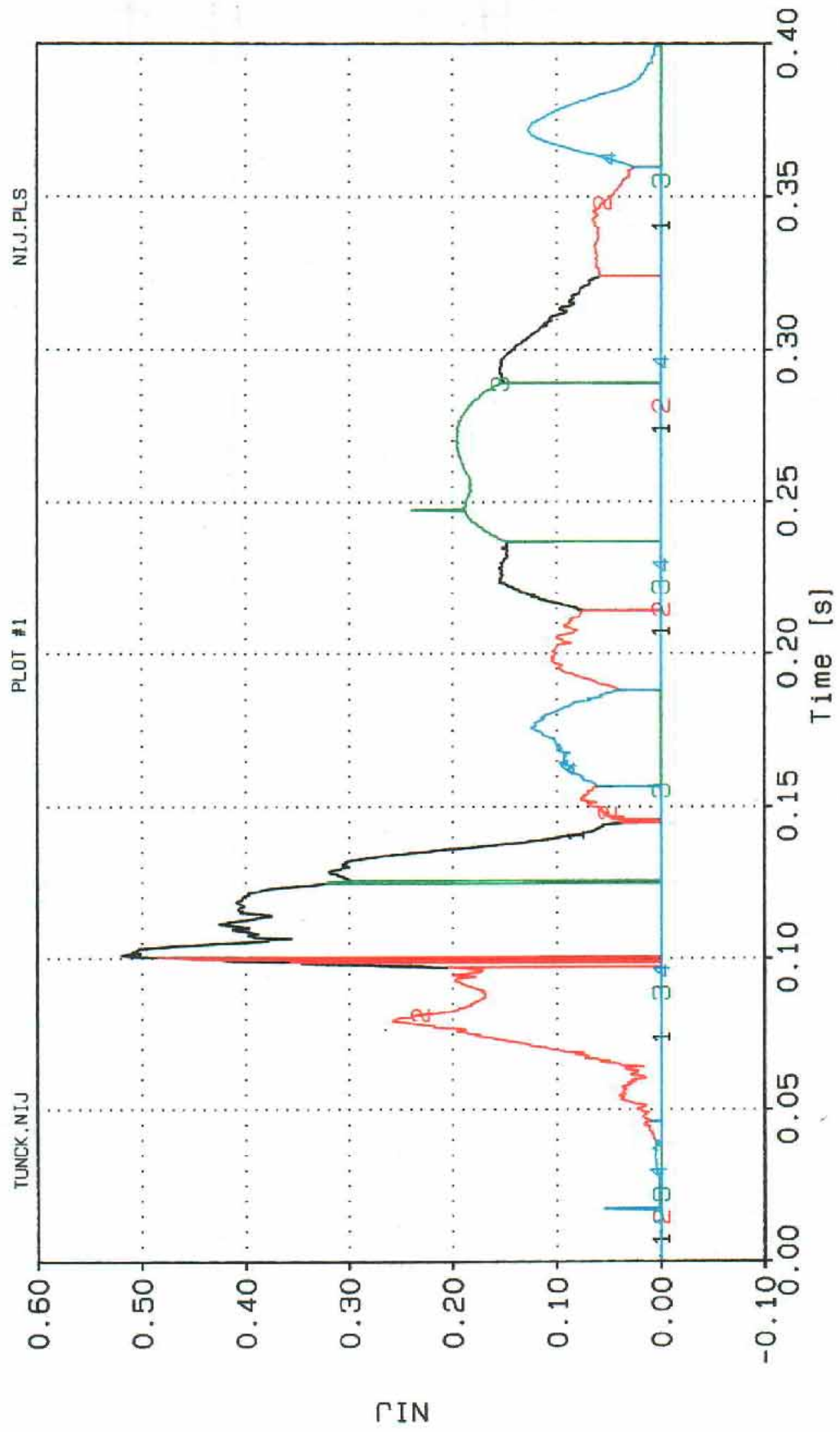
Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Neck Injury Predictor v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Ntf
Ncf

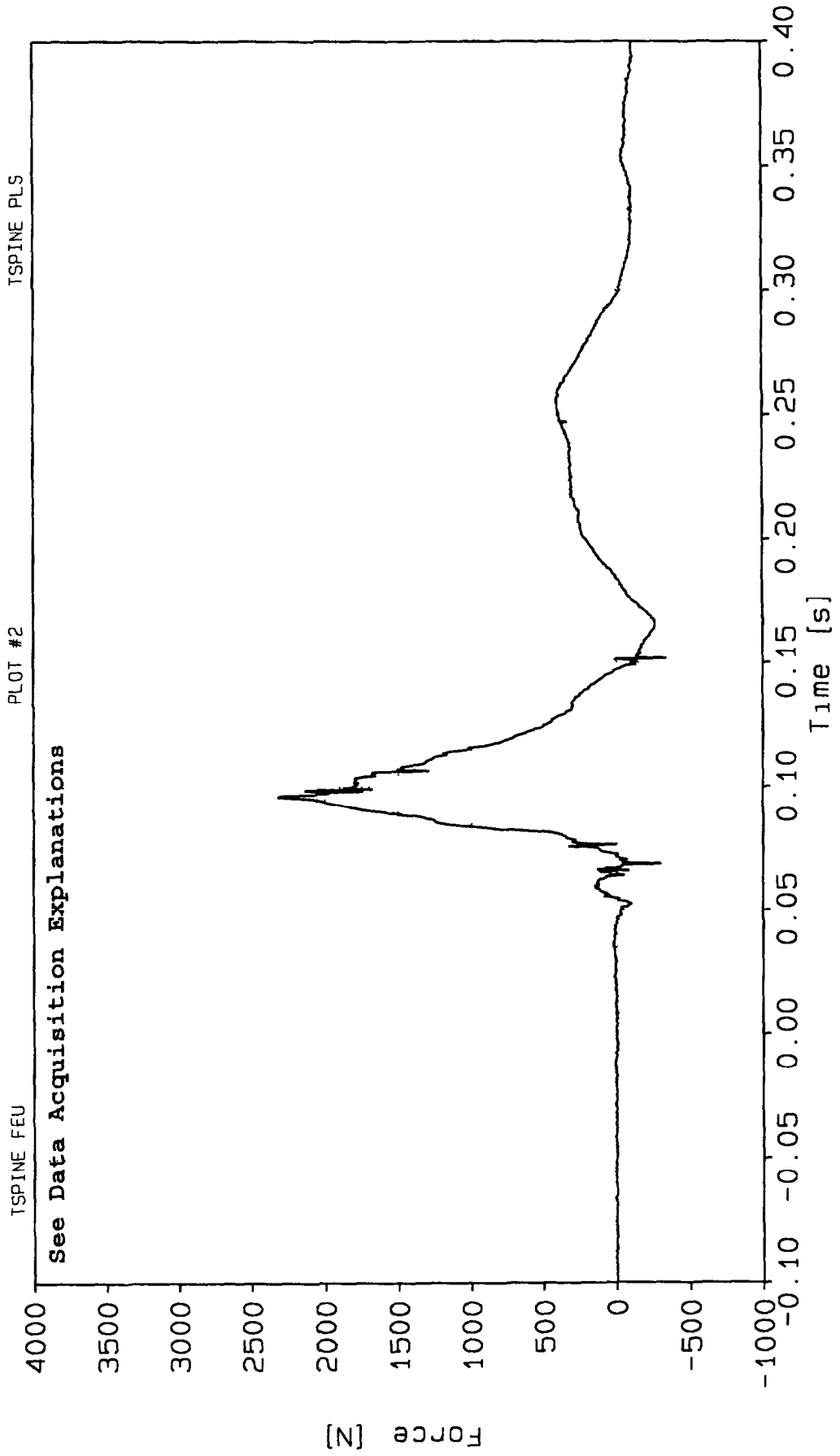
Nte
Nce

Volpe Crash Testing
PH06608

T12 Thoracic Force (Fy) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



See Data Acquisition Explanations

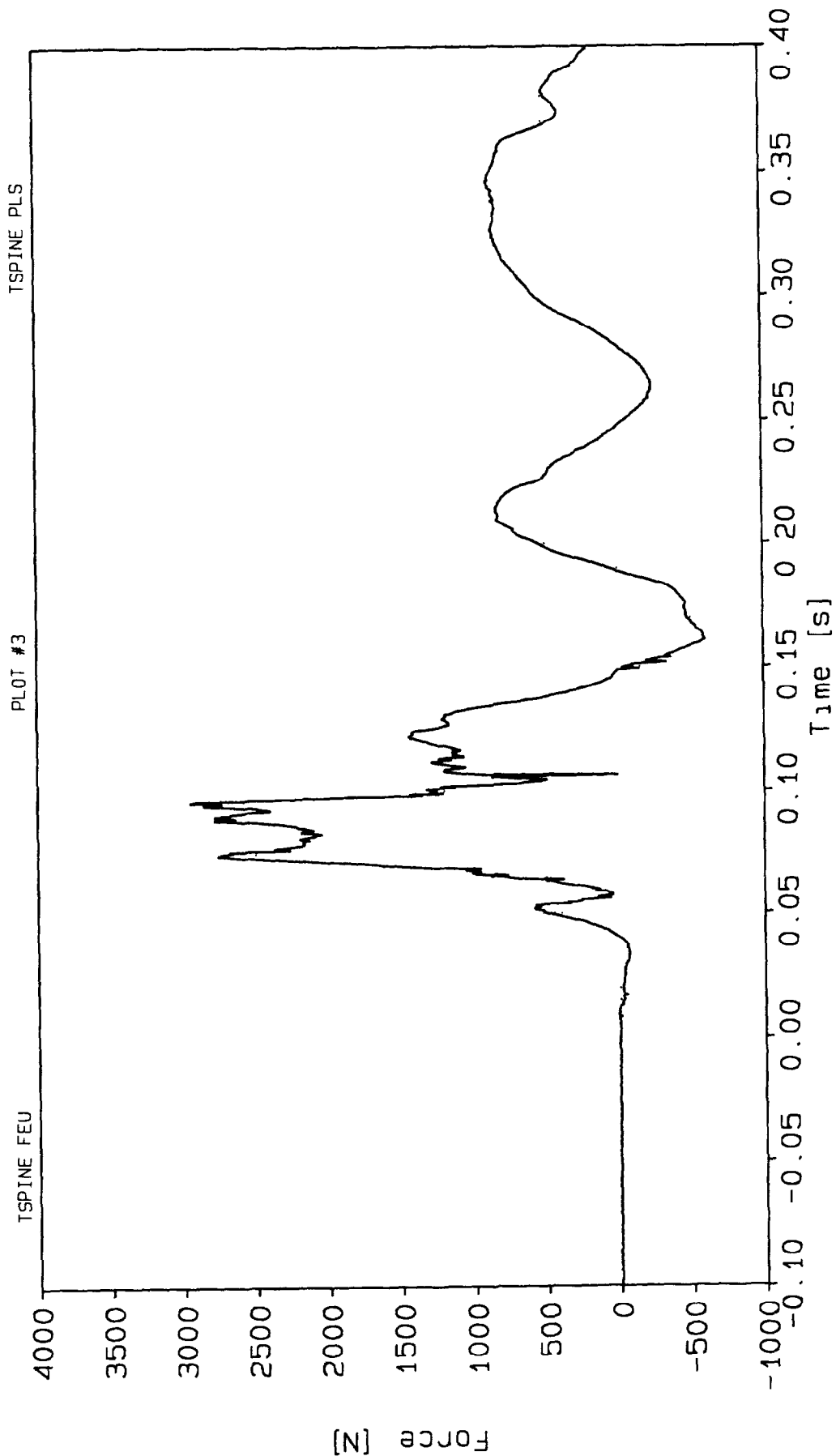
Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

T12 Thoracic Force (Fz) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

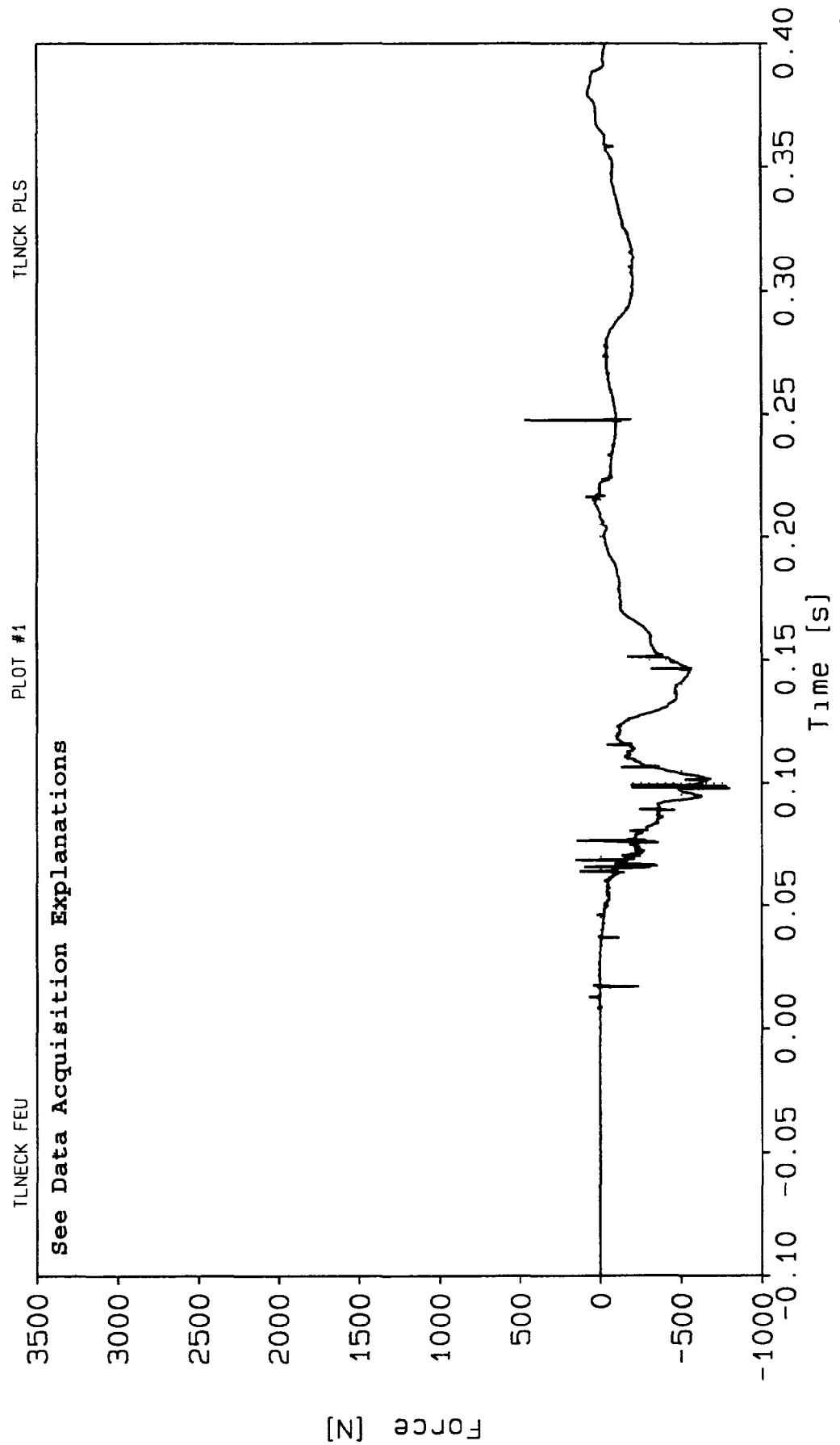
Filter Class 600
Volpe Crash Testing
PH06608

Lower Neck Force (Fx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

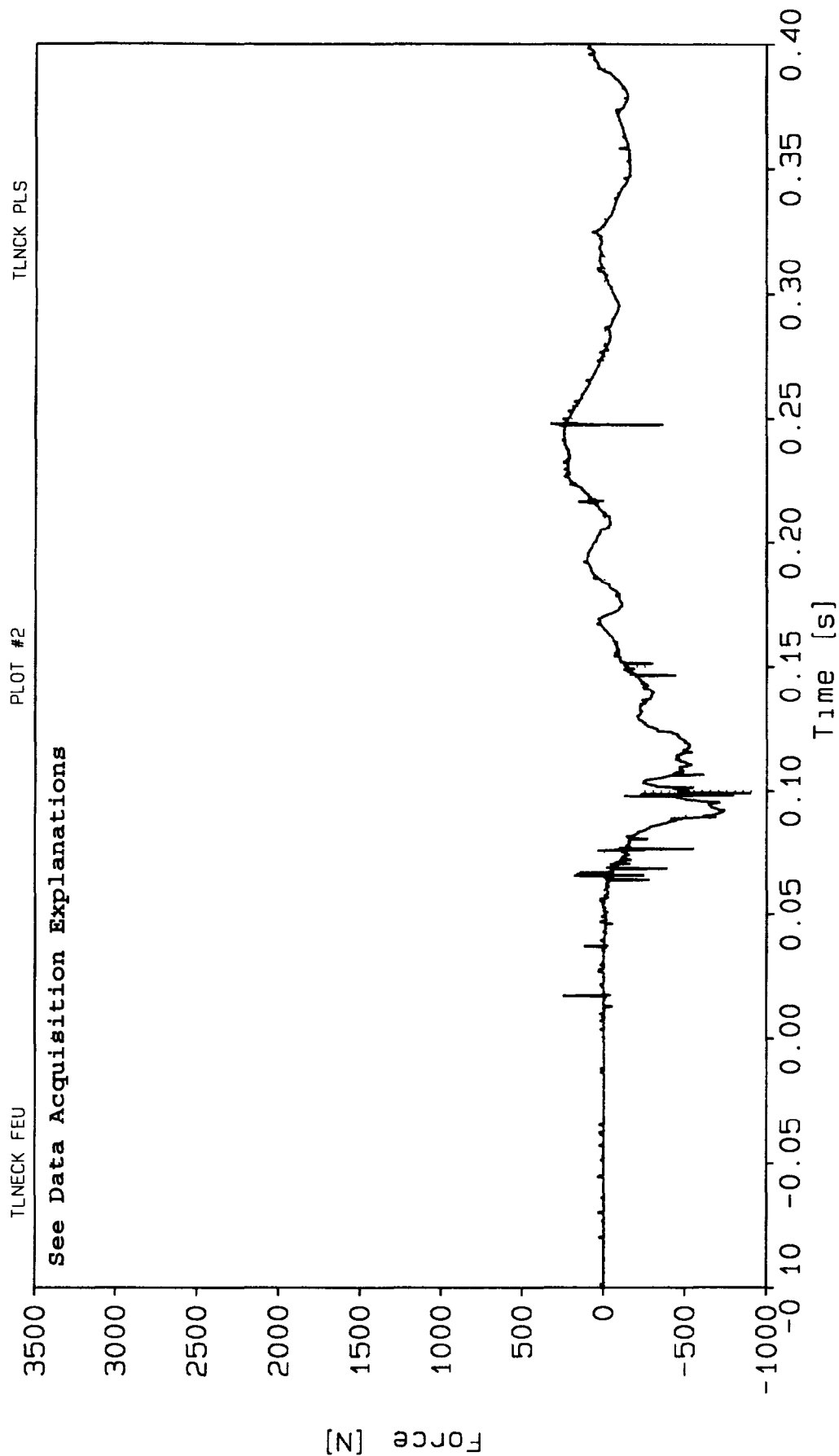
Filter Class 1000
Volpe Crash Testing
PH05608

Lower Neck Force (Fy) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

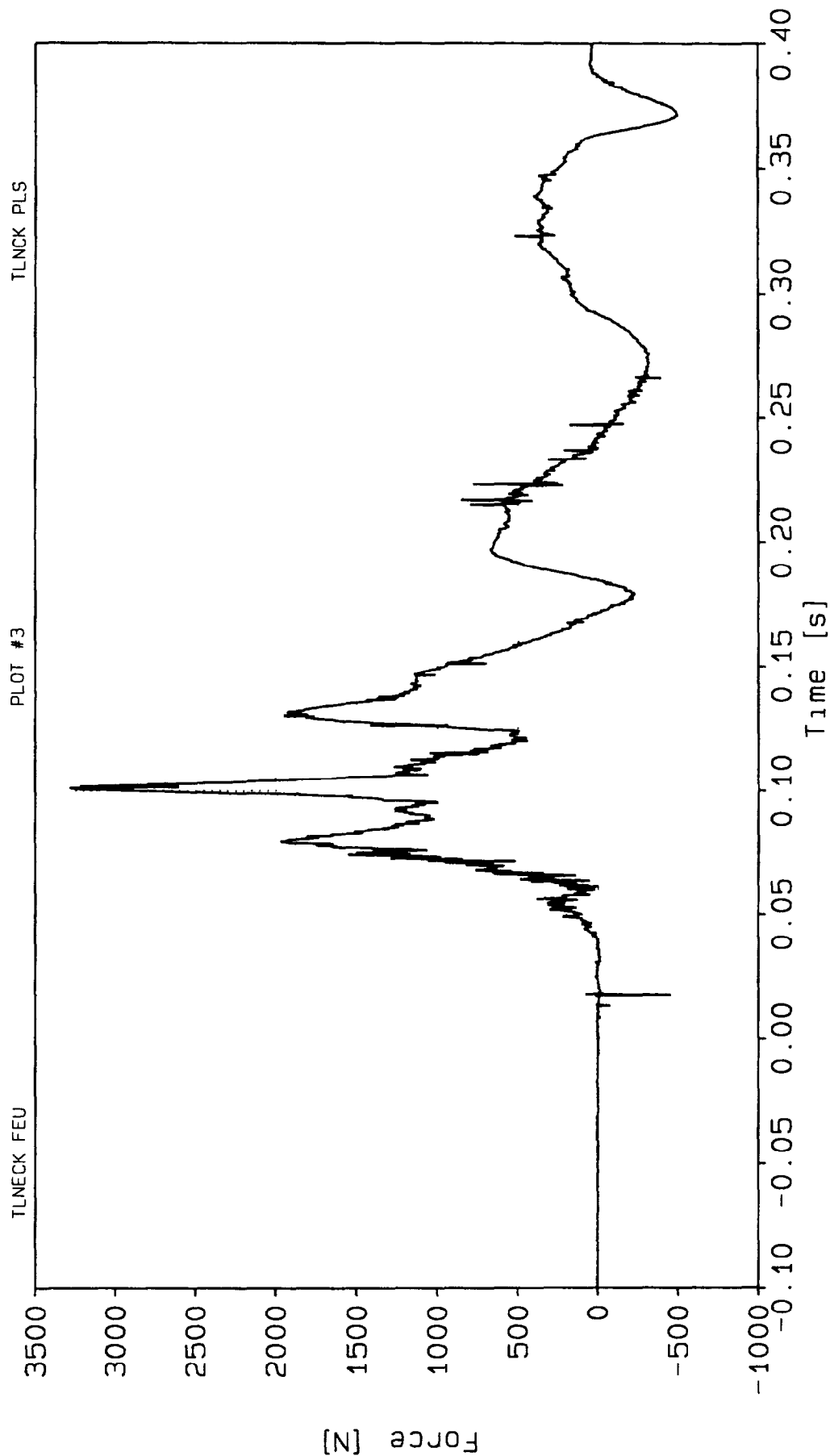
Exponent
Failure
Analysis
Associates

Lower Neck Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



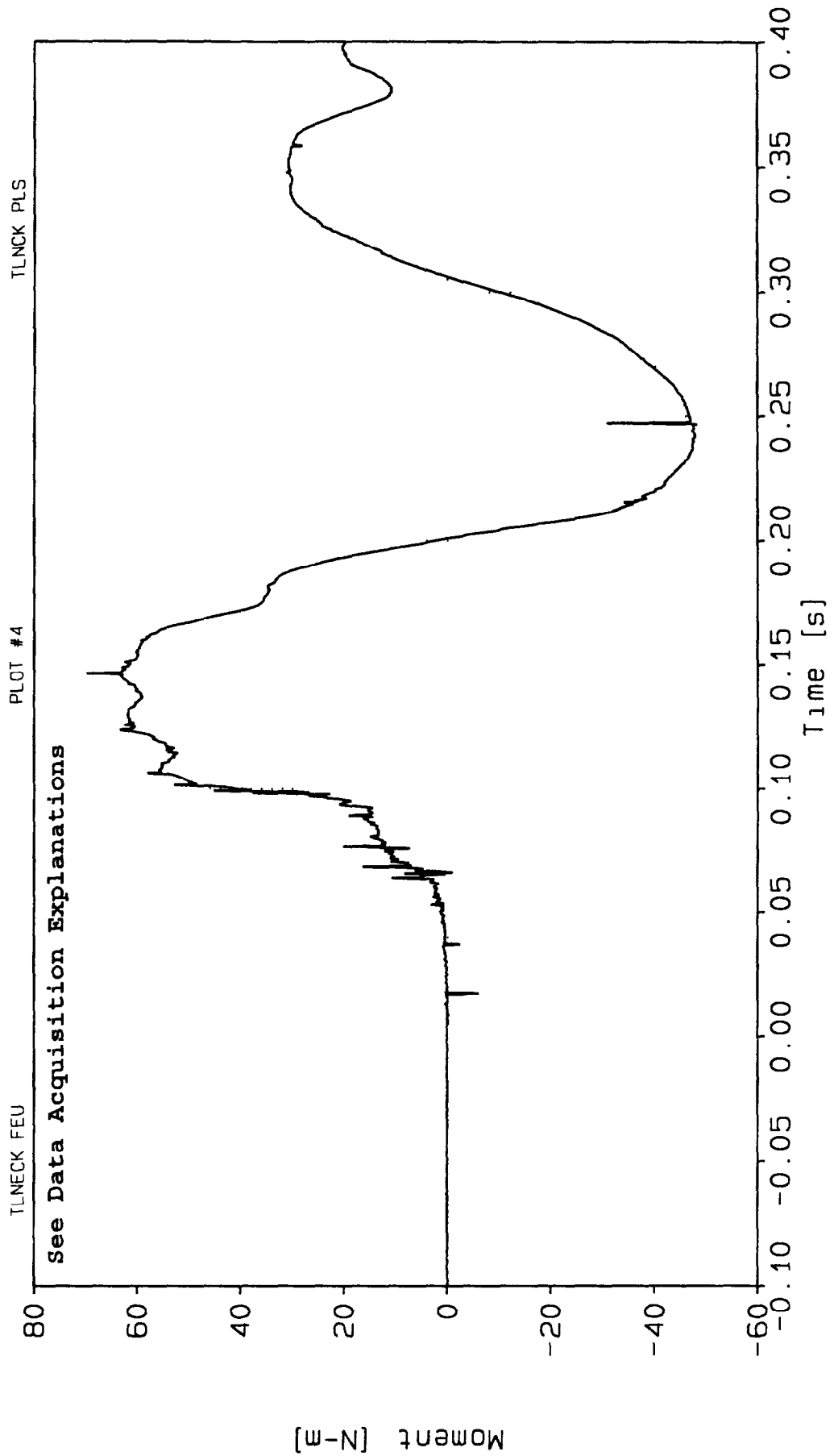
Exponent
Failure
Analysis
Associates

Filter Class 1000
Volpe Crash Testing
PH06608

Lower Neck Moment (Mx) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



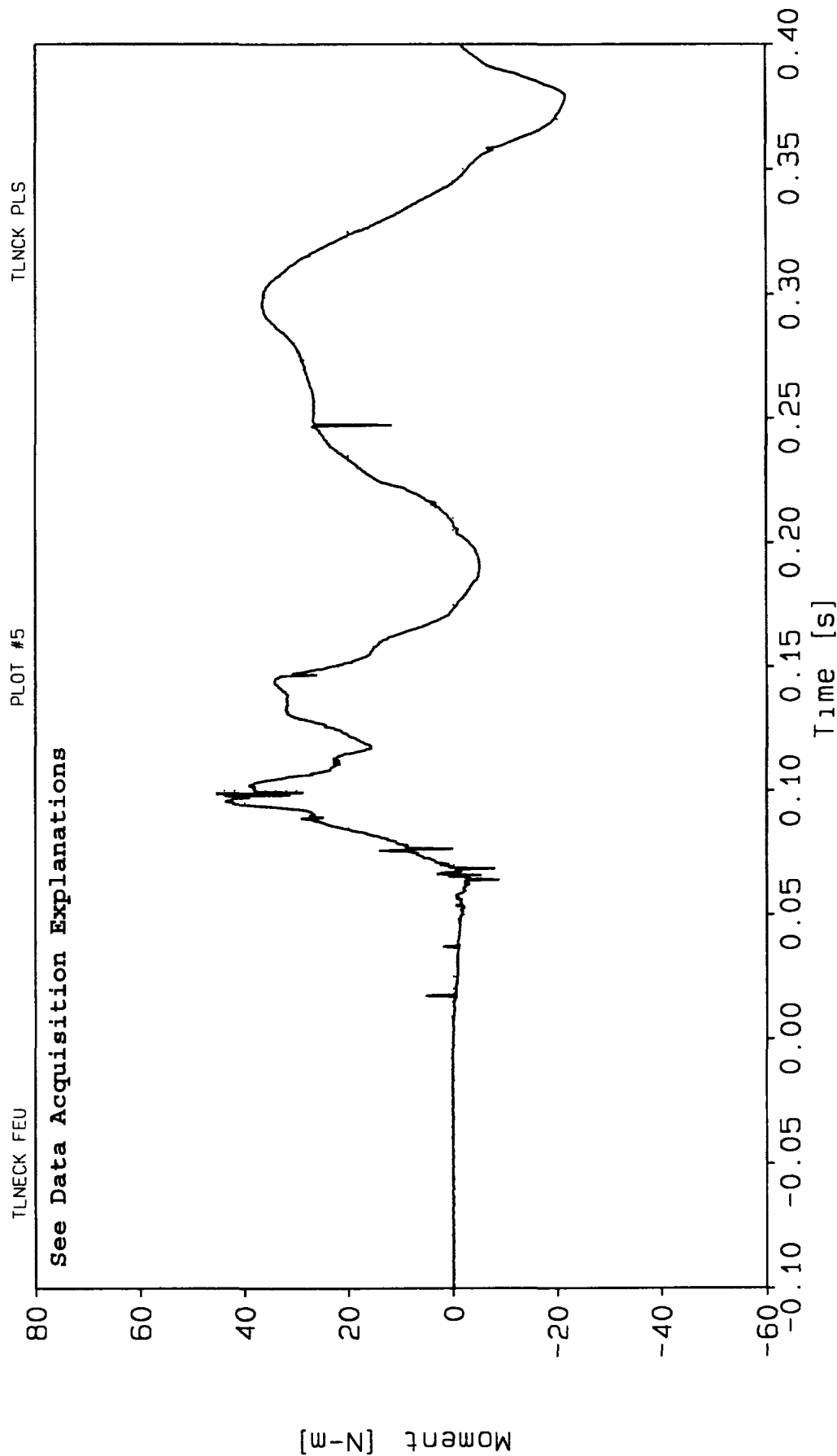
Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Lower Neck Moment (My) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



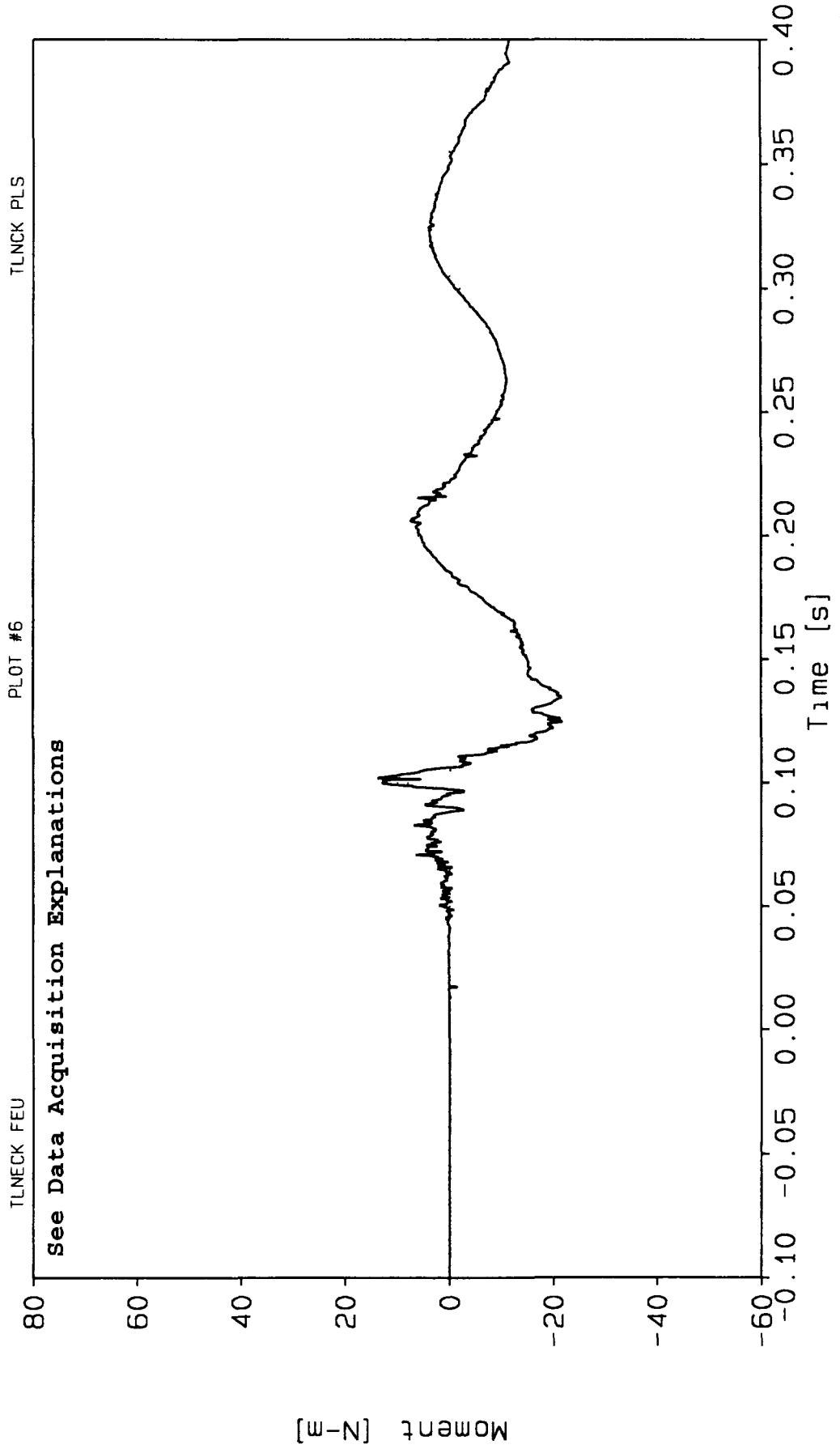
Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Lower Neck Moment (Mz) v Time

Driver Dummy - THOR
2001 Dodge Neon

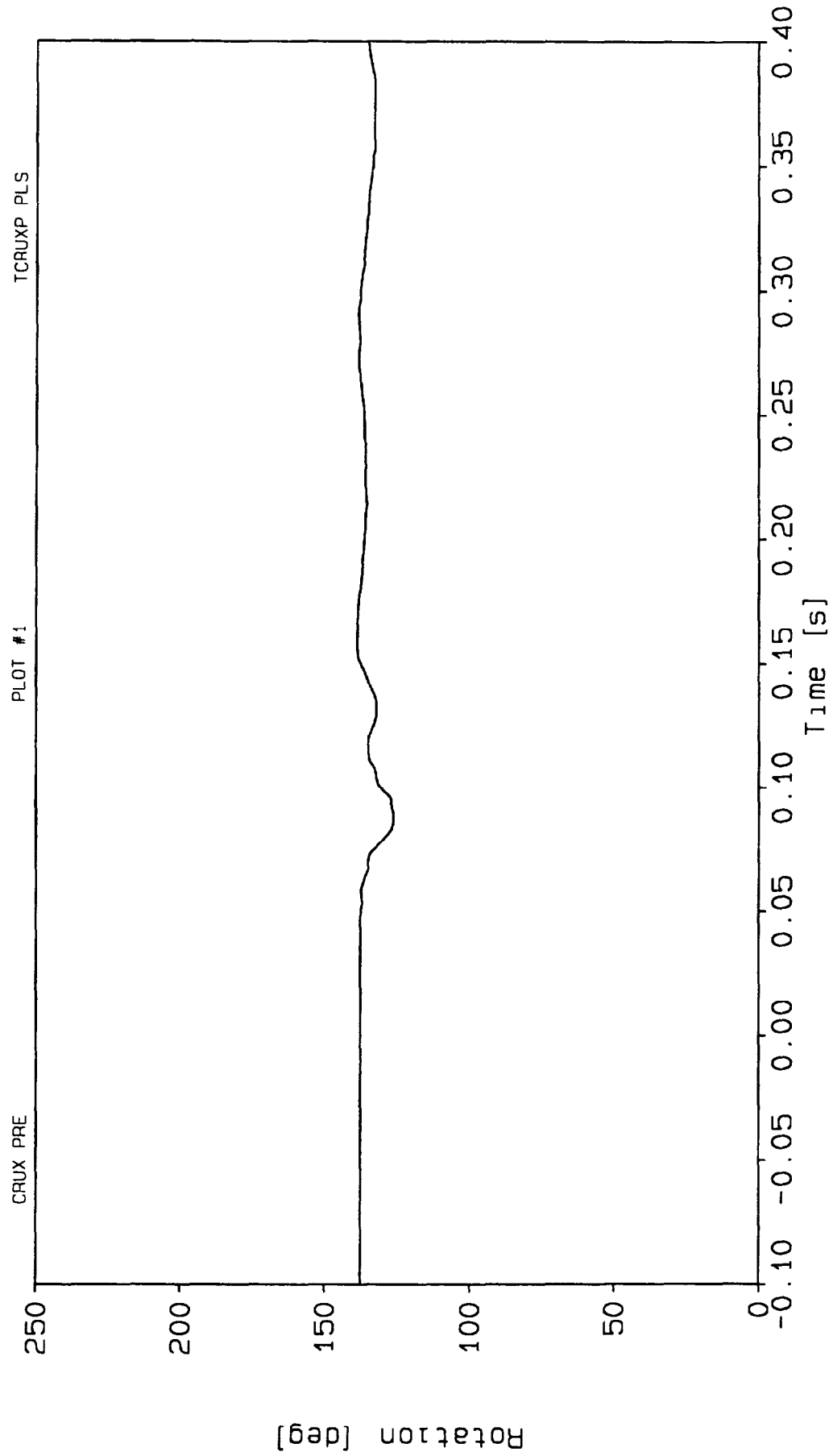
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 500
Volpe Crash Testing
PH06608

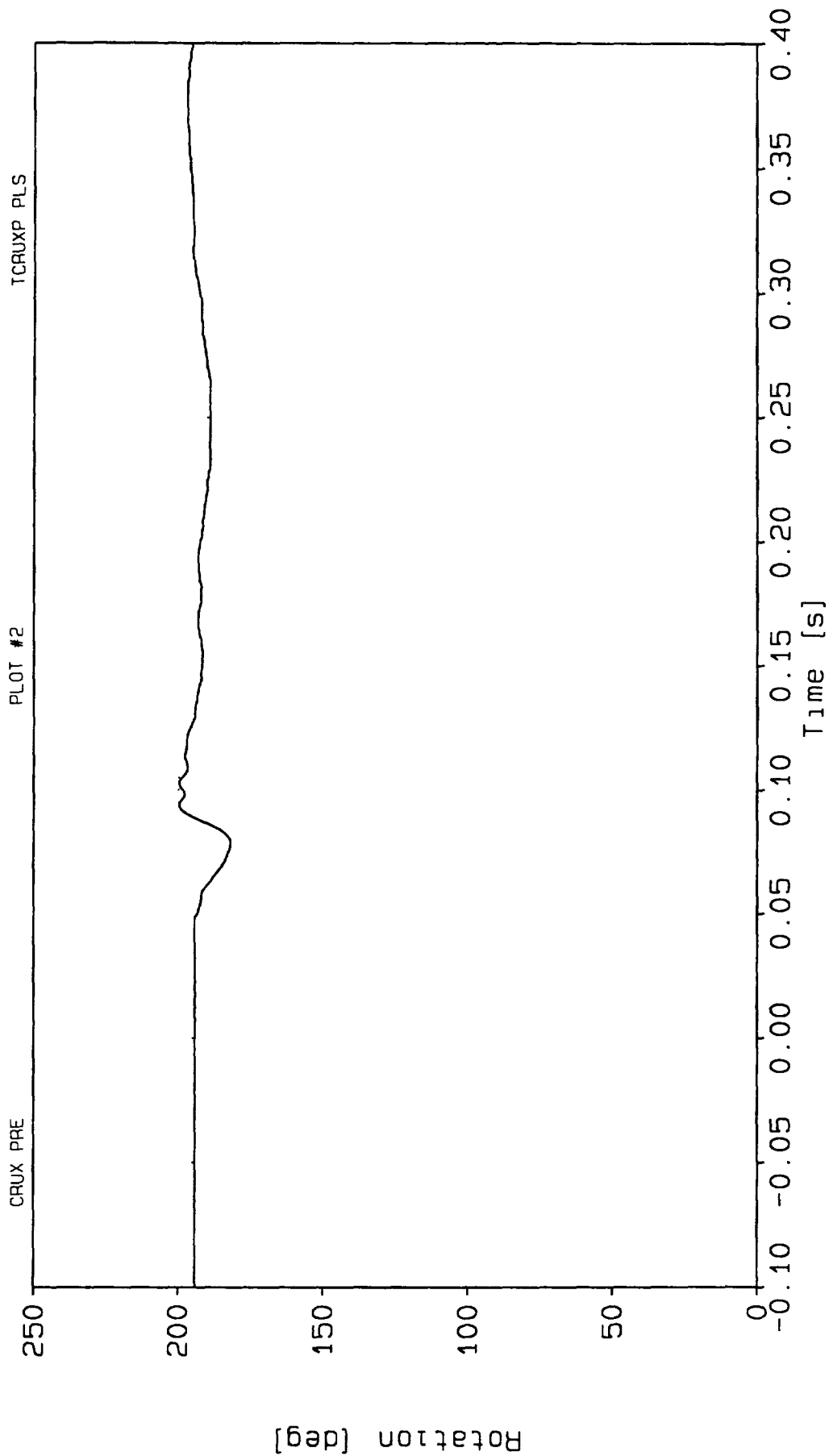
Crux Upper Left Base Rotation v Time
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH06608

Crux Upper Left Mid Rotation v Time
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



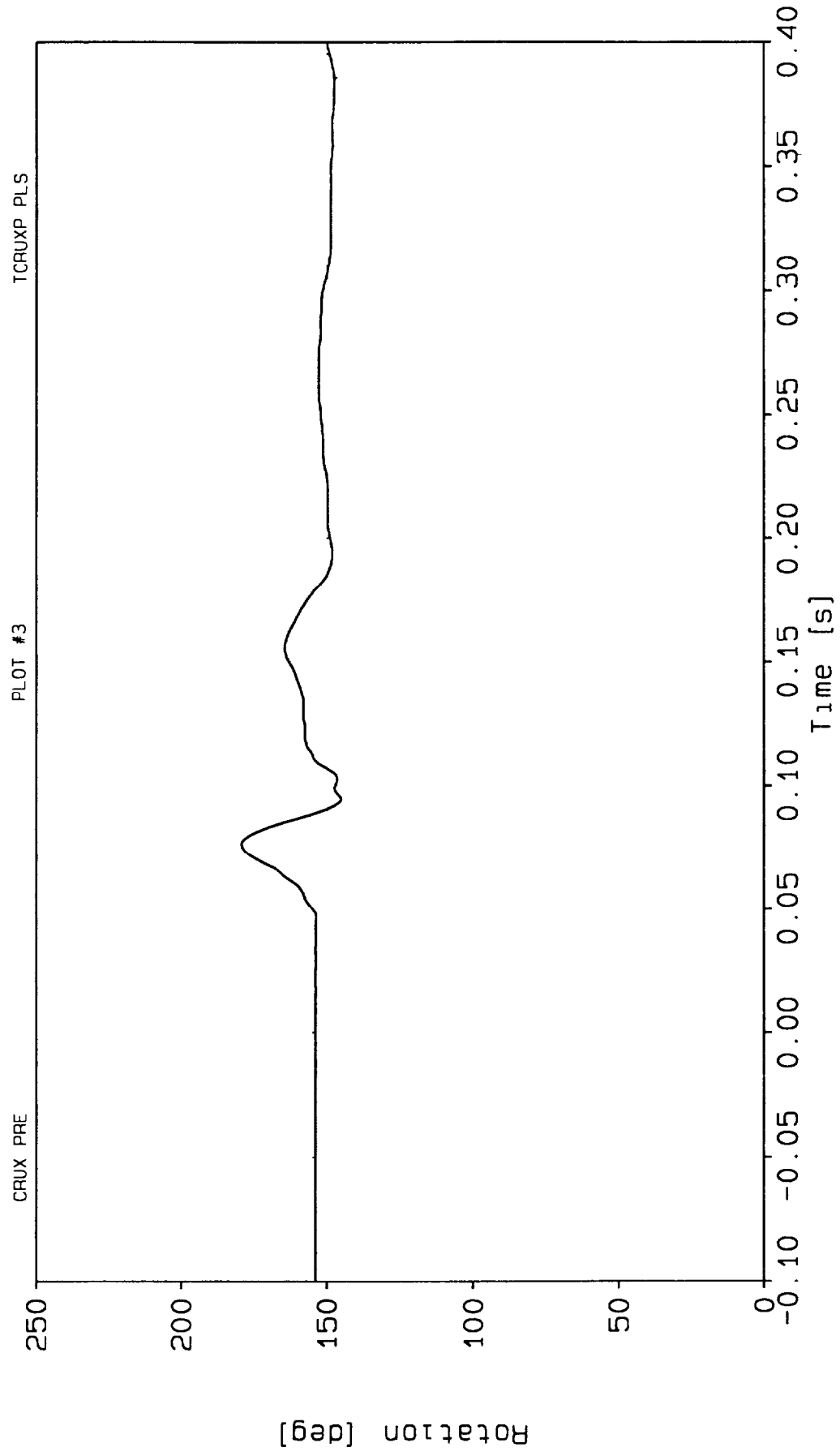
Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Left Elbow Rotation v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



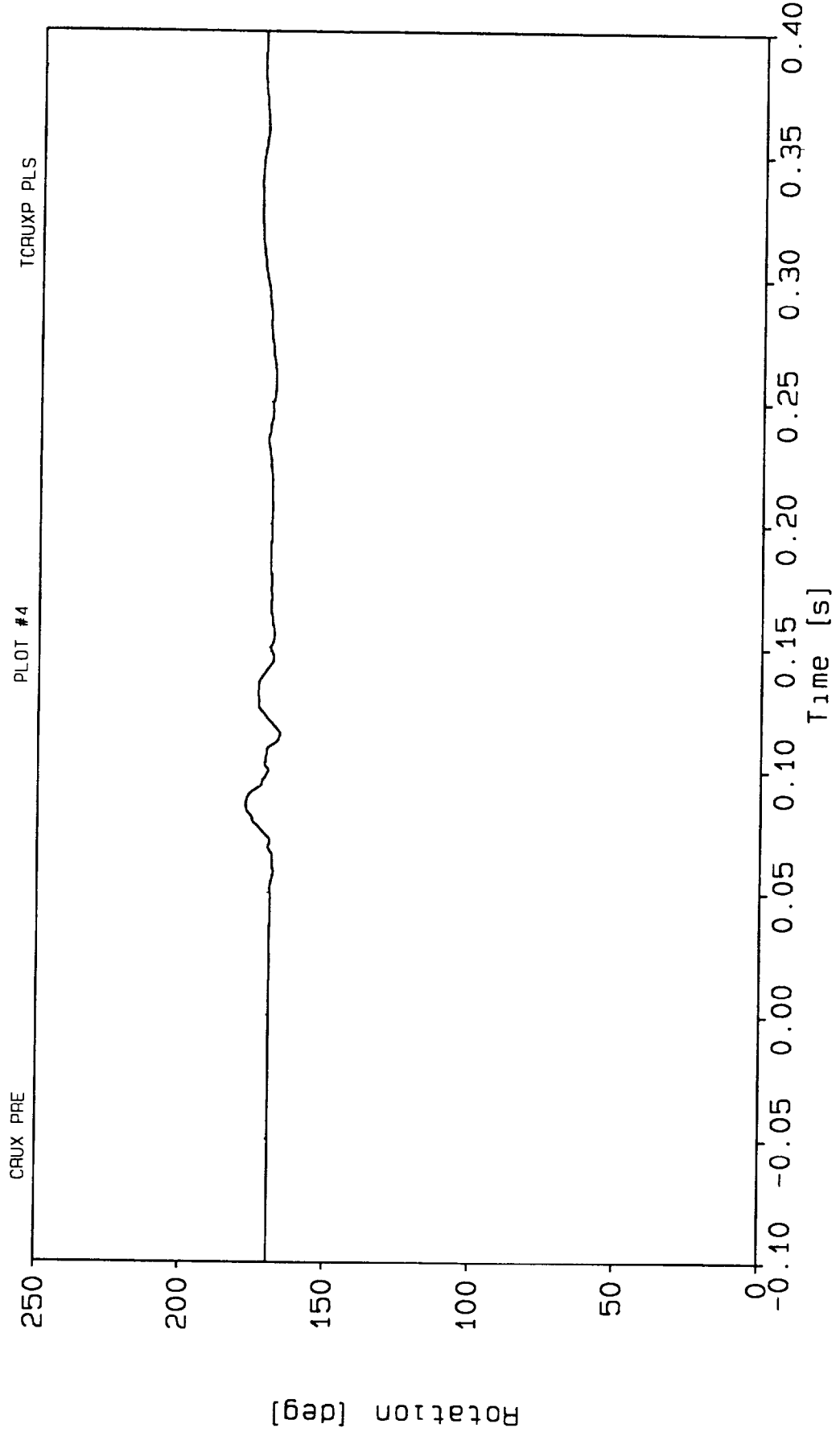
Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH05608

Crux Upper Right Base Rotation v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon

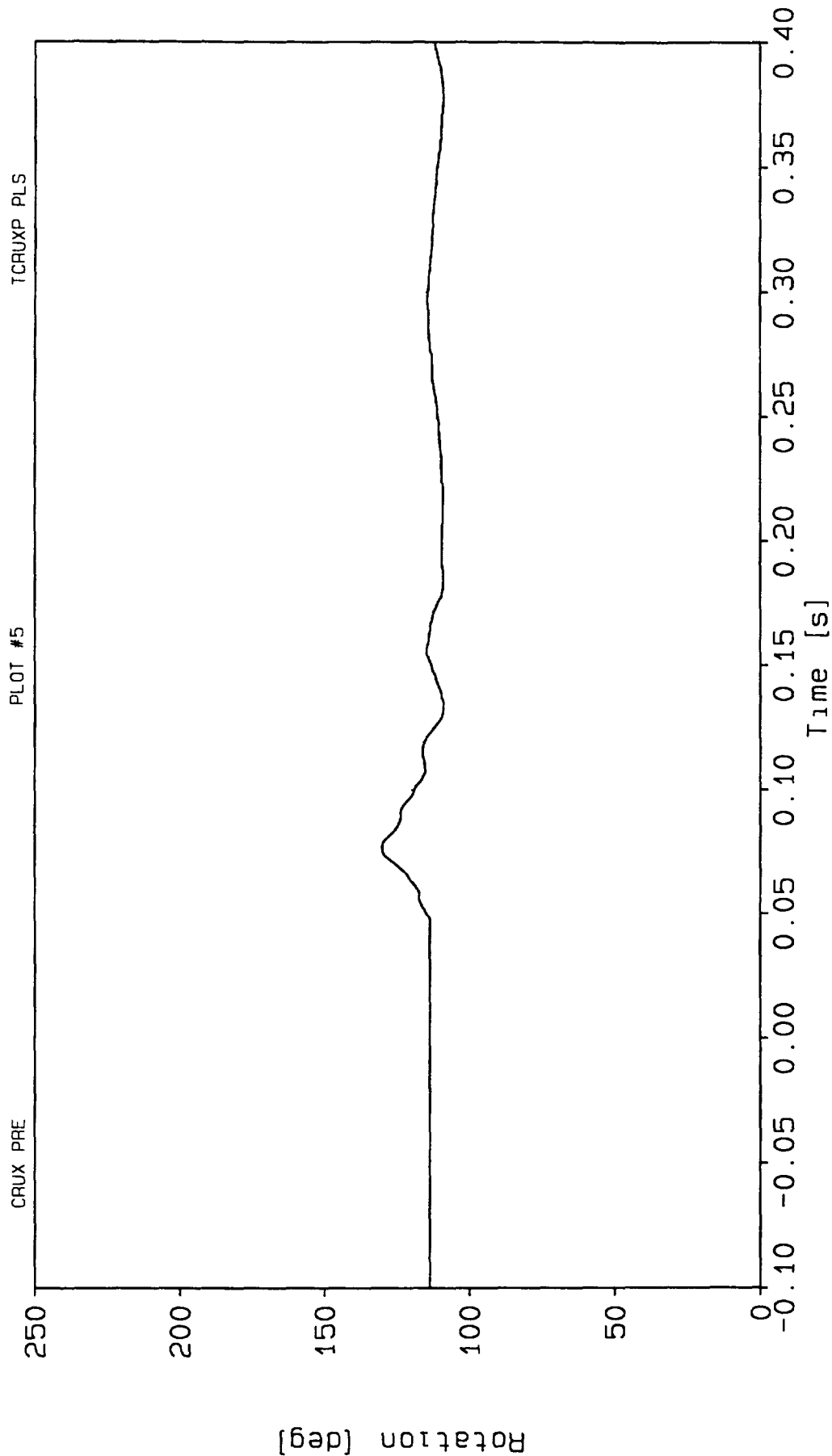
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Right Mid Rotation v Time
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



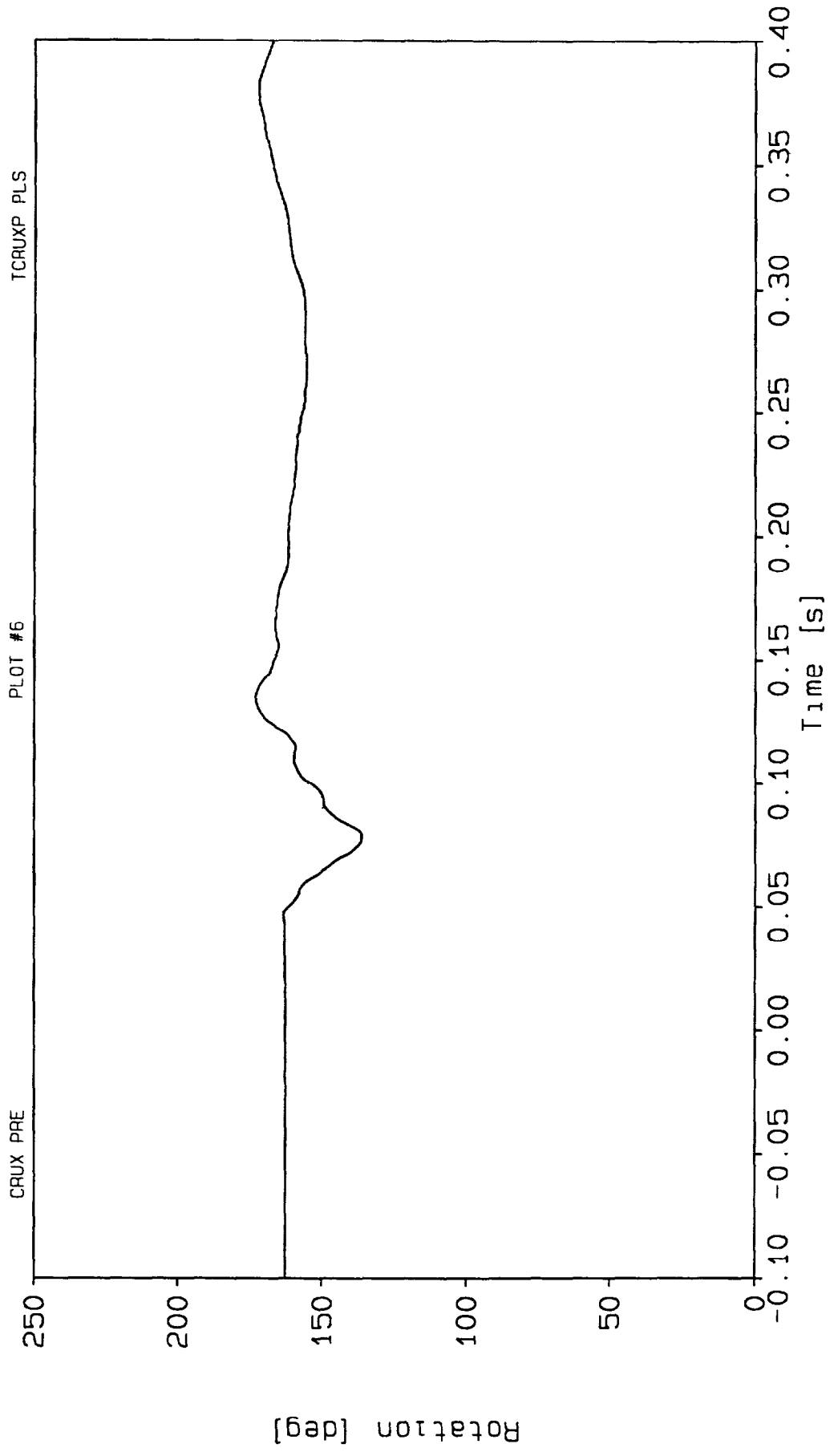
Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Right Elbow Rotation v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

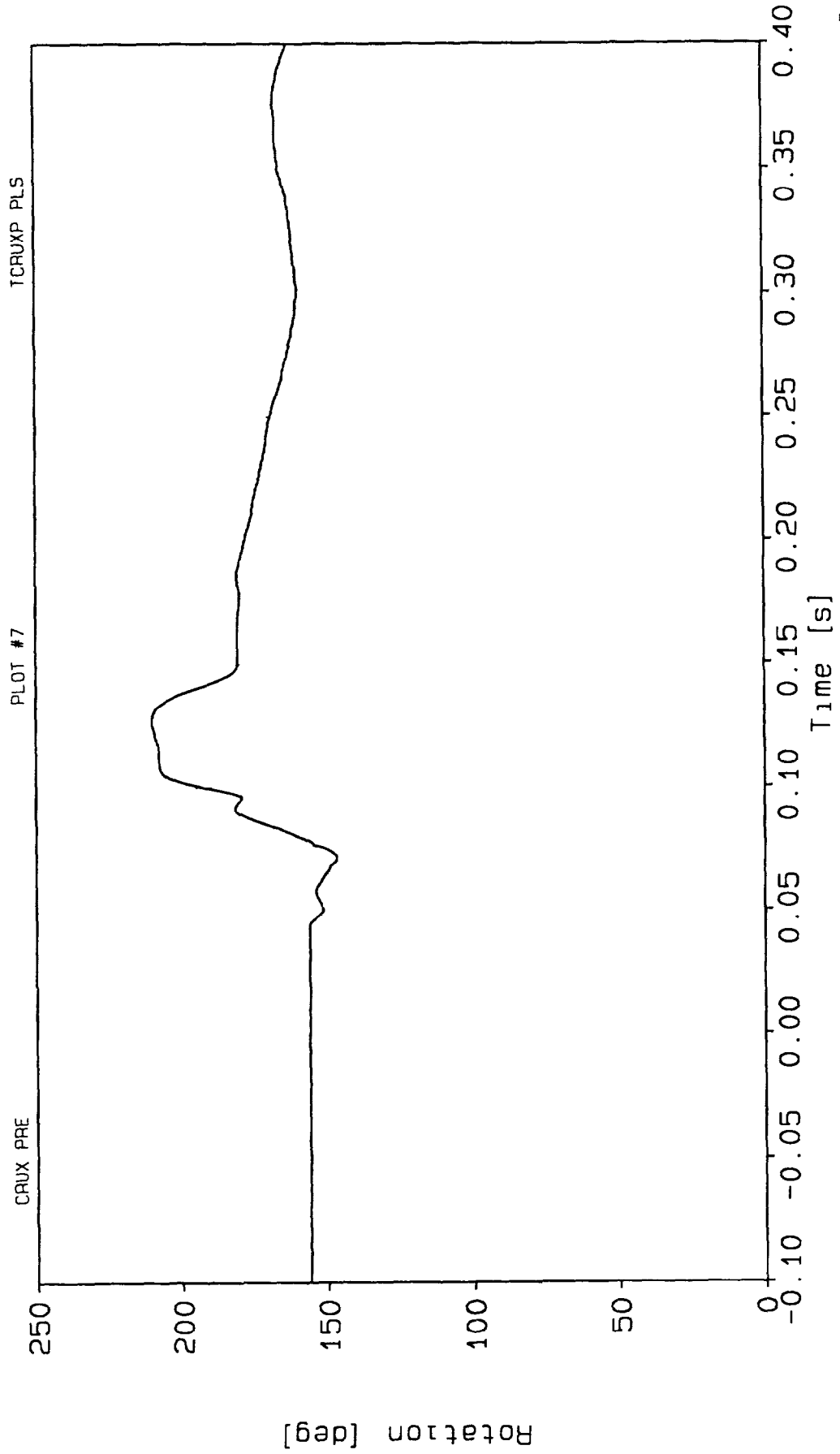
Exponent
Failure
Analysis
Associates

Crux Lower Left Base Rotation v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

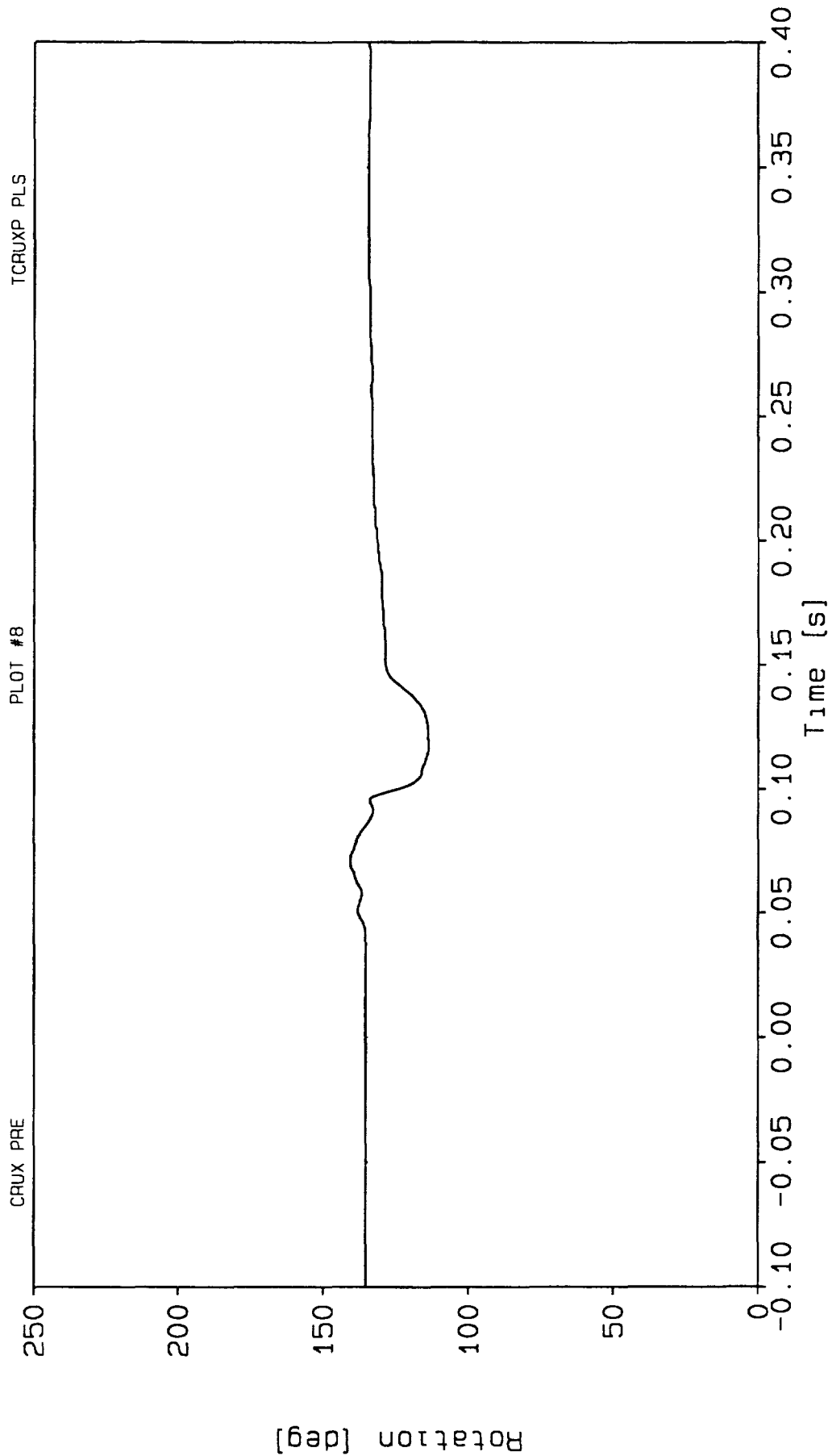
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH05608

Crux Lower Left Mid Rotation v Time
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

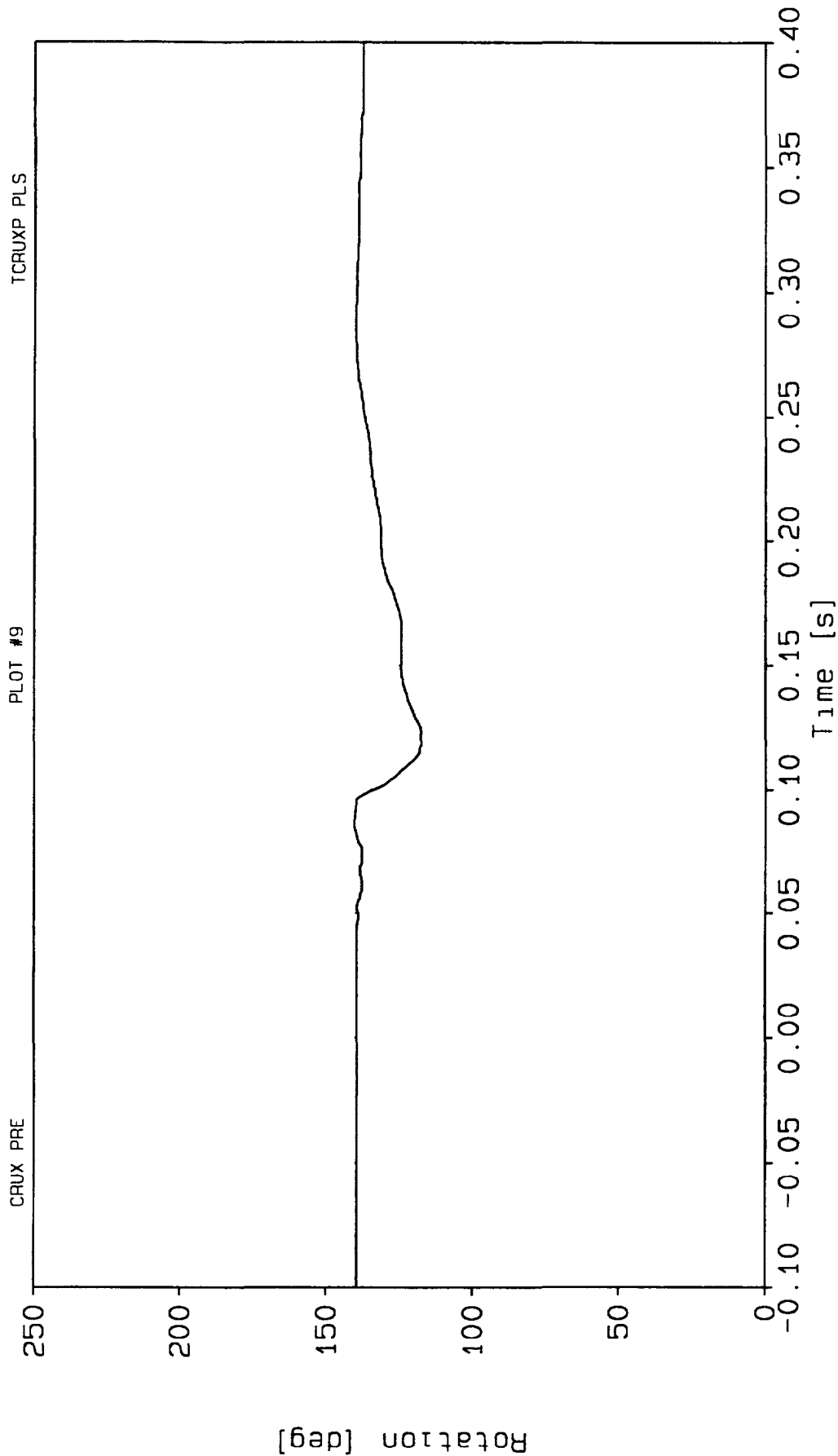


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Lower Left Elbow Rotation v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



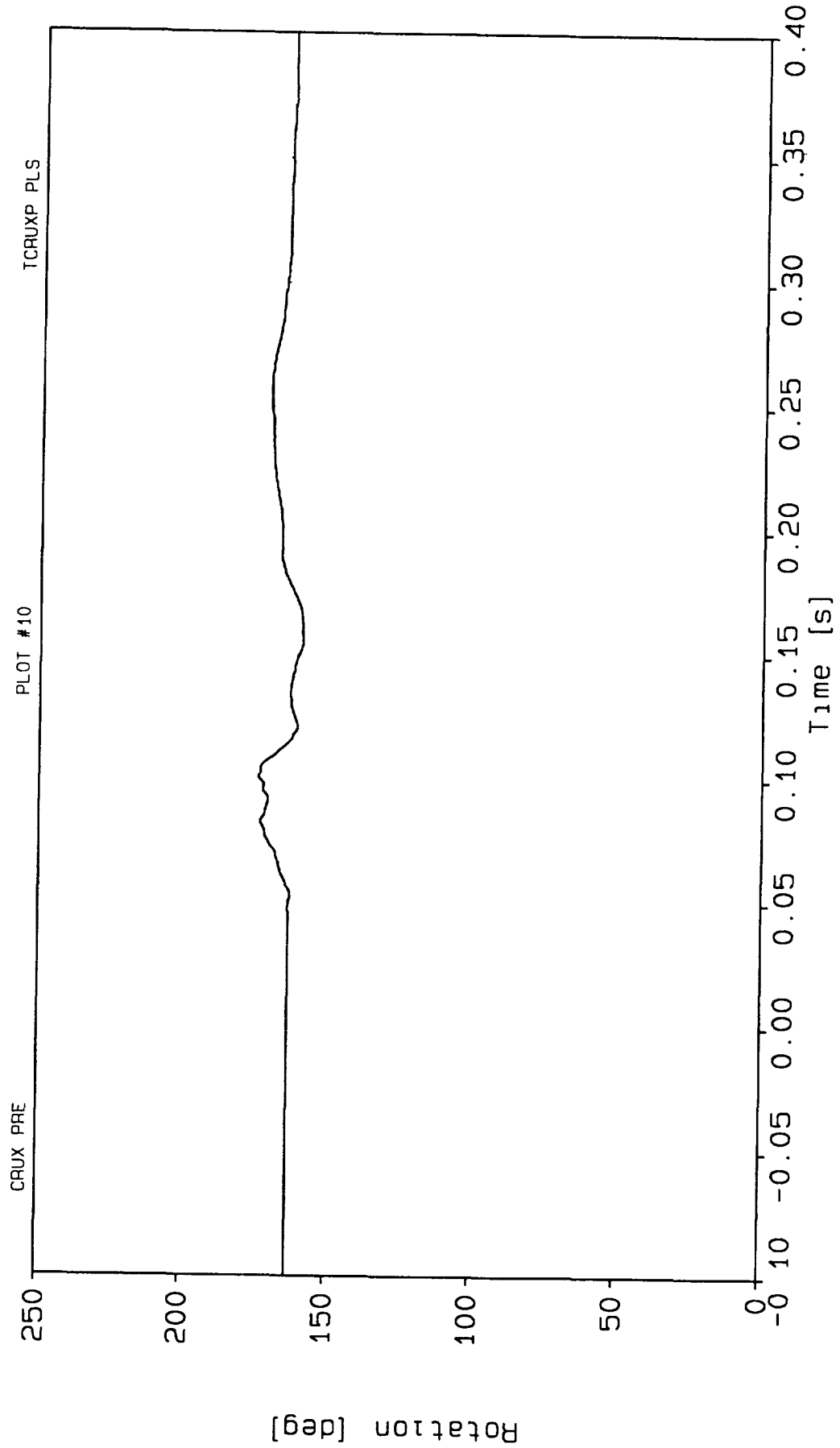
Filter Class 180
Voipe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Lower Right Base Rotation v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

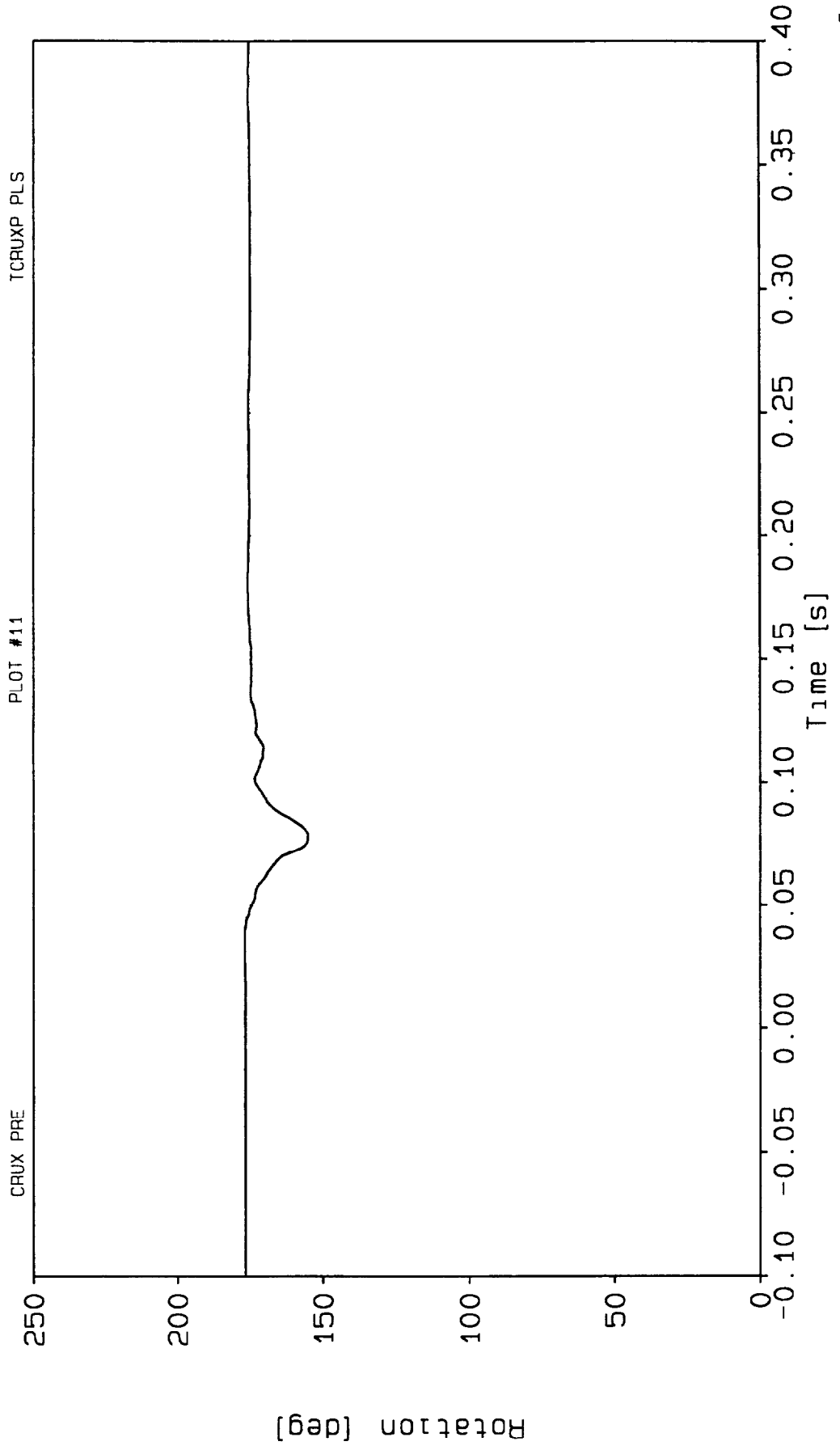


Filter Class 180
Volpe Crash Testing
PH05608

Exponent
Failure
Analysis
Associates

Crux Lower Right Mid Rotation v Time

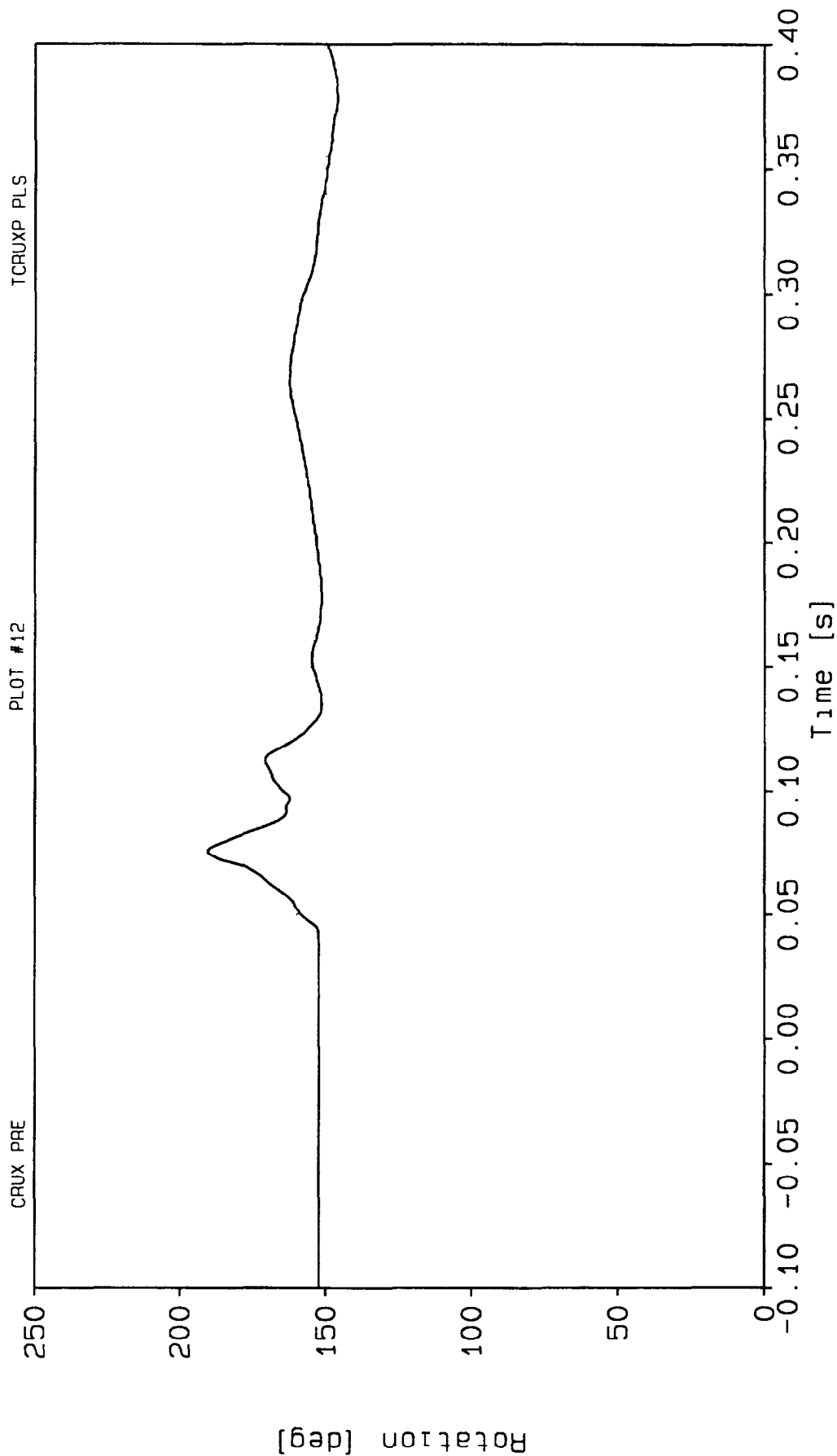
Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Crux Lower Right Elbow Rotation v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

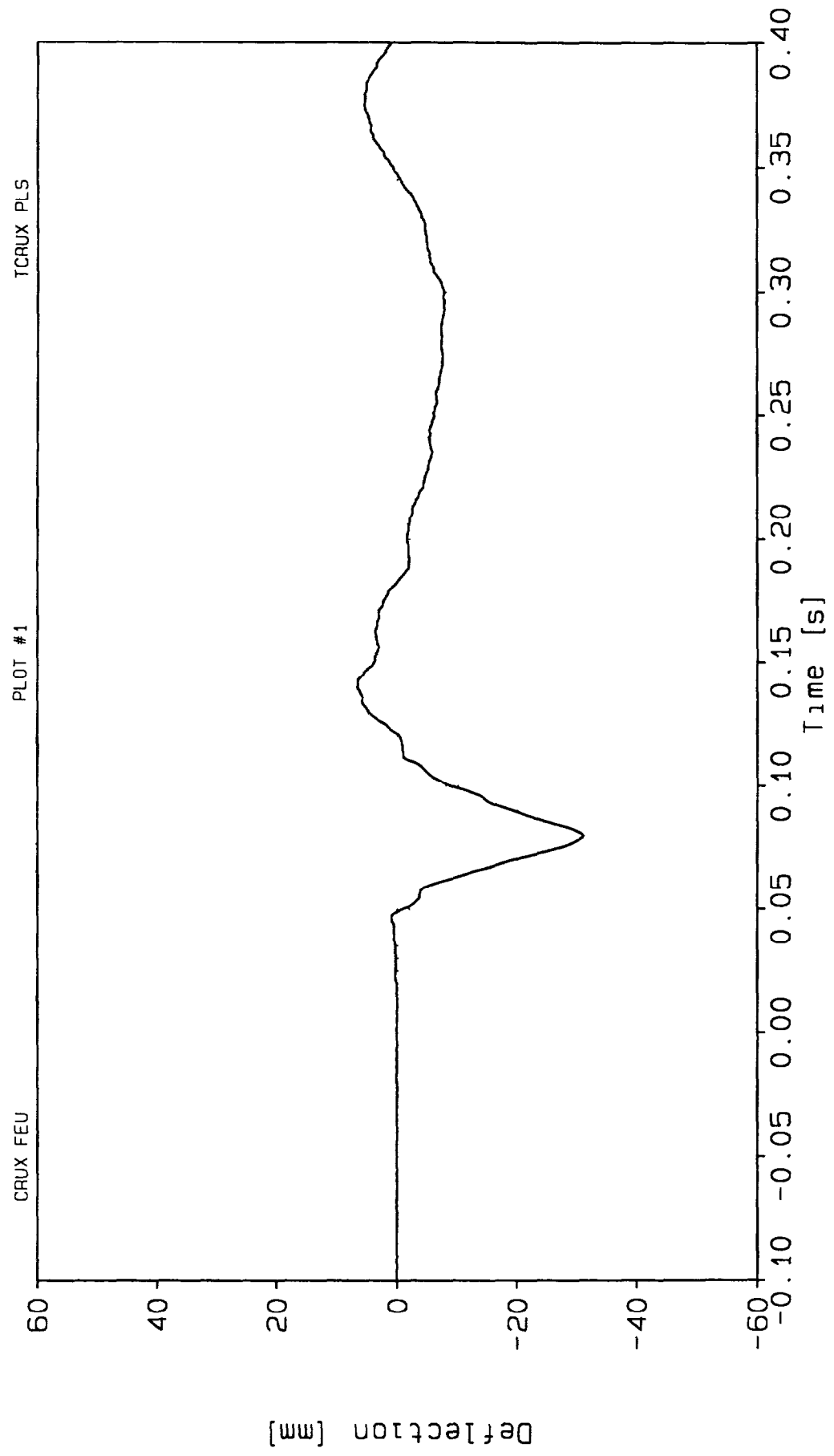


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Right Deflection (Dx) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

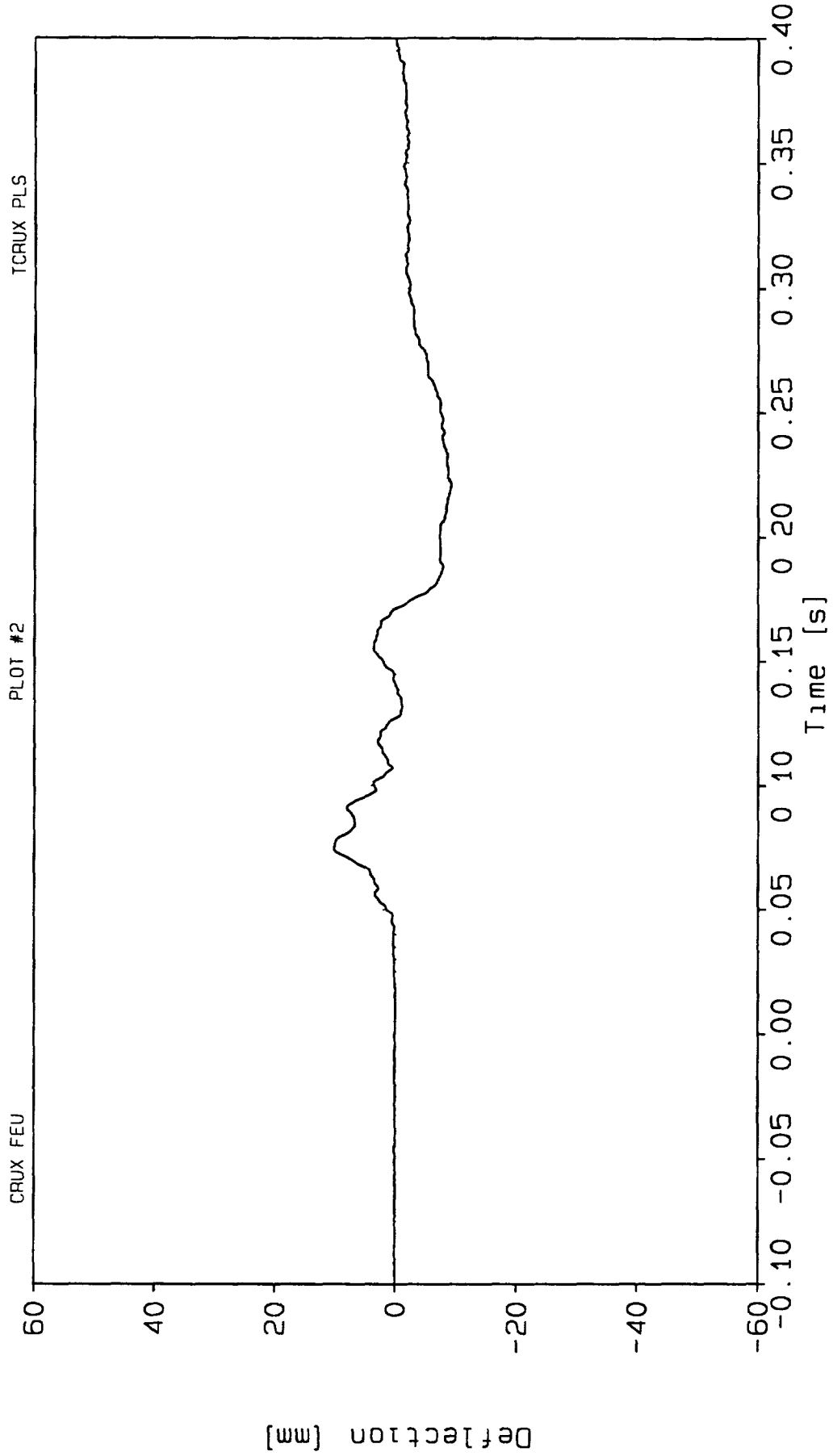


Filter Class 180
Volpe Crash Testing
PH05608

Exponent
Failure
Analysis
Associates

Crux Upper Right Deflection (Dy) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH05608

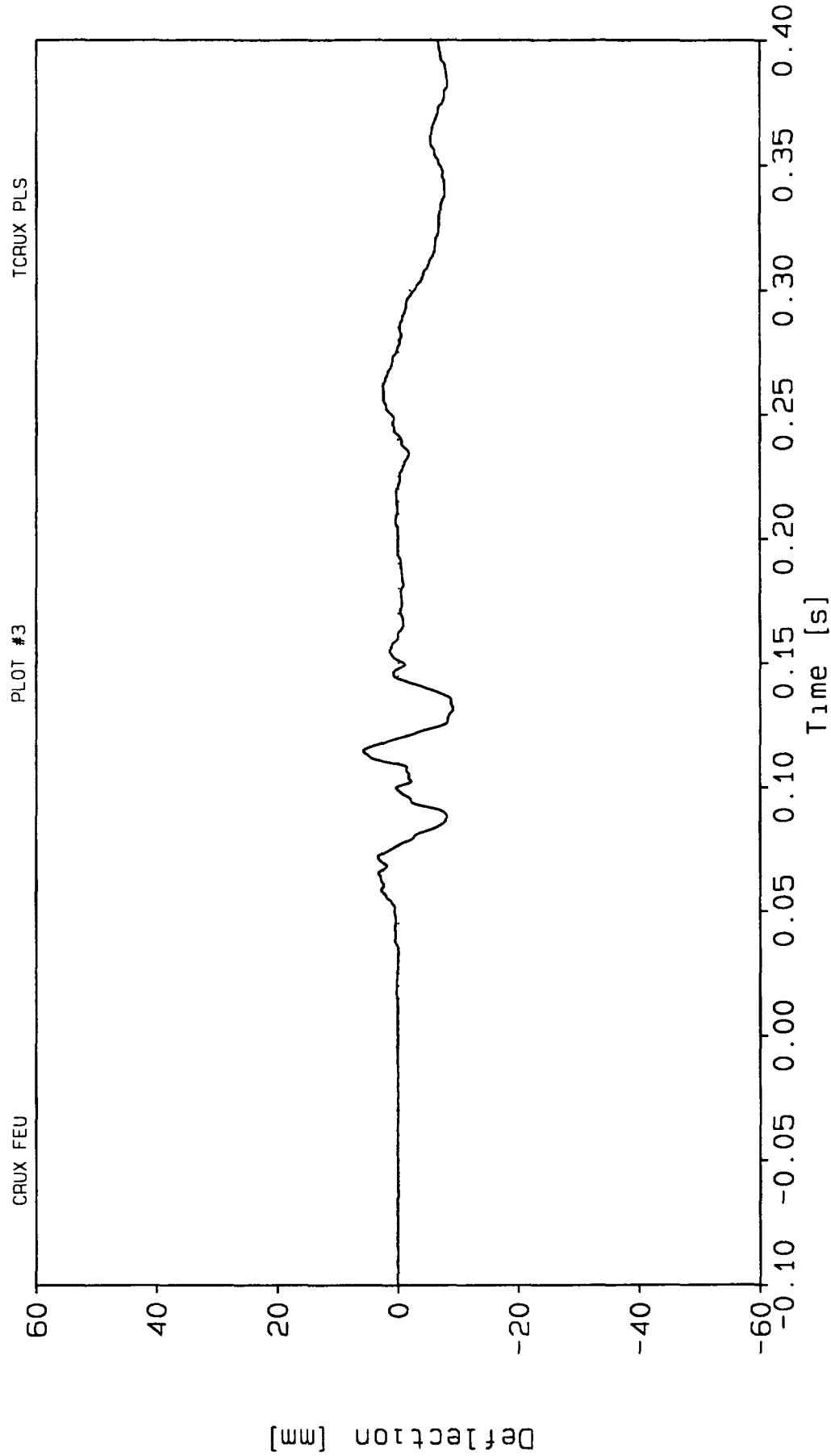
Exponent
Failure
Analysis
Associates

Crux Upper Right Deflection (Dz) v Time

Driver Dummy - THOR - Post THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



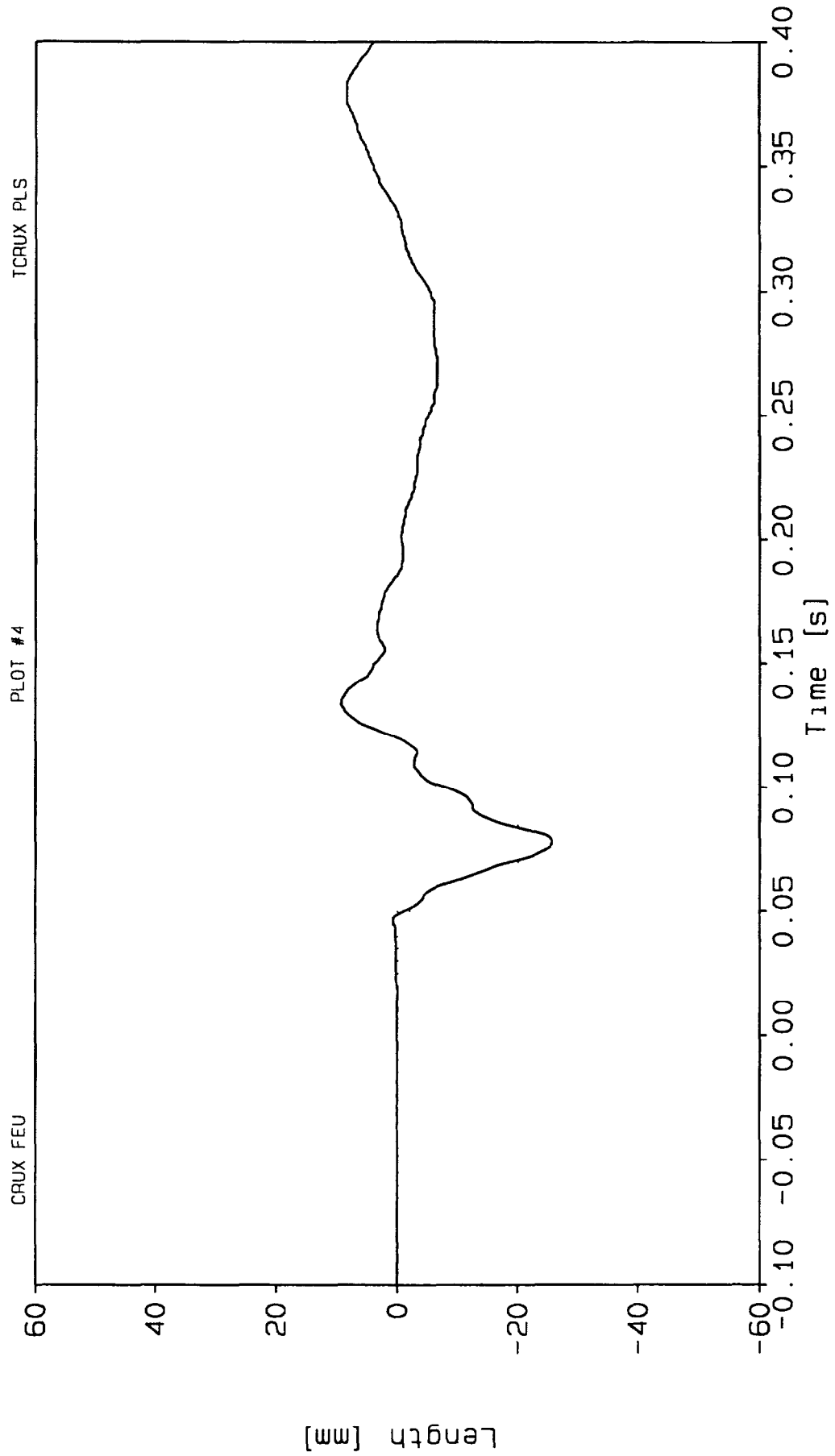
Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Right Endpoint Length v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

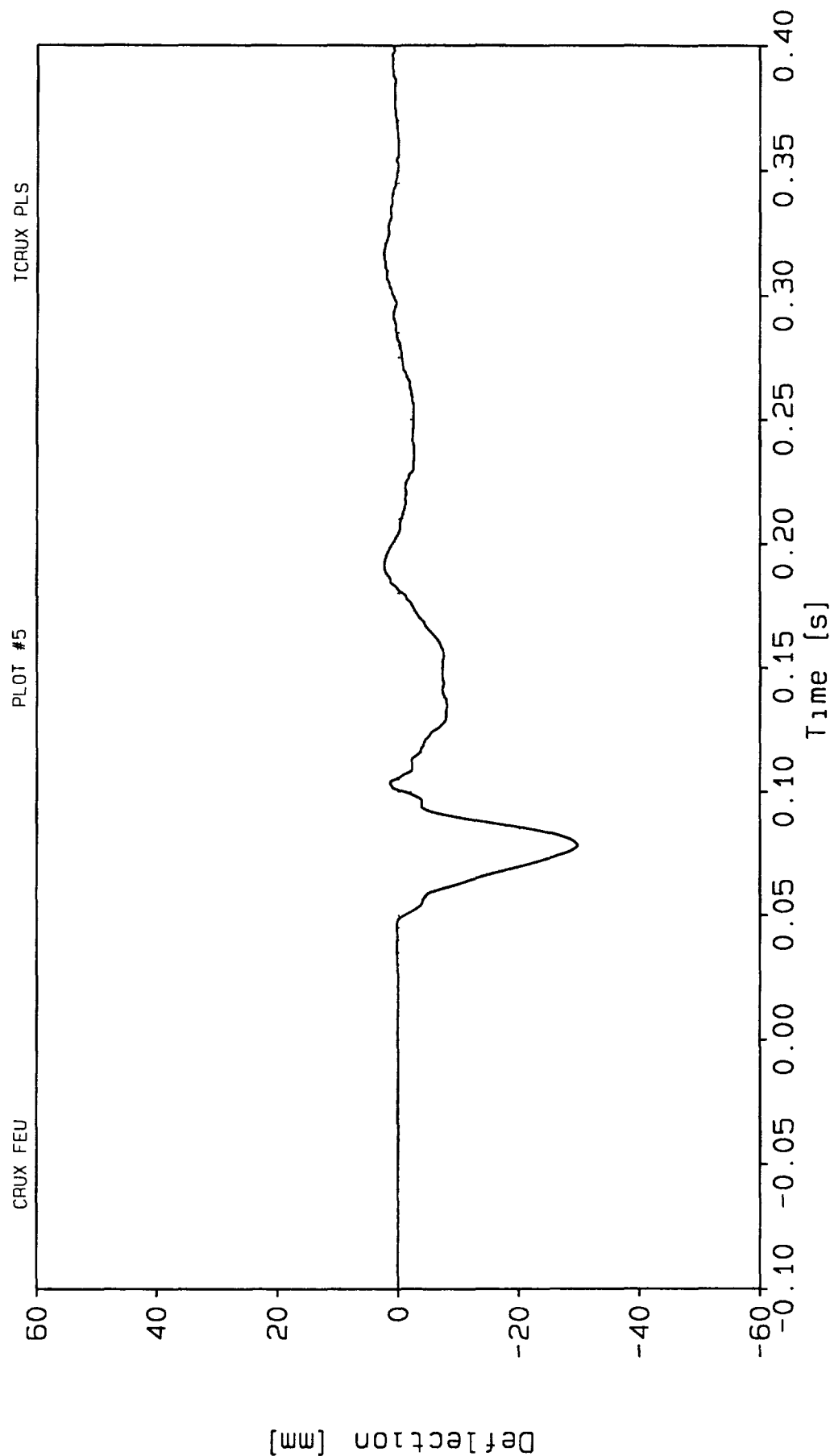


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Left Deflection (Dx) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



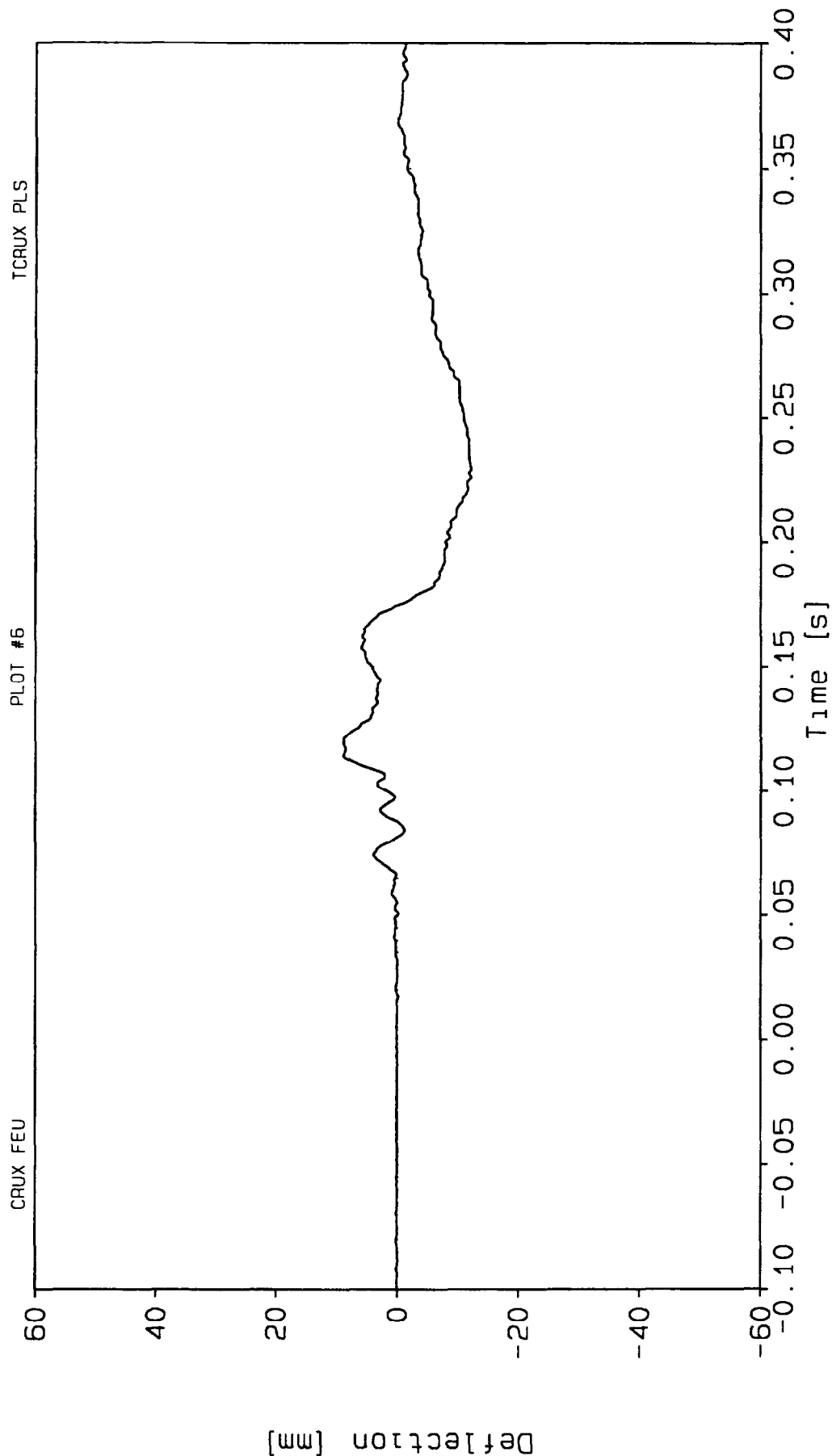
Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Left Deflection (Dy) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

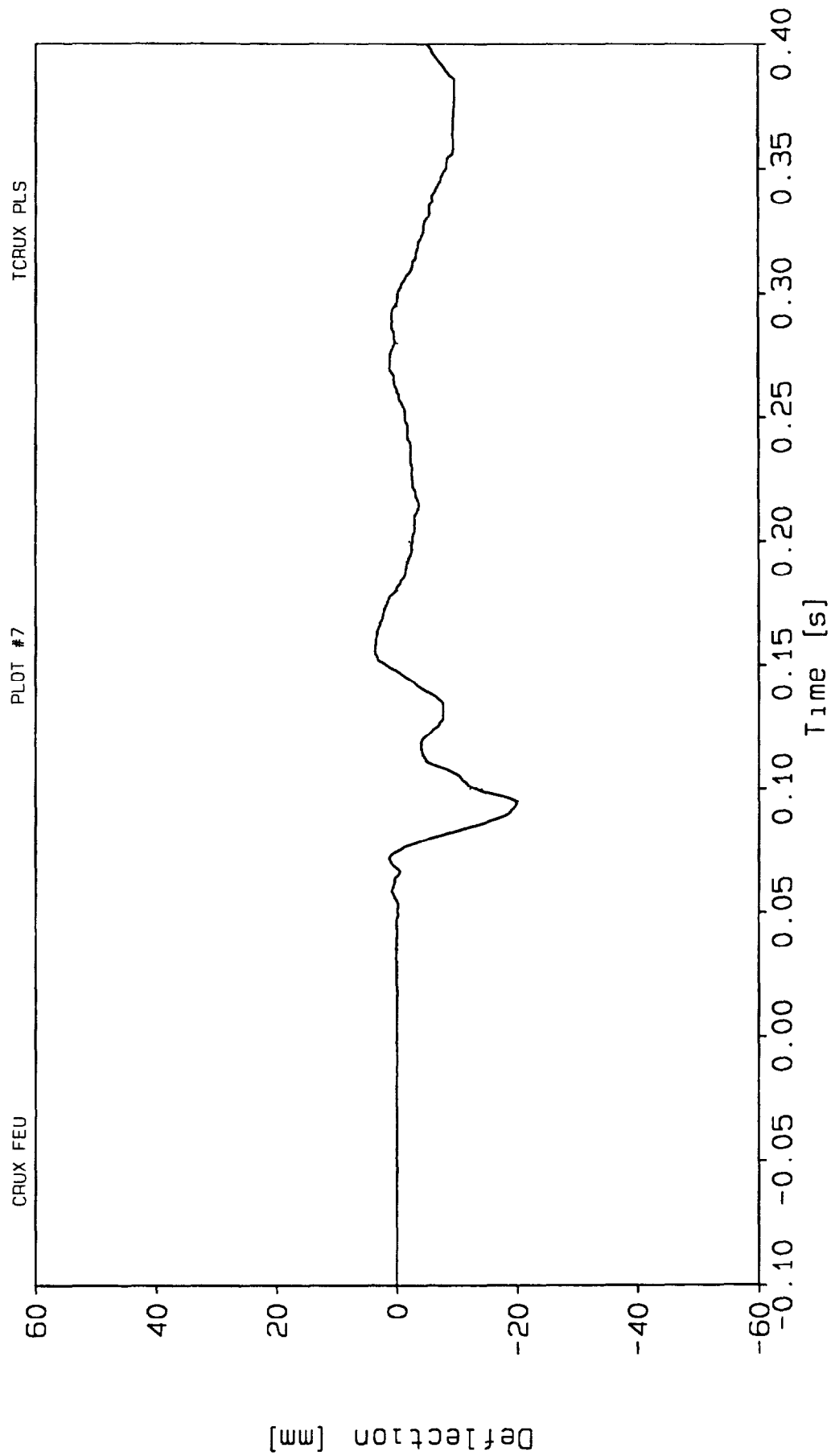


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Upper Left Deflection (Dz) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

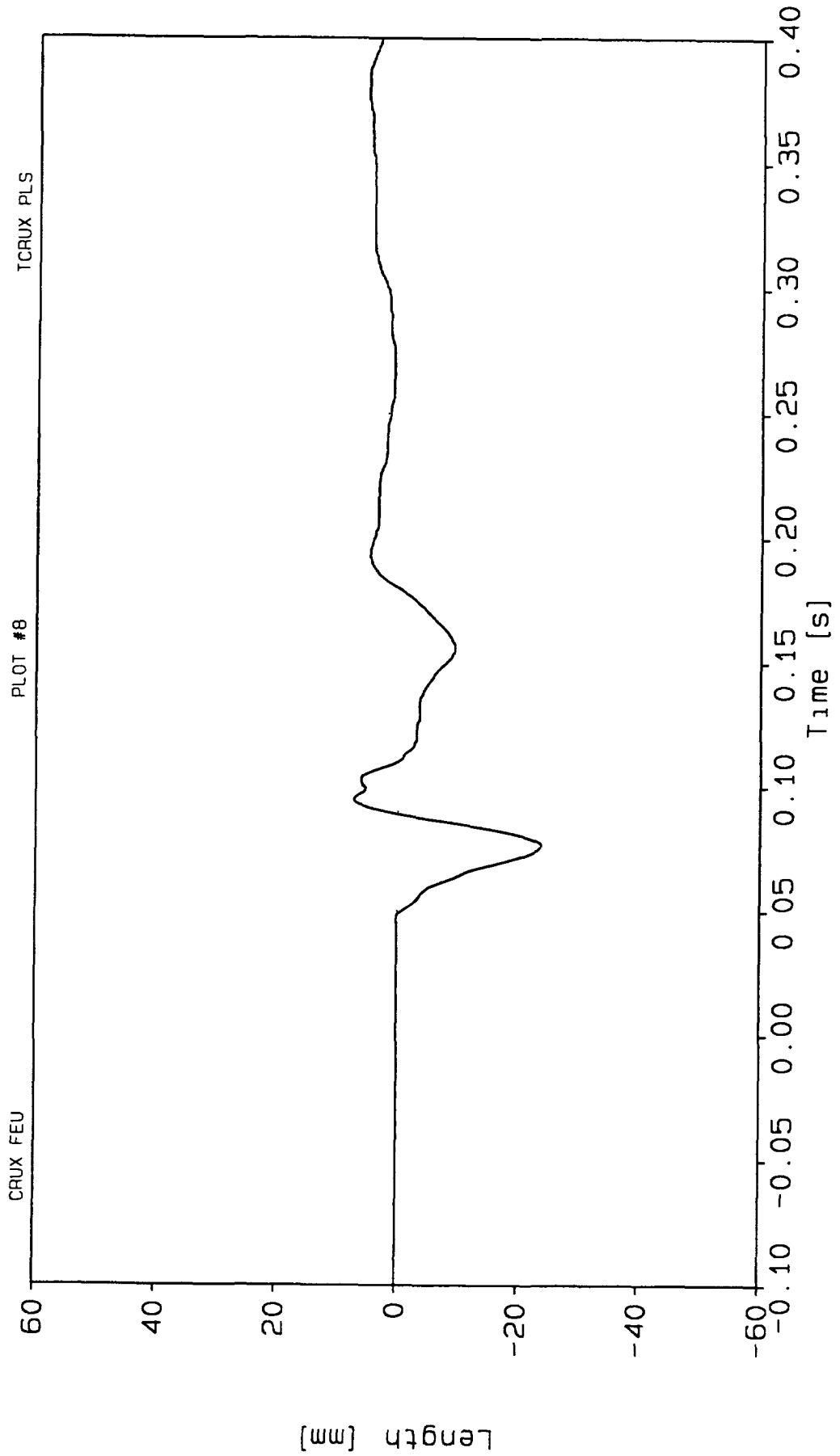
Filter Class 180
Volpe Crash Testing
PH06608

Crux Upper Left Endpoint Length v Time

Driver Dummy - THOR - Post THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

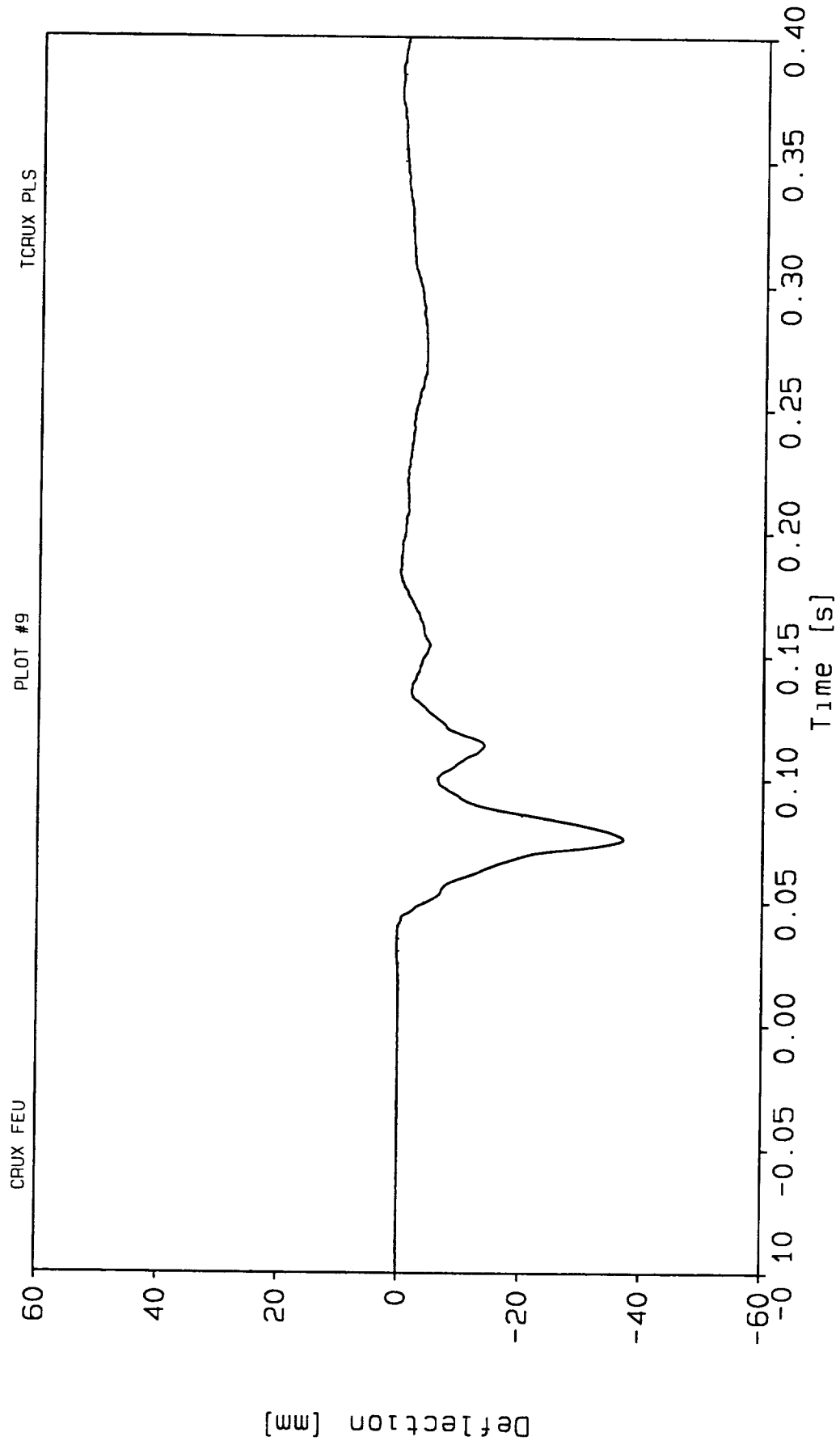


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Lower Right Deflection (Dx) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



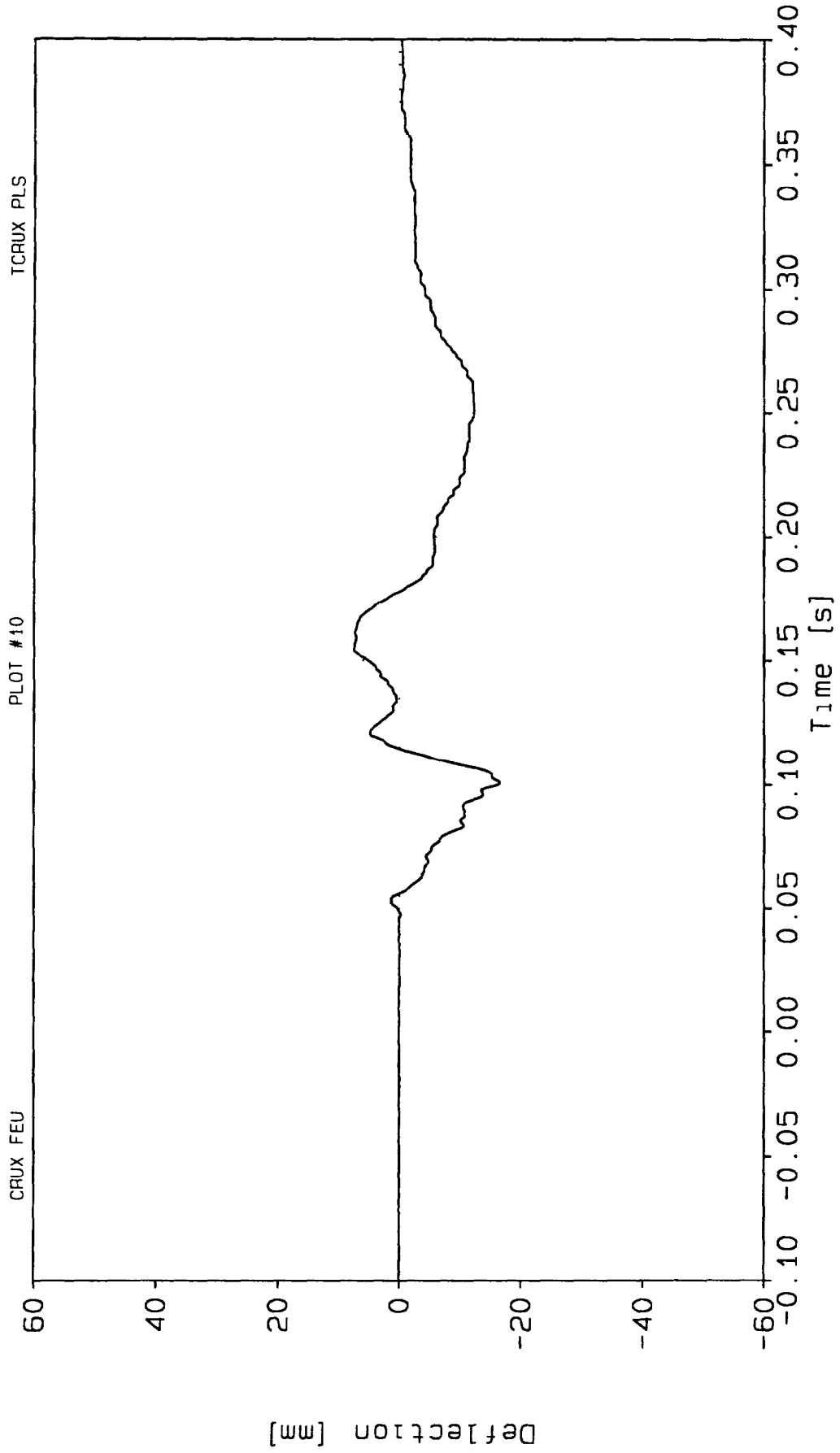
Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Lower Right Deflection (Dy) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

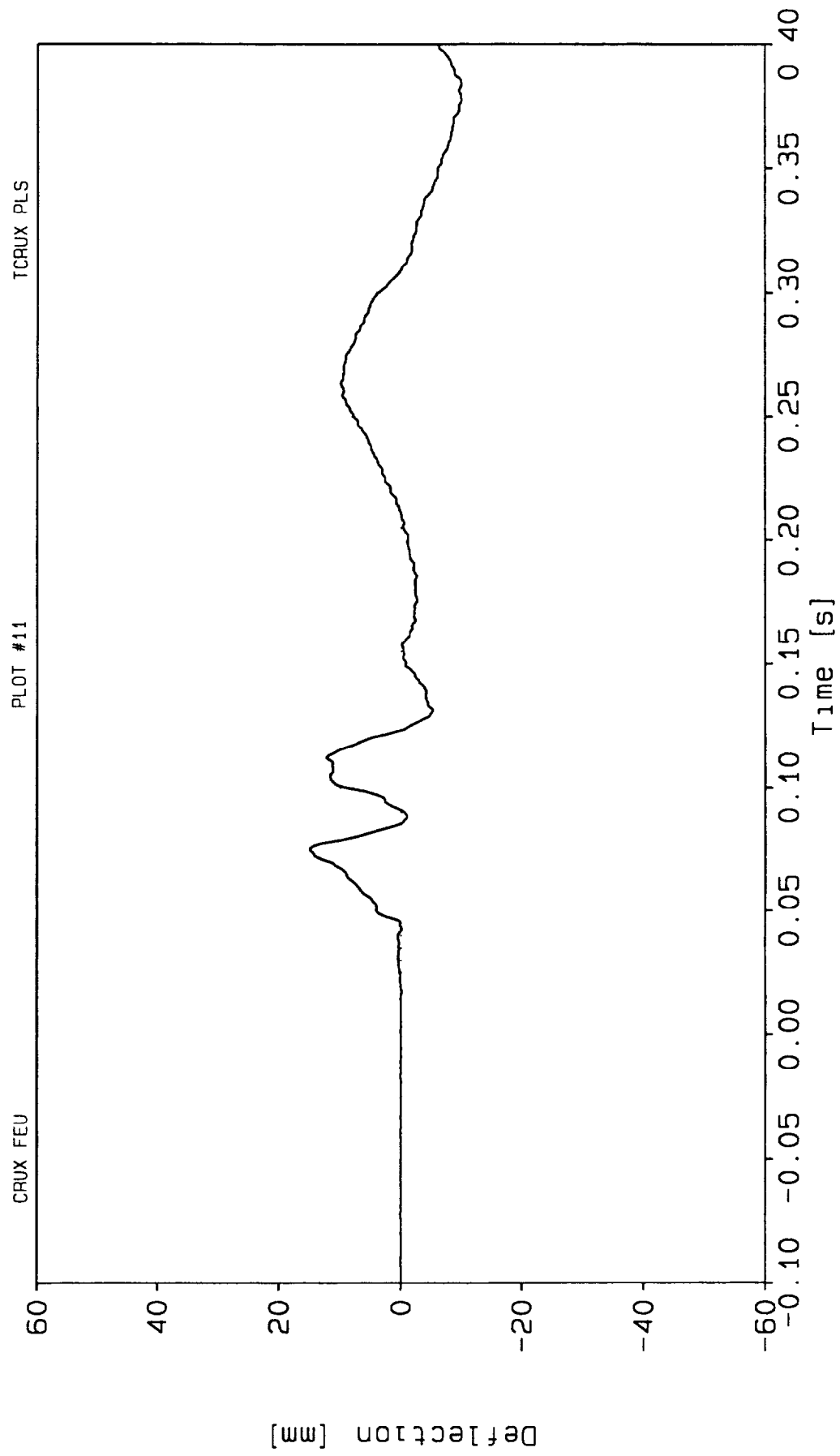


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Lower Right Deflection (Dz) v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

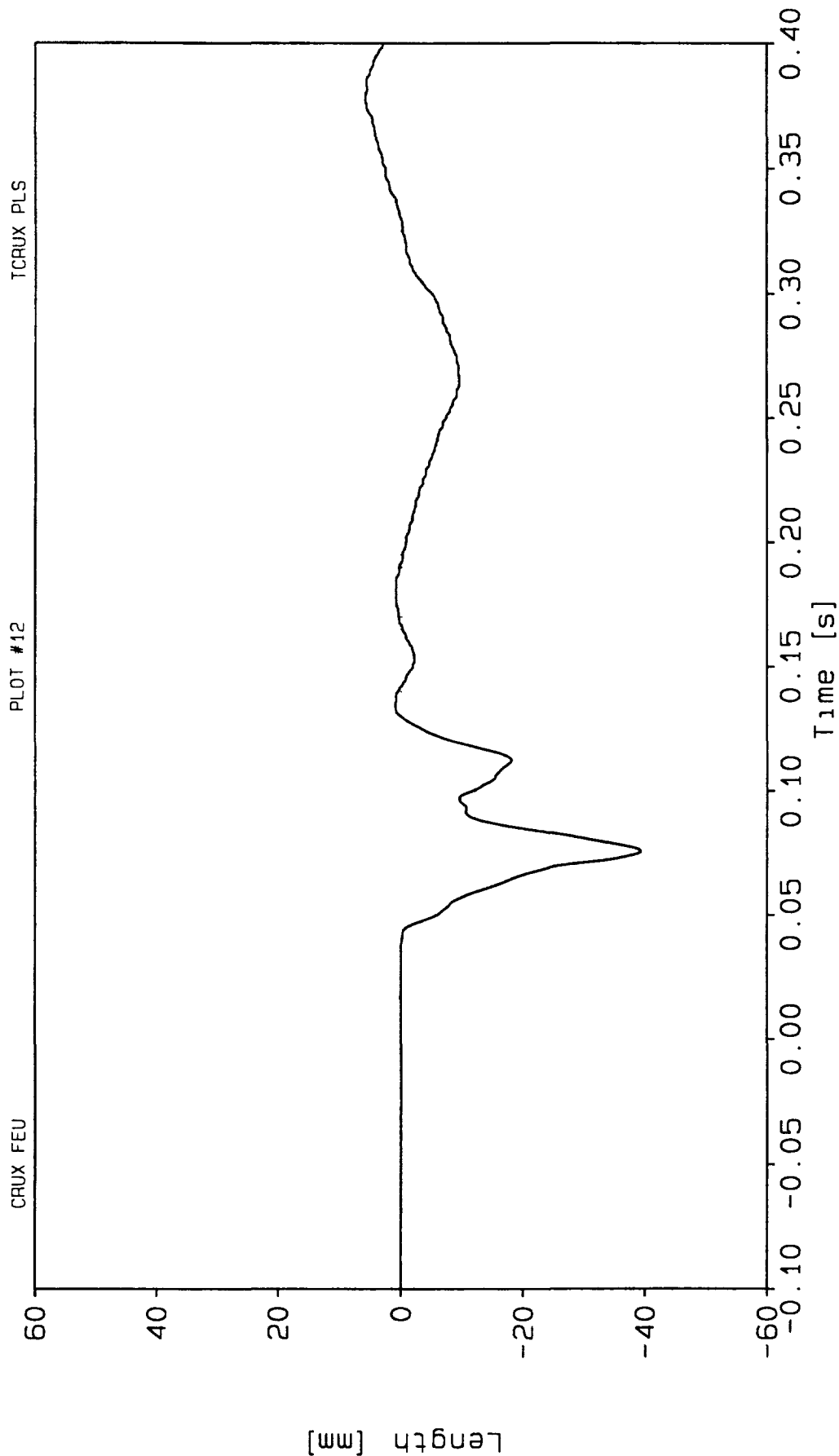
Filter Class 180
Volpe Crash Testing
PH06608

Crux Lower Right Endpoint Length v Time

Driver Dummy - THOR - Post THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH05508

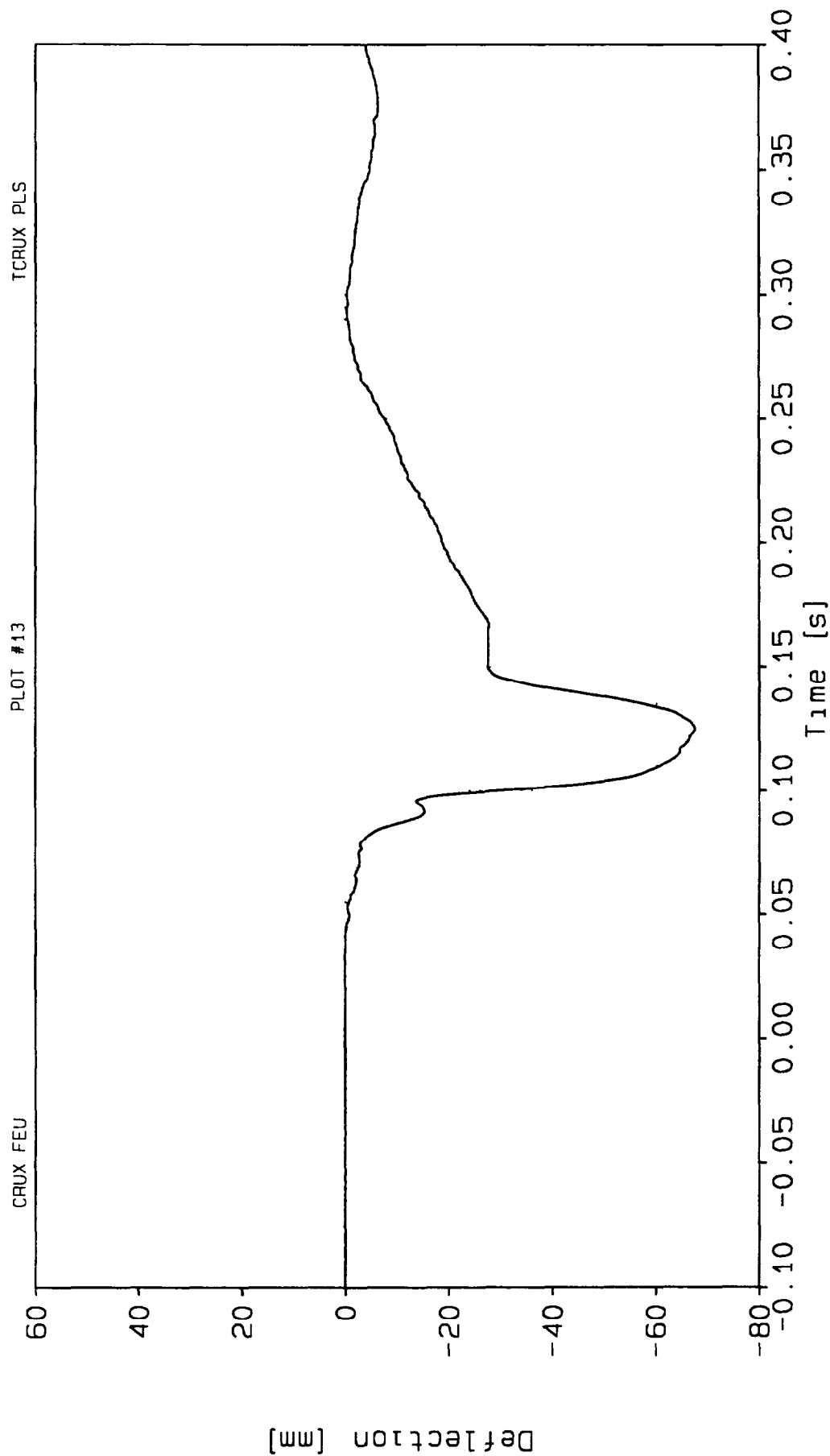
Exponent
Failure
Analysis
Associates

Crux Lower Left Deflection (Dx) v Time

Driver Dummy - THOR - Post THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

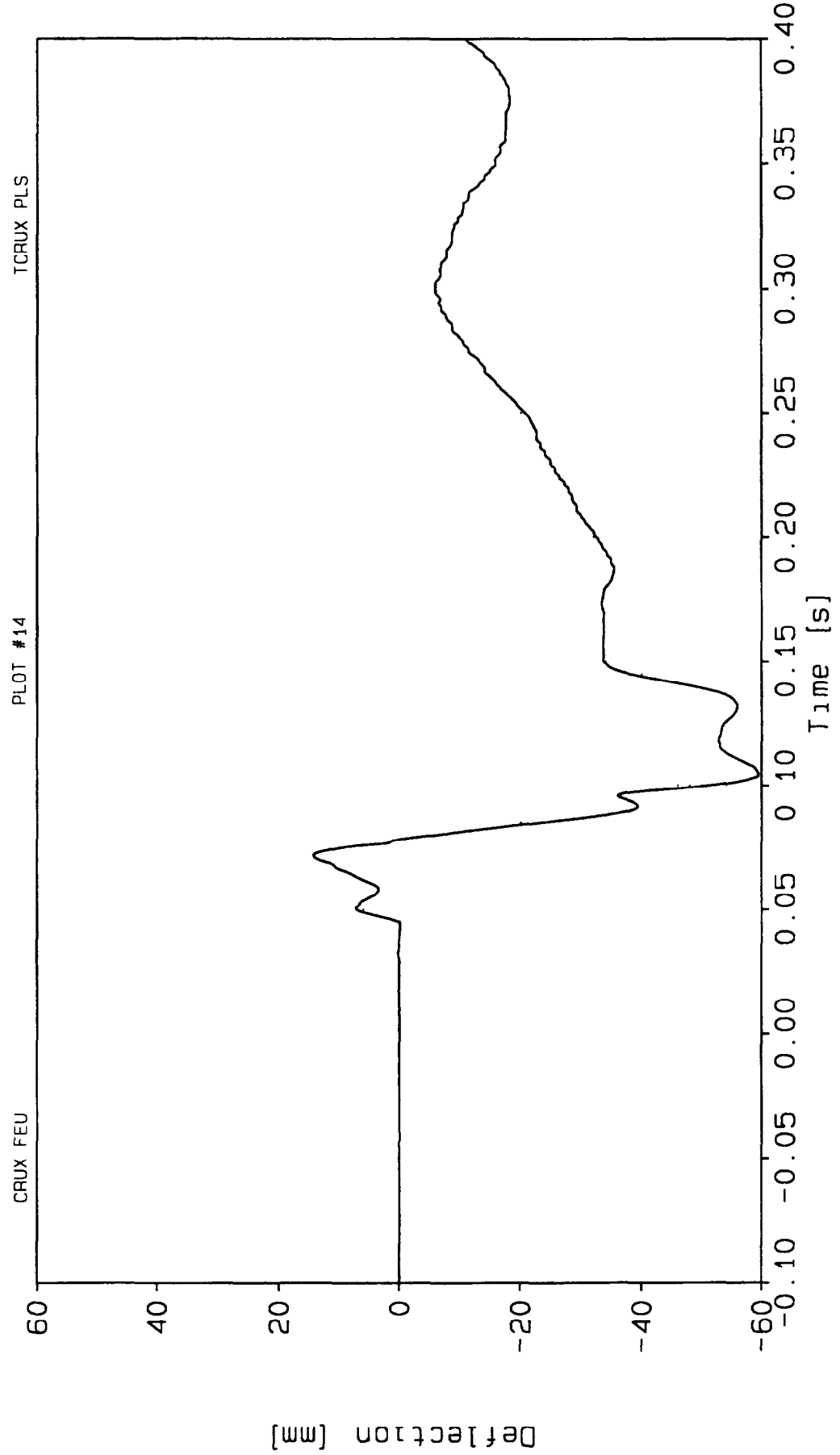
Filter Class 180
Volpe Crash Testing
PH05608

Crux Lower Left Deflection (Dy) v Time

Driver Dummy - THOR - Post THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

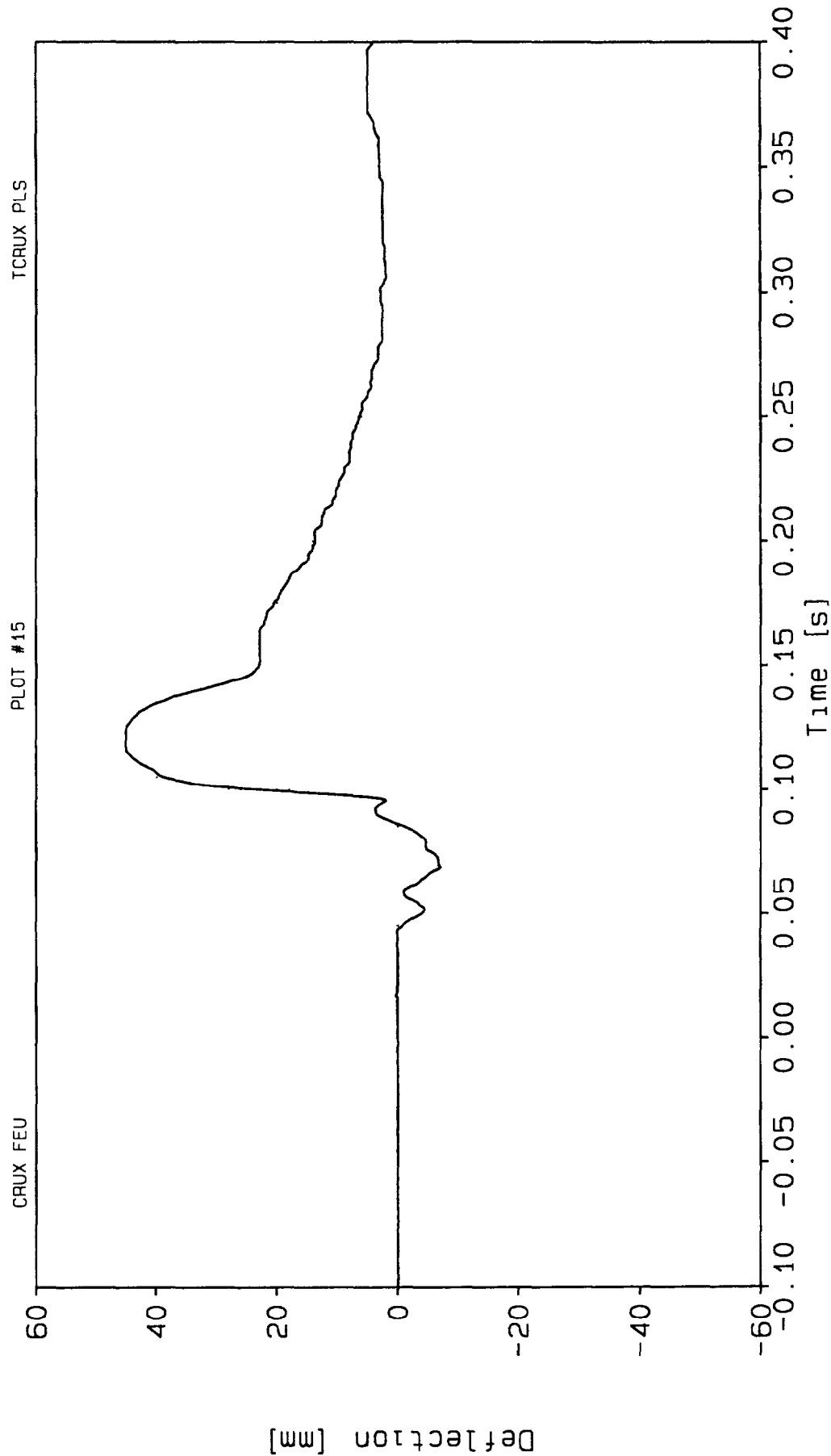
Filter Class 180
Volpe Crash Testing
PH06608

Crux Lower Left Deflection (Dz) v Time

Driver Dummy - THOR - Post THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

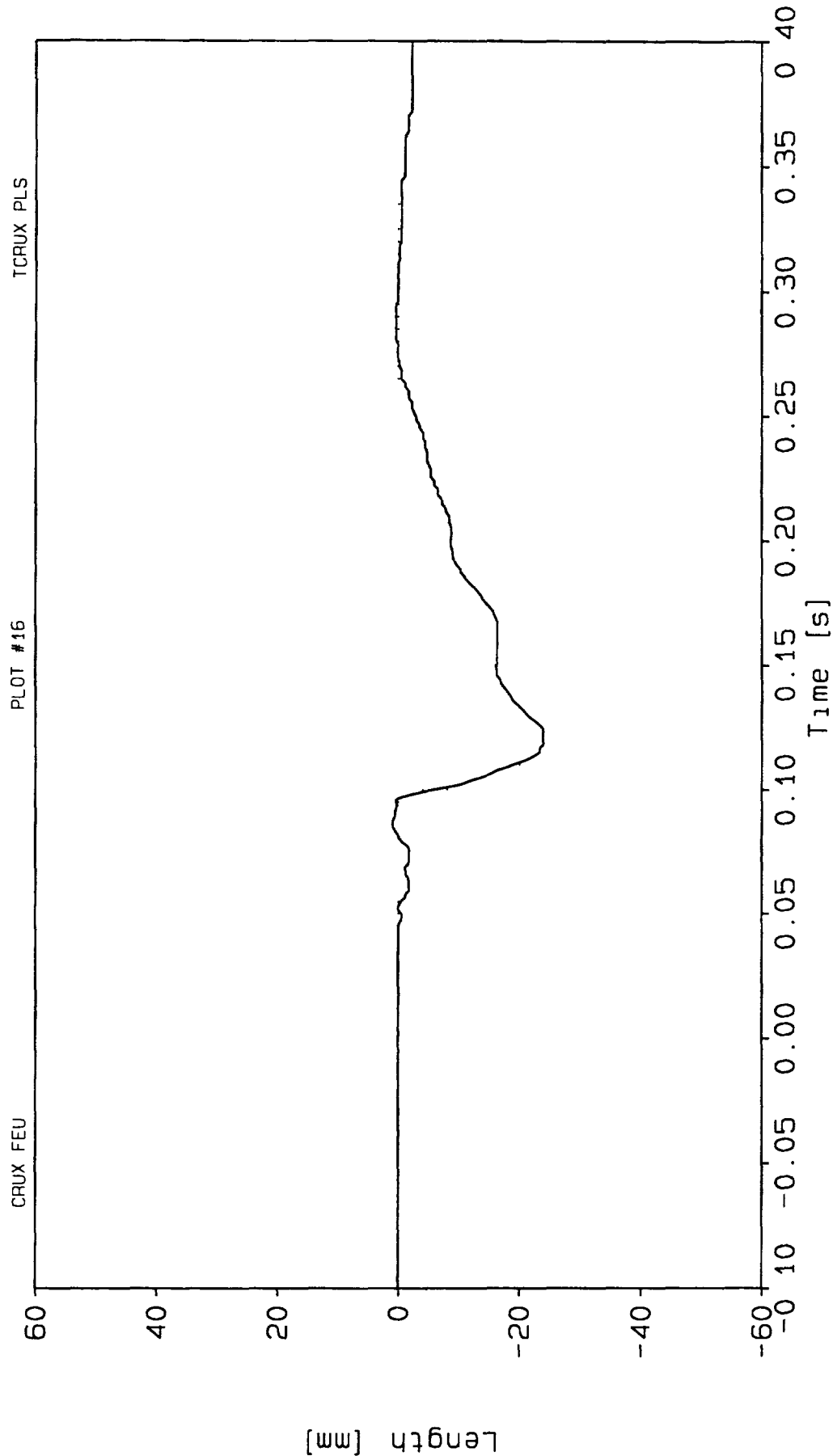


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Crux Lower Left Endpoint Length v Time

Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

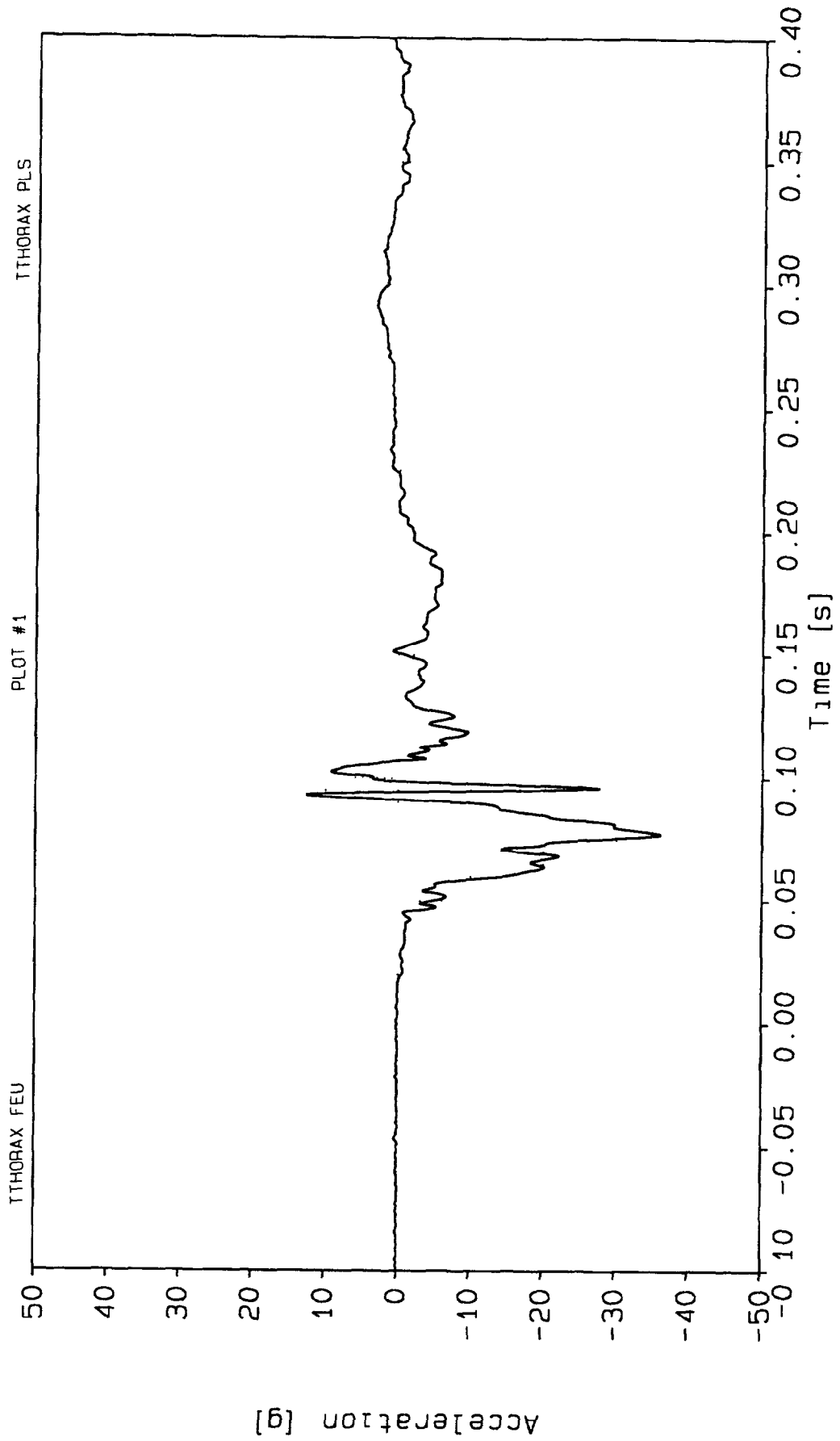
Filter Class 180
Volpe Crash Testing
PH05608

Thorax C.G. Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH05608

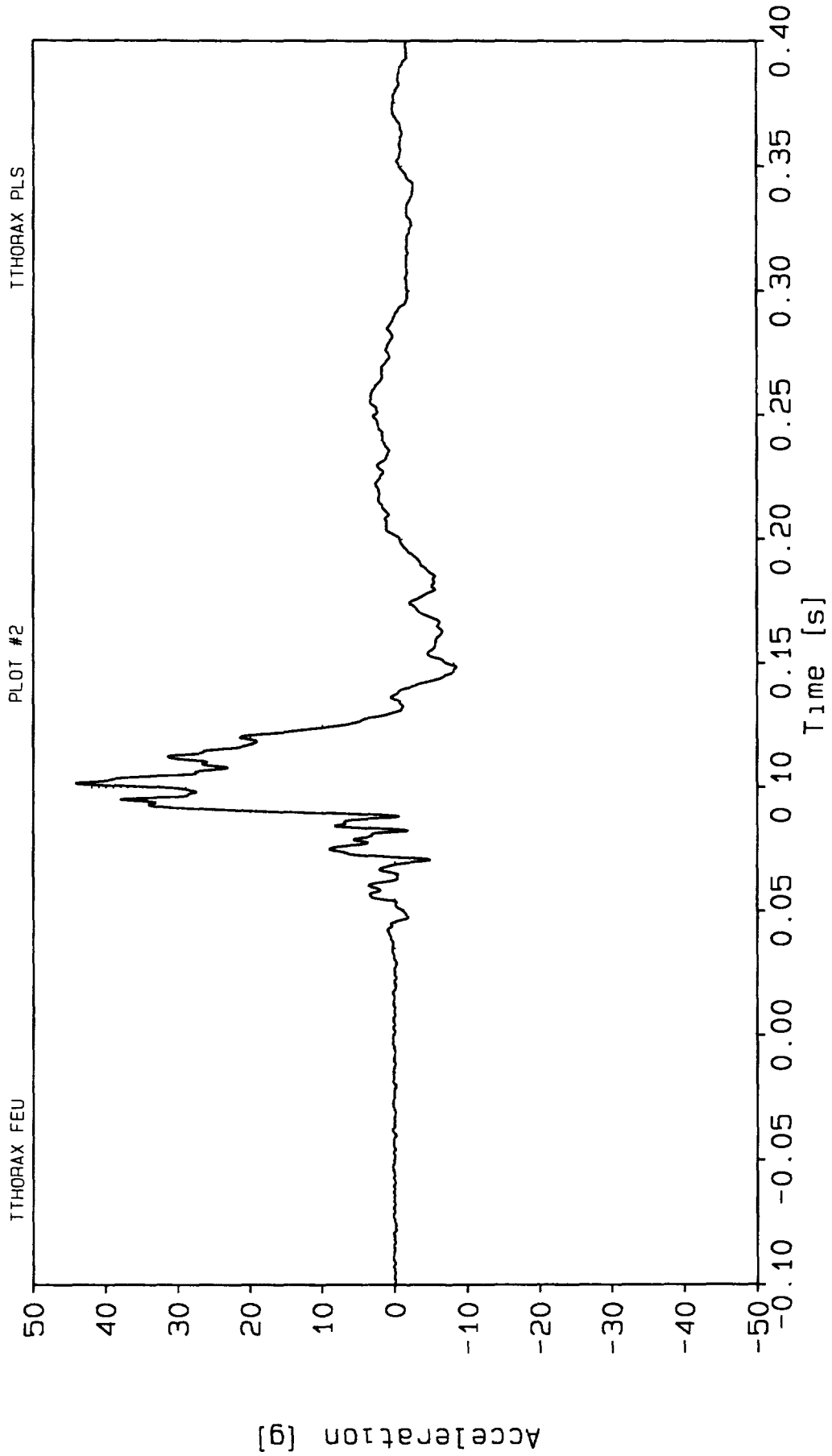
Exponent
Failure
Analysis
Associates

Thorax C.G. Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

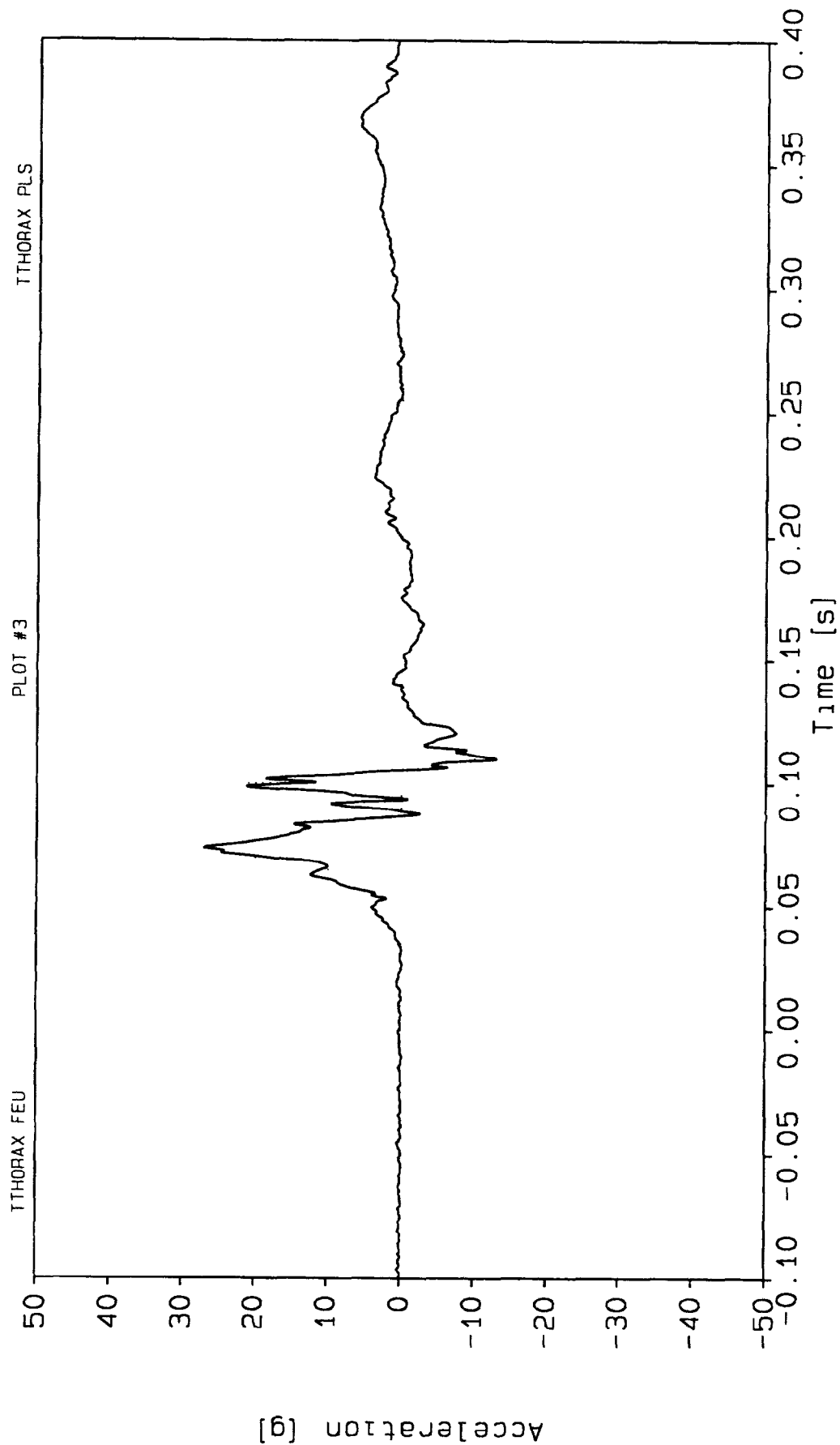
Filter Class 180
Volpe Crash Testing
PH05508

Thorax C.G. Acceleration (Az) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

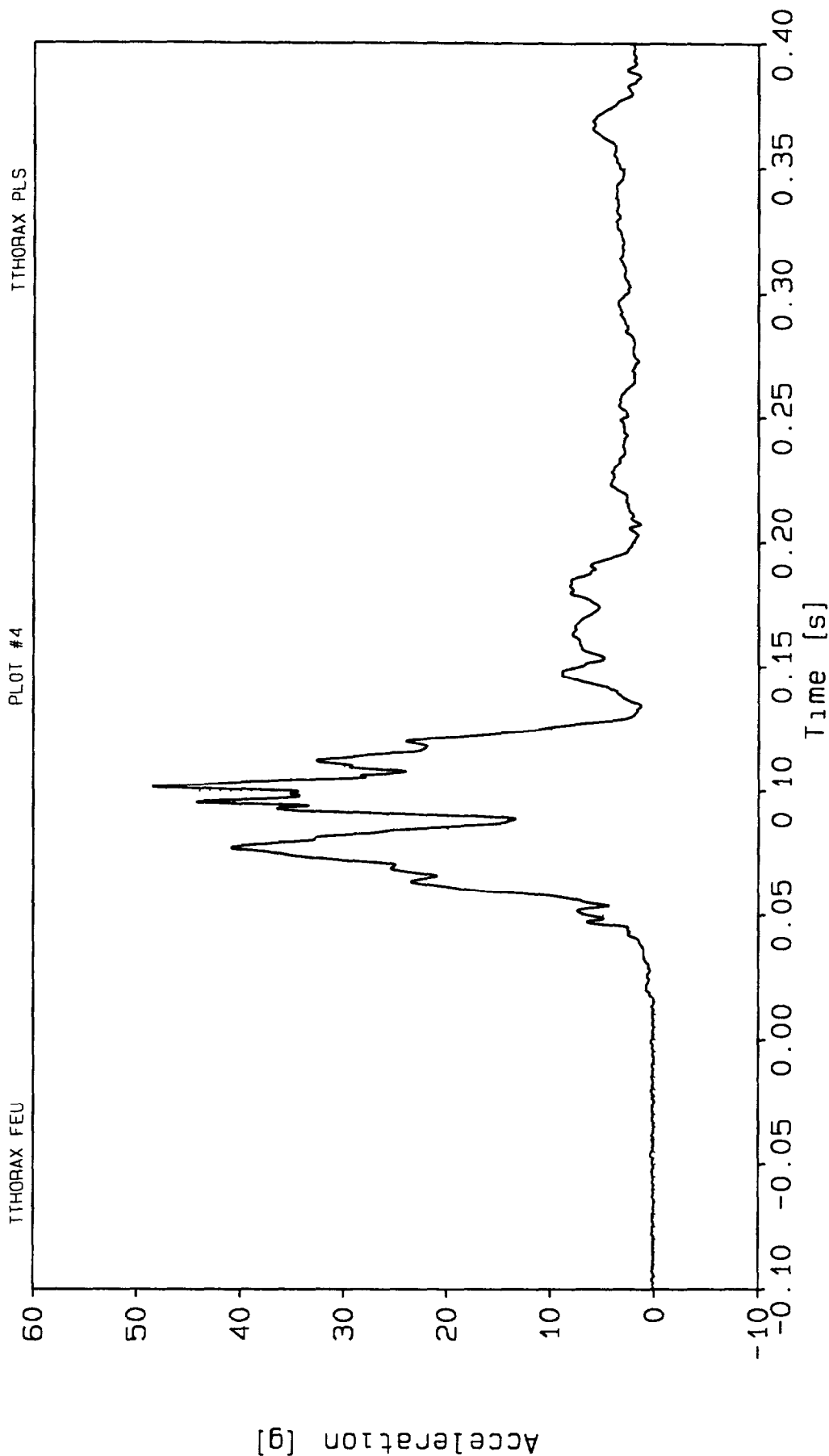
Filter Class 180
Volpe Crash Testing
PH06608

Thorax C.G. Resultant Acceleration (Ar) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



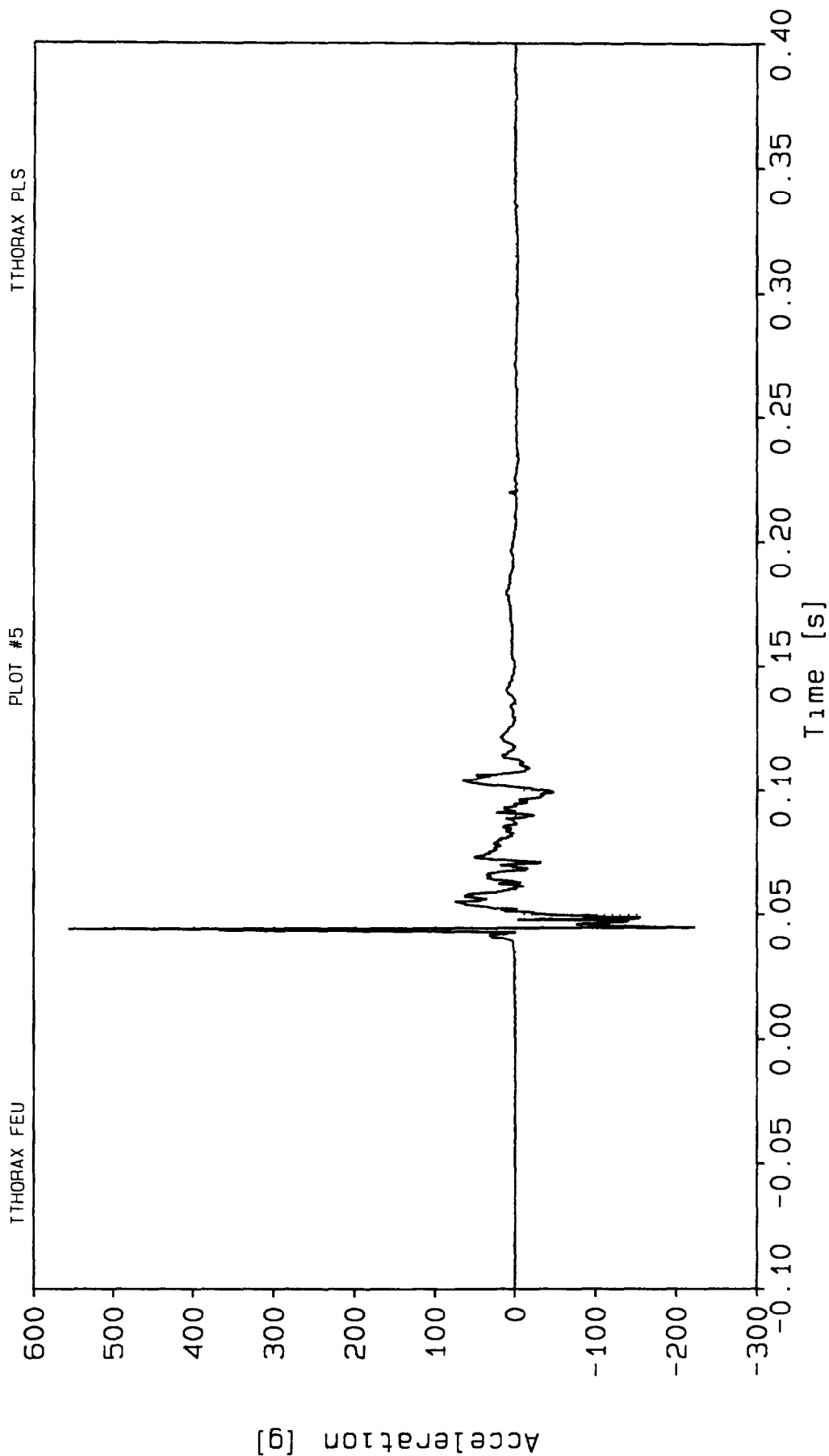
Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH06608

Upper Abdomen Acceleration (Ax) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

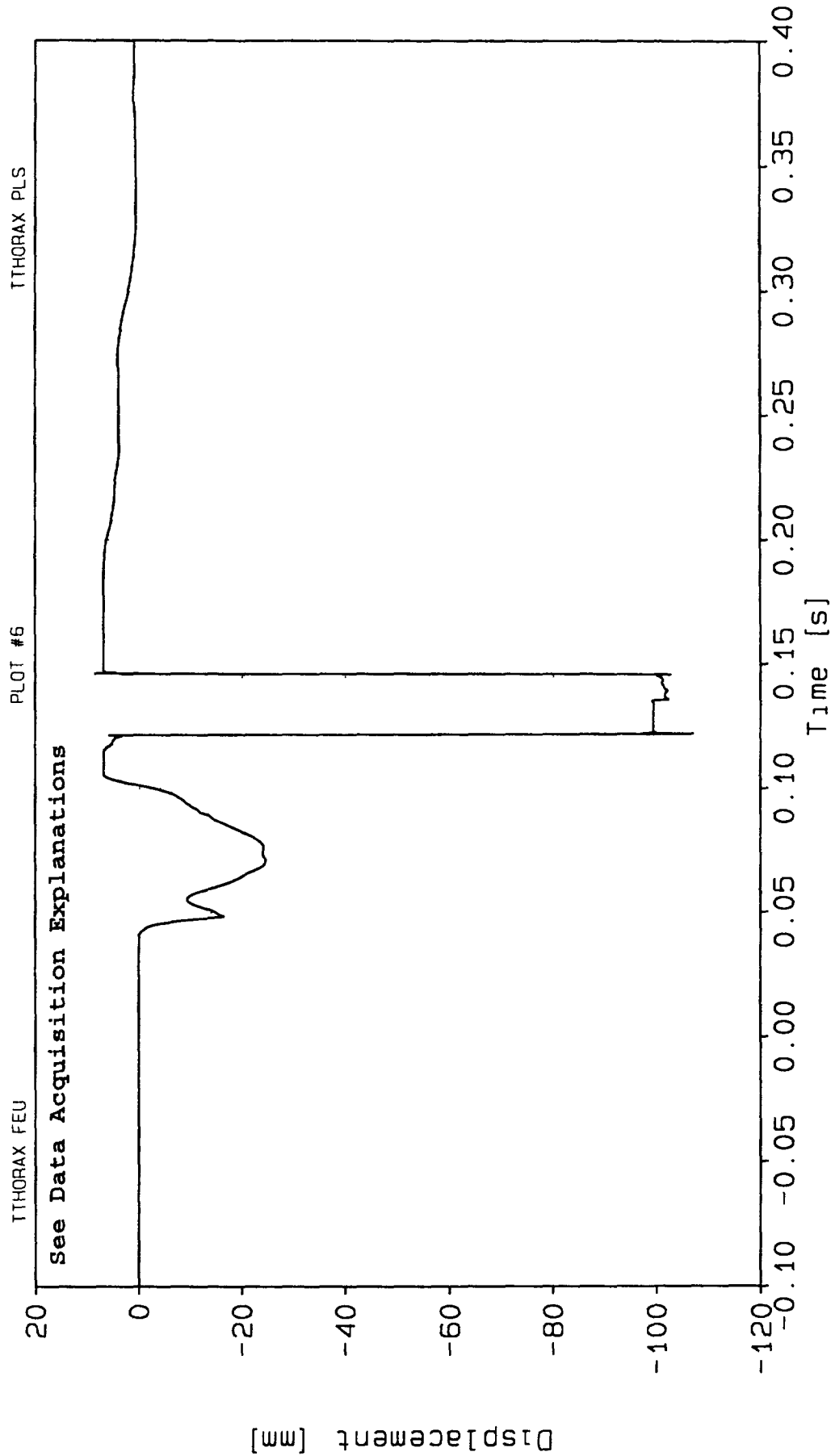
Exponent
Failure
Analysis
Associates

Upper Abdomen Displacement v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

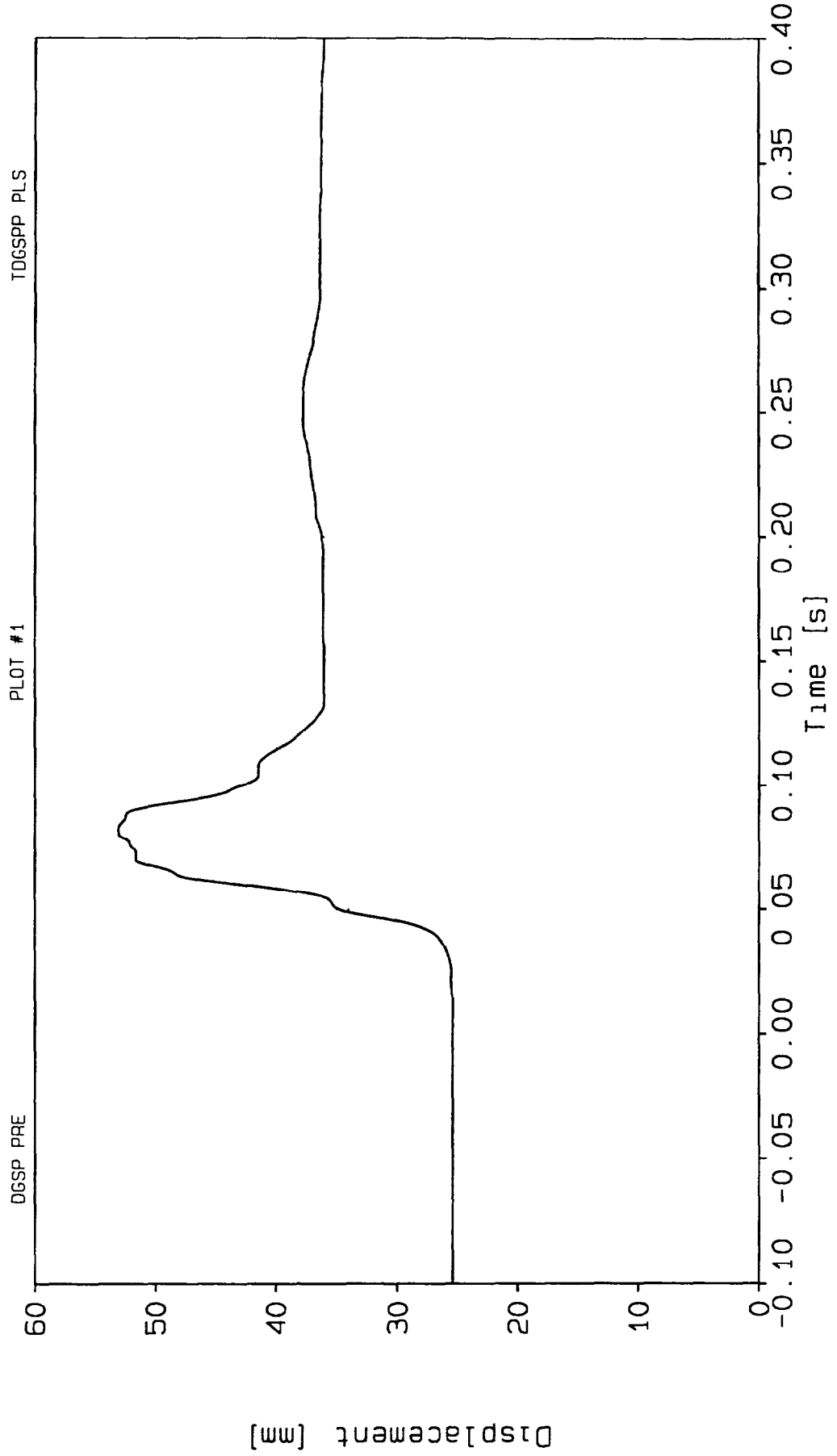
Filter Class 1000
Volpe Crash Testing
PH05508

DGSP Left Displacement v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

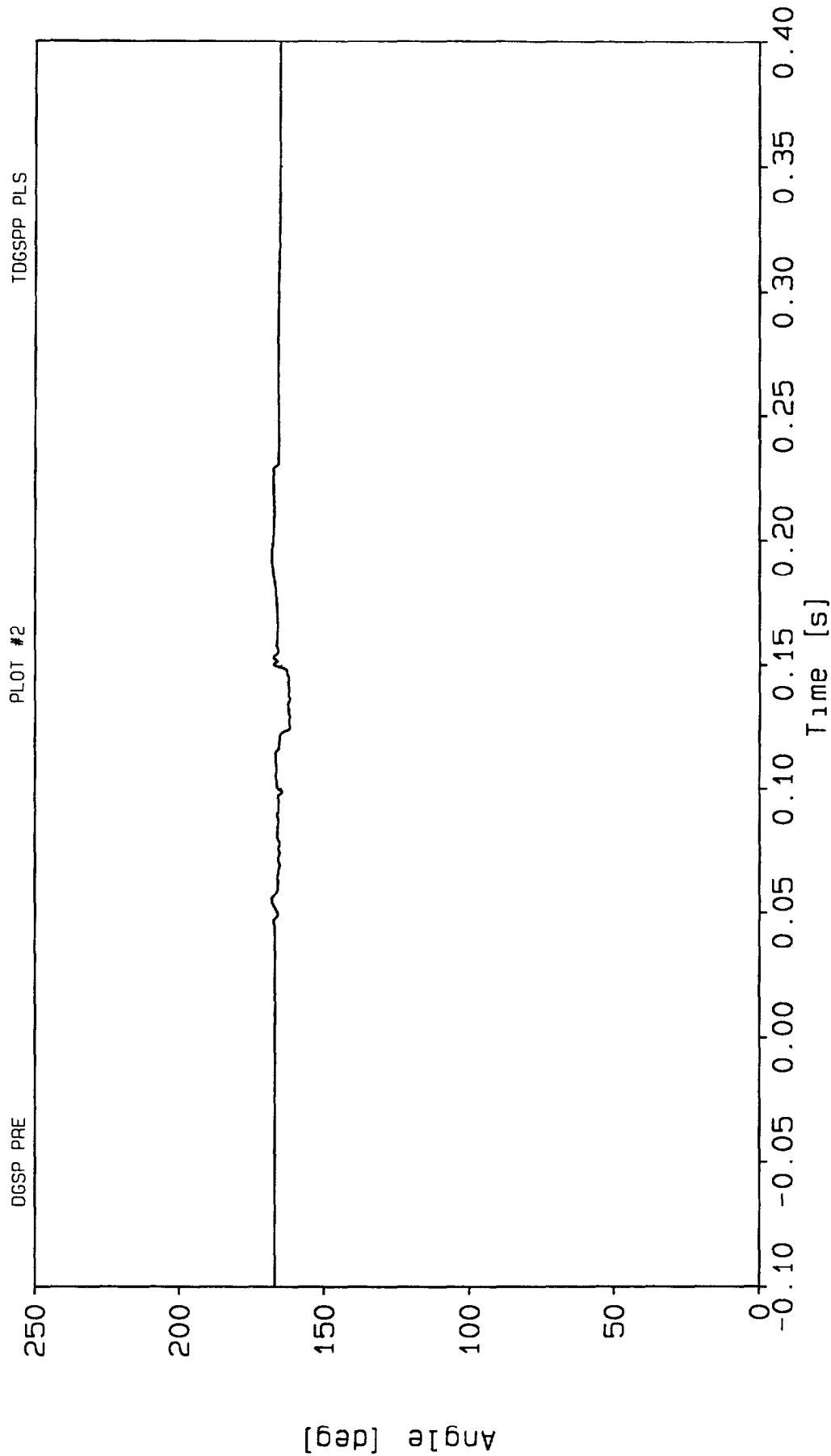
Filter Class 180
Volpe Crash Testing
PH06608

DGSP Left Yaw v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

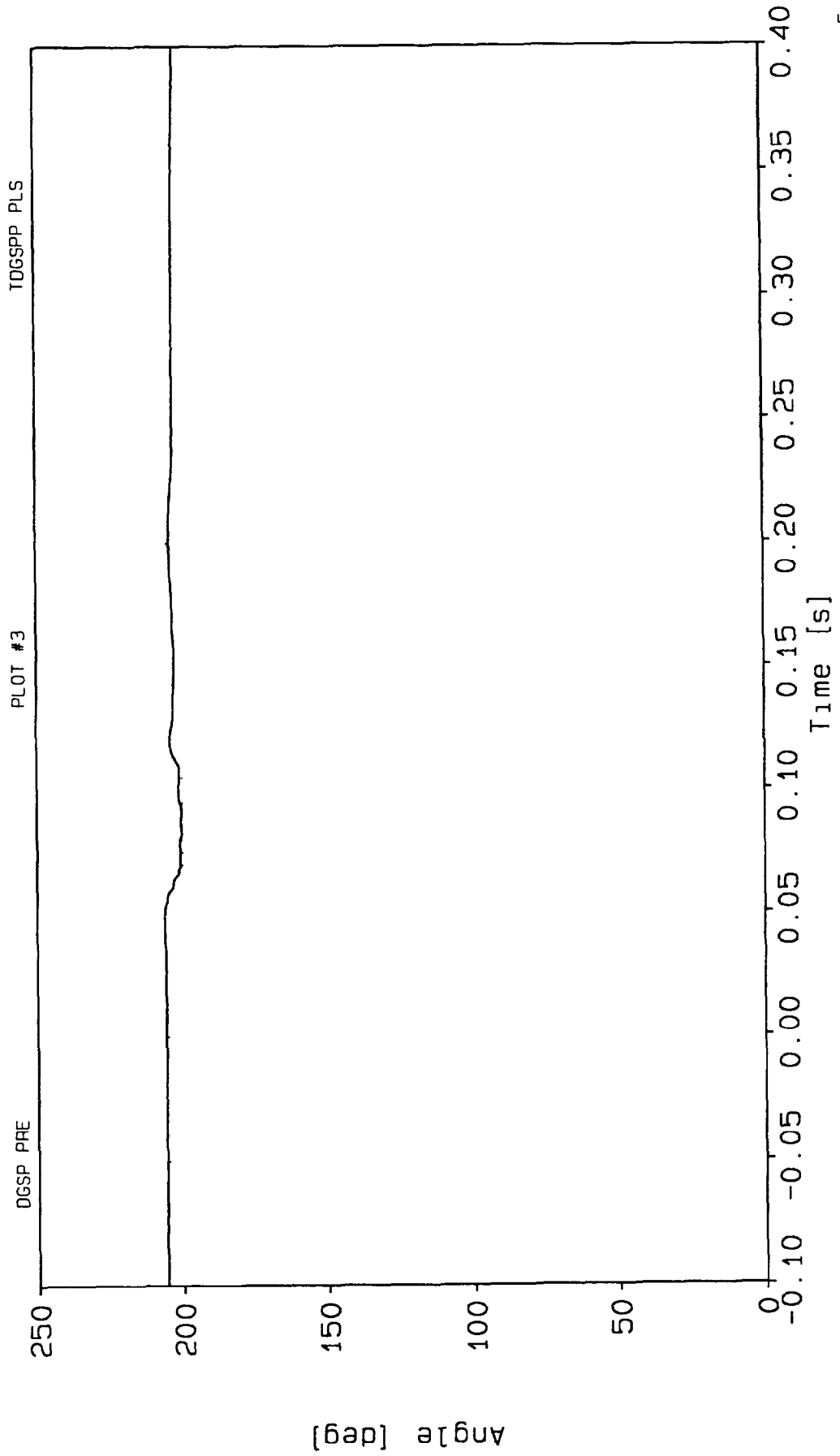


Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH05508

DGSP Left Pitch v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

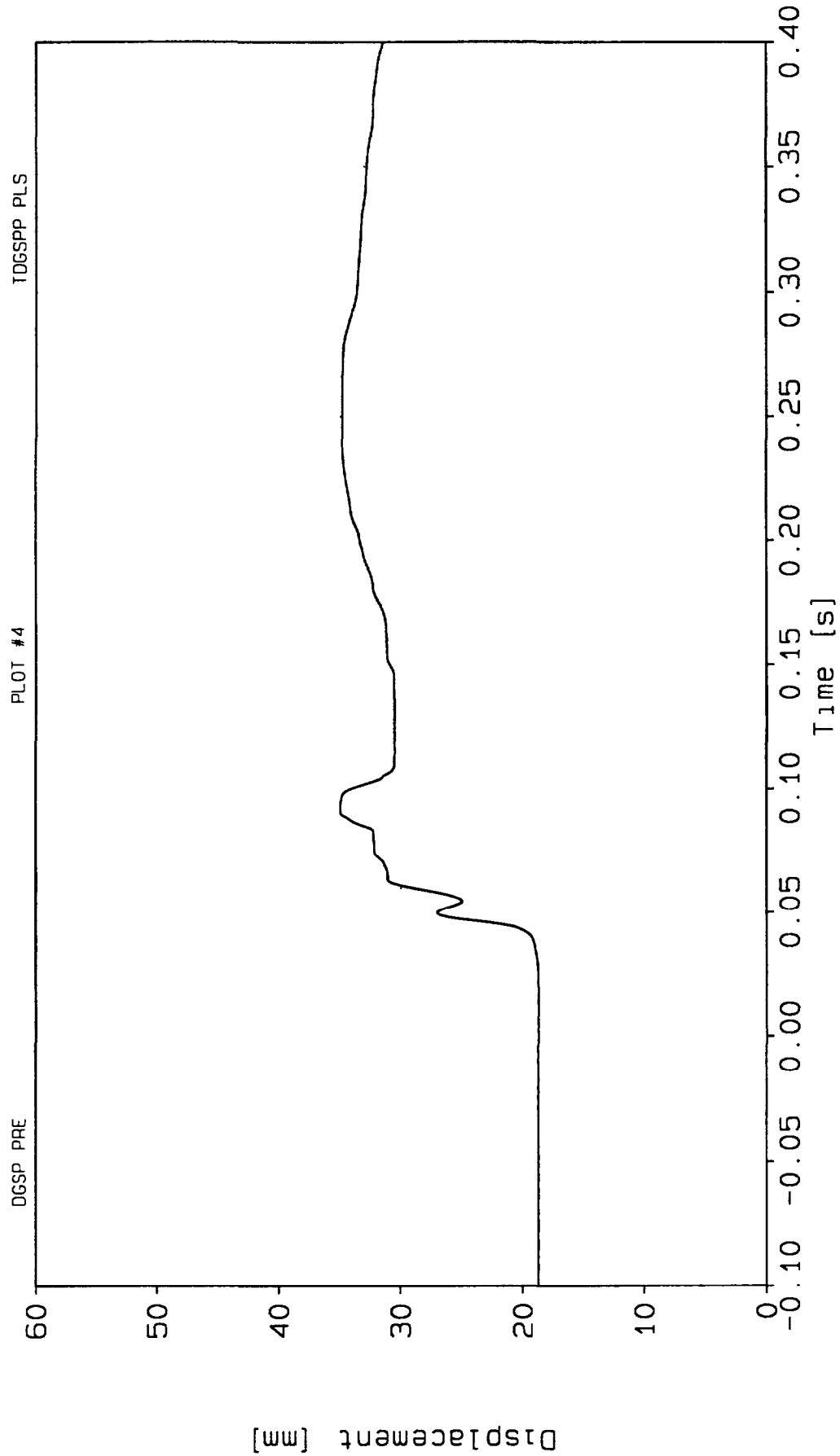
Exponent
Failure
Analysis
Associates

DGSP Right Displacement v Time

Driver Dummy - THOR - Pre-THORTEST Processing

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

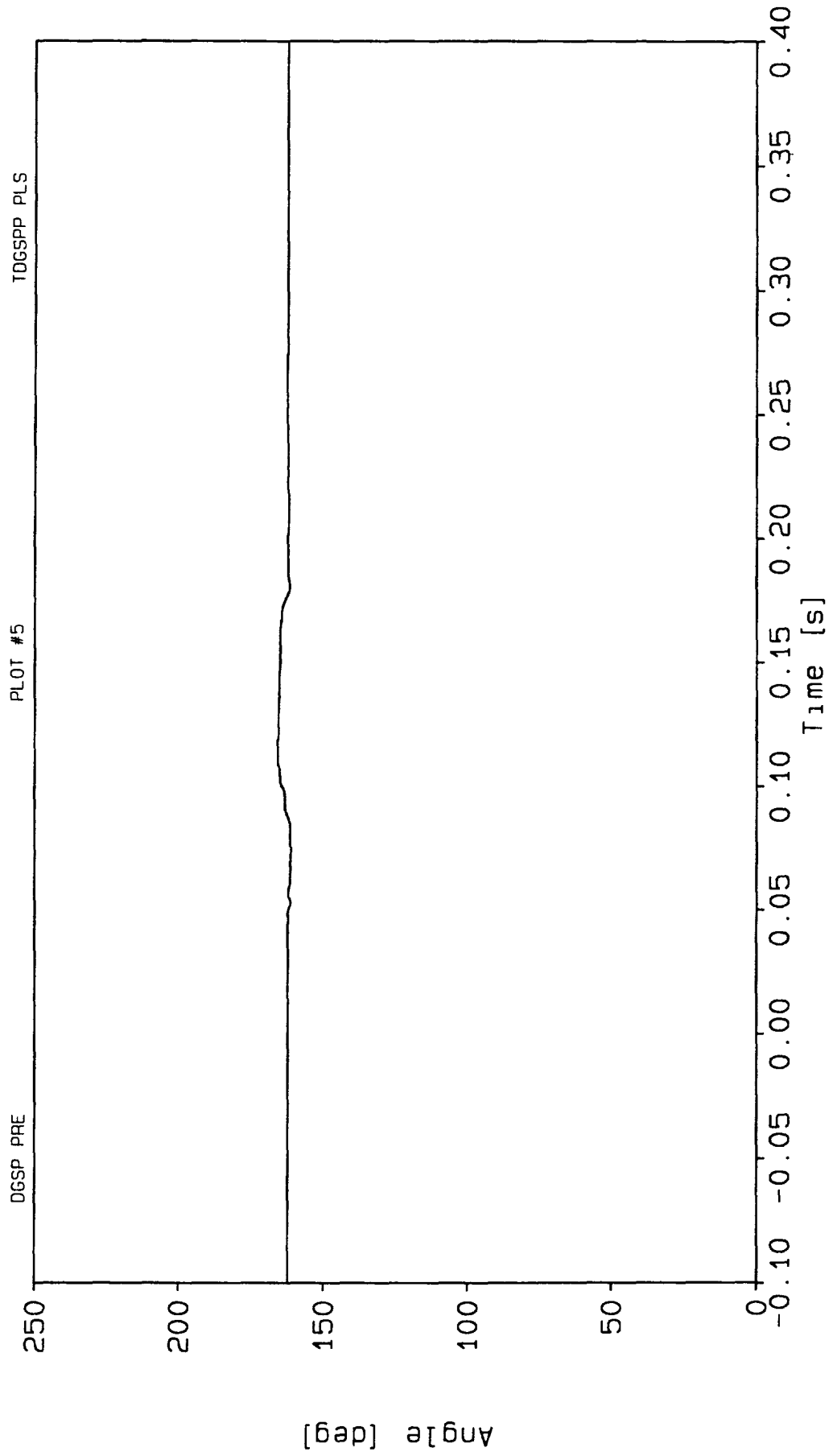


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

DGSP Right Yaw v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



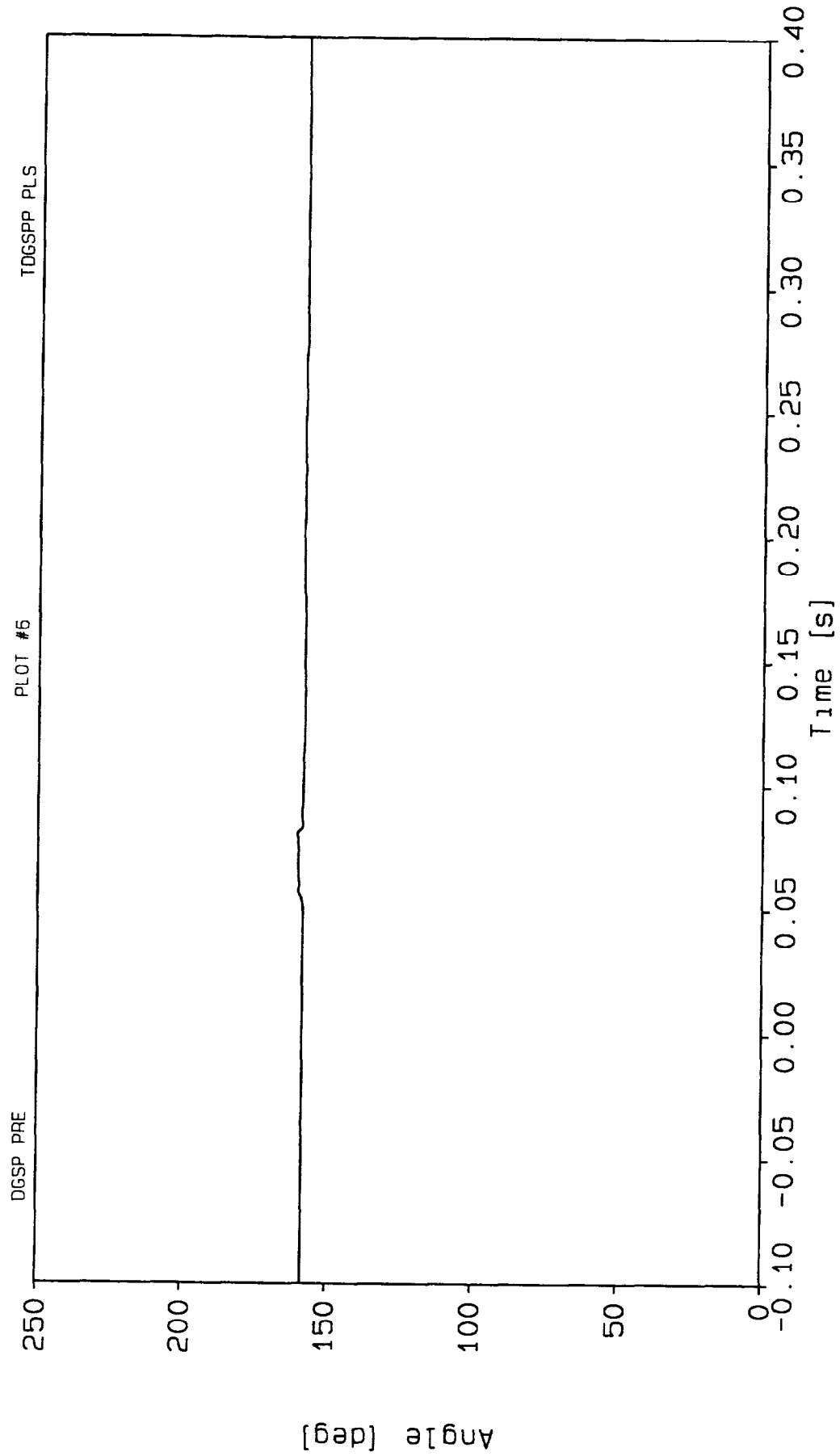
Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

DGSP Right Pitch v Time

Driver Dummy - THOR - Pre-THORTEST Processing
2001 Dodge Neon

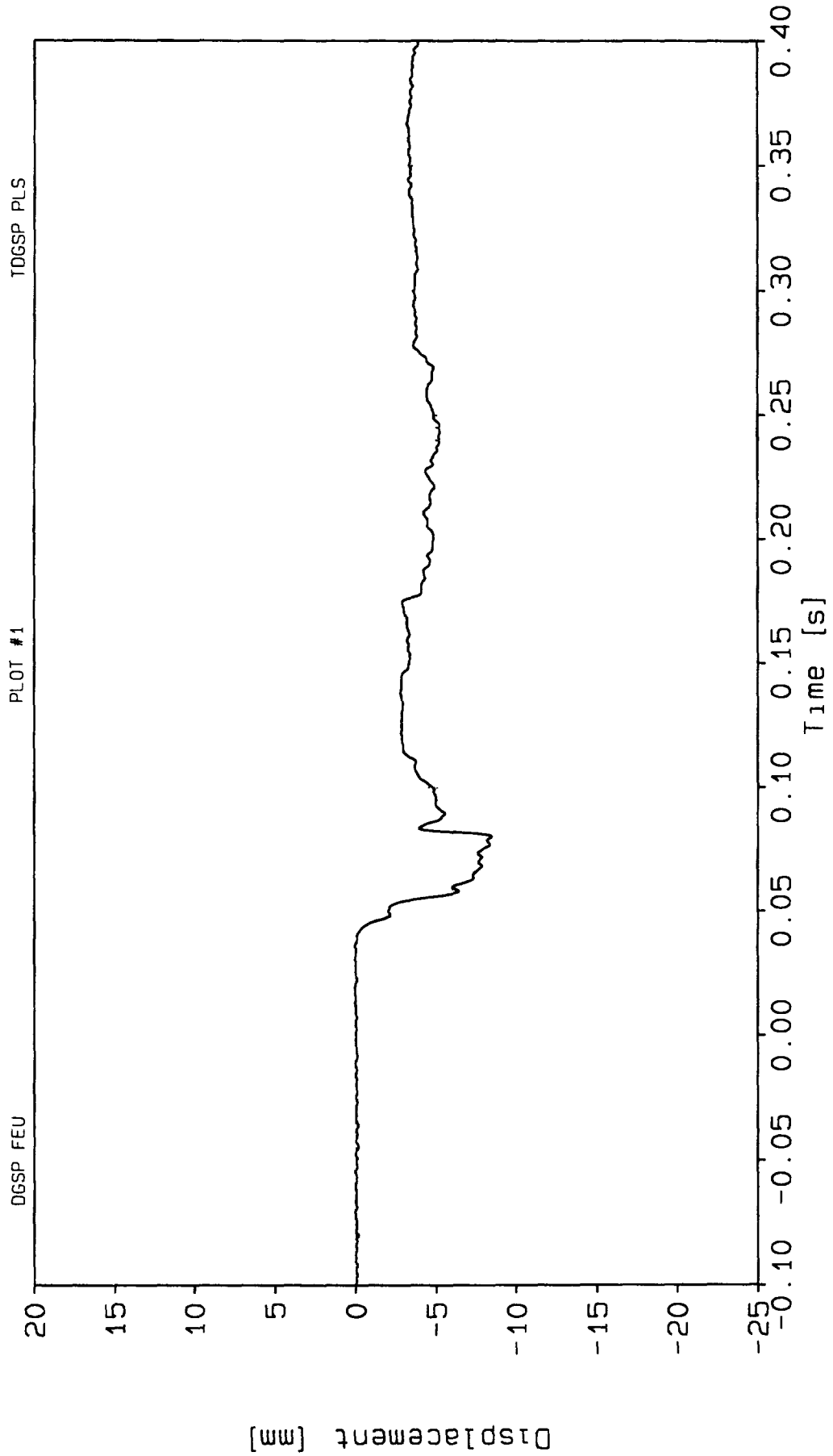
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

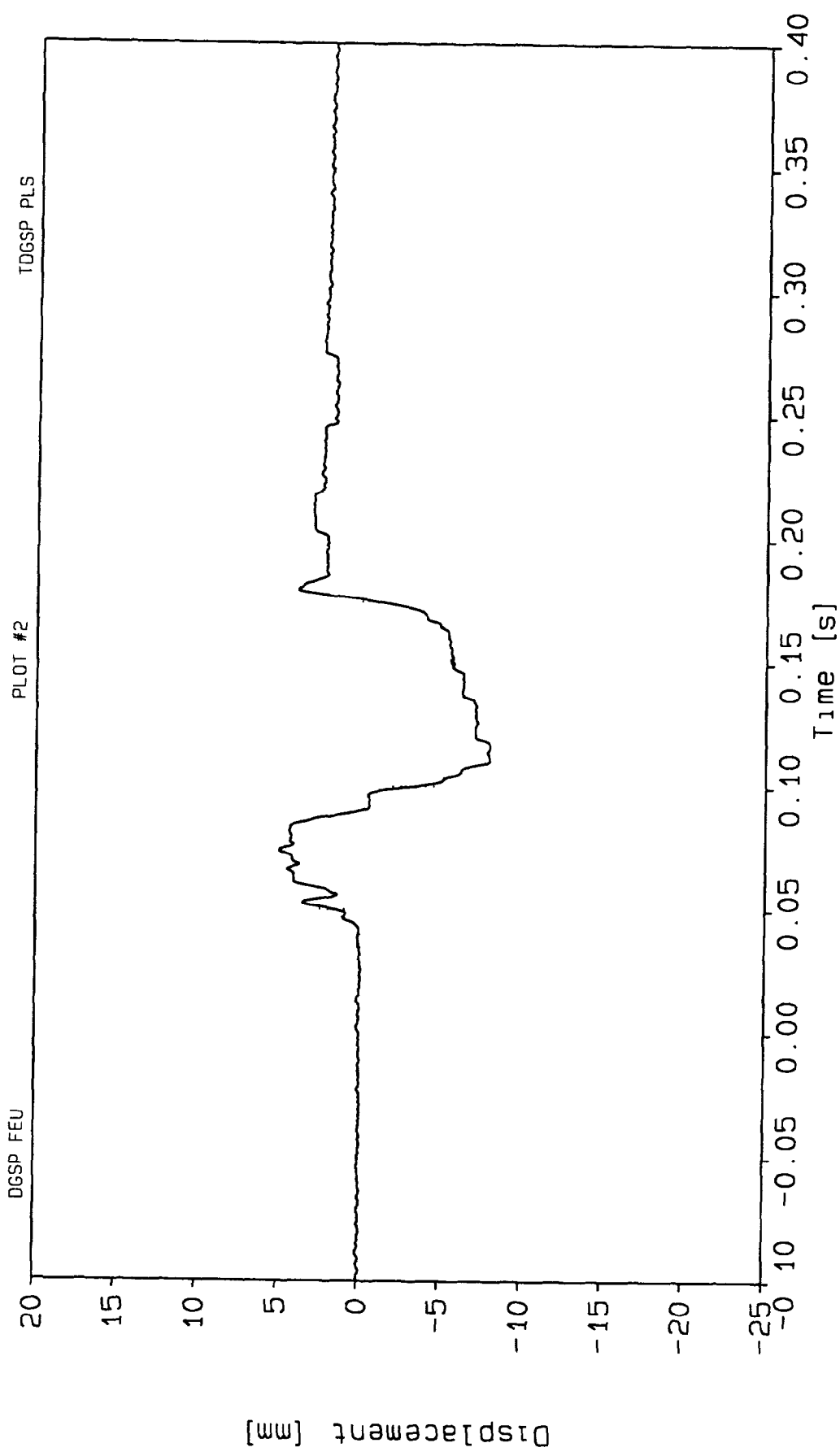
DGSP Right Displacement (Dx) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH05508

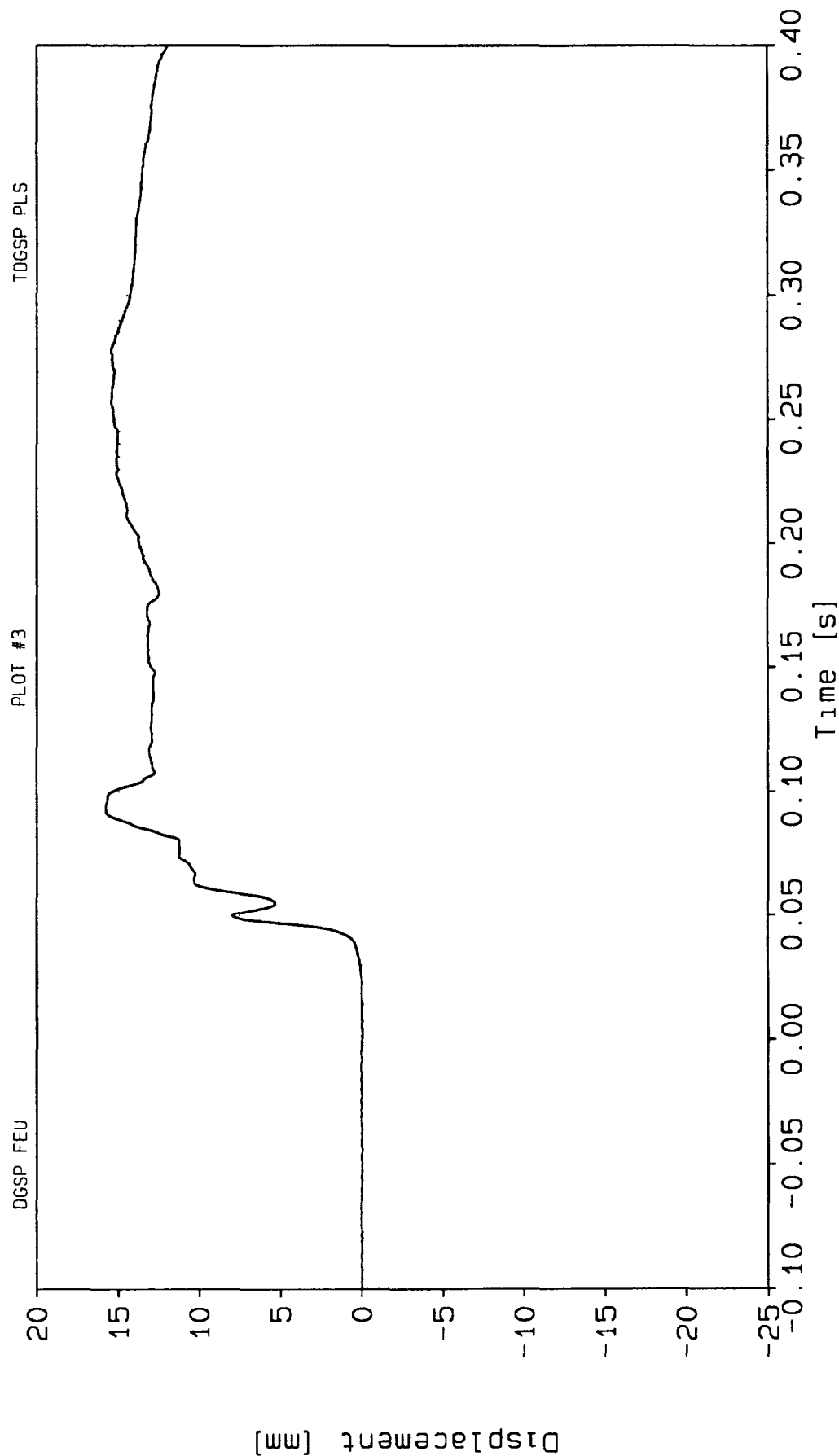
DGSP Right Displacement (Dy) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH06608

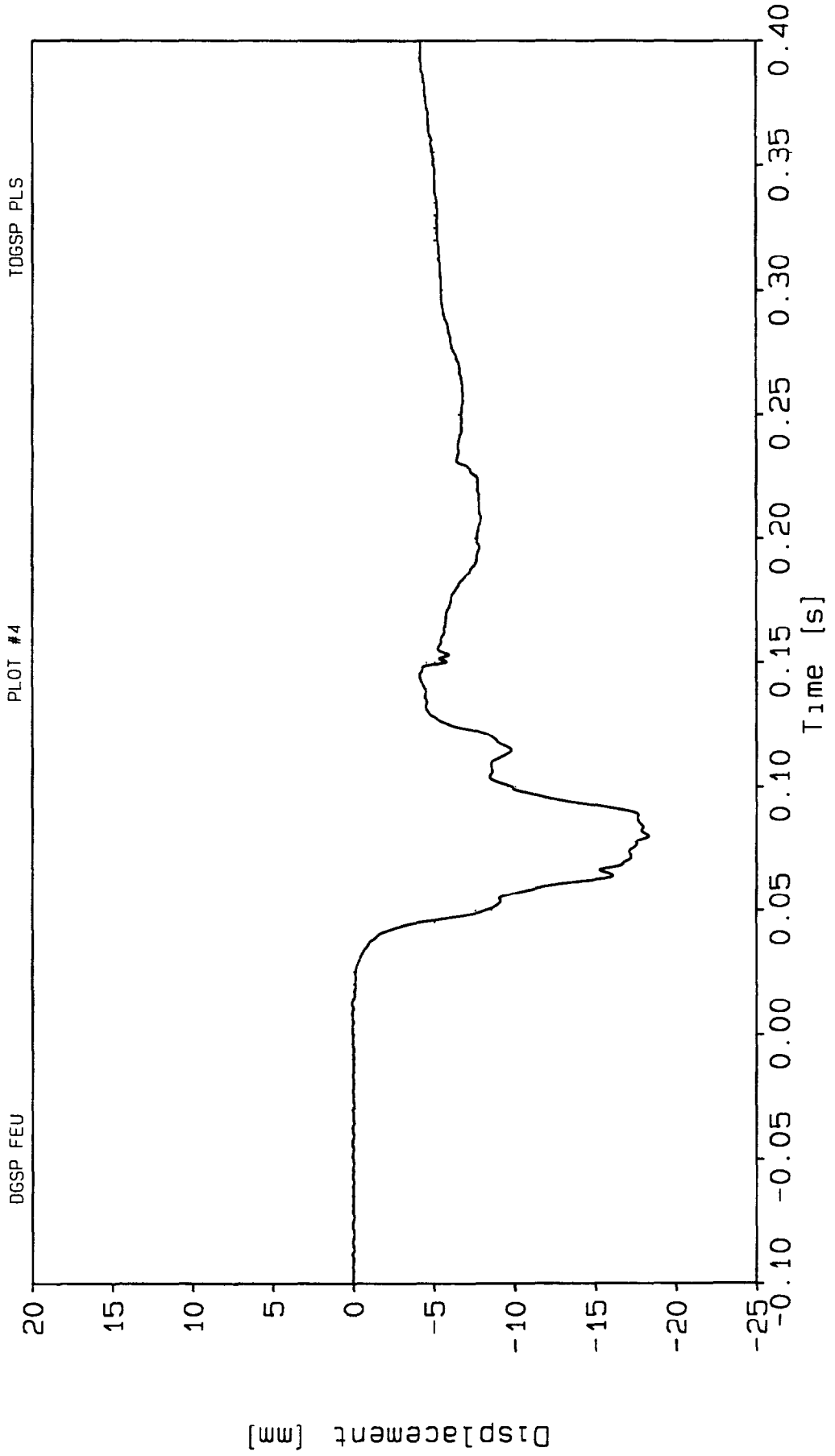
DGSP Right Displacement (Dz) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

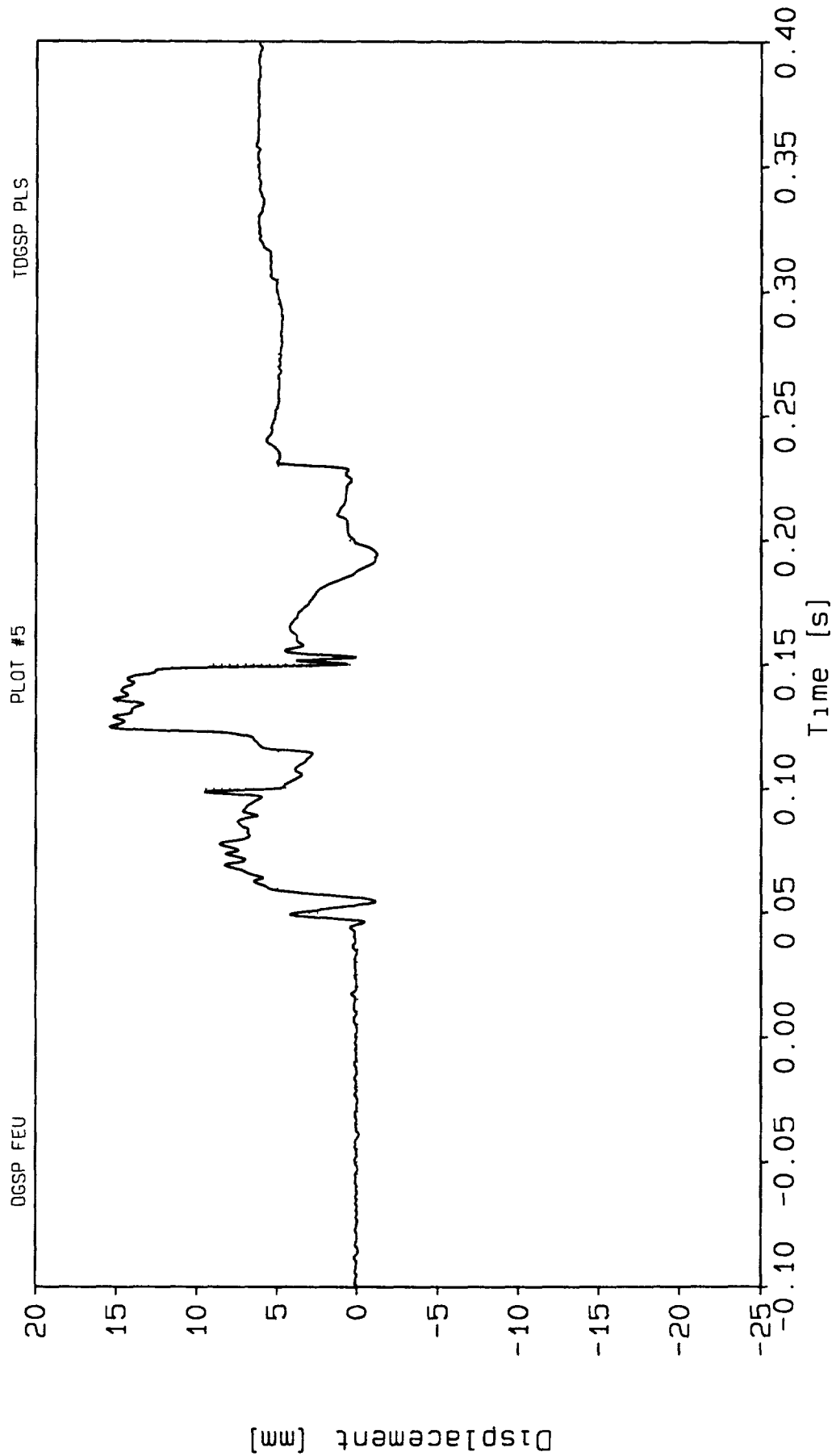
DGSP Left Displacement (Dx) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH05508

Exponent
Failure
Analysis
Associates

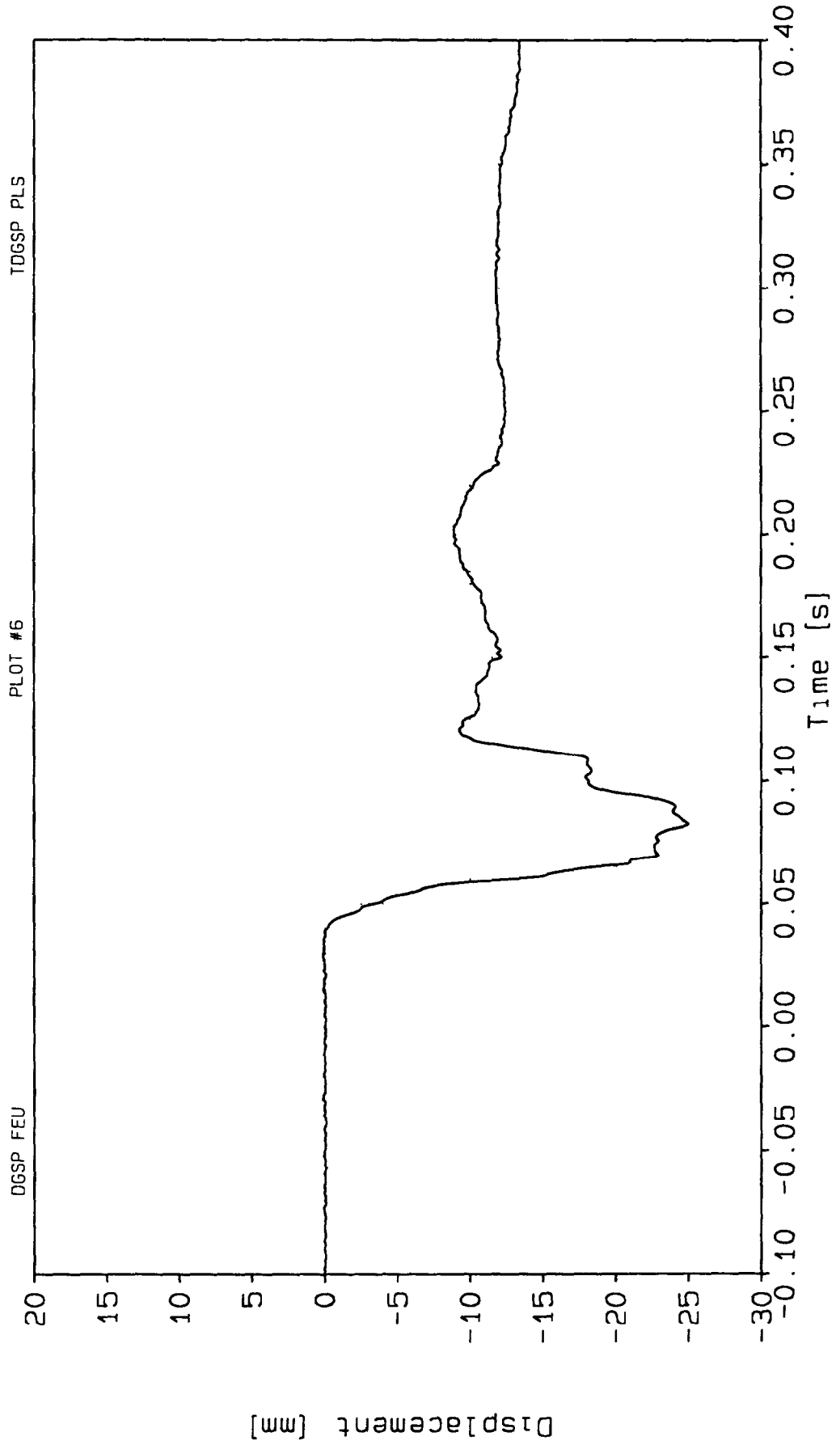
DGSP Left Displacement (Dy) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 180
Volpe Crash Testing
PH06608

DGSP Left Displacement (Dz) v Time
Driver Dummy - THOR - Post THORTEST Processing
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



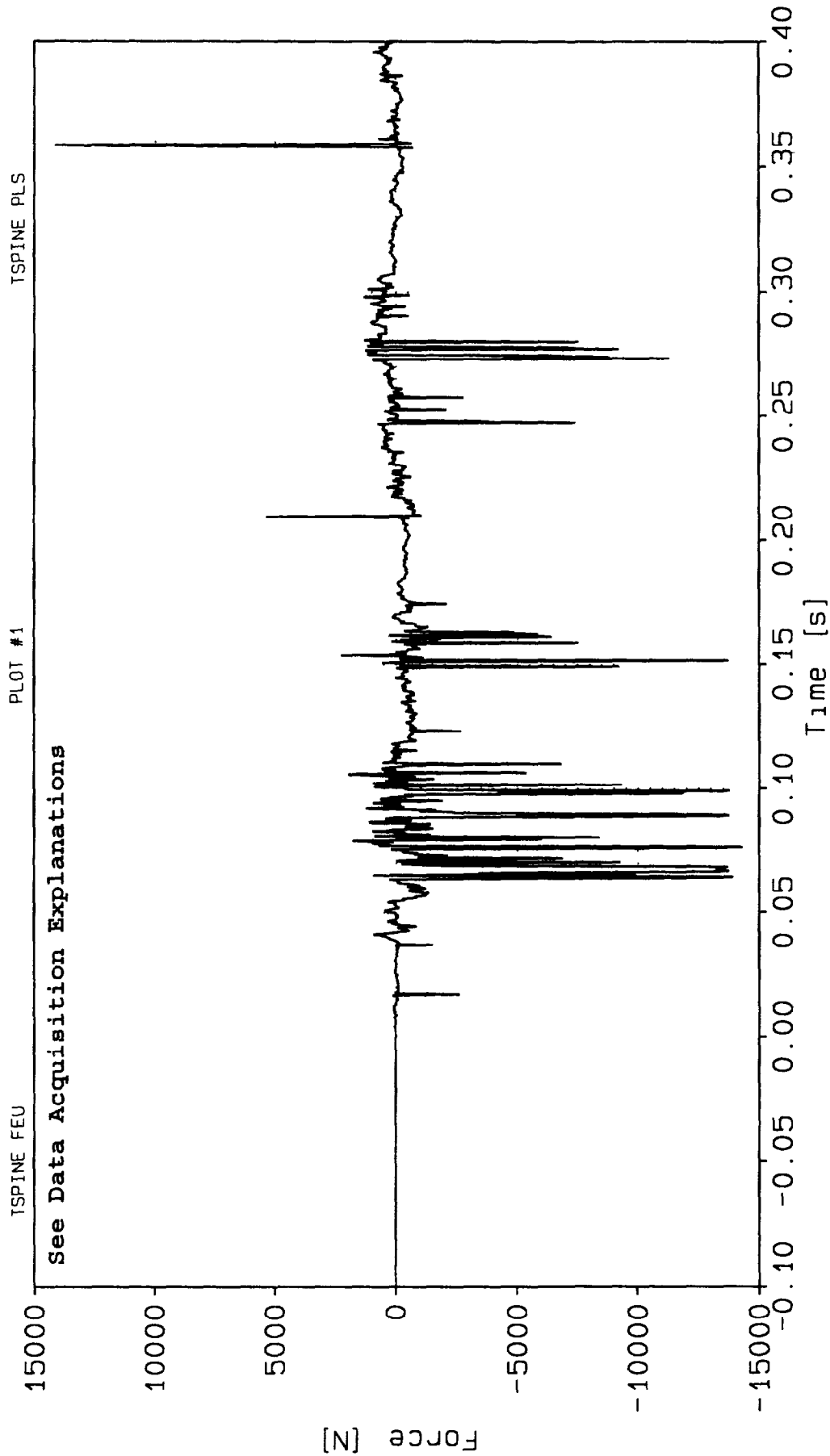
Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

T12 Thoracic Force (Fx) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



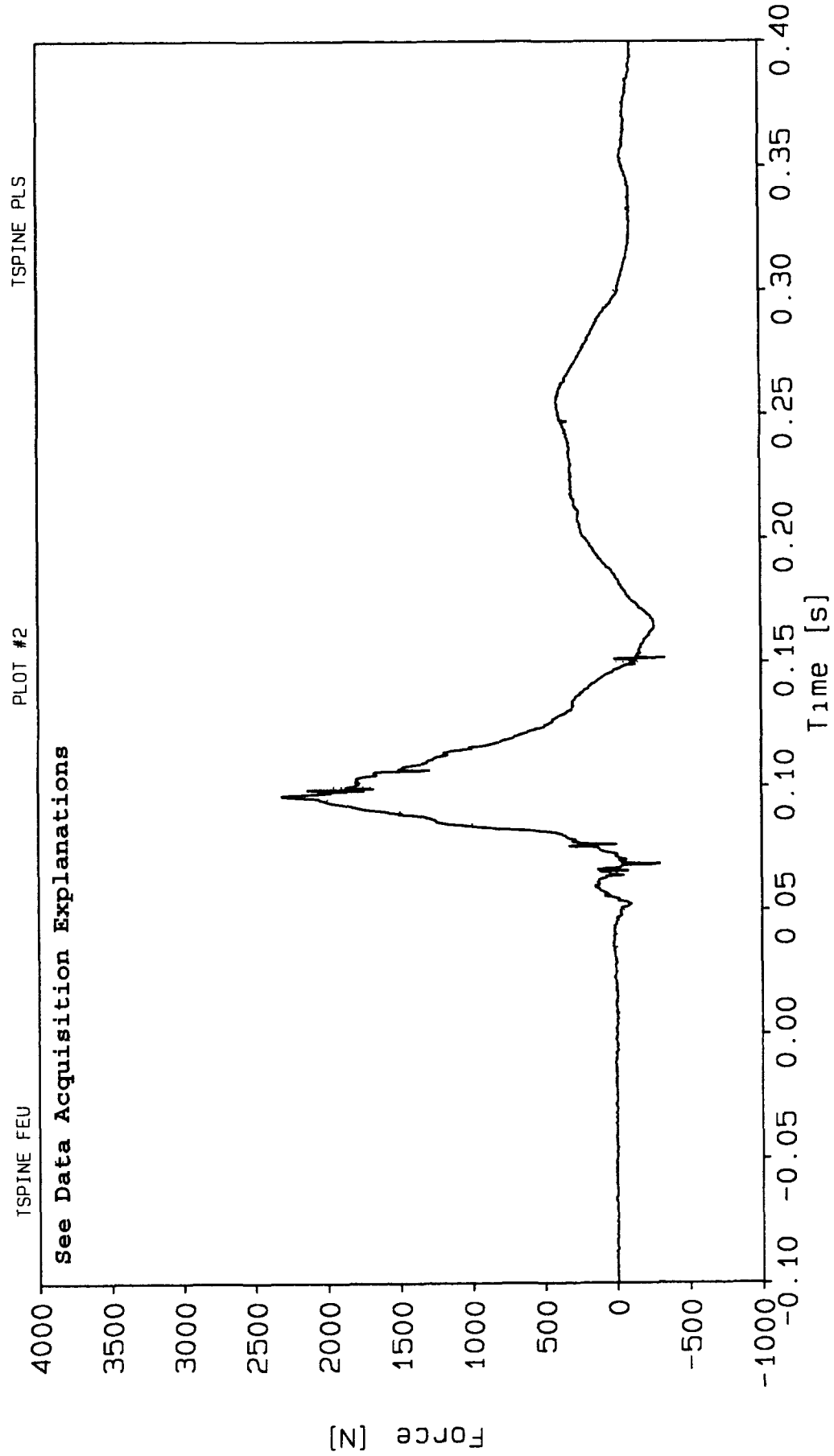
Filter Class 600
Voipe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

T12 Thoracic Force (Fy) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH05508

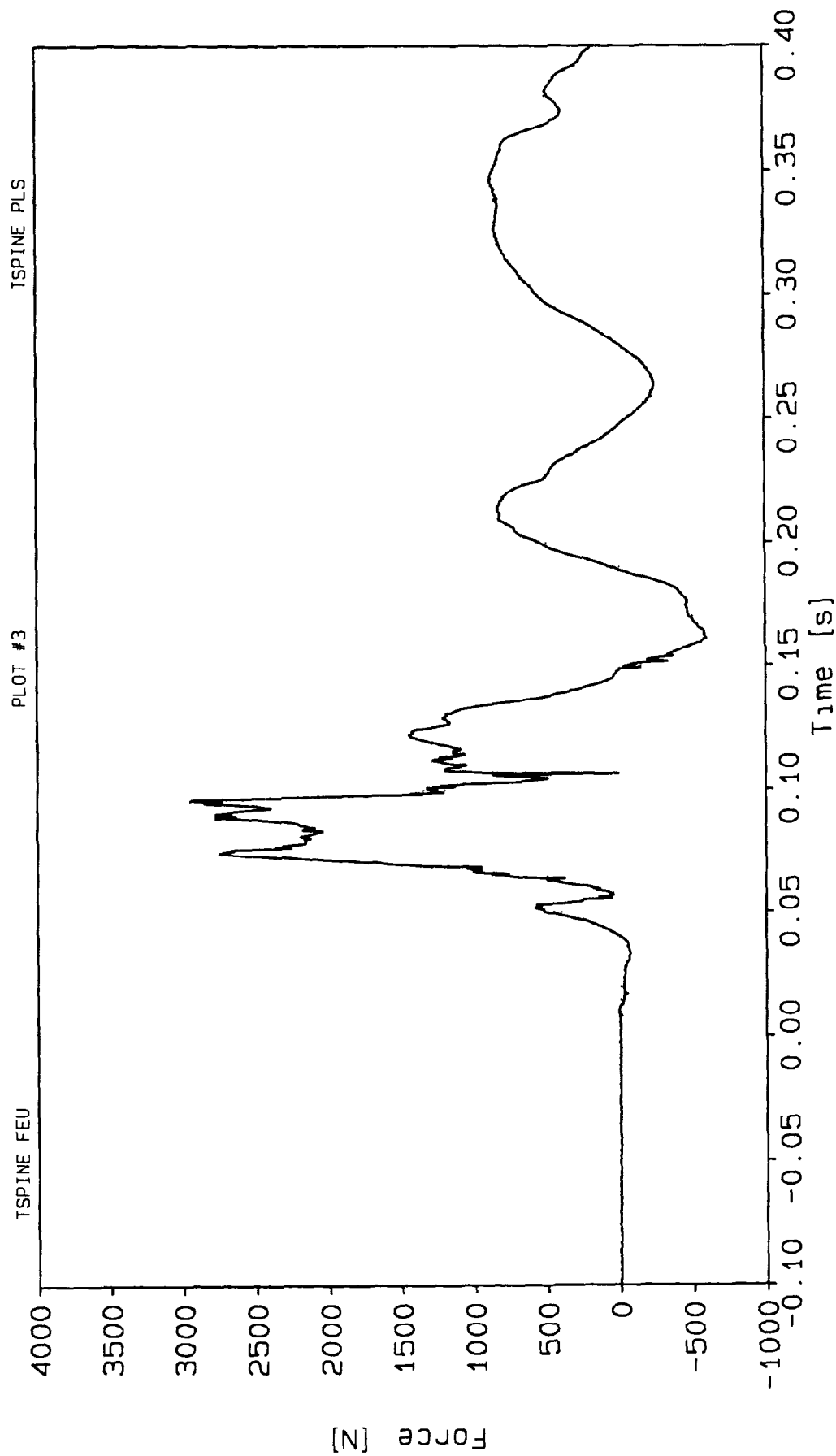
Exponent
Failure
Analysis
Associates

T12 Thoracic Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

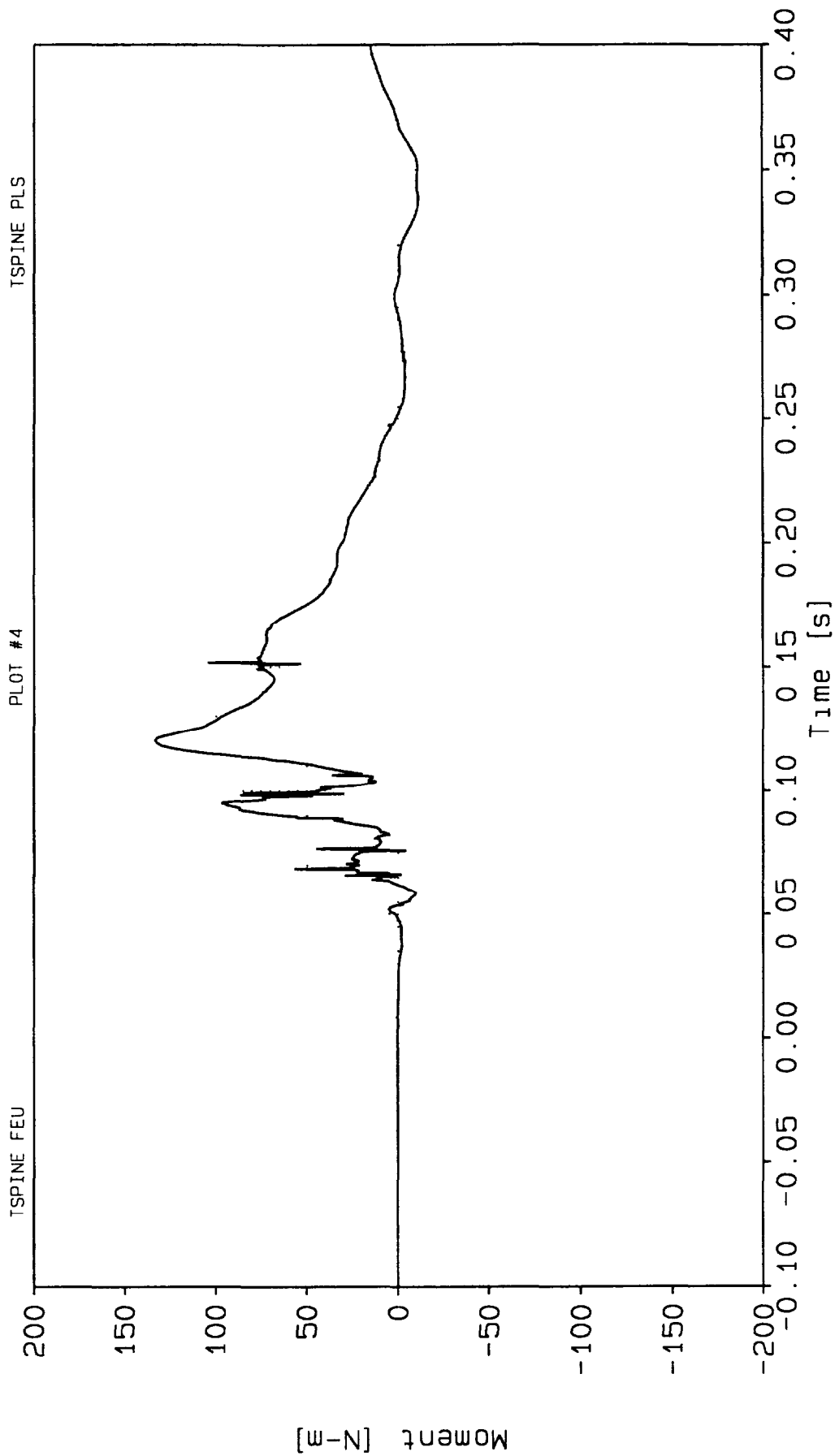
Filter Class 600
Volpe Crash Testing
PH06608

T12 Thoracic Moment (Mx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



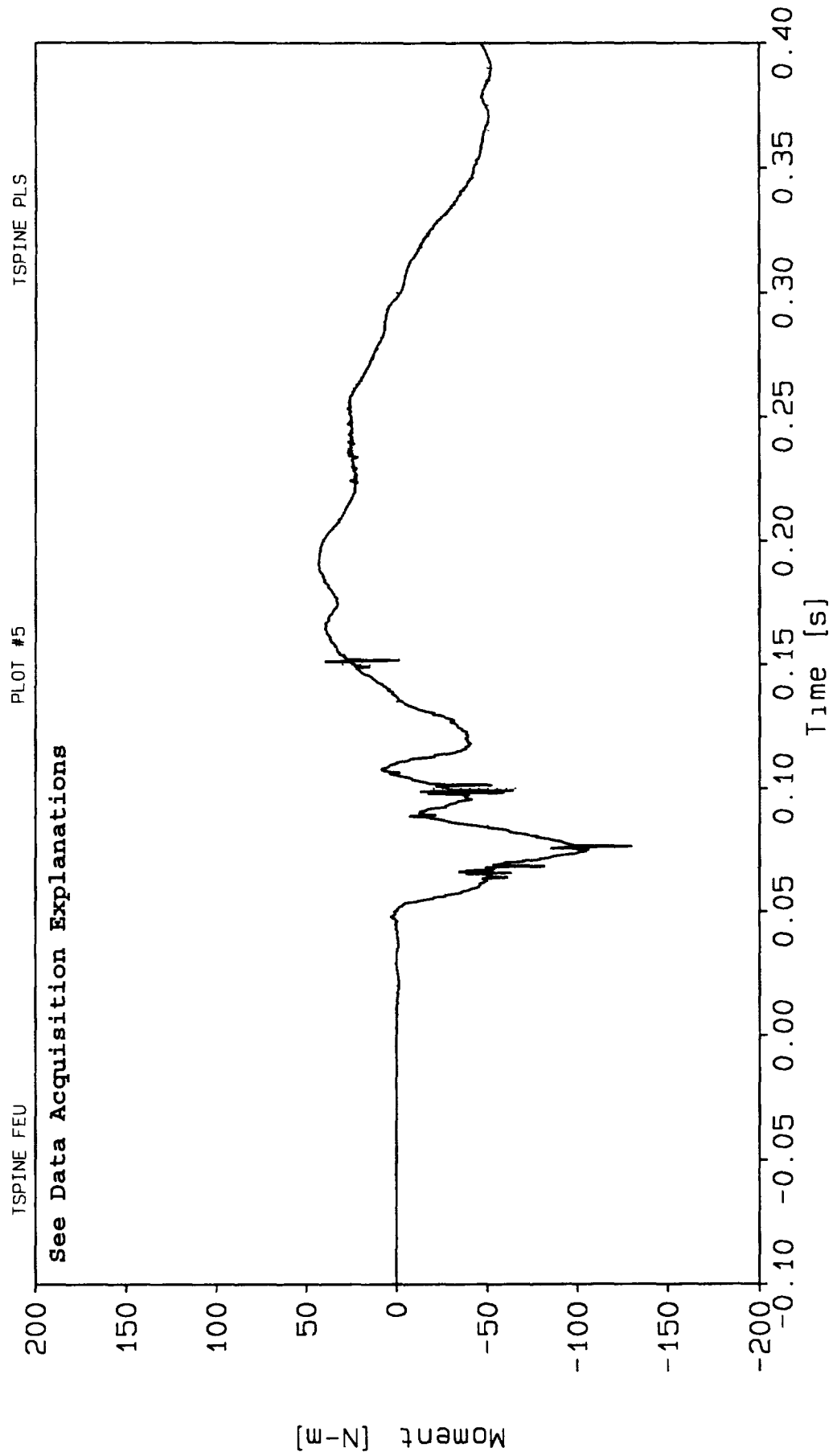
Filter Class 600
Volpe Crash Testing
PH05608

Exponent
Failure
Analysis
Associates

T12 Thoracic Moment (My) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

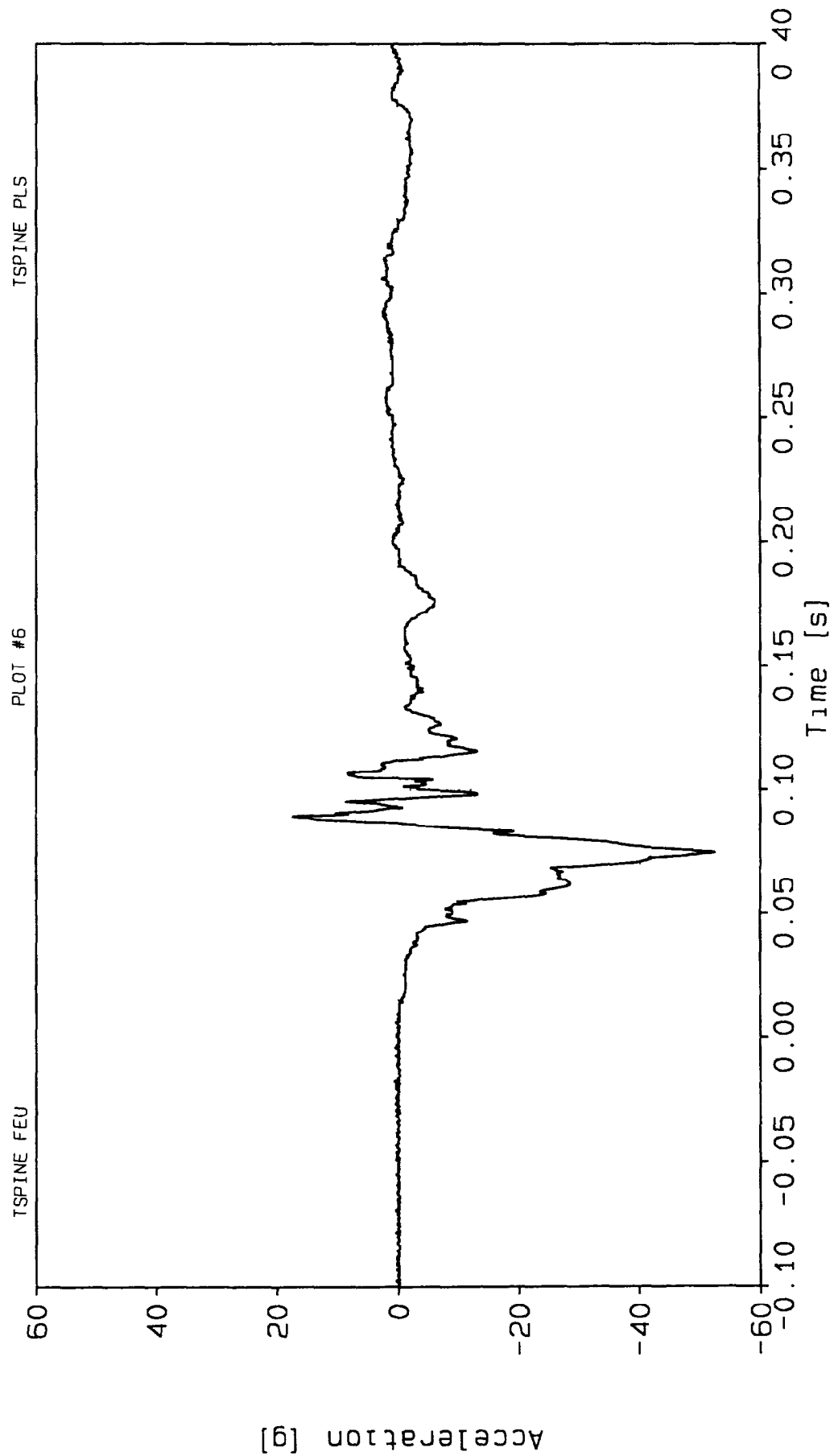
Exponent
Failure
Analysis
Associates

T12 Thoracic Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH05508

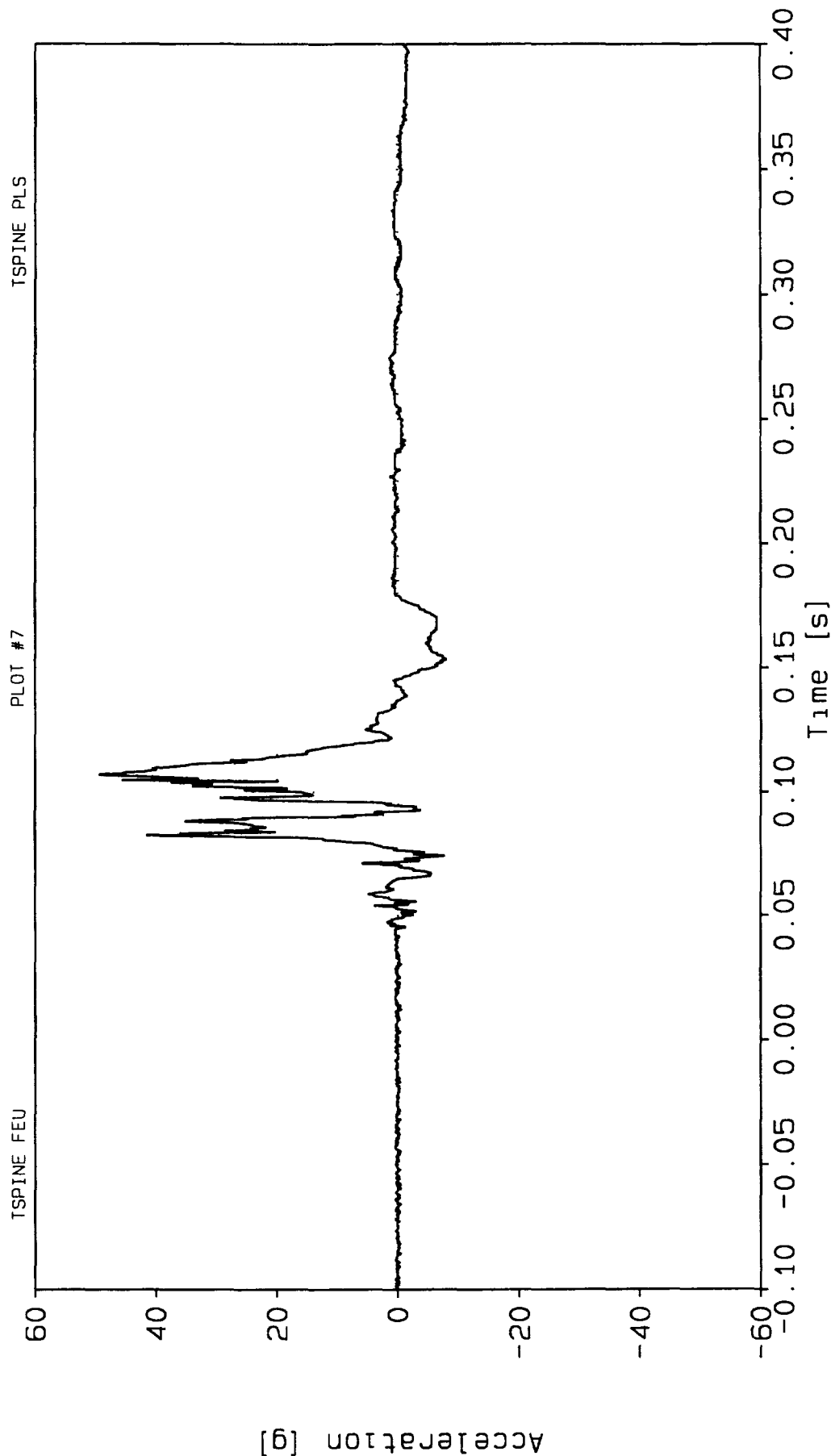
Exponent
Failure
Analysis
Associates

T12 Thoracic Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06508

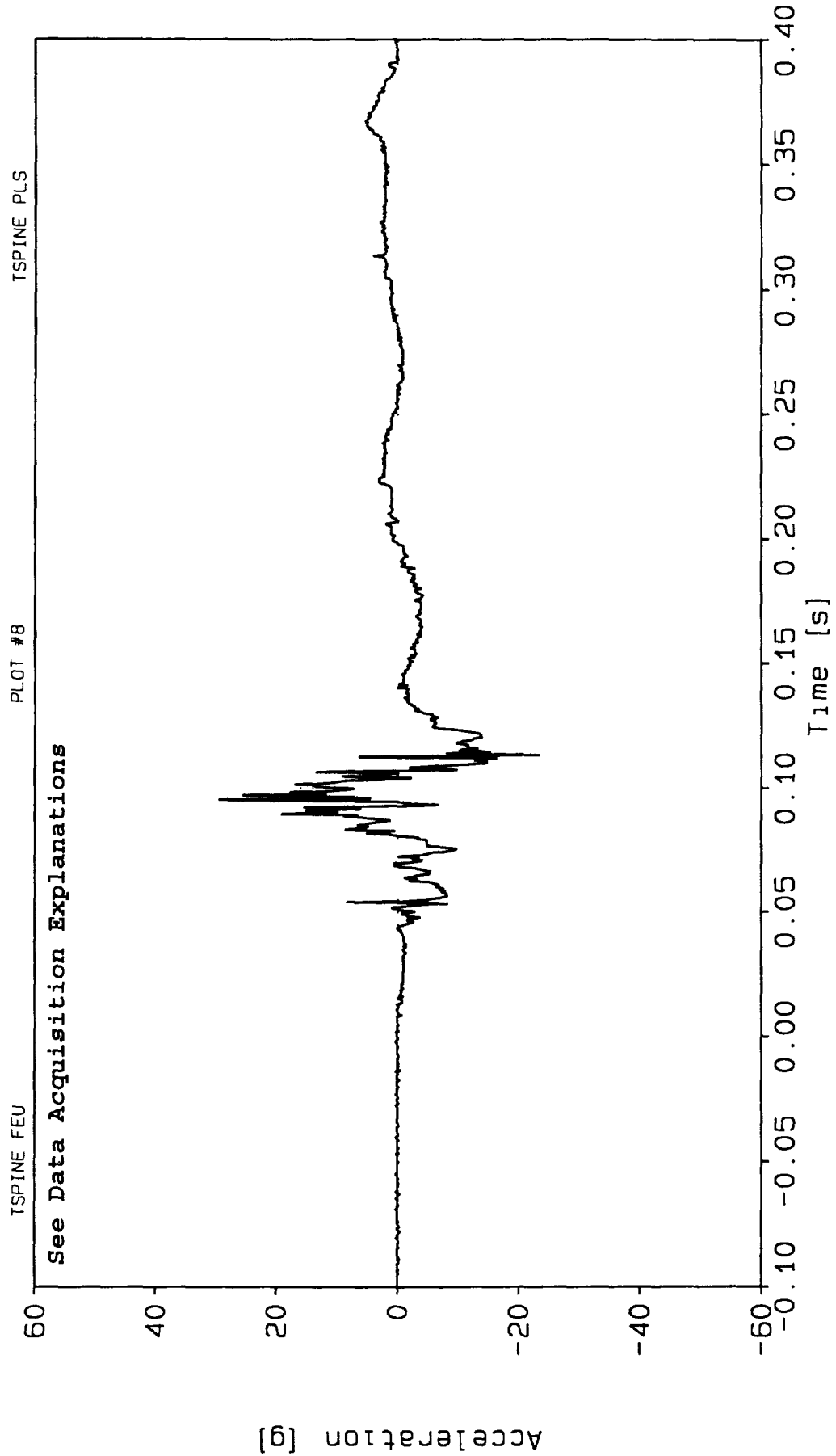
Exponent
Failure
Analysis
Associates

T12 Thoracic Acceleration (Az) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

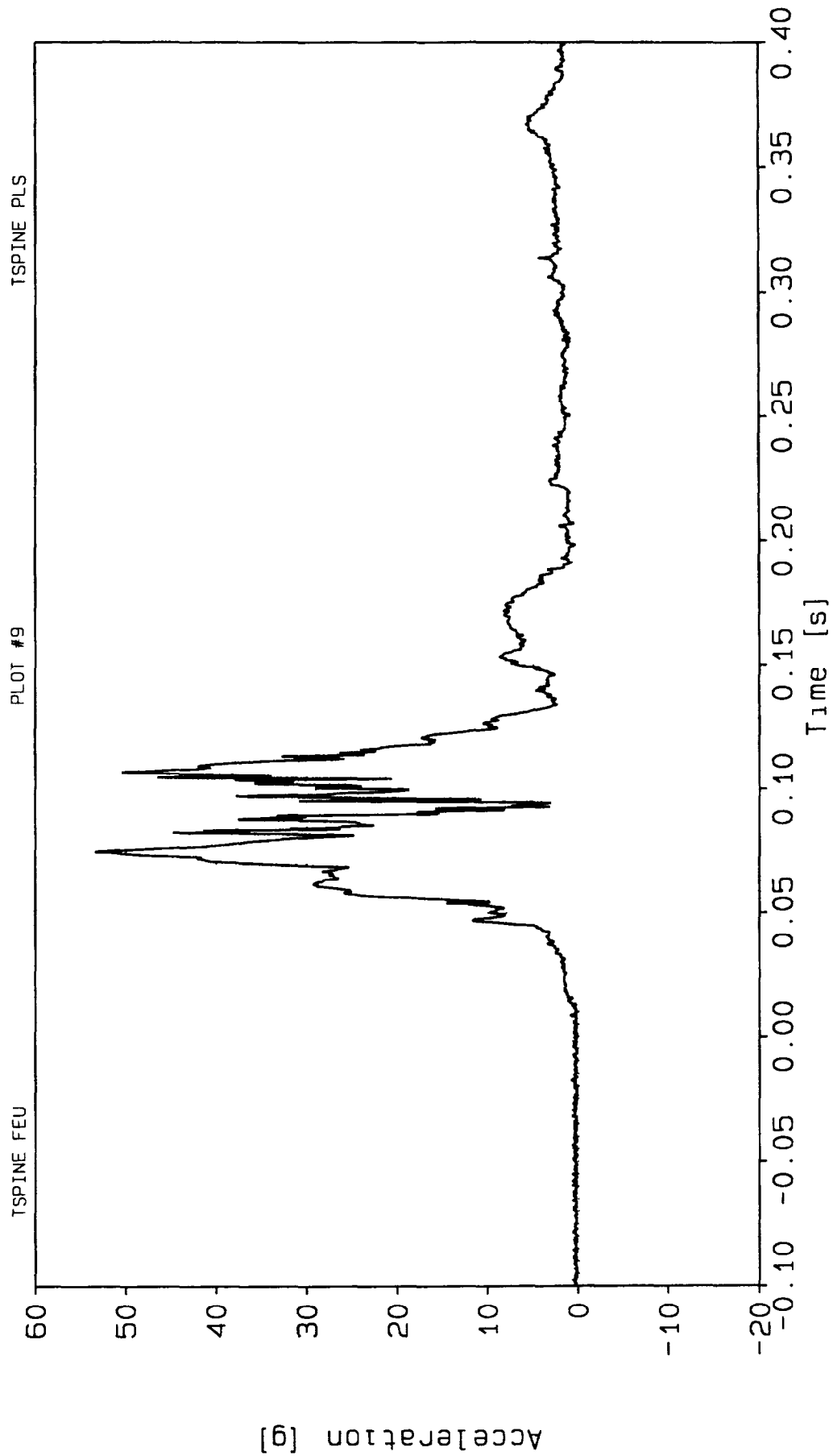
Exponent
Failure
Analysis
Associates

T12 Thoracic Resultant Acceleration (Ar) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

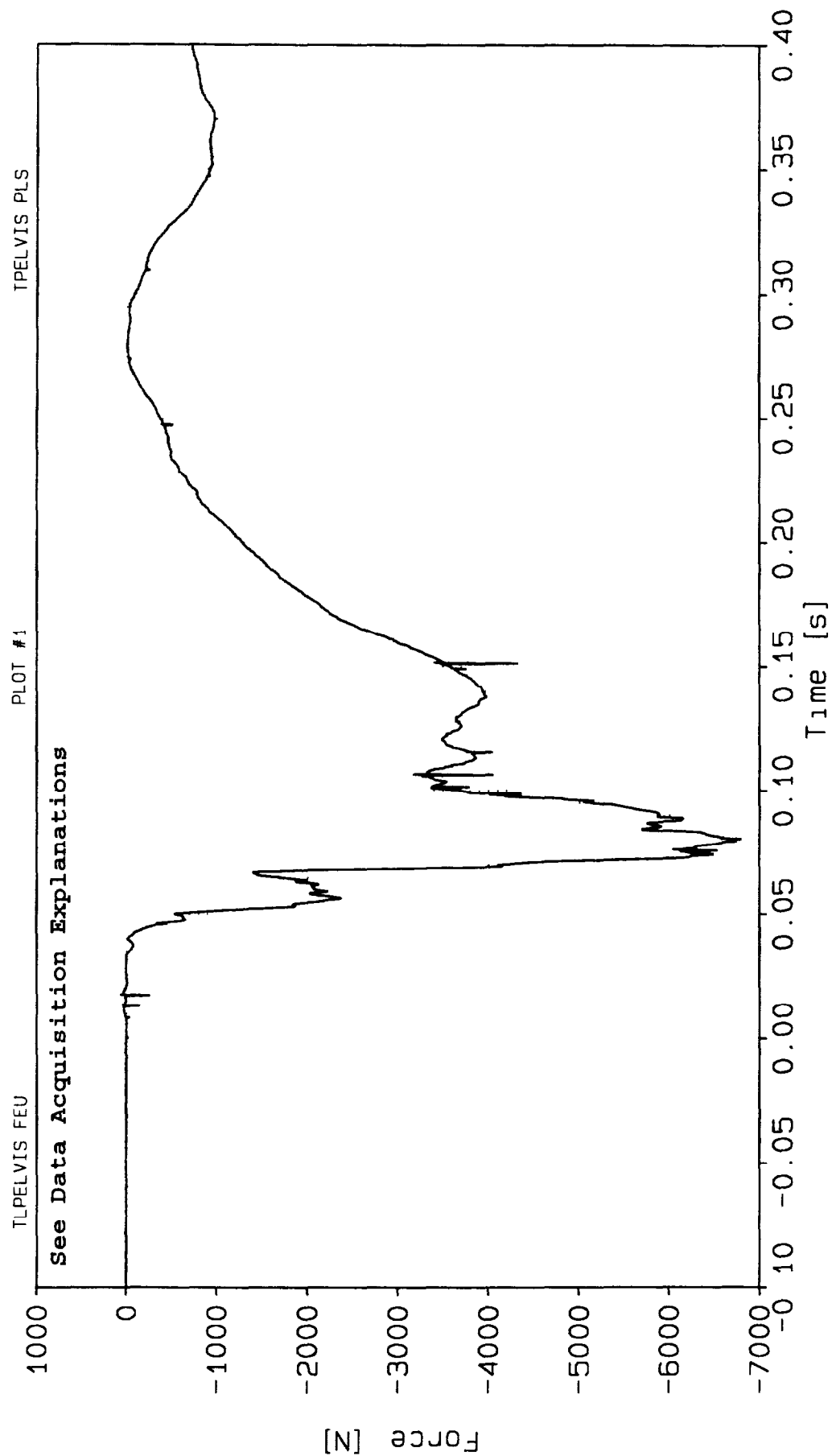
Filter Class 600
Volpe Crash Testing
PH06608

Pelvis Left Acetabular Force (Fx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

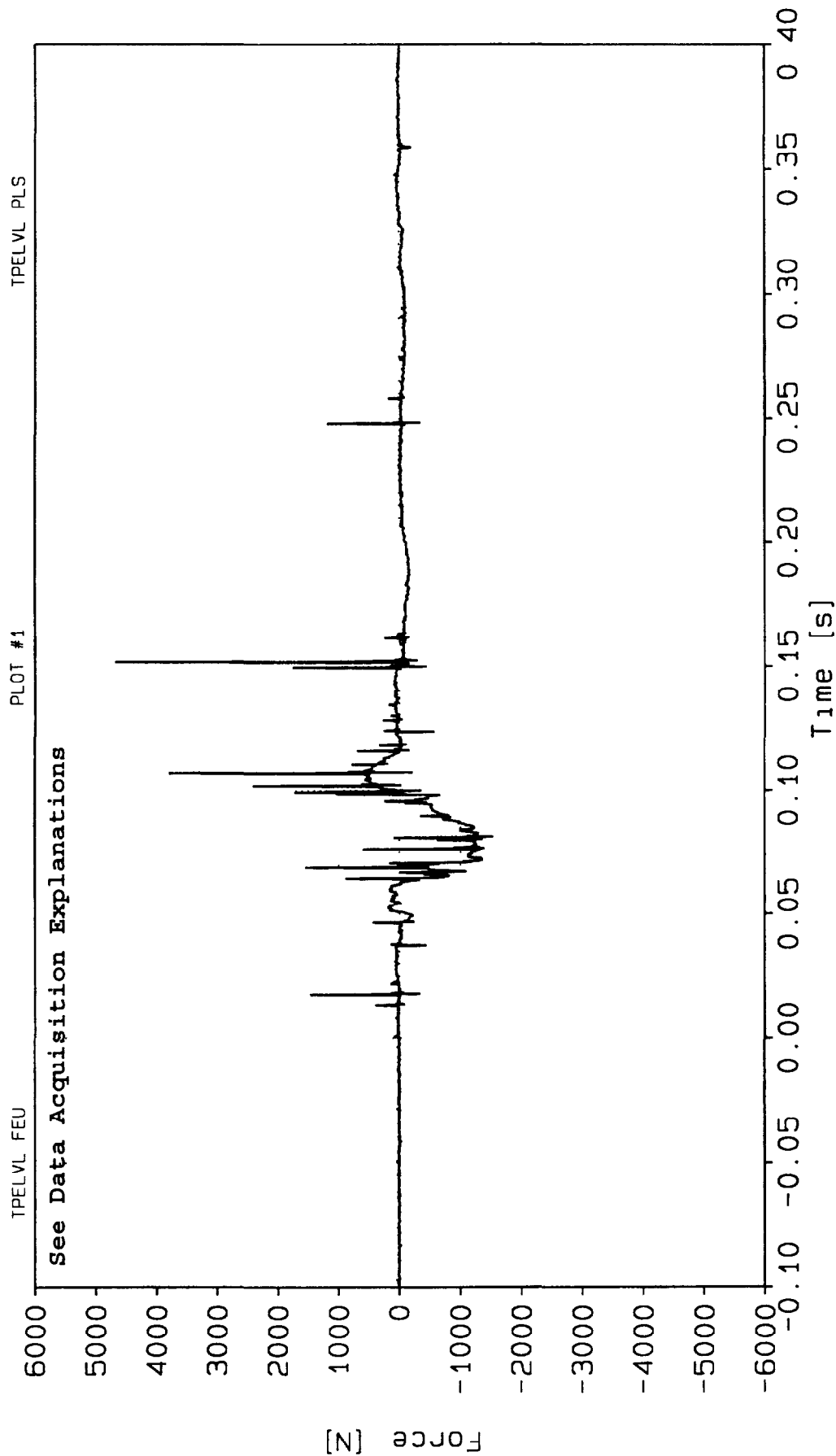
Filter Class 1000
Volpe Crash Testing
PH06608

Pelvis Left Acetabular Force (Fy) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

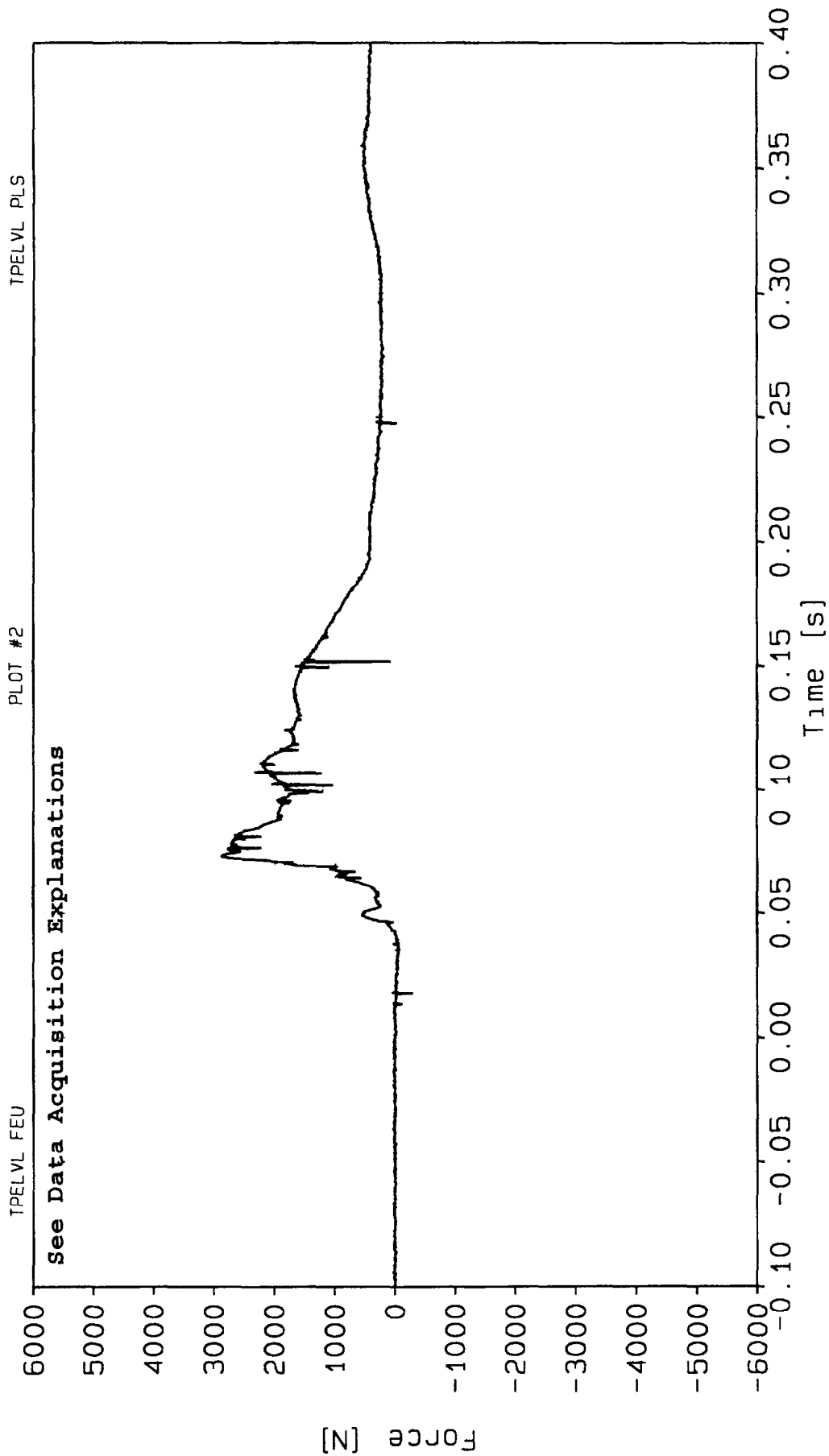
Exponent
Failure
Analysis
Associates

Pelvis Left Acetabular Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

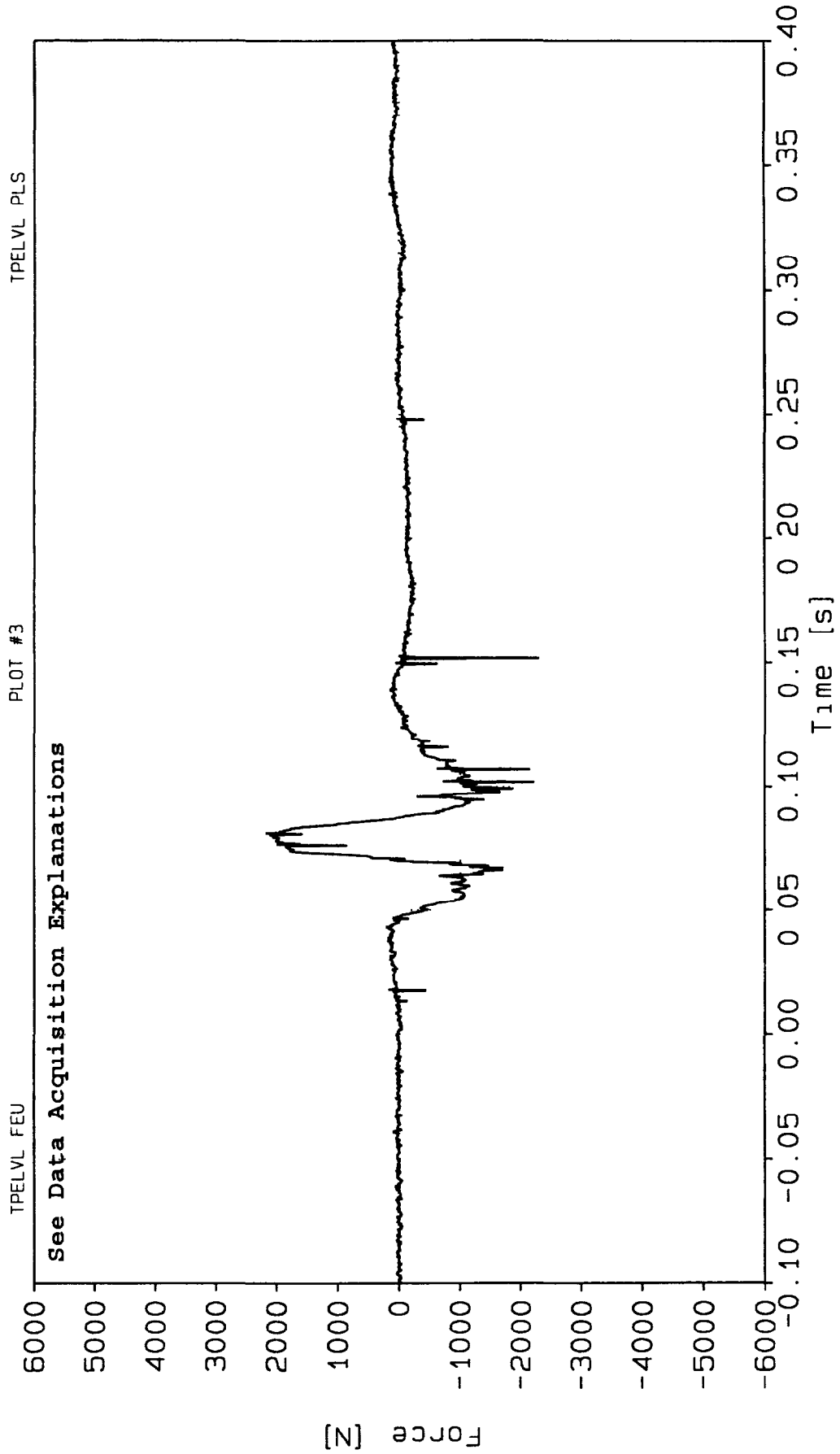
Exponent
Failure
Analysis
Associates

Pelvis Right Acetabular Force (Fx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

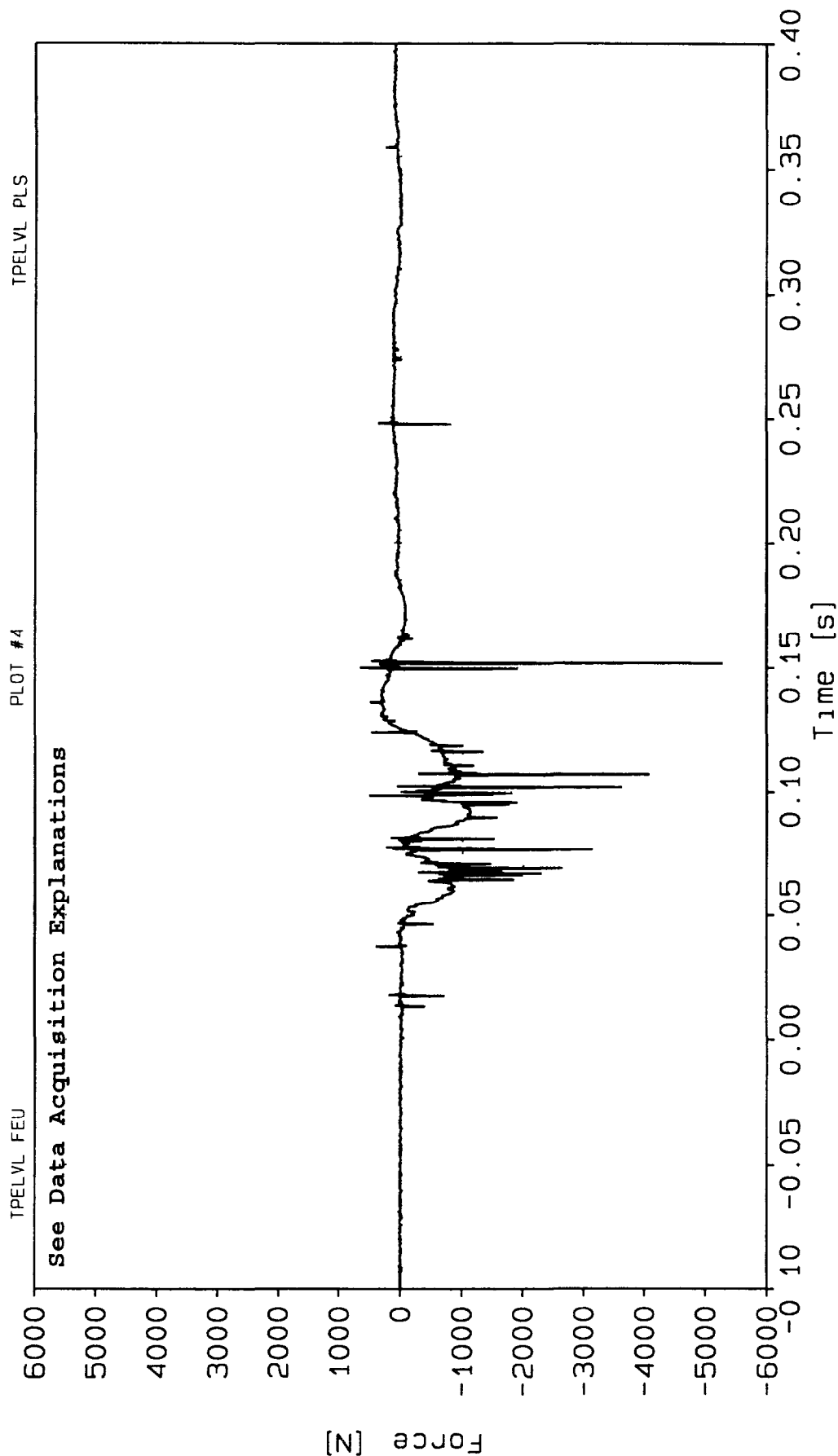
Exponent
Failure
Analysis
Associates

Pelvis Right Acetabular Force (Fy) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH05608

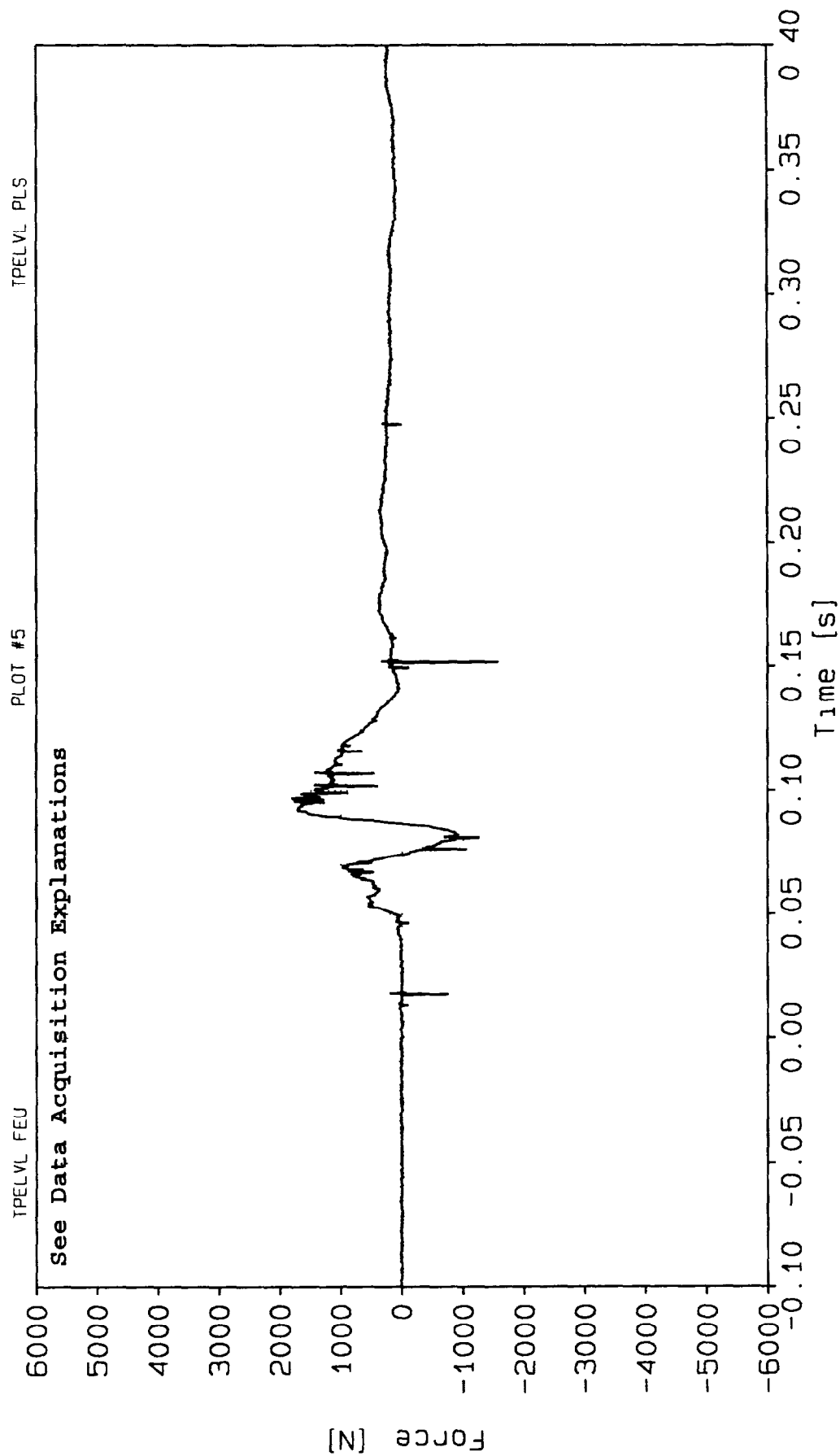
Exponent
Failure
Analysis
Associates

Pelvis Right Acetabular Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

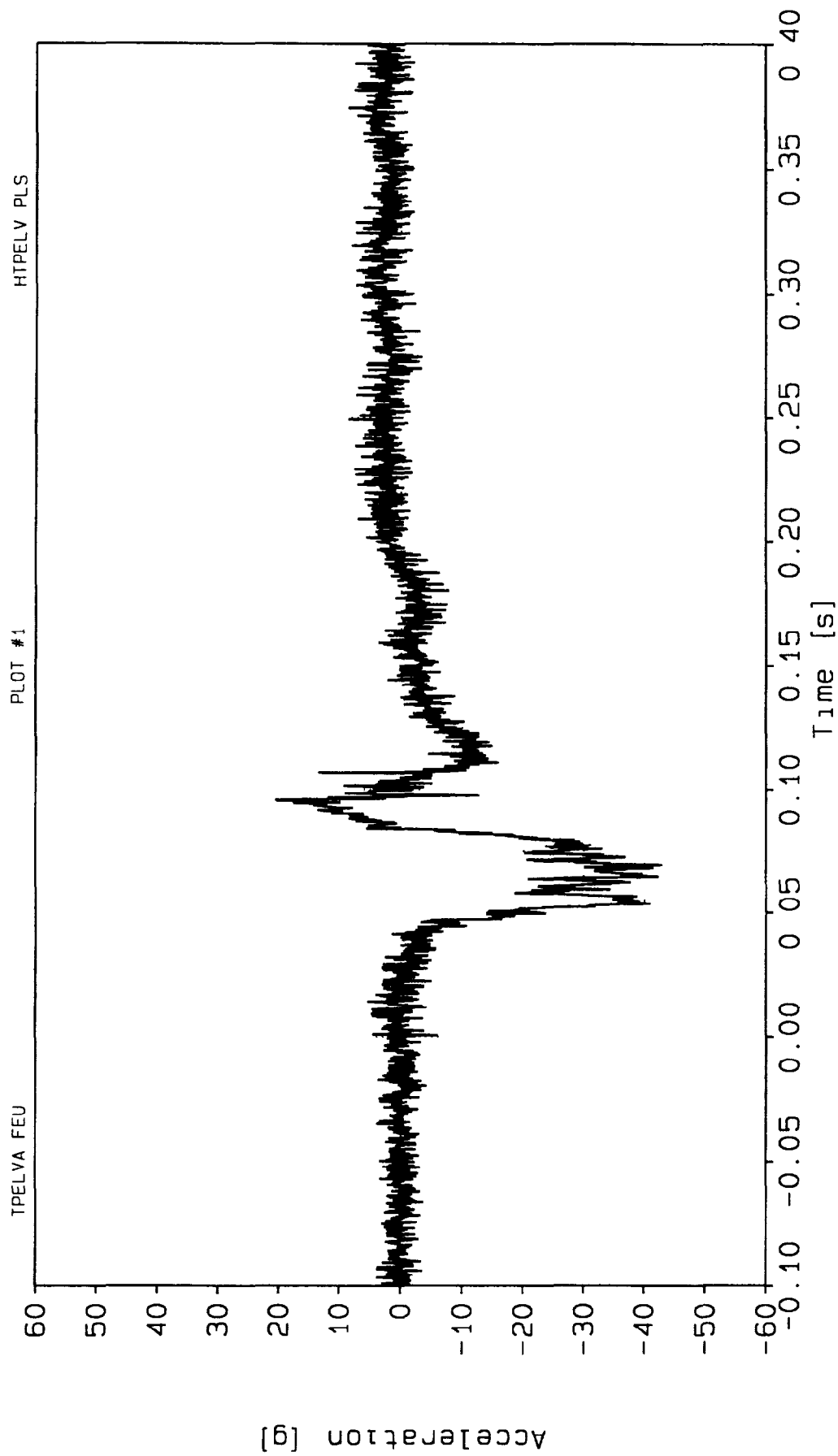
Exponent
Failure
Analysis
Associates

Pelvis Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

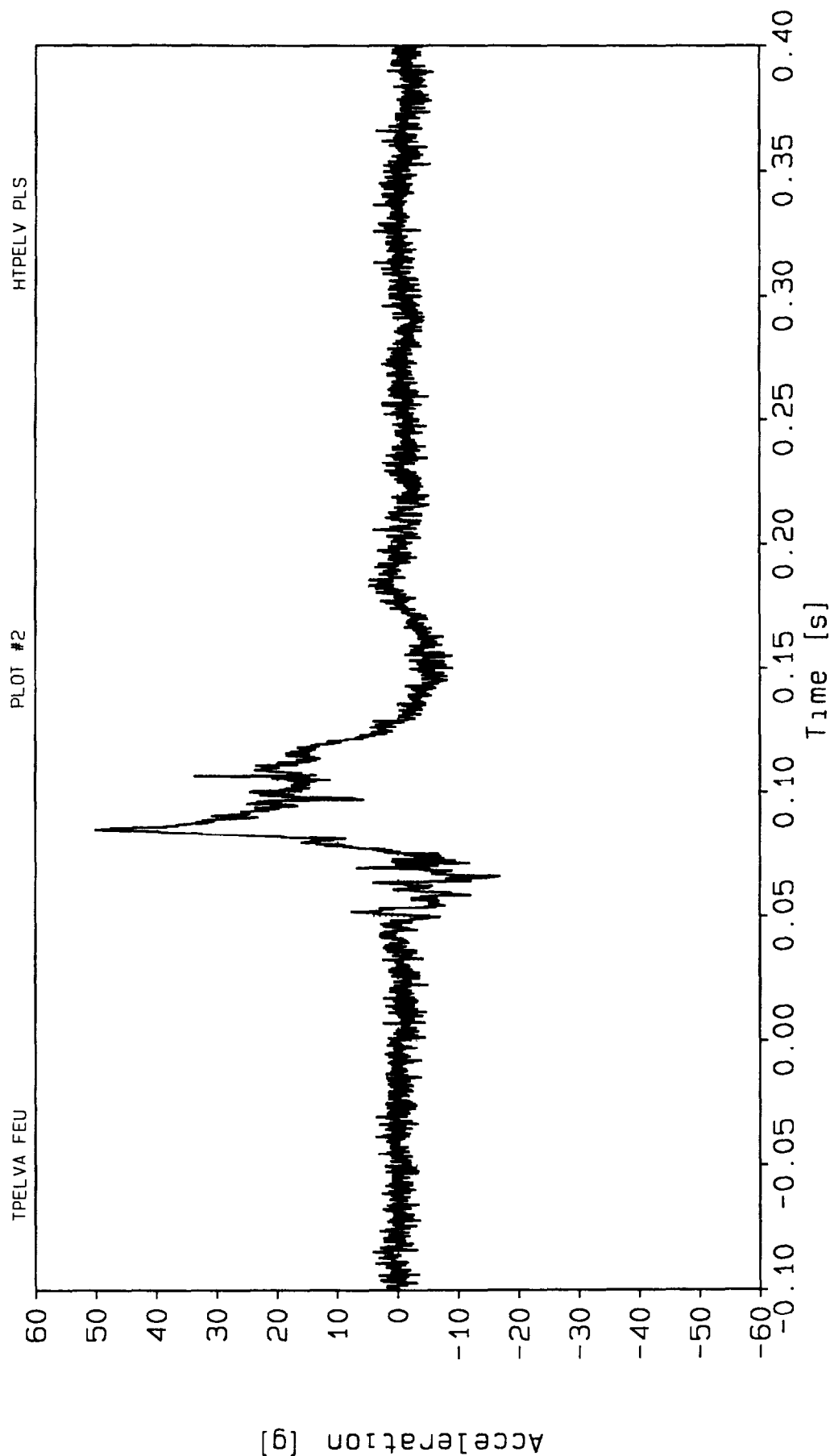
Exponent
Failure
Analysis
Associates

Pelvis Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

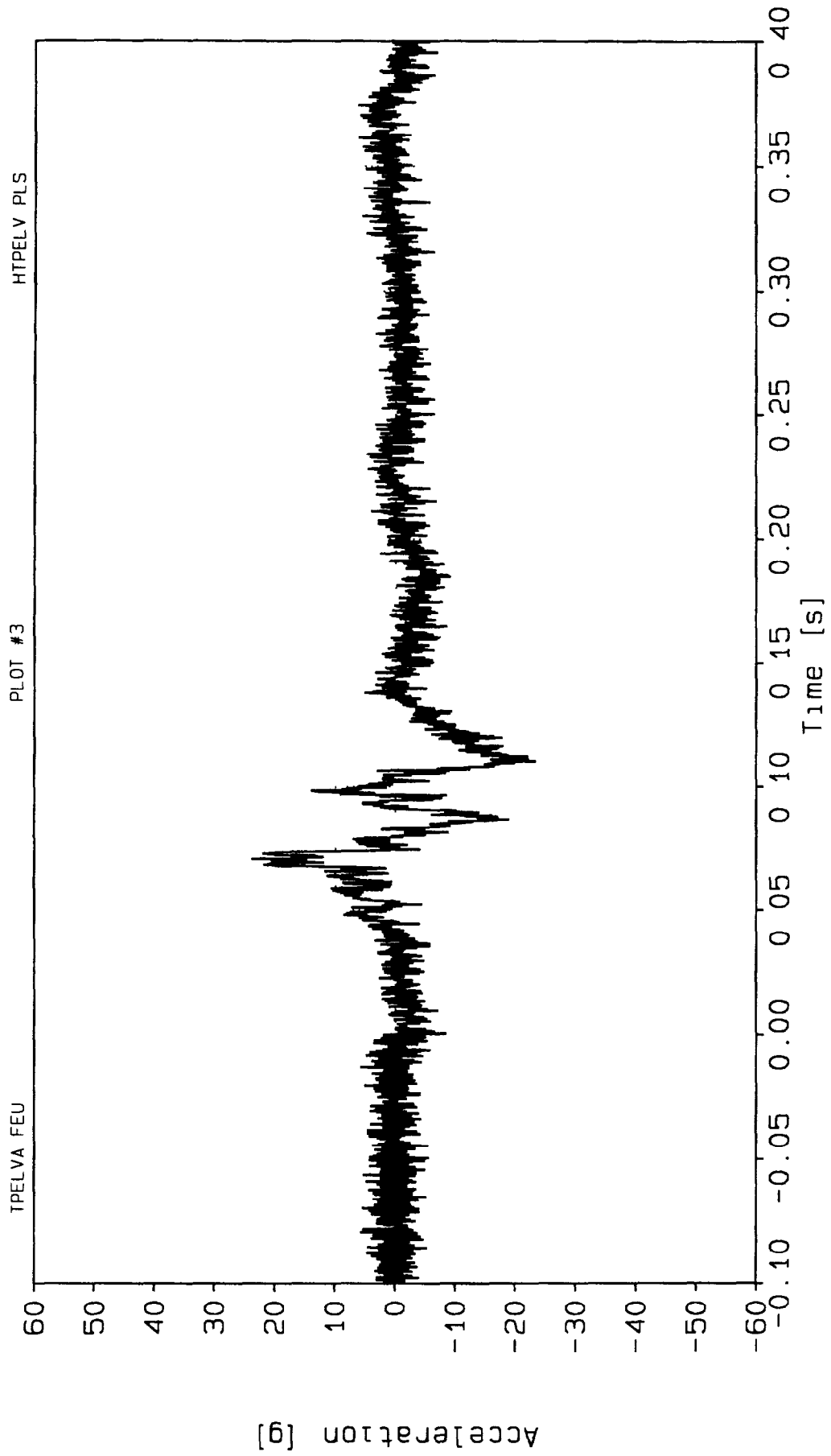
Filter Class 1000
Voipe Crash Testing
PH06608

Pelvis Acceleration (Az) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

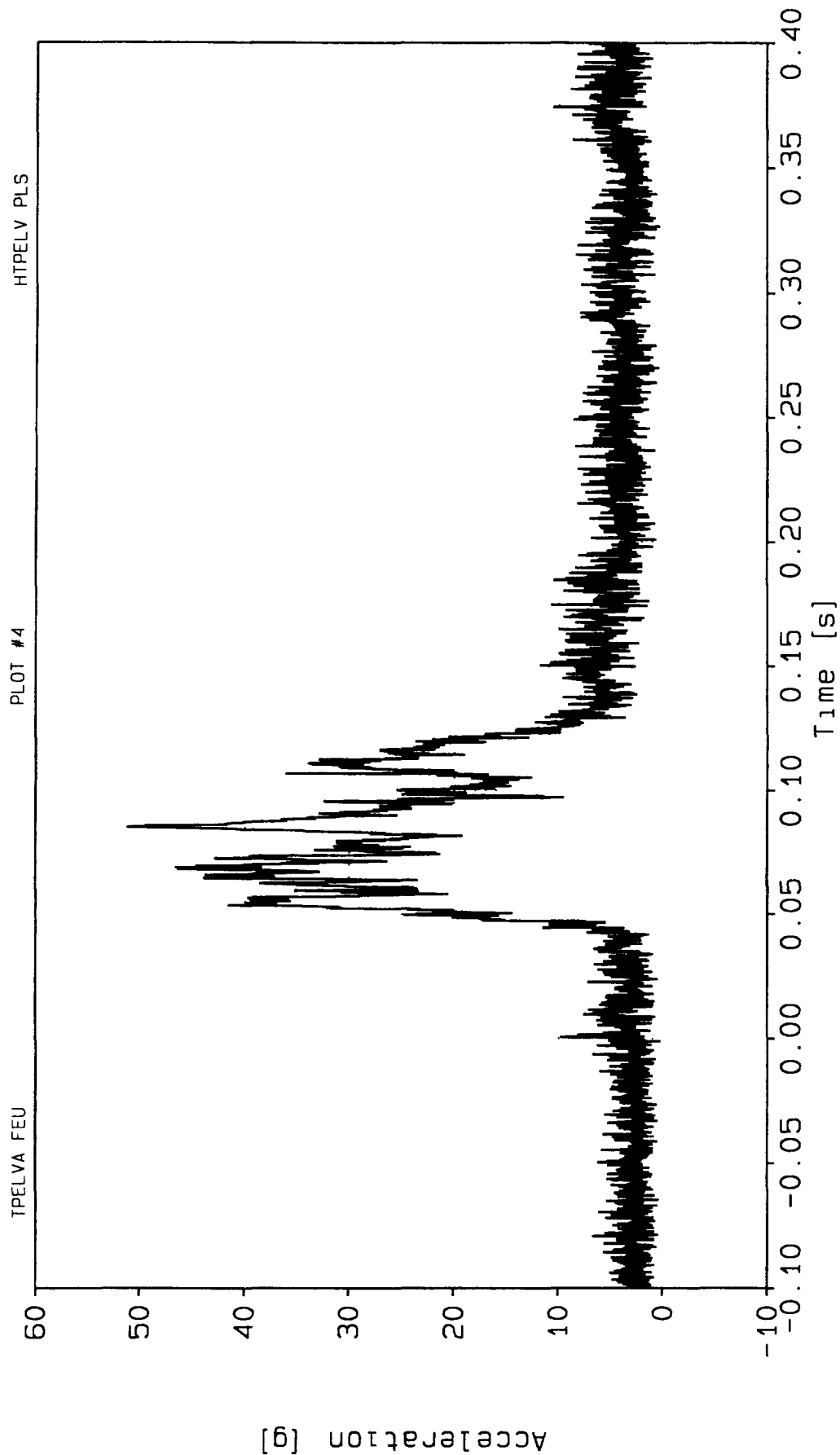
Exponent
Failure
Analysis
Associates

Pelvis Acceleration (Ar) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

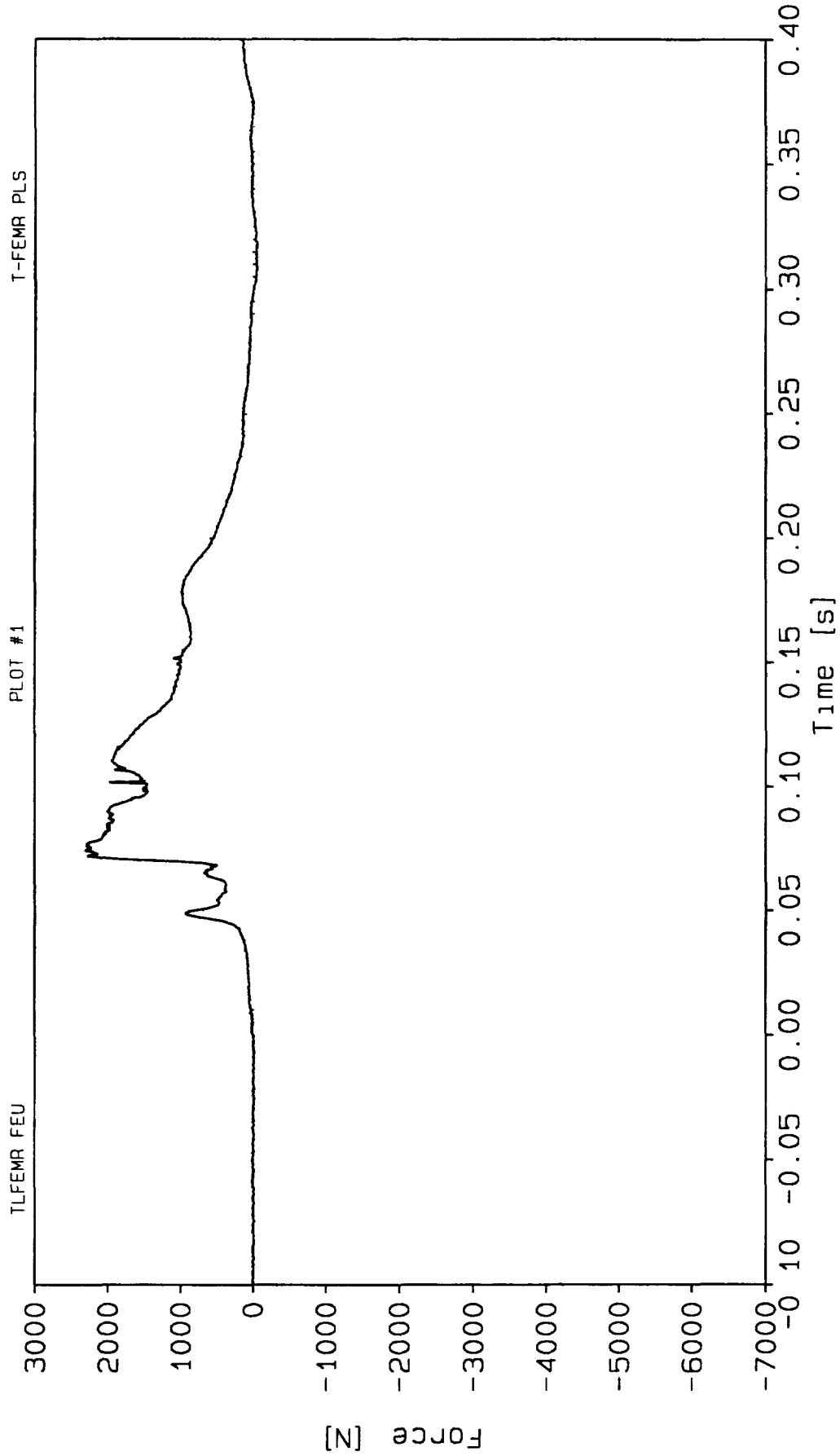
Filter Class 1000
Volpe Crash Testing
PH06608

Left Femur Force (Fx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

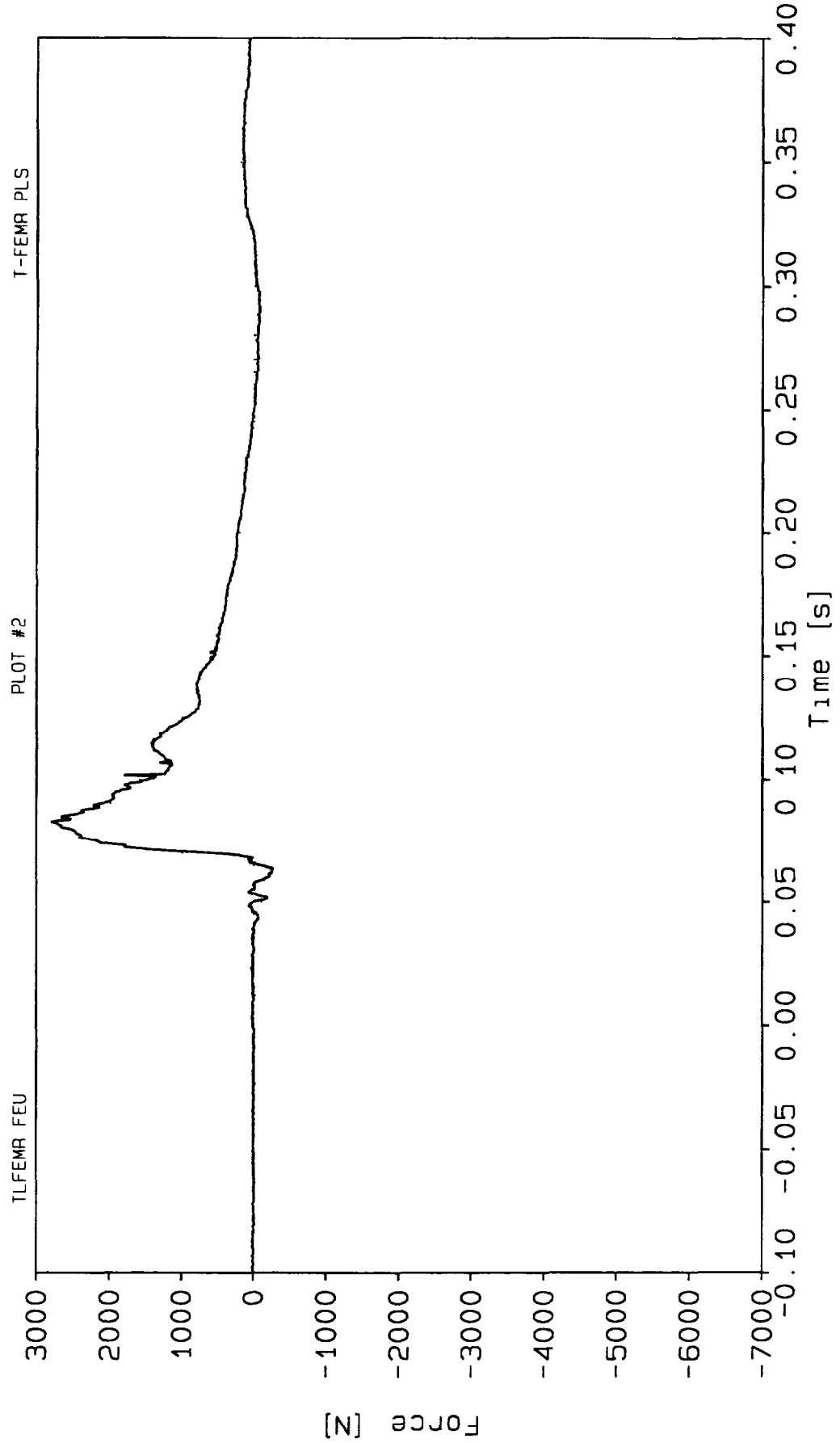
Exponent
Failure
Analysis
Associates

Left Femur Force (Fy) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

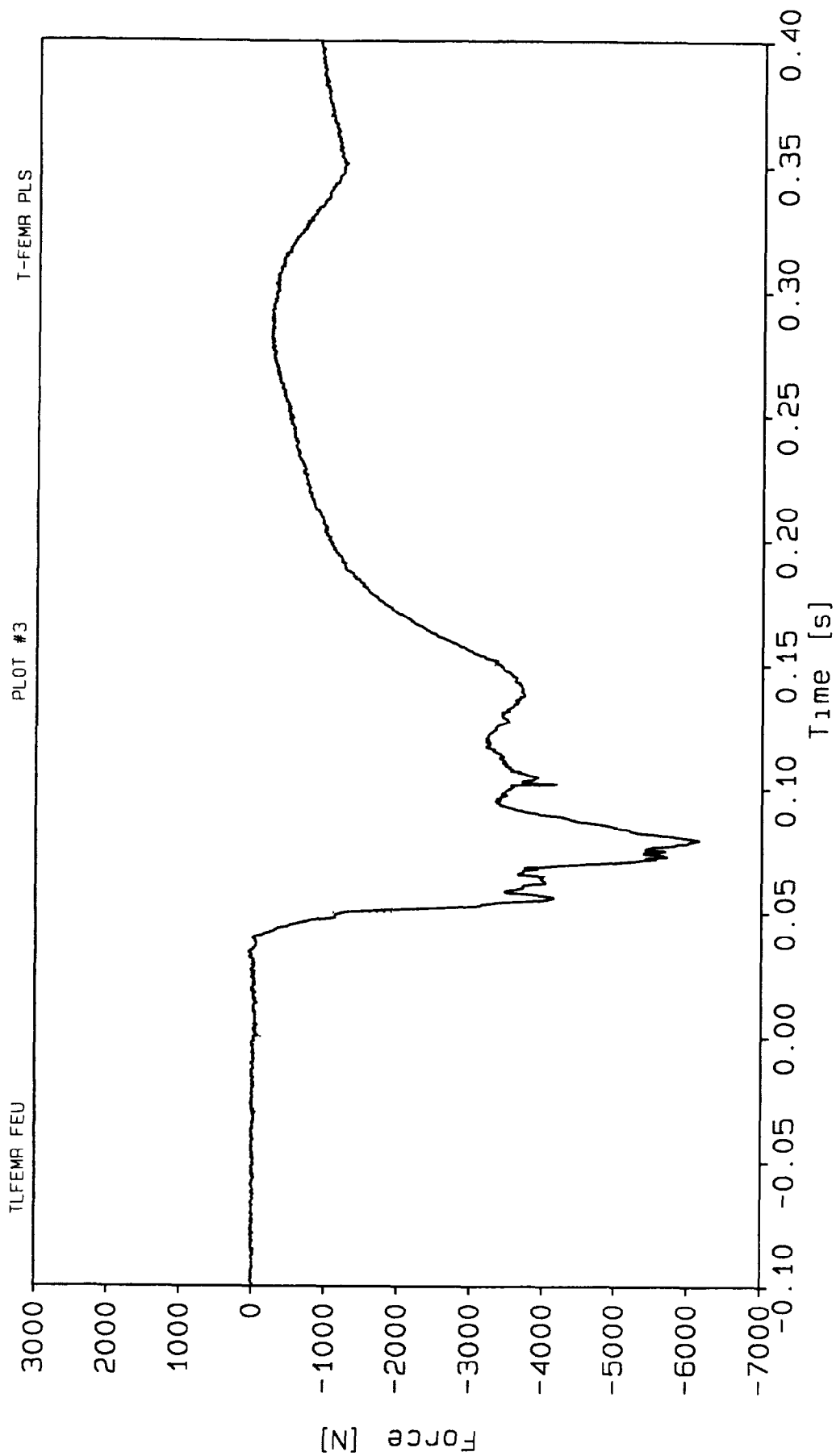
Exponent
Failure
Analysis
Associates

Left Femur Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



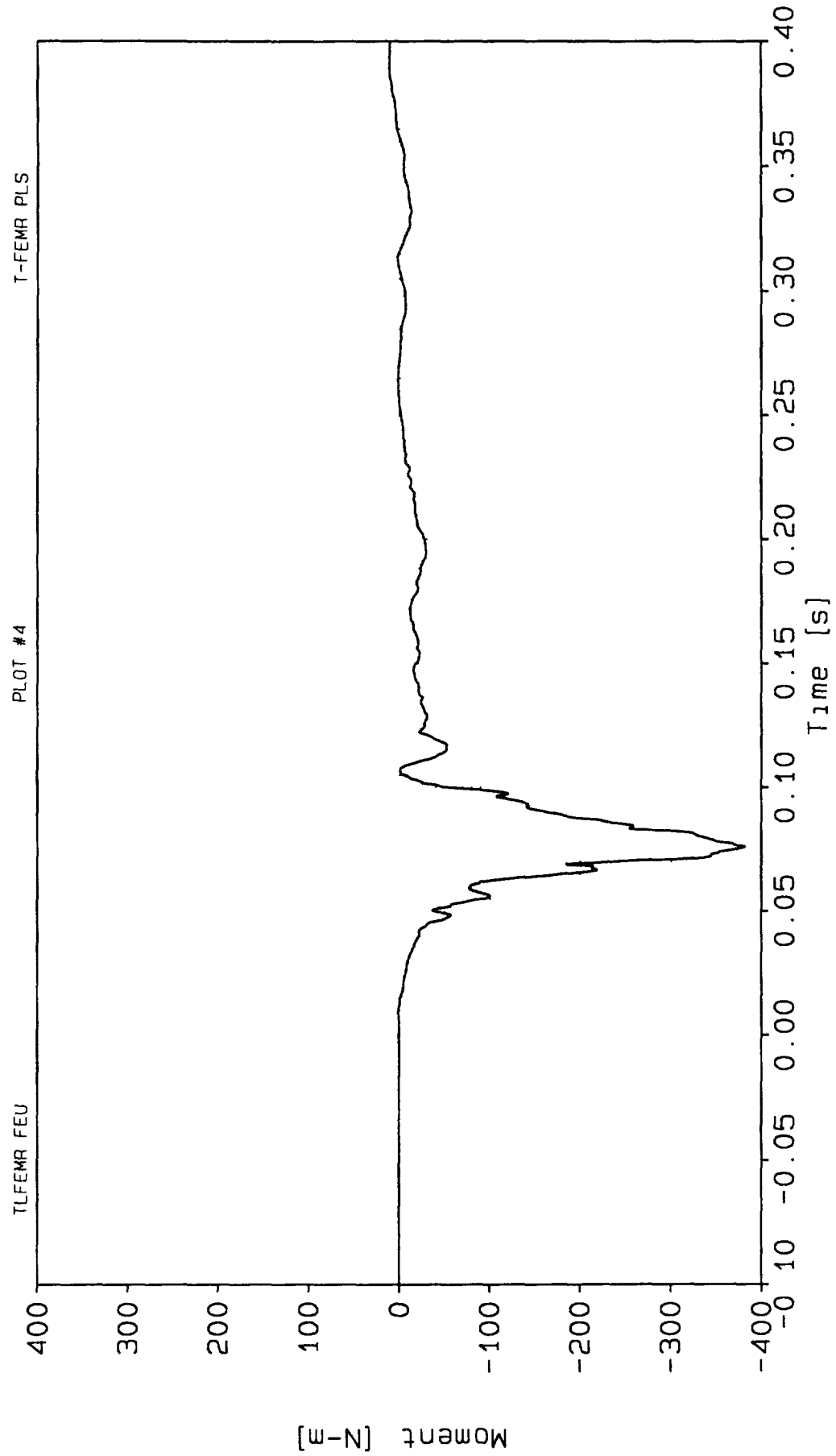
Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Left Femur Moment (Mx) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



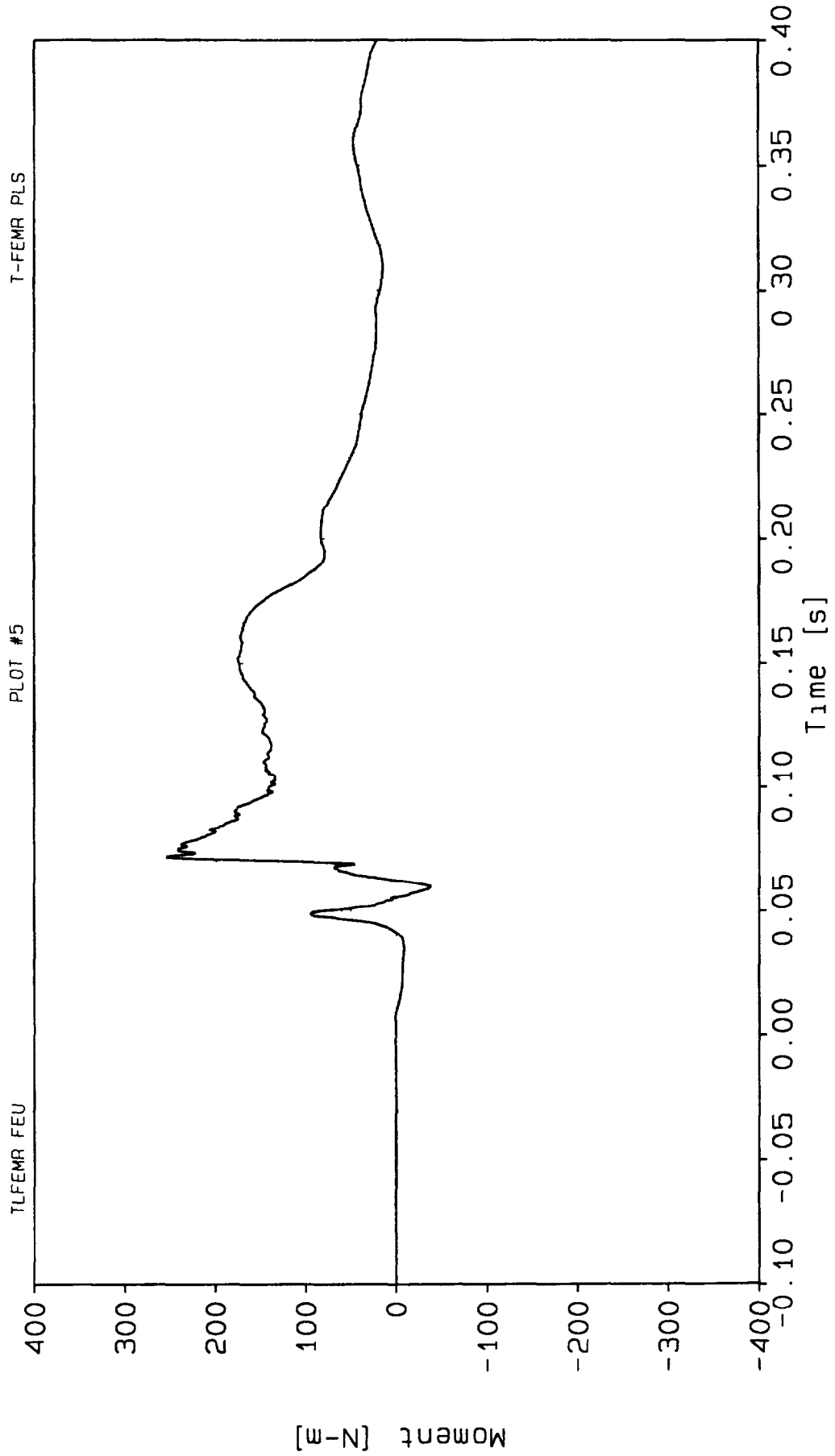
Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Left Femur Moment (My) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



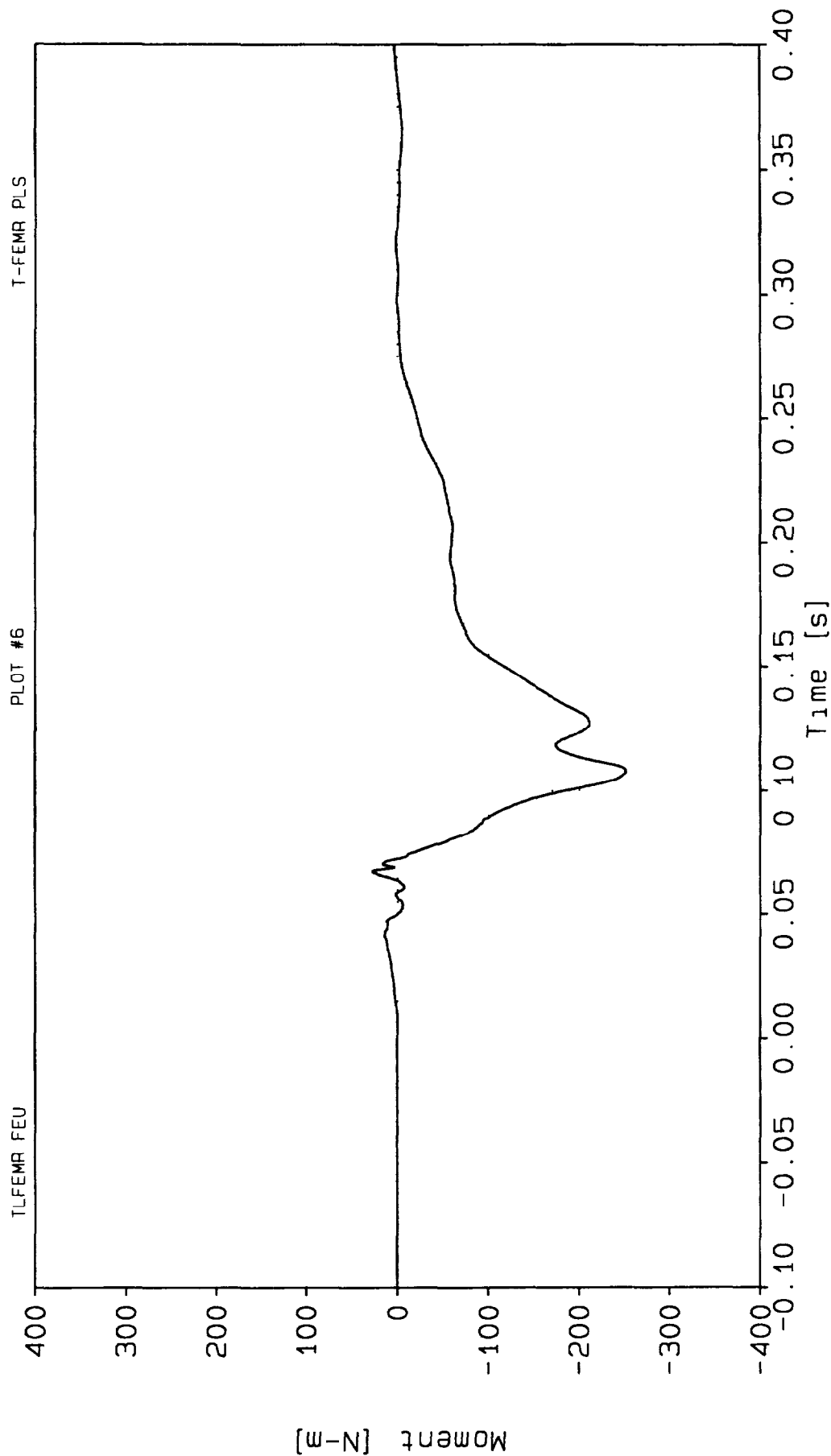
Filter Class 600
Voipe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Left Femur Moment (Mz) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



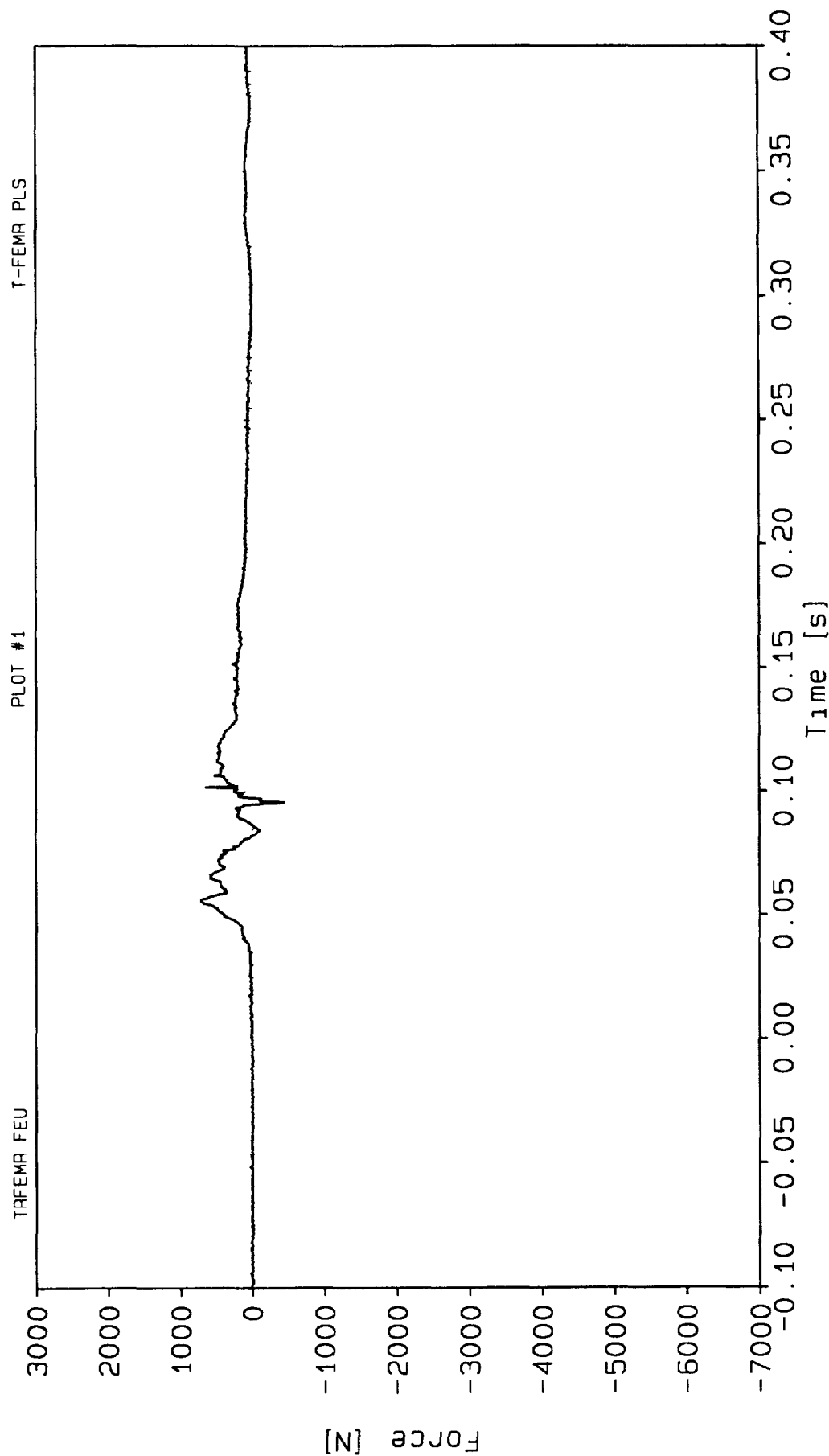
Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Right Femur Force (Fx) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

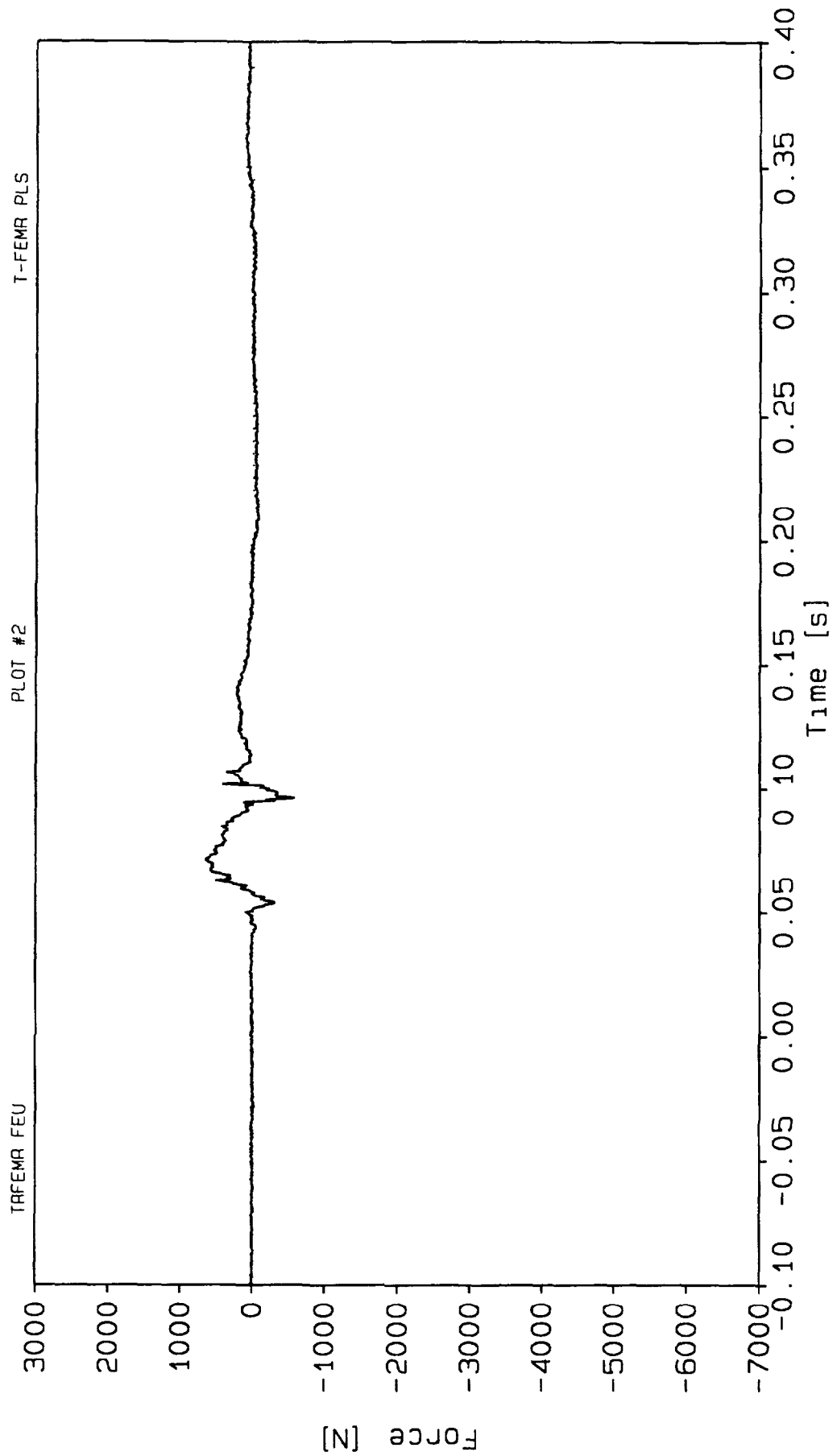
Exponent
Failure
Analysis
Associates

Right Femur Force (Fy) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

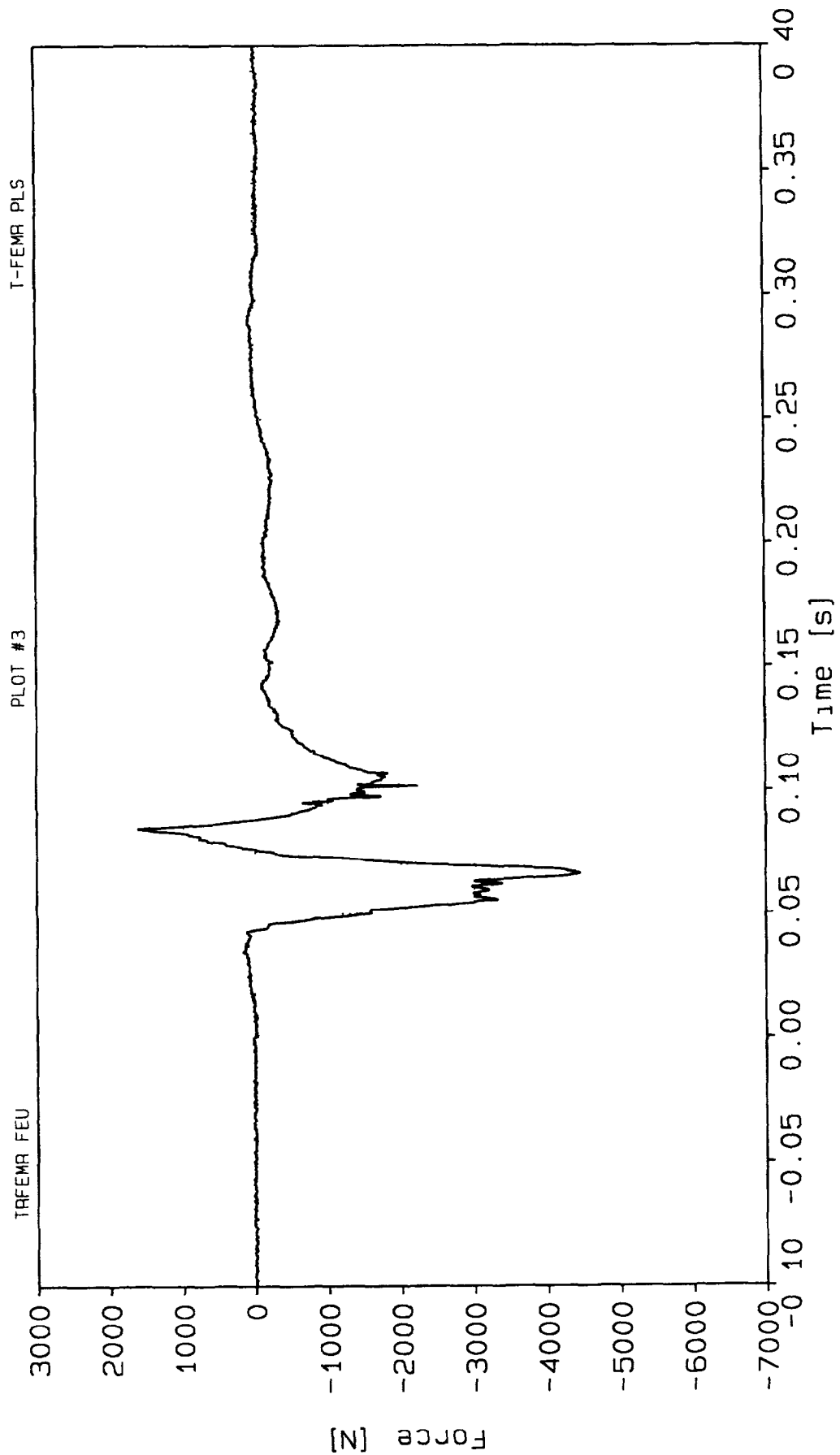
Exponent
Failure
Analysis
Associates

Right Femur Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



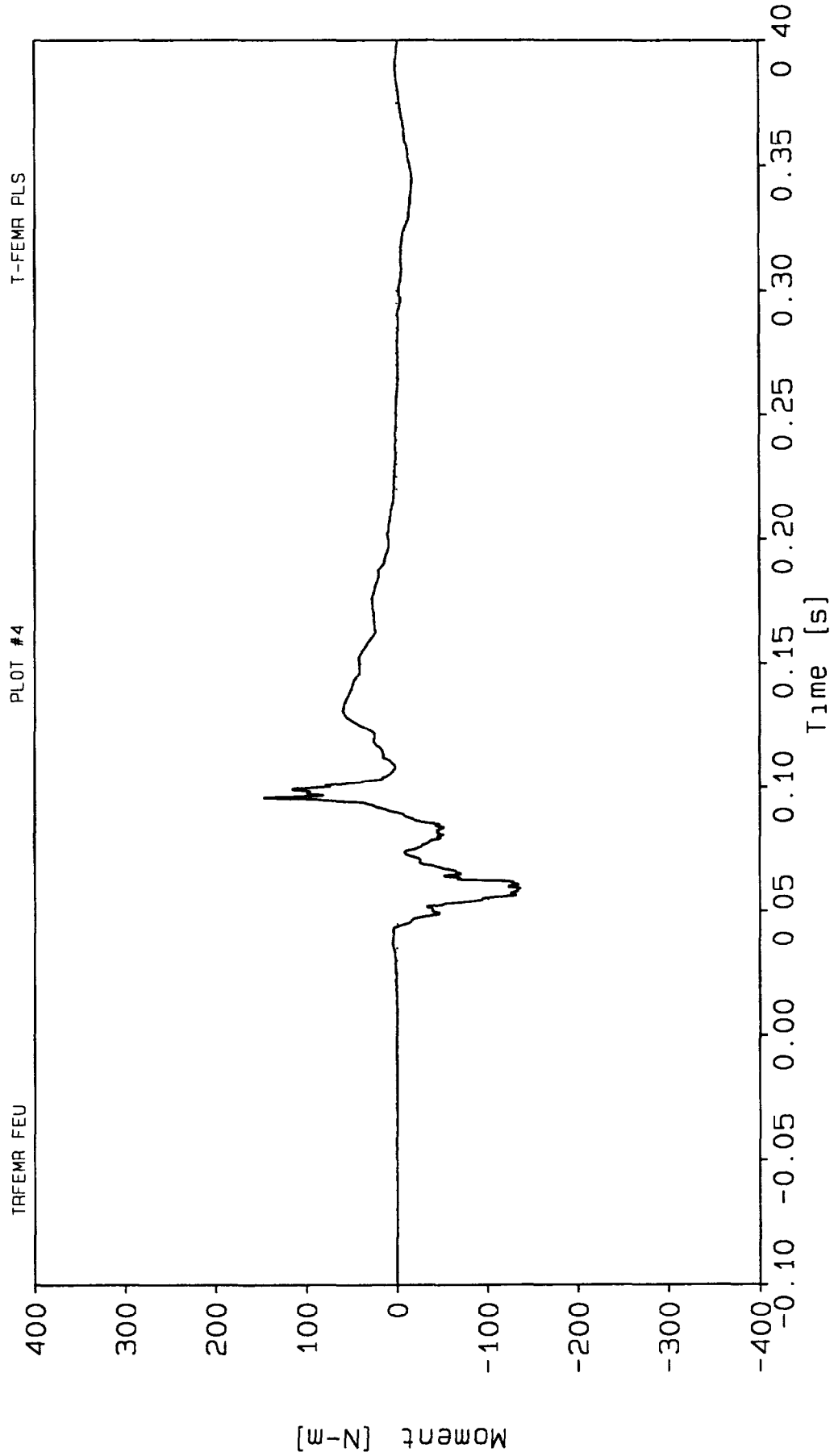
Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06508

Right Femur Moment (Mx) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

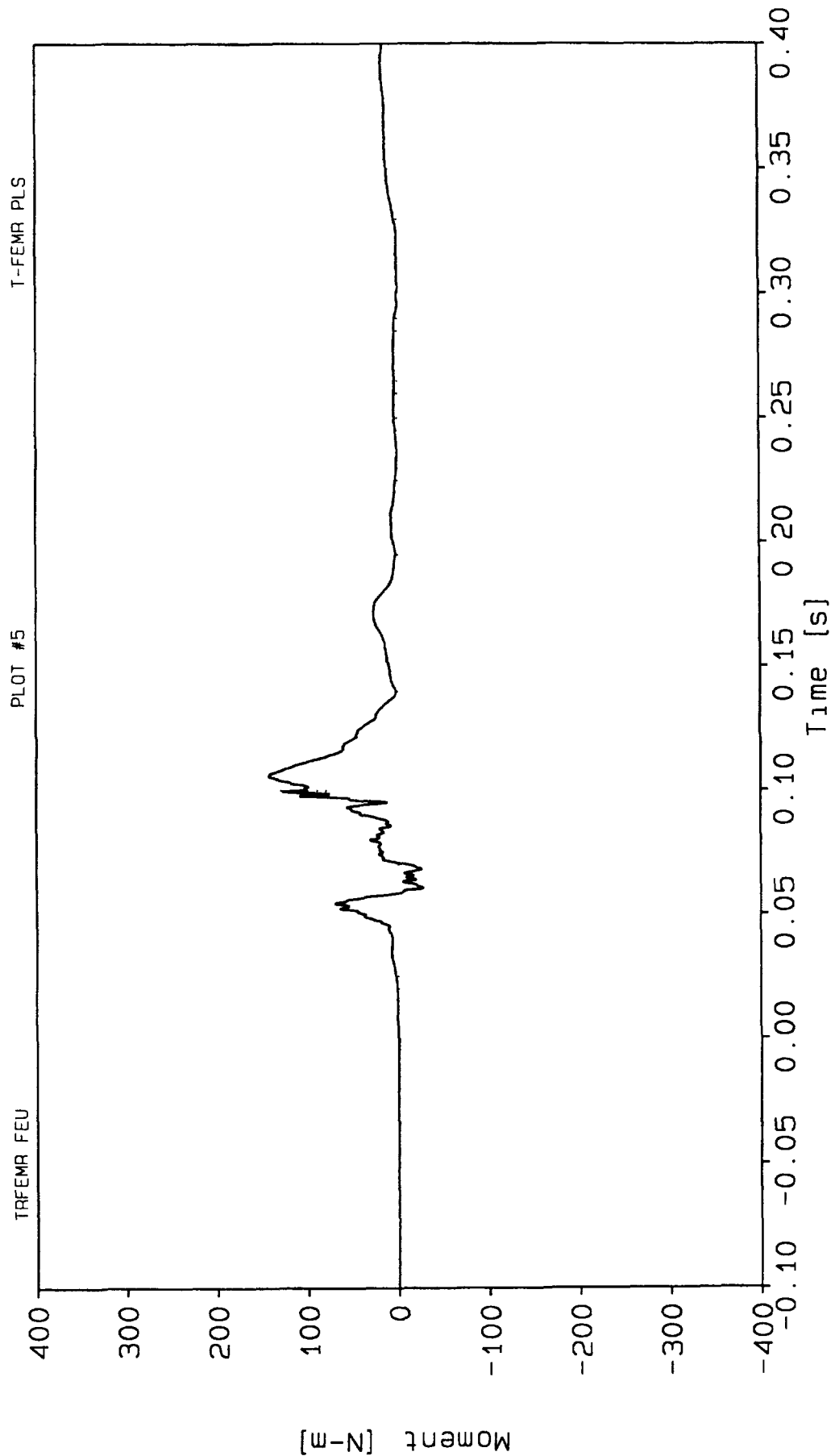
Exponent
Failure
Analysis
Associates

Right Femur Moment (My) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

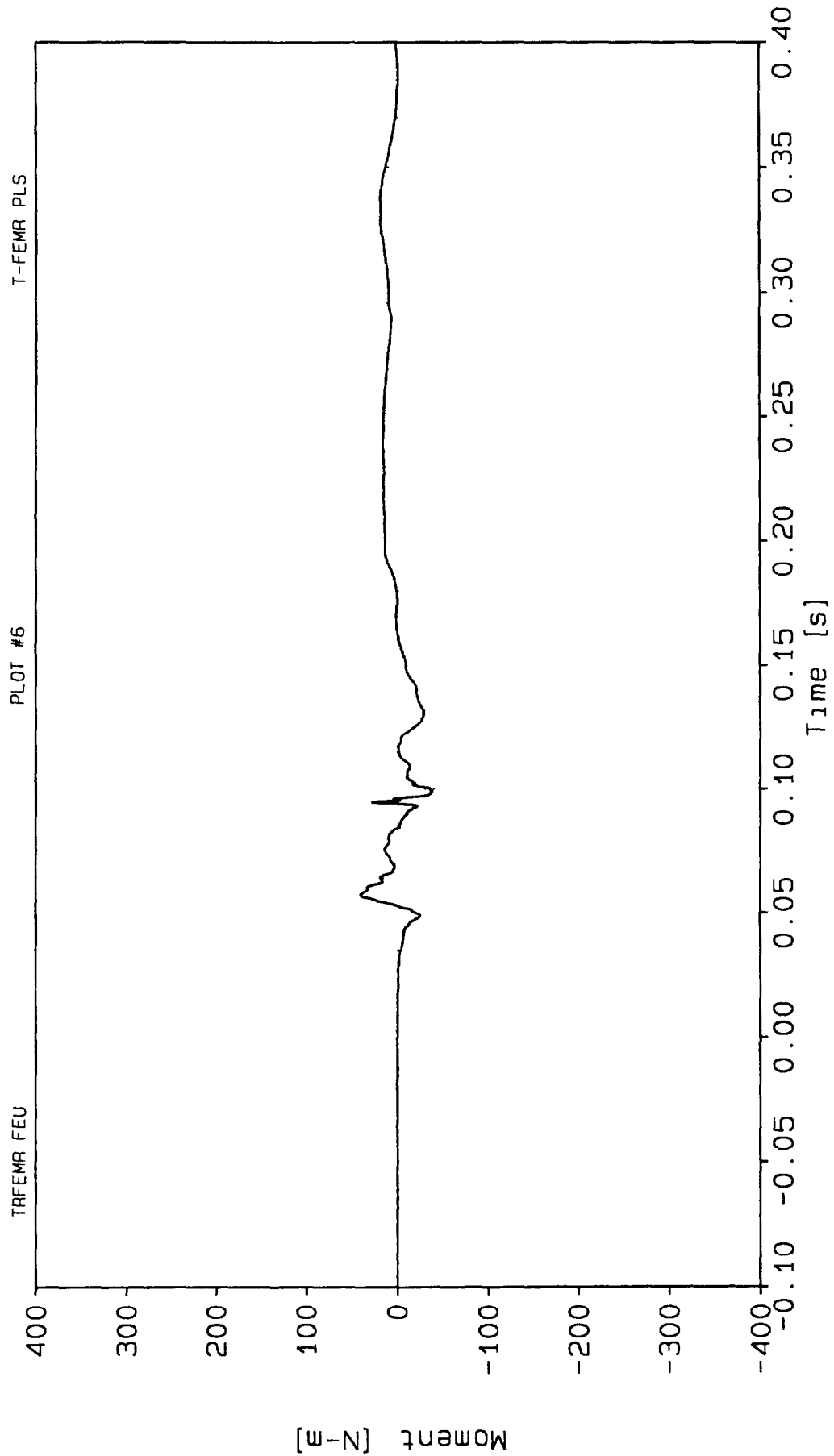
Filter Class 600
Volpe Crash Testing
PH06608

Right Femur Moment (Mz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06508

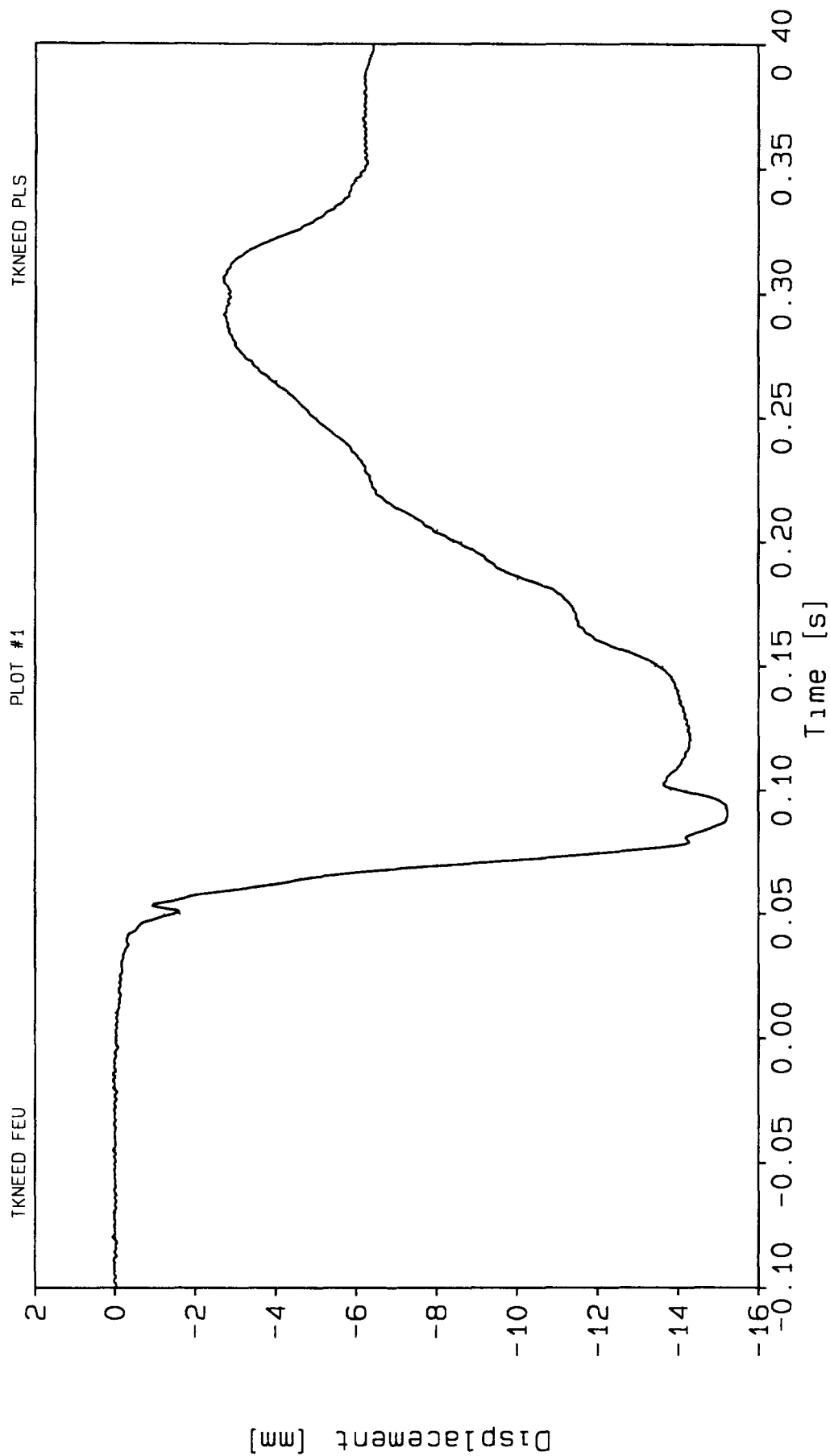
Exponent
Failure
Analysis
Associates

Left Knee Displacement v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

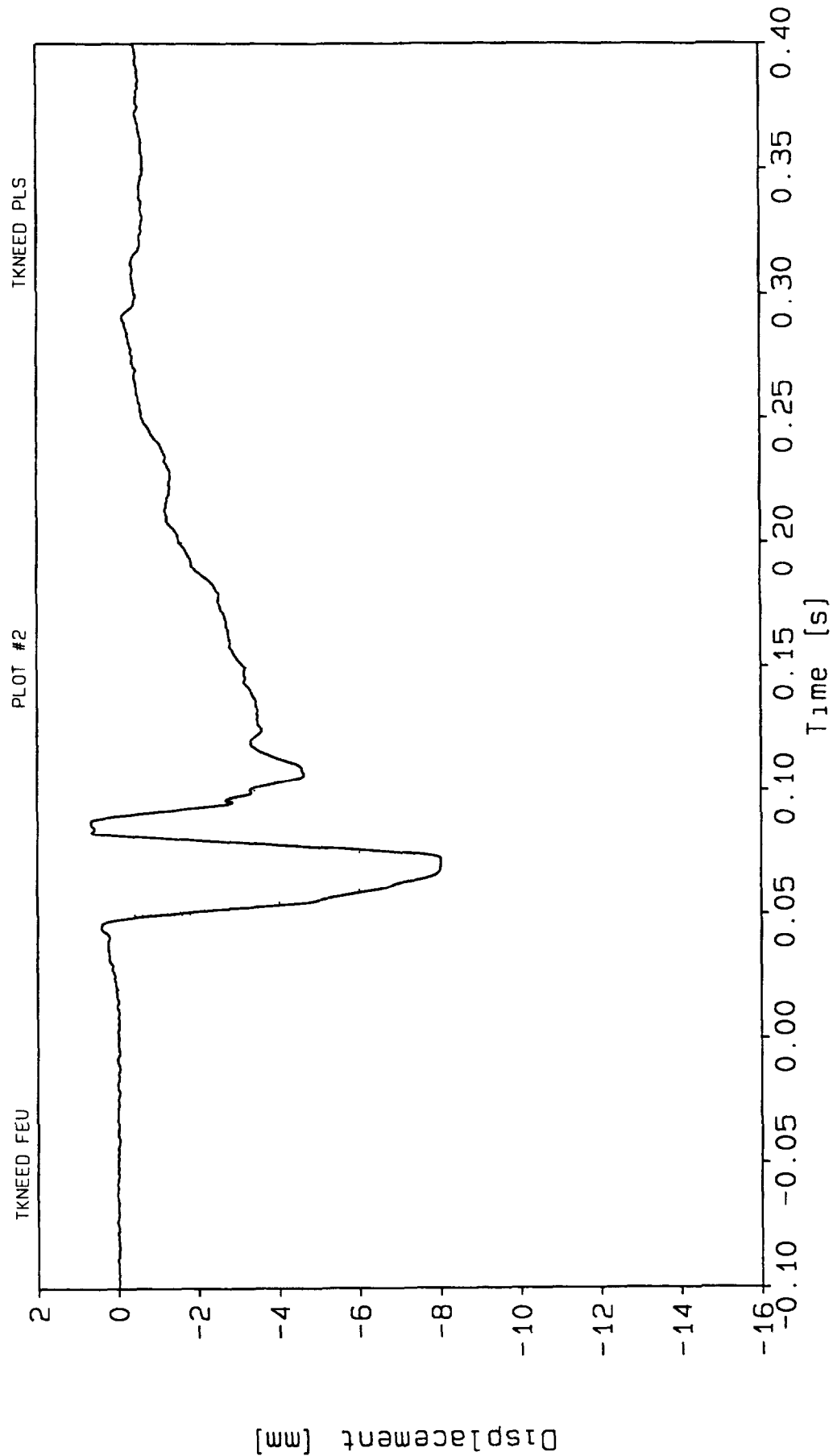
Filter Class 180
Volpe Crash Testing
PH06608

Right Knee Displacement v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

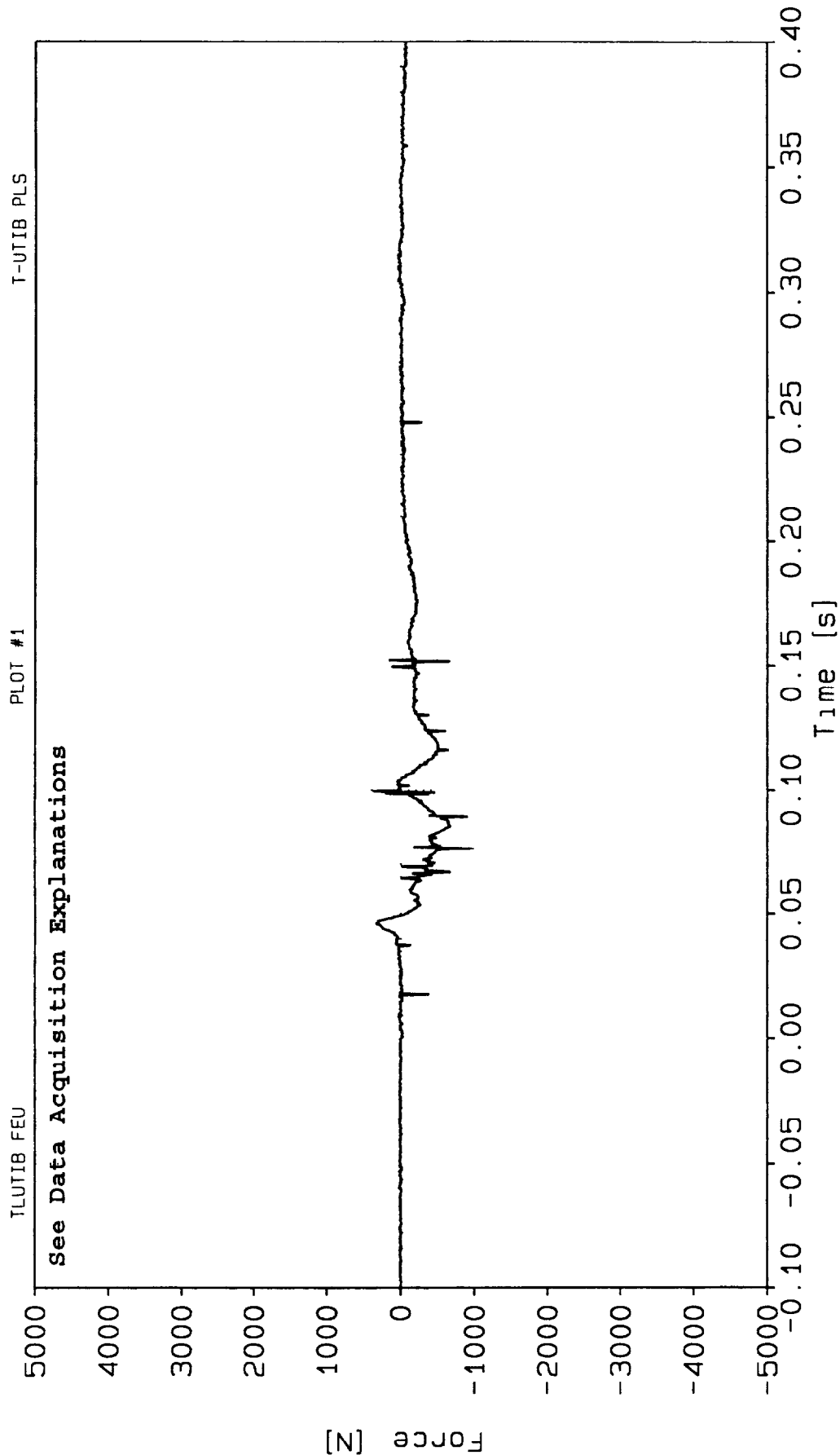
Filter Class 180
Volpe Crash Testing
PH06608

Left Upper Tibia Force (Fx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06508

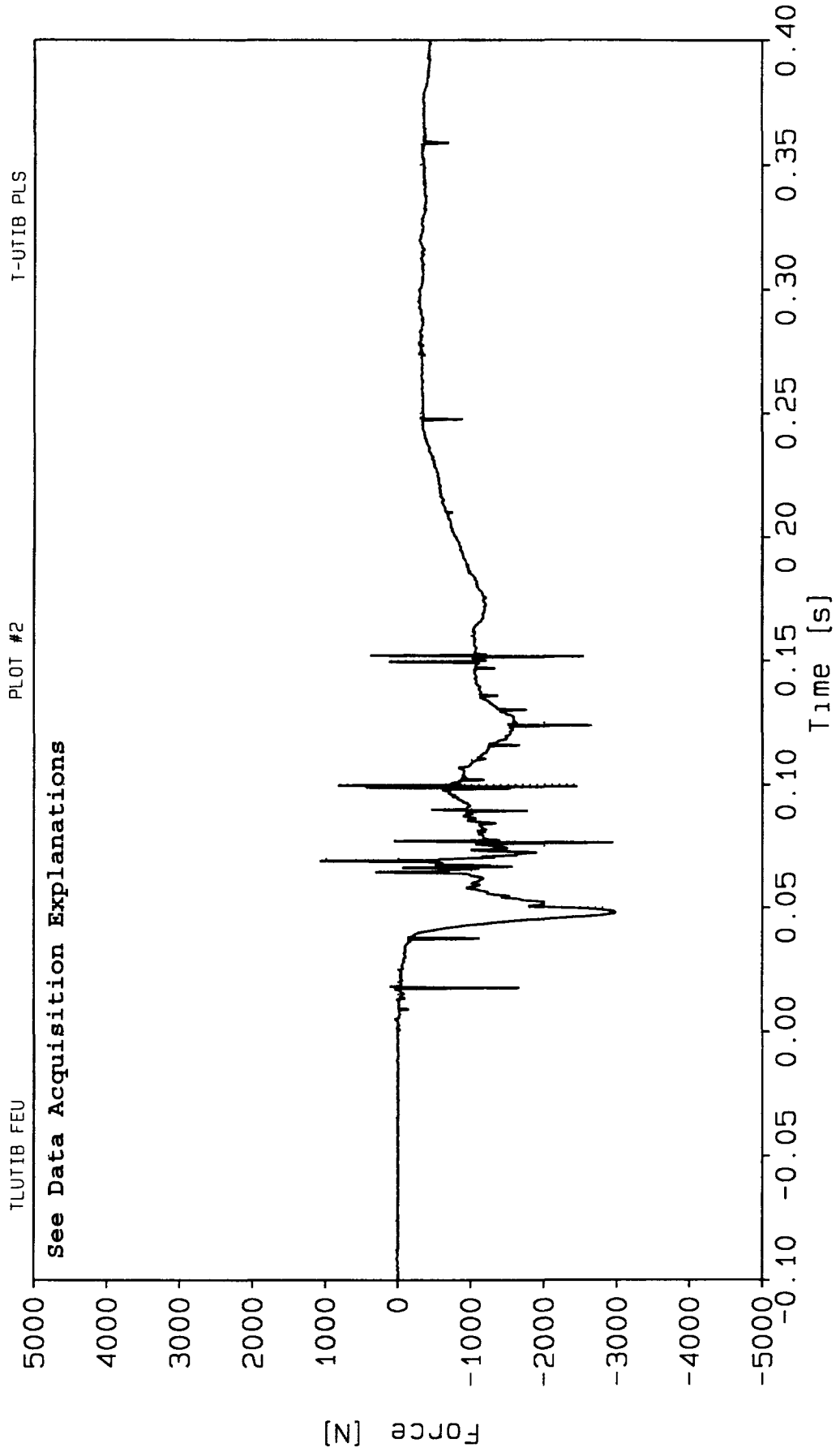
Exponent
Failure
Analysis
Associates

Left Upper Tibia Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

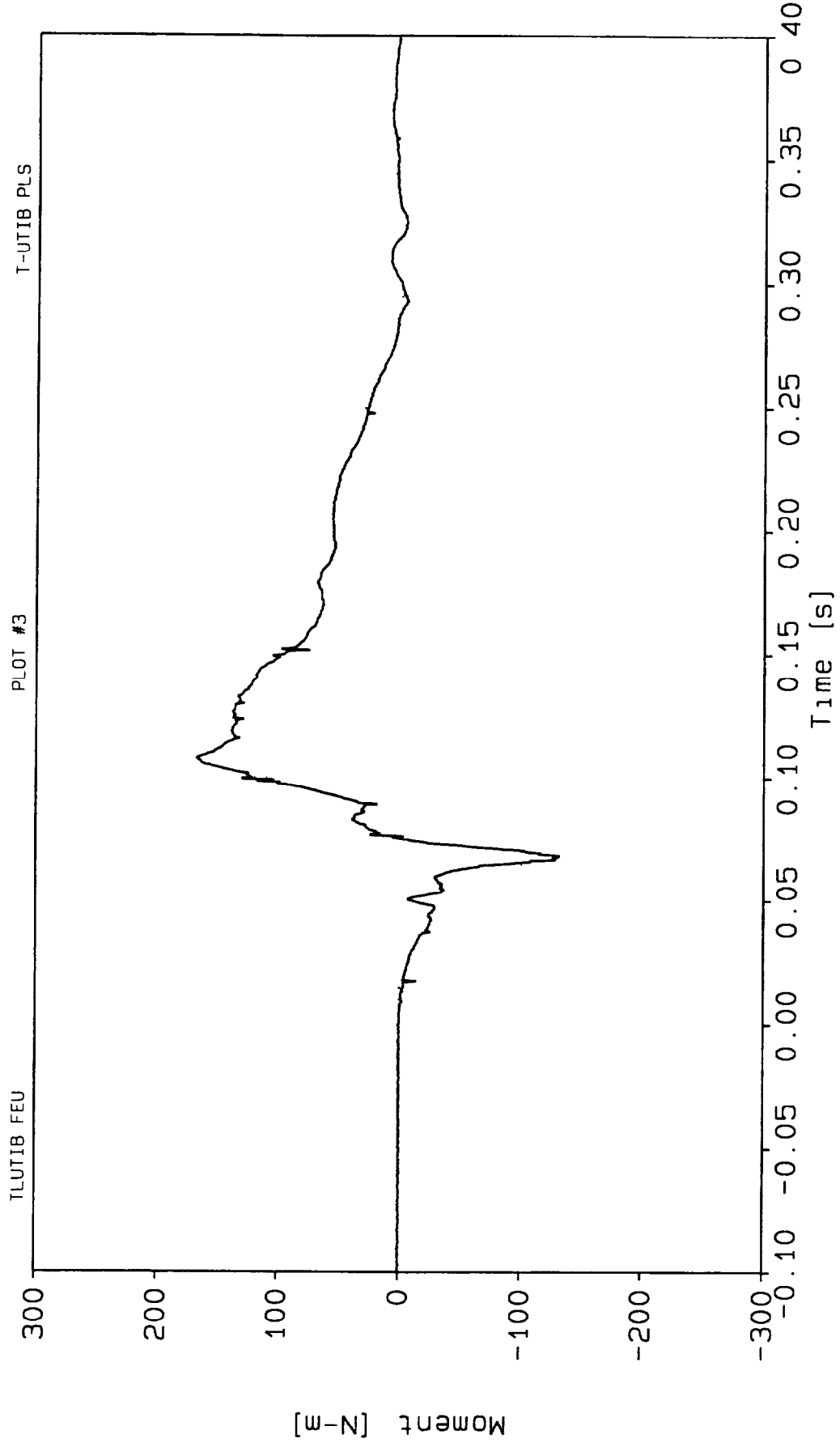
Exponent
Failure
Analysis
Associates

Left Upper Tibia Moment (Mx) v Time

Driver Dummy - THOR

2001 Dodge Neon

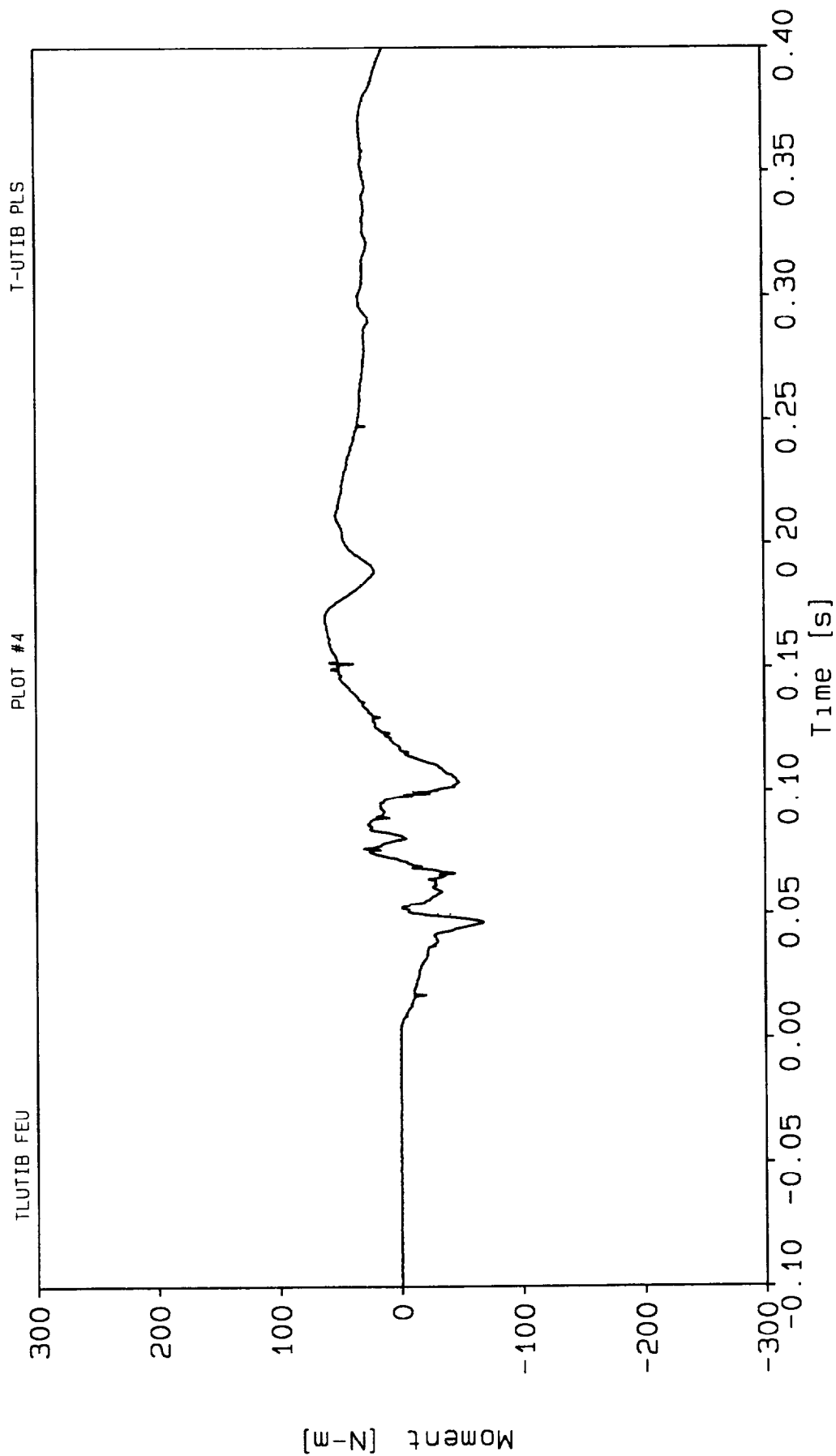
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH05508

Exponent
Failure
Analysis
Associates

Left Upper Tibia Moment (My) v Time
Driver Dummy - THOR
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

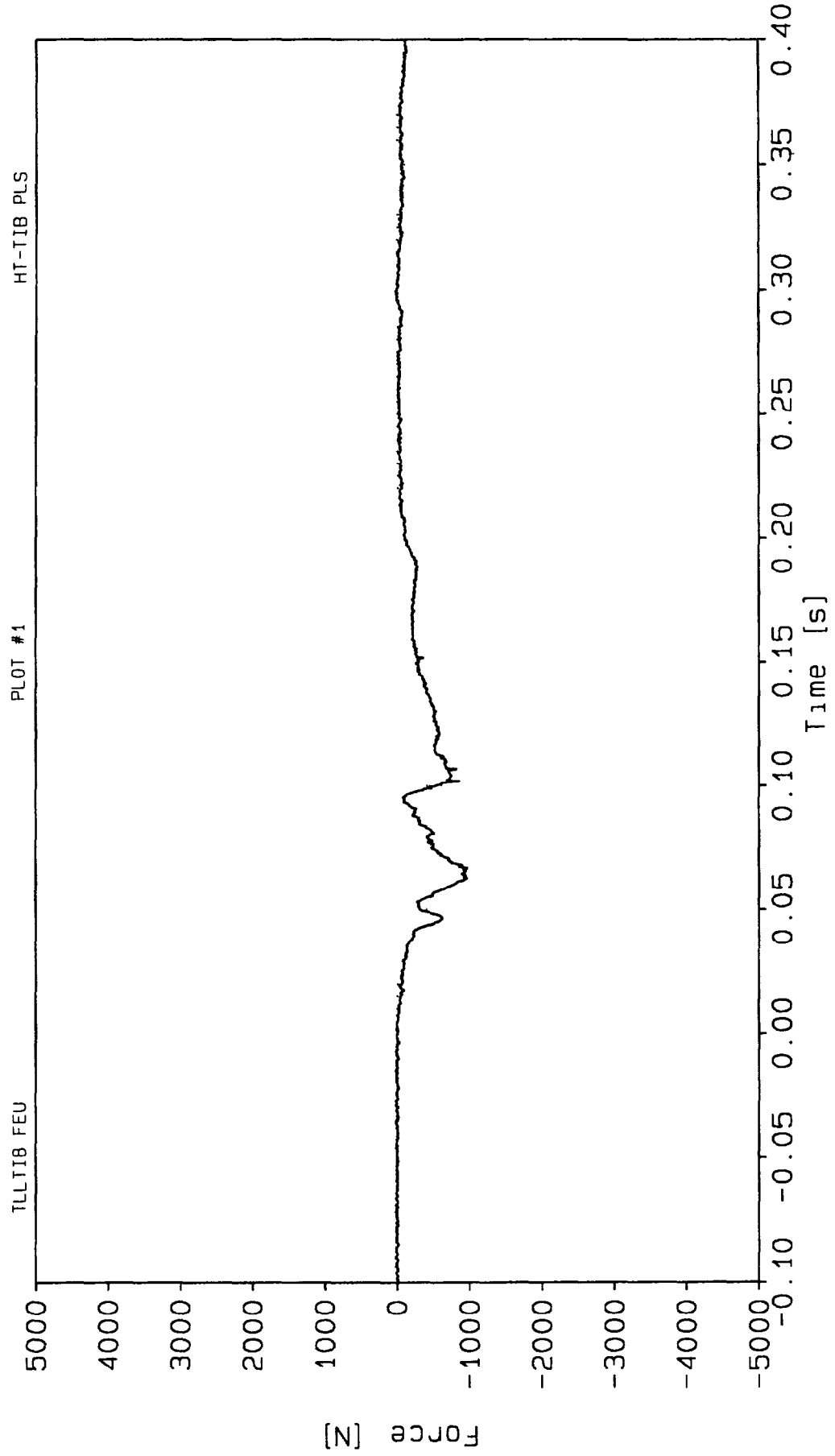
Exponent
Failure
Analysis
Associates

Left Lower Tibia Force (Fx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06608

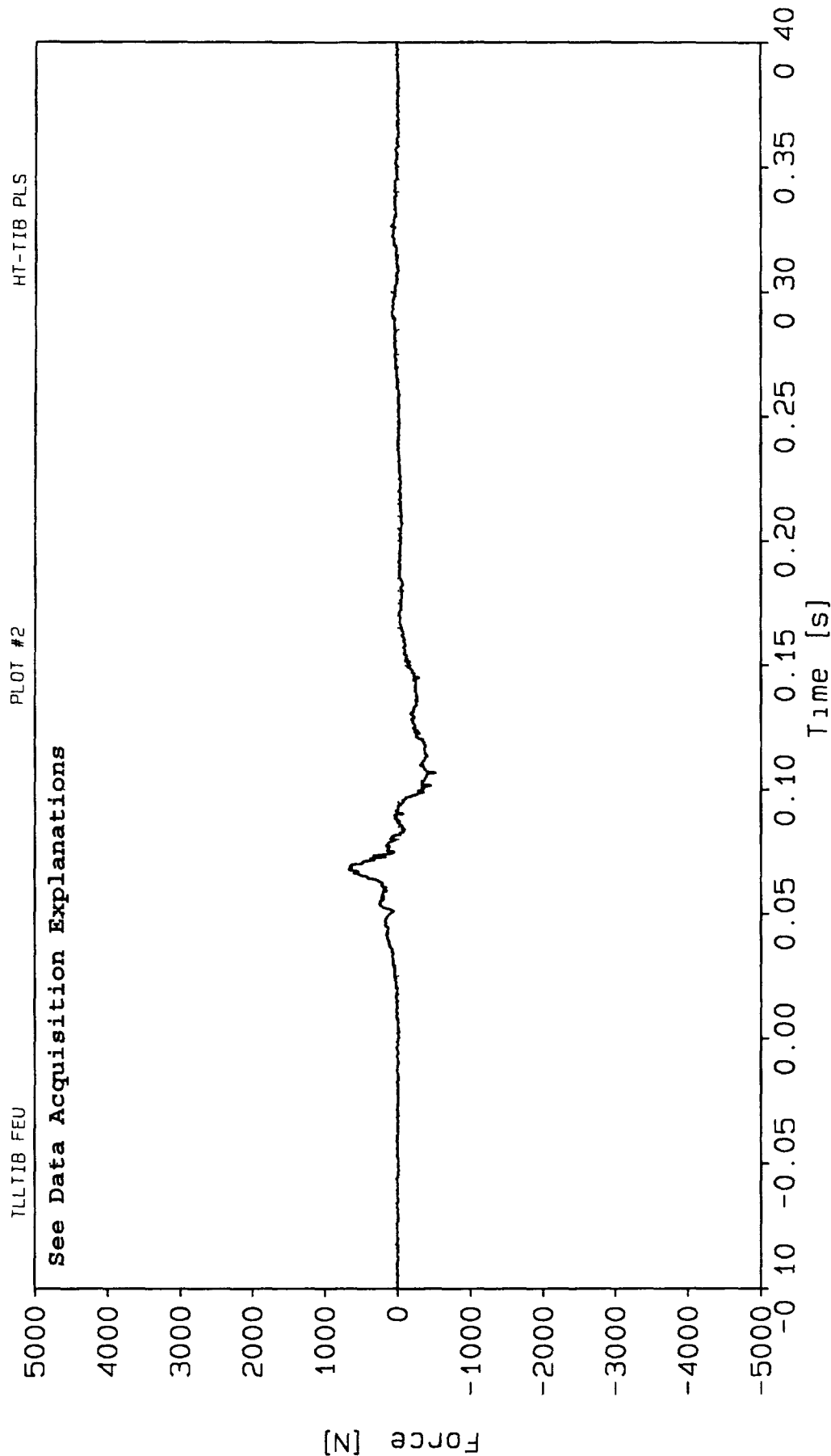
Exponent
Failure
Analysis
Associates

Left Lower Tibia Force (Fy) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

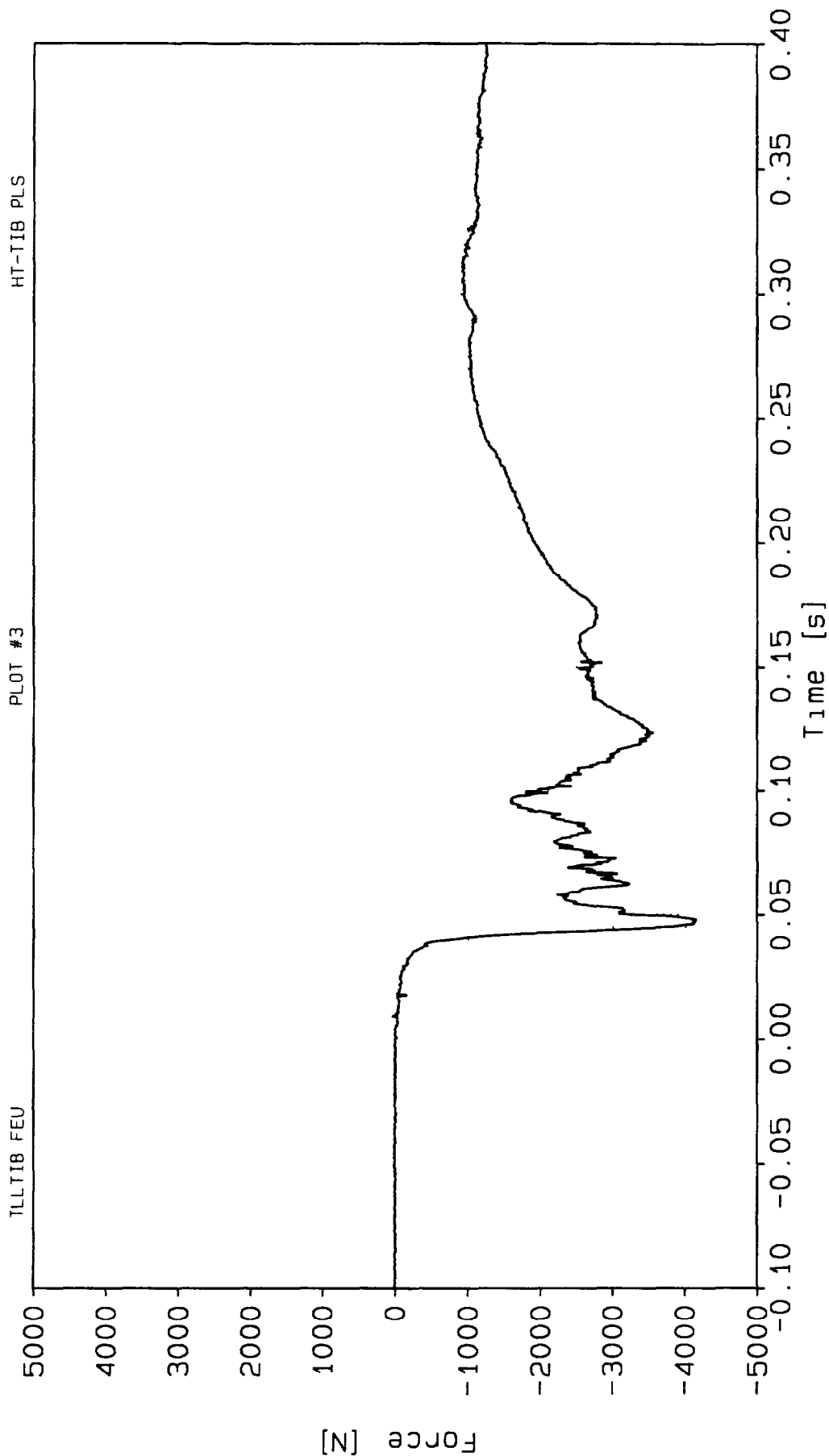
Exponent
Failure
Analysis
Associates

Left Lower Tibia Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

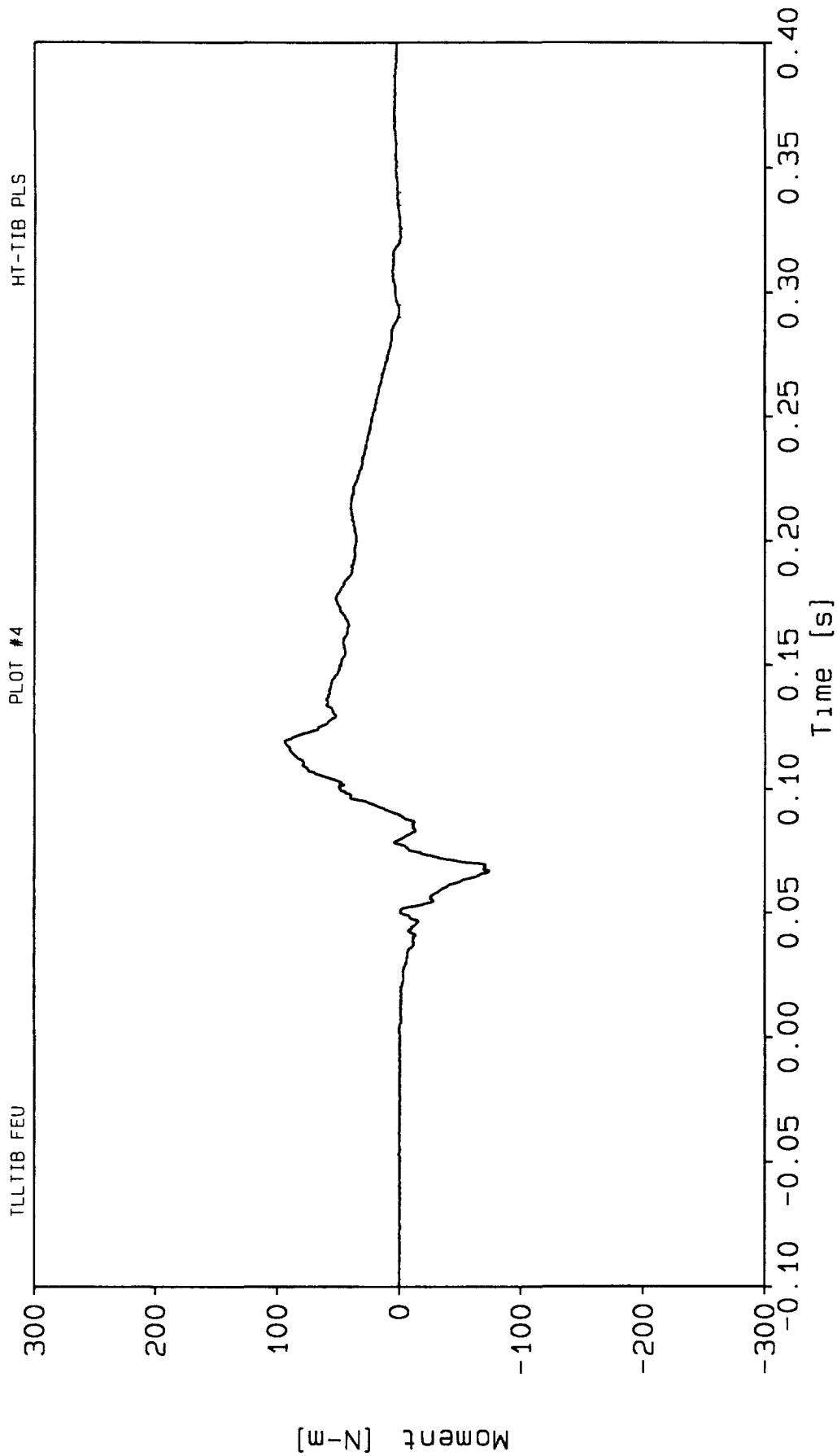
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Left Lower Tibia Moment (Mx) v Time
Driver Dummy - THOR
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH05608

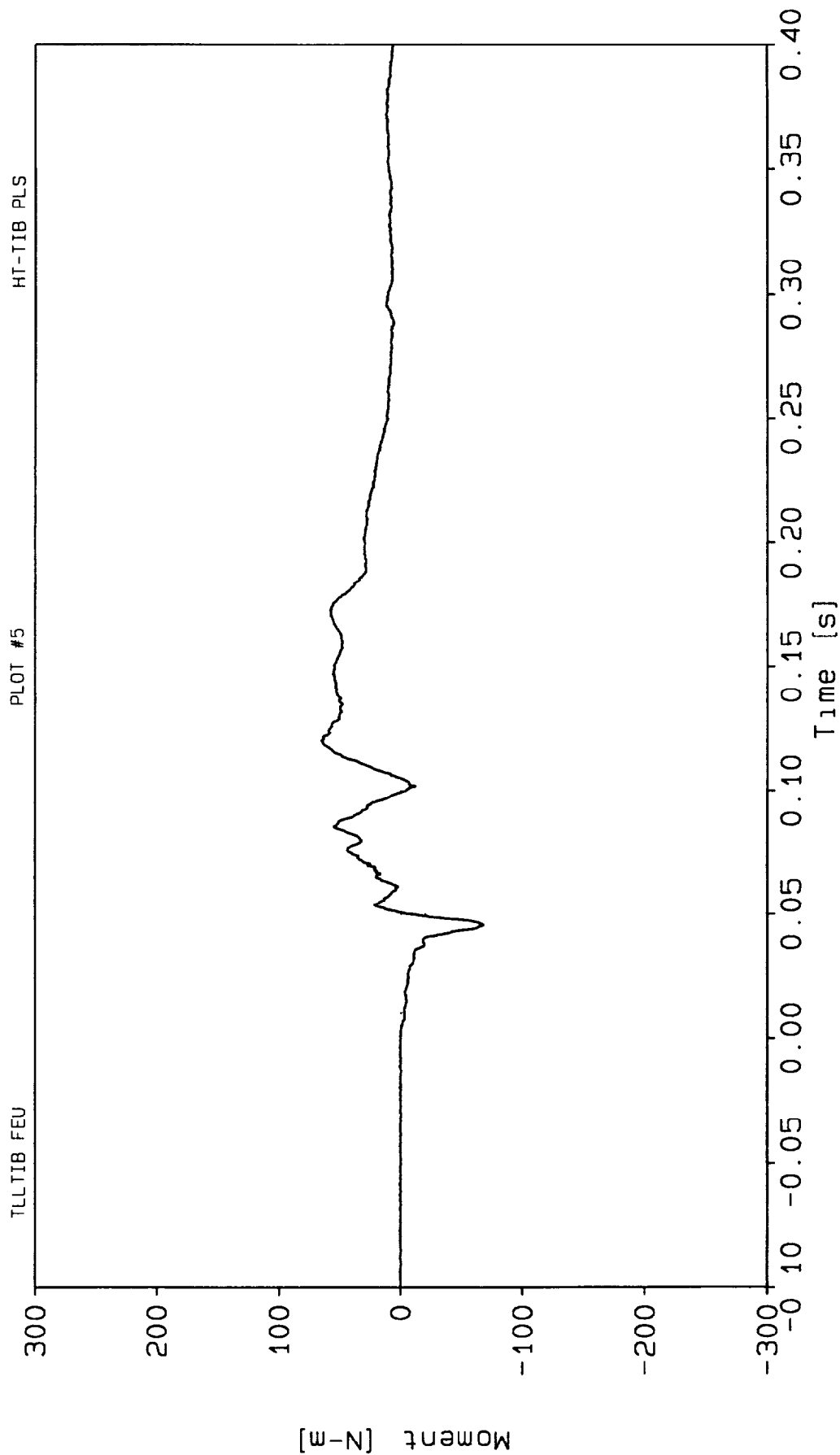
Exponent
Failure
Analysis
Associates

Left Lower Tibia Moment (My) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

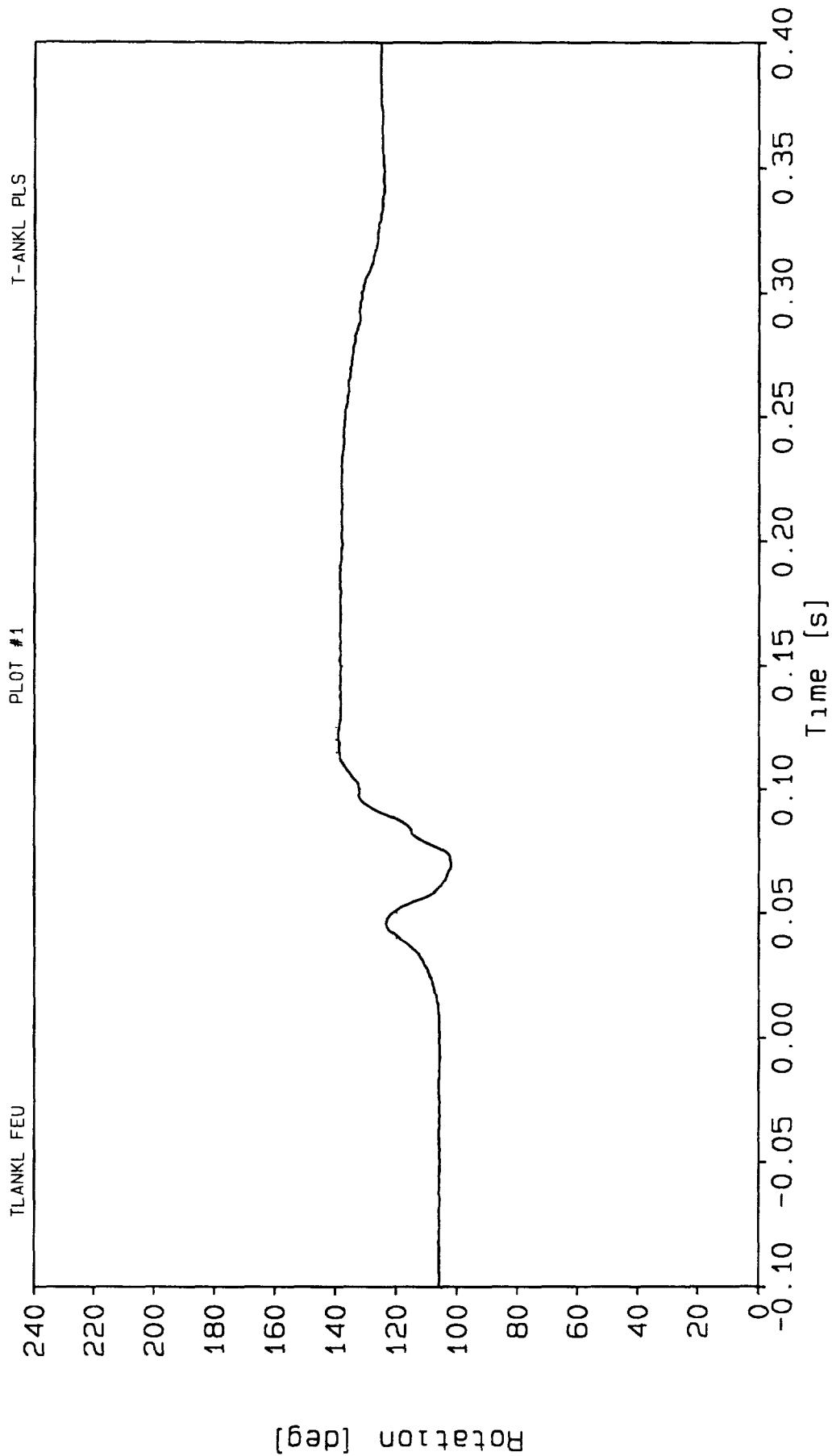
Exponent
Failure
Analysis
Associates

Left Ankle Rotation (X Axis) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

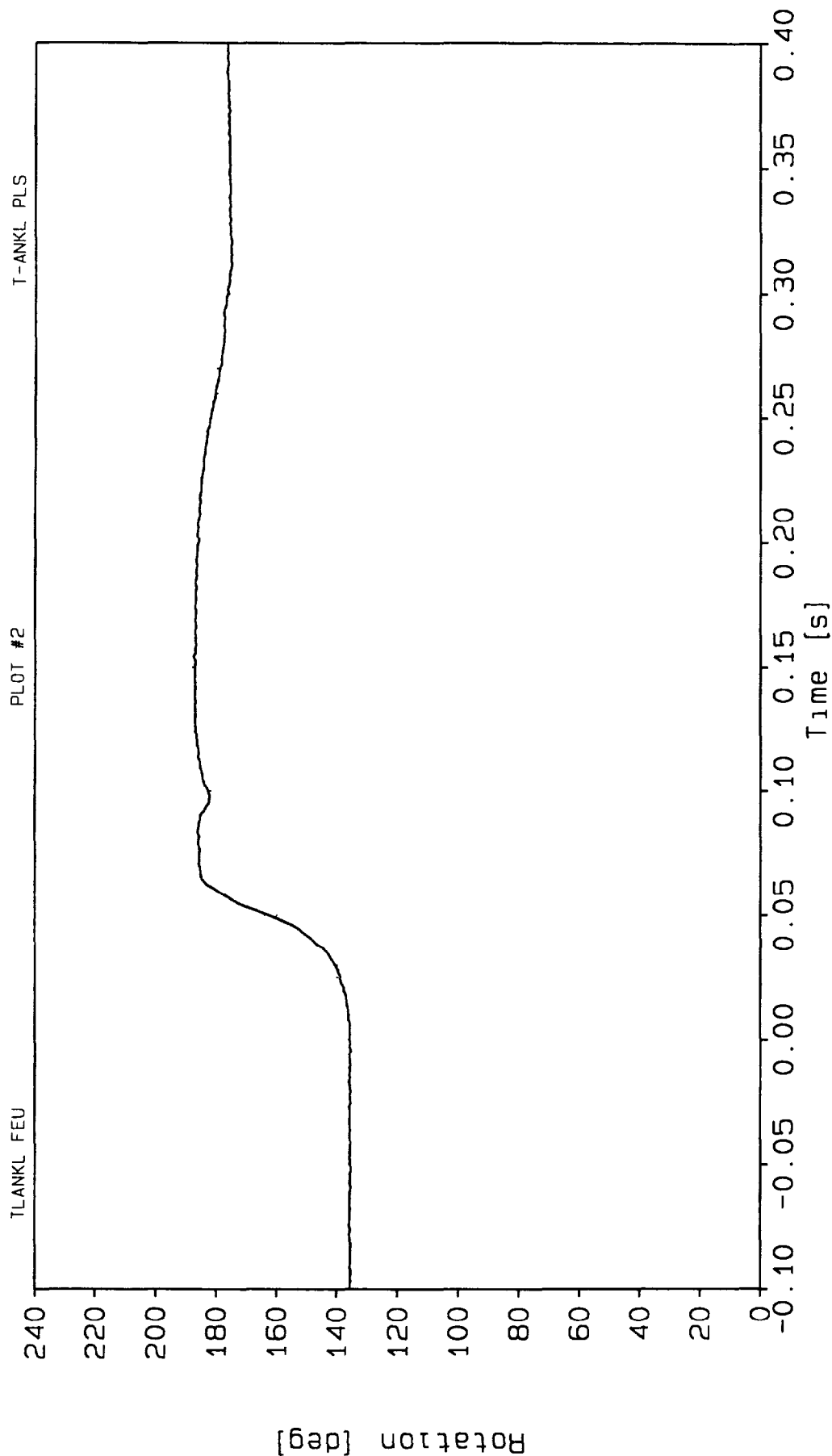
Exponent
Failure
Analysis
Associates

Left Ankle Rotation (Y Axis) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

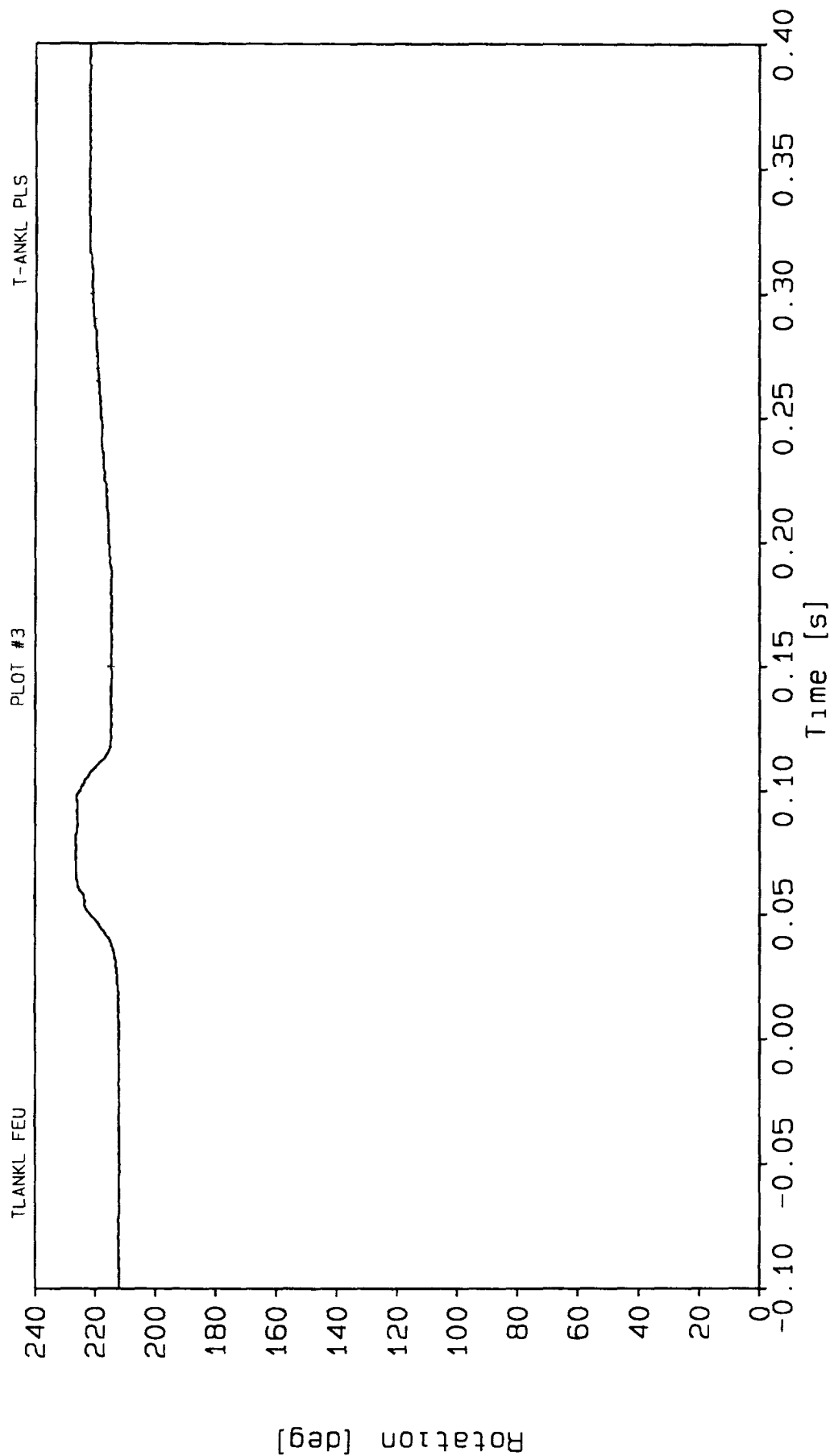
Filter Class 180
Volpe Crash Testing
PH06608

Left Ankle Rotation (Z Axis) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

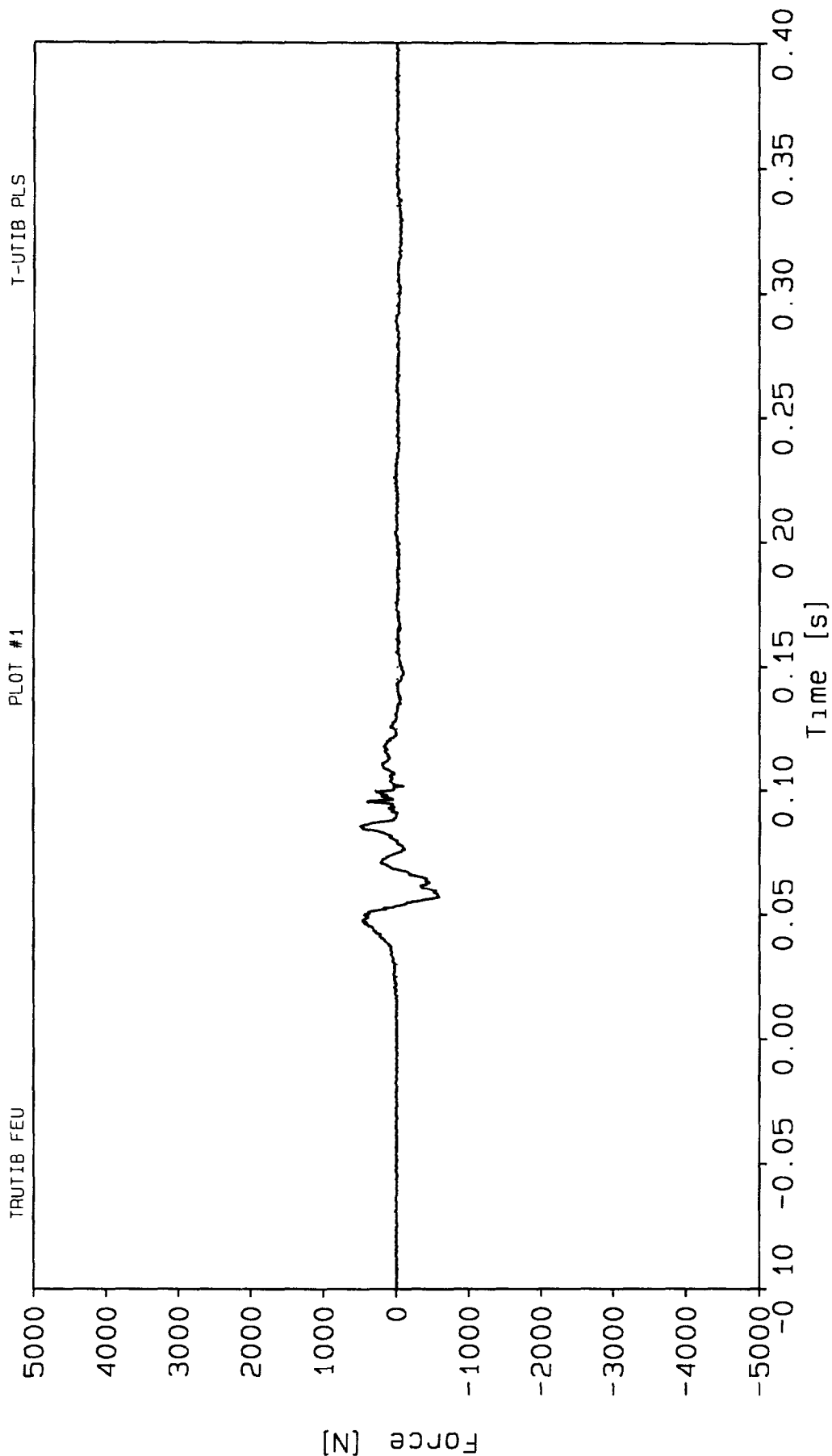
Filter Class 180
Volpe Crash Testing
PH06608

Right Upper Tibia Force (Fx) v Time

Driver Dummy - THOR

2001 Dodge Neon

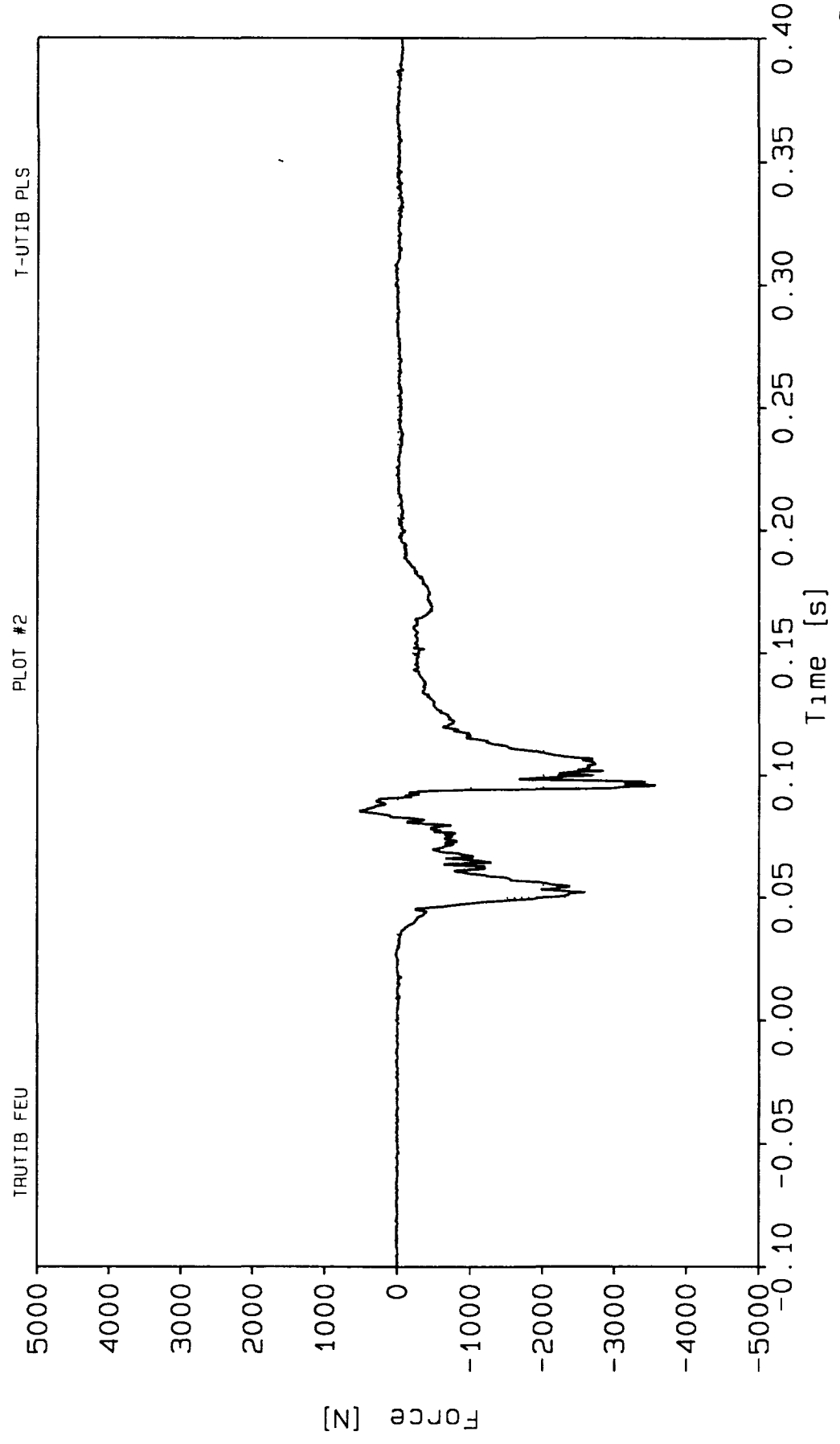
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Right Upper Tibia Force (Fz) v Time
Driver Dummy - THOR
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

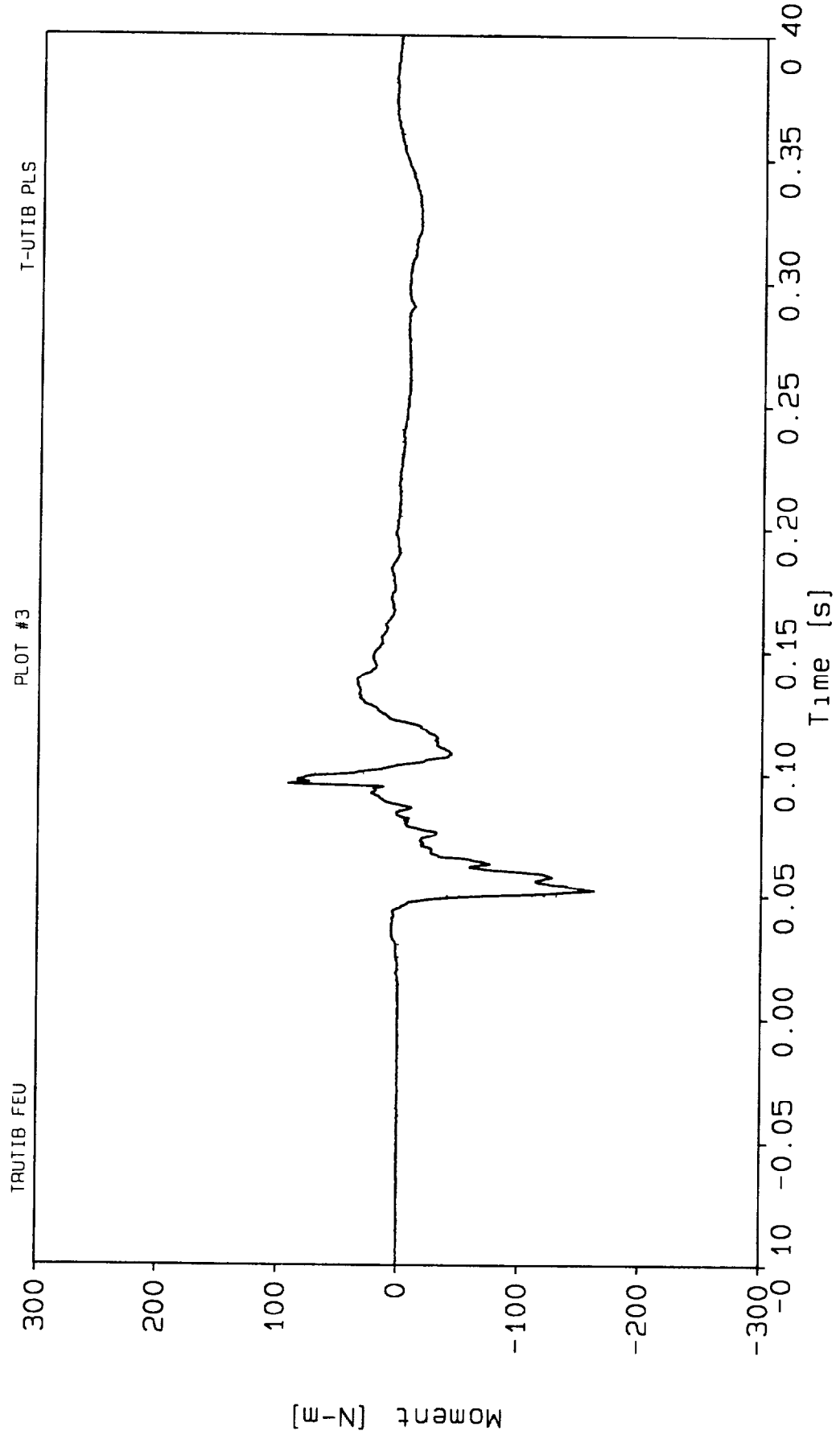
Filter Class 600
Volpe Crash Testing
PH06608

Right Upper Tibia Moment (Mx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06608

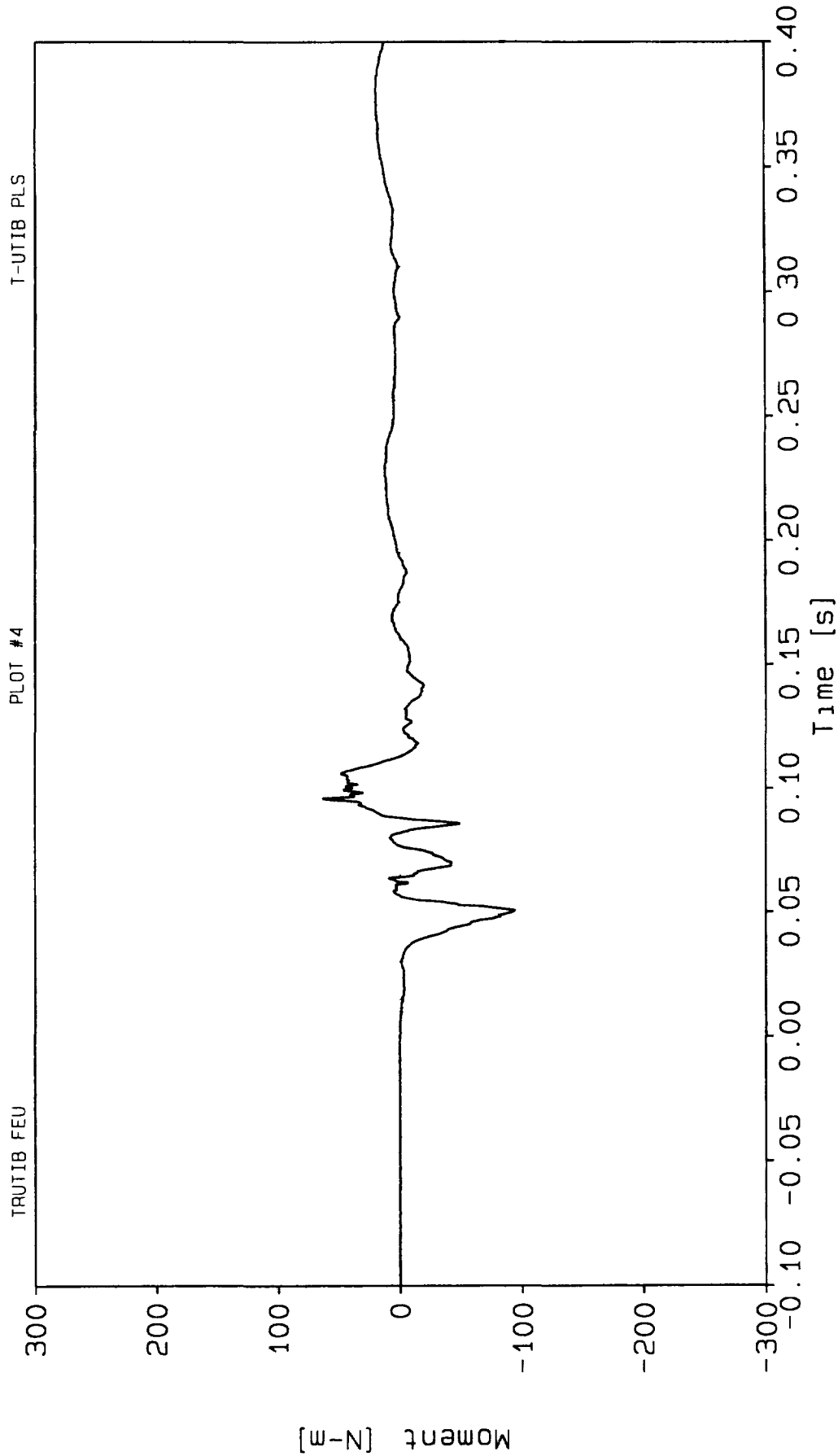
Exponent
Failure
Analysis
Associates

Right Upper Tibia Moment (My) v Time

Driver Dummy - THOR

2001 Dodge Neon

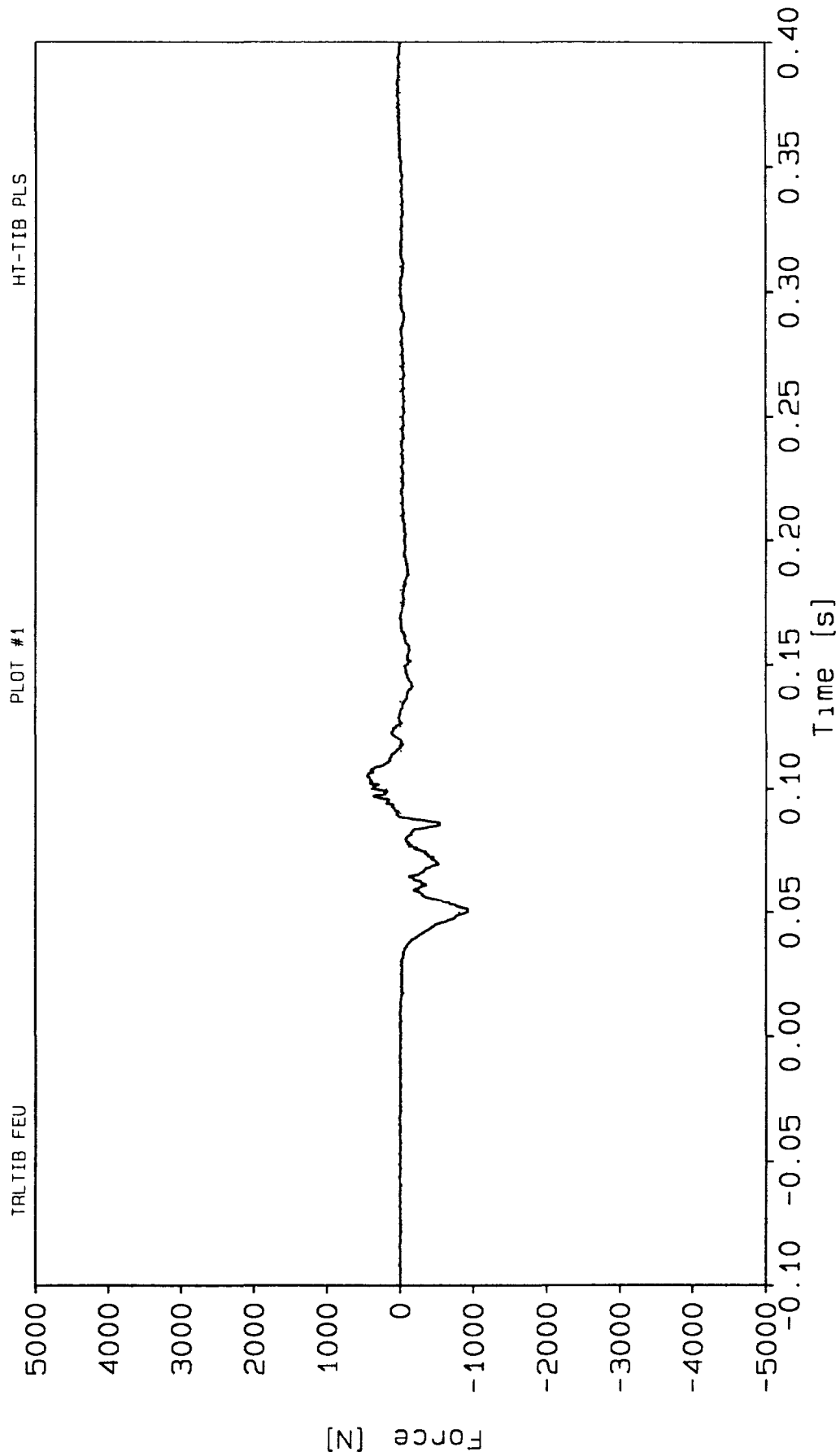
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Right Lower Tibia Force (Fx) v Time
Driver Dummy - THOR
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06508

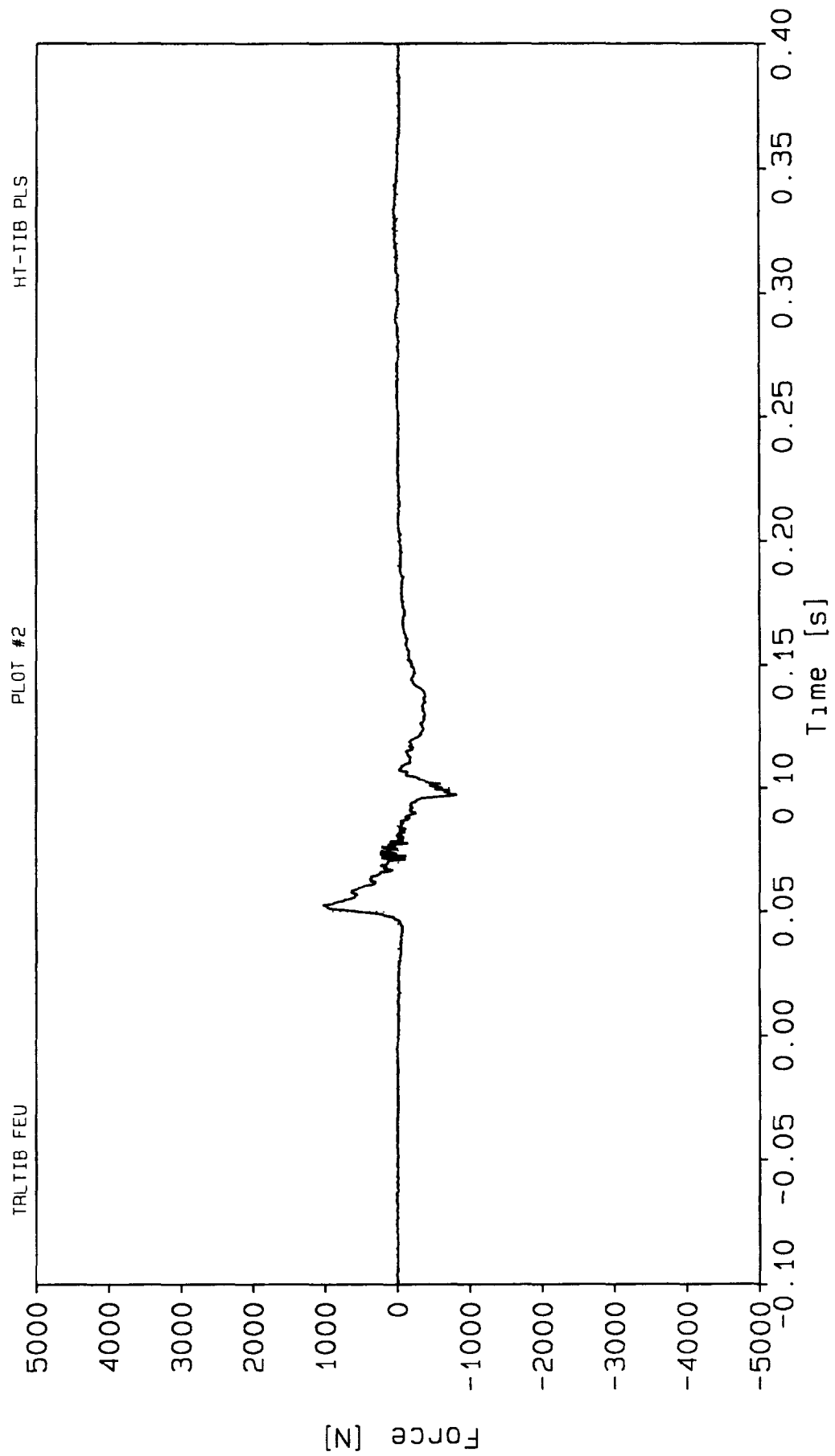
Exponent
Failure
Analysis
Associates

Right Lower Tibia Force (Fy) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

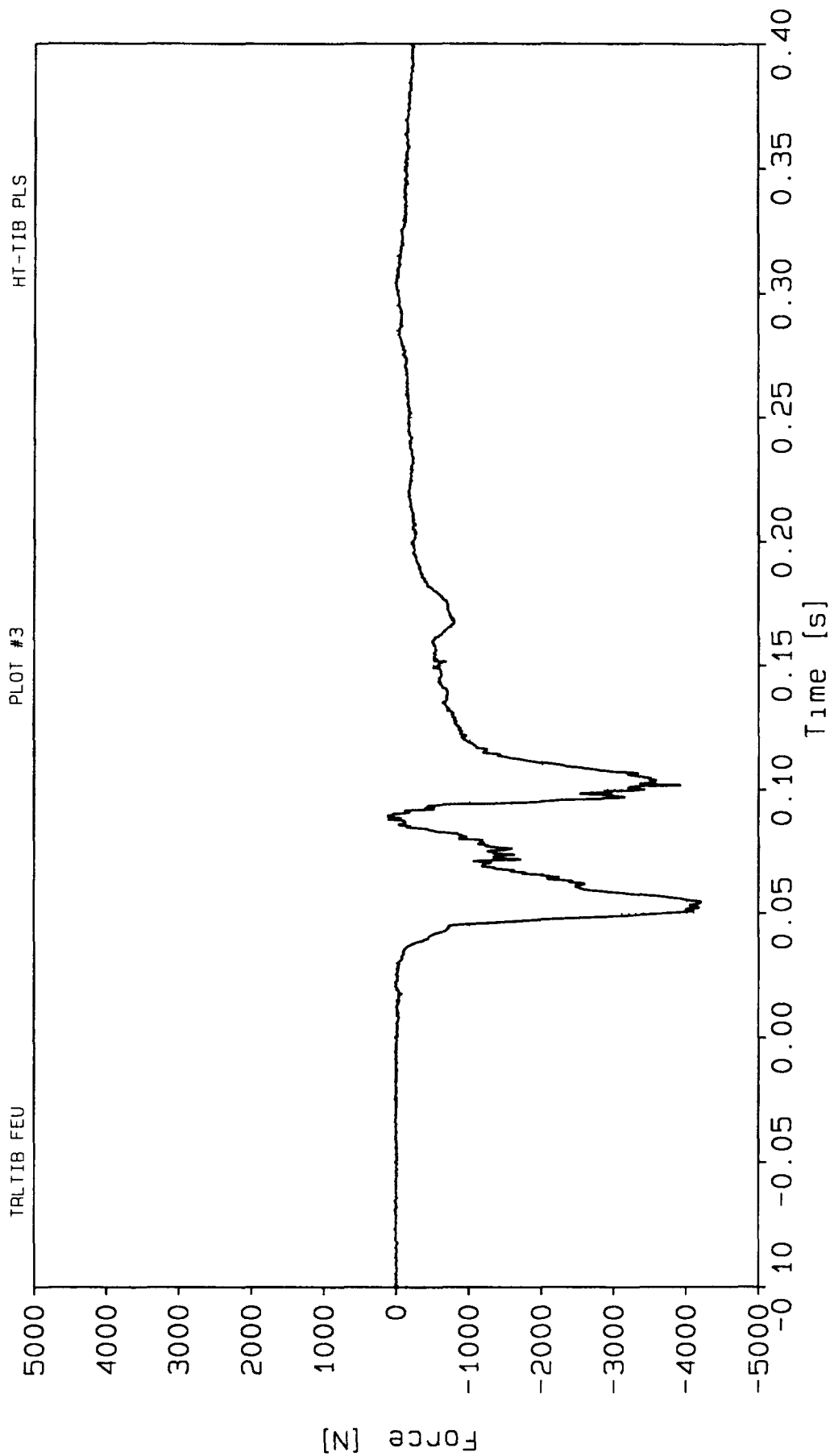
Exponent
Failure
Analysis
Associates

Right Lower Tibia Force (Fz) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

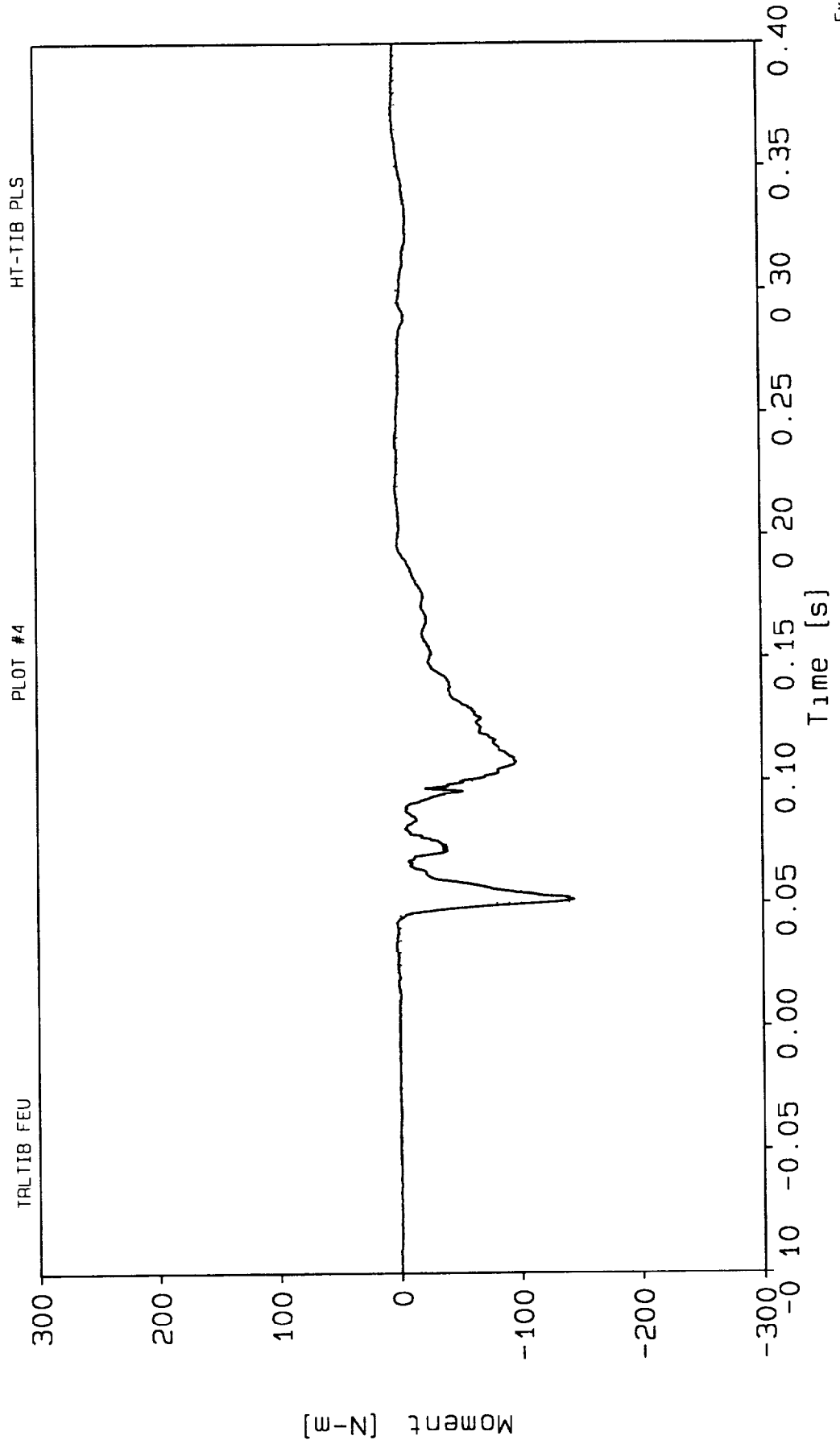
Exponent
Failure
Analysis
Associates

Right Lower Tibia Moment (Mx) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

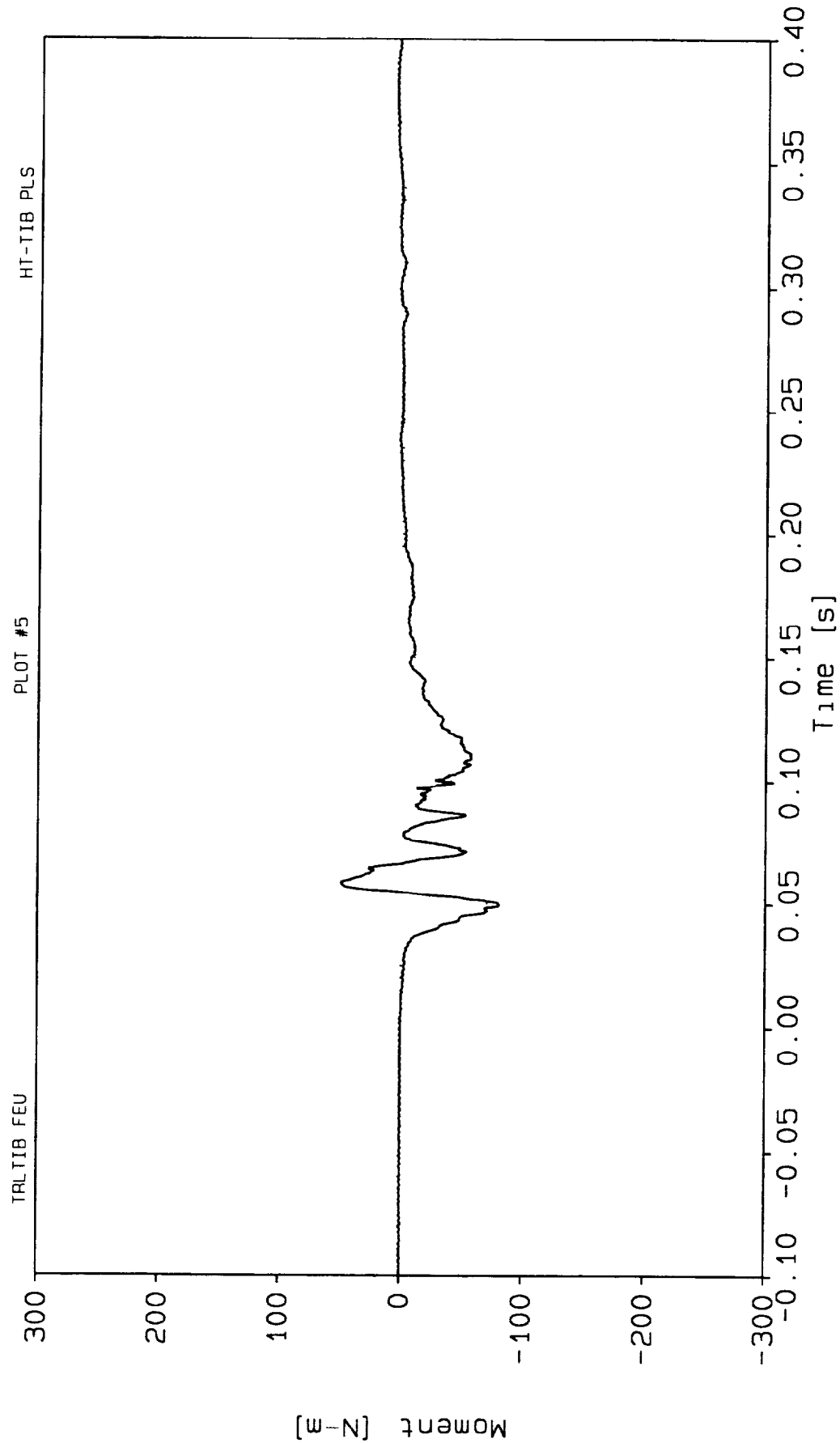
Filter Class 600
Volpe Crash Testing
PH05608

Right Lower Tibia Moment (My) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06608

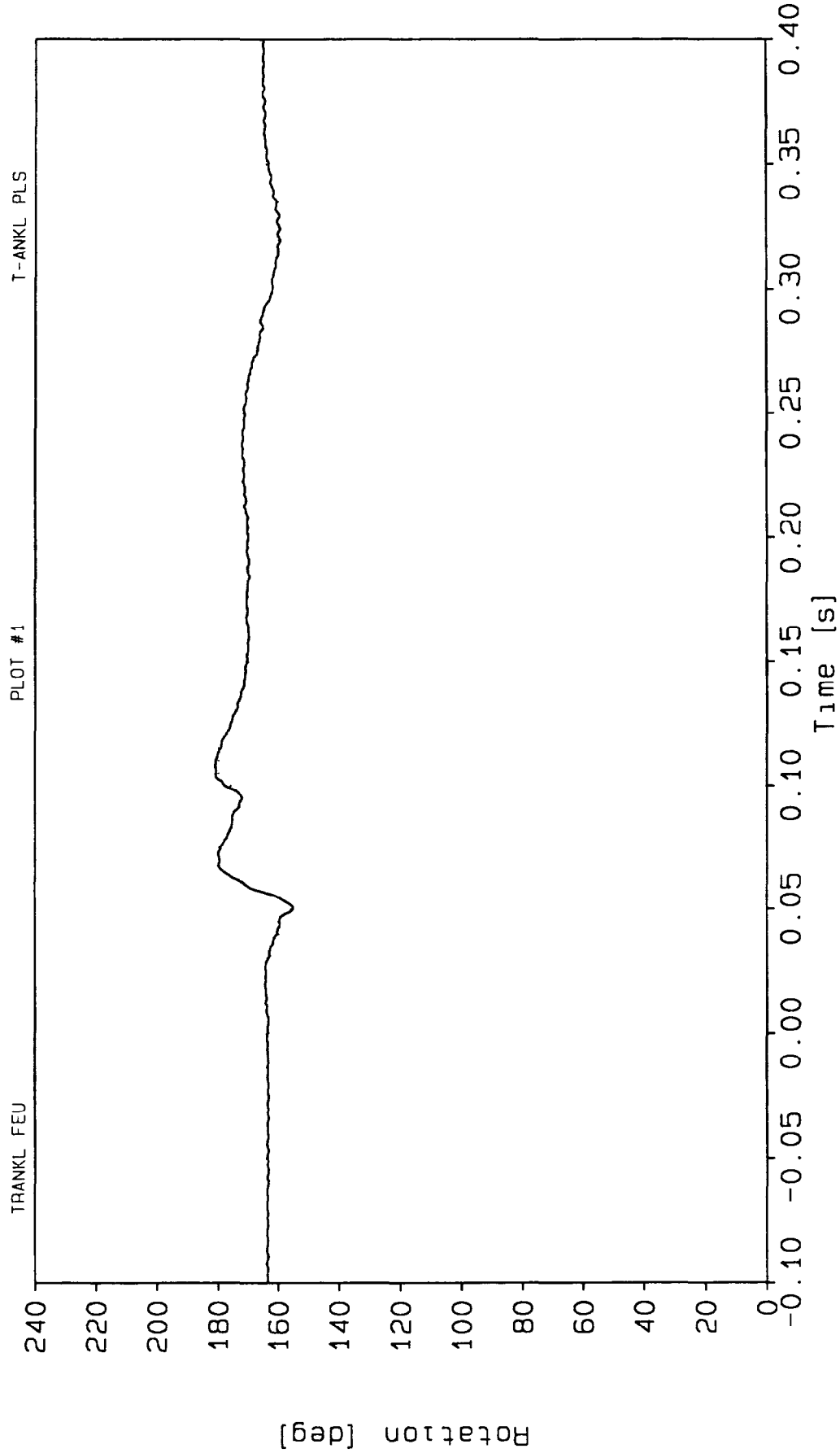
Exponent
Failure
Analysis
Associates

Right Ankle Rotation (X Axis) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

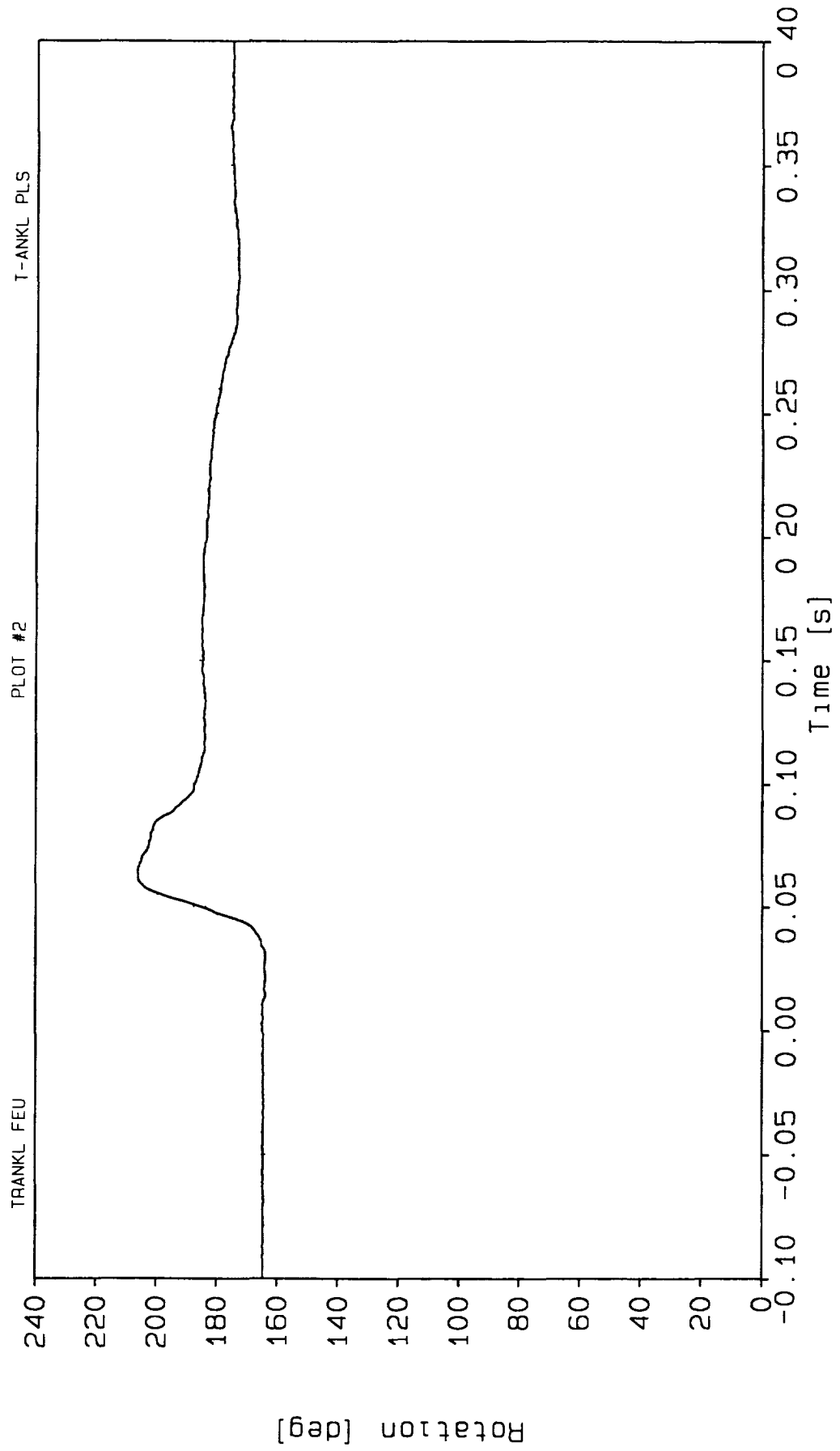
Exponent
Failure
Analysis
Associates

Right Ankle Rotation (Y Axis) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

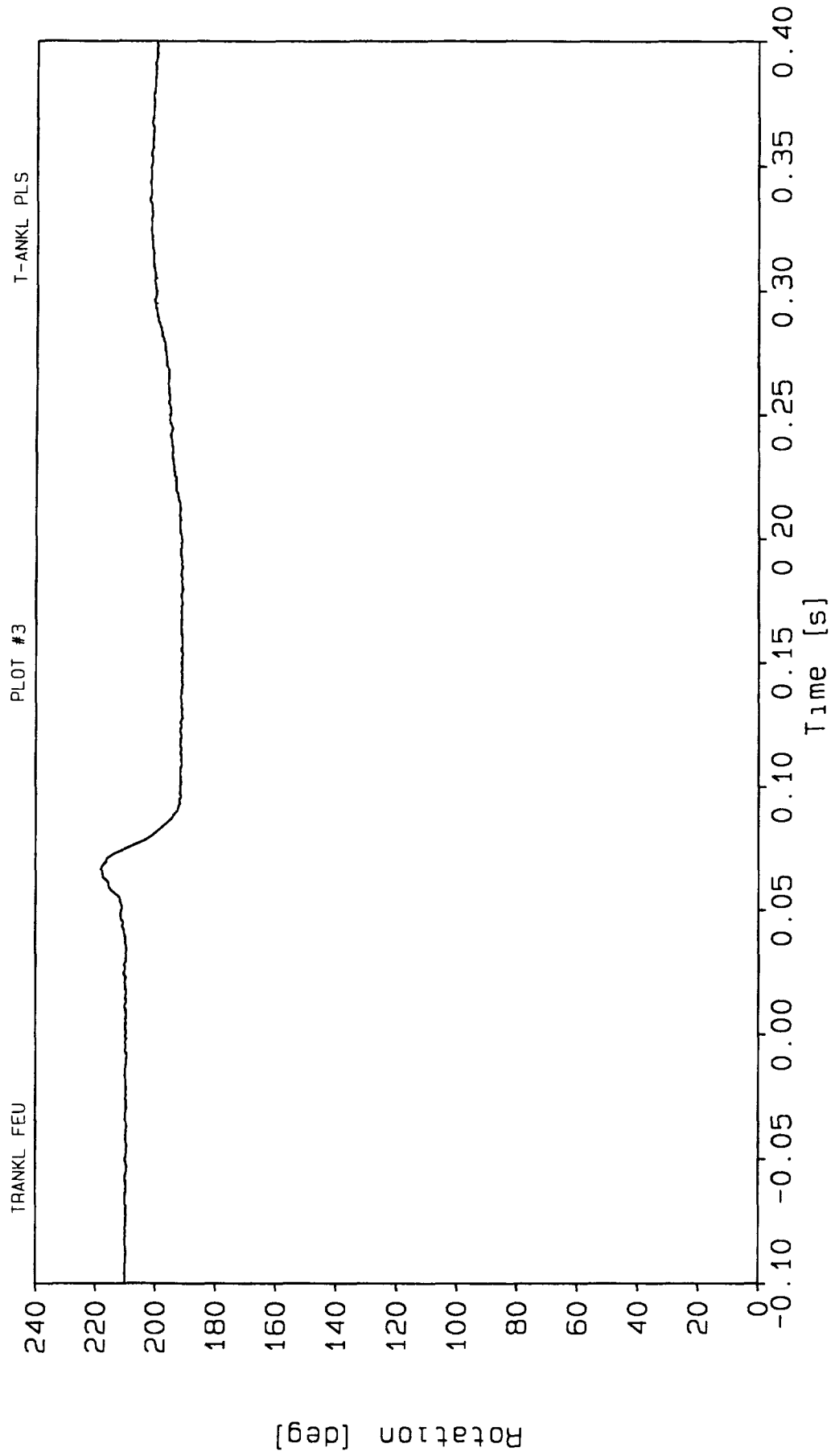
Exponent
Failure
Analysis
Associates

Right Ankle Rotation (Z Axis) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Voipe Crash Testing
PH05608

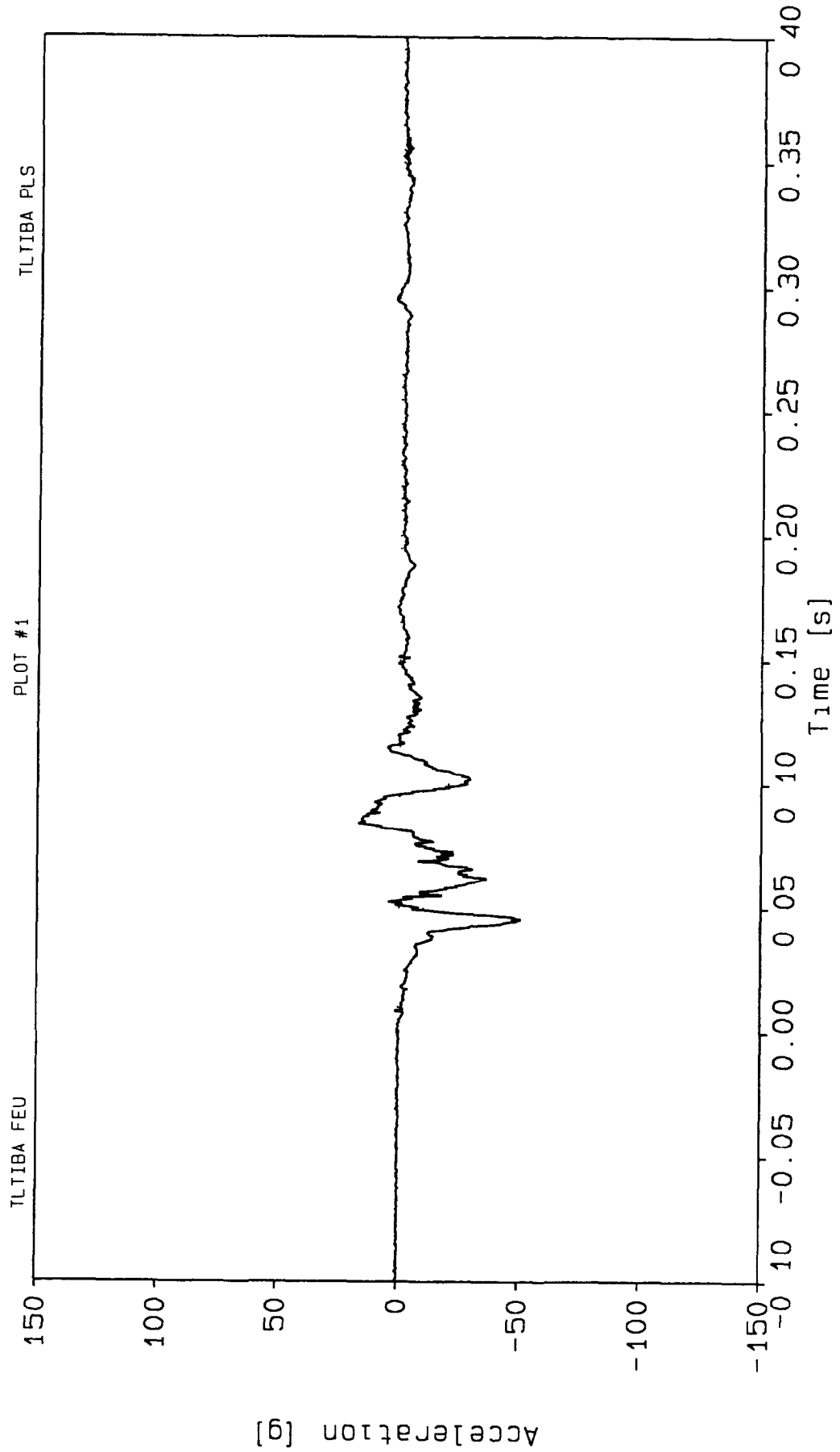
Exponent
Failure
Analysis
Associates

Left Tibia Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

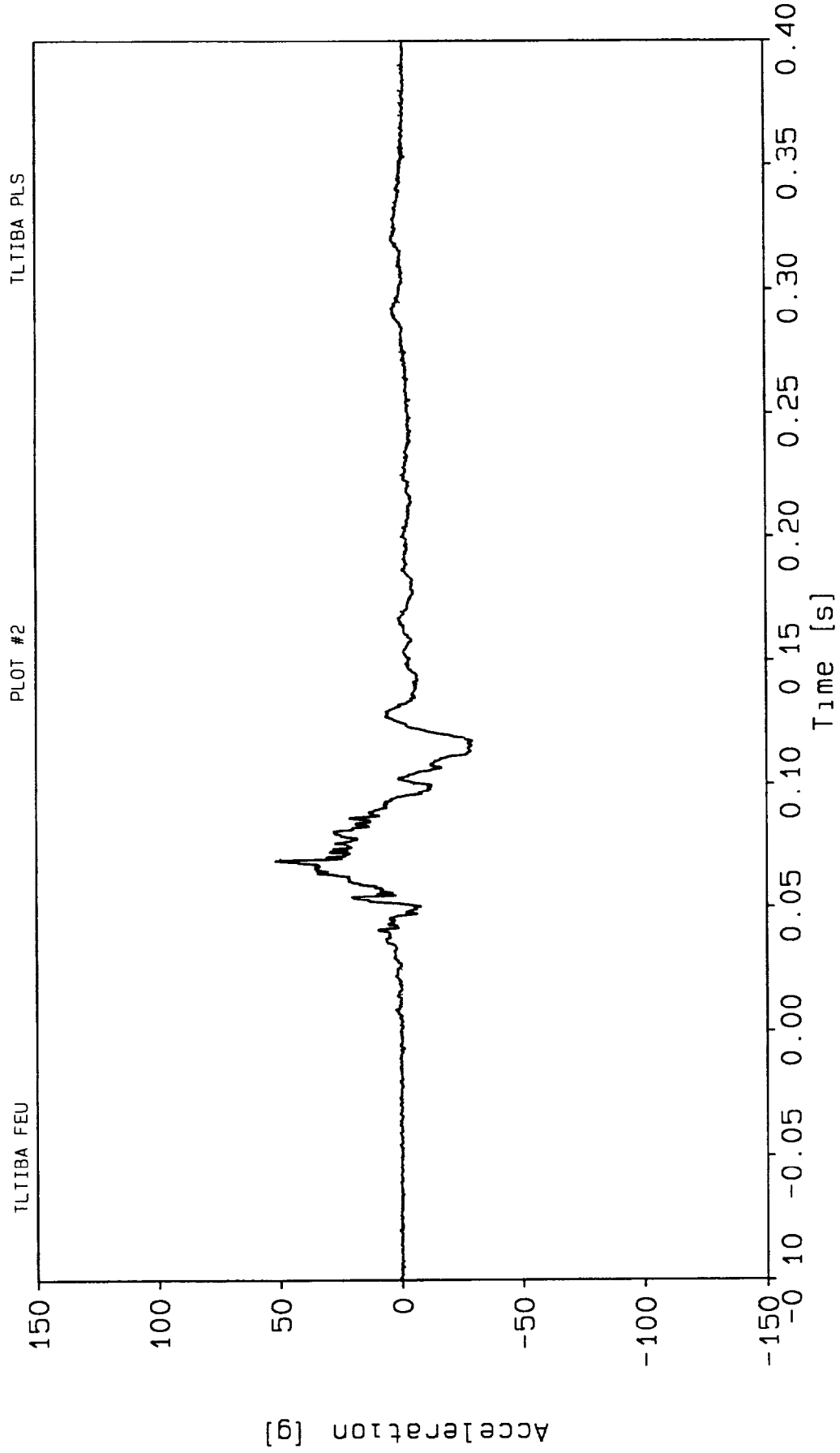
Exponent
Failure
Analysis
Associates

Left Tibia Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



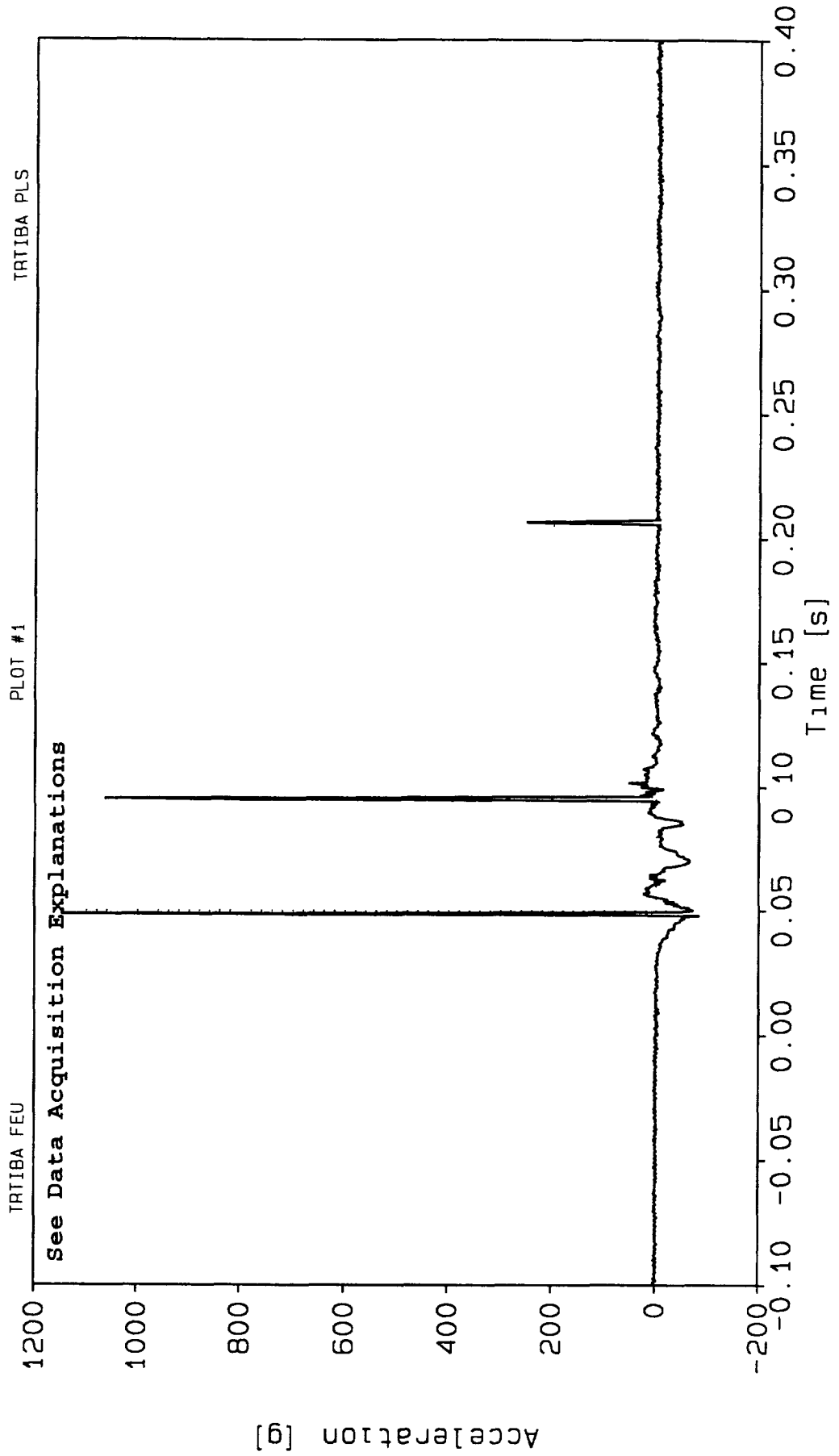
Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Right Tibia Acceleration (Ax) v Time

Driver Dummy - THOR
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH05508

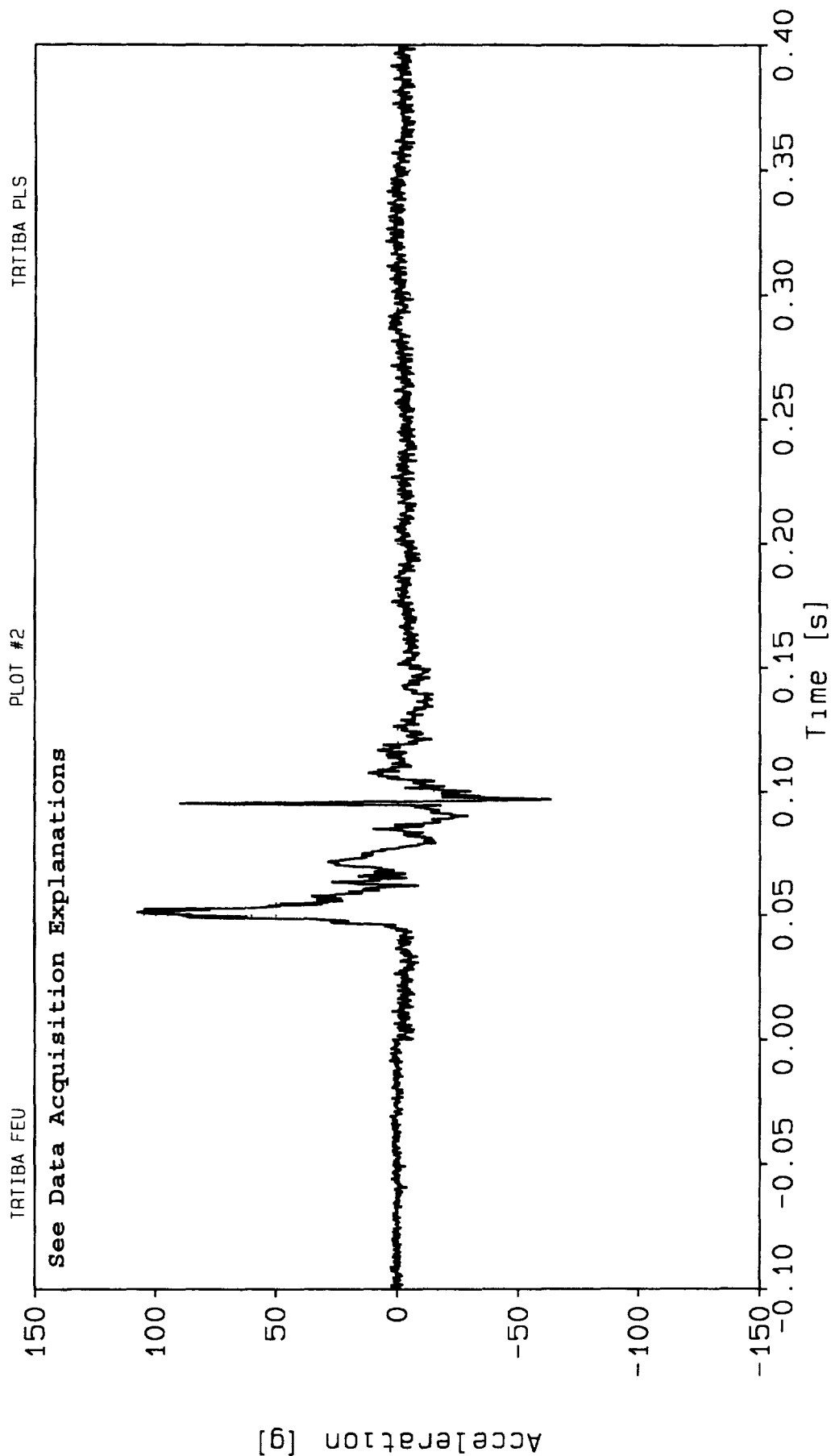
Exponent
Failure
Analysis
Associates

Right Tibia Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

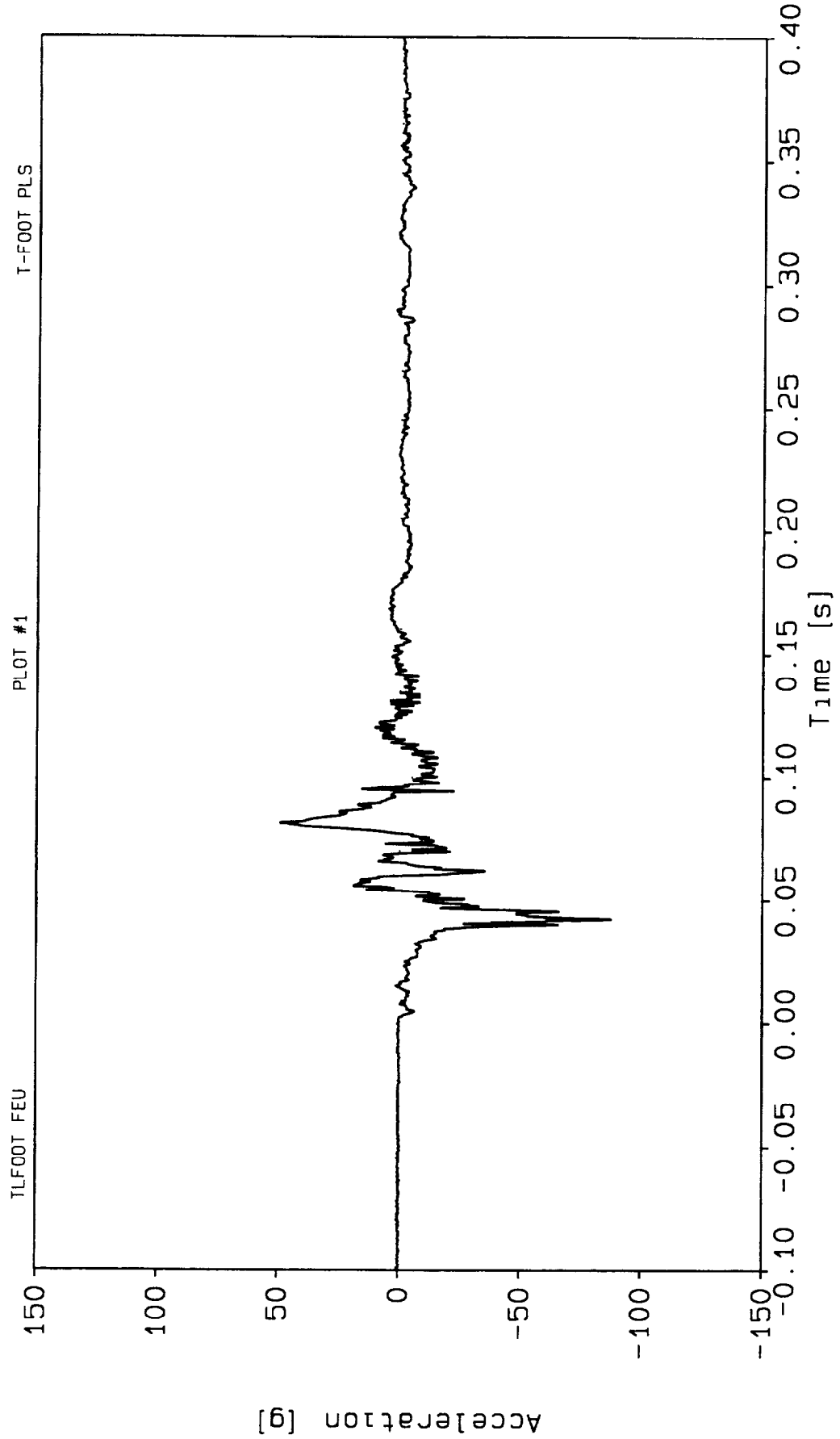
Filter Class 600
Volpe Crash Testing
PH06608

Left Foot Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

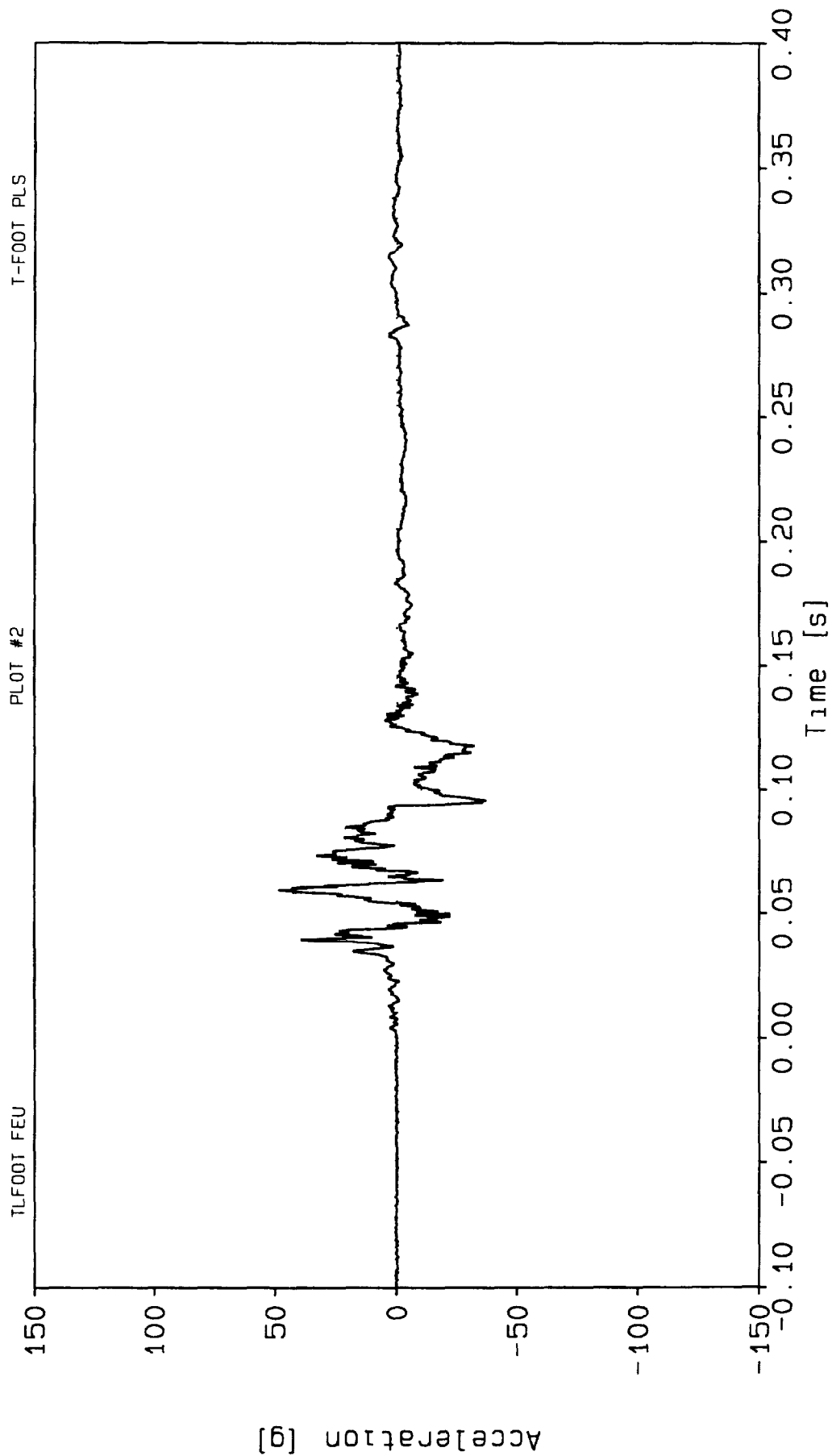
Exponent
Failure
Analysis
Associates

Left Foot Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

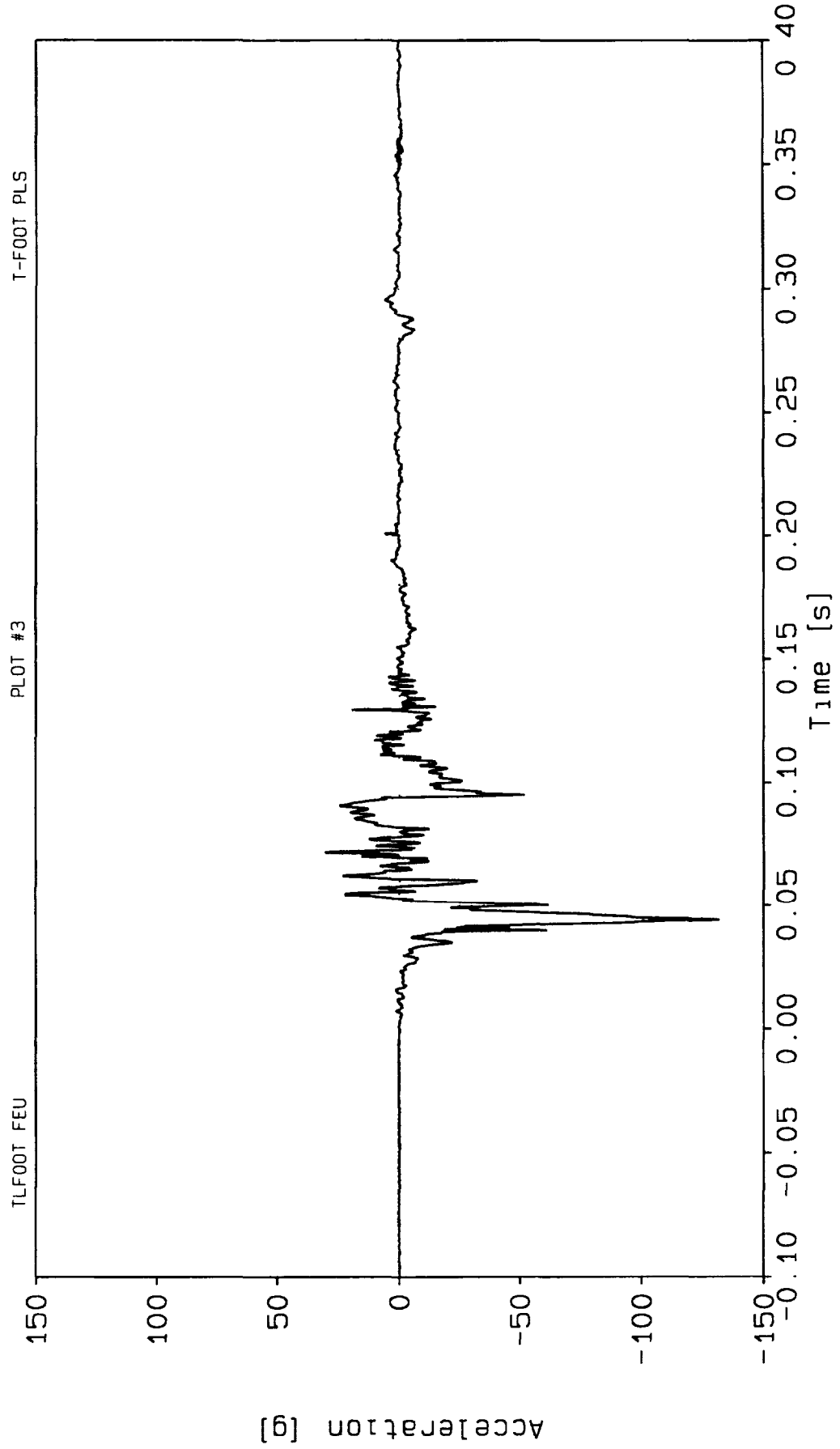
Exponent
Failure
Analysis
Associates

Left Foot Acceleration (Az) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

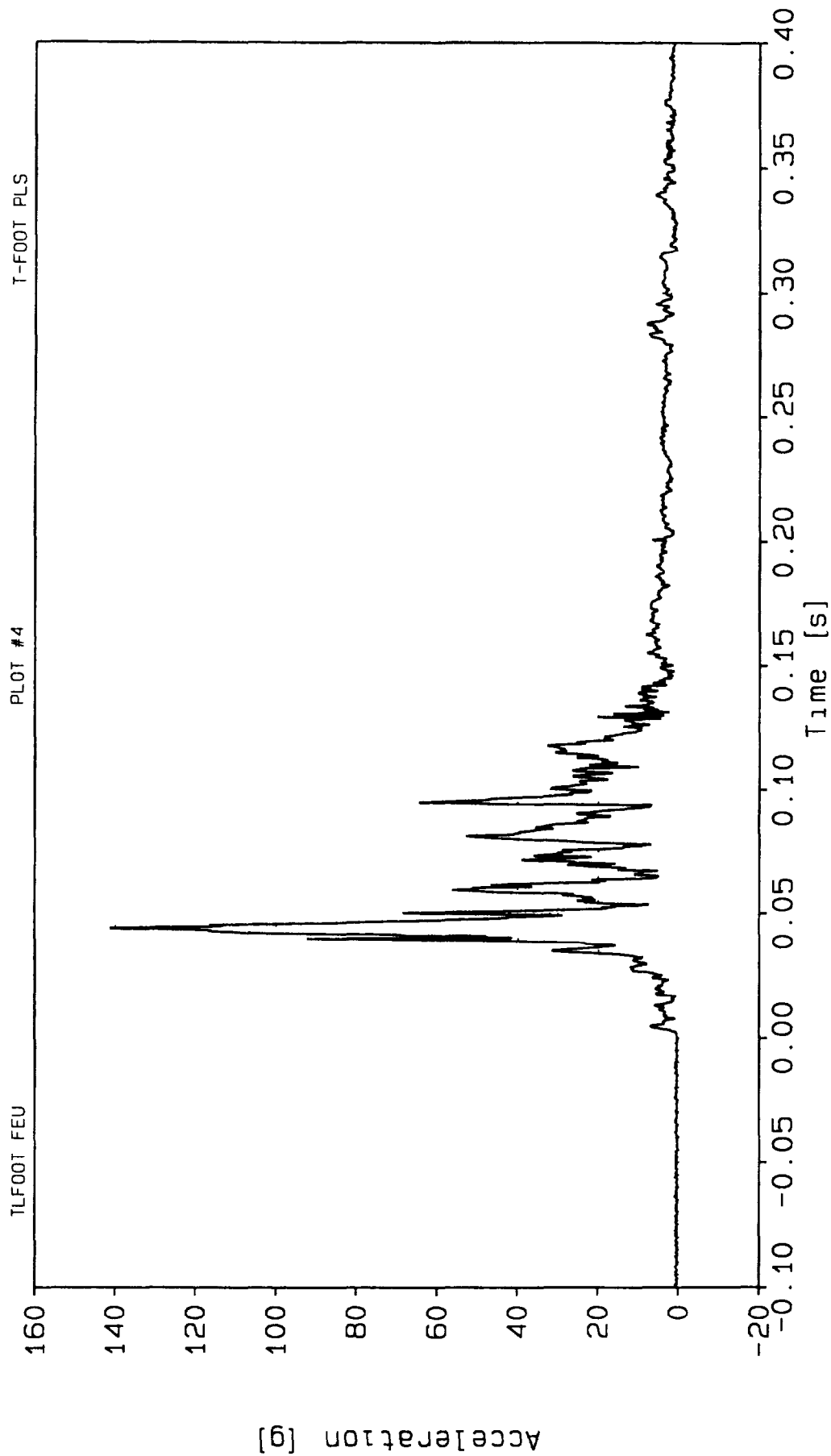
Exponent
Failure
Analysis
Associates

Left Foot Resultant Acceleration (Ar) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

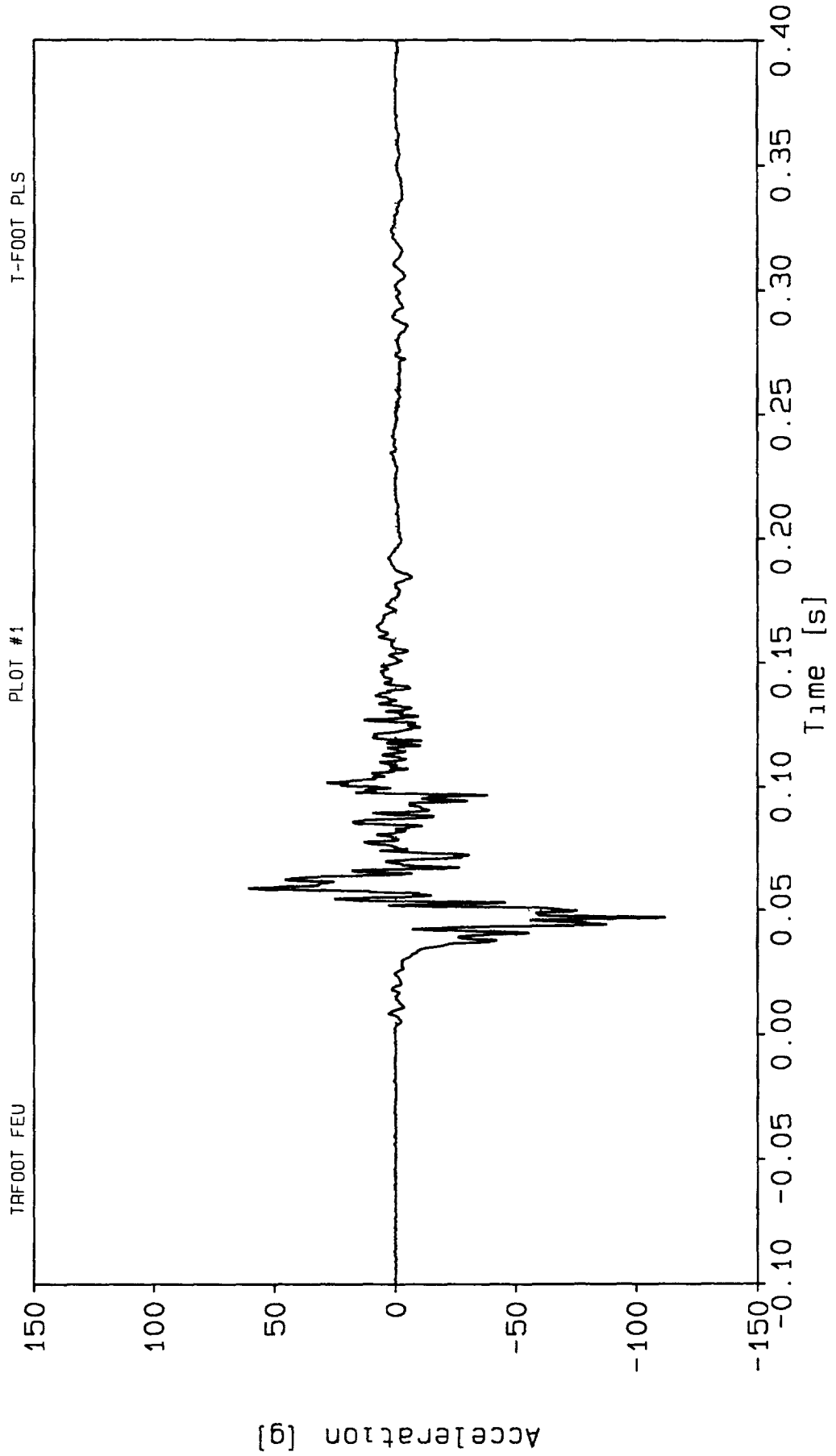
Filter Class 600
Voipe Crash Testing
PH05508

Right Foot Acceleration (Ax) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

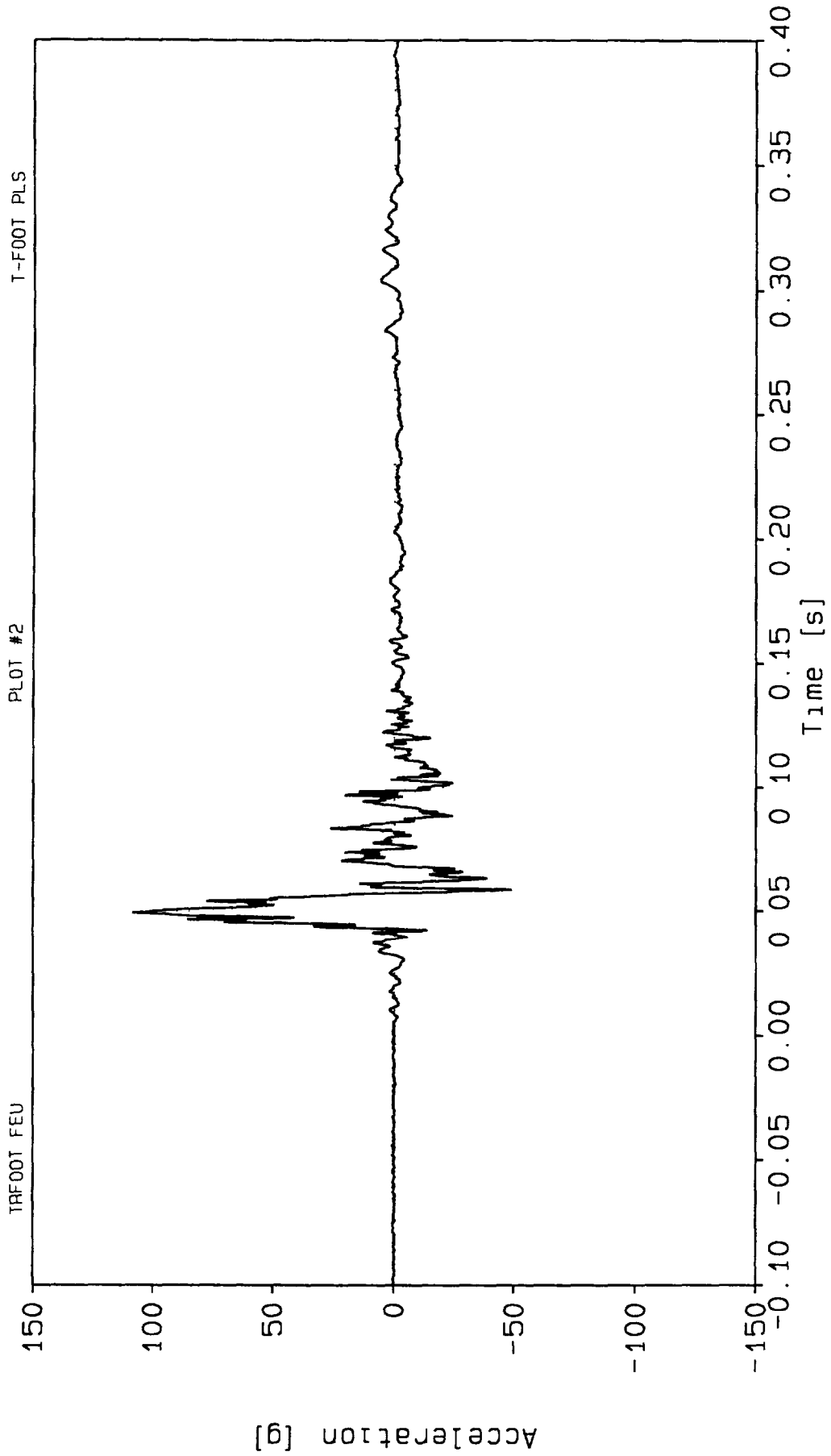
Exponent
Failure
Analysis
Associates

Right Foot Acceleration (Ay) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

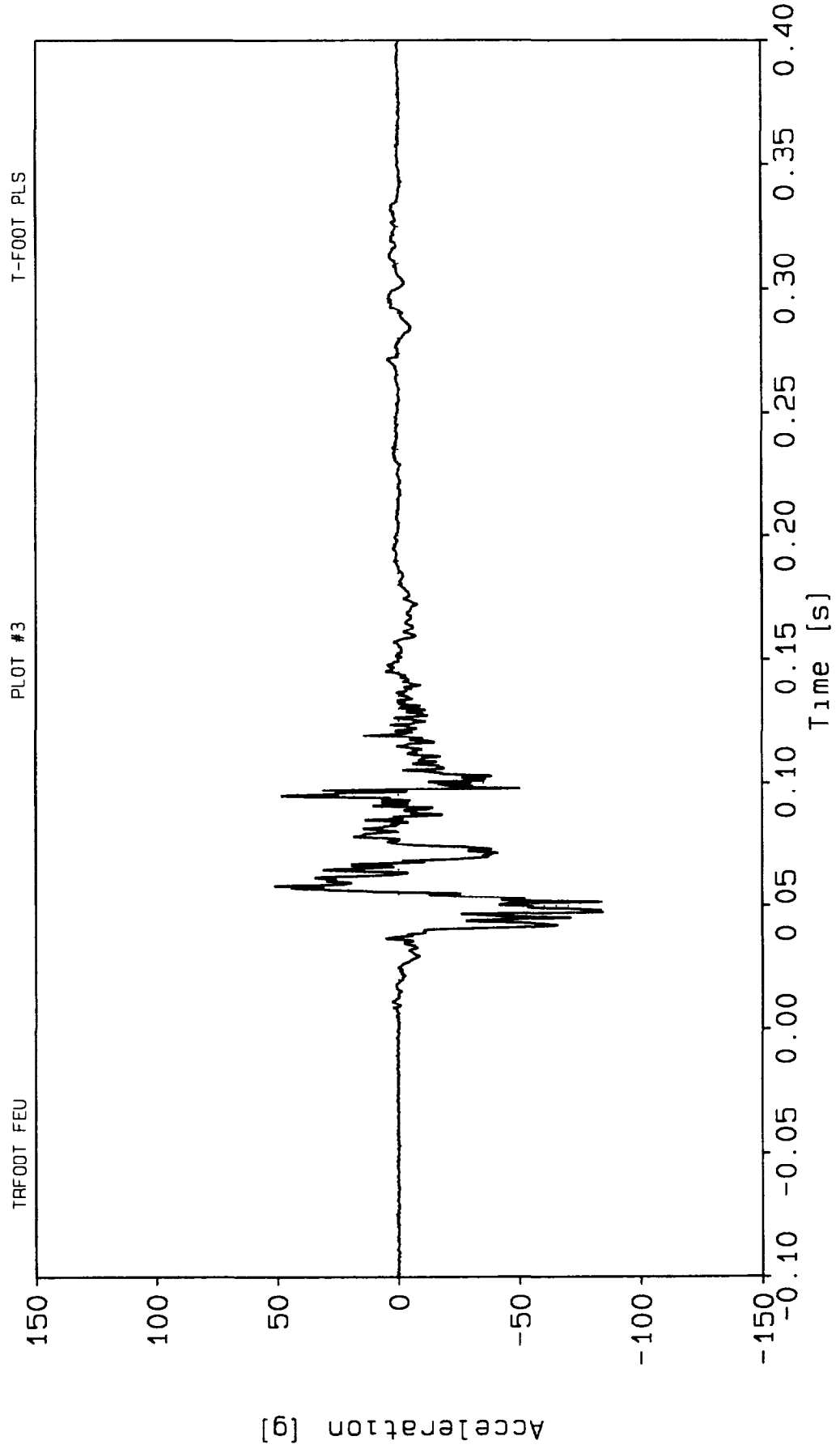


Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Right Foot Acceleration (Az) v Time

Driver Dummy - THOR
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

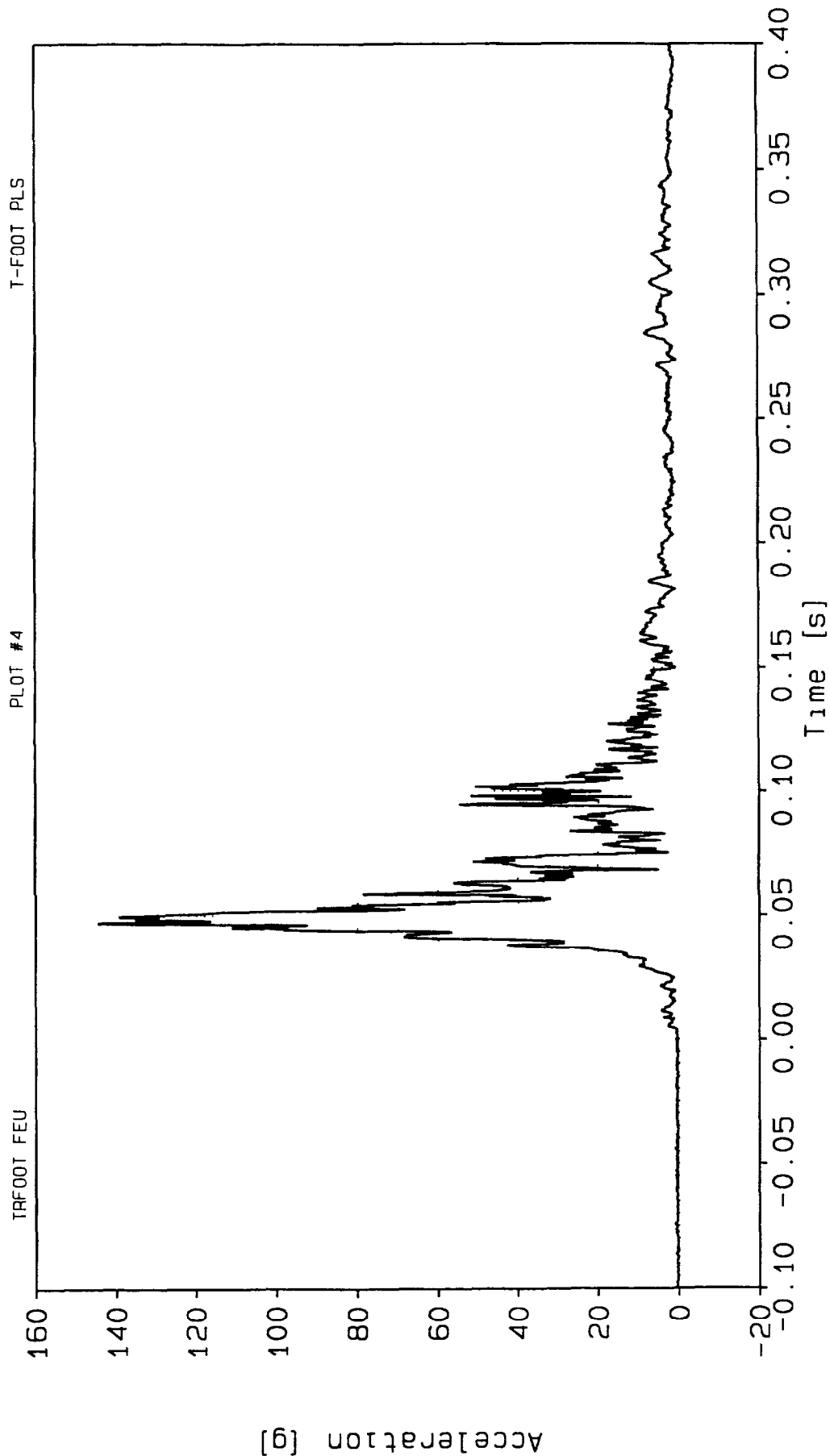
Exponent
Failure
Analysis
Associates

Right Foot Resultant Acceleration (Ar) v Time

Driver Dummy - THOR

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

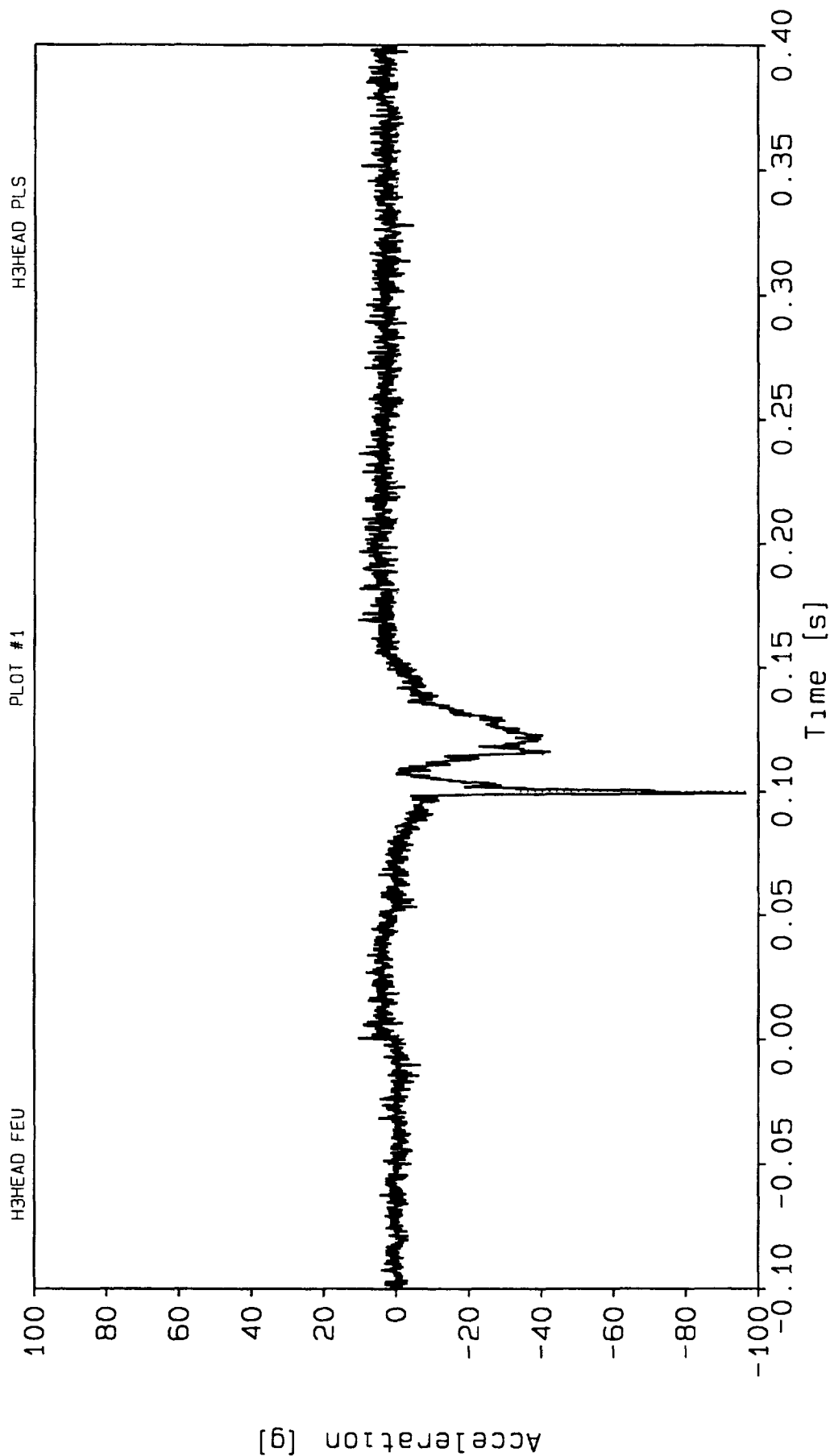
Filter Class 600
Volpe Crash Testing
PH06608

Head Acceleration (Ax) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

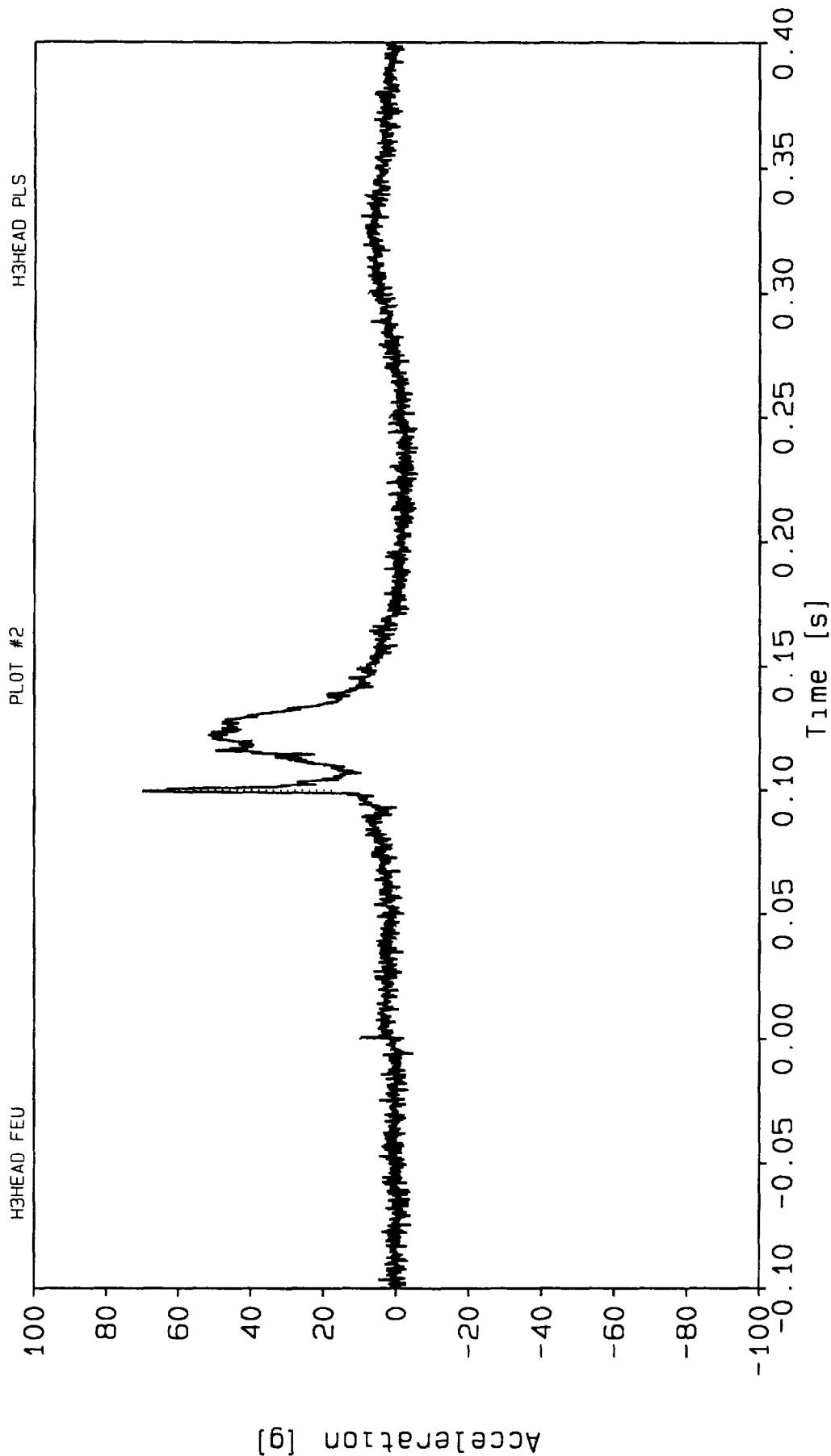
Exponent
Failure
Analysis
Associates

Head Acceleration (Ay) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

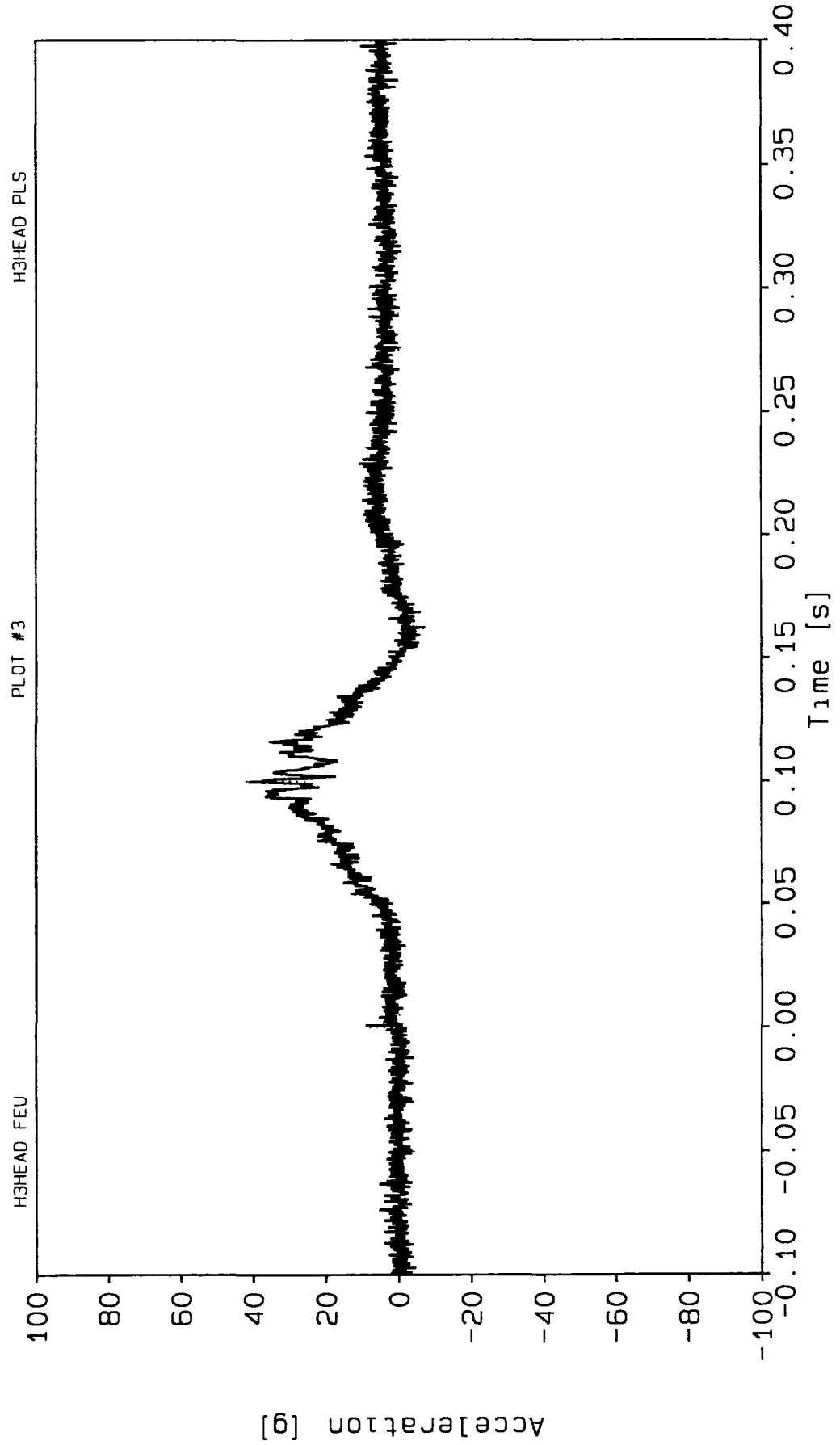
Exponent
Failure
Analysis
Associates

Head Acceleration (Az) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

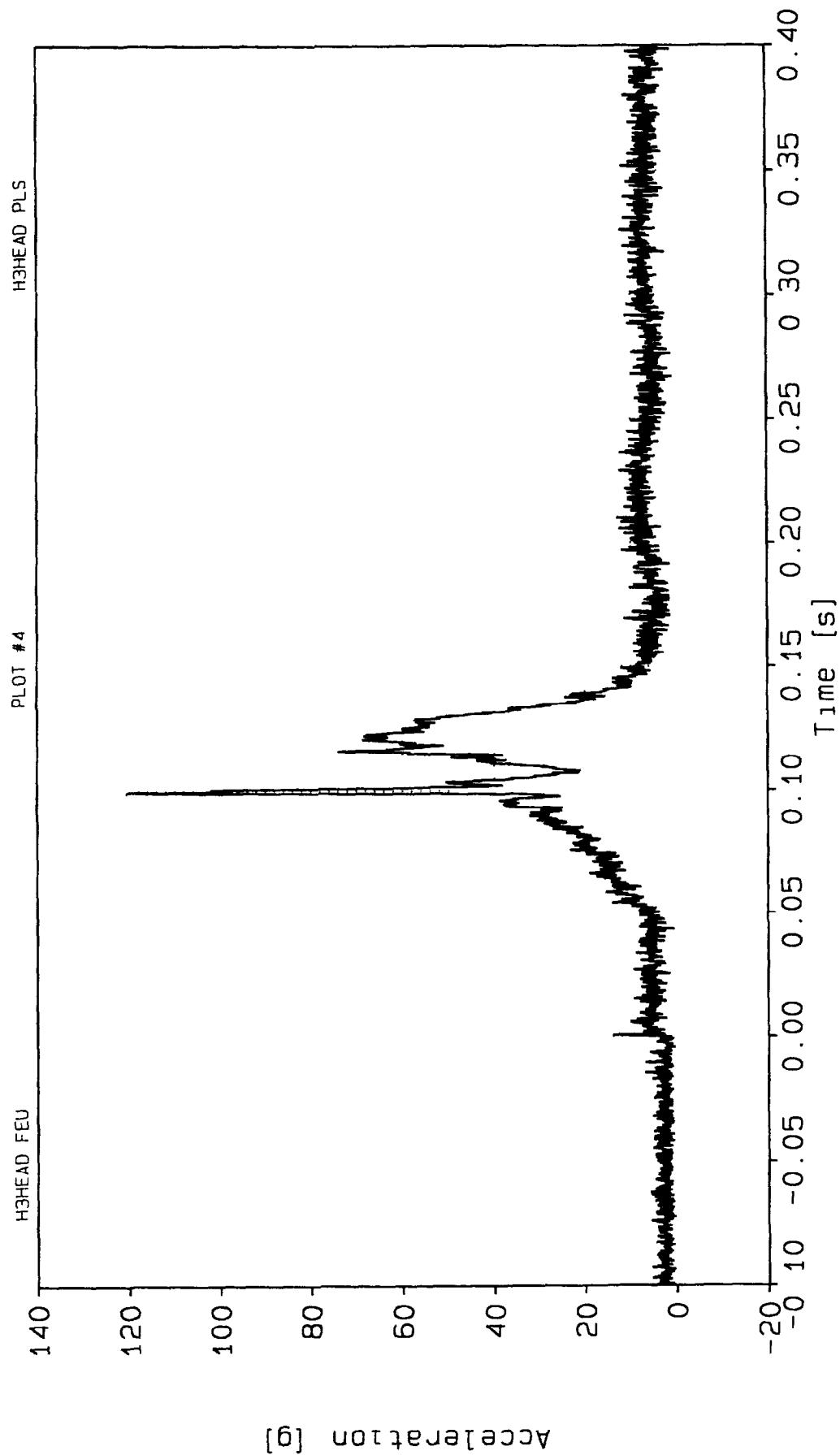
Filter Class 1000
Volpe Crash Testing
PH06608

Head Resultant Acceleration (Ar) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

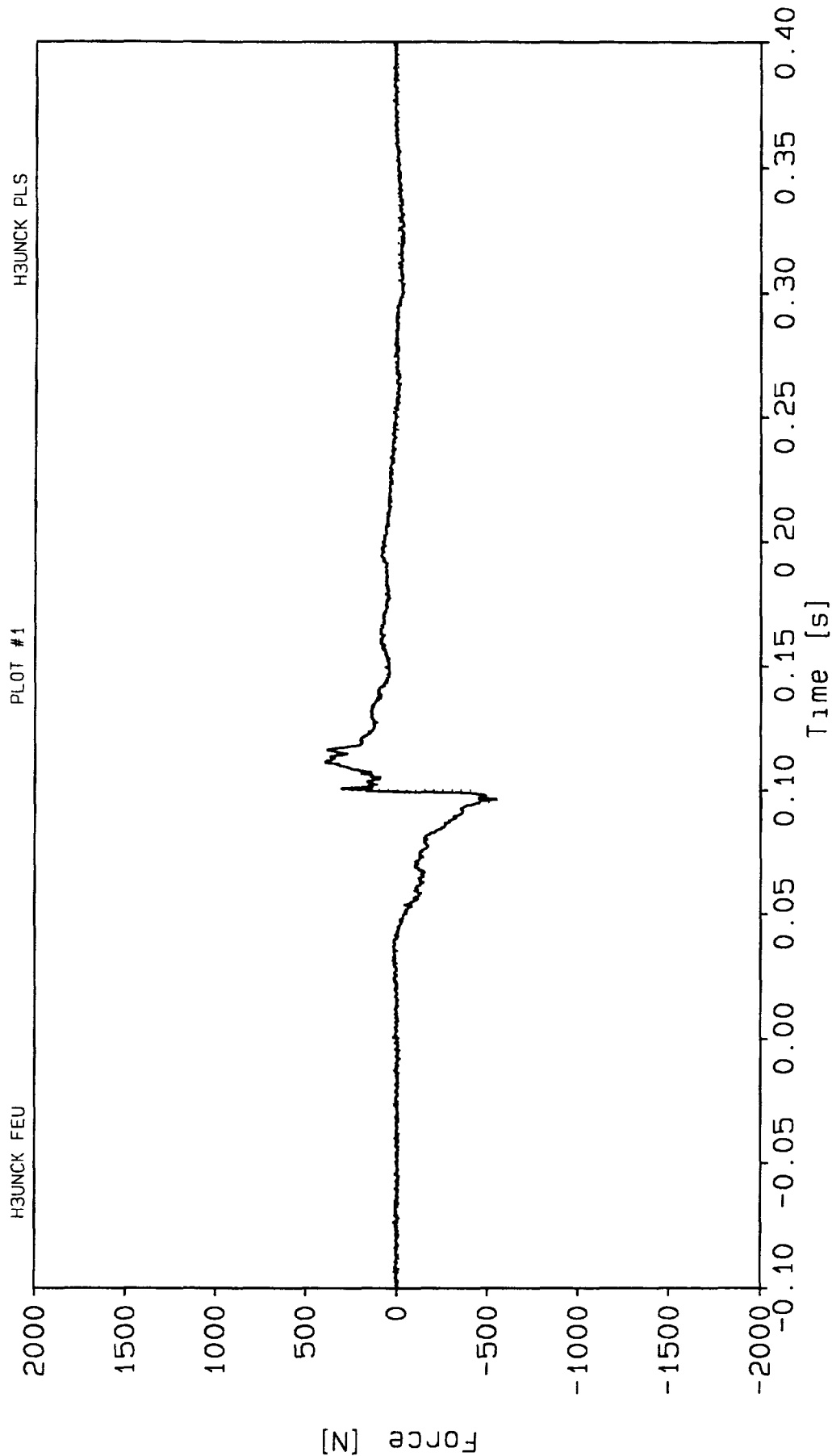
Filter Class 1000
Volpe Crash Testing
PH06608

Upper Neck Force (Fx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

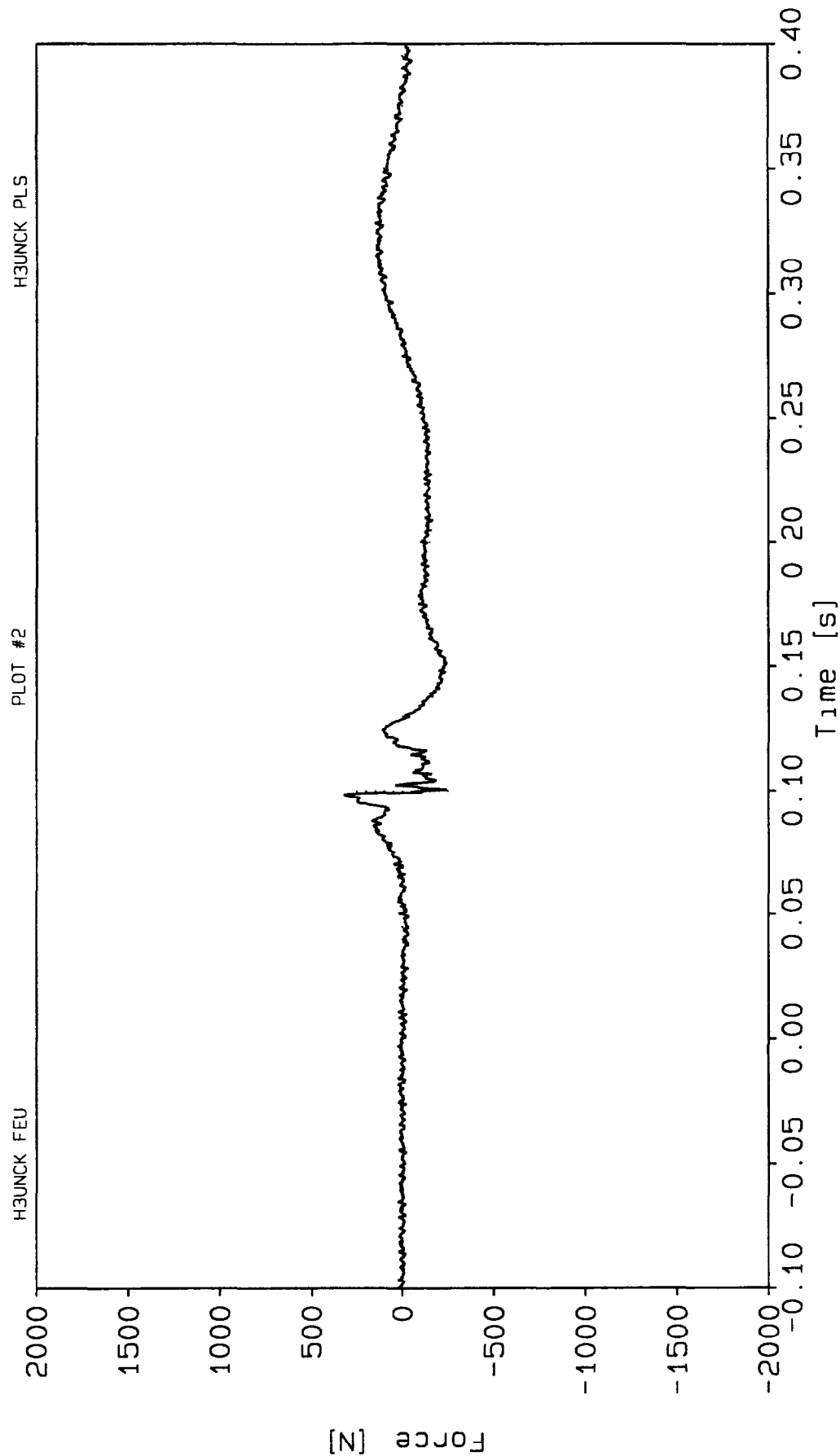
Exponent
Failure
Analysis
Associates

Upper Neck Force (Fy) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

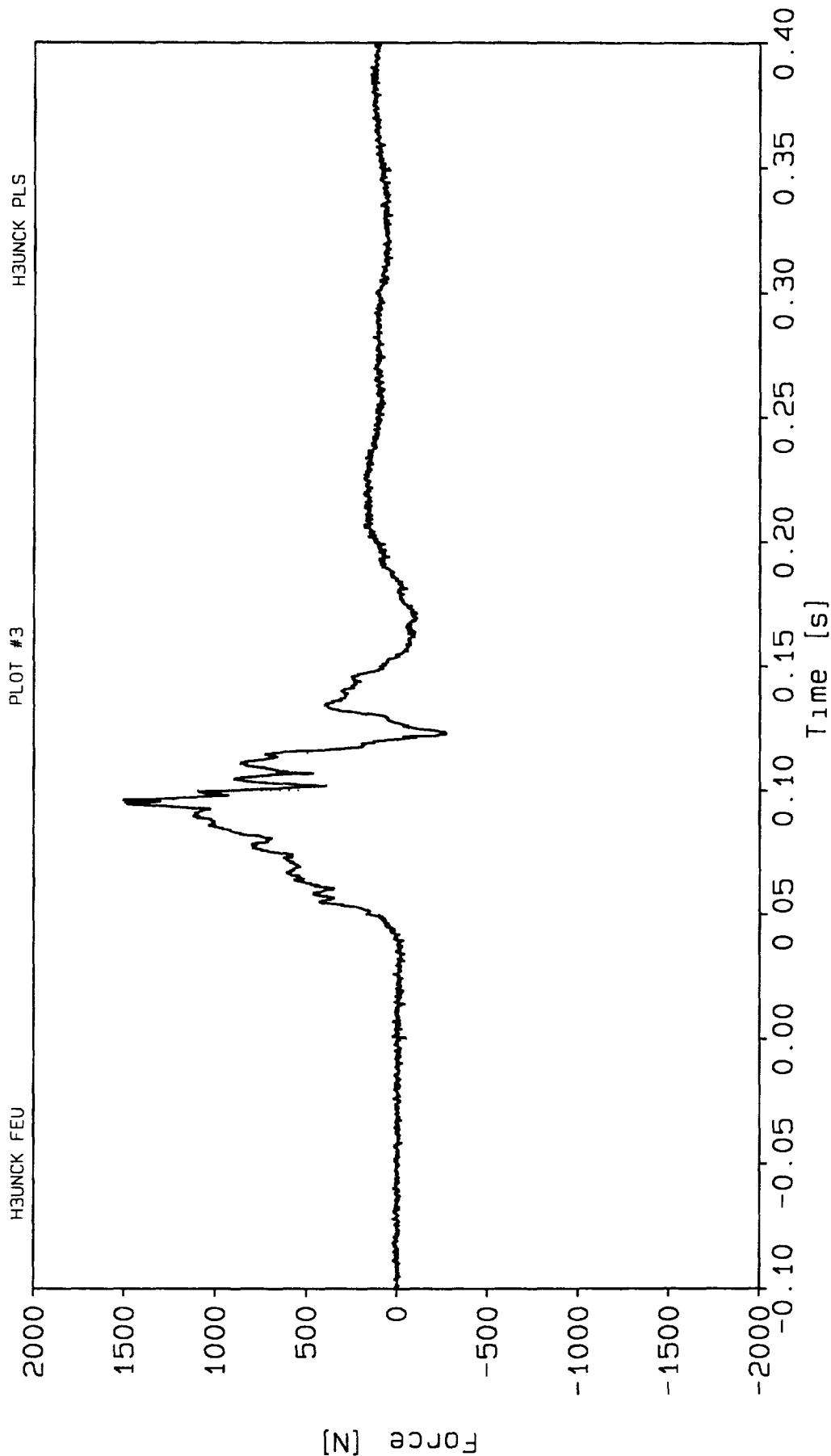
Exponent
Failure
Analysis
Associates

Upper Neck Force (Fz) v Time

Passenger Dummy - HIII

2001 Dodge Neon

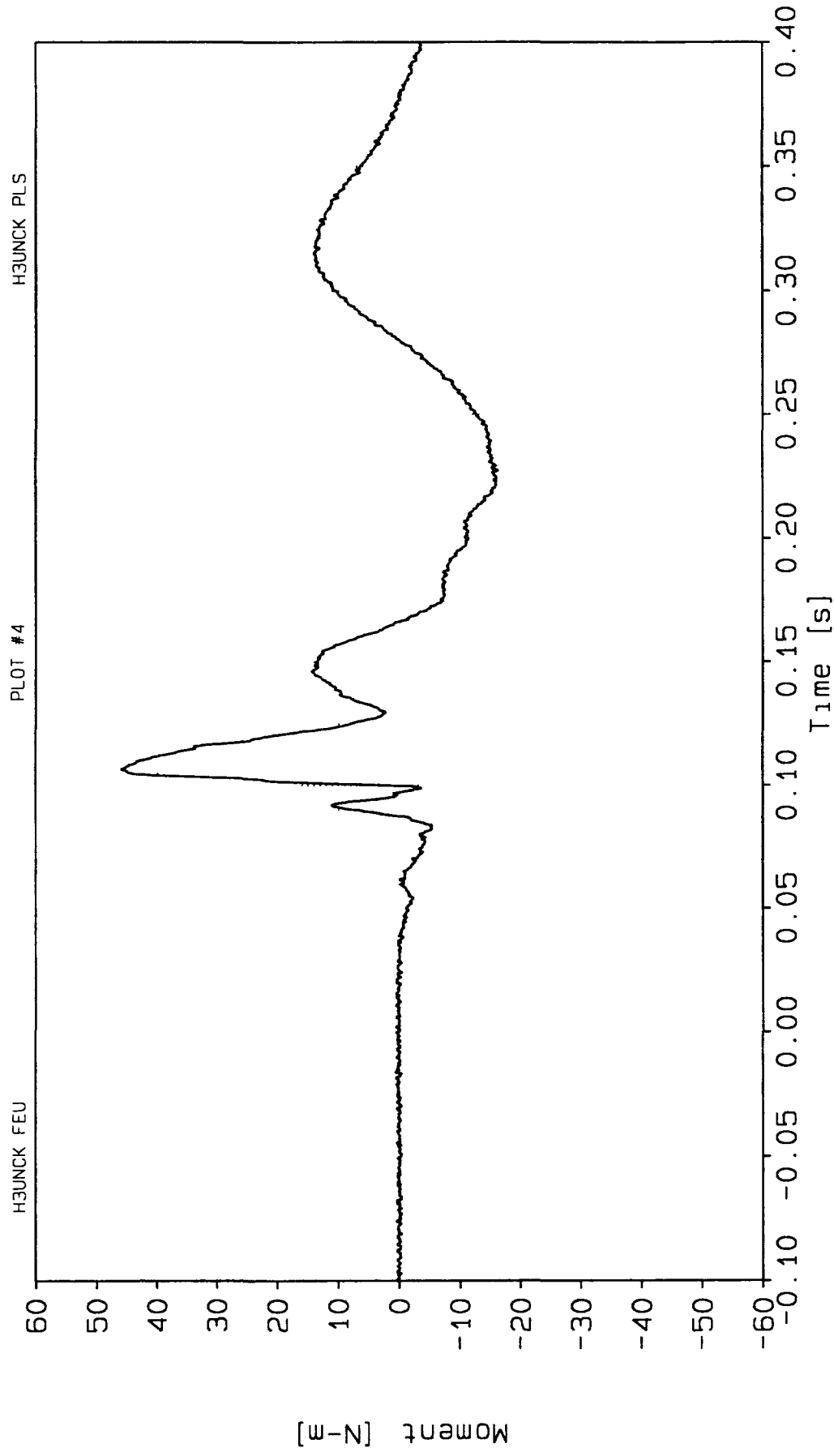
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH05608

Exponent
Failure
Analysis
Associates

Upper Neck Moment (Mx) v Time
Passenger Dummy - HIII
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

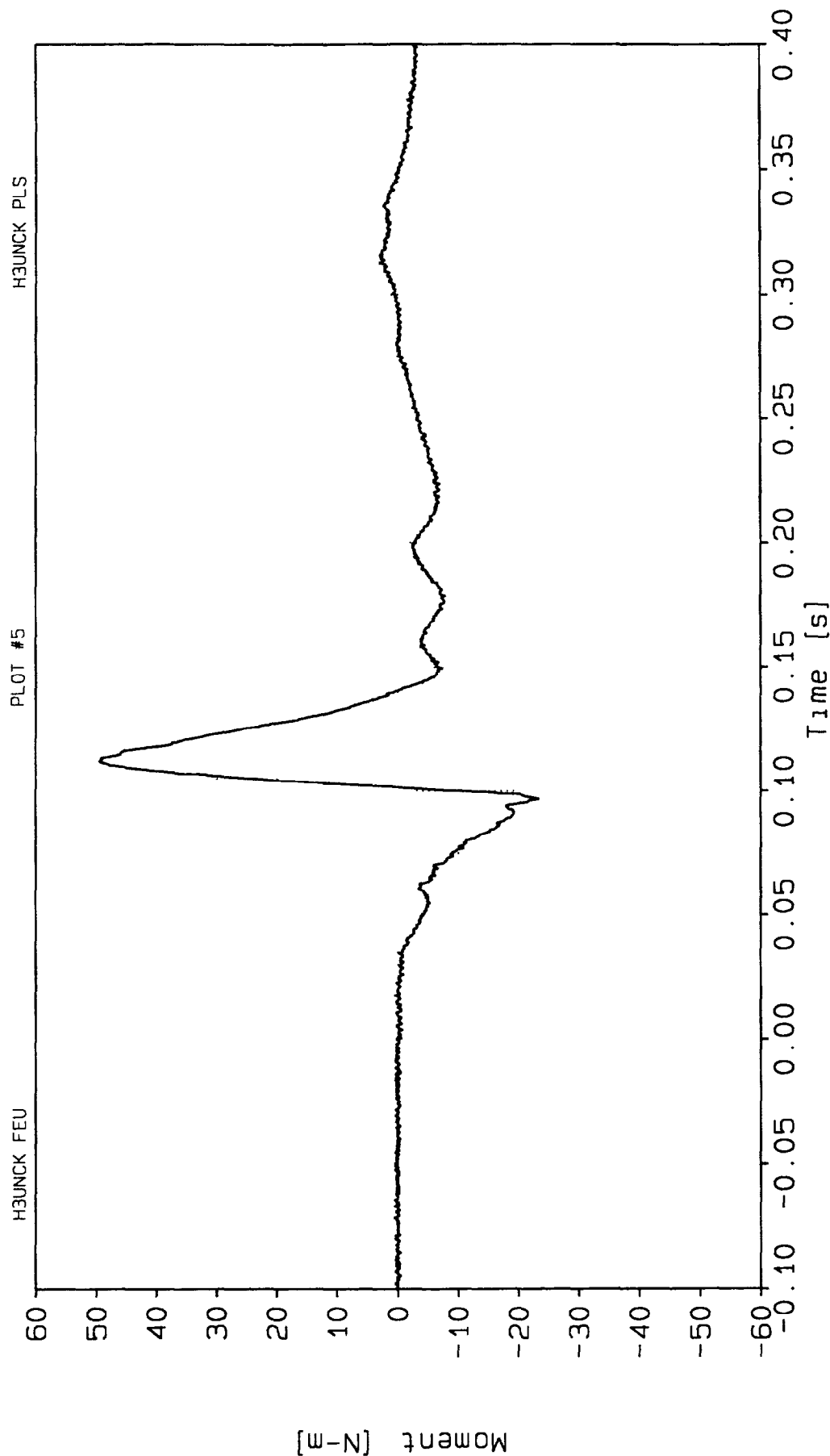
Filter Class 600
Volpe Crash Testing
PH05608

Upper Neck Moment (My) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH05608

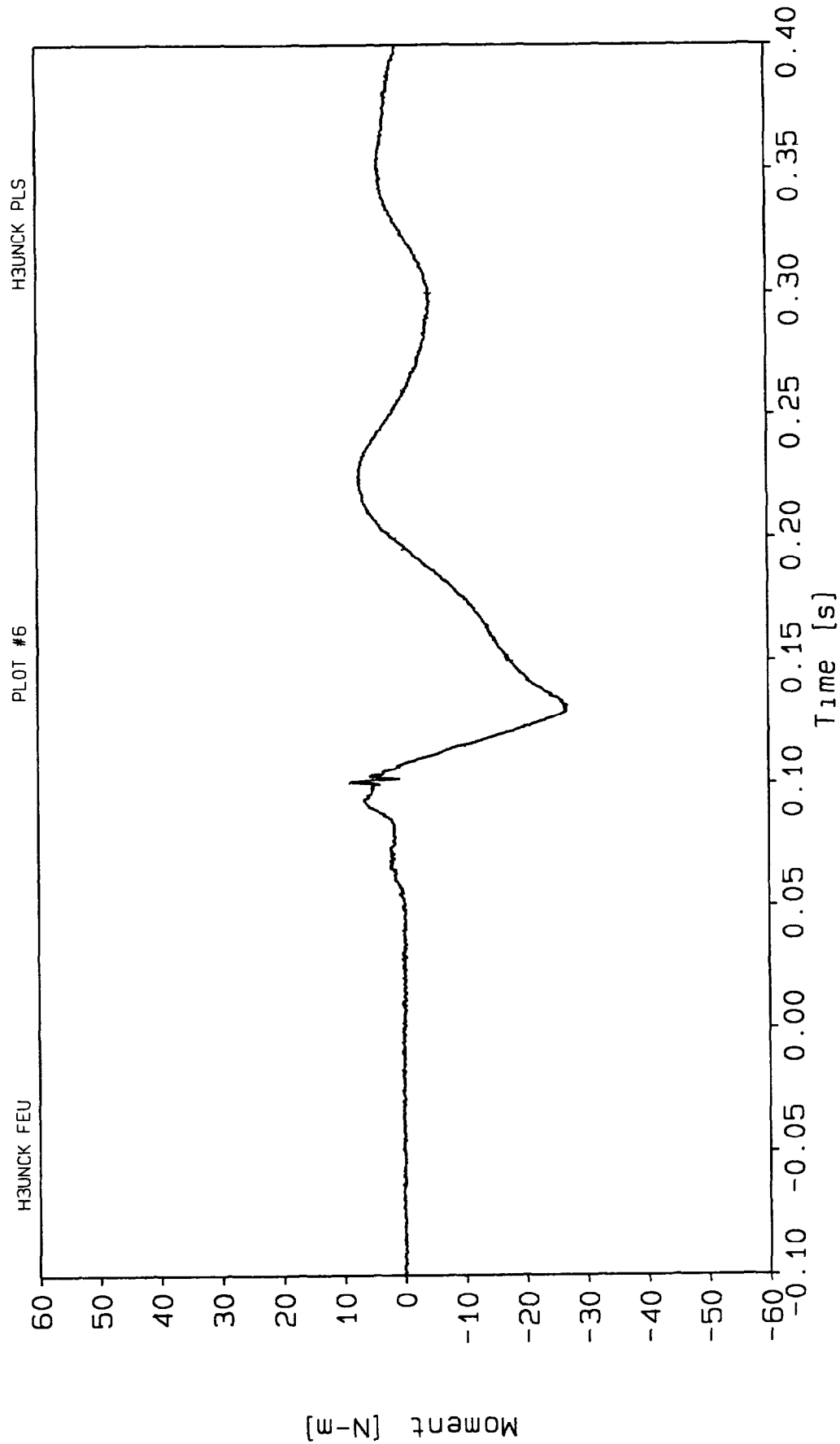
Exponent
Failure
Analysis
Associates

Upper Neck Moment (Mz) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

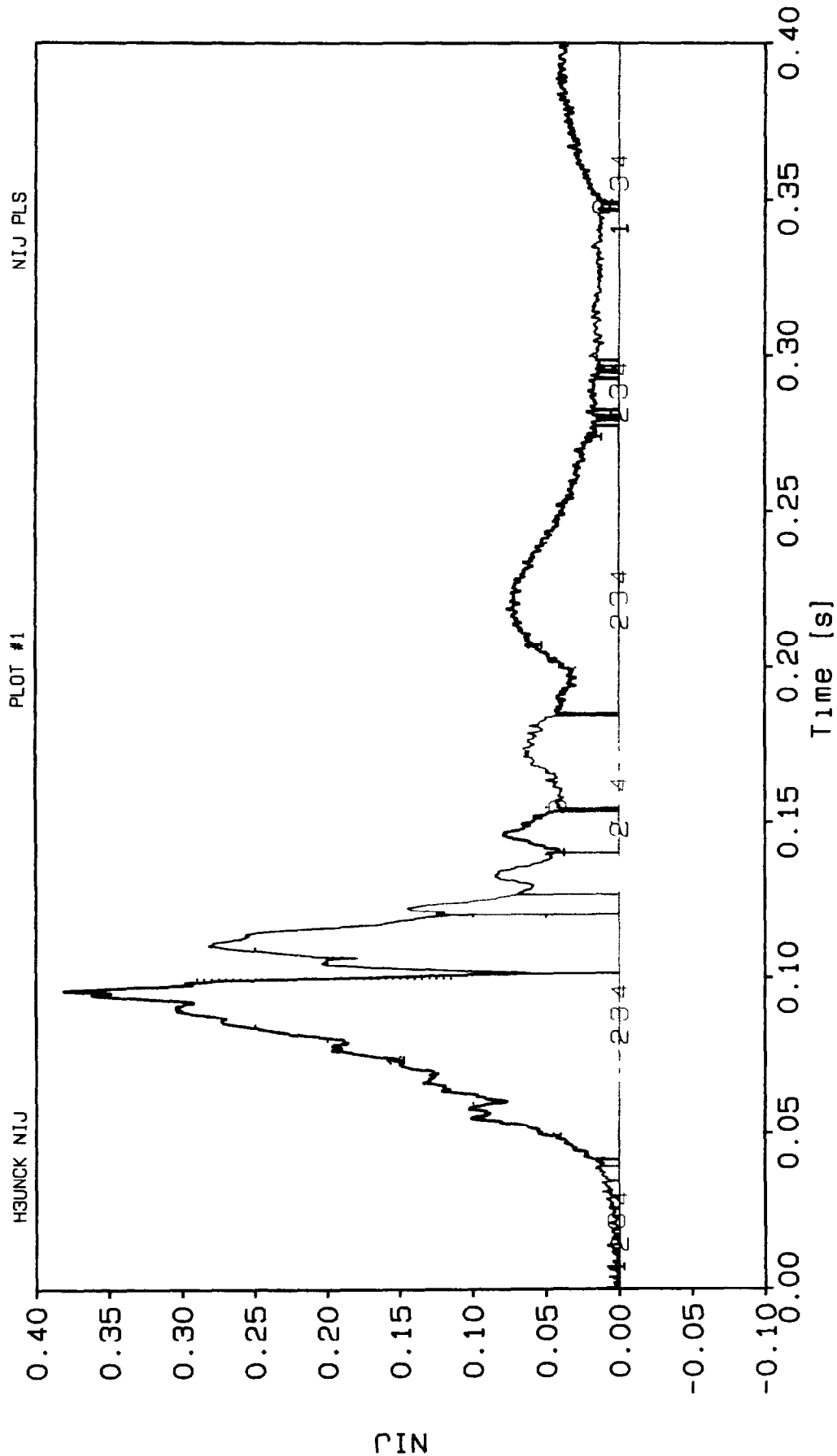


Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06508

Neck Injury Predictor v Time

Passenger Dummy - HIII
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

— Nt f
— Nc f

— Nte
— Nce

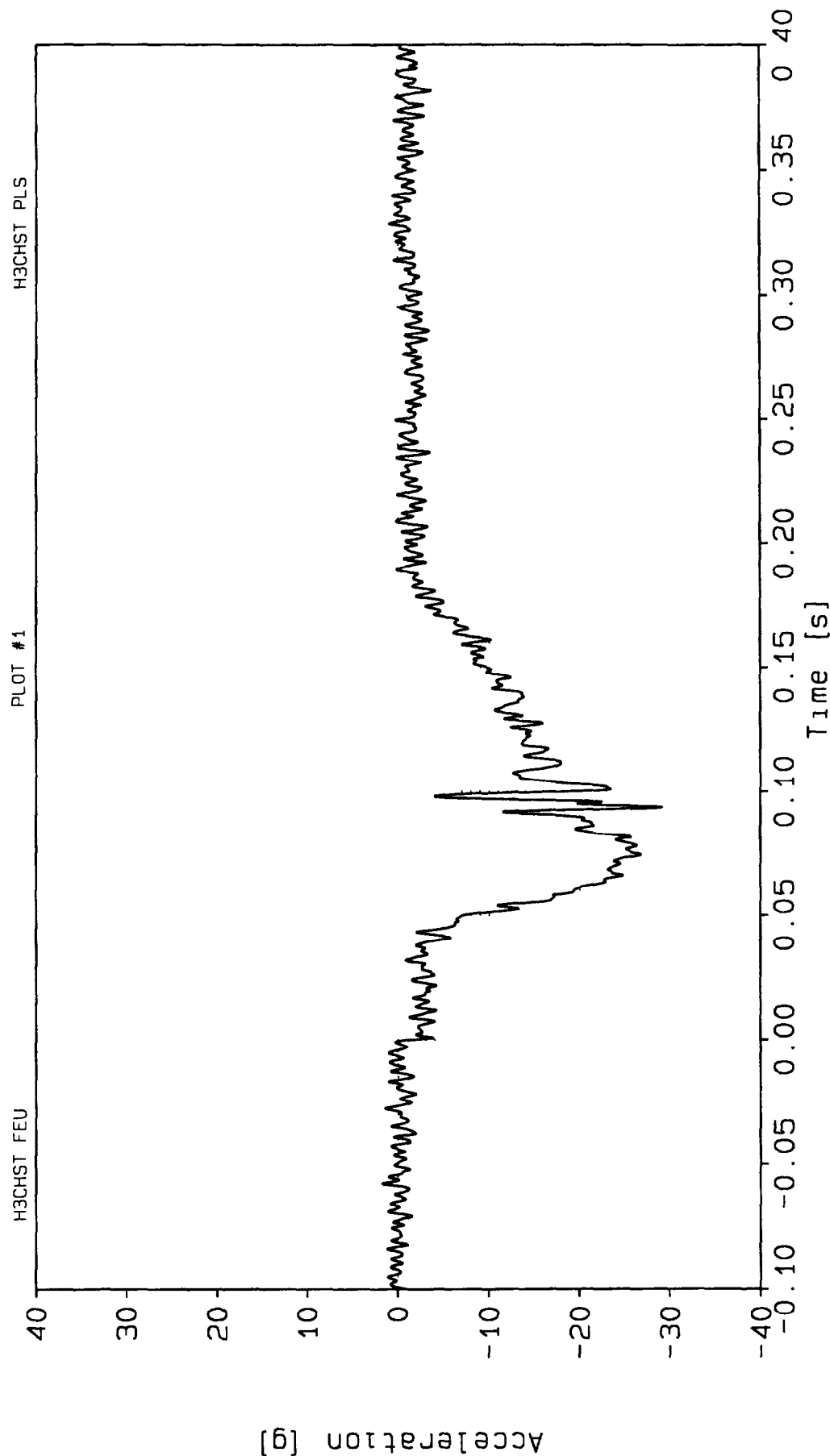
Volpe Crash Testing
PH06608

Chest Acceleration (Ax) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

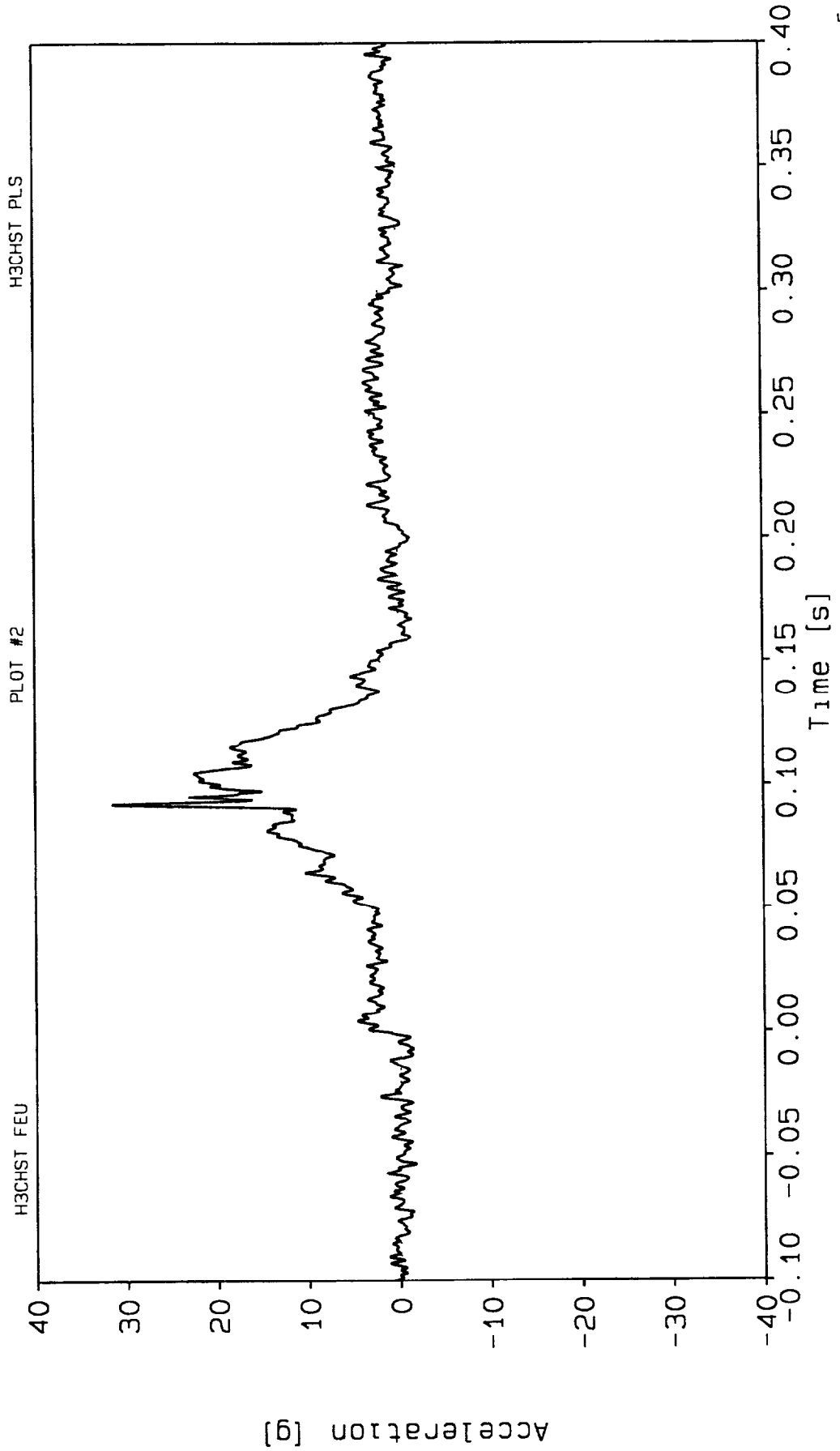
Exponent
Failure
Analysis
Associates

Chest Acceleration (Ay) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

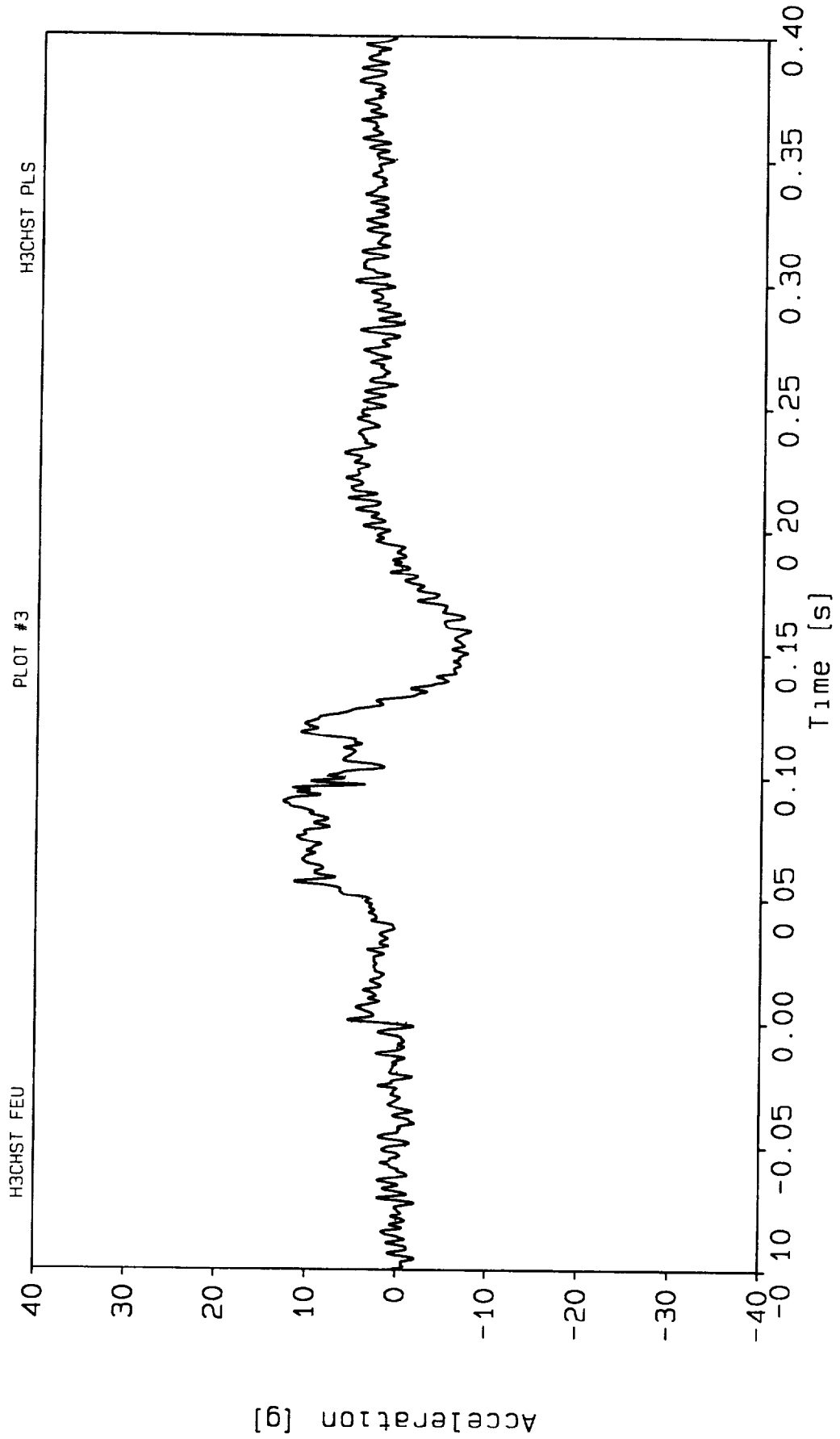


Chest Acceleration (Az) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH05508

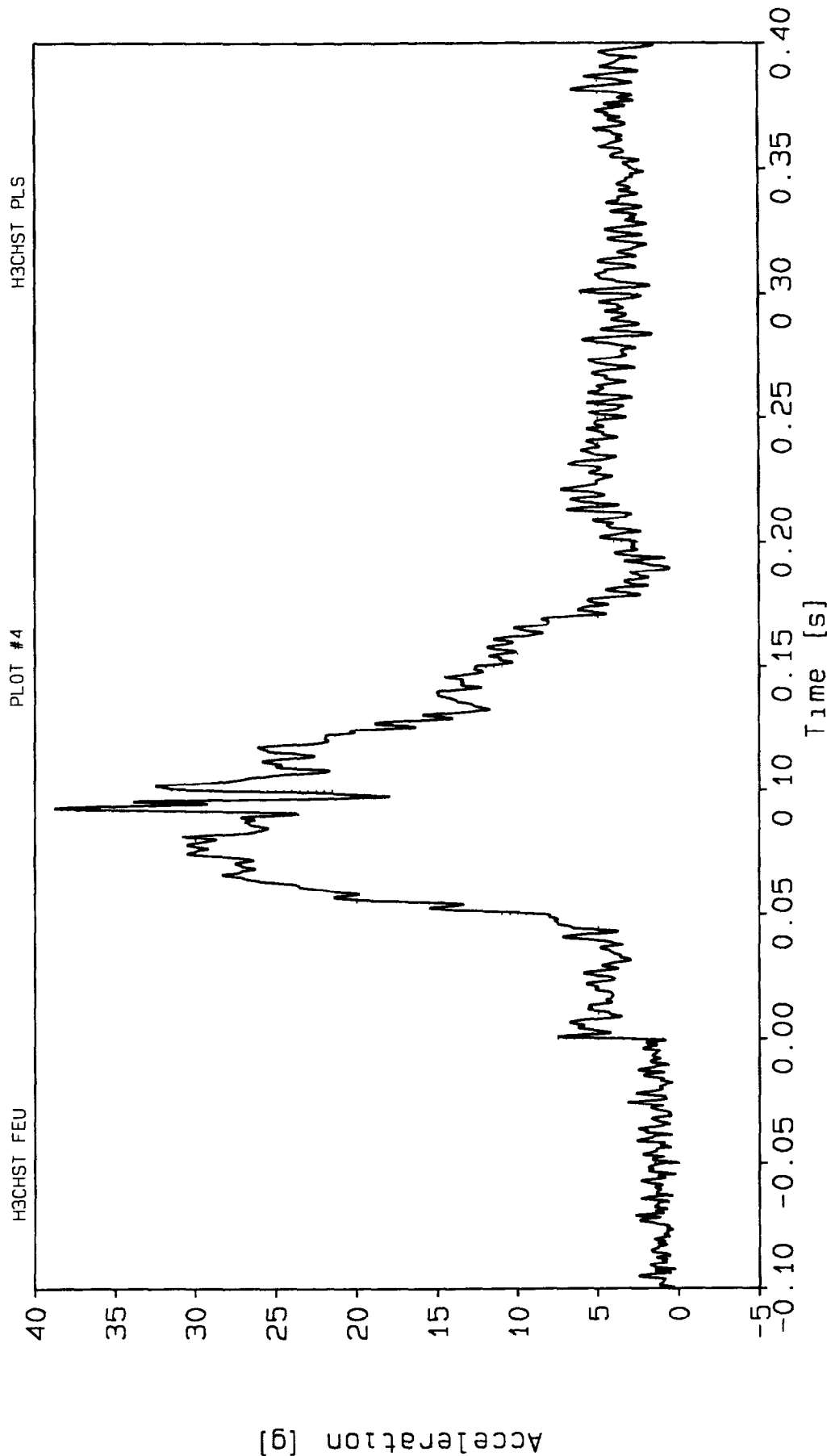
Exponent
Failure
Analysis
Associates

Chest Resultant Acceleration (Ar) v Time

Passenger Dummy - HIIE

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH05608

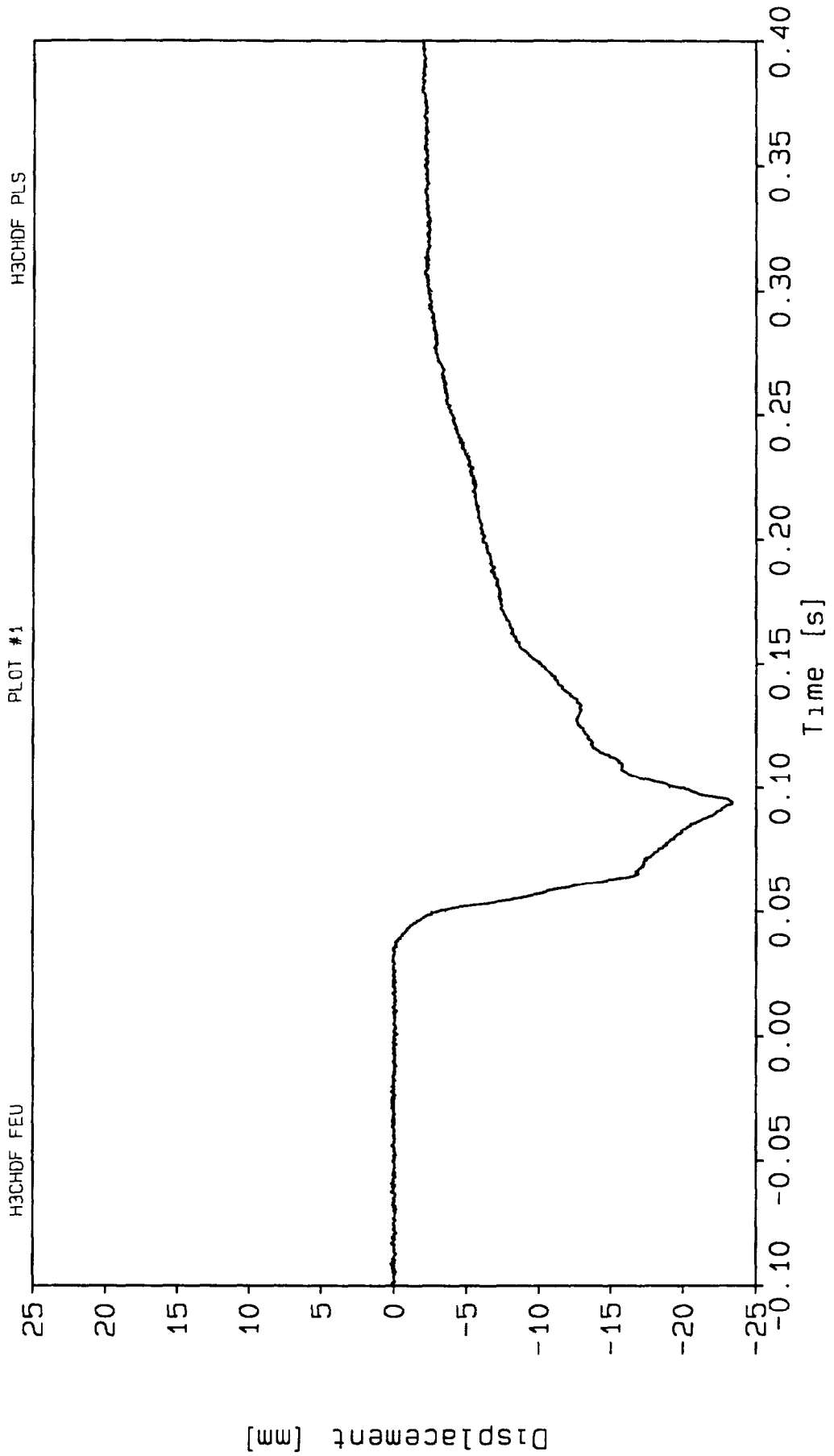
Exponent
Failure
Analysis
Associates

Chest Deflection (Dx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

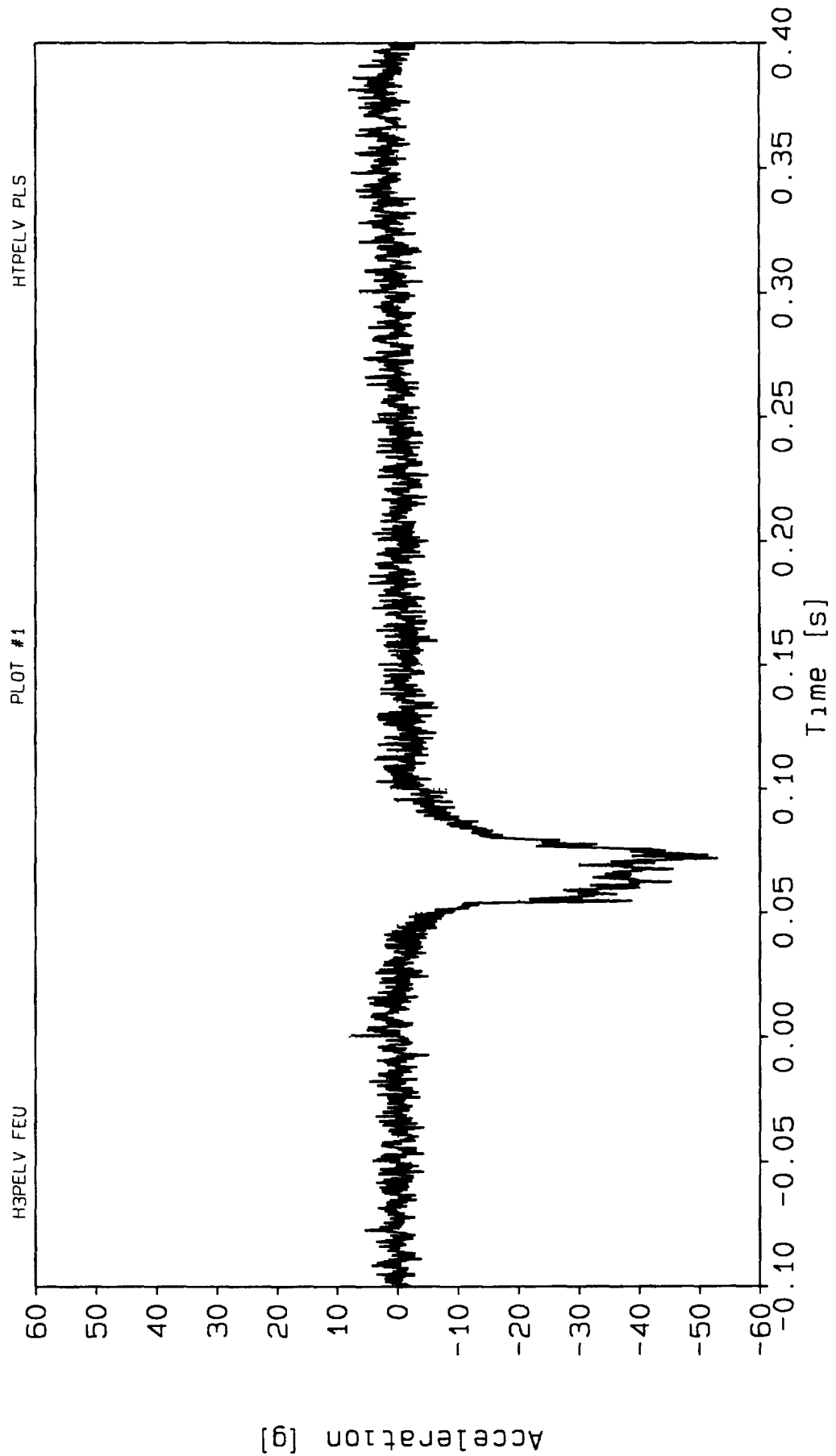
Exponent
Failure
Analysis
Associates

Pelvis Acceleration (Ax) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

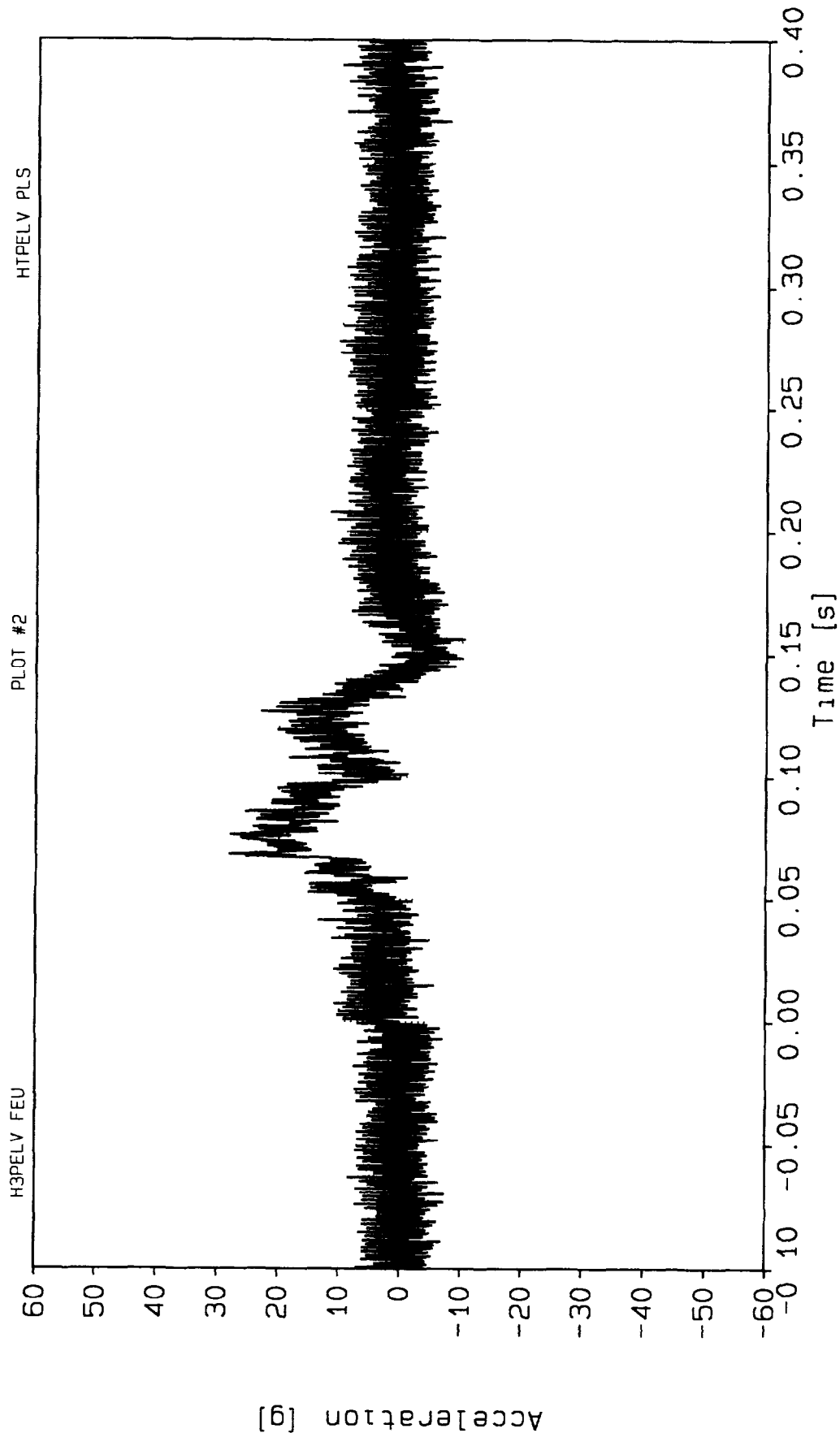
Exponent
Failure
Analysis
Associates

Pelvis Acceleration (Ay) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06608

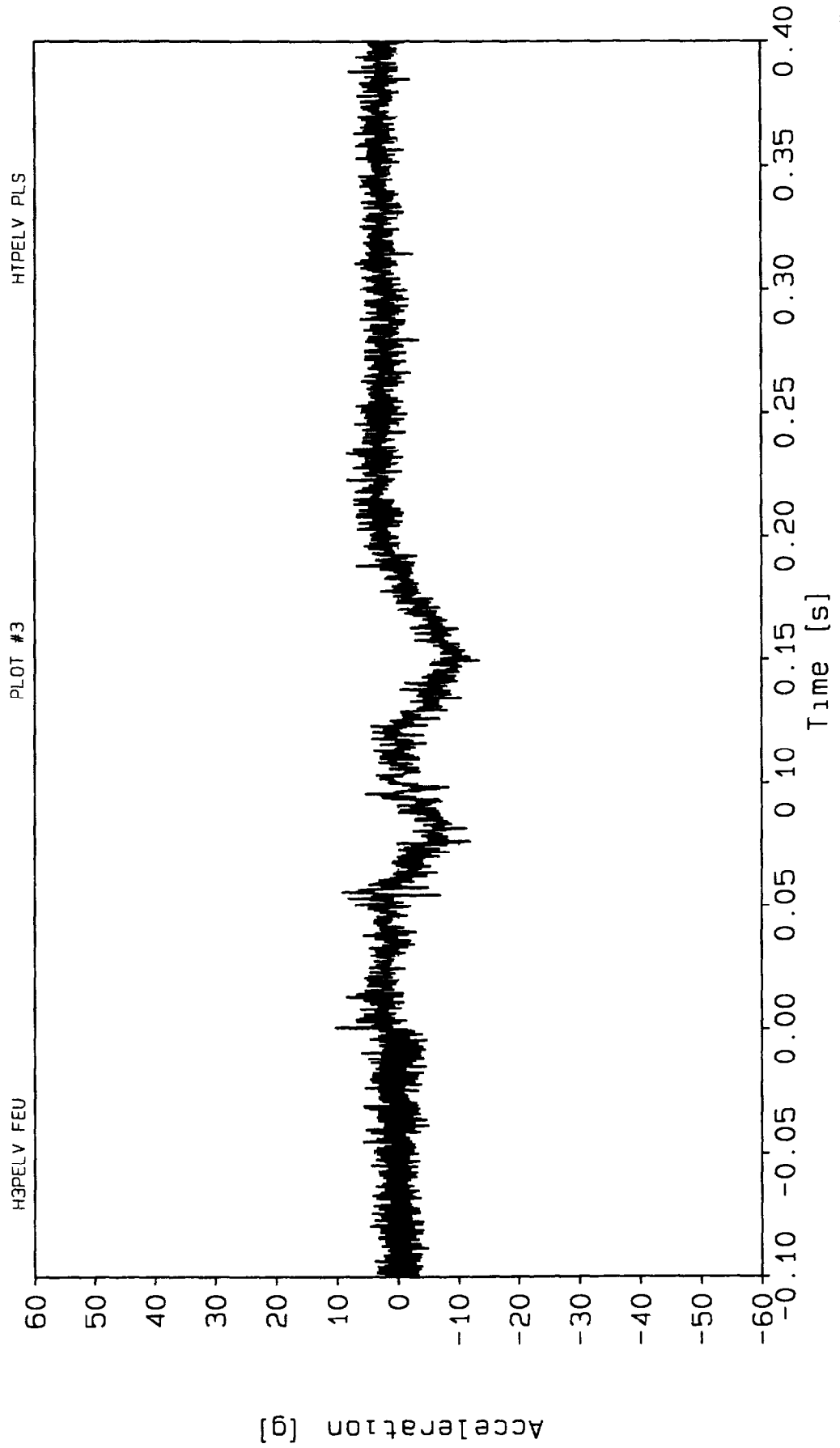
Exponent
Failure
Analysis
Associates

Pelvis Acceleration (Az) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH06508

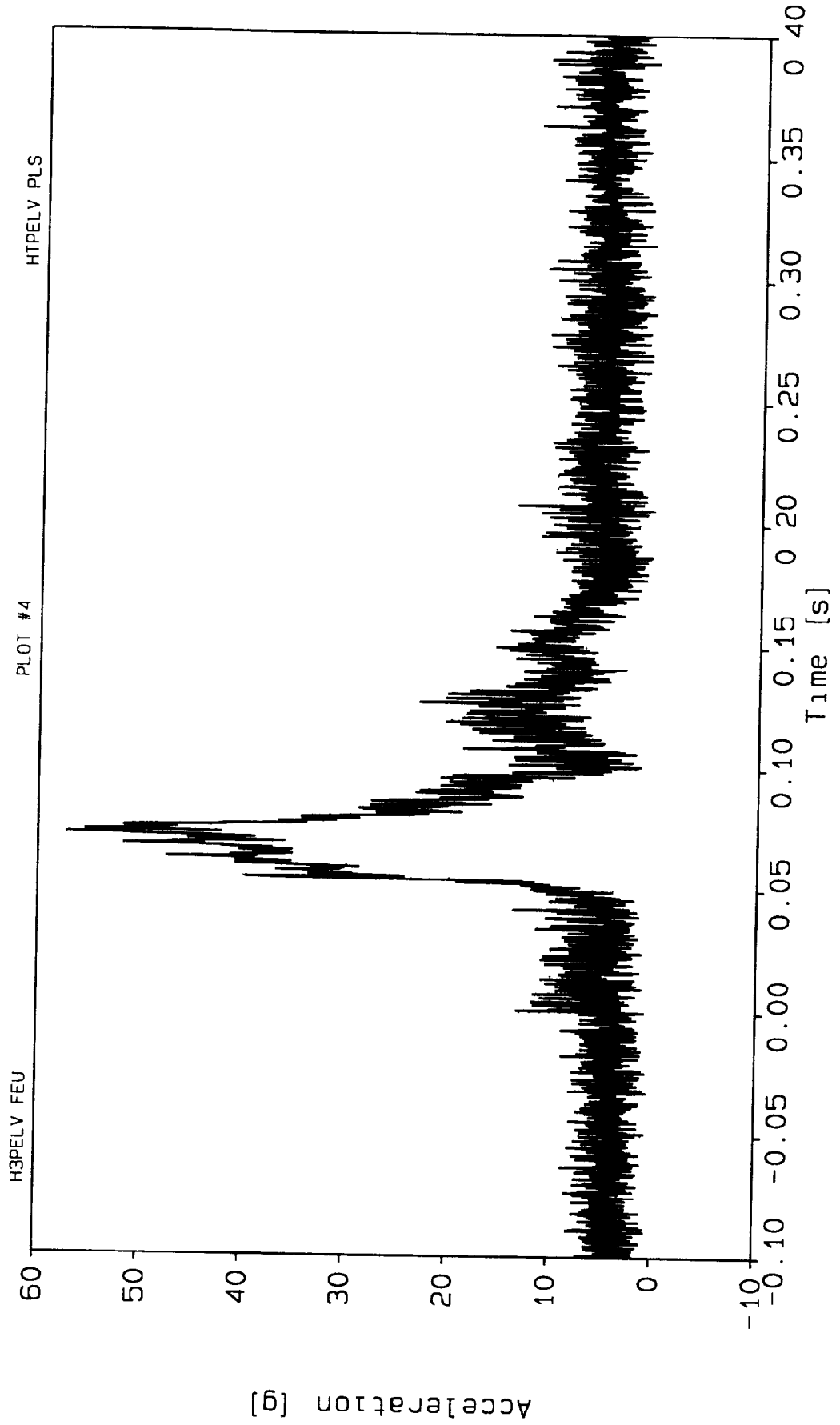
Exponent
Failure
Analysis
Associates

Pelvis Acceleration (Ar) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 1000
Volpe Crash Testing
PH05608

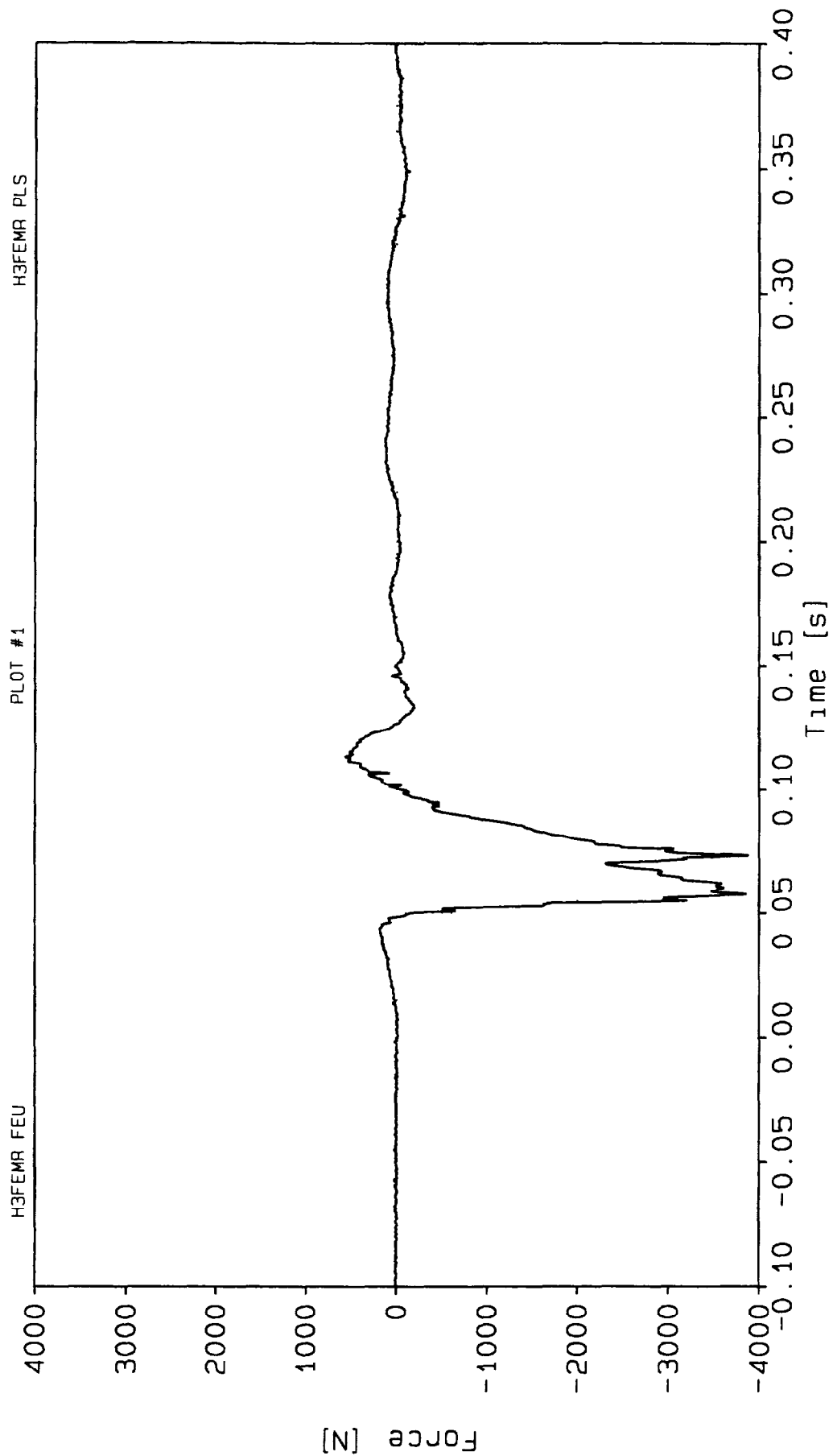
Exponent
Failure
Analysis
Associates

Left Femur Force v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

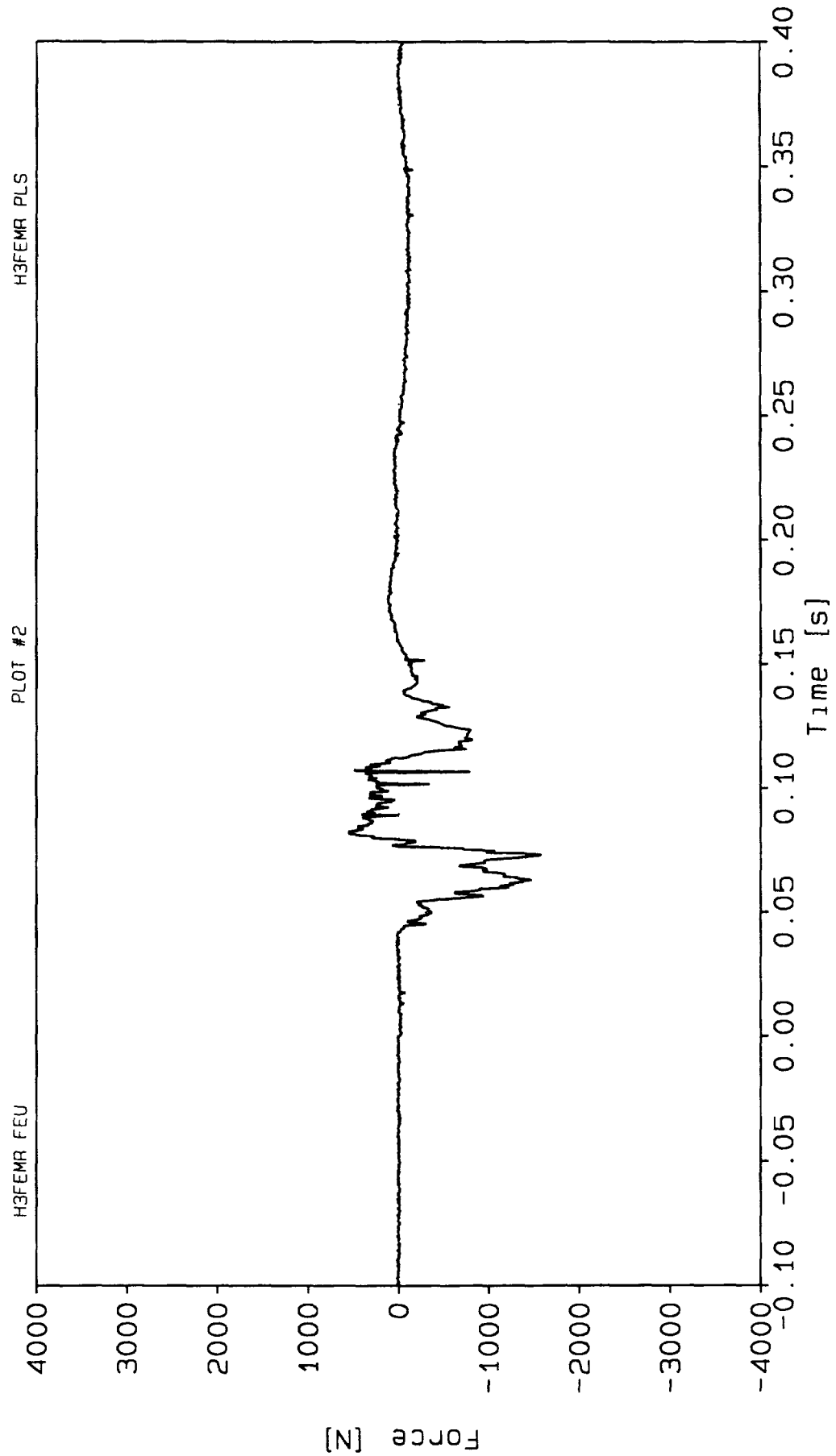
Exponent
Failure
Analysis
Associates

Right Femur Force v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06508

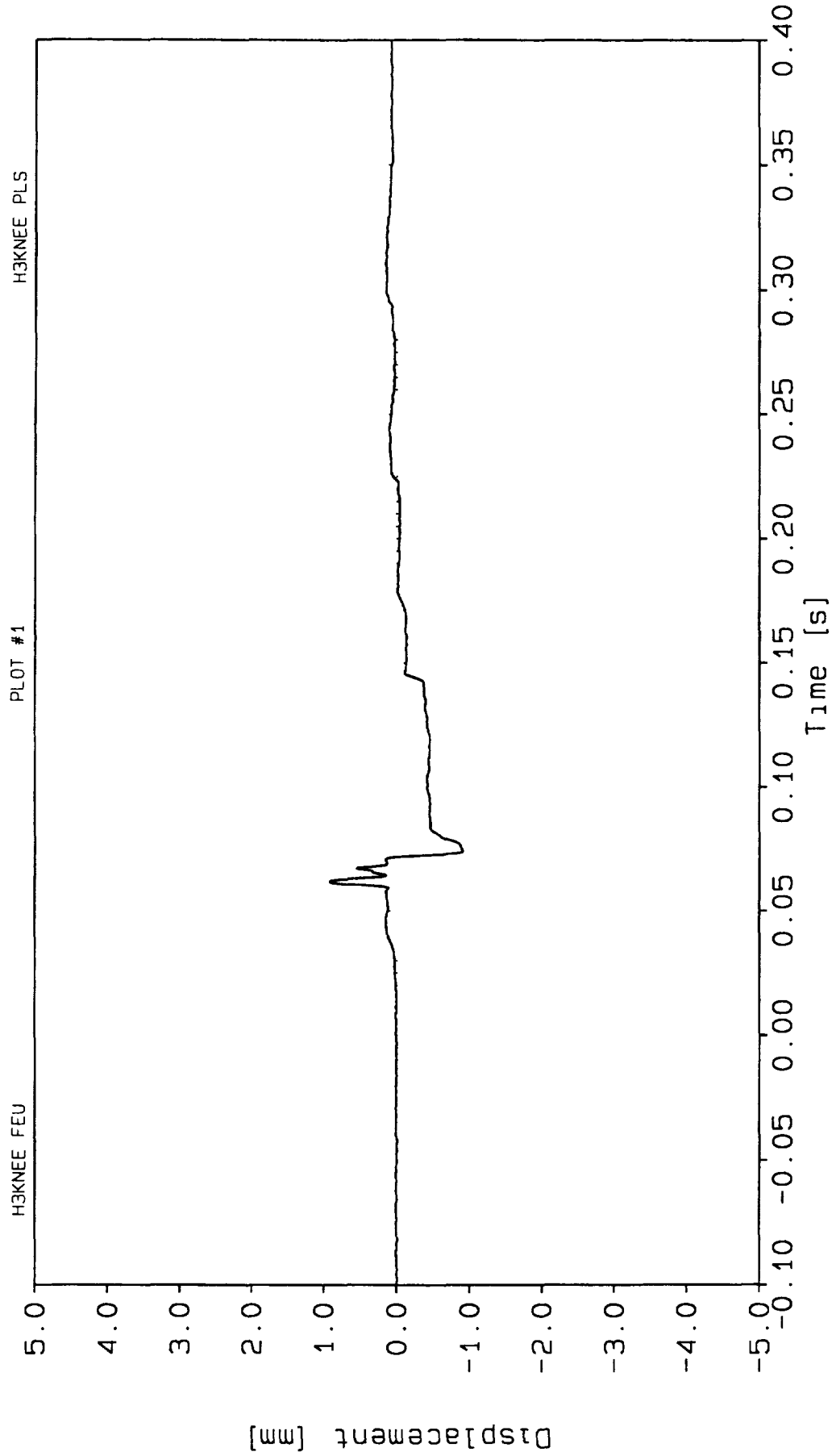
Exponent
Failure
Analysis
Associates

Left Knee Displacement v Time

Passenger Dummy - HIIE

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

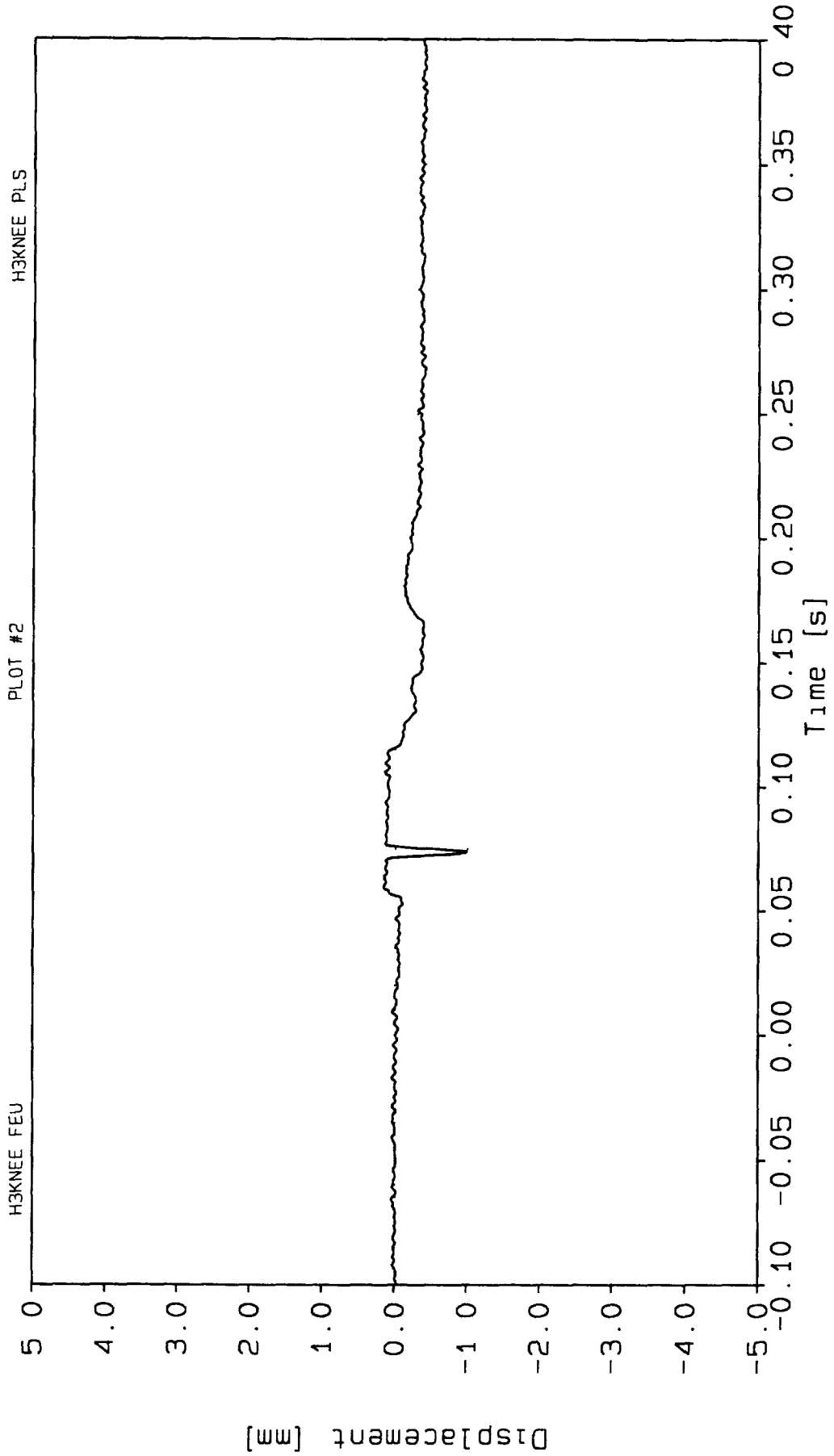
Filter Class 180
Volpe Crash Testing
PH06608

Right Knee Displacement v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 180
Volpe Crash Testing
PH06608

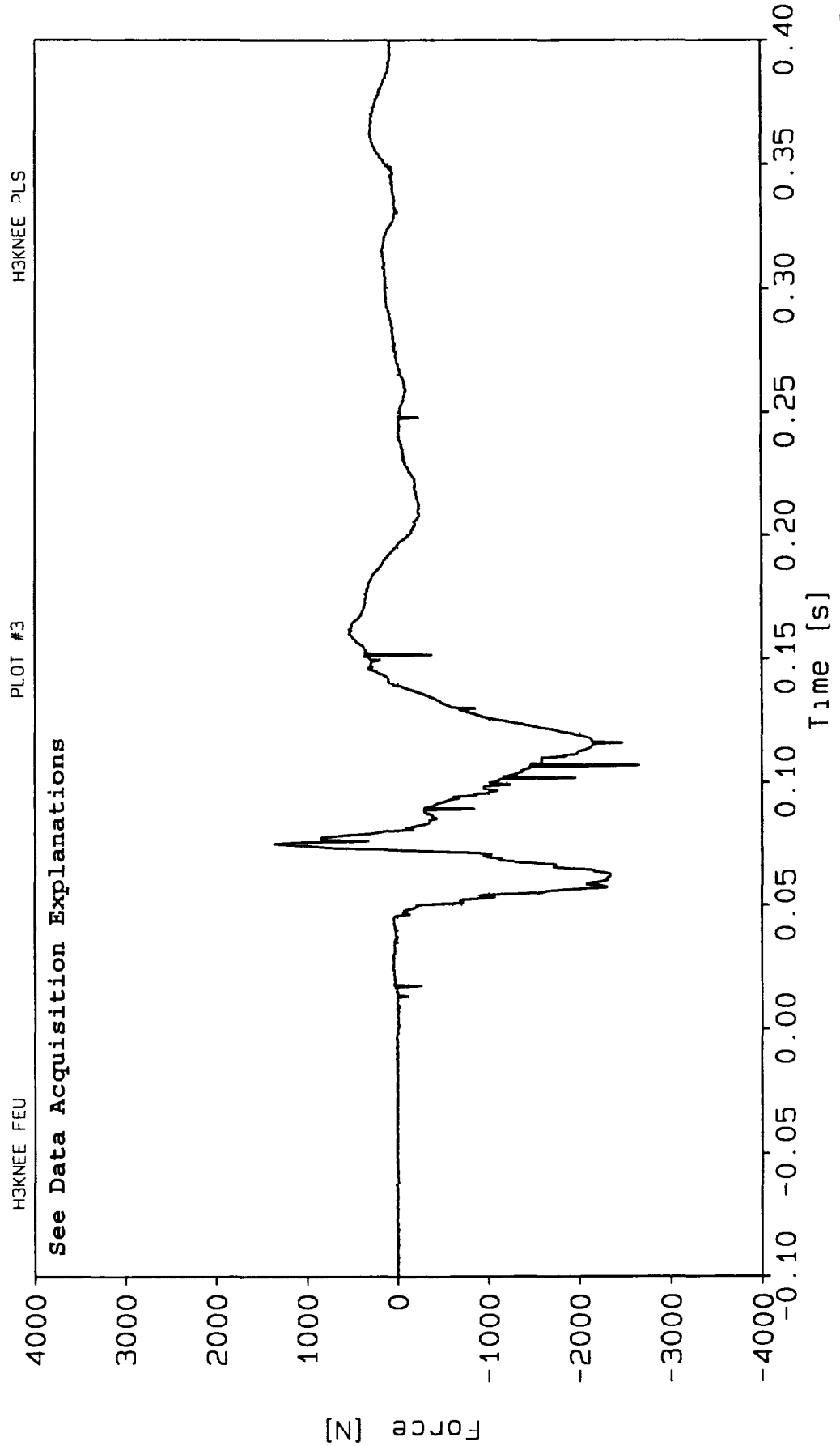
Exponent
Failure
Analysis
Associates

Left Knee Left Force v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

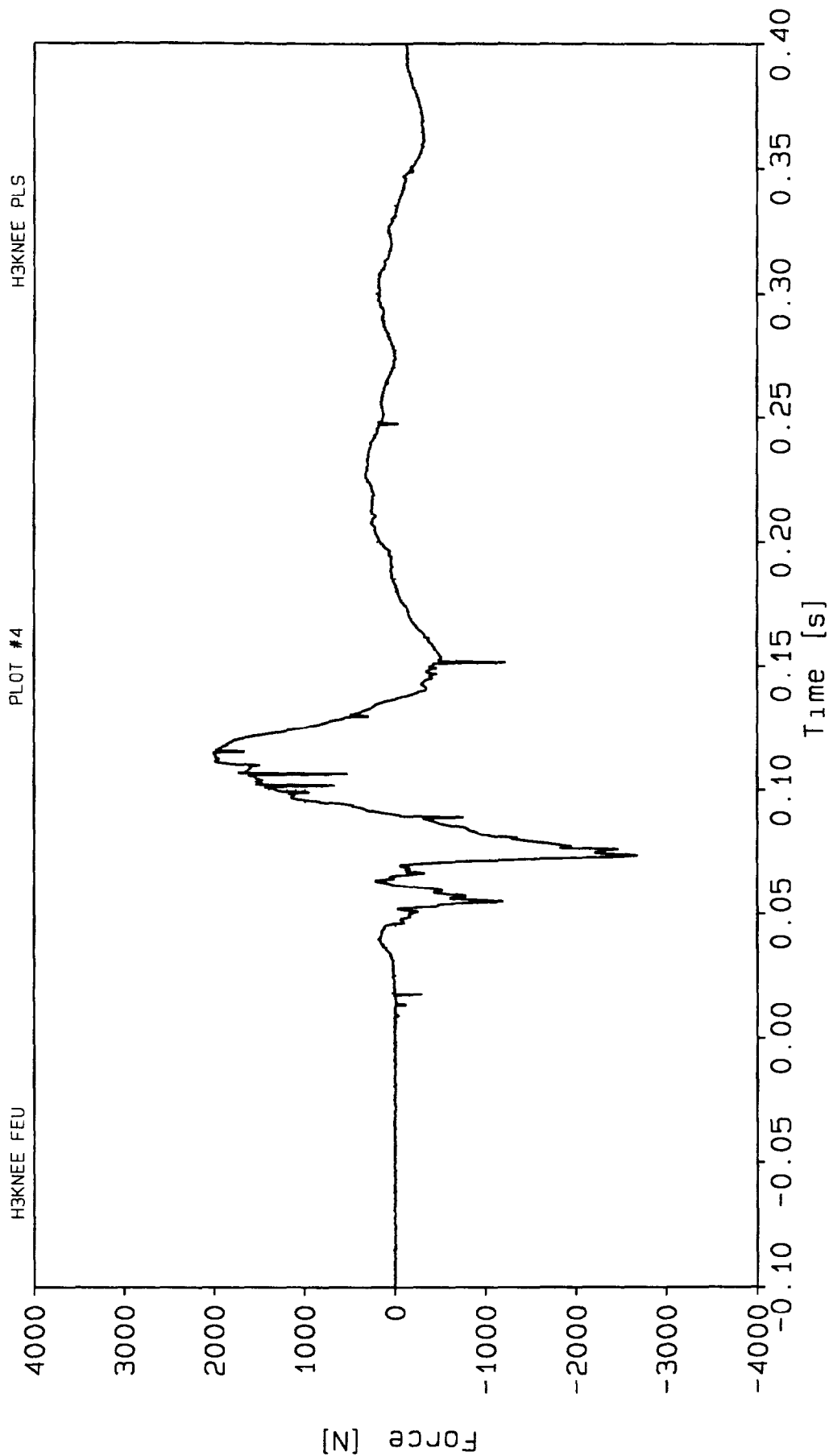
Exponent
Failure
Analysis
Associates

Left Knee Right Force v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

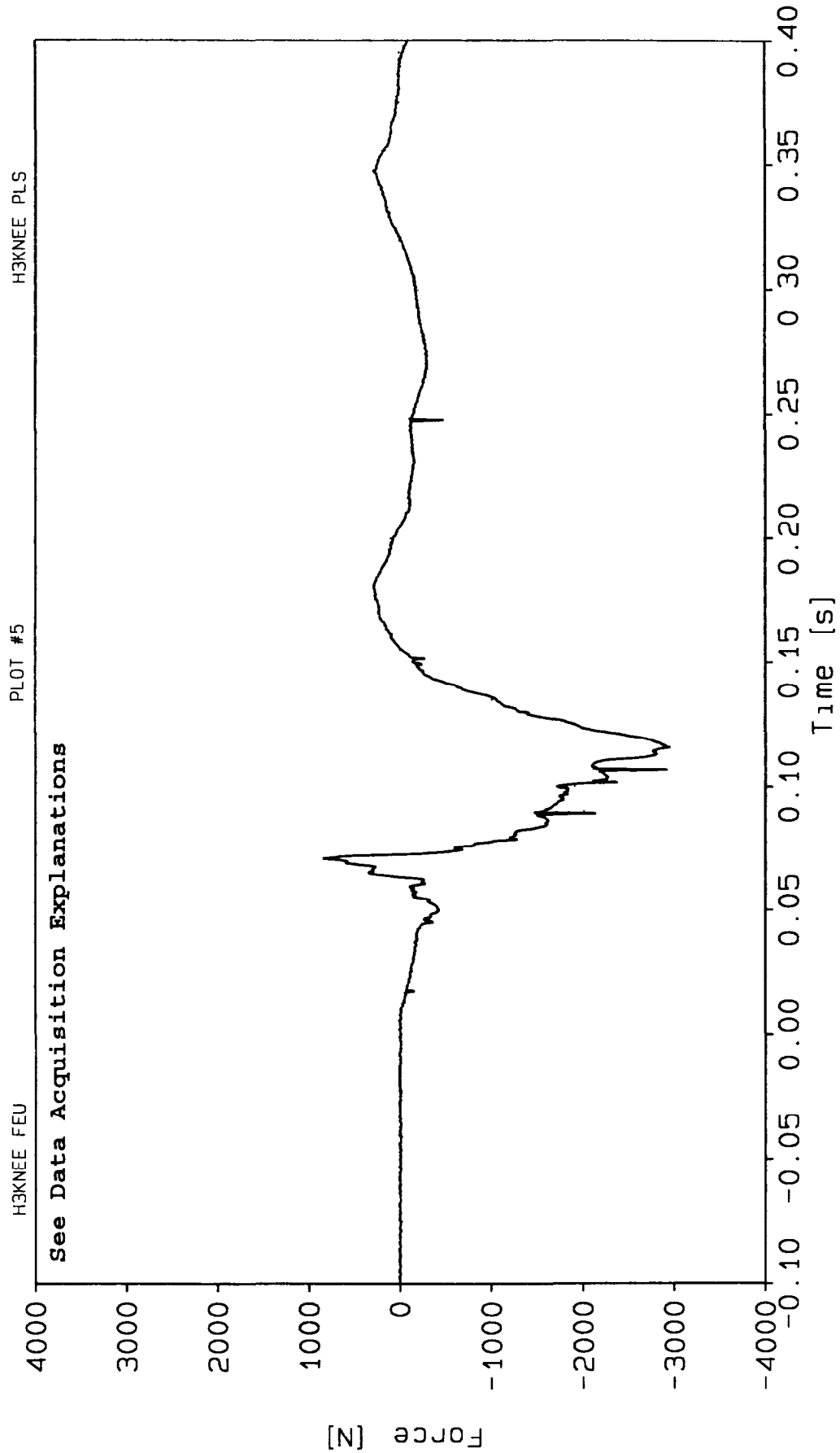
Filter Class 600
Volpe Crash Testing
PH06608

Right Knee Left Force v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

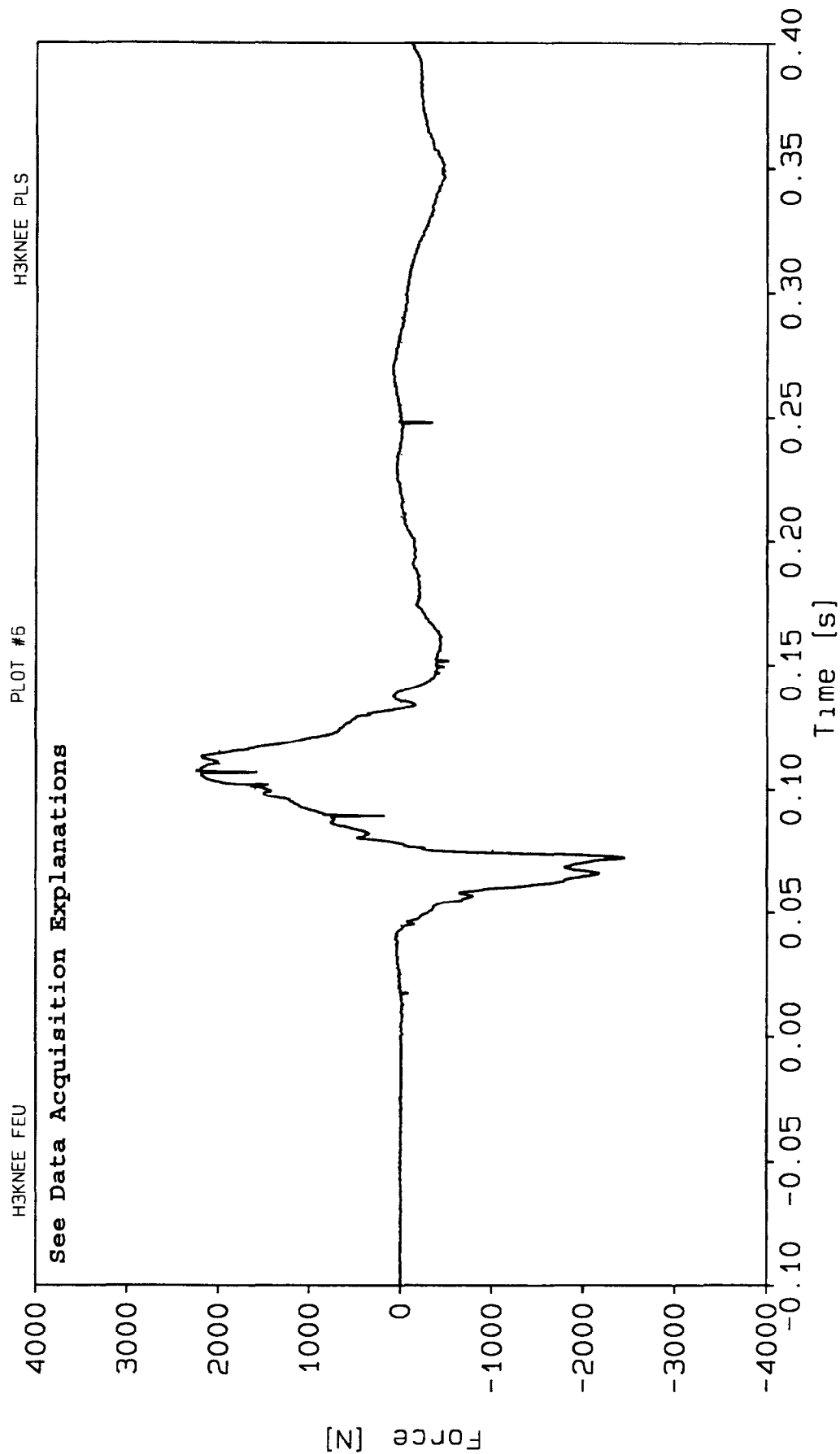
Filter Class 500
Volpe Crash Testing
PH06608

Right Knee Right Force v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06508

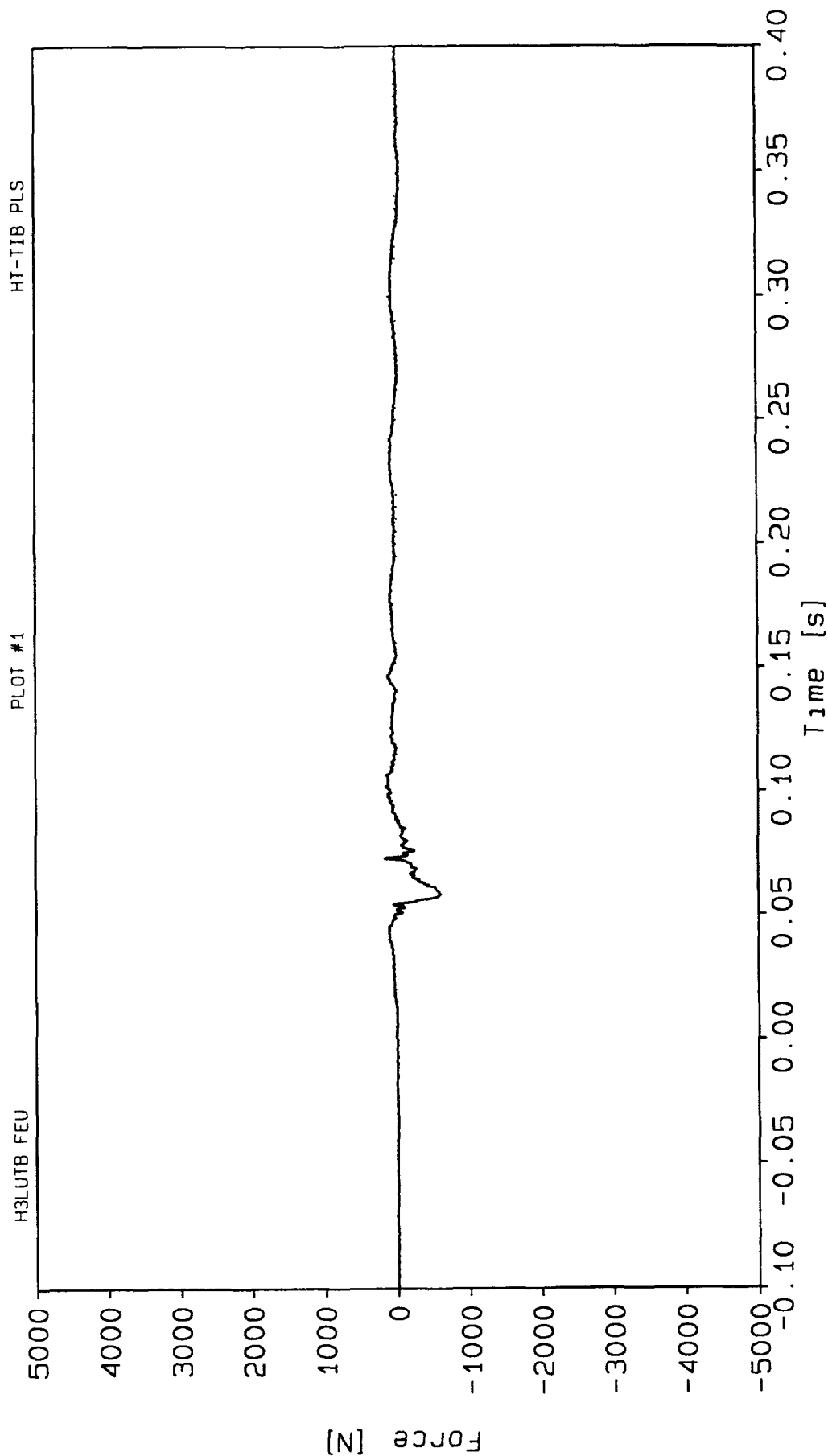
Exponent
Failure
Analysis
Associates

Left Upper Tibia Force (Fx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

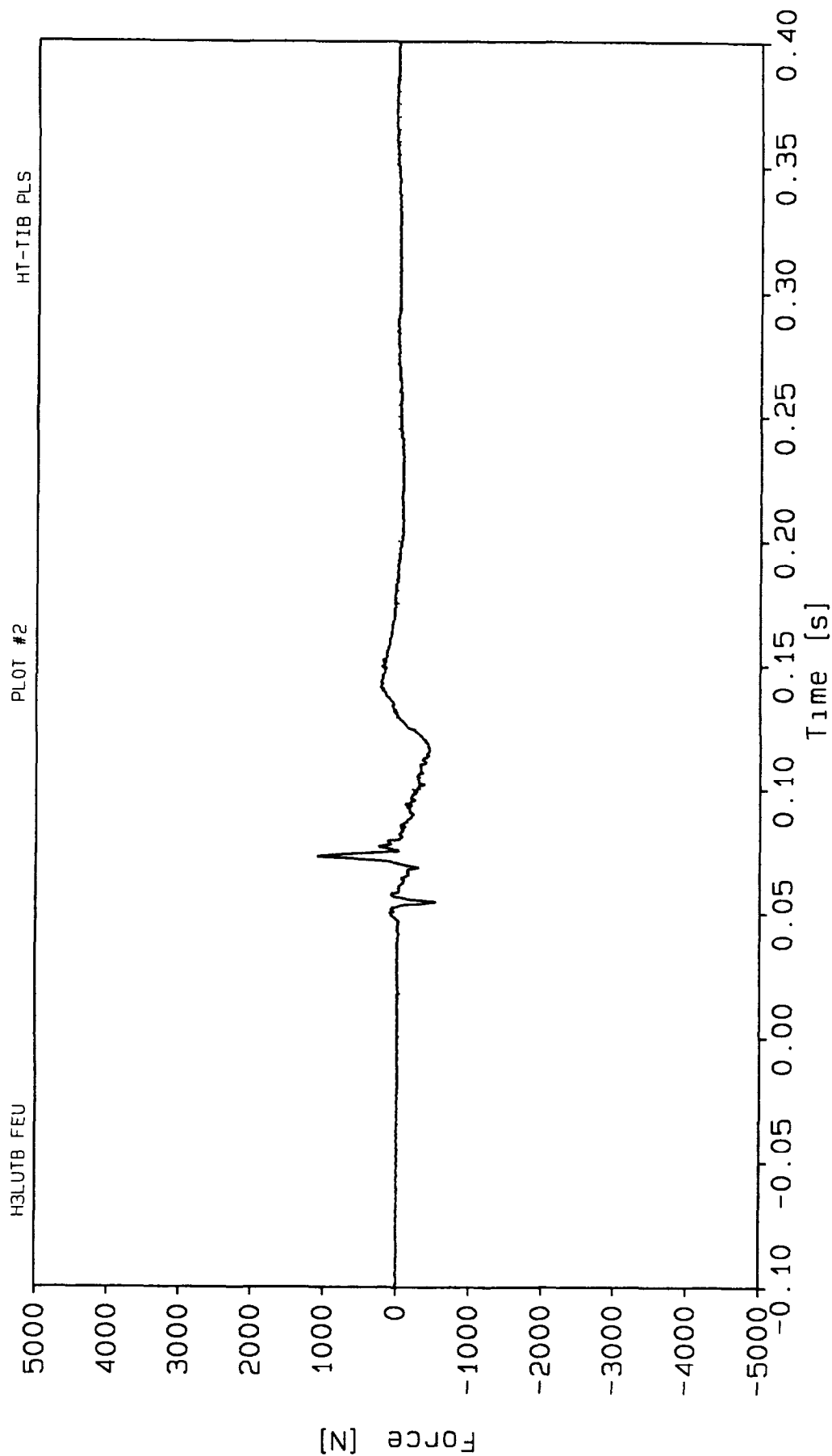
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Left Upper Tibia Force (Fy) v Time
Passenger Dummy - HIII
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

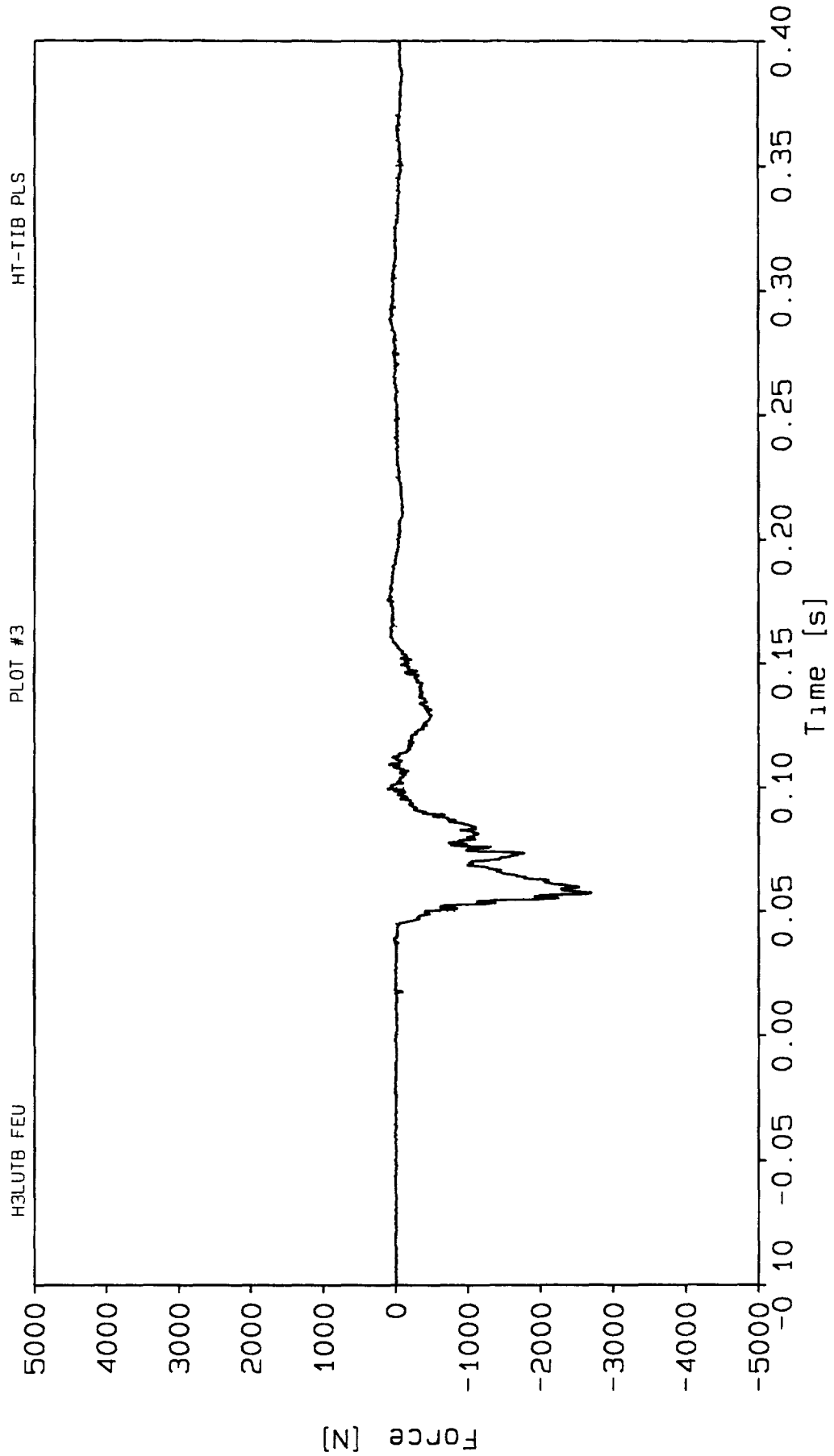
Filter Class 600
Volpe Crash Testing
PH06608

Left Upper Tibia Force (Fz) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

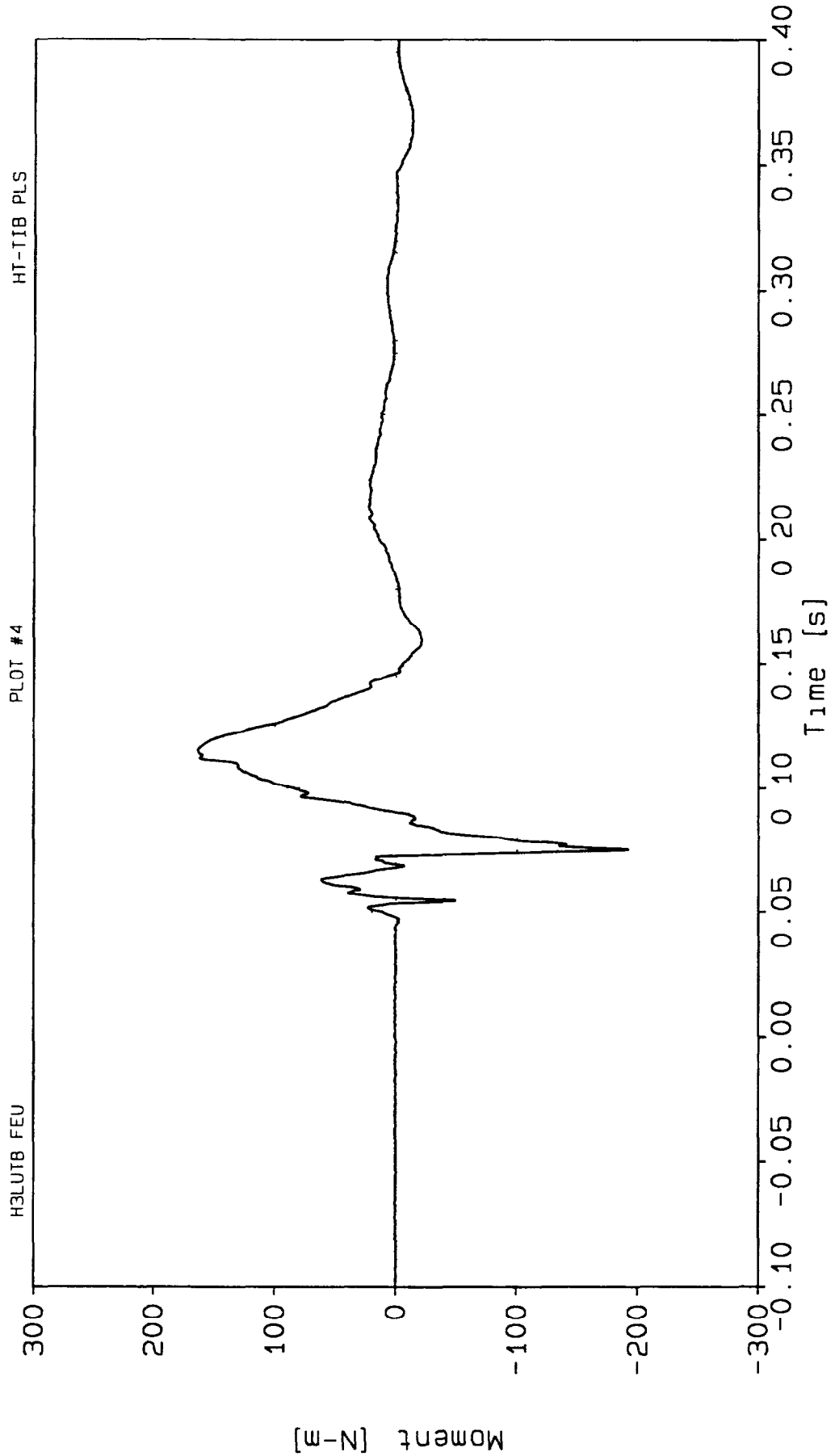
Exponent
Failure
Analysis
Associates

Left Upper Tibia Moment (Mx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

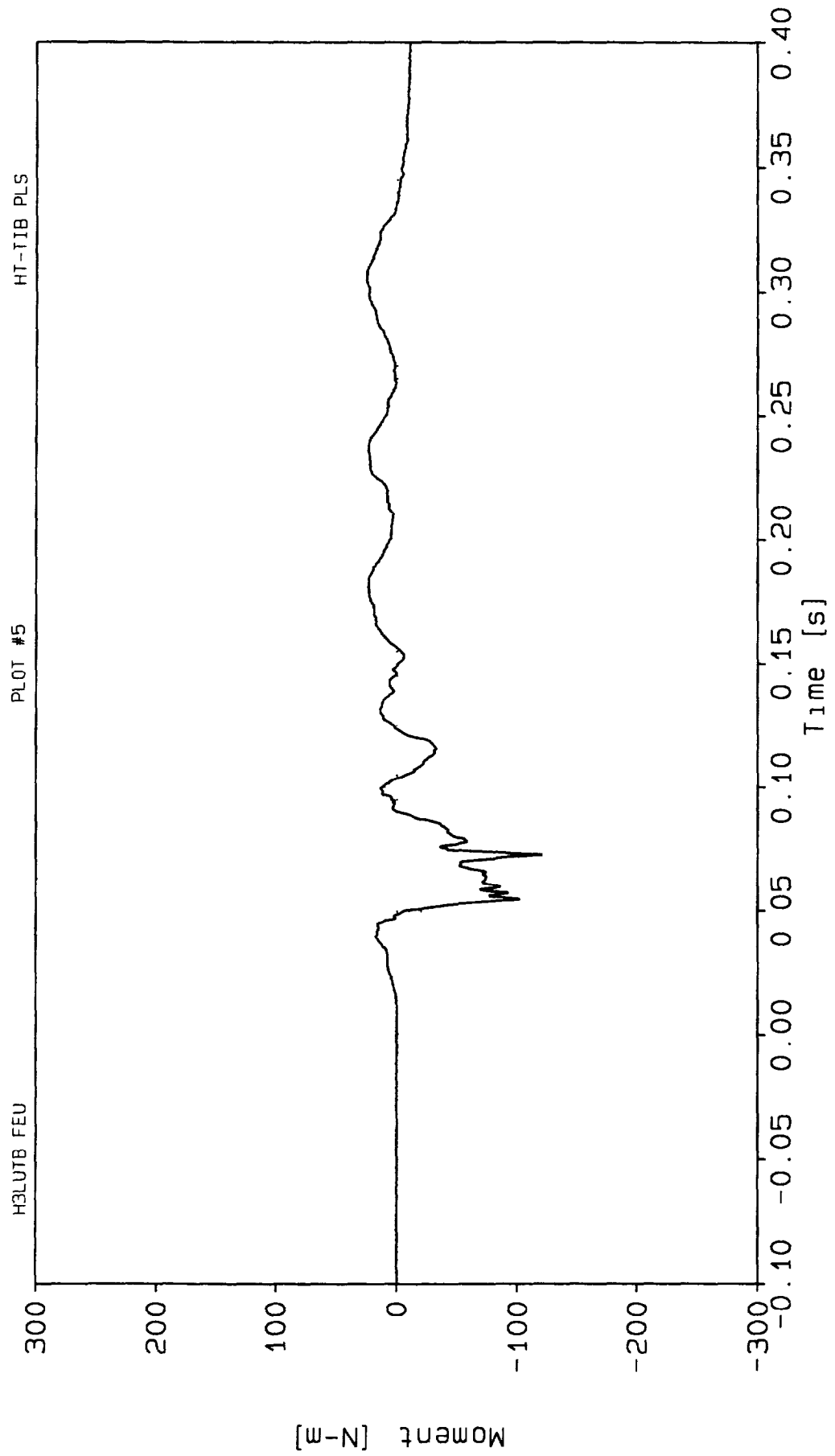
Exponent
Failure
Analysis
Associates

Left Upper Tibia Moment (My) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

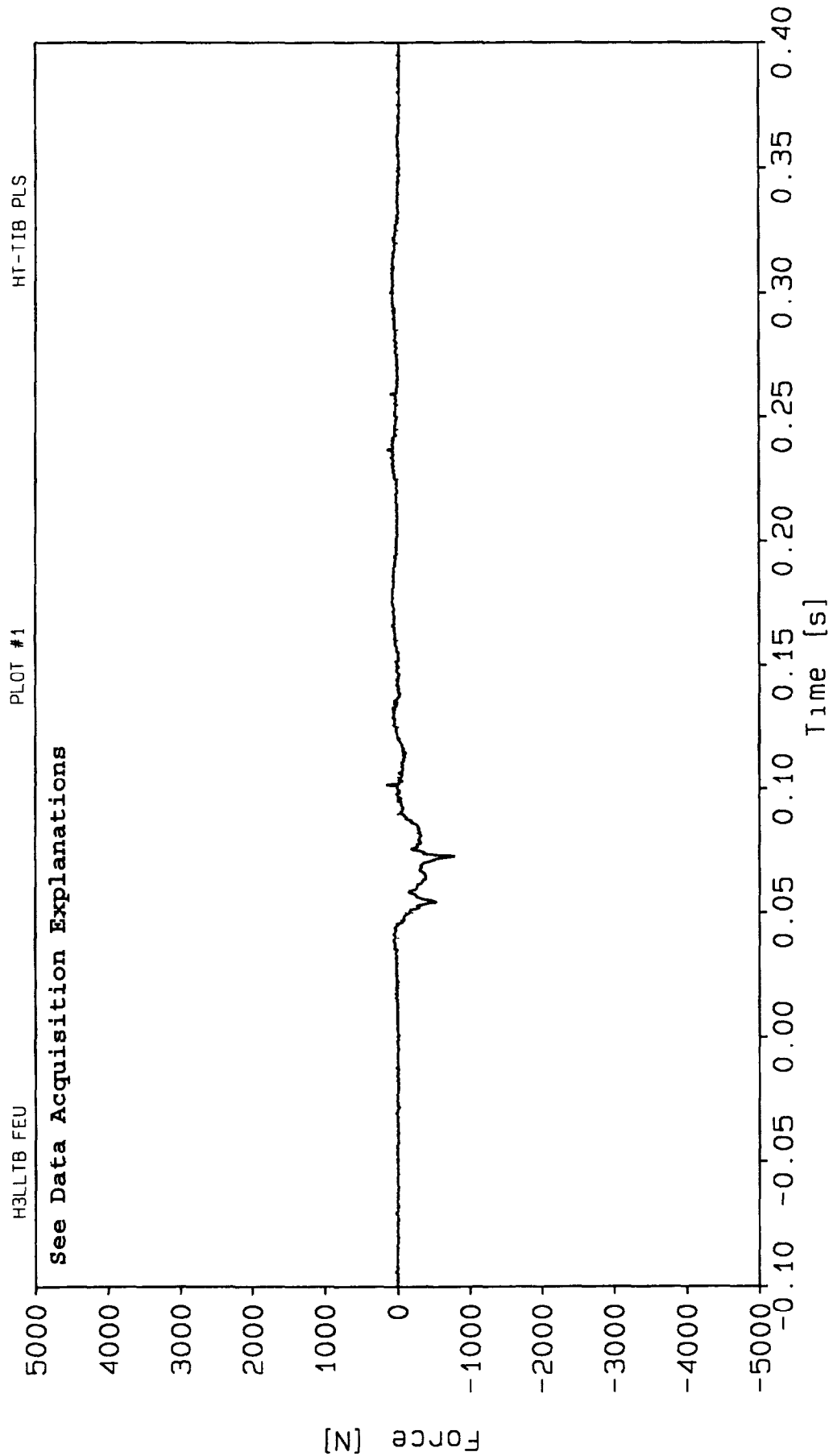
Exponent
Failure
Analysis
Associates

Left Lower Tibia Force (Fx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

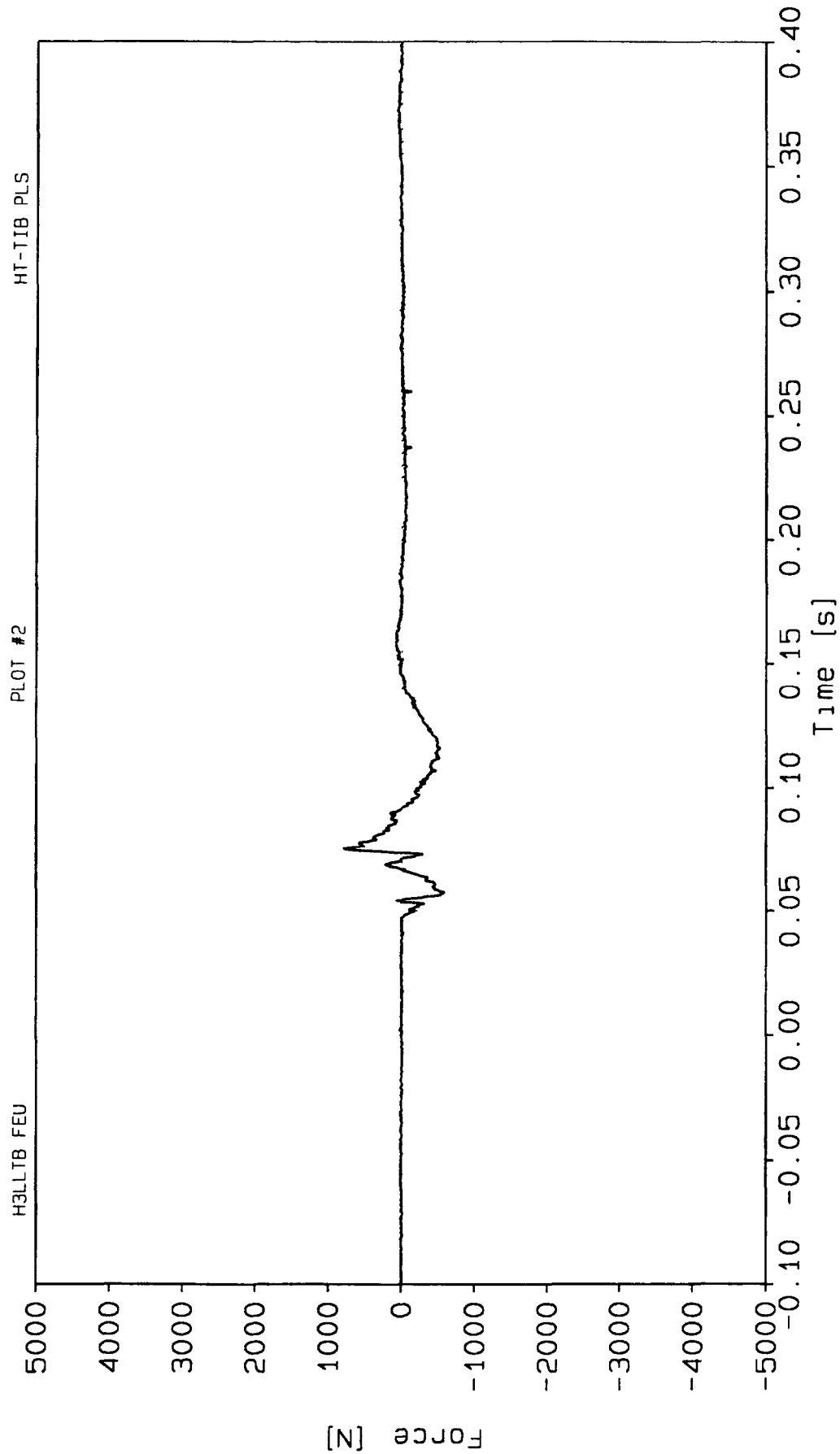
Exponent
Failure
Analysis
Associates

Left Lower Tibia Force (Fy) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06508

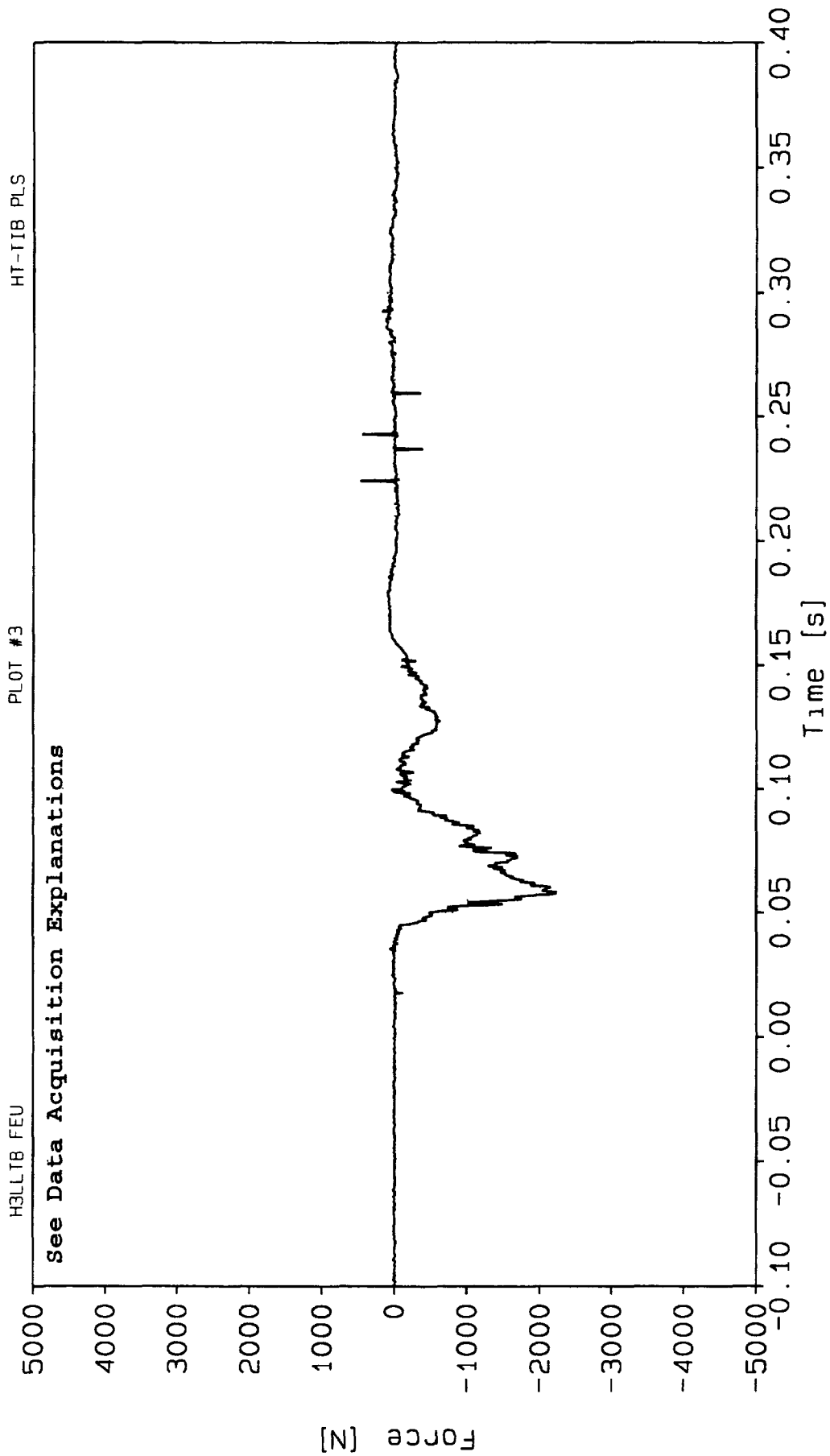
Exponent
Failure
Analysis
Associates

Left Lower Tibia Force (Fz) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
VoIpe Crash Testing
PH05608

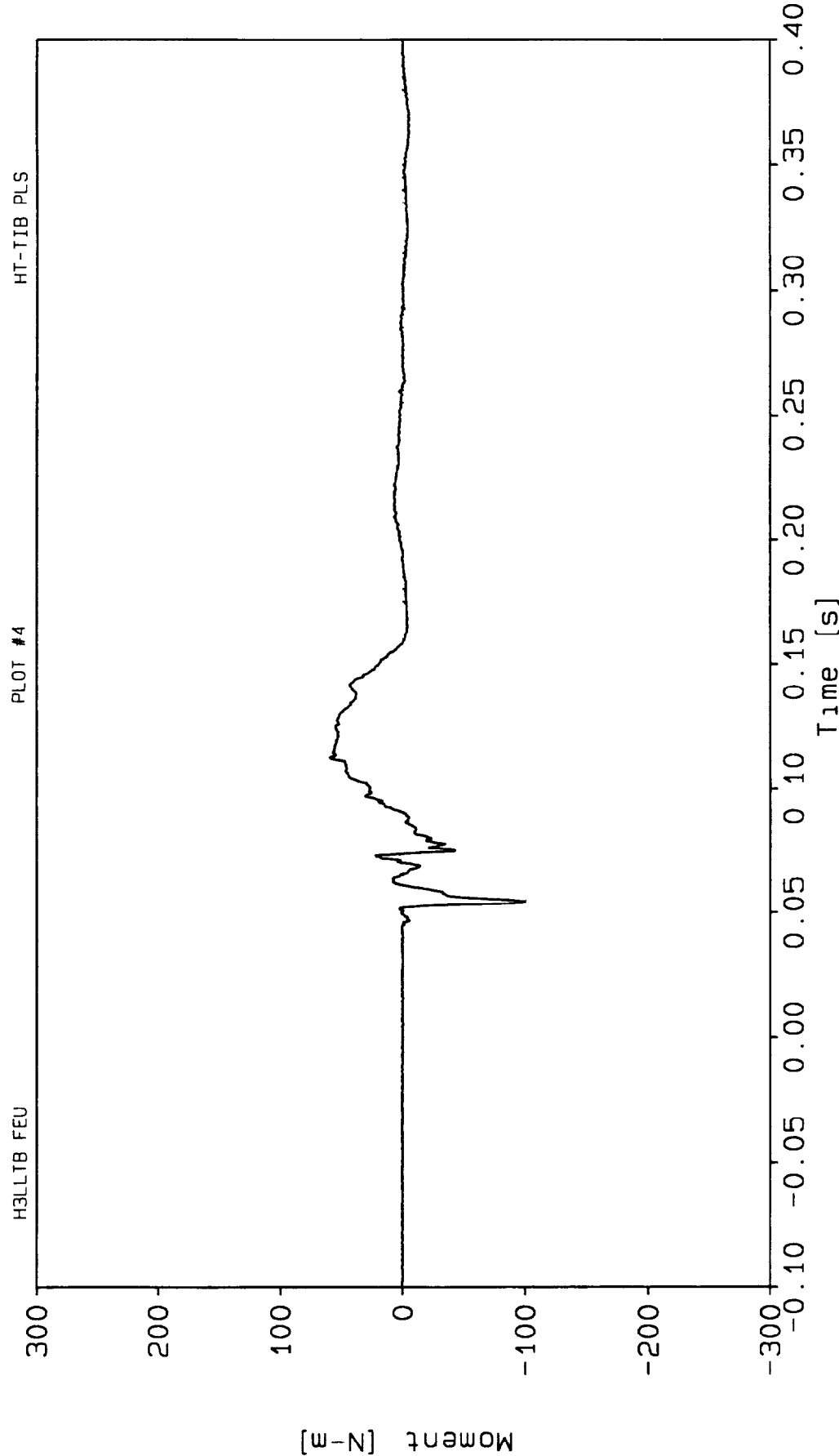
Exponent
Failure
Analysis
Associates

Left Lower Tibia Moment (Mx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

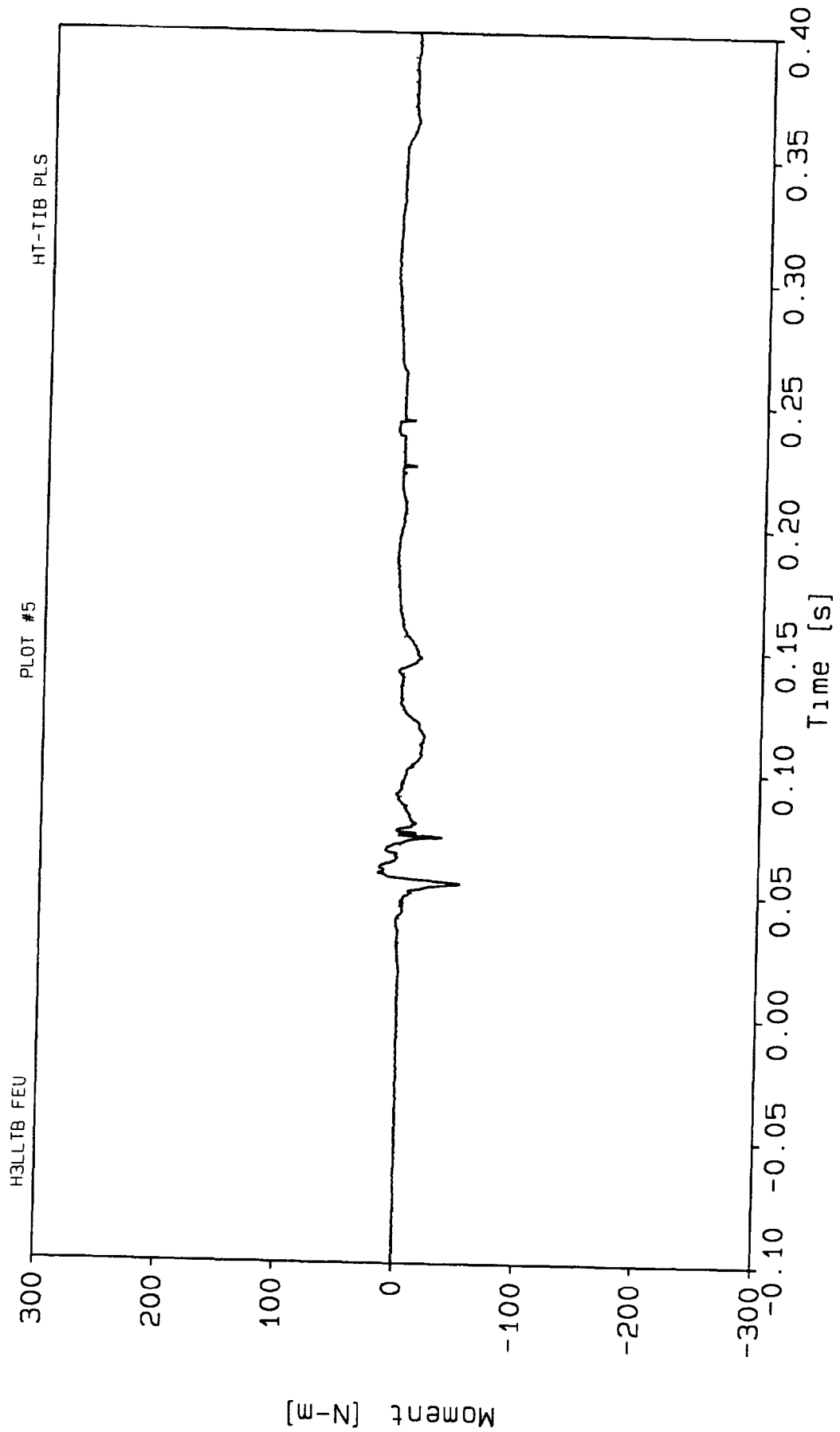
Exponent
Failure
Analysis
Associates

Left Lower Tibia Moment (My) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

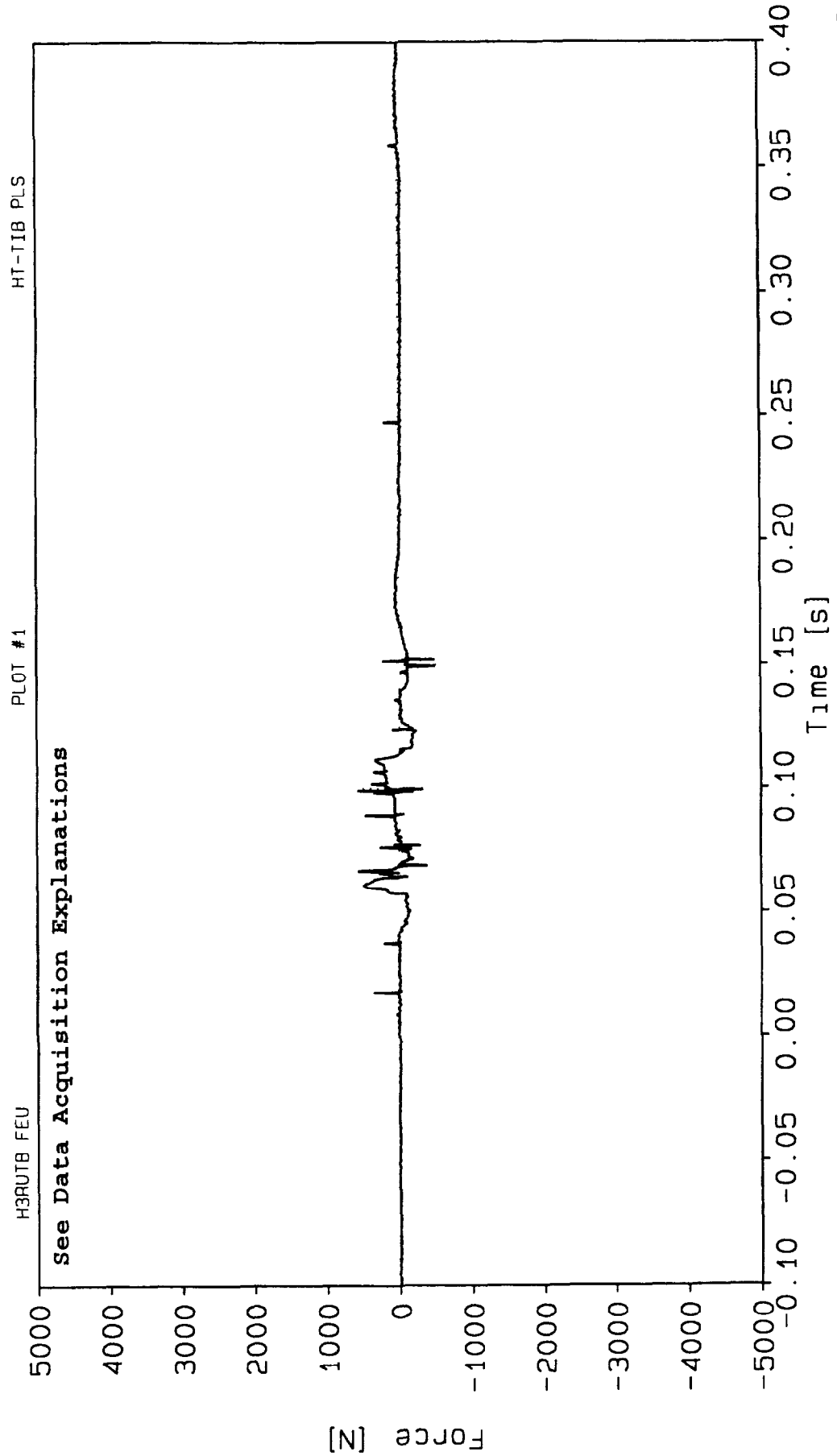
Exponent
Failure
Analysis
Associates

Right Upper Tibia Force (Fx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

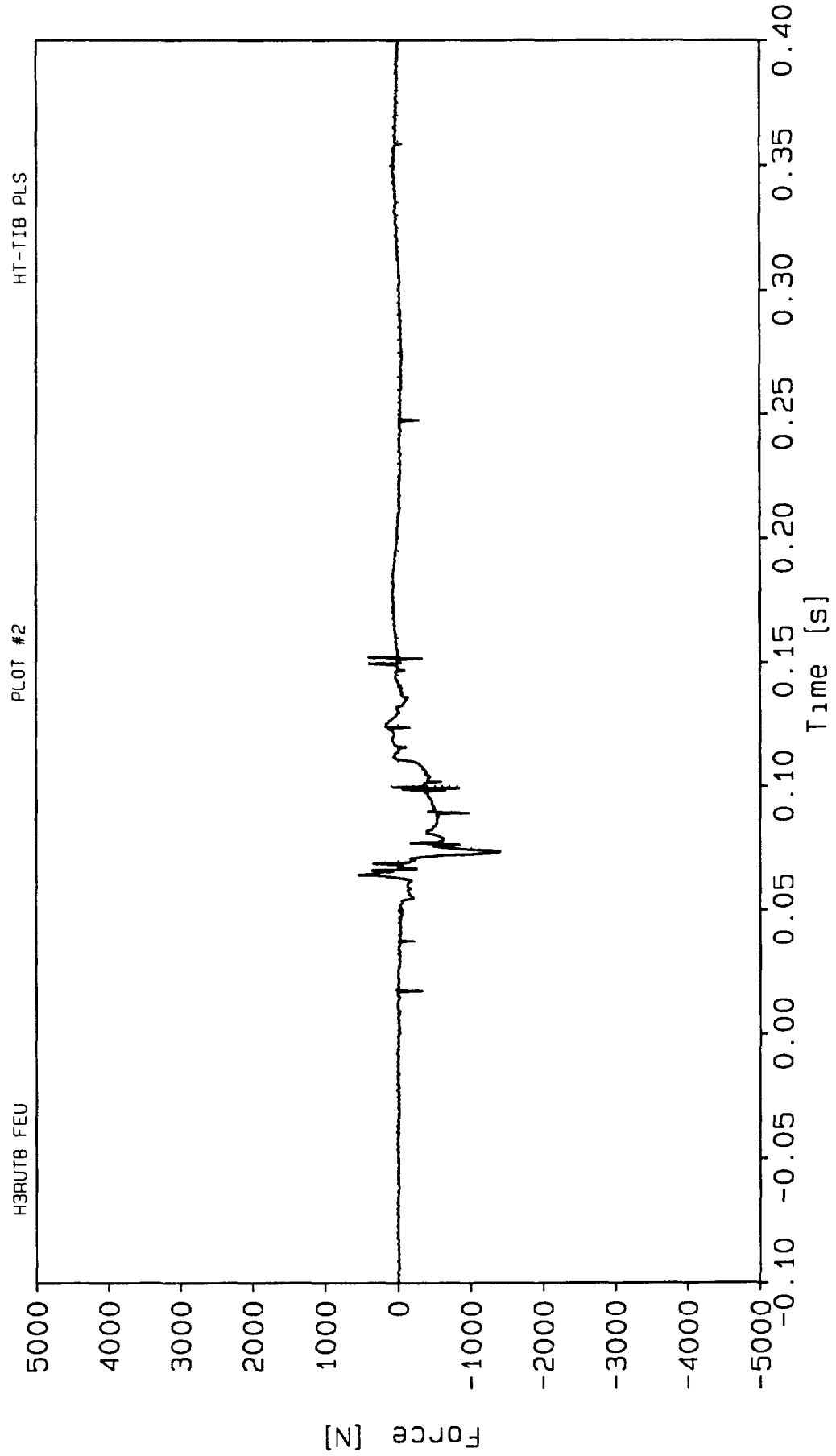


Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Right Upper Tibia Force (Fy) v Time

Passenger Dummy - HIII
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

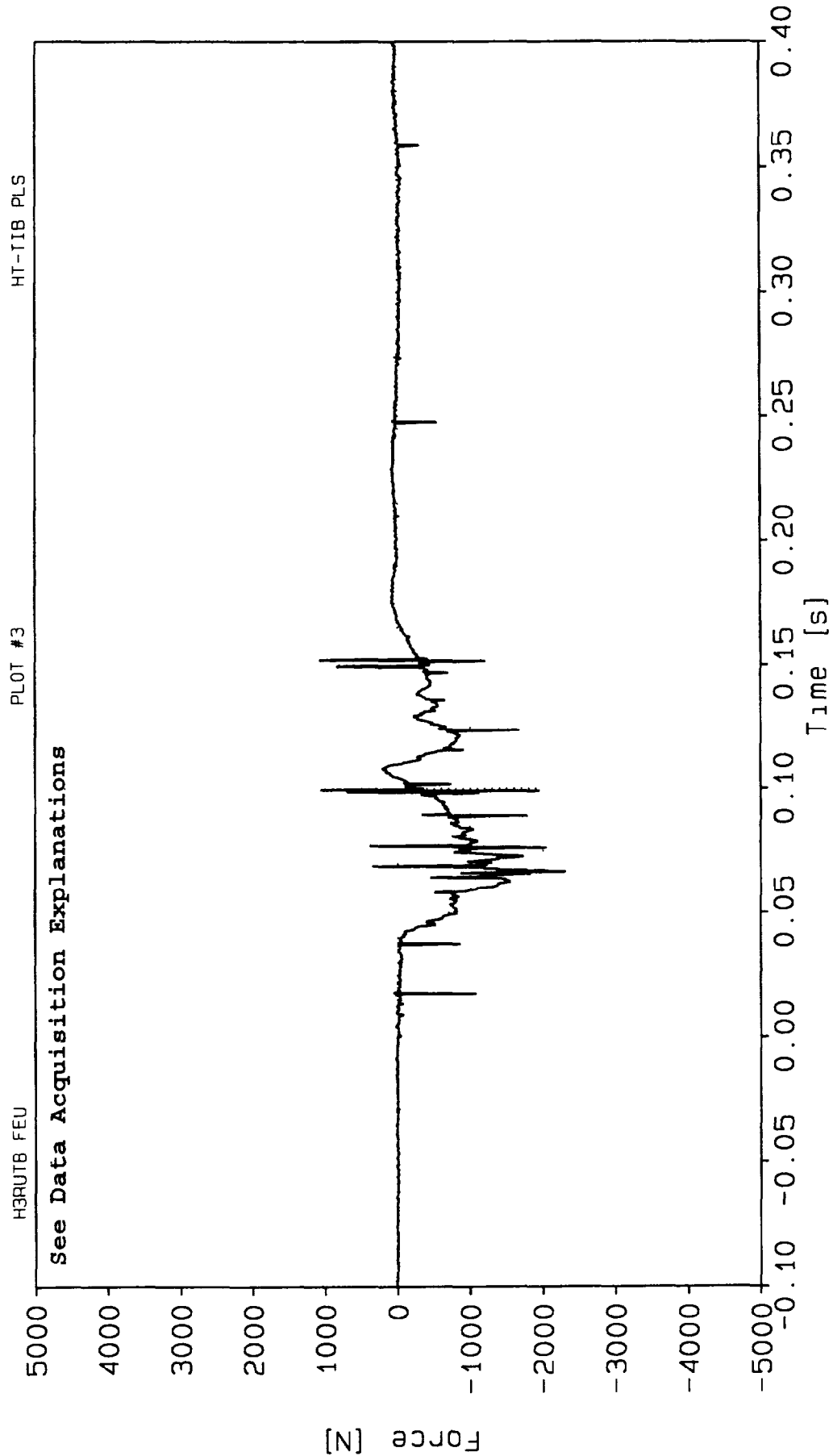
Exponent
Failure
Analysis
Associates

Right Upper Tibia Force (Fz) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH0660B

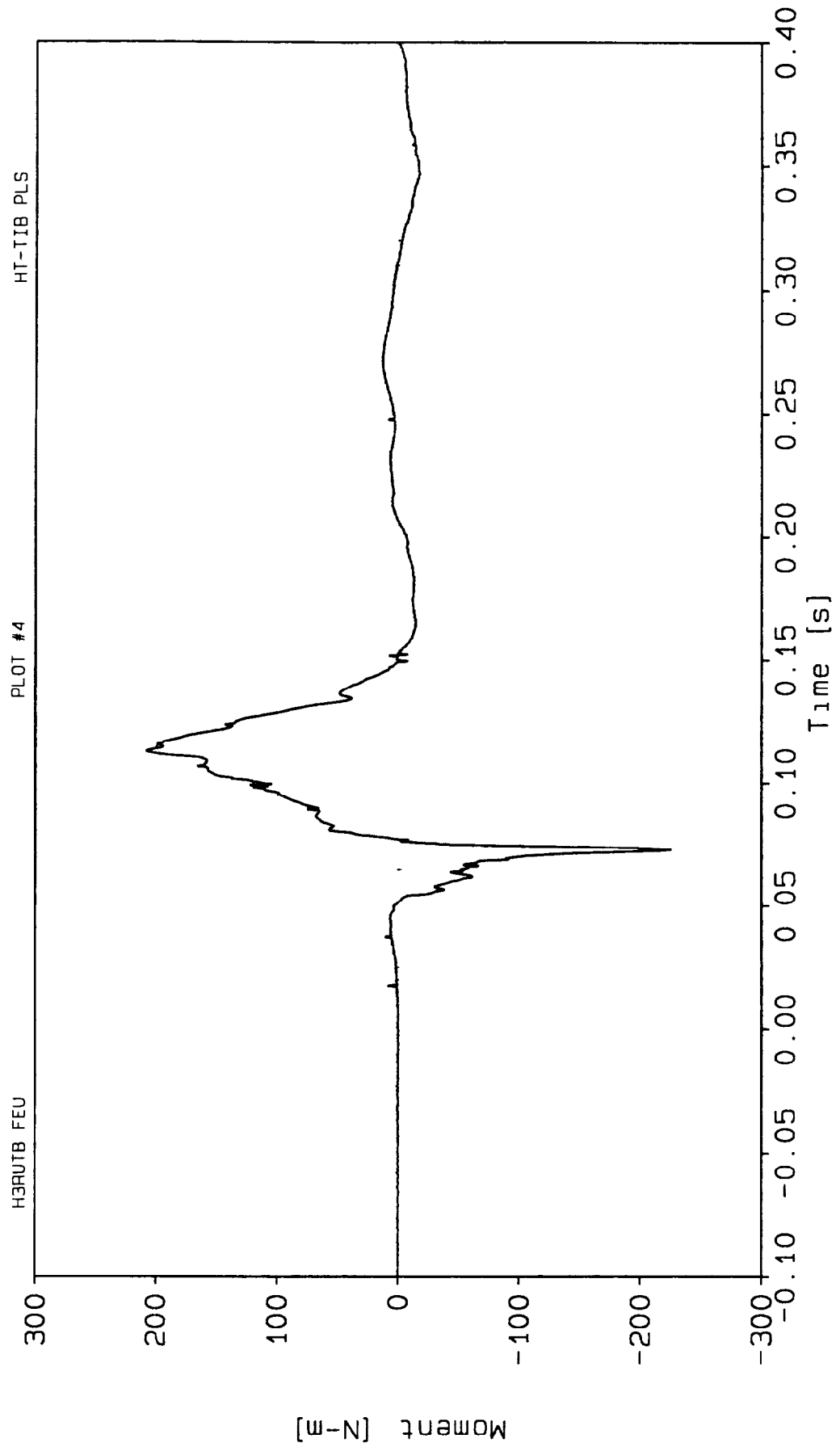
Exponent
Failure
Analysis
Associates

Right Upper Tibia Moment (Mx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

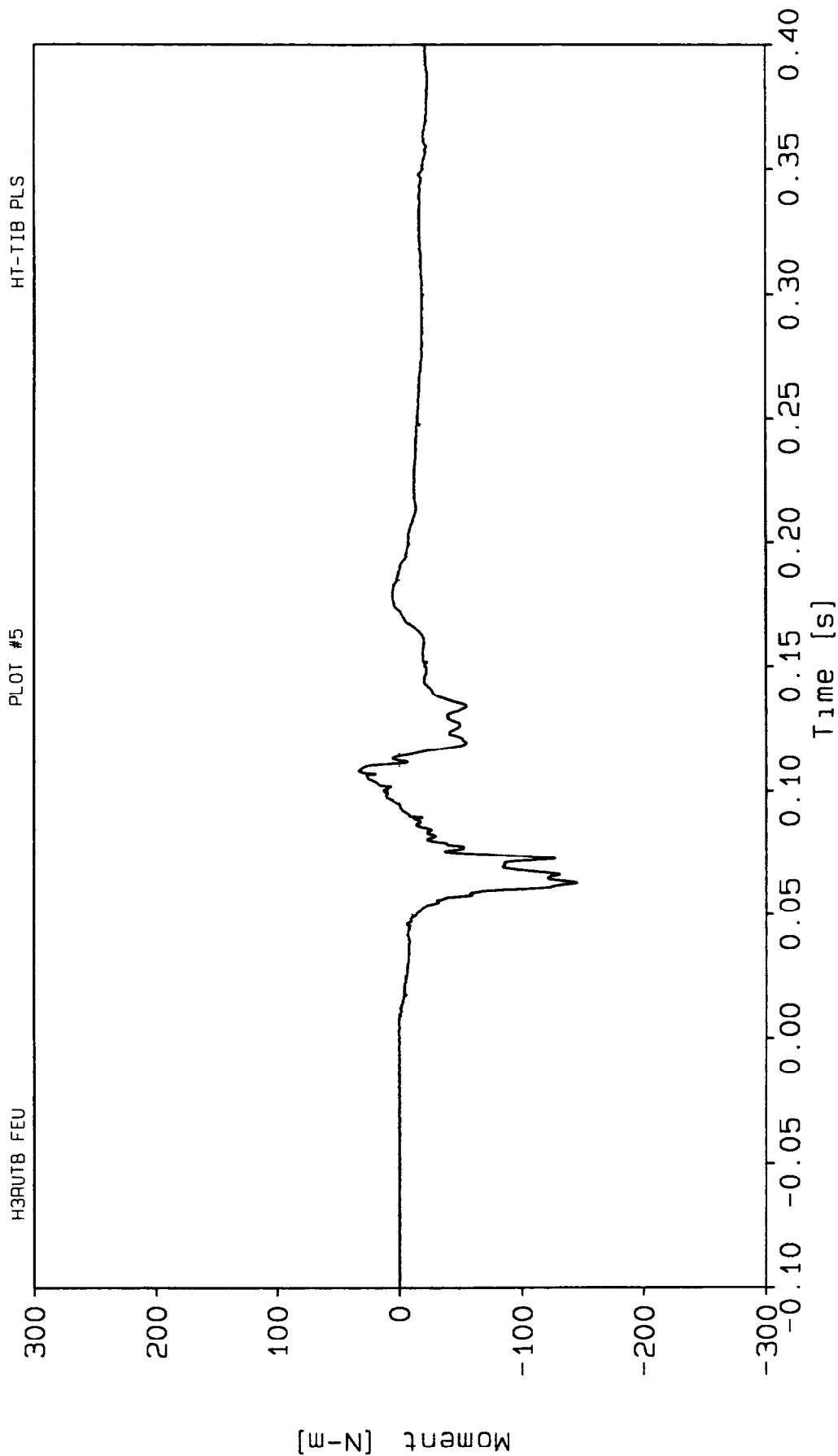
Exponent
Failure
Analysis
Associates

Right Upper Tibia Moment (My) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06608

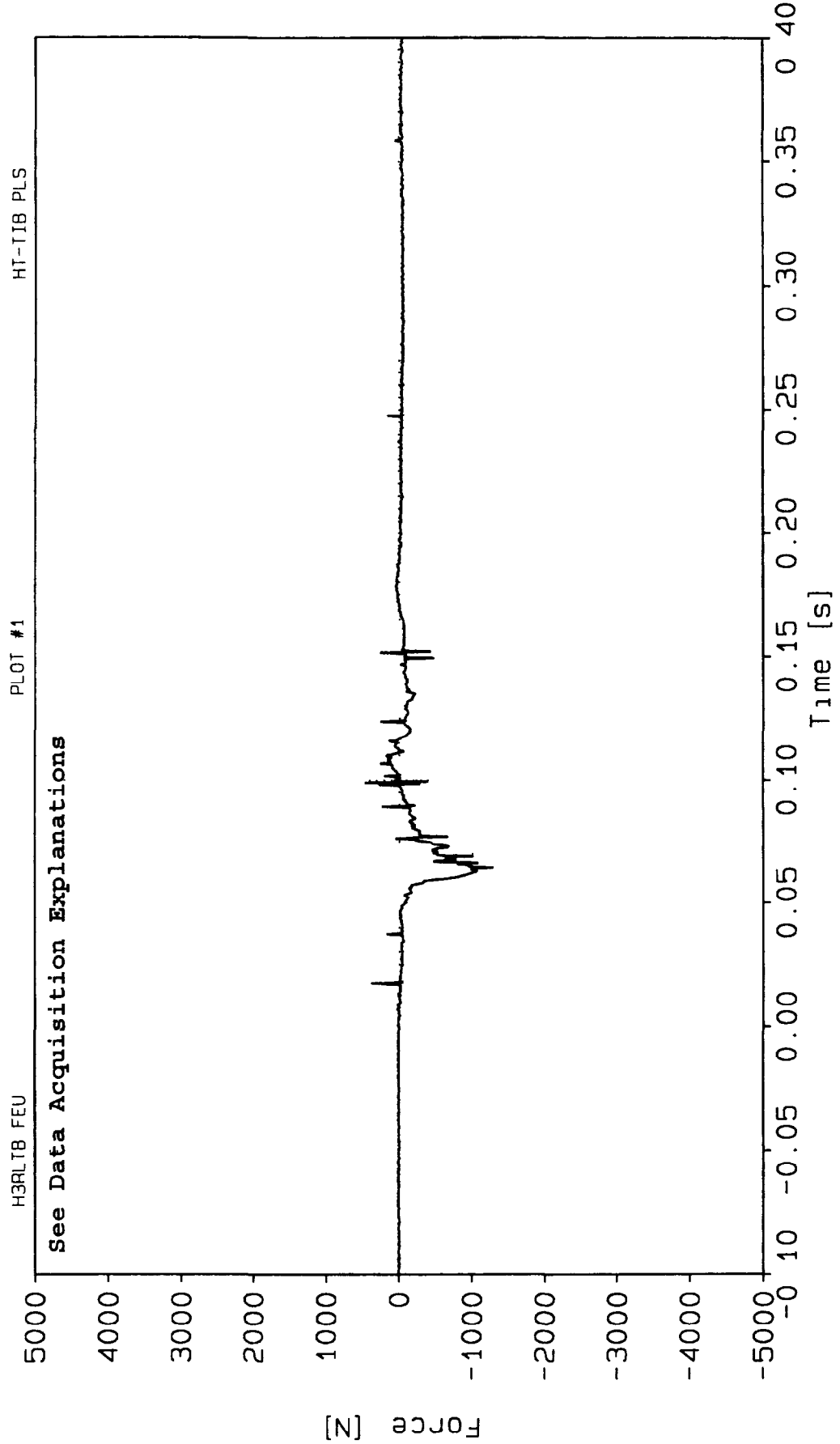
Exponent
Failure
Analysis
Associates

Right Lower Tibia Force (Fx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06608

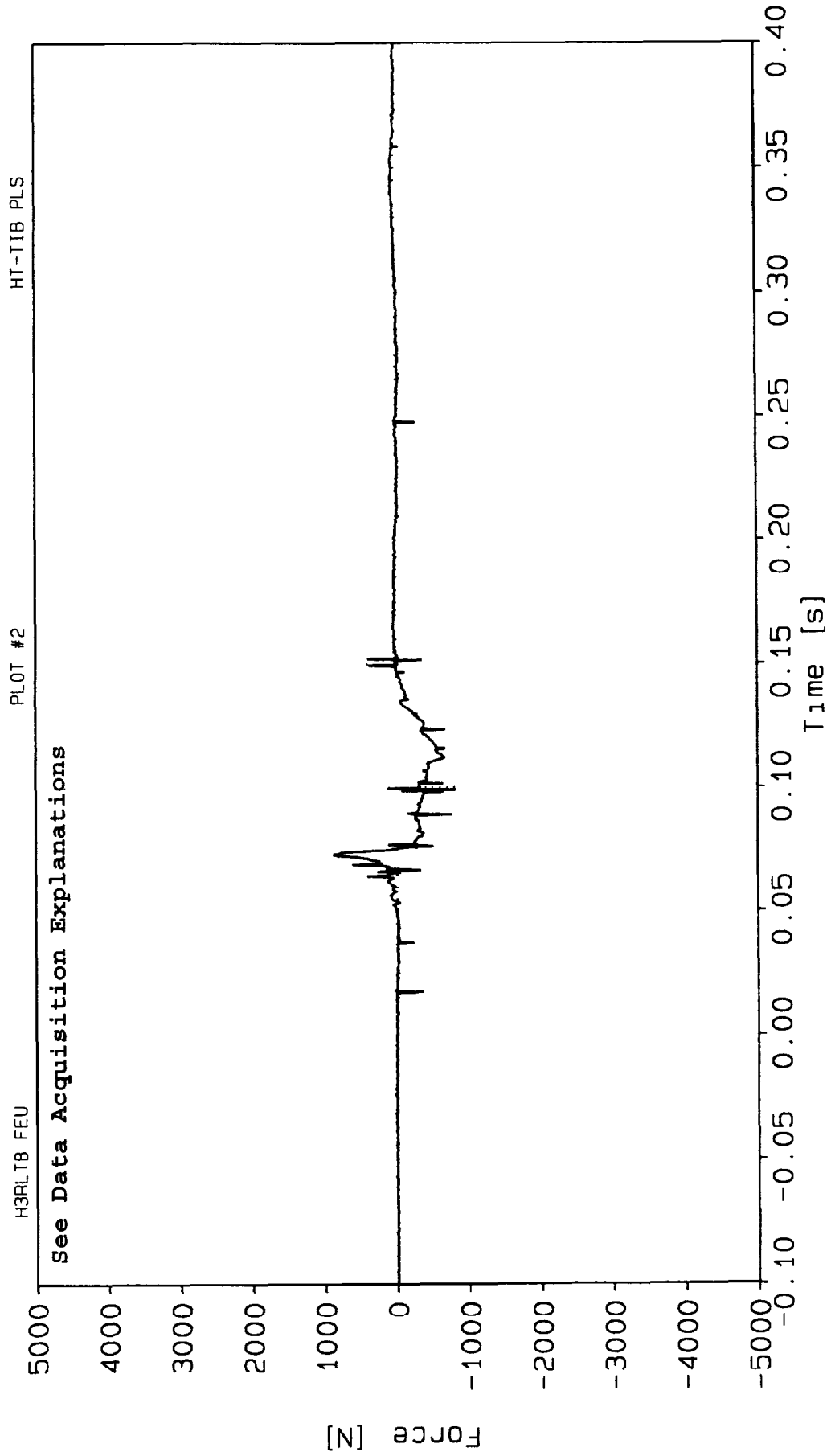
Exponent
Failure
Analysis
Associates

Right Lower Tibia Force (Fy) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

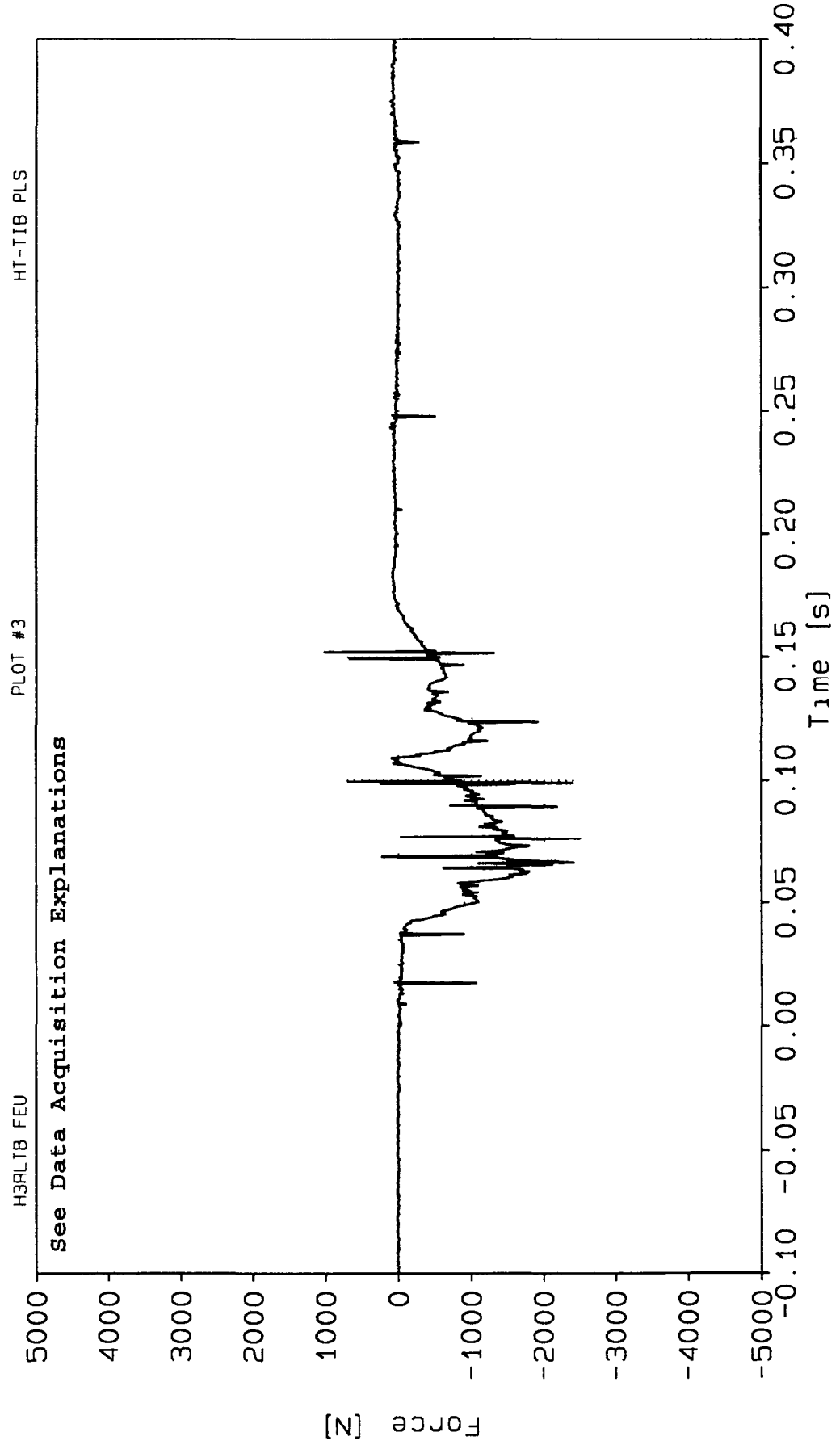


Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

Right Lower Tibia Force (Fz) v Time

Passenger Dummy - HIII
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 600
Volpe Crash Testing
PH06508

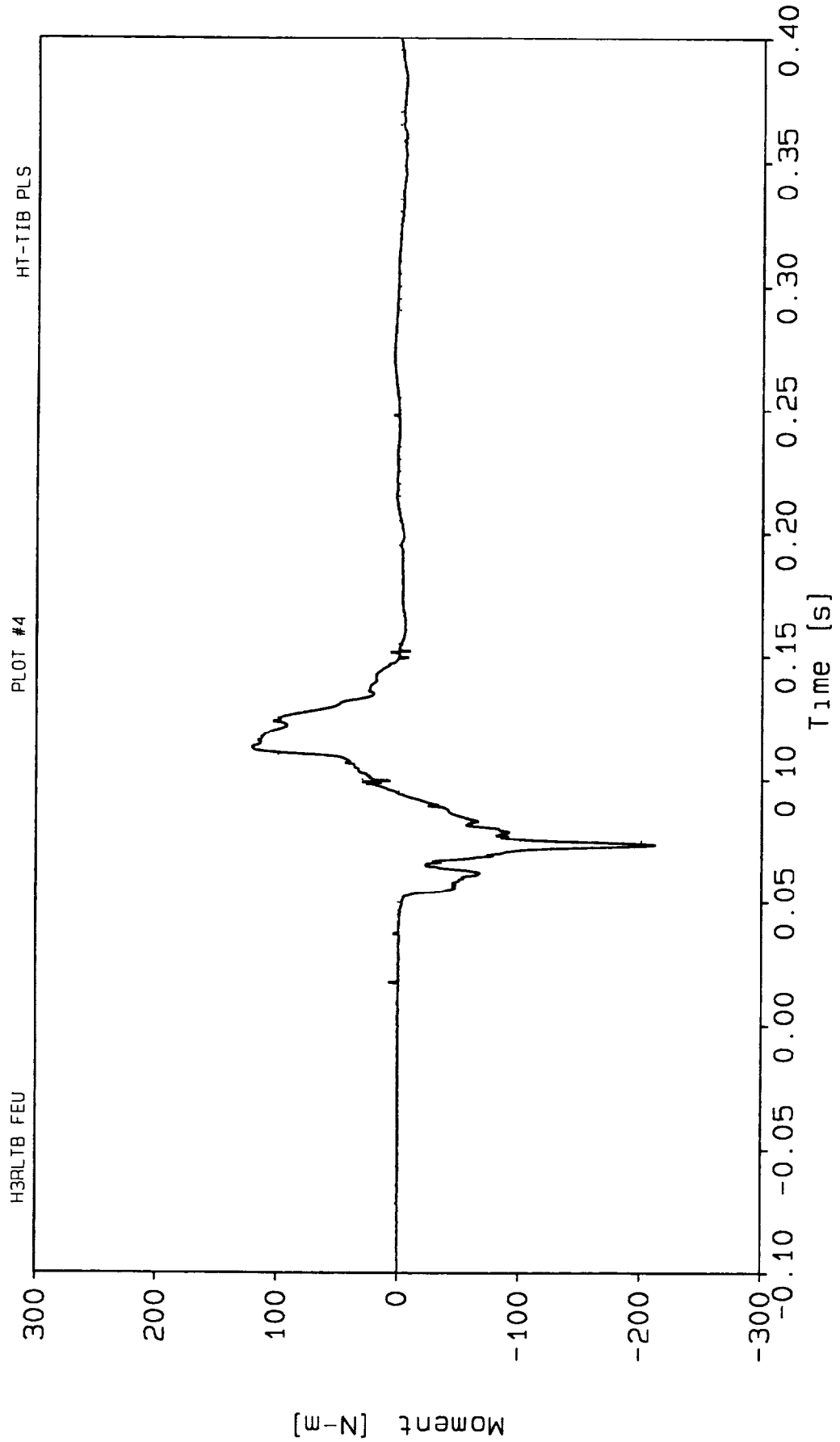
Exponent
Failure
Analysis
Associates

Right Lower Tibia Moment (Mx) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 500
Volpe Crash Testing
PH06608

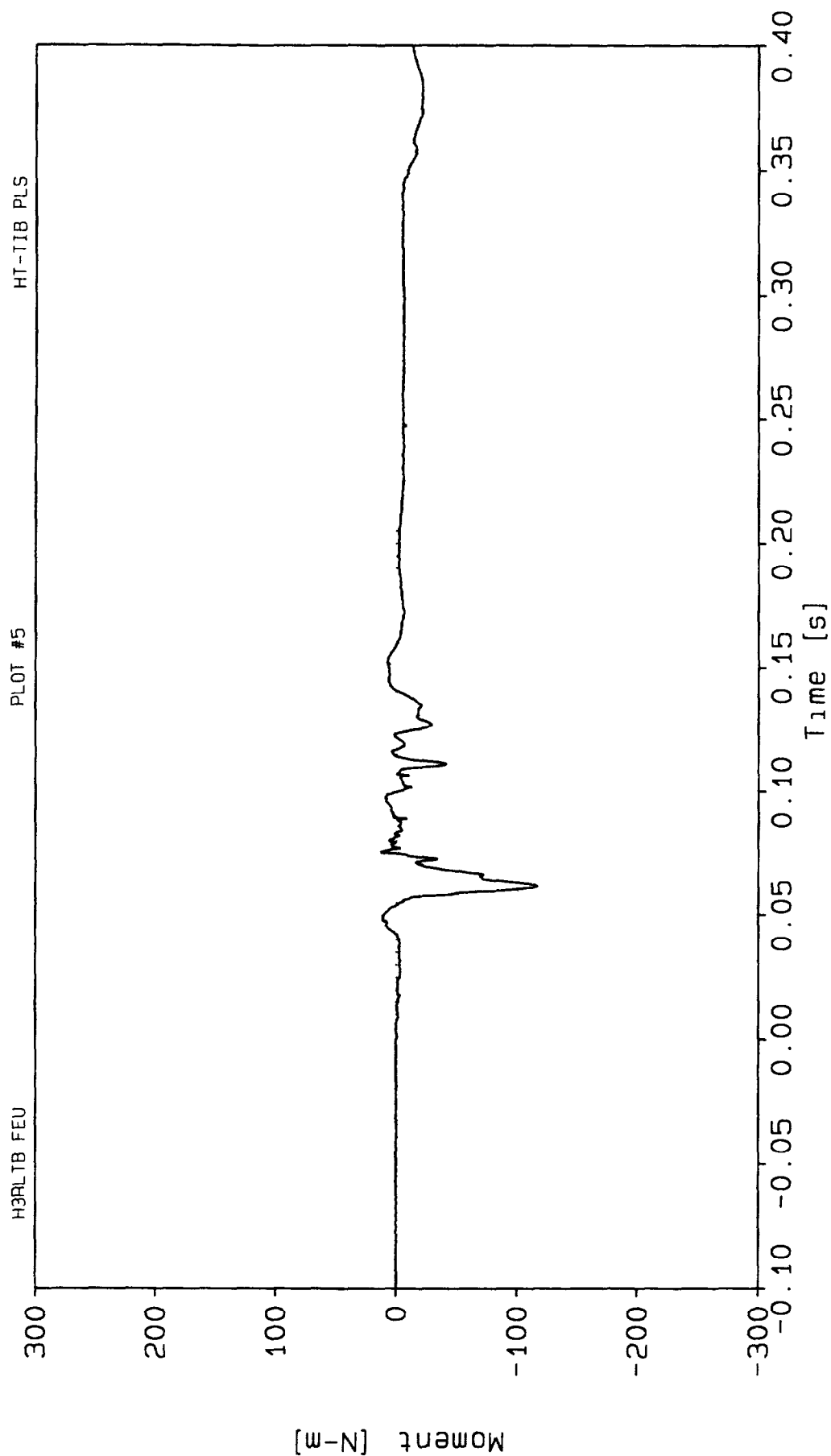
Exponent
Failure
Analysis
Associates

Right Lower Tibia Moment (My) v Time

Passenger Dummy - HIII

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

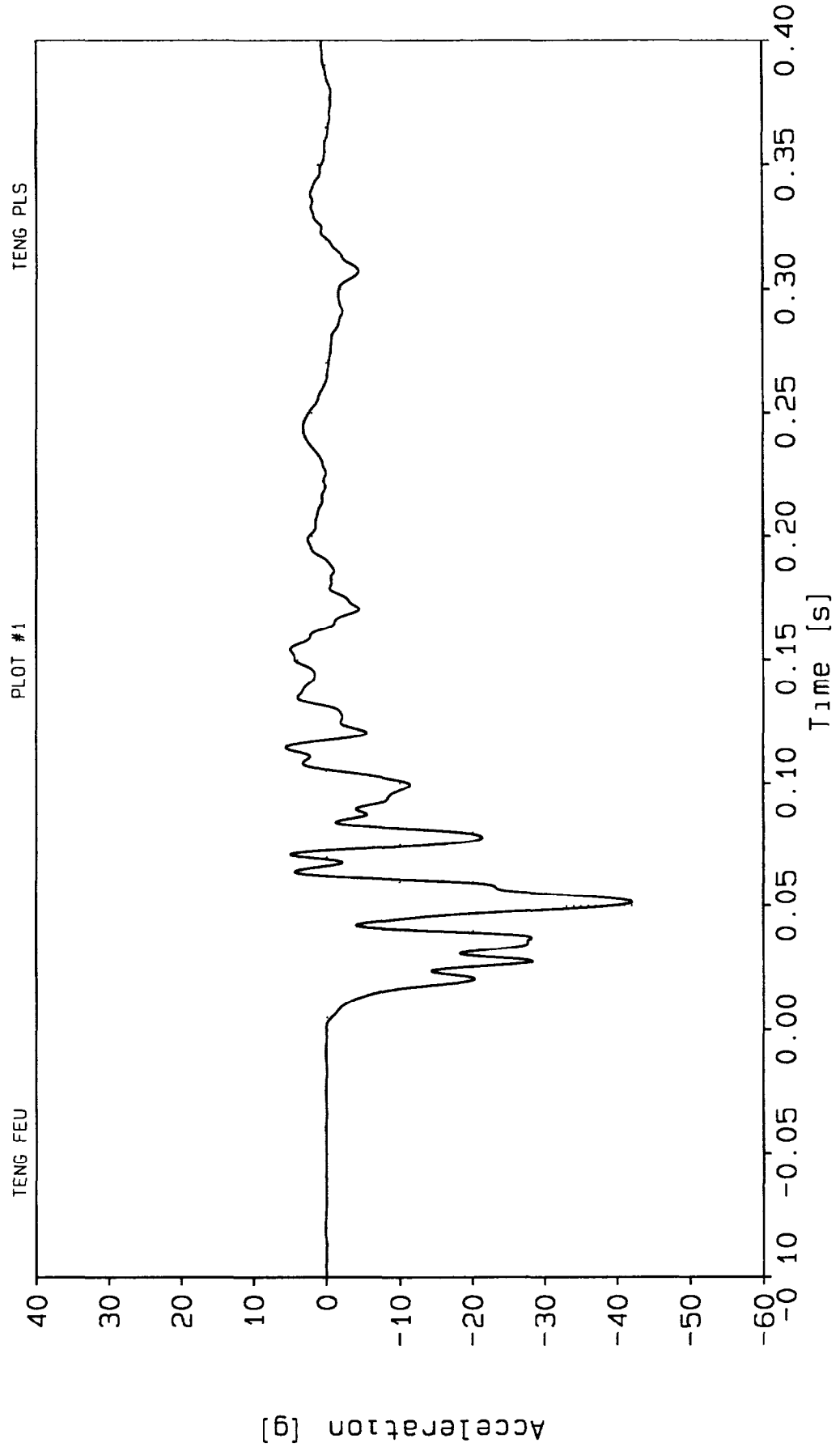


Exponent
Failure
Analysis
Associates

Filter Class 600
Volpe Crash Testing
PH06608

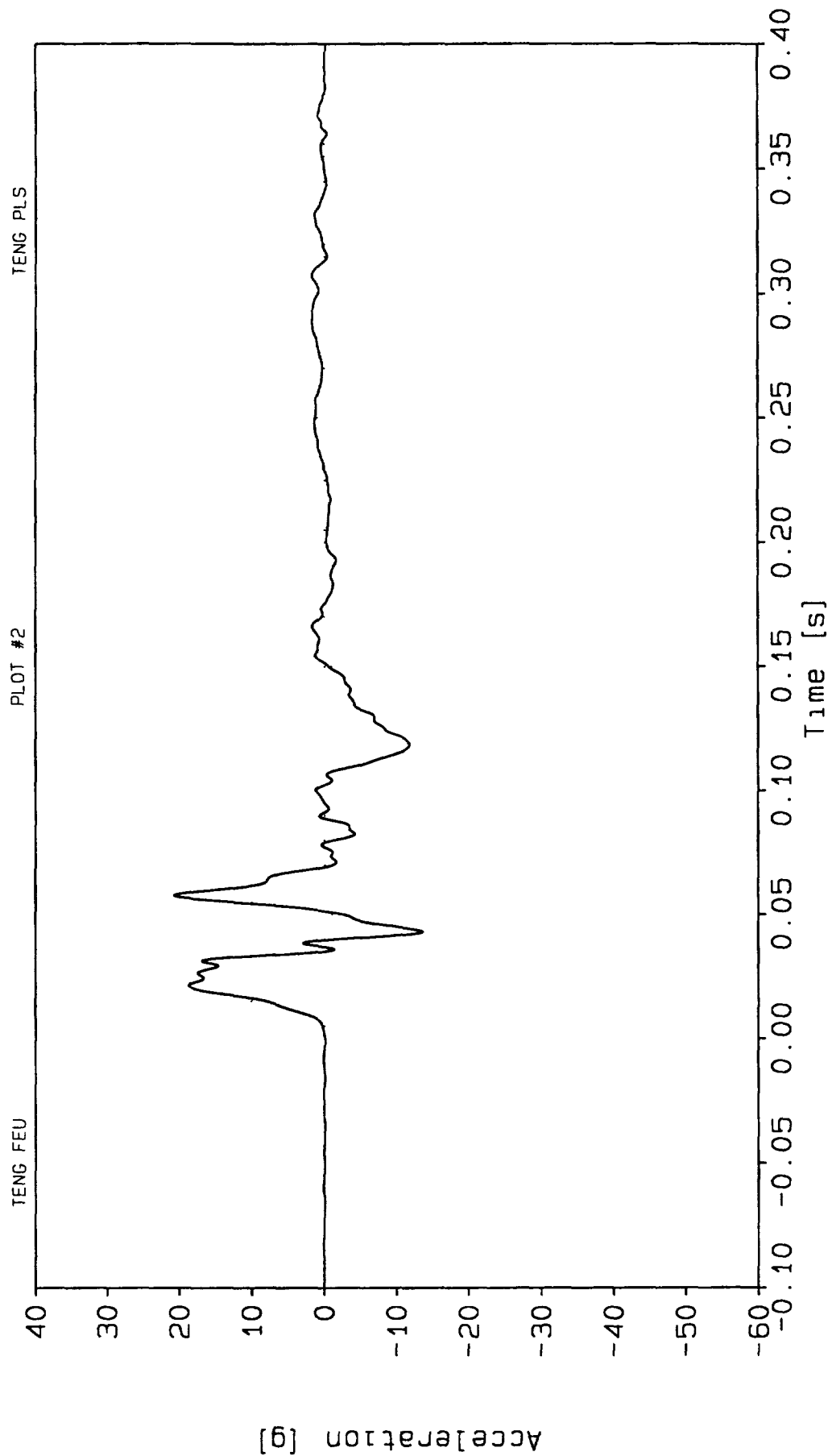
Acceleration (Ax) v Time

Top of Engine
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Acceleration (Ay) v Time

Top of Engine
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Voice Crash Testing
PH05608

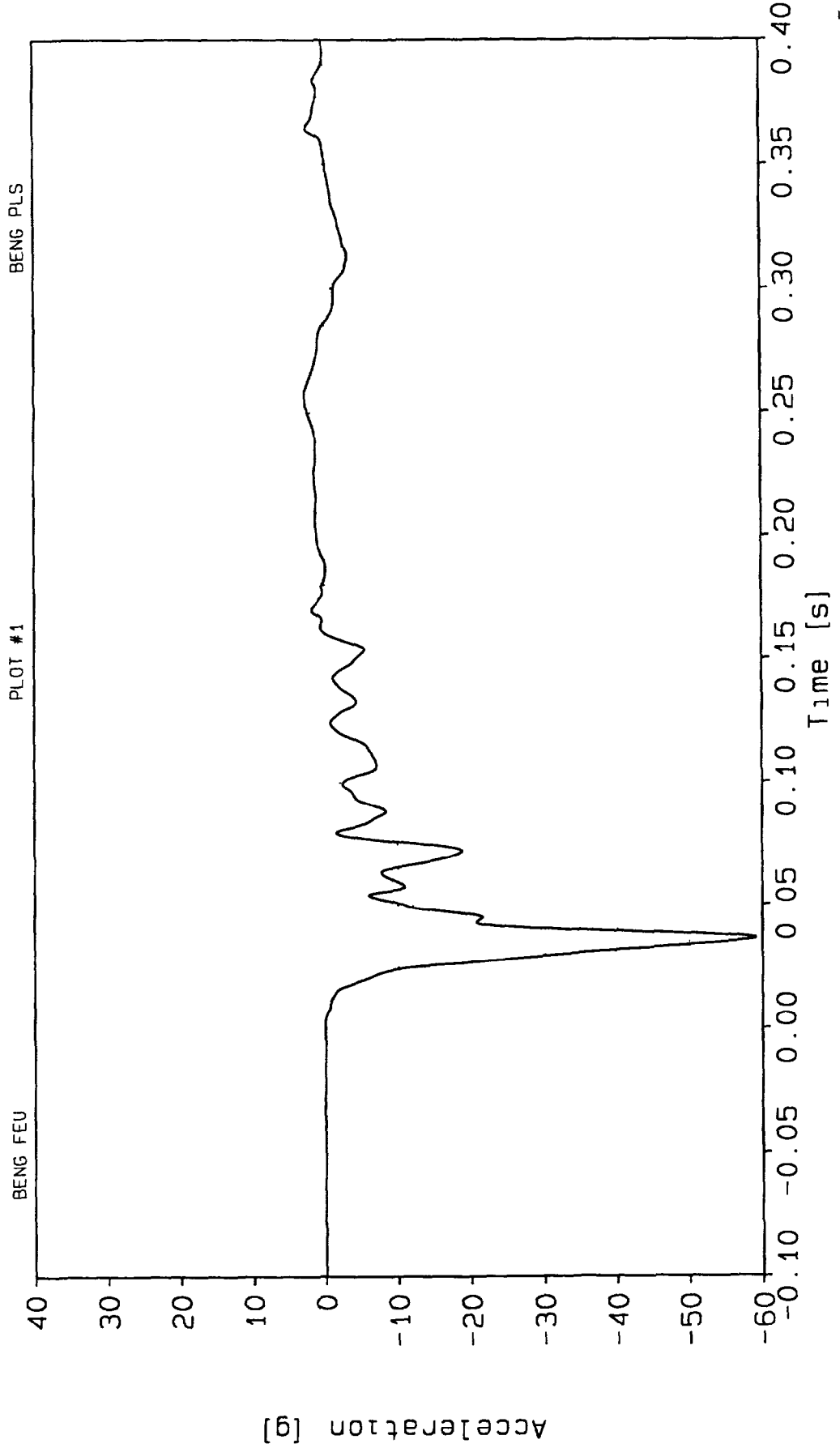
Exponent
Failure
Analysis
Associates

Acceleration (Ax) v Time

Bottom of Engine

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

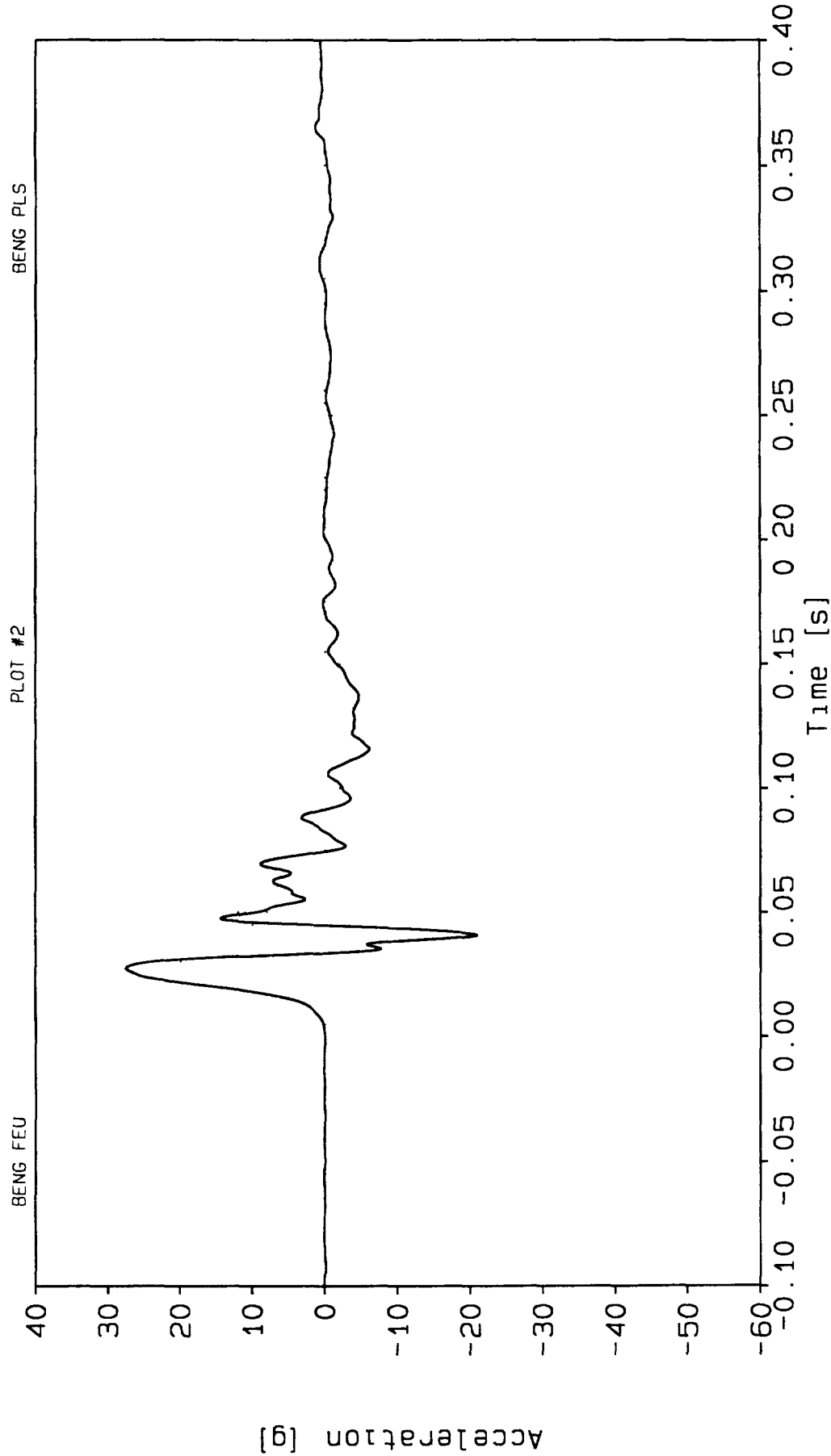
Filter Class 60
Volpe Crash Testing
PH06608

Acceleration (Ay) v Time

Bottom of Engine

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

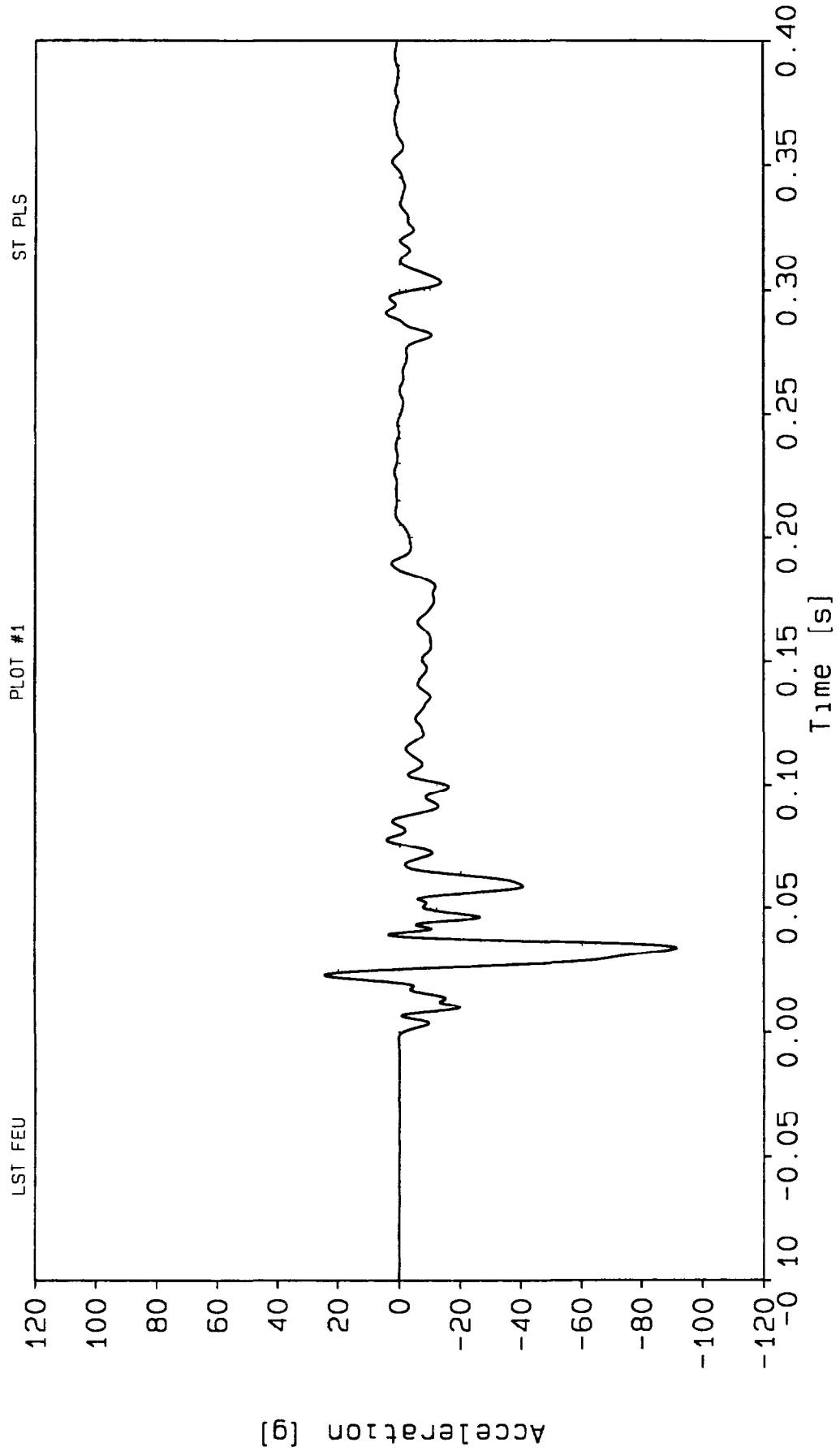
Exponent
Failure
Analysis
Associates

Acceleration (Ax) v Time

Left Shock Tower

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH05608

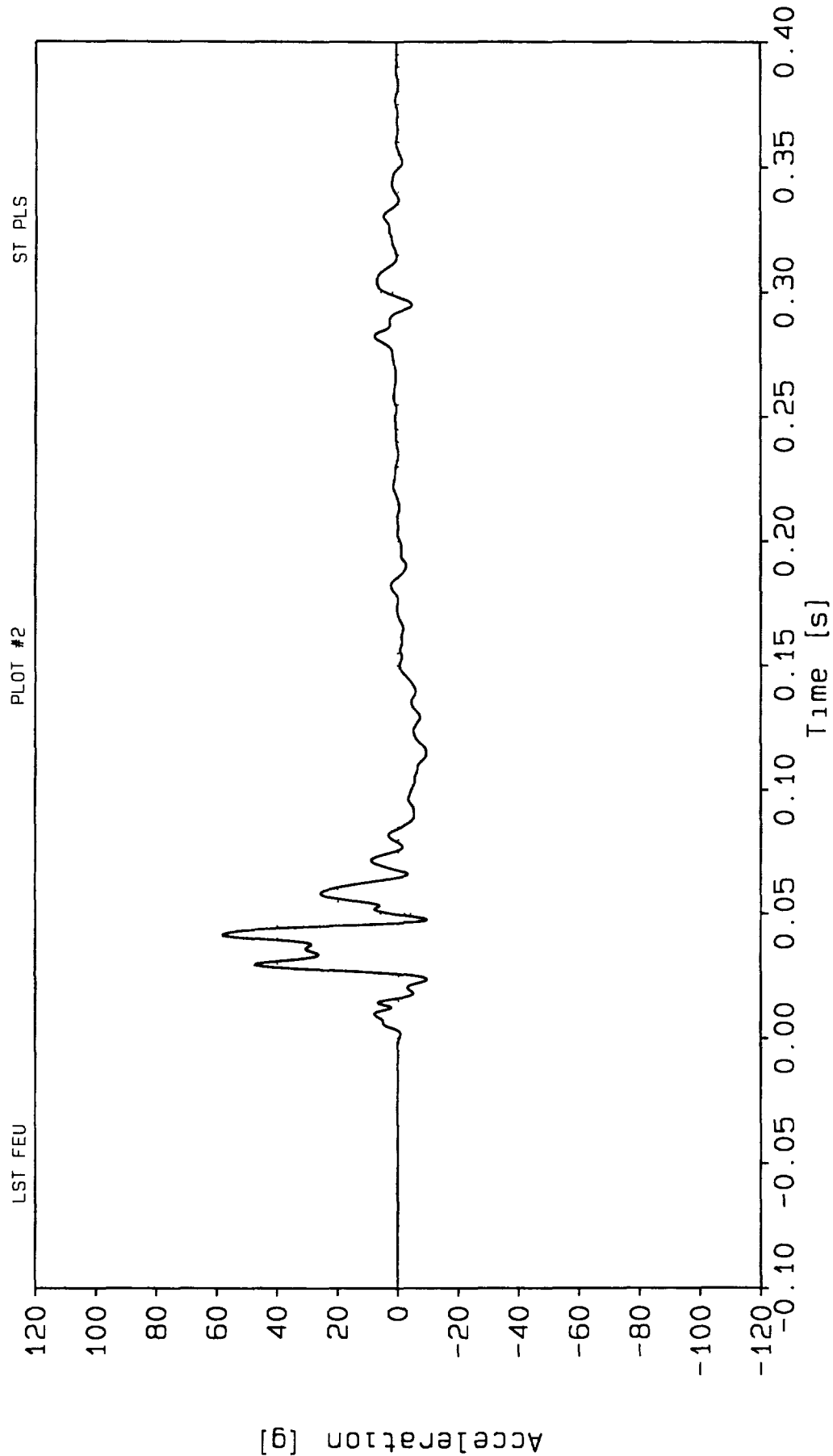
Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Left Shock Tower

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

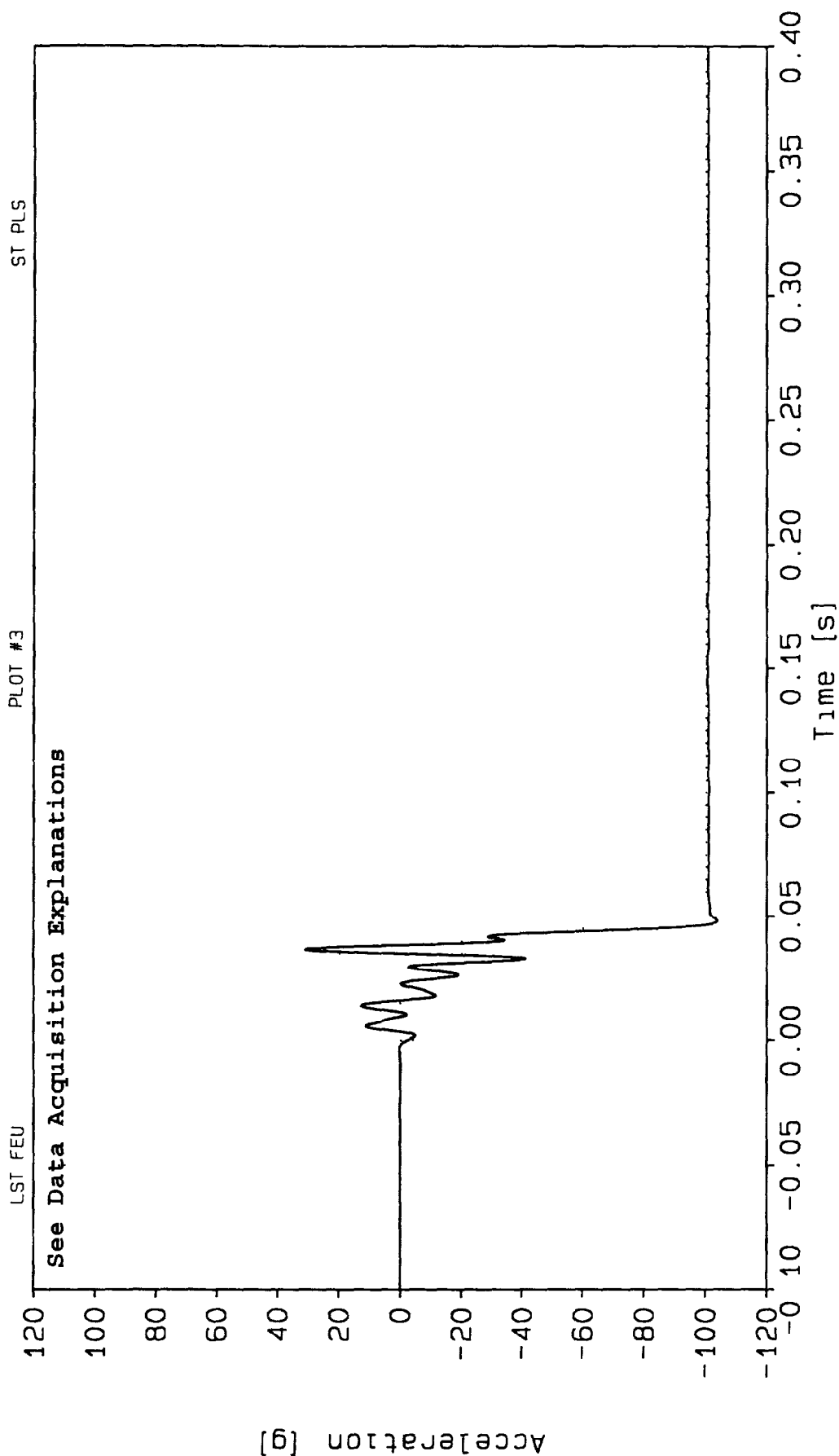
Filter Class 60
Volpe Crash Testing
PH06608

Acceleration (Az) v Time

Left Shock Tower

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

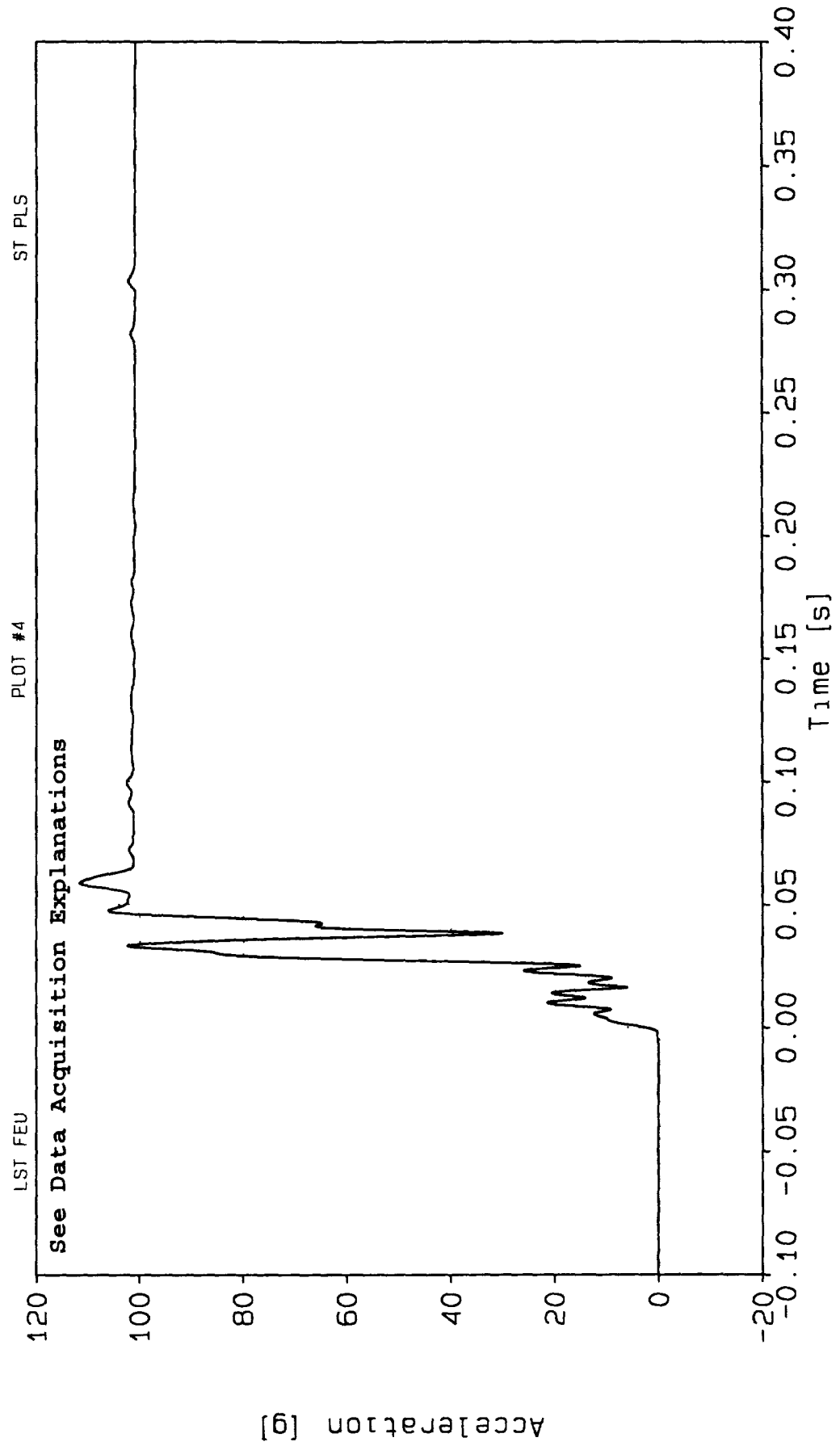
Filter Class 60
Volpe Crash Testing
PH06508

Resultant Acceleration (Ar) v Time

Left Shock Tower

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



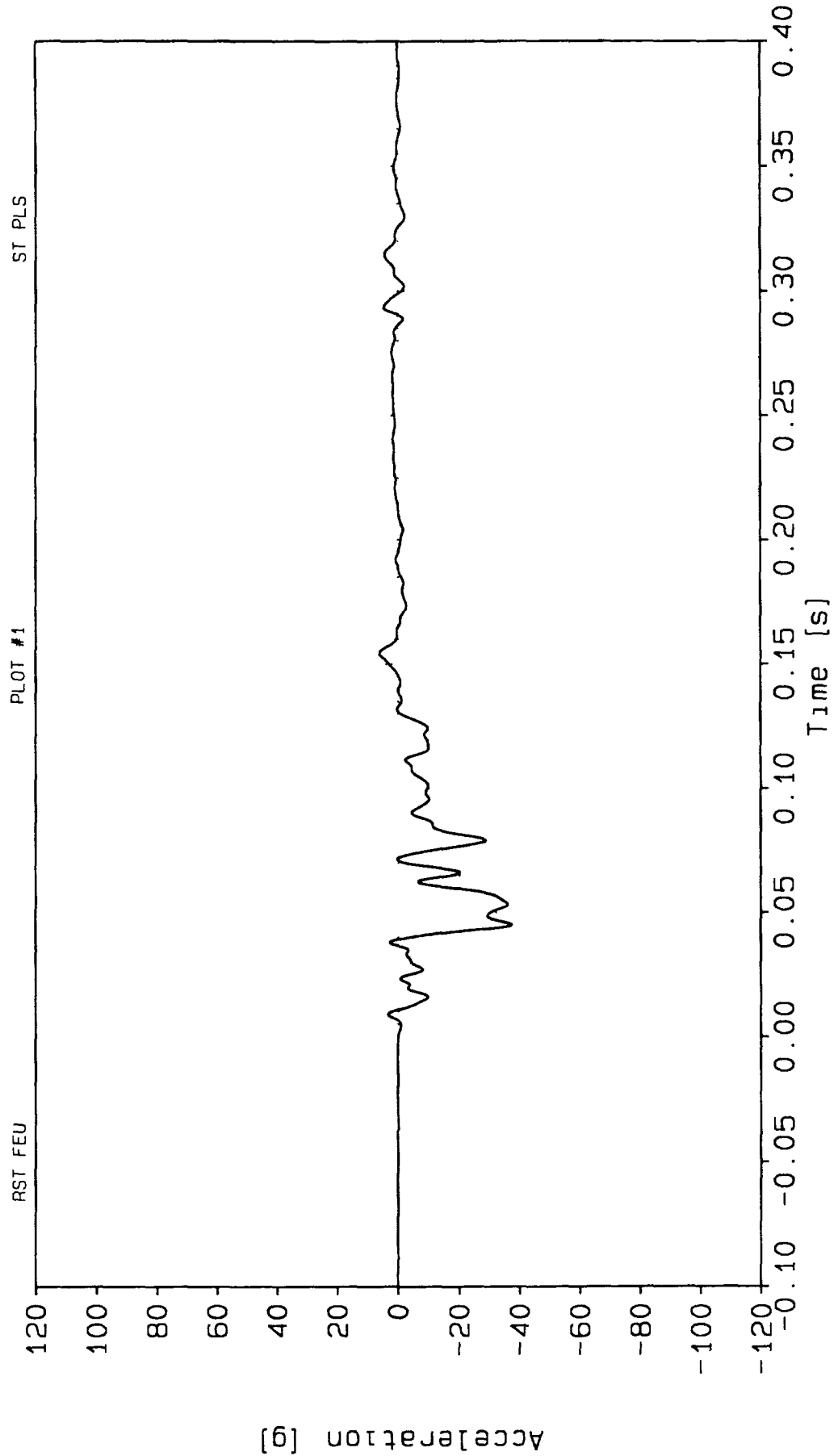
Filter Class 60
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Acceleration (Ax) v Time

Right Shock Tower
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

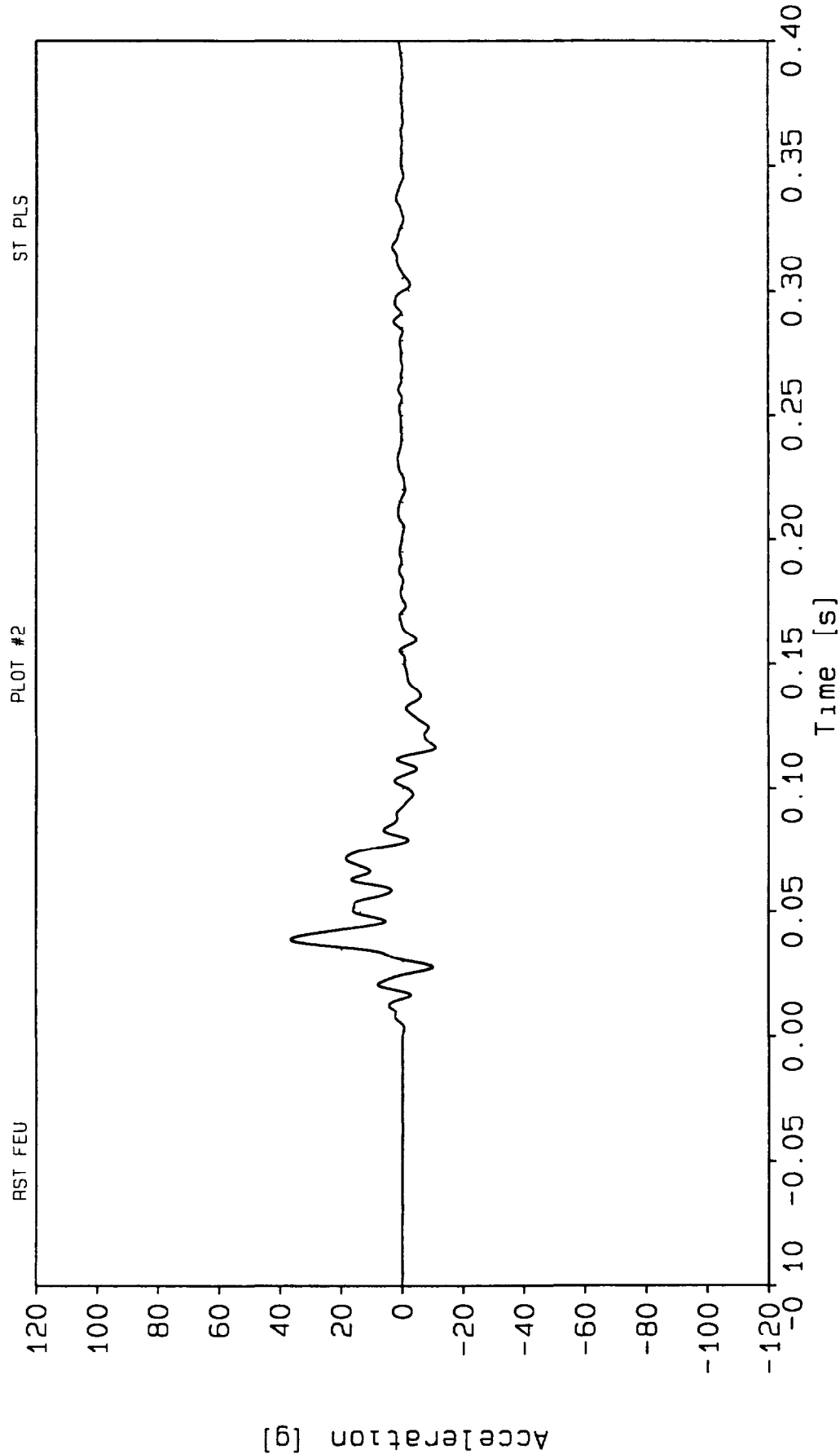
Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Right Shock Tower

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

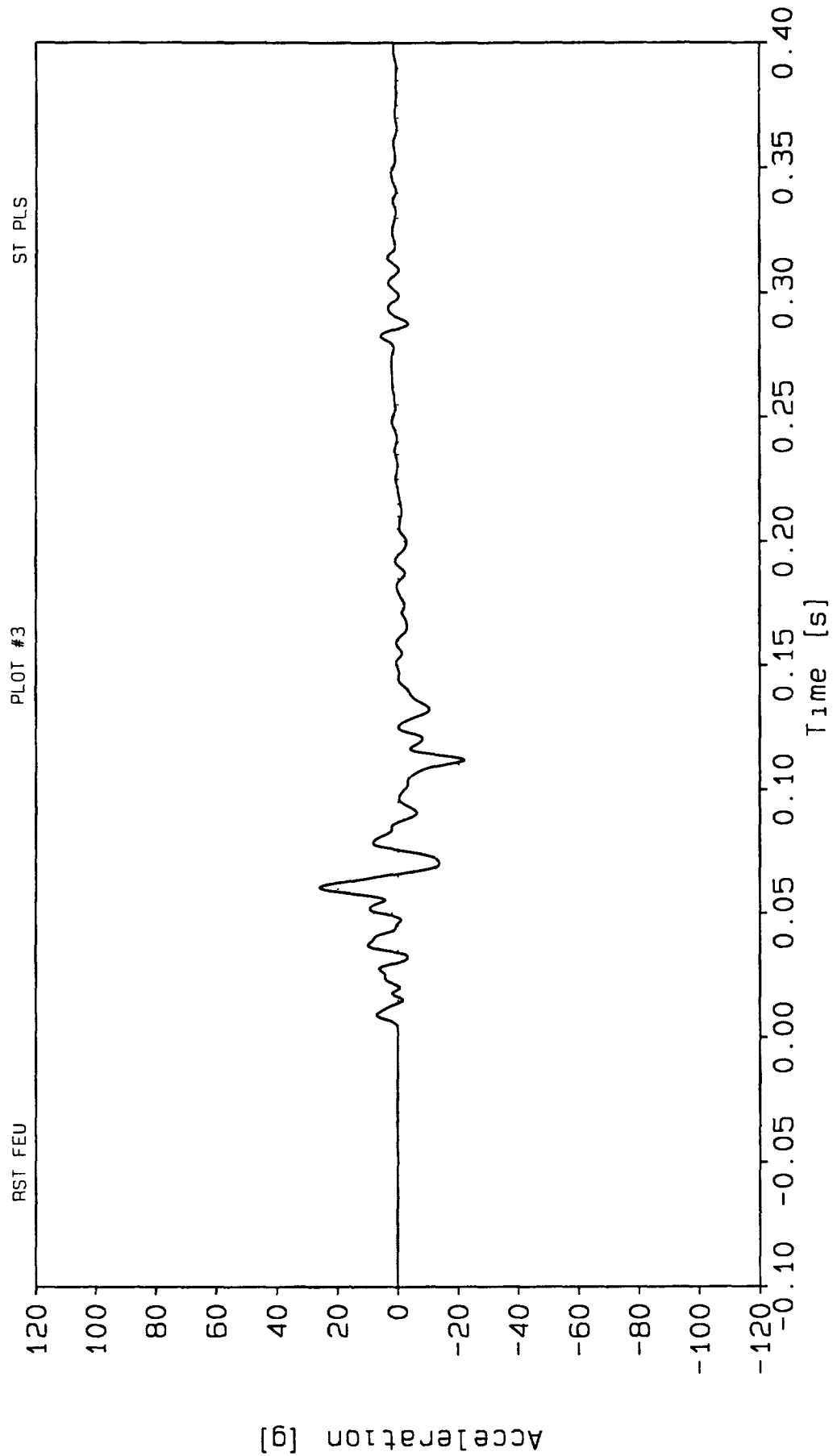
Filter Class 60
Volpe Crash Testing
PH06608

Acceleration (Az) v Time

Right Shock Tower

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



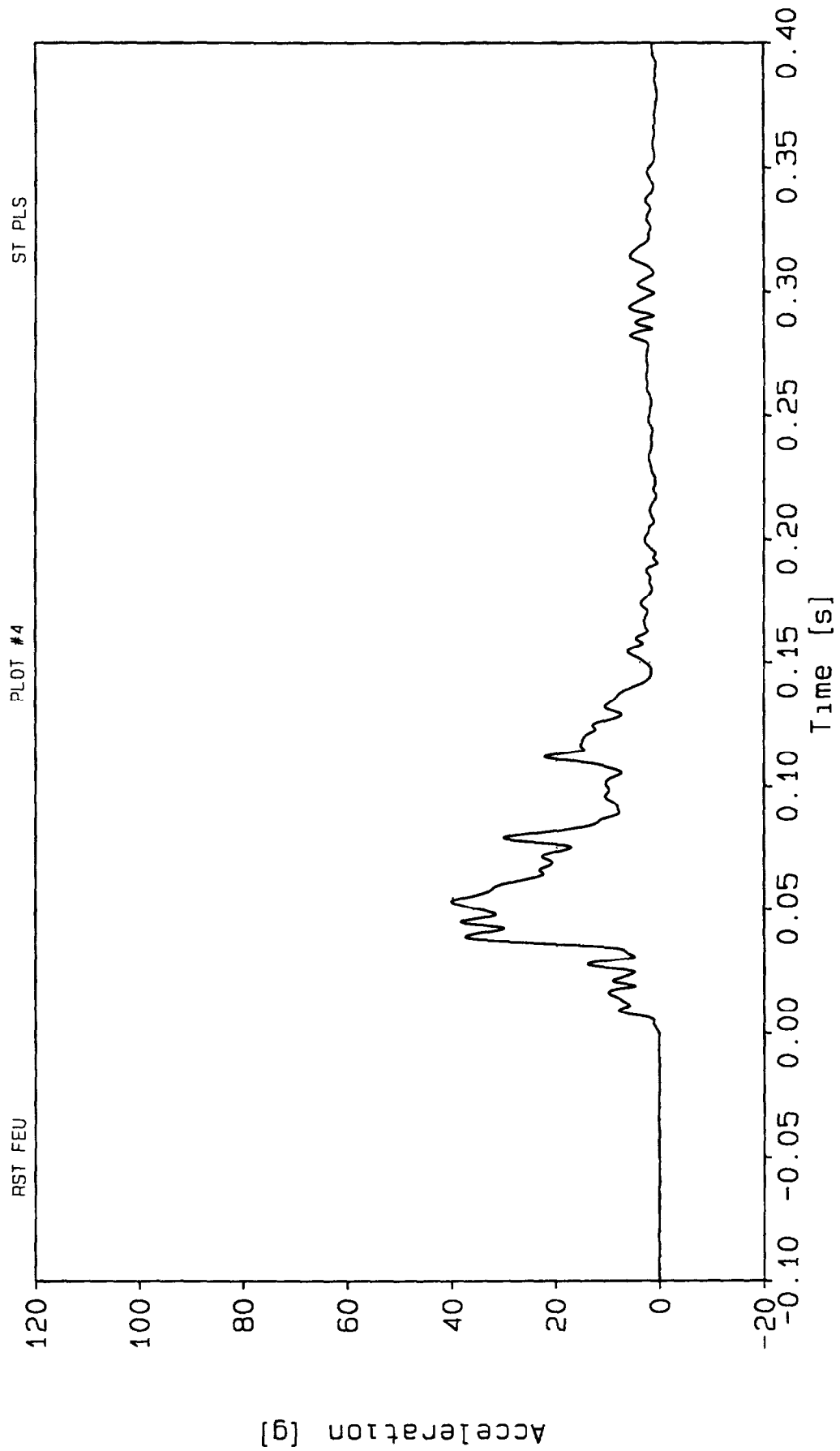
Filter Class 60
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Resultant Acceleration (Ar) v Time

Right Shock Tower
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

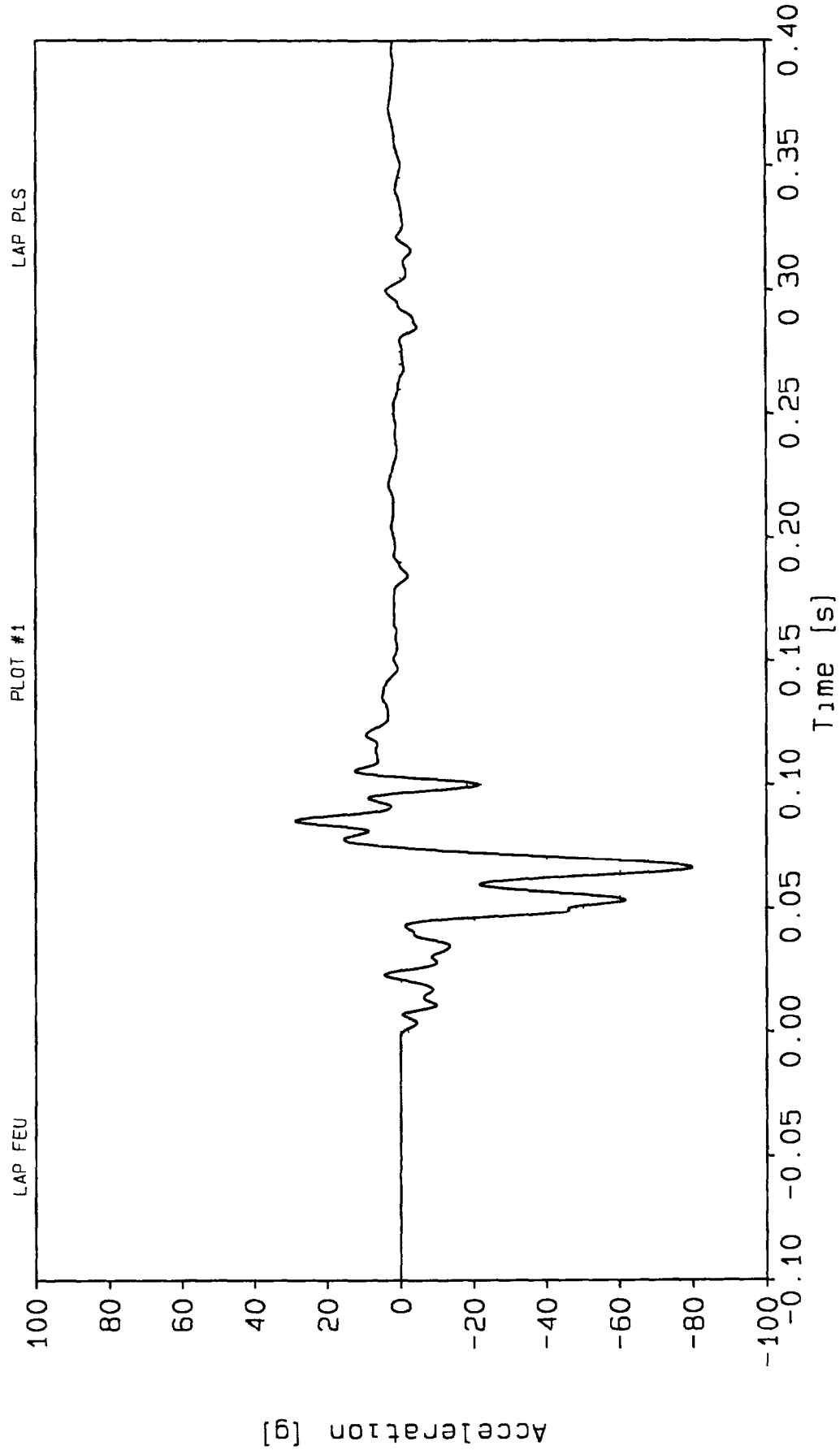
Filter Class 60
Volpe Crash Testing
PH06608

Acceleration (Ax) v Time

Left A-Pillar Top Hinge

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

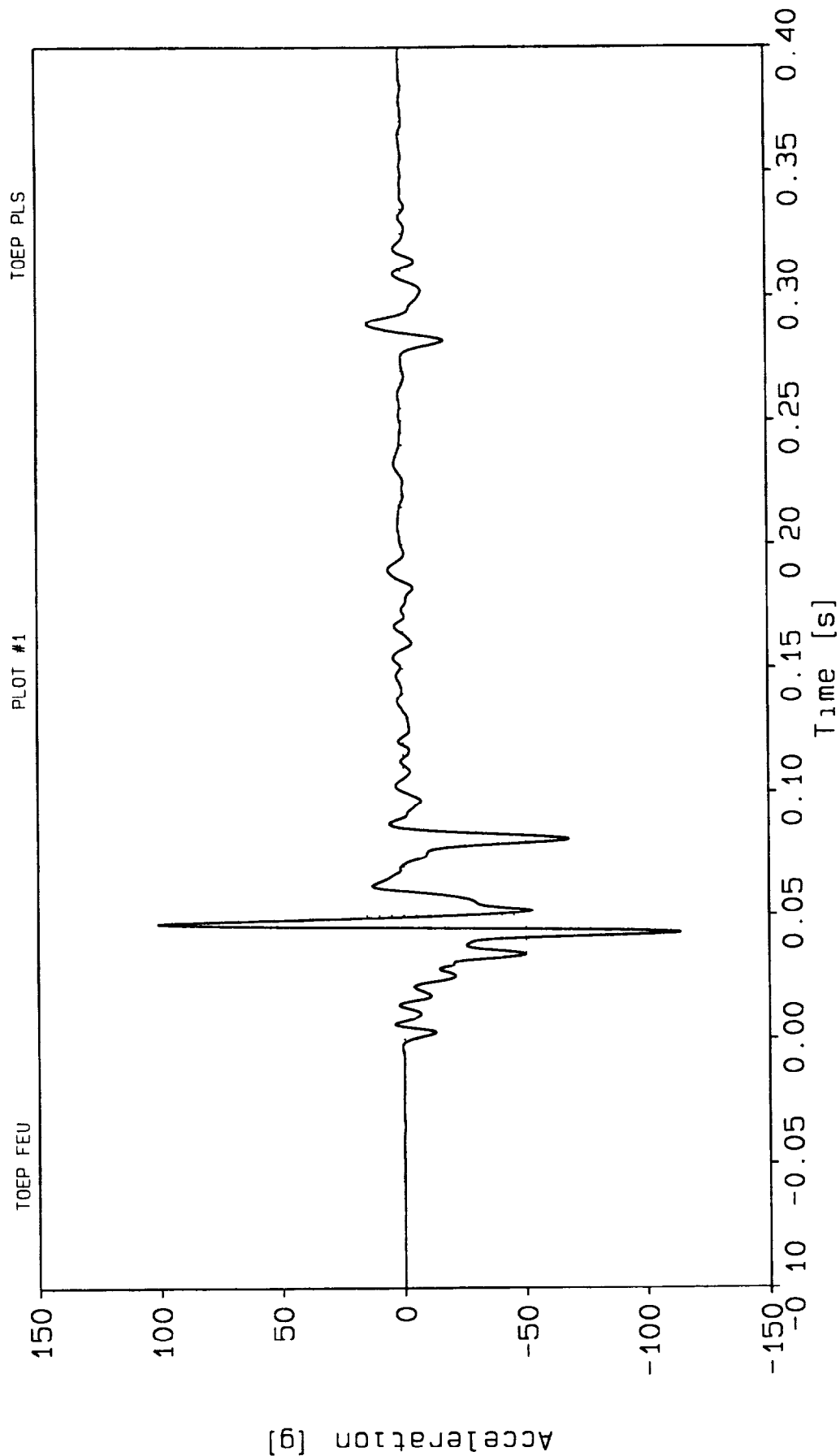
Exponent
Failure
Analysis
Associates

Acceleration (Ax) v Time

Driver Side Toe Pan

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

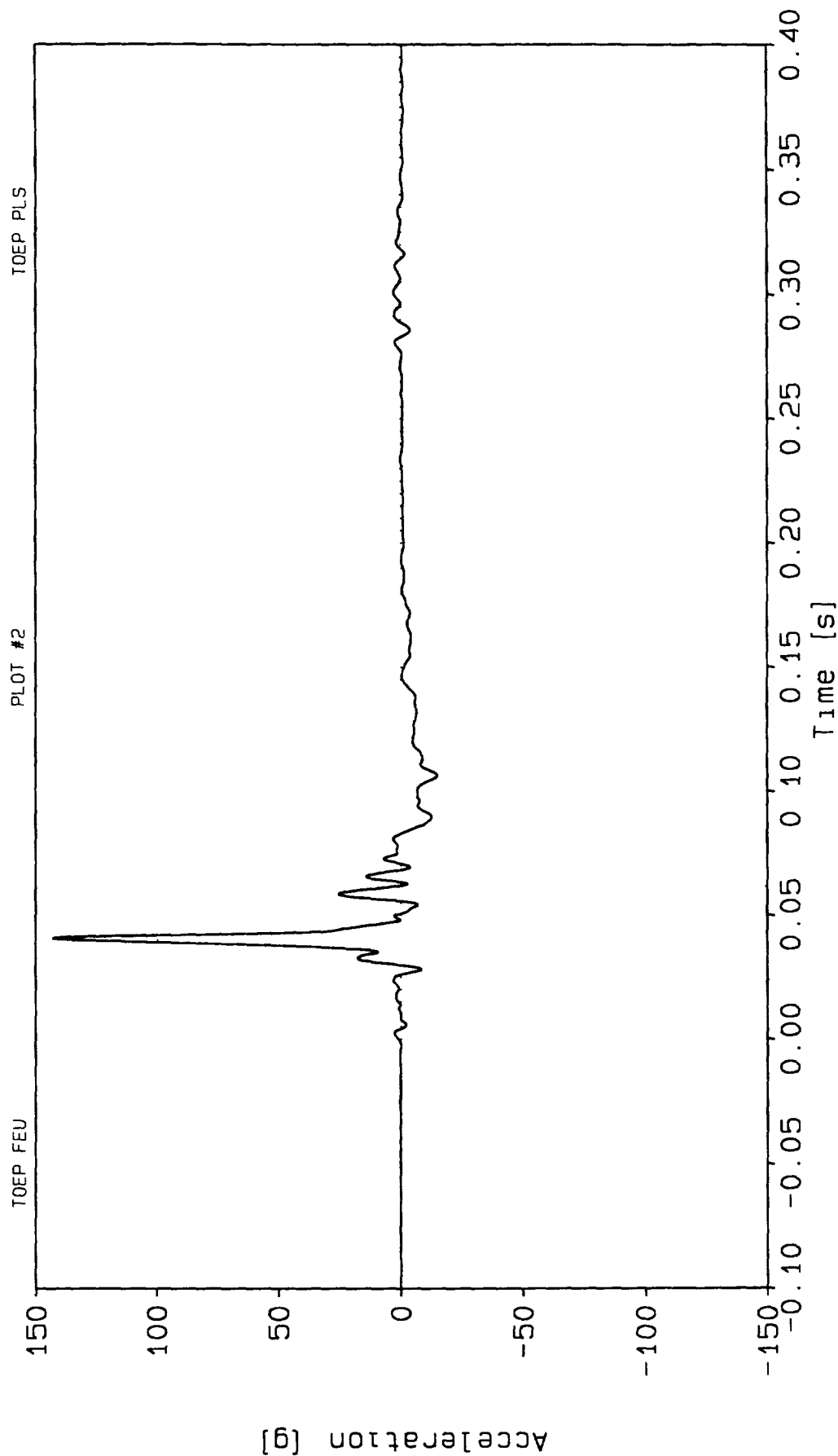
Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Driver Side Toe Pan

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

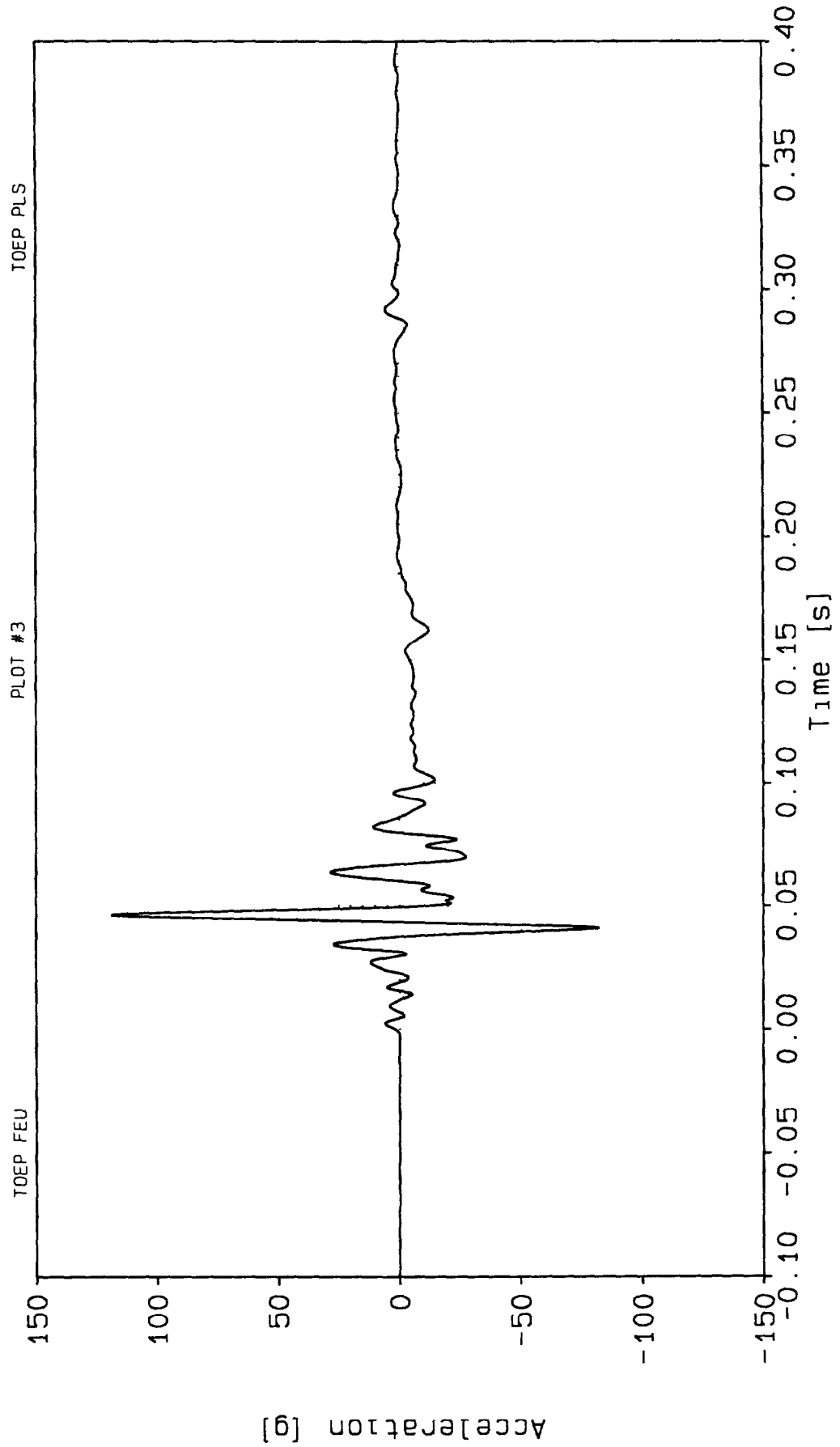
Exponent
Failure
Analysis
Associates

Acceleration (Az) v Time

Driver Side Toe Pan

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

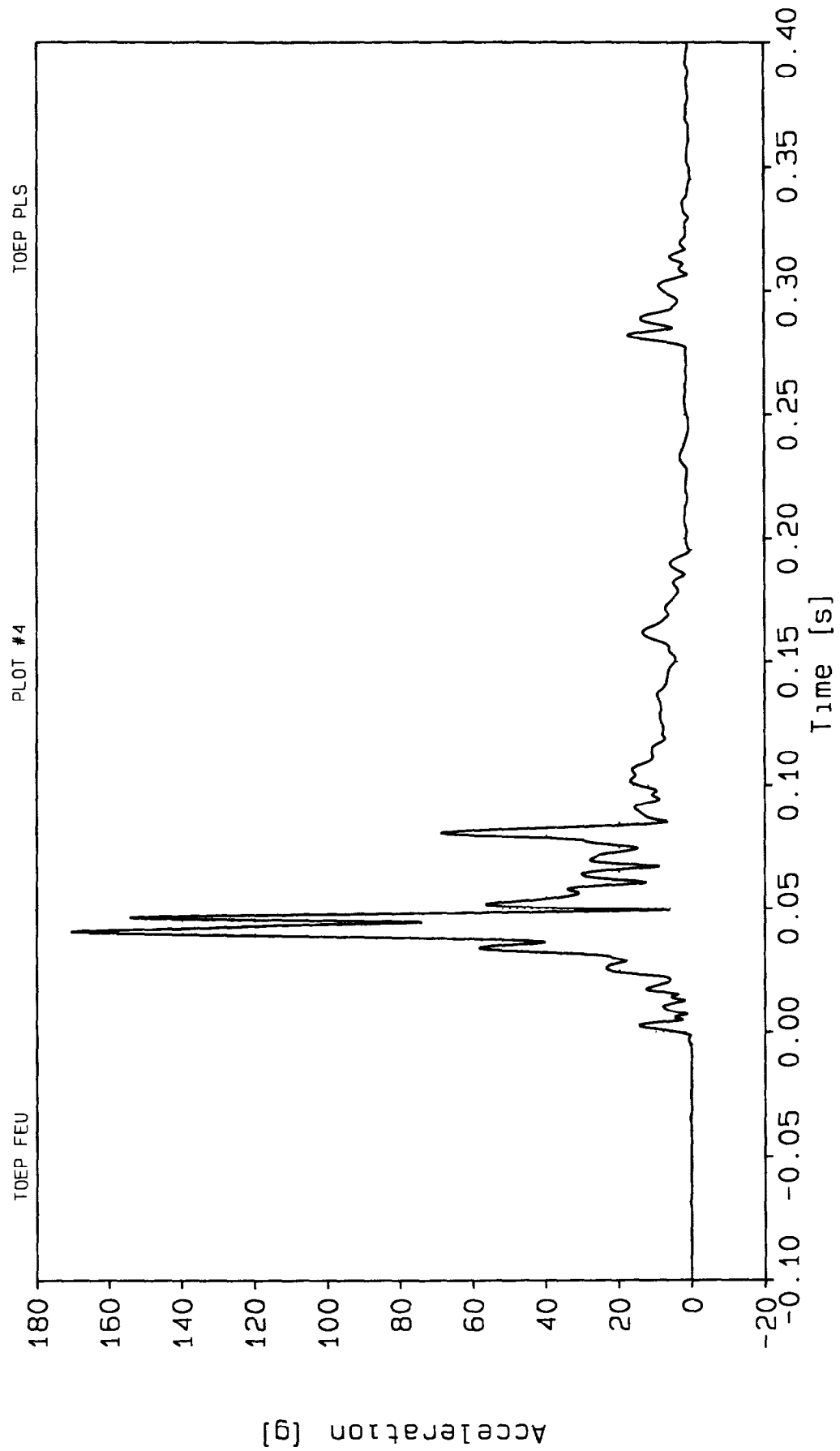
Exponent
Failure
Analysis
Associates

Resultant Acceleration (Ar) v Time

Driver Side Toe Pan

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

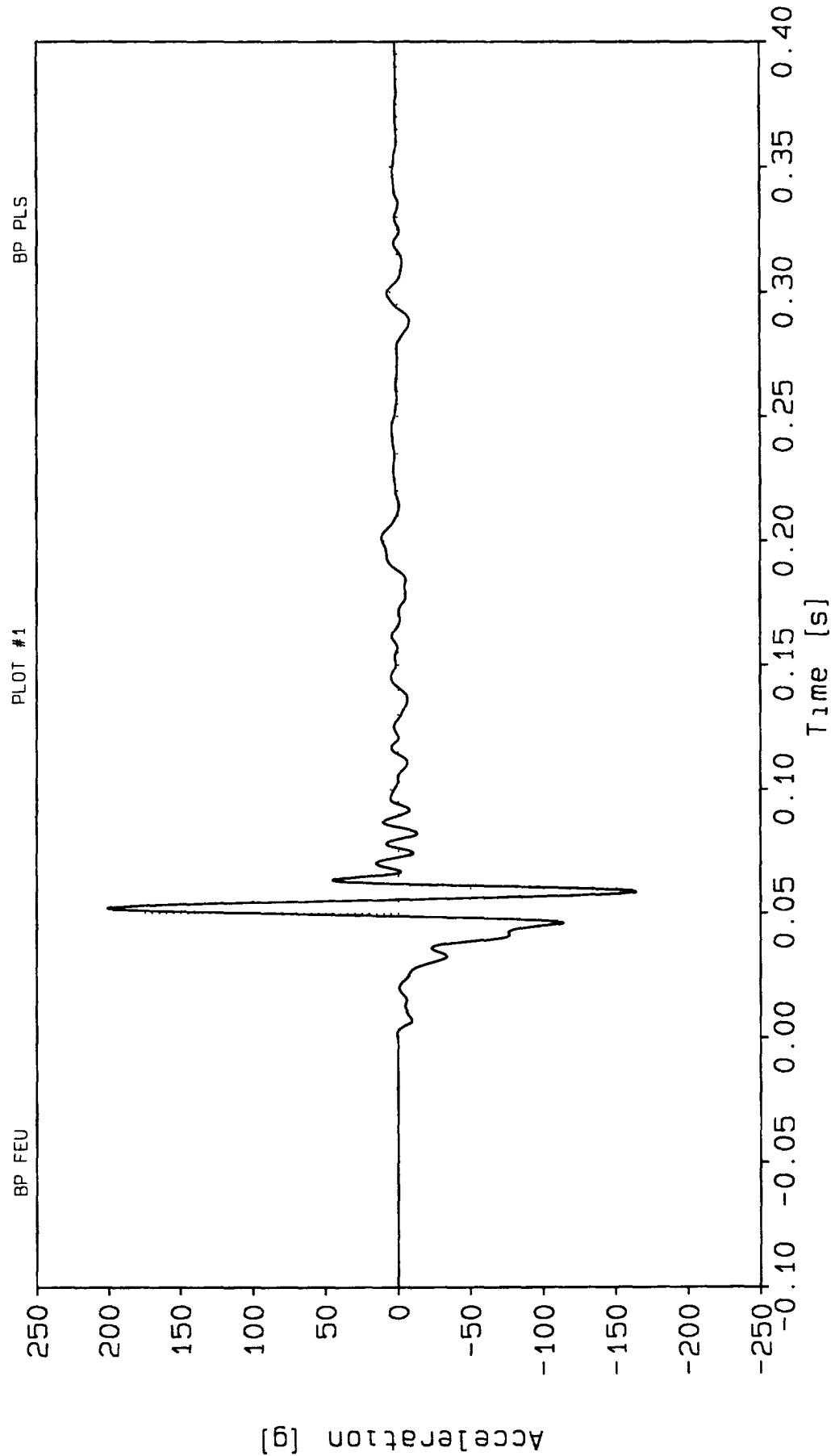


Exponent
Failure
Analysis
Associates

Filter Class 60
Volpe Crash Testing
PH06608

Acceleration (Ax) v Time

Brake Pedal
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

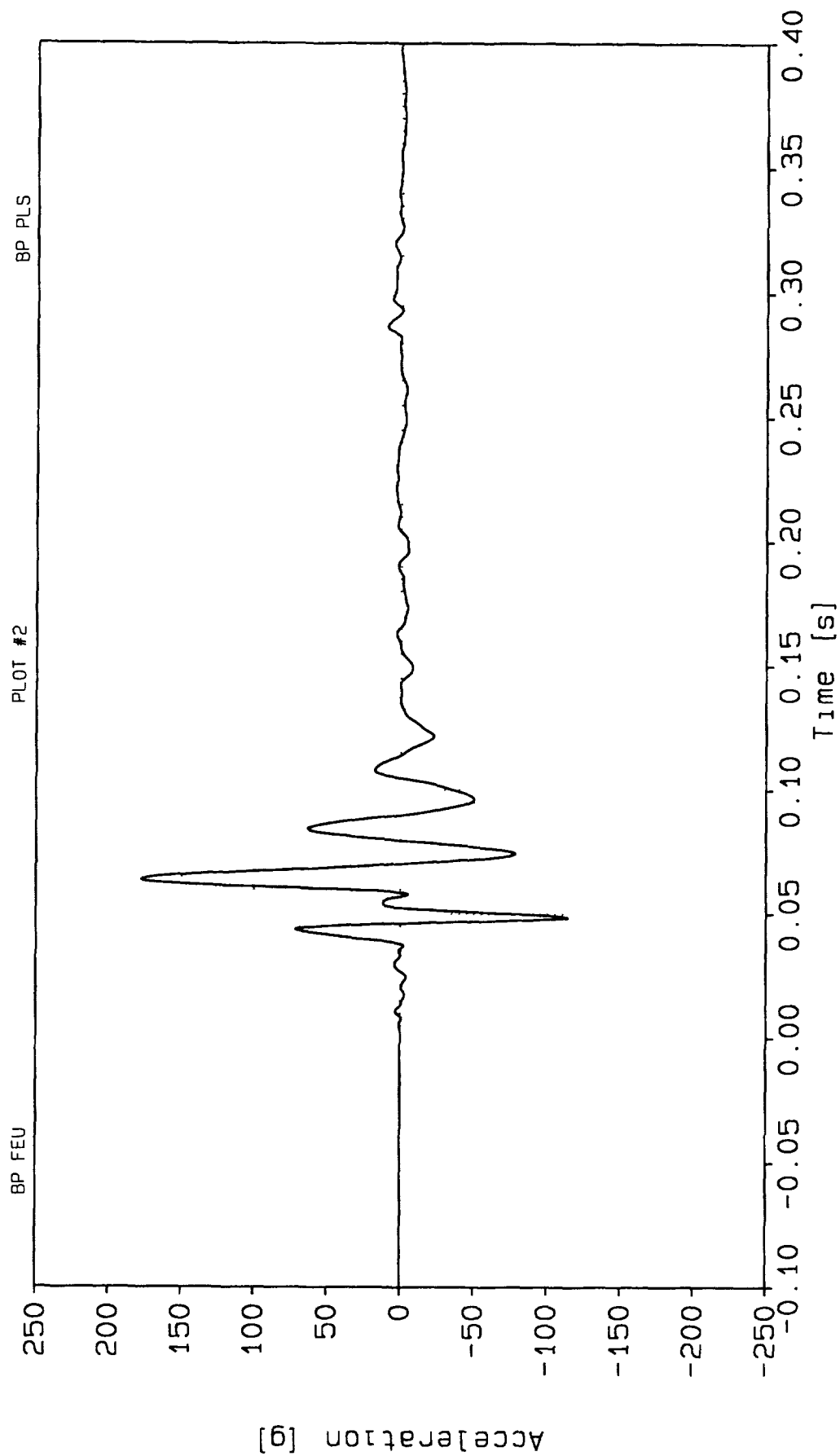


Filter Class 60
Voipe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Brake Pedal
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Voice Crash Testing
PH06508

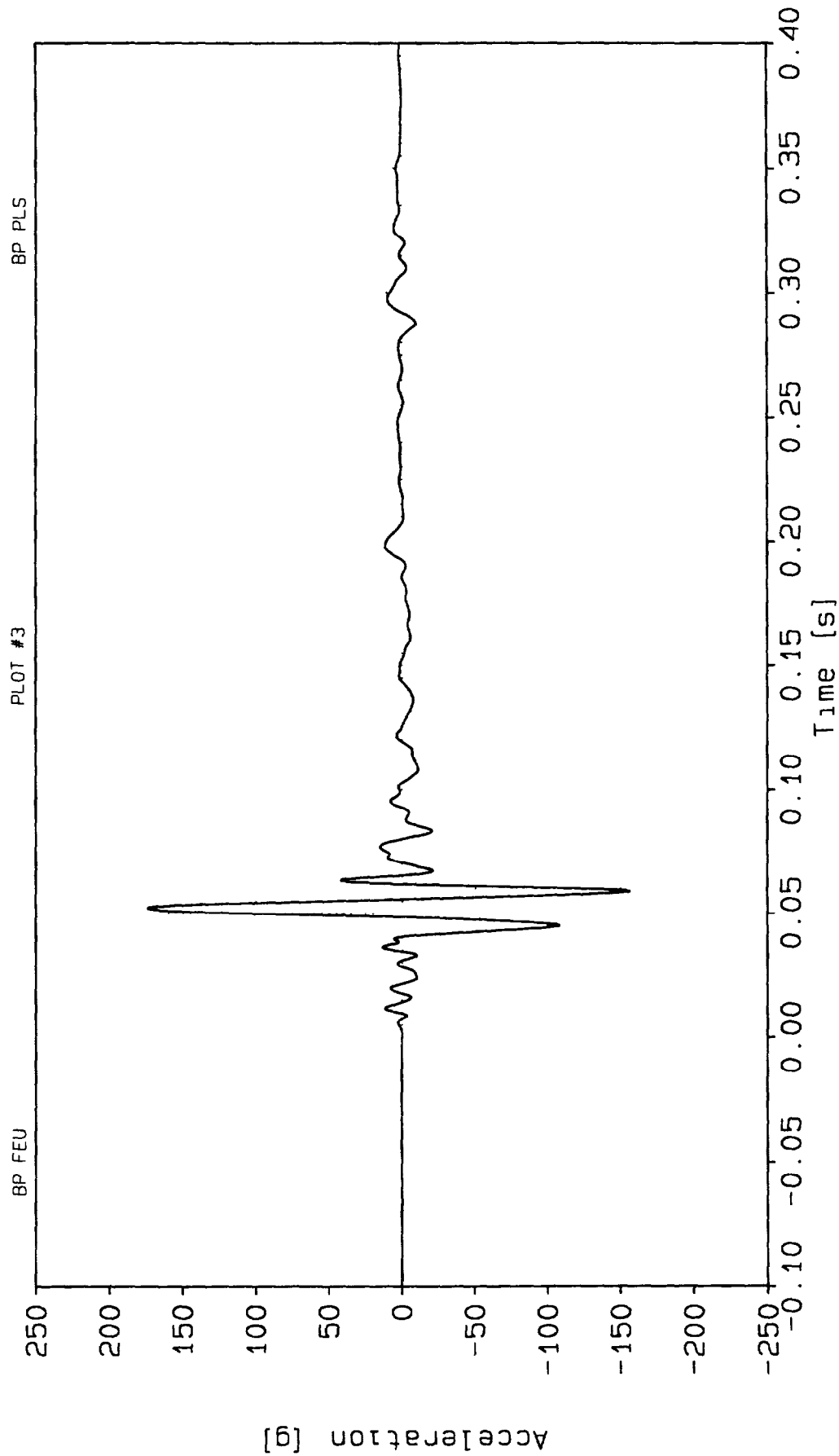
Exponent
Failure
Analysis
Associates

Acceleration (Az) v Time

Brake Pedal

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

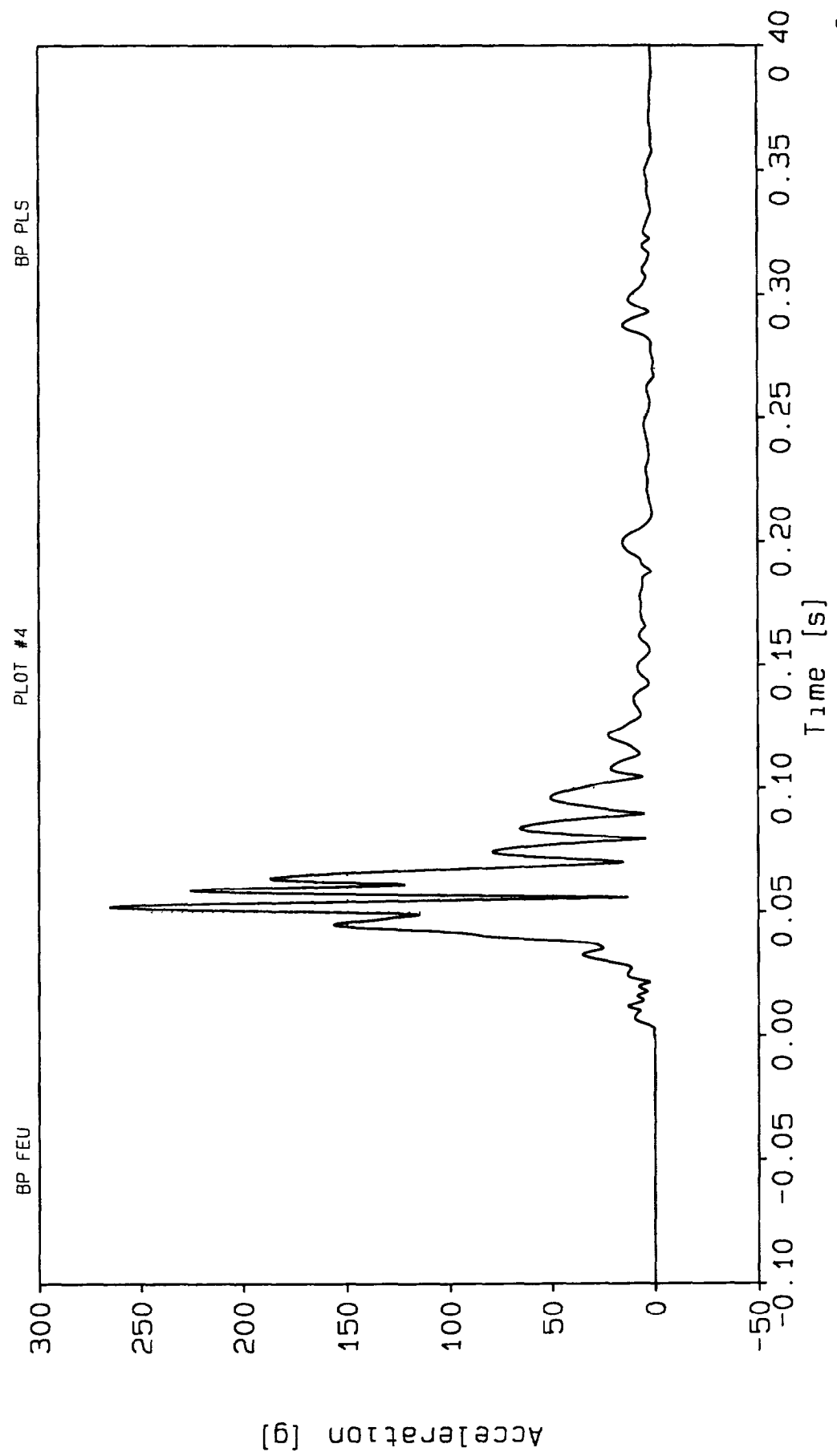


Exponent
Failure
Analysis
Associates

Filter Class 60
Volpe Crash Testing
PH06608

Resultant Acceleration (Ar) v Time

Brake Pedal
2001 Dodge Neon
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

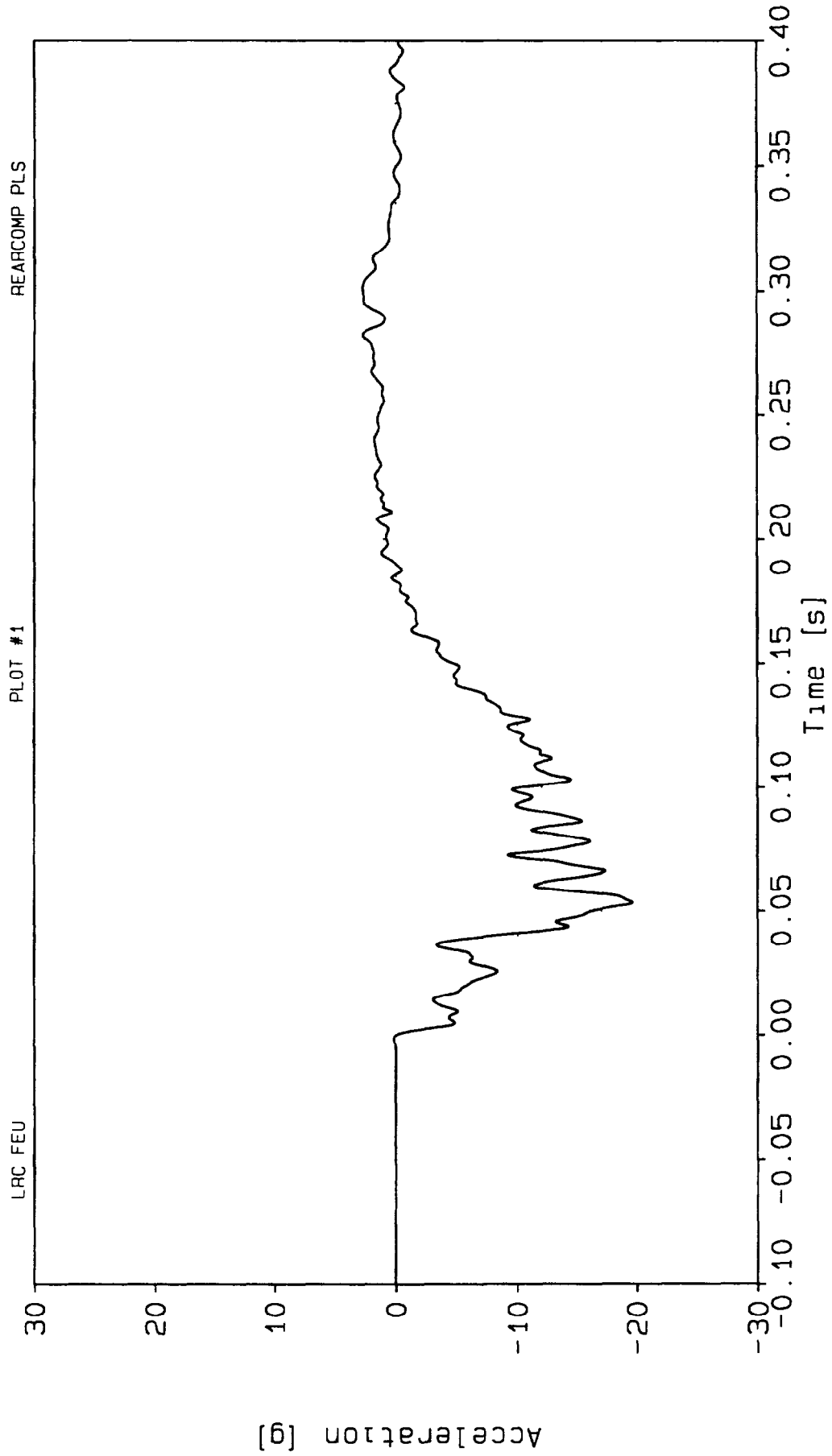
Exponent
Failure
Analysis
Associates

Acceleration (Ax) v Time

Left Rear Compartment

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

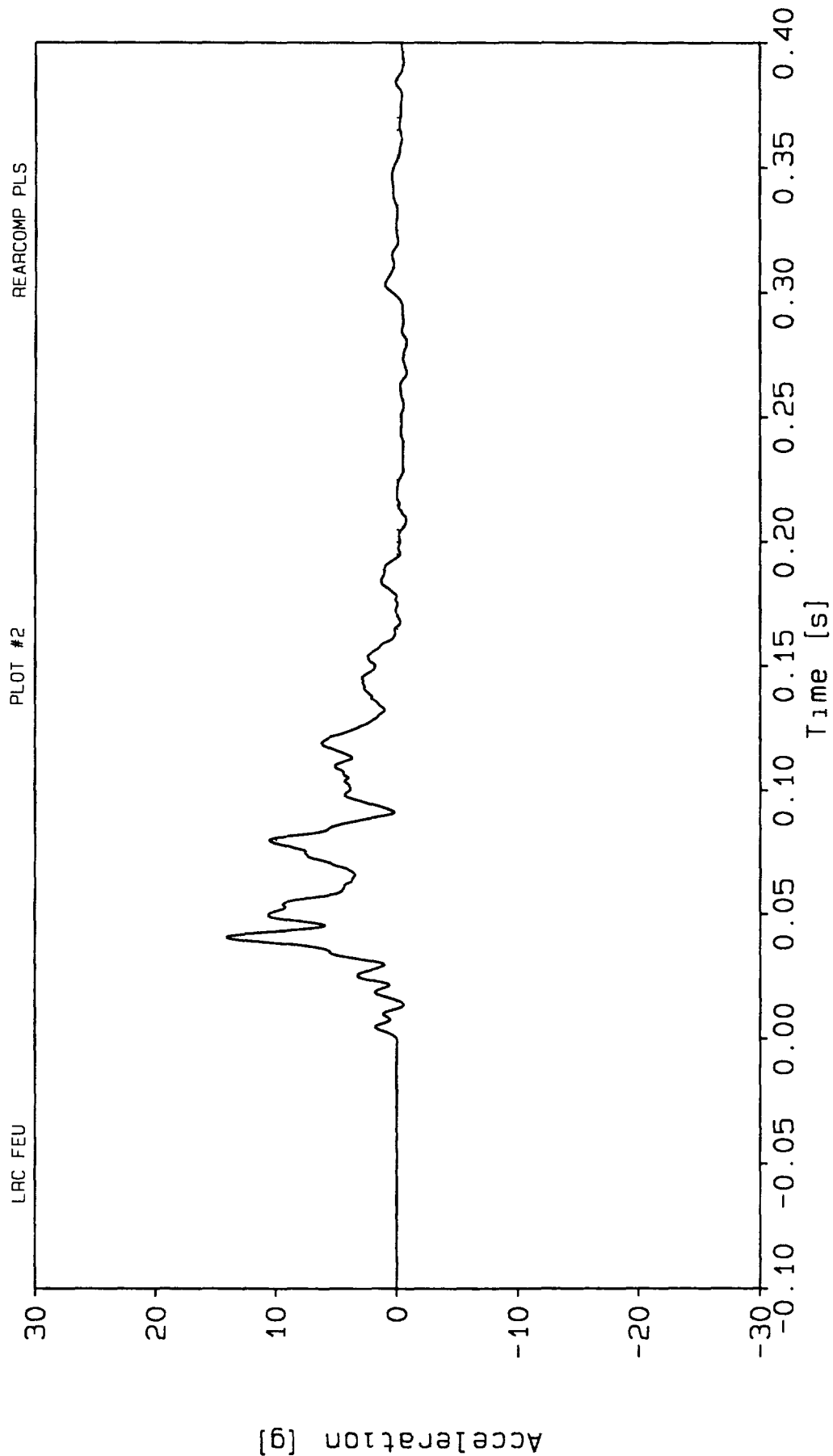
Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Left Rear Compartment

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



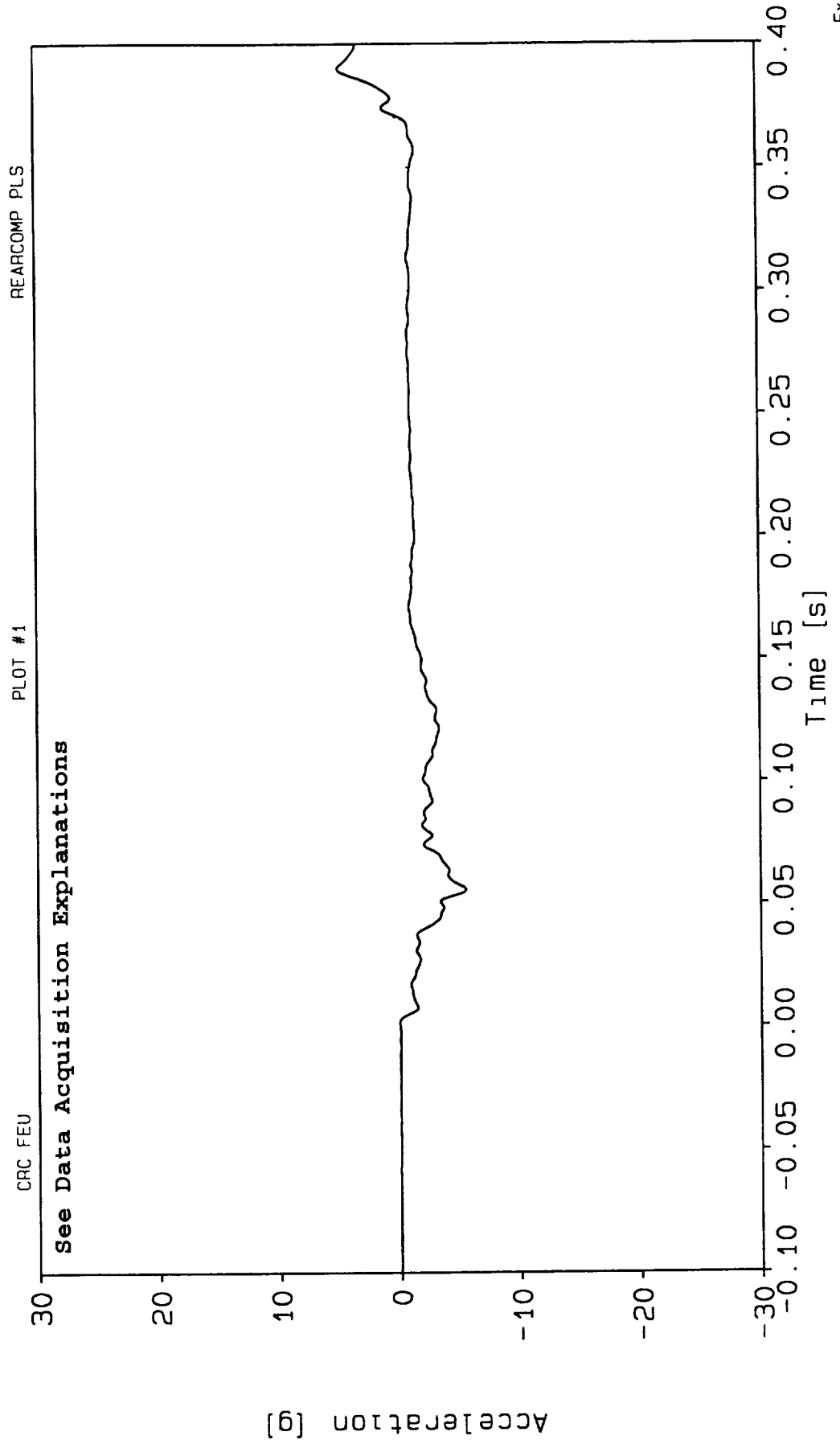
Exponent
Failure
Analysis
Associates

Filter Class 60
Volpe Crash Testing
PH06608

Acceleration (Ax) v Time

Center Rear Compartment
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Acceleration (Az) v Time

Center Rear Compartment

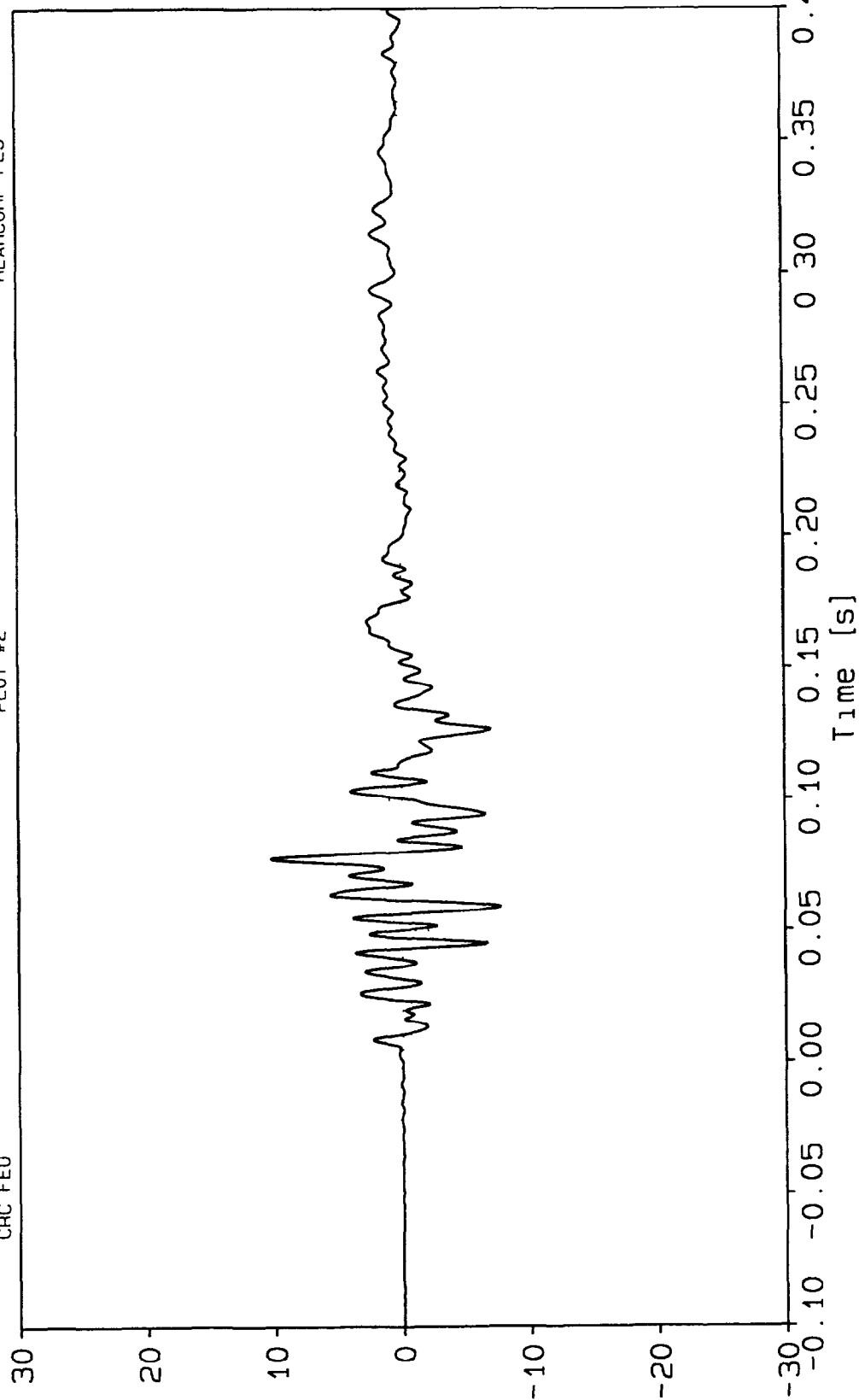
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

REARCOMP PLS

PLOT #2

CRC FEU



Filter Class 60
Volpe Crash Testing
PH06508

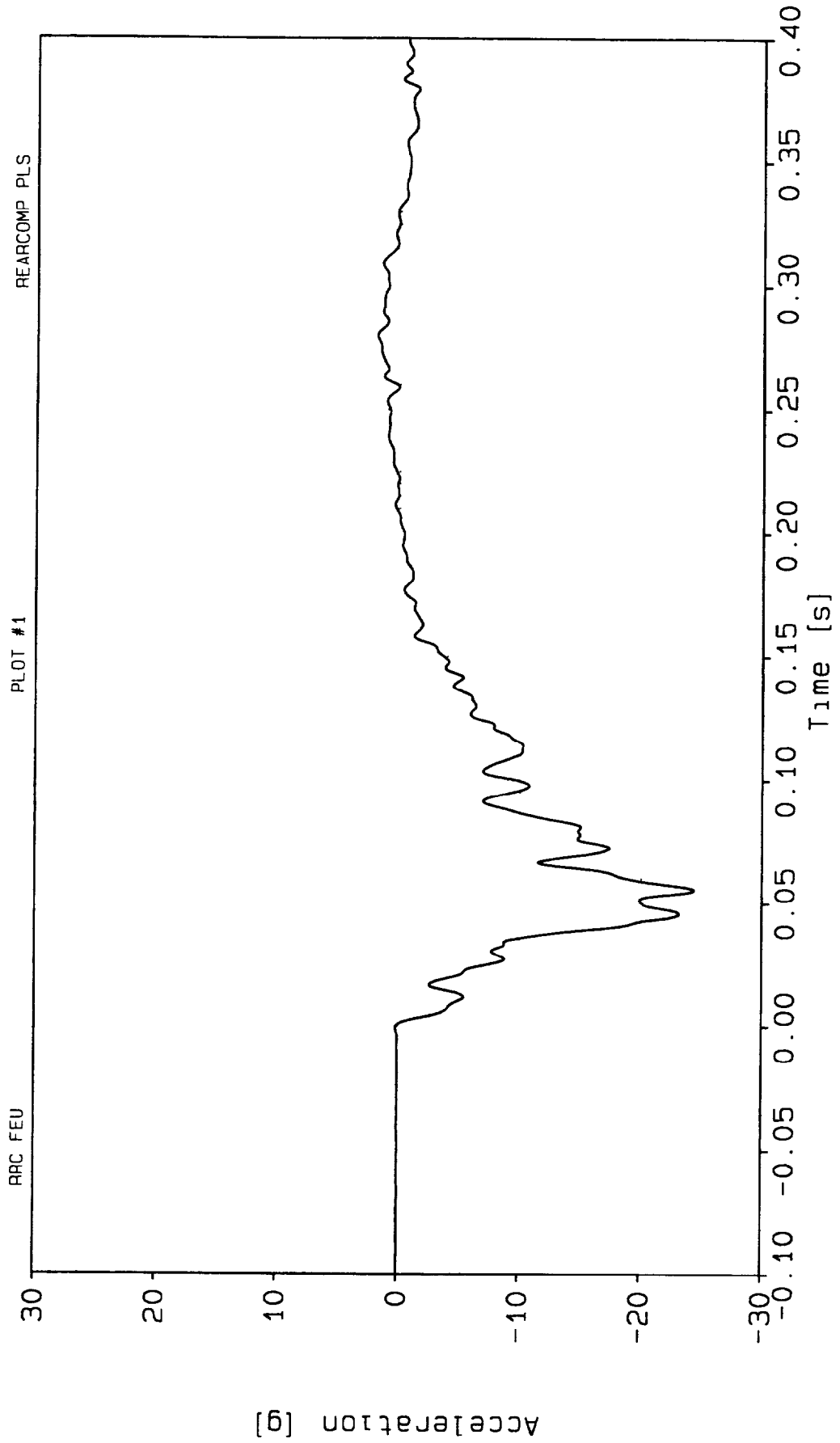
Exponent
Failure
Analysis
Associates

Acceleration (Ax) v Time

Right Rear Compartment

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

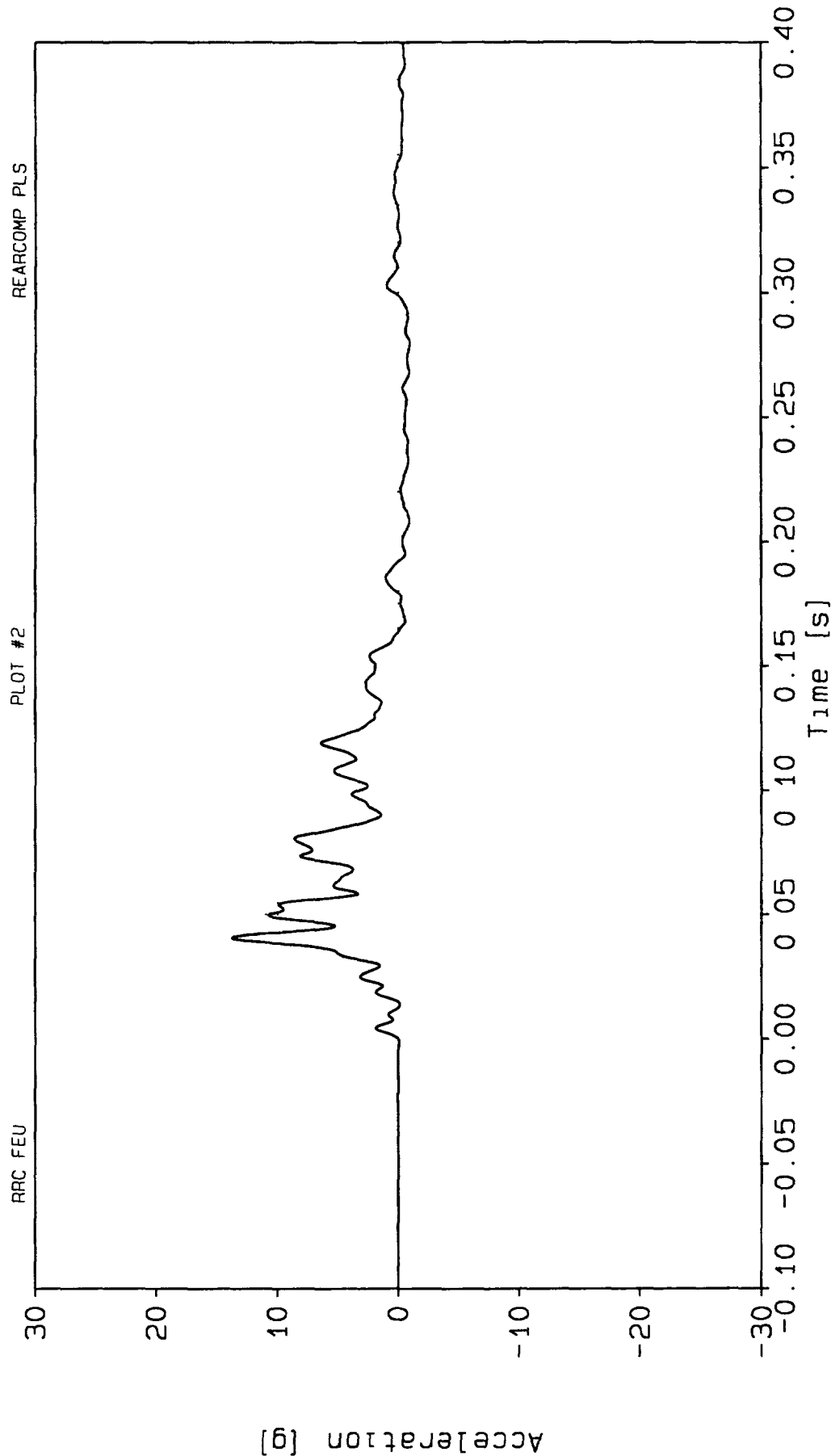
Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Right Rear Compartment

2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



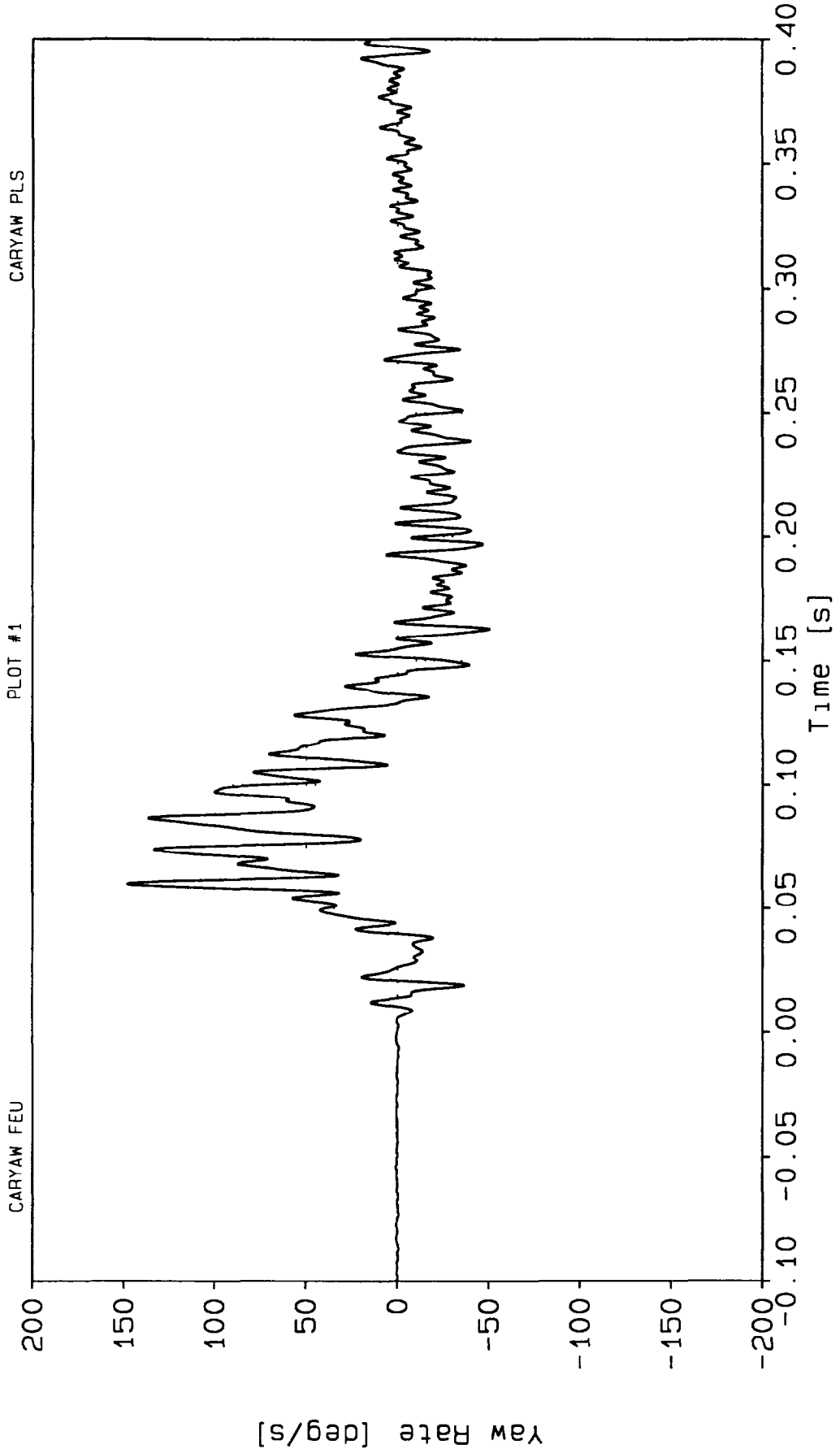
Filter Class 60
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Vehicle Yaw Rate v Time

Vehicle Yaw Rate Sensor
2001 Dodge Neon

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

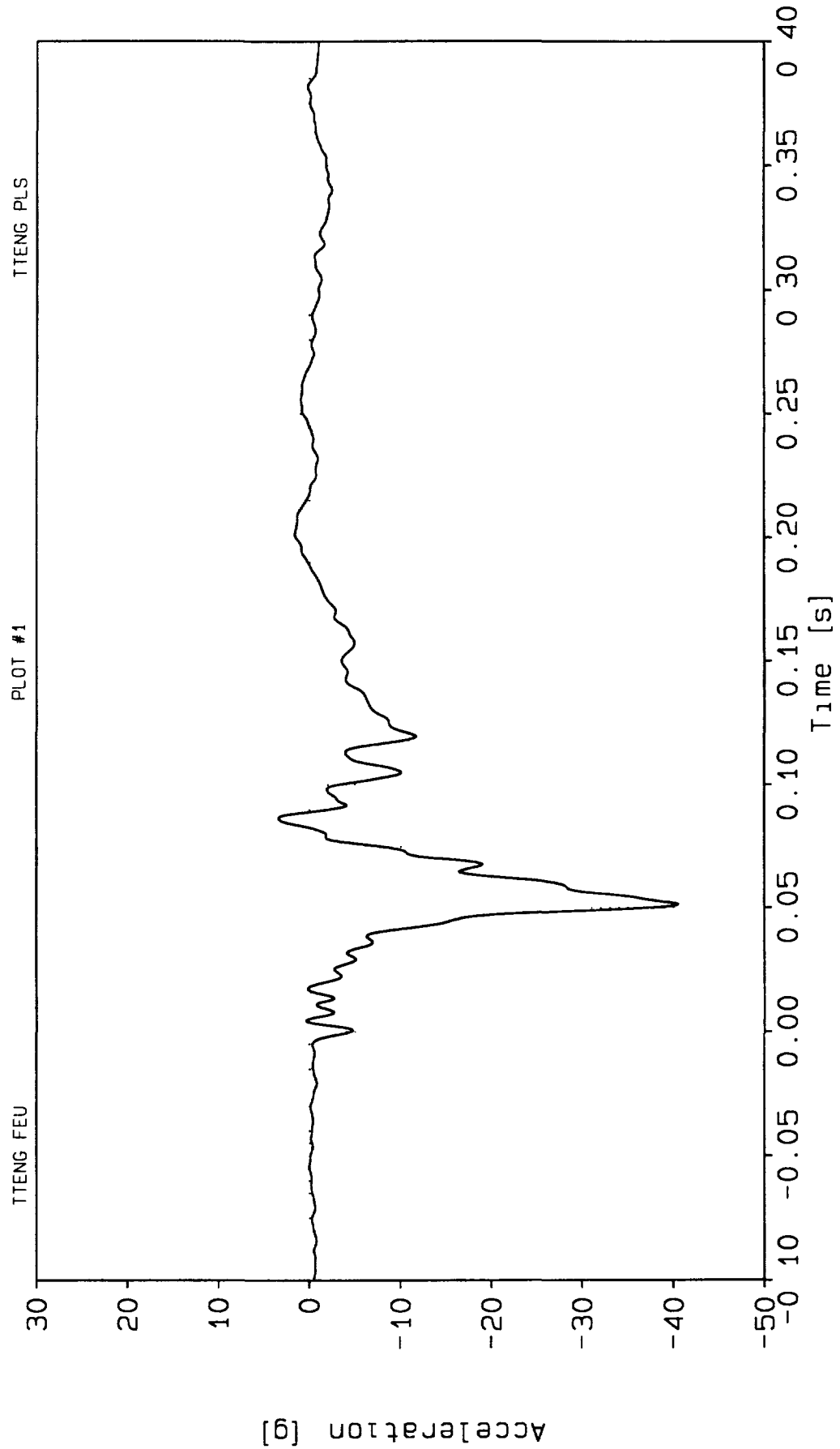


Filter Class 180
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Acceleration (Ax) v Time

Top of Engine
2001 Ford F-150
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

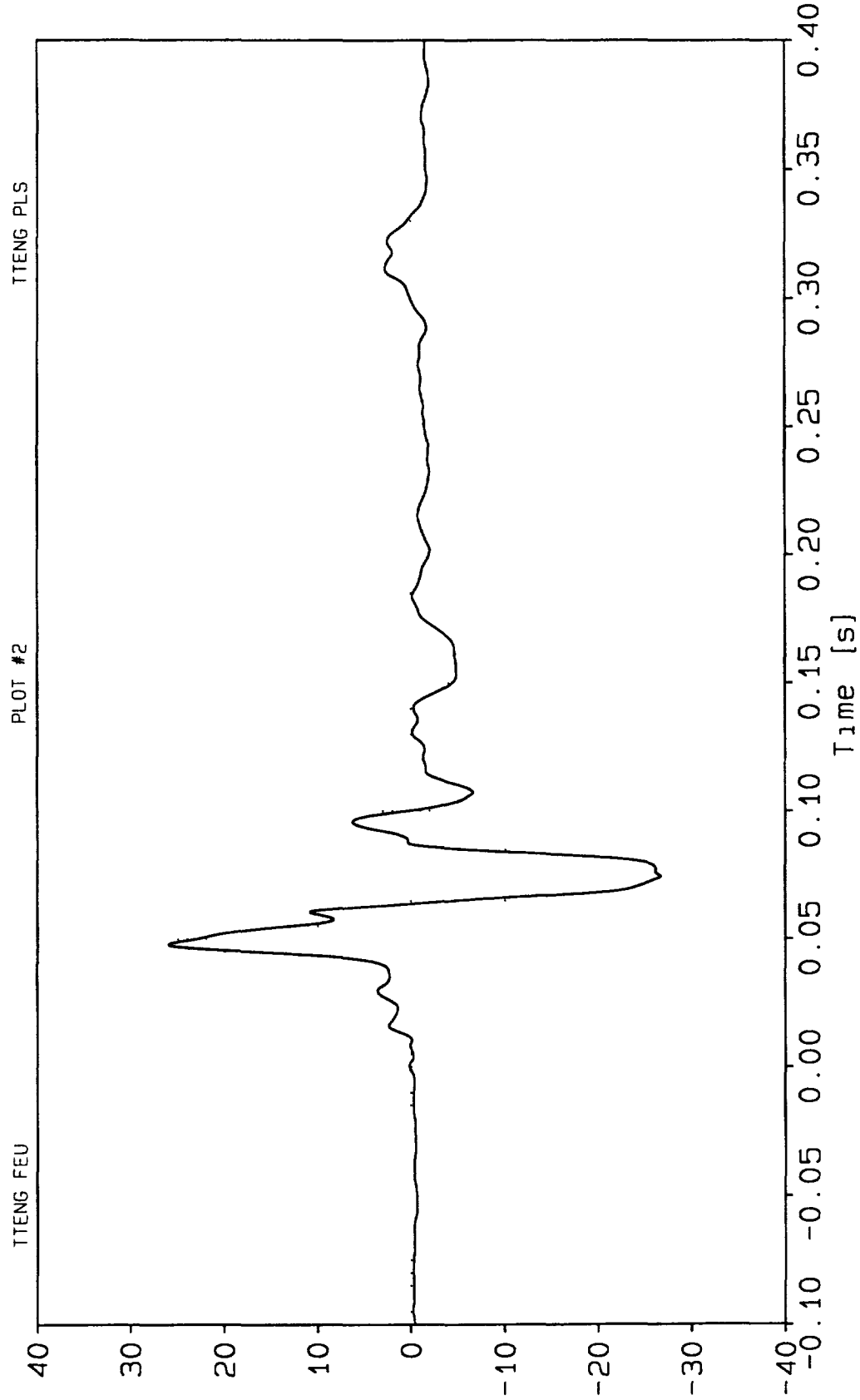


Filter Class 60
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Top of Engine
2001 Ford F-150
2001 Ford F-150 into 2001 Dodge Neon - 09/24/01

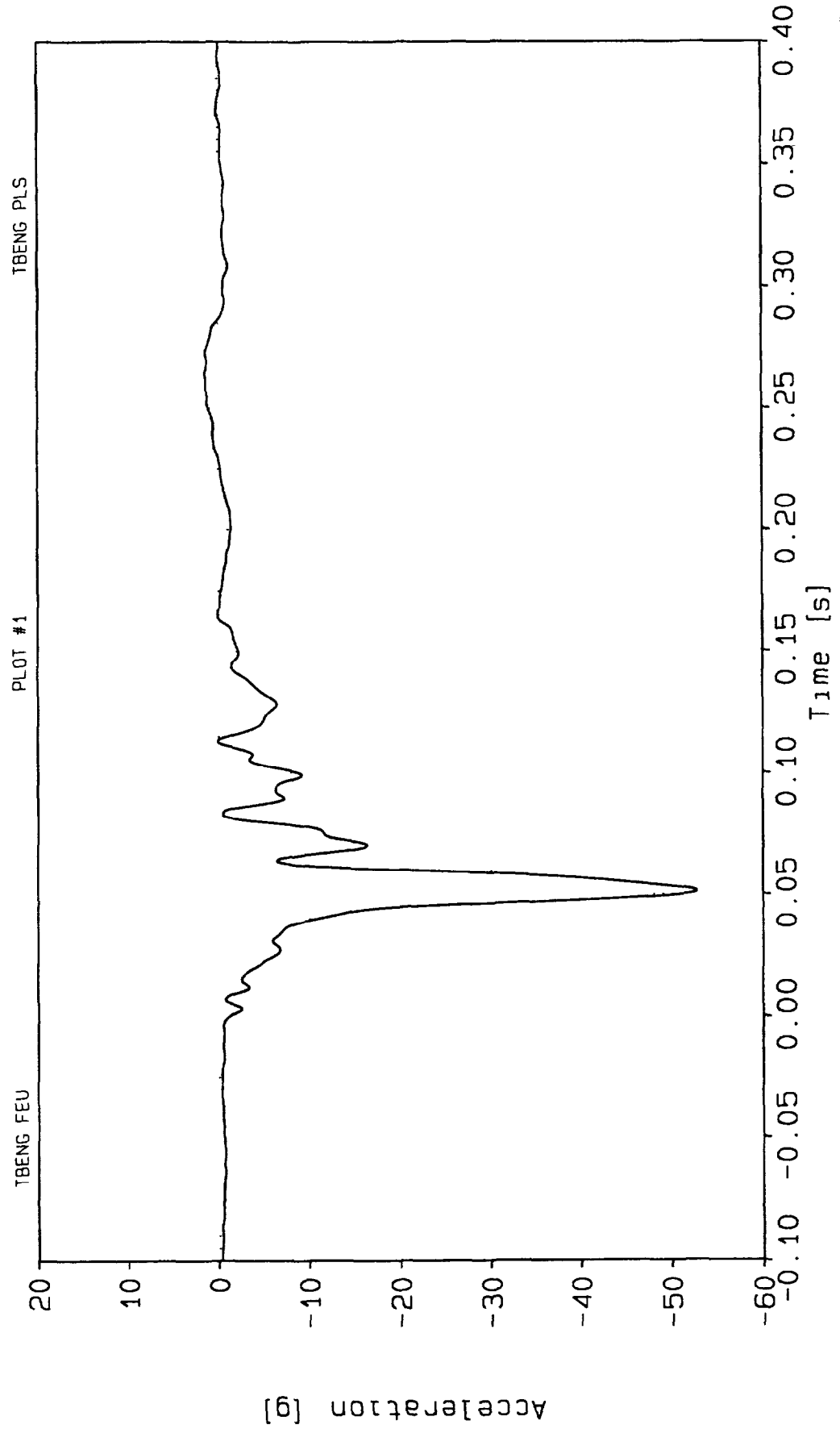


Acceleration (Ax) v Time

Bottom of Engine

2001 Ford F-150

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

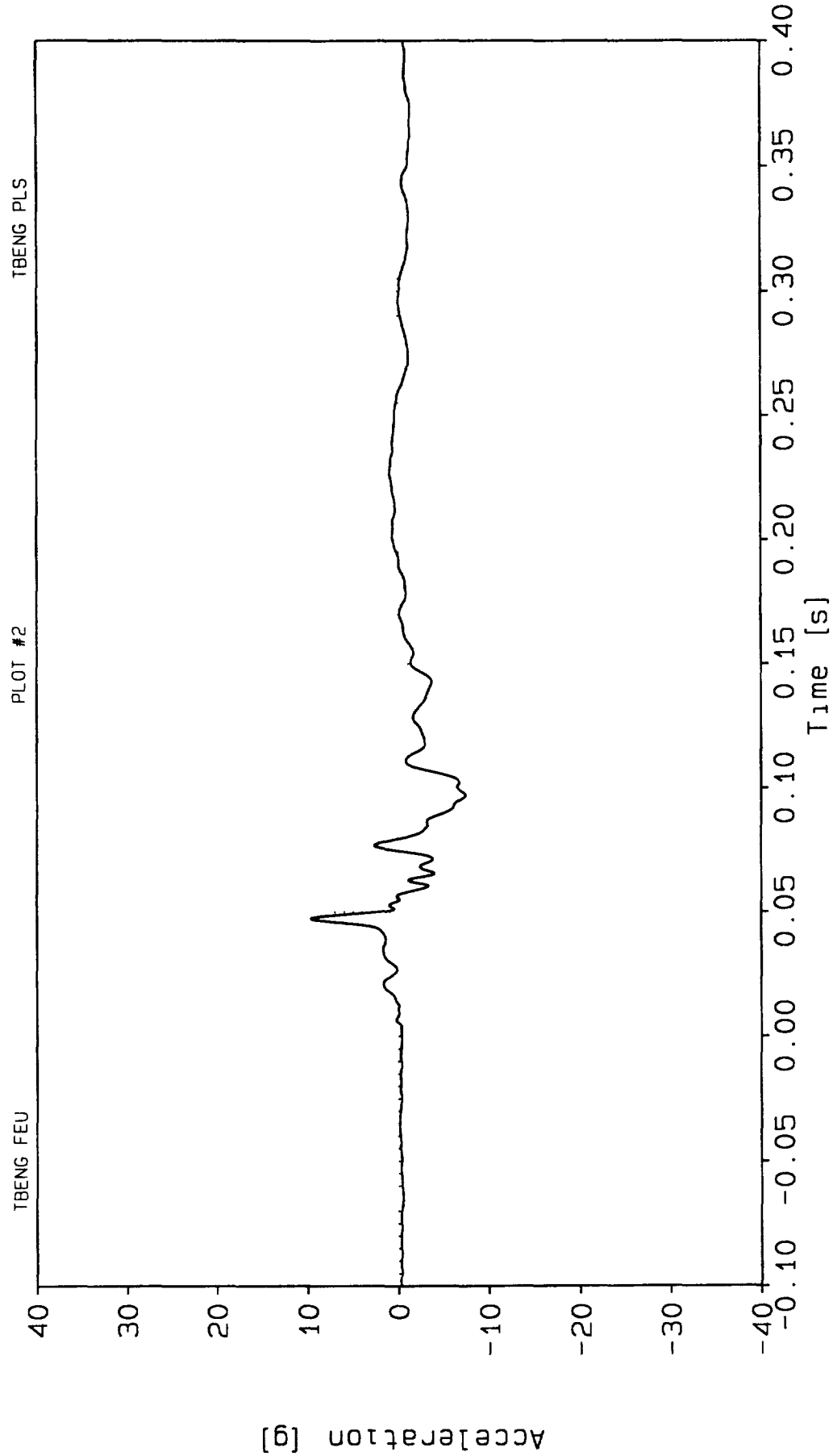
Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Bottom of Engine

2001 Ford F-150

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates

Acceleration [g]

B-234

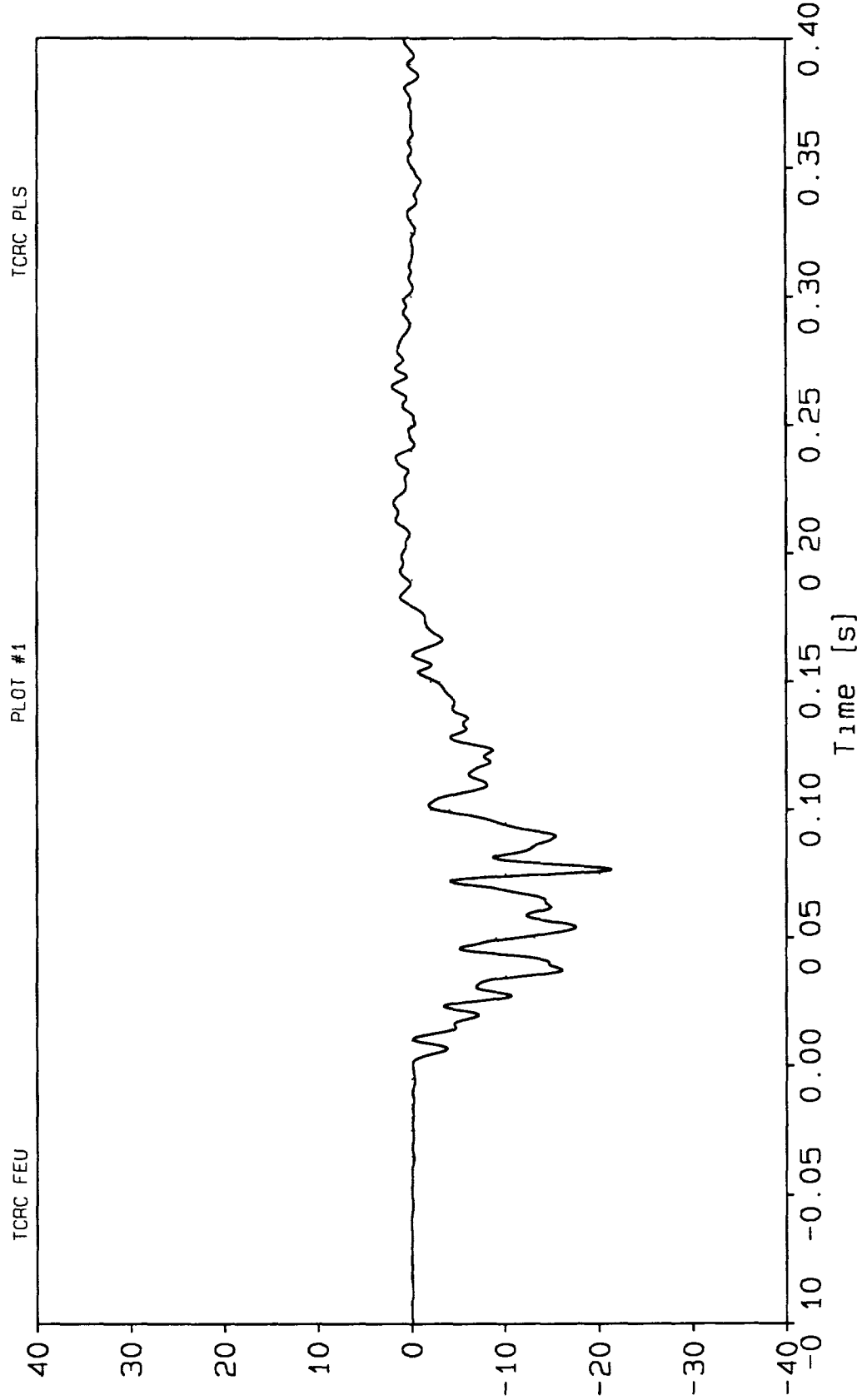
092401

Acceleration (Ax) v Time

Center Rear Compartment

2001 Ford F-150

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

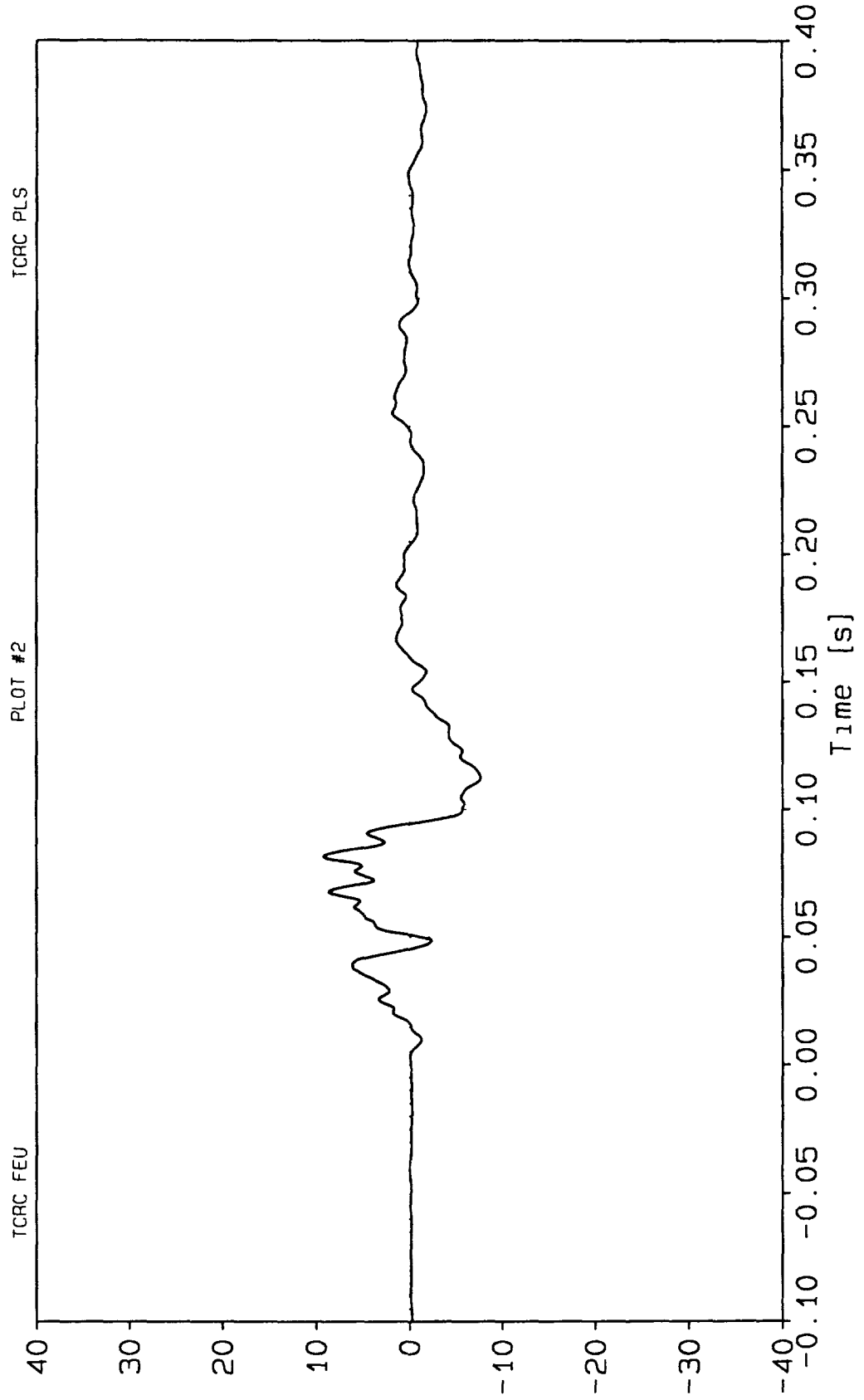
Exponent
Failure
Analysis
Associates

Acceleration (Ay) v Time

Center Rear Compartment

2001 Ford F-150

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

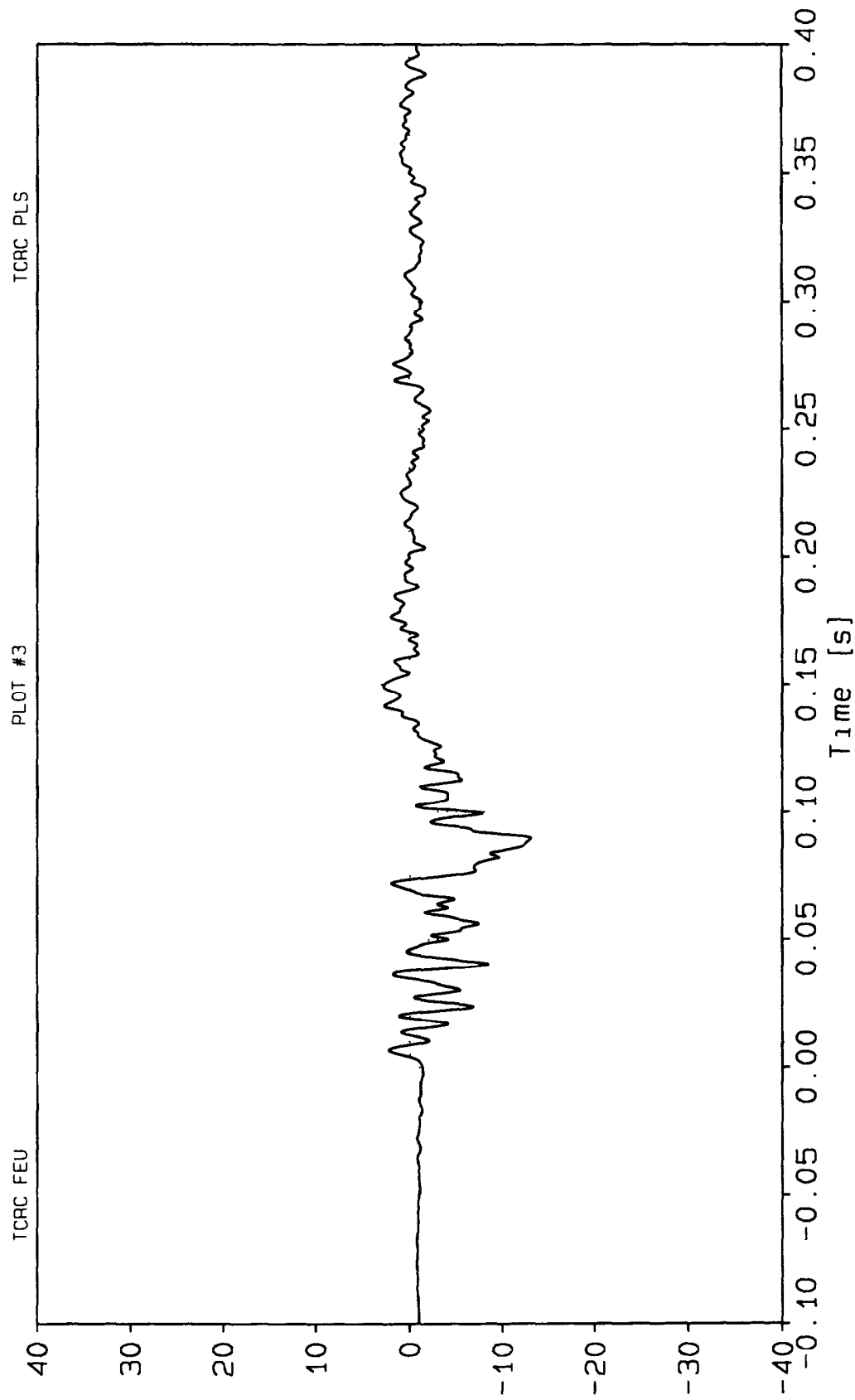
Exponent
Failure
Analysis
Associates

Acceleration (Az) v Time

Center Rear Compartment

2001 Ford F-150

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 60
Volpe Crash Testing
PH06608

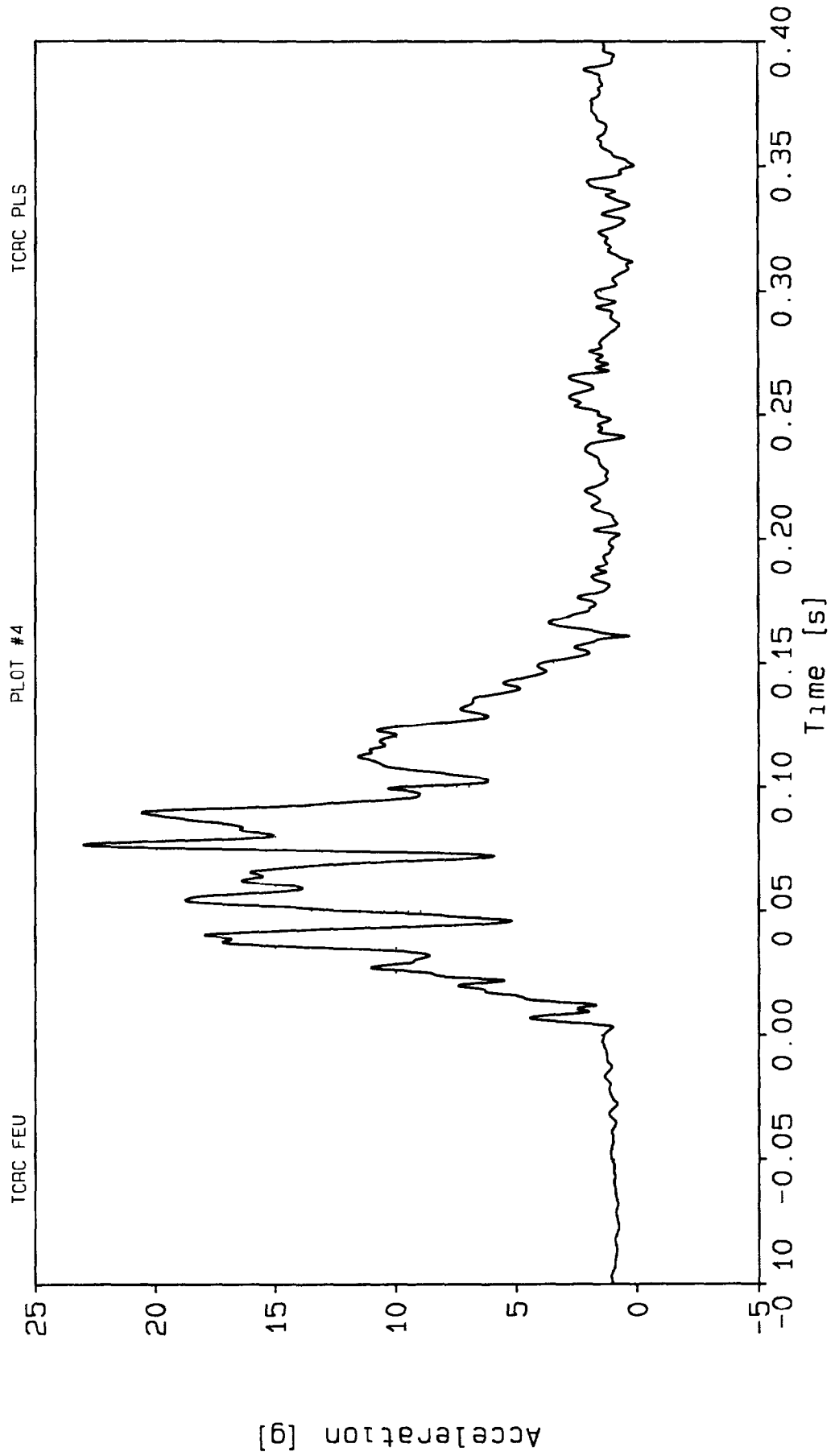
Exponent
Failure
Analysis
Associates

Resultant Acceleration (Ar) v Time

Center Rear Compartment

2001 Ford F-150

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Exponent
Failure
Analysis
Associates

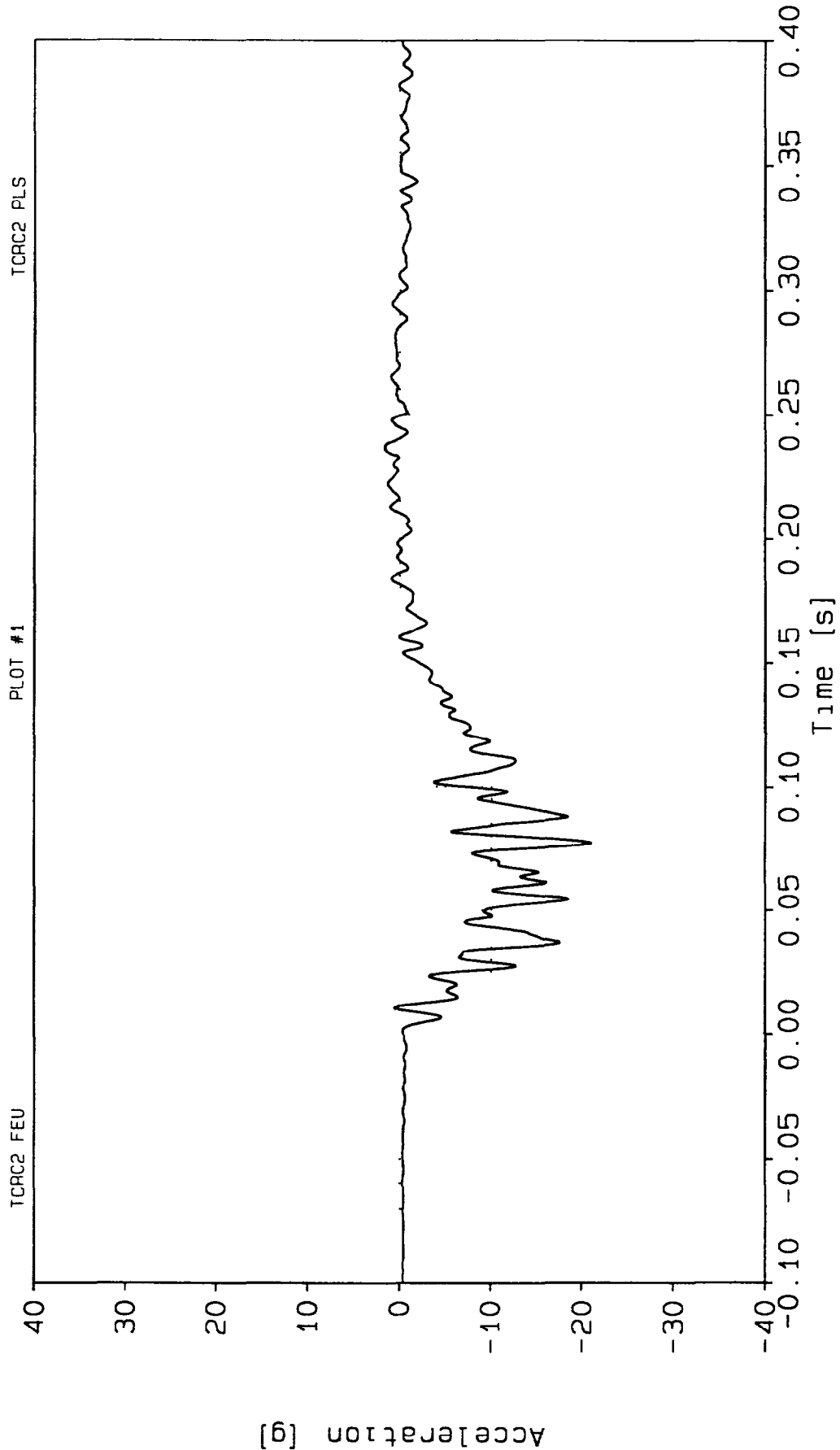
Filter Class 60
Volpe Crash Testing
PH06608

Acceleration (Ax) v Time

Center Rear Compartment - Secondary

2001 Ford F-150

2001 Ford F-150 into 2001 Dodge Neon - 09/24/01



Filter Class 50
Volpe Crash Testing
PH06608

Exponent
Failure
Analysis
Associates