REPORT NUMBER: 201P-CAL-09-01

SAFETY COMPLIANCE TESTING FOR FMVSS 201
RIGID POLE SIDE IMPACT TEST

TOYOTA MOTOR MANUFACTURING, CANADA INC.
2009 TOYOTA COROLLA
SEDAN

NHTSA NUMBER: C95105

CALSPAN TEST NUMBER: 8863-F201P-03

CALSPAN
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225

Test Date: October 10, 2008

FINAL REPORT

PREPARED FOR:

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
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15. Supplementary Notes

16. Abstract

A rigid pole side impact test was conducted on the subject 2009 Toyota Corolla Sedan in accordance with FMVSS 201, "Occupant Protection in Interior Impact, S6.2(b)(3) and the Office of Vehicle Safety Compliance Test Procedure No. TP-201-02 "Rigid Pole Side Impact Test". The test was conducted at the Calspan's facility in Buffalo, New York on October 10, 2008.

The impact velocity of the vehicle was 18.49 kph, and the ambient temperature at the struck side (driver) of the target vehicle at the time of impact was 70ºC. The post test maximum crush was 272 mm at level 3. The test vehicle's performance follows:

Measurement Description	**Threshold**	**P1 (905)**
Head Injury Criteria (HIC- 36 ms)	1000	319.9

Test Failures: NONE

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during side impact event.

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TABLE OF CONTENTS

LIST OF DATA SHEETS

SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY FMVSS 201 “Occupant protection in interior impact” compliance test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-06-D-00031. The purpose of this test was to evaluate the dynamic head protection system in a 2009 Toyota Corolla Sedan, NHTSA Number: C95105. The rigid pole side impact test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-201P-02, dated October 21, 2001).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A rigid pole side impact test was conducted on a 2009 Toyota Corolla Sedan. The subject vehicle was towed into the rigid pole at a velocity of 18.49 kph. The test was conducted by Calspan in Buffalo, New York, on October 10, 2008.

Pretest and post test photographs of the test vehicle, and the side impact dummy (SID HIII) are included in Appendix A of this report.

One SID HIII was placed in the left front outboard designated seating position according to instructions specified in TP201P-02 dated October 21, 2001. The side impact event was documented by thirteen (13) cameras. Camera locations and other pertinent camera information are included in this report.

The SID HIII was instrumented with the following accelerometers:

1. Head CG triaxial accelerometers
2. Upper neck 6 channel load cell (X,Y and Z force and moment)
3. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
5. Lower Thoracic Spine (T12) uniaxial accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

Appendix B contains the vehicle and dummy response data traces. A summary of the side impact dummy (SID HIII) configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

The following table summarizes the results of the test.

INJURY CRITERIA	P1 SID HIII (905)
HIC (≤1000)	319.9
TTI (g) [1]	64
Pelvic (g) [1]	49
Neck X Force (N)[1]	49.5
Neck Y Force (N)[1]	158.1
Neck Z Force (N)[1]	473.2
Neck X Moment (N-m)[1]	19.4
Neck Y Moment (N-m)[1]	11.8
Neck Z Moment (N-m)[1]	10.9

[1] Information purposes only.

SECTION 3

SIDE IMPACT DUMMY (SID HIII) AND VEHICLE TEST DATA

DATA SHEET 1
GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Vehicle Manufacturer: Toyota Motor Manufacturing

Year/Make/Model/Body Style: 2009 Toyota Corolla Sedan

Vehicle Body Color: Desert Sand VIN: 2T1BU40E49C110830

Vehicle NHTSA No.: C95105 Month & Year of Manufacture: 09/08

Engine Data: 4 Cylinders; - CID; 1.8 Liters; - cc

Engine Placement: x Longitudinal; or - Lateral

Transmission: 5 Speed; x Manual; - Automatic; - Overdrive

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

Odometer Reading 19 km

Options: x A/C; x Power Steering; x Power Brakes; - Power Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 210 kPa FRONT

210 kPa REAR

Recommended Tire Size: P195/65R15

Tires on Test Vehicle: P195/65R15 ; Manufacturer: Goodyear

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 Total

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

Type of Front Seat Back: - Fixed; x Adjustable with x Lever or - Knob

Vehicle Max Capacity Loading = 370 kg (A)

No. of Occupants x 68.04 kg. = 340.20 kg (B)

Vehicle Cargo Capacity = 29.80 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

	LEFT SIDE (kg)	RIGHT SIDE (kg)	TOTAL (kg)	PERCENT
FRONT =	375	363	738.0	60.0%
REAR=	247	245	492.0	40.0%

TOTAL DELIVERED WEIGHT (UDVW) : 1230.0 kg

* Tire pressure used in test.

DATA SHEET 1
GENERAL TEST AND VEHICLE PARAMETER DATA (Continued)

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	1230	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	29.8	kg (B)
Weight of instrumented SID HIII (81.2 kg)	=	81.2	kg (C)
TEST VEHICLE TARGET WEIGHT:	=	1341.0	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + SID HIII + CARGO):

	LEFT SIDE	RIGHT SIDE (kg)	TOTAL (kg)	PERCENT
FRONT =	412	375	787.0	58.4%
REAR=	289	272	561.0	41.6%

TOTAL FULLY LOADED WEIGHT : 1348.0 kg

AS TESTED WEIGHT OF TEST VEHICLE (1 SID HIII + CARGO + EQUIPMENT &INSTRUMENTATION):

	LEFT SIDE	RIGHT SIDE (kg)	TOTAL (kg)	PERCENT
FRONT =	400	383	783.0	58.7%
REAR=	279	272	551.0	41.3%

TOTAL TEST WEIGHT: 1334.0 kg

TEST VEHICLE ATTITUDE;

	As Delivered	Fully Loaded	Ready for Test
Left Front (mm)	698	689	690
Left Rear (mm)	720	704	705
Right Front (mm)	700	693	695
Right Rear (mm)	727	712	714
Front Bumper Angle	↓0.1↑	↓0.2↑	↓0.1↑
Left Door Sill Angle	↑0.4↓	↑0.5↓	↑0.4↓
Rear Bumper Angle	↓0.1↑	↓0.2↑	↓0.1↑
Right Door Sill	↓0.3↑	↓0.3↑	↓0.3↑

Test Vehicle Wheelbase: 2600 millimeters

C.G. = 1073.9 millimeters rearward of front wheel centerline

DATA SHEET 1
GENERAL TEST AND VEHICLE PARAMETER DATA (Continued)

TOTAL VEHICLE LENGTH: (Pre Test)

Right Side = 4391 mm
Centerline = 4521 mm
Left Side = 4403 mm

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel = 288 mm
Total Number of Adjustment Positions or Detents = 17

As-Tested Position:

Detent: 7
Distance from full forward: 132 mm

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Torso Angle = 92.1 degrees From headrest

As-Tested Position:

Seat Back Torso Angle = 92.1 degrees From headrest

ADJUSTABLE STEERING COLUMN POSITION:

Detent: N/A
Test Angle: 24.7 degrees

WINDOW POSITIONS:

Right Front= Open Right Rear= Removed
Left Front = Open Left Rear = Removed

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Capacity= 50.0 L
Test Volume = 46.6 L (92% to 94% of Useable Capacity)

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase = 2600 mm
Impact Reference Line is 1308 mm rearward of front axle centerline

DATA SHEET 2
TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2009 Toyota Corolla

Body Style: Sedan VIN: 2T1BU40E49C110830

NHTSA No.: C95105 Test Date: October 10, 2008

Overall Length = 4521 millimeters; Overall Width = 1750 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front	=	375 kg	Left Rear	=	247 kg
Right Front	=	363 kg	Right Rear	=	245 kg
TOTAL FRONT	=	738.0 kg	TOTAL REAR	=	492.0 kg

TOTAL VEHICLE WEIGHT 1230.0 kg

Wheelbase = 2600 millimeters

Longitudinal C.G. from Center of Front Axle = 1040.0 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 17 mm fwd of nominal impact ref. line (Lateral)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (	348 mm above ground)	=	208 millimeters
2. LEVEL 2 (	612 mm above ground)	=	256 millimeters
3. LEVEL 3 (	737 mm above ground)	=	272 millimeters
4. LEVEL 4 (	966 mm above ground)	=	256 millimeters
5. LEVEL 5 (	1498 mm above ground)	=	42 millimeters

Maximum Post-Test Intrusion = 272 millimeters

OCCUPANTS: Front Passenger:

Dummy Identification 905

Restraints Used 3-point belt system

INSTRUMENTATION:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3

Offboard = 10

TOTAL = 13

DATA SHEET 3
POST TEST OBSERVATIONS

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105

VISIBLE DUMMY CONTACT POINTS:

	SID HIII
Head:	Side Curtain
Upper Torso:	Torso Airbag
Lower Torso:	Door Skin
Left Knee:	Door Skin
Right Knee:	Left Knee

DOOR OPENING:

	LEFT DOOR	RIGHT DOOR
Front:	Closed / Inoperable	Closed / Operable
Rear:	Closed / Inoperable	Closed / Operable

ARM REST LOCATIONS:

Front: Intact after impact

Rear: Intact after impact

SEAT MOVEMENT:

Front: None

Rear: None

GLAZING DAMAGE:

Windshield: Shattered in front of driver

Window: None

PILLAR PERFORMANCE:

OK

SILL SEPARATION:

None

AIR BAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
FRONT	YES	NO	YES
SIDE	YES	NO	NO

OTHER NOTABLE IMPACT EFFECTS:

NONE

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 4
SID HIII INSTRUMENTATION DATA

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105

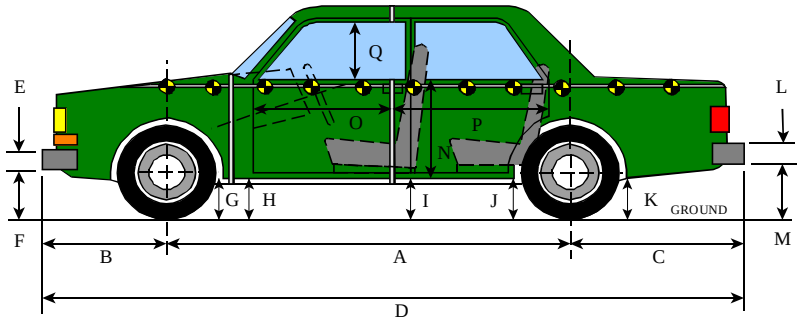
	Front Dummy ID# 905			
	Pos. Direction		Neg. Direction	
	Max	Time	Max	Time
HEAD ACCELERATIONS:	(g)	(msec)	(g)	(msec)
Longitudinal X	4.6	118	-10.1	56
Lateral Y	55.1	53	-10.0	87
Vertical Z	10.8	97	-12.8	59
Resultant R	55.8	53	0.1	26
HIC	319.9			
NECK LOADS:	(N)	(msec)	(N)	(msec)
Longitudinal X	49.5	48	-113.7	102
Lateral Y	158.1	140	-513.5	67
Vertical Z	473.2	97	-324.4	60
Resultant R	544.5	62	6.3	-60
NECK MOMENTS:	(N-m)	(msec)	(N-m)	(msec)
Longitudinal X	19.4	133	-41.8	57
Lateral Y	11.8	115	-10.3	101
Vertical Z	10.9	261	-29.1	125
Resultant R	42.9	57	0.6	-59
RIB ACCELERATIONS:	(g)	(msec)	(g)	(msec)
Upper Rib Lateral Y	65.2	46	-8.9	119
Upper Rib Lateral Y(R)	67.3	46	-8.8	120
Lower Rib Lateral Y	68.7	46	-8.2	101
Lower Rib Lateral Y(R)	70.0	46	-8.7	101
SPINE ACCELERATIONS:	(g)	(msec)	(g)	(msec)
Lower Lateral Y	60.1	49	-7	81
Lower Lateral Y(R)	59.4	49	-7.3	81
PELVIC ACCELERATIONS:	(g)	(msec)	(g)	(msec)
Lateral Y	48.9	46	-4.8	99
Lateral Y(R)	48.6	46	-4.5	99

REFERENCE: Positive Direction –
Longitudinal (X) = forward
Lateral (Y) = to right
Vertical (Z) = down

Note: Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
Head Accelerations are filtered at SAE Class 1000, Neck Force uses Class 1000, Neck Moment uses Class 600

DATA SHEET 5
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105



LEFT SIDE VIEW

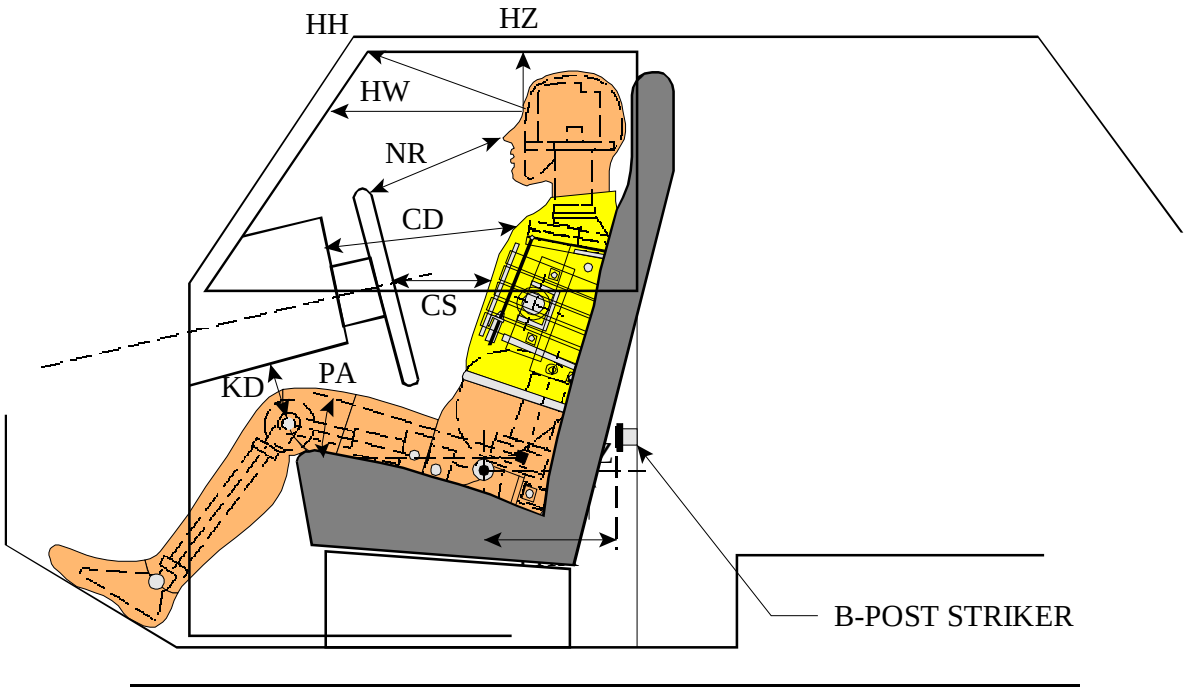
NOTE: all dimensions are in millimeters with tolerance of ±3 mm

	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	Δ CHANGE
A	2602	2600	2581	-19
B	937	938	951	13
C	982	983	987	4
D	4521	-	4519	-2
E	129	-	129	0
F	406	397	426	29
G	190	178	182	4
H	193	181	184	3
I	221	208	200	-8
J1	212	195	219	24
J2	228	213	219	6
K	251	232	244	12
L	290	-	290	0
M	317	302	285	-17
N	723	-	726	3
O	893	-	885	-8
P	1010	-	1004	-6
Q	407	-	377	-30
R	4391	-	4415	24
S	4403	-	4387	-16
T	1750	-	1626	-124

D = Length at Centerline E&L = Bumper Thickness R = Right Side Length S = Left Side Length
T = Width at B-Pillar J1 = To Pinch Weld J2 = To Sill

DATA SHEET 6
SID HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105



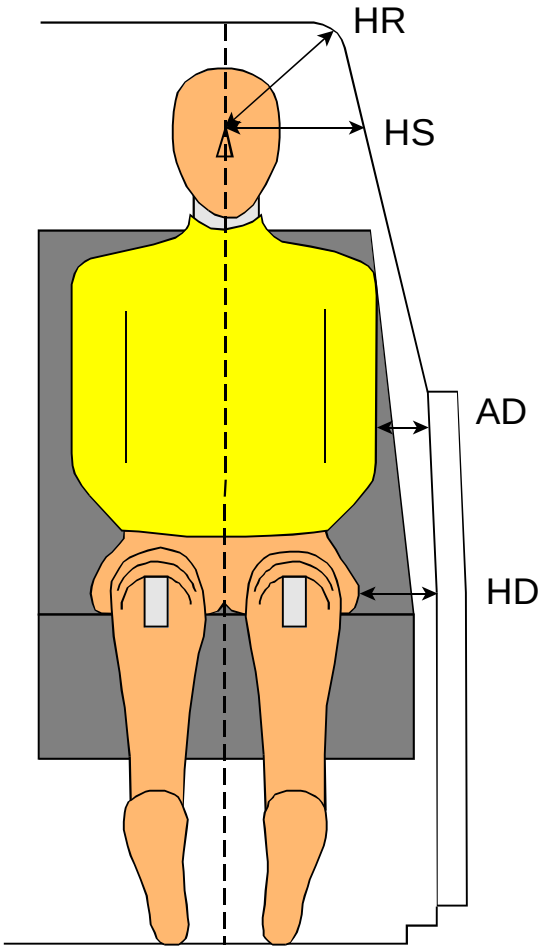
LEFT SIDE VIEW

NOTE: All dimensions are in millimeters with tolerance of ±3 mm

	SID HIII ID# 905
HH	328
HW	592
HZ	160
NR	371
CD	496
CS	287
KDL(KDA^o)	145 (14^o)
KDR(KBA^o)	125 (12^o)
PA^o	24.7 ^{o}
PHX	214
PHZ	242

DATA SHEET 7
SID HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105



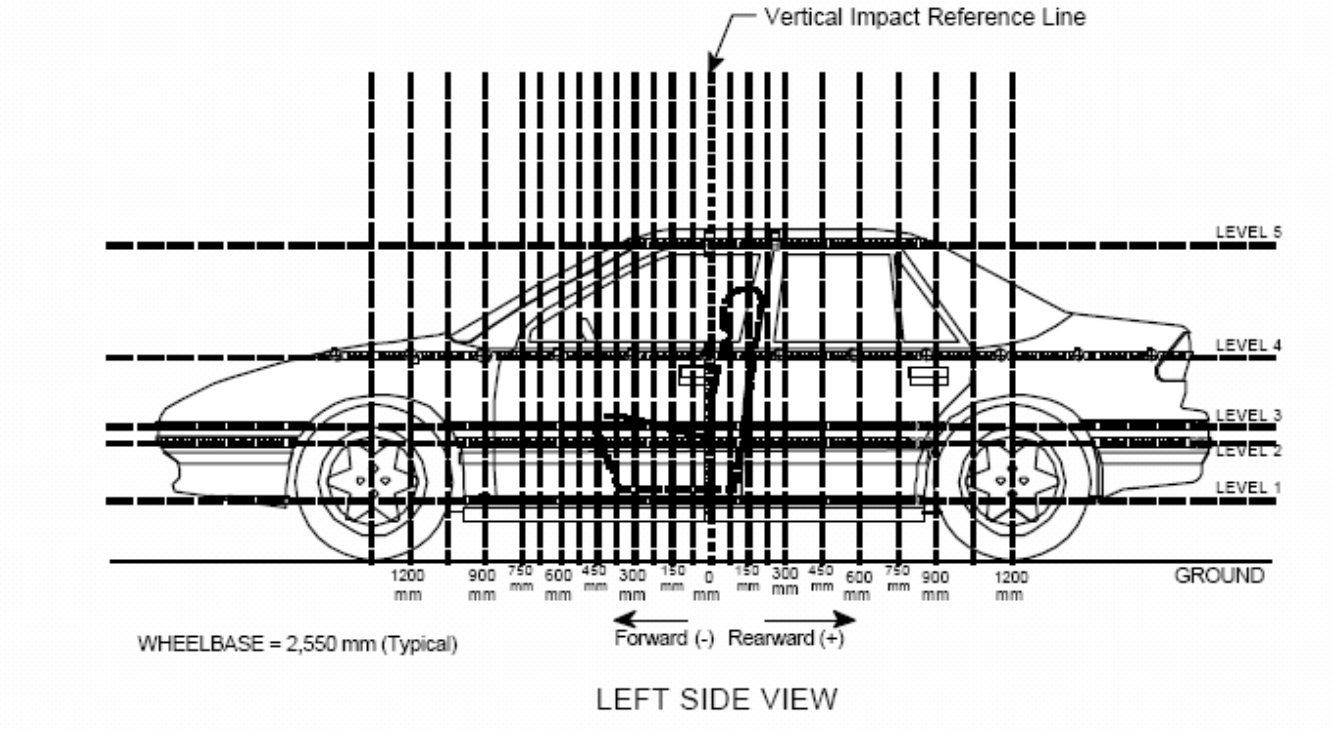
NOTE: All dimensions are in millimeters with tolerance of ±3 mm

	SID HIII ID # 905			
HR	205			
HS	334			
AD*	LOWER:	124	UPPER:	124
HD	168			

* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID arm to the closest part of the vehicle side. Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID HIII arm to the closest part of the vehicle side.

DATA SHEET 8
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105



MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.

Measurements Along the Vertical 0 mm Line Shown Above:

Level 5 @ Window Top	=	42	millimeters
Level 4 @ Window Sill	=	256	millimeters
Level 3 @ Mid Door	=	272	millimeters
Level 2 @ Occupant H-Point	=	256	millimeters
Level 1 @ Sill Top Height	=	208	millimeters

DATA SHEET 9
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105

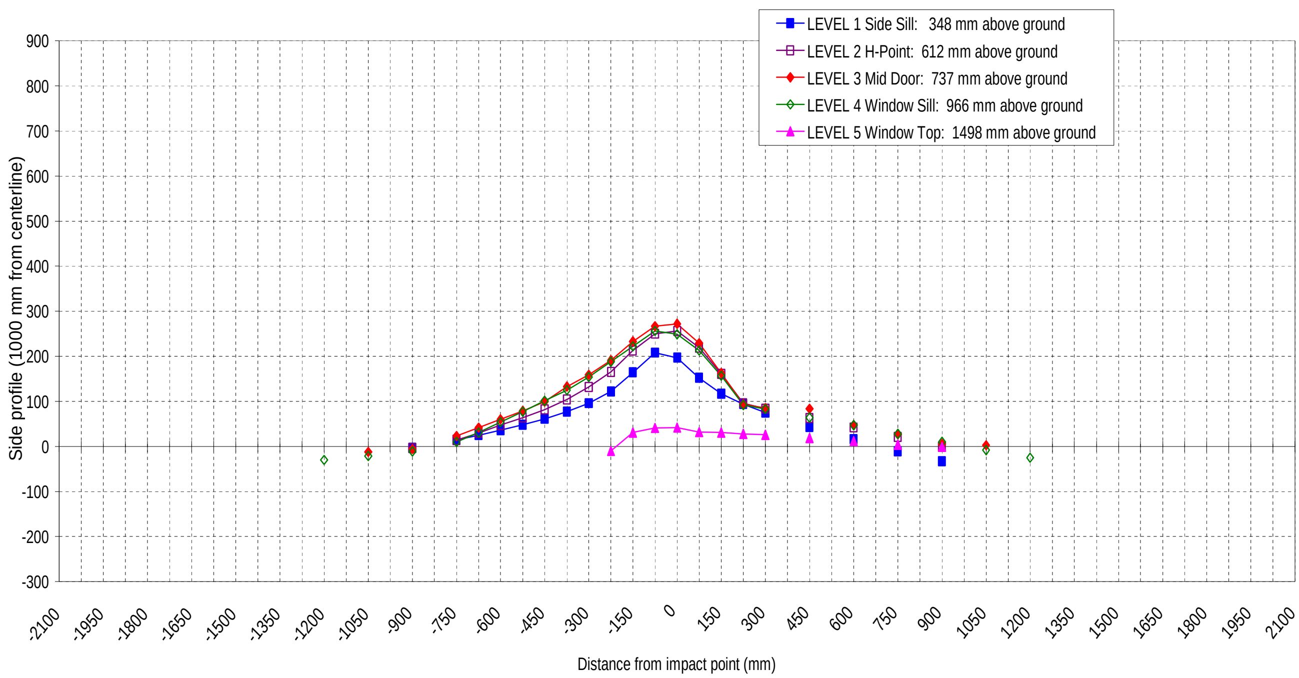
NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT

LEVEL	HEIGHT (mm)		-2100	-2025	-1950	-1875	-1800	-1725	-1650	-1575	-1500	-1425	-1350	-1275	-1200	-1125	-1050	-975	-900	-825
LEVEL 1		PRE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	149	--
SIDE	348	POST	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	146	--
SILL		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3	N/A
LEVEL 2		PRE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120	--
H	612	POST	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	116	--
POINT		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4	N/A
LEVEL 3		PRE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	112	--	121	--
MID	737	POST	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100	--	115	--
DOOR		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-12	N/A	-6	N/A
LEVEL 4		PRE	--	--	--	--	--	--	--	--	--	--	--	--	167	--	160	--	161	--
WINDOW	966	POST	--	--	--	--	--	--	--	--	--	--	--	--	137	--	139	--	150	--
SILL		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-30	N/A	-21	N/A	-11	N/A
LEVEL 5		PRE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WINDOW	1498	POST	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOP		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

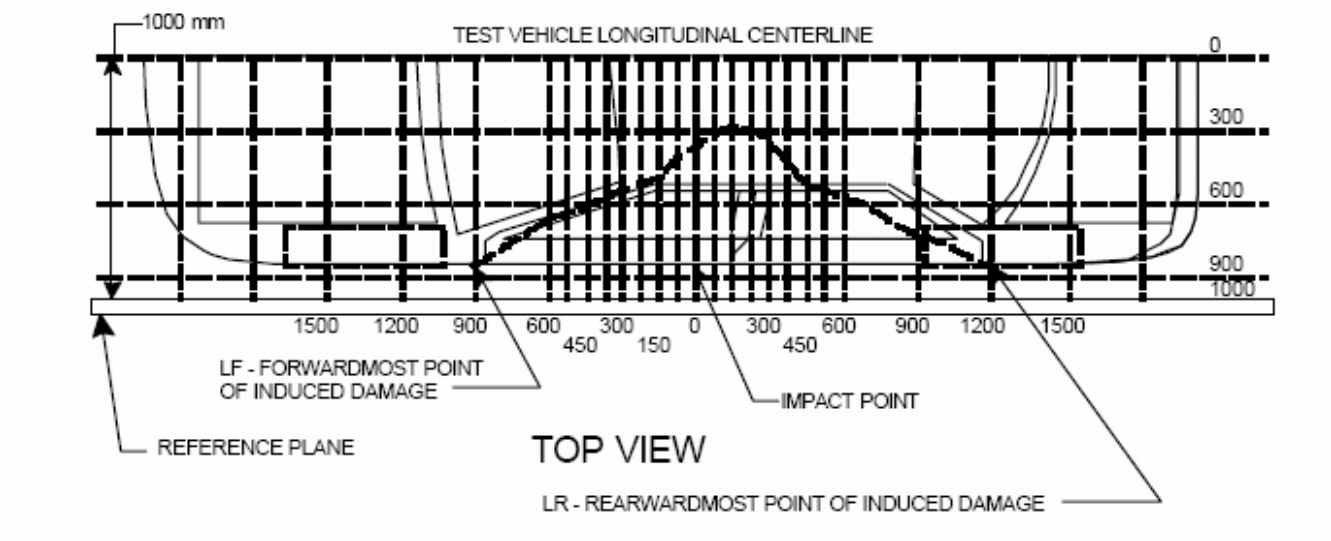
LEVEL	HEIGHT (mm)		-750	-675	-600	-525	-450	-375	-300	-225	-150	-75	0	75	150	225	300	375	450	525	600
LEVEL 1		PRE	160	162	162	161	160	158	156	155	154	153	152	151	152	151	150	--	150	--	149
SIDE	348	POST	175	187	198	209	221	235	252	277	318	361	349	308	269	245	225	--	193	--	165
SILL		CRUSH	15	25	36	48	61	77	96	122	164	208	197	152	117	94	75	N/A	43	N/A	16
LEVEL 2		PRE	129	130	129	128	127	126	124	123	122	121	120	120	120	119	120	--	121	--	122
H	612	POST	143	160	176	192	209	230	256	288	335	371	376	339	281	215	204	--	184	--	164
POINT		CRUSH	14	30	47	64	82	104	132	165	213	250	256	219	161	96	84	N/A	63	N/A	42
LEVEL 3		PRE	125	124	123	121	120	118	116	115	114	113	112	112	111	111	111	--	112	--	113
MID	737	POST	148	166	183	200	219	251	275	306	347	380	384	341	274	205	196	--	196	--	160
DOOR		CRUSH	23	42	60	79	99	133	159	191	233	267	272	229	163	94	85	N/A	84	N/A	47
LEVEL 4		PRE	164	162	160	157	153	149	145	142	139	135	129	123	123	129	128	--	128	--	128
WINDOW	966	POST	174	193	214	234	254	274	299	330	361	391	378	336	280	221	211	--	192	--	175
SILL		CRUSH	10	31	54	77	101	125	154	188	222	256	249	213	157	92	83	N/A	64	N/A	47
LEVEL 5		PRE	--	--	--	--	--	--	--	514	431	420	413	409	407	406	407	--	407	--	410
WINDOW	1498	POST	--	--	--	--	--	--	--	504	462	461	455	441	438	434	433	--	426	--	422
TOP		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-10	31	41	42	32	31	28	26	N/A	19	N/A	12

LEVEL	HEIGHT (mm)		675	750	825	900	975	1050	1125	1200	1275	1350	1425	1500	1575	1650	1725	1800	1875	1950	2025	2100
LEVEL 1		PRE	--	149	--	150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SIDE	348	POST	--	138	--	117	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILL		CRUSH	N/A	-11	N/A	-33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2		PRE	--	121	--	116	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
H	612	POST	--	142	--	115	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
POINT		CRUSH	N/A	21	N/A	-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 3		PRE	--	114	--	112	--	107	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MID	737	POST	--	141	--	118	--	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DOOR		CRUSH	N/A	27	N/A	6	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 4		PRE	--	129	--	131	--	135	--	139	--	--	--	--	--	--	--	--	--	--	--	--
WINDOW	966	POST	--	157	--	141	--	127	--	114	--	--	--	--	--	--	--	--	--	--	--	--
SILL		CRUSH	N/A	28	N/A	10	N/A	-8	N/A	-25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 5		PRE	--	417	--	434	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WINDOW	1498	POST	--	421	--	433	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOP		CRUSH	N/A	4	N/A	-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



DATA SHEET 10
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105



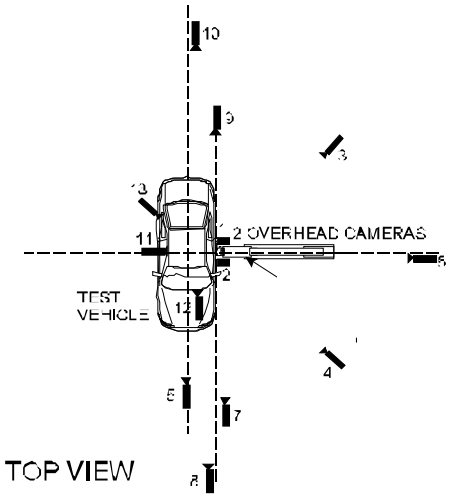
MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (-).
Rearward of the impact point (toward rear of vehicle) is considered positive (+).

NOTE: All dimensions are in millimeters with tolerance of ±3 mm.

DPD MEASUREMENTS (mm)		POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1 (LR)	1050	0	0	0
2	675	0	0	-85
3	300	111	196	85
4	-75	113	380	267
5	-450	153	254	101
6 (LF)	-825	0	0	0

DATA SHEET 11
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	970	180	-4375	90	8	1000
2	Overhead closeup view of impact plane	390	180	-4375	90	28	1000
3	Left side 45° – rearward pole view	2925	2840	1255	3.4	24	1000
4	Left side 45° – forward pole view	2295	2075	1935	19.1	24	1000
5	Real time (30 fps) film coverage of test	-	-	-	-	-	30
6	Left side – rear pole view	1010	1605	2205	31.2	24	1000
7	Front ground level – vehicle/pole impact	8399	315	1015	1.9	24	1000
8	Front ground level – vehicle roof targets and vehicle/pole impact	9858	65	970	1.7	50	1000
9	Rear ground level – vehicle/pole impact	8140	780	970	0.4	50	1000
10	Rear ground level – view of rear roof targets	9410	45	955	1.9	28	1000
11	Test vehicle onboard -- side view of SID H3	209	1604	1059	5.6	12	1000
12	Test vehicle onboard– front view of SID H3	1385	505	1250	11.8	25	1000
13	Test vehicle onboard– 3/4 rear view of SID H3	605	1634	1163	5.7	12.5	1000

* Reference (from point of impact); all measurements accurate to within ±6 mm.

+X = Forward
+Y = To Right
+Z = Down

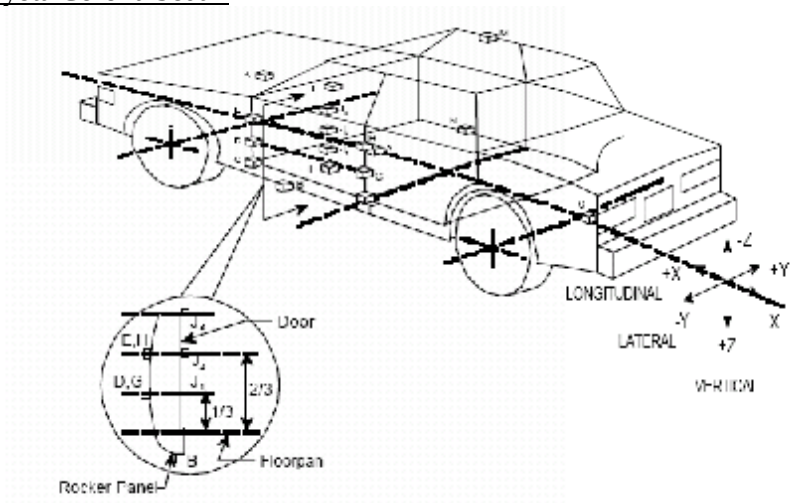
DATA SHEET 12
DUMMY DAMAGE CHECKLIST – SID HIII

Dummy Serial No. 905 Date: 10/14/08

OK	Damaged	(Begin with general cleaning)
X	-	Outer skin on entire dummy (gashes, rips, etc.)
X	-	Head - Check that ballast is secure
X	-	Gashes, rips, general appearances, etc
X	-	Neck - Broken or cracks in rubber
X	-	Check that upper neck bracket is firmly attached to lower neck
X	-	Check for looseness at the condyle joint
X	-	Nodding blocks – cracked or out of position
X	-	Spine - Broken or cracks in rubber
X	-	Ribs - Check all ribs and rib supports for damage (bent or broken)
X	-	Check damping material or separation or cracks
X	-	Three rubber bumpers in place
X	-	Lateral Shock Absorber - Bent or broken
X	-	Transducer Leads - Torn cables
X	-	Accelerometer Mountings - (head, ribs, spine, and pelvis) - Check for secure mounting).
X	-	Knees- Check outer skin, insert and casting (without removing insert)
X	-	Limbs- Check for normal movement and adjustment
X	-	Head / Neck bracket attachment - Check to see if cracked or broken

DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105



Accelerometer Location		Pre-Test (mm)			Post Test (mm)		
		X	Y	Z	X	Y	Z
A	Vehicle CG X,Y,Z	2008	0	-558	2001	5	-558
B	Struck Side Front Sill Y	2840	-613	-415	2821	-609	-410
C	Struck Side A-Pillar Sill Y	3136	-590	-482	3109	-581	-472
D	Struck Side Lower A-Pillar Y	3140	-590	-579	3167	-586	-579
E	Struck Side Middle A-Pillar Y	3101	-638	-1109	3080	-637	-1106
F	Struck Side B-Pillar Sill Y	2131	-654	-437	2113	-557	-439
G	Struck Side Lower B-Pillar Y	2124	-671	-682	2105	-548	-675
H	Struck Side Middle B-Pillar Y	2072	-667	-1019	2053	-555	-1012
I	Front Outboard Seat Track Y at H-point X	2384	-611	-395	2222	-455	-375
J	Front Door Y (3) – 480 mm forward of impact	-	-	-	-	-	-
K	Top of Engine X,Y	3787	92	-909	3787	92	-909
L	Center of Firewall Y	3354	-212	-794	3354	-212	-794
M	Unstruck Side Roof Rail Y at impact line	2281	523	-1528	2281	523	-1528
N	Unstruck Side Floor Sill Y at impact line	2278	660	-518	2278	660	-518
O	Rear Axle Floorpan X,Y	1210	-12	-608	1210	-12	-608

*Reference: X - Rear Bumper (Positve Forward)
Y - Vehicle Centerline (Positive To Right)
Z - Ground Level (Positive Up)

DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY (Continued)

Test Vehicle: 2009 Toyota Corolla Sedan NHTSA No. C95105

		Longitudinal		Lateral		Vertical		Resultant	
Accelerometer		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
A	Pos.	15.2	237.7	101.2	25.6	15.7	147	117.6	25.3
	Neg.	-39.3	25.3	-11.1	31.6	-50.8	24.6		
B	Pos.	-	-	80.6	16.8	-	-	-	-
	Neg.	-	-	-38	21.3	-	-	-	-
C	Pos.	-	-	34.1	41.2	-	-	-	-
	Neg.	-	-	-28.7	75.4	-	-	-	-
D	Pos.	-	-	42	18.1	-	-	-	-
	Neg.	-	-	-13.1	13.3	-	-	-	-
E	Pos.	-	-	65.4	36.5	-	-	-	-
	Neg.	-	-	-69.7	41.7	-	-	-	-
F	Pos.	-	-	69.1	21.3	-	-	-	-
	Neg.	-	-	-3.4	36.8	-	-	-	-
G	Pos.	-	-	66.6	25	-	-	-	-
	Neg.	-	-	-30.3	20.3	-	-	-	-
H	Pos.	-	-	52.3	15.1	-	-	-	-
	Neg.	-	-	-37	32.9	-	-	-	-
I	Pos.	-	-	64.2	21.6	-	-	-	-
	Neg.	-	-	-10.5	29.3	-	-	-	-
J	Pos.	-	-	-	-	-	-	-	-
	Neg.	-	-	-	-	-	-	-	-
K	Pos.	6.6	68.6	19.4	64.4	-	-	-	-
	Neg.	-15.3	41	-2.5	129.4	-	-	-	-
L	Pos.	-	-	13.5	63.8	-	-	-	-
	Neg.	-	-	-0.9	284.5	-	-	-	-
M	Pos.	-	-	15.9	30.3	-	-	-	-
	Neg.	-	-	-2	357.8	-	-	-	-
N	Pos.	-	-	15.8	19.4	-	-	-	-
	Neg.	-	-	-0.7	188.8	-	-	-	-
O	Pos.	7.9	21.9	18	55.1	-	-	-	-
	Neg.	-4.7	16	-1.2	143.2	-	-	-	-

SECTION 5

FMVSS NO. 301 DATA

DATA SHEET 14
SUMMARY OF FMVSS NO. 301 DATA

NHTSA TEST No.: C95105 TEST DATE: October 10, 2008

VEHICLE MAKE/MODEL: 2009 Toyota Corolla Sedan

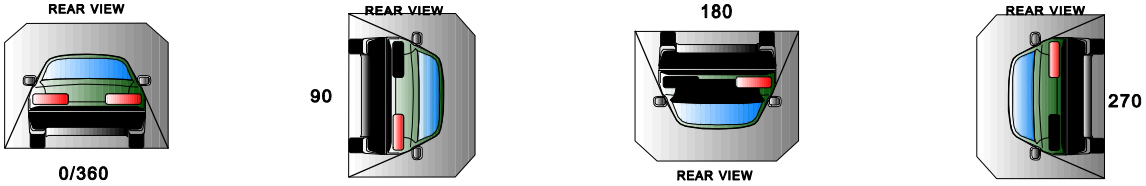
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

FUEL SPILLAGE MEASUREMENT:

Time Interval	Amount	Maximum Allowable Spillage
Impact Until Motion Ceases	0	**28 g**
First Five Minutes Following Impact	0	**142 g**
Next 25 Minutes	0	**28 g / 1 minute**

SOLVENT SPILLAGE DETAILS: None

FMVSS 301 STATIC ROLLOVER DATA



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0º - 90º	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes
90º - 180º	1	minutes	06	seconds	5	minutes	6	minutes	6	seconds	7	minutes
180º-270º	0	minutes	58	seconds	5	minutes	5	minutes	58	seconds	6	minutes
270º-360º	1	minutes	10	seconds	5	minutes	6	minutes	10	seconds	7	minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0º - 90º	0	0	0	N/A
90º - 180º	0	0	0	N/A
180º-270º	0	0	N/A	N/A
270º-360º	0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0º - 90º	None
90º - 180º	None
180º-270º	None
270º-360º	None

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (continued)

Figure A-1: As Received Left Front ¾ View

Figure A-2: As Received Right Rear ¾ View

Figure A-3: Vehicle Certification Label

Figure A-4: Vehicle Tire Placard Label

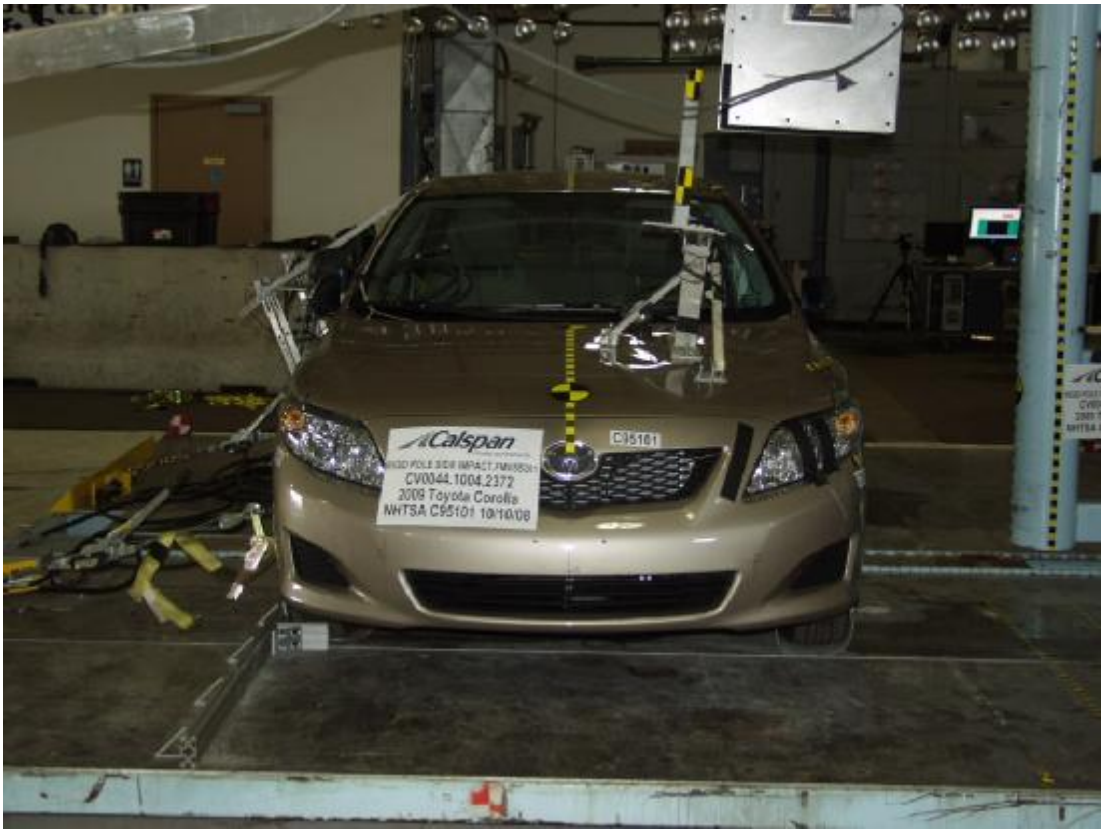


Figure A-5: Pre-Test Front View

Figure A-6: Post-Test Front View

Figure A-7: Pre-Test Left Front ¾ View

Figure A-8: Post-Test Left Front ¾ View

Figure A-9: Pre-Test Left Side View

Figure A-10: Post-Test Left Side View

Figure A-11: Pre-Test Left Rear ¾ View

Figure A-12: Post-Test Left Rear ¾ View

Figure A-13: Pre-Test Rear View

Figure A-14: Post-Test Rear View

Figure A-15: Pre-Test Right Rear ¾ View

Figure A-16: Post-Test Right Rear ¾ View

Figure A-17: Pre-Test Right Side View

Figure A-18: Post-Test Right Side View

Figure A-19: Pre-Test Right Front ¾ View

Figure A-20: Post-Test Right Front ¾ View

Figure A-21: Pre-Test Left Side View of Aligned Vehicle and Pole

Figure A-22: Pre-Test Right Side View of Aligned Vehicle and Pole

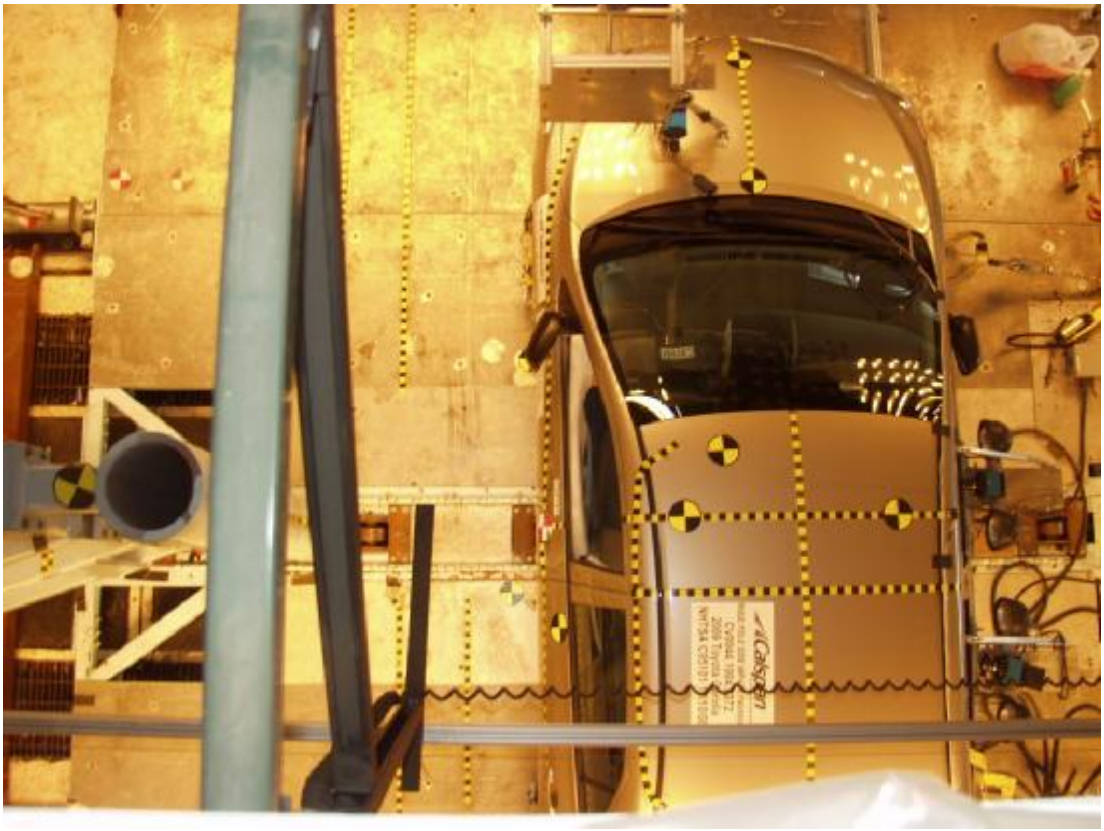


Figure A-23: Pre-Test Overhead View of Aligned Vehicle and Pole

Figure A-24: Post-Test Overhead View of Vehicle and Pole

Figure A-25: Pre-Test Close-Up View of Impact Point Target

Figure A-26: Post-Test Close-Up View of Impact Point Target

Figure A-27: Pre-Test Opposite Side View of SID HIII

Figure A-28: Post-Test Opposite Side View of SID HIII

Figure A-29: Pre-Test Impact Side View of SID HIII with Door Open

Figure A-30: Pre-Test Impact Side View of SID HIII

Figure A-31: Post-Test Impact Side View of SID HIII

Figure A-32: Pre-Test Dummy Shoulder and Door Top View

Figure A-33: Post-Test Dummy Shoulder and Door Top View

Figure A-34: Pre-Test Impact Side Front Interior Trim

Figure A-35: Post-Test Impact Side Front Interior Trim

Figure A-36: Pre-Test Left Front ¾ View of Impact Zone

Figure A-37: Post-Test Left Front ¾ View of Impact Zone

Figure A-38: Pre-Test Left Rear ¾ View of Impact Zone

Figure A-39: Post-Test Left Rear ¾ View of Impact Zone

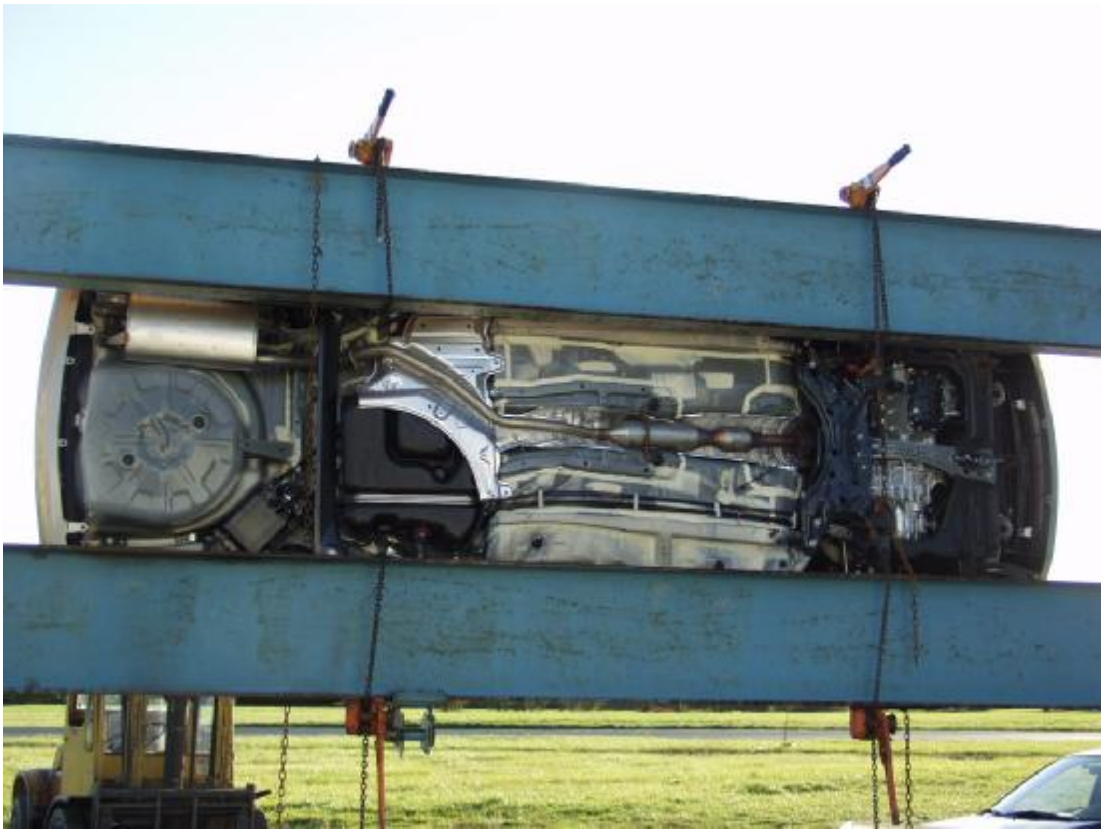


Figure A-40: Rollover 90 Degrees

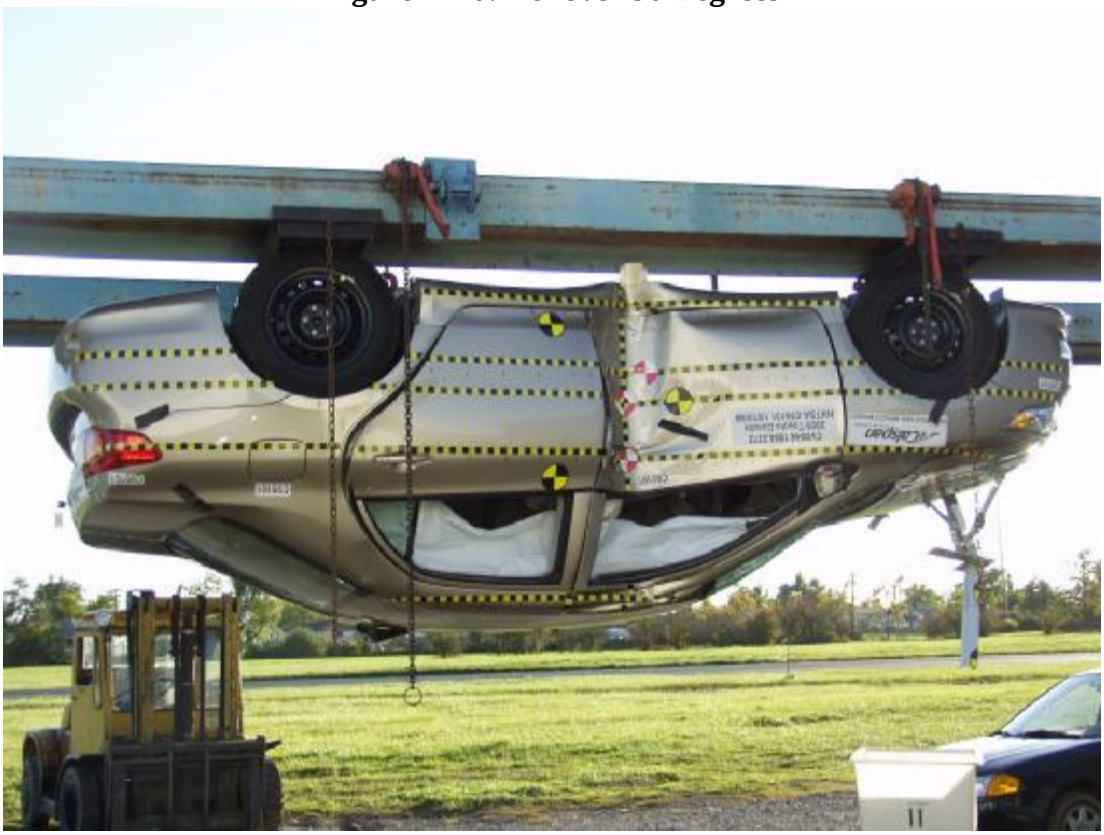


Figure A-41: Rollover 180 Degrees

Figure A-42: Rollover 270 Degrees

Figure A-43: Rollover 360 Degrees

Figure A-44: Impact Photo

APPENDIX B

SID HIII AND VEHICLE RESPONSE DATA

(SAE sign convention)

DATA CHANNEL FILTER CLASS SUMMARY

Data Type	SAE Filter Class
Dummy Head Accelerations	CFC 1000
Rib Accelerations	FIR 100
Spine Accelerations	FIR 100
Pelvis Accelerations	FIR 100

DATA CHANNEL TITLE KEY

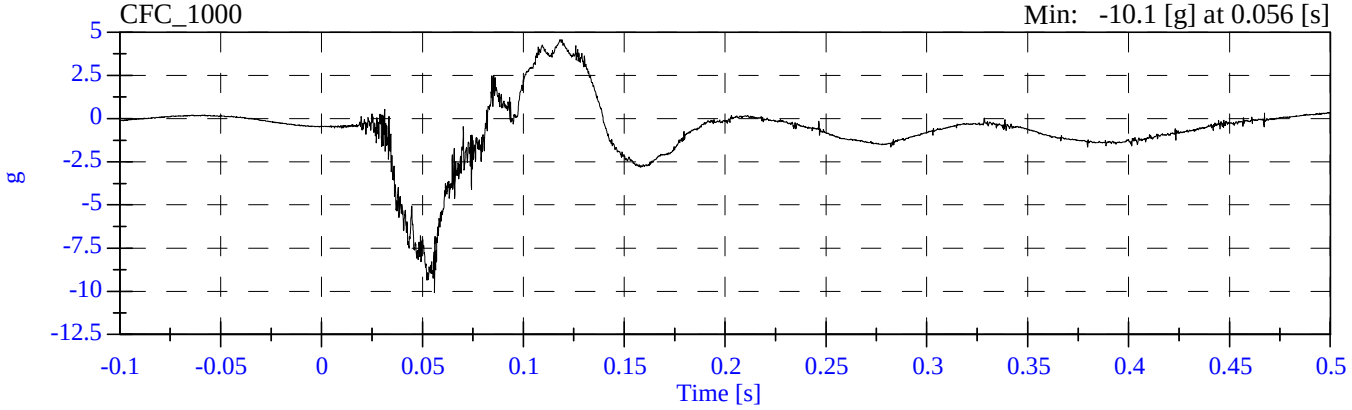
Prefix	Suffix
V1 = Vehicle 1 (Test Vehicle)	Ax = Acceleration, X-direction
	Ay = Acceleration, Y-direction
P1 = Left Front Seating Position (Driver)	Az = Acceleration, Z-direction
P2 = Left Front Seating Position (Passenger)	Fx = Force, X-direction
A1-A17 = Accelerometer Location Number	Fy = Force, Y-direction
	Fz = Force, Z-direction
	Mx = Moment about X
	My = Moment about Y
	Mz = Moment about Z
	Vx = Velocity, X-direction
	Vy = Velocity, Y-direction
	Vz = Velocity, Z-direction
	R = Redundant

TABLE OF DATA PLOTS

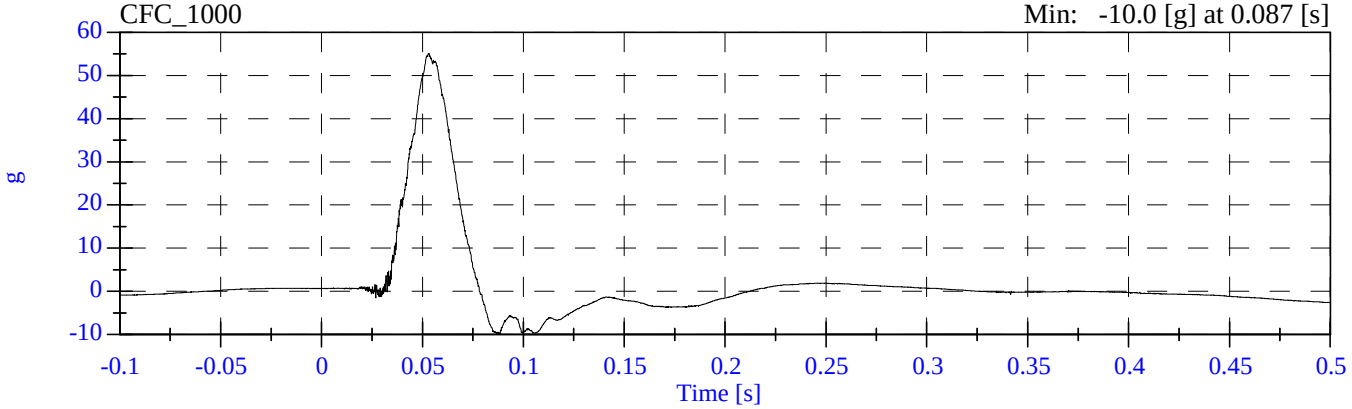
TABLE OF DATA PLOTS (continued)

2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

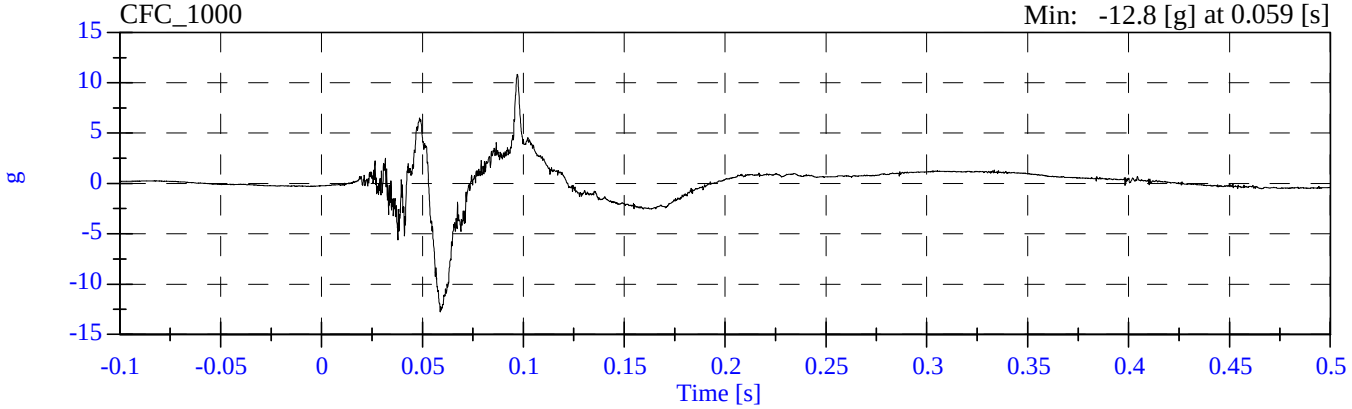
V1P1 Head x
CFC_1000
Max: 4.6 [g] at 0.118 [s]
Min: -10.1 [g] at 0.056 [s]



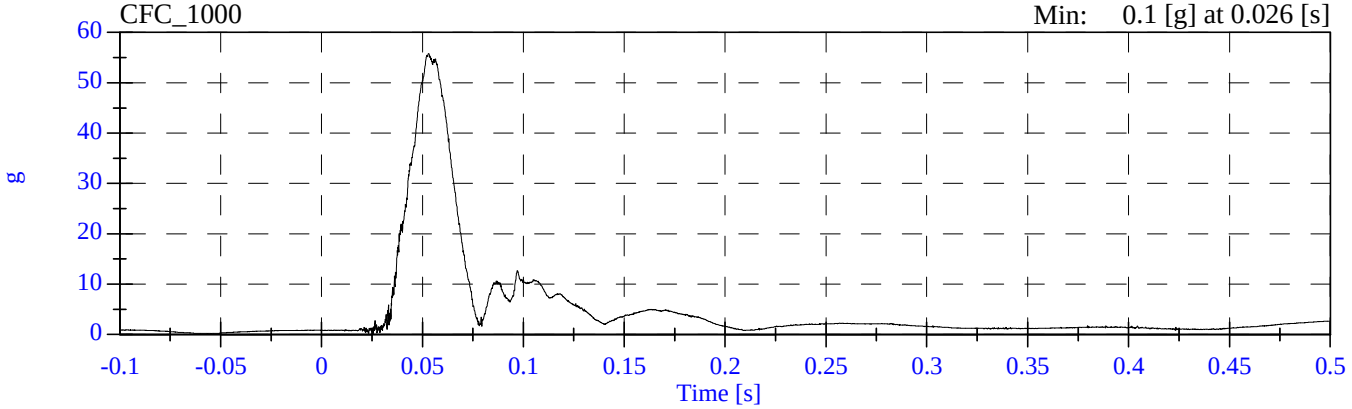
V1P1 Head y
CFC_1000
Max: 55.1 [g] at 0.053 [s]
Min: -10.0 [g] at 0.087 [s]



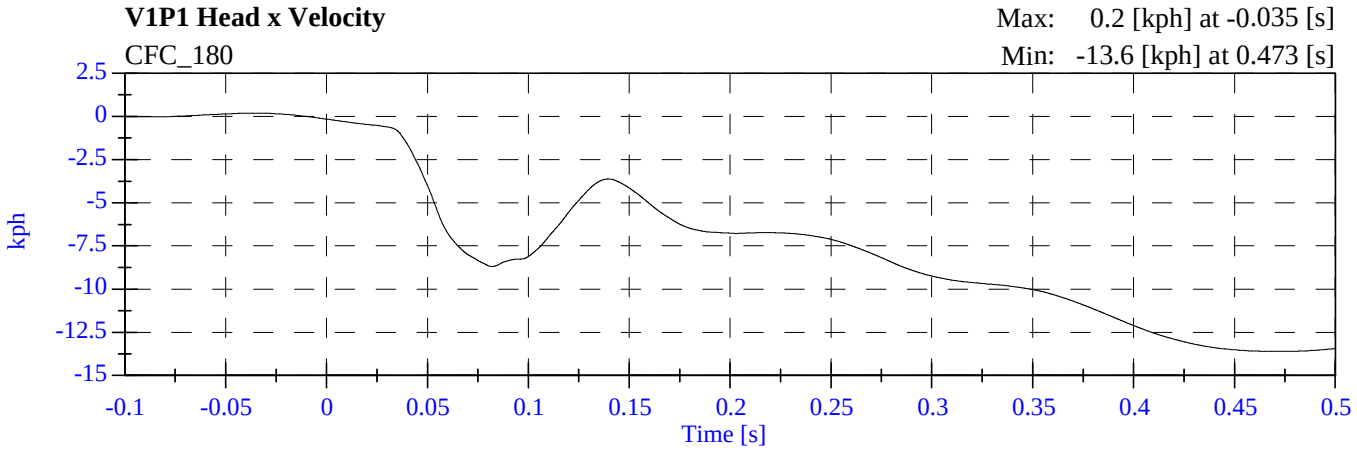
V1P1 Head z
CFC_1000
Max: 10.8 [g] at 0.097 [s]
Min: -12.8 [g] at 0.059 [s]

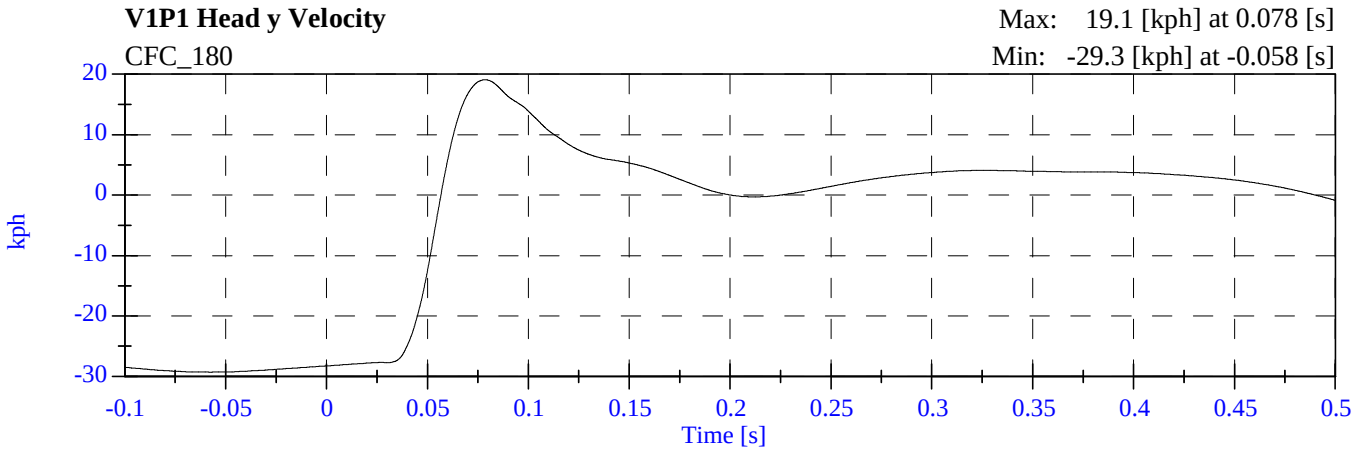


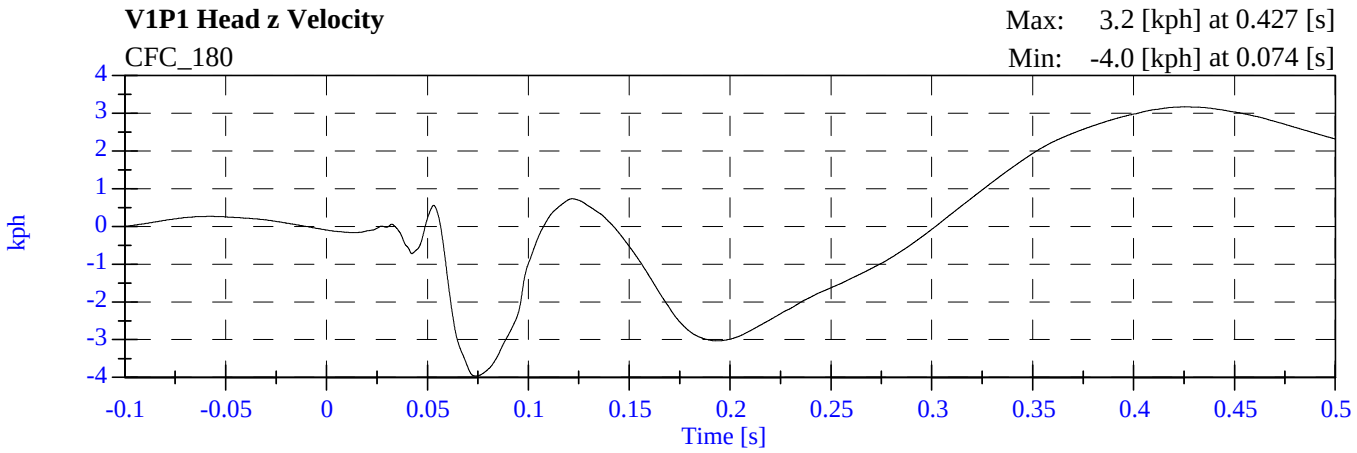
V1P1 Head Resultant
CFC_1000
Max: 55.8 [g] at 0.053 [s]
Min: 0.1 [g] at 0.026 [s]



2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008







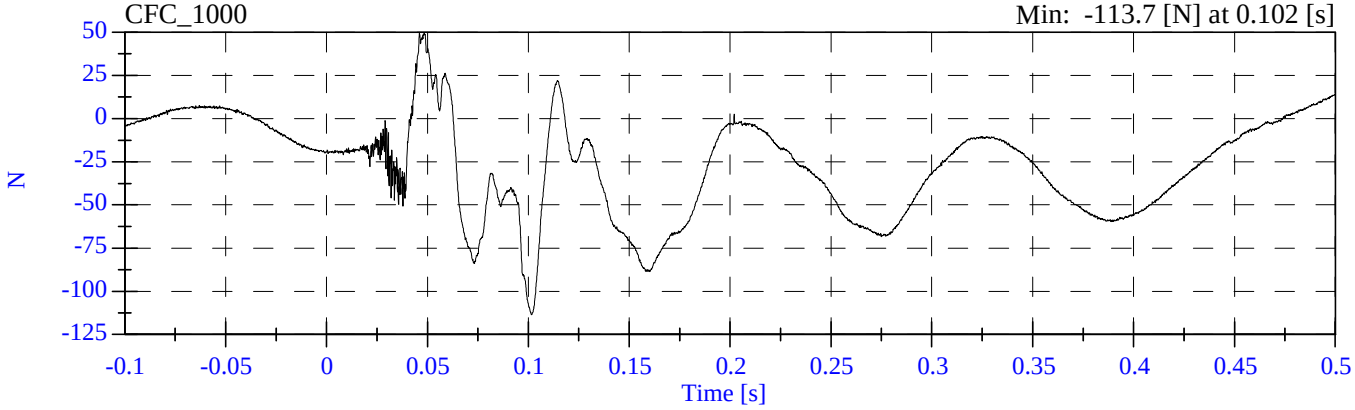
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1P1 Upper Neck Fx

Max: 49.5 [N] at 0.048 [s]

CFC_1000

Min: -113.7 [N] at 0.102 [s]

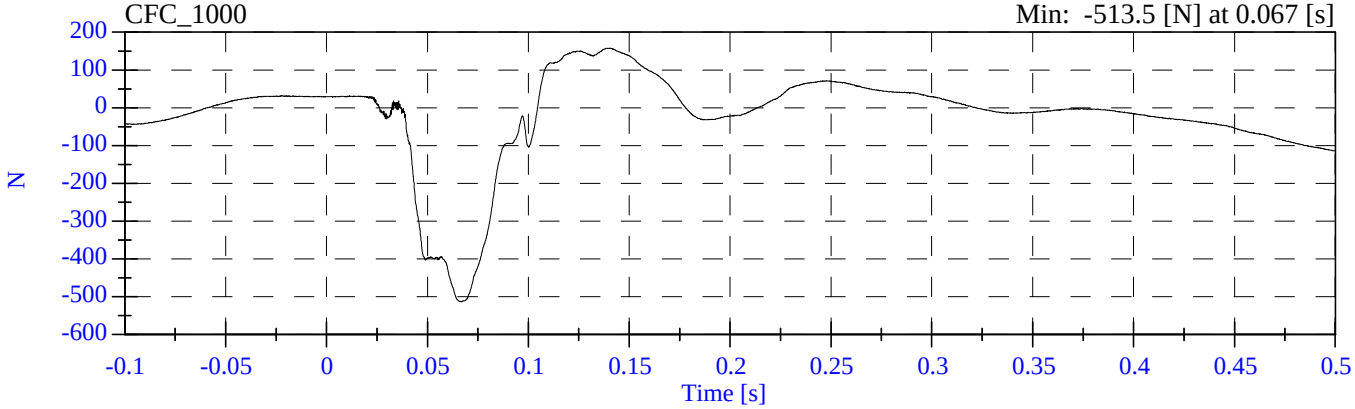


V1P1 Upper Neck Fy

Max: 158.1 [N] at 0.140 [s]

CFC_1000

Min: -513.5 [N] at 0.067 [s]

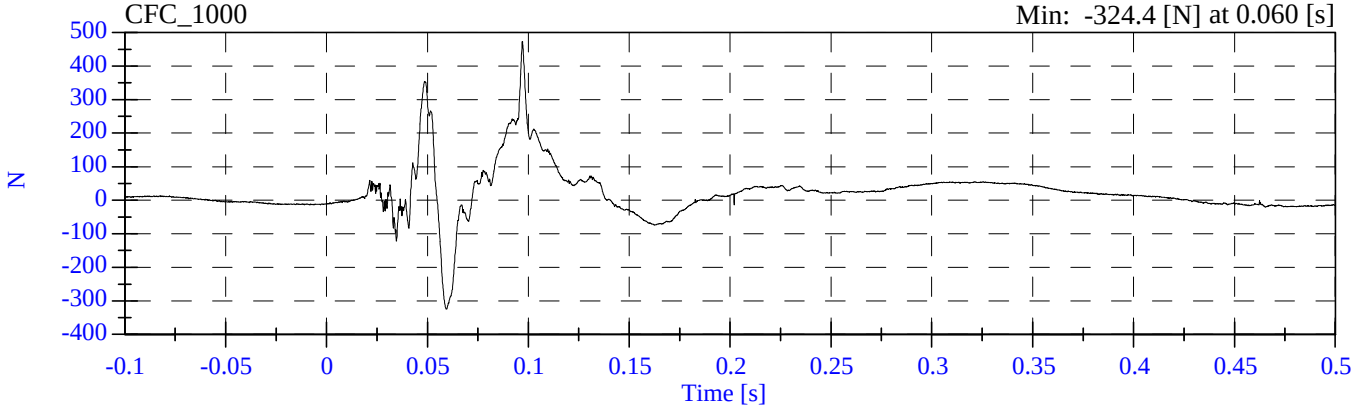


V1P1 Upper Neck Fz

Max: 473.2 [N] at 0.097 [s]

CFC_1000

Min: -324.4 [N] at 0.060 [s]

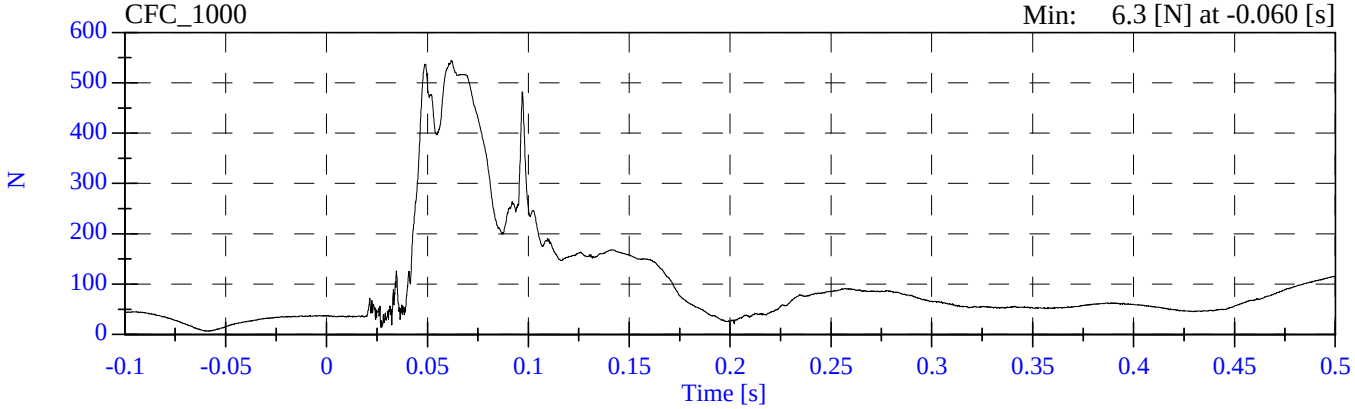


V1P1 Upper Neck F Resultant

Max: 544.5 [N] at 0.062 [s]

CFC_1000

Min: 6.3 [N] at -0.060 [s]



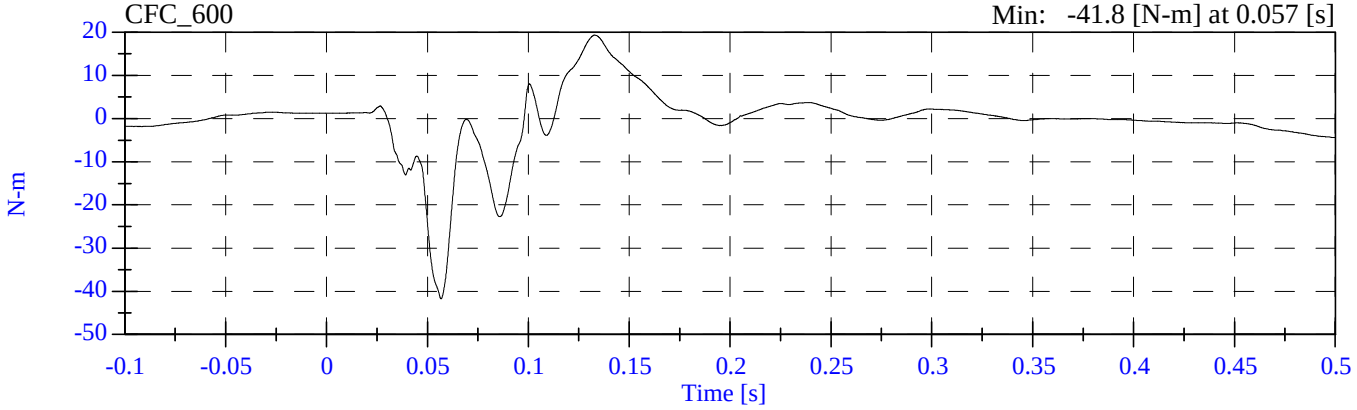
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1P1 Upper Neck Mx

Max: 19.4 [N-m] at 0.133 [s]

CFC_600

Min: -41.8 [N-m] at 0.057 [s]

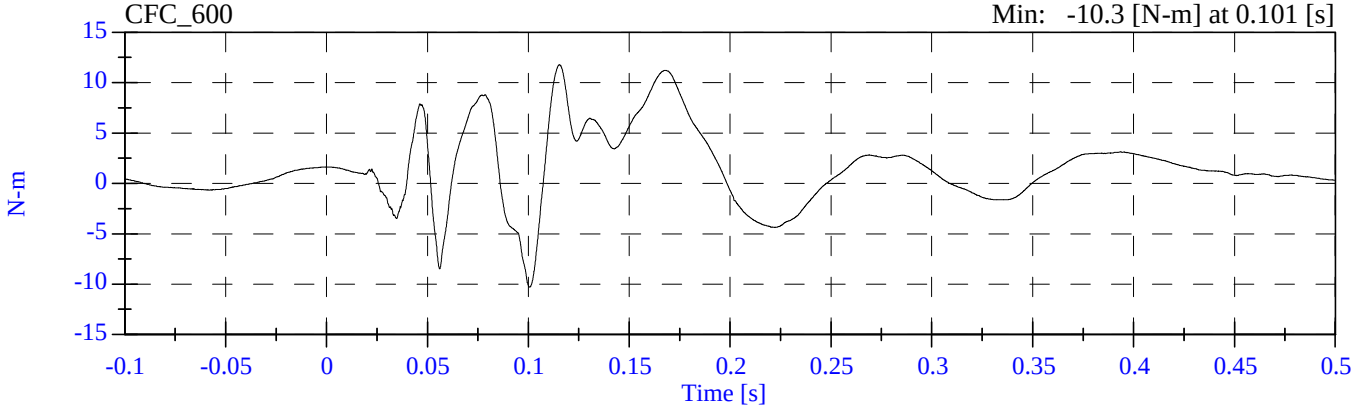


V1P1 Upper Neck My

Max: 11.8 [N-m] at 0.115 [s]

CFC_600

Min: -10.3 [N-m] at 0.101 [s]

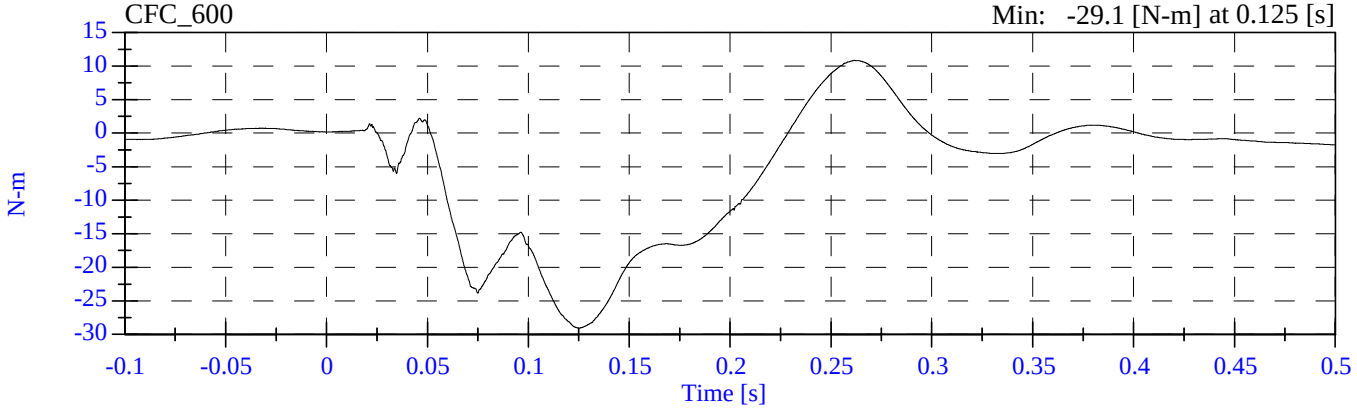


V1P1 Upper Neck Mz

Max: 10.9 [N-m] at 0.261 [s]

CFC_600

Min: -29.1 [N-m] at 0.125 [s]

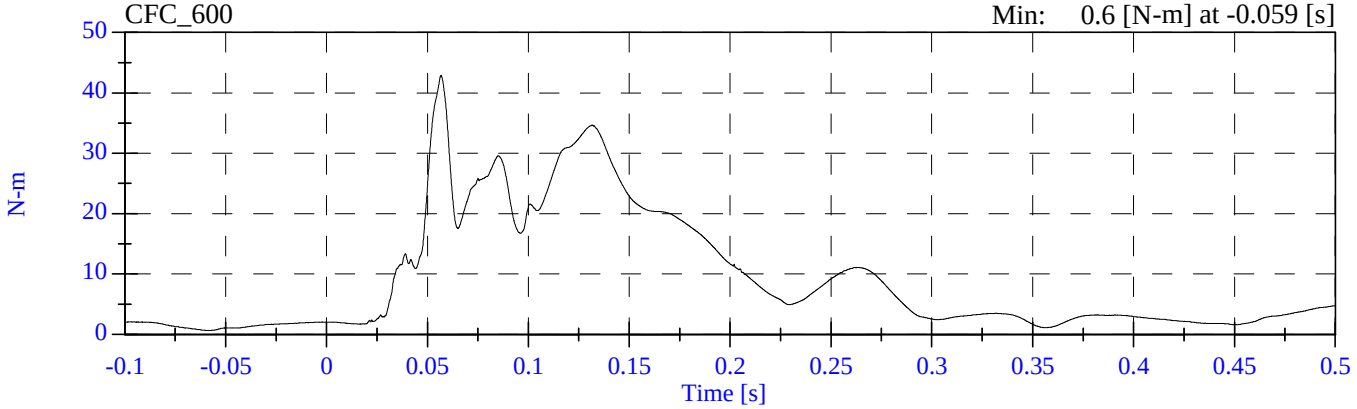


V1P1 Upper Neck M Resultant

Max: 42.9 [N-m] at 0.057 [s]

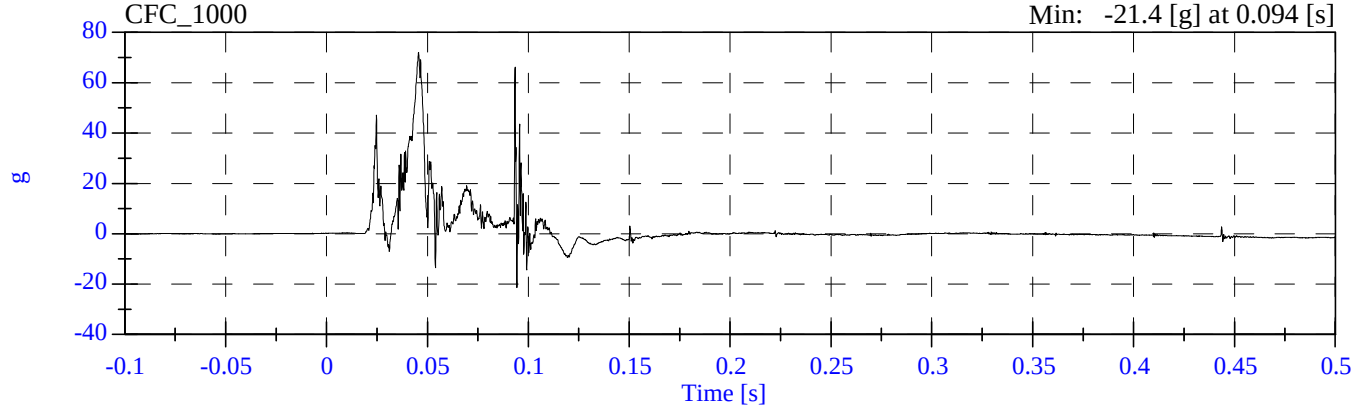
CFC_600

Min: 0.6 [N-m] at -0.059 [s]

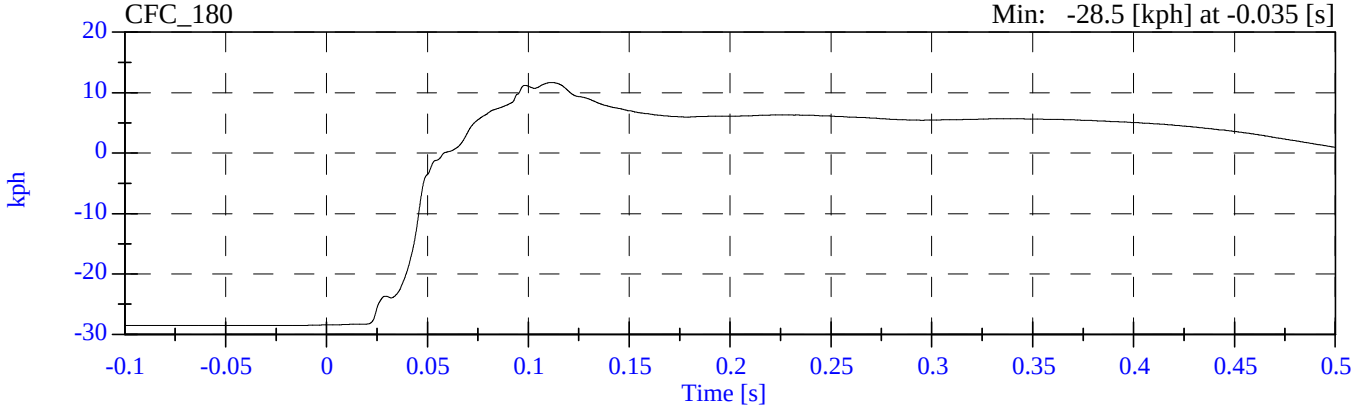


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

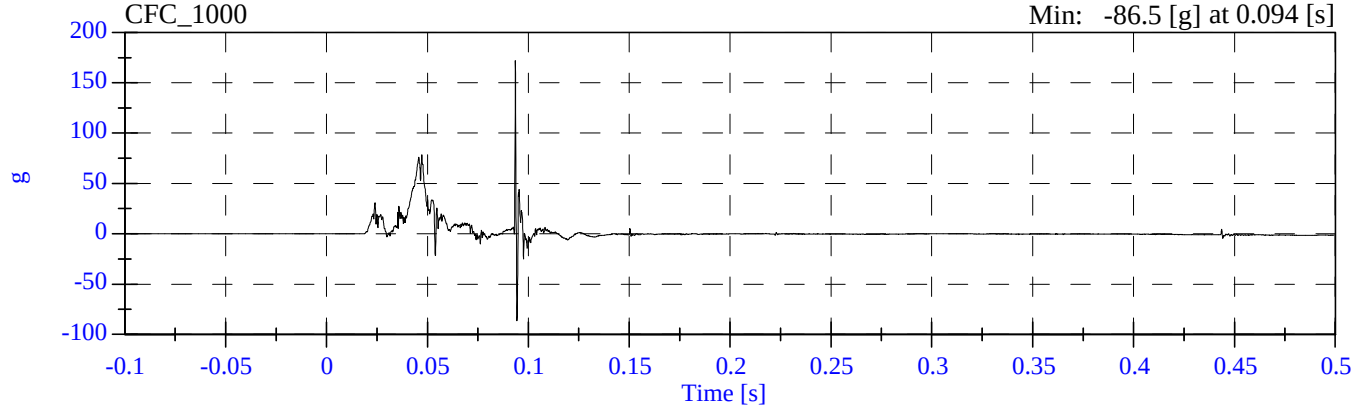
V1P1 Upper Rib y
CFC_1000
Max: 72.0 [g] at 0.046 [s]
Min: -21.4 [g] at 0.094 [s]



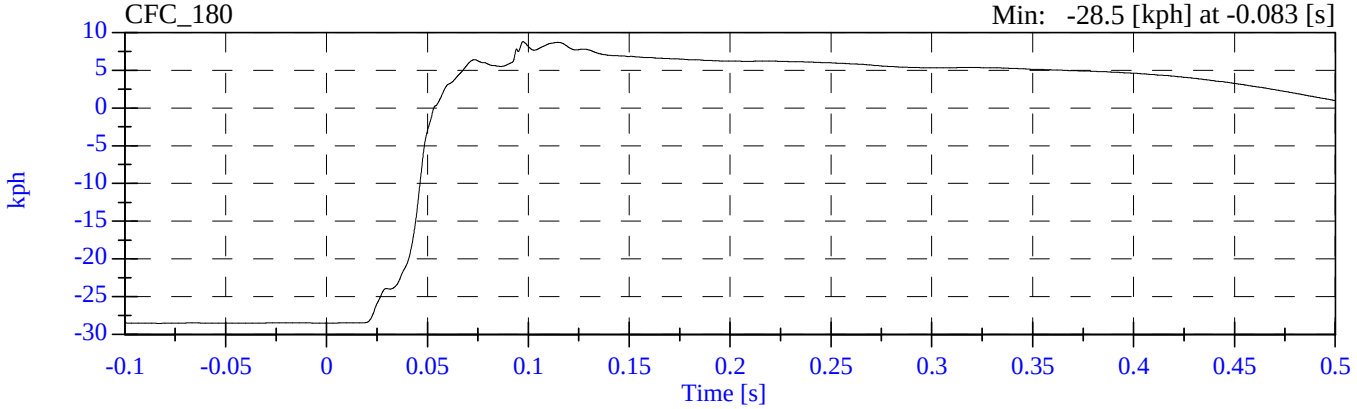
V1P1 Upper Rib y Velocity
CFC_180
Max: 11.7 [kph] at 0.111 [s]
Min: -28.5 [kph] at -0.035 [s]



V1P1 Lower Rib y
CFC_1000
Max: 171.9 [g] at 0.094 [s]
Min: -86.5 [g] at 0.094 [s]

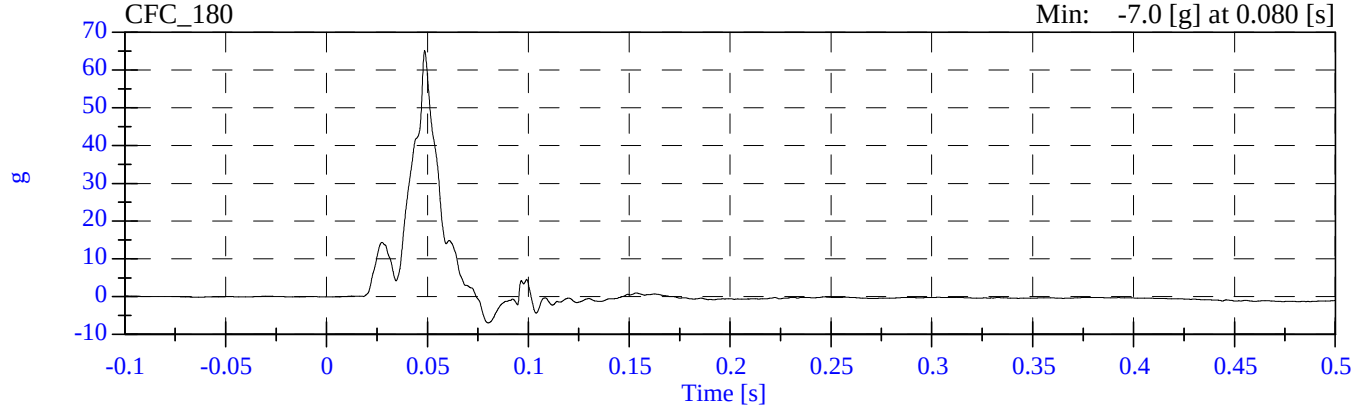


V1P1 Lower Rib y Velocity
CFC_180
Max: 8.8 [kph] at 0.097 [s]
Min: -28.5 [kph] at -0.083 [s]

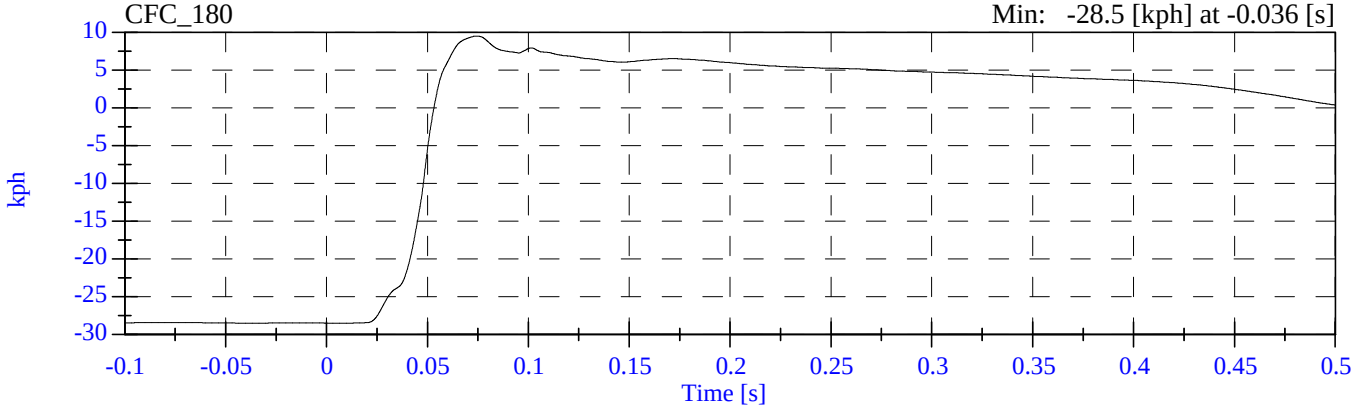


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

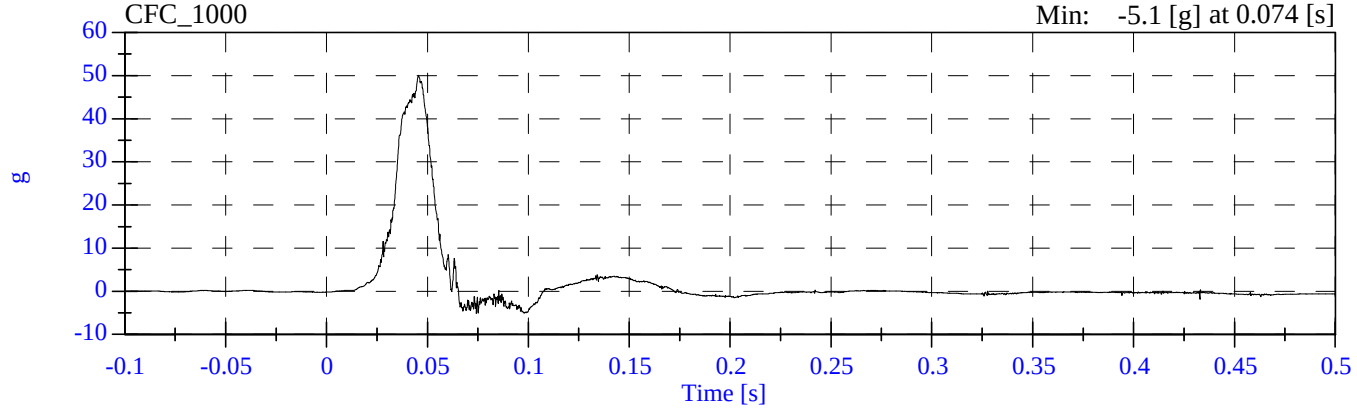
V1P1 Lower Spine y
CFC_180
Max: 65.2 [g] at 0.049 [s]
Min: -7.0 [g] at 0.080 [s]



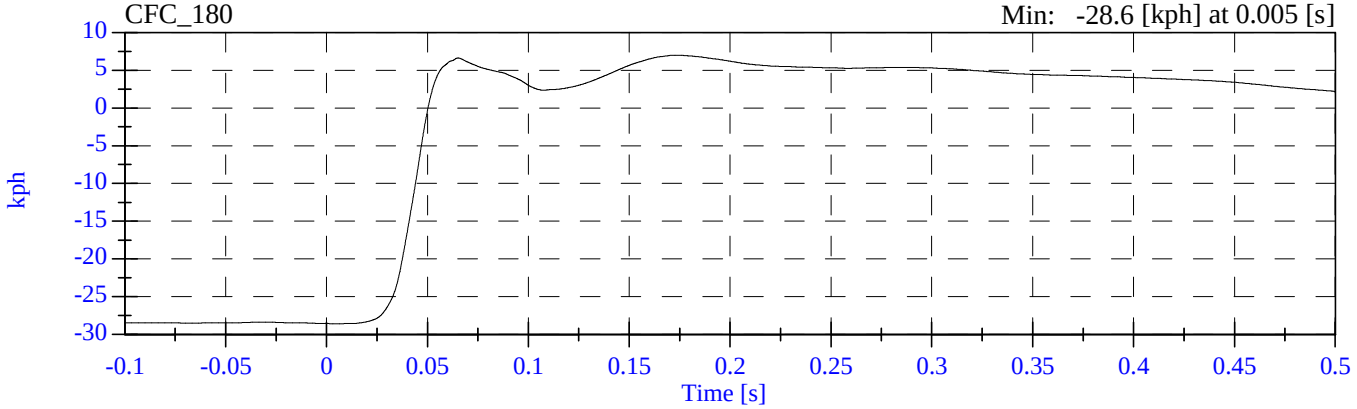
V1P1 Lower Spine y Velocity
CFC_180
Max: 9.5 [kph] at 0.074 [s]
Min: -28.5 [kph] at -0.036 [s]



V1P1 Pelvic y
CFC_1000
Max: 50.0 [g] at 0.046 [s]
Min: -5.1 [g] at 0.074 [s]

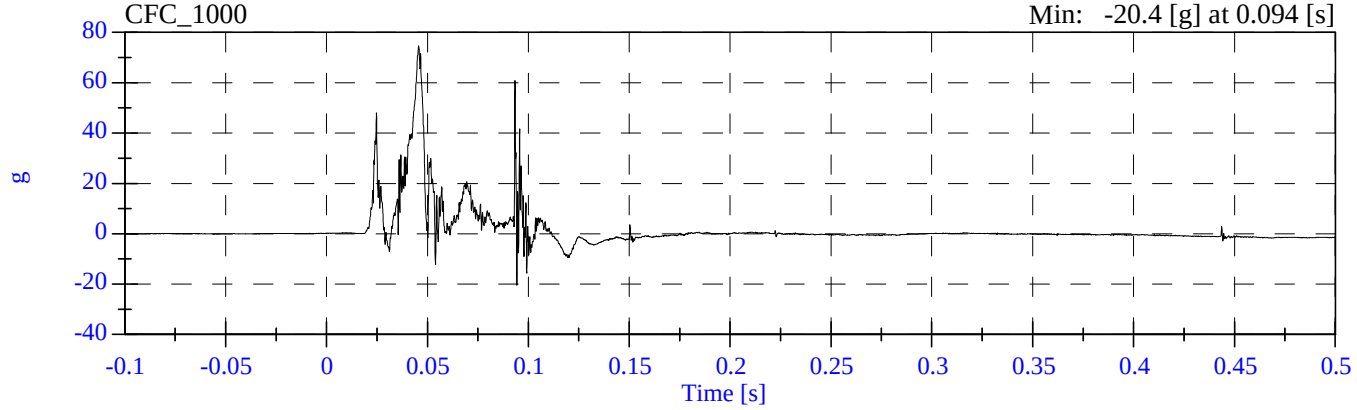


V1P1 Pelvic y Velocity
CFC_180
Max: 7.0 [kph] at 0.172 [s]
Min: -28.6 [kph] at 0.005 [s]

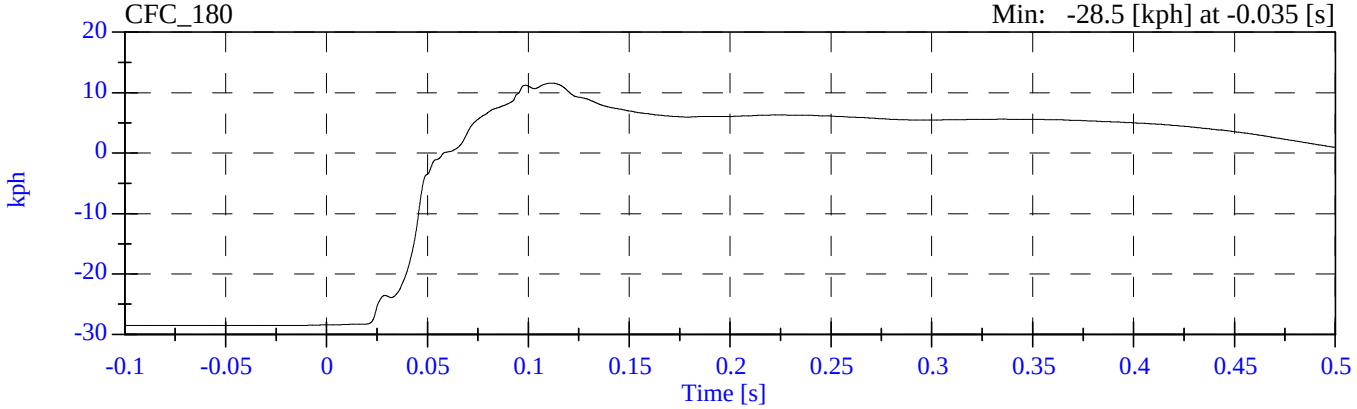


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

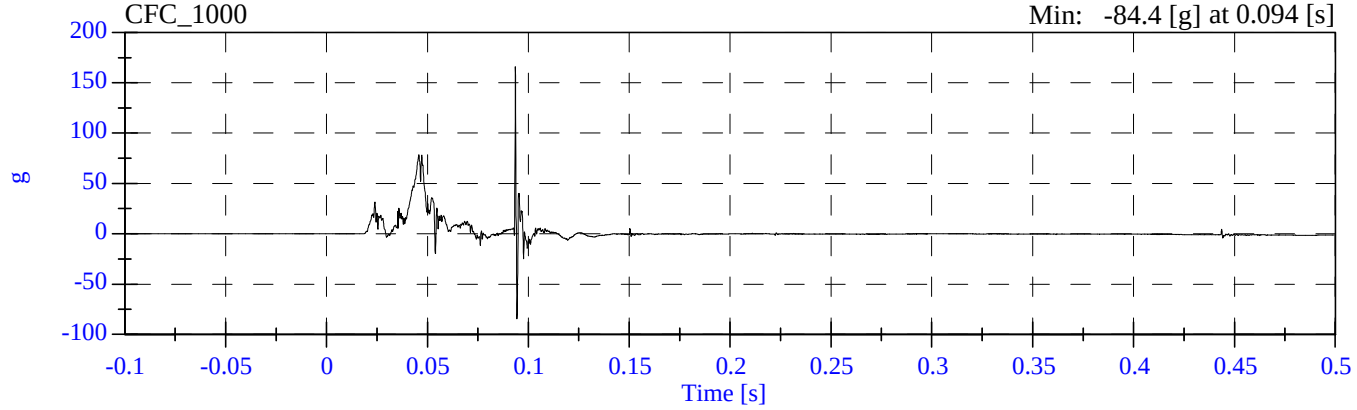
V1P1 Upper Rib Ry
CFC_1000
Max: 74.6 [g] at 0.046 [s]
Min: -20.4 [g] at 0.094 [s]



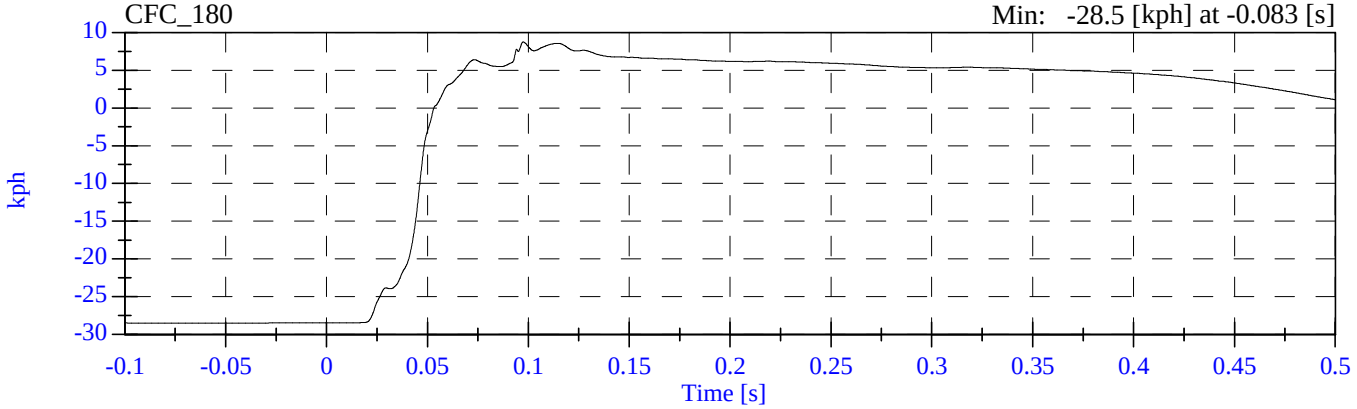
V1P1 Upper Rib Ry Velocity
CFC_180
Max: 11.6 [kph] at 0.111 [s]
Min: -28.5 [kph] at -0.035 [s]



V1P1 Lower Rib Ry
CFC_1000
Max: 165.9 [g] at 0.094 [s]
Min: -84.4 [g] at 0.094 [s]

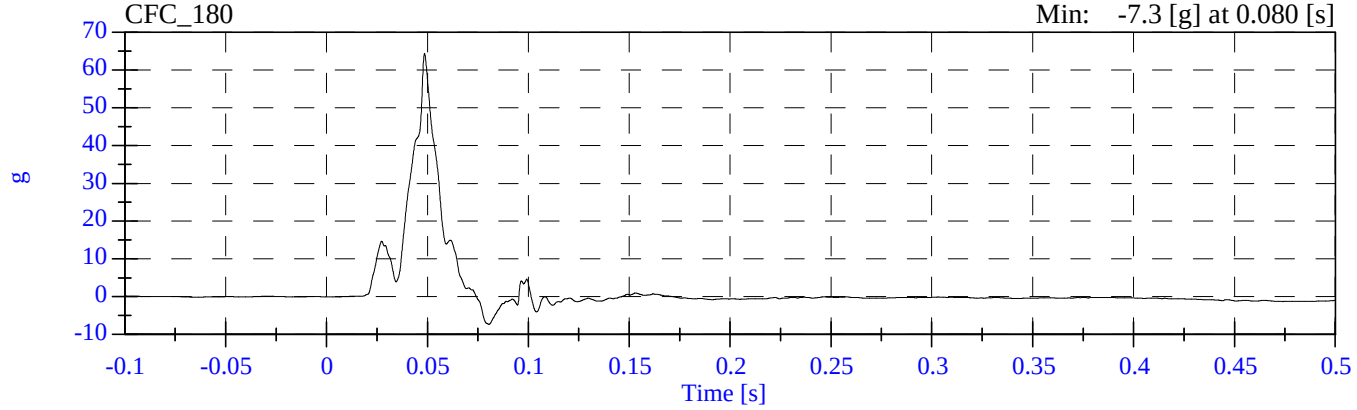


V1P1 Lower Rib Ry Velocity
CFC_180
Max: 8.8 [kph] at 0.097 [s]
Min: -28.5 [kph] at -0.083 [s]

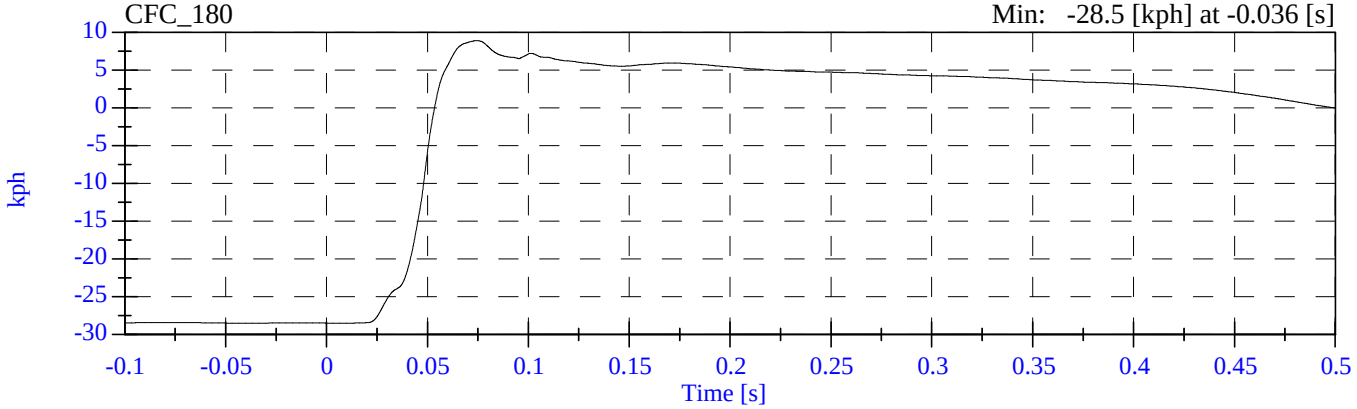


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

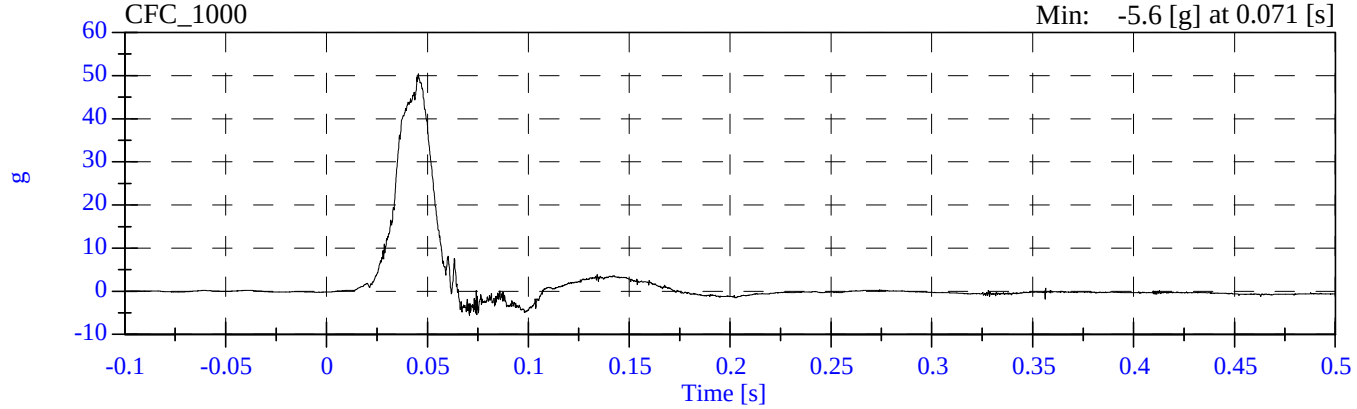
V1P1 Lower Spine Ry
CFC_180
Max: 64.4 [g] at 0.049 [s]
Min: -7.3 [g] at 0.080 [s]



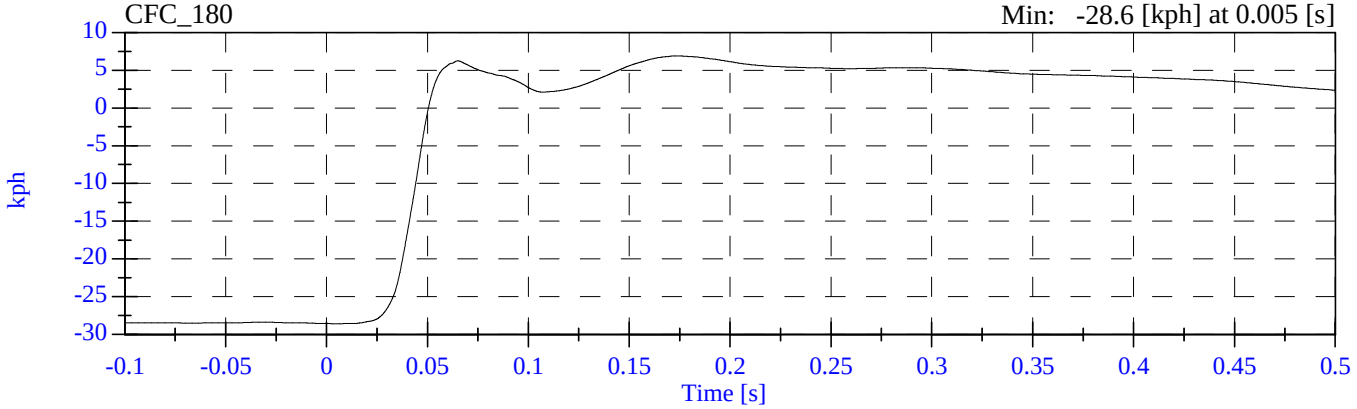
V1P1 Lower Spine Ry Velocity
CFC_180
Max: 8.9 [kph] at 0.074 [s]
Min: -28.5 [kph] at -0.036 [s]



V1P1 Pelvic Ry
CFC_1000
Max: 50.4 [g] at 0.045 [s]
Min: -5.6 [g] at 0.071 [s]



V1P1 Pelvic Ry Velocity
CFC_180
Max: 6.9 [kph] at 0.175 [s]
Min: -28.6 [kph] at 0.005 [s]



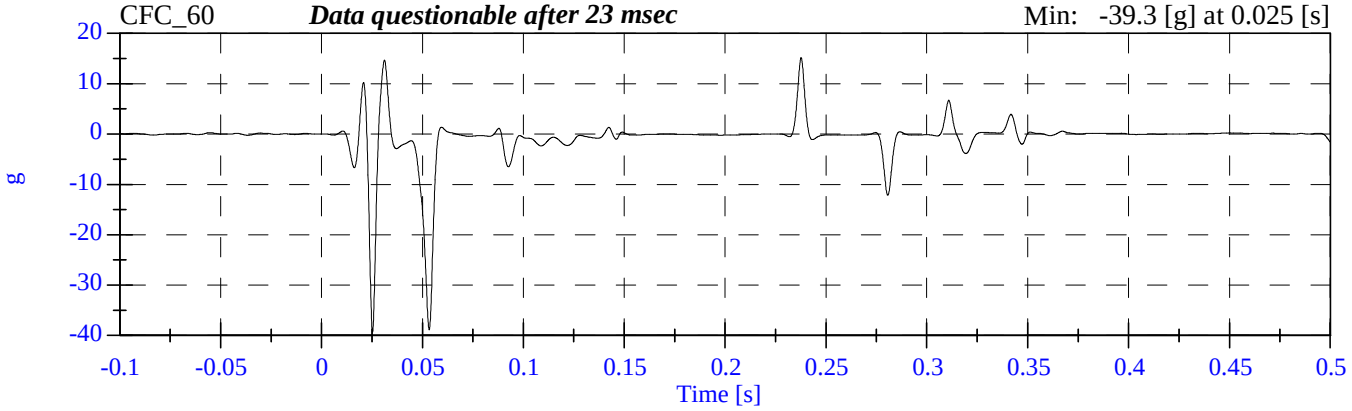
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1 A1 Vehicle CG x

Max: 15.2 [g] at 0.238 [s]

CFC_60 ***Data questionable after 23 msec***

Min: -39.3 [g] at 0.025 [s]

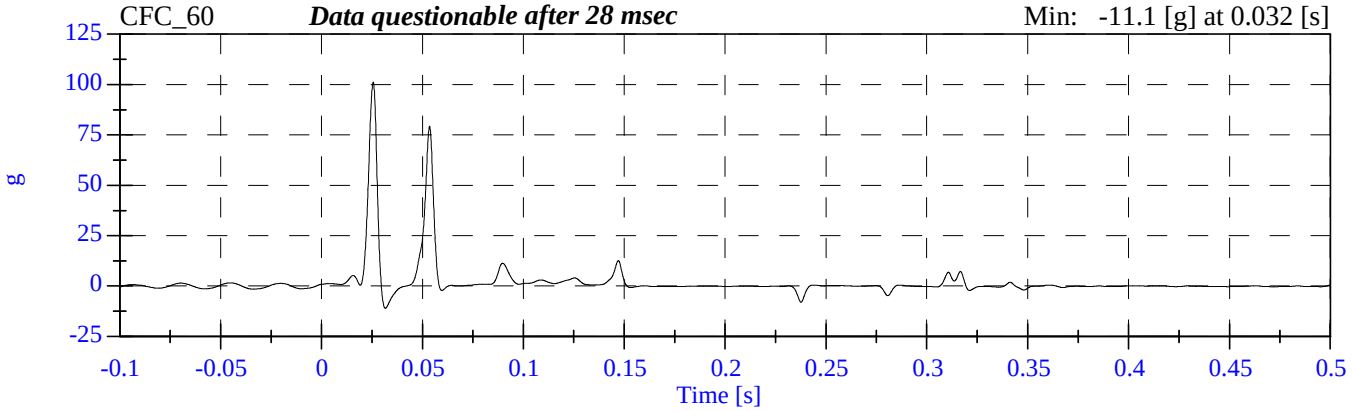


V1 A1 Vehicle CG y

Max: 101.2 [g] at 0.026 [s]

CFC_60 ***Data questionable after 28 msec***

Min: -11.1 [g] at 0.032 [s]

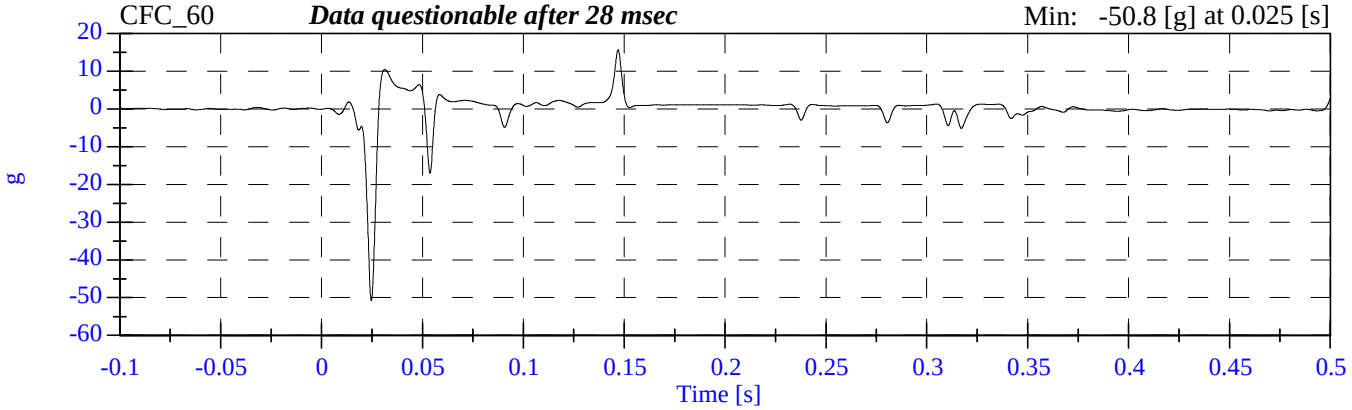


V1 A1 Vehicle CG z

Max: 15.7 [g] at 0.147 [s]

CFC_60 ***Data questionable after 28 msec***

Min: -50.8 [g] at 0.025 [s]

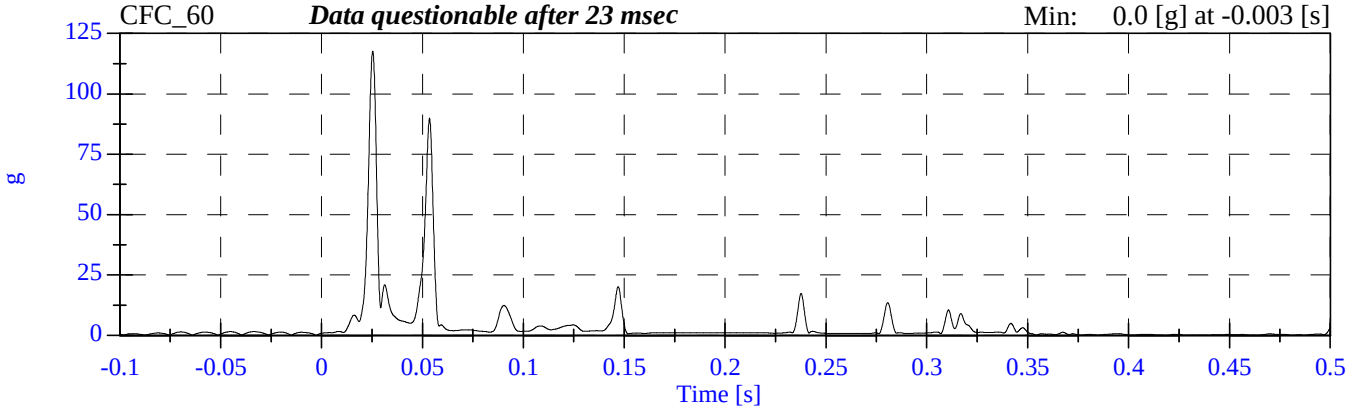


V1 A1 Vehicle CG Resultant

Max: 117.6 [g] at 0.025 [s]

CFC_60 ***Data questionable after 23 msec***

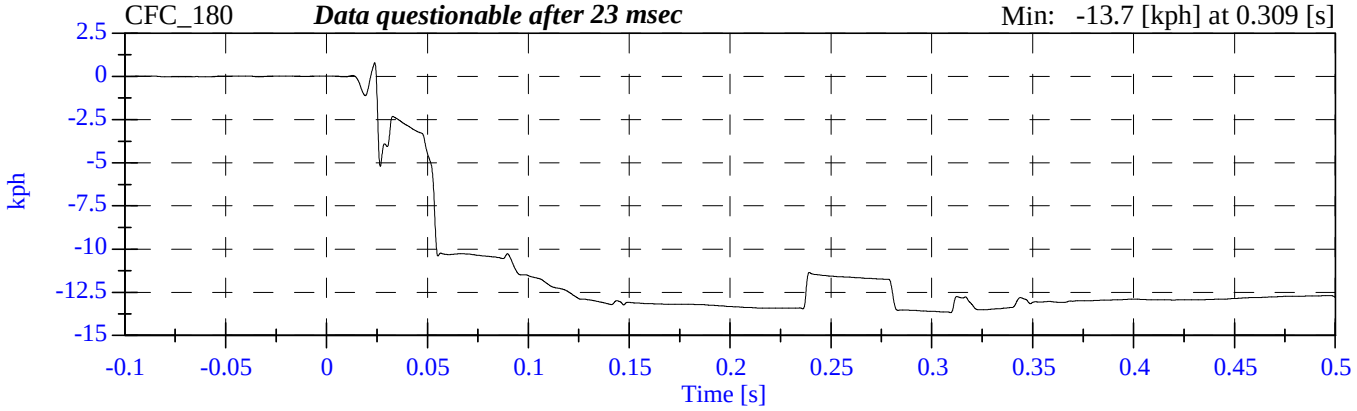
Min: 0.0 [g] at -0.003 [s]



2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

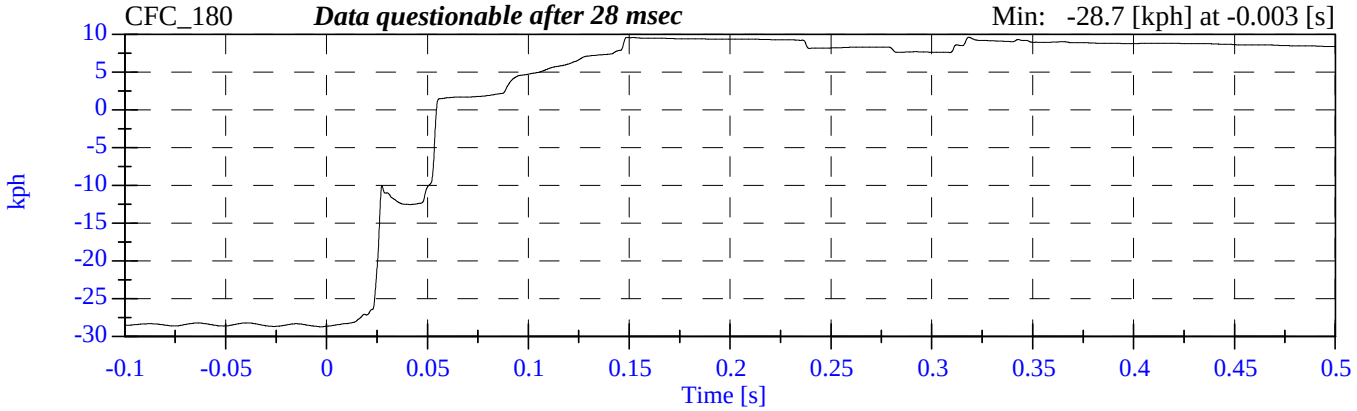
V1 A1 Vehicle CG x Velocity Max: 0.8 [kph] at 0.024 [s]

CFC_180 ***Data questionable after 23 msec*** Min: -13.7 [kph] at 0.309 [s]



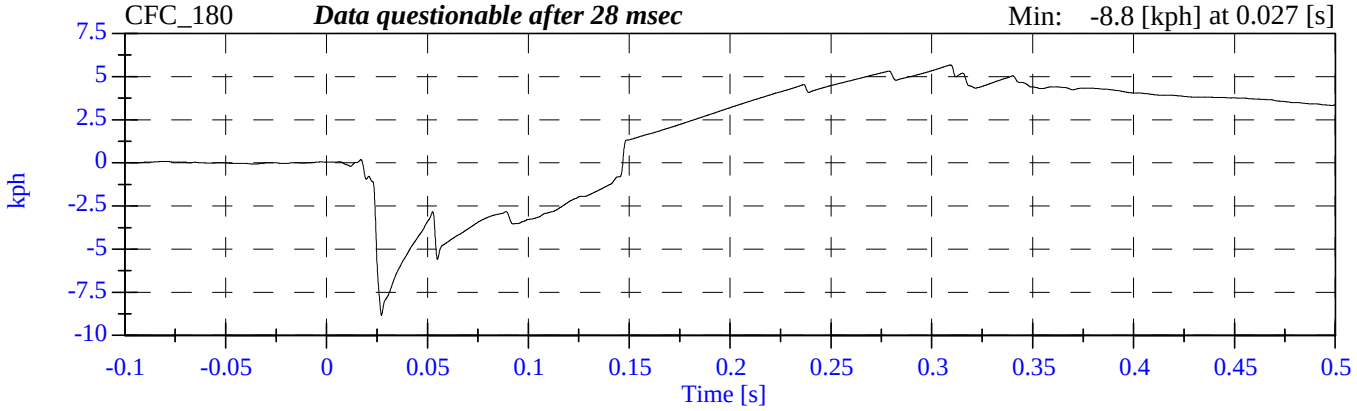
V1 A1 Vehicle CG y Velocity Max: 9.6 [kph] at 0.318 [s]

CFC_180 ***Data questionable after 28 msec*** Min: -28.7 [kph] at -0.003 [s]



V1 A1 Vehicle CG z Velocity Max: 5.7 [kph] at 0.309 [s]

CFC_180 ***Data questionable after 28 msec*** Min: -8.8 [kph] at 0.027 [s]



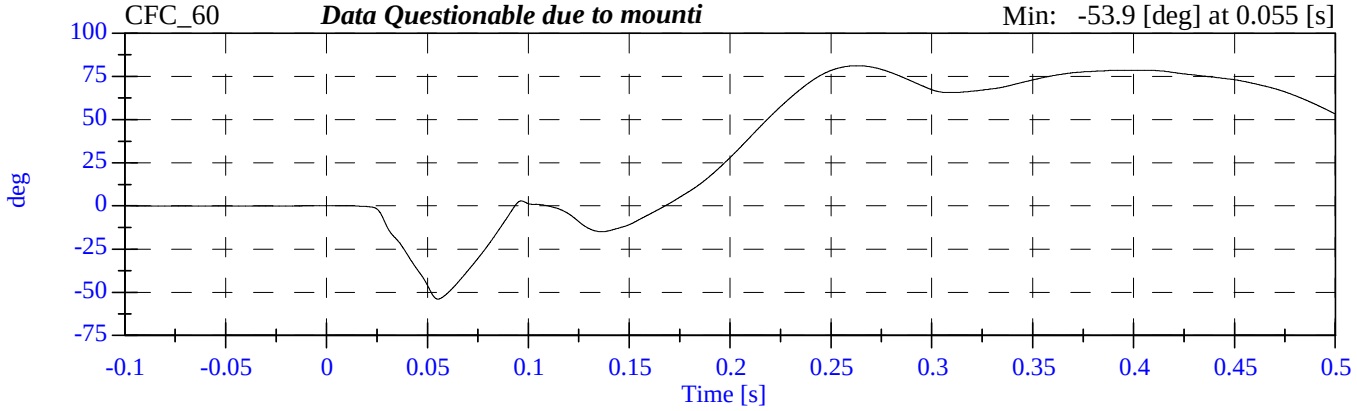
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1 A2 Vehicle CG Angular Rate x

Max: 81.2 [deg] at 0.263 [s]

CFC_60 ***Data Questionable due to mounti***

Min: -53.9 [deg] at 0.055 [s]

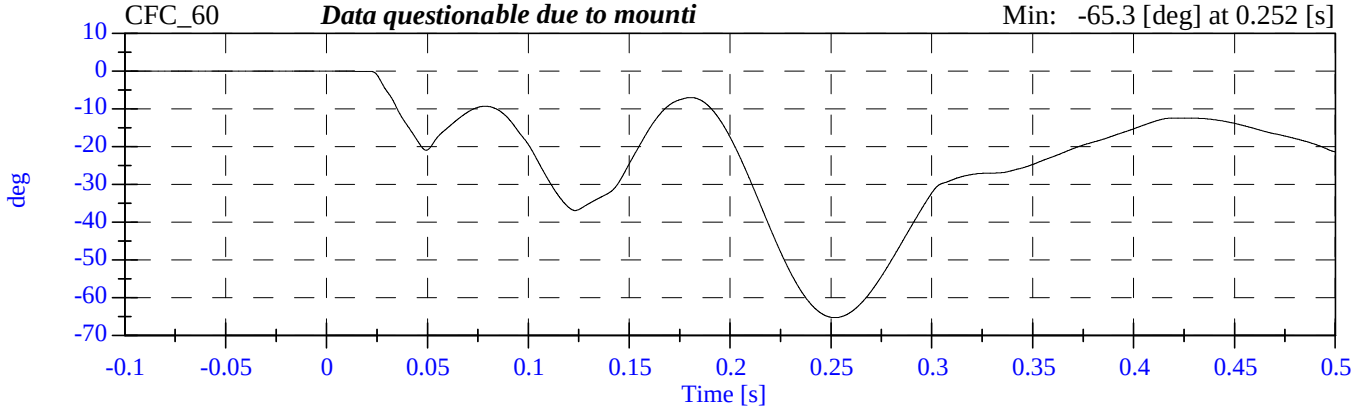


V1 A2 Vehicle CG Angular Rate y

Max: 0.0 [deg] at -0.032 [s]

CFC_60 ***Data questionable due to mounti***

Min: -65.3 [deg] at 0.252 [s]

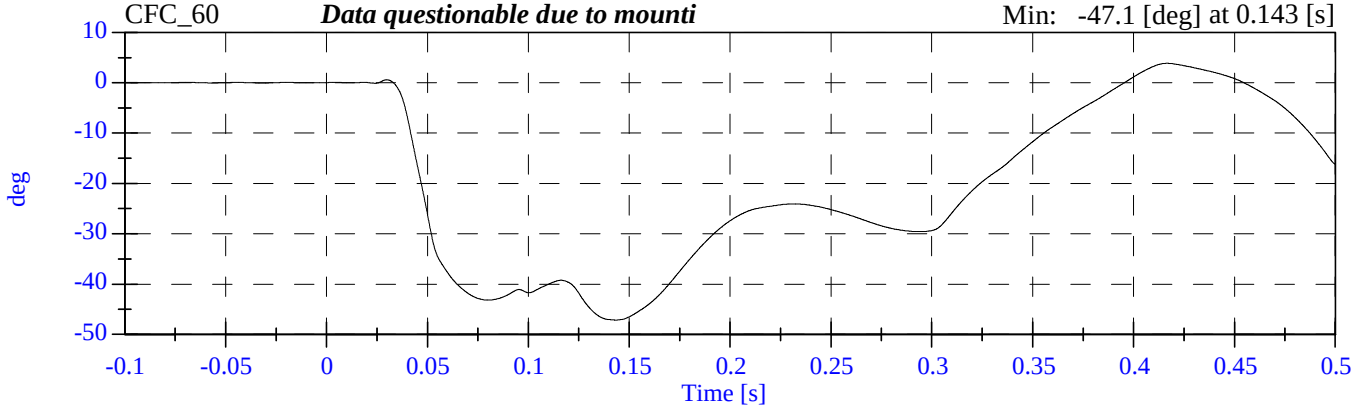


V1 A2 Vehicle CG Angular Rate z

Max: 3.9 [deg] at 0.417 [s]

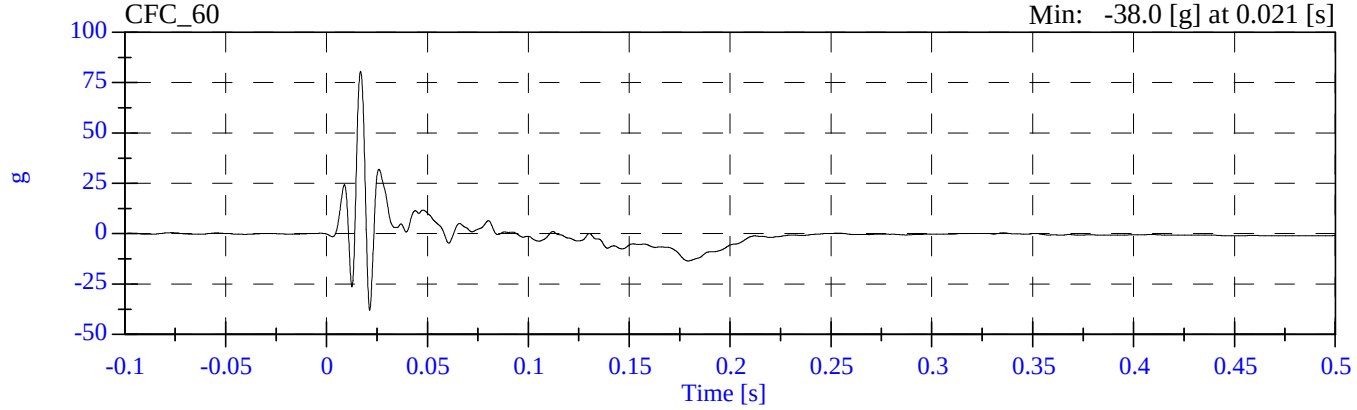
CFC_60 ***Data questionable due to mounti***

Min: -47.1 [deg] at 0.143 [s]

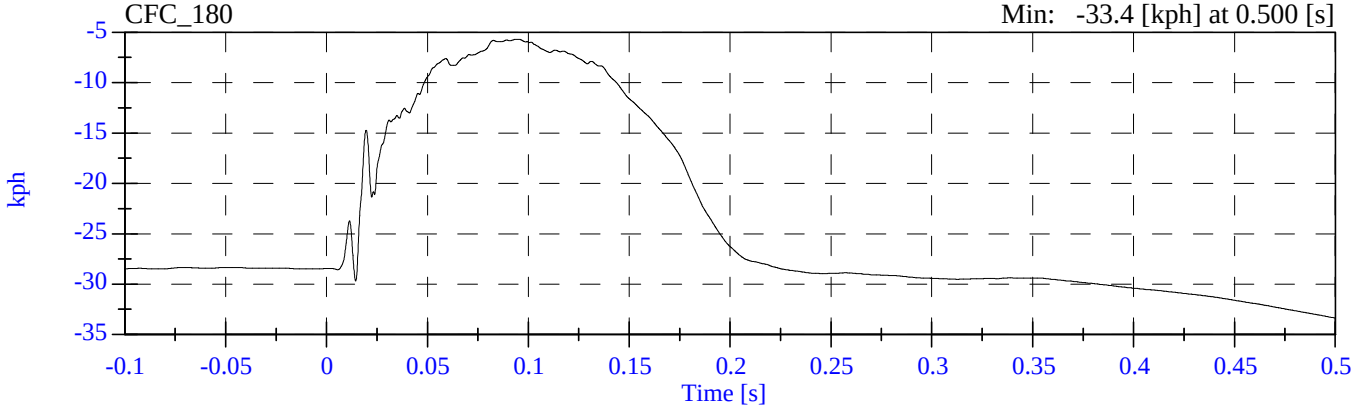


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

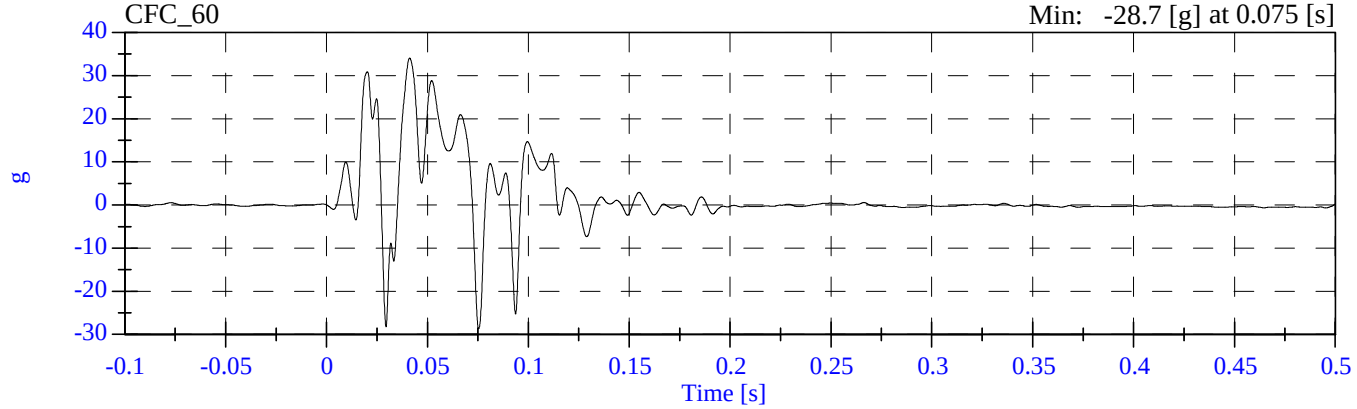
V1 A3 Left Sill y
CFC_60
Max: 80.6 [g] at 0.017 [s]
Min: -38.0 [g] at 0.021 [s]



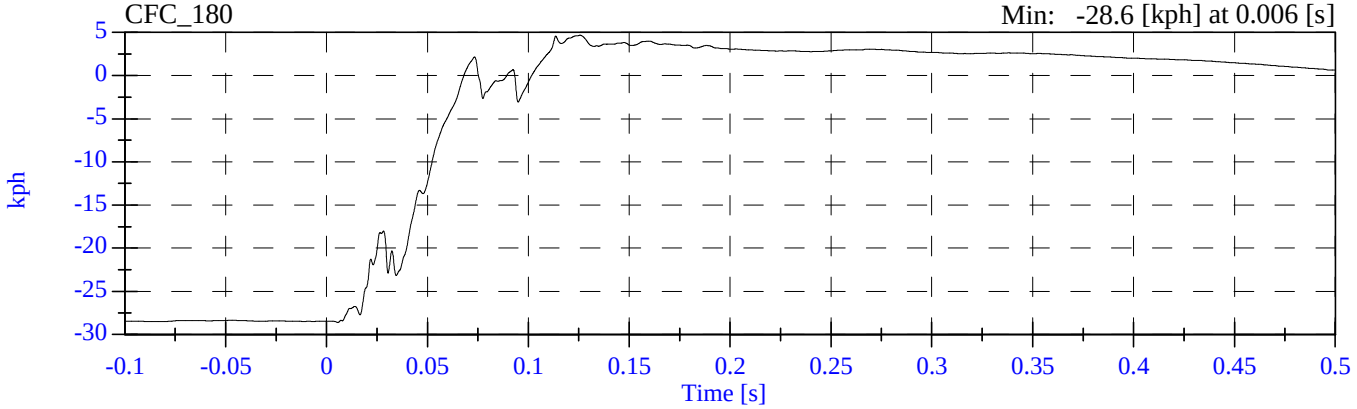
V1 A3 Left Sill y Velocity
CFC_180
Max: -5.7 [kph] at 0.094 [s]
Min: -33.4 [kph] at 0.500 [s]



V1 A4 Left Sill A Pillar y
CFC_60
Max: 34.1 [g] at 0.041 [s]
Min: -28.7 [g] at 0.075 [s]



V1 A4 Left Sill A Pillar y Velocity
CFC_180
Max: 4.7 [kph] at 0.126 [s]
Min: -28.6 [kph] at 0.006 [s]



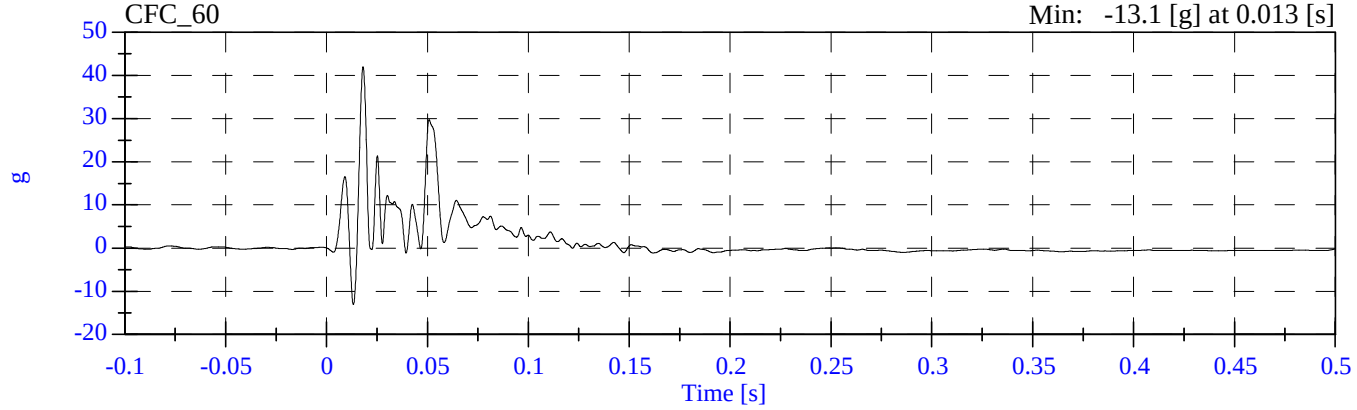
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1 A5 Left Lower A Pillar y

CFC_60

Max: 42.0 [g] at 0.018 [s]

Min: -13.1 [g] at 0.013 [s]

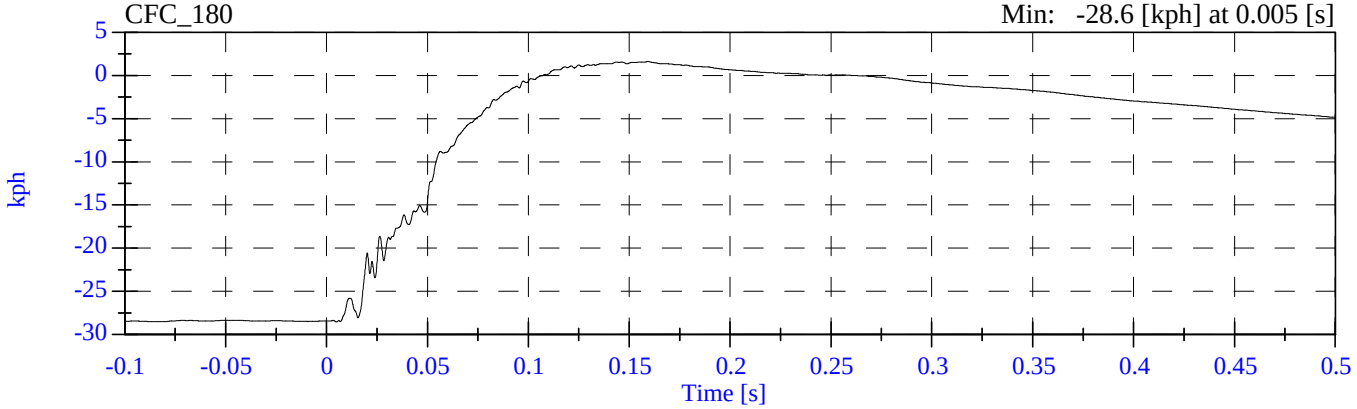


V1 A5 Left Lower A Pillar y Velocity

CFC_180

Max: 1.6 [kph] at 0.159 [s]

Min: -28.6 [kph] at 0.005 [s]

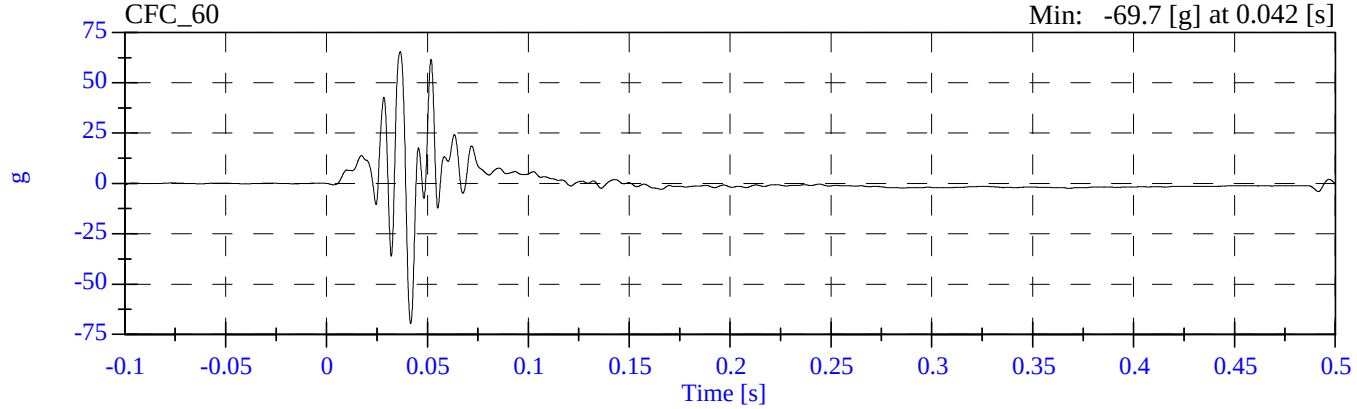


V1 A6 Left Mid A Pillar y

CFC_60

Max: 65.4 [g] at 0.037 [s]

Min: -69.7 [g] at 0.042 [s]

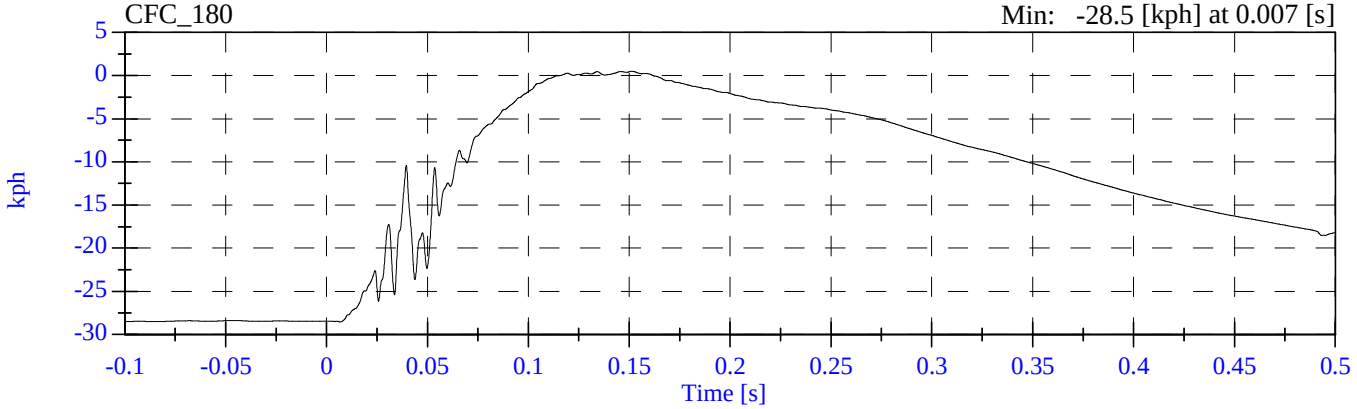


V1 A6 Left Mid A Pillar y Velocity

CFC_180

Max: 0.5 [kph] at 0.151 [s]

Min: -28.5 [kph] at 0.007 [s]



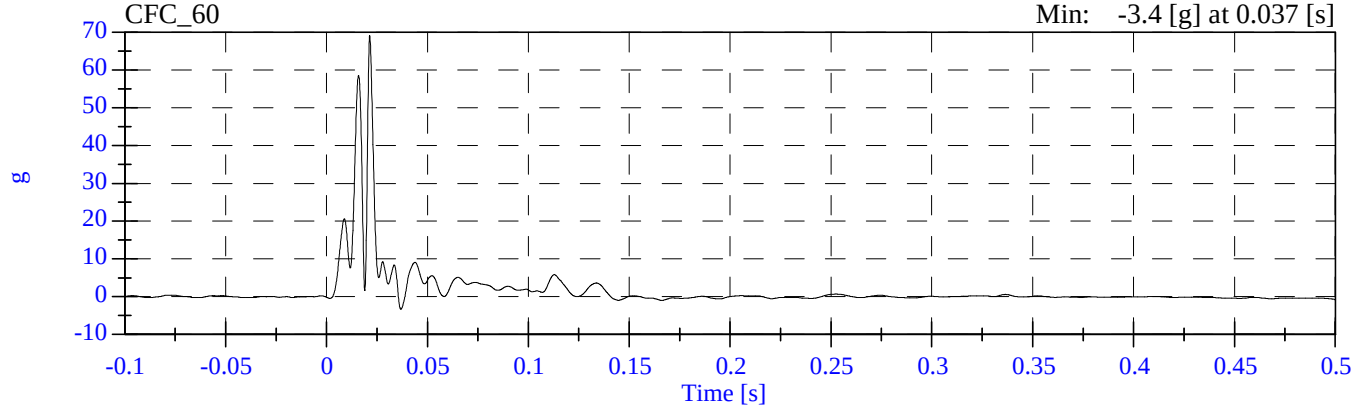
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1 A7 B Pillar Sill y

CFC_60

Max: 69.1 [g] at 0.021 [s]

Min: -3.4 [g] at 0.037 [s]

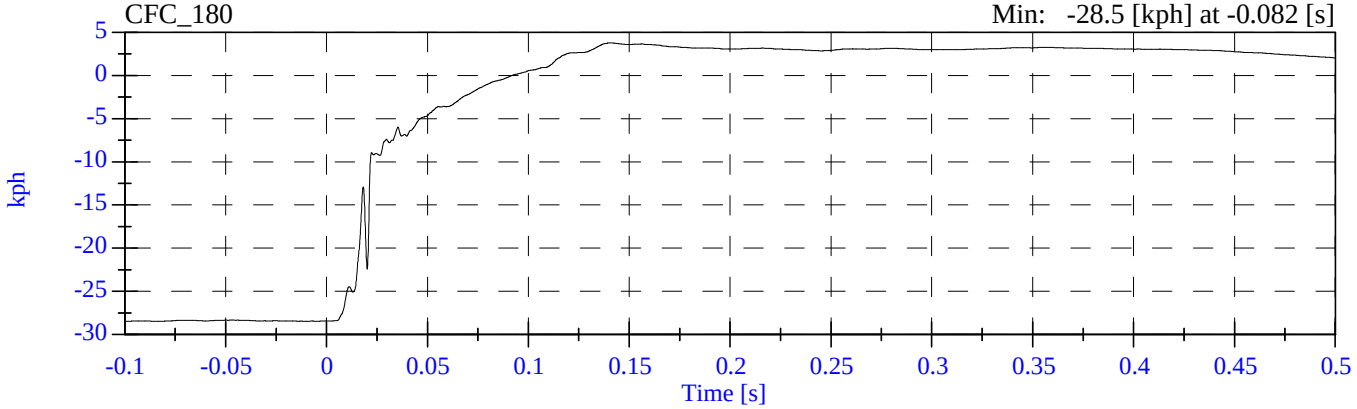


V1 A7 B Pillar Sill y Velocity

CFC_180

Max: 3.8 [kph] at 0.141 [s]

Min: -28.5 [kph] at -0.082 [s]

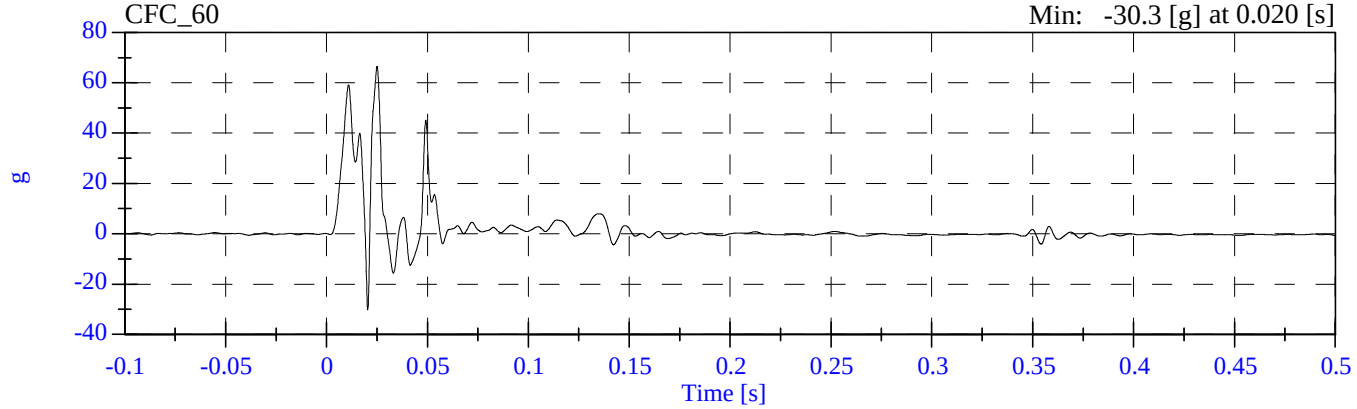


V1 A8 B Pillar Lower y

CFC_60

Max: 66.6 [g] at 0.025 [s]

Min: -30.3 [g] at 0.020 [s]

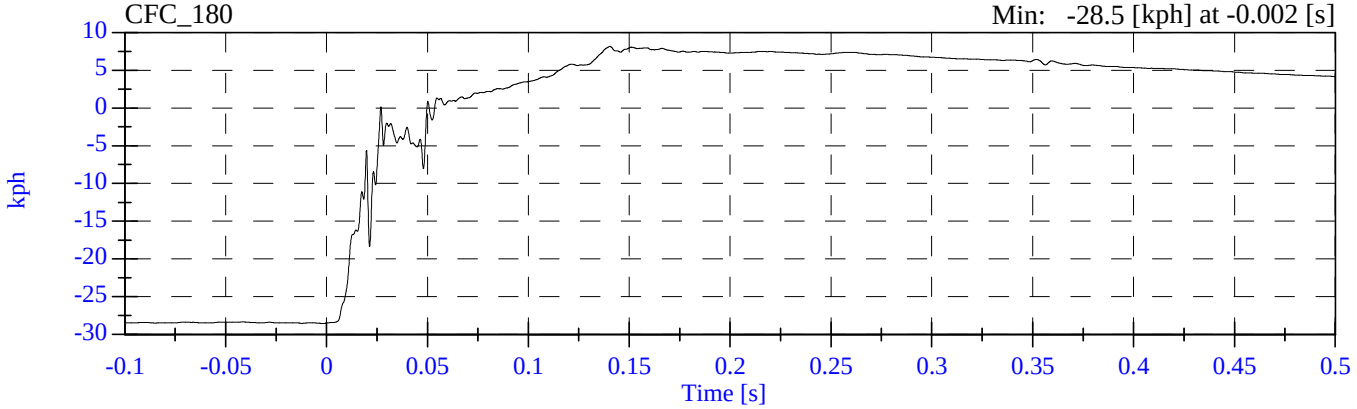


V1 A8 B Pillar Lower y Velocity

CFC_180

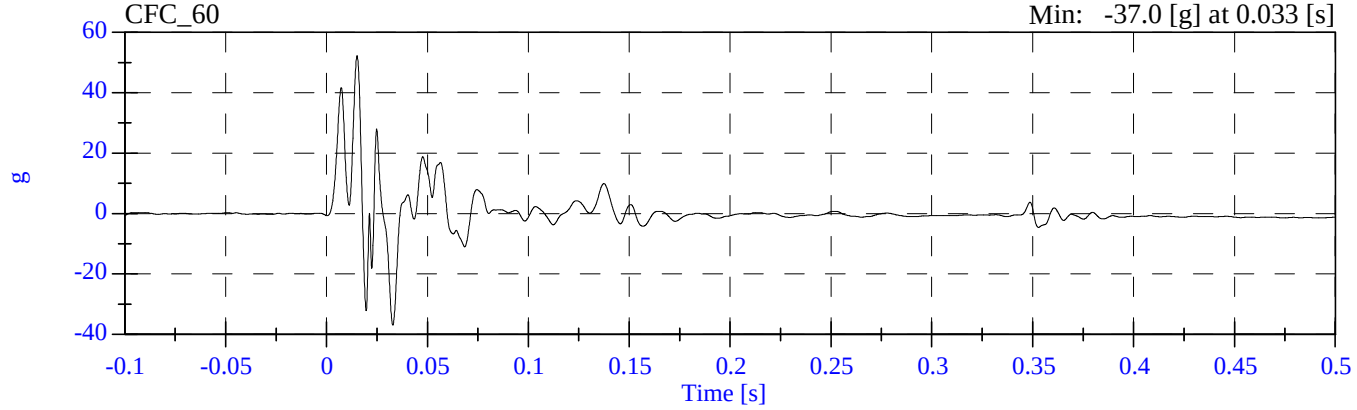
Max: 8.2 [kph] at 0.140 [s]

Min: -28.5 [kph] at -0.002 [s]

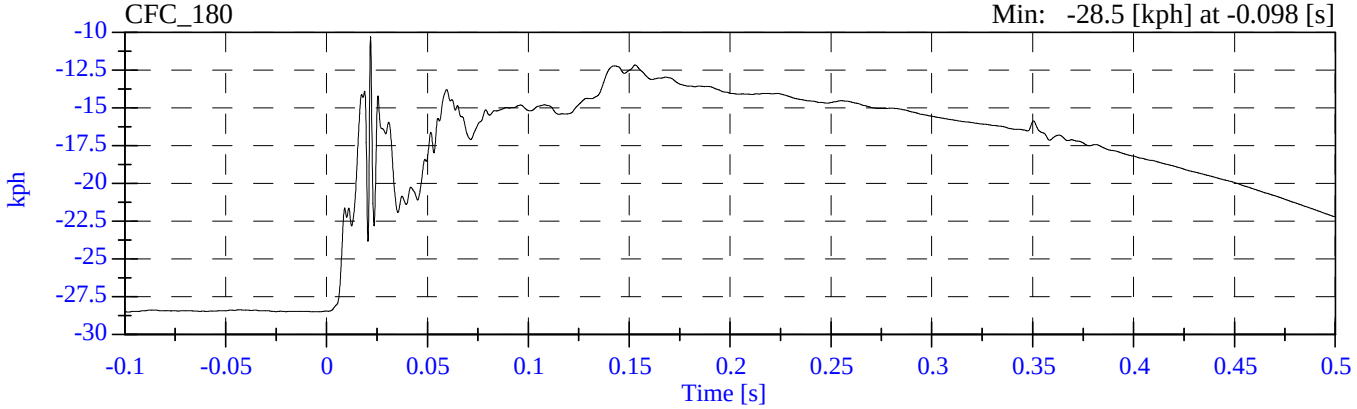


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

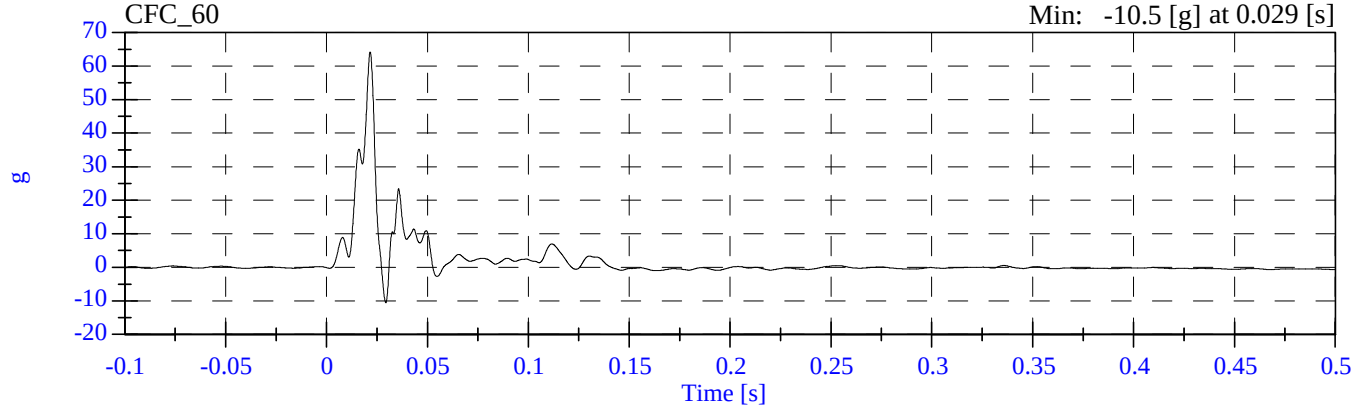
V1 A9 B Pillar Mid y
CFC_60
Max: 52.3 [g] at 0.015 [s]
Min: -37.0 [g] at 0.033 [s]



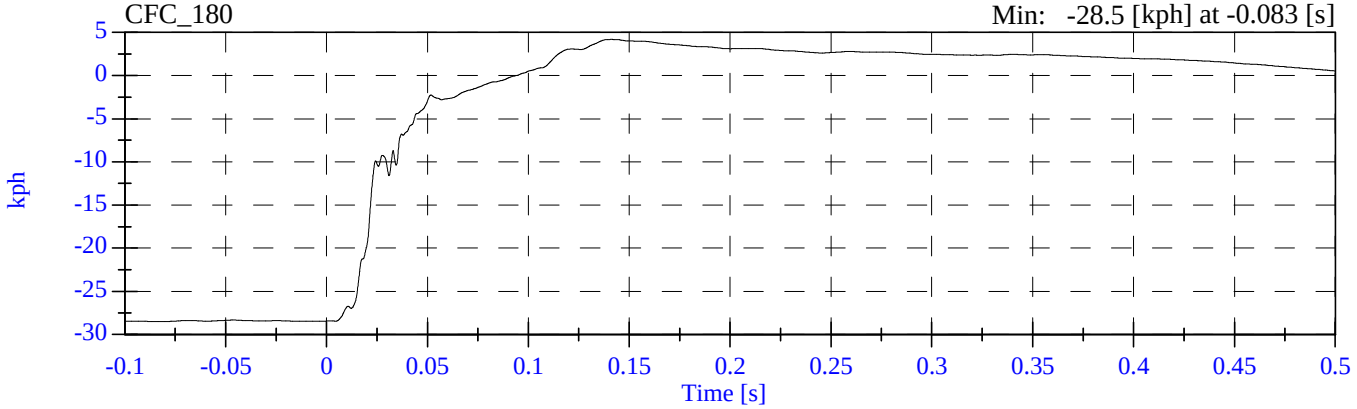
V1 A9 B Pillar Mid y Velocity
CFC_180
Max: -10.3 [kph] at 0.022 [s]
Min: -28.5 [kph] at -0.098 [s]



V1 A10 Driver Seat y
CFC_60
Max: 64.2 [g] at 0.022 [s]
Min: -10.5 [g] at 0.029 [s]



V1 A10 Driver Seat y Velocity
CFC_180
Max: 4.2 [kph] at 0.141 [s]
Min: -28.5 [kph] at -0.083 [s]



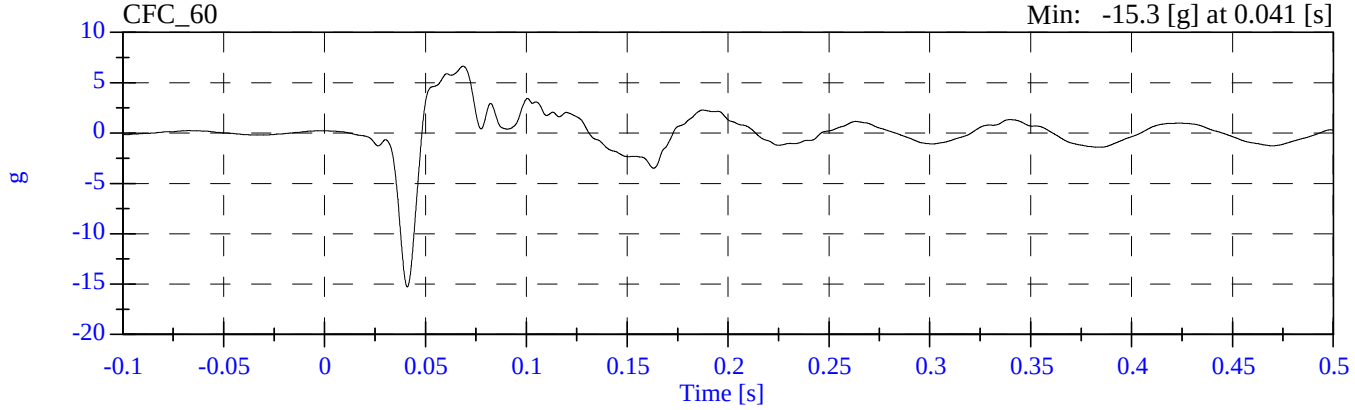
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1 A11 Engine Top x

CFC_60

Max: 6.6 [g] at 0.069 [s]

Min: -15.3 [g] at 0.041 [s]

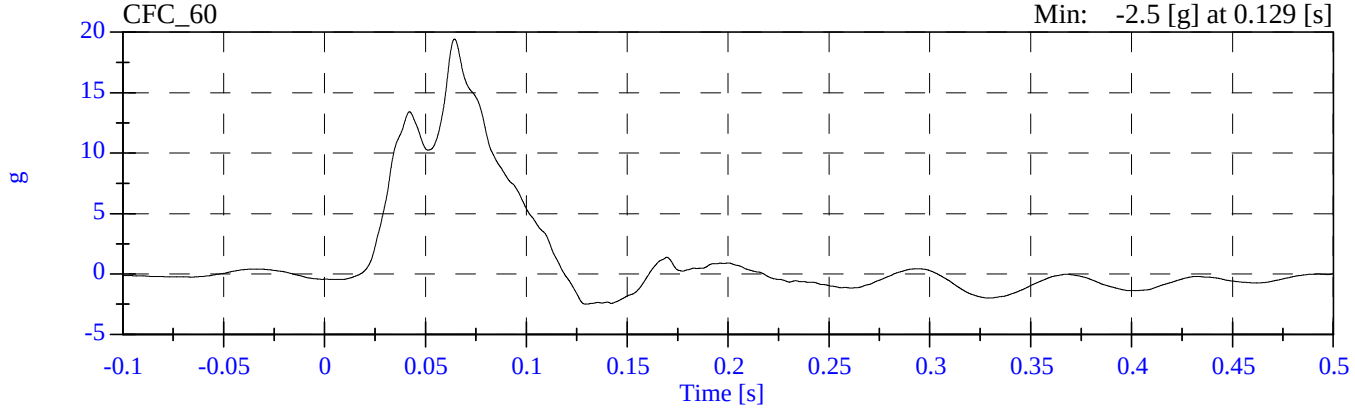


V1 A11 Engine Top y

CFC_60

Max: 19.4 [g] at 0.064 [s]

Min: -2.5 [g] at 0.129 [s]

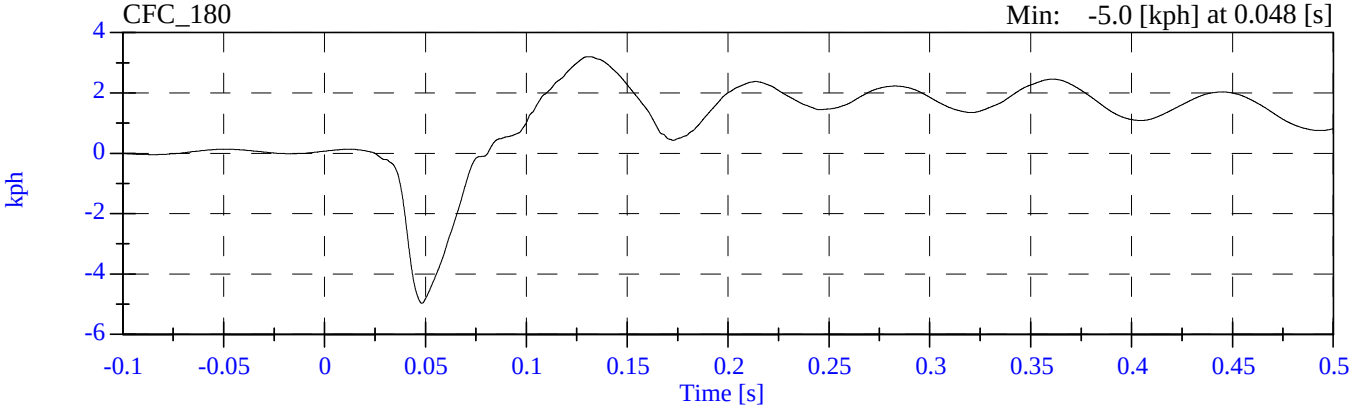


V1 A11 Engine Top x Velocity

CFC_180

Max: 3.2 [kph] at 0.131 [s]

Min: -5.0 [kph] at 0.048 [s]

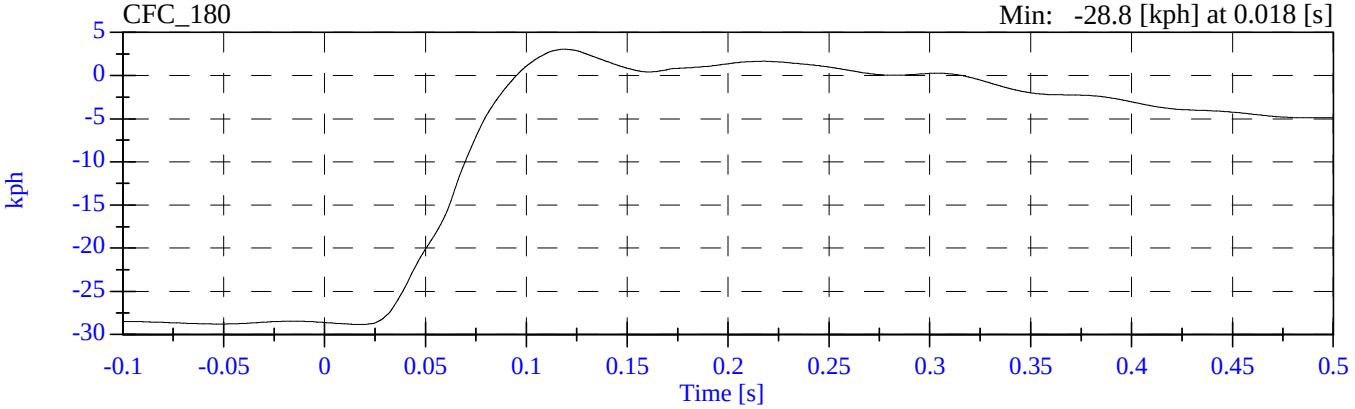


V1 A11 Engine Top y Velocity

CFC_180

Max: 3.1 [kph] at 0.119 [s]

Min: -28.8 [kph] at 0.018 [s]



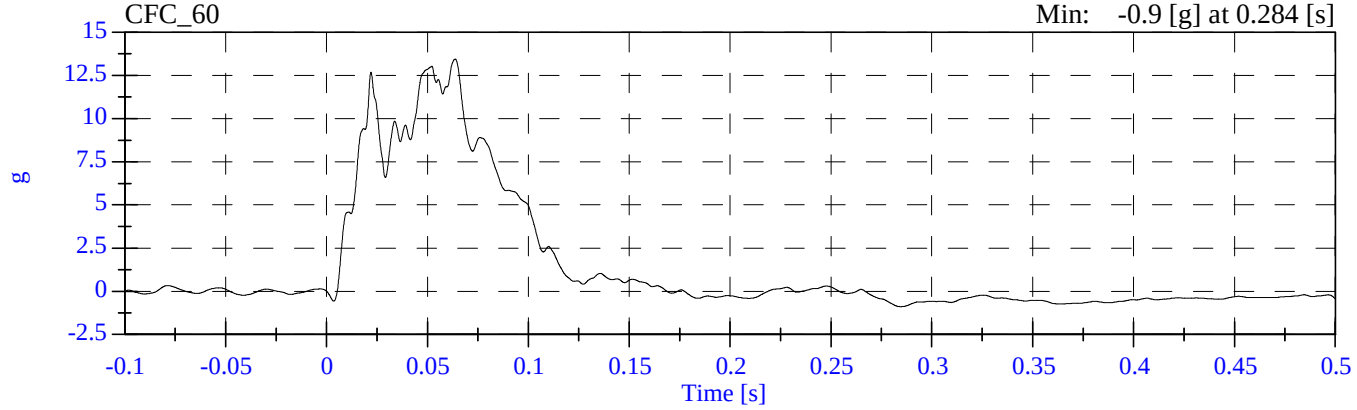
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

V1 A12 Firewall Center y

CFC_60

Max: 13.5 [g] at 0.064 [s]

Min: -0.9 [g] at 0.284 [s]

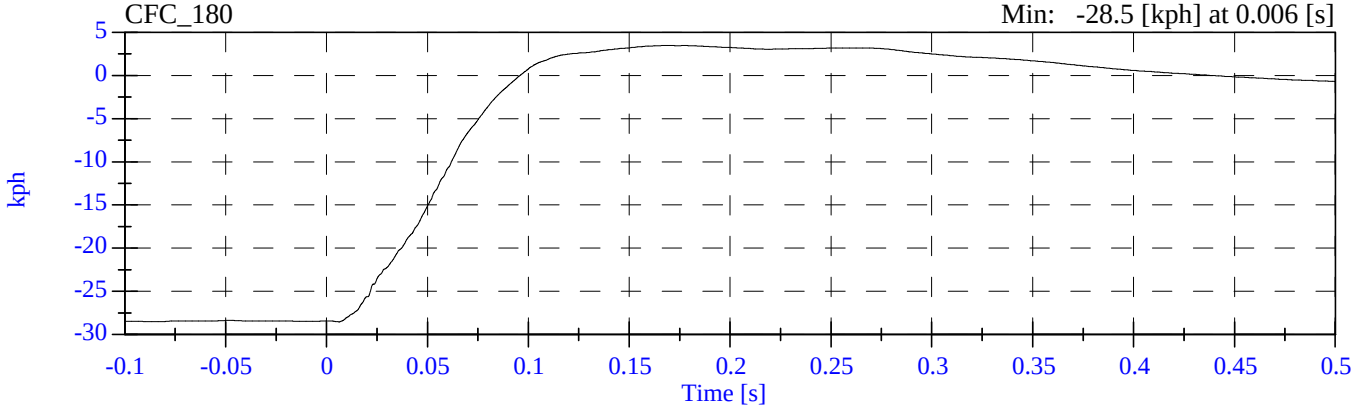


V1 A12 Firewall Center y Velocity

CFC_180

Max: 3.5 [kph] at 0.168 [s]

Min: -28.5 [kph] at 0.006 [s]

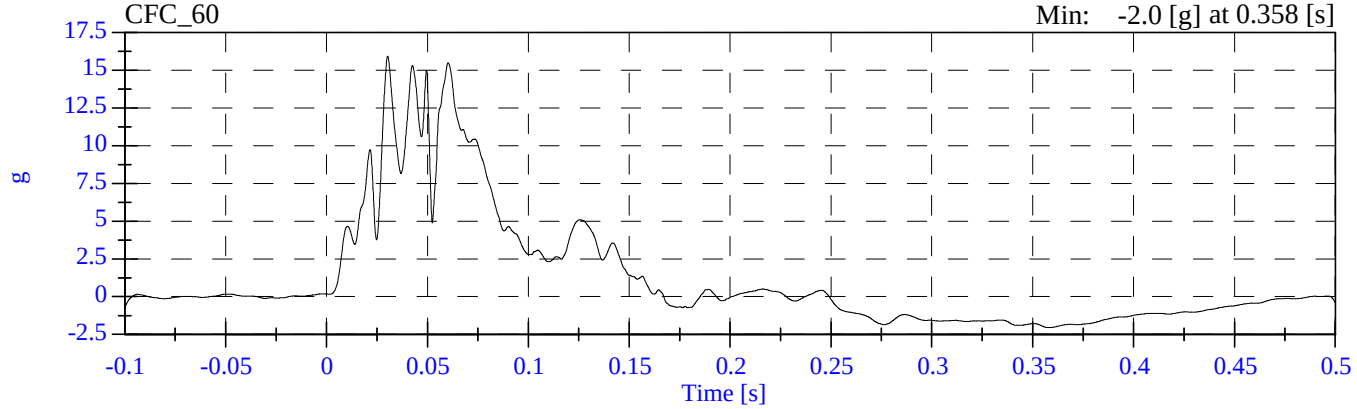


V1 A13 Right Roof y

CFC_60

Max: 15.9 [g] at 0.030 [s]

Min: -2.0 [g] at 0.358 [s]

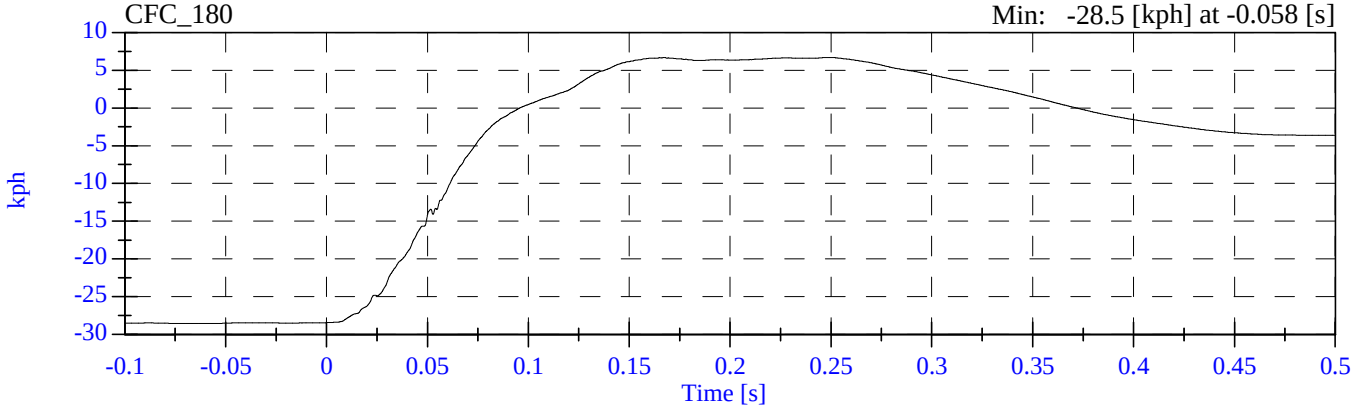


V1 A13 Right Roof y Velocity

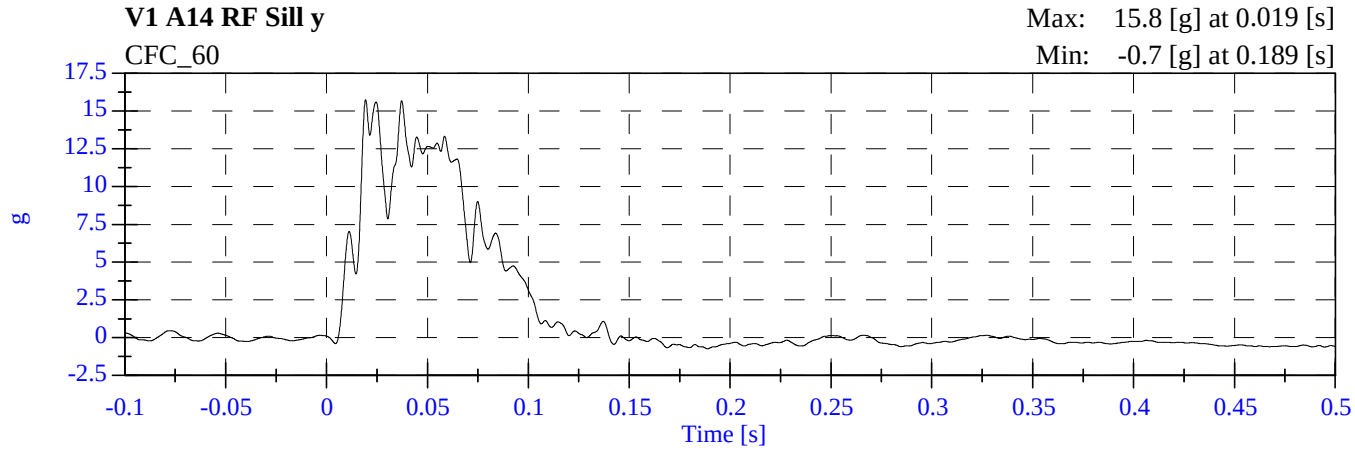
CFC_180

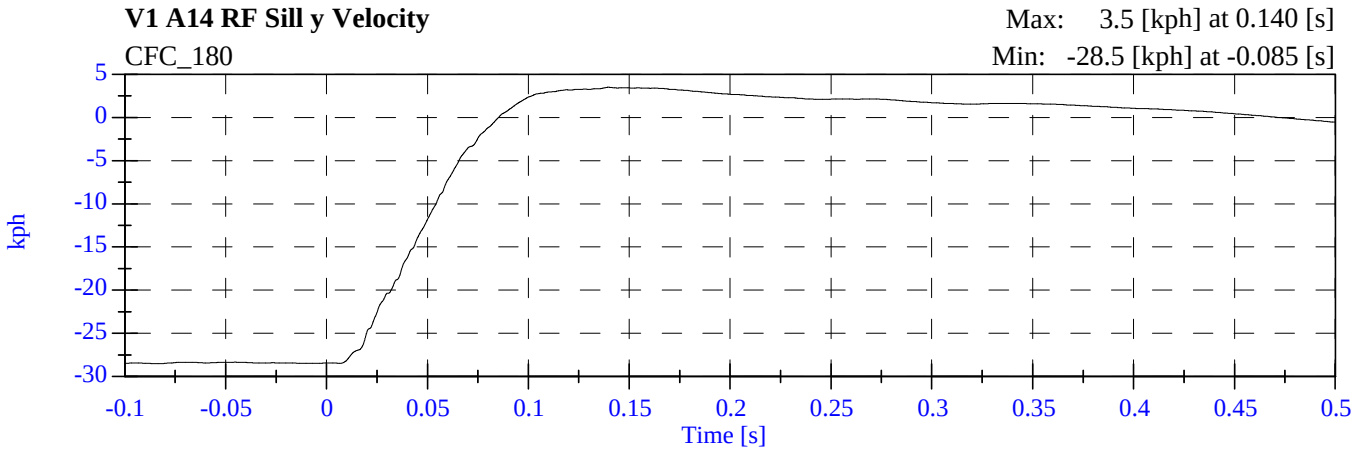
Max: 6.7 [kph] at 0.167 [s]

Min: -28.5 [kph] at -0.058 [s]



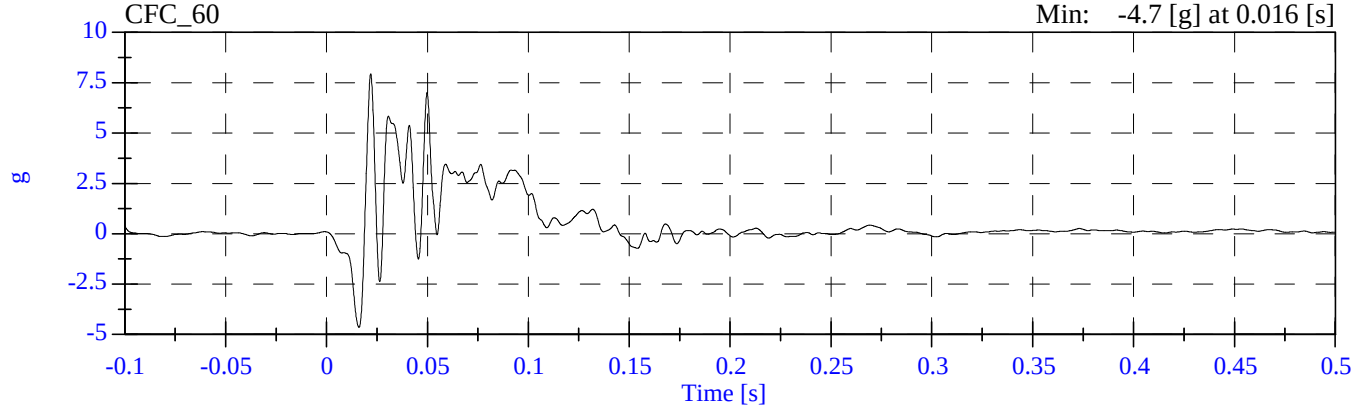
2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008



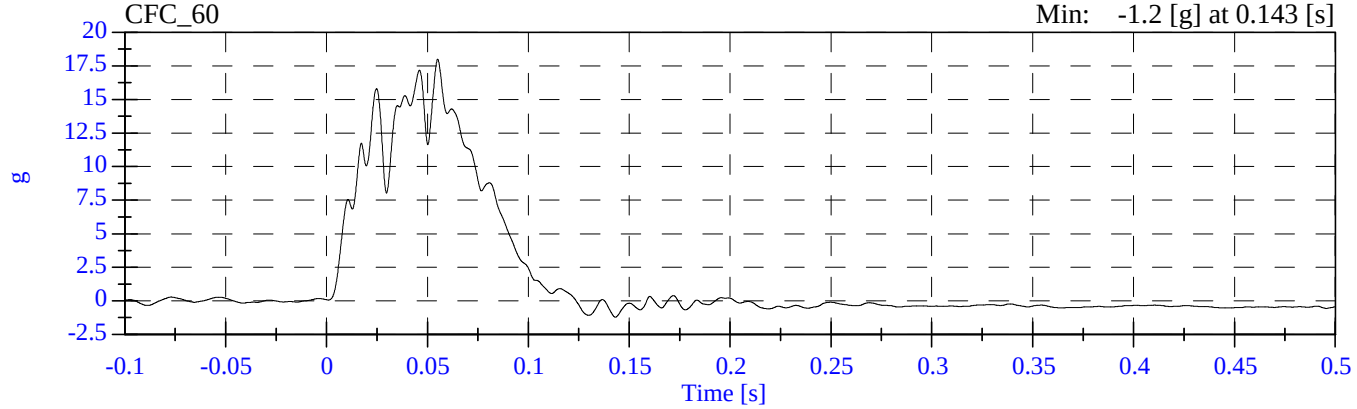


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

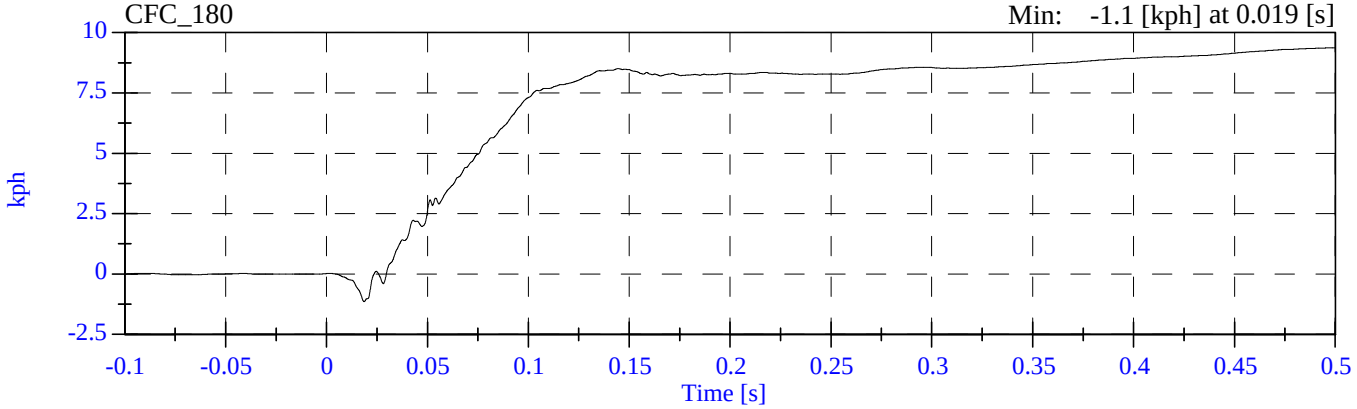
V1 A15 Rear Deck x
CFC_60
Max: 7.9 [g] at 0.022 [s]
Min: -4.7 [g] at 0.016 [s]



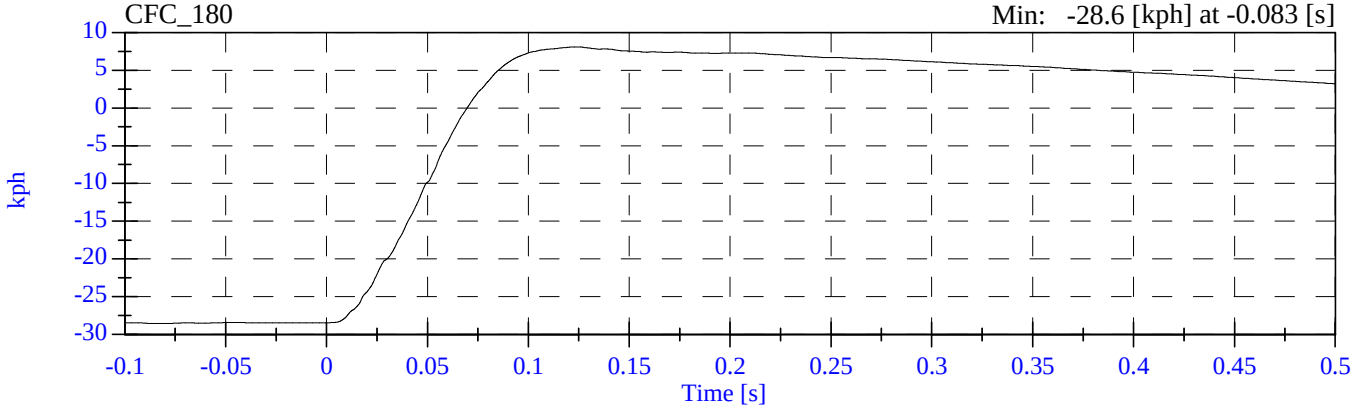
V1 A15 Rear Deck y
CFC_60
Max: 18.0 [g] at 0.055 [s]
Min: -1.2 [g] at 0.143 [s]



V1 A15 Rear Deck x Velocity
CFC_180
Max: 9.4 [kph] at 0.500 [s]
Min: -1.1 [kph] at 0.019 [s]

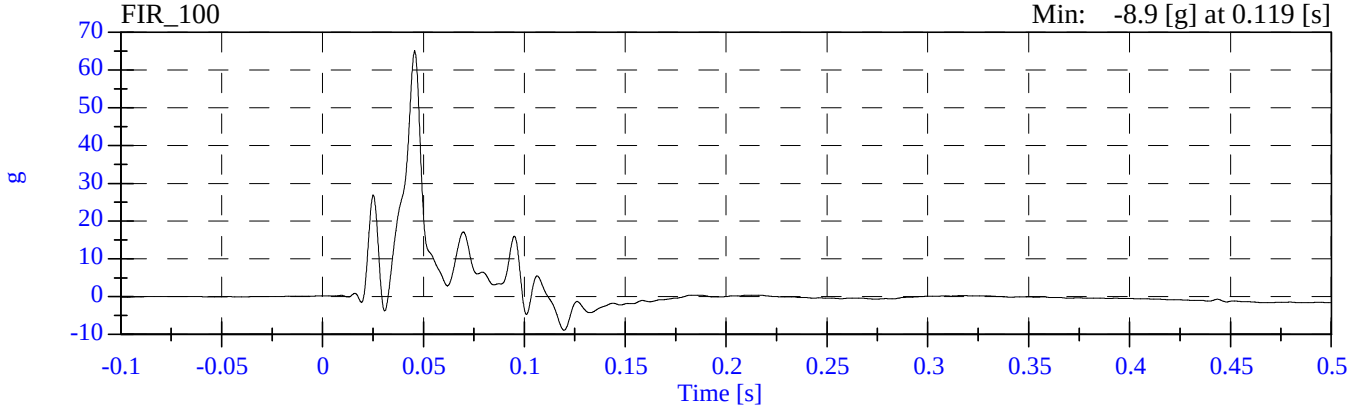


V1 A15 Rear Deck y Velocity
CFC_180
Max: 8.1 [kph] at 0.124 [s]
Min: -28.6 [kph] at -0.083 [s]

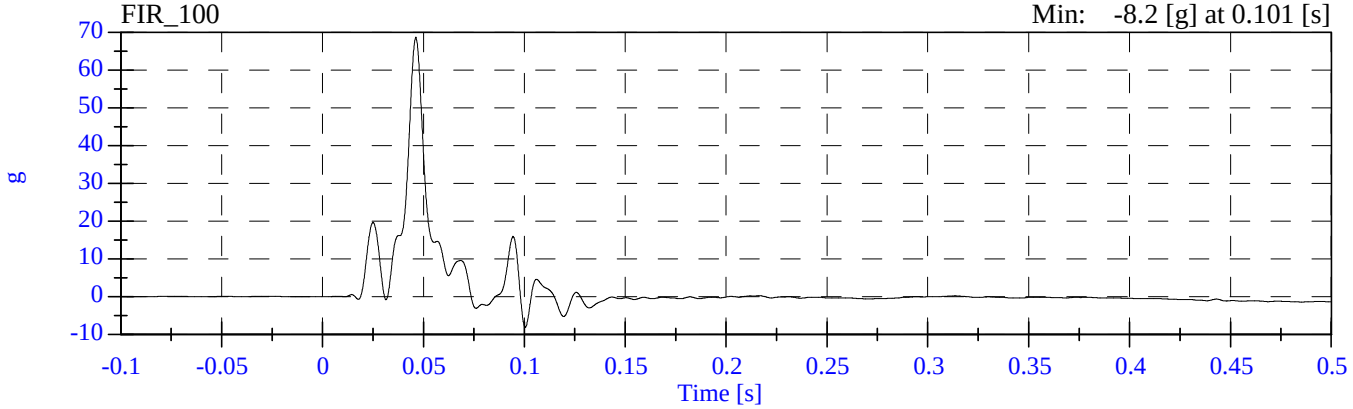


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

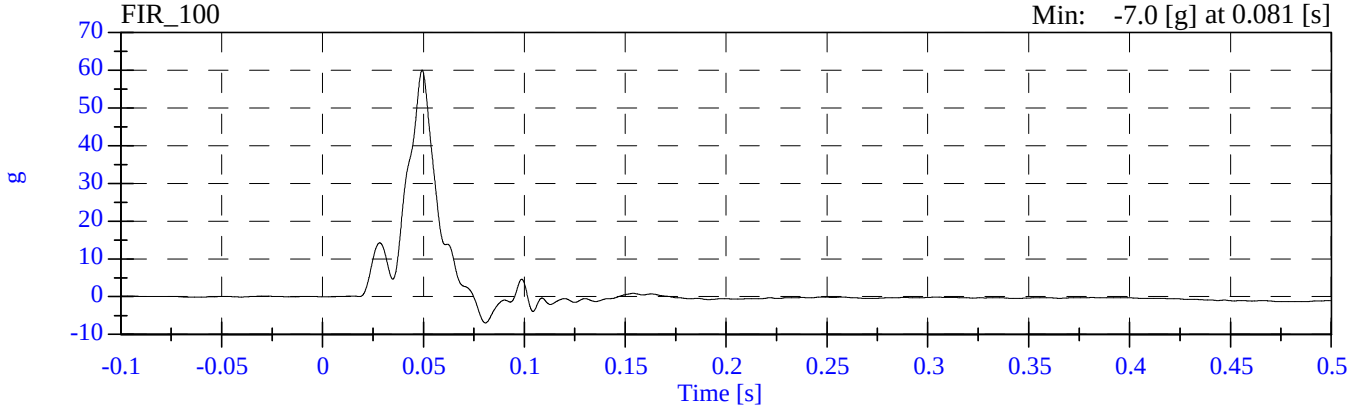
V1P1 Upper Rib y
FIR_100
Max: 65.2 [g] at 0.046 [s]
Min: -8.9 [g] at 0.119 [s]



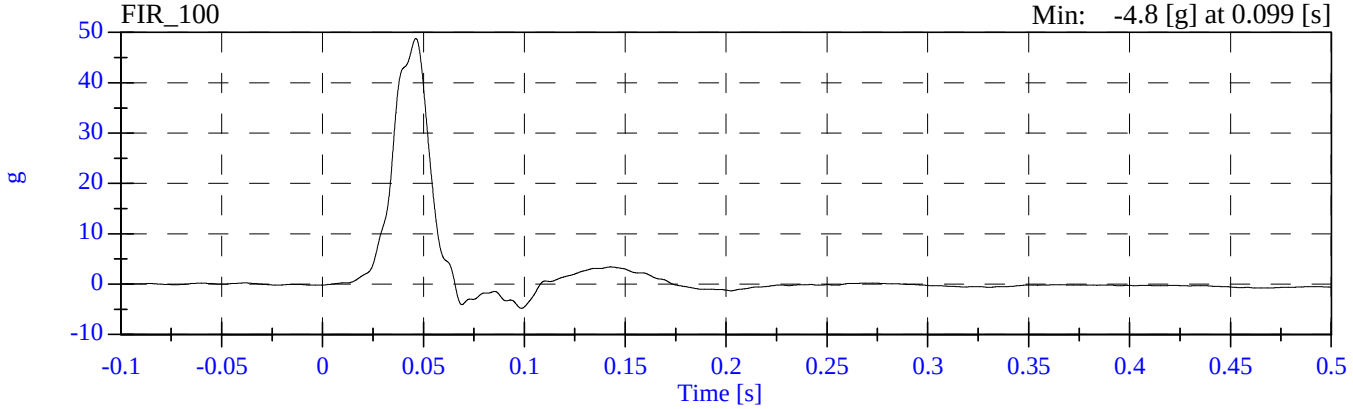
V1P1 Lower Rib y
FIR_100
Max: 68.7 [g] at 0.046 [s]
Min: -8.2 [g] at 0.101 [s]



V1P1 Lower Spine y
FIR_100
Max: 60.1 [g] at 0.049 [s]
Min: -7.0 [g] at 0.081 [s]

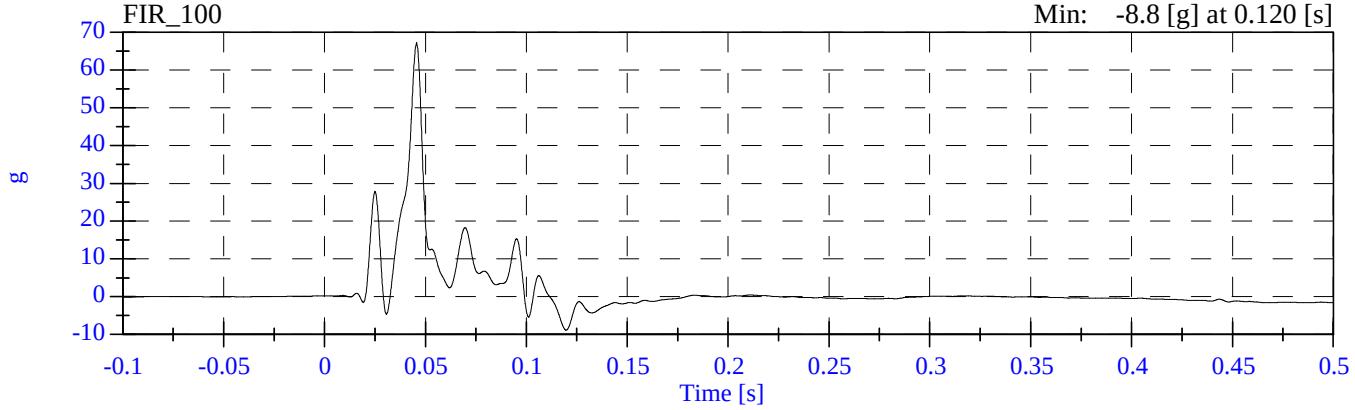


V1P1 Pelvic y
FIR_100
Max: 48.9 [g] at 0.046 [s]
Min: -4.8 [g] at 0.099 [s]

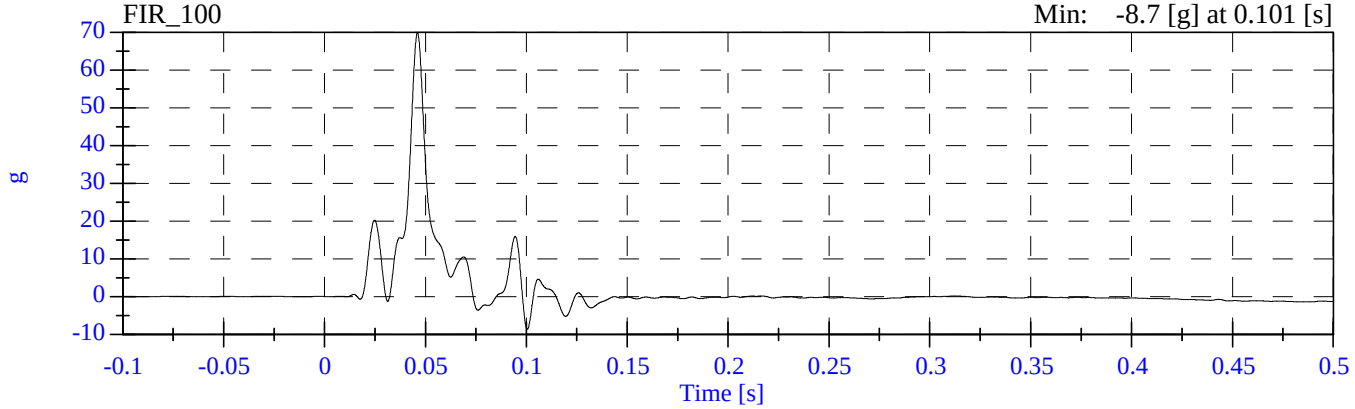


2009 201P Test 4 2009 Toyota Corolla
C95105 - October 10, 2008

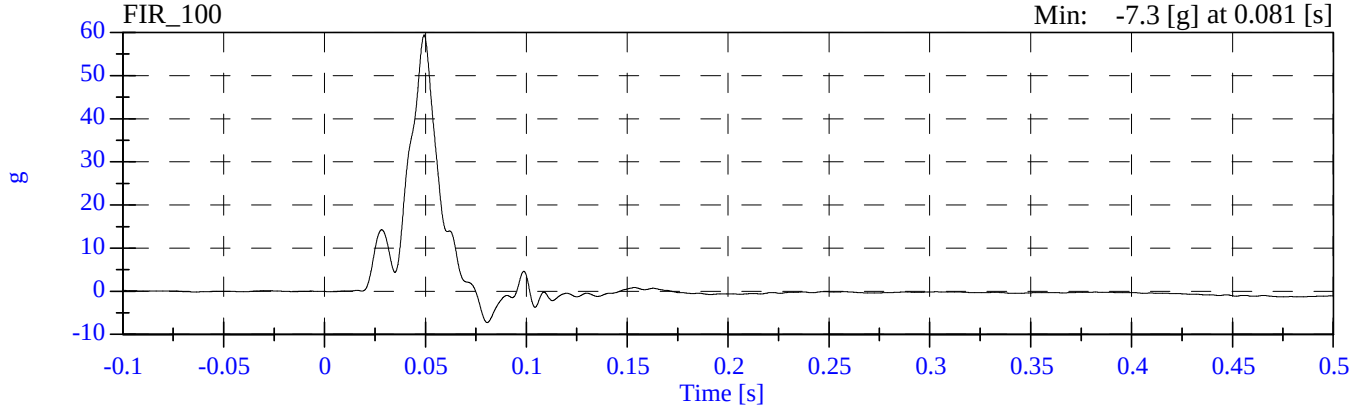
V1P1 Upper Rib Ry
FIR_100
Max: 67.3 [g] at 0.046 [s]
Min: -8.8 [g] at 0.120 [s]



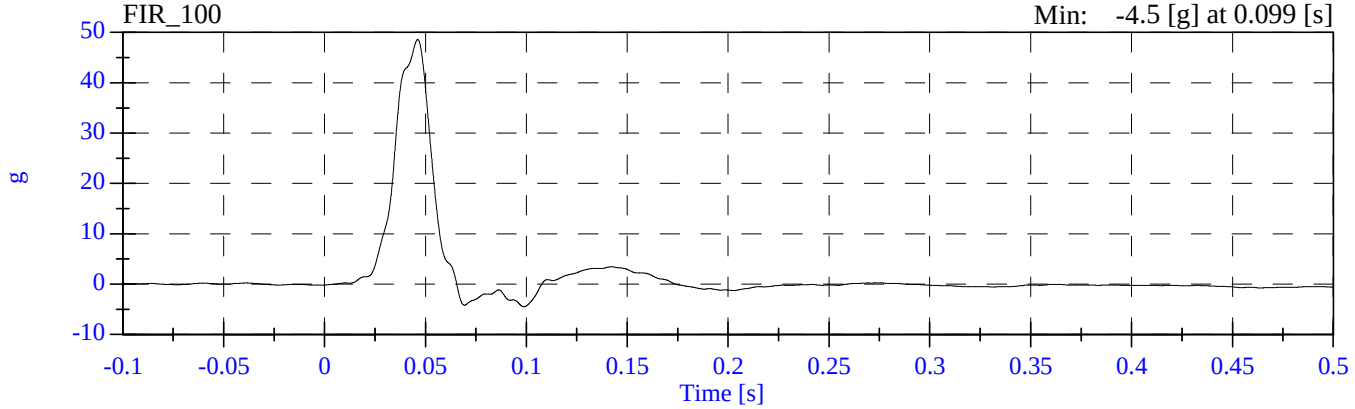
V1P1 Lower Rib Ry
FIR_100
Max: 70.0 [g] at 0.046 [s]
Min: -8.7 [g] at 0.101 [s]



V1P1 Lower Spine Ry
FIR_100
Max: 59.4 [g] at 0.049 [s]
Min: -7.3 [g] at 0.081 [s]



V1P1 Pelvic Ry
FIR_100
Max: 48.6 [g] at 0.046 [s]
Min: -4.5 [g] at 0.099 [s]



APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID HIII PRE & POST TEST CALIBRATION
CONFIGURED FOR Left SIDE IMPACT

Date: 10/09-28/08 Sequential Test Number: 1 & 2
Laboratory Technician: B. Swiecicki

TEST PARAMETER	RANGE	SID HIII NO.: 905	
		PRE-TEST	POST-TEST
SH- Seated Height (mm)	889 - 909	904	899
RH- Rib Height (mm)	501 - 521	509	512
HP- Hip Pivot Height (mm)	99 ref.	99	99
RD- Rib from Back Line (mm)	229 - 241	234	234
KV- Knee Pivot from Back Line (mm)	511 - 526	514	519
SW- Knee Pivot to Floor (mm)	490 - 505	495	497
HW- Hip Width (mm)	356 - 391	370	367
THORAX IMPACTS			
TEMPERATURE (• C)	18.9 - 25.5	21.7	21.7
RELATIVE. HUMIDITY (%)	10 -70	48	29
PROBE SPEED (m/s)	4.27 - 4.33	4.31	4.27
UPPER RIB (g's)	37 - 46	44.21	43.61
LOWER RIB (g's)	37 - 46	40.63	41.82
LOWER SPINE (g's)	15 -22	16.67	21.40
PELVIS IMPACT			
TEMPERATURE (• C)	18.9 - 25.5	21.7	21.7
RELATIVE HUMIDITY (%)	10 - 70	44	29
PROBE SPEED (m/s)	4.27 - 4.33	4.30	4.29
PELVIS (g's)	40 -60	49.25	47.51
HEAD DROP			
TEMPERATURE (C)	18.9 - 25.6	21.7	21.7
RELATIVE. HUMIDITY (%)	10 -70	55	25
PEAK RESULTANT ACCELERATION.	120-150 Gs	149.67	133.16
PEAK LATERAL ACCELERATION	15 Gs Max	1.17	4.33
CURVE PERCENT NONMODAL	< 15%	2.31	4.45

NECK TEST			
TEMPERATURE (C^o)	20.6 – 22.2	21.7	21.7
HUMIDITY (%)	10-70%	56	25
IMPACT VELOCITY (m/s)	6.89-7.13	6.99	7.00
PENDULUM DELTA V			
DELTA V at 10 ms.	1.96-2.55 m/s	2.15	2.20
DELTA V at 20 ms.	4.12-5.10 m/s	4.47	4.54
DELTA V at 30 ms.	5.73-7.01 m/s	6.35	6.42
DELTA V between 40-70 ms.	6.27-7.64 m/s	7.15	7.09
D PLANE ROTATION			
MAXIMUM ROTATION (deg.)	66.0-82.0	69.73	73.57
ROTATION ANGLE DECAY	58.0-67.0 ms	58.60	59.60
MOMENT ABOUT THE OCCIPITAL CONDYLE			
MAX OCCIPITAL MOMENT	73.0-88.0 N-m	86.79	84.22
OCCIPITAL MOMENT DECAY	49.0-64.0 ms	53.90	55.90
HEAD ROTATION TIME WITH RESPECT TO OCCIPITAL CONDYLE MOMENT			
MOMENT TO ROTATION PEAK	2.0-16.0 ms	9.30	11.30

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID HIII NO.: 905

CONFIGURED FOR Left **SIDE IMPACT**

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR Left **SIDE IMPACT**

SID HIII Serial No.: 905 Sequential Test Number: 1
Date: 10/09/08 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST	Passed all requirements.
LATERAL NECK BEND TEST	Passed all requirements.
ABDOMINAL COMPRESSION TEST	Passed all requirements.
LUMBAR FLEXION TEST	Passed all requirements.

REMARKS: None

EXTERNAL DIMENSIONS
PRE-TEST

CONFIGURED FOR Left **SIDE IMPACT**

SID HIII Serial No.: 905 Sequential Test Number: 1
Date: 10/09/08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	904
RH- Rib Height (mm)	502 – 520	509
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	234
KH- Knee Pivot from Back Line (mm)	511 – 526	514
KV- Knee Pivot to Floor (mm)	490 – 505	495
HW- Hip Width (mm)	356 - 391	370

REMARKS: None

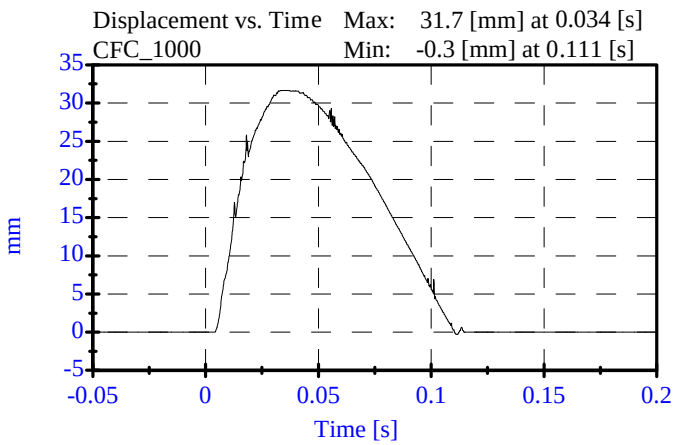
905 Shock Impact Low (3.05 m/s)
PRE TEST

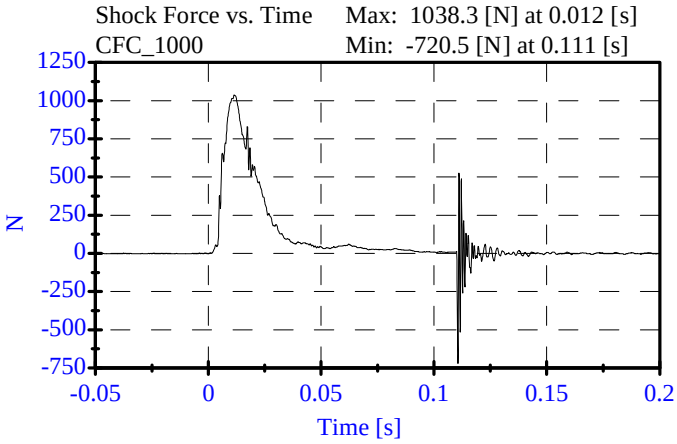
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905SL 08-13-08
Date: 08-13-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	48.00 %	Passed
Displacement:	30.00-35.00 mm	31.67 mm	Passed
Maximum Force:	836.00-1125.00 N	1038.31 N	Passed

Impact Test Velocity: 3.05 m/s
Damper Identification: 905
Damper Setting: 5





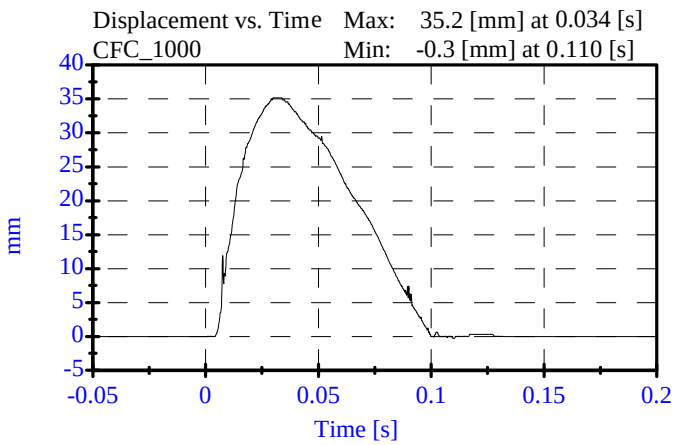
905 Shock Impact Med (4.27 m/s)
PRE TEST

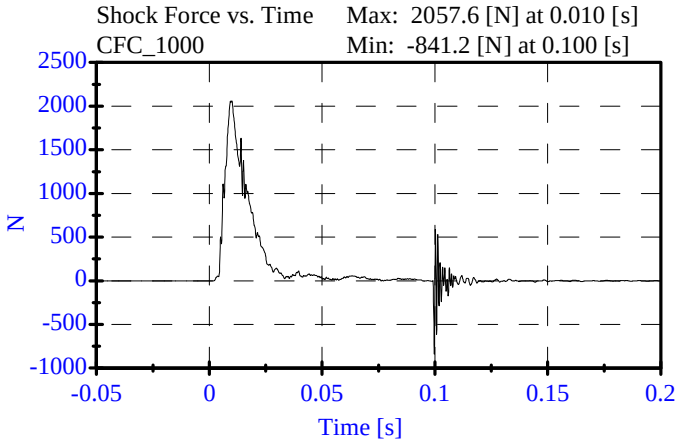
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905SM 08-13-08
Date: 08-13-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	48.00 %	Passed
Displacement:	32.00-37.00 mm	35.17 mm	Passed
Maximum Force:	1730.00-2099.00 N	2057.58 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 905
Damper Setting: 5





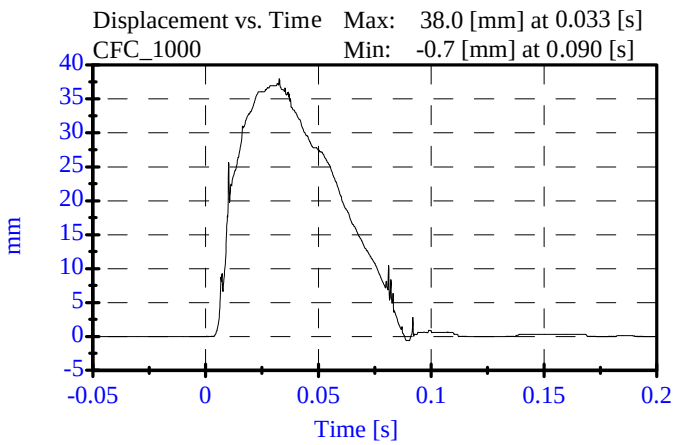
905 Shock Impact High (6.10 m/s)
PRE TEST

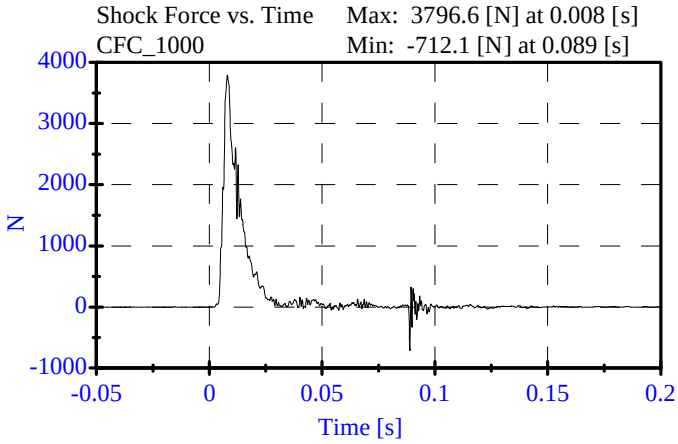
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905SH 08-13-08
Date: 08-13-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	49.00 %	Passed
Displacement:	33.00-40.00 mm	37.99 mm	Passed
Maximum Force:	3741.00-4448.00 N	3796.60 N	Passed

Impact Test Velocity: 6.10 m/s
Damper Identification: 905
Damper Setting: 5





Thorax Impact

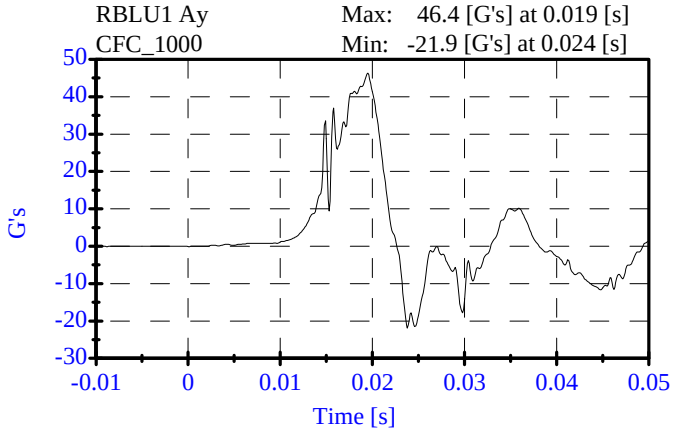
Pre-Test

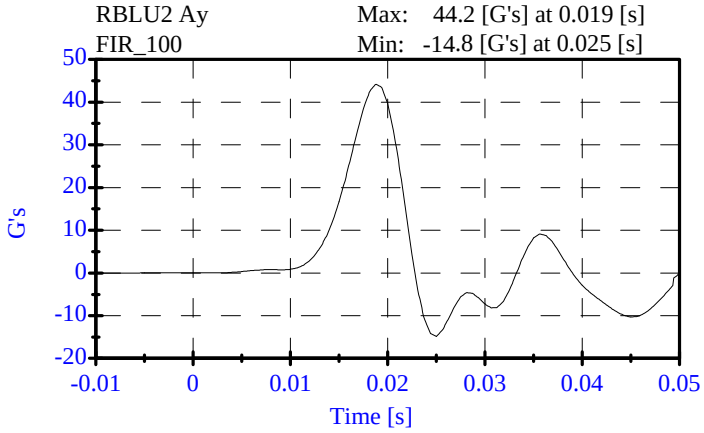
CONFIGURED FOR LEFT SIDE IMPACT

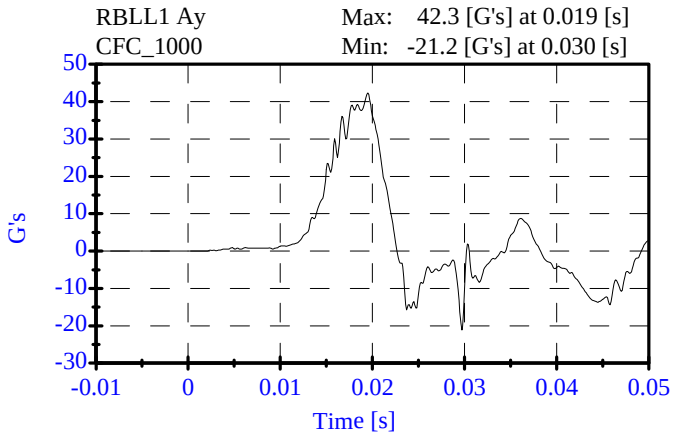
ATD Serial No: 905 Sequential Test Number: 1 File: 905T1 08-26-08

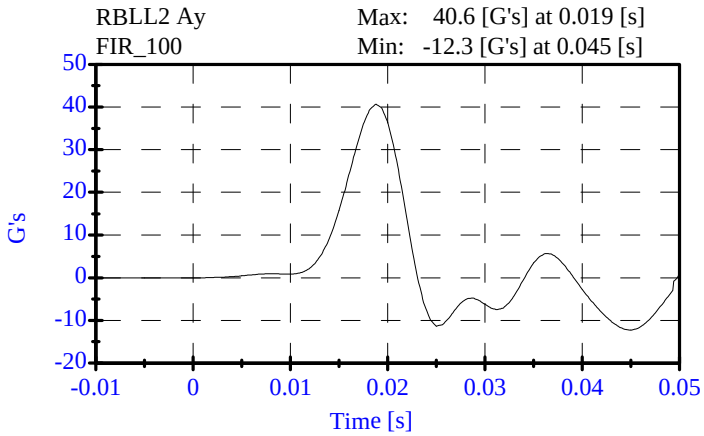
Date: 08-26-08 Laboratory Technician: B. Swiecicki

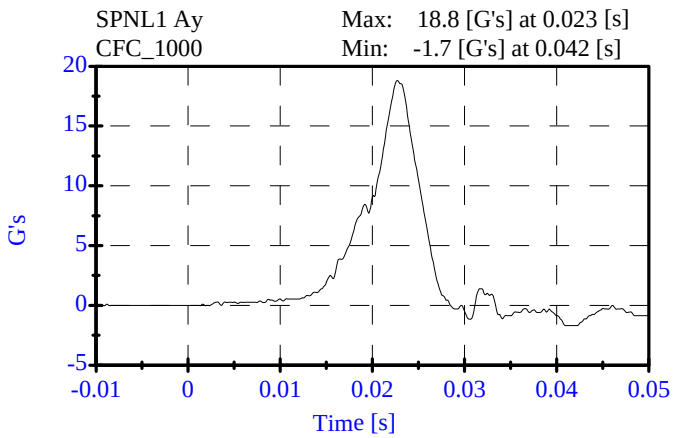
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	48.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	44.21 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	40.63 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	16.67 G's	Passed

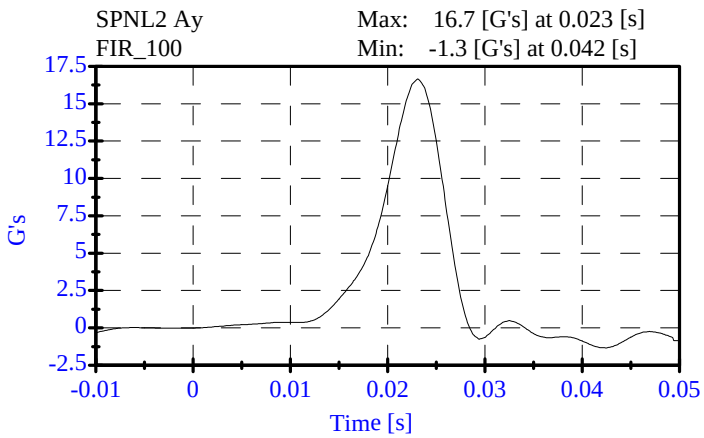












Pelvis Impact

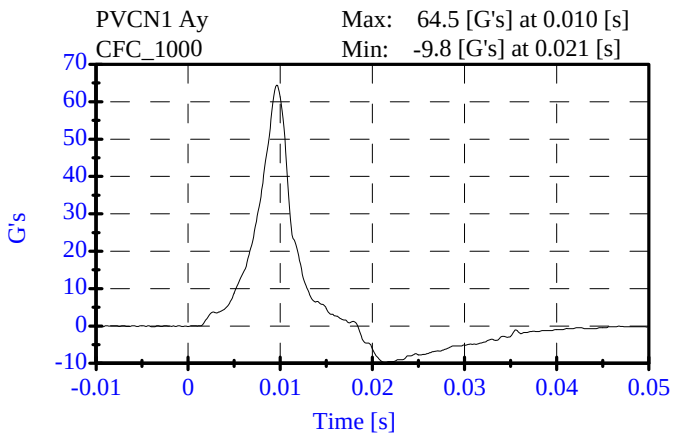
Pre-Test

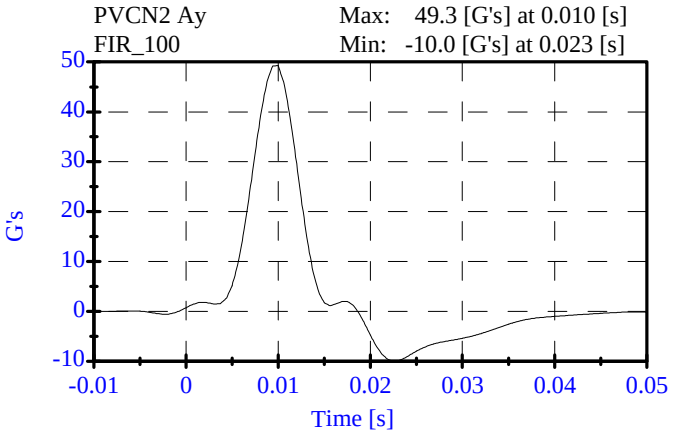
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905P1 08-26-08

Date: 08-26-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	44.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	49.25 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.1 ms	Passed





Head Drop Test

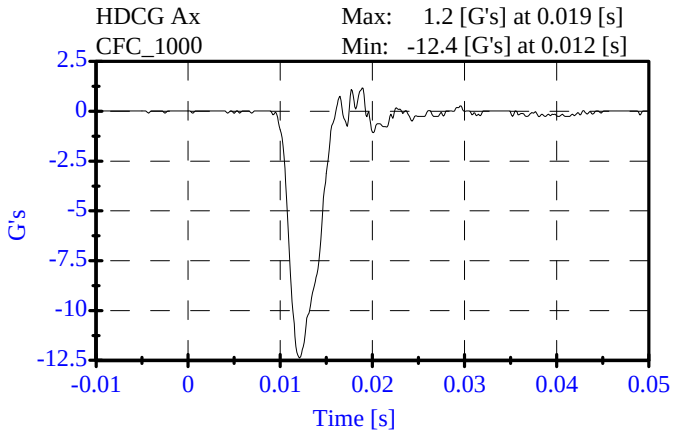
Pre-Test

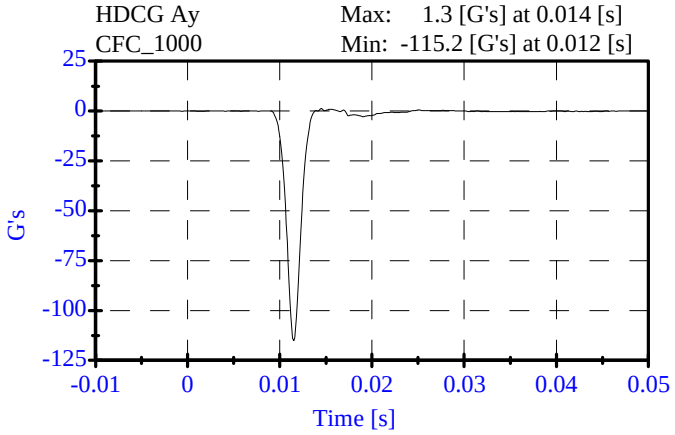
CONFIGURED FOR LEFT SIDE IMPACT

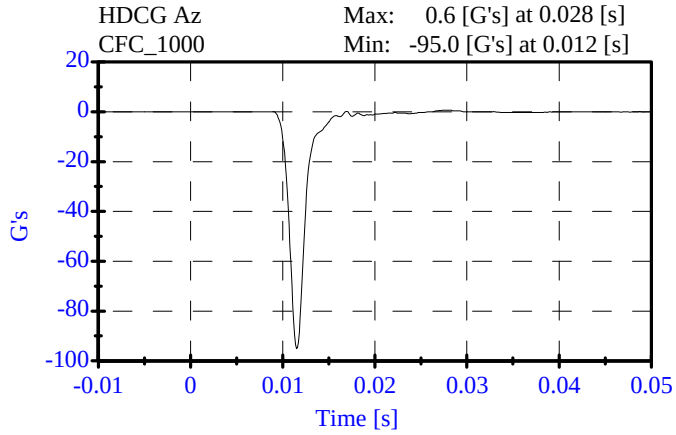
ATD Serial No: 905 Sequential Test Number: 1 File: 905H 08-11-08

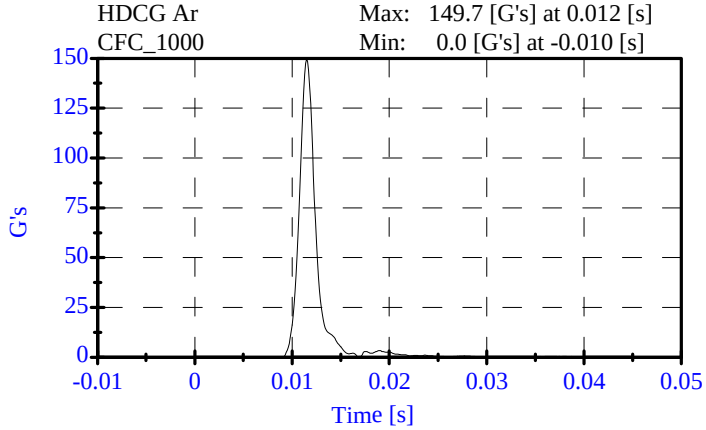
Date: 08-11-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.7 C	Passed
Lab Humidity:	10-70 %	55.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	149.67 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.17 Gs	Passed
Curve PerCent NonModal:	< 15%	2.31 %	Passed









Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905N 08-04-08

Date: 08-05-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	56.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.99 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.15 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.47 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.35 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.15 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	69.73 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.60 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	86.79 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	53.90 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	9.30 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

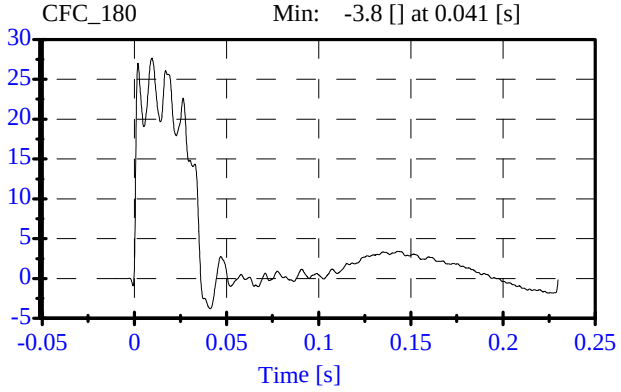
ATD Serial No: 905

Sequential Test Number: 1 File: 905N 08-04-08

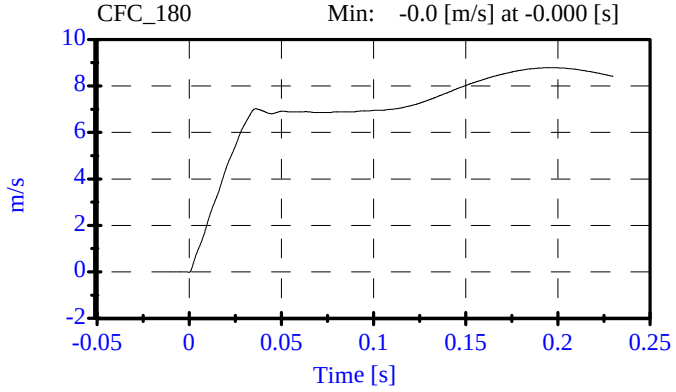
Date: 08-05-08

Laboratory Technician: B. Swiecicki

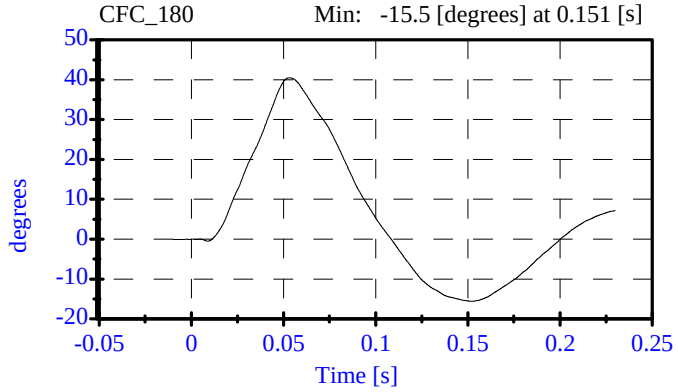
Pend Ax
CFC_180
Max: 27.7 [] at 0.010 [s]
Min: -3.8 [] at 0.041 [s]



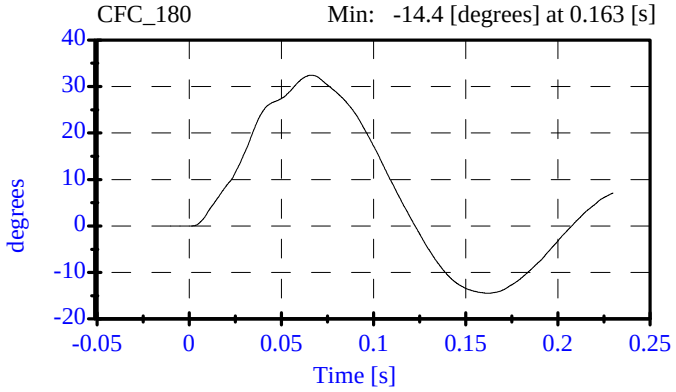
Pend Vx
CFC_180
Max: 8.8 [m/s] at 0.198 [s]
Min: -0.0 [m/s] at -0.000 [s]



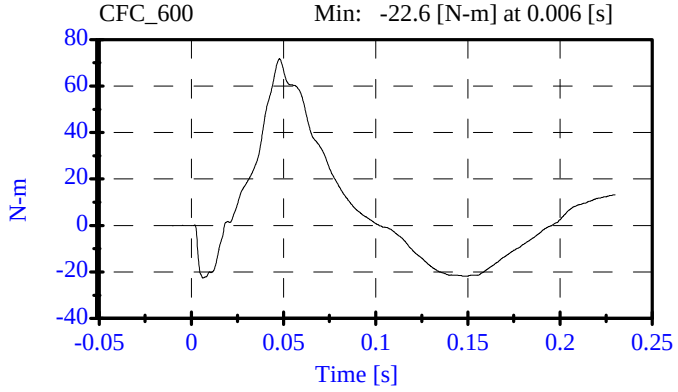
Head Rot
CFC_180
Max: 40.5 [degrees] at 0.053 [s]
Min: -15.5 [degrees] at 0.151 [s]



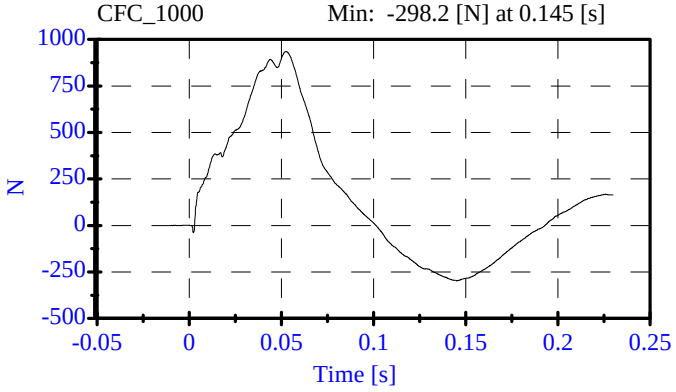
Arm Rot
CFC_180
Max: 32.4 [degrees] at 0.066 [s]
Min: -14.4 [degrees] at 0.163 [s]



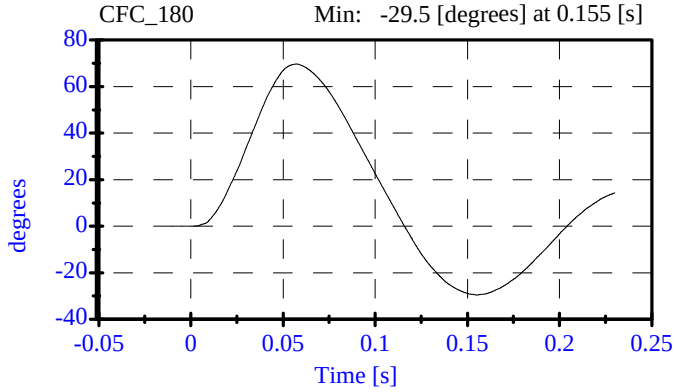
Neck Mx
CFC_600
Max: 71.7 [N-m] at 0.048 [s]
Min: -22.6 [N-m] at 0.006 [s]



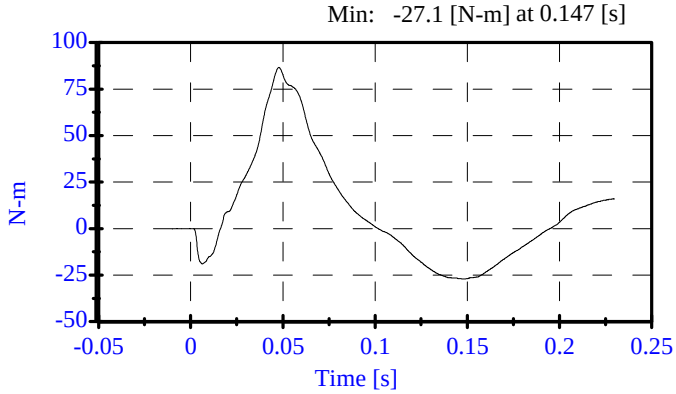
Neck Fy
CFC_1000
Max: 935.7 [N] at 0.053 [s]
Min: -298.2 [N] at 0.145 [s]



Tot Rot
CFC_180
Max: 69.7 [degrees] at 0.057 [s]
Min: -29.5 [degrees] at 0.155 [s]



MOCX
Max: 86.8 [N-m] at 0.048 [s]
Min: -27.1 [N-m] at 0.147 [s]



Abdominal Compression Test

Pre-Test

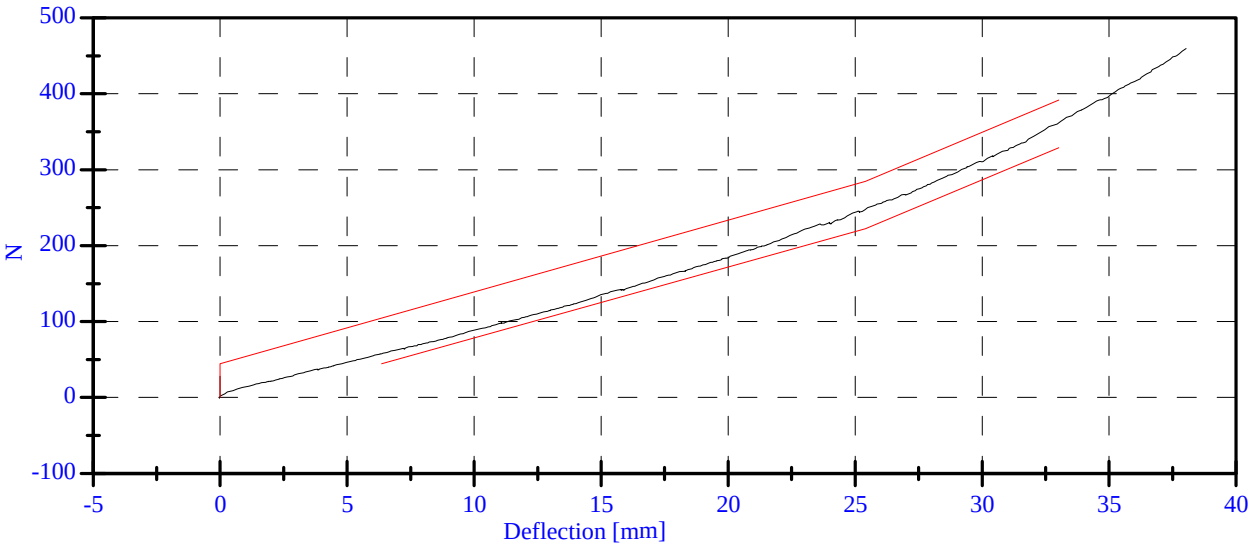
CONFIGURED FOR LEFT SIDE IMPACT

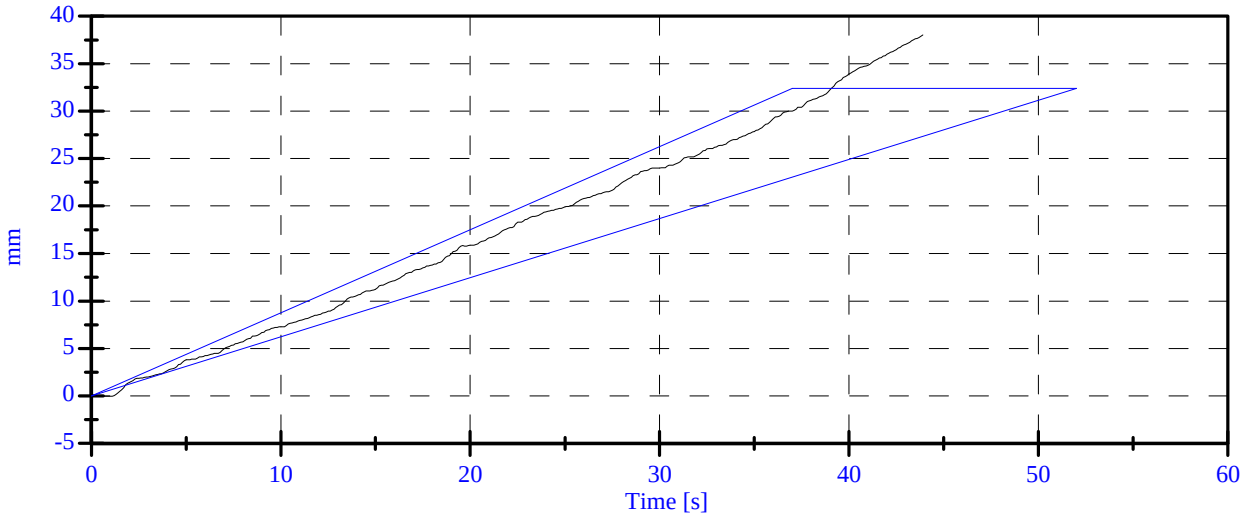
ATD Serial No: 905 Sequential Test Number: 1 File: 905 Ab 08-28-08

Date: 08-28-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	55.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	114.42 N	Passed
Force at 19.05 mm :	162.98-220.99 N	174.65 N	Passed
Force at 25.40 mm :	221.97-280.02 N	247.30 N	Passed
Force at 33.02 mm :	324.99-391.00 N	360.09 N	Passed

ABDOMINAL COMPRESSION TEST





Lumbar Spine Test
Pre-Test

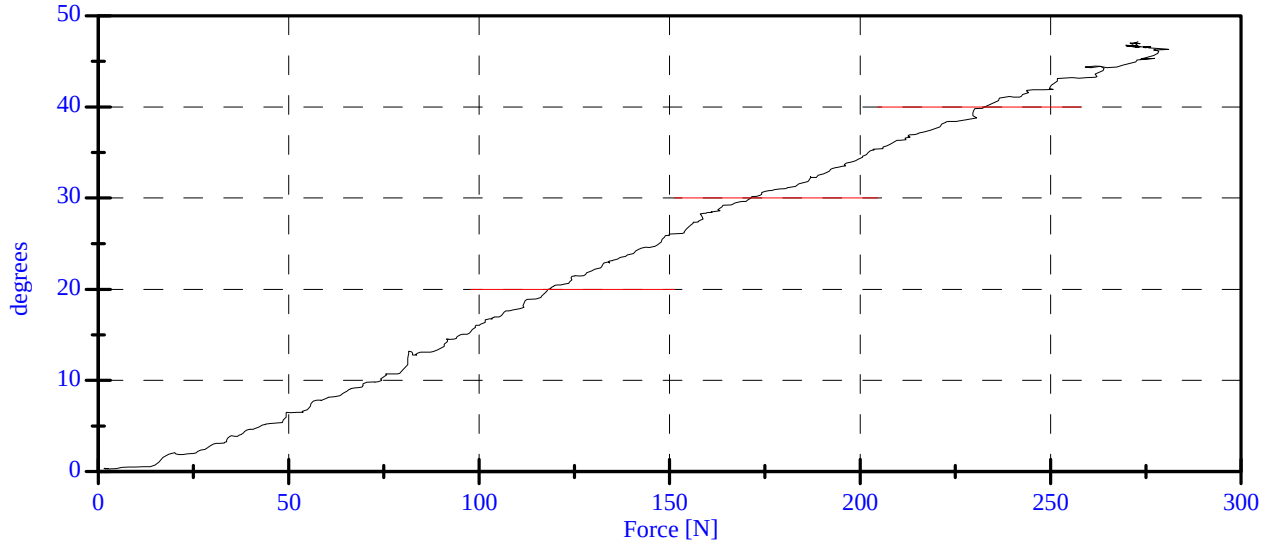
CONFIGURED FOR LEFT SIDE IMPACT

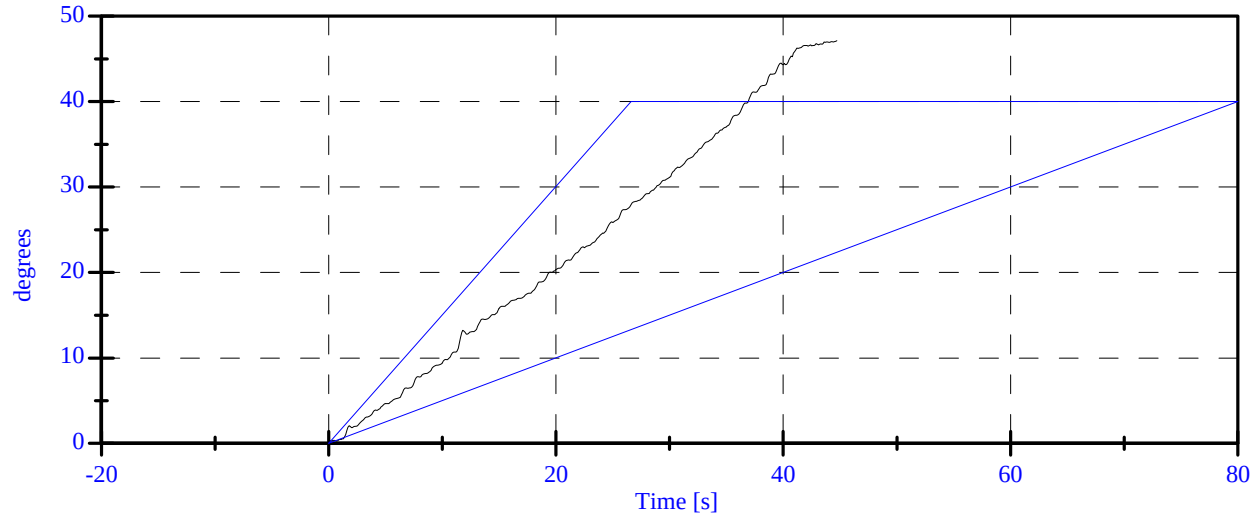
ATD Serial No: 905
Date: 08-27-08

Sequential Test Number: 1 File: 905 Spine 08-27-08
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	46.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	1.83 N	Passed
Force at 20 Deg:	97.86-151.24 N	118.04 N	Passed
Force at 30 Deg	151.24-204.62 N	171.32 N	Passed
Force at 40 Deg	204.62-258.00 N	232.69 N	Passed
Return Angle	12 Deg Max	7.87 deg	Passed

LUMBAR SPINE FLEXION TEST





PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR Left **SIDE IMPACT**

SID HIII Serial No.: 905 Sequential Test Number:
Date: 10/09/08 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID HIII NO.: 905

CONFIGURED FOR Left **SIDE IMPACT**

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR Left **SIDE IMPACT**

SID HIII Serial No.:	905	Sequential Test Number:	2
Date:	10/28/08	Laboratory Technician:	B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST	Passed all requirements.
LATERAL NECK BEND TEST	Passed all requirements.
ABDOMINAL COMPRESSION TEST	Passed all requirements.
LUMBAR FLEXION TEST	Passed all requirements.

REMARKS: None

EXTERNAL DIMENSIONS
POST TEST

CONFIGURED FOR Left **SIDE IMPACT**

SID HIII Serial No.: 905 Sequential Test Number: 2
Date: 10/28/08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	512
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	519
KV- Knee Pivot to Floor (mm)	490 - 505	497
HW- Hip Width (mm)	356 - 391	367

REMARKS: None

Thorax Impact

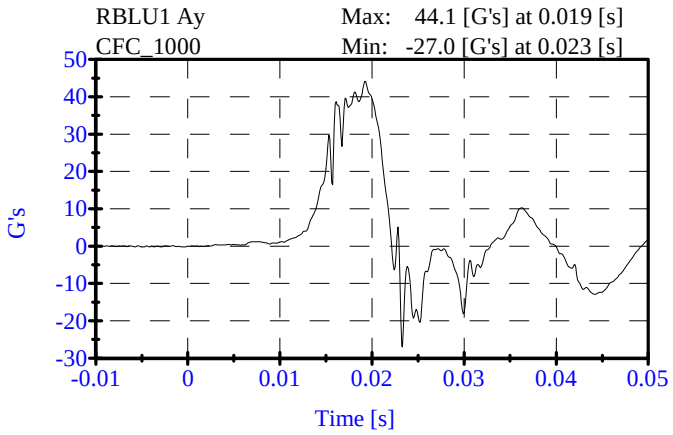
Pre-Test

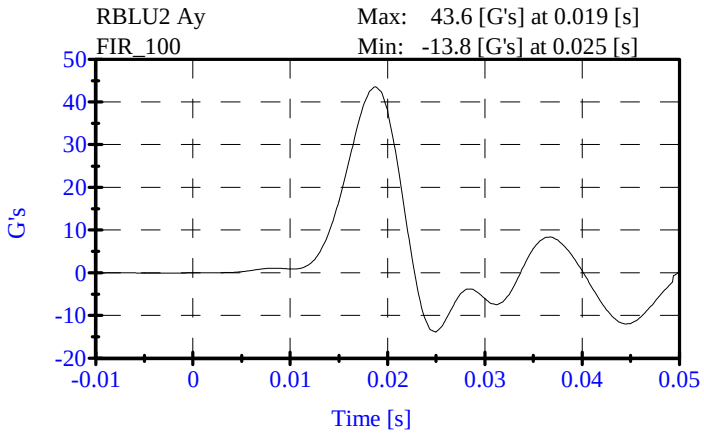
CONFIGURED FOR LEFT SIDE IMPACT

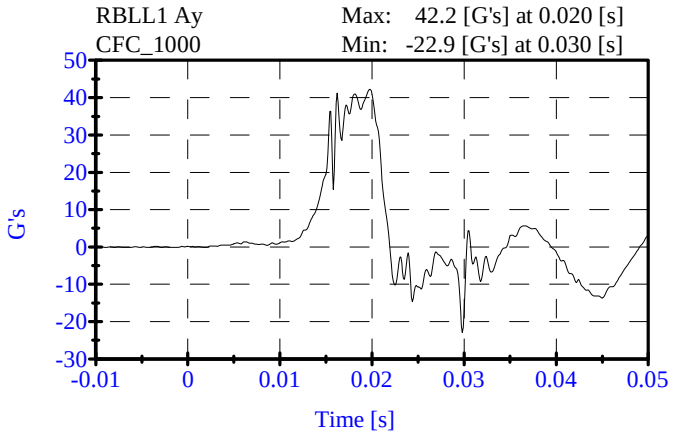
ATD Serial No: 905 Sequential Test Number: 1 File: 905T 10-27-08

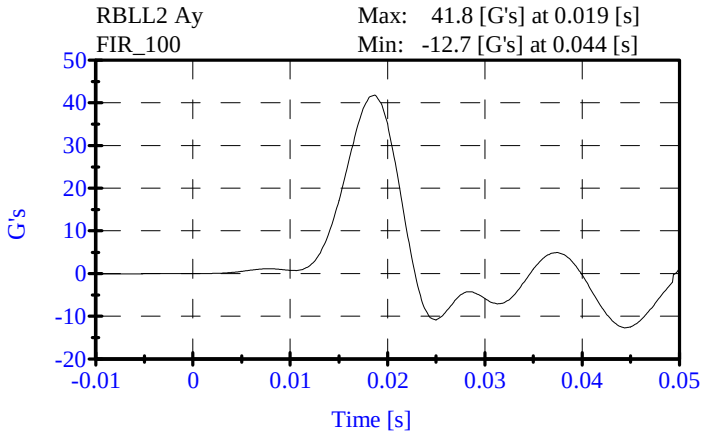
Date: 10-27-08 Laboratory Technician: B. Swiecicki

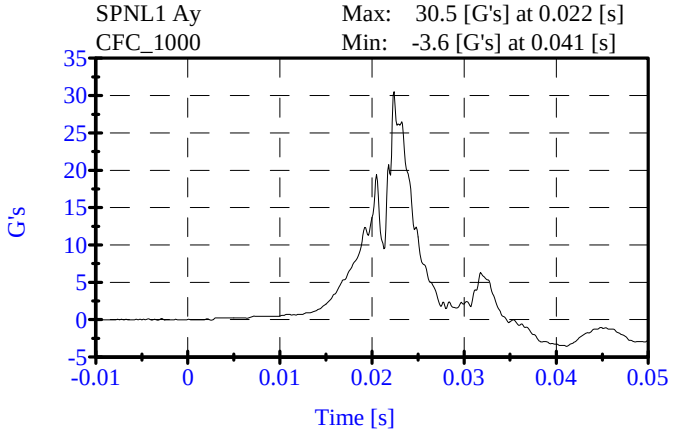
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	43.61 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	41.82 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.40 G's	Passed

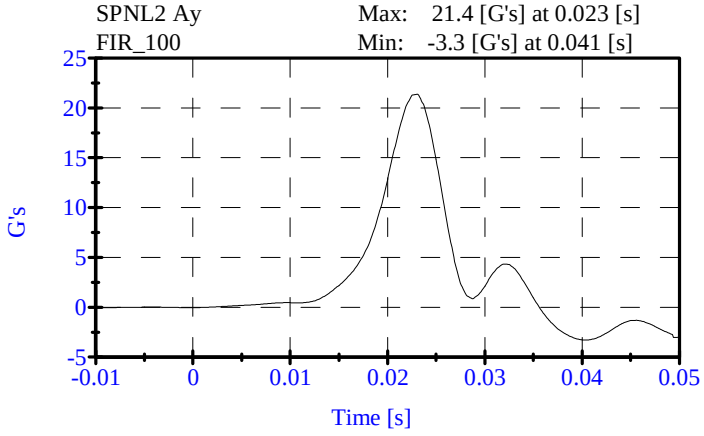












Pelvis Impact

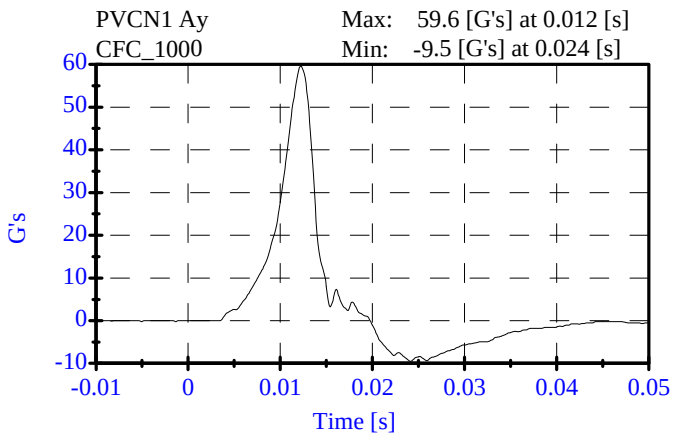
Post-Test

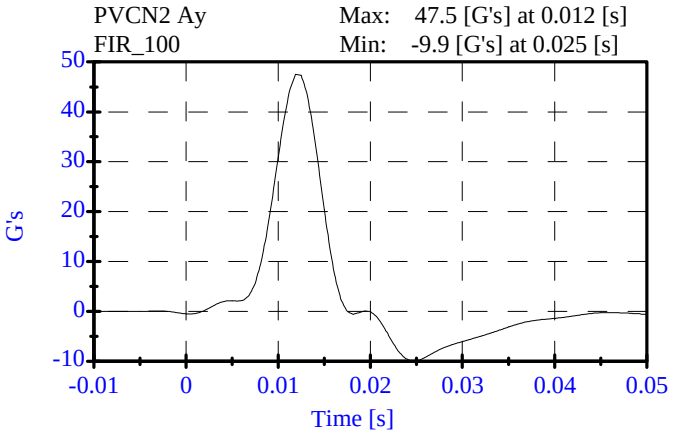
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905P 10-27-08

Date: 10-27-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	47.51 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.9 ms	Passed





Head Drop Test

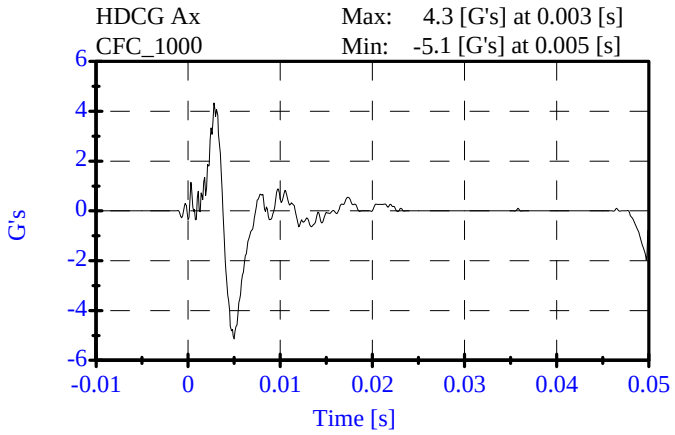
Post-Test

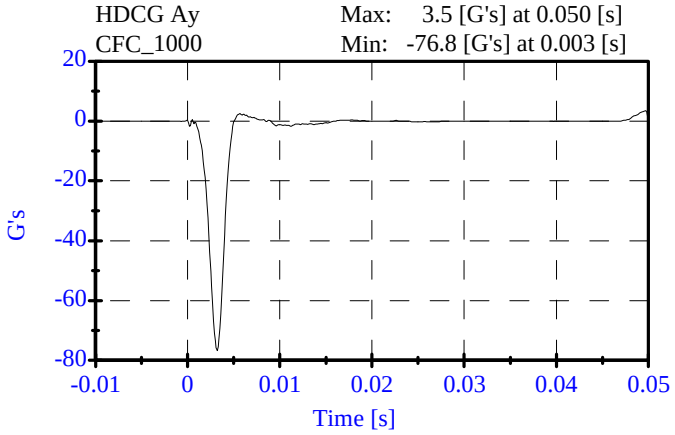
CONFIGURED FOR LEFT SIDE IMPACT

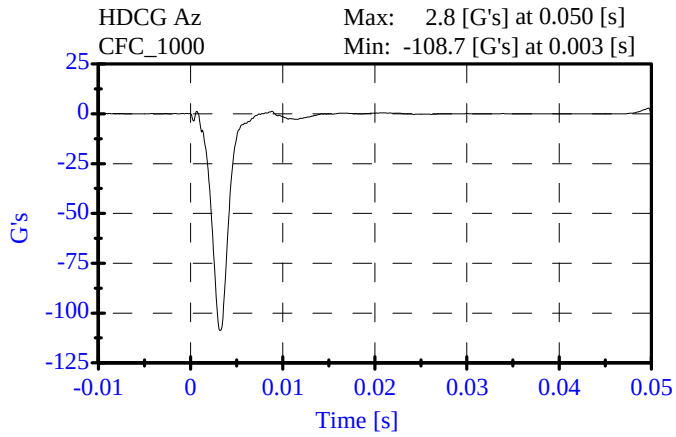
ATD Serial No: 269 Sequential Test Number: 1 File: 905H 10-23-08

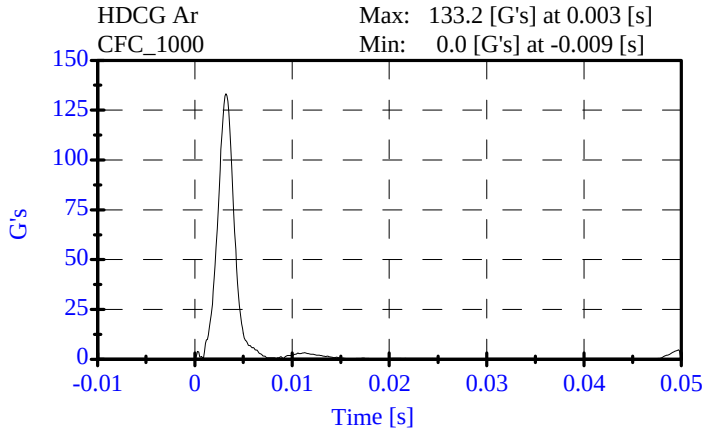
Date: 10-23-08 Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.7 C	Passed
Lab Humidity:	10-70 %	25.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	133.16 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	4.33 Gs	Passed
Curve PerCent NonModal:	< 15%	4.45 %	Passed









Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905N 10-24-08

Date: 10-24-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	25.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.20 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.54 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.42 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.09 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	73.57 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.60 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	84.22 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	55.90 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	11.30 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

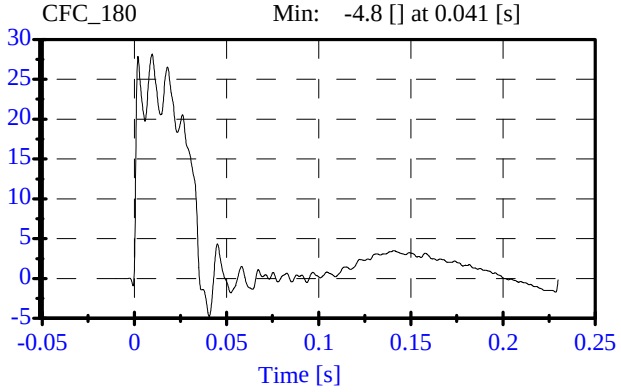
ATD Serial No: 905

Sequential Test Number: 1 File: 905N 10-24-08

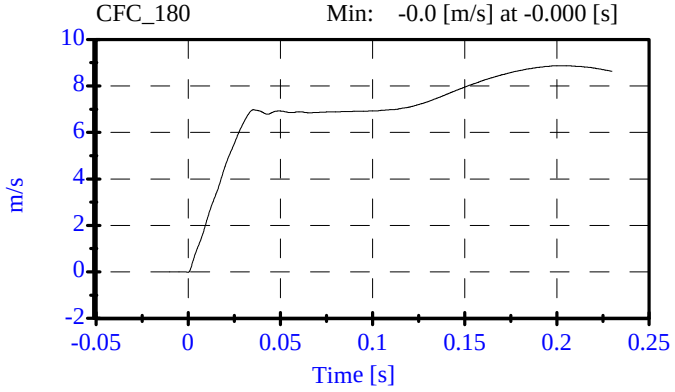
Date: 10-24-08

Laboratory Technician: B. Swiecicki

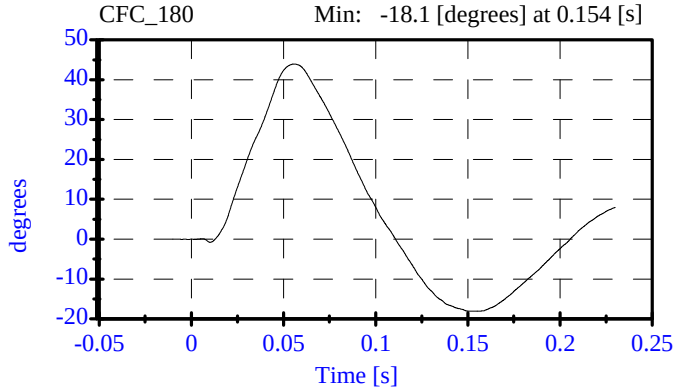
Pend Ax
CFC_180
Max: 28.2 [] at 0.010 [s]
Min: -4.8 [] at 0.041 [s]



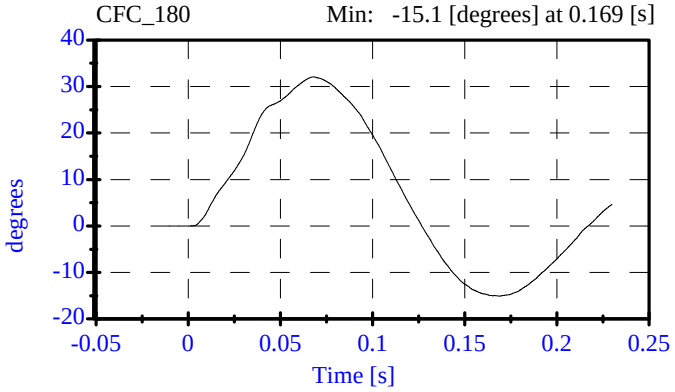
Pend Vx
CFC_180
Max: 8.9 [m/s] at 0.201 [s]
Min: -0.0 [m/s] at -0.000 [s]



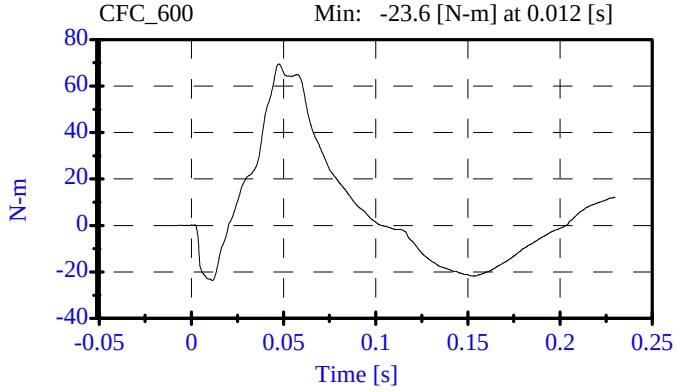
Head Rot
CFC_180
Max: 43.9 [degrees] at 0.056 [s]
Min: -18.1 [degrees] at 0.154 [s]



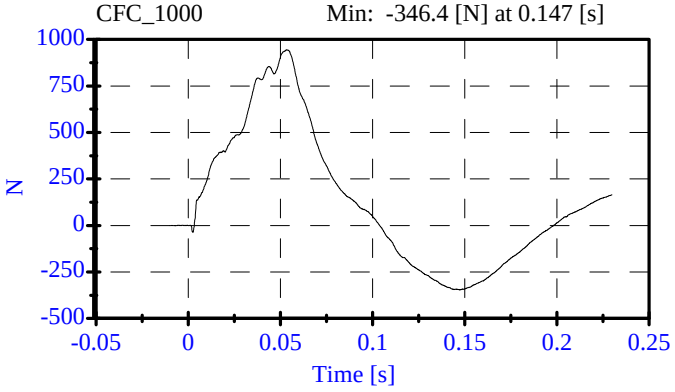
Arm Rot
CFC_180
Max: 32.1 [degrees] at 0.068 [s]
Min: -15.1 [degrees] at 0.169 [s]



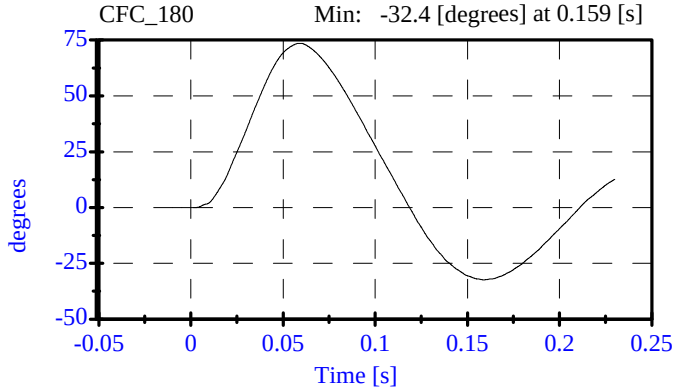
Neck Mx
CFC_600
Max: 69.5 [N-m] at 0.048 [s]
Min: -23.6 [N-m] at 0.012 [s]



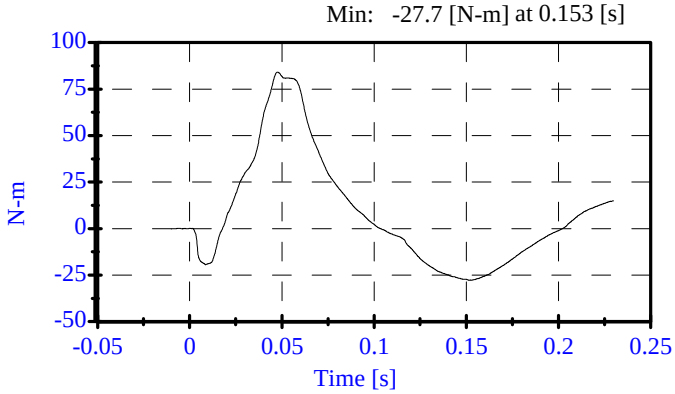
Neck Fy
CFC_1000
Max: 944.3 [N] at 0.054 [s]
Min: -346.4 [N] at 0.147 [s]



Tot Rot
CFC_180
Max: 73.6 [degrees] at 0.059 [s]
Min: -32.4 [degrees] at 0.159 [s]



MOCX
Max: 84.2 [N-m] at 0.048 [s]
Min: -27.7 [N-m] at 0.153 [s]



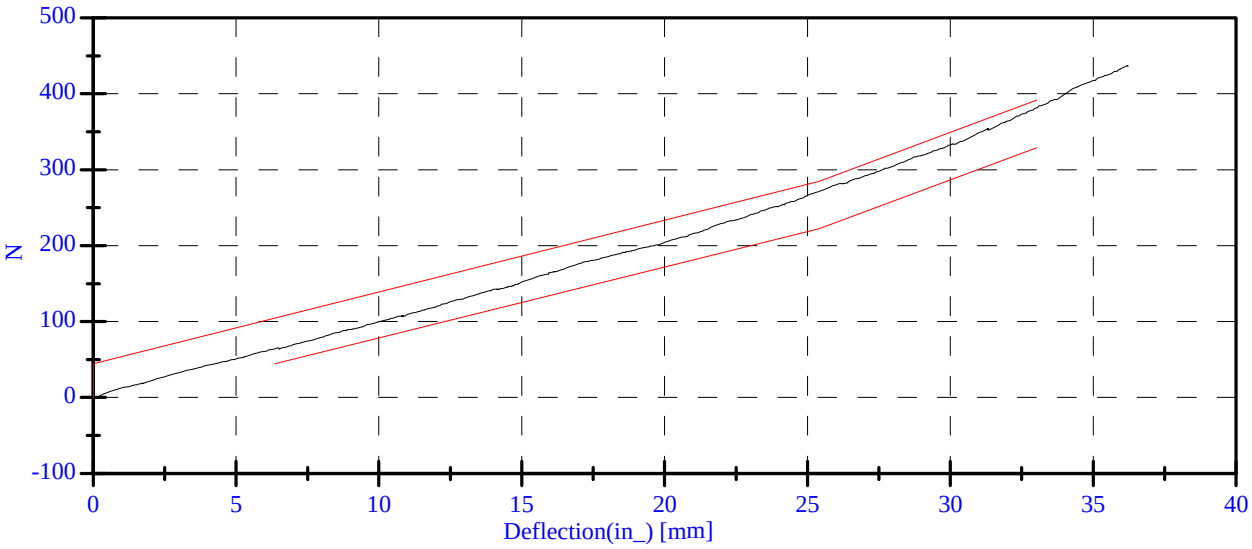
Abdominal Compression Test
Post-Test

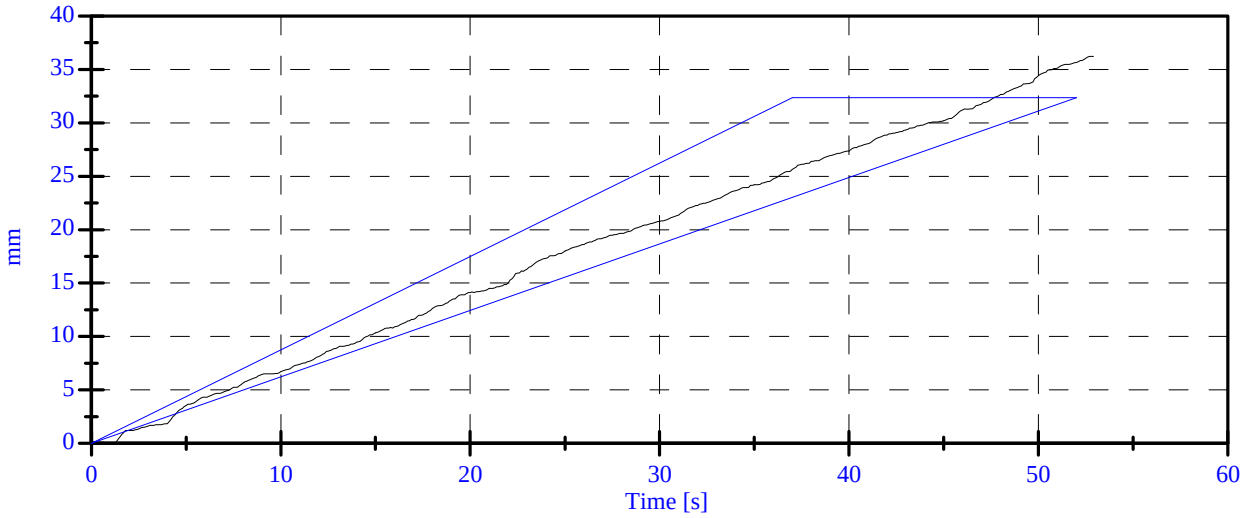
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905 Ab 10-28-08
Date: 10-28-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	129.75 N	Passed
Force at 19.05 mm :	162.98-220.99 N	195.10 N	Passed
Force at 25.40 mm :	221.97-280.02 N	271.39 N	Passed
Force at 33.02 mm :	324.99-391.00 N	382.00 N	Passed

ABDOMINAL COMPRESSION TEST





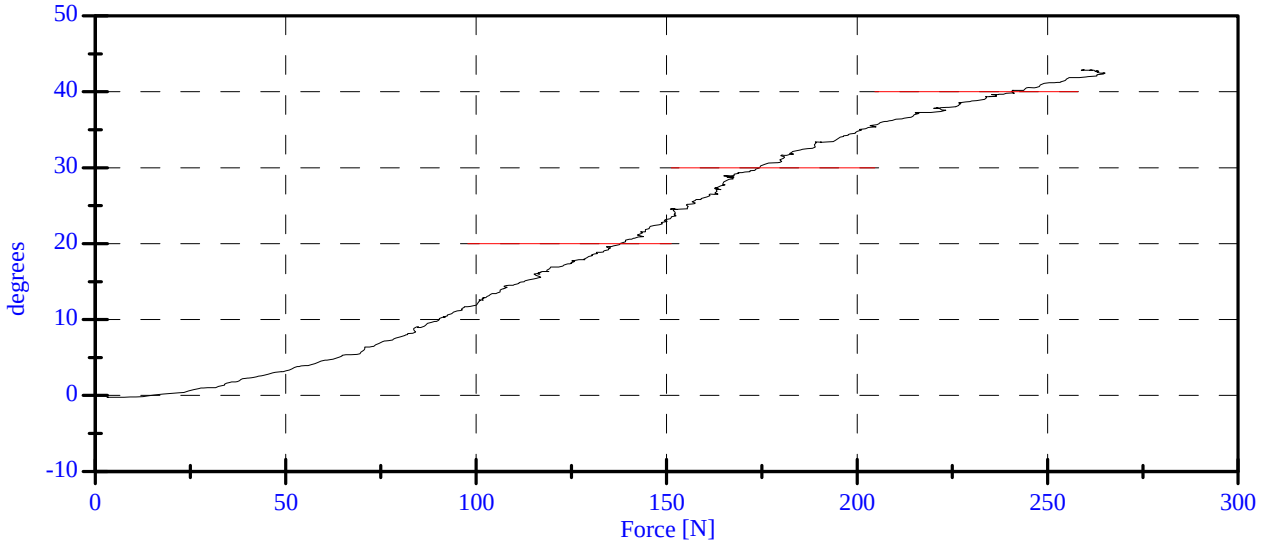
Lumbar Spine Test
Post-Test

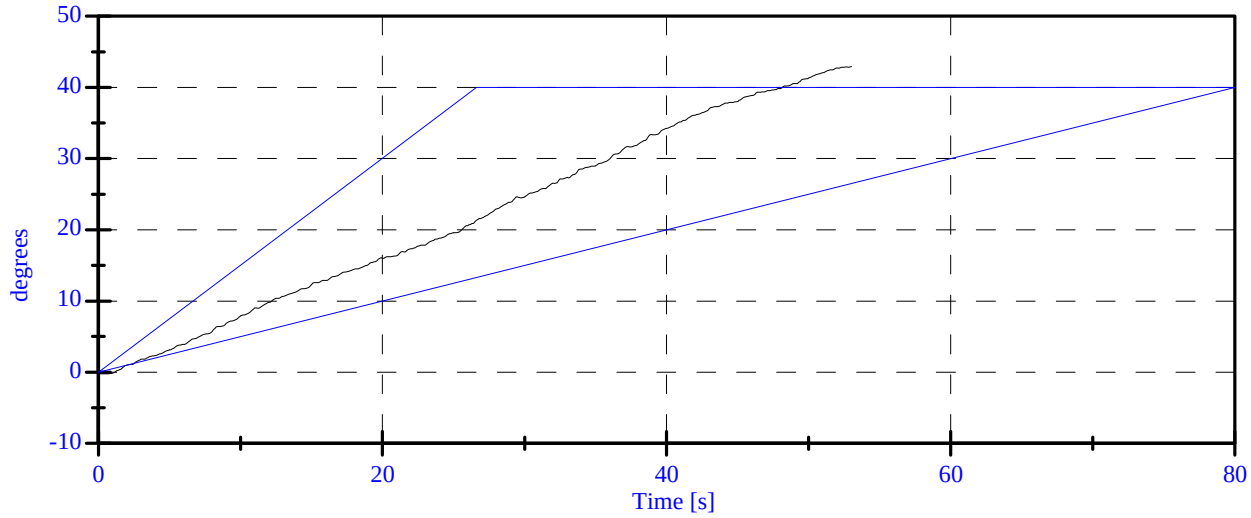
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905 Spine 10-27-08
Date: 10-27-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	13.58 N	Passed
Force at 20 Deg:	97.86-151.24 N	137.89 N	Passed
Force at 30 Deg	151.24-204.62 N	174.45 N	Passed
Force at 40 Deg	204.62-258.00 N	240.52 N	Passed
Return Angle	12 Deg Max	5.93 deg	Passed

LUMBAR SPINE FLEXION TEST





POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR Left **SIDE IMPACT**

SID HIII Serial No.: 905 Sequential Test Number: 2
Date: 10/28/08 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

APPENDIX D

TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID HIII INSTRUMENTATION

	SID HIII NO.: 905		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	ENDEVCO	P58757	9/5/2008
HEAD AY	ENDEVCO	P58911	9/5/2008
HEAD AZ	ENDEVCO	P58887	9/5/2008
UPPER NECK FX	DENTON	1647Fx	4/3/2008
UPPER NECK FY	DENTON	1647Fy	4/3/2008
UPPER NECK FZ	DENTON	1647Fz	4/3/2008
UPPER NECK MX	DENTON	1647Mx	4/3/2008
UPPER NECK MY	DENTON	1647My	4/3/2008
UPPER NECK MZ	DENTON	1647Mz	4/3/2008
UPPER RIB	ENDEVCO	P59010	9/5/2008
LOWER RIB	ENDEVCO	P59017	9/8/2008
LOWER SPINE	ENDEVCO	P59019	9/8/2008
PELVIS	ENDEVCO	P58777	9/8/2008
UPPER RIB REDUNDANT	ENDEVCO	P58981	9/5/2008
LOWER RIB REDUNDANT	ENDEVCO	P58788	9/8/2008
LOWER SPINE REDUNDANT	ENDEVCO	P58979	9/8/2008
PELVIS REDUNDANT	ENDEVCO	P59018	9/8/2008

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
VEHICLE CG (AX)	ENDEVCO	P32464	9/5/2008
VEHICLE CG (AY)	ENDEVCO	P32455	9/5/2008
VEHICLE CG (AZ)	ENDEVCO	P32139	9/5/2008
VEHICLE CG RATE (VX)	ATA	323	10/5/2007
VEHICLE CG RATE (VY)	ATA	336	10/5/2007
VEHICLE CG RATE (VZ)	ATA	321	10/5/2007
STRUCK SIDE SILL (AY)	ENDEVCO	J31095	10/6/2008
A-PILLAR SILL (AY)	ENDEVCO	J29805	10/6/2008
A-PILLAR LOWER (AY)	ENDEVCO	P17283	8/6/2008
A-PILLAR MIDDLE (AY)	ENDEVCO	J41004	10/6/2008
B-PILLAR SILL (AY)	ENDEVCO	P35788	10/3/2008
B-PILLAR LOWER (AY)	ENDEVCO	P17285	8/6/2008
B-PILLAR MIDDLE (AY)	ENDEVCO	P21516	6/18/2008
SEAT TRACK HP (AY)	ENDEVCO	P19222	6/16/2008
DOOR LOWER (AY)	-	-	-
DOOR MIDDLE (AY)	-	-	-
DOOR UPPER (AY)	-	-	-
ENGINE (AX)	ENDEVCO	P35803	7/11/2008
ENGINE (AY)	ENDEVCO	P35811	7/11/2008
FIREWALL (AY)	ENDEVCO	P23960	6/30/2008
OPPOSITE SIDE ROOF (AY)	ENDEVCO	P26259	10/3/2008
OPPOSITE SIDE SILL (AY)	ENDEVCO	P32197	6/16/2008
TRUNK (AX)	ENDEVCO	P15526	7/11/2008
TRUNK (AY)	ENDEVCO	P38188	6/19/2008

REMARKS: None