

Case 471 : Narrative

Case Vehicle (A): 1999 Hyundai	Vehicle (B): 2003 Lincoln
Type: Accent GL, 4-door sedan	Type: Navigator SUV, 4x4 4-door
Driver: 20-year-old male	Driver: 46-year-old female
CDC: 11-FDEW-2, 09-LZAW-2	CDC: 99-0000-0, 99-0000-0

SITUATION

[1](#) [2](#) [3](#) It was daylight and cloudy, and the asphalt surface of the undivided, five-lane, two-way urban road was wet from an earlier rain. The posted speed limit was 35 mph (56 kph) and case vehicle (A) was traveling west at an unknown speed in the outside westbound lane. [4](#) Vehicle (B) was stopped facing east in the center-turn lane and, according to witnesses, the driver was using a cell phone. As case vehicle (A) approached the private drive, [5](#) the driver of vehicle (B) began to make a left turn to enter a private driveway and vehicle (B) entered the westbound lanes. The driver of case vehicle (A) braked and steered to the right but was not able to avoid a collision, and the front end of case vehicle (A) struck the right side of vehicle (B). [6](#) After the impact, case vehicle (A) rotated clockwise and vehicle (B) rotated counterclockwise so that the right side of vehicle (B) struck the left side of case vehicle (A) as both vehicles departed the north edge of the road. Both vehicles were towed from the scene.

The police accident report (PAR) indicates A-level injuries for the driver of case vehicle (A) who was transported to a local hospital where he was treated and released. The PAR indicates C-level injuries for the driver of vehicle (B), who was not transported to a hospital.

GENERAL VEHICLE DAMAGE AND ESTIMATED CRASH SEVERITIES

[7](#) Damage to the front of case vehicle (A) was moderate. Direct damage began at the left-front bumper corner and extended 150-cm across the entire front of the vehicle. [8](#) The maximum rearward crush was 35 cm and it occurred at the center of the front bumper. [9](#) Damage from the side-slap impact began at the left-rear corner and extended 180-cm forward along the left quarter panel, the left-rear wheel, and the left-rear door. [10](#) The maximum lateral crush was 10 cm at the left quarter panel.

Vehicle (B) was not available for inspection.

[11](#) [12](#) [13](#) [14](#) [15](#) Using the WinSMASH crash-reconstruction program and a crush profile measured for case vehicle (A), the following impact severity was estimated for the T-type collision between case vehicle (A) and vehicle (B):

		Estimated Velocity Change - kph (mph)		
Vehicle	Variable	Total	Longitudinal	Latitudinal
Case Vehicle (A)	EBS	34 (21)	-32 (-20)	12 (7)

Using the WinSMASH crash-reconstruction program and crush profiles measured for case vehicle (A),

the following impact severity was estimated for the side-slap collision between case vehicle (A) and vehicle (B):

		Estimated Velocity Change - kph (mph)		
Vehicle	Variable	Total	Longitudinal	Latitudinal
Case Vehicle (A)	delta V	14 (9)	0 (0)	14 (9)

DESCRIPTION OF DAMAGE TO CASE VEHICLE (A)

Exterior

[16](#) In the front, damage extended across the entire frontal plane with the majority of the damage occurring to the left and center sections of the bumper and grille, which were crushed rearward into the engine compartment. The bumper cover was completely separated from its attachments, the front end was shifted to the right, and both headlight assemblies were displaced although the headlamps were intact. [17](#) The front of the hood was crushed down, the damaged hood latch was jammed, [18](#) [19](#) both hood hinges were bent up, and the left hinge was separated. [20](#) The rear portion of the hood was elevated [21](#) and the left hood hinge and rear edge of the hood contacted and cracked the lower-left corner of the windshield. Cracks also radiated across the lower section of the windshield and vertically along the left A-pillar, and there were internal cracks on the right side of the windshield from contact by the deploying dash-mounted airbag.

[22](#) [23](#) On the right side, the fender was buckled and shifted to the right. There was no damage to the right-side wheels but the right wheelbase was reduced by 5 cm. [24](#) There was no other damage to the right side of the case vehicle.

[25](#) On the left side, the fender was crushed and shifted to the right. [26](#) The fender was also pushed against the left-front tire and the left wheelbase was increased by 8 cm. [27](#) The left quarter panel, the left-rear wheel, and the left-rear door were crushed and damaged from the side-slap impact. [28](#) The upper and lower sections of the C-pillar were buckled and the left-rear door would not close properly after being opened also from the side-slap impact. [29](#) The left-rear wheel was damaged, the tire was deflated, and the wheel rim was broken. [30](#) There was no other damage to the left side and [31](#) there was no damage to the rear of case vehicle (A).

Interior

[32](#) This vehicle was equipped with steering-wheel and dash-mounted frontal-impact airbags and both deployed during the frontal impact. [33](#) In the driver seating area, there was no damage to the deployed steering-wheel airbag but there were bloodstains on the upper and lower sections of the fabric. [36](#) [37](#) There was no rotation of the steering column but [38](#) the windshield-wiper lever on the right side of the steering column was broken. [34](#) [35](#) [39](#) [40](#) There was no other damage in the driver seating area.

[41](#) In the center-front area, there was no damage to the roof, to the roof header, or to the rearview mirror. [42](#) The plastic surrounding the vertical console was pushed forward and the [43](#) [44](#) transmission selector on the floor console was broken and hanging by electrical wires.

[45](#) [47](#) [48](#) In the right-front seating area, there was no damage to the deployed dash-mounted airbag or module cover, but [46](#) the windshield was cracked due to contact by the deploying airbag. [49](#) There was

no other damage in the right-front seating area.

OCCUPANT KINEMATICS AND INJURIES

[50](#) The 180-cm, 82-kg (5-ft 11-in, 180-lb) 20-year-old male driver was not using the three-point belt and the [33](#) steering-wheel airbag deployed. [51](#) There was no evidence of belt use on the D-ring, on the shoulder-belt webbing, [52](#) or on the continuous loop of the latch plate.

Prior to the frontal impact, the driver may have been leaning to the left due to his steering the vehicle to the right to avoid a collision. During the frontal impact, the driver moved forward relative to the vehicle interior, into the airbag and then probably into the vehicle interior to the left and forward of the airbag. He lost consciousness and experienced temporary memory loss, and he sustained an avulsion fracture to the #8 tooth, multiple loose teeth, a contusion and laceration to the lower lip, and a large laceration to the left side of the chin, possibly due to head/face contact with unknown interior components to the left and forward of the steering wheel and airbag.

The attached table and [53](#) drawing summarize the injuries for the unbelted driver.

Occupant: Driver	Age: 20 years	Gender: Male		
Restraints: Steering-wheel airbag	Stature: 180 cm (5 ft, 11 in)	Mass: 82 kg (180 lb)		
Injury Description	A.I.S.	Injury Source		
		Definite	Probable	Possible
—	—			
Loss of consciousness with temporary memory loss	3	—	—	Unknown interior component
Avulsion, #8 tooth	1	—	—	Unknown interior component
Multiple loose teeth	1	—	—	Unknown interior component
Contusion and laceration, lower lip	1	—	—	Unknown interior component
Large laceration, left side of chin	1	—	—	Unknown interior component
Maximum A.I.S. Level	3	—	—	—
Injury Severity Score	11	—	—	—

CASE NO.: 471

CASE VEHICLE: 1999 Hyundai

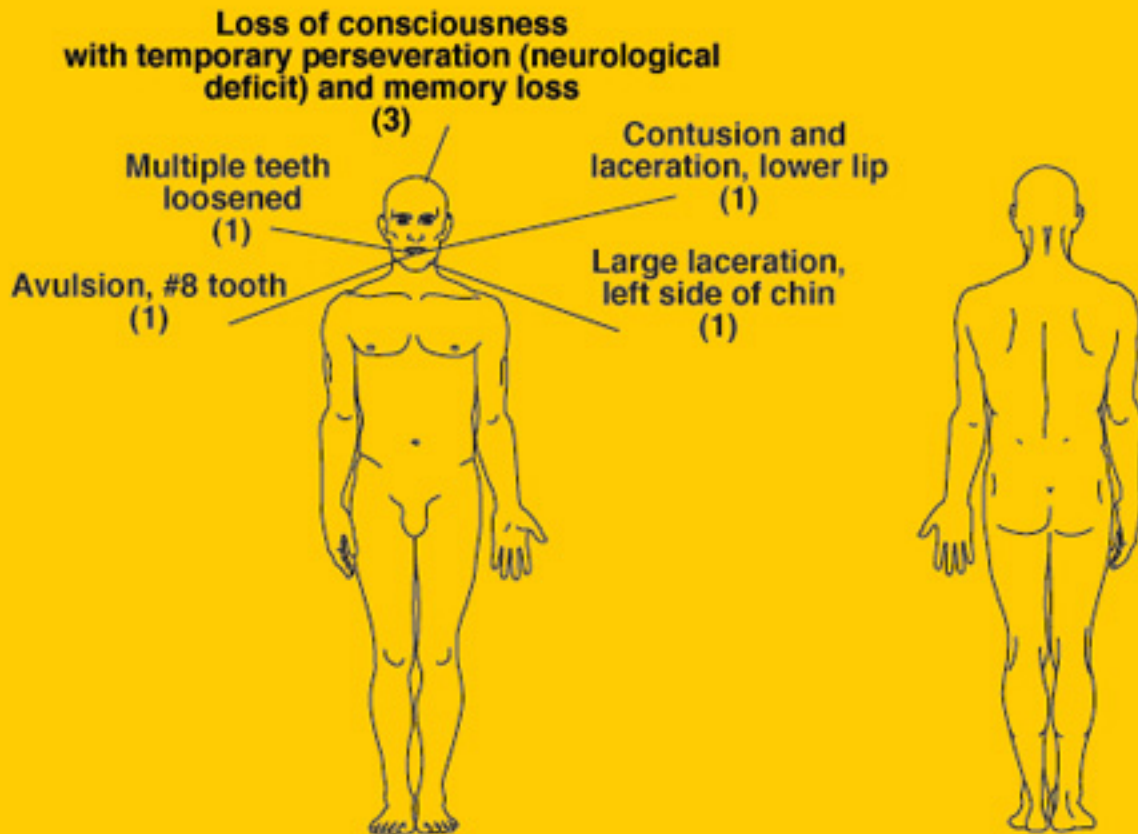
TYPE: Accent GL, 4-door sedan

OCCUPANT: (Driver) 20-year-old male

STATURE: 180 cm (5 ft, 11 in) MASS: 82 kg (180 lb)

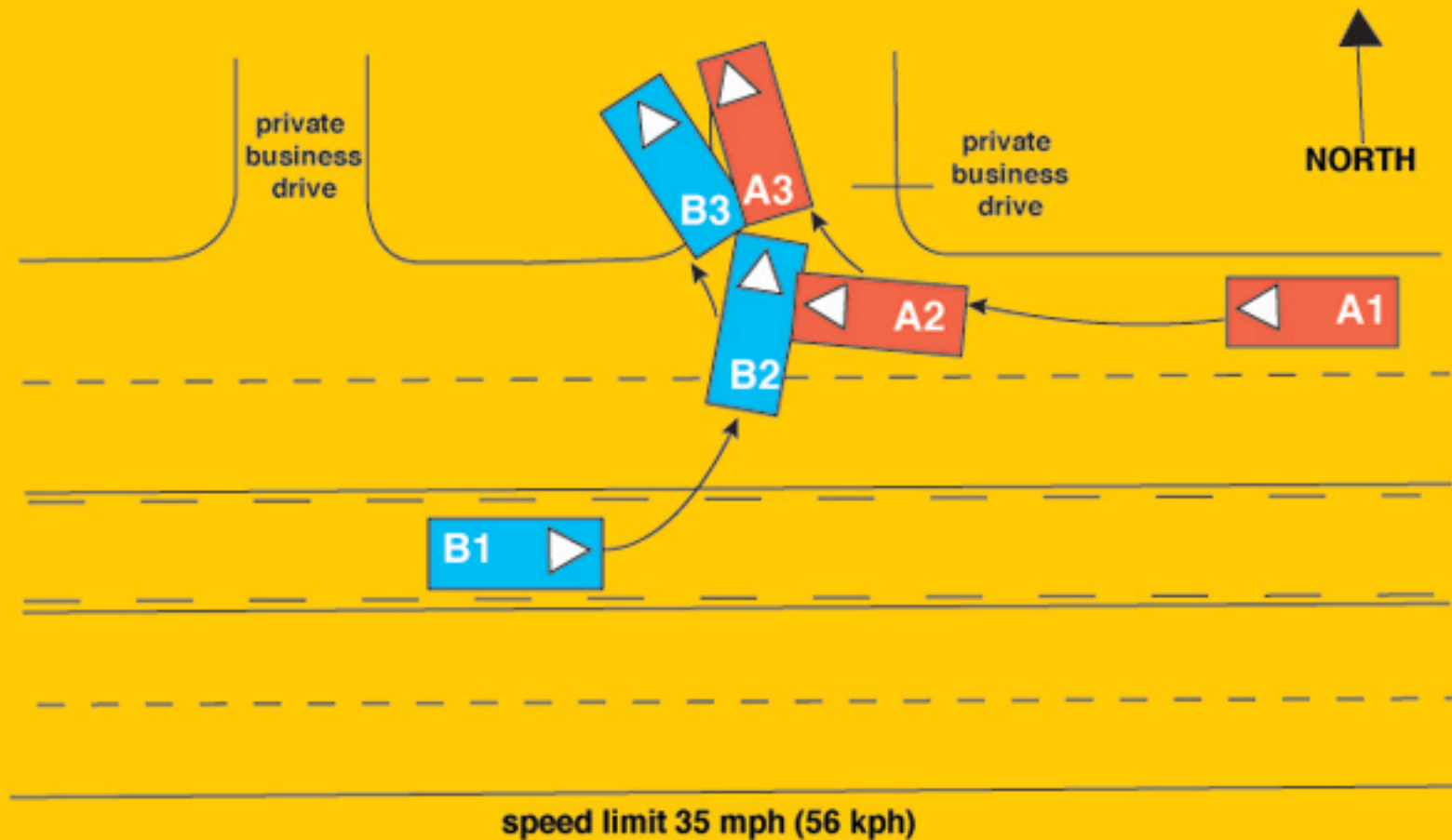
RESTRAINTS: Steering-wheel airbag

SEVERITY: MAIS - 3 ISS - 11



Case No.: 471
Case Veh. (A): 1999 Hyundai
Type: Accent GL, 4-door sedan
Driver: 20-year-old male
Vehicle (B): 2003 Lincoln Navigator SUV, 4x4 4-door

Weather: Cloudy
Road Surface: Wet
Road Construction: Asphalt
Light Condition: Daylight



471: Vehicle Report

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General Information

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0204	Collision Hour	1415	Time of day (24 hour clock)	more
V0205	State Fips Code	26	Michigan	more
V0206	Urban/rural Area	1	Urban	more
V0207	Limited Access Highway	0	No	more
V0208	Road Total Lanes	4	4 lanes or more	more
V0209	Intersect Road Total Lanes	6	Parking lot/driveway	more
V0210	Trafficway Flow	0	Not physically divided - two way traffic	more
V0211	Road Surface Type	1	Asphalt	more
V0212	Road Defects	0	No	more
V0213	Construction Zone	0	No	more
V0214	Road Alignment Vertical Plane	1	Level	more

V0215	Road Alignment Horizontal Plane	1	Straight	more
V0216	Surface Covering	22	Water - wet	more
V0217	Visibility Limitation	0	None	more
V0218	Visibility Obstruction	0	None	more
V0219	Speed Limit	2	56-60 km/h .. 35 mph	more
V0220	Precipitation Type	0	None	more
V0221	Precipitation Rate	8	Not applicable	more
V0222	Temperature	5	6 to 15 C .. 42 to 59 F	more
V0223	Crosswind	9	Unknown	more
V0224	Light Conditions	1	Daylight	more
V0225	Mechanical Malfunction Mention	0	No	more
V0226	Case Vehicle And Object	0	No	more
V0227	Case Vehicle Rollover	0	No	more
V0228	Rollover Location	0	No rollover	more
V0229	Roll Direction	0	No rollover	more
V0230	Rollover Initiation Type	0	No rollover	more
V0231	Rollover Number Of Turns	0	No rollover	more
V0232	Case Vehicle Preimpact Braking	9	Unknown	more
V0233	Case Vehicle Preimpact Stability	1	Case vehicle tracking before impact	more
V0234	Case Vehicle Ran Off Roadway	0	No	more
V0235	Moving Case Vehicle Contacted Moving Vehicle	1	Yes	more
V0236	Case Vehicle Contacted Stopped Vehicle	0	No	more
V0237	Stopped Case Vehicle Contacted Vehicle	0	No	more
V0238	Total Vehicles Hit By Case Vehicle	1	1 vehicle	more
V0239	Any Fire In Crash?	0	No	more
V0240	Maximum Police Severity-acc	3	A - Incapacitating Injury	more
V0241	Driver Alcohol Involvmnt	0	Had not been drinking	more
V0242	Driver Alcohol BAC (Case Vehicle)	80	No test	more
V0243	Driver Impairment Mention	0	No	more
V0244	Driver Distraction	01	Attentive or not distracted	more

V0245	Driver Drug Involvement	0	None	more
V0246	Driver Drug Type	0	No drug use	more
V0247	Driven/towed From Scene	2	Towed Due to Damage	more

Other Vehicle

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0301	Other Vehicle VIN	5LMFU28R13XXXXXX	Click for Contacted Vehicle figure	more
V0302	Other Vehicle Manufacturer/Body Code	12215	—	—
V0303	Other Vehicle Manufacturer	122	Lincoln-Mercury	more
V0304	Other Vehicle Body Code	15	Long wheelbase utility vehicle (Carryall, Suburb	more
V0305	Other Vehicle Make/model	1370	Navigator	more
V0306	Other Vehicle Model Year	2003	Year	more
V0307	Other Vehicle Mass	002619 kg	Mass (Kg.)	more
V0308	Other Vehicle Number	0	No separate report	more
V0309	Other Vehicle Number of Occupants	01	number of occupants	more
V0310	Other Vehicle Traveling Speed	995	Just starting	more
V0311	Highest Police Injury Severity	1	C - Possible Injury	more
V0312	Other Vehicle Type	15	Large utility (wheelbase >107", e.g. Suburban)	more
V0313	Other Vehicle Wheelbase in Centimeters	303 cm	Actual Wheelbase (cm)	more
V0314	Other Vehicle Average Track Width	173 cm	actual measurement (cm)	more
V0315	Other Vehicle Overall Length	529 cm	actual measurement (cm)	more
V0316	Other Vehicle Overall Width (OAW)	203 cm	actual measurement (cm)	more
V0317	Other Vehicle Front Overhang	100 cm	actual measurement (cm)	more

V0318	Other Vehicle Rear Overhang	126 cm	actual measurement (cm)	more
V0319	Other Vehicle Undeformed End Width (UEW)	180 cm	actual measurement (cm)	more
V0320	Other Vehicle Engine Displacement	5.4 l	Liters	more
V0321	Other Vehicle Engine: Number of Cylinders	08	number of cylinders	more
V0322	Other Vehicle Direct Damage Length (DDL)	999	Unknown	more
V0323	Other Vehicle Front-End Overlap	99	Missing or Not applicable	more
V0324	Other Vehicle - Vehicle Overlap	99	Missing or Not applicable	more

Case Vehicle General

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0401	VIN	KMHVF24N6XXXXXXXX	Click for Case Vehicle figure	more
V0402	Manufacturer/Body Code	93925	—	—
V0403	Vehicle Manufacturer	939	Hyundai	more
V0404	Vehicle Body Code	25	Mini 90-94.9 inch wheelbase	more
V0405	Make/model Code	4703	Accent	more
V0406	Model Year	1999	Model year	more
V0407	Vehicle Mass	000961 kg	Mass (Kg)	more
V0408	Odometer Reading	136116	—	—
V0409	Number of Occupants	01	1 occupant	more
V0410	Traveling Speed	999	Unknown	more
V0411	Body Type	14	4-door sedan	more
V0412	Stolen Vehicle	8	Not currently collected	more
V0413	Body Structure	2	Unitized	more
V0414	Transmission Type	1	Automatic	more
V0415	Transmission Lever Location	2	Console	more
V0416	Steering	1	Power	more
V0417	Brakes	1	Power	more
V0418	Brake Type	2	Disc - front wheels	more
V0419	Adjustable Pedals?	0	No	more

V0420	Brake Anti-lock Device	0	None installed	more
V0421	Air Conditioning in Vehicle	8	Not currently collected	more
V0422	Drive Type	2	Front wheel	more
V0423	Dual Rear Wheels	0	No	more
V0424	Original Restraint System Type	3	Air bag	more
V0425	Equipped With Roll Bar	0	No	more
V0426	Roof Type	1	Solid	more
V0427	Case Vehicle Wheelbase in Centimeters	240 cm	Actual Wheelbase	more
V0428	Anti-lacerative Glass	8	Not Collected	more
V0429	Case Vehicle average track Width	142 cm	actual measurement (cm)	more
V0430	Case Vehicle Overall Length	414 cm	actual measurement (cm)	more
V0431	Case Vehicle Overall Width (OAW)	162	actual measurement (cm)	more
V0432	Case Vehicle Front Overhang	081 cm	actual measurement (cm)	more
V0433	Case Vehicle Rear Overhang	093 cm	actual measurement (cm)	more
V0434	Case Vehicle Undeformed End Width (UEW)	150 cm	actual measurement (cm)	more
V0435	Case Vehicle Engine Displacement	1.5 l	Liters	more
V0436	Case Vehicle Engine: Number of Cylinders	04	number of cylinders	more
V0437	Case Vehicle Direct Damage Length (DDL)	150 cm	actual measurement (cm)	more
V0438	Case Vehicle Front-end Overlap	98	98% or more	more
V0439	Case Vehicle - Vehicle Overlap	98	98% or more	more

Case Vehicle Damage Description

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Variable Number	Variable Name	Code Value	Code Description	Other Options

V0501	Maximum Sheet Metal Crush - Front	035 cm	Depth of Crush (cm)	more
V0502	Maximum Sheet Metal Crush - Right Side	000 cm	No Crush (or less than 1 cm.)	more
V0503	Maximum Sheet Metal Crush - Rear	000 cm	No Crush (or less than 1 cm.)	more
V0504	Maximum Sheet Metal Crush - Left Side	010 cm	Depth of Crush (cm)	more
V0505	Maximum Sheet Metal Crush - Roof	000 cm	No Crush (or less than 1 cm.)	more
V0506	Maximum Sheet Metal Crush - Other	000 cm	No Crush (or less than 1 cm.)	more
V0507	Seq In Chronological Ord	1	Yes	more
V0508	Event 1 -impact Location	1	On Roadway	more
V0509	Event 1 -Impact Configuration	13	FRONT of case veh - SIDE of contacted veh	more
V0510	Event 1 -Object/Vehicle Contactd	15	Large utility (wheelbase >107", e.g. Suburban)	more
V0511	Event 2 -impact Location	1	On Roadway	more
V0512	Event 2 -Impact Configuration	23	LEFT of case veh - SIDE of cont veh (no sideswip	more
V0513	Event 2 -Object/Vehicle Contactd	15	Large utility (wheelbase >107", e.g. Suburban)	more
V0514	Event 3 -impact Location	8	No 3rd event	more
V0515	Event 3 -Impact Configuration	88	No 3rd event	more
V0516	Event 3 -Object/Vehicle Contactd	00	No object/vehicle contacted	more
V0517	Event 4 -impact Location	8	No 4th event	more
V0518	Event 4 -Impact Configuration	88	No 4th event	more
V0519	Event 4 -Object/Vehicle Contactd	00	No object/vehicle contacted	more
V0520	Event 5 -impact Location	8	No 5th event	more
V0521	Event 5 -Impact Configuration	88	No 5th event	more
V0522	Event 5 -Object/Vehicle Contactd	00	No object/vehicle contacted	more
V0523	Event 6 -impact Location	8	No 6th event	more
V0524	Event 6 -Impact Configuration	88	No 6th event	more
V0525	Event 6 -Object/Vehicle	00	No object/vehicle contacted	more

	Contactd			
V0526	Event 7 -impact Location	8	No 7th event	more
V0527	Event 7 -Impact Configuration	88	No 7th event	more
V0528	Event 7 -Object/Vehicle Contactd	00	No object/vehicle contacted	more
V0529	Primary CDC Case Vehicle - event Number	1	Event 1	more
V0530	Primary CDC Case Vehicle - Impact Speed (kph)	999	Unknown	more
V0531	Primary CDC Case Vehicle- estimatr	1	Investigator	more
V0532	Primary CDC Case Vehicle - Crush (CM)	035	Crush measurements in cm	more
V0533	Primary CDC Case Vehicle- clock #1	11	11 o'clock	more
V0534	Primary CDC Case Vehicle- Letter 1 #1	06	F - Front	more
V0535	Primary CDC Case Vehicle- Letter 2 #1	04	D - Distributed (Side or End)	more
V0536	Primary CDC Case Vehicle- Letter 3 #1	05	E - Everything below belt line	more
V0537	Primary CDC Case Vehicle- Letter 4 #1	23	W - Wide impact area	more
V0538	Primary CDC Case Vehicle Extent #1	02	Extent 2	more
V0539	Primary CDC - Contacted Vehicles Assoc CDC - CDC #1	11FDEW2	—	—
V0540	Primary CDC Case Vehicle- clock #2	98	Not Applicable	more
V0541	Primary CDC Case Vehicle- Letter 1 #2	00	Missing Data/Not applicable	more
V0542	Primary CDC Case Vehicle- Letter 2 #2	00	Missing Data/Not applicable	more
V0543	Primary CDC Case Vehicle- Letter 3 #2	00	Missing Data/Not applicable	more
V0544	Primary CDC Case Vehicle- Letter 4 #2	00	Missing Data/Not applicable	more
V0545	Primary CDC Case Vehicle Extent #2	00	Missing Data/Not applicable	more
V0546	Primary CDC - Case Vehicle Assoc CDC - CDC #2	9800000	—	—

V0547	Primary CDC Contacted Vehicle - Impact Speed (kph)	998	Not Applicable	more
V0548	Primary CDC Contacted Vehicle-estimator	1	Investigator	more
V0549	Primary CDC Contacted Vehicle - Crush (CM)	998	Not Applicable	more
V0550	Primary CDC Contacted Vehicle-clock #1	99	Unknown or no damage	more
V0551	Primary CDC Contacted Vehicle-Letter 1 #1	00	Missing Data/Not applicable	more
V0552	Primary CDC Contacted Vehicle-Letter 2 #1	00	Missing Data/Not applicable	more
V0553	Primary CDC Contacted Vehicle-Letter 3 #1	00	Missing Data/Not applicable	more
V0554	Primary CDC Contacted Vehicle-Letter 4 #1	00	Missing Data/Not applicable	more
V0555	Primary CDC Contacted Vehicle Extent #1	00	Missing Data/Not applicable	more
V0556	primary CDC - Contacted Vehicles Assoc CDC - CDC #1	99000000	—	—
V0557	Primary CDC Contacted Vehicle-clock #2	98	Not Applicable	more
V0558	Primary CDC Contacted Vehicle-Letter 1 #2	00	Missing Data/Not applicable	more
V0559	Primary CDC Contacted Vehicle-Letter 2 #2	00	Missing Data/Not applicable	more
V0560	Primary CDC Contacted Vehicle-Letter 3 #2	00	Missing Data/Not applicable	more
V0561	Primary CDC Contacted Vehicle-Letter 4 #2	00	Missing Data/Not applicable	more
V0562	Primary CDC Contacted Vehicle Extent #2	00	Missing Data/Not applicable	more
V0563	Primary CDC - Contacted Vehicles Assoc CDC - CDC #2	98000000	—	—
V0564	Secondary CDC Case Vehicle-event No	2	Event 2	more
V0565	Secondary CDC Case Vehicle - Impact Speed (kph)	999	Unknown	more
V0566	Secondary CDC Case Vehicle-estimator	1	Investigator	more
V0567	Secondary CDC Case Vehicle - Crush (CM)	010	Crush measurements in cm	more

V0568	Secondary CDC Case Vehicle-clock #1	09	9 o'clock	more
V0569	Secondary CDC Case Vehicle-Letter 1 #1	12	L - Left Side	more
V0570	Secondary CDC Case Vehicle-Letter 2 #1	26	Z - Side or end (B + P or R + C)	more
V0571	Secondary CDC Case Vehicle-Letter 3 #1	05	E - Everything below belt line	more
V0572	Secondary CDC Case Vehicle-Letter 4 #1	23	W - Wide impact area	more
V0573	Secondary CDC Case Vehicle Extent #1	02	Extent 2	more
V0574	Secondary CDC - Case Vehicle Assoc CDC - CDC #1	09LZEW2	—	—
V0575	Secondary CDC Case Vehicle-clock #2	98	Not Applicable	more
V0576	Secondary CDC Case Vehicle-Letter 1 #2	00	Missing Data/Not applicable	more
V0577	Secondary CDC Case Vehicle-Letter 2 #2	00	Missing Data/Not applicable	more
V0578	Secondary CDC Case Vehicle-Letter 3 #2	00	Missing Data/Not applicable	more
V0579	Secondary CDC Case Vehicle-Letter 4 #2	00	Missing Data/Not applicable	more
V0580	Secondary CDC Case Vehicle Extent #2	00	Missing Data/Not applicable	more
V0581	Secondary CDC - Case Vehicle Assoc CDC - CDC #2	9800000	—	—
V0582	Secondary CDC Contacted Vehicle - Impact Speed (kph)	998	Not Applicable	more
V0583	Secondary CDC Contacted Vehicle-estimator	1	Investigator	more
V0584	Secondary CDC Contacted Vehicle - Crush (CM)	998	Not Applicable	more
V0585	Secondary CDC Contacted Vehicle-clock #1	99	Unknown or no damage	more
V0586	Secondary CDC Contacted Vehicle-Letter 1 #1	00	Missing Data/Not applicable	more
V0587	Secondary CDC Contacted Vehicle-Letter 2 #1	00	Missing Data/Not applicable	more
V0588	Secondary CDC Contacted Vehicle-Letter 3 #1	00	Missing Data/Not applicable	more

V0589	Secondary CDC Contacted Vehicle-Letter 4 #1	00	Missing Data/Not applicable	more
V0590	Secondary CDC Contacted Vehicle Extent #1	00	Missing Data/Not applicable	more
V0591	Secondary CDC - Contacted Vehicle Assoc CDC - CDC #1	99000000	—	—
V0592	Secondary CDC Contacted Vehicle-clock #2	98	Not Applicable	more
V0593	Secondary CDC Contacted Vehicle-Letter 1 #2	00	Missing Data/Not applicable	more
V0594	Secondary CDC Contacted Vehicle-Letter 2 #2	00	Missing Data/Not applicable	more
V0595	Secondary CDC Contacted Vehicle-Letter 3 #2	00	Missing Data/Not applicable	more
V0596	Secondary CDC Contacted Vehicle-Letter 4 #2	00	Missing Data/Not applicable	more
V0597	Secondary CDC Contacted Vehicle Extent #2	00	Missing Data/Not applicable	more
V0598	Secondary CDC - Contacted Vehicle Assoc CDC - CDC #2	98000000	—	—

Crash Reconstruction

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0601	Primary Delta-V Case Vehicle-event #	1	Event number 1	more
V0602	Primary Delta V Case Vehicle - Total Delta V	034 kph	kph	more
V0603	Primary delta-V Case Vehicle -LONGITUD	-032	—	—
V0604	Primary delta-V Case Vehicle-Lateral	0012	—	—
V0605	Primary Delta V Case Vehicle - Energy Dissipated by Crush (k	0060	—	—
V0606	Primary Delta-V Case Vehicle-Reconstruction	22	Reconstructed, moderate confidence level	more
V0607	Primary Delta-V Case Vehicle- Mode	2	CDC & detailed damage	more
V0608	Primary Delta V Contacted	888	Not Applicable	more

	Vehicle - Total Delta V			
V0609	Primary delta-V Contacted Vehicle-LONGITUD	8888	—	—
V0610	Primary delta-V Contacted Vehicle-Lateral	8888	—	—
V0611	Primary delta-V Contacted Vehicle - Energy Dissipated by Cru	8888	—	—
V0612	Secondary Delta-V Case Vehicle-event #	2	Event number 2	more
V0613	Secondary Delta V Case Vehicle - Total Delta V	014 kph	kph	more
V0614	Secondarydelta-V Case Vehicle -LONGITUD	0000	—	—
V0615	Secondary delta-V Case Vehicle-Lateral	0014	—	—
V0616	Secondary delta-V Case Vehicle - Energy Dissipated by Crush	0010	—	—
V0617	Secondary Delta-V Case Vehicle-Reconstruction	22	Reconstructed, moderate confidence level	more
V0618	Secondary Delta-V Case Vehicle- Mode	2	CDC & detailed damage	more
V0619	Secondary Delta V Contacted Vehicle - Total Delta V	888	Not applicable	more
V0620	Secondary delta-V Contacted Vehicle-LONGITUD	8888	—	—
V0621	Secondary delta-V Contacted Vehicle-Lateral	8888	—	—
V0622	Secondary delta-V Contacted Vehicle - Energy Dissipated By C	8888	—	—
V0623	Primary EBS Case Vehicle-event #	1	Event number 1	more
V0624	Primary EBS Case Vehicle - Total EBS	034 kph	kph	more
V0625	Primary EBS Case Vehicle - LONGITUD	-032	—	—
V0626	Primary EBS Case Vehicle-Lateral	0012	—	—
V0627	Primary EBS Case Vehicle - Energy Dissipated by Crush (kj)	0060	—	—
	Primary EBS Case Vehicle-		Reconstructed, moderate confidence	

V0628	Reconstruction	22	level	more
V0629	Primary EBS Case Vehicle-Mode	2	CDC & detailed damage	more
V0630	Primary EBS Contacted Vehicle - Total EBS	888	Not Applicable	more
V0631	Primary EBS Contacted Vehicle-LONGITUD	8888	—	—
V0632	Primary EBS Contacted Vehicle-Lateral	8888	—	—
V0633	Primary EBS Contact Vehicle - Energy Dissipated by Crush (kj	8888	—	—
V0634	Secondary EBS Case Vehicle-event #	2	Event number 2	more
V0635	Secondary EBS Case Vehicle - Total EBS	014 kph	kph	more
V0636	Secondary EBS Case Vehicle -LONGITUD	0000	—	—
V0637	Secondary EBS Case Vehicle-Lateral	0014	—	—
V0638	Secondary EBS Case Vehicle - Energy Dissipated by Crush (kj)	0010	—	—
V0639	Secondary EBS Case Vehicle-Reconstruction	22	Reconstructed, moderate confidence level	more
V0640	Secondary EBS Case Vehicle- Mode	2	CDC & detailed damage	more
V0641	Secondary EBS Contacted Vehicle - Total EBS	888	Not Applicable	more
V0642	Secondary EBS Contacted Vehicle-LONGITUD	8888	—	—
V0643	Secondary EBS Contacted Vehicle-Lateral	8888	—	—
V0644	Secondary EBS Contact Vehicle - Energy Dissipated by Crush (8888	—	—
V0645	Specific Event # Case(1)	2	Event number 2	more
V0646	Plane of Impact Case Vehicle (1)	4	Above sill	more
V0647	Direct Damage Length (DDL) - Case Vehicle (1)	180 cm	cm	more
V0648	Direct Damage Maximum Crush - Case Vehicle (1)	010 cm	cm	more

V0649	Direct and Induced Damage Length in CM	180 cm	cm	more
V0650	Field C1 - Case Vehicle (1)	010 cm	cm	more
V0651	Field C2 - Case Vehicle (1)	006 cm	cm	more
V0652	Field C3 - Case Vehicle (1)	006 cm	cm	more
V0653	Field C4 - Case Vehicle (1)	006 cm	cm	more
V0654	Field C5 - Case Vehicle (1)	004 cm	cm	more
V0655	Field C6 - Case Vehicle (1)	003 cm	cm	more
V0656	Direct Damage D Value = The Center of Direct Damage Offset t	-060 cm	Offset (cm)	more
V0657	Specific Event # Case(2)	2	Event number 2	more
V0658	Plane of Impact Case Vehicle (2)	4	Above sill	more
V0659	Direct Damage Length (DDL) - Case Vehicle (2)	180 cm	cm	more
V0660	Direct Damage MaximumCrush - Case Vehicle (2)	010 cm	cm	more
V0661	Direct and Induced Damage Length in CM	180 cm	cm	more
V0662	Field C1 - Case Vehicle (2)	010 cm	cm	more
V0663	Field C2 - Case Vehicle (2)	006 cm	cm	more
V0664	Field C3 - Case Vehicle (2)	006 cm	cm	more
V0665	Field C4 - Case Vehicle (2)	006 cm	cm	more
V0666	Field C5 - Case Vehicle (2)	004 cm	cm	more
V0667	Field C6 - Case Vehicle (2)	003 cm	cm	more
V0668	Direct Damage D Value = The Center of Direct Damage Offset t	-060 cm	cm	more
V0669	Specific Event # Cont(1)	2	Event number 2	more
V0670	Plane of Impact Contacted Vehicle(1)	9	Unknown	more
V0671	Direct Damage Length (DDL) - Contacted Vehicle (1)	999	Unknown	more
V0672	Direct Damage Maximum Crush - Contacted Vehicle (1)	999	Unknown	more
V0673	Field L - Contacted Vehicle (1)	999	Unknown	more
	Field C1 - Contacted Vehicle			

V0674	(1)	999	Unknown	more
V0675	Field C2 - Contacted Vehicle (1)	999	Unknown	more
V0676	Field C3 - Contacted Vehicle (1)	999	Unknown	more
V0677	Field C4 - Contacted Vehicle (1)	999	Unknown	more
V0678	Field C5 - Contacted Vehicle (1)	999	Unknown	more
V0679	Field C6 - Contacted Vehicle (1)	999	Unknown	more
V0680	Direct Damage D Value = The Center of Direct Damage Offset t	+999 cm	offset (cm)	more
V0681	Specific Event # Contacted Vehicle (2)	2	Event number	more
V0682	Plane of Impact Contacted Vehicle(2)	9	Unknown	more
V0683	Direct Damage Length (DDL) - Contacted Vehicle (2)	999	Unknown	more
V0684	Direct Damage Maximum Crush - Contacted Vehicle (2)	999	Unknown	more
V0685	Direct and Induced Damage Length in CM	999	Unknown	more
V0686	Field C1 - Contacted Vehicle (2)	999	Unknown	more
V0687	Field C2 - Contacted Vehicle (2)	999	Unknown	more
V0688	Field C3 - Contacted Vehicle (2)	999	Unknown	more
V0689	Field C4 - Contacted Vehicle (2)	999	Unknown	more
V0690	Field C5 - Contacted Vehicle (2)	999	Unknown	more
V0691	Field C6 - Contacted Vehicle (2)	999	Unknown	more
V0692	Direct Damage D Value = The Center of Direct Damage Offset t	+999 cm	Offset (cm)	more

Case Vehicle Tires & Rims

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0701	Left Front Wheel Damaged	1	Yes	more
V0702	Right Front Wheel Damaged	0	No	more
V0703	Right Rear Wheel Damaged	0	No	more
V0704	Left Rear Wheel Damaged	1	Yes	more
V0705	Left Front Tire Tread Type	4	All Weather	more
V0706	Right Front Tire Tread Type	4	All Weather	more
V0707	Right Rear Tire Tread Type	4	All Weather	more
V0708	Left Rear Tire Tread Type	4	All Weather	more
V0709	Left Front Carcass Construction	3	Radial	more
V0710	Right Front Carcass Construction	3	Radial	more
V0711	Right Rear Carcass Construction	3	Radial	more
V0712	Left Rear Carcass Construction	3	Radial	more
V0713	Left Front Tire Condition Precrash	0	Normal - no pre-crash problems	more
V0714	Right Front Tire Condition Precrash	0	Normal - no pre-crash problems	more
V0715	Right Rear Tire Condition Precrash	0	Normal - no pre-crash problems	more
V0716	Left Rear Tire Condition Precrash	0	Normal - no pre-crash problems	more
V0717	Left Front Tire Condition Postcrash	0	Normal - no damage to tire	more
V0718	Right Front Tire Condition Postcrash	0	Normal - no damage to tire	more
V0719	Right Rear Tire Condition Postcrash	0	Normal - no damage to tire	more
V0720	Left Rear Tire Condition Postcrash	7	Multiple Conditions	more
V0721	Left Front Tire Involvement	0	No	more
V0722	Right Front Tire Involvement	0	No	more
V0723	Right Rear Tire Involvement	0	No	more
V0724	Left Rear Tire Involvement	0	No	more

V0725	Left Front Tire Size	P165180R13	—	—
V0726	Right Front Tire Size	P165180R13	—	—
V0727	Right Rear Tire Size	P165180R13	—	—
V0728	Left Rear Tire Size	P165180R13	—	—
V0729	Left Front Tire Pressure (recorded in psi)	31.5 psi	Actual tire pressure in psi	more
V0730	Right Front Tire Pressure (recorded in psi)	23.5 psi	Actual tire pressure in psi	more
V0731	Right Rear Tire Pressure (recorded in psi)	22.0 psi	Actual tire pressure in psi	more
V0732	Left Rear Tire Pressure (recorded in psi)	03.0 psi	Actual tire pressure in psi	more
V0733	Left Front Tread Depth	04	04/32"	more
V0734	Right Front Tread Depth	04	04/32"	more
V0735	Right Rear Tread Depth	07	07/32"	more
V0736	Left Rear Tread Depth	02	02/32"	more

Case Vehicle Fuel Tank

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0801	Propulsive Fuel Type	1	Gasoline	more
V0802	Main Tank Location	322	Within frame/centered laterally - within vertical	more
V0803	Main Filler Cap Location	113	Left of frame laterally - above vertically	more
V0804	Main Tank Material	3	Plastic	more
V0805	Aux Tank Type	8	Not applicable (not equipped)	more
V0806	Aux Tank Location	888	Not applicable (not equipped)	more
V0807	Aux Filler Cap Location	888	Not applicable (not equipped)	more
V0808	Aux Tank Material	8	Not applicable	more

Case Vehicle Fuel Leakage

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0901	Fuel Leakage From Crash	0	No	more

Case Vehicle Fire

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V1001	Fire In Or On Case Vehicle	0	No	more

Case Vehicle Exterior

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V1101	Hood Latch Released	0	No	more
V1102	Hood Latch Damaged	1	Yes	more
V1103	Hood Latch Jammed	1	Yes	more
V1104	Left Hood Hinge Damaged	1	Yes	more
V1105	Left Hood Hinge Separated	1	Yes	more
V1106	Right Hood Hinge Damaged	1	Yes	more
V1107	Right Hood Hinge Separated	0	No	more
V1108	Hood Remained On Vehicle	1	Yes	more
V1109	Rear Hood Edge Elevated	1	Yes	more
V1110	Edge Contacted Windshield	1	Yes	more
V1111	Edge Penetrated Windshield	0	No	more
V1112	Hood Latch Location	1	Front of Vehicle	more
V1113	Eng/transmissn Mount Separated	0	No	more
V1114	Steering Column Flex Couplng	9	Unknown if equipped	more
V1115	Steering Column Coupling Dam	9	Unknown	more
V1116	Steering Column Coupling Separated	9	Unknown	more
V1117	Eng Comp Telescopng Unit	88	Not currently collected	more
V1118	Compartment Unit's Original/telescoped Length Difference	888	Not currently collected	more
V1119	Left Side Body Mount Separated	8	Not applicable (unitized)	more
V1120	Upper Left A-pillar Sep	0	No	more
V1121	Lower Left A-pillar Sep	0	No	more
V1122	Upper Left B-pillar Sep	0	No	more
V1123	Lower Left B-pillar Sep	0	No	more
V1124	Upper Left C-pillar Sep	1	Yes	more
V1125	Lower Left C-pillar Sep	1	Yes	more

V1126	Upper Left D-pillar Sep	8	Not applicable (not equipped)	more
V1127	Lower Left D-pillar Sep	8	Not applicable (not equipped)	more
V1128	Left Front Door Opening Cause	00	Door did not open	more
V1129	Left Rear Door Opening Cause	00	Door did not open	more
V1130	Left Front Door Jammed Closed	0	No	more
V1131	Left Rear Door Jammed Closed	0	No	more
V1132	Van Left Rear Door Type	8	Not applicable (not a van)	more
V1133	Left Front Glazing Availability	3	Partially open	more
V1134	Left Rear Glazing Availability	2	Closed	more
V1135	Lr2 Glazing Availability	1	Fixed	more
V1136	Left Front Glazing Damage	0	No damage	more
V1137	Left Rear Glazing Damage	0	No damage	more
V1138	Lr2 Glazing Damage	0	No damage	more
V1139	Rear Door Type	0	No door (includes pickups)	more
V1140	Rear Door Opening Cause	8	Not applicable (no rear door)	more
V1141	Rear Door Jammed Closed	8	Not applicable (no rear door)	more
V1142	Rear Glazng Availability	8	Not Applicable (No Door)	more
V1143	Rear Glazing Damage	8	Not Applicable (No Door)	more
V1144	Luggage Partition Damaged	8	Not applicable	more
V1145	Spare Tire Status	8	Not collected	more
V1146	Trailer Hitch Type	0	No hitch	more
V1147	Trailer Type	0	No trailer	more
V1148	Rght Side Body Mount Separated	8	Not applicable (unitized)	more
V1149	Upper Right A-pillar Separated	0	No	more
V1150	Lower Right A-pillar Separated	0	No	more
V1151	Upper Right B-pillar Separated	0	No	more
V1152	Lower Right B-pillar Separated	0	No	more
V1153	Upper Right C-pillar Separated	0	No	more
	Lower Right C-pillar			

V1154	Separated	0	No	more
V1155	Upper Right D-pillar Separated	8	Not applicable (not equipped)	more
V1156	Lower Right D-pillar Separated	8	Not applicable (not equipped)	more
V1157	Right Front Door Opening Cause	00	Door did not open	more
V1158	Right Rear Door Opening Cause	00	Door did not open	more
V1159	Right Front Door Jammed Closed	0	No	more
V1160	Right Rear Door Jammed Closed	0	No	more
V1161	Van Right-rear Door Type	8	Not applicable (not a van)	more
V1162	Right Front Glazing Availability	3	Partially open	more
V1163	Right Rear Glazing Availability	2	Closed	more
V1164	Rr2 Glazing Availability	1	Fixed	more
V1165	Right Front Glazing Damage	0	No damage	more
V1166	Right Rear Glazing Damage	0	No damage	more
V1167	Rr2 Glazing Damage	0	No damage	more
V1168	Windshield Cracked	1	Yes	more
V1169	Windshield Broken	0	No Click for Windshield Damage figure	more
V1170	Occupant Cracked/Broke Wndshld	0	No	more
V1171	Bond Separation Extent	0	None	more
V1172	Windshield Code	97	Click for Windshield Mark figure	more
V1173	Did Sun Roof/T-Roof Open	8	Not Applicable	more

Case Vehicle Steering Column/Rim

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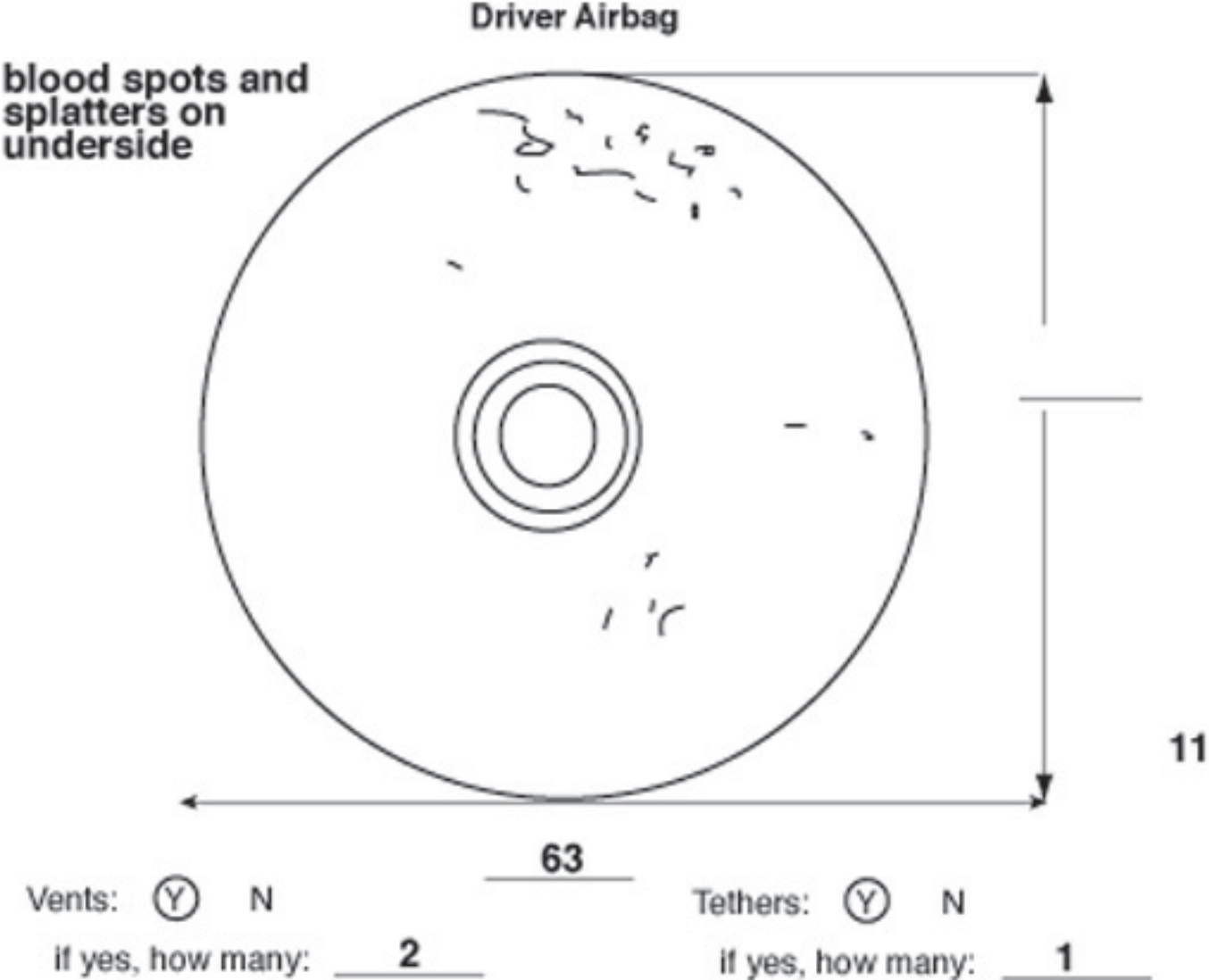
Variable Number	Variable Name	Code Value	Code Description	Other Options
V1201	Steering Wheel Rim Damage	0	None	more
V1202	Number of Steering Wheel Spokes	4	4 spokes	more
V1203	Steering Wheel Spoke Damage	0	None	more
V1204	Steering Wheel Hub Damage	0	None	more

V1205	Steering Wheel Location of Rim Damage	0	No damage	more
V1206	Aftermarket Add-on Device	0	None	more
V1207	Column Tilt Feature	0	Not equipped	more
V1208	Column Swing-away Feature	0	Not equipped	more
V1209	Column Telescoping Feature	0	Not equipped	more
V1210	Wheel Energy Absorb Device	8	Not currently collected	more
V1211	Wheel EA Device's original/damage Dimension Difference	888	Not collected	more
V1212	Column Energy Absorb Device	88	Not collected	more
V1213	Col EA Device's Orig/compressed (or Extruded) Length Diff	888	Not collected	more
V1214	Shear Capsule Separation	888	Not collected	more
V1215	Column Vertical Rotation	0	No apparent rotation	more
V1216	Column Lateral Rotation	0	No apparent rotation	more

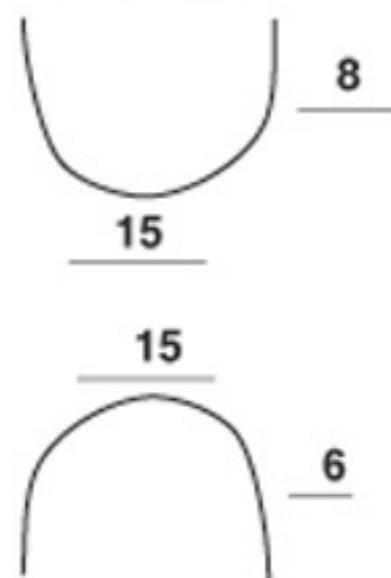
Case Vehicle Intrusion

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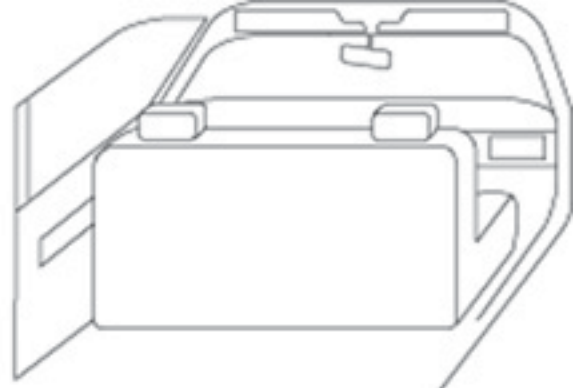
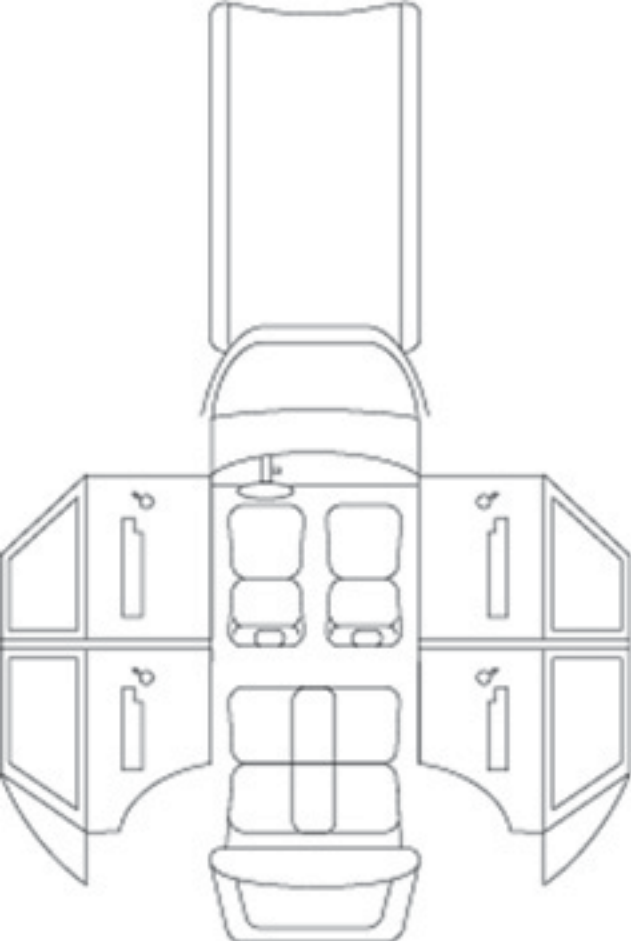
Variable Number	Variable Name	Code Value	Code Description	Other Options
V1301	Was Occupant Compartment Intruded	0	No Click for Intrusion Worksheet figure Click for Intrusion figure	more
V1302	Was Intrusn Catastrophic	8	Not applicable	more
V1303	Intrusion #1	99	Unknown or data not collected	more
V1304	Occupant Space Number(1)	99	Unknown or data not collected	more
V1305	Intrud Component/obj (1)	99	Unknown or data not collected	more
V1306	Associate Event Numb (1)	9	Unknown or data not collected	more
V1307	Maximum Intrusion X Axis	99	Unknown or data not collected	more
V1308	Maximum Intrusion Y Axis	99	Unknown or data not collected	more
V1309	Maximum Intrusion Z Axis	99	Unknown or data not collected	more
V1310	Occupant Number #1 (1)	99	Unknown or data not collected	more
V1311	Injury Number #1 (1)	99	Contact, injury unknown or data not collected	more
V1312	Occupant Number #2 (1)	99	Unknown or data not collected	more
V1313	Injury Number #2 (1)	99	Contact, injury unknown or data not collected	more
V1314	Intrusion Number #2	99	Unknown or data not collected	more



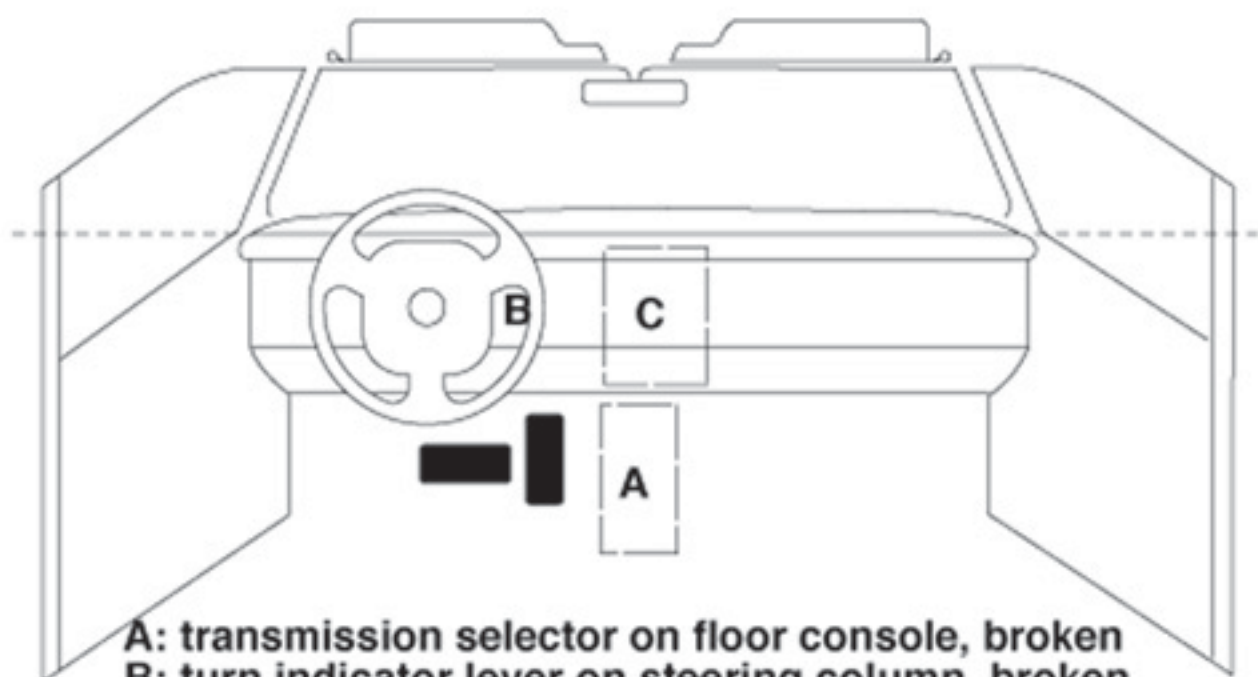
Driver Airbag Doors



vents located at 10 and 2 o'clock



no evidence of belt use



A: transmission selector on floor console, broken
B: turn indicator lever on steering column, broken
C: vertical console, pushed in

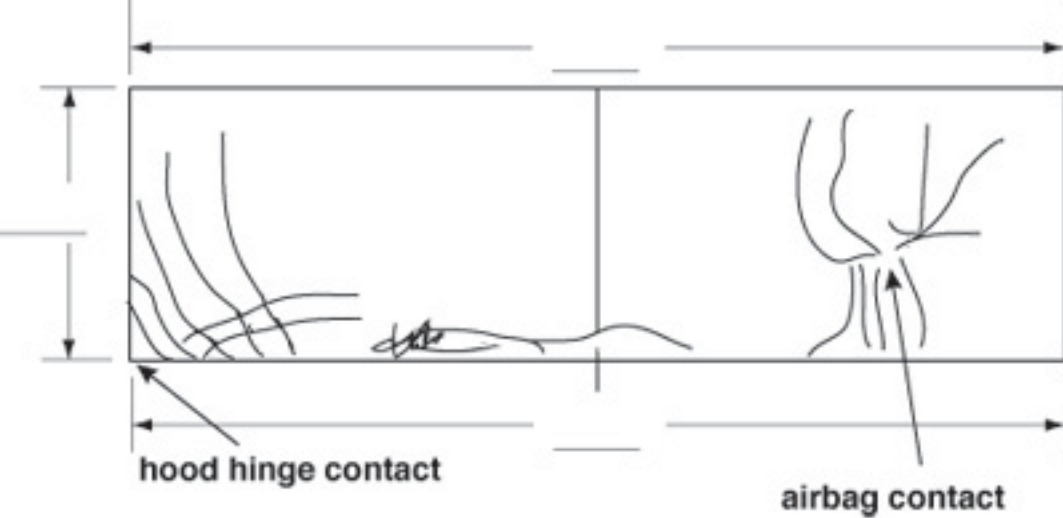
1 = Definitely 2 = Probably 3 = Possible

INTRUSION IT-1

Location of Intrusion	Intruded Component	(All Measurements Are in Centimeters)			Dominant Crush Direction
		Comparison Value	–	Intruded Value = Intrusion	
none			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	
			–	=	

OCCUPANT CONTACT WORKSHEET

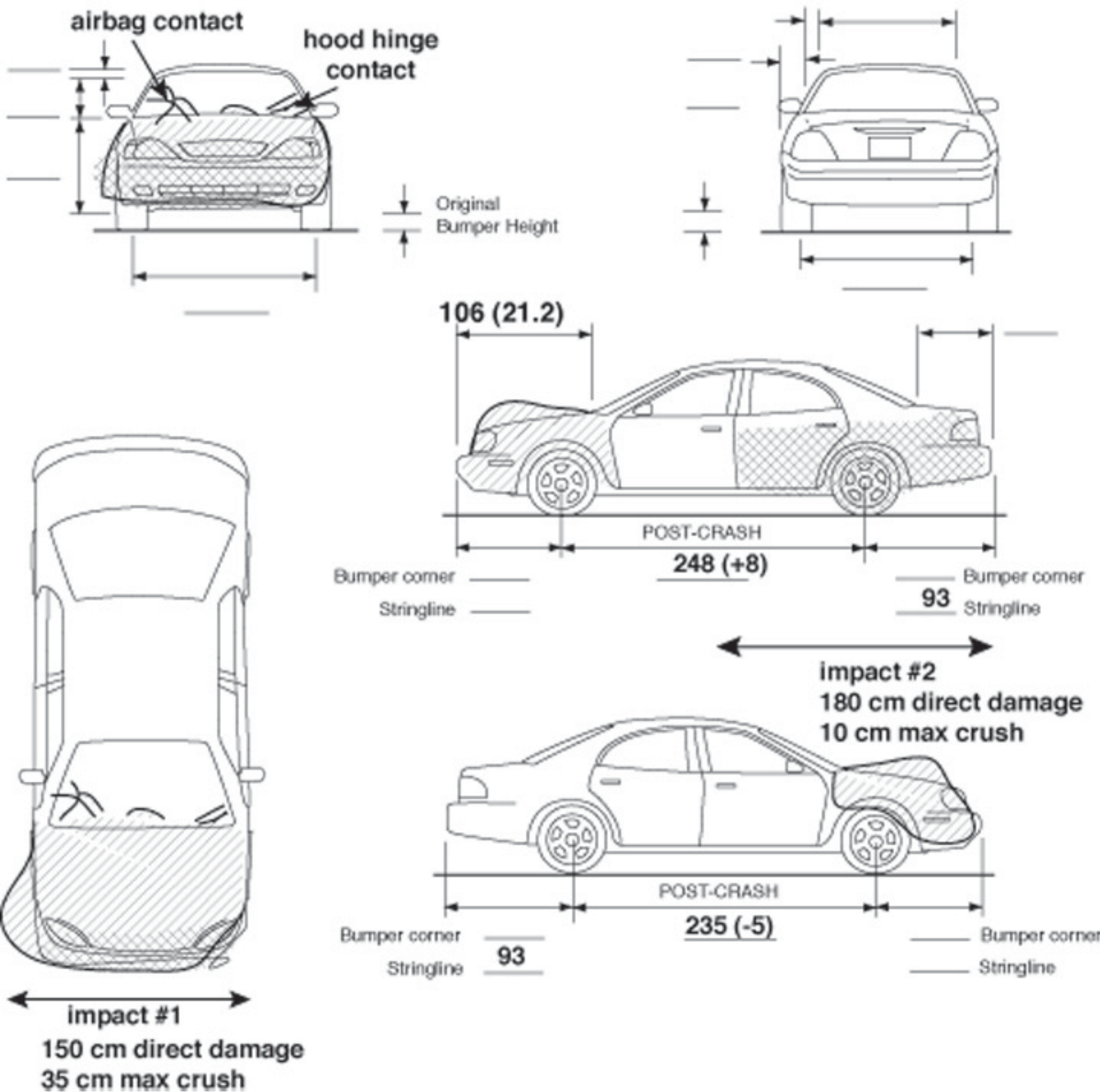
Contact	Interior Component Contacted	Occupant No. if Known	Body Region if Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	Transmission selector on console	1	Body	Top is broken	1
B	Turn indicator lever on steering column	1	Face	Lever is broken	1
C	Vertical console	1	Body	Panel is pushed in	1
D					
E					
F					
G					



WINDSHIELD MARK ON CASE VEHICLE:

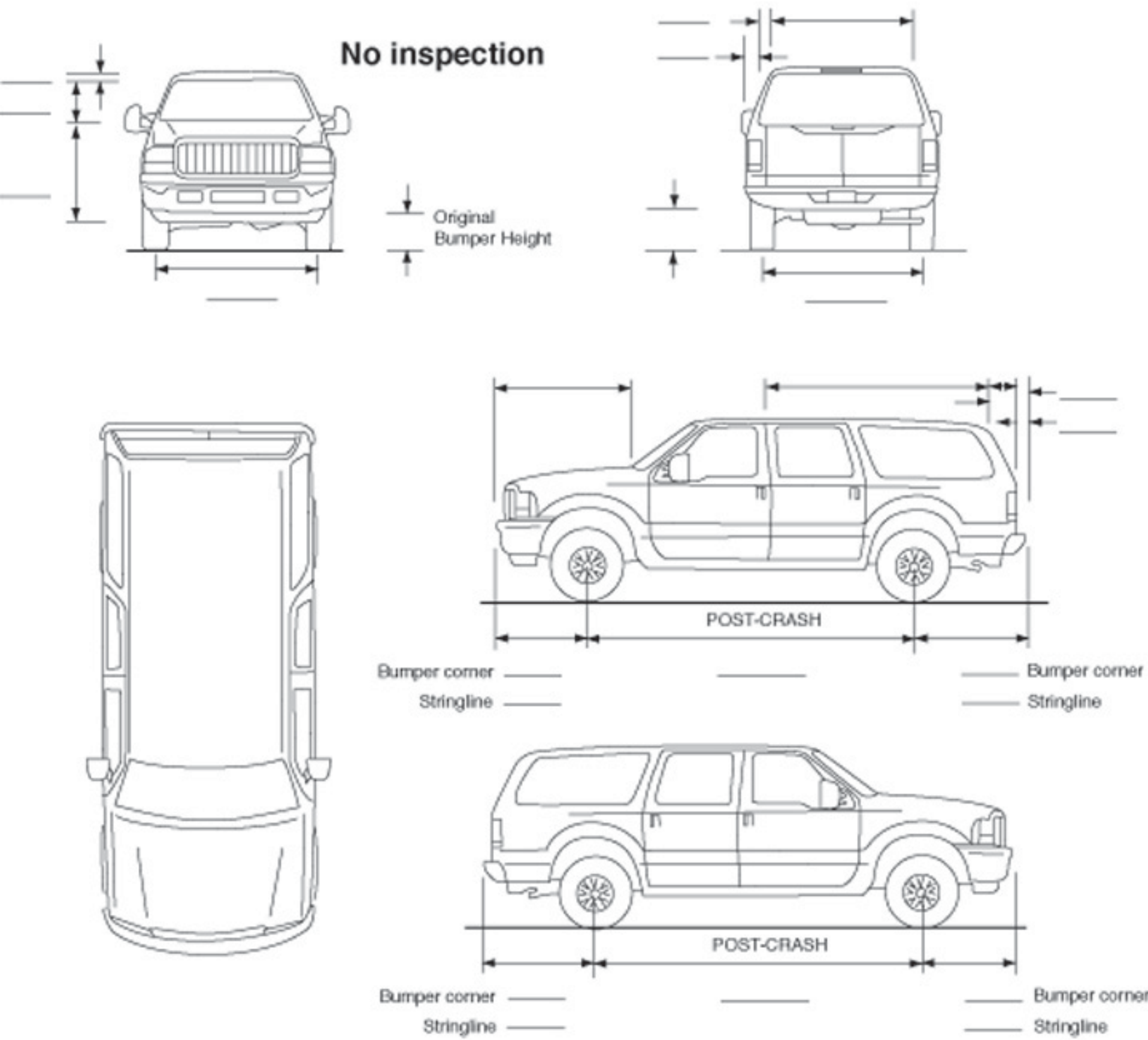


MEASUREMENTS IN CENTIMETERS

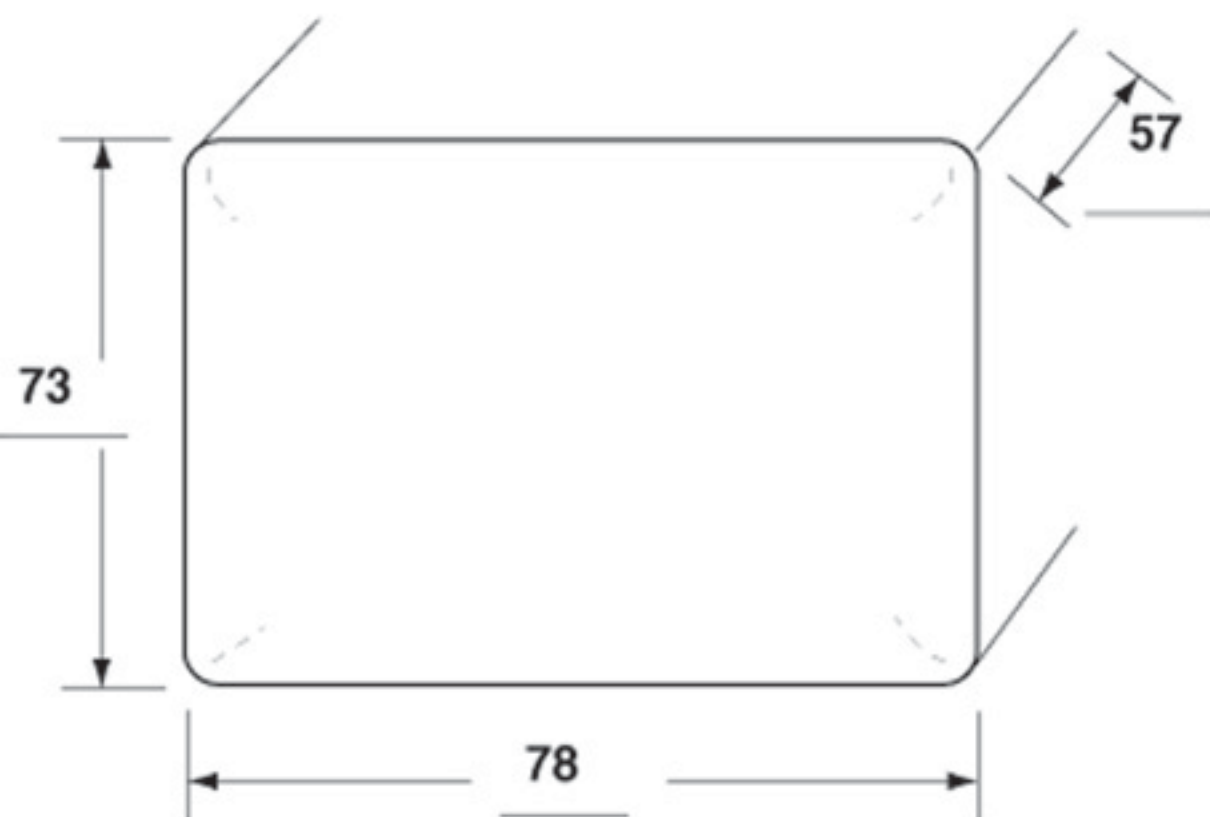


MEASUREMENTS IN CENTIMETERS

No inspection



Passenger Airbag



Passenger Airbag Doors

Single Door



Vents: ☒ Y N 2
if yes, how many: _____

Tethers: ☒ Y N 1
if yes, how many: _____









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35



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EZ146A-3A