Individual Vehicle dimensions were obtained through the use of the Expert AutoStats(R) program.

The Expert AutoStats(R) program contains a multitude of vehicle dimensions and specifications on over 47,000 different vehicles and 203 different manufacturers spanning more than 71 years.

While every attempt has been made to ensure accurate data, these dimensions are meant to be used as first approximations. Some measurements are dependant on such factors as tire and rim sizes, tire inflation pressure and wear, suspension system condition, bumper type and style, and other manufacturing variations from vehicle to vehicle.

Whenever feasible, the vehicle in question or an exemplar vehicle should be measured to verify data important to your case.

Individual Vehicle Data Search Service (R)

Provided by: 4N6XPRT SYSTEMS (R) Forensic Expert Software 8387 University Avenue La Mesa, CA 91942-9342

(619) 464-3478 / (800) 266-9778 / FAX: (619) 464-2206 Web Site - <u>www.4N6XPRT.com</u> Email - 4n6@4n6xprt.com

Through the use of

EXPERT AUTOSTATS(R)

COPYRIGHT (c) 1991-2017 EXPERT WITNESS SERVICES, INC. ALL RIGHTS RESERVED

DEVELOPED BY:

Daniel W. Vomhof III & Daniel W. Vomhof, Ph.D.

VEHICLE DATA RESEARCH BY:

Sheryl Cozby, Marion Vomhof, Muriel Vomhof, & Cindy Christensen

Expert VIN DeCoder®

Copyright© 1991-2016 Expert Witness Services, Inc. All Rights Reserved

Version Number 3.6.0.9

DeCoded VIN: 3G5DA03L06S622319

Model: 2006 Buick Rendezvous Four Door Cab/Utility

Engine Size: 3.5L / 214 cu.in.

Engine Description: V6 Cylinder W/ Dual Overhead Cam

Horse Power: 200 @ 5200 rpm

Torque: 200 1b-ft @ 5200 rpm

Injection System: Sequential Fuel Injection (SFI)

PSI: N/A Ignition: electronic

Manufacturer: Chevrolet - Pontiac - GM Canada

Assembly Plant: Ramos Arizpe, Mexico

Drive Wheels: This is a Front Wheel Drive vehicle

The First through Third characters (3G5) indicate a Buick MPV made in Mexico

The Fourth character (D) indicates a GVWR of 5001 - 6000 lbs.; Hydraulic Brakes

The Fifth through Sixth characters (AO) indicate a Rendezvous

The Seventh character (3) indicates Four Door Cab/Utility

The Eighth character (L) indicates the OEM engine: 3.5L / 214 cu.in., V6, DOHC

The Ninth character (the check digit) is entered as 0.

The VIN appears Valid, the calculated value is 0.

The Tenth character (6) indicates the model year 2006

The Eleventh character (S) indicates the vehicle was made in the assembly plant in Ramos Arizpe, Mexico

The Twelfth through Seventeenth characters (622319) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.7.1.2 Copyright 2017 - All Rights Reserved

PROVIDED BY: 4N6XPRT Systems 8387 University Avenue La Mesa CA 91941

10/3/2017

2006 BUICK RENDEZVOUS 4 DOOR 4X2 UTILITY

2000 BUICK RENDEZVOUS 4 DOOK 4XZ UIILIIT			
Curb Weight: Curb Weight Distribution - Front:	4024 lbs.	Rear:	1825 kg.
Gross Vehicle Weight Rating:	5357 1bs.		2430 kg.
Number of Tires on Vehicle: Drive Wheels:	4 FRONT		
Horizontal Dimensions Total Length Wheelbase:	Inches 187 112	Feet 15.58 9.33	Meters 4.75 2.84
Front Bumper to Front Axle: Front Bumper to Front of Front Well: Front Bumper to Front of Hood: Front Bumper to Base of Windshield: Front Bumper to Top of Windshield:	37 21 4 36 71	3.08 1.75 0.33 3.00 5.92	0.94 0.53 0.10 0.91 1.80
Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well: Rear Bumper to Rear of Trunk: Rear Bumper to Base of Rear Window:	38 19 5 8	3.17 1.58 0.42 0.67	0.97 0.48 0.13 0.20
Width Dimensions Maximum Width: Front Track: Rear Track:	74 63 64	6.17 5.25 5.33	1.88 1.60 1.63
Vertical Dimensions Height: Ground to -	69	5.75	1.75
Front Bumper (Top) Headlight - center Hood - top front: Base of Windshield Rear Bumper - top: Trunk - top rear: Base of Rear Window:	26 33 35 43 26 50	2.17 2.75 2.92 3.58 2.17 4.17 4.25	0.66 0.84 0.89 1.09 0.66 1.27 1.30

Expert AutoStats®

2006 BUICK RENDEZVOUS 4 DOOR 4X2 UTILITY

Front Leg Room - seatback to floor (max)

Front Leg Room - seatback to floor (min)

Interior	Dimer	nsions

Inches 59

Feet Meters 4.92 1.50

Front Seat Shoulder Width Front Seat to Headliner

41

3.42 1.04 3.42 1.04

Rear Seat Shoulder Width
Rear Seat to Headliner

59 40 30 4.92 3.33 2.50 1.50 1.02 0.76

Seatbelts:

3pt - front and rear

Airbags:

FRONT SEAT AIRBAGS + SIDE AIRBAGS

Steering Data

Turning Circle (Diameter)

444

37

11.28

Steering Ratio: Wheel Radius:

Tire Size (OEM):

17.10:1

P215/70R16

13

1.08

0.33

Acceleration & Braking Information

Brake Type:

ALL DISC

ABS System:

ALL WHEEL ABS

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

d = **136.0** ft

t = **3.1** sec

a = -28.4 ft/sec²

G-force = -0.88

Acceleration:

0 to 30mph 0 to 60mph t = 3.7 t = 11.0

sec sec

a = **11.9** a = **8.0**

ft/sec²
ft/sec²

G-force =

G-force =

G-force =

0.37

45 to 65mph

t = **7.8** sec

a = 3.8

ft/sec²

0.12

Transmission Type:

4spd AUTOMATIC

Notes:

Federal Bumper Standard Requirements:

No Requirement

N.S.D.C = 2002 - 2007

2006 BUICK RENDEZVOUS 4 DOOR 4X2 UTILITY

Other Information

Tip-Over Stability Ratio =	1.15	Reasonably Sta	ble
NHTSA Star Rating (calculated)		***	
Center of Gravity (No Load):			
Inches behind front axle	=	49.28	
Inches in front of rear axle	=	62.72	
Inches from side of vehicle	=	37.00	
Inches from ground	=	27.53	
Inches from front corner	=	93.88	
Inches from rear corner	=	107.30	
Inches from front bumper	=	86.28	
Inches from rear bumper	=	100.72	
Moments of Inertia Approximations (No Load):			
Yaw Moment of Inertia	=	2801.72	lb*ft*sec²
Pitch Moment of Inertia	=	2849.88	lb*ft*sec²
Roll Moment of Inertia	=	650.28	lb*ft*sec²
Front Profile Information			
Angle Front Bumper to Hood Front	=	66.0	deg
Angle Front of Hood to Windshield Base	=	14.0	deg
Angle Front of Hood to Windshield Top	=	25.5	deg
Angle of Windshield	=	34.4	deg

First Approximation Crush Factors:

Angle of Steering Tires at Max Turn

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

$$V(mph) = \sqrt{(30 * CF * MID)}$$

$$KE Equivalent Speed (Front/Rear/Side) = 21 CF$$

$$Bullet vehicle IMPACT SPEED estimation$$

$$based on TARGET VEHICLE damage ONLY = 27 CF$$

$$(Tested for Rear/Side Impact only)$$

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independent evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

28.9

dea

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #3852

2002 BUICK RENDEZVOUS

Provided By

4N6XPRT StifCalcs®

Registered to:

4N6XPRT SYSTEMS 8387 UNIVERSITY AVENUE LA MESA CA 91941-3842 17R-030201SC02301

Copyright 2017 - All Rights Reserved 4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA (800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Serial Number: 17R-030201SC02301

Similar Vehicle database reader

You entered: 2006 BUICK RENDEZVOUS

The Similar Vehicle Year/Model list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
2001 - 2005	PONTIAC	AZTEK	SUV	108.3
Remarks: BASED (ON VENTURE/M	ONTANA - SUV?? - Minivan??		
2002 - 2007	BUICK	RENDEZVOUS	SUV	112
Remarks: BASED (ON VENTURE/M	ANATMC		

The Similar Vehicle List contained in 4N6XPRT StifCalcs is an extension of the free Vehicle Interchange List provided by Gregory C. Anderson of Scalia Safety Engineering through the 2012 model year. 4N6XPRT Systems® has taken over the maintenance of the Similar Vehicle List beginning with the 2013 version of the 4N6XPRT StifCalcs program. 4N6XPRT Systems® makes no warranties, either expressed or implied, with respect to this data, its quality, performance, merchantability, or fitness for any particular purpose. The entire risk as to its quality and performance is with the user. In no event will 4N6XPRT Systems® be liable for direct, incidental, or consequential damages resulting from any data presented here, even if 4N6XPRT Systems® has been advised of the possibility of such damages. The user must agree to assume full responsibility for any decisions which are based, in whole or in part, upon information obtained by using this data. Some of the listed similarities are based on estimates or memory. Most of the data are pulled from specification tables which may contain inaccuracies of their own. Use common sense - if something seems wrong, check it (and if it is wrong, let us know!).

If you have suggestions and/or corrections, we request and urge you to contact us - 4n6@4n6xprt.com.

Test Information

Test # 3852	NHTSA Test Reference Guide Version #	V5		\neg									
Test Date 2001-12-05	<u></u>	# DTNH22-97-C-01033											
		D114022-37-C	C-01033	=									
· ·													
,	TO EVALUATE VEHICLE SIDE IMPACT PROTECTION PI												
Test Type	COMPLIANCE - INDICANT TEST	Configuration	IMPACTOR INTO VEHICLE										
Impact Angle	270 Side Impact Point	N/A	mm N/A incl	nes									
	Offset Distance	9999	mm 0.0 inch	nes									
	Closing Speed	62.3	Km/Hr 38.70 MP	Н									
Test Performer	CALSPAN		· · · · · · · · · · · · · · · · · · ·										
Test Reference #	RUN1968												
Test Track Surface	CONCRETE Condition	DRY											
Ambient Temperature	21 C 69.8 F Total Number of Curves	49											
Data Recorder Type	DIGITAL DATA ACQUISITION	Data Link	UMBILICAL CABLE										
Test Commentary	FY 2002 FMVSS 214D INDICANT - 2002 BUICK REND	EZVOUS C2010	2										
	Fixed Barrier Information												
Barrier Type	Pole Barrier Diameter		mm inch	nes									
Barrier Shape													
Barrier Commentary				\neg									

2002 BUICK RENDEZVOUS LEFT FRONT SEAT OCCUPANT

Test # 3852	
Vehicle # 2	Sex MALE
Location LEFT FRONT SEAT	Age 99
Position CENTER POSITION	Height 9999 mm 0.0 inches
Type NHTSA SIDE IMPACT DUMMY	Weight 999.0 kg 2202 pounds
Size 50 PERCENTILE	
Calibration Method SIDE IMPACT DUMMY	
Occupant Manufacturer MFG: FIRST TECHNOLO	DGY SAFETY SYSTEMS S/N:013
Occupant Modification UNMODIFIED	
Occupant Description SUBPART F SIDE IMPA	CT DUMMY
Occupant Commentary CONTACTS: CNTRL1:DO	OOR TRIM
<u>Head</u>	
Head to -	
Windshielder Header 480 mm 18.9 inch	es Head Injury Criteria (HIC) 72
WindShield 752 mm 29.6 inch	es HIC Lower Time Interval (ms) 45
Seatback 9999 mm 0.0 inch	es HIC Upper Time Interval (ms) 76.5
Side Header 236 mm 9.3 inch	es
Side Window 378 mm 14.9 inch	es
Neck to Seatback 9999 mm 0.0 inches	
First Contact Region (Head)	
Second Contact Region (Head)	
<u>Chest</u>	
Chest to -	
Dash 573 mm 22.6 inches	Arm to Door 120 mm 4.7 inches
Steering Wheel 304 mm 12.0 inches	Hip to Door 220 mm 8.7 inches
Seatback 9999 mm 0.0 inches	
	Pelvic Peak Lateral Acceleration (g's)
Thoracic Trauma Index 42	Thorax Peak Acceleration (g's) 99999
· · · · · · · · · · · · · · · · · · ·	Newtons 22480.8 pound Force
	Newtons 22480.8 pound Force
First Contact Region (Chest/Abdomen) AIR BAG	
Second Contact Region (Chest/Abdomen) NONE	
<u>Legs</u>	
Knees to Dash 158 mm 6.2 inches K	inees to Seatback 9999 mm 0.0 inches
Left Femur Peak Load 0 Newtons	0.0 pounds Force
Right Femur Peak Load 0 Newtons	0.0 pounds Force
First Contact Region (Legs) OTHER	
Second Contact Region (Legs)	

2002 BUICK RENDEZVOUS LEFT FRONT SEAT OCCUPANT

Test #	3852	
Vehicle #	2	Sex MALE
Location	LEFT FRONT S	EAT Age 99
Position	CENTER POSIT	FION Height 9999 mm 0.0 inches
Туре	NHTSA SIDE IN	Meight 999.0 kg 2202 pounds
Size	50 PERCENTIL	E
Cali	bration Method	SIDE IMPACT DUMMY
Occupar	nt Manufacturer	MFG: FIRST TECHNOLOGY SAFETY SYSTEMS S/N:013
Occupa	ant Modification	UNMODIFIED
Occu	pant Description	SUBPART F SIDE IMPACT DUMMY
Occupa	ant Commentary	CONTACTS: CNTRL1:DOOR TRIM
		Restraints
Restrai	nt # 1 3 POINT	BELT
Mounte	ed BELT - C	CONVENTIONAL MOUNT
Deploy	ment NOT AP	PLICABLE
Restrai	nt Commentary	NONE
Restrai	nt # 2 FRONTA	AL AIRBAG
Mounte	ed SEAT BA	ACK
Deploy	ment DEPLOY	(ED PROPERLY

Restraint Commentary

NONE

2002 BUICK RENDEZVOUS LEFT REAR SEAT OCCUPANT

Test #	3852					
Vehicle #	2		Sex	MALE		
Location	LEFT REAR SEA	ĪΤ	Age	99		
Position	NON-ADJUSTAB	LE SEAT] Height	9999 mm).0 inches	
Туре	NHTSA SIDE IMF	PACT DUMMY	Weight	999.0 kg	2202 pounds	
Size	50 PERCENTILE					
Cal	ibration Method	SIDE IMPACT DUMMY				
Occupa	nt Manufacturer	MFG: FIRST TECHNOLO	OGY SAFETY SYST	EMS S/N:026		
Occup	ant Modification	UNMODIFIED				╝
Occu	pant Description	SUBPART F SIDE IMPA	CT DUMMY			╝
Occupa	ant Commentary	CONTACTS: CNTRC1:DO	OOR TRIM; CNTRL1	:DOOR TRIM		╝
Head to -		<u>Head</u>				
Windshie	elder Header 999	9 mm 0.0 inch	es Head Injury (Criteria (HIC)	506	٦
	WindShield 999	= ==	, ,	ver Time Interva		f
	Seatback 635			oer Time Interva		ī
	Side Header 195		es			
	Side Window 319	mm 12.6 inch	es			
Neck to Se	atback 9999 r	mm 0.0 inches				
	First Contact Re	egion (Head) C PILLAR				
5	Second Contact Re	egion (Head)				
		<u>Chest</u>				
Chest to -						
	Dash 9999 m	nm 0.0 inches	Arm to Door 8:	5 mm 3.	inches	
Steering \	Wheel 9999 m	nm 0.0 inches	Hip to Door 1	14 mm 4.	5 inches	
Sea	tback 557 m	nm 21.9 inches				
Chest S	Severity Index 99	99 F	Pelvic Peak Lateral A	cceleration (g's)	83	
Thoracic Ti	rauma Index 48			Acceleration (g's	99999	
	•		Newtons 22480.			
			Newtons 22480.8	pound Force		
	= -	est/Abdomen) OTHER				
Second Co	ontact Region (Che	est/Abdomen) NONE				
		<u>Legs</u>				
Knees to	Dash 9999 m		nees to Seatback 2	22 mm 8.	7 inches	
Left Fem	ur Peak Load 0	Newtons	0.0 pound	s Force		
Right Femi	ur Peak Load 0	Newtons	0.0 pound	s Force		
	First Contact R	Region (Legs) OTHER				
	Second Contact R	Region (Legs)				

2002 BUICK RENDEZVOUS LEFT REAR SEAT OCCUPANT

Test #	3852			
Vehicle #	2		Sex	MALE
Location	LEFT REAR SEA	AT	Age	99
Position	NON-ADJUSTAE	LE SEAT	Height	9999 mm 0.0 inches
Type	NHTSA SIDE IM	PACT DUMMY	Weight	999.0 kg 2202 pounds
Size	50 PERCENTILE			
Cali	ibration Method	SIDE IMPACT DUMMY		
Occupai	nt Manufacturer	MFG: FIRST TECHNOLO	GY SAFETY SYST	EMS S/N:026
Occupa	ant Modification	UNMODIFIED		
Occu	pant Description	SUBPART F SIDE IMPAG	CT DUMMY	
Occupa	ant Commentary	CONTACTS: CNTRC1:DC	OOR TRIM; CNTRL1	I:DOOR TRIM
		Restraints	<u>5</u>	
Restrai	nt # 1 3 POINT	BELT		
Mounte	ed BELT - Co	ONVENTIONAL MOUNT		
Deploy	ment NOT APF	LICABLE		
Restrai	nt Commentary	NONE		

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Test #	3852										
VIN	9999				NHTSA Te	est Vehic	le Number	1			
Year	0				Vehicle Mo	dification	Indicator	RESEA	RCH V	EHICLE	
Make	NHTSA		Post-test	Steering (Column Shear	Capsule	Seperatio	n NOT AF	PLICA	BLE	
Model	DEFORMAB	LE IMPA	CTOR	Stee	ring Column C	ollapse N	/lechanism	NOT AF	PLICA	BLE	
Body	NOT APPLIC	CABLE									
Engine	NOT APPLIC	CABLE									
Displacement	99 Lite	er Tra	ansmissio	n NOT A	PPLICABLE						
Vehicle Modific	ation(s) Desc	ription [NONE								
Vehicle Comm	entary NHTS	SA SIDE	IMPACT (CART WITI	H DEFORMAB	LE FACE					
Vehicle Len	gth 4120	mm	162.2	inches	CG	behind	Front Axle	1104	mm [43.5	inches
Vehicle V	Vidth 1676	mm	66.0	inches	Center of D	Damage	to CG Axis	99999	mm [0.0	inches
Vehicle Whee	lbase 2590	mm	102.0	inches	Total Leng	gth of Ind	dentation	1676	mm [66.0	inches
Vehicle Test W	eight 1363	KG	3004	pounds	Maximum \$	Static Cru	ısh Depth	9999	mm [0.0	inches
						Pre-Impa	act Speed	62	kph [38.7	mph
Vel	hicle Damage	Index 9	999999		Princ	ipal Direc	tion of Fo	rce 27			
Damaga Pr	ofilo Dieton	oo Mood	ruromor	nto.	Cruch from	m Dro 8	Post Tos	t Damac	no Mor	acurom	onto
Damage Pro					Crush fror			-			
_	ured Left-to-R		_			Pre-Tes		Post-Test		Crush E	
DPD 1 g		0.0	inches		umper Corner				inches		inches
DPD 2		0.0	inches			9999	l mm	99999	mm	-90000	l mm
DPD 3 [9		0.0	inches		Centerline	0.0	inches	0.0	inches	N/A	inches
DPD 4 9		0.0	inches			9999	mm	99999	mm	-90000	mm
DPD 5		0.0	inches	Diaht D	umper Corner	0.0	inches	0.0	inches	N/A	inches
DPD 6 9	9999 mm	0.0	inches	Ü	•	9999	mm		mm	-90000	mm
							•				1
Bumper E	ngagement			Sill E	ingagement			A-	pillar Er	ngageme	ent
(Inline Im	pact Only)			(Side	e Impact Only))		(5	Side Im	pact Onl	y)
2	7.0			NOT	APPLICABLE			Ė		0.0	Ì
			_					_			_
Moving	Test Cart			Moving	Test Cart/Vehi	icle		Vehic	cle Orie	ntation o	n Cart
	ngle			Cra	abbed Angle					Test Carl	
	<u>ENGAGEMEN</u>	TI			27.0					LICABL	
_	of the Tilt Angle				of the Crabbed Ang				-	of the Angle	
	etween surface of a				ıre Clockwise from			Measured b			
Rollover Test	Cart and the Grour	nd	Lon	gitudinal Vecto	r to Velocity Vector	of Vehicle		and Di	rection of	Test Cart M	otion

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Test #	3852											
VIN	9999					NHTSA	NHTSA Test Vehicle Number 1					
Year	0					Vehicle	Modification Indi	cator RESE	ARCH	VEHICLE		
Make	NHTS/	4	F	ost-tes	t Steering	g Column She	ear Capsule Sep	eration NOT	APPLIC	ABLE		
Model	DEFOR	RMABLE	IMPAC	CTOR	Ste	ering Columr	n Collapse Mecha	anism NOT	APPLIC	ABLE		
Body	NOT A	PPLICA	BLE									
Engine	NOT A	PPLICA	BLE									
Displacement	99	Liter	Tra	nsmissi	on NOT	APPLICABL	E					
Vehicle Modific	cation(s)	Descript	tion 📭	ONE								
Vehicle Comm	entary	NHTSA	SIDE II	MPACT	CART WI	ITH DEFORM	ABLE FACE					
Vehicle Len	igth	4120	mm	162.2	inches		CG behind Fron	t Axle 1104	mm	43.5	inches	
Vehicle V	Vidth	1676	mm	66.0	inches	Center	of Damage to CO	G Axis 99999] mm	0.0	inches	
Vehicle Whee	elbase	2590	mm	102.0	inches	Total L	ength of Indenta	ation 1676	mm	66.0	inches	
Vehicle Test W	eight/	1363	KG	3004	pounds	Maximu	m Static Crush D	Depth 9999	mm	0.0	inches	
	Pre-Impact Speed 62 kph 38.7 mph											
Vehicle Damage Index 99999999 Principal Direction of Force 27												
		0					- 1					

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehi de Surface forward.)

	Left	Left Side Centerline Right Sid						t Side	ide		
Pr	e-Test	Pos	t-Test	Pre	Pre-Test Post-Test Pre-Test		Post-	-Test			
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Len	gth of Veh	icle at Ce	nterline				
				9999	0.0	99999	0.0				
					Engin	e Block					
				9999	0.0	99999	0.0				
9999	0.0	99999	0.0		Front Bur	mper Corr	ner	9999	0.0	99999	0.0
					Front o	of Engine					
				9999	0.0	99999	0.0				
9999	0.0	99999	0.0		Fire	ewall		9999	0.0	99999	0.0
				9999	0.0	99999	0.0				
9999	0.0	99999	0.0	Upj	oer Leadin	g Edge o	f Door	9999	0.0	99999	0.0
9999	0.0	99999	0.0	Lov	ver Leading	g Edge of	f Door	9999	0.0	99999	0.0
9999	0.0	99999	0.0		Bottom o	f 'A' Post		9999	0.0	99999	0.0
9999	0.0	99999	0.0	Up	per Trailing	g Edge of	f Door	9999	0.0	99999	0.0
9999	0.0	99999	0.0	Lo	wer Trailing	g Edge of	f Door	9999	0.0	99999	0.0
					Steerin	g Column	1				
				9999	0.0	99999	0.0				
				Center of Se	ering Colu	mn to 'A'	Post (Horiz	ontal)			
				9999	0.0	99999	0.0				
				Center of Ste	ering Colu	mn to He	adliner (Vei	tical)			
				9999	0.0	99999	0.0				

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

Vehicle 2 2002 BUICK RENDEZVOUS

Test #	3852										
VIN	3G5DA03E2	2S52742	0		NHTSA Te	est Vehicl	e Number	2			
Year	2002				Vehicle Mo	dification	Indicator	PROD	UCTION	VEHICL	E
Make	BUICK		Post-te	st Steering	Column Shear	Capsule	Seperatio	n UNKN	OWN		
Model	RENDEZVO	US		Stee	ring Column C	ollapse M	lechanism	UNKN	OWN		
Body	UTILITY VE	HICLE									
Engine	V6 TRANSV	ERSE FR	ONT								
Displacement	3.4 Lite	er Tra	ınsmiss	ion AUTO	MATIC - FROM	IT WHEE	L DRIVE				
Vehicle Modific	ation(s) Desc	ription [NONE								
Vehicle Comm	entary 2002	BUICK R	ENDEZ	VOUS C20	102						
Vehicle Len	gth 4735	mm	186.4	inches	CC	behind	Front Axle	1265] mm	49.8	inches
Vehicle V	Vidth 1860	mm	73.2	inches	Center of I	Damage t	o CG Axis	-269] mm	-10.6	inches
Vehicle Whee	lbase 2847	mm	112.1	inches	Total Len	gth of Ind	lentation	3900] mm	153.5	inches
Vehicle Test W	eight 2055	KG	4530	pounds	Maximum	Static Cru	ish Depth	349] mm	13.7	inches
						Pre-Impa	act Speed	0	kph	0.0	mph
Vel	nicle Damage	Index 9	999999		Princ	ipal Direc	tion of Fo	ce 297	7		
Damaga Dr	ofilo Dioton	oo Mooo	uromo	nto	Cruch from	m Dro 9	Doot Too	t Dama	ao Mo	oourom.	onto
Damage Pro					Crush fror				_		
	red Left-to-R	_	-			Pre-Tes		Post-Te	_	Crush D	
DPD 1 (0.0	inche		Bumper Corne			0.0	inches		inches
DPD 2 8		3.3	inche			9999	mm	99999	mm	-90000	mm
DPD 3 3		13.2] inche		Centerline	0.0	inches	0.0	inches	N/A	inches
DPD 4 2	i	9.8	inche			9999	mm	99999	mm	-90000	mm
DPD 5		2.4	inche	Diaht D	Bumper Corner	0.0	inches	0.0	inches	N/A	inches
DPD 6) mm	0.0	inche	S		9999	mm	99999	mm	-90000	•
							l		•		J
Bumper E	ngagement			Sill E	Engagement			A	A-pillar E	ngageme	ent
•	pact Only)				e Impact Only))				npact Onl	
	7.0		Γ		T ENGAGEME					0.0	ĺ
			L					'			_
Moving	Test Cart			Moving	Test Cart/Veh	icle		Veh	ricle Orie	entation o	n Cart
A	ngle			Cr	abbed Angle				Moving	Test Cart	į
NOT A	PPLICABLE				0.0			DIR	ECT EN	IGAGEMI	ENT
Magnitude	of the Tilt Angle			Magniture	e of the Crabbed Ang	ıle			Magnitude	of the Angle	
Measured be	etween surface of a	1		Meas	ure Clockwise from	,		Measured	l between th	he Vehicle Or	rientation
Rollover Test	Cart and the Grour	nd	1	ongitudinal Vect	or to Velocity Vector	of Vehicle		and I	Direction of	f Test Cart M	otion

Vehicle 2 2002 BUICK RENDEZVOUS

Test #	3852										
VIN	3G5D/	A03E22S	5274	20		NHTSA Test Vehicl	le Number	2			
Year	2002					Vehicle Modification	Indicator	PROD	UCTIO	N VEHICL	.E
Make	BUICK			Post-test St	eering Colu	ımn Shear Capsule	Seperation	UNKN	OWN		
Model	RENDI	ZVOUS			Steering	Column Collapse M	/lechanism	UNKN	OWN		
Body	UTILIT	Y VEHIC	LE								
Engine	V6 TR	ANSVER	SE FF	RONT							
Displacement	3.4	Liter	Tr	ansmission	AUTOMA	TIC - FRONT WHEE	L DRIVE				
Vehicle Modific	ation(s)	Descript	tion	NONE							
Vehicle Comm	entary	2002 B	UICK I	RENDEZVOL	JS C20102	2					
Vehicle Len	igth	4735	mm	186.4 in a	ches	CG behind	Front Axle	1265	mm	49.8	inches
Vehicle V	Vidth	1860	mm	73.2 ind	ches	Center of Damage	to CG Axis	-269	mm	-10.6	inches
Vehicle Whee	lbase	2847	mm	112.1 ind	ches	Total Length of Inc	dentation	3900	mm	153.5	inches
Vehicle Test W	eight '	2055	KG	4530 pc	unds	Maximum Static Cru	ush Depth [349	mm	13.7	inches
						Pre-Impa	act Speed[0	kph	0.0	mph
Vel	hicle Da	mage In	dex 🛭	999999		Principal Direc	tion of Ford	e 297			

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehi de Surface forward.)

	Left	Side			Centerline				Righ	t Side	
Pro	e-Test	Pos	t-Test	Pre	-Test	Post	-Test	Pre	-Test	Post-	-Test
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Len	gth of Veh	icle at Ce	nterline				
				9999	0.0	99999	0.0				
					Engin	e Block					
				9999	0.0	99999	0.0				
9999	0.0	99999	0.0		Front Bu	mper Corr	ner	9999	0.0	99999	0.0
					Front	of Engine					
				9999	0.0	99999	0.0				
9999	0.0	99999	0.0			ewall	,	9999	0.0	99999	0.0
				9999	0.0	99999			,		
9999	0.0	99999		Up _l	per Leadin	g Edge o	f Door	9999	0.0		0.0
9999	0.0		0.0	Lov	ver Leadin	•	f Door	9999	0.0		0.0
9999	0.0	99999				f 'A' Post		9999	0.0		0.0
9999	0.0				pper Trailing	•		9999	0.0		0.0
9999	0.0	99999	0.0	Lo	wer Trailin			9999	0.0	99999	0.0
						g Column					
				9999	0.0	99999					
				Center of Se				ontal)			
				9999	0.0	99999					
				Center of Ste	- <u> </u>		. ——	rtical)			
				9999	0.0	99999	0.0				

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2002 BUICK RENDEZVOUS

NHTSA Crash Test - #3852 - Side Impact

Max Crush Depth - Indention Length - KE Equivalent Speed

Test Crush Length = 153.5 inches

Rated No Damage Speed = Impact speed with a barrier

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific

resulting in no permanant vehicle deformation

vehicles may, however, have a higher rating

Maximum Crush Depth (inches)

Maximum Crush 13.7

		CRASH	SMAC Stiffness		
		A	<u>B</u>	G	Kv
Minimum Crush = N/A inches					
Using a Rated No Damage Speed of	1.0mph				
Using a Rated No Damage Speed of	2.0mph				
Using a Rated No Damage Speed of	3.0mph				
Using a Rated No Damage Speed of	5.0mph				
Average Crush = N/A inches					
Using a Rated No Damage Speed of	1.0mph				
Using a Rated No Damage Speed of	2.0mph				
Using a Rated No Damage Speed of	3.0mph				
Using a Rated No Damage Speed of	5.0mph				
Maximum Crush = 13.7 inches					75.2
Using a Rated No Damage Speed of	1.0mph	40.5	69.2	11.8	
Using a Rated No Damage Speed of	2.0mph	77.5	63.4	47.3	
Using a Rated No Damage Speed of	3.0mph	111.0	57.9	106.4	
Using a Rated No Damage Speed of	5.0mph	167.8	47.6	295.6	

A = Maximum force per inch of dam age without permanent dam age, lb/in

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	13.7	26.8	2.4	8.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 17.4

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Registered Owner: 4N6XPRT SYSTEMS

Registered Owner: 4N6XPRT SYSTEMS

Serial Number: 17R-030201SC02301

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2002 - 2007

Make: BUICK

Model: RENDEZVOUS

Test	Vehicle	No							
Numbe	r Info	Damage	Average		I n (dention	Leng	g t h	
		Speed	Crush	KEES	S t	iffness	Valu	ı e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Kv	Factor
3443	2001 PONTIAC AZTEK UTILITY VEHICLE	2.0	5.0	24.5	205.6	459.7	46.0	544.9	47.8
3852	2002 BUICK RENDEZVOUS UTILITY VEHICLE	2.0	4.8	24.4	221.9	520.3	47.3	617.2	49.9
		Average	(AVG)		213.7	490.0	46.6	581.1	48.9
		Minimum	(MIN)		205.6	459.7	46.0	544.9	47.8
		Maximum	(MAX)		221.9	520.3	47.3	617.2	49.9
	Standard Deviation	n (STDev-sa	ample)		11.5	42.9	0.9	51.1	1.5
	Nui	mber of Tes	sts (n)	2					

Serial Number: 17R-030201SC02301

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2002 - 2007

Make: BUICK

Model: RENDEZVOUS

Test Numbe	Vehicle r Info	No Damage Speed (mph)	Max Crush (inch)			lention iffness B	U		Crush Factor
3443	2001 PONTIAC AZTEK UTILITY VEHICLE	2.0	13.5	24.5	76.5	63.6	46.0	75.4	17.8
3852	2002 BUICK RENDEZVOUS UTILITY VEHICLE	2.0	13.7	24.4	77.2	63.1	47.3	74.8	17.4
		Average ((AVG)		76.9	63.4	46.6	75.1	17.6
		Minimum	(MIN)		76.5	63.1	46.0	74.8	17.4
		Maximum	(MAX)		77.2	63.6	47.3	75.4	17.8
	Standard Deviation	n (STDev-sa	ample)		0.5	0.4	0.9	0.5	0.3
	Nur	mber of Tes	sts (n)	2					

Serial Number: 17R-030201SC02301

4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91941-3842

Fax: (619) 464-2206 Toll Free: 1-800-266-9778

Phone: (619) 464-3478

Web Site: http://www.4n6xprt.com E-Mail: 4n6@4n6xprt.com

The NHTSA Crash Test database contains TWO SIDE Impact tests for the 2002-2007 Buick Rendezvous and its same/similar vehicles.

To create a SIMILAR class of vehicle, we looked at the NHTSA database for UTILITY vehicles that have SIDE IMPACT TESTS, a wheelbase range of +/- 2 inches of the wheelbase in Report 3852, and were +/- 4 years of the crash test model year of 2006.

For the crush summary reports, all tests with a A value greater than 500, and B value greater than 1000 were removed from the summary.

The Test Summary Reports based on the Average and Maximum crush depths follow.

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2002 - 2010 Bodystyle: UTILITY VEHICLE

Wheelbase Range: 110.1-114.1

Test Numbe	Vehicle r Info	No Damage Speed	Average Crush			lention iffness		g t h u e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Kv	Factor
4379	2002 FORD EXPLORER UTILITY VEHICLE	2.0	4.9	20.1	175.3	324.0	47.4	399.7	33.0
5302	2005 NISSAN MURANO UTILITY VEHICLE	2.0	7.0	24.6	189.2	303.7	58.9	359.9	34.3
4977	2003 NISSAN MURANO UTILITY VEHICLE	2.0	6.1	24.7	203.1	378.3	54.5	448.0	40.0
4600	2003 NISSAN MURANO UTILITY VEHICLE	2.0	6.1	24.7	203.1	378.3	54.5	448.0	40.0
5035	2005 CHEVROLET EQUINOX UTILITY VEHICLE	2.0	5.5	24.4	204.9	416.9	50.3	494.6	43.3
6479	2009 CHEVROLET EQUINOX UTILITY VEHICLE	2.0	8.2	24.9	218.3	305.3	78.1	361.1	30.2
3852	2002 BUICK RENDEZVOUS UTILITY VEHICLE	2.0	4.8	24.4	221.9	520.3	47.3	617.2	49.9
5975	2007 HYUNDAI VERACRUZ UTILITY VEHICLE	2.0	7.9	24.0	237.4	328.1	85.9	390.5	28.9
5893	2007 INFINITI FX35 UTILITY VEHICLE	2.0	7.8	24.0	243.6	344.6	86.1	410.0	29.7
6065	2008 SUZUKI XL-7 UTILITY VEHICLE	2.0	5.0	24.1	243.7	541.5	54.8	643.8	46.8
6048	2007 CHEVROLET TRAILBLAZER UTILITY VEHICLE	2.0	7.9	23.4	246.2	330.8	91.6	395.6	27.5
6318	2009 NISSAN MURANO UTILITY VEHICLE	2.0	5.5	24.7	247.7	516.2	59.5	611.0	44.8
5913	2007 FORD EDGE UTILITY VEHICLE	2.0	6.5	24.0	251.3	422.7	74.7	503.2	35.2
4087	2002 FORD EXPLORER UTILITY VEHICLE	2.0	4.3	23.8	260.4	665.6	50.9	793.3	53.1
4959	2004 INFINITI FX35 UTILITY VEHICLE	2.0	6.8	23.7	270.5	433.9	84.3	517.5	33.3
6158	2007 MAZDA CX-9 UTILITY VEHICLE	2.0	6.9	24.1	275.2	441.6	85.8	525.0	33.8
5560	2006 FORD EXPLORER UTILITY VEHICLE	2.0	5.2	22.9	285.7	570.1	71.6	684.2	40.1
4563	2002 FORD EXPLORER UTILITY VEHICLE	2.0	3.0	19.8	287.6	841.1	49.2	1040.5	51.6
5829	2006 FORD FREESTYLE UTILITY VEHICLE	2.0	4.7	24.3	295.5	705.4	61.9	837.7	50.5
6074	2007 FORD EXPLORER UTILITY VEHICLE	2.0	6.8	23.2	297.7	466.2	95.0	558.3	31.8
5253	2005 FORD FREESTYLE UTILITY VEHICLE	2.0	5.7	24.3	299.6	581.8	77.2	690.8	41.2
3835	2002 CHEVROLET TRAILBLAZER UTILITY VEHICLE	2.0	4.0	23.2	310.7	824.2	58.5	986.7	54.0
6827	2010 CADILLAC SRX UTILITY VEHICLE	2.0	5.2	23.8	323.0	672.0	77.6	800.7	43.3
4926	2004 CHEVROLET TRAILBLAZER UTILITY VEHICLE	2.0	4.6	23.3	327.9	762.5	70.5	912.4	47.4
4566	2003 BMW X5 UTILITY VEHICLE	2.0	5.2	23.1	328.1	667.4	80.7	800.0	41.1
5910	2007 SUZUKI XL-7 UTILITY VEHICLE	2.0	5.8	24.2	329.4	633.3	85.6	752.7	40.6
6789	2010 CHEVROLET EQUINOX UTILITY VEHICLE	2.0	4.5	24.8	353.2	887.7	70.3	1050.1	54.3
		Average ((AVG)		264.1	528.3	69.0	630.8	40.7
		Minimum	-		175.3	303.7	47.3	359.9	27.5
		winimum laximum	` '		353.2	303.7 887.7	47.3 95.0	ანყ.ყ 1050	54.3
	Standard Deviation				353.2 48.5	177.5	15.1	214.0	8.3
		ber of Tes		27	40.3	111.5	13.1	£ 14.U	0.3
	Nulli	~ J. J. 160	(11)						

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2002 - 2010 Bodystyle: UTILITY VEHICLE

Wheelbase Range: 110.1 -114.1

Test Numbe	Vehicle r Info	No Damage	Max			ention			
		Speed (mph)	Crush (inch)	(mph)	Α	ffness B	V a i u e G	e s Kv	Crush Factor
4379	2002 FORD EXPLORER UTILITY VEHICLE	2.0	21.3	20.1	40.2	17.0	47.4	21.0	7.6
4601	2002 FORD EXPLORER UTILITY VEHICLE	2.0	15.3	20.2	58.4	34.7	49.1	42.7	10.7
4563	2002 FORD EXPLORER UTILITY VEHICLE	2.0	14.3	19.8	61.3	38.2	49.2	47.3	11 .0
3852	2002 BUICK RENDEZVOUS UTILITY VEHICLE	2.0	13.7	24.4	77.2	63.1	47.3	74.8	17.4
5035	2005 CHEVROLET EQUINOX UTILITY VEHICLE	2.0	13.4	24.4	84.2	70.4	50.3	83.5	17.8
4087	2002 FORD EXPLORER UTILITY VEHICLE	2.0	12.8	23.8	86.8	74.0	50.9	88.1	17.7
4600	2003 NISSAN MURANO UTILITY VEHICLE	2.0	13.8	24.7	89.6	73.7	54.5	87.3	17.7
4977	2003 NISSAN MURANO UTILITY VEHICLE	2.0	13.8	24.7	89.6	73.7	54.5	87.3	17.7
5302	2005 NISSAN MURANO UTILITY VEHICLE	2.0	14.2	24.6	93.7	74.6	58.9	88.4	17.0
6065	2008 SUZUKI XL-7 UTILITY VEHICLE	2.0	12.9	24.1	94.0	80.5	54.8	95.8	18.0
6856	2010 HONDA ACCORD CROSSTOUR UTILITY VEH	2.0	10.4	24.8	98.4	108.2	44.7	128.0	23.7
3835	2002 CHEVROLET TRAILBLAZER UTILITY VEHICLE	2.0	11 2	23.2	110.8	104.9	58.5	125.6	19.3
5975	2007 HYUNDAI VERACRUZ UTILITY VEHICLE	2.0	16.7	24.0	113.0	74.3	85.9	88.5	13.8
6318	2009 NISSAN MURANO UTILITY VEHICLE	2.0	11 .6	24.7	116.3	113.8	59.5	134.7	21.0
4926	2004 CHEVROLET TRAILBLAZER UTILITY VEHICLE	2.0	12.3	23.3	122.3	106.0	70.5	126.8	17.7
6479	2009 CHEVROLET EQUINOX UTILITY VEHICLE	2.0	13.5	24.9	131.8	111.3	78.1	131.6	18.3
6508	2009 KIA BORREGO UTILITY VEHICLE	2.0	11 .7	24.1	137.7	130.6	72.6	155.3	19.9
5829	2006 FORD FREESTYLE UTILITY VEHICLE	2.0	9.4	24.3	146.0	172.2	61.9	204.5	25.0
5893	2007 INFINITI FX35 UTILITY VEHICLE	2.0	12.8	24.0	147.8	126.8	86.1	150.9	18.0
5910	2007 SUZUKI XL-7 UTILITY VEHICLE	2.0	12.8	24.2	148.0	127.9	85.6	152.0	18.2
4959	2004 INFINITI FX35 UTILITY VEHICLE	2.0	11 8	23.7	155.1	142.6	84.3	170.1	19.1
5560	2006 FORD EXPLORER UTILITY VEHICLE	2.0	9.6	22.9	155.4	168.6	71.6	202.4	21.8
5913	2007 FORD EDGE UTILITY VEHICLE	2.0	10.4	24.0	157.3	165.6	74.7	197.1	22.0
6048	2007 CHEVROLET TRAILBLAZER UTILITY VEHICLE	2.0	12.2	23.4	159.8	139.3	91.6	166.6	17.8
4958	2004 VOLKSWAGEN TOUAREG UTILITY VEHICLE	2.0	8.9	22.3	166.3	189.1	73.1	228.2	22.3
5253	2005 FORD FREESTYLE UTILITY VEHICLE	2.0	10.3	24.3	167.0	180.7	77.2	214.5	22.9
6789	2010 CHEVROLET EQUINOX UTILITY VEHICLE	2.0	9.6	24.8	167.6	200.0	70.3	236.6	25.8
6158	2007 MAZDA CX-9 UTILITY VEHICLE	2.0	11 2	24.1	169.8	168.0	85.8	199.7	20.8
6827	2010 CADILLAC SRX UTILITY VEHICLE	2.0	9.6	23.8	177.2	202.3	77.6	241.1	23.8
4566	2003 BMW X5 UTILITY VEHICLE	2.0	9.4	23.1	181.5	204.3	80.7	244.8	22.8
4622	2003 VOLVO XC90 UTILITY VEHICLE	2.0	6.9	23.3	196.7	302.8	63.9	362.2	31.4
6335	2009 DODGE JOURNEY UTILITY VEHICLE	2.0	7.1	24.9	199.1	320.4	61.8	378.7	34.9
6074	2007 FORD EXPLORER UTILITY VEHICLE	2.0	10.1	23.2	200.0	210.5	95.0	252.0	21.4
5277	2005 NISSAN PATHFINDER UTILITY VEHICLE	2.0	6.1	23.3	273.5	478.0	78.2	571.8	35.7
6731	2009 AUDI Q5 UTILITY VEHICLE	2.0	6.9	23.7	279.8	439.7	89.0	524.7	32.5
5566	2006 HUMMER H3 UTILITY VEHICLE	2.0	7.0	23.4	283.7	429.8	93.6	514.1	31.0
6861	2010 TOYOTA 4RUNNER UTILITY VEHICLE	2.0	6.8	23.8	287.4	462.6	89.3	551.4	33.5
6058	2007 HUMMER H3 UTILITY VEHICLE	2.0	7.0	22.9	288.2	427.2	97.2	512.9	29.7

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2002 - 2010 Bodystyle: UTILITY VEHICLE

Wheelbase Range: 110.1 -114.1

Average (AVG)		150.3	173.9	70.4	207.4	21.5
Minimum (MIN)		40.2	17.0	44.7	21.0	7.6
Maximum (MAX)		288.2	478.0	97.2	571.8	35.7
Standard Deviation (STDev-sample)		66.1	126.5	15.8	151.1	6.6
Number of Tosts (n)	38					

Expert VIN DeCoder®

Copyright© 1991-2016 Expert Witness Services, Inc. All Rights Reserved

Version Number 3.6.0.9

DeCoded VIN: 1GKDT13S822326698

Model: 2002 GMC Envoy 1/2 Ton Four Door Cab/Utility

Engine Size: 4.2 L/ 256 cu.in.

Engine Description: INLINE 6 Cylinder w/ Dual Overhead Cam

Horse Power: **270 @ 6000 rpm**

Torque: 275 1b-ft @ 3600 rpm

Injection System: Multi-Port Fuel Injection (MFI)

PSI: N/A Ignition: electronic

Manufacturer: Chevrolet - Pontiac - GM Canada

Assembly Plant: Moraine (T&B), OH

Drive Wheels: This is a 4 Wheel Drive vehicle

The First through Third characters (1GK) indicate a GMC MPV made in the U.S.A.

The Fourth character (D) indicates a GVWR of 5001 - 6000 lbs.; Hydraulic Brakes

The Fifth through Sixth characters (T1) indicate an Envoy and a 1/2 Ton series

The Seventh character (3) indicates Restraints Four Door Cab/Utility

The Eighth character (S) indicates the OEM engine: 4.2 L/ 256 cu.in., L6, DOHC

The Ninth character (the check digit) is entered as 8.

The VIN appears Valid, the calculated value is 8.

The Tenth character (2) indicates the model year 2002

The Eleventh character (2) indicates the vehicle was made in the assembly plant in Moraine (T&B), OH

The Twelfth through Seventeenth characters (326698) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.7.1.2 Copyright 2017 - All Rights Reserved

PROVIDED BY: 4N6XPRT Systems 8387 University Avenue La Mesa CA 91941

8/28/2017

2002 GMC ENVOY 4 DOOR 4X4 UTILITY

Curb Weight: Curb Weight Distribution - Front:	4628 1bs.	Rear:	kg. 46 %
Gross Vehicle Weight Rating:	5750 1bs.	2	2608 kg.
Number of Tires on Vehicle: Drive Wheels:	4 4 Wheel Drive		
Horizontal Dimensions	Inches	Feet	Meters
Total Length	192	16.00	4.88
Wheelbase:	113	9.42	2.87
Front Bumper to Front Axle:	35	2.92	0.89
Front Bumper to Front of Front Well:	17	1.42	0.43
Front Bumper to Front of Hood:	5	0.42	0.13
Front Bumper to Base of Windshield:	52	4.33	1.32
Front Bumper to Top of Windshield:	77	6.42	1.96
Rear Bumper to Rear Axle:	44	3.67	1.12
Rear Bumper to Rear of Rear Well:	25	2.08	0.64
Rear Bumper to Rear of Trunk:	6	0.50	0.15
Rear Bumper to Base of Rear Window:	8	0.67	0.20
Width Dimensions			
Maximum Width:	75	6.25	1.91
Front Track:	63	5.25	1.60
Rear Track:	02	3.17	1.57
Vertical Dimensions			
Height:	72	6.00	1.83
Ground to -			
Front Bumper (Top)	28	2.33	0.71
Headlight - center	34	2.83	0.86
Hood - top front: Base of Windshield	39 47	3.25	1.19
Rear Bumper - top:	29	2.42	0.74
Trunk - top rear:	44	3.67	1.12
Base of Rear Window:	49	4.08	1.24

Expert AutoStats®

2002 GMC ENVOY 4 DOOR 4X4 UTILITY

Tntariar	DIMO	ncianc
Interior	ם ווווכו	113 1 0113

Inches 59

Feet Meters

Front Seat Shoulder Width
Front Seat to Headliner

40

4.92 3.33 3.58 1.50 1.02 1.09

Rear Seat Shoulder Width

Rear Seat to Headliner

Front Leg Room - seatback to floor (min)

Front Leg Room - seatback to floor (max)

49 40

37

4.08 3.33 3.08 1.24 1.02 0.94

Seatbelts:

3pt - front and rear

Airbags: FRONT SEAT AIRBAGS + SIDE AIRBAGS

Steering Data

Turning Circle (Diameter)

468

39

11.89

Steering Ratio: Wheel Radius:

Tire Size (OEM):

20.40:1

P245/65R17

14

1.17

0.36

Acceleration & Braking Information

Brake Type:

ALL DISC

ABS System:

ALL WHEEL ABS

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

d = **146.0** ft

t = **3.3** sec

a = -26.5 ft/sec²

G-force = **-0.82**

Acceleration:

0 to 30mph 0 to 60mph t = 3.0 t = 8.5

.0 sec

a = **14.7** a = **10.4**

ft/sec²

G-force =

0.46

45 to 65mph

t = **5.6** sec

 $a = \begin{bmatrix} 10.4 \\ a = 5.2 \end{bmatrix}$

ft/sec² ft/sec² G-force = G-force =

0.32

Transmission Type:

4spd AUTOMATIC

Notes:

Federal Bumper Standard Requirements:

No Requirement

N.S.D.C = 2002 - 2009

2002 GMC ENVOY 4 DOOR 4X4 UTILITY

Other Information

Tip-Over Stability Ratio = NHTSA Star Rating (calculated)	1.09	Reasonably Stable
NHISA Star Rating (Carculateu)		
Center of Gravity (No Load):		
Inches behind front axle	=	51.98
Inches in front of rear axle	=	61.02
Inches from side of vehicle	=	37.50
Inches from ground	=	28.73
Inches from front corner	=	94.72
Inches from rear corner	=	111.51
Inches from front bumper	=	86.98
Inches from rear bumper	=	105.02
Moments of Inertia Approximations (No Load):		
Yaw Moment of Inertia	=	3423.84 lb*ft*sec²
Pitch Moment of Inertia	=	3 526.36 lb*ft*sec²
Roll Moment of Inertia	=	783.16 lb*ft*sec²
Front Profile Information		
Angle Front Bumper to Hood Front	=	65.6 deg
Angle Front of Hood to Windshield Base	=	9.7 deg
Angle Front of Hood to Windshield Top	=	= 23.3 deg
Angle of Windshield	=	= 42.6 deg
Angle of Steering Tires at Max Turn	=	27.7 deg

First Approximation Crush Factors:

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independent evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #4918

2004 GMC ENVOY XUV

Provided By

4N6XPRT StifCalcs®

Registered to:

4N6XPRT SYSTEMS 8387 UNIVERSITY AVENUE LA MESA CA 91941-3842 17R-030201SC02301

Copyright 2017 - All Rights Reserved 4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA (800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Serial Number: 17R-030201SC02301

Similar Vehicle database reader

You entered: **2002 GMC ENVOY**

The Similar Vehicle Year/Model list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
2002 - 2004 Remarks:	OLDSMOBILE	BRAVADA	SUV	117
2004 - 2007 Remarks:	BUICK	RAINIER	SUV	113
2002 - 2006 Remarks:	GMC	ENVOY XL	SUV	113
2002 - 2009 Remarks:	CHEVROLET	TRAILBLAZER	SUV	113
2002 - 2009 Remarks:	GMC	ENVOY	SUV	113
2003 - 2008 Remarks:	ISUZU	ASCENDER	SUV	107
2002 - 2007 Remarks:	CHEVROLET	TRAILBLAZER EXT	SUV	113
2005 - 2009 Remarks:	SAAB	9-7X	SW	113

The Similar Vehicle List contained in 4N6XPRT StifCalcs is an extension of the free Vehicle Interchange List provided by Gregory C. Anderson of Scalia Safety Engineering through the 2012 model year. 4N6XPRT Systems® has taken over the maintenance of the Similar Vehicle List beginning with the 2013 version of the 4N6XPRT StifCalcs program. 4N6XPRT Systems® makes no warranties, either expressed or implied, with respect to this data, its quality, performance, merchantability, or fitness for any particular purpose. The entire risk as to its quality and performance is with the user. In no event will 4N6XPRT Systems® be liable for direct, indirect, incidental, or consequential damages resulting from any data presented here, even if 4N6XPRT Systems® has been advised of the possibility of such damages. The user must agree to assume full responsibility for any decisions which are based, in whole or in part, upon information obtained by using this data. Some of the listed similarities are based on estimates or memory. Most of the data are pulled from specification tables which may contain inaccuracies of their own. Use common sense - if something seems wrong, check it (and if it is wrong, let us know!).

If you have suggestions and/or corrections, we request and urge you to contact us - 4n6@4n6xprt.com.

Test Information

To at # 4019	_	NILITC	^ T+ D	-f	C:d = \/:	4	VE			
Test # 4918	<u></u>	IVH I S	A rest R	ererence	Guide Versi					
Test Date 2004-02-03	3				Contra	act#	DTNH22-01-	D-32005		
Contract/Study Title	NEW CAR A	SSESSME	NT PRO	GRAM F	RONTAL BA	RRIEF	RIMPACT TEST			
Test Objective(s)	TO OBTAIN	VEHICLE	CRASH	WORTHI	NESS AND	occı	JPANT RESTRA	INT INFO	ORMATION	
Test Type	NEW CAR A	SSESSMEI	NT TEST				Configuration	VEHICLE	INTO BARRI	ER
Impact Angle	0			5	Side Impact	Point	9999	mm	0.0	inches
					Offset Dis	tance	0	mm	0.0	inches
					Closing S	Speed	56.7	Km/Hr	35.20	MPH
Test Performer	CALSPAN									
Test Reference #	RUN2112									
Test Track Surface	CONCRETE				Cond	lition	DRY			
Ambient Temperature	21 C	69.8] F	Total N	umber of C	urves	197			
Data Recorder Type	DIGITAL DA	TA ACQUI	SITION				Data Link	UMBILIC	CAL CABLE	
Test Commentary	FY 04 NCAF	- 2004 G	MC ENV	OY XUV	M40107					
,										
			F:	ad Dawi	I£	:				
			гіх	tea barri	er Informat	ion				
D T	DICID			D. 1	Damian Di		0000		0000	1 :
Barrier Type				Pole	Barrier Diar	neter	9999	mm	9999	inches
Barrier Shape	LOAD CELL	BARRIER								
Barrier Commentary	FRONTAL F	LAT BARRI	ER WIT	H 36 LO	ADCELLS					

2004 GMC ENVOY XUV LEFT FRONT SEAT OCCUPANT

Test # 4918
Vehicle # 1 Sex MALE
Location LEFT FRONT SEAT Age 99
Position CENTER POSITION Height 9999 mm 0.0 inches
Type HYBRID III DUMMY Weight 999.0 kg 2202 pounds
Size 50 PERCENTILE
Calibration Method HYBRID III
Occupant Manufacturer MFG: ARL S/N:150
Occupant Modification NO COMMENTS
Occupant Description NO COMMENTS
Occupant Commentary CNTRH2: HEAD RESTRAINT
<u>Head</u>
Head to -
Windshielder Header 468 mm 18.4 inches Head Injury Criteria (HIC) 762
WindShield 745 mm 29.3 inches HIC Lower Time Interval (ms) 61
Seatback 9999 mm 0.0 inches HIC Upper Time Interval (ms) 97
Side Header 288 mm 11.3 inches
Side Window 360 mm 14.2 inches
Neck to Seatback 9999 mm 0.0 inches
First Contact Region (Head)
Second Contact Region (Head)
<u>Chest</u>
Chest to -
Dash <u>555</u> mm <u>21.9</u> inches Arm to Door <u>120</u> mm <u>4.7</u> inches
Steering Wheel 312 mm 12.3 inches Hip to Door 142 mm 5.6 inches
Seatback 9999 mm 0.0 inches
Chest Severity Index 633 Pelvic Peak Lateral Acceleration (g's) 0
Thoracic Trauma Index 0 Thorax Peak Acceleration (g's) 59.3
Lap Belt Peak Load 5900 Newtons 1326.4 pound Force
Shoulder Belt Peak Load 0 Newtons 0.0 pound Force
First Contact Region (Chest/Abdomen) AIR BAG
Second Contact Region (Chest/Abdomen) NONE
<u>Legs</u>
Knees to Dash 185 mm 7.3 inches Knees to Seatback 9999 mm 0.0 inches
Left Femur Peak Load -8442 Newtons -1897.8 pounds Force
Right Femur Peak Load -8168 Newtons -1836.2 pounds Force
First Contact Region (Legs) DASHPANEL
Second Contact Region (Legs)

2004 GMC ENVOY XUV LEFT FRONT SEAT OCCUPANT

4049	7					
	J					
1			Sex	MALE		
LEFT FRO	ONT SEA	AT	Age	99		
CENTER	POSITIO	ON	Height	9999 mm	0.0 inches	
HYBRID I	II DUMN	ΙΥ	Weight	999.0 kg	2202 pounds	
50 PERC	ENTILE					
bration Me	thod	HYBRID III				
nt Manufac	cturer	MFG: ARL S/N:150				
ant Modific	ation	NO COMMENTS				
pant Desci	ription	NO COMMENTS				
ant Comme	entary	CNTRH2: HEAD RESTRA	AINT			
	-					
		Restraints	<u> </u>			
nt # 1 3	POINT E	BELT				
ed Si	EAT BAC	K				
ment N	OT APPI	LICABLE				
nt Comme	ntary	SHOULDER BELT FORCE	E LIMITER			
nt # 2 [FF	RONTAL	AIRBAG				
ed S	TEERING	G WHEEL				
ment Di	EPLOYE	D PROPERLY				
nt Comme	ntary	NONE				
	CENTER HYBRID I 50 PERC bration Me at Manufac ant Modific brath Description Towns ant Common ant # 1 3 ad SI ment No ant Common ant # 2 FF ad Si ment DI	LEFT FRONT SEA CENTER POSITION HYBRID III DUMN 50 PERCENTILE bration Method at Manufacturer ant Modification cant Description ant Commentary at # 1 3 POINT E d SEAT BAC ment NOT APPI at Commentary at # 2 FRONTAL STEERING	LEFT FRONT SEAT CENTER POSITION HYBRID III DUMMY 50 PERCENTILE bration Method Int Manufacturer Ant Modification Control Description Int Commentary Restraints MESTRAINTS MOTAPPLICABLE Int Commentary The Commentary	Age CENTER POSITION Height HYBRID III DUMMY Weight 50 PERCENTILE Dration Method It Manufacturer Ant Modification Dration Description Ant Commentary Restraints That I 3 POINT BELT Ind SEAT BACK Int MOT APPLICABLE Int Commentary SHOULDER BELT FORCE LIMITER Int # 2 FRONTAL AIRBAG Int # 2 FRONTAL AIRBAG IND COMMENTS SHOULDER BELT FORCE LIMITER INT # 2 FRONTAL AIRBAG INT DEPLOYED PROPERLY	Sex MALE LEFT FRONT SEAT CENTER POSITION Height 9999 mm HYBRID III DUMMY Weight 999.0 kg 50 PERCENTILE bration Method HYBRID III III MANUfacturer MFG: ARL S/N:150 NO COMMENTS Ant Modification NO COMMENTS CNTRH2: HEAD RESTRAINT Restraints TH # 1 3 POINT BELT III SEAT BACK Ment NOT APPLICABLE IN COmmentary SHOULDER BELT FORCE LIMITER TH # 2 FRONTAL AIRBAG III STEERING WHEEL MEDITAL MALE Age 99 MMALE Age 99 MEDITAL AIRBAG AGE 1999 AGE 1999 MEDITAL AIRBAG AGE 1999 AGE 1999 MEDITAL AIRBAG AGE 1999 AGE 1	Sex MALE Age 99 CENTER POSITION Height 9999 mm 0.0 inches Weight 999.0 kg 2202 pounds From Manufacturer and Modification and Commentary Restraints Restraints

2004 GMC ENVOY XUV RIGHT FRONT SEAT OCCUPANT

Test # 4918	
Vehicle # 1 Sex MALE	
Location RIGHT FRONT SEAT Age 99	
Position CENTER POSITION Height 9999 mm 0.0 inches	
Type HYBRID III DUMMY Weight 999.0 kg 2202 pounds	
Size 50 PERCENTILE	
Calibration Method HYBRID III	
Occupant Manufacturer MFG: ARL S/N:245	
Occupant Modification NO COMMENTS	
Occupant Description NO COMMENTS	
Occupant Commentary CNTRH2: HEAD RESTRAINT	
<u>Head</u> Head to -	
Windshielder Header 443 mm 17.4 inches Head Injury Criteria (HIC) 891	
WindShield 675 mm 26.6 inches HIC Lower Time Interval (ms) 69.3	
Seatback 9999 mm 0.0 inches HIC Upper Time Interval (ms) 105.3	
Side Header 284 mm 11.2 inches	
Side Window 365 mm 14.4 inches	
Neck to Seatback 9999 mm 0.0 inches	
First Contact Region (Head)	
Second Contact Region (Head)	
<u>Chest</u>	
Chest to -	
Dash 519 mm 20.4 inches Arm to Door 124 mm 4.9 inches	
Steering Wheel 9999 mm 0.0 inches Hip to Door 148 mm 5.8 inches	
Seatback 9999 mm 0.0 inches	
Chest Severity Index 603 Pelvic Peak Lateral Acceleration (g's) 0	
Thoracic Trauma Index 0 Thorax Peak Acceleration (g's) 52.1	
Lap Belt Peak Load 6691 Newtons 1504.2 pound Force	
Shoulder Belt Peak Load 0 Newtons 0.0 pound Force	
First Contact Region (Chest/Abdomen) AIR BAG	
Second Contact Region (Chest/Abdomen) NONE	
<u>Legs</u>	
Knees to Dash 169 mm 6.7 inches Knees to Seatback 9999 mm 0.0 inches	
Left Femur Peak Load 4285 Newtons -963.3 pounds Force	
Right Femur Peak Load -3390 Newtons -762.1 pounds Force	
First Contact Region (Legs) DASHPANEL	
Second Contact Region (Legs)	

2004 GMC ENVOY XUV RIGHT FRONT SEAT OCCUPANT

-	4040						
Test #	4918						
Vehicle #	1			Sex	MALE		
Location	RIGHT FRO	ONT SE	AT	Age	99		
Position	CENTER P	POSITIO	N	Height	9999 mm	0.0 inches	
Туре	HYBRID III	DUMN	ΙΥ	Weight	999.0 kg	2202 pounds	
Size	50 PERCE	NTILE					
Cali	ibration Meth	hod	HYBRID III				
Occupar	nt Manufact	urer	MFG: ARL S/N:245				
Occupa	ant Modifica	ition	NO COMMENTS				
Occu	pant Descrip	ption	NO COMMENTS				
Occupa	ant Commer	ntary	CNTRH2: HEAD RESTRA	AINT			
			Restraints	\$			
Restrai	nt # 1 3 P	OINT B		<u>2</u>			
Mounte		AT BAC					
Deploy			ICABLE				
	nt Commen		SHOULDER BELT FORCE	E LIMITER			
rtootian			OHOOLDER BEEF TORK				
Restrai	nt # 2 FR	ONTAL	AIRBAG				
Mounte	ed DA S	SH PAN	IEL - MID				
Deploy	ment DEI	PLOYE	D PROPERLY				
Restrai	nt Commen	itary	NONE				

2004 GMC ENVOY XUV RIGHT REAR SEAT OCCUPANT

Test # 4918
Vehicle # 1 Sex NOT APPLICABLE
Location RIGHT REAR SEAT Age 1
Position NON-ADJUSTABLE SEAT Height 9999 mm 0.0 inches
Type HYBRID III DUMMY Weight 999.0 kg 2202 pounds
Size 3 YEAR OLD CHILD
Calibration Method HYBRID III
Occupant Manufacturer MFG: DENTON S/N:044
Occupant Modification UNMODIFIED
Occupant Description SUBPART P THREE YEAR OLD CHILD
Occupant Commentary CONTACTS: CNTRH1: CHEST, CNTRH2: CRS BACK AND P3 HEAD RESTRAINT
Head to -
Windshielder Header 9999 mm 0.0 inches Head Injury Criteria (HIC) 0
WindShield 9999 mm 0.0 inches HIC Lower Time Interval (ms) 0
Seatback 637 mm 25.1 inches HIC Upper Time Interval (ms) 0
Side Header 9999 mm 0.0 inches
Side Window 405 mm 15.9 inches
Neck to Seatback 9999 mm 0.0 inches
First Contact Region (Head) OTHER
Second Contact Region (Head)
Chest
Chest to -
Dash 9999 mm 0.0 inches Arm to Door 210 mm 8.3 inches
Steering Wheel 9999 mm 0.0 inches Hip to Door 262 mm 10.3 inches
Seatback 601 mm 23.7 inches
Chest Severity Index 461 Pelvic Peak Lateral Acceleration (g's) 0
Thoracic Trauma Index 0 Thorax Peak Acceleration (g's) 39.8
Lap Belt Peak Load 0 Newtons 0.0 pound Force
Shoulder Belt Peak Load 0 Newtons 0.0 pound Force
First Contact Region (Chest/Abdomen) NONE
Second Contact Region (Chest/Abdomen) NONE
<u>Legs</u>
Knees to Dash 9999 mm 0.0 inches Knees to Seatback 364 mm 14.3 inches
Left Femur Peak Load 0 Newtons 0.0 pounds Force
Right Femur Peak Load 0 Newtons 0.0 pounds Force
First Contact Region (Legs) SEAT BACK
Second Contact Region (Legs)

2004 GMC ENVOY XUV RIGHT REAR SEAT OCCUPANT

Test #	4918						
Vehicle #	1			Sex	NOT APPLI	CABLE	
Location	RIGHT R	EAR SEA	AT	Age	1		
Position	NON-AD	JUSTABL	E SEAT	Height	9999 mn	n 0.0	inches
Type	HYBRID	III DUMM	Υ	Weight	999.0 kg	2202	pounds
Size	3 YEAR	OLD CHII	LD				
Cali	ibration Me	ethod	HYBRID III				
Occupai	nt Manufa	cturer	MFG: DENTON S/N:044				
Occupa	ant Modific	cation	UNMODIFIED				
Occu	pant Desc	ription	SUBPART P THREE YEA	AR OLD CHILD			
Occupa	ant Comm	entary	CONTACTS: CNTRH1: CH	HEST, CNTRH2: CR	S BACK AND	P3 HEAI	D RESTRAINT
			Restraints	<u>5</u>			
Restrai	int # 1 C	ONVERT	IBLE CHILD SAFETY SE	AT, FRONT FACING			
Mounte	ed L	ATCH - LO	OWER ANCHORAGES AN	ND TOP TETHER			
Deploy	ment N	OT APPL	ICABLE				
Restrai	int Comme	entary	EVENFLO VANGAURD V	/ LATCH			
Restrai	int # 2 5	POINT B	ELT				
Mounte	ed C	HILD SEA	AT				
Deploy	ment N	OT APPL	ICABLE				
Restrai	int Comme	entary	EVENFLO VANGAURD V	LATCH			

2004 GMC ENVOY XUV LEFT REAR SEAT OCCUPANT

Test # 4918
Vehicle # 1 Sex NOT APPLICABLE
Location LEFT REAR SEAT Age 1
Position NON-ADJUSTABLE SEAT Height 9999 mm 0.0 inches
Type HYBRID III DUMMY Weight 999.0 kg 2202 pounds
Size 3 YEAR OLD CHILD
Calibration Method HYBRID III
Occupant Manufacturer MFG: DENTON S/N:142
Occupant Modification UNMODIFIED
Occupant Description SUBPART P THREE YEAR OLD CHILD
Occupant Commentary CONTACTS: CNTRH1: CHEST, CNTRH2: CRS BACK
<u>Head</u> Head to -
Windshielder Header 9999 mm 0.0 inches Head Injury Criteria (HIC) 739
WindShield 9999 mm 0.0 inches HIC Lower Time Interval (ms) 79.8
Seatback 602 mm 23.7 inches HIC Upper Time Interval (ms) 115.8
Side Header 9999 mm 0.0 inches
Side Window 415 mm 16.3 inches
Neck to Seatback 9999 mm 0.0 inches
First Contact Region (Head) OTHER
Second Contact Region (Head)
Chest
Chest to -
Dash 9999 mm 0.0 inches Arm to Door 226 mm 8.9 inches
Steering Wheel 9999 mm 0.0 inches Hip to Door 274 mm 10.8 inches
Seatback 566 mm 22.3 inches
Chest Severity Index 457 Pelvic Peak Lateral Acceleration (g's) 0
Thoracic Trauma Index 0 Thorax Peak Acceleration (g's) 38.3
Lap Belt Peak Load 0 Newtons 0.0 pound Force
Shoulder Belt Peak Load 0 Newtons 0.0 pound Force
First Contact Region (Chest/Abdomen) NONE
Second Contact Region (Chest/Abdomen) NONE
<u>Legs</u>
Knees to Dash 9999 mm 0.0 inches Knees to Seatback 369 mm 14.5 inches
Left Femur Peak Load 0 Newtons 0.0 pounds Force
Right Femur Peak Load 0 Newtons 0.0 pounds Force
First Contact Region (Legs) SEAT BACK
Second Contact Region (Legs)

2004 GMC ENVOY XUV LEFT REAR SEAT OCCUPANT

Test #	4918							
Vehicle #	1	Sex NOT APPLICABLE						
Location	LEFT REAR SE	Age 1						
Position	NON-ADJUSTA	BLE SEAT Height 9999 mm 0.0 inches						
Туре	HYBRID III DUM	MMY Weight 999.0 kg 2202 pounds						
Size	3 YEAR OLD C	HILD						
Cali	bration Method	HYBRID III						
Occupai	nt Manufacturer	MFG: DENTON S/N:142						
Occupa	ant Modification	UNMODIFIED						
Occu	pant Description	SUBPART P THREE YEAR OLD CHILD						
Occupa	Occupant Commentary CONTACTS: CNTRH1: CHEST, CNTRH2: CRS BACK							
		<u>Restraints</u>						
Restrai	nt # 1 CONVEI	RTIBLE CHILD SAFETY SEAT, FRONT FACING						
Mounte	ed LATCH -	LOWER ANCHORAGES AND TOP TETHER						
Deploy	ment NOT AP	PLICABLE						
Restrai	nt Commentary	COSCO ALPHA OMEGA V						
Restrai	nt # 2 5 POINT	T BELT						
Mounte	ed CHILD S	SEAT						
Deploy	ment NOT AP	PLICABLE						

COSCO ALPHA OMEGA V

Restraint Commentary

Vehicle 1 2004 GMC ENVOY XUV

Test #	4918										
VIN	1GKET12S3	4617706	7		NHTSA Te	st Vehicl	e Numbei	1			
Year	2004				Vehicle Mo	dification	Indicator	PRODUCTI	ON VEHIC	LE	
Make	GMC		Post-test S	Steering Co	olumn Shear	Capsule	Seperatio	n UNKNOWN			
Model	ENVOY XUV			Steeri	ng Column Co	ollapse M	lechanism	UNKNOWN			
Body	UTILITY VEH	IICLE									
Engine	STRAIGHT 6	INLINE I	FRONT								
Displacement	4.2 Lite	er Tra	ınsmissior	AUTON	IATIC - FOUR	WHEEL	DRIVE				
Vehicle Modific	ation(s) Descr	iption [NONE								
Vehicle Comm	entary 2004	GMC EN	VOY XUV	M40107							
Vehicle Len	gth 5300	mm	208.7 i	nches	CG	behind I	Front Axle	1672 mm	65.8	inches	
Vehicle V	Vidth 1897	mm	74.7 i	nches	Center of D	amage t	o CG Axis	9999 mm	0.0	inches	
Vehicle Whee	lbase 3280	mm	129.1 i	nches	Total Leng	gth of Ind	lentation	9999 mm	0.0	inches	
Vehicle Test W	eight 2597	KG	5724 r	oounds	Maximum S	Static Cru	ish Depth	499 mm	19.6	inches	
						Pre-Impa	ct Speed	57 kph	35.2	mph	
Vel	nicle Damage	Index 1	2FDEW3		Princi	pal Direc	tion of Fo	rce 0			
Damaga Dr	ofilo Diotopo				Cruch from	n Dra 0	Doot Too	t Damaga N	1000urom	onto	
Damage Pro				<u>.S</u>	Crush iron			t Damage N			
` _	red Left-to-Ri	Ĭ <u></u>	• ′	. « .		Pre-Tes		Post-Test	Crush		
DPD 1 3		15.3	inches	Left Bu	ımper Comer		inches	189.1 inch		inches	
DPD 2 4		17.8	inches			5235	mm	4804 mm	431	_ mm	
DPD 3 4		19.2	inches		Centerline	208.7	inches	189.0 inch	es 19.6	inches	
DPD 4 4		19.4	inches			5300	mm	4801 mm	499	mm	
DPD 5 4		19.0	inches	Right Bu	mper Corner	206.5	inches	188.9 inch	es 17.6	inches	
DPD 6 3	377 mm	14.8	inches	. ag. a		5245	mm	4798 mm			
						0240		4700	1771	¬	
Bumper F	ingagement			Sill Er	ngagement			A-pilla	r Engagem	ent	
•	pact Only)				Impact Only)			•	Impact On		
	0.0				PPLICABLE			(0.00	0.0		
	,			11017	ti i Lio/tbll				<u> </u>	_	
Moving	Test Cart			Moving 7	est Cart/Vehi	cle		Vehicle (Orientation of	on Cart	
Α	ngle			Crat	bed Angle			Movi	ng Test Ca	rt	
DIRECT	ENGAGEMEN	IT			0.0			NOT A	APPLICABL	.E	
Magnitude	of the Tilt Angle			Magniture o	f the Crabbed Angl	le		Magni	tude of the Angl	e	
Measured be	etween surface of a			Measur	e Clockwise from			Measured between	en the Vehicle C)rientation	
Rollover Test	Cart and the Groun	d	Longi	itudinal Vector	to Velocity Vector	of Vehicle		and Direction of Test Cart Motion			

Vehicle 1 2004 GMC ENVOY XUV

Test #	4918										
VIN	1GKE	Γ12S346	17706	7		NHTSA	A Test Vehicle Nu	mber 1			
Year	2004					Vehicle	Modification Indic	cator PROD	UCTIO	N VEHICL	.E
Make	GMC			Post-test	t Steerii	ng Column She	ear Capsule Sepe	eration UNKN	OWN		
Model	ENVO'	Y XUV			s	Steering Column	n Collapse Mecha	nism UNKN	OWN		
Body	UTILIT	Y VEHIC	CLE								
Engine	STRAI	GHT 6 II	NLINE	FRONT							
Displacement	4.2	Liter	Tra	ansmissio	on AU	JTOMATIC - FO	UR WHEEL DRIV	/E			
Vehicle Modific	ation(s)	Descript	tion [NONE							
Vehicle Comm	entary	2004 G	MC EN	IVOY XU	IV M40	107					
Vehicle Len	gth	5300	mm	208.7	inches	5	CG behind Front	Axle 1672	mm	65.8	inches
Vehicle V	Vidth	1897	mm	74.7	inches	S Center of	of Damage to CG	Axis 9999	mm	0.0	inches
Vehicle Whee	lbase	3280	mm	129.1	inches	s Total L	ength of Indenta	tion 9999	mm	0.0	inches
Vehicle Test W	eight	2597	KG	5724	pound	ds Maximu	m Static Crush D	epth 499	mm	19.6	inches
							Pre-Impact S _l	peed 57	kph	35.2	mph
Vel	nicle Da	mage In	dex 1	2FDEW3	}] Pr	incipal Direction o	of Force 0			

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehi de Surface forward.)

	Left	Side		Centerline Right Side							
Pr	e-Test	Pos	st-Test	Pre	-Test	Post	:-Test	Pre	-Test	Post	-Test
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Len	gth of Veh	icle at Ce	nterline				
				5300	208.7	4801	189.0				
					Engin	e Block					
				448	17.6	464	18.3				
5235	206.1	4804	189.1		Front Bui	mper Con	ner	5245	206.5	4798	188.9
					Front	of Engine					
				4708	185.4	4461	175.6				
4159	163.7	4057	159.7		Fire	ewall		4166	164.0	4068	160.2
				4199	165.3	3957	155.8				
3827	150.7	3757	147.9	Upp	oer Leadin	g Edge o	f Door	3825	150.6	3794	149.4
3770	148.4	3747	147.5	Lov	er Leadin	g Edge o	f Door	3768	148.3	3760	148.0
3850	151.6	3782	148.9		Bottom o	f 'A' Post		3850	151.6	3811	150.0
2631	103.6	2623	103.3	Up	per Trailing	g Edge o	f Door	2632	103.6	2622	103.2
2633	103.7	2622	103.2	Lo	wer Trailing	g Edge o	f Door	2632	103.6	2625	103.3
					Steerin	g Column	1				
				3287	129.4	3192	125.7				
				Center of Se	ering Colu	mn to 'A'	Post (Horiz	ontal)			
				335	13.2	334	13.1				
				Center of Ste	ering Colu	ımn to He	adliner (Ve	rtical)			
				445	17.5	597	23.5				

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2004 GMC ENVOY XUV

NHTSA Crash Test - #4918 - Front Impact

Pre/Post Depths - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 5724 pounds Vehicle Closing Speed = 35.2 mph Test Crush Length = 74.7 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 17.0 19.6 17.6

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 17.0 inches 263.4 Using a Rated No Damage Speed of 295.5 227.3 192.0 2.5mph Using a Rated No Damage Speed of 5.0mph 545.8 193.9 768.0 Using a Rated No Damage Speed of 7.5mph 750.9 163.1 1728.1 Using a Rated No Damage Speed of 3072.1 10.0mph 910.8 135.0 222.4 Average Crush = 18.5 inches Using a Rated No Damage Speed of 2.5mph 271.5 192.0 192.0 Using a Rated No Damage Speed of 768.0 5.0mph 501.5 163.7 Using a Rated No Damage Speed of 7.5mph 690.0 137.8 1728.1 Using a Rated No Damage Speed of 10.0mph 837.0 114.0 3072.1 198.2 Maximum Crush = 19.6 inches Using a Rated No Damage Speed of 2.5mph 256.3 171.0 192.0 Using a Rated No Damage Speed of 5.0mph 473.4 145.9 768.0 1728.1 Using a Rated No Damage Speed of 7.5mph 651.3 122.7 790.0 Using a Rated No Damage Speed of 10.0mph 101.6 3072.1

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	19.6	32.1	-3.1	-9.7

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 25.3

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Registered Owner: 4N6XPRT SYSTEMS

Registered Owner: 4N6XPRT SYSTEMS

Serial Number: 17R-030201SC02301

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

2004 GMC ENVOY XUV

NHTSA Crash Test - #4918 - Front Impact

Damage Profile Distances - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 5724 pounds Vehicle Closing Speed = 35.2 MPH Test Crush Length = 74.7 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	(Dana Cida)
(Driver Side)	15.3	17.8	19.2	19.4	19.0	14.8	(Pass Side)

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 14.8 inches 347.6 Using a Rated No Damage Speed of 339.4 300.0 192.0 2.5mph Using a Rated No Damage Speed of 5.0mph 626.9 255.8 768.0 Using a Rated No Damage Speed of 7.5mph 862.5 215.2 1728.1 Using a Rated No Damage Speed of 10.0mph 1046.2 178.1 3072.1 Average Crush = 16.3 inches 286.5 Using a Rated No Damage Speed of 2.5mph 308.2 247.3 192.0 Using a Rated No Damage Speed of 569.2 768.0 5.0mph 210.9 Using a Rated No Damage Speed of 7.5mph 783.1 177.5 1728.1 Using a Rated No Damage Speed of 10.0mph 949.9 146.9 2139.1 202.3 Maximum Crush = 19.4 inches Using a Rated No Damage Speed of 2.5mph 258.9 174.6 192.0 Using a Rated No Damage Speed of 5.0mph 478.3 148.9 768.0 Using a Rated No Damage Speed of 7.5mph 658.0 125.3 1728.1 Using a Rated No Damage Speed of 10.0mph 798.1 103.7 3072.1

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	19.4	31.9	-3.3	-10.3

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 25.5

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2002 - 2009

Make: GMC Model: ENVOY

Test	Vehicle	No							
Number	Info	Damage	Average	Closing	V	ehicle	Width	า	
		Speed	Crush	Speed	S t	iffness	s Valu	ı e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Κv	Factor
5036	2002 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	18.2	35.2	473.0	157.2	711.6	213.5	27.3
5303	2005 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	17.3	35.0	490.0	170.0	706.2	231.4	28.3
4918	2004 GMC ENVOY XUV UTILITY VEHICLE	5.0	16.3	35.2	568.7	210.5	768.0	286.0	30.4
4244	2002 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	14.5	35.1	575.8	238.3	695.5	324.1	33.9
4416	2002 CHEVROLET TRAILBLAZER FIVE DOOR HAT	5.0	13.4	34.8	607.5	270.9	681.3	369.4	36.2
5572	2006 CHEVROLET TRAILBLAZER EXT UTILITY VE	5.0	14.6	35.2	650.3	268.9	786.4	365.4	33.9
5537	2005 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	12.6	34.9	663.4	316.0	696.3	430.5	38.8
		Average ((AVG)		575.5	233.1	720.8	317.2	32.7
	ı	Vinimum	(MIN)		473.0	157.2	681.3	213.5	27.3
	М	aximum	(MAX)		663.4	316.0	786.4	430.5	38.8
	Standard Deviation (STDev-sa	ample)		73.3	57.5	40.1	78.5	4.2
	Numl	per of Tes	sts (n)	7					

Serial Number: 17R-030201SC02301

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2002 - 2009

Make: GMC Model: ENVOY

Test Numbe	Vehicle r Info	No Damage Speed (mph)	Max Crush (inch)	•	•	ehicle iffness B		•	Crush Factor
4873	2003 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	23.1	35.2	362.7	94.8	693.9	128.8	21.4
5303	2005 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	21.6	35.0	392.8	109.3	706.2	148.7	22.7
5036	2002 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	20.8	35.2	414.0	120.4	711.6	163.5	23.9
4416	2002 CHEVROLET TRAILBLAZER FIVE DOOR HAT	5.0	18.9	34.8	430.5	136.0	681.3	185.5	25.7
5537	2005 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	19.3	34.9	432.0	134.0	696.3	182.5	25.3
5538	2005 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	12.3	25.0	456.1	148.3	701.0	231.6	20.4
4244	2002 CHEVROLET TRAILBLAZER UTILITY VEHICLE	5.0	18.2	35.1	459.4	151.7	695.5	206.3	27.0
4918	2004 GMC ENVOY XUV UTILITY VEHICLE	5.0	19.6	35.2	472.3	145.2	768.0	197.3	25.2
5572	2006 CHEVROLET TRAILBLAZER EXT UTILITY VE	5.0	18.9	35.2	501.1	159.7	786.4	217.0	26.1
4512	2002 CHEVROLET TRAILBLAZER FIVE DOOR HAT	5.0	11 .5	29.8	587.5	253.9	679.8	366.4	31.0
4675	2003 CHEVROLET TRAILBLAZER OTHER	5.0	10.5	29.7	651.2	306.8	691.1	443.8	33.6
		Average (AVG)		469.1	160.0	710.1	224.7	25.7
	I	Minimum	(MIN)		362.7	94.8	679.8	128.8	20.4
	M	aximum (MAX)		651.2	306.8	786.4	443.8	33.6
	Standard Deviation	(STDev-sa	mple)		84.6	63.6	34.7	95.5	3.9
	Num	ber of Tes	ts (n)	11					

Expert VIN DeCoder®

Copyright© 1991-2016 Expert Witness Services, Inc. All Rights Reserved

Version Number 3.6.0.9

DeCoded VIN: 1C3LC56R18N244752

Model: 2008 Chrysler Sebring Touring 4-Door Sedan

Engine Size: 2.7 L/ 167 cu.in.

Engine Description: V-6 cylinder with Dual Overhead Cam

Horse Power: 200 @ 5800 rpm

Torque: 190 1b-ft @ 4850 rpm

Injection System: Multi-Port Fuel Injection (MFI)

PSI: 58 psi Ignition: Electronic

Manufacturer: Chrysler

Assembly Plant: Sterling Hts. MI

Drive Wheels: This is a Front Wheel Drive vehicle w/ Dual Front and Front Side Air

The First through Third characters (1C3) indicate a Chrysler Passenger Car made in the U.S.A.

The Fourth character (L) indicates Dual Front and Front Side Air Bags

The Fifth through Sixth characters (C5) indicate a Sebring

The Seventh character (6) indicates a 4-Door Sedan

The Eighth character (R) indicates the OEM engine: 2.7 L/ 167 cu.in., L4, DOHC

The Ninth character (the check digit) is entered as 1.

The VIN appears Valid, the calculated value is 1.

The Tenth character (8) indicates the model year 2008

The Eleventh character (N) indicates the vehicle was made in the assembly plant in Sterling Hts, MI

The Twelfth through Seventeenth characters (244752) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.7.1.2 Copyright 2017 - All Rights Reserved

PROVIDED BY: 4N6XPRT Systems 8387 University Avenue La Mesa CA 91941

10/3/2017

2008 CHRYSLER SEBRING 4 DOOR SEDAN

Curb Weight: Curb Weight Distribution - Front:	3287 lbs. 60 %	Rear:	1491 kg. 40 %
Gross Vehicle Weight Rating:	4600 lbs.		2087 kg.
Number of Tires on Vehicle: Drive Wheels:	FRONT		
Horizontal Dimensions Total Length Wheelbase:	Inches 191 109	Feet 15.92 9.08	Meters 4.85 2.77
Front Bumper to Front Axle: Front Bumper to Front of Front Well: Front Bumper to Front of Hood: Front Bumper to Base of Windshield: Front Bumper to Top of Windshield:	38 22 7 47 77	3.17 1.83 0.58 3.92 6.42	0.97 0.56 0.18 1.19 1.96
Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well: Rear Bumper to Rear of Trunk: Rear Bumper to Base of Rear Window:	44 26 7 22	3.67 2.17 0.58 1.83	1.12 0.66 0.18 0.56
Width Dimensions Maximum Width: Front Track: Rear Track:	71 62 62	5.92 5.17 5.17	1.80 1.57 1.57
Vertical Dimensions Height: Ground to -	59	4.92	1.50
Front Bumper (Top) Headlight - center Hood - top front: Base of Windshield Rear Bumper - top: Trunk - top rear: Base of Rear Window:	22 29 32 40 27 43 44	1.83 2.42 2.67 3.33 2.25 3.58 3.67	0.56 0.74 0.81 1.02 0.69 1.09 1.12

Expert AutoStats®

2008 CHRYSLER SEBRING 4 DOOR SEDAN

Interior Dimensions

Inches 56 Feet Meters 4.67 1.42

Front Seat Shoulder Width Front Seat to Headliner

40 42 3.33 1.02 3.50 1.07

Rear Seat Shoulder Width Rear Seat to Headliner

56 38 38 4.67 3.17 3.17

1.42 0.97 0.97

Seatbelts:

3pt - front and rear

Airbags: FRONT SEAT AIRBAGS + SIDE AIRBAGS

Front Leg Room - seatback to floor (max)

Front Leg Room - seatback to floor (min)

Steering Data

Turning Circle (Diameter)

444

37

11.28

Steering Ratio: Wheel Radius:

Tire Size (OEM): P215/65R16

Acceleration & Braking Information

Brake Type:

ALL DISC

ABS System:

ALL WHEEL ABS

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

:1

138.0 ft

t = 3.1 sec

-28.0 | ft/sec² a =

G-force = -0.87

Acceleration:

0 to 30mph 0 to 60mph

3.3 t = 9.5 t =

13.3 a = 9.3 a =

ft/sec² ft/sec²

ft/sec²

G-force = 0.41

45 to 65mph

sec 5.3 t = sec

sec

5.5 a =

G-force = 0.29 G-force = 0.17

Transmission Type:

4spd AUTOMATIC

Notes:

Federal Bumper Standard Requirements: This vehicles Rated Bumper Strength:

2.5 2.5

mph mph

N.S.D.C =

2007 - 2009

29.5

28.1

dea

dea

2008 CHRYSLER SEBRING 4 DOOR SEDAN

Other Information

1.34	Stable

=	43.60
=	65.40
=	35.50
=	23.16
=	88.99
=	115.02
=	81.60
=	109.40
:	
=	2179.61 lb*ft*sec²
=	2105.13 lb*ft*sec²
=	441.66 lb*ft*sec²
=	55.0 deg
=	11.3 deg
=	19.7 deg
	= = = = = = = = =

First Approximation Crush Factors:

Angle of Steering Tires at Max Turn

Angle of Windshield

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

$$V(mph) = \sqrt{(30 * CF * MID)}$$
KE Equivalent Speed (Front/Rear/Side) = 21 CF
Bullet vehicle IMPACT SPEED estimation
based on TARGET VEHICLE damage ONLY = 27 CF
(Tested for Rear/Side Impact only)

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independent evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Expert VIN DeCoder®

Copyright© 1991-2016 Expert Witness Services, Inc. All Rights Reserved

Version Number 3.6.0.9

DeCoded VIN: 1G2HY54KX24175618

Model: 2002 Pontiac Bonneville SLE 4 Door Sedan

Engine Size: 3.8L / 231cu.in.

Engine Description: V6 Cylinder with Overhead Valves (OHV)

Horse Power: 205 @ 5200 rpm

Torque: 230 1b-ft at 4000 rpm

Injection System: Multi-Port Fuel Injection (MFI)

PSI: 41-47 psi Ignition: Electronic

Manufacturer: Buick, Olsmobile, Cadillac

Assembly Plant: Orion, MI

Drive Wheels: This is a Front Wheel Drive vehicle w/ Active (Manual) Seatbelts +
Front and Side Air Bags

The First through Third characters (1G2) indicate a Pontiac Passenger Car made in the $\frac{11.5}{10.00}$

The Fourth through Fifth characters (HY) indicate a Bonneville SLE

The Sixth character (5) indicates a 4 Door Sedan

The Seventh character (4) indicates Active (Manual) Seatbelts + Front and Side Air Bags

The Eighth character (K) indicates the OEM engine: 3.8L / 231cu.in., V6 OHV

The Ninth character (the check digit) is entered as X.

The VIN appears Valid, the calculated value is 10. (The display Character should be X)

The Tenth character (2) indicates the model year 2002

The Eleventh character (4) indicates the vehicle was made in the assembly plant in Orion, MI

The Twelfth through Seventeenth characters (175618) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.7.1.2 Copyright 2017 - All Rights Reserved

PROVIDED BY: 4N6XPRT Systems 8387 University Avenue La Mesa CA 91941

10/3/2017

2002 PONTIAC BONNEVILLE 4 DOOR SEDAN

2002 PONTIAC BUNNEVILLE 4 DOUR SEDAN			
Curb Weight: Curb Weight Distribution - Front:	3700 lbs.		678 kg. 89 %
Gross Vehicle Weight Rating:	4808 1bs.	2:	181 kg.
Number of Tires on Vehicle: Drive Wheels:	4 FRONT		
Horizontal Dimensions Total Length Wheelbase:	Inches 203 112	Feet 16.92 9.33	5.16 2.84
Front Bumper to Front Axle: Front Bumper to Front of Front Well: Front Bumper to Front of Hood: Front Bumper to Base of Windshield: Front Bumper to Top of Windshield:	44 28 6 53 87	3.67 2.33 0.50 4.42 7.25	1.12 0.71 0.15 1.35 2.21
Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well: Rear Bumper to Rear of Trunk: Rear Bumper to Base of Rear Window:	47 32 7 30	3.92 2.67 0.58 2.50	1.19 0.81 0.18 0.76
Width Dimensions Maximum Width: Front Track: Rear Track:	74 63 62	6.17 5.25 5.17	1.88 1.60 1.57
Vertical Dimensions Height: Ground to -	57	4.75	1.45
Front Bumper (Top) Headlight - center Hood - top front: Base of Windshield Rear Bumper - top: Trunk - top rear: Base of Rear Window:	21 27 28 37 25 39	1.75 2.25 2.33 3.08 2.08 3.25 3.50	0.53 0.69 0.71 0.94 0.64 0.99 1.07

Expert AutoStats®

2002 PONTIAC BONNEVILLE 4 DOOR SEDAN

Front Seat Shoulder Width Front Seat to Headliner

Front Leg Room - seatback to floor (max)

Rear Seat Shoulder Width
Rear Seat to Headliner
Front Leg Room - seatback to floor (min)

58 37 38

Inches

58

39

3.58 4.83 3.08 3.17

Feet

4.83

3.25

1.47 0.94 0.97

Meters

1.47

0.99

1.09

Seatbelts:

3pt - front and rear

Airbags: FRONT SEAT AIRBAGS + SIDE AIRBAGS

Steering Data

Turning Circle (Diameter)

Steering Ratio: :1
Wheel Radius:

Tire Size (OEM): **P225/60R16**

480

12

40

1.00

12.19

0.30

Acceleration & Braking Information

Brake Type: ALL DISC

ALL WHEEL ABS

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

d = 125.0 ft

t = **2.8** sec

 $a = \boxed{-30.9}$ ft/sec²

G-force = -0

-0.96

Acceleration:

ABS System:

0 to 30mph 0 to 60mph

t = 2.9 t = 8.0 t = 6.3

9 sec0 sec3 sec

a = 15.2 a = 11.0 a = 4.7

ft/sec² ft/sec² ft/sec² G-force = G-forc

G-force =

0.47 0.34 0.15

Transmission Type:

45 to 65mph

4spd AUTOMATIC

Notes:

Federal Bumper Standard Requirements: This vehicles Rated Bumper Strength: 2.5 2.5

mph mph

N.S.D.C =

2002 - 2005

2002 PONTIAC BONNEVILLE 4 DOOR SEDAN

Other Information

Tip-Over Stability Ratio =	1.40		Stable	
NHTSA Star Rating (calculated)			****	
Center of Gravity (No Load):	'			
Inches behind front axle	=		43.68	
Inches in front of rear axle	=		68.32	
Inches from side of vehicle	=		37.00	
Inches from ground	=		22.37	
Inches from front corner	=		95.17	
Inches from rear corner	=		121.11	
Inches from front bumper	=		87.68	
Inches from rear bumper	=		115.32	
Moments of Inertia Approximations (No Load):				
Yaw Moment of Inertia	=	ſ	2605.00	lb*ft*sec²
Pitch Moment of Inertia	=	ľ	2514.00	lb*ft*sec²
Roll Moment of Inertia	=	ľ	516.00	lb*ft*sec²
Front Profile Information				
Angle Front Bumper to Hood Front	=		49.4	deg
Angle Front of Hood to Windshield Base	=		10.8	deg
Angle Front of Hood to Windshield Top	=		18.4	deg
Angle of Windshield	=		27.9	deg

First Approximation Crush Factors:

Angle of Steering Tires at Max Turn

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independent evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

26.7

dea

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #4837

2004 CADILLAC DE VILLE

Provided By

4N6XPRT StifCalcs®

Registered to:

4N6XPRT SYSTEMS 8387 UNIVERSITY AVENUE LA MESA CA 91941-3842 17R-030201SC02301

Copyright 2017 - All Rights Reserved 4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA (800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Similar Vehicle database reader

You entered: 2002 PONTIAC BONNEVILLE

The Similar Vehicle Year/Model list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
1998 - 2004 Remarks:	CADILLAC	SEVILLE	4D	112.2
2000 - 2005 Remarks: MOVES	BUICK TO PARK AVENUE CHAS	LESABRE SSIS	2D, 4D, SW	112.2, 127
1997 - 2005 Remarks:	BUICK	PARK AVENUE	2D, 4D	113.8
2000 - 2005 Remarks: MOVES	CADILLAC TO NEW SEVILLE CHAS	DEVILLE	2D, 4D	115.3
1995 - 1999 Remarks: BASED O	BUICK ON AURORA CHASSIS	RIVIERA	2D	113.8
1995 - 1999 Remarks:	OLDSMOBILE	AURORA	4D	113.8
2000 - 2005 Remarks:	PONTIAC	BONNEVILLE	2D, 4D, SW	112.2, 127

The Similar Vehicle List contained in 4N6XPRT StifCalcs is an extension of the free Vehicle Interchange List provided by Gregory C. Anderson of Scalia Safety Engineering through the 2012 model year. 4N6XPRT Systems® has taken over the maintenance of the Similar Vehicle List beginning with the 2013 version of the 4N6XPRT StifCalcs program. 4N6XPRT Systems® makes no warranties, either expressed or implied, with respect to this data, its quality, performance, merchantability, or fitness for any particular purpose. The entire risk as to its quality and performance is with the user. In no event will 4N6XPRT Systems® be liable for direct, incidental, or consequential damages resulting from any data presented here, even if 4N6XPRT Systems® has been advised of the possibility of such damages. The user must agree to assume full responsibility for any decisions which are based, in whole or in part, upon information obtained by using this data. Some of the listed similarities are based on estimates or memory. Most of the data are pulled from specification tables which may contain inaccuracies of their own. Use common sense - if something seems wrong, check it (and if it is wrong, let us know!).

If you have suggestions and/or corrections, we request and urge you to contact us - 4n6@4n6xprt.com.

Serial Number: 17R-030201SC02301

Registered Owner: 4N6XPRT SYSTEMS

Test Information

Test # 4837		1	NHTSA Te	est Refere	ence (Guide Versic	n #	V5			
Test Date 2003-11-1	7					Contra	ct#	DTNH22-01-	D-02005		
Contract/Study Title	35 MPH N	CAP FF	RONTAL	- 2004 (CADIL	LLAC DEVIL	LE D	HS 4 DOOR SE	DAN		
Test Objective(s)	OBTAIN A	TD AN	D VEHIC	LE DATA	١						
Test Type	OPTIONAL	. NEW	CAR ASS	SESSMEN	NT TE	ST		Configuration	VEHICLE	INTO BARRI	ER
Impact Angle	0				Si	ide Impact I	Point	0	mm	0.0	inches
						Offset Dist	tance	0	mm	0.0	inches
						Closing S	peed	56.0	Km/Hr	34.80	MPH
Test Performer	KARCO EN	GINEE	RING								
Test Reference #	G40100										
Test Track Surface	CONCRETE					Cond	ition	DRY			
Ambient Temperature	14 C	57.	2 F	To	tal Nu	ımber of Cu	ırves	185			
Data Recorder Type	DIGITAL D	ATA A	CQUISIT	ION				Data Link	OTHER		
Test Commentary	DATALINK	IS NO	NE, ON-	BOARD	DAS						
				Fixed E	Barrie	er Informati	ion				
											_
Barrier Type					Pole	Barrier Dian	neter	0	mm	0	inches
Barrier Shape	LOAD CELL	. BARR	IER								
Barrier Commentary	NO COMM	IENTS									

2004 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test # 4837	
Vehicle # 1	Sex MALE
Location LEFT FRONT SE	
Position CENTER POSIT	Height 0 mm 0.0 inches
Type HYBRID III DUM	MY Weight 0.0 kg 0 pounds
Size 50 PERCENTILE	
Calibration Method	HYBRID III
Occupant Manufacturer	VECTOR, S/N:035
Occupant Modification	UNMODIFIED
Occupant Description	NO COMMENTS
Occupant Commentary	NO COMMENTS
Hood to	<u>Head</u>
Head to - Windshielder Header 350	mm 13.8 inches Head Injury Criteria (HIC) 414
WindShield 62	
Seatback 0	5 mm 24.6 inches HIC Lower Time Interval (ms) 56.1 mm 0.0 inches HIC Upper Time Interval (ms) 92
Side Header 28	
Side Window 36	
	mm 0.0 inches
First Contact F	
Second Contact R	
Cooma Comacin	Sgion (Houd)
	<u>Chest</u>
Chest to -	
Dash 542	mm 21.3 inches Arm to Door 155 mm 6.1 inches
Steering Wheel 300	mm 11.8 inches Hip to Door 170 mm 6.7 inches
Seatback 0	mm 0.0 inches
Chest Severity Index 0	Pelvic Peak Lateral Acceleration (g's) 0
Thoracic Trauma Index 0	Thorax Peak Acceleration (g's) 49.2
Lap	Belt Peak Load 5194 Newtons 1167.7 pound Force
Shoulder	Belt Peak Load 4574 Newtons 1028.3 pound Force
First Contact Region (Ch	nest/Abdomen) AIR BAG
Second Contact Region (Ch	lest/Abdomen) NONE
	Legs
Knees to Dash 170	mm 6.7 inches Knees to Seatback mm 0.0 inches
Left Femur Peak Load	Newtons -954.5 pounds Force
Right Femur Peak Load -5	Newtons -1190.1 pounds Force
First Contact	Region (Legs) DASHPANEL
Second Contact F	Region (Legs)

2004 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test #	4837							
Vehicle #	1			Sex	MALE			
Location	LEFT FRO	NT SEA	AT	Age	0			
Position	CENTER P	OSITIC	N	Height	0 mn	n 0.0	inches	
Туре	HYBRID III	DUMM	ΙΥ	Weight	0.0 kg	0	pounds	
Size	50 PERCE	NTILE						
Cali	ibration Met	hod	HYBRID III					
Occupai	nt Manufact	urer	VECTOR, S/N:035					
Occupa	ant Modifica	ition	UNMODIFIED					
Occupant Description NO COMMENTS								
Occupant Commentary NO COMMENTS								
			Restraints	<u>s</u>				
Restrai	nt # 1 3 P	OINT B	ELT					
Mounte	ed BE	LT - CO	NVENTIONAL MOUNT					
Deploy	ment DE	PLOYE	D PROPERLY					
Restrai	nt Commen	itary	NO COMMENTS					
Doctrai	nt# 2 FR	ONITAL	AIRBAG					
Mounte	=		S WHEEL					
Deploy			D PROPERLY					
Restrai	nt Commen	itary	NO COMMENTS					

2004 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test # 48	837							
Vehicle # 1				Se	ex MAL	.E		\neg
Location R	IGHT FRONT S	EAT			ge 0			_
Position C	ENTER POSITI	ON] Heig	ht 0	mm 0. 0	inche	S
Type H	YBRID III DUMI	ИY] Wei	ht 0.0	kg 0	poun	ds
Size 50	0 PERCENTILE]				
Calibra	ation Method	HYBRID III						
Occupant I	Manufacturer	VECTOR, S/N	:034					
Occupant	t Modification	UNMODIFIED						
Occupa	nt Description	N0 COMMENT	ΓS					
Occupant	Commentary	NO COMMEN	TS					
Head to -			<u>Head</u>					
Windshielde	er Header 360	mm 14.	2 inche	es Head Inju	ny Critoria	a (HIC) 43	Ω	
	/indShield 645			-	•	me Interval (
**	Seatback 0	mm 0.0	inche			me Interval (· · =	
Sic	de Header 270		==		оррог ги	ino intorvar ((1110) <u>[00.7]</u>	
	e Window 340							
Neck to Seath			nches					
	First Contact Ro		AIR BAG					
	cond Contact Re	· · · · / =						
			Chest					
Chest to -								
Da	sh 568 n	nm 22.4 i	nches	Arm to Door	48	mm 1.9	inches	
Steering Wh	neel 0 n	nm 0.0 i	nches	Hip to Door	160	mm 6.3	inches	
Seatba	ack 0 n	nm [0.0 i	nches					
	erity Index 0		Р	elvic Peak Later		ίο ,	0	l
Thoracic Trau					_	eration (g's)	46.9	I
	•	Belt Peak Load		Newtons 1001	= '			
		Belt Peak Load		Newtons 1181.	2 poun	d Force		1
		est/Abdomen)						I
Second Cont	act Region (Ch	est/Abdomen)[<u>N</u>	NONE					
			<u>Legs</u>					
Knees to Da	ash 155 n	nm 6.1 i	nches K	nees to Seatbac	k 0	mm 0.0	inches	
Left Femur	Peak Load 3	706 Ne	wtons	-833.1 po	unds For	ce		
Right Femur F	Peak Load 4	735 Ne	wtons	-1064.5 po	unds For	ce		
	First Contact F	Region (Legs)	DASHPANE	<u>EL</u>				
Se	cond Contact R	Region (Legs)						

2004 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test #	4837							
Vehicle #	1			Sex	MALE			
Location	RIGHT FR	ONT SE	AT	Age	0			
Position	CENTER	POSITIO	ON	Height	0 mr	n 0.0	inches	
Туре	HYBRID II	I DUMN	IY	Weight	0.0 kg	0	pounds	
Size	50 PERCE	NTILE						
Cali	ibration Me	thod	HYBRID III					
Occupai	nt Manufac	turer	VECTOR, S/N:034					
Occupant Modification UNMODIFIED								
Occupant Description NO COMMENTS								
Occupant Commentary NO COMMENTS								
			Restraints	<u> </u>				
Restrai	nt # 1 3 i	POINT E	BELT	_				
Mounte	ed BE	LT - CO	NVENTIONAL MOUNT					
Deploy	ment DE	PLOYE	D PROPERLY					
Restrai	nt Comme	ntary	NO COMMENTS					
Poetrai	int#2 FR	ONTAL	AIRBAG					
Mounte			IEL - TOP					
Deploy	ment DE	PLOYE	D PROPERLY					
Restrai	int Commei	ntary	NO COMMENTS					

2004 CADILLAC DE VILLE RIGHT REAR SEAT OCCUPANT

Test # 4837	
Vehicle # 1 Sex NOT	APPLICABLE
Location RIGHT REAR SEAT Age 0	
Position NOT APPLICABLE Height 0	mm 0.0 inches
Type HYBRID III DUMMY Weight 0.0	kg 0 pounds
Size 3 YEAR OLD CHILD	
Calibration Method HYBRID III	
Occupant Manufacturer FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:13	39
Occupant Modification UNMODIFIED	
Occupant Description NO COMMENTS	
Occupant Commentary NO COMMENTS	
<u>Head</u>	
Head to -	
Windshielder Header 0 mm 0.0 inches Head Injury Criteria	(HIC) 571
WindShield 0 mm 0.0 inches HIC Lower Tim	ne Interval (ms) 74.5
Seatback 618 mm 24.3 inches HIC Upper Tim	ne Interval (ms) 110.5
Side Header 0 mm 0.0 inches	
Side Window 400 mm 15.7 inches	
Neck to Seatback 0 mm 0.0 inches	
First Contact Region (Head) NONE	
Second Contact Region (Head)	
<u>Chest</u>	
Chest to -	
Dash 0 mm 0.0 inches Arm to Door 305	mm 12.0 inches
Steering Wheel 0 mm 0.0 inches Hip to Door 350	mm 13.8 inches
Seatback 590 mm 23.2 inches	
Chest Severity Index 0 Pelvic Peak Lateral Accelera	ation (g's) 0
Thoracic Trauma Index 0 Thorax Peak Acceler	ation (g's) 40.1
Lap Belt Peak Load 0 Newtons 0.0 pound	Force
Shoulder Belt Peak Load 0 Newtons 0.0 pound	Force
First Contact Region (Chest/Abdomen) NONE	
Second Contact Region (Chest/Abdomen) NONE	
<u>Legs</u>	
Knees to Dash 0 mm 0.0 inches Knees to Seatback 402	mm 15.8 inches
Left Femur Peak Load 0 Newtons 0.0 pounds Force	
Right Femur Peak Load 0 Newtons 0.0 pounds Force	
First Contact Region (Legs) NONE	
Second Contact Region (Legs)	

2004 CADILLAC DE VILLE RIGHT REAR SEAT OCCUPANT

Test #	4837					
Vehicle #	1		Sex	NOT APPLIC	ABLE	
Location	RIGHT REAR SE	AT	Age	0		
Position	NOT APPLICAB	LE	Height	0 mm	0.0 inches	
Туре	HYBRID III DUM	MY	Weight	0.0 kg	<pre>pounds</pre>	
Size	3 YEAR OLD CH	IILD				
Cali	ibration Method	HYBRID III				
Occupa	nt Manufacturer	FIRST TECHNOLOGY SA	AFETY SYSTEMS,	S/N:139		
Occupa	ant Modification	UNMODIFIED				
Occu	pant Description	NO COMMENTS				
Occupa	ant Commentary	NO COMMENTS				
		Restraints	<u>5</u>			
Restrai	nt # 1 CONVER	TIBLE CHILD SAFETY SE	AT, FRONT FACING	}		
Mounte	ed LATCH -	LOWER ANCHORAGES AN	ND TOP TETHER			
Deploy	ment NOT APF	LICABLE				
Restrai	nt Commentary	MANUFACTURER:EVEN	FLO, MODEL:VAN	GUARD 5, MO	DEL#3691261 P1	
Restrai	nt # 2 5 POINT	RFIT				
Mounte						
Deploy	ment NOT APF	PLICABLE				

Restraint Commentary

NO COMMENTS

2004 CADILLAC DE VILLE LEFT REAR SEAT OCCUPANT

Test # 4837	
Vehicle # 1	Sex NOT APPLICABLE
Location LEFT REAR SEAT	Age 0
Position NOT APPLICABLE	Height 0 mm 0.0 inches
Type HYBRID III DUMMY	Weight 0.0 kg 0 pounds
Size 3 YEAR OLD CHILD	
Calibration Method HYBRID III	
Occupant Manufacturer FIRST TECHNOLOGY SAF	FETY SYSTEMS, S/N:082
Occupant Modification UNMODIFIED	
Occupant Description NO COMMENTS	
Occupant Commentary CNTRH1, HEAD CONTACT	ED THE SEAT BAR
Head to -	
Windshielder Header 0 mm 0.0 inches	Head Injury Criteria (HIC) 766
WindShield 0 mm 0.0 inches	
Seatback 622 mm 24.5 inches	` /
Side Header 0 mm 0.0 inches	
Side Window 400 mm 15.7 inches	
Neck to Seatback 0 mm 0.0 inches	
First Contact Region (Head) OTHER	
Second Contact Region (Head)	
J (, <u></u>	
<u>Chest</u>	
Chest to -	
Dash 0 mm 0.0 inches	Arm to Door 280 mm 11.0 inches
Steering Wheel 0 mm 0.0 inches	Hip to Door 348 mm 13.7 inches
Seatback 620 mm 24.4 inches	
Chest Severity Index 0 Pel	vic Peak Lateral Acceleration (g's)
Thoracic Trauma Index 0	Thorax Peak Acceleration (g's) 41.3
Lap Belt Peak Load 0 Ne	ewtons 0.0 pound Force
Shoulder Belt Peak Load 0 Ne	ewtons 0.0 pound Force
First Contact Region (Chest/Abdomen) NONE	
Second Contact Region (Chest/Abdomen) NONE	
<u>Legs</u>	
	ees to Seatback 415 mm 16.3 inches
Left Femur Peak Load 0 Newtons 0.0	
Right Femur Peak Load 0 Newtons 0.0	
First Contact Region (Legs) NONE	
Second Contact Region (Legs)	
J \ J /	

2004 CADILLAC DE VILLE LEFT REAR SEAT OCCUPANT

Test #	4837							
Vehicle #	1			Sex	NOT APPLICABLE			
Location	LEFT F	REAR SEA	Γ	Age	0			
Position	NOT A	PPLICABL	E	Height	0 mm 0.0 in	ches		
Type	HYBRI	D III DUMN	IY	Weight	0.0 kg 0 pc	ounds		
Size	3 YEA	R OLD CHI	LD					
Cal	libration l	Method	HYBRID III					
Occupa	nt Manu	facturer	FIRST TECHNOLOGY SAFE	TY SYSTEMS,	S/N:082			
Occupant Modification UNMODIFIED			UNMODIFIED					
Occupant Description NO COMMENTS			NO COMMENTS					
Occupant Commentary CNTRH1, HEAD CONTACTED THE SEAT BAR								
			Restraints					
Restrai	int # 1	CONVERT	IBLE CHILD SAFETY SEAT,	FRONT FACING	}			
Mounte	ed	LATCH - L	OWER ANCHORAGES AND	TOP TETHER				
Deploy	ment	NOT APPI	ICABLE					
Restrai	Restraint Commentary MANUFACTURER:COSCO, MODEL:REGAL RIDE, MODEL#22-139-MON							
Restrai	int # 2	5 POINT E	RFIT					
Mounte		CHILD SE						
Deploy		NOT APPI						
	int Comr		NO COMMENTS					
· tootiai	00.1111							

Vehicle 1 2004 CADILLAC DE VILLE

Test #	4837										
VIN	1G6KE54Y	/64U1524	37		NHTSA Te	est Vehicle	e Number	1			
Year	2004				Vehicle Mo	dification	Indicator	PRODU	CTION	VEHICL	E
Make	CADILLAC		Post-test	Steering Co	olumn Shear	Capsule	Seperatio	n UNKNO	WN		
Model	DE VILLE			Steerii	ng Column Co	ollapse M	echanism	UNKNO	WN		
Body	FOUR DOO	OR SEDAN									
Engine	V8 TRANS	VERSE FF	RONT								
Displacement	4.6 L	iter Tr	ansmissio	n AUTON	ATIC - FRON	IT WHEEL	DRIVE				
Vehicle Modific	cation(s) Des	scription	UNMODIF	FIED							
Vehicle Comm	entary DH	S MODEL									
Vehicle Len	ngth 525	8 mm	207.0	inches	CG	behind F	ront Axle	1238	mm [48.7	inches
Vehicle V	Width 189	1 mm	74.4	inches	Center of D	Damage to	o CG Axis	0 1	mm [0.0	inches
Vehicle Whee	elbase 293	34 mm	115.5	inches	Total Leng	gth of Ind	entation	1291	mm [50.8	inches
Vehicle Test W	eight 205	4 KG	4527	pounds	Maximum S	Static Cru	sh Depth	615	mm [24.2	inches
						Pre-Impa	ct Speed	56	kph [34.8	mph
Vel	hicle Damag	ge Index [1	2FDEW6		Princi	ipal Direct	ion of Fo	ce 0			
Damaga Pr	ofilo Dista	nco Moo	curomon	to	Cruch from	n Dro 8 I	Doct Toc	t Damaa	10 Mo	acurom	onto
Damage Pro					Crush fron			_			
` –	ured Left-to-		_ ′			Pre-Test		Post-Test	_	Crush [
=	480 mm		inches	Leit Bt	ımper Corner				inches		」inches T⊶⊶
DPD 2 <u>-</u> DPD 3 -			inches			5108	mm	4628	mm	480	_ mm _
			inches		Centerline	207.0	inches	182.8 i	inches	24.2	inches
DPD 4 _			inches			5258	mm	4643	mm	615	mm
=	-559 mm		inches	Right Bu	mper Corner	201.1	inches	182.0 i	inches	19.1	inches
DPD 6	485 mm	1 <u>-19.1</u>	inches	Ū	•	5108	mm		mm	485	ī̃mm
											_
Bumper E	ngagemen	t		Sill Er	gagement			A- ₁	pillar E	ngagem	ent
(Inline Im	npact Only)			(Side	Impact Only))		(5	Side Im	npact On	ıly)
	0.0			NOT A	PPLICABLE			Ĺ		0.0	
											_
Moving	g Test Cart			_	est Cart/Vehi	cle		Vehic	cle Orie	entation o	on Cart
A	ngle			Crab	bed Angle			N	/loving	Test Car	t
	ENGAGEMI	ENT			0.0					PLICABL	
	of the Tilt Angle			ū	f the Crabbed Angl					of the Angle	
	etween surface o				e Clockwise from			Measured be			
Rollover Test	Cart and the Gro	ound	Long	gitudinal Vector	to Velocity Vector	of Vehicle		and Dii	rection of	f Test Cart N	∆otion

Vehicle 1 2004 CADILLAC DE VILLE

Test #	4837										
VIN	1G6KE	54Y64	U1524:	37		NHTSA	Test Vehicle Nu	ımber 1			
Year	2004					Vehicle	Modification Indi	cator PROD	UCTIO	N VEHICL	.E
Make	CADIL	LAC		Post-test S	Steering	Column She	ar Capsule Sep	eration UNKN	OWN		
Model	DE VIL	.LE] Stee	ering Column	Collapse Mecha	anism UNKN	OWN		
Body	FOUR	DOOR S	SEDAN								
Engine	V8 TR	ANSVE	RSE FF	RONT							
Displacement	4.6	Liter	Tr	ansmission	AUTO	MATIC - FR	ONT WHEEL DR	RIVE			
Vehicle Modific	ation(s)	Descrip	tion	UNMODIFI	ED						
Vehicle Comm	entary	DHS M	ODEL								
Vehicle Len	gth	5258	mm	207.0 ir	nches		CG behind Fron	t Axle 1238	mm	48.7	inches
Vehicle V	Vidth	1891	mm	74.4 ir	nches	Center	of Damage to CO	G Axis 0	mm	0.0	inches
Vehicle Whee	lbase	2934	mm	115.5 ir	nches	Total L	ength of Indenta	ation 1291] mm	50.8	inches
Vehicle Test W	eight	2054	KG	4527 p	ounds	Maximu	m Static Crush D	Depth 615	mm	24.2	inches
							Pre-Impact S	peed 56	kph	34.8	mph
Veh	nicle Da	mage Ir	ndex 1	2FDEW6		Pr	incipal Direction	of Force 0			

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehi de Surface forward.)

Left Side Centerline				Right Side							
Pr	e-Test	Pos	st-Test	Pre	-Test	Post	-Test	Pre	Pre-Test		-Test
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Len	gth of Veh	icle at Ce	nterline				
				5258	207.0	4643	182.8				
					Engin	e Block					
				646	25.4	646	25.4				
5108	201.1	4628	182.2		Front Bui	mper Con	ner	5108	201.1	4623	182.0
					Front	of Engine					
				4725	186.0	4512	177.6				
4219	166.1	4187	164.8		Fire	ewall		4234	166.7	4133	162.7
				4107	161.7	4010	157.9				
3651	143.7	3650	143.7	Upp	oer Leadin	g Edge o	f Door	3656	143.9	3656	143.9
3633	143.0	3620	142.5	Low	ver Leadin	g Edge of	f Door	3636	143.1	3631	143.0
3586	141.2	3572	140.6		Bottom o	f 'A' Post		3601	141.8	3590	141.3
2529	99.6	2528	99.5	Up	per Trailing	g Edge of	f Door	2537	99.9	2537	99.9
2500	98.4	2483	97.8	Lo	wer Trailing	g Edge of	f Door	2497	98.3	2495	98.2
					Steerin	g Column	1				
				3146	123.9	3200	126.0				
Center of Seering Column to 'A' Post (Horizontal)											
				410	16.1	410	16.1				
				Center of Ste	ering Colu	ımn to He	adliner (Ve	rtical)			
				425	16.7	333	13.1				

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2004 CADILLAC DE VILLE

NHTSA Crash Test - #4837 - Front Impact

Pre/Post Depths - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4527 pounds Vehicle Closing Speed = 34.8 mph Test Crush Length = 74.4 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Driver Side) 18.9 24.2 19.1 (Pass. Side)

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 18.9 inches 165.3 Using a Rated No Damage Speed of 208.3 142.4 152.3 2.5mph Using a Rated No Damage Speed of 5.0mph 384.4 121.2 609.4 Using a Rated No Damage Speed of 7.5mph 528.2 101.7 1371.1 Using a Rated No Damage Speed of 639.8 10.0mph 84.0 2437.5 Average Crush = 21.6 inches 126.6 Using a Rated No Damage Speed of 2.5mph 182.3 109.0 152.3 Using a Rated No Damage Speed of 336.3 609.4 5.0mph 92.8 Using a Rated No Damage Speed of 7.5mph 462.2 77.9 1371.1 Using a Rated No Damage Speed of 10.0mph 559.8 64.3 2437.5 100.8 Maximum Crush = 24.2 inches Using a Rated No Damage Speed of 2.5mph 162.7 86.9 152.3 Using a Rated No Damage Speed of 5.0mph 300.2 73.9 609.4 Using a Rated No Damage Speed of 7.5mph 412.5 62.1 1371.1 Using a Rated No Damage Speed of 499.6 51.2 10.0mph 2437.5

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	24.2	35.6	0.8	2.4

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 20.0

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

2004 CADILLAC DE VILLE

NHTSA Crash Test - #4837 - Front Impact

Pre/Post Depths - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4527 pounds Vehicle Closing Speed = 34.8 mph Test Crush Length = 50.8 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 18.9 24.2 19.1

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 18.9 inches 242.1 Using a Rated No Damage Speed of 305.1 208.6 223.1 2.5mph Using a Rated No Damage Speed of 5.0mph 563.0 177.6 892.6 Using a Rated No Damage Speed of 7.5mph 773.7 149.0 2008.3 Using a Rated No Damage Speed of 937.1 123.0 3570.3 10.0mph Average Crush = 21.6 inches 185.4 Using a Rated No Damage Speed of 2.5mph 267.0 159.7 223.1 Using a Rated No Damage Speed of 492.6 892.6 5.0mph 135.9 Using a Rated No Damage Speed of 7.5mph 677.0 114.1 2008.3 Using a Rated No Damage Speed of 10.0mph 820.0 94.2 3570.3 147.7 Maximum Crush = 24.2 inches Using a Rated No Damage Speed of 2.5mph 238.3 127.2 223.1 Using a Rated No Damage Speed of 5.0mph 439.7 108.3 892.6 Using a Rated No Damage Speed of 7.5mph 604.2 90.9 2008.3 Using a Rated No Damage Speed of 10.0mph 731.9 75.0 3570.3

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	24.2	35.6	0.8	2.4

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 20.0

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Registered Owner: 4N6XPRT SYSTEMS

Registered Owner: 4N6XPRT SYSTEMS

Serial Number: 17R-030201SC02301

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005 Make: PONTIAC Model: BONNEVILLE

Test	Vehicle	No							
Numbe	r Info	Damage	Average	Closing	V	ehicle	Width	า	
		Speed	Crush	Speed	S t	iffnes		ı e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Kv	Factor
4691	2003 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	19.2	29.8	301.6	77.7	585.6	11 2.2	18.4
3534	2001 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	21.5	35.1	322.3	90.3	574.9	122.8	22.9
3520	2001 BUICK LESABRE FOUR DOOR SEDAN	5.0	18.7	35.1	360.9	116.5	559.2	158.4	26.4
4837	2004 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	20.0	34.8	363.0	108.1	609.4	147.4	24.2
4238	2002 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	19.1	35.3	384.5	121.9	606.4	165.5	26.1
3282	2000 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	18.6	35.4	387.4	126.8	591.9	171.9	27.0
3274	2000 BUICK LESABRE FOUR DOOR SEDAN	5.0	17.1	35.1	394.9	139.3	559.5	189.5	28.9
4490	2003 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	14.1	29.3	422.7	145.6	613.8	211.5	24.3
2193	1995 OLDSMOBILE AURORA FOUR DOOR SEDAN	5.0	16.7	34.7	439.5	156.1	618.6	213.2	28.8
		A	(A)(O)		075.0	400.0	F04.0	405.0	05.0
		Average	(AVG)		375.2	120.3	591.0	165.8	25.2
		Minimum	(MIN)		301.6	77.7	559.2	112.2	18.4
	Maximum (MAX)				439.5	156.1	618.6	213.2	28.9
	Standard Deviation	(STDev-sa	ample)		44.1	25.5	22.8	35.4	3.3
	Nun	nber of Tes	sts (n)	9					

Serial Number: 17R-030201SC02301

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005 Make: PONTIAC Model: BONNEVILLE

Test Numbei	Vehicle Info	No Damage	Max			ehicle			
		Speed (mph)	Crush (inch)	Speed (mph)	S t A	iffness B	Valι G	ı e s Kv	Crush Factor
		(IIIPII)	(111011)	(IIIpII)				IXV	i actor
4691	2003 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	22.3	29.8	260.2	57.8	585.6	83.5	15.9
3534	2001 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	25.5	35.1	271.8	64.2	574.9	87.3	19.3
3520	2001 BUICK LESABRE FOUR DOOR SEDAN	5.0	24.1	35.1	279.9	70.1	559.2	95.3	20.5
3282	2000 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.9	35.4	289.4	70.8	591.9	95.9	20.2
4238	2002 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.6	35.3	298.7	73.6	606.4	99.8	20.3
4837	2004 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.2	34.8	300.0	73.9	609.4	100.7	20.0
4490	2003 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	18.3	29.3	326.3	86.7	613.8	126.0	18.8
2193	1995 OLDSMOBILE AURORA FOUR DOOR SEDAN	5.0	22.0	34.7	334.2	90.3	618.6	123.3	21.9
3274	2000 BUICK LESABRE FOUR DOOR SEDAN	5.0	19.8	35.1	339.6	103.1	559.5	140.1	24.8
4874	2003 CADILLAC SEVILLE FOUR DOOR SEDAN	5.0	20.9	35.1	343.6	98.8	597.8	134.3	23.5
		Average ((AVG)		304.4	78.9	591.7	108.6	20.5
		Minimum	(MIN)		260.2	57.8	559.2	83.5	15.9
		Maximum	(MAX)		343.6	103.1	618.6	140.1	24.8
	Standard Deviation	(STDev-sa	imple)		29.9	15.0	21.6	20.4	2.5
	Num	ber of Tes	sts (n)	10					

Serial Number: 17R-030201SC02301

Expert VIN DeCoder®

Copyright© 1991-2016 Expert Witness Services, Inc. All Rights Reserved

Version Number 3.6.0.9

DeCoded VIN: 1FMDK03196GA45644

Model:	2006 Ford Freestyle Limited 4x2 4-Door Wagon
Engine Size:	3.0 L / 183 cu.in.
Engine Description:	V6 cylinder with Dual Overhead Cam
Horse Power:	200 @ 5500 rpm
Torque:	200 lb-ft at 4500 rpm
Injection System:	Sequential Port Fuel Injection (SEFI)
PSI:	65 psi Ignition: electronic
Manufacturer:	Ford
Assembly Plant:	Chicago, IL
Drive Wheels:	This is a Front Wheel Drive vehicle w/ Second Generation Front Air Bags/Side Air Bags

The First through Third characters (1FM) indicate a Ford Multi-Purpose Vehicle (MPV) made in the U.S.A.

The Fourth character (D) indicates a GVWR of 5001-6000 lbs.

The Fifth through Seventh characters (KO3) indicate a Freestyle Limited 4x2 and a $4\text{-}Door\ Wagon}$

The Eighth character (1) indicates the OEM engine: 3.0 L / 183 cu.in., V6, DOHC

The Ninth character (the check digit) is entered as 9.

The VIN appears Valid, the calculated value is 9.

The Tenth character (6) indicates the model year 2006

The Eleventh character (G) indicates the vehicle was made in the assembly plant in Chicago, IL

The Twelfth through Seventeenth characters (A45644) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.7.1.2 Copyright 2017 - All Rights Reserved

PROVIDED BY: 4N6XPRT Systems 8387 University Avenue La Mesa CA 91941

8/28/2017

2006 FORD FREESTYLE 4 DOOR 4X2 UTILITY

2006 FORD FREESTYLE 4 DOOR 4X2 UTILITY			
Curb Weight:	3959 1bs.		1796 kg.
Curb Weight Distribution - Front:	55 %	Rear:	45 %
Gross Vehicle Weight Rating:	5380 lbs.		2440 kg.
Number of Tires on Vehicle: Drive Wheels:	4 FRONT		
Horizontal Dimensions	Inches	Feet	Meters
Total Length	200	16.67	5.08
<pre>wheelbase:</pre>	113	9.42	2.87
Front Bumper to Front Axle: Front Bumper to Front of Front Well:	24	3.42 2.00	1.04 0.61
Front Bumper to Front of Hood: Front Bumper to Base of Windshield:	50	0.75 4.17	1.27
Front Bumper to Top of Windshield:	80	6.67	2.03
·	46	3.83	1.17
Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well:	29	2.42	0.74
Rear Bumper to Rear of Trunk:	5	0.42	0.13
Rear Bumper to Base of Rear Window:	7	0.58	0.18
Width Dimensions			
Maximum Width:	73	6.08	1.85
Front Track:	65 65	5.42 5.42	1.65
Rear Track:		3.42	1.03
Vertical Dimensions			
Height:	65	5.42	1.65
Ground to -			
Front Bumper (Top)	26	2.17	
Headlight - center	30	2.50	0.76
Hood - top front:	36	3.00	0.91
Base of Windshield	43 25	3.58 2.08	1.09
Rear Bumper - top: Trunk - top rear:	38	3.17	0.64
Base of Rear Window:	46	3.83	1.17
base of hear william.			

Expert AutoStats®

2006 FORD FREESTYLE 4 DOOR 4X2 UTILITY

Front Leg Room - seatback to floor (max)

Front Leg Room - seatback to floor (min)

Interior	DIMO	1CIANC
TILCEL LOI	ושוווע	13 10113

Inches 59 39

Feet Meters 4.92 1.50

Front Seat to Headliner

Front Seat Shoulder Width

41

3.25 3.42

Rear Seat Shoulder Width Rear Seat to Headliner

58 39

40

4.83 3.25 3.33

1.47 0.99 1.02

0.99

1.04

Seatbelts:

3pt - front and rear

Airbags:

FRONT SEAT AIRBAGS

Steering Data

Turning Circle (Diameter)

480

40

12.19

Steering Ratio: Wheel Radius:

Tire Size (OEM):

16.00:1

P215/65R17

13

1.08

0.33

Acceleration & Braking Information

Brake Type:

ALL DISC

ABS System:

ALL WHEEL ABS

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

132.0 ft t = 3.0 sec

-29.3 | ft/sec² a =

G-force = -0.91

Acceleration:

0 to 30mph 0 to 60mph

3.5 t = 9.2 t =

sec sec

sec

12.6 a = 9.6 a =

ft/sec²

G-force =

45 to 65mph

4.2 t =

7.0 a =

ft/sec² ft/sec²

G-force = 0.30 G-force = 0.22

0.39

Transmission Type:

AUTOMATIC

Notes:

Federal Bumper Standard Requirements:

No Requirement

N.S.D.C =2005 - 2007

1.25

Stable

33.7

27.0

dea

dea

2006 FORD FREESTYLE 4 DOOR 4X2 UTILITY

Tip-Over Stability Ratio =

Other Information

=		50.85	
=		62.15	
=		36.50	
=		25.94	
=		98.84	
=		114.14	
=		91.85	
=		108.15	
=	Γ	2734.77	lb*ft*sec²
=	Ī	2777.08	lb*ft*sec²
=	[635.98	lb*ft*sec²
=		48.0	deg
=		9.7	deg
=		20.8	deg
	= = = = = = = =	= = = = = = = = =	= 62.15 = 36.50 = 25.94 = 98.84 = 114.14 = 91.85 = 108.15 = 2734.77 = 2777.08 = 635.98

First Approximation Crush Factors:

Angle of Steering Tires at Max Turn

Angle of Windshield

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

$$V(mph) = \sqrt{(30 * CF * MID)}$$
KE Equivalent Speed (Front/Rear/Side) = 21 CF
Bullet vehicle IMPACT SPEED estimation
based on TARGET VEHICLE damage ONLY = 27 CF
(Tested for Rear/Side Impact only)

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independent evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #5541

2005 FORD FREESTYLE

Provided By

4N6XPRT StifCalcs®

Registered to:

4N6XPRT SYSTEMS 8387 UNIVERSITY AVENUE LA MESA CA 91941-3842 17R-030201SC02301

Copyright 2017 - All Rights Reserved 4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA (800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Serial Number: 17R-030201SC02301

Similar Vehicle database reader

You entered: 2006 FORD FREESTYLE

The Similar Vehicle Year/Model list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
2009 - 2012 Remarks: Stretched	LINCOLN Taurus X Chassis	MKT	SW	117.9
2005 - 2007 Remarks: Basically a	FORD a Five Hundred Wagon	FREESTYLE	SW	112.9
2003 - 2012 Remarks: Freestyle?	VOLVO ?? - Chassis is based or	XC90 n Ford Freestyle Taurus X??	SW	112.5
2008 - 2009 Remarks: Was FREE	FORD	TAURUS X	SW	112.9
2009 - 2012 Remarks: Stretched	FORD Taurus X Chassis	FLEX	SW	117.9

The Similar Vehicle List contained in 4N6XPRT StifCalcs is an extension of the free Vehicle Interchange List provided by Gregory C. Anderson of Scalia Safety Engineering through the 2012 model year. 4N6XPRT Systems® has taken over the maintenance of the Similar Vehicle List beginning with the 2013 version of the 4N6XPRT StifCalcs program. 4N6XPRT Systems® makes no warranties, either expressed or implied, with respect to this data, its quality, performance, merchantability, or fitness for any particular purpose. The entire risk as to its quality and performance is with the user. In no event will 4N6XPRT Systems® be liable for direct, incidental, or consequential damages resulting from any data presented here, even if 4N6XPRT Systems® has been advised of the possibility of such damages. The user must agree to assume full responsibility for any decisions which are based, in whole or in part, upon information obtained by using this data. Some of the listed similarities are based on estimates or memory. Most of the data are pulled from specification tables which may contain inaccuracies of their own. Use common sense - if something seems wrong, check it (and if it is wrong, let us know!).

If you have suggestions and/or corrections, we request and urge you to contact us - 4n6@4n6xprt.com.

Test Information

Test # 5541		NHTSA Test F	Reference (Guide Version	# V5	‡ V 5				
Test Date 2005-03-3 ()			Contract	# 05-6008					
Contract/Study Title	RESEARCH COLI	LISION TEST								
Test Objective(s)	FRONTAL CRAS	Н								
Test Type	RESEARCH SAFE	TY VEHICLE	TEST		Configuration	n VEHICL	E INTO BARRI	ER		
Impact Angle	0		S	int 9999	mm	0.0	inches			
				Offset Distar	rce 9999	mm	0.0	inches		
				Closing Spe	56.4	Km/Hr	35.05	МРН		
Test Performer	TRANSPORT CA	NADA						_		
Test Reference #	TC05-226									
Test Track Surface	CONCRETE			Conditio	on DRY					
Ambient Temperature	21 C 6 9	9.8 F	Total Nu	umber of Curv	es 184					
Data Recorder Type	OTHER				Data Link	OTHER				
Test Commentary	NO COMMENTS	5								
		Fi	xed Barrie	r Information	1					
Barrier Type	DEFORMABLE		Pole	Barrier Diamet	er 9999	mm	9999	inches		
Barrier Shape	FLAT BARRIER									
Barrier Commentary		<u> </u>								

2005 FORD FREESTYLE LEFT FRONT SEAT OCCUPANT

Test # 5541	
Vehicle # 1	Sex FEMALE
Location LEFT FRONT SEAT	Age 99
Position FORWARD OF CENTER POSITION	Height 999 mm 39.3 inches
Type HYBRID III DUMMY WITH THOR LX LEG	S Weight 999.0 kg 2202 pounds
Size 5 PERCENTILE	
Calibration Method OTHER	
Occupant Manufacturer FIRST TECHNOLOGY	
Occupant Modification UNMODIFIED	
Occupant Description S/N: 105	
Occupant Commentary LAST CALIBRATION D	ATE: MAY/04.
Head to -	
Windshielder Header 330 mm 13.0 inc	hes Head Injury Criteria (HIC) 203
WindShield 675 mm 26.6 inc	hes HIC Lower Time Interval (ms) 55.8
Seatback 9999 mm 0.0 inc	hes HIC Upper Time Interval (ms) 91.8
Side Header 301 mm 11.9 inc	hes
Side Window 395 mm 15.6 inc	hes
Neck to Seatback 9999 mm 0.0 inches	
First Contact Region (Head) AIR BAG	
Second Contact Region (Head)	
Chest	
Chest to -	
Dash 9999 mm 0.0 inches	Arm to Door 145 mm 5.7 inches
Steering Wheel 205 mm 8.1 inches	Hip to Door 245 mm 9.6 inches
Seatback 9999 mm 0.0 inches	
Chest Severity Index 9999	Pelvic Peak Lateral Acceleration (g's) 99999
Thoracic Trauma Index 99999	Thorax Peak Acceleration (g's) 43.8
Lap Belt Peak Load 4464	Newtons 1003.6 pound Force
Shoulder Belt Peak Load 2994	Newtons 673.1 pound Force
First Contact Region (Chest/Abdomen) AIR BAG	
Second Contact Region (Chest/Abdomen) NONE	
Legs Legs	
	Knees to Seatback 9999 mm 0.0 inches
Left Femur Peak Load -2288 Newtons	-514.4 pounds Force
Right Femur Peak Load -3306 Newtons	-743.2 pounds Force
First Contact Region (Legs) DASHPA	NEL
Second Contact Region (Legs)	

2005 FORD FREESTYLE LEFT FRONT SEAT OCCUPANT

Test #	5541					
Vehicle #	1		Sex	FEMALE		
Location	LEFT FRONT SE	AT	Age	99		
Position	FORWARD OF C	ENTER POSITION	Height	999 mm	39.3 inches	
Туре	HYBRID III DUM	MY WITH THOR LX LEGS	Weight	999.0 kg	2202 pounds	
Size	5 PERCENTILE					
Cali	ibration Method	OTHER				
Occupa	nt Manufacturer	FIRST TECHNOLOGY				
Occupa	ant Modification	UNMODIFIED				
Occu	pant Description	S/N:105				
Occupa	ant Commentary	LAST CALIBRATION DAT	E:MAY/04.			
		Restraints				
Restrai	nt # 1 3 POINT	BELT				
Mounte	ed BELT - Co	ONVENTIONAL MOUNT				
Deploy	ment DEPLOY	ED PROPERLY				
Restrai	int Commentary	NO COMMENTS				
Restrai	int # 2 AIR BAG					
Mounte	ed STEERIN	G WHEEL	·			
Deploy	ment DEPLOY	ED PROPERLY				

Restraint Commentary

NO COMMENTS

2005 FORD FREESTYLE RIGHT FRONT SEAT OCCUPANT

Test # 5541	
/ehicle # 1 Sex FEMALE]
_ocation RIGHT FRONT SEAT Age 99	
Position FORWARD OF CENTER POSITION Height 999 mm 39.3 inches	ı
Type HYBRID III DUMMY WITH THOR LX LEGS Weight 999.0 kg 2202 pound	s
Size 5 PERCENTILE	
Calibration Method OTHER	
Occupant Manufacturer FIRST TECHNOLOGY	
Occupant Modification UNMODIFIED	
Occupant Description S/N: 104	
Occupant Commentary LAST CALIBRATION DATE : MAY/04.	
<u>Head</u>	
Head to -	
Windshielder Header 352 mm 13.9 inches Head Injury Criteria (HIC) 236	
WindShield 685 mm 27.0 inches HIC Lower Time Interval (ms) 58.2	
Seatback 9999 mm 0.0 inches HIC Upper Time Interval (ms) 94.2	
Side Header 307 mm 12.1 inches	
Side Window 395 mm 15.6 inches	
Neck to Seatback 9999 mm 0.0 inches	
First Contact Region (Head) AIR BAG	
Second Contact Region (Head)	
<u>Chest</u>	
Chest to -	
Dash 340 mm 13.4 inches Arm to Door 166 mm 6.5 inches	
Steering Wheel 9999 mm 0.0 inches Hip to Door 233 mm 9.2 inches	
Seatback 9999 mm 0.0 inches	
Chest Severity Index 9999 Pelvic Peak Lateral Acceleration (g's) 99999	
Thoracic Trauma Index 99999 Thorax Peak Acceleration (g's) 36.3	
Lap Belt Peak Load 4865 Newtons 1093.7 pound Force	
Shoulder Belt Peak Load 1274 Newtons 286.4 pound Force	
First Contact Region (Chest/Abdomen) AIR BAG	
Second Contact Region (Chest/Abdomen) NONE	
<u>Legs</u>	
Knees to Dash 25 mm 1.0 inches Knees to Seatback 9999 mm 0.0 inches	
Left Femur Peak Load Newtons pounds Force	
Right Femur Peak Load -3662 Newtons -823.3 pounds Force	
First Contact Region (Legs) DASHPANEL	
Second Contact Region (Legs)	

2005 FORD FREESTYLE RIGHT FRONT SEAT OCCUPANT

Test #	5541					
Vehicle #	1		Sex	FEMALE		
Location	RIGHT FRONT S	EAT	Age	99		
Position	FORWARD OF C	ENTER POSITION	Height	999 mm	39.3 inches	
Туре	HYBRID III DUM	MY WITH THOR LX LEGS	Weight	999.0 kg	2202 pounds	
Size	5 PERCENTILE					
Cali	ibration Method	OTHER				
Occupa	nt Manufacturer	FIRST TECHNOLOGY				
Occupa	ant Modification	UNMODIFIED				
Occu	pant Description	S/N: 104				
Occupa	ant Commentary	LAST CALIBRATION DAT	E:MAY/04.			
		Restraints				
Restrai	nt # 1 3 POINT	BELT				
Mounte	ed BELT - Co	ONVENTIONAL MOUNT				
Deploy	ment DEPLOY	ED PROPERLY				
Restrai	int Commentary	NO COMMENTS				
Restrai	int # 2 AIR BAG					
Mounte	DASH PA	NEL - TOP	·			
Deploy	ment DEPLOY	ED PROPERLY				

Restraint Commentary

NO COMMENTS

2005 FORD FREESTYLE RIGHT REAR SEAT OCCUPANT

Test # 5541
Vehicle # 1 Sex FEMALE
Location RIGHT REAR SEAT Age 99
Position NOT APPLICABLE Height 9999 mm 0.0 inches
Type HYBRID III DUMMY Weight 999.0 kg 2202 pounds
Size 5 PERCENTILE
Calibration Method OTHER
Occupant Manufacturer FIRST TECHNOLOGY
Occupant Modification UNMODIFIED
Occupant Description S/N: 103
Occupant Commentary LAST CALIBRATION DATE : JUN/04.
<u>Head</u>
Head to -
Windshielder Header 330 mm 13.0 inches Head Injury Criteria (HIC) 1169
WindShield 675 mm 26.6 inches HIC Lower Time Interval (ms) 77.5
Seatback 9999 mm 0.0 inches HIC Upper Time Interval (ms) 113.5
Side Header 301 mm 11.9 inches
Side Window 395 mm 15.6 inches
Neck to Seatback 9999 mm 0.0 inches
First Contact Region (Head) OTHER
Second Contact Region (Head)
<u>Chest</u>
Chest to
Dash 9999 mm 0.0 inches Arm to Door 145 mm 5.7 inches
Steering Wheel 205 mm 8.1 inches Hip to Door 245 mm 9.6 inches
Seatback 9999 mm 0.0 inches
Chest Severity Index 9999 Pelvic Peak Lateral Acceleration (g's) 99999
Thoracic Trauma Index 99999 Thorax Peak Acceleration (g's) 66.3
Lap Belt Peak Load 6831 Newtons 1535.7 pound Force
Shoulder Belt Peak Load 7030 Newtons 1580.4 pound Force
First Contact Region (Chest/Abdomen) NONE
Second Contact Region (Chest/Abdomen) NONE
<u>Legs</u>
Knees to Dash 25 mm 1.0 inches Knees to Seatback 9999 mm 0.0 inches
Left Femur Peak Load 0 Newtons 0.0 pounds Force
Right Femur Peak Load 0 Newtons 0.0 pounds Force
First Contact Region (Legs) NONE
Second Contact Region (Legs)

2005 FORD FREESTYLE RIGHT REAR SEAT OCCUPANT

Test #	5541					
Vehicle #	1		Sex	FEMALE]
Location	RIGHT REAR SE	AT	Age	99		
Position	NOT APPLICABL	E	Height	9999 mm	0.0 inches	
Type	HYBRID III DUMN	ΛY	Weight	999.0 kg	2202 pound	S
Size	5 PERCENTILE					
Cali	ibration Method	OTHER				
Occupar	nt Manufacturer	FIRST TECHNOLOGY				
Occupa	ant Modification	UNMODIFIED				
Occu	pant Description	S/N: 103				
Occupa	ant Commentary	LAST CALIBRATION DAT	ΓE : JUN/04.			
		Restraints	<u>5</u>			
Restrai	nt # 1 3 POINT E	BELT				
Mounte	ed BELT - CC	NVENTIONAL MOUNT				
Deploy	ment NOT APP	LICABLE				
Restrai	nt Commentary	NO COMMENTS				
Restrai	nt# 2 SEAT BAG	CK				
Mounte						
Deploy	ment NOT APP	LICABLE				

Restraint Commentary

NO COMMENTS

Vehicle 1 2005 FORD FREESTYLE

Test #	5541									
VIN	1FMDK01	 1X5GA335	84		NHTSA Te	est Vehicl	e Number	1		
Year	2005				Vehicle Mo	dification	Indicator	PRODUCTI	ON VEHIC	LE
Make	FORD		Post-tes	st Steering	Column Shear	Capsule	Seperatio	n NOT APPL	CABLE	
Model	FREESTY			Stee	ering Column C	ollapse M	Iechanism	NOT APPL	CABLE	
Body	UTILITY V	/EHICLE			-					
Engine	V6 TRAN	SVERSE FF	RONT							
Displacement			ansmiss	ion AUTO	MATIC - FRON	IT WHEE	L DRIVE			
Vehicle Modific	ation(s) De	escription [UNMOD	IFIED						
Vehicle Comm	entary 05	-226 FORD	FREES	TYLE						
Vehicle Len	igth 50	75 mm	199.8	inches	CG	behind	Front Axle	1306 mm	51.4	inches
Vehicle V	Vidth 18	91 mm	74.4	inches	Center of D	Damage t	o CG Axis	9999 mm	0.0	inches
Vehicle Whee	lbase 28	67 mm	112.9	inches	Total Leng	gth of Ind	lentation	1600 mm	63.0	inches
Vehicle Test W	eight 20	33 KG	4481	pounds	Maximum \$	Static Cru	ish Depth	9999 mm	0.0	inches
						Pre-Impa	act Speed	56 kph	35.0	mph
Vel	hicle Dama	ige Index 9	999999		Princ	ipal Direc	tion of Fo	ce 0		
D	-el- D:-t	NA		1-	Owner la face	D 0	D + T	4 D a a a a . N	4	4 .
Damage Pr					Crush from			<u>t Damage N</u>		
· –		o-Right, Rea	_	•	_	<u>Pre-Tes</u>		Post-Test	Crush	
DPD 1			inche		Bumper Corner			174.9 inch		inches
DPD 2			inche			5025	mm	4442 mm	583	mm
DPD 3			inche:		Centerline	199.8	inches	179.4 inch	es 20.4	inches
DPD 4			inche			5075	mm	4558 mm	517	mm
DPD 5			inche	Diaht E	Bumper Corner	198.0	inches	178.7 inch	es 19.2	inches
DPD 6	453 m	m 17.8	inche	s Kigitt L	diliper comer	5028	mm	4540 mm		
						3020	1111111	4540 111111	400	J
Rumner F	ngageme	nt		Sill F	Engagement			A-nilla	r Engagem	ent
•	pact Only				e Impact Only)	1		•	Impact On	
	0.0	1	Г	•	APPLICABLE			(Glac	0.0	''y <i>'</i>
	<u>,,, </u>		L	1101	AI I LIOADEL				0.0	_
Moving	Test Cart			Moving	Test Cart/Vehi	icle		Vehicle (Orientation (on Cart
Α	ngle			Cr	abbed Angle			Movi	ng Test Ca	rt
NOT A	PPLICAB	LE			0.0			NOT A	PPLICABL	E
	of the Tilt Angl			Magniture	e of the Crabbed Ang	le	•		tude of the Angl	
Measured be	etween surface	e of a		Meas	sure Clockwise from			Measured between	en the Vehicle C)rientation
Rollover Test	Cart and the G	round	Lo	ongitudinal Vect	or to Velocity Vector	of Vehicle		and Direction	on of Test Cart N	Motion

Vehicle 1 2005 FORD FREESTYLE

Test #	5541											
VIN	1FMD	(011X	GA335	84		NHTSA	NHTSA Test Vehicle Number 1					
Year	2005					Vehicle	Modification Ind	icator	PROD	UCTIO	N VEHIC	LE
Make	FORD	Post-test Steering Column Shear Capsule Seperation NOT APPLICABLE										
Model	FREES	TYLE			Ste	ering Columr	n Collapse Mech	anism	NOT A	PPLIC	ABLE	
Body	UTILIT	Y VEH	ICLE									
Engine	V6 TR	ANSVE	RSE F	RONT								
Displacement	3	Lite	r Tr	ransmissior	n AUT	OMATIC - FR	ONT WHEEL DE	RIVE				
Vehicle Modific	ation(s)	Descri	ption	UNMODIF	IED							
Vehicle Comm	entary	05-22	6 FORD	FREESTY	′LE							
Vehicle Len	gth	5075	mm	199.8	inches		CG behind Fron	rt Axle[1306	mm	51.4	inches
Vehicle V	Vidth	1891	mm	74.4	inches	Center	of Damage to Co	G Axis[9999	mm	0.0	inches
Vehicle Whee	lbase	2867	mm	112.9	inches	Total L	ength of Indenta	ation [1600	mm	63.0	inches
Vehicle Test W	eight	2033	KG	4481	pounds	Maximu	m Static Crush [Depth [9999	mm	0.0	inches
							Pre-Impact S	Speed[56	kph	35.0	mph
Vel	nicle Da	mage	Index [999999		Pr	incipal Direction	of Ford	ce 0			

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehi de Surface forward.)

	Left	Side			Cente	rline	Right Side				
Pr	e-Test	Pos	st-Test	Pre	-Test	Post	-Test	Pre-Test		Post	-Test
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Len	gth of Veh	icle at Ce	nterline				
				5075	199.8	4558	179.4				
					Engin	e Block					
				405	15.9	415	16.3				
5025	197.8	4442	174.9		Front Bui	mper Con	ner	5028	198.0	4540	178.7
					Front	of Engine					
				4535	178.5	4269	168.1				
3774	148.6	3690	145.3		Fire	ewall		3620	142.5	3540	139.4
				3894	153.3	3790	149.2				
3460	136.2	3476	136.9	Upp	oer Leadin	g Edge o	f Door	3481	137.0	3471	136.7
3482	137.1	3471	136.7	Low	ver Leadin	g Edge of	f Door	3479	137.0	3469	136.6
3431	135.1	3414	134.4		Bottom o	f 'A' Post		3431	135.1	3417	134.5
2413	95.0	2401	94.5	Up	per Trailing	g Edge of	f Door	2415	95.1	2406	94.7
2440	96.1	2430	95.7	Lo	wer Trailing	g Edge of	f Door	2441	96.1	2432	95.7
					Steerin	g Column	1				
				3042	119.8	3081	121.3				
				Center of Se	ering Colu	mn to 'A'	Post (Horiz	ontal)			
				434	17.1	430	16.9				
				Center of Ste	ering Colu	mn to He	adliner (Ve	rtical)			
				495	19.5	517	20.4				

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2005 FORD FREESTYLE

NHTSA Crash Test - #5541 - Front Impact

Pre/Post Depths - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4481 pounds Vehicle Closing Speed = 35.0 mph Test Crush Length = 74.4 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 23.0 20.4 19.2

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 19.2 inches 160.8 Using a Rated No Damage Speed of 204.5 138.6 150.8 2.5mph Using a Rated No Damage Speed of 5.0mph 377.5 118.2 603.1 Using a Rated No Damage Speed of 7.5mph 519.2 99.3 1357.1 Using a Rated No Damage Speed of 629.4 82.1 10.0mph 2412.6 Average Crush = 20.7 inches 138.3 Using a Rated No Damage Speed of 2.5mph 189.7 119.3 150.8 Using a Rated No Damage Speed of 350.2 5.0mph 101.7 603.1 Using a Rated No Damage Speed of 7.5mph 481.6 85.4 1357.1 Using a Rated No Damage Speed of 10.0mph 583.8 70.6 2412.6 112.0 Maximum Crush = 23.0 inches Using a Rated No Damage Speed of 2.5mph 170.7 96.6 150.8 Using a Rated No Damage Speed of 5.0mph 315.2 82.3 603.1 433.4 Using a Rated No Damage Speed of 7.5mph 69.2 1357.1 Using a Rated No Damage Speed of 10.0mph 57.2 2412.6 525.4

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	23.0	34.7	-0.3	-0.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 21.4

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Registered Owner: 4N6XPRT SYSTEMS

Registered Owner: 4N6XPRT SYSTEMS

Serial Number: 17R-030201SC02301

2005 FORD FREESTYLE

NHTSA Crash Test - #5541 - Front Impact

Pre/Post Depths - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4481 pounds
Vehicle Closing Speed = 35.0 mph
Test Crush Length = 63.0 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Driver Side) 23.0 20.4 19.2 (Pass. Side)

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 19.2 inches 190.0 Using a Rated No Damage Speed of 241.7 163.9 178.2 2.5mph Using a Rated No Damage Speed of 5.0mph 446.2 139.6 712.8 Using a Rated No Damage Speed of 7.5mph 613.6 117.4 1603.9 Using a Rated No Damage Speed of 2851.4 10.0mph 743.9 97.0 Average Crush = 20.7 inches 163.5 Using a Rated No Damage Speed of 2.5mph 224.2 141.0 178.2 Using a Rated No Damage Speed of 413.9 120.1 712.8 5.0mph Using a Rated No Damage Speed of 7.5mph 569.1 101.0 1603.9 Using a Rated No Damage Speed of 10.0mph 690.0 83.5 2851.4 132.4 Maximum Crush = 23.0 inches Using a Rated No Damage Speed of 2.5mph 201.7 114.2 178.2 Using a Rated No Damage Speed of 5.0mph 372.5 97.3 712.8 Using a Rated No Damage Speed of 7.5mph 512.2 81.8 1603.9 Using a Rated No Damage Speed of 10.0mph 67.6 2851.4 621.0

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	23.0	34.7	-0.3	-0.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 21.4

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Registered Owner: 4N6XPRT SYSTEMS

Registered Owner: 4N6XPRT SYSTEMS

Serial Number: 17R-030201SC02301

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2005 - 2007

Make: FORD Model: FREESTYLE

Test	Vehicle	No							
Numbe	r Info	Damage	Average	Closing	V	ehicle	Width	า	
		Speed	Crush	Speed	S t	iffnes	s Valu	ı e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Κv	Factor
6854	2010 LINCOLN MKT UTILITY VEHICLE	5.0	22.2	35.1	384.0	104.0	708.9	141.4	22.2
5263	2005 FORD FREESTYLE UTILITY VEHICLE	5.0	19.3	35.1	402.3	125.8	643.1	171.1	25.6
5540	2005 FORD FREESTYLE UTILITY VEHICLE	5.0	11 .8	25.1	410.5	139.8	602.6	218.0	21.4
5541	2005 FORD FREESTYLE UTILITY VEHICLE	5.0	17.3	35.0	418.7	145.3	603.1	197.7	28.4
6461	2009 FORD FLEX UTILITY VEHICLE	5.0	15.6	34.8	524.0	200.3	685.6	273.0	31.1
6611	2009 FORD FLEX OTHER	5.0	9.9	24.7	529.0	211.5	661.8	332.2	24.8
6219	2008 VOLVO XC90 UTILITY VEHICLE	5.0	13.7	34.7	614.1	265.4	710.3	362.3	35.0
6190	2007 VOLVO XC90 FOUR DOOR SEDAN	5.0	9.0	24.7	614.5	270.0	699.5	424.1	27.2
		Average	(AVG)		487.1	182.8	664.4	265.0	27.0
		Minimum	(MIN)		384.0	104.0	602.6	141.4	21.4
		Maximum	(MAX)		614.5	270.0	710.3	424.1	35.0
	Standard Deviation	ı (STDev-sa	ample)		95.5	63.5	44.4	100.2	4.6
	Nur	mber of Tes	sts (n)	8					

Serial Number: 17R-030201SC02301

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2005 - 2007

Make: FORD Model: FREESTYLE

Test Numbe	Vehicle r Info	No Damage Speed (mph)	Max Crush (inch)	J	•	ehicle iffnes B			Crush Factor
5540	2005 FORD FREESTYLE UTILITY VEHICLE	5.0	16.9	25.1	287.6	68.6	602.6	107.0	15.0
6854	2010 LINCOLN MKT UTILITY VEHICLE	5.0	28.2	35.1	302.9	64.7	708.9	88.0	17.5
5541	2005 FORD FREESTYLE UTILITY VEHICLE	5.0	23.0	35.0	315.8	82.7	603.1	11 2.5	21.4
5263	2005 FORD FREESTYLE UTILITY VEHICLE	5.0	21.8	35.1	355.8	98.4	643.1	133.8	22.6
6611	2009 FORD FLEX OTHER	5.0	11.7	24.7	445.2	149.7	661.8	235.2	20.9
6219	2008 VOLVO XC90 UTILITY VEHICLE	5.0	18.7	34.7	451.2	143.3	710.3	195.6	25.8
6461	2009 FORD FLEX UTILITY VEHICLE	5.0	18.1	34.8	451.9	148.9	685.6	203.0	26.8
6190	2007 VOLVO XC90 FOUR DOOR SEDAN	5.0	11 .7	24.7	472.1	159.3	699.5	250.3	20.9
		Average ((AVG)		385.3	114.5	664.4	165.7	21.4
		Minimum	(MIN)		287.6	64.7	602.6	88.0	15.0
		Maximum	(MAX)		472.1	159.3	710.3	250.3	26.8
	Standard Deviation	n (STDev-sa	ample)		77.4	39.9	44.4	62.8	3.9
	Nui	mber of Tes	sts (n)	8					

Serial Number: 17R-030201SC02301

4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91941-3842

Fax: (619) 464-2206 Toll Free: 1-800-266-9778

Phone: (619) 464-3478

Web Site: http://www.4n6xprt.com E-Mail: 4n6@4n6xprt.com

The NHTSA Crash Test database contains ZERO REAR Impact tests for the 2005-2007 Ford Freestyle or its similar/same vehicles

To create a SIMILAR class of vehicle, we looked at the NHTSA database for UTILITY vehicles that have REAR IMPACT TESTS.

For the crush summary reports, all tests with a A value greater than 500 were removed from the summary.

The Test Summary Reports based on the Average and Maximum crush depths follow.

Available Test Results Rear Impact Test Summary

Report Filter Settings

Year Range: 1965 - 2017 Bodystyle: UTILITY VEHICLE

Test Numbe	Vehicle r Info	No Damage Speed (mph)	Average Crush (inch)	KEES (mph)		ehicle iffness B			Crush Factor
3418	2000 ISUZU RODEO UTILITY VEHICLE	5.0	39.3	20.3	101.9	8.0	653.3	14.0	4.2
2432	1996 SUZUKI SIDEKICK UTILITY VEHICLE	5.0	20.2	35.7	286.8	87.2	471.5	11 8.0	25.2
4858	2003 INFINITI QX4 UTILITY VEHICLE	5.0	13.9	19.8	297.0	63.1	698.8	11 3.1	11 2
557	1984 JEEP CHEROKEE UTILITY VEHICLE	5.0	11 .1	21.4	321.5	95.2	542.9	161.8	16.6
5091	2003 JEEP LIBERTY UTILITY VEHICLE	5.0	11 .0	19.9	354.6	96.4	652.4	171.8	14.5
5214	2003 JEEP LIBERTY UTILITY VEHICLE	5.0	11 .1	20.2	357.1	97.8	652.1	172.7	14.7
5243	2002 JEEP LIBERTY UTILITY VEHICLE	5.0	10.6	20.1	369.8	104.8	652.4	185.9	15.1
1434	1990 TOYOTA 4RUNNER UTILITY VEHICLE	5.0	9.7	20.5	409.3	131.2	638.4	229.2	17.4
1970	1993 CHEVROLET BLAZER UTILITY VEHICLE	5.0	9.2	20.6	414.9	141.0	610.5	246.0	18.5
641	1983 CHEVROLET BLAZER UTILITY VEHICLE	5.0	8.8	20.8	439.9	158.1	611.9	273.7	19.7
2438	1996 CHEVROLET BLAZER UTILITY VEHICLE	5.0	15.6	32.7	441.4	156.2	623.5	217.8	27.3
875	1985 CHEVROLET BLAZER UTILITY VEHICLE	5.0	7.7	21.1	467.2	196.6	555.0	337.5	23.3
		Average	(AVG)		355.1	111.3	613.6	186.8	17.3
		Minimum	(MIN)		101.9	8.0	471.5	14.0	4.2
		Maximum	(MAX)		467.2	196.6	698.8	337.5	27.3
	Standard Deviation	(STDev-sa	ample)		98.7	49.6	62.3	84.0	6.3
	Nur	nber of Tes	sts (n)	12					

Available Test Results Rear Impact Test Summary

Report Filter Settings

Year Range: 1965 - 2017 Bodystyle: UTILITY VEHICLE

Test Numbe	Vehicle Info	No Damage Speed (mph)	Max Crush (inch)	KEES (mph)	V				Crush Factor
3418	2000 ISUZU RODEO UTILITY VEHICLE	5.0	39.3	20.3	101.9	8.0	653.3	14.0	4.2
2432	1996 SUZUKI SIDEKICK UTILITY VEHICLE	5.0	33.2	35.7	174.1	32.1	471.5	43.5	15.3
2438	1996 CHEVROLET BLAZER UTILITY VEHICLE	5.0	27.4	32.7	252.3	51.0	623.5	71.1	15.6
4858	2003 INFINITI QX4 UTILITY VEHICLE	5.0	16.1	19.8	255.8	46.8	698.8	83.9	9.7
557	1984 JEEP CHEROKEE UTILITY VEHICLE	5.0	12.5	21.4	285.2	74.9	542.9	127.4	14.7
1434	1990 TOYOTA 4RUNNER UTILITY VEHICLE	5.0	11 .6	20.5	341.7	91.5	638.4	159.8	14.5
5091	2003 JEEP LIBERTY UTILITY VEHICLE	5.0	11 .0	19.9	354.6	96.4	652.4	171.8	14.5
5214	2003 JEEP LIBERTY UTILITY VEHICLE	5.0	11 .1	20.2	357.1	97.8	652.1	172.7	14.7
1970	1993 CHEVROLET BLAZER UTILITY VEHICLE	5.0	10.5	20.6	361.9	107.3	610.5	187.2	16.1
5243	2002 JEEP LIBERTY UTILITY VEHICLE	5.0	10.6	20.1	369.8	104.8	652.4	185.9	15.1
1917	1993 ISUZU TROOPER II UTILITY VEHICLE	5.0	10.7	19.9	390.2	108.3	703.1	193.4	14.7
641	1983 CHEVROLET BLAZER UTILITY VEHICLE	5.0	9.9	20.8	392.4	125.8	611.9	217.8	17.6
875	1985 CHEVROLET BLAZER UTILITY VEHICLE	5.0	9.0	21.1	397.0	142.0	555.0	243.7	19.8
		Average (AVG)		310.3	83.6	620.4	144.0	14.4
		Minimum	(MIN)		101.9	8.0	471.5	14.0	4.2
		Maximum (MAX)		397.0	142.0	703.1	243.7	19.8
	Standard Deviation	ı (STDev-sa	mple)		91.7	38.8	64.6	70.4	3.8
	Nur	mber of Tes	ts (n)	13					

Expert VIN DeCoder®

Copyright© 1991-2016 Expert Witness Services, Inc. All Rights Reserved

Version Number 3.6.0.9

DeCoded VIN: 3C4FY4BB51T698585

Model: 2001 Chrysler PT Cruiser (Limited) 4 Door Wagon

Engine Size: 2.4L / 146 cu.in.

Engine Description: In-Line 4 cylinder with Double Overhead Cam

Horse Power: 150 @ 5200 rpm

Torque: 164 lb-ft @ 4000 rpm

Injection System: Sequential Multiport Fuel Injection (SMFI)

PSI: 49 psi Ignition: Electronic

Manufacturer: Mitsubishi

Drive Wheels: This is a Front Wheel Drive vehicle

The First through Third characters (3C4) indicate a Chrysler Multi-purpose Vehicle (MPV) made in Mexico

The Fourth character (F) indicates GVWR: 4001-5000 lbs and BRAKE SYSTEM: Hydraulic

The Fifth through Sixth characters (Y4) indicate a PT Cruiser (Limited)

The Seventh character (B) indicates a 4 Door Wagon

Assembly Plant: Toluca, Mexico

The Eighth character (B) indicates the OEM engine: 2.4L / 146 cu.in., L4, DOHC

The Ninth character (the check digit) is entered as 5.

The VIN appears Valid, the calculated value is 5.

The Tenth character (1) indicates the model year 2001

The Eleventh character (T) indicates the vehicle was made in the assembly plant in Toluca, Mexico

The Twelfth through Seventeenth characters (698585) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.7.1.2 Copyright 2017 - All Rights Reserved

PROVIDED BY: 4N6XPRT Systems 8387 University Avenue La Mesa CA 91941

8/28/2017

2001 CHRYSLER PT CRUISER 4 DOOR WAGON

2001 CHRYSLER PI CRUISER 4 DOOR WAGON			
Curb Weight: Curb Weight Distribution - Front:	3112 lbs. 58 %		412 kg. 42 %
Gross Vehicle Weight Rating:	4225 lbs.	1	916 kg.
Number of Tires on Vehicle: Drive Wheels:	FRONT		
Horizontal Dimensions Total Length Wheelbase:	169 103	Feet 14.08 8.58	Meters 4.29 2.62
Front Bumper to Front Axle: Front Bumper to Front of Front Well: Front Bumper to Front of Hood: Front Bumper to Base of Windshield: Front Bumper to Top of Windshield:	31 16 10 43 67	2.58 1.33 0.83 3.58 5.58	0.79 0.41 0.25 1.09
Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well: Rear Bumper to Rear of Trunk: Rear Bumper to Base of Rear Window:	35 16 5 13	2.92 1.33 0.42 1.08	0.89 0.41 0.13 0.33
Width Dimensions Maximum Width: Front Track: Rear Track:	67 58 58	5.58 4.83 4.83	1.70 1.47 1.47
Vertical Dimensions Height: Ground to -	63	5.25	1.60
Front Bumper (Top) Headlight - center Hood - top front: Base of Windshield Rear Bumper - top: Trunk - top rear: Base of Rear Window:	21 24 33 41 23 24 45	1.75 2.00 2.75 3.42 1.92 2.00 3.75	0.53 0.61 0.84 1.04 0.58 0.61 1.14

Expert AutoStats®

2001 CHRYSLER PT CRUISER 4 DOOR WAGON

Front Leg Room - seatback to floor (min)

Interior Dimensions	Inches		Feet	
Front Seat Shoulder Width	55]	4.58	
Front Seat to Headliner	40]	3.33	

41

3.42

Seatbelts:	3pt - front and rear
Airbags:	FRONT SEAT AIRBAGS

Steering Data

Turning Circle (Diame	ter)	444	37	11.28
Steering Ratio:	:1			

•			
Wheel Radius:	12	1.00	0.30

Tire Size (OEM): **P205/55R16**

Acceleration & Braking Information

Brake Type:	FRONT DISC - REAR DRUM
ABS System:	ALL WHEEL ABS - OPTIONAL

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

			-			•	-	•	-		
d =	131.0	ft	t =	3.0	sec	a	=	-29.5	ft/sec²	G-force =	-0.92

Acceleration:

0 to 30mph	t =	3.0 sec	a =	14.7 ft/sec²	G-force =	0.46
0 to 60mph	t =	8.6 sec	a =	10.2 ft/sec ²	G-force =	0.32
45 to 65mph	t =	4.8 sec	a =	6.1 ft/sec ²	G-force =	0.19

Transmission Type: 5spd MANUAL

Notes:

Federal Bumper Standard Requirements:	2.5	mph
This vehicles Rated Bumper Strength:	2.5	mph

N.S.D.C = 2001 - 2005

Meters 1.40

1.04

2001 CHRYSLER PT CRUISER 4 DOOR WAGON

Other Information

Tip-Over Stability Ratio =	1.17	Reaso	nably Sta	ble
NHTSA Star Rating (calculated)			***	
				<u>-</u>
Center of Gravity (No Load):				
Inches behind front axle	=	=	43.26	
Inches in front of rear axle	=	=	59.74	
Inches from side of vehicle	=	=	33.50	
Inches from ground	=	=	24.85	
Inches from front corner	=	=	81.47	
Inches from rear corner	=	=	100.49	
Inches from front bumper	=	=	74.26	
Inches from rear bumper	=	=	94.74	
Moments of Inertia Approximations (No Load):				
Yaw Moment of Inertia	=	- [1999.36	lb*ft*sec²
Pitch Moment of Inertia	=	. [1931.88	lb*ft*sec²
Roll Moment of Inertia	=	• [410.16	lb*ft*sec²
Front Profile Information				
Angle Front Bumper to Hood Front	=	=	50.2	deg
Angle Front of Hood to Windshield Base	=	=	13.6	deg
Angle Front of Hood to Windshield Top	=	=	26.2	deg
Angle of Windshield	=	=	39.8	deg
Angle of Steering Tires at Max Turn	=	=	26.6	deg

First Approximation Crush Factors:

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

$$V(mph) = \sqrt{(30 * CF * MID)}$$
KE Equivalent Speed (Front/Rear/Side) = 21 CF
Bullet vehicle IMPACT SPEED estimation
based on TARGET VEHICLE damage ONLY = 27 CF
(Tested for Rear/Side Impact only)

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independent evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #3354

2001 CHRYSLER PT CRUISER

Provided By

4N6XPRT StifCalcs®

Registered to:

4N6XPRT SYSTEMS 8387 UNIVERSITY AVENUE LA MESA CA 91941-3842 17R-030201SC02301

Copyright 2017 - All Rights Reserved 4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA (800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Similar Vehicle database reader

You entered: 2006 CHRYSLER PT CRUISER

The Similar Vehicle Year/Model list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase							
2001 - 2009	CHRYSLER	PT CRUISER	4D, CONV	103							
Remarks: BASED C	Remarks: BASED ON NEON CHASSIS. Convertible start 2005										

The Similar Vehicle List contained in 4N6XPRT StifCalcs is an extension of the free Vehicle Interchange List provided by Gregory C. Anderson of Scalia Safety Engineering through the 2012 model year. 4N6XPRT Systems® has taken over the maintenance of the Similar Vehicle List beginning with the 2013 version of the 4N6XPRT StifCalcs program. 4N6XPRT Systems® makes no warranties, either expressed or implied, with respect to this data, its quality, performance, merchantability, or fitness for any particular purpose. The entire risk as to its quality and performance is with the user. In no event will 4N6XPRT Systems® be liable for direct, incidental, or consequential damages resulting from any data presented here, even if 4N6XPRT Systems® has been advised of the possibility of such damages. The user must agree to assume full responsibility for any decisions which are based, in whole or in part, upon information obtained by using this data. Some of the listed similarities are based on estimates or memory. Most of the data are pulled from specification tables which may contain inaccuracies of their own. Use common sense - if something seems wrong, check it (and if it is wrong, let us know!).

If you have suggestions and/or corrections, we request and urge you to contact us - 4n6@4n6xprt.com.

Test Information

Test # 3354		NHTS	A Test R	eference	Guide Vers	sion #	V5						
Test Date 2000-06-08	3				Cont	ract#	DTNH22-96-	D-02010					
Contract/Study Title	NEW CAR A	SSESMEN	T PROG	RAM FRO	NTAL BA	RRIER	IMPACT TEST						
Test Objective(s)	TO OBTAIN	VEHICLE	CRASH	WORTHI	NESS AND	occi	CUPANT RESTRAINT PERFORMANCE						
Test Type	NEW CAR A	SSESSME	NT TEST	Γ			Configuration	VEHICLE	INTO BARRIE	R			
Impact Angle	O Side Impact Point					0	mm	0.0	inches				
					Offset Di	istance	0	mm	0.0	inches			
					Closing	Speed	56.5	Km/Hr	35.10	MPH [
Test Performer	CALSPAN												
Test Reference #	RUN1879												
Test Track Surface	CONCRETE				Con	dition	DRY						
Ambient Temperature	21 C	69.8] F	Total N	umber of 0	Curves	129						
Data Recorder Type	OTHER						Data Link	OTHER					
Test Commentary	FY 00 NCAP #18 - 2001 CHRYSLER PT CRUISER												
			Fix	ced Barrie	er Informa	tion							
Barrier Type				Pole	Barrier Dia	meter	0	mm	0	inches			
Barrier Shape													
Barrier Commentary	FRONTAL F	LAT BARR	IER WIT	H 36 LO	ADCELLS								

2001 CHRYSLER PT CRUISER LEFT FRONT SEAT OCCUPANT

Test # 3354
/ehicle # 1 Sex MALE
Location LEFT FRONT SEAT Age 99
Position REARWARD OF CENTER POSITION Height 999 mm 39.3 inches
Type HYBRID III DUMMY Weight 999.0 kg 2202 pounds
Size 50 PERCENTILE
Calibration Method HYBRID III
Occupant Manufacturer MFG: ARL, S/N 245
Occupant Modification NO COMMENTS
Occupant Description NO COMMENTS
Occupant Commentary CNTRH2: HEADREST
<u>Head</u>
Head to -
Windshielder Header 415 mm 16.3 inches Head Injury Criteria (HIC) 1079 WindShield 617 mm 24.3 inches HIC Lower Time Interval (ms) 65.4
Seatback 9999 mm 0.0 inches HIC Upper Time Interval (ms) 93.3
Side Header 226 mm 8.9 inches
Side Window 305 mm 12.0 inches
Neck to Seatback 9999 mm 0.0 inches
First Contact Region (Head) AIR BAG
Second Contact Region (Head)
Gecome Contact Region (ricae)
<u>Chest</u>
Chest to -
Dash 566 mm 22.3 inches Arm to Door 99 mm 3.9 inches
Steering Wheel 292 mm 11.5 inches Hip to Door 176 mm 6.9 inches
Seatback 9999 mm 0.0 inches
Chest Severity Index 627 Pelvic Peak Lateral Acceleration (g's) 0
Thoracic Trauma Index 0 Thorax Peak Acceleration (g's) 58.2
Lap Belt Peak Load 8926 Newtons 2006.7 pound Force
Shoulder Belt Peak Load 9999 Newtons 2247.9 pound Force
First Contact Region (Chest/Abdomen) AIR BAG
Second Contact Region (Chest/Abdomen) NONE
<u>Legs</u>
Knees to Dash 169 mm 6.7 inches Knees to Seatback 9999 mm 0.0 inches
Left Femur Peak Load [-2130] Newtons [-478.8] pounds Force
Right Femur Peak Load -6997 Newtons -1573.0 pounds Force
First Contact Region (Legs) DASHPANEL
Second Contact Region (Legs)
· · · · · · · · · · · · · · · · · · ·

2001 CHRYSLER PT CRUISER LEFT FRONT SEAT OCCUPANT

Test #	3354					
Vehicle #	1		Sex	MALE		
Location	LEFT FRONT SE	AT	Age	99		
Position	REARWARD OF (CENTER POSITION	Height	999 mm 39.3	inches	
Туре	HYBRID III DUMN	ЛΥ	Weight	999.0 kg 220	2 pounds	
Size	50 PERCENTILE					
Cali	bration Method	HYBRID III				-
Occupar	nt Manufacturer	MFG: ARL, S/N 245				
Occupa	ant Modification	NO COMMENTS				
Occup	pant Description	NO COMMENTS				
Occupa	ant Commentary	CNTRH2: HEADREST				
		Restraints	.			
Restrair	nt # 1 3 POINT E		_			
Mounte	ed A PILLAR					
Deployi						
	nt Commentary					
Restrair	nt # 2 FRONTAL	AIRBAG				
Mounte	ed STEERING	G WHEEL				
Deployi	ment DEPLOYE	D PROPERLY				
Restrair	nt Commentary					

2001 CHRYSLER PT CRUISER RIGHT FRONT SEAT OCCUPANT

Test # 3354	
Vehicle # 1	Sex MALE
Location RIGHT FRONT SEAT	Age 99
Position REARWARD OF CENTER	POSITION Height 999 mm 39.3 inches
Type HYBRID III DUMMY	Weight 999.0 kg 2202 pounds
Size 50 PERCENTILE	
Calibration Method HYBRID	111
Occupant Manufacturer MFG: V	ECTOR, S/N: 064
Occupant Modification NO COM	MMENTS
Occupant Description NO COM	MMENTS
Occupant Commentary NO COM	MMENTS
	<u>Head</u>
Head to -	
Windshielder Header 431 mm	inches Head Injury Criteria (HIC) 466
WindShield 622 mm	inches HIC Lower Time Interval (ms) 65.5
Seatback 9999 mm	0.0 Inches HIC Upper Time Interval (ms) 101.5
Side Header 222 mm	8.7 inches
Side Window 326 mm	12.8 inches
Neck to Seatback 9999 mm 0.0	inches
First Contact Region (He	ad) AIR BAG
Second Contact Region (He	ad)
	<u>Chest</u>
Chest to -	
Dash <u>554</u> mm <u>21.</u>	
Steering Wheel 9999 mm 0.0	
Seatback 9999 mm 0.0	
Chest Severity Index 513	Pelvic Peak Lateral Acceleration (g's)
Thoracic Trauma Index 0	Thorax Peak Acceleration (g's) 49.3
Lap Belt Peak	
Shoulder Belt Peak	
First Contact Region (Chest/Abdor	
Second Contact Region (Chest/Abdor	nen)[NONE
	<u>Legs</u>
Knees to Dash 170 mm 6.7	inches Knees to Seatback 9999 mm 0.0 inches
Left Femur Peak Load -8144	Newtons -1830.9 pounds Force
Right Femur Peak Load -3695	Newtons -830.7 pounds Force
First Contact Region (Le	gs) DASHPANEL
Second Contact Region (Le	egs)

2001 CHRYSLER PT CRUISER RIGHT FRONT SEAT OCCUPANT

Test #	3354					
Vehicle #	1		Sex	MALE		
Location	RIGHT FRONT S	EAT	Age	99		
Position	REARWARD OF	CENTER POSITION	Height	999 mm 3	9.3 inches	
Type	HYBRID III DUM	МΥ	Weight	999.0 kg 2 :	202 pounds	
Size	50 PERCENTILE					
Cali	bration Method	HYBRID III				
Occupar	nt Manufacturer	MFG: VECTOR, S/N: 064	ļ			
Occupa	ant Modification	NO COMMENTS				
Occu	pant Description	NO COMMENTS				
Occupa	ant Commentary	NO COMMENTS				
		Restraints	<u>.</u>			
Restrai	nt # 1 3 POINT I	BELT				
Mounte	ed OTHER					
Deploy	ment NOT APP	LICABLE				
Restrai	nt Commentary					
Restrai	nt# 2 FRONTAL	AIDBAC				
Mounte		NEL - UNSPECIFIED				
Deploy	ment DEPLOYE	D PROPERLY				
Restrai	nt Commentary					

Vehicle 1 2001 CHRYSLER PT CRUISER

Test #	3354										
VIN	3C4FY4BB7	1T28335	0		NHTSA Te	st Vehicl	e Number	1			
Year	2001				Vehicle Mo	dification	Indicator	PROD	UCTION	VEHICL	E.
Make	CHRYSLER		Post-test	Steering C	Column Shear	Capsule	Seperatio	n UNKN	OWN		
Model	PT CRUISER			Steer	ing Column Co	ollapse M	lechanism	UNKN	OWN		
Body	UTILITY VEH	IICLE									
Engine 4 CYLINDER TRANSVERSE FRONT											
Displacement 2.4 Liter Transmission AUTOMATIC - FRONT WHEEL DRIVE											
Vehicle Modific	ation(s) Descr	iption [NO COM	MENTS							
Vehicle Comm	entary 2001	CHRYSL	ER PT C	RUISER S	PECIAL PURP	OS E VE	HICLE				
Vehicle Len	gth 4253	mm	167.4	inches	CG	behind	Front Axle	1133	mm	44.6	inches
Vehicle V	Vidth 1704	mm	67.1	inches	Center of E	Damage t	o CG Axis	0	mm	0.0	inches
Vehicle Whee	lbase 2616	mm	103.0	inches	Total Leng	gth of Ind	lentation	1400	mm	55.1	inches
Vehicle Test W	eight 1652	KG	3641	pounds	Maximum S	Static Cru	ish Depth	603	mm	23.7	inches
						Pre-Impa	act Speed	56	kph	35.1	mph
Vehicle Damage Index 12FDEW2 Principal Direction of Force 180											
Damage Pro	ofile Distanc	e Meas	uremer	ıts	Crush fron	n Pre &	Post Tes	t Dama	ge Me	<u>asurem</u>	<u>ents</u>
(Measu	ıred Left-to-Ri	ght, Reai	r-to-Front)		Pre-Tes	<u>t</u>	Post-Te	<u>st</u>	Crush E	<u>Depth</u>
DPD 1 4	1 72 mm	18.6	inches	Left B	umper Corner	163.3	inches	142.7	inches	20.6	inches
DPD 2 5	647 mm	21.5	inches			4148	mm	3624	mm	524] mm
DPD 3 6	03 mm	23.7	inches		Centerline	167.4	inches	147.5	inches	19.9	inches
DPD 4 5	97 mm	23.5	inches			4253	mm	3747	mm	506	mm
DPD 5 4	195 mm	19.5	inches	District D					•		-
DPD 6 3	93 mm	15.5	inches	Right Bi	umper Corner		inches	144.7	inches		inches
						4146	mm	3675	mm	471	mm
Bumper F	ingagement			Sill F	ngagement			Δ	∖-pillar E	ngageme	ent
•	pact Only)				Impact Only)				•	npact On	
Ì	0.0			` _	APPLICABLE			[`	0.0	Ί
			<u> </u>					'			_
Moving	Test Cart			Moving	Test Cart/Vehi	cle		Veh	icle Orie	entation c	n Cart
A	ngle			Cra	bbed Angle				Moving	Test Car	t
NOT A	PPLICABLE				0.0			N	OT API	PLICABL	E
-	of the Tilt Angle			Magniture	of the Crabbed Angl	le		Magnitude of the Angle			
	etween surface of a				re Clockwise from					ne Vehicle O	
Rollover Test (Cart and the Ground	d	Lon	gitudinal Vecto	r to Velocity Vector	of Vehicle		and [Direction of	f Test Cart M	lotion

Vehicle 1 2001 CHRYSLER PT CRUISER

Test #	3354										
VIN	3C4FY	4BB71	T28335	0		NHTSA	Test Vehicle Nu	umber 1			
Year	2001	2001 Vehicle Modification Indicator PRODUCTION VEHICL									.E
Make	CHRYS	CHRYSLER Post-test Steering Column Shear Capsule Seperation UNKNOWN									
Model	PT CR	PT CRUISER Steering Column Collapse Mechanism UNKNOWN									
Body	UTILIT	Y VEHI	CLE								
Engine	4 CYLI	NDER 1	TRANS\	/ERSE	FRONT						
Displacement	2.4	Liter	Tra	nsmissi	ion AU1	TOMATIC - FR	ONT WHEEL DE	RIVE			
Vehicle Modification(s) Description NO COMMENTS											
Vehicle Comm	entary	2001 C	HRYSL	ER PT	CRUISEF	R SPECIAL P L	JRP OS E VEHIC	LE			
Vehicle Len	gth	4253	mm	167.4	inches		CG behind Fron	nt Axle 1133] mm	44.6	inches
Vehicle V	Vidth	1704	mm	67.1	inches	Center	of Damage to Co	G Axis 0	mm	0.0	inches
Vehicle Whee	lbase	2616	mm	103.0	inches	Total L	ength of Indenta	ation 1400	mm	55.1	inches
Vehicle Test W	'eight	1652	KG	3641] pounds	s Maximu	m Static Crush [Depth 603	mm	23.7	inches
							Pre-Impact S	Speed 56	kph	35.1	mph
Vehicle Damage Index 12FDEW2 Principal Direction of Force 180											

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehi de Surface forward.)

Left Side			Centerline				Right Side				
Pre-Test Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test			
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Len	gth of Veh	icle at Ce	nterline				
				4253	167.4	3747	147.5				
					Engin	e Block					
				272	10.7	272	10.7				
4148	163.3	3624	142.7		Front Bur	mper Con	ner	4146	163.2	3675	144.7
					Front o	of Engine					
				3647	143.6	3412	134.3				
3295	129.7	3211	126.4		Fire	ewall		3300	129.9	3173	124.9
				3313	130.4	3207	126.3				
2902	114.3	2901	114.2	Upp	oer Leadin	g Edge o	f Door	2901	114.2	2897	114.1
2910	114.6	2907	114.4	Low	ver Leadin	g Edge of	f Door	2914	114.7	2905	114.4
3008	118.4	3004	118.3		Bottom o	f 'A' Post		3039	119.6	3050	120.1
1893	74.5	1894	74.6	Up	per Trailing	g Edge of	f Door	1897	74.7	1891	74.4
1937	76.3	1935	76.2	Lo	wer Trailing	g Edge of	f Door	1935	76.2	1929	75.9
					Steerin	g Column	1				
	2488 98.0 2485 97.8										
Center of Seering Column to 'A' Post (Horizontal)											
294 11.6 272 10.7											
				Center of Steering Column to Headliner (Vertical)							
				412	16.2	373	14.7				

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2001 CHRYSLER PT CRUISER

NHTSA Crash Test - #3354 - Front Impact

Pre/Post Depths - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 3641 pounds Vehicle Closing Speed = 35.1 mph Test Crush Length = 67.1 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 20.6 19.9 18.5

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 18.5 inches 156.6 Using a Rated No Damage Speed of 191.7 135.1 136.0 2.5mph Using a Rated No Damage Speed of 5.0mph 354.0 115.2 543.9 Using a Rated No Damage Speed of 7.5mph 486.9 96.9 1223.8 Using a Rated No Damage Speed of 590.4 80.1 2175.6 10.0mph Average Crush = 19.8 inches 136.7 Using a Rated No Damage Speed of 2.5mph 179.1 118.0 136.0 Using a Rated No Damage Speed of 330.7 100.6 5.0mph 543.9 Using a Rated No Damage Speed of 7.5mph 454.9 84.6 1223.8 Using a Rated No Damage Speed of 10.0mph 551.6 69.9 2175.6 126.3 Maximum Crush = 20.6 inches Using a Rated No Damage Speed of 2.5mph 172.2 109.0 136.0 Using a Rated No Damage Speed of 5.0mph 317.9 92.9 543.9 437.2 Using a Rated No Damage Speed of 7.5mph 78.1 1223.8 Using a Rated No Damage Speed of 10.0mph 530.2 64.6 2175.6

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	20.6	32.9	-2.2	-6.7

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 23.9

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Registered Owner: 4N6XPRT SYSTEMS

Registered Owner: 4N6XPRT SYSTEMS

Serial Number: 17R-030201SC02301

2001 CHRYSLER PT CRUISER

NHTSA Crash Test - #3354 - Front Impact

Pre/Post Depths - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 3641 pounds Vehicle Closing Speed = 35.1 mph Test Crush Length = 55.1 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 20.6 19.9 18.5

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 18.5 inches 190.7 Using a Rated No Damage Speed of 233.3 164.5 165.5 2.5mph Using a Rated No Damage Speed of 5.0mph 430.9 140.2 662.0 Using a Rated No Damage Speed of 7.5mph 592.6 117.9 1489.5 Using a Rated No Damage Speed of 97.5 2648.0 10.0mph 718.6 Average Crush = 19.8 inches 166.4 Using a Rated No Damage Speed of 2.5mph 218.0 143.6 165.5 Using a Rated No Damage Speed of 402.6 122.4 5.0mph 662.0 Using a Rated No Damage Speed of 7.5mph 553.7 102.9 1489.5 Using a Rated No Damage Speed of 10.0mph 671.4 85.1 2648.0 Maximum Crush = 20.6 inches 153.8 Using a Rated No Damage Speed of 2.5mph 209.5 132.6 165.5 Using a Rated No Damage Speed of 5.0mph 386.9 113.1 662.0 Using a Rated No Damage Speed of 7.5mph 532.2 95.1 1489.5 Using a Rated No Damage Speed of 10.0mph 645.3 78.6 2648.0

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of dam age without permanent dam age, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	20.6	32.9	-2.2	-6.7

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 23.9

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Registered Owner: 4N6XPRT SYSTEMS

Registered Owner: 4N6XPRT SYSTEMS

Serial Number: 17R-030201SC02301

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2001 - 2009 Make: CHRYSLER Model: PT CRUISER

Test Number	Vehicle Info	No Damage Speed	Average Crush	•	•	e h i c l e i f f n e s		•	Crush
		(mph)	(inch)	(mph)	A	В	G	Kv	Factor
3354	2001 CHRYSLER PT CRUISER UTILITY VEHICLE	5.0	18.8	35.1	347.6	111.1	543.9	151.1	26.2
4230	2002 CHRYSLER PT CRUISER UTILITY VEHICLE	5.0	13.8	35.0	482.8	209.6	556.1	285.3	35.5
		Average	(AVG)		415.2	160.3	550.0	218.2	30.8
			(MIN)		347.6	111.1	543.9	151.1	26.2
Maximum (MAX)					482.8	209.6	556.1	285.3	35.5
Standard Deviation (STDev-sample)					95.6	69.6	8.6	94.9	6.6
Number of Tests (n)				2					

Serial Number: 17R-030201SC02301

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2001 - 2009 Make: CHRYSLER Model: PT CRUISER

Test	Vehicle	No		01			147: 171		
Number Info		Damage Speed	Max Crush	J		ehicle iffnes:			Crush
		(mph)	(inch)	(mph)	Α	В	G	Kv	Factor
3354	2001 CHRYSLER PT CRUISER UTILITY VEHICLE	5.0	23.7	35.1	275.9	70.0	543.9	95.1	20.8
4230	4230 2002 CHRYSLER PT CRUISER UTILITY VEHICLE		20.9	35.0	319.2	91.6	556.1	124.7	23.4
		Average ((AVG)		297.5	80.8	550.0	109.9	22.1
	Minimum	(MIN)		275.9	70.0	543.9	95.1	20.8	
Maximum (MAX)					319.2	91.6	556.1	124.7	23.4
Standard Deviation (STDev-sample			ample)		30.7	15.3	8.6	20.9	1.9
Number of Tests (n)				2					

Serial Number: 17R-030201SC02301

4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91941-3842

Fax: (619) 464-2206 Toll Free: 1-800-266-9778

Phone: (619) 464-3478

E-Mail: 4n6@4n6xprt.com

Web Site: http://www.4n6xprt.com

The NHTSA Crash Test database contains TWO FRONT Impact tests for the 2001-2009 Chrysler PT Cruiser and its same/similar vehicles.

To create a SIMILAR class of vehicle, we looked at the NHTSA database for All vehicles within +/- 20 pounds test weight of the test weight for the 2001 Chrysler PT Cruiser test in the database..

For the crush summary reports, all tests with a A value greater than 500 were removed from the summary.

The Test Summary Reports based on the Average and Maximum crush depths follow.

4N6XPRT StifCalcs®

Available Test Results Front Impact Test Summary Report Filter Settings

Year Range: 2002 - 2010

Vehicle Weight Range: 3621-3661

Serial Number: 17R-030201SC02301

Test Numbe	Vehicle r Info	No Damage Speed (mph)	Average Crush (inch)	•	•	ehicle iffness B		•	Crush Factor
6755	2010 FORD FUSION FOUR DOOR SEDAN	5.0	19.9	35.0	306.6	92.3	509.5	125.6	24.6
5145	2004 HONDA ACCORD FOUR DOOR SEDAN	5.0	19.6	35.1	310.9	95.3	507.1	129.6	25.1
5730	2006 HYUNDAI SONATA FOUR DOOR SEDAN	5.0	12.3	24.7	329.2	106.0	511.4	166.5	20.0
5602	2006 CHEVROLET HHR UTILITY VEHICLE	5.0	18.4	34.9	359.0	116.8	551.6	159.1	26.5
6720	2010 FORD MUSTANG TWO DOOR COUPE	5.0	7.7	19.7	383.8	146.6	502.5	263.3	20.2
6715	2009 BMW 128I TWO DOOR COUPE	5.0	10.5	24.7	405.9	152.3	541.0	239.2	23.3
5071	2004 TOYOTA CAMRY FOUR DOOR SEDAN	5.0	9.6	24.6	422.0	171.7	518.5	270.5	25.1
5717	2006 MITSUBISHI GALANT FOUR DOOR SEDAN	5.0	14.0	34.7	428.7	182.2	504.3	248.8	34.4
5853	2006 KIA OPTIMA FOUR DOOR SEDAN	5.0	14.9	35.0	478.6	193.6	591.5	263.4	33.1
4559	2003 MITSUBISHI OUTLANDER UTILITY VEHICLE	5.0	12.9	35.0	494.1	229.4	532.0	312.3	37.9
		Average ((AVG)		391.9	148.6	526.9	217.8	27.0
		Minimum	(MIN)		306.6	92.3	502.5	125.6	20.0
		Maximum	(MAX)		494.1	229.4	591.5	312.3	37.9
	Standard Deviation	n (STDev-sa	ample)		66.1	46.0	28.1	66.4	6.1
	Nur	mber of Tes	sts (n)	10					

4N6XPRT StifCalcs®

Available Test Results Front Impact Test Summary Report Filter Settings

Year Range: 2002 - 2010

Vehicle Weight Range: 3621-3661

Test Numbe	Vehicle r Info	No Damage Speed (mph)	Max Crush (inch)			ehicle iffness B			Crush Factor
6720	2010 FORD MUSTANG TWO DOOR COUPE	5.0	17.2	19.7	171.3	29.2	502.5	52.5	9.0
5717	2006 MITSUBISHI GALANT FOUR DOOR SEDAN	5.0	26.5	34.7	226.2	50.7	504.3	69.3	18.2
5145	2004 HONDA ACCORD FOUR DOOR SEDAN	5.0	24.8	35.1	246.6	60.0	507.1	81.5	19.9
5602	2006 CHEVROLET HHR UTILITY VEHICLE	5.0	26.3	34.9	251.4	57.3	551.6	78.0	18.6
6755	2010 FORD FUSION FOUR DOOR SEDAN	5.0	23.8	35.0	256.5	64.6	509.5	87.9	20.6
5730	2006 HYUNDAI SONATA FOUR DOOR SEDAN	5.0	15.7	24.7	257.6	64.9	511.4	101.9	15.6
5666	2006 SUZUKI VERONA FOUR DOOR SEDAN	5.0	21.7	34.9	282.3	77.8	511.7	106.1	22.4
5071	2004 TOYOTA CAMRY FOUR DOOR SEDAN	5.0	13.3	24.6	305.6	90.1	518.5	141.8	18.2
6715	2009 BMW 128I TWO DOOR COUPE	5.0	13.3	24.7	320.8	95.1	541.0	149.5	18.4
4559	2003 MITSUBISHI OUTLANDER UTILITY VEHICLE	5.0	16.9	35.0	377.0	133.6	532.0	181.8	28.9
5853	2006 KIA OPTIMA FOUR DOOR SEDAN	5.0	17.5	35.0	406.7	139.8	591.5	190.2	28.1
		Average ((AVG)		282.0	78.5	525.6	112.8	19.8
		Minimum	(MIN)		171.3	29.2	502.5	52.5	9.0
		Maximum	(MAX)		406.7	139.8	591.5	190.2	28.9
	Standard Deviation	n (STDev-sa	imple)		67.4	34.0	27.1	46.3	5.5
	Nui	mber of Tes	sts (n)	11					

4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942 Phone: (619) 464-3478 Fax: (619) 464-2206

Toll Free: 1-800-266-9778

Web Site: http://www.4n6xprt.com E-Mail: 4n6@4n6xprt.com

Dear Conference Attendee,

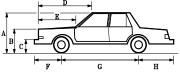
We at 4N6XPRT Systems were pleased to be able to provide you with the preceding data for the crash test vehicles.

Information regarding the Services available to you through our company, as well as the Programs used to create the data report follows this page.

We look forward to providing you similar information in the near future.

Sincerely,

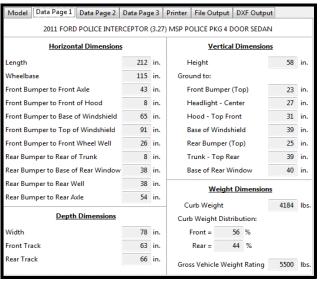
Daniel W. Vomhof III Daniel W. Vomhof, Ph.D.



Expert AutoStats[®]

program that has over 42,000 cars, pick-ups, vans, and utility vehicles that range in years from the 1940's to the present. Expert AutoStats® has specifications that can assist in reconstructing accidents when the data for the vehicle is unavailable or the vehicle is too severely damaged to get correct measurements.

For many vehicles mid-1960's to present, data such as bumper height, front and rear overhang, hood height, etc., are also included.



4N6XPRT BioMeknx®



Collecting the
Biomechanical
data of
importance to
the Accident
Investigator
into one easily
accessible
reference
location

Biomechanics is the application of physics to describe, evaluate, or model living tissue and biological materials. Originally it was the application of the part of physics known as Mechanics to living systems. This is the same portion of physics which is used as the basis for much of accident reconstruction.

Biomechanics is important in many aspects of forensic work from vehicle accident reconstruction to slip-trip-stumble-fall cases. This particular program contains modules containing information on a variety of biomechanics and injury modalities, physical data found in the literature for failure of bone and tissue, calculation modules to evaluate individual specific parameters, and definitions and terminology used in the literature and found in medical reports.

4N6XPRT BioMeknx® is a program designed for the accident investigator. The BioMeknx program incorporates information from a number of different sources, as well as over 30 years of reconstruction experience. 4N6XPRT BioMeknx™ compiles into one source a number of items of information to assist in reconstructing accidents by tying in the human component more tightly without the need to be a BioMechanics expert. Identification of body location, body part illustrations, failure threshold limits, definitions of terms, calculation modules for body link lengths, weights, stride lengths, and formulas for other types of calculations are only some of the material included in the program.

To gather into your library the material included in the 4N6XPRT BioMeknxTM, you would need a minimum of 10-15 Anatomy and Physiology, Human Factors, and Biomechanics books, as well as conduct over 50 hours of internet research.

3FAPP1280MR117253

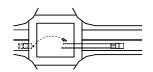
Expert VIN DeCoder®



Expert VIN DeCoder® is a program that "DeCodes" the 17 character VIN number for Cars, Vans, Pickups, and Utility vehicles manufactured from 1981 to the present.

Cars/Vans/Utility/Lt. Trucks Modules: 1981 to Present

Ford Mercury/Lincoln Chrysler/AMC/Jeep European Import Chevrolet/Geo Pontiac / Buick / Oldsmobile Cadillac/Saturn Asian Import



4N6XPRT Ped & Bike Calcs®

The 4N6XPRT

Ped & Bike Calcs®) program is a program that provides FIRST ESTIMATE calculations to evaluate the speed of a vehicle involved in striking a pedestrian or bicyclist, IF Vehicle, scene, and pedestrian {or pedestrian and bicycle in a vehicle-bike accident} measurements are available. This program may also be used when skateboards or roller skates are involved.

Expert Qwic Calcs®



>>>Calculate Time given D & V<<
Enter Distance (in feet): 45
Enter Velocity (in mph): 6

Expert Qwic Calcs® quickly provides answers to questions important in vehicle collision litigation. The user inputs data in response to relevant questions, Expert

Qwic Clacs® performs the mathematical calculations required. Both the input data and the calculated result are then displayed, and may be "dumped" to a printer.

When the law enforcement accident report gives insufficient information to do a full - blown accident reconstruction, Expert Qwic Calcs® may be used to "scope out" the parameters of speeds, times, and distances to determine these relationships in a vehicle accident.

Expert TireStuf®



The Expert
TireStuf® program is a
Menu Driven program
which has 19 modules
explaining the various tire
size designation systems,
the information which
MAY be in the DOT tire

number, the DOT mandated Tire Grading system, Lug Nut Tightening and Tire Rotation schemes, Mix and Match precautions, a glossary of Tire Terms, and Addresses of a few of the sources of additional information on tires and rims.

Also included is a calculation of the number of revolutions in one mile given the tire dimensions.

A=? B=? CF=? 4N6XPRT StifCalcs®

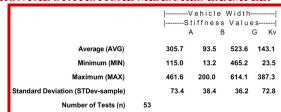
4N6XPRT StifCalcs®. Is a program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet in order to obtain Stiffness Values!

In addition to the NHTSA Crash Test data, the program includes a "Similar Vehicle List Reader" which allows quick retrieval of the data for the desired and "similar" vehicle(s). This will drive the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module which allows the creation of "Class" vehicles.

WITHOUT THE INTERNET the user can:

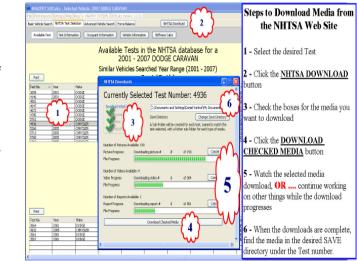
- ★ Lookup individual tests and get basic front, side, and rear STIFFNESS VALUES from these tests. The values are based on the reported crush depths and lengths within each test.
- ★ Obtain Similar Vehicle group summary STIFFNESS data with Statistical measures.
- ★ Create "CLASS" vehicles and get summary STIFFNESS data with Statistical measures.

FRONTAL STATISTICAL MEASURES EXAMPLE:



WITH THE INTERNET the user can:

★ RESEARCH and easily download the PICTURES, VIDEOS, and REPORTS available for individual tests



	0 1 0		e paid per the included schedule.
Contact Name: Title:			
	•		
Straat:	· <u> </u>		
Street:			
City			State Zip
Phone: ()_			FAX: ()
E-Mail:			
			der Govt. Purchase Order
			Express / Visa / MasterCard, then complete the following:
Card Number:			Expiration Date (MM/YY):/
Security co	de (card ID) on back of	Visa/MasterC	ard card or front of American Express Card:
			AMERICAN GEORGES
1234 5678 9012 345 123 Lamp glant have Janu Janu Janu Janu Janu Janu Janu Janu	←Visa/MasterCard S	Security	American Express →
Address for where the cred	it card bill is sent:		
(This i	is the address that the credit ca	ırd bill would go to	, not where we would send the data or product to)
	Zip for where the cred	it card bill is s	sent:, not where we would send the data or product to)
(This i	s the zip code that the credit co	ırd bill would go to	n, not where we would send the data or product to)
	M ORDER FORM: - prices subject to change without n	notice)	Individual Vehicle Data FAX/Order Form
xpert AutoStats®:	\$ 625.00 *	¢	□ Expert VIN Decoder & Expert AutoStats
N6XPRT BioMeknx®:	\$ 495.00 *	\$	□ NHTSA Crash Test Results
N6XPRT Ped & Bike Calcs®:	\$ 375.00 *	\$	□ BOTH Please circle ALL OPTIONS that apply
xpert Qwic Calcs®:	\$ 275.00 *	\$	
xpert TireStuf®:	\$ 85.00 *	\$	YEAR & MAKE:
N6XPRT StifCalcs®:	\$ 650.00 *	\$	MODEL:
xpert VIN DeCoder®:	\$ 550.00 *	\$	
	CUD TOTAL	======	If you are requesting VIN DeCoder & AutoStats please also provide:
41: **.	SUB-TOTAL	\$	Vehicle Type:Car - Pickup - Utility - Van
andling **: (Cash or Check with order	u = \$5.00 Cuadit Cand = \$	\$	No. of Doors:2/3/4/5
,	se Order = \$15.00)	10.00,	Car Body Style:Coupe/Conv./Sedan/Wagon DRIVE WHEELS: 4x2 / 4x4
otarized Affidavit Filing Requir		\$	PICKUPS:Dual Rear Wheel - Std. / Extra / Super / Crew Cab - Short Bed / Long Bed
	red Notarized Signature)	Ψ	VANS:Cargo / Passenger - Short / Long Wheelbase
			VIN Information
	s via electronic download	¢ 0.00	
- Deliver via electronic download lir - Deliver on USB - additional cost		\$ 0.00 \$	$\frac{1}{2}$ $\frac{2}{3}$ $\frac{4}{5}$ $\frac{6}{6}$ $\frac{7}{8}$ $\frac{9}{9}$
Benver on OBB auditional cost	or \$55.00 / disk / program	======	
	SUB-TOTAL	\$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
alifornia shipping addresses add	8 50% sales tay	\$	NHTSA Crash Test Information
California orders delivered electronic		Ψ	Impact location - Front / Side / Rear Impact Speed - Lower / Higher
	· ——	\$	impact speed "Lower," Higher
	101/11		Case Reference/Number:
Authorized signatur	e:		

Individual Vehicle Data Search Service®

Charges & Services

Individual Vehicle Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)

\$40.00-First cycle*, \$35.00/Additional cycles*, \$20.00/Additional Similar Model*

NHTSA Crash Test Results

\$40.00 per test - Includes A, B, & G values Calculations are based on the test results

Individual Vehicle Specifications

Now you can get the Expert AutoStats® data for the vehicles in your case *QUICKLY*, *EASILY*, and *ECONOMICALLY*, instead of guessing, or begging a printout from a friend.

Our vehicle database includes dimensions on over 42,000 Cars, Vans, Lt. Pickups, and Utility Vehicles covering 1945 to the present.

Minimum Vehicle specifications include:

Overall Length Curb Weight
Overall Width Weight Distribution
Overall Height Front/Rear Track
Wheelbase CG Location

Model years with No Significant Dimensional Changes VIN DeCoding when VIN is provided Information available

Mid-60's to present **also includes** (when available)
Front/Rear Overhang
Bumper Heights

Hood height Turning Circle
Bumper-to-hood Ground-to-hood

Dimensions are given in both Imperial and metric (SI) units. Motorcycle specifications will be similar to the Vehicle specifications with appropriate changes where applicable.

NHTSA Crash Test Results

Test results include: General Test information, Barrier Data when provided, Vehicle Data as reported by the testing organization, Occupant (Dummy) data when provided, and A-B-G Stiffness calculations based on the test results.

4N6XPRT Systems[®]

Providing Vehicle dimensional data, VIN DeCoding, and NHTSA Crash Test Results as a service to the Litigation community, in the form of:

Expert Systems Software Programs for Litigation

Expert AutoStats®
4N6XPRT StifCalcs®
4N6XPRT BioMeknx®
4N6XPRT Ped & Bike Calcs®
Expert Qwic Calcs®
Expert TireStuf®
Expert VIN DeCoder®

Vehicle Data Service

Individual Vehicle Data Search Service®

8387 University Avenue, Suite P La Mesa, CA 91942-9342

> Phone: 1-800-266-9778 Fax: **(619)** 464-2206

E-Mail: 4n6@4n6xprt.com

Web: http://www.4n6xprt.com

Expert VIN DeCoder®

Expert VIN DeCoder® is a program that "DeCodes" the 17 character VIN number for vehicles manufactured from 1981 to the present.

Modules: 1981 to Present
Control Module - One Required per Set

Ford Cars (includes Festiva & Merkur) Mercury/Lincoln Cars Ford vans/Utility/Lt. Trucks

Chevrolet/Geo Cars
Pontiac/GM of Canada Cars
Oldsmobile Cars
Buick Cars
Cadillac/Saturn Cars
General Motors Vans/Utility/Lt. Trucks

Chrysler/AMC/Jeep Cars Chrysler/Jeep Vans/Utility/Lt. Trucks

European Import Cars/Vans/Utility/Lt. Trucks Asian Import Cars/Vans/Utility/Lt. Trucks

SYSTEM REQUIREMENTS

Expert VIN DeCoder® has been tested on a wide variety of IBM laptop and desktop clones ranging from 8088 through Pentium® chips. A math coprocessor chip is NOT required. Expert VIN DeCoder® has also been tested under the various versions of MSDOS 3.0 thru 7.0, DrDOS 6.0, and PC DOS 7.0. It also works as a DOS program under Windows 3.x, Windows, 95, Windows 98, Windows NT, OS/2 2.x, OS/2 Warp, and various versions of LINUX.

A variety of dot matrix printers emulating the EPSON series have been used with no difficulty. The output is also compatible with the Hewlett-Packard II, IIP, III and IIIP Laser printers. Expert VIN DeCoder® works with monochrome and color monitors.

As of April 1995 the 4N6XPRT Systems® programs Expert AutoStats®, Expert Qwic Calcs®, Expert TireStuf®, 4N6XPRT Ped & Bike Calcs®, and Expert VIN DeCoder® are accessible from within RECTEC

PLEASE PRINT

Contact Name:
Company/Dept:
Mailing Address:
City: State: Zip:
Phone:
Fax:
E-Mail:
· · ·
Expert VIN DeCoder®
(copies) x \$550.00 = \$
Handling **: \$
(Check with order = \$5.00, Credit Card = \$10.00, Govt. P.O.r = \$15.00)
Notarized Affidavit Filing Requirement \$(\$25.00 per required Notarized Signature)
(\$25.00 per requirea Nourizea Signature)
Normal delivery is via electronic download
□ - Deliver via electronic download link (e-mail address required) \$ 0.00
☐ Please deliver on USB at an additional cost of \$35.00 per disk \$
SUB-TOTAL = \$
CA Addresses add 8.75% sales tax = \$
(California orders delivered by e-mail attachment DO NOT owe sales tax)
TOTAL = \$
Enclosed is:
Check*/Money Order: Credit Card: P.O.:
Please make check*/M.O./P.O. payable to:
4N6XPRT Systems®
Credit Card Orders:
MasterCard: Visa: Am.Ex.:
Card #:
Expires:
Name on Card:
Signature.
Billing Add. #:
Billing Zip:
Mail to: 4N6XPRT Systems®
8387 University Avenue
La Mesa, CA 91942-9342
Telephone Orders:
Monday-Friday - 9:30am-5:00pm PST
Phone: (619) 464-3478 Fax: (619) 464-2206

Orders will be shipped Priority Mail within 10 working days of receipt of order.

Prices subject to change WITHOUT NOTICE.

* Checks MUST be drawn from a bank in the U.S.A.

Expert VIN DeCoder®



User Friendly Software to provide interpretation of the 17 character VIN Number on Cars, Lt. Pickups, Utility Vehicles, and Vans.

4N6XPRT Systems®

Forensic Expert Software 8387 University Avenue La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com E-Mail: VIN@4n6xprt.com

1-800-266-9778

Expert VIN DeCoder® example

INPUT:

Enter VIN Numbers to be DeCoded: 3FAPP1280MR117253 1)

3FA PP128 0 MR 117253

2) Is this the VIN Number to be DeCoded (Y/N)? Y

OUTPUT:

EXPERT VIN DeCoder

The VIN Number is 3FA PP128 0 MR 117253

The vehicle should be a 1991 Ford
The model: Escort 2/3-door Hatchback GT
The assembly plant: Hermosillo, Mexico
The 4 passenger vehicle had: Passive (Automatic) Front Belts

The OEM engine was: In-line 4 cylinder with Double Overhead Cam
Engine Displacement/Type = 1.8 L/112 cu.in. L4, DOHC
Brake Horsepower (SAE) = 127 @ 6500 rpm
Torque (SAE) = 114 lb-ft at 4500 rpm
Engine manufacturer = Mazda

The fuel distribution system: Electronic Fuel Injection (EFI)

Fuel pump/line pressure = 35-45 psi

The ignition system = electronic

This is a Front Wheel Drive vehicle.

The first three characters {3, F, A} indicates that the vehicle was a Ford made in Mexico

The fourth character {P} indicates the vehicle had Passive (Automatic) Front Belts

The fifth character {P} indicates it was a Passenger Car

The sixth with the seventh character {12} indicates a Escort 2/3-door Hatchback GT

The eighth character $\{8\}$ indicates the OEM engine : 1.8 L/112 cu.in. L4, DOHC

The 9th Character { the Check Digit } is 0 The calculated Check Digit value is 0

The tenth character {M} indicates the Model Year was 1991

The eleventh character {R} indicates it was made at the assembly plant in Hermosillo, Mexico

The twelveth through the seventeenth characters { 117253 } is the Serial Number unique to this vehicle.

S/N:930114VD01201 01-01-2001 Reg. User: 4N6XPRT SYSTEMS

Expert AutoStats®

The Expert AutoStats® program contains data on more than 42,000 cars, pick-ups, vans, and utility vehicles that range in years from the 1940's to the present. The Expert AutoStats® base information can assist in reconstructing accidents when the data for the vehicle is unavailable or the vehicle is too severely damaged to get correct measurements. The program is currently relied upon by over 700 private and 300 Government entities within the United States for this very purpose. Additionally, for many vehicles mid-1960's to present, data such as bumper height, front and rear overhang, hood height, etc., are also included.

As of April 1995 the 4N6XPRT Systems® programs Expert AutoStats®, Expert Qwic Calcs®, Expert TireStuf®, and Expert VIN DeCoder® are accessible from within RECTEC.

SYSTEM REQUIREMENTS

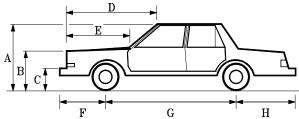
Expert AutoStats® has been tested on a wide variety of IBM laptop and desktop clones ranging from 8088 through Pentium® chips. A math coprocessor chip is NOT required. Expert AutoStats® has also been tested under the various versions of MS-DOS 3.0 thru 7.0, DrDOS 6.0, and PC DOS 7.0. It also works as a DOS program under Windows 3.x, Windows, 95, Windows 98, Windows NT, Windows Me, Windows 2000, Windows XP, Windows Vista, OS/2 2.x, OS/2 Warp, and various versions of LINUX.

A variety of dot matrix printers emulating the EPSON series have been used with no difficulty. The output is also compatible with the Hewlett-Packard II, IIP, III and IIIP Laser printers and Hewlett-Packard Desk Jet inkjet printers. Expert AutoStats® works with monochrome and color monitors.

PLEASE PRINT

SUB-TOTAL = \$ CA Addresses add 8.50% sales tax = \$ (California orders delivered by e-mail attachment DO NOT owe sales tax) TOTAL = \$ Enclosed is: Check*/Money Order: Credit Card: P.O.: Please make check*/M.O./P.O. payable to: 4N6XPRT Systems® Credit Card Orders:	
Contact Nam	ie:
Company/De	ept:
Mailing Add	ress:
City:State:Zi	p:
Phone:	
Fax:	
E-Mail:	
Handling **: (Check with order: Notarized Aff	\$
()	
□ - Deliver via elect	tronic download link (e-mail address required) \$ 0.00 USB at an additional cost of \$35.00 per disk \$
	SUB-TOTAL = \$
CA Addresses (California orders deliv	add 8.50% sales tax = \$
	TOTAL = \$
Please make	1 2
Maste	rCard: Visa: Am.Ex.:
Card #:	9 9 1
Expires:	Sec.Code:
Name on Car	rd:
Signature: _	
Billing Add.	:
Billing Zip:	
	8387 University Avenue
	19) 464-3478 Fax: (619) 464-2206

Expert AutoStats®



Over 42,000 cars, pick-ups, vans, and utility vehicles 1940's to the present are represented.

4N6XPRT Systems®

Forensic Expert Software 8387 University Avenue La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com E-Mail: <u>autostats@4n6xprt.com</u>

1-800-266-9778

Orders will be shipped Priority Mail within 10 working days of receipt of order.

Prices subject to change WITHOUT NOTICE.

* Checks MUST be drawn from a bank in the U.S.A.

Select Your Vehicle

Expert AutoStats®	Model Data Page 1	Data Page 2	Data Page 3	Printer	File Output D	(F Output		
Version 5.2.0.2 Serial Number:	Make of Vehicle	FORD			Select the Ma	nufacture	from	the
12R-930512AQ03201	Year of Vehicle	2011			list below.			
Copyright© 1991-2012	Model of Vehicle				Once a Manu	facturer h	s heer	
Expert Witness Services, Inc	2000,000,000 A 50,000 A				Selected the I			
All Rights Reserved	Number of Doors				Models will b	e below.		
Introduction	Bodystyle of Vehicle				Fill in the em	atu bawas t	a tha I	-61
	Car Pickup				to parrow the		o tile i	CIL
Examine Vehicle Specs	Van Utility	Cther		Clear				_
rint Blank Vehicle Spec Form	Manufact		St	art Year	End	Year		9 83
anufacturers & Years Available	FORD			930	2012			
ASHTO Design Vehicle Specs	FRAZER FRAZER NASH			947 948	1951 1957			
	FUNKE & WILL			002	2004			Ė
Data Definitions	GENERIC			979	1989			1
About Expert Autostats®	GEO			987	1998			
About expert Autostatse	GLAS			963	1966			
<< <exit autostats®="">>></exit>	GMC			947	2011			į.
PROVIDED BY:	Model			Body St	vle	WB (in)	OAL	(in
4N6XPRT Systems	FUSION HYBRID				SEDAN	108	191	
8387 University Avenue	MUSTANG				COUPE	107	188	
La Mesa CA 91941	MUSTANG				CONVERTIBLE	107	188	
12R-930512AO03201	MUSTANG GT			2 DOOF	COUPE	107	188	
121(-330312AQ03201)	MUSTANG GT			2 DOOF	CONVERTIBLE	107	188	
4N6XPRT Systems®	MUSTANG SHELBY	GT500		2 DOOF	COUPE	107	188	
Forensic Expert Software	MUSTANG SHELBY				CONVERTIBLE	107	188	
La Mesa, CA 91942-9342	POLICE INTERCEPT				SEDAN	115	212	
(619) 464-3478 / (800) 266-9778	POLICE INTERCEPT	OR (3.55) MSP P	OLICE PKG		SEDAN	115	212	
Fax: (619) 464-2206	RANGER 112WB				4X2 PICKUP	112	188	-0
www.4N6XPRT.com	RANGER 112WB				4X4 PICKUP	112	188	
4N6@4N6XPRT.com	RANGER 118WB			2 DOOF	4X2 PICKUP	118	200	

After typing in the Make, Year, and Type of vehicle, you are presented with the vehicles which are available for that year.

Screen 1

Model Data Page 1 Data Page 2	Data Pag	e 3	Printer	File Outp	ut D	XF Outp	ut	
2011 FORD POLICE INTER	RCEPTOR	(3.27) MSP P	OLICE PKG	4 DO	OR SEDA	N	
Horizontal Dimension	<u>s</u>			Vert	ical Di	mensio	n <u>s</u>	
Length	212	in.	H	leight			58	in.
Wheelbase	115	in.	Grou	und to:				
Front Bumper to Front Axle	43	in.	F	ront Bump	er (To	p)	23	in.
Front Bumper to Front of Hood	8	in.	F	leadlight -	Cente	r	27	in.
Front Bumper to Base of Windshield	65	in.	H	Hood - Top Front				in.
Front Bumper to Top of Windshield	91	in.	В	Base of Windshield				in.
Front Bumper to Front Wheel Well	26	in.	R	lear Bumpe	er (Top)	25	in.
Rear Bumper to Rear of Trunk	8	in.	Т	runk - Top	Rear		39	in.
Rear Bumper to Base of Rear Window	38	in.	В	ase of Rea	r Wind	low	40	in.
Rear Bumper to Rear Well	38	in.		Wei	aht Di	mensior	ne .	
Rear Bumper to Rear Axle	54	in.	_			mension		
Depth Dimensions				urb Weight b Weight D		tion:	4184	lbs.
Width	78	in.		Front =	56	%		
Front Track	63	in.		Rear =	44	%		
Rear Track	66	in.	Gros	ss Vehicle \	Veight	Rating	5500	lbs.

The first screen of data contains exterior dimensions and weight data. Length, Height, Wheelbase, Width, and Weight Distribution are published dimensions. Curb Weight is an average of published curb weights for the given vehicle. Detail dimensions such as the bumper heights and Front Bumper to Front of

Hood are measurements obtained by our staff from actual vehicles

Screen 2

Model D	ata Page 1	Data Page 2	Data	Page 3	Printer	File Output	DXF Output		
	2011 FORE	POLICE INT	ERCEPT	TOR (3.2	7) MSP P	OLICE PKG 4 E	OOR SEDAN		
Ace	celeration/	Braking							
Acceleratio	n 0-30 mph	13.8	13.8 ft/sec²			Bumper Stre	ngth	2.5	mp
Acceleratio	n 0-60 mph	9.8	ft/sec	ft/sec²		Steering Rati	io	:1	
Acceleratio	n 45-65 mp	h 6.5	ft/sec	2		Interior	Dimensions		
Braking 60-	0 mph	138	feet			Front Should		61	in.
Drive Whee	els		REAR			Front Head I	Room	40	in.
Turn Circle	(Diameter)		40	feet		Front Leg Ro	oom	42	in.
Number of	Wheels		4			Rear Should	er Room	60	in.
Wheel Radi	us		12	in.	Rear Head Room		oom	38	in.
Tire Size		P235/	55R17			Rear Leg Roo	om	38	in.
ALL DISC	- ALL WHEE	L ABS							
3pt - front	and rear - I	FRONT SEAT	AIRBA	GS					
4spd AUT	OMATIC								
N.S.D.C. =	2011 - 20	11							
	= Not in D	atabase							

The second screen of data contains interior dimensions and various performance data. The data contained in the second screen comes from various published sources.

Screen 3

Model Data Page 1 Da	ata Pag	je 2 Dat	a Page 3	Printer	File O	utput	DXF Ou	tput	
2011 FORD PO	OLICE II	NTERCEP	TOR (3.2	7) MSP P	OLICE P	KG 4 E	OOR SEI	DAN	
		Ang	gle Meas	urement	<u>s</u>				
Angle Front Bumper to Ho	ood Fro	ont	=		45.0	degre	ees		
Angle Front of Hood to W	indshie	eld Base	=		8.0	degre	ees		
Angle Front of Hood to W	indshie	eld Top	=		16.8	degre	ees		
Angle of Windshield			=		33.2	degre	es		
Angle of Steering Tires at I	Max Tu	ırn	=		27.5	degre	ees		
		C	enter of	Gravity					
Inches from ground	=	22.77		Inch	es from	side o	f vehicle	=	39.00
Inches behind front axle	=	50.60		Inche	s in fro	nt of n	ear axle	=	64.40
Inches from front bumper	= [93.60		Inch	es from	rear b	umper	=	118.40
Inches from front corner	=	101.40		Inch	es from	rear c	orner	=	124.66
Tip-Over Stability Ratio				=	1.4	11	Stable		
NHTSA Static Stability Fac	tor (ca	lculated)	Star Ratir	ng	=		****		
		M	oments o	of Inertia					
Yaw Moment of Inertia				=			31	03.52	lb*ft*sec²
Pitch Moment of Inertia				=			29	93.16	lb*ft*sec²
Roll Moment of Inertia			:	=			6	03.12	lb*ft*sec²

The third and last screen contains a number of calculated items of information which may be of use depending upon the type of case, the

other software that you use, and the questions which need to be answered.

DXF Output Screen

Model Data Page 1 Data Page 2 Da	ta Page 3 Prin	ter File Outpu	ut DXF Output						
2011 FORD POLICE INTERCE	PTOR (3.27) MS	P POLICE PKG	4 DOOR SEDAN						
While every attempt has been made to ensure accurate data, these dimensions are meant to be used as first approximations. Some measurements are dependant on such factors as manufacturing variations from vehcle to vehicle. Whenever feasible, the vehicle in question or an exemplar vehicle should be measured TO VERIFY DATA IMPORTANT TO YOUR CASE. The provision of the DXF output is provided as an aide to your evaluation. It is not meant to be the final drawing of the vehicle.									
DXF File Name 2011_FORD_POLICE_IN	NTERCEPTOR_(3	.27)_MSP_POLI	CE_PKG_4_DOOR_SEDAN_						
Length	212	Inches	Drawing Notation						
Wheelbase	115	Inches	⊚ On						
Width	78	Inches	Off						
Front Track	63	Inches	Units						
Rear Track	66	Inches	Inches						
Front Overang	43	Inches	⊚ Feet						
Bumper to Base of windshield	65	Inches	Meters						
Bumper to Top of windshield	91	Inches							
Rear Bumper to Base of Rear window	38	Inches							
Rear Bumper to Top of Rear window									
Front Tire Diameter	24	Inches							
Rear Tire Diameter	24	Inches							
CG behind Front axle	50.6	Inches	DXF Output						

From within the Expert AutoStats program you have the ability to output the data to a 2-D DXF file for importation into your CAD Scene Drawings. The screen below shows an import of the DXF file with Text into the CAD Zone program.

CADZONE Import

The Crash Zone 8.1 - (5)		
	ps Text/Dimension Utilities Recon 30 Window Help	. 6 ×
D 😅 🔛 🙏 🕪 🛝 6	§ ା ଦ ଦ ାଲ୍ଲା ଲ ାଜ୍ୟ ଲୋକ୍କ୍ଲୋକ୍କ୍ୟ କ୍ଷାଣ୍ଡ ହେଉ	
Line Types	FRONT of 2001 FORD CROWN VICTORIA 4.6L MSP POLICE PACKAGE 4DR SEDAN	^
<u> </u>	0	
		æ
Quick Pidk Draw / Snaps / Hotch Une Types Edit	DXF Output Data Length: 17.67 Feet Width: 6.50 Feet	
A Text/Dimensions Street The View Recon	Front bumper to Front Asie: 3.67 Feet Wheelbase:	
Symbols (ii) Templates (iii) Forms (iii) Learning Center	Rear Track: 5.33 Feet CG behind Front Axie: 4.31 Feet	¥
Select Objects : Selection Too	A 282.06" D 8.05" X 1.76" Y - 8.36	

4N6XPRT StifCalcs®

Introducing 4N6XPRT StifCalcs®. A program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet in order to obtain Stiffness Values!

In addition to the NHTSA Crash Test data, the program includes a "Similar Vehicle Reader". Initially developed in cooperation with Greg Anderson and maintained by 4N6XPRT Systems starting with the 2013 version, the reader allows quick retrieval of vehicles similar to the desired vehicle. The Reader drives the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module which allows the creation of "CLASS" vehicles.

STIFFNESS DATA, based on the selected test or test grouping is automatically calculated based on the reported crush depths and widths for front, side, and rear tests.

The User can - WITHOUT the need for the internet:

★ Lookup individual tests and get basic front, side, or rear (as appropriate to the test) STIFFNESS VALUES from the selected test. The values are based on the reported crush depths and lengths within each test.

SYSTEM REQUIREMENTS

4N6XPRT StifCalcs® is a MS-Windows program designed to work under a 32 **or** 64-bit (2000/XP/Vista/7) Windows System.

- ★ Obtain Similar Vehicle group summary STIFFNESS VALUES with Statistical measures.
- ★ Create "CLASS" vehicles and get summary STIFFNESS VALUES with Statistical measures.

FRONTAL STATISTICAL MEASURES **EXAMPLE:**

	Vehicle Width Stiffness Values							
	A B G K							
	305.7	93.5	523.6	143.1				
	115.0	13.2	465.2	23.5				
	461.6	200.0	614.1	387.3				
	73.4	38.4	36.2	72.8				
53								
	53	305.7 115.0 461.6 73.4	305.7 93.5 115.0 13.2 461.6 200.0 73.4 38.4	Stiffness Value A B 305.7 93.5 523.6 115.0 13.2 465.2 461.6 200.0 614.1 73.4 38.4 36.2				

WITH an internet connection the User will also be able to -

★ RESEARCH and easily download the

PICTURES, VIDEOS. and

REPORTS

that are available for the individual tests

MODERT STOTE Date: A Solution of Vehicle 2000 Per Propost Serges Rep Prop 10 416 9941 S Basic Vehicle Search MettSA Test Selection Advanced Vehicle Search Available Test Test Information Occupants	ISTORIS SPECIALS Version (3.2.0.)	Steps to Download Media from the NHTSA Web Site
·	2001 - 2007 DODGE CARAVAN	1 - Select the desired Test
Print No. Year Males 3002 2001 DODGE 4146 2001 DODGE	2 MIREL Brooks &	2 - Click the <u>NHTSA DOWNLOAD</u> button
201		3 - Check the boxes for the media you want to download
5/00 2005 CREVAR LOVA NOOP TO BRIDGE	Picture Progress: Conclosing picture 4 2 of 120 Caroli	4 - Click the <u>DOWNLOAD</u> <u>CHECKED MEDIA</u> button
	Water Acquess Developing (46) 2 1 of CO4 Case 1 Fig. Progress 1 1 of CO4 Case 1 of C	5 - Watch the selected media download, OR continue working on other things while the download
Perk Perk Migle	Connibati Orden(Heds)	progresses 6 - When the downloads are complete, find the media in the desired SAVE directory under the Test number.

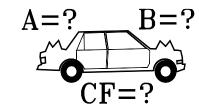
PLEASE PRINT

Contact Name:
Company/Dept:
Mailing Address:
City:State:Zip:
Phone:
Fax:
E-Mail:
(E-mail address required for electronic delivery)
StifCalcs [®] (copies) x \$650.00 = \$
Handling **: \$
(Check with order = \$5.00, Credit Card = \$10.00, Govt. P.O. = \$15.00) Notarized Affidavit Filing Requirement \$
(\$25.00 per required Notarized Signature)
Normal delivery is via electronic download □ - Deliver via electronic download link (e-mail address required) \$ 0.00 □ Please deliver on USB at an additional cost of \$35.00 per disk SUB-TOTAL = \$
CA Addresses add 8.50% sales tax = \$
(California orders delivered by e-mail attachment DO NOT owe sales tax)
mom i v
TOTAL = \$
Enclosed is: Check/M. O. : Credit Card: P.O.:
Please make check/M.O./P.O. payable to:
4N6XPRT Systems®
Credit Card Orders:
MasterCard: Visa: Am.Ex.:
Card #:
Expires:
Name on Card:
Signature:
Billing Add. #:
Billing Zip:
Mail to: 4N6XPRT Systems®
8387 University Avenue
La Mesa, CA 91942-9342
•
Telephone Orders:
Monday-Friday - 9:30am-5:00pm PST Phone: (619) 464-3478 Fax: (619) 464-2206
1 none. (017) 404-3476 1 ax. (017) 404-2200
Orders within the U.S. will be shipped Priority Mail or via E-mail attachment

Orders outside of U.S.A. shipped via E-Mail attachment ONLY.

within 10 working days of receipt of order. All prices are in U.S. Dollars, and subject to change WITHOUT NOTICE.

4N6XPRT **StifCalcs**®



Quick, Convenient, Easy access to the NHTSA Crash Test data on your own MS-Windows computer without the need for an internet connection.

4N6XPRT Systems®

Forensic Expert Software 8387 University Avenue La Mesa, CA 91942-9342

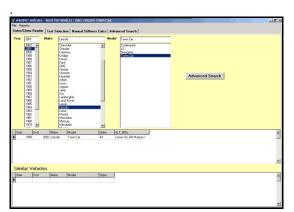
Web: http://www.4n6xprt.com E-Mail: stifcalcs@4n6xprt.com

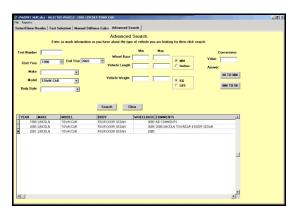
1-800-266-9778

BASIC VEHICLE CRASH TEST SEARCH

SIC VEHICLE SEARCH NHTSA TEST SELECTION ADVANCED VEHICLE SEARCH

Select the desired vehicle through our SIMILAR VEHICLE READER

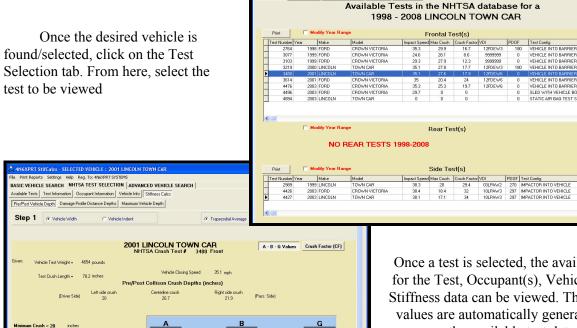




Once the desired vehicle is found/selected, click on the Test test to be viewed

mum Crush =26.7 inches

Normal "Bated No Damage Speed" is 2.5 or 5 mph. Some specific

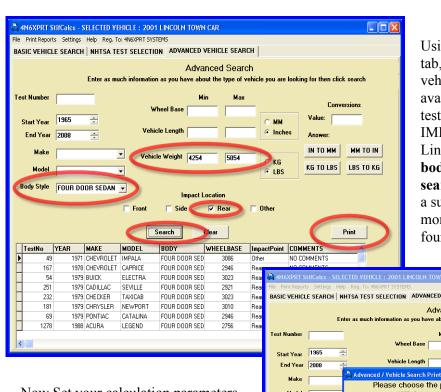


A = Maximum force per inch of damage without permenant damage, lb/in B = Crush resistance per inch of damage width, lb/in^.

G = Energy dissipated without permenant damage, It

Once a test is selected, the available data for the Test, Occupant(s), Vehicle(s), and Stiffness data can be viewed. The stiffness values are automatically generated from the available test data.

"CLASS" VEHICLE CRASH TEST SEARCH



1979 BUICK

1979 CADILLAC

1979 CHECKER

1979 CHRYSLEF

1979 PONTIAC

ELECTRA

SEVILLE

TAXICAR

NEWPOR

CATALINA

To select multiple records hold the ctrl key down and click on the records you wish to select

FOUR DOOR SEDAN

FOUR DOOR SEDAN

FOLIR DOOR SEDAN

FOUR DOOR SEDAN

FOUR DOOR SEDAN

Print All Pages

Using the **ADVANCED SEARCH** tab, you can also create a CLASS of vehicle for when there are no tests available for the specific vehicle and test type. To create a class of REAR IMPACT stiffness values for the Lincoln, first set the weight range, body style, and test type, then search the database, when you have a sufficient number of tests (that is, more than one or two) that have been found, click the PRINT button:

Please choose the parameters for the report Now Set your calculation parameters -LBS TO KG No Damage Speed - Crush Depth -Indentation (Crush) Length - and **Speed**, then view your results, and if Print desired, print them to hard copy TestNo YEAR Default settings 1978 C 1979 B Include Not Calculated Test 1979 CHRYSLER NEWPOR FOUR DOOR SED NO COMMENTS 1979 PONTIAC CATALINA FOUR DOOR SED NO COMMENTS Display Auto Calculated Tests Frontal Tests Rear Tests Side Tests Other / Not Calculated

10.8

18.4

No Damage Speed | Crush Distance | Impact Velocity | Stiffness A | Stiffness B | Stiffness G | Crush Factor

20.2

24.1

20.2

237.3

354.7

33.1

94.6

64.9

49.4

93.2 674.8

597.9

562.8

570.4

The program will calculate the AVERAGE, MINIMUM, MAXIMUM, and **Standard Deviation** of the Stiffness Values calculated based upon the parameters you set in the preceding step.

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

FED Tax ID No.: 95-3121248

Phone: 1-800-266-9778

Fax: (619) 464-2206

Web Site: http://www.4n6xprt.com

E-Mail: 4n6@4n6xprt.com

2014 ORDER FORM

Expert AutoStats® - Expert VIN DeCoder® - 4N6XPRT StifCalcs® - 4N6XPRT BioMeknx™ Expert Qwic Calcs® - Expert TireStuf® - 4N6XPRT Ped & Bike Calcs®

Please use this order form when ordering your programs. Due to conditions and rising costs beyond our control, Shipping & Handling must be paid per the included schedule.

Contact Name:		
Title:		
Company/Organization:		
Street:		
City:	State: Zip:	
Phone: ()	FAX: ()	
E-Mail:		
Expert AutoStats®:	\$ 625.00 * \$	
4N6XPRT BioMeknx [™] :	\$ 495.00 * \$	
4N6XPRT Ped & Bike Calcs®:	\$ 375.00 *	
Expert Qwic Calcs®:	\$ 275.00 *	
Expert TireStuf®:	\$ 85.00 * \$	
4N6XPRT StifCalcs®:	\$ 650.00 * \$	
Expert VIN DeCoder®:	\$ 550.00 *	
	===	====
	SUB-TOTAL \$	
□ - Deliver via electronic download link (e-r	email of a download link to a self extracting zip file mail address required) \$ (**)	0.00
☐ - Please deliver on USB at an additional	cost of \$35.00 per program \$	
California shipping addresses add 8.75% sa	SUB-TOTAL \$	
(,	wered by e-mail attachment DO NOT owe sales tax)	
(y		
	wered by e-mail attachment DO NOT owe sales tax) TOTAL \$	
Enclosed is:		press_
Enclosed is: Check Money Order Purchase Order_ Card #	TOTAL \$	
Enclosed is: Check Money Order Purchase Order_ Card #	TOTAL \$	

PLEASE NOTE

- -- Orders cannot be shipped without correct Shipping & Handling included.
- -- California orders cannot be shipped without sales tax included.
- -- Written Purchase Orders must be received in office before shipping.

Please make checks, money orders or Purchase Orders Payable to: 4N6XPRT Systems® You may call or fax your order to us if paying by credit card.

^{*} Prices are subject to change without notice. Call for Multi-program and package purchase discounts.

^{**} Orders will be shipped within 10 working days. Other shipping methods may cost extra. The Handling charge listed is for the first program, add \$5.00 per additional program ordered at the same time and shipped to the same address.

4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

Web Site: http://www.4n6xprt.com

is being required of us to obtain the information.

FED Tax ID No.: 95-3121248

Phone: 1- 800-266-9778 Fax: (619) 464-2206

E-Mail: 4n6@4n6xprt.com

Dear Customer,

Due to the governments desire (both U.S. & California) to "protect us" we will need the following information from you in order to process your credit card(s). Please complete this form and return it with your order.

Card type: Am. Express Card Number:	/ Visa / MasterCard		
Expiration Date (MM/YY):	/		
1234 5678 9012 345 123 Lorent grown forms grown forms paure forms paure forms grown forms grown forms paure	← Visa/MasterCard	American Express →	3712 3458 9500b
Security code (card ID) Address for where the credi		Card card or front of Amer	rican Express Card:
(This is the address number -	for instance, ours would be 838 , not where we would send to	7 University Avenue - that the creath the data or product to)	lit card bill would go to,
City/State/Zip for where the	credit card bill is sent:		
(- for instance	e, ours would be La Mesa, CA 9 not where we would send t	1941 - that the credit card bill wou the data or product to)	ld go to,
Authorized signature:			
We appreciate your	cooperation in supplying	us with this information a	and understanding that it

Sincerely,

Daniel W. Vomhof III

General Manager/Technical Support

SERVICE

You may make your request by phone or fax. Our fax machine is on 24 hours, 7 days a week, and can be reached at (619) 464-2206. A request may also be made by e-mail, which reaches us when we are "on the road" as well as in the office..

Upon receiving your request, we will research you request and fax the information to you at NO ADDITIONAL CHARGE! Normal response time is one working day or less. Your hard copy will follow in the mail.

Please include the vehicle information on the sample order form when requesting your Individual Vehicle Data Search. Please also be sure to provide a Visa, MasterCard, or American Express number, name as it appears on the card, Expiration date, and the billing address # and Zip.

*Pricing is for multiple vehicles on same Order/Request. Similar Vehicles may be required when it is not possible to determine the exact model of vehicle requested, based upon the information provided.

FAX/Order Form

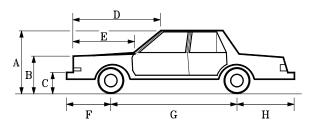
□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

VEAR & MAKE.

That was made.
MODEL:
If you are requesting VIN DeCoder & AutoStats please also provide the following information:
No. of Doors: 2/3/4/5 Body Style: Coupe/Conv./Sedan/Wagon SUV & P/U: 4x2 / 4x4 / Dual Rear Wheel PICKUPS: Std. / Extra / Super / Crew Cab Short Bed / Long Bed VANS: Cargo / Passenger Short / Long Wheelbase
VIN Information
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17
NHTSA Crash Test Information Impact location - Front / Side / Rear Impact Speed - Lower / Higher PAYMENT INFORMATION
Visa/MasterCard / American Express:
Expires: /
Name & Address:
Case Reference Name/Number:

Individual Vehicle Data Search Service®



Providing Vehicle dimensional data, VIN DeCoding, and NHTSA Crash Test Results as a service to the Litigation community.

E-Mail: **ivdss@4n6xprt.com**

FAX: (619) 464-2206 Phone: (619) 464-3478 / 1-800-266-9778

4N6XPRT Systems®

Forensic Expert Software 8387 University Avenue, Suite P La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com

How often have you been confronted with the

following on a Traffic Collision Report - "87 Ford, 4 door, Blue"? We have the answer to the problem of determining WHICH Ford 4 door model this was!

We will DeCode the VIN number and provide you with the information contained within that VIN number

Information generally includes:

Year OEM Engine
Make Displacement/Type
Model Rated Horsepower
Drive Wheels Rated Torque
Rated Pass. Load Iginition System
Plant of Manufacture Fuel Line Pressure

Also (when provided by VIN)

Gross Vehicle Weight Safety Equipment

Transmission

A DMV search for a vehicle identification from the registration will typically cost less than \$10.00 and will give the VIN number, Make, and Year of vehicle. However, to also obtain the vehicle Model requires a "Manual Search" which will typically cost \$30.00/vehicle/year searched.

With our service, you will be able to find out the model of vehicle as well as all of the other information mentioned above. This information will be faxed to you, typically in less than one working day, and the hard copy will follow in the mail.

Allow us to help you have all the information you require in your next Accident, Personal Injury, Criminal, Domestic, or Product Liability case.

Individual Vehicle Specifications

Now you can get the Expert AutoStats® data for the vehicles in your case *QUICKLY*, *EASILY*, and *ECONOMICALLY*, instead of guessing, or begging a printout from a friend.

Our vehicle database includes dimensions on over 35,000 Cars, Vans, Lt. Pickups, and Utility Vehicles covering 1945 to the present.

Minimum Vehicle specifications include:

Overall Length Curb Weight
Overall Width Weight Distribution
Overall Height Front/Rear Track
Wheelbase CG Location

Model yeasr with No Significant Dimensional Changes VIN DeCoding when VIN is provided Information available

Mid-60's to present **also includes** (when available)

Fron/Reart Overhang Bumper Heights
Hood height Turning Circle
Bumper-to-hood Ground-to-hood

Dimensions are given in both Imperial and metric (SI) units. Motorcycle specifications will be similar to the Vehicle specifications with appropriate changes where applicable.

While the VIN number contains much information, it does not contain everything needed to identify a particular vehicle in every situation. Therefore, we would appreciate you providing as much of the information on the order form as possible.

If you are not sure of the specific model, we will provide dimensions on the similar model vehicles matching the provided data for a small additional cost per model*.

Individual Vehicle Data Search Service[®] Charges & Services

Individual Vehicle Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)

\$40.00-First cycle*, \$35.00/Additional cycles*, \$20.00/Additional Similar Model*

NHTSA Crash Test Results

\$40.00 per test - Includes A, B, & G values Calculations are based on the test results

NHTSA Crash Test Results

Test results include: General Test information, Barrier Data when provided, Vehicle Data as reported by the testing organization, Occupant (Dummy) data when provided, and A-B-G Stiffness calculations based on the test results.

You may make your request by phone or fax. Our fax machine is on 24 hours/day and can be reached at:

(619) 464-2206

Individual Vehicle Data Search Service® Charges & Services

You may make your request by phone or fax. Our fax machine is on 24 hours/day and can be reached at

(619) 464-2206

Individual Vehicle Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)

\$40.00-First cycle*, \$35.00/Additional cycles*, \$20.00/Additional Similar Model*

NHTSA Crash Test Results

\$40.00 per test - Includes A, B, & G values Calculations are based on the test results

Contact Name	&	Address:
--------------	---	----------

hone	:()
ax:	
	PAYMENT INFORMATION
	Visa/MasterCard / American Express:
_	Evniros: /
madit (Expires:/
	Card billing address and Zip:
ddress	S:
ip:	
ecuri	ty Code #

FAX/Order Form

□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

YEAR & MAKE:

MODEL:			
If you are reque	Č .		
VIN DeCoder			
please also prov	vide:		
No. of Doors:	2/3/4/5		
Body Style:	Coupe/Conv./Sedan/Wagon		
SUV - P/U:	4x2 / 4x4 / Dual Rear Wheel		
PICKUPS:	Std. / Extra / Super / Crew Cab		
WANG.	Short Bed / Long Bed		
VANS:	Cargo / Passenger Short / Long Wheelbase		
	Short / Long wheelbase		
	VIN Information		
1 2 3	4 5 6 7 8 9		
10 11	12 13 14 15 16 17		
	A Crash Test Information		
YEAR & MAK	E:		
MODEL:			
MODEL			
Impact location	- Front / Side / Rear		
Impact Speed -			
_			
Case Reference	/Number:		

FAX/Order Form

□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

If you are reque VIN DeCoder of please also prov	& AutoStats
No. of Doors:	2/3/4/5
Body Style:	Coupe/Conv./Sedan/Wagon
SUV - P/U:	4x2 / 4x4 / Dual Rear Wheel
PICKUPS:	Std. / Extra / Super / Crew Cab
	Short Bed / Long Bed
VANS:	Cargo / Passenger
	Short / Long Wheelbase
	VIN Information
1 2 3	4 5 6 7 8 9
10 11	12 13 14 15 16 17
<u>NHTS</u> YEAR & MAK	A Crash Test Information E:
MODEL:	
Impact location	- Front / Side / Rear Lower / Higher

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

Web Site: http://www.4n6xprt.com

FED Tax ID No.: 95-3121248

Phone: 1-800-266-9778 Fax: (619) 464-2206

E-Mail: 4n6@4n6xprt.com

Dear Customer,

Due to the governments desire (both U.S. & California) to "protect us" we will need the following information from you in order to process your credit card(s). Please complete this form and return it with your order.

Card type: Am. Express Card Number:	/ Visa / MasterCard		
Expiration Date (MM/YY):	/		
1234 5678 9012 345 123 Lonard graum binard graum binard passes binard passes binard passes binard passes binard passes binard passes Card ID	← Visa/MasterCard	American Express →	3712 3 9500b
Security code (card ID) Address for where the credi		Card card or front of Ame	erican Express Card:
($\overline{\it This}$ is the address number -	for instance, ours would be 838 not where we would send	7 University Avenue - that the cre the data or product to)	edit card bill would go to,
City/State/Zip for where the	credit card bill is sent:		
(- for instance	e, ours would be La Mesa, CA 9 not where we would send	1941 - that the credit card bill wo the data or product to)	ould go to,
Authorized signature:			
We appreciate your of is being required of us to obtain		us with this information	and understanding that

it

Sincerely,

Daniel W. Vomhof III

General Manager/Technical Support