*** * * A T T E N T I O N * * ***

**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 39,000 different vehicles and 203 different manufacturers spanning more than 50 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**
**La Mesa, CA 91941-3842**

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

**Through the use of**

**E X P E R T A U T O S T A T S (R)**



**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**
**Version 2.7**

**The VIN Number is 1G2 NE12E 1 XM 900418**

**The vehicle should be a 1999 Pontiac**
**The model: Grand AM SE Two-Door Coupe .**
**The assembly plant: Lansing (A), MI**
**The 5 passenger vehicle had :**
**Manual Seatbelts + Driver & Passenger Air Bags**
**The GM Body Class was : N**

**The OEM engine was: V6 Cylinder Overhead Valves**
**Engine Displacement/Type = 3.4L / 207cu.in. V6 OHV**
**Brake Horsepower (SAE) = 170 @ 4800 rpm**
**Torque (SAE) = 200 lb-ft at 4000 rpm**
**Engine manufacturer = Buick - Oldsmobile - Cadillac**

**The fuel distribution system:**
**Multi-Port Fuel Injection (MFI)**
**Fuel pump/line pressure = 41-47 psi**
**The ignition system was = Electronic**

**This is a Front Wheel Drive vehicle.**

**The first three characters {1, G, 2} indicate the vehicle was a Pontiac product made in the U.S.A.**

**The fourth through sixth characters {NE1} indicates a Grand AM SE Two-Door Coupe**

**The seventh character {2} indicates the OEM vehicle had Manual Seatbelts + Driver & Passenger Air Bags**

**The eighth character {E} indicates the OEM engine : 3.4L / 207cu.in. V6 OHV**

**The 9th Character { the Check Digit } is 1**
**The calculated Check Digit value is 1**

**The tenth character {X} indicates the Model Year was 1999**

**The eleventh character {M} indicates it was made at the assembly plant in Lansing (A), MI**

**The twelfth through the seventeenth characters {900418} is the Serial Number unique to this vehicle.**

**EXPERT AUTOSTATS**
**Ver. 5.0 BETA**


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

**04-21-2009**

## 1999 PONTIAC GRAND AM 2DR COUPE

| | | |
|---|---|---|
| **CURB WEIGHT:** | **3050 lbs.** | **1383 kg.** |
| **Curb Weight Distribution -** | **Front: 64 %** | **Rear: 36 %** |
| **Gross Vehicle Weight Rating:** | **3921 lbs.** | **1779 kg.** |
| **Number of Tires on Vehicle:** | **4** | |
| **Drive Wheels:** | **FRONT** | |

### HORIZONTAL DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Total Length | 186 | 15.50 | 4.72 |
| Wheelbase: | 107 | 8.92 | 2.72 |
| Front Bumper to Front Axle | 40 | 3.33 | 1.02 |
| Front Bumper to Front of Front Well | 25 | 2.08 | 0.63 |
| Front Bumper to Front of Hood | 5 | 0.42 | 0.13 |
| Front Bumper to Base of Windshield | 51 | 4.25 | 1.30 |
| Front Bumper to Top of Windshield | 82 | 6.83 | 2.08 |
| Rear Bumper to Rear Axle | 39 | 3.25 | 0.99 |
| Rear Bumper to Rear of Rear Well | 25 | 2.08 | 0.63 |
| Rear Bumper to Rear of Trunk | 8 | 0.67 | 0.20 |
| Rear Bumper to Base of Rear Window | 27 | 2.25 | 0.69 |

### WIDTH DIMENSIONS

| | | | |
|---|---|---|---|
| Maximum Width | 70 | 5.83 | 1.78 |
| Front Track | 59 | 4.92 | 1.50 |
| Rear Track | 59 | 4.92 | 1.50 |

### VERTICAL DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Height | 55 | 4.58 | 1.40 |
| Ground to: | | | |
| Front Bumper (Top) | 22 | 1.83 | 0.56 |
| Headlight - center | 26 | 2.17 | 0.66 |
| Hood - top front | 28 | 2.33 | 0.71 |
| Base of windshield | 37 | 3.08 | 0.94 |
| Rear Bumper - top | 27 | 2.25 | 0.69 |
| Trunk - top rear | 41 | 3.42 | 1.04 |
| Base of rear window | 43 | 3.58 | 1.09 |

1999 PONTIAC GRAND AM 2DR COUPE

INTERIOR DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Front Seat Shoulder Width | 53 | 4.42 | 1.35 |
| Front Seat to Headliner | 38 | 3.17 | 0.97 |
| Front Leg - seatback to floor (max) | 42 | 3.50 | 1.07 |
| Rear Seat Shoulder Width | 51 | 4.25 | 1.30 |
| Rear Seat to Headliner | 37 | 3.08 | 0.94 |
| Rear Leg - seatback to floor (min) | 36 | 3.00 | 0.91 |

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

STEERING DATA

| | | | |
|---|---|---|---|
| Turning Circle (Diameter) | 456 | 38.00 | 11.58 |
| Steering Ratio: | __.__:1 | | |
| Wheel Radius: | 12 | 1.00 | 0.30 |
| Tire Size (OEM): | P215/60R15 | | |

ACCELERATION & BRAKING INFORMATION

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

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = 140 ft t = 3.2 sec. a =-27.6 ft/sec/sec G-force = -0.86

ACCELERATION:

| | | | |
|---|---|---|---|
| 0->30 mph | t = 3.6 sec. | a = 12.2 ft/sec/sec | G-force = 0.38 |
| 0->60 mph | t = 7.7 sec. | a = 11.4 ft/sec/sec | G-force = 0.35 |
| 45->65 mph | t = 6.2 sec. | a = 4.7 ft/sec/sec | G-force = 0.15 |

Transmission Type: 4spd AUTOMATIC

NOTES:

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

1999 PONTIAC GRAND AM 2DR COUPE

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 1.31 STABLE
NHTSA Star Rating (calculated) ****

CENTER OF GRAVITY (No Load):

| | | |
|---|---|---|
| Inches behind front axle | = | 38.52 |
| Inches in front of rear axle | = | 68.48 |
| Inches from side of vehicle | = | 35.00 |
| Inches from ground | = | 22.47 |
| Inches from front corner | = | 85.97 |
| Inches from rear corner | = | 113.04 |
| Inches from front bumper | = | 78.52 |
| Inches from rear bumper | = | 107.48 |

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

| | | | |
|---|---|---|---|
| YAW MOMENT OF INERTIA | = | 1935.50 | lb-ft-sec^2 |
| PITCH MOMENT OF INERTIA | = | 1870.50 | lb-ft-sec^2 |
| ROLL MOMENT OF INERTIA | = | 399.00 | lb-ft-sec^2 |

FRONT PROFILE INFORMATION

| | | | |
|---|---|---|---|
| ANGLE FRONT BUMPER TO HOOD FRONT | = | 50.2 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD BASE | = | 11.1 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD TOP | = | 18.0 | deg |
| ANGLE OF WINDSHIELD | = | 27.3 | deg |
| ANGLE OF STEERING TIRES AT MAX TURN | = | 26.9 | deg |

FIRST APPROXIMATION CRUSH FACTORS:

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

V(mph) = Sqr root of (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 independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The Rear Impact data with more than 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, esp. GM, your 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

## # 2967

## 1999 PONTIAC GRAND AM

Provided By

4N6XPRT StifCalcs™

**Registered to:**

**4N6XPRT SYSTEMS**

**8387 UNIVERSITY AVENUE**

**LA MESA  CA 91941-3842**

**S/N: 030201SC01301**



4N6XPRT Systems® | 8387 University Avenue | La Mesa, CA 91941 | USA

(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

# 4N6XPRT StifCalcs™

# Sister/Clone database reader

You entered: **1999 PONTIAC GRANDAM**

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

| Year Range | Make | Model | Body Styles | Wheelbase |
|---|---|---|---|---|
| 1999 - 2004 | OLDSMOBILE | ALERO | 4D,CPE | 107" |

REMARKS :

| | | | | |
|---|---|---|---|---|
| 1999 - 2005 | PONTIAC | GRANDAM | 2D,4D | 103.4" |

REMARKS :



**If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering, 521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.**

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Test Information

Test # 2967 NHTSA Version # V4 Test Date 1998-11 Contract # DTNH22-97-D-02007

Contract/Study Title 1999 NHTSA 35 MPH NEW CAR ASSESSMENT PROGRAM (NCAP)

Test Objective(s) OBTAIN ATD AND VEHICLE DATA

Test Type NEW CAR ASSESSMENT TEST Configuration VEHICLE INTO BARRIER

Closing Speed 56.5 Km/Hr 35 MPH

Impact Angle 0 Offset Distance 0 mm 0 inches Side Impact Point 9999 mm 0 inches

Test Performer KARCO ENGINEERING Test Reference # MX0109

Test Track Surface CONCRETE Condition DRY Ambient Temperature 18 C 64 F

Data Recorder Type OTHER Data Link OTHER Total Number of Curves 133

Test Commentary NO COMMENTS

## Fixed Barrier Information

Barrier Type RIGID Barrier Shape LOAD CELL BAR Pole Barrier Diameter 9999 mm inches

Barrier Commentary NO DATA COLLECTED ON A1,B1,C1,D1,D2,D3,D4,D5,D6,D7,D8,D9

# 4N6XPRT StifCalcs™

## 1999 PONTIAC GRAND AM LEFT FRONT SEAT OCCUPANT

Test # 2967 Vehicle # 1 Location LEFT FRONT SEAT Seat Position CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer VECTOR, S/N:034

Occupant Modification UNMODIFIED

Occupant Description NO COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 260 | mm | 10.2 | inches |
| Windshield | 582 | mm | 22.9 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 175 | mm | 6.9 | inches |
| Side Window | 245 | mm | 9.6 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) NONE

Head Injury Criteria (HIC) 570 HIC Lower Time interval (ms) 90 HIC Upper Time interval (ms) -5009

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 525 | mm | 20.7 | inches |
| Steering Wheel | 285 | mm | 11.2 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 122 | mm | 4.8 | inches |
| Hip to Door | 132 | mm | 5.2 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 9999 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 150 mm 5.9 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) KNEE RESTRAINT Second Contact Region (Legs) NONE

Left Femur Peak Load 4055 Newtons 911.6 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1999 PONTIAC GRAND AM LEFT FRONT SEAT OCCUPANT

Restraint # 1 3 POINT BELT Mounted Deployment? NOT APPLICABLE

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1999 PONTIAC GRAND AM LEFT FRONT SEAT OCCUPANT

| Restraint # | 2 | AIR BAG | Mounted | | Deployment? | DEPLOYED PROPERLY |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## 1999 PONTIAC GRAND AM RIGHT FRONT SEAT OCCUPANT

Test # 2967 Vehicle # 1 Location RIGHT FRONT SEAT Seat Position FORWARD OF CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer VECTOR, S/N:035

Occupant Modification UNMODIFIED

Occupant Description N0 COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 245 | mm | 10.2 | inches |
| Windshield | 570 | mm | 22.9 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 160 | mm | 6.9 | inches |
| Side Window | 245 | mm | 9.6 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) NONE

Head Injury Criteria (HIC) 545 HIC Lower Time interval (ms) 93.1 HIC Upper Time interval (ms) -5436

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 485 | mm | 20.7 | inches |
| Steering Wheel | 9999 | mm | 11.2 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 46 | mm | 4.8 | inches |
| Hip to Door | 136 | mm | 5.2 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 9999 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 110 mm 5.9 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) KNEE RESTRAINT Second Contact Region (Legs) NONE

Left Femur Peak Load 6909 Newtons 911.6 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1999 PONTIAC GRAND AM RIGHT FRONT SEAT OCCUPANT

Restraint # 1 3 POINT BELT Mounted Deployment? NOT APPLICABLE

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1999 PONTIAC GRAND AM RIGHT FRONT SEAT OCCUPANT

| Restraint # | 2 | AIR BAG | Mounted | | Deployment? | DEPLOYED PROPERLY |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## Vehicle 1 - 1999 PONTIAC GRAND AM

Test # 2967 | NHTSA Test Vehicle Number MX0109 | VIN 1G2NE52T7XM719345

Year 1999 | Make PONTIAC | Model GRAND AM | Body FOUR DOOR SEDAN

Vehicle Modification Indicator: PRODUCTION VEHICLE

Vehicle Modification(s) Description: UNMODIFIED

Post-test Steering Column Shear Capsule Seperation: UNKNOWN

Steering Column Collapse Mechanism: UNKNOWN

Vehicle Commentary: NO COMMENTS

| | | | | |
|---|---|---|---|---|
| Vehicle Length | 4722 | mm | 185.9 | inches |
| Vehicle Wheelbase | 2720 | mm | 107.1 | inches |
| CG behind front axle | 1122 | mm | 44.2 | inches |
| Center of Damage to CG Axis | 0 | mm | 0 | inches |

| | | | |
|---|---|---|---|
| **Vehicle Test Weight** | 1618 | KG | **3567** **pounds** |
| **Vehicle Width** | | mm | **0** **inches** |
| **Total Length of Indentation** | 1575 | mm | **62** **inches** |
| **Maximum Static Crush Depth** | 517 | mm | **20.4** **inches** |

Vehicle Damage Index: 12FDEW | Principal Direction of Force: 0 | **Pre-Impact Speed**: 56.5 kph **35.1 mph**

### Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

| | | | | |
|---|---|---|---|---|
| DPD 1 | 442 | mm | 17.4 | inches |
| DPD 2 | 514 | mm | 20.2 | inches |
| DPD 3 | 517 | mm | 20.4 | inches |
| DPD 4 | 507 | mm | 20 | inches |
| DPD 5 | 504 | mm | 19.8 | inches |
| DPD 6 | 377 | mm | 14.8 | inches |

### Crush from Pre & Post Test Damage Measurements

| | Pre-Test | | Post-Test | | Crush-Depth | |
|---|---|---|---|---|---|---|
| **Left Bumper Corner** | 172.1 | **inches** | 154.9 | **inches** | **17.2** | **inches** |
| | 4372 | mm | 3935 | mm | 437 | mm |
| **Centerline** | 185.9 | **inches** | 166.1 | **inches** | **19.8** | **inches** |
| | 4722 | mm | 4218 | mm | 504 | mm |
| **Right Bumper Corner** | 172.1 | **inches** | 157.5 | **inches** | **14.6** | **inches** |
| | 4372 | mm | 4000 | mm | 372 | mm |

| Bumper Engagement (Inline Impact Only) | Still Engagement (Side Impact Only) | A-pillar Engagement (Side Impact Only) |
|---|---|---|
| DIRECT ENGAGEMENT | NOT APPLICABLE | NOT APPLICABLE |

| Moving Test Cart Angle | Moving Test Cart / Vehicle Crabbed Angle | Moving Test Cart Vehicle Orientation on Cart |
|---|---|---|
| 999 | 0 | 999 |

*Magnitude of the Tilt-Angle Measured between surface if a Rollover Test Cart and the Ground*

*Magnitude of the Crabbed Angle Measured Clockwise from Logitudial Vector to Velocity Vector of Vehicle*

*Magnitude of the Angle Measured between the vehicle Orientation and the Direction of the Test Cart Motion*

# Vehicle 1 - 1999 PONTIAC GRAND AM

| Test # | NHTSA Test Vehicle Number | VIN |
|---|---|---|
| 2967 | MX0109 | 1G2NE52T7XM719345 |

| Year | Make | Model | Body |
|---|---|---|---|
| 1999 | PONTIAC | GRAND AM | FOUR DOOR SEDAN |

| Vehicle Modification Indicator | Vehicle Modification(s) Description |
|---|---|
| PRODUCTION VEHICLE | UNMODIFIED |

| Post-test Steering Column Shear Capsule Seperation | Steering Column Collapse Mechanism |
|---|---|
| UNKNOWN | UNKNOWN |

Vehicle Commentary: NO COMMENTS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Vehicle Length | 4722 | mm | 185.9 | inches | **Vehicle Test Weight** | 1618 | KG | **3567** | **pounds** |
| Vehicle Wheelbase | 2720 | mm | 107.1 | inches | **Vehicle Width** | | mm | **0** | **inches** |
| CG behind front axle | 1122 | mm | 44.2 | inches | **Total Length of Indentation** | 1575 | mm | **62** | **inches** |
| Center of Damage to CG Axis | 0 | mm | 0 | inches | **Maximum Static Crush Depth** | 517 | mm | **20.4** | **inches** |

| Vehicle Damage Index | Principal Direction of Force | | | | |
|---|---|---|---|---|---|
| 12FDEW6 | 0 | **Pre-Impact Speed** | 56.5 | kph | **35.1** **mph** |

## Pre & Post Test Measurements

(Measurments are taken in a logitudinal direction. Except for Engine Block, all measurments are taken from the Rear Vehicle 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 |
| | | | | Length of Vehicle at Centerline | | | | | | | |
| | | | | 4722 | 185.9 | 4218 | 166.1 | | | | |
| | | | | Engine Block | | | | | | | |
| | | | | 250 | 9.8 | 250 | 9.8 | | | | |
| 4372 | 172.1 | 3935 | 154.9 | Front Bumper Corner | | | | 4372 | 172.1 | 4000 | 157.5 |
| | | | | Front of Engine | | | | | | | |
| | | | | 3980 | 156.7 | 3820 | 150.4 | | | | |
| 3582 | 141 | 3492 | 137.5 | Firewall | | | | 3582 | 141 | 3457 | 136.1 |
| | | | | 3585 | 150.4 | 3535 | 139.2 | | | | |
| 3191 | 125.6 | 3172 | 124.9 | Upper Leading Edge of Door | | | | 3193 | 125.7 | 3190 | 125.6 |
| 3165 | 124.6 | 3171 | 124.8 | Lower Leading Edge of Door | | | | 3175 | 125 | 3165 | 124.6 |
| 3170 | 124.8 | 3161 | 124.4 | Bottom of 'A' Post | | | | 3168 | 124.7 | 3160 | 124.4 |
| 2152 | 84.6 | 2141 | 84.3 | Upper Trailing Edge of Door | | | | 2152 | 84.7 | 2151 | 84.7 |
| 2157 | 84.9 | 2153 | 84.8 | Lower Trailing Edge of Door | | | | 2160 | 85 | 2153 | 84.8 |
| | | | | Steering Column | | | | | | | |
| | | | | 2768 | 109 | 2744 | 108 | | | | |
| | | | | Center of Steering Column to 'A' Post (Horizontal) | | | | | | | |
| | | | | 480 | 18.9 | 421 | 16.6 | | | | |
| | | | | Center of Steering Column to 'A' Post (Vertical) | | | | | | | |
| | | | | 370 | 14.6 | 352 | 13.9 | | | | |

Registered Owner : 4N6XPRT SYSTEMS

Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

# 1999 PONTIAC GRAND AM

## NHTSA Crash Test - # 2967 - Front Impact

{ Pre/Post Crush Depths - Vehicle Width - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3567 pounds
Vehicle Test Speed = 35.1 mph
Test crush width = 70 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 17.2 | 19.8 | 14.6 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 14.6 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 228.1 | 203.8 | 127.7 |
| Using a Rated No Damage Speed of | 5 mph | 421.2 | 173.7 | 510.6 |
| Using a Rated No Damage Speed of | 7.5 mph | 579.3 | 146.1 | 1148.9 |
| Using a Rated No Damage Speed of | 10 mph | 702.5 | 120.8 | 2042.4 |
| **Average Crush = 17.9 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 186 | 135.6 | 127.7 |
| Using a Rated No Damage Speed of | 5 mph | 343.5 | 115.6 | 510.6 |
| Using a Rated No Damage Speed of | 7.5 mph | 472.5 | 97.2 | 1148.9 |
| Using a Rated No Damage Speed of | 10 mph | 573 | 80.4 | 2042.4 |
| **Maximum Crush = 19.8 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 168.2 | 110.8 | 127.7 |
| Using a Rated No Damage Speed of | 5 mph | 310.6 | 94.5 | 510.6 |
| Using a Rated No Damage Speed of | 7.5 mph | 427.2 | 79.4 | 1148.9 |
| Using a Rated No Damage Speed of | 10 mph | 518 | 65.7 | 2042.4 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

**********

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **19.8** | **32.2** | -2.9 | -8.3% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 24.9**

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

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

# 4N6XPRT StifCalcs™

# 1999 PONTIAC GRAND AM

## NHTSA Crash Test - # 2967 - Front Impact

{ Pre/Post Crush Depths - Indentation Length - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3567 pounds
Vehicle Test Speed = 35.1 mph
Test crush width = 62 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 17.2 | 19.8 | 14.6 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 14.6 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 257.5 | 230 | 144.1 |
| Using a Rated No Damage Speed of | 5 mph | 475.5 | 196.1 | 576.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 654 | 164.9 | 1296.9 |
| Using a Rated No Damage Speed of | 10 mph | 793 | 136.4 | 2305.7 |
| **Average Crush = 17.9 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 210 | 153 | 144.1 |
| Using a Rated No Damage Speed of | 5 mph | 387.8 | 130.5 | 576.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 533.4 | 109.7 | 1296.9 |
| Using a Rated No Damage Speed of | 10 mph | 646.8 | 90.7 | 2305.7 |
| **Maximum Crush = 19.8 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 189.9 | 125.1 | 144.1 |
| Using a Rated No Damage Speed of | 5 mph | 350.6 | 106.6 | 576.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 482.2 | 89.7 | 1296.9 |
| Using a Rated No Damage Speed of | 10 mph | 584.8 | 74.2 | 2305.7 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

************************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **19.8** | **32.2** | -2.9 | -8.3% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 24.9**

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

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

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1999 - 2005

Make : PONTIAC

Model : GRANDAM

| Test Number | Vehicle Info | No Damage Speed (mph) | Average Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Average Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2967 | 1999 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 19.3 | 35.1 | 359.6 | 112.2 | 576.4 | 25.5 |
| 3617 | 2001 PONTIAC GRAND AM TWO DOOR COUPE | 5.0 | 16.2 | 34.7 | 362.2 | 132.5 | 495.1 | 29.7 |
| | | **Front Averages** | | | 360.9 | 122.4 | 532.3 | 27.6 |
| | | **Front Minimums** | | | 359.6 | 112.2 | 576.3 | 25.5 |
| | | **Front Maximums** | | | 362.2 | 132.5 | 495.1 | 29.7 |
| | | **Front Standard Deviations** | | | 1.8 | 14.4 | 39.9 | 3 |

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1999 - 2005

Make : PONTIAC

Model : GRANDAM

| Test Number | Vehicle Info | No Damage Speed (mph) | Max Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Max Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2967 | 1999 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 20.4 | 35.1 | 340.2 | 100.4 | 576.4 | 24.2 |
| 3617 | 2001 PONTIAC GRAND AM TWO DOOR COUPE | 5.0 | 18.2 | 34.7 | 322.7 | 105.1 | 495.1 | 26.4 |
| 4145 | 2000 OLDSMOBILE ALERO TWO DOOR COUPE | 5.0 | 23.1 | 24.9 | 173.8 | 29.9 | 504.4 | 10.7 |
| | | **Front Averages** | | | 278.9 | 78.5 | 495.7 | 20.4 |
| | | **Front Minimums** | | | 173.8 | 29.9 | 505.1 | 10.7 |
| | | **Front Maximums** | | | 340.2 | 105.1 | 550.6 | 26.4 |
| | | **Front Standard Deviations** | | | 91.4 | 42.1 | 42.6 | 8.5 |

**EXPERT VIN DeCoder**
**Version 2.7**

**The VIN Number is 1G2 NE52M X VM 536513**

**The vehicle should be a 1997 Pontiac**
**The model: Grand AM SE Four-Door Sedan .**
**The assembly plant: Lansing (A), MI**
**The 5 passenger vehicle had :**
**Manual Seatbelts + Driver & Passenger Air Bags**
**The GM Body Class was : N**

**The OEM engine was: V6 cylinder with Overhead Valves (OHV)**
**Engine Displacement/Type = 3.1L / 191 cu.in. V6 OHV**
**Brake Horsepower (SAE) = 160 - 170 @ 5200 rpm**
**Torque (SAE) = 185 - 190 lb-ft at 4000 rpm**
**Engine manufacturer = Buick, Olsmobile, Cadillac**

**The fuel distribution system:**
**Sequential Fuel Injection (SFI)**
**Fuel pump/line pressure = 41-47 psi**
**The ignition system was = Electronic**

**This is a Front Wheel Drive vehicle.**

**The first three characters {1, G, 2} indicate the vehicle was a Pontiac product made in the U.S.A.**

**The fourth through sixth characters {NE5} indicates a Grand AM SE Four-Door Sedan**

**The seventh character {2} indicates the OEM vehicle had Manual Seatbelts + Driver & Passenger Air Bags**

**The eighth character {M} indicates the OEM engine : 3.1L / 191 cu.in. V6 OHV**

**The 9th Character { the Check Digit } is X**
**The calculated Check Digit value is 10**
**Therefore the 9th Character should be { X }**

**The tenth character {V} indicates the Model Year was 1997**

**The eleventh character {M} indicates it was made at the assembly plant in Lansing (A), MI**

**The twelfth through the seventeenth characters {536513} is the Serial Number unique to this vehicle.**

**EXPERT AUTOSTATS**
**Ver. 5.0 BETA**


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

**04-21-2009**

**1997 PONTIAC GRAND AM 4DR SEDAN**

| | | |
|---|---|---|
| **CURB WEIGHT:** | **2881 lbs.** | **1307 kg.** |
| **Curb Weight Distribution -** | **Front: 64 %** | **Rear: 36 %** |
| **Gross Vehicle Weight Rating:** | **3876 lbs.** | **1758 kg.** |
| **Number of Tires on Vehicle:** | **4** | |
| **Drive Wheels:** | **FRONT** | |

**HORIZONTAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Total Length** | **187** | **15.58** | **4.75** |
| **Wheelbase:** | **103** | **8.58** | **2.62** |
| **Front Bumper to Front Axle** | **46** | **3.83** | **1.17** |
| **Front Bumper to Front of Front Well** | **24** | **2.00** | **0.61** |
| **Front Bumper to Front of Hood** | **5** | **0.42** | **0.13** |
| **Front Bumper to Base of Windshield** | **54** | **4.50** | **1.37** |
| **Front Bumper to Top of Windshield** | **83** | **6.92** | **2.11** |
| **Rear Bumper to Rear Axle** | **38** | **3.17** | **0.97** |
| **Rear Bumper to Rear of Rear Well** | **23** | **1.92** | **0.58** |
| **Rear Bumper to Rear of Trunk** | **7** | **0.58** | **0.18** |
| **Rear Bumper to Base of Rear Window** | **29** | **2.42** | **0.74** |

**WIDTH DIMENSIONS**

| | | | |
|---|---|---|---|
| **Maximum Width** | **68** | **5.67** | **1.73** |
| **Front Track** | **56** | **4.67** | **1.42** |
| **Rear Track** | **57** | **4.75** | **1.45** |

**VERTICAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Height** | **53** | **4.42** | **1.35** |
| **Ground to:** | | | |
| **Front Bumper (Top)** | **21** | **1.75** | **0.53** |
| **Headlight - center** | **24** | **2.00** | **0.61** |
| **Hood - top front** | **27** | **2.25** | **0.69** |
| **Base of windshield** | **36** | **3.00** | **0.91** |
| **Rear Bumper - top** | **26** | **2.17** | **0.66** |
| **Trunk - top rear** | **35** | **2.92** | **0.89** |
| **Base of rear window** | **40** | **3.33** | **1.02** |

**Reg. To: 4N6XPRT Systems** **S/N:10R-930512AQ03201**

1997 PONTIAC GRAND AM 4DR SEDAN

INTERIOR DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Front Seat Shoulder Width | 54 | 4.50 | 1.37 |
| Front Seat to Headliner | 38 | 3.17 | 0.97 |
| Front Leg - seatback to floor (max) | 43 | 3.58 | 1.09 |
| Rear Seat Shoulder Width | 54 | 4.50 | 1.37 |
| Rear Seat to Headliner | 37 | 3.08 | 0.94 |
| Rear Leg - seatback to floor (min) | 35 | 2.92 | 0.89 |

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

STEERING DATA

| | | | |
|---|---|---|---|
| Turning Circle (Diameter) | 420 | 35.00 | 10.67 |
| Steering Ratio: | 16.00:1 | | |
| Wheel Radius: | 12 | 1.00 | 0.30 |
| Tire Size (OEM): | 185-75R14 | | |

ACCELERATION & BRAKING INFORMATION

Brake Type: FRONT DISC - REAR DRUM
ABS System: ABS UNKNOWN

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = 142 ft t = 3.2 sec. a =-27.2 ft/sec/sec G-force = -0.85

ACCELERATION:

| | | | |
|---|---|---|---|
| 0->30 mph | t = 2.6 sec. | a = 16.9 ft/sec/sec | G-force = 0.53 |
| 0->60 mph | t = 8.6 sec. | a = 10.2 ft/sec/sec | G-force = 0.32 |
| 45->65 mph | t = 6.2 sec. | a = 4.7 ft/sec/sec | G-force = 0.15 |

Transmission Type: 5spd MANUAL

NOTES:

Federal Bumper Standard Requirements = 2.5 MPH
This vehicles Rated Bumper Strength: 5 mph

N.S.D.C. = 1995 - 1998

Reg. To: 4N6XPRT Systems S/N:10R-930512AQ03201

1997 PONTIAC GRAND AM 4DR SEDAN

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 1.35 STABLE
NHTSA Star Rating (calculated) ****

CENTER OF GRAVITY (No Load):

| | | |
|---|---|---|
| Inches behind front axle | = | 37.08 |
| Inches in front of rear axle | = | 65.92 |
| Inches from side of vehicle | = | 34.00 |
| Inches from ground | = | 20.80 |
| Inches from front corner | = | 89.77 |
| Inches from rear corner | = | 109.34 |
| Inches from front bumper | = | 83.08 |
| Inches from rear bumper | = | 103.92 |

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

| | | | |
|---|---|---|---|
| YAW MOMENT OF INERTIA | = | 1761.43 | lb-ft-sec^2 |
| PITCH MOMENT OF INERTIA | = | 1703.19 | lb-ft-sec^2 |
| ROLL MOMENT OF INERTIA | = | 368.58 | lb-ft-sec^2 |

FRONT PROFILE INFORMATION

| | | | |
|---|---|---|---|
| ANGLE FRONT BUMPER TO HOOD FRONT | = | 50.2 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD BASE | = | 10.4 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD TOP | = | 17.1 | deg |
| ANGLE OF WINDSHIELD | = | 27.3 | deg |
| ANGLE OF STEERING TIRES AT MAX TURN | = | 28.1 | deg |

FIRST APPROXIMATION CRUSH FACTORS:

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

V(mph) = Sqr root of (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 independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The Rear Impact data with more than 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, esp. GM, your 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

## # 2492

## 1997 PONTIAC GRAND AM

Provided By

4N6XPRT StifCalcs™

**Registered to:**

**4N6XPRT SYSTEMS**

**8387 UNIVERSITY AVENUE**

**LA MESA  CA 91941-3842**

**S/N: 030201SC01301**



4N6XPRT Systems® | 8387 University Avenue | La Mesa, CA 91941 | USA

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# 4N6XPRT StifCalcs™

# Sister/Clone database reader

You entered: **1997 PONTIAC GRANDAM**

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

| Year Range | Make | Model | Body Styles | Wheelbase |
|---|---|---|---|---|
| 1987 - 1996 | CHEVROLET | CORSICA | 2D,4D | 103.4" |

REMARKS : Less Similar than Grand Am, Calais, Skylark- Others moved to CORS/BER CHAS

| | | | | |
|---|---|---|---|---|
| 1992 - 1998 | BUICK | SKYLARK | 2D,4D | 103.4" |

REMARKS : Restyle in 96, "PROW" deleted

| | | | | |
|---|---|---|---|---|
| 1987 - 1996 | CHEVROLET | BERETTA | 2D,4D | 103.4" |

REMARKS : Less Similar than Grand Am, Calais, Skylark- Others moved to CORS/BER CHAS

| | | | | |
|---|---|---|---|---|
| 1992 - 1998 | PONTIAC | GRANDAM | 2D,4D | 103.4" |

REMARKS :

| | | | | |
|---|---|---|---|---|
| 1992 - 1998 | OLDSMOBILE | ACHIEVA | 2D,4D | 103.4" |

REMARKS :



**If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering, 521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.**

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Test Information

Test # 2492 NHTSA Version # V4 Test Date 1997-01 Contract # DTNH22-90-D-12121

Contract/Study Title: NCAP TEST - 1997 PONTIAC GRAND AM (NHTSA NO.: MV0104)

Test Objective(s): VEHICLE CRASHWORTHINESS AND OCCUPANT RESTRAINT PERFORMANCE DATA

Test Type: NEW CAR ASSESSMENT TEST Configuration: VEHICLE INTO BARRIER

Closing Speed 56.4 Km/Hr 35 MPH

Impact Angle 0 Offset Distance 0 mm 0 inches Side Impact Point mm 0 inches

Test Performer: MGA RESEARCH Test Reference #: BT97011201

Test Track Surface: CONCRETE Condition: DRY Ambient Temperature 21 C 70 F

Data Recorder Type: OTHER Data Link: UMBILICAL CABLE Total Number of Curves 110

Test Commentary: HIGH SPEED ANALOG TO D

## Fixed Barrier Information

Barrier Type: RIGID Barrier Shape: LOAD CELL BAR Pole Barrier Diameter 9999 mm inches

Barrier Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## 1997 PONTIAC GRAND AM LEFT FRONT SEAT OCCUPANT

Test # 2967 Vehicle # 1 Location LEFT FRONT SEAT Seat Position CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer VECTOR, S/N:034

Occupant Modification UNMODIFIED

Occupant Description NO COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 260 | mm | 13 | inches |
| Windshield | 582 | mm | 20.8 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 175 | mm | 6.8 | inches |
| Side Window | 245 | mm | 12.2 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) NONE

Head Injury Criteria (HIC) 570 HIC Lower Time interval (ms) 90 HIC Upper Time interval (ms) -5009

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 525 | mm | 20.1 | inches |
| Steering Wheel | 285 | mm | 11.9 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 122 | mm | 3 | inches |
| Hip to Door | 132 | mm | 4 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 9999 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 150 mm 5.6 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) KNEE RESTRAINT Second Contact Region (Legs) NONE

Left Femur Peak Load 4055 Newtons 1070. pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1997 PONTIAC GRAND AM LEFT FRONT SEAT OCCUPANT

Restraint # 1 3 POINT BELT Mounted Deployment? NOT APPLICABLE

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1997 PONTIAC GRAND AM LEFT FRONT SEAT OCCUPANT

| Restraint # | 2 | AIR BAG | Mounted | | Deployment? | DEPLOYED PROPERLY |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## 1997 PONTIAC GRAND AM RIGHT FRONT SEAT OCCUPANT

Test # 2967 Vehicle # 1 Location RIGHT FRONT SEAT Seat Position FORWARD OF CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer VECTOR, S/N:035

Occupant Modification UNMODIFIED

Occupant Description N0 COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 245 | mm | 13 | inches |
| Windshield | 570 | mm | 20.8 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 160 | mm | 6.8 | inches |
| Side Window | 245 | mm | 12.2 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) NONE

Head Injury Criteria (HIC) 545 HIC Lower Time interval (ms) 93.1 HIC Upper Time interval (ms) -5436

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 485 | mm | 20.1 | inches |
| Steering Wheel | 9999 | mm | 11.9 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 46 | mm | 3 | inches |
| Hip to Door | 136 | mm | 4 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 9999 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 110 mm 5.6 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) KNEE RESTRAINT Second Contact Region (Legs) NONE

Left Femur Peak Load 6909 Newtons 1070. pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1997 PONTIAC GRAND AM RIGHT FRONT SEAT OCCUPANT

Restraint # 1 3 POINT BELT Mounted Deployment? NOT APPLICABLE

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1997 PONTIAC GRAND AM RIGHT FRONT SEAT OCCUPANT

| Restraint # | 2 | AIR BAG | Mounted | | Deployment? | DEPLOYED PROPERLY |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## Vehicle 1 - 1997 PONTIAC GRAND AM

Test # 2492 | NHTSA Test Vehicle Number MV0104 | VIN 1G2NE52T3VC735948

Year 1997 | Make PONTIAC | Model GRAND AM | Body FOUR DOOR SEDAN

Vehicle Modification Indicator: PRODUCTION VEHICLE

Vehicle Modification(s) Description: NO COMMENTS

Post-test Steering Column Shear Capsule Seperation: UNKNOWN

Steering Column Collapse Mechanism: UNKNOWN

Vehicle Commentary: NO COMMENTS

| | | | | | |
|---|---|---|---|---|---|
| Vehicle Length | 4441 | mm | 174.8 | inches | |
| Vehicle Wheelbase | 2625 | mm | 103.3 | inches | |
| CG behind front axle | 976 | mm | 38.4 | inches | |
| Center of Damage to CG Axis | 0 | mm | 0 | inches | |

| | | | | |
|---|---|---|---|---|
| **Vehicle Test Weight** | 1569 | KG | **3459** | **pounds** |
| **Vehicle Width** | 1378 | mm | **54.3** | **inches** |
| **Total Length of Indentation** | 1378 | mm | **54.3** | **inches** |
| **Maximum Static Crush Depth** | 522 | mm | **20.6** | **inches** |

Vehicle Damage Index: 12FDEW | Principal Direction of Force: 0 | **Pre-Impact Speed**: 56.4 kph / **35** **mph**

### Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

| | | | | |
|---|---|---|---|---|
| DPD 1 | 492 | mm | 19.4 | inches |
| DPD 2 | 477 | mm | 18.8 | inches |
| DPD 3 | 504 | mm | 19.8 | inches |
| DPD 4 | 514 | mm | 20.2 | inches |
| DPD 5 | 620 | mm | 24.4 | inches |
| DPD 6 | 406 | mm | 16 | inches |

### Crush from Pre & Post Test Damage Measurements

| | Pre-Test | | Post-Test | | Crush-Depth | |
|---|---|---|---|---|---|---|
| **Left Bumper Corner** | 167.3 | **inches** | 147.9 | **inches** | **19.4** | **inches** |
| | 4249 | mm | 3757 | mm | 492 | mm |
| **Centerline** | 174.8 | **inches** | 154.3 | **inches** | **20.6** | **inches** |
| | 4441 | mm | 3919 | mm | 522 | mm |
| **Right Bumper Corner** | 166.4 | **inches** | 150.4 | **inches** | **16** | **inches** |
| | 4226 | mm | 3820 | mm | 406 | mm |

| Bumper Engagement (Inline Impact Only) | Still Engagement (Side Impact Only) | A-pillar Engagement (Side Impact Only) |
|---|---|---|
| NOT APPLICABLE | NOT APPLICABLE | NOT APPLICABLE |

| Moving Test Cart Angle | Moving Test Cart / Vehicle Crabbed Angle | Moving Test Cart Vehicle Orientation on Cart |
|---|---|---|
| 999 | 0 | 999 |

*Magnitude of the Tilt-Angle Measured between surface if a Rollover Test Cart and the Ground*

*Magnitude of the Crabbed Angle Measured Clockwise from Logitudial Vector to Velocity Vector of Vehicle*

*Magnitude of the Angle Measured between the vehicle Orientation and the Direction of the Test Cart Motion*

# Vehicle 1 - 1997 PONTIAC GRAND AM

| Test # | NHTSA Test Vehicle Number | VIN |
|---|---|---|
| 2492 | MV0104 | 1G2NE52T3VC735948 |

| Year | Make | Model | Body |
|---|---|---|---|
| 1997 | PONTIAC | GRAND AM | FOUR DOOR SEDAN |

| Vehicle Modification Indicator | Vehicle Modification(s) Description |
|---|---|
| PRODUCTION VEHICLE | NO COMMENTS |

| Post-test Steering Column Shear Capsule Seperation | Steering Column Collapse Mechanism |
|---|---|
| UNKNOWN | UNKNOWN |

Vehicle Commentary: NO COMMENTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vehicle Length | 4441 | mm | 174.8 | inches | **Vehicle Test Weight** | 1569 | KG | **3459** **pounds** |
| Vehicle Wheelbase | 2625 | mm | 103.3 | inches | **Vehicle Width** | 1378 | mm | **54.3** **inches** |
| CG behind front axle | 976 | mm | 38.4 | inches | | | | |
| Center of Damage to CG Axis | 0 | mm | 0 | inches | **Total Length of Indentation** | 1378 | mm | **54.3** **inches** |
| | | | | | **Maximum Static Crush Depth** | 522 | mm | **20.6** **inches** |

| Vehicle Damage Index | Principal Direction of Force | Pre-Impact Speed | | | |
|---|---|---|---|---|---|
| 12FDEW6 | 0 | 56.4 | kph | **35** | **mph** |

## Pre & Post Test Measurements

(Measurments are taken in a logitudinal direction. Except for Engine Block, all measurments are taken from the Rear Vehicle 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 |
| | | | | Length of Vehicle at Centerline | | | | | | | |
| | | | | 4441 | 174.8 | 3919 | 154.3 | | | | |
| | | | | Engine Block | | | | | | | |
| | | | | 402 | 15.8 | 402 | 15.8 | | | | |
| 4249 | 167.3 | 3757 | 147.9 | Front Bumper Corner | | | | 4226 | 166.4 | 3820 | 150.4 |
| | | | | Front of Engine | | | | | | | |
| | | | | 3631 | 143 | 3419 | 134.6 | | | | |
| 3136 | 123.5 | 3089 | 121.6 | Firewall | | | | 3044 | 119.8 | 3049 | 120 |
| | | | | 3043 | 134.6 | 3049 | 120 | | | | |
| 2858 | 112.5 | 2878 | 113.3 | Upper Leading Edge of Door | | | | 2856 | 112.4 | 2869 | 113 |
| 2847 | 112.1 | 2819 | 111 | Lower Leading Edge of Door | | | | 2847 | 112.1 | 2821 | 111.1 |
| 2852 | 112.3 | 2827 | 111.3 | Bottom of 'A' Post | | | | 2854 | 112.4 | 2857 | 112.5 |
| 1826 | 71.8 | 1842 | 72.5 | Upper Trailing Edge of Door | | | | 1826 | 71.9 | 1812 | 71.3 |
| 1856 | 73.1 | 1839 | 72.4 | Lower Trailing Edge of Door | | | | 1851 | 72.9 | 1827 | 71.9 |
| | | | | Steering Column | | | | | | | |
| | | | | 2406 | 94.7 | 2350 | 92.5 | | | | |
| | | | | Center of Steering Column to 'A' Post (Horizontal) | | | | | | | |
| | | | | 395 | 15.6 | 228 | 9 | | | | |
| | | | | Center of Steering Column to 'A' Post (Vertical) | | | | | | | |
| | | | | 453 | 17.8 | 304 | 12 | | | | |

Registered Owner : 4N6XPRT SYSTEMS

Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™
# 1997 PONTIAC GRAND AM

## NHTSA Crash Test - # 2492 - Front Impact

{ Pre/Post Crush Depths - Vehicle Width - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3459 pounds
Vehicle Test Speed = 35 mph
Test crush width = 54.3 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 19.4 | 20.6 | 16 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 16 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 259.9 | 211.5 | 159.7 |
| Using a Rated No Damage Speed of | 5 mph | 479.9 | 180.2 | 638.9 |
| Using a Rated No Damage Speed of | 7.5 mph | 659.9 | 151.5 | 1437.5 |
| Using a Rated No Damage Speed of | 10 mph | 800.1 | 125.2 | 2555.5 |
| **Average Crush = 19.2 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 216.6 | 146.9 | 159.7 |
| Using a Rated No Damage Speed of | 5 mph | 399.9 | 125.2 | 638.9 |
| Using a Rated No Damage Speed of | 7.5 mph | 550 | 105.2 | 1437.5 |
| Using a Rated No Damage Speed of | 10 mph | 666.7 | 87 | 2555.5 |
| **Maximum Crush = 20.6 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 201.9 | 127.6 | 159.7 |
| Using a Rated No Damage Speed of | 5 mph | 372.7 | 108.7 | 638.9 |
| Using a Rated No Damage Speed of | 7.5 mph | 512.6 | 91.4 | 1437.5 |
| Using a Rated No Damage Speed of | 10 mph | 621.4 | 75.6 | 2555.5 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

***********************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **20.6** | **32.9** | -2.1 | -6.1% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 23.8**

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

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

# 4N6XPRT StifCalcs™
# 1997 PONTIAC GRAND AM

## NHTSA Crash Test - # 2492 - Front Impact

{ Pre/Post Crush Depths - Indentation Length - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3459 pounds
Vehicle Test Speed = 35 mph
Test crush width = 54.3 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 19.4 | 20.6 | 16 | |

**Minimum Crush = 16 inches**

**Average Crush = 19.2 inches**

**Maximum Crush = 20.6 inches**

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| Using a Rated No Damage Speed of | 2.5 mph | 259.9 | 211.5 | 159.7 |
| Using a Rated No Damage Speed of | 5 mph | 479.9 | 180.2 | 638.9 |
| Using a Rated No Damage Speed of | 7.5 mph | 659.9 | 151.5 | 1437.5 |
| Using a Rated No Damage Speed of | 10 mph | 800.1 | 125.2 | 2555.5 |
| Using a Rated No Damage Speed of | 2.5 mph | 216.6 | 146.9 | 159.7 |
| Using a Rated No Damage Speed of | 5 mph | 399.9 | 125.2 | 638.9 |
| Using a Rated No Damage Speed of | 7.5 mph | 550 | 105.2 | 1437.5 |
| Using a Rated No Damage Speed of | 10 mph | 666.7 | 87 | 2555.5 |
| Using a Rated No Damage Speed of | 2.5 mph | 201.9 | 127.6 | 159.7 |
| Using a Rated No Damage Speed of | 5 mph | 372.7 | 108.7 | 638.9 |
| Using a Rated No Damage Speed of | 7.5 mph | 512.6 | 91.4 | 1437.5 |
| Using a Rated No Damage Speed of | 10 mph | 621.4 | 75.6 | 2555.5 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

***********************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **20.6** | **32.9** | -2.1 | -6.1% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 23.8**

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

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

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1992 - 1998

Make : PONTIAC

Model : GRANDAM

| Test Number | Vehicle Info | No Damage Speed (mph) | Average Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Average Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 1706 | 1992 OLDSMOBILE ACHIEVA TWO DOOR COUPE | 5.0 | 19.4 | 35.2 | 299.9 | 93.4 | 481.5 | 25.6 |
| 1740 | 1992 OLDSMOBILE ACHIEVA TWO DOOR COUPE | 5.0 | 16.7 | 29.5 | 281 | 82.5 | 478.5 | 20.9 |
| 1765 | 1993 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 21 | 34.8 | 271.8 | 77.1 | 479.3 | 23 |
| 1770 | 1992 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 29.5 | 73 | 388.9 | 179.4 | 421.5 | 72.3 |
| 1780 | 1992 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 31.1 | 73.8 | 372.3 | 164.9 | 420.2 | 70.1 |
| 1883 | 1993 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 27.8 | 40.3 | 214.3 | 54.5 | 421.4 | 23.4 |
| 1896 | 1992 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 27 | 72.2 | 424.9 | 211.9 | 426 | 77.4 |
| 1902 | 1993 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 15.7 | 40.5 | 425.2 | 192.3 | 470.1 | 41.8 |
| 1967 | 1993 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 16.7 | 35.2 | 348 | 126.1 | 480.4 | 29.7 |
| 2030 | 1994 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 24.3 | 35 | 304 | 75 | 616.1 | 20.1 |
| 2035 | 1994 OLDSMOBILE ACHIEVA TWO DOOR SEDAN | 5.0 | 18.9 | 35 | 373.8 | 118.5 | 589.3 | 25.9 |
| 2124 | 1994 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 18.6 | 29.5 | 247.7 | 65.2 | 470.4 | 18.7 |
| 2194 | 1995 PONTIAC GRAND AM TWO DOOR COUPE | 5.0 | 10.4 | 29.6 | 473.1 | 223.2 | 501.5 | 33.6 |
| 2341 | 1996 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 19.4 | 35.4 | 298.2 | 93.5 | 475.7 | 25.8 |
| 2380 | 1993 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 39.4 | 29.7 | 21.1 | 2.6 | 84.2 | 9 |
| 2460 | 1997 PONTIAC GRAND AM TWO DOOR COUPE | 5.0 | 23 | 35.2 | 337.4 | 88.4 | 643.8 | 21.5 |
| 2489 | 1997 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 13.6 | 29.4 | 366.8 | 131.9 | 509.9 | 25.5 |
| 2492 | 1997 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 20.2 | 35 | 379.9 | 113 | 638.9 | 24.3 |
| | | **Front Averages** | | | 323.8 | 116.3 | 450.7 | 32.7 |
| | | **Front Minimums** | | | 21.1 | 2.6 | 85.6 | 9 |
| | | **Front Maximums** | | | 473.1 | 223.2 | 501.4 | 77.4 |
| | | **Front Standard Deviations** | | | 100.9 | 58.7 | 74.4 | 19.8 |

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1992 - 1998

Make : PONTIAC

Model : GRANDAM

| Test Number | Vehicle Info | No Damage Speed (mph) | Max Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Max Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 1706 | 1992 OLDSMOBILE ACHIEVA TWO DOOR COUPE | 5.0 | 20 | 35.2 | 290.8 | 87.8 | 481.5 | 24.8 |
| 1765 | 1993 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 22.5 | 34.8 | 253.9 | 67.3 | 479.3 | 21.5 |
| 1770 | 1992 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 38 | 73 | 301.7 | 108 | 421.5 | 56.1 |
| 1780 | 1992 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 53.8 | 73.8 | 214.9 | 55 | 420.2 | 40.5 |
| 1883 | 1993 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 29.3 | 40.3 | 203.1 | 48.9 | 421.4 | 22.2 |
| 1896 | 1992 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 40.5 | 72.2 | 282.7 | 93.8 | 426 | 51.5 |
| 1902 | 1993 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 26.5 | 40.5 | 251.9 | 67.5 | 470.1 | 24.8 |
| 1967 | 1993 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 31.7 | 35.2 | 183.1 | 34.9 | 480.4 | 15.6 |
| 2030 | 1994 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 27.1 | 35 | 272.8 | 60.4 | 616.1 | 18.1 |
| 2035 | 1994 OLDSMOBILE ACHIEVA TWO DOOR SEDAN | 5.0 | 21.5 | 35 | 328.4 | 91.5 | 589.3 | 22.8 |
| 2124 | 1994 CHEVROLET CORSICA FOUR DOOR SEDAN | 5.0 | 21.9 | 29.5 | 210.6 | 47.1 | 470.4 | 15.9 |
| 2194 | 1995 PONTIAC GRAND AM TWO DOOR COUPE | 5.0 | 12.9 | 29.6 | 382.1 | 145.6 | 501.5 | 27.1 |
| 2341 | 1996 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 21.5 | 35.4 | 269.1 | 76.1 | 475.7 | 23.3 |
| 2460 | 1997 PONTIAC GRAND AM TWO DOOR COUPE | 5.0 | 25.6 | 35.2 | 303.8 | 71.7 | 643.8 | 19.4 |
| 2489 | 1997 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 14.7 | 29.4 | 338.6 | 112.4 | 509.9 | 23.5 |
| 2492 | 1997 PONTIAC GRAND AM FOUR DOOR SEDAN | 5.0 | 24.4 | 35 | 314.2 | 77.3 | 638.9 | 20.1 |
| | | **Front Averages** | | | 275.1 | 77.8 | 486.2 | 26.7 |
| | | **Front Minimums** | | | 183.1 | 34.9 | 480.3 | 15.6 |
| | | **Front Maximums** | | | 382.1 | 145.6 | 501.4 | 56.1 |
| | | **Front Standard Deviations** | | | 54.3 | 28.2 | 48.5 | 12 |

**EXPERT VIN DeCoder**
**Version 2.8**

**The VIN Number is 1FA FP53U 9 2A 150399**

**The vehicle should be a 2002 Ford Passenger car**
**The model: Taurus SE 4-Door Sedan**
**The assembly plant: Atlanta, GA**
**The 5 passenger vehicle had :**
**Manual Seatbelts + Driver/Passenger Front Air Bags**

**The OEM engine was: V-6 cylinder with Overhead Cam**
**Engine Displacement/Type = 3.0 L/ 181 cu.in. V6 OHV**
**Brake Horsepower (SAE) = 155 @ 4900 rpm**
**Torque (SAE) = 185 lb-ft at 3950 rpm**
**Engine manufacturer = Ford**

**The fuel distribution system:**
**Sequential Fuel Injection (SFI)**
**Fuel pump/line pressure = 26-45 psi**
**The ignition system = electronic**

**This is a Front Wheel Drive vehicle.**

**The first three characters {1, F, A} indicates that the vehicle was a Ford made in the U.S.A.**

**The fourth character {F} indicates the vehicle had Manual Seatbelts + Driver/Passenger Front Air Bags**

**The fifth though seventh character {P53} indicates a Taurus SE 4-Door Sedan**

**The eighth character {U} indicates the OEM engine : 3.0 L/ 181 cu.in. V6 OHV**

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

**The tenth character {2} indicates the Model Year was 2002**

**The eleventh character {A} indicates it was made at the assembly plant in Atlanta, GA**

**The twelveth through the seventeenth characters { 150399 } is the Serial Number unique to this vehicle.**

**EXPERT AUTOSTATS**
**Ver. 5.0 BETA**


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

**04-02-2009**

**2002 FORD TAURUS 4DR SEDAN**

| | | |
|---|---|---|
| **CURB WEIGHT:** | **3331 lbs.** | **1511 kg.** |
| **Curb Weight Distribution -** | **Front: 62 %** | **Rear: 38 %** |
| **Gross Vehicle Weight Rating:** | **4680 lbs.** | **2123 kg.** |
| **Number of Tires on Vehicle:** | **4** | |
| **Drive Wheels:** | **FRONT** | |

**HORIZONTAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Total Length** | **198** | **16.50** | **5.03** |
| **Wheelbase:** | **109** | **9.08** | **2.77** |
| **Front Bumper to Front Axle** | **42** | **3.50** | **1.07** |
| **Front Bumper to Front of Front Well** | **26** | **2.17** | **0.66** |
| **Front Bumper to Front of Hood** | **6** | **0.50** | **0.15** |
| **Front Bumper to Base of Windshield** | **49** | **4.08** | **1.24** |
| **Front Bumper to Top of Windshield** | **82** | **6.83** | **2.08** |
| **Rear Bumper to Rear Axle** | **47** | **3.92** | **1.19** |
| **Rear Bumper to Rear of Rear Well** | **32** | **2.67** | **0.81** |
| **Rear Bumper to Rear of Trunk** | **7** | **0.58** | **0.18** |
| **Rear Bumper to Base of Rear Window** | **28** | **2.33** | **0.71** |

**WIDTH DIMENSIONS**

| | | | |
|---|---|---|---|
| **Maximum Width** | **73** | **6.08** | **1.85** |
| **Front Track** | **62** | **5.17** | **1.57** |
| **Rear Track** | **62** | **5.17** | **1.57** |

**VERTICAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Height** | **56** | **4.67** | **1.42** |
| **Ground to:** | | | |
| **Front Bumper (Top)** | **22** | **1.83** | **0.56** |
| **Headlight - center** | **27** | **2.25** | **0.69** |
| **Hood - top front** | **28** | **2.33** | **0.71** |
| **Base of windshield** | **38** | **3.17** | **0.97** |
| **Rear Bumper - top** | **26** | **2.17** | **0.66** |
| **Trunk - top rear** | **41** | **3.42** | **1.04** |
| **Base of rear window** | **43** | **3.58** | **1.09** |

**Reg. To: 4N6XPRT Systems** **S/N:10R-930512AQ03201**

2002 FORD TAURUS 4DR SEDAN

INTERIOR DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Front Seat Shoulder Width | 57 | 4.75 | 1.45 |
| Front Seat to Headliner | 40 | 3.33 | 1.02 |
| Front Leg - seatback to floor (max) | 42 | 3.50 | 1.07 |
| Rear Seat Shoulder Width | 57 | 4.75 | 1.45 |
| Rear Seat to Headliner | 38 | 3.17 | 0.97 |
| Rear Leg - seatback to floor (min) | 39 | 3.25 | 0.99 |

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

STEERING DATA

| | | | |
|---|---|---|---|
| Turning Circle (Diameter) | 480 | 40.00 | 12.19 |
| Steering Ratio: | 17.00:1 | | |
| Wheel Radius: | 12 | 1.00 | 0.30 |
| Tire Size (OEM): | P215/60R16 | | |

ACCELERATION & BRAKING INFORMATION

Brake Type: FRONT DISC - REAR DRUM
ABS System: ABS UNKNOWN

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = 141 ft t = 3.2 sec. a =-27.4 ft/sec/sec G-force = -0.85

ACCELERATION:

| | | | |
|---|---|---|---|
| 0->30 mph | t = 2.8 sec. | a = 15.7 ft/sec/sec | G-force = 0.49 |
| 0->60 mph | t = 8.0 sec. | a = 11.0 ft/sec/sec | G-force = 0.34 |
| 45->65 mph | t = 4.2 sec. | a = 7.0 ft/sec/sec | G-force = 0.22 |

Transmission Type: 4spd AUTOMATIC

NOTES:

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

N.S.D.C. = 2000 - 2006

Reg. To: 4N6XPRT Systems S/N:10R-930512AQ03201

2002 FORD TAURUS 4DR SEDAN

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 1.41 STABLE
NHTSA Star Rating (calculated) ****

CENTER OF GRAVITY (No Load):

| | |
|---|---|
| Inches behind front axle | = 41.42 |
| Inches in front of rear axle | = 67.58 |
| Inches from side of vehicle | = 36.50 |
| Inches from ground | = 21.98 |
| Inches from front corner | = 91.06 |
| Inches from rear corner | = 120.25 |
| Inches from front bumper | = 83.42 |
| Inches from rear bumper | = 114.58 |

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

| | | |
|---|---|---|
| YAW MOMENT OF INERTIA | = 2224.93 | lb-ft-sec^2 |
| PITCH MOMENT OF INERTIA | = 2148.69 | lb-ft-sec^2 |
| ROLL MOMENT OF INERTIA | = 449.58 | lb-ft-sec^2 |

FRONT PROFILE INFORMATION

| | | |
|---|---|---|
| ANGLE FRONT BUMPER TO HOOD FRONT | = 45.0 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD BASE | = 13.1 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD TOP | = 18.9 | deg |
| ANGLE OF WINDSHIELD | = 25.9 | deg |
| ANGLE OF STEERING TIRES AT MAX TURN | = 26.0 | deg |

FIRST APPROXIMATION CRUSH FACTORS:

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

V(mph) = Sqr root of (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 independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The Rear Impact data with more than 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, esp. GM, your 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**
**Version 2.8**

**The VIN Number is 2G1 WL52M 0 V1 191051**

**The vehicle should be a 1997 Chevrolet**
**The model: Lumina LS Four Door Sedan.**
**The assembly plant: Oshawa (T&B), ON**
**The 6 passenger vehicle had :**
**Manual Seatbelts + Driver & Passenger Air Bags**

**The OEM engine was: V6 cylinder with Overhead Valves (OHV)**
**Engine Displacement/Type = 3.1L / 191 cu.in. V6 OHV**
**Brake Horsepower (SAE) = 160 - 170 @ 5200 rpm**
**Torque (SAE) = 185 - 190 lb-ft at 4000 rpm**
**Engine manufacturer = Buick, Olsmobile, Cadillac**

**The fuel distribution system:**
**Sequential Fuel Injection (SFI)**
**Fuel pump/line pressure = 41-47 psi**
**The ignition system was = Electronic**

**This is a Front Wheel Drive vehicle.**

**The first three characters {2, G, 1} indicate the vehicle was a Chevrolet product made in Canada**

**The fourth through sixth characters {WL5} indicates a Lumina LS Four Door Sedan**

**The seventh character {2} indicates the OEM vehicle had Manual Seatbelts + Driver & Passenger Air Bags**

**The eighth character {M} indicates the OEM engine : 3.1L / 191 cu.in. V6 OHV**

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

**The tenth character {V} indicates the Model Year was 1997**

**The eleventh character {1} indicates it was made at the assembly plant in Oshawa (T&B), ON**

**The twelfth through the seventeenth characters {191051} is the Serial Number unique to this vehicle.**

**EXPERT AUTOSTATS**
**Ver. 5.0 BETA**


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

**04-02-2009**

**1997 CHEVROLET LUMINA 4DR SEDAN**

| | | |
|---|---|---|
| **CURB WEIGHT:** | **3330 lbs.** | **1510 kg.** |
| **Curb Weight Distribution -** | **Front: 65 %** | **Rear: 35 %** |
| **Gross Vehicle Weight Rating:** | **4426 lbs.** | **2008 kg.** |
| **Number of Tires on Vehicle:** | **4** | |
| **Drive Wheels:** | **FRONT** | |

**HORIZONTAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Total Length** | **201** | **16.75** | **5.11** |
| **Wheelbase:** | **108** | **9.00** | **2.74** |
| **Front Bumper to Front Axle** | **44** | **3.67** | **1.12** |
| **Front Bumper to Front of Front Well** | **29** | **2.42** | **0.74** |
| **Front Bumper to Front of Hood** | **6** | **0.50** | **0.15** |
| **Front Bumper to Base of Windshield** | **57** | **4.75** | **1.45** |
| **Front Bumper to Top of Windshield** | **80** | **6.67** | **2.03** |
| **Rear Bumper to Rear Axle** | **49** | **4.08** | **1.24** |
| **Rear Bumper to Rear of Rear Well** | **33** | **2.75** | **0.84** |
| **Rear Bumper to Rear of Trunk** | **6** | **0.50** | **0.15** |
| **Rear Bumper to Base of Rear Window** | **30** | **2.50** | **0.76** |

**WIDTH DIMENSIONS**

| | | | |
|---|---|---|---|
| **Maximum Width** | **72** | **6.00** | **1.83** |
| **Front Track** | **59** | **4.92** | **1.50** |
| **Rear Track** | **59** | **4.92** | **1.50** |

**VERTICAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Height** | **55** | **4.58** | **1.40** |
| **Ground to:** | | | |
| **Front Bumper (Top)** | **20** | **1.67** | **0.51** |
| **Headlight - center** | **26** | **2.17** | **0.66** |
| **Hood - top front** | **31** | **2.58** | **0.79** |
| **Base of windshield** | **36** | **3.00** | **0.91** |
| **Rear Bumper - top** | **26** | **2.17** | **0.66** |
| **Trunk - top rear** | **39** | **3.25** | **0.99** |
| **Base of rear window** | **43** | **3.58** | **1.09** |

**Reg. To: 4N6XPRT Systems** **S/N:10R-930512AQ03201**

1997 CHEVROLET LUMINA 4DR SEDAN

INTERIOR DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Front Seat Shoulder Width | 58 | 4.83 | 1.47 |
| Front Seat to Headliner | 38 | 3.17 | 0.97 |
| Front Leg - seatback to floor (max) | 42 | 3.50 | 1.07 |
| Rear Seat Shoulder Width | 57 | 4.75 | 1.45 |
| Rear Seat to Headliner | 37 | 3.08 | 0.94 |
| Rear Leg - seatback to floor (min) | 37 | 3.08 | 0.94 |

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

STEERING DATA

| | | | |
|---|---|---|---|
| Turning Circle (Diameter) | 468 | 39.00 | 11.89 |
| Steering Ratio: | __.__:1 | | |
| Wheel Radius: | 13 | 1.08 | 0.33 |
| Tire Size (OEM): | 205-70R15 | | |

ACCELERATION & BRAKING INFORMATION

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

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = 144 ft t = 3.3 sec. a =-26.8 ft/sec/sec G-force = -0.83

ACCELERATION:

| | | | |
|---|---|---|---|
| 0->30 mph | t = 3.5 sec. | a = 12.6 ft/sec/sec | G-force = 0.39 |
| 0->60 mph | t = 10.2 sec. | a = 8.6 ft/sec/sec | G-force = 0.27 |
| 45->65 mph | t = 6.8 sec. | a = 4.3 ft/sec/sec | G-force = 0.13 |

Transmission Type: AUTOMATIC

NOTES:

Federal Bumper Standard Requirements = 2.5 MPH
This vehicles Rated Bumper Strength: 5 mph

N.S.D.C. = 1995 - 2001

Reg. To: 4N6XPRT Systems S/N:10R-930512AQ03201

1997 CHEVROLET LUMINA 4DR SEDAN

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 1.37 STABLE
NHTSA Star Rating (calculated) ****

CENTER OF GRAVITY (No Load):

| | | |
|---|---|---|
| Inches behind front axle | = | 37.80 |
| Inches in front of rear axle | = | 70.20 |
| Inches from side of vehicle | = | 36.00 |
| Inches from ground | = | 21.59 |
| Inches from front corner | = | 89.37 |
| Inches from rear corner | = | 124.52 |
| Inches from front bumper | = | 81.80 |
| Inches from rear bumper | = | 119.20 |

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

| | | | |
|---|---|---|---|
| YAW MOMENT OF INERTIA | = | 2223.90 | lb-ft-sec^2 |
| PITCH MOMENT OF INERTIA | = | 2147.70 | lb-ft-sec^2 |
| ROLL MOMENT OF INERTIA | = | 449.40 | lb-ft-sec^2 |

FRONT PROFILE INFORMATION

| | | | |
|---|---|---|---|
| ANGLE FRONT BUMPER TO HOOD FRONT | = | 61.4 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD BASE | = | 5.6 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD TOP | = | 16.6 | deg |
| ANGLE OF WINDSHIELD | = | 36.5 | deg |
| ANGLE OF STEERING TIRES AT MAX TURN | = | 26.4 | deg |

FIRST APPROXIMATION CRUSH FACTORS:

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

V(mph) = Sqr root of (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 independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The Rear Impact data with more than 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, esp. GM, your 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

## # 2222

## 1995 CHEVROLET LUMINA

Provided By

4N6XPRT StifCalcs™

**Registered to:**

**4N6XPRT SYSTEMS**

**8387 UNIVERSITY AVENUE**

**LA MESA  CA 91941-3842**

**S/N: 030201SC01301**



4N6XPRT Systems® | 8387 University Avenue | La Mesa, CA 91941 | USA

(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

# 4N6XPRT StifCalcs™

# Sister/Clone database reader

You entered: **1997 CHEVROLET LUMINA**

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

| Year Range | Make | Model | Body Styles | Wheelbase |
|---|---|---|---|---|
| 1995 - 2001 | CHEVROLET | LUMINA | 2D,4D | 107.5" |

REMARKS : "Older Cars"

| | | | | |
|---|---|---|---|---|
| 1995 - 1999 | CHEVROLET | MONTE CARLO | 2D,4D | 107.5" |

REMARKS : "Older Cars"



**If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering, 521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.**

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Test Information

Test # 2222 NHTSA Version # 3 Test Date 1995-02 Contract # DTNH22-90-D-22121

Contract/Study Title 1995 CHEVROLET LUMINA INTO FRONTAL LOAD CELL BARRIER

Test Objective(s) OBTAIN 35 MPH NEW CAR ASSESSMENT AND RESEARCH DATA

Test Type NEW CAR ASSESSMENT TEST Configuration VEHICLE INTO BARRIER

Closing Speed 56.2 Km/Hr 35 MPH

Impact Angle 0 Offset Distance 0 mm 0 inches Side Impact Point mm 0 inches

Test Performer TRC OF OHIO Test Reference # 950209

Test Track Surface CONCRETE Condition DRY Ambient Temperature 23 C 73 F

Data Recorder Type FM MULTIPLEXOR TAPE Data Link UMBILICAL CABLE Total Number of Curves 89

Test Commentary NO COMMENTS

## Fixed Barrier Information

Barrier Type RIGID Barrier Shape LOAD CELL BAR Pole Barrier Diameter mm inches

Barrier Commentary NO COMMENTS

# 4N6XPRT StifCalcs™

## 1995 CHEVROLET LUMINA LEFT FRONT SEAT OCCUPANT

Test # 2967 Vehicle # 1 Location LEFT FRONT SEAT Seat Position CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer VECTOR, S/N:034

Occupant Modification UNMODIFIED

Occupant Description NO COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 260 | mm | 11.7 | inches |
| Windshield | 582 | mm | 20.1 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 175 | mm | 8.4 | inches |
| Side Window | 245 | mm | 13.4 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) NONE

Head Injury Criteria (HIC) 570 HIC Lower Time interval (ms) 90 HIC Upper Time interval (ms) -5009

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 525 | mm | 18.4 | inches |
| Steering Wheel | 285 | mm | 9.5 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 122 | mm | 5.9 | inches |
| Hip to Door | 132 | mm | 6.5 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 9999 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 150 mm 5.9 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) KNEE RESTRAINT Second Contact Region (Legs) NONE

Left Femur Peak Load 4055 Newtons 363.7 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1995 CHEVROLET LUMINA LEFT FRONT SEAT OCCUPANT

Restraint # 1 3 POINT BELT Mounted Deployment? NOT APPLICABLE

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1995 CHEVROLET LUMINA LEFT FRONT SEAT OCCUPANT

| Restraint # | 2 | AIR BAG | Mounted | | Deployment? | DEPLOYED PROPERLY |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## 1995 CHEVROLET LUMINA RIGHT FRONT SEAT OCCUPANT

Test # 2967 Vehicle # 1 Location RIGHT FRONT SEAT Seat Position FORWARD OF CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer VECTOR, S/N:035

Occupant Modification UNMODIFIED

Occupant Description N0 COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 245 | mm | 11.7 | inches |
| Windshield | 570 | mm | 20.1 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 160 | mm | 8.4 | inches |
| Side Window | 245 | mm | 13.4 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) NONE

Head Injury Criteria (HIC) 545 HIC Lower Time interval (ms) 93.1 HIC Upper Time interval (ms) -5436

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 485 | mm | 18.4 | inches |
| Steering Wheel | 9999 | mm | 9.5 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 46 | mm | 5.9 | inches |
| Hip to Door | 136 | mm | 6.5 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 9999 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 110 mm 5.9 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) KNEE RESTRAINT Second Contact Region (Legs) NONE

Left Femur Peak Load 6909 Newtons 363.7 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1995 CHEVROLET LUMINA RIGHT FRONT SEAT OCCUPANT

Restraint # 1 3 POINT BELT Mounted Deployment? NOT APPLICABLE

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1995 CHEVROLET LUMINA RIGHT FRONT SEAT OCCUPANT

| Restraint # | 2 | AIR BAG | Mounted | | Deployment? | DEPLOYED PROPERLY |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## Vehicle 1 - 1995 CHEVROLET LUMINA

Test # 2222 | NHTSA Test Vehicle Number MS0110 | VIN 2G1WL52M8S1145494

Year 1995 | Make CHEVROLET | Model LUMINA | Body FOUR DOOR SEDAN

Vehicle Modification Indicator: PRODUCTION VEHICLE

Vehicle Modification(s) Description: NO COMMENTS

Post-test Steering Column Shear Capsule Seperation: UNKNOWN

Steering Column Collapse Mechanism: UNKNOWN

Vehicle Commentary: INSTR. PANEL COVERED STEERING COLUMN COLLAPSE MECHANISM

| | | | | | |
|---|---|---|---|---|---|
| Vehicle Length | 4924 | mm | 193.9 | inches | |
| Vehicle Wheelbase | 2730 | mm | 107.5 | inches | |
| CG behind front axle | 1092 | mm | 43 | inches | |
| Center of Damage to CG Axis | 0 | mm | 0 | inches | |

| | | | |
|---|---|---|---|
| **Vehicle Test Weight** | 1741 | KG | **3838** **pounds** |
| **Vehicle Width** | 1837 | mm | **72.3** **inches** |
| **Total Length of Indentation** | 1524 | mm | **60** **inches** |
| **Maximum Static Crush Depth** | 552 | mm | **21.7** **inches** |

Vehicle Damage Index: 12FDEW | Principal Direction of Force: 0 | **Pre-Impact Speed**: 56.2 kph **34.9 mph**

### Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

| | | | | |
|---|---|---|---|---|
| DPD 1 | 300 | mm | 11.8 | inches |
| DPD 2 | 473 | mm | 18.6 | inches |
| DPD 3 | 552 | mm | 21.7 | inches |
| DPD 4 | 505 | mm | 19.9 | inches |
| DPD 5 | 465 | mm | 18.3 | inches |
| DPD 6 | 414 | mm | 16.3 | inches |

### Crush from Pre & Post Test Damage Measurements

| | Pre-Test | | Post-Test | | Crush-Depth | |
|---|---|---|---|---|---|---|
| **Left Bumper Corner** | 184.3 | **inches** | 172.4 | **inches** | **11.8** | **inches** |
| | 4680 | mm | 4380 | mm | 300 | mm |
| **Centerline** | 193.9 | **inches** | 173.2 | **inches** | **20.6** | **inches** |
| | 4924 | mm | 4400 | mm | 524 | mm |
| **Right Bumper Corner** | 184.3 | **inches** | 168 | **inches** | **16.3** | **inches** |
| | 4680 | mm | 4266 | mm | 414 | mm |

Bumper Engagement (Inline Impact Only): NOT APPLICABLE

Still Engagement (Side Impact Only): NOT APPLICABLE

A-pillar Engagement (Side Impact Only): NOT APPLICABLE

Moving Test Cart Angle:

*Magnitude of the Tilt-Angle Measured between surface if a Rollover Test Cart and the Ground*

Moving Test Cart / Vehicle Crabbed Angle: 0

*Magnitude of the Crabbed Angle Measured Clockwise from Logitudial Vector to Velocity Vector of Vehicle*

Moving Test Cart Vehicle Orientation on Cart:

*Magnitude of the Angle Measured between the vehicle Orientation and the Direction of the Test Cart Motion*

# Vehicle 1 - 1995 CHEVROLET LUMINA

| Test # | NHTSA Test Vehicle Number | VIN |
|---|---|---|
| 2222 | MS0110 | 2G1WL52M8S1145494 |

| Year | Make | Model | Body |
|---|---|---|---|
| 1995 | CHEVROLET | LUMINA | FOUR DOOR SEDAN |

| Vehicle Modification Indicator | Vehicle Modification(s) Description |
|---|---|
| PRODUCTION VEHICLE | NO COMMENTS |

| Post-test Steering Column Shear Capsule Seperation | Steering Column Collapse Mechanism |
|---|---|
| UNKNOWN | UNKNOWN |

Vehicle Commentary: INSTR. PANEL COVERED STEERING COLUMN COLLAPSE MECHANISM

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vehicle Length | 4924 | mm | 193.9 | inches | **Vehicle Test Weight** | 1741 | KG | **3838** **pounds** |
| Vehicle Wheelbase | 2730 | mm | 107.5 | inches | **Vehicle Width** | 1837 | mm | **72.3** **inches** |
| CG behind front axle | 1092 | mm | 43 | inches | **Total Length of Indentation** | 1524 | mm | **60** **inches** |
| Center of Damage to CG Axis | 0 | mm | 0 | inches | **Maximum Static Crush Depth** | 552 | mm | **21.7** **inches** |

| Vehicle Damage Index | Principal Direction of Force | | | |
|---|---|---|---|---|
| 12FDEW2 | 0 | **Pre-Impact Speed** | 56.2 kph | **34.9** **mph** |

## Pre & Post Test Measurements

(Measurments are taken in a logitudinal direction. Except for Engine Block, all measurments are taken from the Rear Vehicle 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 |
| | | | | Length of Vehicle at Centerline | | | | | | | |
| | | | | 4924 | 193.9 | 4400 | 173.2 | | | | |
| | | | | Engine Block | | | | | | | |
| | | | | 460 | 18.1 | 460 | 18.1 | | | | |
| 4680 | 184.3 | 4380 | 172.4 | Front Bumper Corner | | | | 4680 | 184.3 | 4266 | 168 |
| | | | | Front of Engine | | | | | | | |
| | | | | 4204 | 165.5 | 3960 | 155.9 | | | | |
| 3588 | 141.3 | 3567 | 140.4 | Firewall | | | | 3580 | 140.9 | 3595 | 141.5 |
| | | | | 3609 | 155.9 | 3570 | 140.6 | | | | |
| 3260 | 128.3 | 3273 | 128.9 | Upper Leading Edge of Door | | | | 3264 | 128.5 | 3266 | 128.6 |
| 3225 | 127 | 3311 | 130.4 | Lower Leading Edge of Door | | | | 3241 | 127.6 | 3206 | 126.2 |
| 3170 | 124.8 | 3160 | 124.4 | Bottom of 'A' Post | | | | 3180 | 125.2 | 3155 | 124.2 |
| 2222 | 87.2 | 2225 | 87.6 | Upper Trailing Edge of Door | | | | 2222 | 87.5 | 2222 | 87.5 |
| 2218 | 87.3 | 2205 | 86.8 | Lower Trailing Edge of Door | | | | 2226 | 87.6 | 2194 | 86.4 |
| | | | | Steering Column | | | | | | | |
| | | | | 2754 | 108.4 | 2786 | 109.7 | | | | |
| | | | | Center of Steering Column to 'A' Post (Horizontal) | | | | | | | |
| | | | | 310 | 12.2 | 230 | 9.1 | | | | |
| | | | | Center of Steering Column to 'A' Post (Vertical) | | | | | | | |
| | | | | 400 | 15.7 | 411 | 16.2 | | | | |

Registered Owner : 4N6XPRT SYSTEMS

Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™
# 1995 CHEVROLET LUMINA

## NHTSA Crash Test - # 2222 - Front Impact

{ Pre/Post Crush Depths - Vehicle Width - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3838 pounds
Vehicle Test Speed = 34.9 mph
Test crush width = 72.3 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 11.8 | 20.6 | 16.3 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 11.8 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 292.2 | 321.2 | 132.9 |
| Using a Rated No Damage Speed of | 5 mph | 539.4 | 273.6 | 531.8 |
| Using a Rated No Damage Speed of | 7.5 mph | 741.5 | 229.8 | 1196.5 |
| Using a Rated No Damage Speed of | 10 mph | 898.5 | 189.8 | 2127.1 |
| **Average Crush = 17.3 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 199.3 | 149.4 | 132.9 |
| Using a Rated No Damage Speed of | 5 mph | 367.9 | 127.3 | 531.8 |
| Using a Rated No Damage Speed of | 7.5 mph | 505.8 | 106.9 | 1196.5 |
| Using a Rated No Damage Speed of | 10 mph | 612.9 | 88.3 | 2127.1 |
| **Maximum Crush = 20.6 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 167.4 | 105.4 | 132.9 |
| Using a Rated No Damage Speed of | 5 mph | 309 | 89.8 | 531.8 |
| Using a Rated No Damage Speed of | 7.5 mph | 424.7 | 75.4 | 1196.5 |
| Using a Rated No Damage Speed of | 10 mph | 514.7 | 62.3 | 2127.1 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

***********************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **20.6** | **32.9** | -2 | -5.8% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 23.7**

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

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

# 4N6XPRT StifCalcs™
# 1995 CHEVROLET LUMINA

## NHTSA Crash Test - # 2222 - Front Impact

{ Pre/Post Crush Depths - Indentation Length - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3838 pounds
Vehicle Test Speed = 34.9 mph
Test crush width = 60 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 11.8 | 20.6 | 16.3 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 11.8 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 352.2 | 387.1 | 160.2 |
| Using a Rated No Damage Speed of | 5 mph | 650.2 | 329.7 | 641 |
| Using a Rated No Damage Speed of | 7.5 mph | 893.8 | 276.9 | 1442.2 |
| Using a Rated No Damage Speed of | 10 mph | 1083 | 228.7 | 2564 |
| **Average Crush = 17.3 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 240.3 | 180.1 | 160.2 |
| Using a Rated No Damage Speed of | 5 mph | 443.5 | 153.4 | 641 |
| Using a Rated No Damage Speed of | 7.5 mph | 609.6 | 128.8 | 1442.2 |
| Using a Rated No Damage Speed of | 10 mph | 738.7 | 106.4 | 2564 |
| **Maximum Crush = 20.6 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 201.8 | 127 | 160.2 |
| Using a Rated No Damage Speed of | 5 mph | 372.4 | 108.2 | 641 |
| Using a Rated No Damage Speed of | 7.5 mph | 512 | 90.9 | 1442.2 |
| Using a Rated No Damage Speed of | 10 mph | 620.4 | 75.1 | 2564 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

***********************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **20.6** | **32.9** | -2 | -5.8% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 23.7**

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

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

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1995 - 2001

Make : CHEVROLET

Model : LUMINA

| Test Number | Vehicle Info | No Damage Speed (mph) | Average Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Average Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2159 | 1995 CHEVROLET MONTE CARLO TWO DOOR COUPE | 5.0 | 23.5 | 34.9 | 265.3 | 67.5 | 521.4 | 20.7 |
| 2222 | 1995 CHEVROLET LUMINA FOUR DOOR SEDAN | 5.0 | 18.5 | 34.9 | 343.6 | 111 | 531.8 | 26.3 |
| 2742 | 1998 CHEVROLET LUMINA FOUR DOOR SEDAN | 5.0 | 19.8 | 35.4 | 470 | 144.5 | 764.5 | 25.3 |
| 3524 | 2001 CHEVROLET MONTE CARLO TWO DOOR COUPE | 5.0 | 23.2 | 35.5 | 277.4 | 73 | 526.9 | 21.8 |
| | | **Front Averages** | | | 339.1 | 99 | 580.7 | 23.5 |
| | | **Front Minimums** | | | 265.3 | 67.5 | 521.4 | 20.7 |
| | | **Front Maximums** | | | 470 | 144.5 | 764.4 | 26.3 |
| | | **Front Standard Deviations** | | | 93.8 | 36 | 47.5 | 2.7 |

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1995 - 2001

Make : CHEVROLET

Model : LUMINA

| Test Number | Vehicle Info | No Damage Speed (mph) | Max Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Max Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2159 | 1995 CHEVROLET MONTE CARLO TWO DOOR COUPE | 5.0 | 24.6 | 34.9 | 253.4 | 61.6 | 521.4 | 19.8 |
| 2222 | 1995 CHEVROLET LUMINA FOUR DOOR SEDAN | 5.0 | 21.7 | 34.9 | 292.7 | 80.5 | 531.8 | 22.4 |
| 2742 | 1998 CHEVROLET LUMINA FOUR DOOR SEDAN | 5.0 | 22.4 | 35.4 | 414.3 | 112.2 | 764.5 | 22.3 |
| 3524 | 2001 CHEVROLET MONTE CARLO TWO DOOR COUPE | 5.0 | 28.5 | 35.5 | 225.6 | 48.3 | 526.9 | 17.7 |
| | | **Front Averages** | | | 296.5 | 75.7 | 581 | 20.6 |
| | | **Front Minimums** | | | 225.6 | 48.3 | 526.9 | 17.7 |
| | | **Front Maximums** | | | 414.3 | 112.2 | 764.9 | 22.4 |
| | | **Front Standard Deviations** | | | 83.2 | 27.7 | 41.8 | 2.2 |

**EXPERT VIN DeCoder**
**Version 2.8**

**The VIN Number is 1ME FM53U 2 YA 628527**

**The vehicle should be a 2000 Mercury (Ford) Passenger car**
**The model: Sable LS 4-door Sedan**
**The assembly plant: Atlanta, GA**
**The 6 passenger vehicle had :**
**Active Frt+Manual Rear Seatbelts + Driver/Passgr Air Bag**

**The OEM engine was: V-6 cylinder with Overhead Valve**
**Engine Displacement/Type = 3.0 L/ 181 cu.in., V6, OHV**
**Brake Horsepower (SAE) = 140 @ 4800 rpm**
**Torque (SAE) = 160 lb-ft at 3000 rpm**
**Engine manufacturer = Ford**

**The fuel distribution system:**
**Sequential Port Fuel Injection (SEFI)**
**Fuel pump/line pressure = 35-40 psi**
**The ignition system = electronic**

**This is a Front Wheel Drive vehicle.**

**The first three characters {1, M, E} indicates that the vehicle was a Mercury (Ford) made in the U.S.A.**

**The fourth character {F} indicates the vehicle had Active Frt+Manual Rear Seatbelts + Driver/Passgr Air Bag**

**The fifth though seventh character {M53} indicates a Sable LS 4-door Sedan**

**The eighth character {U} indicates the OEM engine : 3.0 L/ 181 cu.in., V6, OHV**

**The 9th Character { the Check Digit } is 2**
**The calculated Check Digit value is 2**

**The tenth character {Y} indicates the Model Year was 2000**

**The eleventh character {A} indicates it was made at the assembly plant in Atlanta, GA**

**The twelveth through the seventeenth characters { 628527 } is the Serial Number unique to this vehicle.**

**EXPERT AUTOSTATS**
**Ver. 5.0 BETA**


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

**04-02-2009**

**2000 MERCURY SABLE 4DR SEDAN**

| | | |
|---|---|---|
| **CURB WEIGHT:** | **3331 lbs.** | **1511 kg.** |
| **Curb Weight Distribution -** | **Front: 62 %** | **Rear: 38 %** |
| **Gross Vehicle Weight Rating:** | **4680 lbs.** | **2123 kg.** |
| **Number of Tires on Vehicle:** | **4** | |
| **Drive Wheels:** | **FRONT** | |

**HORIZONTAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| Total Length | 198 | 16.50 | 5.03 |
| Wheelbase: | 109 | 9.08 | 2.77 |
| Front Bumper to Front Axle | 42 | 3.50 | 1.07 |
| Front Bumper to Front of Front Well | 26 | 2.17 | 0.66 |
| Front Bumper to Front of Hood | 6 | 0.50 | 0.15 |
| Front Bumper to Base of Windshield | 49 | 4.08 | 1.24 |
| Front Bumper to Top of Windshield | 82 | 6.83 | 2.08 |
| Rear Bumper to Rear Axle | 47 | 3.92 | 1.19 |
| Rear Bumper to Rear of Rear Well | 32 | 2.67 | 0.81 |
| Rear Bumper to Rear of Trunk | 7 | 0.58 | 0.18 |
| Rear Bumper to Base of Rear Window | 28 | 2.33 | 0.71 |

**WIDTH DIMENSIONS**

| | | | |
|---|---|---|---|
| Maximum Width | 73 | 6.08 | 1.85 |
| Front Track | 62 | 5.17 | 1.57 |
| Rear Track | 62 | 5.17 | 1.57 |

**VERTICAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| Height | 56 | 4.67 | 1.42 |
| Ground to: | | | |
| Front Bumper (Top) | 22 | 1.83 | 0.56 |
| Headlight - center | 27 | 2.25 | 0.69 |
| Hood - top front | 28 | 2.33 | 0.71 |
| Base of windshield | 38 | 3.17 | 0.97 |
| Rear Bumper - top | 26 | 2.17 | 0.66 |
| Trunk - top rear | 41 | 3.42 | 1.04 |
| Base of rear window | 43 | 3.58 | 1.09 |

**Reg. To: 4N6XPRT Systems** **S/N:10R-930512AQ03201**

2000 MERCURY SABLE 4DR SEDAN

INTERIOR DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Front Seat Shoulder Width | 57 | 4.75 | 1.45 |
| Front Seat to Headliner | 40 | 3.33 | 1.02 |
| Front Leg - seatback to floor (max) | 42 | 3.50 | 1.07 |
| Rear Seat Shoulder Width | 57 | 4.75 | 1.45 |
| Rear Seat to Headliner | 38 | 3.17 | 0.97 |
| Rear Leg - seatback to floor (min) | 39 | 3.25 | 0.99 |

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

STEERING DATA

| | | | |
|---|---|---|---|
| Turning Circle (Diameter) | 480 | 40.00 | 12.19 |
| Steering Ratio: | 17.00:1 | | |
| Wheel Radius: | 12 | 1.00 | 0.30 |
| Tire Size (OEM): | P215/60R16 | | |

ACCELERATION & BRAKING INFORMATION

Brake Type: FRONT DISC - REAR DRUM
ABS System: ABS UNKNOWN

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = 141 ft t = 3.2 sec. a =-27.4 ft/sec/sec G-force = -0.85

ACCELERATION:

| | | | |
|---|---|---|---|
| 0->30 mph | t = 2.8 sec. | a = 15.7 ft/sec/sec | G-force = 0.49 |
| 0->60 mph | t = 8.0 sec. | a = 11.0 ft/sec/sec | G-force = 0.34 |
| 45->65 mph | t = 4.2 sec. | a = 7.0 ft/sec/sec | G-force = 0.22 |

Transmission Type: 4spd AUTOMATIC

NOTES:

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

N.S.D.C. = 2000 - 2005

Reg. To: 4N6XPRT Systems S/N:10R-930512AQ03201

2000 MERCURY SABLE 4DR SEDAN

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 1.41 STABLE
NHTSA Star Rating (calculated) ****

CENTER OF GRAVITY (No Load):

| | |
|---|---|
| Inches behind front axle | = 41.42 |
| Inches in front of rear axle | = 67.58 |
| Inches from side of vehicle | = 36.50 |
| Inches from ground | = 21.98 |
| Inches from front corner | = 91.06 |
| Inches from rear corner | = 120.25 |
| Inches from front bumper | = 83.42 |
| Inches from rear bumper | = 114.58 |

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

| | | |
|---|---|---|
| YAW MOMENT OF INERTIA | = 2224.93 | lb-ft-sec^2 |
| PITCH MOMENT OF INERTIA | = 2148.69 | lb-ft-sec^2 |
| ROLL MOMENT OF INERTIA | = 449.58 | lb-ft-sec^2 |

FRONT PROFILE INFORMATION

| | | |
|---|---|---|
| ANGLE FRONT BUMPER TO HOOD FRONT | = 45.0 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD BASE | = 13.1 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD TOP | = 18.9 | deg |
| ANGLE OF WINDSHIELD | = 25.9 | deg |
| ANGLE OF STEERING TIRES AT MAX TURN | = 26.0 | deg |

FIRST APPROXIMATION CRUSH FACTORS:

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

V(mph) = Sqr root of (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 independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

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

**4N6XPRT Systems**
Expert System Software for Litigation

8387 University Avenue
La Mesa, CA 91941-3842

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Toll Free: 1- 800-266-9778

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

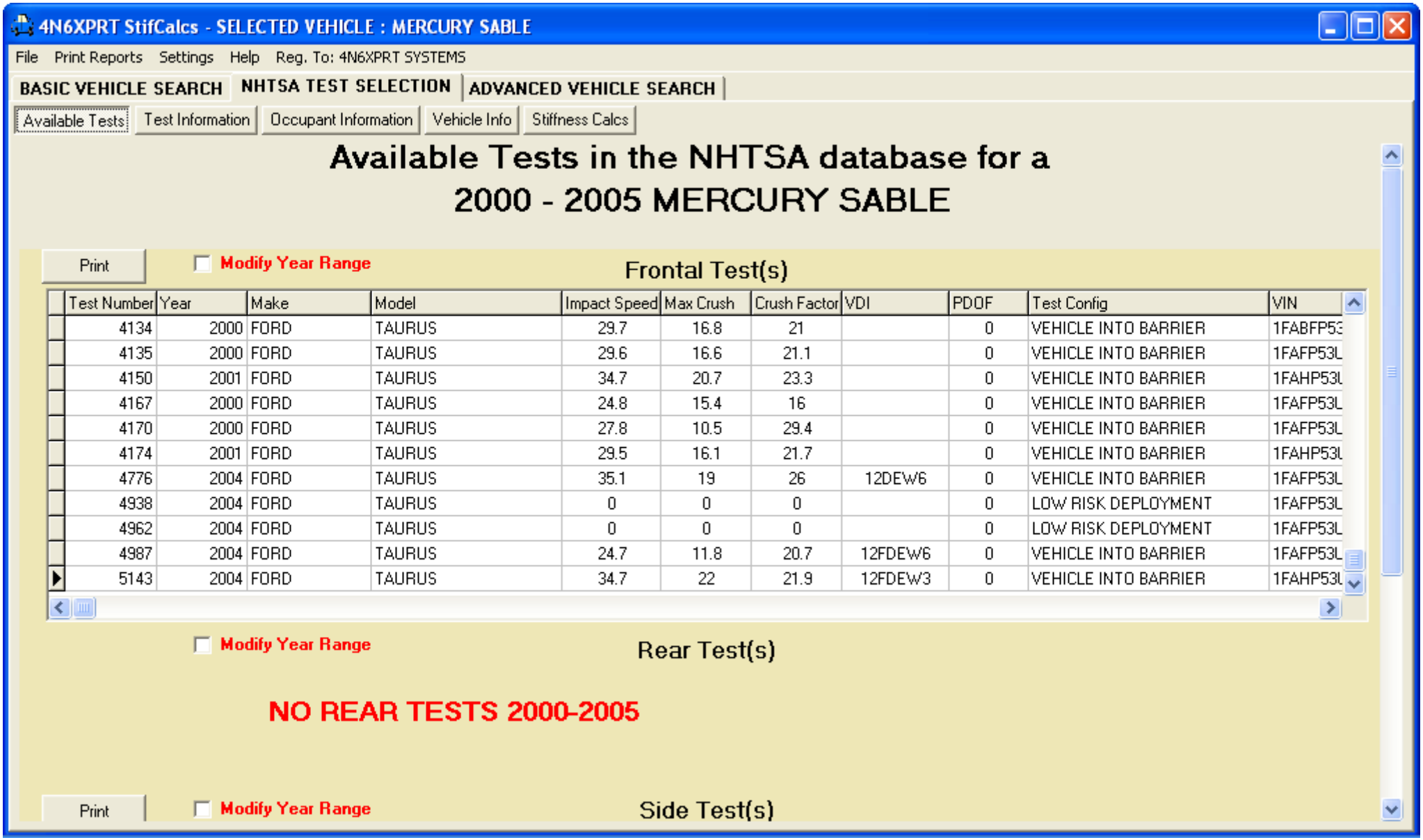
**E-Mail: 4n6@4n6xprt.com**

The NHTSA Crash Test database contains NO REAR Impact tests for the Mercury Sable.

To create a SIMILAR class of vehicle, we first looked at the test weight of a frontal impact test for the Sable, which was reported as 3880 pounds in test # 4170.

We then looked at the NHTSA database for CARS that have REAR IMPACT TESTS and had a test weight of 3860-4000 pounds (+/- ~20 pounds of the frontal test vehicle).

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


4N6XPRT StifCalcs - SELECTED VEHICLE : MERCURY SABLE
File
Print Reports
Settings
Help
Reg. To: 4N6XPRT SYSTEMS
BASIC VEHICLE SEARCH
NHTSA TEST SELECTION
ADVANCED VEHICLE SEARCH
Available Tests
Test Information
Occupant Information
Vehicle Info
Stiffness Calcs
Available Tests in the NHTSA database for a
2000 - 2005 MERCURY SABLE
Print
Modify Year Range
Frontal Test(s)
Test Number Year Make Model Impact Speed Max Crush Crush Factor VDI PDOF Test Config VIN
4134 2000 FORD TAURUS 29.7 16.8 21 0 VEHICLE INTO BARRIER 1FABFP53
4135 2000 FORD TAURUS 29.6 16.6 21.1 0 VEHICLE INTO BARRIER 1FAFP53L
4150 2001 FORD TAURUS 34.7 20.7 23.3 0 VEHICLE INTO BARRIER 1FAHP53L
4167 2000 FORD TAURUS 24.8 15.4 16 0 VEHICLE INTO BARRIER 1FAFP53L
4170 2000 FORD TAURUS 27.8 10.5 29.4 0 VEHICLE INTO BARRIER 1FAFP53L
4174 2001 FORD TAURUS 29.5 16.1 21.7 0 VEHICLE INTO BARRIER 1FAHP53L
4776 2004 FORD TAURUS 35.1 19 26 12DEW6 0 VEHICLE INTO BARRIER 1FAFP53L
4938 2004 FORD TAURUS 0 0 0 0 LOW RISK DEPLOYMENT 1FAFP53L
4962 2004 FORD TAURUS 0 0 0 0 LOW RISK DEPLOYMENT 1FAFP53L
4987 2004 FORD TAURUS 24.7 11.8 20.7 12FDEW6 0 VEHICLE INTO BARRIER 1FAFP53L
5143 2004 FORD TAURUS 34.7 22 21.9 12FDEW3 0 VEHICLE INTO BARRIER 1FAHP53L
Modify Year Range
Rear Test(s)
NO REAR TESTS 2000-2005
Print
Modify Year Range
Side Test(s)

# 4N6XPRT StifCalcs™

## Available Test Results

Rear Impact Test Summary

### Report Filter Settings

Year Range : 1965 - 2009

Weight Range : 3860 - 4000

Impact Locations : REAR

| Test Number | Vehicle Info | No Damage Speed (mph) | Average Crush (inch) | KE Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Average Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Rear** | | | | | | | | |
| 117 | 1978 PONTIAC LEMANS TWO DOOR SEDAN | 5.0 | 14.5 | 20.9 | 237 | 52.1 | 539.4 | 12.1 |
| 38 | 1979 CHEVROLET CAMARO TWO DOOR COUPE | 5.0 | 13.8 | 24.8 | 306 | 87.4 | 535.3 | 17.7 |
| 75 | 1979 DODGE ASPEN TWO DOOR COUPE | 5.0 | 20.1 | 24.8 | 212.1 | 41.8 | 538.3 | 12.2 |
| 68 | 1979 PONTIAC GRAND PRIX TWO DOOR COUPE | 5.0 | 21.2 | 24.9 | 203 | 38.1 | 540.1 | 11.7 |
| 139 | 1980 DODGE MIRADA TWO DOOR COUPE | 5.0 | 19 | 25 | 226.9 | 47.6 | 540.4 | 13.1 |
| 154 | 1980 OLDSMOBILE CUTLASS FOUR DOOR SEDAN | 5.0 | 19.5 | 24.8 | 226.6 | 46 | 558.3 | 12.6 |
| 1279 | 1988 CHEVROLET CAVALIER FOUR DOOR SEDAN | 5.0 | 14 | 20.8 | 275.7 | 62.3 | 610 | 12.4 |
| 1408 | 1989 BUICK RIVIERA TWO DOOR SEDAN | 5.0 | 20.1 | 21.2 | 177.5 | 28.7 | 548.2 | 9 |
| | | **Rear Averages** | | | 233.1 | 50.5 | 538 | 12.6 |
| | | **Rear Minimums** | | | 177.5 | 28.7 | 548.9 | 9 |
| | | **Rear Maximums** | | | 306 | 87.4 | 535.7 | 17.7 |
| | | **Rear Standard Deviations** | | | 40.8 | 17.9 | 18.3 | 2.4 |

# 4N6XPRT StifCalcs™

## Available Test Results

Rear Impact Test Summary

### Report Filter Settings

Year Range : 1965 - 2009

Weight Range : 3860 - 4000

Impact Locations : REAR

| Test Number | Vehicle Info | No Damage Speed (mph) | Max Crush (inch) | KE Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Max Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Rear** | | | | | | | | |
| 117 | 1978 PONTIAC LEMANS TWO DOOR SEDAN | 5.0 | 16.7 | 20.9 | 205.5 | 39.2 | 539.4 | 10.5 |
| 38 | 1979 CHEVROLET CAMARO TWO DOOR COUPE | 5.0 | 13.9 | 24.8 | 304.3 | 86.5 | 535.3 | 17.6 |
| 75 | 1979 DODGE ASPEN TWO DOOR COUPE | 5.0 | 21.5 | 24.8 | 198.3 | 36.5 | 538.3 | 11.4 |
| 68 | 1979 PONTIAC GRAND PRIX TWO DOOR COUPE | 5.0 | 21.2 | 24.9 | 203 | 38.1 | 540.1 | 11.7 |
| 139 | 1980 DODGE MIRADA TWO DOOR COUPE | 5.0 | 20 | 25 | 215.9 | 43.1 | 540.4 | 12.5 |
| 154 | 1980 OLDSMOBILE CUTLASS FOUR DOOR SEDAN | 5.0 | 20.5 | 24.8 | 215.7 | 41.7 | 558.3 | 12 |
| 1279 | 1988 CHEVROLET CAVALIER FOUR DOOR SEDAN | 5.0 | 15.5 | 20.8 | 248.5 | 50.6 | 610 | 11.2 |
| 1408 | 1989 BUICK RIVIERA TWO DOOR SEDAN | 5.0 | 21.4 | 21.2 | 166.2 | 25.2 | 548.2 | 8.4 |
| | | **Rear Averages** | | | 219.7 | 45.1 | 534.9 | 11.9 |
| | | **Rear Minimums** | | | 166.2 | 25.2 | 548.1 | 8.4 |
| | | **Rear Maximums** | | | 304.3 | 86.5 | 535.3 | 17.6 |
| | | **Rear Standard Deviations** | | | 41.1 | 18.2 | 18.9 | 2.6 |

**EXPERT VIN DeCoder**

**The VIN Number is 1FA FP52U 0 WA 213932**

**The vehicle should be a 1998 Ford Passenger car**
**The model: Taurus SE 4-Door Sedan**
**The assembly plant: Atlanta, GA**
**The 6 passenger vehicle had :**
**Manual Seatbelts + Driver/Passenger Front Air Bags**

**The OEM engine was: V-6 cylinder with Overhead Cam**
**Engine Displacement/Type = 3.0 L/ 181 cu.in. V6 OHV**
**Brake Horsepower (SAE) = 155 @ 4900 rpm**
**Torque (SAE) = 185 lb-ft at 3950 rpm**
**Engine manufacturer = Ford**

**The fuel distribution system:**
**Sequential Fuel Injection (SFI)**
**Fuel pump/line pressure = 26-45 psi**
**The ignition system = electronic**

**This is a Front Wheel Drive vehicle.**

**The first three characters {1, F, A} indicates that the vehicle was a Ford made in the U.S.A.**

**The fourth character {F} indicates the vehicle had Manual Seatbelts + Driver/Passenger Front Air Bags**

**The fifth though seventh character {P52} indicates a Taurus SE 4-Door Sedan**

**The eighth character {U} indicates the OEM engine : 3.0 L/ 181 cu.in. V6 OHV**

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

**The tenth character {W} indicates the Model Year was 1998**

**The eleventh character {A} indicates it was made at the assembly plant in Atlanta, GA**

**The twelveth through the seventeenth characters { 213932 } is the Serial Number unique to this vehicle.**

**EXPERT AUTOSTATS**
**Ver. 5.0 BETA**


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

**04-02-2009**

**1998 FORD TAURUS 4DR SEDAN**

| | | |
|---|---|---|
| **CURB WEIGHT:** | **3326 lbs.** | **1509 kg.** |
| **Curb Weight Distribution -** | **Front: 64 %** | **Rear: 36 %** |
| **Gross Vehicle Weight Rating:** | **4707 lbs.** | **2135 kg.** |
| **Number of Tires on Vehicle:** | **4** | |
| **Drive Wheels:** | **FRONT** | |

**HORIZONTAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Total Length** | **198** | **16.50** | **5.03** |
| **Wheelbase:** | **109** | **9.08** | **2.77** |
| **Front Bumper to Front Axle** | **41** | **3.42** | **1.04** |
| **Front Bumper to Front of Front Well** | **24** | **2.00** | **0.61** |
| **Front Bumper to Front of Hood** | **7** | **0.58** | **0.18** |
| **Front Bumper to Base of Windshield** | **46** | **3.83** | **1.17** |
| **Front Bumper to Top of Windshield** | **82** | **6.83** | **2.08** |
| **Rear Bumper to Rear Axle** | **48** | **4.00** | **1.22** |
| **Rear Bumper to Rear of Rear Well** | **28** | **2.33** | **0.71** |
| **Rear Bumper to Rear of Trunk** | **6** | **0.50** | **0.15** |
| **Rear Bumper to Base of Rear Window** | **26** | **2.17** | **0.66** |

**WIDTH DIMENSIONS**

| | | | |
|---|---|---|---|
| **Maximum Width** | **73** | **6.08** | **1.85** |
| **Front Track** | **61** | **5.08** | **1.55** |
| **Rear Track** | **61** | **5.08** | **1.55** |

**VERTICAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Height** | **55** | **4.58** | **1.40** |
| **Ground to:** | | | |
| **Front Bumper (Top)** | **21** | **1.75** | **0.53** |
| **Headlight - center** | **26** | **2.17** | **0.66** |
| **Hood - top front** | **28** | **2.33** | **0.71** |
| **Base of windshield** | **38** | **3.17** | **0.97** |
| **Rear Bumper - top** | **25** | **2.08** | **0.63** |
| **Trunk - top rear** | **35** | **2.92** | **0.89** |
| **Base of rear window** | **40** | **3.33** | **1.02** |

**Reg. To: 4N6XPRT Systems** **S/N:10R-930512AQ03201**

1998 FORD TAURUS 4DR SEDAN

INTERIOR DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Front Seat Shoulder Width | 59 | 4.92 | 1.50 |
| Front Seat to Headliner | 39 | 3.25 | 0.99 |
| Front Leg - seatback to floor (max) | 43 | 3.58 | 1.09 |
| Rear Seat Shoulder Width | 56 | 4.67 | 1.42 |
| Rear Seat to Headliner | 36 | 3.00 | 0.91 |
| Rear Leg - seatback to floor (min) | 39 | 3.25 | 0.99 |

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

STEERING DATA

| | | | |
|---|---|---|---|
| Turning Circle (Diameter) | 480 | 40.00 | 12.19 |
| Steering Ratio: | __.__:1 | | |
| Wheel Radius: | 12 | 1.00 | 0.30 |
| Tire Size (OEM): | 205/65R15 | | |

ACCELERATION & BRAKING INFORMATION

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

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = 142 ft t = 3.2 sec. a =-27.2 ft/sec/sec G-force = -0.85

ACCELERATION:

| | | | |
|---|---|---|---|
| 0->30 mph | t = 3.5 sec. | a = 12.6 ft/sec/sec | G-force = 0.39 |
| 0->60 mph | t = 9.4 sec. | a = 9.4 ft/sec/sec | G-force = 0.29 |
| 45->65 mph | t = 5.8 sec. | a = 5.1 ft/sec/sec | G-force = 0.16 |

Transmission Type: 4spd AUTOMATIC

NOTES:

Federal Bumper Standard Requirements = 2.5 MPH
This vehicles Rated Bumper Strength: 5 mph

N.S.D.C. = 1996 - 1999

Reg. To: 4N6XPRT Systems S/N:10R-930512AQ03201

1998 FORD TAURUS 4DR SEDAN

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 1.41 STABLE
NHTSA Star Rating (calculated) ****

CENTER OF GRAVITY (No Load):

| | |
|---|---|
| Inches behind front axle | = 39.24 |
| Inches in front of rear axle | = 69.76 |
| Inches from side of vehicle | = 36.50 |
| Inches from ground | = 21.59 |
| Inches from front corner | = 88.15 |
| Inches from rear corner | = 123.29 |
| Inches from front bumper | = 80.24 |
| Inches from rear bumper | = 117.76 |

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

| | | |
|---|---|---|
| YAW MOMENT OF INERTIA | = 2219.78 | lb-ft-sec^2 |
| PITCH MOMENT OF INERTIA | = 2143.74 | lb-ft-sec^2 |
| ROLL MOMENT OF INERTIA | = 448.68 | lb-ft-sec^2 |

FRONT PROFILE INFORMATION

| | | |
|---|---|---|
| ANGLE FRONT BUMPER TO HOOD FRONT | = 45.0 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD BASE | = 14.4 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD TOP | = 18.4 | deg |
| ANGLE OF WINDSHIELD | = 22.6 | deg |
| ANGLE OF STEERING TIRES AT MAX TURN | = 26.0 | deg |

FIRST APPROXIMATION CRUSH FACTORS:

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

V(mph) = Sqr root of (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 independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The Rear Impact data with more than 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, esp. GM, your 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

## # 2832

## 1998 FORD TAURUS

Provided By

4N6XPRT StifCalcs™

**Registered to:**

**4N6XPRT SYSTEMS**

**8387 UNIVERSITY AVENUE**

**LA MESA  CA 91941-3842**

**S/N: 030201SC01301**



4N6XPRT Systems® | 8387 University Avenue | La Mesa, CA 91941 | USA

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# 4N6XPRT StifCalcs™

# Sister/Clone database reader

You entered: **1998 FORD TAURUS**

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

| Year Range | Make | Model | Body Styles | Wheelbase |
|---|---|---|---|---|
| 1996 - 1999 | FORD | TAURUS | 4D,SW | 108.5" |
| REMARKS : | | | | |
| 1996 - 1999 | MERCURY | SABLE | 4D,SW | 108.5" |
| REMARKS : | | | | |



**If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering, 521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.**

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Test Information

Test # 2832 NHTSA Version # V4 Test Date 1997-12 Contract # 096017-5000

Contract/Study Title 1998 FORD TAURUS INTO A FLAT FRONTAL BARRIER

Test Objective(s) EVALUATION OF DEPOWERED AIRBAGS

Test Type MODIFIED VEHICLE TEST Configuration VEHICLE INTO BARRIER

Closing Speed 47.2 Km/Hr 29 MPH

Impact Angle 0 Offset Distance mm 0 inches Side Impact Point mm 0 inches

Test Performer TRC OF OHIO Test Reference # 971222

Test Track Surface CONCRETE Condition DRY Ambient Temperature 22 C 72 F

Data Recorder Type OTHER Data Link UMBILICAL CABLE Total Number of Curves 45

Test Commentary RECTYP IS DIGITAL ONBO

## Fixed Barrier Information

Barrier Type RIGID Barrier Shape FLAT BARRIER Pole Barrier Diameter 9999 mm inches

Barrier Commentary NO COMMENTS

# 4N6XPRT StifCalcs™

## 1998 FORD TAURUS LEFT FRONT SEAT OCCUPANT

Test # 2832 Vehicle # 1 Location LEFT FRONT SEAT Seat Position CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer UNKNOWN

Occupant Modification NONE

Occupant Description NO COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 311 | mm | 12.2 | inches |
| Windshield | 558 | mm | 22 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 208 | mm | 8.2 | inches |
| Side Window | 315 | mm | 12.4 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) UNKNOWN

Head Injury Criteria (HIC) 290 HIC Lower Time interval (ms) 104.24 HIC Upper Time interval (ms) -5556

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 538 | mm | 21.2 | inches |
| Steering Wheel | 318 | mm | 12.5 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 115 | mm | 4.5 | inches |
| Hip to Door | 169 | mm | 6.7 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 369 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 150 mm 5.9 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) DASHPANEL Second Contact Region (Legs) NONE

Left Femur Peak Load 9999 Newtons 0 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1998 FORD TAURUS LEFT FRONT SEAT OCCUPANT

Restraint # 1 AIR BAG Mounted Deployment? DEPLOYED PROPERLY

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1998 FORD TAURUS LEFT FRONT SEAT OCCUPANT

| Restraint # | 2 | NONE | Mounted | | Deployment? | NOT APPLICABLE |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## 1998 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

Test # 2832 Vehicle # 1 Location RIGHT FRONT SEAT Seat Position CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer UNKNOWN

Occupant Modification NO COMMENTS

Occupant Description NO COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 307 | mm | 12.2 | inches |
| Windshield | 579 | mm | 22 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 202 | mm | 8.2 | inches |
| Side Window | 314 | mm | 12.4 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) UNKNOWN

Head Injury Criteria (HIC) 299 HIC Lower Time interval (ms) 106.72 HIC Upper Time interval (ms) -5697

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 468 | mm | 21.2 | inches |
| Steering Wheel | 9999 | mm | 12.5 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 119 | mm | 4.5 | inches |
| Hip to Door | 154 | mm | 6.7 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 348 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 142 mm 5.9 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) DASHPANEL Second Contact Region (Legs) NONE

Left Femur Peak Load 9999 Newtons 0 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1998 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

Restraint # 1 AIR BAG Mounted Deployment? DEPLOYED PROPERLY

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1998 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

| Restraint # | 2 | NONE | Mounted | | Deployment? | NOT APPLICABLE |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## Vehicle 1 - 1998 FORD TAURUS

Test # 2832 | NHTSA Test Vehicle Number | VIN 1FAFP52U9WG130657

Year 1998 | Make FORD | Model TAURUS | Body FOUR DOOR SEDAN

Vehicle Modification Indicator: MODIFIED VEHICLE

Vehicle Modification(s) Description: VEHICLE HAD DEPOWERED AIRBAGS

Post-test Steering Column Shear Capsule Seperation: UNKNOWN

Steering Column Collapse Mechanism: UNKNOWN

Vehicle Commentary: NO COMMENTS

| | | | | |
|---|---|---|---|---|
| Vehicle Length | 5020 | mm | 197.6 | inches |
| Vehicle Wheelbase | 2750 | mm | 108.3 | inches |
| CG behind front axle | 1091 | mm | 43 | inches |
| Center of Damage to CG Axis | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| **Vehicle Test Weight** | 1738 | KG | **3831** | **pounds** |
| **Vehicle Width** | 1856 | mm | **73.1** | **inches** |
| **Total Length of Indentation** | 1525 | mm | **60** | **inches** |
| **Maximum Static Crush Depth** | 314 | mm | **12.4** | **inches** |

Vehicle Damage Index 9999999 | Principal Direction of Force 0 | **Pre-Impact Speed** 47.2 kph **29.3** **mph**

### Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

| | | | | |
|---|---|---|---|---|
| DPD 1 | 174 | mm | 6.9 | inches |
| DPD 2 | 279 | mm | 11 | inches |
| DPD 3 | 287 | mm | 11.3 | inches |
| DPD 4 | 300 | mm | 11.8 | inches |
| DPD 5 | 314 | mm | 12.4 | inches |
| DPD 6 | 234 | mm | 9.2 | inches |

### Crush from Pre & Post Test Damage Measurements

| | Pre-Test | | Post-Test | | Crush-Depth | |
|---|---|---|---|---|---|---|
| **Left Bumper Corner** | 189 | **inches** | 182.1 | **inches** | **6.9** | **inches** |
| | 4800 | mm | 4626 | mm | 174 | mm |
| **Centerline** | 197.6 | **inches** | 186.2 | **inches** | **11.4** | **inches** |
| | 5020 | mm | 4730 | mm | 290 | mm |
| **Right Bumper Corner** | 188.8 | **inches** | 179.6 | **inches** | **9.2** | **inches** |
| | 4795 | mm | 4561 | mm | 234 | mm |

| Bumper Engagement (Inline Impact Only) | Still Engagement (Side Impact Only) | A-pillar Engagement (Side Impact Only) |
|---|---|---|
| UNKNOWN | UNKNOWN | UNKNOWN |

| Moving Test Cart Angle | Moving Test Cart / Vehicle Crabbed Angle | Moving Test Cart Vehicle Orientation on Cart |
|---|---|---|
| 999 | 0 | 999 |

*Magnitude of the Tilt-Angle Measured between surface if a Rollover Test Cart and the Ground*

*Magnitude of the Crabbed Angle Measured Clockwise from Logitudial Vector to Velocity Vector of Vehicle*

*Magnitude of the Angle Measured between the vehicle Orientation and the Direction of the Test Cart Motion*

# Vehicle 1 - 1998 FORD TAURUS

| Test # | NHTSA Test Vehicle Number | VIN |
|---|---|---|
| 2832 | | 1FAFP52U9WG130657 |

| Year | Make | Model | Body |
|---|---|---|---|
| 1998 | FORD | TAURUS | FOUR DOOR SEDAN |

| Vehicle Modification Indicator | Vehicle Modification(s) Description |
|---|---|
| MODIFIED VEHICLE | VEHICLE HAD DEPOWERED AIRBAGS |

| Post-test Steering Column Shear Capsule Seperation | Steering Column Collapse Mechanism |
|---|---|
| UNKNOWN | UNKNOWN |

Vehicle Commentary: NO COMMENTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vehicle Length | 5020 | mm | 197.6 | inches | **Vehicle Test Weight** | 1738 | KG | **3831** **pounds** |
| Vehicle Wheelbase | 2750 | mm | 108.3 | inches | **Vehicle Width** | 1856 | mm | **73.1** **inches** |
| CG behind front axle | 1091 | mm | 43 | inches | **Total Length of Indentation** | 1525 | mm | **60** **inches** |
| Center of Damage to CG Axis | 9999 | mm | 0 | inches | **Maximum Static Crush Depth** | 314 | mm | **12.4** **inches** |

| Vehicle Damage Index | Principal Direction of Force | **Pre-Impact Speed** | | | |
|---|---|---|---|---|---|
| 9999999 | 0 | 47.2 | kph | **29.3** | **mph** |

## Pre & Post Test Measurements

(Measurments are taken in a logitudinal direction. Except for Engine Block, all measurments are taken from the Rear Vehicle 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 |
| | | | | Length of Vehicle at Centerline | | | | | | | |
| | | | | 5020 | 197.6 | 4730 | 186.2 | | | | |
| | | | | Engine Block | | | | | | | |
| | | | | 360 | 14.2 | 360 | 14.2 | | | | |
| 4800 | 189 | 4626 | 182.1 | Front Bumper Corner | | | | 4795 | 188.8 | 4561 | 179.6 |
| | | | | Front of Engine | | | | | | | |
| | | | | 4380 | 172.4 | 4270 | 168.1 | | | | |
| 3834 | 150.9 | 3807 | 149.9 | Firewall | | | | 3819 | 150.4 | 3766 | 148.3 |
| | | | | 3883 | 168.1 | 3885 | 153 | | | | |
| 3430 | 135 | 3433 | 135.2 | Upper Leading Edge of Door | | | | 3433 | 135.2 | 3428 | 135 |
| 2391 | 94.1 | 2390 | 94.1 | Lower Leading Edge of Door | | | | 3409 | 134.2 | 3410 | 134.3 |
| 3410 | 134.3 | 3415 | 134.4 | Bottom of 'A' Post | | | | 3412 | 134.3 | 3410 | 134.3 |
| 2413 | 95 | 2414 | 95 | Upper Trailing Edge of Door | | | | 2413 | 95 | 2404 | 94.6 |
| 3404 | 134 | 3401 | 133.9 | Lower Trailing Edge of Door | | | | 2387 | 94 | 2382 | 93.8 |
| | | | | Steering Column | | | | | | | |
| | | | | 3022 | 119 | 3080 | 121.3 | | | | |
| | | | | Center of Steering Column to 'A' Post (Horizontal) | | | | | | | |
| | | | | 345 | 13.6 | 343 | 13.5 | | | | |
| | | | | Center of Steering Column to 'A' Post (Vertical) | | | | | | | |
| | | | | 430 | 16.9 | 400 | 15.7 | | | | |

# 4N6XPRT StifCalcs™
# 1998 FORD TAURUS

## NHTSA Crash Test - # 2832 - Front Impact

{ Pre/Post Crush Depths - Vehicle Width - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3831 pounds
Vehicle Test Speed = 29.3 mph
Test crush width = 73.1 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 6.9 | 11.4 | 9.2 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 6.9 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 408.6 | 635.5 | 131.4 |
| Using a Rated No Damage Speed of | 5 mph | 741.1 | 522.6 | 525.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 997.4 | 420.7 | 1182.2 |
| Using a Rated No Damage Speed of | 10 mph | 1177.5 | 329.9 | 2101.7 |
| **Average Crush = 9.7 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 290.7 | 321.6 | 131.4 |
| Using a Rated No Damage Speed of | 5 mph | 527.2 | 264.4 | 525.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 709.5 | 212.9 | 1182.2 |
| Using a Rated No Damage Speed of | 10 mph | 837.6 | 166.9 | 2101.7 |
| **Maximum Crush = 11.4 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 247.3 | 232.8 | 131.4 |
| Using a Rated No Damage Speed of | 5 mph | 448.5 | 191.5 | 525.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 603.7 | 154.1 | 1182.2 |
| Using a Rated No Damage Speed of | 10 mph | 712.7 | 120.8 | 2101.7 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

************************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **11.4** | **24.5** | -4.8 | -16.5% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 30.2**

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

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

# 4N6XPRT StifCalcs™
# 1998 FORD TAURUS

## NHTSA Crash Test - # 2832 - Front Impact

{ Pre/Post Crush Depths - Indentation Length - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3831 pounds
Vehicle Test Speed = 29.3 mph
Test crush width = 60 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 6.9 | 11.4 | 9.2 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 6.9 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 497.3 | 773.5 | 159.9 |
| Using a Rated No Damage Speed of | 5 mph | 901.9 | 636 | 639.5 |
| Using a Rated No Damage Speed of | 7.5 mph | 1213.9 | 512 | 1438.8 |
| Using a Rated No Damage Speed of | 10 mph | 1433.1 | 401.5 | 2557.9 |
| **Average Crush = 9.7 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 353.7 | 391.4 | 159.9 |
| Using a Rated No Damage Speed of | 5 mph | 641.6 | 321.8 | 639.5 |
| Using a Rated No Damage Speed of | 7.5 mph | 863.5 | 259.1 | 1438.8 |
| Using a Rated No Damage Speed of | 10 mph | 1019.4 | 203.1 | 2557.9 |
| **Maximum Crush = 11.4 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 301 | 283.4 | 159.9 |
| Using a Rated No Damage Speed of | 5 mph | 545.9 | 233 | 639.5 |
| Using a Rated No Damage Speed of | 7.5 mph | 734.7 | 187.6 | 1438.8 |
| Using a Rated No Damage Speed of | 10 mph | 867.4 | 147.1 | 2557.9 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

***********************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **11.4** | **24.5** | -4.8 | -16.5% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 30.2**

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

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

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1996 - 1999

Make : FORD

Model : TAURUS

| Test Number | Vehicle Info | No Damage Speed (mph) | Average Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Average Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2312 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 15.9 | 35.1 | 404.7 | 153.7 | 532.7 | 31.1 |
| 2450 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 14.5 | 29.1 | 405.5 | 134.8 | 609.9 | 23.4 |
| 2671 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 14.3 | 30.4 | 454.9 | 161.4 | 641.2 | 25.8 |
| 2675 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 13.8 | 37.5 | 486.7 | 228.6 | 518.1 | 40.6 |
| 2677 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 18.7 | 37.9 | 372.8 | 131 | 530.5 | 30.7 |
| 2748 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 15.1 | 34.9 | 417.6 | 165.6 | 526.6 | 32.3 |
| 2832 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 10.9 | 29.3 | 468.1 | 208.5 | 525.4 | 31.5 |
| 2905 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 11.1 | 29.3 | 441.8 | 193.4 | 504.5 | 30.9 |
| 2913 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 19.6 | 35 | 357 | 109.6 | 581.6 | 25.1 |
| 3093 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 12.4 | 29.3 | 423 | 166.5 | 537.5 | 27.8 |
| 3102 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 14.2 | 29.5 | 369.9 | 128 | 534.5 | 24.6 |
| | | **Front Averages** | | | 418.4 | 161.9 | 540.5 | 29.4 |
| | | **Front Minimums** | | | 357 | 109.6 | 581.4 | 23.4 |
| | | **Front Maximums** | | | 486.7 | 228.6 | 518.1 | 40.6 |
| | | **Front Standard Deviations** | | | 41.9 | 36.5 | 36.5 | 4.9 |

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1996 - 1999

Make : FORD

Model : TAURUS

| Test Number | Vehicle Info | No Damage Speed (mph) | Max Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Max Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2312 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.9 | 35.1 | 379.5 | 135.2 | 532.7 | 29.2 |
| 2450 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.2 | 29.1 | 362.9 | 108 | 609.9 | 20.9 |
| 2671 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.5 | 30.4 | 393.9 | 121 | 641.2 | 22.4 |
| 2675 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 23.6 | 37.5 | 285.1 | 78.5 | 518.1 | 23.8 |
| 2677 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 29.5 | 37.9 | 236.5 | 52.7 | 530.5 | 19.5 |
| 2748 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.9 | 34.9 | 372 | 131.4 | 526.6 | 28.8 |
| 2832 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 12.4 | 29.3 | 411.9 | 161.4 | 525.4 | 27.7 |
| 2905 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 12.2 | 29.3 | 401.8 | 160 | 504.5 | 28.1 |
| 2913 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 54.4 | 35 | 128.3 | 14.2 | 581.6 | 9 |
| 3093 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 13.8 | 29.3 | 378.6 | 133.3 | 537.5 | 24.9 |
| 3102 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.1 | 29.5 | 325.3 | 99 | 534.5 | 21.6 |
| | | **Front Averages** | | | 334.2 | 108.6 | 514.1 | 23.3 |
| | | **Front Minimums** | | | 128.3 | 14.2 | 579.6 | 9 |
| | | **Front Maximums** | | | 411.9 | 161.4 | 525.6 | 29.2 |
| | | **Front Standard Deviations** | | | 86.5 | 45.2 | 45.7 | 5.8 |

**4N6XPRT Systems**
Expert System Software for Litigation

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La Mesa, CA 91941-3842

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Toll Free: 1- 800-266-9778

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

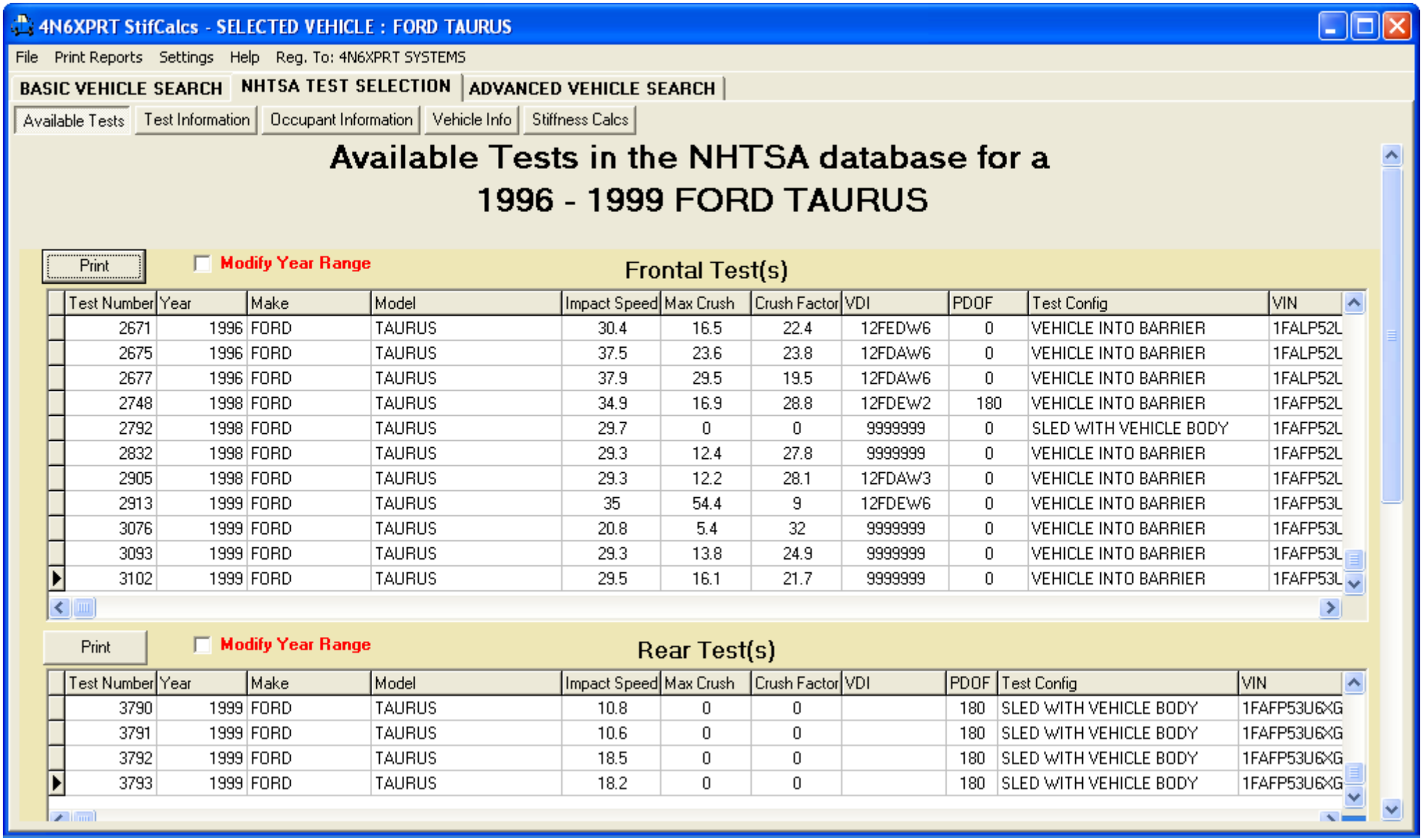
**E-Mail: 4n6@4n6xprt.com**

The NHTSA Crash Test database contains NO REAR Crush measurements for the Impact tests in the database.

To create a SIMILAR class of vehicle, we first looked at the test weight of a frontal impact test for the Taurus, which was reported as 3831 pounds in test # 2748.

We then looked at the NHTSA database for CARS that have REAR IMPACT TESTS and had a test weight of 3731-3931 pounds (+/- ~100 pounds of the frontal test vehicle).

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


4N6XPRT StifCalcs - SELECTED VEHICLE : FORD TAURUS
File Print Reports Settings Help Reg. To: 4N6XPRT SYSTEMS
BASIC VEHICLE SEARCH
NHTSA TEST SELECTION
ADVANCED VEHICLE SEARCH
Available Tests
Test Information
Occupant Information
Vehicle Info
Stiffness Calcs
Available Tests in the NHTSA database for a
1996 - 1999 FORD TAURUS
Print
Modify Year Range
Frontal Test(s)
Test Number Year Make Model Impact Speed Max Crush Crush Factor VDI PDOF Test Config VIN
2671 1996 FORD TAURUS 30.4 16.5 22.4 12FEDW6 0 VEHICLE INTO BARRIER 1FALP52L
2675 1996 FORD TAURUS 37.5 23.6 23.8 12FDAW6 0 VEHICLE INTO BARRIER 1FALP52L
2677 1996 FORD TAURUS 37.9 29.5 19.5 12FDAW6 0 VEHICLE INTO BARRIER 1FALP52L
2748 1998 FORD TAURUS 34.9 16.9 28.8 12FDEW2 180 VEHICLE INTO BARRIER 1FAFP52L
2792 1998 FORD TAURUS 29.7 0 0 9999999 0 SLED WITH VEHICLE BODY 1FAFP52L
2832 1998 FORD TAURUS 29.3 12.4 27.8 9999999 0 VEHICLE INTO BARRIER 1FAFP52L
2905 1998 FORD TAURUS 29.3 12.2 28.1 12FDAW3 0 VEHICLE INTO BARRIER 1FAFP52L
2913 1999 FORD TAURUS 35 54.4 9 12FDEW6 0 VEHICLE INTO BARRIER 1FAFP53L
3076 1999 FORD TAURUS 20.8 5.4 32 9999999 0 VEHICLE INTO BARRIER 1FAFP53L
3093 1999 FORD TAURUS 29.3 13.8 24.9 9999999 0 VEHICLE INTO BARRIER 1FAFP53L
3102 1999 FORD TAURUS 29.5 16.1 21.7 9999999 0 VEHICLE INTO BARRIER 1FAFP53L
Print
Modify Year Range
Rear Test(s)
Test Number Year Make Model Impact Speed Max Crush Crush Factor VDI PDOF Test Config VIN
3790 1999 FORD TAURUS 10.8 0 0 180 SLED WITH VEHICLE BODY 1FAFP53U6XG
3791 1999 FORD TAURUS 10.6 0 0 180 SLED WITH VEHICLE BODY 1FAFP53U6XG
3792 1999 FORD TAURUS 18.5 0 0 180 SLED WITH VEHICLE BODY 1FAFP53U6XG
3793 1999 FORD TAURUS 18.2 0 0 180 SLED WITH VEHICLE BODY 1FAFP53U6XG

# 4N6XPRT StifCalcs™

## Available Test Results

Rear Impact Test Summary

### Report Filter Settings

Year Range : 1965 - 2009

Weight Range : 3731 - 3931

Impact Locations : REAR

| Test Number | Vehicle Info | No Damage Speed (mph) | Average Crush (inch) | KE Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Average Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Rear** | | | | | | | | |
| 116 | 1978 BUICK REGAL TWO DOOR COUPE | 5.0 | 20.8 | 21.4 | 171.4 | 26.9 | 546 | 8.8 |
| 106 | 1978 CHEVROLET MALIBU FOUR DOOR SEDAN | 5.0 | 16.4 | 21.3 | 212.4 | 42.3 | 532.7 | 11.1 |
| 117 | 1978 PONTIAC LEMANS TWO DOOR SEDAN | 5.0 | 14.5 | 20.9 | 237 | 52.1 | 539.4 | 12.1 |
| 75 | 1979 DODGE ASPEN TWO DOOR COUPE | 5.0 | 20.1 | 24.8 | 212.1 | 41.8 | 538.3 | 12.2 |
| 89 | 1979 MERCURY MONARCH FOUR DOOR SEDAN | 5.0 | 18.9 | 25.2 | 216.9 | 46.4 | 507.7 | 13.4 |
| 68 | 1979 PONTIAC GRAND PRIX TWO DOOR COUPE | 5.0 | 21.2 | 24.9 | 203 | 38.1 | 540.1 | 11.7 |
| 139 | 1980 DODGE MIRADA TWO DOOR COUPE | 5.0 | 19 | 25 | 226.9 | 47.6 | 540.4 | 13.1 |
| 716 | 1983 OLDSMOBILE CUTLASS TWO DOOR COUPE | 5.0 | 17 | 21.8 | 210.8 | 41.8 | 531.7 | 11.2 |
| 927 | 1984 BUICK ELECTRA FOUR DOOR SEDAN | 5.0 | 17.1 | 21.2 | 198.4 | 37.5 | 524.6 | 10.5 |
| 1261 | 1988 MAZDA MX6 TWO DOOR SEDAN | 5.0 | 22.4 | 21.5 | 167.7 | 24.7 | 569.5 | 8.2 |
| 1408 | 1989 BUICK RIVIERA TWO DOOR SEDAN | 5.0 | 20.1 | 21.2 | 177.5 | 28.7 | 548.2 | 9 |
| | | **Rear Averages** | | | 203.1 | 38.9 | 530.2 | 11 |
| | | **Rear Minimums** | | | 167.7 | 24.7 | 569.3 | 8.2 |
| | | **Rear Maximums** | | | 237 | 52.1 | 539 | 13.4 |
| | | **Rear Standard Deviations** | | | 22.5 | 8.9 | 10.5 | 1.7 |

# 4N6XPRT StifCalcs™

## Available Test Results

Rear Impact Test Summary

### Report Filter Settings

Year Range : 1965 - 2009

Weight Range : 3731 - 3931

Impact Locations : REAR

| Test Number | Vehicle Info | No Damage Speed (mph) | Max Crush (inch) | KE Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Max Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Rear** | | | | | | | | |
| 116 | 1978 BUICK REGAL TWO DOOR COUPE | 5.0 | 21.6 | 21.4 | 165.4 | 25 | 546 | 8.4 |
| 106 | 1978 CHEVROLET MALIBU FOUR DOOR SEDAN | 5.0 | 16.4 | 21.3 | 212.2 | 42.3 | 532.7 | 11.1 |
| 117 | 1978 PONTIAC LEMANS TWO DOOR SEDAN | 5.0 | 16.7 | 20.9 | 205.5 | 39.2 | 539.4 | 10.5 |
| 75 | 1979 DODGE ASPEN TWO DOOR COUPE | 5.0 | 21.5 | 24.8 | 198.3 | 36.5 | 538.3 | 11.4 |
| 89 | 1979 MERCURY MONARCH FOUR DOOR SEDAN | 5.0 | 19.3 | 25.2 | 212.5 | 44.5 | 507.7 | 13.2 |
| 68 | 1979 PONTIAC GRAND PRIX TWO DOOR COUPE | 5.0 | 21.2 | 24.9 | 203 | 38.1 | 540.1 | 11.7 |
| 139 | 1980 DODGE MIRADA TWO DOOR COUPE | 5.0 | 20 | 25 | 215.9 | 43.1 | 540.4 | 12.5 |
| 716 | 1983 OLDSMOBILE CUTLASS TWO DOOR COUPE | 5.0 | 17.5 | 21.8 | 204.4 | 39.3 | 531.7 | 10.9 |
| 927 | 1984 BUICK ELECTRA FOUR DOOR SEDAN | 5.0 | 18.2 | 21.2 | 186.7 | 33.2 | 524.6 | 9.9 |
| 1261 | 1988 MAZDA MX6 TWO DOOR SEDAN | 5.0 | 25.4 | 21.5 | 147.7 | 19.2 | 569.5 | 7.3 |
| 1408 | 1989 BUICK RIVIERA TWO DOOR SEDAN | 5.0 | 21.4 | 21.2 | 166.2 | 25.2 | 548.2 | 8.4 |
| | | **Rear Averages** | | | 192.5 | 35.1 | 528.7 | 10.5 |
| | | **Rear Minimums** | | | 147.7 | 19.2 | 568.1 | 7.3 |
| | | **Rear Maximums** | | | 215.9 | 44.5 | 523.7 | 13.2 |
| | | **Rear Standard Deviations** | | | 22.9 | 8.4 | 10.4 | 1.8 |

**EXPERT VIN DeCoder**

**The VIN Number is 1FA FP52U 6 WA 227690**

**The vehicle should be a 1998 Ford Passenger car**
**The model: Taurus SE 4-Door Sedan**
**The assembly plant: Atlanta, GA**
**The 6 passenger vehicle had :**
**Manual Seatbelts + Driver/Passenger Front Air Bags**

**The OEM engine was: V-6 cylinder with Overhead Cam**
**Engine Displacement/Type = 3.0 L/ 181 cu.in. V6 OHV**
**Brake Horsepower (SAE) = 155 @ 4900 rpm**
**Torque (SAE) = 185 lb-ft at 3950 rpm**
**Engine manufacturer = Ford**

**The fuel distribution system:**
**Sequential Fuel Injection (SFI)**
**Fuel pump/line pressure = 26-45 psi**
**The ignition system = electronic**

**This is a Front Wheel Drive vehicle.**

**The first three characters {1, F, A} indicates that the vehicle was a Ford made in the U.S.A.**

**The fourth character {F} indicates the vehicle had Manual Seatbelts + Driver/Passenger Front Air Bags**

**The fifth though seventh character {P52} indicates a Taurus SE 4-Door Sedan**

**The eighth character {U} indicates the OEM engine : 3.0 L/ 181 cu.in. V6 OHV**

**The 9th Character { the Check Digit } is 6**
**The calculated Check Digit value is 6**

**The tenth character {W} indicates the Model Year was 1998**

**The eleventh character {A} indicates it was made at the assembly plant in Atlanta, GA**

**The twelveth through the seventeenth characters { 227690 } is the Serial Number unique to this vehicle.**

**EXPERT AUTOSTATS**
**Ver. 5.0 BETA**


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

**04-02-2009**

**1998 FORD TAURUS 4DR SEDAN**

| | | |
|---|---|---|
| **CURB WEIGHT:** | **3326 lbs.** | **1509 kg.** |
| **Curb Weight Distribution -** | **Front: 64 %** | **Rear: 36 %** |
| **Gross Vehicle Weight Rating:** | **4707 lbs.** | **2135 kg.** |
| **Number of Tires on Vehicle:** | **4** | |
| **Drive Wheels:** | **FRONT** | |

**HORIZONTAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Total Length** | **198** | **16.50** | **5.03** |
| **Wheelbase:** | **109** | **9.08** | **2.77** |
| **Front Bumper to Front Axle** | **41** | **3.42** | **1.04** |
| **Front Bumper to Front of Front Well** | **24** | **2.00** | **0.61** |
| **Front Bumper to Front of Hood** | **7** | **0.58** | **0.18** |
| **Front Bumper to Base of Windshield** | **46** | **3.83** | **1.17** |
| **Front Bumper to Top of Windshield** | **82** | **6.83** | **2.08** |
| **Rear Bumper to Rear Axle** | **48** | **4.00** | **1.22** |
| **Rear Bumper to Rear of Rear Well** | **28** | **2.33** | **0.71** |
| **Rear Bumper to Rear of Trunk** | **6** | **0.50** | **0.15** |
| **Rear Bumper to Base of Rear Window** | **26** | **2.17** | **0.66** |

**WIDTH DIMENSIONS**

| | | | |
|---|---|---|---|
| **Maximum Width** | **73** | **6.08** | **1.85** |
| **Front Track** | **61** | **5.08** | **1.55** |
| **Rear Track** | **61** | **5.08** | **1.55** |

**VERTICAL DIMENSIONS**

| | Inches | Feet | Meters |
|---|---|---|---|
| **Height** | **55** | **4.58** | **1.40** |
| **Ground to:** | | | |
| **Front Bumper (Top)** | **21** | **1.75** | **0.53** |
| **Headlight - center** | **26** | **2.17** | **0.66** |
| **Hood - top front** | **28** | **2.33** | **0.71** |
| **Base of windshield** | **38** | **3.17** | **0.97** |
| **Rear Bumper - top** | **25** | **2.08** | **0.63** |
| **Trunk - top rear** | **35** | **2.92** | **0.89** |
| **Base of rear window** | **40** | **3.33** | **1.02** |

**Reg. To: 4N6XPRT Systems** **S/N:10R-930512AQ03201**

1998 FORD TAURUS 4DR SEDAN

INTERIOR DIMENSIONS

| | Inches | Feet | Meters |
|---|---|---|---|
| Front Seat Shoulder Width | 59 | 4.92 | 1.50 |
| Front Seat to Headliner | 39 | 3.25 | 0.99 |
| Front Leg - seatback to floor (max) | 43 | 3.58 | 1.09 |
| Rear Seat Shoulder Width | 56 | 4.67 | 1.42 |
| Rear Seat to Headliner | 36 | 3.00 | 0.91 |
| Rear Leg - seatback to floor (min) | 39 | 3.25 | 0.99 |

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

STEERING DATA

| | | | |
|---|---|---|---|
| Turning Circle (Diameter) | 480 | 40.00 | 12.19 |
| Steering Ratio: | __.__:1 | | |
| Wheel Radius: | 12 | 1.00 | 0.30 |
| Tire Size (OEM): | 205/65R15 | | |

ACCELERATION & BRAKING INFORMATION

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

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = 142 ft t = 3.2 sec. a =-27.2 ft/sec/sec G-force = -0.85

ACCELERATION:

| | | | |
|---|---|---|---|
| 0->30 mph | t = 3.5 sec. | a = 12.6 ft/sec/sec | G-force = 0.39 |
| 0->60 mph | t = 9.4 sec. | a = 9.4 ft/sec/sec | G-force = 0.29 |
| 45->65 mph | t = 5.8 sec. | a = 5.1 ft/sec/sec | G-force = 0.16 |

Transmission Type: 4spd AUTOMATIC

NOTES:

Federal Bumper Standard Requirements = 2.5 MPH
This vehicles Rated Bumper Strength: 5 mph

N.S.D.C. = 1996 - 1999

Reg. To: 4N6XPRT Systems S/N:10R-930512AQ03201

1998 FORD TAURUS 4DR SEDAN

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 1.41 STABLE
NHTSA Star Rating (calculated) ****

CENTER OF GRAVITY (No Load):

| | |
|---|---|
| Inches behind front axle | = 39.24 |
| Inches in front of rear axle | = 69.76 |
| Inches from side of vehicle | = 36.50 |
| Inches from ground | = 21.59 |
| Inches from front corner | = 88.15 |
| Inches from rear corner | = 123.29 |
| Inches from front bumper | = 80.24 |
| Inches from rear bumper | = 117.76 |

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

| | | |
|---|---|---|
| YAW MOMENT OF INERTIA | = 2219.78 | lb-ft-sec^2 |
| PITCH MOMENT OF INERTIA | = 2143.74 | lb-ft-sec^2 |
| ROLL MOMENT OF INERTIA | = 448.68 | lb-ft-sec^2 |

FRONT PROFILE INFORMATION

| | | |
|---|---|---|
| ANGLE FRONT BUMPER TO HOOD FRONT | = 45.0 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD BASE | = 14.4 | deg |
| ANGLE FRONT OF HOOD TO WINDSHIELD TOP | = 18.4 | deg |
| ANGLE OF WINDSHIELD | = 22.6 | deg |
| ANGLE OF STEERING TIRES AT MAX TURN | = 26.0 | deg |

FIRST APPROXIMATION CRUSH FACTORS:

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

V(mph) = Sqr root of (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 independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The Rear Impact data with more than 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, esp. GM, your 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

## # 2905

## 1998 FORD TAURUS

Provided By

4N6XPRT StifCalcs™

**Registered to:**

**4N6XPRT SYSTEMS**

**8387 UNIVERSITY AVENUE**

**LA MESA  CA 91941-3842**

**S/N: 030201SC01301**



4N6XPRT Systems® | 8387 University Avenue | La Mesa, CA 91941 | USA

(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

# 4N6XPRT StifCalcs™

# Sister/Clone database reader

You entered: **1998 FORD TAURUS**

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

| Year Range | Make | Model | Body Styles | Wheelbase |
|---|---|---|---|---|
| 1996 - 1999 | FORD | TAURUS | 4D,SW | 108.5" |
| REMARKS : | | | | |
| 1996 - 1999 | MERCURY | SABLE | 4D,SW | 108.5" |
| REMARKS : | | | | |



**If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering, 521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.**

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Test Information

Test # 2905 NHTSA Version # V4 Test Date 1998-04 Contract # 096017-5500

Contract/Study Title 1998 FORD TAURUS INTO FRONTAL LOAD CELL BARRIER

Test Objective(s) OCCUPANT RESPONSE

Test Type RESEARCH SAFETY VEHICLE TEST Configuration VEHICLE INTO BARRIER

Closing Speed 47.2 Km/Hr 29 MPH

Impact Angle 0 Offset Distance mm 0 inches Side Impact Point mm 0 inches

Test Performer TRC OF OHIO Test Reference # 980421-1

Test Track Surface CONCRETE Condition DRY Ambient Temperature 22 C 72 F

Data Recorder Type OTHER Data Link OTHER Total Number of Curves 96

Test Commentary ONBOARD DIGITAL DATA A

## Fixed Barrier Information

Barrier Type RIGID Barrier Shape LOAD CELL BAR Pole Barrier Diameter 9999 mm inches

Barrier Commentary NO COMMENTS

# 4N6XPRT StifCalcs™

## 1998 FORD TAURUS LEFT FRONT SEAT OCCUPANT

Test # 2832 Vehicle # 1 Location LEFT FRONT SEAT Seat Position CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer UNKNOWN

Occupant Modification NONE

Occupant Description NO COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 311 | mm | 9.8 | inches |
| Windshield | 558 | mm | 24.4 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 208 | mm | 9.9 | inches |
| Side Window | 315 | mm | 14.1 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) UNKNOWN

Head Injury Criteria (HIC) 290 HIC Lower Time interval (ms) 104.24 HIC Upper Time interval (ms) -5556

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 538 | mm | 17 | inches |
| Steering Wheel | 318 | mm | 7.5 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 115 | mm | 6.4 | inches |
| Hip to Door | 169 | mm | 8 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 369 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 150 mm 4.8 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) DASHPANEL Second Contact Region (Legs) NONE

Left Femur Peak Load 9999 Newtons 0 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1998 FORD TAURUS LEFT FRONT SEAT OCCUPANT

Restraint # 1 AIR BAG Mounted Deployment? DEPLOYED PROPERLY

Restraint Commentary NO COMMENTS

Registered Owner : 4N6XPRT SYSTEMS Serial Number # 030201SC01301

# 4N6XPRT StifCalcs™

## Restraints

1998 FORD TAURUS LEFT FRONT SEAT OCCUPANT

| Restraint # | 2 | NONE | Mounted | | Deployment? | NOT APPLICABLE |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## 1998 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

Test # 2832 Vehicle # 1 Location RIGHT FRONT SEAT Seat Position CENTER POSITION

Type HYBRID III DUMMY Size Percentile 50 PERCENTILE Calibration Method HYBRID III

Sex M Age 99 Occupant Height 999 mm 0 inches Occupant Weight 999 kg 0 pounds

Occupant Manufactuer UNKNOWN

Occupant Modification NO COMMENTS

Occupant Description NO COMMENTS

Occupant Commentary

### Head

Head To

| | | | | |
|---|---|---|---|---|
| Windshield Header | 307 | mm | 9.8 | inches |
| Windshield | 579 | mm | 24.4 | inches |
| Seatback | 9999 | mm | 0 | inches |
| Neck to Seatback | 9999 | mm | 0 | inches |

Head To

| | | | | |
|---|---|---|---|---|
| Side Header | 202 | mm | 9.9 | inches |
| Side Window | 314 | mm | 14.1 | inches |

First Contact Region (Head) AIR BAG Second Contact Region (Head) UNKNOWN

Head Injury Criteria (HIC) 299 HIC Lower Time interval (ms) 106.72 HIC Upper Time interval (ms) -5697

### Chest

Chest To

| | | | | |
|---|---|---|---|---|
| Dash | 468 | mm | 17 | inches |
| Steering Wheel | 9999 | mm | 7.5 | inches |
| Seatback | 9999 | mm | 0 | inches |

| | | | | |
|---|---|---|---|---|
| Arm to Door | 119 | mm | 6.4 | inches |
| Hip to Door | 154 | mm | 8 | inches |

First Contact Region (Chest/Abdomen) AIR BAG Second Contact Region (Chest/Abdomen) NONE

Lap Belt Peak Load Newtons 0 pounds Force Shoulder Belt Peak Load Newtons 0 pounds Force

Chest Severity Index

Thorax Peak Acceleration (g's) 348 Thoraic Trauma Index Pelvic Peak Lateral Acceleration (g's)

### Legs

Knees to Dash 142 mm 4.8 inches Knees to Seatback 9999 mm 0 inches

First Contact Region (Legs) DASHPANEL Second Contact Region (Legs) NONE

Left Femur Peak Load 9999 Newtons 0 pounds Force Right Femur Peak Load 0 Newtons 0 pounds Force

1998 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

Restraint # 1 AIR BAG Mounted Deployment? DEPLOYED PROPERLY

Restraint Commentary NO COMMENTS

# 4N6XPRT StifCalcs™

## Restraints

1998 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

| Restraint # | 2 | NONE | Mounted | | Deployment? | NOT APPLICABLE |
|---|---|---|---|---|---|---|

Restraint Commentary: NO COMMENTS

# 4N6XPRT StifCalcs™

## Vehicle 1 - 1998 FORD TAURUS

Test # 2905 | NHTSA Test Vehicle Number | VIN 1FAFP52U1WG145718

Year 1998 | Make FORD | Model TAURUS | Body FOUR DOOR SEDAN

Vehicle Modification Indicator: PRODUCTION VEHICLE

Vehicle Modification(s) Description: NO COMMENTS

Post-test Steering Column Shear Capsule Seperation: UNKNOWN

Steering Column Collapse Mechanism: UNKNOWN

Vehicle Commentary: NO COMMENTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vehicle Length | 5025 | mm | 197.8 | inches | **Vehicle Test Weight** | 1666 | KG | **3673** **pounds** |
| Vehicle Wheelbase | 2765 | mm | 108.9 | inches | **Vehicle Width** | 1853 | mm | **73** **inches** |
| CG behind front axle | 1099 | mm | 43.3 | inches | **Total Length of Indentation** | 1524 | mm | **60** **inches** |
| Center of Damage to CG Axis | 0 | mm | 0 | inches | **Maximum Static Crush Depth** | 310 | mm | **12.2** **inches** |

Vehicle Damage Index: 12FDAW | Principal Direction of Force: 0 | **Pre-Impact Speed**: 47.2 kph | **29.3** **mph**

### Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

| | | | | |
|---|---|---|---|---|
| DPD 1 | 193 | mm | 7.6 | inches |
| DPD 2 | 271 | mm | 10.7 | inches |
| DPD 3 | 293 | mm | 11.5 | inches |
| DPD 4 | 307 | mm | 12.1 | inches |
| DPD 5 | 308 | mm | 12.1 | inches |
| DPD 6 | 269 | mm | 10.6 | inches |

### Crush from Pre & Post Test Damage Measurements

| | Pre-Test | | Post-Test | | Crush-Depth | |
|---|---|---|---|---|---|---|
| **Left Bumper Corner** | 189.4 | **inches** | 178.4 | **inches** | **11** | **inches** |
| | 4812 | mm | 4532 | mm | 280 | mm |
| **Centerline** | 197.8 | **inches** | 185.6 | **inches** | **12.2** | **inches** |
| | 5025 | mm | 4715 | mm | 310 | mm |
| **Right Bumper Corner** | 189.3 | **inches** | 181.7 | **inches** | **7.6** | **inches** |
| | 4807 | mm | 4615 | mm | 192 | mm |

| Bumper Engagement (Inline Impact Only) | Still Engagement (Side Impact Only) | A-pillar Engagement (Side Impact Only) |
|---|---|---|
| NOT APPLICABLE | NOT APPLICABLE | NOT APPLICABLE |

| Moving Test Cart Angle | Moving Test Cart / Vehicle Crabbed Angle | Moving Test Cart Vehicle Orientation on Cart |
|---|---|---|
| 999 | 0 | 999 |

*Magnitude of the Tilt-Angle Measured between surface if a Rollover Test Cart and the Ground*

*Magnitude of the Crabbed Angle Measured Clockwise from Logitudial Vector to Velocity Vector of Vehicle*

*Magnitude of the Angle Measured between the vehicle Orientation and the Direction of the Test Cart Motion*

# Vehicle 1 - 1998 FORD TAURUS

| Test # | NHTSA Test Vehicle Number | VIN |
|---|---|---|
| 2905 | | 1FAFP52U1WG145718 |

| Year | Make | Model | Body |
|---|---|---|---|
| 1998 | FORD | TAURUS | FOUR DOOR SEDAN |

| Vehicle Modification Indicator | Vehicle Modification(s) Description |
|---|---|
| PRODUCTION VEHICLE | NO COMMENTS |

| Post-test Steering Column Shear Capsule Seperation | Steering Column Collapse Mechanism |
|---|---|
| UNKNOWN | UNKNOWN |

Vehicle Commentary: NO COMMENTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vehicle Length | 5025 | mm | 197.8 | inches | **Vehicle Test Weight** | 1666 | KG | **3673** **pounds** |
| Vehicle Wheelbase | 2765 | mm | 108.9 | inches | **Vehicle Width** | 1853 | mm | **73** **inches** |
| CG behind front axle | 1099 | mm | 43.3 | inches | **Total Length of Indentation** | 1524 | mm | **60** **inches** |
| Center of Damage to CG Axis | 0 | mm | 0 | inches | **Maximum Static Crush Depth** | 310 | mm | **12.2** **inches** |

| Vehicle Damage Index | Principal Direction of Force | **Pre-Impact Speed** | | | |
|---|---|---|---|---|---|
| 12FDAW3 | 0 | 47.2 | kph | **29.3** | **mph** |

## Pre & Post Test Measurements

(Measurments are taken in a logitudinal direction. Except for Engine Block, all measurments are taken from the Rear Vehicle 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 |
| | | | | Length of Vehicle at Centerline | | | | | | | |
| | | | | 5025 | 197.8 | 4715 | 185.6 | | | | |
| | | | | Engine Block | | | | | | | |
| | | | | 345 | 13.6 | 345 | 13.6 | | | | |
| 4812 | 189.4 | 4532 | 178.4 | Front Bumper Corner | | | | 4807 | 189.3 | 4615 | 181.7 |
| | | | | Front of Engine | | | | | | | |
| | | | | 4415 | 173.8 | 4128 | 162.5 | | | | |
| 3702 | 145.7 | 3385 | 133.3 | Firewall | | | | 3661 | 144.1 | 3351 | 131.9 |
| | | | | 3885 | 162.5 | 3860 | 152 | | | | |
| 3431 | 135.1 | 3425 | 134.8 | Upper Leading Edge of Door | | | | 3437 | 135.3 | 3447 | 135.7 |
| 3415 | 134.4 | 3405 | 134.1 | Lower Leading Edge of Door | | | | 3424 | 134.8 | 3415 | 134.4 |
| 3422 | 134.7 | 2422 | 95.4 | Bottom of 'A' Post | | | | 3425 | 134.8 | 2426 | 95.5 |
| 2425 | 95.3 | 2420 | 95.3 | Upper Trailing Edge of Door | | | | 2425 | 95.5 | 2435 | 95.9 |
| 2410 | 94.9 | 2402 | 94.6 | Lower Trailing Edge of Door | | | | 2415 | 95.1 | 2412 | 95 |
| | | | | Steering Column | | | | | | | |
| | | | | 3045 | 119.9 | 3028 | 119.2 | | | | |
| | | | | Center of Steering Column to 'A' Post (Horizontal) | | | | | | | |
| | | | | 316 | 12.4 | 300 | 11.8 | | | | |
| | | | | Center of Steering Column to 'A' Post (Vertical) | | | | | | | |
| | | | | 415 | 16.3 | 410 | 16.1 | | | | |

# 4N6XPRT StifCalcs™
# 1998 FORD TAURUS

## NHTSA Crash Test - # 2905 - Front Impact

{ Pre/Post Crush Depths - Vehicle Width - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3673 pounds
Vehicle Test Speed = 29.3 mph
Test crush width = 73 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 11 | 12.2 | 7.6 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 7.6 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 356.2 | 503 | 126.1 |
| Using a Rated No Damage Speed of | 5 mph | 646 | 413.6 | 504.5 |
| Using a Rated No Damage Speed of | 7.5 mph | 869.4 | 333 | 1135.1 |
| Using a Rated No Damage Speed of | 10 mph | 1026.5 | 261.1 | 2017.9 |
| **Average Crush = 10.8 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 250.6 | 249.1 | 126.1 |
| Using a Rated No Damage Speed of | 5 mph | 454.6 | 204.8 | 504.5 |
| Using a Rated No Damage Speed of | 7.5 mph | 611.8 | 164.9 | 1135.1 |
| Using a Rated No Damage Speed of | 10 mph | 722.3 | 129.3 | 2017.9 |
| **Maximum Crush = 12.2 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 221.9 | 195.2 | 126.1 |
| Using a Rated No Damage Speed of | 5 mph | 402.4 | 160.5 | 504.5 |
| Using a Rated No Damage Speed of | 7.5 mph | 541.6 | 129.2 | 1135.1 |
| Using a Rated No Damage Speed of | 10 mph | 639.4 | 101.3 | 2017.9 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

***********************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **12.2** | **25.3** | -4 | -13.7% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 28.2**

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

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

# 4N6XPRT StifCalcs™
# 1998 FORD TAURUS

## NHTSA Crash Test - # 2905 - Front Impact

{ Pre/Post Crush Depths - Indentation Length - Closing Speed - Trapezoidal Average}

Vehicle Test Weight = 3673 pounds
Vehicle Test Speed = 29.3 mph
Test crush width = 60 inches

**Pre/Post Collision Crush Depths (inches)**

| (Driver Side) | Left Bumper Corner | Centerline | Right Bumper Corner | (Pass. Side) |
|---|---|---|---|---|
| | 11 | 12.2 | 7.6 | |

**Calculated Stiffness Coefficients**

| | | A | B | G |
|---|---|---|---|---|
| **Minimum Crush = 7.6 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 433.1 | 611.5 | 153.3 |
| Using a Rated No Damage Speed of | 5 mph | 785.4 | 502.9 | 613.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 1057.1 | 404.8 | 1380.1 |
| Using a Rated No Damage Speed of | 10 mph | 1248 | 317.4 | 2453.5 |
| **Average Crush = 10.8 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 304.8 | 302.8 | 153.3 |
| Using a Rated No Damage Speed of | 5 mph | 552.7 | 249 | 613.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 743.9 | 200.5 | 1380.1 |
| Using a Rated No Damage Speed of | 10 mph | 878.3 | 157.2 | 2453.5 |
| **Maximum Crush = 12.2 inches** | | | | |
| Using a Rated No Damage Speed of | 2.5 mph | 269.8 | 237.3 | 153.3 |
| Using a Rated No Damage Speed of | 5 mph | 489.3 | 195.2 | 613.4 |
| Using a Rated No Damage Speed of | 7.5 mph | 658.5 | 157.1 | 1380.1 |
| Using a Rated No Damage Speed of | 10 mph | 777.5 | 123.2 | 2453.5 |

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

*Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some specific vehicles may have a higher rating*

*A = Maximum force per inch of damage without permenant damage, lb/in*
*B = Crush resistance per inch of damage width, lb/in^2*
*G = Energy dissipated without permenant damage, lb*

***********************************************************

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

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

*Impact Speed (mph) = SQR(30 * CF * max crush in feet)*

| Crush Factor | Maximum Crush (inches) | Calculated Impact Speed (mph) | Calculated Error (mph) | Calculated Error (%) |
|---|---|---|---|---|
| **21** | **12.2** | **25.3** | -4 | -13.7% |

**4N6XPRT Systems Specific Crush Factor (CF specific to this test) = 28.2**

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

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

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1996 - 1999

Make : FORD

Model : TAURUS

| Test Number | Vehicle Info | No Damage Speed (mph) | Average Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Average Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2312 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 15.9 | 35.1 | 404.7 | 153.7 | 532.7 | 31.1 |
| 2450 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 14.5 | 29.1 | 405.5 | 134.8 | 609.9 | 23.4 |
| 2671 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 14.3 | 30.4 | 454.9 | 161.4 | 641.2 | 25.8 |
| 2675 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 13.8 | 37.5 | 486.7 | 228.6 | 518.1 | 40.6 |
| 2677 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 18.7 | 37.9 | 372.8 | 131 | 530.5 | 30.7 |
| 2748 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 15.1 | 34.9 | 417.6 | 165.6 | 526.6 | 32.3 |
| 2832 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 10.9 | 29.3 | 468.1 | 208.5 | 525.4 | 31.5 |
| 2905 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 11.1 | 29.3 | 441.8 | 193.4 | 504.5 | 30.9 |
| 2913 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 19.6 | 35 | 357 | 109.6 | 581.6 | 25.1 |
| 3093 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 12.4 | 29.3 | 423 | 166.5 | 537.5 | 27.8 |
| 3102 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 14.2 | 29.5 | 369.9 | 128 | 534.5 | 24.6 |
| | | **Front Averages** | | | 418.4 | 161.9 | 540.5 | 29.4 |
| | | **Front Minimums** | | | 357 | 109.6 | 581.4 | 23.4 |
| | | **Front Maximums** | | | 486.7 | 228.6 | 518.1 | 40.6 |
| | | **Front Standard Deviations** | | | 41.9 | 36.5 | 36.5 | 4.9 |

# 4N6XPRT StifCalcs™

## Available Test Results

Frontal Impact Test Summary

### Report Filter Settings

Year Range : 1996 - 1999

Make : FORD

Model : TAURUS

| Test Number | Vehicle Info | No Damage Speed (mph) | Max Crush (inch) | Closing Speed (mph) | Vehicle Width Stiffness Values A | B | G | Crush Factor (Max Crush) |
|---|---|---|---|---|---|---|---|---|
| Test Type : **Front** | | | | | | | | |
| 2312 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.9 | 35.1 | 379.5 | 135.2 | 532.7 | 29.2 |
| 2450 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.2 | 29.1 | 362.9 | 108 | 609.9 | 20.9 |
| 2671 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.5 | 30.4 | 393.9 | 121 | 641.2 | 22.4 |
| 2675 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 23.6 | 37.5 | 285.1 | 78.5 | 518.1 | 23.8 |
| 2677 | 1996 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 29.5 | 37.9 | 236.5 | 52.7 | 530.5 | 19.5 |
| 2748 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.9 | 34.9 | 372 | 131.4 | 526.6 | 28.8 |
| 2832 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 12.4 | 29.3 | 411.9 | 161.4 | 525.4 | 27.7 |
| 2905 | 1998 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 12.2 | 29.3 | 401.8 | 160 | 504.5 | 28.1 |
| 2913 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 54.4 | 35 | 128.3 | 14.2 | 581.6 | 9 |
| 3093 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 13.8 | 29.3 | 378.6 | 133.3 | 537.5 | 24.9 |
| 3102 | 1999 FORD TAURUS FOUR DOOR SEDAN | 5.0 | 16.1 | 29.5 | 325.3 | 99 | 534.5 | 21.6 |
| | | **Front Averages** | | | 334.2 | 108.6 | 514.1 | 23.3 |
| | | **Front Minimums** | | | 128.3 | 14.2 | 579.6 | 9 |
| | | **Front Maximums** | | | 411.9 | 161.4 | 525.6 | 29.2 |
| | | **Front Standard Deviations** | | | 86.5 | 45.2 | 45.7 | 5.8 |

**4N6XPRT Systems**
Expert System Software for Litigation

8387 University Avenue
La Mesa, CA 91941-3842

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,

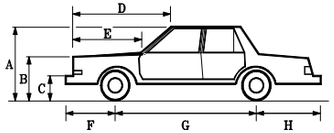
We at 4N6XPRT Systems were pleased to be able to provide you with the preceding data for the crash test vehicles.

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®

Expert AutoStats® is a program that has over 39,000 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.

********** [ PARTIAL OUTPUT ] **********

2001 FORD CROWN VICTORIA 4DR SEDAN

[ HORIZONTAL DIMENSIONS ]

| | |
|---|---|
| LENGTH | 212 in. |
| WHEELBASE | 115 in. |
| FRONT BUMPER TO FRONT AXLE | 44 in. |
| FRONT BUMPER TO FRONT OF HOOD | 8 in. |
| FRONT BUMPER TO BASE OF WINDSHIELD | 66 in. |
| FRONT BUMPER TO TOP OF WINDSHIELD | 91 in. |
| FRONT BUMPER TO FRONT WELL | 27 in. |
| REAR BUMPER TO REAR OF TRUNK | 8 in. |
| REAR BUMPER TO BASE OF REAR WINDOW | 39 in. |
| REAR BUMPER TO REAR WELL | 37 in. |
| REAR BUMPER TO REAR AXLE | 53 in. |

[ DEPTH DIMENSIONS ]

| | |
|---|---|
| WIDTH | 78 in. |
| FRONT TRACK | 63 in. |
| REAR TRACK | 64 in. |

[ VERTICAL DIMENSIONS ]

| | |
|---|---|
| HEIGHT | 57 in. |
| GROUND TO: | |
| FRONT BUMPER (Top) | 23 in. |
| HEADLIGHT - Center | 27 in. |
| HOOD - Top Front | 26 in. |
| BASE OF WINDSHIELD | 38 in. |
| REAR BUMPER (Top) | 26 in. |
| TRUNK - Top Rear | 40 in. |
| BASE OF REAR WINDOW | 40 in. |

[ WEIGHT DIMENSIONS ]

| | |
|---|---|
| CURB WEIGHT | 3920 lbs. |
| Curb Weight Distribution: | |
| FRONT = 55% | REAR = 45% |
| GROSS VEHICLE WEIGHT | 5170 lbs. |

EXPERT AUTOSTATS(c) Reg.To:4N6XPRT Systems S/N:01R-930512AQ03201

2001 FORD CROWN VICTORIA 4DR SEDAN

[ ACCELERATION/BRAKING ]

| | |
|---|---|
| ACCELERATION 0-30 mph | 16.9 ft/sec/sec |
| ACCELERATION 0-60 mph | 11.1 ft/sec/sec |
| ACCELERATION 45-65 mph | 6.8 ft/sec/sec |
| BRAKING 60-0 mph | 133 ft |

| | |
|---|---|
| DRIVE WHEELS | REAR |
| TURNING CIRCLE (DIAMETER) | 41 ft. |
| NUMBER OF WHEELS | 4 |
| WHEEL RADIUS | 13 in. |
| TIRE SIZE | P225/60SR16 |

| | |
|---|---|
| BUMPER STRENGTH: | 5 mph |
| STEERING RATIO | 16.40:1 |

[ INTERIOR DIMENSIONS ]

| | |
|---|---|
| FRONT SHOULDER ROOM | 61 in. |
| FRONT HEAD ROOM | 39 in. |
| FRONT LEG ROOM | 43 in. |
| REAR SHOULDER ROOM | 60 in. |
| REAR HEAD ROOM | 38 in. |
| REAR LEG ROOM | 40 in. |

ALL DISC - REAR ABS - OPTIONAL
3pt - front and rear, FRONT SEAT AIRBAGS
4spd AUTOMATIC

N.S.D.C. = 1998 - 2001
___ = Value not in Database

EXPERT AUTOSTATS(c) Reg.To:4N6XPRT Systems S/N:01R-930512AQ03201

# 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 BioMeknx™, 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.

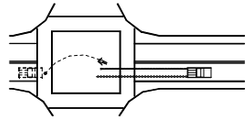
# Expert VIN DeCoder®

**3FAPP1280MR117253**

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

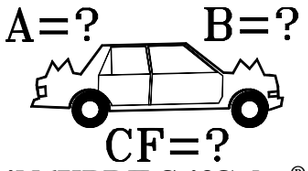
Expert Qwic Calcs® quickly provides answers to questions important in vehicle collision litigation. The user inputs data in response to relevant questions, Expert Qwic Clacs® performs the mathematical calculations required. Both the input data and the calculated result are then displayed, and may be "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.




# 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 addition to the NHTSA Crash Test data, the program includes a "Sister/Clone List Reader" developed in cooperation with Greg Anderson. This allows quick retrieval of the "Sister/Clone" data for the desired vehicle. This will drive the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module for the initial vehicle selection.

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

To use the program, follow this "Yellow Brick Road":

1) **Sister/Clone Reader -**

**( a ) - Select YEAR ( b ) - Select Manufacturer ( c ) - Select Model**

▼

2) **Click on TEST SELECTION Tab**

▼

3) **Select a test from the available tests which are displayed**

▼

4) **View TEST INFORMATION**

▼

5) **View OCCUPANT DATA**

▼

6) **View VEHICLE DATA**

▼

7) **View STIFFNESS CALCS**

▼

8) **Click on Reports - PRINT REPORT**

**IT'S THAT SIMPLE .... <u>REALLY!!</u>**

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

Contact Name:_____

Title:_____

Company/Organization:_____

Street:_____

City: _____ State: _____ Zip: _____

Phone: (_____)_____ FAX: (_____)_____

**E-Mail:** _____

PAYMENT BY: Check____ Money Order____ Govt. Purchase Order____

for Credit Card Orders, **please circle Credit Card type: Am. Express / Visa / MasterCard**, then complete the following:

Card Number: _____Expiration Date ( MM/YY):____/____

Security code (card ID) on **back of** Visa/MasterCard card or **front of** American Express Card:


←Visa/MasterCard | Security | American Express →


Address for where the **credit card bill is sent**: _____

*( This is the address that the credit card bill would go to, not where we would send the data or product to )*

Zip for where the **credit card bill is sent**:_____

*( This is the zip code that the credit card bill would go to, not where we would send the data or product to )*

Authorized signature: _____

PROGRAM ORDER FORM:

*(Pricing effective as of 4/1/09 - prices subject to change without notice)*

| | | |
|---|---|---|
| Expert AutoStats®: | $ 595.00 * | $_____ |
| 4N6XPRT BioMeknx™: | $ 495.00 * | $_____ |
| 4N6XPRT Ped & Bike Calcs®: | $ 375.00 * | $_____ |
| Expert Qwic Calcs®: | $ 275.00 * | $_____ |
| Expert TireStuf®: | $ 85.00 * | $_____ |
| 4N6XPRT StifCalcs®: | $ 520.00 * | $_____ |
| Expert VIN DeCoder®: | $ 525.00 * | $_____ |
| | | ====== |
| | **SUB-TOTAL** | $_____ |
| California shipping addresses add **9.50%** sales tax | | $_____ |
| (*California orders delivered by e-mail attachment **DO NOT** owe sales tax*) | | |
| Handling **: | | $_____ |
| ***( Cash or Check with order = $5.00, Credit Card = $10.00 , Govt. Purchase Order = $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 |
| ☐ - Deliver on Disk - **additional cost of $25.00 / disk / program** | $_____ |
| | ====== |
| **TOTAL** | **$_____** |

**Individual Vehicle Data 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 requesting **VIN DeCoder & AutoStats** please also provide:

Vehicle Type:Car - Pickup - Utility - Van
No. of Doors:2/3/4/5
Car Body Style:Coupe/Conv./Sedan/Wagon
DRIVE WHEELS: 4x2 / 4x4
PICKUPS:Dual Rear Wheel - 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

Case Reference/Number:_____

# 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 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 years with **N**o **S**ignificant **D**imensional **C**hanges
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®**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