

AMA Specifications – Passenger Car

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MANUFACTURER	Pontiac Motor Division General Motors Corporation	CAR NAME Tempest & LeMans	
MAILING ADDRESS	Pontiac 11, Michigan	MODEL YEAR 1963	ISSUED: 9-12-62 REVISED (*)

NOTES:

1. The Specifications herein are those in effect at date of compilation and are subject to change without notice by the manufacturer.
2. UNLESS OTHERWISE INDICATED:
 - a. Specifications apply to standard models without optional equipment. Significant deviations are noted.
 - b. Nominal design dimensions are used throughout these specifications.

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BODY—TYPES AND STYLE NAMES—

Body type, number of passenger & style names; use manufacturer's code for series & body style.

<u>Body Type</u>	<u>Number of Passengers</u>	<u>Body Style Number</u>
Tempest		
Four-Door Sedan - 6 Window	6	2119
Two-Door Sports Coupe	6	2117
Two-Door Coupe	6	2127
Four-Door 2 Seat Station Wagon	6	2135
Two-Door Convertible Coupe	5	2167
LeMans		
Two-Door Sports Coupe	5	2217
Two-Door Convertible Coupe	4	2267

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GENERAL SPECIFICATIONS

(All dimensions in inches unless otherwise indicated)

MODEL	Additional Information Page No.:	TEMPEST & LEMANS
Wheelbase (L101)	23	112
Tread	Front (W101)	57.3
	Rear (W102)	58.0
Maximum Overall Dimensions	Length (L103)	194.3
	Width (W103)	74.2
	Height (H101)	54.2
Transmission— (Specify trade name - opt., not available)	Manual	Synchromesh - Std.
	Overdrive	Not Available
	Automatic	Automatic Opt.
Axle ratio	Manual	3.30:1
	Overdrive	None
	Automatic	3.09:1
Tire size	18	6.00 x 15
Engine	Type, no. cyl., valve arr.	45° Inclined Line, 4, In-Head
	Fuel system (Carb., other)	8 Carburetor
	Bore and stroke	2 4.06 x 3.75
	Piston displ., cu.in.	2 194.5
	Std. compression ratio	2 8.6:1
	Max. bhp at engine rpm	2 115 @ 4000
	Max. torque at rpm	2 195 @ 2000

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MODEL TEMPEST & LEMANS

ENGINE—GENERAL

		Standard Engine	Optional Engine
Type, no. cyls., valve arr.		Line, 4, In-Head	90° V, 8, In-Head
Bore and stroke (nominal)		4.06 x 3.75	3.72 x 3.75
Piston displacement, c.u. in.		194.5	326
Bore spacing (C/L to C/L)		4.62	
No. system (front to rear)	L. Bank	None	1-3-5-7
	R. Bank	1-2-3-4	2-4-6-8
Firing order		1-3-4-2	1-8-4-3-6-5-7-2
Compres. ratio (nominal)		8.6:1	10.25:1
Cylinder Head Material		Alloy Cast Iron	
Cylinder Block Material		Alloy Cast Iron	
Cylinder Sleeve—Wet, dry, none		None	
Number of mounting points	Front	Two	
	Rear	Two (at Differential)	
Engine installation angle		6° 36'	
Taxable horsepower	Dia. ² x No. Cyl. 2.5	26.4	44.3
Published max. bhp* @ eng. RPM		115 @ 4000	260 @ 4800
Published max. torque* (lb. ft. @ RPM)		195 @ 2000	352 @ 2800
Recommended fuel regular - premium		Regular	Premium
Idle speed (spec. neutral or drive)	Manual	680-700 (in Neutral)	580-600 (in Neutral)
	Automatic	580-600 (in Drive)	480-500 (in Drive)

ENGINE—PISTONS

Material		Aluminum Alloy	
Description and finish		Cam Ground Flipper Type With Steel Struts - Piston Tin Plated	
Weight (piston only) oz.		23.875 - 24.062	21.255 - 21.442
Clearance (limits)	Top land	.024 - .033	.031 - .041
	Skirt	Top	.0005 - .0021**
		Bottom	.0006 - .0018**
Ring groove depth	No. 1 ring	.207 - .215	
	No. 2 ring	.197 - .205	
	No. 3 ring	.179 - .188	
	No. 4 ring	None	

* Max. bhp (brake horsepower) and max. torque corrected as defined by SAE Engine Test Code.

** Pistons selected for .0007 to .0013 clearance 1:18 below top of skirt.

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POWER TEAMS

(Indicate whether standard or optional)

MODEL AVAILABILITY	ENGINE					TRANSMISSION	AXLE RATIO (Std. first)*	
	Displ. cu. in.	Carburetor	Compr. Ratio	BHP @ RPM	Torque @ RPM		All Models Except Station Wagon and Convertible	Station Wagon and Convertible
TEMPEST 21 LE MANS 22								
All - Std.	194.5	1 Bbl.	8.6:1	115 @ 4000	195 @ 2000	Synchromesh (c)	3.30:1, 3.56:1 (a) (b)	
All - Opt.	194.5	1 Bbl.	8.6:1	115 @ 4000	195 @ 2000	Automatic	3.09:1, 2.91:1, 3.56:1 (a)	3.30:1, 3.09:1, 3.56:1 (a)
All - Opt.	194.5	1 Bbl.	10.25:1	120 @ 3800	204 @ 2000	Synchromesh (c)	3.30:1, 3.56:1 (a) (b)	
All - Opt.	194.5	1 Bbl.	10.25:1	140 @ 4400	209 @ 2200	Automatic	2.91:1, 3.56:1 (a)	3.30:1, 3.09:1, 3.56:1 (a)
All - Opt.	194.5	4 Bbl.	10.25:1	166 @ 4800	217 @ 2800	Synchromesh (c)	3.30:1, 3.56:1 (a) (b)	
All - Opt.	194.5	4 Bbl.	10.25:1	166 @ 4800	217 @ 2800	Automatic	3.30:1, 3.09:1, 3.56:1 (a)	
All - Opt.	326	2 Bbl.	10.25:1	260 @ 4800	352 @ 2800	Synchromesh	3.09:1	
All - Opt.	326	2 Bbl.	10.25:1	260 @ 4800	352 @ 2800	Automatic	2.91:1	

* 2.53:1, 2.91:1, 3.09:1, 3.30:1, 3.56:1, 3.78:1 and 3.90:1 Ratios available on special order for certain models.

(a) 3.56:1 Mandatory ratio with Air Conditioning.

(b) 3.09:1 Economy Ratio available on cars equipped with optional 4-Speed Synchromesh Transmission.

(c) 3-Speed Synchromesh Transmission Standard - 4-Speed Synchromesh Optional.

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MODEL TEMPEST & LEMANS

ENGINE—RINGS		Standard Engine	Optional Engine
Function (top to bottom)	No. 1, oil or comp.	Compression	
	No. 2, oil or comp.	Compression	
	No. 3, oil or comp.	Oil	
	No. 4, oil or comp.	None	
Compression	Description - material, type, coating, etc.	Cast Iron, Taper Faced Rings No. 1 with Thick Chrome, No. 2 with Lubrite Finish	
	Width	.078	
	Gap	No. 1 .021 No. 2 .019	
Oil	Description - material, type, coating, etc.	Multi-piece (2 rails & 1 spacer expander) Rails - Steel with chrome plate O. D. Spacer - Stainless Steel	
	Width	.186	
	Gap	.035	
Expanders		In Oil Ring Assembly	

ENGINE—PISTON PINS		
Material		SAE 1117 Modified Steel
Length		3.25
Diameter		.9802
Type	Locked in rod, in piston, floating, etc.	Locked in Rod
	Bushing	None
		None
Clearance	In piston	.0003 - .0005
	In rod	Press Fit
Direction & amount offset in piston		To Right - .063

ENGINE—CONNECTING RODS			
Material		Arma Steel	
Weight (oz.)		30.7	
Length (center to center)		6.625	
Bearing	Material & Type	Durex 100-A Steel Backed - Removable, Precision	
	Overall length	.82	.88
	Clearance (Limits)	.0005 - .0025	
	End play	.0045 - .0085	.006 - 011 (Total for Two)

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MODEL TEMPEST & LEMANS

ENGINE—CRANKSHAFT

Standard Engine

Optional Engine

Material		Cast Pearlitic Malleable Iron		
Vibration damper type		Rubber Floated Weight		
End thrust taken by bearing (No.)		4		
Crankshaft end play		.0035 - .0085		
Main bearing	Material & type		Durex 100A Steel Backed - Removable Precision	
	Clearance		.0005 - .0020	
	Journal dia. and bearing overall length	No. 1	3.00 x .94	
		No. 2	3.00 x .94	
		No. 3	3.00 x .94	
		No. 4	3.00 x 1.13	
		No. 5	3.00 x 1.59	
		No. 6	None	
No. 7		None		
Dir. & amt. cyl. offset		None		
Crankpin journal diameter		2.25		

ENGINE—CAMSHAFT

Location		Above Crankshaft	Between Cylinder Banks
Material		Hardened Alloy Cast Iron	
Bearings	Material	High Lead Babbit on Steel	
	Number	5	
Gear or chain		Chain	
Crankshaft gear or sprocket material		Carburized and Hardened Steel	
Camshaft gear or sprocket material		Cyanide Hardened Alloy Iron	
Type of Drive	Timing chain	No. of links	60
		Width	1.00
		Pitch	.375
		.88 (Morse) - 1.00 (Link-Belt)	

ENGINE—VALVE SYSTEM

Hydraulic lifters (Std, opt, NA)		Standard
Valve rotator, type (intake, exhaust)		None
Rocker ratio		1.5:1
Operating tappet clearance (indicate hot or cold)	Intake	0
	Exhaust	0
Timing marks on flywheel, damper, other		On Crankshaft Pulley Hub

(Continued)

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ENGINE—VALVE SYSTEM (cont.)

		Standard Engine		Optional Engine	
		Camshaft (a)	Camshaft (b)		
Timing	Intake	Opens (^o BTC)	14	30	22
		Closes (^o ABC)	58	63	67
		Duration - deg.	252	273	269
	Exhaust	Opens (^o BBC)	48	77	72
		Closes (^o ATC)	24	25	25
		Duration - deg.	252	282	277
Valve opening overlap		38	55	47	
Material		Manganese - Moly Steel (c)			
Overall length		4.74 (Reg. Fuel) 4.86 (Prem. Fuel)		4.97	
Actual overall head dia.		1.88			
Angle of seat & face *		30 ^o Seat - 29 ^o Face			
Seat insert material		None			
Stem diameter		.34			
Stem to guide clearance		.0021 to .0038			
Intake	Lift ($\bar{\bar{a}}$ zero lash)		.33	.40	.37
	Outer spring press. and length	Valve closed (lb. @ in.)	83 @ 1.52	60 @ 1.52	60 @ 1.52
		Valve open (lb. @ in.)	174 @ 1.19	113 @ 1.12	109 @ 1.15
	Inner spring press. and length	Valve closed (lb. @ in.)	Not Used	27 @ 1.47	27 @ 1.47
		Valve open (lb. @ in.)	Not Used	65 @ 1.07	62 @ 1.10
	Material		T-XCR Steel (c)		
	Overall length		4.72 (Reg. Fuel) 4.85 (Prem. Fuel)		4.96
	Actual overall head dia.		1.60		
	Angle of seat & face *		45 ^o Seat - 44 ^o Face		
	Seat insert material		Not Used		
Stem diameter		.34			
Stem to guide clearance		.0026 to .0043			
Exhaust	Lift ($\bar{\bar{a}}$ zero lash)		.33	.40	.37
	Outer spring press. and length	Valve closed (lb. @ in.)	83 @ 1.52	60 @ 1.52	60 @ 1.52
		Valve open (lb. @ in.)	174 @ 1.19	114 @ 1.12	109 @ 1.15
	Inner spring press. and length	Valve closed (lb. @ in.)	Not Used	27 @ 1.47	27 @ 1.47
		Valve open (lb. @ in.)	Not Used	65 @ 1.07	62 @ 1.10

ENGINE—LUBRICATION SYSTEM

Type of lubrication (splash, pressure, nozzle)	Main bearings	Pressure
	Connecting rods	Pressure
	Piston pins	Splash
	Camshaft bearings	Pressure
	Tappets	Pressure
	Timing gear or chain	Metered Jet
	Cylinder walls	Metered Jet

* Angle measured from perpendicular to valve stem. (Continued)

- (a) Camshaft for 8.6:1 C.R. and SM 10.25:1 C.R. 1-Bbl. carburetor engines.
- (b) Camshaft for all 4-Bbl. carb. engines & 10.25:1 C.R. 1-Bbl. carb. engine in auto. transmission cars.
- (c) Aluminum treatment on seat.

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ENGINE—LUBRICATION SYSTEM (cont.)

	Standard Engine	Optional Engine	
Oil pump type	Spur Gear		
Normal oil pressure (lb. @ engine rpm)	30 to 40 Above 2600 RPM		
Oil pressure sending unit (elect. or mech.)	Electric		
Type oil intake (floating, stationary)	Stationary Screen		
Oil filter system (full flow, partial, other)	Full Flow		
Filter replacement (element, complete)	Complete		
Capacity of crankcase, less filter-refill (qt.)	4		
Oil grade recommended (SAE viscosity and temperature range)	<u>Anticipated Lowest Temp.</u>	<u>Single Viscosity SAE Number</u>	<u>Acceptable Alternate</u>
	Above Freezing (+32°F.)	20W	10W - 30
	Below Freezing (0°F. to +32°F.)	10W	5W - 20
Below Zero	5W	5W - 20	
Engine Service Requirement (MM, MS, etc.)	MS		

ENGINE—EXHAUST SYSTEM

Type (single, single with cross-over, dual, other)	Single with Cross-over		
Muffler No. & type (reverse flow, straight thru, separate resonator)	One - Reverse Flow		
Exhaust pipe dia. (O.D. wall thickness)	Branch	1.13 x .075	2.00 x .075
	Main	1.75 x .075 (a)	2.25 x .075
Tail pipe diameter (O.D. & wall thickness)	1.50 x .049 (b) Aluminized		2.00 x .055 Aluminized

ENGINE—CRANKCASE VENTILATION SYSTEM

	Standard	Optional	Induction System
Type (ventilates to atmos., induction system, other)			None
Control unit	Make and model		AC, Type CV 486 AC, Type CV 273
	Location		Push Rod Cover
	Energy source (manifold vacuum, carburetor air stream, other)		Manifold Vacuum
	Control method (variable orifice, fixed orifice, other)		Variable Orifice
Complete system	Discharges (to intake manifold, carb. air intake, air cleaner intake, other)		Intake Manifold
	Air Inlet (breather cap, carburetor air cleaner, other)		Breather Cap
	Flame arrestor (screen, check valve, other)		Check Valve

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MODEL TEMPEST & LEMANS

ENGINE—FUEL SYSTEM

(See Supplement to Page 8 for Details of Fuel Injection, Supercharger, etc. if used) **Standard Engine**

Optional Engine

Induction type: Carburetor, fuel injection, supercharger.		Carburetor	
Fuel Tank	Capacity (gals.)	20.0	
	Filler location	Center Rear	
Fuel Pump	Type (elec. or mech.)	Mechanical	
	Locations	Left Front of Engine	
	Pressure range	4.0 to 5.25 PSI	
Vacuum booster (std., optional, none)		None	
Fuel Filter	Type	Plastic Fabric & Sintered Bronze	Plastic Fabric-Paper Element
	Locations	In Tank - In 1 Bbl. Carb. (b)	In Tank - (a)
Carburetor	Choke type	Manual (c), Auto. Integral (d)	Automatic - Integral
	Intake manifold heat control (exhaust or water)	Exhaust	
	Air clnr. type	Standard	Oiled Metallic Element
Optional		Oiled Plastic Foam Element	

CARBURETOR SUPPLEMENTARY INFORMATION

Model Usage	Engine Displ.	Transmission	Carburetors		No. Used and Type (e)	Barrel Size	No. of Barrel
			Make	Model			
All 21 & 22 Std.	194.5	Synchromesh	Rochester	7023067	One	1.57	1
All 21 & 22 Opt.	194.5	Automatic	Rochester	7023068	One	1.57	1
All 21 & 22 Opt.	194.5	Synchromesh	Rochester	7023069	One	(f)	4
All 21 & 22 Opt.	194.5	Automatic	Rochester	7023070	One	(f)	4
All 21 & 22 Opt.	326	Synchromesh	Rochester	702371	One	1.68	2
All 21 & 22 Opt.	326	Automatic	Rochester	702362	One	1.68	2

- (a) Disposable pleated paper element type in fuel line between fuel pump and carburetor.
- (b) Four Bbl. carburetor option uses filter described in note (a) above.
- (c) With Synchromesh 1-bbl. carburetor engines.
- (d) With Synchromesh 4-bbl. carburetor engines.
- (e) All downdraft type.
- (f) 1.44 primary - 1.69 secondary.

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ENGINE—COOLING SYSTEM		Standard Engine	Optional Engine
Type system (pressure, pressure vented, atmospheric, other)		Pressure - Vented	
Radiator cap relief valve pressure		14 to 17 P. S. I.	
Circulation thermostat	Type (choke, bypass)	Choke	
	Starts to open at (°F)	180° F.	
Water pump	Type (centrifugal, other)	Centrifugal	
	GPM @ 1000 pump rpm	7	
	Number of pumps	One	
	Drive (V-belt, other)	V-Belt	
	Bearing type	Sealed Ball Bearing	
By-pass recirculation type (internal, external)		Internal	
Radiator core type (cellular, tube and fin, other)		Tube and Center	
Cooling system capacity	With heater (qt.)	12.6	20.5
	Without heater (qt.)	Heater Standard Equipment	
	Opt. equipment-specify (qt.)	Air Cond. - 13.0	Air Cond. - 20.5
Water jackets full length of cylinder (yes, no)		Yes	
Water all around cylinder (yes, no)		Yes	
Radiator hose	Lower	Number and type (molded, straight)	One Molded
		Inside diameter	1.75
	Upper	Number and type (molded, straight)	One Molded
		Inside diameter	1.50
	By-pass	Number and type (molded, straight)	None - Internal
		Inside diameter	Hose Not Used
Fan	Number of blades & Spacing		4 - 76° and 104°(c) 5.45°, 92.5°, 65°, 65°, 92.5°(c)
	Diameter		17.0 (a)
	Ratio-fan to crankshaft rev.		.91 to 1 (b)
	Fan cutout type		Fluid Clutch - Thermostat Controlled (with Air Cond. Opt.)
	Bearing type		See Water Pump
*Drive belts (indicate belt used by letter)	Fan	A B C & D D & E F B & F G & H H & I	
	Generator	A B C E F G I	
	Water Pump	A B C & D D & E F B & F G & H H & I	
	Power Steering	B E B	
	Air Conditioning	D D H H	

* Drive Belt Dimensions	A	B	C	D	E	F	G	H	I
Angle of V	36°	36°	36°	36°	36°	36°	36°	36°	36°
Nominal length (SAE)	47.50	55.0	49.0	64.0	56.0	56.8	52.5	63.5	59.0
Width	.38	.38	.38	.38	.38	.38	.38	.47	.38

- (a) 18.0" 7 blade with Air Conditioning.
- (b) 1.126:1 with Air Conditioning option.
- (c) Except Air Conditioning (7 blade)..

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MODEL TEMPEST & LEMANS

ELECTRICAL—SUPPLY SYSTEM

		Standard Engine	Optional Engine	
Battery	Make and Model	Delco 554	Delco 458	
	Voltage Rtg. & Total Plates	12 & 54		
	SAE Designation & Amp Hr. Rtg	17 M1 - 44 at 20 Hr. Rate	2S MB - 53 @ 20 Hr. Rate	
	Location	Under Hood - Left Side		
Terminal grounded		Negative		
Generator	Make	Delco-Remy		
	Model	1100632 (a)	1100637 (b)	
	Type	3 Phase - 37 Amp. (42 Amp. with Air Conditioning)		
	Ratio—Gen. to Cr/s rev.	2.49:1 (2.85:1 with Air Cond.)		
	Gen. cut-in (hot)—engine rpm	Charge at Idle		
Regulator	Make	Delco-Remy		
	Model	1119511		
	Type	Voltage Regulator		
	Cutout relay	Closing voltage @ generator rpm	None	
		Reverse current to open	None	
	Regulated	Voltage	14.3	
		Current	Generator Self-Regulated	
	Voltage test conditions	Temperature	125° F. Around Regulator	
Load		10 Amp.		
Other				

ELECTRICAL—STARTING SYSTEM

Starting motor	Make	Delco-Remy		
	Model	1107796	1107270	
	Rotation (drive end view)	Clockwise		
	Engine cranking speed	170 RPM	153 RPM	
	Test conditions	Room Temperature		
	Lock test	Amps	Lock Test Not Recommended	
		Volts		
		Torque (lb. ft.)		
No load test	Amps	49-76 (c)	65-100 (c)	
	Volts	10.6	10.6	
	RPM (min.)	6200 - 9400	3600 - 5100	
Motor control	Switch (solenoid, manual)	Solenoid		
	Starting procedure	Place gearshift lever in Neutral and depress clutch*. Depress accelerator pedal to floor once and release (with cold engine) - hold accelerator pedal about half way down (with warm engine). Turn ignition key to right to engage starter, release as soon as engine starts.		

* With Automatic transmission use "Neutral" - no clutch. (Continued)

- (a) 1100634 with Air Conditioning.
- (b) 1100636 with Air Conditioning.
- (c) Without solenoid.

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ELECTRICAL—STARTING SYSTEM (cont.)

Motor Drive	Engagement type		Standard Engine	Optional Engine
			Sliding Gear - Overrunning Clutch	
	Pinion meshes (front, rear)		Front	
	Number of teeth	Pinion	9	
Flywheel		150		
Flywheel tooth face width		.38		

ELECTRICAL—IGNITION SYSTEM

Coil	Make		Delco-Remy	
	Model		1115169	1115174
	Amps	Engine stopped	3.5	
		Engine idling	2.8	
Distributor	Make		Delco-Remy	
	Model		1110284 (a)	1110300
	Cent'fgal adv. in crankshaft degrees @ engine rpm (nominal)	Start (rpm)	650	650
		Intermediate points deg. @ rpm	15 - 19 @ 2000	14 - 18 @ 2000
	Max. deg. @ rpm		24-28 @ 4250	20-24 @ 4600
	Vacuum adv. in crankshaft degrees @ in. Hg. (nominal)	Start (in Hg)	6-8	
		Intermediate points, deg @ in Hg	None	
		Max. deg. in. Hg.	20 @ 13-15	
	Breaker gap (in.)		.013-.019	
	Cam angle (deg.)		31° - 34°	28° - 32°
Breaker arm tension (oz.)		19-23		
Timing	Crankshaft deg. @ rpm.		6° at Hot Idle	
	Mark location		On Crankshaft Pulley Hub	
	Cylinder numbering system (see page 2)		1-2-3-4	Left Bank 1-3-5-7 Right Bank 2-4-6-8
	Firing order (see page 2)		1-3-4-2	1-8-4-3-6-5-7-2
Spark Plug	Make and model		AC 45S	
	Thread (mm)		14 MM	
	Tightening torque (lb. ft.)		15-25	
	Gap		.033 - .038	
Cable	Conductor type		Carbonized Thread	
	Insulation type		Neoprene	
	Spark plug protector		Butyl Rubber Boot	

ELECTRICAL—SUPPRESSION

Locations & type	Carbonized threat core secondary cables on all cars. Voltage regulator condenser, engine to dash ground strap and ground strap across each front engine mount on all cars with radio
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(a) Regular fuel engine - 1110300 with premium fuel engine.

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ELECTRICAL—INSTRUMENTS AND SWITCHES

Speedometer	Make	AC
	Trip odometer (yes, no)	No
Charge indicator—type		Ammeter
Temperature indicator—type		Tell-Tale Light
Oil pressure indicator—type		Tell-Tale Light
Fuel indicator—type		Electric Guage
Other		None
Ignition switch	Identify positions in order and circuits controlled	Counterclockwise to stop - accessory circuits on. Vertical - "Off" position - key removable in this position only. Clockwise - 40° from vertical - ignition and accessory circuits on. Clockwise - 70° from vertical - ignition and starter circuits only.
	Provision for illumination	None
	Location	Left Center of Instrument Panel
Main lighting switch	Identify positions and lamps controlled	Forward position - off. 1st. position - instrument panel, parking, tail and license lights. 2nd. position - instrument panel, head, tail and license lights. Clockwise rotation dims instrument lights to "Off". Counterclockwise rotation brightens instrument lights and turns on dome light.
Other light switches	Locations and lamps controlled (Std. Car) - For Accessory Switches see Page 12-A	Direction Signal - on steering column below wheel. Dimmer Switch - on floor left of steering column. Stop Light Switch - on brake support.
Other switches	Locations and devices controlled	(See Supplement Page 12-A)
Windshield wiper	Make	Delco Appliance
	Type	Electric
	Vacuum booster provision	None
	Washer provision	Yes
Horn	Type	Solenoid
	Number used	One Std. - Second Horn Optional
	Amp draw (each)	8 to 11 Amps. @ 12.5 V

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SUPPLEMENTARY INFORMATION

MODEL TEMPEST & LEMANS

SWITCH LOCATIONS

ACCESSORY LIGHT SWITCHES:

Back-Up Light - on shift lever bracket behind instrument panel of cars with Automatic transmission - on transmission case of cars with Synchronesh transmission.

Parking Brake Signal - on parking brake pedal arm.

Spot Light - on L.H. or R.H. end of instrument panel.

Courtesy Light - manual control on main light switch - turn knob counterclockwise to stop; automatic control by front door pillar switches.

Ash Tray Light - manual control - same as instrument lights.

Luggage Compartment and Utility Lamp - manual switch on lamp mounting bracket operates with main light switch on.

Glove Compartment Lamp - on instrument panel behind compartment door.

OTHER SWITCHES:

Radio - at center of instrument panel.

Heater Blower Motor - on instrument panel left of steering column.

Air Conditioning Blower Motor - on control panel at center of instrument panel.

Windshield Wiper Motor - on instrument panel left of steering column.

Windshield Washer - on windshield wiper switch knob.

Neutral Safety Switch - on shift lever bracket behind instrument panel.

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MODEL TEMPEST & LEMANS

ELECTRICAL—LAMP BULBS

Give quantity used and trade number, e.g., Headlamp 2-5400 S, dual headlight 2-4001, 2-4002.
Indicate accessories which are not standard equipment by an asterisk following the numbers.

Headlamps & arrangement		2 #4001, 2 #4002 - Horizontal
Headlamp beam indicator		1 #57
Parking		2 #1034
Tail		2 #1034 and 2 #67 on 21 Series (a)
Stop		Same as #1034 Tail Light Bulbs
Direction signal	Front	Same as Parking Light
	Rear	Same as Stop Light
	Indicator	1 #57
License plate		1 #67
Instrument		4 #1816
Ignition lock		None
Back up		2 #1073*
Dome		1 #1004
Clock		1 #57*
Radio		1 #57*
Glove compartment		1 #57*
Oil Press. Tell-Tale		1 #57
Eng. Temp. Tell-Tale		1 #57
Trans. Shift Ind.		1 #53*
Interior Panel		1 #57*
Spot Light		1 #4404*
P. Brake Warn. Lamp		1 #57*
Courtesy Light		1 #89* (b)
Ash Tray Lamp		1 #57*
Underhood Lamp		1 #93*
Tachometer		1 #57*
Luggage Lamp		1 #89*

(a) 22 Series (LeMans) uses 4 #1034 and 2 #67

(b) Std. on Convertible Coupe

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MODEL TEMPEST & LEMANS

ELECTRICAL—FUSE & CIRCUIT BREAKER DATA

Use trade number of fuse, e.g., SFE-10. Indicate circuit breaker by ampere capacity suffixed by letters "C.B.", e.g., 30 C.B. Where fuse or circuit breaker protects multiple circuits indicate first use by a letter and repeat the same letter for all units protected by the same fuse or circuit breaker, e.g., Parking lamp SFE-10 (a), Direction Indicator same as (a).

Headlamp	22 Amp. C.B.	(a)	Parking Brake Signal Light	Same As	(h)
Headlamp beam indicator	Same As	(a)	Air Cond. Blower	Same As	(f)
Parking lamp	Same As	(a)	Auto. Trans. Shift		
Tail lamp	(a) Plus 9 Amp. Fuse	(b)	Indicator Lamp	Same As	(e)
Stop lamp	20 Amp. Fuse	(d)	Tachometer Lamp	Same As	(e)
Direction indicator	Same As	(d)	Power Tail Gate Window	40 Amp. C. B.	
License plate lamp	Same As	(b)	Underhood Lamp	Same As	(j)
Instrument lamp	4 Amp. Fuse	(e)	Luggage Compartment	Same As	(i)
Ignition lamp	None				
Back up lamp	Same As	(d)			
Dome lamp	9 Amp. Fuse	(i)			
Clock	Same As	(j)			
Clock lamp	Same As	(e)			
Radio Power	2.5 Fuse	(g)			
Glove compartment lamp	Same As	(j)			
Radio Dial Light	Same As	(e)			
Windshield Wiper	25 Amp. Fuse	(h)			
Windshield Washer	Same As	(h)			
Cigar Lighter	20 Amp. Fuse	(j)			
Heater Blower	20 Amp. Fuse	(f)			
Heater Panel	Same As	(e)			
Spot Light	20 Amp. Fuse	(m)			
Courtesy Light	Same As	(i)			
Ash Tray Lamp	Same As	(e)			

ELECTRICAL—LOCATION OF OUTSIDE LAMPS

		2119	2117	2127	2167	2135	2217	2267	
Height above ground to center of bulb	Tail	Lowest	27.8		27.3	28.2		26.4	
		Highest	32.2		31.7	32.6		26.4	
	Stop		32.2		31.7	32.6		26.4	
	Backup		18.6		18.1	19.1		18.1	
	License, rear		22.6		22.1	23.1		22.1	
	Directional	Front			18.1		18.7		18.1
		Rear		32.2		31.7	32.6		26.4
	Headlamp	Inside			29.0		29.5		29.0
		Outside*			29.0		29.5		29.0
	Distance from C/L of car to center of bulb	Tail	Inside			29.0	29.0		21.0
Outside					29.3	29.3		29.6	
Stop				29.0		29.0		21.0 & 29.6	
Backup				27.0		27.4		27.0	
License, rear						0.4 (Left of C.)			
Directional		Front				27.9			
		Rear			29.0		29.0		21.0 & 29.6
Headlamp		Inside				23.3			
	Outside*				29.6				

* If single headlamps are used enter here.

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MODEL TEMPEST & LEMANS

DRIVE UNITS—CLUTCH (Manual Transmission)

Make & type		Standard Engine	Optional Engine
		Own - Dry	
Type pressure plate springs		Disc Spring	
Effective plate pressure (lb.)		1500	2050
No. of clutch driven discs		One	
Material		Woven Molded Asbestos	
Clutch facing	Outside & inside dia.	9.50 - 6.25	10.4 - 6.50
	Total eff. area (sq.in.)	67.35	85.56
	Thickness	.125	.140
	Engagement cushioning method	Spring Action of Offset Driven Plate Spokes	
Release bearing	Type & method of lubrication	Ball Thrust - Prepacked & Sealed	
Torsional damping	Methods: springs, friction material	Coil Springs and Metal to Metal Friction	

DRIVE UNITS—TRANSMISSIONS

Manual (std. or opt.)	Standard
Manual with overdrive (std. or opt.)	Not Available
Automatic (std. or opt.)	Optional

DRIVE UNITS—MANUAL TRANSMISSION

Number of forward speeds		Three (Std.)	Optional 4-Speed	Three	
Transmission ratios	In first	2.94:1	3.65:1	2.47:1	
	In second	1.68:1	2.35:1	1.53:1	
	In third	1.0:1	1.44:1	1.00:1	
	In fourth	None	1.00:1	None	
	In reverse	3.33:1	3.66:1	2.80:1	
Synchronous meshing, specify gears		Second & Third	All Forward Speeds	Second & Third	
Shift lever location		Floor	Floor	Floor	
Lubricant	Capacity (pt.)	3	3.75	3	
	Type recommended		A-9 Mild Hypoid		
	SAE viscosity number	Summer	90 (Modified to Meet SAE 80 Cold Test)		
		Winter	90 (Modified to Meet SAE 80 Cold Test)		
Extreme cold		90 (Modified to Meet SAE 80 Cold Test)			

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DRIVE UNITS—MANUAL TRANSMISSION WITH OVERDRIVE

For transmission data see manual transmission section

Overdrive	Type (planetary or other)		None	
	Manual lockout (yes, no)		None	
	Downshift accelerator control (yes, no)		None	
	Minimum cut-in speed		None	
	Gear ratio		None	
	Lu- bri- cant	Capacity (pt.) (Overdrive only)		None
		Separate filler (yes, no)		None
		Type recommended		None
		SAE vis- cosity number	Summer	None
			Winter	None
Ext. cold		None		

DRIVE UNITS—AUTOMATIC TRANSMISSION

Trade name	TempeTorque		
Type describe	Torque Converter with Split Torque		
Method of Selection (Lever, Push Button or other)	Lever		
Selector Pattern	R - N - D - L		
List gear ratios Selector Pattern and indicate which are used in each selector position	$\frac{R}{1.76:1}$	$\frac{D}{1.76:1}$ $1.00:1$	$\frac{L}{1.76:1}$ (a)
Max. upshift speeds—drive range	65 MPH		
Max. kickdown speeds—drive range	59 MPH		
Torque converter	Number of elements		Three
	Max. ratio at stall		2.0:1
	Type of cooling (air, water)		Air
Lubricant	Capacity—refill (pt.)		4
	Type recommended		AQ ATF Type A
Special transmission features	Torque converter provides full hydraulic drive for instant response and smoothness. Transmission gear case mounted ahead of differential with torque converter mounted behind differential in trans-axle assembly.		

DRIVE UNITS—PROPELLER SHAFT

Number used	One		
Type (exposed, torque tube)	Torque Tube		
Outer diameter x length* x wall thickness	Manual transmission		0.75 x 81.94 (a)
	Overdrive transmission		None
	Automatic transmission		.065 x 85.36 (b)

*Center to center of universal joints, or to centerline of rear attachment.

(Continued)

(a) Total transmission tor que multiplication 4.22:1 with 4 cylinder engine, 3.87:1 with V-8 engine.

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DRIVE UNITS—PROPELLER SHAFT (cont.)

Inter-mediate bearing	Type (plain, anti-friction)		Ball
	Lubrication (fitting, prepack)		Prepacked
Universal joints	Make		Not Used
	Number used		None
	Type (ball and trunnion, cross, other)		Not Used
	Bearing	Type (plain, anti-friction)	
Lubric. (fitting, prepack)			Not Used
Drive taken through (torque tube or arms, springs)			Control Arms
Torque taken through (torque tube or arms, springs)			Torque Tube

DRIVE UNITS—REAR AXLE

Description (see instructions)	Trans-Axle Unit Includes Rear Axle and Transmission			
Limited Slip differential, type	None			
Drive Pinion Offset	1.88			
No. of differential pinions	2 With Std. Engine	4 with Optional V-8 Engine		
Gear ratios (Std. equip.)	Manual transmission	3.30:1 (33:10) Std., 3.56:1 (32.9) Opt. (a)		
	Overdrive transmission	None		
	Automatic transmission	3.09:1 (34:11) Std. - 2.91:1 (32:11) & 3.56:1 (32:9) Opt. (a)		
Ring gear O.D. (std. ratio)	7.375 P.D. - 7.375 O.D.			
Pinion adjustment (shim, other)	Shim			
Pinion bearing adj. (shim, other)	Adjusting Nut			
Wheel bearing type	Spherical Roller Bearing			
Lubricant	Capacity (pt.)	3.3		
	Type recommended	A-9 Mild Hypoid		
	SAE viscosity number	Summer	90 (Modified to Meet SAE 80 Cold Test)	
		Winter	90 (Modified to Meet SAE 80 Cold Test)	
Extreme cold		90 (Modified to Meet SAE 80 Cold Test)		

REAR AXLE RATIO TOOTH COMBINATIONS

(See page 3 for axle ratio usage)

Axle ratio		2.53:1	2.91:1	3.09:1	3.30:1	3.56:1	3.78:1	3.90:1
No. of teeth	Pinion	15	11	11	10	9	9	10
	Ring gear	38	32	34	33	32	34	39

(a) Sedans and 2-Door Coupes with standard engine - see page 3 for ratios used with optional equipment for all models and special ratios for Station Wagon & Convertible Coupe. Form Rev. 3-62

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DRIVE UNITS—WHEELS

Type & material		Disc - Steel
Rim (size and flange type)	Std.	15 x 5K
	Opt.	15 x 5K
Attachment	Type (bolt or stud)	Bolt
	Circle diameter	4.5
	Number and size	5, 1/2 - 20

DRIVE UNITS—TIRES

Standard (List option below)	Size & ply	6.00 x 15
	Type - Nylon, etc.	Rayon Cord
Rev./mile at 50 mph.		799 Std.
Inflation press.(cold)	Front	22 Std.
	Rear	22 Std.
Optional tires - size and ply		6.50 x 15 22 P. S. I. Front & Rear 775 Rev. Per Mile (Std. on 2135)

BRAKES—SERVICE

Type (duo-servo, disc, balanced, etc.)		Hydraulic, Internal Expanding, Self-Adjusting, 2 Shoe, Single / x	
Self adjusting (std., opt., N.A.)		Standard	
Hydraulic system type (single, dual, etc.)		Single	
Power brake make & type (remote, integral, etc.)		Not Offered	
Effective area (sq. in.)*		124.2	
Gross lining area (sq. in.)**		130.3	
Swept drum area (sq. in.)***		197.9	
Percent brake effectiveness—front		56.3	
Drum	Diameter	Front	9.0
		Rear	9.0
	Type and material		Steel Backed Centrifugally Cast Alloy Iron
Wheel cylinder bore	Front	1.064	
	Rear	.9375	
Master cylinder bore		1.00	
Available pedal travel		4.52	
Line pressure at 100 lb. pedal load		900	
Shoe clearance adjustment		See Note (a)	

* Excludes rivet holes, grooves, chamfers, etc.
 ** Includes rivet holes, grooves, chamfers, etc.
 *** Total swept areas for four brakes:
 Widest lining contact width for each brake x its drum circumference.

(Continued)

- (a) Tighten to heavy drag against drum and then back off 22 notches front and 26 notches rear with rear suspension in full rebound position.

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BRAKES—SERVICE (cont.)

Brake lining	Bonded or riveted		Riveted	
	Front Shoe	Material	Molded Asbestos	
		Size (length x width x thickness)	Front wheel	9.31 x 1.75 x .22
			Rear wheel	9.31 x 1.75 x .22
		Segments per shoe		One
	Rear Shoe	Material	Molded Asbestos	
		Size (length x width x thickness)	Front wheel	9.31 x 1.75 x .22
			Rear wheel	9.31 x 1.75 x .22
Segments per shoe		One		

BRAKES—PARKING

Type of control	Foot Lever Application - Hand Lever Release	
Location of control	Below Instrument Panel at Left	
Operates on	Rear Service Brakes	
If separate from service brakes	Type (internal or external)	Not Separate
	Drum diameter	Not Separate
	Lining size (length x width x thickness)	Not Separate

FRAME or UNITIZED CONSTRUCTION

Type and description
Integral with front and rear cross member and suspension subassemblies bolted on.

SUSPENSION—GENERAL (See Supplemental page 19 for details on Air Suspension)*

Provision for car leveling	None	
Provision for brake dip control	Compound Anti-Dive Control Front Suspension	
Provision for acc. squat control	Geometry of Rear Suspension	
Special provisions for car jacking	Dimpled pads provided in underbody side rail - rear of front wheel opening & forward of rear wheel opening.	
Shock absorber front & rear	Type	Direct Acting - Two Way
	Make	Delco
	Piston dia.	1.00
Other special features		

SUSPENSION—FRONT

Type and description
Ball joint independent front suspension with upper control arms pivoted at inner end on rubber bushings. Lower control arms & compression struts mounted on rubber bushings.

* Air Suspension: Normal operating pressures
 Air spring type spring rates
 Compressor data leveling data
 type
 make
 drive ratio

(Continued)

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MODEL TEMPEST & LEMANS

SUSPENSION FRONT (cont.)

Spring	Type		Coil
	Material		SAE 9260 Steel
	Size (coil design height & I.D.; bar length x dia.)		9.25 x 3.93
	Spring rate (lb. per in.)		210 (a)
	Rate at wheel (lb. per in.)		65 (b)
	Design load (lb. @ design height)		1390 - 1460 (c)
Stabilizer	Type (link, linkless, frameless)		Link
	Material & bar diameter		SAE 1080 Steel - .688 Dia.

STEERING

Mechanical (std., opt., NA)	Standard	
Power (std., opt., NA)	Optional	
Wheel diameter	16.0	
Turning diameter	Outside front	
	Wall to wall (l. & r.)	40.3
	Curb to curb (l. & r.)	37.7
	Inside rear	
Wall to wall (l. & r.)	22.1	
Curb to curb (l. & r.)	22.7	
Outside wheel angle with inside wheel at 20°	19°	

Mechanical	Gear	Type	Recirculating Ball Bearing		
		Make	Saginaw		
		Ratios	Gear	24:1	
			Overall	23.6:1	
	No. wheel turns	4.25			
Power	Type (coaxial, linkage, etc.)		Linkage		
	Make		Saginaw		
	Trade name		Power Steering		
	Gear	Type	Recirculating Ball Bearing		
		Ratios	Gear	24:1	
			Overall	23.6:1	
	Pump driven by		Belt from Crankshaft		
	Number wheel turns		4.25		
	Linkage	Type		Link Parallelogram	
		Location (front or rear of wheels, other)		Front of Wheels	
Drag link (trans. or longit.)		Transverse Strg. Rod Connects Tie Rods, Pitman & Idler Arms			
Tie rods (one or two)		Two			

- (a) 238 with optional V-8 engine.
- (b) 75 with optional V-8 engine.
- (c) 1565-1635 with optional V-8 engine.

(Continued)

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MODEL TEMPEST & LEMANS

STEERING (cont)

Steering Axis	Inclination of camber (deg.)		6°50' @ 0° Camber
	Bearings (type)	Upper	Ball Joint
		Lower	Ball Joint
		Thrust	Thrust Taken by Lower Ball Joint
Wheel alignment (range and preferred)	Caster (deg.)		1°40' + 30' Negative
	Camber (deg.)		0°8' + 30' Positive
	Toe-in (outside tread-inches)		0 to .125 Toe-In Measured 9 Inches Above Floor
Steering spindle & joint type			Reverse Elliott - Ball Joint
Wheel spindle	Diameter	Inner bearing	1.249
		Outer bearing	.749
	Thread size		3/4 - 20
	Bearing type		Taper Roller

SUSPENSION—REAR

Type and description			Independent - Pivoted Control Arm	
Drive and torq. taken through (see page 17)			Control Arms and Torque Tube	
Spring	Type		Coil	
	Material		SAE 9260 Steel	
	Size (length x width, coil design height and I.D.; bar length & dia.)		8.50 x 3.40	
	Spring rate (lb. per in.)		382 (a)	
	Rate at wheel (lb. per in.)		120 (b)	
	Design load (lb. at design height)		1325-1375 (c)	
	Mounting insulation type		Rubber	
	If leaf	No. of leaves		None
		Inserts	Type and size	None
			Material	None
Shackle (comp. or tens.)		None		
Stabilizer	Type (link, linkless, frameless)		None	
	Material		None	
Track bar type			None	

- (a) 415 with optional V-8 engine.
- (b) 130 with optional V-8 engine.
- (c) 1335-1385 with optional V-8 engine.

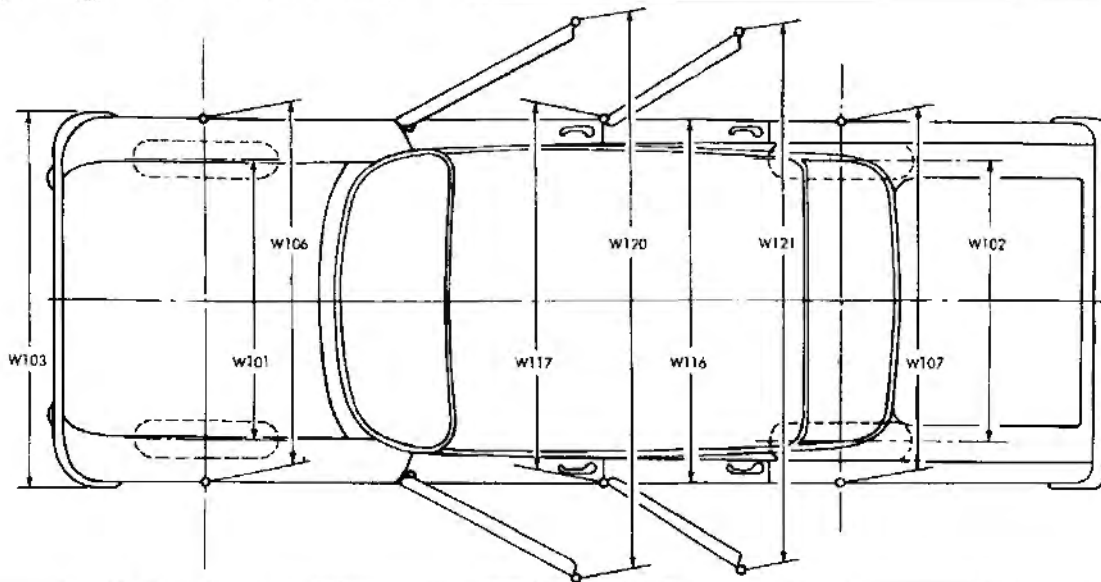
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CAR AND BODY DIMENSIONS—GENERAL

NOTE: Included in the dimension definitions listed on pages 34-36 are those which have been adopted by SAE. These are indicated by a number following the type of dimension, e.g., L3. Additional dimensions have been added by the AMA Specifications Review Committee. These are shown by an additional letter, e.g., H67a. The symbol "a" has been added as a suffix to denote a dimension adopted by the AMA and submitted to the SAE for approval. The dimensions are developed from the following basic points:

1. Body dimensions are for all body styles.
2. All interior dimensions are taken with manikin 15.0 inches outboard of car centerline unless otherwise stated.
3. All interior dimensions are measured with the front seat in the lowest and rearmost position.
4. Unless otherwise specified, all exterior height dimensions are taken with a full design load which consists of 5 passengers, 300 lbs. front, 450 lbs. rear; includes spare wheel, tire and tools, and full complement of gas, oil, water and tires to recommended pressure, etc.
5. The SAE manikin with 90th percentile leg length will be used for recording purposes.
6. The H Point is the pivot center of the manikin's torso and thigh.
7. The Torso Line is a line parallel to the small of manikin's back and extending through the H Point.

EXTERIOR WIDTH DIMENSIONS

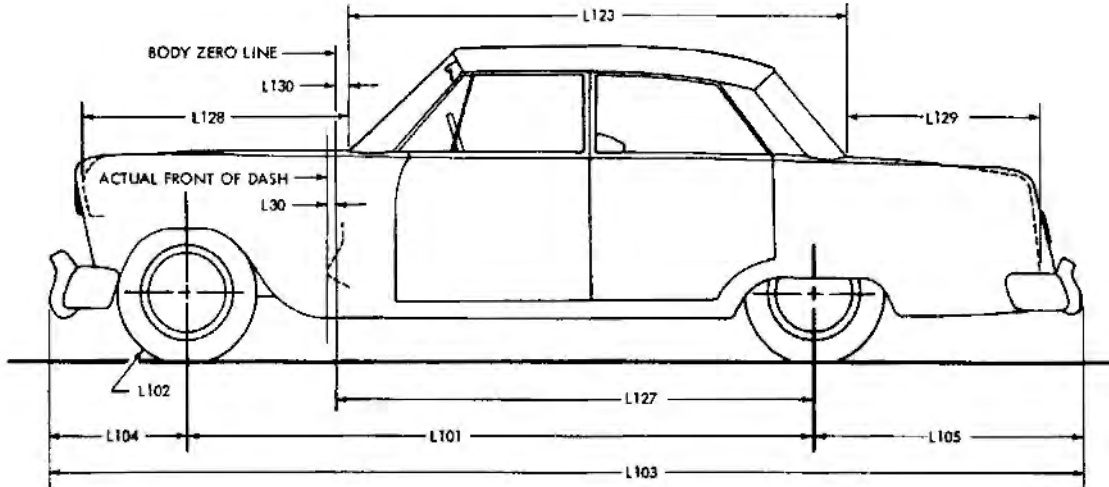


MODEL	Ref. No.	TEMPEST				LEMANS		
		2119	2117	2127	2167	2135	2217	2267
Tread - front	W101				57.3			
Tread - rear	W102				58.0			
Maximum overall car width	W103				74.2			
Maximum overall body width	W116				72.1			
Maximum body width at #2 pillar	W117	68.3	-----			68.3	-----	
Front fender overall width	W106				70.2			
Rear fender overall width	W107				72.1			
Maximum overall car width - front doors open	W120a	135.4		155.4		134.5		155.4
Maximum overall car width - rear doors open	W121a	123.4		-----		123.4		-----

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EXTERIOR LENGTH DIMENSIONS

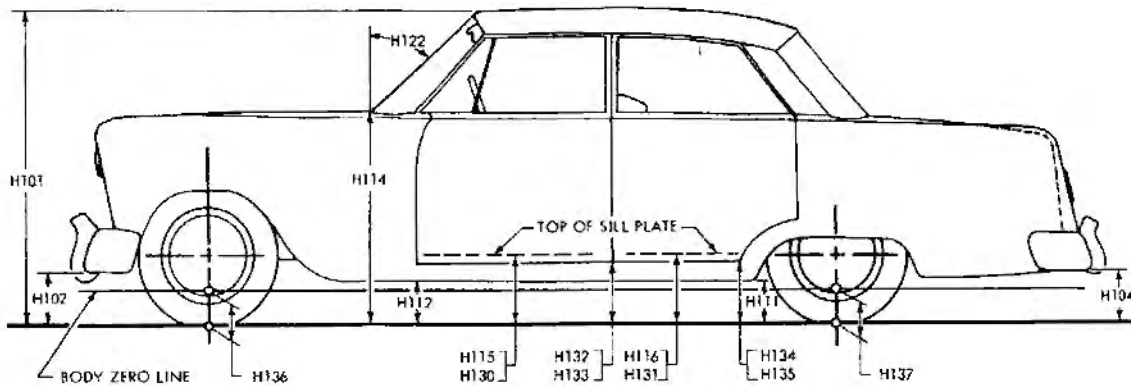


MODEL	Ref. No.	TEMPEST					LEMANS	
		2119	2117	2127	2167	2135	2217	2267
Body zero line to actual front of dash	L30	0.0						
Wheelbase	L101	112.0						
Overhang - front	L104	33.1						
Overhang - rear	L105	49.2						
Overall length	L103	194.3						
Hood length at car centerline	L128a	47.5						
Body upper structure length at car centerline	L123	96.5	92.2	92.3	96.4	124.4	92.0	96.2
Deck length at car centerline	L129a	39.4	43.6	43.5	39.4	—	41.2	37.0
Body zero line to centerline of rear wheels	L127	99.0						
Body zero line to windshield cowl point	L130a	10.0	10.2	10.1	10.2	10.6		
Tire size	L102	6.00 x 15				6.50x15	6.00 x 15	

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EXTERIOR HEIGHT DIMENSIONS

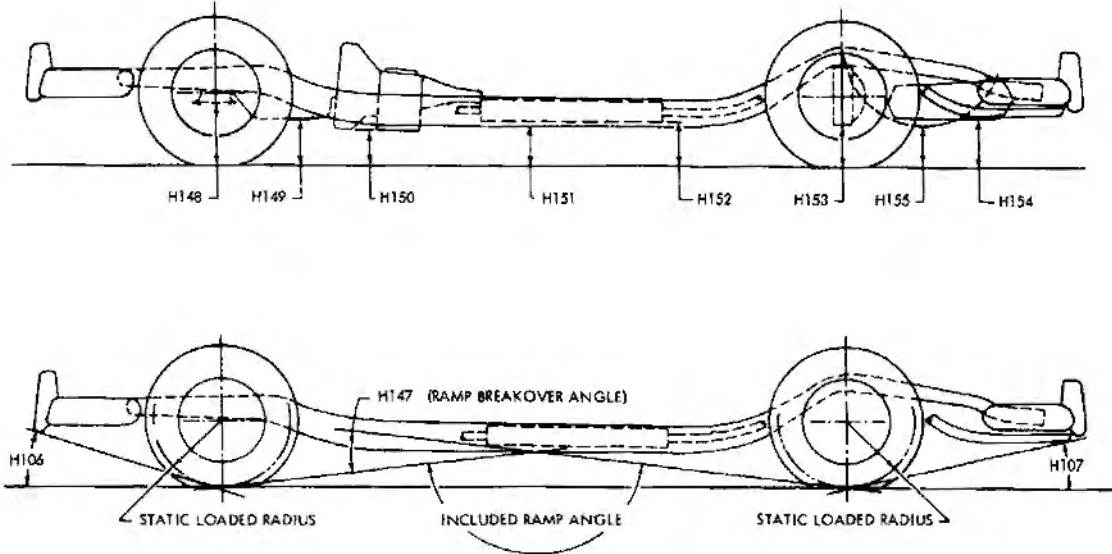


MODEL	Ref. No.	TEMPEST				LEMANS		
		2119	2117	2127	2167	2135	2217	2267
Overall height	H101	54.0	53.6		54.2	55.3	53.6	54.2
Hood at rear to ground	H114		36.6			36.9	36.6	
Rocker panel to ground - front	H112a		9.2			9.5	9.2	
Rocker panel to ground - rear	H111		8.8			9.1	8.8	
Step height - front (design load)	H115				13.4			
Step height - rear (design load)	H116	13.5				13.4		
Step height - front (curb load)	H130				N. A.			
Step height - rear (curb load)	H131				N. A.			
Bottom of door to ground, open - front	H132		12.4			12.7	12.4	
Bottom of door to ground, closed - front	H133	12.1	12.0			12.4	12.0	
Bottom of door to ground, open - rear	H134	11.3				11.7		
Bottom of door to ground, closed - rear	H135	11.8				12.1		
Front bumper to ground	H102		17.8			18.0	17.8	
Rear bumper to ground	H104		18.9			19.3	18.9	
Windshield slope angle	H122	53.8°	53.10°	53.6°	53.8°		53.1°	
Body zero to ground - front	H136a		5.9			6.2	5.9	
Body zero to ground - rear	H137a		5.9			6.2	5.9	

AMA Specifications—Passenger Car

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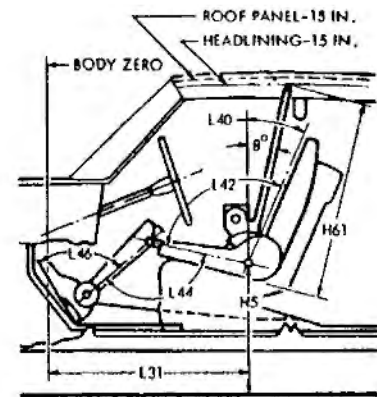
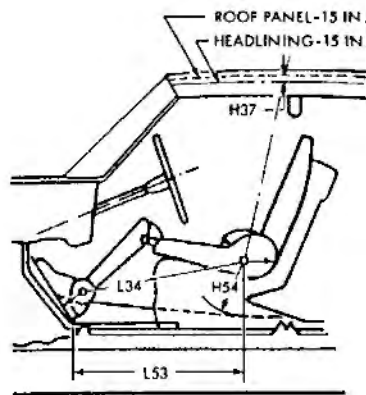
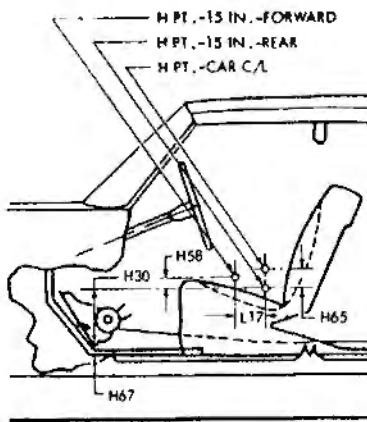
GROUND CLEARANCE DIMENSIONS



MODEL	Ref. No.	TEMPEST				LEMANS			
		2119	2117	2127	2167	2135	2217	2267	
Angle of approach	H106		23.5°			26.0°	23.5°		
Angle of departure	H107		16.5°			17.0°	16.5°		
Ramp breakover angle	H147		15.0°			16.0°	15.0°		
Front suspension to ground	H148		6.0			6.3	6.0		
Oil pan to ground	H149		6.2			6.5	6.2		
Flywheel housing to ground	H150		6.3			6.6	6.3		
Frame structure to ground	H151		7.5			7.8	7.5		
Exhaust system to ground	H152		6.1			6.4	6.1		
Rear axle differential to ground	H153		6.3			6.6	6.3		
Fuel tank to ground	H154		8.1			8.4	8.1		
Spare tire well to ground	H155		None						
Minimum running ground clearance	H156		6.0			6.4	6.0		

MAKE OF CAR PONTIAC MODEL YEAR 1963 DATE ISSUED 9-12-62 REVISED (*)

FRONT COMPARTMENT DIMENSIONS

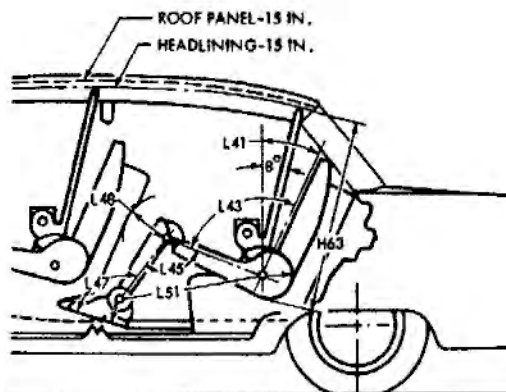
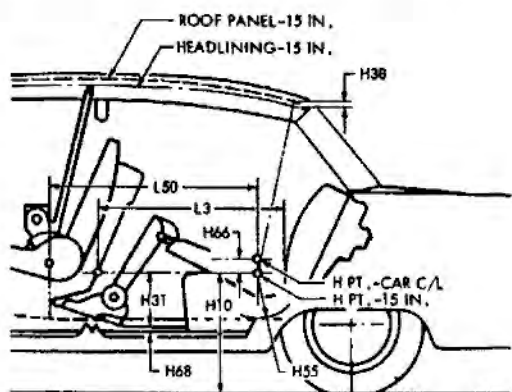


MODEL	Ref. No.	TEMPEST & LEMANS
H Point to body zero line	L31a	
H Point to ground	H5a	
Effective head room	H61a	
Headlining to roof height	H37	
Maximum effective leg room - accelerator	L34a	
H Point to heel point	H30a	
Depressed floor covering thickness	H67a	
Back angle	L40a	
Hip angle	L42a	
Knee angle	L44a	
Foot angle	L46a	
H Point differential, side to center	H65a	
H Point to tunnel	H54a	
H Point to accelerator floor point	L53a	
H Point travel	L17a	
H Point rise	H58a	

NOT AVAILABLE

MAKE OF CAR PONTIAC MODEL YEAR 1963 DATE ISSUED 9-12-62 REVISED (a)

REAR COMPARTMENT DIMENSIONS

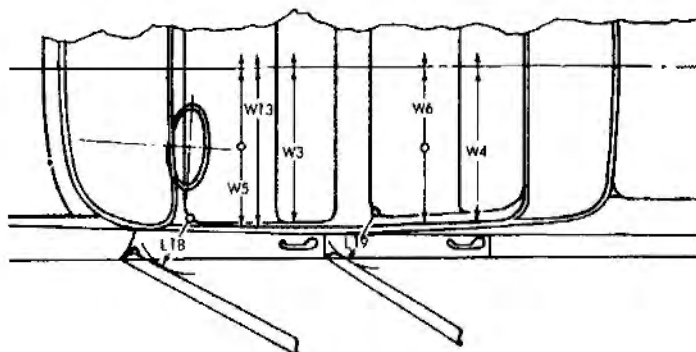
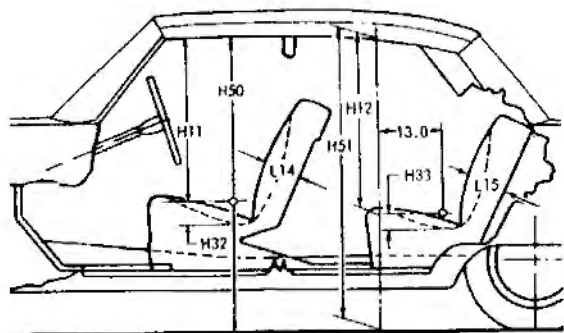


MODEL	Ref. No.	TEMPEST & LEMANS
H Point couple distance	L50a	
H Point to ground	H10a	
Effective head room	H63a	
Headlining to roof height	H38	
Minimum effective leg room	L51a	
H Point to heel point	H31a	
Depressed floor covering thickness	H68a	
Minimum knee room	L48a	
Rear compartment room	L3	
Back angle	L41a	
Hip angle	L43a	
Knee angle	L45a	
Foot angle	L47a	
H Point differential, side to center	H66a	
H Point to tunnel	H55a	

NOT AVAILABLE

MAKE OF CAR PONTIAC MODEL YEAR 1963 DATE ISSUED 9-12-62 REVISED(•) _____

SEAT AND ENTRANCE DIMENSIONS

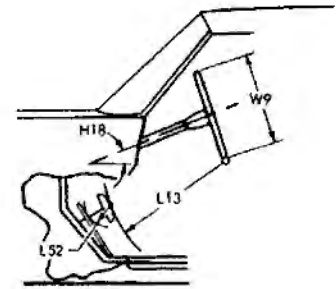
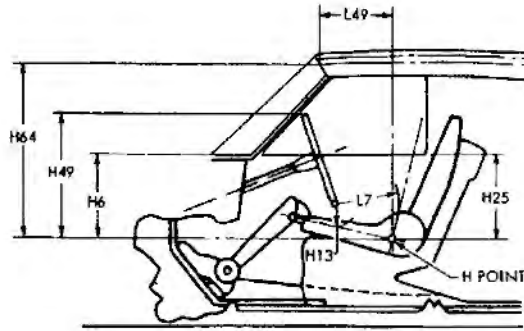


MODEL	Ref. No.	TEMPEST & LEMANS
Shoulder room - front	W3a	
Hip room - front	W5a	
Seat width - front	W16a	
Upper body opening to ground - front	H50a	
Entrance height - front	H11a	
Entrance foot clearance - front	L18	
Seat cushion deflection - front	H32a	
Seat back thickness - front	L14	
Shoulder room - rear	W4a	
Hip room - rear	W6a	
Upper body opening to ground - rear	H51a	
Entrance height - rear	H12a	
Entrance foot clearance - rear	L19	
Seat cushion deflection - rear	H33a	
Seat back thickness - rear	L15	

NOT AVAILABLE

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VISION AND CONTROL DIMENSIONS



MODEL	Ref. No.	
		TEMPEST & LEMANS
H Point to windshield bottom DLO	H6a	
H Point to windshield upper DLO	H64a	
H Point to windshield upper DLO	L49a	
Belt height - front	H25a	
Steering wheel center to centerline of car	W7	
Steering wheel maximum outside diameter	W9	
Steering column angle - horizontal	H18	
H Point to top of steering wheel	H49a	
Steering wheel torso clearance	L7a	
Steering wheel thigh clearance	H13a	
Brake pedal knee clearance	L13	
Brake pedal to accelerator	L52a	
Tumble-home	W122a	

NOT AVAILABLE

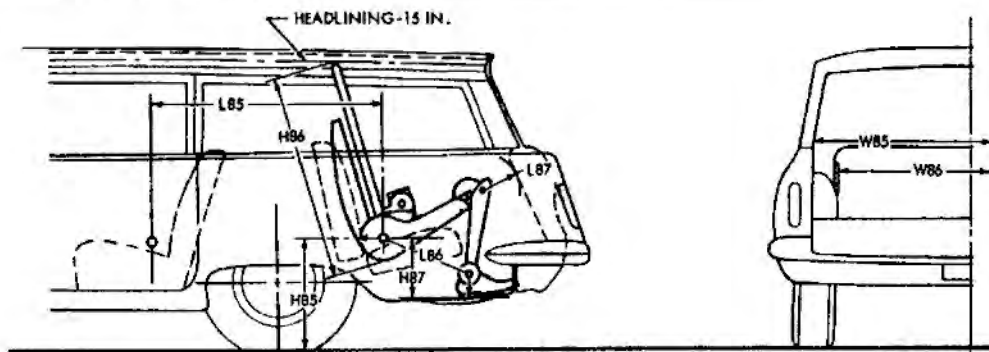
AMA Specifications – Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1963 DATE ISSUED 9-12-62 REVISED(*) _____

LUGGAGE COMPARTMENT

MODEL	Ref. No.	TEMPEST & LEMANS
Usable luggage capacity (See Instructions)		
Liftover height*	H301a	<div style="border: 1px solid black; padding: 5px; transform: rotate(-15deg); display: inline-block;"> NOT AVAILABLE </div>
Position of spare tire storage		
Method of holding lid open		

THIRD SEAT DIMENSIONS



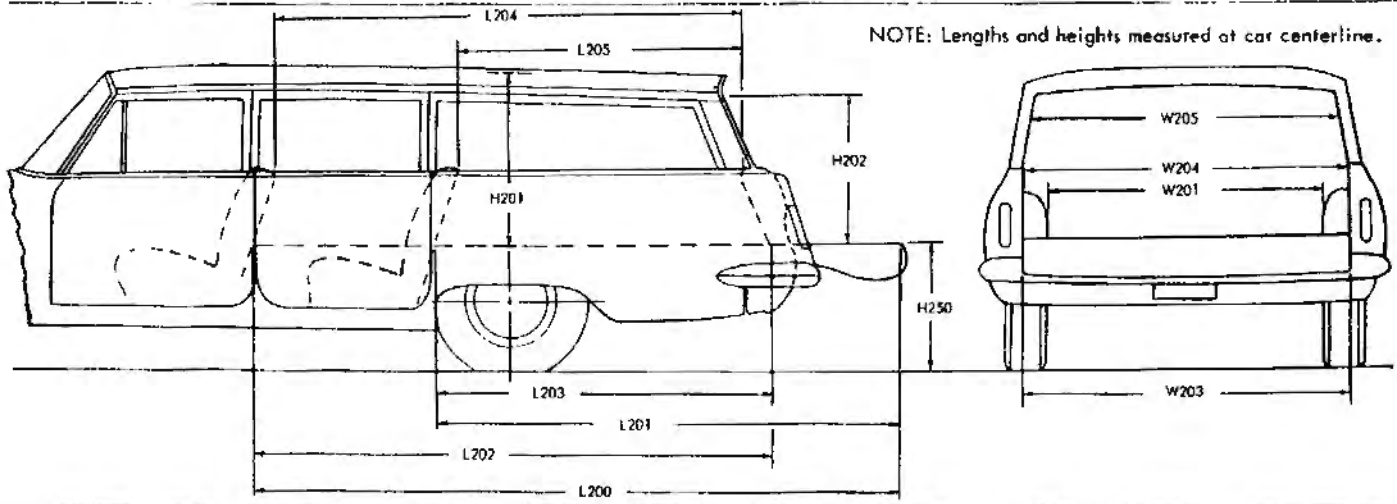
MODEL	Ref. No.	TEMPEST & LEMANS
Seat facing direction		
Shoulder room	W85a	<div style="border: 1px solid black; padding: 5px; transform: rotate(-15deg); display: inline-block;"> NOT AVAILABLE </div>
Hip room	W86a	
H Point couple distance	L85a	
H Point to ground	H85a	
Effective head room	H86a	
Effective leg room	L86a	
H Point to heel point	H87a	
Knee room	L87a	
Back angle	L88a	
Hip angle	L89a	
Knee angle	L90a	
Foot angle	L91a	

* Vertical dimension from luggage compartment lower opening to ground.

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STATION WAGON—CARGO SPACE DIMENSIONS



MODEL	Ref. No.	TEMPEST & LEMANS
Floor length from back of front seat at floor level to end of lowered tail gate or floor	L200	
Floor length from back of second seat at floor level to end of lowered tail gate or floor	L201	
Floor length from back of front seat at floor level to inside of closed tail gate	L202	
Floor length from back of second seat at floor level to inside of closed tail gate	L203	
Minimum horizontal distance from top rear of front seat back to inside of tail gate at belt	L204	
Minimum horizontal distance from top rear of second seat back to inside of tail gate at belt	L205	
Maximum width of cargo space at floor - specify location	W200 _c	
Minimum distance between wheel houses at floor level	W201	
Rear end opening width at floor	W203	
Rear end opening width at belt	W204	
Maximum width of rear opening above belt	W205	
Maximum height - floor covering to headlining at centerline of rear axle	H201	
Maximum height of rear opening - tail and lift gates open	H202	
Platform height from ground to top of tail gate floor covering at rear most edge of tail gate - curb weight	H250	
Rear end closure (e.g., one piece door, hinged left - sliding glass, drop tail gate)		
Cargo volume index (cu. ft.) W4 x L204 x H201 1728		

NOT AVAILABLE

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MAKE OF CAR	PONTIAC	MODEL YEAR	1963	DATE ISSUED	9-12-62	REVISED (e)
			TEMPEST			LEMANS
MODEL	2119	2117	2127	2167	2135	2217 2267

BODY - MISCELLANEOUS INFORMATION

Drs. hinged (front, rear)	Front doors	Front				
	Rear doors	Front	Front			
Type of finish (lacquer, enamel, other)	Acrylic Lacquer					
Hood hinge location (front, rear)	Rear					
Hood counterbalanced (yes, no)	Yes					
Hood release control (internal, external)	External					
Vehicle (Serial) No. Location	Left Front Body Pillar					
Engine No. Location	Front of Cylinder Block (a)					
Theft protection - type	Ignition switch terminals guarded by locked-on conn. body. Ignition key starter control & "in-harness" wiring from switch to starter & coil add to theft protection offered by locked doors.					
Vent window control method (crank, friction pivot)	Front	Friction Pivot				
	Rear	None				
Seat cushion type	Front	Zig Zag Springs with Polyurethane over Cotton Pad				
	Rear	Zig Zag Springs with Cotton over Jute Pad				
Seat back type	Front	Zig Zag Springs with Cotton Pad				
	Rear	Zig Zag Springs with Cotton Pad				
Windshield type (single curved, compound curved, other)	Single Curved					
Rear window type (flat, curved, one piece, three piece)	One Pieced Curved					
Side glass type (curved, flat)	Flat					
Side glass exposed surface area	1322.1	1109.6	1150.7	2206.9	1109.6	1150.7
Windshield glass exposed surface area	1255.7					
Backlight glass exposed surface area	1081.0	751.7	953.3	803.1	727.8	751.7 803.1
Total glass exposed surface area	3658.8	3117.0	3318.6	3209.5	4190.4	3117.0 3209.5

DIMENSION DEFINITIONS

- W3a SHOULDER ROOM - FRONT. The minimum lateral dimension between the door garnish moldings or nearest interference. Measured at H Point station.
- W4a SHOULDER ROOM - REAR. Measured in the same manner as W3a.
- W5a HIP ROOM - FRONT. The lateral dimension through H Point to trimmed surfaces.
- W6a HIP ROOM - REAR. Measured in the same manner as W5a.
- W7 STEERING WHEEL CENTER TO CENTERLINE OF CAR. Measured horizontally from steering wheel center to centerline of car. The point at steering wheel center is located in the surface plane of wheel.
- W9 STEERING WHEEL MAXIMUM OUTSIDE DIAMETER. Define if other than round.
- W16a SEAT WIDTH - FRONT. The maximum trimmed width of front seat cushion.
- W85a SHOULDER ROOM - THIRD SEAT. Measured in the same manner as W3a.
- W86a HIP ROOM - THIRD SEAT. Measured in the same manner as W5a.
- W101 TREAD - FRONT. Measured at centerline of tires, with nominal camber, at ground.
- W102 TREAD - REAR. Measured at centerline of tires at ground.
- W103 MAXIMUM OVERALL CAR WIDTH. Include bumpers, moldings, or sheet metal protrusions.
- W106 FRONT FENDER OVERALL WIDTH. Measured at centerline of front wheels, excluding moldings.
- W107 REAR FENDER OVERALL WIDTH. Measured at centerline of rear wheels, excluding moldings.
- W116 MAXIMUM OVERALL BODY WIDTH. Measured across body, excluding hardware and applied moldings, but including fenders when integral with body.
- W117 MAXIMUM BODY WIDTH AT #2 PILLAR. Measured across body at #2 pillar, excluding hardware and applied moldings.
- W120a MAXIMUM OVERALL CAR WIDTH, FRONT DOORS OPEN. Measured with front doors in maximum hold-open position.
- W121a MAXIMUM OVERALL CAR WIDTH, REAR DOORS OPEN. Measured in same manner as W120a.
- W122a TUMBLE-HOME. The angle from vertical to the front door glass outer surface or the chord of a curved door glass, measured at the front H Point station.
- L3 REAR COMPARTMENT ROOM. The horizontal dimension from the back of front seat to front of rear seat back at a height tangent to the top of rear seat cushion.
- L7a STEERING WHEEL TORSO CLEARANCE. The minimum distance from the back edge of steering wheel, in straight-ahead position, to the Torso Line.
- L13 BRAKE PEDAL KNEE CLEARANCE. The minimum dimension from the lower edge of the steering wheel to the brake pedal face centerline.
- L14 SEAT BACK THICKNESS - FRONT. The maximum thickness of the seat back, excluding bolsters.
- L15 SEAT BACK THICKNESS - REAR. Measured in the same manner as L14.
- L17a H POINT TRAVEL. The horizontal dimension between the H Point in the most forward and rearward seat positions.
- L18 ENTRANCE FOOT CLEARANCE - FRONT. The minimum horizontal dimension between seat and normal line of door or pillar at a height between the sill plate bead and 4.0 inches above the bead. Door should be in the maximum hold-open position.
- L19 ENTRANCE FOOT CLEARANCE - REAR. Measured in the same manner as L18 on four-door models. On two-door styles, the minimum dimension between rear corner of front seat, with front seat back tilted forward, and trimmed lock pillar, built-in quarter armrest panel, or rear seat cushion at a height between the sill plate bead and 4.0 inches above the bead.
- L30 BODY ZERO LINE TO ACTUAL FRONT OF DASH. If actual front of dash is to the rear of Body Zero Line, it is identified by a minus (-) sign.
- L31a H POINT TO BODY ZERO LINE - FRONT. Horizontal dimension.
- L34a MAXIMUM EFFECTIVE LEG ROOM - ACCELERATOR. Measured along a diagonal line from ankle pivot center to H Point plus a constant of 10.0 inches. Measured with the right foot on accelerator pedal.
- L40a BACK ANGLE - FRONT. The angle between a vertical line through the H Point and the Torso Line.
- L41a BACK ANGLE - REAR. Measured in the same manner as L40a.
- L42a HIP ANGLE - FRONT. The angle between Torso Line and a line extending from knee pivot center to H Point.
- L43a HIP ANGLE - REAR. Measured in the same manner as L42a.
- L44a KNEE ANGLE - FRONT. The angle between a line from H Point to knee pivot center and a line from the knee pivot center to the ankle pivot center.
- L45a KNEE ANGLE - REAR. Measured in the same manner as L44a.
- L46a FOOT ANGLE - FRONT. The angle between a line extended from the knee pivot center through the ankle pivot center and a line tangent to the sole and heel of man/kin bare foot.
- L47a FOOT ANGLE - REAR. Measured in the same manner as L46a.
- L48a MINIMUM KNEE ROOM - REAR. The minimum dimension from the knee pivot center to the back of front seat back.
- L49a H POINT TO WINDSHIELD UPPER DLO. The horizontal dimension from H Point to the point of tangency of horizontal line of vision (described in dimension H64a) with body upper structure.

DIMENSION DEFINITIONS (cont.)

- L50a H POINT COUPLE DISTANCE.** The horizontal dimension from the front seat H Point to the rear seat H Point.
- L51a MINIMUM EFFECTIVE LEG ROOM – REAR.** Measured along a diagonal line from ankle pivot center to H Point plus a constant of 10.0 inches. Measured with the foot positioned to nearest interference between seat structure and toe, instep or lower leg.
- L52a BRAKE PEDAL TO ACCELERATOR.** The minimum dimension from center of brake pedal face to accelerator. Measured in the side view.
- L53a H POINT TO ACCELERATOR FLOOR POINT.** The horizontal dimension from intersection of accelerator and depressed floor covering to the H Point.
- L85a H POINT COUPLE DISTANCE – THIRD SEAT.** The horizontal dimension from the second seat H Point to the third seat H Point.
- L86a EFFECTIVE LEG ROOM – THIRD SEAT.** Measured in the same manner as L51a. With rear-facing third seat, foot is positioned in foot well or to nearest interference with rear end or rear closure.
- L87a KNEE ROOM – THIRD SEAT.** Measured in the same manner as L48a. With rear-facing third seat, dimension is measured to rear closure.
- L88a BACK ANGLE – THIRD SEAT.** Measured in the same manner as L40a.
- L89a HIP ANGLE – THIRD SEAT.** Measured in the same manner as L42a.
- L90a KNEE ANGLE – THIRD SEAT.** Measured in the same manner as L44a.
- L91a FOOT ANGLE – THIRD SEAT.** Measured in the same manner as L46a.
- L101 WHEELBASE.**
- L102 TIRE SIZE.**
- L103 OVERALL LENGTH.** Include bumper guards if standard equipment.
- L104 OVERHANG – FRONT.** Measured from C/L of front wheels to front of car, including bumper guards if standard equipment.
- L105 OVERHANG – REAR.** Measured from C/L of rear wheels to rear of car, including bumper guards if standard equipment.
- L123 BODY UPPER STRUCTURE LENGTH AT CAR CENTERLINE.** The horizontal dimension from the theoretical intersection of extended windshield glass plane and normal cowl surface to the theoretical intersection of extended back window glass plane and normal deck surface; or in the case of a Fastback roof or Station Wagon, to back glass lower reveal molding, or rubber when molding is not used.
- L127 BODY ZERO LINE TO CENTERLINE OF REAR WHEELS.** A horizontal dimension.
- L128a HOOD LENGTH AT CAR CENTERLINE.** The horizontal dimension from the foremost point on sheet metal hood surface, excluding series identification or ornamentation, to the theoretical intersection of extended windshield glass plane and normal cowl surface.
- L129a DECK LENGTH AT CAR CENTERLINE.** The horizontal dimension from the rearmost point of the body sheet metal (visible above bumper), excluding series identification or ornamentation, to the theoretical intersection of extended back window glass plane and normal deck surface.
- L130a BODY ZERO LINE TO WINDSHIELD COWL POINT.** The horizontal dimension from body zero line to the theoretical intersection of extended windshield glass plane and normal cowl surface.
- H5a H POINT TO GROUND – FRONT.** Vertical dimension.
- H6a H POINT TO WINDSHIELD BOTTOM DLO.** Vertical dimension.
- H10a H POINT TO GROUND – REAR.** Vertical dimension.
- H11a ENTRANCE HEIGHT – FRONT.** The vertical dimension from H Point to upper trimmed body opening.
- H12a ENTRANCE HEIGHT – REAR.** The vertical dimension from H Point to the upper trimmed body opening at a section 13.0 inches forward of the H Point.
- H13a STEERING WHEEL THIGH CLEARANCE.** The minimum dimension from the bottom of steering wheel, in straight-ahead position, to centerline of thigh.
- H18 STEERING COLUMN ANGLE – HORIZONTAL.** The angle the centerline of steering column makes with the horizontal.
- H25a BELT HEIGHT – FRONT.** The vertical dimension from H Point to bottom of side window DLO.
- H30a H POINT TO HEEL POINT – FRONT.** The vertical dimension from the H Point to the manikin accelerator heel point on the depressed floor covering.
- H31a H POINT TO HEEL POINT – REAR.** The vertical dimension from the H Point to the manikin heel point on the depressed floor covering.
- H32a SEAT CUSHION DEFLECTION – FRONT.** The vertical dimension from a point on the undepressed seat cushion to the depressed seat cushion. Measured at the H Point station.
- H33a SEAT CUSHION DEFLECTION – REAR.** Measured in the same manner as H32a.
- H37 HEADLINING TO ROOF HEIGHT – FRONT.** The dimension from the intersection of the headlining and the extended effective head room line to the roof panel. Measured perpendicularly to the roof panel.
- H38 HEADLINING TO ROOF HEIGHT – REAR.** Measured in the same manner as H37.
- H49a H POINT TO TOP OF STEERING WHEEL.** The vertical dimension from the H Point to top of steering wheel, in straight-ahead position.
- H50a UPPER BODY OPENING TO GROUND – FRONT.** The vertical dimension from a point on the trimmed body opening to the ground. Measured at the H Point station.

DIMENSION DEFINITIONS (cont.)

- H51a UPPER BODY OPENING TO GROUND - REAR. The vertical dimension from a point on the trimmed body opening to the ground. Measured 13.0 inches forward of the H Point.
- H54a H POINT TO TUNNEL - FRONT. The minimum dimension from the H Point, at car centerline, to top of tunnel.
- H55a H POINT TO TUNNEL - REAR. Measured in the same manner as H54a.
- H58a H POINT RISE. The vertical dimension between the H Point in the most forward and rearward seat positions.
- H61a EFFECTIVE HEAD ROOM - FRONT. The dimension from H Point to the headlining, plus a constant of 4.0 inches. Measured along a line 8° to rear of vertical.
- H63a EFFECTIVE HEAD ROOM - REAR. Measured in the same manner as H61a.
- H64a H POINT TO WINDSHIELD UPPER DLO. Vertical dimension from H Point to highest horizontal line of vision through windshield at 15 inch section.
- H65a H POINT DIFFERENTIAL, SIDE TO CENTER - FRONT. The vertical dimension from side occupant H Point to center occupant H Point.
- H66a H POINT DIFFERENTIAL, SIDE TO CENTER - REAR. Measured in the same manner as H65a.
- H67a DEPRESSED FLOOR COVERING THICKNESS - FRONT. The vertical dimension from manikin accelerator heel point normally to underbody sheet metal immediately below heel point.
- H68a DEPRESSED FLOOR COVERING THICKNESS - REAR. Measured same as H67a.
- H85a H POINT TO GROUND - THIRD SEAT. Vertical dimension.
- H86a EFFECTIVE HEAD ROOM - THIRD SEAT. Measured in the same manner as H61a.
- H87a H POINT TO HEEL POINT - THIRD SEAT. Measured in the same manner as H31a.
- H101 OVERALL HEIGHT. Measured with full design load.
- H102 FRONT BUMPER TO GROUND. Minimum dimension.
- H104 REAR BUMPER TO GROUND. Minimum dimension.
- H106 ANGLE OF APPROACH. Minimum angle between ground and a line tangent to arc of front tire static loaded radius and touching the limiting point of interference on front bumper, bumper guard, or gravel deflector.
- H107 ANGLE OF DEPARTURE. Minimum angle between ground and a line tangent to arc of rear tire static loaded radius and touching the limiting point of interference on rear bumper, bumper guard, gravel deflector, tail pipe, fender or other interfering structure.
- H111 ROCKER PANEL TO GROUND - REAR. The vertical dimension from ground to bottom of rocker panel, excluding flanges. Measured at front of rear wheel opening.
- H112a ROCKER PANEL TO GROUND - FRONT. The vertical dimension from ground to bottom of rocker panel, excluding flanges. Measured at foremost point of rocker panel.
- H114 HOOD AT REAR TO GROUND. Measured from hood opening line on shroud, exclusive of moldings.
- H115 STEP HEIGHT - FRONT (DESIGN LOAD). The vertical dimension from top of sill plate bead, at C/L of front door sill plate, to ground.
- H116 STEP HEIGHT - REAR (DESIGN LOAD). Measured in same manner as dimension H115.
- H122 WINDSHIELD SLOPE ANGLE. The angle between a vertical line and the windshield surface at car centerline. On compound-curved windshields the chord of the arc is used and limited to that section of the windshield comprehended by an 18-inch chord.
- H130 STEP HEIGHT - FRONT (CURB LOAD). The vertical dimension from top of sill plate, at C/L of front door sill plate, to ground.
- H131 STEP HEIGHT - REAR (CURB LOAD). Measured in same manner as H130.
- H132 BOTTOM OF DOOR TO GROUND, OPEN - FRONT. Measured from bottom outside corner of door with door in maximum hold-open position.
- H133 BOTTOM OF DOOR TO GROUND, CLOSED - FRONT. Same point on door as H132 dimension, with door closed.
- H134 BOTTOM OF DOOR TO GROUND, OPEN - REAR. Measured in same manner as H132.
- H135 BOTTOM OF DOOR TO GROUND, CLOSED - REAR. Measured in same manner as H133.
- H136a BODY ZERO TO GROUND - FRONT. A vertical dimension measured at front wheel centerline.
- H137a BODY ZERO TO GROUND - REAR. A vertical dimension measured at rear wheel centerline.
- H147 RAMP BREAKOVER ANGLE. Supplement of included ramp angle (180° minus included ramp angle) over which car can pass without interference; measured with car sitting on a level surface, using lines tangent to arcs of front and rear static loaded radii and intersecting at point on underside of car which defines the smallest angle.
- H148 FRONT SUSPENSION TO GROUND. Minimum clearance measured from lower control arm inner shaft or lowest point on the car centerline.
- H149 OIL PAN TO GROUND. Minimum clearance measured from sheet metal or drain plug.
- H150 FLYWHEEL/CONVERTER HOUSING AND TRANSMISSION ASSEMBLY TO GROUND. Minimum clearance.
- H151 FRAME STRUCTURE TO GROUND. Minimum clearance measured approximately midway between front and rear axles. In this measurement, cross bars and X-members shall be considered part of frame.
- H152 EXHAUST SYSTEM TO GROUND. Minimum clearance. Specify location.
- H153 REAR AXLE DIFFERENTIAL SYSTEM TO GROUND. Minimum clearance.
- H154 FUEL TANK TO GROUND. Minimum clearance measured from sheet metal or drain plug, but excluding supports or straps.
- H155 SPARE TIRE WELL TO GROUND. Minimum clearance.
- H156 MINIMUM RUNNING GROUND CLEARANCE. Location of measurement on the car is to be clearly recorded.

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