

## AMA Specifications – Passenger Car

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<b>MANUFACTURER</b>	Pontiac Motor Division General Motors Corporation	<b>CAR NAME</b>	PONTIAC
<b>MAILING ADDRESS</b>	Pontiac 11, Michigan	<b>MODEL YEAR</b>	1963
		<b>ISSUED:</b>	9-12-62
		<b>REVISED (•)</b>	

**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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<b>BODY—TYPES AND STYLE NAMES—</b>		Body type, number of passenger & style names; use manufacturer's code for series & body style.			
Body Type	No. of Pass.	Model			
		Catalina	Star Chief	Bonneville	Grand Prix
4-Door Sedan	6	2369	2669		
2-Door Sedan	6	2311			
4-Door Hardtop Sedan	6	2339	2639	2839	
2-Door Hardtop Coupe	6	2347		2847	2957**
2-Door Convertible Coupe	5	2367		2867*	
4-Dr. Station Wagon - 2-Seat	6	2335		2835	
4-Dr. Station Wagon - 3-Seat	9	2345			

\* Passenger capacity is reduced to 4 with optional bucket front seats.

\*\* Passenger capacity is 5 - bucket front seats standard equipment.

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**MODEL** CATALINA | STAR CHIEF | BONNEVILLE | GRAND PRIX

## ENGINE—GENERAL

Type, no. cyls., valve arr.		90°V, 8, In-Head		
Bore and stroke (nominal)		4.06 x 3.75		
Piston displacement, c.u. in.		389		
Bore spacing (C/L to C/L)		4.62		
No. system (front to rear)	L. Bank	1-3-5-7		
	R. Bank	2-4-6-8		
Firing order		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	One		
Engine installation angle		5°		
Taxable $\frac{\text{Dia.}^2 \times \text{No. Cyl.}}{2.5}$ horsepower		52.8		
Published max. bhp* @ eng. RPM		215 @ 3600 (a)	235 @ 3600 (a)	303 @ 4600 (a)
Published max. torque* (lb. ft. @ RPM)		394 @ 2000 (a)	407 @ 2000 (a)	430 @ 2800 (a)
Recommended fuel regular - premium		Regular		Premium
Idle speed (spec. neutral or drive)	Manual	480-500 RPM (Neutral) (b)		
	Automatic	480-500 RPM (Drive) (b)		

## ENGINE—PISTONS

Material		Aluminum Alloy		
Description and finish		Cam Ground Slipper Type with Steel Struts - Piston Tin Plated		
Weight (piston only) oz.		23.875 to 24.062		
Clearance (limits)	Top land	.024 - .033		
	Skirt	Top	.0007 - .0021*	
		Bottom	.0000 - .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.

- (a) See Page 3 for Optional Engine Information.
- (b) Air Conditioned Car adjusted to 540-560 RPM with Air Conditioning Unit turned off.

\* Pistons selected for .0007 to .0013 clearance at 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		
<b>STANDARD ENGINES</b>							
23 & 26	389	2-Bbl.	8.6:1	215 @ 3600	394 @ 2000	Synchromesh (a) (g)	3.23:1, 3.08:1, 3.42:1 (h)
28	389	4-Bbl.	8.6:1	235 @ 3600	407 @ 2000	H. D. Synchromesh (c)	3.23:1, 3.08:1, 3.42:1
29	389	4-Bbl.	10.25:1	303 @ 4600	430 @ 2800	H. D. Synchromesh (b)(g)	3.42:1, 3.64:1
<b>OPTIONAL ENGINES</b>							
<b>Economy Hydramatic</b>							
23 & 29	389	2-Bbl.	8.6:1	230 @	386 @	Hydramatic 375	2.56:1*
26 & 28	389	2-Bbl.	8.6:1	4000	2000	Hydramatic 375	2.56:1* (f)
<b>Standard Hydramatic</b>							
23	389	2-Bbl.	10.25:1	267 @ 4200	410 @ 2400	Hydramatic 375	2.69:1, 2.56:1, 3.08:1*
26	389	2-Bbl.	10.25:1	283 @ 4400	418 @ 2800	Hydramatic 315	2.69:1, 2.56:1, 3.08:1*
28	389	4-Bbl.	10.25:1	303 @ 4600	430 @ 2800	Hydramatic 315	2.69:1, 2.56:1, 3.08:1* (e)
29	389	4-Bbl.	10.25:1	303 @ 4600	430 @ 2800	Hydramatic 375	3.23:1, 3.42:1
<b>4-Barrel Carburetor Options</b>							
23 & 26	389	4-Bbl.	8.6:1	235 @ 3600	407 @ 2000	Synchromesh (g) (d)	3.23:1, 3.08:1, 3.42:1 (h)
23, 26 & 28	389	4-Bbl.	10.25:1	303 @	430 @	4-Speed Synchromesh (b)	3.42:1, 3.64:1
23	389	4-Bbl.	10.25:1	4600	2800	Hydramatic 375	2.69:1, 2.56:1, 3.08:1*
26	389	4-Bbl.	10.25:1			Hydramatic 315	2.69:1, 2.56:1, 3.08:1*
<b>389 TRIPLE 2-BARREL CARBURETOR OPTION</b>							
23, 26, 28 & 29	389	3-2 Bbl.	10.25:1	313 @	430 @	H. D. Synchromesh (b)(g)	3.42:1 (j)
23	389	3-2 Bbl.	10.25:1	4600	3200	Hydramatic 375	3.08:1
26 & 28	389	3-2 Bbl.	10.25:1			Hydramatic 315	3.08:1
29	389	3-2 Bbl.	10.25:1			Hydramatic 375	3.23:1, 3.42:1
<b>421 HO 4-BARREL CARBURETOR ENGINE OPTION</b>							
All Models	421	4-Bbl.	10.75:1	353 @	455 @	H. D. Synchromesh (b)(g)	3.42:1
23 & 29	421	4-Bbl.	10.75:1	5000	3400	Hydramatic 375	3.42:1
26 & 28	421	4-Bbl.	10.75:1			Hydramatic 315	3.42:1
<b>421 HO 3-2 BARREL CARBURETOR ENGINE OPTION</b>							
All Models	421	3-2 Bbl.	10.75:1	370 @	460 @	H. D. Synchromesh (b)(g)	3.42:1
23 & 29	421	3-2 Bbl.	10.75:1	5200	3800	Hydramatic 375	3.42:1
26 & 28	421	3-2 Bbl.	10.75:1			Hydramatic 315	3.42:1

- (a) Heavy duty 3-speed synchromesh trans. with heavy duty clutch optional on 23 series. Heavy duty 3-speed synchromesh trans. is standard on 26 series - heavy duty clutch is separate option on 26 series.
- (b) Heavy duty clutch is standard equipment.
- (c) Except 2835 model on which H. D. 3-speed trans. is optional.
- (d) Heavy duty 3-speed synchromesh trans. optional on 23 series - std. on 26 series.
- (e) Except 2835 and 2867 models on which ratios are 3.08:1, 2.69:1 & 3.23:1.
- (f) Except 2835 and 2867 models which use 2.69:1
- (g) 4-speed synchromesh trans. optional.
- (h) Except with 4-speed synchromesh option on which ratios are 3.42:1 std. & 3.64:1 performance.
- (j) Performance ratio (3.64:1) optional on 29 series.
- \* If air conditioned - mandatory minimum ratio is 2.69:1.

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## ENGINE—RINGS

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 expander) Rails - Steel with Chrome Plated 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	In rod or piston	None
		Material	None
Clearance	In piston	.0003 - .0005	
	In rod	Press Fit	
Direction & amount offset in piston	To right - .063		

## ENGINE—CONNECTING RODS

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

(a) Optional 421 cu. in. engine uses forged 1139 or 1335 modified steel connecting rods weighing 30.4 oz.



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## ENGINE—CRANKSHAFT

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 100-A* Steel Backed - Removable, Precision		
	Clearance	.0005-.0020		
	Journal dia. and bearing overall length	No. 1	3.00 x .94 (a)	
		No. 2	3.00 x .94 (a)	
		No. 3	3.00 x .94 (a)	
		No. 4	3.00 x 1.13 (b)	
		No. 5	3.00 x 1.59 (a)	
		No. 6	None	
No. 7		None		
Dir. & amt. cyl. offset		None		
Crankpin journal diameter		2.25		

## ENGINE—CAMSHAFT

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

## 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	

\* M-400 in lower half of No. 4.

(Continued)

(a) 3.25 dia. on optional 421 cu. in. engine

(b) 3.25 x 1.19 on optional 421 cu. in. engine.

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MODEL Std. 23, 26 & 28 SM 23 HM or Economy HM 26, 28 & 29 HM, 29 SM & All 4-Sp. SM Opt. with Prem. Fuel Engine. 23 & 26 HM with 4-Bbl. Opt. All 3x2 Bbl. Carb. Opt. 421 H. O. Engine Opt.

### ENGINE—VALVE SYSTEM (cont.)

Timing	Intake	Opens ( <sup>o</sup> BTC)	14	22	30	33	
		Closes ( <sup>o</sup> ABC)	58	67	63	79	
		Duration - deg.	252	269	273	292	
	Exhaust	Opens ( <sup>o</sup> BBC)	48	63	77	90	
		Closes ( <sup>o</sup> ATC)	24	27	25	32	
		Duration - deg.	252	270	282	302	
Valve opening overlap		38	49	55	65		
Intake	Material		Manganese Moly with Aluminum Treatment on Seat				
	Overall length		4.74	4.86	4.86	4.91	
	Actual overall head dia.		1.88			1.92	
	Angle of seat & face		30 <sup>o</sup> Seat - 29 <sup>o</sup> Face				
	Seat insert material		Not Used				
	Stem diameter		.34				
	Stem to guide clearance		.0021 - .0038				
	Lift (@ zero lash)		.33	.37	.40	.40	
	Outer spring press. and length	Valve closed (lb. @ in.)	80 @ 1.53	58 @ 1.53	60 @ 1.52	62 @ 1.52	
		Valve open (lb. @ in.)	171 @ 1.20	107 @ 1.16	114 @ 1.12	131 @ 1.12	
	Inner spring press. and length	Valve closed (lb. @ in.)	Not Used	26 @ 1.48	26 @ 1.48	32 @ 1.48	
		Valve open (lb. @ in.)	Not Used	61 @ 1.11	64 @ 1.08	96 @ 1.08	
	Exhaust	Material		T-XCR*			
		Overall length		4.72	4.85	4.85	4.89
Actual overall head dia.		1.60					
Angle of seat & face		45 <sup>o</sup> Seat - 44 <sup>o</sup> Face					
Seat insert material		Not Used					
Stem diameter		.34					
Stem to guide clearance		.0026 - .0043					
Lift (@ zero lash)		.33	.37	.40	.40		
Outer spring press. and length		Valve closed (lb. @ in.)	80 @ 1.53	58 @ 1.53	60 @ 1.52	62 @ 1.52	
		Valve open (lb. @ in.)	171 @ 1.20	107 @ 1.16	114 @ 1.12	131 @ 1.12	
Inner spring press. and length		Valve closed (lb. @ in.)	Not Used	26 @ 1.48	26 @ 1.48	32 @ 1.48	
		Valve open (lb. @ in.)	Not Used	61 @ 1.11	64 @ 1.08	96 @ 1.08	

### 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

(Continued)

\* Aluminum treatment on seat.

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**MODEL** CATALINA | STAR CHIEF | BONNEVILLE | GRAND PRIX

## ENGINE—LUBRICATION SYSTEM (cont.)

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)	Anticipated Lowest Temp.	Single Viscosity SAE Number	Acceptable Alternate
	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	Dual
Muffler No. & type (reverse flow, straight thru, separate resonator)	One-Reverse Flow	2-Reverse Flow
Exhaust pipe dia. (O.D. wall thickness)	Branch 2.00 x .075	Not Used
	Main 2.25 x .075	2.25 x .075
Tail pipe diameter (O.D. & wall thickness)	2.00 x .055 (Aluminized)	

## ENGINE—CRANKCASE VENTILATION SYSTEM

Type (ventilates to atmos., induction system, other)	Standard	Induction System
	Optional	None
Control unit	Make and model	AC Type CV273
	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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## ENGINE—FUEL SYSTEM

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

Induction type: Carburetor, fuel injection, supercharger.		Carburetor
Fuel Tank	Capacity (gals.)	25 (a)
	Filler location	Left Rear Fender
Fuel Pump	Type (elec. or mech.)	Mechanical
	Locations	Left Front of Engine
	Pressure range	5.25 - 6.50
Vacuum booster (std., optional, none)		None
Fuel Filter	Type	Plastic Fabric in Tank & Disposable Pleated Paper Above Pump
	Locations	(See Above)
Carburetor	Choke type	Automatic - Integral
	Intake manifold heat control (exhaust or water)	Exhaust
	Air clnr. type	Oiled Metallic Element Oiled Plastic Foam Element
	Standard	
	Optional	

## CARBURETOR SUPPLEMENTARY INFORMATION

Model Usage	Engine Displ.	Transmission	Carburetors		No. Used and Type (b)	Barrel Size
			Make	Model		
23 & 26	389	Synchromesh	Rochester	7023066	One	1.438
All with Economy Opt.	389	Hydramatic	Rochester	7023063	One	1.438
23 & 26	389	Hydramatic	Rochester	7023060	One	1.688
28 & 29 Std., 23 & 26 Opt.	389	Synchromesh	Carter	AFB 3479S	One	(c)
29 Std. & 23 Opt.	389	Hydramatic	Carter	AFB 3326 SA	One	(c)
28 Std. & 26 Opt.	389	Hydramatic	Carter	AFB 3300 SA	One	(c)
All 3-2 Bbl. Carb. Opt.	389	SM & HM	Rochester	7013063	1-Front	1.688
All 3-2 Bbl. Carb. Opt.	389	Synchromesh	Rochester	7023075	1-Center	1.438
23 & 29 3-2 Bbl. Carb. Opt.	389	Hydramatic	Rochester	7023073	1-Center	1.438
23 & 28 3-2 Bbl. Carb. Opt.	389	Hydramatic	Rochester	7023077	1-Center	1.438
All 3-2 Bbl. Carb. Opt.	389	SM & HM	Rochester	7013065	1-Rear	1.688
All HO 3-2 Bbl. Carb.	421	SM & HM	Rochester	7023078	1-Front	1.688
All HO 3-2 Bbl. Carb.	421	Synchromesh	Rochester	7023161	1-Center	1.438
All HO 3-2 Bbl. Carb.	421	Hydramatic	Rochester	7023162	1-Center	1.438
All HO 3-2 Bbl. Carb.	421	SM & HM	Rochester	7023079	1-Rear	1.688
All HO 4-Bbl. Carb.	421	Synchromesh	Carter	AFB 3574 S	One	(c)
All HO 4-Bbl. Carb.	421	Hydramatic	Carter	AFB 3545 S	One	(c)

- (a) 19 on station wagons
- (b) All downdraft type
- (c) 1.438 primary, 1.688 secondary

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**MODEL** CATALINA STAR CHIEF BONNEVILLE GRAND PRIX

## ENGINE—COOLING SYSTEM

Type system (pressure, pressure vented, atmospheric, other)		Pressure Vented			
Radiator cap relief valve pressure		14 to 17 PSI			
Circulation thermostat	Type (choke, bypass)	Choke			
	Starts to open at (°F)	180°F.			
Water pump	Type (centrifugal, other)	Centrifugal			
	GPM @ 1000 pump rpm	14			
	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.)	19.5			
	Without heater (qt.)	Heater Std. Equipment			
	Opt. equipment-specify (qt.)	-			
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	1.75		
	By-pass	Number and type (molded, straight)	None - Integral		
		inside diameter	Hose Not Used		
Fan	Number of blades & Spacing		Four - 76° and 104° (1)		
	Diameter		19.0		
	Ratio-fan to crankshaft rev.		.91 to 1 (2)		
	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	A & B	C & E	C & F
	Generator	A	A	C	C
	Water Pump	A	A & B	C & E	C & F
	Power Steering		B		F
	Air Conditioning			D	D

* Drive Belt Dimensions	A	B	C	D	E	F
Angle of V	36°	36°	36°	36°	36°	36°
Nominal length (SAE)	56.8	61.0	56.0	58.5	50.5	62.0
Width	.38	.47	.38	.47	.38	.47

- (1) Special fan used on air conditioned cars is 7 blade design.
- (2) 1.13:1 with air conditioning.

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## ELECTRICAL—SUPPLY SYSTEM

Battery	Make and Model	Delco 458 (a) or 558 (b)	Delco 558	
	Voltage Rtg. & Total Plates	12 & 54 (a) or 12 & 66 (b)	12 & 66	
	SAE Designation & Amp Hr. Rtg	2 SMB-53 (a) or 2 SMD-61 (b)	2 SMD - 61	
	Location	Under Hood - Left Side		
	Terminal grounded	Negative		
Generator	Make	Delco-Remy		
	Model	1100634 (1100621 with Air Cond.)		
	Type	3 Phase - 42 Amp (52 Amp with Air Cond.)		
	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	
	Regu-lated	Voltage	14.3 V	
		Current	Not Regulated	
	Voltage test con-ditions	Temperature	125° Ambient Air at Regulator	
Load		10 Amps.		
Other				

## ELECTRICAL—STARTING SYSTEM

Starting motor	Make	Delco-Remy		
	Model	1107791 (a) or 1107781 (b)		
	Rotation (drive end view)	Clockwise		
	Engine cranking speed	Not Available		
	Test conditions	Room Temperature		
	Lock test	Amps	Lock Test Not Recommended	
		Volts	—	
		Torque (lb. ft.)	—	
No load test	Amps (d)	65 - 100 with 1107791, 80 - 120 with 1107781		
	Volts	10.6		
	RPM (min.)	3600-5100 with 1107791, 4700-5400 with 1107781		
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.		

(Continued)

- (a) With Regular Fuel (8.6:1 C.R.) Engines.
- (b) With Premium Fuel (10.25:1 or 10.75:1 C.R.) Engines.
- (c) Without solenoid.
- \* With Hydra-Matic use "Neutral" or "Park" (no clutch).



# AMA Specifications – Passenger Car

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

**MODEL** CATALINA STAR CHIEF BONNEVILLE GRAND PRIX

## ELECTRICAL—STARTING SYSTEM (cont.)

<b>Motor Drive</b>	Engagement type		Sliding Gear - Overrunning Clutch
	Pinion meshes (front, rear)		Front
	Number of teeth	Pinion	9
		Flywheel	166
Flywheel tooth face width		.40	

## ELECTRICAL—IGNITION SYSTEM

<b>Coil</b>	Make		Delco-Remy		
	Model		1115133		
	Amps	Engine stopped	3.4		
Engine idling		2.1			
<b>Distributor</b>	Make		Delco-Remy		
	Model		1110997 (a)	or	1110996 (b)
	Cent'fgal adv. in crankshaft degrees @ engine rpm (nominal)	Start (rpm)	700		650
		Intermediate points deg. @ rpm	12-16 @ 2100		14-18 @ 2000
		Max deg. @ rpm	18-22 @ 3600		16-20 @ 2850
	Vacuum adv. in crankshaft degrees @ in. Hg. (nominal)	Start (in Hg)	6 to 8		8 to 10
		Intermediate points, deg @ in Hg	None		None
		Max. deg. in. Hg.	20 @ 13 to 15		20 @ 15 to 17
	Breaker gap (in.)		.016		
	Cam angle (deg.)		30° + 2°		
Breaker arm tension (oz.)		19 to 23			
<b>Timing</b>	Crankshaft deg. @ rpm.		6° at Hot Idle		
	Mark location		On Crankshaft Pulley Hub		
	Cylinder numbering system (see page 2)		L. Bank 1-3-5-7 (Front to Rear)		
			R. Bank 2-4-6-8		
Firing order (see page 2)		1-8-4-3-6-5-7-2			
<b>Spark Plug</b>	Make and model		AC 45S		
	Thread (mm)		14 MM		
	Tightening torque (lb. ft.)		15-25		
	Gap		.033-.038		
<b>Cable</b>	Conductor type		Carbonized Threat		
	Insulation type		Neoprene		
	Spark plug protector		Butyl Rubber Boot		

## ELECTRICAL—SUPPRESSION

<b>Locations &amp; type</b>	Carbonized thread core secondary cables on all cars. Voltage regulator condenser plus ground straps - 2 engine to dash, 2 engine to frame & 1 frame to RH fender skirt on all cars with radio.
-----------------------------	--

(a) With Regular Fuel (8.6:1 C. R.) Engines.

(b) With Premium Fuel (10.25:1 or 10.74:1 C. R.) Engines.

# AMA Specifications – Passenger Car

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MODEL CATALINA | STAR CHIEF | BONNEVILLE | GRAND PRIX

## ELECTRICAL—INSTRUMENTS AND SWITCHES

Speed-ometer	Make	AC
	Trip odometer (yes, no)	No
Charge indicator—type		Ammeter
Temperature indicator—type		Tell-Tale Lights (Hot & Cold) Std. - Gage Optional
Oil pressure indicator—type		Tell-Tale Light Std. - Gage Optional
Fuel indicator—type		Electric Gage
Other		Standard Equipment on Grand Prix with SM Trans. Separate Option on all other models.
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	Yes
	Location	Left Center of Instrument Panel
Main lighting switch	Identify positions and lamps controlled	Forward position - off 1st position - Instrument, Parking, Tail and License lights. 2nd position - Instrument, Head, Tail and License lights. Clockwise rotation turns off Dome Light and dims Instrument Lights to "off".
Other light switches	Locations and lamps controlled (Std. Car) - For Accessory Switches - See Supplement Page 12-A	Dimmer Switch - on floor left of Steering Column. Dome Light Switch - on main light switch & Front Door Frames of all exc. Bonneville model where front & rear switches are used. Direction Indicator Switch - on Steering Column below wheel. Stop Light Switch - on Brake Pedal Support. Courtesy Light - Bonneville & GP Models - same as Accessory install
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	Two
	Amp draw (each)	8 to 11 Amps. @ 12.5 V

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### SUPPLEMENTARY INFORMATION

MODEL CATALINA, STAR CHIEF, BONNEVILLE AND GRAND PRIX

#### SWITCH LOCATIONS

##### ACCESSORY LIGHT SWITCHES:

- Back-Up Light - on lower end of steering column - combined with neutral safety switch on Hydramatic cars. (at transmission on cars with 4-speed SM trans. ).
- Luggage Compartment and Utility Lamp - on lamp mounting bracket.
- Glove Compartment Light - on instrument panel behind compartment door.
- Parking Brake Signal - on parking brake pedal arm.
- Ash Tray Light - controlled by main light switch.
- Courtesy Light - manual at center of instrument panel - automatic on front door frames.
- Spot Light - on LH or RH end of instrument panel.

##### OTHER SWITCHES:

- Radio - at center of instrument panel.
- Power Antenna Motor - right center of instrument panel.
- Rear Seat Speaker - left center of instrument panel.
- Heater Blower Motor - control panel on right of steering column.
- Air Conditioning Blower Motor - control panel on right of steering column.
- Windshield Wiper Motor - on instrument panel left of steering column.
- Windshield Washer - on wiper switch knob.
- Safeguard Speedometer - on instrument panel below odometer.
- Power Seat Position Selector - LH end of seat.
- Neutral Safety Switch - on lower end of steering column (Hydramatic only).
- Underhood Light - in engine compartment on LH side of dash.
- Power Window Regulators - on each door trim pad - master switches on left front door.

# AMA Specifications – Passenger Car

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MODEL CATALINA | STAR CHIEF | BONNEVILLE | GRAND PRIX

## 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 Vertical	Air Cond. Panel Light	1 #1895*	
Headlamp beam indicator	1 #57 (5)	Hydra-Matic Shift Ind.	1 #57*	
Parking	2 #1034	Ash Tray & Lighter Light	2 #53*	
Tail	2 #1034	Parking Brake Signal Light	1 #57* (5)	
Stop	Same as #1034 Tail Light Bulbs	Safeguard Speedometer with	1 #57* (5)	
Direction signal	Front	Same as Parking Light	Low Fuel Warning Light	1 #55*
	Rear	Same as Stop Light	Underhood & Utility Light	1 #93*
	Indicator	2 #57 (5)	Luggage Compartment	1 #1003*
License plate	1 #67	Tachometer Light	1 #57 (4)	
Instrument	4 #57 (1) (5)			
Ignition lock	1 #53			
Back up	2 #1073*			
Dome	1 #1004 (3)			
Clock	2 #57 (2) (5)			
Radio	1 #57* (5)			
Glove compartment	1 #57*			
Oil Press. Tell-Tale	1 #57 (5)			
Eng. Temp. Tell-Tale	2 #57 (5)			
Courtesy Light	1 #89 (Std. on Catalina Convertible, All Bonneville & GP opt. on others)			
Compass Light	1 #53*			
Heater Panel	1 #57			
Underhood Light	1 #93*			
Spot Light	1 #4404*			
Oil Press Gage	1 #57 (5)			
Eng. Temp. Gage	1 #57 (5)			

- (1) 6 on Bonneville and Grand Prix models.
- (2) 26, 28 and 29 std. equipment and 23 Accessory Clock.
- (3) 2 #90 on Star Chief, Bonneville and Grand Prix Hardtops.
- (4) Tachometer standard on Grand Prix with SM trans. - optional on all other models.
- (5) Special bulb #1895 used on cars with optional Air Conditioning.

# AMA Specifications – Passenger Car

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**MODEL** CATALINA      STAR CHIEF      BONNEVILLE      GRAND PRIX

## 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 C. B. (a)	Luggage Compartment	Same as (f)
Headlamp beam indicator	Same as (a)	Parking Brake Signal Light	20 Fuse (j)
Parking lamp	Same as (a)	Ash Tray & Lighter Light	14 Fuse (m)
Tail lamp	(a) Plus 14 Fuse (b)	Custom Air Cond. Panel Light	Same as (d)
Stop lamp	14 Fuse (c)	Hydra-Matic Shift Indicator	Same as (d)
Direction indicator	Same as (c)	Underhood & Utility Light	Same as (k)
License plate lamp	Same as (b)	Safeguard Speedometer	Same as (j)
Instrument lamp	4 Fuse (d)	Power Antenna	14 Fuse (n)
Ignition lamp	Same as (d)	Cigar Lighter	See Note (#)
Back up lamp	25 Fuse (e)	Windshield Washer	Same as (e)
Dome lamp	14 Fuse (f)	Custom A/C Power & Blower Motor	30 Fuse AGC (o)
Clock	14 Fuse (g)	Power Window Regulator	40 C. B. (q)
Clock lamp	Same as (d)	Power Seat Motor	Same as (q)
Radio	2.5 Fuse (h)	Tachometer Light	1 Fuse (in line)
Glove compartment lamp	Same as (g)	Compass Light	Same as (d)
Radio Dial Light	Same as (d)		
Windshield Wiper	Same as (e)		
Courtesy Light	Same as (f)		
Heater Panel	Same as (d)		
Heater Blower	20 Fuse (j)		
Spot Light	14 Fuse (k)		
Underhood Light	Same as (k)		

## ELECTRICAL—LOCATION OF OUTSIDE LAMPS

			2311, 39, 47, 67 & 69	2335 & 45	2639, 2839	2669, 2847, 2867	2835	2957	
Height above ground to center of bulb (At curb load)	Tail	Lowest	30.9	31.8	31.0	32.5	27.4		
		Highest	30.9	31.8	31.0	32.5	27.4		
	Stop		30.9	31.8	31.0	32.5	27.4		
	Backup		16.6	16.5	16.7	17.3	15.8		
	License, rear		21.9	22.0	22.0	22.8	21.1		
	Directional	Front		18.0	18.3	17.9	18.1	27.1	
		Rear		30.9	31.8	31.0	32.5	27.4	
	Headlamp	Lowest		25.1	25.5	25.0	25.2	24.4	
Highest			31.4	31.8	31.3	31.5	30.7		
Distance from C/L of car to center of bulb	Tail	Inside							
		Outside		36.2			29.8		
	Stop			Same as Tail					
	Backup			31.6					
	License, rear			0.3 Left of Center					
	Directional	Front			27.7			25.0	
		Rear			Same as Tail				
Headlamp	Inside			34.1					
	Outside*			34.1					

\* If single headlamps are used enter here.

(#) Optional Lighters - one uses attached fuse, the other has integral C. B.

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**MODEL** CATALINA | STAR CHIEF | BONNEVILLE | GRAND PRIX

## DRIVE UNITS—CLUTCH (Manual Transmission)

Make & type	Own - Dry	Borg & Beck Semi-Centrifugal - Dry
Type pressure plate springs	Disc	Coil
Effective plate pressure (lb.)	2000	2360
No. of clutch driven discs	One	
Clutch facing	Material Woven Molded Asbestos	
	Outside & inside dia.	10.4 - 6.5
	Total eff. area (sq.in.)	85.56
	Thickness	.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 Friction	

## DRIVE UNITS—TRANSMISSIONS

Manual (std. or opt.)	3-Speed Standard - 4-Speed Optional
Manual with overdrive (std. or opt.)	Not Offered
Automatic (std. or opt.)	Optional

## DRIVE UNITS—MANUAL TRANSMISSION

Number of forward speeds	Three-Standard* (a)	Three - Standard (a)	
Transmission ratios	In first	2.47:1*	
	In second	1.53:1*	
	In third	1.00:1*	
	In fourth	None*	
	In reverse	2.63:1*	
Synchronous meshing, specify gears	Second & Third		
Shift lever location	On Steering Column		
Lubricant	Capacity (pt.)	1.8 Refill	
	Type recommended	2.8 Refill	
	SAE viscosity number	Type A - Extreme Pressure	
		Summer	80 or 90
Winter		80 or 90	
	Extreme cold	80 or 90	

\* Optional heavy duty 3-speed transmission available on Catalina Model conforms to specifications shown for Star Chief, Bonneville and Grand Prix Models.

(a) Four-speed transmission (with all forward gears synchronized and floor mounted shift lever) optional on all cars.  
 Gear Ratios: 1st. 2.54:1, 2nd, 1.92:1, 3rd. 1.51:1, 4th. 1.00:1, Rev. 2.61:1. used with 389 cu. in. engines, gear ratios: 1st. 2.20:1, 2nd. 1.64:1, 3rd. 1.31:1, 4th. 1.00:1, Rev. 2.26:1 used with 421 H.O. engine options.  
 Lubricant Capacity 2.5 pts. EP 80 or 90 all seasons.



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**MODEL** CATALINA | GRAND PRIX | STAR CHIEF | BONNEVILLE

## 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		Hydra-Matic							
Type describe		Fluid Coupling with Planetary Gears							
Method of Selection (Lever, Push Button or other)		Lever							
Selector Pattern		P - N - DR - L - R							
List gear ratios Selector Pattern and indicate which are used in each selector position		DR	DR	L	R	DR	DR	L	R
		(a) 2.97:1	2.97:1	2.97:1	2.49:1	3.97:1	3.97:1	3.97:1	3.74:1
		1.56:1	1.56:1			2.55:1	2.55:1	2.55:1	
		1.00:1				1.55:1	1.55:1	1.55:1*	
Max. upshift speeds—drive range		75 - Full Throttle							
Max. kickdown speeds—drive range		40 - Part Throttle, 70 - Full Throttle							
Torque converter	Number of elements	3				Converter Not Used			
	Max. ratio at stall	1.2				Converter Not Used			
	Type of cooling (air, water)	Water							
Lubricant	Capacity—refill (pt.)	12				18			
	Type recommended	GM Hydra-Matic Drive Fluid - Type A							
Special transmission features		Safety device prevents shifting into reverse at forward speeds that would damage transmission. Shift lever must be lifted over stop to enter "Park" position. Engine starting in "Park" position provided for.							

## DRIVE UNITS—PROPELLER SHAFT

Number used		One							
Type (exposed, torque tube)		Exposed							
Outer diameter x length* x wall thickness	Manual transmission	3.25 x 61.40 x .062(a)(c)		3.00 x 55.76 x .065		3.25x58.96x.065(c)(b)			
	Overdrive transmission	None							
	Automatic transmission	Frnt. tube 3.00 x58.20x.065 (c)		3.00 x58.20x.065		3.38 x61.40x.065 (c)			
		Rr. tube 2.25 x.095		2.25 x.095		2.75 x.083			

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

(Continued)

Form Rev. 3-62

- (a) Optional heavy duty 3-speed transmission uses 3.00 x 55.76 x .065 shaft.
- (b) Optional 4-speed transmission uses same shaft as Automatic transmission.
- (c) Except Station Wagon which is not shown.
- (d) Total transmission torque multiplication - 3.56:1

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## DRIVE UNITS—PROPELLER SHAFT (cont.)

Intermediate bearing	Type (plain, anti-friction)	None
	Lubrication (fitting, prepack)	None
Universal joints	Make	Saginaw
	Number used	Two
	Type (ball and trunion, cross, other)	Cross
	Bearing	Type (plain, anti-friction)
Lubric. (fitting, prepack)		Pre-Packed
Drive taken through (torque tube or arms, springs)		Arms
Torque taken through (torque tube or arms, springs)		Arms

## DRIVE UNITS—REAR AXLE

Description (see instructions)		Semi-Floating Hypoid Rear Axle		
Limited Slip differential, type		Cam & Clutch (Opt.)		
Drive Pinion Offset		1.75		
No. of differential pinions		2-Std. - 4 with optional Safe-T-Track unit		
Gear ratios (Std. equip.)	Manual transmission	3.23:1	3.42:1	
	Overdrive transmission	None		
	Automatic transmission	2.69:1	3.23:1	
Ring gear O.D. (std. ratio)		9.25 P.D. - 9.27 O.D.		
Pinion adjustment (shim, other)		Shim		
Pinion bearing adj. (shim, other)		Collapsible Spacer		
Wheel bearing type		Single Row Ball Bearing		
Lubricant	Capacity (pt.)	5.75		
	Type recommended	A-9 Hypoid		
	SAE viscosity number	Summer	90	
		Winter	90	
Extreme cold		90		

## REAR AXLE RATIO TOOTH COMBINATIONS

(See page 3 for axle ratio usage)

Axle ratio		2.56:1	2.69:1	2.87:1	3.08:1	3.23:1	3.42:1	3.64:1	3.90:1	4.30:1
No. of teeth	Pinion	16	16	15	13	13	12	11	10	10
	Ring gear	41	43	43	40	42	41	40	39	43

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MODEL CATALINA | STAR CHIEF | BONNEVILLE | GRAND PRIX

### DRIVE UNITS—WHEELS

Type & material		Disc - Steel
Rim (size and flange type)	Std.	14 x 6K
	Opt.	None
Attachment	Type (bolt or stud)	Bolt
	Circle diameter	5.0
	Number and size	5 - 1/2 - 20

### DRIVE UNITS—TIRES

Standard (List option below)	Size & ply	800 x 14		
	Type - Nylon, etc.	Rayon Cord		
Rev/mile at 50 mph.		749 Std.	739 Opt. A	N. A. Opt. B
Inflation press.(cold)	Front	22 Std.	20 Opt. A	28 Opt. B
	Rear	22 Std.	20 Opt. A	28 Opt. B
Optional tires - size and ply		<u>Opt. A-Oversize</u>		<u>Opt. B - Heavy Duty</u>
		8.50 x 14		8.00 x 14 (6 ply rating)

### BRAKES—SERVICE

Type (duo-servo, disc, balanced, etc.)		Hydraulic, Internal Expanding, Single Anchor	
Self adjusting (std., opt., N.A.)		Standard	
Hydraulic system type (single, dual, etc.)		Single	
Power brake make & type (remote, integral, etc.)		Moraine or Bendix Products - Integral Type, Vacuum Suspended	
Effective area (sq. in.)*		173.7	
Gross lining area (sq. in.)**		191	
Swept drum area (sq. in.)***		311	
Percent brake effectiveness—front		58.5	
Drum	Diameter	Front	11.0
		Rear	11.0
Type and material		Steel Backed Centrifugally Cast Alloy Iron (a)	
Wheel cylinder bore	Front	1.188	
	Rear	1.00	
Master cylinder bore		1.00	
Available pedal travel		6.25 Std. - 3.40 with Power Brake Option	
Line pressure at 100 lb. pedal load		800	
Shoe clearance adjustment		Tighten to heavy drag then back off 30 notches	

(Continued)

\* 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.

- (a) Integral aluminum hub and drum with metallurgically bonded alloy cast iron braking surface - optional equipment.

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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	9.29 x 2.50 x .22
			Rear wheel	9.29 x 2.00 x .22
		Segments per shoe		One
	Rear Shoe	Material	Molded Asbestos	
		Size (length x width x thickness)	Front wheel	11.94 x 2.50 x .22
			Rear wheel	11.94 x 2.00 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	Perimeter Type - Boxed
----------------------	------------------------

## 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 Links	
Special provisions for car jacking	None	
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 mounted on rubber bushings.
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\* Air Suspension: Normal operating pressures (Continued)  
 Air spring type spring rates  
 Compressor data leveling data  
 type  
 make  
 drive ratio

# AMA Specifications – Passenger Cars

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## SUSPENSION FRONT (cont.)

<b>Spring</b>	Type	Coil		
	Material	SAE 9260		
	Size (coil design height & I.D.; bar length x dia.)	10.6 x 4.05		
	Spring rate (lb. per in.)	315		
	Rate at wheel (lb. per in.)	90		
	Design load (lb. @ design height)	1950-2000 @ 10.6	2000 - 2050 @ 10.6	1950-2000 @ 10.6
<b>Stabilizer</b>	Type (link, linkless, frameless)	Link		
	Material & bar diameter	SAE 1080 Steel (a)		

## STEERING

Mechanical (std., opt., NA)		Standard				
Power (std., opt., NA)		Optional				
Wheel diameter		17.0 Std., 15.74 x 16.5 Opt.		15.74 x 16.5 Std.		
<b>Turning diameter</b>	Outside front	Wall to wall (l. & r.)	46.0	46.9	46.0	
		Curb to curb (l. & r.)	42.8*	43.7*	42.8	
	Inside rear	Wall to wall (l. & r.)	25.5	26.2	25.5	
		Curb to curb (l. & r.)	26.0*	26.6*	26.0	
Outside wheel angle with inside wheel at 20°		18°				
<b>Mechanical</b>	Gear	Type	Recirculating Ball Bearing			
		Make	Saginaw			
		Ratios	Gear	24:1		
	Overall		29.1:1			
No. wheel turns		5.50				
<b>Power</b>	Type (coaxial, linkage, etc.)		Coaxial			
	Make		Saginaw			
	Trade name		Power Steering			
	Gear	Type	Recirculating Ball Bearing			
		Ratios	Gear	17.5:1		
			Overall	22.5:1		
	Pump driven by		Belt from Crankshaft			
	Number wheel turns		4.25:1			
	<b>Linkage</b>	Type		Link Parallelogram		
		Location (front or rear of wheels, other)		Rear of Wheels		
Drag link (trans. or longit.)		Transverse Strg. Rod Connects Tie Rods, Pitman & Idler Arms				
Tie rods (one or two)		Two				

(Continued)

(a) .75 dia. on Bonneville Convertible, Grand Prix and all Catalina Models except Station Wagons - .8125 dia. on all Star Chief and Bonneville models except Convertible and Station Wagon. - .875 dia. on all Station Wagons.

* Except Station Wagon which is as follows:	<b>Wall to Wall</b>	<b>Curb to Curb</b>
Outside Front	45.7	42.5'
Inside Rear	25.3	25.8'

# AMA Specifications – Passenger Car

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

**MODEL** CATALINA | STAR CHIEF | BONNEVILLE | GRAND PRIX

## STEERING (cont)

Steering Axis	Inclination at camber (deg.)		4° 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.)		1-1/2° Negative + 1/2°
	Camber (deg.)		1/4° Positive + 1/2°
	Toe-in (outside tread-inches)		0 to .125 Toe-In Measured 9 In. 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			Four Link Pivoted Control Arm			
Drive and torq. taken through (see page 17)			Control Arms			
Spring	Type		Coil			
	Material		SAE 9260			
	Size (length x width, coil design height and I.D.; bar length & dia.)		7.84 x 5.50			
	Spring rate (lb. per in.)		122 (1)	135 (1)	122 (1)	122 (1)
	Rate at wheel (lb. per in.)		110 (1)	122 (1)	110 (1)	110 (1)
	Design load (lb. at design height)		955-995(1)	100-1040 (1)	1040-1080 (1)	875-915 (1)
	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			Not Used			

(1) Figures apply to 4-door Sedans and Grand Prix Coupe - specifications for other models vary to compensate for different loading.



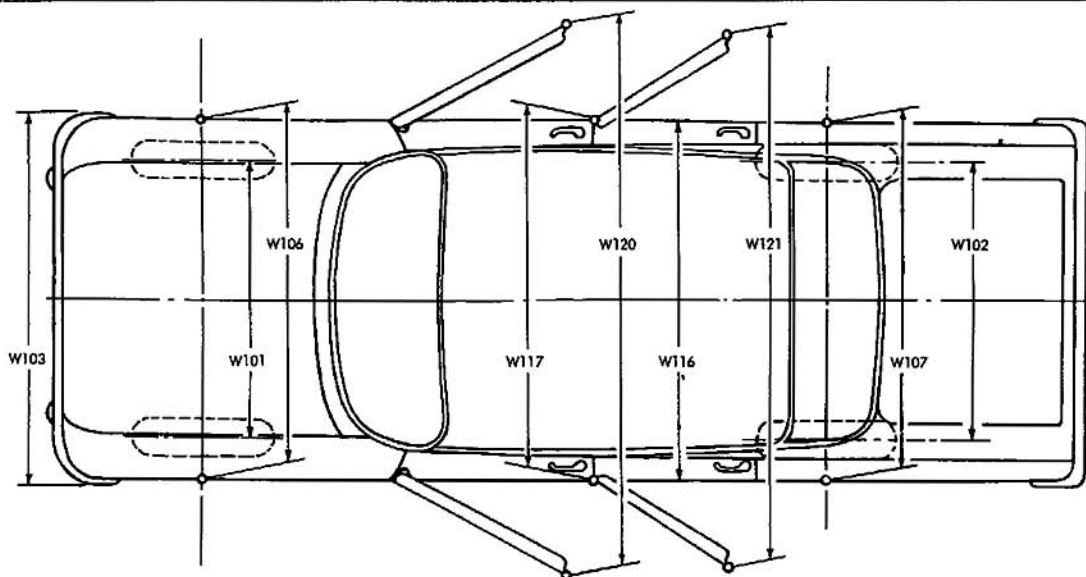
MAKE OF CAR PONTIAC MODEL YEAR 1963 DATE ISSUED 9-12-62 REVISED (\*)

## 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.	CATALINA						
		2369	2311	2347	2339	2367	2335	2345
Tread - front	W101				62.5			
Tread - rear	W102				64.0			
Maximum overall car width	W103				78.7			
Maximum overall body width	W116	78.3		78.2	78.3	78.2		78.3
Maximum body width at #2 pillar	W117	75.9	—	—	75.9	—		75.9
Front fender overall width	W106				77.7			
Rear fender overall width	W107	78.2		78.2	78.2	78.2		78.2
Maximum overall car width - front doors open	W120a	144.1	162.1	156.3	144.1	156.3		141.4
Maximum overall car width - rear doors open	W121a	139.6			N.A.			140.2

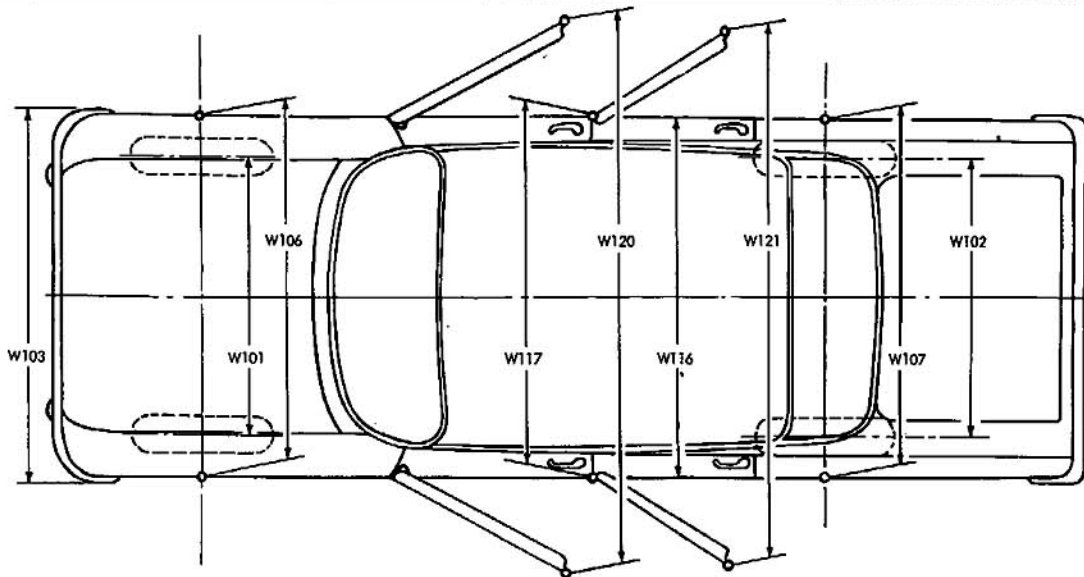
**MAKE OF CAR** PONTIAC **MODEL YEAR** 1963 **DATE ISSUED** 9-12-62 **REVISED** <sup>(\*)</sup>

## 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

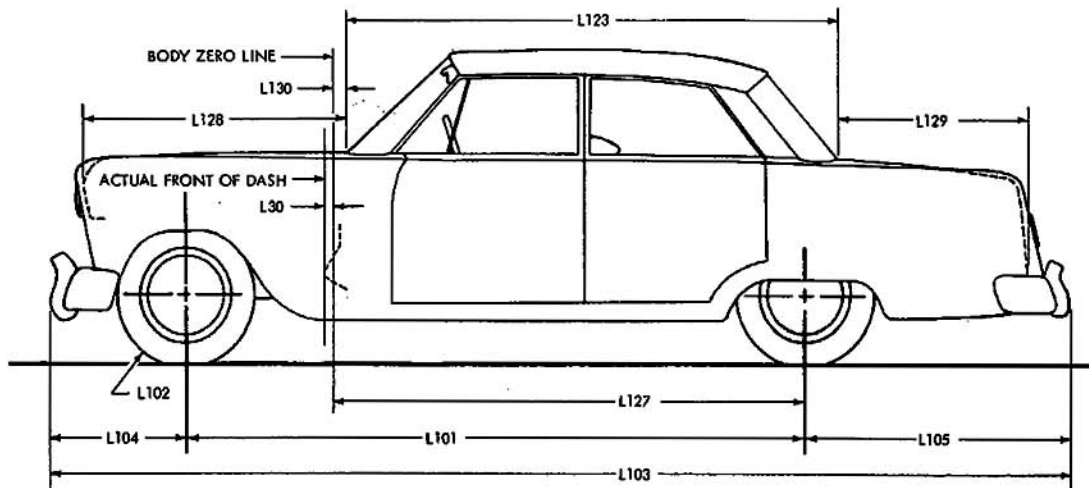


MODEL	Ref. No.	STAR CHIEF		BONNEVILLE				GRAND PRIX
		2669	2639	2839	2847	2867	2835	2957
Tread - front	W101	62.5						
Tread - rear	W102	64.0						
Maximum overall car width	W103	78.7						
Maximum overall body width	W116	78.3		78.2		78.3	78.2	
Maximum body width at #2 pillar	W117	75.9		—		75.9	—	
Front fender overall width	W106	77.7						
Rear fender overall width	W107	78.2		78.1		78.2	78.2	
Maximum overall car width - front doors open	W120a	144.1		156.3		141.4	156.3	
Maximum overall car width - rear doors open	W121a	139.6	N. A.	N. A.	N. A.	N. A.	140.2	N. A.

# AMA Specifications – Passenger Car

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

## EXTERIOR LENGTH DIMENSIONS

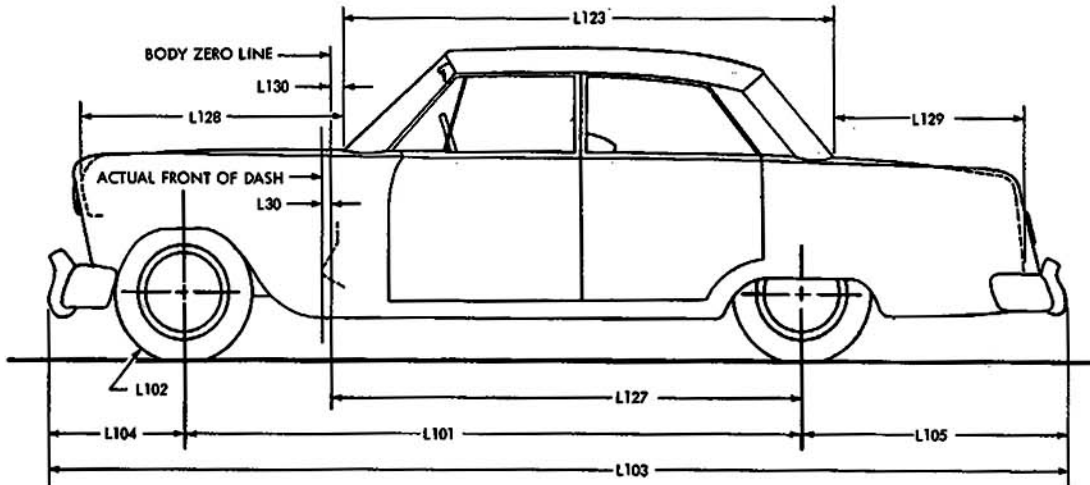


MODEL	Ref. No.	CATALINA						
		2369	2311	2347	2339	2367	2335	2345
Body zero line to actual front of dash	L30	.54						
Wheelbase	L101	120.0					119.0	
Overhang - front	L104	35.9						
Overhang - rear	L105	56.0					56.70	
Overall length	L103	211.9					211.6	
Hood length at car centerline	L128a	53.4						
Body upper structure length at car centerline	L123	103.3		103.4	106.0	105.9	141.5	
Deck length at car centerline	L129a	49.0		48.8	46.3		—	
Body zero line to centerline of rear wheels	L127	101.5					100.50	
Body zero line to windshield cowl point	L130a	4.1		4.2	4.1	4.2	3.9	
Tire size	L102	8.00 x 14					8.50 x 14	

# AMA Specifications – Passenger Car

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

## EXTERIOR LENGTH DIMENSIONS

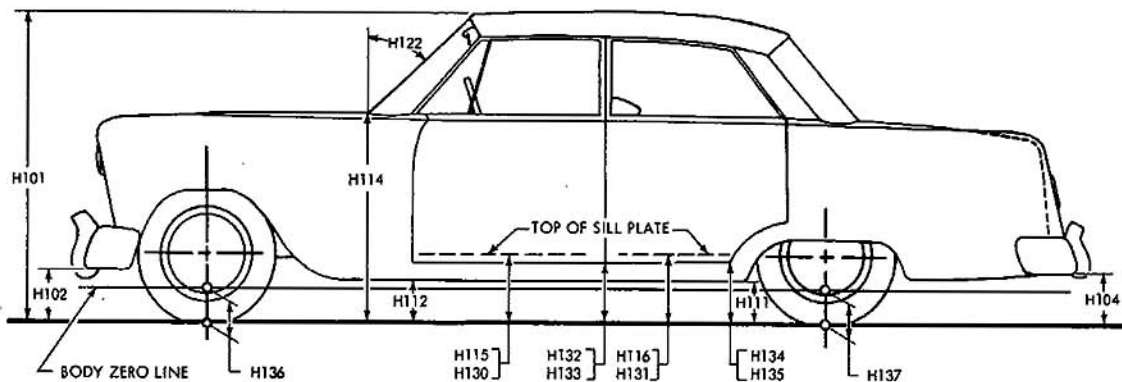


MODEL	Ref. No.	STAR CHIEF		BONNEVILLE			GRAND PRIX		
		2669	2639	2839	2847	2867	2835	2957	
Body zero line to actual front of dash	L30	.54							
Wheelbase	L101	123.0			119.0	120.0			
Overhang - front	L104	35.9							
Overhang - rear	L105	60.0				56.70	56.0		
Overall length	L103	218.9				211.6	211.9		
Hood length at car centerline	L128a	53.4							
Body upper structure length at car centerline	L123	103.3	106.0	106.0	103.4	105.9	141.5	102.7	
Deck length at car centerline	L129a	56.0	53.3		55.7	53.3	—	49.6	
Body zero line to centerline of rear wheels	L127	104.5				100.5	101.5		
Body zero line to windshield cowl point	L130a	4.1		4.2		3.9	4.1		
Tire size	L102	8.00 x 14					8.50 x 14	8.00 x 14	

# AMA Specifications— Passenger Car

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

## EXTERIOR HEIGHT DIMENSIONS

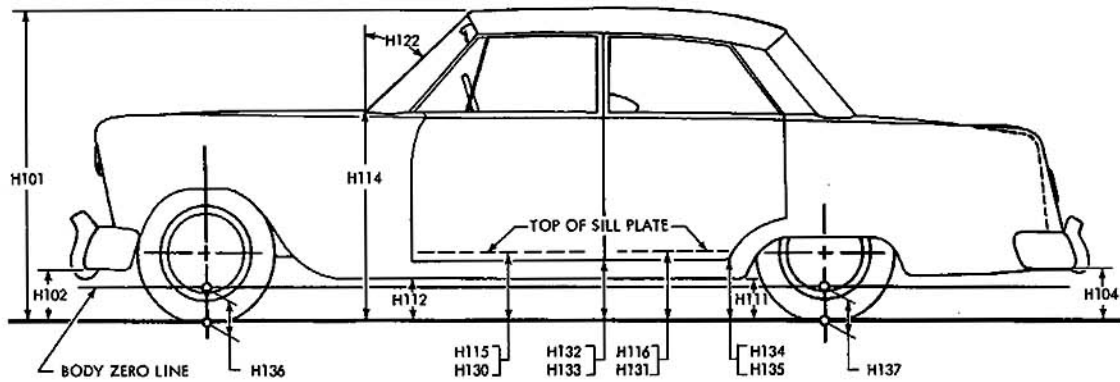


MODEL	Ref. No.	CATALINA						
		2369	2311	2347	2339	2367	2335	2345
Overall height	H101	55.2		54.1	54.4	55.1	56.5	
Hood at rear to ground	H114	37.5				37.3	38.0	
Rocker panel to ground - front	H112a	8.6				8.5	9.2	
Rocker panel to ground - rear	H111	8.2				8.1	8.8	
Step height - front (design load)	H115	N. A.						
Step height - rear (design load)	H116	N. A.						
Step height - front (curb load)	H130	N. A.						
Step height - rear (curb load)	H131	N. A.						
Bottom of door to ground, open - front	H132	12.9	13.1	13.1	12.9	12.9	13.3	
Bottom of door to ground, closed - front	H133	11.8	11.7	11.7	11.8	11.6	12.2	
Bottom of door to ground, open - rear	H134	11.6	—	—	11.6	—	11.9	
Bottom of door to ground, closed - rear	H135	11.6	—	—	11.6	—	11.9	
Front bumper to ground	H102	10.5				10.4	10.9	
Rear bumper to ground	H104	11.6				11.4	11.0	
Windshield slope angle	H122	57.0°		54.5°		54.5°	55.0°	
Body zero to ground - front	H136a	5.1				4.9	5.4	
Body zero to ground - rear	H137a	5.1				4.9	5.4	

# AMA Specifications— Passenger Car

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

## EXTERIOR HEIGHT DIMENSIONS



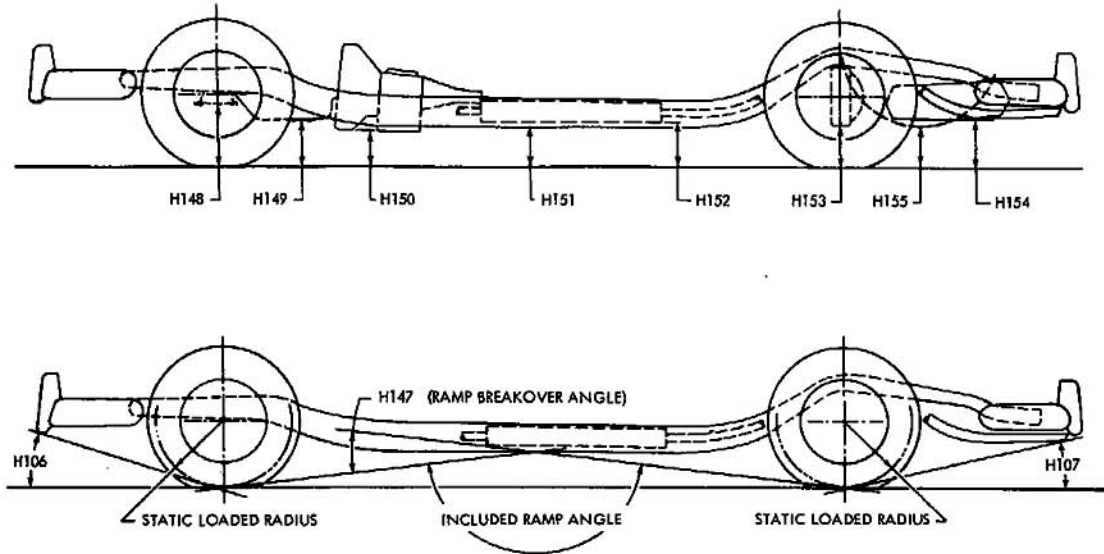
MODEL	Ref. No.	STAR CHIEF		BONNEVILLE			GRAND PRIX	
		2669	2639	2839	2847	2867	2835	2957
Overall height	H101	55.2	54.4		54.1	55.1	56.5	54.1
Hood at rear to ground	H114		37.5			37.3	38.0	36.8
Rocker panel to ground - front	H112a		8.6			8.5	9.2	7.9
Rocker panel to ground - rear	H111		8.2			8.06	8.76	7.5
Step height - front (design load)	H115				N. A.			
Step height - rear (design load)	H116				N. A.			
Step height - front (curb load)	H130				N. A.			
Step height - rear (curb load)	H131				N. A.			
Bottom of door to ground, open - front	H132		12.9		13.1	12.9	13.3	13.1
Bottom of door to ground, closed - front	H133		11.8		11.7	11.6	12.2	11.7
Bottom of door to ground, open - rear	H134		11.6		---	---	11.9	---
Bottom of door to ground, closed - rear	H135		11.6		---	---	11.9	---
Front bumper to ground	H102		10.5			10.4	10.9	10.5
Rear bumper to ground	H104		11.5			11.4	11.0	11.5
Windshield slope angle	H122		57.0°		54.5°		55.0°	57.5°
Body zero to ground - front	H136a		5.1			4.9	5.4	5.1
Body zero to ground - rear	H137a		5.1			4.9	5.4	5.1



# AMA Specifications—Passenger Car

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

## GROUND CLEARANCE DIMENSIONS

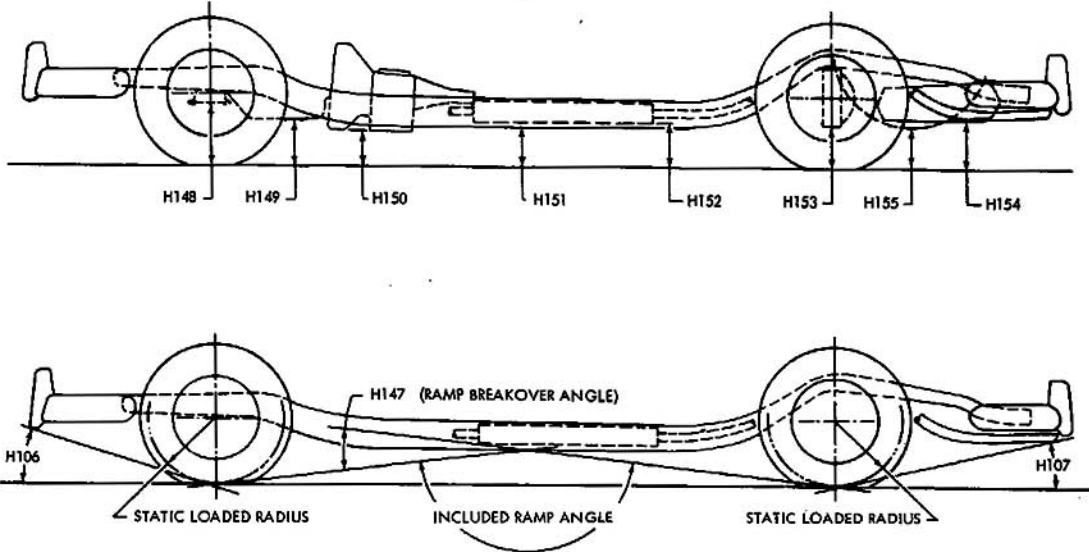


MODEL	Ref. No.	CATALINA					
		2369	2311	2347	2339	2367	2335
Angle of approach	H106	21.5°			21.0°		22.3°
Angle of departure	H107	12.5°					11.5°
Ramp breakover angle	H147	12.5°			12.0°		14.0°
Front suspension to ground	H148	6.0					6.4
Oil pan to ground	H149	6.8					7.1
Flywheel housing to ground	H150	6.0					6.4
Frame structure to ground	H151	6.0					6.4
Exhaust system to ground	H152	6.0					6.2
Rear axle differential to ground	H153	6.3					6.6
Fuel tank to ground	H154	8.2					9.3
Spare tire well to ground	H155	None					6.3
Minimum running ground clearance	H156	6.0					6.2

# AMA Specifications—Passenger Car

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

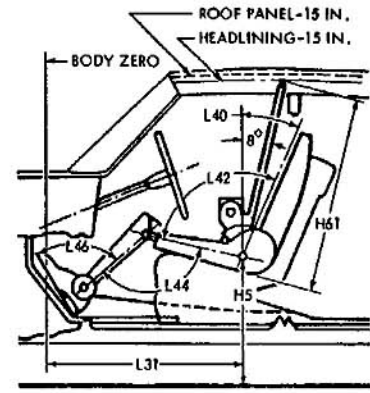
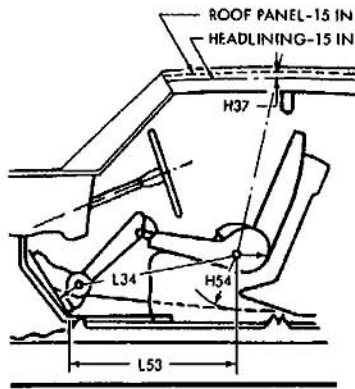
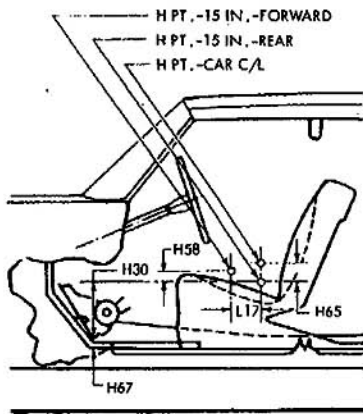
## GROUND CLEARANCE DIMENSIONS



MODEL	Ref. No.	STAR CHIEF		BONNEVILLE				GRAND PRIX
		2669	2639	2839	2847	2867	2835	2957
Angle of approach	H106	21.5°				21°	22.3°	21.5°
Angle of departure	H107	11.5°						
Ramp breakover angle	H147	12.5°				12°	14°	12.5°
Front suspension to ground	H148	6.0					6.4	6.0
Oil pan to ground	H149	6.8					7.1	6.8
Flywheel housing to ground	H150	6.0					6.4	6.0
Frame structure to ground	H151	6.0					6.4	6.0
Exhaust system to ground	H152	6.0					6.2	6.0
Rear axle differential to ground	H153	6.3					6.6	6.3
Fuel tank to ground	H154	8.2					9.3	8.2
Spare tire well to ground	H155	None					6.3	None
Minimum running ground clearance	H156	6.0					6.2	6.0

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

## FRONT COMPARTMENT DIMENSIONS



MODEL	Ref. No.	CATALINA	STAR CHIEF	BONNEVILLE	GRAND PRIX
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

# AMA Specifications – Passenger Car

MAKE OF CAR	PONTIAC	MODEL YEAR	1963	DATE ISSUED	9-12-62	REVISED	(a)
		CATALINA					
MODEL	2369	2311	2339	2347	2367	2335	2345

## BODY—MISCELLANEOUS INFORMATION

Drs. hinged (front, rear)	Front doors	Front					
	Rear doors	Front	---	Front	---	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 R. H. Cylinder Bank					
Theft protection - type		Ignition switch terminals guarded by locked on conn. body. Ignition key starter control with "in harness" wiring from switch to starter and coil add to protection offered by locked doors.					
Vent window control method (crank, friction pivot)	Front	Crank					
	Rear	None					
Seat cushion type	Front	(a)					
	Rear	(a)					
Seat back type	Front	(b)					
	Rear	(c)					
Windshield type (single curved, compound curved, other)		Single Curved	Compound Curved			Single Curved	
Rear window type (flat, curved, one piece, three piece)		One Piece					
		Curved	Flexible		Flat		
Side glass type (curved, flat)		Flat					
Side glass exposed surface area		1322.8	1346.3	1360.6	1236.2	1115.5	2669.3
Windshield glass exposed surface area		1590.9		1405.7	1461.2		1590.9
Backlight glass exposed surface area		1257.1		1239.9	941.9	1103.0	938.0
Total glass exposed surface area		4170.8	4194.3	4006.2	3639.3	3679.7	5198.2

- (a) Zig zag spring with polyurethane over cotton pad.
- (b) Zig zag spring with cotton pad.
- (c) Formed wire spring with cotton pad.

# AMA Specifications – Passenger Car

MAKE OF CAR	PONTIAC		MODEL YEAR	1963		DATE ISSUED	9-12-62		REVISED (*)
MODEL	STAR CHIEF				BONNEVILLE			GRAND PRIX	
	2669	2639	2839	2847	2867	2835	2957		

## 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 R. H. Cylinder Bank							
Theft protection - type		Ignition switch terminals guarded by locked on conn. body. Ignition key starter control with "in harness" wiring from switch to starter and coil added to protection offered by locked doors.							
Vent window control method (crank, friction pivot)	Front	Crank							
	Rear	None							
Seat cushion type	Front	(a)				(d)			
	Rear	(a)							
Seat back type	Front	(b)				(d)			
	Rear	(c)							
Windshield type (single curved, compound curved, other)		Single Curved				Compound Curved	Single Curved		
Rear window type (flat, curved, one piece, three piece)		One Piece -							
Side glass type (curved, flat)		Curved		Flat		Flexible	Flat	Concave	
Side glass exposed surface area		1322.8	1360.6	1236.2	1115.5	2669.3	1309.4		
Windshield glass exposed surface area		1590.9	1405.7	1461.2		1590.9	1405.7		
Backlight glass exposed surface area		1257.1	1239.9	941.9	1103.0	938.0	1276.5		
Total glass exposed surface area		4170.8	4006.2	3639.3	3679.7	5198.2	2991.6		

- (a) Zig zag spring with polyurethane over cotton pad.
- (b) Zig zag spring with cotton pad.
- (c) Formed wire spring with cotton pad.
- (d) Contour molded foam pad.

