

# AMA Specifications—Passenger Car

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MANUFACTURER	Pontiac Motor Division General Motors Corporation	CAR NAME	Tempest, Custom S, LeMans, LeMans Safari, and GTO	
MAILING ADDRESS	Pontiac, Michigan 48053	MODEL YEAR	1969	ISSUED: 9-12-68
				REVISED (•) 1-2-69

**NOTES:**

1. The General 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.

### TABLE OF CONTENTS

Car & Body Dimensions .....	1,2	Drive Units .....	14	Suspensions .....	21
Engine - Mechanical .....	4	Brakes .....	18, 19	Weights .....	24
Electrical .....	12	Steering .....	20	Index .....	27

BODY - TYPES AND STYLE NAMES -	Body type, style names; use manufacturer's code for series & body style.				
	BODY STYLE NUMBER				
Body Type	Tempest	Custom S	LeMans	LeMans Safari	GTO
4-Door Sedan	23369	23569			
4-Door Hardtop		23539	23739		
Sports Coupe	23327	23527	23727		
Hardtop Coupe		23537	23737		24237
Convertible		23567	23767		24267
Station Wagon		23535 (a)		23936	

(a) Bottom hinged tailgate standard - 23536 (dual hinged tailgate) optional.

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (a) 9-26-68

## CAR AND BODY DIMENSIONS

See Pages 25, 26 for SAE Dimension Definitions

(All dimensions in inches unless otherwise indicated)

All dimensions to ground are for comparative purposes only. Dimensions are to be shown for:

4-Dr. Sedan, 2-Dr. H.T., 4-Dr. H.T., Convertible and Station Wagon.

MODEL	SAE Ref. No.	TEMPEST (233 Series)	CUSTOM S (235 Series)	LEMANS (237 Series)	LEMANS SAFARI 23936	GTO (242 Series)
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## WIDTH

Track - Front	W101	61				
Track - Rear	W102	60				
Maximum overall car width	W103	75.8 (m)		76.3	75.8	
Body width at No. 2 pillar	W117	74.1				

## LENGTH

Body "O" to front of dash	L 30	0.0				
Wheelbase	L101	116.0 - All with 4 Doors, 112.0 All with 2 Doors				
Overall car length	L103	205.5 with Long Wheelbase*, 201.5 with Short W.B.**				
Overhang - front	L104	40.1 (n)				
Overhang - rear	L105	49.4		54.9	49.4	
Body upper structure length	L123	(27 & 37) 96.7, (35 & 36) 130.8, (39 & 69) 99.8, (67) 95.2				
Body "O" line to $\text{C}$ of rear wheel	L127	99.5 With Long Wheelbase, 95.5 with Short W.B.				
Body "O" line to w/s cowl point	L130	10.4				

## HEIGHT

Passenger Distribution (front & rear)		2 - 3				
Trunk/Cargo load (lbs.)		0				
Overall height	H101	(27 & 37) 52.1, (35 & 36) 54.3, (39) 52.6, (67) 52.4, (69) 52.7 (a)				
Cowl height	H114	(27, 37 & 67) 36.7, (35 & 36) 37.5, (39) 36.6, (69) 36.7 (b)				
Deck height	H138	(27 & 37) 37.7, (35 & 36) 38.7, (39) 37.3, (67) 36.9, (69) 37.6 (c)				
Rocker panel - front	H112	To ground	(27 & 37) 7.76, (35 & 36) 8.64, (39) 7.67, (67) 7.67, (69) 7.71 (d)			
From front wheel $\text{C}$						
Rocker panel - rear	H111	To ground	(27, 37 & 67) 6.82, (35 & 36) 8.21, (39) 6.57, (69) 6.77 (e)			
From rear wheel $\text{C}$						
Windshield slope angle	H122	53.0				

## GROUND CLEARANCE

Bumper to ground - front	H102	(27, 37 & 67) 16.0, (35 & 36) 16.3, (39) 16.2, (69) 16.1 (f)				
Bumper to ground - rear	H104	(27, 37 & 67) 11.0, (35 & 36) 12.8, (39) 10.6, (69) 10.8 (g)				
Angle of approach	H106	(27, 37 & 67) 17.5°, (35 & 36) 18.5°, (39) 17.5°, (69) 17.6° (h)				
Angle of departure	H107	(27, 37 & 67) 8.5°, (35 & 36) 12.4°, (39) 8.0°, (69) 8.4° (i)				
Ramp breakover angle	H147	(27, 37 & 67) 11.1°, (35 & 36) 12.8°, (39) 10.8°, (69) 11.0° (j)				
Min. running clearance (Specify)	H156	(27, 37 & 67) 5.5, (35 & 36) 6.5, (39) 5.5, (69) 5.6 (k)				

\* Except station wagons which are 211.0

(a) Except GTO - 24237 is 52.3, 24267 is 52.6

(b) Except GTO - 36.9

(c) Except GTO - 24237 is 37.9, 24267 is 36.9

(d) Except GTO - 7.97

(e) Except GTO - 6.88

(f) Except GTO - 16.4

\*\* Except GTO - 201.2

(g) Except GTO - 10.9

(h) Except GTO - 18.0°

(i) Except GTO - 8.6°

(j) Except GTO - 12.8°

(k) Except GTO - 5.8

(m) Except 76.3 on 23535

(n) Except 39.8 on GTO

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (a) 9-26-68

## CAR AND BODY DIMENSIONS

See Pages 25, 26 for SAE Dimension Definitions

(All dimensions in inches unless otherwise indicated)

MODEL	SAE Ref. No.	CUSTOM S*					
		Sports Cpe. 23527	H.T. Coupe 23537	4-Dr. HT 23539	4 Dr. Sedan 23569	Conv. Cpe. 23567	Station Wagon 23535

### FRONT COMPARTMENT

Effective head room	H61	37.9 (a)	37.9 (b)	38.5 (c)	38.5	38.7 (d)	38.4 (e)
Max. eff. leg room — accelerator	L34	42.4 (f)	42.4	42.4 (g)	42.4 (h)	42.4	42.6 (i)
H Point to Heel point	H30	7.9 (j)	7.9 (k)	7.9 (l)	7.9 (m)	7.9 (k)	7.7 (n)
H Point travel	L17	4.8					
Shoulder room	W 3	58.3 (p)	58.3	58.2 (q)	58.2 (r)	58.2 (s)	58.3
Hip room	W 5	59.6 (t)	59.6 (u)	59.6 (v)	59.6 (w)	59.6 (u)	59.7
Upper body opening to ground	H50	46.8	47.4 (x)	48.1	47.7	47.5	48.9

### REAR COMPARTMENT

H Point couple distance	L50	30.6 (y)	30.6 (z)	32.8	32.8	30.6 (z)	32.8
Effective head room	H63	36.3	36.3	37.1 (1)	37.1	36.9	38.3
Min. effective leg room	L51	32.2 (2)	32.2 (3)	34.8	34.8	32.2 (3)	34.8
H Point to Heel point	H31	10.0 (4)	10.0	10.6	10.6 (5)	10.0	10.6
Min. knee room	L48	0.7 (6)	0.7 (7)	3.5	3.5	3.1 (7)	2.3
Rear Compartment room	L 3	26.0	24.0 (8)	25.8	25.8	24.0 (8)	26.1
Shoulder room	W 4	56.9	56.9	57.2 (9)	57.2	47.9	57.4
Hip room	W 6	58.1 (10)	58.1 (11)	58.8	58.8 (12)	50.7	59.4
Upper body opening to ground	H51	--	--	47.6	47.3	--	48.6

### LUGGAGE COMPARTMENT

Usable luggage capacity	V 1	N.A.					
Liftover height	H195	27.1	27.1	26.6	26.9	27.1	--
Position of spare tire storage		Flat — Except S.W. & Optional Space Saver Which Are Vertical					
Method of holding lid open		Torsion Bar Counterbalance					

### STATION WAGON — THIRD SEAT

Shoulder Room	W85	Not Offered					
Hip room	W86						
Effective leg room	L86						
Effective head room	H86						
Seat facing direction							

### STATION WAGON — CARGO SPACE

Cargo length at floor — front seat	L202	90.9					
Cargo length at belt — front seat	L204	79.9					
Cargo width — Wheelhouse	W201	44.5					
Opening width at belt	W204	49.6					
Maximum cargo height	H201	31.5					
Rear opening height	H202	28.4					
Cargo volume index (cu. ft.) W4 x L204 x H201 1728	V2	83.6 (13)					

- |                            |                              |                            |   |
|----------------------------|------------------------------|----------------------------|---|
| (a) 37.7 on 237            | (l) 8.3 on 237               | (w) 59.8 on 233            | (7) 2.0 on 237 & 242                                  |
| (b) 37.7 on 237 & 242      | (m) 8.1 on 233               | (x) 47.6 on 242            | (8) 24.2 on 237 & 242                                 |
| (c) 38.1 on 237            | (n) 8.1 on 239               | (y) 30.7 on 237            | (9) 57.4 on 237                                       |
| (d) 38.5 on 237 & 242      |                              | (z) 30.7 on 237 & 242      | (10) 58.4 on 233; 58.3 on 237                         |
| (e) 38.0 on 239            | (p) 58.2 on 233              |                            | (11) 58.3 on 237 & 242                                |
| (f) 42.3 on 233            | (q) 58.3 on 237              | (1) 36.9 on 237            | (12) 59.1 on 233                                      |
| (g) 42.5 on 237            | (r) 58.1 on 233              | (2) 31.9 on 237            | (13) Add 10.0 cu.ft. for compartment under load floor |
| (h) 42.5 on 233            | (s) 58.3 on 237 & 242        | (3) 31.9 on 237 & 242      |   |
| (i) 42.7 on 239            | (t) 59.8 on 233, 59.7 on 237 | (4) 9.9 on 233             |   |
| (j) 8.1 on 233, 8.0 on 237 | (u) 59.7 on 237 and 242      | (5) 10.5 on 233            |   |
| (k) 8.0 on 237 & 242       | (v) 59.7 on 237              | (6) 0.7 on 233; 2.0 on 237 |   |

## AMA Specifications—Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED 1-2-69  
~~(e) 9-26-68~~

## POWER TEAMS

MODEL AVAILABILITY		(Indicate whether standard or optional)					TRANSMISSION	AXLE RATIO (Std. first) (Indicate A/C ratio)
		ENGINE						
		Displ. cu. in.	Carburetor	Compr. Ratio	BHP RPM	Torque RPM		
TEMPEST	233							
CUSTOM S	235							
LEMANS	237							
LEMANS SAFARI	239							
GTO	242							
<u>STANDARD ENGINE</u>								
233, 235, 237 &	239	250 (6)	1 bbl.	9.0:1	175 @ 4800	240 @ 2600	Manual (3-Sp.) Automatic (b)	3.23:1 (a) 3.23:1, 2.56:1 (a)
242		400 (8)	4 bbl.	10.75:1	350 @ 5000	445 @ 3000	Manual (3-Sp.) (c) Turbo Hydra-Matic	3.55:1 (a) 3.55:1 (a)
<u>OPTIONAL 6 AND 8 CYLINDER ENGINES</u>								
<u>Sprint Option</u>								
233, 235 &	237 (e)	250 (6)	4 bbl.	10.5:1	230 @ 5400	260 @ 3600	Manual (3-Sp.) (c)	3.55:1 (d)
233, 235 &	237 (e)	250 (6)	4 bbl.	10.5:1	215 @ 5200	255 @ 3800	Turbo Hydra-Matic	3.23:1, 2.56:1, 3.55:1 (d)
<u>350 V-8 Engine</u>								
233, 235, 237 &	239	350 (8)	2 bbl.	9.2:1	265 @ 4600	355 @ 2800	Manual (3-Sp.) (c) Automatic (b)	3.23:1, 3.08:1 (a) (g) 2.56:1, 2.93:1 (f)
<u>350 H.O. V-8 Engine</u>								
233, 235 &	237 (e)	350 (8)	4 bbl.	10.5:1	330 @ 5100	380 @ 3200	Manual (3-Sp.) (c) Turbo Hydra-Matic	3.55:1 (h) 3.55:1 (h)
<u>400 Regular Fuel Engine</u>								
242		400 (8)	2 bbl.	8.6:1	265 @ 4600	397 @ 2400	Turbo Hydra-Matic	2.93:1, 2.56:1, 3.23:1 (f)
<u>400 Ram Air</u>								
242		400 (8)	4 bbl.	10.75:1	366 @ 5100	445 @ 3600	Manual (3-Sp.) (c) Turbo Hydra-Matic	3.55:1 (a) (i) 3.55:1 (a) (i)
<u>400 Ram Air IV Engine</u>								
242		400 (8)	4 bbl.	10.75:1	370 @ 5500	445 @ 3900	Manual (4-Sp.) Turbo Hydra-Matic	3.90:1 (d) 3.90:1 (d)

- (a) 3.23:1 with air conditioning  
 (b) 2-Speed automatic or 3-Speed Turbo Hydra-Matic optional  
 (c) 4-Speed manual optional  
 (d) Air conditioning not available  
 (e) Not available on station wagons  
 (f) 2.78:1 with air conditioning  
 (g) 3.08:1 not available with 4-Speed manual option  
 (h) 3.55:1 with air conditioning  
 (i) Engine included with "The Judge" option

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISSED (\*)

	TEMPEST, CUSTOM S, LEMANS & LEMANS SAFARI	GTO
MODEL	Standard Engine	Optional Engine
ENGINE - GENERAL		

## ENGINE - GENERAL

Type, no. cyls., valve arr.	Line, 6 O'head Cam		90°V, 8, In-Head			
Bore and stroke (nominal)	3.8750	3.525	3.8750	3.746	4.1200	3.746
	3.8774 x	3.535	3.8774 x	3.754	4.1224 x	3.754
Piston displacement, cu. in.	250		350		400	
Bore spacing (C to C)	4.4		4.62			
No. system (front to rear)	L. Bank	1-2-3-4-5-6 (In-Line)		1-3-5-7		
	R. Bank	--		2-4-6-8		
Firing order	1-5-3-6-2-4		1-8-4-3-6-5-7-2			
Compres. ratio (nominal)	9.0:1		9.2:1		10.75:1	
Cylinder Head Material	Alloy Cast Iron					
Cylinder Block Material	Alloy Cast Iron					
Cyl. Sleeve-Wet, dry, none	None					
Number of mtg. points	Front	2				
	Rear	1				
Engine installation angle	4° 19'		4° 42'			
Taxable horsepower	36.0		48.0		54.3	
Publishing max. bhp* @ eng. RPM	175 @ 4800		265 @ 4600		350 @ 5000	
Publishing max. torque* (lb. ft. @ RPM)	240 @ 2600		355 @ 2800		445 @ 3000	
Recommended fuel regular - premium	Regular (a)		Regular (a)		Premium	

## ENGINE - PISTONS

Material	Aluminum Alloy							
Description and finish	Cam Ground Slipper Type - Tin Plated							
Weight (piston only) oz.	19.740 - 19.920		21.010 - 21.190		22.070 - 22.250 (c)			
Clearance (limits)	Top land	.024 - .029				.017 - .021 (e)		
	Skirt	Top	.0022 - .0028 (b)				.0025 - .0031 (b-d)	
		Bottom	.0017 - .0033				.0020 - .0036 (f)	
Ring groove depth	No. 1 ring	3.427 - 3.437				3.667 - 3.677		
	No. 2 ring	3.427 - 3.437				3.667 - 3.677		
	No. 3 ring	3.446 - 3.456				3.670 - 3.680		
	No. 4 ring	None						

\* Max. bhp (brake horsepower) and max. torque corrected to 60° F and 29.92 in. Hg atmospheric pressure.

- (a) Premium fuel required for optional 10.5:1 compression ratio engines.  
 (b) Pistons selected for clearance at 1.110 below top of piston.  
 (c) 18.00 - 18.20 on Ram Air IV Engine option.  
 (d) .0055 - .0061 on Ram Air IV Engine option.  
 (e) .033 - .042 on Ram Air IV Engine option.  
 (f) .004 - .0057 on Ram Air IV Engine option.

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (\*)  
 TEMPEST, CUSTOM S, LEMANS, &  
 LEMANS SAFARI GTO  
 MODEL 250 Cu.In.Engines 350 Cu.In.Engines 400 Cu.In.Engines

## 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, coating, etc.	Cast Iron Reverse Twist With -			
		(a)	(b)	(c)	Moly Channel - #1 Barrel Face - #2 Taper Face
		Width	.0778	No. 1 .0778, No. 2 .0775	
	Gap	.015		.019	
Oil	Description - material, coating, etc.	Multi-Piece (2 Rails & 1 Expander) Rails: Steel with Chrome Plated O.D. Expander: Stainless Steel			
		Width	.186		
		Gap	.035		
Expanders		In Oil Ring Assembly			

## ENGINE - PISTON PINS

Material	SAE 5015		SAE 1016	
Length	3.00		3.25	
Diameter	.9272		.9802	
Type	Locked in rod, in piston, floating, etc.		Locked in Rod	
	Bush- ing	in rod or piston		None
		Material		None
Clearance	in piston		.0003 - .0005	
	in rod		.0005 - .0007	
Direction & amount offset in piston		Press Fit To Right - .063		

## ENGINE - CONNECTING RODS

Material	SAE 1037, 1038 or 1141		Arma Steel	
Weight (oz.)	23.9		31.7	
Length (center to center)	5.70		6.625	
Bearing	Material & Type		Moraine 100-A (d) (e) (f)	
	Overall length		Moraine 400-A(d-h)	
	Clearance (limits)		.837	
	End play		.88	
	.0007 - .0027 (g)		.0005 - .0025	
	.0085 - .0135		.0005 - .0026 (i)	
			.006 - .011 (Total for Two) (j)	

- (a) 250 1 bbl. Engine: #1 - Barrel Face Moly Channel  
 #2 - Taper Face Tin Plated  
 (b) 250 4 bbl. Engine: #1 - Barrel Face Moly Channel  
 #2 - Taper Face Moly Channel  
 (c) 350 2 bbl. Engine: #1 - Barrel Face Moly Channel  
 #2 - Taper Face Tin Plated  
 (d) Steel backed removable precision.  
 (e) Moraine 400-A on 4 bbl. 250 cu. in. engines.  
 (f) Moraine 400-A on 4 bbl. 350 cu. in. engines.  
 (g) .0007 - .0028 on 4 bbl. 250 cu. in. engines.  
 (h) 100-A on 400 cu. in. 2 bbl. automatic transmission engine.  
 (i) .0015 - .0031 with Ram Air IV Option.  
 (j) .016 - .021 with Ram Air IV Option.

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 12-68 REVISED (e)  
 TEMPEST, CUSTOM S, LEMANS, &  
 LEMANS SAFARI GTO  
 MODEL 250 Cu.In.Engines 350 Cu.In.Engines 400 Cu.In.Engines

## ENGINE - CRANKSHAFT

Material	Nodular Iron (c)			
Vibration damper type	Rubber Floated Weight			
End thrust taken by bearing (No.)	7	4		
Crankshaft end play	.002 - .006	.0035 - .0085		
Main bearing	Material & type	Durex 100-A* Steel Backed, Removable, Precision (b)		
	Clearance	.0003 - .0019	.0002 - .0017 (d)	
	Journal dia. and bearing overall length	No. 1	2.30 x .80	3.00 x .94
		No. 2	2.30 x .80	3.00 x .94
		No. 3	2.30 x .80	3.00 x .94
		No. 4	2.30 x .80	3.00 x 1.13
		No. 5	2.30 x .80	3.00 x 1.59
No. 6		2.30 x .80	None	
No. 7	2.30 x 1.01	None		
Dir. & amt. cyl. offset	None			
Crankpin journal diameter	2.00	2.25		

## ENGINE - CAMSHAFT

Location	Overhead	Between Cylinder Banks		
Material	Hardened Alloy Cast Iron			
Bearings	Material	Aluminum Alloy	High Lead Babbitt on Steel	
	Number	7	5	
Type of Drive	Gear or chain	Belt (a)	Chain	
	Crankshaft gear or sprocket material	Hardened Cast Iron	Hardened Sintered Iron	
	Camshaft gear or sprocket material	Hardened Cast Iron	Aluminum Alloy With Nylon Covered Teeth	
	Timing chain	No. of links	98 Teeth	60
		Width	1.031 - .954	.88 (Morse) - 1.00 (Link Belt)
Pitch		.500	.375	

## ENGINE - VALVE SYSTEM

Hydraulic lifters (Std., opt., NA)	Standard (e)		
Valve rotator, type (intake, exhaust)	None		
Rocker ratio	1.5:1 (f)		
Operating tappet clearance (indicate hot or cold)	Intake	0	
	Exhaust	0	

\* Moraine 400-A in lower half of No. 1, 2, 3, and 4 locations of 350 cu.in. 4-bbl. and GTO 4-bbl. engine - No. 4 lower only of GTO 2-bbl. engine.

(a) Neoprene with fiberglass cord reinforcement.

(b) M-400 in all locations of optional 6-cylinder 4-bbl. engine and all but #5 location of 400 cu. in. Ram Air IV engines.

(c) Arma Steel on Ram Air IV Engine option.

(d) .0012 - .0028 on Ram Air IV Engine option.

(e) Manual lash, limited travel hydraulic lifters standard on Ram Air IV engine.

(f) 1.65:1 on Ram Air IV engine.

# AMA Specifications—Passenger Car

MAKE OF CAR		Pontiac		MODEL YEAR	1969	DATE ISSUED	9-12-68	REVISED (e)
MODEL		TEMPEST, CUSTOM S, LEMANS, LEMANS SAFARI		6 Cyl. 1-Bbl.		6 Cyl. 4-Bbl.		
ENGINE - VALVE SYSTEM (cont.)				Automatic		Manual		
Timing (based on top of ramp points)	Intake	Opens (°BTC)	14	14	22			
		Closes (°ABC)	46	50	58			
		Duration - deg.	240	244	260			
	Exhaust	Opens (°BBC)	46	52	60			
		Closes (°ATC)	14	12	20			
		Duration - deg.	240	244	260			
Valve opening overlap		28°	26°	42°				
Material		GM-8440 w/Alum. Treatment on Face & Fl. Chrome Plated Stem						
Overall length		4.810	4.902					
Actual overall head dia.		1.923 - 1.917						
Angle of seat & face		45° Seat, 44° Face						
Seat insert material		Not Used						
Stem diameter		.3419 - .3412						
Stem to guide clearance		.0016 - .0033						
Intake	Lift (@ zero lash)		.400 ± .011	.438 ± .011				
	Outer spring press. & length	Valve closed (lb.@in.)	94.6 @ 1.6298	62.4 @ 1.6298				
		Valve open (lb.@in.)	100.6 @ 1.6298	68.4 @ 1.6298				
	Inner spring press. & length	Valve closed (lb.@in.)	165.6 @ 1.2298	116.2 @ 1.1918				
		Valve open (lb.@in.)	175.6 @ 1.2298	128.2 @ 1.1918				
	Inner spring press. & length	Valve closed (lb.@in.)	---	30.5 @ 1.5898				
Valve open (lb.@in.)		---	36.5 @ 1.5898					
Inner spring press. & length	Valve closed (lb.@in.)	---	59.4 @ 1.1518					
	Valve open (lb.@in.)	---	65.4 @ 1.1518					
Material		21-2 Steel w/Alum. Treatment on Face & Fl. Chrome Pl. Stem						
Overall length		4.799	4.891					
Actual overall head dia.		1.603 - 1.597						
Angle of seat & face		45° Seat, 44° Face						
Seat insert material		Not Used						
Stem diameter		.3414 - .3407						
Stem to guide clearance		.0021 - .0038						
Lift (@ zero lash)		.400 ± .011	.438 ± .011					
Outer spring press. & length	Valve closed (lb.@in.)	94.6 @ 1.6298	62.4 @ 1.6298					
	Valve open (lb.@in.)	100.6 @ 1.6298	68.4 @ 1.6298					
Inner spring press. & length	Valve closed (lb.@in.)	165.6 @ 1.2298	116.2 @ 1.1918					
	Valve open (lb.@in.)	175.6 @ 1.2298	128.2 @ 1.1918					
Inner spring press. & length	Valve closed (lb.@in.)	---	30.5 @ 1.5898					
	Valve open (lb.@in.)	---	36.5 @ 1.5898					
Inner spring press. & length	Valve closed (lb.@in.)	---	59.4 @ 1.1598					
	Valve open (lb.@in.)	---	65.4 @ 1.1598					

## ENGINE - LUBRICATION SYSTEM

Type of lubrica- tion (splash, pressure, nozzle)	Main bearings	Pressure
	Connecting rods	Pressure
	Piston pins	Splash
	Camshaft bearings	Pressure
	Tappets	Pressure
	Timing gear or chain	Belt - Not Lubricated
	Cylinder walls	Metered Jet

(Continued)



# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (of) 9-26-68  
TEMPEST, CUSTOM S, LEMANS, LEMANS SAFARI  
 MODEL V-350 2-Bbl. V-350 4-Bbl. H.O.  
Manual Trans. Auto. Trans.

## ENGINE – VALVE SYSTEM (cont.)

Timing (based on top of ramp points)	Intake	Opens (°BTC)	22	38	23	
		Closes (°ABC)	67	83	70	
		Duration - deg.	269	301	273	
	Exhaust	Opens (°BBC)	72	95	78	
		Closes (°ATC)	25	38	31	
		Duration - deg.	277	313	289	
Valve opening overlap		47°	76°	54°		
Material		GM-8440 w/Alum. Treatment on Face & Fl. Chrome Pl. Stem				
Overall length		5.026	5.093			
Actual overall head dia.		1.963 - 1.957	2.113 - 2.107			
Angle of seat & face		45° Seat - 44° Face	30° Seat - 29° Face			
Seat insert material		Not Used				
Stem diameter		.3419 - .3412				
Stem to guide clearance		.0016 - .0033				
Intake	Lift (at zero lash)		.376 ± .011	.414 ± .011	.410 ± .011	
	Outer spring press. & length	Valve closed (lb. @ in.)	59.6 65.6 @ 1.5823	78 88 @ 1.591	78 88 @ 1.591	
		Valve open (lb. @ in.)	122.5 132.5 @ 1.2063	192.72 206.72 @ 1.177	191.6 205.6 @ 1.181	
	Inner spring press. & length	Valve closed (lb. @ in.)	31.7 37.7 @ 1.5423	42 48 @ 1.521	42 48 @ 1.521	
		Valve open (lb. @ in.)	88.8 98.8 @ 1.1663	95.86 105.86 @ 1.107	95.33 105.33 @ 1.111	
	Material		21-2 Steel w/Alum. Treatment on Face & Fl. Chrome Pl. Stem			
	Overall length		5.015	5.082		
	Actual overall head dia.		1.663 - 1.657	1.773 - 1.767		
	Angle of seat & face		45° Seat - 44° Face	45° Seat - 44° Face		
	Seat insert material		Not Used			
Stem diameter		.3414 - .3407				
Stem to guide clearance		.0021 - .0038				
Exhaust	Lift (at zero lash)		.412 ± .011	.413 ± .011		
	Outer spring press. & length	Valve closed (lb. @ in.)	59.6 65.6 @ 1.5823	78 88 @ 1.591		
		Valve open (lb. @ in.)	128.7 138.7 @ 1.1703	192.44 206.44 @ 1.178		
	Inner spring press. & length	Valve closed (lb. @ in.)	31.7 37.7 @ 1.5423	42 48 @ 1.521		
		Valve open (lb. @ in.)	94.4 104.4 @ 1.1303	95.73 105.73 @ 1.108		

## ENGINE – LUBRICATION SYSTEM

Type of lubrica- tion (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)

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (9-26-68)  
 GTO

MODEL V-400 4-Bbl. Auto. Trans. (a) V-400 Ram Air 4-Bbl. Auto. Trans. Manual Trans.

## ENGINE - VALVE SYSTEM (cont.)

Timing (based on top of ramp points)	Intake	Opens (°BTC)	23	31	38	
		Closes (°ABC)	70	77	83	
		Duration - deg.	273	288	301	
	Exhaust	Opens (°BBC)	78	90	95	
		Closes (°ATC)	31	32	38	
		Duration - deg.	289	302	313	
Valve opening overlap		54°	63°	76°		
Intake	Material		GM-8440 w/Alum.Treatment on Face & Fl.Chrome Pl. Stem			
	Overall length		5.093			
	Actual overall head dia.		2.113 - 2.107			
	Angle of seat & face		30° Seat - 29° Face			
	Seat insert material		Not Used			
	Stem diameter		.3419 - .3412			
	Stem to guide clearance		.0016 - .0033			
	Lift (@ zero lash)		.410 ± .011	.414 ± .011	.413 ± .011	
	Outer spring press. & length	Valve closed (lb.@in.)	63.3 69.3 @ 1.5613	78 88 @ 1.591	78 88 @ 1.591	
		Valve open (lb.@in.)	132 142 @ 1.1513	192.72 206.72 @ 1.177	192.44 206.44 @ 1.178	
	Inner spring press. & length	Valve closed (lb.@in.)	35 41 @ 1.5213	42 48 @ 1.521	35 41 @ 1.521	
		Valve open (lb.@in.)	97.4 107.4 @ 1.1113	95.86 105.86 @ 1.107	95.73 105.73 @ 1.108	
	Exhaust	Material		21-2 Steel w/Alum.Treatment on Face & Fl.Chrome Pl.Stem		
		Overall length		5.082		
Actual overall head dia.		1.773 - 1.767				
Angle of seat & face		45° Seat - 44° Face				
Seat insert material		Not Used				
Stem diameter		.3414 - .3407				
Stem to guide clearance		.0021 - .0038				
Lift (@ zero lash)		.413 ± .011	.413 ± .011	.413 ± .011		
Outer spring press. & length		Valve closed (lb.@in.)	63.3 69.3 @ 1.5613	78 88 @ 1.591	78 88 @ 1.591	
		Valve open (lb.@in.)	132.5 142.5 @ 1.1483	192.44 206.44 @ 1.178	192.44 206.44 @ 1.178	
Inner spring press. & length		Valve closed (lb.@in.)	35 41 @ 1.5213	42 48 @ 1.521	35 41 @ 1.521	
		Valve open (lb.@in.)	97.9 107.9 @ 1.1083	95.73 105.73 @ 1.108	95.73 105.73 @ 1.108	

## ENGINE - LUBRICATION SYSTEM

Type of lubrica- tion (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

(a) 400 4-Bbl. with manual transmission valve system is the same as the Ram Air 4-Bbl. engine for automatic transmission. (Continued)

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (e)MODEL GTO  
V-400 2-Bb1.

## ENGINE - VALVE SYSTEM (cont.)

Timing (based on top of ramp points)	Intake	Opens (°BTC)	22
		Closes (°ABC)	67
		Duration - deg.	269
	Exhaust	Opens (°BBC)	72
		Closes (°ATC)	55
		Duration - deg.	277
Valve opening overlap		47°	
Intake	Material		GM-8440 w/Alum.Treatment on Face & Fl.Chrome Pl.Stem
	Overall length		4.998
	Actual overall head dia.		1.963 - 1.957
	Angle of seat & face		45° Seat - 44° Face
	Seat insert material		Not Used
	Stem diameter		.3419 - .3412
	Stem to guide clearance		.0016 - .0033
	Lift (@ zero lash)		.376 ± .011
	Outer spring press. & length	Valve closed (lb.@in.)	59.6 @ 1.5823
		Valve open (lb.@in.)	65.6 @ 1.2063
	Inner spring press. & length	Valve closed (lb.@in.)	122.5 @ 1.2063
		Valve open (lb.@in.)	132.5 @ 1.1663
	Outer spring press. & length	Valve closed (lb.@in.)	31.7 @ 1.5423
		Valve open (lb.@in.)	37.7 @ 1.1663
	Inner spring press. & length	Valve closed (lb.@in.)	88.8 @ 1.1663
Valve open (lb.@in.)		98.8 @ 1.1663	
Exhaust	Material		21-2 Steel w/Alum.Treatment on Face-Flash Cr. on Stem
	Overall length		4.987
	Actual overall head dia.		1.663 - 1.657
	Angle of seat & face		45° Seat - 44° Face
	Seat insert material		Not Used
	Stem diameter		.3414 - .3407
	Stem to guide clearance		.0021 - .0038
	Lift (@ zero lash)		.412 ± .011
	Outer spring press. & length	Valve closed (lb.@in.)	59.6 @ 1.5823
		Valve open (lb.@in.)	65.6 @ 1.1703
	Inner spring press. & length	Valve closed (lb.@in.)	128.7 @ 1.1703
		Valve open (lb.@in.)	138.7 @ 1.1303
	Outer spring press. & length	Valve closed (lb.@in.)	31.7 @ 1.5423
		Valve open (lb.@in.)	37.7 @ 1.1303
	Inner spring press. & length	Valve closed (lb.@in.)	94.4 @ 1.1303
Valve open (lb.@in.)		104.4 @ 1.1303	

## ENGINE - LUBRICATION SYSTEM

Type of lubrica- tion (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)

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 12-68 REVISED (a)MODEL GTO  
Ram Air IV Engine Option

## ENGINE - VALVE SYSTEM (cont.)

Timing (based on top of ramp points)	Intake	Opens (°BTC)	42	
		Closes (°ABC)	86	
		Duration - deg.	308	
	Exhaust	Opens (°BBC)	95	
		Closes (°ATC)	45	
		Duration - deg.	320	
Valve opening overlap		87		
Intake	Material		GM-8440 w/Alum. Treatment on Face & Chrome Pl. Stem	
	Overall length		5.198	
	Actual overall head dia.		2.113 - 2.107	
	Angle of seat & face		30° Seat - 29° Face	
	Seat insert material		Not Used	
	Stem diameter		.3419 - .3412	
	Stem to guide clearance		.0016 - .0033	
	Lift (@ zero lash)		.520 ± .011	
	Outer spring press. & length	Valve closed (lb.@in.)	70 @ 1.820	
		Valve open (lb.@in.)	80 @ 1.300	
	Inner spring press. & length	Valve closed (lb.@in.)	214 @ 1.300	
		Valve open (lb.@in.)	228 @ 1.230	
	Exhaust	Material		21-2 Steel w/Alum. Treatment on Face & Chrome Pl. Stem
		Overall length		5.212
Actual overall head dia.		1.773 - 1.767		
Angle of seat & face		45° Seat - 44° Face		
Seat insert material		Not Used		
Stem diameter		.3414 - .3407		
Stem to guide clearance		.0021 - .0038		
Lift (@ zero lash)		.520 ± .011		
Outer spring press. & length		Valve closed (lb.@in.)	70 @ 1.820	
		Valve open (lb.@in.)	80 @ 1.300	
Inner spring press. & length		Valve closed (lb.@in.)	214 @ 1.300	
		Valve open (lb.@in.)	228 @ 1.230	

## ENGINE - LUBRICATION SYSTEM

Type of lubrica- tion (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)

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED 9-26-68

MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI
ENGINE - LUBRICATION SYSTEM (cont.) 6 Cylinder Engines		Optional V-8 Engines		
Oil pump type	Spur Gear			
Normal oil pressure (lb. engine rpm)	26-36 @ 2800	30-40 Above 2600 RPM (c)		
Oil press. sending unit (elect. or mech.)	Electric			
Type oil intake (floating, stationary)	Stationary Screen			
Oil filter system (full flow, part., other)	Full Flow			
Filter replacement (element, complete)	Complete			
Capacity of a case, less filter-refill (qt.)	4.5	5		
Oil grade recommended (SAE viscosity and temperature range)	Single Viscosity Acceptable			
	Anticipated Lowest Temp.	SAE Number	Alternate	
	Above Freezing (+32°F.)	20W	10W - 30	
	Below Freezing (0°F. to +32°F.)	10W	10W - 30	
Engine Service Reqmt. (MM, MS, etc.)	MS			
Below Zero	5W	5W - 20		

## ENGINE - EXHAUST SYSTEM

Type (single, single with cross-over, dual, other)	Single (a)		
Muffler No. & type (reverse flow, straight thru, separate resonator)	One - Reverse Flow (a)		
Exhaust pipe dia. (O.D., wall thick.)	Branch	None (b)	2.00 x .076 (a)
	Main	2.00 x .060 (b)	2.25 x .076 (a)
Tail pipe dia. (O.D. & wall thickness)	2.00 x .048 Aluminized		

## ENGINE - CRANKCASE VENTILATION SYSTEM

Type (ventilates to atmos., induction system, other)	Standard	Induction System	
	Optional	None	
Make and model		AC Type CV-735C	AC Type CV-679C
Location		Intake Manifold	Push Rod Cover
Control Unit		Manifold Vacuum	
Control method (variable orifice, fixed orifice, other)		Variable Orifice	
Complete system		Intake Manifold	
Air inlet (breather cap, carburetor air cleaner, other)		Through Filter in the Carburetor Air Cleaner	
Flame arrestor (screen, check valve, other)		Check Valve	

(a) Optional dual system for 350 V-8 uses 2 reverse flow mufflers, two resonators, and no crossover pipe, 2.00 x .060 exhaust pipes and 2.25 x .048 aluminized tailpipes. Dual system standard with 350 HO engine - not available on station wagons.

(b) 6 cylinder 4-bbl. option uses 2.00 branch, 2.25 main.

(c) 55-60 above 2600 RPM on 350 H.O. engine.

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (•)MODEL GTO

## ENGINE – LUBRICATION SYSTEM (cont.)

Oil pump type	Spur Gear		
Normal oil pressure (lb. engine rpm)	55-60 Above 2600 RPM*		
Oil press. sending unit (elect. or mech.)	Electric		
Type oil intake (floating, stationary)	Stationary Screen		
Oil filter system (full flow, part., other)	Full Flow		
Filter replacement (element, complete)	Complete		
Capacity of c/case, less filter-refill (qt.)	5		
Oil grade recommended (SAE viscosity and temperature range)	Single Viscosity Acceptable		
	Anticipated Lowest Temp.	SAE Number	Alternate
	Above Freezing (+32°F.)	20W (b)	10W-30(c)
	Below Freezing (0°F. to +32°F.)	10W	10W-30(c)
	Below Zero	5W	5W-20
Engine Service Reqmt. (MM, MS, etc.)	MS		

## ENGINE – EXHAUST SYSTEM

Type (single, single with cross-over, dual, other)	Dual		
Muffler No. & type (reverse flow, straight thru, separate resonator)	2 - Reverse Flow - Resonators with 2.00" Outlet Used on Turbo Hydra-Matic Cars Only		
Exhaust pipe dia. (O.D., wall thick.)	Branch	Not Used	
	Main	2.00 x .060 (a)	
Tail pipe dia. (O.D. & wall thickness)	2.25 x .048 Aluminized		

## ENGINE – CRANKCASE VENTILATION SYSTEM

Type (ventilates to atmos., induction system, other)	Standard	Induction System	
	Optional	None	
Control Unit	Make and model	AC Type CV-679C	
	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)	Through Filter in the Carburetor Air Cleaner	
	Flame arrester (screen, check valve, other)	Check Valve	

\* 30-40 above 2600 RPM with Regular Fuel Engine Option.

(a) 2.25 x .060 with 400 Ram Air and Ram Air IV Engine Options.

(b) 30W with Ram Air IV Option.

(c) 10W-40 with Ram Air IV Option.

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (•)

<b>MODEL</b>	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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**ENGINE – EXHAUST EMISSION CONTROL**

Type (Air injection, engine modifications, other)			
Air Injection Pump	Type		
	Displacement		
	Drive ratio		
	Drive type		
	Relief valve (type)		
	Filter (describe)		
Air Injection System	Air distribution (head, manifold, etc.)		
	Point of entry		
	Injection tube I.D.		
	Check valve type		
Carburetor	Make		
	Model		
	Barrel size		
	Idle speed	Drive Neutral	
	Idle A/F mixture		
Aux. Adv. Systems (type)			
Distributor	Make		
	Model		
	Cent'fgal adv. in crank degrees @ eng. rpm	Start (rpm)	
		Intermed. points deg. @ rpm	
		Max. deg. @ rpm	
	Vacuum adv. in crank degrees @ eng. rpm	Start (in Hg)	
Intermed. points deg. @ in. Hg			
Max. deg. @ in.			
Vacuum Source			
Timing - Crank degrees @ rpm			
Cooling System			
Exhaust System			

STANDARD ENGINE PROVIDES EXHAUST EMISSION CONTROL

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (\*)

<b>MODEL</b>	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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**ENGINE – FUEL SYSTEM** 6 Cyl. Engines V-8 Engines

Induction type: Carburetor, fuel injection, supercharger.		Carburetor			
Fuel Tank	Refill capacity (U.S. gals.)	21.5 (Except 20 on Station Wagon)			
	Filler location	Center Rear			
Fuel Pump	Type (elec. or mech.)	Mechanical			
	Locations	Right Front of Engine	Left Front of Engine		
	Pressure range	4.0 - 5.5	5.0 - 6.5		
Vacuum booster (std., optional, none)		None			
Fuel Filter	Type and Locations	Plastic Fabric in Fuel Tank and Sintered Bronze in Carburetor Inlet (a)			
	Choke type	Automatic			
Carburetor	Intake manifold heat control (exhaust or water)	Exhaust			
	Air cleaner type (c)	Standard	Oil Wetted Paper		
		Optional	Two Stage-Wetted Plastic Foam Over Paper Element		
	Idle speed (spec. neutral or drive)	Manual N	500 (6 - 1 Bbl)	600 (6 - 4 Bbl)	850 (350 & 400 2 Bbl)
Automatic D		500	500	650	650 (750 Ram Air)
	Idle A F mix.				

### CARBURETOR SUPPLEMENTARY INFORMATION

Model Usage	Engine Displ.	Transmission	Carburetors		No. Used and Type	Barrel Size
			Make	Model		
233, 235, 237, 239 - Std.	250	Manual Automatic	Rochester	7029165 (b)	1, 1-Bbl.	1.69
			Rochester	7029166 (b)		
233, 235, 237 - Opt.	250	Manual Automatic	Rochester	7029261	1, 4-Bbl.	P. - 1.38 S. - 2.25
			Rochester	7029260		
233, 235, 237, 239 - Opt.	350	Manual Automatic	Rochester	7028071	1, 2-Bbl.	1.69
			Rochester	7029062		
233, 235, 237 - Opt.	350	Manual Turbo H-M	Rochester	7029263	1, 4-Bbl.	P. - 1.38 S. - 2.25
			Rochester	7029268		
242 Std.	400	Manual Turbo H-M	Rochester	7029263	1, 4-Bbl.	P. - 1.38 S. - 2.25
			Rochester	7029268		
242 Ram Air Opt.	400	Manual Turbo H-M	Rochester	7028273	1, 4-Bbl.	P. - 1.38 S. - 2.25
			Rochester	7028270		
242 Ram Air IV Opt.	400	Manual Turbo H-M	Rochester	7029273	1, 4-Bbl.	P. - 1.38 S. - 2.25
			Rochester	7029270		
242 Reg. Fuel Opt.	400	Turbo H-M	Rochester	7029060	1, 2-Bbl.	1.69

(a) Pleated paper instead of sintered bronze in all 1 & 4-Bbl. carburetors.  
 (b) 7029167 with manual transmission and air conditioning, 7029168 with automatic transmission and air conditioning.  
 (c) Includes provisions for thermostatic control of carburetor inlet air temperature.



# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (e)

<b>MODEL</b>	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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**ENGINE—COOLING SYSTEM**                      6 Cyl. Engines                      V-8 Engines

Type system (pressure, pressure vented, atmospheric, other)		Pressure Vented							
Radiator cap relief valve pressure		14-17 P.S.I.							
Circulation thermostat	Type (choke, bypass)	Choke							
	Starts to open at (°F)	190°							
Water pump	Type (centrifugal, other)	Centrifugal							
	GPM @ 1000 pump rpm	16							
	Number of pumps	One							
	Drive (V-belt, other)	V-Belt							
	Bearing type	Sealed Ball Bearing							
By-pass recirculation type (inter., ext.)		Internal							
Radiator core type (cellular, tube and fin, other)		Tube and Center							
Cooling system capacity	With heater (qt.)	11.9	19.9 (350), 18.3 (400)						
	Without heater (qt.)	Heater Standard Equipment							
	Opt. equipment-specify (qt.)	12.2 with A/C	21.3 (350), 19.7 (400)w/A/C						
Water jackets full length of cyl. (yes, no)		Yes							
Water all around cylinder (yes, no)		Yes							
Radiator hose	Lower	Number and type (molded, straight)	One, Molded						
		Inside diameter	1.50						
	Upper	Number and type (molded, straight)	One, Molded						
		Inside diameter	1.50						
	By-pass	Number and type (molded, straight)	Hose Not Used						
		Inside diameter	-						
Fan	Number of blades & spacing		4 - 76° & 104° (a) (b) (c)						
	Diameter		17.62                      18.0						
	Ratio-fan to crankshaft rev.		.95:1 (1.08:1 with A/C)                      .91:1 (1.12:1 with A/C)						
	Fan cutout type		Fluid Clutch - Thermostatically Controlled (V-8 A/C Only)						
	Bearing type		See Water Pump						
*Drive belts (indicate belt used by letter)	Fan	A	A, B	A, C	B, C	E	F, G	E	F, I
	Generator or alternator	A	A, B	A	B, D	E	F	E	F
	Water Pump	A	A, B	A, C	B, C	E	F, G	E	F, I
	Power Steering		B		B, D		G		I
	Air Conditioning			C	C			H	H

* Drive Belt Dimensions	A	B	C	D	E	F	G	H	I	J	K
Angle of V	36°	36°	36°	36°	36°	36°	36°	36°	36°		
Nominal Length (SAE)	39.0	51.5	58.0	27.6	54.0	50.0	52.0	59.0	53.5		
Width	.38	.47	.47	.38	.38	.38	.47	.47	.47		

- (a) 5 blade 19 dia. Power-Flex fan on 6 cyl. with A/C.
- (b) 7 blade 19.5 dia. on V-8 with A/C.
- (c) 5 blade 19 dia. Power-Flex fan standard on GTO 4-bbl. engines without A/C or Ram Air IV Option.

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (\*)

MODEL		TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO	
<b>ELECTRICAL – SUPPLY SYSTEM</b>		6 Cylinder		350 V-8		400 V-8	
Battery	Make and Model	Delco Y-55 (a)		Delco Y-59 (b)		Delco R-59	
	Voltage Rtg. & Total Plates	12-54		12-54		12-66	
	SAE Designation & Amp. Hr. Rtg.	17 MI - 44 Amp.Hr.		2 SM - 53 Amp.Hr.		2 SM - 61 Amp.Hr.	
	Location	Under Hood - R.H. Side		Under Hood - L.R. Side			
	Terminal grounded	Negative					
Generator or Alternator	Make	Delco Remy					
	Model	1100761 (c)		1100704 (d)			
	Type and rating	37 Amp. (e)		37 Amp. (e)			
	Output at engine idle (neutral)	5-10 Amps.					
	Ratio-Gen. to Cr/s rev.	2.74:1 (3.02:1 With A/C)					
Regulator	Make	Delco Remy					
	Model	1119515 (f)					
	Type	Regulating Contacts in Standard Type					
	Cutout relay	Closing voltage generator rpm	Cutout Relay Not Required				
		Reverse current to open	Cutout Relay Not Required				
	Regulated	Voltage	13.8				
		Current	Alternator Self Regulating				
	Voltage test conditions	Temperature	125° F.				
Load		10 Amps.					
Other	Cycle Regulator Before Final Setting						

## ELECTRICAL – STARTING SYSTEM

Starting Motor	Make	Delco Remy					
	Model	1107499	1107293		1107355 (h)		
	Rotation (drive end view)	Clockwise					
Motor control	Switch (solenoid, manual)	Solenoid					
	Starting procedure	Place gearshift lever in neutral and depress clutch. *With cold engine, depress accelerator pedal to floor and release. With warm engine, hold accelerator pedal about halfway down, turn ignition key clockwise to engage starter, release key as soon as engine starts.					
		*Use neutral or park with automatic transmission. (No clutch)					
Motor Drive	Engagement type	Sliding Gear - Overrunning Clutch					
	Pinion meshes (front, rear)	Front					
	Number of teeth	Pinion	9				
		Flywheel	Manual	155		166	
	Auto.		155		166		
Flywheel tooth face width	Manual	.41		.40			
	Auto.	.41		.40			

(a) Delco R-59 used with A/C or H.D. battery option.

(b) With regular fuel engine - Delco R-59 with premium fuel engine or H.D. battery option.

(c) 1100760 (55 amp.) with A/C.

(d) 1100700 (55 amp.) with A/C.

(e) Diode rectified, 3-phase alternating current.

(f) 1116368 transistor regulator optional.

(h) 1108353 with Ram Air and Ram Air IV options.

## AMA Specifications—Passenger Car

MAKE OF CAR	Pontiac		MODEL YEAR	1969	DATE ISSUED	9-12-68	REVISED	(*)1-2-69
MODEL	TEMPEST		CUSTOM S		LEMANS		LEMANS SAFARI	
ELECTRICAL - IGNITION SYSTEM			250 L-6 Engines			350 V-8 2-Bbl. Engines		
Type	Conventional - Std., Opt., N.A.		Standard					
	Transistorized - Std., Opt., N.A.		Not Offered					
	Other (specify)		--					
Coil	Make		Delco Remy					
	Model		1115414			1115410		
	Amps	Engine stopped	3.4					
Engine idling		2.1						
Distributor	Make		Delco Remy					
	Model		1110475 (a)	1110474 (b)	1111942 (c)	1111960 (d)		
	Cent'fgal adv. in c/shaft degrees@ engine rpm (nominal)	Start (rpm)	900	1000	800	1100		
		Intermediate points, deg.@rpm	15 - 19 @ 1250	12 - 16 @ 1750	13 - 17 @ 1950	12 - 16 @ 2000		
		Max. deg.@rpm	26-30 @ 4400	24-28 @ 5100	22-26 @ 4800	20-24 @ 4600		
	Vacuum adv. in c/shaft degrees@ in. Hg. (nominal)	Start (in. Hg.)	5 - 7	5 - 7	6 - 8	8 - 10		
		Intermediate points, deg.@in. Hg.	None					
		Max. deg. in. Hg.	15° @ 10.5 - 11.5		20° @ 13-15	20° @ 15-17		
	Breaker gap (in.)		.016					
	Cam angle (deg.)		31 - 34			28-32		
Breaker arm tension (oz.)		19 - 23						
Timing	Crankshaft deg.@rpm		TDC	5° BTDC	9° BTDC			
	Mark location		On Balancer			On Crankshaft Pulley Hub		
Spark Plug	Make		AC					
	Model		R 44NS			R 46S		
	Thread (mm)		14mm					
	Tightening torque (lb. ft.)		15 - 25					
Gap		.033 - .038						
Cable	Conductor type		Distributed Resistance					
	Insulation type		Neoprene					
	Spark plug protector		Hypalon Boot					

## ELECTRICAL - SUPPRESSION

Locations & type	(e)
------------------	-----

- (a) Used on 1-Bbl. L-6 engines - manual and automatic transmissions  
 (b) Used on 4-Bbl. L-6 engines - manual and automatic transmissions  
 (c) Used on 2-Bbl. 350 V-8 engines with automatic transmission  
 (d) Used on 2-Bbl. 350 V-8 engines with manual transmission  
 (e) Wide gap distributor rotor, distributed resistance secondary cables, resistor spark plugs (5000 OHMS), engine to dash ground strap and fender to frame ground strap.
- Production change approximately 2-1-69 and all service.

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (e) 1-2-69

TEMPEST	CUSTOM S	LEMANS	GTO
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MODEL \_\_\_\_\_

### ELECTRICAL - IGNITION SYSTEM

350 V-8 4-Bbl. Engines & All 400 V-8 Engines

Type	Conventional - Std., Opt., N.A.		Standard						
	Transistorized - Std., Opt., N.A.		Not Offered						
	Other (specify)		--						
Coil	Make		Delco Remy						
	Model		1115410						
	Amps	Engine stopped	3.4						
		Engine idling	2.1						
Distributor	Make		Delco Remy						
	Model		1111946 (a)	1111952 (b)	1111941 (c)	1111940 (d)	1111965 (e)	1111966 (f)	
	Centrifugal adv. in c shaft degrees @ engine rpm (nominal)	Start (rpm)	800	1100	1200	800	850	1100	
		Intermediate points deg. @ rpm	10 - 14 @ 2000	10 - 14 @ 2000	10 - 14 @ 2100	15 - 19 @ 1900	3 - 7 @ 1400	3 - 7 @ 1600	
		Max. deg. @ rpm	18-22 @ 4600	18-22 @ 4600	26-30 @ 6100	30-34 @ 4550	16-20 @ 5100	16-20 @ 5000	
	Vacuum adv. in c shaft degrees @ in. Hg. (nominal)	Start (in. Hg.)	3 - 10	8 - 10	8 - 10	8 - 10	8 - 10	8 - 10	
		Intermediate points, deg. @ in. Hg.	None						
		Max. deg. in. Hg.	20° @ 15-17	20° @ 15-17	20° @ 15-17	20° @ 15-17	20° @ 15-17	20° @ 15-17	
		Breaker gap (in.)		.016					
		Cam angle (deg.)		28 - 32					
	Breaker arm tension (oz.)		28 - 31 (h)						
Timing	Crankshaft deg. @ rpm		9° BTDC (g)						
	Mark location		Crankshaft Pulley Hub						
Spark Plug	Make		AC						
	Model		(j)						
	Thread (mm)		14mm						
	Tightening torque (lb. ft.)		15 - 25						
	Gap		.023 - .038						
Cable	Conductor type		Distributed Resistance						
	Insulation type		Neoprene						
	Spark plug protector		Hypalon Boot						

### ELECTRICAL - SUPPRESSION

Locations & type	See Page 13
------------------	-------------

- (a) Used on 4-bbl. 400 cu. in. V-8 engines with Turbo Hydra-Matic.
- (b) Used on 4-bbl. 400 cu. in. V-8 engines with Manual Transmission.
- (c) Used on 4-bbl. 400 cu. in. Ram Air IV engines with Manual & Automatic Transmissions, model 1111970 used after 12-12-68.
- (d) Used on 2-bbl. 400 cu. in. regular fuel engine - Turbo Hydra-Matic.
- (e) Used on 4-bbl. 350 cu. in. V-8 engine with Turbo Hydra-Matic.
- (f) Used on 4-bbl. 350 cu. in. V-8 engine with Manual Transmission.
- (g) 15° BTDC on Ram Air IV engine
- (h) Except 1111940 distributor where tension is 19-23 oz.
- (j) R 46S on 400 2-bbl., R 45S on 350-400 4-bbl., R 44S on 400 Ram Air and Ram Air IV effective in production and all service.

## AMA Specifications—Passenger Car

MAKE OF CAR	Pontiac	MODEL YEAR	1969	DATE ISSUED	9-12-68	REVISED (e)
MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO	

## ELECTRICAL - INSTRUMENTS AND EQUIPMENT

Speedometer	Type	Mechanical				
	Trip odometer (yes,no)	No				
Charge indicator - type		Telltale Lamp				
Temperature indicator - type		Telltale Lamp				
Oil pressure indicator - type		Telltale Lamp				
Fuel indicator - type		Electric Gage				
Other		Optional Instrument Cluster With Temperature and Oil Pressure Telltales Replaced With Gages				
Windshield wiper	Type - Standard	Two-Speed Electric (d) (f)				
	Type - Optional	Concealed Park - L.H. Arm Articulated (e) (f)				
Windshield washer	Type - Standard	Electric - Pump Integral With Wiper Motor				
	Type - Optional	None				
Horn	Type	Solenoid				
	Number used	1 (a)	2 Std.			
	Amp draw (each)	4.3 - 5.9 @ 12.5 V				

## DRIVE UNITS - CLUTCH (Manual Transmission) 6 Cyl. Engines | V-8 Engines

Make & type	Own - Dry				
Type pressure plate springs	Disc Spring				
Total spring load (lb.)	2050 (b)				
No. of clutch driven discs	One				
Clutch facing	Material	Woven Molded Asbestos			
	Outside & inside dia.	10.0 x 6.0 (c)	10.4 x 6.5		
	Total eff. area (sq.in.)	82.93 (c)	85.56		
	Thickness	.135 (c)	.140		
	Engagement cushioning method	Driven Plate Waved Spoke Springs			
Release bearing	Type & method of lubrication	Ball Thrust - Prepacked & Sealed			
Torsional damping	Methods: springs, friction material	Coil Springs and Metal to Metal Friction			

- (a) 1 Standard - second horn optional.  
 (b) 2350# pressure on 6 cyl. 4-bbl. option and standard GTO.  
 (c) 6 cylinder 4-bbl. option uses 10.4 x 6.5 driven plate with 80.56. effective area and .140 facing thickness.  
 (d) Concealed park system standard on LeMans, LeMans Safari, and GTO.  
 (e) Standard equipment on LeMans, LeMans Safari, and GTO.  
 (f) Pulse wiper feature is included with concealed park system. The pulse wiper is actuated by depressing the "wash" button to the detent, wiper will continue to operate until the button is released.

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REISED (\*)

MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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## DRIVE UNITS—TRANSMISSIONS

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

## DRIVE UNITS—MANUAL TRANS.

Number of forward speeds		3-Speed			4-Speed (d)
		6 Cyl. (a)	350 V-8 (b)	All V-8 (c)	
Transmission ratios	In first	2.85:1	2.54:1	2.42:1	2.52:1
	In second	1.68:1	1.50:1	1.61:1	1.88:1
	In third	1.00:1	1.00:1	1.00:1	1.46:1
	In fourth	-	-	-	1.00:1
	In reverse	2.95:1	2.63:1	2.33:1	2.59:1
Synchronous meshing, specify gears		All Forward			
Shift lever location		(a)	(b)	Floor Shift	
Capacity (pt.)		3.5		2.8	2.5
Type recommended		Type A - Extreme Pressure			
Lubricant	SAE viscosity number	Summer		80 or 90	
		Winter		80 or 90	
		Extreme cold		80 or 90	

## DRIVE UNITS—MANUAL TRANS. W/OVERDRIVE

(For transmission data see manual transmission section)

Type (planetary or other)	Not Offered	
Manual lockout (yes, no)		
Downshift accelerator control (yes, no)		
Minimum cut-in speed		
Gear ratio		
Lubricant	Capacity (pt.) (Overdrive only)	
	Separate filler (yes, no)	
	Type recommended	
	SAE viscosity number	Summer
		Winter
	Extreme cold	

- (a) Column shift standard - floor shift optional  
 (b) Available with standard column shift only  
 (c) Standard on 400 cu. in. V-8 includes floor shift - optional on 350 cu. in. V-8  
 (d) Special order close ratio 4-speed (2.20:1, 1.64:1, 1.28:1, 1.00:1, and 2.27:1 R) is the only transmission available with 3.9:1 and 4.33:1 rear axle ratios on GTO - available on other series with 350 H.O. engine option only.

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (c)

MODEL All Except GTO With- All Except GTO With - All Except L-6 Engine  
L-6 1-Bbl. V-8 2-Bbl. L-6 1-Bbl. L-6 4-Bbl. V-8 2-Bbl. 350 2-Bbl. 350 4-Bbl. 400 2-Bbl. 400 4-Bbl.

### DRIVE UNITS – AUTOMATIC TRANSMISSION

Trade name	Automatic		Turbo Hydra-Matic							
Type describe	Torque Converter									
Selector location	Steering Column (a)									
List gear ratios Selector Pattern and indicate which are used in each selector position	$\frac{P}{1.76}$ $\frac{R}{1.76}$ $\frac{N}{1.00}$ $\frac{D}{1.76}$ $\frac{L}{1.76}$ (b)		$\frac{P}{1.92}$ $\frac{R}{2.52}$ $\frac{N}{2.52}$ $\frac{D}{2.52}$ $\frac{S}{1.52}$ $\frac{L}{1.52}$ (d)			$\frac{P}{2.08}$ $\frac{R}{2.48}$ $\frac{N}{2.48}$ $\frac{D}{2.48}$ $\frac{S}{1.48}$ $\frac{L}{1.48}$				
Max. upshift speed—drive range (j)	80	73	(e)40, (f)67	(e)44, (f)70	(e)52, (f)88	(e)45, (f)79	(e)41, (f)72	(e)45, (f)80	(e)49, (f)71	
Max. kickdown speed—drive range (j)	75	68	(g)62, (h)37	(g)65, (h)41	(g)83, (h)49	(g)72, (h)26	(g)66, (h)27	(g)74, (h)26	(g)66, (h)33	
Torque converter	Number of elements									
	Three									
	Max. ratio at stall									
	2.8:1	2.5:1	2.5:1		2.0:1	2.05:1	2.30:1	2.05:1	2.30:1	
Type of cooling (air, liquid)	Water									
	Nominal diameter				11.75				12.5	
Lubricant	Capacity—refill (pt.)		15 (Approx.)			16 (Approx.)		19 (Approx.)		
	Type recommended									
GM Dexron Automatic Transmission Fluid										
Special transmission features	Shift lever must be lifted over stop to enter "Park", "Reverse" and "Low" ("S" on 400) positions. Engine starting on "Neutral" and "Park" positions provided for. (i)									

### DRIVE UNITS – PROPELLER SHAFT

Number used	One					
Type (straight tube, tube-in-tube, internal-external damper, etc.)	Straight Tube					
Outer diam. x length* x wall thickness	Manual 3-speed trans.		3.25 x 60.0 x .065 (116 W.B.) 3.25 x 56.0 x .065 (112 W.B.)			
	Manual 4-speed trans.		3.25 x 60.0 x .065 (116 W.B.) 3.25 x 56.0 x .065 (112 W.B.)			
	Overdrive transmission		Not Available			
	Automatic transmission 7804821 - 7804822		3.25 x 60.0 x .065 (116 W.B.) 3.25 x 56.0 x .065 (112 W.B.)		3.25 x 59.34 x .065 (116 W.B.) 3.25 x 55.34 x .065 (112 W.B.)	

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

- (a) Floor with optional console.
- (b) Total torque multiplication in first gear is 4.93:1 with 6 cyl., 4.4:1 with V-8.
- (c) Not available on station wagons.
- (d) Total torque multiplication in first gear is 6.30:1 with 6 cyl., 5.04:1 with V-8.
- (e) 1-2 Upshift @
- (f) 2-3 Upshift @
- (g) 3-2 Kickdown @
- (h) 3-1 Kickdown @
- (i) Rally shifter available with console option provides manual speed shift stops to locate second and third gear positions when the lever is deflected to the right hand path.
- (j) Based on non-A/C car with standard axle for the engine indicated.

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (\*)

MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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**DRIVE UNITS – PROPELLER SHAFT (cont.)**

Inter-mediate bearing	Type (plain, anti-friction)	Not Used
	Lubrication (fitting, prepack)	Not Used
Slip Yoke	Type	Splined
	Number of teeth	28
	Spline O.D.	1.166
Universal joints	Make and Mfg. No.	Saginaw - Size 44 (Regular)
	Number used	Two
	Type (ball and trunnion, cross)	Cross
	Rear attach. (u-bolt, clamp, etc.)	
	Bearing	Type (plain, anti-friction)
Lubric. (fitting, prepack)		Prepacked
Drive taken through (torque tube or arms, springs)		Control Arms
Torque taken through (torque tube or arms, springs)		Control Arms

**DRIVE UNITS – AXLE**

Type (front, rear)	Rear		
Description	Semi-Floating Hypoid		
Limited Slip differential, type	Spring Loaded Clutch (Opt.)		
Drive Pinion Offset	1.50		
No. of differential pinions	2		
Pinion adjustment (shim, other)	Shim		
Pinion bearing adj. (shim, other)	Collapsible Spacer		
Wheel bearing type	Single Row Ball Bearing		
Lubricant	Capacity (pt.)	3	
	Type recommended	A-9 Hypoid (a)	
	SAE viscosity number	Summer	80 or 90
		Winter	80 or 90
		Extreme cold	80 or 90

**AXLE RATIO TOOTH COMBINATIONS**

(See page 3 for axle ratio usage)

Axle ratio	2.56:1	2.78:1	2.93:1	3.08:1	3.23:1	3.36:1	3.55:1	3.90:1	4.33:1
No. of teeth	Pinion	16	14	14	13	13	11	11	9
	Ring gear	41	39	41	40	42	37	39	39
Ring Gear O.D.	8.125								

(a) Special lubricant required with limited slip differential.



# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (\*) 9-26-68 1-2-69

MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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### DRIVE UNITS - WHEELS

Type & material		Disc - Steel			
Rim (size & flange type)	Std.	14 x 5JJ(a)		14 x 6 JK	
	Opt.	14 x 6 JK(g)			
Attachment	Type (bolt or stud)	Bolt			
	Circle diameter	4.75			
	Number and size	5, 7/16 - 20			

MODEL \_\_\_\_\_

### DRIVE UNITS - TIRES

Standard	Size, ply rating, & ply	7.75 - 14 (b) (c)	8.25-14 (c)	G78-14 (c) (f)	
	Type (bias, radial, etc.)	Bias			
	Full rated Inflation Press.	Front	24		
		Rear	28 (d) (e)		
Rev./Mile at 50 MPH		7.75-14 - 766, 8.25-14 - 760, G78-14 - 768			
Optional	Size, ply rating, & ply	G78-14 (c) Option For All Models Except GTO 8.25-14 (c) Oversize Option for 6 Cyl. Models G78-14 4 Ply Rated, 2 Ply Carcass Plus 2 Fiberglass Tread Plys			

### BRAKES - PARKING

Type of control		Foot Lever Application - Hand Pull 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

- (a) Std. on 6 cyl. engine models - 14 x 6 rims with V-8 engine option and station wagons.
- (b) 6 cyl. engine models except Sta.Wgn., 8.25-14 std. on Sta.Wgn. and all with V-8 engine option.
- (d) Optional inflation for reduced loads: 24 PSI except station wagon. 28 PSI on station wagon.
- (e) Station wagon full rated load inflation pressure is 32 PSI.
- (c) 4 Ply rated - 2 Ply
- (f) G70-14 4 Ply rated, 2 Ply carcass plus 2 fiberglass tread plys standard with "The Judge" option.
- (g) De-chromed Rally II wheels standard with "The Judge" option.

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (a) 9-26-68

MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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## BRAKES—SERVICE

Type (drum) or (disc & no. of pistons)		Drum - Standard		Front Disc-Single, Opt. (a)		
Self adjusting (std., opt., N.A.)				Standard		
Special Valving	Type (proportion, delay, metering, other)	--		Metering Type - Delay		
Power brake make & type (remote, int., etc.)	Std. Opt.			--		
		Delco Moraine, Integral Type, Vacuum Suspended (b)				
Effective area (sq. in.) *		149.4		103.6		
Gross lining area (sq. in.) **		155.5		110.6		
Swept area (sq. in.) ***		269.2		350.9		
Front to Rear Effectiveness Relationship		62.6		62.6		
Drum	Diameter (nominal)	Front	9.5		--	
		Rear			9.5	
Type and material		Cast Alloy Iron (c)		--		
Rotor	Outer working diameter		--		10.94	
	Inner working diameter		--		6.88	
	Working width		--		1.00	
	Material & type (vented/solid)		--		Cast Alloy Iron - Vented	
Wheel cylinder bore	Front		1.125		2.9375	
	Rear				.875	
Master Cylinder	Bore		1.00		1.125	
	displacement distribution	Front %	59		73	
		Rear %	41		37	
Pedal arc ratio		6.15:1 Manual - 3.36:1 Power (e)				
Line pressure at 100 lb. pedal load		700 Manual, 900 Power-Drum, 800 Power-Disc				
Shoe Clearance	Front		(d)		None	
	Rear				(d)	
Brake lining	Bonded or riveted		Riveted			
	Front Wheel	Material		Molded Asbestos		
		Size (length x width x thickness)	Prim. or out-board	7.6 x 2.5 x .196		5.40 x 1.93 x .41
			Second. or in-board	9.85 x 2.5 x .265		5.40 x 1.93 x .44
		Segments per shoe		One		
	Rear Wheel	Material		Molded Asbestos		
		Size (length x width x thickness)	Prim. or out-board	7.6 x 2.0 x .196		
			Second. or in-board	9.85 x 2.0 x .265		
Segments per shoe		One				

\* Excludes rivet holes, grooves, chamfers, etc. \*\* Includes rivet holes, grooves, chamfers, etc.

\*\*\* Total swept area for four brakes. (Widest lining contact width for each brake x its contact circumference.)

- (a) Included with power brake option on GTO series.  
 (b) Optional with Drum Brakes. Included with front disc brake opt.all series.\*  
 (c) Front - finned 1 pc. casting, rear - finned composite.  
 (d) Tighten drum brakes to heavy drag then back off 26 notches.  
 (e) At 0.5 in. push rod travel.

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (e) 9-26-68

<b>MODEL</b>	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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**STEERING**

Manual (std., opt., NA)		Standard			
Power (std., opt., NA)		Optional			
Adjustable steering wheel (tilt, swing, other)	Type and description	Tilting Wheel, Adjusts Vertically - Seven Positions			
	(std., opt., NA)	Optional			
Wheel diameter	Manual	14.75 x 15.25			
	Power	14.75 x 15.25			
Turning diameter (feet)	Outside front	Wall to wall (l. & r.)	40.5 (112 W.B.)	41.7 (116 W.B.)	
		Curb to curb (l. & r.)	37.4 (112 W.B.)	38.6 (116 W.B.)	
	Inside rear	Wall to wall (l. & r.)	23.1 (112 W.B.)	24.3 (116 W.B.)	
		Curb to curb (l. & r.)	23.7 (112 W.B.)	24.9 (116 W.B.)	
Outside Whl. Angle with Inside Whl. at 20°	18.6°				
Manual	Gear	Type	Recirculating Ball Bearing		
		Make	Saginaw		
	Ratios	Gear	24:1		
		Overall	28.3:1		
No. wheel turns (stop to stop)		5.6			
Power	Type (coaxial, linkage, etc.)		Coaxial		
	Make		Saginaw		
	Gear	Type	Recirculating Ball Bearing		
		Ratios	Gear	17.5:1	15.0:1
	Overall		20.5:1		
	Pump driven by		Belt From Crankshaft		
No. wheel turns (stop to stop)		4.2	3.6		
Linkage	Type		Link Parallelogram		
	Location (front or rear of wheels, other)		Front of Wheels		
	Drag link (trans. or longit.)		Trans.Strg.Rod Connects Tie Rods,Pitman & Idler Arms		
	Tie rods (one or two)		Two		
Steering Axis	Inclination at camber (deg.)		9° 0' @ 0° Camber		
	Bearings (type)	Upper	Ball Joint		
		Lower	Ball Joint		
	Thrust		Spring Load Taken by Lower Ball Joint		
Whl. Align. (range at curb wt. & preferred)	Caster (deg.)		1° 30' Negative ± 30'		
	Camber (deg.)		0° 15' Positive ± 30'		
	Toe-in (outside track 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		

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (\*)

MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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## SUSPENSION – GENERAL

(See Supplement page for details on Air Suspension)

Provision for car leveling	None				
Provision for brake dip control	Compound Anti-Dive Control & Anti-Rise Rear Susp.				
Provision for acc. squat control	Geometry of Rear Links				
Special provisions for car jacking	Jack Locating Provisions on Front & Rear Bumpers				
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 & Lower Control Arms Mounted on Rubber Bushings				
Spring	Type	Coil			
	Material	SAE 9260			
	Size (coil design height & I.D. bar length x dia.)	11.30 x 3.6			
	Spring rate (lb. per in.)	250 Std. on 23369 - 280, 310 & 335 (a)			310
	Rate at wheel (lb. per in.)	74 Std. on 23369 - 82, 91 & 99 (a)			91
Stabilizer	Type (link, linkless, frameless)	Link			
	Material & bar diameter	SAE 9260, .937 (Exc. .907 on Sta.Wgn. & 1.00 on GTO)			

## SUSPENSION – REAR

Type and description	Four Link Pivoted Control Arm				
Drive and torque taken through	Control Arms				
Spring	Type	Coil			
	Material	SAE 9260			
	Size (length x width, coil design height & I.D.; bar length & dia.)	7.76 x 5.50			
	Spring rate (lb. per in.)	106 Std. on 23369 - 122, 144, 150 & 200 (a)			122
	Rate at wheel (lb. per in.)	96 Std. on 23369 - 110, 130, 136 & 180 (a)			110
	Mounting insulation type	None			
	If leaf	No. of leaves	None		
Shackle (comp. or tens.)		None			
Stabilizer	Type (link, linkless, frameless)	Not Used			
	Material	None			
Track bar type	Not Used				

(a) Alternate springs used as required for body styles and optional equipment.

## AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (e)

MODEL	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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## FRAME

Type and description (Separate frame, unitized frame, partially - unitized frame)

Perimeter Type With Swept Hips - Boxed on Convertible

## BODY - MISCELLANEOUS INFORMATION

Drs. hinged (front, rr.)	Front doors	Front					
	Rear doors	Front					
Type of finish (lacquer, enamel, other)		Acrylic Lacquer					
Hood counterbalanced (yes, no)		Yes					
Hood release control (internal, external)		External					
Vehicle Ident. No. location		Left Front Edge of Instrument Panel - Visible Through Windshield					
Engine No. location		Top of Cyl. Block on R.H. Side Near Oil Filler (a)					
Theft protection - type		*					
Vent window control method (crank, friction pivot)	Front	Crank - Exc. 37 & 67 Styles Which Are W/O Vent					
	Rear	---					
Seat cushion type	Front	(b)	(c)	(b)	(c)		
	Rear	(d)					
	3rd seat	None					
Seat back type	Front	(d)	(c)	(d)	(c)		
	Rear	(d)					
	3rd seat	None					
Windshield glass type (i.e., single curved - laminated plate)		Single Curved Laminated Safety Plate					
Side glass type (i.e., curved - tempered plate)		Curved Tempered Safety Plate					
Backlight glass type (i.e., compound curved - tempered plate, three piece)		Curved Tempered Safety Plate (e)					
	<b>BODY STYLE</b>	<b>69</b>	<b>39</b>	<b>27</b>	<b>37</b>	<b>67</b>	<b>35 &amp; 36</b>
Windshield glass exposed surface area		1249.6	1249.6	1208.7	1208.7	1211.8	1249.6
Side glass exposed surface area		1197.0	1303.6	1198.8	1295.5	1186.6	2419.9
Backlight glass exposed surface area		1032.2	1032.2	1083.9	1083.9	539.7	757.0
Total glass exposed surface area		3478.8	3585.4	3491.4	3588.1	2938.1	4426.5

(a) Front of R.H. cylinder bank on V-8 engine.

(b) Zig-zag spring with foam pad.

(c) Zig-zag spring with contour molded foam pad - LeMans 23739 is same as Tempest.

(d) Zig-zag spring with cotton pad.

(e) Compound curved tempered safety plate on 35, 36, and 39 styles.

\* Ignition lock on steering column also locks steering gear and gearshift (in Reverse with manual - Park with automatic transmission), key removable in locked position only & opening driver's door operates "key-in-lock" buzzer. Interior front door locking knobs moved forward to deter theft.

# AMA Specifications—Passenger Car

MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISED (a)

<b>MODEL</b>	TEMPEST	CUSTOM S	LEMANS	LEMANS SAFARI	GTO
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## CONVENIENCE EQUIPMENT

(Indicate whether standard, optional or NA on each series)

<b>Power windows</b>	Side windows	Optional
	Vent windows	Not Offered
	Backlight or tailgate	Optional on Station Wagon
<b>Power seats (specify type as well as availability)</b>		Power Tilt Seat (Fore and Aft Plus Elevation at Rear Edge) Optional On All Bench Seats and L.H. Bucket Seats
<b>Reclining front seat back (R-L or both)</b>		Optional on R.H. Side With Bucket Seats
<b>Front seat head restrainer (R-L or both)</b>		Optional L & R On All Front Seats
<b>Radios (specify type as well as availability)</b>		Optional: AM, AM-FM, AM-FM Stereo - All Push Button Type
<b>Rear seat speaker</b>		Optional - Also Reverberation Type Optional (a)
<b>Power antenna</b>		Optional - Not Offered on Station Wagon
<b>Clock</b>		Optional on All Except With Panel Mounted Tachometer
<b>Air conditioner (specify type and availability)</b>		Reheat Cycle - Optional
<b>Speed warning device</b>		Safeguard Speedometer - Optional
<b>Speed control device</b>		Optional on Cars With V-8 Engine & Automatic Transmission Comb.
<b>Ignition lock lamp</b>		Not offered
<b>Dome lamp</b>		Standard Except Convertible
<b>Glove compartment lamp</b>		Standard on 237, 239 & 242 Series - Optional on Others
<b>Luggage compartment lamp</b>		Optional
<b>Underhood lamp</b>		Optional
<b>Courtesy lamp</b>		Standard on 237, 239, 242 & 23567 - Optional on Others
<b>Map lamp</b>		Not Offered
<b>Auto. trans. quad. lamp</b>		Standard
<b>Cornering light lamp</b>		Optional
<b>Low Fuel Warning Lamp</b>		Optional - Included With Safeguard Speedometer
<b>Tachometer</b>		Optional - Hood Mounted or in Rally Gage Cluster
<b>Stereo Tape Player</b>		Optional in Combination With Any Radio
<b>Elec. Luggage Compt. Lid Release</b>		Optional

## LAMP HEIGHT AND SPACING

Height above ground to center of bulb or marker	Headlamp	Highest	26.2 All Exc. 69, 35 & 36 Styles, 26.1 69, 26.6 35 & 36
		Lowest	26.2 All Exc. 69, 35 & 36 Styles, 26.1 69, 26.6 35 & 36
	Tail	Highest	25.3 All Exc. 69, 35 & 36 Styles, 25.6 69, 28.9 35 & 36
		Lowest	25.3 All Exc. 69, 35 & 36 Styles, 25.6 69, 28.9 35 & 36
	Sidemarkers	Front	16.3 All Exc. 69, 35 & 36 Styles, 16.2 69, 16.7 35 & 36
		Rear	25.9 All Exc. 69, 35 & 36 Styles, 26.2 69, 27.2 35 & 36
Distance from C.L. of car to center of bulb	Headlamp	Inside	23.0 All Exc. 242, 23.1 All 242
		Outside	29.5 All Exc. 242, 29.4 All 242
	Tail	Inside	16.1 All Exc. 35 & 36, 33.48 35 & 36
		Outside	25.9 All Exc. 35 & 36, 33.48 35 & 36
	Directional	Front	25.5 All Exc. 242, 26.2 All 242
		Rear	25.9 All Exc. 35 & 36, 33.48 35 & 36

\* If single headlamps are used enter here.

(a) Not available on station wagons.

## AMA Specifications—Passenger Car

 MAKE OF CAR Pontiac MODEL YEAR 1969 DATE ISSUED 9-12-68 REVISIONS 1-2-60  
~~(9-26)~~

## WEIGHTS

MODEL	STYLE NO.	CURB WEIGHT * POUNDS			% PASS. WEIGHT DISTRIBUTION				LIQUID WEIGHT	
		Front	Rear	Total	Pass. In Front		Pass. In Rear		Fuel	Coolant
					Front	Rear	Front	Rear		
<b>TEMPEST</b>										
4-Dr. Sedan	23369	1839	1540	3379	50.0	50.0	20.0	80.0	131	25
Sports Coupe	23327	1822	1514	3336	47.4	52.6	19.7	80.3	131	25
<b>CUSTOM S</b>										
4-Dr. Sedan	23569	1839	1552	3391	50.0	50.0	20.0	80.0	131	25
Sports Coupe	23527	1834	1532	3366	47.4	52.6	19.7	80.3	131	25
4-Dr. Hardtop	23539	1879	1592	3471	50.0	50.0	20.0	80.0	131	25
Hardtop Coupe	23537	1840	1536	3376	47.4	52.6	17.7	80.3	131	25
Convertible	23567	1850	1571	3421	47.4	52.6	17.7	80.3	131	25
Sta.Wgn.-2 Seat	23535	1771	1971	3742	51.0	49.0	22.0	78.0	122	25
<b>LEMANS</b>										
4-Dr. Hardtop	23739	1923	1593	3516	50.0	50.0	20.0	80.0	131	25
Sports Coupe	23727	1837	1544	3381	47.4	52.6	19.7	80.3	131	25
Hardtop Coupe	23737	1845	1556	3401	47.4	52.6	19.7	80.3	131	25
Convertible	23767	1860	1586	3446	47.4	52.6	19.7	80.3	131	25
<b>LEMANS SAFARI</b>										
Sta.Wgn.-2 Seat	23936	1753	2084	3837	51.0	49.0	22.0	78.0	122	25
<b>GTO</b>										
Hardtop Coupe	24237	2042	1630	3672	47.4	52.6	19.7	80.3	131	38
Convertible	24267	2060	1662	3722	47.4	52.6	19.7	80.3	131	38
Accessories & Equipment Differential Weights					Remarks					
Automatic Trans.				0	L-6 1-bbl. & 350 V-8 2-bbl. only					
Turbo Hydra-Matic		+ 15	+ 7	+ 22	L-6 & 350 V-8 2-bbl.					
Turbo Hydra-Matic		+ 27	+11	+ 38	350 V-8 4-bbl.					
Turbo Hydra-Matic		+ 7	+ 3	+ 10	400 V-8					
Air Conditioning		+113	+ 2	+115						
Sprint Option		+ 38	+ 4	+ 42	All 233,235 & 237 Except Sta.Wgn.					
350 V-8 Engine Option		+162	+27	+189	233, 235, 237 & 239 series					
350 HO V-8 Engine Opt.		+182	+44	+226	All 233,235 & 237 Except Sta.Wgn.					
400 Ram Air Eng. Opt.				0	242 Series only					
400 Ram Air IV EngOpt		- 10	- 2	- 12	242 Series only					
Power Steering		+ 32	- 2	+ 30						
Power Brakes (DrumFrnt)		+ 8	+ 1	+ 9	All except 242 series					
Power Brakes (DiscFrnt)		+ 20	+ 1	+ 21	All series					
Radio & Man. Antenna		+ 6	+ 2	+ 8						
"The Judge" Option		+ 10	+27	+ 37	242 series only - includes 400 Ram Air engine, G70-14 polyglas tires, de-chromed Rally II wheels, air foil and identification					

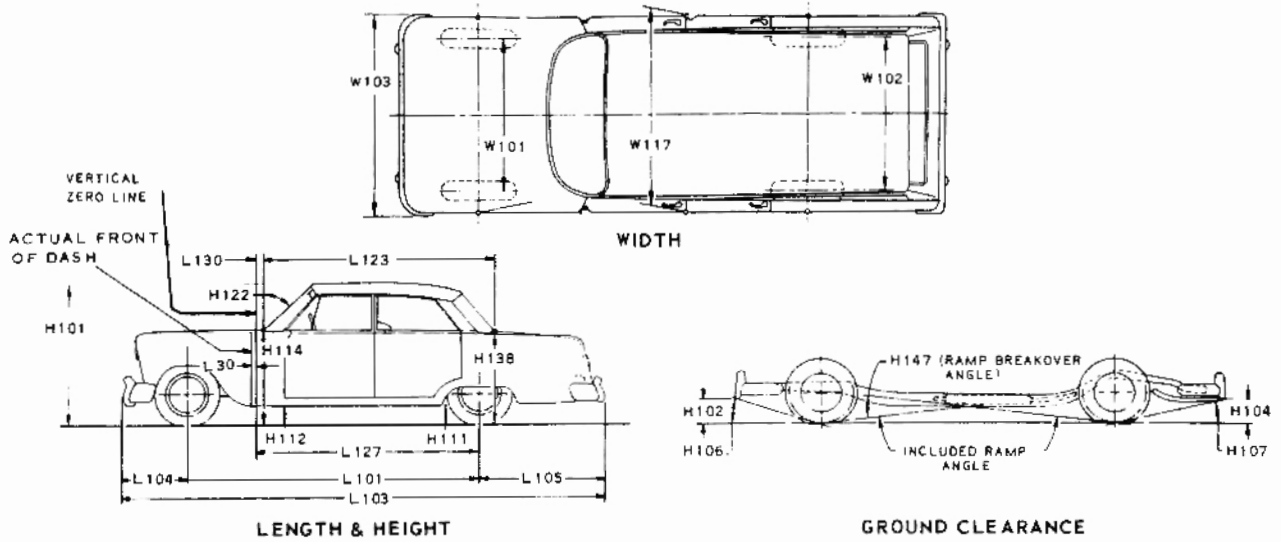
\*Reference - SAE Aerospace-Automotive drawing standards, Section E 1.02 (d).

# AMA Specifications—Passenger Car

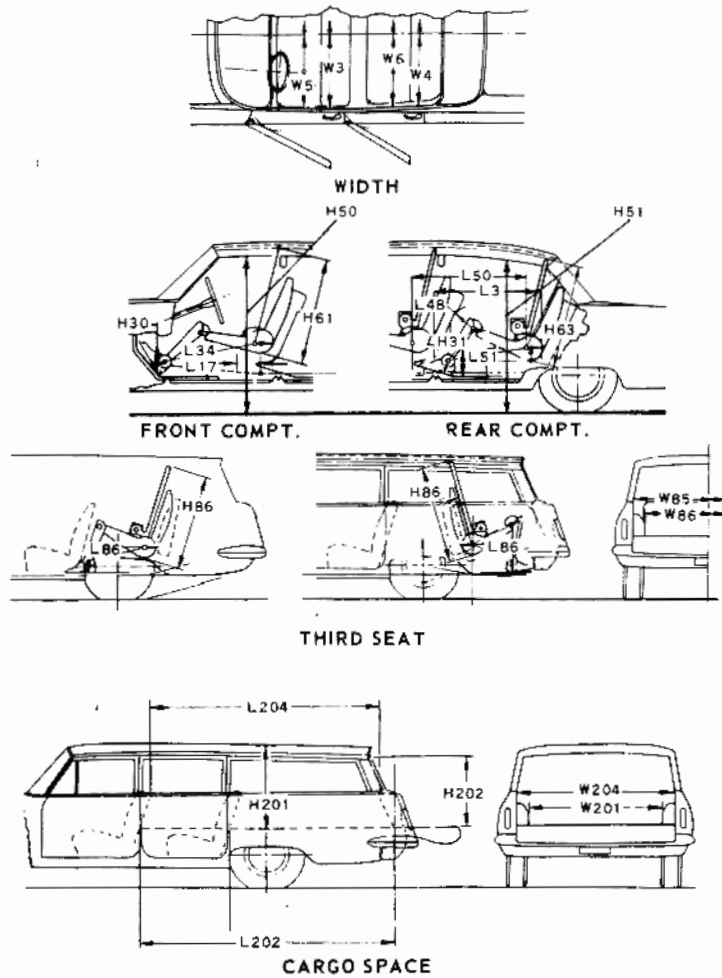
## CAR AND BODY DIMENSIONS

### KEY SHEET

#### EXTERIOR CAR AND BODY DIMENSIONS



#### INTERIOR CAR AND BODY DIMENSIONS





# AMA Specifications—Passenger Car

## CAR AND BODY DIMENSIONS

### KEY SHEET

#### DIMENSION DEFINITIONS

#### EXTERIOR WIDTH DIMENSIONS

- W101 WHEEL TREAD - FRONT. Measured at centerline of tires, with nominal camber, at ground.
- W102 WHEEL TREAD - REAR. Measured at centerline of tires at ground.
- W103 MAXIMUM OVERALL CAR WIDTH. Include bumpers, moldings, or sheet metal protrusions. Measured to outside of metal.
- W117 MAXIMUM BODY WIDTH AT #2 PILLAR. Measured across body at #2 pillar, excluding hardware and applied moldings.

#### EXTERIOR LENGTH DIMENSIONS

- L 30 VERTICAL 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.
- L101 WHEELBASE.
- 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 Cowl Point to the Deck Point.
- L127 VERTICAL ZERO LINE TO CENTERLINE OF REAR WHEELS. A horizontal dimension.
- L130 VERTICAL ZERO LINE TO WINDSHIELD COWL POINT. The horizontal dimension from the vertical zero line to the theoretical intersection of extended windshield glass plane and normal cowl surface.

#### EXTERIOR HEIGHT DIMENSIONS

- H101 OVERALL HEIGHT - DESIGN. Measured with the vehicle in Manufacturer's Design Weight attitude.
- H114 COWL POINT TO GROUND. Measured at vehicle centerline.
- H138 DECK POINT TO GROUND. Measured at vehicle centerline.
- H112 ROCKER PANEL TO GROUND - FRONT. The vertical dimension from ground to bottom of rocker panel, excluding flanges. Measured to the outside of sheet metal at foremost point of rocker panel.
- H111 ROCKER PANEL TO GROUND - REAR. The vertical dimension from ground to bottom of rocker panel, excluding flanges. Measured to the outside of sheet metal at front of rear wheel opening.
- 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.

#### GROUND CLEARANCE DIMENSIONS

- H102 BUMPER TO GROUND - FRONT. Minimum dimension, includes bumper guards.
- H104 BUMPER TO GROUND - REAR. Minimum dimension, includes bumper guards.
- H106 ANGLE OF APPROACH. The angle between ground and a line tangent to the front tire static loaded radius arc and the first point of interference, i.e., bumper, guard, gravel deflector, fender or other component, excluding license plate. This dimension may be determined graphically for reporting purposes.
- H107 ANGLE OF DEPARTURE. The angle between ground and a line tangent to the rear tire static loaded radius arc and the first point of interference, i.e., bumper, guard, gravel deflector, tail pipe, fender or other component, excluding license plate. This dimension may be determined graphically for reporting purposes.
- H147 RAMP BRAKING ANGLE. The 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.
- H156 MINIMUM RUNNING GROUND CLEARANCE. Location of measurement on the car is to be clearly recorded.

#### FRONT COMPARTMENT DIMENSIONS

- H 61 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.
- L 34 MAXIMUM EFFECTIVE LEG ROOM - ACCELERATOR. Measured along a diagonal line from the Manikin ankle pivot center to the H Point plus a constant of 10.0 inches. For treadle type accelerator pedals, the leg room is measured with the Manikin's right foot on the accelerator pedal and the Manikin Heel Point at Accelerator Heel Point. All other types of accelerator pedals will be measured with the Manikin foot angle set at 87° and the shoe touching the pedal.
- H 30 H POINT TO HEEL POINT - FRONT. The vertical dimension from the H Point to the Accelerator Heel Point.
- L 17 H POINT TRAVEL. The horizontal dimension between the H Point in the most forward and rearward seat positions.

#### FRONT COMPARTMENT DIMENSIONS (Cont.)

- W 3 SHOULDER ROOM - FRONT. The minimum lateral dimensions between the door garnish moldings or nearest interference, measured at the H Point station.
- W 5 HIP ROOM - FRONT. The lateral dimension through the H Point to trimmed body surfaces. Depress loose side wall cloth to trim foundation or other obstruction if such construction exists.
- H 50 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.

#### REAR COMPARTMENT DIMENSIONS

- L 50 H POINT COUPLE DISTANCE. The horizontal dimension from the front seat H Point to the rear seat H Point.
- H 63 EFFECTIVE HEAD ROOM - REAR. The dimension from the H Point to the headlining, plus a constant of 4.0 inches, measured along a line 8° to rear of vertical.
- L 51 MINIMUM EFFECTIVE LEG ROOM - REAR. Measured along a diagonal line from the ankle pivot center to the H Point plus a constant of 10.0 inches, with the foot positioned to the nearest interference between the seat structure and toe, instep or lower leg.
- H 31 H POINT TO HEEL POINT - REAR. The vertical dimension from the H Point to the Manikin Heel Point on the depressed floor covering.
- L 48 MINIMUM KNEE ROOM - REAR. The minimum dimension from the Manikin knee pivot center to the back of the front seat back.
- L 3 REAR COMPARTMENT ROOM. The horizontal dimension from the back of front seat to front of rear seat back at height tangent to the top of rear seat cushion.
- W 4 SHOULDER ROOM - REAR. The minimum lateral dimension between the door garnish molding or nearest interference. Measured at H Point station.
- W 6 HIP ROOM - REAR. The lateral dimension through H Point to trimmed body surfaces. Depress loose side wall cloth to trim foundation or other obstruction when such construction exists.
- H 51 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.

#### LUGGAGE COMPARTMENT DIMENSIONS

- V 1 LUGGAGE CAPACITY - USABLE. The total luggage compartment luggage capacity in cubic feet with the tire and tools in place.
- H195 LIFTOVER HEIGHT. Vertical dimension from the highest point on the luggage compartment lower opening to ground, excluding corner radii.

#### STATION WAGON - THIRD SEAT DIMENSIONS

- W 85 SHOULDER ROOM - THIRD SEAT. The minimum lateral dimension between the door garnish moldings or nearest interference. Measured at H Point station.
- W 86 HIP ROOM - THIRD SEAT. The lateral dimension through H Point to trimmed surfaces.
- L 86 EFFECTIVE LEG ROOM - THIRD SEAT. Measured along a diagonal line from ankle pivot center to H Point plus a constant of 10.0 inches. With rear-facing third seat, foot is positioned in foot well or to nearest interference with rear end or rear closure.
- H 86 EFFECTIVE HEAD ROOM - THIRD SEAT. The dimension from H Point to the headlining, plus a constant of 4.0 inches. Measured along a line 8° to rear of vertical.

#### STATION WAGON - CARGO SPACE DIMENSIONS

- L202 CARGO LENGTH AT FLOOR - FRONT SEAT. The horizontal dimension, measured at the floor level from the rear of the front seat back to the normal inside limiting interference on the tailgate, on the car centerline.
- L204 CARGO LENGTH AT BELT - FRONT SEAT. The horizontal dimension measured from the top rear of front seat back to a vertical extension line from the normal inside limiting interference at the top of the tailgate, on the car centerline.
- W201 CARGO WIDTH - WHEELHOUSE. The minimum horizontal dimension, measured between wheelhouse housings at floor level.
- W204 OPENING WIDTH AT BELT. The minimum horizontal dimension, measured between the nearest normal inside limiting interferences of the rear opening at the top of the tailgate.
- H201 MAXIMUM CARGO HEIGHT. The maximum vertical dimension, measured from the top of the floor covering to the headlining, on the car centerline.
- H202 REAR OPENING HEIGHT. The vertical dimension measured from the top of the floor covering to the normal inside limiting interference at the top of the rear opening, on the car centerline, with both tail-and liftgates fully open.
- V 2 CARGO VOLUME INDEX BEHIND FRONT SEAT. The total volume in cubic feet above the normal load floor and behind the front seat with the liftgate and tailgate closed.

W4xL204xH201

1728

## INDEX

SUBJECT	PAGE NO.	SUBJECT	PAGE NO.
Automatic Transmission.....	16	Kingpin (Steering Axis).....	20
Axis, Steering.....	20	Lamp height and spacing.....	23
Axle, Rear.....	17	Legroom.....	2
Battery.....	12	Lengths — Car and Body.....	1
Bearings, Engine.....	5, 6, 7	Lifters, valve.....	6
Belts — Fan, Generator, Water Pump.....	11	Linings — Clutch, Brake.....	14, 19
Brakes — Parking, Service Power.....	18, 19	Lubrication.....	7, 8, 14, 15, 16, 17
Camber.....	20	Luggage Compartment.....	2
Camshaft.....	6	Motor, Starting.....	12
Capacities.....		Muffler.....	8
Cooling System.....	11	Overdrive.....	15
Fuel Tank.....	10	Piston Pins & Rings.....	4, 5
Lubricants.....		Pistons.....	4, 5
Engine Crankcase.....	8	Power Brakes.....	19
Transmission and Overdrive.....	15, 16	Power Steering.....	20
Rear Axle.....	17	Power Teams.....	3
Car and Body Dimensions.....		Propeller Shaft, Universal Joints.....	16, 17
Width.....	1	Pumps — Oil, Fuel.....	8, 10
Length.....	1	Water.....	11
Height.....	1	Radiator, Hoses.....	11
Ground Clearance.....	1	Ratios — Axle.....	3, 17
Front Compartment.....	2	Compression.....	3, 4
Rear Compartment.....	2	Steering.....	20
Luggage Compartment.....	2	Transmission.....	15, 16
Station Wagon — Third Seat.....	2	Rear Axle.....	3, 17
Station Wagon — Cargo Space.....	2	Regulator — Generator.....	12
Carburetor.....	3, 9, 10	Rims.....	18
Caster.....	20	Rings, Piston.....	5
Choke, Automatic.....	10	Rods — Connecting.....	5
Clutch — Pedal Operated.....	14	Shock Absorbers, Front & Rear.....	21
Coil, Ignition.....	13	Spark Plugs.....	13
Connecting Rods.....	5	Speedometer.....	14
Convenience Equipment.....	23	Springs — Front & Rear Suspension.....	21
Cooling System.....	11	Valve, Engine.....	6
Crankcase Ventilation System.....	8	Stabilizer (Sway Bar) — Front & Rear.....	21
Crankshaft.....	6	Starting System.....	12
Cylinders and Cylinder Head.....	4	Steering.....	20
Dimension Definitions.....		Supply System.....	12
Key Sheet.....	25	Suppression — Ignition, Radio.....	13
Exterior & Interior.....	26	Suspension — Front & Rear.....	21
Distributor — Ignition.....	13	Tail Pipe.....	8
Electrical System.....	12, 13, 14	Thermostat, Cooling.....	11
Engine.....		Timing, Engine & Valve.....	6, 7, 13
Bore, Stroke, Displacement, Type.....	4	Tires.....	18
Compression Ratio.....	4	Toe in.....	20
Firing Order, Cylinder Numbering.....	4	Torque Converter.....	16
General Information, H.P. & Torque.....	4	Torque — Engine, Rated.....	3, 4
Lubrication.....	7, 8	Transmission — Types.....	3, 10, 15, 16
Power Teams.....	3	Automatic.....	3, 10, 15, 16
Exhaust Emission Control.....	9	Manual & Overdrive.....	3, 10, 15
Exhaust System.....	8	Ratios.....	15, 16
Equipment Availability.....	22	Track.....	1
Fan, Cooling.....	11	Trunk Luggage Capacity.....	2
Filters — Engine Oil, Fuel System.....	8, 10	Turning Diameter.....	20
Frame.....	22	Unitized Construction.....	22
Front Suspension.....	21	Universal Joints, Propeller Shaft.....	16, 17
Fuel, Fuel Pump, Fuel System.....	4, 10	Valves — Intake & Exhaust.....	6, 7
Fuel Injection.....	10	Vibration Damper.....	6
Generator and Regulator.....	12	Voltage Regulator.....	12
Glass.....	22	Water Pump.....	11
Height (Lamps).....	14	Weights.....	24
Headroom — Body.....	2	Wheel Alignment.....	20
Heights — Car and Body.....	1	Wheelbase.....	1
Horns.....	14	Wheels & Tires.....	18
Horsepower — Brake.....	3, 4	Wheel Spindle.....	20
Ignition System.....	13	Widths — Car and Body.....	1
Inflation — Tires.....	18	Windshield.....	22
Instruments.....	14	Windshield Wiper.....	14