

# AMA Specifications – Passenger Car

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|                                                                      |                              |                |
|----------------------------------------------------------------------|------------------------------|----------------|
| MANUFACTURER<br>Pontiac Motor Division<br>General Motors Corporation | CAR NAME<br>TEMPEST & LEMANS |                |
| MAILING ADDRESS<br>Pontiac 11, Michigan                              | MODEL YEAR<br>1964           | ISSUED: 9-6-63 |
|                                                                      | REVISED (e)                  |                |

**NOTES:**

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

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### BODY—TYPES AND STYLE NAMES—

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

|                                | <u>Number of<br/>Passengers</u> | <u>Body Style<br/>Number</u> |
|--------------------------------|---------------------------------|------------------------------|
| <b><u>TEMPEST</u></b>          |                                 |                              |
| Four-Door Sedan - 4-Window     | 6                               | 2069                         |
| Two-Door Coupe                 | 6                               | 2027                         |
| Four-Door 2-Seat Station Wagon | 6                               | 2035                         |
| <b><u>TEMPEST CUSTOM</u></b>   |                                 |                              |
| Four-Door Sedan - 4-Window     | 6                               | 2169                         |
| Two-Door Coupe                 | 6                               | 2127                         |
| Four-Door 2-Seat Station Wagon | 6                               | 2135                         |
| Two-Door Convertible Coupe     | 5                               | 2167                         |
| <b><u>TEMPEST LEMANS</u></b>   |                                 |                              |
| Two-Door Coupe                 | 5                               | 2227                         |
| Two-Door Convertible Coupe     | 4                               | 2267                         |

To: All Recipients of 1964  
Pontiac Tempest & LeMans  
AMA Specifications

Subject: Revisions for Specifications      Date: September 17, 1963  
          Issued 9-6-63

Attached is a revised page 6 furnishing correct valve spring and lift information for the Tempest and LeMans optional engines.

In addition to insertion of the revised page, the following corrections should be entered as follows:

| <u>Page Number</u> | <u>Printed in Error</u> | <u>Change to</u> |
|--------------------|-------------------------|------------------|
| 4                  | SAE 1016 Steel          | SAE 1117 Steel   |
| 4a                 | SAE 1117 Modified Steel | SAE 1117 Steel   |
| 5                  | .0005 - .0020           | .0002 - .0017    |
| 5a                 | .0005 - .0020           | .0002 - .0017    |

PONTIAC MOTOR DIVISION  
General Motors Corporation

# AMA Specifications – Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED(a) \_\_\_\_\_

## GENERAL SPECIFICATIONS

(All dimensions in inches unless otherwise indicated)

| MODEL                                                       | Additional Information Page No.: | TEMPEST & LEMANS |                                  |
|-------------------------------------------------------------|----------------------------------|------------------|----------------------------------|
| Wheelbase (L101)                                            | 23                               | 115              |                                  |
| Tread                                                       | Front (W101)                     | 22               | 58.0                             |
|                                                             | Rear (W102)                      | 22               | 58.0                             |
| Maximum Overall Dimensions                                  | Length (L103)                    | 23               | 203.0                            |
|                                                             | Width (W103)                     | 22               | 73.3                             |
|                                                             | Height (H101)                    | 24               | 54.0                             |
| Transmission—<br>(Specify trade name - opt., not available) | Manual                           | 15               | Synchronesh - Std.               |
|                                                             | Overdrive                        | 16               | Not Available                    |
|                                                             | Automatic                        | 16               | Automatic Opt.                   |
| Axle ratio                                                  | Manual                           | 17               | 3.08:1                           |
|                                                             | Overdrive                        | 17               | None                             |
|                                                             | Automatic                        | 17               | 2.78:1                           |
| Tire size                                                   | 18                               | 6.50 x 14        |                                  |
| Engine                                                      | Type, no. cyl., valve arr.       | 2                | Line, 6, In-Head                 |
|                                                             | Fuel system (Carb., other)       | 8                | Carburetor                       |
|                                                             | Bore and stroke                  | 2                | 3.7495 x 3.245<br>3.7525 x 3.255 |
|                                                             | Piston displ., cu.in.            | 2                | 215                              |
|                                                             | Std. compression ratio           | 2                | 8.6:1                            |
|                                                             | Max. bhp at engine rpm           | 2                | 140 @ 4200                       |
|                                                             | Max. torque at rpm               | 2                | 206 @ 2000                       |

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MODEL TEMPEST & LEMANS

| ENGINE—GENERAL                                                        |           | STANDARD ENGINE                  | OPTIONAL ENGINE (c)              |
|-----------------------------------------------------------------------|-----------|----------------------------------|----------------------------------|
| Type, no. cyls., valve arr.                                           |           | Line, 6, In-Head                 | 90°V, 8, In-Head                 |
| Bore and stroke (nominal)                                             |           | 3.7495 x 3.245<br>3.7525 x 3.255 | 3.7187 x 3.746<br>3.7211 x 3.754 |
| Piston displacement, c.u. in.                                         |           | 215                              | 326                              |
| Bore spacing (C/L to C/L)                                             |           | 4.4                              | 4.62                             |
| No. system<br>(front to rear)                                         | L. Bank   | 1 - 2 - 3 - 4 - 5 - 6 (In-Line)  |                                  |
|                                                                       | R. Bank   | --                               |                                  |
| Firing order                                                          |           | 1 - 5 - 3 - 6 - 2 - 4            | 1 - 8 - 4 - 3 - 6 - 5 - 7 - 2    |
| Compres. ratio (nominal)                                              |           | 8.6:1                            | 8.6:1*                           |
| Cylinder Head Material                                                |           | Alloy Cast Iron                  |                                  |
| Cylinder Block Material                                               |           | Alloy Cast Iron                  |                                  |
| Cylinder Sleeve-Wet, dry, none                                        |           | None                             |                                  |
| Number of<br>mounting points                                          | Front     | 2                                |                                  |
|                                                                       | Rear      | 1                                |                                  |
| Engine installation angle                                             |           | 4°37'                            |                                  |
| Taxable $\frac{\text{Dia.}^2 \times \text{No. Cyl.}}{2.5}$ horsepower |           | 33.75                            | 44.3                             |
| Published max. bhp*<br>@ eng. RPM                                     |           | 140 @ 4200                       | 250 @ 4600*                      |
| Published max. torque*<br>(lb. ft. @ RPM)                             |           | 206 @ 2000                       | 333 @ 2800*                      |
| Recommended fuel<br>regular - premium                                 |           | Regular*                         |                                  |
| Idle speed (spec.<br>neutral or drive)                                | Manual    | 580-600 (in neutral)             |                                  |
|                                                                       | Automatic | 480-500 (in drive)               |                                  |

## ENGINE—PISTONS

|                          |            |                                                                  |                   |
|--------------------------|------------|------------------------------------------------------------------|-------------------|
| Material                 |            | Aluminum Alloy                                                   |                   |
| Description and finish   |            | Cam Ground Slipper Type<br>With Steel Struts - Piston Tin Plated |                   |
| Weight (piston only) oz. |            | 18.82 - 19.00                                                    | 21.25 - 21.44     |
| Clearance<br>(limits)    | Top land   | .032 - .042                                                      | .031 - .041       |
|                          | Skirt      | Top                                                              | .0005 - .0011 (b) |
|                          |            | Bottom                                                           | .0004 - .0017     |
| Ring groove<br>depth     | No. 1 ring | .192 - .200                                                      | .207 - .215       |
|                          | No. 2 ring | .197 - .205                                                      | .197 - .205       |
|                          | No. 3 ring | .190 - .197                                                      | .179 - .188       |
|                          | No. 4 ring | None                                                             |                   |

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

(a) Pistons selected for .0013 clearance 1.18 below top of skirt.

(b) Measured at 2.16 below top of piston.

\* 326 H.O. Optional Engine has 10.5:1 C.R., 280 BHP @ 4800, 355 Lb.Ft. @ 3200 - requires premium fuel.

(c) See page 2A for G. T.O. option.

# AMA Specifications—Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED (\*)

MODEL LE MANS G. T. O. OPTION

## ENGINE—GENERAL

|                                                                          |           |                                 |
|--------------------------------------------------------------------------|-----------|---------------------------------|
| Type, no. cyls., valve arr.                                              |           | 90° V, 8, In-Head               |
| Bore and stroke (nominal)                                                |           | 4.0625 x 3.746<br>4.097 x 3.754 |
| Piston displacement, cu. in.                                             |           | 389                             |
| Bore spacing (C/L to C/L)                                                |           | 4.62                            |
| No. system<br>(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   |
| Compras. ratio (nominal)                                                 |           | 10.75:1                         |
| Cylinder Head Material                                                   |           | Alloy Cast Iron                 |
| Cylinder Block Material                                                  |           | Alloy Cast Iron                 |
| Cylinder Sleeve—Wet, dry, none                                           |           | None                            |
| Number of<br>mounting points                                             | Front     | Two                             |
|                                                                          | Rear      | One                             |
| Engine installation angle                                                |           |                                 |
| Taxable $\frac{\text{Dia.}^2 \times \text{No. Cyl.}}{2.5}$<br>horsepower |           | 52.8                            |
| Published max. bhp*<br>@ eng. RPM                                        |           | 325 @ 4800 (a)                  |
| Published max. torque*<br>(lb. ft. @ RPM)                                |           | 428 @ 3200 (a)                  |
| Recommended fuel<br>regular - premium                                    |           | Premium                         |
| Idle speed (spec.<br>neutral or drive)                                   | Manual    | 480 - 500 In Neutral            |
|                                                                          | Automatic | 480 - 500 In Drive              |

## 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<br>(limits)    | Top land   | .024 - .033                                                   |                  |
|                          | Skirt      | Top                                                           | .0005 - .0021 ** |
|                          |            | Bottom                                                        | .0000 - .0018 ** |
| Ring groove<br>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 to 60° F and 29.92 in. Hg atmospheric pressure.

\*\* Pistons selected for .0007 to .0013 clearance at 1.18 below top of skirt.

(a) With 4-Barrel Carburetor - Optional 3-2 Barrel carburetor engine: 348 BHP @ 4900 RPM, 428 Lb. Ft. @ 3600 RPM.

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## POWER TEAMS

(Indicate whether standard or optional)

| MODEL<br>AVAILABILITY                        | ENGINE            |            |                 |                 |                    | TRANSMISSION                 | AXLE RATIO<br>(Std. first) |
|----------------------------------------------|-------------------|------------|-----------------|-----------------|--------------------|------------------------------|----------------------------|
|                                              | Displ.<br>cu. in. | Carburetor | Compr.<br>Ratio | BHP<br>@<br>RPM | Torque<br>@<br>RPM |                              |                            |
| Tempest 20                                   |                   |            |                 |                 |                    |                              |                            |
| Tempest Custom 21                            |                   |            |                 |                 |                    |                              |                            |
| LeMans 22                                    |                   |            |                 |                 |                    |                              |                            |
| <b>STANDARD 6 CYLINDER ENGINE</b>            |                   |            |                 |                 |                    |                              |                            |
| 20, 21 & 22                                  | 215               | 1-Bbl.     | 8.6:1           | 140 @           | 206 @              | Synchronesh (a)<br>Automatic | 3.08:1 (b)                 |
| 20, 21 & 22                                  | 215               | 1-Bbl.     | 8.6:1           | 4200            | 2000               |                              | 2.78:1, 2.56:1, 2.93:1 (c) |
| <b>OPTIONAL V-8 ENGINES</b>                  |                   |            |                 |                 |                    |                              |                            |
| <b>REGULAR FUEL OPTION</b>                   |                   |            |                 |                 |                    |                              |                            |
| 20, 21 & 22                                  | 326               | 2-Bbl.     | 8.6:1           | 250 @           | 333 @              | Synchronesh (a)<br>Automatic | 3.23:1, 3.08:1             |
| 20, 21 & 22                                  | 326               | 2-Bbl.     | 8.6:1           | 4600            | 2800               |                              | 2.56:1, 2.93:1             |
| <b>326 H.O. OPTION</b>                       |                   |            |                 |                 |                    |                              |                            |
| 20, 21 & 22                                  | 326               | 4-Bbl.     | 10.5:1          | 280 @           | 355 @              | Synchronesh (a)<br>Automatic | 3.36:1                     |
| 20, 21 & 22                                  | 326               | 4-Bbl.     | 10.5:1          | 4800            | 3200               |                              | 3.23:1                     |
| <b>G. T. O. 4-BARREL CARBURETOR</b>          |                   |            |                 |                 |                    |                              |                            |
| 22                                           | 389               | 4-Bbl.     | 10.75:1         | 325 @           | 428 @              | Synchronesh (a)<br>Automatic | 3.23:1                     |
| 22                                           | 389               | 4-Bbl.     | 10.75:1         | 4800            | 3200               |                              | 3.23:1                     |
| <b>G. T. O. 3-2 BARREL CARBURETOR OPTION</b> |                   |            |                 |                 |                    |                              |                            |
| 22                                           | 389               | 3-2 Bbl.   | 10.75:1         | 348 @           | 428 @              | Synchronesh (a)<br>Automatic | 3.55:1                     |
| 22                                           | 389               | 3-2 Bbl.   | 10.75:1         | 4900            | 3600               |                              | 3.55:1                     |

(a) 3-Speed Standard - 4-Speed Optional.

(b) Except Station Wagons which use 3.36:1 Ratio.

(c) All models except 2027, 2069 & 2169 which use 2.56:1 - Std., 2.93:1 - Perf. (No Economy Ratio).

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MODEL TEMPEST & LEMANS

| ENGINE—RINGS                   |                                                   | STANDARD ENGINE                                                                                             | OPTIONAL ENGINE(a)                               |
|--------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Function<br>(top to<br>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 -<br>material, type,<br>coating, etc. | Alloy Cast Iron Taper Faced Rings                                                                           |                                                  |
|                                |                                                   | No. 1 Flash Chrome Plate<br>No. 2 Lubrite Finish                                                            | No. 1 Thick Chrome Plate<br>No. 2 Lubrite Finish |
|                                | Width                                             | .078                                                                                                        |                                                  |
|                                | Gap                                               | .014                                                                                                        | No. 1 .021, No. 2 .019                           |
| Oil                            | Description -<br>material, type,<br>coating, etc. | Multi-Piece (2 rails and 1 expander), Rails - Steel with Chrome<br>Plate on O. D., Spacer - Stainless Steel |                                                  |
|                                | Width                                             | .186                                                                                                        |                                                  |
|                                | Gap                                               | .035                                                                                                        |                                                  |
|                                | Expanders                                         | In Oil Ring Assembly                                                                                        |                                                  |

| ENGINE—PISTON PINS                  |                                             |                  |
|-------------------------------------|---------------------------------------------|------------------|
| Material                            | SAE 5015 Steel                              |                  |
| Length                              | 3.00                                        |                  |
| Diameter                            | .9272                                       |                  |
| Type                                | Locked in rod, in<br>piston, floating, etc. |                  |
|                                     | Bushing                                     | In rod or piston |
|                                     |                                             | Material         |
| Clearance                           | In piston                                   | .0003 - .0005    |
|                                     | In rod                                      | Press Fit        |
| Direction & amount offset in piston |                                             | To Right - .06   |

| ENGINE—CONNECTING RODS    |                                         |                                                               |
|---------------------------|-----------------------------------------|---------------------------------------------------------------|
| Material                  | Forged Steel                            |                                                               |
| Weight (oz.)              | 20.8                                    |                                                               |
| Length (center to center) | 5.70                                    |                                                               |
| Bearing                   | Material & Type                         | Durex-100-A or Copper-Lead<br>Alloy, Steel Backed - Removable |
|                           | Overall length                          | .84                                                           |
|                           | Clearance (limits)                      | .0007 - .0027                                                 |
|                           | End play                                | .008 - .014                                                   |
|                           | Arma Steel                              |                                                               |
| Weight (oz.)              | 30.7                                    |                                                               |
| Length (center to center) | 6.625                                   |                                                               |
|                           | Durex-100-A Steel<br>Backed - Removable |                                                               |
|                           | .88                                     |                                                               |
|                           | .0005 - .0025                           |                                                               |
|                           | .006 - .011 (total for two)             |                                                               |

(a) See page 4a for G. T. O. Option



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MODEL LE MANS G. T. O. OPTION

## ENGINE—RINGS

|                                |                                                   |                                                                                                     |
|--------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Function<br>(top to<br>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 -<br>material, type,<br>coating, etc. | Alloy Cast Iron Taper Faced Rings<br>No. 1 With Thick Chrome Plate, No. 2 With Lubrite Finish       |
|                                | Width                                             | .078                                                                                                |
|                                | Gap                                               | No. 1 .021, No. 2 .019                                                                              |
| Oil                            | Description -<br>material, type,<br>coating, etc. | Multi-piece (2 Rails & 1 Spacer), Rails - Steel<br>With Chrome Plated O. D., Stainless Steel Spacer |
|                                | Width                                             | .186                                                                                                |
|                                | Gap                                               | .035                                                                                                |
| Expanders                      |                                                   | Spacer in Oil Ring Assembly                                                                         |

## ENGINE—PISTON PINS

|                                     |                                             |                  |      |
|-------------------------------------|---------------------------------------------|------------------|------|
| Material                            | SAE 1117 Steel                              |                  |      |
| Length                              | 3.25                                        |                  |      |
| Diameter                            | .9802                                       |                  |      |
| Type                                | Locked in rod, in<br>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         |                                                 |
| Weight (oz.)              | 30.7               |                                                 |
| 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)                     |



# AMA Specifications—Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED (a)

MODEL TEMPEST & LEMANS

| ENGINE—CRANKSHAFT                 |                                         | STANDARD ENGINE       | OPTIONAL ENGINE (a)                   |             |
|-----------------------------------|-----------------------------------------|-----------------------|---------------------------------------|-------------|
| Material                          |                                         | Cast Nodular Iron     | Cast Pearlitic Malleable Iron         |             |
| 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<br>Steel Backed Removable |             |
|                                   | Clearance                               |                       | .0003 - .0029                         |             |
|                                   | 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 |                                      | Above & to right of crankshaft               | Between cylinder banks        |                                |
|-----------------|--------------------------------------|----------------------------------------------|-------------------------------|--------------------------------|
| Location        |                                      | Above & to right of crankshaft               | Between cylinder banks        |                                |
| Material        |                                      | Hardened Alloy Cast Iron                     |                               |                                |
| Bearings        | Material                             | High Lead Babbitt on Steel                   |                               |                                |
|                 | Number                               | 4                                            | 5                             |                                |
| Type of Drive   | Gear or chain                        | Gear                                         | Chain                         |                                |
|                 | Crankshaft gear or sprocket material | Steel                                        | Carburized and Hardened Steel |                                |
|                 | Camshaft gear or sprocket material   | Bakelite & Fabric Composition with Steel Hub | Cyanide Hardened Alloy Iron   |                                |
|                 | Timing chain                         | No. of links                                 | None                          | 60                             |
|                 |                                      | Width                                        | None                          | .88 (Morse) - 1.00 (Link Belt) |
| Pitch           |                                      | None                                         | .375                          |                                |

| ENGINE—VALVE SYSTEM                               |         | Std.              | None                     |
|---------------------------------------------------|---------|-------------------|--------------------------|
| Hydraulic lifters (Std, opt, NA)                  |         | Std.              | None                     |
| Valve rotator, type (intake, exhaust)             |         | None              | None                     |
| Rocker ratio                                      |         | 1.75:1            | 1.5:1                    |
| Operating tappet clearance (indicate hot or cold) | Intake  | 0                 | 0                        |
|                                                   | Exhaust | 0                 | 0                        |
| Timing marks on flywheel, damper, other           |         | Harmonic Balancer | On Crankshaft Pulley Hub |

Note (a) See page 5a for G. T. O. Option.

(Continued)

# AMA Specifications—Passenger Car

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MODEL LE MANS G. T. O. OPTION

## 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                               |                               | .0002 - .0017                                    |  |
|                                   | Journal dia. and bearing overall length | No. 1                         | 3.00 x .94                                       |  |
|                                   |                                         | No. 2                         | 3.00 x .94                                       |  |
|                                   |                                         | No. 3                         | 3.00 x .94                                       |  |
|                                   |                                         | No. 4                         | 3.00 x 1.13                                      |  |
|                                   |                                         | No. 5                         | 3.00 x 1.59                                      |  |
|                                   |                                         | No. 6                         | None                                             |  |
| No. 7                             |                                         | None                          |                                                  |  |
| Dir. & amt. cyl. offset           |                                         | None                          |                                                  |  |
| Crankpin journal diameter         |                                         | 2.25                          |                                                  |  |

## ENGINE—CAMSHAFT

|               |                                      |                            |                                |  |
|---------------|--------------------------------------|----------------------------|--------------------------------|--|
| Location      |                                      | 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 |                            | Carburezed 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 |  |

(Continued)

\* M-400 in Lower Half of No. 4

# AMA Specifications—Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED (\*) 9-17-63

MODEL TEMPEST & LE MANS

|                          |                                | ENGINE—VALVE SYSTEM (cont.) |                     | Standard Engine     | Optional Engines (b) |            |
|--------------------------|--------------------------------|-----------------------------|---------------------|---------------------|----------------------|------------|
|                          |                                |                             |                     |                     | V-326                | V-326 H.O. |
| Timing                   | Intake                         | Opens (°BTC)                |                     | 18                  | 22                   |            |
|                          |                                | Closes (°ABC)               |                     | 54                  | 67                   |            |
|                          |                                | Duration - deg.             |                     | 252                 | 269                  |            |
|                          | Exhaust                        | Opens (°BDC)                |                     | 52                  | 72                   |            |
|                          |                                | Closes (°ATC)               |                     | 20                  | 25                   |            |
|                          |                                | Duration - deg.             |                     | 252                 | 277                  |            |
| Valve opening overlap    |                                |                             | 38                  | 47                  |                      |            |
| Material                 |                                |                             | AISI C-1041         | SAE 1041 (a)        |                      |            |
| Overall length           |                                |                             | 4.91                | 4.97                |                      |            |
| Actual overall head dia. |                                |                             | 1.715 - 1.725       | 1.878 - 1.884       |                      |            |
| Angle of seat & face     |                                |                             | 46° Seat - 45° Face | 30° Seat - 29° Face |                      |            |
| Seat insert material     |                                |                             | None                | None                |                      |            |
| Stem diameter            |                                |                             | .34                 | .34                 |                      |            |
| Stem to guide clearance  |                                |                             | .0010 - .0027       | .0021 - .0038       |                      |            |
| Lift (@ zero lash)       |                                |                             | .331 - .339         | .365 - .373         |                      |            |
| Intake                   | Outer spring press. and length | Valve closed (lb. @ in.)    | 84 - 92 @ 1.66      | 55-61 @ 1.53        | 56-62 @ 1.53         |            |
|                          |                                | Valve open (lb. @ in.)      | 166-176 @ 1.33      | 106-112 @ 1.15      | 117-127 @ 1.15       |            |
|                          | Inner spring press. and length | Valve closed (lb. @ in.)    | Not Used            | 24-30 @ 1.48        | 24-30 @ 1.48         |            |
|                          |                                | Valve open (lb. @ in.)      | Not Used            | 59-65 @ 1.10        | 59-65 @ 1.10         |            |
|                          | Material                       |                             |                     | 21 - 4N Steel       | T-XCR Steel (a)      |            |
|                          | Overall length                 |                             |                     | 4.92                | 4.96                 |            |
| Actual overall head dia. |                                |                             | 1.495 - 1.505       | 1.597 - 1.603       |                      |            |
| Angle of seat & face     |                                |                             | 46° Seat - 45° Face | 45° Seat - 44° Face |                      |            |
| Seat insert material     |                                |                             | None                | None                |                      |            |
| Stem diameter            |                                |                             | .34                 | .34                 |                      |            |
| Stem to guide clearance  |                                |                             | .0020 - .0037       | .0026 - .0043       |                      |            |
| Lift (@ zero lash)       |                                |                             | .331 - .339         | .398 - .406         |                      |            |
| Exhaust                  | Outer spring press. and length | Valve closed (lb. @ in.)    | 84-92 @ 1.66        | 55-61 @ 1.53        | 56-62 @ 1.53         |            |
|                          |                                | Valve open (lb. @ in.)      | 166-176 @ 1.33      | 106-112 @ 1.15      | 117-127 @ 1.15       |            |
|                          | Inner spring press. and length | Valve closed (lb. @ in.)    | Not Used            | 24-30 @ 1.48        | 24-30 @ 1.48         |            |
|                          |                                | Valve open (lb. @ in.)      | Not Used            | 59-65 @ 1.10        | 59-65 @ 1.10         |            |

## ENGINE—LUBRICATION SYSTEM

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

(Continued)

- (a) Aluminum treatment on seat
- (b) See page 6a for G. T. O. Option.

# AMA Specifications—Passenger Car

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MODEL LE MANS G. T. O. OPTION

## ENGINE—VALVE SYSTEM (cont.)

|                                |                                |                          |                                          |                                       |
|--------------------------------|--------------------------------|--------------------------|------------------------------------------|---------------------------------------|
| Timing                         | Intake                         | Opens (°BTC)             | 23                                       |                                       |
|                                |                                | Closes (°ABC)            | 70                                       |                                       |
|                                |                                | Duration - deg.          | 273                                      |                                       |
|                                | Exhaust                        | Opens (°BBC)             | 78                                       |                                       |
|                                |                                | Closes (°ATC)            | 31                                       |                                       |
|                                |                                | Duration - deg.          | 289                                      |                                       |
| Valve opening overlap          |                                | 54                       |                                          |                                       |
| Intake                         | Material                       |                          | SAE-1041 with Aluminum Treatment on Seat |                                       |
|                                | Overall length                 |                          | 4.87                                     |                                       |
|                                | Actual overall head dia.       |                          | 1.878 - 1.884                            |                                       |
|                                | Angle of seat & face           |                          | 30° Seat - 29° Face                      |                                       |
|                                | Seat insert material           |                          | Not Used                                 |                                       |
|                                | Stem diameter                  |                          | .34                                      |                                       |
|                                | Stem to guide clearance        |                          | .0021 - .0038                            |                                       |
|                                | Lift (@ zero lash)             |                          | .402 - .409                              |                                       |
|                                | Outer spring press. and length | Valve closed (lb. @ in.) | 55-61 @ 1.53                             |                                       |
|                                |                                | Valve open (lb. @ in.)   | 111-117 @ 1.12                           |                                       |
|                                | Inner spring press. and length | Valve closed (lb. @ in.) | 23 - 29 @ 1.48                           |                                       |
|                                |                                | Valve open (lb. @ in.)   | 61-67 @ 1.08                             |                                       |
|                                | Exhaust                        | Material                 |                                          | T-XCR With Aluminum Treatment on Seat |
|                                |                                | Overall length           |                                          | 4.86                                  |
| Actual overall head dia.       |                                | 1.597 - 1.603            |                                          |                                       |
| Angle of seat & face           |                                | 45° Seat - 44° Face      |                                          |                                       |
| Seat insert material           |                                | Not Used                 |                                          |                                       |
| Stem diameter                  |                                | .34                      |                                          |                                       |
| Stem to guide clearance        |                                | .0026 - .0043            |                                          |                                       |
| Lift (@ zero lash)             |                                | .404 - .411              |                                          |                                       |
| Outer spring press. and length |                                | Valve closed (lb. @ in.) | 55-61 @ 1.53                             |                                       |
|                                |                                | Valve open (lb. @ in.)   | 111-117 @ 1.12                           |                                       |
| Inner spring press. and length |                                | Valve closed (lb. @ in.) | 23-29 @ 1.48                             |                                       |
|                                |                                | Valve open (lb. @ in.)   | 61-67 @ 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)

# AMA Specifications – Passenger Car

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| <b>ENGINE—LUBRICATION SYSTEM (cont.)</b>                    | Standard Engine                   | Optional Engine (b)         |
|-------------------------------------------------------------|-----------------------------------|-----------------------------|
| Oil pump type                                               | Spur Gear                         |                             |
| Normal oil pressure (lb. @ engine rpm)                      | 30-45 @ 1500 RPM                  | 30-40 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 |
|                                                             | Above Freezing (+32 °F.)          | 20W                         |
|                                                             | Below Freezing (0 °F. to +32 °F.) | 10W                         |
|                                                             | Below Zero                        | 5W                          |
| Engine Service Requirement (MM, MS, etc.)                   | MS                                |                             |

|                                   | Single Viscosity SAE Number | Acceptable Alternate |
|-----------------------------------|-----------------------------|----------------------|
| Above Freezing (+32 °F.)          | 20W                         | 10W - 30             |
| Below Freezing (0 °F. to +32 °F.) | 10W                         | 10W - 30             |
| Below Zero                        | 5W                          | 5W - 20              |

| <b>ENGINE—EXHAUST SYSTEM</b>                                         |                        |                 |
|----------------------------------------------------------------------|------------------------|-----------------|
| 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 thickness)                            | Branch                 | None            |
|                                                                      | Main                   | 2.00 x .060     |
| Tail pipe diameter (O.D. & wall thickness)                           | 2.00 x .049 Aluminized | 2.00 x .076 (a) |

| <b>ENGINE—CRANKCASE VENTILATION SYSTEM</b>           |                                                                              |                  |
|------------------------------------------------------|------------------------------------------------------------------------------|------------------|
| Type (ventilates to atmos., induction system, other) | Standard                                                                     | Induction System |
|                                                      | Optional                                                                     | None             |
| Control unit                                         | Make and model                                                               | AC Type CV 486   |
|                                                      | Location                                                                     | Rocker Arm Cover |
| Complete system                                      | Energy source (manifold vacuum, carburetor air stream, other)                | AC Type CV 273   |
|                                                      | Control method (variable orifice, fixed orifice, other)                      | Push Rod Cover   |
| Complete system                                      | Discharges (to intake manifold, carb. air intake, air cleaner intake, other) | Manifold Vacuum  |
|                                                      | Air inlet (breather cap, carburetor air cleaner, other)                      | Variable Orifice |
|                                                      | Flame arrester (screen, check valve, other)                                  | Intake Manifold  |
|                                                      |                                                                              | Breather Cap     |
|                                                      |                                                                              | Check Valve      |

- (a) Optional dual exhaust system for V-8 engine uses two reverse flow mufflers and no crossover pipe. 2.25 x .076 exhaust pipes and 2.00 x .048 aluminized steel tail pipes.
- (b) See page 7a for GTO Option



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MODEL LE MANS G. T. O. OPTION

## 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.)             | 5                             |                                |                         |
| Oil grade recommended (SAE viscosity and temperature range) | Anticipated Lowest Temp.      | Single Viscosity<br>SAE Number | Acceptable<br>Alternate |
|                                                             | Above Freezing (+32°F.)       | 20W                            | 10W - 30                |
|                                                             | Below Freezing (0°F. to 32°F) | 10W                            | 10W - 30                |
|                                                             | Below Zero                    | 5W                             | 5W - 20                 |
| Engine Service Requirement (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         |             |  |
| Exhaust pipe dia. (O.D. & wall thickness)                            | Branch                   | Not Used    |  |
|                                                                      | Main                     | 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 CV 273   |
|                                                      | Location                                                                     | Push Rod Cover   |
|                                                      | Energy source (manifold vacuum, carburetor air stream, other)                | Manifold Vacuum  |
|                                                      | Control method (variable orifice, fixed orifice, other)                      | Variable Orifice |
| Complete system                                      | Discharges (to intake manifold, carb. air intake, air cleaner intake, other) | Intake Manifold  |
|                                                      | Air Inlet (breather cap, carburetor air cleaner, other)                      | Breather Cap     |
|                                                      | Flame arrestor (screen, check valve, other)                                  | Check Valve      |

# AMA Specifications— Passenger Car

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MODEL \_\_\_\_\_ TEMPEST & LEMANS

| ENGINE—FUEL SYSTEM                                        |                                                | Standard Engine                          | Optional Engine (b)        |
|-----------------------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------|
| Induction type: Carburetor, fuel injection, supercharger. |                                                | Carburetor                               |                            |
| Fuel Tank                                                 | Capacity (gals.)                               | 21.5                                     |                            |
|                                                           | Filler location                                | Center Rear                              |                            |
| Fuel Pump                                                 | Type (elec. or mech.)                          | Mechanical                               |                            |
|                                                           | Locations                                      | Right Front of Engine                    | Left Front of Engine       |
|                                                           | Pressure range                                 |                                          |                            |
| Vacuum booster (std., optional, none)                     |                                                | None                                     |                            |
| Fuel Filter                                               | Type                                           | Plastic Fabric in Fuel Tank and Sintered |                            |
|                                                           | Locations                                      | Bronze in Carburetor Inlet               |                            |
| Carburetor                                                | Choke type                                     | Automatic                                |                            |
|                                                           | Intake manifold heat contr. (exhaust or water) | Exhaust                                  |                            |
|                                                           | Air clnr. type                                 | Standard<br>Oiled Plastic Foam           | Optional<br>Oiled Metallic |
|                                                           |                                                | None                                     |                            |

## CARBURETOR SUPPLEMENTARY INFORMATION

| Model Usage                       | Engine Displ. | Transmission | Carburetors |          | No. Used and Type | Bbl. Size | No. of Bbl. |
|-----------------------------------|---------------|--------------|-------------|----------|-------------------|-----------|-------------|
|                                   |               |              | Make        | Model    |                   |           |             |
| All 20, 21 & 22 Std.              | 215           | Synchromesh  | Rochester   | 7024164  | One               | 1.56      | 1           |
| All 20, 21 & 22 Opt.              | 215           | Automatic    | Rochester   | 7024166  | One               | 1.56      | 1           |
| All 20, 21 & 22 Opt.              | 326           | Synchromesh  | Rochester   | 7023071  | One               | 1.68      | 2           |
| All 20, 21 & 22 Opt.              | 326           | Automatic    | Rochester   | 7023062  | One               | 1.68      | 2           |
| All 20, 21 & 22<br>326 H. O. Opt. | 326           | Synchromesh  | Carter      | AFB3686S | One               | (a)       | 4           |
| All 20, 21 & 22<br>326 H. O. Opt. | 326           | Automatic    | Carter      | AFB3687S | One               | (a)       | 4           |

(a) 1.438 Primary, 1.688 Secondary

(b) See pages 8a for G. T. O. Option



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MODEL LE MANS G. T. O. OPTION

## 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.)                                | 21.5                                     |                            |
|                                                           | Filler location                                 | Center Rear                              |                            |
| 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 Fuel Tank and Sintered |                            |
|                                                           | Locations                                       | Bronze in Carburetor Inlet               |                            |
| Carburetor                                                | Choke type                                      | Automatic                                |                            |
|                                                           | Intake manifold heat control (exhaust or water) | Exhaust                                  |                            |
|                                                           | Air clnr. type                                  | Standard                                 | Oiled Metallic Element     |
|                                                           |                                                 | Optional                                 | Oiled Plastic Foam Element |

## CARBURETOR SUPPLEMENTARY INFORMATION

| Model Usage                  | Engine Displ. | Transmission             | Carburetors |            | No. Used and Type | Barrel Size | No. of Barrels |
|------------------------------|---------------|--------------------------|-------------|------------|-------------------|-------------|----------------|
|                              |               |                          | Make        | Model      |                   |             |                |
| 22 G. T. O., 4-Bbl.          | 389           | Synchromesh              | Carter      | AFB 3647-S | One               | (a)         | 4              |
| 22 G. T. O., 4-Bbl.          | 389           | Hydramatic               | Carter      | AFB 3648-S | One               | (a)         | 4              |
| 22 G. T. O., 3-2 Bbl. Option | 389           | Synchromesh & Hydramatic | Rochester   | 7024178    | 1-Front           | 1.69        | 2              |
|                              |               |                          | Rochester   | 7024175    | 1-Center          | 1.44        | 2              |
|                              |               |                          | Rochester   | 7024173    | 1-Center          | 1.44        | 2              |
|                              |               |                          | Rochester   | 7024179    | 1-Rear            | 1.69        | 2              |

(a) 1.438 Primary, 1.688 Secondary

# AMA Specifications – Passenger Car

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MODEL **TEMPEST & LE MANS**

| ENGINE—COOLING SYSTEM                                          |                              | STANDARD ENGINE                    | OPTIONAL ENGINE                                |       |       |   |       |       |       |
|----------------------------------------------------------------|------------------------------|------------------------------------|------------------------------------------------|-------|-------|---|-------|-------|-------|
| 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)       | 180°F.                             |                                                |       |       |   |       |       |       |
| Water pump                                                     | Type (centrifugal, other)    | Centrifugal                        |                                                |       |       |   |       |       |       |
|                                                                | GPM @ 1000 pump rpm          | 65 @ 4400 RPM                      | 19 @ 1000 RPM                                  |       |       |   |       |       |       |
|                                                                | 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.)            | 11.3                               | 20.5                                           |       |       |   |       |       |       |
|                                                                | Without heater (qt.)         | Heater Standard 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                    | 1.5                                            |       |       |   |       |       |       |
|                                                                | By-pass                      | Number and type (molded, straight) | None-Internal                                  |       |       |   |       |       |       |
|                                                                |                              | Inside diameter                    | Hose Not Used                                  |       |       |   |       |       |       |
| Fan                                                            | Number of blades & Spacing   |                                    | 4-76° & 104° (b)                               |       |       |   |       |       |       |
|                                                                | Diameter                     |                                    | 17.62   18.0                                   |       |       |   |       |       |       |
|                                                                | Ratio-fan to crankshaft rev. |                                    | .95:1   .91:1                                  |       |       |   |       |       |       |
|                                                                | Fan cutout type              |                                    | Fluid Clutch - Thermostatically Controlled (a) |       |       |   |       |       |       |
|                                                                | Bearing type                 |                                    | See Water Pump                                 |       |       |   |       |       |       |
| * Drive belts<br><small>(indicate belt used by letter)</small> | Fan                          | A                                  | A & B                                          | A & C | B & C | E | F & F | G & H | H & J |
|                                                                | Generator                    | A                                  | A & B                                          | A     | D     | E | F & F | G     | J     |
|                                                                | Water Pump                   | A                                  | A & B                                          | A & C | B & C | E | F & F | G & H | H & J |
|                                                                | Power Steering               |                                    | B                                              |       | B     |   | F & F |       | J     |
|                                                                | Air Conditioning             |                                    |                                                | C     | C     |   |       | H     | H     |

| * Drive Belt Dimensions | A    | B    | C    | D    | E    | F    | G    | H    | J    |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Angle of V              | 36°  | 36°  | 36°  | 36°  | 36°  | 36°  | 36°  | 36°  | 36°  |
| Nominal length (SAE)    | 39.0 | 49.5 | 55.5 | 31.0 | 53.5 | 57.5 | 52.5 | 62.0 | 60.5 |
| Width                   | .38  | .38  | .47  | .38  | .38  | .38  | .38  | .47  | .47  |

(a) Used with Air Conditioning installation on cars with optional engine and all with G. T. O. option.

(b) Air Conditioned cars with standard engine use 18" 5-blade fan, 18" 7-blade fan with optional engine - both fans have non-uniform spacing.

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MODEL TEMPEST & LE MANS

## ELECTRICAL—SUPPLY SYSTEM

|                          |                               | Standard Engine<br>Delco 554                      | Optional Engine<br>Delco 458 |  |
|--------------------------|-------------------------------|---------------------------------------------------|------------------------------|--|
| Battery                  | Make and Model                | 12 & 54                                           |                              |  |
|                          | Voltage Rtg. & Total Plates   | 12 & 54                                           |                              |  |
|                          | SAE Designation & Amp Hr. Rtg | 17 MI-44 @ 20 Hr. Rate                            | 25 MB-53 @ 20 Hr. Rate       |  |
|                          | Location                      | Under Hood-Right Side                             | Under Hood - Left Side       |  |
| Terminal grounded        |                               | Negative                                          |                              |  |
| Generator                | Make                          | Delco-Remy                                        |                              |  |
|                          | Model                         | 1100668 (a)                                       | 1100683 (b)                  |  |
|                          | Type                          | 3-Phase - 37 Amp. (55 Amp. with Air Conditioning) |                              |  |
|                          | Ratio—Gen. to Cr/s rev.       | 2.46:1                                            | 2.74:1 (b)                   |  |
|                          | Gen. cut-in (hot)—engine rpm  | Charge at Idle                                    |                              |  |
| Regulator                | Make                          | Delco-Remy                                        |                              |  |
|                          | Model                         | 1119515 (e)                                       |                              |  |
|                          | Type                          | Voltage Regulator                                 |                              |  |
|                          | Cutout relay                  | Closing voltage @ generator rpm                   | None                         |  |
|                          |                               | Reverse current to open                           | None                         |  |
|                          | Regu-lated                    | Voltage                                           | 13.8                         |  |
|                          |                               | Current                                           | Alternator Self-Regulated    |  |
| Voltage test con-ditions | Temperature                   | 125°F Around Regulator                            |                              |  |
|                          | Load                          | 10 Amp.                                           |                              |  |
|                          | Other                         |                                                   |                              |  |

## ELECTRICAL—STARTING SYSTEM

|                |                           |                                                                                                                                                                                                                                                                              |                           |  |
|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--|
| Starting motor | Make                      | Delco-Remy                                                                                                                                                                                                                                                                   |                           |  |
|                | Model                     | 1107301                                                                                                                                                                                                                                                                      | 1107293 (d)               |  |
|                | 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                      | 49-76 (c)                                                                                                                                                                                                                                                                    | 65-100 (c)                |  |
|                | Volts                     | 10.6                                                                                                                                                                                                                                                                         | 10.6                      |  |
|                | RPM (min.)                | 6200-9400                                                                                                                                                                                                                                                                    | 3600-5100                 |  |
| Motor control  | Switch (solenoid, manual) | Solenoid                                                                                                                                                                                                                                                                     |                           |  |
|                | Starting procedure        | Place gearshift lever in Neutral and depress clutch*. Depress accelerator pedal to floor once and release (with cold engine) - Hold accelerator pedal about halfway down (with warm engine). Turn ignition key to right to engage starter, release as soon as engine starts. |                           |  |

- (a) 1100665 with air conditioning (Continued)  
 (b) 1100627 with air conditioning - 2.85:1 drive ratio except breakerless ignition.  
 (c) Without solenoid  
 (d) 1107294 with G. T. O. Option  
 (e) Except breakerless ignition system.

\* With Automatic Transmission use "Neutral" or "Park" (no clutch).

# AMA Specifications – Passenger Car

**MAKE OF CAR** PONTIAC **MODEL YEAR** 1964 **DATE ISSUED** 9-6-63 **REVISED** (\*)

**MODEL** TEMPEST & LE MANS

| <b>ELECTRICAL—STARTING SYSTEM (cont.)</b> |                             | Standard Engine                   | Optional Engine |     |
|-------------------------------------------|-----------------------------|-----------------------------------|-----------------|-----|
| <b>Motor Drive</b>                        | Engagement type             | Sliding Gear - Overrunning Clutch |                 |     |
|                                           | Pinion meshes (front, rear) | Front                             |                 |     |
|                                           | Number of teeth             | Pinion                            | 9               |     |
|                                           |                             | Flywheel                          | 155             | 166 |
| Flywheel tooth face width                 |                             | .41                               |                 |     |

## ELECTRICAL—IGNITION SYSTEM

|                           |                                                             |                                  |                                         |              |
|---------------------------|-------------------------------------------------------------|----------------------------------|-----------------------------------------|--------------|
| <b>Coil</b>               | Make                                                        | Delco-Remy                       |                                         |              |
|                           | Model                                                       | 1115184                          | 1115187 (a)                             |              |
|                           | Amps                                                        | Engine stopped                   | 3.5                                     | 3.4          |
| Engine idling             |                                                             | 2.8                              | 2.1                                     |              |
| <b>Distributor</b>        | Make                                                        | Delco-Remy                       |                                         |              |
|                           | Model                                                       | 1110316                          | 1111052 (a)                             |              |
|                           | Cent'fgal adv. in crankshaft degrees @ engine rpm (nominal) | Start (rpm)                      | 800                                     | 650          |
|                           |                                                             | Intermediate points deg. @ rpm   | 17-21 @ 1850                            | 17-21 @ 2000 |
|                           |                                                             | Max deg. @ rpm                   | 28-32 @ 4600                            | 22-26 @ 4600 |
|                           | Vacuum adv. in crankshaft degrees @ in. Hg. (nominal)       | Start (in Hg)                    | 5-7                                     | 6 - 8        |
|                           |                                                             | Intermediate points, deg @ in Hg | None                                    |              |
|                           |                                                             | Max. deg. in. Hg.                | 23 @ 11-13.5                            | 20 @ 13-15   |
|                           | Breaker gap (in.)                                           |                                  | .013 - .019                             |              |
| Cam angle (deg.)          |                                                             | 31-34                            | 28-32                                   |              |
| Breaker arm tension (oz.) |                                                             | 19 - 23                          |                                         |              |
| <b>Timing</b>             | Crankshaft deg. @ rpm.                                      | 4° at Hot Idle                   | 6° at Hot Idle                          |              |
|                           | Mark location                                               | On Crankshaft Pulley             | On Crankshaft Pulley Hub                |              |
|                           | Cylinder numbering system (see page 2)                      | 1-2-3-4-5-6                      | Left Bank 1-3-5-7<br>Right Bank 2-4-6-8 |              |
|                           |                                                             | 1-5-3-6-2-4                      | 1-8-4-3-6-5-7-2                         |              |
| <b>Spark Plug</b>         | Make and model                                              | AC 46N                           | AC 45S                                  |              |
|                           | Thread (mm)                                                 | 14 MM                            |                                         |              |
|                           | Tightening torque (lb. ft.)                                 | 15-25                            |                                         |              |
|                           | Gap                                                         | .033 - .038                      |                                         |              |
| <b>Cable</b>              | Conductor type                                              | Carbonized Thread                |                                         |              |
|                           | Insulation type                                             | Neoprene                         |                                         |              |
|                           | Spark plug protector                                        | Butyl Rubber Boot                |                                         |              |

## ELECTRICAL—SUPPRESSION

|                             |                                                                                                                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Locations &amp; type</b> | Carbonized Thread Core Secondary Cables and Engine to Dash Ground Strap on all cars. Ground strap from engine to Shroud and Engine to Frame plus Condenser on Regulator of all Cars with Radio. |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

(a) Except Breakerless Ignition System

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MODEL TEMPEST & LE MANS

## ELECTRICAL—INSTRUMENTS AND SWITCHES

|                             |                                                                                |                                                                                                                                                                                                                                                                                                       |
|-----------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Speed-ometer                | Make                                                                           | AC                                                                                                                                                                                                                                                                                                    |
|                             | Trip odometer (yes, no)                                                        | No                                                                                                                                                                                                                                                                                                    |
| Charge indicator—type       |                                                                                | Telltale Light                                                                                                                                                                                                                                                                                        |
| Temperature indicator—type  |                                                                                | Telltale Light                                                                                                                                                                                                                                                                                        |
| Oil pressure indicator—type |                                                                                | Telltale Light                                                                                                                                                                                                                                                                                        |
| Fuel indicator—type         |                                                                                | Electric Gauge                                                                                                                                                                                                                                                                                        |
| Other                       |                                                                                | None                                                                                                                                                                                                                                                                                                  |
| Ignition switch             | Identify positions in order and circuits controlled                            | Counterclockwise to stop - accessory circuits on.<br>Vertical - "Off" position - key removable in this position only.<br>Clockwise - 40° from vertical - ignition and accessory circuits on.<br>Clockwise - 70° from vertical - ignition and starter circuits only.                                   |
|                             | Provision for illumination                                                     | None                                                                                                                                                                                                                                                                                                  |
|                             | Location                                                                       | Left Center of Instrument Panel                                                                                                                                                                                                                                                                       |
| Main lighting switch        | Identify positions and lamps controlled                                        | Forward position - off.<br>1st position-instrument panel, parking, tail and license lights.<br>2nd position-instrument panel, head, tail and license lights.<br>Clockwise rotation dims instrument lights to "Off".<br>Counterclockwise rotation brightens instrument lights and turns on dome light. |
| Other light switches        | Locations and lamps controlled (Std. Car)-For Accessory Switches see Page 12-A | Direction Signal-on steering column below wheel.<br>Dimmer Switch-on floor left of steering column.<br>Stop Light Switch-on brake support.                                                                                                                                                            |
| Other switches              | Locations and devices controlled                                               | (See Supplement Page 12-A)                                                                                                                                                                                                                                                                            |
| Windshield wiper            | Make                                                                           | Delco Appliance                                                                                                                                                                                                                                                                                       |
|                             | Type                                                                           | Electric                                                                                                                                                                                                                                                                                              |
|                             | Vacuum booster provision                                                       | None                                                                                                                                                                                                                                                                                                  |
|                             | Washer provision                                                               | Yes                                                                                                                                                                                                                                                                                                   |
| Horn                        | Type                                                                           | Solenoid                                                                                                                                                                                                                                                                                              |
|                             | Number used                                                                    | Tempest Series: 1 Std. Second Horn Optional (a)                                                                                                                                                                                                                                                       |
|                             | Amp draw (each)                                                                | 4.3 - 5.9                                                                                                                                                                                                                                                                                             |

(a) Two horns standard on Tempest Custom & LeMans Series.

# AMA Specifications – Passenger Car

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## SUPPLEMENTARY INFORMATION

MODEL TEMPEST & LE MANS

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### ACCESSORY LIGHT SWITCHES:

Back-Up Light - on steering column jacket behind instrument panel except cars with optional 4-speed synchromesh transmission where switch is mounted on the transmission.

Parking Brake Signal - on parking brake pedal arm.

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

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

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

Luggage Compartment and Utility Lamp - mercury switch on lamp mounting bracket operates lamp when trunk lid is opened.

Glove Compartment Lamp - on instrument panel behind compartment door.

### OTHER SWITCHES:

Radio - at center of instrument panel.

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

Air Conditioning Blower Motor - on instrument panel right of steering column.

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

Windshield Washer - on windshield wiper switch knob.

Neutral Safety Switch - steering column jacket behind instrument panel except cars with floor mounted shift lever.

Rear Seat Speaker - left center of instrument panel.



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MODEL TEMPEST & LE MANS

## ELECTRICAL—LAMP BULBS

Give quantity used and trade number, e.g., Headlamp 2-5400 S, dual headlight 2-4001, 2-4002.

|                         |                                |                       |
|-------------------------|--------------------------------|-----------------------|
| Headlamps & arrangement | 2 #4001, 2 #4002 - Horizontal  |                       |
| Headlamp beam indicator | 1 #1895                        |                       |
| Parking                 | 2 #1157                        |                       |
| Tail                    | 2 #1157 (a)                    |                       |
| Stop                    | Same as #1157 Tail Light Bulbs |                       |
| Direction signal        | Front                          | Same as Parking Light |
|                         | Rear                           | Same as Stop Light    |
|                         | Indicator                      | 1 #1895               |
| License Plate           | 1 #67                          |                       |
| Oil pressure indicator  | 1 #1895                        |                       |
| Charge indicator        | 1 #1895                        |                       |
| Instrument              | 4 #1895                        |                       |
| Clock                   | 2 #1895 *                      |                       |
| Radio                   | 1 #1895 *                      |                       |

Indicate also whether the following lamp assemblies are standard equipment, optional, or NA.

|                      |             |
|----------------------|-------------|
| Ignition lock        | None        |
| Back up              | 2 #1156 *   |
| Dome                 | 1 #1004     |
| Glove compartment    | 1 #1893 *   |
| Prkg. brake signal   | 1 #1895 *   |
| Luggage compartment  | 1 #89 *     |
| Underhood            | 1 #93 *     |
| Courtesy             | 1 #89 * (c) |
| Map                  |             |
| Eng. Temp. Indicator | 1 #1895     |
| Heater Panel         | 1 #1895 (b) |
| Spot Lamp            | 1 #4404 *   |
| Ash Tray Lamp        | 1 #1445 *   |
| Tachometer           | 2 #1895 *   |
| Trans. Shift Ind.    | 1 #1445 *   |

\* Optional Equipment

(a) 22 Series (Le Mans) uses 4 #1157 and 2 #93

(b) Same Bulb Used

(c) Standard on Convertible Coupes



# AMA Specifications – Passenger Car

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## ELECTRICAL—FUSE & CIRCUIT BREAKER DATA

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

|                         |                |     |                                    |             |
|-------------------------|----------------|-----|------------------------------------|-------------|
| Headlamp                | 22 Amp. C. B.  | (a) | Parking Brake Warning Lamp         | same as (h) |
| Headlamp beam indicator | Same as        | (a) | Air Cond. Blower                   | AGC-30 (l)  |
| Parking lamp            | Same as        | (a) | Auto. Trans. Shift Ind. Lamp       | same as (e) |
| Tail lamp               | AGC-10         | (b) | Tachometer Lamp                    | same as (e) |
| Stop lamp               | AGC-15         | (d) | Power Tail Gate Wdw. 40 Amp. C. B. | (k)         |
| Direction indicator     | Same as        | (d) | Underhood Lamp                     | same as (j) |
| License plate lamp      | Same as        | (b) | Luggage Compt. Lamp                | same as (i) |
| Instrument lamp         | (b) plus AGC-4 | (e) | Auto. Trans. Downshift Sw.         | same as (h) |
| Ignition lamp           | None           |     | Tachometer                         | 1-AG (m)    |
| Back up lamp            | AGC-20         | (h) | Power Antenna                      | same as (j) |
| Dome lamp               | AGC-10         | (i) |                                    |             |
| Clock                   | Same as        | (i) |                                    |             |
| Clock lamp              | Same as        | (e) |                                    |             |
| Radio                   | AGW- 2-1/2     | (g) |                                    |             |
| Glove compartment lamp  | Same as        | (i) |                                    |             |
| Radio Dial Light        | Same as        | (e) |                                    |             |
| Windshield Wiper        | Same as        | (h) |                                    |             |
| Windshield Washer       | Same as        | (h) |                                    |             |
| Cigar Lighter           | AGC-20         | (j) |                                    |             |
| Heater Blower           | AGA-20         | (f) |                                    |             |
| Heater Panel            | Same as        | (e) |                                    |             |
| Spot Lamp               | Same As        | (j) |                                    |             |
| Courtesy Lamp           | Same as        | (i) |                                    |             |
| Ash Tray Lamp           | Same as        | (e) |                                    |             |

## ELECTRICAL—LOCATION OF OUTSIDE LAMPS

2027 | 2069 | 2127 | 2167 | 2169 | 2035 | 2135 | 2227 | 2267

|                                       |                                            | 2027     | 2069   | 2127 | 2167 | 2169 | 2035 | 2135 | 2227 | 2267     |          |
|---------------------------------------|--------------------------------------------|----------|--------|------|------|------|------|------|------|----------|----------|
| Height above ground to center of bulb | Tail                                       | Lowest   |        | 25.5 |      |      |      | 25.4 |      | 25.2     |          |
|                                       |                                            | Highest  |        | 25.5 |      |      |      | 25.4 |      | 25.2     |          |
|                                       | Stop                                       |          |        | 25.5 |      |      |      | 25.4 |      | 25.2     |          |
|                                       | Backup                                     |          |        | 15.0 |      |      |      | 12.5 |      | 15.0     |          |
|                                       | License, rear                              |          |        | 19.5 |      |      |      | 16.9 |      | 19.5     |          |
|                                       | Directional                                | Front    |        |      | 17.1 |      |      |      | 17.9 |          | 17.1     |
|                                       |                                            | Rear     |        |      | 25.5 |      |      |      | 25.4 |          | 25.5     |
|                                       | Headlamp                                   | Inside   |        |      | 25.6 |      |      |      | 26.4 |          | 25.6     |
|                                       |                                            | Outside* |        |      | 25.6 |      |      |      | 26.4 |          | 25.6     |
|                                       | Distance from C/L of car to center of bulb | Tail     | Inside |      | 33.2 |      |      |      | 32.9 |          | 20.7     |
| Outside                               |                                            |          |        | 33.2 |      |      |      | 32.9 |      | 29.3     |          |
| Stop                                  |                                            |          |        | 33.2 |      |      |      | 32.9 |      | 25.0 (a) |          |
| Backup                                |                                            |          |        | 27.8 |      |      |      | 28.0 |      | 27.8     |          |
| License, rear                         |                                            |          |        | 0    |      |      |      | 0    |      | 0        |          |
| Directional                           |                                            | Front    |        |      | 29.9 |      |      |      | 29.9 |          | 29.9     |
|                                       |                                            | Rear     |        |      | 33.2 |      |      |      | 32.9 |          | 25.0 (a) |
| Headlamp                              |                                            | Inside   |        |      | 25.2 |      |      |      | 25.2 |          | 25.2     |
|                                       |                                            | Outside* |        |      | 31.5 |      |      |      | 31.5 |          | 31.5     |

\* If single headlamps are used enter here.

(a) Outer stop and directional bulb - inner at 20.7

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MODEL TEMPEST & LE MANS

## DRIVE UNITS—CLUTCH (Manual Transmission)

| Make & type                    |                                     | Standard Engine                          | Optional Engine |
|--------------------------------|-------------------------------------|------------------------------------------|-----------------|
| Type pressure plate springs    |                                     | Own-Dry<br>Disc Spring                   |                 |
| Effective plate pressure (lb.) |                                     | 1700                                     | 2000 (a)        |
| No. of clutch driven discs     |                                     | One                                      |                 |
| Material                       |                                     | Woven Asbestos                           |                 |
| Clutch facing                  | Outside & inside dia.               | 9.125 x 6.125                            | 10.4 - 6.50     |
|                                | Total eff. area (sq.in.)            | 58.1                                     | 85.56           |
|                                | Thickness                           | .135                                     | .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 |                 |

## DRIVE UNITS—TRANSMISSIONS

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

## DRIVE UNITS—MANUAL TRANSMISSION

| Number of forward speeds           |                                             | Three (Std.)    | Optional 4-Speed   | Three           |
|------------------------------------|---------------------------------------------|-----------------|--------------------|-----------------|
| Transmission ratios                | In first                                    | 2.94:1          | 2.56:1             | 2.58:1          |
|                                    | In second                                   | 1.68:1          | 1.91:1             | 1.48:1          |
|                                    | In third                                    | 1.0 :1          | 1.48:1             | 1.00:1          |
|                                    | In fourth                                   | None            | 1.00:1             | None            |
|                                    | In reverse                                  | 2.94:1          | 2.64:1             | 2.58:1          |
| Synchronous meshing, specify gears |                                             | Second & Third  | All Forward Speeds | Second & Third  |
| Shift lever location               |                                             | Steering Column | Floor              | Steering Column |
| Lubricant                          | Capacity (pt.)                              | 3               | 3.75               | 3               |
|                                    | Type recommended: Type A - Extreme Pressure |                 |                    |                 |
|                                    | SAE viscosity number                        | Summer          | 80 or 90           |                 |
|                                    |                                             | Winter          | 80 or 90           |                 |
| Extreme cold                       |                                             | 80 or 90        |                    |                 |

(a) 2350 With G. T. O. Option

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MODEL TEMPEST & LEMANS

## 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-<br>bri-<br>cant                     | Capacity (pt.) (Overdrive only) |        | None |
|           |                                         | Separate filler (yes, no)       |        | None |
|           |                                         | Type recommended                |        | None |
|           |                                         | SAE vis-<br>cosity<br>number    | Summer | None |
|           |                                         |                                 | Winter | None |
|           | Ext. cold                               | None                            |        |      |

## DRIVE UNITS—AUTOMATIC TRANSMISSION

|                                                                                         |                              |                                                                                                                                             |                  |                      |
|-----------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|
| Trade name                                                                              |                              |                                                                                                                                             |                  |                      |
| Type describe                                                                           |                              | Torque Converter                                                                                                                            |                  |                      |
| Method of Selection<br>(Lever, Push Button or other)                                    |                              | Lever                                                                                                                                       |                  |                      |
| Selector Pattern                                                                        |                              | P - R - N - D - L                                                                                                                           |                  |                      |
| List gear ratios Selector Pattern and indicate which are used in each selector position |                              | R                                                                                                                                           | D                | L                    |
|                                                                                         |                              | 1.76:1                                                                                                                                      | 1.76:1<br>1.00:1 | 1.76:1 (a)           |
| Max. upshift speeds—drive range                                                         |                              | 66 MPH - Std. Engine                                                                                                                        |                  | 77 MPH - Opt. Engine |
| Max. kickdown speeds—drive range                                                        |                              | 62 MPH - Std. Engine                                                                                                                        |                  | 73 MPH - Opt. Engine |
| Torque<br>converter                                                                     | Number of elements           | Three                                                                                                                                       |                  |                      |
|                                                                                         | Max. ratio at stall          | 2.8:1 - Std. Engine                                                                                                                         |                  | 2.5:1 - Opt. Engine  |
|                                                                                         | Type of cooling (air, water) | Air                                                                                                                                         |                  | Water                |
| Lubricant                                                                               | Capacity—refill (pt.)        | 15 (Approx.)                                                                                                                                |                  |                      |
|                                                                                         | Type recommended             | GM Hydramatic Drive Fluid - Type A                                                                                                          |                  |                      |
| Special transmission features                                                           |                              | Torque converter provides full hydraulic drive for instant response and smoothness. Transmission gear case mounted behind torque converter. |                  |                      |

## DRIVE UNITS—PROPELLER SHAFT

|                                                       |                        |                     |
|-------------------------------------------------------|------------------------|---------------------|
| Number used                                           |                        | One                 |
| Type (exposed, torque tube)                           |                        | Exposed             |
| Outer<br>diameter x<br>length* x<br>wall<br>thickness | Manual transmission    | 3.25 x 60.15 x .065 |
|                                                       | Overdrive transmission | None                |
|                                                       | Automatic transmission | 3.25 x 60.15 x .065 |

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

(Continued)

(a) Total transmission torque multiplication is 4.93:1 with 6 cylinder engine -  
4.23:1 with optional V-8 engine.

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MODEL TEMPEST & LEMANS

## DRIVE UNITS—PROPELLER SHAFT (cont.)

|                                                     |                                       |                             |
|-----------------------------------------------------|---------------------------------------|-----------------------------|
| Inter-mediate 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)                          |                                       | Prepacked                   |
| Drive taken through (torque tube or arms, springs)  |                                       | Control Arms                |
| Torque taken through (torque tube or arms, springs) |                                       | Control Arms                |

## DRIVE UNITS—REAR AXLE

|                                   |                                  |              |    |
|-----------------------------------|----------------------------------|--------------|----|
| Description (see instructions)    | Semi-Floating Hypoid Rear Axle   |              |    |
| Limited Slip differential, type   | Spring Loaded Cone Clutch (Opt.) |              |    |
| Drive Pinion Offset               | 1.50                             |              |    |
| No. of differential pinions       | 2                                |              |    |
| Gear ratios (Std. equip.)         | Manual transmission              | 3.08:1 (a)   |    |
|                                   | Overdrive transmission           | None         |    |
|                                   | Automatic transmission           | 2.78:1 (a)   |    |
| Ring gear O.D. (std. ratio)       | 8.125                            |              |    |
| Pinion adjustment (shim, other)   | Shim                             |              |    |
| Pinion bearing adj. (shim, other) | Collapsible Spacer               |              |    |
| Wheel bearing type                | Single Row Ball Bearing          |              |    |
| Lubricant                         | Capacity (pt.)                   | 4.5          |    |
|                                   | 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    | 2.78:1 | 2.93:1 | 3.08:1 | 3.23:1 | 3.36:1 | 3.55:1 | 3.73:1 | 3.90:1 | 4.30:1 |
|--------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| No. of teeth | Pinion    | 16     | 14     | 14     | 13     | 13     | 11     | 11     | 11     | 10     |
|              | Ring gear | 41     | 39     | 41     | 40     | 42     | 37     | 39     | 41     | 43     |

(a) Std. 6 Cyl. engine car only - see page 3 for options.

# AMA Specifications – Passenger Car

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MODEL TEMPEST & LEMANS

### DRIVE UNITS—WHEELS

|                            |                     |              |
|----------------------------|---------------------|--------------|
| Type & material            |                     | Disc - Steel |
| Rim (size and flange type) | Std.                | 14 x 5J (c)  |
|                            | Opt.                | None         |
| Attachment                 | Type (bolt or stud) | Bolt         |
|                            | Circle diameter     | 4.75         |
|                            | Number and size     | 5. 7/16 - 20 |

### DRIVE UNITS—TIRES

|                               |                    |                                         |
|-------------------------------|--------------------|-----------------------------------------|
| Standard (List option below)  | Size & ply         | 6.50 x 14 (a)(c)                        |
|                               | Type - Nylon, etc. | Rayon (c)                               |
| Rev./mile at 50 mph.          |                    | 817 with 6.50 x 14 - 798 with 7.00 x 14 |
| Inflation press.(cold)        | Front              | 24                                      |
|                               | Rear               | 22                                      |
| Optional tires - size and ply |                    | 7.00 x 14 - 24psi Front, 22 psi Rear    |

### BRAKES—SERVICE

|                                                  |          |                                                                          |     |
|--------------------------------------------------|----------|--------------------------------------------------------------------------|-----|
| Type (duo-servo, disc, balanced, etc.)           |          | Hydraulic, Internal Expanding, Self-Adjusting, 2-Shoe, Single Anchor     |     |
| Self adjusting (std., opt., N.A.)                |          | Standard                                                                 |     |
| Hydraulic system type (single, dual, etc.)       |          | Single                                                                   |     |
| Power brake make & type (remote, integral, etc.) |          | Delco Moraine-Integral                                                   |     |
| Effective area (sq. in.)*                        |          | 150.2                                                                    |     |
| Gross lining area (sq. in.)**                    |          | 156.3                                                                    |     |
| Swept drum area (sq. in.)***                     |          | 269.8                                                                    |     |
| Percent brake effectiveness—front                |          | 56.3                                                                     |     |
| Drum                                             | Diameter | Front                                                                    | 9.5 |
|                                                  |          | Rear                                                                     | 9.5 |
| Type and material                                |          | Steel Backed Centrifugally Cast Alloy Iron Front — Fanned Composite Rear |     |
| Wheel cylinder bore                              | Front    | 1.125                                                                    |     |
|                                                  | Rear     | .9375                                                                    |     |
| Master cylinder bore                             |          | 1.00                                                                     |     |
| Available pedal travel                           |          | 5.70 (Std.) - 4.00 (Power Opt.)                                          |     |
| Line pressure at 100 lb. pedal load              |          | 800                                                                      |     |
| Shoe clearance adjustment                        |          | See Note (b)                                                             |     |

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

(Continued)

- (a) 7.00 x 14 Std. on station wagon and all with V-8 engine option - 24 psi front and 22 psi rear.
- (b) Tighten to heavy drag against drum and then back off 30 notches.
- (c) 7.50 x 14 Nylon cord red stripe tires mounted on 14 x 6JK rim wheels standard equipment on G. T. O. Option cars (22 series only) - 7.50 x 14 rayon cord white wall tires optional on G. T. O. Inflation press.: 22 Frt. - 20 Rear.



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MODEL TEMPEST & LE MANS

## BRAKES—SERVICE (cont.)

|              |            | Bonded or riveted                 |             | Riveted           |  |
|--------------|------------|-----------------------------------|-------------|-------------------|--|
| Brake lining | Front Shoe | Material                          |             | Molded Asbestos   |  |
|              |            | Size (length x width x thickness) | Front wheel | 7.55 x 2.50 x .22 |  |
|              |            |                                   | Rear wheel  | 7.55 x 2.00 x .22 |  |
|              |            | Segments per shoe                 |             | One               |  |
|              | Rear Shoe  | Material                          |             | Molded Asbestos   |  |
|              |            | Size (length x width x thickness) | Front wheel | 9.82 x 2.50 x .26 |  |
|              |            |                                   | Rear wheel  | 9.82 x 2.00 x .26 |  |
|              |            | 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 with Swept Hips - Boxed on Convertible

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

|                                    |                                                         |                         |
|------------------------------------|---------------------------------------------------------|-------------------------|
| Provision for car leveling         | None                                                    |                         |
| Provision for brake dip control    | Compound Anti-Drive Control Front Suspension            |                         |
| Provision for acc. squat control   | Geometry of Rear Suspension                             |                         |
| Special provisions for car jacking | Jack Positioned by Locating Hole in Front Bumper Flange |                         |
| 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 and lower control arms mounted on rubber bushings.

\* Air Suspension:  
 Air spring type  
 Compressor data  
 type  
 make  
 drive ratio

Normal operating pressures  
 spring rates  
 leveling data

(Continued)

# AMA Specifications – Passenger Cars

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MODEL TEMPEST & LEMANS

## SUSPENSION FRONT (cont.)

|            |                                                     |                    |
|------------|-----------------------------------------------------|--------------------|
| Spring     | Type                                                | Coil               |
|            | Material                                            | SAE 9260           |
|            | Size (coil design height & I.D.; bar length x dia.) | 11.4 x 3.6         |
|            | Spring rate (lb. per in.)                           | 225 (b)            |
|            | Rate at wheel (lb. per in.)                         | 66 (c)             |
|            | Design load (lb. @ design height)                   | 1380 - 1430 (d)    |
| Stabilizer | Type (link, linkless, frameless)                    | Link               |
|            | Material & bar diameter                             | SAE 1070 Steel (a) |

## STEERING

|                                                        |                               |                                                                  |                                     |
|--------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------|
| Mechanical (std., opt., NA)                            |                               | Standard                                                         |                                     |
| Power (std., opt., NA)                                 |                               | Optional                                                         |                                     |
| Wheel diameter                                         |                               | 15.5 x 16.0                                                      |                                     |
| Turning diameter                                       | Outside front                 | Wall to wall (l. & r.)                                           | 43.4                                |
|                                                        |                               | Curb to curb (l. & r.)                                           | 40.9                                |
|                                                        | Inside rear                   | Wall to wall (l. & r.)                                           | 25.0                                |
|                                                        |                               | Curb to curb (l. & r.)                                           | 25.6                                |
| Outside wheel angle with inside wheel at 20°           |                               | 18.6°                                                            |                                     |
| Mechanical                                             | Gear                          | Type                                                             | Recirculating Ball Bearing          |
|                                                        |                               | Make                                                             | Saginaw                             |
|                                                        |                               | Ratios                                                           | Gear<br>24:1<br>Overall<br>28.3:1   |
|                                                        | No. wheel turns               |                                                                  | 5.0                                 |
|                                                        | Type (coaxial, linkage, etc.) |                                                                  | Coaxial                             |
| Power                                                  | Make                          |                                                                  | Saginaw                             |
|                                                        | Trade name                    |                                                                  | Power Steering                      |
|                                                        | Gear                          | Type                                                             | Recirculating Ball Bearing          |
|                                                        |                               | Ratios                                                           | Gear<br>17.5:1<br>Overall<br>22.0:1 |
|                                                        |                               | Pump driven by                                                   |                                     |
|                                                        | Number wheel turns            |                                                                  | 4.2                                 |
|                                                        | Linkage                       | Type                                                             |                                     |
| Location (front or rear of wheels, other)              |                               | Front of Wheels                                                  |                                     |
| Drag link (trans. or longit.)<br>Tie rods (one or two) |                               | Traverse Strg. Rod Connects Tie Rods, Pitman & Idler Arms<br>Two |                                     |

(Continued)

- (a) .875 diameter on all except. 938 dia. on G. T. O.
- (b) Except 275 with optional V-8 engine.
- (c) 80 with optional V-8 engine.
- (d) 1635 to 1685 with optional V-8 engine.



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MODEL TEMPEST & LE MANS

## STEERING (cont)

|                                       |                               |               |                                                |
|---------------------------------------|-------------------------------|---------------|------------------------------------------------|
| 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          |
| Wheel alignment (range and preferred) | Caster (deg.)                 |               | 1° 30' ± 30' Negative                          |
|                                       | Camber (deg.)                 |               | 0° 15' ± 30' Positive                          |
|                                       | Toe-in (outside tread-inches) |               | 0 to .125 Toe-In Measured 9 Inches Above Floor |
| Steering spindle & joint type         |                               |               | Reverse Elliott - Ball Joint                   |
| Wheel spindle                         | Diameter                      | Inner bearing | 1.249                                          |
|                                       |                               | Outer bearing | .749                                           |
|                                       | Thread size                   |               | 3/4 - 20                                       |
|                                       | Bearing type                  |               | Taper Roller                                   |

## SUSPENSION—REAR

|                                             |                                                                       |               |                               |      |
|---------------------------------------------|-----------------------------------------------------------------------|---------------|-------------------------------|------|
| Type and description                        |                                                                       |               | Four Link Pivoted Control Arm |      |
| Drive and torq. taken through (see page 17) |                                                                       |               | Upper & Lower Control Arms    |      |
| Spring                                      | Type                                                                  |               | Coil                          |      |
|                                             | Material                                                              |               | SAE 9260                      |      |
|                                             | Size (length x width, coil design height and I.D.; bar length & dia.) |               | 8.52 x 5.50                   |      |
|                                             | Spring rate (lb. per in.)                                             |               | 106 (a)                       |      |
|                                             | Rate at wheel (lb. per in.)                                           |               | 96                            |      |
|                                             | Design load (lb. at design height)                                    |               | 715 - 765 (b)                 |      |
|                                             | Mounting insulation type                                              |               | None                          |      |
|                                             | 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                      |      |

- (a) Except 150 on Station Wagon
- (b) Except 975-1025 on Station Wagon

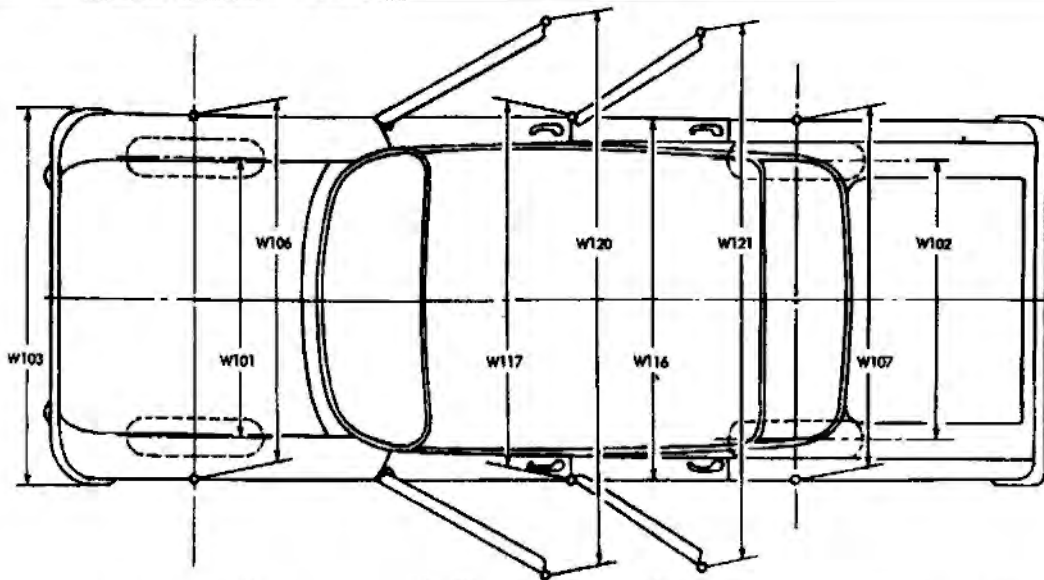
MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED (\*)

## 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

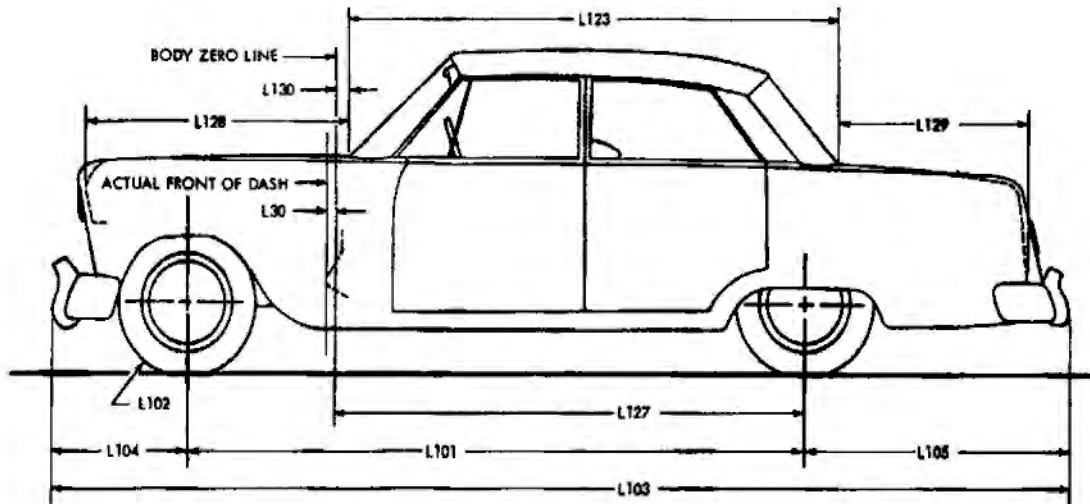


| MODEL                                        | Ref. No. | TEMPEST |      |      |       |      | LE MANS |      |       |      |
|----------------------------------------------|----------|---------|------|------|-------|------|---------|------|-------|------|
|                                              |          | 2069    | 2169 | 2027 | 2127  | 2167 | 2035    | 2135 | 2227  | 2267 |
| Tread - front                                | W101     |         |      |      | 58.0  |      |         |      |       |      |
| Tread - rear                                 | W102     |         |      |      | 58.0  |      |         |      |       |      |
| Maximum overall car width                    | W103     |         |      |      | 73.3  |      |         |      |       |      |
| Maximum overall body width                   | W116     |         |      |      | 73.1  |      |         |      |       |      |
| Maximum body width at #2 pillar              | W117     | 72.3    |      | --   |       |      | 72.3    |      | --    |      |
| Front fender overall width                   | W106     |         |      |      | 72.2  |      |         |      |       |      |
| Rear fender overall width                    | W107     |         |      |      | 73.1  |      |         |      |       |      |
| Maximum overall car width - front doors open | W120a    | 134.0   |      |      | 152.1 |      | 134.0   |      | 152.1 |      |
| Maximum overall car width - rear doors open  | W121a    | 132.7   |      |      | --    |      | 132.7   |      | --    |      |

# AMA Specifications – Passenger Car

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## EXTERIOR LENGTH DIMENSIONS

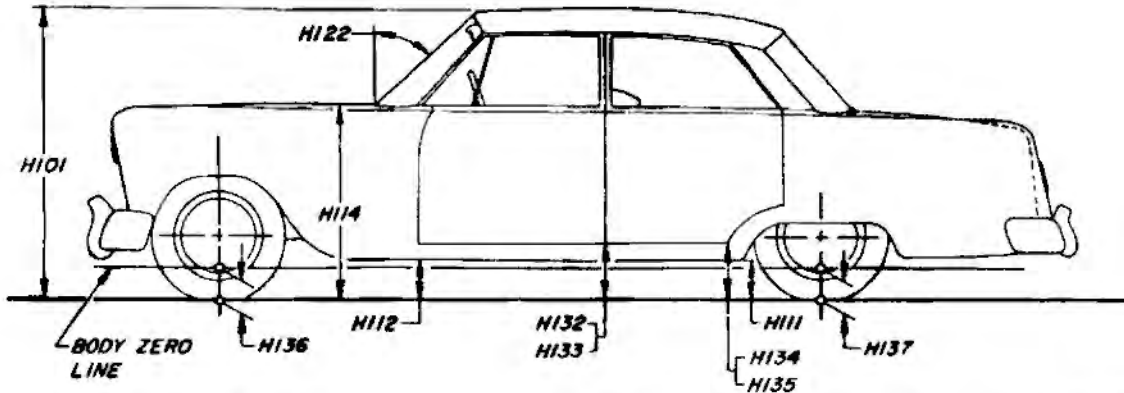


| MODEL                                         | Ref. No. | TEMPEST   |      |      |      |           |       | LE MANS   |      |      |
|-----------------------------------------------|----------|-----------|------|------|------|-----------|-------|-----------|------|------|
|                                               |          | 2069      | 2169 | 2027 | 2127 | 2167      | 2035  | 2135      | 2227 | 2267 |
| Body zero line to actual front of dash        | L30      | 0         |      |      |      |           |       |           |      |      |
| Wheelbase                                     | L101     | 115.0     |      |      |      |           |       |           |      |      |
| Overhang - front                              | L104     | 33.2      |      |      |      |           |       |           |      |      |
| Overhang - rear                               | L105     | 54.5      |      |      |      |           |       |           |      |      |
| Overall length                                | L103     | 203.0     |      |      |      |           |       |           |      |      |
| Hood length at car centerline                 | L128a    | 53.7      |      |      |      |           |       |           |      |      |
| Body upper structure length at car centerline | L123     | 96.2      |      | 96.3 |      | 92.2      | 132.8 |           | 96.3 | 92.2 |
| Deck length at car centerline                 | L129a    | 43.8      |      |      |      | 47.8      | -     |           | 43.8 | 47.8 |
| Body zero line to centerline of rear wheels   | L127     | 99.5      |      |      |      |           |       |           |      |      |
| Body zero line to windshield cowl point       | L130a    | 10.7      |      |      |      |           |       |           |      |      |
| Tire size                                     | L102     | 6.50 x 14 |      |      |      | 7.00 x 14 |       | 6.50 x 14 |      |      |

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## EXTERIOR HEIGHT DIMENSIONS

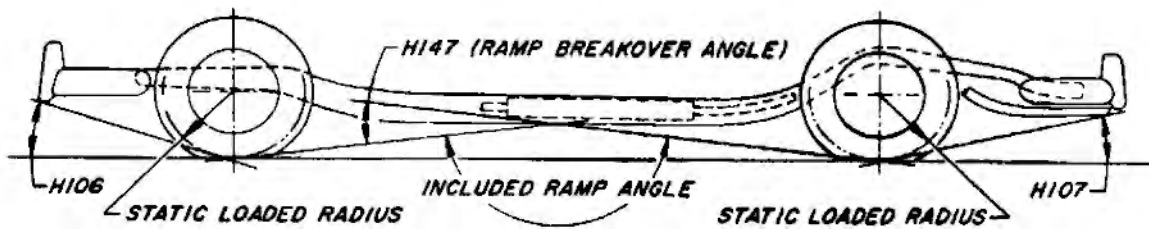
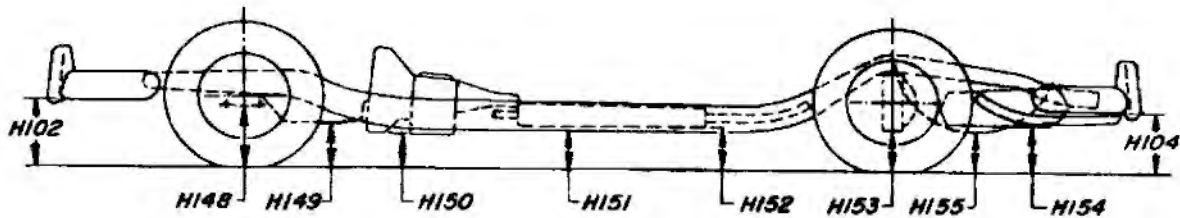


| MODEL                                    | Ref. No. | TEMPEST |      |      |      |      |      | LE MANS |      |      |
|------------------------------------------|----------|---------|------|------|------|------|------|---------|------|------|
|                                          |          | 2069    | 2169 | 2027 | 2127 | 2167 | 2035 | 2135    | 2227 | 2267 |
| Overall height                           | H101     | 54.0    |      | 53.5 |      | 53.6 | 55.2 |         | 53.5 | 53.6 |
| Hood at rear to ground                   | H114     | 37.2    |      |      |      |      | 38.0 |         | 37.2 |      |
| Rocker panel to ground - front           | H112     | 8.4     |      |      |      |      | 9.2  |         | 8.4  |      |
| Rocker panel to ground - rear            | H111     | 8.0     |      |      |      |      | 8.8  |         | 8.0  |      |
| Bottom of door to ground, open - front   | H132     | 11.3    |      |      |      |      | 12.1 |         | 11.3 |      |
| Bottom of door to ground, closed - front | H133     | 11.1    | 11.0 |      |      |      | 11.9 |         | 11.0 |      |
| Bottom of door to ground, open - rear    | H134     | 10.7    | --   |      |      |      | 11.5 |         | --   |      |
| Bottom of door to ground, closed - rear  | H135     | 10.9    | --   |      |      |      | 11.7 |         | --   |      |
| Windshield slope angle                   | H122     | 48.8°   |      |      |      |      |      |         |      |      |
| Body zero to ground - front              | H136     | 4.9     |      |      |      |      | 5.7  |         | 4.9  |      |
| Body zero to ground - rear               | H137     | 4.9     |      |      |      |      | 5.7  |         | 4.9  |      |

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## GROUND CLEARANCE DIMENSIONS

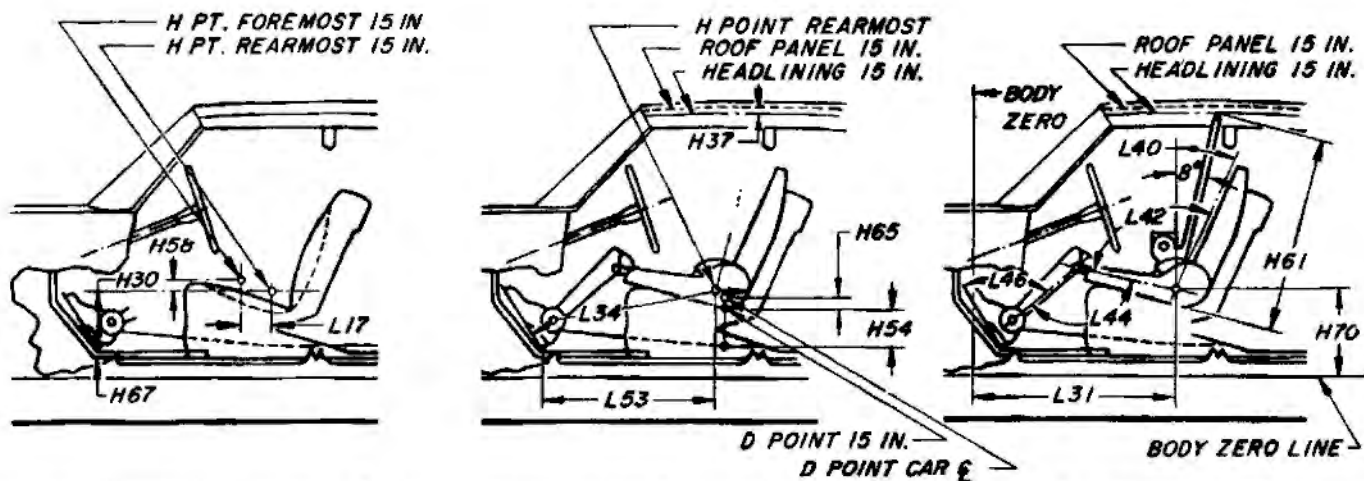


| MODEL                            | Ref. No. | Tempest |       |       |       | Tempest Custom |      |       | LeMans |      |
|----------------------------------|----------|---------|-------|-------|-------|----------------|------|-------|--------|------|
|                                  |          | 2027    | 2035  | 2069  | 2127  | 2135           | 2167 | 2169  | 2227   | 2267 |
| Front bumper to ground           | H102     | 10.4    | 11.2  | 10.4  | 11.2  |                |      | 10.4  |        |      |
| Rear bumper to ground            | H104     | 12.0    | 9.4   | 12.0  | 9.4   |                |      | 12.0  |        |      |
| Angle of approach                | H106     | 16°     | 17.5° | 16°   | 17.5° |                |      | 16°   |        |      |
| Angle of departure               | H107     | 12.5°   | 14°   | 12.5° | 14°   |                |      | 12.5° |        |      |
| Ramp breakover angle             | H147     | 13.8°   | 11.3° | 13.8° | 11.3° |                |      | 13.8° |        |      |
| Front suspension to ground       | H148     | 7.0     | 7.4   | 7.0   | 7.4   |                |      | 7.0   |        |      |
| Oil pan to ground                | H149     | 6.0     | 6.4   | 6.0   | 6.4   |                |      | 6.0   |        |      |
| Flywheel housing to ground       | H150     | 6.0     | 6.4   | 6.0   | 6.4   |                |      | 6.0   |        |      |
| Frame structure to ground        | H151     | 6.2     | 6.6   | 6.2   | 6.6   |                |      | 6.2   |        |      |
| Exhaust system to ground         | H152     | 6.7     | 7.1   | 6.7   | 7.1   |                |      | 6.7   |        |      |
| Rear axle differential to ground | H153     | 6.4     | 6.8   | 6.4   | 6.8   |                |      | 6.4   |        |      |
| Fuel tank to ground              | H154     | 7.6     | 8.0   | 7.6   | 8.0   |                |      | 7.6   |        |      |
| Spare tire well to ground        | H155     | None    | 8.4   | None  | 8.4   |                |      | None  |        |      |
| Minimum running ground clearance | H156     | 6.0     | 6.4   | 6.0   | 6.4   |                |      | 6.0   |        |      |

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## FRONT COMPARTMENT DIMENSIONS



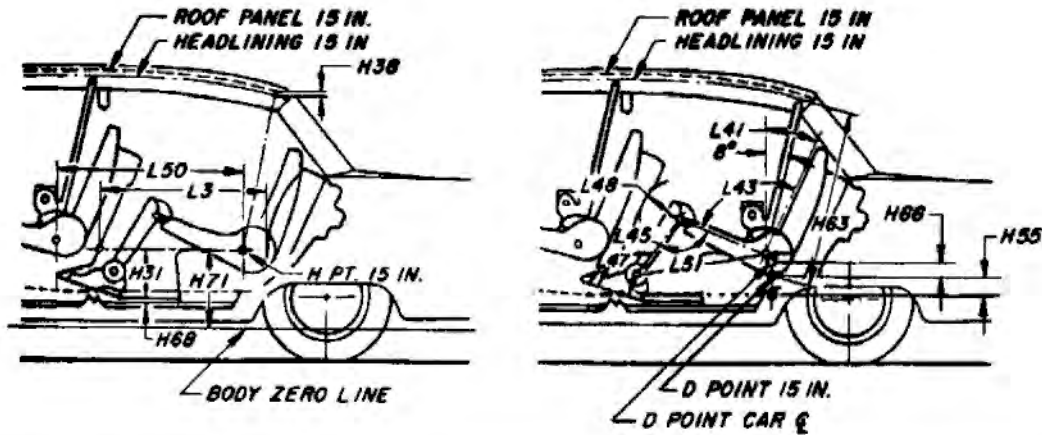
| MODEL                                    | Ref. No. | Tempest |      |      | Tempest Custom |      |      |      | LeMans |      |
|------------------------------------------|----------|---------|------|------|----------------|------|------|------|--------|------|
|                                          |          | 2027    | 2035 | 2069 | 2127           | 2135 | 2167 | 2169 | 2227   | 2267 |
| H Point to body zero line                | L31      |         |      |      |                |      |      |      |        |      |
| H Point to body zero line - front        | H70      |         |      |      |                |      |      |      |        |      |
| Effective head room                      | H61      | 38.1    | 38.2 | 38.6 | 38.1           | 38.2 | 38.7 | 38.6 | 38.3   | 39.0 |
| Headlining to roof height                | H37      |         |      |      |                |      |      |      |        |      |
| Maximum effective leg room - accelerator | L34      | 42.3    | 42.0 | 42.3 | 42.4           | 42.2 | 42.4 | 42.4 | 42.1   | 42.1 |
| H Point to heel point                    | H30      |         |      |      |                |      |      |      |        |      |
| Depressed floor covering thickness       | H67      |         |      |      |                |      |      |      |        |      |
| Back angle                               | L40      |         |      |      |                |      |      |      |        |      |
| Hip angle                                | L42      |         |      |      |                |      |      |      |        |      |
| Knee angle                               | L44      |         |      |      |                |      |      |      |        |      |
| Foot angle                               | L46      |         |      |      |                |      |      |      |        |      |
| D Point differential, side to center     | H65      |         |      |      |                |      |      |      |        |      |
| D Point to tunnel                        | H54      |         |      |      |                |      |      |      |        |      |
| H Point to accelerator floor point       | L53      |         |      |      |                |      |      |      |        |      |
| H Point travel                           | L17      |         |      |      |                |      |      |      |        |      |
| H Point rise                             | H58      |         |      |      |                |      |      |      |        |      |



# AMA Specifications – Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED(\*)

## REAR COMPARTMENT DIMENSIONS



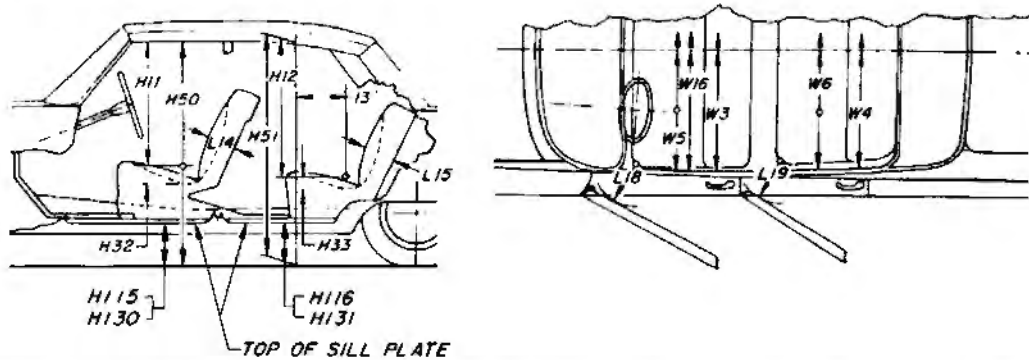
| MODEL                                | Ref. No. | Tempest |      |      | Tempest Custom |      |      |      | LeMans |      |
|--------------------------------------|----------|---------|------|------|----------------|------|------|------|--------|------|
|                                      |          | 2027    | 2035 | 2069 | 2127           | 2135 | 2167 | 2169 | 2227   | 2267 |
| H Point couple distance              | L50      |         |      |      |                |      |      |      |        |      |
| H Point to body zero line - rear     | H71      |         |      |      |                |      |      |      |        |      |
| Effective head room                  | H63      | 36.8    | 38.5 | 37.3 | 36.8           | 38.5 | 37.0 | 37.3 | 36.8   | 36.9 |
| Headlining to roof height            | H38      |         |      |      |                |      |      |      |        |      |
| Minimum effective leg room           | L51      | 35.1    | 36.9 | 36.5 | 35.8           | 37.1 | 35.8 | 36.5 | 35.8   | 35.8 |
| H Point to heel point                | H31      |         |      |      |                |      |      |      |        |      |
| Depressed floor covering thickness   | H68      |         |      |      |                |      |      |      |        |      |
| Minimum knee room                    | L48      |         |      |      |                |      |      |      |        |      |
| Rear compartment room                | L3       |         |      |      |                |      |      |      |        |      |
| Back angle                           | L41      |         |      |      |                |      |      |      |        |      |
| Hip angle                            | L43      |         |      |      |                |      |      |      |        |      |
| Knee angle                           | L45      |         |      |      |                |      |      |      |        |      |
| Foot angle                           | L47      |         |      |      |                |      |      |      |        |      |
| D Point differential, side to center | H66      |         |      |      |                |      |      |      |        |      |
| D Point to tunnel                    | H55      |         |      |      |                |      |      |      |        |      |



# AMA Specifications – Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED (a)

## SEAT AND ENTRANCE DIMENSIONS

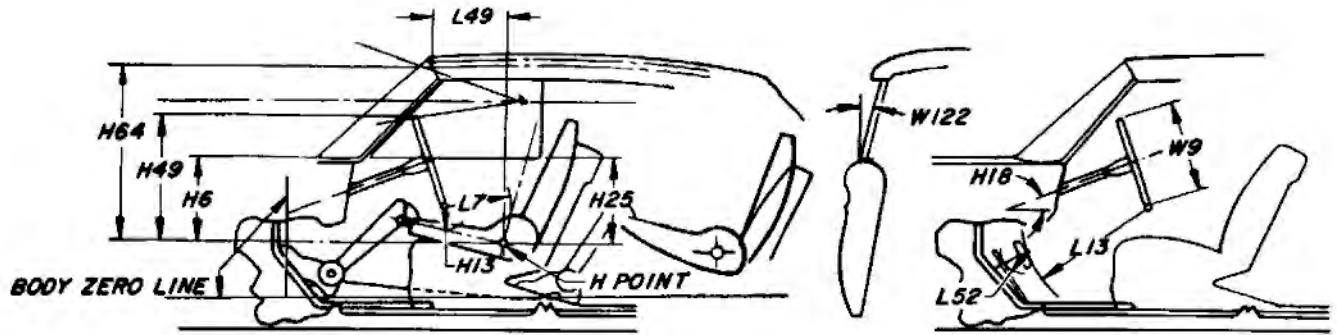


|                                      | Ref. No. | Tempest |      |      | Tempest Custom |      |      |      | LeMans |      |
|--------------------------------------|----------|---------|------|------|----------------|------|------|------|--------|------|
|                                      |          | 2027    | 2035 | 2069 | 2127           | 2135 | 2167 | 2169 | 2227   | 2267 |
| Shoulder room - front                | W3       | 58.8    |      |      |                |      |      |      |        |      |
| Hip room - front                     | W5       | 60.2    |      |      |                |      |      | 60.1 |        |      |
| Seat width - front                   | W16      |         |      |      |                |      |      |      |        |      |
| Upper body opening to ground - front | H50      |         |      |      |                |      |      |      |        |      |
| Entrance height - front              | H11      |         |      |      |                |      |      |      |        |      |
| Step height - front (design load)    | H115     |         |      |      |                |      |      |      |        |      |
| Step height - front (curb load)      | H130     |         |      |      |                |      |      |      |        |      |
| Entrance foot clearance - front      | L18      |         |      |      |                |      |      |      |        |      |
| Seat cushion deflection - front      | H32      |         |      |      |                |      |      |      |        |      |
| Seat back thickness - front          | L14      |         |      |      |                |      |      |      |        |      |
| Shoulder room - rear                 | W4       | 57.0    | 58.8 | 58.8 | 57.0           | 58.8 | 45.6 | 58.8 | 57.0   | 45.6 |
| Hip room - rear                      | W6       | 58.8    | 59.9 | 59.9 | 58.8           | 59.9 | 48.6 | 59.9 | 58.7   | 48.6 |
| Upper body opening to ground - rear  | H51      |         |      |      |                |      |      |      |        |      |
| Entrance height - rear               | H12      |         |      |      |                |      |      |      |        |      |
| Step height - rear (design load)     | H116     |         |      |      |                |      |      |      |        |      |
| Step height - rear (curb load)       | H131     |         |      |      |                |      |      |      |        |      |
| Entrance foot clearance - rear       | L19      |         |      |      |                |      |      |      |        |      |
| Seat cushion deflection - rear       | H33      |         |      |      |                |      |      |      |        |      |
| Seat back thickness - rear           | L15      |         |      |      |                |      |      |      |        |      |

# AMA Specifications – Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED(0)

## VISION AND CONTROL DIMENSIONS



| MODEL                                      | Ref. No. | Tempest | Tempest Custom | LeMans |
|--------------------------------------------|----------|---------|----------------|--------|
| H Point to windshield bottom DLO           | H6       |         |                |        |
| H Point to windshield upper DLO            | H64      |         |                |        |
| H Point to windshield upper DLO            | L49      |         |                |        |
| Belt height - front                        | H25      |         |                |        |
| Steering wheel center to centerline of car | W7       |         |                |        |
| Steering wheel maximum outside diameter    | W9       |         | 16.1           |        |
| Steering column angle - horizontal         | H18      |         |                |        |
| H Point to top of steering wheel           | H49      |         |                |        |
| Steering wheel torso clearance             | L7       |         |                |        |
| Steering wheel thigh clearance             | H13      |         |                |        |
| Brake pedal knee clearance                 | L13      |         |                |        |
| Brake pedal to accelerator                 | L52      |         |                |        |
| Tumble-home                                | W122     |         |                |        |

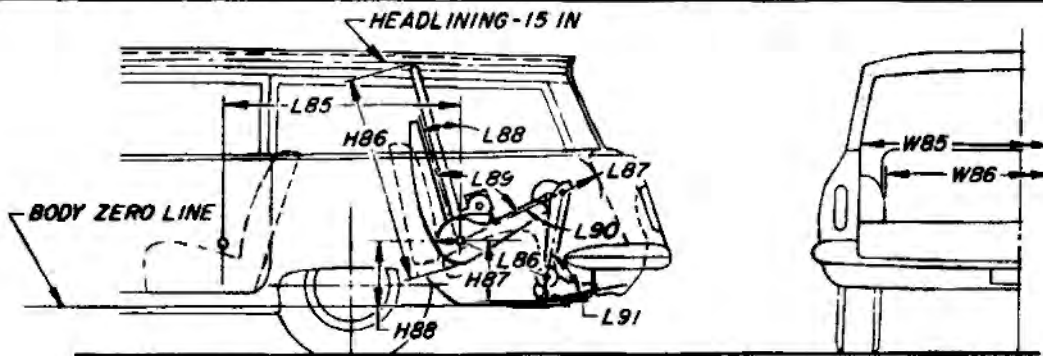
# AMA Specifications – Passenger Car

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED(•) \_\_\_\_\_

## LUGGAGE COMPARTMENT

| MODEL                          | Ref. No. | Tempest                                      |      | Tempest Custom |      |      | LeMans |      |
|--------------------------------|----------|----------------------------------------------|------|----------------|------|------|--------|------|
|                                |          | 2027                                         | 2069 | 2127           | 2167 | 2169 | 2227   | 2267 |
| Usable luggage capacity        |          |                                              |      |                |      |      |        |      |
| Total Volume - Cu. Ft.         |          | 32.1                                         | 30.1 | 32.1           |      | 30.1 |        | 32.1 |
| Liftover height                | H195     | 27.2                                         |      |                |      |      |        |      |
| Position of spare tire storage |          | Flat on Right Hand Side of Compartment Floor |      |                |      |      |        |      |
| Method of holding lid open     |          | Torsion Bar Counterbalance                   |      |                |      |      |        |      |

## THIRD SEAT DIMENSIONS

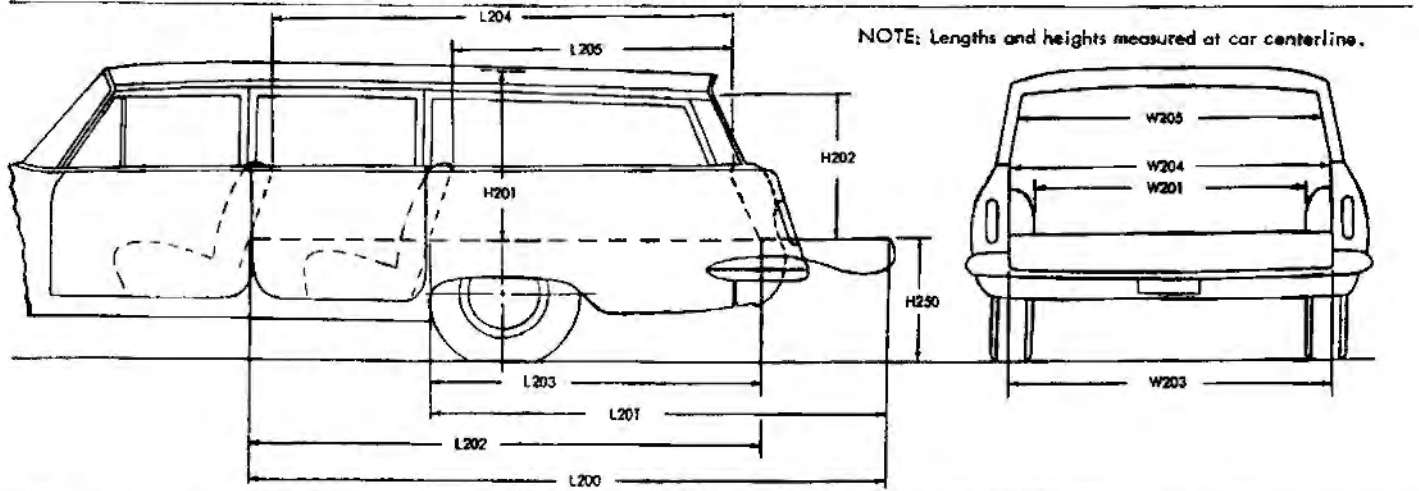


| MODEL                                  | Ref. No. |  |
|----------------------------------------|----------|--|
| Seat facing direction                  |          |  |
| Shoulder room                          | W85      |  |
| Hip room                               | W86      |  |
| H Point couple distance                | L85      |  |
| H Point to body zero line - third seat | H88      |  |
| Effective head room                    | H86      |  |
| Effective leg room                     | L86      |  |
| H Point to heel point                  | H87      |  |
| Knee room                              | L87      |  |
| Back angle                             | L88      |  |
| Hip angle                              | L89      |  |
| Knee angle                             | L90      |  |
| Foot angle                             | L91      |  |

3 SEAT STATION WAGON NOT OFFERED

MAKE OF CAR PONTIAC MODEL YEAR 1964 DATE ISSUED 9-6-63 REVISED(e)

## STATION WAGON—CARGO SPACE DIMENSIONS



| MODEL                                                                                                       | Ref. No. | TEMPEST                               |      |
|-------------------------------------------------------------------------------------------------------------|----------|---------------------------------------|------|
|                                                                                                             |          | 2035                                  | 2135 |
| Floor length from back of front seat at floor level to end of lowered tail gate or floor                    | L200     | 113.5                                 |      |
| Floor length from back of second seat at floor level to end of lowered tail gate or floor                   | L201     | 81.2                                  |      |
| Floor length from back of front seat at floor level to inside of closed tail gate                           | L202     | 91.4                                  |      |
| Floor length from back of second seat at floor level to inside of closed tail gate                          | L203     | 59.1                                  |      |
| Minimum horizontal distance from top rear of front seat back to inside of tail gate at belt                 | L204     | 80.3                                  |      |
| Minimum horizontal distance from top rear of second seat back to inside of tail gate at belt                | L205     | 46.5                                  |      |
| Maximum width of cargo space at floor - specify location                                                    | W200a    | 59.6                                  |      |
| Minimum distance between wheel houses at floor level                                                        | W201     | 44.4                                  |      |
| Rear end opening width at floor                                                                             | W203     | 55.0                                  |      |
| Rear end opening width at belt                                                                              | W204     | 53.0                                  |      |
| Maximum width of rear opening above belt                                                                    | W205     | 45.7                                  |      |
| Maximum height - floor covering to headlining at centerline of rear axle                                    | H201     | 31.1                                  |      |
| Maximum height of rear opening - tail and lift gates open                                                   | H202     | 28.3                                  |      |
| Platform height from ground to top of tail gate floor covering at rear most edge of tail gate - curb weight | H250     | 25.1                                  |      |
| Rear end closure (e.g., one piece door, hinged left - sliding glass, drop tail gate)                        |          | <b>Sliding Glass - Drop Tail Gate</b> |      |
| Cargo volume index (cu. ft.)<br>W4 x L204 x H201<br>1728                                                    |          | 85.0                                  |      |

# AMA Specifications – Passenger Car

|             |         |            |      |             |        |             |      |      |      |
|-------------|---------|------------|------|-------------|--------|-------------|------|------|------|
| MAKE OF CAR | PONTIAC | MODEL YEAR | 1964 | DATE ISSUED | 9-6-63 | REVISED (e) |      |      |      |
| MODEL       | TEMPEST |            |      |             |        | LE MANS     |      |      |      |
|             | 2069    | 2169       | 2027 | 2127        | 2167   | 2035        | 2135 | 2227 | 2267 |

## BODY—MISCELLANEOUS INFORMATION

|                                                         |             |                                                                                                                                                                                                 |               |                 |                 |               |          |  |
|---------------------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|-----------------|---------------|----------|--|
| Drs. hinged (front, rear)                               | Front doors | Front                                                                                                                                                                                           |               |                 |                 |               |          |  |
|                                                         | Rear doors  | 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                                     |             | Right Side of Cylinder Block                                                                                                                                                                    |               |                 |                 |               |          |  |
| Theft protection - type                                 |             | Ignition switch terminals guarded by locked-on conn. body.<br>Ignition key starter control & "in-harness" wiring from switch to starter & coil add to theft protection offered by locked doors. |               |                 |                 |               |          |  |
| Vent window control method (crank, friction pivot)      | Front       | Friction Pivot                                                                                                                                                                                  |               |                 |                 |               |          |  |
|                                                         | Rear        | None                                                                                                                                                                                            |               |                 |                 |               |          |  |
| Seat cushion type                                       | Front       | (a)                                                                                                                                                                                             |               |                 |                 | (b)           |          |  |
|                                                         | Rear        | (c)                                                                                                                                                                                             |               |                 |                 |               |          |  |
| Seat back type                                          | Front       | (a)                                                                                                                                                                                             |               |                 |                 | (b)           |          |  |
|                                                         | Rear        | (c)                                                                                                                                                                                             |               |                 |                 |               |          |  |
| Windshield type (single curved, compound curved, other) |             | Single Curved                                                                                                                                                                                   |               |                 |                 |               |          |  |
| Rear window type (flat, curved, one piece, three piece) |             | Compound Curved                                                                                                                                                                                 | Single Curved | (2167) Flexible | Compound Curved | Single Curved | Flexible |  |
| Side glass type (curved, flat)                          |             | Curved                                                                                                                                                                                          |               |                 |                 |               |          |  |
| Side glass exposed surface area                         |             | 1310.6                                                                                                                                                                                          | 1291.4        | 1281.4          | 2540.4          | 1291.4        | 1281.4   |  |
| Windshield glass exposed surface area                   |             | 1107.1                                                                                                                                                                                          |               |                 |                 |               |          |  |
| Backlight glass exposed surface area                    |             | 1031.6                                                                                                                                                                                          | 1016.6        | 786.2           | 768.4           | 1016.6        | 786.2    |  |
| Total glass exposed surface area                        |             | 3449.3                                                                                                                                                                                          | 3415.1        | 3174.7          | 4415.9          | 3415.1        | 3174.7   |  |

- (a) Zig Zag spring with foam pad.
- (b) Zig Zag spring with contour molded foam pad.
- (c) Zig Zag spring with cotton pad.





## DIMENSION DEFINITIONS

- W3 SHOULDER ROOM - FRONT. The minimum lateral dimension between the door garnish moldings or nearest interference. Measured at H Point station.
- W4 SHOULDER ROOM - REAR. Measured in the same manner as W3.
- W5 HIP ROOM - FRONT. The lateral dimension through H Point to trimmed surfaces.
- W6 HIP ROOM - REAR. Measured in the same manner as W5.
- W7 STEERING WHEEL CENTER TO CENTERLINE OF CAR. Measured horizontally from steering wheel center to centerline of car. The point at steering wheel center is located in the surface plane of wheel.
- W7 STEERING WHEEL MAXIMUM OUTSIDE DIAMETER. Define if other than round.
- W16 SEAT WIDTH - FRONT. The maximum trimmed width of front seat cushion.
- W85 SHOULDER ROOM - THIRD SEAT. Measured in the same manner as W3.
- W86 HIP ROOM - THIRD SEAT. Measured in the same manner as W5.
- W101 TREAD - FRONT. Measured at centerline of tires, with nominal camber, at ground.
- W102 TREAD - REAR. Measured at centerline of tires at ground.
- W103 MAXIMUM OVERALL CAR WIDTH. Include bumpers, moldings, or sheet metal protrusions.
- W106 FRONT FENDER OVERALL WIDTH. Measured at centerline of front wheels, excluding moldings.
- W107 REAR FENDER OVERALL WIDTH. Measured at centerline of rear wheels, excluding moldings.
- W116 MAXIMUM OVERALL BODY WIDTH. Measured across body, excluding hardware and applied moldings, but including fenders when integral with body.
- W117 MAXIMUM BODY WIDTH AT #2 PILLAR. Measured across body at #2 pillar, excluding hardware and applied moldings.
- W120 MAXIMUM OVERALL CAR WIDTH, FRONT DOORS OPEN. Measured with front doors in maximum hold-open position.
- W121 MAXIMUM OVERALL CAR WIDTH, REAR DOORS OPEN. Measured in same manner as W120.
- W122 TUMBLE-HOME. The angle from vertical to the front door glass outer surface or the chord of a curved door glass, measured at the front H Point station.
- L3 REAR COMPARTMENT ROOM. The horizontal dimension from the back of front seat to front of rear seat back at a height tangent to the top of rear seat cushion.
- L7 STEERING WHEEL TORSO CLEARANCE. The minimum distance from the back edge of steering wheel, in straight-ahead position, to the Torso Line.
- L13 BRAKE PEDAL KNEE CLEARANCE. The minimum dimension from the lower edge of the steering wheel to the brake pedal face centerline.
- L14 SEAT BACK THICKNESS - FRONT. The maximum thickness of the seat back, excluding bolsters.
- L15 SEAT BACK THICKNESS - REAR. Measured in the same manner as L14.
- L17 H POINT TRAVEL. The horizontal dimension between the H Point in the most forward and rearward seat positions.
- L18 ENTRANCE FOOT CLEARANCE - FRONT. The minimum horizontal dimension between seat and normal line of door or pillar at a height between the sill plate bead and 4.0 inches above the bead. Door should be in the maximum hold-open position.
- L19 ENTRANCE FOOT CLEARANCE - REAR. Measured in the same manner as L18 on four-door models. On two-door styles, the minimum dimension between rear corner of front seat, with front seat back tilted forward, and trimmed lock pillar, built-in quarter armrest panel, or rear seat cushion at a height between the sill plate bead and 4.0 inches above the bead.
- L30 BODY ZERO LINE TO ACTUAL FRONT OF DASH. If actual Front of Dash is to the rear of Body Zero Line, it is identified by a minus (-) sign.
- L31 H POINT TO BODY ZERO LINE - FRONT. Horizontal dimension.
- L34 MAXIMUM EFFECTIVE LEG ROOM - ACCELERATOR. Measured along a diagonal line from ankle pivot center to H Point plus a constant of 10.0 inches. Measured with the right foot on accelerator pedal.
- L40 BACK ANGLE - FRONT. The angle between a vertical line through the H Point and the Torso Line.
- L41 BACK ANGLE - REAR. Measured in the same manner as L40.
- L42 HIP ANGLE - FRONT. The angle between Torso Line and a line extending from knee pivot center to H Point.
- L43 HIP ANGLE - REAR. Measured in the same manner as L42.
- L44 KNEE ANGLE - FRONT. The angle between a line from H Point to knee pivot center and a line from the knee pivot center to the ankle pivot center.
- L45 KNEE ANGLE - REAR. Measured in the same manner as L44.
- L46 FOOT ANGLE - FRONT. The angle between a line extended from the knee pivot center through the ankle pivot center and a line tangent to the sole and heel of manikin bare foot.
- L47 FOOT ANGLE - REAR. Measured in the same manner as L46.
- L48 MINIMUM KNEE ROOM - REAR. The minimum dimension from the knee pivot center to the back of front seat back.
- L49 H POINT TO WINDSHIELD UPPER DLO. The horizontal dimension from H Point to the point of tangency of horizontal line of vision (described in dimension H64) with body upper structure.

## DIMENSION DEFINITIONS (cont.)

- L50 H POINT COUPLE DISTANCE.** The horizontal dimension from the front seat H Point to the rear seat H Point.
- L51 MINIMUM EFFECTIVE LEG ROOM – REAR.** Measured along a diagonal line from ankle pivot center to H Point plus a constant of 10.0 inches. Measured with the foot positioned to nearest interference between seat structure and toe, instep or lower leg.
- L52 BRAKE PEDAL TO ACCELERATOR.** The minimum dimension from center of brake pedal face to accelerator. Measured in the side view.
- L53 H POINT TO ACCELERATOR FLOOR POINT.** The horizontal dimension from intersection of accelerator and depressed floor covering to the H Point.
- L85 H POINT COUPLE DISTANCE – THIRD SEAT.** The horizontal dimension from the second seat H Point to the third seat H Point.
- L86 EFFECTIVE LEG ROOM – THIRD SEAT.** Measured in the same manner as L51. With rear-facing third seat, foot is positioned in foot well or to nearest interference with rear end or rear closure.
- L87 KNEE ROOM – THIRD SEAT.** Measured in the same manner as L48. With rear-facing third seat, dimension is measured to rear closure.
- L88 BACK ANGLE – THIRD SEAT.** Measured in the same manner as L40.
- L89 HIP ANGLE – THIRD SEAT.** Measured in the same manner as L42.
- L90 KNEE ANGLE – THIRD SEAT.** Measured in the same manner as L44.
- L91 FOOT ANGLE – THIRD SEAT.** Measured in the same manner as L46.
- L101 WHEELBASE**
- L102 TIRE SIZE.**
- L103 OVERALL LENGTH.** Include bumper guards if standard equipment.
- L104 OVERHANG – FRONT.** Measured from C/L of front wheels to front of car, including bumper guards if standard equipment.
- L105 OVERHANG – REAR.** Measured from C/L of rear wheels to rear of car, including bumper guards if standard equipment.
- L123 BODY UPPER STRUCTURE LENGTH AT CAR CENTERLINE.** The horizontal dimension from the theoretical intersection of extended windshield glass plane and normal cowl surface to the theoretical intersection of extended back window glass plane and normal deck surface, or in the case of a Fastback roof or Station Wagon, to back glass lower reveal molding, or rubber when molding is not used.
- L127 BODY ZERO LINE TO CENTERLINE OF REAR WHEELS.** A horizontal dimension.
- L128 HOOD LENGTH AT CAR CENTERLINE.** The horizontal dimension from the foremost point on sheet metal hood surface, excluding series identification or ornamentation, to the theoretical intersection of extended windshield glass plane and normal cowl surface.
- L129 DECK LENGTH AT CAR CENTERLINE.** The horizontal dimension from the rearmost point of the body sheet metal (visible above bumper), excluding series identification or ornamentation, to the theoretical intersection of extended back window glass plane and normal deck surface.
- L130 BODY ZERO LINE TO WINDSHIELD COWL POINT.** The horizontal dimension from body zero line to the theoretical intersection of extended windshield glass plane and normal cowl surface.
- H6 H POINT TO WINDSHIELD BOTTOM DLO.** Vertical dimension.
- H11 ENTRANCE HEIGHT – FRONT.** The vertical dimension from H Point to upper trimmed body opening.
- H12 ENTRANCE HEIGHT – REAR.** The vertical dimension from H Point to the upper trimmed body opening at a section 13.0 inches forward of the H Point.
- H13 STEERING WHEEL THIGH CLEARANCE.** The minimum dimension from the bottom of steering wheel, in straight-ahead position, to centerline of thigh.
- H18 STEERING COLUMN ANGLE – HORIZONTAL.** The angle the centerline of steering column makes with the horizontal.
- H25 BELT HEIGHT – FRONT.** The vertical dimension from H Point to bottom of side window DLO.
- H30 H POINT TO HEEL POINT – FRONT.** The vertical dimension from the H Point to the manikin accelerator heel point on the depressed floor covering.
- H31 H POINT TO HEEL POINT – REAR.** The vertical dimension from the H Point to the manikin heel point on the depressed floor covering.
- H32 SEAT CUSHION DEFLECTION – FRONT.** The vertical dimension from a point on the undepressed seat cushion to the depressed seat cushion. Measured at the H Point station.
- H33 SEAT CUSHION DEFLECTION – REAR.** Measured in the same manner as H32.
- H37 HEADLINING TO ROOF HEIGHT – FRONT.** The dimension from the intersection of the headlining and the extended effective head room line to the roof panel. Measured perpendicularly to the roof panel.
- H38 HEADLINING TO ROOF HEIGHT – REAR.** Measured in the same manner as H37.
- H49 H POINT TO TOP OF STEERING WHEEL.** The vertical dimension from the H Point to top of steering wheel, in straight-ahead position.
- H50 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.
- H51 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.

## DIMENSION DEFINITIONS (cont.)

- H54 D POINT TO TUNNEL - FRONT. The vertical dimension from the D Point, at car centerline, to top of tunnel.
- H55 D POINT TO TUNNEL - REAR. Measured same manner as H54
- H58 H POINT RISE. The vertical dimension between the H Point in the most forward and rearward seat position.
- H61 EFFECTIVE HEAD ROOM - FRONT. The dimension from H Point to the headlining, plus a constant of 4.0 inches. Measured along a line  $B^D$  to rear of vertical.
- H63 EFFECTIVE HEAD ROOM - REAR. Measured same as H61.
- H64 H POINT TO WINDSHIELD UPPER DLO. Vertical dimension from H Point to highest horizontal line of vision through windshield at 15 inch section.
- H65 D POINT DIFFERENTIAL, SIDE TO CENTER - FRONT. Vertical dimension from side occupant to center occupant D Point.
- H66 D POINT DIFFERENTIAL, SIDE TO CENTER - REAR. Measured in the same manner as H65.
- H67 DEPRESSED FLOOR COVERING THICKNESS - FRONT. The vertical dimension from manikin accelerator heel point normally to underbody sheet metal immediately below heel point.
- H68 DEPRESSED FLOOR COVERING THICKNESS - REAR. Measured same as H67.
- H70 H POINT TO BODY ZERO LINE - FRONT. Vertical dimension.
- H71 H POINT TO BODY ZERO LINE - REAR. Vertical dimension.
- H86 EFFECTIVE HEAD ROOM - THIRD SEAT. Measured in the same manner as H61
- H87 H POINT TO HEEL POINT - THIRD SEAT. Measured in the same manner as H31.
- H88 H POINT TO BODY ZERO LINE - THIRD SEAT. Vertical dimension.
- H101 OVERALL HEIGHT. Measured with full design load.
- H102 FRONT BUMPER TO GROUND. Minimum dimension
- H104 REAR BUMPER TO GROUND. Minimum dimension.
- H106 ANGLE OF APPROACH. The angle between the 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 interfering component, excluding license plate.
- H107 ANGLE OF DEPARTURE. The angle between the 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 interfering component, excluding license plate
- H111 ROCKER PANEL TO GROUND - REAR. The vertical dimension from ground to bottom of rocker panel, excluding flanges. Measured at front of rear wheel opening.
- H112 ROCKER PANEL TO GROUND - FRONT. The vertical dimension from ground to bottom of rocker panel, excluding flanges. Measured at foremost point of rocker panel.
- H114 HOOD AT REAR TO GROUND. Measured from hood opening line on shroud, exclusive of moldings.
- H115 STEP HEIGHT - FRONT (DESIGN LOAD). The vertical dimension from top of sill plate bead, at C/L of front door sill plate, to ground.
- H116 STEP HEIGHT - REAR (DESIGN LOAD). Measured in same manner as dimension H115.
- H122 WINDSHIELD SLOPE ANGLE. The angle between a vertical line and the windshield surface at car centerline. On compound-curved windshields the chord of the arc is used and limited to that section of the windshield comprehended by an 18-inch chord.
- H130 STEP HEIGHT - FRONT (CURB LOAD). The vertical dimension from top of sill plate, at C/L of front door sill plate, to ground.
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- H132 BOTTOM OF DOOR TO GROUND, OPEN - FRONT. Measured from bottom outside corner of door with door in maximum hold-open position.
- H133 BOTTOM OF DOOR TO GROUND, CLOSED - FRONT. Same point on door as H132 dimension, with door closed.
- H134 BOTTOM OF DOOR TO GROUND, OPEN - REAR. Measured in same manner as H132.
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- H147 RAMP BREAKOVER ANGLE. Supplement of included ramp angle ( $180^\circ$  minus included ramp angle) over which car can pass without interference, measured with car sitting on a level surface, using lines tangent to arcs of front and rear static loaded radii and intersecting at point on underside of car which defines the smallest angle.
- H148 FRONT SUSPENSION TO GROUND. Minimum clearance from lower control arm inner shaft or lowest point on the car centerline.
- H149 OIL PAN TO GROUND. Minimum clearance measured from sheet metal or drain plug.
- H150 FLYWHEEL/CONVERTER HOUSING AND TRANSMISSION ASSEMBLY TO GROUND. Minimum clearance.
- H151 FRAME STRUCTURE TO GROUND. Minimum clearance measured approximately midway between front and rear axles. In this measurement, cross bars and X-members shall be considered part of frame.
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