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**CHEVROLET PASSENGER CAR  
SPECIFICATIONS**

**CHEVROLET ENGINEERING CENTER**



**ENGINEERING PRODUCT INFORMATION DEPARTMENT**

**WARREN MICHIGAN**

## INTRODUCTION

In the automobile industry, a specification is defined as any item in a detailed description of a mechanism. Usually the description is composed of separate specifications in tabular question and answer form.

Specifications of this nature, however, are not required in the manufacture of an automobile. All the information necessary for this process is given by the Engineering Department to the manufacturing and assembling plants in the forms of drawings and parts lists. But drawings and parts lists usually are not made available to other people who require information of the vehicle, since these records must be interpreted. Moreover, they and other engineering records are much too numerous or voluminous for convenient reference. Therefore, a special interpretation is made by the Engineering Department in the form of a specifications list or book, the contents of which are determined by the nature of questions people ask the Engineering Department concerning the vehicle.

As has been the experience of most manufacturers, originally the questions asked were few in number and were answered individually at the time they were asked. Through the years, however, many questions were asked quite frequently and, for convenience, the answers were recorded in the form of specifications. Others, which arose because of heightened interest and because of advancements in design, were added from time to time. As the automobile grew into a necessary means of transportation --- as its component units were advanced in design and as new ones were added --- and as manufacturers were forced to make more detailed comparisons of their vehicles with those of their competitors to satisfy an increasingly technically minded public --- more and more questions concerning the various characteristics of vehicles were answered in the form of specifications.

The Chevrolet Engineering Department has always been willing to answer questions of a technical nature concerning Chevrolet products and for the past thirty years has endeavored to anticipate such questions by preparing a specifications book each new model year.

This current book has been prepared to answer all the questions concerning the Chevrolet 1963 products that we believe may be asked.

It is intended primarily as a convenient and authoritative source of information for all Chevrolet executives, engineers, sales and service representatives, plant managers, and other personnel who must be in a position to answer such questions, and also as a common source of those Chevrolet specifications that are needed in advertisements, vehicle comparisons, trade publications, license applications and in correspondence with governments, firms, educational institutions, and individuals throughout the world who require a wide variety of information about Chevrolet products for diverse purposes.



Director - Engineering  
Product Information

## ORGANIZATION OF BOOK

Every effort has been made to facilitate the finding of information. The sequence followed in presenting the information is that of the G. M. Uniform Parts Classification major groupings, modified to facilitate usage by the reading majority, who are unacquainted with this classification. The title page for each section lists the subjects in the order in which they occur in that section. The title for each section, such as CHASSIS, is printed at the bottom of each page beside the page number. A detailed index is located at the back of the book.

Tabs are provided for conveniently locating basic sections such as BODY, CHASSIS, and POWER TRAINS.

## VEHICLES AND EQUIPMENT SPECIFIED

The specifications are those of all standard left drive passenger and delivery cars which have been designed to be manufactured for the domestic (U.S.A.) open market. Included also are the specifications of the RPO (Regular Production Option) units which are intended for use with these vehicles. All data are for vehicles with regular equipment, except where noted as RPO.

No information is furnished concerning right drive vehicles of equipment manufactured for export, nor any vehicles or equipment built on COPO's (Central Office Production Orders) or any other special orders. Accessories released through the Parts and Accessories Department, however, are listed although specifications are not included. This publication covers all passenger cars, including the Chevy II, Corvair, and Corvette. Also covered is the Corvair Greenbrier Station Wagon.

Except where noted, all information was derived directly from official Chevrolet Engineering Department drawings, parts lists, and test reports, or was calculated from these records.

## ABBREVIATIONS

The data are presented in a condensed tabular form which necessitates the use of abbreviations or symbols in some cases. See page IV.

## LOCATION OR POSITION OF PARTS

When referring to the location or position of any engine part or vehicle unit, the practice throughout the automotive industry is that such reference is made from the driver seat position. Any views shown or references made, which are contrary to the above rule, are clearly labelled or explained in the text of the specifications.

## DIMENSIONS

The dimensions shown are of three types:

Type #1. Those dimensions where very accurate fits are essential in the parts concerned, such as bearing surfaces and splines, and where dimensions usually are expressed on drawings in decimals with very close limits.

Type #2. Those dimensions where accuracy of fit is of less importance, as in structural members such as frame parts, I-beam axles, or in fuel tanks; also, dimensions for the purpose of identification, such as cylinder bore, or diameter of the wheel cylinder piston, where dimensions are expressed in fractions or integers with fractions and to which fairly large tolerances ( $\pm 1/64$ ,  $\pm 1/16$ ) are applied.

Type #3. Those dimensions, such as wheelbases, ground clearances, body size dimensions, and turning diameters, which are subject to large manufacturing variations.

In this book, the dimensions of type #1 are quoted with limits exactly as on the drawings while the dimensions of type #2 and #3 are quoted without manufacturing tolerances.

Unless specified otherwise all dimensions are in inches.

## REVISIONS

Specification changes and the dates on which they occur are indicated on revised pages. A dot symbol is used in the proximity of the revised specification. The date appears at the bottom of the page. Subsequent revisions on a revised page are indicated in the same manner. To emphasize and clarify the later changes, however, symbols pertaining to previous revisions are removed.

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Or Call

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# ABBREVIATIONS AND SYMBOLS

## ABBREVIATIONS

**A**  
 AC Spark Plug Division ----- AC  
 After Bottom Center ----- ABC  
 After Top Center ----- ATC

**B**  
 Barrel ----- bbl  
 Before Bottom Center ----- BBC  
 Before Top Center ----- BTC  
 Before Top Dead Center ----- BTDC  
 Bolt Circle ----- BC  
 Brake Horsepower ----- BHP

**C**  
 Candle Power ----- CP  
 Cast Iron ----- CI  
 Commercial ----- Comm  
 Connecting ----- conn  
 Central Office Production Order ----- COPO  
 Cubic Inches ----- Cu. In.

**D**  
 Daylight Opening ----- DLO  
 Decalcomania ----- decal  
 Double Row ----- DR

**F**  
 Factory Optional Accessory ----- FOA

**G**  
 Gallons Per Minute ----- GPM  
 General Motors ----- GM

**H**  
 Heavy Duty ----- HD  
 Horsepower ----- HP  
 Hot Rolled ----- HR

**I**  
 Inside Diameter ----- ID

**L**  
 Laminated Safety Plate ----- LSP  
 Left Hand ----- LH  
 Limited Production Option ----- LPO

**N**  
 Not Available ----- NA  
 New Departure ----- ND

**O**  
 Outside Diameter & Overdrive ----- OD

**P**  
 Pitch Diameter ----- PD  
 Ply Rating ----- PR  
 Pounds Per Square Inch ----- psi or PSI  
 Powerglide ----- PG

**R**  
 Regular Production Option ----- RPO  
 Revolutions Per Mile ----- rev/mi  
 Revolutions Per Minute ----- rpm

**S**  
 Safety Solid Plate ----- SSP  
 Saginaw ----- Sag  
 Single Row ----- SR  
 Society of Automotive Engineers ----- SAE  
 Society of Fuse Engineers ----- SFE

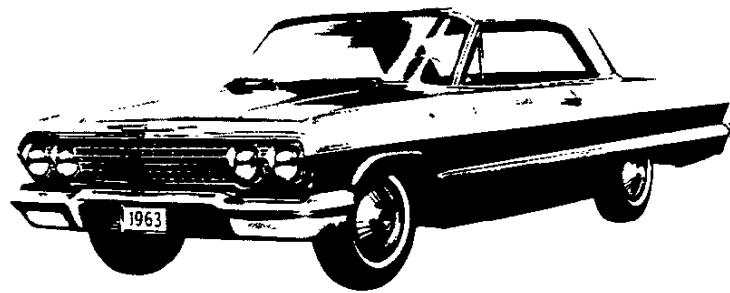
**T**  
 Thread ----- thd  
 Turboglide ----- TG

**W**  
 Windshield ----- W/S

## SYMBOLS

And ----- &  
 At ----- @  
 By, Times ----- x  
 Center Line -----  $\text{\textcircled{C}}$   
 Degrees ----- °  
 Divided By ----- ÷  
 Inches or Seconds ----- ''  
 Minus ----- -  
 Minutes ----- '   
 Number or Pounds ----- #  
 Per ----- /  
 Per Cent ----- %  
 Plus ----- +  
 To (Range) ----- -  
 To (Ratio) ----- :

# GENERAL



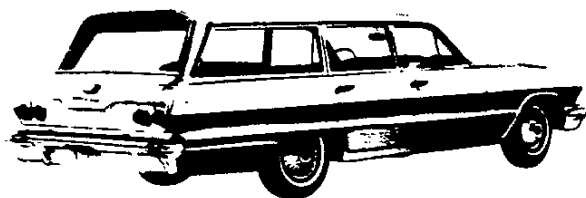
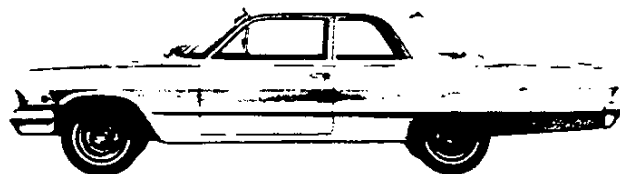
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## MODEL IDENTIFICATION

1100-1200 BISCAYNE SERIES

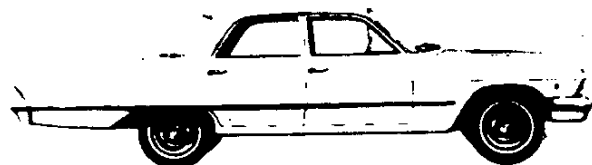


MODEL 11-1211 2-DOOR SEDAN, 6-PASSENGER  
MODEL 11-1235 4-DOOR STATION WAGON, 6-PASSENGER  
MODEL 11-1269 4-DOOR SEDAN, 6-PASSENGER



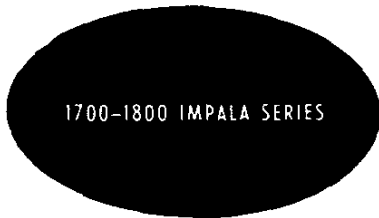
MODEL 15-1611 2-DOOR SEDAN, 6-PASSENGER  
MODEL 15-1635 4-DOOR STATION WAGON, 6-PASSENGER  
MODEL 15-1645 4-DOOR STATION WAGON, 9-PASSENGER  
MODEL 15-1669 4-DOOR SEDAN, 6-PASSENGER

1500-1600 BEL AIR SERIES





MODEL 17-1839 4-DOOR SPORT SEDAN, 6-PASSENGER  
MODEL 17-1847 2-DOOR SPORT COUPE, 5-PASSENGER  
MODEL 17-1845 4-DOOR STATION WAGON, 9-PASSENGER



MODEL 17-1835 4-DOOR STATION WAGON, 6-PASSENGER  
MODEL 17-1867 2-DOOR CONVERTIBLE, 5-PASSENGER  
MODEL 17-1869 4-DOOR SEDAN, 6-PASSENGER





# SERIAL NUMBERS AND IDENTIFICATION

ONLY BASIC DESIGNATIONS SHOWN

## VEHICLE SERIAL NUMBER

6-Cylinder Example:

Model Year	Model	Assembly Plant (Tarrytown)	Unit Number (25th unit)
1963	1169	T	100025

Thus: The 25th model built at Tarrytown would be serial number 31169T100025

8-Cylinder Example:

Model Year	Model	Assembly Plant (Flint)	Unit Number (26th unit)
1963	1269	F	100026

Thus: The 26th model built at Flint would be serial number 31269F100026

### ASSEMBLY PLANTS

A - Atlanta	L - Los Angeles
B - Baltimore	R - Arlington
F - Flint	S - St. Louis
G - Framingham	T - Tarrytown
J - Janesville	
K - Kansas City	

Starting unit number ----- 100001 and up at each assembly plant regardless of series

Location ----- Stamped on plate attached to left front body hinge pillar



## REAR AXLE IDENTIFICATION

Example: BB 0212

Plant and Type Designation	Production* Month & Date
BB	0212

Gear & Axle Buffalo

AA ----- BA ----- 3-speed transmission

AB ----- BB ----- Automatic transmission

AC ----- BC ----- Overdrive transmission

Location ----- Stamped from right side differential carrier.

\* - Month: February, 02; 12th day of February, 12



## ENGINE IDENTIFICATION

Example: F 1210 A

Source Designation	Production* Month & Date	Type Designation
F	1210	A

230 Cubic Inch 6-Cylinder

A - Regular production engine, 3-speed or OD

B - Regular engine, Powerglide

283 Cubic Inch 8-Cylinder

C - Regular production engine, 3-speed

CD - Regular engine, Overdrive

D - Regular, Powerglide

327 Cubic Inch 8-Cylinder (RPO L30)

R - Optional, 3 or 4-speed trans, 4-bbl. carb.

S - Optional, Powerglide, 4-bbl. carb.

409 Cubic Inch 8-Cylinder (RPO L31)

QA- Optional, 3 or 4-speed, large 4-bbl. carb. spec. cam.



6-cylinder



8-cylinder

Location:

6-cylinder engine ----- Stamped on pad on right side of cylinder block to rear of distributor

8-cylinder engine ----- Stamped on pad at front right side of cylinder block

\* - Month: December, 12; 10th day of December, 10

**REGULAR EQUIPMENT-EXTERIOR**

		ITEM	MODELS
Bright Metal Trims	Stainless Steel	Windshield reveal	All
		Roof drip gutter	15-16-17-1800 exc 17-1867
		Rear belt reveal	17-1867
		Roof rail reveal	17-1847, 39
		Belt reveal	17-1800
		Door upper reveal	17-1869, 35, 45
		Roof rear drip gutter	15-1635, 45; 17-1835, 45
		Rear quarter stationary window upper reveal	17-1835, 45
		Rear window reveal	11-1800 exc 15-1635, 45; 11-1235; 17-1845, 35, 67
		Rear window lower reveal extension	17-1847
		Tailgate window reveal	17-1835, 45
		Body side	All (Nameplate and painted insert on 17-1800)
	Rear cove molding "Chevrolet" embossed	15-16-17-1800	
	Headlight, parking light bezels	All	
	Tail light bezels		
	Radiator grille		
	Chevrolet hood nameplate molding		
	Back-up light bezels	17-1800	
	Rear cove trim panels	17-1800	
	Chrome Plated Metal	Ventipane frame	17-1847, 39, 67
		Series nameplates and emblems	All (emblem only on 17-1800)
		Ventipane glass channel	All
		Hub caps	
		Side window glass moldings	17-1847, 39, 67
		Front fender accent bars	17-1800
		"Chevrolet" script on deck lid	11-1211, 69
		Tail light ornaments	11-12-15-1600
		Tail and back-up light ornaments & rings	17-1800
	Rear license lamp	All	
	Hood emblem (chrome base, plastic insert)	All	
	Deck lid emblem, tailgate emblem (chrome base, plastic insert)	All	
	Dual windshield wipers, electric, single-speed	All	
	Gasoline filler in left rear quarter panel	All	
	Electric rear window regulator	15-1645; 17-1845	
	Manual rear window regulator	11-1235; 15-1635; 17-1835	
	Front Fender Side Emblems (Chrome)	Crest and "V" (283 V-8 identification)	12-16-1800
Crest, "V" and crossed flags (327 V-8 identification)			
Crest, "V" and crossed flags with "409"			
Number plate (409 V-8 identification)		11-15-1700	
"6" cylinder shield			

## REGULAR EQUIPMENT-INTERIOR

ITEM		MODELS	
Instrument Panel	Anodized aluminum trim molding (Short on 11-1200)	11-12-15-1600	
	Anodized aluminum trim molding and plate	17-1800	
	Anodized aluminum instrument cluster trim plates	All	
	Chrome capped control knobs		
	Glove compartment	Light	15-16-17-1800
		Lock	
	Chrome vent control knobs		
	Cigarette lighter	All	
	Ash tray		
	5-position ignition lock and starter switch		
	Electric clock	17-1800	
	Parking brake alarm		
	Rear window control switch	15-1645, 17-1845	
Convertible top switch	17-1867		
Steering Wheel	Deep hub, dual solid spokes, horn button	11-1200	
	Deep hub, dual solid spokes, horn ring	15-1600	
	Deep hub, dual solid spokes, horn ring with thumb tabs (2-tone type)	17-1800	
Coat hooks	All exc 17-1867		
Crank-type front ventipanes			
Door locking knobs - front and rear			
Dual sunshades	All		
Inside rear view mirror (chrome back & support on 17-1800)			
Manual interior light switch integral with headlight switch (main switch)			
Automatic interior light switch, front doors only	15-16-17-1800		
Interior Lights	Single dome, center (with switch on all wagons)	All exc 17-1847, 17-1839, 17-1867	
	Dual side rail	17-1839	
	Dual courtesv (inst. panel)	17-1867, 47	
	Dual rear quarter dome	17-1847	
	Third seat, courtesv	15-1645, 17-1845	
Rear seat speaker grille	17-1847, 17-1867		
Aluminum front seat end panels	17-1800		
Door remote control handle, paddle-type			
Door remote control handle, conventional-type(dual arm type 15-1600)	All exc 17-1800		
Armrests, front door	All		
Armrests, rear doors or quarter panels	15-16-17-1800		
Ash tray, rear door or quarter panels			
Bright Metal Moldings	Windshield, upper and side		
	Rear window, upper and side	17-1847, 17-1839	
	Side roof rails		
	Front door, rear door or rear quarter trim	15-16-17-1800	
Luggage compartment lamp	17-1800 exc 35, 45		
Deluxe heater	All		

## REGULAR PRODUCTION OPTIONS

GROUP	ITEM	NUMBER	MODELS	
Engine	Air cleaner, oil bath	K45	11-15-1700	
	Delcotron, 12-42 amp.	K79	All	
	Delcotron, 5-52 amp.	K82	All	
	Delcotron, 23-62 amp.	K81	All	
	Carburetor, economy	Z05	1100	
	Clutch, heavy-duty	M01	11-15-1700	
	327 cubic inch V-8 - 250 HP	L30	12-16-1800	
	327 cubic inch V-8 high performance - 300 HP	L74	12-16-1800	
	409 cubic inch V-8 - 340 HP	L33	12-16-1800	
	409 cubic inch V-8 - 400 HP	L31	12-16-1800	
	409 cubic inch V-8 - 425 HP	L80	12-16-1800	
	Fan drive, thermostatic	K02	All	
	Radiator, heavy-duty	V01	All	
	Ventilation, engine positive closed	K23	11-15-1700	
	Transmission	Four speed (4-speed close ratio - M21)	M20	12-16-1800
Overdrive		M10	All	
Powerglide		M35	All	
Chassis	Axle, limited slip (3.08, 3.36, 3.55, 3.70, 4.11, 4.56:1)	G80	All	
	Axle, rear (3.55:1)	G96	All exc. 6-cyl. wagons	
	Axle, rear (3.36:1)	G76	11-12-15-16-1700 exc. wagons & conv.	
	Battery, heavy-duty	T60	All	
	Brakes, power	J50	All	
	Brakes, metallic	J65	All	
	Chassis, police car	Z04	11-1211, 69.35	
	Cover, wheel trim	P01	All	
	Special front and rear suspension	F40	All exc. wagons	
	Wheels, 14 x 6.00 JK	P12	All exc. wagons	
	Steering, power	N40	All	
	Tires	6.70 x 15-4 pr blackwall nylon	P91	All exc. wagons
		6.70 x 15-4 pr blackwall nylon-tube	P95	All exc. wagons
		6.70 x 15-4 pr blackwall rayon	P90	All exc. wagons
		7.50 x 14-4 pr blackwall nylon	P60	All exc. wagons
		6.70 x 15-4 pr blackwall rayon-tube	P93	All exc. wagons
		6.70 x 15-4 pr b/w rayon-tube	P94	All exc. wagons
		6.70 x 15-6 pr b/w rayon	Q01	11-1211, 69
		6.70 x 15-6 pr b/w rayon/tube (taxi & police)	Q03	11-1211, 69
		7.00 x 14-4 pr whitewall rayon	P58	All exc. wagon & conv.
		7.10 x 15-4 pr blackwall rayon	Q04	All exc. wagons
	7.10 x 15-4 pr blackwall nylon	Q05	All exc. wagons	
7.50 x 14-4 pr blackwall rayon	P65	All exc. wagon & conv.		
7.50 x 14-4 pr blackwall nylon	P65	All exc. wagons		

# REGULAR PRODUCTION OPTIONS -Cont'd.

GROUP	ITEM	NUMBER	MODELS		
Chassis Continued	Tires	7.50 x 14-4 pr whitewall rayon	P62	All exc. wagons	
		7.50 x 14-4 pr whitewall nylon	P61	All exc. wagons	
		7.50 x 14-6 pr blackwall rayon	P63	All	
		8.00 x 14-4 pr blackwall rayon	P75	All exc. wagons	
		8.00 x 14-4 pr whitewall rayon	P77	All	
		8.00 x 14-4 pr blackwall nylon	P76		
Body	Air conditioning, Deluxe		C60	All	
	Air conditioning, Custom		C64		
	Belt, seat		A37		
	Body, police car		B01	11-1211, 69, 35	
	Cushion, foam rubber front seat		B50	11-1200	
	Comfort and Convenience	Inside and outside r/v mirror		Z01	All
		2-speed wiper and washer			11-1200
		Glove box lamp			11-12-15-1600 (exc. wagons)
		Luggage lamp			11-12-15-1600
		Back-up lamp			
	Glass, tinted		A01	All	
	Group "A"	Front grille guard		V20	All exc. wagons
		Rear bumper guard		V32	
	Less heater		C48	All	
	Lock, compartment		A96	Station wagons	
	Luggage carrier, roof		V55		
	Pad, instrument panel		B70	All	
	Radio, manual		U63		
	Radio, push-button		U60		
	Radio and auxiliary rear speaker, push button		Z02	All	
	Roof covering, vinyl		C08	17-1847	
	Seat, split second		A66	Station wagons	
	Seat, 6-way electric front		A42	15-16-17-1800	
	Steering wheel, Deluxe		N30	11-1200	
	Super-sport	Special steering wheel emblem		Z03	17-1847, 67
		Wheel discs (special)			
		Ornaments, emblems, and moldings			
		Bucket seats (all vinyl)			
		Floor shift (Powerglide and 4-speed)			
	Gadget box and center console (exc. 3-speed)				
	Tachometer		U16	12-16-1800	
	Taxicab		B02	11-1269	
Top, folding		C05	17-1867		
Wheels, chrome		P05	All exc. wagons		
Window, electric tailgate		A33	2-seat wagons		
Windows, electric		A31	15-16-17-1800		
Wipers and washers, windshield 2-speed		C14	All		
Wire wheel cover (simulated)		P02			
Windshield Glass, tinted		A02	All		
Steering wheel, tilt type		N33	15-16-17-1800		
Radio, AM-FM		U69	All		
Radio and auxiliary speaker, AM-FM		Z10	All		

## DEALER INSTALLED ACCESSORIES

ITEM	MODELS
Alarm - Parking	11-12-15-1600
Antenna - Front fender radio	All
Antenna - Rear fender radio	All except wagons
Antenna - Rear fender dummy radio	All except wagons
Belt - Seat	All
Blade - Fan	All
Brake - Power	All
Cap-gas tank filler locking	All
Carrier - Roof luggage	Station wagons
Clock - Instrument panel	11-12-15-1600
Compass - Auto	All
Conditioning - Air (Deluxe)	All
Conditioning - Air (Custom)	All
Control - Cruise	All
Control - Headlamp automatic beam	All
Cover - Accelerator pedal	All
Cover - Front seat cushion	All
Cover - Roof luggage carrier	Station wagons
Cover - Wheel trim (disk or simulated wire)	All
Deflector - Rain	All except sport models
Defogging Unit - Back window	All except conv. & station wagons
Extension - Coat hook	All except convertible
Fan - Thermomodulated	12-16-1800
Guard - Bumper rear	All except wagons
Guard - Door edge	All
Guard - Mud	Station wagons
Guard - Radiator grille	All
Guard - Gas tank filler door	All
Heater - Deluxe	All
Lamp - Back up	11-12-15-1600
Lamp - Courtesy	All except 17-1847, 67
Lamp - Luggage compartment	All except wagons & 17-1800
Lamp - Portable spot	All
Lamp - Rear door warning	All exc. 2-doors
Lamp - Traffic hazard flasher	All
Lamp - Underhood	All
Lock - Rear compartment	All wagons
Lock - Rear door safety	All except 2-door models
Mat - Front and rear floor deluxe	All
Mat - Front floor full width	All
Mat - Rear compartment floor	Station wagons
Mirror - Outside rear view (door mount)	All
Mirror - Prismatic - Inside rear view	All
Mirror - Visor vanity	All
Pad - Rear floor	Station wagons
Radio - Manual	All
Radio - Push button	All
Release - Rear compartment lid vacuum	All except wagons
Screen - Radiator insect	All
Screen - Rear door window	All 4-door models
Screen - Tailgate window	All wagons
Speaker - Radio auxiliary	All
Tool Kit	All
Litter container	All
Tissue dispenser	All
Tissue dispenser and litter container	All
Washer - Windshield push button	All

## TAXI-CAB EQUIPMENT-RPO BO2

### MODEL APPLICATION:

4-Door Sedan - 1169-1269

### BODY EQUIPMENT

#### INTERIOR TRIM

Biscayne  
Standard ----- Cloth/vinyl fawn  
Optional ----- All vinyl, fawn

#### FLOORS, FRONT AND REAR

Covering ----- Waterproof asphalt  
impregnated paper felt, .125 minimum thickness.  
Mats ----- Black rubber (no spatter  
design) .125 minimum thickness.

#### SEAT CUSHIONS AND BACKRESTS

Construction, front and rear ----- Heavy-duty  
"S" wire springs, reinforced.

#### DOORS, FRONT AND REAR

Jamb switches (dome lamp) ----- Furnished on all  
four doors.  
Armrests ----- L.H. & R.H. rear doors

#### INSTRUMENT PANEL

Open-door red warning lamp  
Location ----- Bright metal bracket under  
instrument panel, left of steering column.  
Switch ----- All door jambs

### CHASSIS EQUIPMENT

#### FRAME

Type ----- Heavy duty with reinforced front  
cross member, rear spring brackets, rear shock  
absorber and front upper control arm brackets

#### SUSPENSION

Coil Springs & Shock Absorbers, Front and Rear  
Type ----- Heavy-duty  
Spherical Joints, Front  
Type ----- Metal lined

#### Rear Axle Lower Control Arm Bushings

Type ----- Heavy-duty;  
inner and outer metal sleeves with rubber insert.  
Front Wheel Hubs and Drums  
Type ----- Heavy-duty;  
includes heavy duty front brake drum webs.

#### WHEELS AND TIRES

Wheel Size ----- 15 x 5K  
Tire type and size ----- Blackwall tubeless rayon  
6.70 x 15-4

#### LUBRICATION FITTINGS

Used at U-joints of front, intermediate, and rear pro-  
peller shaft.

#### REAR AXLE (3.36:1)

Type ----- Heavy-duty  
heavy-duty wheel roller bearings, parking brake  
cable with nylon liner, and cadmium plated rear  
brake flange plate mounting bolts and nuts.

### POWER TRAIN EQUIPMENT

#### SIX-CYLINDER MODELS

Spark Plugs ----- AC 46  
Clutch ----- 10" heavy-duty  
Carburetor  
Model  
3-Speed ----- 7023005  
Powerglide ----- 7023004  
Transmission 3-Speed ---- Heavy-duty; incorporates  
heavy-duty clutch gear and mainshaft bearings  
Transmission (Powerglide) ----- Incorporates 4-  
plate heavy-duty clutch with high  
temperature oil seals and provi-  
sions for oil cooler piping  
Radiator (Powerglide) ----- Incorporates  
transmission oil cooler

## POLICE CAR EQUIPMENT

### MODEL APPLICATION:

2-Door Sedan - 1111-1211  
4-Door Sedan - 1169-1269  
4-Door Station Wagon - 1135-1235

### BODY EQUIPMENT RPO B04

#### INTERIOR TRIM

Standard (Sedans) ----- Cloth/vinyl, fawn  
Optional (Sedans) ----- All vinyl; fawn  
Standard (Station wagon) ----- All vinyl; fawn

#### FLOORS

Covering  
Front and Rear ----- Waterproof asphalt  
impregnated paper felt, .125 minimum thickness.  
(Front only on station wagon)

#### Mats

Front and Rear ----- Black rubber (no spatter  
design) .125 minimum thickness.  
(Front only on station wagon)

#### SEAT CUSHIONS AND BACKRESTS

Front, all models ----- Heavy duty  
"S" wire springs, reinforced.  
Rear, sedans only ----- Same as front

### CHASSIS EQUIPMENT RPO Z04

#### SUSPENSION

Coil Springs & Shock Absorbers, Front & Rear  
Type ----- Heavy duty  
Spherical Joints, Front  
Type ----- Metal lined

#### REAR AXLE (3.36:1)

Type ----- Heavy-duty, includes  
heavy-duty wheel roller bearings, parking brake  
cable with nylon liner, and cadmium plated rear  
brake flange plate mounting bolts and nuts.  
Rear Axle Lower Control Arm-Bushings, Rear Sus-  
pension  
Type ----- Heavy duty;  
inner and outer metal sleeves with rubber insert.

#### Front Stabilizer Bar

Regular equipment on V-8, provided on 6-cyl.  
Clutch ----- 10" with H. D. driven disc  
& clutch spring (V-8)

#### WHEELS AND TIRES

Wheel Size ----- 15 x 5-1/2 K  
Tire type and size ----- Blackwall tubeless rayon,  
6.70 x 15-4 on sedans, 6.70 x 15-6 on wagons

#### METALLIC BRAKES

Material ----- Sintered Iron  
Segments Per Shoe: -----  
Primary - Front and Rear ----- Six  
Secondary ----- Front, 12; Rear, 10  
Lining Size: (after grinding)

#### Front:

Primary ----- 1.64 x 1.37 x .175  
Secondary ----- 1.64 x 1.37 x .295

#### Rear:

Primary ----- 2.0 x 1.00 x .175  
Secondary ----- 2.0 x 1.00 x .295

#### Wheel Cylinder Bore:

Front ----- 1.1875  
Rear ----- 1.00

Method of Attachment ----- Welded  
Gross Lining Area (sq in) ----- 145.0  
Effective Area (sq in) ----- 145.0  
Brake Effectiveness (front) ----- 58.5%

#### TRANSMISSION

Type ---- Heavy duty, incorporates heavy duty clutch  
gear and mainshaft bearings. (6-cylinder only)  
Transmission (Powerglide) ----- Incorporates 4-  
plate heavy-duty clutch with high  
temperature oil seals and provi-  
sions for oil cooler piping  
Radiator (Powerglide) ----- Incorporates  
transmission oil cooler

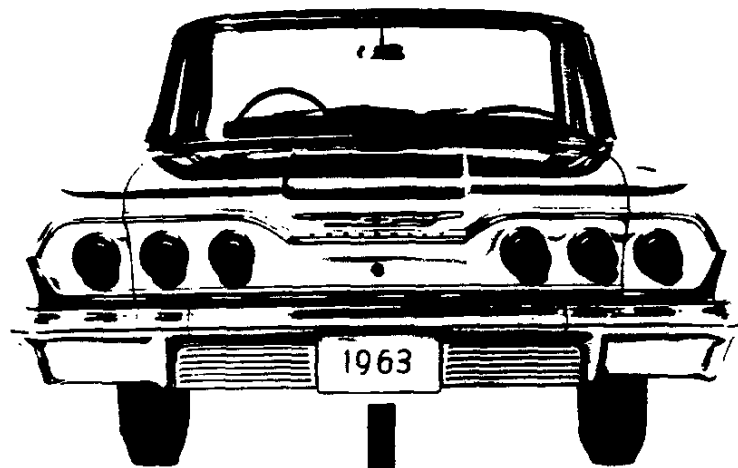
#### MASTER CYLINDER

Diameter ----- .875





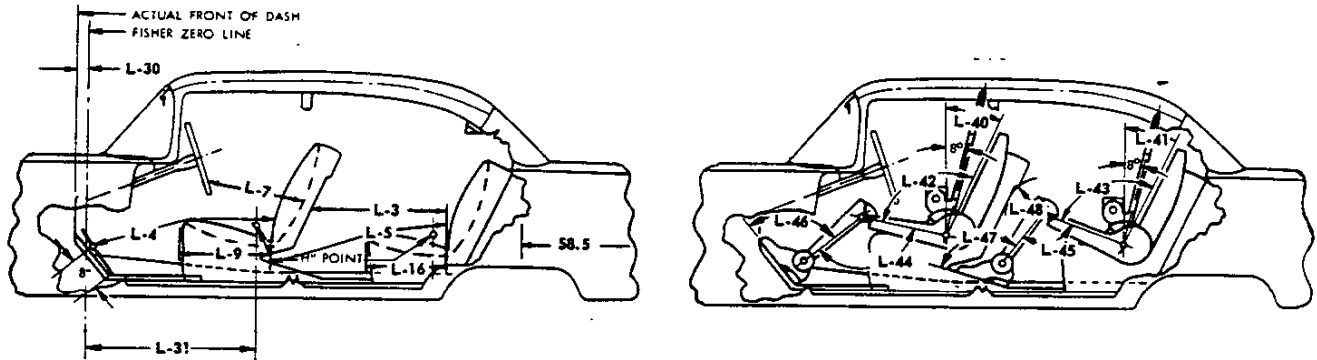
## DIMENSIONS AND WEIGHTS



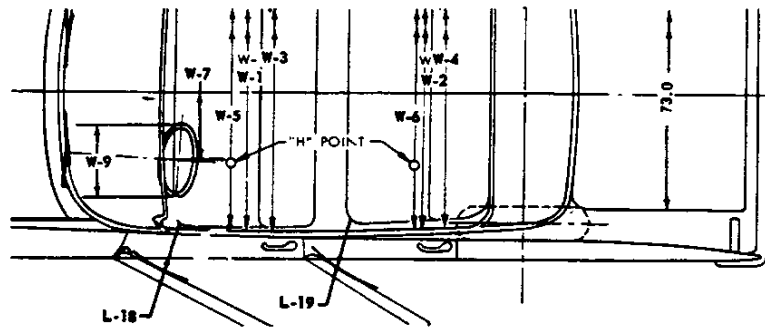
INTERIOR DIMENSIONS .....	2
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STATION WAGON CARGO AND SEDAN TRUNK CAPACITIES .....	6
VEHICLE WEIGHTS .....	7

# INTERIOR DIMENSIONS

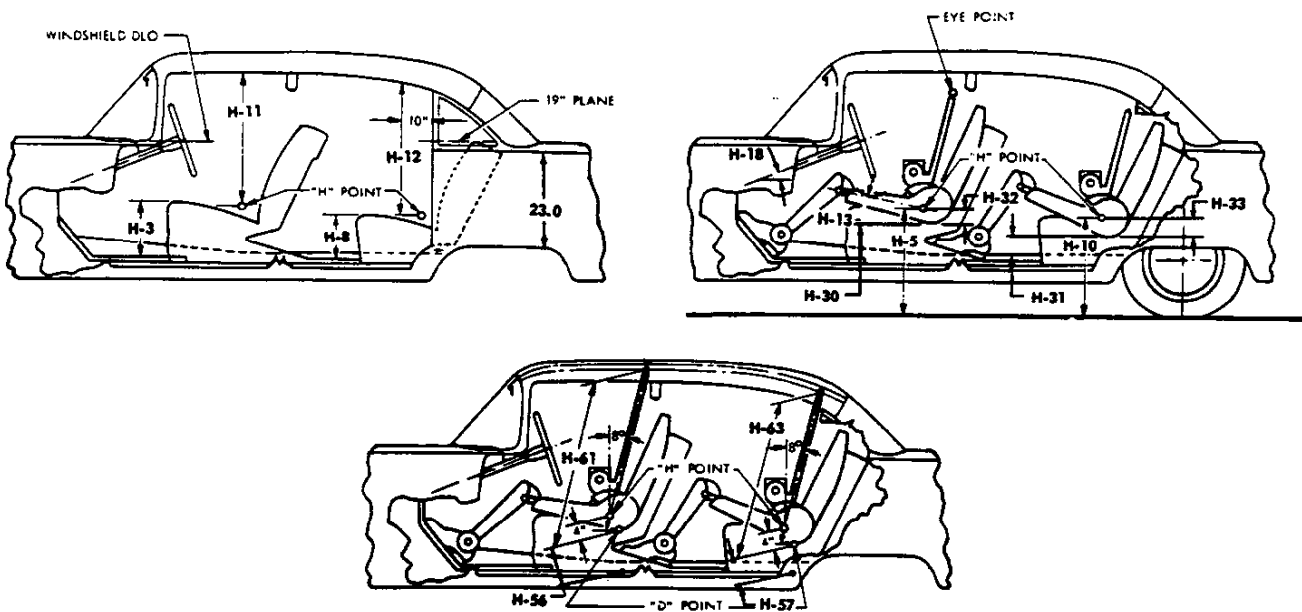
## INTERIOR LENGTHS



## INTERIOR WIDTHS

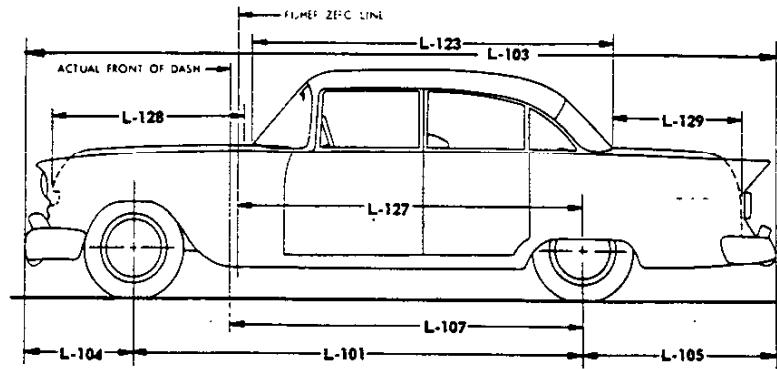


## INTERIOR HEIGHTS



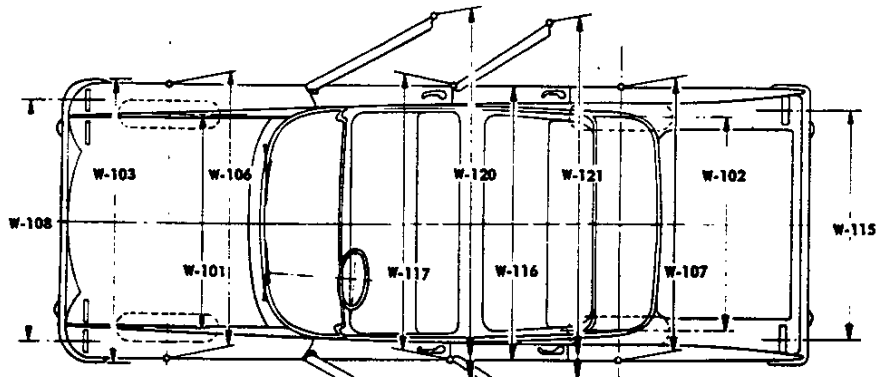
CODE	DESCRIPTION	MODELS						
		1211 1611	1269 1669 1869	1847	1839	1867	1235 1635-45 1835-45	
L E N G T H S	L-3	Rear compartment room	28.5	26.0	27.0	26.0	28.5	
	L-4	Effective leg room - front	41.0					
	L-5	Effective leg room	rear	38.0	35.0	37.0	35.0	38.0
			third	-	-	-	-	37.0
	L-7	Steering wheel to torso clearance	11.0					
	L-9	Seat depth - front	18.5					
	L-16	Seat depth	rear	18.0	18.5	18.0	18.5	
			third	-	-	-	-	17.5
	L-17	"H" point travel	5.0					
	L-18	Entrance - foot clearance - front	15.0					
	L-19	Entrance - foot clearance - rear	11.5	9.0	11.5	9.0	13.5	
	L-30	Body "O" line to actual front of dash	.54					
	L-31	Body "O" line to "H" point - front	42.0					
	L-40	Back angle - front	26°	25°	26°	25°	26°	
	L-41	Back angle	rear	23°	18°	23°	18°	23°
			third	-	-	-	-	17°
	L-42	Hip angle - front	104°					
	L-43	Hip angle	rear	90°	77°	88°	77°	90°
			third	-	-	-	-	81.5°
	L-44	Knee angle - front	145°					
L-45	Knee angle	rear	105°	108°	91°	102°	91°	
		third	-	-	-	-	81.5°	
L-46	Foot angle - front	120°		119°	118°	120°		
L-47	Foot angle	rear	117°		114°	112°	117°	
		third	-	-	-	-	114°	
L-48	Knee clearance	5.0	3.5	5.0	3.5	5.0		
W I D T H S	W-1	Hat room - front	57.5					
	W-2	Hat room	rear	55.5		54.5	52.0	
			third	-	-	-	-	55.0
	W-3	Shoulder room - front	59.0					
	W-4	Shoulder room	rear	57.5	58.0	57.0	58.0	58.0
			third	-	-	-	-	52.0
	W-5	Hip room - front	63.5					
	W-6	Hip room	rear	62.5	63.5	55.0	63.5	52.0
			third	-	-	-	-	46.0
W-7	Steering wheel clearance to $\mathcal{C}$ of car	16.0						
W-9	Steering wheel outside diameter	17.0						
H E I G H T S	H-3	Chair height - front	11.0					
	H-5	"H" point to ground - front	20.0					
	H-8	Chair height	rear	14.0	13.0	15.0	13.5	
			third	-	-	-	-	15.5
	H-10	"H" point to ground	rear	19.5	18.5	19.5	18.5	
			third	-	-	-	-	22.0
	H-11	Entrance room - front	30.0	29.0	30.0	29.0	30.0	
	H-12	Entrance room - rear	-	29.5	-	-	30.5	
	H-13	Steering wheel thigh clearance	5.0					
	H-18	Steering column angle	16.5°					
	H-30	"H" point to heel point - front	6.0					
	H-31	"H" point to heel point	rear	12.0	11.0	12.0	11.0	
			third	-	-	-	-	12.5
	H-32	Seat cushion deflection - front	4.5					
	H-33	Seat cushion deflection	rear	4.0	4.5	5.0	4.5	
third			-	-	-	-	4.0	
H-56	"D" point to floor - front	6.0						
H-57	"D" point to floor	rear	4.0	3.0	4.0	3.0		
		third	-	-	-	-	8.0	
H-61	Torso room - front (depressed)	39.0	38.5	39.0	38.5	39.0		
H-63	Torso room	rear (depressed)	38.0			40.0		
		third (depressed)	-	-	-	-	37.0	

# EXTERIOR DIMENSIONS

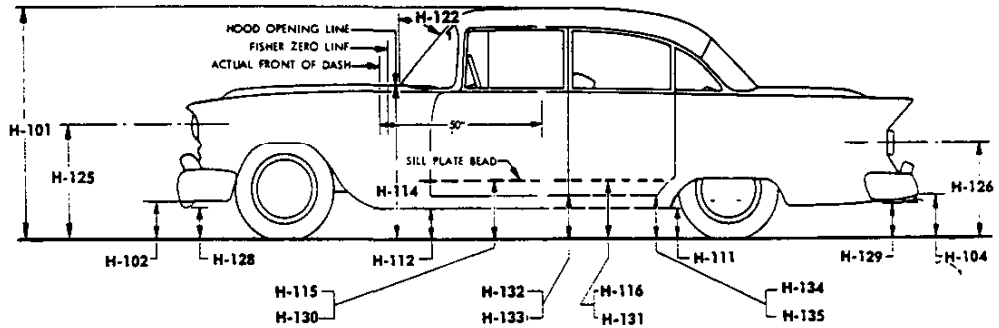


"C" SUFFIX DIMENSIONS NOT ILLUSTRATED

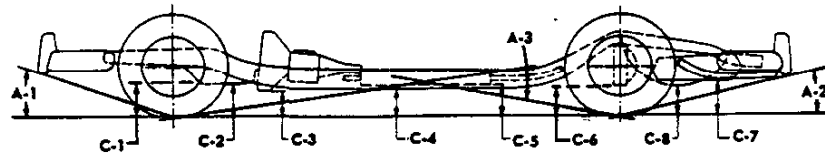
CODE	DESCRIPTION	MODELS					
		1211 1611	1269 1669 1869	1847	1839	1867	1235 1635-45 1835-45
L-101	Wheelbase	119.0					
L-103	Overall length - bumper to bumper	210.4					
L-104	Overhang - front	33.4					
L-105	Overhang - rear	58.0					
L-107	Front of dash to $\mathcal{C}$ of rear wheels	100.5					
L-123	Body upper structure length at $\mathcal{C}$	102.8	103.2	104.3	105.4	141.0	
L-127	Body "O" line to $\mathcal{C}$ of rear wheels	100.0					
L-128	Hood length at $\mathcal{C}$	50.6					
L-129	Deck length at $\mathcal{C}$	48.5		47.0	46.0	--	
Lc-1	Overall length--less bumpers	206.4					



CODE	DESCRIPTION	MODELS					
		1211 1611	1269 1669 1869	1847	1839	1867	1235 1635-45 1835-45
W-101	Tread - front	60.3					
W-102	Tread - rear	59.3					
W-103	Overall width (maximum)	79.0					
W-106	Front fender width at $\mathcal{C}$ of wheel	76.4					
W-107	Rear fender width at $\mathcal{C}$ of wheel	77.0					
W-108	Outer headlight centers width	63.4					
W-115	Taillight centers width	61.0					64.8
W-116	Maximum overall width of body	78.0					
W-117	Maximum body width at center pillar	76.5					
W-120	Overall width, front doors open	156.6	141.6	156.6	141.6	156.6	141.6
W-121	Overall width, rear doors open	--	139.1	--	139.1	--	139.1
Wc-1	Front bumper width	78.8					
Wc-2	Rear bumper width	79.0					
Wc-3	Inner headlight centers width	45.8					
Wc-4	Opening width at beltline - front door	45.4	36.3	45.4	36.3	45.4	36.3
Wc-5	Opening width below beltline - front door	48.2	38.9	48.2	38.9	48.2	38.9
Wc-6	Opening width below beltline - rear door	--	36.3	--	36.3	--	36.3
Wc-7	Door swing out distance - front	46.2	37.4	46.2	37.4	46.2	37.4
Wc-8	Door swing out distance - rear	--	33.6	--	33.6	--	33.6
Wc-9	Windshield DLO width	60.1					
Wc-10	Rear window DLO width	59.5		52.3	57.9	52.5	54.7

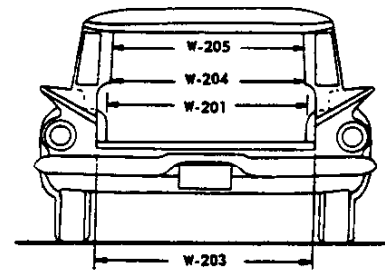
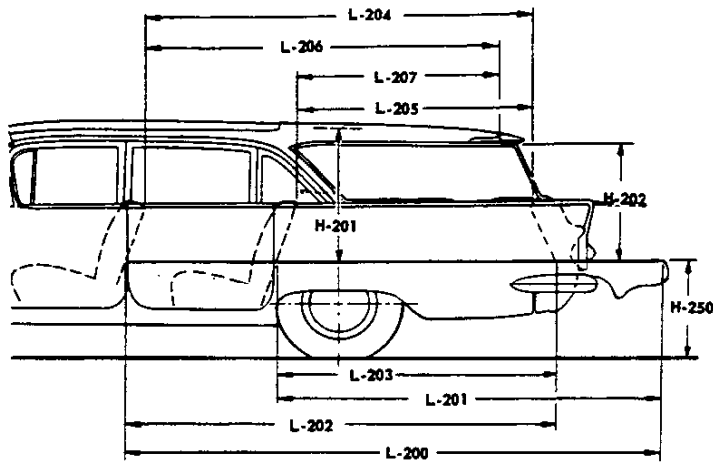


CODE	DESCRIPTION	MODELS					
		1211 1611	1269 1669 1969	1847	1839	1867	1235 1635-45 1835-45
H-101	Overall height-loaded	55.0		54.5	55.5	56.0	
H-102	Front bumper bottom to ground	12.5			13.0		13.5
H-104	Rear bumper bottom to ground	12.0			12.5		13.0
H-111	Rocker panel to ground-rear	8.0					
H-112	Rocker panel to ground-front	8.5					
H-114	Hood at rear to ground	38.0					
H-115	Step height-front door-loaded	13.0					
H-116	Step height-rear door-loaded	--	13.0	--	13.0	--	13.0
H-122	Windshield slope angle	55°					
H-125	Headlight centerline to ground	26.0			25.5		
H-126	Taillight centerline to ground	26.0			25.5		
H-128	Bottom of front bumper guard to ground	--	--	--	--	--	--
H-129	Bottom of rear bumper guard to ground	--	--	--	--	--	--
H-130	Step height-front door-unloaded	15.0					
H-131	Step height-rear door-unloaded	15.0		15.0	--	15.0	
H-132	Bottom of front door to ground-open	13.0					
H-133	Bottom of front door to ground-closed	11.5					
H-134	Bottom of rear door to ground-open	--	11.5	--	11.5	--	11.5
H-135	Bottom of rear door to ground-closed	--	11.5	--	11.5	--	11.5
Hc-1	Rear window slope angle	47°		61°	47°	57°	27°
Hc-2	Windshield DLO vertical height	15.0		14.0	13.0	14.0	15.0
Hc-3	Rear window DLO vertical height	14.5		11.5	12.5	11.0	15.5
Hc-4	Front door opening height	37.0		36.0	37.0	35.5	37.0
Hc-5	Rear door opening height	--	37.0	--	37.0	--	37.0
Hc-7	Overall height-unloaded	57.5			57.0		58.0
Hc-8	Trunk sill to ground-loaded	22.0			--		
Hc-9	Tailgate to ground	--	--	--	--	--	23.0
Hc-10	Deck at rear window to ground	36.0			--		



CODE	DESCRIPTION	VALUE
A-2	Angle of departure	14°
A-3	Ramp breakover angle	13°
C-1	Front suspension to ground	7.5
C-2	Oil pan to ground	7.0
C-3	Flywheel housing to ground	7.0
C-4	Frame to ground	7.0
C-5	Exhaust system to ground	6.0
C-6	Rear axle to ground	7.5
C-7	Fuel tank to ground	8.0
C-8	Tire well to ground	--
C-9	Minimum ground clearance	6.0

## STATION WAGON CARGO AND SEDAN TRUNK CAPACITIES



### CARGO DIMENSIONS

CODE	DESCRIPTION	MODELS				
		1235	1635	1645	1835	1845
L-200	Maximum cargo length - front seat			118.5		
L-201	Maximum cargo length - rear seat			84.5		
L-202	Cargo length at floor - front seat			94.0		
L-203	Cargo length at floor - second seat			60.0		
L-204	Cargo length at belt - front seat			82.5		
L-205	Cargo length at belt - second seat			47.0		
L-206	Cargo length at roof - front seat			74.5		
L-207	Cargo length at roof - second seat			39.5		
W-200	Cargo width - front (rr of frt. seat back, flr. level) †			62.0		
W-201	Cargo width - wheelhouse			46.0		
W-203	Rear opening width at floor			56.5		
W-204	Rear opening width at belt			54.5		
W-205	Maximum rear opening width above belt			54.0		
H-201	Maximum cargo height			31.5		
H-202	Rear opening height			30.5		
H-250	Tailgate to ground height			23.0		

† Not illustrated

### CARGO CAPACITIES CU. FT.

1235	6-Passenger Wagon	Rear seat folded	97.5 (inc. 10.5 for hidden compt.)
1635		Rear seat erect	49.5
1835			
1645	9-Passenger Wagon	Rear and third seat folded	87.0 (plus 5.7 for hidden compt.)
1845		Rear seat erect and third seat folded	49.5
		Rear and third seat erect	5.6

### TRUNK CAPACITIES CU. FT.

Model	Overall	Standard Luggage
Sedans and Coupes	29.7	19.0
Convertibles	Top up	29.7
	Top down	28.2

## VEHICLE WEIGHTS

### 1100-1200 BISCAYNE SERIES

Model	VEHICLE TYPE Description	SHIPPING WEIGHT			CURB WEIGHT			DESIGN WEIGHT		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
1111	2-Door Sedan 6-cylinder	1680	1525	3205	1695	1655	3350	1920	2180	4100
1111P		1705	1530	3235	1715	1665	3380	1940	2190	4130
1211	2-Door Sedan 8-cylinder	1790	1550	3340	1815	1685	3500	2040	2210	4250
1211P		1815	1555	3370	1840	1690	3530	2065	2215	4280
1135	4-Door Station Wagon 6-cylinder	1645	2040	3685	1640	2185	3825	1865	2710	4575
1135P		1665	2050	3715	1660	2195	3855	1885	2720	4605
1235	4-Door Station Wagon 8-cylinder	1740	2070	3810	1750	2215	3965	1975	2740	4715
1235P		1765	2075	3840	1770	2225	3995	1995	2750	4745
1169	4-Door Sedan 6-cylinder	1710	1570	3280	1720	1705	3425	1945	2230	4175
1169P		1730	1580	3310	1745	1710	3455	1970	2235	4205
1269	4-Door Sedan 8-cylinder	1815	1600	3415	1845	1730	3575	2070	2255	4325
1269P		1840	1605	3445	1865	1740	3605	2090	2265	4355

### 1500-1600 BEL AIR SERIES

1511	2-Door Sedan 6-cylinder	1690	1525	3215	1700	1660	3360	1925	2185	4110
1511P		1710	1535	3245	1725	1665	3390	1950	2190	4140
1611	2-Door Sedan 8-cylinder	1790	1555	3345	1820	1685	3505	2045	2210	4255
1611P		1820	1560	3380	1840	1695	3535	2065	2220	4285
1535	4-Door Station Wagon 6-cylinder	1645	2040	3685	1640	2185	3825	1865	2710	4575
1535P		1665	2050	3715	1660	2195	3855	1885	2720	4605
1635	4-Door Station Wagon 8-cylinder	1740	2070	3810	1750	2215	3965	1975	2740	4715
1635P		1765	2075	3840	1770	2225	3995	1995	2750	4745
1545	4-Door Station Wagon 6-cylinder*	1620	2100	3720	1620	2245	3865	1875	3190	5065
1545P		1645	2105	3750	1640	2255	3895	1900	3195	5095
1645	4-Door Station Wagon 8-cylinder*	1730	2120	3850	1735	2270	4005	2005	3200	5205
1645P		1750	2130	3880	1760	2275	4035	2015	3220	5235
1569	4-Door Sedan 6-cylinder	1710	1570	3280	1720	1705	3425	1945	2230	4175
1569P		1730	1580	3310	1745	1710	3455	1970	2235	4205
1669	4-Door Sedan 8-cylinder	1815	1600	3415	1845	1730	3575	2070	2255	4325
1669P		1840	1605	3445	1865	1740	3605	2090	2265	4355



# VEHICLE WEIGHTS -Cont'd.

## 1700-1800 IMPALA SERIES

VEHICLE TYPE		SHIPPING WEIGHT			CURB WEIGHT			DESIGN WEIGHT		
Model	Description	Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
1735	4-Door Station Wagon 6-cylinder	1650	2055	3705	1650	2200	3850	1875	2725	4600
1735P		1675	2060	3735	1670	2210	3880	1895	2735	4630
1835	4-Door Station Wagon 8-cylinder	1755	2080	3835	1765	2225	3990	1990	2750	4740
1835P		1775	2090	3865	1785	2235	4020	2010	2760	4770
1739	4-Door Sport Sedan 6-cylinder	1740	1610	3350	1750	1745	3495	2030	2215	4245
1739P		1760	1620	3380	1775	1750	3525	2050	2225	4275
1839	4-Door Sport Sedan 8-cylinder	1840	1630	3475	1865	1765	3630	2140	2240	4380
1839P		1865	1640	3505	1890	1775	3665	2170	2245	4415
1745	4-Door Station Wagon 6-cylinder*	1630	2115	3745	1630	2260	3890	1890	3200	5090
1745P		1655	2120	3775	1655	2265	3920	1910	3210	5120
1845	4-Door Station Wagon 8-cylinder*	1735	2135	3870	1745	2285	4030	2005	3225	5230
1845P		1760	2145	3905	1770	2290	4060	2025	3235	5260
1747	2-Door Sport Coupe 6-cylinder	1715	1550	3265	1735	1680	3415	2010	2195	4165
1747P		1740	1555	3295	1755	1690	3445	2030	2165	4195
1847	2-Door Sport Coupe 8-cylinder	1815	1575	3390	1845	1705	3550	2120	2180	4300
1847P		1845	1580	3425	1865	1715	3580	2140	2190	4330
1767	2-Door Convertible 6-cylinder	1755	1645	3400	1765	1780	3545	2045	2250	4295
1767P		1775	1655	3430	1790	1785	3575	2065	2260	4325
1867	2-Door Convertible 8-cylinder	1850	1675	3525	1875	1810	3685	2155	2280	4435
1867P		1870	1685	3555	1900	1815	3715	2175	2290	4465
1769	4-Door Sedan 6-cylinder	1725	1585	3310	1735	1720	3455	1960	2245	4205
1769P		1745	1595	3340	1760	1725	3485	1980	2250	4235
1869	4-Door Sedan 8-cylinder	1830	1605	3435	1850	1740	3590	2075	2265	4340
1869P		1850	1615	3465	1875	1750	3625	2100	2275	4375

P - Powerglide  
\* - 9-passenger

**SHIPPING WEIGHT:** The weight of the basic vehicle with all regular equipment and with grease and oil where required. It does not include the weight of gasoline and water.

**CURB WEIGHT:** The weight of the empty vehicle ready to drive. It is the shipping weight plus the weights of gasoline and water. For the weight of gasoline add 118 pounds to station wagons, and 121 pounds to all others. For the weight of water add 25 pounds to the 6-cylinder models, 39 pounds to the 283 and the 327 V-8 models, and 45 pounds to the 409 V-8 models.

‡ **DESIGN WEIGHT:** The curb weight of the basic vehicle plus 150 pounds for each passenger. (5-passengers, 2 front, 3 rear)

Example:

Model 1169 (5-passengers) ----- 3425 + 750=4175

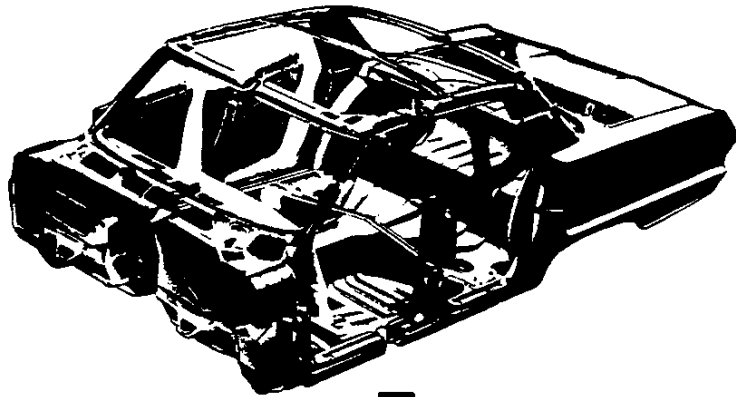
**PERFORMANCE WEIGHT:** The curb weight of the lowest priced 4-door sedan with regular equipment plus 600 pounds for 4-passengers.

Example:

Model 1169 ----- 3630 + 600=4025

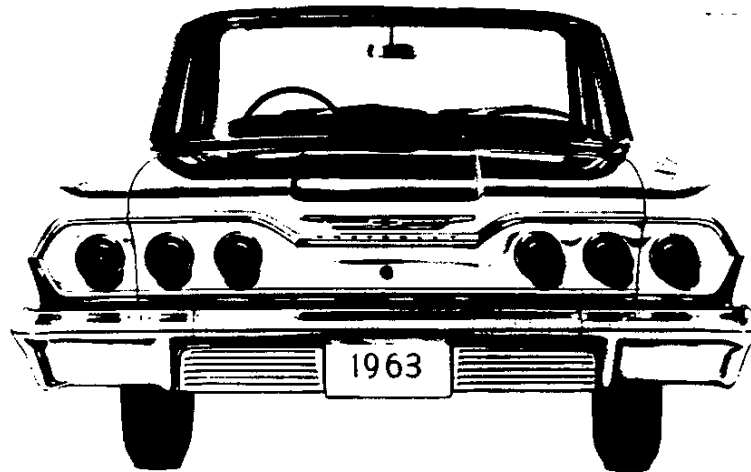
‡ Based on passenger weight distribution for number of passengers in front and rear. For total loaded weight, add 150 pounds for each passenger to the designated passenger carrying capacity for the particular vehicle.

# BODY



EXTERIOR PAINT .....	2
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## EXTERIOR PAINT PROCESS



### NINE STEP FINISHING PROCESS ●

1. **RUSTPROOFING . . .** Bare steel is thoroughly treated with chemicals that etch the metal for improved paint adhesion. This chemical also cleans the metal to give it a corrosion-resisting surface.
2. **BODY AND SHEET METAL PRIMER . . .** Four different and specially formulated corrosion resistant primers are used during sub-assembly of the body where rust could possibly develop. Areas considered especially critical are subsequently coated with another type rust inhibiting compound, after the lacquer coats have been applied.  
A primer coat is applied to all outside and inside surfaces of the front fenders and hood. This is done by dipping or flowcoating to insure coating in all seams and secluded areas, and then baking at 390 degrees F for 30 minutes. After baking, a coat of sealer is applied to all surfaces requiring a subsequent coat of lacquer.
3. **PRIMER-SURFACER COAT AND FLASH PRIME COAT . . .** An air dried flash prime coat is applied to surfaces below the beltline. Next, a full primer-surfacer coat is applied to all outside surfaces of the body receiving lacquer and then oven baked for 45 minutes at 285 degrees F.
4. **SANDING . . .** Power wet sanding followed by hand sanding is done on all surfaces requiring lacquer. Upon inspection, spot sanding assures
5. **LACQUERING . . .** Many coats of acrylic lacquer are now sprayed on the surfaces to build up a finish of the required thickness for each color.
6. **INITIAL BAKING . . .** To set up the paint hardness for final sanding the body is baked for approximately 10 minutes at 200 degrees F.
7. **FINAL BAKING . . .** To assure a durable, hard, high luster finish the lacquer is now baked for 30 minutes at 275 degrees F. Reheating the lacquer after final sanding permits paint film to soften and allows surface blemishes and sanding scratches to disappear during the thermo-reflow process.
8. **UNDERCOATING . . .** An asphaltic based-asbestos fiber type sound deadener is sprayed inside the wheel housings and on the underside of the underbody at designated locations to block out road noises.
9. **PAINT REPAIR . . .** Any slight mars, nicks, or scratches that might occur during final assembly are factory-repaired and corrected before shipment. Light "slush" polishing is done to bring painted surfaces to a high luster finish.

# EXTERIOR-INTERIOR COLOR COMBINATIONS

## 1100-1200 BISCAYNE SERIES

Exterior Colors and RPO Numbers		Interior Trim Colors and RPO Numbers ●					
		Models 11-1211, 11-1269			Model 11-1235		
		Fawn 860	Aqua 852	Red 876	Fawn 861	Aqua 855	Red 877
900	Tuxedo Black	X	X	X	X	X	X
905	Laurel Green	X			X		
908	Ivy Green	X			X		
912	Silver Blue	X			X		
914	Monaco Blue	X			X		
918	Azure Aqua		X			X	
919	Marine Aqua		X			X	
920	Autumn Gold	X		X	X		X
922	Ember Red	X		X	X		X
932	Saddle Tan	X			X		
936	Ermine White	X	X	X	X	X	X
938	Adobe Beige	X		X	X		X
940	Satin Silver		X	X		X	X
948	Palomar Red	X		X	X		X
934	Cordovan Brown	X			X		
950	Ermine White/Tuxedo Black	X	X	X	X	X	X
954	Ermine White/Laurel Green	X			X		
959	Ermine White/Silver Blue	X			X		
962	Silver Blue/Monaco Blue	X			X		
963	Ermine White/Azure Aqua		X			X	
967	Azure Aqua/Marine Aqua		X			X	
970	Adobe Beige/Autumn Gold	X		X			X
971	Adobe Beige/Saddle Tan	X			X		
972	Adobe Beige/Cordovan Brown	X			X		
973	Ermine White/Ember Red	X		X	X		X
984	Ermine White/Satin Silver		X	X		X	X

# EXTERIOR - INTERIOR COLOR COMBINATIONS - Cont'd.

1500-1600 BEL AIR SERIES

Exterior Colors and RPO Numbers		Interior Trim Colors and RPO Numbers				
		Models 15-1611, 15-1669, 15-1635, 15-1645				
		Fawn 863	Aqua 850	Red 872	Blue 839	Green 823
900	Tuxedo Black	X	X	X	X	X
905	Laurel Green					X
908	Ivy Green					X
912	Silver Blue				X	
914	Monaco Blue				X	
918	Azure Aqua		X			
919	Marine Aqua		X			
920	Autumn Gold	X		X		
922	Ember Red	X		X		
932	Saddle Tan	X				
936	Ermine White	X	X	X	X	X
938	Adobe Beige	X		X		
940	Satin Silver		X	X	X	
948	Palomar Red	X		X		
934	Cordovan Brown	X				
950	Ermine White/Tuxedo Black	X	X	X	X	X
954	Ermine White/Laurel Green					X
959	Ermine White/Silver Blue				X	
962	Silver Blue/Monaco Blue				X	
963	Ermine White/Azure Aqua		X			
967	Azure Aqua/Marine Aqua		X			
970	Adobe Beige/Autumn Gold	X		X		
971	Adobe Beige/Saddle Tan	X				
972	Ermine White/Cordovan Brown	X				
973	Ermine White/Ember Red	X		X		
984	Ermine White/Satin Silver		X	X	X	

1700-1800 IMPALA SERIES  
EXCEPT CONVERTIBLE

Exterior Colors and RPO Numbers		Interior Trim Colors and RPO Numbers ●						
		Models 17-1869, 17-1847, 17-1839, 17-1835, 17-1845						
		Fawn	Aqua	Red	Blue	Green	Saddle	Black
		866(a)	853(a)	874(a)	842(a)	826(a)	857(a)	811(b)
		867(c)	854(c)	875(c)	843(c)	827(c)	858(c)	812(c)
900	Tuxedo Black	X	X	X	X	X	X	X
905	Laurel Green					X		X
908	Ivy Green					X		
912	Silver Blue				X			X
914	Monaco Blue				X			
918	Azure Aqua		X					X
919	Marine Aqua		X					
920	Autumn Gold	X		X			X	X
922	Ember Red	X		X				X
932	Saddle Tan						X	
936	Ermine White	X	X	X	X	X	X	X
938	Adobe Beige	X		X			X	X
940	Satin Silver		X	X	X			X
948	Palomar Red	X		X				X
934	Cordovan Brown	X					X	
950	Ermine White/Tuxedo Black	X	X	X	X	X	X	X
954	Ermine White/Laurel Green					X		X
967	Azure Aqua /Marine Aqua		X					
959	Ermine White/Silver Blue				X			
962	Silver Blue/Monaco Blue				X			
963	Ermine White/Azure Aqua		X					
971	Adobe Beige/Saddle Tan						X	
972	Adobe Beige/Cordovan Brown	X					X	
973	Ermine White/Ember Red	X		X				X
984	Ermine White/Satin Silver		X	X	X			X
970	Adobe Beige/Autumn Gold	X		X			X	X

- (a) All models
- (b) Models 17-1847, 17-1839 only
- (c) Optional bucket seats for models 17-1847 only

# EXTERIOR - INTERIOR COLOR COMBINATIONS - Cont'd.

1700-1800 IMPALA SERIES  
CONVERTIBLE

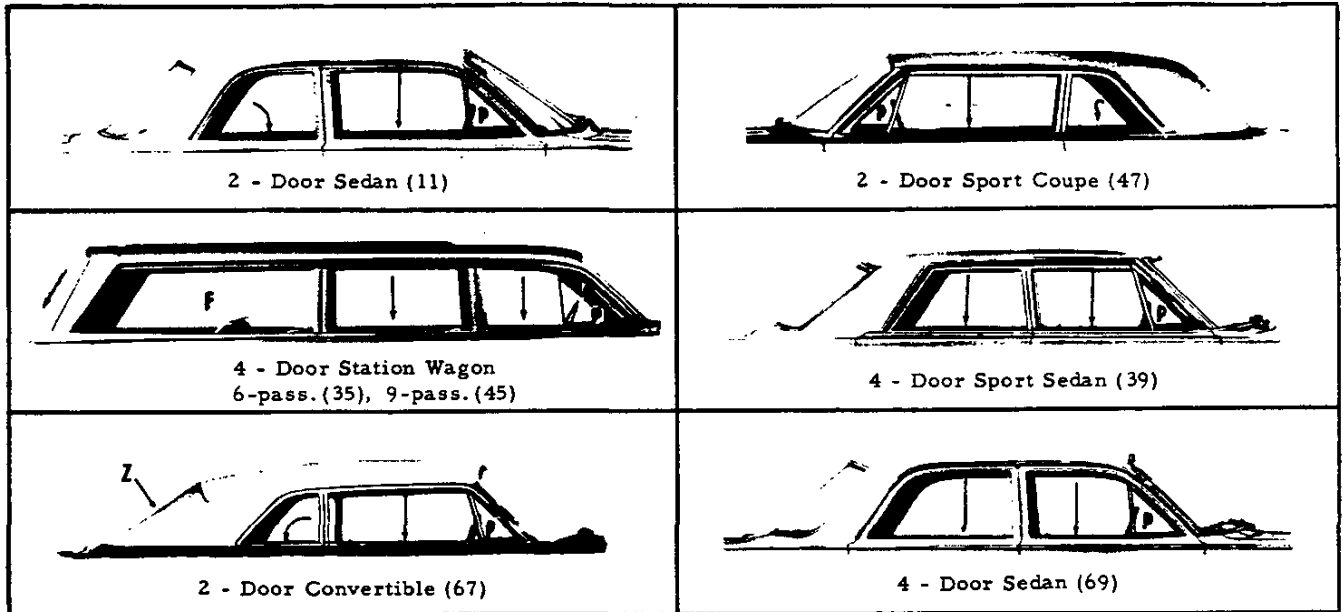
Exterior Colors and RPO Numbers		Interior Trim Colors and RPO Numbers						
		Models 17-1867						
		Fawn	Aqua	Red	Blue	Green	Saddle	Black
		870	847	886	836	829	859	814
		856(a)	845(a)	879(a)	831(a)	821(a)	862(a)	815(a)
900	Tuxedo Black	X	X	X	X	X	X	X
905	Laurel Green					X		X
908	Ivy Green					X		
912	Silver Blue				X			X
914	Monaco Blue				X			
919	Marine Aqua		X					
918	Azure Aqua		X					X
920	Autumn Gold	X		X			X	X
922	Ember Red	X		X				X
932	Saddle Tan						X	
936	Ermine White	X	X	X	X	X	X	X
938	Adobe Beige	X		X			X	X
940	Satin Silver		X	X	X			X
948	Palomar Red	X		X				X
934	Cordovan Brown	X					X	

Exterior Colors and RPO Numbers		Folding Top Colors And RPO Numbers		
		Models 17-1867		
		White	Black	Beige
		Regular Production	C05A	C05B
900	Tuxedo Black	X	X	X
905	Laurel Green	X	X	X
908	Ivy Green	X	X	X
912	Silver Blue	X	X	X
914	Monaco Blue	X	X	X
919	Marine Aqua	X	X	X
918	Azure Aqua	X	X	X
920	Autumn Gold	X	X	X
922	Ember Red	X	X	X
932	Saddle Tan	X	X	X
936	Ermine White	X	X	X
938	Adobe Beige	X	X	X
940	Satin Silver	X	X	X
948	Palomar Red	X	X	X
934	Cordovan Brown	X	X	X

(a) Optional bucket seats

## BODY GLASS

### WINDOW ACTION



P - Pivoting, crank vent

F - Fixed glass

Z - Zip out

↓ - "Monkey" action

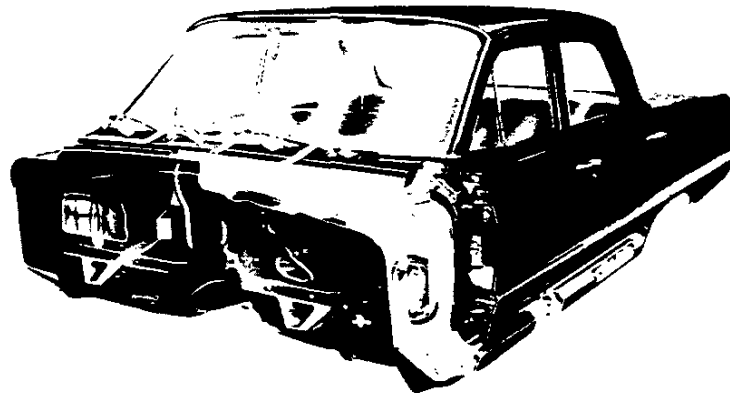
↻ - Rotating

### BODY GLASS TYPE AND VISIBILITY AREA

Location		69	39	11	47	67	35	45
Windshield		Laminated safety plate, compound curve element						
		1589.7	1405.7	1589.7	1461.2		1589.7	
Front door	Ventipane	Safety Solid Plate						
		96.0	88.8	96.0	72.3		96.0	
Rear door window	Window	Safety Solid Plate						
		571.0	624.8	816.4	796.1	768.2	571.0	
Rear door window		Safety Solid Plate						
		655.8	647.0				820.7	
Rear quarter	Window	Safety Solid Plate						
					427.4	367.8	275.0	
Rear side		Safety Solid Plate						
								1181.6
Back window		Safety Solid Plate				Plastic	Safety Solid Plate	
		1257.1	1239.9	1257.1	941.9	1103.0	898.6	
Total visibility area		4169.6	4006.2	4186.6	3639.3	3679.7	5162.6	



## BODY CONSTRUCTION



### GENERAL

Type ----- Unisteel, with cowl, roof, underbody and body panels welded to form body shell. Doors, front and rear lids are of double-panel construction and hinge assembled to body. Separate frame and bolt-on front end sheet metal.

### DOORS AND LOCKS

Door construction ----- Double steel panels, hinged at front.  
Door handles ----- Push-button with rotary type latches. Inside push button locks on all doors.  
Door ventipanes ----- Crank operated

### HOOD AND TRUNK LID

Type ----- Counterbalanced, with spring loaded toggle action hinges on rear of hood and boxed hinges on trunk lid with torsion rod.  
Hood release ----- External

### VENTILATION

High level with double wall plenum chamber, providing washing and air drying of rocker panels for corrosion resistance. Air and water travel through rocker panels and drain at ends of rocker inner panels.

### SEAT CONSTRUCTION

Type ----- Front seat cushion - Biscayne models, 3/4 polyurethane; 1" on Bel-Air and 1835, 45; 1-3/4 on all other 1800 models. Rear seat cushion - Biscayne models, jute and cotton; Bel-Air 3/4 polyurethane; 1-3/4 on Impala, 3/4 on 9-passenger wagons.

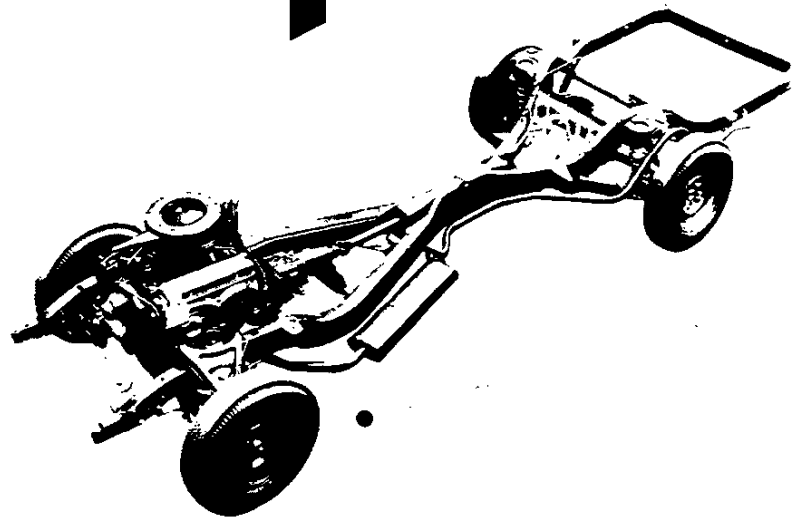
### WINDSHIELD WIPERS

Type ----- Dual single speed electric  
Linkage ----- Parallel acting

### SPARE TIRE AND TOOLS

Location-Sedans and Sport Coupe, horizontal on center of shelf in trunk compartment; Station wagon, vertically in right hand side of cargo compartment rear of wheelhouse behind removable cover. Convertible, right side of trunk compartment rearward of wheelhouse. Tools consist of bumper jack with combination lever handle and wheel nut wrench stored under tire.

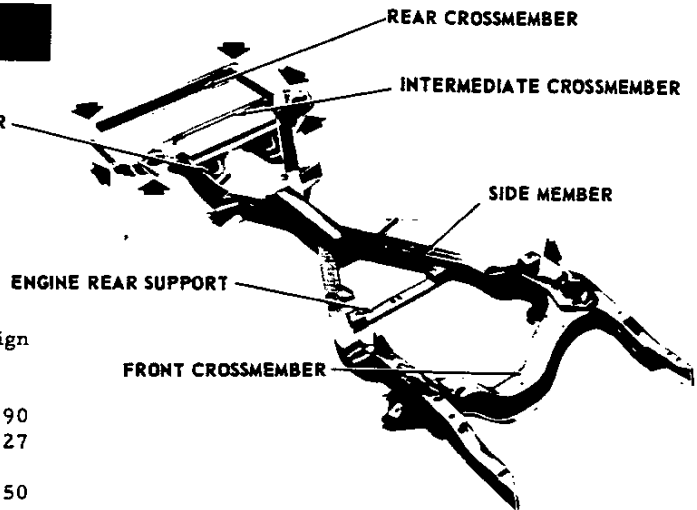
# CHASSIS



FRAME . . . . .	2
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## FRAME

REAR UPPER CONTROL ARM CROSSMEMBER

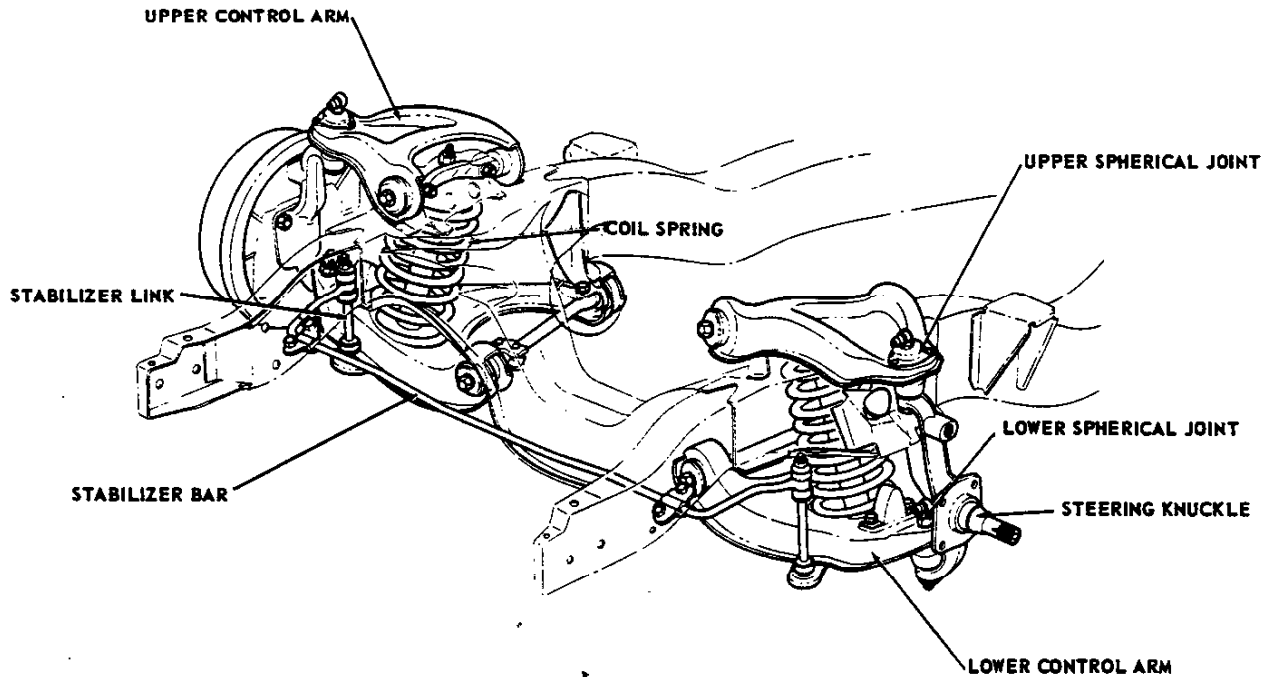


### GENERAL

Description .....	All welded X-design with 4 crossmembers
Side member	
Section modulus (inches <sup>3</sup> ) .....	1.90
Moment of inertia (inches <sup>4</sup> ) .....	4.27
Dimensions (maximum)	
Length .....	194.50
Width (over side members at rear crossmember) ..	47.50
Body mounting points	
All except convertible .....	8
Convertible frame	
Description .....	Same with steel plates welded to top and bottom of side members and center beam
Body mounting points .....	12

BODY MOUNTING POINTS ▾

## FRONT SUSPENSION



## GENERAL

Description ----- Independent, each steering knuckle spherically-jointed to frame-hinged upper and lower control arms. Frame-secured coil spring and shock absorber (inside coil spring) attached to each lower control arm. Front end stability achieved with stabilizer bar hinged to frame front crossmember and each lower control arm. Front end dive when braking controlled by mounting angle of upper control arms.

Wheel travel, from design attitude  
Jounce ----- 4.24  
Rebound ----- 4.30  
Wheel to spring ratio ----- 1.87

## CONTROL ARMS

Description  
Upper ----- Stamped A frame rubber-bushed to pivot shaft which is bolted to extension welded to frame side rail. Front suspension geometry adjustments achieved with shimmed pivot shafts.

Lower ----- Stamped A frame rubber-bushed to pivot shaft which is bolted to frame front crossmember.

Bushings  
Type ----- Pre-loaded, steel encased rubber.

## STEERING KNUCKLES

Description ----- Forged steel with integral brake cylinder mounting, and detachable steering knuckle arm.

Spindle diameters  
At inner bearing ----- 1.2493-1.2498  
At outer bearing ----- .7492-.7497  
Spindle thread size ----- 3/4-20 NEF-3 (modified)

## SHOCK ABSORBERS

Type ----- Direct, double-acting, hydraulic  
Code  
With standard engines except wagons -----  
----- C2.75 (43) J8/C1.25-82  
Wagons ----- C1.75 (43) L8/D1-82  
With RPO engines 1-L31, 1-L33 and 1-L80-----  
----- C1.75 (43) L8/D1-82  
Secured (through coil spring) to ----- Lower control arm and front suspension crossmember  
Piston diameter and travel (unassembled)--- 1.00;  
5.25  
Piston rod plating ----- Chrome

## WHEEL BEARINGS

Type ----- Taper roller  
Quantity ----- Two per spindle  
OD  
Inner ----- 2.326-2.329  
Outer ----- 1.781-1.782

## SPHERICAL JOINTS

Type ----- Ball studs, upper self-adjusting for wear.  
Quantity ----- Two per steering knuckle  
Ball studs  
Material ----- HR steel, hardened and ground  
Spherical diameters  
Upper ----- 1.304-1.308  
Lower ----- 1.246-1.250  
Bearing surfaces  
Material  
Upper ----- Two bearings, both non-metallic: the upper surface, a teflon-coated phenolic; the lower surface, a teflon-cotton composition  
Lower ----- One upper surface, a teflon-cotton composition

## Housings

Description  
Upper ----- Welded, grease-tight stamped socket and retainer.  
Lower ----- Steel forging

## Seals

Description  
Upper ----- Reinforced neoprene secured by retainer  
Lower ----- Neoprene secured by retainer

## Lubrication

Upper and lower ----- High pressure grease fitting

## STABILIZER BAR

Type ----- Link  
Material ----- HR steel  
Diameter ----- .6875  
Bushing material ----- Natural or synthetic rubber  
Application ----- All except 11 and 1500-11, -69

## FRONT WHEEL ALIGNMENT

In design attitude  
Camber ----- (+) 0° 30' ± 0° 30'  
Caster ----- (+) 1° 30' ± 30'  
Toe-in, per wheel -----  
In curb attitude  
Camber ----- (+) 0° 30' ± 0° 30'  
Caster ----- 0° ± 30'  
Toe-in, per wheel ----- 1/32-3/32  
Steering axis inclination ----- 7° 15' ± 0° 30'

(continued on page 4)

**FRONT SPRINGS FOR STANDARD ENGINES**

Application	Series	1100			1200			1500				1600				1700				1800							
	Model	11	35	69	11	35	69	11	35	45	69	11	35	45	69	35	39	45	47	67	69	35	39	45	47	67	69
140 HP engine	3-speed	B	A	B				B	A	F	B					A	C	F			C						
	Powerglide																										
195 HP engine	3-speed				C	E	D					C	E	B	D							E	D	B			D
	Powerglide																										

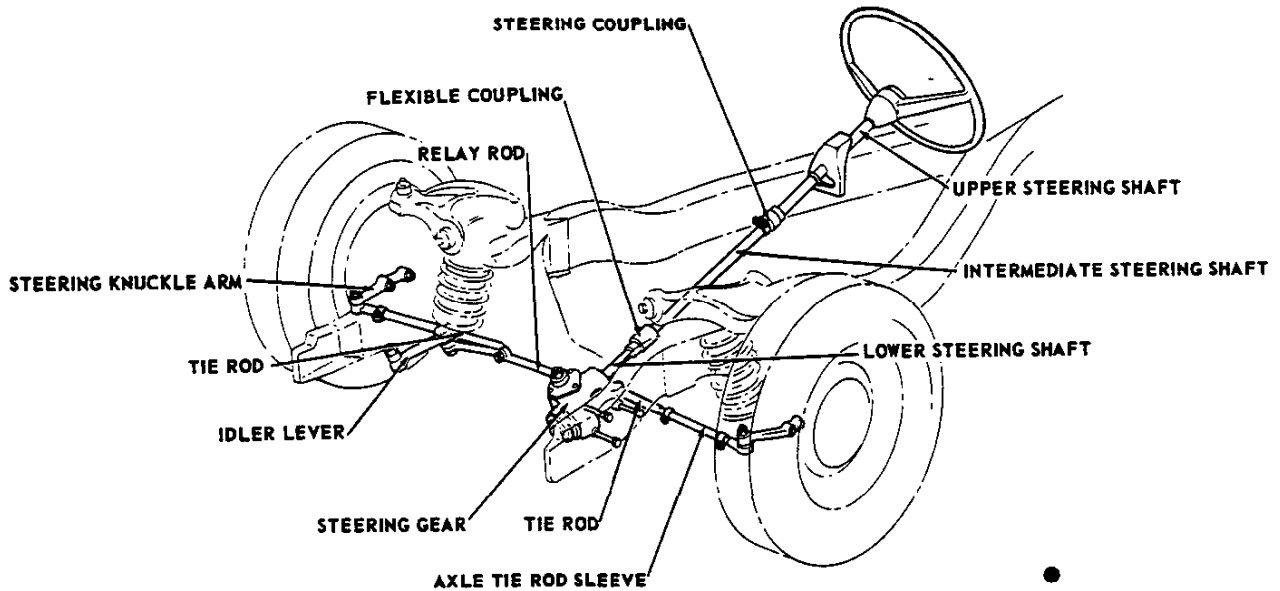
Application	A	B	C	D	E	F
Part number	3827032	3827038	3827034	3827035	3827033	3827037
Type	Right hand helix					
Material	High alloy steel					
No. of coils (active, total)	8.67, 10.2	7.67, 9.11	8.67, 10.2			
Wire diameter	.630	.664	.630			
OD	5.062	5.130	5.062			
PD	4.432	4.466	4.432			
Height	Free	16.24	15.20	17.01	17.34	16.68
	Working (inches @ lb)	10.50				
Deflection rate (lb per in.) between 8.67 and 11.67	At spring	1580	1740	1790	1880	1700
	At wheel (ride rate)	275	370	275		370
		92	119	92		119

**FRONT SPRINGS FOR RPO ENGINES**

Application	Series	1200			1600				1800					
	Model	11	35	69	11	35	45	69	35	39	45	47	67	69
250 HP engine (RPO 1-L30)	3-speed	Same as front springs for Standard Engines												
	4-speed	Same as front springs for Standard Engines												
	Powerglide	Same as front springs for Standard Engines												
300 HP engine (RPO 1-L74)	3-speed	Same as front springs for Standard Engines												
	4-speed	Same as front springs for Standard Engines												
	Powerglide	Same as front springs for Standard Engines												
340 HP engine (RPO 1-L33)	3-speed													
	4-speed													
	Powerglide													
400 HP engine (RPO 1-L31)	3-speed	A	B		A		B		A	B		A	B	C
	4-speed													
425 HP engine (RPO 1-L80)	3-speed													
	4-speed													

Application	A	B	C
Part number	3827104	3827039	3827105
Type	Right hand helix		
Material	High alloy steel		
No. of coils (active, total)	7.67, 9.11		
Wire diameter	.664		
OD	5.130		
PD	4.466		
Height	Free	15.69	15.47
	Working (inches @ lb)	10.50	
Deflection rate (lb per in.) between 8.67 and 11.67	At spring	1920	1840
	At wheel (ride rate)	2000	
		370	
		119	

## STEERING



### GENERAL

Description ----- Semi-reversible, recirculating ball steering gear. Manual steering standard; power optional.

#### Steering gear

Gear ratio  
 Manual ----- 24:1  
 Power ----- 20:1  
 Overall ratio  
 Manual ----- 28:1  
 Power ----- 24:1

#### Turning characteristics

Turning diameters (ft)  
 Outside front  
   Wall to wall  
   Right and left ----- 44.1  
 Curb to curb  
   Right and left ----- 40.8  
 Inside rear  
   Wall to wall  
   Right and left ----- 24.2  
 Curb to curb  
   Right and left ----- 24.5

#### Number of wheel turns, lock to lock

Manual ----- 5.80  
 Power ----- 5.06  
 Outside wheel angle with inside wheel at 20°  
 Manual ----- 17.9°  
 Power -----

#### Steering Shaft

Number ----- 2  
 Diameter ----- .75

#### Steering wheel

Type ----- Deep dished  
 Diameter ----- 17.0

#### Linkage

Type ----- Relay  
 Location ----- Front of wheels  
 Number of tie rods ----- 2  
 ● Lubrication points ----- 4: one at each end of each tie rod.

### POWER STEERING, RPO 1 - N40

Description ----- Hydraulic; pump powered cylinder in linkage. Fluid capacity, 2.3 pints.

#### Drive

Type ----- V-belt from crankshaft

#### Pump pulley

PD ----- 5.60  
 "V" Angle ----- 36°  
 Width @ PD ----- .38

#### Crankshaft pulley

PD ----- 6.64  
 "V" angle ----- 36°  
 Width @ PD ----- .38

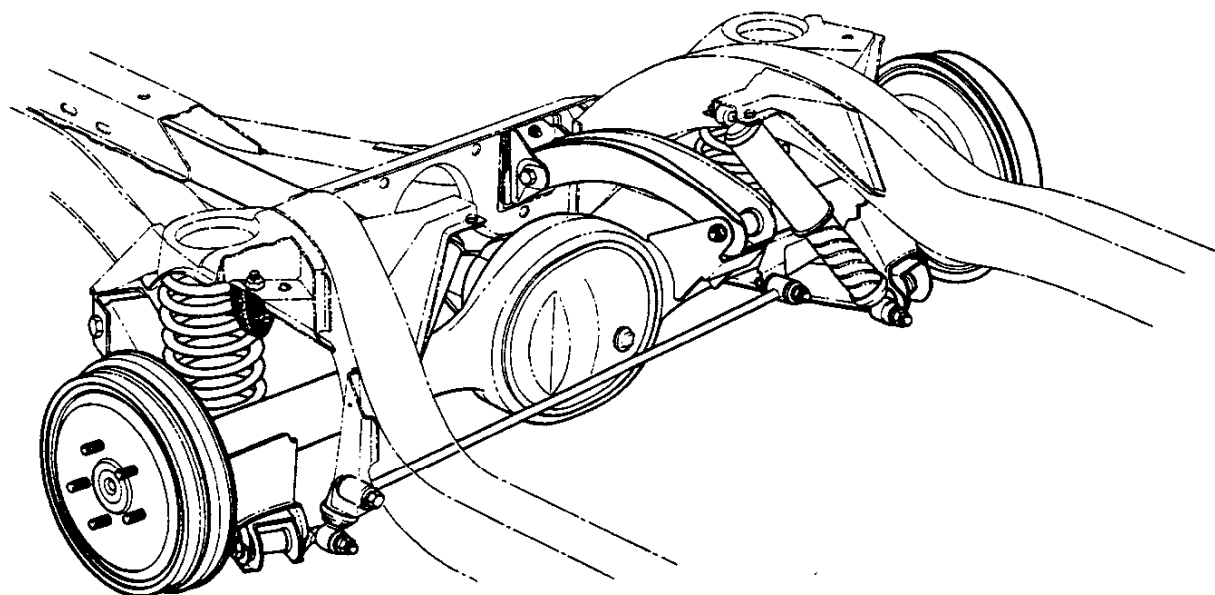
#### Belt

Pitch line length ----- 50.5

#### Cylinder

Bore ----- 1.375  
 Piston travel (unassembled) ----- 8.44  
 Lubrication points ----- One fitting at cylinder piston rod ball stud

## REAR SUSPENSION



### GENERAL

Make ----- Chevrolet  
 Type ----- Four-link with an upper control arm, a lateral control bar, and 2 lower control arms, coil springs.  
 Provision for squat control ----- Rear suspension geometry, drive and torque taken through upper and lower control arms.

### LATERAL CONTROL BAR

Mounting ----- Pivotaly attached at right side of axle housing banjo and at frame left sidemember.  
 Diameter ----- .750  
 Length ----- 31.35-31.47

### WHEEL BEARINGS

Type ----- Single row ball

### WHEEL TRAVEL

Vertical, Loaded Conditions  
 Metal to metal ----- 4.32 up, 5.56 down  
 Wheel to Spring Ratio ----- 1.51:1

### SHOCK ABSORBERS

Make ----- Delco Products  
 Type ----- Direct, double acting, hydraulic  
 Secured to ----- Short cantilever bracket welded to frame side member at upper end (rear of) lower control arm at lower end  
 Piston diameter ----- 1.00  
 Piston travel (nominal) ----- 8.50

**REAR SPRINGS FOR STANDARD ENGINES**

Application	Series	1100			1200			1500				1600			1700					1800									
	Model	11	35	69	11	35	69	11	35	45	69	11	35	45	69	35	39	45	47	67	69	35	39	45	47	67	69		
140 HP engine	Manual or Powerglide	A	B	A				A	B	E	A					B	D	E	C	D									
195 HP engine	Manual or Powerglide				C	B	D					C	B	E	D							B	D	E	C	D			

Application	A	B	C	D	E
Part number	3827042	3832216	3827040	3827041	3777137
Type	Right hand helix				
Material	High alloy steel				
No. of coils (active, total)	7.8, 9.41		8.8, 10.41		7.8, 9.41
Wire diameter	.587	.648		.583	.681
OD	4.812	4.934		4.804	5.000
PD	4.225	4.286		4.221	4.319
Height	Free	15.37	15.85	16.14	16.49
	Working inches @ 1b			9.88@	
Deflection rate, lb/in. , (between 8.78 and 11.78)	At spring	265	340	230	450
	Ride rate				

**REAR SPRINGS FOR RPO ENGINES**

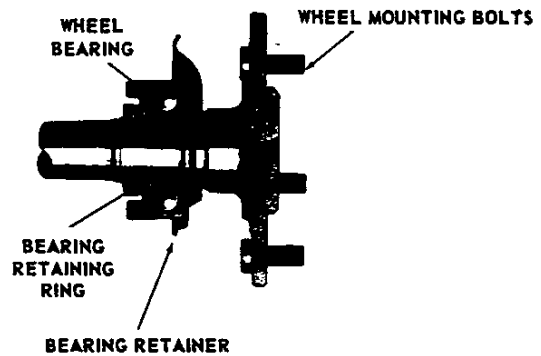
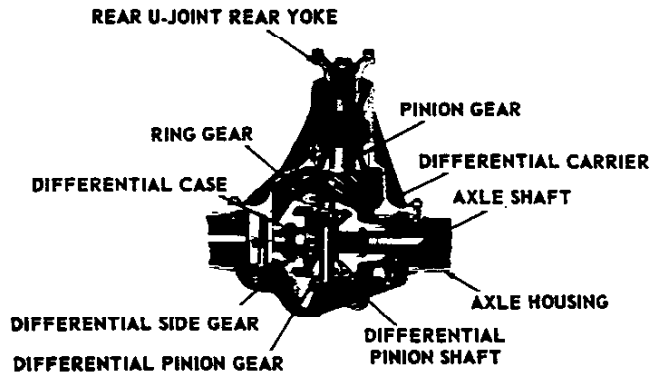
Application	Series	1200			1600				1800					
	Model	11	35	69	11	35	45	69	35	39	45	47	67	69
250 HP engine (RPO 1-L30)	3-speed													
	4-speed													
	Powerglide													
300 HP engine (RPO 1-L74)	3-speed													
	4-speed													
	Powerglide													
340 HP engine (RPO 1-L33)	3-speed													
	4-speed	C				C							C	
	Powerglide													
400 HP engine (RPO 1-L31)	3-speed													
	4-speed	A	B	A	B				A	B	A			A
425 HP engine (RPO 1-L80)	3-speed													
	4-speed													

Application	A	B	C
Part number	3813818	3777137	3827041
Type	Right hand helix		
Material	High alloy steel		
No. of coils (active, total)	7.8, 9.41		8.8, 10.41
Wire diameter	.630	.681	.583
OD	4.898	5.000	4.804
PD	4.268	4.319	4.221
Height	Free	14.35	15.40
	Working inches @ 1b	988@	10.22@
Deflection rate, lb/in. , (between 8.78 and 11.78)	At spring	340	450
	Ride rate		230



# REAR AXLE



## GENERAL

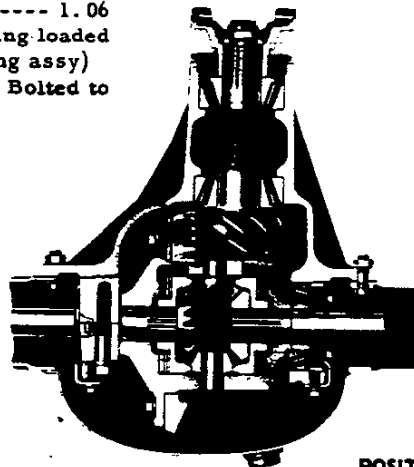
Make ----- Chevrolet  
 Type ----- Semi-floating, hypoid gear, Hotchkiss drive type, with overhung drive pinion supported by two tapered roller bearings  
 Rating ----- 3000 lb  
 Four-Link Suspension Drive:  
 Drive and torque taken through --- All control arms  
 Lateral forces taken through --- Lateral control bar  
 Housing Type ----- Pressed steel banjo, two piece welded construction with axle housing cover welded in place  
 Lubricant Capacity (pints) ----- 4  
 ● Lubricant Recommended --- Military MIL-L-2105-B  
 Viscosity ----- SAE 80

## DIFFERENTIAL

Type ----- Two pinion with Armasteel housing  
 Drive Pinion Offset (℄ differential pinion to ℄ drive pinion, vertically) ----- 1.5  
 Hypoid Drive Ring Gear PD (and OD) ----- 8.375

## AXLE SHAFT

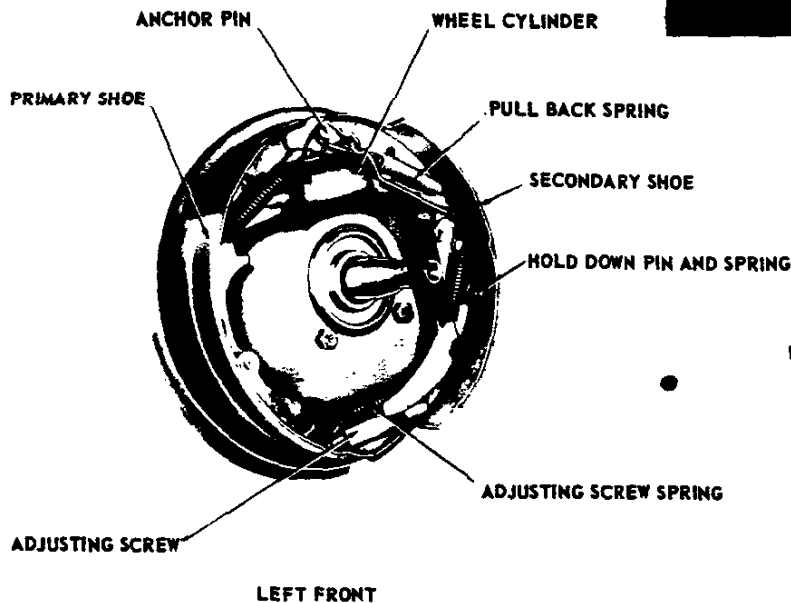
Type and Material ----- Forged and hardened steel with wheel drive flange forged integral with shaft  
 Minimum Diameter ----- 1.06  
 Oil Seal ----- Steel encased spring loaded synthetic rubber (part of rear wheel bearing assy)  
 Hub Attachment ----- Bolted to integrally forged wheel drive flange



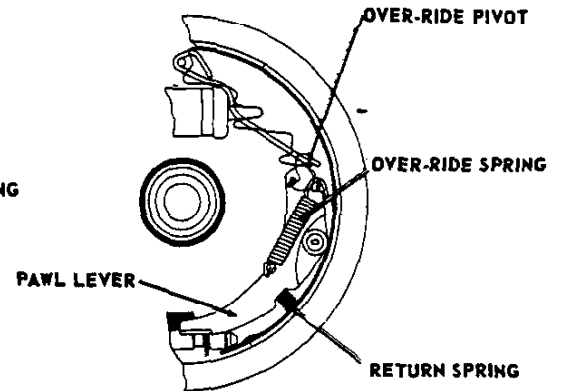
## POSITRACTION

For availability, see POWER TRAINS Section

## BRAKES



LEFT FRONT



SELF-ADJUSTING MECHANISM

### SERVICE BRAKES, Regular Production

#### General

Type	Duo servo, 4-wheel Hydraulic, reverse self-adjusting
Brake system fluid capacity (pts)	.6
Line pressure, psi, @ 100 lb pedal load	750
● Braking ratios	
Pedal	6.21:1
Hydraulic	4.82:1
Overall	29.93:1
Distribution of braking effort (theoretical, percent)	
Front wheels	58.5
Rear wheels	41.5
Clearance adjustment	Self-adjusting
Brake drum	
Construction	Composite, web cast into rim
Material	
Web	HR steel
Rim	Cast iron alloy
Web thickness	
Front	.109-.119
Rear	.095-.105
Swept drum area, sq. inches	328
Diameter, front and rear	11.0
Brake lining	
Material	Full molded asbestos composition
Length	
Per wheel	21.09
Primary shoe	9.34
Secondary shoe	11.75
Width	
Front shoes	2.75
Rear shoes	2.00
Thickness, minimum @ C	.168

Method of attachment	Bonded
Total effective area, sq. inches	185.2
Gross lining area, sq. inches	200.4

#### ● Master Cylinder

Location	Engine compartment on dash panel
Piston diameter	1.00
Piston travel (with available pedal travel)	1.03

#### Wheel cylinders

Location	
Front	Steering knuckle
Rear	On backing plate

#### Piston diameter

Front	1.1875
Rear	1.00

#### Foot pedal

Type	Pendant
Travel	6.38
Mounting	On dash brace

#### PARKING BRAKE

Type	Mechanical pull rods and cables operate two rear service brakes
Total effective area, sq. inches	77
Control	Apply by pendulum foot pedal; release by T handle below instrument panel to left of steering column

#### STOPLIGHT SWITCH

Type	Mechanical, make-break, normally on
Location	On dash panel brace
Activation	Brake pedal

(continued on page 10)

● SERVICE BRAKES, METALLIC, RPO 1-J65

Same as SERVICE BRAKES, regular production, except as follows

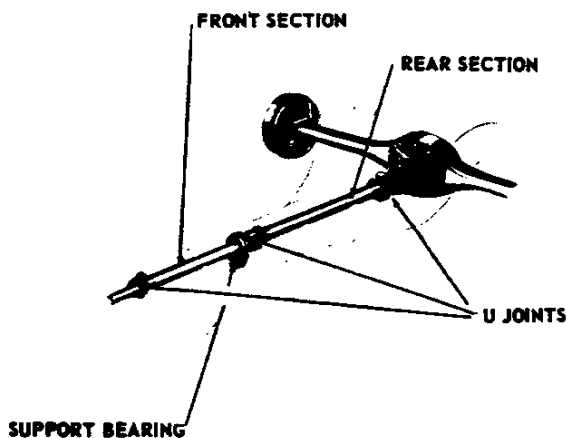
<b>General</b>	
Line pressure, psi, @ 100 pedal load -----	980
<b>Braking ratios</b>	
Pedal -----	6.21:1
Hydraulic -----	6.30:1
Overall -----	39.12:1
<b>Brake drum</b>	
Web thickness	
Front -----	.125-.135
<b>Brake lining</b>	
Material -----	Sintered iron segments
<b>Size</b>	
Front wheel segments	
Primary -----	1.64 x 1.37 x .175
Secondary -----	1.64 x 1.37 x .295
Rear wheel segments	
Primary -----	2.00 x 1.00 x .175
Secondary -----	2.00 x 1.00 x .295
<b>Segments per shoe</b>	
Primary, front and rear -----	6
Secondary	
Front -----	12
Rear -----	10
Method of attachment -----	Welded
Total effective area, sq. inches -----	134.9
<b>Master cylinder</b>	
Piston diameter -----	.875

POWER BRAKES, RPO 1-J50

Same as SERVICE BRAKES, regular production, except as follows

<b>General</b>	
Type -----	Vacuum power unit added to assist regular production master cylinder
Pedal load to actuate power brakes (lb) -----	10
<b>Braking assistance (percent)</b>	
By vacuum power unit -----	40
By foot pedal -----	60
<b>Braking ratios with regular production lining</b>	
Pedal -----	3.43:1
Hydraulic -----	4.82:1
Overall -----	16.53:1
Braking system fluid capacity (pts) -----	.76
Line pressure, psi, @ 100 lb pedal load ----	
● Master cylinder	
Piston travel (with available pedal travel) ----	1.31
● Foot pedal	
Travel -----	4.50

**DRIVELINE**



**PROPELLER SHAFTS**

Description -----	Bearing supported, two-section tubular construction with 3 universal joints; bearing integral with front section
<b>Shafts</b>	
Tube OD -----	1.997-2.003
Tube wall thickness -----	.092-.097
Length (between $\text{C}$ of yoke bores)	
Front section	
3-Speed -----	30.1
4-Speed and overdrive -----	25.0
● Powerglide -----	27.2
Rear section, all transmissions -----	35.0
<b>Support bearing</b>	
Type -----	Single row ball, sealed
<b>Universal joints</b>	
Type -----	Yoke and yoke trunnion
Lubrication -----	No fittings, all universal joints prepacked

## WHEELS AND TIRES

### WHEELS, regular production

Type .....	Short spoke spider
Attachment to hub ----	5 hex nuts, 7/16-20 UNF-2B, arranged on a 4.75 diameter stud circle
Offset .....	.56
Rim size	
Station wagons .....	14 x 6.0 JK
Others .....	14 x 5.0 J

### WHEELS, RPO 1-P05

Same as regular production except chrome plated; in one rim size, 14 x 5.0 J

### TIRES, Regular production

Type .....	Rayon tubeless, blackwall
Construction .....	2-ply
Size	
Wagons .....	8.00 x 14-4 PR
Convertibles .....	7.50 x 14-4 PR
Others .....	7.00 x 14-4 PR

#### Specifications

Loaded rolling radius	
7.00 x 14 .....	12.35
7.50 x 14 .....	12.60
8.00 x 14 .....	12.85
Loaded revolutions per mile	
7.00 x 14 .....	817
7.50 x 14 .....	800
8.00 x 14 .....	785

### Capacity per tire (lb)

7.00 x 14 .....	975
7.50 x 14 .....	1085
8.00 x 14 .....	1175
Inflation pressure, cold, psi	
Front .....	24
Rear except wagons .....	24
Rear, wagons .....	28

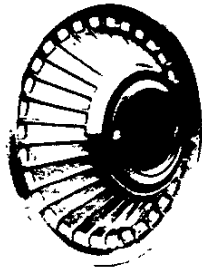
### SPARE TIRE LOCATION

Sedans and coupes .....	Left side of kickup, horizontal
Convertibles .....	Trunk floor to right of well
Station wagons .....	Right rear quarter panel, rear of wheelhouse, vertical

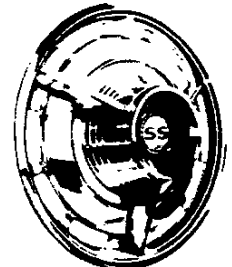
### TOOLS

Jack	
Type .....	Bumper
Wheel wrench .....	Serves also as jack handle and hub cap remover
Stowage .....	Jack column and wrench secured with tire; column base serves as spare wheel retainer

ACCESSORY WHEEL DISK



SUPER SPORT WHEEL DISK



## ELECTRICAL

LAMPS	NO. REQUIRED AND TRADE NO.	CANDLE POWER PER LAMP
Back up	2-1073	32
Compass	1-53	1
Courtesy		
Rear quarter	1-90	6
Instrument panel	2-89	6
Seat console	1-90	6
Dome		
Rear quarter	2-90	6
Roof center	1-211	15
Side rail	2-90	6
Headlamps		
Outer	2-4002	High beam-37.5W Low beam-50W
Inner	2-4001	High beam-37.5W
Instrument panel		
Clock	2-57	2
Fuel gauge	1-57	2
Generator indicator	1-57	2
Glove compartment	1-57	2
Headlamp hi-beam indicator	1-57	2

Continued  
on page 12

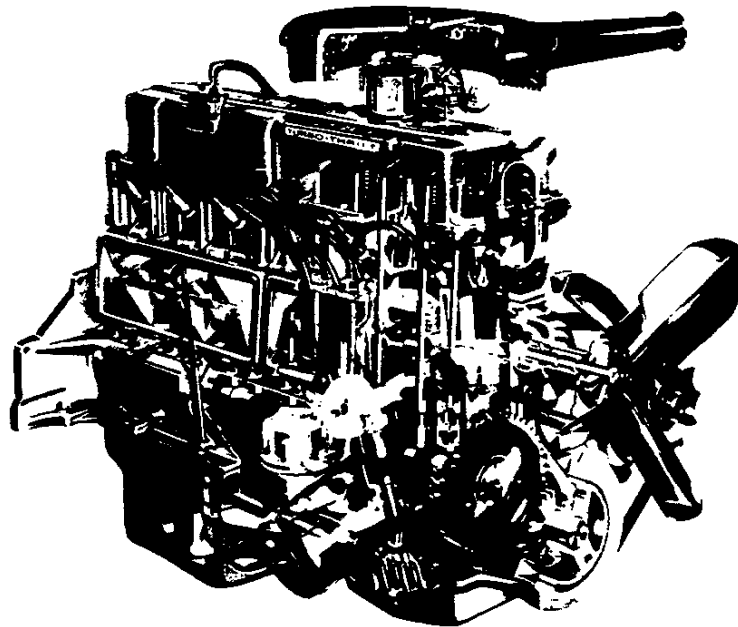
Electrical Continued

Lamps	No. required and trade no.	Candle power
Heater (or air conditioning) controls	1-53	1
Oil pressure indicator	1-57	2
Radio dial	1-1893	2
Speedometer head	3-57	2
Temperature indicator	2-57	2
Turn signal indicators	2-57	2
License plate, rear	1-67	4
Luggage compartment	1-93	15
Park and turn	2-1034	Park-4 Turn-32
Parking brake flasher	1-257	2
Powerglide quadrant	1-53	1
Seat console compartment	1-1891	2
Spotlamp		
Inside operated	1-4405	30W
Portable	1-4416	30W
Tachometer gauge	1-53	1
Tail, stop and turn	2 or 4-1034	Tail-4
Traffic hazard flasher	1-53	Stop and turn-4
Underhood	1-93	15

DEVICE PROTECTED	TYPE OF PROTECTION	LOCATION *
Air conditioning circuit	SAE 20 fuse	FB
Air conditioning blower motor	SAE 20 fuse	EC
Back up lamps	AGC 10 fuse	FB
Clock motor	AGC 15 fuse	FB
Compass lamp	AGC 3 fuse	FB
Courtesy lamps (not on instrument panel)	AGC 15 fuse	FB
Dome lamps	AGC 15 fuse	FB
Headlamps and parking lamps	15 amp circuit breaker	Light switch
Heater	AGC 10 fuse	FB
Hydraulic folding top motor	40 amp circuit breaker	Door pillar
Instrument panel lamps		
Clock	AGC 3 fuse	FB
Courtesy	AGC 15 fuse	FB
Fuel gauge	AGC 3 fuse	FB
Generator indicator	AGC 3 fuse	FB
Glove compartment	AGC 15 fuse	FB
Heater and a/c controls	AGC 3 fuse	FB
Oil pressure indicator	AGC 3 fuse	FB
Radio dial (and radio)	AGC 2.5 fuse	FB
Speedometer head	AGC 3 fuse	FB
Temperature indicators	AGC 3 fuse	FB
License plate lamp, rear	AGC 15 fuse	FB
Luggage compartment lamp	AGC 15 fuse	FB
Overdrive solenoid	AGC 15 fuse	EC
Parking brake flasher	AGC 10 fuse	FB
Power seats	40 amp circuit breaker	Door pillar
Power windows	40 amp circuit breaker	Door pillar
Powerglide quadrant lamp	AGC 3 fuse	FB
Radio (and dial lamp)	AGC 2.5 fuse	FB
Seat console compartment lamp		
Spotlamp, inside operated	AGC 15 fuse	FB
Tachometer gauge lamp	AGC 3 fuse	FB
Tail lamps	AGC 15 fuse	FB
Tail and stop lamps	AGC 15 fuse	FB
Tailgate window motor		
Traffic hazard flasher	AGC 15 fuse	FB
Underhood lamp	SAE 9 fuse	EC
Windshield wiper motor		
Single-speed	SAE 20 fuse	FB
Two-speed	SAE 20 fuse	FB
Two-speed	14 amp circuit breaker	Motor switch

\* - FB = fuse block; EC = engine compartment

# POWER TRAINS



POWER TEAM COMBINATIONS .....	2
TURBO-THRIFT 230 SIX CYLINDER ENGINE .....	4
TURBO-FIRE 283 V-8 ENGINE .....	11
TURBO-FIRE 327 V-8 ENGINE .....	18
TURBO-FIRE 409 V-8 ENGINE .....	27
CLUTCHES .....	36
THREE AND FOUR SPEED TRANSMISSIONS .....	37
OVERDRIVE UNIT .....	39
POWERGLIDE .....	40

# POWER TEAM COMBINATIONS

<u>ENGINE</u>	<u>EQUIPMENT</u>	<u>TRANSMISSION</u>	<u>AXLE RATIO</u>	<u>POSITRACTION AXLE RATIOS</u>	
230 CUBIC INCH L-6 TURBO-THRIFT 230 140 HORSEPOWER	SINGLE BARREL CARBURETOR HYDRAULIC LIFTERS	●			
		3-SPEED & POWERGLIDE *			
		SEDANS AND COUPES .....	3.08:1 (A) (B) .....	3.08:1	
		CONVERTIBLE .....	3.36:1 (B) .....	3.36:1	
		STATION WAGONS .....	3.55:1 .....	3.55:1	
		OVERDRIVE .....	3.70:1 .....	3.70:1	
283 CUBIC INCH V-8 TURBO-FIRE 283 195 HORSEPOWER	2-BARREL CARBURETOR HYDRAULIC LIFTERS	3-SPEED & POWERGLIDE			
		12 and 1600 SEDANS .....	3.08:1 (A) (B) .....	3.08:1	
		1800 MODELS .....	3.36:1 (B) .....	3.36:1	
		STATION WAGONS .....	3.36:1 (B) .....	3.55:1	
		OVERDRIVE .....	3.70:1 .....	3.70:1	
327 CUBIC INCH V-8 TURBO-FIRE 327 250 HORSEPOWER RPO L30	4-BARREL CARBURETOR HYDRAULIC LIFTERS	3-SPEED .....	3.36:1 .....	3.36:1	
		4-SPEED .....	3.36:1 .....	3.36:1	
		POWERGLIDE .....	3.08:1 (C) .....	3.08:1	
327 CUBIC INCH V-8 TURBO-FIRE 327 300 HORSEPOWER RPO L74	LARGE 4-BARREL ALUMINUM CARBURETOR HYDRAULIC LIFTERS	3-SPEED .....	3.36:1 .....	3.36:1	
		4-SPEED .....	3.36:1 .....	3.36:1	
		POWERGLIDE .....	3.36:1 .....	3.36:1	
409 CUBIC INCH V-8 TURBO-FIRE 409 340 HORSEPOWER RPO L33	LARGE 4-BARREL CARBURETOR HYDRAULIC LIFTERS	3-SPEED .....	3.36:1 .....	3.36:1	
				3.36:1	
		4-SPEED (2.54:1 LOW) .....	3.36:1 .....	4.11:1	
				4.56:1	
		POWERGLIDE .....	3.36:1 .....	3.36:1	
409 CUBIC INCH V-8 TURBO-FIRE 409 400 HORSEPOWER RPO L31	LARGE 4-BARREL ALUMINUM CARBURETOR SPECIAL CAMSHAFT MECHANICAL LIFTERS	3-SPEED .....	3.36:1 .....	3.36:1	
				3.36:1	
		4-SPEED (2.20:1 LOW) .....	3.36:1 .....	4.11:1 (D)	
				4.56:1 (D)	
		4-SPEED (2.54:1 LOW) .....	3.36:1 .....	3.36:1	
409 CUBIC INCH V-8 TURBO-FIRE 409 425 HORSEPOWER RPO L80	TWO 4-BARREL ALUMINUM CARBURETOR SPECIAL CAMSHAFT MECHANICAL LIFTERS	3-SPEED .....	3.36:1 .....	3.36:1	
				3.36:1	
		4-SPEED .....	3.36:1 .....	4.11:1 (D)	
				4.56:1 (D)	
		4-SPEED (2.54:1 LOW) .....	3.08:1 (C) .....	3.08:1	
				3.36:1 (E)	

- (\*) - General Purpose Standard
- (A) - 3.36:1 available as Performance option also as Positraction
- (B) - 3.55:1 available as Special Purpose or Mountain option also as Positraction
- (C) - Performance Cruise
- (D) - 4.11:1 and 4.56:1 available as High Performance Positraction option only
- (E) - 3.36:1 available as Performance Positraction option only

## MULTIPLICATION FACTORS

### WITH MANUAL TRANSMISSIONS

ENGINE	CARBU-RETION	TRANS-MISSION		TOTAL GEAR REDUCTION*					AXLE RATIO	MAX AXLE TORQUE LOW# GEAR (LB-FT)		
				1st	2nd	3rd	4th	Rev				
140 HP Six Cyl Turbo-Thrift	Single Barrel	3-Speed		9.06	5.17	3.08		10.29	3.08:1	1579		
		Overdrive	out	10.88	6.22	3.70		12.36		3.70:1	1896	
195 HP V-8 Turbo-Fire	2-Barrel	3-Speed		9.06	5.17	3.08		10.29	3.08:1	1887		
		Overdrive	out	10.88	6.22	3.70		12.36		3.70:1	2265	
250 HP V-8 Turbo-Fire RPO L30	4-Barrel	3-Speed		8.30	5.14	3.36		9.41	3.36:1	2222		
		4-Speed		8.53	6.35	5.07		3.36		8.77	3.36:1	2285
300 HP V-8 Turbo-Fire RPO L74	4-Barrel Aluminum	3-Speed		8.30	5.14	3.36		9.41	3.36:1			
		4-Speed		8.53	6.35	5.07		3.36		8.77	3.36:1	
340 HP V-8 Turbo-Fire RPO-L33	4-Barrel	3-Speed		8.30	5.14	3.36		9.41	3.36:1			
		4-Speed		8.53	6.35	5.07		3.36		8.77	3.36:1	
400 HP V-8 Turbo-Fire RPO L31	4-Barrel Aluminum Special Cam	3-Speed		8.30	5.14	3.36		9.41	3.36:1			
		4-Speed		8.53	6.35	5.07		3.36		8.77	3.36:1	
		4-Speed		7.39	5.51	4.40		3.36		7.59	3.36:1	
425 HP V-8 Turbo-Fire RPO L80	2 x 4 Barrel Special Cam	3-Speed		8.30	5.14	3.36		9.41	3.36:1			
		4-Speed		7.82	5.82	4.65		3.08		8.04	3.08:1	
		4-Speed		7.39	5.51	4.40		3.36		7.59	3.36:1	

### WITH AUTOMATIC TRANSMISSIONS

ENGINE	TRANSMISSION	SELECTOR POSITION	TOTAL TORQUE MULTIPLICATION*	AXLE RATIO
140 HP Six Cyl Turbo-Thrift	Powerglide	Drive	11.77:1 - 3.08:1	3.08:1
		Low & Reverse	11.77:1 - 5.61:1	
195 HP V-8 Turbo-Fire	Powerglide	Drive	11.77:1 - 3.08:1	3.08:1
		Low & Reverse	11.77:1 - 5.61:1	
250 HP V-8 Turbo-Fire RPO-L30	Powerglide	Drive	11.40:1 - 3.08:1	3.08:1
		Low & Reverse	11.40:1 - 5.42:1	
300 HP V-8 Turbo-Fire RPO-L74	Powerglide	Drive	12.43:1 - 3.36:1	3.36:1
		Low & Reverse	12.43:1 - 5.91:1	
425 HP V-8 Turbo-Fire RPO-L33	Powerglide	Drive	12.43:1-3.36:1	3.36:1
		Low & Reverse	12.43:1-3.36:1	

\* - Axle ratio x transmission ratio

# - Gear reduction x maximum net engine torque x efficiency factor (0.90 in drive, 0.85 all others)



# 230 CUBIC INCH SIX CYLINDER ENGINE

1963

## GENERAL DATA

		Synchromesh	Overdrive	Powerglide
Piston Displacement (Cu In)		230		
Type		Valve-in-head		
Number Cylinder		6		
Bore and Stroke (nominal)		3.875 x 3.25		
Compression Ratio		8.5:1		
Taxable (SAE) Horsepower		36		
Firing Order		1-5-3-6-2-4		
Idling Speed (RPM)		500 in neutral	475 in drive	
Compression Press. (PSI) @ Cranking Speed, Engine Hot		140		
Lubrication		Full pressure		
Power Plant Mounting		Two at center combination compression & shear type; one rear, full shear type		
Measurements	Fan to rear of engine block	34.96 (a)		
	Top of oil filler to bottom of oil pan	26.67		
	Oil filter to air cleaner (width)	28.37		

(a) - Including fan spacer of 2.29 inches.

## ADVERTISED ENGINE RATINGS

Engine	Turbo-Thrift 230		
Carburetor	Single Barrel		
Brake Horsepower	Gross	140 @ 4400 RPM	
	Net	120 @ 3600 RPM	
Torque (Lb-Ft)	Gross	220 @ 1600 RPM	
	Net	205 @ 1600 RPM	

## ENGINE SPEED AND PISTON TRAVEL

Transmission	3-Speed	3-Speed with Overdrive		Powerglide
		OD Locked Out	OD Locked In	
Rear Axle Ratio	3.08:1#	3.70:1		3.08:1#
Tire Size	7.00 x 14-4 PR*			
Crankshaft Revolutions per Mile	2516.4	3022.9	2116.0	2516.4
Crankshaft RPM @ 1 MPH	Low	123.3	148.1	76.3
	Second	70.5	84.6	59.3
	Direct (N/V Factor)	41.9	50.4	41.9
	Reverse	140.1	168.3	76.3
Piston Travel (ft/mile)	1363.1	1637.4	1146.2	1321.5

\* - 7.50 x 14-4 PR standard on Convertible and 8.00 x 14-4 PR standard on Station Wagons.

# - 3.36:1 on Model 1767 Impala convertible and 3.55:1 on Station Wagons.

**VEHICLE PERFORMANCE FACTORS**  
(Model 1569)

Transmission	3-Speed	3-Speed with Overdrive		Powerglide*
		Locked out	Locked in	
Performance Weight (pounds)	4026	4061		4056
Pounds per Gross Horsepower	28.76	29.01		28.97
Pounds per Cu In Displacement	17.50	17.66		17.63
Gross HP per Cu In Displacement	.609			
Power Displacement (Cu Ft/mile)	167.47	201.18	140.82	167.47
Displacement Factor (Cu Ft/ton mile)	83.19	99.10	69.37	82.58

\* - Data computed assuming zero slippage in torque converter.

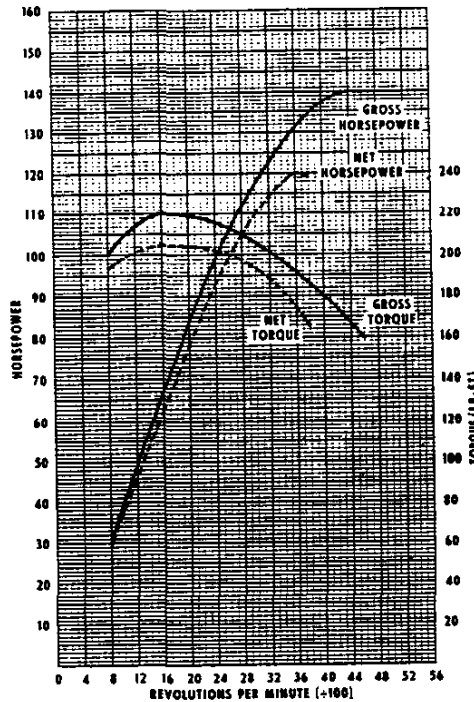
**GLOSSARY**

Performance Weight = Curb Weight plus 600 Lb  
(weight of four 150 Lb passengers)

Power Displacement =  $\frac{\text{Crankshaft Revs/Mi} \times \text{Piston Displacement}}{2 \times 1728}$

Displacement Factor =  $\frac{\text{Power Displacement}}{\text{Performance Wt (tons)}}$

● 140 HP TURBO-THRIFT L-6



The engine performance curves represent full throttle performance as obtained from dynamometer test data corrected to standard barometric pressure 29.92 inches of mercury and standard temperature of 60°F.

GROSS POWER and TORQUE were obtained in a regular dynamometer test with the dynamometer exhaust

system, no fan, generator not charging, optimum spark advance, and optimum fuel setting.

NET POWER and TORQUE were obtained from a dynamometer test simulating actual operating conditions when the engine is in its vehicle, except the generator is not charging.

# 230 CUBIC INCH SIX CYLINDER ENGINE - Cont'd.

## PRINCIPAL COMPONENTS

### CYLINDER BLOCK

Material ----- Cast alloy iron  
 Bore Diameter ----- 3.8745-3.8775  
 No of Bulkheads ----- 7  
 Water Jacket ----- Full length  
 Cylinder Numbering Arrangement  
 Front to Rear ----- 1-2-3-4-5-6  
 ● Bore Spacing (⊘ to ⊘) ----- 4.4

### CYLINDER HEAD

Material ----- High chrome cast alloy iron  
 Bolt No. & Size ----- 14; .500 dia. 13 threads/in.  
 Combustion Chamber Volume ----- 5.31 cu. in.

### INLET MANIFOLD

Material ----- Cast alloy iron  
 Type ----- 3 port, rectangular section  
 Heat Provision ----- Heated by exhaust gases

### EXHAUST MANIFOLD

Material ----- Cast alloy iron  
 Type ----- Low resistance  
 Outlet Diameter (nominal) ----- 2.00

### CRANKSHAFT

Material ----- High strength forged steel  
 or nodular iron casting  
 End Play ----- .002-.006  
 Counter Weights ----- 4  
 Crank Arm Length ----- 1.625  
 Vibration Damper ----- Rubber mounted inertia  
 Timing Gear and Tooth Type ----- Steel, helical cut  
 Pulley Pitch Diameter ----- 6.64

### MAIN BEARINGS

Material ----- Extra-life steel backed babbitt  
 Type ----- Precision removable  
 Thrust Against Bearing No ----- 7  
 Clearance ----- .0008-.0034

Dimensions			
Bearing	Theoretical Inner Dia	Effective Length	Projected Area
1-6	2.3009	.752	1.7303
7	2.3004	.760	1.7483

### CAMSHAFT

Material ----- Cast alloy iron  
 Drive ----- Gear; Bakelite and fabric composition with steel hub

### Lobe Lift

Inlet ----- .1914  
 Exhaust ----- .1914

### Bearings

Material ----- Extra-life steel backed babbitt

Dimensions			
Bearing	Rear Diameter	Effective Length	Projected Area
1-4	1.8712	.866	1.6092

### VALVE TRAIN

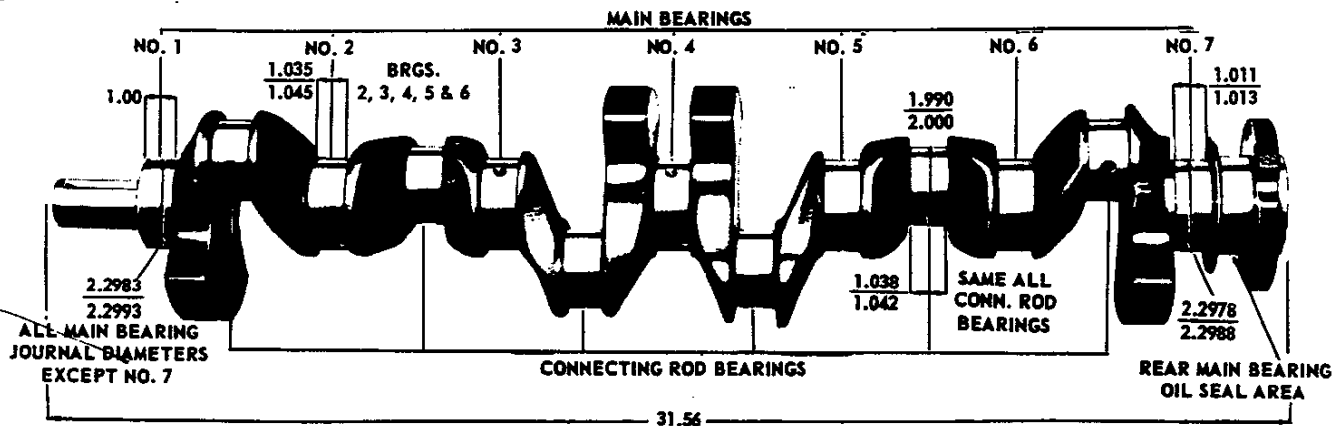
Type ----- Individually mounted overhead rocker arms push rod actuated

Lifters ----- Hydraulic

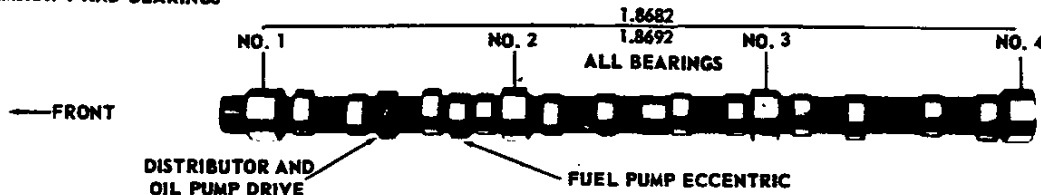
### Push Rods

Type & Material ----- Hollow steel  
 Ends ----- Hardened

### ● CRANKSHAFT AND BEARINGS



### ● CAMSHAFT AND BEARINGS



PRINCIPAL COMPONENTS - Continued

ROCKER ARMS

Type & Material ----- Stamped steel  
 Ratio ----- 1.75:1

VALVE SPRINGS

Diameter (I. D.) ----- .880  
 Installed Length (in@lb)  
     Valves Closed ----- 1.66 @ 84-92  
     Valves Open ----- 1.33 @ 166-176  
 Free Length ----- 2.03  
 Valve Spring Damper ----- None  
 Oil Shields ----- Steel Cups

VALVES

Inlet Material ----- Carbon steel  
 Coating ----- None  
 Exhaust Material ----- High alloy steel  
 Coating ----- None

VALVE LIFT

Inlet ----- .3350  
 Exhaust ----- .3350

VALVE TRAIN LASH

Inlet ----- Zero  
 Exhaust ----- Zero

VALVE TIMING

	Excluding Ramps	Including Ramps
<b>Inlet Valve</b>		
Opens - BTC	18°	34°
Closes - ABC	54°	86°
Duration	252°	300°
<b>Exhaust Valve</b>		
Opens - BBC	52°	68°
Closes - ATC	20°	52°
Duration	252°	300°

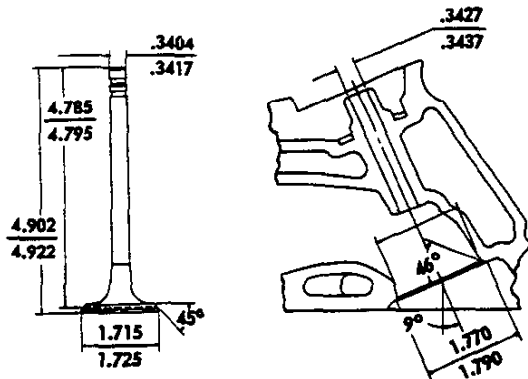
PISTON

Material ----- Cast aluminum alloy  
 Head Type ----- Flat notched  
 Skirt Type ----- Slipper  
 Top Land Clearance ----- .035-.044  
 Skirt Clearance ----- .0006-.0010  
 Compression Ring Groove Depth ----- .2153-.2218  
 Oil Ring Groove Depth ----- .2093-.2158  
 Pin Bore Offset ----- .055-.065  
 ● Compression Height ----- 1.799-1.801

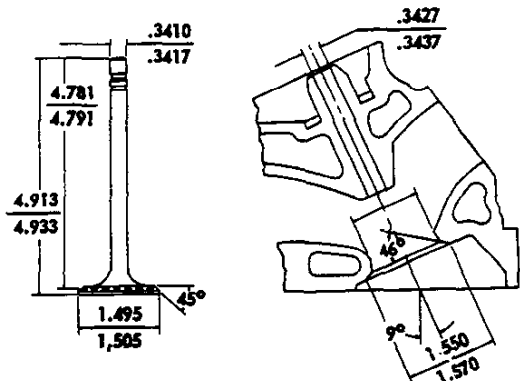
COMPRESSION RING-UPPER

Material ----- Cast alloy iron  
 Inside Bevel ----- Bottom of ring 30 degrees to piston vertical axis  
 Ring Face ----- Tapered  
 Coating ----- Flash chrome plating  
 Width ----- .0775-.0780  
 Wall Thickness ----- .179-.184  
 Gap ----- .010-.020

● INLET VALVE



● EXHAUST VALVE



# 230 CUBIC INCH SIX CYLINDER ENGINE - Cont'd.

## PRINCIPAL COMPONENTS - Continued

### COMPRESSION RINGS-LOWER

Material .....	Cast alloy iron
Inside Bevel .....	Top of ring 30 degrees To piston vertical axis
Ring Face .....	Tapered
Coating .....	Wear resistant
Width .....	.0770-.0780
Wall Thickness .....	.184-.194
Gap .....	.010-.020

### OIL CONTROL RINGS

Material .....	Steel
Type .....	Multi-piece (2 rails and one spacer)
Width .....	.193-.195 assembled
Wall Thickness .....	.150-.156
Gap .....	.015-.055
Rail Coatings (O. D.) .....	Chrome plated

### PISTON PINS

Material .....	Chromium steel
Length .....	2.990-3.010
Diameter .....	.9270-.9273
Clearance in piston .....	.00015-.00025
Pin Mounting .....	Locked in rod by shrink fit

### CONNECTING RODS

Material .....	Forged steel
Length (center to center) .....	5.70

### CONNECTING ROD BEARINGS

Material .....	Extra-life steel backed babbitt
Type .....	Precision removable
Clearance .....	.0007-.0027
Theo I. D. ....	2.0016
Effective Length .....	.807
End Play .....	.008-.014

## FUEL SYSTEM

### FUEL TANK

Capacity (Gal)	
Sedans & Coupes .....	20
Station Wagon .....	19
Fuel Tank Location	
Station Wagon .....	In left quarter panel behind rear wheel
Remaining Models .....	Rearward of rear axle kick-up, in shelf area
Filler Location .....	Behind opening in left rear quarter panel
Gauge .....	AC electric

### FUEL FILTER

In Fuel Tank .....	Mesh strainer in fuel line
In Carburetor Inlet .....	Sintered bronze filter

### FUEL PUMP ASSEMBLY

Make .....	AC
Drive .....	Camshaft eccentric
Type .....	Diaphragm
Location .....	Right side front of engine
Pressure Range .....	3.50-4.50 PSI

### AIR CLEANER

Make & Type --	AC, Oil wetted polyurethane element
----------------	-------------------------------------

### CARBURETOR

Make .....	Rochester
Type .....	Single barrel, downdraft
SAE Flange Size .....	1.50
Throttle Bore .....	1.56
Venturi Diameter .....	1.34

## EXHAUST and VENTILATION SYSTEM

### EXHAUST SYSTEM

Type .....	Single
------------	--------

### MUFFLERS

Type .....	Oval, reverse flow
Construction .....	Heads and body joined by rolled lock seam construction
Shell .....	.047 sheet steel
Head .....	.048 sheet steel
Baffles .....	6; .035 sheet steel
Coating --	Interior and exterior completely aluminized
Length, Body .....	29.24
Width (I. D.) .....	3.24
Height (I. D.) .....	7.74

### EXHAUST PIPE

Dimensions (O. D.) .....	2.00
Wall thickness .....	.063

### TAIL PIPE

Dimensions (O. D.) .....	1.875
Wall thickness .....	.062-.076

### ENGINE VENTILATION

Type .....	Positive;
	Fumes withdrawn into induction system, fresh air enters the crankcase through oil breather cap and oil filler tube.

## LUBRICATION SYSTEM

### GENERAL

Type ----- Controlled full pressure  
 Main Bearings ----- Pressure  
 Connecting Rods ----- Pressure  
 Piston Pins ----- Splash  
 Cylinder Walls --- Main & conn. rod brg. throwoff  
 Camshaft Bearings ----- Pressure  
 Valve Lifters ----- Pressure  
 Rocker Arms ----- Pressure  
 Timing Gears ----- Oil nozzle  
 Oil Pressure Sending Unit  
 Type ----- Electric  
 Actuation ---- Opens or closes circuit @ 2 to 6 PSI  
 Oil Filler  
 Cap ----- Oil wetted crimped aluminum breather  
 Location ----- Forward end rocker cover

### CRANKCASE CAPACITY (Quarts)

Refill ----- 4.0  
 Refill with Filter Change ----- 5.0

### OIL PUMP

Type ----- Gear  
 Regulator Valve ----- Opens between 40-45 lbs

Oil Pressure @ 1500 RPM ----- 30-45 PSI  
 Intake Type ----- Fixed pickup with screen  
 Capacity (GPM @ Eng RPM) ----- 4.3 @ 2000

### OIL FILTER

Make ----- AC  
 Type ----- Full flow throwaway canister  
 Location ----- Right side front  
 Capacity (qts) ----- One  
 By Pass Valve ----- Opens between 9 to 11 PSI  
 drop in pressure

### LUBRICANT GRADES AND TEMPERATURES

32°F and Above -- SAE 20W, SAE 20 or SAE 10W-30  
 0°F and Above ----- SAE 10W or SAE 10W-30  
 Below 0°F ----- SAE 5W or SAE 5W-20

### OIL PAN DRAIN SCREW

Type ----- Hex head  
 Location ----- Rear lower part of oil pan sump  
 Size Hex Head ----- 860-.875  
 Thread ----- 1/2-20 UNF-2A  
 Length ----- 0.81  
 Diameter ----- .410-.430

## COOLING SYSTEM

### GENERAL

Type ----- Pressure  
 Capacity with Heater (Standard Equipment) --- 12 Qts

### RADIATOR

Make and Type ----- Harrison, tube on center  
 Core Constant and Thickness  
 Distance between fins ----- .25 (Syn) .22 (P/Gld)  
 Distance between tubes ----- .55  
 Thickness of core ----- 1.26  
 Frontal Area (Sq. In.) ----- 324

### RADIATOR, HEAVY DUTY (RPO-VO1)

Core Constant and Thickness  
 Distance between fins ----- .22  
 Distance between tubes ----- .55  
 Thickness of core ----- 1.75  
 Front Area (Sq In) ----- 429

### RADIATOR CAP RELIEF VALVE

Opens at ----- Approx 13 PSI

### THERMOSTAT

Make and Type ----- Harrison, pellet  
 Begins to Open at ----- 177°-183°F  
 Fully Opened at ----- 212°F

### RADIATOR HOSE

Outlet, Lower (radiator to water pump) ---- 1.75 ID  
 Inlet, Upper (thermostat hsg. to radiator) -- 1.50 ID

### FAN

Number of Blades ----- 4, staggered  
 Diameter ----- 17.62  
 Fan Pulley Pitch Diameter ----- 7.00

### WATER PUMP

Type ----- Centrifugal  
 Capacity ----- 65 GPM @ 4400 RPM  
 Bearing ----- Permanent lubricated double row ball  
 Drive ----- Fan belt  
 Ratio (pump to engine RPM) ----- 949:1

### BELT, CRANKSHAFT, FAN AND GENERATOR

Number used ----- One  
 Angle of "V" ----- 37°-44°  
 Pitch Line ----- 41.50  
 Width ----- .375

### DRAIN LOCATIONS

Radiator ----- Right side bottom  
 Type ----- Petcock  
 Engine Block ----- Left rear side  
 Type ----- Plug

# 230 CUBIC INCH SIX CYLINDER ENGINE - Cont'd.

## ELECTRICAL SYSTEM

### SUPPLY SYSTEM

#### BATTERY

Make ----- Delco-Remy  
 Voltage Rating ----- 12  
 Capacity (SAE) ----- 44 Amp hr @ 20hr rate  
 Heavy Duty (RPO T60) --- 70 Amp hr @ 20 hr rate  
 Total Number of Plates ----- 54; Heavy Duty 66  
 Number of Cells ----- 6  
 Terminal Grounded ----- Negative  
 Location ----- Right front engine compartment

#### GENERATOR

Make ----- Delco-Remy  
 Type ----- Diode rectified  
 Rating  
 Amps ----- 9-37  
 Volts ----- 12-15  
 Drive ----- By fan belt  
 Pulley Pitch Diameter ----- 2.88  
 Ratio (Gen to Engine Speed) ----- 2.30:1

#### REGULATOR

Make ----- Delco-Remy  
 Type ----- Two unit, Vibrator  
 Voltage Regulator  
 Voltage ----- 13.8-14.8 @ 85°F  
 Field Relay (Combination light and field relay)  
 Closing Voltage ----- 1-3 Volts @ 80°F  
 Location ----- Left side front engine compartment

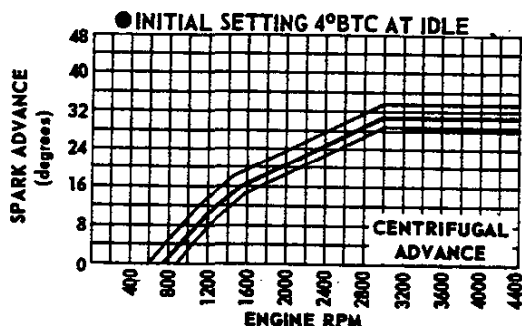
### STARTING SYSTEM

#### STARTING MOTOR

Make ----- Delco-Remy  
 Rotation (drive end view) ----- Clockwise  
 Test Conditions ----- Engine at operating temp  
 No Load Test  
 Amps ----- 49-76  
 Volts ----- 10.6  
 RPM ----- 6200-9400

#### Motor Drive

Engagement ----- Solenoid  
 Pinion meshes at ----- Rear  
 Pinion tooth no. ----- 9  
 Flywheel tooth no. ----- 153  
 Mounting ----- Cylinder block flange



### STARTING

Ignition Switch ----- Five (5) positions  
 Accessory, Lock, Off, On, Start  
 Starting Procedure  
 Synchromesh --- Place gearshift lever in neutral and depress clutch pedal to floor  
 Powerglide -- Place control lever in N or P position  
 Initial Start ----- Depress accelerator to floor and release. Turn ignition to START and release as soon as engine starts. When engine is warm or outside temperature is below 0°F hold accelerator about half way open.

### IGNITION SYSTEM

#### COIL

Make ----- Delco-Remy  
 Type ----- 12 volt  
 Amperes Drawn  
 Engine stopped ----- 4.0  
 Engine idling ----- 1.8

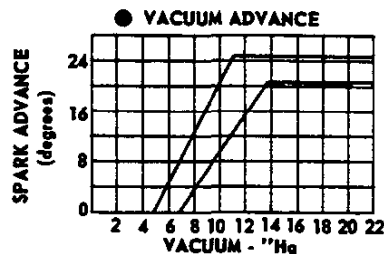
#### DISTRIBUTOR

Make ----- Delco-Remy  
 Type ----- Single breaker  
 Cam angle ----- 31°-34°  
 Breaker Gap ----- .019 (new)  
 Breaker Arm Tension ----- 19-23 oz  
 Centrifugal Advance Begins (RPM) ----- 800  
 Max Degrees @ RPM ----- 30° @ 3000  
 Vacuum Advance Begins (In Hg) ----- 6  
 Max Degrees @ In Hg ----- 23 @ 12  
 Timing (Initial Design Setting)  
 Crankshaft Degrees @ RPM- 4°±1°BTC @ 450-500 with vacuum spark line disconnected  
 Timing Mark Location ----- Harmonic balancer  
 Firing Order ----- 1-5-3-6-2-4

CABLE ----- Linen core impregnated with electrical conducting material and insulation of rubber with neoprene jacket.

#### SPARK PLUGS

Make ----- AC 46N (long reach)  
 Thread Size (mm) ----- 14  
 Gap ----- .033-.038  
 Torque ----- 25 lb. ft



# 283 CUBIC INCH V-8 ENGINES

1963

## GENERAL DATA

Piston Displacement (Cu In)	Synchromesh	Overdrive	Powerglide
Type	283		
Number Cylinders	Valve-in-head		
Bore and Stroke (nominal)	8		
Compression Ratio	3.875 x 3.000		
Taxable (SAE) Horsepower	9.25:1		
Firing Order	48		
Idling Speed (RPM)	1-8-4-3-6-5-7-2		
Compression Press (PSI) @ Cranking Speed Engine Hot	500 in neutral		475 in drive
Lubrication	150		
Power Plant Mounting	Full pressure		
Measurements	Two front, combination compression & shear type; one rear, full shear type		
	Fan to rear of engine block		30.14
	Top air cleaner to bottom oil pan		29.57
	Exhaust manifold to generator (width)		28.92

## ADVERTISED ENGINE RATINGS

Engine	Turbo-Fire 283	
Carburetor	2-Barrel	
Brake Horsepower	Gross	195 @ 4800
	Net	150 @ 4400
Torque (Lb-Ft)	Gross	285 @ 2400
	Net	245 @ 2400

## ENGINE SPEED AND PISTON TRAVEL

Transmission	3-Speed	3-Speed with Overdrive		Powerglide
		Locked out	Locked in	
Rear Axle Ratio	3.08:1 *	3.70:1		3.08:1 *
Tire Size		7.00 x 14-4 PR#		
Crankshaft Revolutions per Mile	2516.4	3022.9	2116.0	2516.4
Crankshaft RPM @ 1 MPH	Low	123.3	148.1	76.3
	Second	70.5	84.6	
	Direct	41.9	50.4	41.9
	Reverse	140.1	168.3	76.3
Piston Travel (Ft/mile)	1258.2	1511.5	1058.0	1258.2

\* - 3.36:1 on 1800 models and Station Wagons

# - 7.50 x 14-4 PR on Convertible and 8.00 x 14-4 PR on Station Wagon



# 283 CUBIC INCH V-8 ENGINE - Cont'd.

## VEHICLE PERFORMANCE FACTORS (Model 1669)

Transmission	3-Speed	3-Speed with Overdrive		Powerglide*
		Locked out	Locked in	
Performance Weight (pounds)	4174	4209		4205
Pounds per Gross Horsepower	21.40	21.59		21.56
Pounds per Cu In Displacement	14.75	14.87		14.86
Gross HP per Cu In Displacement		.689		
Power Displacement (Cu Ft/mile)	206.06	247.54	173.27	206.06
Displacement Factor (Cu Ft/ton mile)	98.73	111.65	82.35	98.03

\* Data computed assuming zero slippage in torque converter.

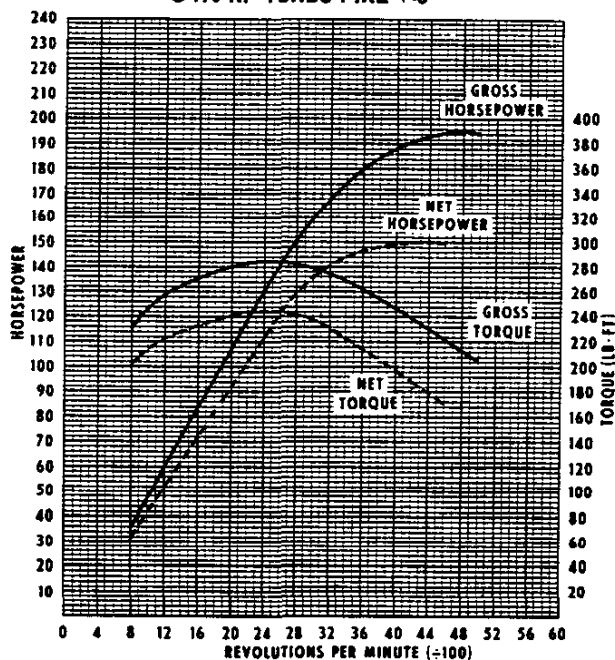
### GLOSSARY

Performance Weight = Curb Weight plus 600 Lb  
(weight of four 150 Lb passengers)

Power Displacement =  $\frac{\text{Crankshaft Revs/Mi} \times \text{Piston Displacement}}{2 \times 1728}$

Displacement Factor =  $\frac{\text{Power Displacement}}{\text{Performance Wt (tons)}}$

### ● 195 HP TURBO-FIRE V-8



The engine performance curves represent full throttle performance as obtained from dynamometer test data corrected to standard barometric pressure 29.92 inches of mercury and standard temperature of 60°F..

GROSS POWER and TORQUE were obtained in a regular dynamometer test with the dynamometer exhaust

system, no fan, generator not charging, optimum spark advance, and optimum fuel setting.

NET POWER and TORQUE were obtained from a dynamometer test simulating actual operating conditions when the engine is in its vehicle, except the generator is not charging.

## PRINCIPAL COMPONENTS

### CYLINDER BLOCK

Material ----- Cast alloy iron  
 Bore Diameter ----- 3.8745-3.8775  
 No of Bulkheads ----- 5  
 Water Jacket ----- Full length around each cylinder  
 Cylinder Numbering Arrangement (Front to Rear)  
     Left Bank ----- 1-3-5-7  
     Right Bank ----- 2-4-6-8  
 ● Bore Spacing (℄ to ℄) ----- 4.4

### CYLINDER HEAD

Material ----- High chrome cast alloy iron  
 Bolt No & Size ----- 34; .4375 dia. 14 threads /in  
 Combustion Chamber Volume ----- 4.39 cu in

### INLET MANIFOLD

Material ----- Cast alloy iron  
 Type ----- 8 port double-deck  
 Heat Provision ----- Heated by exhaust gases

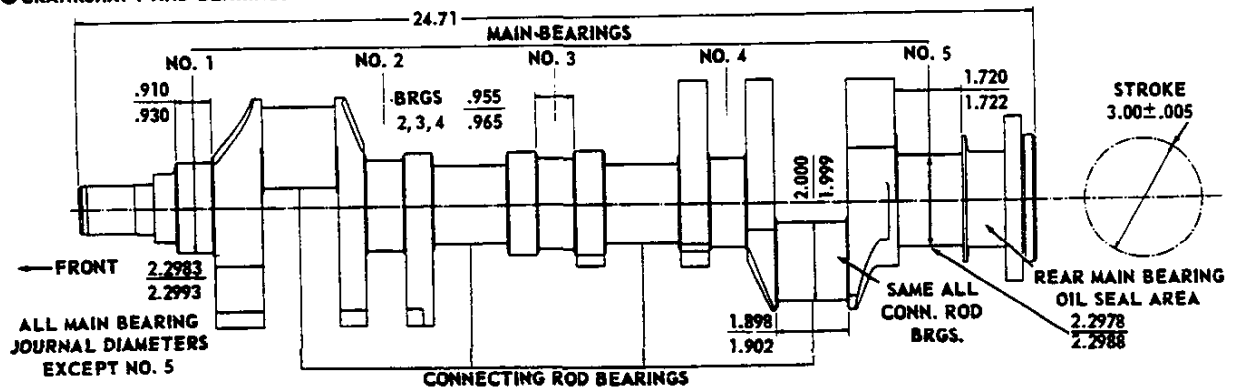
### EXHAUST MANIFOLD

Material ----- Cast alloy iron  
 Type ----- Low resistance  
 Outlet Diameter (nominal) ----- 2.00

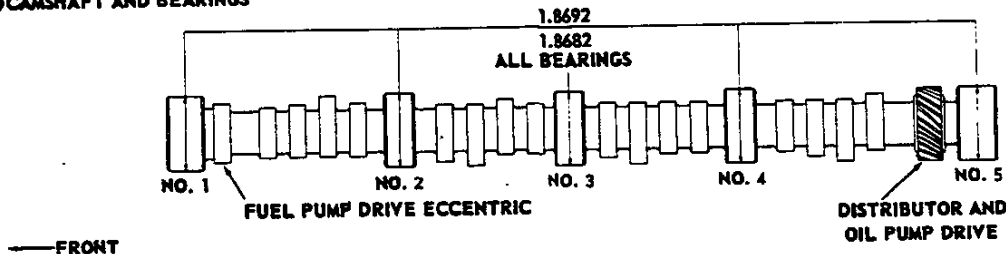
### CRANKSHAFT

Material ----- Forged steel  
 End Play ----- .002-.006  
 Counter Weights ----- 6  
 Crank Arm Length ----- 1.50  
 Vibration Damper ----- None  
 Timing Gear & Mtl. ----- Sprocket & Chain; Steel  
 Pulley Pitch Diameter ----- 6.64

#### ● CRANKSHAFT AND BEARINGS



#### ● CAMSHAFT AND BEARINGS



### MAIN BEARINGS

Material ----- Extra-life steel backed babbitt  
 Type ----- Precision removable  
 End Thrust Against Bearing No ----- 5  
 Clearance ----- .0008-.0034

Dimensions Bearing	Theoretical Inner Dia	Effective Length	Projected Area
1-4	2.3009	.752	1.7303
5	2.3004	1.177	2.7076

### CAMSHAFT

Material ----- Cast alloy iron  
 Lobe Lift  
     Inlet ----- .2658  
     Exhaust ----- .2658

### Bearings

Material ----- Extra-life steel backed babbitt

Dimensions Bearing	Ream Diameter	Effective Length	Projected Area
1-4	1.8712	.740	1.3847
5	1.8712	.940	1.7589

### VALVE TRAIN

Type ----- Individually mounted overhead rocker arms push rod actuated  
 Lifters ----- Hydraulic  
 Push Rods  
     Type & Material ----- Hollow steel  
     Ends ----- Hardened

# 283 CUBIC INCH V-8 ENGINE - Cont'd.

## ROCKER ARMS

Type & Material ----- Stamped Steel  
 Ratio ----- 1.5:1

## VALVE SPRINGS

Diameter (I. D.) ----- .872-.888  
 Installed Length (in. @ lb.)  
 Valves Closed ----- 1.660@ 78-86  
 Valves Opened ----- 1.260@ 170-180  
 Free Length ----- 2.03  
 Valve Spring Dampers ----- Steel - 4 Coils  
 Oil Shields ----- Steel cup

## VALVES

Inlet Material ----- Carbon steel  
 Coating ----- None  
 Exhaust Material ----- High alloy steel  
 Coating, neck ----- Aluminized

## VALVE LIFT

Inlet ----- .3987  
 Exhaust ----- .3987

## VALVE TRAIN LASH

Inlet ----- Zero  
 Exhaust ----- Zero

## VALVE TIMING

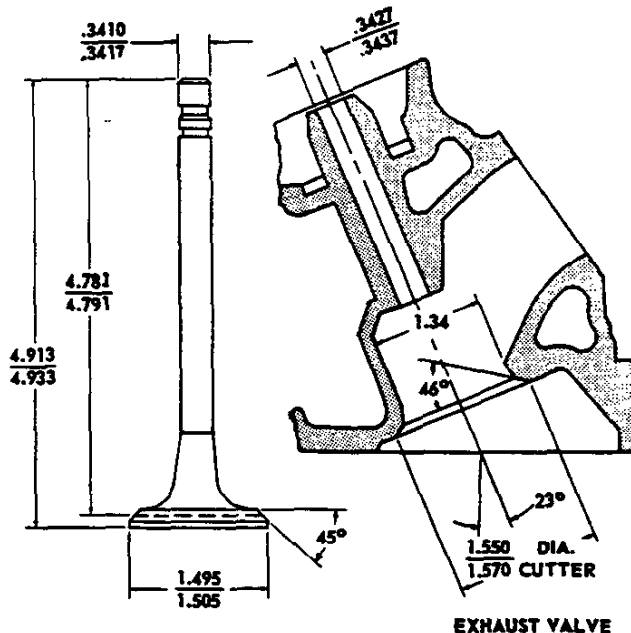
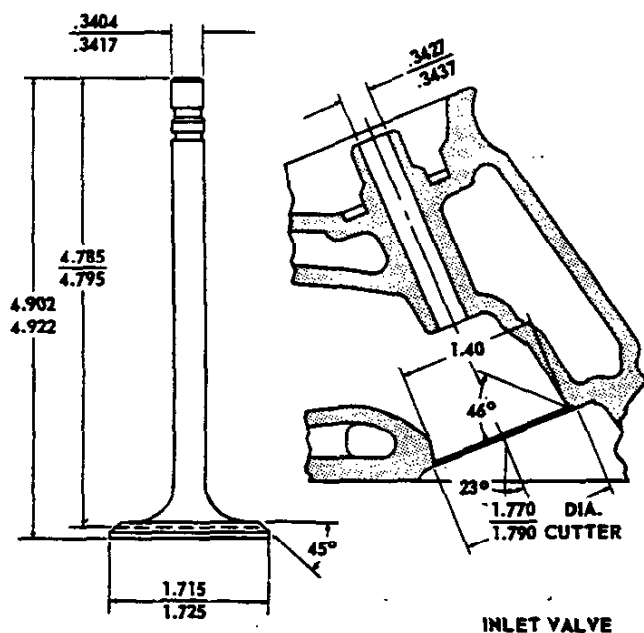
	Excluding Ramps	Including Ramps
<b>Inlet Valve</b>		
Opens-BTC	12° 30'	32° 30'
Closes-ABC	57° 30'	87° 30'
Duration	250°	300°
<b>Exhaust Valve</b>		
Opens-BBC	54° 30'	74° 30'
Closes-ATC	15° 30'	45° 30'
Duration	250°	300°

## PISTON

Material ----- Cast aluminum alloy  
 Head Type ----- Flat, notched  
 Skirt Type ----- Slipper  
 Top Land Clearance ----- .035-.044  
 Skirt Clearance ----- .0006-.0010  
 Compression Ring Groove Depth ----- .2153-.2218  
 Oil Ring Groove Depth ----- .2093-.2158  
 Pin Bore Offset ----- .055-.065  
 ● Compression Height ----- 1.799-1.801

## COMPRESSION RING-UPPER

Material ----- Cast alloy iron  
 Inside Bevel ----- Bottom edge 30 degrees to piston vertical axis  
 Ring Face ----- Tapered  
 Coating ----- Flash chrome plate  
 Width ----- .0775-.0780  
 Wall Thickness ----- .179-.194  
 Gap ----- .010-.020



## PRINCIPAL COMPONENTS - Continued

### COMPRESSION RINGS-LOWER

Material ----- Cast alloy iron  
 Inside Bevel ----- Top edge 30 degrees to  
 piston vertical axis  
 Ring Face ----- Tapered  
 Coating ----- Wear resistant  
 Width ----- .0770-.0780  
 Wall Thickness ----- .184-.194  
 Gap ----- .010-.020

### OIL CONTROL RINGS

Material ----- Steel  
 Type ----- Multi-piece (2 rails and one spacer)  
 Width ----- .1930-.1950 assembled  
 Wall Thickness ----- .150-.156  
 Gap ----- .015-.055  
 Rail Coatings ----- Chrome plated

### PISTON PINS

Material ----- Chromium steel  
 Length ----- 2.990-3.010  
 Diameter ----- .9270-.9273  
 Clearance in Piston ----- .00015-.00025  
 Pin Mounting ----- Locked in rod by shrink fit

### CONNECTING RODS

Material ----- Forged steel  
 Length (center to center) ----- 5.699-5.701

### CONNECTING ROD BEARINGS

Material ----- Extra-life steel backed babbitt  
 Type ----- Precision removable  
 Clearance ----- .0007-.0027  
 Theo. I. D. ----- 2.0016  
 Effective Length ----- .807  
 End Play ----- .009-.013

## FUEL SYSTEM

### FUEL TANK

Capacity (Gal)  
 Sedans & Coupes ----- 20  
 Station Wagon ----- 19  
 Fuel Tank Location  
 Station Wagon ----- In left quarter panel  
 behind rear wheel  
 Remaining Models ----- Rearward of rear axle  
 kick-up, in shelf area  
 Filler Location ----- Behind opening in left  
 rear quarter panel  
 Gauge ----- AC, electric

### FUEL FILTER

In Fuel Tank ----- Mesh strainer  
 In Carburetor Inlet ----- Sintered bronze filter

### FUEL PUMP ASSEMBLY

Make ----- AC  
 Drive ----- Camshaft eccentric  
 Type ----- Diaphragm  
 Location ----- Lower right front of engine  
 Pressure Range ----- 5.25-6.50 PSI

### CARBURETOR

Make ----- Rochester  
 Type ----- 2 barrel, downdraft  
 SAE Flange Size ----- 1.25  
 Throttle Bore ----- 1.4375  
 Venturi Diameter ----- 1.09

### AIR CLEANER

Make & Type ----- AC, resin impregnated paper  
 type element

## EXHAUST and VENTILATION SYSTEM

### EXHAUST SYSTEM

Type ----- Single

### MUFFLERS

Type ----- Oval, reverse flow  
 Construction ----- Heads and body joined by  
 rolled lock seam construction  
 Shell ----- .035 sheet steel  
 Cover ----- .018 sheet steel  
 Wrap ----- .030 indented asbestos sheet  
 Heads ----- .048 sheet steel  
 Baffles ----- 5;-.035 sheet steel  
 Coating --Interior and exterior completely aluminized  
 Length, Body ----- 29.24  
 Width (I. D.) ----- 3.24  
 Height (I. D.) ----- 7.74

### EXHAUST CROSS OVER PIPE

Dimensions (O. D.) ----- 2.00  
 Wall thickness ----- .067-.083

### EXHAUST PIPE

Dimensions (O. D.) ----- 2.00  
 Wall thickness ----- .057-.069

### TAIL PIPE

Dimensions (O. D.) ----- 1.875  
 Wall thickness ----- .062-.076

### ENGINE VENTILATION

Type ----- Positive;  
 Fumes withdrawn into induction  
 system, fresh air enters the  
 crankcase through oil breather  
 cap and oil filler tube.

## 283 CUBIC INCH V-8 ENGINE - Cont'd.

### LUBRICATION SYSTEM

#### GENERAL

Type .....	Controlled full pressure
Main Bearings .....	Pressure
Connecting Rods .....	Pressure
Piston Pins .....	Splash
Cylinder Wall .....	Pressure, jet cross sprayed
Camshaft Bearings .....	Pressure
Valve Lifters .....	Pressure
Rocker Arms .....	Pressure
Timing Gears .....	Nozzle sprayed
Oil Pressure Sending Unit	
Type .....	Electric
Actuation .....	Opens or closes circuit @ 2 to 6 PSI
Oil Filler	
Cap .....	Oil wetted crimped aluminum breather
Location .....	Left front of intake manifold

#### CRANKCASE CAPACITY (Quarts)

Refill .....	4.0
Refill with Filter Change .....	5.0

#### OIL PUMP

Type .....	Gear
Regulator Valve .....	Opens between 40-45 lbs

Oil Pressure .....	40 psi (min)
Intake Type .....	Fixed
Capacity (GPM @ Eng. RPM) .....	4.3 @ 2000

#### OIL FILTER

Make .....	AC
Type .....	Full flow, replaceable element
Location .....	Left rear, underside of engine
Capacity (Qts.) .....	1
By-Pass Valve .....	Opens between 9 to 11 PSI drop in pressure

#### LUBRICANT GRADES AND TEMPERATURES

32° F and Above ---	SAE 20W, SAE 20 or SAE 10W-30
0° F and Above .....	SAE 10W, or SAE 10W-30
Below 0° F .....	SAE 5W or SAE 5W-20

#### OIL PAN DRAIN SCREW

Type .....	Hex head
Location .....	Lower front edge of oil pan sump
Size Hex Head .....	.860-.875
Thread .....	1/2-20 UNF 2A
Length .....	0.81
Diameter .....	.410-.430

### COOLING SYSTEM

#### GENERAL

Type .....	Liquid, Pressurized
● Capacity with Heater (Standard Equipment) ..	18.5 Qts

#### RADIATOR

Make and Type .....	Harrison, tube on center
Core Constant and Thickness	
● Distance between fins .....	.20 (Syn). 18 (P/G)
Distance between tubes .....	.55
Thickness of Core .....	1.26
Frontal Area (Sq. In.) .....	357

#### RADIATOR HEAVY DUTY (RPO-V01)

Core Constant and Thickness	
Distance between fins .....	.18 (Syn) .16 (P/G)
Distance between tubes .....	.55
Thickness of Core .....	1.75
Frontal Area (Sq. In.) .....	429

#### RADIATOR CAP RELIEF VALVE

Opens at .....	Approx. 13 PSI
----------------	----------------

#### THERMOSTAT

Make and Type .....	Harrison, Pellet
Begins to Open .....	177°-183° F
Fully Opened .....	212° F

#### RADIATOR HOSE

Outlet, Lower (radiator to water pump) .....	1.75 ID
Inlet, Upper (thermostat hsg. to radiator) ..	1.50 ID

#### FAN

Number of Blades .....	4 staggered
Diameter .....	17.62
Fan Pulley Pitch Diameter .....	7.00

#### BELT, CRANKSHAFT, FAN AND GENERATOR

Number Used .....	One
Angle of "V" .....	37°-44°
Pitch Line .....	56.50
Width .....	.380

#### WATER PUMP

Type .....	Centrifugal
Capacity .....	53 GPM @ 4200 RPM
Bearing .....	Permanently lubricated double row ball
Drive .....	Fan Belt
Ratio (pump to engine RPM) .....	.949:1

#### DRAIN LOCATIONS

Radiator .....	Rightside bottom
Type .....	Petcock
Engine Block .....	Right and left center
Type .....	Plug

## ELECTRICAL SYSTEM

### SUPPLY SYSTEM

#### BATTERY

Make ----- Delco-Remy  
 Voltage Rating ----- 12  
 Capacity ----- 44 amp. hr. @ 20 hr. rate  
 Heavy Duty (RPO T60) -- 70 amp. hr. @ 20 hr. rate  
 Total Number of Plates ----- 54; Heavy Duty 66  
 Number of Cells ----- 6  
 Terminal Grounded ----- Negative  
 Location ----- Right front engine compartment

#### GENERATOR

Make ----- Delco-Remy  
 Type ----- Diode rectified  
 Rating  
   Amps ----- 9-37  
   Volts ----- 12-15  
 Drive ----- By fan belt  
 Pulley Pitch Diameter ----- 2.88  
 Ratio (Gen to Engine Speed) ----- 2.30:1

#### REGULATOR

Make ----- Delco-Remy  
 Type ----- Two unit, Vibrator  
 Voltage Regulator  
   Voltage ----- 13.8-14.8 @ 85°F  
 Field Relay (Combination light and field relay)  
   Closing Voltage ----- 1-3 Volts @ 80°F  
 Location ----- Left side front engine compartment

### STARTING SYSTEM

#### STARTING MOTOR

Make ----- Delco-Remy  
 Rotation (drive end view) ----- Clock-wise  
 Test Conditions ----- Engine at operating temp  
 No Load Test  
   Amps ----- 49-76  
   Volts ----- 10.6  
   RPM ----- 6200-9400  
 Motor Drive  
   Engagement ----- Solenoid  
   Pinion meshes at ----- Rear  
   Pinion tooth no. ----- 9  
   Flywheel tooth no. ----- 153  
 Mounting ----- Bolted to clutch housing

### STARTING

Ignition Switch ----- Five (5) positions  
                             Accessory, Lock, Off, On, Start  
 Starting Procedure  
   Synchronmesh --- Place gearshift lever in neutral  
                             and depress clutch pedal to floor  
   Powerglide-Place control lever in N or P position  
 Initial Start ---- Depress accelerator to floor and  
                             release. Turn ignition switch to START and  
                             release as soon as engine starts. When  
                             engine is warm or outside temperature is  
                             below 0°F hold accelerator about half way  
                             open.

### IGNITION SYSTEM

#### COIL

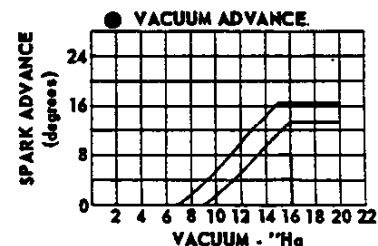
Make ----- Delco-Remy  
 Type ----- 12 Volt  
 Amperes Drawn  
   Engine stopped ----- 4.0  
   Engine idling ----- 1.8

#### DISTRIBUTOR

Make ----- Delco-Remy  
 Type ----- Single breaker  
 Cam Angle ----- 28°-32°  
 Breaker Gap ----- .019 (new)  
 Breaker Arm Tension ----- 19-23 oz  
 Centrifugal Advance Begins (RPM) ----- 800  
   Max Degrees @ RPM ----- 32° @ 4000  
 Vacuum Advance Begins (In Hg) ----- 8  
   Max Degrees @ In Hg ----- 15 @ 15.5  
 Timing (Initial Design Setting)  
   Crankshaft Degrees @ RPM ----- 4° ± 1° @ 550  
   with vacuum spark line disconnected  
 Timing Mark Location ---- On crankshaft pulley hub  
 Firing Order ----- 1-5-3-6-2-4  
 CABLE ----- Linen core impregnated with electrical  
                             conducting material and insulation of  
                             rubber with neoprene jacket.

#### SPARK PLUGS

Make ----- AC45  
 Thread Size (mm) ----- 14  
 Gap ----- .033-.038  
 Torque ----- 25 lb ft



# 327 CUBIC INCH V-8 ENGINE

1963

## GENERAL DATA

Piston Displacement (Cu In)	Synchromesh	4-Speed	Powerglide
Type	327		
Number Cylinders	Valve-in-head		
Bore and Stroke (nominal)	8		
Compression Ratio	4.0 x 3.25		
Taxable (SAE) Horsepower	10.5:1		
Firing Order	51.2		
Idling Speed (RPM)	1-8-4-3-6-5-7-2		
Compression Press (PSI) @ Cranking Speed, Engine hot	500		475
Lubrication	160		
Power Plant Mounting	Full pressure		
	Two front, combination compression & shear type; one rear, full shear type		
Measurements	Fan to rear of engine block	30.64	
	Top air cleaner to bottom oil pan	29.96	
	Exhaust manifold to generator (width)	28.92	

## ADVERTISED ENGINE RATINGS

Engine	Turbo-Fire 327 250 HP		Turbo-Fire 327 300 HP	
Option	RPO L30		RPO L74	
Carburetor	4 Barrel		Large 4 Barrel Aluminium	
Brake Horsepower	Gross	250 @ 4400 RPM	300 @ 5000 RPM	
	Net	210 @ 4400 RPM		
Torque (Lb-Ft)	Gross	350 @ 2800 RPM	360 @ 3200 RPM	
	Net	315 @ 2600 RPM		

## ENGINE SPEED AND PISTON TRAVEL

Transmission	Synchromesh	4-Speed	Powerglide
Rear Axle Ratio	3.36:1		3.08:1 **
Tire Size	7.50 x 14-4 PR*		
Crankshaft Revolutions per Mile	2688.0		2464.0
Crankshaft RPM @ 1 MPH	Low	110.7	113.8
	Second	68.5	84.7
	Third		67.6
	Direct N/V	44.8	41.1
	Reverse	125.4	116.9
Piston travel (Ft/mile)	1456.0		1334.7

\* - 8.00 x 14-4 PR Tires standard on Station Wagons

\*\* 3.36:1 on 300 HP RPO L74

VEHICLE PERFORMANCE FACTORS  
(Model 1669)

ENGINE - 327 Cu. In. V-8	250 HP RPO L30	300 HP RPO L74
--------------------------	-------------------	-------------------

3-Speed Transmission

Performance Weight (pounds)	4247	4250
Pounds per Gross Horsepower	16.99	14.17
Pounds per Cu. In. Displacement	12.99	13.00
Gross HP per Cu. In. Displacement	.765	.917
Power Displacement (Cu. Ft. /mile)	254.33	254.33
Displacement Factor (Cu. Ft. /ton mile)	119.80	119.68

4-Speed Transmission

Performance Weight (pounds)	4251	4254
Pounds per Gross Horsepower	17.00	14.18
Pounds per Cu. In. Displacement	13.00	13.01
Gross HP per Cu. In. Displacement	.765	.917
Power Displacement (Cu. Ft. /mile)	254.33	254.33
Displacement Factor (Cu. Ft. /ton mile)	119.69	119.57

Powerglide \*

Performance Weight (pounds)	4278	4281
Pounds per Gross Horsepower	17.11	14.27
Pounds per Cu. In. Displacement	13.08	13.09
Gross HP per Cu. In. Displacement	.765	.917
Power Displacement (Cu. Ft. /mile)	233.14	254.33
Displacement Factor (Cu. Ft. /ton mile)	109.00	118.79

\* - Data computed assuming zero slippage in torque converter

GLOSSARY

Performance Weight = Curb Weight plus 600 Lb  
(weight of four 150 Lb passengers)

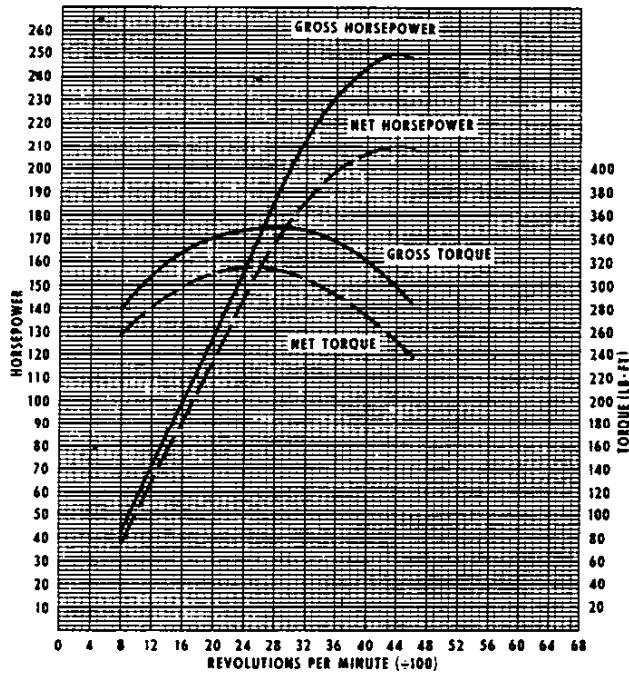
Power Displacement =  $\frac{\text{Crankshaft Revs/Mi} \times \text{Piston Displacement}}{2 \times 1728}$

Displacement Factor =  $\frac{\text{Power Displacement}}{\text{Performance Wt (tons)}}$

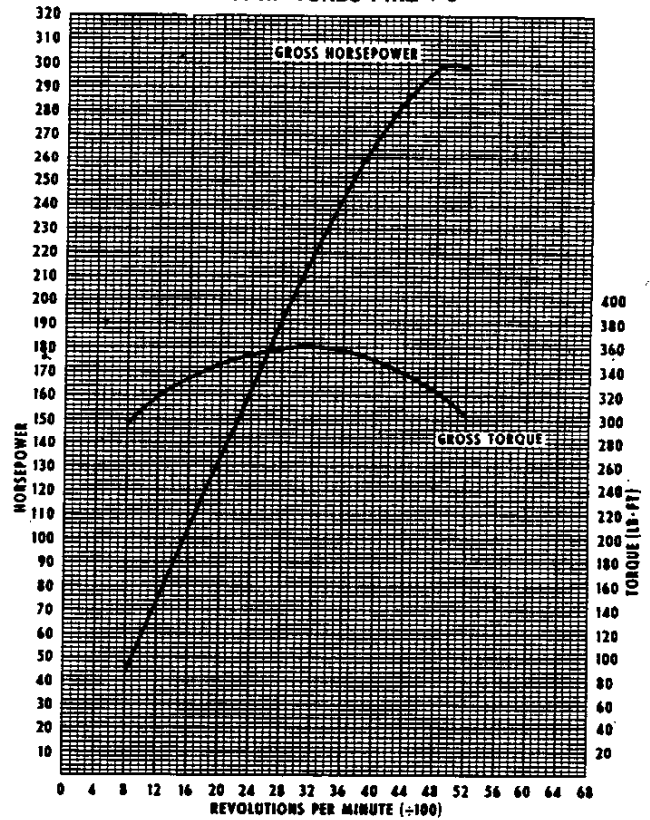


# 327 CUBIC INCH V-8 ENGINE - Cont'd.

● 250 HP TURBO-FIRE V-8



300 HP TURBO-FIRE V-8



The engine performance curves represent full throttle performance as obtained from dynamometer test data corrected to standard barometric pressure 29.92 inches of mercury and standard temperature of 60°F;

GROSS POWER and TORQUE were obtained in a regular dynamometer test with the dynamometer exhaust

system, no fan, generator not charging, optimum spark advance, & optimum fuel setting.

NET POWER and TORQUE were obtained from a dynamometer test simulating actual operating conditions when the engine is in its vehicle, except the generator is not charging.

## PRINCIPAL COMPONENTS

### CYLINDER BLOCK

Material ----- Cast alloy iron  
 Bore Diameter ----- 4.00  
 No. of Bulkheads ----- 5  
 Water Jackets ----- Full length around each cylinder  
 Cylinder Numbering Arrangement (Front to Rear)  
     Left Bank ----- 1-3-5-7  
     Right Bank ----- 2-4-6-8  
 ● Bore Spacing (⊕ to ⊕) ----- 4.4

### CYLINDER HEAD

Material ----- High chrome cast alloy iron  
 Bolt No. & Size ----- 34; .4375 dia., 14 threads/in  
 Combustion Chamber Volume- RPO-L30-4.43 cu. in.  
                                     RPO-L74-4.49 cu. in.

### INLET MANIFOLD

Material ----- Cast alloy iron  
 Type ----- 8 port double deck (RPO-L74) large port  
 Heat Provision ----- Heated by exhaust gases

### EXHAUST MANIFOLD

Material ----- Cast alloy iron  
 Type ----- Low resistance  
 Outlet Diameter (nominal) ----- 2.0 (RPO-L74) 2.5

### CRANKSHAFT

Material ----- Forged steel  
 End Play ----- .002-.006  
 Counter Weights ----- 6  
 Crank Arm Length ----- 1.625  
 Vibration Damper ----- Rubber mounted inertia  
 Timing Gear & Mtl. ----- Sprocket & chain; steel  
 Pulley Pitch Diameter ----- 6.64

### MAIN BEARINGS

Material ----- Premium aluminum except  
                                     No. 5 upper - steel backed babbit  
 Type ----- Precision removable  
 End Thrust Against Bearing No. ----- 5  
 Clearance ----- .0008-.0034 (#1-4) .0010-.0036 (#5)

Bearing	Theoretical	Effective	Projected Area
	Inner Dia.	Length	
1-4	2.3009	.752	1.7303
5	2.3006	1.1824	2.7202

### CAMSHAFT

Material ----- Cast alloy iron  
 Lobe Lift  
     Inlet ----- .2658  
     Exhaust ----- .2658

### Bearings

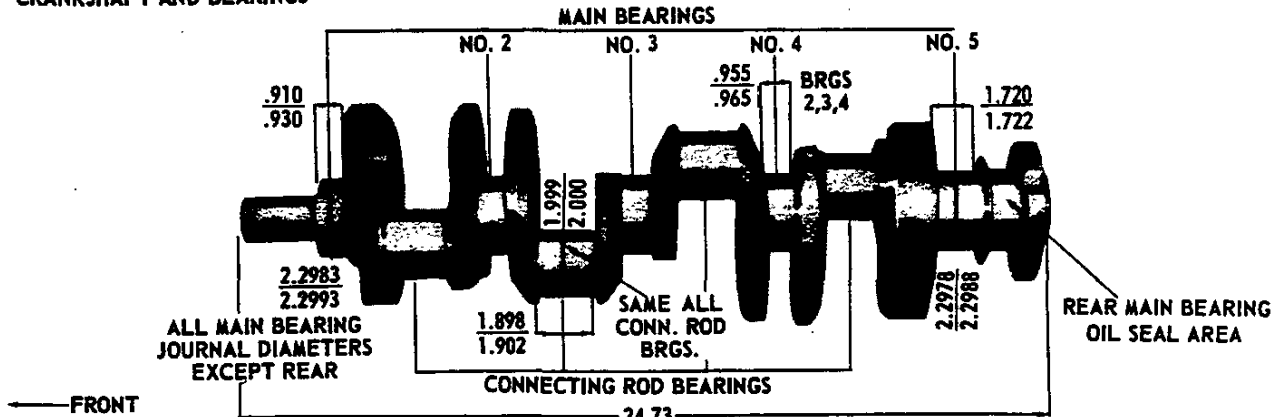
Material ----- Extra life steel backed babbit

Bearing	Ream	Effective	Projected Area
	Diameter	Length	
1-4	1.8712	.740	1.3847
5	1.8712	.940	1.7589

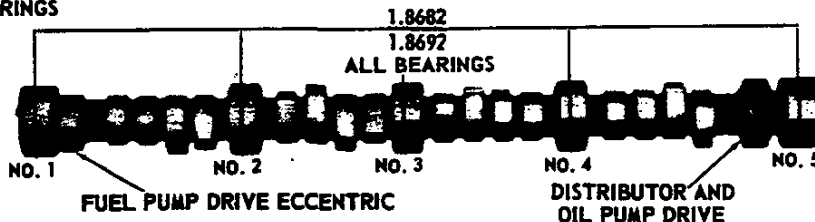
### VALVE TRAIN

Type ----- Individually mounted overhead  
                                     rocker arms push rod actuated  
 Lifters ----- Hydraulic  
 Push Rods  
     Type of Material ----- Hollow steel  
     Ends ----- Hardened

### CRANKSHAFT AND BEARINGS



### CAMSHAFT AND BEARINGS



# 327 CUBIC INCH V-8 ENGINE - Cont'd.

## PRINCIPAL COMPONENTS - Continued

### ROCKER ARMS

Type & Material ----- Stamped Steel  
 Ratio ----- 1.5:1

### VALVE SPRINGS

Diameter (I. D.) ----- .872-.888  
 Installed Length (in. @ lb.)  
 Valves Closed ----- 1.660 @ 78-86  
 Valves Opened ----- 1.260 @ 170-180  
 Free Length ----- 2.03  
 Valve Spring Dampers ----- Steel-4 Coils  
 Oil Shields ----- Steel cup

### VALVES

Inlet Material ----- Carbon steel; (L74) Alloy steel  
 Coating ----- None  
 Exhaust Material ----- High alloy steel  
 Coating, neck ----- Aluminized

### VALVE LIFT

Inlet ----- .3987  
 Exhaust ----- .3987

### VALVE TRAIN LASH

Inlet ----- Zero  
 Exhaust ----- Zero

### VALVE TIMING

	Excluding Ramps	Including Ramps
<b>Inlet Valve</b>		
Opens - BTC	12° 30'	32° 30'
Closes - ABC	57° 30'	87° 30'
Duration	250°	300°
<b>Exhaust Valve</b>		
Opens - BBC	54° 30'	74° 30'
Closes - ATC	15° 30'	45° 30'
Duration	250°	300°

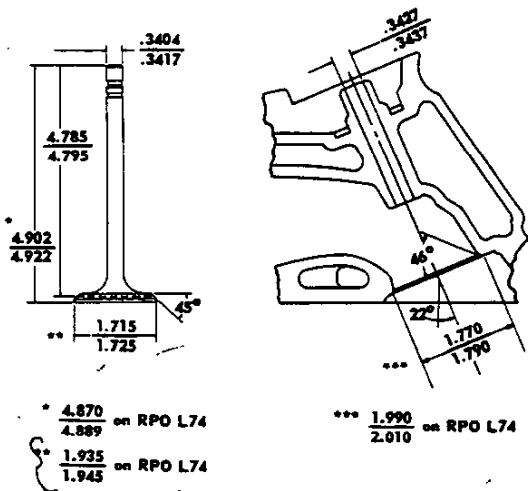
### PISTON

Material ----- Cast aluminum alloy  
 Head Type ----- Flat, notched  
 Skirt Type ----- Slipper  
 Top Land Clearance ----- .0365-.0455  
 Skirt Clearance ----- .0006-.0010  
 Compression Ring Groove Depth ----- .2217-.2283  
 Oil Ring Groove Depth ----- .2038-.2103  
 Pin Bore Offset ----- .055-.065  
 ● Compression Height ----- 1.674-1.676

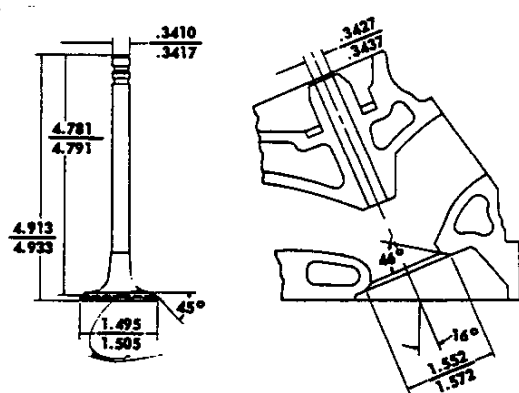
### COMPRESSION RING-UPPER

Material ----- Cast alloy iron  
 Inside Bevel ----- Bottom edge 30 degrees  
 to piston vertical axis  
 Ring Face ----- Tapered  
 Coating ----- Flash chrome plate  
 Width ----- .0775-.0780  
 Wall Thickness ----- .190-.200  
 Gap ----- .013-.023

● INLET VALVE



● EXHAUST VALVE



PRINCIPAL COMPONENTS - Continued

●COMPRESSION RINGS - LOWER

Type ----- One ring and one expander  
 Ring  
 Material ----- Cast alloy iron  
 Inside Bevel ----- Top edge 30 degrees  
 to piston vertical axis  
 Ring Face ----- Tapered  
 Coating ----- Wear resistant  
 Width ----- .0770-.0775  
 Wall Thickness ----- .164-.170  
 Gap ----- .013-.025  
 Expander  
 Material ----- Steel  
 Width ----- .068-.074

●OIL CONTROL RINGS

Material ----- Steel  
 Type ----- (2 rails and one spacer)  
 Width ----- .1874-.1894 assembled  
 Wall Thickness ----- .150-.156

Gap ----- .015-.055  
 Rail Coatings ----- Chrome plated

PISTON PINS

Material ----- Chromium steel  
 Length ----- 2.990-3.010  
 Diameter ----- .9270-.9273  
 Clearance in Piston ----- .00015-.00025  
 Pin Mounting ----- Locked in rod by shrink fit

CONNECTING RODS

Material ----- Drop forged steel  
 Length (center to center) ----- 5.699-5.701

CONNECTING ROD BEARINGS

Material ----- Premium aluminum  
 Type ----- Precision removable  
 Clearance ----- .0007-.0028  
 Theo I. D. ----- 2.0017  
 Effective Length ----- .807  
 End Play ----- .009-.013

FUEL SYSTEM

FUEL TANK

Capacity (Gal)  
 Sedan & Coupes ----- 20  
 Station Wagons ----- 19  
 Fuel Tank Location  
 Station Wagon ----- In left quarter panel  
 behind rear wheel  
 Remaining Models ----- Rearward of rear axle  
 kick-up in shelf area  
 Filler Location ----- Behind opening in left  
 rear quarter panel  
 Gauge ----- AC, electric

FUEL FILTERS, DUAL

In Fuel Tank ----- Mesh strainer  
 RPO-L30 ----- Sintered bronze filter  
 in carburetor inlet  
 RPO-L74 ----- Glass bowl with paper element  
 between fuel pump and carburetor

FUEL PUMP ASSEMBLY

Make ----- AC  
 Drive ----- Camshaft, eccentric  
 Type ----- Diaphragm  
 Location ----- Lower right front of engine  
 Pressure Range ----- 5.25-6.50 PSI

CARBURETOR

Make ----- Carter, synchronesh  
 Carter & Rochester, Powerglide  
 Type  
 RPO-L30 ----- 4 barrel downdraft  
 RPO-L74 ----- 4 barrel aluminum downdraft  
 SAE Flange Size ----- 1.50  
 Throttle Bore  
 Primary ----- 1.4375 (RPO-L30)  
 1.5625 (RPO-L74)  
 Secondary ----- 1.4375 (RPO-L30)  
 1.6875 (RPO-L74)  
 Secondary Throttle Actuation ----- By linkage  
 approximately when primary valves are  
 opened half way between closed and full  
 open  
 Venturi Diameter  
 Primary ----- 1.06 (RPO-L30)  
 1.25 (RPO-L74)  
 Secondary ----- 1.25 (RPO-L30)  
 1.56 (RPO-L74)

AIR CLEANER

Make and type ----- AC, Resin impregnated  
 paper type element

# 327 CUBIC INCH V-8 ENGINE - Cont'd.

## EXHAUST and VENTILATION SYSTEM

### EXHAUST SYSTEM

Type ----- Dual

### MUFFLERS

Type ----- Dual, reverse flow  
Construction ----- Heads and body joined by  
rolled lock seam construction

### Shell

Right hand ----- .036 stainless steel

Left hand ----- .036 sheet steel aluminum coating

Wrap ----- .030 indented asbestos sheet

Cover ----- .018 sheet steel aluminum coating

### Heads

Right hand ----- .048 stainless steel

Left hand ----- .048 sheet steel aluminum coating

### Baffles

Right hand ----- 5;-.036 stainless steel

Left hand ----- 5;-.036 sheet steel alum. coating

Length, Body ----- 29.24

Width (ID) ----- 3.24

Height (ID) ----- 7.74

### RESONATORS

Type ----- Straight through

Material ----- .036 sheet steel

Corrosion prevention ----- Interior & exterior  
aluminum coated

### EXHAUST PIPES

Dimensions ----- 2.00 (RPO-L30) 2.50 (RPO-L74)

Wall Thickness ----- .062-.063 (RPO-L30)  
.067-.081 (RPO-L74)

### TAIL PIPES

Dimensions ----- 1.87 (RPO-L30) 2.00 (RPO-L74)

Wall Thickness ----- .052-.066

### ENGINE VENTILATION

Type ----- Positive; Fumes withdrawn into  
induction system, fresh air enters  
the crankcase through oil breather  
cap and oil filler tube

## LUBRICATION SYSTEM

### GENERAL

Type ----- Controlled full pressure

Main Bearings ----- Pressure

Connecting Rods ----- Pressure

Piston Pins ----- Splash

Cylinder Walls ----- Pressure, jet cross sprayed

Camshaft Bearings ----- Pressure

Valve Lifters ----- Pressure

Rocker Arms ----- Pressure

Timing Gears ----- Nozzle sprayed

### Oil Pressure Sending Unit

Type ----- Electric

Actuation ----- Opens or closes circuit @ 2 to 6 PSI

### Oil filler

Cap ----- Oil wetted crimped aluminum breather

Location ----- Left front of intake manifold

Intake Type ----- Fixed

Capacity (GPM @ Eng RPM) ----- 4.3 @ 2000

Regulator Valve ----- Opens between 40-45 lbs

### OIL FILTER

Make ----- AC

Type ----- Full flow, replaceable element

Location ----- Left rear underside of engine

Capacity (Qts) ----- 1

By-Pass Valve ----- Opens between 9 to 11 PSI  
drop in pressure

### LUBRICANT GRADES AND TEMPERATURES

32°F and Above --- SAE 20W SAE 10 or SAE 10W-30

0°F and Above ----- SAE 10W, or SAE 10W-30

Below 0°F ----- SAE 5W or SAE 5W-20

### CRANKCASE CAPACITY (Quarts)

Refill ----- 4.0

Refill with Filter Change ----- 5.0

### OIL PUMP

Type ----- Gear

Normal Oil Pressure ----- 40 PSI (min.) @ 2000 RPM

### OIL PAN DRAIN SCREW

Type ----- Hex head

Location ----- Lower front edge of oil pan sump

Size Hex Head ----- .860-.875

Thread ----- 1/2-20 UNF 2A

Length ----- .081

Diameter ----- .410-.430

## COOLING SYSTEM

### GENERAL

Type ----- Liquid, pressurized  
 ● Capacity with Heater (standard equipment) -- 18.5 Qts

### RADIATOR

Make & Type ----- Harrison; tube on center  
 Cove Constant and Thickness  
 ● Distance between fins ----- 20 (Syn) .18 (P/G)  
   RPO L74----.22 (Syn & P/G)  
         Distance between tubes ----- .55  
         Thickness of core ----- 1.26  
         Frontal Area (Sq. In) ----- 357; (RPO L74) 429

### RADIATOR HEAVY DUTY (RPO-V01)

Distance between fins ----- .18 (Syn) .16 (P/G)  
   RPO L74 ----.18 (Syn & P/G)  
         Distance between tubes ----- .55  
         Thickness of core ----- 1.75  
         Frontal Area (Sq. In) ----- 429; (RPO L74) 439

### RADIATOR CAP RELIEF VALVE

Opens at ----- Approx 13 PSI

### THERMOSTAT

Make ----- Harrison, Pellet  
 Begins to Open ----- 177°-183°F  
 Fully Opened ----- 212°F

### RADIATOR HOSE

Outlet Lower (radiator to waterpump) ----- 1.75 ID  
 Inlet, Upper (thermostat hsg to radiator) --- 1.50 ID

### FAN

Number of Blades ----- 5, staggered  
 Diameter ----- 18.00  
 Fan Pulley Pitch Diameter ----- 7.00  
 Drive  
         Type ----- Thermo modulated fluid coupling  
         Performance ----- At 4000 RPM input, fan speed  
   = 3200-3500 RPM @ 135°-150°F  
   800-1600 RPM @ 120°F and below

### BELT; CRANKSHAFT, FAN AND GENERATOR

Number Used ----- One  
 Angle of "V" ----- 37°-44°  
 Pitch Line ----- 56.50  
 Width ----- .380

### WATER PUMP

Type ----- Centrifugal  
 Capacity ----- 55 GPM @ 4000 RPM  
 Bearing ----- Permanent lubricated double row ball  
 Drive ----- Fan belt  
 Ratio Pump to Engine RPM ----- .949:1

### DRAIN LOCATIONS

Radiator  
         RPO-L30 ----- Left side bottom  
         RPO-L74 ----- Right side bottom  
 Type ----- Petcock  
 Engine Block ----- Right and left center  
 Type ----- Plug

## ELECTRICAL SYSTEM

### SUPPLY SYSTEM

#### BATTERY

Make ----- Delco-Remy  
 Voltage ----- 12  
 Capacity (SAE) ----- 61 amp. hr. @ 20 hr. rate  
 Heavy Duty (RPO-T60) -- 70 amp. hr. @ 20 hr. rate  
 Total Number of Plates ----- 66  
 Number of Cells ----- 6  
 Terminal Grounded ----- Negative  
 Location ----- Right front engine compartment

#### GENERATOR

Make ----- Delco-Remy  
 Type ----- Diode rectified

#### Rating

Amps ----- 9.37  
 Volts ----- 10-15  
 Drive ----- By fan belt  
 Pulley Pitch Diameter ----- 2.88  
 Ratio (Gen to Engine Speed) ----- 2.30:1

#### REGULATOR

Make ----- Delco-Remy  
 Type ----- Two unit; Vibrator  
 Voltage Regulator  
         Voltage ----- 13.8-14.8 @ 85°F  
         Field Relay (Combination light & field relay)  
         Closing Voltage ----- 1-3 volts @ 80°F  
 Location ----- Left side front eng. compartment

# 327 CUBIC INCH V-8 ENGINE - Cont'd.

## ELECTRICAL SYSTEM - Continued

### STARTING SYSTEM

#### STARTING MOTOR

Make ----- Delco-Remy  
 Rotation (drive end view) ----- Clockwise  
 Test Conditions ----- Eng at operating temperature  
 No Load Test  
 Amps ----- 65-100  
 Volts ----- 10.6  
 RPM ----- 3600-5100  
 Motor Drive  
 Engagement ----- Solenoid  
 Pinion meshes at ----- Rear  
 Pinion-tooth no ----- 9  
 Flywheel tooth no ----- 153  
 Mounting ----- Bolted to clutch housing

### STARTING

Ignition Switch ----- Five (5) positions; Accessory  
 Lock, Off, On, Start

#### Starting Procedure

Synchromesh ----- Place gearshift lever in neutral  
 and depress clutch pedal to floor  
 Powerglide ----- Place control lever  
 in N or P position  
 Initial start ----- Depress accelerator pedal to  
 floor and release. Turn ignition  
 to START and release as soon as  
 engine starts. When engine is  
 warm or outside temperature is  
 below 0°F hold accelerator about  
 half way open

### IGNITION SYSTEM

#### COIL

Make ----- Delco-Remy  
 Type ----- 12 Volt  
 Amperes Drawn  
 Engine stopped ----- 4.0  
 Engine idling ----- 1.8

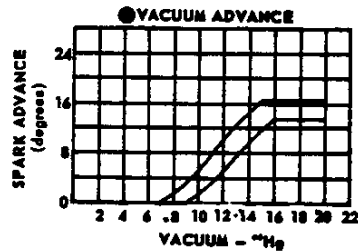
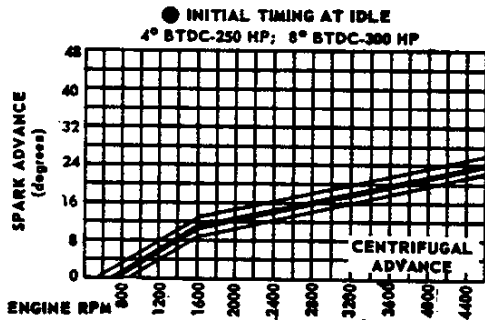
#### DISTRIBUTOR

Make ----- Delco-Remy  
 Type ----- Single breaker  
 Cam Angle ----- 28°-32°  
 Breaker Gap ----- .019 (new)  
 Breaker Arm Tension ----- 19-23 oz  
 Centrifugal Advance begins (RPM) ----- 700  
 Max Degrees @ RPM ----- 24 @ 4600  
 Vacuum Advance begins (In Hg) ----- 8  
 Max Degrees in Hg ----- 15° @ 15.5  
 Timing (Initial Design Setting)  
 Crankshaft Degrees @ RPM ----- 4°± BTC @ 550  
 with vacuum spark line disconnected  
 Timing Mark Location ----- On harmonic balancer  
 Firing Order ----- 1-8-4-3-6-5-7-2

#### SPARK PLUGS

Make ----- AC44  
 Thread Size (mm) ----- 14  
 Gap ----- .033-.038  
 Torque ----- 25 lb. ft.

CABLE ----- Linen core impregnated with electrical  
 conducting material and insulation of  
 rubber with neoprene jacket



1963

**409 CUBIC INCH V-8 ENGINE**

**GENERAL DATA**

		3-Speed	4-Speed
Piston Displacement (Cu In)		409	
Type		Valve-in-head	
Number Cylinders		8	
Bore and Stroke (nominal)		4.3125 x 3.50	
Compression Ratio		11.00:1*	
Taxable (SAE) Horsepower		59.5	
Firing Order		1-8-4-3-6-5-7-2	
Idling Speed (RPM)		700#	
Compression Press (PSI) @ Cranking Speed, Engine Hot		150	
Lubrication		Full pressure	
Power Plant Mounting		Two front, combination compression & shear type; one rear, full shear type	
Measurements	Fan to rear of engine block	32.47	
	Top air cleaner to bottom oil pan	31.60	
	Exhaust manifold to generator (width)	31.43	

\* 10.00:1 on RPO-L33

# 500 on RPO-L33

**ADVERTISED ENGINE RATINGS**

Engine	Turbo-Fire 409 340 HP	Turbo-Fire 409 400 HP	Turbo-Fire 409 425 HP
Carburetor	4-Barrel	Large 4-Barrel Aluminum	Two 4-Barrel Aluminum
Option	RPO-L33	RPO-L31	RPO-L80
Brake Gross Horsepower	340 @ 5000	400 @ 5800	425 @ 6000
Brake Gross Torque	420 @ 3200	425 @ 3600	425 @ 4200

**ENGINE SPEED AND PISTON TRAVEL**

Transmission		3-Speed	Powerglide (a)	4-Speed	
Rear Axle Ratio		3.36:1 (b)		3.08:1 (c)	
Tire Size		8.00 x 14-4 PR			
Crankshaft Revolutions per Mile		2637.6			
Crankshaft RPM @ 1 MPH	Low	108.6	77.4	96.7	102.4
	Second	67.3		72.1	77.4
	Third			57.6	60.8
	Direct N/V	44.0			
	Reverse	123.1	77.4	99.3	105.2
Piston Travel (Ft/Mile)		1538.6		1410.4	

(a) - Available with RPO-L33 only

(b) - Optional 4.11 & 4.56 axles available with 4-speed

●(c) - Available with RPO - L80 only



## 409 CUBIC INCH V-8 ENGINE - Cont'd.

### ● VEHICLE PERFORMANCE FACTORS (Model 1669)

ENGINE - 409 Cu. In. V-8	340 HP RPO L33	400 HP RPO L31	425 HP RPO L80
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#### 3-Speed Transmission

Performance Weight (pounds)	4390	4376	4384
Pounds per Gross Horsepower	12.91	10.94	10.32
Pounds per Cu. In. Displacement	10.73	10.70	10.72
Gross HP per Cu. In. Displacement	.831	.978	1.039
Power Displacement (Cu. Ft. /mile)	312.15	312.15	312.15
Displacement Factor (Cu. Ft. /ton mile)	142.21	142.66	142.40

#### 4-Speed Transmission

Performance Weight (pounds)	4394	4380	4388
Pounds per Gross Horsepower	12.92	10.95	10.33
Pounds per Cu. In. Displacement	10.74	10.71	10.73
Gross HP per Cu. In. Displacement	.831	.978	1.039
Power Displacement (Cu. Ft. /mile)	312.15	312.15	312.15
Displacement Factor (Cu. Ft. /ton mile)	142.08	142.53	142.27

#### Powerglide \*

Performance Weight (pounds)	4421	
Pounds per Gross Horsepower	13.00	
Pounds per Cu. In. Displacement	10.81	
Gross HP per Cu. In. Displacement	.831	
Power Displacement (Cu. Ft. /mile)	312.15	
Displacement Factor (Cu. Ft. /ton mile)	141.24	

\* Data computed assuming zero slippage in torque converter

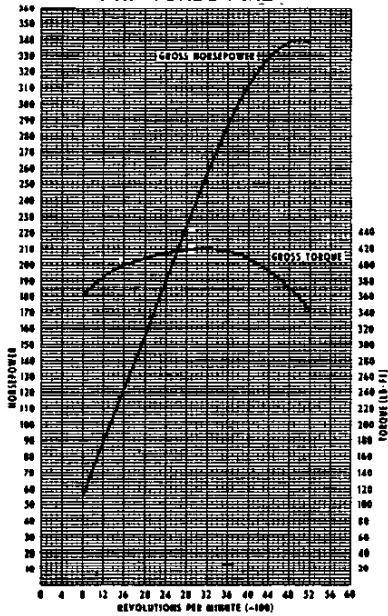
#### GLOSSARY

Performance Weight = Curb Weight plus 600 Lb  
(weight of four 150 Lb passengers)

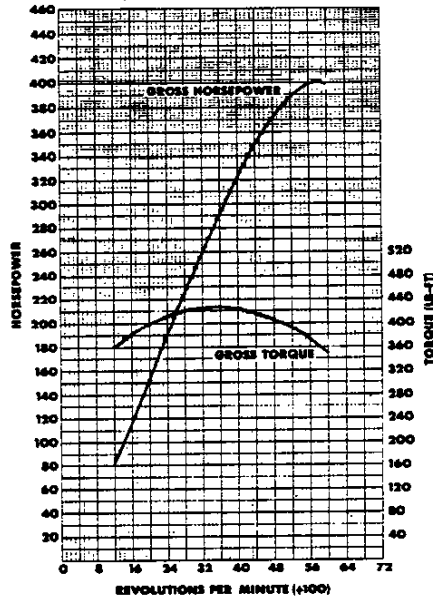
Power Displacement =  $\frac{\text{Crankshaft Revs/Mi} \times \text{Piston Displacement}}{2 \times 1728}$

Displacement Factor =  $\frac{\text{Power Displacement}}{\text{Performance Wt (tons)}}$

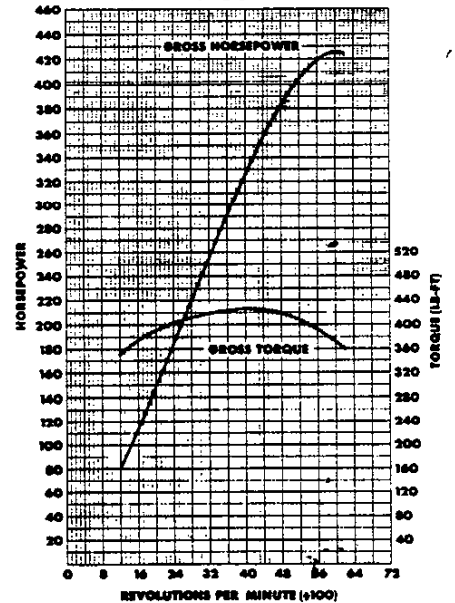
●340 HP TURBO-FIRE V-8



400 HP TURBO-FIRE V-8



425 HP TURBO-FIRE V-8



The engine performance curves represent full throttle performance as obtained from dynamometer test data corrected to standard barometric pressure 29.92 inches of mercury and standard temperature of 60°F.

GROSS POWER and TORQUE were obtained in a regular dynamometer test with the dynamometer exhaust

system, no fan, generator not charging, optimum spark advance, and optimum fuel setting.

NET POWER and TORQUE were obtained from a dynamometer test simulating actual operating conditions when the engine is in its vehicle, except the generator is not charging.

# 409 CUBIC INCH V-8 ENGINE - Cont'd.

## PRINCIPAL COMPONENTS

### CYLINDER BLOCK

Material ----- Cast alloy iron  
 Bore Diameter ----- 4.3120-4.3150  
 No. of Bulkheads ----- 5  
 Water Jacket ----- Full length around each cylinder  
 Cylinder Numbering Arrangement (front to rear)  
 Left bank ----- 1-3-5-7  
 Right bank ----- 2-4-6-8  
 ● Bore Spacing (℄ to ℄) ----- 4.84

### CYLINDER HEAD

Material ----- High chrome cast alloy iron  
 Bolt No & Size ----- 36; .4375 dia. 14 threads/in  
 Combustion Chamber Volume --(L31 & L80) 5.27 Cu. In  
 (L33) 6.14 Cu. In.

### INLET MANIFOLD

Material ----- Cast aluminum alloy  
 (RPO L33)-Cast alloy iron  
 Type ----- 8 part double-deck  
 Heat Provision ----- Heated by exhaust gases

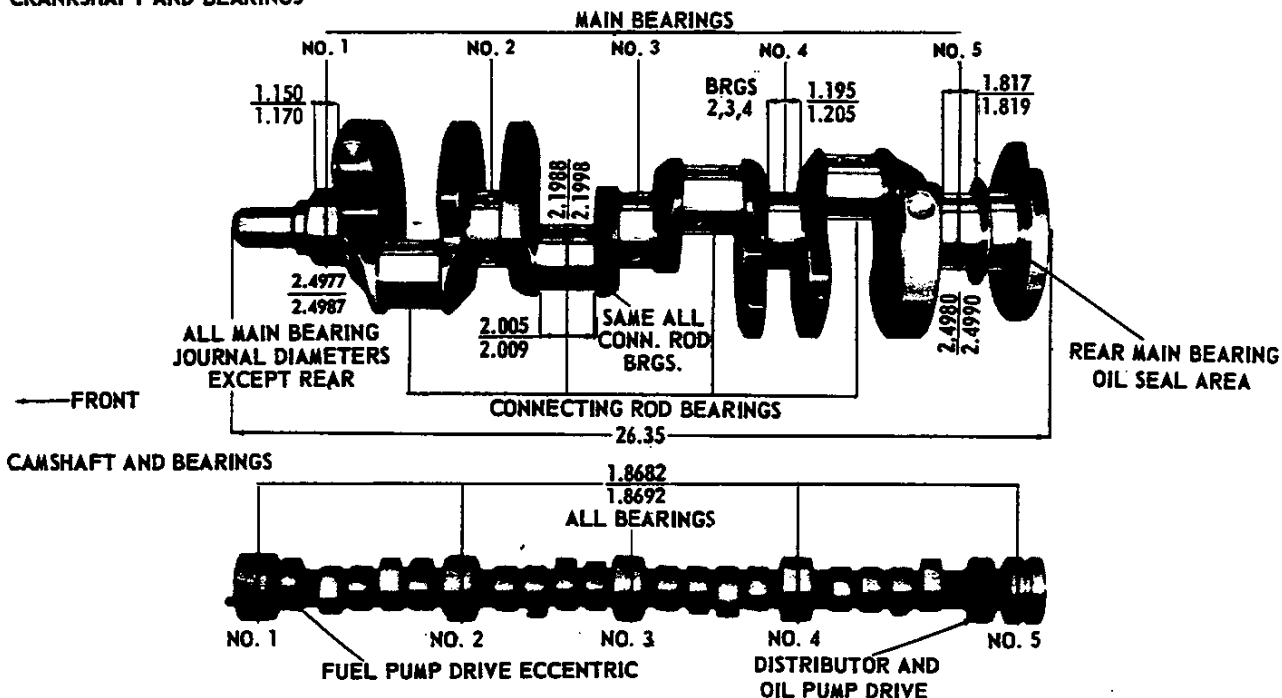
### EXHAUST MANIFOLD

Material ----- Cast alloy iron  
 Type ----- Low resistance; long runners  
 (RPO L33) Short runners

### CRANKSHAFT

Material ----- Forged steel  
 End Play ----- .006-.010  
 Counter Weights ----- 6  
 Crank Arm Length ----- 1.75  
 Vibration Damper ----- Rubber mounted inertia  
 Timing Gear & Mtl. ----- Steel Sprocket & Chain  
 Pulley Pitch Diameter ----- Dual; 6.64

### CRANKSHAFT AND BEARINGS



### MAIN BEARINGS

Material ----- #1-4 Premium Aluminum  
 #5 Extra life steel backed babbit  
 Type ----- Precision removable  
 End Thrust Against Bearing No. ----- 5  
 Clearance ----- (#1-4) .0006-.0032 (#5) .0018-.0034

Bearing	Theoretical Inner Dia	Effective Length	Projected Area
1-4	2.5001	.992	2.4801
5	2.5008	1.2525	3.1323

### CAMSHAFT

Material ----- Cast alloy iron  
 Lobe Lift  
 Inlet ---- (RPO L31 & L80) .2896 (RPO L33) .2289  
 Exhaust -- (RPO L31 & L80) .2963 (RPO L33) .2354

Bearing	Ream Diameter	Effective Length	Projected Area
1-4	1.8712	.860	1.6092
5	1.8712	.941	1.7589

### VALVE TRAIN

Type --- Individually mounted over head rocker arms  
 Lifters ----- (RPO L31 & L80) Mechanical  
 (RPO L33) Hydraulic

### Push Rods

Type & Material ----- Hollow steel  
 Ends ---- (RPO L31 & L80) Hardened steel inserts  
 RPO L33-(Rocker arm end) Hardened steel inserts  
 (Valve lifter end) Hardened tip

PRINCIPAL COMPONENTS - Continued

ROCKER ARMS

Type & Material ----- Stamped Steel  
 Ratio ----- 1.75:1

VALVE SPRINGS

	RPO L33	RPO L31 & L80
Diameter	.872-.888	1.070-1.090
Installed Length (in@lb)		
● Valves Closed	1.66@84-92	1.68@128-140
● Valves Opened	1.33@166-176	1.20@315-339
Free Length	2.03	2.01
Valve Spring Damper	Inner Spring*	Steel 3.75 coils
Oil Shield	Steel cup	

\* Inner Spring  
 Diameter (O.D.) ----- .863-.873  
 Free Length ----- 1.84  
 Installed Length (in@lb)  
 Valves closed ----- 1.488@20-24  
 Valves opened ----- 1.106@55-61

VALVES

Inlet Material ----- Alloy steel  
 Coating - Face & head aluminized; Stem chrome flash\*  
 Exhaust Material ----- High alloy steel  
 Coating - Face & head aluminized; Stem chrome flash\*  
 \*No chrome flash on RPO L33

VALVE LIFT

Inlet ----- (RPO L31 & L80) .5068 (RPO L33) .4005  
 Exhaust ----- (RPO L31 & L80) .5185 (RPO L33) .4119

VALVE TRAIN LASH

Inlet ----- (RPO L31 & L80) .012 (RPO L33) zero  
 Exhaust ----- (RPO L31 & L80) .020 (RPO L33) zero

VALVE TIMING

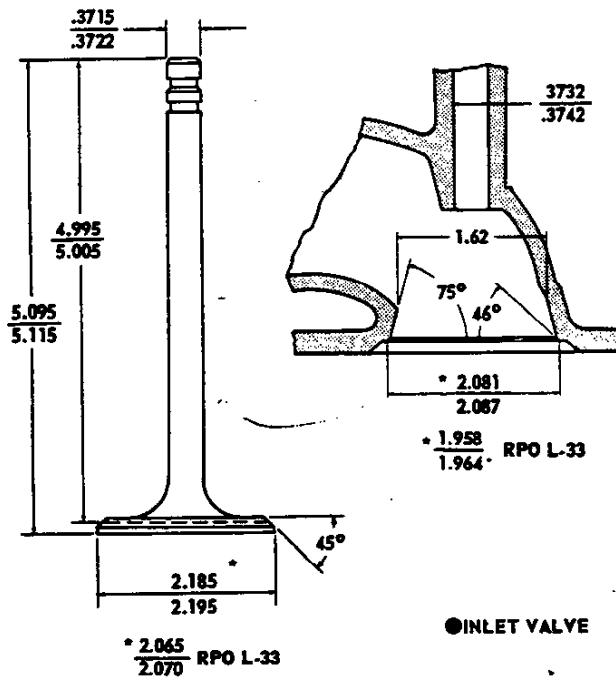
	Exc'l	Ramps	Inc'l	Ramps
	L31&L80	L33	L31&L80	L33
Inlet Valve	.012 lash		.012 lash	
Open-BTC	49°13'20"	18°30'	110°	38°30'
Closes-ABC	93°13'20"	67°30'	154°	93°30'
Duration	322°26'40"	266°	444°	312°
Exhaust Valve	.020 lash		.020 lash	
Opens-BBC	95°20'	68°30'	193°	88°30'
Closes-ATC	45°20'	25°30'	143°	51°30'
Duration	320°40'	274°	416°	320°

● PISTON

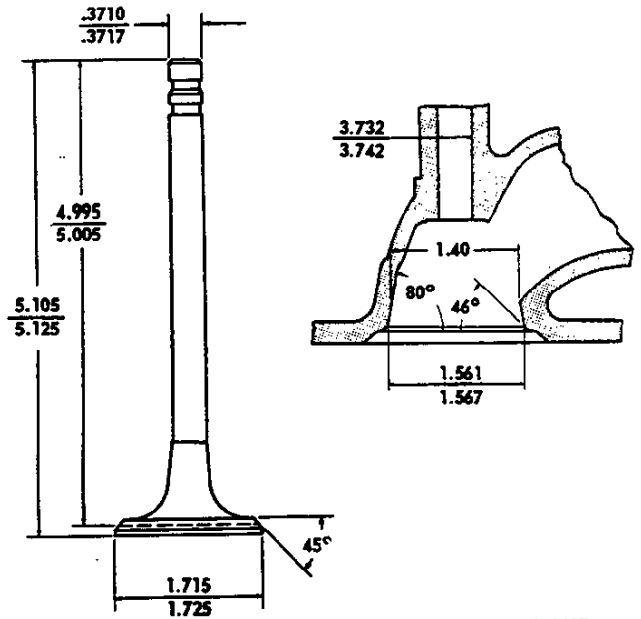
Material ----- Aluminum impact extruded  
 (RPO L33) Cast aluminum alloy

Head Type

RPO L31 & L80 -- Half flat, half slant with valve cutout  
 RPO L33 ----- 2/3 flat, 1/3 slant with valve cutout  
 Top Land Clearance -- .0520-.0610 (RPO L33) .0360-.0450  
 Skirt Clearance ----- .0031-.0035 (RPO L33) .0005-.0011  
 Compression Ring Groove Depth ----- .2390-.2455  
 Oil Ring Groove Depth ----- .2125-.2190  
 Pin Bore Offset (RPO L33 only) ----- .055-.065  
 Compression Height ----- 2.304-2.308  
 (RPO-L33) 2.220-2.260



● INLET VALVE



● EXHAUST VALVE

# 409 CUBIC INCH V-8 ENGINE - Cont'd.

## PRINCIPAL COMPONENTS - Continued

### ●COMPRESSION RINGS - UPPER

Material ----- Cast alloy iron  
 Inside Bevel --- Bottom edge 28°-52°(RPO L31 & L80)  
 30°(RPO L33) to piston vertical axis  
 Ring Face ----- Tapered  
 Coating ----- Chrome plate  
 Width ----- .0770-.0775  
 Wall Thickness ----- .194-.204  
 Gap ----- .015-.025

### ●COMPRESSION RINGS - LOWER

Type ----- One ring and one expander  
 Ring  
 Material ----- Cast alloy iron  
 Inside Bevel ----- Top edge 48°-52° to piston  
 vertical axis  
 Ring Face ----- Tapered  
 Coating ----- Wear resistant  
 Width ----- .0770-.0775  
 Wall Thickness ----- .174-.180  
 Gap ----- .015-.025  
 Expander  
 Material ----- Steel  
 Width ----- .068-.074

### OIL CONTROL RINGS

Material ----- Steel  
 Type ----- (2 rails and one spacer)  
 Width ----- .1869-.1889 assembled  
 Wall Thickness ----- .135-.141  
 Gap ----- .015-.055  
 Rail Coatings ----- Chrome plated O. D.

### PISTON PINS

Material ----- Chromium steel  
 Length ----- 3.250-3.270  
 Diameter ----- .9895-.9898  
 Clearance in Piston ----- .00015-.00035  
 Pin Mounting ----- Locked in rod by shrink fit

### CONNECTING RODS

Material ----- Drop forged steel  
 Length (center to center) ----- 6.009-6.011

### CONNECTING ROD BEARINGS

Type ----- Premium aluminum  
 Clearance ----- .0007-.0028  
 Theo I. D. ----- 2.2011  
 Effective Length ----- .857  
 End Play ----- .016-.020

## FUEL SYSTEM

### FUEL TANK

Capacity (Gal)  
 Sedans & Coupes ----- 20  
 Station Wagons ----- 19  
 Fuel Tank Location  
 Station Wagon ----- In left quarter panel  
 behind rear axle  
 Remaining Models ----- Rearward of rear axle  
 kick-up in shelf area  
 Filler Location ----- Behind opening in left  
 rear quarter panel  
 Gauge ----- AC, electric

### FUEL FILTER

In Fuel Tank ----- Mesh strainer  
 To Carburetor Inlet -- Glass bowl with paper element

### FUEL PUMP ASSEMBLY

Make ----- AC  
 Drive ----- Camshaft eccentric  
 Type ----- Diaphragm  
 Location ----- Lower right front of engine  
 Pressure Range ----- 7.25-8.75 psi

### CARBURETOR

Make & Type  
 RPO L31 ----- Carter; 4 bbl downdraft  
 RPO L33 ----- Rochester; 4 bbl downdraft  
 RPO L80 ----- Carter; 2 x 4 bbl downdraft  
 SAE Flange Size ----- 1.50  
 Throttle Bore

	Primary	Secondary
RPO L31	1.625	1.6875
RPO L33	1.56	1.68
RPO L80 (front & rear carb)	1.5625	1.6875

Secondary Throttle Actuation ----- By linkage  
 approximately when primary valves are  
 opened half way between closed and full open

### Venturi Diameter

	Primary	Secondary
RPO L31	1.34	1.5625
RPO L33	1.3125	1.4688
RPO L80 (front & rear carb)	1.25	1.5625

### AIR CLEANER

Make & Type  
 RPO L31 ----- AC, Oil wetted polyurethane element  
 RPO L33, L80 --AC, Resin impregnated paper element

## EXHAUST and VENTILATION SYSTEM

### GENERAL

Type ----- Dual

### EXHAUST PIPE

Dimensions (O. D.) ----- 2.50

Wall Thickness ----- .067-.081

### TAIL PIPE

Dimensions (O. D.) ----- 2.00

Wall Thickness ----- .052-.066

### MUFFLERS

Type ----- Dual; reverse flow

Construction ----- Heads and body joined by  
rolled lock seam construction

#### Shell

Right hand ----- .036 stainless steel

Left hand ----- .036 sheet steel aluminum coating

Wrap ----- .030 indented asbestos sheet

Cover ----- .018 sheet steel, aluminum coating

### Heads

Right hand ----- .048 stainless steel

Left hand ----- .048 sheet steel, aluminum coating

### Baffles

Right hand ----- 5; .036 stainless steel

Left hand ----- 5; .036 sheet steel, alum coating

Length, body ----- 29.24

Width (I. D.) ----- 3.24

Height (I. D.) ----- 7.74

### RESONATORS

Type ----- Straight through

Material ----- .048 stainless steel

Corrosion prevention-Aluminum coating on both sides

### ● ENGINE VENTILATION

Type ----- Closed-Positive; fumes withdrawn into  
induction system, fresh air enters the crankcase  
through the side of the oil filler tube via hose &  
tubing from the under side of the air cleaner  
except RPO L33 which is Positive and air enters  
via the oil breather cap.

## LUBRICATION SYSTEM

### GENERAL

Type ----- Controlled full pressure

Main Bearings ----- Pressure

Connecting Rods ----- Pressure

Piston Pins ----- Splash

Cylinder Walls ----- Pressure, jet cross sprayed

Camshaft Bearings ----- Pressure

Valve Lifters ----- Pressure

Rocker Arms ----- Pressure

Timing Gears ----- Nozzle sprayed

#### Oil Pressure Sending Unit

Type ----- Electric

Actuation ----- Opens or closes circuit @ 2 to 6 PSI

#### Oil Filler

Cap ----- Positive seal

Location ----- Right front of intake manifold

### CRANKCASE CAPACITY (Quarts)

Refill ----- 5

Refill with Filter Change ----- 6

### OIL PUMP

Type ----- Gear

Normal Oil Pressure ----- 50 PSI (min) @ 2000 RPM

Intake Type ----- Fixed

Capacity (GPM @ Eng RPM) ----- 4.3 @ 2000

Regulator Valve ----- Opens between 40-45 lbs

### OIL FILTER

Make ----- AC

Type ----- Full flow replaceable element

Location ----- Left rear at engine

Capacity (Qts)----- 1

By-Pass Valve ----- Opens between 9 to 11 PSI

### LUBRICANT GRADES AND TEMPERATURES

32°F and Above --- SAE20W, SAE20, or SAE 10W-30

0°F and Above ----- SAE 10W or SAE 10W-30

Below 0°F ----- SAE 5W or SAE 5W-20

### OIL PAN DRAIN SCREW

Type ----- Hex head

Location ----- Lower front edge of oil pan sump

Size Hex Head ----- .860-.875

Thread ----- 1/2-20 UNF 2A

Length ----- 0.81

Diameter ----- .410-.430

# 409 CUBIC INCH V-8 ENGINE - Cont'd.

## COOLING SYSTEM

### GENERAL

Type ----- Liquid, Pressurized  
Capacity with Heater (standard equipment) --- 22 qts

### RADIATOR

Make & Type ----- Harrison, tube on center  
Core Constant and Thickness  
Distance between fins ----- .18  
Distance between tubes ----- .55  
Thickness of core ----- 1.98  
Frontal Area (Sq In) ----- .439

### RADIATOR CAP RELIEF VALVE

Opens at ----- Approx 13 psi

### THERMOSTAT

Make and Type ----- Harrison, Pellet  
Begins to Open ----- 177°-183°F  
Fully Opened ----- 212°F

### RADIATOR HOSE

Outlet, Lower (radiator to water pump) ---- 1.88 ID  
Inlet, Upper (thermostat hsg to radiator) --- 1.50 ID

### FAN

Number of Blades ----- 5, staggered  
Diameter ----- 18.00

Fan Pulley Pitch Diameter ----- 7.00  
Drive

Type ----- Thermo modulated fluid coupling  
Performance ----- At 4000 RPM input, fan speed=  
3200-3500 RPM @ 135°-150°F  
800-1600 RPM@120°F and below

### BELT, CRANKSHAFT, FAN AND GENERATOR

Number used ----- Two  
Angle of "V" ----- 39°-41°  
Pitch Line  
Fan, Generator and Water Pump Belt ----- 59.00  
Fan and Water Pump Belt ----- 43.00  
Width ----- .380

### WATER PUMP

Type ----- Centrifugal  
Capacity ----- 78 GPM @ 5200 RPM  
Bearing --- Permanently lubricated double row ball  
Drive ----- Fan belt  
Ratio (pump to engine RPM) ----- .949:1

### DRAIN LOCATIONS

Radiator ----- Left side bottom  
Type ----- Petcock  
Engine Block ----- Right and left center  
Type ----- Plug

## ELECTRICAL SYSTEM

### SUPPLY SYSTEM

#### BATTERY

Make ----- Delco-Remy  
Voltage Rating ----- 12  
Capacity (SAE) ----- 61 amp hr @ 20 hr rate  
RPO L33 ----- 70 amp hr @ 20 hr rate  
Heavy Duty (T60) ----- 70 amp hr @ 20 hr rate  
Total Number of Plates ----- 66  
Number of Cells ----- 6  
Terminal Grounded ----- Negative  
Location ----- Right front engine compartment

#### GENERATOR

Make ----- Delco-Remy  
Type ----- Diode Rectified

#### Rating

Amps ----- 9-37  
Volts ----- 12-15  
Drive ----- By fan belt  
Pully, Pitch Diameter ----- 2.88  
Ratio (Gen to Engine Speed) ----- 2.30:1

#### REGULATOR

Make ----- Delco-Remy  
Type ----- Two-unit, Vibrator  
Voltage Regulator  
Voltage ----- 13.8-14.8 @ 85°F  
Field Relay (Combination light & field relay)  
Closing Voltage ----- 1-3 Volts @ 80°F  
Location ----- Left side front engine compartment

## ELECTRICAL SYSTEM - Continued

### STARTING SYSTEM

#### STARTING MOTOR

Make ----- Delco-Remy  
 Rotation (drive end view) ----- Clockwise  
 Test Conditions ----- Engine at operating temperature

#### No Load Test

Amps ----- 65-100  
 Volts ----- 10.6  
 RPM ----- 3600-5100

#### Motor Drive

Engagement ----- Solenoid  
 Pinion meshes at ----- Rear  
 Pinion tooth no. ----- 9  
 Flywheel tooth no. ----- 168

Mounting ----- Bolted to clutch housing

#### Starting

Ignition Switch ---- Five (5) positions; Accessory  
 Lock, Off, On, Start

#### Starting Procedure

Synchromesh ----- Place gearshift lever in neutral and depress clutch pedal to floor

Powerglide ----- Place control lever in N or P position

Initial Start ---- Depress accelerator pedal to floor and release. Turn ignition switch to START and release as soon as engine starts. When engine is warm or outside temperature is below 0° F hold accelerator about half way open.

### IGNITION SYSTEM

#### Coil

Make ----- Delco-Remy  
 Type ----- 12 Volt  
 Amperes Drawn  
 Engine stopped ----- 4.0  
 Engine idling ----- 1.8

#### DISTRIBUTOR

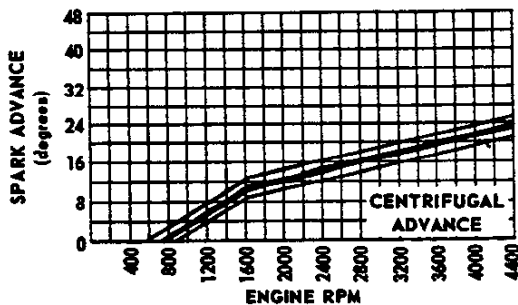
Make ----- Delco-Remy  
 Type ----- Dual breaker  
 Cam Angle ----- 28°-32°  
 Breaker Gap ----- .019 new  
 Breaker Arm Tension ----- 19-23 oz  
 Centrifugal Advance Begins (RPM) ----- 700  
 Max Degrees @ RPM ----- 24 @ 4600  
 Vacuum Advance Begins (In Hg) ----- 8  
 Max Degrees @ In Hg ----- 15 @ 15.5  
 Timing (Initial Design Setting)  
 Crankshaft Degrees @ RPM - 12°±1°BTC@600(max)  
 Timing Mark Location ---- On harmonic balancer  
 Firing Order ----- 1-8-4-3-6-5-7-2

#### SPARK PLUGS

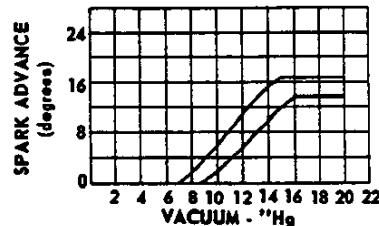
Make ----- AC43N  
 Thread Size (mm) ----- 14  
 Gap ----- .033-.038  
 Torque ----- 25 lb ft

CABLE ---- Linen core impregnated with electrical conducting material and insulations of rubber with neoprene jacket

INITIAL SETTING 12°BTC AT IDLE

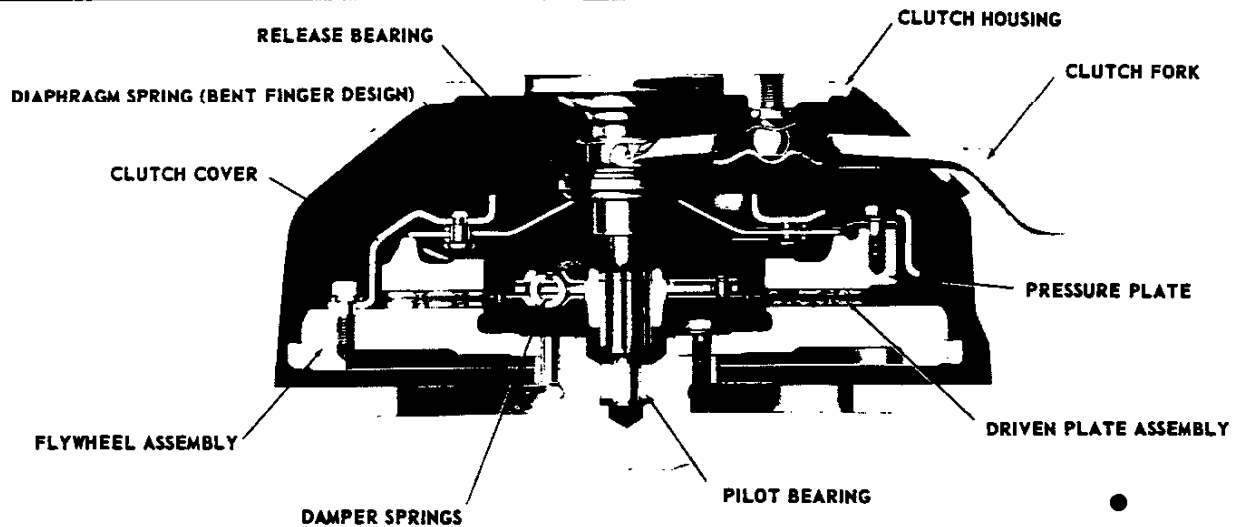


VACUUM ADVANCE





# CLUTCHES



ENGINE	Name	Turbo-Thrift 6		Turbo-Fire V-8						
	Horsepower	140		195	250	300	340	400	425	
	Displacement, in. <sup>3</sup>	230		283	327			409		
TRANSMISSION		3-speed	3-speed with overdrive	3-speed	3-speed with overdrive	3-speed 4-speed		3-speed 4-speed		
Clutch assembly										
Clutch assembly type		Single dry disk				Single dry disk, centrifugal ●				
Clutch cover and pressure plate assembly	Effective plate load, lb	1500 - 1800 (a)		1700 - 1950		2100 - 2300 ●		2300 - 2600		
	Type of drive	Steel straps								
Pressure Plate	Material	Cast iron				Perlitic malleable or nodular iron				
	OD	10.14				10.48				
Clutch spring assembly	Type	Circular plate diaphragm				Circular plate diaphragm, bent fingers ●				
	Material	Spring steel heat treated								
Attachment to fly/w		6 bolts, 3/8 - 16 UNC 3A, 1.00 long								
Driven plate assembly	Type	Single disk with two friction surfaces								
	Cushions	Flat spring steel between friction rings								
	Dampers	6 springs		12 springs (6 sets of 2) ●		10 springs (5 sets of 2)				
	Friction rings	OD	9.12 (b)		10.0		10.4			
		ID	6.12 (b)		6.5		6.5			
Material	Total area (sq. inches)	71.82 (c)		90.72		103.54				
	Material	Woven asbestos (d)		Woven asbestos		Premium woven asbestos ●				
Flywheel assembly	Flywheel	Material	Cast iron							
		OD	12.54				13.44			
	Ring gear	Material	HR steel heat treated							
		No. of teeth	153				168			
		Width	.4010 - .4130				.4100 - .4220			
PD	12.75				14.00					
Attachment	Shrink fit									
Bearings	Release	Type	Single row ball							
		Lubrication	Packed with high temperature, high viscosity grease							
Pilot	Type	Sintered powdered bronze bushing								
	Lubrication	Oil impregnated								
Controls	Clutch fork		Drop forged steel, pivot mounted on ball							
	Pedal mounting		Pendent, from brace on dash							
Clutch housing	Material		Aluminum alloy							
	Attachment to engine		6 bolts, 3/8 - 16 UNC-2A, 1.25 long							

(a) For heavy duty clutch, 1900-2200

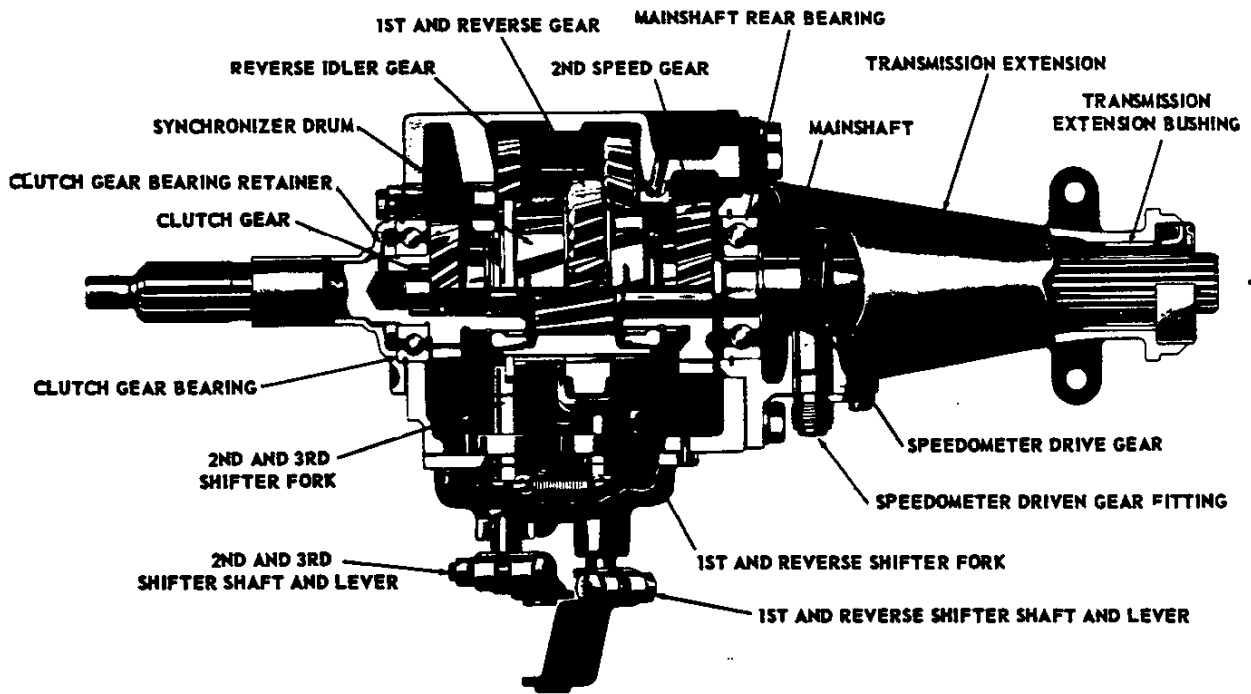
(b) For heavy duty clutch, 10.0 and 6.00

(c) For heavy duty clutch, 100.54

(d) Woven front and molded rear ring for heavy duty clutch

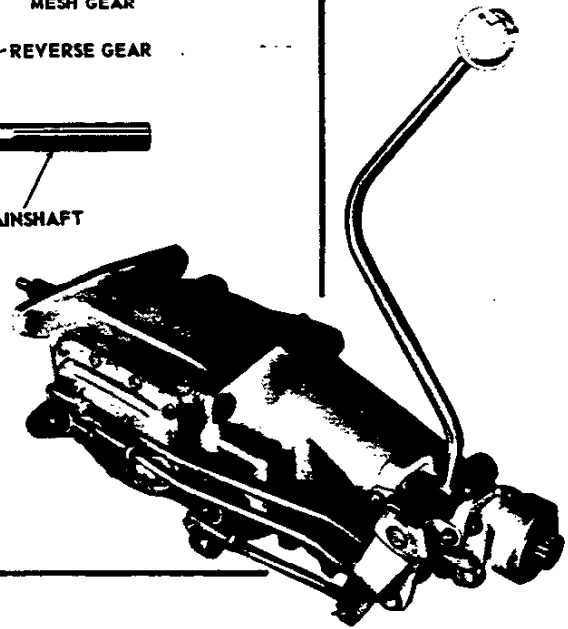
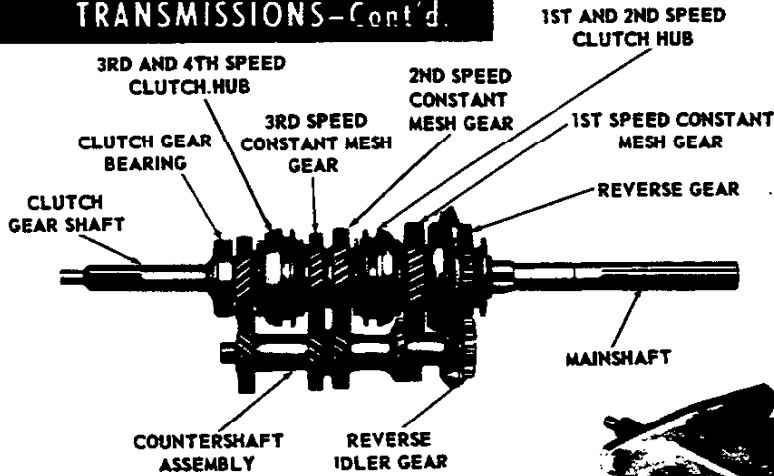
# TRANSMISSIONS

## THREE AND FOUR-SPEED CONVENTIONAL TRANSMISSIONS



THREE-SPEED TRANSMISSION

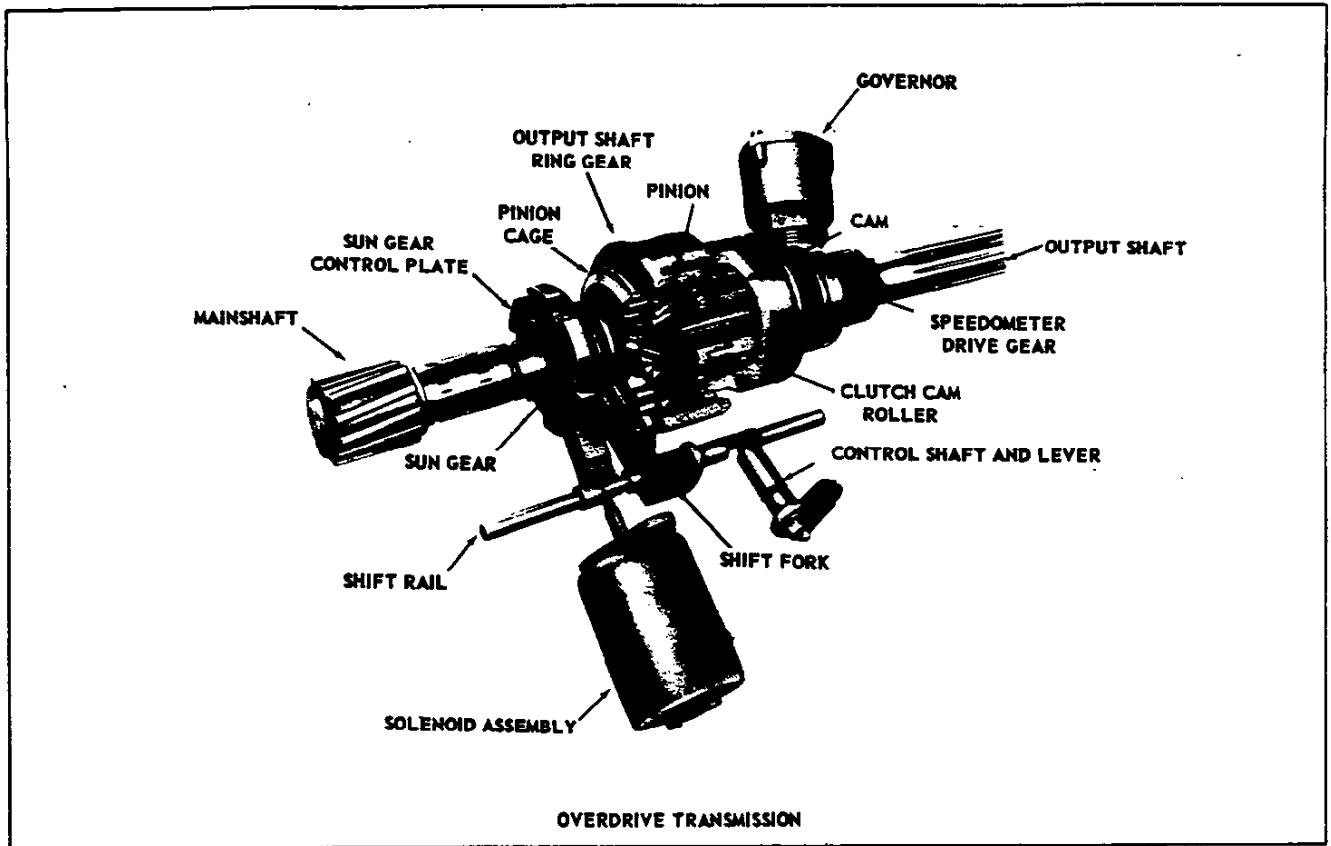
## TRANSMISSIONS-Cont'd.



FOUR-SPEED TRANSMISSION

Engine	Name	Turbo-Thrift 6	TURBO-FIRE V8									
		Horsepower	140	195	250	300	380	409	250	300	340	400
	Displacement (in <sup>3</sup> )	230	283	327			409	327			409	
TRANSMISSION TYPE		THREE SPEED					FOUR SPEED					
Case material		Cast iron					Aluminum					
Gear-shift	Control	Remote										
	Type	Lever										
	Location	Steering column					Floor					
Gears	Type	Helical										
	Material	Forged steel, hardened										
	Synchronization	2nd and 3rd					All forward gears					
	Constant mesh gears	2nd					1st 2nd and 3rd					
	Sliding gears	1st and reverse					Reverse					
	Ratio	First	2.94:1				2.47:1		2.54:1		* 2.20:1	
		Second	1.68:1				1.53:1		1.89:1		1.64:1	
Third		1:1				1:1		1.51:1		1.31:1		
Fourth		--				--		1:1		1:1		
Reverse		3.34:1				2.80:1		2.61:1		2.26:1		
Speedometer gears	Normal pitch	28										
	No. of Drive	8										
	Teeth Driven	20										
Lubricant	Type recommended	Military MIL-L-2105-B										
	Capacity (pts)	2					2.5					
Transmission ext. oil seal		Steel encased double seal of spring loaded rubber or felt										

\* Optional 2.54 low gear set.



**OVERDRIVE UNIT RPO**

**GENERAL DATA**

Type ----- 3-speed synchro-mesh with 3-pinion planetary drive unit. The drive unit with its integral mainshaft replaces the mainshaft and extension of the regular 3-speed transmission.

Lockout Switch ----- Manually controlled by "pull type" cable located under instrument panel to right of steering column. With handle fully extended, overdrive is locked-out.

Kickdown Switch ----- On carburetor, actuated by accelerator pedal.

Cut-in speed (output shaft RPM) ----- 1385

Cut-out speed (output shaft RPM) ----- 975

**GEAR RATIOS**

Overdrive Unit	Locked Out	Locked In
First	2.94:1	2.058:1
Second	1.68:1	1.176:1
Third	1.00:1	0.700:1
Reverse	3.33:1	

**SPEEDOMETER GEARS**

Tooth Pitch ----- 30

Teeth-Drive and Driven ----- 8, 22

**LUBRICANT**

Type ----- Military MIL-L-2105-B

Capacity

Transmission ----- 2 pints

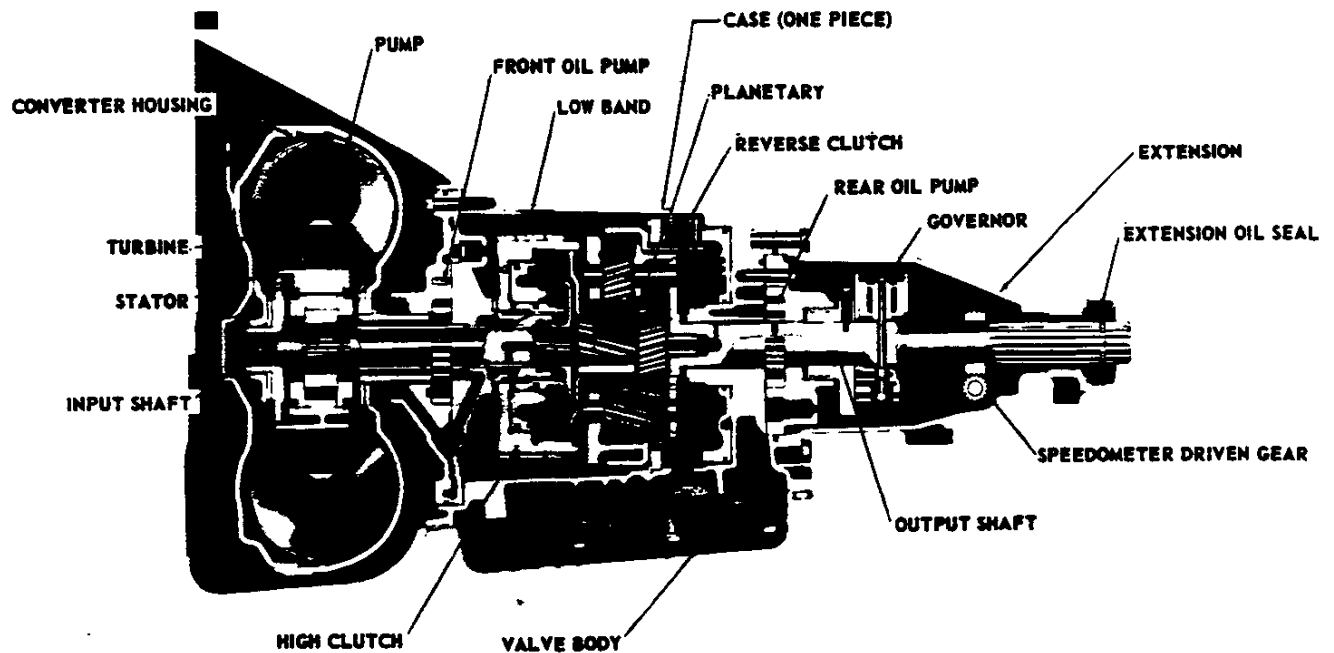
Overdrive unit ----- 1 pint

Total ----- 3 pints

# POWERGLIDE

Engine	Displacement, cubic inches		230	283	327	327	409
	Horsepower		140	195	250	300	340
	RPO 1 -		-	-	L30	L74	L33
<b>AUTOMATIC TRANSMISSION</b>							
General data	Type		Automatic hydraulic torque converter with planetary gear system for low and reverse				
	Selector lever	Location	Steering column				
		Operation	Actuates manual valve in hydraulic control system				
		Quadrant position	P-R-N-D-L				
	Parking lock	Type	Pawl and gear (on planetary)				
		Operation	Applied by selector lever thru spring loaded linkage				
	Method of cooling		Air	Water			
Flywheel assembly		Steel stamping with welded on ring gear					
Hydraulic controls	Manual valve type		Spool				
	Pressure regulator valve type		Spool				
	Pressure range, psi @ idle	Drive and neutral	Minimum				
			Maximum				
		Low and park	Minimum				
			Maximum				
	Reverse	Minimum					
Maximum							
Converter assembly	Type		Three element				
	Pump		Inner and outer sheet steel shells separated by sheet steel vanes. Outer shell is pump housing which is welded to converter housing				
	Turbine		Inner and outer shells separated by sheet steel vanes. Assembly supported in converter cover. Operation independent of cover and pump housing				
	Stator		Aluminum air foil supported on a stationary sleeve by an over-running clutch of cam and roller design				
	Stall torque ratio		2.10:1				
	Diameter (nominal)		11.0	11.75			
Planetary gear set	Type		Compound planetary				
	Range	Drive	1.82:1 to 1:1		1.76:1 to 1:1		
		Low	1.82:1		1.76:1		
		Reverse	1.82:1		1.76:1		
	Low band		Three linked circular segments				
Low band servo		Piston with release spring and inner cushion spring					
Case	Material		Aluminum (one piece)				
Accelerator pedal controls - output shaft RPM and vehicle speed (MPH)	N/V		40.5	39.4	42.2		
	Upshift	Closed throttle	650 (16.0)		580 (14.7)		585 (13.9)
		Throttle at detent	1925(47.4)	2080(51.4)	2140 (54.3)	2350 (55.5)	
		Full throttle	2225(55.0)	2400(59.3)	2500 (63.5)	2750 (65.1)	
	Downshift	Closed throttle	605 (15.0)		560 (13.5)		540 (12.8)
		Throttle at detent	1180(29.1)	845(25.8)	735 (18.7)	780 (18.5)	
		Full throttle	2070(51.2)	2263(55.9)	2410 (60.8)	2610 (61.9)	

Engine	Displacement, cubic inches		230	283	327	327	409
	Horsepower		140	195	250	300	340
	RPO 1 -		-	-	L30	L74	L33
<b>AUTOMATIC TRANSMISSION - Continued</b>							
High clutch	Type		Multi-disk				
	Drive plates	Description	Waved steel with bonded organic facings				
		Number	3	4			
	Driven plates	Description	Flat steel				
Number		4	5				
Reverse clutch	Type		Multi-disk				
	Drive plates	Description	Flat steel with bonded organic facings				
		Number	4	5	6		
	Reaction plates	Description	Waved steel				
Number		3	4	5			
Torque multiplication	Maximum overall ratio		3.82:1		3.70:1		
	Low and reverse		3.82:1 to 1.82:1		3.70:1 to 1.76:1		
Lubricant	Type		Type A, suffix A				
	Capacity (pts)	Dry	15			18	
		Refill	3				
Governor	Type		Centrifugal				
	Operation		Regulates pump oil pressure to automatic shift control valve body				
	Drive		Mounted on output shaft				
	Location		In extension				
Oil pumps	Type		Internal-external gear				
	Number		Two, front and rear				
	Function		To supply pressure				
	Front pump	Drive	Converter pump				
		Function	Supply main system pressure at low vehicle speeds				
	Rear pump	Drive	Output shaft				
Function		Supply main system pressure at high vehicle speeds and during push starts					





# AMA Specifications — Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED(\*)

## GENERAL SPECIFICATIONS

(All dimensions in inches unless otherwise indicated)

MODEL 1200-1600-1800	Additional Information Page Nos.	Sedans	Coupe	Convertible	Station Wagon
Wheelbase (L101)	23	119.0			
Tread	Front (W101)	60.3			
	Rear (W102)	59.3			
Maximum Overall Dimensions	Length (L103)	210.4			
	Width (W103)	79.0			
	Height (H101)	55.5	54.5	55.0	56.0
Transmission (Specify trade name - opt., not available)	Manual	3-Speed Synchromesh, Standard			
	Overdrive	Optional			
	Automatic	Powerglide, Optional			
Axle ratio	Manual	12 and 1600 Sedan, 3.08:1 Station Wagons and 1800 Models, 3.36:1			
	Overdrive	3.70:1			
	Automatic	Same as "Manual"			
Tire size	18	7.00 x 14, All except 7.50 x 14, Convertibles 8.00 x 14, Station Wagons			
Engine	Type, no. cyl., valve arr.	2 90° V-8 OHV			
	Fuel system (Carb., other)	3 Carburetor			
	Bore and stroke	2 3.875 x 3.00			
	Piston displ., cu.in.	2 283			
	Std. compression ratio	2 9.25:1			
	Max. bhp at engine rpm	2 195 @ 4800			
	Max. torque at rpm	2 285 @ 2400			



## AMA Specifications – Passenger Car

The information contained herein is prepared, distributed by, and is solely the responsibility of the automobile manufacturing company to whose products it relates. Questions concerning these specifications should be directed to the manufacturer whose address is shown below. This uniform specification form was developed by the automobile manufacturing companies under the auspices of the Automobile Manufacturers Association.

<b>MANUFACTURER</b> Chevrolet Motor Division General Motors Corporation	<b>CAR NAME</b> Chevrolet (1200-1600-1800) (283 V-8)	
<b>MAILING ADDRESS</b> Chevrolet Engineering Center Box 7346 North End Station, Detroit 2, Mich.	<b>MODEL YEAR</b> 1963	<b>ISSUED:</b> 10/1/62 <b>REVISED (e)</b>

**NOTES:**

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

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<b>BODY—TYPES AND STYLE NAMES—</b>		Body type, number of passenger & style names; use manufacturer's code for series & body style.
<u>283 Cu. In. V-8 Engine - 195 hp</u>		
Biscayne	1211 2-Door Sedan - 6 Passenger	
	1235 4-Door Station Wagon - 6 Passenger	
	1269 4-Door Sedan - 6 Passenger	
Bel Air		
	1611 2-Door Sedan - 6 Passenger	
	1635 4-Door Station Wagon - 6 Passenger	
	1645 4-Door Station Wagon - 9 Passenger	
	1669 4-Door Sedan - 6 Passenger	
Impala		
	1835 4-Door Station Wagon - 6 Passenger	
	1839 4-Door Sport Sedan - 6 Passenger	
	1845 4-Door Station Wagon - 9 Passenger	
	1847 2-Door Sport Coupe - 5 Passenger	
	1867 2-Door Convertible - 5 Passenger	
	1869 4-Door Sedan - 6 Passenger	

# AMA Specifications - Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED (\*)

## POWER TEAMS

(Indicate whether standard or optional)

MODEL AVAILABILITY	ENGINE					TRANSMISSION	AXLE RATIO (Std. first)		
	Displ. cu. in.	Carburetor	Compr. Ratio	BHP @ RPM	Torque @ RPM		(a)		
1200-1600 (excluding sta. wagons)	<b>Z83</b>	2 bbl. down-draft	9.25:1	195 @ 4800	285 @ 2400	3-Speed Powerglide* Overdrive*	3.08:1	3.36:1	3.55:1
1800 and all station wagons	<b>Z83</b>	2 bbl. down-draft	9.25:1	195 @ 4800	285 @ 2400	3-Speed Powerglide* Overdrive*	3.36:1	3.55:1	3.70:1

\* - Optional

(a) - Positraction options available in same ratio.

# AMA Specifications—Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED (a)

MODEL 1200-1600-1800 (V-8) 195 hp Engine

## ENGINE—GENERAL

Type, no. cyls., valve arr.		90° OHV V-8
Bore and stroke (nominal)		3.875 x 3.00
Piston displacement, cu. in.		283
Bore spacing (C/L to C/L)		4.4
No. system (front to rear)	L. Bank	1-3-5-7
	R. Bank	2-4-6-8
Firing order		1-8-4-3-6-5-7-2
Compres. ratio (nominal)		9.25:1
Cylinder Head Material		Cast Alloy Iron
Cylinder Block Material		Cast Alloy Iron
Cylinder Sleeve—Wet, dry, none		None
Number of mounting points	Front	Two
	Rear	One
Engine installation angle		5° 11'
Taxable horsepower	Dia. <sup>2</sup> x No. Cyl. 2.5	48
Published max. bhp* @ eng. RPM		195 @ 4800
Published max. torque* (lb. ft. @ RPM)		285 @ 2400
Recommended fuel regular - premium		Regular
Idle speed (spec. neutral or drive)	Manual	500 in neutral
	Automatic	475 in drive

## ENGINE—PISTONS

Material		Cast Aluminum Alloy	
Description and finish		Flat notched head, Slipper skirt	
Weight (piston only) oz.		20.30	
Clearance (limits)	Top land	.035 - .044	
	Skirt	Top	.0006 - .0010 (a)
		Bottom	-
Ring groove depth	No. 1 ring	.2153 - .2218	
	No. 2 ring	.2153 - .2218	
	No. 3 ring	.2093 - .2158	
	No. 4 ring	-	

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

(a) Measured 2.44 from top of cylinder.

# AMA Specifications—Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (\*)

MODEL 1200-1600-1800 (V-8) 195 hp Engine

## ENGINE—CRANKSHAFT

Material		Forged Steel	
Vibration damper type		None	
End thrust taken by bearing (No.)		5	
Crankshaft end play		.002 - .006	
Main bearing	Material & type		
	Extra-life steel backed babbitt		
	Clearance		
	.0008 - .0034		
	Journal dia. and bearing overall length	No. 1	2.3009 x .752
		No. 2	2.3009 x .752
		No. 3	2.3009 x .752
		No. 4	2.3009 x .752
No. 5		2.3004 x 1.177	
No. 6		None	
No. 7		None	
Dir. & amt. cyl. offset		None	
Crankpin journal diameter		1.999 - 2.000	

## ENGINE—CAMSHAFT

Location		In block above crankshaft
Material		Cast alloy iron
Bearings	Material	Extra-life steel backed babbitt
	Number	5
Gear or chain		Chain
Crankshaft gear or sprocket material		Steel sprocket
Camshaft gear or sprocket material		Cast alloy iron
Type of Drive	Timing chain	No. of links
		46
		Width
		.875
		.500

## 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	Zero
	Exhaust	Zero
Timing marks on flywheel, damper, other		Crankshaft Pulley Hub

(Continued)

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (a)

MODEL 1200-1600-1800 (V-8) 195 hp Engine

## ENGINE—RINGS

Function (top to bottom)	No. 1, oil or comp.	Compression
	No. 2, oil or comp.	Compression
	No. 3, oil or comp.	Oil Control
	No. 4, oil or comp.	None
Compression	Description - material, type, coating, etc.	Cast Alloy Iron, inside bevel Upper - Flash chrome plate Lower - Wear resistant coating
	Width	.0775 - .0785 Upper; .0770 - .0780 Lower
	Gap	.010 - .020
Oil	Description - material, type, coating, etc.	Multi-piece (2 rails and one spacer expander) Spacer-expander - steel Rails - Stainless steel, chromeplated O.D.
	Width	.1930 - .1950 (assembled)
	Gap	.015 - .055
Expanders		In oil ring assembly

## ENGINE—PISTON PINS

Material	Chromium Steel	
Length	2.990 - 3.010	
Diameter	.9270 - .9273	
Type	Locked in rod, in piston, floating, etc.	Locked in rod
	Bushing	None
	Material	-
Clearance	In piston	.00015 - .00025
	In rod	None
Direction & amount offset in piston		Major Thrust Side .060

## ENGINE—CONNECTING RODS

Material	Drop Forged Steel	
Weight (oz.)	20.00	
Length (center to center)	5.699 - 5.701	
Bearing	Material & Type	Extra-life steel backed babbitt - removable
	Overall length	.807
	Clearance (limits)	.0007 - .0027
	End play	.009 - .013

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (a)

MODEL 1200-1600-1800 (V-8) 195 HP Engine

## ENGINE—LUBRICATION SYSTEM (cont.)

Oil pump type	Gear
Normal oil pressure (lb. @ engine rpm)	40 PSI @ 2000
Oil pressure sending unit (elect. or mech.)	Electric
Type oil intake (floating, stationary)	Stationary
Oil filter system (full flow, partial, other)	Full Flow
Filter replacement (element, complete)	Element
Capacity of crankcase, less filter-refill (qt.)	4
Oil grade recommended (SAE viscosity and temperature range)	32°F and above - SAE 20W, SAE 20 or SAE 10W-30 40°F and above - SAE 10W, or SAE 10W-30 50°F and below - SAE 5W, or SAE 5W-20
Engine Service Requirement (MM, MS, etc.)	MS or DG

## ENGINE—EXHAUST SYSTEM

Type (single, single with cross-over, dual, other)	Single with crossover
Muffler No. & type (reverse flow, straight thru, separate resonator)	One: Reverse flow
Exhaust pipe dia. (O.D. & wall thickness)	2.00 x .067-.083
	2.00 x .057-.069
Tail pipe diameter (O.D. & wall thickness)	1.875 x .062-.076

## ENGINE—CRANKCASE VENTILATION SYSTEM

Type (ventilates to atmos., induction system, other)	Standard	Ventilates to induction system
	Optional	
Control unit	Make and model	AC5649996
	Location	At rear of carburetor
	Energy source (manifold vacuum, carburetor air stream, other)	Manifold vacuum
	Control method (variable orifice, fixed orifice, other)	Variable
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

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED(\*)

MODEL 1200-1600-1800 (V-8) 195 HP Engine

## ENGINE—VALVE SYSTEM (cont.)

*	Timing	Intake	Opens (°BTC)	32° 30'
			Closes (°ABC)	87° 30'
			Duration - deg.	300°
		Exhaust	Opens (°BBC)	74° 30'
			Closes (°ATC)	45° 30'
			Duration - deg.	300°
		Valve opening overlap	78°	
Intake	Material		Carbon Steel	
	Overall length		4.902 - 4.922	
	Actual overall head dia.		1.715 - 1.725	
	Angle of seat & face		46° (seat) 45° (face)	
	Seat insert material		None	
	Stem diameter		.3404 - .3417	
	Stem to guide clearance		.0010 - .0033	
	Lift (@ zero lash)		.3987	
	Outer spring press. and length	Valve closed (lb. @ in.)	78-86 @ 1.660	
		Valve open (lb. @ in.)	170-180 @ 1.260	
	Inner spring press. and length	Valve closed (lb. @ in.)	Spring Damper	
		Valve open (lb. @ in.)	Spring Damper	
	Exhaust	Material		High Alloy Steel
		Overall length		4.913 - 4.933
Actual overall head dia.		1.495 - 1.505		
Angle of seat & face		46° (seat) 45° (face)		
Seat insert material		None		
Stem diameter				
Stem to guide clearance		.0010 - .0027		
Lift (@ zero lash)		.3987		
Outer spring press. and length		Valve closed (lb. @ in.)	78-86 @ 1.660	
		Valve open (lb. @ in.)	170-180 @ 1.260	
Inner spring press. and length		Valve closed (lb. @ in.)	Spring Damper	
		Valve open (lb. @ in.)	Spring Damper	

## 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	Nozzle
	Cylinder walls	Pressure, jet cross sprayed

\* - Including cam ramps

(Continued)

# AMA Specifications – Passenger Car

**MAKE OF CAR** Chevrolet      **MODEL YEAR** 1963      **DATE ISSUED** 10/1/62      **REVISED** (\*)  
**MODEL** 1200-1600-1800 (V-8) 195 HP Engine

## ENGINE—COOLING SYSTEM

Type system (pressure, pressure-vented, atmospheric, <del>other</del> )		Pressure
Radiator cap and valve pressure		13 PSI ±PSI
Circulation thermostat	Type (choke, bypass)	Choke
	Starts open at (°F)	177° - 183°F
Water pump	Type (centrifugal, other)	Centrifugal
	GPM @ 1000 rpm	53 GPM @ 4200 RPM
	Number of pumps	One
	Drive (V-belt, other)	V-Belt
Shafting type		Double row ball
By-pass circulation type (internal, external)		Internal
Radiator core type (cellular, tubular-fin, other)		Tube on center
Cooling system capacity	With heater (qt.)	18.5
	Without heater (qt.)	17.5
	Dist. equipment capacity (qt.)	18.5
Water jacket full length of cylinder (yes, no)		Yes
Water all around cylinder (yes, no)		Yes
Radiator hose	Number and type (molded, straight)	One molded
	tube diameter	1.75
	Number and type (molded, straight)	One molded
	tube diameter	1.50
	Number and type (molded, straight)	None
	tube diameter	None
Fan	Number of blades & Spacing	4 - staggered
	Diameter	17.62
	Ratio fan to crankshaft rev.	.949:1
	Fan output type	5-blade 18" fan used with air conditioning
	Shafting type	Double row ball
*Drive belts (indicate belt used by letter)	Fan	A
	Generator	A
	Water Pump	A
	Power Steering	B
	Air Conditioning	C

* Drive Belt Dimensions	A	B	C
Angle of V	37-44°	37-44°	37-44°
Nominal length (SAE)	56.50	35.00	55.50
Width	.380 ± .005	.380 ± .005	.380 ± .005



# AMA Specifications— Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED (e)

MODEL 1200-1600-1800 (V-8) 195 HP Engine

## ENGINE—FUEL SYSTEM

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

Induction type: Carburetor, fuel injection, supercharger.		<b>Carburetor</b>	
Fuel Tank	Capacity (gals.)	20 (19 on station wagons)	
	Filler location	Left rear quarter panel	
Fuel Pump	Type (elec. or mech.)	Mechanical	
	Locations	Lower right front corner of engine	
	Pressure range	5.25 - 6.50 PSI	
Vacuum booster (std., optional, none)		None	
Fuel Filter	Type	Fine mesh plastic strainer in gasoline tank	
	Locations	and sintered bronze filter in carburetor	
Carburetor	Choke type	Automatic	
	Intake manifold heat control (exhaust or water)	Exhaust	
	Air circ. type	Standard	Paper Element
		Optional	

## CARBURETOR SUPPLEMENTARY INFORMATION

Model Usage	Engine Displ.	Transmission	Carburetors		No. Used and Type	Barrel Size
			Make	Model		
12-16-1800	283	Synchronesh Powerglide	Rochester Rochester	7023007 7023008	One; Two bbl. down- draft	1.4375

# AMA Specifications – Passenger Car

**MAKE OF CAR** Chevrolet      **MODEL YEAR** 1963      **DATE ISSUED** 10-1-62      **REVISED** (\*)

**MODEL** 1200-1600-1800 (V-8) 195 HP Engine

## ELECTRICAL—STARTING SYSTEM (cont.)

Motor Drive	Engagement type			Solenoid
	Pinion meshes (front, rear)			Rear
	Number of teeth	Pinion		9
		Flywheel		153
Flywheel tooth face width			.4135	

## ELECTRICAL—IGNITION SYSTEM

Coil	Make			Delco-Remy
	Model			1115115
	Amps	Engine stopped		1.0
Engine idling			1.8	
Distributor	Make			Delco-Remy
	Model			1111015
	Cent'fgal adv. in crankshaft degrees @ engine rpm (nominal)	Start (rpm)		800
		Intermediate points deg. @ rpm		
		Max deg. @ rpm		32 @ 4000
	Vacuum adv. in crankshaft degrees @ in. Hg. (nominal)	Start (in Hg)		
		Intermediate points, deg @ in Hg		
		Max. deg. in. Hg.		
	Breaker gap (in.)			.019
	Cam angle (deg.)			28° - 32°
Breaker arm tension (oz.)			19 - 23 oz.	
Timing	Crankshaft deg. @ rpm.			3° - 5° BTC @ 550.
	Mark location			Crankshaft Pulley Hub
	Cylinder numbering system (see page 2)			Left bank 1-3-5-7
				Right bank 2-4-6-8
Firing order (see page 2)			1-8-4-3-6-5-7-2	
Spark Plug	Make and model			AC 45
	Thread (mm)			14
	Tightening torque (lb. ft.)			25
	Gap			.033 - .040
Cable	Conductor type			Linen core impregnated with electrical conducting material
	Insulation type			Rubber with neoprene jacket
	Spark plug protector			Hypalon jacket

## ELECTRICAL—SUPPRESSION

Locations & type

Non-Metallic High Tension Ignition Cables

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED (\*)

MODEL 1200-1600-1800 (V-8) 195 HP Engine

## ELECTRICAL—SUPPLY SYSTEM

Battery	Make and Model	Delco 1980554		
	Voltage Rtg. & Total Plates	12 Volt, 54 Plate		
	SAE Designation & Amp Hr. Rtg	44 amp hr. @ 20 hr. rate		
	Location	Right front of engine compartment		
	Terminal grounded	Negative		
Generator	Make	Delco-Remy		
	Model	1100628		
	Type	Diode rectified		
	Ratio—Gen. to Cr./s rev.	2.30:1		
	Gen. cut-in (hot)—engine rpm	Idle (435 RPM)		
Regulator	Make	Delco-Remy		
	Model	1119512		
	Type	Vibrator		
	Cutout relay	Closing voltage @ generator rpm	None	
		Reverse current to open		
	Regulated	Voltage	13.8 - 14.8 @ 85°F	
		Current	-	
Voltage test conditions	Temperature	Operating		
	Load	3-8 Amperes		
	Other	None		

## ELECTRICAL—STARTING SYSTEM

Starting motor	Make	Delco-Remy		
	Model	1107237		
	Rotation (drive end view)	Clockwise		
	Engine cranking speed			
	Test conditions	Engine at operating temperature		
	Lock test	Amps		
		Volts		
		Torque (lb. ft.)		
	No load test	Amps	49-76	
		Volts	10.6	
RPM (min.)		6200 - 9400		
Motor control	Switch (solenoid, manual)	Solenoid		
	Starting procedure	<p>Synchromesh - Place gearshift in neutral and depress clutch to floor.</p> <p>Powerglide - Place control lever in N or P position.</p> <p>Initial Start - Press accelerator pedal to floor once to set automatic choke, then release. Turn ignition to START and release as soon as engine starts.</p>		

(Continued)

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-2-62 REVISED (e)  
 MODEL 12-16-1800 Standard V-8

## ELECTRICAL—LAMP BULBS

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

Headlamps & arrangement	Horizontal, dual; 2-4002 (outer), 2-4001 (inner)	
Headlamp beam indicator	1-57	
Parking	2-1034 (4CP filament)	
Tail (a)	2 and 4-1034 (4CP filament); tail only, 2-67	
Stop (a)	2 and 4-1034 (32CP filament)	
Direction signal	Front	2-1034 (32CP filament)
	Rear (a)	2 and 4-1034 (32CP filament)
	Indicator	2-57
License plate	1-67	
Instrument	See below	
Ignition lock	None	
Back up (b)	2-1073*	
Dome	Roof center, 1-211; rear qtr., 2-90 (1847); side rail, 2-90 (1839)	
Clock (b)	2-57*	
Radio	1-1893*	
Glove compartment (c)	1-57*	
Balance of instrument cluster	fuel gauge, 1-57; generator, indicator, 1-57; oil pressure indicator, 1-57; speedo. head, 3-57; temperature indicator, 2-57.	
Compass	1-53*	
Courtesy (e)	Rear qtr.: 1-90 (16-1845); instru. panel, 2-89 (1847-67); seat console, 2-90 (1847-67)*	
Heater (and all weather air conditioner)(d)	1-53*	
Luggage compartment (§)	1-93*	
Parking brake flasher (b)	1-257*	
Powerglide quadrant	1-53*	
Seat console compartment (e)	1-57*	
Spotlamp:		
Inside operated	1-4405*	
Portable	1-4416*	
Tach. gage	1-53*	
Traffic hazard flasher	1-53*	
Underhood	1-93*	

(a) 2 tail, stop and turn for 1200 series; 2 tail, stop and turn, and 2 tail only for 1600 series; 4 tail, stop and turn for 1800 series.

(b) Std. for 1800 series.

(c) Std. for 16 and 1800 series.

(d) Air conditioner optional equipment.

(e) Seat console optional equipment.

(§) Std for 1800 except station wagons.

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 7-2-62 REVISED (e)

MODEL 12-16-1800 Standard V-8

## ELECTRICAL—INSTRUMENTS AND SWITCHES

Speed-ometer	Make	AC
	Trip odometer (yes, no)	NO
Charge indicator—type		Tell -tale lamp
Temperature indicator—type		Tell -tale lamps (cold, green; hot, red)
Oil pressure indicator—type		Tell -tale lamp
Fuel indicator—type		Electric, gauge
Other		Parking brake flasher (a)
Ignition switch	Identify positions in order and circuits controlled	2nd position CCW from vertical - ACC (accessories) 1st position CCW from vertical - LOCK (off, locked) Vertical - OFF (unlocked) 1st position CW from vertical - ON (ignition, batt., access.) 2nd position CW from vertical - START (ignition, batt., accessories, starter: spring return to ON)
	Provision for illumination	Lamp from instru. cluster
	Location	Instru. panel to right of steering column
Main lighting switch	Identify positions and lamps controlled	Fully depressed - off 1st notch - Instru. panel, parking, tail and license lamps 2nd notch - Instru. panel, head, tail and license lamps CW rotation of knob - dim and turn off instru. panel lamps CCW rotation of knob - turn on and brighten instru. panel lamps; Full CCW rotation - turn on dome lamp
Other light switches	Locations and lamps controlled	Toe panel - Head lamp dimmer Glove compartment - Glove comp. lamp (b) Front door hinge pillar - Dome and courtesy lamps (b) Steering column - Turn signal lamps Under instru. panel - Stop lamps Steering mast jacket - Back-up lamps (a) Console compartment - Console compartment light (c)
Other switches	Locations and devices controlled	Accelerator linkage - Overdrive kick-down (d) Instru. panel to right of steering column - Heater blower Doors or qtr. trim panels - Power windows (d) Instru. panel, center - Radio (d) Instru. panel, left of steering column - W/S wiper Instru. panel, left of steering column - Tailgate window (g) Steering column - Trans. Neu. Saf. Sw. (a) Front seat lower panel, L.H. side - Power seat (h) Under instru. panel to left of steering column - Power top (i)
Windshield wiper	Make	Delco
	Type	Electric, Single-speed (e)
	Vacuum booster provision	None
	Washer provision	None (f)
Horn	Type	Vibrator
	Number used	2
	Amp draw (each)	8.00-11.0 @ 12.5 V

- |  |  |
|--|--|
| <p>(a) Std. on 1800 series<br/>                 (b) Std. on 16 and 1800 series<br/>                 (c) Std. on SS models (1847-67)<br/>                 (d) Optional equipment<br/>                 (e) Optional electric two-speed including washer<br/>                 (f) Optional dealer installed accessory, pushbutton</p> | <p>(g) Standard on 16-1845<br/>                 (h) Optional on 16-1800 Series<br/>                 (j) Standard on 1867</p> |
|--|--|

# AMA Specifications - Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (\*)

## SUPPLEMENTARY INFORMATION

MODEL 1100 - 1500 - 1700 (6-cylinder)

Luggage compartment lamp	(b)
Seat console compartment lamp	(c)
Underhood lamp	SAE-9
Spotlamp (inside operated)	AGC-15
Overdrive solenoid	AGC-15
Windshield wiper motor	
Single-speed	SAE-20
Two-speed	SAE-20 and 14 C.B.
Hydraulic folding top motor	40C. B.
Power seats	40C. B.
Power windows	40C. B.
Tailgate window	40C. B.

# AMA Specifications – Passenger Car

**MAKE OF CAR** Chevrolet      **MODEL YEAR** 1963      **DATE ISSUED** 10-1-62      **REVISED** (\*)  
**MODEL** 12-16-1800 Standard V-8

## 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	15 C. B. (a)
Headlamp beam indicator	(a)
Parking lamp	(a)
Tail lamp	AGC-15 (b)
Stop lamp	(b)
Direction indicator	Interrupter
License plate lamp	(b)
* Instrument lamp	AGC-3 (c)
Ignition lamp	None
Back up lamp	AGC-10 (d)
Dome lamp	(b)
Clock	(b)
Clock lamp	(c)
Radio and radio dial lamp	AGC-2.5
Glove compartment lamp	(b)
Direction lamp	Interrupter
Heater	(d)
Park, brake flasher	(d)
Courtesy lamps	(b)
Traffic hazard flasher	(b)
Heater (and A/C) control lamp	(c)
Powerglide quadrant lamp	(c)
Compass lamp	(c)

\* Speedo, head, temperature indicators, fuel gauge, generator indicator, oil pressure indicator

## ELECTRICAL—LOCATION OF OUTSIDE LAMPS

	Tail	Lowest	26.0	
		Highest	26.0	
Height above ground to center of bulb	Stop		26.0	
	Backup		26.0	
	License, rear		23.0	
	Directional	Front		21.5
		Rear		26.0
	Headlamp	Inside		26.0
		Outside*		26.0
	Distance from C/L of car to center of bulb	Tail	Inside	16.0 Impala, 23.5 Biscayne, Bel Air
			Outside	30.5
		Stop		16.0 Impala, 23.5 Biscayne, Bel Air
Backup			23.5	
License, rear			On centerline	
Directional		Front		27.0
		Rear		16.0 Impala, 23.5 Biscayne, Bel Air
Headlamp		Inside		23.0
		Outside*		31.5

\* If single headlamps are used enter here.

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (o)

MODEL 12-16-1800 Standard V-8

## DRIVE UNITS—MANUAL TRANSMISSION WITH OVERDRIVE

For transmission data see manual transmission section

Overdrive	Type (planetary or other)		Planetary
	Manual lockout (yes, no)		Yes
	Downshift accelerator control (yes, no)		Yes
	Minimum cut-in speed		27 MPH
	Gear ratio		0.70:1
Lu- bri- cant	Capacity (pt.) (Overdrive only)		1
	Separate filler (yes, no)		No
	Type recommended		Military MIL-L-2105-B
	SAE vis- cosity number	Summer	---
		Winter	---
Ext. cold		---	

## DRIVE UNITS—AUTOMATIC TRANSMISSION

Trade name	Powerglide	
Type describe	Torque Converter with Planetary Gears	
Method of Selection (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	D, 1.82 and 1.0:1 L, 1.82:1 R, 1.82:1	
Max. upshift speeds—drive range	63 mph	
Max. kickdown speeds—drive range	60 mph	
Torque converter	Number of elements	3
	Max. ratio at stall	2.10:1
	Type of cooling (air, water)	Water
Lubricant	Capacity—refill (pt.)	3
	Type recommended	A suffix A
Special transmission features		

## DRIVE UNITS—PROPELLER SHAFT

Number used	2		
Type (exposed, torque tube)	Exposed		
Outer diameter x length* x wall thickness	Manual transmission	Front	2 x 30.1 x .10
		Rear	2 x 35.0 x .10
	Overdrive transmission	Front	2 x 25.0 x .10
		Rear	2 x 35.0 x .10
	Automatic transmission	Front	2 x 27.2 x .10
		Rear	2 x 35.0 x .10

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

(Continued)



# AMA Specifications - Passenger Car

**MAKE OF CAR** Chevrolet **MODEL YEAR** 1963 **DATE ISSUED** 10/1/62 **REVISED** (e)

**MODEL** 18-16-1800 Standard V-8

## DRIVE UNITS—CLUTCH (Manual Transmission)

<b>Make &amp; type</b>		<b>Chevrolet, Single Drive Disk</b>
<b>Type pressure plate springs</b>		<b>Diaphragm</b>
<b>Effective plate pressure (lb.)</b>		<b>1700 - 1950</b>
<b>No. of clutch driven discs</b>		<b>One with 2 facings</b>
<b>Clutch facing</b>	<b>Material</b>	<b>Woven Asbestos</b>
	<b>Outside &amp; inside dia.</b>	<b>10.0 and 6.0 (a)</b>
	<b>Total eff. area (sq.in.)</b>	<b>100.54 (b)</b>
	<b>Thickness</b>	<b>.135 eq.</b>
	<b>Engagement cushioning method</b>	<b>Flat Spring Cushions</b>
<b>Release bearing</b>	<b>Type &amp; method of lubrication</b>	<b>Ball Bearing, Prepacked, Sealed</b>
<b>Torsional damping</b>	<b>Methods: springs, friction material</b>	<b>Coil Springs in Driven Disk Assembly</b>

## DRIVE UNITS—TRANSMISSIONS

<b>Manual (std. or opt.)</b>	<b>3-Speed, Standard</b>
<b>Manual with overdrive (std. or opt.)</b>	<b>Optional</b>
<b>Automatic (std. or opt.)</b>	<b>Optional</b>

## DRIVE UNITS—MANUAL TRANSMISSION

<b>Number of forward speeds</b>		<b>3</b>
<b>Transmission ratios</b>	<b>in first</b>	<b>2.94:1</b>
	<b>in second</b>	<b>1.68:1</b>
	<b>in third</b>	<b>1.0:1</b>
	<b>in fourth</b>	<b>---</b>
	<b>in reverse</b>	<b>3.34:1</b>
<b>Synchronous meshing, specify gears</b>		<b>2nd and 3rd</b>
<b>Shift lever location</b>		<b>Steering Column</b>
<b>Lubricant</b>	<b>Capacity (qt.)</b>	
	<b>2 (c)</b>	
	<b>Type recommended</b>	
	<b>Military MIL-L-2105-B</b>	
	<b>SAE viscosity number</b>	<b>Summer</b>
<b>Winter</b>		<b>---</b>
<b>Extreme cold</b>		<b>---</b>

- (a) For overdrive, 10.0 and 6.5
- (b) For overdrive, 90.72
- (c) For overdrive, 3

# AMA Specifications - Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (a)

MODEL 12-16-1800 Standard V-8

### DRIVE UNITS—WHEELS

Type & material		Short Spoke Disk, Steel
Rim (size and flange type)	Std.	14 x 5J (a)
	Opt.	15 x 5K
Attachment	Type (bolt or stud)	Stud
	Circle diameter	4.75
	Number and size	5 Hex Nuts, 7/16 - 20

### DRIVE UNITS—TIRES Tubless, 2 Ply Construction, unless indicated otherwise

Standard (List option below)	Size & ply	7.00 x 14-4 PR except Conv., 7.50 x 14-4 PR, & Wagons, 8.00 x 14-4 PR
	Type - Nylon, etc.	Blackwall Rayon
Rev/mile at 50 mph.		7.00 x 14-4 PR, 817 ; 7.50 x 14-4 PR, 800 ; 8.00 x 14-4 PR, 785
Inflation press.(cold)	Front	24
	Rear	24 PSI except Wagons, 28 PSI
Optional tires - size and ply		7.00 x 14-4 PR, W/Wall, Highway Rayon; 7.50 x 14-4 Ply, B/Wall, Highway Nylon; 7.50 x 14-4 Ply, W/Wall, Highway Nylon; 7.50 x 14-4 PR, W/Wall, Highway Rayon; 7.50 x 14-6 Ply, B/Wall, Highway Rayon; 7.50 x 14-4 PR, B/Wall, Highway Rayon; Con't. in footnote (b)

### BRAKES—SERVICE

		Regular Production	Metallic Brakes
Type (duo-servo, disc, balanced, etc.)		Duo-Servo, 4-Wheel Hydraulic	
Self adjusting (std., opt., N.A.)		Standard	
Hydraulic system type (single, dual, etc.)		Single	
Power brake make & type (remote, integral, etc.)		Delco-Moraine, Vacuum Power Unit Assisting Master Cylinder; integral	
Effective area (sq. in.)*		186.2	134.9
Gross lining area (sq. in.)**		200.4	134.9
Swept drum area (sq. in.)***		328.0	
Percent brake effectiveness—front		58.5	
Drum	Front	11.0	
	Rear	11.0	
Type and material		Composite: Rim, Cast Iron Alloy; Web, Steel	
Wheel cylinder bore	Front	1.1875 (c)	
	Rear	1.0 (c)	
Master cylinder bore		1.0 (c)	.875 (c)
Available pedal travel			
Line pressure at 100 lb. pedal load		750 PSI	
Shoe clearance adjustment		Self-Adjusting	

(Continued)

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

- (a) 14 x 6 JK for Station Wagons
- (b) 8.00 x 14-4 Ply, B/Wall, Highway Rayon; 8.00 x 14-4 Ply, B/Wall, Highway Nylon; 8.00 x 14-4 PR, W/Wall, Highway Rayon; 6.70 x 15-4 Ply, B/Wall, Highway Rayon; 6.70 x 15-4 Ply, B/Wall, Highway Nylon; 6.70 x 15-4 Ply, B/Wall, Highway Rayon, Tube; 6.70 x 15-4 Ply, B/Wall, On-Off, Rayon, Tube; 6.70 x 15-4 Ply, B/Wall, Highway Nylon, Tube; 6.70 x 15-6 Ply, B/Wall, Highway Rayon; 7.10 x 15-4 Ply, B/Wall, Highway Rayon; 7.10 x 15-4 Ply, B/Wall, Highway Nylon.
- (c) With Power brakes also.

# AMA Specifications - Passenger Car

**MAKE OF CAR** Chevrolet      **MODEL YEAR** 1963      **DATE ISSUED** 10/1/62      **REVISED** (\*)

**MODEL** 12-16-1800 Standard V-8

## DRIVE UNITS—PROPELLER SHAFT (cont.)

Intermediate bearing	Type (plain, anti-friction)	Single Row Ball, Sealed
	Lubrication (fitting, prepack)	Prepack
Universal joints	Make	Chevrolet
	Number used	3
	Type (ball and trunnion, cross, other)	Cross
	Bearing	Type (plain, anti-friction)
Lubric. (fitting, prepack)		Prepack
Drive taken through (torque tube or arms, springs)		Upper and Lower Control Arms
Torque taken through (torque tube or arms, springs)		Upper and Lower Control Arms

## DRIVE UNITS—REAR AXLE

Description (see instructions)		Conventional - Semi-Floating, Overhung Pinion Gear	
Limited Slip differential, type		Conventional with Dual Disk Clutches	
Drive Pinion Offset		1.5	
No. of differential pinions		Conventional 2; Limited Slip, 4	
Gear ratios (Std. equip.)	Manual transmission	12 and 1600 Sedans, 3.08:1 Station Wagons and 1800 Models, 3.36:1	
	Overdrive transmission	3.70:1	
	Automatic transmission	Same as "Manual"	
Ring gear O.D. (std. ratio)		8.375	
Pinion adjustment (shim, other)		Shim	
Pinion bearing adj. (shim, other)		None	
Wheel bearing type		Single Row Ball, Sealed	
Lubricant	Capacity (pt.)	4	
	Type recommended	Military MIL-L-2105-B	
	SAE viscosity number	Summer	---
		Winter	---
Extreme cold		---	

## REAR AXLE RATIO TOOTH COMBINATIONS

(See page 3 for axle ratio usage)

Axle ratio		3.08:1	3.36:1	3.70:1
No. of teeth	Pinion	12	11	10
	Ring gear	37	37	37

# AMA Specifications – Passenger Cars

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (e)

MODEL 12-16-1800 Standard V-8

## SUSPENSION FRONT (cont.)

Spring	Type	Coil
	Material	Steel Alloy
	Size (coil design height & I.D.; bar length x dia.)	10.50 and 3.802 141.25 x .630
	Spring rate (lb. per in.)	275
	Rate at wheel (lb. per in.)	1880
Stabilizer	Type (link, linkless, frameless)	Link
	Material & bar diameter	Steel and 0.6875

## STEERING

	Mechanical (std., opt., NA)	Standard		
	Power (std., opt., NA)	Optional		
	Wheel diameter	17.00		
Turning diameter	Outside front	Wall to wall (l. & r.)	44.1 ft.	
		Curb to curb (l. & r.)	40.8 ft.	
	Inside rear	Wall to wall (l. & r.)	24.2 ft.	
		Curb to curb (l. & r.)	24.5 ft.	
	Outside wheel angle with inside wheel at 20°			
Mechanical	Gear	Type	Semi-Reversible, Recirculating Ball	
		Make	Saginaw	
		Ratios	Gear	24.0:1
			Overall	28.0:1
	No. wheel turns	5.80 Lock to Lock		
Power	Gear	Type	Semi-Reversible, Recirculating Ball	
		Ratios	Gear	20.0:1
			Overall	24.0:1
	Pump driven by	Crankshaft Pulley		
	Number wheel turns	5.06 Lock to Lock		
Linkage	Type	Type	Relay	
		Location (front or rear of wheel, other)	Front	
		Drag link (trans. or longit.)	None	
		Tie rods (one or two)	Two	

(Continued)

# AMA Specifications—Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (6)

MODEL 12-16-1800 Standard V-8

## BRAKES—SERVICE (cont.)

		Bonded or riveted		Bonded		Welded	
		Material		Molded Asbestos		Sintered Iron	
Brake lining	Front Shoe	Size (length x width x thickness)	Front wheel	9.34 x 2.75 x .168		1.64 x 1.37 x .175	
			Rear wheel	9.34 x 2.00 x .168		2.00 x 1.00 x .175	
			Segments per shoe	1		6	
	Rear Shoe	Size (length x width x thickness)	Front wheel	11.75 x 2.75 x .168		1.64 x 1.37 x .295	
Rear wheel			11.75 x 2.00 x .168		2.00 x 1.00 x .295		
		Segments per shoe	1		Front, 12; Rear, 10		
		Material	Molded Asbestos		Sintered Iron		

## BRAKES—PARKING

Type of control	Foot Pedal for apply, "T" Handle for release	
Location of control	Below Instrument Panel, Left of Steering Column	
Operates on	Rear Service Brakes	
If separate from service brakes	Type (internal or external)	Not Separate
	Drum diameter	---
	Lining size (length x width x thickness)	---

## FRAME or UNITIZED CONSTRUCTION

Type and description All welded "X" frame with box girder side rails, box section front suspension crossmember, "Z" section intermediate crossmember, channel section rear crossmember and reinforced box girder center beam. Special crossmember for rear suspension upper control arms/mounting.

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

Provision for car leveling	Front Stabilizer Bar <sup>2</sup>	
Provision for brake dip control	Mounting Angle of Front Upper Control Arms	
Provision for acc. squat control	Geometry of Rear Suspension Control Arms	
Special provisions for car jacking	None	
Shock absorber front & rear	Type	Direct, Double Acting, Hydraulic
	Make	Delco
	Piston dia.	1.00
Other special features	----	

## SUSPENSION—FRONT

Type and description Independent, wheels spherically-jointed to frame-hinged upper and lower control arms. Frame-secured coil spring and shock absorber (inside coil spring) attached to lower control arm.

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

(Continued)

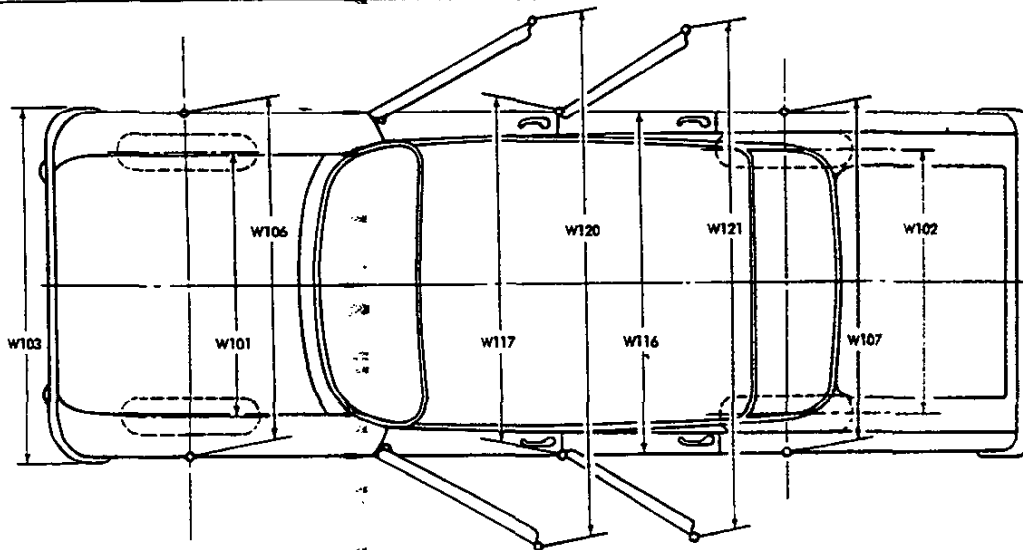
MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED (\*)

## CAR AND BODY DIMENSIONS—GENERAL

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

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

## EXTERIOR WIDTH DIMENSIONS



MODEL Chevrolet	Ref. No.	Sedans	Coupe	Convertible	Station Wagon
Tread - front	W101	-	-	60.3	-
Tread - rear	W102	-	-	59.3	-
Maximum overall car width	W103	-	-	79.0	-
Maximum overall body width	W116	-	-	76.0	-
Maximum body width at #2 pillar	W117	-	-	76.5	-
Front fender overall width	W106	-	-	76.4	-
Rear fender overall width	W107	-	-	77.0	-
Maximum overall car width - front doors open	W120a	141.6	-	156.6	141.6
Maximum overall car width - rear doors open	W121a	139.1	-	-----	139.1

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/17/62 REVISED (e)  
 MODEL 12-16-1800 Standard V-8

## STEERING (cont)

Steering Axis	Inclination at camber (deg.)		
	Bearings (type)	Upper	Spherical Joint, Non-Metallic Bearing Liner
		Lower	Spherical Joint, Non-Metallic Bearing Liner
	Thrust		None
Wheel alignment (range and preferred)	Caster (deg.)		(+) 0° ±30' (curb)
	Camber (deg.)		(+) 0° 30' ±30' (curb)
	Toe-in (outside tread-inches)		1/16 to 3/16 (overall, curb)
Steering spindle & joint type			Knuckle with Brake Cyl. Mount. Pad; Det. Steering Arms
Wheel spindle	Diameter	Inner bearing	1.2493 - 1.2498
		Outer bearing	.7492 - .7497
	Thread size		3/4 - 20 NEF-3
	Bearing type		Taper Roller

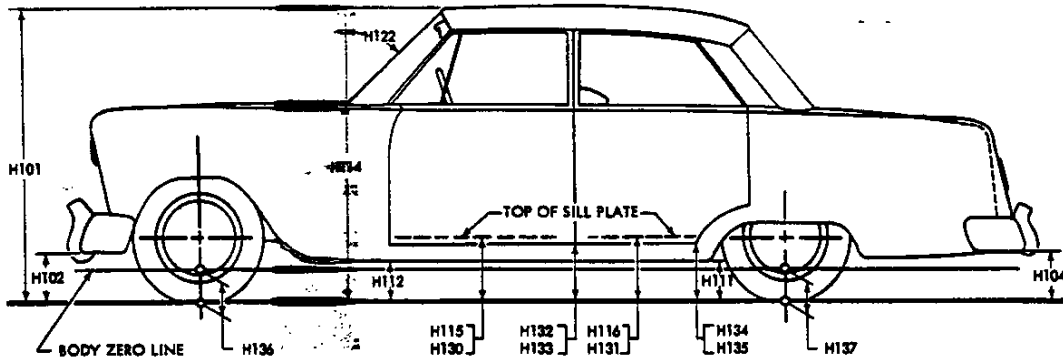
## SUSPENSION—REAR

Type and description			4 Link; 3 Control Arms and a Lateral Control Bar		
Drive and torq. taken through (see page 17)			Control Arms		
Spring	Type		Coil		
	Material		Steel Alloy		
	Size (design height, coil design height and I.D.; bar length & dia.)		9.88 and 3.638 138.27 and .583		
	Spring rate (lb. per in.)		230		
	Rate at wheel (lb. per in.)				
	Design load (lb. at design height)		1520		
	Mounting insulation type		None		
	If leaf	No. of leaves		Does not apply	
Inserts		Type and size			
		Material			
Shackle (comp. or tens.)					
Stabilizer	Type (link, linkless, frameless)				
	Material				
Track bar type			Lateral, Frame to Rear Axle		

# AMA Specifications— Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED (e)

## EXTERIOR HEIGHT DIMENSIONS



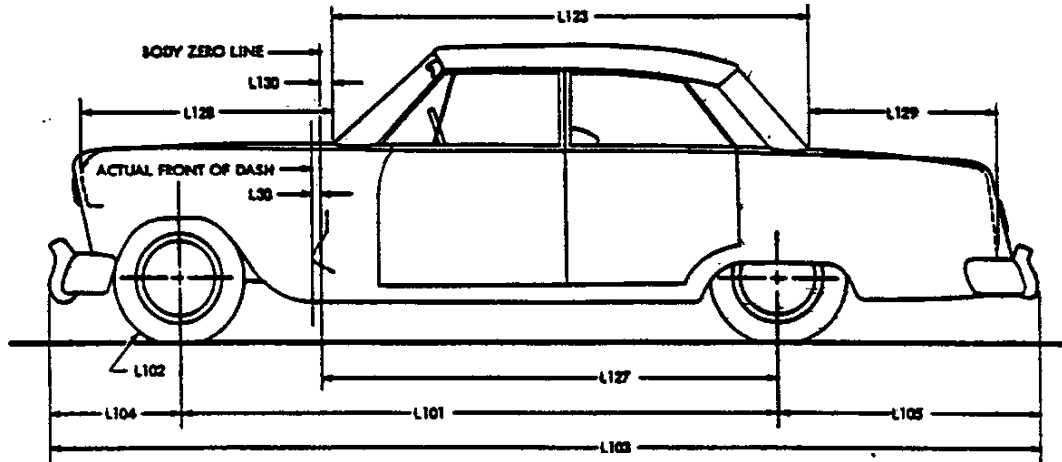
MODEL Chevrolet	Ref. No.	Limousine	Coupe	Convertible	Station Wagon
Overall height	H101	55.5	54.5	55.0	56.0
Hood at rear to ground	H114		38.0		
Rocker panel to ground - front	H112a		8.5		
Rocker panel to ground - rear	H111		8.0		
Step height - front (design load)	H115		13.0		
Step height - rear (design load)	H116	13.0	-----		13.0
Step height - front (curb load)	H130		15.0		
Step height - rear (curb load)	H131	15.0	-----		15.0
Bottom of door to ground, open - front	H132		13.0		
Bottom of door to ground, closed - front	H133		11.5		
Bottom of door to ground, open - rear	H134	11.5	-----		11.5
Bottom of door to ground, closed - rear	H135	11.5	-----		11.5
Front bumper to ground	H102		12.5	13.0	13.5
Rear bumper to ground	H104		12.0	12.5	13.0
Windshield slope angle	H122		55°		
Body zero to ground - front	H136a		5.0		
Body zero to ground - rear	H137a		5.0		



# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED(+) \_\_\_\_\_

## EXTERIOR LENGTH DIMENSIONS

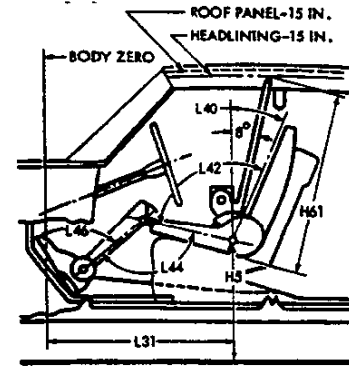
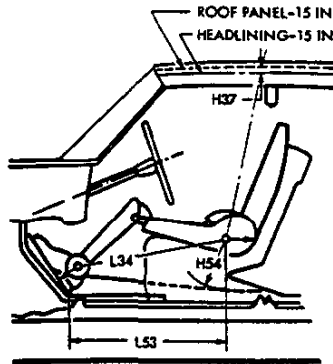
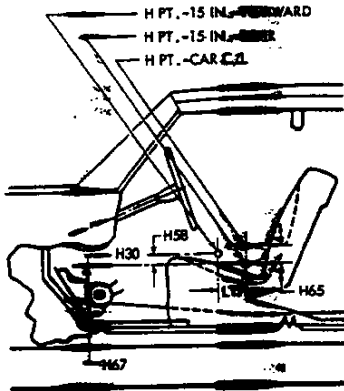


MODEL Chevrolet	Ref. No.	Sedans	Coupe	Convertible	Station Wagon
Body zero line to actual front of dash	L30			.5	
Wheelbase	L101			119.0	
Overhang - front	L104			33.4	
Overhang - rear	L105			58.0	
Overall length	L103			210.4	
Hood length at car centerline	L128a			50.6	
Body upper structure length at car centerline	L123	102.8	103.2	105.4	141.0
Deck length at car centerline	L129a	48.5		46.0	---
Body zero line to centerline of rear wheels	L127			100.0	
Body zero line to windshield cowling point	L130a			5.0	
Tire size	L102	Refer to Page 18			

# AMA Specifications—Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISION (e)

## FRONT COMPARTMENT DIMENSIONS

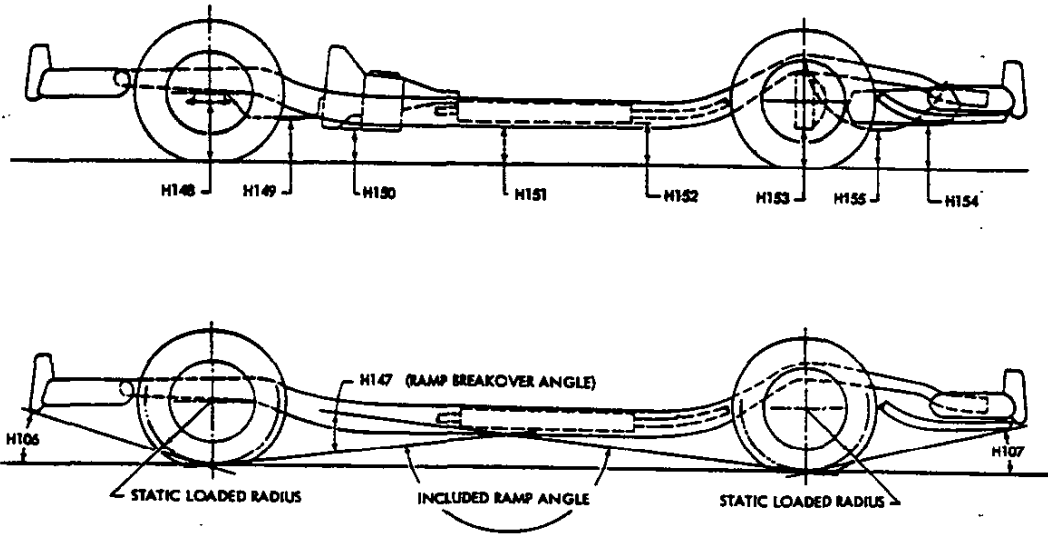


MODEL	Chevrolet		Sedans	Coupe	Convertible	Station Wagon
H Point to body zero line	333a				42.0	
H Point to ground	335a				20.0	
Effective head room	461a		39.0		38.5	39.0
Headlining to roof height	467		.5		---	1.0
Maximum effective leg room - accelerator	334a				41.0	
H Point to heel point	430a				9.0	
Depressed floor covering thickness	467a					
Back angle	440a		26°		25°	26°
Hip angle	442a				104°	
Knee angle	444a				145°	
Foot angle	446a		120°	119°	118°	120°
H Point differential, side to center	465a				.4	
H Point to tunnel	454a			3.0		7.0
H Point to accelerator floor point	453a				33.0	
H Point travel	437a				5.0	
H Point rise	458a				.7	

# AMA Specifications—Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10-1-62 REVISED (e)

## GROUND CLEARANCE DIMENSIONS

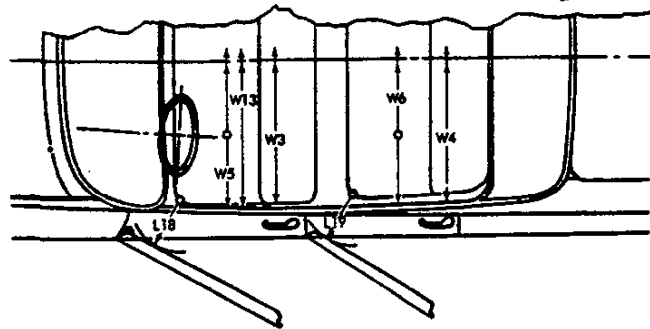
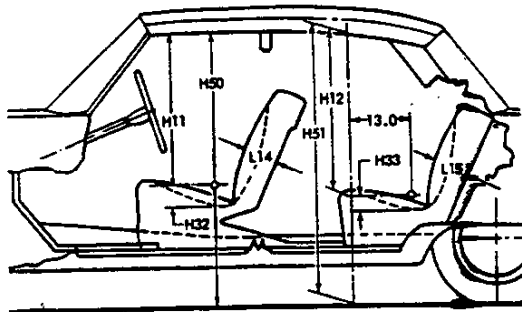


MODEL Chevrolet	Ref. No.	Sedans	Coupe	Convertible	Station Wagon
Angle of approach	H106			31°	
Angle of departure	H107			14°	
Ramp breakover angle	H147			13°	
Front suspension to ground	H148			7.5	
Oil pan to ground	H149			7.0	
Flywheel housing to ground	H150			7.0	
Frame structure to ground	H151			7.0	
Exhaust system to ground	H152			6.0	
Rear axle differential to ground	H153			7.5	
Fuel tank to ground	H154			8.0	
Spare tire well to ground	H155			---	8.5
Minimum running ground clearance	H156			6.0	

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED(•)

## SEAT AND ENTRANCE DIMENSIONS

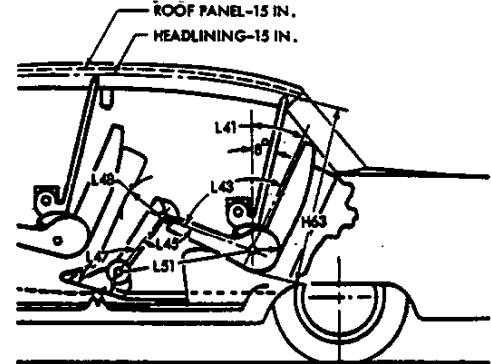
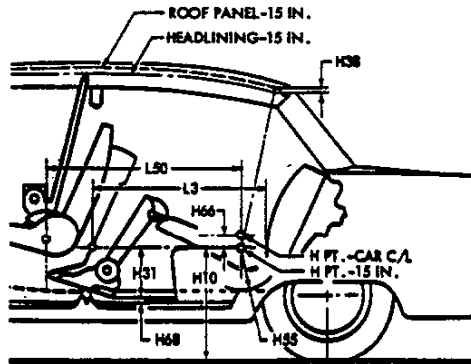


MODEL Chevrolet	Ref. No.	Sedans	Coupe	Convertible	Station Wagon
Shoulder room - front	W3a			59.0	
Hip room - front	W5a			63.5	
Seat width - front	W16a			57.5	
Upper body opening to ground - front	H50a	50.0		48.5	50.0
Entrance height - front	H11a	30.0		29.0	33.0
Entrance foot clearance - front	L18			15.0	
Seat cushion deflection - front	H32a			4.5	
Seat back thickness - front	L14			7.5	
Shoulder room - rear	W4a	57.5	57.0	51.0	58.0
Hip room - rear	W6a	62.5	55.0	52.0	63.5
Upper body opening to ground - rear	H51a	50.0	---	---	50.0
Entrance height - rear	H12a	29.0	---	---	30.5
Entrance foot clearance - rear	L19	11.5		9.0	13.5
Seat cushion deflection - rear	H33a	4.0		4.5	
Seat back thickness - rear	L15	8.5		7.5	5.5

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED( )

## REAR COMPARTMENT DIMENSIONS



MODEL Chevrolet	Ref. No.	Sedans	Coupe	Convertible	Station Wagon
H Point couple distance	L50a	35.5	33.0		35.5
H Point to ground	H10a	19.5	18.5		19.5
Effective head room	H63a	38.0			40.0
Headlining to roof height	H38	.8	.6	---	.8
Minimum effective leg room	L51a	38.0	35.0		38.0
H Point to heel point	H31a	12.0	11.0		12.0
Depressed floor covering thickness	H68a				
Minimum knee room	L48a	5.0	3.5		5.0
Rear compartment room	L3	28.5	26.0		28.5
Back angle	L41a	23°	18°		23°
Hip angle	L43a	90°	77°		90°
Knee angle	L45a	105°	91°		109°
Foot angle	L47a	117°		112°	117°
H Point differential, side to center	H66a	.6	.7		.6
H Point to tunnel	H55a	6.0	5.3		6.0

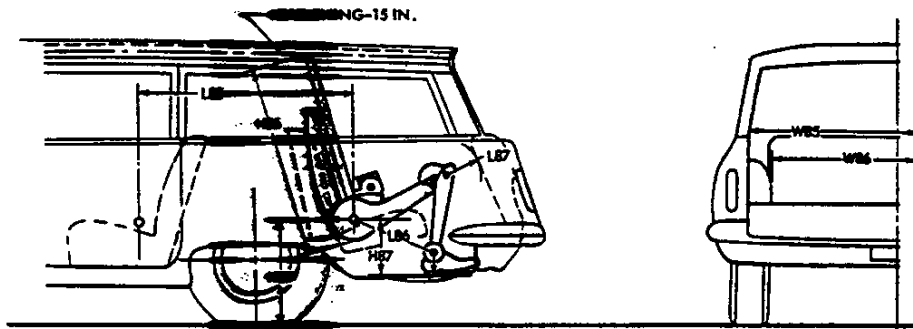
# AMA Specifications - Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (6)

## LUGGAGE COMPARTMENT

MODEL Chevrolet	Ref. No.	<del>Station</del>	Coupe	Convertible	Station Wagon
Usable luggage capacity (See instructions)			19.0		----
Liftover height*	H301a		22.0		---- vertical
Position of spare tire storage		Horizontal on trunk forward shelf, left side			behind right rear quarter
Method of holding lid open		Torsion bars, counterbalance			access pane.

## THIRD SEAT DIMENSIONS



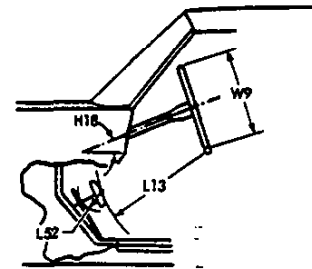
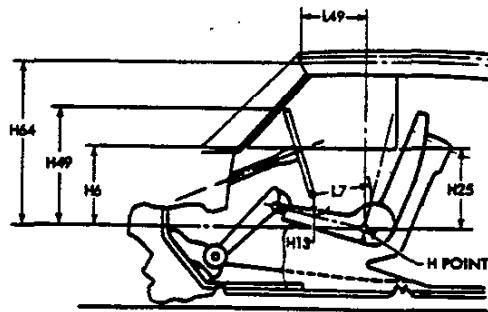
MODEL Chevrolet	Ref. No.	1645 - 1845 9-Passenger
Seat facing direction		Rearward
Shoulder room	W85a	52.0
Hip room	W86a	46.0
H Point couple distance	L85a	39.5
H Point to ground	H85a	22.0
Effective head room	H86a	37.0
Effective leg room	L86a	33.0
H Point to heel point	H87a	12.5
Knee room	L87a	10.0
Back angle	L88a	17°
Hip angle	L89a	81°
Knee angle	L90a	81°
Foot angle	L91a	114°

\* Vertical dimension from luggage compartment lower opening to ground.

# AMA Specifications – Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED(\*)

## VISION AND CONTROL DIMENSIONS



MODEL Chevrolet	Ref. No.	Sedans	Coupe	Convertible	Station Wagon
H Point to windshield bottom DLO	H6a		19.0		
H Point to windshield upper DLO	H64a	33.5	31.5		27.5
H Point to windshield upper DLO	L49a	11.5	14.0		11.5
Belt height - front	H25a		16.5		
Steering wheel center to centerline of car	W7		16.0		
Steering wheel maximum outside diameter	W9		17.0		
Steering column angle - horizontal	H18		16°		
H Point to top of steering wheel	H49a		3.5		
Steering wheel torso clearance	L7a		11.0		
Steering wheel thigh clearance	H13a		5.0		
Brake pedal knee clearance	L13		24.5		
Brake pedal to accelerator	L52a		4.5		
Tumble-home	W122a				

# AMA Specifications - Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED (a)

MODEL 1200-1600-1800

## BODY - MISCELLANEOUS INFORMATION

Drs. hinged (front, rear)	Front doors	Front
	Rear doors	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 hinge pillar
Engine No. Location		On pad at front right side of Cylinder deck
Theft protection - type		Shielded ignition lock terminals, key removable in "lock" or "on" position.
Vent window control method (crank, friction pivot)		Crank
		None
Seat cushion type		Polyurethane foam with zigzag springs
		Cotton-jute with zigzag springs (a)
Seat back type		Cotton-zigzag springs
		Cotton-zigzag springs
Windshield type (single curved, compound curved, other)		One-piece, compound curve
Rear window type (flat, curved, one piece, three piece)		One-piece, curved
Side glass type (curved, flat)		Flat
Side glass exposed surface		1322.8
Windshield glass exposed surface		1589.7
Backlight glass exposed surface		1257.1
Total glass exposed surface		4169.6 (a)

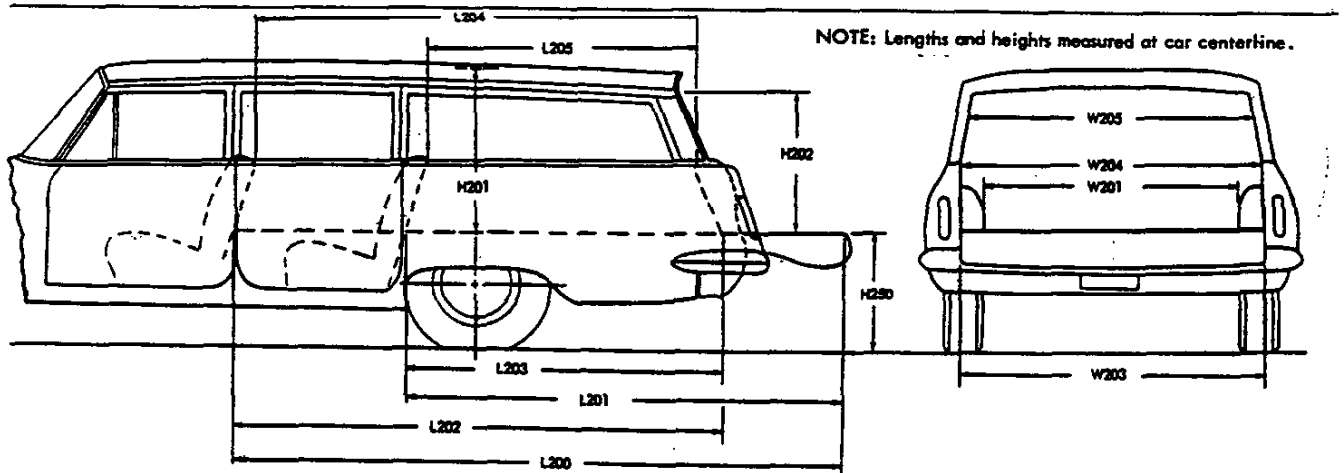
(a) - Biscayne 4-door sedan



# AMA Specifications—Passenger Car

MAKE OF CAR Chevrolet MODEL YEAR 1963 DATE ISSUED 10/1/62 REVISED <sup>(\*)</sup>

## STATION WAGON—CARGO SPACE DIMENSIONS



MODEL	Chevrolet	Ref. No.	1235 - 1635 - 1645 - 1835 - 1845
Floor length from back of front seat at floor level to end of lowered tail gate or floor		L200	118.5
Floor length from back of second seat at floor level to end of lowered tail gate or floor		L201	84.5
Floor length from back of front seat at floor level to inside of closed tail gate		L202	94.0
Floor length from back of second seat at floor level to inside of closed tail gate		L203	60.0
Minimum horizontal distance from top rear of front seat back to inside of tail gate at belt		L204	82.5
Minimum horizontal distance from top rear of second seat back to inside of tail gate at belt		L205	47.0
Maximum width of cargo space at floor - specify location		W200a	62.0 forward of wheelhouse
Minimum distance between wheel houses at floor level		W201	46.0
Rear end opening width at floor		W203	56.5
Rear end opening width at belt		W204	54.5
Maximum width of rear opening above belt		W205	54.0
Maximum height - floor covering to headlining at centerline of rear axle		H201	31.5
Maximum height of rear opening - tail and lift gates open		H202	30.5
Platform height from ground to top of tail gate floor covering at rear most edge of tail gate - curb weight		H250	23.0
Rear end closure (e.g., one piece door, hinged left - sliding glass, drop tail gate)			Hinged tailgate with folding link supports and manual retractable rear window (a)
Cargo volume index (cu. ft.) W4 x L204 x H201 1728			87.0 (b)

(a) Electrically operated window on 9-Passenger (opt. on 6-Pass. Wagon)

(b) Plus 10.5 cu. ft. for hidden compartment in 6-Pass; plus 5.7 cu. ft. in 9-Pass. Form Rev. 3-62

## DIMENSION DEFINITIONS

W3a SHOULDER ROOM - FRONT. The minimum lateral dimension between the door garnish moldings or nearest interference. Measured at H Point station.

W4a SHOULDER ROOM - REAR. Measured in the same manner as W3a.

W5a HIP ROOM - FRONT. The lateral dimension through H Point to trimmed surfaces.

W6a HIP ROOM - REAR. Measured in the same manner as W5a.

W7 STEERING WHEEL CENTER TO CENTERLINE OF CAR. Measured horizontally from steering wheel center to centerline of car. The point at steering wheel center is located in the surface plane of wheel.

W9 STEERING WHEEL MAXIMUM OUTSIDE DIAMETER. Define if other than round.

W16a SEAT WIDTH - FRONT. The maximum trimmed width of front seat cushion.

W85a SHOULDER ROOM - THIRD SEAT. Measured in the same manner as W3a.

W86a HIP ROOM - THIRD SEAT. Measured in the same manner as W5a.

W101 TREAD - FRONT. Measured at centerline of tires, with nominal camber, at ground.

W102 TREAD - REAR. Measured at centerline of tires at ground.

W103 MAXIMUM OVERALL CAR WIDTH. Include bumpers, moldings, or sheet metal protrusions.

W106 FRONT FENDER OVERALL WIDTH. Measured at centerline of front wheels, excluding moldings.

W107 REAR FENDER OVERALL WIDTH. Measured at centerline of rear wheels, excluding moldings.

W116 MAXIMUM OVERALL BODY WIDTH. Measured across body, excluding hardware and applied moldings, but including fenders when integral with body.

W117 MAXIMUM BODY WIDTH AT #2 PILLAR. Measured across body at #2 pillar, excluding hardware and applied moldings.

W120a MAXIMUM OVERALL CAR WIDTH, FRONT DOORS OPEN. Measured with front doors in maximum hold-open position.

W121a MAXIMUM OVERALL CAR WIDTH, REAR DOORS OPEN. Measured in same manner as W120a.

W122a TUMBLE-HOME. The angle from vertical to the front door glass outer surface or the chord of a curved door glass, measured at the front H Point station.

L3 REAR COMPARTMENT ROOM. The horizontal dimension from the back of front seat to front of rear seat back at a height tangent to the top of rear seat cushion.

L7a STEERING WHEEL TORSO CLEARANCE. The minimum distance from the back edge of steering wheel, in straight-ahead position, to the Torso Line.

L13 BRAKE PEDAL KNEE CLEARANCE. The minimum dimension from the lower edge of the steering wheel to the brake pedal face centerline.

L14 SEAT BACK THICKNESS - FRONT. The maximum thickness of the seat back, excluding bolsters.

L15 SEAT BACK THICKNESS - REAR. Measured in the same manner as L14.

L17a H POINT TRAVEL. The horizontal dimension between the H Point in the most forward and rearward seat positions.

L18 ENTRANCE FOOT CLEARANCE - FRONT. The minimum horizontal dimension between seat and normal line of door or pillar at a height between the sill plate bead and 4.0 inches above the bead. Door should be in the maximum hold-open position.

L19 ENTRANCE FOOT CLEARANCE - REAR. Measured in the same manner as L18 on four-door models. On two-door styles, the minimum dimension between rear corner of front seat, with front seat back tilted forward, and trimmed lock pillar, built-in quarter armrest panel, or rear seat cushion at a height between the sill plate bead and 4.0 inches above the bead.

L30 BODY ZERO LINE TO ACTUAL FRONT OF DASH. If actual Front of Dash is to the rear of Body Zero Line, it is identified by a minus (-) sign.

L31a H POINT TO BODY ZERO LINE - FRONT. Horizontal dimension.

L34a MAXIMUM EFFECTIVE LEG ROOM - ACCELERATOR. Measured along a diagonal line from ankle pivot center to H Point plus a constant of 10.0 inches. Measured with the right foot on accelerator pedal.

L40a BACK ANGLE - FRONT. The angle between a vertical line through the H Point and the Torso Line.

L41a BACK ANGLE - REAR. Measured in the same manner as L40a.

L42a HIP ANGLE - FRONT. The angle between Torso Line and a line extending from knee pivot center to H Point.

L43a HIP ANGLE - REAR. Measured in the same manner as L42a.

L44a KNEE ANGLE - FRONT. The angle between a line from H Point to knee pivot center and a line from the knee pivot center to the ankle pivot center.

L45a KNEE ANGLE - REAR. Measured in the same manner as L44a.

L46a FOOT ANGLE - FRONT. The angle between a line extended from the knee pivot center through the ankle pivot center and a line tangent to the sole and heel of manikin bare foot.

L47a FOOT ANGLE - REAR. Measured in the same manner as L46a.

L48a MINIMUM KNEE ROOM - REAR. The minimum dimension from the knee pivot center to the back of front seat back.

L49a H POINT TO WINDSHIELD UPPER DLO. The horizontal dimension from H Point to the point of tangency of horizontal line of vision (described in dimension H64a) with body upper structure.



## DIMENSION DEFINITIONS (cont.)

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

## DIMENSION DEFINITIONS (cont.)

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

# AMA Specifications – Passenger Car

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