



# SERVICE NEWS

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## 1963 FEATURES

This issue outlines new product features and important changes in service procedures for the 1963 Chevrolet, Chevy II, Corvair, Truck and Corvette. This publication can be used to augment the 1963 Shop Manual for each vehicle line.

### PART I—CHEVROLET

The 1963 regular Chevrolet line is again grouped in three series; Biscayne, Bel Air, Impala. A total of 13 models are available with either six or eight cylinder engines. All models available in 1962 are continued in 1963 with the exception of the Bel Air Sport Coupe (1537-1637). With the cancellation of the Bel Air Sport Coupe, the Impala Sport Coupe (1747-1847) becomes the only 2 door hardtop available in the Regular Chevrolet line.

The over-all appearance of the Chevrolet series is completely new for 1963. Although the basic body configuration remains unchanged, the new appearance stems from the use of all new body panels below the belt line and restyled front and rear sheet metal. The grille, which is new for 1963, completely fills the front opening, rather than being an insert

### 1963 CHEVROLET MODEL IDENTIFICATION

| Body Style                          | Biscayne |      | Bel Air |      | Impala |      |
|-------------------------------------|----------|------|---------|------|--------|------|
|                                     | L-6      | V-8  | L-6     | V-8  | L-6    | V-8  |
| 2-Door Sedan, 6 Pass.               | 1111     | 1211 | 1511    | 1611 |        |      |
| 4-Door Sedan, 6 Pass.               | 1169     | 1269 | 1569    | 1669 | 1769   | 1869 |
| 2-Door Sport Coupe*<br>5 Passenger  |          |      |         |      | 1747   | 1847 |
| 4-Door Sport Sedan<br>6 Passenger   |          |      |         |      | 1739   | 1839 |
| 2-Door Convertible*<br>5 Passenger  |          |      |         |      | 1767   | 1867 |
| 4-Door Station<br>Wagon 6-Passenger | 1135     | 1235 | 1535    | 1635 | 1735   | 1835 |
| 4-Door Station<br>Wagon 9-Passenger |          |      | 1545    | 1645 | 1745   | 1845 |

\*"Super Sport" option available.

between the headlamp assemblies as was the 1962 design. The wider appearance imparted by this design is further enhanced by using separate headlamp doors for each of the four lamps. Parking light and front turn signal lenses on all Chevrolet vehicles are amber



colored for 1963. The amber color provides improved visibility.

All the body styles will have a new straight windshield pillar and ventipane assembly that provides a cleaner appearance, but more important from the service view is the reduction of wind noise and potential water leaks. Because of this new pillar design, all windshields are new for 1963. Three basic windshields will service all bodies, two-door sport coupes and convertibles share a common windshield, the second style is used for all two and four door sedans and station wagons with the third type used only on the four-door hardtop.

All roof lines are retained from 1962 with the exception of the four-door hardtop. This body style features a new rear window and roof contour.

The Impala Sport Coupe has a new vinyl top covering available as a regular production option. The outer edges of the top material is covered and finished by the regular production bright metal mouldings that completely surround and define the top area. In addition to this edge finish, the vinyl is cemented to the roof to prevent ballooning at high speeds.

Body mounts for the convertible are changed from the rigid fiber washer type to the rubber biscuit type now used on other body styles. All twelve body mounting points will have rubber biscuits, including the number four mount which was changed to rubber in 1962.

The folding top for the convertible is improved by the addition of hold-down cables paralleling the side roof rails. In operation, the drawstrings, one on each side, become taut and hold the top fabric snug to the roof side rails. With this type of arrangement, less wind noise is encountered and increased sealing is provided.

Door locks for all models are completely new and

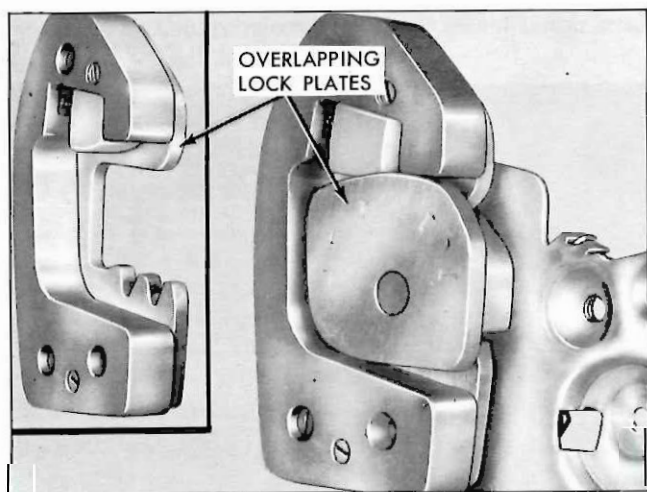


Fig. 1—New Safety Door Locks

feature improved locking for increased safety. Lock strikers have new double lipped interlocks to mate with new corresponding interlocks of the door lock giving twice the contact areas of previous units. With this new development a more positive retention of the door is assured. The rotating lock bolt prevents lateral movement of the closed door. (Fig. 1).

Improved corrosion resistance of the lower body and rocker panels are provided by forced wash and dry provisions and the continuation of galvanized rocker panels. The rocker panel wash is basically the same feature introduced with the 1962 Chevy II.

The cowl inlet ventilation system is used to wash and ventilate the rocker interiors. This is accomplished by feeding a portion of the passenger compartment ventilating air and all the water entering the cowl inlet through the rocker sections. (Fig. 2).



Fig. 2—Rocker Panel Air Flow

The air and water travels through the rocker panels to the escape drains at the rear ends of the rocker inner panels.

The interior appointments and styling for the 1963 Chevrolet line are new in all three series. Featured in these appointments is the new instrument panel. The 1963 instrument panel retains the "console" type grouping of instruments and controls; however, the console is an integral part of the instrument panel (Fig. 3).

The upper portion of the console contains the instrument cluster. This cluster houses the speedometer, fuel gauge, the warning lights, and the clock, when used. The "OIL", "GEN", "HOT", and "COLD" warning lights are placed in a quartered square between the clock opening and the fuel gauge. The

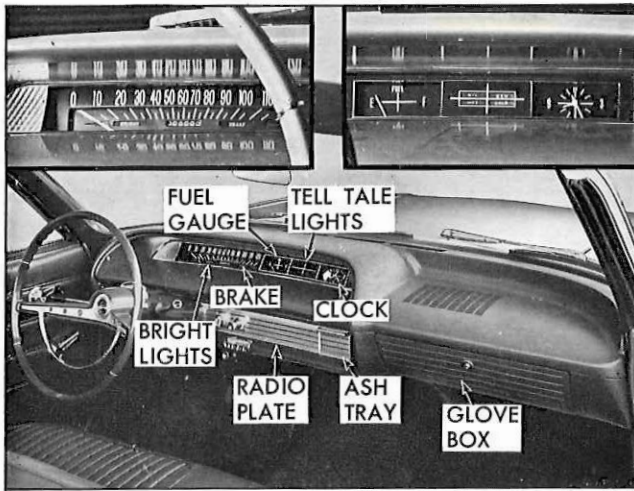


Fig. 3—Chevrolet Instrument Panel

“Left Turn”, “Bright Light”, “Brake Alarm”, and “Right Turn” indicators are positioned on the lower surface of the speedometer. The hot and cold temperature lights continue to operate in the same manner used in 1962. The ignition switch again provides a ground for testing the “hot” indicator circuit each time the ignition switch is held in the “Start” position.

**Engines**

An all new short-stroke 230 cubic inch L-6 engine is offered as standard equipment on all Chevrolet models. The 235 cubic inch engine used on previous models is replaced by this new six which is rated at 140 h.p. at 4400 RPM.

The base 283 cu. in. V-8 is again offered in 1963. Modifications to this engine, include the use of camshaft and cylinder head design similar to the 327 cubic inch V-8 which increases the 283 V-8 gross horsepower to 195 at 4800 RPM, yet this engine still uses regular gas.

The number of optional V-8 engines in the line is increased to five with the introduction of a hydraulic valve lifter equipped 409 cu. in. engine. The two 327 cu. in. and the two 409 cu. in. units available for 1962 are retained with modifications to improve performance and durability.

**Transmissions**

As in the past, the standard transmission for all regular Chevrolet models will be the conventional 3-speed Synchro-Mesh. An overdrive transmission is again offered as a regular production option (RPO-M10) on both the 230 and 283 cubic inch base engines.

A fully-synchronized 4-speed transmission (RPO-M20) is available with any 327 or 409 cu. in. engine.

The Cast Iron Case Powerglide is not used in 1963 vehicles. Modified versions of the Aluminum Case Powerglide, introduced in 1962, are now teamed with all engines in the 1963 line except the two maximum performance 409's.

**Rear Axles**

Six axle ratios are again offered in various combinations of the 1963 power trains. The rear axle is generally a continuation of the 1962 design. The Positraction, available on previous models, will again be offered in the 1963 model year.

**RPO LISTINGS**

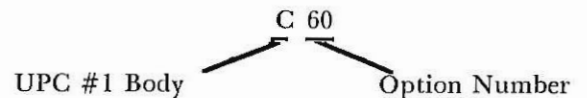
The sales identification codes for all Regular Production Options have been changed for 1963. Each RPO code will consist of a prefix letter and two numbers. The RPO letter prefix keys the material to a Universal Parts Classification (UPC) grouping; as shown in the accompanying chart. The two digit number in the RPO code designates the individual option.

**RPO CODE AND UPC GROUP RELATIONSHIP**

| RPO CODE     | UPC GROUP                      |
|--------------|--------------------------------|
| A01 thru D99 | #1 Body                        |
| F01 to F39   | #2 Frame                       |
| F50 thru H99 | #3 Front Suspension            |
| G50 thru H99 | #4 Rear Axle and Suspension    |
| J50 to J99   | #5 Brakes                      |
| K01 thru L99 | #6 Engine                      |
| M01 to M99   | #7 Transmission                |
| N01 to N29   | #8 Fuel and Exhaust            |
| N30 to N49   | #9 Steering                    |
| P01 thru S99 | #10 Wheels and Tires           |
| T50 to T59   | #11 Sheet Metal                |
| T60 thru U99 | #12 Electrical and Instruments |
| V01 to V29   | #13 Radiator and Grille        |
| V30 to V99   | #14 Bumpers and Miscellaneous  |
| Z01 to Z49   | Chevrolet Special Items        |
| 800 to 999   |                                |

**EXAMPLE:**

1962 Deluxe Air Conditioning ..... RPO 110  
 1963 Deluxe Air Conditioning ..... RPO C60



**REDUCED MAINTENANCE**

All Chevrolet vehicles incorporate modifications to reduce maintenance. Included is a new extended life exhaust system, self-adjusting brakes, extended oil change and lubrication intervals.

1963 CHEVROLET POWER TRAINS

| Engine Description  | Gross Horsepower      | Engine Equipment                                     | Comp. Ratio           | Transmission         | Model Application            | Rear Axles                                      |  |                      |            |        |
|---|-----------------------|--|-----------------------|----------------------|------------------------------|---|--|----------------------|------------|--------|
|   |                       |  |                       |                      |                              | "General Purpose" Axle Ratio* (Standard Equip.) | Optional Axle Ratios                   |                      |            |        |
| Bore & Stroke   | Gross Torque          |  |                       |                      |                              |   |  |                      |            |        |
| <b>Hi-Thrift 230</b><br>230 Cu. In. L-6<br><br>3.875" x 3.25"               | 140 hp @ 4400 rpm     | Single Barrel Rochester "BC" Carburetor              | 8.5:1                 | 3-Speed (2.94:1 Low) | Sedans & Coupes              | 3.08:1 <sup>(B)</sup>                           | *3.36:1 (RPO G76)<br>*3.55:1 (RPO G96) |                      |            |        |
|   | 220 ft lbs @ 1600 rpm | Hydraulic Lifters                                    |                       | or                   | 1767 Convertible             |   | 3.36:1                                 | *3.55:1 (RPO G96)    |            |        |
|   |                       |  |                       |                      | Station Wagons               | 3.55:1  | —                                      |                      |            |        |
|   |                       |  |                       |                      | Overdrive                    | All Models                                      | 3.70:1                                 | —                    |            |        |
| <b>Turbo-Fire 283</b><br>283 Cu. In. V-8<br><br>3.875" x 3.0"               | 195 hp @ 4800 rpm     | 2-Barrel Rochester "2GC" Carburetor                  | 9.25:1                | 3-Speed (2.94:1 Low) | 12 & 1600 Sedans             | 3.08:1 <sup>(B)</sup>                           | *3.36:1 (RPO G76)<br>*3.55:1 (RPO G96) |                      |            |        |
|   | 285 ft lbs @ 2400 rpm | Hydraulic Lifters                                    |                       | or                   | Station Wagons & 1800 Models |   | 3.36:1                                 | 3.55:1 (RPO G96)     |            |        |
|   |                       |  |                       |                      | Overdrive                    | All Models                                      | 3.70:1                                 | —                    |            |        |
|   |                       |  |                       |                      |                              |   |  |                      |            |        |
| <b>Turbo-Fire 327</b><br>327 Cu. In. V-8<br><br>4.00" x 3.25"<br>(RPO L30)  | 250 hp @ 4400 rpm     | 4-Barrel Carter "WCFB" or Rochester "4GC" Carburetor | 10.5:1                | 3-Speed (2.47:1 Low) | All Models                   | 3.36:1  | —                                      |                      |            |        |
|   | 350 ft lbs @ 2800 rpm | Hydraulic Lifters                                    |                       | or                   |                              |   |  | 4-Speed (2.54:1 Low) | All Models | 3.08:1 |
|   |                       |  |                       |                      | Powerglide                   |   |  |                      |            |        |
|   |                       |  |                       |                      |                              |   |  |                      |            |        |
| <b>Turbo-Fire 327</b><br>327 Cu. In. V-8<br><br>4.00" x 3.25"<br>(RPO L74)  | 300 hp @ 5000 rpm     | 4-Barrel Carter "AFB" Carb. (w/4" Throat)            | 10.5:1                | 3-Speed (2.47:1 Low) | All Models                   | 3.36:1  | —                                      |                      |            |        |
|   | 360 ft lbs @ 3200 rpm | Hydraulic Lifters                                    |                       | or                   |                              |   |  | (2.54:1 Low)         | All Models | 3.36:1 |
|   |                       |  |                       |                      | Powerglide                   |   |  |                      |            |        |
|   |                       |  |                       |                      |                              |   |  |                      |            |        |
| <b>Turbo-Fire 409</b><br>409 Cu. In. V-8<br><br>4.313" x 3.50"<br>(RPO L33) | 340 hp @ 5000 rpm     | 4-Barrel Rochester "4GC" Carburetor (New)            | 10:1                  | 3-Speed (2.47:1 Low) | All Models                   | 3.36:1  | —                                      |                      |            |        |
|   | 420 ft lbs @ 3200 rpm | Hydraulic Lifters                                    |                       |                      | 4-Speed (2.54:1 Low)         | All Models                                      | 3.36:1                                 | —                    |            |        |
|   |                       |  |                       |                      | Powerglide                   | All Models                                      | 3.36:1                                 | —                    |            |        |
|   |                       |  |                       |                      |                              |   |  |                      |            |        |
| <b>Turbo-Fire 409</b><br>409 Cu. In. V-8<br><br>4.313" x 3.50"<br>(RPO L31) | 400 hp @ 5800 rpm     | 4-Barrel Carter "AFB" Carb. (w/5" Throat)            | 11.0:1 <sup>(A)</sup> | 3-Speed (2.47:1 Low) | All Models                   | 3.36:1  | —                                      |                      |            |        |
|   | 425 ft lbs @ 3600 rpm | Spec. Camshaft                                       |                       |                      | 4-Speed (2.20:1 Low)         | All Models                                      | 3.36:1                                 | 4.11:1**<br>4.56:1** |            |        |
|   |                       |  |                       |                      | Mech. Lifters                | All Models                                      | 3.36:1                                 | —                    |            |        |
|   |                       |  |                       |                      | Opt. 4-Speed (2.54:1 Low)    | All Models                                      | 3.36:1                                 | —                    |            |        |
| <b>Turbo-Fire 409</b><br>409 Cu. In. V-8<br><br>4.313" x 3.50"<br>(RPO L80) | 425 hp @ 6000 rpm     | Two 4-Barrel Carter "AFB" Carb. (w/4" Throat)        | 11.0:1 <sup>(A)</sup> | 3-Speed (2.47:1 Low) | All Models                   | 3.36:1  | —                                      |                      |            |        |
|   | 425 ft lbs @ 4200 rpm | Spec. Camshaft                                       |                       |                      | 4-Speed (2.20:1 Low)         | All Models                                      | 3.36:1                                 | 4.11:1**<br>4.56:1** |            |        |
|   |                       |  |                       |                      | Mech. Lifters                | All Models                                      | 3.36:1                                 | —                    |            |        |
|   |                       |  |                       |                      | Opt. 4-Speed (2.54:1 Low)    | All Models                                      | 3.36:1                                 | —                    |            |        |

(A) These engines are produced with two (2) head gaskets per cylinder bank. Compression ratios shown are for one (1) gasket per bank.

\*Also available as Positraction (RPO G80).

\*\*Available as Positraction Axle (RPO G80) only.

(B) 3.36:1 axle ratio is furnished as standard equipment on vehicles with factory installed air conditioning, unless a 3.55:1 ratio optional axle is specified by the customer.

## 1963 CHEVROLET REFINISH PAINT CHART

### 1963 CHEVROLET, CHEVY II, CORVAIR & CORVETTE EXTERIOR REFINISH PAINT

| RPO Number                                   |               | Color<br>(Acrylic<br>Lacquer) | DuPont    | Rinshed-<br>Mason | Ditzler   |
|--|---------------|-------------------------------|-----------|-------------------|-----------|
| Chev.<br>Corvaire<br>Chevy II                | Cor-<br>vette |                               |           |                   |           |
| 900  | 900           | Tuxedo Black                  | 88-L      | A-946             | DDL-9300  |
| 905  |               | Laurel Green                  | 4255-L    | A-1485            | DDL-42975 |
| 908  |               | Ivy Green                     | 4394-L    | A-1542            | DDL-43125 |
| 912  | 912           | Silver Blue                   | 4250-L    | A-1481            | DDL-12546 |
| 914  |               | Monaco Blue                   | 4391-L    | A-1543            | DDL-12711 |
|  | 916           | Daytona Blue                  | 4395-L    | A-1539            | DDL-12696 |
| 918  |               | Azure Aqua                    | 4253-L    | A-1476            | DDL-12525 |
| 919  |               | Marine Aqua                   | 4390-L    | A-1541            | DDL-43114 |
| 920  |               | Autumn Gold                   | 4257-L    | A-1478            | DDL-22268 |
| 922  |               | Ember Red                     | 4387-L    | A-1538            | DDL-71336 |
|  | 923           | Riverside Red                 | 2931-L    | A-1138            | DDL-70961 |
| 932  | 932           | Saddle Tan                    | 4392-L    | A-1537            | DDL-22269 |
| 934  |               | Cordovan Brown                | 4393-L    | A-1535            | DDL-22294 |
| 936  | 936           | Ermine White                  | 4024-L    | A-1199            | DDL-8259  |
| 938  |               | Adobe Beige                   | 4256-L    | A-1486            | DDL-22137 |
| 940  |               | Satin Silver                  | 4247-L    | A-1477            | DDL-32173 |
|  | 941           | Sebring Silver                | 867-96417 |                   | DDL-32312 |
| 948  |               | Palomar Red                   | 4389-L    | A-1536            | DDL-50633 |
| Nova Super "Sport<br>Body Rear" Panel—Silver |               |                               | 4244-L    |                   | DDL-8568  |

### 1963 TRUCK AND CORVAIR "95" EXTERIOR REFINISH PAINT

| RPO<br>No. | Color<br>(Enamel)      | DuPont    | Rinshed-<br>Mason | Ditzler   |
|------------|------------------------|-----------|-------------------|-----------|
| 500        | Jet Black              | 93-005    | P-403             | DQE-9000  |
| 502        | Sea Mist Jade Met.     | 181-17529 | 2U-3737           | DQE-42976 |
| 503        | Glenwood Green         | 93-77695  | 2U-3736           | DQE-42977 |
| 505        | Woodland Green         | 93-77161  | 2U-3692           | DQE-42850 |
| 507        | Brigade Blue           | 93-76548  | 2U-2473           | DQE-12233 |
| 508        | Balboa Blue            | 93-77162  | 2U-2522           | DQE-12409 |
| 510        | Crystal Turquoise Met. | 181-17527 | 2U-2571           | DQE-12553 |
| 514        | Cardinal Red           | 93-58209  | 2U-5625           | DQE-70704 |
| 516        | Omaha Orange           | 93-082    | 2U-7119           | DQE-60156 |
| 519        | Yuma Yellow            | 93-75306  | 2U-7246           | DQE-81348 |
| 521        | Pure White             | 93-21667  | 2U-951            | DQE-8080  |
| 522        | Georgian Gray          | 93-77784  | 2U-1418           | DQE-32185 |
| *524       | Tangier Gold Met.      | 181-17618 | 2U-7247           | DQE-22158 |
| †526       | Cameo White            | 93-93774  | 2U-970            | DQE-8290  |
| 528        | Desert Beige           | 93-77785  | 2U-8957           | DQE-22141 |

\*On "Greenbrier" only.

†Used on second color for two-tone exteriors.

### 1963 CHEVROLET, CHEVY II, CORVAIR & CORVETTE INTERIOR REFINISH PAINT

| Color<br>(Std.<br>Lacquer) | Chevrolet,<br>Chevy II,<br>Corvaire |       | Cor-<br>vette | DuPont | Rinshed-<br>Mason | Ditzler  |
|----------------------------|-------------------------------------|-------|---------------|--------|-------------------|----------|
|                            | Gloss                               | Flat# |               |        |                   |          |
| Black                      | •                                   |       |               | 44     | 400               | DL-9248  |
| Black                      |                                     | •     | •             | 44*    | 400*              | DL-9292  |
| Ivory                      | •                                   |       |               | 94001  | 1199              | DL-8259  |
| Med. Saddle                | •                                   |       |               | 95562  | 62C82             | DL-22162 |
| Med. Saddle                |                                     | •     | •             | 95355* | 62C82*            | DL-22298 |
| Med. Blue                  | •                                   |       |               | 95480  | 62024             | DL-12531 |
| Dk. Blue                   | @ •                                 |       |               | 96221  | 1543              | DL-12737 |
| Dk. Blue                   |                                     | @ •   |               | 95892* | 63V24*            | DL-12739 |
| Dk. Blue                   |                                     |       | •             | 96315* | 63V26*            | DL-12740 |
| Med. Aqua                  | •                                   |       |               | 95479  | 62036             | DL-12533 |
| Dk. Aqua                   | @ •                                 |       |               | 95559  | 62V25             | DL-12534 |
| Dk. Aqua                   |                                     | @ •   |               | 95154* | 62V25*            | DL-12573 |
| Dk. Fawn                   | @ •                                 |       |               | 95561  | 62V83             | DL-22126 |
| Dk. Fawn                   |                                     | @ •   |               | 95168* | 62V83*            | DL-22297 |
| Med. Fawn                  | •                                   |       |               | 95478  | 62082             | DL-22128 |
| Dk. Green                  | % •                                 |       |               | 95556  | 62V33             | DL-42965 |
| Dk. Green                  |                                     | % •   |               | 95147* | 62032*            | DL-43153 |
| Med. Green                 | % •                                 |       |               | 95481  | 1485              | DL-42967 |
| Med. Red                   | •                                   |       |               | 95563  | 1538              | DL-71276 |
| Med. Red                   |                                     | •     |               | 95332* | 62T51*            | DL-71356 |
| Red                        |                                     |       | •             | 2967*  | 59C51*            | DL-71357 |
| Med. Saddle                |                                     |       | \$ •          | 95243* | 62C87*            | DL-22299 |

\*Only high gloss material is furnished by DuPont and R-M sources—it will be necessary to add flattening concentrate in accordance with label directions.  
 @Not used on Chevy II. %Used on Chevrolet Series only.  
 \$On rear window garnish & halo panel only (Non-Metallic)  
 #On I.P. & Steering col. parts.

### 1963 TRUCK AND CORVAIR "95" INTERIOR REFINISH PAINT

| Color<br>(Std. Lacquer)* | DuPont | Rinshed-<br>Mason | Ditzler  |
|--------------------------|--------|-------------------|----------|
| **Cardinal Red           | 2411   | U-5625            | DL-70704 |
| Cameo White              | 4195   | U-970             | DL-8319  |
| **Charcoal Grey          | 61977  | 63V11             | DL-32325 |
| **Turquoise              | 4317   | U-3738            | DL-12569 |
| Charcoal Grey            | 17559  | U-1419            | DL-32189 |
| Fawn                     | 17617  | U-8958            | DL-22151 |
| **Light Green            | 77891  | U-3739            | DL-42989 |

\*Where low gloss is required add flattening compound in accordance with label directions. \*\*Used only on Corvaire "95" series trucks.

## LUBRICATION

Product improvements included in all 1963 Chevrolet vehicles contribute to improved reliability, and an extended mileage period between lubrications and engine oil changes. Other items, such as new suspension spherical joints, are described in the applicable portions of this issue.

The extended maintenance period is based on 6,000 miles or 60 days whichever occurs first. Other related service areas are based on multiples of this 6,000 mile-60 day period.

### ENGINE OIL

Engine oil should be a good quality, "Service type MS," oil specified to have met or exceeded the maximum severity requirements of the auto manufacturers' sequence tests.

Engine oil should be changed at 60 day or 6,000 mile intervals, whichever occurs first, or more frequently under prolonged dusty or other adverse driving conditions.

### ENGINE OIL FILTER

The oil filter should be changed at 6,000 miles or 6 months, whichever occurs first, or sooner under prolonged adverse driving conditions.

### CRANKCASE VENTILATION VALVE

At every oil change, the crankcase ventilation valve should be tested and replaced when necessary. For details of valve servicing refer to the Engine Section in Part I of this issue.

### CRANKCASE BREATHER

At every oil change the breather cap should be cleaned in solvent and re-oiled, if so equipped.

### AIR CLEANER CARE

Paper Element Type—First 12,000 miles, inspect and test element; if satisfactory, element may be reused but must be rechecked every 6,000 miles thereafter. Element must not be washed, oiled, tapped or cleaned with an air hose.

Polyurethane Type—Every 12,000 miles clean element in suitable solvent such as kerosene, squeeze out all solvent, then soak in engine oil and squeeze out. Then squeeze in a clean dry cloth to remove excess oil.

*NOTE: Under prolonged dusty driving conditions, it is recommended that these operations be performed more often.*

### FUEL FILTER

Replace filter element located in carburetor inlet if carburetor flooding occurs.

Every 12,000 Miles—Replace filter element in bowl-type filter if engine is so equipped.

### GENERAL CHASSIS LUBRICATION

All lubrication fittings listed in this group must be serviced with water resistant EP Lubricant, General Motors Standard GM4751-M.

#### Front Suspension

Every 6,000 miles or 6 months—lubricate 4 fittings.

#### Steering Linkage

Every 6,000 miles or 6 months.

##### Manual Steering

Fitting at each tie rod end (4 fittings).

##### Power Steering

Fitting at each tie rod end and at power steering valve adapter and cylinder (6 fittings).

#### Parking Brake Pulley, Cables and Linkage

Every 6,000 Miles—Apply lubricant to pulley bearing area, parking brake cable at the pulleys, cable guides just behind the frame "X" member and at all operating links and levers.

Lubricate Powerglide shift linkage at frame and transmission.

#### Universal Joints

Every 30,000 miles (more often under prolonged dusty driving conditions) clean and repack.

The remaining areas of the chassis require specific lubricants for each component. Thus, the specified lubricant will be listed in each case.

#### STEERING GEAR

Every 6,000 miles or 6 months—check lube level. Add steering gear lubricant to level of filler plug hole.

#### POWER STEERING PUMP

Every 6,000 miles or 6 months—check level in pump reservoir. Fill pump reservoir as required with Automatic Transmission fluid "Type A" with AQ-ATF-A identification. Oil should be at operating temperature and wheels in straight ahead position when checking

or filling operation is performed to ensure against overfilling.

### FRONT WHEEL BEARINGS

Every 30,000 miles—clean and repack with a high melting point wheel bearing lubricant.

### TRANSMISSIONS

#### 3-Speed, Overdrive and 4-Speed

Every 6,000 Miles—Check at operating temperature and fill as necessary to level of filler plug hole with SAE 80 or SAE 80-90 Multi-purpose Gear Lubricant meeting requirements of U.S. Ordinance Spec. MIL-L-2105B.

#### Powerglide

Every 6,000 Miles—Check fluid level on dipstick with engine idling, selector lever in neutral "N" position, parking brake set and transmission at operating temperature. Add Automatic Transmission fluid "Type A" bearing the mark AQ-ATF, followed by a number and suffix letter "A" to fill mark on dipstick. DO NOT OVERFILL.

### REAR AXLES

#### Standard—Differential

Every 6,000 Miles—Check and keep filled to level of filler plug hole with SAE 80 or SAE 80-90 Multi-purpose Gear Lubricant meeting requirements of U.S. Ordinance Spec. MIL-L-2105B.

#### Positraction—Differential

Same as standard axle but use only special limited-slip differential lubricant such as the Positraction Rear Axle Lubricant now available at Chevrolet Dealers.

## FRAME AND SUSPENSION

The general appearance of the frame and suspension remains unchanged from 1962; however, the front suspension spherical joints and front wheel bearing seals are revised to incorporate the extended lubrication feature.

### FRONT SUSPENSION

The basic design appearance of the 1963 spherical joints is unchanged from previous models, and remain as the only parts of the front suspension proper that are lubricated. All joints are still provided with grease fittings (Fig. 4).

The reduced maintenance on these joints is made possible by the use of new low friction bearing surfaces, positive sealing, and special grease. The new

bearing surface is produced by coating a phenolic liner with a material called Teflon. This coating has a lower coefficient of friction than any other solid material, thus, it acts as its own lubricant. The primary purpose of the special high quality grease and the positive seals is to protect the joints from water, sand, salt, or dust damage.

The tapered roller front wheel bearings are protected by a new inner bearing seal and a cork seal between the brake backing plate and the front wheel

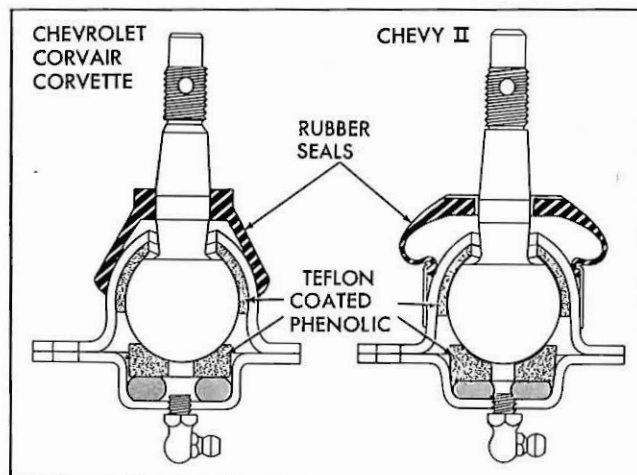


Fig. 4—Spherical Joint Cross-Section

spindle. The cork seal eliminates water and dirt entry while the new inner seal prevents loss of bearing grease. These improved sealing features extend the periodic repack mileage.

## STEERING

The steering linkage for 1963 is the same configuration as the previous design, however, three of the seven pivoting points are now permanently sealed and lubricated units, requiring no periodic maintenance. These are the idler arm connections and the pitman arm-to-relay rod ball stud. The remaining four points, the tie rod inner and outer ends, are designed to require lubrication only at the extended lube interval. This reduces the number of lubrication fittings on the 1963 manual steering linkage to four, from the five used in 1962.

On manual steering, the pitman arm-to-relay rod connection is formed by a rubber isolated stud that replaces the heavy springs and large ball stud used in 1962. Maintenance free, the new unit performs the function of transmitting steering forces and cushioning against road shocks.

On power steering, lubrication fittings are provided at each tie rod end at the power cylinder valve adapter, and at the power cylinder ball stud.

## BRAKES

The service brakes for all models of the regular Chevrolet series incorporate an automatic self-adjusting feature. The mechanical linkage, built into the brakes of all four wheels, automatically operates on reverse stops, as adjustments are needed. This feature assures more properly adjusted brakes at all times, including more consistent pedal height and response.

The basis for the new self-adjusting brakes is the conventional Duo-Servo single anchor type units used on 1962 models. These basic components are modified and the self-adjusting linkage is added. This linkage consists of a heavy wire link, an actuating lever assembly, an override spring, and return spring (Fig. 5). The wire link is mounted between the anchor pin and the actuating lever. The actuating lever uses the secondary shoe hold down pin location as the pivot point. The lower end of the actuating lever acts as a pawl which is engaged with the star wheel. For comparison purposes, the pawl is said to be like a conventional brake adjusting spoon that is used to turn the star wheel.

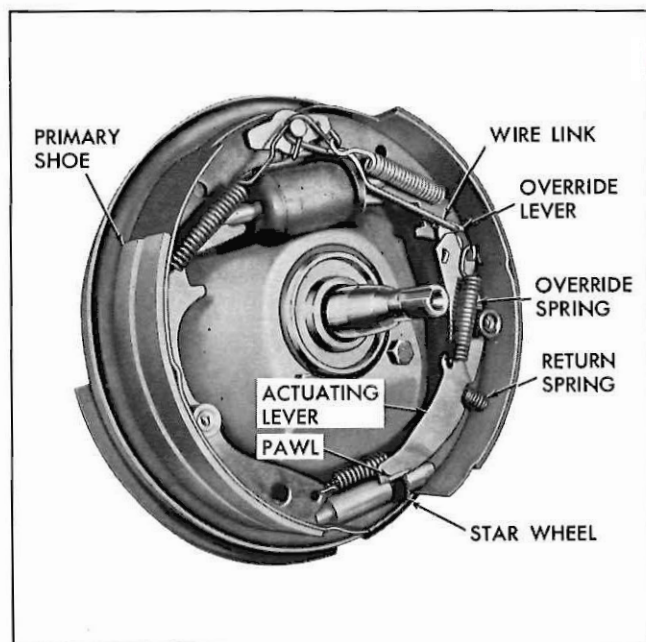


Fig. 5—Self Adjusting Brakes—Left Front Shown

### Operation

As brake lining wear occurs, the clearance between the drum and shoes increases. Due to this increased clearance, the wheel cylinder pistons and links must travel a greater distance to place the shoes in contact with the drums. The self-energizing feature of the Chevrolet brakes allows both primary and secondary shoes to rotate in the same direction as the drum until the web of one shoe contacts the anchor pin.

Relating this principle to the self-adjusting units, we will first observe the reaction to application of the brakes while the vehicle is moving in REVERSE (Fig. 6). As the brakes are applied, the shoes contact the drum and revolve with the wheel until the web of the primary shoe contacts the anchor pin.

This motion causes the secondary shoe to move away from the anchor pin, thus increasing the distance between the actuating lever pivot point and the anchor pin. Since the wire link maintains a constant length, the actuating lever assembly pivots on the secondary shoe hold down pin location and the pawl end of the lever rocks down against the adjusting screw star wheel. If the lining is worn enough to allow sufficient movement of the secondary shoe, the pawl will advance the star wheel one or two teeth. If

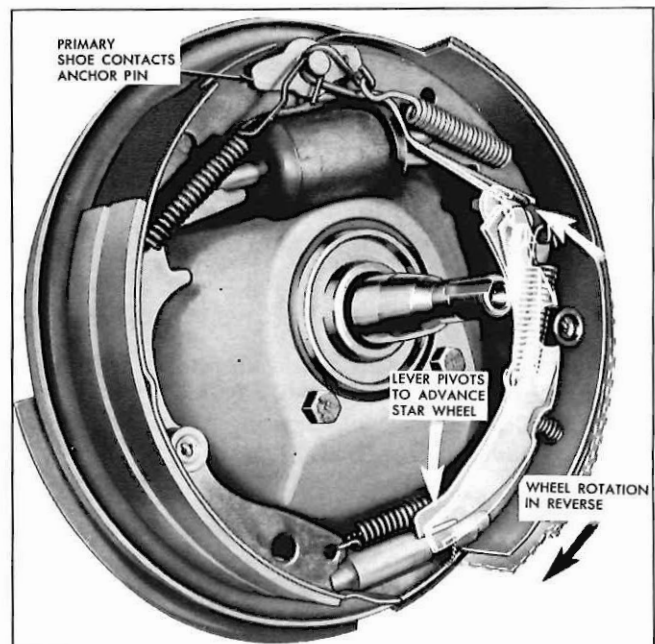


Fig. 6—Self Adjusters Activated

the brake linings are not worn enough to require an adjustment, the restricted movement of the secondary shoe prohibits over-adjustment.

When the brakes are released, the pullback springs return the shoes to the rest position. At the same time, the actuating lever return spring moves the linkage to the rest position. The contour of the actuating lever pawl allows the lever to ratchet back to the rest position and in effect "take a new bite" on the star wheel. As a result of this action, the linkage is in position to make the next adjustment as it is needed.

The adjusters are inoperative for forward stops due to their placement on the secondary shoes. Thus, the only time automatic adjustments are made is during moderate stops in reverse or at the end of an uphill forward stop.



The self-adjusting linkage includes an override feature that protects against overadjustment or possible malfunction. This override feature consists of a pivot lever and spring. If the adjusting screw is frozen, or malfunctions, or if the shoe clearance is great enough to cause linkage movement beyond desirable limits, the actuating lever stops and the override lever pivots on the end of the actuating lever. The override motion is absorbed by the override spring.

The use of the self-adjusting feature allows the elimination of the screw adjusting slot in the backing plate. This affords a more positive moisture and dirt seal for the brake assembly. While the backing plate slot is no longer required for periodic brake adjustments, provisions are made for initial adjustments

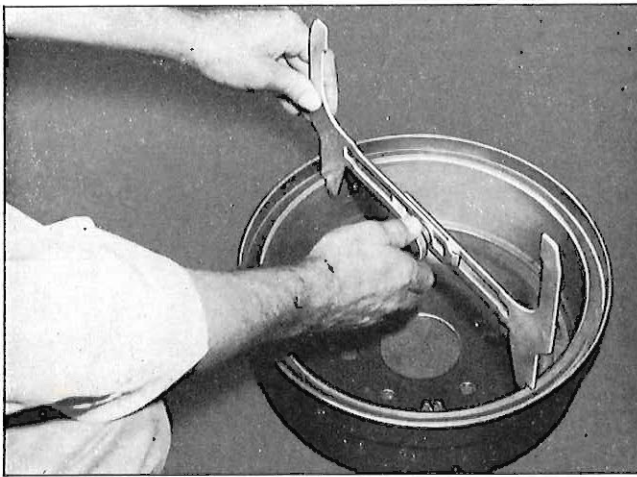


Fig. 7—Measure Drum with Tool J-21177

(such as after shoe replacement) or for retracting the shoes from a deeply grooved drum to allow drum removal. Changes in brake adjustment are made through a slot in the brake drum web. Water entry at the slot is prevented by a filler clip that is covered

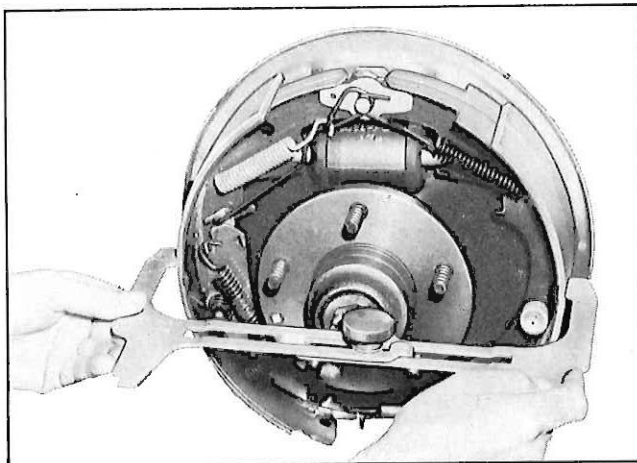


Fig. 8—Transfer Drum Measurement to Shoes

by the wheel. Thus, the wheel must be removed to manually change the adjustment setting.

The initial adjustment is made with the drum removed. Measure the drum diameter with tool J-21177 and transfer the tool to the shoes. Turn the brake star wheel until the tool lightly drags on the lining. A shoe-to-drum clearance is automatically achieved by the design of the tool. Final adjustment is made with the drums and wheels installed by making several moderate stops in reverse.

**CAUTION:** *The adjusting screws on the right side of the car have LEFT HAND threads, while those on the left side of the car have RIGHT HAND threads. If the wrong screw is installed, the brakes will automatically loosen instead of tighten.*

## POWER BRAKE UNITS

The basic Bendix and Moraine "vacuum suspended" power brake boosters are retained from 1962. The general appearance of these units is unchanged; however, component changes in sealing and control parts increase durability. The most visually internal change may be seen in the conversion of the power piston insert seals from lathe cut to conventional "O" Rings.

## ENGINE

The 1963 Chevrolet base engines consists of an all new 230 cu. in. in-line 6-cylinder engine that replaces the 235 cu. in. and a revised version of the familiar 283 cubic inch V-8. The optional V-8 engines are based on the 327 and 409 cubic inch blocks used in 1962. The two 327 cubic inch engines and the two high performance 409's are generally the same as the comparable units available in the past. For 1963, a new version of the 409 is released. This unit is equipped with a single low-contour 4GC 4-barrel carburetor and hydraulic lifters. This new V-8 fills the gap in power train options between the 300 horsepower "327" and the maximum performance "409's."

All 1963 Chevrolet vehicles will have some form of positive crankcase ventilation as regular production equipment. For this reason, the conventional road draft tube is eliminated.

Other new features of the 1963 engine line-up include; revised air cleaners, new choke control mechanisms, Delcotron charging systems as standard equipment, and other product improvement modifications.

## 230 CU. IN. ENGINE

The 235 cu. in. 6-cylinder is replaced in the 1963 regular Chevrolet line by an all new, short stroke 6-cylinder engine. With a bore of 3.875" and a stroke of 3.25" this new lightweight engine has a 230 cubic inch piston displacement. The major engine structures, such as the head and block, are made of cast iron, however, the combination of new foundry methods and high chromium iron not only reduces the weight of the engine by about 23 percent, but also provides improved engine cooling.

The design of this new engine is based on the highly successful features of the Chevy II engines, sharing such features as a total of seven main bearings to provide greater crankshaft rigidity. This close relationship of design in many cases allows common usage of parts between the Chevrolet L-6 and the Chevy II engines. The compact design allows a two inch reduction in over-all length and a three inch reduction in height from the 1962 L-6.

The cylinder head and valve train on the 230 cubic inch engine resembles the present design of the V-8 engines. The basic head has integral guides, in-line valves, pressed-in rocker studs and a modified wedge combustion chamber. The valves, which are slightly tilted to the manifold side, have seats that are completely surrounded by coolant passages. With very few exceptions, the valve train components are identical to the "283" V-8. Since no rocker arm shaft is used, lubrication is accomplished in the V-8 manner, using hollow push rods to transfer the oil.

The valves are arranged in the cylinder head so that inlet valves of adjacent cylinders are side by side. This valve placement allows the inlet ports to be

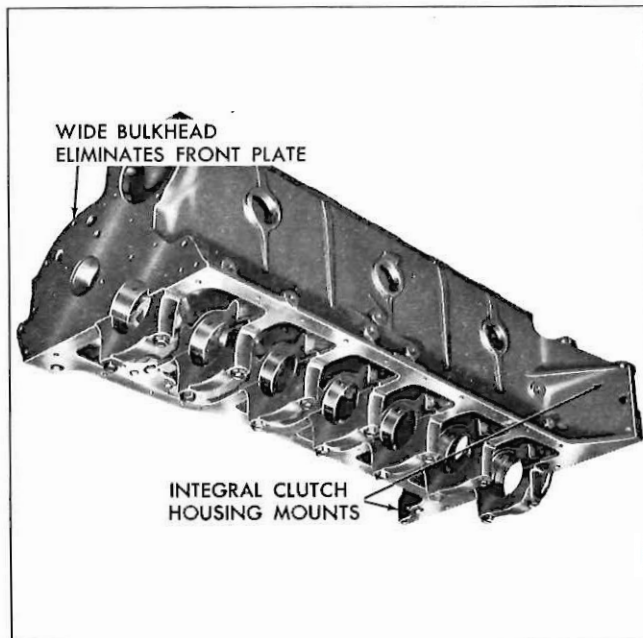


Fig. 9—230 Cu. In. Cylinder Block

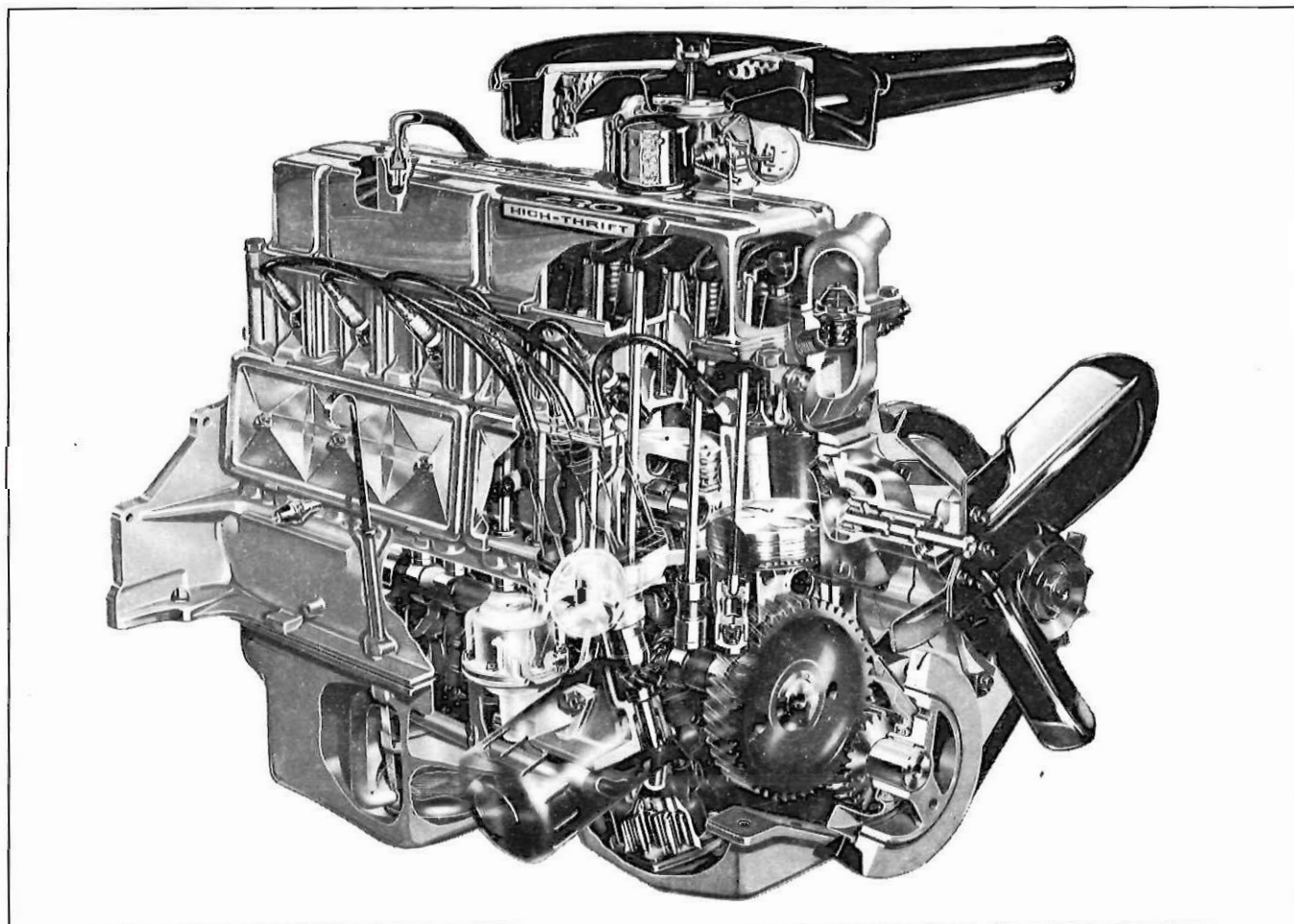


Fig. 10—L-6 Valve Train and Cylinder Head Cut Away

1963 CHEVROLET ENGINE SPECIFICATIONS AND TUNE-UP DATA

| ENGINES   |                  | 230 Cu. In.<br>140 HP<br>L-6                              | 283 Cu. In.<br>195 HP<br>V-8 | 327 Cu. In.<br>250 HP<br>V-8                  | 327 Cu. In.<br>300 HP<br>V-8         | 409 Cu. In.<br>340 HP<br>V-8                              | 409 Cu. In.<br>400 HP<br>V-8                    | 409 Cu. In.<br>425 HP<br>V-8 |
|---|------------------|---|------------------------------|---|--------------------------------------|---|---|------------------------------|
| Rated Gross Horsepower @ rpm                      |                  | 140 @ 4400  | 195 @ 4800                   | 250 @ 4400                                    | 300 @ 5000                           | 340 @ 5000  | 400 @ 5800                                      | 425 @ 6000                   |
| Gross Torque (ft. lbs.) @ rpm                     |                  | 220 @ 1600  | 285 @ 2400                   | 350 @ 2800                                    | 360 @ 3200                           | 420 @ 3200  | 425 @ 3600                                      | 425 @ 4200                   |
| Compression Ratio                                 |                  | 8.5:1   | 9.25:1                       | 10.5:1  |                                      | 10.0:1  | 11.0:1  |                              |
| Carburetor  |                  | 1 BBL<br>Roch. "BC"                                       | 2 BBL<br>Roch. "2GC"         | 4 BBL<br>Roch. "4GC"<br>(or) Carter<br>"WCFB" | 4 BBL<br>Carter "AFB"<br>(4" Throat) | 4 BBL<br>Roch. "4GC"<br>(New Config.)                     | 4 BBL<br>Carter "AFB"<br>(5")                   | Duo—4 BBL<br>"AFB"<br>(4")   |
| Bore and Stroke                                   |                  | 3 7/8 x 3 1/4   | 3 7/8 x 3                    | 4 x 3 1/4                                     |                                      | 4.313 x 3.50  |   |                              |
| Firing Order                                      |                  | 1-5-3-6-2-4   |                              |   | 1-8-4-3-6-5-7-2                      |   |   |                              |
| Cylinder Test Compression*                        |                  | 130 psi   | 140 psi                      | 160 psi                                       |                                      | 150 psi   |   |                              |
| Normal Idle Speed                                 | Manual Trans.    | 500   | 475 rpm                      |   |                                      | 500 rpm   | 750 rpm   |                              |
|   | Auto. (In Drive) | 500   | 450 rpm                      |   |                                      | 475 rpm   | —   |                              |
| Ignition Timing<br>BTDC Settings at Normal Idle** |                  | 4° (Prod.)<br>2°-8° Range                                 | 4° (Prod.)<br>4°-8° Range    | 4° (Prod.)<br>4°-10° Range                    | 8° (Prod.)<br>6°-12° Range           | 10° (Prod.)<br>8°-12° Range                               | 12°   | 12°                          |
| Spark Plugs                                       | Type             | AC 46N  | AC 45                        | AC 44   | AC 44                                | AC 43N  | AC 43N  | AC 43N                       |
|   | Gap and Torque   | .035"—25 ft. lbs.   |                              |   |                                      |   |   |                              |
| Distributor                                       | Dwell            | 31°-34°   | 28°-32°                      | 28°-32°                                       | 28°-32°                              | 28°-32°   | 28°-32°   | 28°-32°                      |
|   | Point Gap        | .019" (New) .016" (Used)                                  |                              |   |                                      |   |   |                              |
|   | Point Tension    | 19-23 oz.   |                              |   |                                      |   |   |                              |
| Tappet Adjustment                                 |                  | Hydraulic—1 turn down from "no lash"                      |                              |   |                                      |   | Mechanical<br>Inlet .012"—hot<br>Exh. .020"—hot |                              |
| Fuel Pressure @ Idle to 1000 rpm                  |                  | 3 1/2-4 1/2 psi   | 5 1/4-6 1/2 psi              |   |                                      | 7 1/4-8 1/2 psi   |   |                              |
| Crankcase Capacity                                |                  | 5 qts.—With Filter Change<br>4 qts.—Without Filter Change |                              |   |                                      | 6 qts.—With Filter Change<br>5 qts.—Without Filter Change |   |                              |
| Cooling System Capacity w/Heater                  |                  | 12 qts.   | 18 1/2 qts.                  |   |                                      | 22 qts.   |   |                              |
| Radiator Pressure Cap Rating                      |                  | 13 P.S.I. (15 P.S.I. when equipped with air conditioner)  |                              |   |                                      |   |   |                              |
| Coolant Thermostat Rating                         |                  | 180° F.   |                              |   |                                      |   |   |                              |

\*At cranking speed with throttle open—15 psi. max. variation between cylinders.

\*\*Range depends on locality, driving conditions, and grade of fuel. When setting timing, disconnect vacuum advance line and cap vacuum opening.

siamesed (Fig. 11). The result of this design is a simplified inlet manifold that uses one passage to feed two cylinders.

The new L-6 engine features a full pressure lubrication system. Pressure is provided by a gear type oil pump that is driven by the distributor shaft. The pump uses a stationary sump with a screen filter. The standard equipment full-flow oil filter is a one quart throw-away type. The filter is mounted on the right side of the engine block, at the extreme front.

**V-8 ENGINE FEATURES**

The 283 cubic inch base V-8 will employ the same type of cylinder head, camshaft, and harmonic balancer as the 1963 "327" engines. This results in improved performance while maintaining the use of regular grade gas. The same basic 283 cubic inch block used previously will be retained with minor

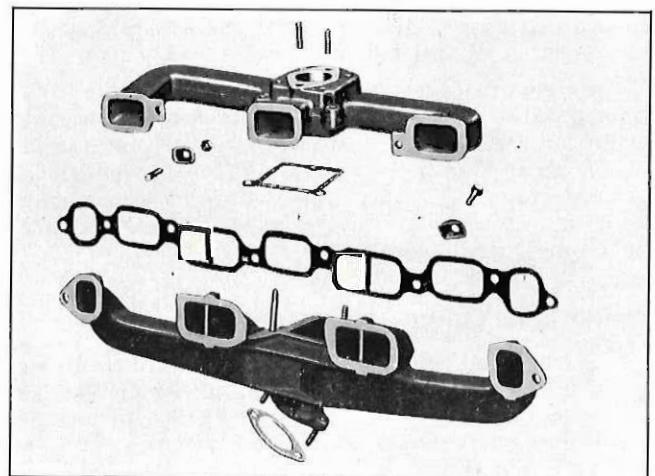


Fig. 11—Manifolds (230 Cu. In.)

modifications. Included in these modifications is a provision for a pad mount starter. To coincide with this new starter, a Chevy II type flywheel with 12¾ inch ring gear is used.

The 327 cubic inch engines are retained for 1963 with virtually no changes other than the product improvements employed throughout the engine line-up.

The 409 cubic inch engine line-up has been increased to a total of three for the new model year. The two maximum performance "409" engines retain the use of solid lifters and single or dual "AFB" carburetors similar to the 1962 version. Through the use of new camshafts, distributors, and other component revisions, the gross horsepower of these engines have been increased. The RPO L-31 is now rated at 400 horsepower at 5800 rpm and the RPO L-80 develops 425 horsepower at 6000 rpm.

The new version of the "409", RPO L-33, is rated at 340 gross horsepower. This engine features hydraulic lifters with a corresponding camshaft design. Cast aluminum pistons with offset pins are used. The carburetor on this engine is a new, low profile, Rochester four-barrel.

This 340 horsepower engine is the only "409" engine on which a Powerglide is offered. The Aluminum Powerglide used with this engine is basically the same as that available on the 327 cubic inch engines with the exception of certain components required by this larger engine.

## POSITIVE CRANKCASE VENTILATION SYSTEMS

In 1963, all Chevrolet vehicles will have some form of positive crankcase ventilation as regular production, either POSITIVE SPECIAL CRANKCASE VENTILATION or POSITIVE (CLOSED) CRANKCASE VENTILATION, which utilizes manifold vacuum to draw fumes and contaminating vapors into the combustion chamber where they are burned.

Positive Special Crankcase Ventilation draws its fresh air from a vented mesh oil filler cap. Positive (closed) Crankcase Ventilation draws its fresh air from the Air Cleaner. (Mesh oil filler cap is replaced by a non-vented oil filler cap.)

The valve regulates the flow of blow-by gases from the crankcase to the manifold under all operating conditions. The valve assembly consists of a coil spring, valve and a two-piece outer body which is crimped together. The valve dimensions, spring "weight" and internal dimensions are such to produce the desired air flow curve.

### Ventilation Valve Testing

It should be remembered that additional air is permitted to enter the intake manifold when positive crankcase ventilation is used. However, the carburetor is calibrated to compensate for the air plus blow-by gas that enters the intake manifold from the crankcase.

The calibrated air flow through the crankcase

ventilation system is the basis of both methods of testing the valve operations that are detailed.

### Engine RPM Drop Method

1. Connect tachometer and vacuum gauge as for idle speed and mixture adjustment.
2. Set parking brake, start engine and adjust idle speed and mixture.
3. a. (6 Cylinder Engine) — Remove valve from rocker arm cover (with hose still connected), plug the open end of the valve and read engine rpm change.  
b. (8 Cylinder Engine) — Disconnect ventilation hose at valve on carburetor base, block opening of valve and read engine rpm change.
4. A change of less than 50 rpm indicates a plugged ventilation valve metering hole—replace the valve.

### Tester Method

Test equipment such as A.C. Type CT-1 Tester, is available to test the operation of the valve as well as checking the entire system for leakage. Equipment manufacturers' recommendations must be followed for the particular tester being used.

The base Chevrolet engines, all Corvair and 10 through 30 series Trucks except P models use the Special system. All other vehicles use the Closed system as standard equipment. The Closed system may be used as RPO on Chevrolet L-6 and 10 through 30 series Trucks.

## ELECTRICAL

The release of several new features for the 1963 Chevrolet series affects the service procedures in the electrical Section. These features include; a new "Delcotron" charging system as standard equipment, a new instrument cluster and related wiring, a self-contained plastic turn signal switch, and a new windshield wiper motor and washer unit. Such items as: new courtesy switches, lamps and accessories, are revised for improved durability and styling changes; however, changes in these areas do not materially affect service procedures.

### DELCO TRON CHARGING SYSTEM

All Chevrolet vehicles except Corvair models will use a "Delcotron" charging system in 1963. Standard equipment generators for the regular Chevrolet line will be a 9-37 (9 amps at idle, 37 amps maximum output) unit. Three additional "Delcotrons" are also offered in higher output ratings. These will be: RPO K79, 12-42 ampere; K82, 5-52 ampere; K81, 23-62 ampere.

All models of the "Delcotron" are basically the same as the late production 1962 units; thus, the service procedures are generally unchanged. The regulators and wiring are all new for 1963, with test, repair, and adjustment steps changed accordingly.

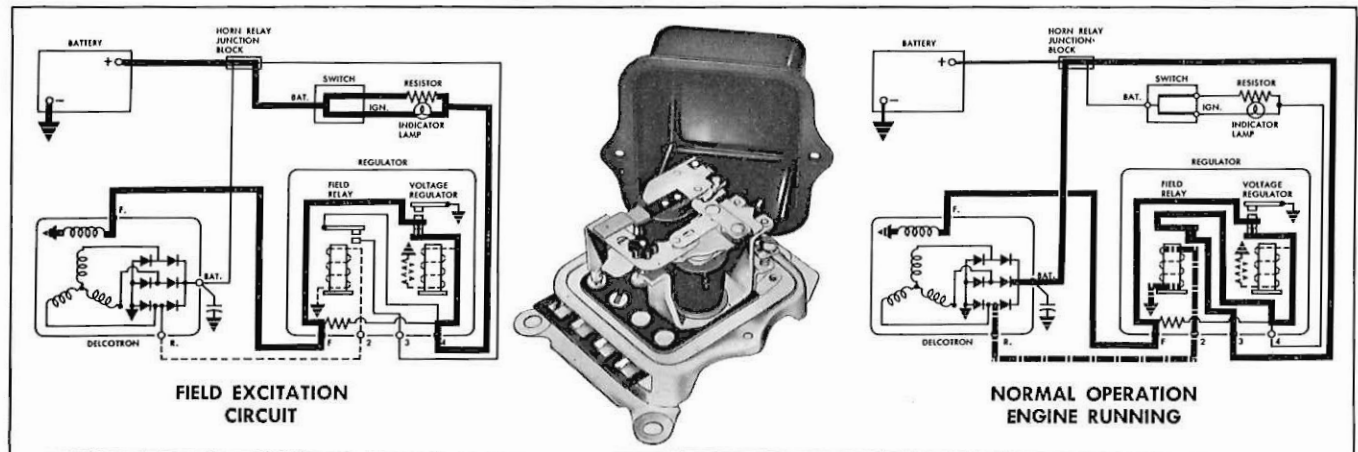


Fig. 12—Double Contact—Regulator

## Voltage Regulators

Two basic voltage regulators are released to service all 1963 "Delcotron" applications. A new, two unit, double contact regulator will service all units through the 52 ampere model. A new transistorized regulator is used on the 62 ampere system. Both of the regulators feature a multiple connector body and slip-connection terminals.

### Double Contact Type

The 1963 double contact regulator operates on much the same principle as last year's model; however, the indicator light relay is eliminated.

When the ignition switch is closed, before the engine is started, the indicator lamp lights, showing that the "Delcotron" is not charging. The current flow can be traced from the battery to the "BAT" terminal on the switch, through the indicator lamp and resistor resistance wire which are in parallel, and then through the voltage regulator lower contacts. From here it continues to flow through the "Delcotron" field wiring to ground, completing the circuit back to the battery. Current through this circuit energizes the rotor sufficiently to insure voltage build-up in the stator windings when the engine starts.

In addition to the current flow through the indicator light, the current from the parallel resistor insures enough field excitation to induce output when the engine is started, or to allow field excitation should the bulb burn out.

Since the generator tell-tale lamp and the parallel resistance wire are used for initial excitation of the Delcotron, the circuit allows the lamp to glow faintly when the ignition switch is turned to the "ACC" position. This glow is normal and may be used as a warning that the key has been turned beyond the "lock" position to the "ACC" position.

As the "Delcotron" begins to operate, voltage from the "R" or relay terminal (used to control the light relay in 1962) is impressed through the regulator No. 2 terminal to the field relay windings. When the

voltage to the field relay winding reaches the preset 2.3 to 3.7 volts, the relay contacts close. This connects the battery voltage, available at regulator No. 3 terminal, through the relay contacts to the junction point near the No. 4 terminal. Since battery voltage is now impressed on both sides of the indicator lamp, the light goes out. Battery current now flows from the junction point, through the normally closed voltage regulator points, and on to fully energize the rotor windings.

The field relay and indicator light operations are now completed, and the relay contacts will remain closed until the engine is shut down. When this occurs, the voltage at the "R" terminal diminishes until the relay snaps to its normal open position eliminating all field current.

Double contact voltage regulation is identical to the method employed in the 1962 double contact unit. When the system requires 10 amperes or more the regulator operates on the lower contacts. System requirements of less than 10 amps causes the unit to operate on the upper or "shorting" contacts to limit voltage.

### Transistorized Regulator

The optional 62 ampere charging system is equipped with a single contact transistorized regulator. This regulator features the same slip-connection type multiple terminal connector as the double contact version. This fact, combined with the similar circuits of the two models, allows a common extension harness to be used with either regulator.

Since the frontal area of this regulator is wider than that of the double contact model, the radio suppression condenser terminal protrudes as the fifth terminal on the face of the regulator.

**CAUTION:** This terminal is intended only for a condenser. Any other connection at this point will damage the regulator.

The circuits in this new regulator are similar to those of the 1962 transistorized regulator, however,

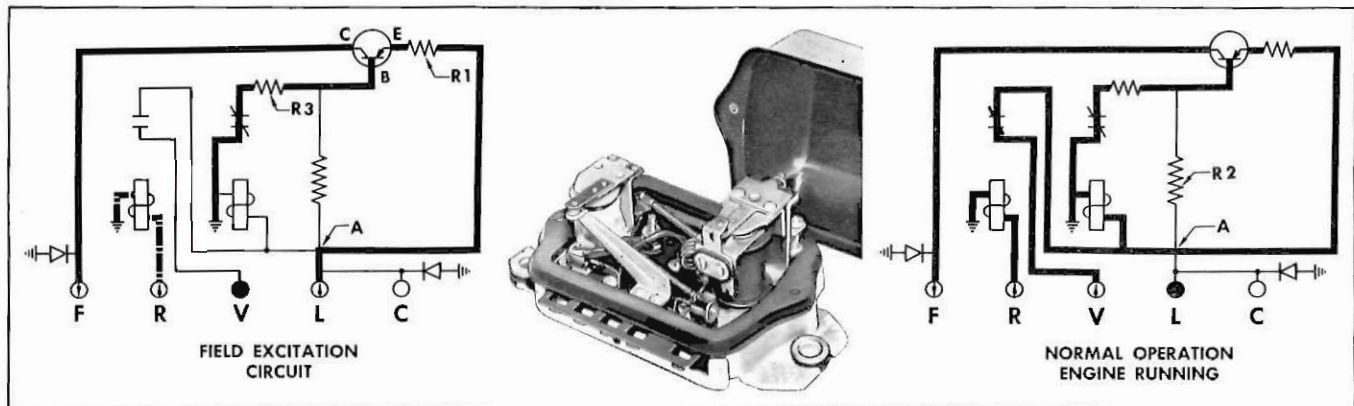


Fig. 13—Transistorized Regulator

several changes have been made to include the indicator light and its initial field excitation feature.

As the key is turned to the "On" position, the indicator lamp circuit grounds through the rotor, causing initial field excitation, the lamp goes on to show that the "Delcotron" is not charging. This circuit may be traced on a schematic diagram by starting at the regulator "L" terminal. Current from the indicator lamp is impressed on junction "A" which is the master connection point in the regulator. From junction "A", current follows the path of least resistance to the emitter (E) side of the transistor. A small portion of the emitter current passes through the base (B) to ground at the normally closed regulator contacts. The grounded base permits an emitter (E) to collector (C) current flow. Collector current passes through the regulator "F" terminal to energize the rotor windings.

As the engine is started and the "Delcotron" begins to operate, voltage is produced at the generator "R" terminal. This terminal was used to operate the light relay on the 1962 charging system, but now operates the field relay. When the voltage at the regulator "R" terminal reaches 2.3 to 3.7 volts, the relay closes and completes the path for battery current from the "V" terminal to flow to the emitter circuit. Since this battery-to-emitter circuit passes through junction "A", the indicator light is subjected to equal potential on both sides and goes out. This shows that the "Delcotron" is operating. The field relay remains closed until the voltage at the "R" terminal is reduced below the operating volt range by stopping the engine.

The voltage regulation circuits are almost identical to the 1962 unit, with the battery voltage impressed on the regulator winding, and through resistor R1 to the transistor. Transistor operation is controlled by regulating the base circuit ground through resistor R-3 and the regulator contacts. When the regulator contacts are closed, full field current passes through the emitter-collector circuit allowing full "Delcotron" output. As the limiting voltage is reached, the regulator contacts separate and interrupt the base circuit to ground. This stops the emitter-to-collector current flow to the rotor windings. The transient voltage surge caused by the collapsing rotor field, is routed

by the field circuit diode thus protecting the transistor from damage.

When the regulator points are open, battery voltage is impressed on the base circuit through resistor R-2. With voltage supplied to both the emitter and the base, transistor leakage is positively prevented.

The terminals of the horn relay are used as the main connection point for the charging system.

### Service Operations

The service operations and precautions outlined for the 1962 A.C. charging system regulators will apply in general, to the 1963 version, with appropriate revisions in specifications. Complete service information for the charging systems is contained in the 1963 Shop Manuals.

Test connections to the multiple plug connector on the regulator can be more easily coupled using Kent-Moore connector J-9782.

The complete charging system test procedure is detailed in the Shop Manual.

### WINDSHIELD WIPER

The windshield wiper motor has been moved from the center of the cowl to the left side, outboard of the brake main cylinder. By placing the motor in this position, a relay type linkage is used that is similar to the Chevy II. Both the single speed and the two speed wiper and washer pumps are slightly revised to facilitate this new mount position, however, general appearance and operation of the units remains unchanged.

In addition to the new wiper motor mount location, all wiper motors for 1963 use a four-lobe direct drive mechanism to operate the windshield washer pump. This direct drive replaces the gear drive formerly used for this purpose.

**NOTE:** The wiper motor must be disconnected and pulled out from the cowl to allow linkage retainer clip removal before attempting linkage service.

The wiper arms are new for 1963. This change was required due to the newly styled windshield and pillar design.

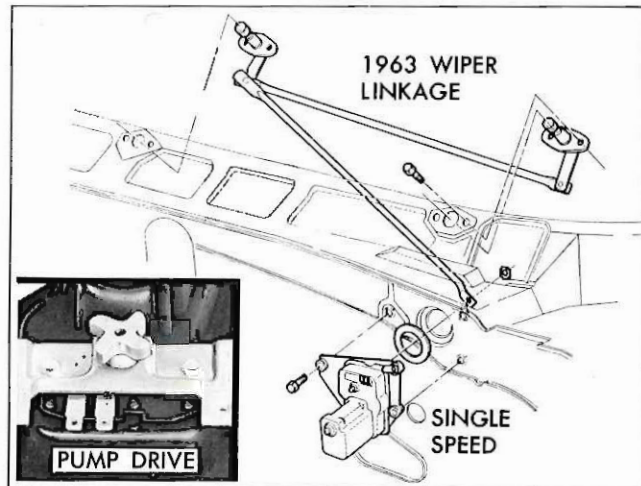


Fig. 14—New Wiper Motor and Washer Drive

### TURN SIGNAL SWITCH

A new self contained turn signal switch replaces the cable operated design offered in previous years. The new switch and cancelling mechanism are one complete plastic assembly and are relocated to the bell shaped housing below the steering wheel. This stamped bowl housing replaces the integral die-cast bowl previously used. The tapered and beveled lever attachment provides a very durable unit with no lever loosening problems.

Wiring for the new switch is routed inside concentric mast jacket housing, and features curved multiple connectors to allow switch replacement without removing the wires from the connector. This connector matches the contour of the components through which the connectors must pass.

### FUEL AND EXHAUST

The 230 cubic inch six cylinder engine is equipped with a single barrel Rochester "BC" carburetor, utilizing an oil-wetted polyurethane element air cleaner.

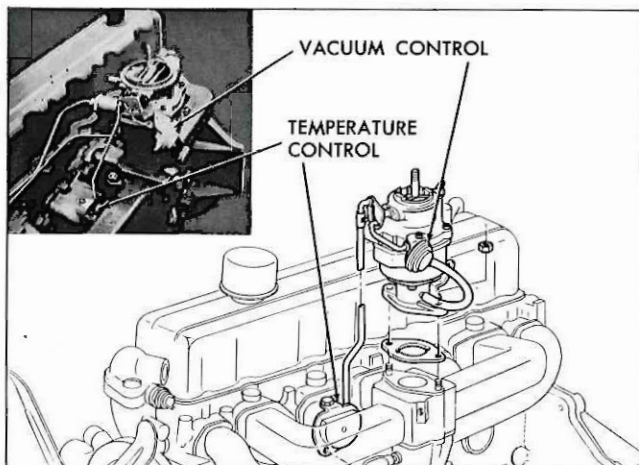


Fig. 15—230 Cu. In. Choke System

Carburetor design is similar to that used for the 1962 six cylinder engine, except for choke arrangement.

In the new choke arrangement, which is similar to the Corvair design, the temperature sensing control is remote with respect to the carburetor. It is mounted in a cast depression on the exhaust manifold. Placement of the thermostatic coil closer to the heat source produces quicker choke valve response, so that fuel mixture proportions are more accurately related to engine operating requirements. Reliability is improved by the use of a diaphragm vacuum control mounted on the carburetor.

## MANUAL TRANSMISSION

### THREE-SPEED

The regular Chevrolet series three-speed transmission will use the smaller diameter clutch gear bearing retainer from the Chevy II. By using this retainer, both the Chevrolet 327 cubic inch engines and Corvette models, which also feature the small diameter retainer, will be able to share a common clutch housing.

### FOUR-SPEED

The four-speed transmission is again offered as an R.P.O. with "327" and "409" engines. This transmission for the 1963 Chevrolet series is the same as the 1962 model with the exception of the clutch gear, clutch gear bearing, and bearing retainer. The 1963 four-speed will use the regular three-speed type threaded clutch gear with the bearing being retained by an adjusting nut rather than a snap ring as has been used on previous models. Two different sizes of clutch gear bearing retainers will be used. The smaller diameter unit adapts the transmissions to the "327" clutch housing as described in the three-speed changes, while the "409" units will use the large diameter retainer.

## AUTOMATIC TRANSMISSION

The modern, lightweight aluminum case Powerglide is extended to all available engines except the 400 and 425 horsepower 409 cubic inch engine. The cast iron case Powerglide is not used in 1963.

The 230 cubic inch L-6 unit uses air cooling ports and a converter shroud while all V-8 applications are water cooled by a heat exchanger located in the radiator lower tank.

Two basic high clutch assemblies are used to match specific transmission and engine assemblies. The 340 horsepower 409 cubic inch and both 327 cubic inch engines use the 13 square inch piston area unit, while the base engines use a piston area of 10.4 square inches. The reduced piston area, for these smaller engines, tends to improve the feel of the upshift. From these two basic clutch units, different plate stacks with compensating thickness pistons comprise the specific application clutches. These applications are listed in the accompanying chart.

## 1963 ALUMINUM POWERGLIDE TRANSMISSION—CLUTCHES &amp; PLANETARY SETS

| Engine                   | Vehicle         | Cooled By | HIGH CLUTCH    |            |      |                       |                     |                        | PLANETARY GEAR SET |              | REVERSE CLUTCH   |                     |                     |                 |
|--------------------------|-----------------|-----------|----------------|------------|------|-----------------------|---------------------|------------------------|--------------------|--------------|------------------|---------------------|---------------------|-----------------|
|                          |                 |           | PISTON         |            |      | Return Springs (Qty.) | Drive Plates (Qty.) | Reaction Plates (Qty.) | Gear Size          | Shaft Length | Piston Thickness | Faced Plates (Qty.) | Steel Plates (Qty.) | Reverse Cushion |
|                          |                 |           | % of 1962 Area | Thick-ness | I.D. |                       |                     |                        |                    |              |                  |                     |                     |                 |
| L-4<br>153<br>Cu.<br>In. | Chevy II        | Air       | 80%            | 1.20       | 3.08 | 21                    | 2                   | 3                      | Small              | 15           | 1.19             | 3                   | 3                   | Yes             |
|                          | P10 Truck       | Water     |                |            |      |                       |                     |                        |                    |              |                  |                     |                     |                 |
|                          | Taxi            |           |                |            |      |                       |                     |                        |                    |              |                  |                     |                     |                 |
| L-6<br>194               | Chevy II        | Air       | 80%            | 1.00       | 3.08 | 21                    | 3                   | 4                      | Small              | 15           | .996             | 4                   | 4                   | Yes             |
|                          | Taxi            | Water     |                |            |      |                       |                     |                        |                    |              |                  |                     |                     |                 |
| L-6<br>230<br>Cu.<br>In. | Chevrolet       | Air       | 80%            | 1.00       | 3.08 | 21                    | 3                   | 4                      | Small              | 12%          | .996             | 4                   | 4                   | Yes             |
|                          | C, P10-20 Truck | Water     |                |            |      |                       |                     |                        |                    | 15           |                  |                     |                     |                 |
|                          | Taxi            |           |                |            |      |                       |                     |                        |                    | 12%          |                  |                     |                     |                 |
| L-6<br>292               | C10-20 Truck    | Water     | 80%            | .81        | 3.08 | 21                    | 4                   | 5                      | Large              | 15           | .816             | 5                   | 5                   | Yes             |
| V-8<br>283               | Chevrolet       | Water     | 80%            | .81        | 3.08 | 21                    | 4                   | 5                      | Small              | 12%          | .816             | 5                   | 5                   | Yes             |
|                          | C10-20 Truck    |           |                |            |      |                       |                     |                        | Large              | 15           |                  |                     |                     |                 |
| V-8<br>327               | Chevrolet       | Water     | 100%           | .80        | 2.5  | 24                    | 4                   | 5                      | Large              | 12%          | .632             | 6                   | 6                   | Yes             |
|                          | Corvette        | —         |                |            |      |                       |                     |                        |                    | 15           |                  |                     |                     |                 |
| V-8<br>409               | Chevrolet       | Water     | 100%           | .80        | 2.5  | 24                    | 4                   | 5                      | *Large             | 12%          | .632             | 6                   | 6                   | Yes             |

\*High clutch same as 327 except low sun gear narrower to accommodate needle thrust bearing utilized with 409.

NOTE: For reference only, this Service News issue will refer to the 10.4 sq. in. unit as the 80% type, and 13 sq. in. clutch as the 100%. This relation is used since the smaller piston area is approximately 80% of the larger area.

The reduction of effective piston area was accomplished by increasing the piston inside diameter to 3.08 inches. The large or 100% piston I.D. remains the same as the 1962 pistons; 2.5 inches. Thus, pistons, drums, and seals are new for the 80% unit, while clutch plates, return springs, and other related parts share common usage for all units.

The reverse clutch assembly of all 1963 Powerglides will include the belleville type cushion spring used in the 1962 L-4 and L-6 units. This addition requires the use of a thinner (.632 thick) piston for "327" and "409" V-8 applications. Refer to the chart for specific component information.

Other minor modifications have been made to increase product reliability with all engine applications. An example of this type of change is the new vacuum modulator valve. The 1963 valve is a two piece design that includes a damper spring to eliminate valve "rattle".

The modified version of the Powerglide used for the new 340 horsepower "409" includes several heavy-duty components beyond those employed on the "327" models. The most obvious difference in the 409's Powerglide, from those used with 327 cubic inch engines, is the use of a Torrington thrust bearing be-

tween the high clutch flange sun gear (low sun gear) and the planet input sun gear. This bearing replaces the thrust washer used on other Powerglide units.

Shift controls are revised for 1963, with the concentric shifter tube type featuring a reverse inhibitor spring load and detent, with a second and even stronger spring and step that prohibits accidental shifts into "Park".

A Corvette style floor shift lever is used on Powerglide models installed in Chevrolets with (R.P.O. number Z-03) Super Sport equipment. The floor mounted shift control will also feature a reverse inhibitor spring and step.

## ACCESSORIES

### DELUXE ALL WEATHER AIR CONDITIONER (RPO-C60)

The completely new heater-air conditioner, a series type system, offers increased versatility in heating and cooling ambient air for improved comfort. Only the compressor, evaporator and receiver-dehydrator remain carryover components from 1962. Most noticeable features of the new unit are the cool air outlets and the controls. The heater portion of the unit is completely new and is of the mixed air type with temperature control similar to the standard production heater.



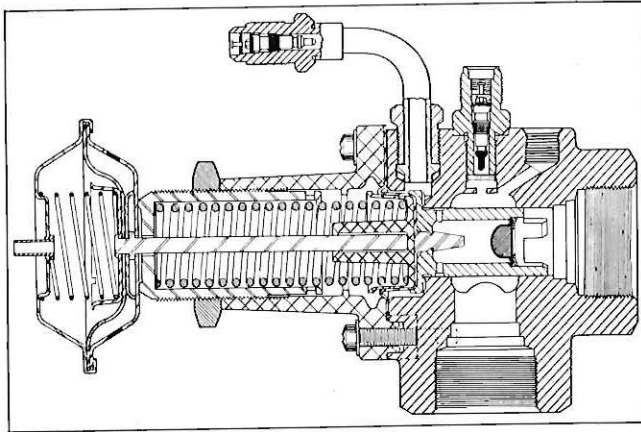


Fig. 16—Suction Throttling Valve

Dual function controls located on the instrument panel provide easy and rapid regulation of either the heater or air conditioner. The controls labeled FAN, DEF, TEMP, and AIR are built into the lower edge of the panel much like last year's heater controls. An additional control labeled PULL FOR AIR COND is flange suspended to the right of the main cluster.

For air conditioning, the PULL FOR AIR COND knob is pulled out turning on the compressor and actuating the air diverter and air deflector valves that are link connected. The air diverter valve directs air from the floor heater outlets to the cool air outlets at instrument panel level. At the same time, the air deflector valve acts as a baffle to channel most of the air entering the heater case so that it bypasses the heater core. Normally the AIR control will be set to permit recirculation of passenger compartment air for cooling purposes. If desired, however, outside air may be cooled by closing the air path from the compartment.

Temperature control of the cool air is achieved by routing part of the air through the heater core with the TEMP valve. The heated air mixes with the cool air for effective temperature control.

The Suction Throttling Valve (Fig. 16) is preset with no cable control. To avoid evaporator freeze up, a vacuum control valve has been added to the system. This is a spring loaded diaphragm valve, using engine vacuum, that will control the STV and take the place of a cable control under conditions of high altitude. The engine vacuum will oppose the spring direction of the STV. When vacuum is reduced, the full force of the STV spring will be effective and regulate the pressure, and therefore the temperature of the system. The vacuum valve is located so that approximately  $\frac{5}{16}$  inch of "Heat" control cable travel will close the valve and the engine vacuum will have no effect on the air conditioning system.

**CUSTOM AIR CONDITIONER (RPO-C64)**

Recirculating air is used for the Custom unit with the blower located on the right and under the instrument panel. The evaporator case is new and occupies

less compartment space than the previous model. Controls and system operation remain unchanged.

Comparable versions of both air conditioner units are released for a dealer installed accessory.

**RADIOS**

Manual and push-button radios are new and have a full complement of transistors for faster warm-up, reduced chassis size and improved reliability. Warm-up time is reduced to virtually an instant, as opposed to the twenty or thirty seconds of previous tube-transistor radios.

A four section, hermetically sealed antenna will replace the present three section design. Since the antenna mast and the antenna body constitute a single assembly, these components can no longer be separately serviced. This design eliminates moisture grounding of the antenna.

**PART II—CHEVY II**

For 1963 the same basic Chevy II body styles are retained in the 100 and the 300 series. These are the two and four door sedans in each series, with a two seat four door wagon in the 100 series and a four door three seat wagon in the 300 series.

Revisions in the model line affect the Nova 400 series which will now contain four models. Of the two models introduced in mid-season 1962, the 141 and 449 two and four door sedans, only the 449 will be retained for 1963. The remaining three vehicles will be the same as those offered throughout 1962. In addition, the two door sports coupe and the convertible will be available with super Sport Equipment.

The integral body-frame unit and the unitized front end assembly are retained with virtually no visible changes for 1963. There are, however, many revisions that cannot be seen but add to the strength and quietness of this vehicle. In general, these improvements don't affect any major service procedures.

All bodies retain the weld nut provision for easy front seat belt installation. Production outboard

**1963 CHEVY II MODEL IDENTIFICATION**

| Series      | Model Number |        | Body Style  |
|-------------|--------------|--------|---|
|             | 4-Cyl.       | 6-Cyl. |   |
| 100         | 111          | 211    | 2-Dr. Sedan, 6-Passenger<br>4-Dr. Sedan, 6-Passenger<br>4-Dr. Station Wagon, 2-Seat                                 |
|             | 169          | 269    |   |
|             | 135          | 235    |   |
| 300         | 311          | 411    | 2-Dr. Sedan, 6-Passenger<br>4-Dr. Sedan, 6-Passenger<br>4-Dr. Station Wagon, 3-Seat                                 |
|             | 369          | 469    |   |
|             | 345          | 445    |   |
| Nova<br>400 | —            | 449    | 4-Dr. Sedan, 6-Passenger<br>2-Dr. Sport Coupe, 5-Pass.<br>2-Dr. Convertible, 5-Pass.<br>4-Dr. Station Wagon, 2-Seat |
|             | —            | 437*   |   |
|             | —            | 467*   |   |
|             | —            | 435    |   |

\*"Super Sport" option available.

**1963 CHEVY II POWER TRAINS**

| Engine                         | Transmission   | Rear Axle        |                 |
|--------------------------------|--|------------------|-----------------|
|                                |  | Prod. Ratio      | Optional Ratios |
| 4-Cylinder<br>Super-Thrift 153 | <b>3-Speed</b><br>Sedans & Coupes<br>Station Wagons    | 3.08:1<br>3.55:1 | 3.55:1<br>—     |
|                                | <b>Powerglide</b><br>Sedans & Coupes<br>Station Wagons | 3.08:1<br>3.55:1 | —<br>—          |
| 6-Cylinder<br>Hi-Thrift 194    | <b>3-Speed</b><br>Sedans & Coupes<br>Station Wagons    | 3.08:1<br>3.36:1 | 3.36:1<br>—     |
|                                | <b>Powerglide</b><br>Sedans & Coupes<br>Station Wagons | 3.08:1<br>3.36:1 | —<br>—          |

Note: Positraction rear axles are available in the same gear ratios listed for conventional axles.

weld-nuts are moved to provide easier entry and exit for rear seat passengers. Inboard weld-nuts are repositioned to increase rear passenger foot room.

Door locks for Chevy II models will be the new double-lip type for improved locking capacity and increased safety. Interlocking capability is increased with the addition of upper locking surfaces that provide utmost protection against striker and bolt disengagement.

The all plastic, self contained, turn signal switch described in the regular Chevrolet part of this issue is also used on all Chevy II models. The turn signal flasher remains in the fuse block location.

**CHASSIS LUBRICATION**

The lubrication recommendations, including the 6,000 mile or 60 day extended maintenance period, described in the Chevrolet Part of this issue, generally apply to all models of the 1963 Chevy II. The components listed for Chevrolet applications, such as Positive Crankcase Ventilation and new suspension spherical joints, are included in all Chevy II vehicles as standard equipment to allow this extension of the maintenance period.

**SUPER SPORT EQUIPMENT**

Super Sport equipment (RPO-Z03) provides distinctive interior and exterior appointments for the Nova 400 Sport Coupe and Convertible.

Fourteen inch wheels and tires are required equipment for the Super Sport models. In addition, models equipped with the optional Powerglide transmission receive a bright metal trim plate, extending from the dash panel rearward to front seat backs, with provision for the floor mounted shift lever. A courtesy light at the rear of the trim plate supplements the regular interior lighting. With the regular equipment 3-speed manual transmission, the trim plate is omitted and the steering column shift lever location is retained.

A broad instrument panel peak moulding and special glove box door nameplate identify Super Sport models. The regular production instrument cluster is modified to include oil pressure, temperature and ammeter gauges in place of warning lights. The Super Sport cluster also includes a centrally located electric clock.

**FRONT SUSPENSION**

Several changes have been made in the component parts to increase durability. Featured in the component changes are new spherical joints that include the same type of Teflon inserts and special grease and improved seals described for the Chevrolet in Part I of this issue.

**1963 CHEVY II FRONT SUSPENSION ALIGNMENT SPECIFICATIONS ARE AS FOLLOWS:**

- Caster.....Pos. 1° ± ½°
- Camber.....Pos. ¼° ± ½°
- Toe-in (total both wheels).....¾" to ⅝"

Note: All above settings to be made with vehicle at curb weight.

**REAR AXLE & SUSPENSION**

The Mono-Plate, single leaf rear suspension is retained for 1963. All service procedures are identical to 1962 steps with the exception of the vehicle trim height measurement. The 1963 trim height is measured from the lower surface of the rebound bumper support bracket to the top of the axle housing. The measurement must be made with the vehicle empty and the gas tank filled. The difference in side-to-side measurement should not exceed ½ inch.

Both the standard and Positraction rear axle service operations are unchanged for the new model year.

All 1963 universal joints are of a heavier construction to increase strength. This structural change does not change the service procedure but does affect interchangeability of individual "U" joint parts.

**BRAKES**

The service brakes used for all 1963 Chevy II models will incorporate the self-adjusting feature described in the regular Chevrolet part of this booklet. Although the individual parts are not identical between the two vehicle lines, the operation and service details are the same. Drums will include the slot in the web to allow backing off the shoes for drum removal. The initial adjustment is made with the drum removed. Measure the drum diameter with tool J21177 and transfer the tool to the shoes.

The optional power brake unit is basically the same as the 1962 version, however, "O" rings replace all lathe-cut rings. Air valve seals have been redesigned for improved sealing and durability. Service operations are not affected by these component changes.

## ENGINE

Both the 153 cubic inch L-4 and the 194 cubic inch L-6 are offered in the Chevy II series. These engines are essentially identical to their 1962 counterparts.

New carburetors are used in both Chevy II engines and they incorporate spark advance connections in the throttle body. In addition, the L-6 carburetor will use the remote mounted, Corvair type, choke control now also employed on the new 230 cubic inch Chevrolet L-6.

The Special positive crankcase ventilation system will be used as standard equipment for all Chevy II models. The pick-up point will be the valve rocker cover and will replace the road draft tube formerly connected at that location. Fresh air intake is through

### 1963 CHEVY II ENGINE SPECIFICATIONS AND TUNE-UP DATA

| Engine                             | 4 Cyl.<br>Super-Thrift 153   | 6 Cyl.<br>Hi-Thrift 194                                  |
|------------------------------------|--|--|
| Gross Horsepower                   | 90 @ 4000 rpm  | 120 @ 4400 rpm   |
| Gross Torque                       | 152 @ 2400 rpm   | 177 @ 2400 rpm   |
| Displacement                       | 153 cu. in.  | 194 cu. in.  |
| Bore & Stroke                      | 3 $\frac{7}{8}$ " x 3 $\frac{1}{4}$ "                                  | 3 $\frac{9}{16}$ " x 3 $\frac{1}{4}$ "                   |
| Compression Ratio                  | 8.5:1  |  |
| Firing Order                       | 1-3-4-2  | 1-5-3-6-2-4  |
| Test Compression                   | 130 psi—(20 psi max. variation)  |  |
| Spark Plugs<br>Gap and Torque      | AC 46N<br>.035"—20-25 ft. lbs.   |  |
| Distributor<br>Dwell               | 31°—34°  |  |
| Point Gap                          | .019 (New)<br>.016 (Used)  |  |
| Point Tension                      | 19-23 oz.  |  |
| Engine Normal Idle                 | 500 rpm**  | 500 rpm**  |
| Ignition Timing*<br>at Normal Idle | (Prod.) 4° BTDC<br>Service Range—<br>4° to 10° BTDC                    | (Prod.) 8° BTDC<br>Service Range—<br>8° to 12° BTDC      |
| Lifter Adjustment                  | 1 turn down from "no lash"   |  |
| Fuel Pressure                      | 3 $\frac{1}{2}$ —4 $\frac{1}{2}$ psi @ Idle to 1000 rpm                |  |
| Crankcase<br>Capacity              | 4 Qts. w/Filter<br>Change<br>3 $\frac{1}{2}$ Qts. w/o Filter<br>Change | 5 Qts. w/Filter<br>Change<br>4 Qts. w/o Filter<br>Change |
| Cooling System                     | 9 Qts.   | 12 Qts.  |
| Pressure Cap                       | 13 psi   | 13 psi <sup>Ⓞ</sup>                                      |
| Thermostat                         | 180°   |  |

\*Timing tab marked in 2° increments. Disconnect hose from vacuum advance and cap line to manifold. \*\*Place Powerglide in "Drive".  
Ⓞ15 psi cap used on air conditioned cars

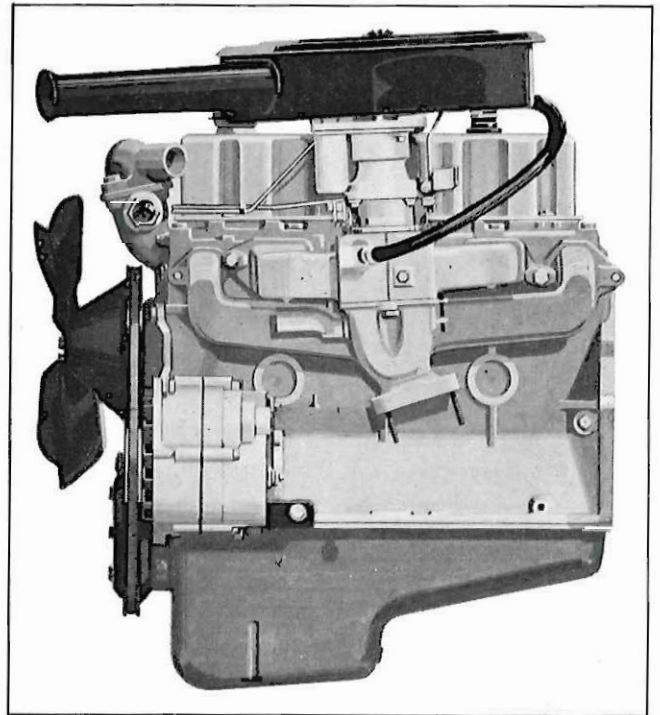


Fig. 17—Engine Appearance

the breather cap at the front of the rocker cover. Test procedures are listed in the Chevrolet portion of this booklet.

## TRANSMISSION

The conventional three-speed transmission is retained unchanged for 1963. All current tools and service steps will be applicable for the new model year.

The Aluminum-case Powerglide includes the 80% high clutch feature described in the regular Chevrolet part of this booklet. Corresponding changes have been made in the control valve body to meet the pressure requirements of the new clutch design.

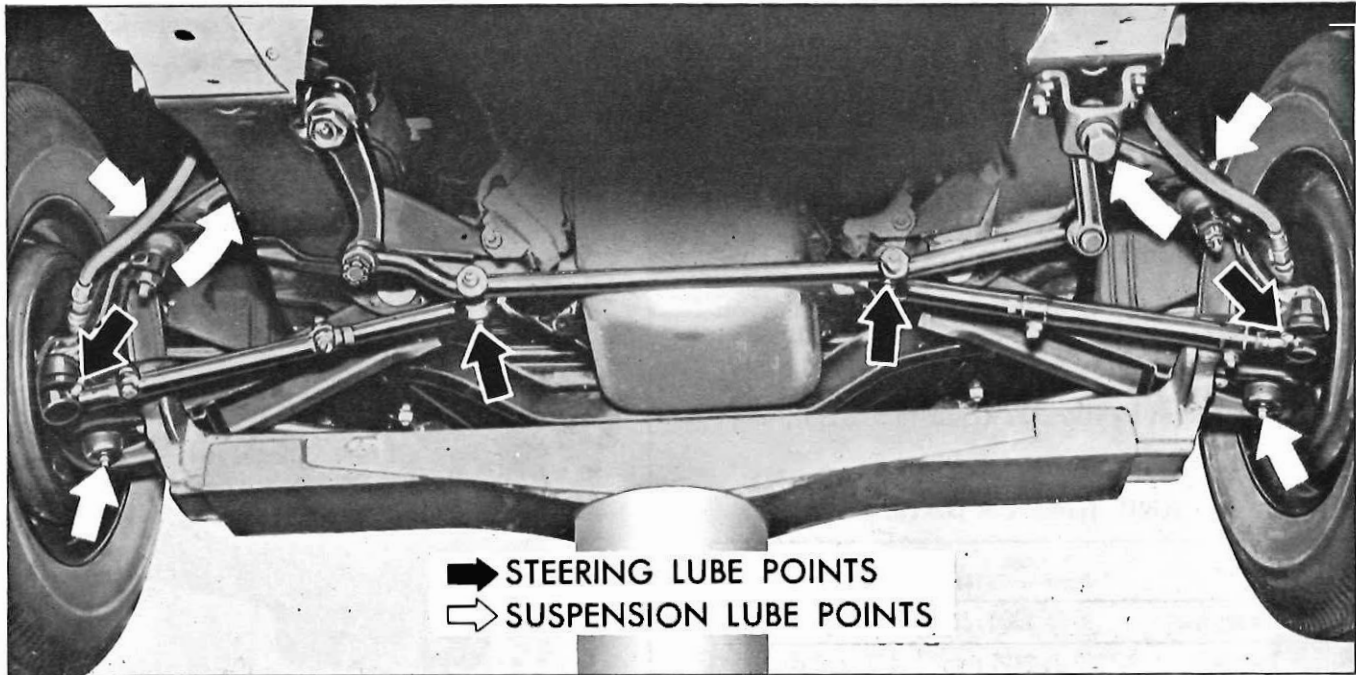
A Corvette-type floor shift will be used on all Powerglide equipped vehicles with the Super Sport option. The shift mechanism will include a spring load reverse inhibitor feature.

The concentric mast jacket shifter will employ the two stage shift pattern featured in the Chevrolet series. This places "N" and "D" in the same plane; "R" and "L" require the shift lever to be raised one step; "P" is elevated to a second step and is protected by the second stage spring.

## FUEL & EXHAUST

Fuel tanks and fuel systems are generally unchanged for the new model year, however, a review of the shop manual procedure shows that the fuel tank must be lowered on the three-seat station wagons to allow gas gauge replacement. Gas tank vents are revised to improve vent operation.

Although the basic exhaust system design is not altered, corrosion resistance for Chevy II mufflers is improved to provide extended life.



*Fig. 18—Steering Linkage and Lube Points*

## STEERING

In addition to the reduced maintenance items discussed in the regular Chevrolet section, new steering linkage components are used for the Chevy II.

All tie rod socket assemblies are new for 1963. The short socket assemblies will be the same type as used on the regular Chevrolet series, and include the features that permit the extended lubrication period. The new long socket assemblies will be common for both right and left hand sides and also include the extended lubrication feature.

The pitman arm for standard steering units will include a sealed integral ball stud that insulates the steering wheel from road vibration. Units equipped with power steering will retain the 1962 style pitman arm with no integral ball stud.

The relay rod, idler lever, and idler lever bracket are new due to the use of rubber bushings. The rubber bushings replace the threaded bushings employed on 1962 units. The new bushings may be replaced with suitable adapters on a conventional press, thus eliminating the use of special tools in this area.

## POWER STEERING

New power steering pump mounts, control valve, and adapter assembly, that are common with the regular Chevrolet L-6 power steering, will be used with all Chevy II installations. Hydraulic steering will not be offered for the 4-cylinder engine models.

## ELECTRICAL

Standard equipment charging system for the Chevy II will be the 4-32 ampere Delcotron. The system uses the same two unit regulator described in the Chevrolet part of this booklet. The multiple plug harness connector will also be used with the Chevy II. The basic wiring diagrams are identical to those shown for the regular Chevrolet series. The one exception to this will be the Super Sport models that utilize an ammeter in the instrument cluster. This ammeter is a shunt type, connected between the horn relay, and the battery terminal of the starter solenoid.

Optional charging systems will be the 12-42 ampere and the 5-52 ampere flat heat sink Delcotrons and two unit double-contact regulators with the 6.2 inch 23-62 ampere Delcotron and transistorized regulator offered as a heavy duty option.

Due to this charging system line-up, all generators, both standard and optional equipment, will be the self-rectified Delcotron. D.C. generators are not offered for the 1963 Chevy II vehicles.

## WINDSHIELD WIPER

Minor revisions have been made to the Chevy II windshield wiper motors. These wiper changes were made to permit use of a direct driven washer pump.

## PARKING LAMPS

The combination parking lamp-turn signal assemblies are identical to the previous model year with the exception of the lenses. Lenses for the 1963 vehicles are amber in color to improve visibility.

## ACCESSORIES

### AIR CONDITIONER

The major change to the Chevy II Deluxe air conditioner is the new evaporator case that features more foot room for front seat passengers and a less bulky appearance. Functionally, the system will operate the same as the previous unit.

### RADIO

Manual and push-button radios are completely transistorized for improved reliability, smaller chassis size, and faster warm-up time. The new antenna, of four section design, has a hermetically sealed base.

## PART III—CORVAIR

The 1963 Corvair line contains 6 models grouped in three series. In addition, the two Greenbrier Sports Wagons are offered as in 1962.

### 1963 CORVAIR MODEL IDENTIFICATION

| Series       | Model Number | Body Style                  |
|--------------|--------------|-----------------------------|
| 500          | 527          | 2-Dr. Coupe, 5-Passenger    |
| 700          | 727          | 2-Dr. Coupe, 5-Passenger    |
|              | 769          | 4-Dr. Sedan, 6-Passenger    |
| Monza<br>900 | 927*         | 2-Dr. Coupe, 4-Passenger    |
|              | 967*         | 2-Dr. Convertible, 4-Pass.  |
|              | 969          | 4-Dr. Sedan, 5-Passenger    |
| Greenbrier   | R-1206**     | 4-Dr. Sports Wagon, 6-Pass. |

\*Also available as turbocharged Monza Spyder.

\*\*Custom interior option available.

The 500 series is again limited to a single model. This is the 2-Door Coupe, model number 527. The 700 series is reduced from three to two models by elimination of the 4-Door Station Wagon, model number 735. The Monza (900) series is increased from two to three models by addition of model 967, 2-Door, 4-passenger convertible. This is the same model which was introduced in mid-season 1962. The 4-Door Monza Sedan, model 969, is now classified as a five passenger car because the bucket seats are standard equipment. (Fig. 19).

The basic styling of the previous model is carried forward for all regular Corvair models with identification changes limited to emblems and ornamentation. Sheet metal changes are confined to the elimination of the dual depression below the back window of the 2-door coupe models. All 1963 regular Corvair models are identified by restyled ornamentation on the body



Fig. 19—General Appearance

front panel, black painted accents on the headlamp bezels and new tail light and back-up light bezels and lenses. Series nameplates for the 500 and 700 series are new, as are the body sill mouldings for the 700 and Monza models. New dual simulated air exhaust ports also distinguish the rear view of all Monzas. Both wheel disks and hub caps are carried over from the previous model, however, black painted accents give the wheel disks a fresh new appearance. All models feature new interior styling, including all-vinyl trim for the 500 Series Club Coupe and the Monza Series.

Fifteen exterior colors are available for all models, with eleven two-tone color combinations offered for all except Monza models. (See chart in Part I).

The 1963 Greenbrier exterior and interior appearance differs only in detail from the previous model. The front door nameplate has been restyled, adding "by Chevrolet" below the vehicle name as an integral part of the nameplate. Front parking lamp lenses are amber for increased visibility. All other exterior appointments, including solid and two-tone color combinations are carried over from the previous model. New wheel disks are available as optional equipment. Greenbrier interiors for both deluxe and RPO Custom models features new seat trim styling and materials. Like the regular Corvair, a distinctive new trim plate decorates the instrument cluster. The balance of interior appointments, including sidewall treatment, are unchanged for 1963.

Basically, the chassis of the 1963 Corvair is continued from the previous model. Several significant component improvements, however, make the new Corvair an even more durable, more reliable automobile requiring less frequent service attention.

Door locks for Corvair models will be of the new double-lip type for improved locking and increased safety. The rotating bolt and sliding shoe are retained from the previous lock while the interlocking points are doubled for more positive engagement.

## LUBRICATION

A program of reduced maintenance is incorporated for 1963 Corvair and Corvair 95, which is similar to that described in Part I of this booklet for Chevrolet.

The oil change interval recommended for Corvair 95 engines is 4,000 miles or 60 days, whichever occurs first. Engine Oil filter for Corvair 95 is recommended at 4,000 miles or 6 months, whichever occurs first.

Corvair 5-7-900 model lubrication intervals are based on the 6,000 mile interval of the regular Chevrolet line.

## BRAKES

All Corvair and Corvair "95" vehicles have self-adjusting brakes of the same basic design as Chevrolet (See Part I). This change is part of the program of improving component parts to make the new Corvair an even more durable, more reliable automobile requiring less frequent service attention. The only difference between the Chevrolet and Corvair production brakes is the size of individual components such as shoes, drums etc.

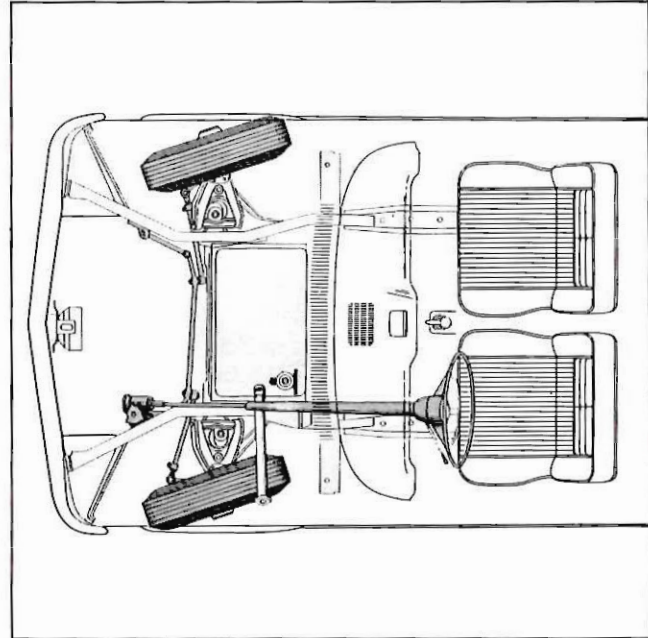


Fig. 20—Steering and Front Suspension

## 1963 CORVAIR POWER TRAINS

| Engine Description   | Gross Horsepower<br>-----<br>Gross Torque | Engine Equipment   | Transmissions    | Model Application | Rear Axles**                     |                               |                    |
|--|---|--|------------------|-------------------|----------------------------------|-------------------------------|--------------------|
|  |   |  |                  |                   | Axle Ratio as Standard Equipment | Optional Ratios Available     |                    |
|  |   |  |                  |                   |                                  | "Special Purpose or Mountain" | "High Performance" |
| 145 Cu. In. Opposed-6 Turbo-Air 145<br>Bore 3.438"<br>Stroke 2.60"<br>Comp. Ratio 8.0:1* | 80 hp @ 4400 rpm*                         | 2-Single Barrel Carburetors  | 3-Speed          | All               | 3.27:1 (A)                       | 3.55:1 (RPO G95)              | 3.89:1 (RPO G90)   |
|  | 128 ft. lbs @ 2300 rpm                    |  | 4-Speed          |                   |                                  |                               |                    |
|  |   |  | Powerglide       |                   |                                  |                               |                    |
| 145 Cu. In. Opposed-6 Turbo-Air 145<br>Comp. Ratio 9.0:1 (RPO L62)                       | 102 hp @ 4400 rpm                         | 2-Single Barrel Carburetors  | 3-Speed          | All               | 3.27:1 (A)                       | 3.55:1 (RPO G95)              | 3.89:1 (RPO G90)   |
|  | 134 ft. lbs. @ 2800-3000 rpm              |  | 4-Speed          |                   |                                  |                               |                    |
|  |   |  | Special Camshaft |                   | Powerglide                       | 3.55:1                        |                    |
| 145 Cu. In. Opposed-6 Turbo-Air 145<br>Comp. Ratio 8.0:1 (RPO L87)                       | 150 hp @ 4400 rpm                         | Turbo-Supercharger<br>Single Side-Draft Carburetor<br>Special Camshaft | 3-Speed          | 927<br>967        | 3.55:1                           | —                             | —                  |
|  | 210 ft. lbs. @ 3200-3400 rpm              |  | 4-Speed          |                   |                                  |                               |                    |
| Greenbrier 145 Cu. In. Opposed-6<br>Comp. Ratio 8.0:1                                    | 80 hp @ 4400 rpm                          | 2-Single Barrel Carburetors  | 3-Speed          | Greenbrier        | 3.89:1                           | —                             | —                  |
|  | 128 ft. lbs. @ 2300 rpm                   |  | 4-Speed          |                   |                                  |                               |                    |
|  |   |  |                  |                   |                                  |                               |                    |

\*On Monza models with Powerglide Transmission, compression ratio is 9.0:1, and power ratings are 84 HP @ 4400 RPM and 130 ft. lbs. @ 2300 RPM.

\*\*Rear axles with positraction differential (RPO G81) are available in the same gear ratios listed for conventional differentials.

(A) 3.55:1 axle ratio is furnished as standard equipment on vehicles with factory installed air conditioning, unless a 3.89:1 ratio optional axle is specified by the customer.

## SUSPENSION

The following are the latest approved suspension alignment specifications for 1963 Corvair and Corvair "95" vehicles. All settings are to be made with the vehicle at curb weight.

### Corvair 500-700-900 Series

#### Front Suspension

|                                  |  |
|----------------------------------|--|
| Caster .....                     | Pos. $2^{\circ} + 0^{\circ} - \frac{1}{2}^{\circ}$ |
| Camber .....                     | Pos. $\frac{1}{2}^{\circ} \pm \frac{1}{2}^{\circ}$ |
| Toe-in (total both wheels) ..... | $\frac{1}{4}''$ to $\frac{3}{8}''$                 |
| Ball Joint Inclination .....     | $7^{\circ} \pm \frac{1}{2}^{\circ}$                |

#### Rear Suspension

|                                  |                                    |
|----------------------------------|------------------------------------|
| Toe-in (total both wheels) ..... | $\frac{1}{8}''$ to $\frac{3}{8}''$ |
|----------------------------------|------------------------------------|

### Corvair "95" Series

#### Front Suspension

|                                  | Greenbrier                                     | Pickup, Panel                                  |
|----------------------------------|--|--|
| Caster... Pos.                   | $2\frac{1}{4}^{\circ} \pm \frac{1}{4}^{\circ}$ | $1\frac{1}{4}^{\circ} \pm \frac{1}{4}^{\circ}$ |
| Camber... Pos.                   | $\frac{1}{2}^{\circ} \pm \frac{1}{4}^{\circ}$  | $0^{\circ} \pm \frac{1}{4}^{\circ}$            |
| Toe-in (total both wheels) ..... | $\frac{1}{16}''$ to $\frac{3}{16}''$           | $\frac{1}{16}''$ to $\frac{3}{16}''$           |
| Ball Joint Inclination ...       | $7\frac{1}{4}^{\circ} \pm \frac{1}{2}^{\circ}$ | $7\frac{1}{4}^{\circ} \pm \frac{1}{2}^{\circ}$ |

#### Rear Suspension

|                                  |                                      |                                      |
|----------------------------------|--------------------------------------|--------------------------------------|
| Toe-in (total both wheels) ..... | $\frac{1}{16}''$ to $\frac{3}{16}''$ | $\frac{1}{16}''$ to $\frac{3}{16}''$ |
|----------------------------------|--------------------------------------|--------------------------------------|

## ENGINE

The engine line-up for Corvair Models is unchanged, however, many improvements are introduced for 1963 to increase component durability and reduce service requirements. A new positive crankcase ventilation system is provided on all engines as standard equipment.

Improved materials and processes used in the manufacture of inlet valves for all Corvair engines increase valve durability. All inlet valves use the familiar single land keys and oil seal, however, to meet engine requirements, the valves for the various engines differ in design and material.

The exhaust valves on all except Corvair 95 engines

are provided with four circular grooves and the mating surface of the keys (2 per valve) are provided with four circular beads. When the (4 bead lock) keys are assembled onto the valve they provide a secure interlock and assure rotation of the valve on reaction to torsional force imparted by the spring during engine operation. On Corvair 95 exhaust valves, valve rotators are used together with the familiar single land keys and oil seal. Corvair 95 exhaust valves have a stellite face to provide additional durability.

The turbocharged engine introduced in mid-season 1962, is carried over for 1963 with the following modifications. 1. On crankshaft mains, new M400 bearings replace Bi-metal bearings used in 1962. Connecting rod bearings for 1963 are type M500. 2. The 1963 engine does not have a throttle return check. 3. The 1963 engine is modified as necessary to include positive crankcase ventilation. 4. The 1963 engine will have an "O" ring seal at the air cleaner to carburetor attachment area. There will be no carburetor drain tube. 5. The manifold pressure gauge in the instrument cluster for 1963 is graduated as follows reading left to right -30 0 +20. In the 1962, this gauge read -30 0 +30.

### 1963 CORVAIR ENGINE SPECIFICATIONS AND TUNE-UP DATA

| TURBO-AIR ENGINES<br>6 Cyl. Horiz. Opposed<br>145 Cu. In.<br>Displacement | 80 HP  | 84 HP<br>(Monza<br>w/Powerglide)                           | 150 HP<br>Turbocharged<br>Monza Spyder<br>(RPO L87) |
|---|--|--|---|
|   |  | 102 HP (RPO L62)   |   |
| Gross Torque (Ft.-Lbs.)   | 128 @ 2300 rpm                                   | (Monza)—<br>130 @ 2300 rpm<br>(RPO L62)—<br>134 @ 2900 rpm | 210 @ 3300  |
| Compression Ratio   | 8.0:1  | 9.0:1  | 8.0:1   |
| Rated GHP Developed at  | 4400 rpm   |  |   |
| Bore and Stroke   | 3.44" x 2.60"                                    |  |   |
| Firing Order  | 1-4-5-2-3-6                                      |  |   |
| Test Compression  | 130 psi.—(20 psi. max. variation)                |  |   |
| Spark Plugs (Prod.)   | AC 46 FF   | AC 44 FF   |   |
| Gap and Torque  | .035"—20-25 ft. lbs.                             |  |   |
| Distributor   |  |  |   |
| Dwell   | 31°-34° (33° preferred)                          |  |   |
| Point Gap   | .019" (New)<br>.016" (Used)                      |  |   |
| Point Tension   | 19-23 oz.  |  |   |
| Engine Normal Idle  | 500 rpm  | 600 rpm—<br>w/Synchro.<br>500 rpm—<br>Auto. (In Drive)     | 850 rpm   |
| Ignition Timing (BTDC Settings at Normal Idle)                            | *4°-10° (Synchro.)<br>*13°-18° (Auto. Trans.)    | *Range 13°-18°<br>(Prod. set at 13°)                       | 24°<br>(Do not Exceed)                              |
| Lifter Adjustment   | 1 Turn Down from "No Lash"                       |  |   |
| Fuel Pressure   | 4-5 psi @ Idle to 1000 rpm                       |  |   |
| Crankcase Capacity  | 4 Qts. w/o Filter Change—4½ Qts. w/Filter Change |  |   |

\*Disconnect vacuum advance line and cap opening at manifold.

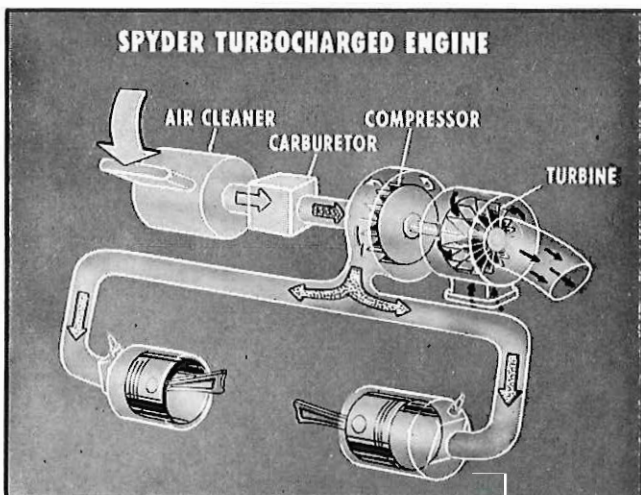


Fig. 21—Turbo-Supercharger—Schematic

## ELECTRICAL

The D.C. generator system has been retained on Corvair for 1963. Since this unit is carryover from the past model, there are no revisions to the system.

Windshield wiper and washers are carryover for 1963 with the exception of minor changes. Among these is a new washer pump drive mechanism which is an improvement over the past model types. Specific information pertaining to this drive change will be found in the Chevrolet section.

## FUEL AND EXHAUST

The Corvair muffler for 1963 is similar to the 1962 muffler except that it has an all-aluminized exterior and is made of heavier gauge material. The exhaust pipe is also new due to the use of heavier gauge material.

The fuel system and its components for the 1963 Corvair will be basically carryover from the past model and incorporates only minor revisions.

## PART IV—TRUCK

For 1963, the model line-up consists of 178 models on 19 wheelbases—a decrease of 25 models over the 1962 line-up. This model consolidation is designed to strengthen Chevrolet's competitive position, especially in the medium-duty segment of the market.

The light-duty category remains essentially unchanged, with the following exceptions: Model R1244, the Loadside pick-up in the Corvair 95 line, is discontinued; two new 157 inch wheelbase cab chassis Models C3803 and C3803S are added.

In the medium-duty category, Series 4 vehicles are discontinued, eliminating eight models from the line-up. Series 50 vehicles, formerly rated at 2-tons, now are rated at 1½ tons, thus eliminating 18 former



Fig. 22—1963 Appearance—50 Series Truck

Series 50S models. In addition, the 121-inch wheelbase medium and heavy-duty vehicles, Models L6103, L6103S, and L6103H are eliminated.

Three new 169 inch wheelbase vehicles, Models L6503, L6503S, and L6503H are added to the line in 1963. The new 169 inch wheelbase Series L65 vehicles broaden LCF coverage between the 145 inch wheelbase Series L63 vehicles and the 175 inch wheelbase Series L66 vehicles.

Changes in the heavy-duty category, in addition to the 2-ton H.D. models mentioned above, consist of eliminating the 121 inch wheelbase vehicles, Models L8103 and E8103, and adding two new school buses, Models S6702H and S6902H.

Two major changes occur in the 1963 GVW ratings: All ratings for Series C10 models are reduced 200 pounds because of front end weight reductions, providing a GVW range from 4100 to 5000 pounds and because of the new 1½ ton nominal rating for Series CL50 models GVW ratings for these models begin at 10,000 pounds and range to a maximum of 16,000.

The power trains this year feature new engines, transmissions and rear axles which will provide optional features not previously available.

Extended lubrication is featured for the Corvair 95 front suspension system, providing greater component durability and reduced maintenance. The front suspension control arm spherical joints features new teflon-coated phenolic lined bearing seats and more positive sealing. Lubrication points on all other truck models are the same as in the past.

## BODY

New shear-type body mounts replace the former double rubber biscuit mounts at the #2 body mount position for Series C20-30 cabs and pickups and for Series CDLM50-80 cabs. The #1 double rubber biscuit body mounts are retained without change. Cab durability and ride are improved through the lateral

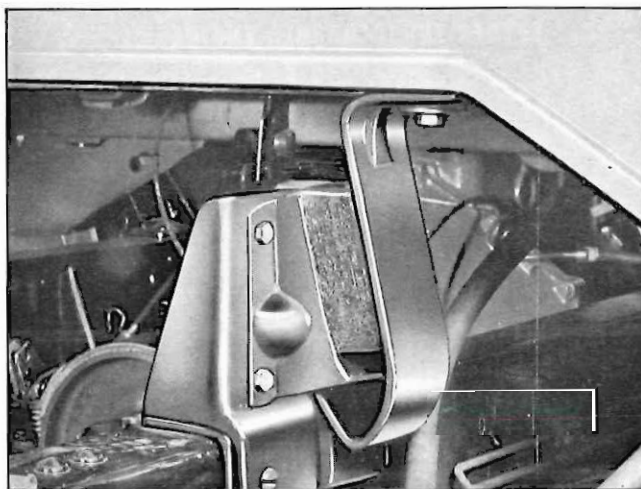


Fig. 23—Shear Type Cab Mounts L50 to 80



1963 LIGHT- AND MEDIUM-DUTY TRUCKS

| Vehicle Type                  | 1/2-Ton                          | C/A Dim.             | 3/4-Ton                              | C/A Dim.             | 1-Ton                   | 1 1/2-Ton                        | C/A Dim.              |
|-------------------------------|----------------------------------|----------------------|--------------------------------------|----------------------|-------------------------|----------------------------------|-----------------------|
| Corvaire "95" Rampside Pickup | R1254                            |                      |                                      |                      |                         |                                  |                       |
| Corvaire "95" Panel           | R1205                            |                      |                                      |                      |                         |                                  |                       |
| Flat Face Cowl                | C1402                            |                      | C2502<br>C3602S*                     |                      | C3602                   | C5102<br>C5202<br>C5302<br>C5502 |                       |
| Windshield Cowl               | C1412                            |                      | C2512<br>C3612S*                     |                      | C3612                   | C5112<br>C5212<br>C5312<br>C5512 |                       |
| Conventional Cab Chassis      | C1403<br>C1503<br>K1403<br>K1503 | 42<br>54<br>42<br>54 | C2503<br>K2503<br>C3603S*<br>C3803S* | 54<br>54<br>60<br>84 | C3603<br>C3803          | C5103<br>C5203<br>C5303<br>C5503 | 60<br>72<br>84<br>102 |
| L. C. F. Cab-Chassis          |                                  |                      |                                      |                      |                         | L5203<br>L5303<br>L5603          | 72<br>84<br>114       |
| Stepside Pickup               | C1404<br>K1404<br>K1504          |                      | C2504<br>K2504<br>C3604S*            |                      | C3604                   |                                  |                       |
| Fleetside Pickup              | C1434<br>K1534<br>K1434<br>K1534 |                      | C2534<br>K2534                       |                      |                         |                                  |                       |
| Panel                         | C1405<br>K1405                   |                      | C3605S*                              |                      | C3605                   |                                  |                       |
| Suburban Carryall             | C1406<br>K1416<br>K1406<br>K1416 |                      |                                      |                      |                         |                                  |                       |
| Conventional Stake            |                                  |                      | C2509<br>C3609S*                     |                      | C3609                   | C5109<br>C5309                   |                       |
| L. C. F. Stake                |                                  |                      |                                      |                      |                         | L5309                            |                       |
| Forward Control               | P1342<br>P1345                   |                      | P2342<br>P2542<br>P2642              |                      | P3342<br>P3542<br>P3642 |                                  |                       |
| Step Van                      |                                  |                      | P2345<br>P2545<br>P2645              |                      | P3345<br>P3545<br>P3645 |                                  |                       |
| School Bus                    |                                  |                      |                                      |                      |                         | S5302                            |                       |

\*1-Ton model with a 3/4 ton (nominal) rating plate requested.  
C/A: Centerline of axle to back of cab (inches).

1963 HEAVY-DUTY TRUCK MODELS

| Vehicle Type             | 2-Ton†   | C/A Dim.   | 2-Ton Heavy Duty   | 2 1/2-Ton  | C/A Dim.                               |
|--------------------------|--|--|--|--|--|
| Flat Face Cowl           | C6102<br>C6302<br>C6502  |  | C6102H<br>C6302H<br>C6502H   |  |  |
| Windshield Cowl          | C6112<br>C6312<br>C6512  |  | C6112H<br>C6312H<br>C6512H   |  |  |
| L.C.F. Cab Chassis       | L6203<br>L6303<br>L6503<br>L6603<br>L6903  | 72<br>84<br>108<br>114<br>136                                | L6203H<br>L6303H<br>L6503H<br>L6603H<br>L6903H   | E8203<br>E8303<br>L8203<br>L8303<br>L8603          | 72<br>84<br>72<br>84<br>114            |
| Tilt Cab Chassis         | T6203<br>T6303<br>T6603<br>T6803   | 70<br>82<br>106<br>118                                       | T6203H<br>T6303H<br>T6603H<br>T6803H   | T8203<br>T8303<br>T8603<br>T8803<br>U8203<br>U8803 | 70<br>82<br>106<br>118<br>71.5<br>83.5 |
| Conventional Cab Chassis | C6103<br>C6203<br>C6303<br>C6503<br>C6803<br>D6103<br>D6203<br>D6303<br>D6503<br>D6803 | 60<br>72<br>84<br>102<br>124<br>60<br>72<br>84<br>102<br>124 | C6103H<br>C6203H<br>C6303H<br>C6503H<br>C6803H<br>D6103H<br>D6203H<br>D6303H<br>D6503H<br>D6803H | C8103<br>C8203<br>C8303<br>C8503<br>C8803          | 60<br>72<br>84<br>102<br>124           |
| Tandem                   |  |  |  | M8303<br>M8503<br>M8803                            | 84<br>102<br>120                       |
| School Bus               | S6202<br>S6402<br>S6702<br>S6902   |  | S6702H<br>S6902H   |  |  |

†On 2-Ton models except schoolbus, an addition of suffix "S" to the model number would designate "1 1/2-Ton Special" rating plate requested.

1963 TRUCK POWER TRAINS

Regular production equipment is shown in bold type.

| Truck Series<br>Engine   | Transmission  | Rear Axle   |  |
|--|---|---|--|
|  |   | Capacity  | Ratio  |
| <b>R10</b> (Corvaire "95")<br>145 cu. in. Horiz. Opposed-6                     | <b>3-Speed</b><br>4-Speed Powerglide  | <b>2500</b>   | <b>3.89:1</b>  |
| <b>P10</b><br>153 cu. in. L-4<br>230 cu. in. L-6                               | <b>3-Speed</b><br>3-Speed H.D. (A)<br>4-Speed Powerglide  | <b>3500</b>   | (A) <b>4.11:1</b><br><b>3.73:1</b>   |
| <b>C10</b><br>230 cu. in. L-6<br>292 cu. in. L-6<br>283 cu. in. V-8            | <b>3-Speed</b><br>3-Speed H.D.<br>4-Speed Powerglide  | <b>3500</b>   | <b>3.73:1</b><br><b>4.11:1</b><br>(B) <b>3.07:1</b>  |
| <b>K10, K20</b><br>235 cu. in. L-6<br>261 cu. in. L-6<br>283 cu. in. V-8       | <b>3-Speed</b><br>4-Speed   | <b>K10 3300</b><br><b>K20 5200</b>                  | <b>3.90:1</b><br><b>4.57:1</b>   |
| <b>C20</b><br>230 cu. in. L-6<br>292 cu. in. L-6<br>283 cu. in. V-8            | <b>3-Speed</b><br>3-Speed H.D.<br>4-Speed Powerglide  | <b>5200</b>   | <b>4.57:1</b>  |
| <b>P20</b><br>230 cu. in. L-6  | <b>3-Speed</b><br>3-Speed H.D.<br>4-Speed Powerglide  | <b>5200</b>   | <b>5.14:1</b>  |
| <b>C30</b><br>230 cu. in. L-6<br>292 cu. in. L-6<br>283 cu. in. V-8            | <b>4-Speed</b><br>3-Speed H.D.  | <b>7200</b>   | <b>5.14:1</b>  |
| <b>P30</b><br>230 cu. in. L-6  | <b>4-Speed</b><br>3-Speed H.D.  | <b>7200</b>   | <b>5.14:1</b><br><b>5.83:1</b>   |
| <b>C, L, S-50</b><br>230 cu. in. L-6<br>292 cu. in. L-6<br>283 cu. in. V-8 (C) | <b>4-Speed</b>  | <b>11,000</b><br>15,000<br>15,000                   | <b>6.17:1</b><br><b>7.20:1</b><br><b>6.40/8.72:1</b>   |
| <b>C, L, T-60; S67</b><br><b>C, L, T-60H; S67H</b><br>292 cu. in. L-6          | <b>4-Speed</b><br>5-Spd. New Process Powermatic (D) (E)   | <b>15,000 (B)</b><br>17,000<br>15,000 (B)<br>17,000 | <b>7.20:1</b><br><b>7.20:1</b><br><b>6.40/8.72:1</b><br><b>6.40/8.72:1</b>                       |
| 327 cu. in. V-8  | <b>4-Speed</b><br>5-Speed Clark<br>5-Spd. Clark CR (V)<br>Powermatic (D) (E)                      | 15,000 (B)<br>17,000<br>15,000 (B)<br>17,000        | <b>7.20:1</b><br><b>7.20:1</b><br><b>6.40/8.72:1</b><br><b>6.40/8.72:1</b><br><b>7.17/9.97:1</b> |
| <b>S62, S64</b><br>292 cu. in. L-6   | <b>4-Speed</b><br>5-Spd. New Process Powermatic (D)   | <b>15,000</b>                                       | <b>7.20:1</b><br><b>6.40/8.72:1</b>  |
| 327 cu. in. V-8  | <b>4-Speed</b><br>5-Spd. Clark<br>5-Spd. Clark CR (V)<br>Powermatic (D)                           |   | <b>7.20:1</b><br><b>7.20:1</b><br><b>6.40/8.72:1</b><br><b>6.40/8.72:1</b>                       |
| <b>S69, S69H</b><br>327 cu. in. V-8  | <b>4-Speed</b><br>5-Spd. Clark<br>5-Spd. Clark CR (V)<br>Powermatic (D)                           | <b>15,000 (B)</b><br>17,000<br>15,000 (B)<br>17,000 | <b>7.20:1</b><br><b>7.20:1</b><br><b>6.40/8.72:1</b><br><b>6.40/8.72:1</b>                       |
| <b>D60</b><br>4-53 Diesel  | <b>5-Spd. Clark OD</b><br>5-Spd. Spicer OD  | <b>15,000</b>                                       | <b>6.17:1</b><br><b>5.83/7.95:1</b>  |
| <b>D60H</b><br>4-53 Diesel   | <b>5-Spd. Clark CR</b><br>5-Spd. Spicer CR  | <b>17,000</b>                                       | <b>4.87/6.77:1</b>   |
| <b>M80</b><br>348 cu. in. V-8<br>409 cu. in. V-8                               | <b>5-Spd. Spicer</b><br>4-Spd. " Aux. (N)<br>3-Spd. " Aux. (N)<br>8-Spd. Fuller (P)<br>Powermatic | <b>30,000</b><br>(Bogie)                            | <b>7.17:1</b>  |
| <b>C, L, T-80</b><br>348 cu. in. V-8<br>409 cu. in. V-8                        | <b>5-Spd. Spicer</b><br>5-Spd. Spicer CR (V)<br>8-Spd. Fuller (P)<br>Powermatic (S) (D)           | <b>18,500</b>                                       | <b>7.17:1</b><br><b>6.50/8.87:1</b><br><b>7.17/9.77:1</b>  |
| <b>E, U-80</b><br>6V-53 Diesel   | <b>5-Spd. Spicer CR</b><br>8-Spd. Fuller<br>Powermatic  | <b>18,500</b>                                       | <b>5.57/7.60:1</b><br><b>5.57:1</b>  |

- (A) Not used with 153 engine.
- (B) Not used with 230 engine or Powerglide.
- (C) Not used on S50 model.
- (D) Used only with single speed axle.
- (E) Not used on 60H series.
- (F) Not used on L (or) T models.

- (H) Used only with Clark CR trans.
- (N) Used with 348 engine only.
- (P) Used with 409 engine only.
- (K) Not used on School Bus model.
- (S) Not used on L80 models.
- (V) Used only with 2-speed axles.

stability and uniform rate afforded with the new mounts (fig. 23).

The new body mounts attach with one bolt to the cab underbody in the same locations previously used, and attach directly to the outside face of the frame side rails with four rivets, thus eliminating the former frame body mounting brackets. A safety feature of the new body mount assembly is that the bracket portion attaching to the cab curves under the portion attaching to the frame. This provides a means of holding the cab to the chassis should either of the brackets become damaged. The new mount permits the chassis to move both torsionally and laterally without imparting these movements to the cab.

Shear-type front sheet metal mounts are now used for Models C1405, 06, 16, C20, C30, and CDLMS50-80 models, replacing the former solid-type mounts. With rubber held in shear, the new mounts considerably lessen sheet metal shake, improving their durability. In addition, the unitized construction of the mounts makes them easier to service for removal or installation.

The new mounts are used to attach the radiator support assembly to frame outrigger brackets on Series 10-30 models and to the frame radiator support crossmember on Series 50-80 models.

All 1963 trucks, except forward control and tilt cab models incorporate new dash and toe panel assemblies, due to the relocation of the steering column and clutch linkage.

## FRAME

Frame for models CP10 and C20 are completely redesigned; Series C30 frame assemblies are revised in the forward section to accommodate the new L-6 engine installations. Otherwise, frames for 1-ton models are basically similar to the 1962 units. Frames for all models from 1½ ton through 2½ ton also are redesigned for greater durability.

Ladder-type, channel-section frames replace the X-member, box-section side rail frames formerly used on Series C10, P10, and C20 models. The new frames

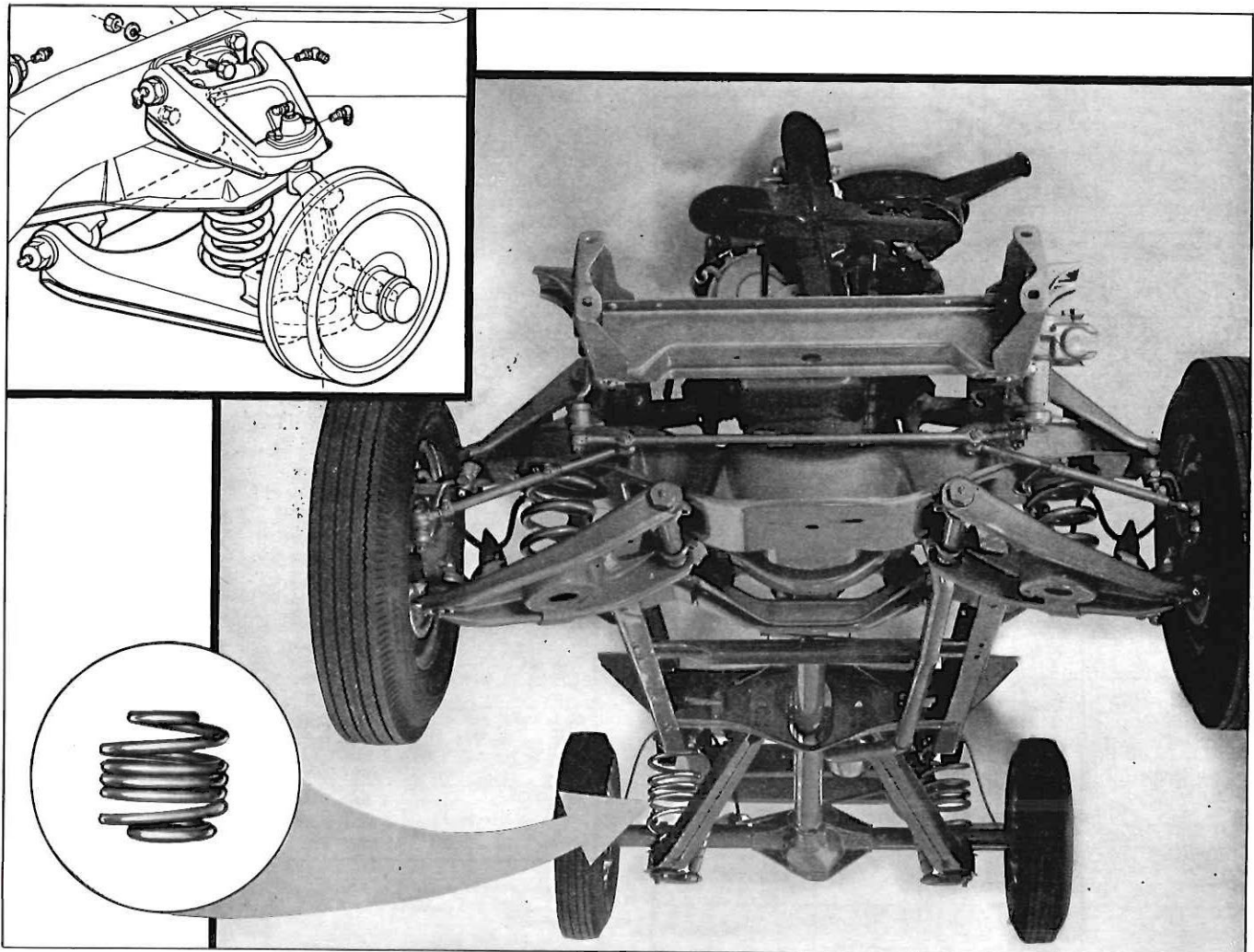


Fig. 24—Features of Frame and Suspension

are generally 34 inches wide, tapered in the front, and slightly widened at the rear kick-up to accommodate installation of the rear coil springs. Overall frame lengths, however, remain the same as those of 1962.

Although the frame side rail configurations and kick-up elevations are basically the same as in 1962, the 1963 side rails are heavier gauge metal on C10, P10, and C20 models.

The new frame assemblies utilize more crossmembers per unit than did the previous designs. The front ends of the frame side rails for all conventional 10 through 30 models are considerably modified for a more rigid bumper attachment. Right hand side rails incorporate a flared section just ahead of the engine front support to provide access to the oil filter used on the L-6 engines. Forward crossmembers are designed to accommodate engine clutch installations with either mechanical or hydraulic actuating mechanisms.

Series C30 frames are basically carryover, however, the right hand side rail is flared-up to permit access to the new 230 cubic inch L-6 engine. The side rail forward sections also incorporate the improved bumper attachment features of the lighter vehicles.

Frame assemblies for Series P20 and P30 models are essentially unchanged, except for a new tubular engine front support crossmember and a minor modification on Series P20 frames. The lower frame side rail flange is flared downwards on either side to accommodate the drop-center transmission support crossmember used for Powerglide transmission installations.

Straight channel-section frames replace the box-section design of the previous year on all Series 50 through 80 models. Side rail gauge for most models has been substantially increased. Discontinued for 1963 are the 30 and 40 inch frame outer reinforcements. Full-length outer frame reinforcements are no longer released as base equipment on Series E80 models, however, they are available optionally on some models in the 60 and 80 Series.

All Series 50 through 80 frame assemblies also feature larger #1 body mounting brackets. The web or center position of the bracket wraps over the frame rail top flange where two  $\frac{7}{16}$ -inch rivets secure the bracket at that point. Two additional rivets secure the bracket to the side of each frame rail. Formerly, the body brackets were straight channel-sections with the mounting surface confined to the frame sides only.

Frame crossmembers for 50 through 80 also incorporate several changes which provide greater frame durability. Major design changes occur in the engine forward support members, the #2 crossmember, and the crossmember directly adjacent to the rear spring front hanger. On Series 80 vehicles, the crossmember opposite the rear spring rear hanger is also new.

Heavy-duty frames available optionally for many models in the 60 Series are identical to those of the base 80 Series. Optional Heavy-Duty Chassis Equipment (Beaver option) is not offered for 1963 models.

## FRONT SUSPENSION

Front suspensions for all 1963 Series 10 through 80 models, except forward control and 4-wheel drive models, are new.

Variable-rate, leaf-type front springs coupled with I-beam axles replace the torsion bar independent front suspension on all Series 50 through 80 models.

Coil springs replace torsion bars on Series C10, P10, C20 and C30 models. In converting from torsion bars to coil springs, the light-duty independent front suspension design is extensively revised from that of 1962 models.

Other new features include simplified upper control arm attachments, new upper and lower pivot shaft designs, and improved single-piece lower control arms. New simplified, stamped lower control arms replace the multi-piece welded units formerly used on light-duty models. There are two brackets welded to each lower control arm. One is a clevis-type bracket used to secure the shock absorber; the other bracket serves as a mounting surface for the jounce bumper, as well as being a metal-to-metal bump stop and a steering knuckle stop. New spherical joints are pressed into the control arm in place of the former riveted method of attachment. Except for the housing and slight gauge differences, spherical joint construction and materials remain unchanged.

The new lower control arm pivot shafts are constructed of round bar stock and are cradled in two bathtub-type brackets and secured by U-bolts. These brackets are riveted to the crossmember bottom plate. A specially designed rivet in the forward position has a head on the bottom side which serves as a gauge pin to locate the pivot shaft in its proper position. When the attaching U-bolt nuts are tightened, the shaft efficiently resists fore, aft, and lateral movements.

Another light-duty front suspension feature consists of a new upper control arm pivot shaft attachment on Series C10, P10, C20, and C30 models. Concave and convex spacers with flat opposite sides are used between the pivot shaft, caster shims, and the upper control arm bracket. This arrangement results in a positive pivot shaft-to-suspension bracket attachment. With this system, bolt torque is better maintained and the concave and convex mounting surfaces provide a sound and rigid attachment in which bending stresses are reduced, attaching nuts resist loosening, and bolt life is extended. Additionally, the loss of caster-camber shims is virtually eliminated.

Series C20 and C30 models use only one upper control arm spacer which has a convex surface to match the dished-out mounting bosses on the pivot shaft. The upper control arm remains unchanged. Previously, the upper control arm pivot shafts were secured to the suspension brackets with bolts having spherical heads.

The front shock absorbers are now stud-mounted at the top and clevis-mounted at the lower control arm which is the reverse of past model attachment. Tapered roller front wheel bearings replace the ball-type bearings on Series C20 and C30 models.

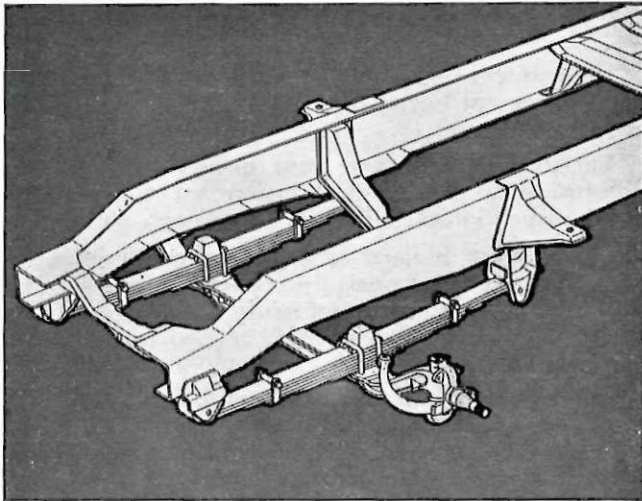


Fig. 25—New I-Beam Features

For 1963, reverse-Elliott I-beam front axles and variable-rate springs replace the independent front suspension on all Series 50 through 80 models. In the overall picture, five separate axle assemblies are used for these models. Rate capacities of the new units are 4000, 5000, 7000, 9000, and 11,000 pounds. The I-beams are constructed of heat-treated, drop-forged steel (fig. 25).

Constant diameter kingpins are protected from contamination by use of diamond-shaped plate seals bolted on both ends of the kingpin bore. Upper and lower kingpin bushings are constructed of steel-backed bronze, while the thrust bearing is comprised of a sintered bronze washer sandwiched between two steel washers. The upper and lower bushings are provided with grooves to ensure uniform distribution of lubricant. Tapered front wheel bearings are used on all units. The ride control bumper is positioned in the spring U-bolt spacer block (fig. 26).

Variable-rate front springs are used on all Series 50 through 80 models. Unlike the variable-rate rear

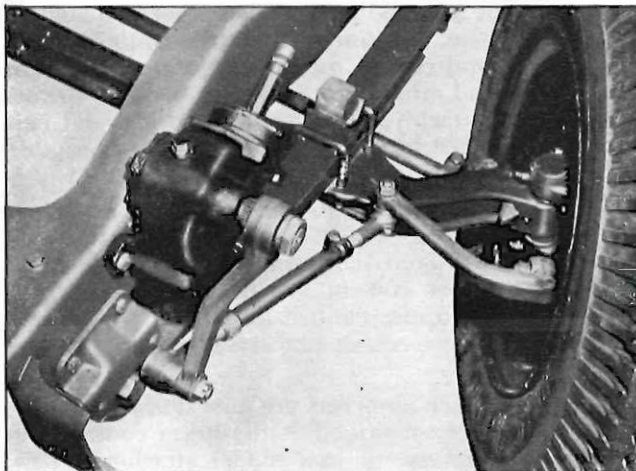


Fig. 26—New I-Beam Steering

springs, the two top leaves of the front springs are formed into a military-type eye at the front and fixed to a stamped hanger by means of a rubber-bushed pin. At the rear, the top leaf is squared off and rides against a specially hardened cam surface in the central section of the hanger. A safety wrap in the second leaf butts against the pin in the rear hanger, assuring satisfactory vehicle control in the event of spring leaf failure.

In operation, under light load the top spring leaf contacts the cam surface near its outer edge. As the vehicle loading is increased, the point of spring contact moves inward until, at full load, it reaches the inner edge of the cam.

Spring eye bushings used with the 4000 thru 9000 pound capacity front springs are made of rubber, and are not lubricated. Bushings used with 11,000 and 14,000 pound front springs are made of a teflon phenolic material and require periodic lubrication.

## REAR SUSPENSION

Many design improvements are provided in Chevrolet truck rear suspensions for 1963. Features for Series C10 and C20 models include new 2-stage coil springs, new leaf-type auxiliary rear springs, and an improved rear shock absorber mounting. On Series C36 models, new main and auxiliary rear springs are provided for vehicles equipped for the 10,000 pound Gross Vehicle Weight rating. Rear shock absorber mounting provisions also are improved on Series C30, and P20-30 models. In the heavy-duty classification, new 2½ inch wide variable-rate springs are released for Series 50 and 60 models.

Two-stage coil springs replace the single-stage type as standard and optional equipment on Series C10, P10, and C20 models.

The 2-stage principle is effected through a closer spacing of the three center coils. Thus, in the unloaded condition, ride is provided by the entire spring within the limits of travel of the center coils. However, severe jounce, or heavier loads, compress the three coils to a point where they touch, and become inactive. This reduces the number of active coils, giving the spring a higher rate and, therefore, greater carrying capacity.

In an effort to anticipate customer needs and preferences, new cantilever mounted, 3-leaf auxiliary rear springs are provided as optional equipment on Series C10 and C20 models. Although these springs do not permit an increase in Gross Vehicle Weight rating, they do improve rear end stability, provide further assurance against bottoming-out conditions, and increase the spring carrying capacity by 500 pounds per side.

Three new 2½ inch wide, 2-stage, variable-rate rear spring assemblies are added to the rear spring line-up for 1963. The springs are released as base and optional equipment for Series 50 and 60 models, replac-

ing the 3-inch wide springs in certain applications. Rated capacities at the ground for these units are 11,000, 15,000, and 17,500 pounds. The 3-inch wide spring formerly rated at 15,000 pounds is discontinued.

Rear shock absorbers for Series CP10 and C20 models are mounted ahead of the rear axle in 1963. Vertical frame beaming vibrations are minimized and ride characteristics are improved. All school bus models will be production equipped with front and rear shock absorbers.

Rear spring equipment requirements for Series C36 models equipped for the 10,000 pound GVW rating are revised from that of the previous year. Eight-leaf, 2-stage main and 5-leaf auxiliary springs replace the 10-leaf springs formerly required. Rated capacity at the ground remains the same as that of the former 10-leaf springs. Benefits derived from this type of rear spring arrangement include improved vehicle trim and ride characteristics.

### LIGHT-DUTY TRUCK REAR AXLES

New Salisbury-type rear axles are used for all 1963 Series 10 trucks. Figure 27 shows the new housing construction in which the axle tubes, as separate members, are pressed and welded into a central differential carrier housing of cast construction.

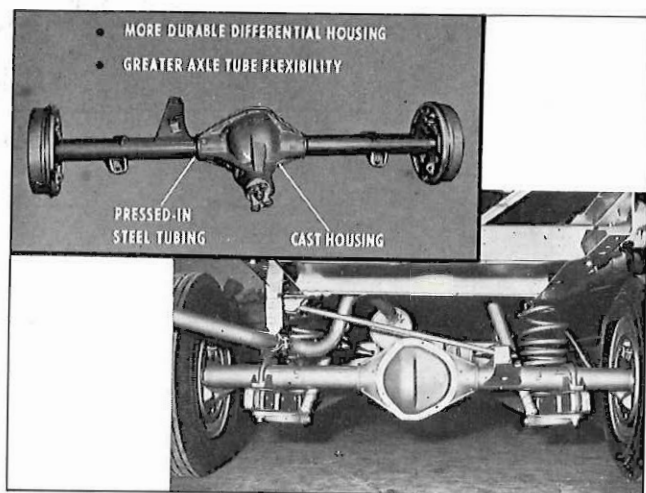


Fig. 27—Salisbury-Type Rear Axle

Since the central carrier is a separate unit, the reinforcing ribs may be placed to the best advantage in the carrier. A full rib extending between the pinion bearings and the differential bearings provides excellent support of the gear teeth at the mesh point.

The base production 5200 pound, 4.57:1 ratio axle for C20 models is essentially the same as the 1962 axle with a redesigned housing to accommodate the new spring centers and control arm mounting locations necessitated by the 1963 frame. This axle will also accommodate a new hub design for optional 16 inch dual rear wheels.

P20 models retain the 5.14:1 ratio and 5200 pound capacity axle as released in 1962. Increased capacity universal joints are used for CP10-20 truck propeller shafts.

1963 base production CP30 axles retain the same 5.14:1 ratio, 7200 pound capacity, and basic design featured in 1962. Dual 16 inch rear wheels again are available; in this application, the new Series 20 axle hub design is utilized.

### MEDIUM AND HEAVY-DUTY TRUCK REAR AXLES

An 11,000 pound Chevrolet hypoid design rear axle is base equipment for 50 Series models. Slight housing configuration revisions to accommodate the new 21½ inch wide rear springs and a new ratio of 6.17:1 for improved performance differentiate this axle from the 11,000 pound model available in 1962. Greater capacity axles, both single and 2-speed, are available as optional equipment for 50 Series models.

Series 60 vehicles retain the same axle line-up as used in 1962. Planet gear bushings are eliminated from the Chevrolet 15,000 and 17,000 pound 2-speed axles. Improved pinion durability results when metal-to-metal contact is allowed between the planet gear inner diameters and the support surfaces.

Eaton 18,500 pound rear axles for CLMT80 models are continued in 1963, but with revised ratio availability. A new single-speed Eaton 18,500 pound axle with a ratio of 5.57:1, however, is released as part of the 8-speed Roadranger transmission option.

### BRAKES

Brake improvements for 1963 are mainly concentrated in the areas of the master cylinder, power brake, and air compressor. Brake sizes and drum designs are basically unchanged except for minor revisions to accommodate the front I-beam axles and new light-duty rear axles. For certain models, single reservoir brake master cylinders replace the dual type brake-clutch cylinders previously used because of the adoption of mechanical-type clutch linkages.

### POWER BRAKES

Power brake availability for 1963 is extended to include a greater number of 10-30 Series models.

The new power unit for 10-30 Series is similar in design to that used for Chevrolet passenger cars, resulting in greater interchangeability of parts and service simplification. The unit is a vacuum-suspended design which requires no vacuum reserve tank. During brake operation, a control valve allows air to enter the power cylinder with the resulting pressure differential being used to supply part of the force required to actuate the master cylinder.

Power units for 50-80 Series models feature greater capacity, with resulting higher pressure outputs and

## 1963 CHEVROLET TRUCK BRAKES

### HYDRAULIC BRAKE SPECIFICATIONS

| Truck Series                                  | Brake Size (inches) |         | Lining Area (sq. inches) |      | Main Cyl. Dia. (inches) | Wheel Cyl. Dia. (inches) |       |
|---|---------------------|---------|--------------------------|------|-------------------------|--------------------------|-------|
|   | Front               | Rear    | Front                    | Rear |                         | Front                    | Rear  |
| C10   | 11 x 2              | 11 x 2  | 83½                      | 83½  | 1.000                   | 1.125                    | 1.000 |
| P10   | 11 x 2              | 11 x 2  | 83½                      | 83½  | 1.125                   | 1.125                    | 1.000 |
| K10   | 11 x 2              | 11 x 2  | 88½                      | 83½  | 1.000                   | 1.125                    | 1.000 |
| R10 (Equipped with self-adjusting brakes.)    | 11 x 2              | 11 x 2  | 83½                      | 83½  | 1.000                   | 1.125                    | 1.000 |
| C20   | 11 x 2¾             | 11 x 2¾ | 119½                     | 119½ | 1.000                   | 1.125                    | 1.125 |
| K20   | 12 x 2              | 12 x 2  | 98                       | 93   | 1.000                   | 1.125                    | 1.125 |
| P20   | 12 x 2              | 12 x 2  | 92½                      | 92½  | 1.125                   | 1.125                    | 1.125 |
| C30   | 11 x 2¾             | 13 x 2½ | 119                      | 133  | 1.125                   | 1.125                    | 1.250 |
| P30   | 12 x 2              | 13 x 2½ | 92                       | 133  | 1.125                   | 1.125                    | 1.250 |
| 50  | 14 x 2½             | 15 x 4  | 136                      | 245  | 1.125                   | 0.875                    | 1.500 |
| <b>S62, S64:</b>                              |                     |         |                          |      |                         |                          |       |
| With 5000-lb front axle & 15,000-lb rear axle | 14 x 2½             | 15 x 4  | 136                      | 249  | 1.125                   | 0.875                    | 1.500 |
| With 7000-lb front axle & 15,000-lb rear axle | 15 x 3              | 15 x 4  | 199                      | 249  | 1.125                   | 1.125                    | 1.500 |
| <b>60 (Except S62, S64):</b>                  |                     |         |                          |      |                         |                          |       |
| With 5000-lb front axle & 15,000-lb rear axle | 14 x 2½             | 15 x 4  | 136                      | 249  | 1.125                   | 0.875                    | 1.500 |
| With 7000-lb front axle & 15,000-lb rear axle | 15 x 3              | 15 x 4  | 199                      | 249  | 1.125                   | 1.125                    | 1.500 |
| With 7000-lb front axle & 17,000-lb rear axle | 15 x 3              | 15 x 6  | 199                      | 380  | 1.250                   | 1.125                    | 1.625 |
| <b>M80</b>                                    | 15 x 3              | 15 x 6  | 199                      | 759  | 1.250                   | 1.125                    | 1.625 |
| <b>80 (Except E-M-U80)</b>                    | 15 x 3              | 15 x 7  | 199                      | 143  | 1.250                   | 1.125                    | 1.750 |

### VACUUM AND AIR POWER CYLINDER USAGE

| Vacuum Assist Units  | Standard on             | Optional on         |
|--|-------------------------|---------------------|
| 8.3" Diaphragm (Moraine or Bendix)   | None                    | C10-20-30<br>K10-20 |
| 7" Diaphragm (Midland Ross—"Hy-Power")   | None                    | P20-30              |
| 11" Single Diaphragm (Bendix—"Multivac")   | C-D-L-S-T60             | C-L-S50             |
| 12¾" Single Diaphragm (Bendix—"Multivac")  | C-D-L-S-T60H            | C-D-L-S-T60         |
| 12¾" Double Diaphragm (Bendix—"Multivac")<br>(3.2 cubic inches fluid displacement) | M60<br>C-L-T80          | None                |
| 12¾" Double Diaphragm (Bendix—"Multivac")<br>(4.5 cubic inches fluid displacement) | M80                     | None                |
| Air Assist Units   | Optional on             |                     |
| 4½" Cylinder (Bendix—"Multipak")<br>(2.3 cubic inches fluid displacement)          | C-D-L-T60<br>C-D-L-T60H |                     |
| 4¾" Cylinder (Bendix—"Multipak")<br>(4.7 cubic inches fluid displacement)          | C-L-M80                 |                     |

### PARKING BRAKE SPECIFICATIONS

A cable linkage operates the rear wheel brakes on all series 10 and K20 models. C20 and P20 models, with standard 3-speed transmission, also use this type of parking brake.

| Truck Series | Transmission                         | Brake Type                | Diameter (inches) | Lining Area (sq. in.) |
|--------------|--------------------------------------|---------------------------|-------------------|-----------------------|
| 10           | All                                  | Rear Wheels               | —                 | 83½                   |
| 20 (exc K20) | Std 3-Spd Powerglide                 | Rear Wheels               | —                 | 119½                  |
|              | HD 3-Spd 4-Spd                       | Prop. Band                | 8                 | 62                    |
| K20          | Std 3-Spd 4-Spd                      | Rear Wheels<br>Prop. Band | 8                 | 93<br>62              |
| 30           | All                                  | Prop. Band                | 8                 | 62                    |
| 50, 60       | 4-Spd                                | Prop. Dual Shoe           | 10                | 36                    |
| 60           | New Process 5-Spd                    | Prop. Band                | 9½                | 68                    |
|              | Clark 5-Spd Powermatic               | Prop. Band<br>Prop. Band  | 9½<br>9½          | 85<br>89              |
| D60          | Clark 5-Spd Spicer 3152A Spicer 3153 | Prop. Band                | 9½                | 85                    |
| 80           | Spicer 3152A Spicer 3152             | Prop. Band                | 9½                | 85                    |
|              | Spicer 5652B Spicer 5756B            | Prop. Band                | 10½               | 100                   |
|              | Powermatic                           | Prop. Band                | 9½                | 89                    |
|              | Fuller R46                           | Prop. Internal Expanding  | 12                | 83½                   |

### BRAKE SIZE—WITH FULL AIR BRAKES

| Truck Series                          | Brake Size (inches) |        | Lining Area (sq. in.) |      |
|---------------------------------------|---------------------|--------|-----------------------|------|
|                                       | Front               | Rear   | Front                 | Rear |
| <b>60-H</b>                           | 15 x 3              | 15 x 6 | 190                   | 379  |
| <b>M80:</b>                           |                     |        |                       |      |
| With 7000-lb. front axle              | 15 x 3              | 15 x 6 | 190                   | 759  |
| With 9000-lb. or 11,000-lb front axle | 15 x 3½             | 15 x 6 | 222                   | 759  |
| <b>80 (Except M80):</b>               |                     |        |                       |      |
| With 7000-lb. front axle              | 15 x 3              | 15 x 7 | 190                   | 443  |
| With 9000-lb. or 11,000-lb front axle | 15 x 3½             | 15 x 7 | 222                   | 443  |

**FULL-AIR BRAKES** are standard on E-U80 models and are available as a regular production option on C-L-T-D60-H and C-L-M-T80 models.

The standard air compressor is a Bendix-Westinghouse Model TU-FLO-400 with a capacity of 7¼ cubic feet per minute. An optional TU-FLO-500 compressor, with a capacity of 12 cubic feet per minute, is also available for full-air brakes. The compressors are water cooled on diesel models; air cooled on all other models. On the E-U80 models the compressor is gear driven, while on all other models it is belt driven from the crankshaft. Two compressed air reservoirs—the wet tank and the dry tank, each has a capacity of 900 cubic inches. Series M80 trucks with full-air brakes have an additional dry tank of 830 cubic inch capacity.

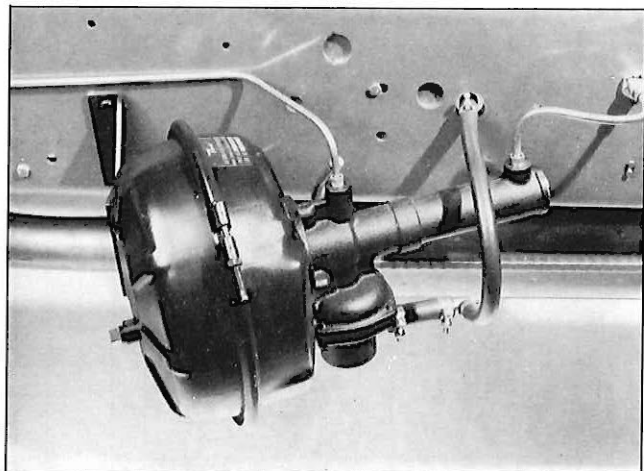


Fig. 28—"Hydrovac" Power Assist Unit

lower pedal efforts. Availability of the various power assist options is described in the brake chart.

Standard equipment for all Corvair 95 models are self-adjusting brakes. This feature, consisting of a wire link, stamped actuating lever, stamped pawl, override spring, and return spring, is similar to that utilized for 1963 passenger cars.

**PARKING BRAKE**

The Orscheln-type parking brake lever equipment is now standard equipment for all P20-P30 models. Offered as an extra-cost option since 1959, the Orscheln lever offers the advantages of versatility, ease of operation, and positive parking brake application. The lever may be mounted anywhere in the cab and its linkage design and dynamic characteristics assure full brake cable travel with no slippage.

**ENGINE**

The 1963 power team line-up boasts many significant changes. Highlighting the program are new 4 and 6-cylinder in-line gasoline engines of 153, 230, and 292 cubic inch displacement; improved carryover

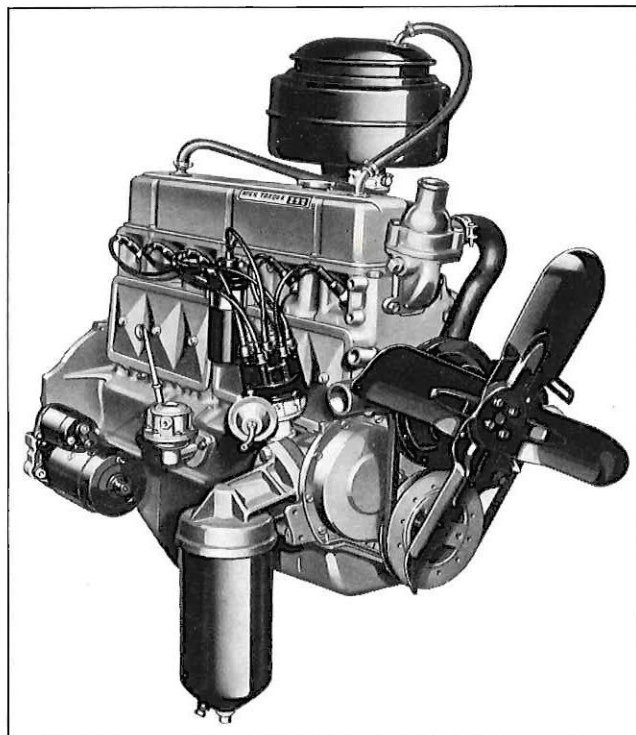


Fig. 29—New 292 Cu. In. L-6 Engine

engines; revised clutch actuation and linkage on certain models; Delcotron generator systems on all except R10 models; and an expanded transmission line-up.

The 145, 283, 327, 348, and 409 cubic inch engines are carried over from 1962 with some modifications.

**GENERATOR AVAILABILITY BY TRUCK SERIES**

| Type                      | Standard                                | Optional       |
|---------------------------|---|----------------|
| 30-amp (DC).....          | R10                                     | none           |
| 35-amp (DC) low cut-in... | none                                    | R10            |
| 37-amp Delcotron.....     | C & P10-30<br>C & L50-80<br>T60-80, M80 | none           |
| 42-amp Delcotron.....     | none                                    | Exc D60, E-U80 |
| 52-amp Delcotron.....     | D60, E-U80                              | Exc D60, E-U80 |
| 62-amp Delcotron.....     | none                                    | Exc D60, E-U80 |

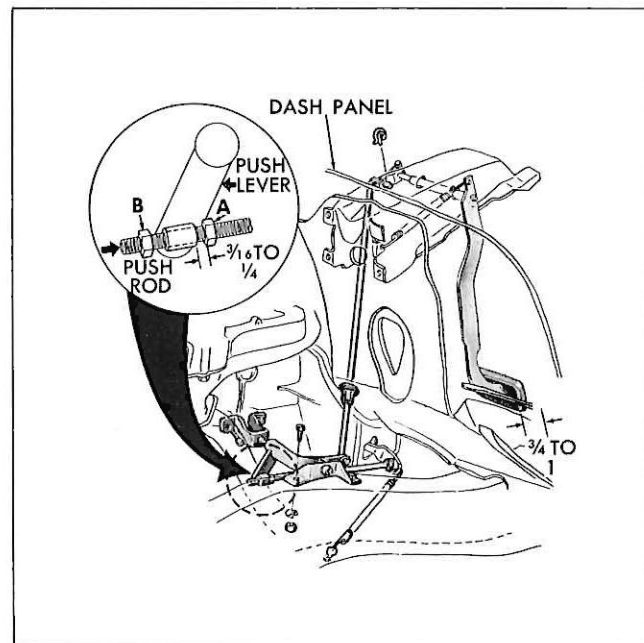


Fig. 30—Clutch Linkage and Adjustment

## 1963 TRUCK ENGINE AND CLUTCH SPECIFICATIONS (EXCEPT DIESEL)

| ENGINES                         | 145<br>OPP.-6                                | 153<br>L-4                                 | 230<br>L-6   | 230 L-6<br>ECON. OPT.  | 292<br>L-6   | 283<br>V-8  | 327<br>V-8  | 348<br>V-8                       | 405<br>V-8                |
|---------------------------------|--|--|--|--|--|---|---|----------------------------------|---------------------------|
| Horsepower @ rpm                | 80 @ 4400                                    | 90 @ 4000                                  | 140 @ 4400   | 125 @ 3400   | 165 @ 3800   | 175 @ 4400  | 185 @ 4400  | 220 @ 4400                       | 252 @ 4400                |
| Horsepower @ rpm                | 65 @ 3600                                    | 75 @ 4000                                  | 120 @ 3600   | 100 @ 3200   | 147 @ 3600   | 145 @ 4200  | 158 @ 4000  | 180 @ 4000                       | 215 @ 4000                |
| Torque (ft. lbs.) @ rpm         | 128 @ 2300                                   | 152 @ 2400                                 | 220 @ 1600   | 210 @ 1600   | 280 @ 1600   | 275 @ 2400  | 305 @ 2000  | 325 @ 2600                       | 390 @ 2600                |
| Torque (ft. lbs.) @ rpm         | 118 @ 2200                                   | 144 @ 2000                                 | 205 @ 1600   | 200 @ 1200   | 262 @ 2000   | 245 @ 2000  | 280 @ 2000  | 300 @ 2400                       | 352 @ 2400                |
| Compression Ratio               | 8.0:1  | 8.5:1                                      | 8.5:1  | 8.5:1  | 8.0:1  | 9.0:1   | 8.0:1   | 7.75:1                           | 7.75:1                    |
| Injector                        | 2—Rochester Mod. "H"                         | Carter Mod. "YF"                           | Rochester Mod. "B"                                       | Rochester Mod. "B" (Econ.)                                     | Rochester Mod. "B"                                       | Rochester "2G"  | Rochester "2G"  | Rochester "4G"                   |                           |
| Lead Stroke                     | 3 7/8" x 2 5/8"                              | 3 7/8" x 3 1/4"                            | 3 7/8" x 3 1/4"  | 3 7/8" x 3 1/4"  | 3 7/8" x 4 1/8"  | 3 7/8" x 3.00"  | 4" x 3 1/4"   | 4 1/8" x 3 1/4"                  | 4 5/8" x                  |
| Order                           | 1-4-5-2-3-6                                  | 1-3-4-2                                    | 1-5-3-6-2-4  | 1-5-3-6-2-4  |  |   |   |                                  |                           |
| Compression Ⓐ                   | 130 psi                                      | 130 psi                                    | 130 psi  | 130 psi  | 130 psi  | 140 psi   | 140 psi   | 140 psi                          | 140                       |
| Man. Trans.                     | 500  | 500  | 500  | 500  | 500  | 475   | 475   | 475                              | 475                       |
| Auto. (in Dr.)                  | 500  | 500  | 500  | 500  | 500  | 450   | 450   | 450                              | 450                       |
| Type (Prod.)                    | AC 46FF                                      | AC 46N                                     | AC 46N   | AC 46N   | AC C42N  | AC 44   | AC 42-1 Com.  | AC C42N                          | AC C44                    |
| Clugs                           |  |  |  |  |  |   |   |                                  |                           |
| Gap & Torque                    |  |  |  |  |  |   |   |                                  |                           |
| Timing Ⓑ                        | 4°-10° (Synchro)<br>13°-18° (Auto.)          | 4° BTDC                                    | 4° BTDC  | 4° BTDC  | 4° BTDC  | 4° BTDC   | 8° BTDC   | 8° BTDC                          | 4° BTDC                   |
| Dwell                           | 31°-34°                                      | 31°-34°                                    | 31°-34°  | 31°-34°  | 31°-34°  | 28°-32°   | 28°-32°   | 28°-32°                          | 28°-32°                   |
| Point Gap                       |  |  |  |  |  |   |   |                                  |                           |
| Lifter Setting                  |  | .019" with New Points                      | .016" with Used Points                                   | .016" with Used Points   |  |   |   |                                  |                           |
| Valve                           |  |  |  |  |  |   |   |                                  |                           |
| Pressure Ⓒ                      |  |  |  |  |  |   |   |                                  |                           |
| Oil Capacity With Filter Change | 4-5 psi                                      | 3 1/2-4 1/2 psi                            | 5 1/4-6 1/2 psi  | 5 1/4-6 1/2 psi  | 5 1/4-6 1/2 psi  | 5 1/4-6 1/2 psi   | 5 1/4-6 1/2 psi   | 5 1/4-6 1/2 psi                  | 5 1/4-6 1/2 psi           |
| Without Filter Change           | 4 1/2 qts.                                   | 4 qts.                                     | 5 qts. Ⓓ   | 5 qts. Ⓓ   | 6 qts. Ⓓ   | 5 Qts. Ⓓ  | 6 qts. Ⓓ  | 7 qts. Ⓓ                         | 8 qts.                    |
| Oil Size & Type                 | 4 qts.                                       | 3 1/2 qts.                                 | 4 qts.   | 4 qts.   | 5 qts.   | 4 Qts.  | 5 qts.  | 6 qts.                           | 6 qts.                    |
| Capacity                        | 9 1/2 Inch Diaphragm; Single Plate, Dry Disc | 10 Inch Diaphragm Ⓒ Single Plate, Dry Disc | 12 Inch Coil Single Plate, Dry Disc                      | 11 Inch Ⓒ Diaphragm; Single Plate, Dry Disc                    | 12 Inch Coil Single Plate, Dry Disc                      | 13 Inch Coil Single Plate, Dry Disc                       | 13 Inch Coil Single Plate, Dry Disc                       | 12 Inch 2-Plate Dry Disc         | 12 Inch 2-Plate Dry Disc  |
| Spring Load (lbs.)              | 160 ft. lbs.                                 | 235 ft. lbs.                               | 320 ft. lbs.   | 282 ft. lbs.   | 320 ft. lbs.   | 340 ft. lbs.  | 340 ft. lbs.  | 700 ft.                          | 700 ft.                   |
| Co-Flywheel                     | 1000-1200                                    | 1325-1500                                  | 1877   | 1450-1600  | 1877   | 2179  | 2179  | 2400                             | 2400                      |
| Action                          | Linkage (on R10)                             | Hydraulic Assist (on P10)                  | Hydraulic Assist on L, T60 Linkage on C6G; S62, S64, S67 | Hydraulic Assist on P10, L50 Linkage on C, K10-20; C30; C, S50 | Hydraulic Assist on L, T60 Linkage on C6G; S62, S64, S67 | Hydraulic Assist on L50; Linkage on C, K10; 20-30; C, S50 | Hydraulic Assist on L50; Linkage on C, K10; 20-30; C, S50 | Hydraulic Assist on C, L, M, T80 | Hydraulic on C, L, M, T80 |
| Total Effective Area            | 71.82 sq. in.                                | 100.53 sq. in.                             | 149.74 sq. in.   | 149.74 sq. in.   | 149.74 sq. in.   | 123.70 sq. in.  | 177.76 sq. in.  | 278 sq. in.                      | 278 sq. in.               |
| O.D.—I.D.                       | 9 1/8" — 6 1/8"                              | 10" — 6"                                   | 11 7/8" — 6 3/4"   | 11 7/8" — 6 3/4"   | 11 7/8" — 6 3/4"   | 11" — 6 1/2"  | 12 7/8" — 7 1/4"  | 11 7/8" — 7 1/4"                 | 11 7/8" — 7 1/4"          |
| Type                            |  |  |  |  |  |   |   |                                  |                           |
| Lubrication Ⓔ                   |  |  |  |  |  |   |   |                                  |                           |
| Claring                         |  | Sintered Bronze                            | Permanently Lubricated                                   | Permanently Lubricated   | Permanently Lubricated                                   | Permanently Lubricated                                    | Permanently Lubricated                                    | Permanently Lubricated           | Permanently Lubricated    |
|                                 |  |  |  |  |  |   |   |                                  |                           |

Banking speed with throttle open—20 psi. max. variation between cylinders.  
 Timing at normal idle speed. On 4 and 6 cylinder engines, disconnect vacuum advance line and vacuum opening.  
 Crank at engine idle to 1,000 rpm.

Ⓓ One additional quart required if optional 2-quart filter is installed.  
 Ⓔ With SAE No. 2 housing, release bearing collar has grease cup lube point.  
 Ⓕ Also used with 230, 235, 261 and 292 engines.  
 Ⓖ Also used with 235 engine on K10-20 models.

Single Row Ball



1963 CHEVROLET TRUCK ENGINE COOLING SYSTEMS

| STANDARD EQUIPMENT |               |              |               |                                   |        |       |           |                                    |                     |        |       |                    |   |     |
|--------------------|---------------|--------------|---------------|-----------------------------------|--------|-------|-----------|------------------------------------|---------------------|--------|-------|--------------------|---|-----|
| TRUCK SERIES       | EQUIPPED WITH |              | RADIATOR TYPE | RADIATOR CORE DIMENSIONS (Inches) |        |       |           | COOLANT CAPACITY (QTS.) W/O HEATER | RADIATOR CAP RATING | FAN    |       | THERMO-STAT RATING |   |     |
|                    | Engine        | Transmission |               | Core Constant (Pattern)           | Height | Width | Thickness |                                    |                     | Blades | Dia.  |                    |   |     |
| C10                | 230 L-6       | Synchro-mesh | Tube & Center | .20 x .55                         | 17.4   | 18.07 | 1.26      | 11.0                               | 13 PSI              | 4      | 17.6" | 180°               |   |     |
|                    | 292 L-6       |              |               | .16 x .55                         | 17.4   | 25.22 | 1.26      | 13.0                               |                     |        |       |                    |   |     |
|                    | 283 V-8       |              |               |                                   |        |       |           | 14.0                               |                     |        |       |                    |   |     |
| C20, C30           | 230 L-6       |              |               | .16 x .55                         | 17.4   | 18.07 | 1.26      | 11.0                               |                     |        |       |                    |   |     |
|                    | 292 L-6       |              |               | .25 x .55                         | 17.4   | 25.22 | 1.98      | 13.5                               |                     |        |       |                    |   |     |
|                    | 283 V-8       |              |               |                                   |        |       |           | 15.5                               |                     |        |       |                    |   |     |
| C10, C20           | 230 L-6       | Power-glide  | Tube & Center | .18 x .55                         | 17.4   | 25.22 | 1.98      | 12.0                               |                     |        |       |                    |   |     |
|                    | 292 L-6       |              |               |                                   |        |       |           | 13.5                               |                     |        |       |                    |   |     |
|                    | 283 V-8       |              |               |                                   |        |       |           | 15.5                               |                     |        |       |                    |   |     |
| P10                | 153 L-4       | Synchro-     | Tube & Center | .25 x .55                         | 14.12  | 18.07 | 1.26      | 8.25                               | 7 PSI               |        |       |                    |   |     |
|                    | 153 L-4       | P/glide      |               | .16 x .55                         | 14.12  | 18.07 | 1.26      | 8.25                               |                     |        |       |                    |   |     |
|                    | 230 L-6       | All          | Cellular      | .25 x .56                         | 20.69  | 19.69 | 2.00      | 14.0                               |                     |        |       |                    |   |     |
| P20, P30           | 230 L-6       |              |               | .25 x .56                         | 19.95  | 21.36 | 2.00      |                                    |                     |        |       |                    |   |     |
| C, L, S50          | 230 L-6       | All          | Cellular      | .22 x .56                         | 19.93  | 23.6  | 2.00      | 12.0                               | 7 PSI               | 4      | 20"   | 170°               |   |     |
|                    | 292 L-6       |              |               |                                   |        |       |           | 15.5                               |                     |        |       |                    |   |     |
|                    | 283 V-8       |              |               | .25 x .56                         | 24.7   | 23.6  | 2.00      | 18.5                               |                     |        |       |                    |   |     |
| C, L, S60          | 292 L-6       | All          | Cellular      | .22 x .56                         | 19.93  | 23.6  | 2.00      | 15.5                               | 7 PSI               |        |       |                    |   |     |
|                    | 327 V-8       |              |               | .20 x .56                         | 24.7   | 23.6  | 2.00      | 18.5                               |                     |        |       |                    |   |     |
| D60                | 4-53 Diesel   | All          | Tube & Center | .18 x .55                         | 29.0   | 23.57 | 2.62      | 21.5                               | 9 PSI               | 5      | 18"   |                    |   |     |
| C, L, M80          | 348 V-8       |              |               | .20 x .55                         | 29.0   | 23.57 | 1.75      | 30.0                               |                     |        |       |                    | 5 | 20" |
|                    | 409 V-8       |              |               | .18 x .55                         | 29.0   | 23.57 | 2.62      | 30.0                               |                     |        |       |                    | 6 | 20" |
| T60                | 292 L-6       | All          | Cellular      | .20 x .56                         | 19.93  | 23.6  | 2.47      | 23.5                               | 7 PSI               | 4      | 20"   |                    |   |     |
|                    | 327 V-8       |              |               |                                   |        |       |           | 26.0                               |                     |        |       |                    | 5 | 20" |
| T80                | 348 V-8       | All          | Tube & Fin    | 10.5                              | 24.0   | 28.72 | 2.25      | 37.5                               | 9 PSI               | 5      | 20"   |                    |   |     |
|                    | 409 V-8       |              |               | 10.5                              | 24.0   | 28.72 | 2.88      | 37.5                               |                     |        |       |                    | 6 | 20" |
| U80                | 6V-53 Diesel  |              |               |                                   |        |       |           | 34.5                               |                     | 5      | 22"   |                    |   |     |
| E80                |               | All          | Tube & Center | .18 x .55                         | 29.0   | 23.57 | 2.62      | 26.75                              |                     | 5      | 22"   |                    |   |     |

OPTIONAL HEAVY DUTY COOLING SYSTEMS

| TRUCK SERIES  | EQUIPPED WITH |              | RADIATOR TYPE | RADIATOR CORE DIMENSIONS (Inches) |        |       |           | COOLANT CAPACITY (QTS.) W/O HEATER | RADIATOR CAP RATING | FAN    |       | THERMO-STAT RATING |
|---------------|---------------|--------------|---------------|-----------------------------------|--------|-------|-----------|------------------------------------|---------------------|--------|-------|--------------------|
|               | Engine        | Transmission |               | Core Constant (Pattern)           | Height | Width | Thickness |                                    |                     | Blades | Dia.  |                    |
| C10, C20, C30 | 230 L-6       | Synchro-mesh | Tube & Center | .16 x .55                         | 17.4   | 25.22 | 1.26      | 12                                 | 13 PSI              | 4      | 17.6" | 180°               |
| C10           | 292 L-6       |              |               | .18 x .55                         | 17.4   | 25.22 | 1.98      | 13.5                               |                     |        |       |                    |
|               | 283 V-8       |              |               |                                   |        |       |           | 15.5                               |                     |        |       |                    |
| C20, C30      | 292 L-6       |              | Tube & Center | .18 x .55                         | 17.4   | 25.22 | 2.62      | 14                                 |                     |        |       |                    |
|               | 283 V-8       |              |               |                                   |        |       | 16        |                                    |                     |        |       |                    |
| C, L, S50     | 230 L-6       | Synchro-mesh | Cellular      | .20 x .56                         | 24.7   | 23.6  | 2.47      | 13.5                               | 7 PSI               | 5      | 20"   | 170°               |
|               | 292 L-6       |              |               |                                   |        |       |           | 17                                 |                     |        |       |                    |
|               | 283 V-8       |              |               |                                   |        |       |           | 18.5                               |                     |        |       |                    |
| C, L, S60     | 292 L-6       |              | Cellular      | .20 x .56                         | 24.7   | 23.6  | 2.47      | 16.5                               | 7 PSI               | 6      | 20"   |                    |
|               | 327 V-8       |              |               |                                   |        |       | 18.5      |                                    |                     |        |       |                    |
| C, L, M80     | 348 V-8       |              | Tube & Center | .18 x .55                         | 29.0   | 23.57 | 2.62      | 31.0                               |                     |        |       |                    |

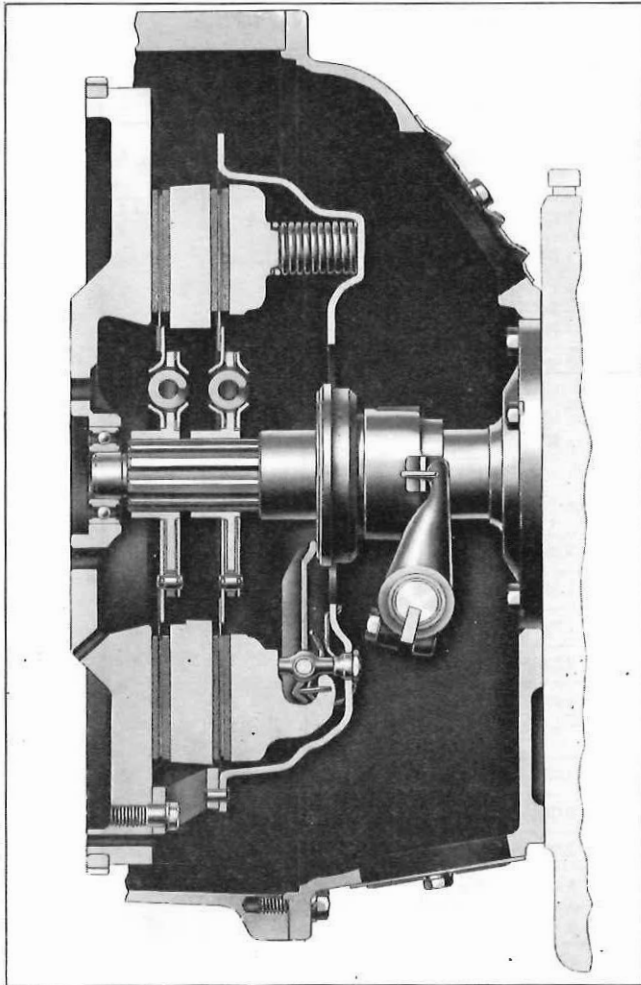


Fig. 31-2 Plate Clutch Cross-Section

Regular production positive crankcase ventilation systems; a higher compression ratio for the 283 engine; a more durable crankshaft pulley on the 348 and 409 engines; and a new heavy-duty clutch for the 409 engine are featured. Diesel power remains unchanged.

The updraft carburetor, formerly used on P20 and P30 models, is discontinued. Rochester downdraft carburetor is used for all 153, 230 and 292 cubic inch engine applications. Various modifications for the improvement of existing carburetors have also been made and are incorporated in all the new models.

Thermostatically controlled air induction systems will be found incorporated in the air cleaners of 348 and 409 cubic inch engines used with C-L-M-T-80 series trucks. This system will afford controlled air temperatures which improves engine carburetion efficiency.

The cooling system of the 292 cubic inch L-6 engine utilizes a large thermostat by-pass hose to provide ample coolant circulation during engine warm-up.

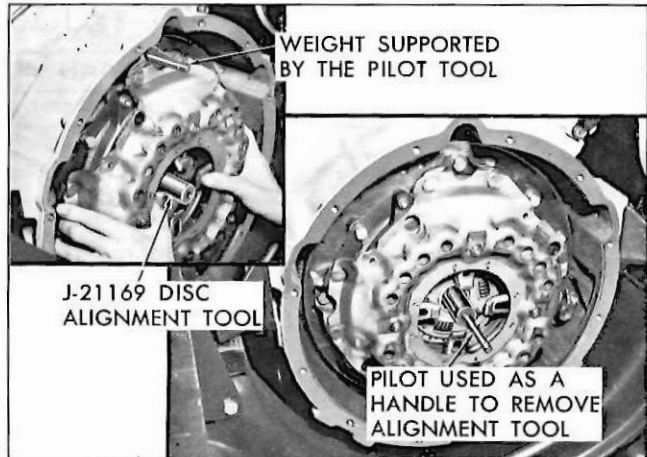


Fig. 32-2 Plate Clutch and SAE #2 Housing

The ignition system for the L-6 engine is similar to that introduced on the Chevy II, except for necessary modifications made to adapt to truck usage.

On most V-8 engine distributors the oil cup is replaced by an integral "Perma-wick" lube reservoir to supply the upper bearing. Distributors with the vacuum-spinner type engine governor retain a hinge cap oiler that should be filled at 12,000 mile intervals.

In general, the hydraulic clutch controls are being replaced by mechanical linkages on certain models of the 10 through 50 series, with exceptions due to body type and/or engine options as shown on the "Engine and Clutch Specifications Chart".

A new innovation in Power Train is a 12" Borg & Beck Double-Disc clutch made standard equipment on all 409 cubic inch engine options (Fig. 31).

An SAE #2 clutch housing is standard on the 409 cubic inch engine and on the diesel models. Use of this housing, with its standardized attaching bolt pattern and size will enable its use with many engine-transmission combinations.

## TRANSMISSIONS

The 1963 transmission line-up features a new 5-speed Spicer transmission, a new 8-speed Fuller transmission, and revised heavy-duty 5-speed and automatic transmission availability. In addition, 3-speed and 4-speed transmissions, while basically unchanged, incorporate several modifications which improve performance and durability.

The Fuller Model R46 Roadranger 8-speed transmission (fig. 33) also is provided for the 409 engine-equipped CLTM80 models, as well as the EU80

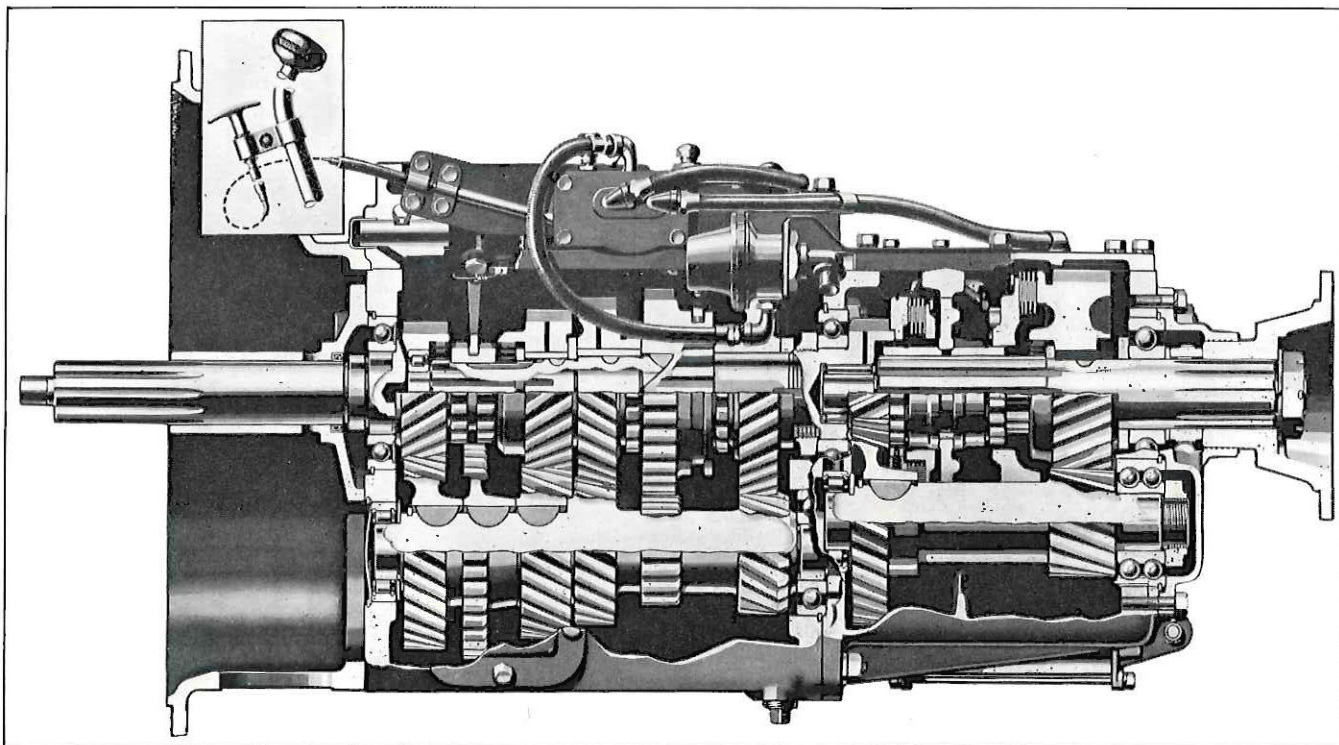


Fig. 33—Fuller 8-Speed Roadranger

models. This transmission, which features eight forward and two reverse speeds, eliminates the need for a 2-speed rear axle.

A new aluminum water-cooled Powerglide is available in the CP10 and C20 series, and this Powerglide will also now be available in the P20 forward control

models. The Hydramatic transmission, formerly available for P20 and P30 models, is discontinued.

The Powermatic transmission offered as an option has expanded usage on models in the 60 & 80 Series. Design of the Powermatic is basically unchanged from 1962.

**1963 TRUCK FIVE SPEED TRANSMISSIONS**

| Transmission Model | Gearing      | Input Capacity (Ft. Lbs.) | Input-Output Shaft Speed Ratio in |        |        |        |       |        | Model Application |   |
|--------------------|--------------|---------------------------|-----------------------------------|--------|--------|--------|-------|--------|-------------------|---|
|                    |              |                           | 1st                               | 2nd    | 3rd    | 4th    | 5th   | Rev.   | Standard on       | Optional on                                 |
| New Process 540C   | Conventional | 310                       | 7.41:1                            | 4.05:1 | 2.40:1 | 1.48:1 | 1:1   | 7.85:1 | —                 | CLT60, 60H, S62, S64, S67 <sup>Ⓐ</sup>      |
| Clark 265V         | Conventional | 314                       | 7.58:1                            | 4.38:1 | 2.40:1 | 1.48:1 | 1:1   | 7.51:1 | —                 | CLT60, 60H, S62, S64, S67, S69 <sup>Ⓑ</sup> |
| Clark 267V         | Close Ratio  | 314                       | 6.06:1                            | 3.50:1 | 1.80:1 | 1.18:1 | 1:1   | 6.00:1 | D60H              | CLT60, 60H, S62, S64, S67, S69 <sup>Ⓒ</sup> |
| Clark 264V0        | Overdrive    | 314                       | 6.06:1                            | 3.50:1 | 1.80:1 | 1:1    | .80:1 | 6.00:1 | D60               | —   |
| Spicer 3152        | Conventional | 300                       | 7.55:1                            | 4.17:1 | 2.45:1 | 1.45:1 | 1:1   | 7.44:1 | CLMT80            | —   |
| Spicer 3152A       | Close Ratio  | 300                       | 6.00:1                            | 3.31:1 | 1.94:1 | 1.16:1 | 1:1   | 5.90:1 | —                 | D60H; CLT80 <sup>Ⓓ</sup>                    |
| Spicer 3153        | Overdrive    | 300                       | 6.00:1                            | 3.31:1 | 1.94:1 | 1:1    | .79:1 | 5.90:1 | —                 | D60   |
| Spicer 5652B       | Conventional | 375                       | 7.08:1                            | 4.37:1 | 2.50:1 | 1.45:1 | 1:1   | 7.50:1 | —                 | CLMT80 <sup>Ⓔ</sup>                         |
| Spicer 5756B       | Close Ratio  | 415                       | 6.50:1                            | 3.51:1 | 1.93:1 | 1.17:1 | 1:1   | 6.88:1 | EU80              | CLT80 <sup>Ⓕ</sup>                          |

<sup>Ⓐ</sup> Used on 292 Engine   
 <sup>Ⓑ</sup> Used on 327 Engine   
 <sup>Ⓒ</sup> Used on 327 Engine with Two Speed Axle  
<sup>Ⓓ</sup> 80 Models: Used on 348 Engine with Two Speed Axle   
 <sup>Ⓔ</sup> Used on 409 Engine   
 <sup>Ⓕ</sup> Used on 409 Engine with Two Speed Axle

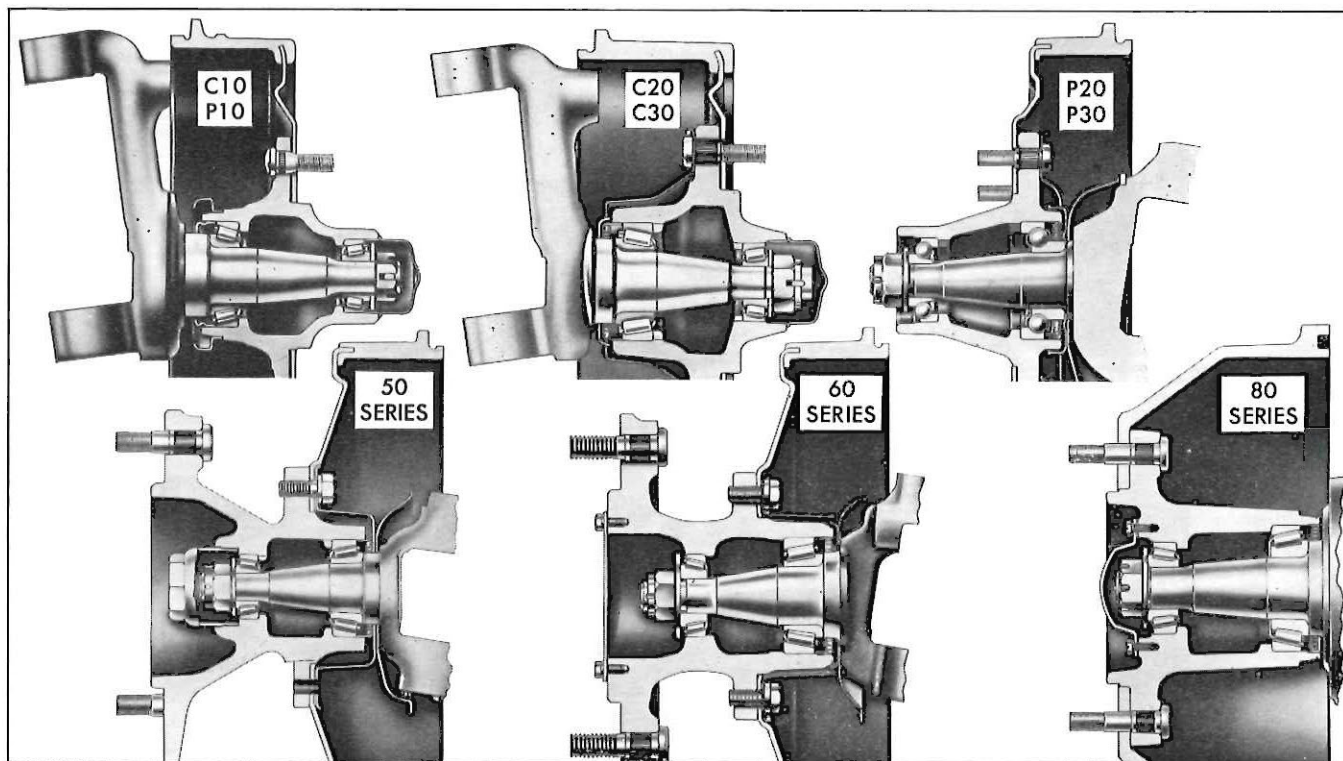


Fig. 34—Front Spindle and Wheel Bearings

## STEERING

Single-piece steering gear shafts eliminate the use of pot-type joints on Series C10, C20, and C30 models. A straight  $\frac{3}{4}$ -inch diameter steering relay rod replaces the offset relay rod used formerly on Series C10 and P10 models. The steering gear and linkage components are moved slightly forward. A new spring-loaded idler arm bracket-to-idler arm socket attachment replaces the vertical ball-stud mounted bracket and idler arm previously used.

Steering systems for Series 50 through 80 models are designed to provide improved steer and handling characteristics plus increased component life. A conventional steering linkage system having a fore-and-aft drag link replaces the parallelogram linkage arrangement employed with the former independent front suspensions. All linkage systems are designed to provide neutral steer characteristics with a minimum of wheel fight. Steering linkage ball-studs are of the half-ball design.

To provide maximum tire turning clearance, the pitman shaft overall length is reduced on medium and heavy-duty models. Steering gear housings are modified as required to suit the new chassis design and method of attachment. In 1963, the gear housings are

secured to the frame side rail web by three attaching bolts utilizing a full side-mounting arrangement.

Single-piece steering shafts and flexible couplings replace the multi-piece shafts and pot-type joints of the previous year on most Series 50 through 80 models. Flat face cowls, windshield cowl, school buses, and tilt-cab models employ multi-piece shafts coupled by trunnion type universal joints.

The new flexible coupling, approximately  $\frac{3}{8}$ " thick, is a molded unit comprised of 16 laminations of rayon fabric impregnated with rubber. Durability is increased considerably over that of the former pot-type joints.

Power steering availability for medium and heavy-duty models remains basically unchanged. A separate power steering package is made available on C10-20-30 models as a dealer installed option.

## WHEELS AND TIRES

The light-duty tire line-up is complemented by the availability of 16-inch dual rear wheels for Series C20 models. Tire option availability for all R10 models is extended to include 7.00-14-6 PR and 7.00-14-8 PR truck-type tires. Base tires for Series 50 models are of the 7-22.5-6 ply size for 1963 because of the revised GVW ratings for these models.

Disk wheels are standard equipment on all 4000 and 5000 pound capacity axles and on the 7000 pound axle when it is specified for use on Series S69 school bus. Cast spoke wheels are base equipment for all other applications of the 7000 pound capacity axle. Cast spoke wheels are available as optional equipment for Series 60 models.

## SHEET METAL

Fenders, running boards, and front bumpers for Series C-D-M-S50 through 80 models are 7.2" narrower for 1963 because the new regular production I-beam front suspension for these models is narrower. Though front bumpers for S models are narrower than those used in 1962, they are not as narrow as the front bumper for C-D-M models since minimum standards for school buses require a wider bumper.

Durability of the Series E80 cab structure is increased with additional reinforcements, extended welding, and improved component attachment.

Model E80 sheet metal durability also is improved through the use of a flexible rather than a fixed hood panel mounting. Two spring loaded latch-type locks are used for each hood panel.

A new design hood release for C-D-L-M-S models facilitates opening the hood panel by simply pulling outward on the release lever rather than lifting the lever upwards as was necessary in the previous design. Other hood lock components remain basically unchanged.

## ELECTRICAL

A new plastic turn signal switch designed as a self-contained unit replaces the 1962 type. This unit has interchangeable and replaceable cancelling and switching mechanism contained in one plastic housing.

Front direction signal lights for Series C-D-E-L-M50 through 80 models are relocated from the hood panel to the side face of the cowl. These lenses are now amber to ensure their being visible at all times. Amber lenses are also released for the combination parking and directional signal light units on Series 10-30 models.

The existing Series 80 instrument cluster with an ammeter and oil pressure gauge is released as regular production equipment for all Series 50 and 60 vehicles except tilt-cabs.

A new tachometer with an internal electronic transmitter is released for both regular production and

optional applications. The new unit with fewer parts affords greater durability, accuracy, and compactness.

## FUEL AND EXHAUST

An entirely new gas tank assembly not interchangeable with past models will be introduced on the C-1402-05-06-12-16 and P-10 series. The new fuel tank assembly is located between the new design frame assembly side rails.

All other fuel tanks will carry-over from last year. Temporary throw-away tank assemblies used for shipping purposes of E & U-80 models will be discontinued and standard tank assemblies will be provided.

50-80 series trucks with the exception of the L-6 engines, use last year's mufflers. Most exhaust and tail pipes will be new to all series due to engine modifications, new frames or new muffler.

### 1963 CHEVROLET TRUCK FUEL TANK SPECIFICATIONS

All fuel tanks are of 2-piece seam-welded construction. Tanks for Series D60 and M80 trucks are made of 18-gauge terneplate; S50 and S60 tanks are 16-gauge; all others are 20-gauge.

| Truck Series                        | Tank Location                            | Filling Station Capacity (gallons) |
|-------------------------------------|--|------------------------------------|
| <b>Corvaire "95"</b>                | Under seat . . . . .                     | 18.6                               |
| <b>Cab Models</b>                   |  |                                    |
| <b>C10 thru C60</b>                 | In cab, back of seat . . . . .           | 17.2 <b>a</b>                      |
| <b>K10, K20</b>                     | In cab, back of seat . . . . .           | 17.2 <b>a</b>                      |
| <b>D60, C-L-M80</b>                 | In cab, back of seat . . . . .           | 19.7                               |
| <b>E-U80</b>                        | On top of frame side rail . . . . .      | 18.0                               |
| <b>L50, L60</b>                     | In cab, back of seat . . . . .           | 17.2 <b>a</b>                      |
| <b>T60, T80</b>                     | Outside right frame side rail . . . . .  | 17.4                               |
| <b>Cowl Models</b>                  |  |                                    |
| <b>C10, C20</b>                     | Inside frame, behind rear axle . . . . . | 20.5                               |
| <b>C30</b>                          | Outside left frame side rail . . . . .   | 19.7                               |
| <b>C50, C60</b>                     | Outside right frame side rail . . . . .  | 18.0                               |
| <b>S50, S60</b>                     | Outside right frame side rail . . . . .  | 30.3                               |
| <b>Panel &amp; Carry-all Models</b> |  |                                    |
| <b>C10</b>                          | Inside frame, behind rear axle . . . . . | 20.2                               |
| <b>K10</b>                          | Outside left frame side rail . . . . .   | 20.5                               |
| <b>C30</b>                          | Outside left frame side rail . . . . .   | 19.7                               |
| <b>Forward-Control Models</b>       |  |                                    |
| <b>P10</b>                          | Inside frame, behind rear axle . . . . . | 20.2                               |
| <b>P23, P33</b>                     | Outside right frame side rail . . . . .  | 15.5                               |
| <b>P25, P26</b>                     | Outside right frame side rail . . . . .  | 18.0 <b>b</b>                      |
| <b>P35, P36</b>                     | Outside right frame side rail . . . . .  | 18.0 <b>b</b>                      |

**a**—20 gallons for optional tank.

**b**—30 gallons for optional tank.

# PART V—CORVETTE

The Corvette line is all new for 1963, including major chassis changes to coincide with the new styling appearance. Also, for the first time since its introduction the Corvette will be offered in two body styles. The new body style, model 837, is a 2-passenger Sport Coupe with a permanent "fastback" hard top. The 2-passenger Convertible Coupe, model 867, is again available with a choice of a removable hard top or a folding soft top.

Both models of the line are identified "Sting Ray".

The roof line on the coupe blends into the rear panels just above the horizontal peak line. Both body styles use the deck medallion to conceal the fuel filler cap (Fig. 36). Due to the relocation of the gas tank, spare tire, and luggage areas, no trunk lid is required. This allows a smooth, unbroken appearance from the rear.

The front end styling places the hood below front fender height. Large simulated grilles are inserted into depressions on each side of the hood windsplit.

Featured in the new front end styling is a pair of retractable headlamp assemblies. These units blend into the leading edge of the front body panel to reduce wind resistance, and electrically rotate to the exposed position for use.

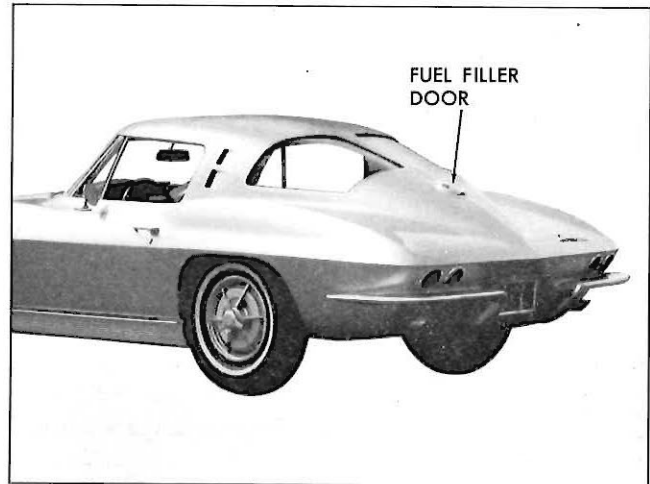


Fig. 36—Sport Coupe Rear Appearance

The door line of the Sport Coupe body extends well into the roofline to increase entry headroom. All instruments and the instrument panel are new. A large glove compartment with a locking door fills the passenger side of the panel.

## CHASSIS

The Corvette chassis is new for 1963. This includes

### 1963 CORVETTE POWER TRAINS

| Engine   | Gross Horsepower<br>Gross Torque                      | Compression Ratio | Identifying Equipment  | Transmission         | Std. Axle Ratio | Positraction Axle Ratios (RPO G81)                       |
|--|---|-------------------|--|----------------------|-----------------|--|
| 327 Cu. In. V-8<br>Base Engine<br>Bore—4.00"<br>Stroke—3.25" | 250 hp @ 4400 rpm<br>-----<br>350 ft. lbs. @ 2800 rpm | 10.5:1            | 4-Barrel Carb. (Carter WCFB)<br><br>Hydraulic Lifters                    | 3-Speed              | 3.36:1          | 3.36:1   |
|  |   |                   |  | 4-Speed (2.54:1 Low) | 3.36:1*         | 3.08:1<br>3.36:1   |
|  |   |                   |  | Powerglide           | 3.36:1          | 3.36:1   |
| 327 Cu. In. V-8<br>RPO L75                                   | 300 hp @ 5000 rpm<br>-----<br>360 ft. lbs. @ 3200 rpm | 10.5:1            | 4-Barrel Alum. Carb. (Carter AFB)<br><br>Hydraulic Lifters               | 3-Speed              | 3.36:1          | 3.36:1   |
|  |   |                   |  | 4-Speed (2.54:1 Low) | 3.36:1*         | 3.08:1<br>3.36:1   |
|  |   |                   |  | Powerglide           | 3.36:1          | 3.36:1   |
| 327 Cu. In. V-8<br>RPO L76                                   | 340 hp @ 6000 rpm<br>-----<br>344 ft. lbs. @ 4000 rpm | 11.25:1           | 4-Barrel Alum. Carb. (Carter AFB)<br><br>Spec. Camshaft<br>Mech. Lifters | 3-Speed              | 3.36:1          | 3.36:1   |
|  |   |                   |  | 4-Speed (2.20:1 Low) | 3.70:1          | 3.08:1<br>3.36:1<br>3.55:1<br>3.70:1<br>4.11:1<br>4.56:1 |
| 327 Cu. In. V-8<br>RPO L84                                   | 360 hp @ 6000 rpm<br>-----<br>352 ft. lbs. @ 4000 rpm | 11.25:1           | Fuel Injection<br><br>Spec. Camshaft<br>Mech. Lifters                    | 3-Speed              | 3.36:1          | 3.36:1   |
|  |   |                   |  | 4-Speed (2.20:1 Low) | 3.70:1          | 3.08:1<br>3.36:1<br>3.55:1<br>3.70:1<br>4.11:1<br>4.56:1 |

\*—3.08:1A ratio available optionally (RPO G91)

a new frame, front suspension, rear suspension, self-adjusting brake system and a new drive line. All steering components are new with optional power steering available.

### POWER TRAIN

The engine line-up for 1963 is generally the same as the previous line-up. All three carburetor equipped engines and the fuel-injected version are again based on the 327 cubic inch block. Positive crankcase ventilation and a Delcotron charging system will be standard equipment.

Three-speed, four-speed, and Aluminum Powerglide transmissions are again available. A new Positraction differential is used with the new third-member design.

### REGULAR PRODUCTION OPTIONS

The regular production options are revised for the new model year and feature several new items. The RPO numbering system is identical to the method shown in the Chevrolet Part of this booklet. Available options include power steering, power brakes, and true knock-off aluminum wheels.

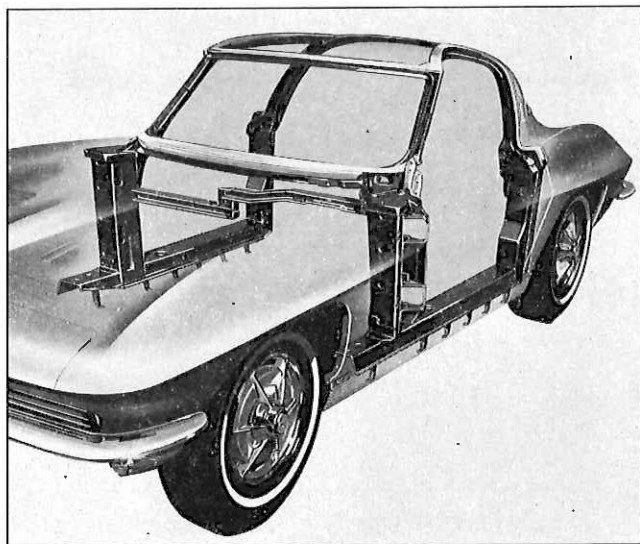
## BODY

All body panels are new for 1963 thus allowing the inclusion of many new features. Among these features are: cowl top ventilation with a double cowl plenum chamber; retractable headlamps; relocation of fuel tank, spare tire, and luggage area; new instrument panel design; and a new heater. Luggage space is moved forward, immediately behind the front seats and is part of the passenger compartment. Access to this area is from the front, with the tilting front seat backrests providing increased clearance for luggage placement.

Spare wheel and fuel tank positions are reversed with the tank in the former wheel area, and the wheel secured below the tank in a protected enclosure.

The spare wheel pocket, or inverted well, is a circular fiberglass panel shaped to accept the tire. This well has a hinged drop lid with a rubber seal. To stow the wheel, the lid and wheel are raised into the well and held in the sealed position with one long bolt that swings into a retaining hook. A lock with an unmatched key, similar to the Corvair spare wheel lock, provides tire security.

A structural network of steel forms the backbone of the new Corvette body resulting in a body with



*Fig. 37—Body Structural Members*

increased torsional rigidity and greater beaming strength.

Sport Coupe passenger compartments are completely framed in steel reinforcing members. Door hinge and lock pillar steel members are tied at bases by reinforcements under the door sills. Front pillars are joined by a lateral member under the instrument panel. Conventional windshield pillars and header, side roof rails and a rear cross bow brace the roof area and connect to the lower reinforcements (Fig. 37).

The convertible model has sill and lock pillar reinforcement members that are effectively joined at the underbody level. Windshield header and pillars are similar to those of the fastback model.

Structural gains are achieved with the plenum chamber forming a "bridge" across the vehicle, spanning between steel sill reinforcements. Left and right hand and center plenum panels are bonded to the dash panel to form this sturdy structure. Adding to the strength are the outer and rear sides of the plenum chambers that are integral with the dash panel. The lower edge of the dash is bonded to the underbody.

Doors for the convertible have inner and outer panels of fiberglass reinforced with steel at hinge and lock locations. Both convertible and coupe models have new ventipanes and door locks. Door locks are the same as those used on the Chevrolet and feature improved locking for increased safety.

Sport Coupe doors are of similar lower construction but have outer window frames of fiberglass and inner frames of steel. The top framing member of side glass curves into the roof for a depth of approximately five inches.

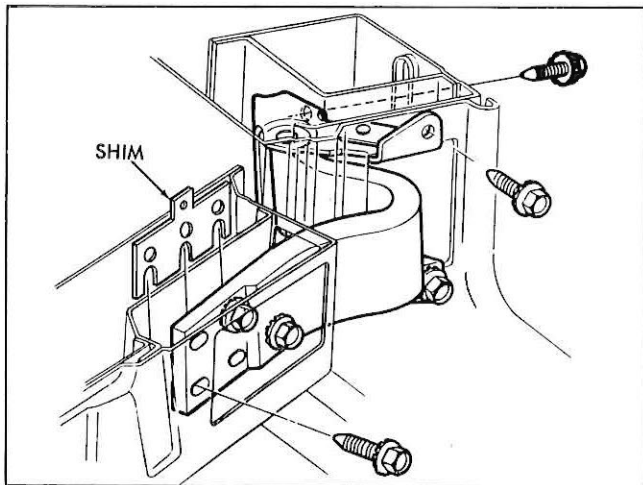


Fig. 38—Door Hinge Adjustment

Door hinge adjustments are new with all changes made on the door portion of the hinge (Fig. 38). Up-down, and fore-aft changes are made by loosening the bolts and shifting the door as required. In-out changes are made by adding or removing shims at the hinge strap to door attachment.

Convertible models continue with two roof styles:

the manually operated folding top and the removable hardtop. A compartment lid opens to permit storage of the folded soft top behind the front seats.

The body to frame mounts for the new Corvette are all of the solid contact type and feature caged nuts and "U" shaped shims to ease the servicing of these areas. Fourteen mounts are used for this new body-frame design.

A completely new mixed-air type heater, tailored to the new cowl top inlet ventilation system, takes air from the right side plenum chamber, heats it and distributes it to the passenger compartment and defrosters. With the new design, all control cables are located within the passenger compartment protected from dust and dirt.

Two controls for the heater are located on the center console and are the push-pull-rotate type. A knob labeled FAN-TEMP is rotated to turn the blower on and off and pulled to adjust the heater mixing door. A knob marked AIR-DEF when pulled through the first one half of travel regulates the shut off door and allows outside air to flow through the system. The last one half of travel of this door directs the air to the defroster outlet.

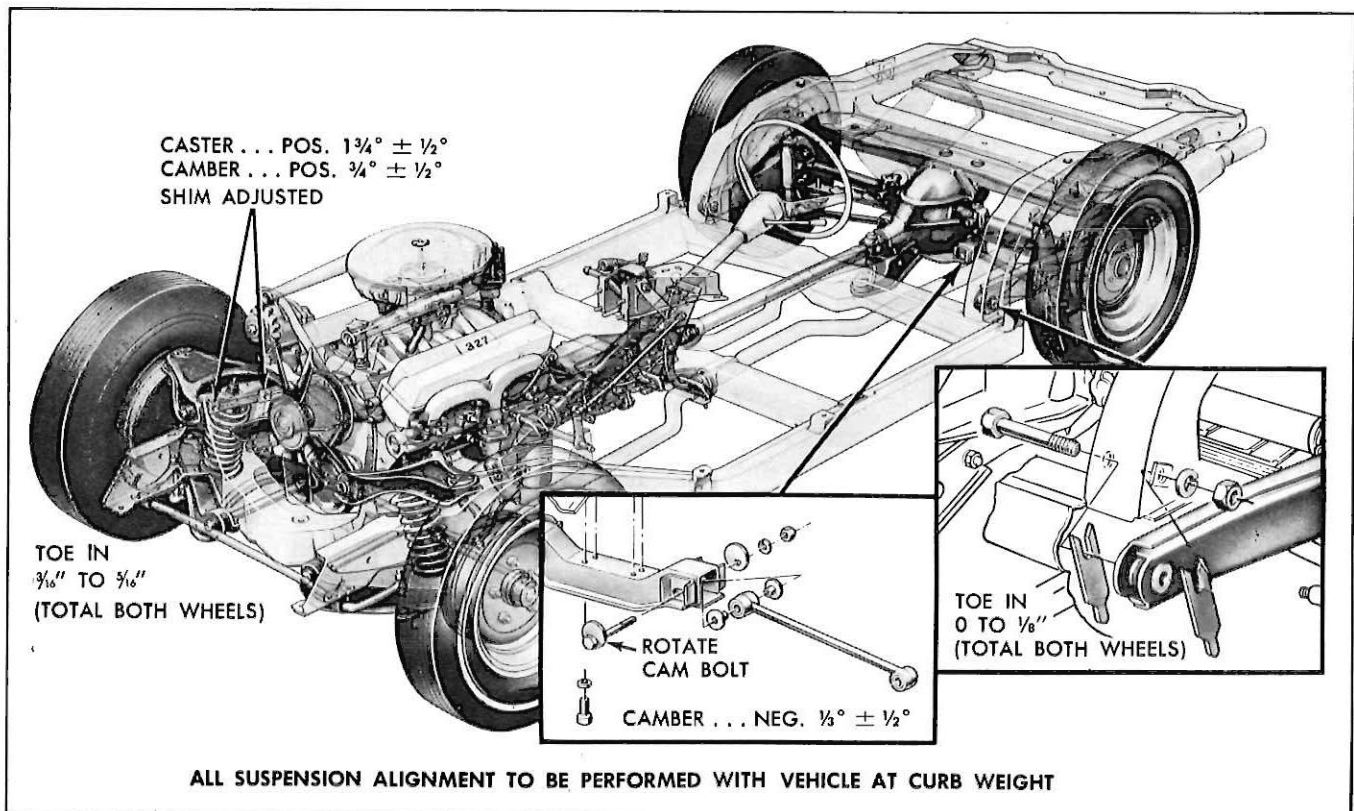


Fig. 39—Frame Details



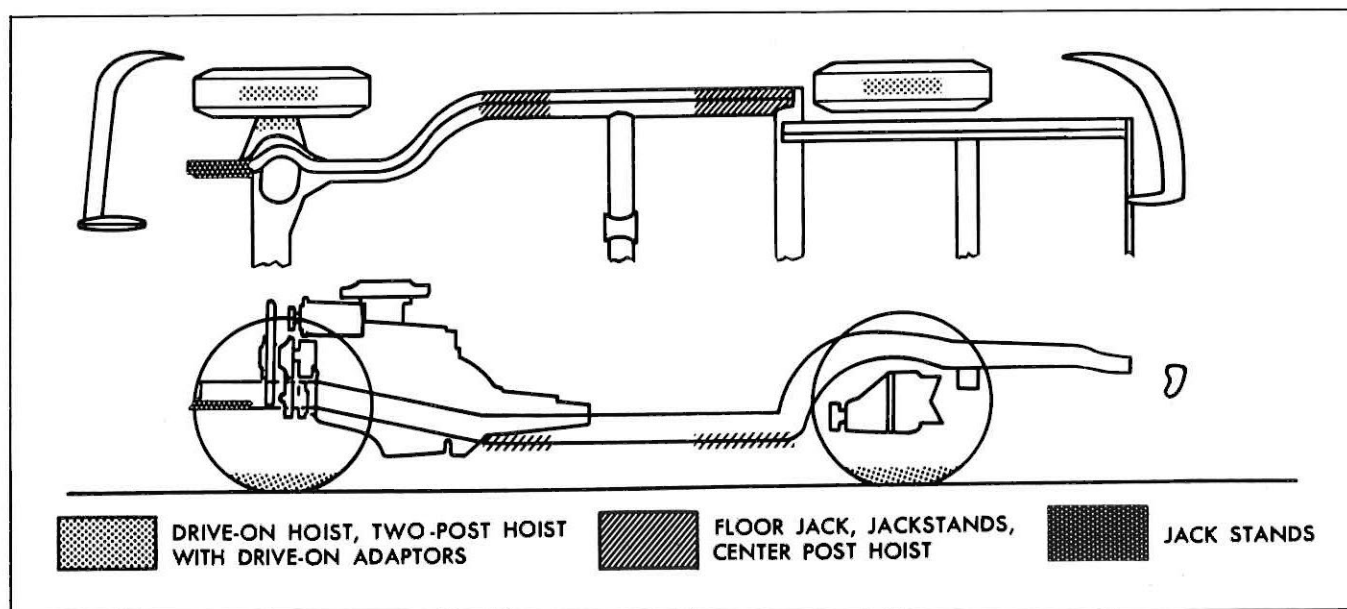


Fig. 40—1963 Corvette Lift Areas

## FRAMES

The Corvette's all new frame is a perimeter unit providing a heavy structural outline of the passenger compartment. Five crossmembers join the box section side rails. The crossmembers are of varied construction, but all are welded to the side members, including the front member that was formerly bolted to the frame.

At the cowl area, the side rails sweep inward to provide front wheel clearance. The massive front crossmember is then positioned to support the engine and provide a base structure for the new short-long arm front suspension.

The second or center crossmember includes an answer to the problem of routing the exhaust system. Two heavy tube sections are welded-in parts of this member. Thus, the dual exhaust system passes through these frame tubes rather than over or under the frame. Several advantages, such as reduced floor heat, and improved ground clearance are gained. In addition to being the intermediate support for the exhaust system, this member also acts as the rear or third mount for the engine.

The rear portion of the frame side rails extend upward and rearward from the third crossmember. This high kick-up design allows the rear suspension and the fixed differential to be slung below. A platform extended rearward from the third crossmember acts as the front attaching point for the differential carrier.

Heavy brackets are welded to the fourth crossmember at each side rail. These two brackets are mount areas for the separate, rubber insulated carrier member. The differential carrier cover bolts directly to this removable member. The cover, being a heavy casting, is the attaching support for both the carrier housing and the transverse rear spring.

A second removable member is bolted to the frame side rails between the fourth and fifth crossmember. This unit acts as the front support for the gas tank.

The trailing arm spindle support attaches to the frame at the third crossmember. The bushing area of the spindle support is positioned by shims to gain the proper toe-in for the rear wheels. Jounce bumpers and the upper end of the shock absorbers attach to the side rails just ahead of the number four crossmember.

The all-welded steel structure formed by these members is more rigid yet lighter than its predecessor. Torsional stiffness is greatly increased.

## FRONT SUSPENSION

The over-all design of the new Corvette front suspension is based on the short-long arm (S.L.A.) type of the regular Chevrolet series. This includes the use of spherical joints and shim-type caster and camber adjustment. Shock absorbers are mounted concentrically within the coil springs. A forward mounted stabilizer bar is attached to the lower control arms through a conventional link and bushing arrangement.

### SPRINGS

The front coil springs are positioned between the lower control arms and frame mount pads. This installation retains the use of the lower control arm as the load bearing member.

### CONTROL ARMS

Both upper and lower control arms are heavy, stamped units mounted to support shafts by rubber bushings. The lower control shaft bolts directly to

the front crossmember while the upper shaft bolts to the upper portion of the frame side rail.

The upper location is shim mounted in the same manner as the regular Chevrolet, so that the addition of shims at both bolt locations will decrease positive camber. Uneven shim stacks will change the caster angle.

Brake backing plates and trailing type steering arms are bolted to the wheel spindle support.

## REAR SUSPENSION AND DRIVE LINE

The 1963 Corvette independent rear suspension and its related components, including the rear axle and drive line components, are all new. This not only refers to the general appearance of these units, but also describes the basic concept of design and operation. The Corvette's rear suspension features a transverse multi-leaf spring mounted on a fixed differential carrier. Each rear wheel is mounted by a three-link independent suspension. These three links are made up of: wheel drive shaft, a camber control strut rod, and a trailing wheel spindle support arm that acts like a radius arm. The inherent advantages of this suspension include a reduction of unsprung weight as well as an over-all weight reduction.

The axle drive shafts and the control rod act together in maintaining an almost constant camber throughout the entire arc of wheel travel. Fore-aft motion of the wheel is controlled by the radius arms, as is rear wheel toe-in. Each rear wheel has a short spindle and a set of spindle bearings contained in the rear end of the support arm. The arm also acts as a mount for the brake backing plate assembly.

### OPERATION

Each rear wheel's suspension, being independent of the other, permits the vertical movement of one wheel

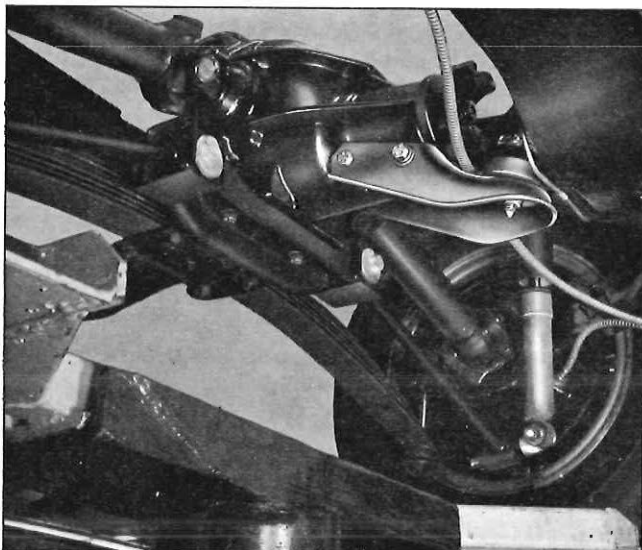


Fig. 41—Carrier Cross Member Attachment

without materially affecting the wheel on the opposite side of the car. This is in contrast to the conventional or solid rear axle where any single wheel movement forces an angular motion of both wheels.

Since each rear wheel has an individual suspension, and both are identical in operation, we will discuss one unit as being typical.

Each rear wheel is located at the right angle formed by the trailing arm and the parallel links (the camber control rod and the rear wheel drive shaft). The two remaining points of the triangle are hinged to provide up-down wheel travel. The solid links thus force the wheel to travel through a controlled arc with fore-aft position determined by the trailing arm and lateral position held by the parallel links.

Aside from controlling wheel location, each portion of the suspension has additional functions. The trailing spindle support arm carries the brake backing plate, thus, all brake torque and braking tractive forces are transmitted through this arm.

The parallel links transmit lateral forces to the fixed differential, and through the rubber mount to the frame. The upper link, or wheel drive shaft, transmits acceleration forces through the differential carrier to the frame. The saddle mount of the carrier and the radius rod action of the spindle support arm eliminate any reaction known as spring "wind-up".

### CAMBER-TOE-IN

The Corvette's rear suspension includes facilities for setting both toe-in and camber.

Camber adjustments are made in a manner similar to the Chevy II front end camber setting. This is done by turning the cam type through-bolt. The cam surface rides within channels on the strut rod bracket. To change the camber setting, loosen the lock nut on the cam bolt, and turn the cam to the desired camber, then retighten the lock nut.

Toe in is set by changing the shim thickness on either side of the spindle support arm bushing. The shims are slotted to slide over the bushing pivot bolt.

### REAR AXLE

The rear axle or differential carrier assembly used for the 1963 Corvette is quite similar in appearance to the carrier portion of the new 1/2 ton truck's Salisbury axle. Only two major differences exist between the 1963 truck and Corvette carrier assembly. These differences are: the use of seals and universal joint flanges in place of axle shaft housings on the Corvette, and provisions for the carrier's mounting to the vehicle frame.

The differential side bearing preload and the ring and pinion back lash are established by installing spacer shims between the bearing race and the carrier casting. Backlash may be altered without changing the bearing preload by subtracting shim thickness from one side and adding an equal thickness to the opposite side (Fig. 42).

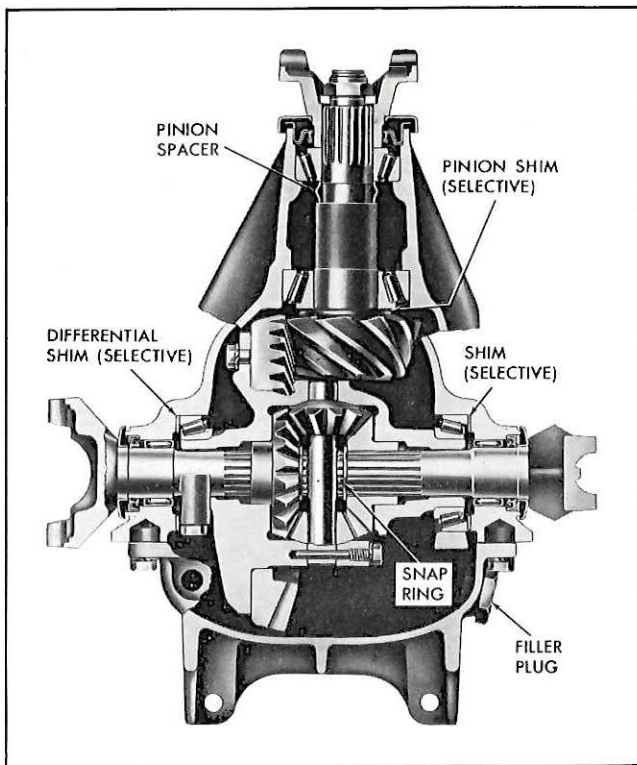


Fig. 42—Rear Axle Assembly—Cut Away

A Positraction differential is optionally available for 1963; however, the design of the carrier assembly requires the use of a new differential. The new version uses a single pinion shaft, two pinion gears, and four coil springs to place the friction plates in compression.

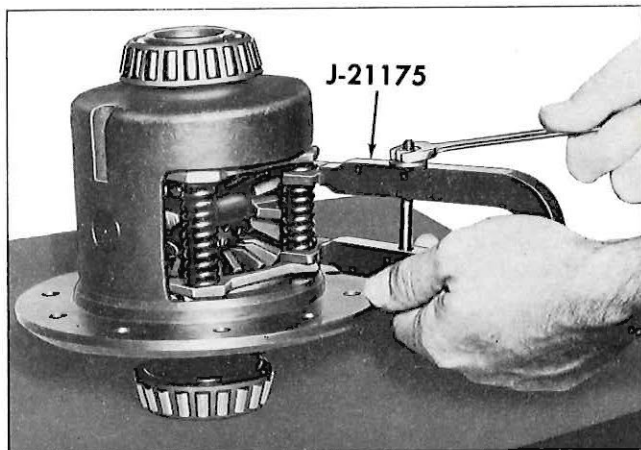


Fig. 43—Positraction Spring Removal

When it is necessary to disassemble the new Positraction, the coil springs must be removed with a new spring compressor, J-21175 (Fig. 43). Further disassembly, after the springs are removed, differs from past models in the fact that the differential housing is a single casting.

The remaining components are now removed through the large access openings in the casting.

The rear cover for the differential carrier assembly is a heavy casting that also serves as a component of the rear suspension. Care must be used in removing or replacing the differential assembly with the cover remaining in the vehicle. The front face of the cover is machined to act as a gasket surface. Any damage to this surface may cause axle lubricant leakage.

### DRIVE SHAFTS AND "U" JOINTS

Three tubular drive shafts are employed for the new rear suspension system. The propeller shaft is a one piece unit with a conventional universal joint at each end. The front end of the shaft connects to the transmission output shaft with a splined slip-yoke. The angulation variations of this shaft are very small since only the differential carrier movement involved is that which is allowed by the rubber mounts of the fixed differential carrier.

The two axle drive shafts are also single element units and use a conventional universal joint at each end. The "U" joints of these shafts use a companion flange type mount at each end, rather than a slip-yoke. The solid connection at each end permits the use of these axle drive shafts as the upper member of the parallel linkage described in the suspension portion of this chapter.

Lip type oil seals are used at the pinion flange and axle flange openings in the differential carrier assembly, or a total of three seals per unit.

The outboard end of the axle drive shafts connect to the rear wheel spindle and bearing assembly. Figure 44 shows a cut-away view of the wheel spindle

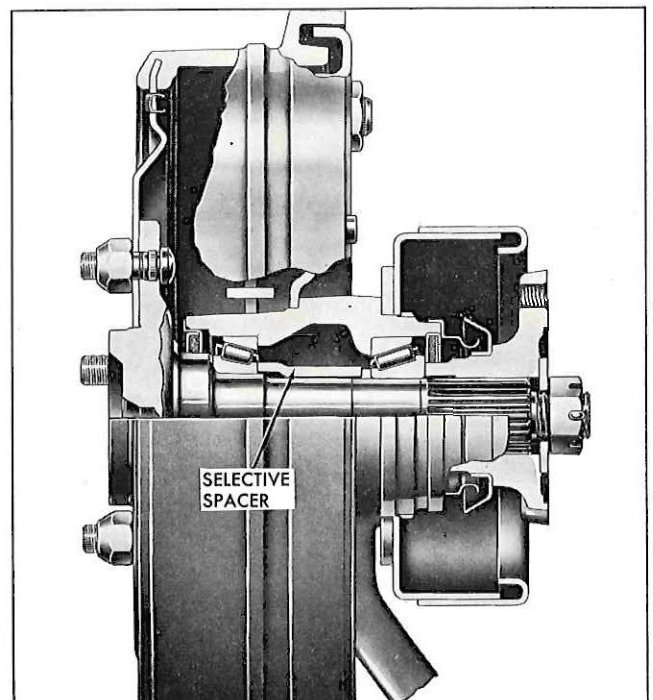


Fig. 44—Rear Wheel Spindle and Bearing

and bearing assembly. The wheel spindle rides in an inner and outer tapered bearing assembly separated by a non-crushing type spacer similar in appearance to the spacer used between the bearings of a rear axle drive pinion. A nut retained companion flange is splined to the wheel spindle to accept the universal joint.

Lip type grease seals are used on both sides of the bearing assembly to prevent grease leakage.

## BRAKES

The standard service brakes for the new Corvette include a new main cylinder, brake pedal bracket, and the self-adjusting feature used on the 1963 Chevrolet. A new parking brake control handle, and the related cables, are employed for the new model. Service brake options include several features from past models, as well as many items used for the first time in the Corvette line.

The standard brake assemblies, on all new Corvettes, are based on the duo-servo, self-adjusting units described in the Chevrolet portion, Part 1, of this issue. These units automatically adjust during moderate braking applications with the vehicle moving rearward.

The braking efficiency is improved by increasing the effective lining area of the shoes, and repositioning the lining on the shoe itself.

The standard main cylinder is a two-bolt-flange type as introduced for the 1962 Chevrolet, Chevy II, and Corvair. A new dash brace-pedal support assembly is used due to the new cylinder and the vehicle's body configuration.

### METALLIC BRAKE

The optional metallic faced brakes (R.P.O. J65) are similar in appearance to the 1962 version, however, a self adjusting feature has been incorporated. The basic brake units retain the same general configuration of the 1962 unit.

### POWER BRAKES

A vacuum suspended power brake unit, of the same the basic design and type as that used on Chevrolet models, is released as an option (RPO J50) for all 1963 Corvettes. The Corvette unit attaches directly to the dash panel with a solid type push rod rather than lever linkage.

When the entire vacuum booster and main cylinder is installed in the vehicle, the cylinder is tilted upward at the front end. Since this above center condition could possibly cause an air pocket if the lines were disconnected, a bleeder adapter is provided on the engine side of the main cylinder.

### SPECIAL PERFORMANCE BRAKES

A single option (RPO Z06) has been established to include all necessary chassis equipment for special high-performance vehicle requirements. Included in the brake portion of this option is: heavy duty metallic

lined brakes with multiple segment shoes, the finned drums, open backing plate, and the internal cooling fan, a vacuum power brake unit, and a special double chamber main cylinder. This special main cylinder has two pistons mounted on a single, common shaft. Each piston operates in a closed portion of the common bore to act as two main cylinders in tandem. Each portion of the cylinder serves two brake units of the vehicle. The front portion energizes the rear brakes, while the rear chamber operates the front wheel brakes. This separation of front and rear brake hydraulic circuits maintains at least two wheel brakes even if one circuit ruptures (Fig. 45).

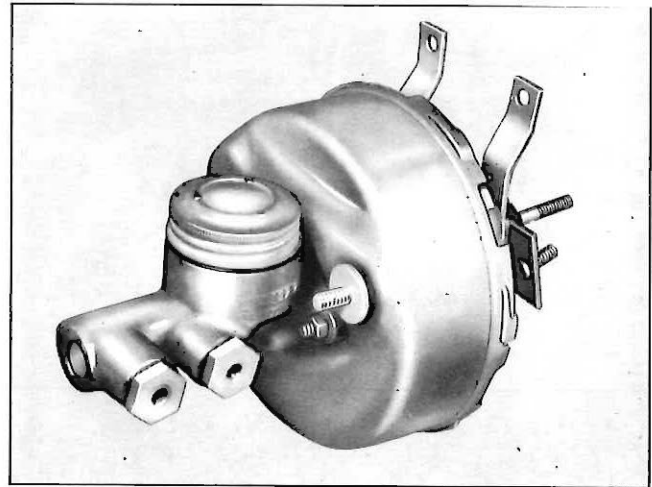


Fig. 45—Dual Main Cylinder

The automatic self-adjuster units are a basic link and lever type, however, on these units only, the adjusters operate when the brakes are *applied with the vehicle traveling forward*. This operation is the exact *opposite* of the standard brake units.

Since forward motion activates these adjusters, the linkage is mounted on the primary shoe of each brake unit.

The piston area and stroke of the Dual Cylinder are identical on both front and rear chambers, thus, fluid is delivered from both at an equal pressure and volume. Any change of unequal brake application between front and rear is eliminated by the constant adjustment value maintained by the self-adjusting feature.

## ENGINE

The engine line-up for 1963 is essentially unchanged from the previous model year with four engines offered at 250, 300, 340, and 360 horsepower respectively. While the general line-up is unchanged, revisions and improvements have been made in all areas of the basic engine design (Fig. 46).

Positive closed crankcase ventilation and a combination vacuum-centrifugal spark advance is standard equipment on all Corvette engines.

All carburetor equipped engines use a low profile polyurethane air cleaner with ram tube intake ports. The fuel injected engine has a new air cleaner system mounted on the left front fender shield. This system includes a cannister type filter chamber with a large diameter flex hose leading to the fuel injection unit. Air intake is from the left side of the radiator support.

New oil pans are used on all 1963 Corvette engines. These are required because of the new front suspension and frame configuration.

**1963 CORVETTE ENGINE SPECIFICATIONS AND TUNE-UP DATA**

| TURBO-FIRE<br>327 CU. IN.<br>V-8 ENGINES<br>Bore 4.00"<br>Stroke 3.25" |                     | 250 HP<br>(Base<br>Engine)  | 300 HP<br>(RPO<br>L75)        | 340 HP<br>(RPO<br>L76)  | 360 HP<br>(RPO<br>L84) |
|--|---------------------|---|-------------------------------|---|------------------------|
| Rated Gross<br>HP @ rpm  |                     | 250 @<br>4400   | 300 @<br>5000                 | 340 @<br>6000   | 360 @<br>6000          |
| Gross Torque<br>(ft. lbs.) @ rpm                                       |                     | 350 @<br>2800   | 360 @<br>3200                 | 344 @<br>4000   | 352 @<br>4000          |
| Compression<br>Ratio   |                     | 10.5:1  |                               | 11.25:1   |                        |
| Carburetor   |                     | 4 BBL<br>Carter<br>"WCFB"   | 4 BBL<br>Carter<br>"AFB"      |   | Fuel<br>Injection      |
| Firing Order   |                     | 1-8-4-3-6-5-7-2   |                               |   |                        |
| Test Compression   |                     | 160 psi.*   |                               | 150 psi.*   |                        |
| Normal<br>Idle<br>Speed  | Manual<br>Trans.    | 475 rpm   |                               | 750 rpm   | 850 rpm                |
|  | Auto.<br>(In Drive) | 450 rpm   |                               | —   |                        |
| Spark Plugs<br>Gap and Torque  |                     | AC-44<br>.035"—25 ft. lbs.  |                               |   |                        |
| Distributor<br>Dwell   |                     | 28° to 32°  |                               |   |                        |
| Point Gap  |                     | .019" (New) .016" (Used)  |                               |   |                        |
| Point Tension  |                     | 19-23 oz.   |                               |   |                        |
| Ignition<br>Timing**<br>(BTDC Settings<br>at Normal Idle)              |                     | 4° (Prod.)<br>4°-10°<br>Range                                       | 8° (Prod.)<br>6°-12°<br>Range | 10°   |                        |
| Tappet<br>Adjustment   |                     | Hydraulic—1 turn<br>down from "no lash"                             |                               | Mechanical<br>Inlet .008"—hot<br>Exh. .018"—hot                     |                        |
| Fuel Pressure  |                     | 5¼-6½ psi. (at idle to 1000 rpm)                                    |                               |   |                        |
| Crankcase<br>Capacity  |                     | 5 qts. (with filter<br>change)<br>4 qts. (without filter<br>change) |                               | 6 qts. (with filter<br>change)<br>5 qts. (without filter<br>change) |                        |
| Cooling System   |                     | 16½ qts.  |                               |   |                        |

\*At cranking speed with throttle open—15 psi. max. variation between cylinders.  
\*\*Range depends on locality, driving conditions, and grade of fuel. When setting, disconnect vacuum advance line and cap vacuum opening.

**CARBURETORS**

All 1963 carburetors include a vacuum port for the distributor vacuum spark advance. In addition, the AFB carburetors have a new throttle valve lever and choke housing location. All choke systems continue to be the clean air type introduced in 1962. The fuel inlet on the WCFB carburetor is repositioned.

**FUEL INJECTION**

The fuel injection unit is completely new in appearance for 1963. The intake manifold is a new two piece unit without internal bulkheads. The entire top of the manifold is a separate piece bolted to the lower portion. Material for the intake manifold is again cast aluminum.

A major component change to the air meter is a warm air choke system. Fresh, filtered air for the choke is taken from the air meter adapter. From there it is routed to the bottom of the left hand exhaust manifold. The air passes through a heat stove where it is warmed by the exhaust manifold. From the upper surface of the manifold, the warmed air is drawn into the choke control housing. This over-all choke system is comparable to a conventional carburetor choke system.

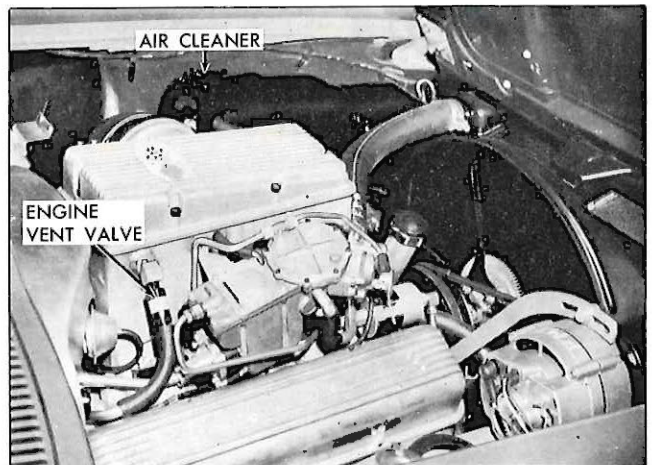


Fig. 46—New Fuel Injection

The Positive Crankcase Ventilation fresh air is also taken from the air meter adapter.

A horizontal throttle shaft replaces the vertical shaft of previous models. All related throttle linkage is new due to this revision.

The injector nozzle orifice size is now a larger diameter. The calibration changes created by the over-all revisions to the fuel injection system improves performance in all speed ranges.

**CLUTCH**

The Corvette clutch linkage continues to a mechanical type. The over-center assist spring is discontinued from 1962. The two stage pedal bracket is retained to provide a choice of normal or fast release of the clutch. The adjustment provision has been moved from the release bearing push rod to the cross-shaft upper push rod. The adjustment provision

is now quite similar to that of the Chevrolet clutch linkage.

To make an adjustment of the clutch pedal free movement, loosen both lock nuts several turns. Pull forward on the cross-shaft upper lever arm to place the release bearing in contact with the clutch release fingers. At the same time, hold the push rod toward the dash panel to place the clutch pedal in contact with the rubber bumper. With the linkage held in this position, turn the upper lock nut to a position  $\frac{3}{16}$ - $\frac{1}{4}$  inch above the swivel. Release the linkage and jam the lower nut against the swivel to lock the adjustment.

## TRANSMISSION

The transmission availability for the 1963 Corvette remains the same as the past year's model. Minor changes have been made in the three transmissions offered.

### THREE-SPEED

The three-speed transmission for the 1963 Corvette employs the same gear train, but a different clutch gear bearing retainer, extension, main-shaft and second and third shift lever. The clutch gear bearing retainer, currently used on the Chevy II, permits usage of the same clutch housings on the standard passenger car and the Corvette.

### FOUR-SPEED

The four-speed transmissions available for the 1963 Corvette will be the same as the 1962 version with the exception of the clutch gear bearing and its related components. The clutch gear bearing, previously retained by a snap ring and groove provision, is redesigned to the same style used on three-speed transmissions. This change affects the clutch gear, the bearing, the bearing retainer, and the adjusting nut and the transmission case. The new clutch gear will include a threaded area to accept the bearing adjusting nut. The new bearing has a smaller outside diameter, which coincides with the new case, and allows the inclusion of the small diameter retainer and common clutch housing.

### POWERGLIDE

The Corvette Powerglide is essentially the same unit used on the new 327 cubic inch Chevrolet. This includes the use of the Belleville spring in the reverse clutch; however, the Corvette unit retains the extension mounted shift mechanism and lacks the liquid cooler provision of the Chevrolet.

## FUEL AND EXHAUST

Due to the complete redesign of Corvette for 1963, the gasoline tanks and mountings are of an entirely new design (Fig. 47). Capacity of the regular production fuel tank for both 1963 Corvette models is increased to 20 gallons, from the 16.4 gallon capacity of the 1962 tank. The new filler neck is centrally located in the rear deck area.

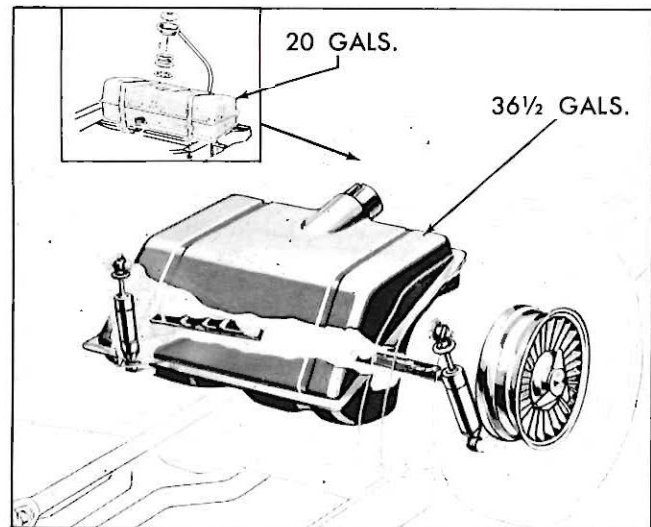


Fig. 47—Standard and Optional Fuel Tanks

Tank replacement procedure is the same in both style 1963 bodies, except that on the Sport Coupe the filler tank must be disassembled from the tank to permit tank removal.

A 36 $\frac{1}{2}$  gallon fuel tank is included in the "Special Performance Equipment" option that is available for model 837 Sport Coupes that are equipped with a 360 h.p. Fuel Injection Engine.

A new design fuel gauge and tank sending unit provide an extremely accurate fuel level reading. A two-wire harness forms the electrical circuit between the fuel tank gauge sending unit and the instrument panel-mounted gauge. With the ignition switch turned "off", it should be considered normal for the fuel gauge needle to come to rest at any position across the face of the gauge.

### MUFFLER AND EXHAUST

The exhaust systems for the 1963 Corvettes are all new due to the new chassis. Components of the new exhaust systems are not interchangeable with those used in any other systems.

Mufflers are mounted behind, instead of in front of, the rear axle, making two-piece exhaust pipes necessary for all systems. New elliptical shaped mufflers are 6.25 inches shorter than previous mufflers, but are more than nine percent greater in volume. The muffler outlets are attached to bright metal tail pipes which extend through circular openings in the lower rear body panels. Muffler corrosion resistance has been improved to give the exhaust system extended life.

## STEERING

The entire steering system is new for the 1963 Corvette and completely replaces the previous steering components of the third arm-drag link system used on all past model Corvettes.

The new system is a trailing relay type linkage completely mounted rearward of the front wheel centerline.

Other features included in the new Corvette steering are: a ball-race steering gear and flexible lower steering shaft coupling, an adjustment provision for steering wheel height, a quick-change fast steering adapter, and a shock dampener (Fig. 48).

**STEERING LINKAGE**

The pitman arm extends forward from the steering gear and contains a sealed relay rod ball stud. The relay rod connects to sealed sockets on the idler lever assembly. The tie rod assemblies are much shorter than previous units, and use ball sockets at all four mount locations.

The relay rod for standard steering units has a bolt-attached center bracket used to mount a damper assembly. This damper resembles a shock absorber and is used to reduce the transmission of road shock to the steering wheel. The opposite end of the damper is retained by a frame bracket bolted to the underside of the left frame rail at the steering gear location.

The new steering gear resembles the Chevy II steering gear with the exception of the flexible shaft coupling. Bearing preload adjustment is on the steering shaft end of the worm gear. The ratio of the steering gear is 16:1. The new gear does not have a filler plug and will be checked and filled by removing two steering gear cover screws as has been the practice for Chevy II.

The steering wheel location is adjustable for 1963 Corvettes. A new flexible steering shaft coupling,

upper steering shaft, and mast jacket are used to obtain this adjustment provision.

The flexible coupling has serrations in the upper and lower flange for attachment to the steering gear shaft and upper shaft assembly. The upper shaft has serrations for engagement with the flexible coupling and has a flat starting approximately 1/2 inches from the coupling end and extending for 2 3/4 inches. This provides for adjustment and yet retains a positive stop at both extremes of travel.

A new dished type steering wheel will be used for regular production equipment.

**FAST STEERING**

Special provisions have been made to allow for a simple method to change from the normal overall steering ratio to fast or lower ratio. This quick-change is made possible by placing two holes in the end of each steering arm. The tie rod socket will normally be placed in the rear most hole of each arm. This is considered the normal steering ratio.

To convert to fast steering, the tie rods are disconnected from the steering arms and moved to the forward holes. The tie rod assemblies are then adjusted to obtain the proper toe-in and the result is a reduction in over-all ratio or fast steering.

*NOTE: Vehicles equipped with power steering use only the front holes. Rear holes are plugged to avoid error in placement. In this case, fast steering is not obtained because of the reduced pitman arm length.*

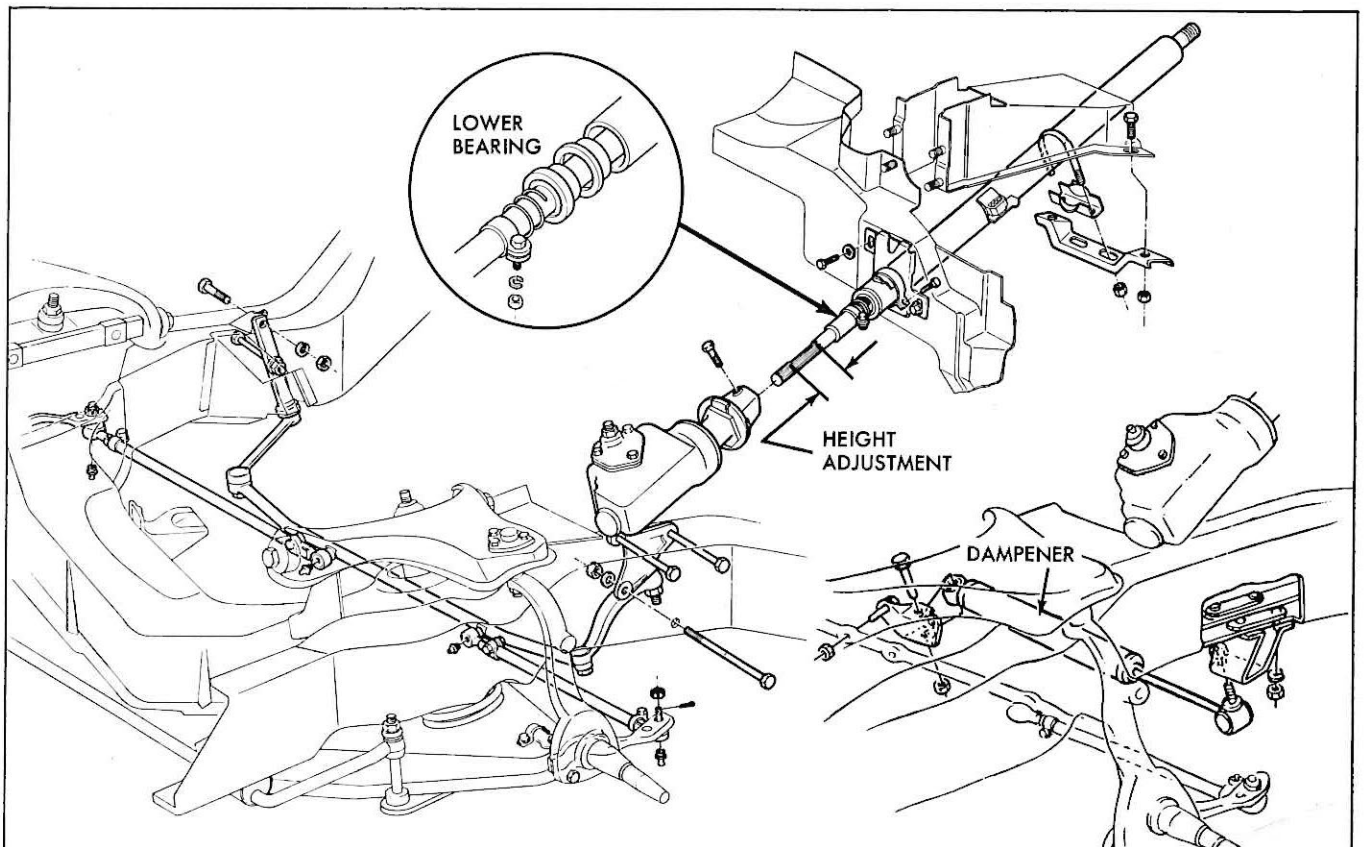


Fig. 48—Steering Linkage and Mast Jacket

## WHEELS AND TIRES

Used as standard equipment, 6.70-15-4 ply rayon blackwall tubeless tires are mounted on 15 x 5.5K wheels, having a 5 bolt attaching circle.

The spare wheel is stowed beneath the underbody in the gas tank area where the wheel is completely encircled by a fiberglass collar. This arrangement provides protection for the gas tank and allows removal of the spare tire from the underside of the vehicle. A spare wheel lock is now provided as standard equipment.

Quick take-off 15 x 6L cast aluminum wheels are offered as a regular production option.

To provide the single point wheel attachment at the center of the disc, a large adapter casting is bolted to the brake drum to furnish a pilot surface and threaded spindle for the wheel. The large spinner nut used to attach the wheel to the spindle has three wings spaced 120° apart. The spinner nuts are marked to indicate use of L.H. threaded nuts on left side of vehicle and R.H. threaded nuts on right side of vehicle. An arrow on the spinner nut shows which direction to turn the nut for removal with the lead hammer provided for this purpose.

## ELECTRICAL

The 12 volt electrical system is retained for the new Corvette, but the D.C. charging system, is replaced by a Delcotron A.C. system as standard equipment. Motorized, retractable headlights, a new windshield wiper system, and a new instrument cluster are all electrical features for the 1963 Corvette.

The instrument cluster for the 1963 Corvette is completely new. The quantity and operation of the gauges are comparable to those of the previous model with minor exceptions. One example of this is the new fuel gauge described previously in this issue.

Revisions in controls include the air vent controls that now operate vents from the plenum chamber.

The ammeter is a shunt type unit with one lead connected to the battery terminal of the horn relay, and the other lead attached to the battery post of the starting motor solenoid.

**CAUTION:** Do not use either ammeter wire as a source of current for any circuit. Such a connection may destroy the instrument.

The Delcotron charging system uses circuits that are quite similar to those of the regular Chevrolet. The one major difference is the lack of the indicator light circuit on the Corvette. Initial field excitation is obtained for Corvette Delcotrons by including a resistance wire in the accessory wiring system from the ignition switch. This wire is connected to the number 4 terminal of the voltage regulator.

The headlights of the Corvette are manually-controlled, electrically-operated units that retract into a hidden position when not in use (Fig. 49). The system contains a manual control switch on the instrument panel, and a telltale light that glows when the headlamps are on, but not locked in the exposed position. Each headlamp assembly has a reversible motor and reduction gear to position the assemblies. A hand wheel attached to the armature shaft of each motor allows the headlamps to be manually raised in the event the motor or motor wiring is damaged.

Power is supplied through a circuit breaker to the manual switch. Two leads are routed to the motors to provide current for the "up" and "down" operation of the system.

Current is supplied to the telltale lamp when the headlight switch is pulled to the on position. The telltale lamp is grounded by two parallel micro-switches that are normally closed to ground. The mechanical stop that holds the headlamps in the pre-set exposed position, strikes the micro-switch a split second before the linkage seats. When both switches have been tripped, the telltale lamp goes out, showing that the headlamps are up and locked, ready for use.

The windshield wiper motor, control switch and washer control, are all based on the regular Chevrolet type of equipment. The wiper motor attaches to the center of the dash panel and connects to direct linkage arms and transmissions. The control switch is a full electrical type that includes a push button center for operation of the wiper motor driven washer pump.

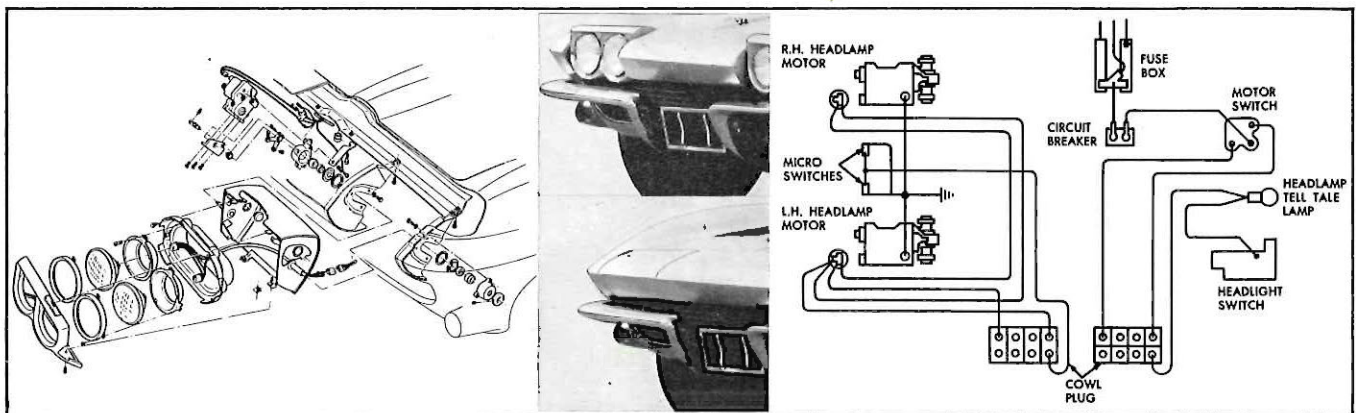


Fig. 49—Corvette Electrically Operated Retracting Headlamps