

# Cadillac

1955

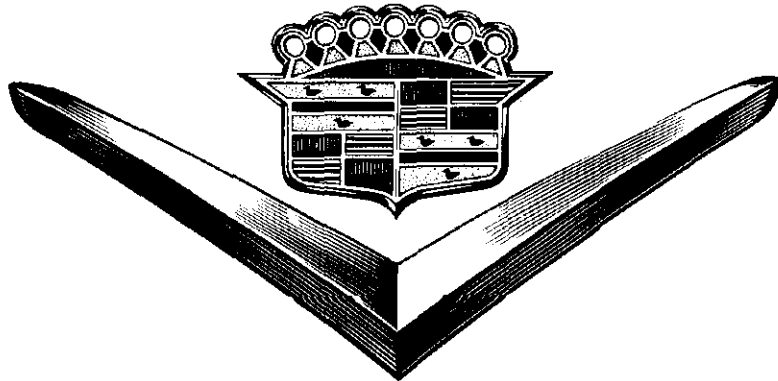
**SHOP MANUAL  
SUPPLEMENT**



# CADILLAC SHOP MANUAL SUPPLEMENT

For 1955

Covering Cadillac 55-62, 60S, 75 Passenger Cars,  
and 86 Commercial Cars



Service Department  
CADILLAC MOTOR CAR DIVISION  
General Motors Corporation  
Detroit, Michigan

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Cadillac Motor Car Division  
General Motors Corporation

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## Cadillac Craftsman Code

I HEREBY pledge myself in all my work on Cadillac cars, to be thorough and exact in diagnosing trouble; to recommend only that service which is to the best interest of the owner; to perform that work for which I am responsible in accordance with Cadillac standards to the best of my ability, and in all my dealings with Cadillac owners, to be courteous, honest, and ethical; and to do everything within my power to further the owner's satisfaction and promote his good will to Cadillac and to my dealer.



## GENERAL INFORMATION

### Foreword

This 1955 SHOP MANUAL SUPPLEMENT has been prepared for use with the 1954 CADILLAC SHOP MANUAL. These two manuals, when used together, provide complete information for servicing 1955 Cadillac cars. Keep this SUPPLEMENT with your 1954 SHOP MANUAL. The information included in this SUPPLEMENT covers only those features of the 1955 Cadillac cars which differ from corresponding features of the 1954 Cadillac that would in any way affect the service of that assembly.

The information contained herein, includes the latest service procedures and specifications relating to the 1955 models. This manual is intended, primarily, for Servicemen who are familiar with Cadillac cars of previous years.

The CADILLAC SERVICEMAN is published each month by the Cadillac Service Department to keep Servicemen up-to-date on the latest service information. Read the SHOP MANUAL . . . Read the SERVICEMAN . . . Enroll in the CRAFTSMAN'S LEAGUE . . . They will help you understand your job better. They will show you various short cuts and new tools for the performance of special operations. They will save you time.

### Arrangement of the Supplement

The front page of this 1955 SUPPLEMENT contains a rapid reference section index with corresponding page tabs at the beginning of each section. Each section contains a brief descriptive introduction, complete specifications, and torque tightness information. In sections where service operations differ from those of 1954, complete service adjustment and replacement procedures are included along with concise notes, and clearly labeled illustrations. In addition, a list of the Special Tools required to perform the operations

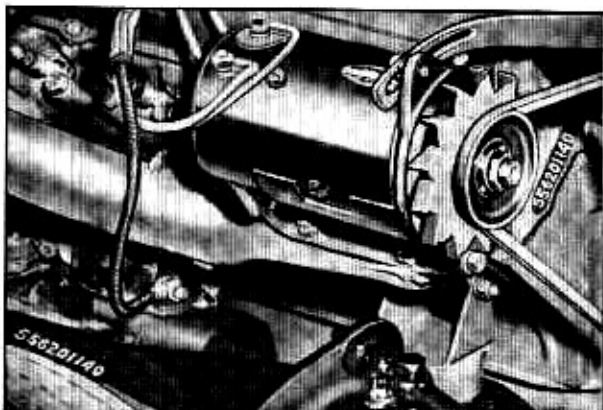


Fig. 1-1 Engine Serial Number Locations

and adjustments discussed in each section, as well as group illustrations of these tools, is provided at the end of each section.

On the final page of most sections, space is provided for personal notes and references. Here, articles from the CADILLAC SERVICEMAN should be listed along with other notes and bulletins which pertain to the material in that section.

### Identification

Each Cadillac car or chassis, when shipped, carries an engine serial number and an engine unit number. The engine serial number is used in license and insurance applications and in general reference to the car. The serial number, on all 1955 Cadillac engines, is stamped on the flat machined boss cast on the upper right hand corner on the front face of the right hand cylinder block, and is at right angles to the crankshaft, the numbers starting from the bottom. Fig. 1-1. This number is also stamped on the frame right hand side bar at the rear of the engine mounting bracket, Fig. 1-1, and on a lubrication plate attached to the left front body pillar. On coupe styles this lubrication plate is located on the left door lock pillar.

The engine serial number has at least nine digits. The first two indicate the model year, the third and fourth the series, and the last five or six



Fig. 1-2 Engine Unit Number Location

GENERAL INFORMATION

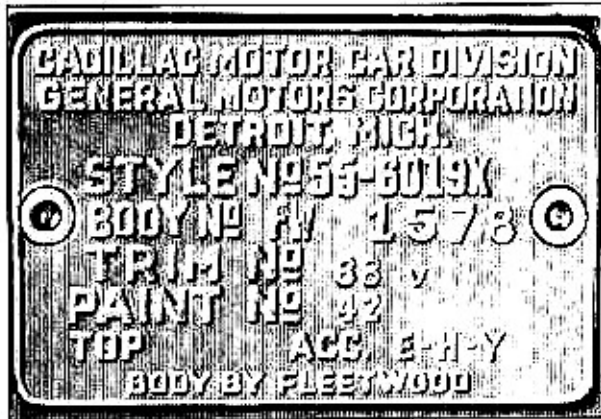


Fig. 1-3 Body Name Plate

indicate the order in which the car was completed in final assembly and is commonly referred to as the "Broadcast Number" of the car.

ENGINE UNIT NUMBER CHART

SERIES	ENGINE UNIT NO.
55-62, 60, 75	4-V 00001
55-62, 60, 75 with Air Conditioning	4-VK 00001
55-86	5-V 00001
55-86 with Air Conditioning	5-VK 00001
55-60, 62 Eldorado Engine	7-V 00001
55-60, 62 Eldorado Engine with Air Conditioning	7-VK 00001

The engine unit number on all engines is stamped on the bell housing portion of the crankcase be-

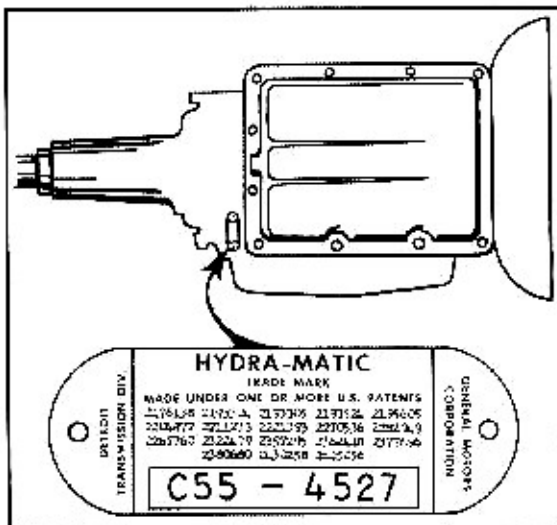


Fig. 1-4 Hydra-Matic Transmission Serial Number Location

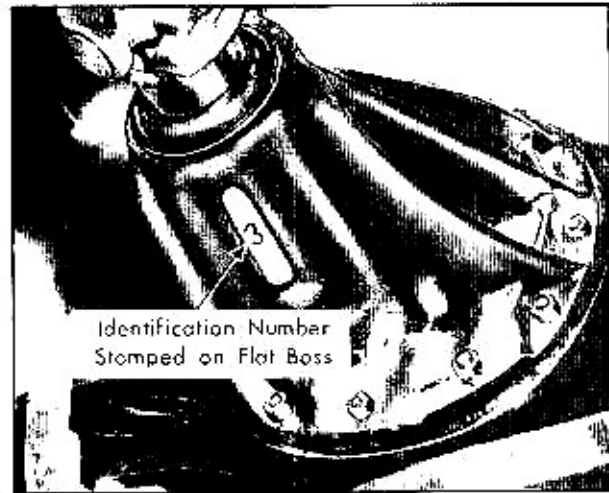


Fig. 1-5 Rear Axle Gear Ratio Identification Number

hind the left hand cylinder block, directly above the cast rib, and numbered at right angles to the crankshaft, the number starting from the left side of the housing, Fig. 1-2. The letters L.C. are added to the engine unit number on all engines built to low compression specifications. Engines assembled with .010" oversized pistons may be identified by an asterisk stamped on the block ahead of the engine unit number.

The body style number, body number, and paint and trim numbers are stamped on a plate attached to the right side of the cowl under the hood near the hood hinge, Fig. 1-3.

The Hydra-Matic transmission also has a unit number stamped on a plate attached to the bottom of the case, just to the rear of the transmission oil pan, Fig. 1-4.

The gear ratio of the differential assembly may be identified by a number stamped on a flat boss on the bottom of the case, Fig. 1-5.

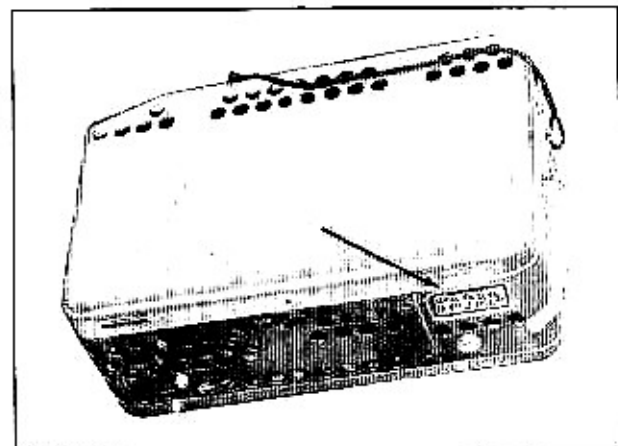


Fig. 1-6 Radio Serial Number Location





# LUBRICATION AND PREVENTIVE MAINTENANCE

## GENERAL DESCRIPTION

Thorough lubrication and preventive maintenance are necessary at regular and proper intervals, if Cadillac owners are to obtain, mile after mile and month after month, the full benefit of the troublefree performance and rugged dependability that has been engineered into their automobile.

Cadillac lubrication has been designed for simplicity, and the instructions for thorough lubrication are clear and concise. Authorized Service Stations and individual Servicemen can cooperate by following the recommendations of the 1955 Cadillac Lubrication Chart, and by helping to impress owners with the necessity of lubricating their cars according to the schedule recommended by Cadillac.

THE LUBRICATION NOTICE (Fig. 2-1) is a plate on the left front door body pillar. The mileage and date at which a lubrication is performed should be posted here. The engine serial number is also printed on this plate. On coupe styles, this plate is located on the door lock pillar.

THE LUBRICATION CHART (Fig. 2-2) illustrates and explains briefly, each of the various points of lubrication on the car. It should be used for reference until the Serviceman is thoroughly familiar with the 1955 series cars. Complete explanations of each point are given under "Service Information" in this section of the manual.

THE LUBRICATION SCHEDULE recommended by Cadillac is based upon service at two month or 2,000 mile intervals, whichever occurs first. In cases where the car is driven less than 2,000 miles in that period of time, the lubrication

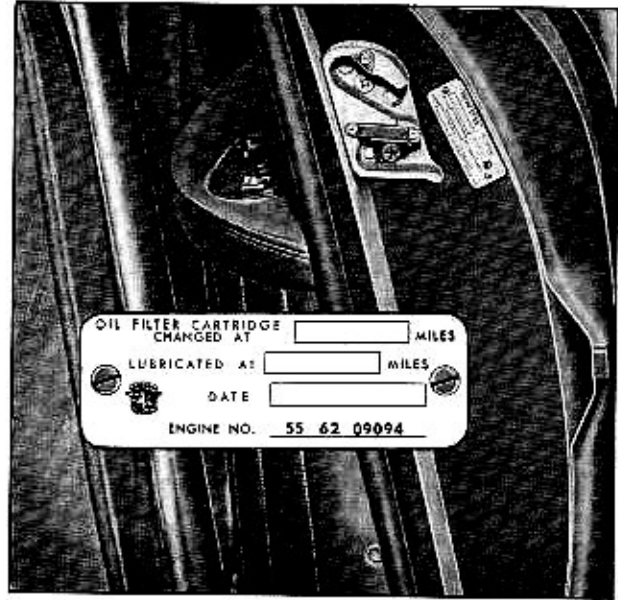


Fig. 2-1 Lubrication Notice

should be performed every two months even if the car has only been driven 1500, 1000, or even 500 miles.

THE LUBRICATION AGREEMENT is designed by Cadillac to promote thorough lubrication at scheduled intervals. The owner purchases complete lubrication for his car, including engine oil changes for 12,000 miles and a Hydra-Matic transmission fluid change at 25,000 miles, at a special price paid in advance. This plan assures proper lubrication and encourages owners to bring their cars in at regular intervals for a Cadillac "inspection".

## SERVICE INFORMATION

### (1) Lubrication Schedule

#### a. Every 2000 Miles

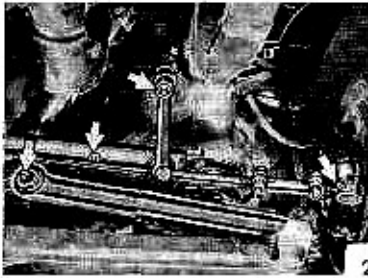
- Lubricate chassis fittings.
- Lubricate hand brake cables and linkage.
- Lubricate accelerator linkage.
- Lubricate brake stop switch actuating arm.
- Inspect rear axle lubricant level.
- Drain and replace engine oil.
- Check tire pressures.
- Clean filter on crankcase breather cap.
- Clean and refill carburetor air cleaner.
- Oil generator oil cups.
- Lubricate hood catch and hinges.
- Oil distributor.
- Lubricate neutral switch actuating pin.
- Inspect brake fluid level in master cylinder

filler tube.

- Inspect fluid level in power steering pump reservoir.
  - Inspect steering gear lubricant level.
  - Inspect coolant level in radiator.
  - Inspect transmission fluid level.
  - Inspect battery fluid level and check specific gravity.
  - Lubricate body hardware.
- #### b. Miscellaneous Lubrication Operations
- Drain and refill Hydra-Matic transmission every 25,000 miles.
  - Clean, replace and adjust front wheel bearings - every 25,000 miles or at the time that the brakes are relined
  - Remove and replace engine oil filter cartridge at least every 6,000 miles.



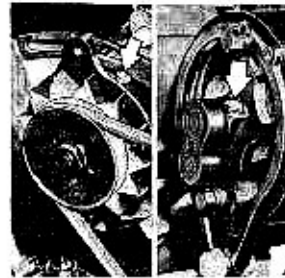
## LUBRICATION AND PREVENTIVE MAINTENANCE



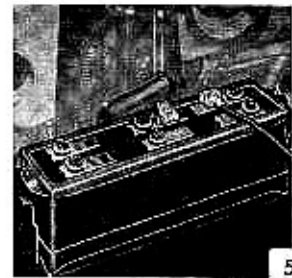
**Steering and Front Suspension**  
 Idler Arm, Tie Rod, Drag Link, Inner Lower Suspension Arm, Right Side.  
 Chassis Lubricant with grease gun.  
**Every 2000 miles**



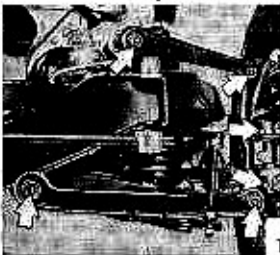
**Breather Cap**  
 Clean copper gauze in a solvent and dip in engine oil.  
**Every 2000 miles**



**Generator**  
 Fill both cups with 10-W engine oil.  
**Every 2000 miles**



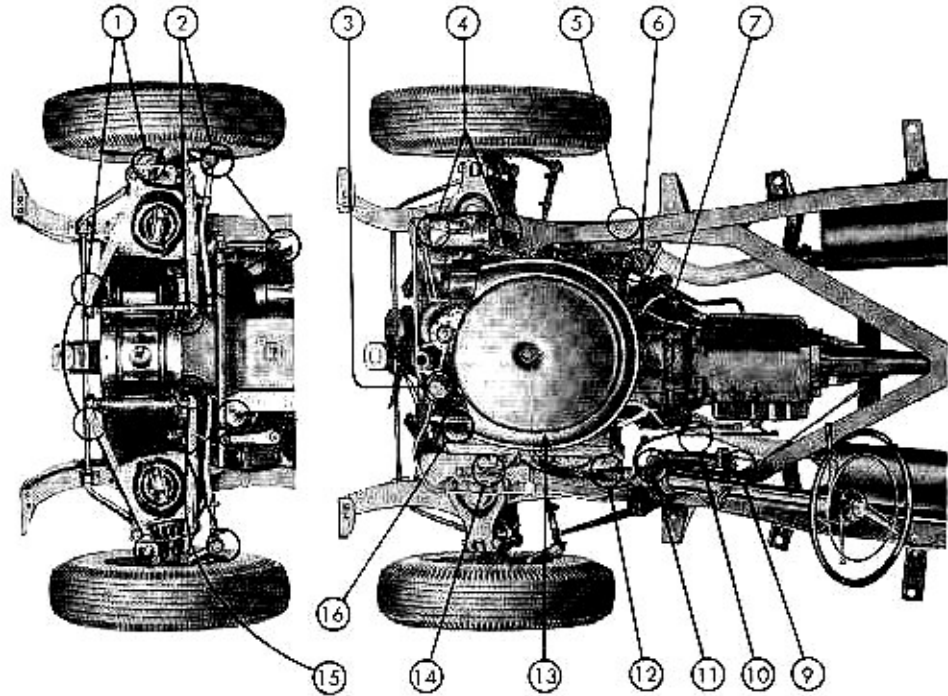
**Battery**  
 Add distilled water to bring level up to bottom of slot in well.  
**Every 2000 miles**  
 In warm weather check level every two weeks.



**Suspension Arms and Steering Knuckle Assy.**  
 Chassis Lubricant with grease gun.  
**Every 2000 miles**



**Power Steering Tank**  
 (on cars so equipped)  
 Check fluid level and fill to mark on tank with AQ-ATF.  
**Every 2000 miles**



**Steering and Suspension**  
 Tie Rod, Drag Link, Inner Lower Suspension Arm, Left Side.  
 Chassis Lubricant with grease gun.  
**Every 2000 miles**



**Engine Oil Filter**  
 Replace filter cartridge  
**Every 6000 miles**  
 In dusty areas replace more frequently.

**Front Wheel Bearings**

Remove bearings, clean and repack with wheel bearing lubricant and adjust.

**Every 25,000 Miles or at Brake Reline**

**Rear Axle**

Check level and add Multi-Purpose Type gear lubricant to bring level up to filler hole

**Every 2000 miles**

Drain and refill only when unit is overhauled or when temperatures are consistently below 0°F. in which case 80 SAE viscosity lubricant should be used.

**Hood Release Mechanism**

Apply a small amount of lubricate to hood lock bolt and catch.

**Every 2000 miles**

**Radiator**

Inspect radiator fluid level.

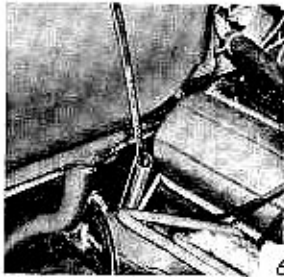
**Every 2000 miles**

Drain, flush and refill.

**Twice a Year**

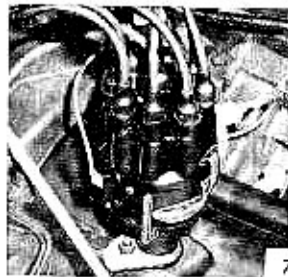
Fig. 2-2 Lubrication Chart

## LUBRICATION AND PREVENTIVE MAINTENANCE



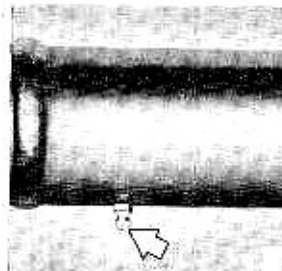
**Hydra-Matic Transmission**

Check level every 2000 miles.  
Drain and refill,  
Every 25,000 miles



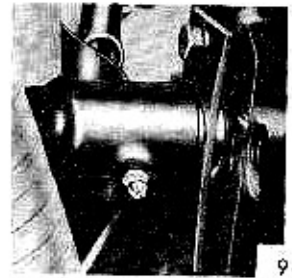
**Distributor**

Fill tube with 10-W engine oil.  
Every 2000 miles



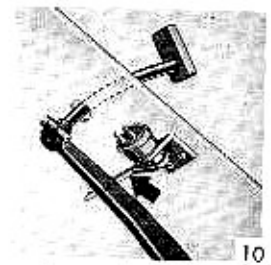
**Propeller Shaft Splines**  
(55-75 and 86 Series Only)

Apply chassis lubricant with grease gun.  
Every 2000 miles



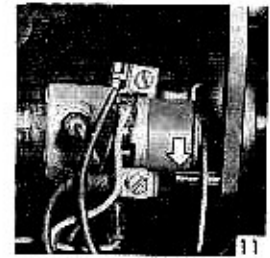
**Brake Pedal Fitting**

Apply chassis lubricant.  
Every 2000 miles



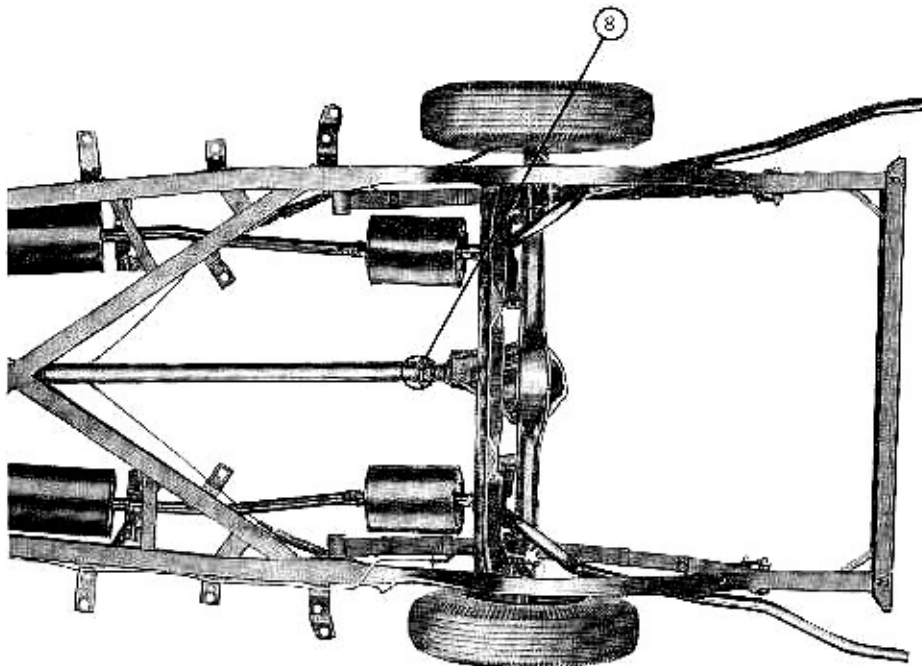
**Stop Light Switch**

Apply Lubriplate where indicated by arrow.  
Every 2000 miles



**Hydra-Matic Neutral Switch**

Apply Lubriplate where indicated by arrows.  
Every 2000 miles



**Body Lubrication**

Apply a few drops of light oil to door hinges, door checks and lock bolt rollers. Clean off dust and old lubricant from door striker plate and apply a slight amount of Lubriplate.

Apply DC-4 silicone compound to door weatherstrips, window run channels, and sealing strip on gasket on closed coupes.  
Every 2000 miles

Apply Lubriplate to seat adjustment track springly. Apply a slight amount of powdered graphite to keys and insert in lock cylinders.  
Every 6000 miles

**Brakes**

Inspect master cylinder fluid level.

At every brake adjustment and at relina.

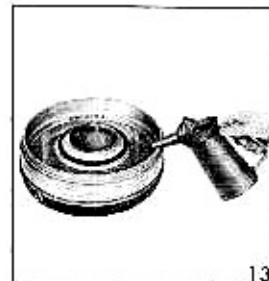
Lubricate brake cables, brackets, and levers with 10W engine oil.  
Every 2000 miles

**"Oil Can" Lubrication**

Apply a few drops of engine oil to hood hinges, clutch linkage, and accelerator linkage.  
Every 2000 miles

**Tire Inflation**

	55-62, 60S	55-75	55-86 Conv.
Inflate tires to . . .	24 lbs.	28 lbs.	{ 24 lbs. front 30 lbs. rear



**Air Cleaner**

Drain, clean and refill with one pint of oil. Use SAE 40 above 32°F and SAE 20 below 32°F.  
Every 2000 miles



**Steering Gear**

Add steering gear lubricant to bring level up to filler plug on manual and power gears.  
Every 2000 miles

Fig. 2-2 Lubrication Chart

## LUBRICATION AND PREVENTIVE MAINTENANCE

### (2) The 2000 and 4000 Mile Inspections

When new Cadillac cars are brought in for service during the 90 Day - 4,000 Mile Warranty Period, Servicemen should use the list of inspections and operations, Fig. 2-3, as a guide.

### (3) Related Items

In addition to the lubrication operations, there are several regularly required maintenance items which should be brought to each owner's attention. They are as follows:

- Clean Power Brake filter every 2,000 miles.
- Cooling System - Flush twice a year - Spring and Fall. Add rust inhibitor and DuPont Sealer. See Section 13 for information relative to preparation of cooling system for anti-freeze.
- Gasoline lines and strainers - Clean out twice a year - Spring and Fall.
- Engine oil pan - Remove and clean once a year, after the "Winter" season.
- Tires - Interchange every 4,000 Miles (or less).
- Brake System - Clean and flush once a year.

### (4) Body

#### a. Body Hardware

Lubrication of the body hardware is an important part of each 2,000 mile lubrication operation. The following should be performed:

Apply a slight amount of petrolatum to the door wedge plates and lubricate both sides of the lock frame at the lift bolt cutout with a thin film of Lubriplate. Also lubricate the bottom surface of the lower guide channel in the striker with Lubriplate. Be sure to wipe off dust and old lubricant before applying the new. Use lubricant sparingly. Apply a drop or two of 10W oil at the lift bolt roller and allow it to drain inside the roller. The door check spring on sedan rear doors should be lubricated with 10W oil. Apply Lubriplate to the hood lock mechanism and oil the hood hinges.

The following additional operations should be performed twice a year or every 6,000 miles: Apply powdered graphite to keys and insert in lock cylinders; clean dust and old lubricant off of front seat adjustment track and apply Lubriplate sparingly.

#### b. Body Weatherstrips

The mechanical sealing strip hinge on closed coupes should be lubricated along its entire length with Lubriplate.

The sealing strip awning gasket should be lubricated on both sides with DC-4 Silicone Compound every 2,000 miles or as necessary.

Apply DC-4 Silicone Compound every 2,000 miles, if necessary, to door and window weatherstrips and run channels to prevent squeaks. Wipe off any excess lubricant to reduce the possibility of dust sticking to the treated surface.

#### c. Hydro-Lectric System (Convertible Coupe Styles and Eldorado Only)

On 1955 series cars, the Hydro-Lectric system is used only for raising and lowering the top in the Eldorado and Convertible Coupe styles. The Hydro-Lectric system is a sealed unit and is not vented to the atmosphere. Therefore, it is not necessary to replace hydraulic fluid periodically. The system is "self-air bleeding". Should air become trapped in the lines due to replacement of hydraulic units, a few operational cycles of the top will expel the trapped air into the reservoir.

The Hydro-Lectric motor and pump assembly, on Convertible Coupe styles, is located on the trunk floor pan beneath the top well. On the Eldorado, this assembly is located in the trunk on the left side to the rear of the wheel housing. A reservoir filler plug is provided should it become necessary to add fluid. The fluid capacity of the Hydro-Lectric system is 3/4 pint.

### (5) Chassis Suspension

The front wheel bearings on all series cars require repacking with wheel bearing grease and adjustment every 25,000 miles, or when brakes are relined. When lubricating these bearings, always use grease meeting the G-12 specifications.

Lubrication fittings are provided where necessary on the chassis of all 1955 series cars. These points must be lubricated every 2,000 miles. The locations of these fittings are given in the Lubrication Chart, Fig. 2-2.

The rear upper control arm bushings are fitted with lubrication fittings which point downward on the right side toward the opening between the frame side bar, front cross member and reinforcing brace, and upward on the left side. Use of a 12" extension on the grease gun is required to reach the fitting through the bottom of the opening on the right side.

If any of the lubrication fittings are found to be broken, plugged, or missing, be sure to secure authorization for the installation of new fittings. No point should be left unlubricated.



## LUBRICATION AND PREVENTIVE MAINTENANCE

### SUGGESTED OPERATIONS AT THE FIRST 2000 AND 4000 MILES

#### At 2000 Miles

1. Check with the owner concerning his experience with the car and clarify any questions he may have on controls or function of any part of the car.
2. Correct any conditions reported to you by the owner when your inspection also indicates that the car is not normal.
3. Road test the car, checking operation of the following and correct only when necessary:
  - (a) Carburetor and manifold heat control valve.
  - (b) Steering.
  - (c) Brakes.
  - (d) Instruments, all controls, and lights.
  - (e) All accessories.
  - (f) Hydra-Matic transmission.
4. Remove and inspect fuel filter element. Do not attempt to clean. Replace if necessary.
5. Lubricate and change engine oil. The break-in engine oil should have been replaced at 500 miles.
6. Make general inspection for coolant, brake fluid, fuel, or any lubricant leaks. (Do not confuse with normal seepage.)
7. Tighten radiator hoses, upper and lower. Check Heater hoses.
8. Tighten intake and exhaust manifold screws and nuts. (25 - 30 Ft. Lbs.).
9. Tighten rear spring clips and "U" bolts (45 to 52 Ft. Lbs.).
10. On Air Conditioner equipped cars, clean and wash filters.

#### At 4000 Miles

1. Check with the owner concerning his experience with the car and clarify any questions he may have on controls or function of any part of the car.
2. Correct any conditions reported to you by the owner when your inspection also indicates that the car is not normal.
3. Road test the car, checking operation of the following and correct only when necessary:
  - (a) Carburetor and manifold heat control valve.
  - (b) Steering
  - (c) Brakes.
  - (d) Instruments, all controls, and lights.
  - (e) All accessories.
  - (f) Hydra-Matic transmission.
4. Lubricate and change engine oil. (This operation to be charged to the owner.)
5. Suggest to owner that tires be rotated. (Owner's expense.)
6. Make general inspection for coolant, brake fluid, or any lubricant leaks. (Do not confuse with normal seepage.)
7. Clean and adjust points and spark plugs and reset ignition timing. (Point gap .016", plug gap .035".)
8. Adjust brakes. Check fluid level and free pedal travel.
9. Adjust steering gear.
10. Check toe-in and adjust when necessary. (1/4" preferred.)

Fig. 2-3 Suggested Operations at 2,000 and 4,000 Mile Inspection

## LUBRICATION AND PREVENTIVE MAINTENANCE

### (6) Steering Gear

Special Steering Gear Lubricant, meeting G.M. 4673-M specifications, is required in the gear housing of the power steering gear unit. The lubricant level should be inspected every 2,000 miles and additional lubricant added to bring the level to the filler plug opening. Special tubes of Steering Gear Lubricant 4673-M are available at the Factory Parts Department under Part No. 146 1598. Each tube contains sufficient lubricant for one complete refill of the power steering gear.

The fluid level in the pump reservoir should be checked every 2,000 miles and filled with Automatic Transmission Fluid, Type "A".

The Hydra-Matic transmission neutral switch actuating pin should be lubricated every 2,000 miles with a small amount of Lubriplate to prevent undue wear at the switch arm and pin.

### (7) Rear Axle

Check the lubricant level in the rear axle every 2,000 miles and add fresh lubricant if necessary. Draining and refilling of the differential is necessary only when the unit is removed for overhaul, or when seasonal temperature changes make it necessary to use a fluid of lower viscosity. SAE 90 Multi-Purpose type gear lubricant should be used except in localities where winter tempera-

tures are consistently below 0°F. In these localities SAE 80 should be used. When a replacement differential is installed, use the special "break-in" lubricant supplied with the differential.

### (8) Brakes

The fluid level in the brake master cylinder filler tube should be checked every 2,000 miles, and every time the brakes are relined or adjusted. Fill with Delco Super No. 11 brake fluid to 3/4" from the top of the filler cap boss. Fig. 2-4. The remote filler tube is located on the left side of the cowl, near the hood hinge, in the engine compartment. Brake cables, brackets, and levers should be lubricated every 2,000 miles with 10W engine oil.

On cars equipped with Power Brakes, the cylinder air filter should be cleaned every 2,000 miles. This may be done by removing the spring type retainer, screen and filtering element (hair). Wash filtering element (hair) in solvent, shake solvent out thoroughly and reinstall.

In addition, lubricate the vacuum piston leather once a year. This may be done by removing the pipe plug from the cylinder shell and injecting Delco Hydraulic Shock Absorber Fluid up to the point where it runs out of the filler hole.

The brake stop light switch arm, located under the brake pedal, below the floor pan, should be lubricated with Lubriplate every 2,000 miles.

NOTE: The braking system must be flushed once a year. This is particularly important on cars equipped with the Power Brake system where dirt under the ball check will affect operation of the system.

### (9) Engine

#### a. Engine Oil Recommendations

Use of the proper engine oil is of great importance in obtaining maximum performance and satisfaction from the Cadillac engine.

In service, crankcase oils may form sludge, varnish, or corrosive acids unless properly protected. For maximum protection of the Cadillac engine under all normal driving conditions it is recommended that oils designated "For Service MS" or "For Service DG" be used. In addition, only those crankcase oils should be used which have high wear resistant qualities with low combustion chamber deposit forming characteristics, and which have proven, through use, to be satisfactory in the Cadillac high compression engine.

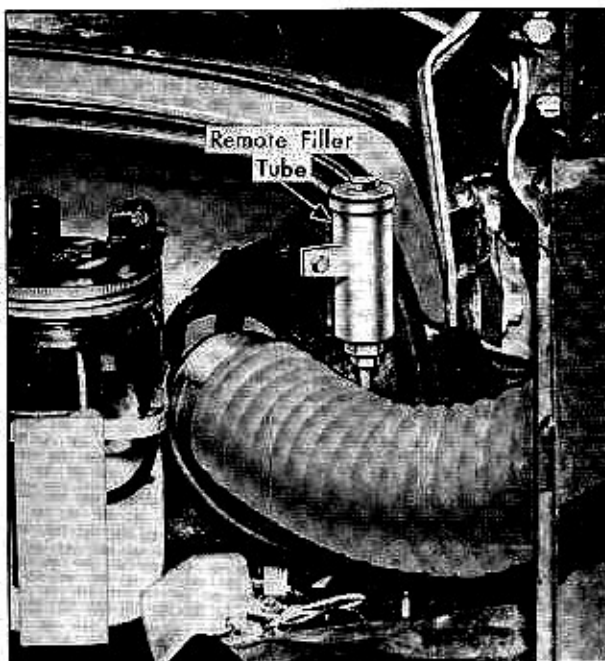


Fig. 2-4 Master Cylinder Remote Filler Tube

## LUBRICATION AND PREVENTIVE MAINTENANCE

During the first 500 miles of operation, the oil in the crankcase when the car is shipped should be used. When it is necessary to add oil during this period, use nothing heavier than S.A.E. 10W oil in winter or 20 in the summer. Change the oil at the end of 500 miles.

After the first 500 miles, the crankcase oil should be selected to give the best performance under the individual climatic and driving conditions. If the car is driven regularly at high speeds, or if the prevailing temperature averages 90° or above, S.A.E. 30 oil may be used. Recommendations for engine oil viscosities for all 1955 Cadillacs are shown in Fig. 2-5.

Any field attempt to improve lubricants by adding so called "dopes, solvents, friction reducing compounds and other trick materials" to engine oils, Hydra-Matic transmission fluids, and differential lubricants should be avoided. The use of these materials is entirely unnecessary to the proper operation of a Cadillac car.

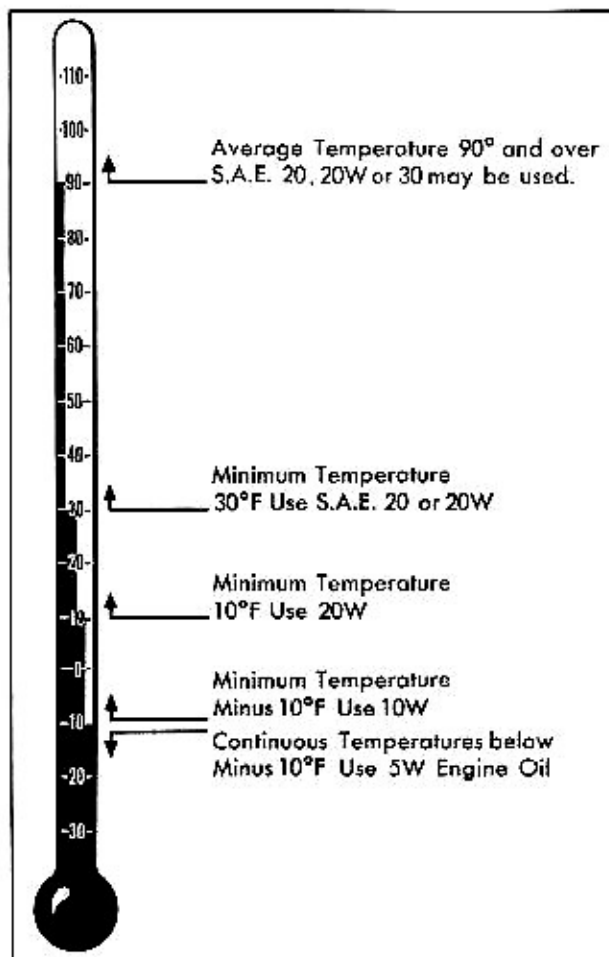


Fig. 2-5 Engine Oil Viscosity Chart

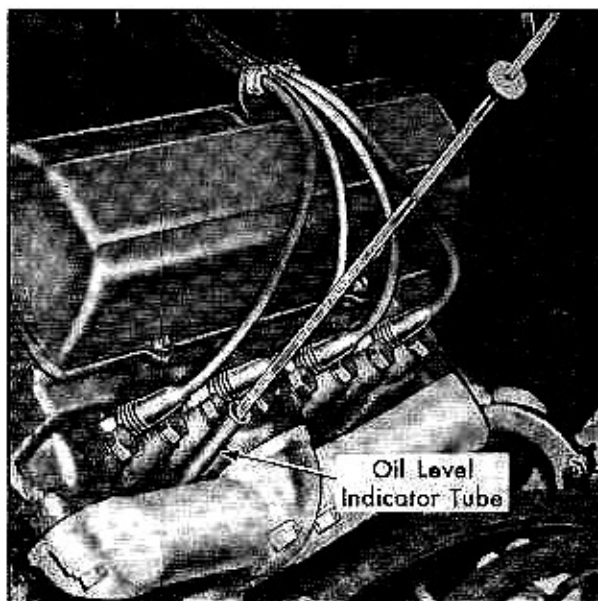


Fig. 2-6 Checking Engine Oil Level

### b. Adding Engine Oil

Always maintain the correct oil level. Oil should be added when the level falls to the "ADD OIL" mark on the dipstick. Do not add oil above the "FULL" mark, Fig. 2-6.

### c. Changing Engine Oil

After the initial drain at 500 miles and a second oil change at 2,000 miles, engine oil should be drained and replaced every two months or 2,000 miles, whichever occurs first. More frequent changes are required with unusual stop and go operations, dusty road travel or during prolonged cold or wet climatic conditions. In extreme cases, it may be advisable to recommend an oil change after 1,000 or even 500 miles of operation.

Drain the crankcase only after the engine has been heated to normal operating temperature. The benefits of draining are minimized if the crankcase is drained when engine is cold, as some suspended foreign matter will cling to the sides of the oil pan and will not drain out readily with slower moving cold oil. Flushing the crankcase is not recommended. The engine oil pan should be removed and cleaned once a year, after the "Winter" season.

### d. Engine Accessories

The generator has two oil cups, one at each end. These cups should be filled with 10W engine oil every 2,000 miles.

NOTE: If the oil reservoir in the commutator

## LUBRICATION AND PREVENTIVE MAINTENANCE

end bearing becomes completely exhausted through failure to lubricate at regular intervals, the reservoir should be restored by filling the oil cup 3 times consecutively, allowing time between fillings for the oil to soak down.

At each 2,000 mile lubrication, 10W engine oil should be added to the filler tube (located at the front of the distributor) until the oil level is brought up to the top of the filler tube.

When the distributor points are adjusted, cleaned, or replaced, the distributor breaker plate bushing, felt, pivot pin, and distributor cam wick should be lubricated with 1 or 2 drops of No. 10W oil. Lubricate the distributor cam at this time using Delco-Remy Cam and Bearing Lubricant (M-31 Lubrico).

Whenever the crankcase oil is changed, the copper gauze in the filler cap should be cleaned in a solvent and dipped in engine oil. This operation of oiling the cap should also be performed when conditioning a new car for delivery. The carburetor air cleaner should also be cleaned and oiled as follows:

1. Loosen wing nut on top of air cleaner and remove shroud, filter element and reservoir as an assembly from the carburetor.

NOTE: On engines equipped with two carburetors, it will be necessary to remove both wing nuts holding air cleaner shroud to carburetors, remove each cleaner from shroud and service in same manner as standard air cleaner.

2. Remove shroud from air cleaner assembly.

3. Lift filter element off of reservoir and pour oil out of reservoir.

4. Wash all parts in solvent.

5. Fill reservoir to correct level as indicated on inside of reservoir, with proper grade of oil. Use SAE 40 oil when average temperature is above 32°F and SAE 20 oil when average temperature is below 32°F.

6. Inspect reservoir to carburetor gasket; replace if damaged or full contact is not observed.

7. Place filter element and shroud on reservoir, and install air cleaner assembly on carburetor.

8. Tighten wing nut finger tight.

It is recommended that the engine oil filter element be replaced every 6,000 miles under normal car usage.

If the car has been subject to severe driving conditions, such as constant travel over dusty roads or excessive stop-and-go driving in cold weather, more frequent replacement of the filter element will be necessary.

Remove the filter cover screw, cover, and gasket, and remove the element. Remove any oil which may be in the housing, and be sure all sludge is cleaned out completely.

Install element, cover with new gasket, and tighten cover screw. Check for leaks at the cover gasket with engine running at fast idle. After engine has run for 3 or 4 minutes, stop engine and check engine oil level. Add oil to bring level to the "Full" mark.

### (10) Hydra-Matic Transmission

#### a. Checking Fluid Level

The dipstick and filler tube for the Hydra-Matic transmission are located under the hood at the right rear side of the engine on all 1955 Cadillac cars, for convenience in checking and filling. The fluid level should be checked every 2,000 miles and fluid added to bring the level to the "Full" mark on the dipstick. The oil level is always checked after the engine has been running to be sure the fluid coupling is full in order to obtain an accurate reading. Run engine with selector lever in "N" (neutral) position, at 800 R.P.M. for 2 minutes. Reduce the engine speed to slow idle, remove and wipe dipstick, and check fluid level. With the engine still running, add fluid through

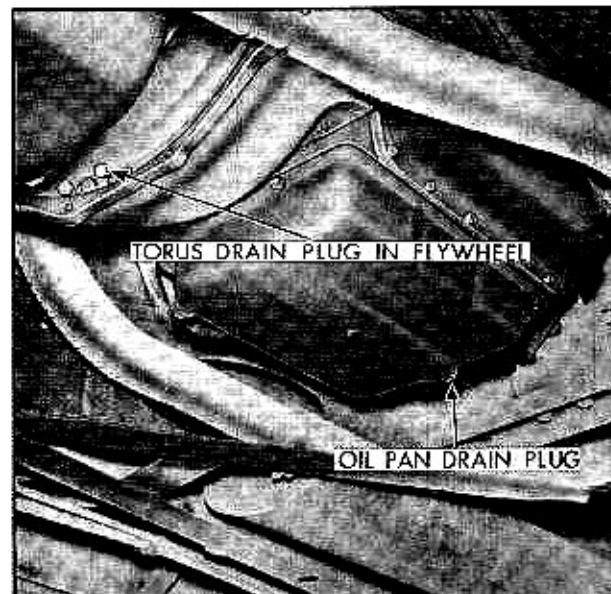


Fig. 2-7 Transmission Drain Plugs

## LUBRICATION AND PREVENTIVE MAINTENANCE

dipstick tube to bring level up to "Full" mark on the dipstick. ("Low" to "Full" marking is 1 quart.)

Whenever the Hydra-Matic transmission is drained and refilled or fluid is added, use only Cadillac Hydra-Matic Transmission Fluid or an Automatic Transmission "Fluid Type "A" with an Armour Qualification number embossed on top of container (Brand Name AQ-ATF ---). This assures the user that the fluid has all the properties essential for correct operation of the Hydra-Matic transmission.

### b. To Replace Fluid

1. Remove starter motor.
2. Remove lower flywheel housing cover plate.
3. Remove drain plugs, Fig. 2-7, from transmission oil pan and front face of flywheel.
4. Allow old fluid to drain completely and re-install drain plugs, lower flywheel cover plate, and starter.
5. Add 7 quarts of Automatic Transmission Fluid into the oil filler tube.
6. Run the engine at a speed of 800 R.P.M. for approximately 1-1/2 minutes with the selector lever in "N" (neutral).
7. Reduce engine speed to slow idle (carburetor off the fast idle step) and add 2-1/2 to 3 quarts of fluid to bring the level up to the "F" mark on the dipstick.

NOTE: The capacity of the Hydra-Matic transmission is approximately 10 quarts for a refill, but the correct level is determined by the mark on the dipstick rather than by the amount added. Do not overfill as foaming may result when the oil is hot.

8. Shut off engine and replace dipstick.

### (11) Air Conditioner

Frigidaire 525 viscosity oil is used in the Air Conditioner unit. For information concerning the checking and adding of oil at the compressor, see Air Conditioning, Section 16A.

### (12) Series 75 and Commercial Chassis

Instructions for lubrication of 1955 series 75 and 86 Cadillac commercial chassis are included in the Lubrication Chart, Fig. 2-2. The only difference is in the addition of a lubrication fitting at the splined joint at the rear of the rear propeller shaft.

### (13) Points Requiring No Lubrication

No lubrication is required at the water pump, the rear wheel bearings, or the universal joints, as all of these bearings are packed at assembly.

No lubrication of the rear springs is required, as the shackles are rubber mounted, and the spring leaves are fitted with waxed interliners. It is important that no lubrication be attempted at these points as lubrication is harmful to the proper functioning of the springs.

### (14) Capacities

Unit	62,60S	1955 Series 75	86 Comm.
Rear Axle . . . . .	5 pints	5 pints	5 pints
Engine Crankcase . . . . .	5 quarts	5 quarts	5 quarts
When filter element is replaced add . . . . .	.1 quart	.1 quart	.1 quart
Cooling System			
With Heater . . . . .	20-1/4 quarts	22-3/4 quarts	20-1/4 quarts
Without Heater . . . . .	.18 quarts	.18 quarts	.18 quarts
Gasoline Tank . . . . .	20 gallons	20 gallons	20 gallons
Tire Pressure			
Front . . . . .	24 lbs.	28 lbs.	24 lbs.
Rear . . . . .	24 lbs.	28 lbs.	30 lbs.

NOTE: Add 4 lbs. when driving at higher speeds.





# BODY

## GENERAL DESCRIPTION

The 1955 line of Cadillac cars consists of four different series and eight body styles, as described in the specifications at the end of this section. Chassis for commercial bodies are available in the 1955-86 series.

Several important design changes have been made in the various body styles to enhance interior and exterior appearance, provide greater safety, and to simplify some service operations.

The body is slightly recessed above the side molding, which extends forward from the vertical stone guard at the rear fender, to add to the appearance of width and close-to-the-ground stability. At the rear of the car, below the deck lid, six vertical chrome moldings compliment the upright lines of the rear bumper guards.

The distinctively curved rear window pillar, formerly only on closed coupes, is now used on sedan models also. In addition, the center body pillar, on 60S series cars, is narrower to provide greater passenger visibility without sacrificing structural strength.

New interior trim styles and fabrics, as well as a wide selection of new exterior colors, have been made available for 1955. Three highly iridescent colors, for the Eldorado series only, have been added.

New rear fender and tail lamp styling is used on the Eldorado coupe, with the fuel filler access door in the left fender, below the tail lamp tube.

Maximum windshield wiper blade travel has been accomplished by using a large drive pulley on the wiper motor and a special cam and follower arrangement on the transmission shaft and wiper arm which assures blade contact at the curved ends of the windshield.

Windshield molding attachment has been revised to simplify removal and installation of the windshield glass, without removal of the instrument panel cover.

Body service operations for 1955 are very similar to those outlined in the 1954 Shop Manual. Those operations which have changed are explained in the following notes.

## SERVICE INFORMATION

### (1) Windshield Wiper Arm and Cam Removal and Installation

1. Remove arm and blade assembly by pulling the outer section of the arm assembly toward the center of the car to disengage the cam follower

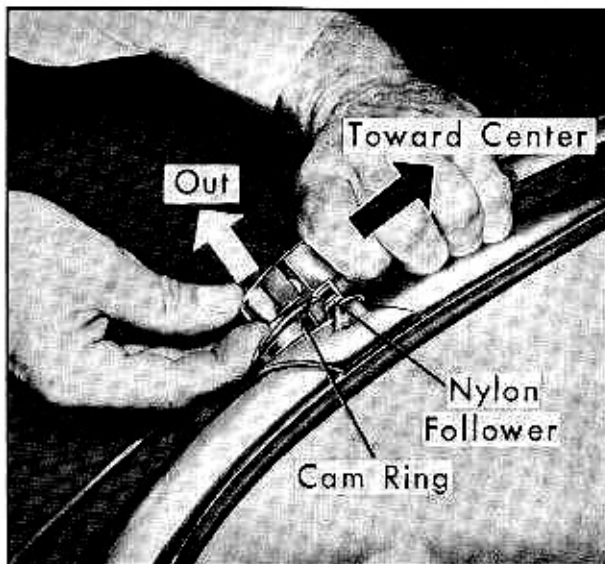


Fig. 3-1 Removing Wiper Arm

from the cam ring. Pull outward on the lower section of the arm to remove assembly from the transmission shaft. Fig. 3-1

2. Remove transmission spanner nut.

3. Remove wiper arm cam ring and escutcheon from transmission shaft.

4. Reverse above procedure to install, making certain that key on cam is located in keyway in escutcheon. Before installing wiper arm, press in on end of shaft to attain proper cable tension.

### (2) Outside Door Handle Removal and Installation (60S and 6219)

#### a. Removal

1. Raise door window to full "up" position.

2. Remove door inside finish panel.

3. Remove rubber plug from access hole "A" directly behind the door handle on 60S series front doors. Fig. 3-2.

4. Remove attaching screw "B", using a magnetized screw driver. Do not drop between door panels.

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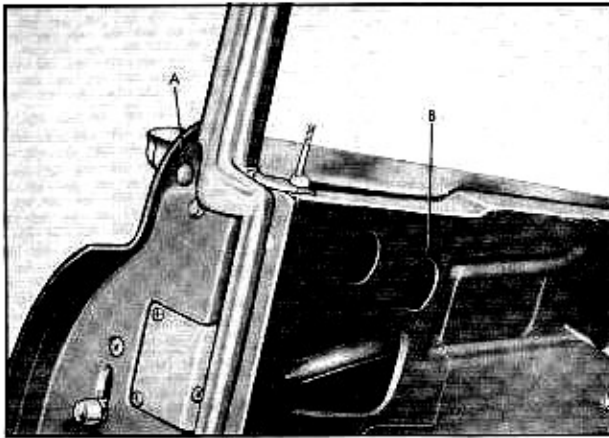


Fig. 3-2 Door Handle Screw Access Holes

5. Remove attaching screw "A" and remove handle and gaskets from door.

6. The lock cylinder assembly can be removed from the handle in the same manner as on past models.

#### b. Installation

1. Cock lock bolt by pushing it to the "up" position.

2. Depress push button on door handle, then assemble handle and gasket to door. When the push button shaft of the door lock cylinder is properly engaged in door lock, lock bolt will snap down.

3. Install handle attaching screws "A" and "B" and check push button action of handle.

4. Install door finish panel and hardware.

5. Install rubber plug in access hole behind screw "A" on 60S series.

### (3) Front Door Lock Assembly Removal and Installation—(60S)

1. Remove door garnish molding, finishing panel and trim pad.

2. Remove door ventilator and window assemblies.

3. Remove door outside handle assembly as described in Note 2.

4. Remove three door lock remote control attaching screws. Rotate remote control sufficiently to disengage it from connecting link.

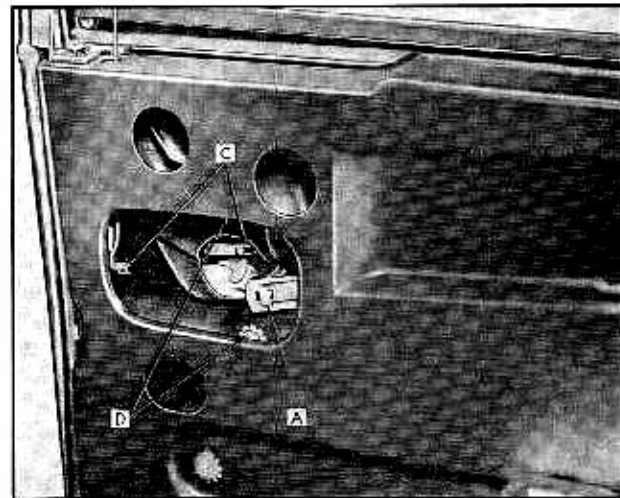


Fig. 3-3 Removing Link from Door Lock

5. Rotate remote control link downward sufficiently to disengage link from door lock at "A". Fig. 3-3.

6. Remove three screws "B" securing locking rod control link assembly to face of door pillar. Fig. 3-4.

7. Using a screwdriver, carefully detach the spring clip ends of the locking rod control link from the lock and locking rod, indicated at "C". Remove locking rod control link assembly from door pillar. Fig. 3-3.

8. Remove two lock attaching screws, indicated at "D".

9. Remove three lock attaching screws "E"; then remove lock through large loading hole. Fig. 3-4.

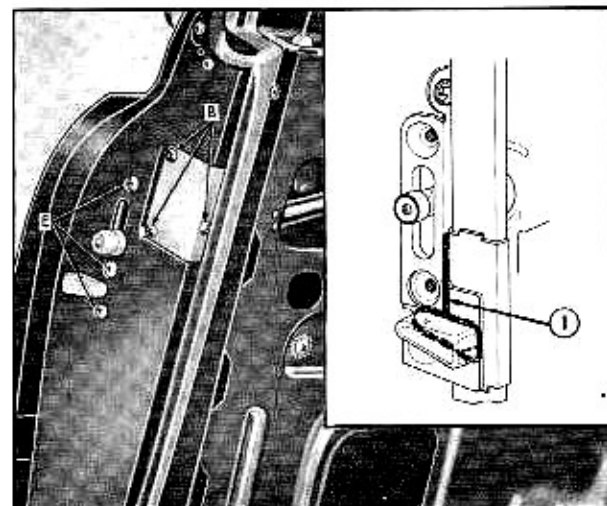


Fig. 3-4 Locking Rod Link Attaching Screws



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10. Before installing lock, apply a 1/8 inch ribbon of medium bodied sealer along the joint of the lock reinforcement and lock facing, extending downward completely around the base of the lock wedge, as shown at "1". After installation of lock, remove any excess sealer which has squeezed out at the door panel, wedge plate and lock bolt areas. Fig. 3-4.

To install lock, reverse removal procedure. Check operation of door lock using door outside handle and inside remote control handle. Seal door inner panel.

NOTE: Do not attempt to close door with lock lift bolt in "up" position.

### (4) Front Door Hinge Pillar Auxiliary Weatherstrip Removal and Installation

#### a. Removal

1. Remove two snap-on fasteners near the lower end of the weatherstrip with a flat bladed tool.
2. Loosen weatherstrip seal at front face of door and remove. Clean off all cement.

#### b. Installation

1. Apply weatherstrip cement to the surface of the door hinge pillar contacted by the weatherstrip and to the weatherstrip attaching surface.

2. Install two snap-on clips to weatherstrip, then install snap-on clips and lower portion of weatherstrip to pillar, aligning weatherstrip with drain hole. Install upper end of weatherstrip to door pillar as shown in Fig. 3-5. Weatherstrip must not cover drain hole, indicated at "1" in Fig. 3-5.

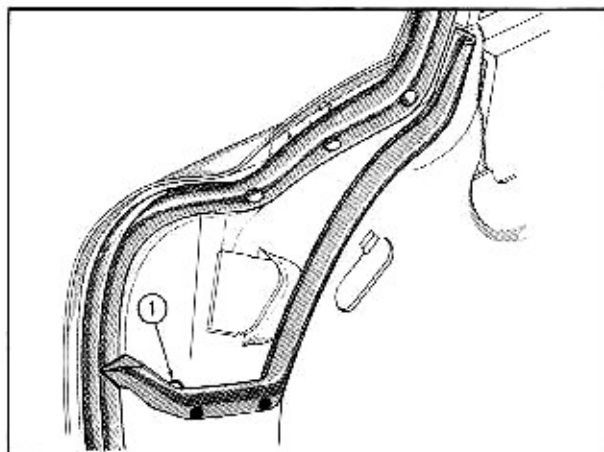


Fig. 3-5 Door Auxiliary Weatherstrip Position

3. Firmly press entire weatherstrip to hinge pillar to complete cemented bond. Clean off excess cement.

### (5) Door Window Frame Removal and Installation (60S)

1. Remove garnish molding and door finishing panel.
2. Remove door trim pad and large loading hole cover.
3. Loosen weatherstrip from window frame.
4. Lower window and remove four screws securing window to sash channel cam. Detach cam from window and lower window sufficiently to remove frame attaching screw "B". Fig. 3-6.

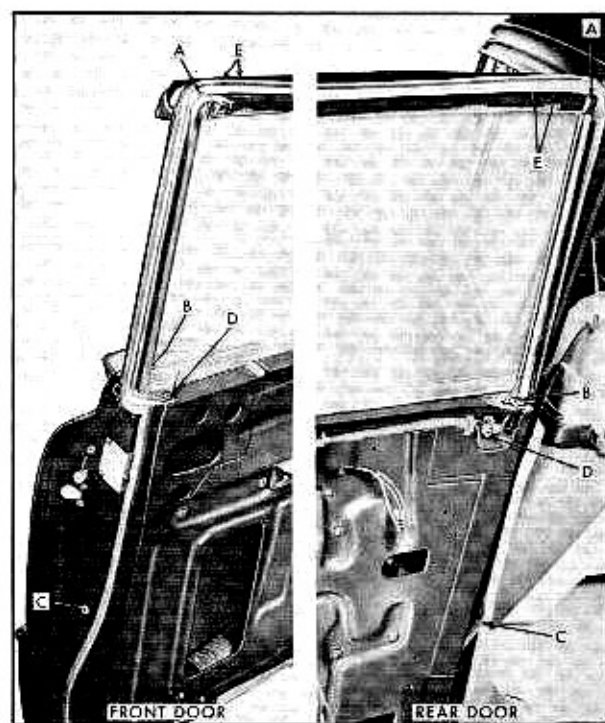


Fig. 3-6 Door Frame Attaching Screws (60S)

5. Prop glass in "up" position and remove window frame lower attaching screw "C" from face of door pillar.
6. Remove frame attaching screws "D" and "E". Tilt top of frame to clear window upper frame, then lift upward and remove from door.
7. To install, reverse above procedure.

NOTE: A cap screw and internal-external type lock washer should be used at the frame lower attaching point "C" to prevent loosening of

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the screw and excessive deflection at the top of the door frame. A few early production cars used a cross-head screw without a lock washer at this point and these should be replaced.

### (6) Rear Door Hinge Adjustments—(60S)

Due to the new upper hinge and center pillar upper hinge support, the rear door hinge adjustments are performed in a different manner than on the past model. To adjust rear doors, proceed as follows:

1. Remove hinge cover plate on rear door lower hinge pillar, then scribe location of hinge straps on pillar.

NOTE: The door weatherstrip and door trim pad must be loosened in the area of the lower hinge cover plate for removal.

2. For up and down adjustment, loosen bolts "A", on center body pillar. Adjust door as required and tighten bolts. Fig. 3-7.

3. For in and out adjustment, loosen bolts "B", on door hinge pillar, adjust door as required and tighten bolts.



Fig. 3-7 Hinge Attaching Screws

4. For rearward adjustment, proceed as follows:

a. Remove bolts "A" on center body pillar at lower hinge.

b. Cement a waterproof shim of the required thickness to entire contacting surface of hinge strap and reinstall bolts.

c. Remove bolts "B" on door pillar upper hinge.

d. Cement a waterproof shim of the required thickness to entire contacting surface of hinge strap and reinstall bolts.

### (7) Rear Door Hinge Assembly Removal and Installation—(60S)

#### a. Removal

1. If door is being removed from hinge strap, proceed as follows:

a. Loosen rubber weatherstrip along door hinge pillar.

b. Loosen door trim pad at hinge area sufficiently to allow removal of hinge cover plates.

2. Remove lower hinge cover plate from door or lower hinge cover plate from center pillar, depending on method of removal being used.

3. Clean off excess sealer from around edges of hinge straps, then scribe location of each hinge strap on hinge pillar.

4. On doors equipped with electric-powered regulators, proceed as follows:

a. Remove two screws securing electrical conduit to center body pillar, then bend down conduit tabs and remove conduit.

b. Remove entire door trim pad and loading hole cover.

c. Loosen clips securing wiring harness to door inner panel and disconnect motor leads from harness.

d. Remove wiring from between door panels by carefully pulling harness through cut-out in rear door hinge pillar.

5. With door properly supported, remove hinge attaching bolts at center pillar, or bolts at door hinge pillar, depending on method of removal being used.

6. With helper, remove door from body opening.

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### b. Installation

1. Apply a coat of heavy-bodied sealer to attaching surfaces of hinge straps or corresponding surfaces of door hinge pillar or center hinge pillar. Sealer must be applied evenly. Apply sealer to the lower hinge strap bearing pad.

2. With a helper, lift door into position. Install bolts loosely, then align hinge strap within scribe marks on pillar and tighten bolts. Check door for alignment.

3. Before lower hinge cover plates are installed, door hinges must be weathersealed with a ribbon of medium-bodied sealer or caulking compound at the following points:

- Top and bottom of hinge.
- Underside of hinge cover plates (body side).
- Underside of door hinge cover plates.

4. Install hinge cover plates and clean off excessive sealer.

5. Reinstall wiring harness and connect to motor.

6. Reinstall conduit and loading hole cover. Seal inner panel.

7. Reinstall door trim pad and remaining door hardware.

8. Re-cement door weatherstrip if previously loosened.

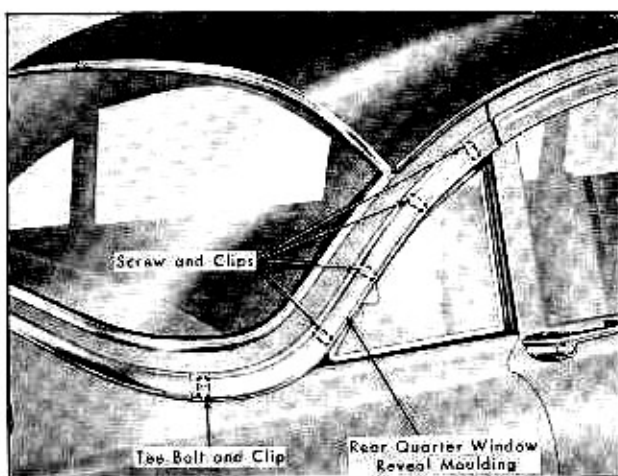


Fig. 3-8 Reveal Molding Attaching Points

### (8) Rear Quarter Window Reveal Molding Removal and Installation (6219 and 60S)

1. Loosen rear compartment side foundation

sufficiently to allow removal of tee bolt nut which secures rear end of molding and remove nut and washer.

2. Remove rear quarter window garnish molding.

3. Remove molding attaching screws and remove molding. Fig. 3-8.

4. To install molding, apply medium bodied sealer around attaching holes and reverse removal procedure.

### (9) Rear Door Window Rear Reveal Molding Removal and Installation (60S)

1. Lower rear door window and detach upper end of rear glass run channel.

2. Remove two molding attaching screws located under run channel strip.

3. Remove screws securing rear of the upper window reveal molding.

4. Carefully disengage rear edge of molding from door hemming flange and remove molding.

5. To install, reverse removal procedure.

### (10) Eldorado Exterior Moldings Removal and Installation

NOTE: Fig. 3-9 shows the location and names of the moldings referred to in the notes below.

#### a. Front Door Window Reveal Molding

1. Remove door finish panel, trim pad and inner panel loading hole covers.

2. Remove four attaching nuts and cup washers through loading holes.

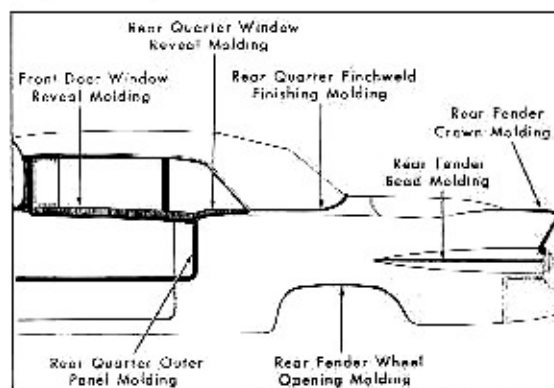


Fig. 3-9 Eldorado Exterior Moldings

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3. Remove screw securing rear end of molding at hemming flange and remove molding.

4. Install by reversing above procedure.

### b. Rear Quarter Window Reveal Molding

1. Remove rear quarter side panel trim assembly and loading hole cover.

2. Remove four nuts and cup washers through loading hole and remove molding.

3. To install, first apply medium bodied sealer around rear stud attaching hole, then reverse removal procedure.

### c. Rear Quarter Outer Panel Molding

1. Remove rear quarter trim panel and inner panel loading hole cover.

2. Through loading hole, remove attaching nuts and washers from molding studs and remove molding from outer panel.

3. Check to see that rubber washers are installed around molding studs, then install molding.

### d. Rear Fender Crown Molding and Reflector

1. Remove rear compartment side trim foundation.

2. Remove molding attaching nuts, retaining plates and washers. Remove screw which holds lower end of retainer to molding.

3. Remove reflector retaining ring, cover and retainer.

4. Before installing, apply caulking compound to seal molding and fender as described below:

Apply sufficient body caulking compound in the cored section of embossment at the forward attach-

ing stud and around the lower attaching hole, indicated at "1" in Fig. 3-10, to effect a water tight seal.

Apply a 1/4" bead of body caulking compound along each side of the stud embossment as indicated at "2".

Apply a 1/8" coating of body caulking compound to the contacting surface of the retaining plates, as indicated at "3".

### e. Rear Fender Bead Molding

1. Remove molding attaching speed nuts from studs and remove molding from fender. On left side of car, it will be necessary to remove tail lamp to remove rearmost nuts.

2. To install, reverse removal procedure.

### f. Rear Fender Wheel Opening Molding

1. Remove attaching nuts, washers, and screws which secure molding to fender flange. Reverse removal procedure to install.

### g. Rear Quarter Pinch Weld Finishing Molding

1. Apply masking tape below molding to protect finish.

2. Detach front end of folding top compartment bag from rear seat back panel and remove trim stick attaching screws to gain access to molding attaching screws.

3. Remove molding screws and, with a cushioned block and hammer, remove molding from pinch-weld flange.

4. To install, place new waterproof tape over flange, replace clips where required, and reverse removal procedure.

## (11) Top Boot Replacement

1. Lower top and fold material correctly.

2. Slide front edge of folding top dust boot into seat back retainer indicated at "A" in Fig. 3-11. Make sure that boot is centered on retainer.

3. Carefully position top boot over linkage, making certain that the entire boot is properly positioned as shown in Fig. 3-11.

4. Lift portion of boot, indicated in area "B", out of position and apply white chalk to surface of stud fasteners (indicated by arrows) on top compartment

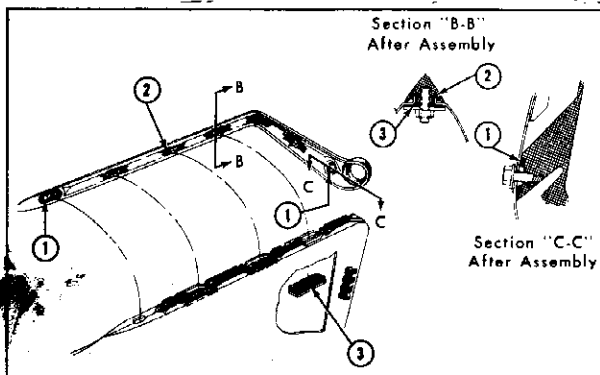


Fig. 3-10 Crown Molding Sealing Areas

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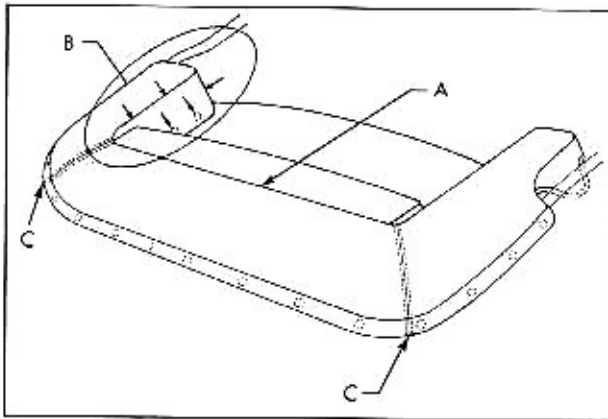


Fig. 3-11 Top Boot Position over Linkage

side panel and rear quarter pinchweld finishing molding.

5. Reposition boot in this area and carefully press material down on each stud fastener to transfer chalk to inner surface of boot.

6. Place button on die. Fig. 3-12.

7. Place boot material over button at marked location, then position fastener socket over chalk mark on material and squeeze handles of tool together until socket and button are securely attached to boot material. Fig. 3-13.

8. Repeat steps 4 through 7 on opposite side of boot.

9. Snap installed fasteners in place and carefully pull rear edge of dust boot at seam locations, indicated at "C" in Fig. 3-11, to obtain a good fit. Mark location of the first stud inboard of seam "C"

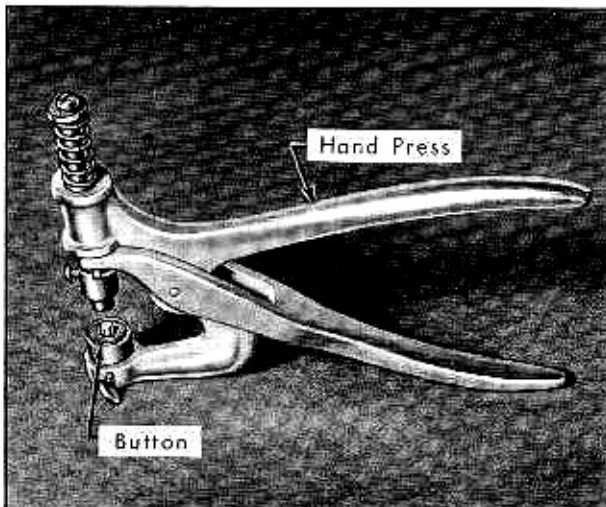


Fig. 3-12 Position Button on Tool Die

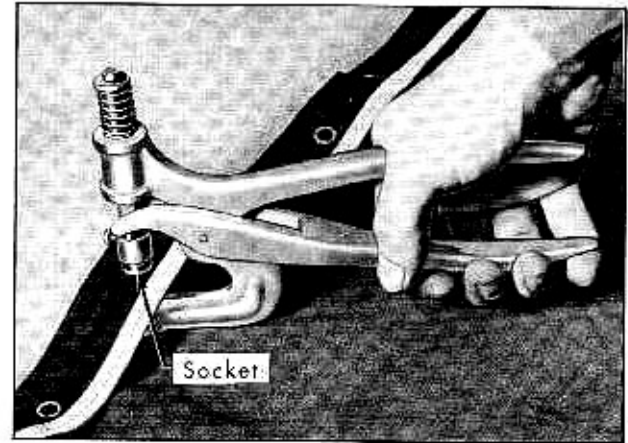


Fig. 3-13 Securing Fastener to Boot

in same manner as before, then install fasteners and snap boot in place.

10. Carefully pull rear edge of dust boot at centerline to obtain a good fit, mark location of fastener and install fastener on boot.

11. Carefully pull and position top boot material as necessary to remove wrinkles, mark location of remaining fasteners and install fasteners on boot.

12. When relocating button to improve fit of boot, use care not to move the button more than the radius of the button to avoid exposing original hole.

## (12) Windshield Assembly Removal and Installation

### a. Removal

1. Lower the top on convertible style coupes.
2. Cover front seat, instrument panel, fenders and hood.
3. Remove windshield wiper blade and arm assemblies; then, on each transmission, remove escutcheon spanner nut, wiper arm, cam plate and escutcheon.
4. Carefully pry the center lower reveal molding, Fig. 3-14, with clip, away from rubber channel.
5. Remove windshield garnish moldings and rear view mirror supports. On convertible styles, remove sunshade supports, sunshade rod retainers and windshield header moldings.
6. Carefully pull each outer lower reveal molding toward front of car to disengage molding lower



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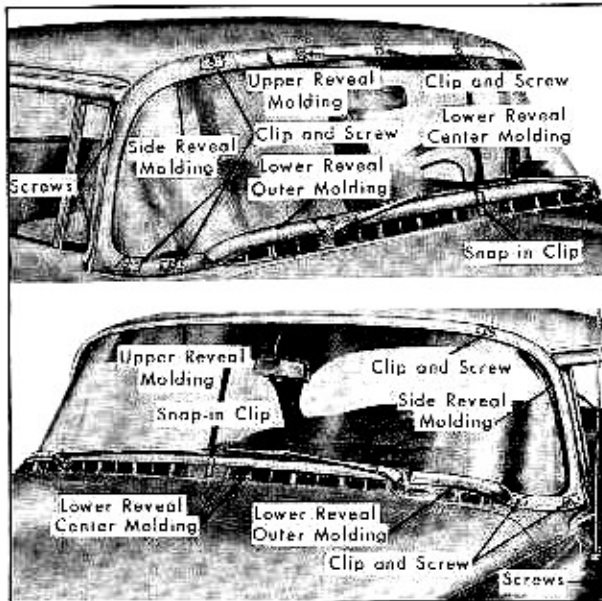


Fig. 3-14 Windshield Reveal Molding Attaching Points

flange from clip; then, pull molding toward center of car to disengage it from side reveal molding.

7. Remove the side reveal molding screws from hinge pillar and remove the screw securing the lower end.

8. On sedan styles, remove the screw attaching the upper end of side reveal molding under the roof panel extension and, on coupes, remove the screws securing ends of upper reveal molding. Remove moldings.

9. On sedan styles, remove windshield reveal upper corner finishing molding by disengaging molding from roof panel extension.

10. Apply outward pressure close to edge of glass with palm of hand and, using a putty knife, work lip of rubber channel over pinchweld flange.

11. With the aid of a helper, carefully remove the windshield assembly from the body and place on a covered bench. On sedan styles, move the lower edge of the windshield assembly forward and downward to remove.

12. Remove windshield upper reveal molding from the rubber channel and remove rubber channel from glass.

#### b. Checking Body Windshield Opening

**NOTE:** It is important that the contour and size of the windshield opening in the body be checked thoroughly before the installation of a new windshield glass.

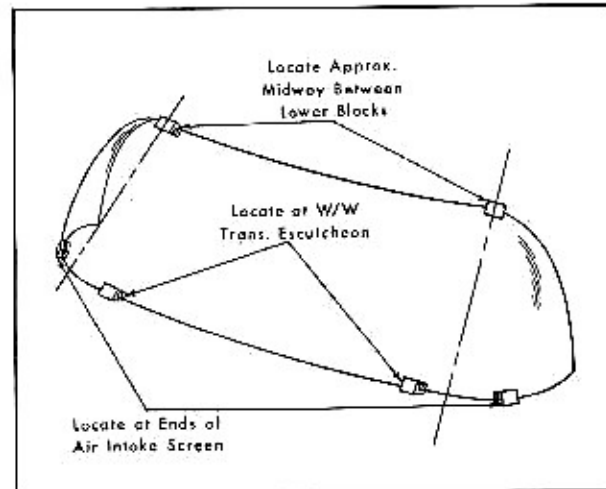


Fig. 3-15 Spacer Position for Pinchweld Alignment

1. Check the rubber channel for any irregularities.

2. Check entire body flange opening for any irregularities after old scaler has been cleaned off.

3. Carefully position glass in opening on Wooden Spacers, Tool No. J-5742, as shown in Fig. 3-15. Do not allow glass to strike body metal during this temporary installation. Chipped edges can cause future breaks.

4. Figure 3-16 shows a typical section through the glass and body opening. The spacing between glass and body should be uniform and within the specified limits.

5. Mark any sections of the body which must be reformed, remove glass and reform as necessary.

6. Recheck opening as in Steps 3 and 4 above.

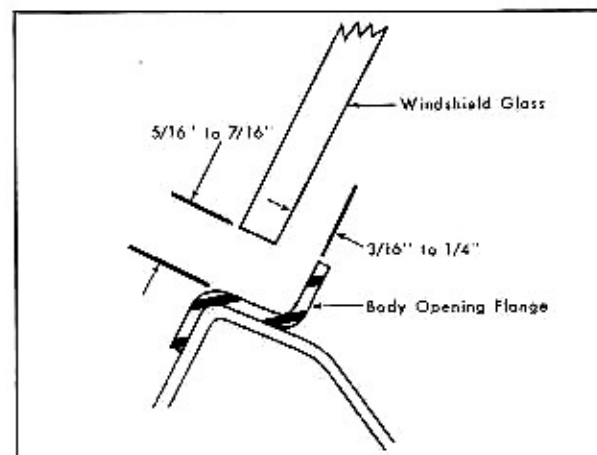


Fig. 3-16 Windshield Glass to Pinchweld Clearances

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### c. Installation

1. Check windshield drain gutter and both left and right drain hose openings for obstructions and clean out if necessary.
2. Install rubber channel on glass. Install and center upper reveal molding in channel on coupes. Apply a mild soap solution to molding groove in channel to facilitate insertion of channel "Tee" leg.
3. Insert a strong cord in pinchweld cavity of channel completely around windshield and tape cords to inside of glass at the bottom center.
4. Apply a bead of medium bodied sealer completely around base of rubber channel as indicated at "1" in Figure 3-17. In addition, apply a ribbon of sealer along pinchweld flange as indicated at "3", Figure 3-17. This seal should be applied at each side of windshield opening as indicated by distance "X".
5. Place assembly, with the aid of a helper, in opening and center glass between windshield pillars.
6. Press firmly on outside of glass, while helper on the inside pulls cord along bottom, up the sides and along top of windshield to seat lip of channel over pinchweld.
7. Using weatherstrip cement, seal between outside lip of rubber channel and glass.
8. On convertible styles, apply a bead of medium bodied sealer in corner of pillar finishing molding. In addition, apply body caulking compound along joint of windshield outer frame and rear panel of front body hinge pillar. Then, apply a bead of medium bodied sealer along length of windshield outer frame. Outer ends of this seal should join previously applied caulking compound.

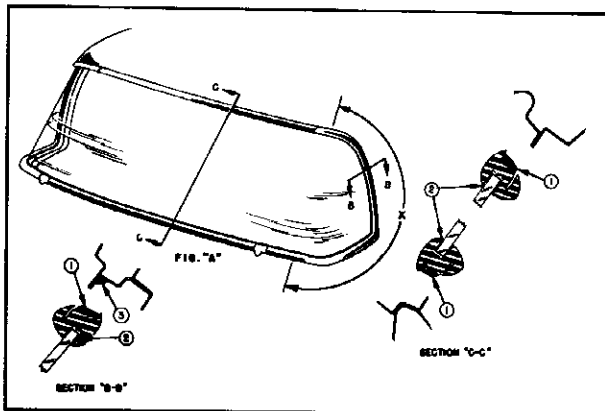


Fig. 3-17 Windshield Glass Sealing

9. On all styles, apply a bead of caulking compound to the windshield side pillar and a medium bodied sealer to all reveal molding attaching screw holes.

10. Clean off all excess sealer and reinstall all parts. Remove protective coverings.

### (13) Repair and Maintenance of Metallic Lacquer Finishes

The specially compounded lacquers containing a large quantity of aluminum particles require a different method of application, repair, and finish preservation that those normally used with the non-metallic lacquers on standard exterior finishes. Familiarity with this special treatment, as explained below, is necessary to successfully perform any necessary refinishing.

**Mixing Paint** - Lacquer must be thoroughly agitated for a minimum of twenty minutes just before being used. Use of a commercial paint shaker is the best method of assuring the equal distribution of metallic particles through the lacquer.

**Spraying** - Spray car in an area where the air is as free as possible from dirt and lint. Move car to a location away from general refinishing area to prevent overspray from other paint operations settling on the newly finished surface. This is necessary as the final mist coat of high metallic lacquers should not be compounded.

When applying the paint, maintain consistent gun distance from area being painted. Air pressure and the speed of each pass should also remain constant.

Apply a final mist coat consisting of a small amount of lacquer solids diluted with a high percentage of good thinner. Do not polish final mist coat with abrasives as a break through to the under layer of paint, known as scaling, may result. Luster may be obtained by sprinkling a few drops of water on finished surface and lightly polishing with a dry sheepskin buffing wheel.

**Spot Repair** - Whenever a small area on a panel is repaired and retouched, the final mist coat should be applied over the complete panel to the nearest break line, such as a molding, door or trunk opening.

**Finish Preservation** - High metallic finishes should be washed frequently with clear water to which a small amount of detergent has been added, rinsed with clear water, then dried with an air hose. When cleaning is necessary, use Blue Coral cleaner applied by hand only. Use of a buffing wheel is not recommended.

## BODY

### SPECIFICATIONS

Series 55-62, 129" Wheelbase, Fisher Bodies

Series 55-60S, 133" Wheelbase, Fleetwood Bodies

55-6237 . . . . . 5 Passenger Sport Coupe.  
Manual 2-way seat adjuster and manual window regulators - standard. Electric window and/or electric 4-way seat adjusters - optional.

55-60S . . . . . 5 Passenger 4-door sedan -  
Electric 2-way seat and electric windows - standard. Electric 4-way seat - optional.

Series 55-75,

149-3/4" Wheelbase, Fleetwood Bodies

55-6237D . . . 5 Passenger Special Sport Coupe.  
(Coupe de Ville). Electric 2-way seat and windows - standard. Electric 4-way seat - optional.

55-7523X . . . . . 8 Passenger 4-door sedan -  
Electric 2-way front seat, two auxiliary seats, sliding quarter window and electric windows - standard.

55-6267X . . . . 5 Passenger Convertible Coupe  
- Fabric top - Hydro-Lectric control of top. Electric 2-way seat and electric windows - standard. Electric 4-way seat - optional.

55-7533X . . . 8 Passenger 4-door Imperial Sedan.  
Two auxiliary seats, sliding quarter window and divisional glass. Electric 2-way front seat and electric windows.

55-6267SX . . . . 5 Pass. Spec. Sport Conv. Cpe.  
Fabric top with plastic covered top well. Hydro-Lectric control of top. Electric 4-way seat and electric windows - standard.

NOTE: Vertical front seat adjustment is optional on all models with electric control equipment except the 75 Series: Vertical seat adjustment is not available for the 55-75 Series cars.

55-6219 . . . . . 5 Passenger 4-door sedan.  
Manual 2-way seat and manual windows - standard. Electric window and/or electric 2-way and 4-way seat adjusters optional.

55-86, 158" Wheelbase, Commercial Chassis.

Bodies manufactured by:

The Meteor Motor Car Co., Piqua, Ohio

The A. J. Miller Co., Bellefontaine, Ohio

The Eureka Co., Rock Falls, Illinois

The Hess & Eisenhardt Co., Rossmoyne, Ohio

Superior Coach Corp., Lima, Ohio

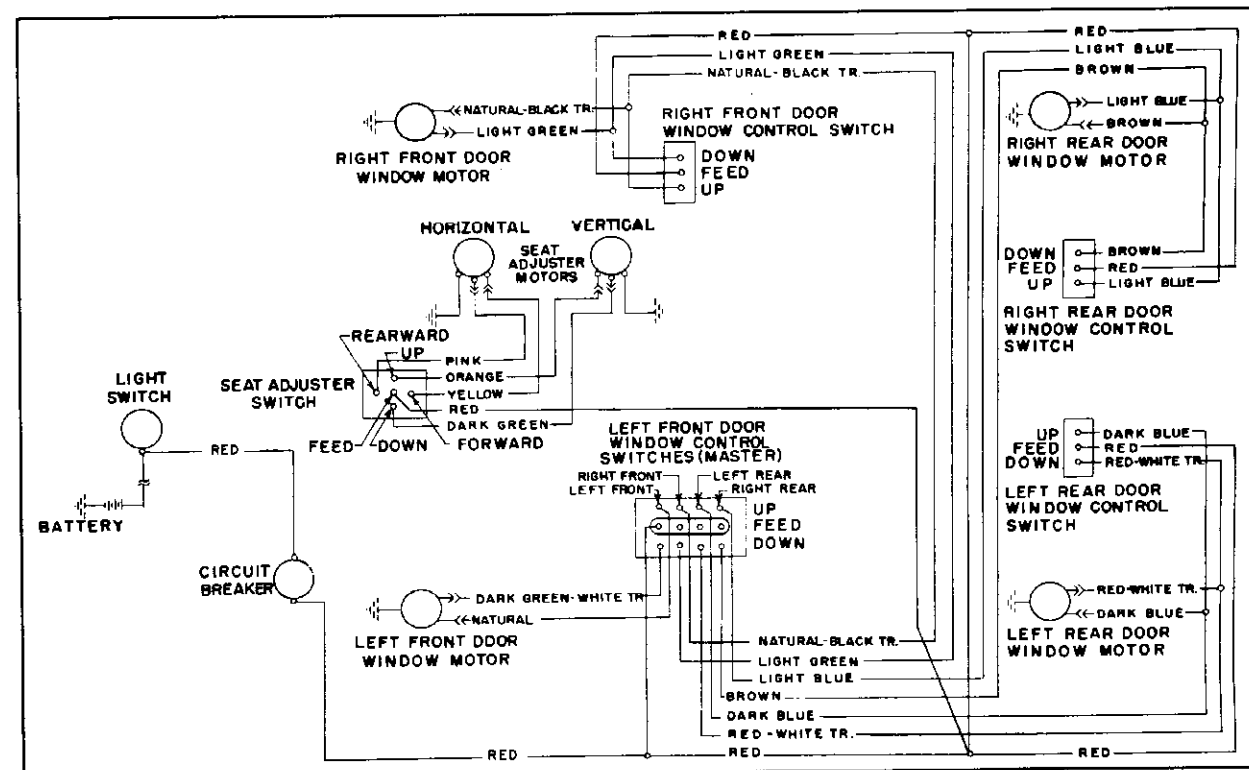


Fig. 3-18 Window and Seat Control Electrical Circuit Diagram



# CHASSIS SHEET METAL

## GENERAL INFORMATION

The appearance and styling of the 1955 Cadillac cars has been enhanced by revising the hood silhouette to give it a wider appearance. The front fenders are also newly designed to match the new side treatment of the body.

Open grille styling has been accomplished by slightly narrowing the grille fins and providing

much wider spacing. In addition, the front bumper and bumper guards have been newly styled. The assembly consists of four bolted-together sections; the outer impact bars, a lower impact bar, and a bumper guard tie bar. With this design, replacement of any one section may be made in case of damage.

## SERVICE INFORMATION

### (1) Removal and Installation of Radiator Grille and Front Bumper Assembly

#### a. Removal

1. Disconnect parking or fog lamp wires at plastic connector.

2. Remove bolts, one each side, support to outer impact bar end.

3. Remove four bolts, two each side, frame to bumper mounting bar. Note the number of shims, if any, between the bumper mounting bars and frame so that the same number may be reinstalled.

4. Remove bumper and radiator grille assembly from the car and place it upon a suitable padded covering.

#### b. Installation

1. Place assembly in position and install four frame to bumper mounting bar bolts, making certain that the same number of shims are installed between the frame and bumper mounting bar as were removed. Also install two support to bumper guard bolts.

Do not tighten these bolts all the way until the next step in the procedure is performed.

2. Adjust assembly horizontally, vertically, fore and aft, or to obtain proper tilt as follows:

a. Bumper mounting bars are slotted horizontally for this adjustment.

b. Assembly may be adjusted vertically by means of vertical slots in the frame.

c. Fore and aft adjustment is obtained by placing variable thicknesses of shims between the frame and bumper mounting bars.

d. Proper tilt of assembly may be obtained by loosening and tightening the bumper guard intermediate support bolts, two each side.

3. Use any combination of the above methods until over-all alignment is obtained.

4. Torque tighten bumper mounting bar bolts to 110-120 ft. lbs. and support-to-bumper-guard bolts to 35-45 ft. lbs.

5. Connect parking and fog lamp wires at plastic connector.

### (2) Removal and Installation of Radiator Grille

1. Front bumper and radiator grille assembly must be removed and installed as described in Note 1.

2. Remove grille-to-impact-bar outer screws, one each side.

3. Remove grille and grille extension to impact bar outer end bolts, two each side.

4. Remove three grille to bumper guard tie bar screws.

5. Remove 15 grille to lower impact bar screws.

6. Remove grille assembly from bumper assembly.

7. Install grille assembly by reversing the procedure for removal.

### (3) Disassembly and Assembly of Radiator Grille

1. Remove right and left grille fin retainers by removing 23 attaching screws.

2. Individual vertical or horizontal fins may be removed from the grille by releasing the horizontal fin from the two tangs at each vertical fin.

3. Assemble grille assembly by reversing the procedure for removal.

## CHASSIS SHEET METAL

### (4) Disassembly and Assembly of Front Bumper

1. Radiator grille must be removed as described in Note 2.
2. Remove 3 bolts holding bumper mounting bar to lower impact bar and impact bar outer end on each side and remove mounting bars.
3. Remove bumper guard tie bar to impact bar outer end bolts, two each side and remove bumper guard tie bar.
4. Remove grille extension to impact bar outer end bolts, two each side and remove grille extensions.
5. Remove lower impact bar to impact bar outer end bolts, four each side and separate lower impact bar and impact bar outer ends.
6. Assemble front bumper by reversing the procedure for disassembly.

### (5) Removal and Installation of Front Bumper Sections

#### a. Lower Impact Bar

1. Front bumper and radiator grille assembly must be removed as described in Note 1.
2. Remove 15 grille to lower impact bar screws.
3. Remove 3 bolts holding bumper mounting bar to lower impact bar and impact bar outer end on each side and remove mounting bars.
4. Remove lower impact bar to impact bar outer end bolts, four each side and remove lower impact bar.
5. Install lower impact bar by reversing the procedure for removal.

#### b. Impact Bar Outer End—Right or Left

1. Front bumper and radiator grille assembly must be removed as described in Note 1.
2. Remove three bolts holding bumper mounting bar to lower impact bar and impact bar outer end and remove mounting bar.
3. Remove two grille extension to impact bar outer end bolts.
4. Remove one grille and grille extension to impact bar outer end bolt.

5. Remove one grille to impact bar outer end screw.
6. Remove two bumper guard tie bar to impact bar outer end bolts.
7. Remove four impact bar outer end to lower impact bar bolts.
8. Install impact bar outer end by reversing the procedure for removal.

#### c. Bumper Guard Tie Bar

NOTE: It is not necessary to remove the front bumper and grille assembly to perform this operation.

1. Remove bumper guard tie bar to impact bar outer end bolts, two each side.
2. Remove three grille assembly to tie bar screws and remove bumper guard tie bar.
3. Install bumper guard tie bar by reversing the procedure for removal.

### (6) Removal and Installation of Radiator Support Assembly

1. Remove radiator grille and front bumper assembly as explained in Note 1.
2. On Air Conditioner equipped cars, proceed as follows:
  - a. Remove condenser from radiator support as described in Section 16-A, Note 25.
  - b. Disconnect and remove pipe between receiver-filter unit and sight glass.
  - c. Disconnect and remove compressor to condenser pipe.
3. Drain cooling system and remove radiator assembly.
4. Disconnect battery cable, horn wires to horns and horn relay, and wires from voltage regulator.
5. Remove horn relay and voltage regulator.
6. Remove wiring harness clips from top of radiator support and disconnect wiring harness ground wires.
7. Remove two radiator support to hood lock plate screws and two center baffle to air deflector screws. On Air Conditioner equipped cars, these items are removed when removing the condenser.

## CHASSIS SHEET METAL

8. Remove four air deflector screws, two each side, and remove air deflector with horns. On Air Conditioned cars, only two screws, one each side, are removed, as the other two screws serve as condenser mounting screws.

9. Remove four fender bracket to radiator support bolts, two each side.

10. Remove right front fender as explained in Note 9.

11. Remove three radiator support to left front fender screws.

12. Remove radiator support to frame bolt, noting the number of shims removed so that the same number may be reinstalled.

13. Remove radiator support assembly.

14. Install radiator support assembly by reversing the procedure for removal. After the assembly is installed, adjust hood lock.

### (7) Removal of Left Front Fender

1. Disconnect positive battery cable.

2. Disconnect parking lamp or fog lamp and headlamp wires at plastic connectors.

3. Disconnect wire from blower motor.

4. Disconnect both flexible hoses from blower to motor.

5. Remove three radiator support to fender screws.

6. Remove fender attaching screw at cowl.

7. Jack up car, and remove left front wheel.

8. Disconnect antenna lead from antenna on cars so equipped.

9. Working from the under side of fender, remove four screws which attach the Autronic Eye amplifier to the fender dust shield.

10. Working from top side of fender, remove Autronic Eye Amplifier.

11. Disconnect wires from Autronic Eye Power relay.

12. Remove wire harness from retainer clips on fender, and move harness away from fender.

13. Remove two screws at rocker panel "U" clamp.

14. Remove rocker sill molding.

15. Remove three dust shield to frame screws.

16. Remove two fender bracket to radiator support bolts.

17. Apply masking tape to front edge of door in order to avoid scratching finish when removing fender.

18. Remove fender from car by moving fender backward slightly and then upward and out.

### (8) Installation of Left Front Fender

1. Place fender in position, and install fender to cowl attaching screw loosely.

2. Install two fender bracket to radiator support bolts loosely.

3. Install three dust shield to frame screws loosely.

4. Install two fender to rocker panel "U" clamp screws loosely.

5. Install three radiator support to fender screws loosely.

6. Align fender to door, cowl, and hood, and tighten all bolts and screws.

NOTE: Fender screw and bolt holes are elongated to allow for alignment. To raise or lower the fender for alignment to hood or door, install or remove shims from fender bracket to radiator support bolts, or fender to cowl screws as necessary.

7. Install rocker sill molding.

8. Connect antenna lead to antenna.

9. Install Autronic Eye amplifier and power relay to fender dust shield.

10. Install left front wheel and lower car.

11. Connect ventilator flexible air hoses from blower to air duct and blower to heater.

12. Connect blower wire to blower motors.

13. Connect wires to Autronic Eye power relay.



# FRAME

## GENERAL DESCRIPTION

The frames used on 1955 series Cadillac cars are of the familiar X-type construction as in 1954. The frames have been slightly modified to accommodate a change in rear shock absorber

location. The body bolt locations, torque tightness and frame dimensions remain the same as outlined in Section 5 of the 1954 Shop Manual.

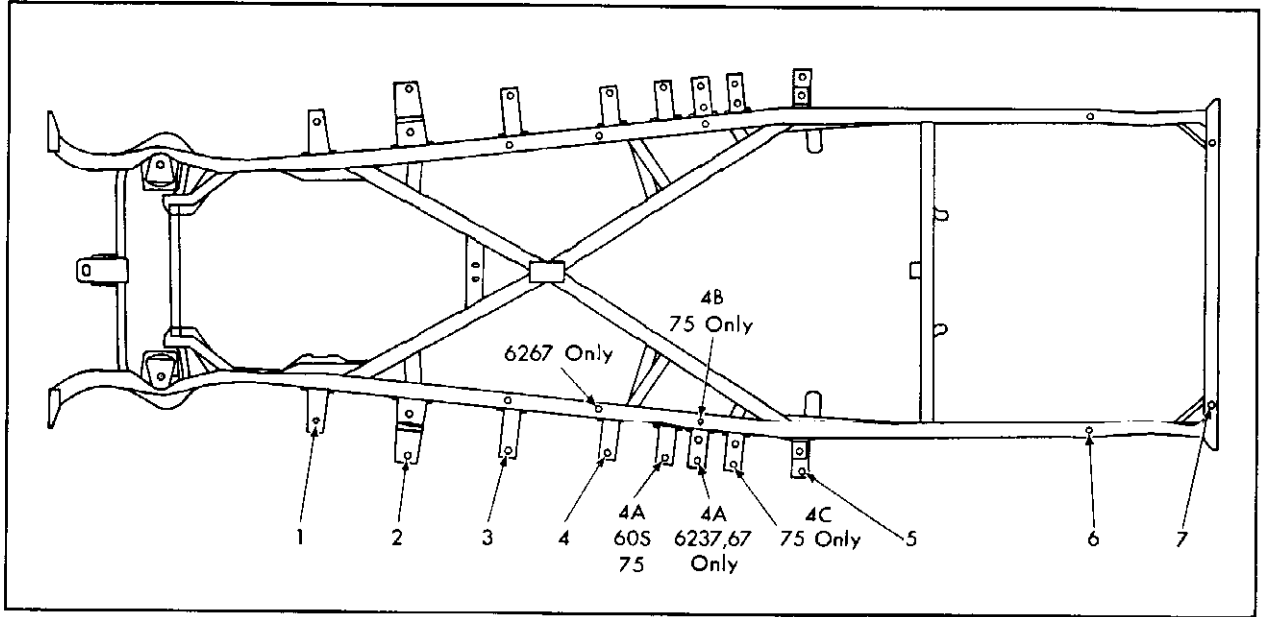


Fig. 5-1 Body Bolt Locations  
KEY

(x)--Bolts Installed  
(-)--Bolts Omitted

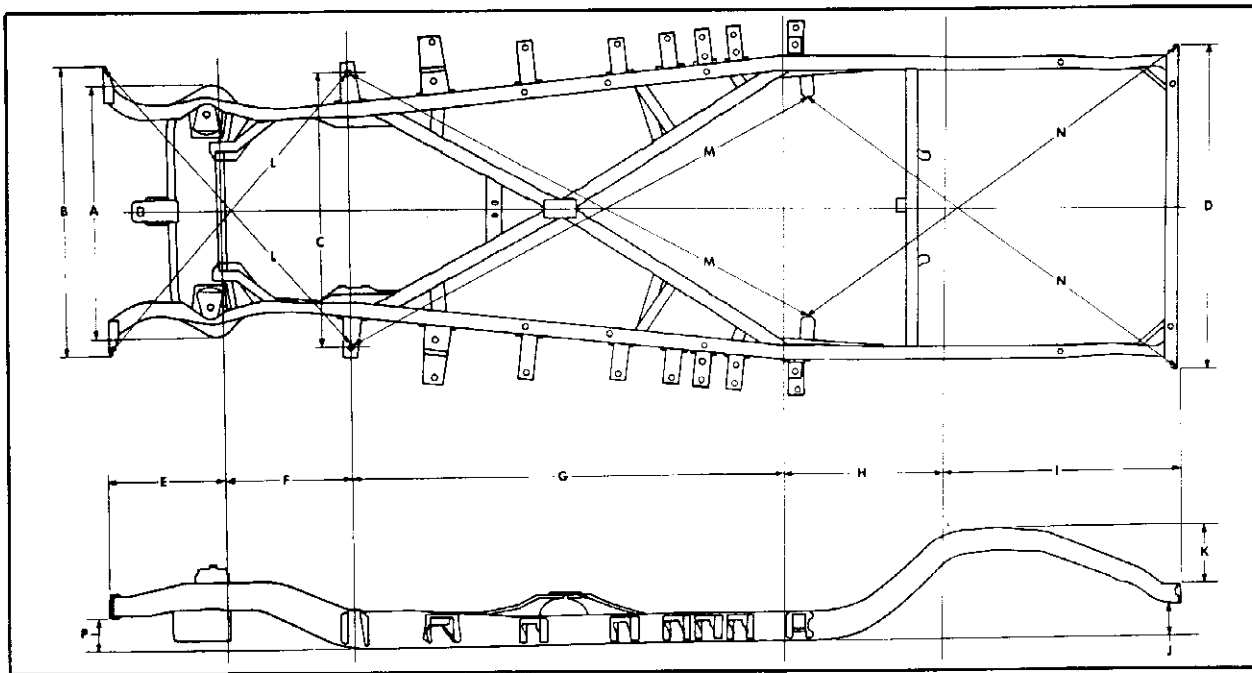
1955	OUTER BODY BOLT NUMBERS										INNER BODY BOLT NUMBERS						
Body Style	1	2	3	4	4A	4B	4C	5	6	7	2	3	4	4A	4B	4C	5
6219	x	x	x	x	-	-	-	x	x	x	x	-	-	-	-	-	x
6019	x	x	x	x	x	-	-	x	x	x	x	-	-	-	-	-	x
6237,6237D	x	x	x	x	x	-	-	x	x	x	x	-	-	x	-	-	x
6267,6267S	x	x	x	x	x	-	-	x	x	x	x	x	x	x	-	-	x
7523,7533	x	x	x	x	x	x	x	x	x	x	x	x	-	-	-	-	x

## TORQUE TIGHTNESS

All body bolts on all series except the Convertible & No. 1 body bolt . . . . . 20 to 35 ft. lbs.

All body bolts on the Convertible & No. 1 body bolt . . . . . 40 to 55 ft. lbs.

## FRAME



Dimension	Sedan 55-62	Conv. 55-62	Coupe 55-62	Sedan 55-60S	Sedan 55-75	Comm'l. 55-86
A	42-1/2"	42-17/32"	42-17/32"	42-17/32"	42-17/32"	42-17/32"
B	48"	48"	48"	48"	48"	48"
C	45-3/4"	45-25/32"	45-25/32"	45-25/32"	45-25/32"	45-25/32"
D	54-1/4"	54-1/4"	54-1/4"	54-1/4"	54-1/4"	56-1/4"
E	19-13/32"	19-13/32"	19-13/32"	19-13/32"	19-13/32"	19-13/32"
F	23-1/2"	23-1/2"	23-1/2"	23-1/2"	23-1/2"	23-1/2"
G	80-13/32"	80-13/32"	80-13/32"	84-13/32"	101-5/32"	109-13/32"
H	25-3/32"	25-3/32"	25-3/32"	25-3/32"	25-3/32"	25-3/32"
I	40-1/4"	47-1/4"	47-1/4"	47-1/4"	40-1/4"	40-1/4"
J	5-9/32"	5-9/32"	5-9/32"	5-9/32"	5-9/32"	5-9/32"
K	10-3/16"	10-3/16"	10-3/16"	10-3/16"	10-3/16"	10-3/16"
L	63-17/32"	63-17/32"	63-17/32"	63-17/32"	63-17/32"	63-17/32"
M	90-13/32"	90-13/32"	90-13/32"	94"	109-9/32"	116-31/32"
N	79-5/8"	85-15/32"	85-15/32"	85-15/32"	79-5/8"	80-7/32"
P	5-21/32"	5-21/32"	5-21/32"	5-21/32"	5-21/32"	5-21/32"

Fig. 5-2 Frame Checking Dimensions

- A. Maximum spread of frame at front cross member.
- B. Outside of front end of left front bumper bracket to outside front end of right front bumper bracket.
- C. Left front body bolt to right front body bolt.
- D. Over-all rear cross member.
- E. Outside face of front bumper bracket to center line of front wheels.
- F. Front wheels to front body bolts.
- G. Front body bolts to rear spring front pin.
- H. Inner end of rear spring front pin to center line of rear wheels.
- I. Rear wheels to rear end of bumper bracket.
- J. Bottom of bumper bracket at rear end to normal bottom of side bar.
- K. Top of side bar at rear to top of side bar at rear wheels.
- L. Outside of front end of left front bumper bracket to right front body bolt and vice versa.
- M. Left front body bolt to inner end of right rear spring front pin and vice versa.
- N. Inner end of left rear spring front pin to outside rear corner of rear cross member and vice versa.
- P. Bottom of front bumper bracket to normal bottom of side bar.

# CHASSIS SUSPENSION

## GENERAL DESCRIPTION

The chassis suspension system used on 1955 Cadillac cars is very similar to that used on 1954 series cars, and information relative to service procedures remains the same as that outlined in Section 6 of the 1954 Shop Manual.

Shock absorber valving has been changed slightly to improve ride characteristics and the rear spring seat has been changed to accommodate the shock absorber bayonet type lower mounting stud.

Tubeless tires are used as standard equipment on all 1955 series cars. These tires employ a butyl liner (not puncture sealing), which is an integral part of the tire casing, to protect against

blowouts and rapid loss of air when a puncturing object penetrates the casing. Tire service information is covered in the following notes.

Disc wheels, identical to those used on 1954 series cars, are standard equipment on all 1955 series cars except the Eldorado. Forged aluminum, chrome plated wheels are standard equipment in the Eldorado styles and are available as optional equipment on all other 62 and 60S series, 1955 Cadillac cars.

Wheel mounting studs on the left side have left hand threads on 1955 series cars.

## SERVICE INFORMATION

### (1) Checking and Repairing Air Leaks

Loss of air may be due to a hole in the tire, a poor seal between the tire bead and the rim or between the valve stem and the rim, a leaking valve core, or a loose rivet or open weld joint in the wheel.

If the source of the air leak is not readily located, the tire and wheel assembly should be removed from the car, inflated to 50 lbs. pressure, and immersed in a tank of water. When air bubbles appear, mark location of leak on tire or rim.

If leak is in tire, reduce tire pressure to 10 lbs. remove puncturing object and repair casing as follows:

(a) Holes up to  $3/32$ " in diameter may be repaired without removing the tire from the rim, by forcing tire sealing dough in the hole, using a commercially available pressure gun with the nozzle held firmly over the hole in the tire. Fig.

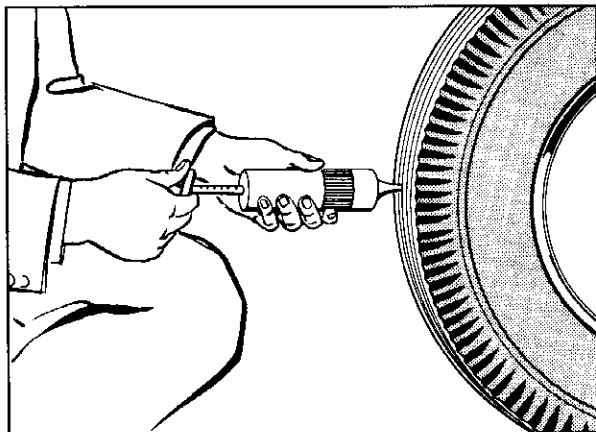


Fig. 6-1 Sealing Holes with Pressure Gun

6-1. If the nozzle goes into hole in casing, it is an indication that the hole is too large and the tire should be removed from the wheel to be repaired.

(b) Holes up to  $1/4$ " in diameter may be repaired using a hot patch or by installing a special rubber plug in the hole with its large flange cemented to the inside of the tire. Fig. 6-2.

(c) Holes larger than  $1/4$ " in diameter should be vulcanized by the authorized tire dealer in accordance with the instructions of the tire manufacturer.

(d) Leaks between the rim and the casing necessitate removal of the tire from the wheel and inspection of the sealing area on both the tire bead and the rim flange. The rim flange should be cleaned with a wire brush. Any weld beads should be filed smooth and dents in the rim flange should be straightened.

(e) Leaks around the valve stem, at the wheel, require replacement of the valve stem. Fig. 6-3.

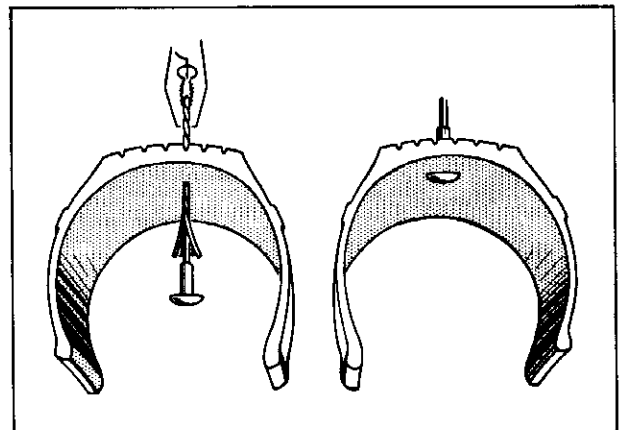


Fig. 6-2 Puncture Repair with Rubber Plug

## CHASSIS SUSPENSION

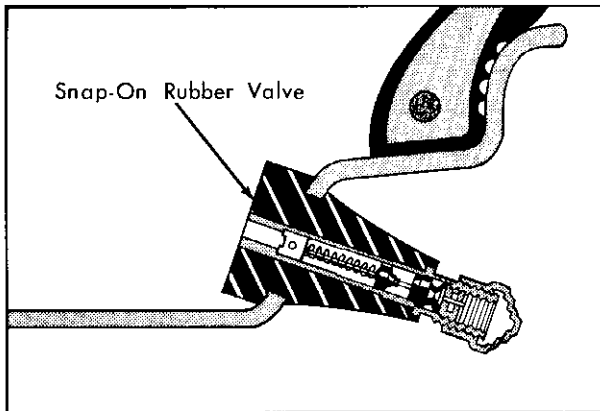


Fig. 6-3 Valve Stem Assembly

Before installing a new stem, remove any foreign material around hole or any burrs which would prevent seating of the valve stem.

(f) Occasionally an air leak may be encountered in the wheel weld joint or at a rivet. If the rivet is not visibly loose, it may be sealed with a cement, available from tire manufacturers, for this purpose.

**CAUTION:** Under no condition should the rivet or wheel be peened, welded or brazed. Replace the wheel if the air leak cannot be repaired with cement or if rivet is noticeably loose. On the Sabre Spoke aluminum wheels, a sealing tape is cemented into the tire well to seal the joint between the aluminum forging and the steel back rim. Use care not to disturb this tape when mounting or removing tire.

## (2) Removal and Installation of Tire

### a. Removal

1. Remove valve cap and core.
2. Using a bead breaker tool, force beads away from rim flange.

**CAUTION:** The use of tire irons for breaking beads away from rim is not recommended as there is a possibility of damaging the sealing surface on the tire bead.

3. Work outside tire bead over rim, starting adjacent to the valve stem, and then remove the inside bead.

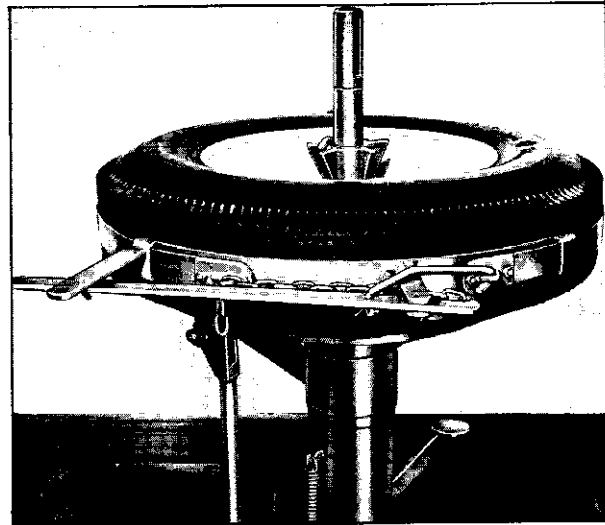


Fig. 6-4 Expanding Beads Against Rim with Mounting Band

### b. Installation

1. Inspect rim ledges and flanges for foreign particles and remove with emery cloth or a file. Straighten rim flange if bent.
2. Carefully install beads over rim, using either a special tire installing tool or tire irons. A small amount of water may be used on the beads to facilitate installation. Soap solutions or solvents are not recommended. Start tire over rim flange at a point opposite valve stem so that stem will not prevent bead from dropping into rim well, as last section of bead is forced over rim.
3. Install valve core. Place a tire mounting band around center of tread and engage it to force tire beads out against rim. Fig. 6-4.

**NOTE:** If a tire mounting band is not available, a heavy sash cord may be installed around the tire circumference and tightened with a tire iron to serve the same purpose.

4. Inflate tire to hold bead against rim (approx. 5 lbs.). Remove band and inflate to 50 lbs. pressure.
5. Leak test tire and wheel assembly and, if satisfactory, reduce to recommended pressure.



## CHASSIS SUSPENSION

### SPECIFICATIONS

Subject and Remarks	55-62, 60S	55-75	55-86 Comm.
King Pin inclination	5° 51'	5° 51'	5° 51'
Camber of front wheels	-3/8° to +3/8°	-3/8° to +3/8°	-3/8° to +3/8°
*Caster angle	0° to -1°	0° to -1°	0° to -1°
Toe in (Car standing)	3/16" to 1/4"	3/16" to 1/4"	3/16" to 1/4"
Turning radius	21'8", 22'6"	25'10"	29'
*Adjustment must be within 1/2° or less on both sides of car.			
SHOCK ABSORBERS -- Front			
Type	Delco Hydraulic Direct Acting		
Bore	1"	1"	1"
Model No. (Replacement Type)	542G	542G	542G
SHOCK ABSORBERS -- Rear			
Type	Delco Hydraulic Direct Acting		
Bore	1"	1"	1"
Model No. (Replacement Type)	544X	544X	544X
RIMS			
Diameter	15"	15"	15"
Width	6"	6"	6"
Eccentricity	3/64" max.	3/64" max.	3/64" max.
Runout	3/64" max	3/64" max.	3/64" max.
TIRES			
Inflation pressure, in pounds --			
Front	24	28	24
Rear	24	28	30
Ply rating	4	6	6
Size (Black Walls)	8.00 x 15	8.00 x 15	8.90 x 15
Size (White Walls)	8.20 x 15	8.20 x 15	8.90 x 15
WHEELS			
Type	Slotted Disc Optional - Sabre Spoke Aluminum Wheels	Slotted Disc	Slotted Disc
Make	Kelsey-Hayes	Kelsey-Hayes	Kelsey-Hayes

### FRONT SPRING DATA CHART

Series	Part No.	Color Daub	Normal Load	Rate Per In.
55-6019 (Without Air Conditioner)	1460196	Yellow	2300	350
55-6219, 6237, and 6237D (Without A.C.)	1460194	Light Blue	2250	350
55-6267 and 6267S (Without A.C.)	1460197	Aluminum	2380	375
55-6019, 6219, 6237 and 6237D (With A.C.)	1460197	Aluminum	2380	375
55-7523 and 7533 (Without A.C.)	1460192	Orange	2650	400
55-7523 and 7533 (With A.C.)	1460198	Dark Red	2760	400
55-86	1460199	Green	2725	540
55-86 Heavy Duty	1460998	None	3000	540
Inside diameter of springs is 4.00 inches.				

NOTE: On cars equipped with Air Conditioner, Spring 1460197 or 1460198 is used on both sides, with Shim 1457838 on R.H. side only.

## CHASSIS SUSPENSION

### REAR SPRING DATA CHART

Series	Part No.	Color Daub	Normal Load	Rate Per In.	No. of Leaves
55-6019, 6219, 6237 and 6237D (Without Air Conditioner)	1460924	Light Blue	1190	115	5
55-6267 and 6267S (Without Air Conditioner)	1460925	Pink	1260	120	5
55-6019, 6219, 6237 and 6237D (With Air Conditioner)	1460925	Pink	1260	120	5
55-60 and 62 - Heavy Duty	1460930	Dark Red	1330	140	6
55-7523 and 7533 (Except Exports)	1460927	Purple	1440	140	6
55-7523 and 7533 - Export	1460929	Yellow	1430	170	7
55-86	1460928	None	1700	235	9
55-86 - Heavy Duty	1460931	White	1900	235	9

All springs are 2.50 inches in width.

Color daub to appear on rear eye only.

### SPRING HEIGHTS

The spring heights should be:

Model	Weight*		Front Spring Height in Inches	Rear Spring Height in Inches
	Front	Rear		
6019	2455	2250	4-1/2 to 5-1/4	8-3/4 to 9-1/2
6237	2390	2170	4-1/2 to 5-1/4	8-3/4 to 9-1/2
6237D	2410	2215	4-1/2 to 5-1/4	8-3/4 to 9-1/2
6267	2510	2335	4-1/2 to 5-1/4	8-3/4 to 9-1/2
6219	2390	2180	4-1/2 to 5-1/4	8-3/4 to 9-1/2
7523-33	2700	2500	5-3/8 to 6-1/8	10 to 10-3/4
86 Comm. (approx.)	2550	3040	5-1/2 to 6-1/4	9-5/8 to 10-3/8

\*Car weight with full tank of gasoline, heater, radio, and wheel discs.

### TORQUE TIGHTNESS

	Size	Ft. Lbs. Min.	Ft. Lbs. Max.
Knuckle to brake plate and steering arm . . . . .	7/16-20	60	70
Knuckle support arm - fixed threaded bushings --			
In lower end of knuckle support . . . . .	Special	200 Min.	
In lower suspension arm . . . . .	Special	195	205
In upper suspension arm . . . . .	Special	140	150
Knuckle support, upper and lower, nut . . . . .	Special	70	90
Rubber bumper to lower suspension arm . . . . .	3/8-24	16	20
Spring bolt (front end) . . . . .	Special	65	75
Spring shackle bushings and hanger bushings . . . . .	Special	65	75
Stabilizer bracket to frame . . . . .	3/8-24	25	30
Steering idler arm threaded bushing . . . . .	Special	110	115
Steering tie rod adjuster clamp bolts . . . . .	5/16-24	20	20
Steering tie rod pivots to steering arms . . . . .	1/2-20	50	55
Suspension arm shaft to frame (lower) . . . . .	7/16-20	60	70
Suspension arm shaft to frame (upper) . . . . .	9/16-18	150	160
Wheel mounting nuts . . . . .	1/2-20	90	100
Wheel mounting nuts . . . . . Lefthand threads on left side			

# STEERING

## GENERAL DESCRIPTION

The hydraulic operation of the power steering gear unit used on 1955 Cadillac cars is identical to that used on the 1954 series cars. Minor refinements in the pump reservoir and hydraulic hoses do not effect service procedure.

A two piece steering shaft, Fig. 7-1, with a flexible coupling above the valve body is used on all 1955 series cars. The flexible coupling, Fig. 7-2, acts as a shock absorber between the steering linkage and the steering wheel. The transmission of steering gear noises to the steering wheel is virtually eliminated.

The upper steering shaft is supported in the steering jacket by an upper and lower bearing. The shaft is held up in position by a spring located between the upper bearing in the directional signal housing and the steering wheel.

Due to the flexibility of the new design, it is no longer necessary to insert shims between the gear housing and frame for alignment purposes. The flexible coupling will compensate for any slight misalignment that may be present due to production variables between the steering tube mounting point on the instrument panel, steering gear housing, and the frame side bar.

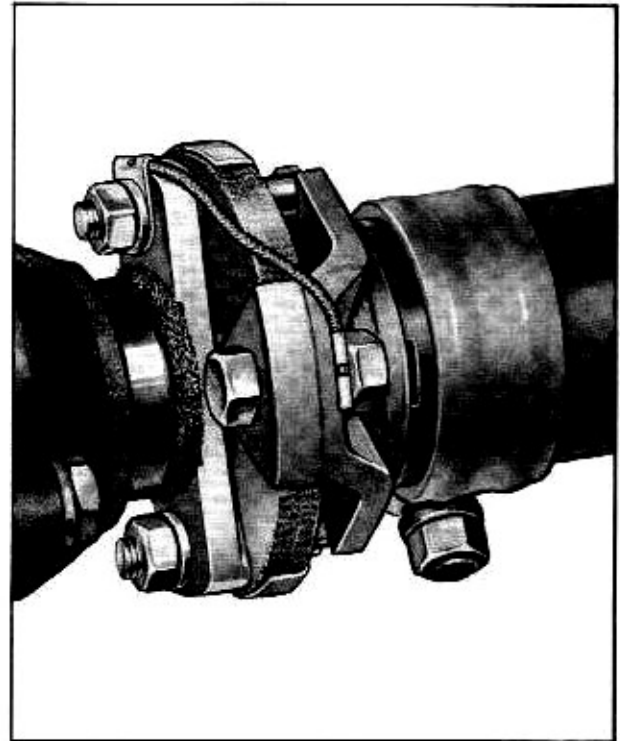


Fig. 7-2 Flexible Steering Coupling (Assembled)

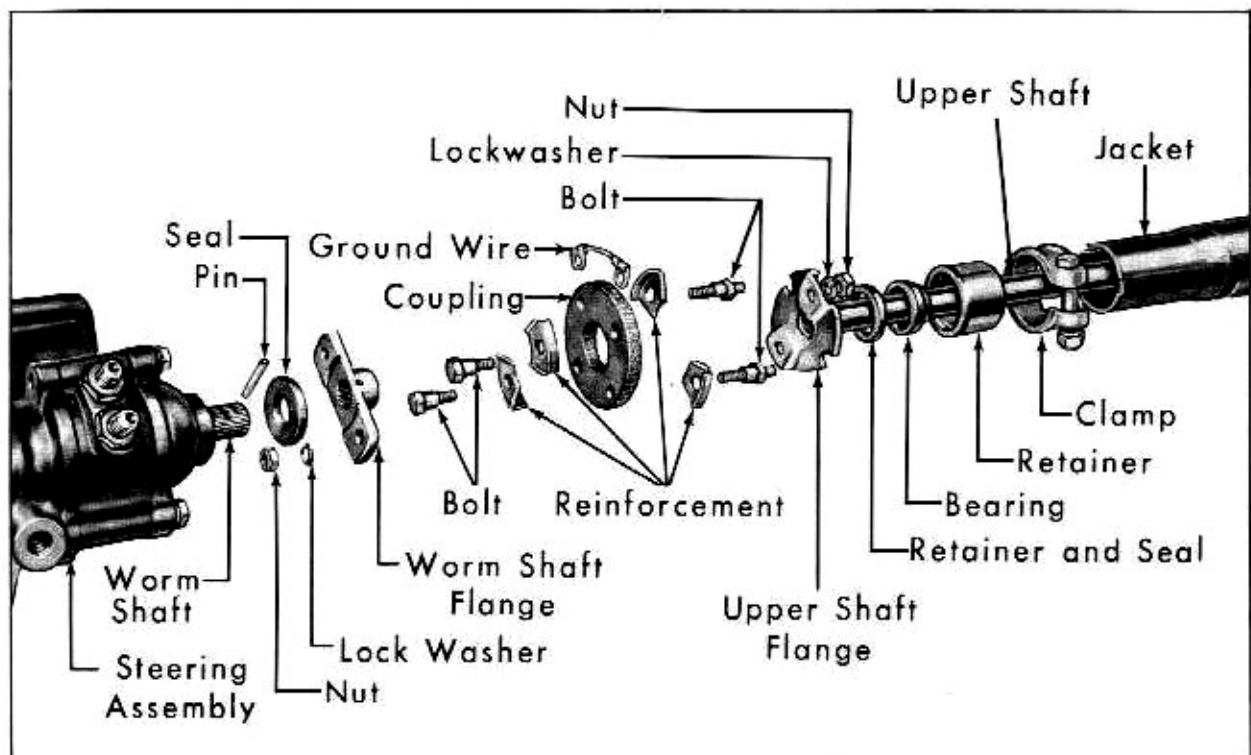


Fig. 7-1 Flexible Steering Coupling (Exploded)

## STEERING

The steering drag link has been modified to improve directional stability and obtain faster steering response. This has been accomplished by eliminating the inside spring at the pitman arm end of the drag link. Lost motion of the pitman arm, before steering effort is transmitted to the

wheels, has been reduced by this arrangement.

Servicemen should refer to the 1954 Shop Manual for information pertaining to service operations on the 1955 Cadillac Power Steering gear assemblies as only those operations affected by design changes are included in this section.

### SERVICE INFORMATION

#### (1) Steering Gear Adjustments

##### a. Off-Center Preload Check

1. Disconnect drag link at pitman arm.
2. Check for coupling distortion and correct as outlined in Note 6.
3. Back off power rack and pitman shaft adjusting screws at least 1/2 turn.
4. Using Spring Scale, Tool No. J-544-A, check the "off-center" pull through at the rim of the steering wheel. This should be between 3/8 and 3/4 lbs.

NOTE: If off-center pull is still greater or less than specified it will be necessary to remove the gear from the car to check thrust bearing lock nut torque. See Note 5. Also check for binding or rough bearings in upper and lower thrust bearing retainers. Do not attempt to compensate for any variance from off-center pull specifications by adjusting the pitman shaft end play screw or the power rack screw.

##### b. Pitman Shaft End Play Adjustment

1. Refer to Section 7, Note 3b, of the 1954 Shop Manual.

##### c. Power Rack Guide Adjustment

1. Refer to Section 7, Note 3c, of the 1954 Shop Manual.

#### (2) Bleeding Hydraulic System

1. Raise front end of car.
2. Remove tank cover hold-down screw and remove tank cover and gasket.
3. Fill oil tank to proper level and turn steering wheel from left to right to expel air from all internal circuits. Do not force wheel against stops.
4. Start engine and run at 1500 R.P.M. for two minutes.

5. With engine idling, turn wheels from left to right, recheck fluid level and fill as required. (1/2" below top edge, at oil level mark.)

6. Lower front end of car, turn wheels from left to right, and inspect gear, pump, hoses, and connections for leaks.

7. Stop engine, recheck oil level and install oil tank gasket and cover.

#### (3) Removal and Installation of Steering Linkage

Follow procedure outlined in 1954 Shop Manual. There is, however, no inside spring on the left side of the drag link on the 1955 series. After assembly, adjust left end plug in drag link by turning down tight and backing off 1/4 to 1/2 turn (1/2 turn preferred). See Fig. 7-3.

#### (4) Removal of Steering Gear Assembly

1. Disconnect hydraulic hoses from valve body on gear housing. Cap ends of hoses to prevent loss of oil.
2. Remove return port (large) fitting from the valve body.
3. Raise front end of car and place stands near outer ends of lower suspension arms.
4. Disconnect pitman arm from drag link.
5. Remove lower flange to coupling screws.

NOTE: Scribe marks on coupling and flange to assure correct positioning of steering wheel at assembly.

6. Remove gear housing to frame side bar screws and remove gear housing.

#### (5) Disassembly and Assembly of Steering Gear

1. Remove coupling flange to steering shaft dowel pin, supporting flange from below to prevent shock damage to thrust bearings, Fig. 7-4.

## STEERING

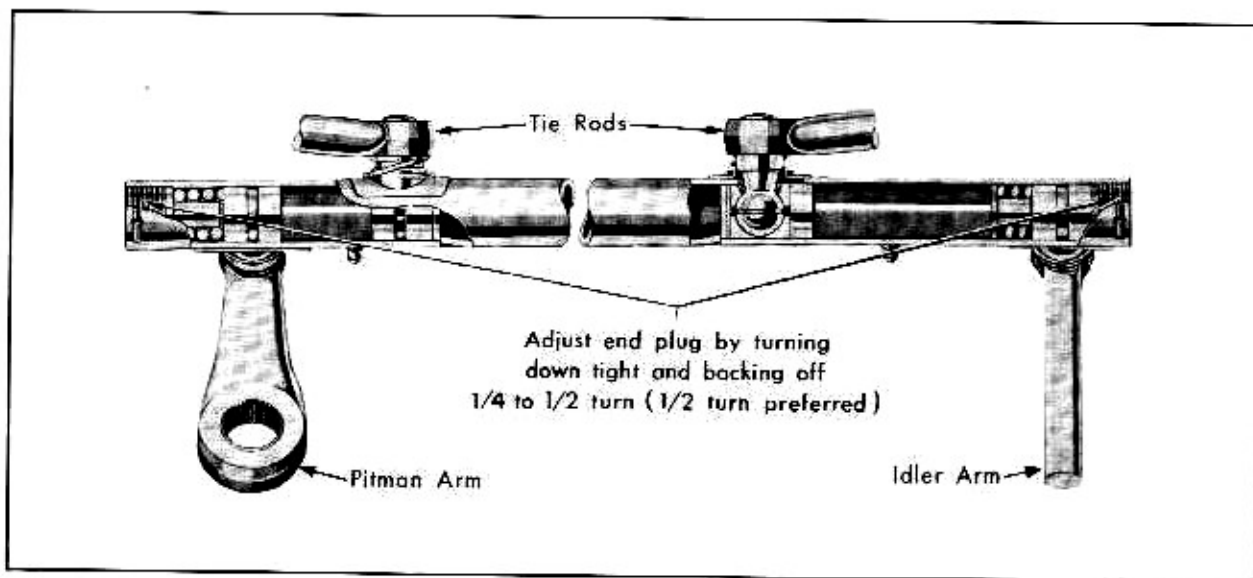


Fig. 7-3 Steering Drag Link

2. Remove flange from splined shaft.
3. Remove felt washer.
4. Proceed as outlined in Notes 22 and 23, Section 7, of the 1954 Shop Manual.

NOTE: Use the flange and a suitable lever to hold the shaft stationary when making the thrust bearing nut adjustment (30 ft.-lbs., back off 1/4 turn) during assembly.

For checking the through-center and off-center pull, a holding bar, Fig. 7-5, must be attached to the coupling flange.

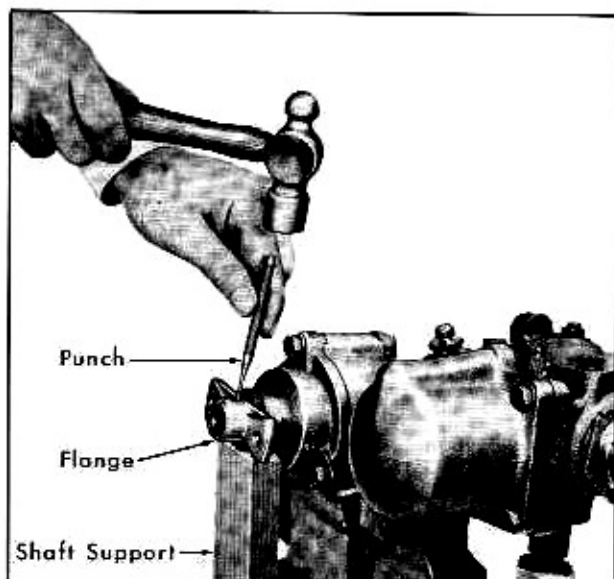


Fig. 7-4 Removing Dowel Pin

Hook the Spring Scale, Tool No. J-544-A, in the end hole and measure the pull through an arc not exceeding 3" as the bar reaches a vertical position, Fig. 7-6.

### (6) Installation of Steering Gear Assembly

1. Place steering gear in position on frame side bar, guiding the lower flange onto the coupling, and install gear to frame screws.

NOTE: Make certain that scribe marks on coupling and upper steering tube flange are aligned.

2. Install lower flange to coupling nuts.

NOTE: After installing the gear, check the flexible coupling for distortion. The coupling must rest in a flat plane with no visible bend or twist. If it is distorted, remove the lower steering column cover and lower clamp to jacket screw. Then, loosen the steering jacket clamp screws at the instrument panel, and slide the

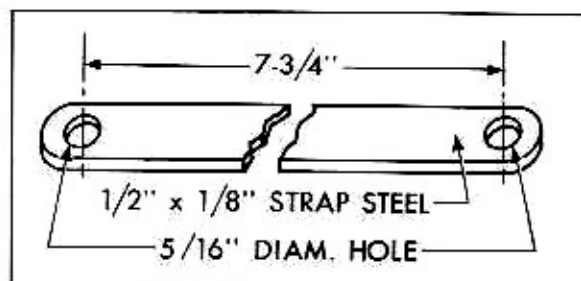


Fig. 7-5 Coupling Flange Holding Bar

## STEERING

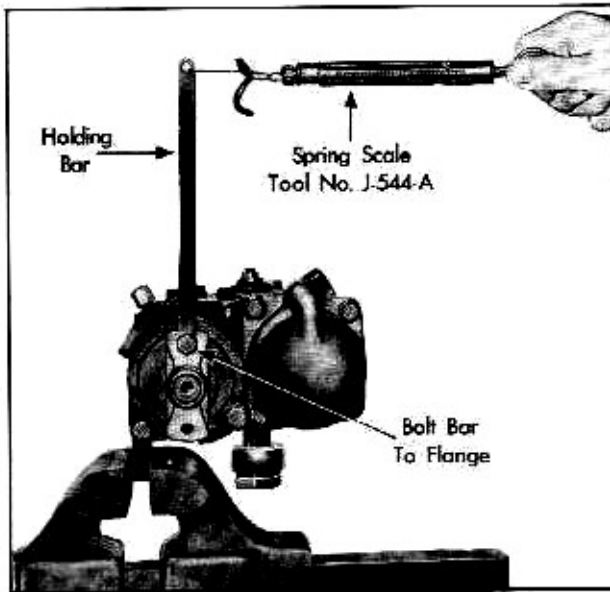


Fig. 7-6 Measuring Pull Through Center

complete steering jacket assembly up or down as required. Redrill lower clamp and jacket if necessary to reinstall screw.

3. Connect pitman arm to drag link. See Note 3 for correct adjustment.

4. Install return port (large) fitting on valve body.

5. Connect hydraulic hoses to valve body.

6. Fill and bleed hydraulic system as outlined in Note 2.

7. Lower front end of car.

### (7) Removal of Upper Steering Shaft

1. Remove steering gear assembly as outlined in Note 4.

2. Disconnect battery ground strap.

3. Remove neutral safety switch and horn contact.

4. Remove horn button and spring.

5. Remove steering wheel hub nut.

6. Remove horn ring retainer and horn ring.

7. Remove steering wheel using Special Puller No. J-1859.

8. Remove steering tube jacket tensioner spring and split ring.

9. Loosen lower steering jacket clamp, pry lower bearing retainer out of steering jacket and remove upper steering shaft through bottom of jacket.

### (8) Removal and Installation of Upper Steering Shaft Lower Bearing

1. Remove upper steering shaft as outlined in Note 7.

2. Using a soldering iron, remove the upper tip on the horn contact wire and remove the plastic insulator.

3. Pull the wire down through the shaft and out of opening at horn contact bushing.

4. Remove bushing with wire from steering shaft.

5. Slide bearing retainer from shaft and press bearing from retainer.

6. To install, reverse above procedure.

### (9) Installation of Upper Steering Shaft

1. Slide upper shaft into steering jacket, inserting lower bearing retainer into steering jacket until retainer flange is tight against bottom of shaft, and temporarily tighten lower clamp.

2. Install split ring and steering shaft tensioner spring over end of steering shaft.

3. Install steering wheel over splines on steering shaft with punch marks lined up.

4. Install horn ring retainer and horn ring in position on steering wheel.

5. Install steering wheel hub nut and tighten to 45-50 ft.-lbs. torque.

6. Stake nut to steering shaft.

7. Install spring and horn button.

8. Loosen lower steering jacket clamp and work lower bearing retainer flange down from end of steering jacket until  $3/16$ " clearance is obtained between the horn ring and directional signal switch carrier.

## STEERING

**NOTE:** To obtain desired clearance, insert a screwdriver between the lower bearing retainer and the steering jacket. Twist the screwdriver to move the retainer down.

9. Hold the lower bearing retainer in position while tightening the lower steering jacket clamp, making certain that the lower edge of the clamp is as close as possible to the lower end of the steering jacket.

### (10) Removal and Installation of Steering Shaft Upper Bearing

1. Remove neutral safety switch and horn contact from lower steering column.

2. Remove cotter key, dust shield and horse-shoe retainer at lower shift lever on steering jacket and then disengage shift lever from shifter tube.

3. Remove horn button and spring.

4. Remove steering wheel hub nut.

5. Remove horn ring retainer and horn ring.

6. Remove steering wheel using Special Puller, Tool No. J-1859.

7. Remove steering shaft tensioner spring and split ring.

8. Remove directional signal switch.

9. Remove cap screws holding upper bearing retainer to steering jacket.

10. Remove steering column lower cover.

11. Remove Hydra-Matic shift dial pointer.

12. Pull shifter tube up out of steering jacket until shift detent on bearing retainer clears the jacket and then unscrew bearing retainer from shifter tube.

13. Press upper bearing from retainer.

14. To install, reverse above procedure.

### (11) Removal and Installation of Steering Column Assembly

**NOTE:** Removal of the complete steering column assembly, as explained in the following procedure, is necessary only when both the upper and lower bearings must be replaced or if the lower shift lever must be removed.

#### a. Removal

1. Disconnect battery ground strap.

2. Remove directional signal switch and horn contact from lower steering jacket.

3. Remove brake pedal retaining screw.

4. Raise car.

5. Disconnect the manual control rod from the lower shift lever.

6. Scribe marks on coupling and flange, to assure correct positioning on assembly, then remove coupling to lower flange nuts.

7. Remove brake pedal.

8. Loosen carpet on left front side and pull back from steering column toe plate.

9. Remove seven toe plate to floor board screws.

**NOTE:** It is not necessary to remove the screw just below the steering jacket which holds the small cover plate and the brake pedal shaft seal to the toe plate.

10. Remove the stop light switch to toe plate screws.

11. Remove steering jacket lower cover and remove the Hydra-Matic shift indicator pointer.

12. Disconnect directional signal switch wires at connector.

13. Remove the small screw at the bottom of the steering-jacket-to-instrument-panel-clamp and remove the two steering column to instrument panel clamp nuts.

14. Remove steering column assembly from car.

#### b. Installation

1. Position steering gear assembly in car and install steering jacket to instrument panel clamp and install nuts loosely.

2. Install coupling to lower steering flange nuts. Be certain scribe marks are lined up.

3. Position the steering jacket assembly in the clamp so that the hole in the steering jacket is lined up with the hole at the bottom side of the steering clamp and install the clamp to steering jacket screw, then tighten clamp nuts.



## STEERING

4. Position stop light switch on toe plate and install screws.

5. Position toe plate and insulator on floor board and install screws. Be certain stop light switch arm is in position between the brake arm and the floor board.

6. Install brake pedal, guiding the rod through the upper seal, toe board, and the grommet underneath the floor board. Be certain that upper seal does not restrict the movement of the pedal rod.

7. Install the carpet and connect directional signal switch wire at connector.

8. Connect throttle rod to lower shift lever.

9. Lower car.

10. Be sure that the coupling is in a flat plane. If not, loosen lower steering jacket to bearing retainer clamp screw and adjust the shaft up or down to align flexible coupling.

11. Install brake pedal rod retaining screw.

12. Install horn contact and neutral safety switch.

13. Connect battery ground strap and adjust safety switch.

## TORQUE TIGHTNESS

Application	Size	Ft. Lbs. Min.	Ft. Lbs. Max.
Steering gear to frame . . . . .	7/16-14	40	45
Tie rod pivots to steering arms . . . . .	1/2 -20	50	55
Tie rod adjuster clamp nuts . . . . .	5/16-24	20	25
Idler arm threaded bushings . . . . .	Special	110	115
Pitman arm nut . . . . .	7/8 -16	100	125
Steering wheel nut . . . . .	Special	45	50
Idler arm support to frame . . . . .	3/8-24	30	35
Lower end cover . . . . .	3/8-16	25	29
Side cover plate . . . . .	3/8-16	25	29
Valve cover to housing . . . . .	3/8-16	15	20
Power cylinder to housing . . . . .	3/8-16	25	29
Pump tank cover . . . . .	3/8-16	25	29
Pump cover to body . . . . .	3/8-16	25	29
Flexible coupling nut . . . . .	Special	20	25
Pitman rack adjuster lock nut . . . . .	Special	75	125

## SPECIFICATIONS

Steering Ratio		
Gear	19.1 to 1	
Overall	21.3 to 1	
Hydraulic Pump Pressure		
Steering wheel against stop	900 to 1000 psi.	
Relief valve opens above	. . . . . 900 psi.	
Tread	62, 60S, 75	86 Comm.
Front	60"	60"
Rear	63.10"	65.12"

## STEERING

## SPECIAL TOOLS

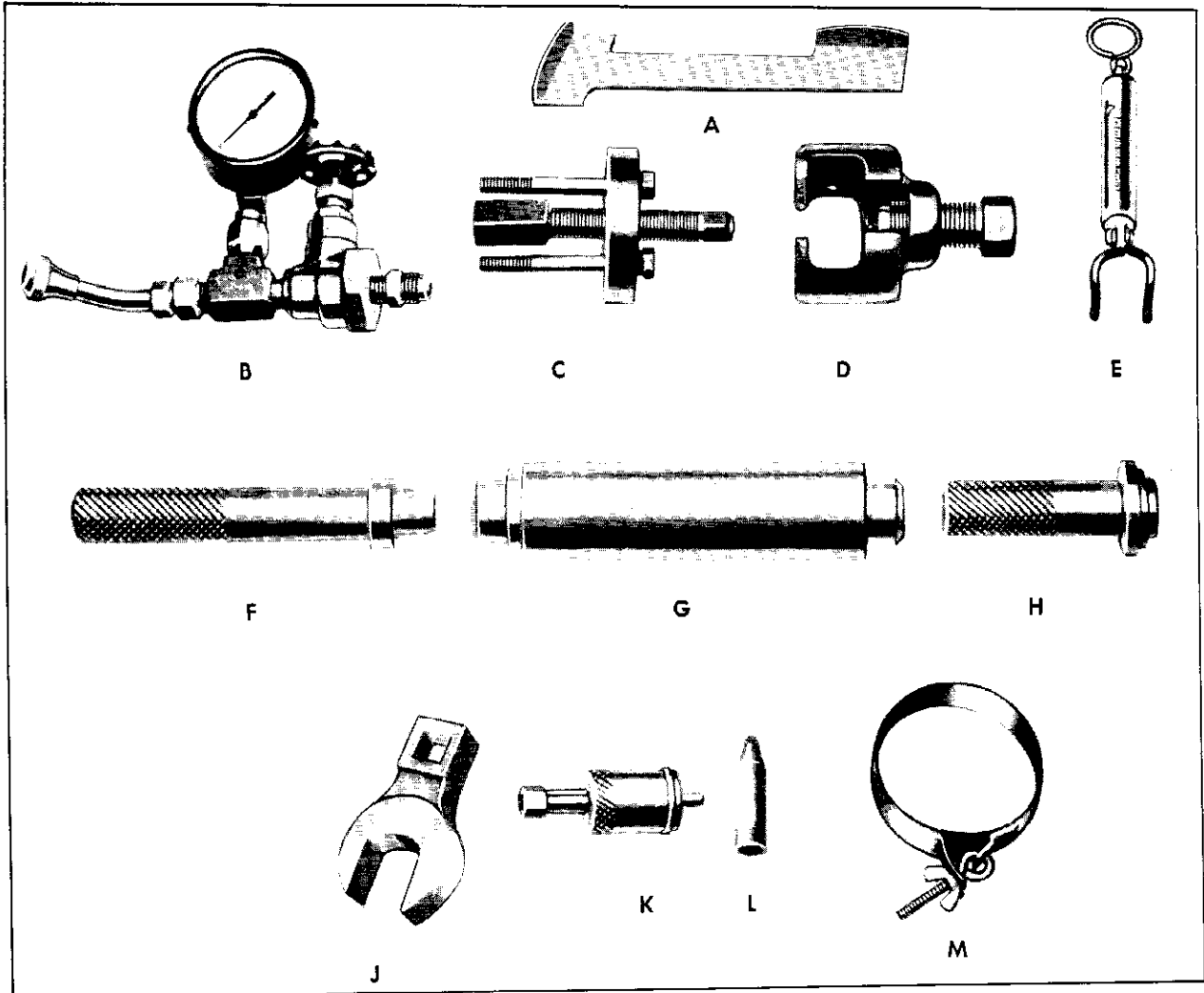
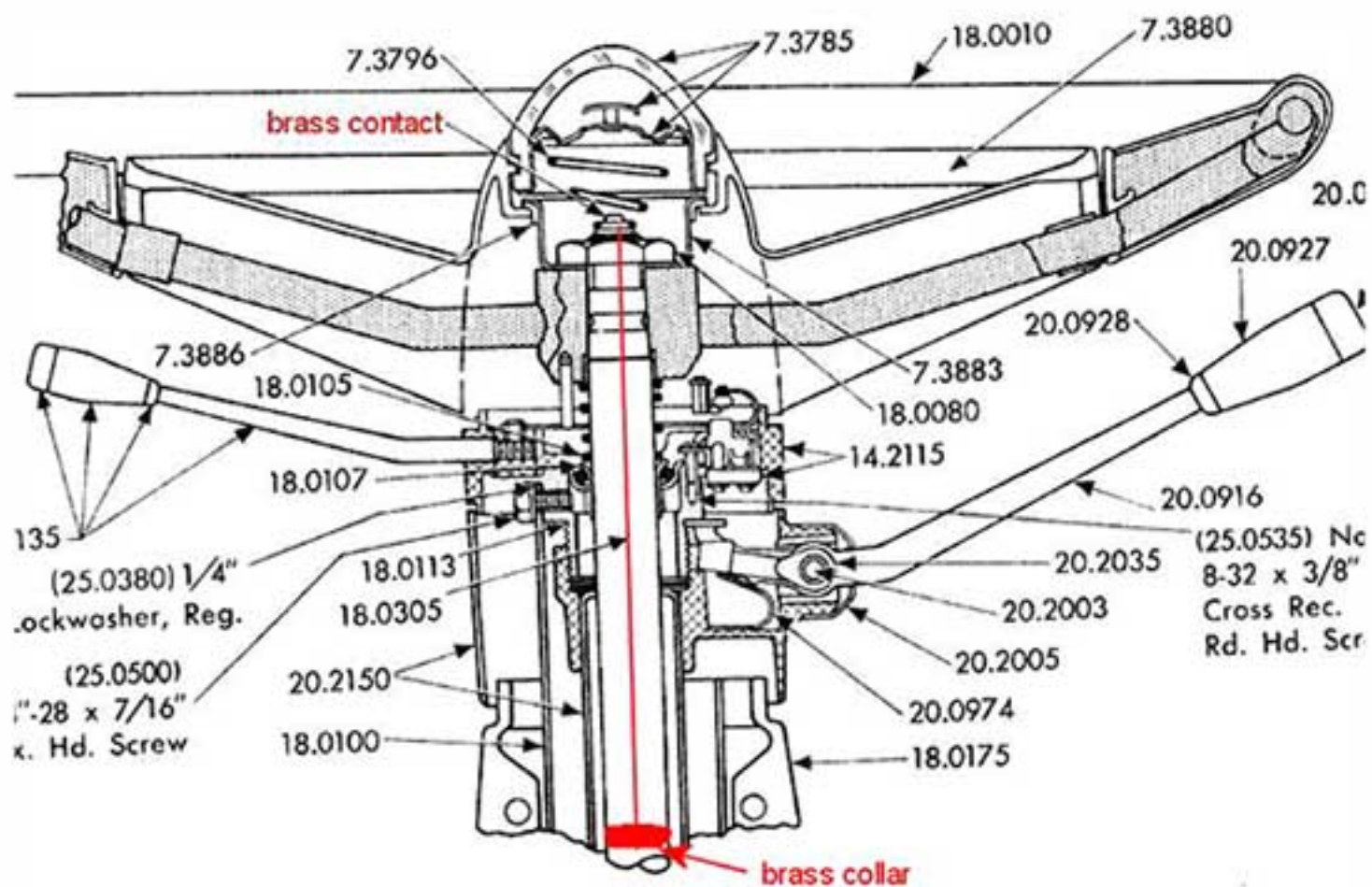


Fig. 7-7 Special Tools

Key	Tool No.	Name
A	J-5648	Power Rack Adjusting Wrench
B	J-5176	Pressure Testing Gage
C	J-1859	Steering Wheel Puller
D	J-2162	Pitman Arm Puller
E	J-544A	4# Spring Scale
F	J-5188	Seal Installer
G	J-5189	Bearing and Seal Installer
H	J-5191	Bearing Installer
J	J-5680	Bearing Adjusting Wrench
K	J-5190	Bearing Puller
L	J-5193	Piston Rod Inserter
M	J-5186	Piston Ring Compressor





STEERING WHEEL, DIRECTIONAL SIGNAL AND SHIFT CONTROL,  
 HORN BUTTON AND RING. CROSS SECTIONAL VIEW  
 SERIES 1955

## REAR AXLE

### GENERAL DESCRIPTION

The design of all rear axle gear assemblies used on 1955 cars is identical to those used in 1954, although the gear ratios for different series vary to provide optimum performance and economy on all models. The 3.36 to 1 ratio rear axle

gear assembly is used as standard equipment on the 1955-62 and 60S Series cars. A 3.07 to 1 ratio axle is available for these models when ordered with the car. The rear axle ratio for the 75 Series is 3.77 to 1, and 4.27 to 1 for the 86 Series.

### SPECIFICATIONS

Subject and Remarks	55-62, 60S	55-75	55-86
Axle shaft length			
Left (has left hand threaded wheel studs in flange)	30-1/4"	30-1/4"	32-3/4"
Right	32-1/2"	32-1/2"	35"
Runout (at ground surface near splines) not to exceed	.006"	.006"	.006"
Backlash - pinion and ring gear	.003"-.010"	.003"-.010"	.003"-.010"
Distance - outer face of flange to inner end of bearing inner race	3.075"-3.085"	3.075"-3.085"	
Minimum road clearance (under center of axle housing)	8"	8-1/4"	9"
Gear Ratio			
Standard	3.36-1	3.77-1	4.27-1
Optional	3.07-1		

### TORQUE TIGHTNESS

Location	Size	Ft. Lbs. Min.	Ft. Lbs. Max.
Spring U-bolts	Special	45	52
Brake backing plate to axle housing (55-86 Comm.)	7/16-20	55	60
Brake backing plate to axle housing (55-62, 60S, 75)	3/8-24	35	40
Axle shaft hub nuts (86 Comm.)	1-14	285	315
Differential carrier to axle housing	3/8-24	30	40
Pinion shaft nut	7/8-14	200 Min.	
Universal joint screws	5/16-24	18	22
Intermediate propeller shaft yoke nut (75 & 86 Comm.)	1/2-20	40*	50*
Differential carrier pedestal clamp screw	1/2-20	50	60

\* Back off 1/2 turn. See Note 10b, Step 5, 1954 Shop Manual.

### OTHER NOTES AND REFERENCES

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# BRAKE SECTION

## GENERAL DESCRIPTION

Several improvements have been made in the brake system on 1955 Cadillac cars to prolong brake lining life and obtain better braking action.

On all 75 and 86 series commercial chassis, the length of the primary brake lining has been increased, providing greater braking area and longer lining life.

A 1/2" diameter control valve piston, Fig. 9-1, is used on the Power Brake in 1955, which ma-

terially reduces the pressure required on the pedal to obtain power assist in braking. Use of a softer master cylinder boot and pedal shaft seal at the toe-board has eliminated the necessity for a brake pedal retracting spring on cars with Power Brakes, which further reduces pedal apply effort.

The residual check valve, which was formerly in the master cylinder, is now located in the hydraulic cylinder end cap on the power brake assembly, Fig. 9-1.

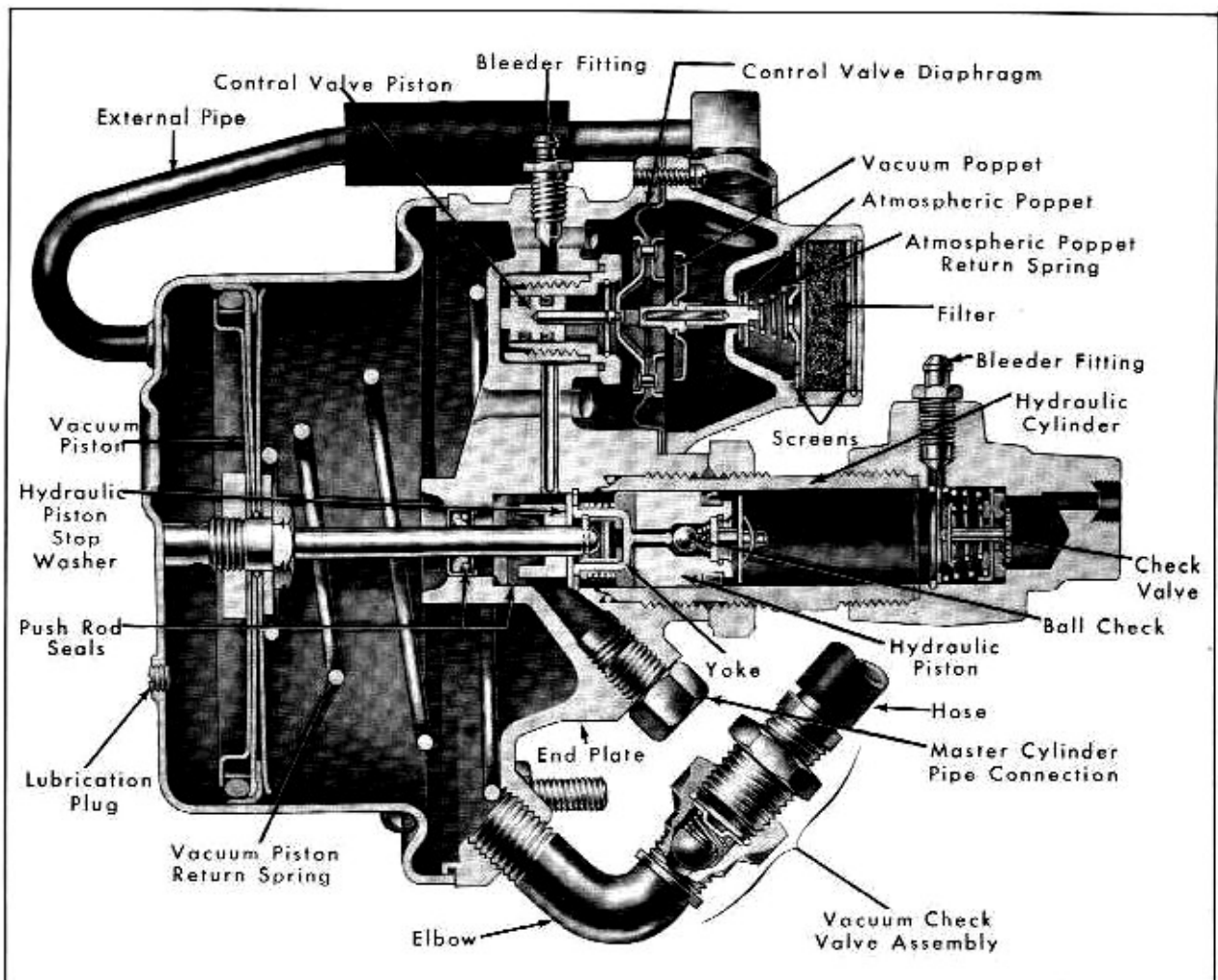


Fig. 9-1 Power Brake Cut-Away View

## SERVICE INFORMATION

### (1) Removal of Power Brake Assembly

1. Disconnect brake lines at power cylinder end plate.
2. Loosen vacuum line hose clamp at check

valve and slide hose off of check valve.

3. Remove three nuts and lockwashers from the cylinder mounting bracket and remove Power Brake assembly from car.



BRAKES

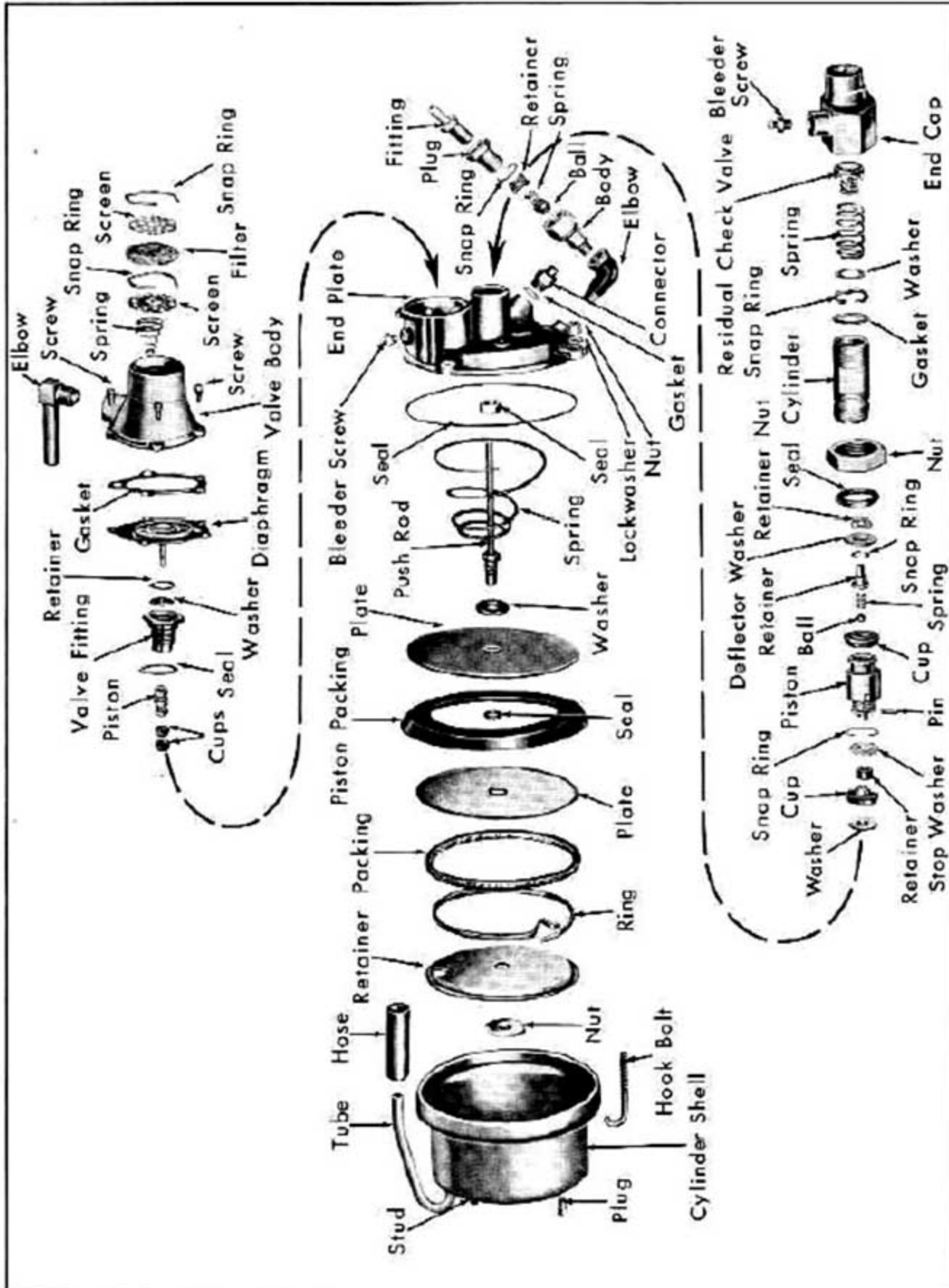


Fig. 9-2 Power Brake Disassembled

## BRAKES

**(2) Disassembly of Power Brake Assembly****a. Disassembly of Hydraulic Cylinder Assembly**

**NOTE:** When disassembling the Power Brake assembly, use care in handling parts to prevent their coming in contact with mineral oil or greases. Do not handle hydraulic cups and seals with greasy hands.

1. Loosen hydraulic cylinder nut and unscrew hydraulic cylinder assembly from the end plate, Fig. 9-2.

2. Hold the end cap in a vise and remove the hydraulic cylinder from the cap, using an open end wrench on the flat part of the cylinder.

3. Remove cylinder to end cap gasket. Remove the bleeder fitting from the end cap.

4. Remove the residual check valve snap ring. Remove spring seat, spring and residual check valve.

5. Loosen the four hook bolt nuts and remove cylinder shell, sliding the connector pipe out of the rubber hose.

6. Compress the piston spring by pressing down on the end plate and install the Vacuum Piston Retaining Strap, Tool No. J-5650, under opposite hook bolts as shown in Fig. 9-3.

7. Remove the hydraulic piston assembly from the push rod by holding retaining spring back and removing the small pin.

8. Remove the Retaining Strap, while compress-

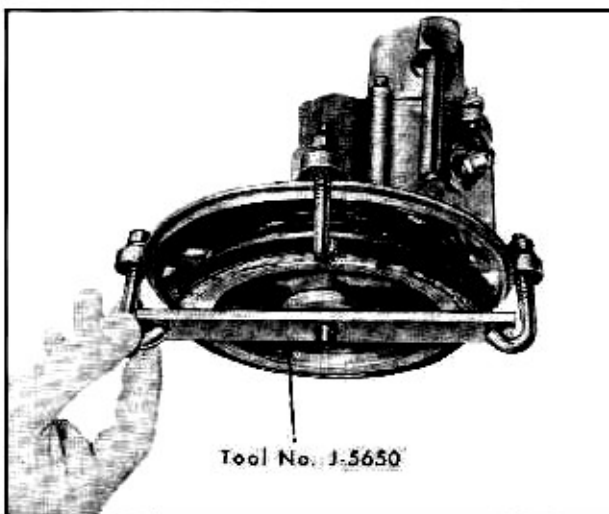


Fig. 9-3 Installing Retaining Strap

ing the return spring, then remove the vacuum piston with push rod and vacuum piston spring.

9. Remove deflector retainer nut and deflector washer from piston.

10. Remove snap ring, retainer, spring, and ball from piston.

11. Remove hydraulic piston cup from piston.

12. Remove the hydraulic cylinder end seal.

13. Remove the retaining ring and the hydraulic cylinder stop washer from the end plate.

14. Remove the seal retainer. Note that the counter-bored side is next to seal cup.

15. Remove seal and lower stop washer. Note that lip of cup seal is up.

16. Drive piston rod seal out with a flat end rod or drift.

**b. Disassembly of Vacuum Control Valve Assembly**

1. Remove control valve body screws and remove control valve assembly with diaphragm and gasket.

2. Remove diaphragm from control valve body.

3. Remove air intake filter snap ring and screen.

4. Remove filter.

5. Remove lower snap ring and screen with spring.

6. Remove hydraulic control valve fitting from end plate, using 1-1/8" socket wrench.

7. Push piston out of fitting and remove two cups from piston.

8. Remove seal from fitting.

9. Remove retainer ring and stop washer from fitting.

**c. Disassembly of Vacuum Piston**

1. Remove nut from threaded end of push rod.

2. Remove retainer plate, packing, and expander ring.

3. Remove small diameter piston plate with rubber seal ring.

## BRAKES

4. Remove leather packing, larger diameter piston plate, and washer from push rod.

### d. Disassembly of Check Valve

1. Remove check valve assembly from pipe elbow in end plate.
2. Remove plug from bushing.
3. Remove bushing from check valve assembly.
4. Remove snap ring, spring retainer, and spring with check ball.
5. Remove spring from check ball.

### (3) Cleaning and Inspection of Power Brake Parts

1. Thoroughly clean all parts to be reused.
2. Keep all hydraulic system parts away from mineral oils or greases.
3. After cleaning, wash hydraulic system parts in clean alcohol before assembly.
4. Use new rubber seals and cups when reassembling power brake. Do not attempt to reuse old seals or cups.

### (4) Assembly of Power Brake Assembly

#### a. Assembly of Vacuum Piston

1. Drill a 5/16" hole in a block of wood and place piston rod in hole with threaded end up.
2. Install flat washer and larger diameter piston plate (chamfered side of hole up) over threaded end of push rod.
3. Install rubber seal ring over shaft into chamfered hole in piston plate.
4. Install leather packing on piston plate with lip up.
5. Install smaller diameter piston plate over threaded end of push rod, with chamfered side of the hole down over rubber sealing ring. Outer diameter of plate will retain leather packing in position.
6. Install cotton wicking in position against inner face of lip of leather packing.
7. Install expander ring inside of cotton wicking,

with gripper points up and notch at loop end of expander ring under clip at opposite end of ring.

8. Install retainer plate with cut-out portion over loop of expander ring.

9. Install nut on push rod finger tight, then place hexagonal section of push rod in a vise and tighten nut securely, using care to be sure that retainer plate does not turn. Stake the nut to the shaft.

#### b. Assembly of Vacuum Control Valve

1. Install stop washer and retainer ring in control valve fitting.
2. Install two new rubber cups on valve piston with lip of cups toward small end of piston.
3. Install piston in valve fitting with hole in end of piston next to stop washer.
4. Install a new rubber seal gasket in groove under head of valve fitting and install fitting into end plate. Tighten fitting securely.
5. Install gasket on end plate.
6. Install vacuum diaphragm over gasket with shaft in hole in hydraulic valve piston.
7. Position vacuum control valve body over vacuum diaphragm.

NOTE: One side of valve body mounting flange is straight. This side should be positioned next to hydraulic cylinder boss on end plate.

8. Install and tighten five screws.
9. Install spring in vacuum control valve body with small end over raised area of poppet valve seat.
10. Install screen, with depression in larger end of poppet valve spring, and install snap ring.

11. Install filter, upper screen, and retainer.

#### c. Assembly of Hydraulic Cylinder

1. Install a new push rod leather seal into end plate with lip of seal toward hydraulic cylinder side of end plate.
2. Place end plate on bench and install stop washer with chamfered side down.
3. Install seal cup with lip up and seal retainer with counterbored side next to cup.

**BRAKES**

4. Install stop washer next to retainer and install snap ring in groove.
5. Place vacuum piston return spring over push rod with small end of spring next to vacuum piston and carefully guide push rod through seal in end plate.
6. Compress spring and use Vacuum Piston Retaining Strap, Tool No. J-5650, to hold end plate and cylinder together.
7. Install ball, spring, retainer, and snap ring in piston.
8. Dip hydraulic piston cup in Delco No. 11 brake fluid and install in groove with lip of cup toward check valve end of piston.
9. Install deflector washer and deflector retainer nut on piston.
10. Dip hydraulic piston in Delco No. 11 brake fluid and assemble piston on push rod. Install retaining pin in hole in piston and rod. When pin is in position, retaining spring will hold it in place.
11. Place end cap in a vise and install bleeder screw, end cap gasket, residual check valve, spring, spring seat and snap ring.
12. Thread hydraulic cylinder tube into end cap with milled flats next to end cap, and securely tighten cylinder.
13. Thread check nut on cylinder to limit of threads.
14. Install hydraulic cylinder end seal against shoulder in end plate.
15. Guide the lip of the piston cup into the cylinder carefully and thread cylinder into end plate until cylinder bottoms firmly against the end seal. Tighten cylinder until bleed screw on end cap is aligned with bleed screw in end plate and tighten

check nut securely.

16. Remove Piston Retaining Strap.
17. Place rubber ring gasket in groove on end plate.
18. Saturate the cotton wicking by dipping vacuum piston in Delco Shock Absorber Fluid, and allow excess oil to drain off. In addition, coat inside of cylinder shell lightly with Delco Shock Absorber Fluid.
19. Insert piston into cylinder shell by tipping piston and, with connector pipe lined up with hose, slide cylinder shell into position against end plate.
20. Attach hook bolts and tighten each bolt evenly until all bolts are uniformly tight.

**d. Assembly of Check Valve**

1. Install end of spring over check ball.
2. Install spring retainer plate, with depression in plate in end of spring, and install snap ring.
3. Install plug in check valve body.
4. Install fitting in bushing.
5. Install vacuum check valve assembly in elbow on end plate.

**(5) Installation of Power Cylinder Assembly**

1. Position Power Brake assembly on mounting bracket and install lockwashers and nuts.
2. Connect vacuum hose to check valve on Power Brake and tighten hose clamp.
3. Connect brake line fittings to end plate.
4. Bleed braking system.

**TORQUE TIGHTNESS**

Location	Size	Ft. Lbs. Min.	Ft. Lbs. Max.
Brake fluid line connections . . . . .	Special	8	9
Hand brake cable clamps (at backing plate) . . . . .	5/16-24	10	13
Pedal clamp bolt . . . . .	3/8-16	20	25
Front backing plate to knuckle . . . . .	7/16-20	60	70
Brake backing plate to axle housing (except 86) . . . . .	3/8-24	35	40
Brake backing plate to axle housing (55-86 Series) . . . . .	7/16-20	55	60
Brake anchor pin . . . . .	Special	80	120

**BRAKES**

**SPECIFICATIONS**

Subject and Remarks	55-62, 60S	55-75	55-86
Braking area (Total in Square inches) . . . . .	222.8	233.7	233.7
Braking ratio -			
Front . . . . .	55.8%	55.8%	52.8%
Rear . . . . .	44.2%	44.2%	47.2%
Drums -			
(Left front drum has left hand threaded wheel studs.)			
Inside Diameter:			
Front . . . . .	11.995"-12.005"	11.995"-12.005"	11.955"-12.005"
Rear . . . . .	11.995"-12.005"	11.995"-12.005"	11.995"-12.005"
Out-of-round inside diam. not over -			
Front . . . . .	.007"	.007"	.007"
Rear . . . . .	.007"	.006"	.006"
Clearance between lining and drums . . . . .	.010" - top .015" - bottom	.010" - top .015" - bottom	.010" - top .015" - bottom
Remachined diameter not over . . . . .	12.060"	12.060"	12.060"
Lining - Primary -			
Length, width, thickness:*			
Front . . . . .	11.52x2-1/2x1/4	12.98x2-1/2x1/4	12.98x2-1/2x1/4
Rear . . . . .	11.52x2-1/2x1/4	12.98x2-1/2x1/4	12.98x2-1/2x1/4
Lining - Secondary -			
Length, width, thickness:			
Front . . . . .	12.98x2-1/2x1/4	12.98x2-1/2x1/4	12.98x2-1/2x1/4
Rear . . . . .	12.98x2-1/2x1/4	12.98x2-1/2x1/4	12.98x2-1/2x1/4
Type . . . . .	Moulded	Moulded	Moulded
Attached to shoes by . . . . .	Rivets	Rivets	Rivets
Wheel cylinder bore -			
Front . . . . .	1-1/8"	1-1/8"	1-1/8"
Rear . . . . .	1"	1"	1-1/16"
POWER BRAKE			
Type Used . . . . .	Bendix Hydrovac		
Vacuum Piston			
Diameter . . . . .	5-1/4"		
Length of Stroke . . . . .	1-1/2"		
Control Valve Piston Diameter . . . . .	1/2"		
Hydraulic Piston Diameter . . . . .	1"		
Hydraulic Piston Stroke . . . . .	1.325 min.		
* 1/2" wide circumferential groove 1/8" deep full length.			

# MAJOR REPAIR KIT FOR SERVICING BENDIX HYDROVAC

Single Piston Hydrovacs—373853, 374000, 374070, 374550, 374750, 374980,  
375100, 376862.

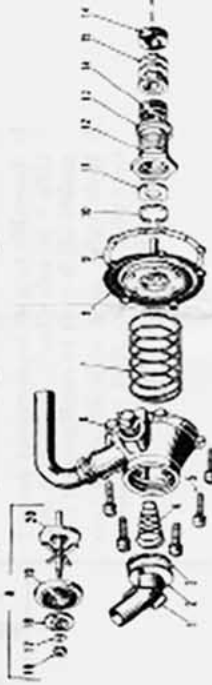
Guided Piston Hydrovacs—375278, 375279, 376710

## PARTS IDENTIFICATION

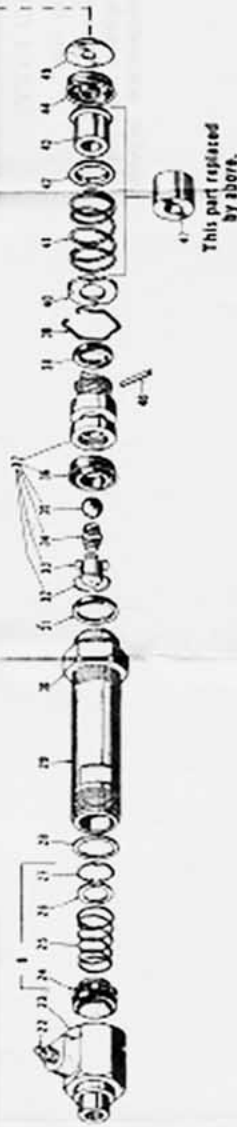
KEY NO.	PART NAME
1	SNAP RING—A.C. Tube & Cover
2	TUBE & COVER
3	GASKET—A.C. Tube & Cover
4	SPRING—Poppet Valve (Small)
5	SCREW & LOCKW.
6	HOUSING—Valve
7	SPRING—Valve Seal
8	DIAPHRAGM & PLATE
9	GASKET—Valve Body
10	RING—Retainer (Valve Piston Stop)
11	WASHER—Valve Piston Slip
12	FITTING—Hydraulic Valve Piston
13	SEAL—Hydraulic Valve Fitting
14	CUP—Hydraulic Valve Piston
15	PISTON—Hydraulic Valve
16	NUT—Valve Poppet
17	WASHER—Seal (Poppet Valve)
18	VALVE—Atmospheric Poppet (Small)
19	VALVE—Atmospheric Poppet (Large)
20	VACUUM POPPET & SHAFT
21	SEAL—End Piston (Rubber)
22	VALVE—Sleeve
23	CAP—End (Hydraulic Cyl. Tube)
24	VALVE—Residual Check
25	SPRING—Retain (Residual Valve)
26	WASHER—Stop (Residual Valve)
27	SNAP RING (Residual Valve)
28	GASKET—Copper (End Cap)
29	CYLINDER—Tube
30	NUT—Check (Hyd. Cyl. Tube)
31	SEAL—Hydraulic Cyl. Tube Nut
32	SNAP RING (Hyd. Pls. Check Valve)
33	RETAINER—Ball (Hyd. Pls. Check Valve)
34	SPRING—Ret. (Hyd. Pls. Check Valve)
35	BALL (Hyd. Pls. Check Valve)
36	CUP—Hydraulic Piston
37	HYDRAULIC PISTON
38	SEAL—Rubber (Hyd. Cyl. End)
39	SNAP RING (Hyd. Pls. Stop Washer)
40	WASHER—Hyd. Pls. Stop
41	SPRING—Retainer (Push Rod)
42	WASHER—Expander (Push Rod)
43	RETAINER—Seal (Push Rod)
44	CUP—Hyd. Seal (Push Rod)
45	WASHER—Guide (Push Rod)
46	PIN—Retainer (Hyd. Pls.)
47	SPACER—Replaces with parts (41), (42), & (4)

The Major Repair Kit contains the parts that are normally required for complete overhaul of a Hydrovac. For ease of installation the instructions are set up in Steps 1 through 5 with parts illustrated for identification and relationship to other parts in the Hydrovac. A complete Service Manual covering the Bendix Hydrovac is available upon request (See reverse side).

**STEP 1**—Clean all metal parts in Bendix Metalbrite. After cleaning, wash all hydraulic system parts in clean alcohol before assembly. Inspect all parts for excessive wear or damage. Replace any questionable parts.



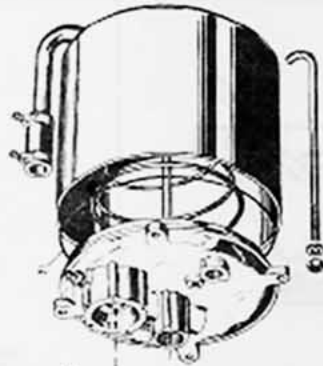
**STEP 2**—Assemble control valve parts 10 through 15, into end plate. Securely tighten fitting (12). On Hydrovacs with double atmosphere poppet, assemble group "A" parts in to housing (6) as a sub-assembly. For replacement of control valve poppets in other Hydrovacs, see reverse side. Attach remaining parts 1 through 9 to end plate.



**STEP 3**—Assemble new type stationary seal parts 39 through 45 into center bore of end plate. Discard stationary seal retainer (47). Assemble end seal (38) in against shoulder of end plate. Assemble hydraulic piston parts (32) through (37) as a sub-assembly. Assemble parts (23) through (31) as a sub-assembly. Securely tighten cylinder (29) into end cap (23). Note: Group "B" parts not used in all Hydrovacs.

**STEP 4**—Compress vacuum piston return spring so that push-rod projects from end plate. Hold spring compressed while attaching piston to push-rod with pin (46) and then guide cylinder over piston and thread cylinder into end plate. Align bleed screw in end cap with bleed screw in control valve and securely tighten check nut (30).

**STEP 5**—Release vacuum piston spring. Coat inside of vacuum cylinder with Bendix Vacuum Cylinder Oil and saturate cotton wicking and leather piston packing in oil. Place gasket (21) on end plate, insert vacuum piston in cylinder shell and assemble cylinder to end plate. Slide hose back in position on control tube. Note: If Hydrovac is to be stored for a prolonged period of time, it is recommended that stationary seal cup (44) be dipped in Bendix Assembly Fluid, Part No. 377854, before assembly into Hydrovac.



# ENGINE MECHANICAL

## GENERAL DESCRIPTION

The 1955 Cadillac engine is of the V-8, overhead valve design, with a 3-13/16" bore and a 3-5/8" stroke to provide a piston displacement of 331 cubic inches. The compression ratio is 9 to 1 and the standard engine, used on all 1955 Cadillac cars except the Eldorado, develops 250 horsepower at 4600 RPM. The Eldorado engine, which develops 270 horsepower at 4800 RPM, utilizes two four-barrel carburetors and a special intake manifold to attain the higher horsepower. In all other respects, the Eldorado engine is identical to the standard engine.

In addition to the higher compression ratio, other design changes have been made which contribute to the increased horsepower of the 1955 engine. The valve lift has been increased by alter-

ing the rocker arm ratio and the valve timing has been retarded by relocating the dowel holes in the camshaft sprocket. Valve lifter push rods are .045" shorter than those used on the 1954 Cadillac engine, to accommodate the lower cylinder head, and may be identified by a single groove at the upper end of the rod as compared with the double groove on 1954 push rods. Valve springs are longer to assure proper valve action with the higher valve lift. The camshaft used in the 1955 engine is the same as that used in 1954, as the higher valve lift and retarded valve timing have been accomplished by design improvements which do not affect the camshaft.

Service procedures remain the same as those outlined in Section 10 of the 1954 Shop Manual.

## SPECIFICATIONS

Subject and Remarks	All Series	Subject and Remarks	All Series
Bore . . . . .	3-13/16"	VALVES, INLET	
Stroke . . . . .	3-5/8"	Clearance between stem and guide --	
Compression Pressure --		New limits . . . . .	.0010 - .0025"
At cranking speed (throttle open) . . .	165 to 185	Worn limits, not over . . . . .	.005"
At 1000 R.P.M. . . . .	212 to 230	Clearance between lifter body and	
Compression Ratio . . . . .	9.0 to 1	crankcase . . . . .	.0010 - .0023"
Horsepower --		Head diameter, overall . . . . .	1.750"
Rated (taxable) . . . . .	46.5	Lift . . . . .	.411"
Standard Engine		Seat angle . . . . .	44°
Developed at 4600 R.P.M. . . . .	250	Seat width in head . . . . .	.050 - .068"
Eldorado Engine		Seat eccentricity, not over	
Developed at 4800 R.P.M. . . . .	270	(total indicator reading) . . . . .	.004"
Piston Displacement . . . . .	331 Cu. In.	Stem, length overall . . . . .	4.628 - 4.650"
Points of Suspension . . . . .	3	Stem, diameter . . . . .	.3415 - .3425"
Standard Engine		VALVE SPRINGS	
Torque, at 2800 R.P.M. . . . .	345 ft. lbs.	Free length . . . . .	1.980"
Eldorado Engine		Pressure in Pounds -- Compressed to	
Torque at 3200 R.P.M. . . . .	345 ft. lbs.	(valve closed) . . . . .	62 to 68
VALVES, EXHAUST		Compressed to 1.285" (valve open) .	.152 to .162"
Clearance between stem and guide --		ROCKER SHAFT ASSEMBLY	
New limits . . . . .	.0010 - .0025"	Clearance between arm and shaft --	
Worn limits, not over . . . . .	.005"	New Limits . . . . .	.0007 - .0022"
Clearance between lifter body and		Worn Limits . . . . .	.003"
crankcase . . . . .	.0010 - .0023"	Clearance between shaft and	
Head diameter, overall . . . . .	1.562"	bracket . . . . .	.0002 - .0017"
Lift . . . . .	.411"	Shaft diameter . . . . .	.8108 - .8113"
Seat Angle . . . . .	44°	Diameter of hole in arm . . . . .	.812 - .813 "
Seat width in head . . . . .	.050" - .068"	Short Spring (Center)	
Seat eccentricity, not over		Free length . . . . .	3-63/64"
(total indicator reading) . . . . .	.004"		
Length overall . . . . .	4-21/32"		
Stem, diameter . . . . .	.3415 - .3420"		



ENGINE MECHANICAL

SPECIFICATIONS (Cont'd)

Subject and Remarks	All Series	Subject and Remarks	All Series
<b>ROCKER SHAFT ASSEMBLY (Cont'd.)</b>		<b>PISTONS AND CYLINDERS</b>	
Pressure in pounds (when compressed to 1.844") . . . . .	10-1/2 - 12	Cylinder bore out of round (new or reground limit)	
Long spring (end)		Not over . . . . .	.0005"
Free length . . . . .	4-31/32"	Taper, not over . . . . .	.0007"
Pressure in pounds (when compressed to 2.219") . . . . .	10-1/2 - 12	Cylinder bore, standard . . . . .	3.8125 - 3.8145
		Cylinder sizes (as indicated by letters stamped on top face of block). . . . .	
<b>VALVE TIMING (without ramp)</b>		Letter	Cylinder Sizes      Piston Sizes
Intake opens . . . . .	19° B.T.D.C.	A	3.8125-3.8127"      3.8116-3.8118"
Intake closes . . . . .	70° A.B.D.C.	B	3.8127-3.8129"      3.8118-3.8120"
Exhaust opens . . . . .	60° B.B.D.C.	C	3.8129-3.8131"      3.8120-3.8122"
Exhaust closes . . . . .	30° A.T.D.C.	D	3.8131-3.8133"      3.8122-3.8124"
		E	3.8133-3.8135"      3.8124-3.8126"
		H	3.8135-3.8137"      3.8126-3.8128"
		J	3.8137-3.8139"      3.8128-3.8130"
		K	3.8139-3.8141"      3.8130-3.8132"
		L	3.8141-3.8143"      3.8132-3.8134"
		M	3.8143-3.8145"      3.8134-3.8136"
<b>CONNECTING RODS</b>		Piston material . . . . .	Aluminum Alloy
Bearing material . . . . .	Moraine 400 Alum.	Piston skirt diameter-standard . . . . .	3.8116-3.8146"
Clearance between bearing and shaft --		Piston skirt diameter-oversize --	
New limits . . . . .	.0005 - .0020"	.010" oversize . . . . .	3.8216-3.8236"
Worn limits, not over . . . . .	.0045"	.020" oversize . . . . .	3.8316-2.8336"
Diameter lower end, without bearing . . . . .	2.3740 - 2.3745"	.030" oversize . . . . .	3.8416-3.8436"
Length, center to center . . . . .	6-5/8"	Piston skirt top clearance . . . . .	.0009"
End play of rods on crank pin . . . . .	.008 - .014"	Piston skirt bottom clearance . . . . .	.000"
		Piston top land diameter --	
		Standard . . . . .	3.784-3.787"
		Piston top land clearance . . . . .	.0255-.0315"
<b>PISTON RINGS</b>		<b>OIL PUMP</b>	
Clearance between rings and sides of groove in piston --		Backlash between drive gears . . . . .	.008-.012"
Compression rings . . . . .	.0017 - .0035"	Clearance between pump body and drive shaft --	
Oil rings . . . . .	.0008 - .0026"	New limits . . . . .	.0010-.0025"
Gap between ends in 3.8125" cylinder --		Worn limits, not over . . . . .	.005"
Compression rings . . . . .	.010 - .020"	Clearance between pump body and gears --	
Oil rings . . . . .	.010 - .020"	New limits . . . . .	.003-.005"
Number of compression rings . . . . .	2	Worn limits, not over . . . . .	.006"
Number of oil rings . . . . .	1	End play in pump gears --	
Width of compression rings . . . . .	3/64"	New limits . . . . .	.001-.004"
Width of oil rings . . . . .	3/16"	Worn limits, not over . . . . .	.006"
Width of oil ring slot . . . . .	.064"	Oil pump type . . . . .	Helical gear
Diameter at bottom of groove			
Oil rings . . . . .	3.410 - 3.415"		
Compression rings . . . . .	3.405 - 3.410"		
Maximum wall thickness			
Oil rings . . . . .	.165"		
Compression rings . . . . .	.184"		
<b>PISTON PINS</b>		<b>VACUUM PUMP</b>	
Clearance between pin and piston --		Clearances --	
New limits . . . . .	.00005 to .0001" at 70°F.	Vane to cover plate . . . . .	.002-.005"
Pin length . . . . .	3-3/32"	Rotor to cover plate . . . . .	.004-.007"
Pin diameter . . . . .	1.000"		

## ENGINE MECHANICAL

## SPECIFICATIONS (Cont'd)

Subject and Remarks	All Series	Subject and Remarks	All Series
VACUUM PUMP (Cont'd.)		OIL PRESSURE REGULATOR	
Clearances --		Clearance between valve plunger and housing --	
Socket to cover plate . . . . .	.0144-.0324"	New limits . . . . .	.0020-.0035"
Socket to rotor face . . . . .	.0104-.0254"	Worn limits, not over . . . . .	.005"
Rotor to shaft . . . . .	.0010-.0023"	Normal pressure to 30	
Rotor to depression in body cavity . . . . .	.0005"-.0034"	M.P.H. (min.) . . . . .	30-35 lbs.
		Idle (average) . . . . .	15 lbs.
CRANKSHAFT AND MAIN BEARINGS		Spring --	
Clearance, main bearings --		Free length (approx.) . . . . .	2-27/64"
New limits . . . . .	.0008-.0025"	Pressure at 1-7/16" . . . . .	4.3-4.8 lbs.
Worn limits, not over . . . . .	.005"	Valve opens at . . . . .	30 lbs.
Main bearing caps --		CHAINS	
Bolt thread diameter . . . . .	1/2"	Camshaft chain --	
Main bearing journal, diameter . . . . .	2-1/2"	Adjustment . . . . .	None
Main bearing journals, out-of-round, not over . . . . .	.00025"	Length . . . . .	23"
Main bearing journal length --		Make . . . . .	Link Belt
Front . . . . .	.907"	Number of links . . . . .	46
Intermediate . . . . .	.907"	Pitch . . . . .	.500"
Rear . . . . .	1.622"	Width . . . . .	11/16"
Main bearings, material . . . . .	Moraine Durex	CAMSHAFT	
Crankpin diameter . . . . .	2.2488-2.2493"	Bearing Clearance --	
Crankpin out-of-round, not over . . . . .	.00025"	New limits . . . . .	.001-.0022"
End play in crankshaft --		Worn limits, not over . . . . .	.004"
New limits . . . . .	.001-.005"	Bearing out-of-round, not over . . . . .	.002"
Worn limits . . . . .	.010"	Number of bearings . . . . .	5

## TORQUE TIGHTNESS

Location	Size	Ft. Lbs.	
		Min.	Max.
Camshaft sprocket screws . . . . .	5/16-18	15	18
Connecting rod nuts . . . . .	3/8-24	40	45
Cylinder head screws . . . . .	7/16-14	65	70
Engine, rear support cushion . . . . .	7/16-14	50	55
Engine, rear support, cushion to cross member bolt . . . . .	7/16-20	50	60
Engine, rear support, cross member to frame bolt . . . . .	3/8-24	25	30
Exhaust manifold to cylinder head . . . . .	3/8-16	25	30
Fan blade assembly to flange . . . . .	5/16-24	15	20
Flywheel to crankshaft . . . . .	7/16-20	80	85
Flywheel housing plate--lower . . . . .	1/4-20	10	12
Flywheel housing to crankcase . . . . .	7/16-14	45	50
Flywheel housing to crankcase--lower . . . . .	3/8-16	25	30
Flywheel housing to cover--lower . . . . .	7/16-14	45	50
Front motor support stud nut . . . . .	1/2-20	80	90
Front support cushion to engine nut . . . . .	3/8-24	25	30
Harmonic balancer to crankshaft . . . . .	1/2-20	60	65
Intake manifold to cylinder head . . . . .	3/8-16	25	30
Intake manifold to cylinder head nut . . . . .	3/8-24	25	30
Main bearing caps to crankcase . . . . .	1/2-13	90	100



Make	Years	Engine	Application	Casting number	Material	Type
Cadillac	1955	331	El Dorado	1463205	Cast iron	2x4

# ENGINE ELECTRICAL

## GENERAL DESCRIPTION

The 12 volt electrical system, used on 1955 cars, is basically the same as that used on 1954 cars with the exception of minor changes in spark plugs and distributor advance curves to make the ignition system compatible with the new higher compression engine.

Type 44-5 spark plugs are installed as original equipment on 1955 standard Cadillac engines, while 43-5 spark plugs are installed on Eldorado engines. For owners who drive at higher speeds on long trips, the cooler type 43-5 spark plug is recommended for the standard 1955 engine. Under no circumstances, however, should a 46-5 spark

plug be used in a 1955 engine.

Service procedures for this section remain the same as those outlined in the 1954 Shop Manual.

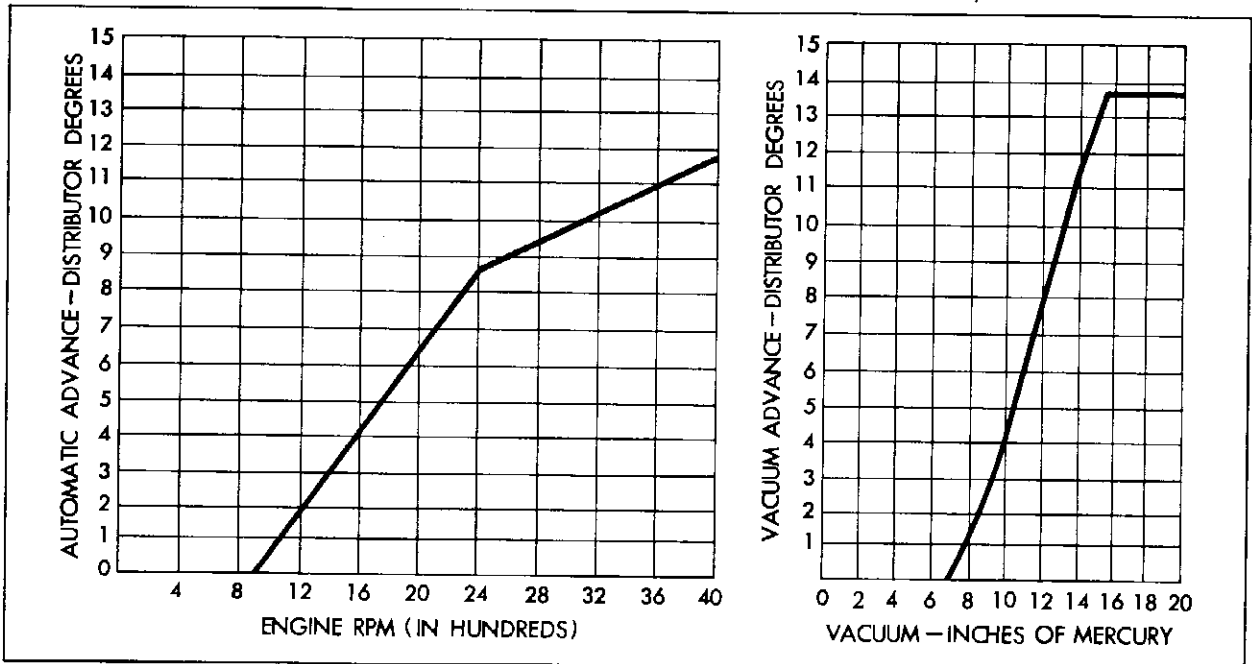
NOTE: When checking and setting the ignition timing on 1955 engines, it is very important that the vacuum pipe to the distributor be disconnected. This will eliminate the possibility of an inaccurate setting due to mispositioned vacuum holes in the carburetor throttle body or poorly seating throttle valves which could expose the vacuum diaphragm to manifold vacuum. Check the timing after connecting the vacuum line. If timing is advanced, check carburetor.

## SPECIFICATIONS

### DISTRIBUTOR TEST INFORMATION

Centrifugal Advance				Vacuum Advance		
Engine Speed R.P.M.	Engine Spark Advance	Distr. Speed R.P.M.	Distr. Spark Advance	Vacuum-Inches of Mercury	Distributor Degrees	Engine Degrees
800	0	400	0	6	0	0
1,200	2-5	600	1- 2.5	10	2.5- 5.5	5-11
1,600	6.75- 9.75	800	3.5 - 5	12	6.5-10.0	13-20
2,000	11 -14.5	1,000	5.5 - 7.25	14	10.0-13.5	20-27
2,400	15.5 -19.25	1,200	7.75- 9.75	16	13.0-14.5	26-29
3,200	18.5 -22.5	1,600	9.25-11.25	17	13.0-14.5	26-29
4,000	21.5 -25.5	2,000	10.75-12.75			

NOTE: Advance starts at 6.5" to 8.5" mercury. Maximum advance is 13<sup>o</sup>-14.5<sup>o</sup> at 15"-16" mercury.



Distributor Advance Curves

## ENGINE ELECTRICAL

## SPECIFICATIONS (Cont'd)

Subject and Remarks	All Series	Subject and Remarks	All Series
<b>IGNITION</b>		*Current setting in amperes	
Coil, amperes draw, engine running. . . . .	1.25A	Range . . . . .	27-33
Coil, Delco-Remy type number . . . . .	1115082	Adjust to . . . . .	30
Distributor, Delco-Remy type number . . . . .	1110852	Cut out relay --	
Distributor advance - engine degrees		Air gap . . . . .	.020"
Centrifugal advance. . . . .	23.5° + 2°	Contact point opening. . . . .	.020"
Vacuum advance . . . . .	27.5° ± 1.5°	*Contacts close at volts. . . . .	11.8-13.6
Dwell angle range . . . . .	26° - 33°	Adjust to . . . . .	12.8
New and used point gap . . . . .	.016"	Voltage regulator --	
Tension of contact arm spring . . . . .	19-23 oz.	Air gap . . . . .	.075"
Timing mark, ahead of center. . . . .	2-1/2°	Voltage setting --	
Spark plugs - Standard Engine		*Closed circuit in volts	
A.C. type number. . . . .	44-5	Range . . . . .	14-15
Gap . . . . .	.035"	Adjust to . . . . .	14.5
Thread. . . . .	14MM	*At operating temperature after 15 minutes run- ning with 8 to 10 amps. current flow through regulator.	
Spark plugs - Eldorado Engine		<b>STARTING MOTOR</b>	
A.C. type number. . . . .	43.5	Delco-Remy type number . . . . .	1107629
Gap . . . . .	.035"	Armature --	
Thread. . . . .	14MM	Commutator out-of-round, not over. . . . .	.005"
Ignition switch --		Bearings --	
Delco-Remy type number. . . . .	1116470	Commutator end. . . . .	Oilless Bushing
Firing order. . . . .	1,8,4,3,6,5,7,2	No center bearing	
Cond. Capacity in Microfarads . . . . .	.18 - .23	Drive end . . . . .	Oilless Bushing
<b>GENERATOR</b>		Lock Amperage . . . . .	460
Delco-Remy type number. . . . .	1102002	Lock torque, in ft. lbs . . . . .	11.5
Armature --		Lock voltage. . . . .	5.2
Commutator out of round,		Gear ratio . . . . .	19.5-1
not over. . . . .	.002"	No load RPM . . . . .	6500
End play in bearing, not over. . . . .	.005"	Amperage . . . . .	75
Car speed at min. peak charging rate. . . . .	25.5 MPH	Volts. . . . .	10.3
Generator ventilation . . . . .	Forced Air	Brush spring tension . . . . .	30-40
Ratio of armature RPM to engine RPM . . . . .	2.15-1	Solenoid switch	
Brush spring tension . . . . .	24-32 oz.	Pull in coil . . . . .	44 amps. at 13.5 volts
Output, cold --		Hold in coil. . . . .	19 amps. at 14.0 volts
Cut-in Engine RPM. . . . .	535	<b>BATTERY</b>	
Amperes . . . . .	0	Capacity, ampere hours	
Volts . . . . .	12.8	55-62,60S,75. . . . .	60
Given Speed Engine RPM. . . . .	1000	55-86 Comm'l . . . . .	70
Amperes . . . . .	30	Delco-Remy type number	
Volts . . . . .	14.0	55-62,60S,75. . . . .	3EM60-W
<b>GENERATOR REGULATOR</b>		55-86 Comm'l . . . . .	3EM70-W
Delco-Remy type number. . . . .	1118826	Plates, number of	
Current regulator --		55-62,60S,75. . . . .	9
Air gap (between armature and center of core). . . . .	.075"	55-86 Comm'l. . . . .	11
		Terminal grounded . . . . .	Negative

# ENGINE FUEL AND EXHAUST

## GENERAL DESCRIPTION

Both the Rochester and Carter carburetors used on 1955 series Cadillac cars are similar in design and operation to those used on 1954 series cars. Changes have been made to improve idle stability, hot starting characteristics and engine breathing during full throttle operation. These minor design changes, which have been incorporated into both carburetors, do not, for the most part, affect disassembly or adjustment procedures except as explained under Service Information in this section of the manual.

Air for idling is now introduced into the intake manifold through passages in the carburetor which by-pass the throttle valves as shown in Fig. 12-1. Air enters the by-pass passages above the throttle valves, in both the Rochester and Carter carburetors, and is directed into the intake manifold through two passages; one metered and one with an adjustable orifice. With this arrangement, the idle speed may be regulated by adjusting the idle by-pass air screw in the throttle body. This eliminates the effect of gum build-up in the throttle bore on idle stability as the throttle valves are completely closed during idle.

On engines equipped with two four-barrel carburetors, the metered by-pass air passage in the throttle body is omitted and all air for idling passes through the adjustable orifice.

On the Eldorado engine, two four-barrel carburetors, with a special intake manifold, are used to obtain a higher engine horsepower (270). The passages in the special intake manifold are arranged so that a primary throttle bore and the diagonally opposite secondary bore on each carburetor supply two cylinders. This provides ideal engine breathing for all performance requirements.

Hot starting characteristics have been improved by the use of vapor vent passages above the throttle valves. With this design, the fuel vapors that are formed when the engine is shut off are dissipated into the atmosphere.

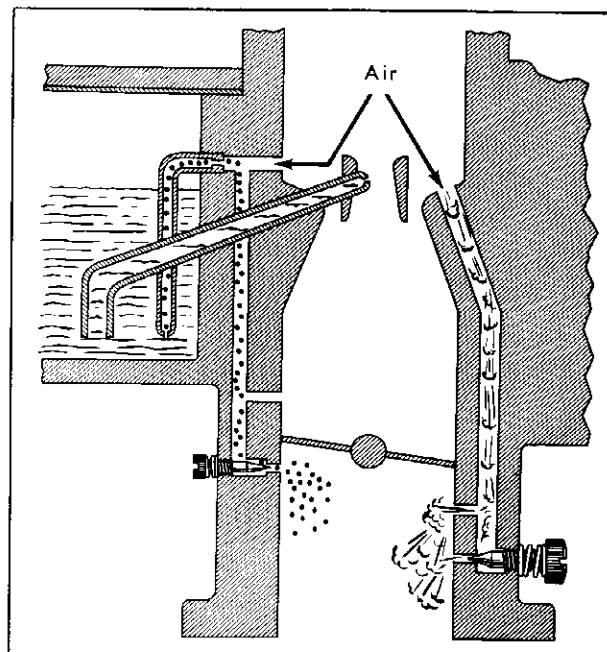


Fig. 12-1 Idle Air By-Pass (Schematic)

The secondary throttle bores, on both Rochester and Carter carburetors, are 1/8" larger in diameter than the primary throttle bores to provide improved engine breathing at full throttle operation. This change was not incorporated into the new carburetors until after approximately 3000, 1955 Cadillac cars had been produced.

## SERVICE INFORMATION

### (1) Accelerator Pump Adjustment

#### Rochester Carburetor—

With throttle valves fully closed, the distance from the air horn surface to the bottom edge of the pump plunger rod, as shown in Fig. 12-18 of the 1954 Shop Manual, should be 63/64" on the standard carburetor and 1-1/16" on the front and rear carburetors on the Eldorado engine.

#### Carter Carburetor—

Pump stroke adjustment specifications for the Carter carburetor remain the same as in 1954.

### (2) Idle Speed Adjustment

#### a. Rochester and Carter Carburetors (Standard Engine)

1. Adjust the idle speed as explained in Section 12, Note 4 of the 1954 Shop Manual, using the idle air by-pass screw on the throttle body to regulate idle speed.

#### b. Rochester Carburetors (Eldorado Engine)

1. Remove carburetor air cleaner, disconnect throttle return spring and the manual control rod



## ENGINE FUEL AND EXHAUST

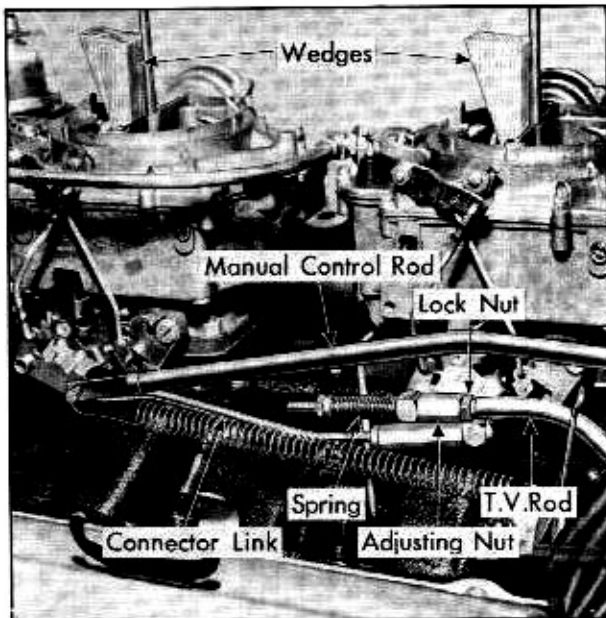


Fig. 12-2 Dual Carburetor Linkage

from end of the connector link, and loosen the throttle connector link jam nut. Refer to Fig. 12-2.

2. Hold or wedge both choke valves fully open and, with the throttle valves on both carburetors tightly closed, adjust the connector link so that the front end of the link fits freely in its hole in the front carburetor throttle lever. Tighten jam nut.

3. Place manual control rod over end of connector link and connect throttle return spring.

4. Back each idle mixture screw two turns off its seat and back each idle by-pass air screw three turns off its seat. Refer to Fig. 12-3.

5. Install carburetor air cleaner, connect tachometer, set hand brake securely, place selector lever in "Dr." and start engine.

6. When operating temperature is reached, turn the idle by-pass air screws on each carburetor equal amounts to obtain an engine speed of 475-485 RPM.

7. Turn right hand idle mixture screw on rear

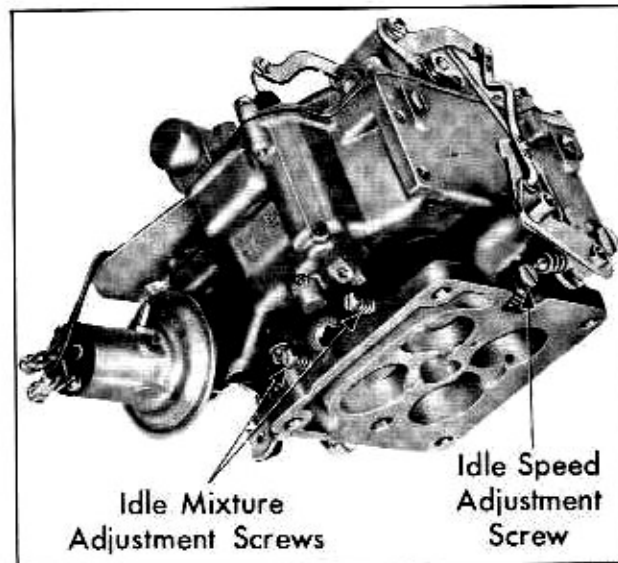


Fig. 12-3 Adjustment Screws

carburetor to its lean limit, then enrich 3/8 turn. Repeat this adjustment on both front carburetor mixture screws next, and then the left mixture screw on the rear carburetor.

8. Adjust each idle by-pass air screw equal amounts to reduce speed to 465 RPM.

9. Readjust mixture screws equal amounts, in the sequence followed in Step 7 above, to obtain the highest engine RPM possible. This should be 475 to 485 RPM.

NOTE: If the specified RPM is not reached by adjusting the mixture screws as noted above, it will be necessary to readjust the idle air screw on each carburetor and then readjust the mixture screws until the specified RPM is obtained and the idle is smooth.

10. Adjust fast idle speed to 2000 RPM with screw on highest step of cam. Shut off engine and remove tachometer.

NOTE: Turn on Air Conditioner, on cars so equipped, when performing above adjustment, to assure idle stability when Air Conditioner is in operation.

### SPECIFICATIONS

#### FUEL PUMP

NOTE: Testing to be done with entire car at room temperatures.

Fuel pressure at idle speed . . . . .	4 to 5-1/4 p.s.i.
Fuel discharge per stroke at cranking speed . . . . .	22 cc. minimum
Fuel discharge in 11 strokes at cranking speed . . . . .	1/2 pint minimum
Push rod stroke . . . . .	.245" to .250"
Push rod length . . . . .	7.1425" to 7.1475"
Push rod diameter . . . . .	.4355" to .4360"

ENGINE FUEL AND EXHAUST

SPECIFICATIONS

Carburetor	Rochester		Carter	
	7006655 7006656	7007970 7007971	1462566 1462567	1463426 1463427
Throttle Bore				
Primary . . . . .	1-5/16"	1-5/16"	1-5/16"	1-5/16"
Secondary . . . . .	1-5/16"	1-7/16"	1-5/16"	1-7/16"
Main Venturi				
Primary . . . . .	1"	1"	1-1/16"	1-1/16"
Secondary . . . . .	1-1/16"	1-3/16"	1-1/16"	1-3/16"
Small Venturi				
Primary . . . . .	1/4"	1/4"	11/32"	11/32"
Secondary . . . . .	1/4"	1/4"	11/32"	11/32"
Low Speed Jets				
Idle Needle Orifice . . . . .	.040"	.040"	.0595"	.0595"
Primary . . . . .	.030"	.030"	.028"	0.028"
Secondary . . . . .	.026"	.026"	.028"	0.028"
Main Metering Jets				
Primary . . . . .	.049"	0.49"	0.0935"	0.0935"
Secondary . . . . .	.064"	0.073"	.067"	0.082"
Power Valve Restriction . . . . .	.038"	0.038"		
Metering Rods				
Economy Step . . . . .			.0715	0.0715
Power Step . . . . .			.053	.053
Float Setting . . . . .	(Gasket to bottom of floats)		(Casting to top of floats)	
Primary . . . . .	1-19/32"	1-19/32"	1/8"	1/8"
Secondary . . . . .	1-19/32"	1-19/32"	3/16"	3/16"
Choke Setting . . . . .	Index	Index	Index	Index
Accelerator Pump				
Capacity - 10 Strokes . . . . .	15 cc. min.	15 cc. min.	15 cc. min.	15 cc. min.
Idle By-Pass				
Fixed Orifice . . . . .	0.110	0.110	.059	.059
Idle Mixture Screws				
(Turns Open) . . . . .	1-1/2 to 2-1/2	1-1/2 to 2-1/2	3/4 to 1-1/2	3/4 to 1-1/2
Idle By-Pass Air Screw				
(Turns Open) . . . . .	2 to 3	2 to 3	1/2 to 2	1/2 to 2
Idle Speed-Standard . . . . .	400 RPM in drive		400 RPM in drive	
-Air Conditioned . . . . .	With Air Conditioning "ON", Set Idle Speed at 400 RPM in Drive and Adjust Idle Speed-up Control to 900 RPM in Neutral.			

ELDORADO CARBURETOR -	Rochester - Std. 7007240 -- Front 7007942 -- Rear	Rochester - A.C. 7007440 -- Front 7007241 -- Rear
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Throttle Bore		Main Metering Jets	
Primary . . . . .	1-5/16"	Primary . . . . .	.049"
Secondary . . . . .	1-7/16"	Secondary . . . . .	.065"
Main Venturi		Power Valve Restriction . . . . .	.025"
Primary . . . . .	1"	Float Setting . . . . . (Gasket to bottom of floats)	
Secondary . . . . .	1-3/16"	Primary . . . . .	1-19/32"
Small Venturi		Secondary . . . . .	1-19/32"
Primary . . . . .	1/4"	Accelerator Pump	
Secondary . . . . .	1/4"	Capacity - 10 Strokes . . . . .	15 cc. minimum
Low Speed Jets		Idle By-Pass	
Idle Needle Orifice . . . . .	.040"	Fixed Orifice . . . . .	None
Primary . . . . .	0.030"	Idle By-Pass Air Screw	
Secondary . . . . .	0.026"	(Turns Open) . . . . .	2-1/2 to 3-1/2
Choke Setting . . . . .	Index	Idle Speed - Standard . . . . .	.475 to 490 RPM in drive

## ENGINE FUEL AND EXHAUST

## TORQUE TIGHTNESS

Location	Size	Ft. Lbs. Min.	Ft. Lbs. Max.
Carburetor to intake manifold . . . . .	5/16-24	15	20
Fuel tank strap nuts . . . . .	5/16-24	2	3
Fuel tank drain plug . . . . .	5/8-18	25	30
Fuel pump to oil filler housing . . . . .	3/8-16	25	30
Muffler clamps - front . . . . .	3/8-24	25	30
Muffler clamps - rear . . . . .	3/8-24	25	30
Muffler support to frame - 75 and 86 . . . . .	5/16-18	4	8
Resonator clamps . . . . .	3/8-24	25	30
Resonator support to frame . . . . .	5/16-12	10	15
Exhaust pipe to manifold - right . . . . .	5/16-24	15	20
Exhaust pipe to manifold - left . . . . .	3/8-24	30	35

## SPECIAL TOOLS

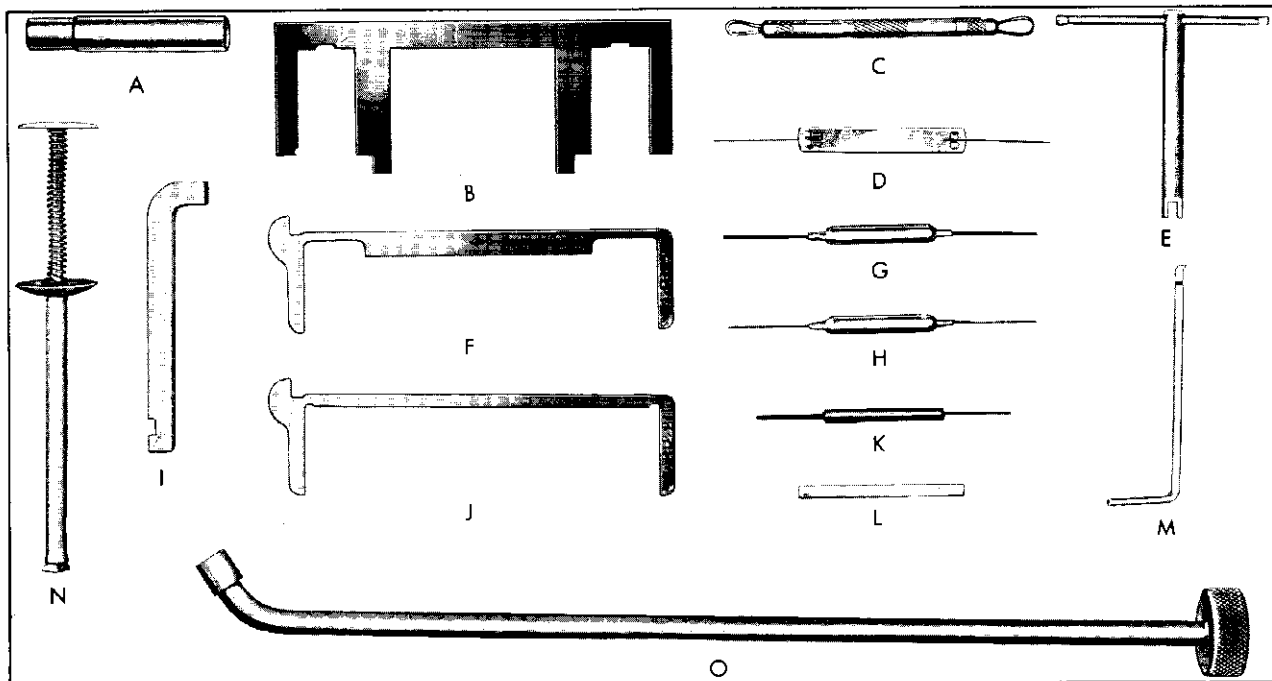


Fig. 12-4 Special Tools

A	J-2110	Ball Retaining Ring Installer
B	J-5683	Float Level Gage, Rochester
C	J-1136	Wire Gage (.020", .030", .040")
D	KMO-657	Wire Gage (.015", .018")
E	J-5197	Bending Tool
F	J-5437	Primary Float Level Gage, Carter, 1/8"
G	J-5660	Wire Gage (.040", .054")
H	KMO-658	Wire Gage (.023", .026")
I	J-1137	Bending Tool
J	J-5458	Secondary Float Level Gage, Carter, 3/16"
K	J-5195	Wire Gage (.028", .063")
L	J-818-3	Float and Unloader Gage, 3/16"
M	J-1306	Ball Retaining Ring Remover
N	KMO-65-4	Screw Holder
O	J-6044	Idle Adjusting Screwdriver

## ROCHESTER CARBURETOR CIRCUITS

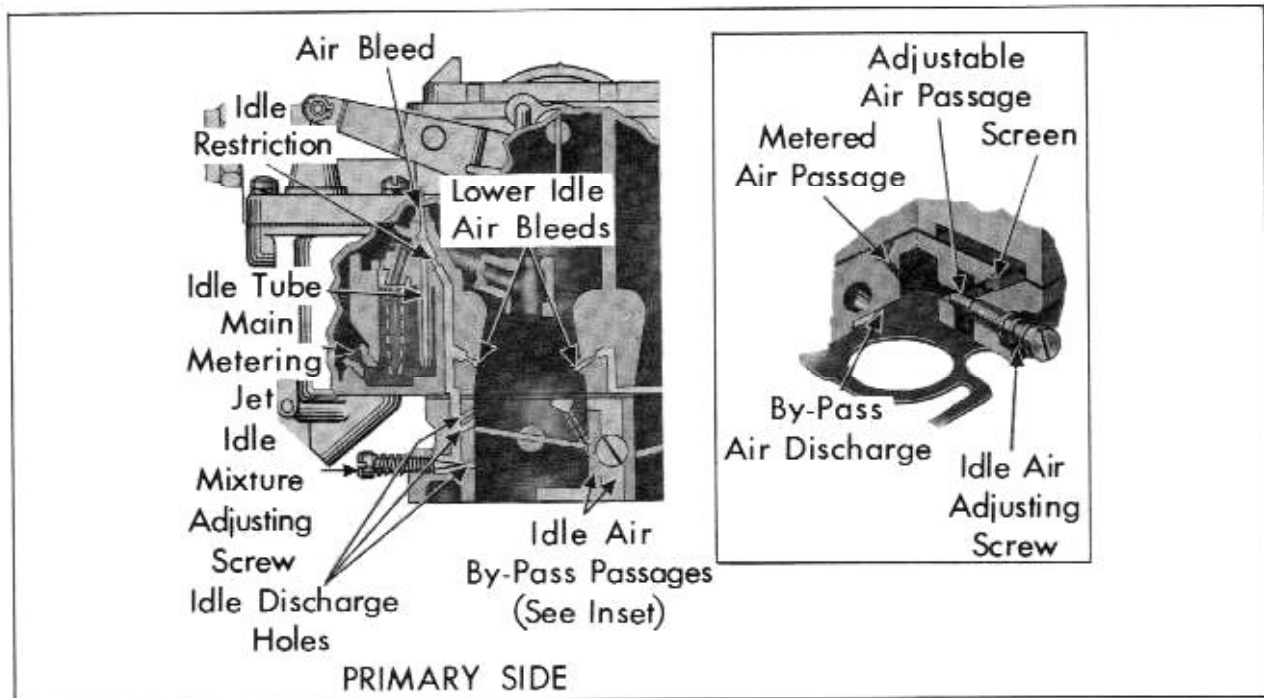


Fig. 10-3 Rochester Idle Circuit

The adjustable idle system is provided in the primary side of the carburetor. The secondary valves are tightly closed at this time and this section of the carburetor does not function at low speeds. The primary idle fuel is drawn from the float bowl through the main metering jets in the main well in the bottom of the primary bowl. It is then drawn up through the calibrated idle tube restrictions and idle tubes. Air joins this fuel at the calibrated air bleed in the primary cluster and the mixture passes through a calibrated restriction and then through the float bowl idle passage. Additional air is bled into the mixture through the lower idle air bleeds in the bowl and upper idle discharge hole in the throttle body. Air for idling is introduced into the intake manifold through passages which by-pass the throttle valves. Two passages are used in the idle air by-pass, a metered passage and an adjustable passage. Idle speed is regulated by adjusting the air by-pass screw in the throttle body. The effects of gum build-up on the throttle bore on idle stability is eliminated, as the throttle valves remain tightly closed during idle. Fig. 10-3.

As the throttle valves are opened slightly to an off idle position, the top idle discharge holes above the throttle valves are exposed to manifold vacuum and stop functioning as additional idle air bleeds. Fuel is discharged from these holes to meet the increased demands of the engine. The two lower idle discharge holes then carry the fuel requirements over until greater throttle opening causes

the part throttle circuits to function as explained in the next paragraphs. The secondary side of the carburetor does not function during idle.

## Part Throttle Circuit

As the throttle valves are opened to a greater degree and more air is drawn through the carburetor, it is necessary to provide a means other than the idle systems for supplying additional fuel to meet the engine requirements. Refer to Fig. 10-4.

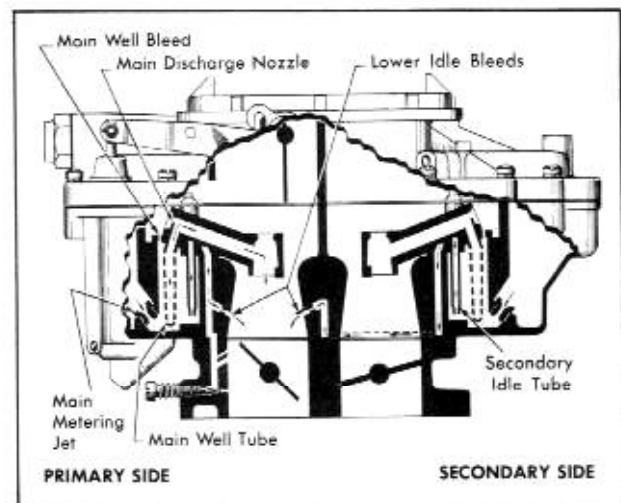


Fig. 10-4 Rochester Part Throttle Circuit

# ENGINE COOLING

## GENERAL DESCRIPTION

More efficient cooling of the 1955 engine has been accomplished by increasing the water pump capacity through the use of wider impeller blades and larger passages in the pump. In addition, restrictions in the cylinder block water passages have been removed to reduce the possibility of

hot spots around the cylinders and combustion chambers.

Refer to the Engine Cooling Section of the 1954 Shop Manual for service information concerning the cooling system on 1955 Cadillac cars which is not covered in this supplement.

## SERVICE INFORMATION

### (1) Removal and Installation of Radiator Assembly

#### a. Removal

1. Drain cooling system and loosen upper and lower radiator hoses.
2. On Air Conditioner equipped cars, remove condenser assembly.
3. Remove six screws (also four spacer screws on Air Conditioner equipped cars) which hold radiator to support.
4. Remove radiator assembly with hoses.

#### b. Installation

1. Place radiator assembly in position against support and install six radiator to support mounting screws. On Air Conditioner equipped cars, install spacers between radiator and support before installing screws.
2. Check space between rear face of radiator core and front edge of the fan blade assembly. This should be 1/2 to 1 inch and is important for efficient fan operation.
3. On Air Conditioner equipped cars, install condenser.
4. Tighten upper and lower radiator hoses and fill cooling system.

### (2) Removal and Installation of Water Pump

#### a. Removal

1. Drain cooling system.
2. Remove power steering pump drive belt.
3. Remove generator drive belt. On Air Conditioner equipped cars, remove second drive belt.
4. Remove upper and lower radiator hoses and heater hoses from water pump.
5. Remove power steering pump and bracket and place to one side.

6. Remove six water pump flange to cylinder block screws and remove water pump with gaskets. On Air Conditioner equipped cars, the following steps must be performed:

- a. Remove two screws which secure compressor mounting bracket to right upper and lower water pump flanges.
- b. Loosen compressor support to cylinder block screw and move support away from water pump.
- c. Remove four screws which hold pump flanges to cylinder block and remove water pump with gaskets.

#### b. Installation

1. Brush gasket cement on water pump inlet and outlet flange surfaces and place new gaskets in position on pump.
2. Place pump in position against cylinder head and block and install six screws in pump flanges. On Air Conditioner equipped cars, the following steps must be performed:
  - a. Place pump in position against cylinder head and block and install four screws which hold pump flanges.
  - b. Install compressor support to cylinder block screw.
  - c. Install two screws which secure compressor mounting bracket to right upper and lower water pump flanges.
3. Install power steering pump and bracket.
4. Install upper and lower radiator hoses and heater hoses to water pump.
5. Install generator drive belt. On Air Conditioner equipped cars, install the second drive belt.
6. Install power steering pump drive belt.
7. Fill cooling system.

## ENGINE COOLING

### SPECIFICATIONS

Subject and Remarks	All Series	Subject and Remarks	All Series
<b>FAN</b>		Hose, thermostat housing to radiator (top) --	
Belt --		Diameter, inside . . . . .	1-3/4"
Length-pitch circumference . . . . .	57"	Length --	
Width . . . . .	.380"	Standard . . . . .	9-3/8"
Type . . . . .	Wedge	Air Conditioner equipped cars . . . . .	10-5/8"
Distance from fan hub to end of fan shaft . . . . .	.3255" Mean	Type . . . . .	Molded
Drive Ratio --		Hose, radiator to water pump --	
Standard . . . . .	.95-1.0	Diameter, inside . . . . .	1-3/4"
Air Conditioner Cars . . . . .	1.1 to 1.0	Length --	
Number of Blades --		Standard . . . . .	8-7/16"
62,60S, Standard . . . . .	.4	Air Conditioner equipped cars . . . . .	9-1/4"
Air Conditioner Cars . . . . .	.4	Type . . . . .	Molded
75 and 86 Comm'l . . . . .	.4		
<b>RADIATOR</b>		<b>WATER PUMP</b>	
Area of core, in sq. in. . . . .	359.93	Clearance between impeller and pump body . . . . .	.005"-.010"
Capacity of system (with heater) 62,60S,86 . . . . .	20-1/4	<b>THERMOSTAT</b>	
Capacity of system (with heater) 75 . . . . .	22-3/4	Type . . . . .	Dole
Capacity of system (without heater) . . . . .	18	Standard --	
Radiator core make . . . . .	Harrison	Starts to open. . . . .	163°F to 168°F
Radiator core center constant (all) . . . . .	.222"	Fully open. . . . .	188°F
Tube spacing . . . . .	.550"	High Opening --	
Radiator cap pressure . . . . .	12 to 15 lbs.	Starts to open. . . . .	177 F to 182°F
		Fully open. . . . .	202°F

### TORQUE TIGHTNESS

Location	Size	Ft. Lbs. Min.	Ft. Lbs. Max.
Hose clamp . . . . .	Special	15	20
Radiator anchorage nut . . . . .	5/8-18	70	80
Thermostat housing . . . . .	5/16-18	15	18
Water pump to crankcase . . . . .	3/8-16	25	29
Water pump to cylinder head . . . . .	3/8-16	25	29
Water pump cover to body . . . . .	1/4-20	10	12

### OTHER NOTES AND REFERENCES

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# HYDRA-MATIC TRANSMISSION

## GENERAL DESCRIPTION

The 1955 Hydra-Matic transmission, available as standard equipment on all series Cadillac cars, is essentially the same as previous models. However, to compensate for an increase in engine horsepower, some changes have been incorporated to provide further improvements in performance. In addition, four Hydra-Matic transmissions, each one slightly different than the other, are used in 1955. Model application of these transmissions are as described below.

The design of the torus members on the model "CE" transmission used with the Eldorado engine, and the heavy loads imposed on the model "A" commercial chassis transmission, necessitate the use of an oil cooler on these assemblies to regulate the transmission oil temperature, thus assuring normal operation and life of the various units in the transmission.

The oil cooler assembly is mounted on the right side of the transmission, where coolant from the rear of the right hand engine block is employed to cool the oil. The heat laden coolant then returns to the cooling system at the heater hose fitting on the water pump, where it is directed to the radiator.

Oil from the rear pump is directed to the cooler assembly through a control valve which opens when rear pump pressure reaches 60 P.S.I. After the oil passes through the cooler, it returns directly to the transmission oil pan.

In addition to the specific changes noted above, other improvements have been incorporated in 1955, which apply to all four Hydra-Matic transmissions.

The front unit gear ratio has been increased from 1.45 to 1.55 to 1. This results in an increase in torque and overall performance in first, third and reverse. In DR-3 range, more positive engine braking is possible when descending steep grades, with increased torque when ascending.

To accomplish the gear ratio change, the front unit planet carrier has been redesigned providing smaller pinion gears. This also allows removal of the bronze thrust washer from the planet carrier. The steel backing washer in the carrier has been eliminated because of the larger thrust area on the front unit drive gear. Likewise, the internal teeth of the front unit drive gear have been changed to conform with the planet pinions. Accordingly, the front unit clutch cover and gear has been changed to accommodate changes to the planet carrier pinions.

The front and rear clutch piston outer oil seals for 1955 consist of cast iron seal rings in place of the expander and neoprene type seal. This requires new annular pistons in which oil seal grooves are machined. The cast iron seal ring gap allows some oil to pass through, which improves the cooling characteristics of clutch apply oil without sacrificing effective clutch pressure and also improves durability of the unit. The circulation of oil through the cast iron seal ring is exhausted through the 1-2 orifice which has been increased from .078" to .094" in diameter.

In 1955, the 4-3 hydraulic valve action in the front servo has been changed to provide a more positive apply on a 2-3 upshift to improve shifting.

## TRANSMISSION IDENTIFICATION

Serial No.	Series	Special Features
55-C-1001	60, 62 Except Eldorado	Groove at rear end of output shaft eliminated.
55-B-1001	75	Output shaft groove retained for yoke retention.
55-A-1001	86 (Commercial)	1. Output shaft groove retained for yoke retention. 2. Oil cooler attached to right side of transmission.
55-CE-1001	6267SX (Eldorado) and all dual carburetor engines.	1. Output shaft groove eliminated. 2. Oil cooler attached to right side of transmission. 3. Smaller torus members raise stall speed to correspond with peak engine torque RPM. 4. G-1 Governor weight reduced to permit higher shift points. 5. 2-3 Shift valve spring and overcontrol valve spring weaker to prevent shifting at high RPM due to G-1 weight change.

## HYDRA-MATIC TRANSMISSION

To make certain that the 4-3 valve is in the open (unrestricted) position on all 2-3 upshifts, Fig. 14-1, and in the closed (restricted) position, Fig. 14-2, for all 4-3 downshifts in 1955, rear band release oil is directed against the large end of the 4-3 valve to close the 4-3 valve, whereas in 1954, G-1 oil was used. The rear band release oil is taken from a point in the rear servo body so that it becomes available only in 3rd and 4th speeds after the rear servo has completed its release stroke

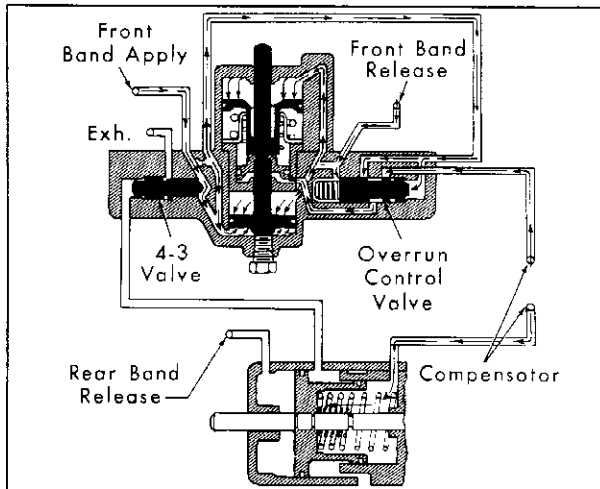


Fig. 14-1 Servo Action During 2-3 Upshift

(rear clutch applied - band released). This allows the front servo to complete its apply action on a 2-3 upshift before the apply passage is closed (restricted). On a 4-3 downshift, front band apply oil is metered, allowing the front clutch sufficient time to release before the band is applied.

Since G-1 oil is not directed to the front servo in 1955, restricted front band apply oil is used in place of G-1 oil in the overrun control valve. The overrun control valve directs the restricted front band apply oil in 3rd speed, and compensator oil for 2nd and 4th speeds, to the compensator piston. By use of a stronger overrun control valve spring and restricted front band apply oil, the apply action is smoother.

To incorporate the changes in the front servo action, the front servo body has been redesigned, eliminating the G-1 feed hole. The compensator feed hole is converted to an exhaust hole. A new feed hole in the front servo for the rear band release oil has been incorporated. The front servo valve body has been changed accordingly. In addition, the rear to front servo compensator pipe has been replaced with a new rear to front servo rear band release oil pipe.

The rear servo body has been changed to provide a greater holding force, accommodating the

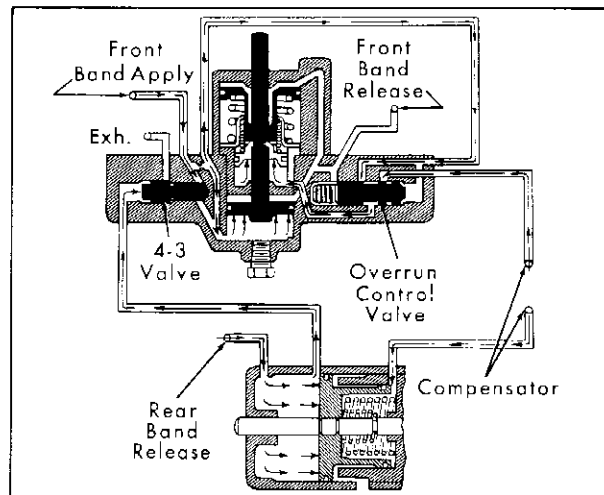


Fig. 14-2 Servo Action During 4-3 Downshift

new front unit gear ratio. To accomplish this, the effective length of the band actuating lever has been increased by relocating the clevis pin hole in the rear servo body. The rear band release oil feed hole in the rear servo is located just to the rear of the former (1954) compensator feed hole which has been eliminated in 1955. Fig. 14-3.

Two rear servo retainer to accumulator body lock washers have been eliminated in 1955. Sufficient locking action can be obtained by rear servo spring force against the retainer.

The flywheel housing consists of a one piece unit, whereas in 1954, the housing consisted of two separate pieces with a portion integral to the engine block. To accommodate this housing, the drain plug has been removed from the torus cover and installed at the outer edge of the front face of the flywheel. Flywheel to torus cover attaching screws are accessible from the front of the flywheel. Weld nuts have been installed on the back flange of the torus cover to engage flywheel bolts. A cover plate mounted at the lower, forward portion of the flywheel housing can be removed to permit access to the drain plug and attaching screws. This requires removal of the starter motor assembly.

A new 1-2 shift valve spring is used in 1955 to improve shift "feel" by raising the part throttle 1-2 shift point.

The 3-4 regulator plug diameter has been enlarged to provide a full throttle (not through detent) 4-3 downshift speed of approximately 34 M.P.H. as compared with approximately 27 M.P.H. in 1954.

The pressure regulator spring has been made stronger to provide an increase in line pressure. This necessitates a change in the regulator plug to accommodate the new spring.



# HYDRA-MATIC TRANSMISSION

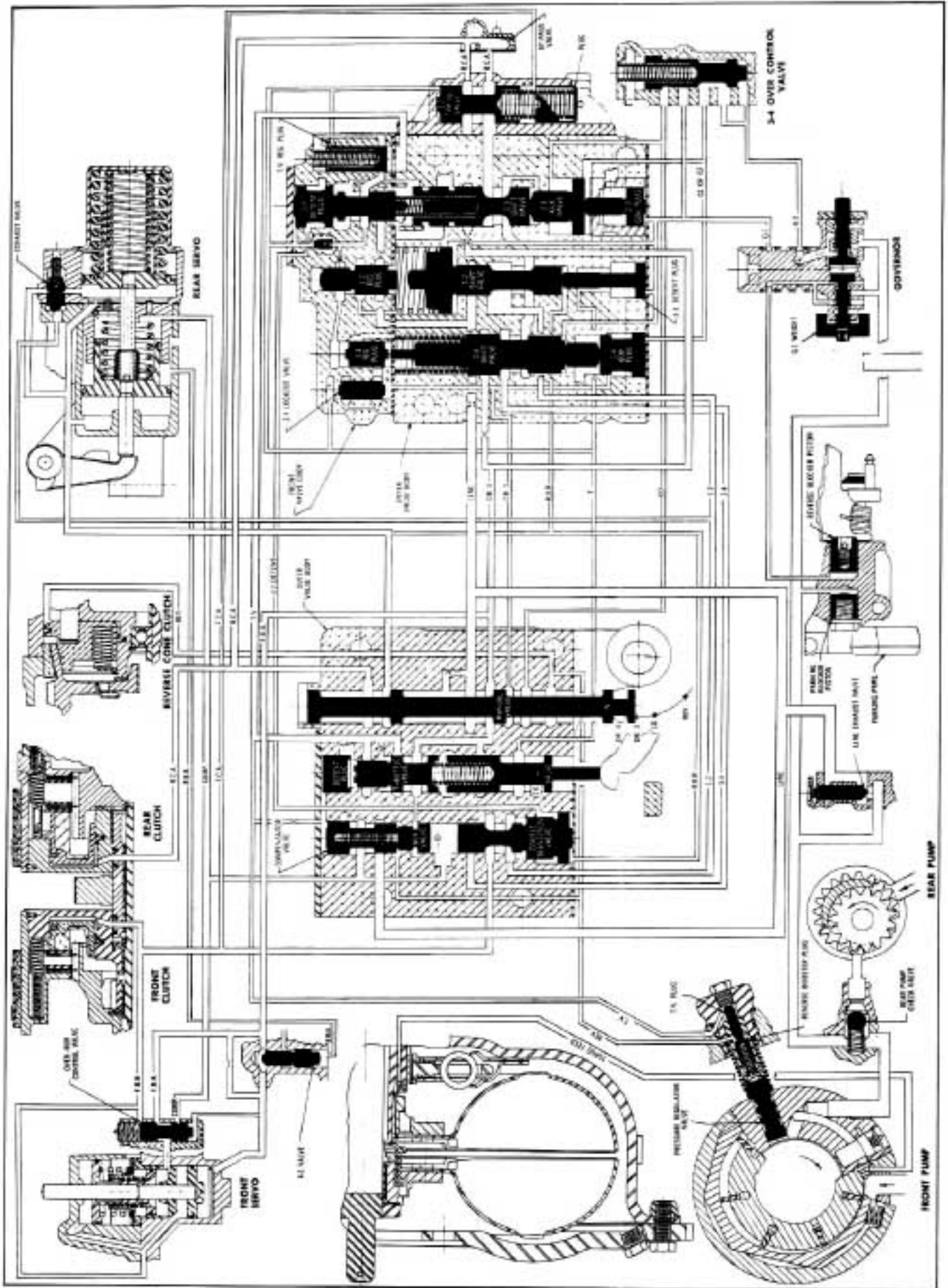


Fig. 14-3 Hydra-Matic Transmission Oil Circuit

## HYDRA-MATIC TRANSMISSION

### SERVICE INFORMATION

With the exception of a few changes, the Service Information contained in the 1954 Shop Manual will be applicable to all 1955 Hydra-Matic Transmissions. Make certain the following information is thoroughly reviewed before proceeding with any service work.

#### (1) Minor Changes

##### a. Correction of Leaks at Fluid Coupling

Procedure for determining at which point leakage occurs will differ from 1954 because of the one piece flywheel housing used in 1955. Removal of the cover plate in front of the housing will permit checking for leaks at torus cover to flywheel bolts and at drain plug.

##### b. Removal and Installation of Hydra-Matic Transmission

The Hydra-Matic removal and installation procedure for 1955 is the same as in 1954 with the following exceptions:

1. With a one piece flywheel housing, there will be no lower cover to remove.

2. To reach the torus cover to flywheel mounting bolts, remove starter motor and flywheel housing front cover.

3. Drain the transmission, as described in Section 2, Note 10b.

4. On transmissions equipped with oil cooler, hoses at cooler must first be removed and hose ends plugged to prevent coolant leakage and entry of dirt or other foreign matter. When removing oil pan, exercise caution when disconnecting the pump feed line from the cooler valve body in the oil pan.

5. When installing transmission, observe changes noted above.

##### c. Disassembly and Assembly of Transmission

1. Planet Carrier - With smaller planet pinions, the bronze thrust washer inside the planet carrier can now be removed. Upon assembly, make certain washer is reinstalled.

2. Front and Rear Unit Outer Clutch Piston Seals - The outer clutch piston seals in the front and rear units for 1955 are cast iron ring seals, whereas in 1954 the seals consisted of an expander and rubber seal. Removal of the ring seal merely

requires expanding the ring until free of piston groove. When installing the piston and ring assembly, Tool No. J-5608 may be used to compress the seal ring until assembly is positioned in the clutch cover. Fig. 14-4.

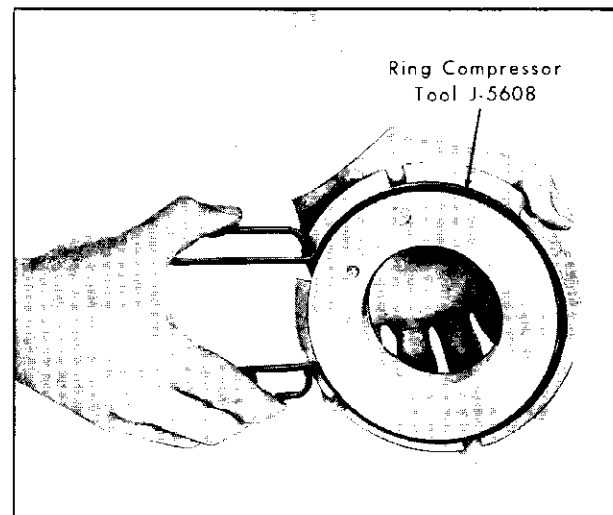


Fig. 14-4 Installing Clutch Piston Seal

The front unit oil seal ring gap must be held to specification. This is required to allow for more tolerance of the front clutch drum bore. All measurements must be taken with ring located squarely in clutch drum bore. To check ring gap, proceed as follows:

a. Insert oil seal ring squarely in clutch drum assembly.

b. Using a feeler gage, check the ring gap. The ring gap limits are .001"-.006" measured at the OD of the ring.

c. If gap is too tight, it may be filed to fall within limits.

NOTE: Care should be exercised not to file the ring gap so as to allow the OD to be longer than the ID. The maximum taper must be .007" gap at ID.

3. CONTROL VALVE ASSEMBLY - Service operations covering the control valve assembly remain the same as for 1954.

#### (2) Throttle Control Linkage Adjustment

1. Remove transmission throttle control clevis pin, and check lever position with Tool No.

## HYDRA-MATIC TRANSMISSION

J-3065-C by fitting tool to rear face of transmission case and inserting clevis pin through lever and 49 E 50 hole in tool while lever is in its rearward position. If throttle lever is misaligned, bring it into alignment by bending with Tool No. J-3310.

2. Assemble linkage to transmission throttle lever and install new cotter pin.

3. Remove spring clip from carburetor to dash relay rod trunnion and remove trunnion from relay lever.

4. Place 1/4 inch drill shank through gaging hole in dash relay lever and into dash relay bracket.

5. With engine running, set throttle lever in hot idle position. (Air Conditioner "off")

6. Adjust carburetor to dash relay rod trunnion to allow free entry into dash relay lever.

7. Install spring clip in trunnion.

8. On cars with single carburetor

(a) Back off both jam nuts on the T.V. rod at carburetor to allow free movement of rod in trunnion.

(b) Push end of T.V. rod to position transmission throttle valve against its stops.

(c) Bring rear jam nut up against trunnion and back off 8 flats (1-1/3 turn).

NOTE: This adjustment may be increased or decreased to improve shift characteristics after road test.

(d) Tighten front jam nut. Check to make certain linkage moves freely.

9. On cars with dual carburetors

(a) Remove lock nut, adjusting nut and spring from forward end of T.V. rod.

(b) Back off rear lock nut and adjusting nut on T.V. rod to permit free movement of rod in trunnion.

(c) Push on end of T.V. rod to position transmission throttle valve against its stop.

(d) Bring rear adjusting nut up against trunnion and back off 3 complete turns.

(e) Tighten rear lock nut.

(f) Install spring and adjusting nut on front end of T.V. rod.

(g) Adjust the nut until the distance between the front face of the trunnion and the rear face of the adjusting nut is 1-13/32". Fig. 14-5.

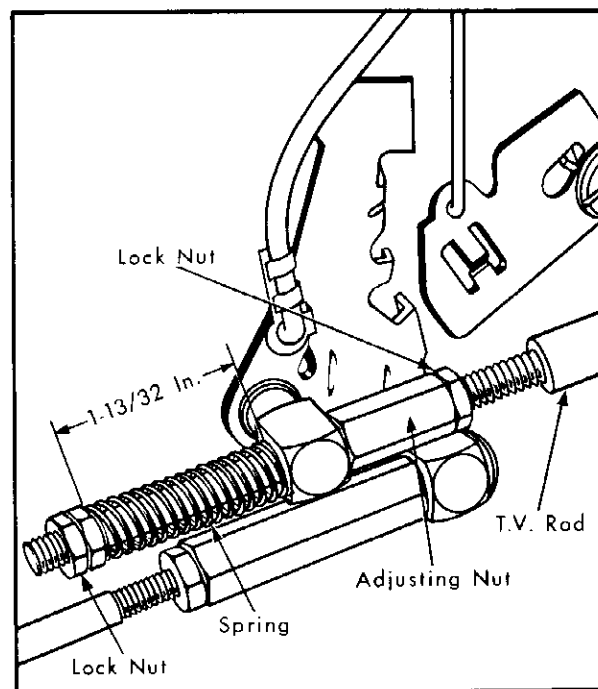


Fig. 14-5 T.V. Rod Adjustment - Eldorado Engine

(h) Install lock nut against front end T.V. adjusting nut.

10. Remove 1/4 inch drill shank from dash relay and check position of accelerator pedal with wide open throttle. Pedal should touch floor mat with slight pressure (allow 1/2" clearance if mat has been removed) when throttle is wide open.

11. Adjust accelerator pedal position at pedal end of dash relay to accelerator pedal rod.

12. Road test car to insure proper shifting characteristics.

### (3) Band Adjustments

To adjust bands on transmissions equipped with oil cooler will require draining of oil at the oil pan drain plug, disconnecting oil lines at pan, and removal of the oil pan.

NOTE: When removing oil pan, exercise caution when disconnecting the rear pump feed line from the cooler valve body in the oil pan. Make certain not to lose cooler valve and spring.

Upon installation of oil pan, be certain that the

## HYDRA-MATIC TRANSMISSION

rear pump feed line is properly installed into the oil pan cooler valve body.

### (4) Checking Pump Pressure

The pump pressure can be checked with the transmission in the car, using a gage calibrated to at least 250 P.S.I.

1. Remove band adjusting hole cover from floor pan, clean dirt from top of case and remove plug from top of transmission case (between band adjusting screws).

2. Screw pressure gage line fitting into hole in case, with gage placed so it can be read from the driver's seat.

3. Drive car until transmission oil has reached normal driving temperature (approximately 200°F).

#### a. Drive Range Check

The following tests may be made by road test or with car on jack stands.

1. At 400 RPM, the pressure should be 50 P.S.I. minimum in all ranges except reverse which could be higher.

2. Zero throttle pressure - At 30 MPH in fourth gear with zero throttle, line pressure should be 73 to 81 P.S.I.

3. Full throttle pressure (road test) - Full throttle pressure in fourth gear at 35 MPH (full throttle without going through detent) should be 114 - 122 P.S.I.

4. To check the operation of the rear pump alone, drive the car at 40 to 45 MPH in fourth speed. Then shift to neutral and turn off the ignition. Pressure should be at least 70 P.S.I.

Low rear pump oil pressure should be corrected by replacement of the pump gears or by checking for leakage in other units.

#### b. Reverse Pressure Check

1. Place the selector lever in reverse position and note pressure with engine running at 400 RPM. This reading should be as high or higher than the previous pressure checks in drive range.

2. With the selector lever in reverse, apply the foot brake and increase engine speed to half throttle. Pressure should increase to 176 P.S.I. minimum. The pressure range under the above conditions is 176 P.S.I. minimum.

If pressure readings are below the specified amount for any of the above tests, a malfunctioning pressure regulator or a leak in the system is indicated.

### (5) Removal and Installation of Oil Cooler Assembly

#### a. Removal and Installation of Cooler Assembly Only

1. Disconnect coolant hoses at cooler and plug open ends to prevent coolant leakage and entry of dirt or other foreign material.

2. Disconnect two oil lines at cooler.

3. Remove screws retaining cooler to oil pan and case and remove cooler.

4. To install, reverse procedure described above.

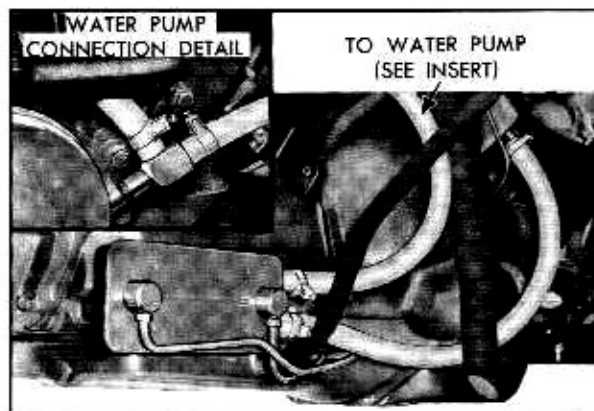


Fig. 14-6 Oil Cooler Hose and Pipe Connections

#### b. Removal and Installation of Oil Pan Equipped with Cooler Assembly

NOTE: This operation is required when adjusting bands or disassembling transmission.

1. Drain oil from transmission at oil pan drain plug.

NOTE: Fluid coupling need not be drained for this operation.

2. Disconnect oil lines at oil pan.

3. Remove oil pan making certain not to bend or distort the rear pump to cooler valve body feed line.

NOTE: When oil pan has been removed, locate valve and spring in cooler valve body to make certain parts are not lost in removal.

## HYDRA-MATIC TRANSMISSION

4. If it is necessary to replace cooler, disconnect hoses and remove cooler. Make certain hoses are plugged to prevent leakage of coolant.

5. Inspect all parts for evidence of wear, damage and foreign material. Clean and replace parts if necessary.

6. To install oil pan, reverse procedure described above, making certain rear pump feed line is positioned properly in the cooler valve body.

### (6) Towing Instructions

Cadillac cars equipped with Hydra-Matic transmission should NEVER be towed unless the propeller shaft is disconnected, or the rear wheels are raised off the ground. This is necessary because of possible close production limits which might cause the front clutch to drag and possibly burn up.

The only exception to this rule would be in a situation where pushing would be for only one or two blocks maximum, transmission oil cold, for purposes of getting the car started. Speeds of 20-25 MPH must be maintained to insure proper lubrication.

### (7) Removal and Installation of Shifter Tube and Lower Shift Lever

#### a. Removal and Installation of Shifter Tube

The following procedure relates specifically to removal of shifter tube from car without removal of steering column assembly.

1. Disconnect battery.
2. Remove neutral safety switch and horn contact from lower steering column.
3. Remove horn button and spring.
4. Remove steering wheel hub nut.
5. Remove horn ring retainer and horn ring.
6. Remove steering wheel using special puller, Tool No. J-1859.
7. Remove steering shaft tensioner spring and split ring.
8. Remove steering column lower cover.
9. Remove Hydra-Matic dial pointer.
10. Remove directional signal switch.
11. Remove screws holding upper bearing retainer to steering jacket.
12. Remove cotter key, dust shield and horseshoe retainer at lower shift lever on steering tube and then disengage shift lever from shifter tube.
13. Pull shifter tube up out of the steering jacket and then unscrew bearing retainer from shifter tube.
14. To install, reverse above procedure.

#### b. Removal and Installation of Lower Shifter Lever

1. Remove steering column assembly from car as described in Section 7, Note 11.
2. Remove horn button and spring.
3. Remove steering wheel hub nut.
4. Remove steering wheel and spring.
5. Loosen lower steering column clamp and remove steering clamp and remove steering shaft and lower bearing.
6. Remove directional signal switch.
7. Remove selector lever and anti-rattle spring.
8. Remove screws holding upper bearing retainer to steering jacket.
9. Remove cotter key, dust shield and horseshoe retainer at lower shift lever on steering tube.
10. Disengage shift lever from shifter tube and remove tube.
11. Remove lower shift lever.
12. Remove upper bearing retainer.
13. Press upper bearing from retainer.
14. To install, reverse above procedure.

## HYDRA-MATIC TRANSMISSION

### SPECIFICATIONS

Subject and Remarks	All Series
<b>FLYWHEEL COVER AND TORUS ASSEMBLIES</b>	
Flywheel Cover, maximum runout of hub . . . . .	0.005"
Backlash between splines of cover and front unit drive gear . . . . .	0.001" to 0.004"
Torus members, maximum runout of face . . . . .	0.015"
Drive Gear backlash between gear and planetary pinions . . . . .	0.005" to 0.008"
Planet Carrier Pinions, end play . . . . .	0.005" to 0.026"
<b>GOVERNOR ASSEMBLY</b>	
Maximum runout of governor sleeve . . . . .	0.005"
Maximum runout of governor drive flange face . . . . .	0.002"
<b>REAR OIL PUMP</b>	
End play of gears . . . . .	0.001" to 0.004"
Backlash of gears . . . . .	0.006" to 0.010"
Mainshaft, end play . . . . .	0.004" to 0.018"
<b>REVERSE ASSEMBLY</b>	
End play of planet carrier pinions . . . . .	0.005" to 0.026"
Backlash of internal gear pinions . . . . .	0.008" to 0.012"
<b>OUTPUT SHAFT ASSEMBLY</b>	
Backlash of pinions - Internal Gear . . . . .	0.0006" to 0.0008"
Sun Gear . . . . .	0.0003" to 0.0005"
End Play of Pinions . . . . .	0.005" to 0.026"

### TORQUE TIGHTNESS

Application	Size	Ft. Lbs. Min.	Ft. Lbs. Max.
Band adjusting screw lock nut . . . . .	1/2-20	40	50
Extension housing to case . . . . .	3/8-16	28	33
Extension housing to reverse unit support . . . . .	3/8-16	28	33
Flywheel to crankshaft . . . . .	7/16-20	80	85
Front cover retaining screws . . . . .	5/16-18	10	13
Front oil pump cover to body . . . . .	1/4-20	12	15
Front servo assembly . . . . .	1/4 pipe	6	7
Front servo body to cylinder . . . . .	1/4-20	6	8
Front servo to case . . . . .	3/8-16	23	28
Governor body to drive flange . . . . .	1/4-20	6	8
Governor bushing retainer to governor body . . . . .	10-24	3	4
Internal gear to rear drum . . . . .	10-24	3	4
Lever, shift on transmission . . . . .	5/16-24	18	22
Mainshaft, retaining nut . . . . .	7/8-16	30	35
Manual lever clamp screw . . . . .	5/16-24	10	13
Oil pan to case . . . . .	5/16-18	10	13
Oil pan drain plug . . . . .	5/8-18	35	45
Oil pressure take-off at case . . . . .	1/8 pipe	15	18
Outer valve body to inner body . . . . .	10-24	3	4
Pressure regulator valve plug . . . . .	1-1/16-16	40	50
Rear oil pump to case . . . . .	5/16-18	15	18
Rear pump cover to body . . . . .	1/4-20	6	8
Rear servo to case . . . . .	3/8-16	23	28
Reverse unit drive flange to rear unit drum . . . . .	5/16-18	10	13
Shifter bracket to case . . . . .	5/16-18	15	18
Side cover to case . . . . .	1/4-20	10	12
Throttle lever clamp screw . . . . .	1/4-28	10	12
Flywheel to Torus cover . . . . .	3/8-24	40	45
Torus cover drain plug . . . . .	1/8 pipe	6	7
Valve body to case . . . . .	1/4-20	6	8

## HYDRA-MATIC TRANSMISSION

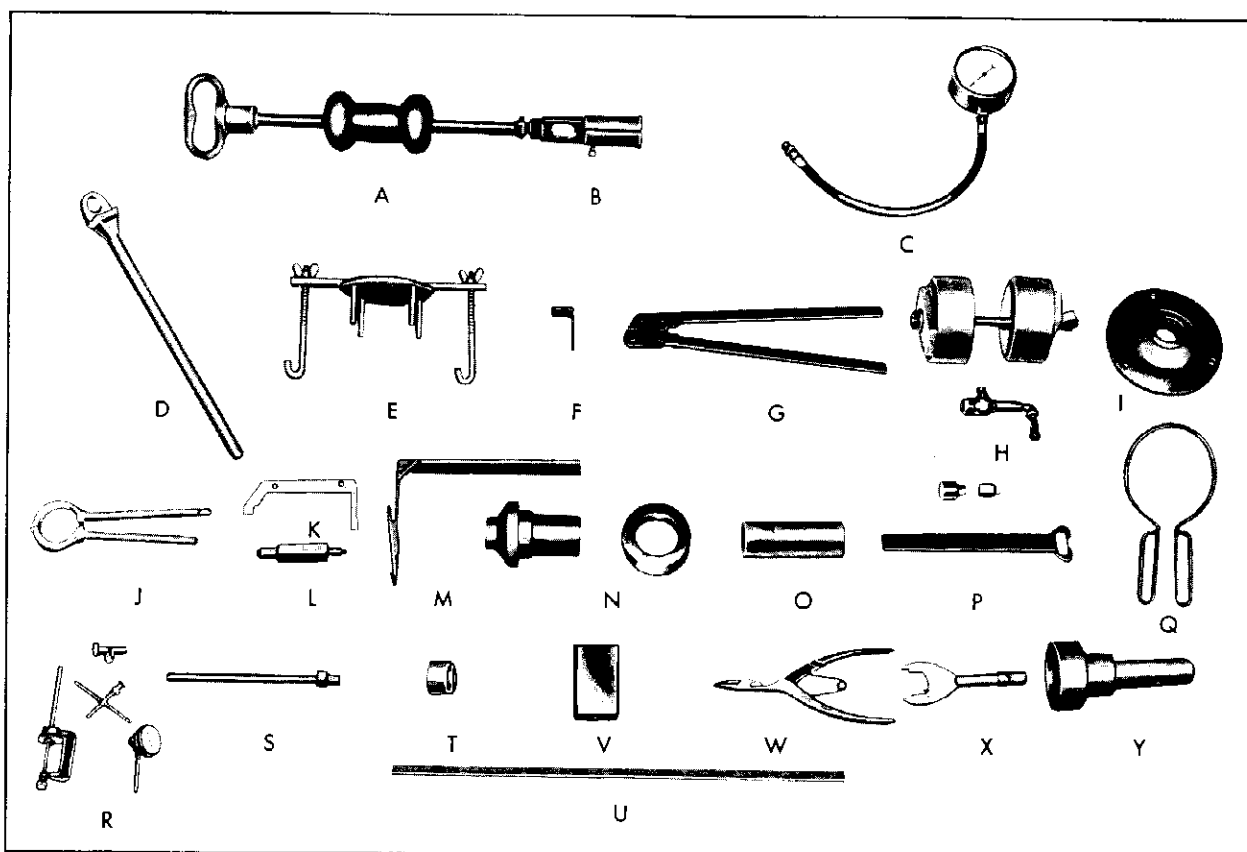


Fig. 14-7 Special Tools

KEY	TOOL NO.	NAME	KEY	TOOL NO.	NAME
A	J-2619-A	Slide Hammer	N	J-2170	Front Pump Cover Oil Seal Installer
B	J-2623	Ext. Housing Oil Seal Remover Collet	O	J-2587-B	Transmission Mainshaft End Play Gauge
C	J-2540-A	Pressure Checking Gauge	P	J-2184-A	Front Pump Holder and Socket Set
D	J-1459-A	Drum Holder	Q	J-1537	Oil Delivery Sleeve Ring Compressor
E	J-4670-B	Clutch Spring Compressor	R	KMO-30	Dial Indicator Set
F	J-2174	Rear Clutch Hub Retainer Bracket	S	J-1465-A	Mainshaft End Play Dial Indicator Extension Rod
G	J-3310	Throttle Lever Bending Tool	T	J-4731	Governor to Sleeve Aligning Tool
H	J-4353	Clutch Piston Actuator and Blow Gun	U	J-4752	Piston to Drum Installing Tool
I	J-2187	Front Planet Carrier Assembly Holder	V	J-5157	Regulator End Casting Assembly Clamp
J	J-1537	Oil Delivery Sleeve Ring Compressor	W	J-5586	Snap Ring Pliers
K	J-5071	Rear Servo Gauge	X	J-2182	Transmission Bearing Retainer Remover
L	J-1693-A	Front Servo Gauge	Y	J-1942-A	Extension Rear Oil Seal Installer
M	J-3065-C	Throttle Lever Checking Gauge			





## Band Adjustment — External Method

Before adjusting either front or rear band, set car hand brake, then chock wheels, making certain car does not move during adjustment.

To expose floorboard access cover over band-adjusting screws, remove accelerator pedal and lift floor mat on left (driver's) side. Remove access cover. Start engine. Run until normal operating temperature is reached.

Connect electrical tachometer.

For car models up to and including 1951, place Shift Lever in Low Range. For 1952 and later models, place Shift Lever in Drive Range.

Adjust carburetor idle screw until tachometer reads 700 RPM.

### Adjustment of Front Band

1. Insert Wrench End of Band Adjusting Tool in floorboard access hole (Fig. 4). Place Outer Socket over adjusting-screw lock nut. Engage adjusting screw by slowly rotating finger-grip Adjustment Knob until Inner Socket is seated.



Fig. 4. Adjusting bands external method

2. Holding Adjustment Knob stationary, loosen lock nut by turning Wrench Handle in counter-clockwise direction.

3. Turn Adjustment Knob slowly in counter-clockwise direction, loosening adjusting screw, until engine speed reaches 900-1000 RPM.

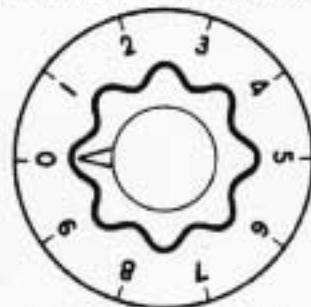


Fig. 5. Indicator dial

4. Reduce engine speed to exactly 700 RPM by slowly retightening adjusting screw. Observe tachometer for 30 seconds. If tachometer reading creeps up beyond 700 RPM, tighten adjusting screw 1/10th of a turn (one marking on Indicator Dial) and again observe tachometer. Continue this process until tachometer reading remains at 700 RPM for 30 seconds.
5. Without turning Wrench Handle or Adjustment Knob, rotate Indicator Dial until Zero mark is directly under arrow pointer (Fig. 5).

6. For car models up to and including 1951, hold Wrench Handle stationary and tighten adjusting screw 6½ turns by rotating adjustment knob in a clockwise direction. For

1952 and later models, tighten adjusting screw 7-7/10th turns.

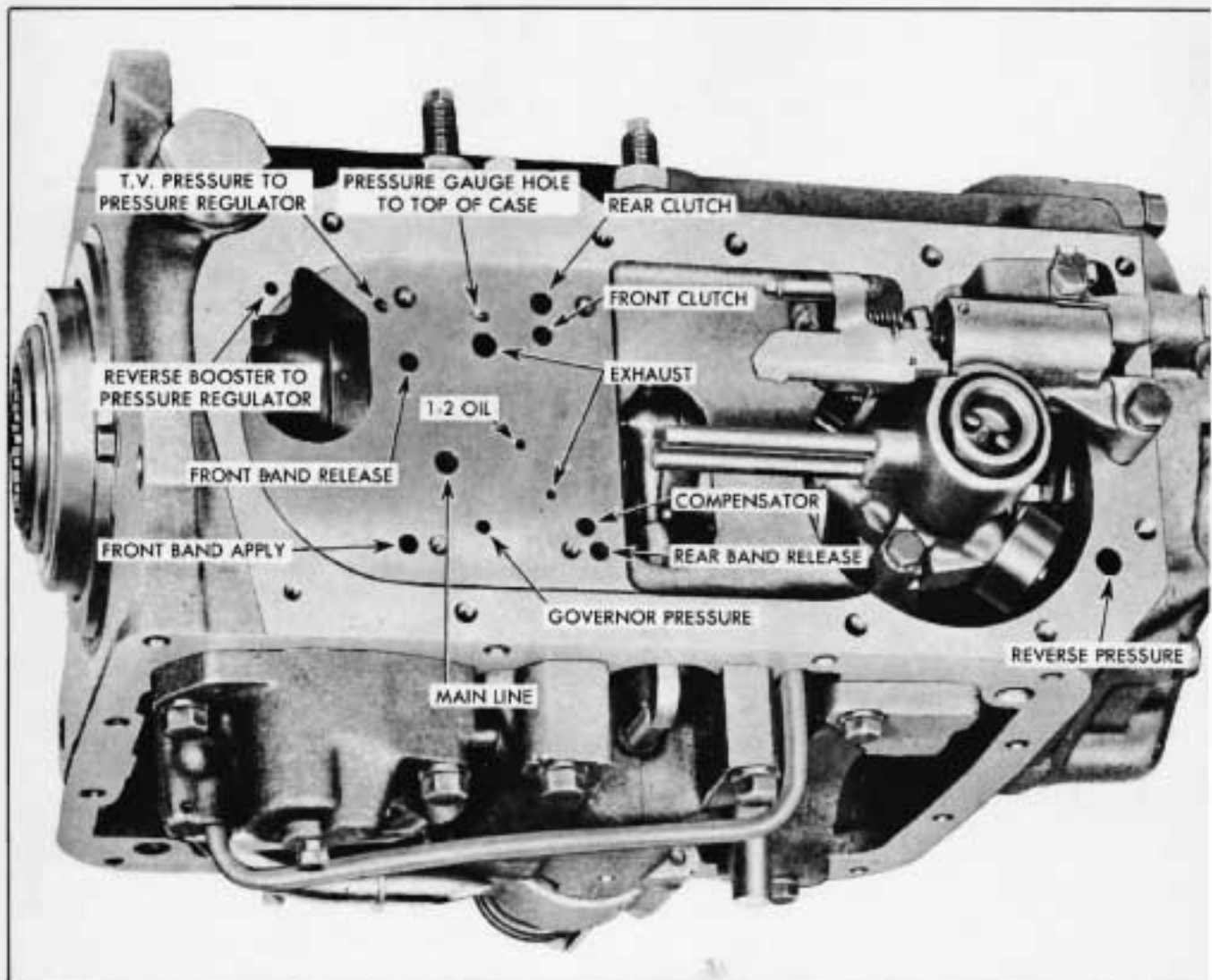
7. Holding adjustment Knob stationary, tighten lock nut.

### Adjustment of Rear Band

1. Repeat operations 1 through 5, as in front-band adjustment procedure.
2. Place Shift Lever in Neutral position.
3. Hold Wrench Handle stationary and tighten adjusting screw 2 turns by

rotating Adjustment Knob in a clockwise direction.

4. Holding Adjustment Knob stationary, tighten lock nut.
5. Re-adjust carburetor for proper engine-idling speed.



Passage identification — Hydra-Matic transmission

# CHASSIS ELECTRICAL

## GENERAL INFORMATION

The speedometer dial has been modified to improve lighting on the speed graduations, resulting in improved readability at night. Figures and letters on the temperature and gasoline gauges are heavier for improved legibility.

A light has been added (on cars above Engine No. 44000 approx.) to illuminate the front ash tray, making it easier for the front seat occupants to locate it in the dark.

The front parking and directional signal lights located in the radiator grille extension molding incorporate a double filament bulb. The double filament bulb consists of a 4 c.p. filament which is operated by the first position of the headlight switch when parking lights are desired, and a 32 c.p. filament which is operated by the directional

signal switch to indicate a right or left turn.

Twin air-tone horns of the "sea shell" type, matched in tone, are used on all series cars. They are mounted between the radiator and radiator grille on brackets on the air deflector and are positioned so that they face each other. In addition, a third horn is mounted on the radiator support on Eldorado series cars. The horn ring, when depressed, permits a small current to pass through a relay mounted on the engine radiator support. This current closes the circuit for the heavier current that operates the horns.

Other adjustments and procedures may be performed as outlined in the 1954 Shop Manual. The new circuit diagram is shown in Fig. 15-1.

## SERVICE INFORMATION

### (1) Replacement of Headlamp Unit

Two types of "Sealed Beam" headlamp units are used. One is made entirely of hard glass, and the other is a composite unit consisting of a metal reflector and a glass lens. Both are completely interchangeable from the standpoint of electrical connections, beam patterns, and physical dimension. Furthermore, they are so designed that they cannot be installed improperly, nor connected incorrectly. The same unit is used in both right and left hand headlamps. To replace a unit:

1. Remove three headlamp door screws, and remove door by pulling out at top.
2. Remove retaining spring from retaining ring.
3. Disengage sealed beam retaining ring from two adjusting screws and remove sealed beam unit with retaining ring and mounting ring.
4. Remove connector plug from sealed beam unit.
5. Remove sealed beam unit mounting ring and retaining ring.
6. Install new unit by reversing above operations.

### (2) Replacement of Bulbs

The complete list of replacement bulbs required for the 1955 series cars is given in the bulb chart, Page 15-5.

### (3) Removal and Disassembly of Directional Signal Switch

1. Disconnect signal switch wires at connectors under dash.

2. Remove steering column lower cover.
3. Remove horn contact at lower steering column.
4. Press down on horn button, turn and remove button and spring.
5. Remove steering shaft nut and horn ring retainer and remove horn ring.
6. Remove the steering wheel, using puller, Tool No. J-1859, and remove split ring and steering shaft tensioner spring.

NOTE: Be sure to mark steering wheel and steering shaft so that the wheel may be installed in the same position.

7. Remove directional switch carrier from upper bearing retainer by removing two screws.
8. Pull directional switch wires through steering column cover bracket and remove carrier assembly.
9. Remove switch cable clamp from carrier, remove two switch back screws from carrier and remove switch back and wire assembly.

### (4) Assembly and Installation of Directional Signal Switch

1. Install switch back and wire assembly to carrier with two screws and install switch cable clamp.
2. Insert directional switch wires through steering column cover bracket.

# CHASSIS ELECTRICAL

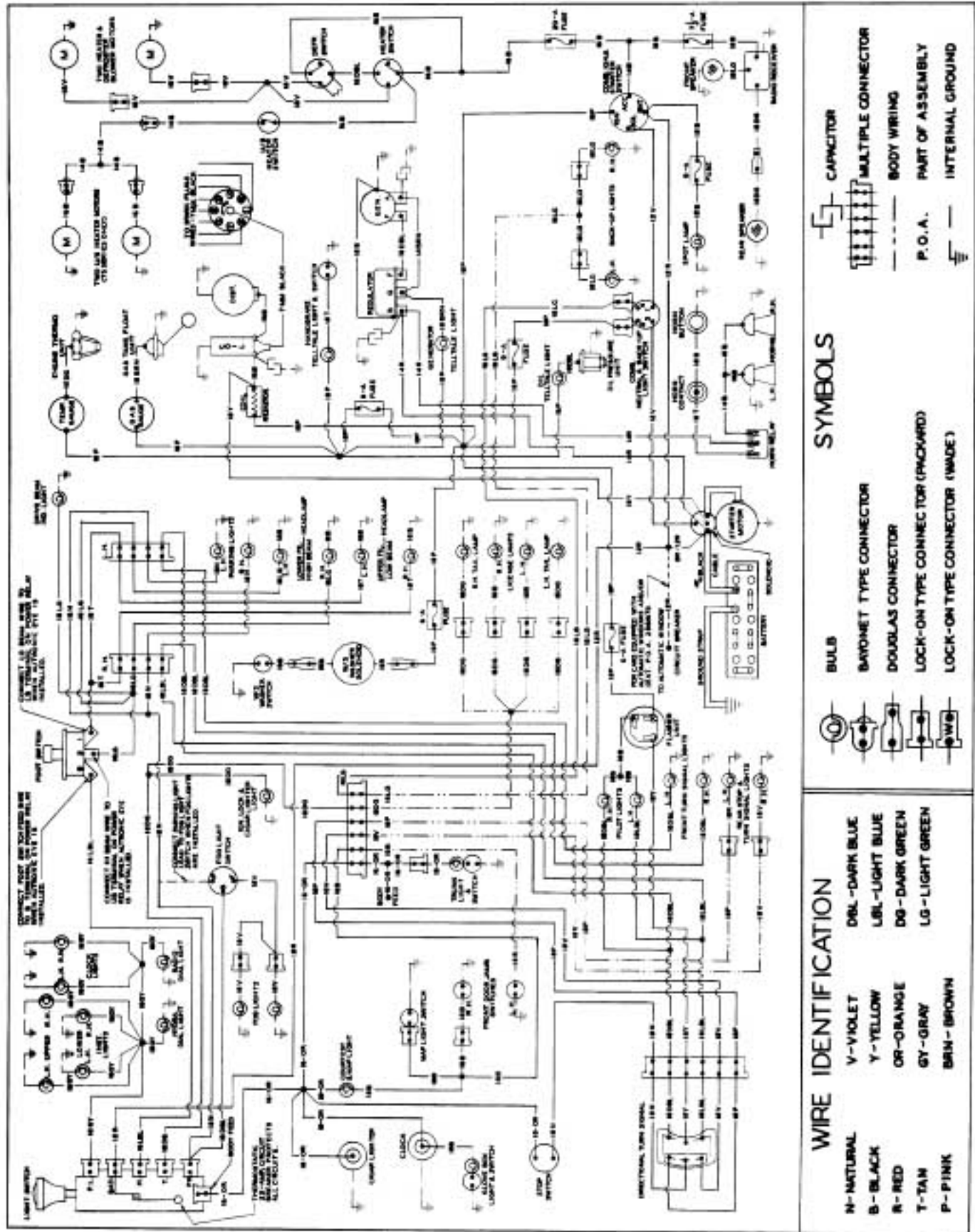


Fig. 15-1 Circuit Diagram

## CHASSIS ELECTRICAL

3. Install directional switch carrier to upper bearing retainer with two screws.

4. Install split ring, steering shaft tensioner spring and steering wheel, aligning mark on steering wheel with mark on steering shaft.

5. Position horn ring over steering wheel, install horn ring retainer and steering shaft nut, tightening nut to 45 to 50 ft-lbs. torque.

6. Install horn button spring and horn button, being sure emblem is in correct position.

7. Install horn contact at lower steering column.

8. Install steering column lower cover.

9. Connect signal switch wires to connector under dash.

### (5) Removal of Instrument Panel Cluster

#### a. Partial Removal

NOTE: Use this procedure for replacement of cluster assembly components where complete removal of cluster assembly is unnecessary.

1. Remove negative terminal from battery.

2. Pull floor carpet away from steering column area.

3. Remove two screws holding triangular steering column cover plate to toe riser and leave third screw in position.

4. Remove five screws holding square cover plate to toe riser.

5. Remove stop light brake switch.

6. Disconnect speedometer cable from speedometer head.

7. Remove lower steering column cover and remove Hydra-Matic dial indicator pointer.

8. Disconnect vent cables from firewall and vent.

9. Remove steering column "U" clamp stud nuts and lower the steering column with "U" clamp.

10. Disconnect trip odometer reset stem.

11. Remove three cluster mounting screws.

12. Place a cloth over the steering column and

pull cluster out far enough for access to defroster and heater control arm brackets.

13. Remove defroster and heater knobs from control arms and remove control arm brackets.

14. Cluster may now be pulled out further for instrument service.

#### b. Complete Removal

NOTE: Use partial removal above with the following steps for complete removal of the cluster assembly.

1. Disconnect cigar lighter wire.

2. Remove ignition lock retaining ring and remove lock assembly.

3. Remove right and left ventilator cables and knobs.

4. Remove windshield wiper control.

5. Remove all bulbs from rear of cluster assembly.

6. Remove all wires from gauge terminals.

7. Cluster may now be removed for disassembly on bench.

### (6) Disassembly and Assembly of Instrument Panel Cluster Assembly

1. Remove three screws which hold temperature gauge base plate to instrument cluster body and remove gauge assembly.

2. Remove screws that hold fuel gauge to cluster body and remove fuel gauge assembly.

3. Remove cigar lighter assembly.

4. Remove ten screws which hold cluster backing plate to cluster body and remove cluster backing plate.

5. Remove three screws which hold speedometer head assembly to cluster backing plate and remove speedometer head assembly.

6. Remove six screws which hold speedometer backing plate to body and remove backing plate.

NOTE: Further disassembly of the speedometer head is not recommended because it involves removal of speedometer pointer, an operation which should be performed by a United Motors Service Station.

## CHASSIS ELECTRICAL

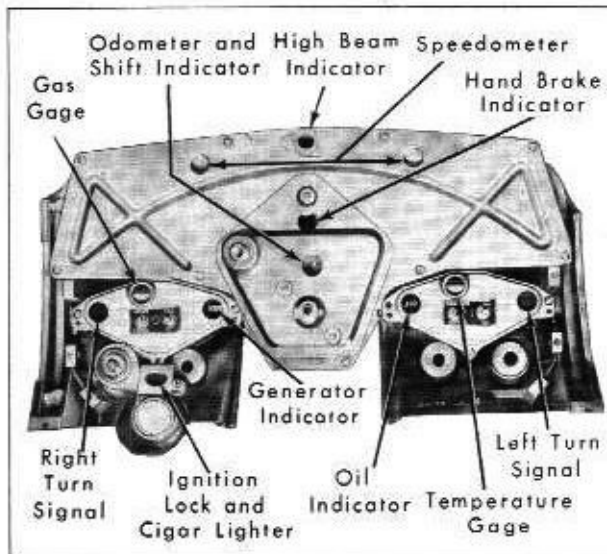


Fig. 15-2 Instrument Bulb Location

7. Remove plastic speed indicator, glass lens, and two rubber insulators from casting.

8. Remove three screws which hold Hydra-Matic indicator backing plate to cluster body and remove backing plate.

9. Remove plastic Hydra-Matic indicator lens and plastic bracket.

10. Assemble instrument panel cluster assembly by reversing the procedure for disassembly.

## (7) Installation of Instrument Panel Cluster Assembly

NOTE: When complete removal of cluster assembly has been made, use procedures "a" and "b" as listed below. When cluster assembly has been partially removed, use procedure "b" below.

### a. Complete Installation

1. With a cloth placed over the steering column, place the cluster assembly in position in front of the opening in the instrument panel. Connect gauge wires to gauge terminals according to the wiring code on the gauge plates.

2. Install all bulbs to rear of cluster assembly, making sure lights are in correct holes. Fig. 15-2.

3. Install windshield wiper control.

4. Install right and left ventilator cables and knobs.

5. Install ignition lock assembly and lock retaining ring.

6. Connect cigar lighter wire.

### b. Partial Installation

1. Connect speedometer cable to speedometer head.

2. Install control arm brackets to cluster body and install defroster and heater knobs to control arms.

3. Install cluster assembly in instrument panel opening with three mounting screws.

4. Connect trip odometer reset stem.

5. With rubber insulator in place on cluster assembly, raise steering column into position, guiding "U" clamp over studs and install stud nuts.

6. Connect vent cables to firewall and vents, check for free operation of the cables.

7. Install Hydra-Matic dial indicator pointer and lower steering column cover.

8. Install stop light brake switch, with switch lever positioned above brake pedal.

9. Install square cover plate to toe riser.

10. Position brake grommet bracket between the two plates and install triangular cover plate to toe riser.

11. Install floor carpet as necessary.

12. Install negative terminal to battery.

## CHASSIS ELECTRICAL

## SPECIFICATIONS

## FUSE LOCATIONS

Unit	Type	Location	Unit	Type	Location	
Headlight	22A	Circuit Breaker	Back-Up-Light	9A	Fuse Panel*	
Ash Tray			Automatic Heating System	20A	Fuse Panel*	
Cigar Lighter			Radio (all)	7.5A	Fuse Panel*	
Clock			Spotlight	9A	Under Hood, De-froster Mounting Screw	
Map and Courtesy			Air Conditioner	6A/20A	Under Dash, Above A/C Control	
Glove Box			Turn Signal	6A	Fuse Panel*	
Dome Light			*Fuse panel located under instrument panel, on cowl insulation board, just to the left of center of car.			
Fog Light						
Inst. Lights						
Parking Light						
Stop Light						
Trunk Light	15A	Circuit Breaker				
Hydro-Lectric	6A	Fuse Panel*				
Windshield Washer						

## BULB DATA CHART

Unit	c/p	Contact	No.	Unit	c/p	Contact	No.
Headlamp	Sealed Beam Unit			Bow Dome Lamp (6267,6267S)	6	Single	90
Parking and Signal	32-4	Double	1034	Rear Door Courtesy Lamp (75)	6	Single	90
Glove Compartment	2	Single	57	Corner Lamp (75)	6	Single	90
Clock	2	Single	57	Radio Dial	2	Single	57
Instrument Lights	2	Single	57	Hydra-Matic Shift Indicator Dial	2	Single	57
Oil Telltale	2	Single	57	Ash Tray Bulb	1	Single	53
Generator Telltale	2	Single	57	Back-Up Light	32	Single	1073
Brake Emergency	2	Single	57	Map and Courtesy	6	Double	90
Beam Indicator	2	Single	57	Spotlight	Sealed Beam Unit		
Direct, Signal Ind.	2	Single	57	Fog Lamp	32	Double	1044
Ignition Lock and Cigar Lighter	1	Single	53	Parking Lamp Bulb in Fog Lamp	3	Single	67
Trunk	6	Single	89				
Tail Lamps	32-4	Double	1034				
License Plate Lamp	3	Single	67				
Dome Lamp (except 6267,6267S)	15	Single	1004				

## SPEEDOMETER PINION APPLICATION CHART

Car Model	Speedo Pinion Part No.	Axle Ratio	No. of Teeth	Ident. Marking	Tire Size
60-62	1457320	3.36	19	S-1	8.00-15
60-62	1460172	3.07	17	S-8	8.00-15
75	1457322	3.77	21	S-3	8.20-15 (6 ply)
86	1457324	4.27	23	S-5	8.90-15 (6 ply)





# AIR CONDITIONER

## GENERAL DESCRIPTION

The 1955 Cadillac Air Conditioner system is basically the same as that used on 1954 cars, but several important changes, including a new compressor, have been made in the individual units to provide a faster cooling rate and to permit more accurate control of interior temperature. Fig. 16-A-1

The new compressor is a five cylinder reciprocating type, having intake and discharge valve reeds for each cylinder which permits a definite separation between the discharge (high pressure) and intake (low pressure) side.

Both the high and low pressure hand shut off valves and the gage fittings are located in the head casting at the rear of the compressor. Fig. 16-A-2

The compressor shaft is engaged with the drive pulley by means of an internal clutch assembly which is actuated by an internal coil. Fig. 16-A-3 This coil, when energized, magnetizes the coil and seal housing to attract the armature which is riveted to the rear clutch plate. As the rear clutch plate moves toward the coil housing, the frictional material on the plate contacts the rear flange of the compressor pulley, causing the clutch plate to rotate. This rotation forces the three balls, between the clutch plates, to the shallow end of their depressions. The front clutch plate, then, is forced into contact with the front inner face of the pulley so that both front and rear clutch plates are rotating with the pulley. The splined hub of the front clutch plate drives the compressor shaft and compressor.

The Air Conditioner control panel, which consists of a toggle switch, blower motor control rheostats, and a temperature control lever, is lo-

cated on the lower flange of the instrument panel just below the radio. While the toggle and blower switches serve the same purpose as on previous model cars, the temperature control lever permits regulation of cooling to the desired degree.

The electrical circuit is arranged so that current flows from the battery, through a 20 ampere fuse, to the toggle switch. With the toggle switch in the "Vent" position, current is directed to the blower switches and to the temperature control lever. Fig. 16-A-4

When the temperature control lever is in the extreme right position, current flows directly to the relay, mounted on the left front fender dust shield. The relay coil is energized and the points close, completing a circuit to the clutch coil to engage the compressor and provide full cooling without temperature control.

When the temperature lever is moved to the left, current flows through a variable resistance to a thermostat mounted on the top of the evaporator housing.

The thermostat has a temperature sensitive coil which extends into the evaporator, where it is exposed to the return air flow from the passenger compartment. As the temperature of the return air increases, the thermostat bellows moves upward and closes the circuit to the relay to operate the compressor. As the resistance in the circuit to the thermostat is increased, by moving the control lever to the left, the points in the thermostat will not close the circuit until the return air reaches a higher temperature, providing the driver with complete control of the interior temperature.

## SERVICE INFORMATION

### (1) Precautions in Handling Freon-12

While Freon-12 was selected as the safest and best refrigerant to use in the Cadillac Air Conditioner, it is very important that the following precautions be observed to avoid serious accidents and personal injury.

a. Do not leave drum uncapped. The metal cap furnished with the drum when it is shipped is to protect the valve and safety plug from damage. It should be replaced after each use of the drum.

b. Do not carry the drum in the passenger compartment of a car. Always place drum in luggage compartment of car or if in an open truck, cover drum to protect it from radiant sun heat. The re-

sultant increase in pressure may cause safety plug to release or drum to burst.

c. Do not subject drum to high temperature when charging system. Use water no warmer than 125°F. to heat drum. Never place drum on radiator, stove, or use torches for heating during charging.

d. Do not fill drum completely - when filling one drum from another, always allow space above liquid for expansion.

e. Do not discharge Freon-12 into a room having an exposed flame - concentrations of this gas in contact with an open flame will produce a toxic gas.

f. Do not expose the eyes to liquid - protect

# AIR CONDITIONER

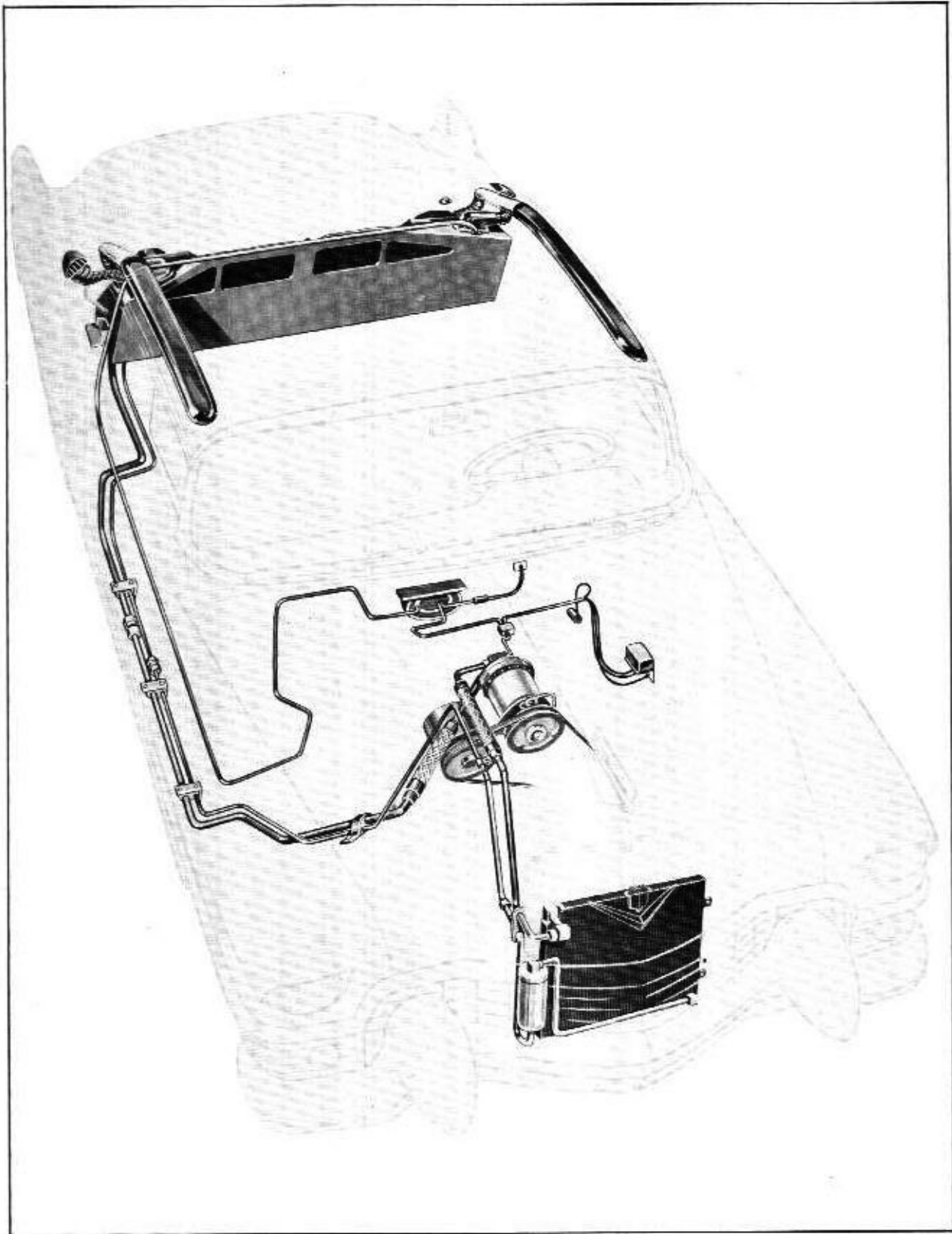


Fig. 16-A-1 Location of Air Conditioner Units

## AIR CONDITIONER

them with glasses or goggles. If Freon-12 liquid should strike the eyeballs:

1. Apply a few drops of sterile mineral oil to the eyes as an irrigator.
2. If irritation continues, wash the eyes with a weak solution of boric acid.
3. See an eye specialist at once.

If liquid Freon-12 comes in contact with the skin, the injury should be treated for frostbite.

### (2) Precautions in Handling Lines

- a. Store all lines to avoid crushing or kinking. If a line is kinked, it should not be used.
- b. Lines should be kept sealed and dehydrated in stock. Do not remove caps from lines until just before installation.
- c. When tightening fittings, use proper size wrenches to avoid over or under tightening. Always use two wrenches, when tightening fittings, to prevent twisting the soft copper tubing. A drop of Frigidaire oil on the pipe flare will allow the flare nut to be tightened without twisting the pipe.
- d. Close ends of lines, which have been disconnected for any reason to prevent entrance of moisture or dirt.

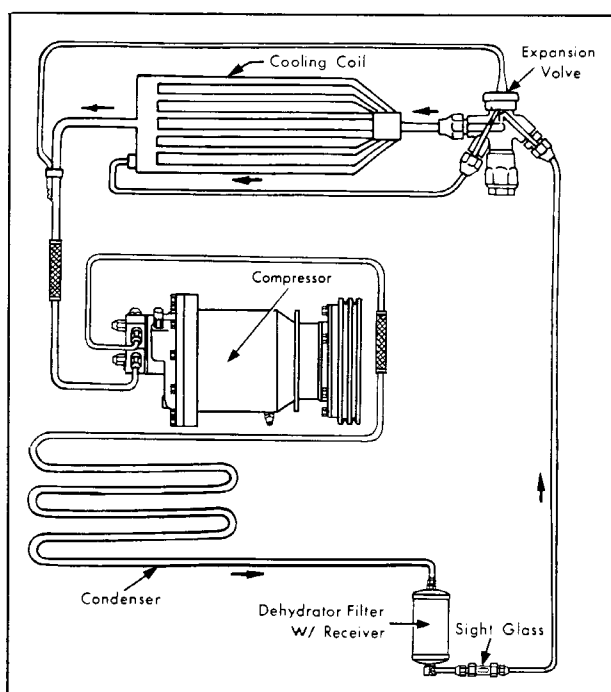


Fig. 16-A-2 Cycle of Operation

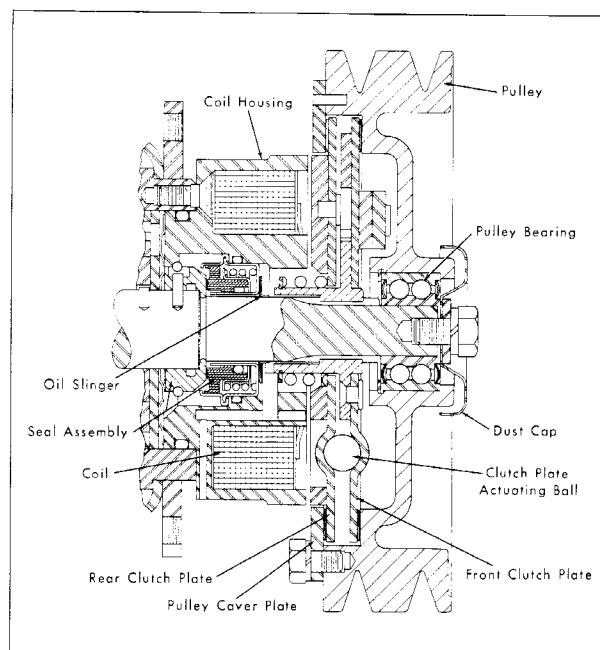


Fig. 16-A-3 Cross-Section of Compressor

- e. Gage set and lines should be kept clean and free from moisture.
- f. Do not leave Frigidaire oil container open any longer than necessary, as the special oil is moisture-free and will absorb moisture from the air if left uncapped.
- g. Use the Vacuum Pump, Tool No. J-5428, to remove any air or moisture which may have entered the system when it was opened to replace a part.

### (3) Maintenance and Inspection

#### a. Preliminary Check

1. High and low pressure shut-off valves at compressor must be fully open.
2. Drive belts must be installed properly to prevent slippage.
3. Make certain clutch is engaging and disengaging.
4. Using Leak Detector, Tool No. J-5419, test entire system for leaks, and make necessary repairs.
5. If there is evidence of oil leaks, check oil level.
6. Check operation of blower fans at all control knob positions.

## AIR CONDITIONER

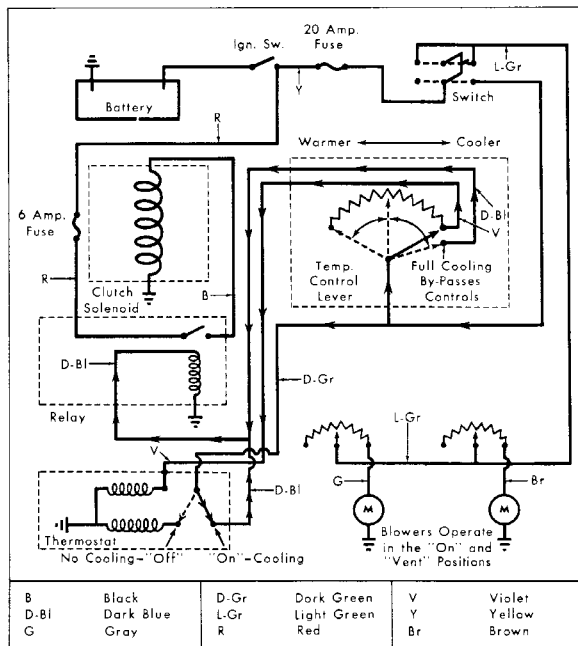


Fig. 16-A-4 A/C Wiring Diagram

7. Check operation of temperature control lever relay and thermostat.

### b. Seasonal Operation

#### 1. Winter Operation

Close outside air intake ducts.

It is advisable to operate the compressor for a few minutes each month during the winter season.

#### 2. Summer Operation

To start the Air Conditioner after the winter season, the following operations should be performed:

Leak test complete system and make necessary repairs.

If leaks are found, check oil level.

Check belts for proper tension.

See that clutch engages and disengages. Make certain clutch is not slipping by observing dust cover bolt at center of pulley. Bolt should be turning at same speed as pulley.

Place toggle switch in "On" position with control lever to extreme right position and operate engine for five minutes at 1300 RPM.

Check sight glass for absence of bubbles which would indicate that system has sufficient Freon-12 charge.

Open outside air intake ducts.

Check conditioning unit blower fans for variable speed control at panel.

### c. 2000 Mile Inspection

The procedure outlined below may be used as a guide to check the Air Conditioner system when the car is brought in for the 2000 mile inspection.

1. Check unit for an indication of leaks and make necessary repairs.

2. If there is an indication of an oil leak, check compressor for proper oil level.

3. Tighten compressor mounting brackets and check belt tension.

4. Check sight glass for absence of bubbles indicating proper charge of Freon-12. This should only be done after running engine at a speed of 1300 RPM for five minutes in the "On" position - clutch engaged.

## (4) Service Precautions

### a. Collision Service

It is very important that the Air Conditioner system be inspected as soon as possible whenever a car, so equipped, has been involved in a collision. If the system has been opened as a result of the collision, it will permit the entrance of air, moisture, and dirt which will cause internal damage. As the length of time the system has been open, and the extent of damage to the components, will govern the replacement of parts and the service operations required, a definite procedure cannot be recommended which will cover all cases. The following procedure, however, may be used as a guide:

1. Make certain clutch is disengaged if car is to be operated before repairs are made. Replace belts with shorter belts if necessary.

2. Close both valves at compressor.

3. Inspect all units and pipes, noting any damage.

a. If the condenser is damaged, it should be replaced. No repairs such as soldering, brazing, or welding should be attempted.

## AIR CONDITIONER

b. Replace dehydrator-receiver assembly if damaged, leaking, clogged, restricted, or if open for any period of time.

4. Check compressor and clutch pulley for cracks. If compressor does not show evidence of external damage, it may be used.

### b. Steam Cleaning and Welding

Excessive heat applied at any section of the refrigerant lines will create excessively high pressures. For this reason, steam cleaning or welding should not be performed on any portion of the car adjacent to the refrigeration units or lines.

### c. Undercoating

To simplify service operations, undercoating should not be applied to any connections on the refrigeration system. While it is permissible to undercoat the copper refrigerant lines, all flare joints and connections should first be masked.

## (5) Installing Gage Set

In performing service operations, the system must be prepared and processed before and after the work is performed.

In order to save time and to avoid repetition in several of these operations, the step-by-step procedure of this operation is explained here, and in other procedures only a reference to it will be made.

### a. To Check Operation of System

1. With gage set valves closed, connect gage line to the high pressure Schrader type gage fitting at compressor. Fig. 16-A-5

NOTE: Make certain center connection of gage set is plugged.

2. Open both valves on gage set 1/4 turn counter-clockwise, purging Freon and air from the lines and, at the same time, install the low pressure gage line to the gage fitting at the compressor. Close gage valves.

3. Leak test all gage connections. If no leaks are found, proceed as follows:

4. Position temperature control lever to extreme right position to energize clutch.

5. Turn Air Conditioner switch to "ON" position and blowers on full speed. A check of the system pressures can now be made.

6. After completing check, remove gage lines and replace caps.

### b. To Purge the System

1. Remove caps from high and low pressure gage connection fittings at compressor.

2. Connect gage lines to compressor. Make certain gage valves are closed tightly.

3. Connect gage line to center connection of gage set, removing plug from end of line.

### c. To Evacuate and Charge the System

1. Remove caps from high and low pressure gage fittings at compressor.

2. Connect gage lines to fittings as shown in Fig. 16-A-5. Make certain gage set valves and shut-off valve at vacuum pump are closed tightly.

3. Remove valve caps from compressor hand shut-off valves and make certain valves are fully open.

## (6) Purging the System

In replacing any of the air conditioning components, (except compressor) the system must be

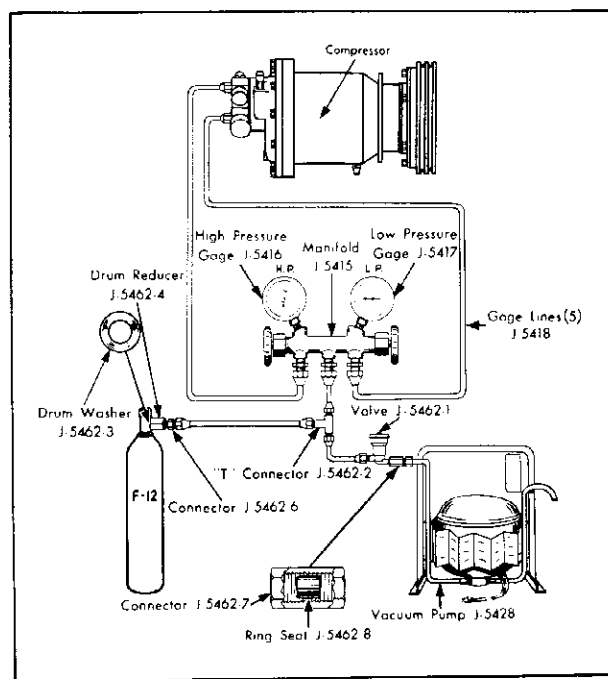


Fig. 16-A-5 Gage Connections For Evacuating or Adding Refrigerant

## AIR CONDITIONER

completely purged (drained) of refrigerant. The purpose is to lower the pressure inside the system so that a component part can be safely removed.

1. Connect gage set to compressor as described in Note 5b.

2. Purge refrigerant from system through the center connection of gage set by first opening high pressure valve on gage set.

**NOTE:** Do not open valve wide until pressure in system has been lowered, as refrigerant under pressure will force oil out of the compressor.

3. Close valve on gage set from time to time for the purpose of allowing 1-2 pounds of refrigerant pressure to remain in the system, then close both valves on gage set.

**NOTE:** Allowing 1-2 pounds of refrigerant pressure to remain in system will prevent air and dirt from entering the system when a part is replaced.

4. Leave gage set connected in preparation for evacuating and recharging.

### (7) Evacuating the System

Whenever the Air Conditioning system is opened for any reason, it should not be put into operation again until it has been evacuated. For this operation, use Vacuum Pump, Tool No. J-5428, to remove air and moisture which may have entered

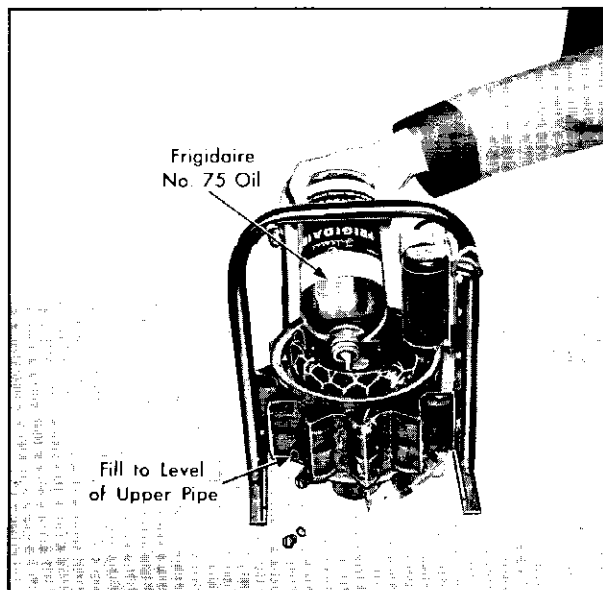


Fig. 16-A-6 Adding Oil to Vacuum Pump

the system when it was opened to replace a part.

Make sure dust cap on discharge side of vacuum pump has been removed. Check fluid level. This should be between the high and low screws in the side of the pump, Fig. 16-A-6. Add Frigidaire 75 viscosity oil to bring to proper level. Change oil in pump every 250 hours of operation by removing top and laying pump on its side with discharge oil trap up. Hold rotor firmly in position to prevent its coming out while draining oil. A small amount of 75 viscosity oil may be drawn into the pump occasionally to insure protection of internal parts during periods of disuse. If the pump should fail to start; check capacitor, relay, or remove the top and turn the rotor by hand to relieve a temporary stuck condition.

**CAUTION:** Do not use the vacuum pump as an air compressor as it will not receive proper lubrication under such usage. Keep suction and discharge fittings capped when not in use.

1. Connect gage lines as described in Note 5c if not installed previously.

2. Open the high and low pressure valves on gage set.

3. Connect and start vacuum pump.

4. Slowly open the shut-off valve at the vacuum pump to avoid forcing oil out of pump. This will permit drawing of a vacuum on both the high and low pressure sides of system at same time.

5. Operate to obtain approximately 28" of vacuum for ten minutes. If sufficient vacuum cannot be obtained, vacuum pump or gage may be faulty. Close the shut-off valve at the pump and then stop the pump. Check gage to see if vacuum holds for at least three minutes. If not, proceed with step 6.

6. Open the Freon drum valve and allow system to reach drum pressure. Close drum valve. Leak test complete system, including gage fittings, with leak detector, Tool No. J-5419; if leak cannot be found, the vacuum pump or gage may be faulty.

**NOTE:** If oil is blown out of vacuum pump, it should be refilled to proper level with Frigidaire 75 viscosity oil.

7. Correct all leaks, then operate pump to obtain vacuum as in Step 5. Watch the gage and see if vacuum will hold for ten minutes. If not, repeat Step 6.

8. With all leaks eliminated, open Freon drum

## AIR CONDITIONER

and bring system to drum pressure. Close drum valve.

9. Evacuate the system again as previously described. This second charging and evacuating is for the purpose of picking up any air or moisture that may have remained in the system.

10. Close gage valves.

11. The system is now ready for a complete charge of refrigerant.

### (8) Adding Refrigerant

If the entire charge of refrigerant has been lost through accident, or in the replacement of any components, a complete charge will be necessary. Procedure "b", below, outlines the steps to be followed.

If the diagnosis indicated a shortage of refrigerant, add Freon-12 as outlined in procedure "c" below.

An important rule to follow in charging is that refrigerant should always be added to the low pressure side of the compressor in a vapor state and should not, under any condition, exceed five pounds. Do not add a complete charge of refrigerant until the system has been leak tested and properly evacuated.

In order to charge refrigerant in a vapor state, the Freon-12 drum should be heated. This can best be accomplished by placing the drum in a container of hot water. The temperature of the hot water should not exceed 125°F. Since the temperature of the water and drum will decrease, as the vapor leaves the drum, the water and drum will be cooled. This may result in lowering of drum pressure and temperature to the extent where it will be necessary to replenish or reheat the water.

Both the Freon-12 drum and container of hot water should be placed on suitable scales, with the drum in an upright position. Note the scale reading before opening the valve on the drum so you can determine when a complete charge of five pounds of refrigerant has been added to the system.

#### a. Charging Precautions

In all refrigerant charging procedures where the compressor is in operation, the following cautions should be observed.

1. Always wear goggles whenever handling Freon-12, and when breaking line connections.

2. The high pressure should not exceed 275 pounds.

3. Drum pressure should not exceed a maximum of 90 pounds.

#### b. Adding Refrigerant—Complete Charge

1. Evacuate complete system as described in Note 7.

2. With gage set connected as when evacuating system, Note 5c, open low pressure valve on gage set.

3. Open drum valve to obtain a maximum pressure of 90 pounds.

4. Freon-12 vapor under pressure will flow into the system without operating the compressor. This amount should not exceed five pounds.

NOTE: If it is not possible to charge the total of five pounds by the method just described, it is permissible after 1 to 2 pounds has been forced into the system, to operate the engine and compressor at slow idle. The hand shut-off valve on the high pressure side of gage set should be CLOSED. Continue to operate engine and compressor at slow idle until five pounds has been charged into the system.

5. Close drum valve and low pressure shut-off valve on gage set.

6. Operate the engine at 1500 RPM with compressor clutch engaged to observe the high and low pressure gages as well as sight glass and general performance of the system.

7. Stop engine and remove gage set.

#### c. Adding Refrigerant—Partial Charge

This operation is performed when a shortage of refrigerant is noted without any evidence of leakage or necessary part replacement.

1. Connect gage set to compressor as described in Note 5a, Steps 1 and 2. Fig. 16-A-5

2. Operate engine and compressor at slow idle.

3. Open low pressure valve on gage set. High pressure valve on gage set must be closed.

4. Open drum valve to obtain a maximum pressure of 90 pounds.

5. Watch sight glass until solid column of liquid appears without bubbles.

## AIR CONDITIONER

6. Note scales, and allow compressor to operate until 1 additional pound of Freon-12 has been charged into the system.

7. Close drum valve.

8. Close low pressure valve on gage set.

9. Operate engine at 1500 RPM with compressor clutch engaged - control lever in extreme right position or jumper wire attached to clutch coil from battery.

10. Observe gages, sight glass, and entire system for proper performance.

11. After five minutes of operation, should bubbles reappear at sight glass, add 1 more pound of refrigerant. If bubbles still appear, check operation of system. Adequate cooling may be obtained even when a few bubbles are still evident.

12. Remove gage set from compressor and install gage fitting caps.

13. Remove jumper wire from clutch coil if installed in Step 9.

### (9) Checking and Adding Oil

The compressor was originally charged with nine ounces of 525 viscosity Frigidaire oil. During normal operation, due to the affinity of Freon-12 for oil, a certain amount of oil will circulate throughout the system along with the liquid and vapor.

To determine whether the compressor has sufficient oil, an elbow fitting has been placed on the underside of the compressor shell.

#### a. Checking Oil Level

1. Remove flare nut from oil test elbow.

2. Depress Schrader core allowing first surge of oil to escape. If oil continues to escape with Freon vapor, the oil level is satisfactory.

NOTE: It is desirable to allow the escaping oil and vapor to blow against a clean white cloth. The cloth should become oily.

3. If oil does not continue to escape from test fitting, the oil is below the minimum level.

4. Add oil as described in Note 9b, if oil is required.

NOTE: Compressors with serial numbers

between 12XB756 and 14XB771 do not have a standpipe to permit oil level checking as described above. In order to check oil level on these compressors, the procedure outlined below should be used.

#### b. Adding Oil--Major/Minor Loss

1. Remove compressor as described in Note 11.

2. Purge pressure from compressor by depressing Schrader valve at gage fittings on compressor until low audible hiss is heard.

3. Remove oil test elbow from compressor.

4. Invert compressor and drain oil into a clean container.

NOTE: Examine condition of oil to determine whether or not it is contaminated with any foreign material, such as metal chips, water, sludge, etc. This oil should be discarded and new oil used. If an excessive amount of water is found, install a new liquid dehydrator-receiver assembly in the high pressure liquid line.

5. Pour nine ounces of 525 viscosity Frigidaire oil into the compressor at the oil fitting opening.

NOTE: Do not add oil at the relief valve opening.

6. Install oil test elbow.

7. Install compressor, using new "O" ring seals at the hand shut-off valves as described in Note 15.

### (10) Purging Air or Excess Refrigerant from the System

Connect gage set. Higher than normal head pressure, as evidenced by experience with other normally operating systems under similar conditions, is caused either by air in the system or an over-charge of Freon-12. Proceed as follows:

1. Bleed off excess refrigerant and air and observe pressure readings. If pressure is still too high, then proceed with Steps 2 and 3.

2. Discharge and evacuate complete system as described in Notes 6 and 7.

3. Recharge complete system with only five pounds of refrigerant as described in Note 8b.

### (11) Compressor Removal

When damaged compressor is to be replaced, the



## AIR CONDITIONER

replacement compressor name plate must be stamped with the numeral "5" 1/8" high on blank space provided. "5" indicates five pounds of Freon and is required by law in some states.

1. Remove shut-off valve caps from ends of both pressure lines.
2. Using Tool No. J-5427, close both hand shut-off valves at the compressor.

**CAUTION:** Do not operate compressor with shut-off valves closed. REMOVE IGNITION KEY.

3. Remove high and low pressure valve fitting center bolt and remove fitting from compressor.

**NOTE:** A momentary release of vapor should be expected as the fitting leaves its bore in the compressor. If vapor continues to escape, the spring loaded automatic valve in the compressor is not seating properly. If this is the case, purge the Freon vapor pressure by depressing the Schrader core in the high pressure gage connection until a low audible hiss is heard. Any air in the compressor must be forced out when the unit is reinstalled.

4. Cover the pressure openings in both the compressor and pressure line fitting with masking tape to keep out dirt.
5. Disconnect clutch coil wires and drive belts.
6. Remove compressor from mounting brackets.

### (12) Compressor Clutch Pulley Removal and Disassembly

#### a. Removal

1. Remove compressor from car as described in Note 11.
2. Remove dust cap, bolt and washer at front end of pulley. Fig. 16-A-7
3. Using universal type puller, remove clutch pulley assembly from shaft.

**CAUTION:** Make certain puller does not damage internal threads of shaft nor inner race of pulley bearing.

#### b. Precautions

1. Use only a clean, dry cloth to wipe off clutch parts.

**NOTE:** The following clutch plate cleaners may be used to clean the frictional material on the clutch plates: Vapor De-Greaser, Tri-Chloro Ethylene and Carbon Tetrachloride.

2. Do not clean the pulley bearing with any type of solvent as it will wash the grease out of the bearing. The pulley bearing is supplied with the correct lubricant or grease when assembled by the manufacturer and requires no other lubricant at any time.
3. Prevent dirt, grease, oil, or any type of foreign matter from coming in contact with ball bearings, frictional and mating surfaces of the clutch plates.
4. It is important that no attempt be made to dress down the frictional lining material on clutch plates as this will result in improper operation.

#### c. Disassembly

1. Remove clutch pulley assembly as described in Note 12a.
2. Remove clutch cover ring from pulley. Fig. 16-A-7
3. Remove clutch assembly and spacer shims from pulley housing.
4. Using Tool No. J-4880, remove snap ring retaining the two clutch plates. Fig. 16-A-8
5. Remove clutch spring, armature clutch plate (rear plate) and three ball bearings.
6. Inspect all parts for dirt, rust, wear or other damage. Replace if necessary.

#### d. Removal and Installation of Pulley Bearing

1. Remove clutch pulley assembly as described in Note 12a, Steps 1, 2 and 3.
2. Remove bearing retaining snap ring, using Tool No. J-4245.
3. Remove bearing from pulley housing with fingers or by tapping lightly with block of wood at outer race. Bearing is installed with only a snug fit. Fig. 16-A-9.
4. Inspect bearing and pulley bore for dirt, rust, wear or other damage, and replace if necessary.
5. To install, use reverse procedure.

### (13) Removal and Installation of Clutch Actuating Coil

1. Remove compressor from car as described in Note 11.

## AIR CONDITIONER

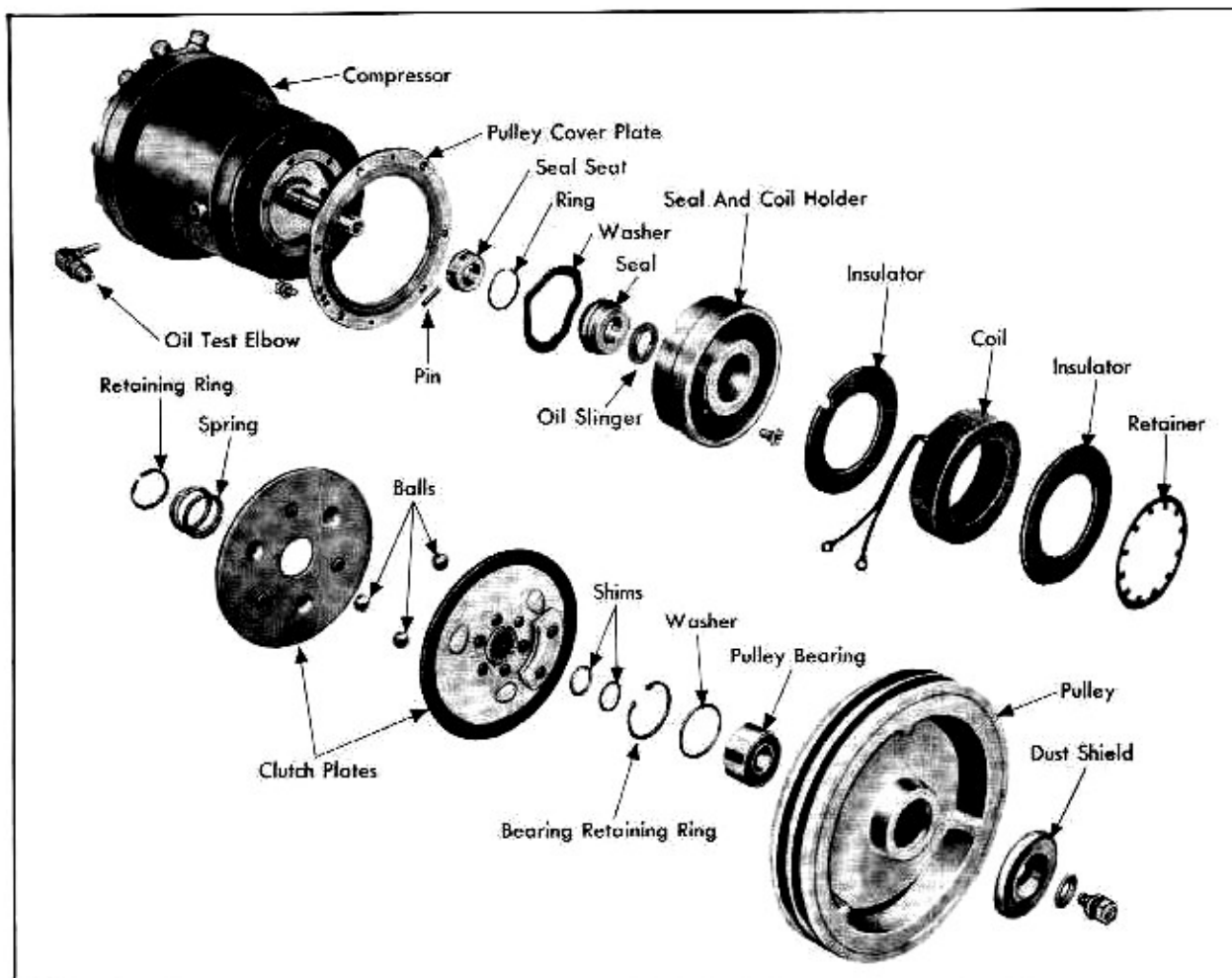


Fig. 16-A-7 Clutch Assembly Disassembled

2. Remove and disassemble clutch pulley assembly as described in Notes 12a and 12c.

3. Remove clutch coil retainer by bending retainer teeth forward with small screwdriver.

NOTE: Do not damage coil insulator gasket or coil. Retainer should be replaced with new one on assembly.

4. Remove insulator gasket, and remove coil from holder, working coil wire leads from holder.

5. Remove insulator gasket from rear of coil.

6. Inspect all parts for dirt, oil damage, or other damage and replace as necessary.

7. When installing, use reverse procedure, assembling and installing clutch pulley assembly as described in Notes 14a and 14b.

8. Install compressor as described in Note 16.

## (14) Compressor Clutch Pulley Assembly and Installation

### a. Assembly

1. Clean all clutch parts observing the precautions listed above.

2. Assemble clutch plates together with three balls in position.

3. Install spring over front clutch plate hub and place snap ring on top of spring.

4. Expand snap ring, using Tool No. J-4880 and force downward on ring and spring until ring engages groove in hub.

5. Place clutch cover plate ring over coil and seal housing with ground surfaces facing pulley end of shaft.

### b. Installation

1. Install clutch assembly on splined shaft with clutch spring toward seal.

## AIR CONDITIONER

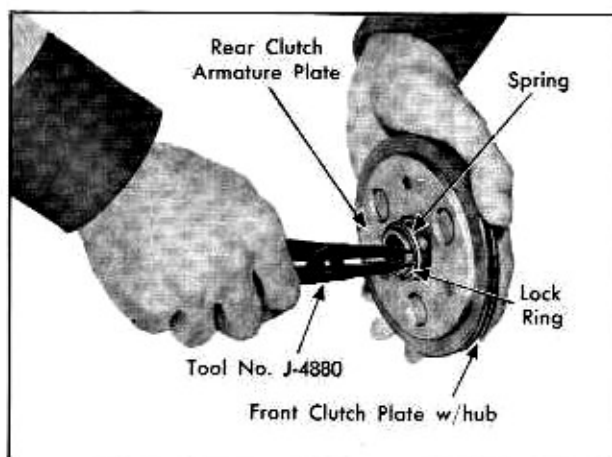


Fig. 16-A-8 Removing Clutch Plate Snap Ring

2. Install spacer shims on shaft using original shims.

3. Install pulley by exerting pressure on inner race of bearing.

4. Install clutch cover ring to pulley.

5. Install washer and pulley to shaft attaching bolt. Then install neoprene dust cap.

6. Check clutch adjustment as described in Note 14c before installing compressor.

#### c. Adjustment

1. Energize clutch coil from a 12 volt battery and check clearance between clutch plate armature (not rear pulley cover ring) and coil housing at three different positions. Fig. 16-A-10. This clearance should be between .025" and .035".

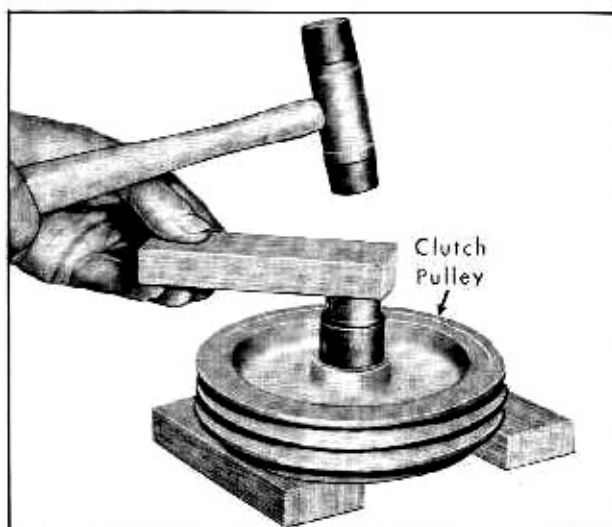


Fig. 16-A-9 Removing Pulley Bearing

2. If clearance is not correct, it will be necessary to remove pulley and add or remove shims accordingly. Shims are available in the following sizes: .015", .020", and .025". By proper selection of shims, .005" variation in clearance can be obtained.

3. Install compressor on car as described in Note 16.

#### d. Checking Clutch Operation

With the engine idling and control lever to extreme right position (clutch engaged), turn the air conditioning switch 'On' and 'Off' a number of times to burnish the clutch plates until the clutch properly engages. By observing the relationship in speed of the pulley to the attaching screw, slip-page can be noted.

### (15) Compressor Shaft Seal and Seat Removal and Installation

#### a. Removal of Seal

1. Remove compressor as described in Note 11.

2. Drain oil from compressor as described in Note 9b.

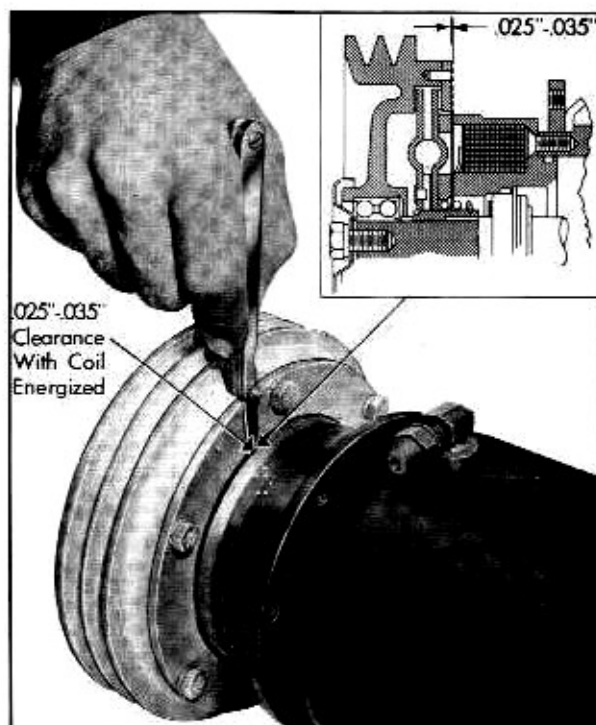


Fig. 16-A-10 Clutch Adjustment

## AIR CONDITIONER



Fig. 16-A-11 Installing Seal

3. Remove clutch coil as described in Note 13.
4. Remove seal and coil housing and also oil slinger from compressor shaft.
5. Press seal from housing.
6. Clean seal cavity thoroughly and replace internal "O" ring seal with new one coated with clean Frigidaire oil.

**b. Installation of Seal**

1. Using Tool No. J-5922, press new seal assembly in the cavity. Make certain not to damage the seal surface. Fig. 16-A-11
2. Replace the large external "O" ring seal on housing with new one coated with clean Frigidaire oil.

**c. Removal of Seal Seat**

1. Remove wave washer from compressor.
2. Force retainer snap ring from groove of rotating seal seat ring.

**CAUTION:** Do not scratch, nick, or score oil pump cover when performing this operation.

3. Remove drive pin from seal seat groove using needle nose pliers.
4. Remove seal seat from shaft. Wipe shaft clean with lint free tissues.

5. Inspect shaft spline for burrs or sharp edges. Remove as necessary using fine stone. Clean all metal dust from shaft.

**d. Installation of Seal Seat**

1. Install new "O" ring seal inside the new seal seat and place seat face down on a piece of oil soaked tissue to protect polished face.
2. Force snap ring over seal seat ring.
3. Coat "O" ring with clean Frigidaire oil.
4. Install new seal seat ring on shaft.

**CAUTION:** Exercise care not to damage "O" ring when starting seal seat over splined end of shaft. Also keep fingers off seal surfaces.

5. Align hole in seat with one in shaft and insert drive pin.
6. Force snap ring into seat groove over pin.
7. Examine oil pump cover plate to make certain dowel pin is in proper place and flush with outer cover.
8. Install wave washer over seat.
9. Install seal and coil housing, exercising care not to damage large "O" ring.
10. Install oil slinger shield on compressor shaft allowing approximately .010" between oil slinger flange and the oil seal assembly.

**NOTE:** Special Tool J-6086-A, Compressor Oil Slinger Installer, will automatically position the slinger on the shaft to provide the required .010" clearance between the slinger flange and oil seal assembly.

11. Install clutch coil as described in Note 13.
12. Add oil as described in Note 9b.
13. Install compressor as described in Note 16.

**(16) Installing Compressor**

Before installing a replacement compressor, make certain the numeral "5" is stamped on the blank space provided in the lower right hand corner of the compressor name plate. If numeral is not evident, then stamp numeral as indicated. "5" indicates five pounds of Freon and must be shown on all 1955 compressors as required by law in some states.

## AIR CONDITIONER

1. Check clutch adjustment as described in Note 14c if not previously performed.
2. Install compressor on front and rear mounting brackets.
3. Place belts on pulley and adjust tension at generator. Tighten adjusting bracket screw.
4. Connect clutch coil wires.
5. Install new "O" rings and flange gaskets on high and low pressure line valve fitting. Apply a slight amount of Frigidaire oil to "O" ring before installing fitting into bore.
6. Insert pressure line fitting into bore in compressor and tighten securely. Use care to be sure "O" ring seals are not damaged.
7. Using the 1/4" key, Tool No. J-5427, open both the high and low pressure line valves all the way (counter-clockwise).

**NOTE:** These valves open against a seal type seat, and therefore, must be turned open all the way against stop to prevent leaks.

8. Depress Schrader valves to purge air from high and low sides of compressor.
9. Test for leaks at all connections on the compressor.
10. If leaks are indicated in above test, connection must be removed and "O" rings and gaskets replaced.

**CAUTION:** It is very important that all leaks be repaired. Under no circumstances should the compressor be run when a leak exists, as a complete loss of refrigerant would damage the compressor.

11. Connect gage set and check clutch operation and general performance of system. See Note 14d.
12. Remove gage set and install caps on fittings.

### (17) Checking Operation of Compressor Discharge Valve Reeds

1. Connect gage set to compressor as described in Note 5a.
2. Connect jumper wire from positive battery post to magnetic clutch coil.
3. Operate engine and compressor at slow idle for five minutes.

4. Slowly close the low side valve on the compressor until low side gage reads between 5 and 10 pounds pressure.

5. Stop engine and immediately close the low side valve on the compressor.

6. Allow system to remain idle for approximately 5 minutes.

7. At the end of this time, the low side gage should not show any rapid rise of pressure. Nor should the low pressure gage have equalized to the high side pressure. If this has occurred, it is evident that the discharge valve reeds are leaking and the compressor should be replaced.

8. If the low side pressure did not show a rapid rise, the compressor can be considered satisfactory as the discharge reeds were holding properly.

9. Open low side valve on compressor.

10. Remove gage set from compressor.

### (18) Adjusting the Expansion Valve

If the expansion valve is out of adjustment (ineffective cooling by either starving the cooling coil of refrigerant, or by flooding the cooling coil with refrigerant) proceed as follows:

1. Remove access plate from evaporator.
2. Remove cap nut from expansion valve making certain valve is supported by a second wrench to prevent damage to lines and fittings.
3. Using Tool No. J-5426, first CLOSE the valve completely, then OPEN (counter-clockwise) 5 complete turns. Fig. 16-A-12.

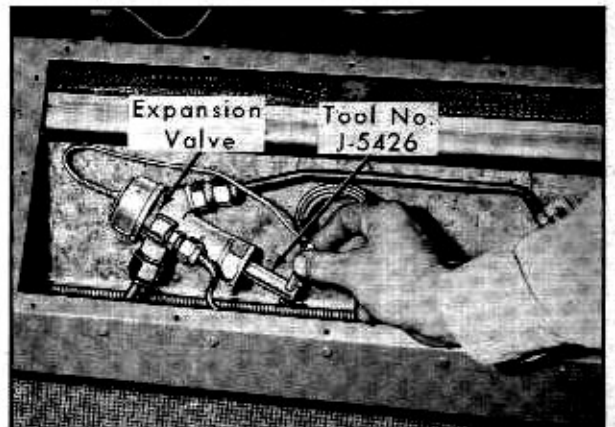


Fig. 16-A-12 Adjusting Expansion Valve



## AIR CONDITIONER

4. Install access plate.

5. If this does not eliminate the condition, replace the expansion valve as described in Note 19, assuming that the remainder of the system is in good operating condition.

### (19) Replacing the Expansion Valve

1. Purge the system as described in Note 6. (Have replacement valve within reach for immediate installation).

2. Remove access plate from evaporator housing.

3. Disconnect power element bulb from low pressure line.

4. Remove the equalizing, low pressure and high pressure line flares in that order at the valve. Fig. 16-A-13.

5. Remove valve assembly with power element bulb.

6. Install new valve by connecting the lines, and clamp power element of new valve to the TOP or SIDE of LOW PRESSURE LINE.

NOTE: Under no circumstances should the smaller high pressure liquid line contact the bulb.

7. Open gage and Freon drum valves and bring system up to drum pressure for checking leaks.

8. Leak test the three expansion valve connections carefully for leaks.

9. Evacuate the system as previously described in Note 7.

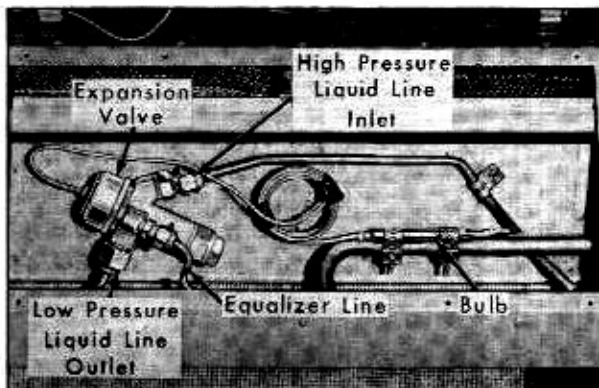


Fig. 16-A-13 Expansion Valve Connections

10. Add refrigerant as previously described in Note 8b.

11. Replace access plate. Check operation of system.

### (20) Replacing Blower Motor

1. Disconnect electrical lead to blower motor.

2. Remove flat rubber pad at rear of motor housing, and motor assembly from housing.

3. Remove fan and mounting plate from the motor and install it on the new motor. Make certain that the fan is in the corresponding position on the new shaft.

4. Install the new motor and its assembly in reverse order of removal.

### (21) Replacing the Cooling Coil

1. Purge the system as previously described in Note 6.

2. Remove spare tire and disconnect all of the air ducts from the evaporator.

3. Disconnect blower motor leads.

4. Disconnect thermostat leads.

5. Remove access panel and disconnect refrigerant line connections at the evaporator unit housing.

6. Remove evaporator unit from luggage compartment.

7. Remove panels from unit housing, including blower assemblies.

8. Disconnect and remove expansion valve as described in Note 19, and install it on new cooling coil.

9. Remove the cooling coil, and install new one. Installation is reverse of removal procedure.

10. Evacuate the system. Note 7.

11. Add refrigerant to the system. Note 8b.

### (22) Removal and Installation of Filters

Two filters are located on top of the evaporator housing in the return air stream. Air inside the car is filtered before passing across the cooling coil and then back into the interior of the car. The

## AIR CONDITIONER

air filter must be cleaned regularly during those months in which the air conditioner is in operation. This should be done every two months or 2,000 miles, or more frequently in those areas of the country which are extremely dusty. To remove the filters for cleaning or replacement purposes, proceed as follows:

1. Remove access panel on the evaporator housing in the trunk compartment.
2. Remove one filter at a time through opening in evaporator housing. Fig. 16-A-14.
3. The filter may be cleaned in solvent or by washing in a soapy solution made with household detergent. After filter is cleaned, it should be rinsed and dried with compressed air. Then apply (spray) a light coating of an SAE 30 detergent free non-odorous engine oil or RP filter coat to the entire filter surface.
4. To install filter, reverse above procedure.

### (23) Replacing Dehydrator Receiver Assembly

The purpose of the dehydrator is to absorb moisture and to trap foreign matter (dirt-solder-filings-etc.) that may not have been removed during the installation or during service operations. When the filter becomes saturated with moisture or clogged with foreign matter, replacement is necessary. The receiver area of unit stores Freon-12 for use as needed. No service should be performed on the dehydrator-receiver assembly. To replace assembly, proceed as follows:

1. Purge the system as described in Note 6 and remove assembly.

**NOTE:** Do not uncap the new assembly until it is in position for installing as it will quickly absorb moisture from the air and decrease its efficiency in the system.

2. Install the new assembly, making certain refrigerant flow through it will be in the direction of the arrow on the label or the letters "IN" stamped on inlet fitting.
3. Before evacuating the system, apply sufficient drum pressure to the system to obtain a good leak test of all connections.
4. Evacuate the system as described in Note 7.
5. Add refrigerant as described in Note 8b.
6. Check performance of system, then remove

the evacuating and charging equipment. Be sure all shut-off valves in the system are fully open.

### (24) Replacing the Sight Glass

The sight glass provides a way of determining whether or not the refrigerant charge in the system is sufficient. It is so designed that a shortage of refrigerant in the receiver and liquid line will be indicated by the appearance of bubbles or foam beneath the glass. A continuous flow of liquid is indicated by the magnification noticed when any printing is read through the sight glass. Whenever replacement of the sight glass is required, proceed as follows:

1. Purge the system as outlined in Note 6. Have replacement sight glass within reach for immediate installation.
2. Remove sight glass.
3. Install new sight glass.
4. Before evacuating the system, apply sufficient drum pressure to the system to obtain a good leak test.
5. Evacuate the system as described in Note 7.
6. Add refrigerant as described in Note 8b.

### (25) Replacing the Condenser

1. Purge the complete system down to 1 - 2 lbs. maximum as described in Note 6.
2. Remove the hood lock plate support, baffle, and horn.
3. Disconnect condenser inlet and outlet lines.
4. Remove condenser.

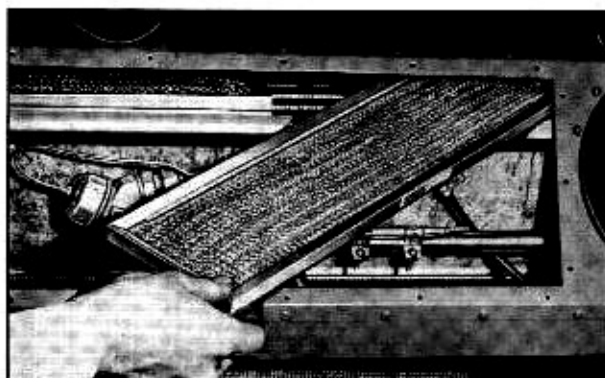


Fig. 16-A-14 Removing Filter

## AIR CONDITIONER

5. Install new condenser by reversing the procedure for removal.

6. Evacuate the entire system and completely recharge it with refrigerant. Notes 7 and 8b.

### (26) Replacing the Thermostat

1. Disconnect lead wires to thermostat which is mounted on top of the evaporator housing in the

trunk compartment.

2. Remove thermostat from housing by lifting thermostat upward until coil winding is clear of housing.

3. Install new thermostat by reversing above procedure for removal, exercising extreme care not to damage the coil winding when positioning thermostat on evaporator housing.

## AIR CONDITIONER SERVICE DIAGNOSIS

CONDITION	CAUSE
<p>A. POOR COOLING</p> <p>Blowers not operating</p>	<p>20 Amp. fuse blown                      A/C Switch in "off" position                      A/C Switch inoperative                      Blower rheostats inoperative                      Wire broken or loose connections                      Blower motor defective                      Blower motor rotates in wrong direction</p>
<p>Restricted air flow</p>	<p>Filter(s) in evaporator clogged with dirt and/or other foreign material                      Outside air scoops restricted                      Roof ducts restricted                      Air flow under rear seat restricted                      Evaporator fins clogged or restricted with frost</p>
<p>Refrigerant flow to cooling coil incorrect</p>	<p>Expansion valve improperly adjusted                      Power element does not contact pressure line properly                      Restriction in liquid line between receiver and cooling coil                      Power element discharged                      Not enough refrigerant</p>
<p>Refrigerant not condensing properly</p>	<p>Air flow through condenser restricted                      High engine operating temperatures                      Air or excess refrigerant in system                      Restriction in high pressure side and condenser</p>
<p>Clutch does not engage</p>	<p>Defective coil or relay                      Clutch plate lining worn or saturated with oil causing slippage                      Toggle Switch defective                      Thermostat inoperative                      Clutch adjustment incorrect</p>
<p>Electrical</p>	<p>Loose connections or broken wires between electrical units                      Blown fuses</p>



## AIR CONDITIONER

## AIR CONDITIONER SERVICE DIAGNOSIS

(Cont'd)

CONDITION	CAUSE
B. TOO COLD	
Clutch does not disengage	Thermostat inoperative Relay stuck closed Toggle switch inoperative
Blower speed can not be reduced	Defective blower switch
C. VIBRATION - NOISE	
Blowers	Loose on shaft Striking housing Foreign material Motor bearings or mounts loose or worn
Compressor	Mounting brackets loose Loose internal parts
Air flow	Foreign material in air system Small slits or openings in ducts
D. INCORRECT OPERATING PRESSURE	
Excessive pressure in high pressure side	Air or excess refrigerant in system Air flow through condenser core restricted Kinks or restrictions in line on high pressure side High engine temperature Shut-off valve on high pressure side of compressor not fully open Insufficient air flow through cooling coil Incorrect expansion valve adjustment
Insufficient pressure on high pressure side	Shortage of refrigerant Incorrect expansion valve adjustment
Excessive pressure on low pressure side	Expansion valve element bulb not making proper contact Expansion valve needle stuck open or leaking
Insufficient pressure on low pressure side	Restriction in lines Shortage of refrigerant Expansion valve needle stuck shut Expansion valve not open far enough

OTHER NOTES AND REFERENCES

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## AIR CONDITIONER

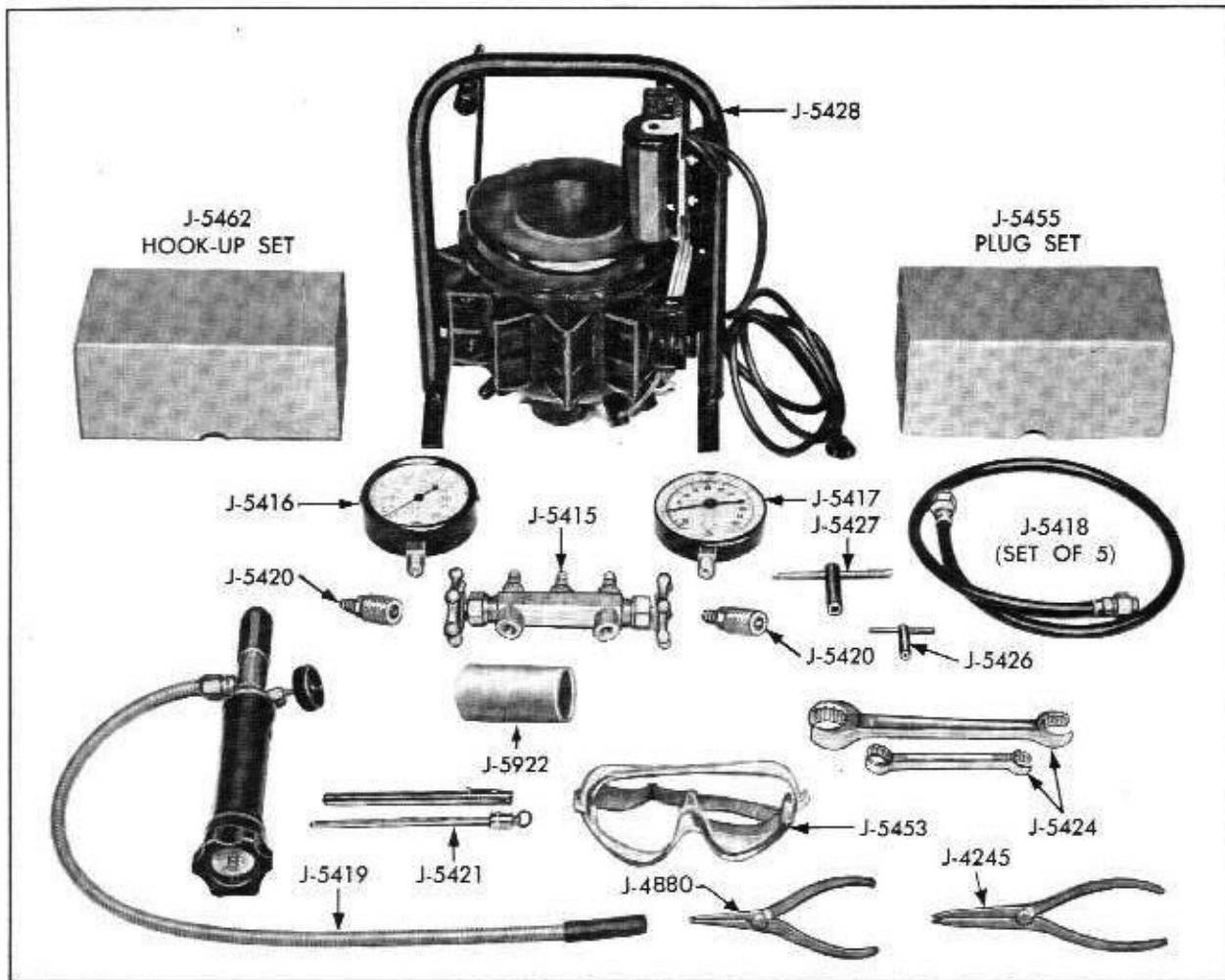


Fig. 16-A-15 Special Tools

Tool No.	Description
J-5415	Gauge Manifold
J-5416	High Pressure Gauge
J-5417	Low Pressure Gauge
J-5418	Gauge Charging Line (Set of 5)
J-5419	Leak Detector With Anhydrous Alcohol
J-5420	Gauge Adapters (Set of 2)
J-5421	Pocket Thermometer (0°-220°)
J-5424	9/16" Tube Wrench-3/4" Tube Wrench
J-4245	Tru Arc Pliers #3
J-4880	Tru Arc Pliers #2
J-5922	Seal Installing Tool
J-5426	3/16" Valve Key
J-5427	1/4" Liquid Valve Key
J-5428	Vacuum Pump 115v, 50-60 Cycle 1/7 HP With Special Oil
J-5453	Goggles
J-5455	Plug Set
J-5462	Gauge Hookup Set

## ACCESSORIES

# AUTOMATIC HEATING SYSTEM

### GENERAL DESCRIPTION

The 1955 Cadillac Automatic Heating System is basically the same as the 1954 system. Service procedures covering the dual heater units remain unchanged. Operations covering removal and installation, however, are somewhat simplified due to modifications in the cowl-to-instrument panel braces and the heater defroster adapters.

A single thermostatic control valve, which is located centrally on the inside of the front cowl panel, is used on all 1955 series cars. The control valve has two capillary tubes, located in the heater outlet duct on each side of the car to obtain im-

proved regulation of interior temperatures. In addition, the thermostatic control valve is equipped with an over-ride mechanism which holds the control valve fully open when the "Defr" lever is all the way down, regardless of the "Heat" lever position. This permits maximum heat for defogging even when the "Heat" lever is in the "off" position.

Only service information affected by design changes in the 1955 system is contained in this manual. For other service information, refer to Section 16-B of the 1954 Shop Manual.

### SERVICE INFORMATION

#### (1) Water Flow

The flow of water through the Automatic Heating system is illustrated in Fig. 16-B-1. The water flows from the upper right side of the water pump to the thermostatic control valve, from the control valve to the right and left heater cores, and then to the water pump intake. On cars equipped with transmission oil coolers, coolant is taken from the right rear of the engine block, flows through the cooler and returns to the intake side of the water pump through a "T" connection at the pump.

#### (2) Operation of "Heat" and "Defr." Control Levers

##### a. Warm Up

- Both control levers should be left in the "OFF" position until the engine has warmed sufficiently to furnish hot water to the heater cores.

position until the engine has warmed sufficiently to furnish hot water to the heater cores.

- If it is necessary to defog before the water is warm, push the "Defr." lever to "ICE" position.

##### b. Ice Removal

- Leave "HEAT" lever in "OFF" position and depress "DEFR." lever to "ICE" position to get maximum air temperature with high blower speed. See Fig. 16-B-2.

##### c. Summer Ventilation

- "Heat" and "Defr." levers in "OFF" position.
- Pull out both ventilator knobs at right and

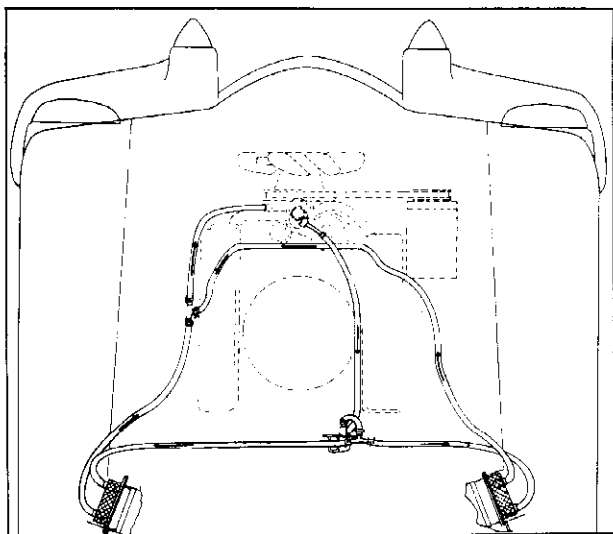


Fig. 16-B-1 Water Flow

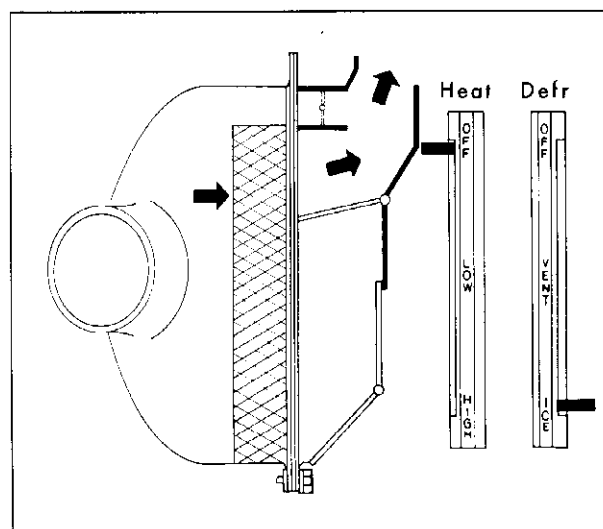


Fig. 16-B-2 Control Lever Position (Ice Removal)

## AUTOMATIC HEATING SYSTEM

left of steering column below instrument cluster. These knobs operate the right and left fresh air intake valves on the lower inner cowl panel.

### d. Winter Ventilation

1. Upper level ventilation is possible during winter operation of the heater by depressing the "Defr." lever no further than the "VENT" position. This will allow fresh, unheated air to by-pass the heater core and circulate at breath level.

### e. Summer Defogging

1. Depress "Defr." lever to vent position.

### (3) Adjustment of "Defr." Control Lever

1. Remove right and left heater grilles and cowl kick pads.

**NOTE:** While it is not necessary to disconnect the capillary tubes from the heater grilles, caution must be exercised when moving the grilles to one side, to prevent kinking of the capillary tubes.

2. Loosen "Defr." lever cables at both heater units and at control lever.

3. Loosen thermostatic valve manual control cable at valve and at "Defr." lever.

4. Move control lever to full "OFF" position

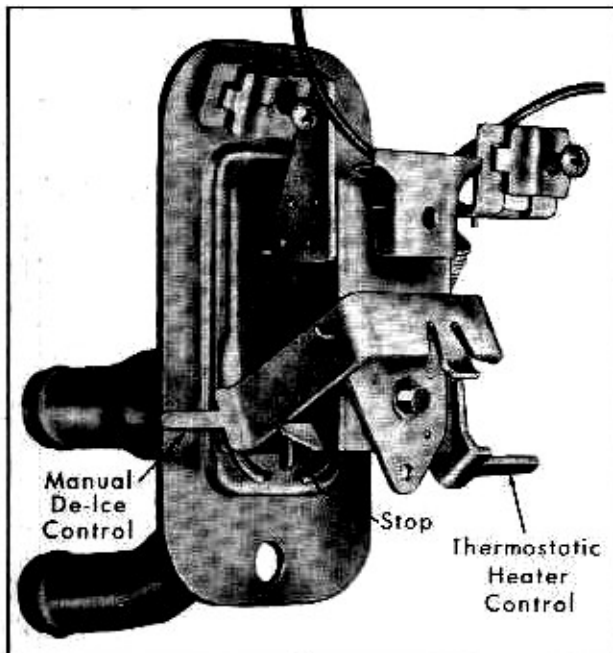


Fig. 16-B-3 Thermostatic Control Valve

and in line with "OFF" position of "HEAT" lever (1/8" from top of slot).

5. Slide "Defr." lever cables in sheaths until defroster valves and fresh air by-pass valves in heaters are completely closed.

6. Tighten cables in place without interfering with the pre-set position of the "Defr." valves, manual control valve, or defroster control lever. Check to see that air valve is closed and blower switch is turned off.

7. Move "Defr." control lever to "ICE" position at full extent of travel. Adjust manual control on thermostatic valve against stop, Fig. 16-B-3, and tighten clamp.

8. Run engine till water is hot. Move lever to "ICE" position and check to see that blowers are on high speed and air is hot at windshield.

9. Install cowl kick pads and heater grilles.

### (4) Removal and Installation of Heater Unit (Right or Left)

The procedure outlined in the 1954 Shop Manual may be followed for this operation. Care should be exercised, however, when removing the heater outlet grilles and cowl trim panels to prevent damaging the capillary tubes. There have also been modifications in the defroster adapter to facilitate removal. It will no longer be necessary, therefore, to remove the instrument panel-to-cowl brace.

### (5) Removal and Installation of Thermostatic Control Valve

1. Disconnect and plug water hoses from the valve at the engine firewall, using special pliers to remove the spring type hose clamps.

2. Remove heater outlet grilles from cowl trim panels and disconnect right and left capillary tubes.

3. Loosen control cable clamps on thermostatic valve and slide cables out of clamps and off of control arms on the valve.

4. Remove valve to cowl panel retaining screws and remove valve using caution to prevent damage to the capillary tubes.

5. To install, reverse the above procedure and adjust control cables.

# AUTRONIC EYE

## GENERAL DESCRIPTION

The Autronic Eye unit, which is available as an accessory on all 1955 Cadillac cars, operates in the same manner as that used on 1954 cars. The units used in the early 1955 cars may be adjusted and serviced as explained in the 1954 Shop Manual.

Later in production, however, changes in the circuit and relocation of the "Dim" sensitivity adjusting screw, from the Phototube unit to the Amplifier unit, necessitate a change in the sequence of adjustment operations as explained below.

## SERVICE INFORMATION

### (1) Hold Sensitivity Test

**CAUTION:** The "Autronic-Eye" develops 800 volts. Turn headlamps OFF before removing cover from the Phototube unit.

1. Install aiming device and adapter on Phototube unit.

2. Turn headlamps ON and wait at least four minutes for amplifier to stabilize. Set standard foot dimmer switch to "Automatic" position.

3. Turn zero corrector on face of meter until meter pointer is on zero set line.

4. Turn intensity rheostat of tester counter-clockwise.

5. Insert tester connector into cigar lighter receptacle.

**CAUTION:** Push straight in.

6. Check car battery voltage. If less than 12 volts, operate engine at fast idle when making sensitivity tests and adjustments.

7. Turn selector switch to "Dim" position. (Be sure to use proper "Dim" position for clear or tinted windshield.)

8. Turn intensity rheostat all the way clockwise to end of adjustment to obtain a lower beam.

9. Turn tester selector switch to "Hold" position.

10. Slowly turn intensity rheostat counter-clockwise just to point where headlamps switch to upper beam. The meter pointer should now read in the HOLD SENSITIVITY ADJUSTMENT BAR on the meter scale.

If Hold Sensitivity is not properly adjusted, proceed with HOLD SENSITIVITY ADJUSTMENT. Note 2.

### (2) Hold Sensitivity Adjustment

Both the "Hold" and "Dim" sensitivity adjust-

ments may be made on the amplifier unit by turning the knurled control screws located on the bottom of the amplifier unit. Each adjusting screw is identified by a stamp on the side of the amplifier cover. See Figure 16-C-1. THE DIM SENSITIVITY ADJUSTMENT MUST NOT BE MADE UNTIL AFTER THE HOLD SENSITIVITY IS CORRECTLY ADJUSTED.

1. Turn Hold Adjustment clockwise to end of adjustment.

2. Rotate intensity rheostat all the way clockwise.

3. Turn selector momentarily to "Dim" position to switch lights to lower beam, then switch back to "Hold" position.

**NOTE:** If lights do not switch to lower beam, the "Dim" control must be turned clockwise to end of adjustment and then readjusted after "Hold" adjustment is correct.

4. Adjust tester intensity rheostat until meter pointer is in center of HOLD SENSITIVITY BAR.



Fig. 16-C-1 Sensitivity Adjusting Screws



<b>PART</b>	<b>NUMBER</b>	<b>PRICE</b>
<b>WHEEL (Disc Type)</b>		
1955 Ser. 60S, 62 .....	1459660	23.15
1955 Ser. 75 .....	1459661	25.05
1956 Ser. 60S, 62 .....	1464276	23.15
1956 Ser. 75 .....	1464277	25.05
1957-60 Ser. 60S, 62 .....	1469869	23.90
1957-60 Ser. 75 .....	1474185	26.45
1961-62 Ser. 60, 62 .....	1476584	23.95
1961-62 Ser. 75 .....	1476586	26.95
<b>WHEEL (Turbine Type)</b>		
1955-56 (Chrome)—		
Ser. 60S, 62 .....	1463918	133.50
1956 (Gold)—		
Ser. 60S, 62 .....	1465348	124.65
Ser. 75 .....	1465353	140.75
1957-58 (Chrome)—		
Ser. 60S, 62 .....	1466798	144.65
Ser. 70 .....	1466047	227.00
Ser. 75 .....	1466799	144.65
<b>WHEEL HUB CAP</b>		
1955 .....	1460125	6.75
1956—		
Chrome .....	1460125	6.75
Gold .....	9701187	7.55
1957—		
Exc. Below .....	3510886	12.45
Brougham .....	3510867	11.30
1958—		
Exc. Below .....	3510886	12.45
El Dorado .....	1460125	6.75
Brougham .....	3510867	11.30



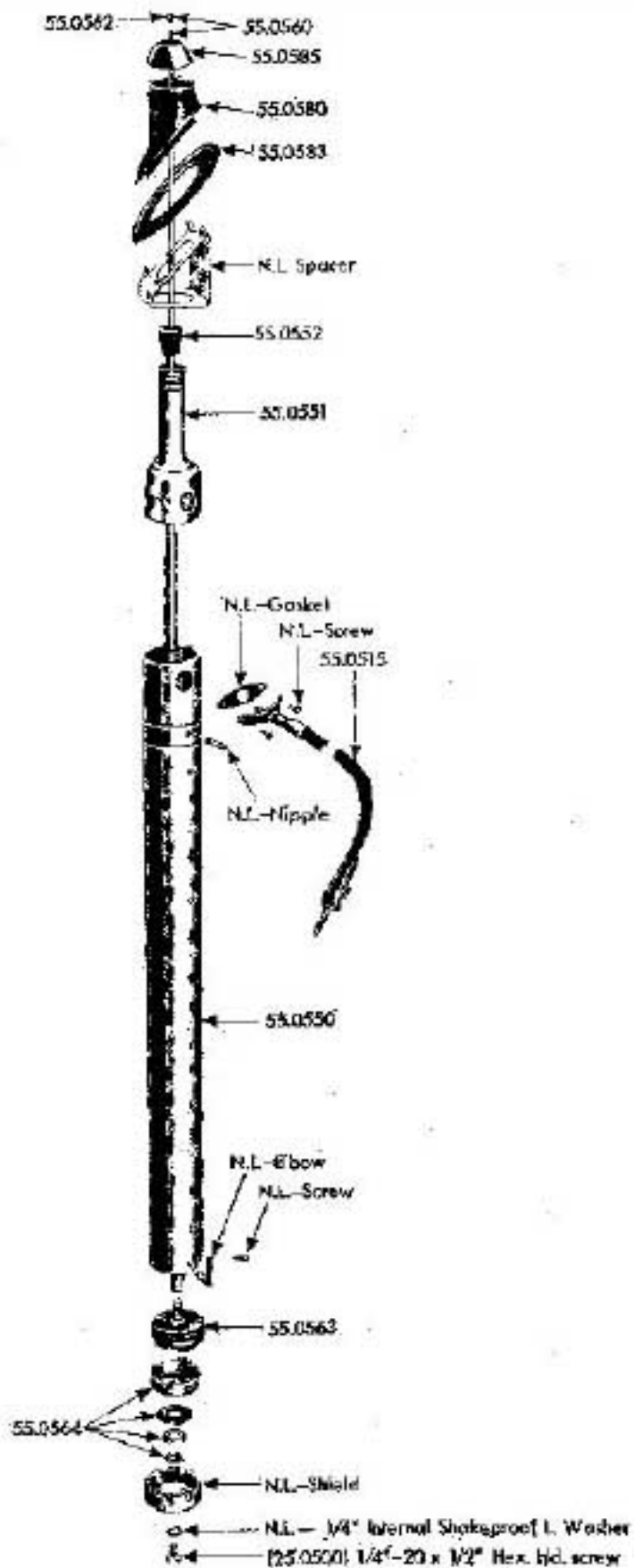
# INSTALLATION INSTRUCTIONS

CADILLAC RADIO 7205825 AND 7205845

IN ALL 1935 CADILLAC CARS

1. Remove the radio control opening cover.
2. The speaker is installed in all cars at the factory. See Figs. 5 and 5A for mounting location.
3. Assemble the right angle mounting brackets and the anti-quake to the mounting brackets in the car using the plain washers, screws and lockwashers. Fig. 1 and 2.
4. Assemble the rubber silencer around the dial escutcheon. Fig. 4.
5. Connect the vacuum antenna lines to the nipples on the top of the receiver following the instructions which accompany the antenna and insert lines under hose clamp on top of radio receiver. Fig. 2.
6. Unscrew the dial light lead which is part of the wiring harness on the car. Remove and discard the plug in the socket. Insert the dial light into the socket and the socket into the opening in the top of the receiver.
7. Assemble the nylon spacers on both the right and left control bushing. Figs. 5 and 6, and install the nuts with the control bushings extending through the instrument panel. Figs. 1, and 2.  
Assemble the control escutcheons marked "Tone" and a hex nut tightly on the right control bushing and the control escutcheon marked "More Stations" and a hex nut tightly on the left bushing.  
**NOTE:** The control escutcheons have heating pins on the back side which must fit in the matching holes in the instrument panel. Figs. 5 and 6.
8. Assemble the plain washers, screws, and lockwashers through the positioning bracket to the receiver. Tighten the screws to the mounting brackets in the car then pull the radio case firmly towards the grille and tighten the positioning screws to the receiver. Figs. 1 and 2.
9. Assemble the tone control knob, the squint and a control knob on the right dial. Fig. 5. Assemble the sensitivity control knob, the wove washer, and a control knob on the left dial. Fig. 6.
10. Connect the "X" lead (black) of the radio to the fuse holder as shown in Fig. 2.
11. On all models except convertibles connect the rear seat speaker lead to the Douglas connector (near the wiring harness). This connector is located above the glove box compartment. Fig. 2. **NOTE:** Convertible models do not have the rear seat speaker connection.
12. Insert the antenna lead into the socket on the left side of the radio. Fig. 1.
13. Insert the lead from the front speaker into the front speaker socket. Figs. 2 and 5A.
14. **TURN RADIO ON. EXTEND VACUUM ANTENNA. SET VOLUME CONTROL AT MAXIMUM. SET SENSITIVITY CONTROL AT MAXIMUM (ALL THE WAY CLOCKWISE) TUNE IN A WEAK STATION BETWEEN 600 AND 1000 KC AND ADJUST THE ANTENNA TRIMMER FOR MAXIMUM VOLUME. NOTE: IF DURING ADJUSTMENT STATION BECOMES STRONG TUNE RADIO TO WEAKER STATION AND CONTINUE ADJUSTMENT.**
15. Install the front wheel static collectors in the holes of the front wheels. Bend the copper pins around the nuts to prevent interference with the collector. Fig. 7.
16. Install the voltage regulator condenser as shown in Fig. 6.
17. Install the ignition coil condenser. Fig. 9.
18. Install the generator condenser. Fig. 10.
19. Check the operation of the radio to be sure the installation is satisfactory.
20. Set the five favorite station selector buttons as follows: Fig. 11.
  - A. Open the largest door below the dial exposing the selector tabs.
  - B. Tune to the desired station, across the left end of the dial.
  - C. Move the first selector tab (near farthest left) and it lines up with the pointer tip.
  - D. Repeat the steps B and C for the four remaining selector tabs choosing stations from left to right on the dial.
  - E. Check the setting of each selector tab by depressing the corresponding station selector button and allowing the desired station to be heard in. If the correct station is not heard it is not the selector tab.
21. The station selector bar must be depressed to release any push buttons before the foot switch can be used.





**VACUUM ANTENNA—SERIES 1954; 1955**  
 Representative of Series 1947 thru 1953

## NEW TRICO C-O WASHER WITH MOTOR COUPLER

To check pump action, use same steps as above for  
Nu-matic Hydrostatic pump (fig. 4).



<http://www.cadillacclub.com/forum/index.php/topic,108350.0.html>

#### Windshield Washer Pump Repair

Bill,

The washer unit is straight forward, the pump unit itself is inside the black canister top and bottom and there are just three parts, a large spring, a plastic cup with two rubber seals lower (water) and top (vacuum) and a plastic plunger with a small spring that seats inside the cup.

Once vacuum is apply to the top section of the canister the plastic cup moves up compressing the large spring. Once at the top the small spring on the plunger closes a rubber disc seal valve for the vacuum. There is a small amount of supply vacuum to keep the cup at this same position, the rubber seal has four tiny holes to maintain the flow.

This action fills the lower canister with the water from the bottom tube. Above this tube there is a two way valve at the bottom that closes the inlet while spraying it opens the outlet and opens the inlet to pull water from the bottle and closes the outlet.

Once you press the washer button inside the cab, the vacuum stops and the large forces the cup downwards, forcing the water out on the top tube.

Once you release the washer button the above action repeats again.

I rebuild two units and working on my third one. I've found the washer unit itself (on the lid) was fine, the two main problems were the cup seals water and vacuum and the rubber disc were bad. The rubber harden and not sealing properly vacuum side and for the water side.

Check the plastic cup has a good seal on top and bottom on yours first. If you get the rebuilt kit and you take the washer unit apart make sure you have a "clincher" to set the blind rivets.

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