

*1947*

**HUDSON  
OWNER MANUAL**



**WHEN YOUR  
NEW HUDSON  
IS DELIVERED TO YOU**

**SEE THAT THESE THINGS ARE DONE**

**OWNER'S SERVICE POLICY** properly filled in and its provisions fully explained to you.

**IDENTIFICATION CARD** completely filled in on both sides. **BE SURE THAT KEY NUMBERS ARE RECORDED.**

**BATTERY** properly registered with National Battery Dealer.

**RADIO WARRANTY REGISTRATION CARD** filled in by dealer and attached to radio if car is so equipped.

## ***Welcome***

As the purchaser of a new Hudson car we welcome you into the fast growing family of Hudson owners. This may be your first Hudson—or possibly you have had previous experience with this fine product. In either event you will have many pleasant reactions in its ownership.

Naturally, you will want to keep it trouble free and derive from it the many pleasures for which it was purchased. With this thought in mind we have prepared this Owner's Manual. In its pages you will find many suggestions to fully acquaint you with its construction, operating features and maintenance requirements.

Before you drive your car take a few minutes to study this manual. It contains a wealth of information--just the things you will want to know. Then place it in the locker box for convenient future reference.

HUDSON MOTOR CAR COMPANY  
Service Department

## WARRANTY

"We warrant each new car manufactured by us to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory any part or parts thereof, including all equipment or trade accessories ( except tires) supplied by the Car Manufacturer, which shall, within ninety (90) days after making delivery of such vehicle to the original purchaser, or before such vehicle has been driven 4,000 miles, whichever event shall first occur, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective ; this warranty being expressly in lieu of all other warranties expressed or implied, and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other liability in connection with the sale of our vehicles.

"This warranty shall not apply to any vehicle which shall have been repaired or altered by other than an Authorized Hudson Dealer in any way so as, in the judgment of the Manufacturer, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident."

HUDSON MOTOR CAR COMPANY  
Detroit, Michigan, U.S, A.

*The Hudson Motor Car Company reserves the right to make any changes in or improvements on its products without incurring any liability or obligation whatever, and without being required to make any corresponding changes or improvements on products theretofore manufactured or sold.*

## OWNER'S SERVICE POLICY

We cannot too greatly impress you with the need for reading fully and becoming acquainted with the provisions of the Hudson Owner's Service Policy which was furnished with this automobile.



**AUTHORIZED  
HUDSON SERVICE  
STATIONS**



The majority of automobile owners are conscientious in the service requirements of their cars and unhesitatingly call on their car dealer for service as and when it is required. These car owners realize that their Hudson Dealer is in a position to render the satisfactory and efficient service to which they are entitled.

When touring or away from familiar surroundings the occasion may arise for service needs. Look for the Hudson Authorized Service sign, illustrated above. The Hudson Dealer displaying this sign is your assurance of the same efficient, friendly service you receive at home. It is your further assurance that his Service Department stocks only genuine Hudson parts; uses factory approved service tools and methods and employs careful and courteous mechanics.

## INSPECTION AND ADJUSTMENT SERVICE

The Hudson Owner's Service Policy provides that at the expiration of 1,000 miles and again at 2,000 miles of driving the Hudson Dealer from whom you purchased your car will perform an Inspection and Adjustment Service without charge, except for supplies or lubricants used.

Should either of these inspections be performed by another Authorized Hudson Dealer (one who did not sell the car) a charge of not to exceed :\$5.00 will be made for either the 1,000-mile inspection or the 2,000-mile inspection. In this event the owner should secure a receipted bill and present it with the Owner's Policy to his own Dealer (who sold the car) and that Dealer will provide for one or two additional inspections, whichever the case may be, without charge, except for supplies and lubricants used.

We urge you to carefully read the provisions of the Owner's Service Policy so that you will fully understand this procedure.

The Inspection and Adjustment Service consists of the following :

### 1,000 Mile

- |                                      |                                    |
|--------------------------------------|------------------------------------|
| 1. Check Operation of All Locks.     | 9. Check Axle Shaft Nut Tightness. |
| 2. Check Signals and Instruments.    | 10. Check Wheel Hub Bolts.         |
| 3. Check Operation of Lights.        | 11. Check Rear Spring Clips.       |
| 4. Check Battery and Connections.    | 12. Check Body Bolts.              |
| 5. Tighten Cylinder Head Stud Nuts.  | 13. Check Hand and Foot Brakes.    |
| 6. Tighten Manifolds.                | 14. Check Drive-Master.            |
| 7. Check Cooling System and Coolant. | 15. Road Test.                     |
| 8. Check Clutch Pedal Clearance.     |                                    |

### 2,000 Mile

- |  |                                   |
|--|-----------------------------------|
| 1. Check Operation of Signals and Instruments.                     | 6. Adjust Tappets—Engine Hot.     |
| 2. Check Operation of All Lights.                                  | 7. Tune-Up Engine.                |
| 3. Check Operation of Windshield Wipers.                           | 8. Check Generator Charging Rate. |
| 4. Inspect Cooling System and Connections (Anti-Freeze in Winter). | 9. Check Wheel Hub Bolts.         |
| 5. Check Battery and Connections                                   | 10. Check Hand and Foot Brakes.   |
|  | 11. Check Drive-Master.           |
|  | 12. Road Test                     |

## 1947 MODELS

### MODEL DESIGNATION AND SERIAL NUMBERS

To simplify identification of the various models referred to in this Owner's Manual, model reference is made to series numbers listed below.

The car serial number which is also the engine number is stamped on a small plate attached to the right front door hinge pillar post. These serial numbers are based on a system which codes the first three digits to the series : e.g. 171101 indicates series 171 while 172101 and 173101 indicate series 172 and 173 respectively. The first three digits remain unchanged regardless of the number of cars produced. Cars are also numbered consecutively as they leave the production line without regard to series. As an example, the car built after car serial 171999 would be numbered 1711000, 1721000, 1731000, 1741000 or 1781000, instead of 172000.

The engine number is stamped on the top of the cylinder block between Nos. 1 and 2 exhaust manifold flanges.

**CAUTION:** Do not confuse engine number with casting or other numbers appearing at different locations on engine.

When ordering service parts or corresponding with your dealer always refer to this number.

Also be sure this number corresponds to the one shown on your Owner's Service Policy, Identification Card, and Car Registration Card.

The car color option code letter is stamped on the upper hinge of the right front door.

#### LICENSE INFORMATION

##### HUDSON SUPER SIX MODEL—SERIES 171

Body Types	No. of Cyls.	Wheel-base	Bore	Stroke	A.M.A. H.P. Rating	Starting Serial No.	Dry Weight Pounds
4 Door Sedan	6	121"	3"	5"	21.6	171101	3110
Brougham	6	121"	3"	5"	21.6	and	3055
3 Pass. Coupe	6	121"	3"	5"	21.6	up	2975
Club Coupe	6						3040
Convertible		121"	3"	5"	21.6		
Brougham	6	121"	3"	5"	21.6		3220

##### HUDSON COMMODORE SIX MODEL—SERIES 172

4 Door Sedan	6	121"	3"	5"	21.6	172101	3175
Club Coupe	6	121"	3"	5"	21.6	and up	2090

##### HUDSON ¾-TON COMMERCIAL MODEL—SERIES 178

Cab Pick-Up	6	128"	3"	5"	21.6	178101	3110
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##### HUDSON SUPER EIGHT MODEL—SERIES 173

4 Door Sedan	8	121"	3"	4½"	28.8	173101	3260
Club Coupe	8	121"	3"	4½"	28.8	and up	3210

##### HUDSON COMMODORE EIGHT MODEL—SERIES 174

4 Door Sedan	8	121"	3"	4½"	28.8	174101	3330
Club Coupe	8	121"	3"	4½"	28.8	and	3260
Convertible						up	
Brougham	8	121"	3"	4½"	28.8		3435

The above weights include spare tire, tube and wheel, but do not include water, oil or gasoline.

## TECHNICAL INFORMATION

### ENGINE

Series	No. Cyls.	Bore	Stroke	A.M.A. H.P.	Piston Displacement
171, 172, 178.....	6	3"		21.6	212 cu. in.
173, 174.....	8	3"	4½"	28.8	254 cu. in.
Compression Ratio					
All Models		6.50 to 1			
Horsepower (Actual)					
171, 172, 178.....	102 0	4000 R.P.M.			
173, 174.....	128	4200 R.P.M.			
Main Bearings (Number)					
6 cylinder.....		3			
8 cylinder.....		5			
Pistons					
Material.....		Aluminum Alloy			
Skirt Clearance—					
Bottom.....		.0005" to			
.001					

### CARBURETOR AND FUEL SYSTEM

Carburetor					
Make.....		Carter			
Series	Size	Type			
171, 172, 178.....	1"	Duplex Down-draft	Manifold Heat Control		Type
173, 174.....	1¾"	Duplex Down-draft	All Models.....		Automatic
Choke Control			Air Cleaner		
All			Standard.....		Oil wetted
Models.....		Automatic	Optional.....		Oil bath

### STARTING, LIGHTING AND IGNITION

Make.....		Auto-Lite			
Generator					
Type.....		3rd brush—voltage regulated			
Charging Rate—					
Cold—All Models.....		Max. 44 Amperes			
Hot—All Models.....		Max. 38 Amperes			
Distributor			Spark Plugs		
Spark Control. Automatic (Additional vacuum control on 6 cylinder models)			Make and .type...Champion Hudson J-9		
Contact Point Gap			Size.....		14 M.M.
6 cylinder.....		.020"	Point Gap.....		.062"
8 cylinder.....		.017"	Battery		
Ignition Timing			Make.....		National
6 cylinder.....		½" on flywheel B.T.D.C.	Dimensions-6 cylinder, Length-10½"		Width-7½"
8 cylinder.....		T.D.C.	Height-7 <sup>13</sup> / <sub>16</sub> "		8 cylinder, Length-11¾"
Firing Order			Width-7¼"		Height-7 <sup>13</sup> / <sub>16</sub> "
6 cylinder.....		1-5-3-6-2-4	Number of plates		
8 cylinder.....		1-6-2-5-8-3-7-4	6 cylinder.....		51
			8 cylinder.....		57
			Terminal grounded.....		Positive

**LAMP BULB SPECIFICATIONS**

Position	Mazda No.	C.P.	Base	Volt-age
Headlamp	Sealed Beam Type			
Bonnet Lamp	55	2	S.C.	6-8
Fender Lamp (with Direction Indicator)	1158	21-3	D.C.	6-8
Fender Lamp (without Direction Indicator)	63	3	S.C.	6-8
Tail and Stop Lamp	1154	21-3	D.C.	6-8
License Lamp	63	3	S.C.	6-8
Dome Lamp	88	15	D.C.	6-8
Generator and Oil Indicator	51	1	S.C.	6-8
Clock	55	2	S.C.	6-8
Speedometer—Series 171, 173, 178	51	1	S.C.	6-8
Speedometer—Series 172, 174	55	2	S.C.	6-8
Radio	44	1	S.C.	6-8
Direction Indicator	51	1	S.C.	6-8
Headlamp Beam	51	1	S.C.	6-8
Ignition Lock	55	2	S.C.	6-8
Courtesy Lamp	88	15	D.C.	6-8
Fog Lamp	1211S	50	S.C.	6-8
Spot Light	1209S	32	S.C.	6-8

**CLUTCH**

Type	Fluid cushioned, cork-insert disc
Series	Disc Size
171, 172 without Overdrive, Vacumotive Drive, and Hudson Drive-Master	9"
171, 172 with Overdrive, Vacumotive Drive, and Hudson Drive-Master, and all 173, 174 and 178 models	10"

**TRANSMISSION**

Type	Synchronized Silent Mesh—All helical gear
Speeds	3 forward-1 reverse
Gear Ratios	

	Low	Second	High	Reverse
All Models	288.1 to 1	1.82 to 1	1 to 1	3.50 to 1

**TRANSMISSION OVERDRIVE**

Final rear axle ratio when car is equipped with Overdrive—All Series	Actual Axle Ratio	In Overdrive
	4 5/9 to 1	3.28 to 1
	4 1/9 to 1	2.96 to 1

**FRONT SUSPENSION**

Type	Independent Coil Spring
Camber	1/2° to 1 1/2°
Caster	1/2° to 1 1/2°
Toe-in	0 to 1/16"

**REAR AXLE**

Type	Semi-floating Helical bevel				
Gear Type					
Gear Ratio:	Series				
	172	172	173	174	178
Standard Ratio	4 1/9	4 1/9	4 1/9	4 1/9	4 5/9
Optional Ratio	4 5/9	4 5/9	4 5/9	4 5/9	—
Standard Ratio with Overdrive	4 5/9	4 5/9	4 5/9	4 5/9	4 5/9
Optional Ratio with Overdrive	4 1/9	4 1/9	4 1/9	4 1/9	—
Standard Ratio with Hudson Drive-Master	4 5/9	4 5/9	4 1/9	4 1/9	4 5/9
Optional Ratio with Hudson Drive-Master	4 1/9	4 1/9	4 5/9	4 5/9	—

## BRAKES

Type			
Size:	Series	Diameter	Width
	171, 172	10"	1¾"
	173, 174, 178	11"	1¾"
Lining Clearance	.075"	Pedal to Floor Board Clearance	¼"
Mechanical Follow-up Clearance	1¼"		

## STEERING GEAR

Type	Worm and roller tooth		
Gear Ratio			
6 cylinder	18.2 to 1	8 cylinder	18.4 to 1

## CHASSIS DIMENSIONS

Series	Wheelbase	Series	Road Clearance	
			Front	Rear
171, 172, 173, 174	121"	171, 173		
178	128"	172, 174, 178	9 <sup>5</sup> / <sub>8</sub> "	8 <sup>3</sup> / <sub>8</sub> "
Over-all Length—Including Bumpers		Turning Radius	9¾"	8½"
171, 172, 173, 174	207"	171, 172, 173, 174		
178	214"	178		
Over-all Height—Free Height				21' 1"
171, 172, 173, 174	68¾"			21' 10"
Over-all Width—Including Fenders		Tread		
Froont—All Models	71"	Front—All Models		56¼"
Rear—All Models	72¾"	Rear—All Models		59½"

## TIRES

Series	Size	Ply		
171, 173	6.00" x 16"	4		
172, 174	6.50" x 15"	4		
178	6.50" x 16"	6		
	Front	Rear		
	Cold	Hot	Cold	Rear
Tire Pressures				
Size				
6.00" x 16"	26 lbs.	29 lbs.	30 lbs.	33 lbs.
6.50" x 16"	26 lbs.	29 lbs.	40 lbs.	44 lbs.
6.50" x 15"	26 lbs.	29 lbs.	30 lbs.	33 lbs.
7.00" x 15" (Opt.)	26 lbs.	29 lbs.	30 lbs.	33 lbs.

## CAPACITIES

Gasoline Tank	U.S. Measure	Imperial Measure	Metric Measure
All Models	16½ gal.	13¾ gal.	62½ liters
Cooling System			
6 cylinder	13 qts.	10¾ qts.	12½ liters
8 cylinder	18 qts.	15 qts.	17 liters
Engine Crankcase			
6 cylinder—dry	5½ qts.	4½ qts.	5¼ liters
—refill	4½ qts.	3¾ qts.	4¼ liters
8 cylinder—dry	9 qts.	9 qts.	8½ liters
—refill	7 qts.	7 qts.	6½ liters
Clutch			
All Models	⅓ pint	¼ pint	160 c.c.

	U. S. Measure	Imperial Measure	Metric Measure
Transmission			
Without Overdrive	2 lbs.	2 lbs	.91 kgs.
With Overdrive	3¼ lbs.	3¼ lbs	1.47 kgs.
Rear Axle			
All Models	2½ lbs.	2¾ lbs.	1.24 kgs.
Shock Absorbers			
	Front		Rear
All Models	3¾ oz. (112 c.c.)		6¼ oz (187 c.c.)

## LUBRICATION

Present day sustained high speed driving, fast acceleration, and closer fitting precision machined parts, place chassis and engine lubrication in the category of a highly specialized operation. A very definite plan of application is necessary to provide the various working parts with the right amount of the correct lubricant at the proper time. Quite contrary to ordinary belief one lubricant will not suffice for all chassis parts. Varying load demands and peculiarities of operation of the various parts require different types of lubricants to prevent friction and reduce wear to a minimum.

Your Authorized Hudson Dealer has been provided with the correct factory lubrication specifications for your car, as well as the definite plan of application. This is your assurance that the lubrication requirements of your automobile will be met with the greatest care. Be sure to consult him on this most important matter.

For your guidance a copy of the Chassis Lubrication Chart is attached to the front cover of this manual. Another quick reference chart will be found on the left side of the dash in the engine compartment. Following is a Lubrication Schedule covering the lubrication requirements from 500 to 10,000 miles. Careful study of these charts and the schedule is recommended.

The lubricants placed in your car at the time of assembly are of the finest quality procurable and *NEED NOT* be changed until the recommended change period shown in the Lubrication Schedule has been reached.

### LUBRICATIONS SCHEDULE

#### AT 500 MILES

See "The Proper Engine Oil to Use," page 14.

#### 1,000 MILES

Upper Support Arm Eccentric Bushing.....	Viscous Chassis Lubricant	2 fittings
Upper Support Arm Pivot Bushing.....	Viscous Chassis Lubricant	4 fittings
Lower Support Arm to Support Pivot		
Bushings .....	Viscous Chassis Lubricant	2 fittings
Lower Support Arm Pivot Bushing.....	Viscous Chassis Lubricant	4 fittings
Spindle Pivot Pin.....	Viscous Chassis Lubricant	2 fittings
Tie Rod End.....	Viscous Chassis Lubricant	4 fittings
Steering Center Arm Bearings.....	Viscous Chassis Lubricant	1 fitting
Drag Link .....	Viscous Chassis Lubricant	2 fittings
Clutch and Brake Pedal Shaft Bushings.....	Viscous Chassis Lubricant	1 fitting
Drive-Master Transfer Key (Opt. Equip.).....	Viscous Chassis Lubricant	1 fitting

Clutch Throwout Bearing	Viscous Chassis Lubricant	1 fitting
Universal Joint Spline	Viscous Chassis Lubricant	1 fitting
Universal Joint Roller Bearing	Viscous Chassis Lubricant	2 fittings
Rear Spring Rear Shackle Bushing	Viscous Chassis Lubricant	4 fittings
Water Pump	Aluminum Soap Base Grease	1 fitting or other water-resistant grease
Distributor-6 cylinder	Water Pump Grease	Turn grease cup 1 turn
Engine	Check Oil Level	
Battery	Add water if less than $\frac{1}{2}$ inch above plates	
Radiator	Check Water Level or Anti-Freeze	
*Transmission	Check level and add lubricant if necessary	
*Rear Axle	Check level and add lubricant if necessary	
Steering Gear	Check level and add lubricant if necessary	
Brake Master Cylinder	Check level and add fluid if necessary	
Front Door Hinge Pins	Light Engine Oil	Hole in each lower hinge
Door Dovetail and Striker	Light Engine Oil	Two places each door
Front Door tipper and Rear Door Lower Hinge Tension Springs	Water Pump Grease.	Apply by hand
Striker Pawls	Pencil lubricant.	Coat lightly

#### 2,000 MILES

*Perform operations listed under 1,000-mile lubrication in addition to the following:*

Engine	See "Proper Oil to Use"—page 14	Drain and Refill
Generator	Light Engine Oil	2 cups
Starting Motor	Light Engine Oil	2 cups
Distributor-6 and 8 cylinder	Water Pump Grease	Cam lobes
Distributor-6 cylinder	Light Engine Oil	Contact arm pivot and wick in top of rotor shaft
Distributor-8 cylinder	Light Engine Oil	Oil cup, contact arm pivot and wick in top of rotor shaft
Throttle Linkage	Light Engine Oil	All joints
Bonnet Support and Lock Shaft	Light Engine Oil	All joints
Brake Operating Linkage	Light Engine Oil	All joints
Carburetor Air Cleaner	Engine Oil	Clean and re-oil
• Drive-Master Linkage	Light Engine Oil	All joints
• Vacuum Drive Linkage	Light Engine Oil	All joints

#### 5,000 MILES

*Perform the operations listed under 1,000 and 2,000-mile lubrication (except change engine oil) in addition to the following:*

Rear Brake Cables	Viscous Chassis Lubricant	Coat Cables
Distributor-6 cylinder	Water Pump Grease	Fill Cup
Oil Filter		Replace Cartridge
Drain and Refill These Units:		
Transmission	S.A.E. 90 E.P. Summer	2 lbs.—with overdrive 3% lbs.
S.A.E. 80 E.P. Winter		
Rear Axle	S.A.E. 90 E.P. Summer and Winter	2 $\frac{3}{4}$ lbs.
Clutch	Hudsonite	$\frac{1}{3}$ pint
• Optional equipment.		

**10,000 MILES**

*Perform the operations listed under 1,000, 2,000 and 5,000-mile lubrication in addition to the following:*

Front Wheel Bearings	Milled Sodium Base Lubricant	4 ounces per wheel
Rear Wheel Bearings	Milled Sodium Base Lubricant	1½ ounces per wheel
Spring Covers	Viscous Chassis Lubricant	
Vacumotive Drive Cylinder (Optional Equipment)	Hudson Shock Absorber Fluid	1 ounce
Drive-Master Cylinder (Optional Equipment)	Hudson Shock Absorber Fluid	1 ounce

*\*Important: When checking transmission and rear axle oil level care should be taken that the oil foam has subsided. If the car has been run for any length of time it should be permitted to stand long enough to allow the oil to reach its actual level before checking.*

The S.A.E. 90 E.P. and S.A.E. 80 E.P. gear oils specified should be of a *mild extreme pressure, non-corrosive type*. When adding lubricant to or refilling the transmission or rear axle be sure the lubricants used meet these requirements for satisfactory operation.

**BREAK-IN OILS NOT REQUIRED**

Special "break-in" oils or compounds are not necessary in Hudson engines. Your decision to use them should be based on the manufacturer's assurance that they contain no harmful ingredients.

**CRANKCASE CAPACITIES**

The capacity of the oil reservoir in *SIX* cylinder engines is five and one-half quarts ; in *EIGHT* cylinder engines nine quarts. When oil is drained in the conventional manner, refill *SIX* cylinder engines with four and one-half quarts of oil and *EIGHT* cylinder engines with seven quarts.

When the oil reservoir is removed for cleaning, pour one and one-half quarts of oil into the upper tray of *SIX* cylinder engines before the reservoir is reassembled. Then pour the additional four quarts through the oil filler hole. On *EIGHT* cylinder engines pour two quarts of oil into the upper tray before reassembling it to the engine and pour the additional seven quarts in through the oil filler hole.

**CHECKING ENGINE OIL LEVEL**

It is not unusual to add oil between change periods. Its rate of usage is governed by the individual engine and is dependent on operating speeds, temperatures, viscosity of oil used, etc.

The level should be checked each time fuel is added. The oil gauge, illustrated in

Fig. 1, is located on the left side of the engine. It is divided off at the lower end into two divisions — Oil Level Range and Low.

For normal operation the oil level is satisfactory when it is within the Oil Level Range. For high speed operation the level should be maintained at the full mark, that is the top line on the Oil Level Range.

To make an accurate check of the oil level it is best to wait a minute or two after the engine has been shut off to permit the oil on the engine parts to drain back into the reservoir.

Two and one-half quarts of oil are required to restore the level from low to full in both six and eight cylinder engines. If the level is low, and the speedometer reading indicates that the oil change period is near at hand, it is more economical to have the oil changed.

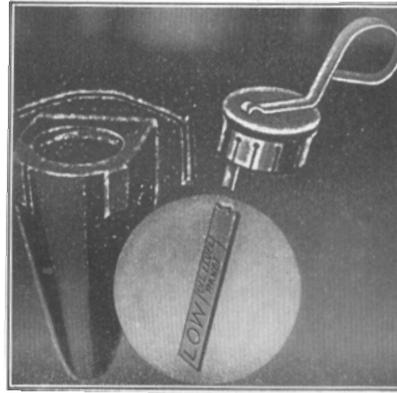


Figure 1

### WHEN TO CHANGE ENGINE OIL

During the first 500 miles of driving it is satisfactory to use the oil which was placed in the engine at the factory.

Thereafter at intervals of 2,000 miles the oil reservoir should be drained and refilled with the proper grade of oil. If the car is operated constantly in dusty areas or for short distances at slow speeds in the winter, which permits foreign matter to accumulate in the oil and contaminate it, the oil should be changed more frequently. The actual change period, however, depends largely on the individual circumstances.

To drain the oil remove the plug at the rear of the oil reservoir. Always drain the oil when it is warm as it will then flow more freely.

It is good practice to remove the oil reservoir at least twice a year, preferably in the fall and spring, to permit cleaning the screens and removing all traces of sludge which may have accumulated in the lower pan.

Caution: When flushing oils or compounds are used in the engine, it is important to remove the oil reservoir and thoroughly clean it out before installing the new oil.

### THE PROPER ENGINE OIL TO USE

There are two important factors to consider when buying engine oil. The first is the selection of a well-known, dependable brand. There are many good, well-bodied, long-lived oils on the market and your selection should be based on the reputation of the refiner or marketer. He is responsible for the quality of his product and his reputation is the car owner's best indication of quality.

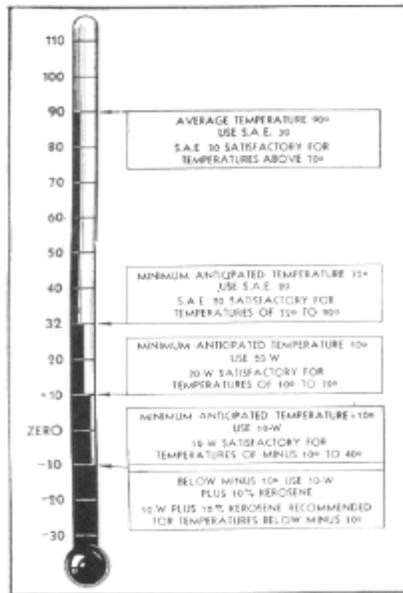


Figure 2

The first requisite is closely related to the second factor, in that the oil should have the ability to flow at low temperatures, to permit easy starting, and at the same time afford adequate lubrication when the engine reaches normal operating temperatures. The oil used should be based on its ability to perform these two functions at the lowest anticipated temperatures expected before the next oil change period. See Fig. 2.

The following table will be helpful in making this selection :

	<i>Use</i>
Use 90° Average temperature	S.A.E. 30
Minimum anticipated temperatures	S.A.E. 20
32°	20 W
10°	10 W
—10°	10 W, plus 10% kerosene.

Note: Kerosene should be added only when

temperatures below minus 10° are expected for long periods

Your Authorized Hudson Dealer, who has had long experience with the brands of oils available in your locality, will be glad to help you with your lubrication problems

**OIL FILTER**

A Hudson Oil Filter, see Fig. 3, which aids in removing foreign matter and impurities under low pressure, and at the same time maintains a normal flow of oil through the engine is available through your Authorized Hudson Dealer. This filter will keep the oil cleaner for longer periods and help minimize wear on engine parts.

The cartridge should be replaced every 5,000 to 6,000 miles or whenever the oil shows definite signs of becoming cloudy. Replacement cartridges should be secured from your Authorized Hudson Dealer

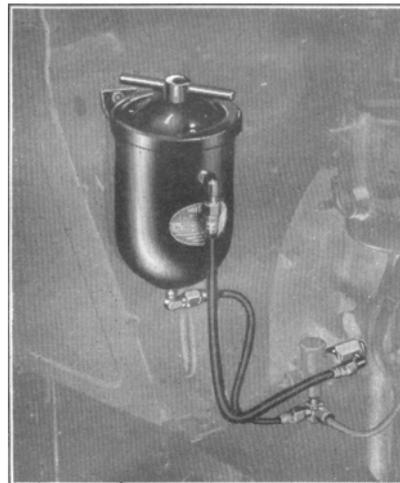


Figure 3

Replace the cartridge by turning the handle on the cover in a counterclockwise direction. Lift out the old cartridge and replace it with the new one. Be sure to use the new cover gasket furnished with the cartridge. The gasket must set squarely on the filter body to prevent damage to it and avoid oil leaks.

Note : Whenever tightening hose connections be sure to use two wrenches to prevent twisting the hose.

It is also good policy to change the engine oil at this time. Using new oil with the new cartridge will help keep the oil cleaner for a longer period.

### CRANKCASE VENTILATION

Diluents, consisting mainly of water resulting from condensation and unburned gasoline, contaminate the engine oil. If these diluents were permitted to remain in the engine oil for any length of time, early deterioration of parts would result.

In the Hudson engine a ventilating system is provided whereby the diluents are drawn out of the crankcase by vacuum through ventilator tubes on the right side of the engine. The violent agitation of the oil by the connecting rod dippers tends to vaporize the water, unburned fuel and other harmful diluents, allowing them to be withdrawn from the engine by the vacuum created when the car is in motion.

### OPERATING CONTROLS

From year to year new devices are introduced by the automobile industry to make driving easier, safer, and to provide more comfort. While many of the controls on the present day automobile are self-evident to the driver, nevertheless a review of their purposes and operation, and a full knowledge of the newer controls before driving your new Hudson will be helpful. It is, therefore, recommended that you carefully read these instructions.



Figure 4

SEAT ADJUSTING LEVER is located on the left side of the seat to secure fore and aft movement of the seat for greater comfort. On long drives, periodically changing the seat position will prove restful. The small knob shown in Fig. 4, is raised with the finger to unlock the seat. Simply releasing the knob locks it in position.

ACCELERATOR PEDAL (A), Fig. 5, controls the speed of the car. Never pump the accelerator when starting the engine as it will result in flooding. When starting a cold engine, the accelerator pedal should be pressed down one-half way and released slowly. With a warm

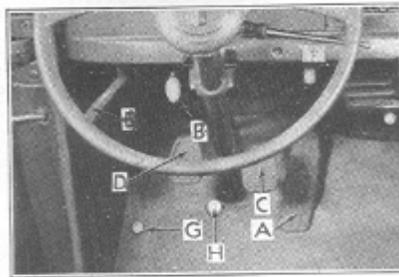


Figure 5

engine, depress the accelerator pedal one-quarter to one-half way and hold in this position when cranking. On cars equipped with Hudson Drive-Master, Overdrive, or Vacuum Drive the accelerator pedal is used to engage or disengage the clutch for gear shifting.

ASH RECEIVER (6), Fig. 6, may be opened by lifting the knob.

BONNET LOCKING HANDLE (12), Fig. 6, should be pushed fully forward to unlock the bonnet. Pull handle back all the way to lock it.

BRAKE PEDAL (C), Fig. 5, hydraulically operates brakes on all wheels. In event of disablement of the hydraulic system, continued pressure on the pedal automatically applies the brakes on the rear wheels mechanically.

CLOCK (20), Fig. 6. Mechanical clock requires winding every day. Turn knob clockwise to wind. Pull knob out to reset. Electric clock requires no attention. Fuse is located in back of clock. Pull out knob to reset.

CLUTCH PEDAL (D), Fig. 5, should be depressed fully to floor board when shifting gears. The clutch pedal must be depressed before pressing the starter button or the starter will not operate on cars equipped with Hudson Drive-Master. When starting the engine, particularly when it is cold, depressing the clutch pedal manually will disconnect the load of the transmission from the starting motor and facilitate starting.

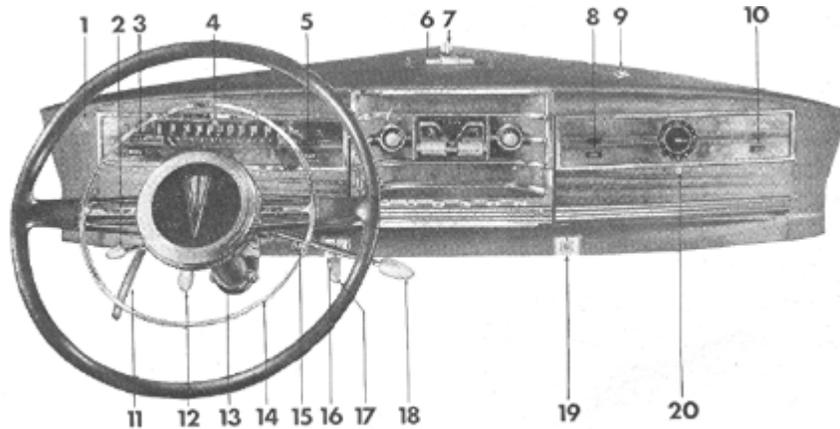


Figure 6

COURTESY LAMPS, at bottom of door lock pillar, are standard on Series 172 and 174. These lamps are lighted by switches operated by the doors when they are opened, day or night.

COWL VENTILATOR HANDLE (17), Fig. 6, should be pushed forward to open ventilator and pulled back to close it.

DIRECTION INDICATOR (2) is optional on all models. Push lever up for *right turn* and push it down for *left turn*. Lever returns to off position automatically when turn is completed. Pilot light (1) on instrument panel flashes with front and rear indicat signals.

DOOR LOCKS—see page 63.

DRIVE-MASTER (optional equipment) control switch. Pressing in "HDM" button permits operation with Hudson Drive-Master. Pressing in "VAC" button permits power clutch operation with conventional gear shifting. Pressing in "OFF" button permits conventional operation of clutch and gear shifting. For more complete details, see page 51. Control buttons are located at lower center on face of panel.

FRONT DOME LAMP SWITCH (Series 172 and 174) is of the sliding type located at bottom of instrument panel on right side.

FUEL GAUGE (3) indicates the fuel level in the gasoline tank when the ignition is turned on. When needle reaches empty mark, approximately 2 gallons of fuel remains in reserve.

GENERATOR CHARGING INDICATOR (10) shows red when ignition is turned on or when engine is idling at low speed. Light should go out as speed is increased. If difficulty is encountered in the electrical system or generator is not charging, the light will either flash or stay on as a warning. Have the electrical system checked by your nearest Authorized Hudson Dealer.

HAND BRAKE HANDLE (11), Fig. 6, should be applied by pulling straight back *and at the same time depressing the brake pedal*. Release by turning  $1/4$  turn to right and pushing downward as far as it will go.

HEADLAMP BEAM INDICATOR (4), Fig. 6, shows red when head lamp beam is in upper or country driving position.

HEADLAMP FOOT SWITCH (G), Fig. 5, controls country (upper) and traffic (lower) beams. When meeting oncoming traffic and headlamp beam indicator shows red, depress foot switch once and release for lower beam. Pressing switch the second time restores beam to upper position.

HORN BUTTON RING (14), Fig. 6 (Opt. equipment on Series 171, 173, and 178 ; std. on Series 172 and 174). Press down from any position to operate horns.

IGNITION SWITCH (15) key should be turned to the right to turn ignition "on."

LIGHTING SWITCH (19) controls instrument lights, headlamps, bonnet lights, fender lamps, tail and license lamps. Pressing button once and releasing it turns on instrument lights, bonnet light, fender lamps, when used, tail and license lamps. Second position of button turns on headlamps in addition to other lamps previously lighted. Pressing the button the third time turns off all lights.

LOCKER BOX LOCK (9) is opened by pressing down to open door. Lock by inserting key and turning it  $\frac{1}{4}$  turn counter-clockwise.

OIL PRESSURE INDICATOR (8) shows red when ignition is turned on and engine is not running. Light should go out when engine is started. Should the light flash or stay on when the engine is running it indicates lack of oil in the reservoir, or some derangement of the oiling system. Engine should be stopped *at once* and source of difficulty determined.

OVERDRIVE CONTROL KNOB (Opt. equipment). Push knob in for overdrive operation and pull it out for conventional driving. See page 49 for more complete details.

RADIO FOOT SWITCH (H), Figure 5, (optional equipment). Press lightly to reduce volume and press hard to change station.

RHEOSTAT (13), Figure 6, located at bottom of instrument panel, is standard on Series 172 and 174. It controls the brilliancy of instrument lights. Turning knob to right decreases light and turning it to the left increases brilliancy. Extreme left position turns out instrument lights.

SPEEDOMETER MILEAGE INDICATOR shows accumulated mileage. It is located below the speedometer.

STARTER SWITCH BUTTON (16) must be pressed in to operate starting motor. The clutch pedal *must* be depressed before pressing the starter button or the starter will not operate on cars equipped with Hudson Drive-Master. *Do not press button when engine is running, or car is in gear.* Switch will not operate unless ignition is turned on.

TRANSMISSION CONTROL LEVER (Handy Shift), Fig. 7, should always be placed in neutral position before starting engine. *For cars with Hudson Drive-Master, see page 51.* Raise knob and move it forward for reverse gear and rearward for low gear. Move to neutral, depress and slide it forward for second gear and rearward for high gear.

WATER TEMPERATURE GAUGE (5), Fig. 6, indicates temperature of cooling fluid only when ignition is turned on. Needle returns to "H" position at right side of dial when ignition is turned oil.

WINDSHIELD WIPER KNOB (7) should be turned to the left to operate wipers.

VACUMOTIVE DRIVE CONTROL (optional equipment). To change from conventional to automatic clutch operation press the "VAC" button located at lower center on face of panel. Revert to conventional by pressing the "OFF" button. Refer also to page 46.

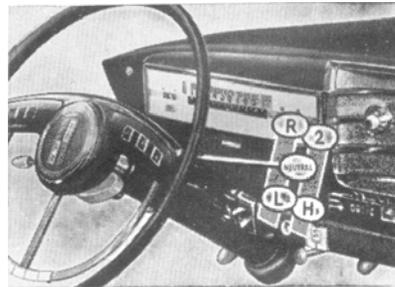


Figure 7

### DRIVING YOUR NEW CAR

Before your new Hudson automobile was delivered to you, your Dealer checked it over thoroughly to be sure that all adjustments were in order ; that all lubrication fittings and units of the car were properly lubricated ; that the cooling system was filled to the proper

level, and that the tires were inflated to the proper pressures.

At the time your car was built, a speed governor was installed on the carburetor and sealed to restrict top speed and fast acceleration during the initial break-in period. This governor causes a slight increase in carburetor intake noise as long as it is in place.

When the speedometer indicates 500 miles, the car should be returned to your Dealer to have the governor removed. There is no charge for this service. At this time the engine oil should be changed, as car speeds will be increased from this point and it is good practice to have clean, fresh oil in the engine.

Although the governor has been removed it does not necessarily mean that the bars should be let down on car speed. The first 500 miles is commonly called the initial break-in period. Until the car has been driven at least another 1,000 miles it should be driven at moderate speeds to give the close fitting, precision machined working parts an opportunity to assume smooth operating surfaces. The following table will be helpful in guiding you as to the highest speeds that should be attained.

0—	250 Miles—	Do not exceed 40 miles per hour in high gear.
250—	500 Miles—	Do not exceed 50 miles per hour in high gear.
500—	1000 Miles—	Do not exceed 60 miles per hour in high gear.

#### STARTING THE ENGINE

All models are fitted with automatic choke type carburetors. The automatic choke proportions the correct mixture of air and gasoline for starting and warm-up period.

NOTE : *The clutch pedal must be depressed before pressing the starter button or the starter will not operate on cars equipped with Hudson Drive-Master.*

Before starting the engine be sure the Handy Shift transmission control lever is placed in neutral position (this applies to all models). Depress clutch pedal to release load on transmission. Turn on ignition switch. If engine is completely *cold* from standing for several hours or overnight, depress the accelerator pedal at least half way and release *slowly*. Then press starter button. Depressing the accelerator pedal in this manner places the throttle in proper position for *cold* starting. This will result in a higher than normal engine idle speed. Depressing the accelerator pedal again slightly and releasing it will permit the engine to run at the normal high idle speed to prevent stalling during the warm-up. *Do not allow the engine to run continuously at the starting speeds as it will load up and stall if left for a minute or two.*

If the engine is *warm* from previous running and has not been standing long enough to become completely *cold*, depress the accelerator pedal one-quarter to one-half way and hold in this position while cranking. Then press starter button.

Should the engine fail to start when following these instructions, it may be due to-

1. Improper engine tune-up.
2. In cold weather, improper lubricants.
3. A combination of 1 and 2.

In such an event it is recommended that you consult your Authorized Hudson Dealer.

### CARBON MONOXIDE GAS

CARBON MONOXIDE, A DEADLY, COLORLESS, ODORLESS GAS IS ALWAYS PRESENT IN THE EXHAUST OF THE INTERNAL COMBUSTION ENGINE. GARAGE DOORS SHOULD ALWAYS BE FULLY OPENED WHEN STARTING OR RUNNING THE ENGINE.

### LOCKING YOUR CAR

When your car was delivered to you it was provided with two sets of keys. The keys with round handles fit the ignition and both front door outside locks. The keys with the octagonal shaped handles fit the locker box door and rear compartment locks.

All keys are numbered and these numbers should be registered on your Ownership Card as well as some other suitable place where they will be available should the keys become lost. As insurance regulations prohibit the stamping of key numbers on lock cylinders, misplaced or lost keys can be obtained from your Hudson Dealer only by referring to key change number.

Many cars are driven away by unscrupulous persons simply because the ignition key was left in the lock. Make it a practice to remove the key from the lock if the car is to be left unattended even for only a few minutes. This is also assurance against accidentally locking yourself out of the car.

**DOOR LOCKS**—All doors can be locked from the inside by pulling up on the rubber knob (B) protruding from the door finish moulding, see Fig. 8. To unlock the door

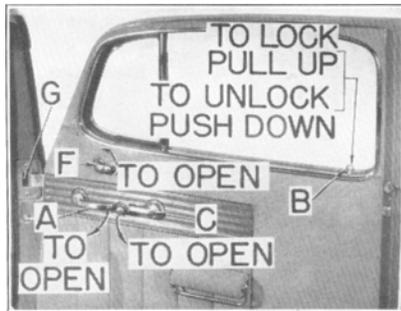


Figure 8

press down the knob. Both the right and left front doors may be locked or unlocked from the outside with the ignition switch key. Turning the key one-quarter turn in a *clockwise* rotation and back to the starting position locks the door. To unlock, turn the key one-quarter turn in *counter-clockwise* rotation and then back to starting position.

**LOCKER BOX DOOR**—To lock the door turn key one-quarter turn *clockwise* and remove key. To unlock it turn key one-quarter turn *counter-clockwise* and remove

key.

When door is unlocked it can be opened by pressing down on lock cylinder face.

**REAR COMPARTMENT DOOR**—To safeguard the spare tire, tools, and any luggage that you may be carrying, always lock the rear compartment

handle. Turning the key one-half turn *clockwise* unlocks the lock. To lock it turn the key one-half turn in *counter-clockwise* rotation.

To open the rear compartment door grasp the handle and turn it to the right. *To prevent damaging the lock be sure the handle is held to the extreme right when closing the door.*

### LOCKING THE BONNET

The bonnet on your car is designed to prevent it from being blown open if the locking handle is accidentally left unlocked, and to prevent the engine parts and accessories being tampered with when locked.

*To raise* the bonnet first unlock it by pushing forward on handle, Fig. 9. Then grasp the bonnet upper moulding at the rear end and raise the bonnet. Strong, self-locking supports hold the bonnet in its raised position.

*To lower* the bonnet, pull it downward and then draw the handle back and snap it into place.

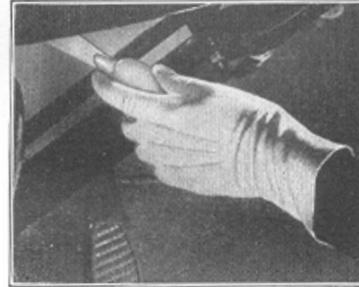


Figure 9

## TIRES

### INFLATION PRESSURES

Maintaining proper tire pressures is important in obtaining maximum tire life, proper car handling, and best riding qualities.

Because tires get hot due to frictional contact with the road surface and internal friction within the tire, tire pressures will increase as much as three to four pounds. As it is hard to check and maintain proper pressures when tires are hot, always make it a point to check and inflate them when they are cold. Both cold and hot pressures are given. Cold pressures should be used when the car has only been driven a few blocks to the service station. Hot pressures should be used when the car has been driven at high speed and if the tires are warm to the hand.

Ordinarily tire pressures should be checked at least once a week. However, when touring, or if the car is driven extensively, they should be checked every morning before starting out.

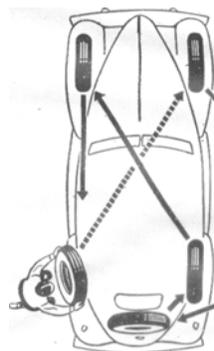
Tire valve caps should be finger tight to prevent loss of air which may be escaping from a leaky valve and also preclude the possibility of dust and dirt getting into the valve. Replace missing valve caps promptly.

Recommended tire pressures are as follows :

Size	Front		Rear	
	Cold	Hot	Cold	Hot
6.00" x 16"	26 lbs.	29 lbs.	30 lbs.	33 lbs.
6.50" x 16"	26 lbs.	29 lbs.	40 lbs.	44 lbs.
6.50" x 15"	26 lbs.	29 lbs.	30 lbs.	33 lbs.
7.00" x 15" (Opt.)	26 lbs.	29 lbs.	30 lbs.	33 lbs.

### MINIMIZING TIRE WEAR

To obtain maximum tire life it is good practice to change tire positions at intervals of from 2,500 to 3,000 miles. This involves placing the left front tire and wheel assembly on the left rear hub, moving the right front assembly to the spare wheel carrier, right rear to left front, left rear to the right front and the spare to the right rear hub. Switching the tires in this manner changes their direction of rotation and equalizes the tread wear over 5 tires instead of 4.



### TIRE AND WHEEL BALANCE

Proper tire and wheel balance is essential to prevent low speed thumping and high speed wheel tramp, both of which contribute to poor handling, certain riding discomforts and excessive wear of front end parts. Tires and tubes are balanced at the time of assembly at the factory. The balancing marks are indicated on the tire by a small red mark. Whenever a tire is removed from the wheel it should always be reinstalled with the red mark aligned with the valve stem.

Although tires and wheels are balanced when they leave the factory, subsequent tire wear causes them to go out of balance. To maintain proper balance and assist in prolonging tire life, it is the tire manufacturers' recommendation that the wheel and tire assemblies be checked for balance every 2,500 miles and whenever a tire has repaired or recapped. Your Authorized Hudson Dealer has the necessary equipment to perform this work.

### DISMOUNTING AND REMOUNTING TIRES

**TO DISMOUNT**—Deflate the tube completely. Stand on the tire with both feet to force the bead away from the rim. Push the valve stem back into the tire. With two tire tools inserted about eight inches apart between the bead and the rim, raise the bead over the rim. *Be careful not to pinch the tube with the tools.* With one tool in position, move the other tool around the rim and remove the remainder of the bead. Then remove the tube.

Stand wheel in upright position with inner bead in rim well. Apply liquid soap around both sides of rim. Insert both tire tools between bead and rim and pry tire out of rim.

**TO REMOUNT TIRE**—Coat both beads of tire with liquid soap to help slide them over the rim. Inflate tube just enough to round it out, then insert it in the tire, placing the valve stem directly in line with the red balancing mark on the tire. Place the tire on the wheel, carefully guiding valve stem into the hole in the rim. Push the inner bead over the rim and into well at valve stem and force balance of bead over the rim. It may be necessary to force a small remaining portion of the bead over the rim with the tire tool.

Insert the tire tool between outer bead and rim at a point opposite the valve stem and work bead over the rim. Leave tool in place and work

other tool around bead and force remainder of the bead over the rim *Be careful not to damage the tube with the tool.*

Inflate tire slowly, carefully checking beads to see that they both are seating properly on the rim. The tire may be centered by bouncing it a few times. Inflate tire to recommended pressure.

#### TOOL KIT

The tool kit is stored in the rear compartment. It contains a wheel hub bolt wrench, which can also be used as a jack wrench or as a jack handle, pliers, screw driver, and a ratchet type or a screw type bumper jack and base. Cab Pickup models are provided with an axle lift type jack with handle extension.

#### SPARE TIRE AND WHEEL

To remove the spare tire and wheel mounted in the well in the rear compartment, take out the clamp bolt and clamp, using the wheel hub bolt wrench. Tilt the top of the tire slightly to the left and remove it from the well.

On models on which the spare tire and wheel is mounted on the partition board, behind the front seat, remove the clamp bolt and clamp, using the wheel hub bolt wrench and roll the tire out of the body.

#### USING THE BUMPER JACK

Set the parking brake securely and apply blocks at wheels to prevent any movement of car. The jack should be placed on a level and solid place with lifting shaft as near vertical as possible.

The lift on the bumper must be from the point where it is mounted to the frame and amply strong to carry the car weight. Figure 10 shows the correct position of jack at the front or rear bumper.

Engage the lifting lug of the jack on the bottom of bumper bar and between the inner and outer mounting bar bolts on bumper bar. **CAUTION** : *Do not* attempt to engage jack or raise the car from the ends of bumpers.

Raise the car sufficiently to lift the tire off the ground by using the crank shaped hub bolt socket wrench as a handle for the ratchet type bumper jack.

#### USING THE AXLE JACK

The axle lift jack should be placed under the front suspension control arm as near to the wheel as possible. The rear end is raised by placing the jack under the rear spring pad. Raise the jack by placing the crank extension in the jack and rotating the extension *clockwise* with the hub bolt wrench.

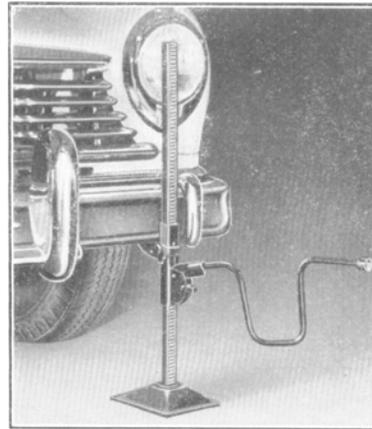


Figure 10

### CHANGING THE WHEEL AND TIRE

*Before raising the car, remove the hub cap with a screw driver and with the hub bolt wrench (jack wrench) loosen the hub bolts one turn. Raise the car sufficiently to clear the ground and then remove all hub bolts and take off tire and wheel.*

When installing the spare, be sure the pilot stud in the hub is in the top position, then slide wheel onto hub using pilot stud as a guide. After wheel has been installed and car lowered, again check tightness of hub bolts and replace hub cap.

### ENGINES

THE ENGINES used in six and eight cylinder Hudson cars are of "L" head type, designed for maximum efficiency and smoothness of operation. Live rubber cushions are used at both front corners and at the rear center of the engine to provide flexibility in the engine mountings. These cushions prevent engine sound or vibrations from being transmitted to the chassis and body.

THE CRANKCASE AND CYLINDER BLOCK, cast integrally for maximum rigidity, is of high chrome iron alloy. The use of this hard material permits seating the valves directly in the block which allows better transfer of heat from the valve seats. Valve life is accordingly prolonged and frequent valve grinding is unnecessary.

THE PISTONS are of cast aluminum alloy, cam ground and are closely fitted in smoothly finished cylinders.

PISTON RINGS are of the pinned type, to prevent ring rotation and permit their maintaining greater efficiency over a longer period of operation.

TWO COMPRESSION RINGS and one oil ring are assembled above the piston pin and one wiper oil ring is located below the piston pin. The compression rings are specially processed to promote quick seating and freedom from scuffing.

THE PISTON PINS are of the full floating type, pressed in the diamond bored pin bosses. Round spring steel lock rings set in grooves in the bosses hold the pins in place.

THE CONNECTING RODS are of drop-forged steel, I-beam construction, shimless type, with lower end bearings of spun bearing alloy. Integral dippers on the lower ends of the rods passing through the oil troughs serve to circulate the oil, by splash, throughout the engine.

PISTONS AND CONNECTING RODS are selected for uniform weight to assure engine balance. They may be removed from the top on six cylinder models and from the top or bottom on eight cylinder cars.

THE CRANKSHAFT is of heavy drop-forged steel with integral counterweights. It is balanced both statically and dynamically to maintain maximum bearing life and smoothness of operation. A vibration dampener pressed on and keyed to the front end of the crankshaft dampens out torsional vibration.

THE CRANKSHAFT BEARINGS are of the shimless, bronze back, bearing alloy type. They are attached to the crankcase and caps with brass screws. Three bearings are used in six cylinder engines and five in eight cylinder engines.

THE CAMSHAFT is of electric furnace alloy, specially processed for maximum life and quiet valve operation.

CAMSHAFT BEARINGS are of the large steel-back, babbitt-lined, replaceable type. Three bearings are used in six cylinder engines and five in eight cylinder engines.

VALVE TAPPETS are of the roller cam type and operate in replaceable guides clamped in the cylinder block. They are adjustable to maintain proper valve operating clearances.

VALVES. Exhaust valves are of silchrome alloy steel to withstand the high temperatures encountered. The intake valves are of nickel chromium steel. Both exhaust and intake valves operate in replaceable guides.

TIMING GEARS are of silent helical tooth design. The camshaft gear is attached to the front face of the camshaft by three cap screws. The crankshaft gear is of cast iron and is pressed on and keyed to the front end of the crankshaft.

FLYWHEEL is of highly polished cold rolled steel, closely balanced to assist in maintaining smooth engine performance. The starter gear is pressed on the flywheel and is replaceable.

#### VALVE TAPPET ADJUSTMENT

Valve tappets are adjustable to provide correct operating clearances.

Correct valve clearance for six cylinder engine is .010" on intake and .012" on exhaust. The eight cylinder engine valve clearance is .006" on intake and .008" on exhaust valves.

Measurement should be made with flat feeler stock of the proper thickness and with the engine idling at normal operating temperature.

Valve locations, counting from the front, are as follows:

Model	Exhaust	Intake
6 cylinder	1-3-6-7-10-12	2-4-5-8-9-11
8 cylinder	1-4-5-8-9-12-13-16	2-3-6-7-10-11-14-15

#### ENGINE LUBRICATION

The Duo-Flo or double circulating lubrication system is employed in all Hudson engines. This provides adequate, positive lubrication under all operating conditions.

The system consists of a large capacity, gear driven oscillating plunger oil pump, a check valve located at the right rear corner of the engine, accessible external oil lines and an oil reservoir having an upper tray in addition to the storage pan.

When the engine is started the oil pump immediately draws oil from the lower reservoir and delivers it positively to the front and rear ends of the engine from whence it is poured into the front and rear troughs of the oil reservoir upper tray. The action of the connecting rod dippers

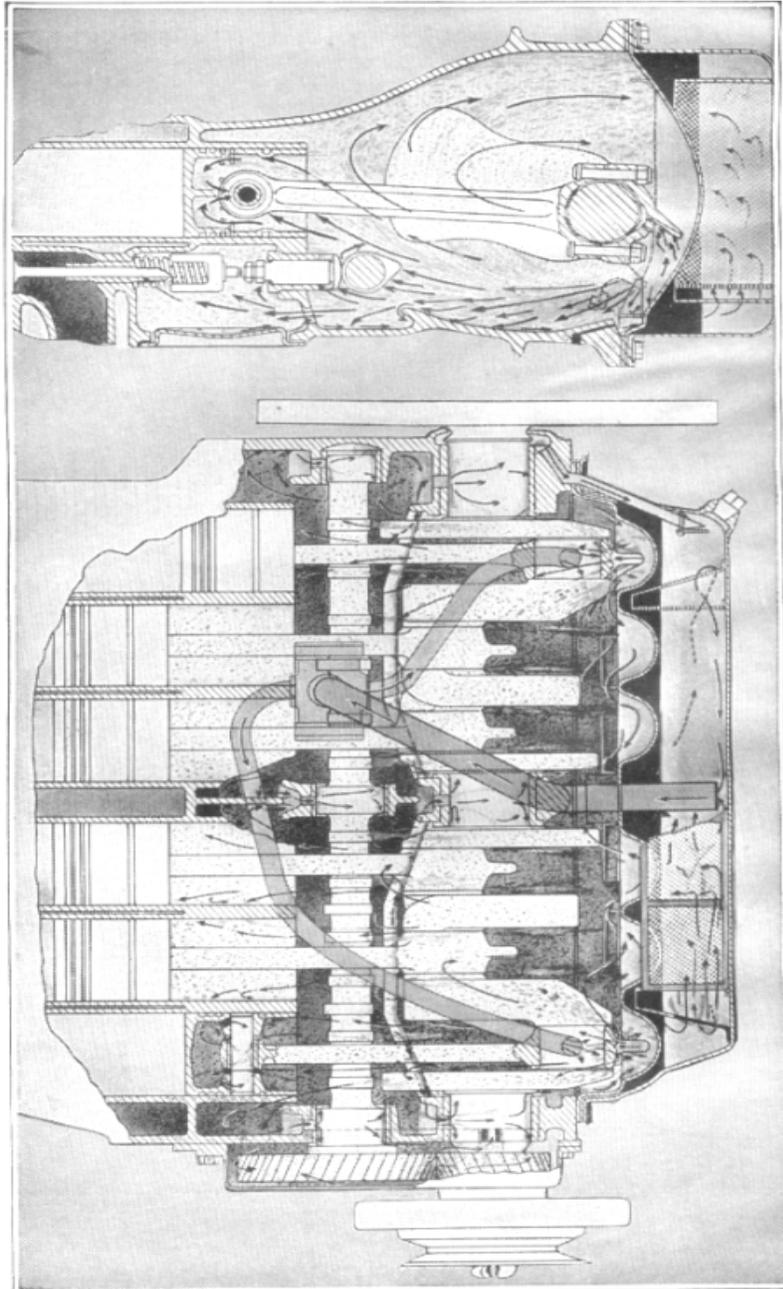


Figure 11

passing through the oil in the troughs causes it to be violently sprayed against the inside of the crankcase. The mist thus created heavily coats all working parts, providing them with a protective film of oil. See Fig. 11. A portion of this oil is caught in channels cast in the side of the crankcase and is fed by gravity into large reservoirs located directly over the crankshaft and camshaft bearings. The rotating action of the crankshaft and camshaft draws the oil into the bearings, affording a constant, positive supply of lubricant.

The overflow of oil from the front and rear troughs toward the center of the engine provides oil to the adjoining troughs. As this oil reaches the center of the tray it is returned to the lower reservoir where it is cooled and strained by circulating through a series of labyrinthian passages and fine mesh screens.

## COOLING SYSTEM

A pressure pump circulating type cooling system, incorporating thermostatic control, is used on all Hudson models.

Series 171, 172, 173 and 178 use the choke type thermostat which is located in outlet (C), Fig. 12, and prevents circulation of the coolant through the radiator core until such time as the water reaches a temperature of 150° to 155°, when the thermostat begins to open. At 185° the thermostat should be fully opened. The path of water circulation is as illustrated.

Series 174, which uses a by-pass type water pump, is equipped with a by-pass type thermostat, located in outlet (D), Fig. 13. This type thermostat, although restricting water circulation through the radiator core, does permit circulation through the by-pass (C) in the pump and back into the cylinder block. This thermostat also begins to open at 150° to 155° and is fully opened at 185°.

TO DRAIN the radiator only, turn handle of the drain cock located at the lower left corner of the radiator, counter-clockwise. To drain the complete cooling system also remove the pipe plug located at the left rear corner of the cylinder block. *Note: If it becomes necessary to drain the radiator when it contains anti-freeze and it is desired to save it, a 7/16" inside diameter hose may be fitted over the end of the drain cock and the loose end placed in a container.*

PROPER CARE of the cooling system is highly essential to maintain efficient engine operation. Rust and scale in the cylinder block is a natural product of water and iron. Therefore, unless the necessary precautions are taken to prevent this accumulation, which acts as an insu-

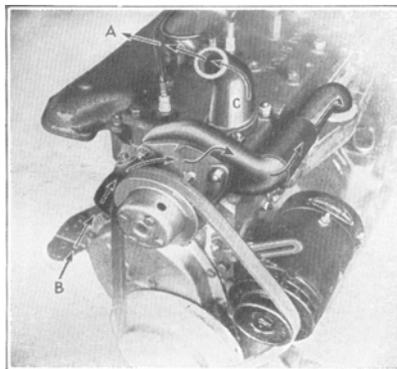


Figure 12

lator, so-called "hot spots" may result through the inability of the water to cool the cylinders and the area adjacent to the valve seats.

The use of Hudson Rust and Corrosion Inhibitor in the cooling system prior to adding anti-freeze in the fall and after draining in the spring will assist to a large measure in keeping the system clean and permit efficient circulation. This product is available through all Authorized Hudson Dealers.

Reverse flushing is an approved method of removing foreign accumulation from the radiator core and water jacket in the cylinder block. As this method requires the use of special equipment, it is recommended that the work be performed by your Authorized Hudson Dealer.

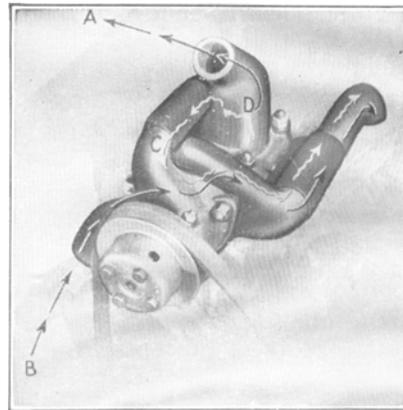
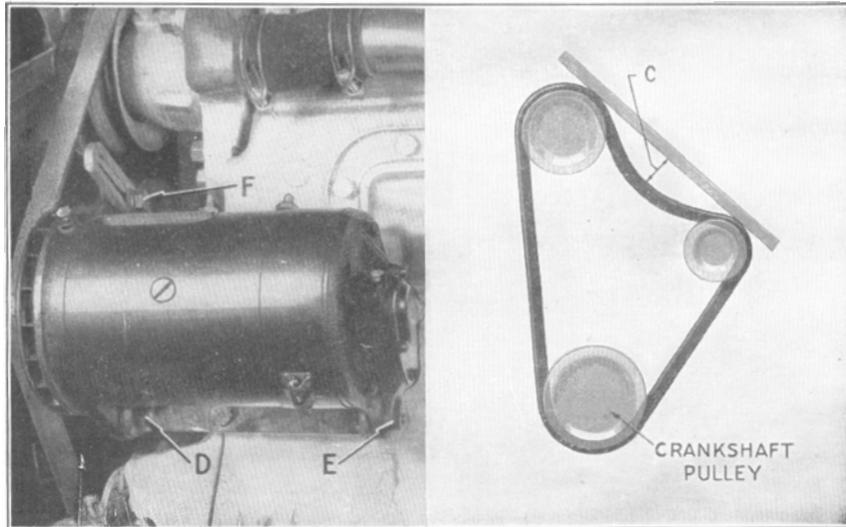


Figure 12

#### FANBELT

The fan belt, Fig. 14, is of the "V" type and drives the water pump and generator through the vibration dampener pulley.

The belt is adjustable by means of a swinging generator mounting. Moving the generator away from the engine increases the belt tension while moving it towards the engine decreases its tension. Belt adjustment is correct when it is possible to depress the belt approximately  $\frac{3}{4}$ " , as shown in the illustration.



Adjustment is made by loosening cap screws and nuts (D), (E), and (F). When proper position has been obtained be sure to tighten screws and nuts.

### WATER PUMP

A six vane impeller packless type water pump, Fig. 15, driven by the fan belt, is used on all models. No attention, other than periodic lubrication is required.

**LUBRICATION** — At intervals of 1,000 miles the water pump should be lubricated through the metered grease fitting, located on the top of the body, with a high grade aluminum soap base lubricant, or other suitable water resistant grease.

### ANTI-FREEZE

Before installing any anti-freeze when preparing for winter operation it is good practice to always drain and flush the cooling system to insure unrestricted circulation. Also carefully check all hose and gaskets for leaks or signs of deterioration.

The use of Hudson Anti-Freeze, available through all Authorized Hudson Dealers, is recommended, as it adequately meets all the requirements of a good, reliable anti-freeze.

Avoid the use of anti-freeze solutions containing calcium salts, or other ingredients which promote electrolytic action. Glucose and honey clog the radiator ; kerosene and fuel oil when hot expel inflammable vapors and, therefore, solutions containing these ingredients should never be used.

The following anti-freeze table will be helpful in determining the quantity of anti-freeze required for proper protection :

#### 6-CYLINDER MODELS

Temperature	Hudson Anti-Freeze			Ethylene Glycol (Prestone or Equivalent)			Methanol or Denatured Alcohol		
	Quarts U.S.	Quarts Imp.	Liters Metric	Quarts U.S.	Quarts Imp.	Liters Metric	Quarts Qts.	Quarts Imp.	Liters Metric
+20°	2½	2½	2½	2	1½	1¾	2	1½	1¾
+10°	3¼	3¼	3½	3	2½	2¾	3½	3	3½
0°	4½	3¾	4¼	4	3½	3¾	4¼	3½	4
-10°	5	4	4¾	5	4½	4¾	5¼	4½	5
-20°	5¾	4¾	5	5½	4¾	5	6	5	5½
-30°	6½	5½	6	6	5	5½	6¾	5½	6½

#### 8-CYLINDER MODELS

+20°	3½	3	3½	3	2½	2¾	3	2½	2¾
+10°	5¼	4½	5	4½	3¾	4¼	4¾	4	4½
0°	6¼	5¼	6	6	5	5½	6	5	5½
-10°	7	6	6½	7	6	6½	7½	6	7
-20°	8	6½	7½	7¾	6½	7¼	8½	7	8
-30°	9½	8	9	8	6½	7½	9½	8	9

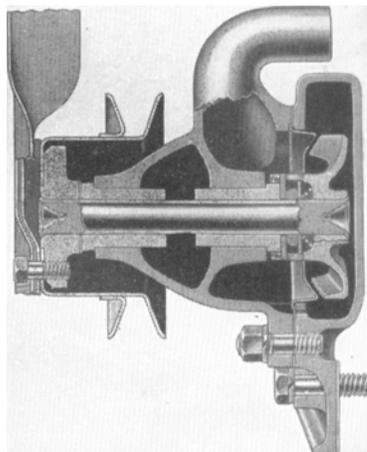


Figure 15

## **CARBURETOR AND FUEL SYSTEM**

### **FUEL RECOMMENDATIONS**

The engine in your Hudson car is designed to give maximum performance and economy with regular grades of gasoline. One of the most important factors in getting the most out of the fuels available is correct ignition timing.

Regular grades of gasoline have octane ratings of 72 or higher while Ethyl fuel has an octane rating of 80 and higher. In the regular brands several grades may be purchased. The lower grades should be avoided in the present day high compression engines as they tend to cause "pinging" under normal load conditions, which requires that the spark be retarded for quieter operation. Retarding the spark naturally affects the performance of the car as well as economy of operation and, therefore, no saving in operation is obtained. Also avoid the use of fuels which tend to gum up quickly as they materially affect the operation of the engine.

Premium grades of fuel, such as Ethyl, which have an octane rating of 80 or higher, permit the use of a more advanced spark timing without knock or "pinging." This will result in improved performance and economy. It should be remembered, however, that these extra advantages cannot be obtained from this type of fuel unless the spark timing is advanced.

For information on "Ignition Timing" see pages 37 and 39.

### **FUEL ECONOMY**

This subject is probably foremost in the minds of all motorists. We hear considerable about the results obtained by certain owners which may cause others to wonder how these claims are substantiated. Unless we understand the conditions under which these figures were obtained they mean very little to us.

Traffic conditions, the terrain, wind conditions, the driver's characteristics as to speed, idling at traffic lights and many other factors influence the final results. It should be understood that the conditions under which maximum results are obtained by the manufacturer are most ideal. By this we mean the cars are driven under fixed throttle conditions, they are not interrupted by cross traffic, they are driven against the wind as well as with the wind and no idling and erratic operation is permitted.

High speed operation requires the use of more fuel as evidenced by the following data compiled on a representative group of cars.

At 20 miles per hour good gasoline mileage can be expected. At 40 miles per hour approximately 24% more fuel is required than at 20 miles per hour. At 50 miles per hour 43% more fuel is required than at 20 miles per hour. At 60 miles per hour 68% more fuel is required than at 20 miles per hour. At 70 miles per hour the percentage of increase in fuel rises to the point where 98% more is used than at 20 miles per hour. From these figures it may be clearly seen that as speed increases, wind resistance becomes greater and fuel economy decreases proportionately.

In the final analysis it is evident that excessive idling, frequent stopping, quick acceleration and high speed operation have a marked effect on the gasoline mileage actually obtained.

## CARBURETORS

The carburetors used on all models are of the down-draft, automatic choke type, incorporating vacuum controlled metering rods, anti-percolator valve, accelerating pump, and fast idle features. A filter screen is also incorporated at the fuel inlet to prevent the entrance of foreign particles which would otherwise clog the small drilled passages and jets in the carburetor.

All models use a Duplex (double barrel) type carburetor, Fig. 16, incorporating two metering rods, one for each barrel.

**ADJUSTMENTS**--There are no adjustments on the carburetor that will affect high speed operation. Therefore, any servicing the carburetor may require, other than minor adjustments that affect operation at idle speed only, should be performed by your Authorized Hudson Dealer who has the special tools and gauges required to service these units.

**IDLE MIXTURE ADJUSTMENT**—This adjustment is made by turning both idle adjusting screws (A), Fig. 16. The normal position of these screws is  $\frac{1}{4}$  to 1 turn off their seats. To adjust them turn both screws into their seats and then out exactly  $\frac{3}{4}$  of a turn. Readjust for smooth idling. Turning the screws in a *clockwise* direction produces a leaner mixture and turning them in a *counter-clockwise* direction results in a richer mixture.

**THROTTLE ADJUSTING SCREW (B)**, Fig. 16, controls the engine idle speed. This screw should be adjusted to give a speed of  $7\frac{1}{2}$  to 8 miles per hour in high gear.

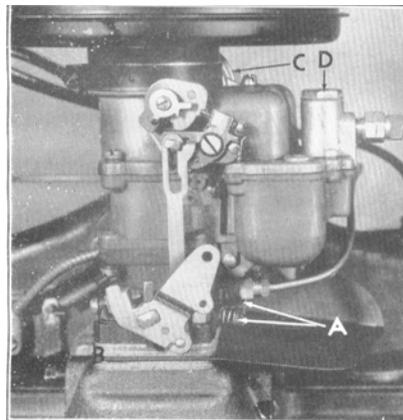


Figure 15

*Note: Before making the Idle Mixture and Throttle Adjusting Screw Adjustments be sure the engine has been run, long enough to reach normal operating temperature. Never make the adjustments when engine is cold.*

**If** these adjustments do not produce satisfactory results, the engine may require an Engine Tune-up and you should consult your Authorized Hudson Dealer.

**AUTOMATIC CHOKE CONTROL** automatically proportions the fuel and air requirements for both starting and engine warm-up.

The thermostatic housing spring which is contained within the thermostat housing (C), Fig. 16, is calibrated to hold the choke valve

closed at a temperature of 75° F. when it is set at the factory. As the engine warms up the hot air drawn into the thermostat housing through a stove attached to the exhaust manifold on 6 cylinder models and through a pipe passing through the exhaust manifold with the opening below the floor of the manifold on 8 cylinder

models causes the thermostatic coil spring to release its tension on the choke valve, permitting it to open gradually. Thus as the engine temperature increases, the choke valve gradually opens, resulting in a leaner mixture being fed into the engine to meet operating requirements.

Any service required on the Automatic Choke should be referred to your Authorized Hudson Dealer.

MANIFOLD HEAT CONTROL VALVE on all models is automatic and requires no adjustment.

FILTER SCREEN CAP (D) should be removed and the screen cleaned every 2,000 miles.

### CARBURETOR AIR CLEANERS

THE OIL WETTED type air cleaner, Fig. 17, is used as standard equipment on all models. In this type cleaner the wire gauze is oil soaked and as the air passes through it foreign particles are removed thereby permitting only clean air to enter the carburetor.

At periods of 2,000 miles, or oftener if local conditions warrant, the filter unit (C) should be taken out by removing wing nut (A) and lifting off cover (B). Clean off old oil and dirt by dipping it in kerosene. Blow it dry and re-oil by dipping it in engine oil, *using the same grade as used in the engine*. Permit excess oil to drain off and reinstall it in the cleaner.

For unusually dusty areas, or when cars are driven extensively on dusty roads, the OIL BATH air cleaner, Fig. 18, should be used. This is available as an option or may be installed by your Authorized Hudson Dealer. In this unit dirt is washed out of the air by the oil spray created as the incoming air strikes the oil in the sump.

Every 2,000 miles, or oftener if local conditions warrant, the unit should be removed from the carburetor and cleaned. Filter unit (E) should be taken out by removing wing nut (D). If heavily coated, the filter unit should be dipped in kerosene and blown dry. Remove all old oil and clean out sump with kerosene. Refill sump with one measured pint

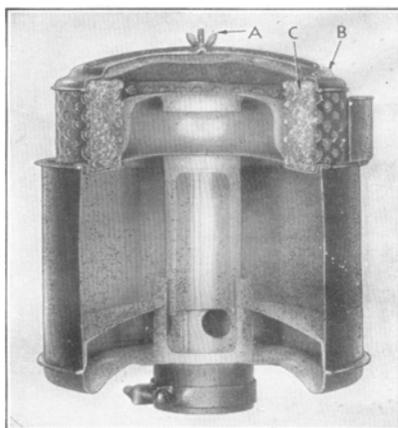


Figure 17

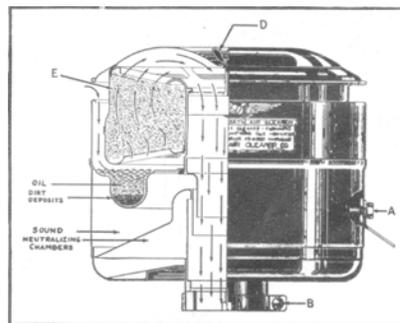


Figure 15

of engine oil, *using the same grade as used in the engine.* Reinstall cleaner on carburetor, being careful not to distort air horn when tightening clamp bolt (B).

### FUEL PUMP

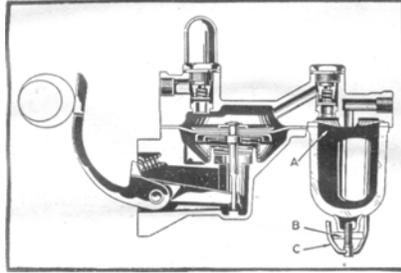


Figure 19

At intervals of 2,000 miles or oftener if conditions warrant, the bowl and screen of the mechanical pump, illustrated in Fig. 19, should be cleaned.

To remove bowl, turn nut "B" counterclockwise and swing strap "C" to one side. This permits removal of bowl and screen. When reassembling parts, carefully inspect screen and gasket: replace them if necessary.

### COMBINATION FUEL AND VACUUM PUMP

This type of pump, illustrated in Fig. 20, assures steady windshield wiper action under wide open throttle operation when engine vacuum is low.

To clean the gasoline filter screen, which is recommended every 2,000 miles, remove the lower cap screw (A) and bowl (B). Before replacing screen (C) and bowl gasket (D), carefully examine them and renew if necessary.

The air filter screen should also be cleaned at 2,000-mile intervals. This is accomplished by removing top cover screw (E) and cover (F). Before replacing the screen and cover, carefully examine screen (G) and gasket (H) and renew if necessary.

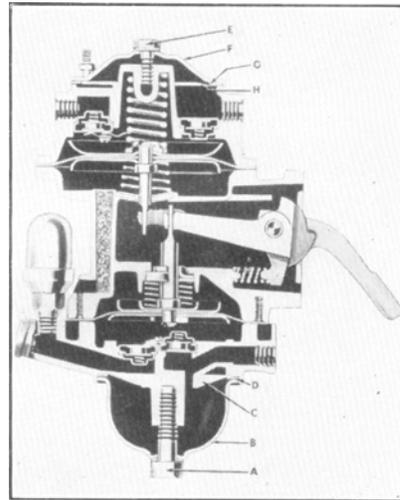


Figure 20

### ENGINE TUNE-UP IS NECESSARY

In the normal operation of your car certain changes take place in Figure 20 the electrical system, carburetor and engine which gradually decrease efficiency of the engine and affect gasoline mileage and car performance. To restore these units to their highest point of efficiency a Major Engine Tune-up is recommended at intervals of 5,000 miles. As special equipment and tools are necessary for these operations, your Authorized Hudson Dealer should be consulted.

## STARTING, LIGHTING and IGNITION

### BATTERY

The battery on all models is located in the left front corner of the engine compartment, Fig. 21, where it is easily accessible for servicing.

A National 51-plate type battery is used in SIX cylinder cars ; 57- plate type in EIGHT cylinder cars. The positive post is grounded.

**REGISTRATION**—So that you may receive the full benefits of the battery manufacturer's Guarantee and Adjustment Policy, which covers the battery, be sure your dealer has registered the battery with the National dealer. If not, this should be done within thirty (30) days after you have taken delivery of your car.

**CARE**—The battery is protected from being overcharged by a voltage regulator. At intervals of 5,000 miles, when the engine is tuned up, the regulator will be checked for voltage setting.

The electrolyte level in the battery should be maintained at least  $\frac{3}{8}$ " above the top of the plates.

At least twice a month in warm weather and once a month in cold weather the level should be checked and distilled water added to restore it to the proper height. When adding water in cold weather, do so immediately before driving the car, or else run the engine for a short time to insure the distilled water mixing properly with the battery solution. Unless this precaution is taken, freezing may be experienced.

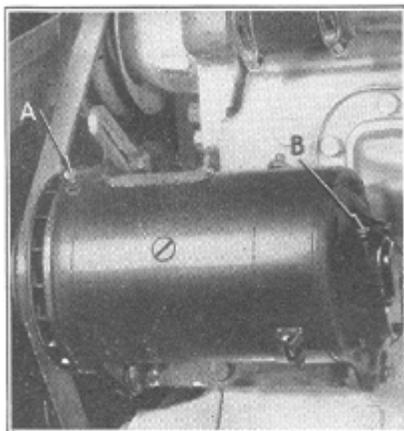


Figure 22



Figure 21

### GENERATORS

The generators used on all models are of the fully ventilated, high output type with third brush adjustment and voltage regulation. The generator is driven from the crankshaft through a "V" type, adjustable fan belt which also operates the water pump. See Fig. 22.

The maximum output on all models is 44 amperes cold and 38 amperes hot.

The term "hot" means after the engine has been run about 15 minutes at a speed corresponding to 20 miles per hour.

Maximum output is reached at a car speed of about 35 miles per hour. Adjustment of the output is dependent on battery voltage and, therefore, any adjustments required should be made by your Authorized Hudson Dealer, who has the proper checking equipment.

**LUBRICATION**—The front and rear armature bearings should be lubricated ever 2,000 miles by applying a few drops of light engine oil to oilers (A) and (B), Fig. 22. *Avoid over-oiling.*

### VOLTAGE REGULATOR

*The* voltage regulator is standard equipment on all models and is mounted on the left front fender, at the rear end, in the engine compartment.

This highly sensitive device automatically increases the amount of current flowing into the battery when it is low due to heavy electrical loads and reduces the current flow when the battery voltage reaches a predetermined value. This prevents damage to battery and other electrical units from excessively high voltage.

As special equipment is required to test this unit, and as the cover is sealed in place, the regulator should never be tampered with. See your Authorized Hudson Dealer if it requires checking.

### STARTING MOTOR

The starting motor, Fig. 23, is located at the rear left corner of the engine and is fitted with a separate solenoid switch. Control of the starting motor is by means of a push button located on the instrument panel to the right of the ignition lock.

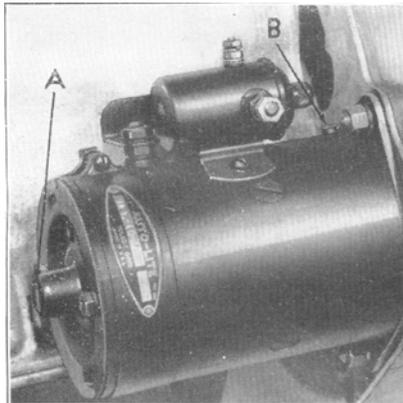


Figure 23

A small button located at the rear end of the solenoid switch may be used to permit cranking the engine when checking ignition timing or changing clutch compound.

**LUBRICATION** — Two small oilers are provided for lubrication of the bearings. Every 2,000 miles the two oilers, (A) and (B), see Fig. 23, should be lubricated with a few drops of light engine oil. *Do this sparingly to prevent over-oiling.*

The Bendix drive pinion threads should be cleaned occasionally with a brush dipped in kerosene to remove gum and dirt. *Do not oil the threads as the kerosene will provide all the lubrication required.*

### DISTRIBUTOR—6—CYLINDER

The distributor, Fig. 24, incorporates an automatic governor advance and in addition a diaphragm advance control (A), operated by engine vacuum.

The automatic governor advance provides the proper ignition timing in direct proportion to engine speed.

The diaphragm advance control provides additional spark advance over the governor advance, through engine vacuum, for maximum fuel economy. When the engine is running under light load and engine vacuum is high, the distributor is rotated to the maximum advanced position. However, under heavy load conditions, as when the throttle is opened for additional acceleration or hill climbing, and engine vacuum is low, the distributor is rotated to the retarded position to provide the proper ignition timing for heavy load operation and prevent fuel detonation or pinging.

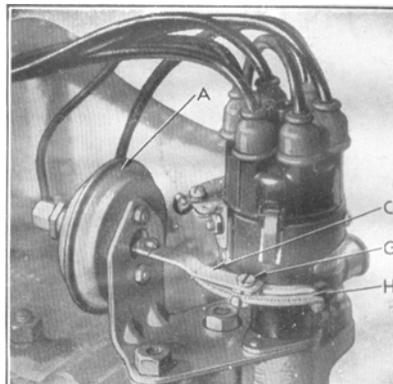


Figure 23

**LUBRICATION**—Every 1,000 miles the distributor shaft grease cup (D), Fig. 25, should be turned one complete turn. Keep the cup filled with water pump grease.

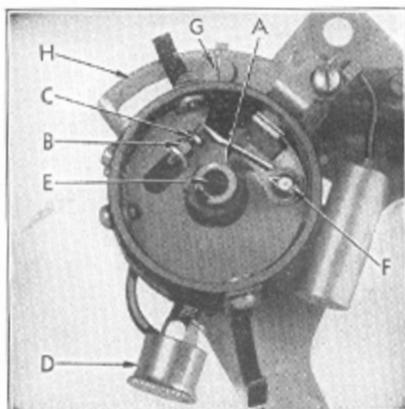


Figure 25

The distributor shaft oil wick (E) should be oiled every 2,000 miles with a few drops of light engine oil. Also place a drop of light engine oil on breaker point arm stud (F) and apply a light coating of water pump grease to cam lobes (A). *Avoid over-oiling.*

**BREAKER POINT ADJUSTMENT**—Correct breaker point setting is .020". These points are adjusted by removing the distributor cap and cranking the engine until the fiber block on the breaker arm is on the highest point of cam lobe (A), Fig. 25. Then loosen lock nut (B) and adjust screw (C) until the correct clearance is obtained. Tighten lock nut and re-check gap. Breaker points should be clean, smooth, and make full

contact.

**IGNITION TIMING**—Remove spark plug from No. 1 (front cylinder), place a finger over the spark plug hole and crank the engine until air pressure against the finger indicates that the piston is coming up, sit the compression stroke. Then continue cranking slowly until the mark  $\frac{1}{2}$  inch ahead of the U.D.C. 1-6 / mark

on the front face of the flywheel lines up with the pointer on the engine rear support plate, shown in Fig. 26.

The engine can be cranked by removing the knurled cap on the starting motor solenoid and pressing the button in quick succession.

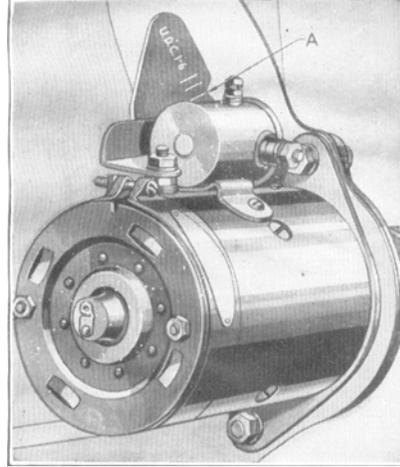


Figure 23

The distributor rotation is *counter-clockwise*. Loosen the distributor advance arm screw (O), Fig. 25, and rotate the distributor housing *counter-clockwise* to the limit of the slot in quadrant (U). Take off the distributor cap and remove the central wire from the cap. Place the bare end  $\frac{1}{8}$ " from the cylinder head. Turn on the ignition and rotate the distributor body *clockwise* slowly just until a spark jumps from the high tension wire to the cylinder head. Tighten screw (G), replace central cable in cap, and clamp cap on distributor. With the distributor cap in position, the metal strip on the rotor should be directly in line with No. 1 terminal. The cables should be in the cap terminals in the order, 1-5-3-6-2-4, following in a *counter-clockwise* rotation.

The foregoing is approximate normal timing for regular or non-premium fuels at or near sea level. For final setting see "Fuel and Altitude Compensation."

#### DISTRIBUTOR- 8-CYLINDER

The distributor, Fig. 27, is mounted at an angle on the right side of the engine near the center. It incorporates an automatic governor advance which mechanically advances the spark in direct proportion to engine speed.

**LUBRICATION**—Oil cup (D) should be filled with a few drops of light engine oil every 2,000 miles. At the same time a few drops of oil should be applied to shaft wick (E) and one drop of oil should be placed on breaker arm stud (F). Also apply a light coating of water pump grease to cam lobes (A). *Avoid over-oiling.*

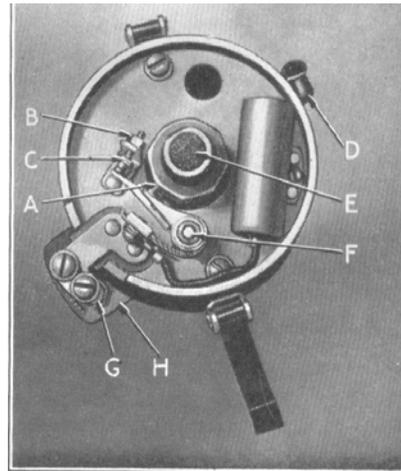


Figure 23

**BREAKER POINT ADJUSTMENT**—The correct breaker point clearance is .017". This is adjusted by removing the distributor cap and cranking the engine until the fiber block on the breaker arm is on the highest point of cam (A). Then loosen lock nut (B) and turn adjusting screw (C) until the proper gap is obtained. Tighten lock nut (B) and re-check setting. Breaker points should be clean, smooth, and make full contact.

**IGNITION TIMING**—To check, remove spark plug from No. 1 (front cylinder) and place a finger over the spark plug hole. Crank the engine by pressing the small button on the rear end of the starting motor solenoid in quick successive movements after removing the knurled cap. As air pressure against the finger is felt, it indicates that the piston is coming up on the compression stroke. Crank the engine slowly now, until the U.D.C. 1-8/mark on the front face of the flywheel lines up with the pointer on the engine rear support plate. See Fig. 28.

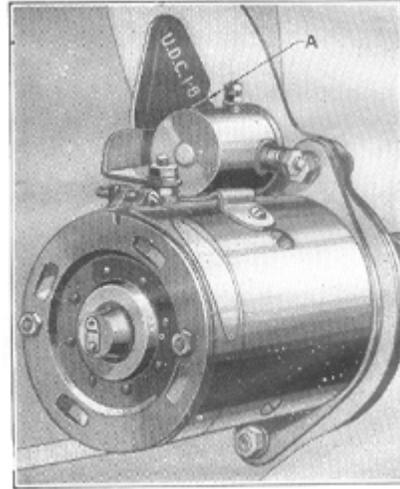


Figure 28

Distributor rotation is *clockwise*. To set timing loosen clamp screw (G), Fig. 27, and rotate distributor housing *clockwise* to the limit of slot in clamping plate (H). Remove the central cable from the distributor cap and place the bare end  $\frac{1}{8}$  inch from the intake manifold. Turn on the ignition and rotate the distributor body *counter-clockwise* slowly until a spark jumps from the high tension wire to the manifold. Tighten clamp screw (G), replace cable in cap and install cap on distributor.

With the cap in place, the metal strip on the rotor should be directly in line with No. 1 terminal. The cables should be in the cap terminals in the order, 1-6-2-5-8-3-7-4 following in a *clockwise* rotation.

The foregoing is approximate normal timing for regular or lion premium fuels at or near sea level. For final setting see "Fuel and Altitude Compensation."

### FUEL AND ALTITUDE COMPENSATION

When Ethyl or premium fuels, which have all octane rating of 80 or higher, are used in place of the regular or non-premium grades of approximately 72 octane rating, a more advanced spark timing should be used and final tests should be made on the road. Also when operating a car at high altitudes it will be found that a more advanced spark timing can be used than at or near sea level.

To determine proper spark timing for these conditions, with engine at normal operating

normal operating temperature, accelerate at full throttle from 8 miles per hour in high gear. A "ping" should be noted at 10 to 15 miles per hour. If no "ping" is heard, loosen the advance diaphragm screw (G), Fig. 24, on 6 cylinder models and rotate distributor body in a clockwise rotation one graduation mark at a time until the "ping" is heard. On 8 cylinder models, loosen clamp screw (G), Fig. 27, and rotate distributor body counter-clockwise one graduation mark at a time until "ping" is heard. Under no circumstances, however, should the pointer on the rear engine support be more than 1 inch (on 1st short mark) before the U.D.C. 1-6/mark on 6 cylinder flywheels or 3/4 inch before (on 2nd short mark) the U.D.C. 1-8/mark on 8 cylinder flywheels.

If the "pinging" is heard at speeds above those previously mentioned, retard the spark timing by loosening the clamp screw and rotate distributor body in opposite direction, one graduation mark at a time until the proper setting is obtained.

### HEADLAMPS

All Hudson models employ the headlighting system known as "Sealed Beam," in which the light source, the reflector, the lens, and the gasket are all assembled in one securely sealed unit. See Fig. 29. When the filament burns out or the lens breaks, the entire unit is discarded and a new one installed, thereby assuring maximum lighting efficiency throughout the life of the car.

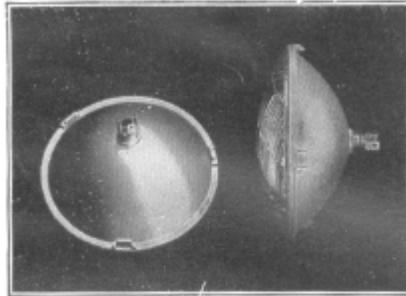


Figure 29

"Sealed Beam" headlamps provide two separate and distinct beams, giving considerably more light than has been produced in the past.

1. A country (upper) beam is provided to illuminate evenly for a considerable distance ahead of the car. This beam is for use on the open highway when no other vehicles are approaching.
2. A traffic (lower) beam is also provided and is low enough on the left side to avoid glare in the eyes of oncoming drivers. It is intended for use on heavily traveled highways and should always be used when meeting other vehicles. This beam is designed so that it does not throw any dazzling light into the eyes of the approaching driver under any condition of car loading. At the same time distribution of light is such that the right side of the road is illuminated as far ahead as is practical without causing glare on curves.

Hudson's "Sealed Beam" headlamps have been designed to insure the motorist of maximum safety and comfort for night driving, but to obtain this safety for himself and for others the motorist must be willing and anxious to use his headlighting equipment in the manner intended. Good drivers are always courteous.

By pressing the lighting switch button once, parking lamps are turned on. A second depression of the button turns on headlamps. When headlamp beams are on the country (upper) or traffic (lower) position, alternate beams are obtained by pressing the foot switch.

When the country (upper) beams are lighted, a red pilot bulb in the speedometer dial will be illuminated, making it convenient for the driver to determine when this beam is in use. Always use the traffic (lower) beam when meeting.

By pressing the lighting switch button once if lights are out, the parking lamp on the bonnet, license plate lamp and both tail lights are lighted. If fender lamps are used, they are also lighted at this time.

**SERVICING HEADLAMPS**— Two types of "Sealed Beam" headlamp units are available. One of these types 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 dimensions.

No dust or moisture can get inside the "Sealed Beam" headlamp unit because the reflector and lens are sealed together permanently. This feature eliminates cleaning, except for wiping off the outside of the lens, and provides proper focusing during the life of the car. The reflector units in both the right and left headlamps are identical and are so designed that they cannot be installed improperly, nor can the electrical connections be attached in any but the right way. This feature makes replacement of the unit extremely simple, as follows:

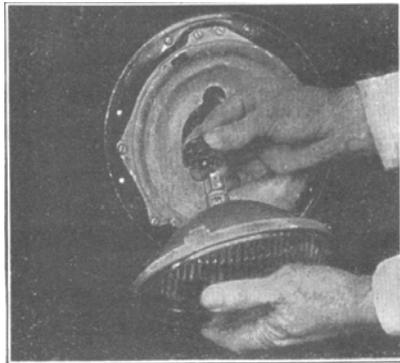


Figure 23

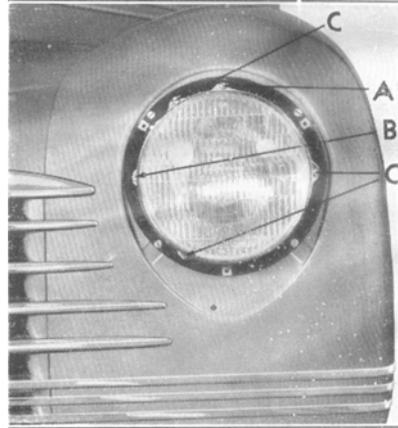


Figure 30

1. Remove headlamp lens rim by taking out the three screws.
2. Loosen, but do not remove, the three screws (C), Fig. 30, holding the retaining ring. (Do not disturb the aiming screws (A and B) at the top and left side of the unit.)

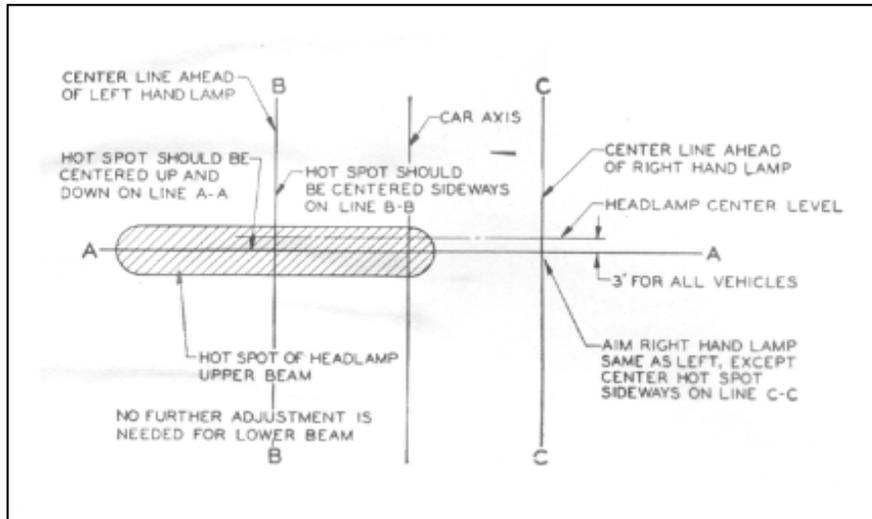


Figure 32

3. Remove retaining ring by rotating counter-clockwise, allowing the reflector unit to be removed.
4. Remove the reflector plug from the reflector unit as in Fig. 31.
5. Install new unit by reversing above operations.

"SEALED BEAM" HEADLAMP AIMING ADJUSTMENT—To obtain the maximum results in road illumination and the safety that has been built into the headlighting equipment, the headlamps must be properly aimed.

Place the car on a level position with a light-colored vertical screen 25 feet ahead. For best road lighting results, draw a horizontal line (A-A), Fig. 32, on this surface at a level of a point three inches below the headlamp center. This distance is 28% inches above the floor line.

If, however, your state requires a loading allowance, draw this horizontal line below the above mentioned line by the amount required by your particular state. Sight through the center of the rear window to the right and left of the windshield center bar and mark two points on the horizontal line. A point midway between these points represents the center line (car axis) on the screen. Next draw vertical lines (B-B) and (C-C) on the screen to the right and left of the center line at a distance equal to one-half of the center-to-center distance (28 inches) between the two headlamps.

Place lighting switch in the position which produces the country (upper) beam (bright light). When the country (upper) beam is lighted the lower filaments on both lamps are illuminated.

Independent adjustment of both horizontal and vertical aim is provided in "Sealed Beam" headlamps, with the adjustment screws accessible from the front of the lamp after first removing lens rim. The

vertical adjustment screw is shown at (A) and the horizontal adjusting screw at (B), Fig. 30. The light beam is moved to the right or left by tightening or loosening the horizontal adjusting screw (B). The beam may be raised or lowered by turning the vertical adjusting screw (A).

Cover one lamp to obscure the beam of light and then adjust the beam from the other lamp so that the center of the zone of highest intensity falls on the intersection of the horizontal line (A-A) three inches below the lamp center and the vertical line directly ahead of the lamp. Repeat the operation for the other lamp. No further adjustment is needed for the traffic (lower) beam.

### FUSES

The fuse block, which contains the fuses that protect the lighting and accessory circuits, is located on the lower edge of the instrument panel, between the ignition lock and the steering column bracket.

These two fuses are of 30 ampere capacity and have silver plated caps to prevent corrosion. The lower fuse protects the lighting circuit and the upper fuse protects the accessory circuit. Two extra terminals are provided in the accessory circuit for additional electrical accessories.

The electric clock is protected by a 2 ampere fuse contained in a fuse case located on the back of the clock.

The direction indicator fuse is of 10 ampere capacity and is located in a fuse case in the wire leading from the wire harness to the gasoline gauge, near the flasher unit located on the relay attached to the hand brake support under the instrument panel.

A 14 ampere fuse is used to protect the circuit of the Hudson Weather-Master. This fuse is in a fuse case which is located on the left side of the heater.

A 20 ampere fuse is used to protect the radio circuit and this is included in the fuse case located in the wire leading from the fuse block to the left side of the radio receiver.

The 30 ampere silver cap fuses used in the lighting and accessory circuits may be procured from Authorized Hudson Dealers.

### CLUTCH

A Fluid Cushioned Clutch, Fig. 33, incorporating a single cork-insert disc, is used exclusively in Hudson cars to assure smooth engagement. Long life is assured through triple sealing the unit against fluid loss. Heat developed within the clutch is kept at a minimum through proper ventilation and the constant bath of fluid within the housing.

The only attention required is lubrication and a periodic check of the pedal-to-floor board clearance to insure full travel of the clutch pedal and prevent the pedal from riding against the floor board which may result in slipping.

#### CLUTCH PEDAL ADJUSTMENT

To assure full disengagement of the clutch to prevent clashing when shifting gears and also to prevent the clutch pedal from riding against

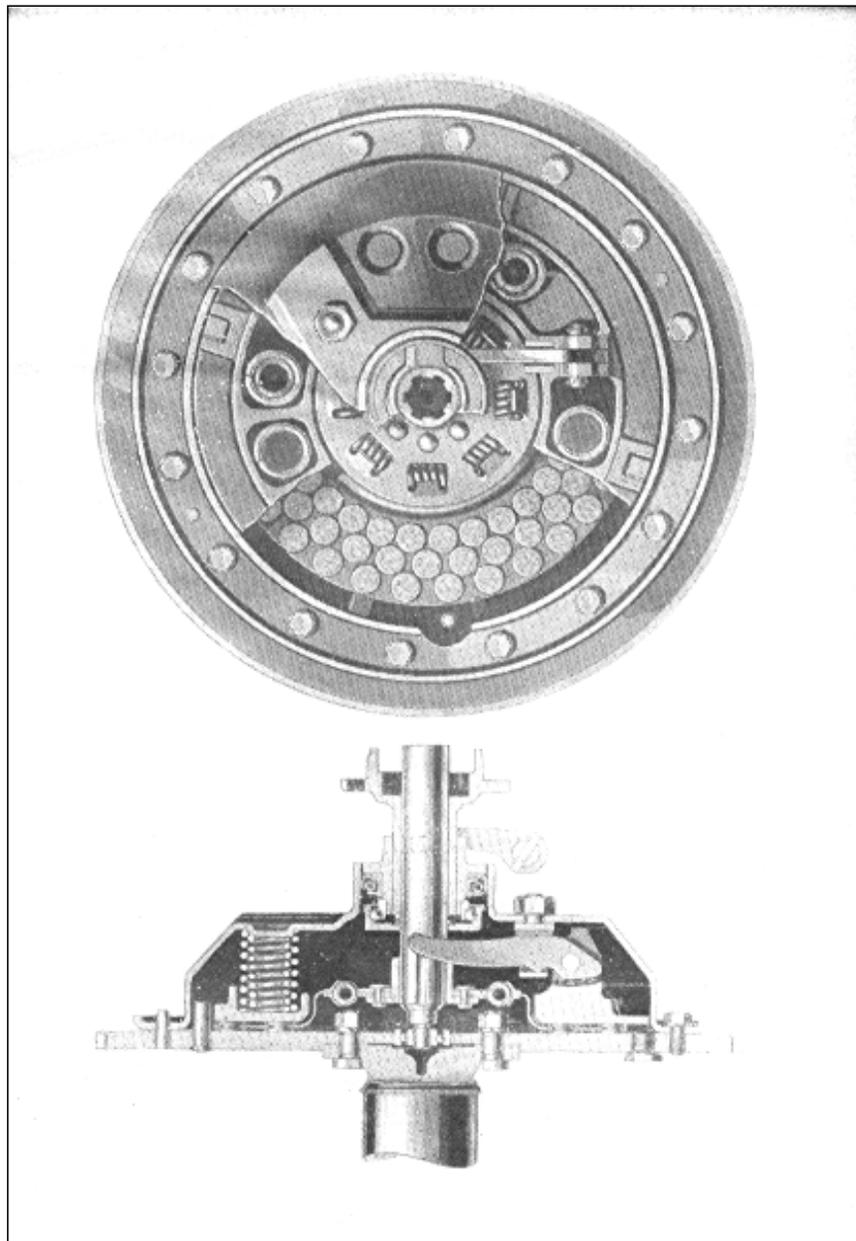


Figure 33

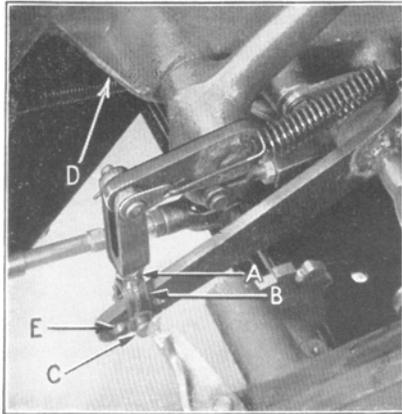


Figure 34

the floor board,  $1\frac{1}{2}$ " clearance must be maintained between the floor board and rear face of pedal.

This can be adjusted by loosening lock nut (A), Fig. 34, removing cotter pin and clevis pin (C), and turning yoke (B) to increase or decrease the clearance as required. Replace clevis pin and cotter pin and tighten lock nut securely.

**LUBRICATION** — The clutch throwout bearing should be lubricated every 1,000 miles, using viscous chassis lubricant applied through the grease fitting on the right side of the clutch housing.

The clutch pedal and brake pedal shaft bushings should also be lubricated at inter-

vals of 1,000 miles, using viscous chassis lubricant applied through the grease fitting (D), Fig. 34, on the bottom of the pedal bracket, reached from underneath the car.

*Note: On cars equipped with Hudson Drive-Master this fitting is lubricated by removing the dirt shield screws and cover and applying the pressure gun to the grease fitting.*

Every 5,000 miles the clutch should be drained and refilled with HUDSONITE CLUTCH COMPOUND, which is produced in the Hudson Engineering Laboratories, and is available through all Authorized Hudson Dealers and the service stations of most of the reliable oil companies. The exclusive use of this compound is your assurance of obtaining smooth, even clutch action.

The clutch is drained without disturbing the flywheel guard by removing hex plug (A), Fig. 35, in the front face of the flywheel. Then rotate the flywheel until the first star stamped on the flywheel face appears in inspection hole over starter motor and allow the old fluid to drain out. Turn flywheel until filler hole reappears and refill with  $\frac{1}{3}$  pint of HUDSONITE CLUTCH COMPOUND. Replace plug and tighten securely.

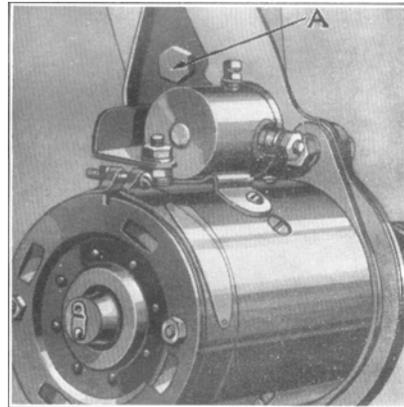


Figure 35

### VACUMOTIVE DRIVE (Optional Equipment)

Vacumotive Drive, which is available as a factory installed option, or may be installed by your Authorized Hudson Dealer, provides a means of engaging and disengaging the clutch automatically without using the left foot. It utilizes the engine vacuum and is operated by momentarily lifting the foot from the accelerator pedal to disengage the clutch and depressing the accelerator pedal to engage the clutch.

A switch, with two buttons marked "VAC" and "OFF," mounted on the instrument panel permits the driver to change from conventional clutch operation to automatic operation by merely pressing in and releasing the "VAC" button. To revert to conventional drive press the "OFF" button. This can be done at any time.

A centrifugal governor switch prevents free wheeling or coasting in high gear at speeds above 19 miles per hour. Under certain conditions, such as when driving on icy or slippery pavements, or when descending steep grades when free wheeling may not be desired the driver may revert to conventional by pressing the "OFF" button. Clutch operation will then be by conventional means.

**OPERATION**—Press in the "VAC" button. Depress the clutch pedal manually as Vacumotive Drive is operative only when the engine is running. Place the Handy Shift lever in neutral position and start the engine. Move the lever to the desired gear position and depress the accelerator pedal. *Note: If moving in reverse gear press the accelerator pedal lightly.*

When moving in low gear accelerate to the desired speed for shift into second gear. Lift the foot from the accelerator pedal, move the gear shift lever into second gear position and then depress the accelerator pedal. Repeat this operation for the shift into high gear.

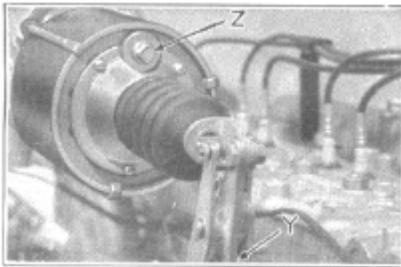


Figure 36

**LUBRICATION** — Vacumotive Drive linkage connections should be lubricated every 1,000 miles with a few drops of light engine oil. Also apply a few drops in the mounting bracket pivot hole (Y), Fig. 36.

At intervals of 10,000 miles the vacuum power cylinder should be lubricated by removing pipe plug (Z) and injecting one ounce of HUDSON SHOCK ABSORBER FLUID. The piston rod end to

bell-crank bolt and the valve rod to lever link should be removed and the piston rod rotated with an in-and-out movement to thoroughly distribute the oil over the piston and oil wick.

## TRANSMISSION

The transmission, Fig. 37, is of the Synchronized Silent Mesh design, incorporating the "blocker type" synchronizing unit which assures an absence of gear clashing when shifting. It provides for three speeds forward and one reverse. All gears are of helical cut tooth design, assuring quiet operation in all speeds.

Gear shifting is accomplished by a steering gear column control known as HANDY SHIFT. The four speeds are in the conventional "H" plate order.

When in neutral the shift lever is in a horizontal position in the second and high rail, see Fig. 7. To shift into reverse gear the lever must be raised and moved forward. Movement to low gear is by pulling the lever backward in the same rail. The shift into second gear is forward to neutral position, then press lever down and move forward. Moving the lever backward gives high gear position.

**LUBRICATION—STANDARD TRANSMISSION**—The transmission is fitted with one drain plug located at the bottom of the case and one filler plug on the right side.

Remove the filler plug every 1,000 miles and check fluid level. As agitation causes all gear oils to foam, the car should be permitted to stand idle a few minutes before checking the level. This will allow the foam to subside and assure a check of the actual oil level.

At intervals of 5,000 miles the oil should be drained and the transmission refilled with new lubricant. In summer use 2 pounds of S.A.E. 90 E.P. gear oil and in winter use an S.A.E. 80 E.P. grade.

If the unit is flushed out, it should be refilled with  $2\frac{1}{4}$  pounds of the proper lubricant.

Should hard shifting be encountered in extremely cold weather, drain out 2 ounces of transmission oil, add 2 ounces of kerosene and refill to proper level with oil.

**LUBRICATION—TRANSMISSION WITH OVERDRIVE**—As the same grades of gear oil recommended for the transmission are used in the Overdrive, communicating passages are provided between the two units. Separate drain and filler plugs are also provided in the Overdrive housing. The drain plug is located on the bottom and the filler plug is on the right side of the housing.

To check fluid level, first remove Overdrive filler plug and determine level, which should be even with lower edge of hole. If level is low, refill to correct level. Then check oil level in transmission and refill as required.

To drain and refill, first be sure lubricant is warm as it will flow more freely. Remove both drain plugs and drain all old lubricant. Replace plugs. Refill Overdrive first, permitting level to come up to bottom of filler plug hole. Next refill transmission to bottom of level of the filler plug hole. Replace both plugs.

Should it be necessary to thin the lubricant to facilitate shifting in extremely cold weather, drain out  $2\frac{1}{2}$  ounces of lubricant, add  $2\frac{1}{2}$  ounces of kerosene and then refill to proper level with oil.

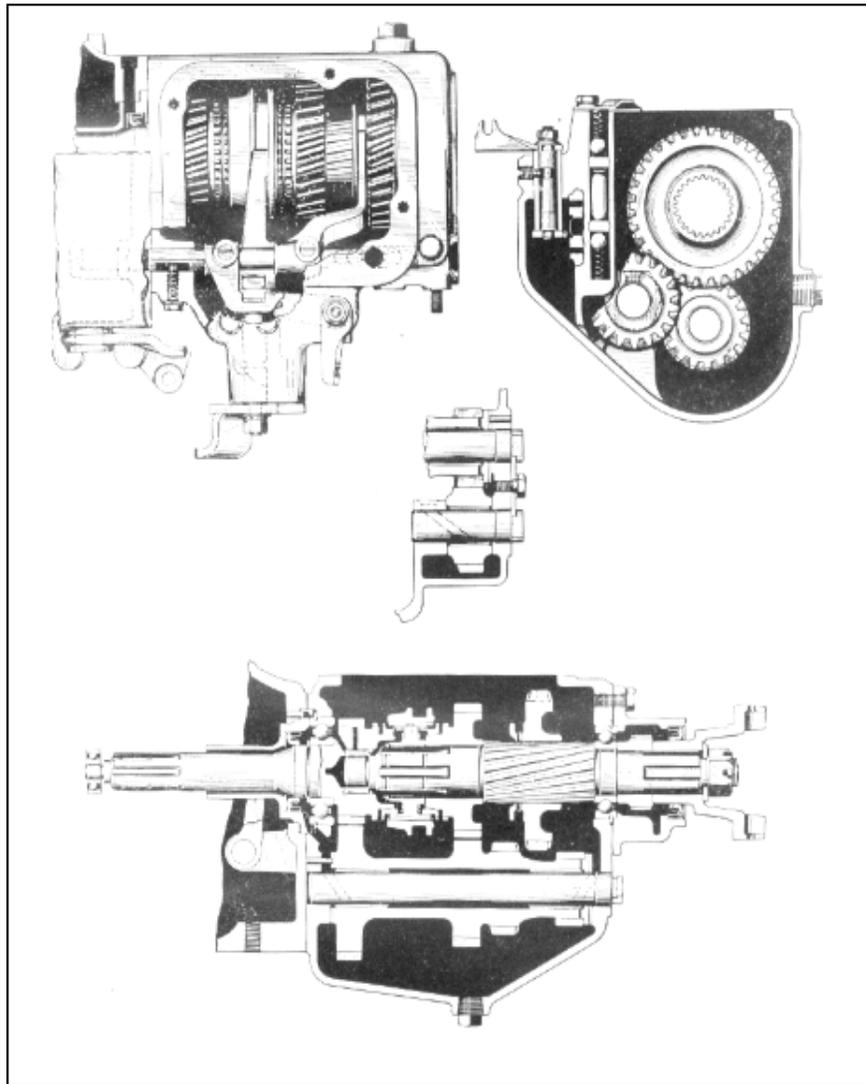


Figure 37

### **TRANSMISSION OVERDRIVE (Optional Equipment)**

Transmission Overdrive, Fig. 38, is available on all models as a factory installed option only. It is not available for field installation. This unit provides a fourth speed operation at approximately 22 miles per hour and also permits free wheeling on deceleration below about 19 miles per hour. It reduces engine speed 28 per cent in relation to car speed, thus permitting smoothness of operation and greater gasoline and oil economy at high speeds.

The speeds at which overdrive becomes operative on acceleration and when free wheeling becomes effective on deceleration, are controlled by a centrifugal governor switch mounted on the overdrive housing. Engagement and disengagement of Overdrive is controlled through the accelerator pedal when the Overdrive control knob, located on the instrument panel, is pushed in. Conventional operation is obtained when the knob is pulled out.

**OPERATION**—Push the control knob, on the instrument panel, in to its fullest extent. This may be done at any speed. At speeds of approximately 22 miles per hour, by releasing the accelerator pedal momentarily the shift into Overdrive is accomplished automatically. Then depress the accelerator for normal operation in Overdrive. The car will now remain in Overdrive until its speed has been reduced to about 19 miles per hour at which time Overdrive will automatically disengage and the car will drive through free wheeling.

As operation in Overdrive does not permit fast acceleration for passing other cars or provide the necessary power to ascend steep grades it is necessary to revert temporarily to direct drive. This can be accomplished by depressing the accelerator pedal fully beyond the wide-open throttle position. As this action takes place the ignition is interrupted for a fraction of a second, releasing the Overdrive and permitting the engine to pick up the load in direct drive through the free wheeling unit.

To re-engage Overdrive, momentarily release the accelerator pedal as before (above about 22 miles per hour) and then resume normal operation in Overdrive.

If it is desired to lock out Overdrive when operating in heavy traffic, or on icy or slippery pavements, or steep grades, when free wheeling is not desired, it is merely necessary to pull out the control knob and disengage the clutch momentarily. This must be done when the car is in motion and may be done at speeds up to 60 miles per hour. A slight clash may be noted at this time. See Page 47 for lubrication data.

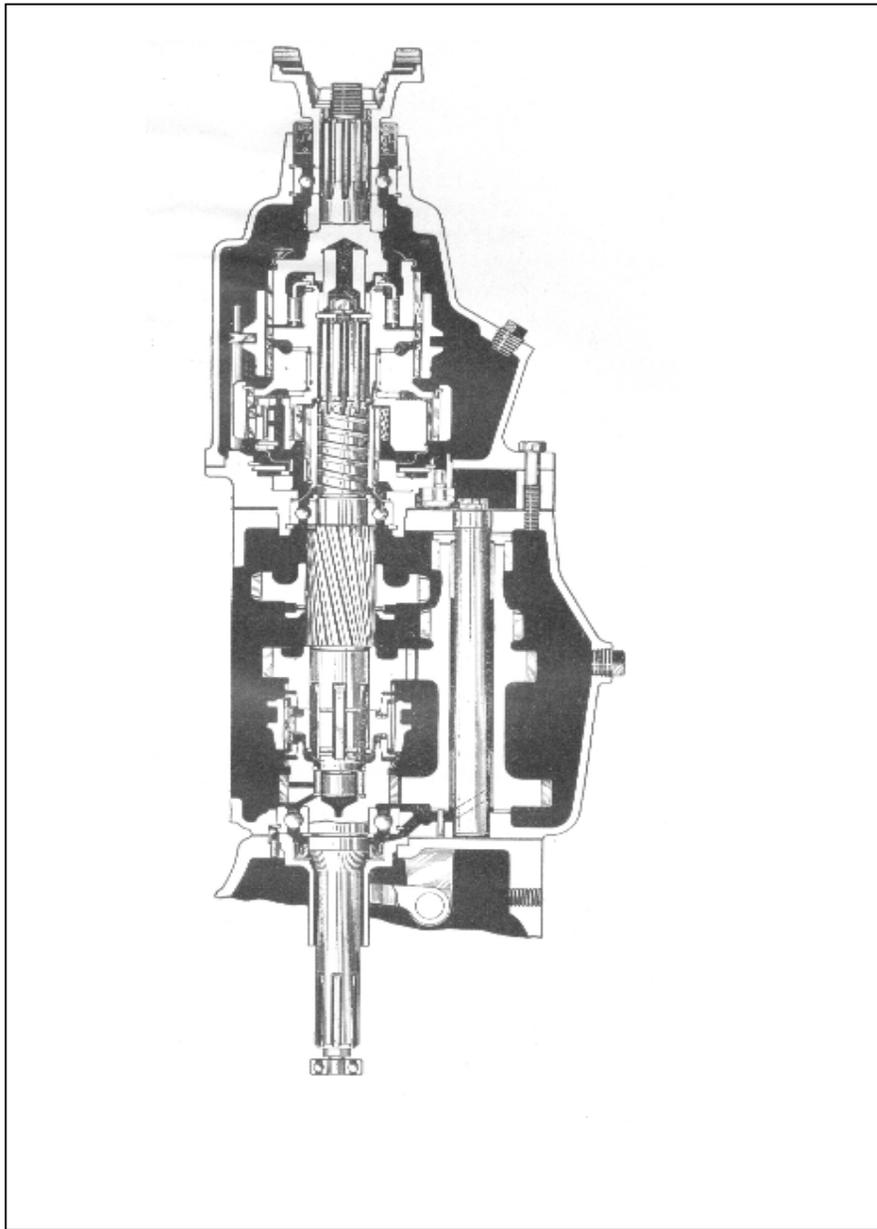


Figure 38

## HUDSON DRIVE-MASTER

(Optional Equipment)

Hudson Drive-Master which is available as a factory installed option only, provides automatic shifting in forward speeds under normal conditions, yet permits shifting in the conventional manner at any time. Hudson Drive-Master allows the driver to have *complete control* of the transmission in every speed at all times.

To the driver the only difference in the controls in the front compartment is the addition of a three button switch mounted at the lower center portion of the instrument panel.

When the "HDM" button is pressed in, the transmission and clutch operation is automatic. When the "VAC" button is pushed in, transmission operation is in the conventional manner, but clutch operation is by vacuum power. With the "OFF" button pushed in, both transmission and clutch operation are by conventional means.

NOTE: *The clutch pedal MUST be depressed before the starter will operate on cars equipped with Hudson Drive-Master.*

OPERATION—To start out in forward speeds under normal operating conditions, place the Handy Shift control lever in the high gear position. Depress accelerator gradually and car will move forward in second gear. When accelerator is released above "shifting speed," high gear will automatically be engaged. *It is possible to accelerate to any speed in second gear before making the shift into high gear, by simply allowing the foot to remain on the accelerator pedal.*

When slowing down with the accelerator released the transmission will automatically shift into second gear as it reaches the "shifting speed," and the car is ready for a new start.

To start in low gear move the Handy Shift lever into neutral position, hesitate momentarily and then move it into low gear in the conventional manner. After getting underway in low gear release the accelerator and shift into second or high gear position. If second speed has been selected it will be necessary to shift into high gear in the conventional manner. If the lever is moved into high gear position and accelerator released the shift is made automatically into second or high gear, depending on the car speed.

Shift into reverse in the conventional manner by simply lifting the foot from the accelerator and moving the Handy Shift lever into neutral and then into reverse.

MOUNTAIN DRIVING—If it is desired to engage second gear when ascending or descending a grade, above the "shifting speed," momentarily release accelerator, *disengage the clutch manually* and move Handy Shift lever into second speed.

## SHAFT AND UNIVERSAL JOINTS

The propeller shaft is of tubular design incorporating needle roller bearing universal joints. The bearings located in the front and rear joints should be lubricated with viscous chassis lubricant during regular chassis lubrication at 1,000 mile intervals, through the fittings (B), Fig. 39.

The spline at the front end should also be lubricated every 1,000 miles through the grease fitting (A) in the sleeve yoke. Apply a viscous chassis lubricant, preferably with a hand operated lubrication gun so as to avoid high pressure that might dislocate or cause damage to the seal at the front end of the spline.

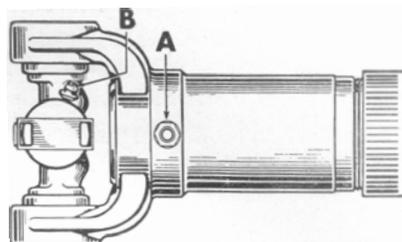


Figure 39

## REAR AXLE

All models use a rear axle of the semi-floating type, incorporating helical cut bevel gears. See Fig. 40.

Tapered roller bearings are used throughout to support the drive pinion, differential case, and the outer ends of the rear axle drive shafts.

As the axle bearings are accurately adjusted under load at the factory no further attention should be required. Special equipment is necessary to properly service this unit ; therefore, any adjustments or repairs required should be referred to your Authorized Hudson Dealer.

**LUBRICATION**—Proper lubrication of the rear axle is important. Every 1,000 miles the oil level should be checked by removing the filler plug in the back cover and the level restored to normal. *All gear oils have a tendency to foam due to agitation and the car should be permitted to stand about fifteen minutes to allow the foam to subside to be sure the actual oil level is being checked.* S.A.E. 90 E.P. gear oil should be used in summer and winter.

At intervals of 5,000 miles the old lubricant should be removed and 2¾ lbs. (1.24 kgs.) of new lubricant installed.

Rear wheel bearings should be removed, cleaned, and repacked every 10,000 miles with 1½ ounces of milled sodium soap base lubricant. *A special puller is required to remove the hubs; therefore, this operation should be performed by your Authorized Hudson Dealer. A knock-out type puller should never be used.*

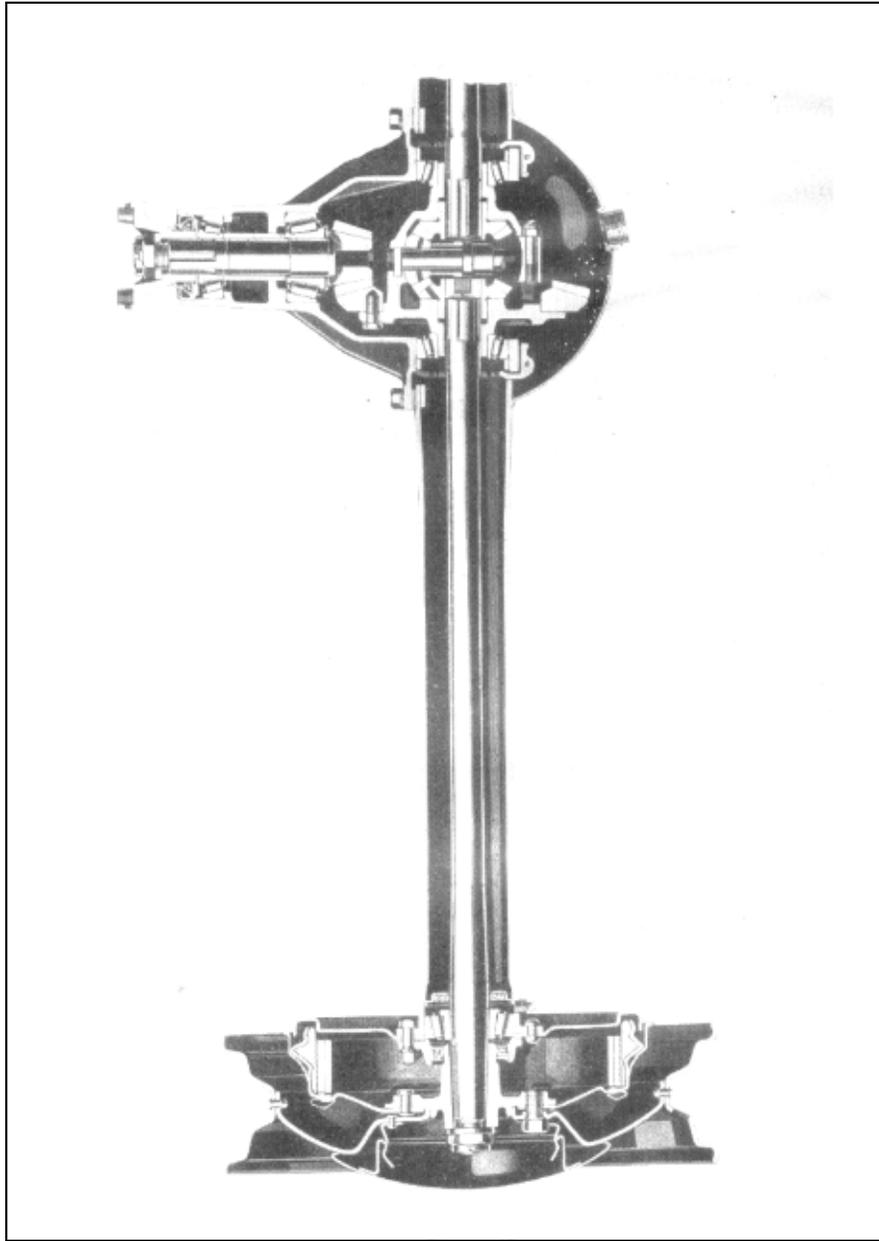
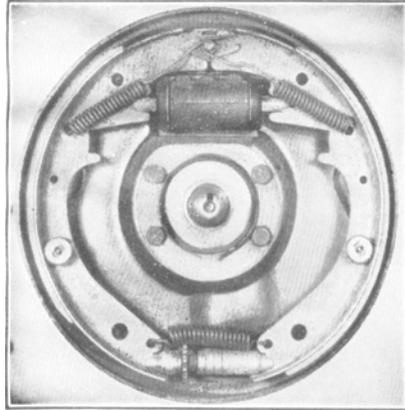


Figure 40

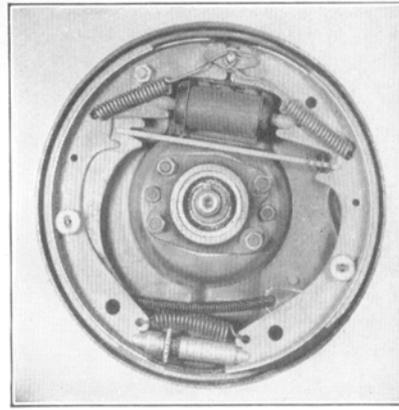
## BRAKE SYSTEM

**BRAKES**—Patented Double-Safe Hydraulic Brakes employing a reserve mechanical system operating from the same brake pedal, are used.

The brake shoes are of the Bendix Duo-Servo single anchor type, see Figs. 41 and 42. The shoes are expanded at the top or anchor end by the wheel cylinders, which are actuated by hydraulic pressure exerted by the master cylinder through foot pressure applied to the brake pedal.



**FRONT**  
**Figure 41**



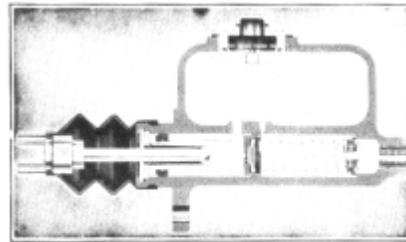
**R EAR**  
**Figure 42**

If at any time, the hydraulic system should fail due to an accident or some other cause, continued pressure on the foot pedal automatically applies the mechanical reserve system on the rear wheels. See Fig. 43.

**BRAKE FLUID**—Numerous rubber parts are used in the hydraulic system which makes it necessary that only Hudson Hydraulic Brake Fluid No. 21 be used. This fluid is entirely free of mineral oil and other ingredients which are detrimental to the rubber parts and may cause swelling and early deterioration.

The master cylinder, Fig. 44, is self-compensating and should be kept at least half full at all times. As dirt in the hydraulic system may cause leaks to develop always wipe off the master cylinder at the filler plug before removing plug to check the fluid level.

The hydraulic system must be bled if air enters the system. A spongy feeling pedal is usually an indication that bleeding is necessary.



**Figure 44**

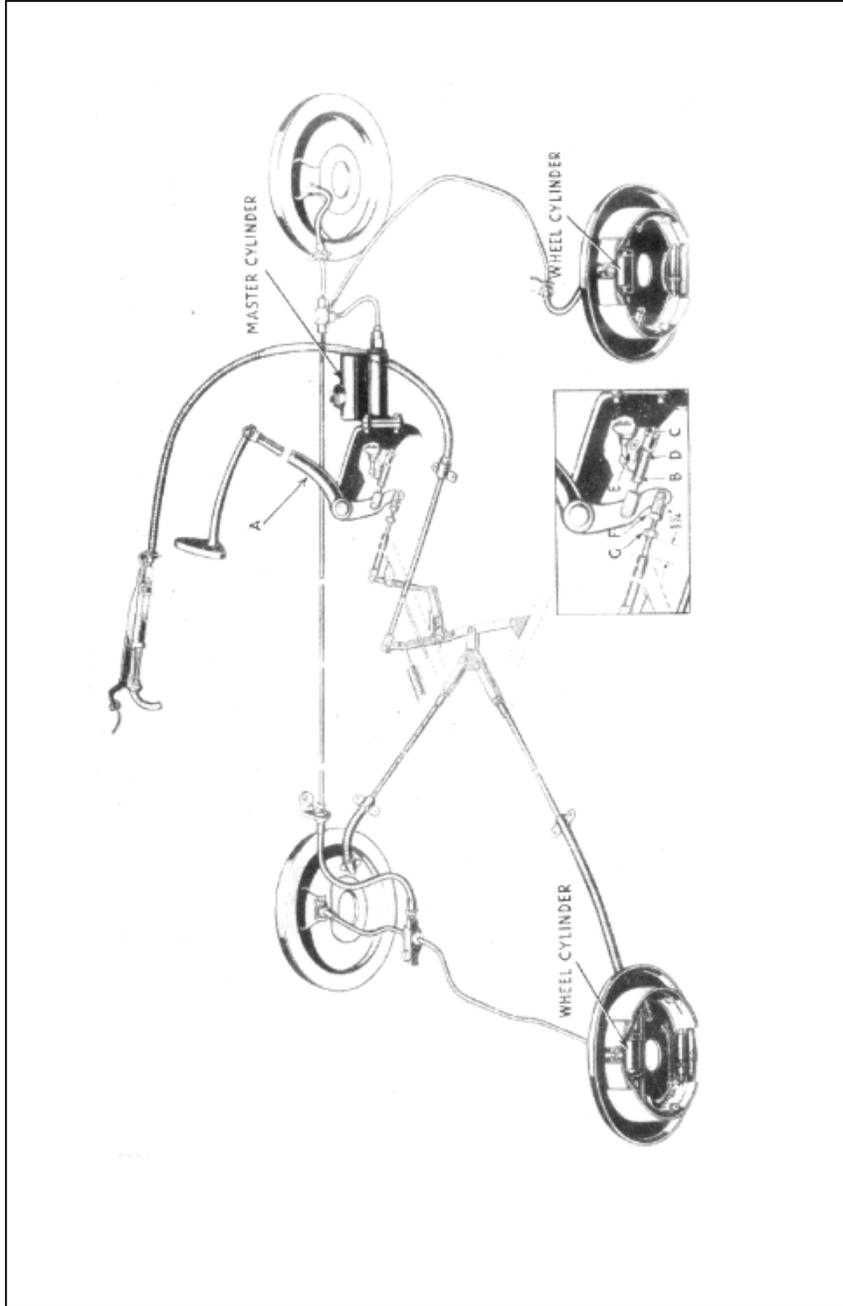


Figure 43

Have your Authorized Hudson Dealer check the fluid level periodically to insure proper brake operation.

**ADJUSTMENTS**—To insure proper operation of the mechanical reserve system it is important that 1/4 inches clearance be maintained between rear face of push rod (G), Fig. 43, and front face of the pedal push rod with the brakes released.

Brake adjustments should be performed by your Authorized Hudson Dealer. However, if an emergency arises where the brakes must be adjusted before you can reach an Authorized Hudson Dealer, the following adjustment procedure to compensate for lining wear can be used.

1. Jack up all wheels clear of the floor.
2. Be sure hand brake is fully released.
3. Remove wheel backing plate adjusting screw hole covers.

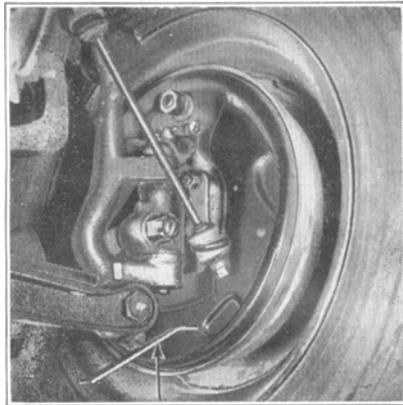


Figure 45

4. At each wheel, with a screw driver or suitable tool inserted through the slot in the brake backing plate, expand shoes against drum with adjusting screw, see Fig. 45, by moving outer end of tool toward center of backing plate until a heavy drag is noted when wheel is turned by hand.
5. Back off screw exactly 14 notches at each wheel by moving tool toward outer edge of backing plate.
6. Replace hole covers and lower car to floor.

Test car for brake balance. If one wheel skids before the others, loosen the adjustment rather than tighten the other screws.

A major brake adjustment involves a complete inspection of the braking system—shoe linings, mechanical follow-up, anchor adjustment, and the hydraulic system. This should be necessary only in the event that an adjustment for normal lining wear does not produce satisfactory braking results.

## FRONT SUSPENSION

Hudson's Auto-Poise Control Front Wheel Suspension is of the angularly set "wishbone" type, see Fig. 46. This arrangement incorporates the use of a front

stabilizing bar (except on Series 178 cars) which helps to keep the wheels straight ahead on an even course on rough roads and against side wind pressure. Center point steering is also employed to provide greater steering stability on all types of road surfaces and at high speeds.

Large diameter, soft acting coil springs of long life characteristics are used between the lower control arms and frame to provide easy riding qualities.

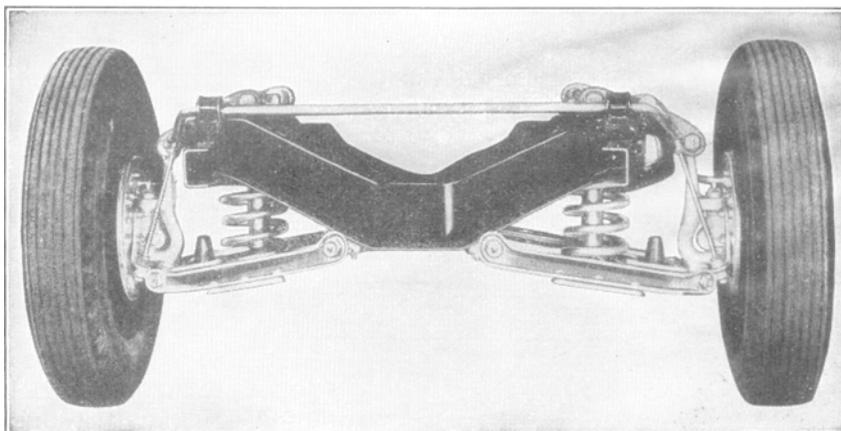


Figure 46

The upper and lower control arms are pivoted at their inner ends to permit each wheel to move vertically independently of the other as they pass over road irregularities.

**LUBRICATION**—All front suspension joint grease fittings should be lubricated every 1,000 miles with viscous chassis lubricant. For the various fitting locations see the "Lubrication Chart" at the front of this book.

### **MAINTAINING PROPER FRONT END ALIGNMENT**

To prolong the life, and assure easy car handling and maximum safety it is essential that proper front end alignment be maintained. Unintentionally striking the curb a severe blow when turning, parking, or skidding may not cause enough damage to make it visible to the eye, but will be reflected in the handling of the car at high speeds, or in abnormal tire wear.

Proper front end alignment is dependent on proper adjustment of these three factors :

**CAMBER**, the outward tilt of the front wheels at the top. **CASTER**, the backward or forward tilt of the spindle pins at the top.

**WHEEL TOE-IN**, the setting of the front wheels closer together at the front than at the rear.

Accurate gauges and carefully calibrated equipment are necessary to check and correct alignment. Therefore, it is suggested that any service requirements be referred to your Authorized Hudson Dealer who is best qualified to do this type of work.

### FRONT WHEEL BEARINGS

The front wheel bearings are of the tapered roller type, adjustable to compensate for wear and are adequately sealed against lubricant loss.

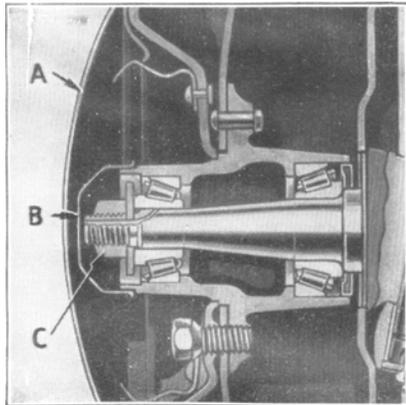


Figure 47

**ADJUSTMENT** — To check for looseness, raise the front end of the car and shake the wheel back and forth. If there is excessive looseness, adjustment should be made as follows :

Remove outer and inner hub caps (A) and (B), Fig. 47, using a pry. Remove cotter pin holding nut (C). Turn nut to the right until a slight drag is felt when turning the wheel by hand. Loosen nut just sufficiently to permit wheel to turn freely. Insert cotter pin, replace hub caps and lower car to floor.

**LUBRICATION**—Every 10,000 miles the bearings should be removed, cleaned, and repacked with four ounces of milled sodium soap base lubricant. Adjust bearings as instructed under "Adjustment."

### STEERING GEAR

The steering gear, Fig. 48, is of the worm and double roller tooth design. The worm revolves in two adjustable tapered roller bearings. The double roller tooth is mounted on needle roller bearings. The roller tooth shaft on Series 171, 172, and 178 rotates in two bronze bushings and on Series 173 and 174 needle roller bearings are used at this point.

This design provides ease of steering with freedom from frequent adjustments. Provisions for adjustments are, however, incorporated, should they be required after extensive service.

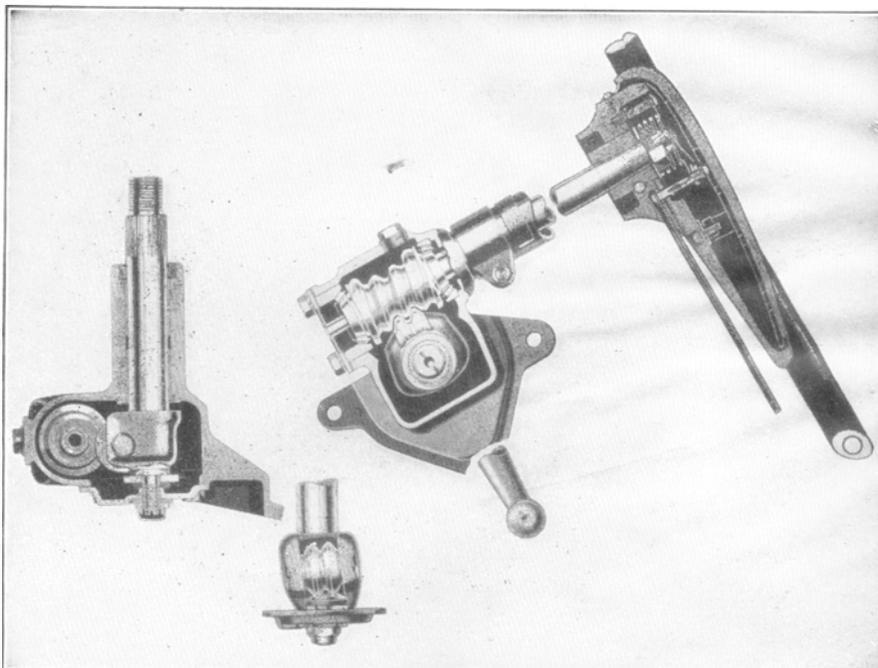


Figure 48

As special equipment is required to properly service this unit, all operations or adjustments required should be referred to your Authorized Hudson Dealer.

**LUBRICATION** — Every 1,000 miles the oil level in the steering gear housing should be checked by removing plug (G), Fig. 49. If level is low refill to bottom of hole with S.A.E. 90 E.P. gear oil, summer or winter. Be sure plug is securely tightened.

#### **DRAG LINK**

The drag link, Fig. 50, is fitted with adjustable bearings at the front and rear ends. Adjustments are required only in the event that

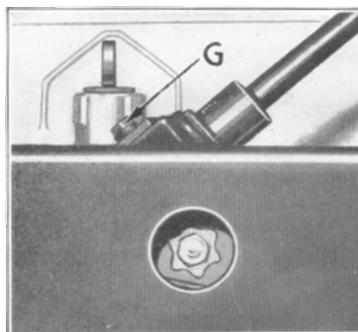


Figure 49

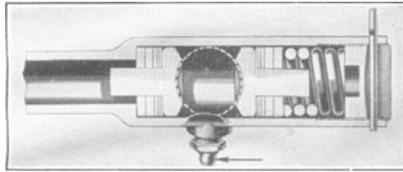


Figure 46

excessive clearance is felt in the bearings and when steering adjustments are made. As special equipment is required to adjust the drag link to its proper relationship to the steering gear, all operations should be performed by your Authorized Hudson Dealer.

**LUBRICATION**—Grease fittings are provided at the front and rear ends and these should be lubricated every 1,000 miles with

viscous chassis lubricant.

## RIDE CONTROL UNITS

### AUTO-POISE CONTROL

All models except Commercial cars are fitted with Auto-Poise Control, see Fig. 51, as standard equipment. This is a mechanical means of holding the front wheels in a true driving position to maintain road stability. It also prevents body sway, particularly when passing other cars at high speed and in driving around curves.

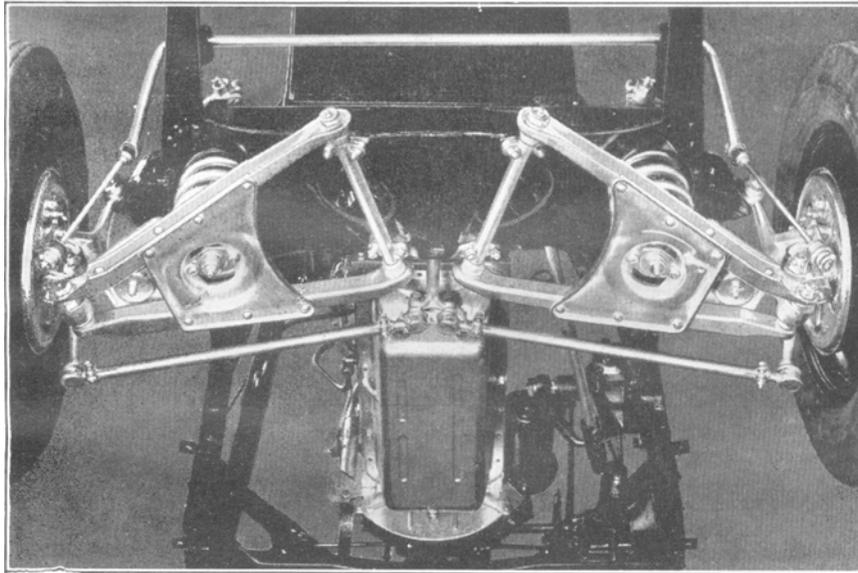


Figure 51

This unit consists of a steel bar mounted in rubber bushings attached to the front end of the frame. The ends are attached to the front wheel backing plates through rubber cushioned connectors.

No service attention is required of this device and no lubrication should be applied to the rubber joints.

#### **REAR LATERAL STABILIZER**

A rear lateral stabilizer, Fig. 52, is used as standard equipment on all Series except 178. One end of this device is assembled to the frame side

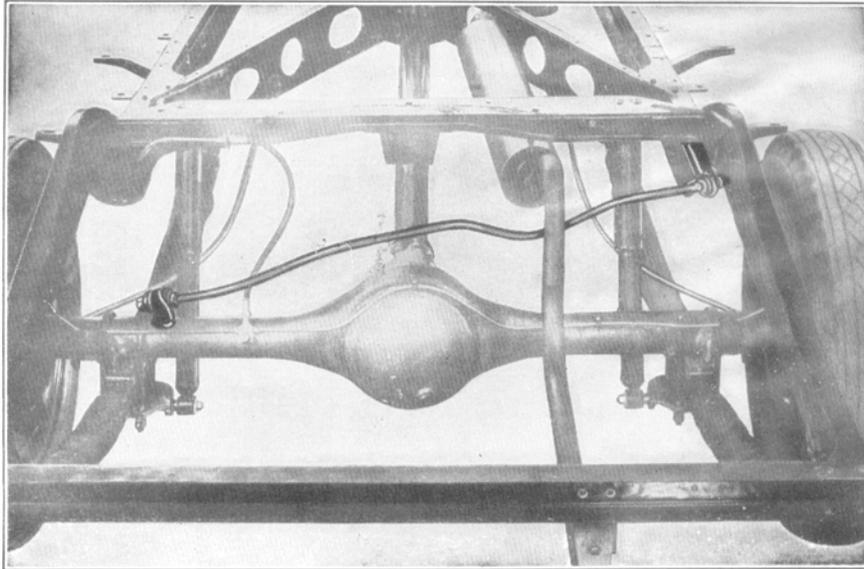


Figure 52

member and the other end to the rear axle housing. Its purpose is to control the horizontal movement of the body and car. It also prevents lateral shake of the axle under the car on rough roads.

The ends of the steel bar are cushioned in rubber and no lubrication should be applied to these points.

#### **REAR SPRINGS**

Rear springs are of long leaf, semi elliptical design. The front ends are attached to frame brackets with pivot bolts cushioned in rubber. The rear ends are attached to the frame through threaded, self-adjusting "U" type shackles operating in hardened steel, threaded bushings. The bushing threads are protected from road splash and dirt by rubber seals.

The cab pickup is fitted with a rear spring having neither cover nor inserts between leaves. All other models have rear springs with either covers or inserts between the leaves.

**LUBRICATION**—Use Viscous Chassis lubricant at 10,000 miles.

**Fabric Covers**—Remove and repack.

**Metal Covers**—Lubricate through holes in bottom of cover using special tool for this purpose.

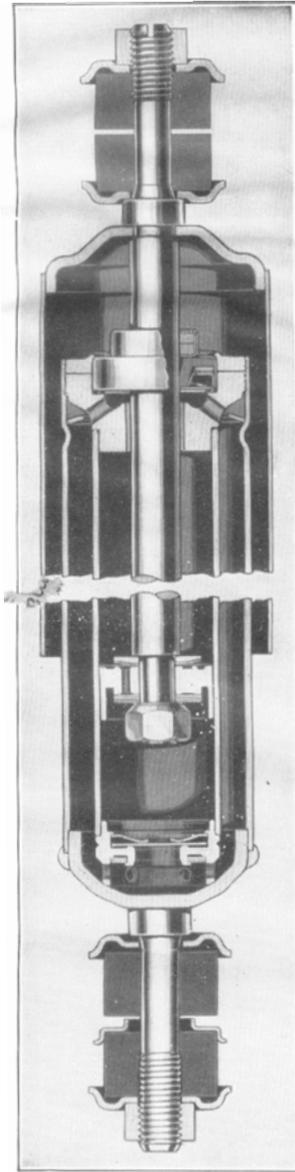


Figure 53

Rear shackle bushings are provided with grease fittings and these should be lubricated with viscous chassis lubricant every 1,000 miles.

Rear spring front pivot bolt bushings require no lubrication.

### SHOCK ABSORBERS

Direct double acting hydraulic type shock absorbers, Fig. 53, are used at the front and rear ends of all cars, except Cab Pickups which are fitted with front shock absorbers only.

The front shock absorbers are mounted axially within the front coil springs and are cushioned at the upper and lower ends in rubber grommets.

The rear units, which are identical in construction to the front units shown in Fig. 53, except that eyes are fitted at the upper and lower ends instead of studs, are also cushioned in rubber. At the upper end they are attached to the frame cross member, while at the lower end they are assembled to the rear spring clip plates.

The fluid is sealed in the shock absorbers and they require no further attention unless a leak should develop. In this event the faulty unit should be removed for repairs. As special tools are required to service the shock absorbers, and only Hudson Shock Absorber Fluid should be used to refill them, all shock absorber work should be performed by your Authorized Hudson Dealer.

## BODY

Hudson bodies are of steel construction throughout—floor, sides and roof welded to insure maximum strength and rigidity. Suitable insulation is used on all large panels to deaden sound. Sealing compound is used at all joints to prevent the entrance of drafts and dust.

Door locks can be locked from the inside or the outside without using the safety lock key. *Be sure when locking the doors by this method that the keys have been removed from the ignition lock and not left inside car, to avoid being locked out of the car.*

To lock the car from the inside, or outside without using the key, pull up on the small knob (B) projecting from the door window finish moulding. See Fig. 54. To unlock the lock from the inside push down on the knob.

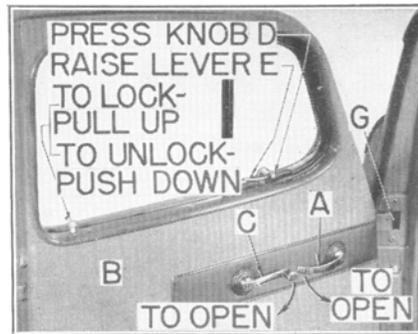


Figure 54

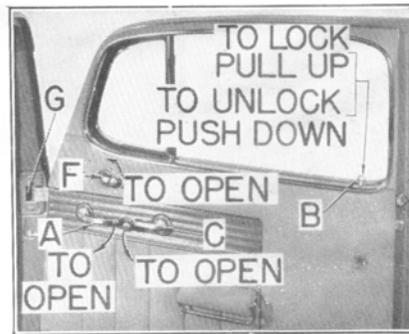


Figure 55

To lock the right or left front door with the safety lock, turn the key clockwise one-quarter turn and then back to original position. To unlock, turn the key counter-clockwise one-quarter turn and then back to original position.

*Be sure key numbers are recorded on your Ownership Card or some other suitable place.*

The doors are opened from the inside by pushing down on handles (A), Figs. 54 & 55. These can be operated only when the locking knob (B) is pushed down.

The door windows are operated by turning handles (C), Figs. 54 & 55.

Ventilator wings—friction type—are unlocked by pressing knob (D), Fig. 54, and raising handle (E).

Ventilator wings—crank type—are operated by turning handle (F), Fig. 55.

Quarter windows on 2-Door Sedan models are raised and lowered by turning the operating handles. On 4-Door Sedans with sliding windows, the handle projecting

above the window molding is raised slightly and moved backward to open the window and moved forward to close it.

Front door upper and rear door lower hinges are of the concealed type with a tension spring incorporated to hold the door in the opened position. This will prevent the doors from quickly closing when passengers are entering or leaving the car.

Door strikers and bumpers are of the adjustable type. In their normal setting the door should raise about 1/32" as the door dovetail rides over the pillar striker (A), Fig. 56. The dovetail is stationary on the door, while the striker is adjustable for movement up and down and sideways. When properly adjusted the doors should close as a slight pressure is applied.

The door rubber bumpers at the top and bottom of the door openings are adjustable sideways. They are correctly adjusted when they are compressed slightly as the door is closed.

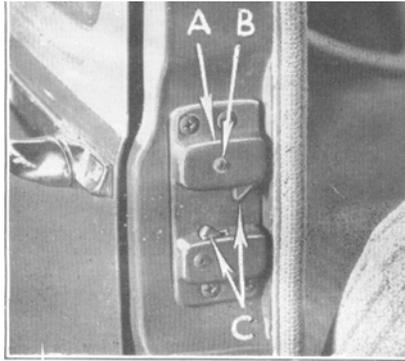


Figure 56

**LUBRICATION**—There are some parts on the body that require periodic lubrication. When using engine oil be sure to wipe off excess.

Door dovetail wicks and door striker wicks (B), Fig. 56, should receive a few drops of light engine oil every 1,000 miles.

Lower front door hinges should be lubricated every 1,000 miles with a few drops of light engine oil applied through the oil hole on the inside, accessible when the door is opened.

At intervals of 1,000 miles place a small amount (about the size of a pea) of viscous

chassis lubricant on the spring contact surface (G) of the concealed hinge, see Figs. 54 and 55.

Also lubricate door striker pawls, (C), Fig. 56, every 1,000 miles, using a pencil lubricant.

#### CARE OF THE FINISH

Your car is finished with high grade hand rubbed lacquer and with a reasonable amount of care it should be possible to maintain its original luster for the life of the car. Constant exposure to the elements—strong sunlight, rain, snow, and dust will cause the finish to become dull. If at all possible it is good practice to park the car in the shade if it is to remain in one place for any great length of time.

To remove grime and dirt the finish should be washed frequently and occasionally it should also be polished.

Figure 56

WASHING the car should never be done in strong sunlight or when the car is warm from standing in the sun. Always wait until the metal has cooled off. Use cold water and if the dirt is heavily caked, soak it off first, using ordinary garden hose. Dry it with a chamois and be careful that all grit is removed to prevent scratching the surface.

POLISHING the car is necessary at intervals to provide the finish with a protective coat. If ordinary washing does not remove the road grime use Hudson Polish and Cleaner.

A more durable, long lasting, high luster finish can be obtained by cleaning the surface with Hudson Pre-Wax Cleaner and then applying Hudson Wax Base Polish.

NEVER polish the car in the sunlight or when the metal is warm. Let it cool first. When cleaning the surface a slight amount of the color will be seen on the cloth. This, however, should be no cause for alarm as it is merely the loose pigment being cleaned off.

These cleaners and polishes may be purchased from your Authorized Hudson Dealer.

### **CARE OF CHROMIUM PLATED PARTS**

Ordinary chromium plated parts require no other attention than the cleaning they receive when the car is washed.

However, in the winter, when many municipalities use salt or calcium chloride to melt ice and snow on the pavements, these parts require a great deal more attention to prevent the finish becoming pitted and corroded. These melting agents are highly destructive to this type of finish and it is important that all trace of the salt be washed off each day.

An application of Hudson Chromium Polish after washing will assist in preserving the finish and provide added protection to the surfaces.

Bumper impact bars that are scratched through the finish should be sprayed with a coating of clear lacquer or have an application of Hudson Chromium Polish to prevent corrosion lifting off the plating.

Hudson Chromium Polish can be purchased from Authorized Hudson Dealers.

### **CLEANING FABRIC TOPS**

Soiled fabric tops used on Convertible models can be cleaned quite satisfactorily if proper instructions are followed.

Hudson Dry Cleaner, which is available through your Authorized Hudson Dealer, should be used. Select an area slightly larger than the soiled portion and with a soft, clean cloth or sponge moistened with Hudson Dry Cleaner, rub it in light successive strokes and work toward the center of the soiled area.

### **CARE OF THE UPHOLSTERY**

The same careful attention that you give the upholstered furniture in your home should be accorded the upholstery cloth of your automobile. Dust and dirt blown into the car when the windows are open settles in the fibres of the cloth and its abrasive action tends to wear the cloth and cause an unsightly appearance.

At least once a month, or oftener if local conditions warrant, it is good practice to brush the upholstery with a whisk broom or better still use the portable attachments usually supplied with most household vacuum cleaners.

### **CLEANING THE UPHOLSTERY**

Spots on the cushions can easily be cleaned off by using the following instructions.

Avoid using hot water and soap unless specifically called for. Never use gasoline as most brands contain tetraethyl of lead or coloring which is harmful to cloth, and it is also highly inflammable.

Note: When using cleaning fluid to remove spots use it sparingly. Just dampen a clean cloth or sponge with the fluid and select an area slightly larger than the soiled portion and rub from the outside in toward the center in successive strokes. This will avoid forming a ring and prevent the spot from spreading.

Hudson Spot Remover referred to herein is available at all Authorized Hudson Dealers.

### **GREASE SPOTS AND OIL**

Scrape off all excess grease with a dull knife. Moisten a cloth or sponge with Hudson Spot Remover and rub spot as directed above.

### **CHEWING GUM AND TAR**

First moisten lightly with Hudson Spot Remover, then scrape off with a dull knife.

#### **CANDY (Except Chocolate)**

Moisten a clean cloth in very hot water, rinse out and rub lightly as directed above. If an oily spot remains after drying, rub it lightly with a cloth moistened with Hudson Spot Remover.

### **CHOCOLATE CANDY**

Sponge lightly with LUKEWARM water. After drying, rub lightly as directed above with a cloth moistened with Hudson Spot Remover.

### **ICE CREAM**

Sponge lightly with LUKEWARM soapsuds, using a neutral soap. Rinse with cold water and allow to dry. If an oily spot remains, rub it lightly as directed above with a cloth moistened with Hudson Spot Remover.

**BLOOD**

Sponge lightly with COLD water. Apply a few drops of household ammonia, then sponge again with COLD water.

Caution,: Never use warm water as it will set the stain.

**FRUIT AND WINE**

Apply a little hot water to the stain. Rub lightly with a cloth moistened with hot water. Allow it to dry, then rub lightly as directed above with a cloth moistened with Hudson Spot Remover.

Caution: Soap or heat applied to a fruit or wine stain will cause it to set.

**COSMETICS**

Lipstick and creams may be removed by applying a few drops of Hudson Spot Remover to the stain and absorbing it quickly with a blotter. Repeat as necessary until the spot is removed.

**SHOE POLISH**

Black and tan polish can be removed by rubbing it with a cloth moistened with Hudson Spot Remover.

White polish can usually be removed by brushing with a whisk broom. If this does not remove it, moisten the spot with cold water, let it dry, then brush it again.

**URINE**

Sponge the spot lightly with a cloth dipped in lukewarm soapsuds (neutral soap) and then rinse well with a clean cloth rinsed in cold water. Next rub the spot with a clean cloth moistened in a solution of one part of household ammonia and five parts of water. After a minute, rinse it off with a clean moist cloth.

**DOG AND CAT HAIR**

Gather the hair together by rubbing the upholstery with a stiff sponge moistened with water. The hair can then be easily picked off.

**RUST SPOTS**

Clean these spots by sponging with a cloth moistened with lukewarm soapsuds (neutral soap).

**LEATHER AND IMITATION LEATHER**

Clean with lukewarm water and any mild soap, such as Castile. Work up a thin suds on a piece of cheese-cloth and rub over the surface. Wipe off the surface the second time, using a piece of cheese-cloth dampened with water. Finish by wiping with a dry cloth.

### MATTED MOHAIR

The pile can be restored to its normal appearance by applying a damp cloth and steaming it with a hot flatiron.

After cleaning upholstery cloth its appearance can be improved by brushing briskly with a whisk broom.

### CARPETS

Mud spots on the carpet can be removed by brushing briskly with a whisk broom or stiff brush. Then sponge **the spots with a cloth dampened with water.**

### CONVERTIBLE BROUGHAM TOP

(Hydraulic Type)

The raising and lowering of the Convertible Brougham top is accomplished by two double-acting hydraulic cylinders mounted between the rear seat trim panels and body quarter panels. These cylinders are connected to an electric pump, located under the rear seat cushion, by means of pipe lines.

Twice each year—when car is prepared for summer or winter, remove filler cap from top of reservoir and fill to a HALF FULL level : use only Hudson Hydraulic shock absorber fluid. Top should be operated occasionally to keep mechanism free. The top may also be lowered or raised by hand : This must be done slowly and without unnecessary force.

Operation of the motor is controlled by a two-way switch mounted on the instrument panel.

TOP OPERATION—CAUTION : CAR MUST BE STATIONARY WHEN TOP IS BEING LOWERED OR RAISED TO PREVENT DAMAGING IT.

TO LOWER-

1. Beginning at the center, unlatch three hold-down clamps from windshield header.
2. Raise header slightly by hand, freeing from location dowels on top of windshield.
3. Loosen zippers and drop rear curtain ; loosen snap fastener outside of body at right and left rear quarter.
4. Pull out control switch knob on instrument panel. Hold knob in this position until top is completely lowered.
5. Install top boot.

TO RAISE TOP

1. Remove top boot and see that top is free.
2. Push in control switch knob and hold in this position until top header is within reaching distance from front seat.
3. Secure rear window zippers and attach snap fasteners, right and left quarter outside of body.
4. Open both front doors to avoid damaging wind cord as top is fastened down.
5. Grasp two end hold-down clamps ; pull top down over locating dowels. Fasten all three clamps in position.

## HUDSON WEATHER-MASTER (Optional Equipment)

This unit (shown in Fig. 57) permits operation of the car in winter weather without the necessity of opening the windows to eliminate window steaming. When the car is in motion fresh air entering through the open cowl ventilator is filtered of dust and rain by passing through a filtering pack in the cowl ventilator. The fresh, filtered air is then heated as it passes through the heater core. Temperature control is provided by means of a valve operated by a lever at the bottom of the heater housing. This regulates the amount of hot water admitted to the heater. Outlets are also provided for defrosting.

The only source of intake air for the Hudson Weather-Master heater is the cowl ventilator. Therefore the ventilator must be open when using the heater. Windows should be closed tightly for best results.

The amount of heat output is best regulated by means of the water control valve operated by the handle mounted underneath the heater. Moving this handle toward the right opens the water valve and gives maximum heat output. Moving it towards the left reduces the water flow and permits the operator to adjust the heat output to suit the weather and driving conditions. When the handle is moved fully to the left the water flow is entirely shut off, permitting use of the cowl opening to obtain fresh, filtered air in mild, summer or rainy weather.



Figure 57

When driving at high speeds in extremely COLD weather more satisfactory heating may be obtained with the ventilator PARTLY closed. At lower speeds, such as in city driving, it is best to open the ventilator fully and regulate the heat by means of the water valve. This will bring in the maximum volume of air and assist in keeping windows from fogging. Under most ordinary driving conditions the flow of air from the cowl ventilator will be ample to supply all the heat required. However, at very low speeds, when stopped, or when driving with a tail wind, it will be necessary to operate the heater fan to supplement the natural flow. This is controlled by the switch knob on the front of the heater. This switch has two operating positions, providing fast and slow fan operation. The fan must also be used when it is necessary to defrost the windshield.

A shutter controlled by a knob is provided on the left side of the Hudson Weather-Master to prevent too much heat being thrown on the driver's feet. Moving this knob downward closes the shutter.

### HUDSON APPROVED ACCESSORIES

Your Authorized Hudson Dealer has available for installation on your car a complete line of Factory Approved Accessories. The addition of these items will greatly enhance the appearance of the car, improve comfort and provide greater safety.

These accessories harmonize beautifully with both the interior and exterior appointments of your Hudson car.

Among the accessories available are :

Bumper Extensions	Gas Tank Locking Cap	Rear Compartment Light
Cigar Lighters	Hydraulic Bumper Jack	Seat Covers
Compass	Large Hub Caps	Spare Tire Valve
Direction Indicator	License Plate Frames	Extension
Driving Lights	Locker Box Light	Spot Light (Right or
Electric Clock	Oil Filter	Left Hand Installation)
Exhaust Extensions	Radio	Under Bonnet Light
Fender Lamps	Rear View Mirror—	Vanity Mirror
Fire Extinguisher	Outside—RE. or L.H.	Visor—Right Hand
Fog Lamps	Rear View Mirror—	Wheel Trim Rings
Gasoline Filter	Oval	Windshield Washer

### GENUINE HUDSON SUPPLIES

A complete line of high quality supplies, bearing approval of the Hudson Laboratories, is available. These supplies enable the owner to pre-serve the finish and clean interiors and chromium plated parts. Essential items for the proper maintenance of your car are included in this group. Among the items stocked by Hudson Dealers are:

Black Rubber Finish	General Use Oil	PiB—Ignition
Chromium Polish	Glass Cleaner	Insulation
Combination Cleaner	High Gloss Wax	Polish and Cleaner
and Wax	Hudsonite Clutch	Pre-Wax Cleaner
Door-Ease	Compound	Radiator Cleaning Kit
Fabric Cleaner	Hydraulic Brake Fluid	Radiator Rust Preventive
Gasket Cement	Hydraulic Top Lift Fluid	Shock Absorber Fluid
	Penetrating Oil	

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