HUDSON

1937

OWNER'S MANUAL

TO THE OWNER
of this
HUDSON EIGHT MOTOR CAR

A great deal of money, time and care has been devoted to the proper designing, manufacturing and preparation of this car for delivery into your hands.

We share your pride in its character and appearance, and our sincere hope is that you derive from its operation the full enjoyment and utility to which you looked forward when purchasing it.

For these reasons, may we take the liberty of suggesting that a fine mechanism such as this new car of yours will always respond with its best to considerate treatment and care?

It will repay you well for the slight outlay in attention and cost required to give it regular and proper lubrication, inspection at stated intervals, and such adjustments as may be indicated from time to time. Hudson and Terraplane Distributors and Dealers in your community, and practically everywhere you may drive, are prepared with equipment facilities and experienced personnel to give your car uniform, proper and complete attention in these respects at moderate prices for the materials supplied and services rendered. We recommend to you their expert and friendly interest in your car.

As to this manual itself, its chief purpose is to acquaint you with the means of taking the best care of your car, so that you may derive from it the full measure of operating quality and long economical life built into it at the factory. Will you cooperate to the extent of reading this manual and keeping it in the locker box of your car for ready reference as needed?

HUDSON MOTOR CAR COMPANY
Detroit, Michigan

Index

A

	Page
Accelerator	12
Accessories	59
Air Cleaner	23
Anti-freeze	29
Axle—Front	8–38
Axle—Rear	8–34

B

	Page
Battery—Care	50
Battery—Registration	50
Bodies	52
Body—Trim Panels	54
Body—Ventilation	55
Brakes	9–12–44
Brake Adjustment	46
Brake Fluid	45
Breaker Points	21
Breaking-in Instructions	14

C

	Page
Camber	39
Carburetor	13–22
Carburetor Choke	23
Care of Car Interior	57
Care of Finish	56
Care of Folding Tops	58
Caster	39
Chassis Dimensions	9
Chassis Lubrication	Inside Back Cover
Cigar Lighter	59
Clutch	8–10–31
Clutch—Automatic Control	58
Clutch Pedal Adjustment	32
Combination Fuel Pump and Vacuum Pump	60
Cooling System	7–27
Crankshaft, Connecting Rods and Pistons	17
Crankcase Ventilation and Oil Conditioning	18

D

	Page
Door Adjustment	53
Drag Links	42
Draining Cooling System	28
Driving Hints	16
Dust Storm Precautions	25

E

	Page
Electric Clock	59
Electric Hand	11–59
Engine	6–17
Engine Tuning	25
Equipment	58

F

	Page
Fan Belt	27
Fender Lamps	60
Front Axle	8–38
Front Seat Adjustment	10–54–55
Front Stabilizer	42
Front Wheel Alignment	38
Front Wheel Bearing Adjustment	38
Fuel Compensation	22
Fuel Pump	24
Fuel System	7–22
Fuses	13

G

	Page
Gasoline Gauge	13
Gasoline Mileage	16
Gear Shift Lever	11–12
Generator	26
Generator Charging Signal	14
Governor	15

H

	Page
Headlamps	47
Headlamp Adjustment	47
Heaters	60
Hudson Approved Accessories	59
Hydraulic Hill-Hold	59

Index (Continued)

I

	Page
Ignition	7–20
Ignition Timing	21
Inspection Service	4

K

Keys	4

L

Lamp Bulb Replacements	48
Lamp Bulb Specifications	8
License Data	6
Lighting System	7
Lights	12
Lubricants	16–19
Lubrication System	18
Lubrication—	
Chassis	Inside Back Cover
Clutch	31
Clutch Pedal	32
Distributor	21
Door	54
Generator	27
Rear Axle	36
Starter	26
Steering Gear	42
Transmission	34
Universal Joints	34
Wheel Bearings	39
Luggage Space	55

M

Manifold Heat Control	23

O

Oil Capacity	18
Oil Economy	16
Oil Pressure Signal	13
Operation	10

P

Pistons	7

R

Radio	60
Radiator	15–28
Rear Axle	8–34

S

	Page
Seat Adjustment	10–54–55
Selective Automatic Shift	11
Shock Absorbers	44
Spring Suspension	38–44
Starter	13–26
Starting, Lighting and Ignition	7
Starting the Engine	14
Starting Motor	13–26
Steering Gear	9–40
Steering Gear Adjustment	41
Storage—Preparing for	62

T

Technical Information	6
Terminals	13
Tires	9–50
Tire Inflation Pressures	51
Tire Removal—Spare	51–52
Tire Wear	16–52
Transmission	8–32
Transmission Control	11
Trim Panels	54

U

Universal Joints	34

V

Valve Tappet Adjustment	17
Valve Timing	18
Ventilation	55
Visor—Inside	59

W

Warranty	4
Water Pump	27
Water Temperature Gauge	13
Wheels	50
Wheel Alignment	38
Wheel Bearing Adjustment	36–38
Windshield Defroster	60
Wiring Diagram	49

Warranty

"We warrant each new passenger automobile 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 and Terraplane Distributor or 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.

Keys

Since it is necessary to omit the numbers on the locks for theft protection, the key numbers should be noted on your Identification Card or in some other accessible place. Keys can be supplied *only* by number. For your own protection in case of loss of keys, *record the numbers.*

Inspection Service

Upon delivery of the new car the Dealer will furnish the owner with an Owner's Service Policy and Identification Card, which entitles the owner to replacement of any defective parts in accordance with the Standard Warranty.

The car will be inspected and lubricated by the Dealer who sold the car at the expiration of 500 miles and 1,500 miles of driving at no charge other than the list price of engine oil, lubricants or supplies used. If the car is taken to a Hudson and Terraplane Dealer other than the one who sold it, the inspections will be made at a nominal cost.

The inspections include the following operations:

500-Mile New Car Inspection

Lubrication and Inspection Procedure

1. Install Fender and Seat Covers
2. Check Window Regulator Operation
3. Check Operation of All Locks and Keys
4. Check Seat Adjustment Operation
5. Check Operation of Signals and Instruments
6. Check Cowl Ventilator Operation
7. Check Operation of All Lights
8. Check Radio Operation
9. Check Windshield Wiper Operation
10. Check Electric Hand Operation
11. Check Cigar Lighter Operation
12. Lubricate Door Locks and Hinges
13. Lubricate Door Strikers and Dovetails
14. Lubricate Water Pump
15. Oil Generator
16. Oil Starter
17. Oil Hood Locks and Hinges
18. Check for Water Leaks
19. Tighten Cylinder Head Stud Nuts
20. Lubricate Hood Lacing (L. H. side)
21. Check Radiator Water Level (anti-freeze in winter)
22. Check Fan Belt Adjustment
23. Check Battery and Connections
24. Check Generator Charging Rate
25. Check Fluid in Master Cylinder
26. Check Clutch Lubricant
27. Check Steering Gear Lubricant
28. Check Clutch Pedal Clearance
29. Oil Distributor (oiler and wick)
30. Oil Hood Locks and Hinges (R. H. side)
31. Oil Throttle Linkage
32. Check Air Cleaner for Oil
33. Lubricate Hood Lacing (R. H. side)
34. Remove Carburetor Governor
35. Adjust Tappets
36. Tune up Engine
37. Check Tire Pressure
38. Check Wheel Alignment
39. Check Rear Wheel Hub for Tightness
40. Check Pitman Arm for Tightness
41. Check Spring Clips
42. Check Front Wheel Bearing Adjustment
43. Check Wheel Hub Bolts
44. Change Engine Oil
45. Lubricate Clutch Throwout Bearing
46. Lubricate Pedals Shaft
47. Check Transmission Lubricant
48. Check Rear Axle Lubricant
49. Lubricate All Chassis Fittings

1,500-Mile New Car Inspection

Lubrication and Inspection Procedure

1. Install Fender and Seat Covers
2. Check Operation of All Locks and Keys
3. Check Operation of Instruments and Signals
4. Check Operation of All Lights
5. Check Radio Operation
6. Check Windshield Wiper Operation
7. Check Electric Hand Operation
8. Lubricate Door Locks and Hinges
9. Lubricate Door Strikers and Dovetails
10. Check Engine Oil Level
11. Lubricate Water Pump
12. Oil Generator
13. Oil Starter
14. Oil Hood Locks and Hinges (L. H. side)
15. Tighten All Hose Connections
16. Lubricate Hood Lacing (L. H. side)
17. Check Radiator Water Level (anti-freeze in winter)
18. Check Fan Belt Adjustment
19. Check Battery and Connections
20. Check Generator Charging Rate
21. Check Steering Gear Lubricant
22. Check Fluid in Master Cylinder
23. Oil Distributor (oiler and shaft wick)
24. Oil Hood Locks and Hinges (R. H. side)
25. Oil Throttle Linkage
26. Lubricate Hood Lacing (R. H. side)
27. Tune up Engine
28. Check Tire Pressures
29. Check Wheel Alignment
30. Check Spring Clips
31. Check Front Wheel Bearing Adjustment
32. Check Wheel Hub Bolts
33. Lubricate Clutch Throwout Bearing
34. Lubricate Pedals Shaft
35. Check Transmission Lubricant
36. Check Rear Axle Lubricant
37. Lubricate All Chassis Fittings

License Data

De Luxe Models	Custom Models
122" Wheelbase	*122" Wheelbase*
Brougham	Brougham
Touring Brougham	Touring Brougham
3-Passenger Coupe	3-Passenger Coupe
4-Passenger Coupe	4-Passenger Coupe
Convertible Brougham	Convertible Brougham
Convertible Coupe	Convertible Coupe
Sedan	Sedan
Touring Sedan	Touring Sedan
Starting Serial Number 74101	Starting Serial Number 75101
129" Wheelbase	*129" Wheelbase*
Sedan	Sedan
Touring Sedan	Touring Sedan
Starting Serial Number 76101	Starting Serial Number 77101

Car Serial Number—Located on plate on right front door hinge pillar above upper hinge.

Engine Number—Stamped on boss near top and front at left side of cylinder block.

Engine Number (All Models)—18000 and up.

Number of Cylinders 8	N. A. C. C. Horsepower Rating. 28.8
Cylinder Bore . . . . . 3"	Piston Displacement . . . . . 254 cu. in.
Stroke of Piston . . . . . 4½"	

Technical Information

Engine

Type	8 Cylinders in Line
Compression Ratio	6.25 to 1
Actual Horsepower Developed—	
6.25 to 1 Compression	122 at 4200
Firing Order	1-6-2-5-8-3-7-4
Number Main Bearings	5
Main Bearing Clearance	.001"
Main Bearing End Play	.006"-.012"
Valve Material	Silicon Chrome Alloy Steel
Valve Head Diameter	Intake, 1½"; Exhaust, 1⅜"
Valve Tappet Clearance (Hot)	Intake, .006"; Exhaust, .008"
Camshaft Drive	Gear

Connecting Rod Lower Bearing Clearance	.001"; End Play, .006"-.010"
Piston Material	Lo Ex Aluminum Alloy
Piston Type	T Slot Cam Ground
Piston Weight, Ounces	10.75
Skirt Clearance	.002"
Number Piston Rings	Compression, 2; Oil Control, 2
Width of Piston Rings	Compression, $\frac{3}{32}$"; Oil Control, $\frac{3}{16}$"
Piston Ring Gap	.009"-.011"
Lubricating System	Hudson Duo-flo Automatic
Oil Pump Type	Oscillating Plunger
Oil Reservoir Capacity	7 Quarts
Capacity of Lubricating System	9 Quarts

Cooling System

Type	Pressure Pump Circulation
Radiator Type	Ribbon Cellular
Cooling System Capacity	5 Gallons
Fan Belt	"V" Type

Fuel System

Carburetor	Make, Carter; Type, Duplex Down Draft; Size, 1"
Choke Control	Automatic
Heat Control	Automatic
Fuel Delivery	Pump
Air Cleaner	Intake Silencer Type
Gasoline Tank Capacity	16½ Gallons

Starting, Lighting and Ignition

Make	Autolite
Spark Control	Automatic
Timing	Dead Center
Firing Order	1-6-2-5-8-3-7-4
Distributor Gap	.020"
Spark Plug Type	Champion J-8—Metric
Spark Plug Size	14 Mm.
Spark Plug Gap	.025"
Generator Regulation	Third Brush and Voltage Regulator
Generator Charging Rate	Cold, 26 Amps.; Hot, 24 Amps.

Lamp Bulb Specifications

	C. P.	Base	Voltage	Mazda No.
Head	32–32	D. C.	6–8	2331
Head—Export	21–50	D. C.	6–8	2520D
Parking	1	S. C.	6–8	55
Fender Lamp	3	S. C.	6–8	63
Dash Signals	1	S. C.	6–8	51
Instrument	1	S. C.	6–8	55
Service Light	1	S. C.	6–8	51
Stop and Tail	3–21	D. C.	6–8	1158
License Lamp	3	S. C.	6–8	63
Dome	15	S. C.	6–8	87

Fuse—Headlamp Circuit, 20 Amps.
Tail Lamp Circuit, 20 Amps.

Clutch

Type. . . . . Oil Cushioned, Single Plate
Clutch Pedal Clearance at Floor Board. . . . . 1½″

Transmission

Type. . . . . Selective
Gear Ratio. . . . . Low, 2.42; Second, 1.6; High, 1; Reverse, 2.99
Lubrication. Summer, S.A.E. 90 E.P.; Winter, S.A.E. 80 E.P.; Capacity, 3 Pounds or Pints.

Rear Axle

Type. . . . . Semi-Floating
Bearing Type. . . . . Taper Roller Throughout
Gear Ratio. 4 1/9:1, 4 5/9:1
Gear Ratio—Optional—Models 74 and 75 only. 3 8/9:1, 3 5/9:1
Lubrication. Summer, S.A.E. 160 E.P.; Winter, S.A.E. 90 E.P.; Capacity, 3 Pounds or Pints.

Front Axle

Toe-in. . . . . 0 to ⅛″
Caster. . . . . 1° to 2°
Camber. . . . . 1° to 1½°

Brakes

Type	4-Wheel Hydraulic
Size	$11\frac{1}{16}$" x $1\frac{3}{4}$"
Clearance Between Lining and Drum	.010"
Clearance for Mechanical Follow-up	$1\frac{29}{64}$"

Steering Gear

Type	Variable Pitch Worm and Roller Tooth
Gear Reduction	18.2 to 1
Lubricant	Summer, S.A.E. 160 E.P.; Winter, S.A.E. 90 E.P.

Tires

Size—Standard	16 x 6.25
Size—Optional	15 x 7.00
Air Pressure—16 x 6.25	Front, 24; Rear, 32
Air Pressure—15 x 7.00	Front, 22; Rear, 28

Chassis Dimensions

Wheelbase	122" and 129"
Tread	Front, 56"; Rear, $57\frac{1}{2}$"
Road Clearance (Center)	Front Axle, $8\frac{9}{16}$"; Rear Axle, $8\frac{7}{16}$"
Wheel Jack	Bumper Type
Over-all Length, including Bumpers—	
Brougham	199"
Coupe	199"
Sedan	199" and $202\frac{3}{8}$"
Over-all Width, including Fenders—	
Front	71"
Rear	72"

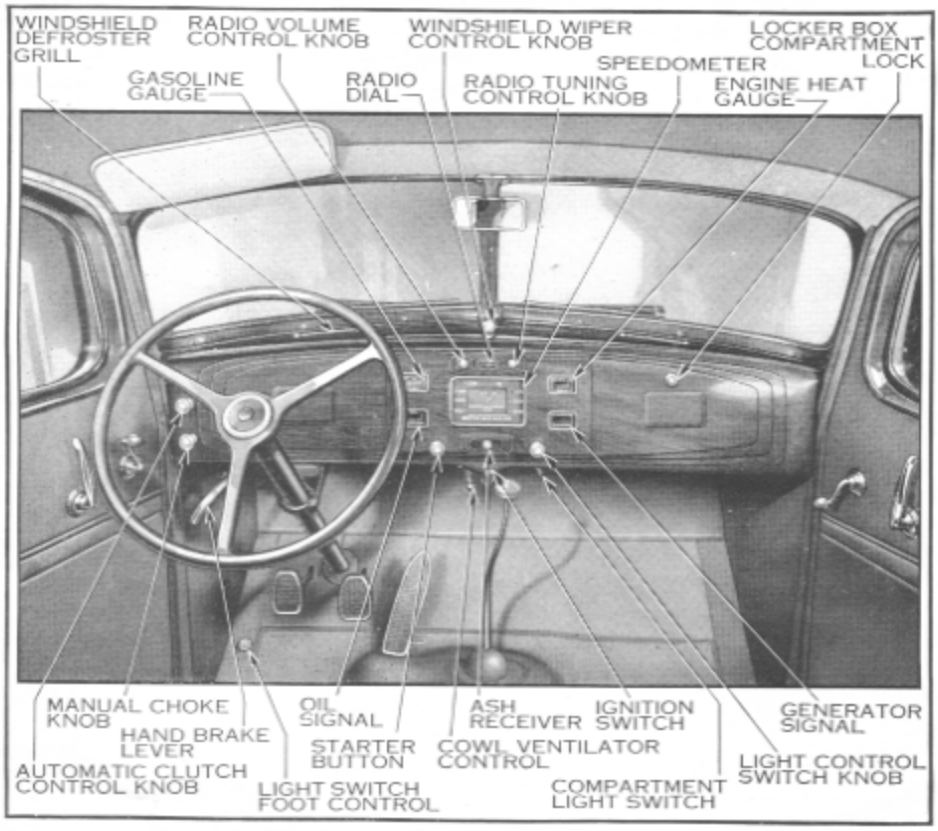


Figure 1

OPERATION

Although the method of operating your Hudson Eight follows standard practice in many respects, there are, however, a number of distinctive features incorporated in its design. In order that you may become acquainted with their relation to the operation of the car, we suggest that you read carefully the following paragraphs:

Front Seat Adjustment

The matter of driving comfort is foremost in the minds of all car owners. Realizing that much of this feature is determined by the front seat position, an adjustment control, Figure 31, has been provided at the left-hand front corner of the front seat. We suggest you adjust the seat to your requirements by pulling upward on the control knob before starting to drive the car.

Clutch

The clutch is disengaged in the conventional manner by depressing the left foot pedal, Figure 1, to release the engine drive from the transmission. Auto-

matic Vacuum Clutch Control is available as an option on all models. When the car is so equipped, it is controlled by a switch, the knob of which is located at the left side of the instrument panel, Figure 1. When the Clutch Control knob is pushed in, the clutch is operated by the Automatic Vacuum Clutch Control. The clutch is then disengaged merely by raising the foot from the accelerator pedal. By depressing the accelerator pedal, the clutch is re-engaged.

The Automatic Vacuum Clutch Control is rendered inoperative at speeds above 15 miles per hour in "**high**" gear by means of a solenoid valve which controls the flow of vacuum.

Selective Automatic Shift

When the Automatic Clutch Control is combined with the Electric Hand it provides a Selective Automatic Shift by means of which the clutch is operated and gears are shifted without physical effort other than that required to flick the finger tip control lever into the desired gear position.

Transmission Control

The transmission operation conforms to the standard shift. The clutch must be disengaged (either by depressing the clutch pedal or by removing the foot from the accelerator pedal) before shifting gears.

Electric Hand

The Electric Hand transmission control, which is a factory option, is a means of simplifying the method of shifting gears and appeals particularly to owners because of its ease of handling.

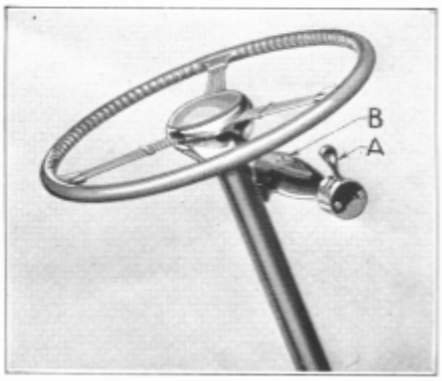


Figure 2

The operation of the Electric Hand is controlled by a small lever attached to a mounting on the steering column, just below the steering wheel. The gear is selected merely by moving the small lever (A), Figure 2, with a finger of the right hand. Then by depressing the clutch pedal fully to the floor board the actual shifting of gears is accomplished.

The method of selecting gears, that is, the positions to which the selector lever is moved, is in the same rotation as that used in the conventional manual shift. The neutral position of the selector lever is to the extreme right end of the horizontal bar of the "H." plate.

A small "off and on" switch (B), Figure 2, is provided on the selector switch to prevent tampering with the shifting mechanism and is also used to make the "Electric Hand" inoperative when the car is being serviced.

We suggest the following procedure in operating the "Electric Hand" equipped car:

(a) Be certain the "off and on" switch is in "on" position.

(b) Depress clutch pedal fully to floor board.

(c) Turn ignition switch "on."

(d) Press starter button.

Now with the engine running and the clutch disengaged (if vacuum clutch control is being used it is not necessary to hold the clutch disengaged with the foot after the engine is started; simply take the foot off the accelerator pedal), move the selector lever to the gear position desired and the shift into that gear will be accomplished immediately. Allow the clutch to engage while depressing the accelerator pedal and the car will move normally in the gear selected. When it is desired to make another shift, simply depress the clutch pedal, move the lever into the gear position desired and allow the clutch to re-engage.

It should be remembered that when changing from one gear to another it is always necessary to depress the clutch pedal fully to the floor board when the actual shift of gears is desired (not necessary to depress clutch pedal, but merely raise the foot from the accelerator pedal when automatic clutch control is used).

The need of a **gear shift lever** is eliminated on cars equipped with "Electric Hand"; however, a lever is provided should it be necessary to shift the car when the engine is not running. It should be remembered that, inasmuch as the operating force of the "Electric Hand" is vacuum and this is not available unless the engine is running, it is impossible to shift gears unless the hand gear shifting lever which is provided with the tool equipment is used. This lever may be used by removing the cap in the floor mat, which exposes the top of the transmission control. Any desired shift can be made with this lever by simply depressing the clutch pedal to disengage the clutch. The "off and on" switch on the selector mounting should be turned "off" while shifting lever is in place.

Brakes

The brakes are operated on all four wheels by hydraulic pressure by depressing the right foot pedal, Figure 1, while the parking brake operating on the two rear wheels is set by pulling backward on the hand lever, located under the dash to the left of the steering wheel as shown on Figure 1.

The braking system incorporates a mechanical follow-up arrangement which only comes into play in the event of an accident to the hydraulic system. By this means the rear wheel brakes are automatically applied by additional travel of the foot pedal.

Accelerator

The foot accelerator controls the engine speed. The engine idling speed is automatically increased when the engine is cold to prevent stalling.

Lights

The lights on the car are operated by a main lighting switch, the knob of which is located on the instrument panel, Figure 1, to the right of the ash receiver; the front compartment light on the lower ledge of the instrument panel, Figure 1, just below the main lighting switch knob; the driving light control switch on the toe board, to the left of the clutch pedal, Figure 1; the dome lamp switch located on the dome lamp on Broughams and Coupes and on the right-

hand door lock pillar post on Sedans and a door switch located on the rear door hinge pillar on Custom Sedans; and the stop lamp switch located on the brake pedal bracket.

The main lighting switch has three positions: The "off" position being to the extreme left, clockwise movement of the knob to the next position gives parking lights, while a further clockwise movement to the extreme right position gives city and country driving lights.

When the main lighting switch is in the driving position, the light control (foot) switch becomes effective. By depressing this control button and releasing it, the headlight beams may be deflected to the city driving position, immediately in front of the car, or to the country driving position, in which the light will be projected a considerable distance ahead of the car.

The front compartment and dome lamp switches are of the conventional toggle type.

The stop lamp switch is located on the pedal mounting bracket forward of the brake pedal so that the stop light is illuminated when the brakes are applied.

Terminals

Two extra terminals are provided at the bottom of the main light switch for connecting electric accessories.

Fuses

Two fuses are provided in the main light switch: The vertical fuse for light terminals and the horizontal fuse for the two extra terminals.

Starter

The starter is controlled by a push button located on the instrument panel to the left of the ash receiver, Figure 1. The ignition switch must be turned on, and on "Electric Hand" equipped cars the clutch pedal must also be depressed when the starter button is depressed.

Carburetor

The carburetor is equipped with Climatic Control (self-controlled choke) which gives correct fuel mixture for all starting and running conditions without any manual control on the part of the operator.

Water Temperature Gauge

The water temperature gauge is located at the upper right corner of the instrument group and is operative only when the ignition switch is turned on.

Gasoline Gauge

The gasoline gauge, located at the upper left corner of the instrument group, is likewise operative only when the ignition switch is turned on.

Oil Pressure Signal

The oil pressure signal is located at the lower left corner of the instrument group. The words "Oil Pressure" are seen clearly at all times. When the ignition switch is turned on the word "No" appears between "Oil" and "Pressure." As soon as the engine is started and at speeds above idling speed, the light

behind "No" should extinguish, indicating that there is oil pressure. Should the word "No" flash on and off while the engine is idling it indicates that there is pressure. However, if "No" flashes on and off above idling speed, the engine should be stopped and the oil level in the reservoir checked. If necessary, check the oil lines and oil pump. Do not run the engine until the trouble is corrected.

Generator Charging Signal

The generator charging signal is located at the lower right corner of the instrument group. The words "Generator Charging" are seen clearly at all times. When the ignition switch is turned on the word "Not" appears between "Generator" and "Charging." As soon as the engine is started and at speeds above idling speed, the light behind "Not" extinguishes, indicating that the generator is charging. Should the word "Not" flash on and off when the car is being driven above twenty miles per hour, it indicates that the battery is not being charged. The electrical system should be checked immediately by your Hudson-Terraplane Dealer.

Starting the Engine

Before attempting to start the engine, depress the accelerator pedal slowly approximately quarter to half way and release. This will allow the high idle speed stop to come into position to prevent stalling during the warming-up period. Insert the key in the ignition lock and turn to the right. Press the starter control button to bring the starter into action and start the engine.

If the engine is warm from previous running, depress the accelerator quarter to half way and hold in this position during the starting operation.

If the engine does not start after 15 to 20 seconds of cranking, release the starter button and after a few seconds repeat the starting operation.

Do not work the accelerator pedal up and down, except as previously mentioned, either before or during the starting operation, as this will cause the accelerator pump to supply an excessive amount of gasoline and prevent correct starting.

Should a flooded condition of the carburetor develop, either through operation of the accelerator pedal or continuous cranking without the ignition turned on, depress the accelerator pedal fully for further cranking of the engine. With the accelerator pedal in this position, the choke is held open so that the excessive amount of gasoline can be drawn through the engine readily.

Failure of the engine to start when the above procedure is followed can usually be traced to improper engine adjustments or, in cold weather, a combination of this and improper engine lubricant. The car should be taken to an Authorized Hudson and Terraplane Dealer for adjustment or replacement of the oil with the correct grade for the local operating conditions.

Breaking-in Instructions

Your Hudson Eight has been designed in accordance with the best practices determined by years of experience and built under the most rigid standards of precision. Before shipment from our factory, each mechanical unit was supplied with the proper quantity of correct lubricant to give maximum protection to the finely finished working parts. In fact, every precaution has been taken to put in your hands an unexcelled mechanism, properly protected against pre-

mature wear. Extreme care has been exercised in selecting and testing each lubricant used and there is, therefore, no necessity of replacing any lubricants until the normal change mileage has been reached.

In order to enjoy the maximum in life and trouble-free performance which has been built into your Hudson Eight, you should at all times give it the consideration that any fine mechanism deserves.

During the first one thousand miles you should be diligent in following accepted practice, as described in later paragraphs, to permit proper break-in of the finely finished working parts. Failure to follow this practice may result in damage to bearing surfaces, cylinder walls or pistons, or abnormal increases in clearances, which will shorten the life and impair the performance of the units.

Keep the radiator full of water at all times. Maintain the proper oil level in the oil reservoir, using the correct grade of good quality oil as prescribed on page 20.

Do not accelerate fast during the break-in period as this throws extreme loads on the working parts. When increasing the speed of the car depress the accelerator pedal gradually. Use second gear under adverse driving conditions.

Do not apply the brakes harshly as braking surfaces require the same care during the break-in period as do engine parts. Hard application of the brakes during the first few hundred miles may score the brake drums or linings.

The following recommendations should be followed as to speed during the first one thousand miles of driving. These recommendations are maximum safe speeds under favorable operating conditions. The speed of the car should be decreased under unfavorable conditions such as rough or rutted roads, or in climbing steep or continuous grades:

0-250 MILES

Do not exceed 40 miles per hour in high gear or 20 miles per hour in second. Do not accelerate rapidly. Use second gear on steep grades.

250-500 MILES

Do not exceed 50 miles per hour in high gear or 25 miles per hour in second.

500-1,000 MILES

During this period the speed should not exceed 60 miles per hour.

Important

Your car is equipped with a governor installed and sealed at the factory to insure its reaching you in good condition.

While the governor is in place the top speed and acceleration are restricted and the air intake noise slightly increased.

Your dealer will remove the governor and tune the engine for you when making the 500-mile inspection.

Maintain oil level in crankcase within "oil level range" on oil level gauge (see Figure 3) at all times.

Do not drive at a high rate of speed until the engine is thoroughly warmed up. Cold oil is not able to flow freely into the small clearances between the working surfaces so that damage may occur if this is not observed.

Special Lubricants

THERE IS NO NECESSITY OF USING SPECIAL LUBRICANTS CONTAINING GRAPHITE OR OIL CONCENTRATES EITHER IN THE ENGINE OIL RESERVOIR OR BY ADDING TO THE GASOLINE DURING THE BREAK-IN PERIOD. If such practices are followed by the owner, he should be guided as to quantities by the recommendations of the manufacturer of the special lubricant. Only light, finely refined oils should be added to the gasoline and not to exceed one quart to a full tank of gasoline.

Even where these special practices are followed, the recommendations of the foregoing paragraphs as to speeds and operation should be adhered to strictly.

Driving Hints for Gasoline, Oil and Tire Economy

Gasoline Mileage

Your Hudson Eight is capable of very good gasoline mileage under normal driving conditions. The mileage you obtain depends largely upon your driving characteristics. Sudden acceleration, long periods of idling the engine, accelerating the engine while the car is standing still and high-speed driving all tend to reduce gasoline economy.

We quote figures indicating how the normal economy of a car operating at 20 miles per hour will vary under various driving conditions. At 40 miles per hour 29% more gasoline is required than at 20 miles per hour, while 39% more gasoline is required at 50 miles per hour than at 20 miles per hour, 54% more is required at 60 miles per hour than at 20 miles per hour, and 82% more gasoline is required at 70 miles per hour than at 20 miles per hour.

The above figures are representative of actual tests made with a number of makes of cars.

Oil Economy

Oil economy likewise is dependent on the speeds at which the car is driven. At consistently high speeds due to higher operating engine temperature, engine oil is naturally thinned down and usage becomes greater. Statistics based on actual tests of a number of makes of cars indicate oil consumption at 50 miles per hour to be nearly seven times greater than at 30 miles per hour.

Tire Wear

Fast acceleration, sudden braking from high speeds, under-inflation, continued fast driving all tend to decrease tire mileage. Tire wear at 50 miles per hour is said to be twice as great as at 40 miles per hour.

Generally speaking, normal driving and handling of your car will result in increased gasoline, oil and tire mileage. While on the other hand, high-speed driving is costlier as it increases gasoline and oil consumption, reduces tire mileage and places greater strain on the entire car.

In cases where high-speed driving is necessary, owners can minimize gasoline consumption by avoiding sudden bursts of speed and depressing the accelerator pedal evenly. Tire wear can be minimized by using good judgment in handling of the brakes when approaching curves or turns. Even pressure on the brake pedal will be as effective, if not more so, as jamming on the brakes.

ENGINE

The unusual power, efficiency and economy of the Hudson Eight engine are due to a combination of such advanced designs as the chrome alloy cylinder block, giving great strength and wearing qualities so as to almost eliminate wear on cylinder walls and valve seats; silicon aluminum alloy pistons, cam ground and fitted with a clearance of .002″; silicon chromium steel valves; patented radial flow intake manifold with down draft Duplex Carburetion—all built around a fully compensated crankshaft and lubricated by the Hudson Duo-flo Automatic Lubricating System.

Crankshaft, Connecting Rods and Pistons

The crankshaft is a heavy forging with integral compensating weights. Full compensation, together with five main bearings and a torsional dampener mounted on the front, insures free running of the crankshaft under all operating conditions. The main bearings are removable bronze-backed, virgin babbitt and are fitted to .001″ clearance and provided with shims for adjustment. The working member of the dampener is rubber, fully enclosed, requiring no adjustment.

The connecting rods are steel forgings carrying spun virgin babbitt bearings in the lower end fitted with a clearance of .001″ and having shims provided for adjustment. The upper end is fitted with a bronze bushing to which the piston pin is fitted with .0003″ clearance.

The pistons are of silicon aluminum alloy of new design. This alloy is hard, lighter than aluminum and dissipates heat rapidly. The piston is "T" slotted to compensate for expansion; cam ground to give full bearing on the cylinder wall; and is fitted with two compression rings and one oil control ring above the piston pin and one oil control ring below. With this arrangement all of the rings are located somewhat lower down on the piston, with the result that cooler operating conditions and better oil control are obtained. The piston is attached to the connecting rod by a full floating pin which is honed to give a perfect bearing in the diamond-bored piston bosses. The piston pin is a snug fit in the piston bosses when the piston is heated to 200° F.

This piston design permits fitting to the cylinder with a clearance of .002″. The pistons are removable either from the top or bottom of the cylinder bore.

The camshaft is Electric Furnace Alloy with hardened bearing and cam surfaces. End play is prevented by a spring and plunger pressing against the front end of the shaft.

Valve Tappet Adjustment

The valves, which are silicon chromium steel, are operated by the cams through adjustable tappets. The tappets should be adjusted while the engine is at normal operating temperature. To adjust the tappets, remove the engine side cover plates (right side of engine below intake manifold) and insert a feeler gauge between the top of the tappet screw and bottom of the valve stem while the engine is running. The valve tappets should be adjusted to a feeler gauge clearance of .006″ on the intake valves and .008″ on the exhaust valves. The tappet screw locking nut should be tightened securely after

adjustment. The tappet clearance is important and should be set accurately to the recommended dimensions.

Valve tappet adjustment can be facilitated by removing the right front wheel and fender dust shield.

Valve Timing

The valve timing is determined by the meshing of the crankshaft and camshaft gears. The tooth of the crankshaft gear with the punch mark on the front face should mesh between the two punch-marked teeth of the camshaft gear.

Lubrication System

The Hudson Duo-flo Automatic Lubrication System gives positive flow of oil to every working part of the engine from the moment of starting throughout the period of operation. It also, through in-built features, conditions the oil so that all oil supplied by the oscillating plunger pump is cooled and freed of solid matter and diluents.

There are only two moving parts in the entire system—the oscillating plunger and the driveshaft of the pump, which is driven by gears direct from the camshaft. There are no small drilled passages to clog or restrict free flow of oil when cold. The oil pipes (3 in number) are all located outside the engine and can readily be removed should there be any necessity to do so.

Crankcase Ventilation and Oil Conditioning

The crankcase ventilators mounted on the valve chamber covers are unusually effective as diluents consist mainly of unburnt gasoline and water coming from the cylinders and crankcase walls and cannot enter the oil reservoir but are retained in the crankcase. The temperature here is near the boiling point of these diluents and with the agitation of the moving parts of the engine they are readily vaporized and removed by slight suction maintained on the ventilator tubes.

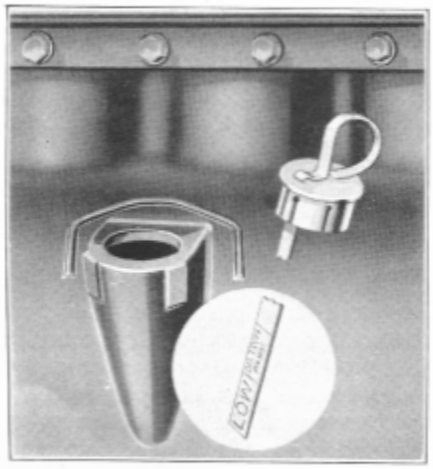


Figure 3

The flow of oil after returning to the crankcase is controlled so that it circulates around passages adjacent to the cool outside walls of the reservoir and is cooled before passing through the filter, which removes all solid matter before the oil is recirculated by the pump.

The filter surfaces are so placed that they are flushed each time the crankcase oil is drained and therefore require no special cleaning nor do they have to be replaced.

Oil Capacity

Under operating conditions two quarts of oil are retained in the crankcase in addition to the seven quarts of oil in the reservoir. If the oil reservoir

is removed, two quarts of oil should be put into the upper crankcase tray and seven quarts in the reservoir.

The quantity of oil in the reservoir can be determined by the bayonet gauge attached to the filler cover (see Figure 3). When the oil level is down to the low mark, one inch from the bottom of the gauge, five quarts of oil remain in the reservoir. Two additional quarts are required to bring the level up to the mark at the top of the "oil level range." When the reservoir only is drained by removal of the drain plug at the rear of the reservoir, seven quarts of oil should be used, filling through the opening in the left side of the crankcase (see Figure 3).

The wording of the oil pressure gauge to the lower left corner of the instrument group should read "OIL NO PRESSURE" when the ignition is turned on. When the engine is running at slightly more than idle speed, the light behind the word "NO" will extinguish and only the words "OIL PRESSURE" will remain. Flashing of the light behind "NO" at idling speeds indicates proper circulation. Should the light behind "NO" light while the engine is running above idle speed, it indicates an interruption of the oil supply and the engine should be stopped until the cause is corrected.

Lubricants

The viscosity of a lubricant is simply a measure of its body or fluidity. The S.A.E. viscosity numbers constitute a classification of lubricants in terms of viscosity, or fluidity, but without reference to any other characteristics or properties.

THE REFINER OR MARKETER SUPPLYING THE OIL IS RESPONSIBLE FOR THE QUALITY OF ITS PRODUCT. HIS REPUTATION IS THE CAR OWNER'S BEST INDICATION OF QUALITY.

The S.A.E. viscosity numbers have been adopted by practically all oil companies and no difficulty should be experienced in obtaining the proper grade of lubricant to meet seasonal requirements.

The grade of oil best suited for each range in temperature is shown by the accompanying table, Figure 4. The car owner should always select an oil having the recommended temperature range agreeing with the lowest atmospheric temperature likely to be encountered before the next oil change.

During the winter months the owner's selection of crankcase oil should be based primarily on easy starting characteristics. The viscosity of 10W and 20W oils is such as to permit easy starting down to the minimum temperature for which they are recommended.

Oils carrying the S.A.E. specification and not a "W" (winter) specification are selected only on their viscosity at higher temperatures and the starting characteristics of such oils will vary depending upon the type of crude and the refining process.

Although there are oils carrying the S.A.E. specification which also meet the "W" specification for winter starting qualities, the "W" specification on the container is the car owner's only definite assurance as to the starting qualities of the oil.

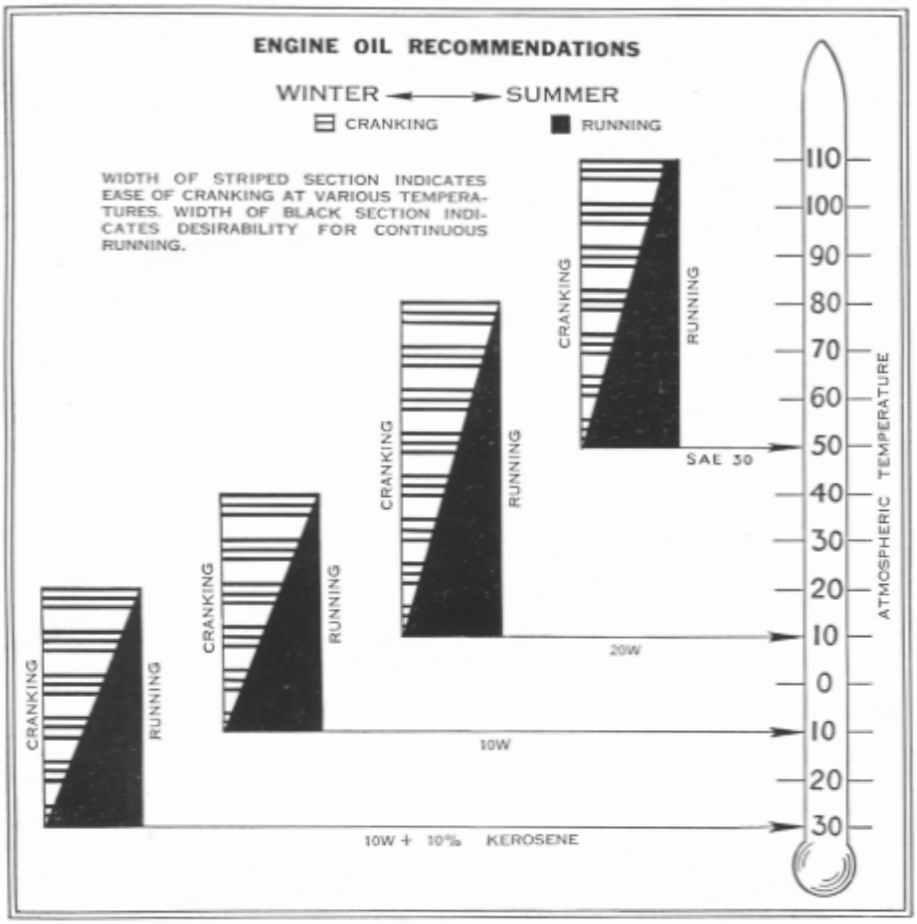


Figure 4

Minimum Atmospheric Temperature Expected	Oil Specification
50° above zero Fahrenheit	S. A. E. 30
10° above zero Fahrenheit	20W
10° below zero Fahrenheit	10W
30° below zero Fahrenheit	10W Plus 10% Kerosene

The oil level should be maintained within the "oil level range" on the oil level gauge at all times. Drain oil after first 500 miles of operation and at 2,000-mile intervals thereafter. Refill with seven quarts of oil of proper specification.

Ignition System

The distributor is mounted on the right side of the crankcase and driven by gears from the camshaft. A single breaker arm is operated by an eight-lobe cam so that no synchronization is required. Automatic advance is incorporated so that the correct timing is given at all speeds.

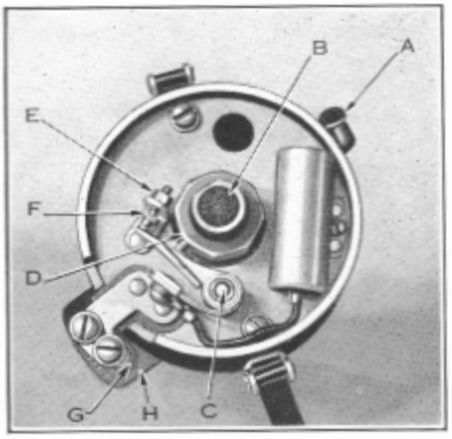


Figure 5

Lubrication

The oil cup (A), Figure 5, should be filled with oil every 2,000 miles. At the same time remove the distributor cap (not shown) and rotor arm, placing a few drops of oil on the wick (B) in the top of the shaft, one drop of oil on the breaker arm pivot (C), and apply a light coating of vaseline on the cam block (D).

Breaker Points

The breaker points should be adjusted to .020" maximum opening. The points should be clean and set squarely on each other. If the points become pitted it is necessary to remove them and grind smooth or replace with new ones. The grinding should be done in a special machine to insure proper seating. This operation should be done by an Authorized Hudson and Terraplane Service Station.

Filing or honing of the points will remove oxidization from the points but, due to the hardness of the tungsten alloy used, this method is not practical for removing deep pits.

Breaker Point Adjustment

Crank engine by hand until the fiber block (D) of the breaker arm is on the highest point of the cam. Measure the gap between the breaker points with a feeler gauge. This gap should be exactly .020". If adjustment of the gap is required, loosen lock nut (E) and turn adjusting screw (F) until the proper gap is obtained. Tighten lock nut (E) and recheck the gap.

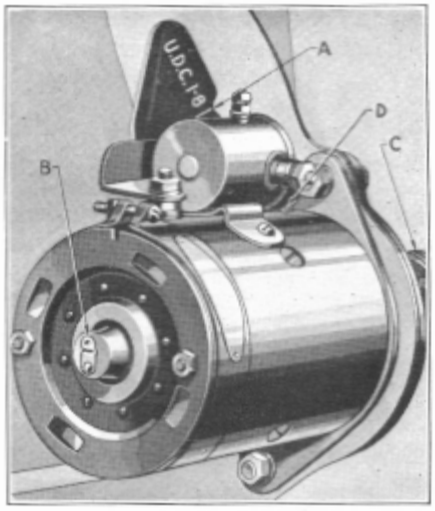


Figure 6

Ignition Timing

The ignition timing is determined by the position of the piston when the distributor breaker points begin to open. In general, the points should begin to open when the piston reaches its highest position in the cylinder. This position of the piston is referred to as upper dead center and is indicated by U. D. C. Marks are placed on the flywheel to indicate when this position of the piston has been reached.

Since the piston in a four-stroke cycle engine may be completing the exhaust stroke or completing the com-

pression stroke and ready for the power stroke when it reaches U. D. C., it is necessary to determine the stroke as well as the piston position.

To determine this, remove the spark plug from number one (front) cylinder. Place the finger over the spark plug hole and crank the engine slowly, using the hand crank. Air pressure against the finger indicates that the piston is coming up on the compression stroke. After this is felt, continue cranking the engine slowly until the mark "U. D. C. 1 and 8" is directly in line with the pointer on timing inspection hole in the rear support plate of the motor as indicated at (A), Figure 6. The piston is then at U. D. C. and ready to move downward on the power stroke.

Setting Ignition Timing

Loosen distributor clamp screw (G), Figure 5, and turn the distributor housing clockwise to the limit of the slot in the clamping plate (H), Figure 5. Remove the central cable from the distributor cap and place the bare end about $\frac{1}{8}$" from the intake manifold. With the ignition turned on and the U.D.C. 1-8 mark on the flywheel in line with the pointer on the inspection hole, Figure 6, turn the distributor body counterclockwise slowly just until a spark jumps from the high tension wire to the intake manifold. Tighten clamp screw (G), Figure 5, replace central cable in distributor cap and clamp cap on distributor.

When the distributor cap is put in place, the metal strip on the rotor arm should be directly under the terminal to which number one spark plug wire is attached. The other cables should be in the cap terminals in the order 1-6-2-5-8-3-7-4, following in a clockwise direction. The cable in the center terminal of the distributor cap should go to the central (high tension) terminal of the ignition coil.

Fuel Compensation

The foregoing operations give dead center timing. This, however, due to variations in fuel characteristics (octane rating), is only approximately correct. To get the correct setting the car should be driven until the engine has reached its normal operating temperature. Allow the car to slow down to 7 miles per hour in high gear on a level, hard-surfaced road, then depress the accelerator rapidly to its limit of travel. As the car accelerates from 10 to 15 miles per hour a slight spark knock should develop. If a knock is not heard, loosen distributor clamp screw (G), Figure 5, and turn the distributor counterclockwise one graduation of the clamping plate (H), Figure 5, and repeat the acceleration test. Repeat this operation until the knock is heard. The higher the octane rating of the gasoline being used, the greater the advance required to get maximum performance and fuel economy. However, the timing should not be set more than $\frac{3}{4}$" ahead of the upper dead center mark on the flywheel.

Carburetor and Fuel System

The carburetor is of the down draft Duplex type incorporating Climatic Control (self-controlled choke), accelerating pump and automatic heat control. The only manual control for the operator is the accelerator pedal controlling the speed of the engine.

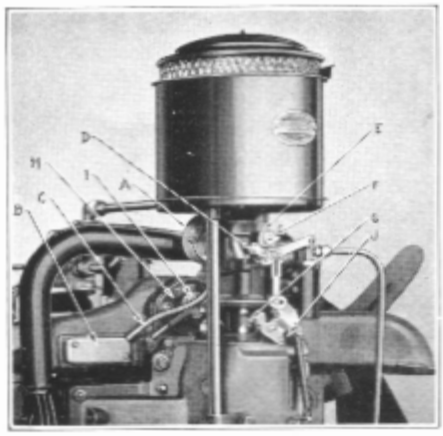


Figure 7

Carburetor Choke

The automatic choke valve, the mechanism of which is contained in the insulated housing (A), Figure 7, is fully closed when the engine is cold at average temperature (75° Fahrenheit). Hot air drawn off the exhaust manifold through the stove (B) and tube (C) enters the control housing, giving accurate positioning of the choke for all starting and operating conditions.

As soon as the accelerator pedal is depressed the throttle is partially opened, at which time the fast idle screw (D) is lifted away from the fast idle cam (E), allowing the choke valve to close and turning the high point of the cam in line with the fast idle screw (D).

When the foot is taken off the accelerator pedal, the fast idle adjusting screw (D) comes to rest on the high lobe of the fast idle cam (E), blocking the throttle to the proper opening for starting and during the warm-up period. As the engine warms up the thermostatic spring loses its tension, allowing the intake vacuum to open the choke valve which revolves the fast idle cam (E) by means of the choke trip lever (F) on the choke shaft, so that the fast idle screw does not strike the high lobe to enable the throttle to close to the normal idle set by the throttle set screw (G). Normal idle is approximately 6 miles per hour.

As the engine temperature cools, the thermostat spring in the control housing gradually gains tension and tends to close the choke valve. It is prevented from doing so by the fast idle adjusting screw (D) coming in contact with the fast idle cam and collar (E).

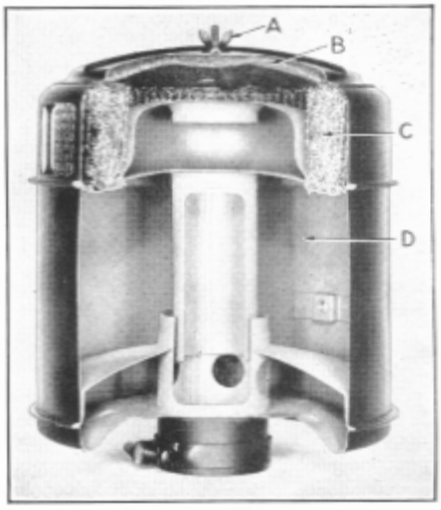


Figure 8

Manifold Heat Control

The heat control valve (H) operation is controlled by a thermostatic spring (I) and is automatic in operation, supplying the correct amount of heat to the intake manifold under all operating conditions.

Air Cleaner

The carburetor air cleaner should be removed for cleaning and re-oiling every 2,000 miles or more frequently as local dust conditions warrant.

Daily, under extreme conditions, the oil bath cleaner, which is optional equipment at extra cost, will absorb about one pound of dust.

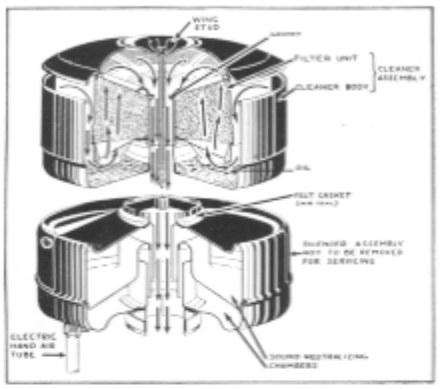


Figure 9

Standard Air Cleaner

Cleaning Instructions:

1. Loosen screw at air cleaner collar. (On Electric Hand equipped cars loosen air intake clamp screw at bottom of air cleaner.)
2. Remove air cleaner from carburetor.
3. Remove wing nut (A), Figure 8.
4. Remove cover and pad assembly (B).
5. Dip in gasoline to clean filter of dust and drain or blow out excess gasoline with air hose.
6. Re-oil filter unit with S.A.E. 50 engine oil and drain off excess.
7. Reinstall cover and pad assembly (B).
8. Reinstall wing nut (A).
9. Reassemble air cleaner to carburetor, tighten air cleaner collar screw. (Tighten air intake clamp screw on Electric Hand equipped cars.)

Be careful not to distort carburetor air horn when tightening air cleaner collar screw as this may restrict choke valve operation.

Oil Bath Air Cleaner (Optional Equipment or Accessory)

To service or clean this type of air cleaner it is not necessary to remove it from the carburetor.

Cleaning Instructions:

1. Remove wing stud, Figure 9.
2. Remove filter unit.
3. Remove old oil from cleaner body and wash thoroughly with gasoline.
4. Refill cleaner body with one pint of S. A. E. 50 engine oil. (S. A. E. 30 in winter.)
5. Reinstall filter unit in cleaner body.

Be sure to see that the felt gasket on the silencer is in place, as this seals against air leaks between the two units; also check center tube gasket.

6. Reinstall wing stud.

Fuel Pump

The nut holding the glass bowl in place should be loosened so that the bowl strap can be swung to one side to permit removal of the bowl and filter screen located above the bowl every 2,000 miles or oftener if the accumulation in the bottom of the bowl necessitates it. Before replacing the bowl, carefully examine the screen and bowl gasket. If damaged, replace with new parts.

Engine Tuning

Do not attempt to adjust the carburetor alone. Perform all the following operations in the order given:

1. Clean spark plugs and adjust gaps to .025".
2. Clean distributor breaker points and adjust to .020" maximum opening as described under "Breaker Points" (page 21).
3. Check battery and ignition wiring, being sure wires are pressed down in their sockets and insulation is in good condition and battery terminals clean.
4. Set ignition timing as described on page 22.
5. Turn the two carburetor idling screws (J), Figure 7, into their seats and back out exactly ¾ of a turn.
6. Start engine.
7. When engine has reached normal operating temperature, adjust intake valve clearance to .006" and exhaust tappet clearance to .008".
8. Set carburetor throttle stop screw (G), Figure 7, so that engine idles at a speed equal to a car speed of 6 miles per hour in high gear.
9. Adjust carburetor idling screws (J), Figure 7, for smooth engine idling. The final adjustment should be from ¼ to ¾ turn out from its full in position.
10. Road test for final ignition timing as described under "Fuel Compensation" (page 22).

If the above operations, properly performed, do not give normal engine performance, the car should be taken to an Authorized Hudson and Terraplane Dealer for mechanical inspection.

Dust Storm Precautions

In view of the dust storms which have been prevalent during the past few years, we feel the necessity of acquainting car owners with certain procedures to follow in an endeavor to minimize the damage which these dust storms are apt to cause.

When dust mixes with engine oil or chassis lubricant it becomes a highly abrasive substance which may cause untold damage to all working parts, such as pistons, piston rings, cylinder blocks, valves, valve guides, bearings, carburetors, spring shackles and bushings.

In some localities it may be necessary to render more frequent attention to chassis lubrication, engine oil change, air cleaner service and fuel system cleaning than the periods outlined in this instruction book and lubrication chart.

The use of a special Oil Bath Carburetor Air Cleaner, Figure 9, which is available as a factory option or may be purchased from any Hudson-Terraplane Dealer will help considerably in protecting the carburetor and engine from premature wear. The frequency with which the air cleaner should be cleaned and re-oiled depends, of course, upon local dust conditions. The protection which this type of air cleaner affords will be appreciated by noting the accumulation of dust and dirt found in the air cleaner oil reservoir just below the filter unit.

Listed below are points which should be checked and handled in accordance with local conditions:

1. Fuel System:
   (a) Clean and service air cleaner as outlined on page 24.
   (b) Clean fuel lines.
   (c) Clean carburetor.
   (d) Clean fuel pump.

2. Crankcase:
   (a) Clean ventilators and insert wads of fine metal gauze or fine mesh screen in lower end.
   (b) Drain oil, remove oil pan, clean thoroughly, reinstall and refill with fresh new oil.

3. Chassis:
   (a) Thoroughly lubricate all chassis fittings, being certain to force out old lubricant to which dust or abrasive may adhere.

Starting Motor

The starting motor is controlled by a push button on the instrument panel through a solenoid switch mounted on top of the starting motor. It is necessary to disengage the clutch on Electric Hand equipped cars in addition to turning on the ignition and pressing the starter button to engage the starter. The switch can be operated manually by unscrewing the cap on the rear of the switch and pushing the plunger in. The drive to the gear on the engine flywheel is through a Bendix drive which is brought into engagement by the rotation of the starting motor.

The front and rear bearings of the starting motor should be lubricated at (B and D), Figure 6, with a few drops of light oil every 1,000 miles.

The threads of the Bendix screw shaft (C), Figure 6, should be cleaned occasionally with a brush and kerosene to remove gum and dirt.

Generator

The generator is of the ventilated type, Figure 10, allowing a greater output than is practical with the non-ventilated type. It will be noted from the illustration that air is drawn through the generator from the rear by a suction fan at the front end and is deflected back over the generator by the engine fan.

The maximum output is controlled by the third brush and an external Voltage Regulator which is mounted on the dash, left side, in addition to the third brush. On these models, the charging rate should be 26 amperes cold and 24 amperes hot. This high charging rate can be used safely as the Voltage Regulator automatically reduces the charging rate when the battery is fully charged. When the battery voltage is low, the maximum possible generator output is

available to charge the battery. As the battery voltage increases, the charging current gradually tapers off and only a small amount flows when the battery is fully charged. In this manner it is possible to recharge the battery to its charged state in the shortest possible time without the dangers of overheating which would be present without a controlled high output generator.

A few drops of light oil should be supplied to cups (A), Figure 10, every 1,000 miles. Do not over-lubricate.

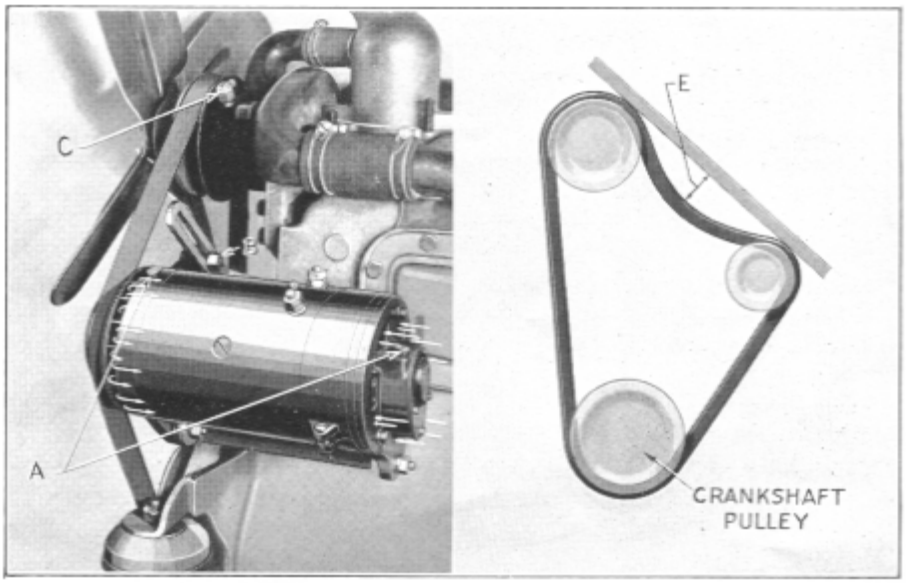


Figure 10

Fan Belt

The generator is driven by the "V" type belt, which also drives the fan and water pump. This belt must be kept sufficiently tight to prevent slippage on the pulleys. When properly adjusted the belt will have from $\frac{3}{4}$" to $1\frac{1}{4}$" of slack at a point midway between the fan pulley and generator pulley as shown at (E), Figure 10. This adjustment provides sufficient tightness to prevent slippage without causing undue wear of the fan and generator bearings.

To tighten belt tension loosen nut (B) and swing generator away from the engine until correct position is obtained. Tighten nut (B), also the two lower mounting cap screw nuts.

Cooling System

Water Pump

The water pump is of the vane type, located on the front of the cylinder block and driven by the "V" belt, which also drives the generator. The adjustment of the belt is covered in preceding paragraph.

The packing gland is of the permanent type, built entirely inside of the pump, and requires no adjustment.

The pump should be lubricated every 1,000 miles through the pressure fitting (C), Figure 10, with a high-grade aluminum soap grease.

Cooling System Operation

The cooling system is of the pressure pump circulation type with thermostatic heat control. This provides positive circulation, combined with a short warm-up period, in spite of a total cooling capacity sufficient to give proper cooling under the most unfavorable operating conditions.

When the water in the cooling system is cold, the thermostat which is located in the cylinder head outlet causes the water to flow through a by-pass directly to the pump inlet hose. During the warming-up period, therefore, the water in the cylinder jacket alone is circulated, while the water in the radiator is completely cut off from the remainder of the cooling system.

When the temperature of the water in the jackets has reached 150° Fahrenheit, the thermostat begins to open the passage into the radiator, and at approximately 185° the by-pass is closed so that all the circulation is through the radiator.

Draining Cooling System

To drain the cooling system completely, open the petcock at the bottom of the radiator (left side under hood) and also remove the pipe plug from the cylinder block (left side to rear of side cover plate).

Care of the Cooling System

In order to get the maximum efficiency from the cooling system, it must be kept clean. There is a tendency toward corrosion of parts due to electrolytic action of water containing minerals and also deposits of minerals when the water is heated. Both the corrosive scale and the mineral deposits tend to coat the cooling surfaces, reducing radiation, and in time will clog the radiator passages.

Unless special steps are taken to prevent these deposits, the cooling system should be cleaned twice a year. This cleaning is most effective when reverse flushing is used to remove deposits after they have been loosened by the use of a good cleaning solution. Since reverse flushing requires special equipment operated by compressed air, you should have this done by an Authorized Hudson and Terraplane Dealer.

The cleaning solution recommended is Hudson Radiator Cleaner. Before using this solution, run the engine a few minutes to circulate the water and stir up loose sediment. Stop the engine and drain all water from the system.

Dissolve the contents of a container of Hudson Radiator Cleaner in a bucket of hot water (be sure the material is completely dissolved). Pour solution into radiator, then fill the radiator almost full of water.

With the radiator covered and filler cap tight, run the engine for about twenty minutes but avoid boiling. Stop the engine and completely drain system.

Reverse flushing will remove all of the sediment the solution has loosened.

It is important that all trace of the cleaning solution be removed, as it will have a detrimental effect if left in the system.

After thoroughly flushing the cooling system, the addition of Hudson Rust and Corrosion Inhibitor to the water will neutralize the action of any cleaning compound which may not have drained out. It will also prevent corrosion of the cast iron and other metals in the cooling system.

Hudson Radiator Cleaner and Inhibitor can be obtained from any Authorized Hudson and Terraplane Dealer.

Anti-Freeze

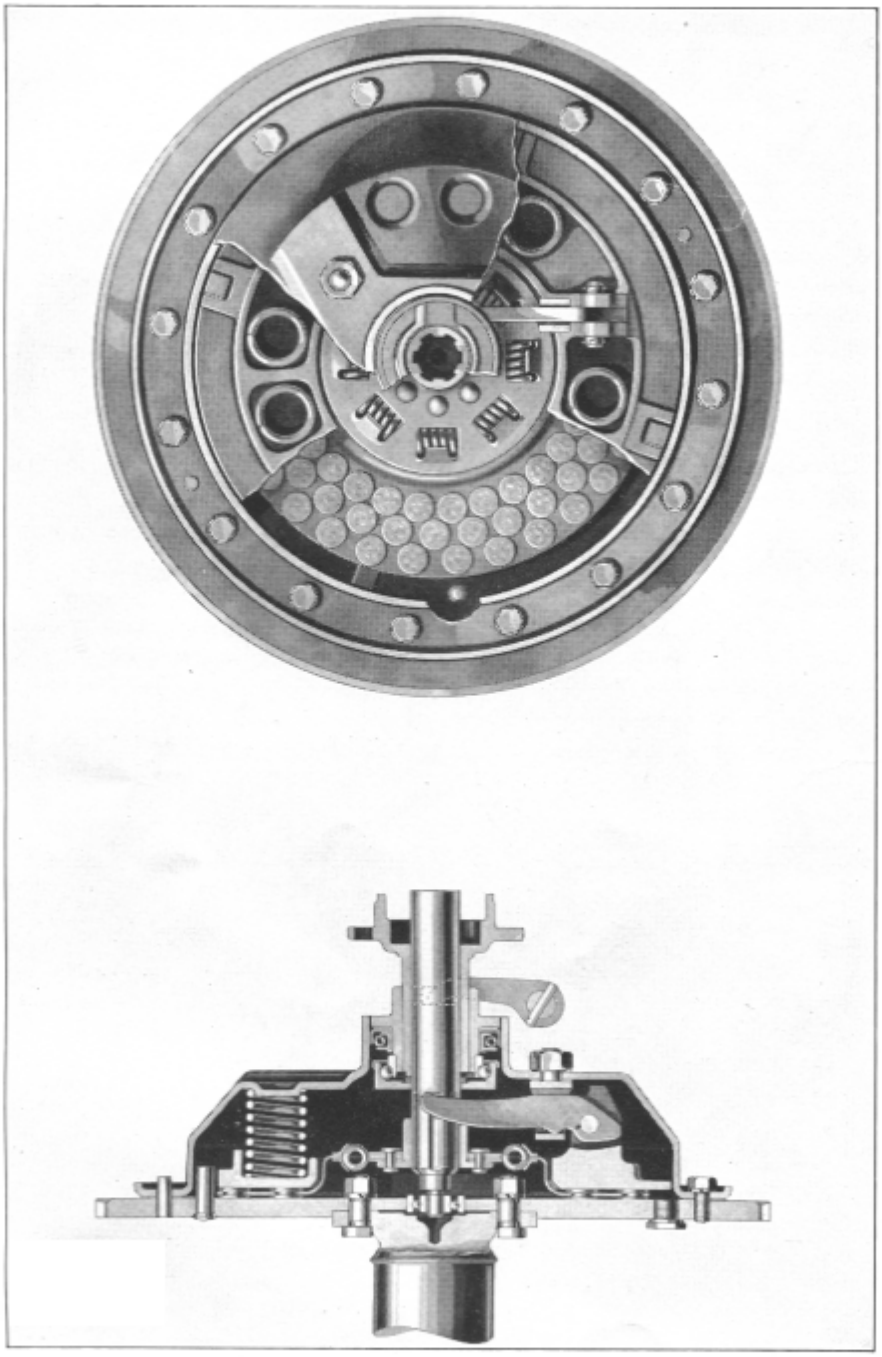
Before putting any anti-freeze in the cooling system, it should be thoroughly cleaned and all hose connections and gaskets checked for leaks.

The types of anti-freeze recommended are: Alcohol, Glycerine and solutions of Ethylene Glycol marketed under various trade names.

Solutions containing calcium salts or other ingredients which promote electrolytic action should be avoided. They will cause serious corrosion of the solder joints of the radiator. Also avoid the use of solutions containing glucose or honey, as they will tend to clog the system; and of kerosene or fuel oil which, when hot, liberate inflammable vapors.

The following table gives the quantities of the recommended solutions required for protection against freezing at various temperatures:

Temperature Fahrenheit	Alcohol Quarts	Radiator Glycerine (G.P.A. or Equivalent) Quarts	Ethylene Glycol (Prestone or Equivalent) Quarts
+20°	4	8¾	4
+10°	6	11	4¾
0°	7½	14	6½
−10°	8¾	16	7¾
−20°	10	17	9
−30°	12	20	10



Clutch

CLUTCH

The clutch is of the single plate type and is driven by friction from the rear face of the steel flywheel and the forward face of the drop forged steel pressure plate. The frictional facing in Hudson clutches is pliable formed cork and is lubricated to give a maximum degree of smoothness in engagement.

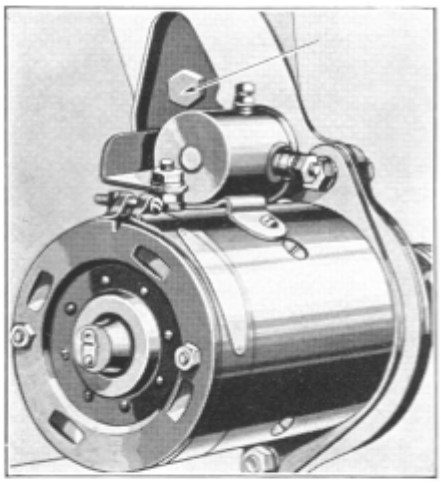


Figure 11

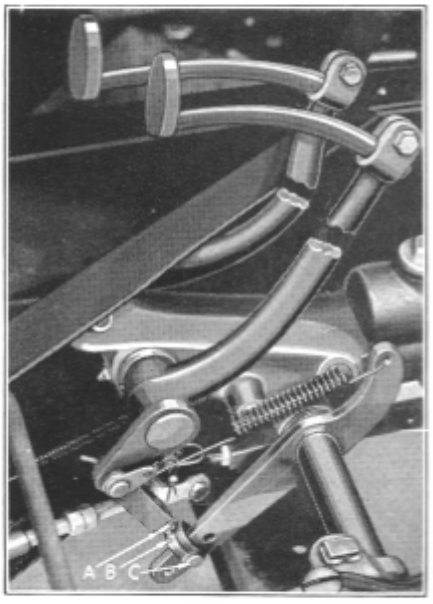


Figure 12

Due to the film of lubricant on the frictional surfaces, burning is prevented and wear is negligible. The frictional surface is always protected and maintained in proper condition by the bath of Hudsonite Clutch Compound, so that even after thousands of miles of usage there will be no material change in the engaging characteristics.

Lubrication

The throwout bearing is a heavy duty ball bearing provided with positive lubrication through a pressure fitting located on the right side of the clutch bell housing. This should be lubricated with one ounce of viscous chassis lubricant every one thousand miles.

The Hudsonite Clutch Compound is permanently sealed into the clutch housing to prevent loss. It should be drained and replaced every five to fifteen thousand miles.

To insert the Hudsonite, turn the engine until the drain plug (arrow), Figure 11, in the front face of the flywheel is visible through the timing inspection hole in the left side of the rear engine plate. Remove the plug and turn the engine slowly until the star stamped in the front of the flywheel is visible through the inspection hole. Allow a minute in this position to permit the clutch housing to drain, then turn the engine until the filler hole again appears in the timing hole and insert one-third pint of Hudsonite. Replace the plug and tighten securely. Hudsonite is available through all Hudson and Terraplane Distributors and Dealers.

Clutch Pedal Adjustment

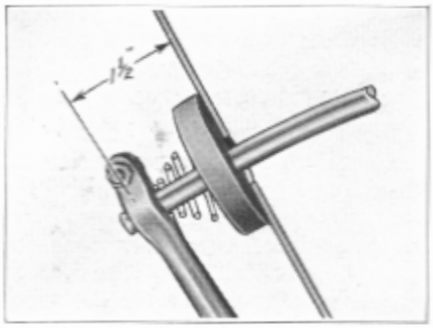


Figure 13

The clutch is self-adjusting; however, it is necessary to adjust the clutch pedal rod to prevent the pedal from "riding" the floor board. To adjust, loosen lock nut (A), Figure 12, remove clevis pin (C), and turn yoke (B) to shorten or lengthen the rod, as necessary, so that the pedal shank can be held in a position one and one-half inches from the floor board when the clutch is engaged, Figure 13. Replace clevis pin (C) and cotter pin. Tighten lock nut (A). The pedal clearance should be checked frequently as a lack of clearance will cause clutch slippage.

On cars equipped with Automatic Clutch Control, pull backward on the power unit piston rod—on the left side of the engine—while the accelerator pedal is depressed. When the rod is in the extreme rearward position, there should be approximately $\frac{7}{8}$" clearance between the back of the slot in the rod yoke and the clevis pin which attaches it to the operating lever.

Lubrication

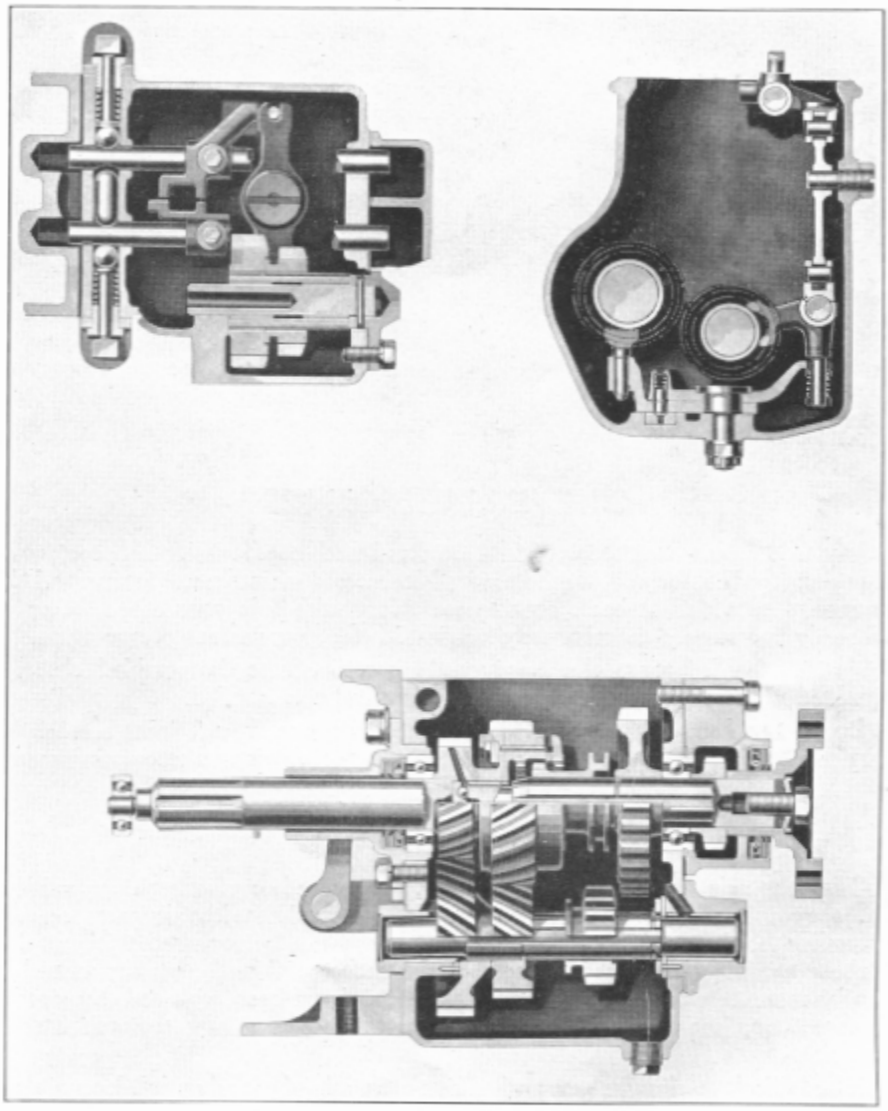
A grease fitting is provided for lubrication of the pedal rod bushings, Figure 12. This point should be lubricated every 1,000 miles with a viscous chassis lubricant.

TRANSMISSION

The transmission is of the quick synchronizing type, incorporating helical gears to give a silent second speed. Quiet operation is obtained in all forward speeds by throwing the reverse idlers out of mesh so that they do not revolve except when in actual use. Through the use of steel alloyed with nickel, chrome and molybdenum in gears which are heat-treated for strength and case-hardened to resist wear, long life is assured. The use of these special alloys also makes extremely heavy parts unnecessary, contributing greatly to ease and rapidity of shifting.

The main drive gear and main shaft are supported by two heavy duty, annular thrust ball bearings, one annular ball bearing and thirty needle bearing rollers. The end thrust between these parts is taken by seven ball bearings running in races machined in the ends of the shafts.

The countershaft is carried on steel-backed babbitt bearings.



Transmission

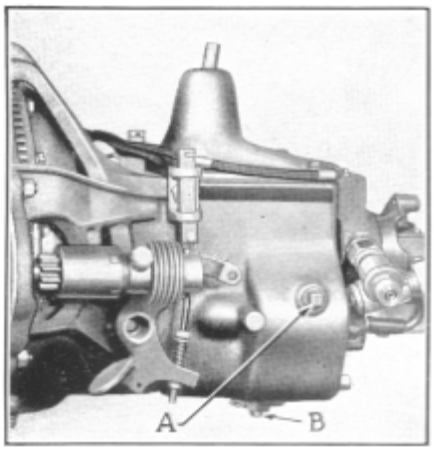


Figure 14

Lubrication

The lubricant used must be able to withstand the pressure developed between the gear teeth and also flow freely into the small clearances of the bearings. These qualities can be obtained in S. A. E. 90 E. P. gear oil for summer and S. A. E. 80 E. P. (zero pour test) gear oil in winter. When hard shifting is encountered during cold weather, three ounces of kerosene should be added to the lubricant.

The transmission should be filled with lubricant to the level of the filler plug (A), Figure 15, at all times. Drain the lubricant with change of season by removing plug (B) and replacing with three pounds (or pints) of fresh oil of the proper specifications.

UNIVERSAL JOINTS

The front and rear universal joints are fitted with needle roller bearings at the trunnions for the purpose of minimizing friction and maintenance attention. Oil reservoirs provided at each bearing are filled with lubricant at the time of assembly and supply the necessary lubrication for long periods of operation.

At 10,000-mile intervals both universal joints should be disassembled, cleaned, repacked with good viscous chassis lubricant and reassembled.

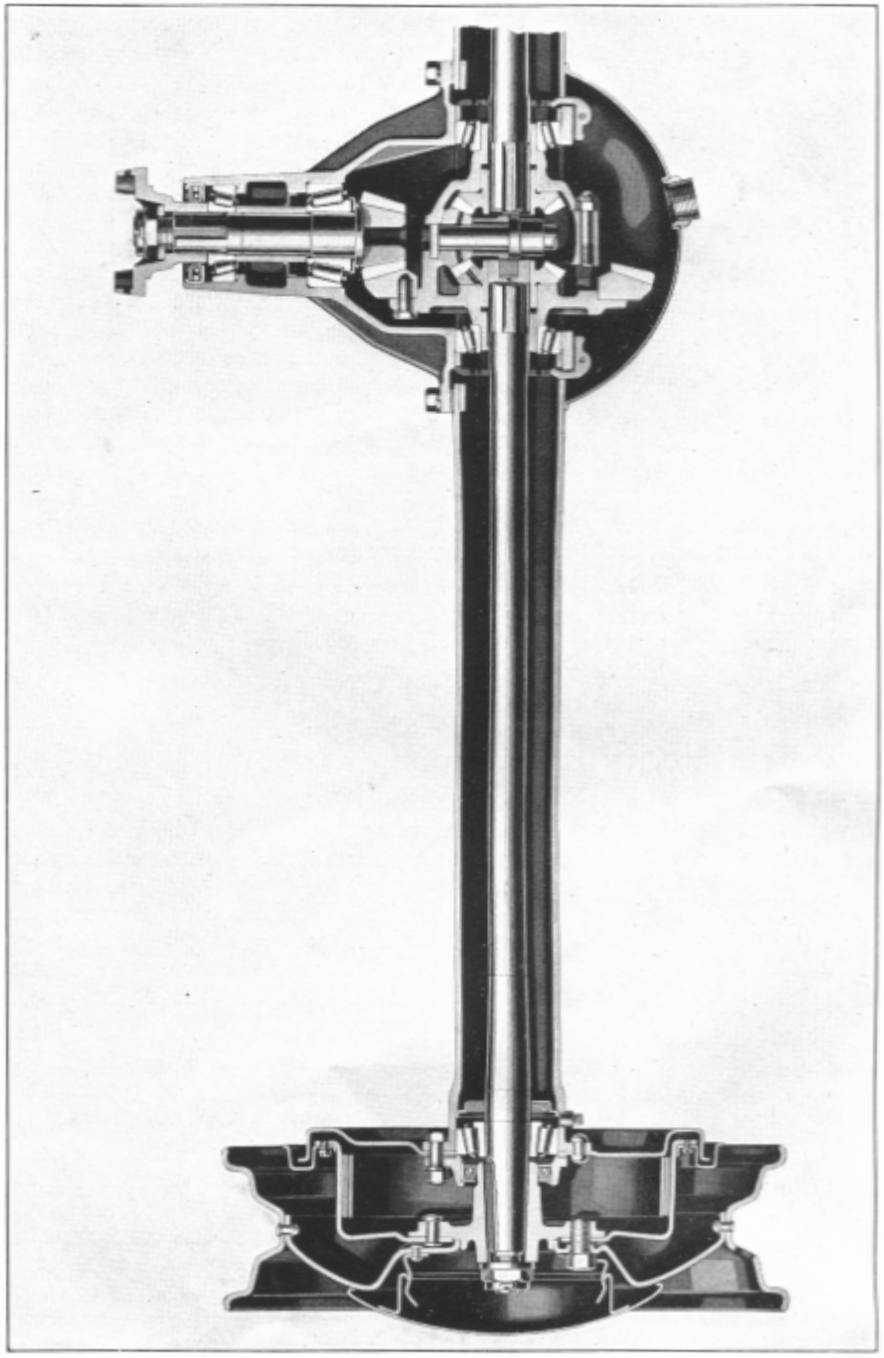
Every 1,000 miles the splined hub of the front universal joint should be lubricated by removing the pipe plug and introducing viscous chassis lubricant.

REAR AXLE

The rear axle is of the semi-floating type carried in a one-piece, welded, banjo type housing. This gives a rugged assembly, with all parts readily accessible, as the axle shafts and wheel bearings can be removed without disturbing the differential assembly; also the differential and gear set assembly can be removed as a unit, after the axle shafts have been removed, by simply disconnecting the rear universal joint flange and removing the ten carrier bolt nuts.

The helical bevel drive gear and pinion are made of nickel molybdenum electric furnace steel, heat-treated for strength and case-hardened to resist wear. The drive pinion, differential and axle shafts are carried by six heavy duty, taper roller bearings.

Exceptional lubrication has been provided to the driving pinion bearings by arranging a large passage to carry oil thrown from the ring gear to a point in the housing between the front and rear pinion bearings. This oil flows



Rear Axle

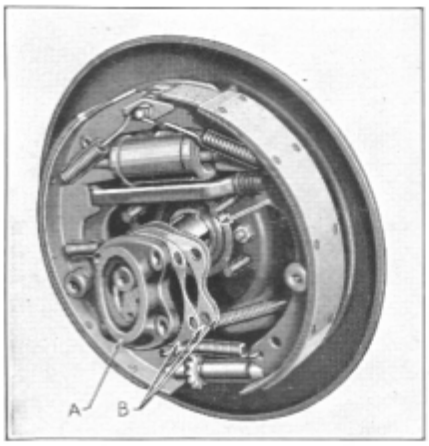


Figure 15

through the bearings and returns to the axle housing. Oil leakage at the front of the pinion is guarded against by the use of a hydraulic leather oil seal. Similar seals are located in the wheel bearing caps.

Adjustment

To adjust rear wheel bearings, jack up rear axle and remove both rear wheels and hubs. Remove the four nuts from bearing cap (A), Figure 15, and push the bolts out of the backing plate to permit removal of the bearing cap without disturbing the hand brake operating link. By removing shims (B) under the cap the end play of the axle shaft is decreased. Total play between axle shafts should be from .005″ to .010″, which is perceptible by pulling shaft in and out with the hand. It is necessary that the thickness of shims at each rear wheel be approximately the same, so when adjusting remove a thin shim from each side and repeat, if necessary, until only a slight amount of play is evident. Be sure the axle shafts turn freely before building up.

Caution

Under no condition should a knock-out type puller be used to remove a wheel hub or the end of the axle shaft struck a heavy blow.

Lubrication

An oil must be used that will withstand the pressure developed between the gear teeth and also flow freely to enter the smaller clearances and circulate through the passages to the pinion bearings. These qualities can be obtained in a heavy bodied gear oil of S. A. E. 160 E. P. viscosity for summer and S. A. E. 90 E. P. for winter.

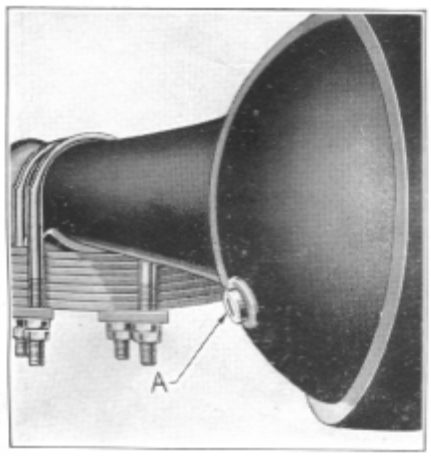


Figure 16

The oil should always be kept to the level of the filler plug (A), Figure 16. Drain the oil and replace with three pounds (or pints) of fresh oil with change of season.

The wheel bearings are lubricated with milled sodium soap base grease. The bearings should each be packed with one and one-half ounces of grease every 5,000 miles. In order to insert this grease the wheels and wheel bearing cap must be removed as described under "Wheel Bearing Adjustment."

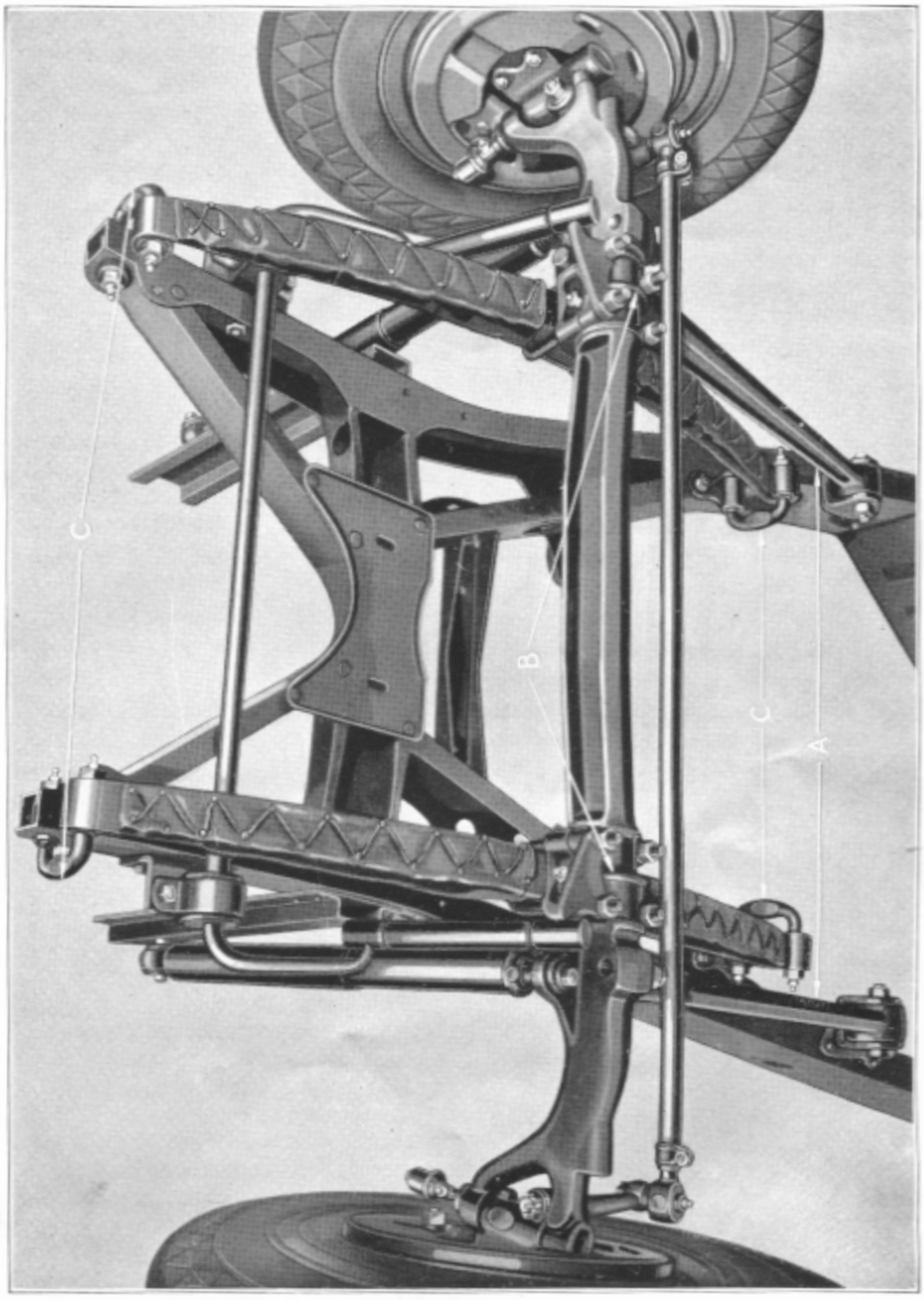


Figure 17—Front Axle and Spring Suspension

FRONT AXLE AND SPRING SUSPENSION

The front axle is of the Elliott type (see Figure 17), made of a heavy drop forging of high quality carbon steel. The steering spindles which are drop-forged molybdenum alloy steel are attached to the axle center with alloy steel pivot pins mounted in hardened steel bushings with ball bearings to carry the thrust on the end of the pin.

The spindle pivot pins are drilled centrally, full length and are equipped with a single 90° pressure grease fitting located above each pivot pin. The pressure grease fittings are of a special design which feed lubricant to the pivot pins under pressure from a reservoir which requires filling each 1,000 miles. (See lubrication chart at back of this book.)

Each wheel is mounted on two taper roller bearings.

The tie rod ends are of the plain bearing type, equipped with lubrication fittings.

The axle is attached to the chassis frame by two drop-forged torque arms (A) which insure accurate positioning of the axle and relieve the front springs of all loads other than that of supporting the weight of the car. The front ends of the torque arms are attached to the axle center by two bolts, the upper bolt passing through a boss in the axle from the front and is threaded into the torque arm. The lower bolt passes through the lower boss of the torque arm and is threaded into the axle center.

The rear ends of the torque arms are attached to the frame through large rubber grommets to absorb road shock.

The springs are mounted on bearings (B) which permit free turning on the axle center and each end of the spring is attached to the frame through shackles (C). This permits unrestricted spring action for a smooth ride under all road conditions.

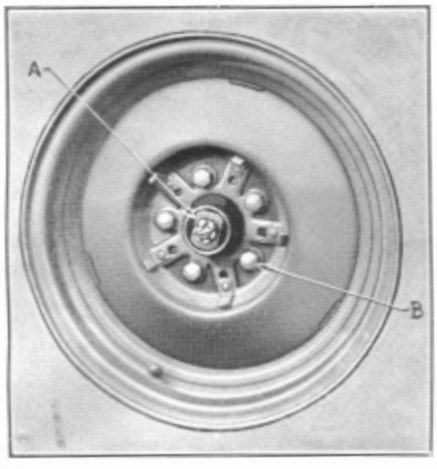


Figure 18

All points requiring lubrication are equipped with pressure fittings except the wheel bearings.

Front Wheel Bearing Adjustment

After jacking up the front axle and removing the hub cap, withdraw cotter key holding nut (A), Figure 18. Turn nut (A) to the right until a slight drag is felt when turning the wheel slightly by hand. Then loosen the nut just sufficiently to permit the wheel to turn freely. Insert cotter key.

Front Wheel Alignment

The front wheels should be adjusted with zero to 1/8" toe-in measured 10" from the ground. This adjust-

ment is made by loosening the clamp bolts on the tie rod ends, Figure 17, and turning the tie rod in a clockwise direction, as viewed from the right, to increase toe-in and in the reverse direction to reduce toe-in.

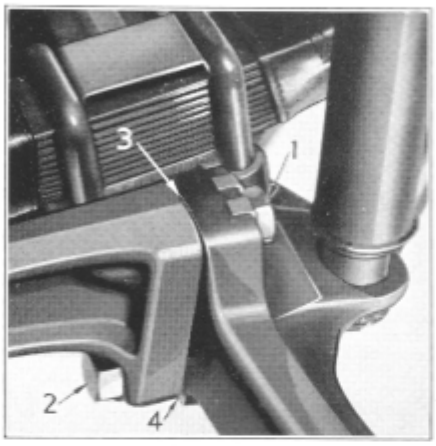


Figure 19

A special tool is required to make this measurement accurately. This adjustment is important for correct steering to prevent excessive tire wear. Have your Authorized Hudson and Terraplane Dealer check this alignment frequently.

Caster

The caster (backward tilt of the axle) should be from 1° to 2° and should be equal within ½° at both front wheels.

By bending back locks and removing cap screws (1 and 2), Figure 19, and installing a shim between the torque arm and upper torque arm boss on each side of the axle (3), caster is decreased. By installing a shim between the torque arm and lower torque arm boss on each side of the axle (4), the caster is increased. In the event that shims are in place and a revision of caster is necessary, the removal of an upper shim (3) on each side of the axle increases caster, while the removal of a lower shim (4) at each side of the axle decreases caster.

Caster shims are .020″ thick and are equal to ½°.

Camber

The camber (outward tilt of front wheels) should be from 1° to 1½°.

Should any front axle parts become bent, through accident, to such extent that they cannot be straightened without heating, they should be replaced with new ones. Heating will destroy the original heat treatment of the parts and may result in sagging or even breakage.

Lubrication

The front wheel bearings should be lubricated every 5,000 miles with a good grade of milled sodium soap base lubricant. Remove hub and wash bearings and inside of hub with kerosene and pack each bearing and hub with 3 ounces of milled sodium soap base lubricant (see page 38 for adjusting wheel bearings).

Spindle pivot pin lubrication fittings require filling with a viscous chassis lubricant every 1,000 miles.

The tie rod ends are equipped with pressure fittings and should be lubricated with a viscous chassis lubricant every 1,000 miles.

All other parts equipped with pressure fittings should be lubricated in accordance with the lubrication chart, inside of back cover.

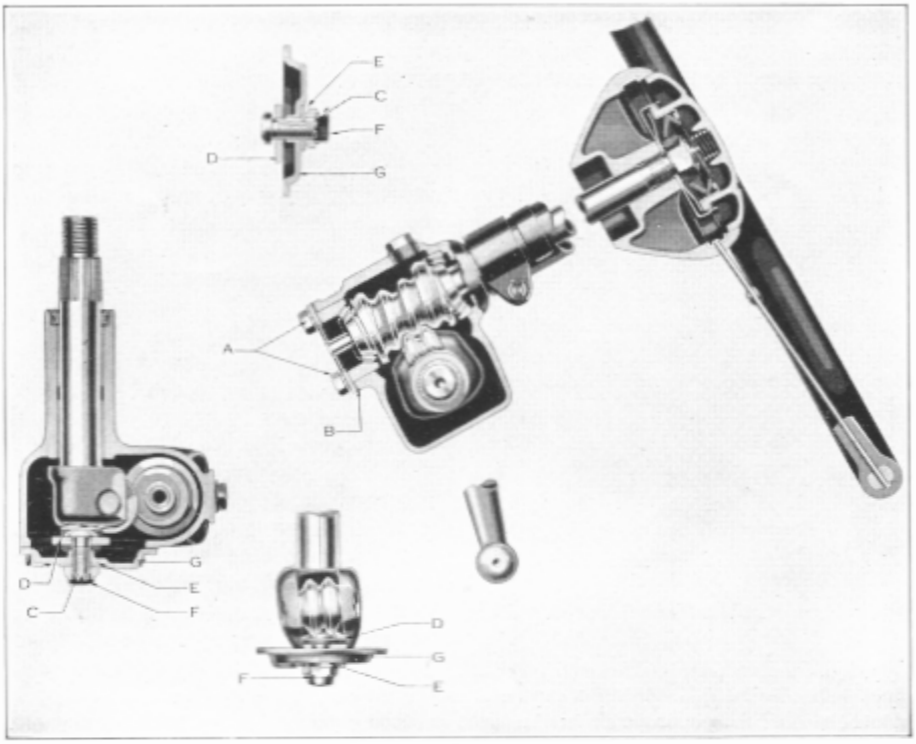


Figure 20

STEERING GEAR

The steering gear is of the variable pitch worm and roller tooth type with a maximum ratio of 18.2 to 1 in the straight ahead position to give maximum ease of steering. The ratio is reduced as the gear is turned to the right or left to give quick action for sharp turns.

The worm is cut in a manner which gives a minimum clearance with the roller tooth in the straight ahead position and increased clearance on turns. This gives maximum control and assures freedom from binding even after extensive use which, on conventional gears, makes it impossible to get proper clearance without binding on extreme turns due to maximum wear coming in the straight ahead position.

It is important that the drag link be removed from the steering gear ball arm in order to effect satisfactory inspection or adjustments and alignment of gear in car.

Gear Alignment

Loosen the three gear housing bolt nuts (B) (one not shown), Figure 21, just enough to allow gear to shift in frame to line up at angle determined by height setting of instrument board gear bracket and retighten gear housing

bolt nuts. Now loosen instrument board gear bracket and allow it to shift to match gear column position and retighten. This will correct any misalignment of gear column.

Worm Shaft and Worm

The main or worm shaft is carried on two taper roller bearings which are maintained in proper adjustment by a shim pack which is properly selected when the gear is built.

Adjustment

Worm Bearings

Worm bearing adjustment should be correct before other adjustments are made. To adjust, loosen four worm cover screws (A) (two not shown), Figure 20, 1/8". Use a knife to separate the top shim (B), passing blade all the way around between shims, care being taken not to mutilate the remaining shims. Remove only one shim at a time between inspections to remove end play. Care should be taken not to set up stiffness in worm bearings.

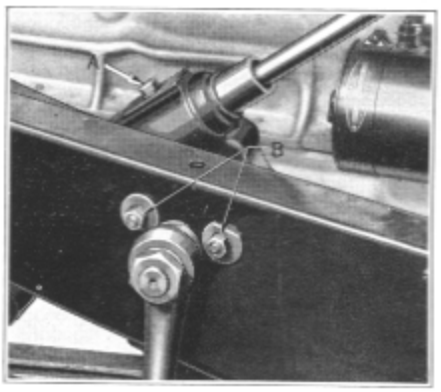


Figure 21

Now revolve hand wheel to determine if any stiffness exists. If so, too many shims have been removed or gear is misaligned in car.

Cross Shaft and Roller Tooth

The end play in the cross shaft and mesh between the worm and roller tooth is adjusted by a screw (C), Figure 20, extending through right side of the gear housing. A flat washer (D), assembled to the inner end of screw (C), fits into a slot in the roller tooth shaft to control the movement of the roller tooth. A lock plate (E) is used to secure the adjustment and this in turn is held in place by a cap (F) which screws onto the adjusting screw (C).

Adjustment

Cross Shaft and Roller Tooth

To adjust for closer mesh of the roller tooth and worm, remove cap (F), Figure 20, slide off lock plate (E) far enough to clear lock boss on roller shaft cover (G). Place steering wheel in mid-position or straight ahead driving position. The adjusting screw (C) is then tightened into the housing, then backed off just enough to prevent binding. Check the amount of play at the end of the ball arm. It is advisable to leave a slight amount of play at this point rather than to tighten too much.

The lock plate (E) is set in position against the roller shaft cover (G) and in locked position. Replace adjusting screw cap (F) and tighten in place.

Wheel Position

To raise or lower steering wheel to suit the requirements of the driver, loosen three gear housing bolt nuts (B) (one not shown), Figure 21, as well as steering column bracket nuts under the instrument panel. Set wheel in desired position, insert or remove shims, and tighten column bracket nuts. Turn steering wheel to right and left to align gear on frame and tighten frame bracket nuts.

When the steering is adjusted to the high point, the flat spot on the serrated end of the main column tube should be pointing straight down. This is determined by removing the horn button and steering wheel. The steering wheel should be assembled with the trademarked spoke pointed straight down. (Trademark is on bottom of spoke near rim.)

Lubrication

The housing should be filled at all times with a good grade of S. A. E. 160 E. P. gear oil in summer and S. A. E. 90 E. P. gear oil in winter. The lubricant can be injected after removing filler plug (A), Figure 21. Fill with recommended lubricant until it reaches the level of the filler hole. Replace oil filler plug to prevent dirt from entering housing. Lubricant change should be made with change of season.

DRAG LINKS

Drag links are of the adjustable type, with shim packs located to the front and rear of the pitman arm ball. This type of drag link arrangement makes it unnecessary to bend the pitman arm in order to obtain proper relationship of the front wheel position to the steering gear high point.

After the steering gear has been properly adjusted it is desirable to have the steering wheel spoke with the trademark on the underside point straight downward. (See paragraph on "Wheel Position.")

Assuming that the front wheels point to the right instead of the straight ahead position it will be necessary to remove shims from the rear pack and add to the front pack. In the event that the front wheels point to the left, then the reverse operation should be followed out, that is, remove shims from the front pack and add to the rear pack. Reconnect the drag link to the pitman arm and lubricate thoroughly.

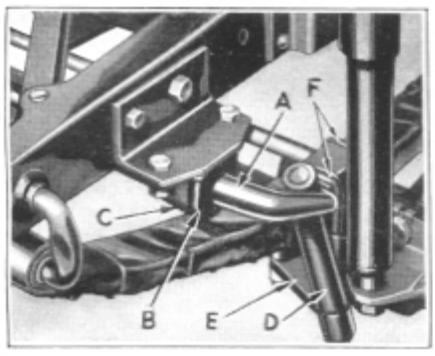


Figure 22

FRONT STABILIZER

The stabilizer is attached to the front end of the frame side rails. The stabilizer bar (A), Figure 22, passes through two large rubber grommets (B), which are supported by brackets (C). The ball ends of the stabilizer bar which point downward and backward are imbedded in rubber bushings assembled in two links (D) which are supported by a mounting bracket attached to the front axle bearing caps by front spring clips (E).

These parts require no lubrication.

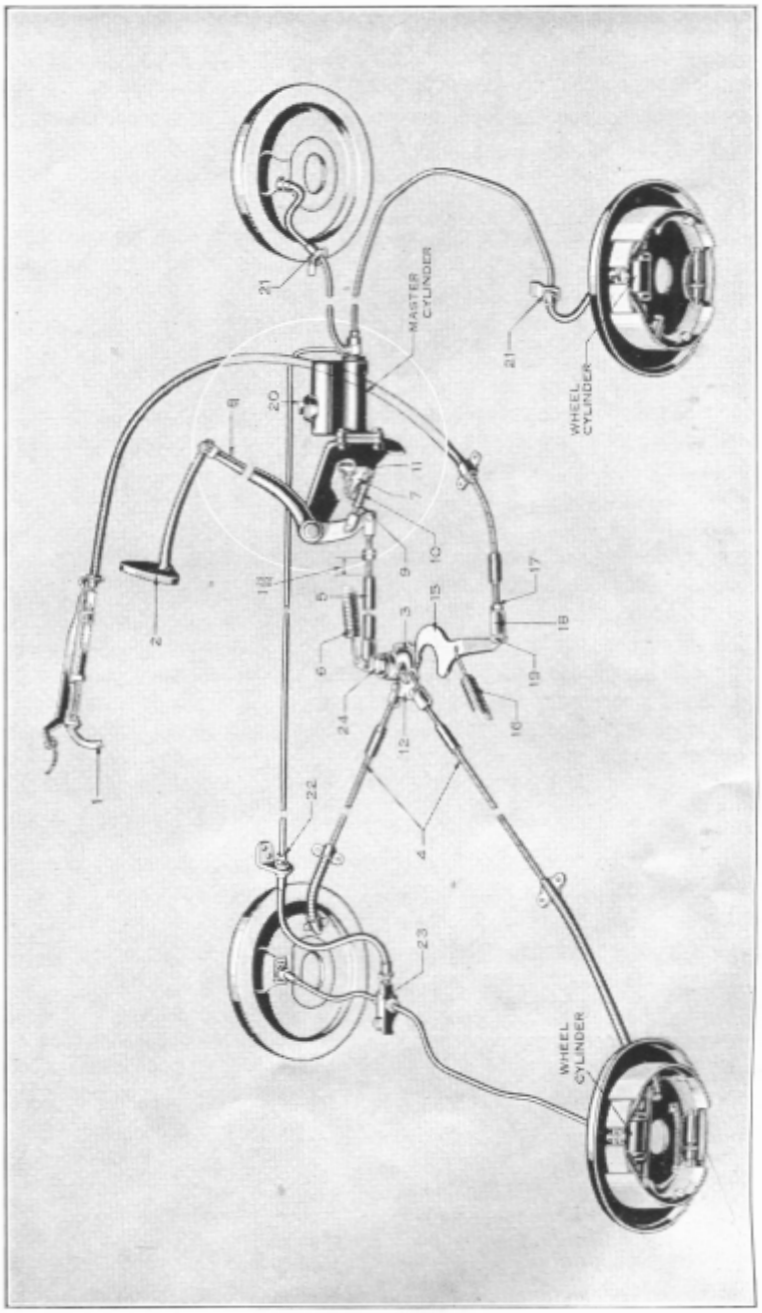

MASTER CYLINDER
WHEEL CYLINDER
WHEEL CYLINDER
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Figure 23

SPRINGS AND SHOCK ABSORBERS

The spring leaves are lubricated with a viscous chassis lubricant and covered to prevent entrance of road dirt or water and preserve lubricant.

Spring control is obtained through the use of four direct-acting, self-compensating shock absorbers. By using a large quantity of fluid working under low pressure, accurate control is obtained and there is no variation due to changes in temperature.

The two front shock absorbers are mounted at the top on two large taper rubber grommets, assembled over a stud projecting from the front fender support bracket.

The stud at the lower end of the shock absorber passes through an eye in the front axle center. The shock absorber is mounted at this location on two large rubber cushions.

The rear shock absorbers are attached at the top to a bracket riveted to the rear axle cross member by means of a bolt which passes through two large taper rubber grommets. The lower ends of the shock absorbers are mounted on drop-forged studs supported by the rear spring clips and are mounted on two large taper rubber grommets.

The use of rubber grommets and cushions at the upper and lower ends of the shock absorbers serves to eliminate a metal-to-metal contact and also to cushion or absorb road shock.

The large reservoir of fluid, the low operating pressure and the double seal practically eliminate the loss of fluid. The fluid, however, should be maintained at the proper level to obtain proper control and it is, therefore, recommended that this be checked by an Authorized Hudson and Terraplane Dealer at least twice a year.

BRAKES

The Hudson brakes are hydraulically operated with supplementary mechanical actuation of the rear brake shoes from both the foot pedal and the hand brake control, Figure 23.

The heart of the hydraulic system is the master cylinder, Figure 24, which has an integral reservoir from which additional fluid is supplied to the system as necessary.

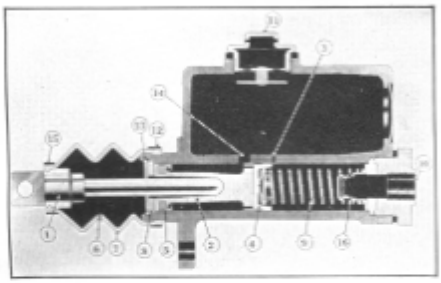


Figure 24

The master cylinder is mounted to the front of the pedal mounting bracket and is accessible by lifting the left side of the hood.

The reservoir should be kept at least half full at all times. Before removing the filler plug (20), Figure 23, wipe all parts free of dirt and take extreme care to prevent dirt getting into the cylinder.

The reservoir should be filled with Genuine Hudson Hydraulic Brake

Fluid. The use of other than Genuine Hudson Fluid or the introduction of oil with a mineral base into the system will cause the rubber parts to swell and become inoperative.

The piston in the master cylinder is operated through the lever (7) and connecting link (10) from the brake pedal (8), Figure 23. In order to insure full return of the piston when the brake is released there must be ¼" clearance between the pedal (8) and the floor board. This clearance is obtained by loosening lock nut (9), removing clevis pin (11) and turning connecting link (10) to increase length until clevis pin (11) just enters the rod with the pedal shank (8) ¼" from the toe board and the bell crank against its stop. Reinsert clevis pin (11) in bottom of bell crank, insert cotter key and tighten lock nut (9). This adjustment is important as failure of the piston to return to the end of the cylinder will cause the brakes to drag.

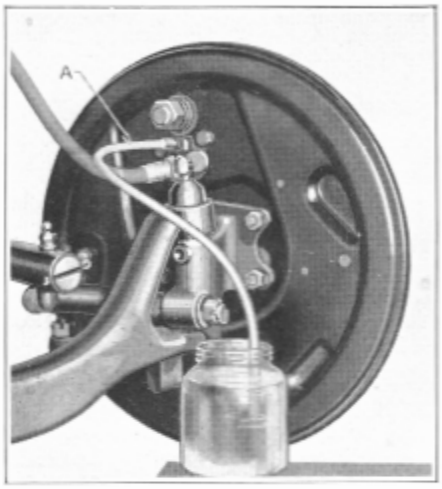


Figure 25

An occasional filling of the master cylinder reservoir should be the only attention required to the hydraulic system unless the reservoir is permitted to run dry, a main line is disconnected or a wheel cylinder is disconnected for service operations. If the cylinder runs dry or a main pipe is disconnected, it is necessary to bleed the air out of the lines at all wheel cylinders. If a wheel cylinder is disconnected it is necessary to bleed *only* at that particular cylinder.

The bleeding operation is performed as follows:

1. Remove screw (D), Figure 26, and screw the end of the bleeder tube (A), Figure 25, in its place and allow end of tube to hang in a jar partially filled with liquid.
2. Unscrew bleeder valve (E), Figure 26, three-quarters of a turn.
3. Depress foot pedal by hand, allowing pedal to return to released position slowly. Continue this operation until air bubbles cease to be emitted from the bleeder tube.
4. Close bleeder valve (E), remove bleeder hose, and replace screw (D), Figure 26.
5. Refill master cylinder reservoir.

CAUTION: Do not use a substitute for Genuine Hudson Hydraulic Brake Fluid. Substitutes are not suitable for this system.

Do not use fluid that has been drained out of the system. Always replace with new fluid.

Use Genuine Hudson Hydraulic Brake Fluid Number 5, except where continuous sub-zero temperatures are encountered. Hudson Fluid Number 1 is recommended for use at extremely low temperatures.

Adjustment of Pedal Push Rod

With equalizer bar cable plate against stop, loosen brake pedal push rod lock nut, Figure 23, and turn adjusting nut until rear face is $1\frac{29}{64}$ inches from front end of push rod (5). Tighten lock nut. This adjustment is important to obtain proper mechanical follow-up to the hydraulic operation of the rear brakes.

Brake Shoe Adjustment

There are only two points of adjustment in the braking system to compensate for brake lining wear. The *Eccentric Adjustment* (B), Figure 26, centralizes the brake shoes in the drum. The *Adjusting Screw*, accessible by removing cover (C), Figure 26, takes up the clearances between the lining surfaces and the brake drums.

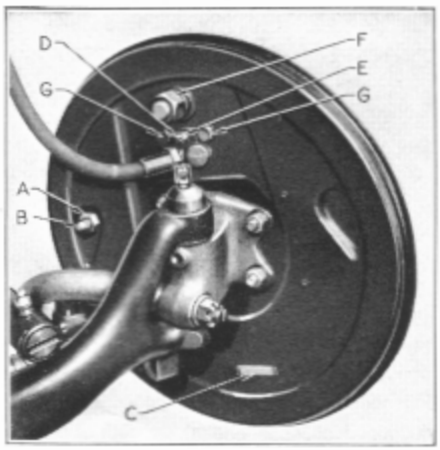


Figure 26

Adjustment for Wear Only

(1) Jack up all wheels clear of the floor.

(2) Disconnect rear wheel cables from equalizer bar cable plate.

(3) After removing adjusting hole cover (C), Figure 26, and gauge hole covers in brake drums, AT EACH WHEEL: loosen eccentric lock nut (A), Figure 26, and insert .010″ feeler gauge between the lining of secondary (eccentrically controlled) shoe and brake drum. Turn the eccentric adjustment in the direction of forward wheel revolution until .010″ feeler is just snug at anchor and adjusting ends of secondary shoe. Tighten eccentric lock nut.

The clearance at both ends of secondary shoe should not vary more than .003″. Should the variation be greater than this it will be necessary to relocate the anchor pin. This work should be done by an Authorized Hudson and Terraplane Service Station. (In case of clearance variation it is desirable that clearance at the anchor end be less than at the adjusting end.)

(4) Spread the brake shoes by means of a screwdriver inserted through the hole (C) engaging the notched adjusting screw until the shoes are expanded against the brake drum so drum can just be turned by hand.

(5) Pull hand brake lever until equalizer bar cable plate is $\frac{1}{8}$ inch from stop, Figure 23.

(6) Pull rear brake cables tight and adjust ends so clevis pins just enter holes in cross shaft levers or equalizer bar (12), Figure 23. The rear face of the equalizer plate must be parallel to the face of the stop after this adjustment is made.

(7) Release hand brake.

(8) Release adjusting screw at each wheel until the brakes are just free of drag and replace feeler gauge hole covers and wheels.

(9) Lower car and test for balance on brake testing machine or road. Always loosen adjusting screw on tight brakes rather than tighten adjusting screw on loose brake to get balance. This is to safeguard against one or more dragging brakes.

HEADLAMPS

The headlamps are designed to give maximum safe illumination under all driving conditions. The only adjustment necessary to obtain the results which should be expected is the proper aiming of the headlamps. The right and left lenses are interchangeable and can be used satisfactorily on either side. The lamps are fitted with standard 1-candlepower bulbs for the parking position and pre-focused bulbs having a flanged mounting and employing a 32-candlepower filament for city driving and passing, and a 32-candlepower filament for country driving. When the main lighting switch is in the driving (right) position, the light beams can be changed to the high or country driving position or to the low or city driving position by depressing and releasing the toe board control switch.

Adjustment

In order to get the proper lighting effect, the headlamps must be aimed accurately as follows:

Place the car on a level floor or driveway, squarely in front of a white wall or screen at a distance of twenty-five feet. Draw a horizontal line (AA), Figure 27, on the wall six feet long and at a height of thirty-nine inches above the floor (E). This line represents the top of the beam. Next draw two vertical lines (C and D) twenty-four inches long, a distance of thirty and one-eighth inches apart. Measure one-half the distance between (C and D) and draw line (B) ten inches long. These vertical lines represent the distance between lamp centers.

Without passengers in the car, cover the left headlamp to obscure its beam and place lighting switch in the high or country driving position. Loosen the headlamp mounting stud hex nut of the right lamp with an open end wrench,

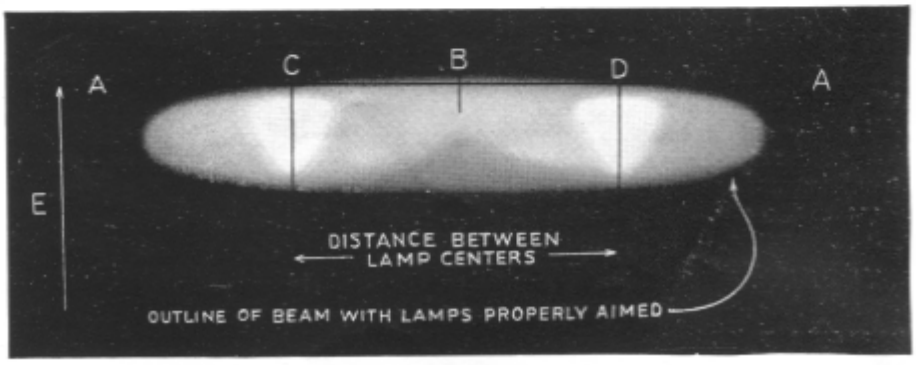


Figure 27

which is reached through the opening in the lower part of the headlamp mounting bracket and aim the lamp so that the top of the light beam is just level with the horizontal line (AA) and equally divided on each side of the vertical line (D).

Tighten the mounting stud nut. Cover the right lamp and follow the same procedure with the left lamp, centering its beam on vertical line (C). When this has been done the lamps will be correctly aimed for both the city and country driving positions.

Lamp Lens and Bulb Replacements

To replace headlamp bulb, loosen the screw at the bottom of the lamp body. Push the bottom of the lens backward and downward until the top of the lens is clear of the top of the lamp body and lift out. Unlock bulb by turning counter-clockwise and remove. Replace bulb (see specifications on page 8), turning in clockwise rotation to lock in reflector. Replace lens by reversing removing instructions.

To replace headlamp parking bulb, press inward and turn to release it from the socket. Replace with new bulb (see specifications on page 8).

Do not touch the reflector, as any marks will reduce the illumination. Should it be necessary to clean the reflector, use ordinary lampblack on a soft cloth and wipe gently in a circular motion.

If the reflectors require frequent cleaning, it is an indication that the gaskets are not giving a proper seal and should be replaced.

Figure 28

To replace rear license lamp bulb, turn the lamp body and lens assembly (A), Figure 28, counter-clockwise and remove. Remove bulb and replace (see specifications on page 8). Replace lamp body and lens assembly and turn in clockwise rotation to lock in place.

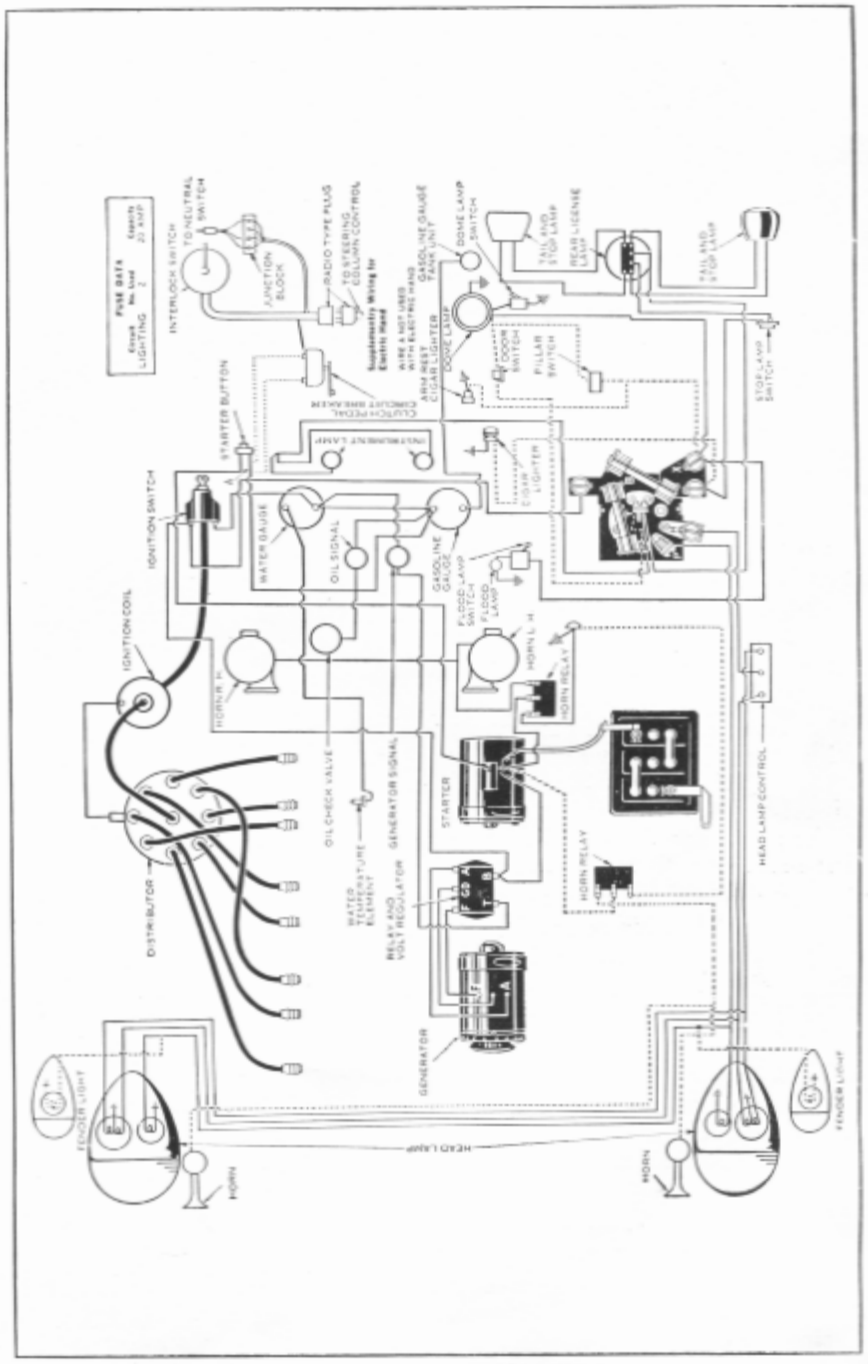
To replace stop lamp bulb, push bottom of lens (B), Figure 28, in and downward until upper part protrudes out of body and remove. Remove bulb and replace. Reinstall lens from top and push inward until lens springs into place.

To replace dome lamp bulb, remove lock ring around lens with small screwdriver. Remove lens and bulb. Replace bulb (see specifications on page 8). Install lens and replace lock ring.

To replace fender lamp bulb, turn lamp lens to left to unlock. Remove lens, replace bulb. Replace lens and turn to right to lock in place.

The oil, generator and instrument light bulbs are held in sockets assembled in the rear face of the instrument cluster base by spring tension behind the instrument panel.

To replace bulb, pull socket out of cluster base and remove bulb. Replace bulb and press socket into socket hole (see specifications on page 8).



Wiring Diagram

BATTERY

Registration

A 19-plate, 125-ampere hour National battery is used. This battery is covered by a Guarantee and Adjustment Policy by its manufacturer. To be entitled to the benefits of this Policy the battery must be registered with a National Dealer within thirty (30) days after delivery of the car. Do not neglect to make this registration.

Care

The battery requires little attention; however, this attention is absolutely essential. Negligence will shorten the battery life and cause premature failure.

Therefore, for convenience of inspection and servicing the battery is located under the left front fender and is easily accessible from the engine compartment. The battery is set in a tray which is provided with a drain. The battery cover can be removed by removing two slotted cap screws along the top flange and one slotted cap screw at the rear flange.

Owners will appreciate that with this arrangement it is not necessary to disturb the driver or other passengers to check the battery for water. All danger of soiling upholstery cloth is also eliminated by this arrangement.

Distilled water should be added to the battery at such intervals as will insure the plates being covered at all times. Usually water should be added twice a month in warm weather and monthly in winter. During freezing weather, water should be added just before the car is to be used.

To prevent corrosion of battery terminals and connections apply a coating of vaseline over the battery posts and strap terminals, making sure the terminals are properly tightened. If corrosion occurs, clean posts and terminals with a soda solution before applying the vaseline. When using the soda solution be sure the cell caps are in place and be careful to prevent the soda from entering the cells. Flush off well with water and dry top of battery.

Inspect the battery ground strap occasionally, as looseness at the battery or fender support bracket or breakage will reduce the output for starting and a complete break will cause the lamp bulbs to burn out.

Periodic hydrometer readings should be made by your Dealer. If the battery gravity is low and the battery in good condition, the generator charging rate should be checked. This requires accurate Voltmeters and Ammeters and should be handled by your Hudson and Terraplane Dealer.

It is not necessary to add acid to a battery except where leakage has occurred. This must be done in conjunction with charging and should not be attempted except by an experienced battery service man.

TIRES AND WHEELS

All wheels are demountable at the hub by prying off the outside hub cap and removing the cap screws (B), Figure 18, in the wheel mounting plate. When replacing the cap screws, the final tightening locks them to prevent loosening in operation. Be sure the cap screws are drawn down tightly.

Steel wheels are of the drop base type, permitting installation and removal without separate locking rings or the use of any special tools. Four-ply 16 x 6.25 tires are used as standard equipment on all models with four-ply 15 x 7.00 tires as optional equipment.

Removal and Installation

To remove a tire, deflate the tube. Starting directly opposite the valve stem and working in both directions toward the valve, press both beads of the tire off the rim ledge down into the rim well. Start removal of one bead at the valve stem, working around the wheel in both directions from this point. Pull the valve back inside of the rim, remove inner tube and remove the second bead by the same procedure used to remove the first.

To install a tire, inflate the tube until just rounded out and insert into the casing, placing the valve directly opposite the double balancing mark (two dots) on the side wall of front tires and single balancing mark (one dot) on rear tires. Place one bead over the rim and into the rim well at one point, so that the remainder of the bead can be worked over the rim. Press this bead onto its rim seat and insert valve stem through the hole in the rim. After the valve is aligned in the hole, start application of the second bead directly opposite the valve, pressing it into the rim well and working in both directions so that the section of the bead at the valve is the last to be worked onto the rim.

Readjust, if necessary, so that the valve protrudes straight through the rim, and pull the valve through from outside until seated snugly against the inside of the rim.

Partially inflate and work both beads onto the rim seats, then complete inflation.

Inflation Pressures

In all modern cars, due to high speeds, four-wheel brakes, and the desire to get maximum riding comfort and life from the tires, it is essential that they be checked for pressure at least once each week and oftener when touring.

Lower pressures than recommended will result in excessive tread wear and make the tire more susceptible to bruises and breaks from impact with sharp irregularities in the road surface. Lower than recommended pressures will often affect the proper handling of the car.

Hard steering on turns is ordinarily due to low front tire pressure. Wandering on the road or weaving, tire screeching and the car leaning to one side or rolling on turns at high speed are traceable to low rear tire pressure.

However, on the other hand, higher than recommended pressures reduce the shock-absorbing qualities of the tires, but increase stability at high speeds.

For all-around average load and driving it is recommended that in the 16x6.25 size tires the following pressures be maintained: front, 24 pounds; rear, 32 pounds. In the case of the 15x7.00 size tires, which are optional equipment at extra cost, 22 pounds pressure is recommended for front tires and 28 pounds in the rear tires.

Tire Wear

Due to increased thickness in tire treads, together with higher driving speeds, faster acceleration and more effective braking, the tread will show uneven wear and a cupping effect and is particularly noticeable on the front tires which are subjected to braking action only, while in the case of the rear tires the tread wear is equalized due to both driving and braking action.

This is a natural wear and can be controlled by reversing the direction of rotation of the tire. It is recommended that the right and left wheel and tire assemblies be interchanged when this wear becomes noticeable. Since the height of the tread block has been reduced by wear, the flexing will be lessened and this change of position of tires will not only even up the wear but will in most cases prevent reappearance.

Wheel and tire balance is carefully checked during the process of assembling; however, this balance may be changed by removal and reinstallation of tires or by tire tread wear. In order to maintain original stability at high driving speeds, have wheels and tires rebalanced whenever it is necessary to remove and reinstall a tire on a wheel, or, if tire changes are not necessary, balance at intervals of 5,000 miles. This operation can be readily and accurately done by attaching sliding type balancing weights to the inside rim flange. The proper position of these weights can, however, be determined only by the use of a wheel balancing machine.

Spare Tires

The spare tire on Brougham, Convertible Brougham and Sedan models is located on the floor of the rear compartment. In the 3-Passenger, 4-Passenger and Convertible Coupe models the spare tire is located on the floor of the rear deck.

Removal of Spare Tire from Vestibule

To remove the spare tire and wheel from the rear compartment of the body, open the door and remove the mounting screw from the wheel clamp. The wheel and tire can then be pulled out of its compartment.

The jack supplied in the tool kit is of the high lift type and is designed to lift either the front or rear of the car by supporting it under the bumper brackets. This makes it unnecessary to reach under the car to put the jack in place in order to lift the car to change a tire.

BODIES

Hudson-built bodies, because of all-steel construction, the method of welding and riveting outside panels to the floor section, and the Hudson unit-construction principle of building the chassis and body as a unit, will remain free of squeaks and rattles throughout the life of the car.

Heavy gauge steel panels; strong, rigid pillars; steel top construction—as a matter of fact, steel all around—assure Hudson owners of complete safety.

Doors

Large, wide front doors hinged at the front afford ample room to enter and leave the car. Because of heavy box type construction and large oversize hinges, the doors will stay in position and will not rattle or sag.

Windows are large and afford clear vision in all directions.

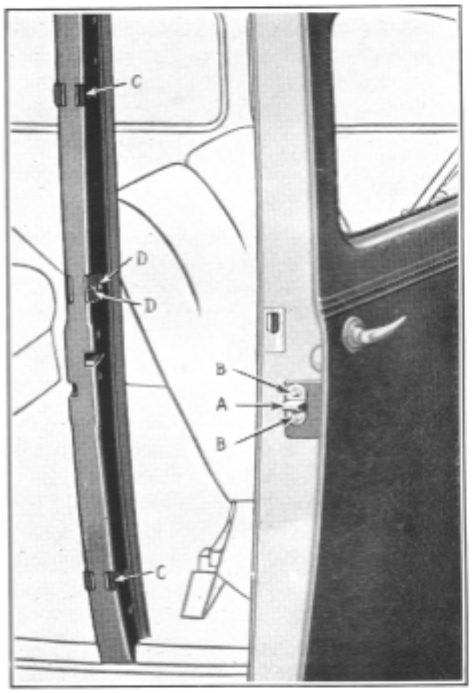


Figure 29

Door Adjustments

Door striker plates are adjustable to permit proper in and out regulation of the door position. The dovetail (male) (A), Figure 29, is adjustable to center the door up and down. The hinge pins are cadmium plated to prevent rusting and squeaking of hinges.

To adjust doors for top and bottom clearance, first loosen screws (B), holding the male portion of the dovetail to the door and move up or down as necessary so that it lifts the door $\frac{1}{16}$" as it enters the female member of the dovetail set in the lock pillar post when the door is closed.

The front door striker plates should be moved in until the door is held firmly against the upper and lower door bumpers.

The front edge of the rear doors should be set slightly inside of the rear edge of the front doors to prevent wind noise at high speed. If an adjustment is necessary, loosen the bumper fastening screw (C) in the pillar post and move the bumper in or out as necessary to permit the door to close to the desired position. Tighten the screws securely.

If, after this adjustment, the door must be slammed to latch it, or the latch does not hold the door snugly against the bumpers and weatherseal, loosen the latch striker plate screws (D) in the pillar post, being careful not to remove the striker plate screws as the tapping plates inside the pillar post will fall out of position, and move the striker in or out, as necessary, and tighten the screws securely.

All doors are provided with strong steel check straps (B), Figure 30, imbedded in rubber at the ends, to control the swing of the doors.

Lubrication

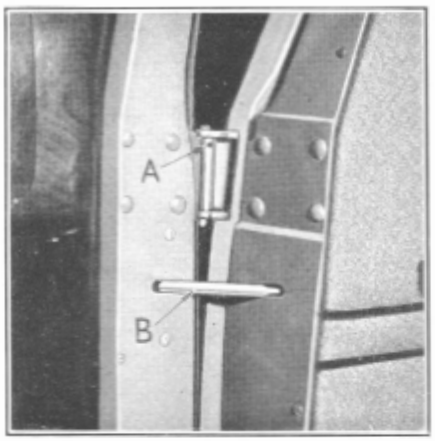


Figure 30

The door striker plates and door dovetails are fitted with lubricating wicks. These should be saturated periodically with light oil.

The door hinges should be lubricated periodically with light oil, through oil holes (A), Figure 30, provided at the top of the body half of the hinge, adjacent to the hinge pin and accessible when the door is open.

Door check straps and door latch tongues should be lubricated periodically with a stainless "Pencil Lubricant."

Trim Panels

All side wall and door upholstery panels are attached with screws which are visible along the edges of the doors and pillar posts when the doors are open. By removing these screws and the regulator and lock handles on the panel in question, it can be easily removed.

Seats

Seat cushions and cushion backs in Hudson-built bodies have been designed to afford the maximum of driving comfort to both driver and passenger. Cushions are deep, have an unusually comfortable coil spring arrangement and padding effect to hold the cushion form in pleasing appearance after long service.

The front seats in all models are adjustable to suit the individual driver's needs and comfort. While on long drives it is often desirable to shift the seat location slightly to change the body position for a short time to relieve driving strains. This arrangement is also designed to accommodate the driver's leg length.

The Brougham and Convertible Brougham front seat cushions are the same full-length type used in Sedan models; however, the cushion back is built in two sections, each section of which may be tilted forward independently of the other. The entire seat is pivoted at the left front corner and can be moved on an arc, forward and to the left side to provide ample room for entrance and exit to and from the rear compartment.

In the 4-Passenger Coupe model, in which a seat has been provided directly behind the driver's position for the extra passenger, the front seat is also of the full-length Sedan type with the cushion back built in two sections, each section of which may be tilted forward independently and is pivoted at the left front corner to afford ample room for entrance and exit to and from the rear compartment.

In the 3-Passenger Coupe and Convertible Coupe, the seat is of the full bench type and adjustable forward and backward.

Seat Adjustments—Forward and Backward

Figure 31

In all models the entire front seat may be moved forward and backward by merely lifting handle (A), Figure 31, to unlock the mechanism, and by stretching or folding the legs the seat is shifted to the desired position. By releasing the handle the seat is again locked in position. This movement is independent of moving the seat on an arc.

Seat Adjustment on Arc

The front seats in the Brougham, Convertible Brougham and 4-Passenger Coupe models can be moved on an arc by merely tilting the passengers' section of the seat back slightly forward to unlock the mechanism and pulling the seat forward by gripping the instrument panel. By moving the seat back to its normal position the seat is again locked.

Inasmuch as the two seat adjustments mentioned above operate independently of each other, it is possible to move the seat forward by lifting the locking handle (A), Figure 31, at the left front corner and also move the seat on an arc at the same time.

Luggage Space

Ample room is provided in the rear luggage compartment for several large and small pieces.

In the Coupe models, luggage and sample cases can be easily placed into or removed from the rear deck compartment due to the extra large deck lid which reaches down to the compartment floor.

Ventilation

Your car is equipped with Year 'Round Ventilation System which includes the Automatic Draft Eliminator and fully sealed doors.

The front door windows are divided into two sections, each section controlled by a separate regulator handle. The front section can be swung outward to act as a wind scoop or deflector and also lowers into the door. Turning the left handle slightly in a counterclockwise direction will open the deflector and create a vacuum which will draw the old air out of the body and permit clean fresh air to be drawn into the body through the Automatic Draft Eliminator located under the rear seat cushion.

Turning the handle in a counterclockwise direction will lower the deflector into the door. This action is reversed for a given movement of the control handle of the right door.

Inasmuch as the Automatic Draft Eliminator is made of cloth and acts as a screen to prevent road dirt and dust from entering the body, it should be inspected periodically and cleaned when necessary. To clean it is not necessary to remove the bag from the car, but merely raise it with the fingers and tap the accumulation loose and permit it to drop to the road surface.

The rear door and quarter windows on the Sedan models and rear quarter windows on Brougham models are controlled by regulators, the handles of which are located directly below the windows.

The rear quarter windows on the Sedan models slide backward and forward. By moving the glass backward to give an opening of approximately ½", a suction is created and draws air out of the body, while further opening permits air to enter.

The cowl ventilator will permit the entrance of large quantities of air into the car. Its operation and extent of opening is controlled by a lever, the knob of which is located directly under the center of the instrument panel.

Floor mats and carpets are all secured under the scuff plates so that dirt can readily be swept off. The front mats can be withdrawn; however, it is necessary to loosen the scuff plate screws to remove the carpets.

Care of the Finish

The lacquers used on Hudson and Terraplane cars have been selected only after exhaustive tests to insure a finish which will withstand the scorching sun rays, hot summer temperatures and rigors of severe cold winter weather.

Due to the variations in temperature to which the finish may be subjected, the accumulation of dust and dirt containing such harmful ingredients as salt spread on streets during winter weather and calcium chloride used to lay dust on gravel and dirt roads, extreme care must be exercised in protecting the finish against premature deterioration.

The surface is hard, yet will scratch easily if the car is dusted off too strenuously. It is, therefore, advisable to select only a soft clean wiping cloth if there is only a light coat of dust to be removed. Examine the wiping cloth carefully before using for buttons, hooks and clasps which may scratch the surface.

Dried dirt or mud should be soaked off with flowing cold water before applying a sponge or cloth to the finish. This process will tend to loosen the accumulation and rinse it off without harming the surface.

It will be noted when wiping the finish that a slight amount of color will appear on the cloth, but this is a natural condition and should not cause alarm to the owner. All lacquers have a natural tendency to disintegrate slightly after exposure to the elements. This condition, however, can be minimized considerably by the application of Hudson Wax Base Polish after the car has been washed, or if preferable a coat of Hudson Wax Polish which will give a lasting, high lustre. Hudson Lacquer and enamel polishes have been compounded carefully and will protect and preserve the finish for long periods. Dusting the car off is accomplished with greater ease when the finish is thus protected.

Grease, water and other foreign spots can be easily removed by carefully cleaning the affected area with Hudson Wax Base Polish.

The life of the car finish naturally depends greatly upon the care and attention given to it by the owner. The car should not be permitted to stand for long periods unwashed, or allowed to stand outdoors night after night under trees where drippings or moisture will attack the finish. Long periods of exposure to the sun should also be avoided.

Enameled surfaces are more susceptible than lacquer to a clouding condition, commonly termed "hazing," after long periods of exposure to the elements. This condition, however, can be corrected without it in any manner affecting the life of the enamel by washing carefully, cleaning with Hudson Body Cleaner, then polishing with Hudson Wax Base Polish or Hudson Wax, being careful not to apply it too thickly so that difficulty will be avoided in properly polishing the surface.

Contrary to general belief, chromium-plated parts must also receive periodic attention, particularly during the winter months when salt is spread on the streets to dissolve ice and snow. While chromium-plated parts must withstand certain rigid tests before being accepted by the car manufacturers, they will spot and rust if neglected for long periods. Bumper bars particularly should be watched as frequent contact with the bumpers of other cars while being parked or in pushing will tend to scuff and scratch the plated surface and make them more susceptible to rust.

Cleaning with gasoline or washing with soap and water will remove the salt or calcium chloride. Follow up by polishing or applying a coat of Hudson Wax Base Polish for protection. If the bars are badly pitted a coat of clear lacquer applied immediately after drying the bar will give it a protecting coat.

We believe it advisable to mention a few "don'ts" in regard to finish which may be beneficial to the car owner:

Don't allow alcohol or anti-freeze solutions to lie on lacquered or enameled surfaces. Rinse these spots immediately with large quantities of water.

Don't wash or polish the car in the hot sun or immediately after engine has been stopped—let it cool naturally.

Don't use so-called "speed" cleaners or polishes—they contain abrasive ingredients which soon wear off the lacquer.

Care of the Car Interior

The care of the interior of your car determines to a large measure the resale value when you contemplate trading in or selling. It is not a difficult job to perform and the small amount of time thus expended will be well repaid by the pride you will derive from its neat appearance.

All body joints are thoroughly sealed against the possibilities of dust entering while driving on dusty roads. However, a certain amount of dust and dirt will find its way into the car by various means and this, if allowed to remain, has an abrasive action on the cloth and will in time cause the upholstery cloth to show wear. It is therefore our suggestion that at least once each month or oftener if conditions warrant the seat cushions be removed and they and the seat backs and upholstered panels be thoroughly brushed with a whisk broom and then vacuum-cleaned.

The nap on mohair upholstery can be easily restored to its normal position if it should become matted down by covering the area with a damp cloth and then steaming it with a hot iron.

Most spots which are apt to soil the car upholstery can be quickly and neatly removed by the use of Hudson Upholstery Dry Cleaner or Hudson Foam Solution Cleaner which is available from your Hudson-Terraplane Dealer.

It is advisable when cleaning soiled sections or spots to work in a circular manner outside the area, working gradually toward the center. By this method you will be certain not to leave an unsightly ring.

Care of the Convertible Coupe and Convertible Brougham Folding Top

Convertible Coupe and Convertible Brougham tops frequently become spotted through the lowering and raising operation. These spots or soiled areas are often permitted to remain for fear of discoloring the top material.

By the use of Hudson Dry Cleaner soiled areas can very easily be cleaned. The proper method is to select an area slightly larger than the area to be cleaned and rub lightly in a circular manner, gradually working toward the center.

EQUIPMENT

With the exception of the Electric Hand and Hydraulic Hill-Hold, which are available only as factory-installed options, all of the following items of equipment can be installed on any models. This equipment is expressly designed for Hudson Eight cars and is in harmony with interior or exterior appointments. In many cases mountings are provided and no drilling or cutting is required to install the equipment; however, any of these items can be easily installed by an Authorized Hudson and Terraplane Dealer:

Automatic Clutch Control

Automatic clutch control is available as an option or can be installed by your Authorized Hudson and Terraplane Dealer. The clutch mechanism has been designed so that automatic clutch control can be installed without any replacement of standard parts or any drilling. The automatic control is designed especially for Hudson cars and is of the latest design, incorporating pendulum control and a lockout device to prevent it from becoming operative in "high" gear at speeds above 15 miles per hour. This, together with the natural smooth action of the Hudson-lubricated clutch and the controlled throttle return, gives a smoothness of operation both on engagement and disengagement that has never before been attained.

Inasmuch as the lockout is effective only when the car is being operated in "high" gear, it will in no manner affect the operation of the automatic clutch control when changing through the gears to reach high gear.

This arrangement is a safety device which eliminates the coasting effect at high speeds and makes automatic clutch control safe to use on wet or slippery streets and when the car is operated in mountainous country.

Electric Hand

The Electric Hand may be had on all models as a factory-installed option. This device simplifies gear shifting over the conventional method of manually operating the gear shift lever by selecting the desired gear with a small lever located immediately under the steering wheel. The actual work of engaging and disengaging the gears is accomplished by the engine intake manifold vacuum which is electrically controlled when the clutch pedal is depressed.

When Electric Hand is combined with Automatic Vacuum Clutch Control it produces a Selective Automatic Shift of an exceptional appealing nature. With this combination it is merely necessary to select the desired gear with the finger tip lever mounted on the steering column and by releasing the accelerator pedal the actual movement of gears is accomplished. With Selective Automatic Shift the shift is accomplished faster, with less effort on the part of the driver and the elimination of gear clashing by synchronizing the actual movement of gears with the clutch fully disengaged.

Hydraulic Hill-Hold

The hydraulic hill-hold is mounted on the front of the brake master cylinder. Its purpose is to hold the car automatically from backing when stopped on a grade. As the car is brought to a stop and the clutch and brake pedals have been depressed, the hydraulic brake fluid forced into the brake fluid tubes is locked in the tubes by the action of the clutch pedal. The brake pedal may be released. This permits freedom of the right foot to operate the accelerator pedal. The releasing of the clutch pedal releases the action of the hydraulic hill-hold. Your Authorized Hudson and Terraplane Dealer only should be permitted to make adjustments on this unit.

Inside Visor

A visor identical with the left-hand visor can be readily installed, as proper mountings have been provided in the right side of the windshield header.

Cigar Lighter

The standard lighter supplied as equipment on some models can be installed on any body type.

HUDSON APPROVED ACCESSORIES

Your Hudson-Terraplane Dealer offers a complete line of Factory-Approved Accessories for your car. Each accessory has been chosen for its superiority over competitive items. Each has been inspected and tested and carries the approval of Hudson engineers.

There are certain extra items of a strictly accessory nature which tend to enhance appearance, increase comfort and add satisfaction to the ownership of either a Hudson or Terraplane car.

An ELECTRIC CLOCK is available for mounting in the locker box door, and is the finest automobile clock on the market. Its illuminated dial is visible day or night. No drilling or cutting is necessary as a hole has been provided for

its installation. It is only necessary to remove the hole cover by removing the two stud nuts in back of the instrument panel. Enjoy the freedom from winding, only possible with an electric movement.

Two HUDSON RADIOS are available, which utilize to the fullest extent the many advances which have taken place in radio engineering. They are real musical instruments of exceptional quality, designed expressly for Hudson cars, bring you the same enjoyment in automobile radio that you enjoy in your radio at home. The STANDARD RADIO with built-in speaker is equipped with five tubes, one being a metal tube. The DE LUXE RADIO with separate speaker, and six tubes, one of metal, faithfully reproduces all reception, and the tone is controlled to your individual wish by the tone control on the set itself. The Hudson radio is really a built-in part of the car, the dial in the instrument panel harmonizing beautifully with the other instruments. Wherever you go you are in touch with the happenings of the world. Sports, music, news bulletins, entertainment of all kinds accurately reproduced.

HUDSON HOT WATER HEATERS are available in three models. The Standard Heater which delivers an ample supply of healthful warmth for normal weather conditions. The De Luxe model provides and delivers an adequate supply of heat for the majority of cars. It is equipped with a deep core and has an exceptionally quick heat-up period and delivers a steady stream of uniform heat. It is equipped with added features in heater design—provision for supplying warm air to the windshield for defrosting and a side opening port for furnishing a flow of warm air to the driver's feet. These features are controlled by a knob on the heater. By pushing back the knob a steady stream of warm air is directed to the foot pedal area, assuring the driver of new and complete winter comfort. The Custom model, with a larger core, is truly a remarkable development in heater performance. This model is also equipped with the defrosting and driver's foot warming features. All models are finished to harmonize with the interior body scheme. Knobs of illuminated tenite to harmonize with the instrument control knobs regulate a rheostat switch to control the heater motor speed.

WINDSHIELD DEFROSTER grilles are provided as standard equipment on all models and facilitate installation of the windshield defroster which is used in conjunction with the De Luxe and Custom heaters.

THE COMBINATION FUEL PUMP AND VACUUM PUMP is particularly adapted to mountainous territories where heavy rain or snow is experienced and which taxes to a limit the operation of the windshield wiper. The combination fuel pump and vacuum pump provides extra vacuum power for the windshield wiper, making it possible to operate very favorably under the most adverse conditions. Its installation also eliminates the slight lag in windshield wiper operation during acceleration.

FENDER LAMPS of unusual pleasing design, heavily chromium plated accentuate the fleeting appearance of the car. Their use as parking lamps effects a saving on the car battery, due to the use of smaller bulbs.

TWIN OUTSIDE AIR ELECTRIC HORNS of high quality tone, heavily chromium plated, add to the pleasing front end appointments of Hudson cars.

REAR WHEEL SHIELDS finished in the same color as the rear fenders accentuate the sweeping lines of the rear fenders and contribute to the impression of speed and grace.

HUDSON SEAT COVERS are tailored to fit Hudson-built cars. They are smart in appearance, the material harmonizing with the upholstery in all models. San-Toy covers somewhat resemble fibre matting, but are far superior in wearing qualities and eye appeal. These covers are not damaged by moisture and are easily cleaned by sponging with Hudson Upholstery Cleaner, foam solution. The smooth finish of this type of material has less tendency to wrinkle clothing and, especially in hot weather, adds greatly to the comfort of riding. Seat covers of this type are usually considered a summer need, but you will be delighted with their all-year comfort and convenience. Quickly and easily installed, they preserve the original upholstery in the car.

A VANITY MIRROR mounted on the sun visor has a decided appeal to feminine motorists. No need of moving the rear view mirror out of driving position when this beauty aid is installed.

The stylish OVAL REAR VIEW MIRROR is not only attractive in design but its special shape enables the driver to command a full view of the road behind.

The TELL-TURN SIGNAL LIGHT is a practical necessity on a motor car with today's high speed and rapid deceleration. Indicates to those following or approaching the driver's intention to turn. Operates with a touch of the hand from inside the car, obviating the need of lowering window in cold or stormy weather to signal with the arm. The signal is given by a brilliant amber arrow, which arrests attention by its rapid intermittent flashing.

The SAFETY SWINGING STOP LIGHT flashes a stop warning to cars behind, which cannot be overlooked. At a pressure on the brake pedal, the lantern is lighted and starts to swing, calling attention to the driver's intention to stop. The safety stop light is installed singly or in pairs on the rear bumper to frame brackets.

LICENSE PLATE FRAMES transform the ordinary appearing license plates into a really attractive accessory. Protect the license plates from bending and prevent rattles.

FENDER GUIDES are helpful in driving through narrow traffic lanes and in parking. They save your fenders and, being exact duplicates of the radiator ornaments, add an extra touch of distinction.

The above items are only a partial list of Hudson-Approved Accessories obtainable from your dealer. Upholstery Cleaner, Car Polish and Wax are also available.

Make your accessory selection from an Authorized Hudson and Terraplane Dealer, with full assurance that such accessories will harmonize with the car design and provide, to the fullest extent, the service for which they are intended.

YOUR HUDSON-TERRAPLANE DEALER
WILL GLADLY SHOW YOU THE FULL LINE OF
HUDSON-APPROVED ACCESSORIES

PREPARING CAR FOR STORAGE

If the car is to be laid up for any length of time, and especially in the winter, the following suggestions should be observed: Drain the water from the cooling system, then run the motor not over one minute to dry out the cylinder water jackets.

Drain the crankcase. Flush out the old oil, then refill with fresh oil. It is also well to pour a little oil into each cylinder through the spark plug holes to prevent the interior from rusting. Clean the spark plugs and dip the ends into oil to prevent rusting, and replace them.

Crank the engine for about twenty seconds with the ignition switch off and the throttle closed. This insures a distribution of the oil over cylinder walls and valve mechanism.

Disconnect the wires from the storage battery and remove battery to some dry place. It is best to take the battery to a battery service station, where it may receive a freshening charge at least once a month. It is well worth while to take care of the battery.

Go over the chrome or nickel-plated parts with a light coating of vaseline jelly or grease to prevent tarnishing. This should be removed with gasoline before putting the car back into service.

Jack up the car and remove the tires.

If the tires are to be out of service for any length of time, they should be removed from the wheels. The inner tubes should be put in the casing with a small amount of air pressure and the tires stored in some cool, dark place, preferably where there is a slight amount of moisture, since if they become too dry the rubber will harden and lose its elasticity. It is a good idea to wrap tires with cloth to protect them from heat.

Remove all dust from upholstery, wash body clean, put the windows or the top up and cover the car with heavy sheetings or a paper cover especially made for the purpose.

When putting the engine back into service again, remove the spark plugs, inject a small quantity of oil into each cylinder, crank the engine by hand for a few seconds, replace the plugs, turn the ignition "on" and, after the engine has been started on its own power, run slowly for a few minutes.