The OPERATION AND CARE OF YOUR

New Chrysler

CHRYSLER

CODE C-25

License Data

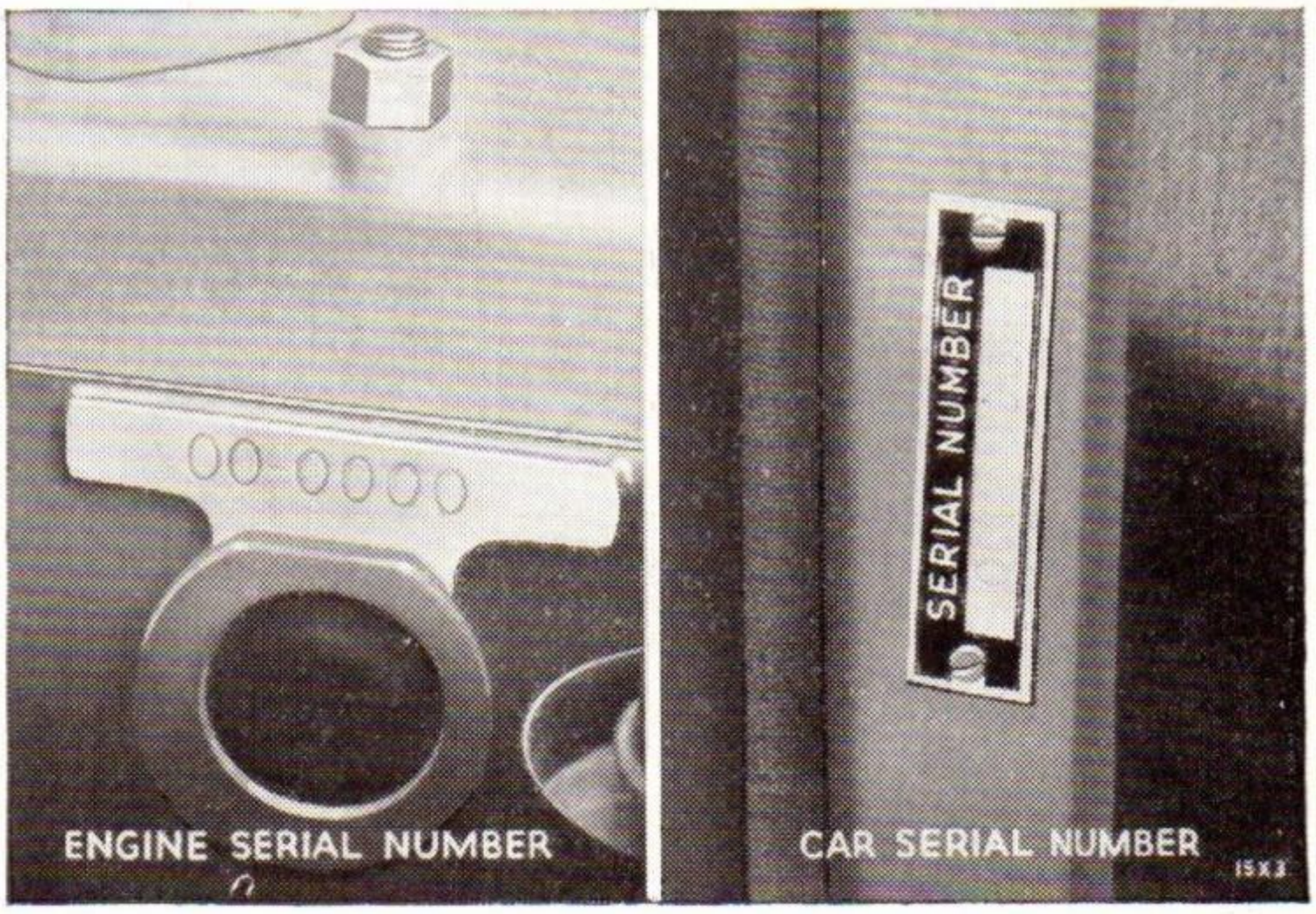
CAR SERIAL NUMBER—Located on right front door hinge post.
ENGINE SERIAL NUMBER—Stamped on boss, left side of cylinder block between numbers 1 and 2 cylinders.
BORE—3⅜"; Stroke—4½"; Number of cylinders—6.
A. M. A. HORSEPOWER RATING—27.34.
PISTON DISPLACEMENT—241.5 cubic inches.

Keys

Two sets of keys accompany your car. Duplicate keys are on a ring together with a metal tag. The numbers of the keys and locks are stamped on the tag. Remove the tag and make record of the number so additional keys may be ordered if required. For theft protection, the number is not indicated on either the keys or locks.

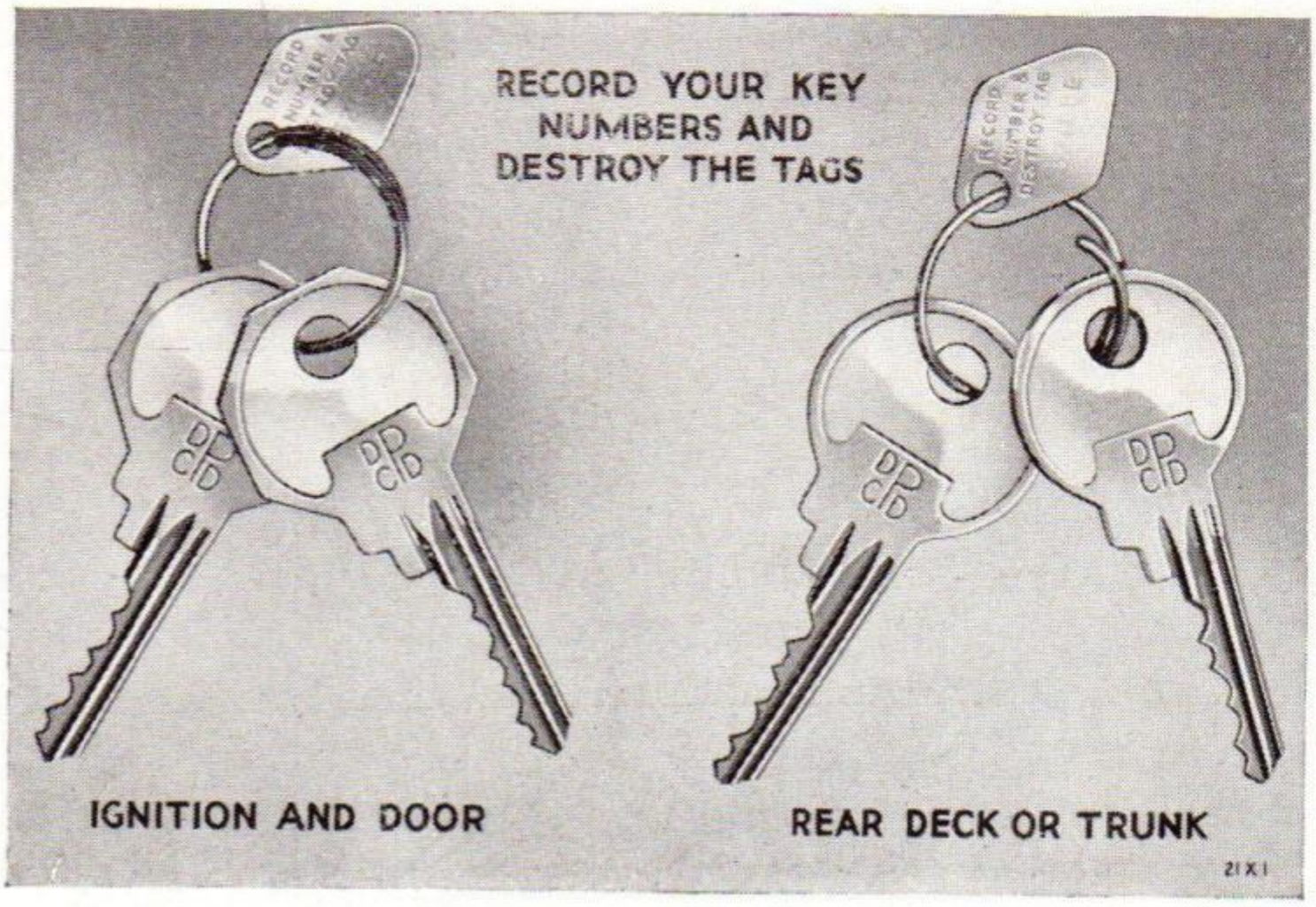
Breaking-In Speeds

Until your car has covered its first 500 miles, do not drive more than 35 miles per hour. During the next 2000 miles the speed may be gradually increased to complete the "breaking-in" process. Do not drive at continued high speeds during the first 2500 miles.



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Chrysler Sales Division

Second Edition D-8624



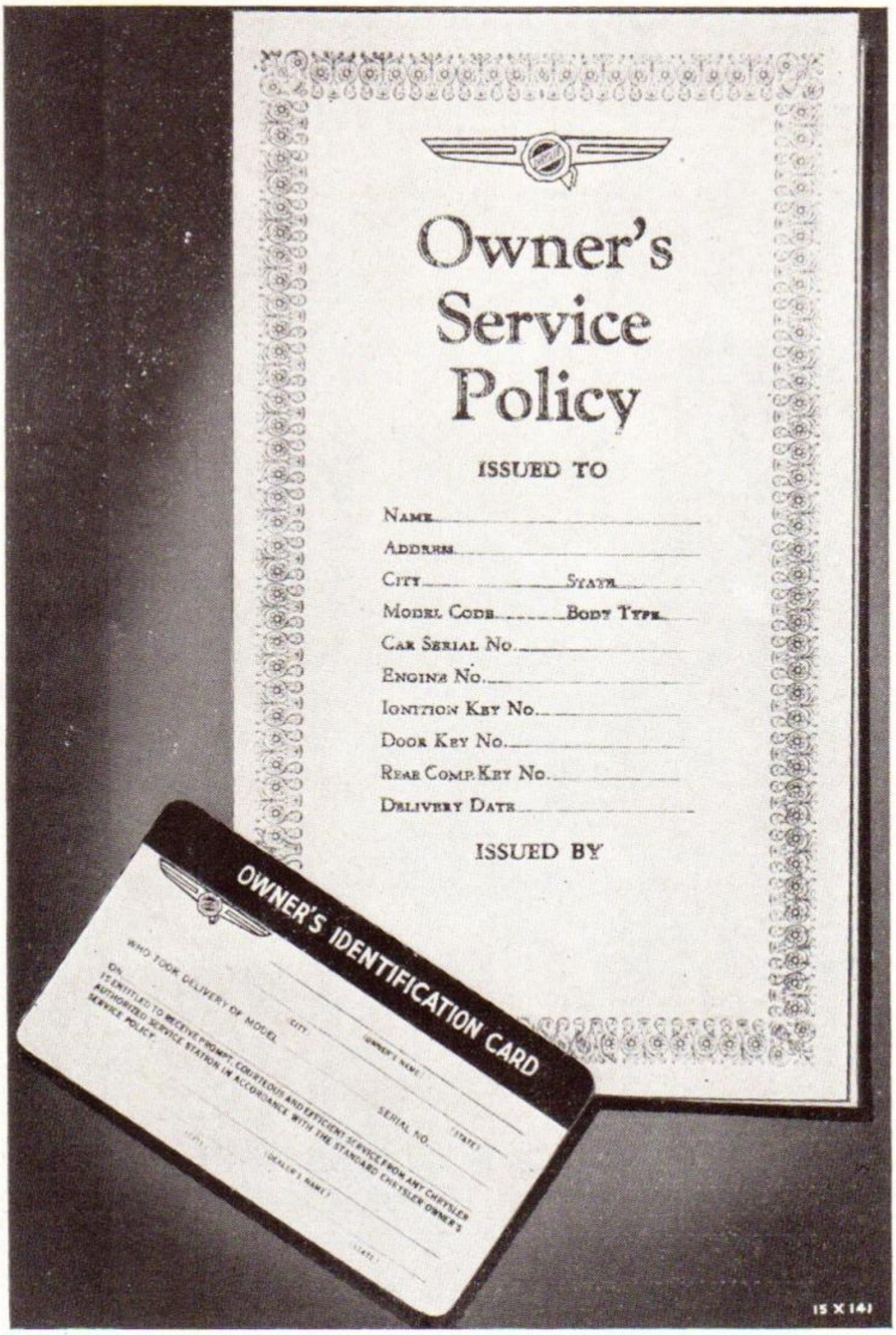
Foreword

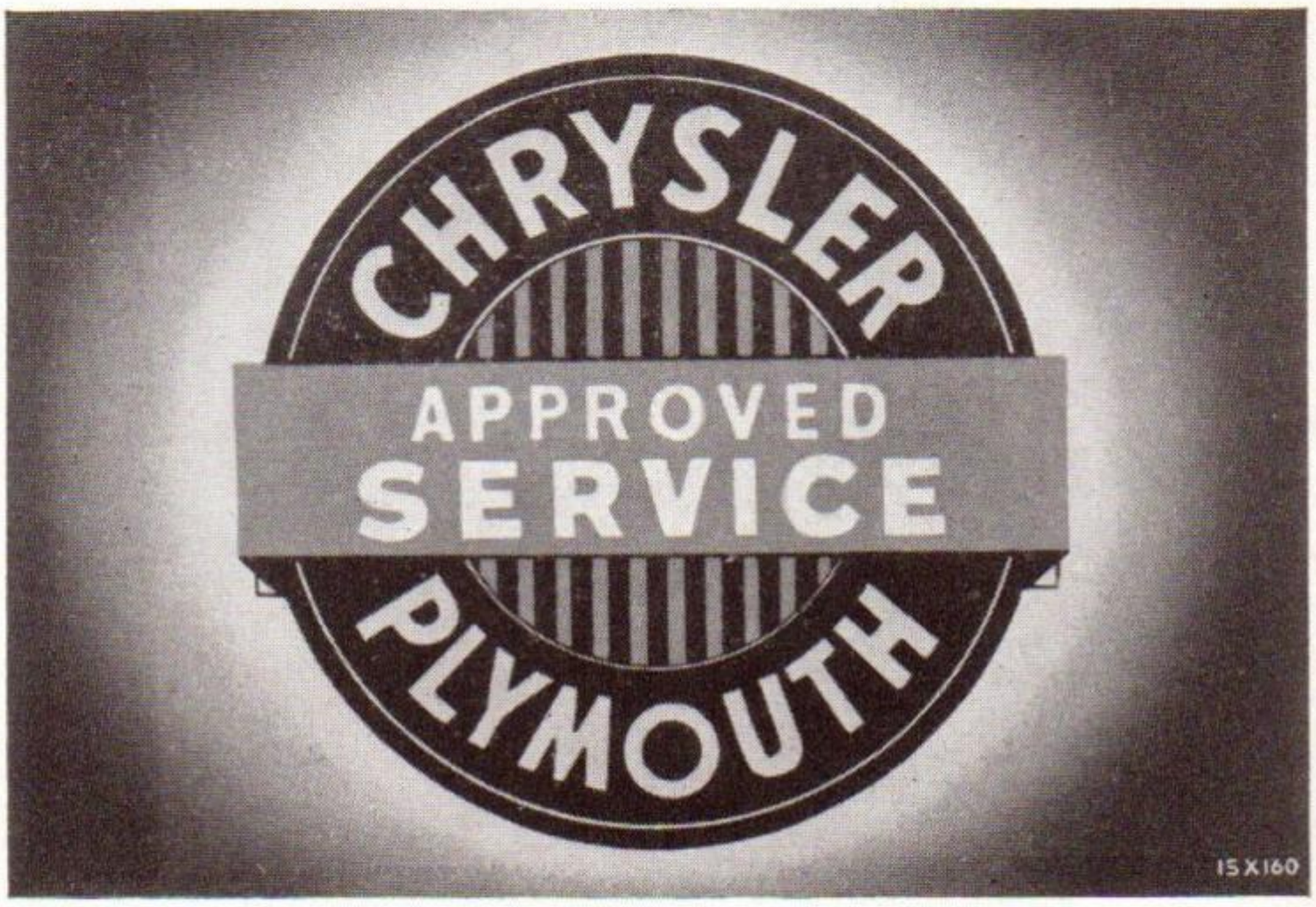
You can easily protect the investment you have in your new Chrysler and enjoy the highest degree of satisfaction, pleasure and economy. This instruction book is intended to guide and help you in driving and maintaining your new car. Read it carefully and abide by its guidance.

Proper lubrication is a vital factor in contributing to the long life and smooth operation which have been built into your car. A regular schedule of inspections is suggested and given in this book to further aid you in maintaining the new car performance.

We recommend your authorized Chrysler dealer's service station as being the best place to have your car inspected periodically and necessary adjustments made. Communications with your dealer regarding your car should state the purchase date, car serial number and total distance it has traveled.

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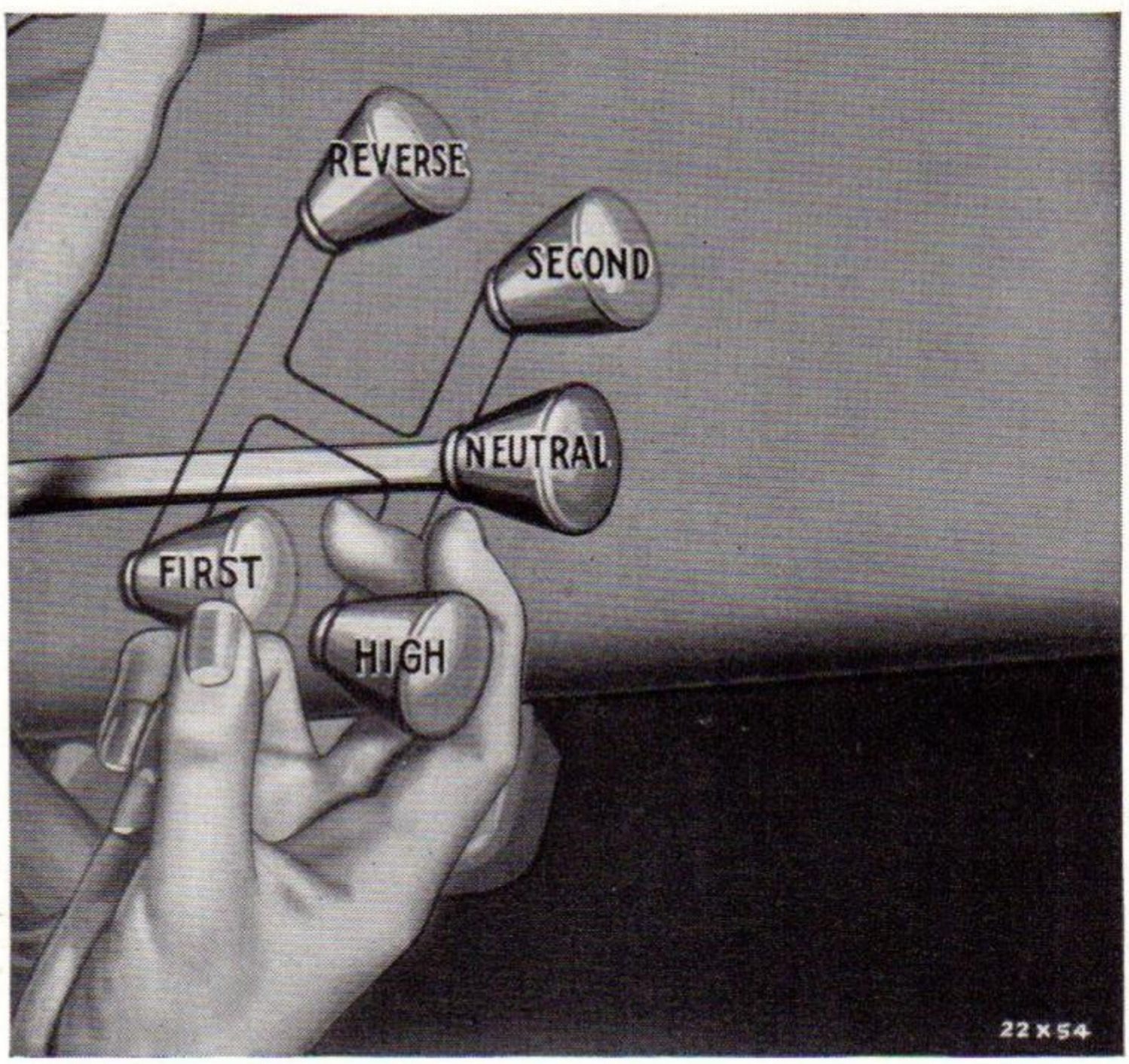

Owner's
Service
Policy
ISSUED TO
NAME
ADDRESS
CITY
STATE
MODEL CODE
BODY TYPE
CAR SERIAL NO.
ENGINE NO.
IGNITION KEY NO.
DOOR KEY NO.
REAR COMP. KEY NO.
DELIVERY DATE
ISSUED BY
OWNER'S IDENTIFICATION CARD
WHO TOOK DELIVERY OF MODEL
CITY
OWNER'S NAME
SERIAL NO.
STATE
DEALER'S NAME
15 X 141


CHRYSLER
APPROVED
SERVICE
PLYMOUTH
15 X 160

Instructions for Starting Warm Engines

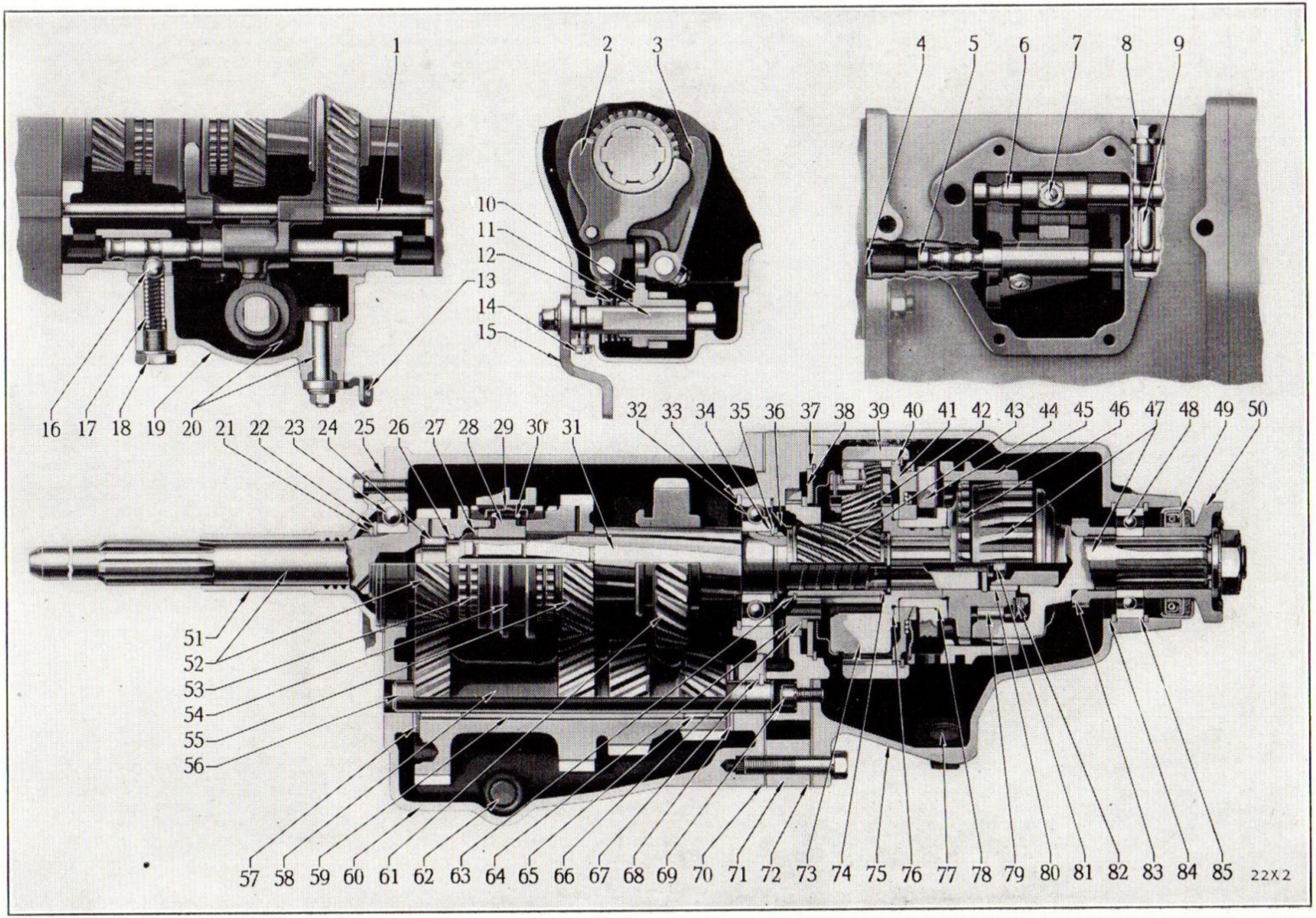
1. Disengage the clutch.
2. Turn on ignition.
3. Press the starter button and keep starter engaged until engine starts.

Note: UNDER EXTREME HOT STARTING CONDITIONS it is advisable, to insure good starting, to pull out hand throttle to give approximately one-third throttle opening.



To Start the Car after starting the engine.

1. Press the clutch pedal down to the floor. Hold it there and—
2. Move the gear shifting lever to first speed forward (or reverse if required).
3. Release the hand brake.
4. Press the accelerator to speed up the engine a little and, at the same time, gradually relieve pressure on the clutch pedal. This engages the clutch and starts the car moving.
5. When the clutch is fully engaged (no foot pressure on the pedal), press the accelerator slowly, increasing the speed (if going forward) to about ten miles per hour.
6. Press the clutch pedal to the floor and, at the same time, release the accelerator.
7. Move the gear shifting lever to the second speed position.
8. Engage the clutch and press the accelerator until you attain a speed of about 20 miles per hour.



Transmission and Overdrive

The Hand-Brake is used principally for holding the car while parked. When parking on a grade, the front wheels should be turned off the straight-ahead position as an added precaution.

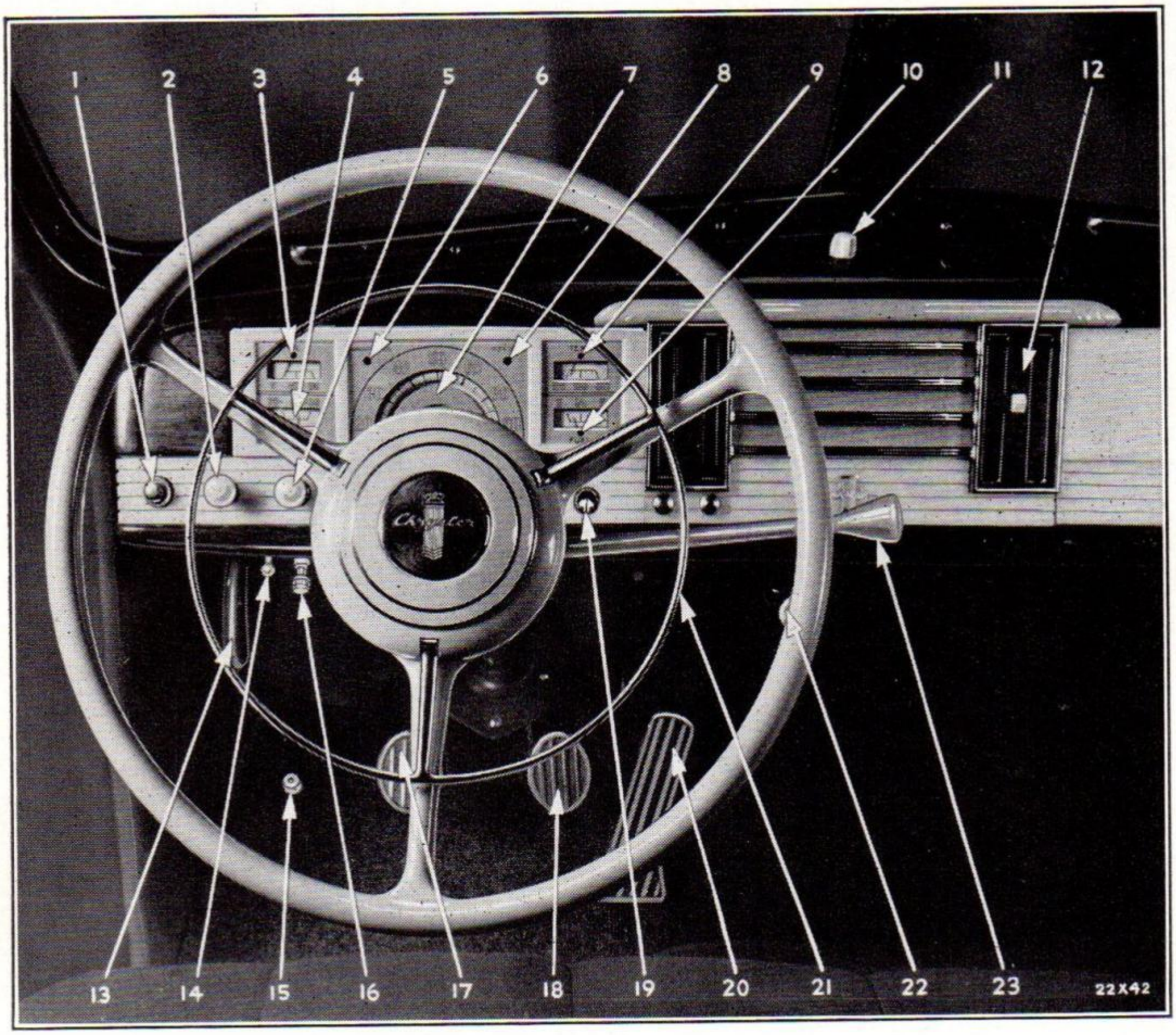
New Brakes, like other moving surfaces, require "breaking-in", as is common with new engines. Brakes on a new car, or after relining brake shoes or replacing brake drums, should be applied only at moderate car speeds and with light pressure, whenever possible, increasing speeds and pressure as the surfaces become "worn-in". Failure to observe this precaution may result in scored brake drums and thereafter rapid wear of linings.

The Ignition Lock is contained in the switch and when the key is removed, the ignition is locked "off". The key can be removed only when the thumb piece is in a vertical position.

Locking the front doors is done from the inside of the car by closing the doors and raising the latch handles. The *left front* door can only be locked from the inside by raising the latch handle after the door is closed. The *right front* door may be locked from the outside by

Transmission and Overdrive

1—Manual remote gearshift fork guide rail
2—Manual remote gearshift fork—first and reverse
3—Manual remote gearshift fork—second and direct
4—Manual remote gearshift rail plug
5—Manual remote gearshift rail—second and direct
6—Manual remote gearshift rail—first and reverse
7—Manual remote gearshift fork lock screw
8—Manual remote gearshift rail interlock screw and lockwasher
9—Manual remote gearshift rail interlock
10—Manual remote gearshift lever
11—Manual remote gearshift lever shaft
12—Manual remote gearshift lever kickover spring
13—Manual remote gearshift selector lever
14—Manual remote gearshift lever shaft screw and lockwasher
15—Manual remote gearshift operating lever
16—Manual remote gearshift selector ball
17—Manual remote gearshift selector ball spring
18—Manual remote gearshift selector ball spring screw
19—Manual remote gearshift housing
20—Manual remote gearshift selector cam and shaft
21—Transmission drive pinion bearing snap ring
22—Transmission drive pinion bearing washer
23—Transmission drive pinion bearing
24—Transmission shaft pilot bearing roller
25—Transmission drive pinion bearing retainer gasket
26—Transmission shaft pilot bearing snap ring
27—Transmission clutch gear snap ring
28—Transmission clutch gear
29—Transmission synchronizer shifting plate
30—Transmission synchronizer spring
31—Transmission shaft
32—Transmission shaft rear bearing
33—Transmission shaft rear bearing snap ring—large
34—Transmission shaft rear bearing washer
35—Transmission shaft rear bearing snap ring—small
36—Transmission shaft oil baffle ring
37—Overdrive sun gear plate snap ring
38—Overdrive sun gear cover plate
39—Overdrive annulus gear
40—Overdrive annulus gear snap ring
41—Overdrive clutch core
42—Overdrive planet pinion
43—Overdrive sun gear
44—Overdrive clutch pawl
45—Overdrive clutch pawl shell
46—Free wheeling cam
47—Overdrive mainshaft
48—Overdrive mainshaft bearing
49—Rear bearing oil seal
50—Transmission shaft flange
51—Transmission drive pinion bearing retainer
52—Transmission drive pinion
53—Transmission synchronizer stop ring
54—Transmission clutch gear sleeve
55—Transmission shaft second speed gear
56—Transmission countershaft
57—Transmission countershaft gear thrust washer plate
58—Transmission countershaft gears
59—Transmission countershaft bearing spacer
60—Transmission case
61—Transmission sliding gear—first and reverse
62—Transmission case drain plug
63—Overdrive sun gear snap ring
64—Overdrive sun gear plate
65—Transmission countershaft bearing rollers
66—Overdrive sun gear balk ring
67—Transmission countershaft key
68—Transmission countershaft gear thrust washer
69—Overdrive adapter to housing screw and lockwasher
70—Overdrive housing adapter gasket
71—Overdrive housing adapter
72—Overdrive housing gasket
73—Overdrive planet pinion cage
74—Overdrive planet pinion cage snap ring
75—Overdrive housing
76—Overdrive clutch core thrust washer
77—Overdrive housing drain plug
78—Overdrive clutch core hub
79—Free wheeling roller
80—Overdrive mainshaft pilot bushing
81—Free wheeling cam retaining screw
82—Free wheeling cam retainer snap ring
83—Speedometer drive gear
84—Overdrive mainshaft bearing front snap ring
85—Overdrive mainshaft bearing snap ring—rear



Front Compartment

1—Starter button
2—Throttle control hand button
3—Water temperature indicator
4—Ammeter
5—Headlamp lighting switch hand button
6—Headlamp beam indicator light
7—Speedometer
8—Overdrive indicator light
9—Engine oil pressure gauge
10—Fuel gauge
11—Windshield wiper control button
12—Ash receiver
13—Hand brake lever
14—Instrument light switch
15—Headlamp beam control foot switch
16—Speedometer trip mileage set stem
17—Clutch pedal
18—Brake pedal
19—Ignition lock switch
20—Accelerator pedal
21—Horn blowing ring
22—Cowl ventilator control hand lever
23—Gearshift hand lever

the same key as used for the ignition switch. The *rear doors* on each side of the car may be locked only from the inside, after the door is latched shut, by pressing down the rubber buttons which protude up through the window sills. To unlock the rear doors pull the rubber buttons up.

Be sure the windows are fully closed and the ventilators are latched so they cannot be pushed open from the outside.

Polishing

Body polishes of known quality should be used and the directions on the container followed carefully. Your Chrysler dealer can supply you with approved Chrysler polishes for protection of the finish on your car which have been proven to be satisfactory.

Plated metal parts of the car will retain their brilliancy after polishing, if given a thin coating of body wax well rubbed onto the surface.

Calcium Chloride

In many localities calcium chloride and other chemicals are used on the streets for melting ice and snow. The slush resulting from the use of these chemicals is harmful, in many instances, to the metal parts of the car and should be washed off frequently to avoid rust formation where the protective finish has been scratched off to the metal.

Tar or Road Oil

Tar or road oil may be removed by use of a standard brand of tar remover without injury to the color finish. After removing the tar or oil it is quite probable that polish will be required to renew the luster.

Windows

Window glass properly cleaned will add a great deal to the sleek sparkling appearance of your car. Washing with water and wiping dry with a linen cloth or chamois does very well, but a cloth slightly dampened with household ammonia removes the thin scum which is difficult to remove with water alone. Your dealer has a glass cleaner available in a convenient container which is unusually effective and easily applied. It is used by many housekeepers for windows as well as mirrors and other glassware at home.

Bumpers

The severe service required of the bumpers naturally makes one think that it is difficult to keep them looking bright, but in reality it is quite easy. Polish is not required for the chromium plating. Just use a wet sponge. If rust forms where the plating has been scratched or rubbed off, remove the rust with a little mild kitchen scouring compound and then cover the spot with wax or clear lacquer to prevent more rust forming.

Tires

Ordinary water and a sponge are all that are needed for cleaning the tires, but to remove tar and road oil it may be necessary to use soap containing a mild abrasive such as mechanic's hand soap. A cloth dampened with kerosene is satisfactory for removing tar and oil. Also be sure to wash all traces of kerosene off the tires. A special cleaner is available for tires having white side walls.

Care of the Upholstery

The upholstery should be cleaned with a whisk broom, clothes brush or a vacuum cleaner at least once a month. However with the best of attention, spots will be made on the upholstery from many and varied causes regardless of how careful you and your guests may be. In paragraphs following we have prepared a few directions which may be helpful to you in keeping the new car appearance indefinitely. Fabric cleaner should be used sparingly. Never pour the cleaner on the spot to be cleaned.

Battery Acids

Pour household ammonia on the spot, let it soak about a minute, then wash it off with a clean cloth wet with cold water. Battery acid will eat a hole in the cloth in a very few hours and should be treated this way immediately.

Candy

Stains from candy containing chocolate can be removed by rubbing with a cloth and lukewarm water, then sponging with approved fabric cleaner.

Candy stains which do not contain chocolate can be removed by rubbing briskly with a cloth soaked in very hot water.

Avoid the use of hot water for cleaning upholstery unless specified.

Chewing Gum

Moisten the gum with approved fabric cleaner and, while it is still moist, scrape the gum off the fabric with a dull knife.

Dog and Cat Hair

Rub a slightly dampened stiff sponge over the upholstery. The sponge gathers the hair into a matted mass which may be picked off with the fingers.

Fruit Stains

A small quantity of very hot water should be poured on the spots stained. Scrape off any excess pulp with a dull knife. Then rub briskly with a cloth wet with very hot water. This treatment is likely to cause some discoloration of the fabric because of direct application of hot water and should be used only in extreme cases. (Sponging with luke warm water may suffice.) If the foregoing treatment does not remove sufficient of the stain, dry it by rubbing with a cloth and then sponge it with a clean cloth wet with approved fabric cleaner.

Soap and water are not recommended because they will probably set the stain permanently, and make even a worse appearance than the original stain. The same is true with drying: do not dry with heat such as from an iron.

Grease and Oil Stains

Remove loose grease or oil by scraping with a dull knife. Clean the spot by rubbing with a cloth wet with approved fabric cleaner. Rubbing should be done with a circular motion starting outside the spot to be cleaned and working toward the spot. The cloth should be clean and a clean portion of that cloth used after every few strokes. The cleaning process transfers the grease from the rubbed material to the material doing the rubbing. Therefore if much of the grease accumulates on the cleaning cloth it may be transferred back to the upholstery and in that process the grease or dirty spot will be made larger. It may be necessary to use more than one cleaning cloth, depending upon the amount of grease to be removed.

Particles of dirt in the grease which may remain on the upholstery may be removed by rubbing with a clean cloth and lukewarm mild soap suds. Be sure to remove the soap by rubbing with a clean damp cloth.

Ice Cream

Use the same method as for removing fruit stains, but it may be necessary to do more sponging with lukewarm water. Final cleaning with approved fabric cleaner should be done after drying.

Lipstick

Moisten the spot with approved fabric cleaner, then soak it up with a clean blotting paper. Repeat this operation until the stain is removed.

Shoe Polish

White shoe polish can usually be removed by brushing, but it may be necessary to moisten with cold water, let it dry and then brush it.

Black or tan shoe polish can be removed by brisk rubbing with a clean cloth saturated with approved fabric cleaner.

Tar

Use the same method as for removing chewing gum.

Urine

First sponge the stain with a clean cloth wet with mild soap suds. After thoroughly rinsing off the soap by rubbing with a clean cloth wet with clean water, rub the spot with a clean cloth saturated with a solution of one part household ammonia and five parts of water. Allow that to remain on the fabric for about a minute and then rinse it off with a clean wet cloth.

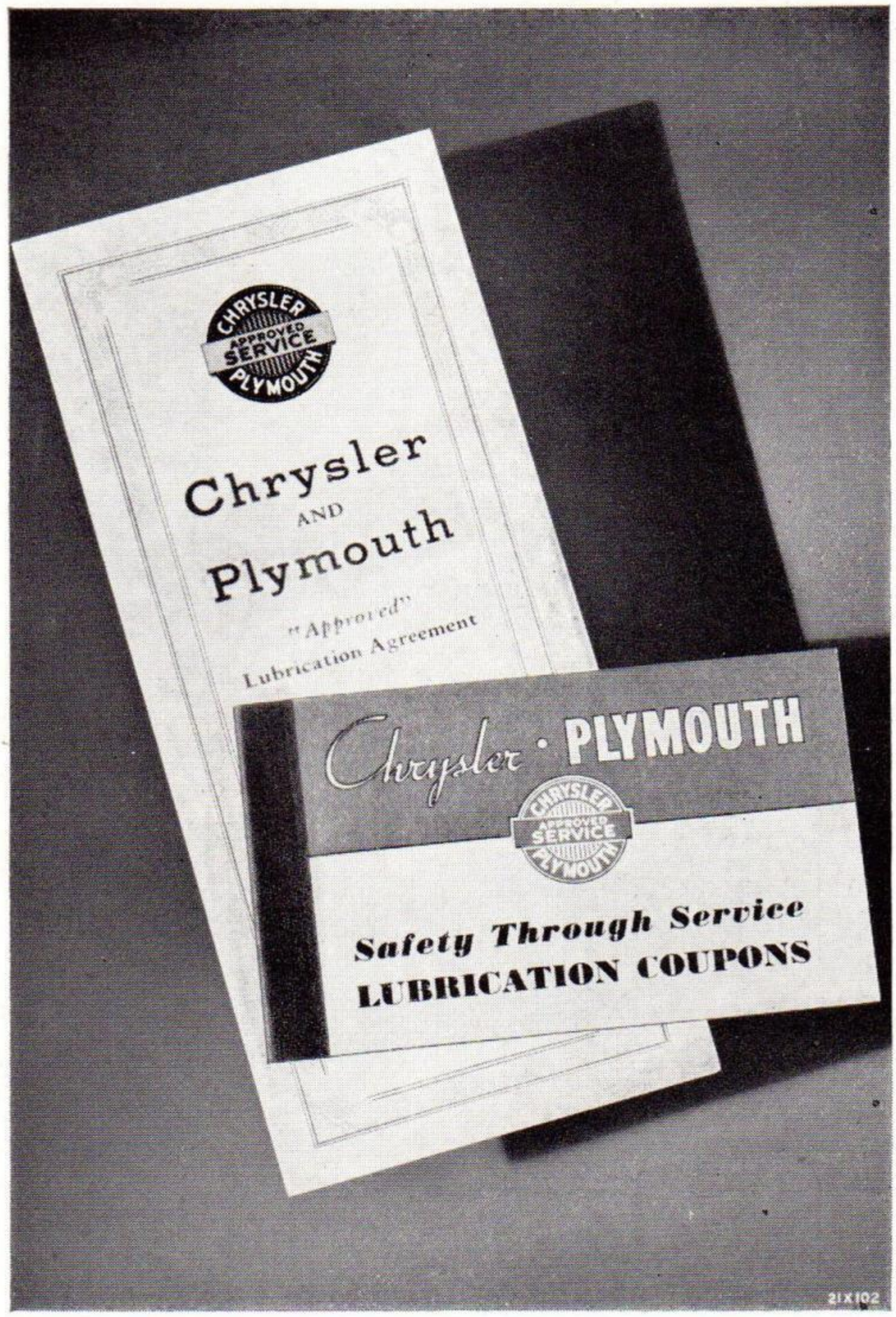
Water Spots

When cleaning water spots it is advisable first to sponge the entire panel of the upholstery. The spot may then be cleaned by rubbing with a clean cloth moistened with approved fabric cleaner.

General

The nap on mohair upholstery may become matted down after a long period of use. This condition may be improved by placing a damp cloth over the matted area and running a hot flat iron over the damp cloth. This will steam the nap so that it can be brushed back and stand up as before matting.

The floor carpets can usually be cleaned by first brushing with a whisk broom or stiff brush to remove loose dirt. A slightly dampened cloth may be needed to rub clean any spots of mud.



If gasoline is used as a cleaning agent for grease on floor mats be sure to use only "white" untreated gasoline. Avoid the use of gasoline containing tetraethyl lead or any coloring material. Gasoline is not recommended as a cleaning agent because of the fire hazard. Gasoline briskly rubbed on cloth or pile fabrics is likely

to ignite. Approved fabric cleaner is better and safer to use as it contains a fire-proofing chemical. Your Chrysler dealer carries it in stock.

Approved Lubrication Agreement

Mechanical changes and higher road speeds have led to very exacting lubrication demands at all bearing points throughout your new Chrysler as compared with the older designs of slower speed cars. This has brought about the introduction of a variety of lubricants to adequately take care of the job of lubricating the various bearing points.

Your Chrysler dealer's success is largely dependent upon the degree of satisfaction you enjoy from your Chrysler. Who could be more concerned about the assurance of your Chrysler being properly lubricated? Unless you have already received your Chrysler dealer's lubrication agreement, be sure to see him about it promptly. It assures you of proper lubricants being used at all of the proper points and at the proper time. You simply deliver the car to the dealer at regular mileage intervals and it will be lubricated and inspected thoroughly by mechanics trained especially for this work on your Chrysler.

Maintenance Schedule

Every 1000 Miles

Chassis—Lubricate all points indicated on the Lubrication Chart and use the recommended lubricants.

Every 2000 Miles

Air Cleaners—Remove filter element from the carburetor air cleaner body and wash in kerosene. Dry thoroughly and re-oil with fresh engine oil (S. A. E. 50) and assemble filter element to the air cleaner. NOTE: Cars operated in dusty territories will require more frequent attention to the air cleaner. In very extreme conditions it may be necessary to clean the air cleaner as often as once a day.

The oil filler pipe cap air cleaner should be cleaned with kerosene and oiled with fresh engine oil, S. A. E. 50.

A special heavy duty carburetor air cleaner is available, as special equipment, for use where existing conditions are extremely dusty. This unit should be cleaned as frequently as required depending upon the severity of the dusty conditions of the air. Dust collects in the oil contained in the air cleaner, and settles into a sump. The sump should be wiped clean and filled to the indicated level with fresh engine oil. Use S. A. E. 50 where air temperatures are higher than 32° above zero (Fahrenheit) or No. 20-W in temperatures below 32° above zero.

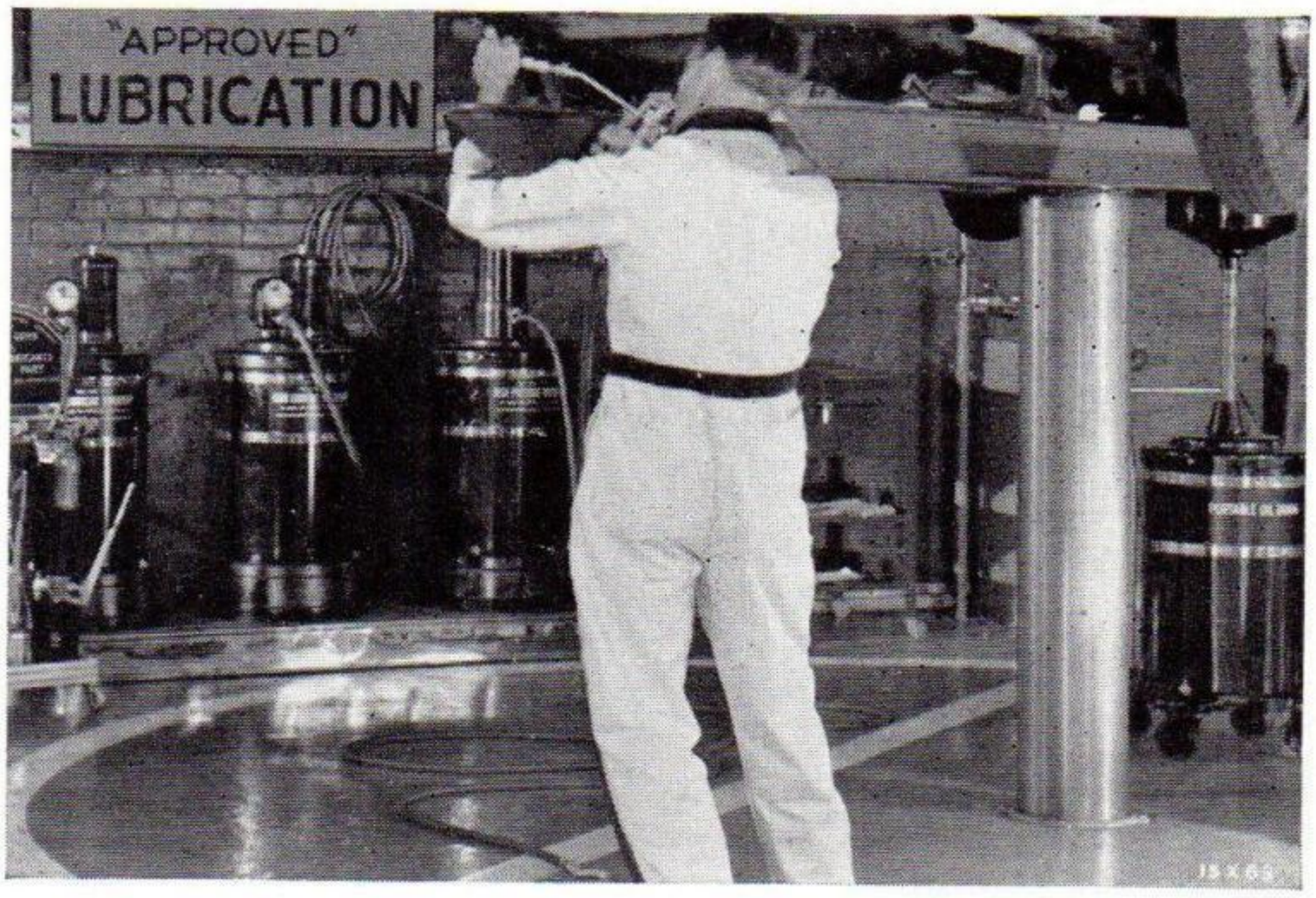
In conjunction with the heavy duty air cleaner a special crankcase ventilator air cleaner (oil filler cap) and an outlet pipe cleaner are used. These air cleaners should be removed, washed in kerosene

Springs (*with steel covers*)—The frequency for lubrication of springs with metal covers is largely dependent upon climatic and road conditions. The necessity of lubrication is indicated by spring squeaks and stiff riding. Use special fitting to inject spring leaf lubricant.

Lubricants containing inert materials such as asbestos fibre, graphite, silica, etc., are undesirable for spring lubrication. A lubricant containing a rust preventive (inhibitor) is recommended in order to avoid rust formation which leads to hard riding and spring squeaks.

Lubrication

The present day automobiles perform an entirely different type of service to that of a short time past. Higher speeds are developed and longer distances are traveled in shorter time. This type of performance demands very exacting lubrication. The necessary mechanical changes have brought about the necessity for a variety



of lubricants to adequately take care of the lubrication requirements.

Proper lubrication is of vital importance to you in the economical operation of your car. We urge you to read carefully the following paragraphs concerning this subject so you will know just what should be used as a lubricant in the major units of your car.

Engine Oil Recommendations

Custom, in the past, was to use heavier (higher viscosity number) oils than at present. The use of light engine oil is an aid in cold weather starting, fuel economy, and the proper lubrication of parts.

For sub-normal winter conditions such as temperatures below —10° F., it is recommended that No. 10-W be diluted with about 10% of colorless refined kerosene. The kerosene should be mixed thoroughly with the 10-W oil before being added to the engine. In cases where it is not convenient or desirable to do this, consult your dealer or any reputable oil company as they will have specially prepared oils to take care of these extremely low temperature conditions.

Important

During winter, all oils used should have a pour point or cold test below the lowest anticipated temperature that will be encountered during its use.

It is always advisable to drain the crankcase while the engine is at normal operating temperature. Oil will drain more completely when hot, and will, therefore, carry more of the foreign material and dirt with it if drained while the engine is warm.



Checking Oil Level

Each time you stop for fuel the oil level should be checked. The oil level indicator is marked at "full" and "half-full". A third marking, between "full" and "half-full", indicates the "running level". The "full" mark shows the proper level of oil after the engine has not been run for a few hours. As soon as the engine is started running, the level will drop somewhat, due to the filling of oil passages and the filter.

Oil should not be added until the level is below "running level" on the oil level indicator, when one quart may be added. The level should never be allowed to drop below the "half-full" mark.

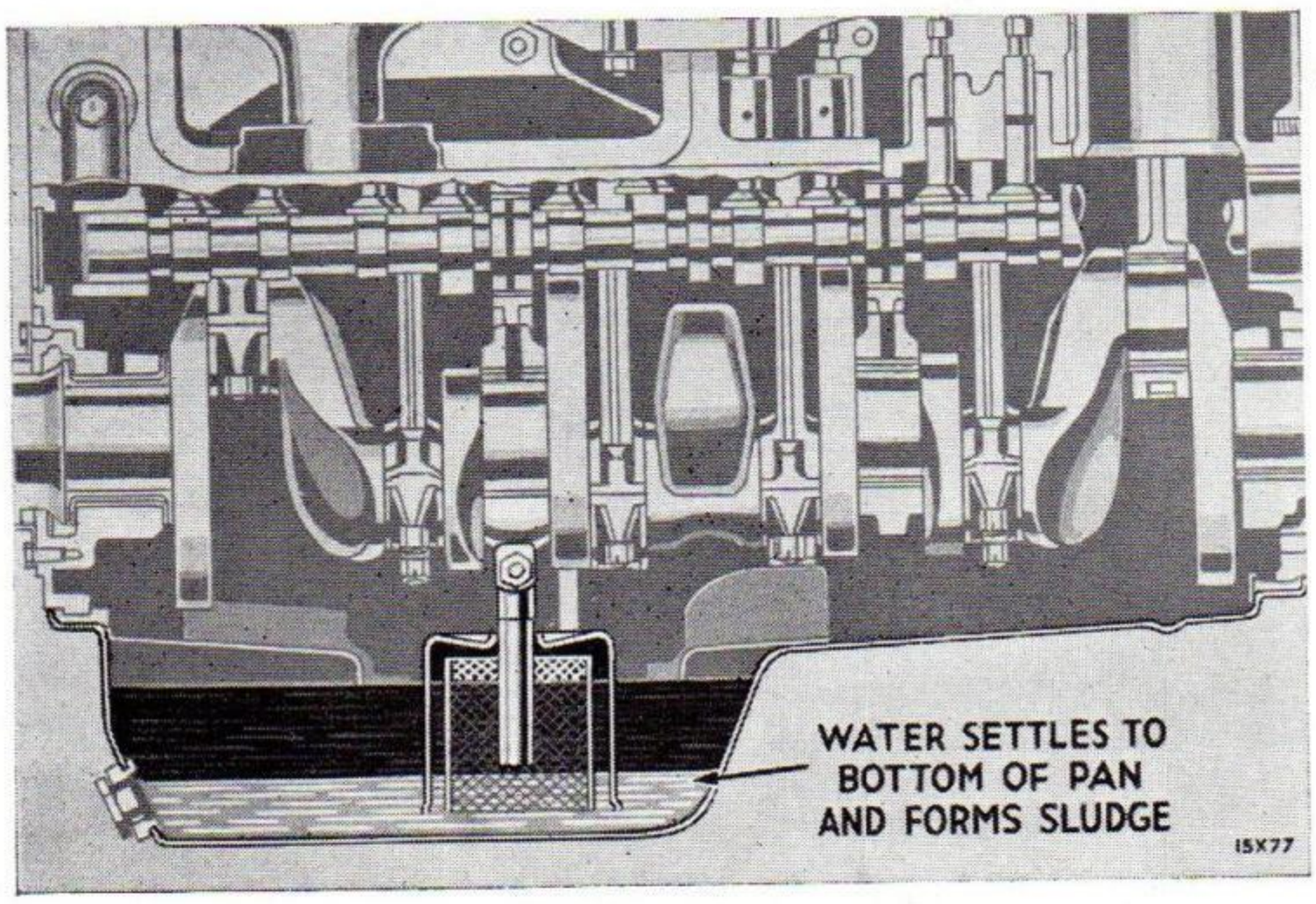
Dusty Roads and Dust Storms

Driving over dusty roads or through dust storms introduces abrasive material into the engine. Air cleaners which are kept in

good clean condition decrease the amount of dust that may enter the crankcase. However, if the oil becomes contaminated with dust or dirt, it should be drained promptly to prevent harmful engine wear. The frequency of draining depends upon the severity of the dust conditions and no definite draining periods can be recommended. It should be remembered that an oil change to eliminate abrasive dust may be considerably less expensive than to take a chance on worn engine parts.

Winter Driving

During winter, if the car is driven for short distances of only a few miles at a time, moisture will condense in the crankcase and form a sludge which may freeze and clog the oil inlet screen. This is especially true if winter temperatures are extremely low for an extended period of time .Under conditions of this kind the engine does not become sufficiently warm to expel the water through the crankcase ventilating system, and the oil should, therefore, be changed about every 500 miles and under extreme conditions, less than 500 miles, to eliminate sludge. The engine should be thoroughly warmed before it is drained.



As an alternative to this frequent change period during winter, an occasional drive of 30 miles or more at speeds of 50 miles per hour or higher, will do much to eliminate the water through the crankcase ventilation system and the change period may then be extended to 1000 miles, or the normally recommended 1500 miles winter change if these longer drives are indulged in frequently.

If the engine is, to quite an extent, operated in unusually low temperatures or on short runs where normal engine operating temperatures are not shown by the heat indicator it is advisable to cover part of the area of the radiator grille with a grille cover.

The Oil Filter

The function of the oil filter is to remove dirt and foreign material from the oil in order to assist in keeping the oil clean.

of this vapor condenses on the cylinder walls and is also carried into the crankcase by action of the pistons. A very large percentage of this water and fuel is carried out of the crankcase by means of the crankcase ventilation system.

Fresh air enters at the oil filler pipe which is capped with an air cleaner for catching dust and preventing its entering the crankcase. Due to the rotation of the crankshaft, the air and vapor in the crankcase are kept whirling. The vacuum created by the car in motion draws the air and vapor out of the crankcase through the ventilation outlet pipe at the rear of the engine.

This system of crankcase ventilation, as you can no doubt readily understand, reduces to a great extent a natural formation of sludge in the bottom of the crankcase. An excess amount of this sludge will interfere with proper engine lubrication.

Acid forms in the combustion chamber also due to natural causes in all automotive engines. Fuel contains varying percentages of sulphur and, when burned, changes to sulphur dioxide. The sulphur dioxide unites with water in the combustion chamber, making sulphurous acid.

These accumulated non-lubricating elements in the engine oil have damaging effects on the highly finished steel surfaces. Fuel thins the oil, reducing its lubricating ability. Water is a non-lubricant and is likely to freeze, causing stoppage of the oil circulation. The sulphurous acid attacks highly finished steel surfaces and causes excessive wear. The rapidity of accumulation of these elements increases as the temperature decreases. That is why it is recommended that the engine oil be drained more frequently in cold weather than in warm weather.

The best time to drain the crankcase is after a run and while the engine is still heated. The oil is thinner when it is hot and also thoroughly mixed. It will therefore, carry off sediment more completely.

Kerosene should never be used for flushing out the oil pan and lubricating systems. A certain amount will remain in the system, collecting in pockets from which it cannot readily be drained and will dilute the oil.

Transmission Lubrication

Transmission (Without Overdrive)

For the standard conventional transmission a high grade Fluid Gear Lubricant should be used. The following recommendations are outlined for your guidance.

For all temperatures above —10° F.—S.A.E. 90 Gear Lubricant.

For temperatures consistently below —10° F.—S.A.E. 80 Gear Lubricant or use a mixture of 60% S.A.E. 90 Gear Lubricant, and 40% No. 10-W Engine Oil.

Change Period—Twice yearly, or every 15,000 miles. There is no filler or drain plug in the extension case.

Cruise and Climb Transmission With Overdrive (Special Equipment)

The transmission equipped with an overdrive should be lubricated only with well refined products. Lubricants compounded with undesirable black oils, or compounded with soaps or solids which would separate or centrifuge out in use, must not be used. In order to guard against the incorrect type of lubricant the following recommendations are outlined:

For all temperatures above —10° F.—S.A.E. 50 Low Cold Test Engine Oil or S.A.E. 50 Low Cold Test Aircraft Engine Oil.

For temperatures consistently below —10° F.—S.A.E. 30 Low Cold Test Engine Oil, or use a mixture of 60% S.A.E. 50 Low Cold Test Engine Oil or Aircraft Engine Oil and 40% No. 10-W Engine Oil.

Change Period—Twice yearly, or every 15,000 miles.

The transmission and overdrive cases each have a filler and drain hole. The filler holes are not on the same level; neither are the drain holes on the same level. Therefore, when filling or draining, be sure to use both fillers or both drains.

Rear Axle Lubrication

The rear axle in your Chrysler is made with Hypoid type teeth in the driving gears. This permits placing the propeller shaft very low so as not to interfere with the rear floor board. It also provides a greater area of tooth contact than with spiral bevel gear teeth.

These gears require Extreme Pressure Gear Lubricants especially designed for Hypoid Gear Lubrication. In summer and normal winter, use S.A.E. 90. Where temperatures average 0°F., or below for an extended period of time, use S.A.E. 80.

It is extremely important that every 15,000 miles the rear axle be drained and flushed out thoroughly with flushing oil (not kerosene); then all flushing oil completely removed, and refilled with the proper viscosity of *Extreme Pressure Hypoid Gear Lubricant.*

Should the level of the lubricant drop, due to leakage, the lubricant should be drained, the case flushed and new lubricant added.

IMPORTANT: NEVER MIX ONE BRAND OF EXTREME PRESSURE HYPOID GEAR LUBRICANT WITH ANOTHER BRAND!

Front Wheel Bearing Lubrication

The front wheel hubs are mounted on roller bearings and therefore should be lubricated with *Short Fibre Wheel Bearing Grease,* medium. Every 6000 miles the front wheel hubs should be removed, the old grease removed from the hubs and bearings, and then new grease packed into them.

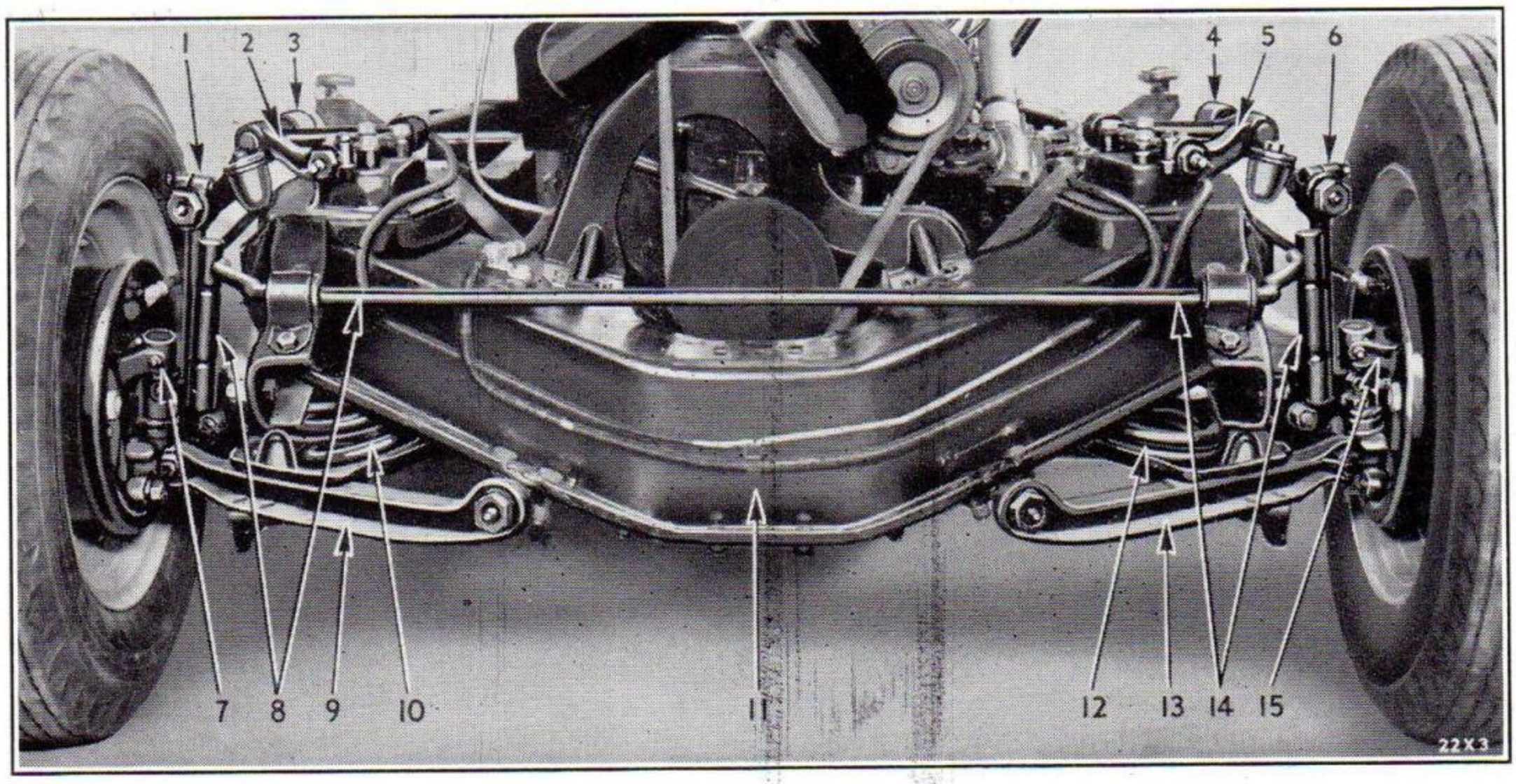
Steering Gear Lubrication

The steering gear should be lubricated with *Fluid Gear Lubricant* of S.A.E. 90 low cold test. Replenish when necessary. When lubricating the steering gear, care should be taken to avoid overfilling the steering gear body, as this may fill the steering column jacket to overflowing, causing damage to clothing and upholstery.

In extremely cold weather it may be necessary to dilute the steering gear oil with a small percentage of No. 10-W engine oil to avoid stiff steering.

Universal Joint Lubrication

The universal joints are lubricated when they are assembled at the factory. If for any reason it is necessary to disassemble the universal joints, it is recommended that they be inspected and lubricated at that time. All parts should be thoroughly cleaned and then lubricated with a heavy fibre grease made from a high viscosity mineral stock. This lubricant should be fairly firm in consistency and the fibre structure should be such that it has a high melting point. Graphite greases are not considered desirable for the lubrication of this unit; soft lubricants such as chassis lubricant or calcium base lubricants must not be used. It is recommended that the fibre grease for this unit be obtained from a reputable oil



Front Wheel Suspension

1—Steering knuckle support
2—Upper control arm
3—Shock absorber
4—Shock absorber
5—Upper control arm
6—Steering knuckle support
7—Steering knuckle
8—Sway eliminator
9—Lower control arm
10—Spring
11—Frame front crossmember
12—Spring
13—Lower control arm
14—Sway eliminator
15—Steering knuckle

company well acquainted with the correct type of lubricant to be used in this assembly.

The splined joint at the front end of the propeller shaft should be lubricated with chassis lubricant every 2000 miles.

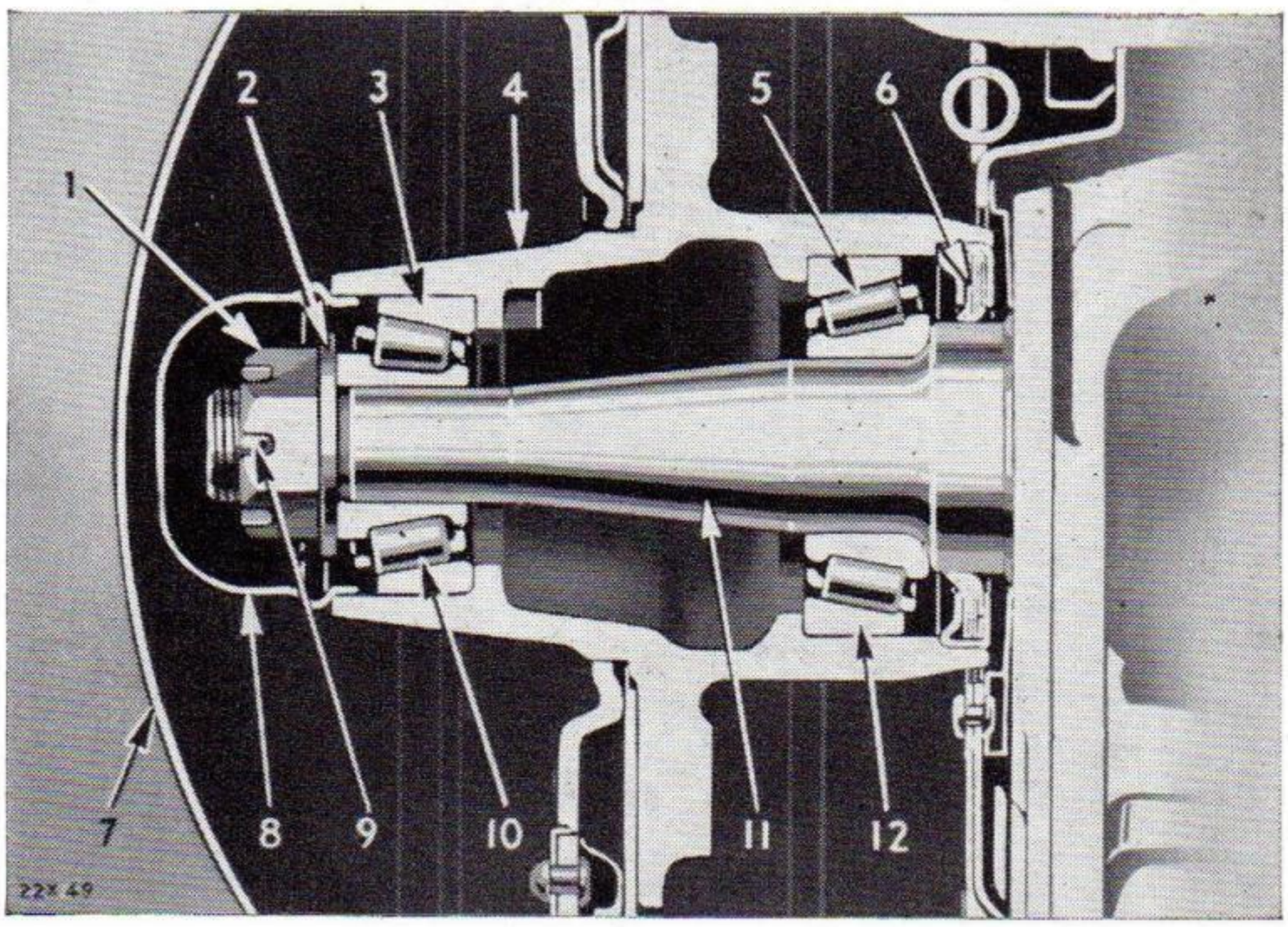
Mechanical Descriptions

If you desire detail mechanical information not given in the foregoing part of this book you will find, in the following pages, considerable technical description and servicing procedure which will be of valuable assistance to you.

Front Wheel Suspension

The front wheels are independently sprung and each mounted on two taper roller bearings. It is important that correct wheel alignment be maintained. An accident which causes no apparent damage may upset the wheel alignment and cause steering difficulties or excessive tire wear. It is advisable to have the wheel alignment of your car checked periodically by your Chrysler dealer.

Front wheel bearings may require adjustment after considerable mileage has been covered. This adjustment can be made by removing the hub cap and cotter pin in the outer end of the spindle, then turning the large nut at the end of the spindle. Using a wrench

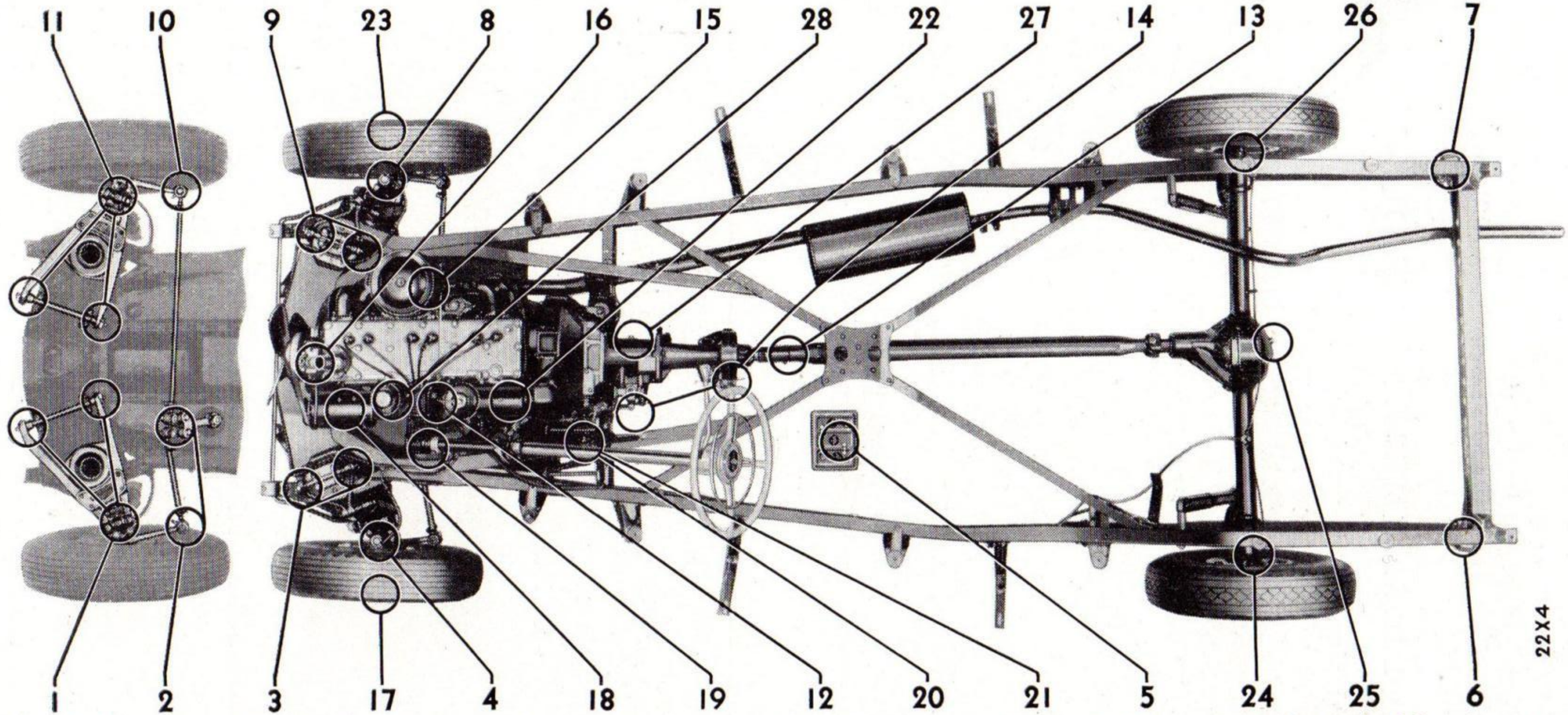


Front Wheel Bearings

1—Bearing nut
2—Bearing thrust washer
3—Outer bearing cup
4—Hub
5—Inner bearing cone and rollers
6—Hub dust seal
7—Hub cap
8—Grease cap
9—Bearing nut cotter pin
10—Outer bearing cone and rollers
11—Steering knuckle
12—Inner bearing cup

CHRYSLER APPROVED LUBRICATION

Code C-25



NOTE: Cars operated principally on gravel or dusty roads may need lubrication attention more frequently and should be serviced as required. In dusty territories the air cleaners should be cleaned often. Under extreme conditions, once a day may be necessary. The clutch release bearing is packed with lubricant at the time of assembly and requires no further lubrication. The propeller shaft center bearing on 7-passenger sedans should be lubricated every 6000 miles, one lubricant fitting, short fibre wheel bearing grease —medium. The oil filter should be replaced every 8000 miles. Rub a very thin film of short fibre wheel bearing grease (medium) onto the gear shifting lever fulcrum slide, at the steering wheel, and water pump grease onto the clover leaf plate under the shifter tube lower lever.

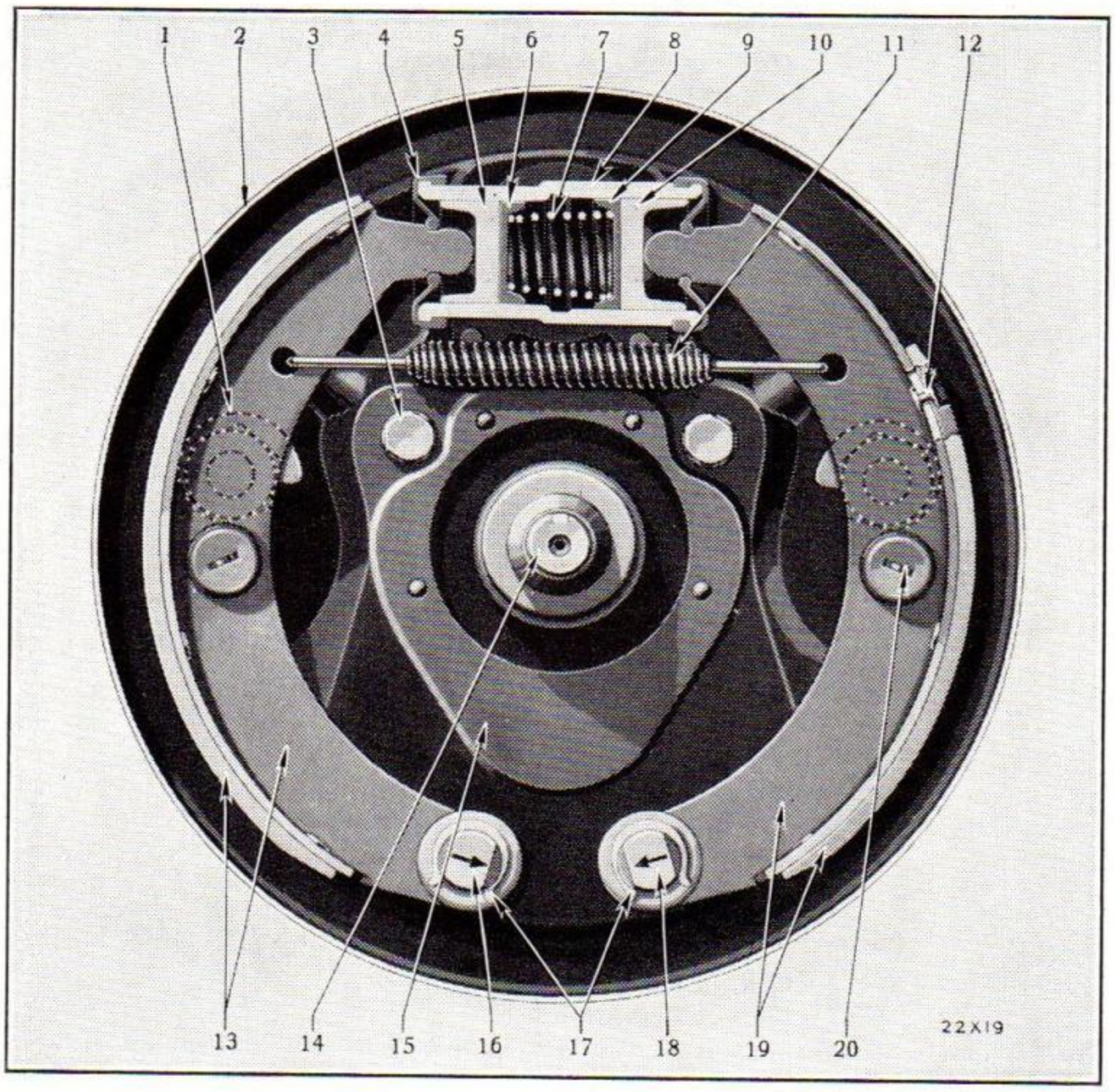
Brakes

Brake Pedal Free Play

Free travel of the brake pedal is important. The total free travel is made up of travel of the master cylinder piston rod before touching the piston, travel of the piston to seal the relief port and then travel of the shoes to take up clearance from the free running position to the position of contact with the brake drums. The total free travel of the pedal from full released position to the point where the shoes contact the drums is 3/4" to 7/8". This is obtained by proper brake shoe cam adjustment.

Brake Shoe Cam Adjustment

A quick way of adjusting the brake shoe cams is to first jack up the car so one wheel can be rotated freely. Then, while rocking



Front Wheel Brake

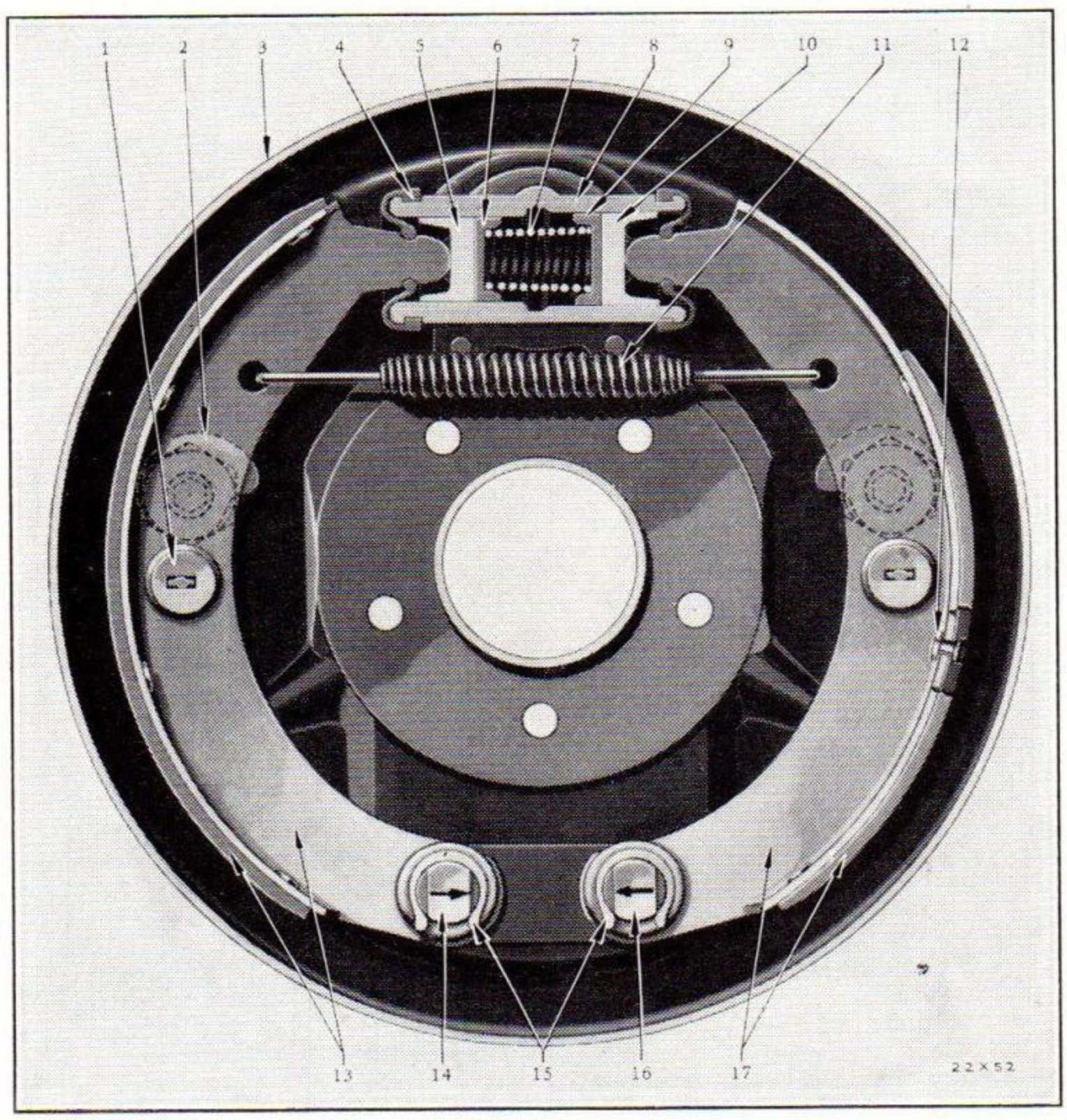
1—Shoe adjusting cam
2—Support
3—Support to knuckle screw
4—Cylinder boot
5—Cylinder piston—front
6—Cylinder piston cup—front
7—Cylinder piston cup spring
8—Cylinder body
9—Cylinder piston cup—rear
10—Cylinder piston—rear
11—Shoe return spring
12—Shoe facing rivet
13—Shoe and facing—front
14—Steering knuckle
15—Support splash shield
16—Shoe anchor bolt—short
17—Shoe anchor bolt "C" washers
18—Shoe anchor bolt—long
19—Shoe and facing—rear
20—Shoe guide rod

that wheel forward and backward, turn one cam adjusting nut until the shoe just clears the drum so the wheel will turn freely. This will give approximately the correct clearance between the top end of the shoe and the drum. Then make the same adjustment to the other shoe of the same wheel. It is important that these adjustments be made the same for the other three wheels. If one or more shoes have less clearance than is obtained by this adjustment there may be "brake drag" which causes overheating of the drums and possible seizure of a shoe.

Major brake adjustment, which includes resetting the anchor bolts, may be required after several thousand miles of operation. Such adjustment should be made by your Chrysler dealer.

Fluid Level in Brake Master Cylinder

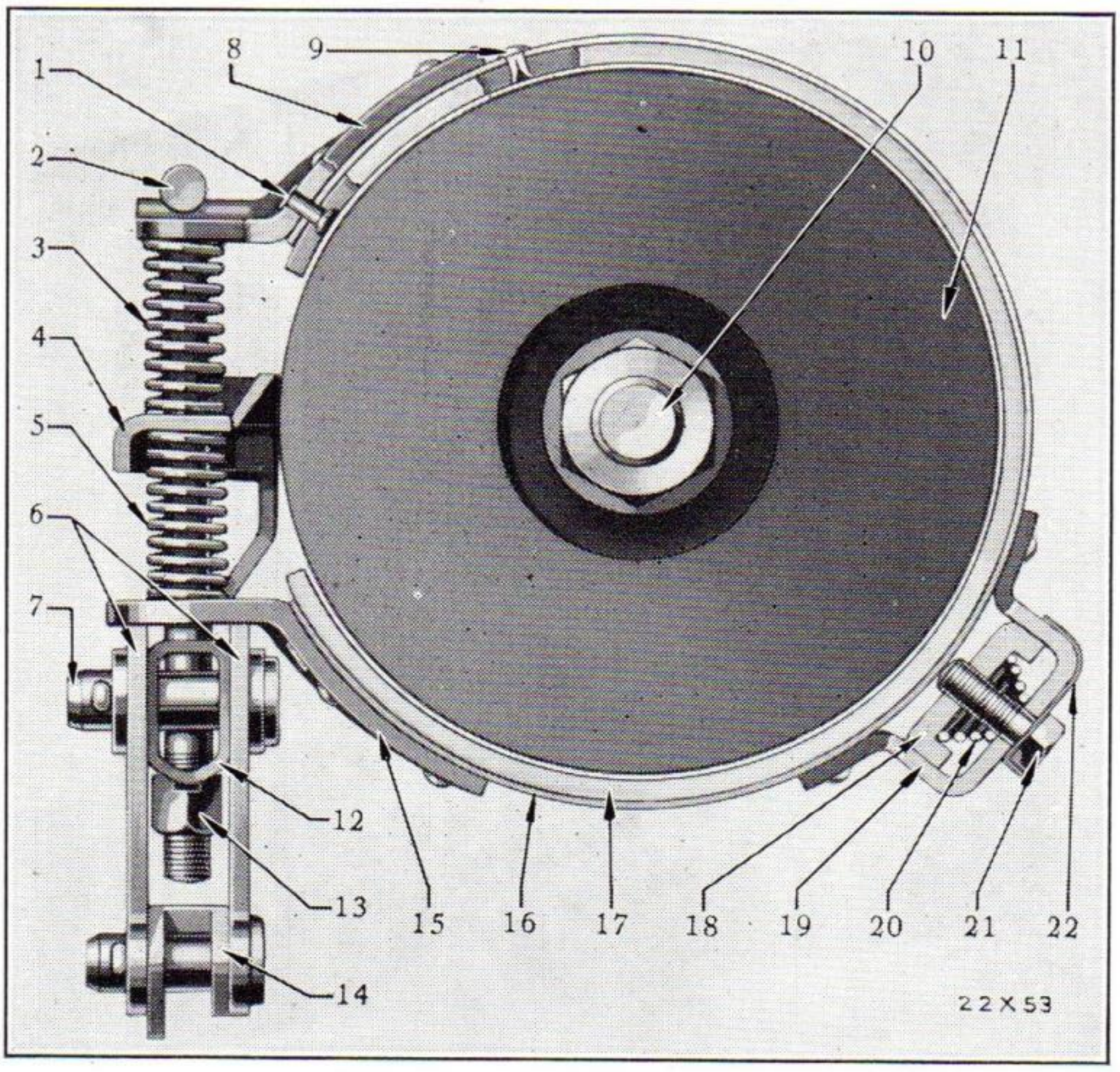
The level of the brake fluid in the master cylinder should be checked whenever brake shoe adjustment is required. However,



Rear Wheel Brake

1—Shoe guide rod
2—Shoe adjusting cam
3—Support
4—Cylinder boot
5—Cylinder piston—front
6—Cylinder piston cup—front
7—Cylinder piston cup spring
8—Cylinder body
9—Cylinder piston cup—rear
10—Cylinder piston—rear
11—Shoe return spring
12—Shoe facing rivet
13—Shoe and facing—front
14—Shoe anchor bolt
15—Shoe anchor bolt "C" washer
16—Shoe anchor bolt
17—Shoe and facing—rear

unless there is a leak somewhere in the system it is improbable that it will be necessary to add fluid. The level should be maintained "full" or not less than "half-full". This can be inspected by removing the filler plug from the top of the master cylinder. All traces of dirt should be wiped off the cylinder and plug before it is removed so as to avoid the possibility of dirt entering the cylinder when removing the plug. Absolute cleanliness of the fluid is essential for the safe and satisfactory operation of the brake system.

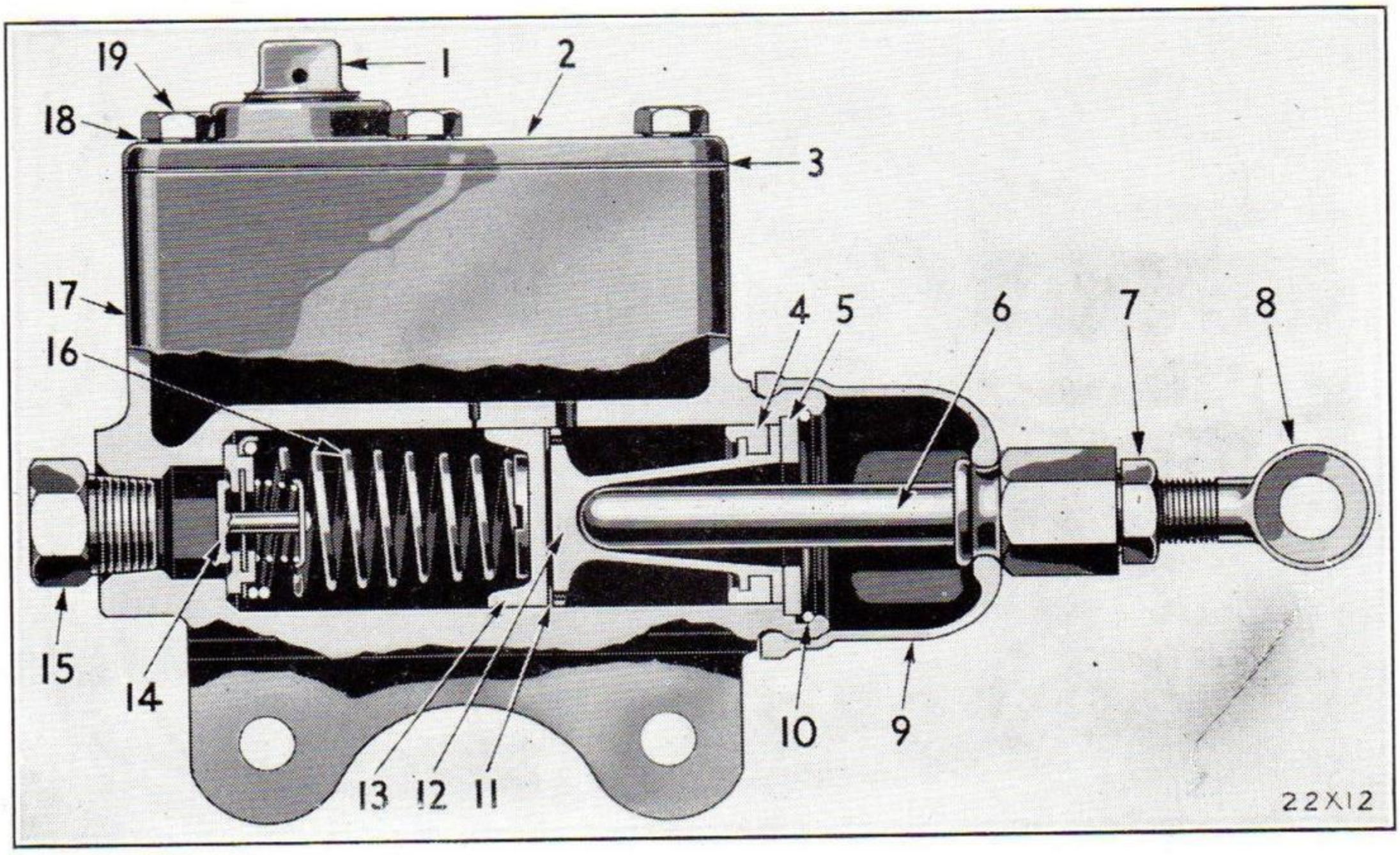


Hand Brake

1—Band lining tubular rivet
2—Band adjusting bolt
3—Band release spring—upper
4—Band adjusting bolt bracket
5—Band release spring—lower
6—Band operating levers
7—Band operating lever clevis pin
8—Band bracket—upper
9—Band lining split rivet
10—Transmission shaft
11—Transmission brake drum
12—Band operating lever spacer
13—Band adjusting bolt nut
14—Cable lower clevis
15—Band bracket—lower
16—Band
17—Band lining
18—Band support
19—Band anchor
20—Band anchor spring
21—Band anchor screw
22—Band anchor screw lock

Brake Fluid

Iso-Brake Fluid is the proper fluid to use in the braking system of your Chrysler car. It should be used to the exclusion of all other types of brake fluid.



Brake Master Cylinder

1—Filler plug
2—Cover
3—Cover gasket
4—Piston secondary cup
5—Piston stop
6—Piston push rod
7—Piston push rod end lock nut
8—Piston push rod end
9—Boot
10—Piston stop lock wire
11—Piston washer
12—Piston
13—Piston cup
14—Valve assembly
15—Outlet connection
16—Piston return spring
17—Master cylinder and supply tank body
18—Cover screw gasket
19—Cover screw

Clutch

The clutch in your car is of ample size and design to give extra long life. However, it functions by friction and if caused to slip excessively by careless operation or by "riding" the clutch pedal, sufficient heat will be generated within the clutch to shorten its life considerably.

Clutch Pedal Free Play

Free play or free movement of the clutch pedal is necessary to compensate for wear of the clutch facing and to avoid slippage. It insures proper clearance between the clutch release bearing and the clutch release levers.

The proper amount of free play for the clutch pedal is one inch and is made by turning the clutch release fork rod adjusting nut.

The Cooling System

It is a recognized fact that an automobile engine operates most efficiently at a certain temperature. The cooling system of your Chrysler engine automatically maintains the most desirable engine operating temperatures under all normal operating conditions.

When the engine is started cold, a thermostat prevents the circulation of water to the radiator and a simple by-pass allows the water to circulate only in the water jackets of the engine until normal engine operating temperature has been reached. When the water temperature, as shown by the Heat Indicator, reaches approximately 157 degrees, the thermostat starts to open allowing some water to circulate through the radiator and at approximately 183 degrees the thermostat is fully open allowing unrestricted radiator circulation. As the water circulates through the radiator it is cooled, but when the temperature of the water in the engine goes below the desired temperature the thermostat starts to close and retard circulation through the radiator, but not through the engine. Therefore, by the automatic operation of the thermostat and by-pass the desired temperature is automatically maintained.

Water from the pump is uniformly distributed through a dis-distributing tube and is discharged directly against the exhaust valve ports which are the hottest spots in the engine. From there the water circulates through full length water jackets around the cylinder walls. Everything about the cooling system is automatic in operation but certain protective maintenance is necessary to insure free circulation in the system. Circulation may be stopped by a loose pump and fan drive belt, dirt in the water, or by ice.

Fan and Water Pump

The fan and water pump are belt driven. The belt seldom needs adjusting, but your Chrysler dealer will check this when giving the car a general inspection.

The water pump is of the packless type and the only maintenance required is proper lubrication.

Whenever adding water to the system be sure it is clean and does not contain any alkali which would form scale inside the metal parts of the system and eventually clog the passages causing poor or no circulation. A good way to keep the cooling system clear is to have your dealer flush it by the forced reversed flow method before filling the system with anti-freeze solution in the fall and after draining it out in the spring.

To drain the cooling system completely, open the drain cock in the lower corner of the radiator on the right hand side and also the drain cock in the cylinder block at the bottom of the water jacket near the center on the left side. If you are going to store your car or leave it idle for a long time, it is advisable to leave these drains open.

Whenever the cooling system is drained and flushed it should be treated with "Rust Resistor" when refilling. This will prevent the formation of rust in the cylinder block and corrosion of the radiator core. In cases where the label on an anti-freeze solution package indicates that a rust inhibitive agent is already contained in the solution, it should not be necessary to add "Rust Resistor" until the cooling system is drained and filled. "Rust Resistor" may be obtained from your Chrysler dealer.

If for any reason such as insufficient water or stoppage of circulation, the engine becomes overheated (212° or more) *never pour in cold water or cold anti-freeze* until the engine has been allowed to cool down below normal. The level of the liquid in the cooling system should be 1¼" below the bottom of the filler neck. When the fluid becomes warm, it will expand and run out the overflow pipe if the cooling system is filled to a higher level. This is especially important when using anti-freeze solution, to prevent loss of any of the fluid which would result in raising its freezing point when water is added.

Use of Anti-Freeze Solution

At the approach of freezing weather an anti-freeze cooling solution should be used. Always flush the system clean when making the initial filling with anti-freeze each fall. Have the solution tested frequently during freezing weather, to make certain that you are protected against a "freeze-up". It is well to have some extra anti-freeze on hand so you can take care of the requirements in case of a sudden drop in temperature.

Caution: Anti-freeze solutions containing salt, calcium chloride, soda, sugar or mineral oils, such as kerosene or engine oil, should never be used in the cooling system, because they will either clog the water passages or damage the hose connections and other parts.

The Electrical System

Battery

The battery is under the left side of the front seat and only requires distilled water for maintenance. The level of the electrolyte (liquid) should be ⅜" above the plates and should be inspected once a month in winter and every two weeks in summer. If the car is to be stored for a month or more the battery should be delivered to a battery service station for attention during the storage period.

Generator

The generator is of the large capacity air-cooled shunt type provided with voltage and current regulators. These regulators control the output of the generator with relation to the voltage and current requirements. This means that the battery will ordinarily be fully charged, and the proper voltage maintained. While driving the car, the ammeter hand may gradually approach zero. This indi-

cates that the battery requires less current at that time and the voltage control unit is preventing over-charging of the battery. Because there is no excessive voltage, long life is assured for the electrical system. The generator becomes warm by the nature of its work and the harder the work the warmer it will become. However to reduce this natural heat an inbuilt fan draws fresh air into the rear end of the generator and forces the hot air out of the front end. This direction of air travel keeps fresh air passing over the brushes and commutator. The faster the generator runs—the faster the air moves through the generator.

Ignition Breaker Points

Improperly adjusted breaker points will affect ignition timing and engine operation. Before attempting to check or adjust the breaker points to a feeler gauge, the engine should be turned sufficiently to bring the breaker arm in contact with the peak of a lobe on the rotating cam. Due to the passage of primary current across the breaker points, a normal transfer of metal from one point to the other may cause the surface of the points to become slightly rough or pitted. Such roughness must be removed with a fine file or hone before the points can be accurately adjusted. The points should open .020". The adjustment is made by loosening the breaker point plate locking screw and turning the breaker point plate adjusting screw until the proper gap is obtained.

Ignition Timing

In low altitudes with standard brands of non-premium gasoline, the engine will give its best performance if timed at top dead center.

With the dead center timing, there will be a trace of spark knock from 10 to 30 miles per hour when accelerating with wide open throttle.

When using lower grade fuels, or after carbon has accumulated, spark knock may be excessive with dead center timing. In such cases the ignition should be retarded not to exceed 4 degrees after dead center.

In high altitudes there is less tendency for spark knock, and the same thing is true in low altitudes when using premium gasolines. In such cases improved performance may be obtained by advancing the spark not to exceed 4 degrees ahead of dead center.

Slight adjustment of the timing is easily made by loosening only the screw in the slot at the outer end of the locking plate lever and then rotating the distributor in the desired direction. When finished with the adjustment, be sure to tighten the clamping or lock plate screw.

To further adjust the ignition timing, loosen the clamping screw in the locking plate at the bottom of the distributor housing and rotate the distributor in the direction required. The rotor should be pressed against its normal direction of rotation so as to take up backlash in the distributor driving mechanism.

To reset ignition timing when the distributor has been removed, turn the engine until No. 6 piston is on top dead center

design of your Chrysler engine. The exhaust valve seats, being of a special ferrous alloy, withstand the severe temperature to such a high degree that valve seat grinding is much less frequent than with old fashioned methods of valve seat design. Oil is directed, under pressure, to all bearings in the engine except the pistons and piston pins. These are lubricated by sprays of oil forced from the bearings at the lower ends of the connecting rods and directed onto the pistons, piston pins, cylinder walls and valve tappets.

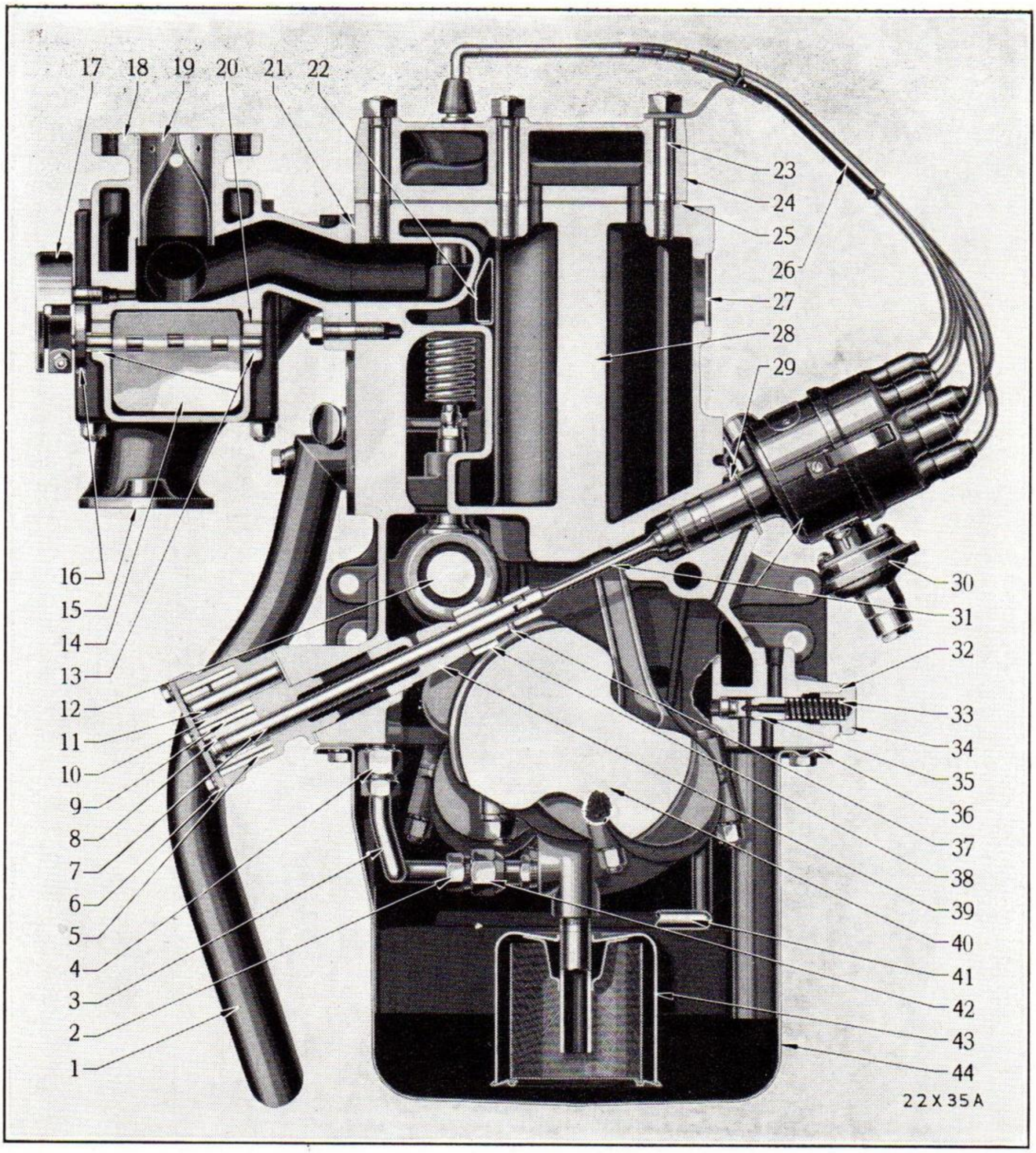
The ordinary way of mounting an engine rigidly in the chassis frame accentuates vibration and shakes the entire car. Your engine is cradled in live rubber so that there is no metal of the engine touching the chassis frame. The rubber mountings are located well above the crankshaft at the front of the engine and below the clutch housing at the rear end. Having the diagonal line of support through the "weight-center" of the power plant reduces the natural power vibration forces to such a low degree that they are unnoticed. The floating power engine mountings absorb the engine power vibrations and further contribute to the smooth running of your Chrysler.

With reasonable care and ordinary maintenance, the engine will deliver for you the economical, dependable performance built into it.

When the engine is started cold it should not be run fast until it has warmed up and the oil given a chance to circulate.

Side Sectional View of Engine

1—Oil pan drain plug
2—Oil strainer
3—Connecting rod cap bolt nut
4—Camshaft
5—Crankshaft bearing cap—No. 4
6—Crankshaft bushing (transmission drive pinion pilot bushing)
7—Crankshaft
8—Crankshaft rear bearing oil seal retainer
9—Connecting rod and cap
10—Camshaft bearing—No. 3
11—Camshaft rear bearing plug
12—Flywheel
13—Valve chamber cover screw
14—Valve chamber cover
15—Exhaust manifold
16—Cylinder block
17—Inlet manifold
18—Cylinder head gasket
19—Cylinder head
20—Manifold heat control thermostat cover
21—Valve tappet
22—Valve tappet adjusting screw
23—Valve spring retainer
24—Valve spring
25—Valve spring retainer lock
26—Valve stem guide
27—Exhaust valve seat
28—Exhaust valve
29—Piston
30—Piston pin lock wire
31—Inlet valve
32—Piston pin
33—Connecting rod bushing (piston pin bushing)
34—Cylinder water outlet elbow gasket
35—Piston ring—upper
36—Thermostat
37—Cylinder water outlet elbow
38—Water pump by-pass hose
39—Water pump by-pass elbow
40—Fan
41—Water pump cover plate
42—Water pump by-pass elbow gasket
43—Fan pulley
44—Water pump body
45—Piston ring—intermediate
46—Fan pulley hub
47—Fan pulley hub pin
48—Piston rings—lower
49—Water pump to cylinder block gasket
50—Water pump cover plate gasket
51—Chain case cover plate
52—Fan and generator belt
53—Engine front support insulator
54—Generator pulley
55—Engine front support plate
56—Connecting rod
57—Camshaft sprocket
58—Chain case cover
59—Camshaft sprocket hub
60—Camshaft sprocket hub key
61—Connecting rod bearings
62—Camshaft sprocket hub thrust plate
63—Fan drive pulley
64—Crankshaft bearing—upper No. 1
65—Crankshaft sprocket key
66—Crankshaft starting jaw
67—Crankshaft torque impulse neutralizer hub key
68—Crankshaft torque impulse neutralizer hub
69—Crankshaft sprocket shim
70—Chain case cover oil seal
71—Crankshaft sprocket
72—Timing chain
73—Crankshaft torque impulse neutralizer
74—Chain case cover gasket
75—Chain case cover plate gasket
76—Oil pan front end oil seal plate
77—Oil pan gasket—front



Center Sectional View of Engine

1—Crankcase ventilator outlet pipe
2—Oil pump inlet pipe nut
3—Oil pump inlet pipe
4—Oil pump inlet pipe nipple
5—Oil pump drive gear
6—Oil pump cover
7—Oil pump drive shaft
8—Oil pump drive gear retainer
9—Oil pump idler gear
10—Oil pump idler gear bushing
11—Oil pump idler gear shaft
12—Camshaft
13—Manifold heat control valve shaft bushings
14—Manifold heat control valve plate
15—Exhaust manifold
16—Manifold heat control valve thermostat
17—Manifold heat control valve thermostat cover
18—Intake manifold
19—Manifold fuel centralizer
20—Intake to exhaust manifold gasket
21—Intake and exhaust manifold gasket—center
22—Cylinder block water distributor tube
23—Cylinder head screw
24—Cylinder head
25—Cylinder head gasket
26—Ignition cable tube
27—Cylinder block core hole plug
28—Cylinder block
29—Distributor oil retainer
30—Distributor vacuum control assembly
31—Ignition distributor assembly
32—Oil pressure relief valve cap gasket
33—Oil pressure relief valve spring
34—Oil pressure relief valve cap
35—Oil pressure relief valve plunger
36—Oil pan gasket
37—Oil pump and distributor drive gear pin
38—Oil pump and distributor drive gear
39—Oil pump body
40—Crankshaft
41—Oil pump outlet pipe
42—Oil pump inlet pipe connector
43—Oil strainer
44—Oil pan

If the engine is, to quite an extent, operated in unusually low temperatures, or on short runs where normal engine operating temperatures are not shown by the heat indicator, it is advisable to cover part of the area of the radiator grille with a grille cover.

If the Engine Stops or Fails to Start

It must be remembered that engine operation depends upon three factors.

1. The proper mixture of fuel and air entering the cylinders.
2. Reasonable compression of the fuel mixture.
3. Adequate spark at the proper time to ignite the compressed fuel mixture.

If fuel is being delivered to the carburetor, a blocked orifice or jet in the carburetor is about the only cause for it not entering the cylinders, and unless there is an excessive air leak in the manifold or at the manifold gaskets, the mixture should be burnable under reasonable compression.

If fuel is not being delivered to the carburetor one of the following conditions may exist:

Stoppage in the fuel line.
Closed vent in the fuel tank filler cap.
Air leak in the fuel line between the tank and the fuel pump, or around the sediment bowl of the fuel pump.
Dirt, water or ice in the sediment bowl or filter of the fuel pump.
Inoperative fuel pump.

Fuel pump operation can be checked after the filter has been cleaned and with the sediment bowl securely in place by disconnecting the fuel line from the tank to the pump, at the pump, and holding a finger over the fitting in the fuel pump body. If intermittent suction is felt at that point when the engine is being cranked, the pump is operative.

With a reasonable mixture entering the cylinders the engine should start and run provided an adequate spark is delivered to the spark plugs at the proper time. The intensity of spark can be checked by disconnecting a wire from a spark plug and holding it about ¼" from the cylinder head while the engine is being cranked. If the spark jumps ¼" to ⅜" to the cylinder head, it should be adequate to start the engine.

If no spark is being delivered to the spark plugs, the difficulty may be due to:

1. No contact at ignition switch.
2. Broken distributor drive shaft or gear.
3. Burned or dirty distributor breaker points.
4. Broken or loose primary lead in the distributor.
5. Loose or broken wire or connection.
6. Shorted condenser.
7. Faulty ignition coil.

When the faulty cylinder has been determined, reset the spark plug gap and if that does not eliminate the miss, the difficulty may be due to insufficient compression.

Poor compression may be caused by a scored piston, worn or broken piston rings, or leaky cylinder head gasket, but more likely by poorly seated valves or improperly adjusted valve tappets. If the tappets have clearance as specified in the adjustment reference section of this book, and the foregoing suggestions have been followed without success, the car should as soon as possible be taken to your Chrysler dealer who has the necessary equipment and experience to locate and correct the difficulty.

The Fuel System

Fuel Pump

Fuel is furnished to the carburetor by a mechanically driven fuel pump. All fuel is passed through a glass enclosed filter at the fuel pump to remove any sediment or water that may find its way into the fuel supply tank. The glass bowl is held in place by a bail and thumb nut and should be removed and cleaned occasionally.

Carburetor

The carburetor is scientifically designed and carefully calibrated to the proper mixture for most economical and efficient engine performance at all speeds. Above the idling engine speed, performance can not be improved by carburetor adjustment. Therefore, provisions are made for idling adjustment only.

The idling mixture can be adjusted by turning the adjusting screw. Not more than one quarter turn should be required at any time.

The engine idling speed can be regulated by turning the stop screw.

Adjustments can be made only when the engine is thoroughly warmed up.

Air Cleaner

It is important that the air cleaner be serviced as recommended in the Maintenance Schedule.

Fuel Gauge Operation

The fuel gauge operates on the principle of electrically heating thermostatic blades. A short time is required after the ignition switch is turned on to allow the thermostat in the gauge to become heated, then the gauge will register the amount of fuel in the suply tank. When the switch is turned off and the thermostat has cooled the gauge hand will return to the empty position.

Steering

The steering mechanism of your Chrysler car requires only the ordinary maintenance to insure the maximum of steering ease and comfort. Misalignment of the front wheels or chassis, caused

sometimes unpleasant weather conditions. Nevertheless this must be done and the engineers, in designing the car, have done an outstanding job of making it comparatively easy. Here is all you do—

1. Securely apply and lock the hand brake and, as an added precaution, place blocks in front and behind the wheel on the side of the car opposite the wheel to be changed.
2. Place jack under the front coil spring seat or under the rear spring at the jack clip.
3. Jack up the car high enough so you can install the fully inflated tire.
4. Remove the hub cap by prying it off with a screwdriver.
5. Remove the capscrews which hold the wheel to the hub, with the socket wrench supplied with the tool kit. The capscrews for the left hand wheels have left hand threads and should be turned to the left to tighten. Those on the right hand wheels have right hand threads and should be turned to the right to tighten.
6. Lift off wheel.
   When installing a wheel, tighten the capscrews equally while the wheel is clear of the ground, then remove the jack and check again, with the socket wrench to make sure they are all tight.
7. Install hub cap by a sharp blow from the fist.

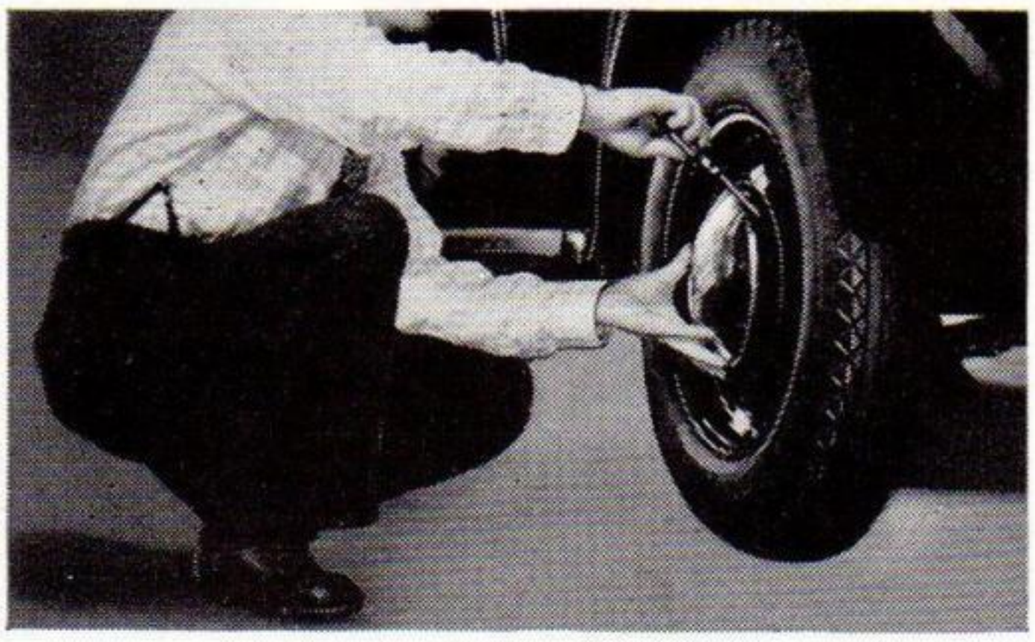
Changing a Tire

1. Make sure all air is removed from the inner tube. Loosen the casing from the rim by stepping on the sides as shown in the illustration.
2. Insert a tire tool between the bead of the tire and the wheel rim. The beads of both sides of the tire opposite where you insert the tire tool should be squeezed together and worked into the channel between the sides of the wheel. This makes it very easy to lift one side of the casing off the wheel. Then lift the other side off the wheel.
3. When installing a tire on the wheel have the inner tube inflated with just enough air to barely shape it. Place the tire and tube on the ground and insert the wheel into the tire as shown in the illustration. When the wheel is about half way into the tire it may be more convenient to turn the wheel and tire over and work the tire onto the wheel. Be careful not to pinch the inner tube between the casing or rim with the tire tool.
4. Inflate to exactly the correct pressure.

The front and rear tires have differently styled treads. Spare tires usually have the same style tread as used on the rear wheels and if it is necessary to use such a spare tire on the front it is recommended that it be changed as soon as convenient.

Tire Use and Abuse

Tires, if given reasonable treatment, will give many thousands of miles of service. Abuse them and they will fail prematurely.













Under-inflation is perhaps the most common of tire abuses and yet it costs nothing to keep up the pressure. Air pressure in all tires should be checked at least once a week even though the tires may "look" to be all right. Too much pressure causes excessive wear in the center of the tire tread and too little pressure causes excessive wear on the sides of the tire tread.

Improper front wheel alignment causes odd shaped worn places on the tire and it is best to have this checked up by your Chrysler dealer, periodically with the special instruments and gauges which he has for this purpose. They assure you of no guess work in this important inspection.

Spinning the wheels on sudden starts, whether on a slippery or dry road surface, often wears the tires as much as several hundred miles of careful driving. There is no advantage in carelessly spinning the wheels and sometimes, in sand or mud, it will cause the wheels to dig a hole in the ground so the car will not pull itself out. Sliding the wheels by too severe brake application wears flat spots

in the tread of the tires and does not effect as quick a stop as when the wheels continue turning until the car comes to a stop.

Scraping the sides of the tires against curbing tears off the rubber and weakens the tire carcass unnecessarily. When parking at a curb keep from rubbing it with the tires, but of course do not park so far from the curb that your car is likely to be side-swiped by another car.

Striking objects such as bricks or curbstones causes pinching of the inner tube with the possibility of puncturing, also the danger of cracking the sidewalls of the casing. The result, if not immediate, is a gradual weakening of the tire carcass at that point, which will eventually result in a blow-out or tire failure otherwise.

Change Direction of Tire Rotation

Many car owners reverse the direction of front tire rotation, for maximum front tire life, even wear and quietness, by interchanging the front wheel assemblies including tires, tubes and wheels (not hubs) from right to left and left to right every 2,000 to 3,000 miles. This has always been good practice and is recommended.

Adjustment Reference

AXLE—FRONT

Toe-in (actual measurement)	0" to 1/8"—1/16" preferred
Caster (not adjustable)	minus 1° to plus 1°
Camber	0° to plus 3/4°—plus 1/4° preferred

AXLE—REAR

Axle shaft end play	.003" to .008"
Back-lash (ring gear and pinion)	.006" to .010"

BATTERY

Terminal grounded	Positive
Voltage	6

BRAKES—SERVICE

Shoe facing to drum clearance	Top —.012" Bottom—.006"
Pedal free play	3/4" to 7/8"

CAPACITIES

Engine refill	5 quarts
Cooling system	18 quarts
Transmission without overdrive	2 3/4 pints
Transmission and overdrive	4 pints
Rear axle	3 1/4 pints
Fuel tank	17 gallons

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