



TECHNICAL
INFORMATION

CITROËN

CITROËN CARS CORPORATION

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BROOKLYN 15, NEW YORK

8423 WILSHIRE BLVD.
BEVERLY HILLS, CALIFORNIA

SERVICE BULLETIN # I - 159

MODELS: DS 21 - DS 19 A - SW 21 - SW 19 A -
ID 19 b

SUBJECT: L U B R I C A T I O N

Frequency	Points to be greased	Material to be used
Every 3000 miles	- Drive shaft universal joints - Change the engine oil - Anti-roll bar ball joints - Grease the anti-roll bar bushings	Wheel bearing grease 10W30 oil Wheel bearing grease Wheel bearing grease
Every 6000 miles	- Distributor felt (under rotor) - Generator rear bushing - Check the gear box oil level - Change engine oil filter cartridge - Clean the hydraulic fluid filter	Vaseline oil Engine oil SAE 90 EP oil
Every 12000 miles	- Rear suspension cylinder ball - Change the gear box oil	Wheel bearing grease SAE 90 EP oil
Every 18000 miles	- Change the fluid in the hydraulic reservoir	H D brake fluid <u>Specification SAE</u> <u>70R 3</u>

IMPORTANT NOTES:

- 1) Greasing the rear suspension ball
See service bulletin I-124
Use the greasing tube described on this note.
- 2) Change the oil filter cartridge
See service bulletin # 127-I (300 mile inspection) paragraph 18.

NT 78-D

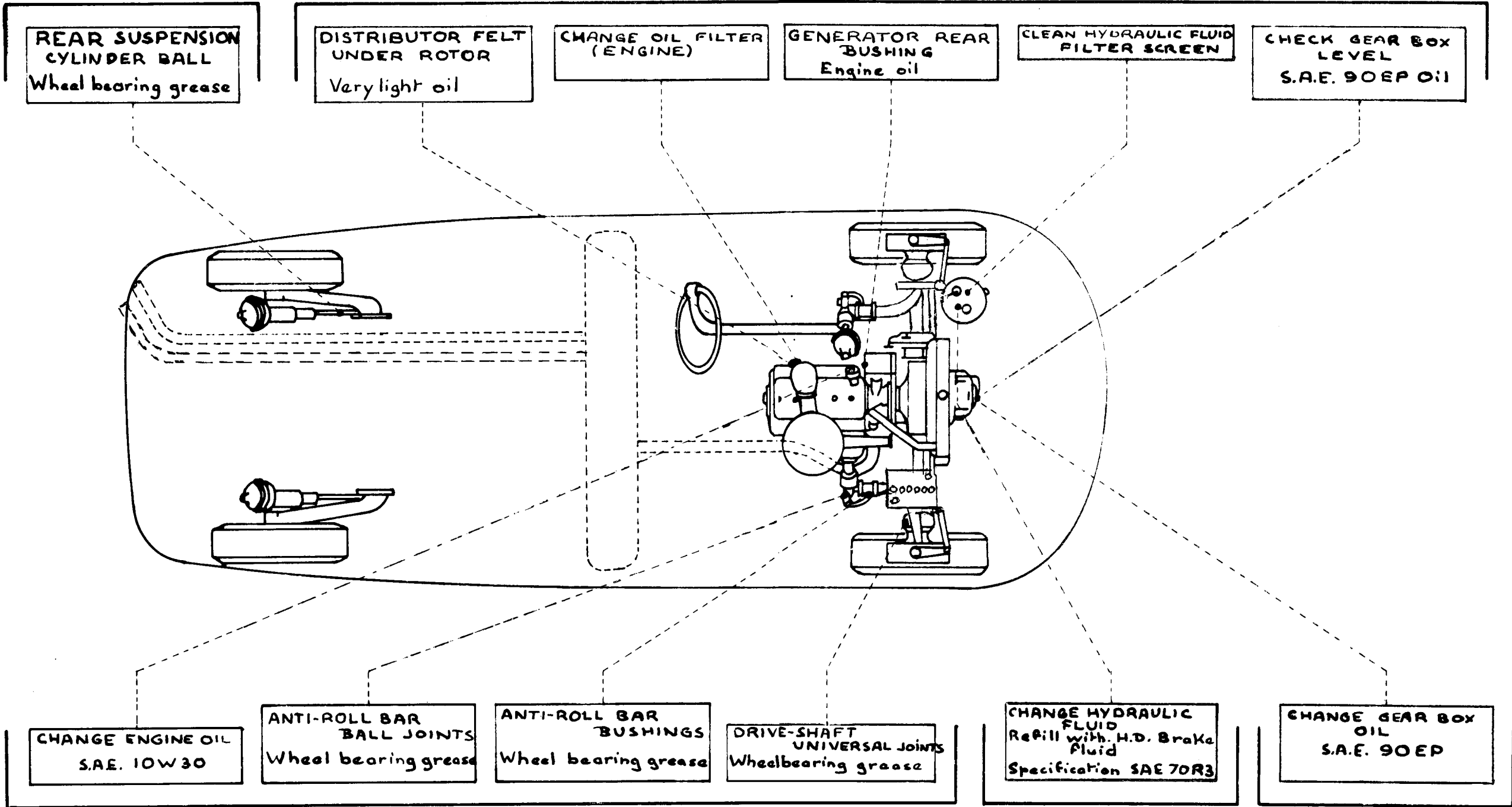
~ LUBRICATION CHART ~

DS - SW - ID

Models 1967 all types

EVERY 12000 m

EVERY 6000 m



EVERY 3000 m

EVERY 18000m EVERY 12000 m

- 4) Retighten the intake and exhaust manifolds on the cylinder head.
- 5) Retighten the carburetor flange mounting nuts.
- 6) Check the functioning of the accelerator linkage and the choke cable.
- 7) Check the tension of the generator and fan belts.
- 8) Check the tension of the high pressure pump belt.
- 9) Check the tension of the centrifugal regulator belt (DX-DY).
- 10) Check the tightness of the starter terminal.
- 11) Adjust the clutch clearance (DJ-DL - DLF - DJF -DV).
- 12) Check and retighten the exhaust pipe clamps (at the exhaust manifold).

b) The engine warm :

- 13) Adjust the rocker arms (it is possible to do this on a cold engine; however, it is preferable to do it on a warm engine).
- 14) Adjust the idling.
- 15) Adjust the declutching guarantee (DX-DY - Hydraulic models).
- 16) Adjust the start of clutch engagement and the accelerated (2nd) idling.
- 17) Drain the motor oil.
- 18) Replace the oil filter cartridge.
- 19) Drain the gear box.

c) The engine warm or cold:

- 20) Refill the engine with fresh oil (5 1/4 + qts. S.A.E. 10W30).
- 21) Uncouple the ventilation duct from the radiator.
- 22) Refill the gear box with fresh oil (2 + qts. S.A.E. 90EP).
- 23) Re-attach the ventilation duct to the radiator and replace the spare wheel.
- 24) Lubricate the drive shafts, the ball-joints and the anti-roll bar bearings.

- 25) Check and correct the tire pressures.
- 26) Retighten the wheel mounting nuts.
- 27) Check the functioning of the height control lever (engine running).
- 28) Check the heights (motor running).
- 29) With the motor running, check the sealing of the hydraulic circuit connections beneath the body and under the hood. If necessary, retighten all sealing clamps and plates.
- 30) Check the "build-up" of pressure in the main accumulator (motor running).
- 31) With the motor running, check the level of the fluid in the main reservoir for the hydraulic circuits. Replenish, if necessary.
- 32) Check the level of the electrolyte in the battery. Tighten the terminals.
- 33) Check the tightness of the voltage regulator terminals.
- 34) Check the output of the generator.
- 35) Check the functioning of the windshield wiper and the windshield washer.
- 36) Check the functioning of:
 - the headlights (their adjustment),
 - the interior lights (the switch on the dash board and the door switches),
 - the tail and stop lights,
 - the trunk light and its switch,
 - the parking lights,
 - the directional signals,
 - the horns,
 - the instrument panel lights,
 - the cigar lighter,
 - the fuel gauge,
 - the temperature gauge,
 - the heater blower.
- 37) Check the functioning of the various indicator lights for:
 - the headlights,
 - the brakes,
 - the directional signals.

- 38) Check the closing and locking of the doors.
- 39) Check the functioning of the door windows and their mechanism.
- 40) Check the closing of the hood and trunk lid.
- 41) Check the functioning of the trunk lid telescoping supports.

II - OPERATION PROCEDURES -

Important Note: The operations referred to below, can be found in the Shop Repair Manuals 518, 527 or 529, 1966 Editions.

- 2.) Tighten the cylinder head: see paragraph 21 of the Operation DX 112-1.
The tightening should be done when the motor is cold (aluminum cylinder head).
Respect the sequence indicated in the Shop Repair Manual.
WORK EACH HEAD BOLT ONE BY ONE: Loosen the bolt until it is free, then tighten it to 6 m.kg. (42 foot pounds).
- 3.) Clean the filter of the hydraulic circuits main reservoir.
 - Disengage the rubber tube and grommet assembly from the support bracket.
 - Remove the filter housing from the reservoir without disconnecting the rubber tube.
 - Remove the filter from its housing.
 - Clean the filter with alcohol only. Dry it by blowing compressed air on its outer surface.
 - If necessary, repeat the operation several times. The filter should be remounted only after thorough cleaning.
 - Place the filter, with its seal, into the filter housing. Be sure it is set all the way in.
 - Place the housing into the reservoir. Attach the high pressure pump rubber suction tube to the support bracket.
 - After this operation, it is necessary to bleed the high pressure circuit:
 - loosen the bleed screw at the pressure regulator.
 - start the motor and let it run a few minutes before retightening the bleed screw.

6.) Check the adjustment of the accelerator linkage.

Depress the accelerator pedal to the floor and hold it there. In this position, the throttle butterflies (single or double barrel carburetors) should be opened to the maximum. (On the "hydraulic" models place the manual clutch control lever in the "engaged" position. When this is done, the accelerator control relay can no longer be manouvered by hand).

Check the alignment of the carburetor throttle shaft with the control relay and ("hydraulic" models only) the axle of the reclutching corrector. See Operation DX 314-1.

7.) Adjust the tension of the fan and generator belt.

See paragraphs 16 - 17, Operation DX 231-0.

8.) Adjust the tension of the high pressure pump belt.

See paragraphs 12 - 13, Operation DX 231-0.

9.) Adjust the tension of the centrifugal regulator belt.

See paragraphs 14 - 15, Operation DX 231-0.

11.) Check the clutch clearance (DSM - Station Wagon - ID).

See Operation DJ 314-0.

13.) Adjust the rocker arms.

This adjustment should preferably be done with the motor warm.

Adjust the rocker arm clearances to:

- .008" for the intake valves,
- .010" for the exhaust valves.

In case the rocker arms are being adjusted on a cold motor, adjust the clearance to:

- .006" for the intake valves,
- .008" for the exhaust valves.

Adjust the valves of one cylinder with the piston at T.D.C. of the compression stroke, the valves of the opposite

cylinder being then "in balance". That is, the intake valve is at the beginning of intake and the exhaust valve is at the end of exhaust.

Adjust the valves of:

cylinder N° 1:	when the valves of cylinder N° 4 are "in balance".
" N° 2:	" " " " " N° 3 " " "
" N° 3:	" " " " " N° 2 " " "
" N° 4:	" " " " " N° 1 " " "

On the "hydraulic" models: to turn the motor with the crank, lock the manual clutch control lever in the "engaged" position. This lever is to be found lodged in a recess under the dashboard to the right of the instrument panel lights dimmer switch. Push the lever toward the front of the car and lock it by moving it straight up toward the top of the dashboard.

Important: Do not forget to replace the lever to its normal position when the valve adjustment is finished.

15) Checking the guaranty of declutching ("Hydraulic" models only).

See Operation DX 142-00, paragraphs 1 and 2.

Remove the rubber cap from the crank hole in the front valance.

Set the crank extension in place being sure to catch the cranking dog at the front of the gear box.

Turn out the clutch fork adjustment screw a fraction of a turn until the point is reached when, with the motor idling, the crank extension is turning slightly but can be stopped by hand.

The "licking" of the clutch disc, or the beginning of clutch engagement, is thus obtained.

From this point turn the adjusting screw in two complete turns in order to obtain the correct adjustment.

Note: 1) If the declutching guaranty is insufficient, it will not be possible to obtain correct reclutching without jerking.

2) This adjustment must imperatively be done warm. An adjustment done cold risks being incorrect when warm.

16) Adjust the idling, the beginning of clutching and the accelerated idling.

See Operation DX 142-0 and DJ 142-0.

Adjust the reclutching corrector.

See Operation DX 314-0, paragraph 5. (This adjustment should be done on the road with the motor warm).

If the reclutching is too fast, turn the screw out (counter-clockwise).

If it is too slow, turn the screw in (clockwise).

The adjustment screw cannot be rotated more than one complete turn. When making this adjustment, rotate the screw 1/8 turn at a time.

If the boss of the collar reaches the stop before the adjustment becomes correct, it is necessary to loosen the collar set screw and place the collar at the median position which permits maximum adjustment in both directions.

17-18) Drain the motor oil - Change the oil filter cartridge.

See Operation DX 220-1.

- Drain the motor oil.
- Remove the inspection plate under the oil pan.
- Remove the mounting bolt holding the filter and take out the assembly of the filter and the lower part of the housing.
- When remounting the filter, be careful to replace the parts on the bolt in the following order :
 - the washer,
 - the prefilter (screen)
 - the cup (lower housing)
 - the spring
 - the washer
 - the "O" ring seal
 - the cartridge support cup
 - the cartridge.
- After placing these parts on the bolt, mount them as an assembly on the filter.

Important: The cover of the prefilter should be placed so that the notch, situated on its rim, is engaged in the oil suction boss (toward the front of the car).

Before locking the mounting bolt be sure the prefilter cover cannot be turned. If so, the notch is not positioned correctly.

Replace the inspection plate, eventually changing the paper gasket, if its condition is bad.

19) Drain the gear box.

At the right side of the gear box, a plug is located for the purpose of checking the oil level. Remove this plug as well as the drain plug located underneath.

After the oil has drained replace the drain plug. Be sure the gasket is in good condition.

21-22-23) Refilling the gear box.

- Detach the motor ventilation duct from the radiator.
- The refilling plug is situated at the center of the gear box cover. It is necessary to refill the gear box with two liters (approximately 2 plus quarts) S.A.E. 90 E.P. oil.
- Allow the excess oil to flow from the level checking hole (at the right side of the gear box) then replace the refilling plug and the level hole plug.
- Replace the ventilation duct.

25) Tire inflation pressures and sizes :

	DS - ID	Station Wagon
Front	180 - 380 X AS = 27 p.s.i.	180 - 380 X AS = 27 p.s.i.
Rear	180 - 380 X AS = 24 p.s.i.	180 - 380 X AS = 30 p.s.i.
Spare	30 p.s.i.	33 p.s.i.

26) Tighten the wheel nuts.

Tightening torque : 43 to 58 ft.lbs.

28) Checking the heights :

Place the car on a lift or over a pit. Let the motor run at idling speed. Release the emergency brake. Chock the wheels, but place the wedges sufficiently from the wheels so that they are free to move with the changing height of the car during the course of checking.

At the front, as well as the rear, with the car stabilized, read the height dimensions from the underside of the anti-roll bar to the supporting surface of the wheels on the ground or lift.

- a) Grasping the bumper by hand raise the car to the maximum.
- Release the car when its weight will become too heavy to keep it in the raised position. (The height corrector valve is then in the "exhaust" position). The car will drop and the corrector valve places itself at the "intake" position, hence, the car rises again.
 - When the car stabilizes take a reading of height dimensions.
- b) Grasping the bumper by hand, press the car down as far as it can go.
- Release the car when it begins to rise (the height corrector valve is then at the "intake" position). The car rises and the height corrector valve places itself at "exhaust"; hence, the car drops again.
 - When the car stabilizes take another reading of the height dimensions.

The average of the dimensions read in accordance with paragraphs a and b should be :

- At the front = between 222 and 228mm (8.74 - 8.98 inches)
- At the rear = between 355 and 365mm (13.98 - 14.37 inches).

To adjust the height at the front or the rear, turn the clamp fastening the height corrector torsion rod at the center of the anti-roll bar. Move it by very small fractions of a turn. Do not move it in the lateral directions.

- Note: 1) At the front take the measurement of the height at the right side, then on the left side. The variation between the two sides should not be more than 3mm (.118"). In the contrary case, turn the left sleeve of the anti-roll bar adjustment link (turnbuckle).

- 2) The rear anti-roll bar becomes accessible after removing the rubber cap found to the right of the tail pipe.

29) Sealing of the hydraulic circuits :

All the connections should be checked (see Operation DX-00)

30) Checking the pressure "build-up" of the main accumulator :

With the motor running, the manual height control lever in "low" position and the pump no longer charging, loosen the bleed screw of the pressure regulator (1/4 - 1/2 turn).

Moderately retighten the screw and wait for the sound indicating "cutting-out" of the pressure regulator. The time elapsing between the retightening of the screw and the sound of "cut-out" should be less than 20 seconds.

31) Check the level of the liquid in the main reservoir of the hydraulic circuits. Replenish, if necessary.

The height of the liquid in the reservoir should be maintained between the "MINI" and "MAXI" marks of the transparent level gauge.

In any instant read this level only with the motor running after the car has been stabilized in "high" position.

37) Check the functioning of the various indicator lights :

The headlight indicator :

In "high beam" position, the blue indicator light should appear.

It should disappear when changing to "low beam".

The brake warning indicator :

The red brake control indicator has two bulbs. On the DS 21, one bulb indicates the wear of the brake lining. To check its functioning, disconnect one of the connecting wires at the brake plates and touch it to "ground". The red indicator should light when contact is made. If the pressure in the brake accumulator is insufficient, the other bulb will light up (ignition switch on contact). To be sure of the correct functioning of the signal, let the pressure in the accumulator drop by applying the brakes a number of times (ignition switch "on", but the motor stopped). To lessen the number of brake applications it is necessary to:

- for the DS and Station Wagon : place the manual height control lever in "low" position.
- for the ID : open the bleed screw of the pressure regulator.

Directional signal indicator :

During the functioning of the right or left directional signals, the indicator should light simultaneously with the signals.

If the indicator does not light in right or left position it indicates a directional signal bulb is bad or the wire is disconnected.

Note : During daylight, the functioning of the indicator is less visible.

38) Check the closing of the doors.

To make this check it is necessary to close the windows. Close the doors from the interior of the car. In case of difficulties in closing, center the lock.

Note : To avoid the whistling of air the front door should project outward 1 to 2mm in relation to the rear door. To obtain this adjustment move the lock horizontally on its pins.

39) Check the functioning of the door windows and their mechanism.

As when checking the closing of the doors, check the windows and their mechanism from the inside of the car.

Sealing of the door windows :

The support of the glass against the rubber frame of the door is adjustable by means of bolts accessible through the door flanges after removing the rubber protection caps. The upper bolts permit a slight vertical adjustment. The lower bolts permit an adjustment of the inclination of the window guides.

40) Check the closing of the hood.

Check the tension of the latch control cables. Check whether or not the latches hook properly. A well adjusted hood should lock itself in the security latch by its own weight.

41) Check the trunk lid telescoping supports.

These supports should function gently, without catching or grating.

Lubricate them, if necessary. To do this: push the lower tube toward the upper one and disengage the lower support.

CITROËN

January 6, 1971

CARS CORPORATION

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TECHNICAL INFORMATION I-321

MODELS: All 1971 "D" Models

SUBJECT: Lubrication - Oil Specifications

Beginning with the 1971 models the specified motor oil for normal use is S.A.E. 20 W 40 instead of S.A.E. 10 W 30.

In areas where the temperature averages above 90°F, the specified oil is S.A.E. 20 W 50.

In areas where the temperature averages below 0°F, the specified oil is S.A.E. 10 W 30.

The specified oil to be used in the gear box is now S.A.E. 80EP instead of S.A.E. 90EP.

Leaflets noting the above changes will be printed for insertion in all Owner's Instruction Guides, as well as the Warranty and Maintenance Booklets. A supply will be sent to all dealers.

We ask that you publicize this information as widely as possible so as to avoid the possibility of errors.

IMPORTANT