COACH D.B.

TYPE HBR.5

DEUTSCH & BONNET

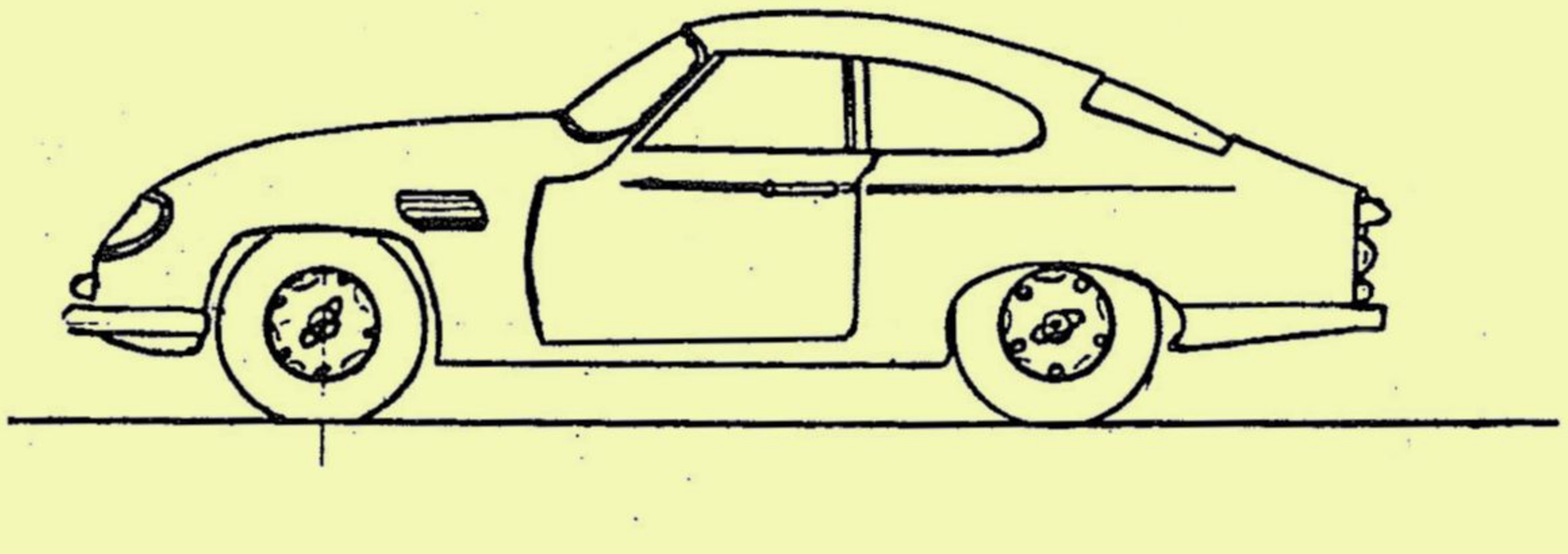
AUTOMOBILES

LE MANS 1954-1955-1956
MILLE MIGLIA 1952-1953-1954-1955-1956-1957
TOURIST TROPHY 1954-1955
SEBRING, FLORIDA 1952-1953-1956
NASSAU INTERNATIONAL RACES 1957

FACTORY BRANCHES IN NORTH AMERICA

4428 STERN AVENUE • SHERMAN OAKS • CALIFORNIA

288, MALIN ROAD • BROOMALL • PENNSYLVANIA



September 1958

No. 02/OT.

D. B. SPORTS COUPE HBR.5 850c/c

Factory Recommendations to Owners & Instruction Manual

--Identification of car

--Taking delivery of car

--Operation of car

--Breaking-in Period

--Lubrication & Service

--Use in Competitions

D.B. AUTOMOBILES FACTORY BRANCHES IN NORTH AMERICA

4513 Katherine Street - SHERMAN OAKS - California

414 Darby Road - Lianerch - HAVERTOWN PO. - PA.

Clutch:	
Design	Single disc, dry
Pedal Free Play	1/2 in.
Clutch linings	riveted or bonded
Transmission:	
Design	4 speeds forward, 1 reverse - 2nd and erd synchronized.
Gear ratios	First 16.17; Second 9.20; Third 6.14; Fourth 4.71 Reverse 17.95
Capacity	1 Qt. SAE 90 Winter SAE 140 Summer
Transmission & differential in a single unit	

Dimensions and weights:

Length	160"
Width	63"
Height	50"
Road clearance	7"
Dry weight	1320 lbs.
front axle	881 lbs.
rear axle	440 lbs.

Capacities:	
Fuel tank	15 ga.
Engine crankcase	2 Qt.
Transmission and differential	1 Qt.

Body	
Design	Prestressed fiberglass shell
Windshield glass	Tempered glass TRIPLEX AS1
Rear window glass	- - - - or PLEXIGLASS 16/100 in.
Side windows glass	Safety glass SECURIT AS2
Trunk space	Approx. 5 cu. ft.
Electrical equipment	12 volts
Headlights	sealed-beam adaptors for 5400 U. S. Sealed-Beam
Tail lights and turn signals	LUCAS 488

FOREWORDS

It is probably after thorough investigation of the sports car market that you have decided to acquire a new D. B. Sports Coupe. In order to obtain complete satisfaction of your car, you should keep in mind the following points:

1/ The breaking-in recommendations are VERY IMPORTANT and should be read carefully, otherwise your engine will be ruined before you can get any performance out of it.

2/ The lubrication and service instructions should be followed closely.

3/ If any repair is needed, request from your dealer genuine original D. B. Panhard parts. It is very possible that you can get domestic part replacements as good as the original ones, but you can also make a mistake which will bring a lot of costly consequences. The Branches of D. B. Automobiles in North America as well as its Distributors and Dealers sustain large stock of parts.

4/ Refrain to modify the car, even if the advice comes from a reliable source. Remember that such recommendations would be the result of one person's experience on one car or on a few units, when the D. B. factory bases its judgment on years of knowledge and on hundreds of cars delivered to various parts of the world. Remember, too, that D. B. has, as a known manufacturer of competition cars, the privilege to test most of the new equipments and accessories sold on the market, and that there is generally a strong reason not to have adopted them.

IDENTIFICATION OF CAR

There are FOUR numbers to identify each D. B. Sports Coupe:

1/ The Chassis or serial number which is to be found on a stamped metal plate screwed to the right (when sitting in car) upper suspension arm. This plate is easily visible when you bend over the engine compartment. It carries the name and address of the factory plus the type of chassis which is H.B.R.5 and the serial number. The latter should be used as serial number for registration to the Bureau of Motor Vehicles. This number should correspond to the one mentioned on your Bill of Sale.

2/ The body shell number which is stamped on a small plate riveted to the right inside panel of the engine compartment. This number is composed of three figures.

3/ The engine or motor numbers which are stamped on the left (when sitting in car) upper side of the crankshaft housing. There are two numbers, one stamped in small letters showing the D. B. factory figure (the D. B. factory motor number is generally the same as the serial number with one zero added), the other stamped in large block letters being the housing number.

4/ The transmission and differential number which is carried on the middle section angle of the clutch housing (on the left side when sitting in car).

Those FOUR numbers should be carefully noted and referred to for any order of parts.

TAKING DELIVERY OF CAR

When you take delivery of the car, you should:

1/ Check the identification numbers as explained above.

2/ Check if tools and accessories are complete. You should get in the trunk compartment:

- one spare wheel with tire
- one jack
- one jack winding shaft extension
- one wheel brace to be also used in conjunction with jack
- one small tool kit with spark plug wrench
- two grille masking plates (if not mounted on car)
- two engine compartment side-vent plates (if not mounted on car)

3/ Receive two sets of two keys:

- one set for doors
- one set for ignition and starter contact

4/ Make sure that the distributor's or dealer's first delivery service has been performed. This first delivery service includes:

- checking all controls, lights, instruments and accessories
- adjusting shifting and selector cables
- changing engine oil
- adjusting carburetor to American High-Test Fuel
- tightening all bolts, nuts and screws
- checking tires, wheel nuts, front wheel tow-out, brakes, battery
- installation or removal of grille masking plates and side-vent plates
- washing of car and removing all marine protection products

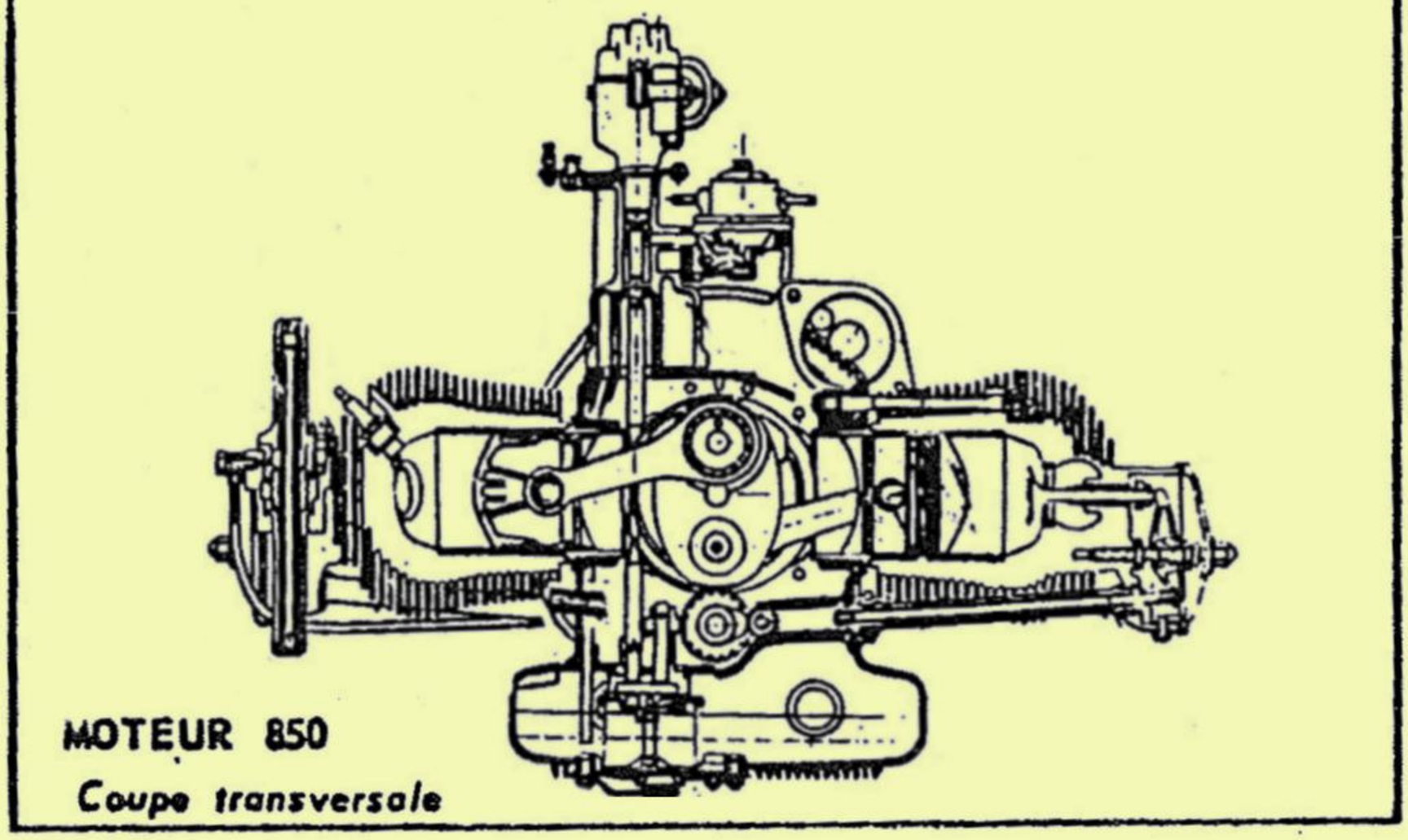
5/ Request a list of dealers

6/ Request a diagram of instruments and shifting patterns

OPERATION OF CAR

A diagram of the instruments and of the gearshift pattern is delivered with each car. However, the following lines should be read carefully to get you more familiar with the pecularities of the D. B. SPORTS COUPE.

Starting Procedure: The air-cooled D. B. Panhard engine should start easily without the use of any choke by turning the key which also operates the starter (models 1958 on) or by pulling the starter control knob after having turned the ignition switch on (older models). The gas pedal should be pushed at the same time halfway down with the foot.



MOTEUR 850

Coupe transversale

However, if the engine does not fire quickly, you can pull the choke control (see diagram) all the way and start the engine. After the engine has started firing, push immediately the choke control halfway back and allow the motor to warm up a couple of minutes. Then, push the choke control back all the way. NEVER USE THE CHOKE WHILE DRIVING. This is detrimental to the engine life. When using the choke, never touch the gas pedal in order not to flood the carburetor.

Warming up of engine: You must remember that this is a two cylinder air-cooled engine with aluminium cylinders. Therefore, it is more important than with any other type of motor to allow the engine to warm up a few minutes. A temperature of 50 degrees C should be indicated on the oil temperature gauge before starting to drive, and a reading of 70 degrees should be attained before pushing the car.

Those recommendations are particularly important if your car is fitted with the 1958 Panhard cooling blower. The action of the new blower is so efficient, particularly in cold weather, that it will actually retard proper warming-up of the engine if the car is driven at speed before the proper idling time. If the engine fails to warm up rapidly to 50 degrees, it is because the side ventilation plates of the engine compartment or the front grille cold weather plates have not been installed when they should (see cold weather instructions).

While driving the car, the oil temperature gauge will go up to 80 degrees and 100 degrees in hot weather. This is perfectly normal. However, the temperature should not be allowed to go over 110 degrees except while racing car and for very short periods of time. If this happens, you have to stop and check the reason why the engine is overheating (see service).

Oil Pressure Gauge: Some cars (older models) are equipped with an oil pressure gauge. When the engine is running, the gauge should indicate some pressure, but it is perfectly normal if the gauge does not go over figure 1, indicating a pressure of 1 kilogram per square centimeter. Since 1958, the oil temperature gauge has been suppressed and replaced by a warning light on the instruments. In case of a sudden fall in oil pressure, this signal would light up at once. In such instances, you must stop the engine at once.

Spark control lever: The manual spark control lever which is to be found on the left side of the steering column, under the steering wheel, is an accessory of PRIME IMPORTANCE in the operation of the D. B. Panhard air-cooled engine. Adequate variations of the spark plug firing time is one of the main actions to be performed by the distributor, and all modern distributors are equipped with automatic spark control built-in. This automatic control provides a restricted action on the time of firing of the plug but does not allow such a broad range to satisfy completely a sports car driver. The main reason why automobile manufacturers have discarded the manual spark control from their mass-produced models is because most drivers did not understand exactly how to use it and they did not care to learn about it.

It is essential to be familiar with the use of the manual spark control to take full advantage of the possibilities of the D. B. Panhard engine and to know how not to mis-use it, which is very detrimental to the life of the power unit.

The D. B. manual spark control lever rotates of 120 degrees up and down its shaft. The upper position is FULL RETARD, the lower position, FULL ADVANCE.

When starting the engine. with the help of the choke or not, the lever must be adjusted about halfway. During driving, the lever must be adjusted to the PROPER POSITION. The PROPER POSITION is the point when the engine starts "knocking" lightly when accelerated in 4th gear. This position will vary with the octane rating of the fuel used, the oil temperature, the outside temperature, and other factors.

The setting of the distributor when adjusted should be in such a way that "knocking" starts when the spark control lever is at its lowest point FULL ADVANCE. Adjustment of the distributor should be made with HIGH TEST FUEL.

Remember that it is very bad for the engine to drive at high speeds and to accelerate with a retarded spark. It is highly preferable to run with too much advance than with too much retard.

Shifting Procedure: As soon as you will seta in your D. B. SPORTS COUPE, you will notice that the shifting pattern is radically different from any other car shifting pattern. Some persons have criticized this pattern as difficult and tricky. It is only because they were completely ignorant of the requirement of a competition car where shifting sequences have to be very close, or because they tested a car where the shifting cables were not properly adjusted. It is therefore suggested that you study the shift diagram supplied with the car carefully, and that you practice the shifts for a while. At first the maneuver will be stiff but the cables and linkages will loosen up pretty soon. You will notice when you are familiar with the car that you have to wait a fraction of a second before getting in 4th speed (overdrive) which is not synchromeshed as 2nd and 3rd speeds are. You can also double clutch.

To get in REVERSE, you have to lift the lever and go all the way back and sideways towards the passenger seat. Sometimes, it will be necessary to double clutch to get in reverse.

Adjustment of cables: the selector and gearshift cables can be adjusted from the transmission cover. This adjustment has to be done very carefully at the right point, otherwise you will experience some difficulties to get in 1st speed position or in Reverse since those are the extreme positions reached by the cables. Therefore the cables must be adjusted so that you can get in first speed and in reverse without trouble.

Clutch: the clutch pedal should be depressed all the way down when shifting gears. Some old cars are equipped with Galfer bonded linings, most new models have the new FERODO M8/F44 riveted disc which is preferable to avoid chatterings. The clutch pedal should be checked from time to time for free travel (see service).

Brakes: you will find out that D.B. brakes are very powerful but also very progressive in action, like most European sports cars. This means that they will not lock at the slightest touch. Watch for that when you follow closely a big car in the traffic. Also remember that your car being lighter will stop in shortest distance at speed than larger vehicles can. Therefore, you are likely to be bumped in the rear of your car. This can be avoided by hitting the brake pedal shortly a couple of times before braking hard. This procedure will also build up more pressure in the brake fluid lines and will give more braking power. From time to time, check brake fluid level in transparent container located in engine compartment. For addition of brake fluid, see service.

Cold and Hot Weather Driving: Each D. B. SPORTS COUPE is delivered with TWO SETS OF PLATES, one set obturating the engine compartment inside vents, another set to be placed in front of grille leaving only a small circular opening in front of the blower air intake.

The decision to install one set or two sets must be dictated by your oil temperature gauge. If the gauge indicates a temperature under 80 constantly when driving, you have to install the side-vent plates in the engine compartment. If, after having installed the side vent plates, your engine temperature still does not climb over 80, you have to install the front plates.

Both sets of plates can be installed by yourself in a few minutes. By freezing weather, both sets of plates have to be installed.

Heating & defrosting: As indicated on the diagram, you will find two control knobs on your instrument panel. One of those knobs control the opening of the heater blowing air on your feet, the other controls the defrosting action obtained through two windshield defrosting ducts. The defrosting ducts also blow heat in the car. You can adjust those knobs to introduce the adequate supply of air.

Wheels and Tires: Check regularly your wheel nuts.

- Alignment and balancing of wheels: It is highly important that your front wheels be balanced and aligned properly every time you change tires or have tires repaired..The tow-out of the front wheels should always be between 2 to 5 mm (8/100 to 20/100 of an inch).
- Tires: We recommend to use MICHELIN TIRES which have been designed in the first place for front-wheel drive cars. No other tires will give you complete satisfaction. The matter of choosing "X" metallic tires is controversial and we will leave it to you to choose the "X" tires or the regular 145 x 400 Stop tires. ALWAYS USE 145 x 400 tires, never try to use 15 inch tires. For racing purposes, see "competition use".

Tire Pressure:

	Front	Rear
Regular tires including Michelin STOP	20 lbs.	20 lbs.
Michelin X or Pirelli Cinturato	18 lbs.	18 lbs.

When lifting car with jack, be careful not to apply jack under fiberglass body.

XXXXXXXXXXXXXX BREAKING-IN INSTRUCTIONS XXXXXXXXXXXXXX

ATTENTION: THIS IS A 850cc TWO CYLINDER AIR-COOLED ENGINE AND NOT A V8 POWER PLANT OF 5 LITERS DISPLACEMENT. Therefore, the life of your engine depends largely upon your care to respect the following breaking-in requirements:

Regime:

up to 300 miles,	3,500/3,800 RPMs maximum
from 300 to 600 miles,	4,000 RPMs maximum
from 600 to 1,200 miles,	4,500 RPMs maximum
from 1,800 miles to 1,800 miles,	5,000 RPMs maximum
from 1,800 miles to 3,000 miles,	5,500 RPMs maximum

Breaking-in period can be considered as terminated at 3,000 miles only.

After breaking-in period, ENGINE SHOULD NEVER BE REV-VED UP OVER 5,700 RPMs. (For competition driving, see special chapter).

Wheels & Tires:

- after 500 miles, check wheel nuts & hubcaps
- tire pressure during breaking-in period:

	Front	Rear
regular tires or Michelin Stop	20 lbs.	19 lbs.
Michelin X or Pirelli Dinturato	18 lbs.	18 lbs.

- check for possible oil leaks and report immediately to your dealer if any.
- adjust tappets after 1,000 to 1,500 miles.
  (allow 20 to 25/100 of a mm or 8 to 10/1,000 of an inch tappet clearance for both inlet and exhaust valves)

Oils & Lubricants: There is no special requirements for oil & lubricants during breaking-in period. Use always the best oil available. All first grade premium oils manufactured by American oil companies are good.

Use: in summer SAE 40
in winter SAE 30
in freezing weather SAE 20

Breaking-in products such as BARDAHL and any other molybdenum based lubricants are good for your engine, but do not forget that their smothering action will actually retard the breaking-in period. Therefore, if you use such lubricants, allow 4,000 miles breaking-in time instead of 3,000.

Fuel: Use any HIGH TEST of a known brand. As for lubricants, do not try to save a few cents by buying an unknown brand.
Such very high octane fuel as SUPER HIGH TEST, 3-D HIGH TEST, etc...are not advisable for every day's driving.

XXXXXXXXXXXXLUBRICATION & SERVICE OF CARXXXXXXXXXXXX

Same as Dyna Panhard Sedan.

Every 1,500 miles:

-change engine oil-drain crankcase when engine is warm preferably. The crankcase contains 2.2 liters (3.87 pints or 2 U. S. quarts)
grade of oils: see above at Breaking-in instructions

-lubricate:

-front upper transverse spring hands	1 steering knuckle fitting	each side	
	1 spring pin fitting	-	-
-front lower transverse spring hands	1 steering knuckle fitting	-	-
	1 spring pin fitting	-	-
-steering rods	1 fitting each side		
-Universal-joints	1 fitting wheel side	-	-
	1 fitting box side	-	-
-rack and pinion steering housing	3 fittings		
-clutch fork	2 fittings		
-pedal croos shaft	1 fitting		
-rear axle trailing arm	1 fitting each side		

-Check
-transmission & differential housing oil level with special dipstick. Top up if necessary with SAE 90 transmission oil in winter and SAE 140 in summer, until mark on dipstick is reached. Contrarily to engine dipstick which bears two marks, one for minimum, one for maximum, the transmission dipstick carries only the Maximum mark.
-brake fluid level in transparent container (top up only with original LOCKHEED No. 5 fluid)
-tire pressure
-battery

Every 3,000 miles: Same as for 1,500 miles plus the following operations:
-drain transmission and differential housing:
-remove both lock tabs, both drain plugs, and drain case
-replace tab and plug assembly and refill with fresh oil until mark on dipstick.
-use same oil as described above.
-content of housing: .8 liter (1.40 pints or a little less than 1 quart)
-oil can points:
-doors, hood and trunk hinges
-doors, hood and trunk catches & locks
-windshield wiper shafts
-generator
-manual spark control cable
-distributor: remove distributor cap & lubricate felt with a few drops of oil (vaseline)
-hand brake cable and lever
-accelerator cable
-heating and defrosting cables and knobs
-choke control cable
-clutch cable
-tachometer intake and cable
-retractable headlights (if fitted)
-Check:
-generator belt tension: adjustment by casing generator mounting bolt's nut & tilting - belt should flex 1/2 inch.
-clutch pedal free travel: ease back cable lock screw and adjust by means of the cable sleeve (screw in to increase travel). After adjustment, make sure the point of the lock screw lies in the sleeve slot & tighten. Check that there is a 1/2 inch clearance between thrust screw and lever.
-front transverse springs rings and bolts: Tighten if necessary
VERY IMPORTANT

-Clean:
-spark plug and set gap at 15 to 20/1,000 of an inch.
-distributor points and set at 15/1,000 of an inch.
-generator and starter commutators and brushes
-air filter (just dust off)

Every 6,000 miles: Same as 1,500 and 3,000 miles plus the following operations:

Clean:
-oil pump filter: drain crankcase, remove oil drainage plate bolts, taking care not to damage gaskets.
unscrew nut securing screen
clean screen with gasoline
replace screen
sump cover and gasket, fitting a new gasket if necessary
do not forget to replace drain plug & lock tab
fill with fresh oil
-gas filter bowl and carburetor bowl: check if engine idles satisfactorily
adjust idling jets & air jets if necessary

Check:
-brake linings; dust them off with air pressure
-shock absorbers
Rotate tires.

Every 15,000 miles: Same operations as described above plus:

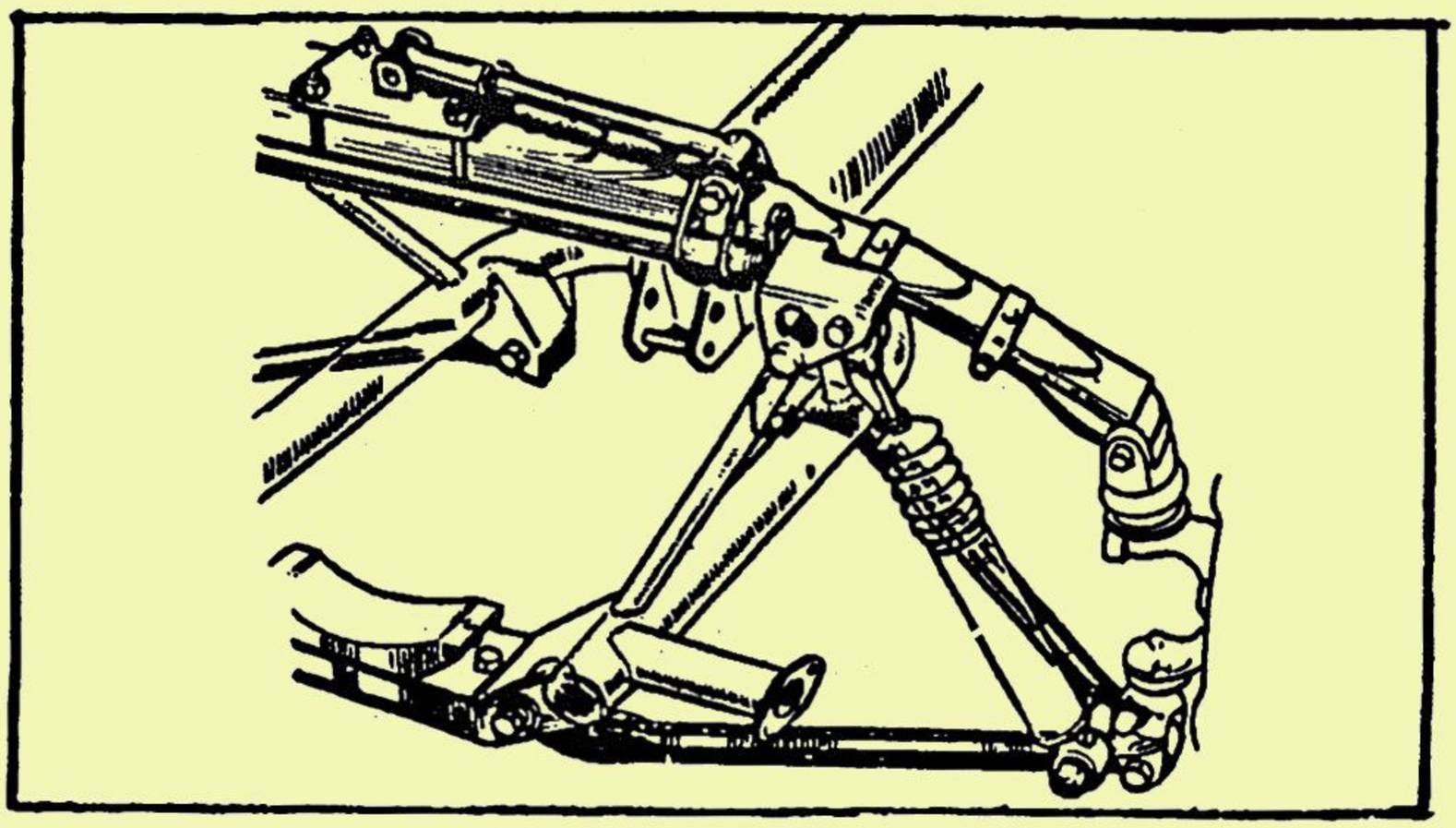
Hubs:: repack hubs to two-third full
take this opportunity to check wheel bearings for play
Brakes: drain and refill master cylinder reservoir
bleed
U-joint drive shafts: remove and disassemble. This work should be done by an expert only. Check for wear and replace worn parts - repack grease cups.
-remember when disassembling that the parts must be marked so as to reassemble them in the same relative position.
-take great care not to drop or damage drive shaft ends
-take great care not to lose interior ball joint and its seal, or the needles from the needle bearing
-if the complete coupling bolts have to be replaced, use only D. B. parts, as these bolts are of a special heat-treated steel.
-remember when installing that the parts must be set in the same relative position (following marks made before removal)
-as all grease cups must be packed with grease, the centering device must be removed.

Engine:
Check compression - If the compression is too low, grind in valves.

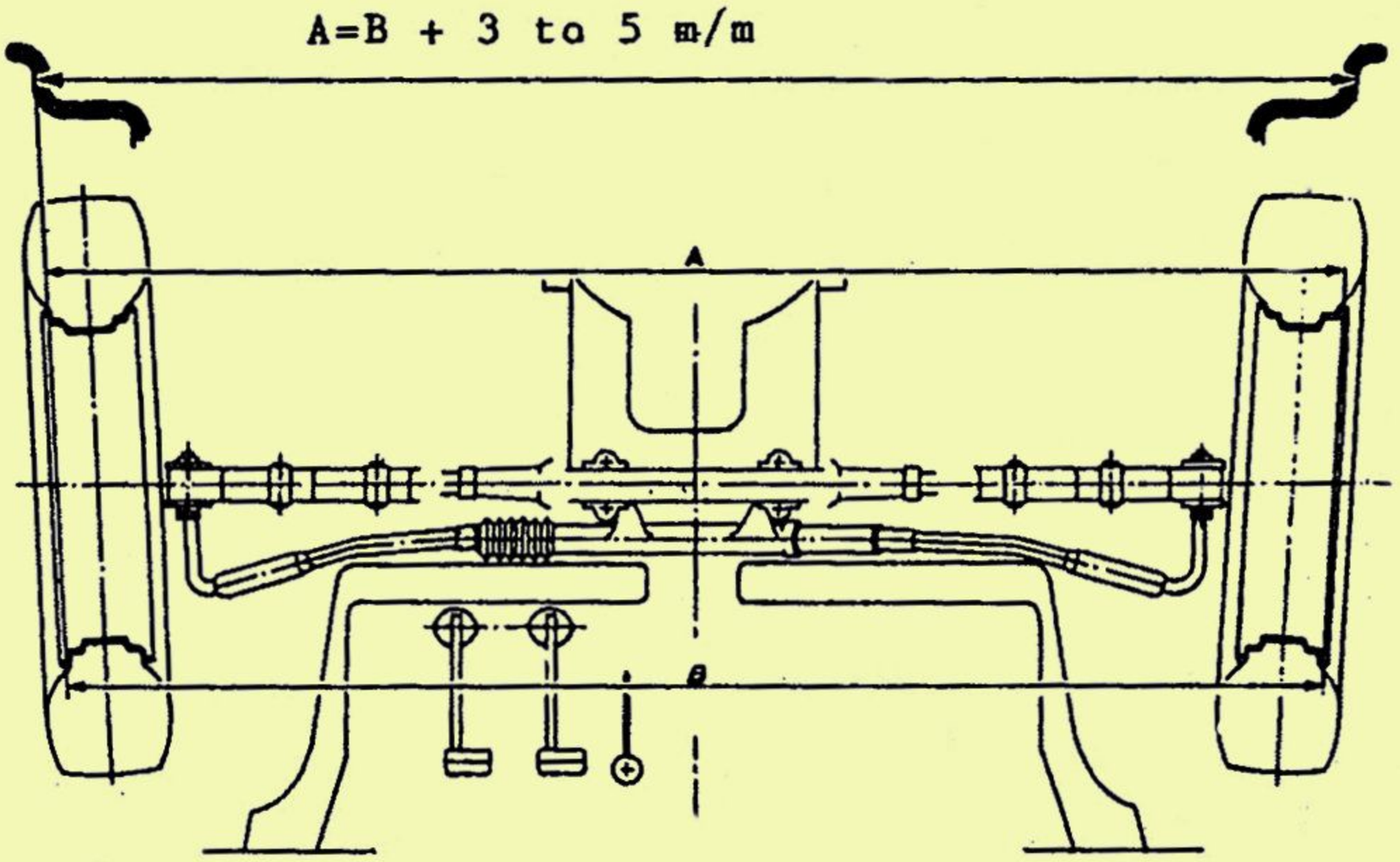
Air Filter: replace filter element

OTHER SERVICE RECOMMENDATIONS

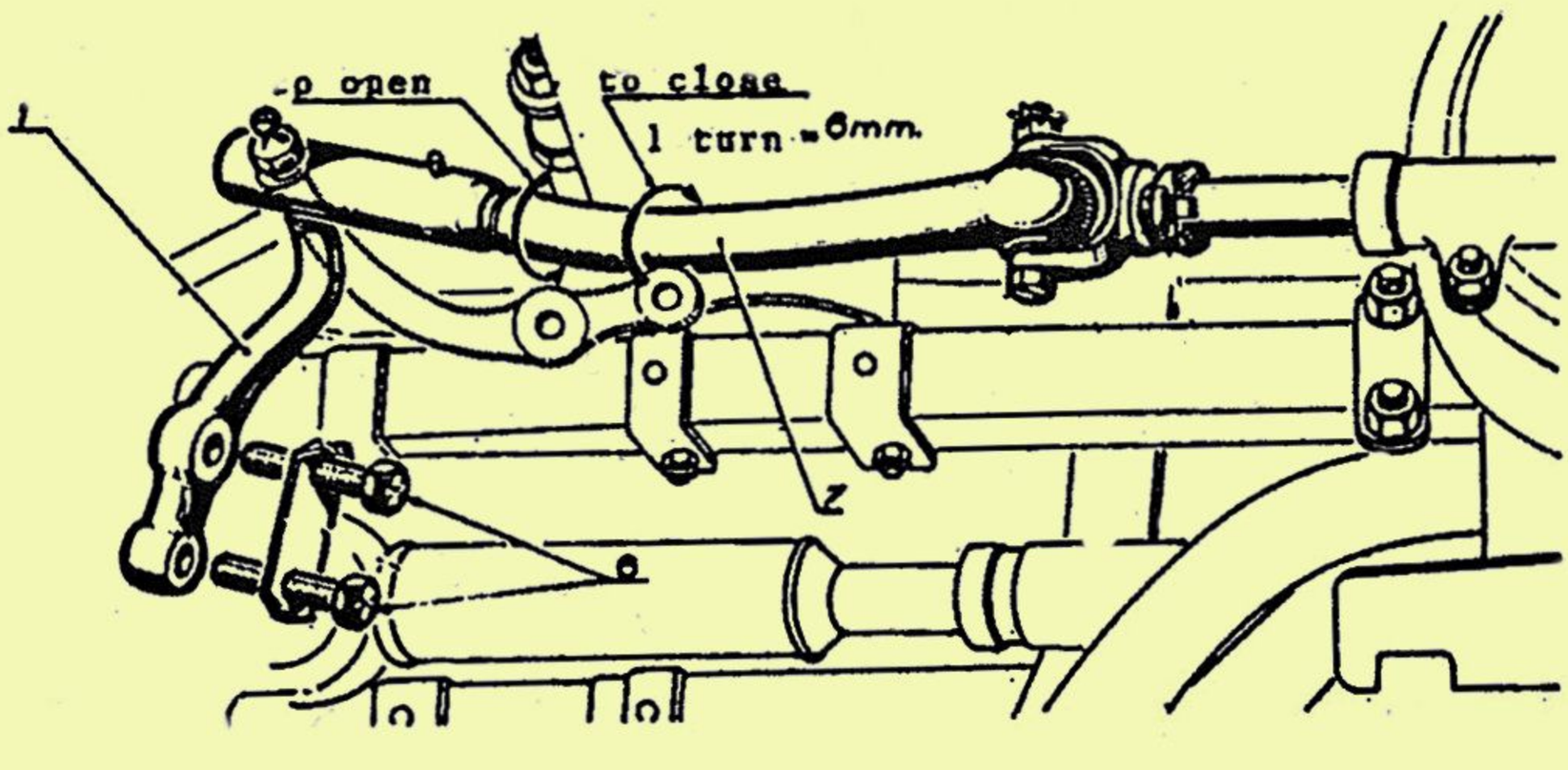
Front Suspension: Since the D. B. SPORTS COUPE is a front-wheel drive car, the full braking and acceleration strains are particularly heavy on the front axle and on the front suspension. This is why special attention should be called upon the maintenance of the latter, by making sure that all bolts and nuts holding front suspension and transverse springs are properly tightened. Upper and Lower hands should also be checked from time to time for play, as well as the king pins and steering wheel rods.



Wheels: Always make sure that a proper tow out of 8/100 to 20/100 of an inch exist between the front wheels. Also check wheel balancing and alignment. If you drive hard, you should get reinforced wheels.



Checking the tow out



Setting the tow out

Unscrew #6

Pull #1

Turn #7 right or left as needed

Engine: Nearly all main troubles with the Panhard tow cylinder opposed power plant come from the following:

-air leak between side manifolds and center inlet manifold
-air leak between inlet manifolds and cylinder inlet ports
-air leak between center manifold and carburetor
-wrong use of the spark control lever at speeds
-use of too hot spark plugs
-wrong tappet clearance

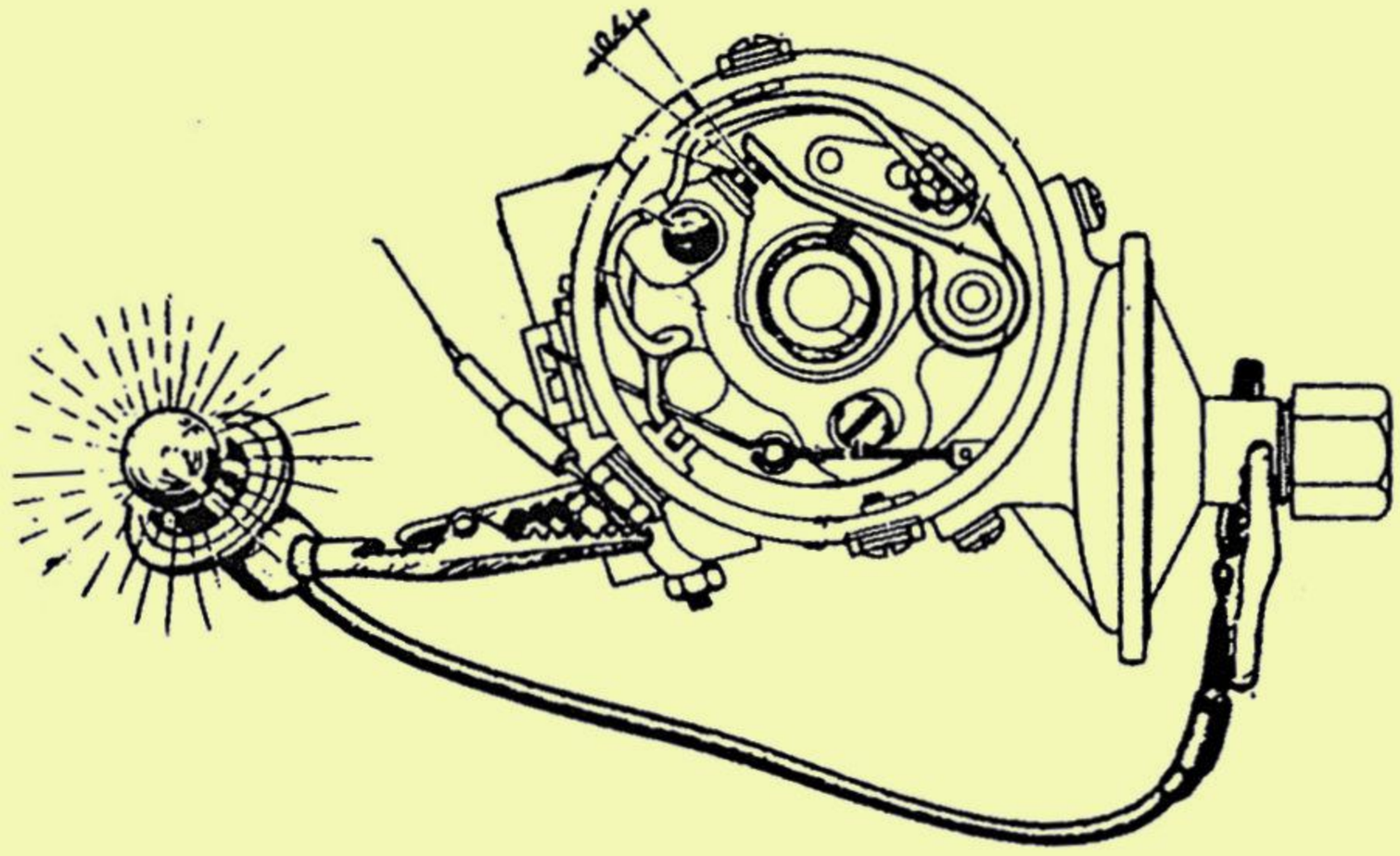
ANY OF THOSE TROUBLES CAN PUT A HOLE THROUGH A PISTON OR BURN A VALVE.

Other possible troubles:

-faulty cooling system
-poor carburetion adjustment
-poor timing

Each of those cases will be studied separately.

1. Air Leaks: Check if such leaks do not exist (there are several ways of checking same) by tightening bolts and eventually changing gaskets. In some instances [illegible] will have to smooth inlet manifold surfaces (flanges)



Setting timing at TDC. with 0.4 m/m gap at the points.

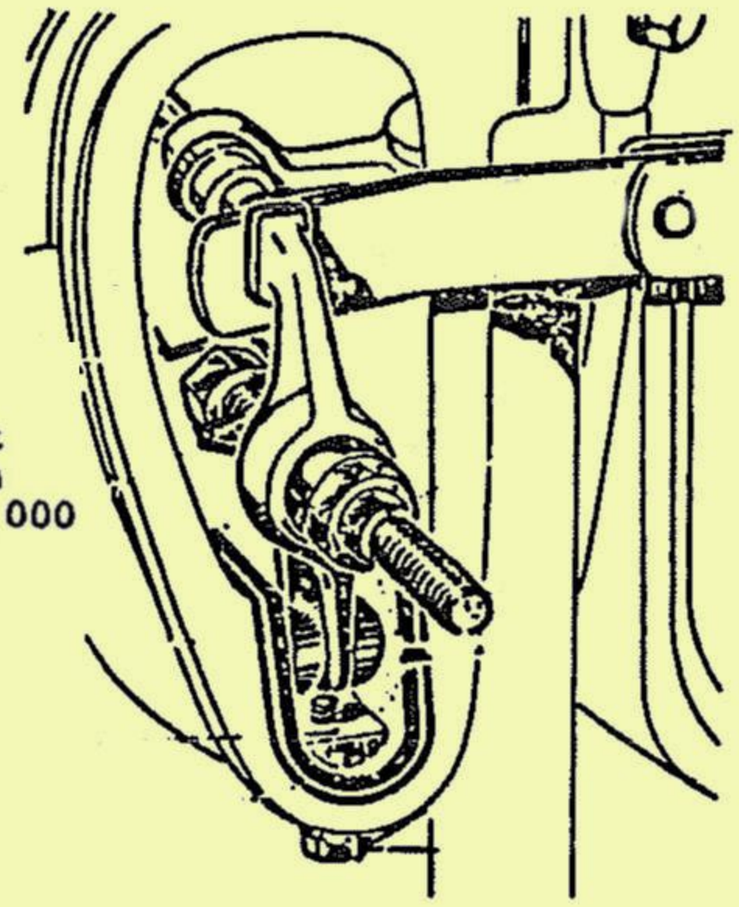
2. Spark Control Lever: See "Operation of Car" for use. You should adjust the distributor in such a way that knocking is clearly audible when the car is accelerated in 4th gear and the spark control lever all the way down (FULL ADVANCE).

3. Spark Plugs: The selection of the right spark plugs is of the utmost importance to avoid damages to the Panhard engine. The matter of makes of plugs is very controversial, everybody seems to have his own idea of the best make and a very good plug for one type of engine can be very bad for another design. The only spark plug that the D. B. factory can recommend is the MARCHAL 34SH for regular driving and the MARCHAL 2/33/H for hot weather driving and for competition purpose. D. B. Distributors and Dealers should be always stocked with both types of plugs.

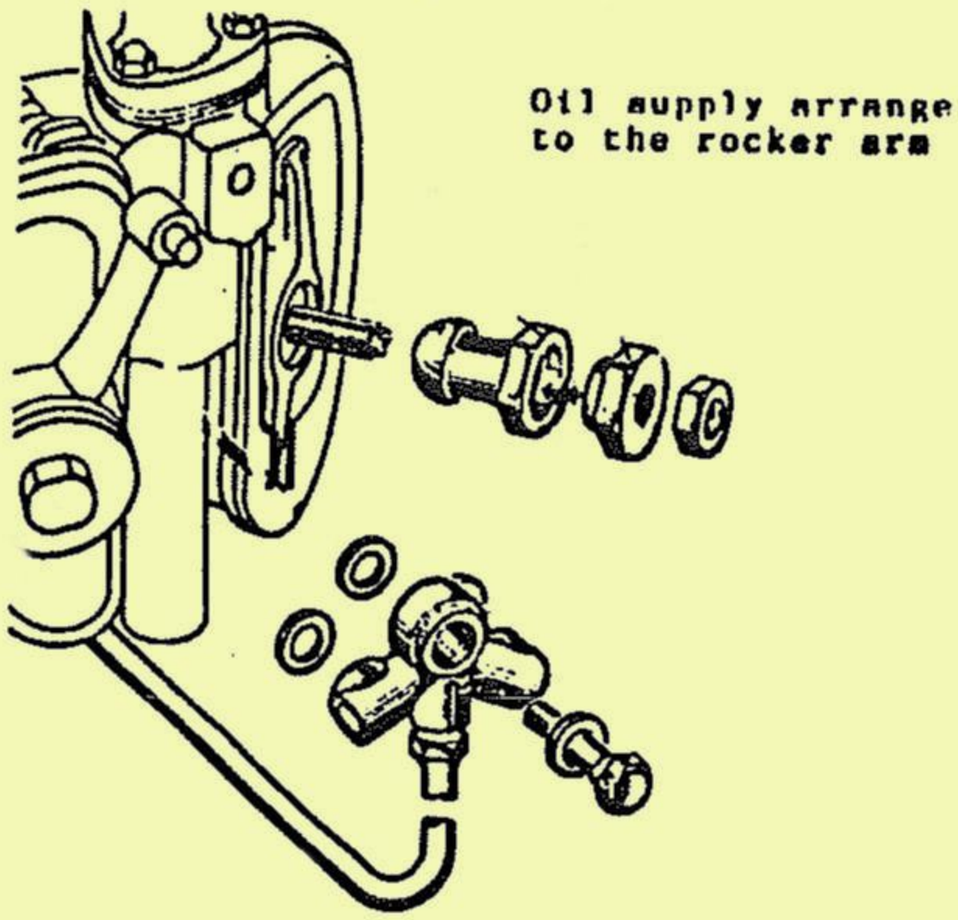
In case that you cannot find MARCHAL plugs, you will find hereunder a chart of various other makes which can be used providing you make sure they are of the right type.

	MARCHAL	AC	KLG	LODGE	CHAMP.	BERU	BOSH
Regular & cold weather driv.	34SH	42 Com	FE80	3HLN	NA10	240/14/3	W240 T1
Racing & hot weather driv.	2/33/H		FE250				W240 T2
Racing in very hot weather	2/32/H		F80	3HN	L115	260/13/H	W260 T2
			F100				
			F250				

ALL SPARK PLUGS MUST BE OF THE LONG REACH TYPE . Gap set at 15 to 20/1,000



valve clearance inlet and exhaust hould be between /1,000 and 10 1,000 of an inch



Oil supply arrange to the rocker arm

4. Tappet adjustment and valve clearance: To adjust tappets, see Panhard service Manual No. 139. The valve clearance both at inlet and exhaust should be between 8/1,000 and 10/1,000 of an inch. After the first 1,500 miles of breaking-in, tappets should be adjusted.

5. Cooling System: Depending on the year of production of the D. B. SPORTS COUPE, the engine is either cooled by the free flow of air through the grille, either equipped with the new 1958 Panhard blower unit. The installation of the cooling blower is an appreciable improvement and it is a "must" in hot weather areas and for city driving. It is also important for competitions since not only does the action of the blower lower the engine temperature but it also equalizes the conditions in both right and left cylinder. This is why we strongly advocate to our Distributors and Dealers to equip all the older cars with the new blower unit. D. B. Automobiles Factory Branches have in stock such equipments complete with heater and defrosters. However, if this cannot be done, a good solution to eliminate self ignition action is to install aluminum ducts from grille to each cylinder.

For cars equipped with the blower unit, the maintenance is confined to two points:

- -checking the rubber gaskets of the generator and starter. In some instances, those gaskets move and allow air leaks through the blower cutting down sharply its output.
- -checking and tightening connecting shafts, bolts and nuts holding blower in place.

If despite those precautions, the engine oil temperature rises over 100, there is something wrong with the blower itself. Therefore you have to take apart the front plate of same and you will find out in most cases that the rotor unit is sliding upon its shaft and under revolves the engine, because of friction seal wear. You will have to replace part No. 106-4-D. When replacing this part, use the thick type of seal instead of the thin one.

6. Poor Carburetion: This is the most common trouble afflicting all European cars delivered to this country (North America). The reason has to be found in the fuel used in America which is not only of a wider octane rating, but also of a different volatility. The D. B. factory is presently conducting tests with American fuels and will issue recommendations in due time. However, until then, the following basic information is available:

A. All cars should be equipped with the 38 NDIX ZENITH double barreled carb. & enlarged "MILLE MIGLIA" manifold. This will improve the performance of the car and its flexibility considerably. All cars since 1957 are equipped stock with this fuel system. The use of any other carburetor is not advised. We also disadvise the installation of two carburetors such as the 232 and 238 equipment. Such fuel system cut down everything in regimes under 4,000 RPMs and the car becomes difficult to drive in traffic.

B. The first thing to do if the carburetion does not appear correct is to check the fuel pump and the fuel lines for perfect action.

C. Before starting to adjust carburetor, you must know if the mixture is too LEAN or too RICH. This can be ascertained easily by the coloration of the spark plug electrodes:

if the electrodes are blackish, you are running too rich
if the electrodes are whitish-green, you are running too lean.
The right coloration should be brownish-yellowish.

D. If you are running too LEAN, you have to change the main jets and the acceleration jets (two of each per carb.) put larger jets. If you are running too RICH, you must replace the original jets by smaller units.

The factory setting of the jets is: MAIN JETS: 2 x 150
for 38 NDIX carb. ACCELERATION JETS: 2 x 220
If you need smaller jets, you should put 145 and 210
If you need larger jets, you should use 155 and 230.
Assortment of jets for Zenith carburetors is available from D. B.

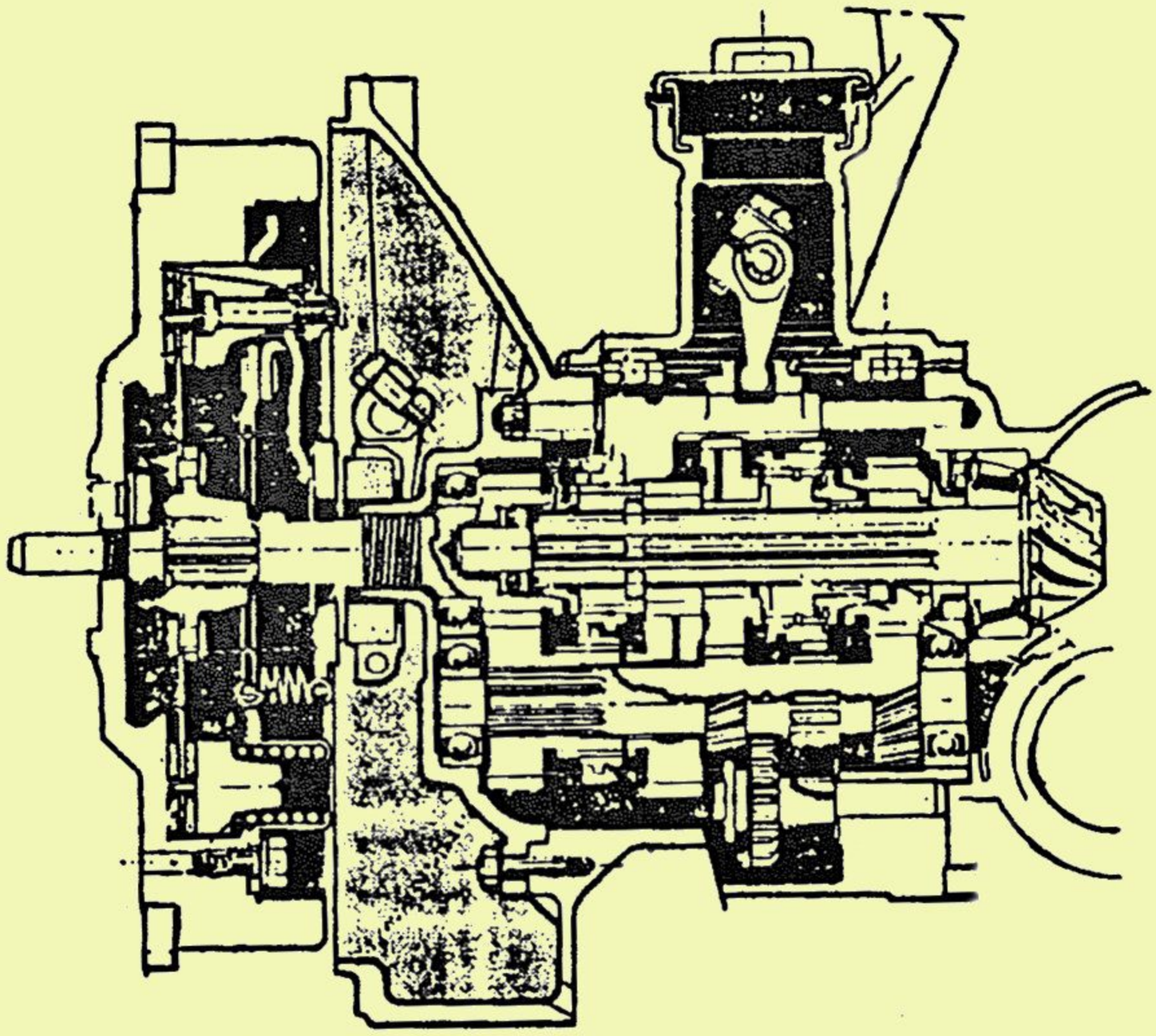
E. Fuel level in bowl: Set originally at 16mm from gasket line of bowl, the fuel level can be altered. Unfortunately the D. B. factory has not yet completed its tests on American fuels and cannot give any definite information at the moment.

F. Air filter: Some D. B. SPORTS COUPES come with the flat round MIOT air filter mounted on top of carburetor, some others, with the D. S. 19 modified cylinder unit. The purpose of the larger DS19 filter is to lower the noise level, but, if the car is entered in competitions, the flat MIOT filter should be used. From time to time, the air filter clamping collars should be tightened.

NEVER, UNDER ANY CONDITION RUN CAR WITHOUT AIR FILTER.

7. Exhaust System: Check for air leaks at cylinder exhaust ports. If for some reason the muffler is damaged beyond repair, have it replaced by the regular EPAF silencer. The installation of any other type of muffler will be detrimental to engine and will cut down performance. The noise level of the exhaust system will diminish considerably when the inside of the muffler is coated with burned carbon.

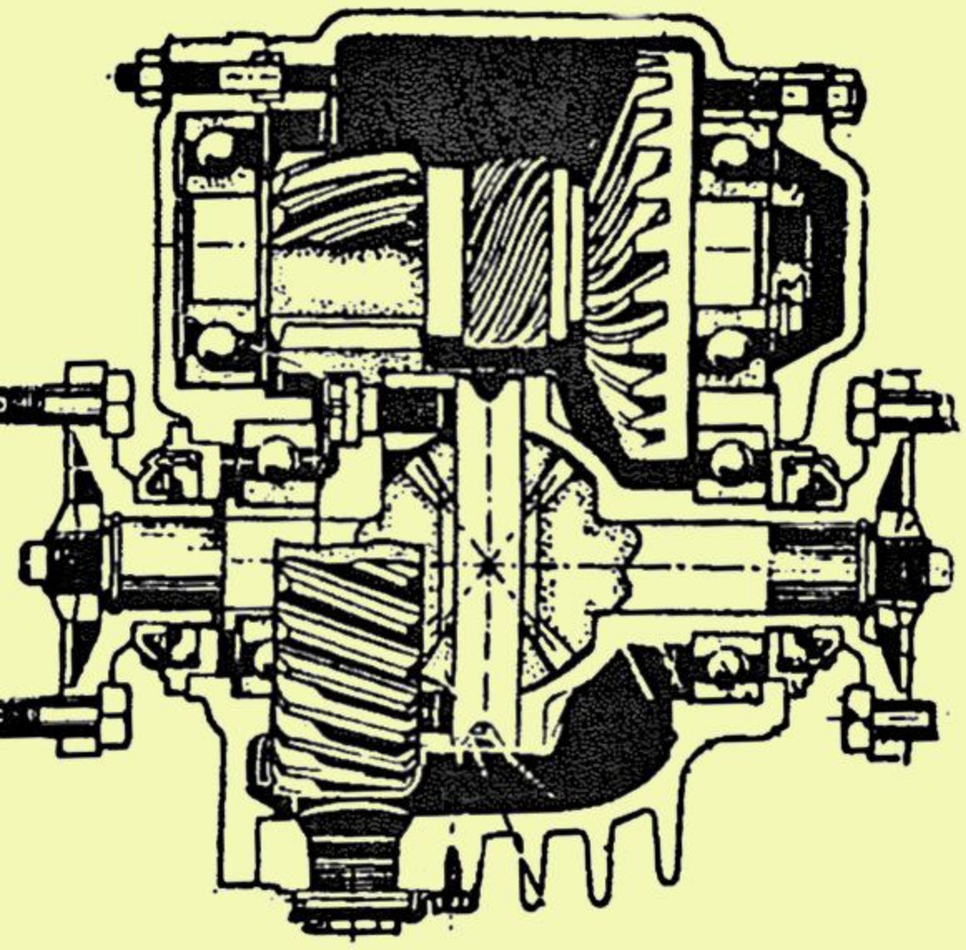
Clutch: D. B. SPORTS COUPES are equipped with bonded Galfer linings or with the new riveted FERODO plate. The latter is much smoother. Therefore, if the clutch linings have to be replaced one day, we recommend that you have the FERODO M8/F44 plate. For free travel of pedal, see service above.



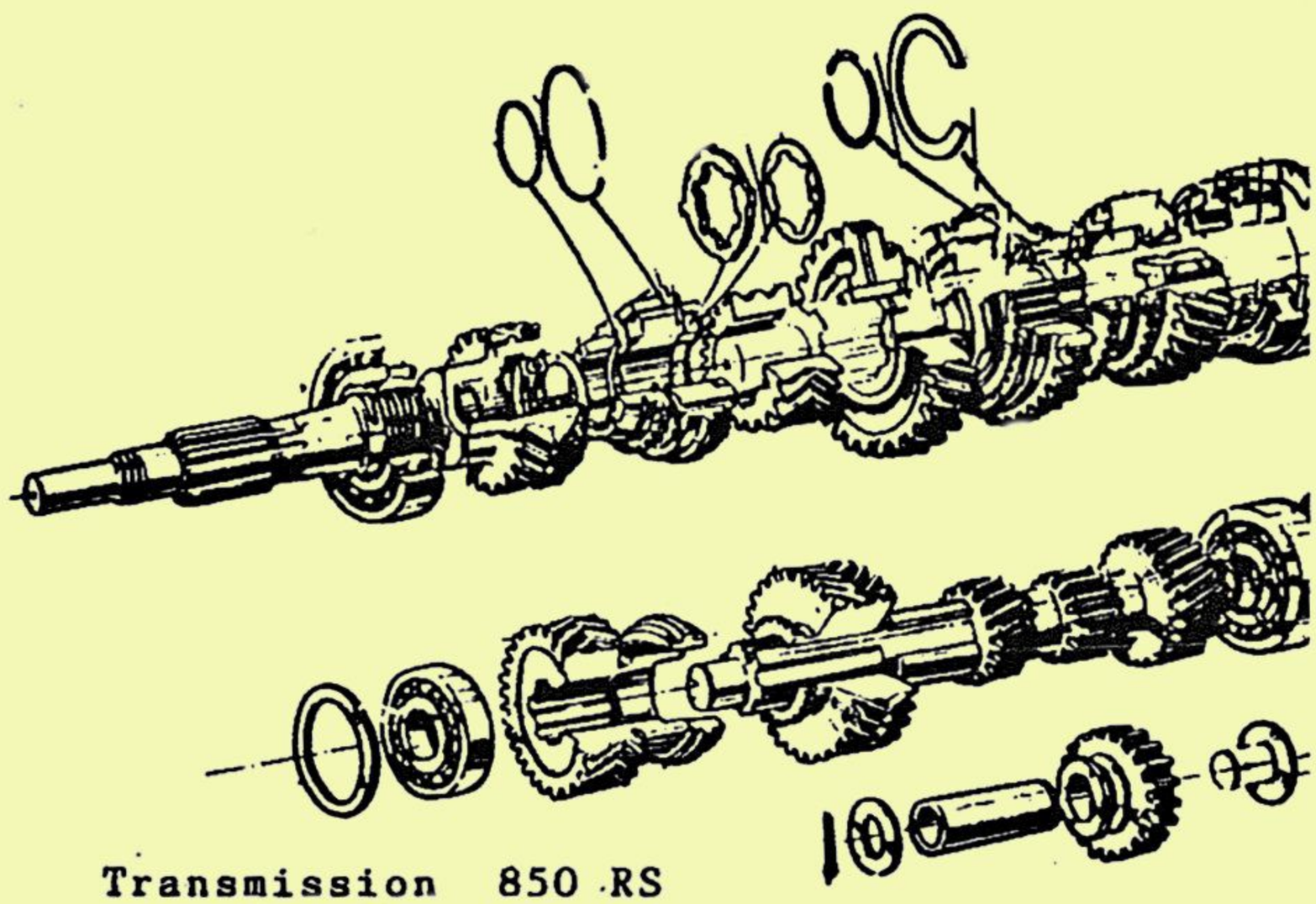
BOITE DE VITESSES 850 RS

For any repair of tranmission and differential, see Panhard shop manual #139

Transmission: All D. B. SPORTS COUPES are fitted with the RS Panhard transmission in a modified version. 2nd and 3rd speeds are synchromeshed. There is no special recommendations for the servicing of the transmission which is one unit with the differential, except checking and draining the oil periodically (see above).



Ring gear
with demultiplicator- 850 RS



Transmission 850 RS

Gear Ratios: We do not recommend any modification of the original gear ratios for normal driving. For racing, see competition chapter.

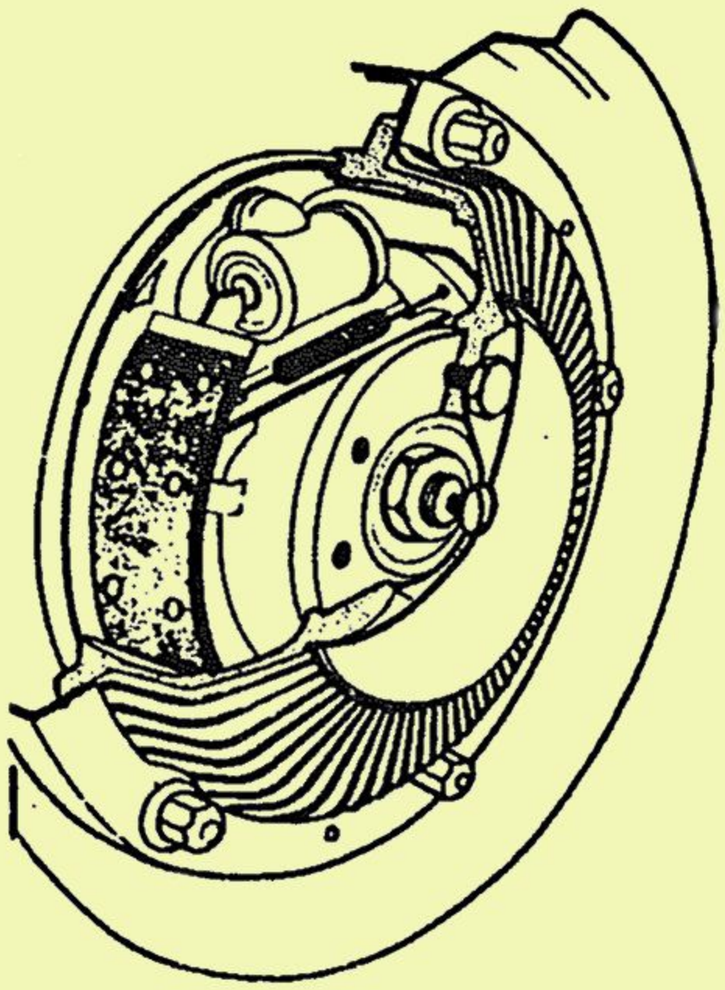
For any repair of transmission and differential, see Panhard shop manual 139.

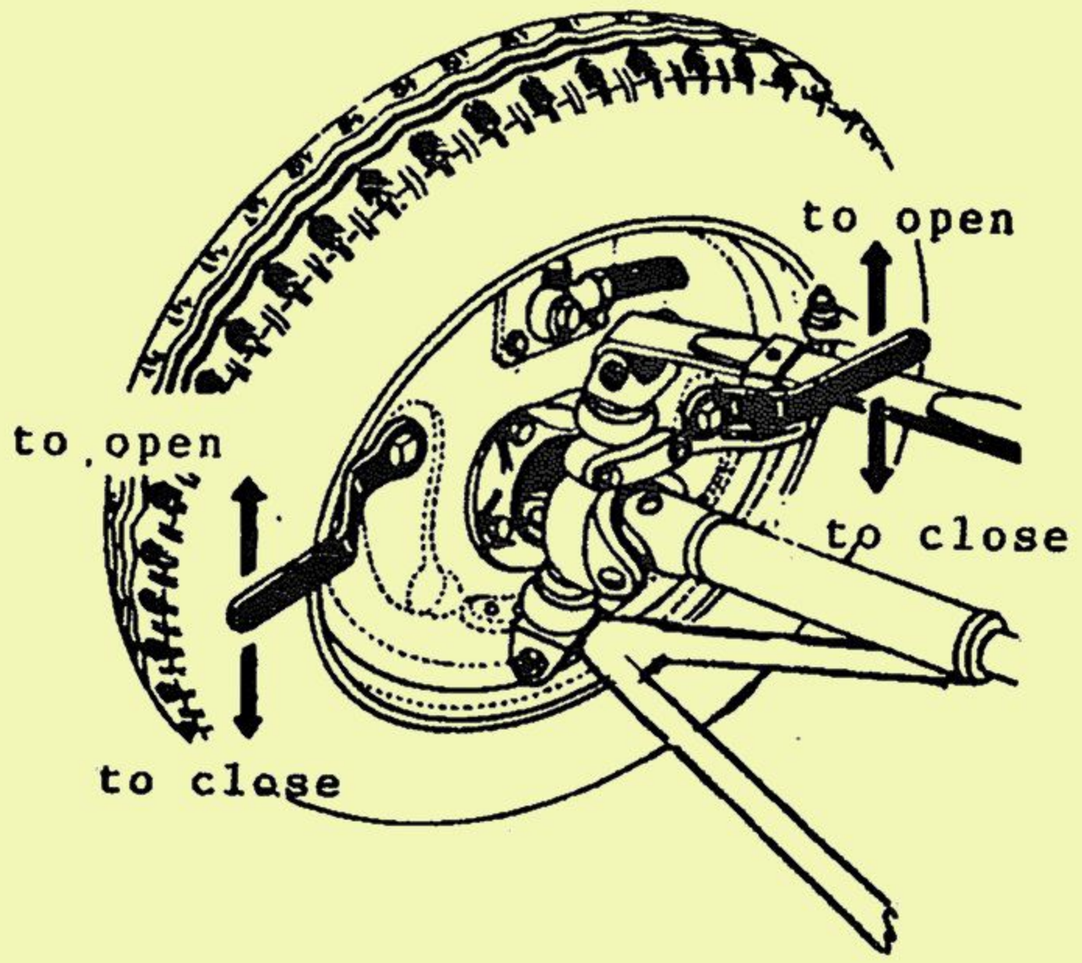
Brakes: D. B. Sports Coupes come equipped either with standard front brakes, either with competition light-alloy brakes of larger dimension, at extra cost. There is nothing special about the servicing of the brakes which are conventional hydraulic units except the usual bleedings and lining adjustment (by lining adjustment, we mean the filing of the linings to smoothen them). If any additional fluid is needed, add only LOCKHEED No. 5.

Galfer brake linings: Most D. B.s brakes are equipped with Galfer linings. Those linings are used in practically all Italian factory competition cars and they have rendered disc-brakes unnecessary. However the characteristics of the Galfer linings are very different from other linings. Instead of being hard when cold, and becoming soft and spongy after repeated use and overheating, the Galfer lining is soft when cold and gets harder and harder when submitted to heat. Therefore, when installing new Galfer linings in your car, take it easy with the brakes for awhile in order to allow the softer linings to "make themselves" to the drum, and to harden. Otherwise, if you use your brakes harshly from the start, you might tear apart the soft material.

For replacement, we highly recommend Galfer linings. Some of our racing cars have been able to race a complete season in such races as Sebring, Mille Miglia, 24 Hours le Mans, etc...with the same set of linings, which is absolutely unique. The factory Branches of D. B. Automobiles as well as D. B. Distributors and Dealers are stocked with those linings. If Galfer linings are not obtainable, use first class American linings; never use Panhard linings.

Replacement of regular front brakes by competition brakes: There will be some instances when the owner of a car with standard front brakes will desire to have them replaced with the LIGHT-ALLOY COMPETITION SUPER 400 BRAKES. D. B. Automobiles sell a complete kit including the larger light-alloy drums, larger brakeshoes and linings, and complete mechanism which can be installed in a few hours (see leaflet). When installing the large drums, you will have to chamfer the angular part of the front hub to shape it in the same round form as the drum is.





On D. B. like on all front wheel drive cars, always adjust front brakeshoes to receive 80% of the braking power. Braking power at the rear wheel is negligible in such designs, and the only thing to check at the rear is the perfect equalization of both wheels.

Electrical System; The D. B. SPORTS COUPE is equipped with a 12 volt system. The only maintenance is to check the battery periodically, the contact points of distributor, the regulator contacts (if the car has been standing awhile). If any replacement of electric accessories is needed, we recommend to use only original parts.

Adjustment of Headlights: All D. B.s imported in the United States are equipped with 5400 sealed beam adaptors. The adjustment of the sealed beams can be performed from the interior of the engine compartment without trouble by removing the side plate of the headlight body recess. AVOID AS MUCH AS POSSIBLE TO MANIPULATE THE PLEXIGLASS COVERS.

All the other lights are LUCAS 488 approved everywhere in the U. S. Windshield and rear window glasses are made of tempered glass TRIPLEX AS1 and side windows are made of GLACE SECURIT AS2 (safety glass) both approved in the U. S.

Headlight Dipswitch: We are obliged to supply all cars exported to the U. S. with a headlight floor switch in order to comply with the inspection laws of some States. We cannot hide that we hate to have to do that because not only is the practice of the headlight foot control ridiculous in a sports car where the left foot of the driver has to be constantly ready to be used on the clutch pedal, but, moreover there is no suitable location in the D. B. Sports Coupe floor. Besides, depending upon each driver's legs, it seems that everybody desires the switch at a different place.

We suggest therefore that you check with the regulations of the State you live in and that if it is found out that the State laws do not require formally a foot control, you re-install the original manual switch on right side of steering column. This is much more practical.

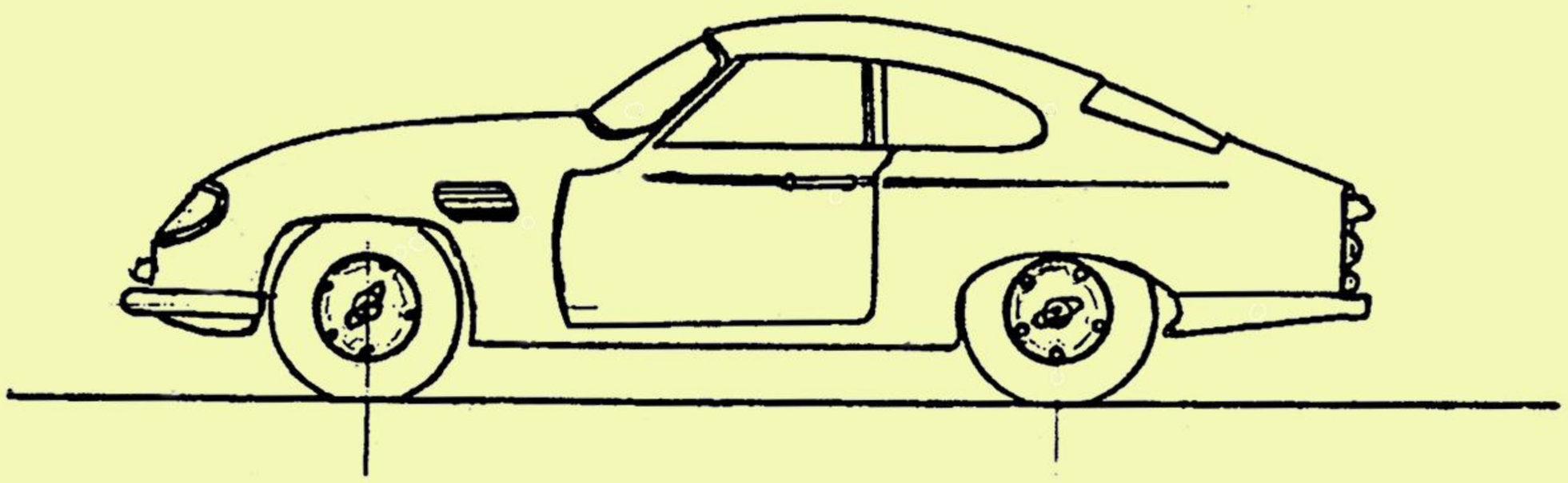
Body: No special recommendations for the fiberglass body except that, if damaged, it should be repaired at a body shop specialized in handling plexiglass and fiberglass shells. Such shops exist in any large town. If the body parts are damaged beyond repair or if they have been lost, we can supply body sections and shell members.

The cleaning and polishing of the paint should be processed the same way as a regular steel bodied car. However constant exposures of fiberglass body to a very hot sun is not recommended for the paint.

D. B. Automobiles do not produce or recommend any special cleaning or polishing products.

Mouldings and Chromes: Most mouldings are aluminium as well as the hubcaps. Therefore most chrome polishes will not be efficient. All aluminium parts have to be cleaned and polished with special aluminium compound used for airplanes.

Plexiglass rear-windows: Some of our cars (previous models) are equipped with Plexiglass rear-windows. If this is a big advantage performance-wise because of considerably lighter weight, be careful not to expose the car for a long time with all windows shut to a very hot sun, otherwise you will have soon a badly checked rear window. This trouble is unavoidable with Plexiglass (the same thing happens to all rear windows of roadsters and convertibles) and the only way to avoid it is to replace the Plexiglass by a safety or tempered glass unit such as the one delivered on all COUPES from 1958 (June) on.



USE OF CAR IN COMPETITION

The D. B. SPORTS COUPE is built to compete and you should not fear to enter it in racing events. However, in order to get the most out of your car, you should read this:

1. The car should never be raced before 3,000 miles of breaking in have not been put on it, otherwise you are heading for troubles.
2. The car should be thoroughly serviced and tuned up before the event
3. You should remove the hubcaps and tape your headlights.
4. You should remove any superfluous weight
5. Tire pressure should be:

	Front	Rear
Regular tires and Michelin STOP	30	28
Michelin X and Pirelli Cinturato	28	26
Dunlop racing	32	30

6. Regime: NEVER GO OVER 6,000 RPMs, except for very short periods of time
7. Check permanently your temperature gauge and never allow it to go over 110 degrees.

Air-Filter: Remove DS19 filter and replace it by the flat MIOT filter indicated in previous chapter. YOU SHOULD ALWAYS RACE WITH AN AIR FILTER ON, since dust and dirt will "wash" your motor pretty quickly, and besides, your engine will not run well without some air resistance.

However, in some instances where you race in an area where the surrounding air is very clean, you can replace the air filter by a racing Zenith carburetor cap sold by D. B. Automobiles. This will increase the performance of the engine only if it is adjusted correctly with the carburetor, and the carburetor adjustment varies every time you change the air intake resistance of the filter.

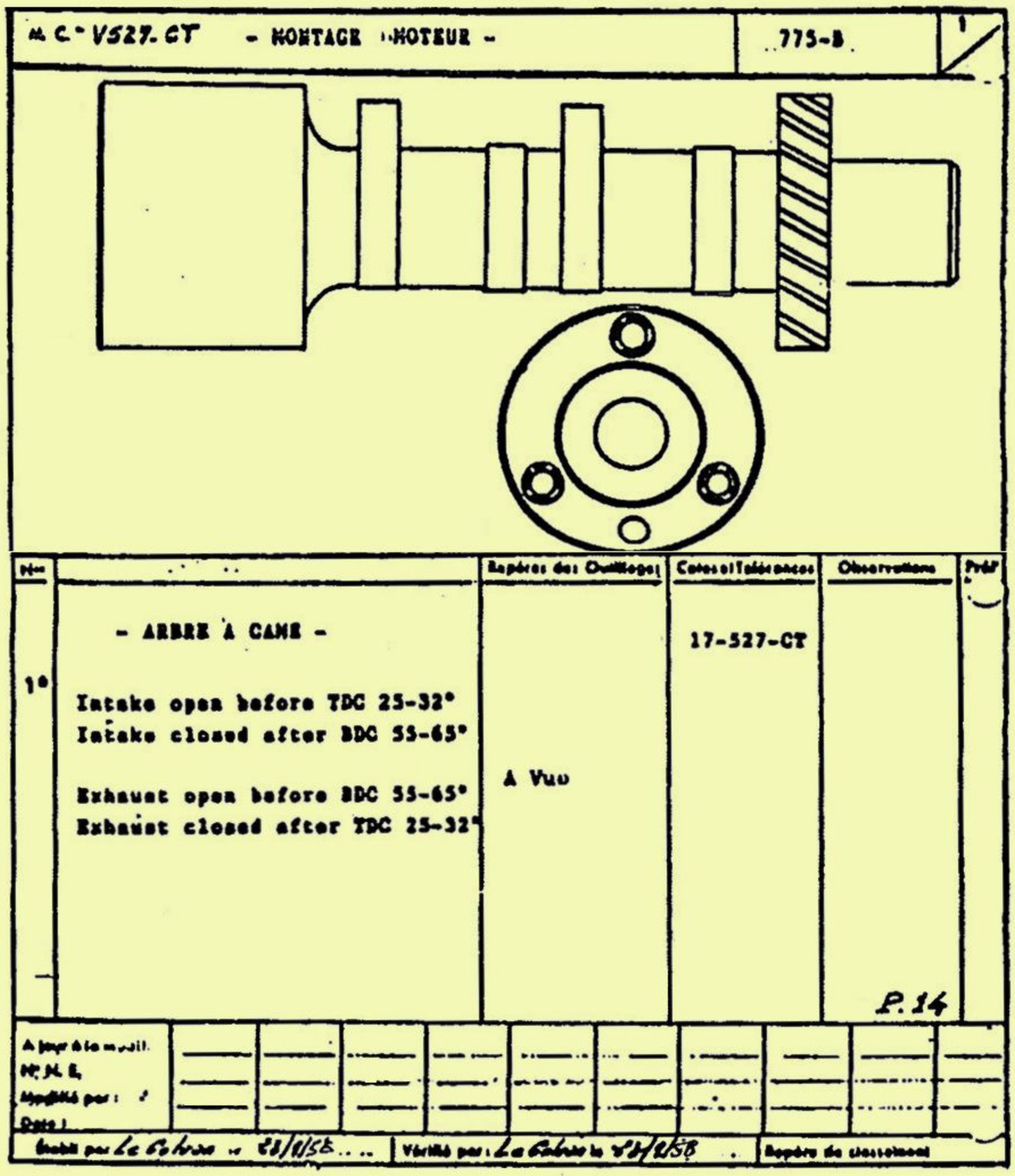
We disadvise you strongly to embark in any other carburetion system such as fitting the car with another type of carb. or a fuel injection system. This will only shorten the life of the engine.

If, after all this has been done, you do not get better results, the only thing you can do is to check the camshaft timing (ask factory specifications from your dealer) and eventually to re-set it or find another setting.

ATTENTION: Camshaft settings are different in D. B. engine from Panhard engine, also settings vary with type of camshaft used. Ask for D. B. Panhard camshaft setting chart from D. B. Automobiles Factory Branches.

D. B. SPORTS COUPES are generally fitted with the 775B camshaft which requires a "SQUARE" setting such as:

Intake opens before TDC	25 deg. to 32 deg. 25-32
Intake closed after BDC	55 deg. to 65 deg. 55-65
Exhaust opens before BDC	55 deg. to 65 deg. 55-65
Exhaust closes after TDC	25 deg. to 32 deg. 25-32



However, if, after having made sure that you cannot obtain higher performance from the engine you have, you still are looking for more power, you can consult a D. B. Distributor or a D. B. factory Branch which will explain to you whet optional equipments you can use. We will summarize the existing equipments:

1. You can install the "LE MANS 238 Fuel System" which is a set-up of two Zenith 38 NDIX carburetors with special inlet manifolds. This equipment will give you all the power you want between 4,200 RPMs and 6,000 RPMs. Therefore you have to be a skilled driver to keep the car at this regime permanently, otherwise, you will have no acceleration. It is perfect for courses with long straight stretches.

2. You can also install the "LE MANS 1958 Exhaust System" composed of a special Y shaped exhaust manifold and a special muffler. This is the easiest and the more likely means to give you satisfaction.

3. You can also take the engine out and have a complete rebuilding job made with the installation of:

- a Le Mans 2512 camshaft
- special X-rayed and balanced crankshsft
- special light flywheel
- lighter D.B. Mondial pistons, etc....

but, again, the engine will be any good only if the job is done by an expert mechanic and if the camshaft timing is perfect.

Also, you must not forget that, outside of the fact that any modification where you have to pull the engine apart is very costly, the further you will modify it, the less flexible to road and city driving,and the moretouchy your car will be.

This is why we do not advise to perform such modifications except if you have had to pull the engine apart for some reasons.

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