

MOTOR REPAIR

1964—1966 Models

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JENSEN CV8 Mk. III

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BODYWORK

GENERAL.—The bonnet lid is hinged at the back, and has a locking mechanism designed to make it impossible for it to fly open accidentally. There are three separate operations required to open the bonnet. The small square panel at the front of the shroud must be unlocked using the ignition key. When this panel is raised, the bonnet release lever will be seen in the recess. This must be turned upwards to a vertical position to release the main securing pins.

A safety catch is to be found in the air intake, immediately to the right of the car centre-line (to the left when facing the car). This should be pulled forward, and the bonnet then lifted with both hands. It will stay open automatically when in the fully open position. There is a small light mounted on the underside of the bonnet. This is illuminated automatically when opened, provided that sidelights are on.

The boot lid is spring-loaded to the open position. Whenever it is opened a light in the forward left-hand corner is switched on. Both front seats are fully adjustable for both fore and aft movement as well as for rake. Seat adjustment is made by a lever at the front of each outer seat runner. This lever should be moved outwards, and the seat moved forwards or backwards as required. Rake adjustment of the back rests is effected by turning a knob at the front. For entry into the rear of the car, a pedal release is mounted at rear outer side of the seat. When this is depressed the squab is released and can be pushed forward.

Safety belts of the single diagonal type are fitted as standard to the C-V8. The belts are fastened at their lower ends to substantial eye-bolts on the car chassis, and at their upper ends to the reinforced grab handles.

HEATING SYSTEM.—A powerful and comprehensive heating system of 4½ Kw. output is fitted, and this allows any combination of temperature and air flow to be selected and maintained. The car interior is heated by fresh air drawn from outside the car and passed over a radiator matrix supplied with hot water from the engine. Therefore the heater will not be fully effective until the engine has reached its normal operating temperature.

There are three main heater controls.

Air Cut-off Control.—This is mounted on the scuttle below the steering wheel and controls the air passing into the heater. This valve is opened by moving the knob down.

Distribution Control.—This is on the left-hand side of the central facia, flanking the grille. Its position determines whether air from the heater is directed towards the windscreen, or into the car interior.

Temperature Control.—This is on the right-hand side of the facia, opposite the distribution control. Once the desired temperature is set, it is maintained by a thermostatic valve in the water system, regardless of engine coolant temperature, or car speed.

The flow of air from the heater can be supplemented by a two-speed fan; with switch half way down, slow speed is selected; fully down increases the fan speed.

VENTILATION SYSTEM.—Two completely independent ventilation systems are built into the car.

Footwell Ventilation.—Small sliding panels on the outside of each footwell are connected to intakes below the headlights. Opening these panels provides a flow of air dependent on the speed of the car.

Face-level Ventilation.—Two spherical air vents are mounted in the facia, which provide fresh air from the scuttle intake. These are opened by pulling out the nozzles. A booster fan is fitted to supplement fresh air output and is controlled by the switch marked 'Air' on the facia.

BRAKES

A Dunlop hydraulic disc braking split system is used on all four wheels, operated by a pedal in conjunction with a vacuum servo unit. The tandem master cylinder ensures that, should a failure occur in any part of the system, braking would still be available on two wheels. The hand-brake, separate from the pedal braking system, operates through a mechanical linkage to the self-adjusting parking brake on the rear discs. The brakes normally require no attention, as both foot and handbrake are self-compensating for wear.

Reservoirs for the brake master cylinders are located above the servo unit in the engine compartment and require checking monthly, or every 2,000 miles, whichever is the shorter period. If required, Dunlop disc brake fluid should be added to a level half an inch below the top of the reservoir. The reservoirs contain a rubber dust seal which should be removed before topping up.

There is one grease nipple on the handbrake compensating linkage which requires attention every 4,000 miles. A multi-purpose grease should be used.

If any item of the hydraulic system has been replaced or if air has entered the system, it must be bled to restore proper working. It should be noted that Dunlop disc brake fluid was formerly known as Wakefield Crimson.

Servo Brakes.—The great braking power of the C-V8 stems partly from the fact that one of the chassis tubes is used as a vacuum reservoir. It is therefore imperative that these are not drilled, otherwise serious loss of braking power would result.

COOLING SYSTEM

The reservoir has a capacity of 32 pints (Imp.). The coolant is circulated by a centrifugal pump driven off the engine, by the same belt as the alternator. A thermostat is fitted immediately above the water pump, to assist in rapid warming up of the engine. The system is pressurised to 9 p.s.i. and operates at a higher temperature than normal. All checks should therefore be made when the engine is cool or cold. The radiator should not be over-filled, as the pressurised system requires room for expansion.

There are three draining points; one at the bottom of the radiator, and one at each side of

the crankcase, at the base of each cylinder block. It is essential that all three be opened when draining the engine. The radiator drain tap may become clogged with sediment, and should therefore be cleaned occasionally with a piece of stiff wire.

The thermostat restricts flow between the cylinder block and radiator to assist rapid warming up. It is of the copper-impregnated wax type, and should start to open at approximately 57°C. It should be fully open at approximately 75°C. Failure of the thermostat is indicated by slow warming up, and poor heater performance.

There is no engine-driven cooling fan, but in its place two electric fans which operate only when required to maintain optimum engine operating temperature. These fans are mounted on the cross tube behind the radiator and are controlled by a thermostatic switch in the bottom of the radiator. They are not wired through the ignition circuit and will therefore continue running, if necessary, even after the engine has been switched off. This is because the water temperature rises during the last few seconds of a journey. The fans will only run for a very short time, and they will then switch themselves off. They are protected by a fuse in the relay box, at the rear of the engine compartment.

ELECTRICAL SYSTEM

All electrical equipment is of Lucas manufacture, with the exception of the ignition, starting and charging systems, which are of Chrysler origin. The electrical system is of the 12-volt negative earth type. Many British and Continental cars employ a positive earth system, and the difference must be observed—as incorrect polarity will cause serious damage to the rectifiers in the alternator.

The alternator takes the place of the usual dynamo. It is an alternating current generator, with six built-in silicone rectifiers converting the alternating current into direct current. The alternator provides a high charging rate at low engine speed, and this means that the battery can be kept fully charged all the time.

The belt which drives the alternator and water pump has to be correctly tensioned. This can be checked by pressing down on it, midway between the water pump and alternator. The deflection should be $\frac{1}{4}$ in., except where a new belt has just been fitted, when it should be $\frac{1}{8}$ in.

Six fuses are used to protect the electrical equipment. The radio, the Selectaride rear dampers, and the electric cooling fans are individually fused; the interior light and the bootlight share a low independent rating fuse, while all other circuits are carried by the two main fuses. The main fuse box is mounted beneath the facia, near to the steering column. The top fuse is of 50 amp.

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rating, and protects all circuits which operate independently of the ignition. The lower one, of 35 amp. rating, protects all circuits controlled by the ignition. Two spare fuses, one 50 amp. and one 35 amp., are provided.

The fuse protecting the interior light and the bootlight is housed in a white nylon in-line fuse holder adjacent to the main fuse box. This is a 10 amp. fuse. A black nylon in-line fuse holder will be found above the white one. This holds the 15 amp. fuse which protects the Selectaride rear dampers.

The 5 amp. fuse for the radio is mounted below the radio itself. Access to it is gained by removing the central instrument panel. The engine cooling fans are protected by a fuse in the relay box on the bulkhead in the engine compartment. This is mounted in a white nylon in-line fuse holder.

ENGINE

GENERAL.—The revolution counter has a red sector from 5,100 r.p.m. to 6,000 r.p.m. and engine speeds in this sector should not be sustained. Maximum engine power is developed at 4,600 r.p.m., so no advantage will be gained by over-revving the engine.

The engine lubrication system comprises an externally mounted rotor-type pump, a full-flow oil filter connected to the pump by flexible pipes, engine sump, and various lubrication passages. Oil is drawn from the sump through a fine-mesh gauze strainer, and delivered to the bearings, via the oil filter, under pressure from the pump. Uniform pressure is maintained by a relief valve in the pump. The valve gear is lubricated by oil-ways through the camshaft, while the gudgeon-pins are splash lubricated.

The engine oil filter should be changed with the engine oil at every second change. The filter is mounted high up on the left-hand side of the engine, and is connected to the pump by two

ENGINE DATA

Cylinders—numbered as follows:

| | |
|-------------------------------------|---|
| R.H. bank, front to rear | 2-4-6-8 |
| L.H. bank, front to rear | 1-3-5-7 |
| Bore | 108 mm. (4.25 in.) |
| Stroke | 86 mm. (3.375 in.) |
| Cubic capacity | 6,276 c.c. (383 cu. in.) |
| B.H.P. | 330 at 4,600 r.p.m. |
| Compression ratio | 10 : 1 |
| Firing order | 1-8-4-3-6-5-7-2 |
| Coolant capacity, including heater | 32 pints (Imp.) |
| Oil sump capacity | 8½ pints (Imp.), including filter |
| Engine oil pressure at 40/50 m.p.h. | 45/65 p.s.i. |
| Gearbox capacity: Automatic | 17 pints (Imp.) |
| Manual | 6 pints (Imp.) |
| Rear axle capacity | 3 pints (Imp.) |
| Fuel tank capacity | 16 gals. (Imp.), 19 galls (U.S.) (72 litres) |

Overall gear ratios

| | |
|------------------|----------------------------------|
| Automatic: 1st | 7.5 : 1 |
| 2nd | 4.44 : 1 |
| 3rd | 3.07 : 1 |
| Reverse | 6.74 : 1 |
| Manual: 1st | 8.16 : 1 |
| 2nd | 5.86 : 1 |
| 3rd | 4.26 : 1 |
| Top | 3.07 : 1 |
| Reverse | 7.92 : 1 |
| Valve clearances | Zerolash. No adjustment required |

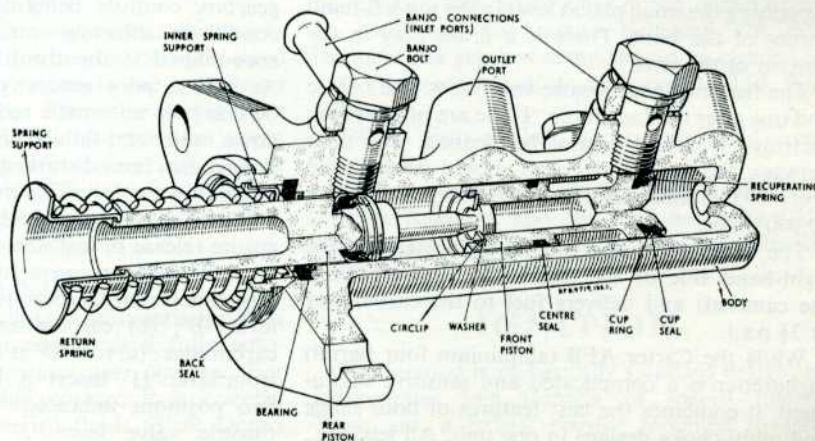
flexible pipes in the conventional manner to avoid the effect of vibration.

The element is changed by undoing the hexagonal nut on top of the filter housing. This will allow the top of the housing to be removed, and the filter element withdrawn.

FRONT END AND FRONT SUSPENSION

This is of the wishbone type, the coil springs being held in compression between the chassis frame and the lower wishbone, while the upper wishbone operates the piston type dampers. An

TANDEM
MASTER
CYLINDER



anti-roll bar connects the two lower wishbones. Hydraulic dampers should be topped up with Armstrong Fluid.

Alignment of the front wheels is an important factor in tyre economy and ease of steering. The front wheels should have 'toe in' of $\frac{1}{16}$ in. If adjustment is necessary, it is made at the tie-rods.

Front hub bearings may need periodical adjustment. The following procedure should be adopted.

1. The car should be jacked up and the nave plate removed.
2. The hub cap should be removed by turning anti-clockwise.
3. The cotter pin should be removed.
4. The wheel bearing nuts should be tightened with a torque wrench to 90 lb/ft., while the wheel is rotated.
5. The nut should be backed off until a slot in the nut coincides with the cotter pin hole, and a new cotter pin fitted.

FRONT END DATA

| | |
|------------------------------------|---------------------------------|
| Toe-in (static laden weight) | $\frac{1}{16}$ in. (1.5875 mm.) |
| Camber (static laden weight) | 1° pos. |
| Castor angle (static laden weight) | 2° pos. |
| King-pin inclination | 6° 30' |

FUEL SUPPLY SYSTEM

The fuel system consists of the fuel tank, line and filters, mechanical pump, carburetter and air cleaner. The fuel tank is located below the floor of the boot and has a capacity of 16 gallons Imp., 19 gallons (U.S.) or 72 litres. The low fuel warning light in the face of the rev. counter burns continuously when 3 gallons or less remain in the tank.

The fuel tank filler pipe is covered by a flap on the left-hand rear wing, which can be opened automatically from the driver's seat. The re-fuel switch on the fascia controls a solenoid which, when energised, allows the flap to fly open. Alternatively, the flap can be opened manually by depressing the small plated lever in the top left-hand corner of the boot. There is a drain plug in the bottom of the tank.

The fuel line incorporates two filters, one before and one after the fuel pump. These are of the paper cartridge type and cannot be cleaned. The filter between the tank and pump should be replaced every 20,000 miles and the after-pump filter every 80,000 miles.

The mechanical fuel pump is located on the right-hand side of the engine. It is driven from the camshaft and delivers fuel to the carburetter at $3\frac{1}{2}$ p.s.i.

While the Carter AFB (aluminium four barrel) carburetter is a complicated and sensitive instrument, it combines the best features of both single and multi-choke designs in one unit. All jets, etc.,

are correctly set before installation, so the only adjustment normally necessary will be to the idling-speed settings.

IDLE SPEED ADJUSTMENT.—To effect this, the engine must be thoroughly warmed up. A much more reliable idle adjustment can be obtained if the car has been driven a minimum of five miles. For the best results, it is recommended that the tachometer be used in this adjustment.

Before making the idle speed adjustment, observe the following precautions: On cars equipped with the automatic transmission, disconnect the carburetter to bell-crank rod so that the stop in the transmission will not interfere with the free movement of the carburetter throttle lever.

To make the idle-speed adjustment, turn the idle-speed screw in or out to obtain 500 r.p.m. Be sure the choke valve is fully open and that the fast idle adjustment screw is not contacting the fast-idle cam. Turn each idle-mixture screw to obtain the highest r.p.m. While making the adjustment, carefully watch the tachometer and notice that the speed can be decreased by turning the screws in either direction from the setting that gave the highest r.p.m. reading. Next readjust to 500 r.p.m. with the idle-speed screw.

Turn each idle-mixture adjusting screw in the clockwise direction (leaner) until there is a slight drop in r.p.m. Now, turn each screw out, counter-clockwise (richer), just enough to regain the lost r.p.m. This procedure will assure that the idle has been set to the leanest possible mixture for smooth idle.

Since the correct speed was originally set using the speed screw, the speed obtained after finding the leanest smooth idle setting will probably be too fast. Readjust the speed screw to obtain correct idle speed.

After the proper idle speed has been obtained, check transmission setting as described under throttle linkage, for the correct setting cannot be over-emphasised.

Throttle Linkage.—The throttle and automatic gearbox controls being inter-connected, various conditions affecting car performance can be encountered if the throttle is not set correctly. As well as poor general performance, there may be delays in automatic gear-changes, both up and down, and total failure of the 'kick-down'. If the linkage has been disturbed for any reason, it must be reset in the following manner.

Block choke valve in fully open position and ensure release of fast idle cam. (These precautions are not necessary on a fully warmed-up engine.)

Disconnect: (a) Carburetter rod 'A' at cross-shaft lever 'B'; (b) carburetter bell-crank rod 'C' at carburetter; (c) rod 'D' at upper end; (d) cable 'G' from lever 'H'. Insert $\frac{3}{16}$ in. diameter rods in the two positions indicated. Using rod 'D' to hold throttle valve lever 'J' against forward stop,



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