No. S2/K1

CATEGORY 2

This Service Bulletin cancels S2/K1 dated 29.2.60.

MODIFIED THROTTLE CONTROLS LEFT-HAND DRIVE S.2 CARS

A modification has been introduced on S.2. left-hand drive cars, to prevent slipping and consequent damage of the throttle linkage. This involves the fitting of two new levers UE.8052 and UE.8049 which replace levers UE.7836 and UE.7817 respectively.

This modification should be carried out on a Category 2 basis and affects all cars prior to chassis No's SPA.230 and 303.LAA.

THROTTLE SHAFT OPERATING LEVER AND CARBURETTER THROTTLE AND STOP LEVER - TO REMOVE

Remove the rubber hosing from the air silencer and the butterfly housing, then remove the air silencer from the bonnet.

Disconnect the control rod from the arm of the throttle shaft operating lever, located just forward of the bulkhead.

Remove from the bulkhead, the screws securing the bracket which carries the Metalastik rubber bush, then move the throttle operating shaft upwards so that the bracket is clear of the bulkhead. Remove the split pin and washers which secure the Metalastik bush to the throttle shaft operating lever then remove from the lever, the rubber bush bracket and distance piece.

Slacken the pinch bolt securing the operating lever to the throttle cross-shaft and remove the lever.

Disconnect the throttle shaft from the carburetter throttle and stop lever by removing the split pin, dished washers and springs.

Unhook the spring from the carburetter throttle levers. Remove the split pin and disconnect the throttle valve control connecting link from the carburetter throttle lever.

Remove the split pins retaining the connecting link between the two carburetter throttle levers and remove the link.

Remove the carburetter throttle and stop lever from the 'B' bank carburetter throttle spindle.

THROTTLE SHAFT OPERATING LEVER (UE.8049) AND CARBURETTER THROTTLE AND STOP LEVER (UE.8052) - TO FIT

Fit the new carburetter throttle and stop lever to 'B' bank carburetter spindle, but do not fully tighten the pinch bolt, then fit the connecting link between the throttle levers, using new split pins. When fitting this link, care should be taken to ensure that it is fitted through the upper hole in the 'B' bank throttle lever. Slacken off the pinch bolt on the 'A' bank carburetter throttle lever and synchronise the two throttles.

THROTTLES - TO SYNCHRONISE

The links incorporated in the induction system are of fixed length; therefore the only setting that is required is to ensure that the throttle blades are synchronised, i.e. that they both reach full throttle simultaneously and that they both return to the closed position together.

To facilitate this setting it is recommended that a quadrant be made, similar to that shown in Figure 1, which will fit over the carburetter spindles.

Two positions are required on the quadrant; "Throttles closed", and "Throttles open".

The procedure for setting the throttles is as follows:-

Remove the carburetter suction chambers and pistons. Fit the special quadrant to the carburetter spindles then with 'B' bank throttle blade held in the closed position and the choke 'off', set the lever (UE.8052), so that the throttle stop platform is opposite the "Throttle closed" position on the quadrant, then tighten the pinch bolt.

With 'B' bank throttle blade still in the position, close 'A' bank throttle blade, then tighten the pinch bolt on the operating lever.

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With the throttles closed, adjust the throttle stop screw to obtain a gap of .002 in. between the screw and the lever platform, then turn the screw another half-turn and tighten the locknut. This setting is sufficient to 'crack' open the throttle blades and to prevent them 'digging' into the carburetter body.

Secure the throttle valve control connecting link to the carburetter throttle lever on 'B' bank, using a new split pin.

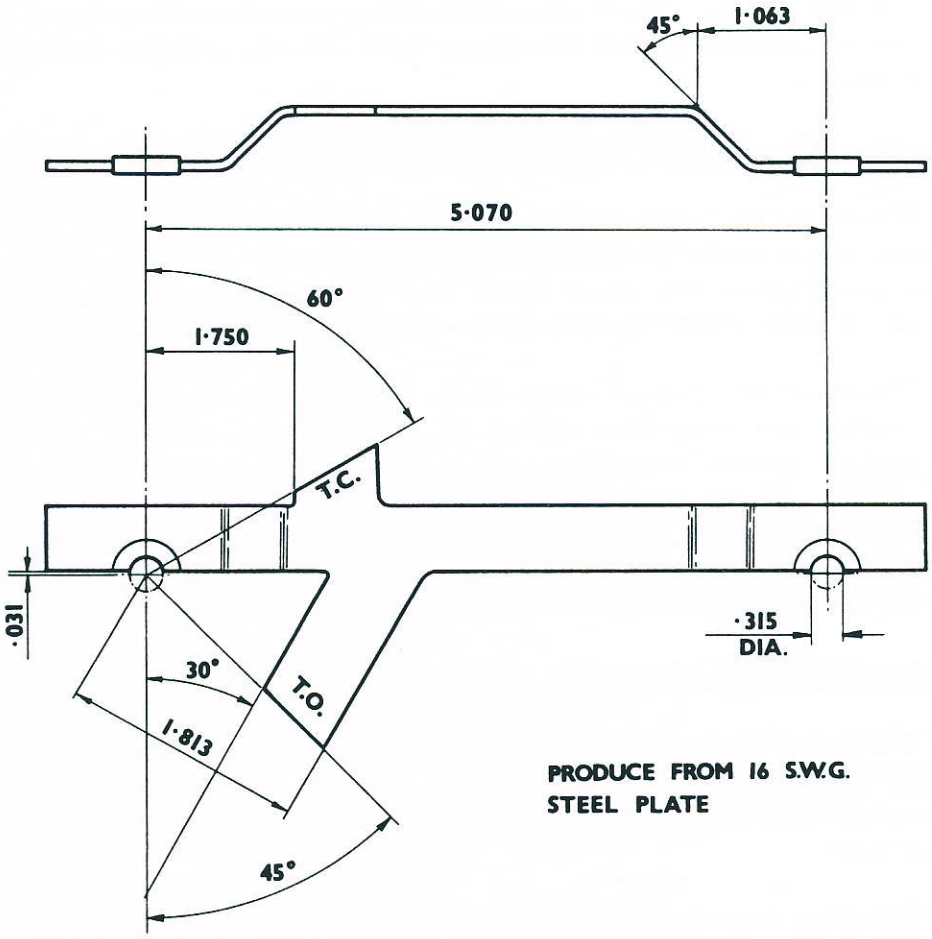

Fig. 1. Carburetter Levers Setting Quadrant.

Connect the spring between the two carburetter throttle levers.

Fit the carburetter pistons and the suction chambers.

Fit the throttle cross-shaft to the carburetter throttle lever ensuring that the spring and the dished washers are in the correct positions; fit a new split pin.

Fit the throttle shaft operating lever to the Metalastik rubber bush and secure it in position, using a new split pin.

Fit the throttle shaft operating lever and the rubber bush to the throttle shaft; do not tighten the pinch bolt. Fit the rubber bush and bracket to the bulkhead.

ACCELERATOR PEDAL TO CARBURETTER CONTROLS - TO SET

Position the carburetter throttle shaft operating lever arm in a horizontal plane when the throttle blades are fully closed and the choke is 'off' and then tighten the pinch bolt. The 'T' - piece at the carburetter end of the throttle shaft should be in the mid-position of its slide.

Place a rod .125 in. diameter, between the accelerator pedal lever and the rubber off-stop then adjust the length of the control rod so that it mates with the throttle operating shaft lever. Connect the shaft to the lever.

Fit the carburetter lever setting quadrant to the carburetter spindles and check that the throttle levers reach the "Throttles open" position, when the accelerator is fully depressed and the choke is 'off'.

CARBURETTER TO GEARBOX CONTROLS - TO SET

Slacken the pinch bolt of the lever on the manifold cross-shaft and adjust the shaft so that the lever at the other end of the shaft lies horizontally when the carburetter throttle blades are closed and the choke is 'off'. Tighten the pinch bolt.

With the throttle valve lever in the fully closed position, check that the distance from the centre of the eye of the throttle valve lever to the rear face of the gearbox main casing is 4.125 in. If necessary, slightly bend the lever to obtain this setting.

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With the throttle blades closed and the choke 'off', adjust the lengths of the throttle valve rod and the connecting rod so that the throttle valve lever is in its fully closed position and the lever connecting the throttle valve rod to the connecting rod is against the off-stop on the bell housing, then shorten the throttle valve rod by one complete turn of the rod.

FINAL ADJUSTMENT ON ROAD TEST

Fit the air silencer and rubber hosing.

Set the controls for good, light throttle changes by adjusting the connecting rod as follows:-

If the gear changes are 'slippy', lengthen the connecting rod.

If the gear changes are jerky, shorten the rod.

If, adjustment to the kick-down is necessary after the gear changes have been set, it should be done by adjusting the throttle control rod.

NEW PARTS REQUIRED:-

UE.8052	Assy-Throttle and Stop Levers - Carburetter	- 1 off
UE.8049	Assy-Operating Lever and Throttle Shaft	- 1 off

CATEGORY 2

MODIFICATIONS TO THE AUTOMATIC CHOKE SYSTEM.

The following modifications will be incorporated on production and should be carried out on cars in customer's hands at the first convenient opportunity, preferably at the 2,500 miles or 5,000 miles maintenance schedules.

a) Fitting of an Otter switch UD.1819

This switch is being incorporated to facilitate easier starting with a warm engine. The Otter switch is wired in series with the thermal delay switch, and prevents the choke solenoid circuit becoming energised and holding the choke butterfly valve closed, when the underbonnet temperature is above 10° Centigrade.

b) Increase of the kick-gap setting

c) Resetting of the bimetal coils

The purpose of the adjustments b & c is to shorten the length of time the choke is opening during engine warm-up.

d) Fitting of a shield over the bimetal coil housing

e) Fitting of asbestos lagged hot air pipes

A separate problem which is not cured by a, b, and c, is the partial closing of the choke when the car is driven at high speeds on an Autobahn or Motorway in cold weather. This is due to a chilling of the hotspot and is curable by fitting a simple shield over the bimetal coil cover and lagging the choke hot air pipes with asbestos sleeving.

MODIFICATION PROCEDURE

a) FITTING THE OTTER SWITCH

The Otter switch is designed to close at an underbonnet temperature of 10°C., thereby completing the choke solenoid circuit. At temperatures above 10°C the switch will not close, therefore the choke solenoid will not hold the butterfly valve closed thereby preventing richness when starting with a warm engine.

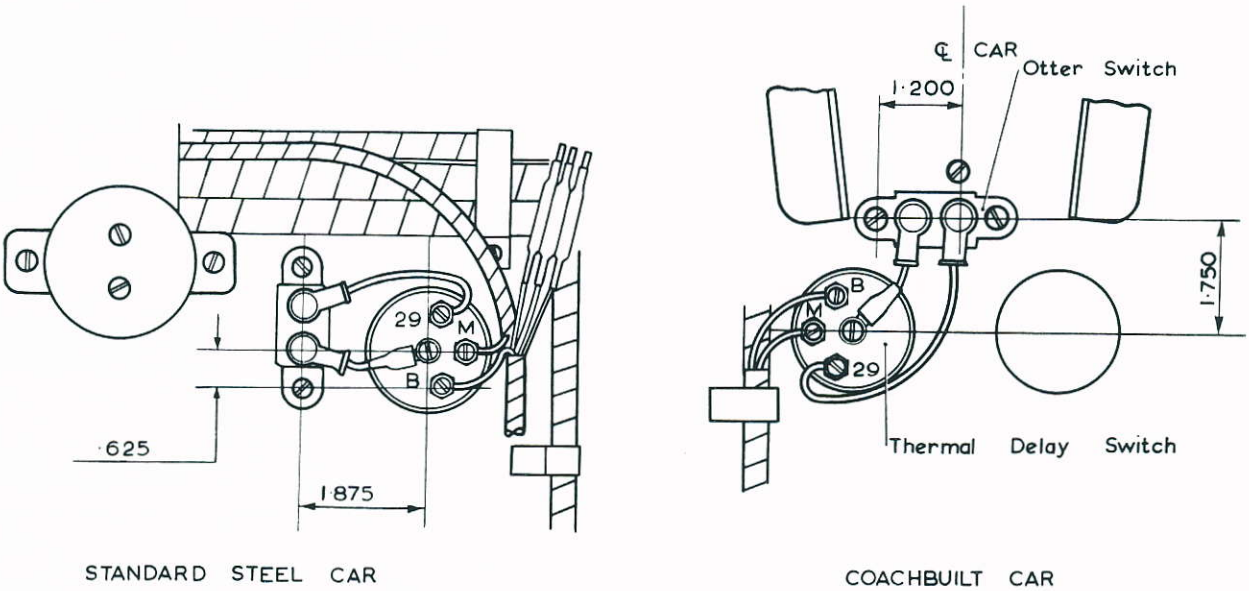
The Otter switch should be fitted and wired in series with the solenoid earth return from the Scintilla thermal delay switch.

The switch should be mounted on the bulkhead, working to the dimensions shown in Figure 1. It should be secured with two No. 8 Self-tapping screws (CS. 31060/Z).

Two new cables (UR. 5236 and UR. 5237) are required to wire the Otter switch. One cable (UR. 5236) should be connected from the terminal marked 29 on the thermal delay switch to the top terminal on the Otter switch.

The second cable (UR. 5237), which is the earth return, should be connected to the lower terminal on the Otter switch and to the centre securing screw on the thermal delay switch. When refitting the delay switch, ensure that the Neoprene seal is correctly fitted.

Although the Otter switch, on coachbuilt cars, is mounted in a different position, the wiring is the same as that for the Standard Steel Saloons, the only difference being the length of the cable (UR. 5235) from the thermal delay switch to the Otter switch. The switch should be fitted to the dimensions given in Figure 1. It is advisable to rotate the thermal delay switch 90° clockwise, to facilitate the installation of the Otter switch and to provide neater wiring.



STANDARD STEEL CAR

COACHBUILT CAR

Fig. 1. Showing dimensions for fitting the Otter switch

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Parts required to fit Otter switch

Standard steel saloons

UD.1819	Otter switch	1 off
UR.5236	Assembly. Cable. Thermal Delay switch to Otter switch	1 off
UR.5337	Assembly. Cable. Otter switch to Thermal delay switch	1 off
CS.31060/Z	No. 8 Self-tapping screw	2 off

Coachbuilt cars

As for standard steel saloons except for:-

UR.5235	Assembly. Cable. Thermal delay switch to Otter switch	1 off

which replaces UR.5236.

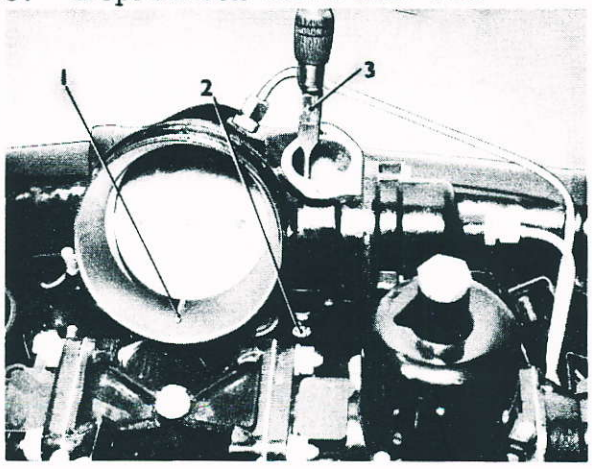
b) REVISED KICK-GAP SETTING

This revised setting shortens the length of time that the choke is opening whilst the engine is warming-up. This setting should only be adjusted when the engine is cold. Disconnect the air silencer hosing from the butterfly housing. Remove the automatic choke solenoid and the shims from the butterfly housing.

Slacken the choke depression diaphragm locking nut and 2BA. adjusting screw. Ensure that the choke is in the 'off' position, then press down the depression valve operating lever so that the depression valve link rod bears against the end of the 2BA. adjusting screw.

Fig.2.
Adjustment of Kick-gap setting

1. .100 dia. drill
2. 2BA. adjusting screw
3. Depression valve link-rod



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The screw should then be adjusted so that a 0.100 in. diameter rod or drill can be inserted between the butterfly housing and the butterfly valve (see Fig. 2). Tighten the adjusting screw locknut, then re-check the kick-gap and adjust if necessary. Re-fit the solenoid and shims to the butterfly housing and connect the air silencer hosing to the butterfly housing.

c) ADJUSTMENT OF THE BIMETAL COILS

The present setting of the bimetal coils is too strong and this results in richness during standing warm-ups.

Because of this strong tension in the coils, a high temperature is required to keep the choke open, and when the car is stationary, the temperature around the coils cannot be maintained; this causes the choke to close and results in poor starting when the engine is warm.

Detach the choke hot air pipe from the bimetal coil cover and remove the cover.

Remove, from the butterfly housing, the bimetal coil housing and the bimetal coils.

Slacken the nut and bolt, securing the bimetal coils in position, then retard the pointer four divisions in a clockwise direction, thereby weakening the tension of the coils (see Fig. 3). Lock the bimetal coils in position and make a new centre 'pop' mark opposite the pointer. The old centre 'pop' marking should be peened over.

Refit the bimetal coil housing to the butterfly housing using a new paper joint (UE.6233). Ensure that the joint is fitted in the correct position, otherwise the bleed hole to the depression valve will be blocked. A dowel pin fitted to the butterfly housing locates in a hole in the coil housing.

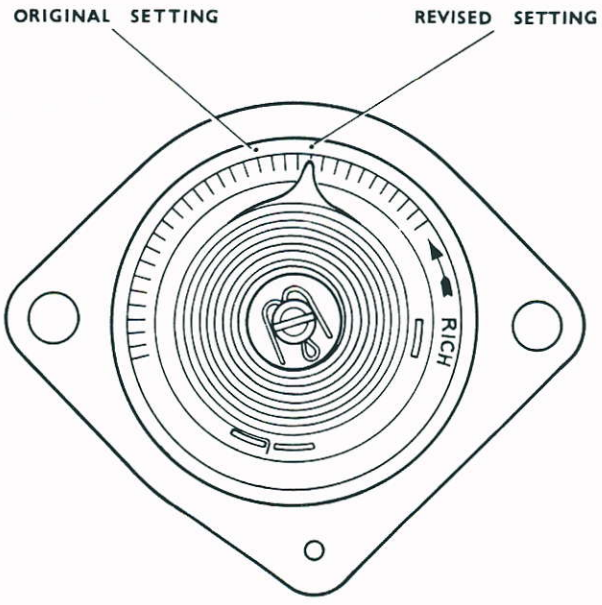


Fig. 3. Setting of bimetal coils

When fitting the housing and coils, it will be necessary to turn the coil shaft clockwise to allow the pin, fitted in the end of the butterfly shaft, to locate the slotted end of the coil shaft.

Fit a new paper joint (UE.6232) to the coil housing, again ensuring that is is fitted correctly, then fit the bimetal coil cover. The cover is located by the dowel pin in the butterfly housing and is secured by two setscrews.

New parts required

UE.6232	Joint. Coil housing to cover	1 off
UE.6233	Joint. Butterfly housing to coil housing	1 off

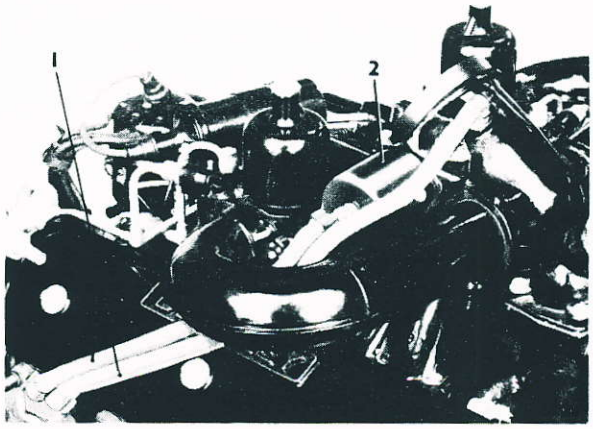
FITTING A SHIELD OVER THE BIMETAL COILS, AND ASBESTOS LAGGED HOT AIR PIPES

When driving a car for prolonged periods at high speed, there is a reduction in the flow of hot air through the bimetal coil heating system, due to low manifold depression and an increase in heat losses from the bimetal coils due to the underbonnet air flow, with the result that the high temperature cannot be maintained and the choke tends to close. To overcome this fault, a cover shield must be fitted to the bimetal coil housing and the two choke hot air pipes must be replaced by pipes that are lagged with plaited asbestos sleeving. (See Fig. 4.).

Fig. 4.

Engine fitted with heat shield and asbestos lagged hot air pipes

1. Hot air pipes 2. Heat shield



d) FITTING SHIELD

Remove the pipe union and washer from the coil cover.

Fit the shield (UE.8264) over the bimetal coil cover, locating it on the two setscrews which secure the coil housing. Then secure the shield in position by refitting the pipe union to the bimetal coil cover. A new aluminium washer should be used.

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New parts required

UE.8264	Cover shield. Bimetal coil cover	1 off
KB.1078/R	Washer. Union hot air pipe	1 off

e) FITTING OF THE CHOKE HOT AIR PIPES

Remove the existing choke hot air pipes from the 'A' Bank exhaust manifold and the butterfly housing, then replace them with two pipes UE.8232 and UE.8233, which are lagged with plaited asbestos sleeving. Pipe UE.8232 fits between the exhaust manifold and the coil housing and pipe UE.8233 fits between the exhaust manifold and the butterfly housing.

New parts required

UE.8233	Assembly. Hot air pipe. Exhaust manifold to butterfly housing	1 off
UE.8232	Assembly. Hot air pipe. Exhaust manifold to coil housing	1 off

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CATEGORY 2

RADIUSED SECTION CHOKE VALVE (UE.8230) - TO FIT

The above modification should now be carried out in conjunction with the modifications described in Service Bulletin S2/K2 (Modifications to the Automatic Choke System).

The new choke valve incorporates a radiused section on its leading edge which maintains the choke valve in a stable position when the throttle is fully open.

CHOKE VALVE - TO FIT

Remove the silencer hosing from the butterfly housing, then remove the air silencer and hosing from the bonnet.

Open the butterfly valve, and close the split ends of the three screws, which secure the valve to the butterfly shaft. Remove the screws, doubling plate and butterfly valve. Fit the new butterfly valve to the shaft using three new screws (UE.2808). Before tightening the screws ensure that when the butterfly valve is in the closed position, it is seating correctly in the housing. Tighten the screws, then check that the shaft is free to move in the housing and finally open out the ends of the screws.

'KICK-GAP' SETTING - TO CHECK

In fitting the butterfly valve, a slight alteration may occur in the kick-gap setting, which should be 0.100 in. This setting must only be checked when the engine is cold.

Remove the automatic choke solenoid and shims from the butterfly housing. Slacken the choke depression diaphragm 2BA. adjusting screw. Then ensuring that the choke is in the 'off' position press down the depression valve operating lever with a screw-driver so that the depression valve link rod bears against the end of the 2BA. adjusting screw. The screw must then be adjusted so that a 0.100 in. dia. drill or rod can be inserted between the butterfly valve and the housing. Tighten the adjusting screw locknut and re-check the Kick-gap. Re-adjust if necessary. Refit the solenoid and shims to the butterfly housing. Fit the air silencer to the bonnet and connect the hosing to the butterfly housing.

New Parts Required

UE.8230	Radiused Section. Butterfly Valve.	1 off
UE.2808	Screw. Split End.	3 off

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CATEGORY 2

FUEL VAPORISATION

Some isolated cases of poor hot starting have occurred due to vaporisation of fuel in the carburetter jet wells. To remedy this fault, it has been found necessary to replace the existing jet assemblies with modified parts.

APPLICABLE TO:-

All cars prior to the following chassis numbers.

Silver Cloud II	L.SWC.130
Bentley S2	B.412.BS
Bentley Continental S2	B C.1.LBY
Phantom V	5.AT.76
Silver Cloud II L.W.B.	LCB.8
Bentley S2 L.W.B.	LBA.19

Carburetters fitted to some cars, prior to the chassis numbers quoted above, have already been modified under an earlier scheme, and these will not require further modification. They can be readily identified by a letter M which is stamped on the carburetter flange adjacent to the serial number.

PROCEDURE:-

Carburetters - To Remove

The carburetters should be removed from the engine as follows:-

Disconnect the battery leads.

Disconnect the air silencer hosing from the butterfly housing.

Remove the fuel drain and feed pipes from the carburetter float chambers.

Disconnect the electrical wiring system from the automatic choke solenoid.

Remove the two stove pipes from the butterfly housing and the bimetal coil cover.

Disconnect the throttle linkage between the double link connecting piece and the arm at the end of the manifold cross-shaft.

Remove, as a complete assembly, the air horns, the butterfly housing, the carburetters and the 'Tee' Piece.

Carburetter - To Dismantle

Unscrew and remove the four bolts securing the float chamber body and the diaphragm casing to the carburetter body. Remove the jet diaphragm assembly and the jet return spring.

Carburetter - To Assemble

Fit the nylon plug and tube assembly (CD.1864) into the base of the main jet well as shown in Figure 1.

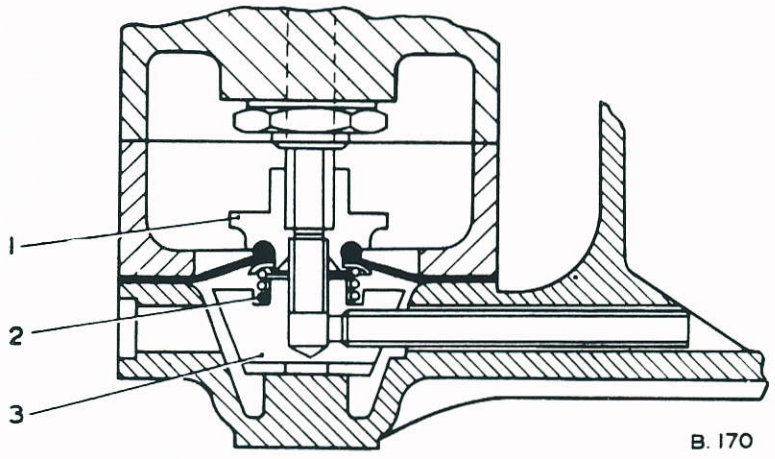

Fig.1. Section of Carburetter Jet Well.
1. Jet and Diaphragm Assembly.
2. Jet Spring.
3. Nylon Block and Tube.

Place the diaphragm casing on the base of the carburetter body then fit the new jet and diaphragm assembly over the jet needle. Check that the piston is free to move up and down and that the jet needle does not foul the jet. If the needle is sticking it may be necessary to recentralise the jet.

Place the jet return spring (UE. 8048) in the circular recess in the top of the nylon plug, (see fig. 1) then fit the float chamber body to the carburetter and the diaphragm casing, securing it in position with four setscrews and washers. Care should be taken to ensure that the rubber diaphragm is firmly sealed between the two faces of the float chamber casing and the diaphragm casing.

When the carburetters have been modified, a letter N should be stamped on the carburetter flanges adjacent to the serial number.

Carburetters - To Fit

To fit the carburetters reverse the procedure given for their removal.

The mixture adjustment of the carburetters should then be set so that the engine is running smoothly at an idle speed of between 450-500 r.p.m.

New Parts Required

Part Number	Description	Quantity
CD.1864	Nylon Plug and Tube Assy.	2
UE.8048	Jet Return Spring	2
UE.8420	Jet and Diaphragm Assy.	2

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FOR INFORMATION

SPLIT THROTTLE VALVE LEVER - TO FACILITATE THE ADJUSTMENT OF THE CONTROLS ON RIGHT AND LEFT-HAND CARS.

ADJUSTABLE PEDAL STOP - TO FACILITATE THE ADJUSTMENT OF KICK-DOWN ON RIGHT-HAND CARS.

To facilitate the adjustment of controls, a split throttle valve lever, accessible from inside the car (on right and left-hand cars), and an adjustable throttle pedal stop (on right-hand cars only) similar to that already fitted on left-hand cars, have been incorporated.

Access to the split throttle valve lever is through a hole, normally blanked off by a rubber bung, in the body floor. Adjustment of the controls is effected with a screwdriver and a 2 B.A. box spanner. By adjusting the throttle valve lever in the manner described later, it is possible to advance or retard the lever on the gearbox spindle instead of altering the length of the throttle valve rod, which advances or retards the lever and spindle as a unit relative to the remainder of the linkage.

In addition to facilitating the adjustment of the controls, (i.e. from inside the car), it is also possible to obtain a finer degree of adjustment. Previously it was only possible to adjust the controls by one half of a turn of the throttle valve connecting rod, whereas with the new arrangement, fractions of a turn can be obtained; one turn of the adjusting screw being equal to one turn of the throttle valve connecting rod.

On right-hand cars the existing fixed throttle stop has been changed to an adjustable stop beneath the pedal, thus making kick-down adjustment similar to that on left-hand cars.

CARBURETTER TO GEARBOX CONTROLS - TO SET

Close the throttle butterflies and ensure that the fast-idle cam is not engaged.

Disconnect the jaw end of the throttle valve control rod at the gearbox end.

Slacken the pinch bolt at the carburetter end of the manifold cross-shaft, then, whilst holding the throttle closed, position the boomerang lever on the gearbox bell housing so that the lower arm is 1/4 in.(0.250 in.) from the boss on the bell housing. Tighten the pinch bolt on the manifold cross-shaft.

Position the adjusting screw on the split throttle valve lever so that it is in the mid-position (i.e. half the threads protrude below the lever and half the threads are ablve).

Holding the throttle valve lever in its forward position (to take up any play) so that it is just bearing against the spring pressure, adjust the length of the connecting rod so that its jaw mates up with the throttle valve lever. Fit the connecting rod to the throttle valve lever and secure with a new split pin.

FINAL ADJUSTMENT ON ROAD TEST.

The controls should be set for good light throttle changes by adjusting the split throttle valve lever. This lever is adjusted through a hole in the floor of the car and requires the use of a 2 B.A. box spanner and screwdriver.

If the gear changes are 'slippy', the adjusting screw should be turned clockwise.

If the gear changes are 'jerky', the adjusting screw should be turned anti-clockwise.

Ensure that after adjusting the gear change, the lock-nut is fully tightened.

If adjustment to the kick-down is necessary after the gear changes have been set, it should be carried out by adjusting the throttle control rod.

If kick-down is 'hard' shorten the throttle rod.

If kick-down is 'soft' lengthen the throttle rod.

It should be noted that the 5/16 in. bolt for the throttle pedal off-stop should stand proud approximately 0.750 in. from the car floor.

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CATEGORY 2.

AUTOMATIC CHOKE SYSTEM - NEW FAST-IDLE CAM

DESCRIPTION

A new fast-idle cam has been designed for use in conjunction with the heat sink unit on the automatic choke. The new cam has only two steps, the 2nd of which is tapered giving a progressive closing of the throttle. It is easily recognisable from the original cam which has three steps. All cars which have been fitted with the heat sink modification, but have the early type of fast-idle cam, should be modified to incorporate the two step fast-idle cam.

APPLICABLE TO:-

All cars fitted with the heat sink unit, prior to chassis numbers:-

Silver Cloud II	SZD.369	(But including chassis nos. SZD.373 and SZD.385)
Bentley S2	B.445.DV	
Phantom V	5.LCG.11	
Bentley Continental S2	BC.76.CZ	
Silver Cloud II LWB	LCC.54	

METHOD

Remove the split pin securing the choke butterfly operating lever and the fast-idle cam in position. Remove the washer, operating lever and fast-idle cam.

Fit the new fast-idle cam (UE.9451) to the spindle and check that it is free to rotate. The cam should be fitted so that the thin, tapered end is over the stop peg on the spindle bracket.

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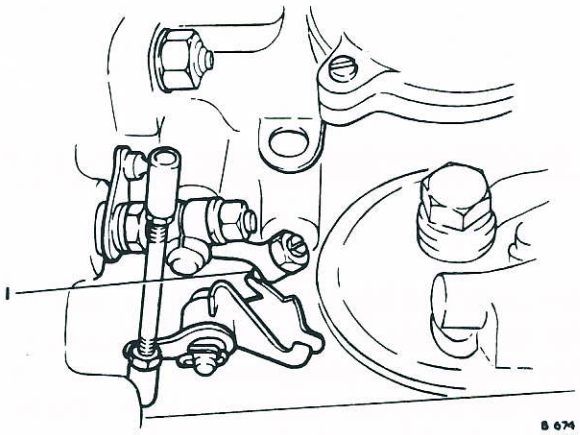

Fig. 1. Two Step Fast-Idle Cam
1 Position for setting fast-idle speed at 600 r.p.m.

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CATEGORY 3

FUEL TANK VENTILATION SYSTEM

APPLICABLE TO:-

Rolls-Royce Silver Cloud II (123 in. and 127 in. Wheelbase).
Bentley S2 (123 in. and 127 in. Wheelbase).
Bentley S2 Continental.

DESCRIPTION

A modification has been introduced which eliminates the possibility of an air lock forming in the fuel tank and thus allows the tank to be filled to its full capacity and prevents fuel from being forced back up the filler tube when the tank is being filled.

The modification consists of a vent pipe, fitted to the top of the fuel tank, which is connected by a length of rubber hose to a further vent pipe fitted in the filler tube assembly. Thus, as fuel is pumped into the tank, the air is forced out through the vent pipes to atmosphere.

FUEL TANK VENT PIPE - TO FIT

Disconnect the battery.

Remove all dirt from around the tank drain plug, then using the special adaptor and spanner from the tool kit, remove the plug and drain the fuel into a suitable storage container.

Remove the carpet from the luggage boot, then remove the three set-screws which secure the trim cover in position over the fuel tank filler tube where it passes through the boot. Slacken the 'Jubilee' clip securing the hose connection to the filler tube.

Disconnect the fuel pipe line at the tank outlet union.

Disconnect the electrical leads to the fuel level indicator.

Using a box spanner, remove the two 0.250 in. nuts from the tensioning bolts which secure the fuel tank straps, then remove the four 0.250 in. saddle bolts and nuts from the mounting bracket.

Continued.....

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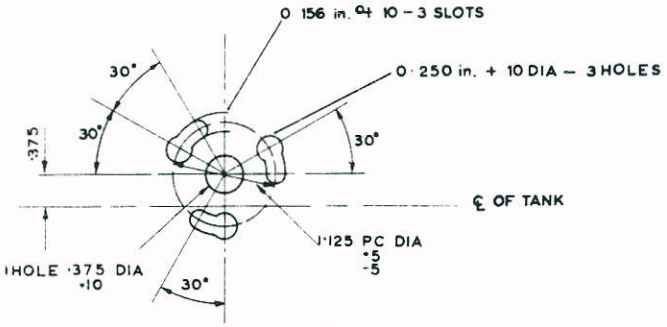
Remove the fuel tank together with rubber connecting hose and fabric packing strips.

Remove the union securing the existing vent pipe to the filler tube then bend the vent pipe so that it is out of the way. Remove the six cheese-headed screws securing the filler tube to the body wing and remove the filler tube and rubber sealing washer.

Working to the dimensions given in Figure 1, drill a hole 0.375 in. diameter in the top of the tank, then drill three further holes 0.250 in. diameter and produce the slots.



VIEW SHOWING HOLE AND SLOT POSITIONS ON TANK

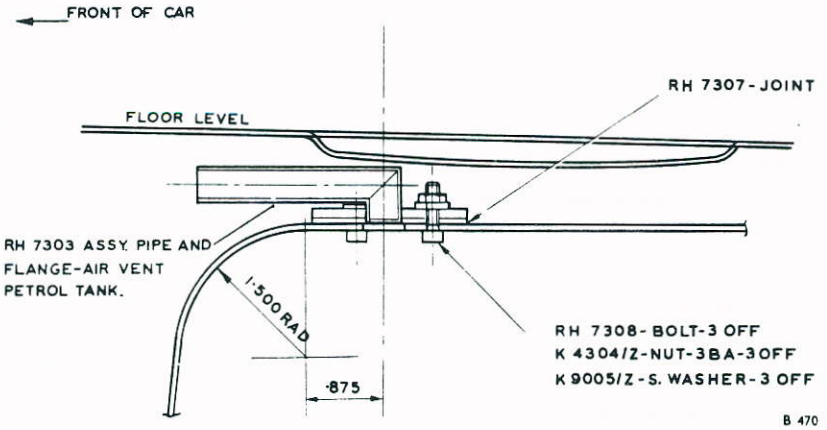


Fig. 1. Dimensions for cutting slots in petrol tank.

After drilling the holes and cutting the slots it is most important that the tank is thoroughly washed with paraffin to remove all dirt and swarf.

Loosely assemble the cork joint (RH.7307), screws, washers and nuts to the fuel tank vent pipe assembly (RH.7303). The heads of the screws should be to the bottom of the flange as shown in Figure 1.

Locate the screws in the three slots in the fuel tank.

Continued....

Rotate the vent pipe assembly 30° clockwise, ensuring that the heads of the screws are correctly located in the slots and that the cork washer is not damaged.

Tighten the three nuts and secure the assembly in position.

FILLER TUBE VENT PIPE - TO FIT

Working to the dimensions given in Figure 2, drill a hole 0.359 in. diameter in the filler tube. Remove all burrs and sharp edges.

Locate the vent pipe (RH.7312) in the hole and 'low temperature braze' it into the filler tube.

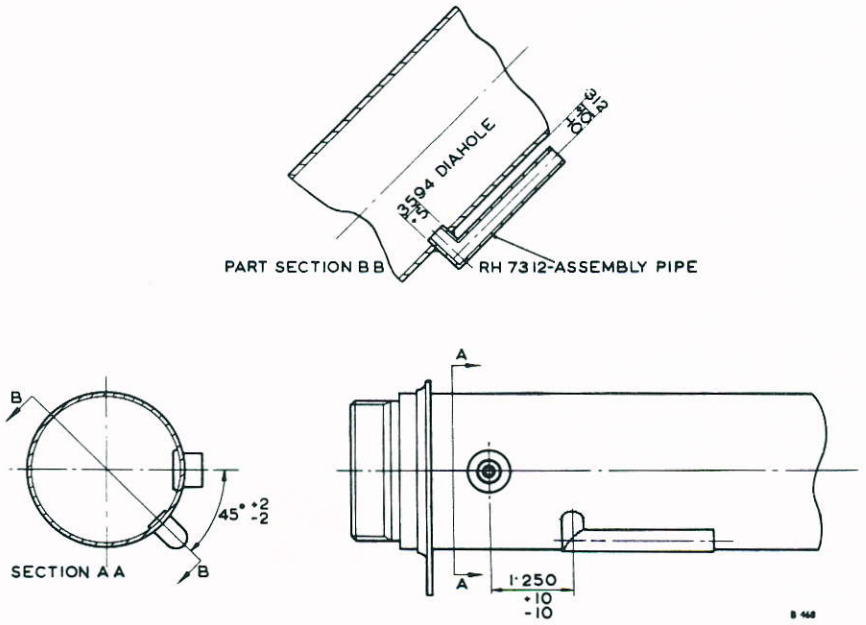


Fig.2. Dimensions for fitting vent pipe to filler tube.

RUBBER GROMMET - TO FIT

Working to the dimensions shown in Figure 3, drill a hole 0.906 in. diameter in the luggage boot floor. Remove all sharp edges and burrs.

Fit the rubber grommet (UR.5391) into position in the hole.

Fit the fuel tank to the chassis frame, reversing the procedure given for its removal.

Continued...

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UNITED KINGDOM
AND EUROPE ONLY

CATEGORY 2

AUTOMATIC CHOKE SYSTEM - HEAT SINK MODIFICATION

DESCRIPTION

Cars at present domiciled in the United Kingdom and Europe should be modified to incorporate the heat sink in the automatic choke system.

Briefly the heat sink modification consists of :-

A single, longer bimetal coil in place of the two previous coils.

An aluminium heat sink, to retain heat and to allow a greater flow of heat over the bimetal coil.

Asbestos lagged covers to retain heat within the coil housing.

The main purpose of the heat sink modification is to improve initial cold drive-away and to prevent the choke closing under hard driving conditions and coming on too quickly after stopping.

When fitting the heat sink modification the two-step fast-idle cam should also be fitted as described in Service Bulletin S2/K6.

APPLICABLE TO :-

All cars prior to :- (see appendix 1).

Silver Cloud II	SYD. 486
Bentley S2	B. 193. DV
Bentley Continental S2	BC. 37. CZ
Phantom V	5. BX. 54
Silver Cloud II L. W. B.	LCC. 24
Bentley S2 L. W. B.	LBB. 11

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METHOD

Remove the two choke stove pipes.

Remove the pipe union securing the heat shield to the bimetal coil cover; remove the heatshield.

Remove the two 2 B.A. screws and washers securing the bimetal coil cover to the choke housing. Then remove the coil cover and the bimetal coils and housing.

Using a pair of pliers, remove the locating pin from the choke butterfly housing. Care should be taken that the pin is not broken off in the housing and that the sealing face around the pin is not damaged.

Fit the new, longer locating pin (UE.9164) to the choke housing, tapping it firmly home with a hammer.

If necessary remove any 'Welseal' from the sealing face of the choke housing and fit a new paper joint.

Fit the new bimetal coil housing assembly (UE.9285) locating it in position on the dowel pin.

Clean the heat sink (UE.9173) and check that none of the holes are blocked.

Fit the rubber 'O' ring (UE.9253) to the heat sink and lightly coat the ring with 'Palmolive' grease to prevent it from rolling back when fitting it to the housing cover.

Press the heat sink into the coil cover (UE.9175). A recess is cut into the heat sink to allow clearance for the pointer on the bimetal coil assembly.

Ensure that the heat sink is positioned correctly. The lower edge of the recess should be just below the locating pin hole in the coil cover.

Fit the packing washer (UE.9176) to the coil assembly, positioning it over the locating pin.

Fit the coil housing and heat sink to the coil assembly. The two exising screws should be replaced by two longer ones (K.1928/Z).

Fit the asbestos lagged cover to the coil housing, securing it in position with the pipe union.

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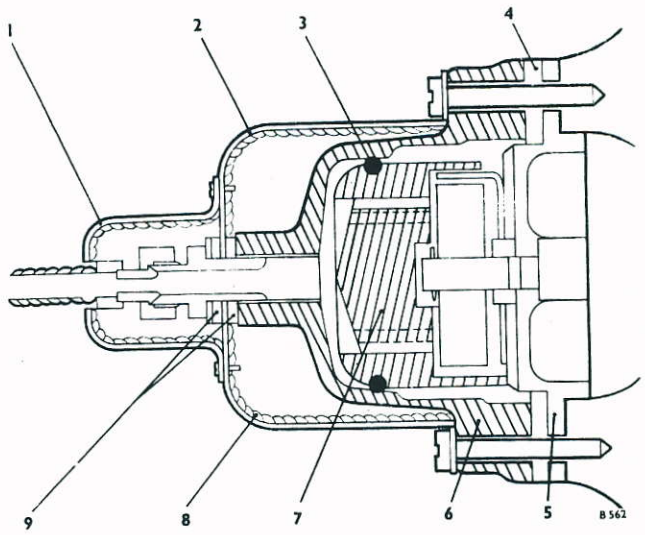

Fig. 1. Sectioned View of Heat-Sink.

1. Small asbestos lagged cover.
2. Large asbestos lagged cover.
3. Rubber sealing ring.
4. Packing washer.
5. Bimetal coil housing assembly.
6. Coil housing cover.
7. Heatsink.
8. Asbestos lagging.
9. Fibre joint washers.

Fibre washers should be fitted either side of the lagged cover.

Bend the choke feed pipe to suit the additional length of the bimetal coil housing, then clean it with an airline to remove any dirt or scale which may be present.

Fit the small asbestos lagged cover over the end of the choke feed pipe. Fit the pipe between the choke and the exhaust stove. The pipe should be connected to the lower connection on the choke stove and not the upper one as before.

Press the small lagged cover over the union and screw it to the large cover with the three 5 B.A. screws. Ensure that the cover clears the rivet holes.

Fit the remaining choke stove pipe bending the pipe so that it passes round the back of the other pipe instead of in front as before.

Remove the split pin securing the choke butterfly operating lever and fast-idle cam.

Remove the fast-idle cam and fit the new 2 step cam. Fit the lever and split pin.

The fast-idle speed should be adjusted to 600 r.p.m., with the engine hot, and should be set on the thin end of the bottom cam and not on the top cam as on earlier cars.

The slow running speed of the carburettors should not be affected but this should be 450-475 r.p.m.

With the engine running remove the choke stove pipe from the butterfly housing and check that air is being drawn through the choke stove system.

MATERIAL REQUIRED

Kit No. RH. 2151 consisting of:-

Part Number	Description	Quantity
UR. 9285	Bimetal coil housing assy.	1
UE. 9170	Asbestos lagged cover	1
UE. 9164	Locating Pin	1
UE. 9175	Coil housing cover	1
UE. 9176	Packing Washer	1
UE. 9253	'O' Ring	1
UE. 5994	Fibre Washer	2
UE. 9173	Heat Sink	1
UE. 9166	Asbestos lagged cover	1
K. 1701/Z	Screw	3
K. 1928/Z	Screw - 2BA	2
UE. 9451	Fast-idle cam	1

TIME ALLOWANCE: 2 Hours.

APPENDIX I

As on the 25th August, 1961 the following cars had not been fitted with the heat sink modification.

SILVER CLOUD.

A.

SPA.2 to SPA.326.	except	SPA.126 and 132
SRA.1 to SRA.325	except	SRA.143

B.

STB.2 to STB.500	except	STB.84, 130, 190, 350 and 410.
SVB.1 to SVB.501	except	SVB.43, 279 and 395.

C.

SWC.2 to SWC.730	except	SWC.216, 346, 384, 524 and 728.
SXC.1 to SXC.671	except	SXC.3, 93, 99, 113, 139, 163, 179, 247, 289, 335, 339, 355, 435, 437, 467, 495, 499, 567, 619, 637 and 639.

D.

SYD.2 to SYD.550	except	10, 18, 118, 154, 162, 170, 172, 178, 240, 250, 264, 266, 276, 278, 282, 292, 294, 322, 326, 336, 340, 348, 350, 356 to 360, 364, 368 to 380, 384 to 388, 392 to 396, 400 to 418, 422 to 426, 430 to 436, 440 to 452, 460 to 478, 482 and 486 to 550.

BENTLEY S2

A.

B.1.AA to B.325.AA	except	B.93.AA, 127 and 301.
B.2.AM to B.326.AM	except	B.36.AM, 114, and 250.

B

B.1.BR to B.501.BR	except	B.71.BR, 89, 189, 267, 351 and 367.
B.2.BS to B.500.BS	except	B.12.BS, 142, 164, 182, 246, 428, 430 and 494.

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BENTLEY S2 (Cont'd)

C.

B.1.CT to B.445.CT	except	B.51.CT, 99, 101, 369, 407 to 411, 417, 425, 437 and 445.
B.2.CU to B.756.CU	except	B.18.CU, 50, 56, 94, 104, 108 116, 134, 152, 160, 180, 192, 194, 198, 206, 210, 214, 284, 288, 336, 346, 360, 430, 574, 682, 710, 722, 726, 742, 752, and 754.
B.1.DV to B.501.DV	except	B.7.DV, 17. 31, 33, 37 to 41, 49 to 55, 61 to 79, 83 to 155, 159, 163 to 171, 175, 177 to 189, 193 to 501.

SILVER CLOUD II L.W.B.

A.

LCA.1 to LCA.76	except	LCA.33

B.

LCB.1 to LCB.101	except	LCB.16 and 99

C.

LCC.1 to LCC.27	except	LCC.1, 4 to 7, 9, 10, 15 to 18, 20 to 22 and 24 to 27.

BENTLEY S2 L.W.B.

A.

LBA.1 to LBA.26

B.

LBB.1 to LBB.10

BENTLEY CONTINENTAL S2

A.

BC.1.AR to BC.151.AR	except	BC.21.AR, 28, 89, 104 and 151.

BENTLEY CONTINENTAL S2 (Cont'd)

B		
BC.1.BY to BC.101.BY	except	BC.23.BY, 31, 36, 42, 65, 68, 72, 73, 80, 81, 83, 85, 88, 90 and 91.
C.		
BC.1.CZ to BC.151.CZ	except	BC.9.CZ, 14, 23, 32, 35 and 37 to 151.

ROLLS-ROYCE PHANTOM V

A.		
5.AS.1 to 5.AS.101	except	5.AS.65 and 69
5.AT.2 to 5.AT.100	except	5.AT.8 and 40
B.		
5.BV.1 to 5.BV.101	except	5.BV.23, 49, 69, 85 and 101
5.BX.2 to 5.BX.100	except	5.BX.10, 18, 26 and 54 to 100.

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No. S2/K8

Addendum

UNITED KINGDOM ONLY

AUTOMATIC CHOKE SYSTEM - HEAT SINK MODIFICATION

When fitting the above modification would Retailers and Service Personnel please note, that upon removal of the following parts they should be returned to:-

Messrs. Rolls-Royce Limited.
Spares Central Stores.
Pym's Lane.
Crewe.

Part No.	Description	Quantity
UE.9113	Thermostat Coils Assy.	1
UE.6219	Cover, Thermostat Coils Assy.	1

If necessary, in order to reduce weight, UE.9113 (Thermostat Coils Assy.) can be broken down and only UE.6220 (Housing, Thermostat Coils Assy.) need be returned.

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CATEGORY 3

S.U. FUEL PUMP

DESCRIPTION

Owing to a number of complaints of fuel pump failure, due mainly to contact points eroding and becoming dirty, a modification has been introduced which increases the service life of the contact points and consequently the pump. This modification consists of a small condenser connected directly across the contact points to reduce the arcing which occurs as the points break. The present condenser fitted outside the pump for radio suppression is still retained.

It is recommended that the modification be carried out when the car requires a scheduled service. It is advisable when the modification is carried out that the contact points be examined and if necessary either cleaned or renewed.

Due to recent service experience, it is considered that fuel pump contact points are consumable, and therefore, that the customer be charged accordingly.

APPLICABLE TO:-

Bentley S2
Bentley S2 L.W.B.
Silver Cloud II
Silver Cloud II L.W.B.
Bentley Continental S2

PROCEDURE

Disconnect the battery

Remove the fuel pumps

Examine the contact points. If these are badly pitted or worn, a new set should be fitted.

It should be noted when re-assembling the pump that the diaphragm settings from the 'toggle-over' position should be as follows:

Part Number	Setting
UD.1327	6 holes
UD.8137	8 holes
UD.8737	8 holes

It should also be noted, that when refitting the coil housing, the number on the identity label should be altered to read AUA 149.

If the points are only slightly worn, they can be cleaned effectively using a fine carborundum stone. Extreme care should be taken when cleaning the points, as the Tungsten layer on the points is only 0.025 in. thick.

No attempt should be made to remove pitting, as this will only reduce service life.

Condenser - To fit

Remove the screw which secures the contact breaker rocker arm earth wire.

Fit the spring clip (CD 3421) to the end moulding securing it with the screw. It should be noted that the earth wire should be fitted directly under the head of the screw, and that the spring clip should be fitted between the earth wire and the 'Thackray' washer. Insert the condenser (CD 3422) into the spring clip.

Slacken the screw which secures the spring blade of the contact set.

Insert the spade terminal of the condenser lead between the washer and the contact breaker main feed connection then retighten the screw ensuring that the contact points make full face contact.

Fit the special end cover (CD 3423).

Seal the end cover to the coil housing with a length of plastic self-adhesive tape.

Refit the fuel pumps to the car and connect the battery.

SERVICING PROCEDURE

Every 24,000 miles

On fuel pumps fitted with the additional condensers, the contact points should be renewed.

MATERIAL REQUIRED

Description	Part Number	Quantity
Clip	CD.3421	2
Condenser	CD.3422	2
Cover	CD.3423	2

FOR INFORMATION

THROTTLE CONTROL LINKAGE L.H. CARS

APPLICABLE TO:

All L.H. S2 series cars domiciled in Europe prior to the following chassis numbers

Silver Cloud II	L.SYD.46
Silver Cloud II L.W.B.	L.LCB.87
Bentley S2	B.492 L.CU
Bentley S2 L.W.B.	L.LBB.5
Phantom V	5L.BV.101
Bentley Continental S2	BC.100 L.BY

DESCRIPTION

Ref: S2 Spare Parts List, Page B8

On a number of early S2 left-hand drive cars, it is possible for the throttle controls to foul the bulkhead. In most cases this happens when the engine 'torques' over during acceleration, causing the end of the control jaw (15 UE 1859) clamping bolt to ride past and foul the head of the right-hand bolt (35.UA 1501/2), which secures the flanged 'Metalastik' bush to the bulkhead.

A number of reasons have been put forward as to why this happens on cars that have been in service some time, and these are as follows

1 The flanged 'Metalastik' bush (32,33 UE 7828) becomes softer in service, and under acceleration, allows the operating lever (24. UE 8049) to be pushed closer to the bulkhead.

2 The engine mounts become softer in service, again allowing the operating lever to be pushed closer to the bulkhead under acceleration.

3 Incorrect setting of the rear engine mount buffer plates, again allow the engine to 'torque' over more and cause conditions similar to 1 and 2.

REMEDY

Ascertain whether or not the throttle linkage is likely to jam. If it is possible, proceed as follows

1 Check the hardness of the flanged 'Metalastik' bush (UE 7828). If soft, worn or distorted, it should be renewed.

2 Check the rear engine mounts. If soft, worn or distorted, they should be renewed.

3 Check the rear engine mount buffer plates. The gap should be 0.032 in. (0.8 mm.).

4 Fit a suitable washer between the lever (UE 8049) and the flanged 'Metalastik' bush (UE 7828). This increases the clearance by the thickness of the selected washer.

5 Bend the lever (UE 8049) sufficiently to ensure adequate clearance between the offending pieces at all engine attitudes.

6 Thoroughly road test the car through a series of acceleration tests, ranging from very light to full throttle.

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