



MODEL: BENTLEY MARK VI

CAR HEATER SYSTEM

A modification has been introduced to the car heater system to obviate the possibility of damage to the heater matrix due to excessive water pressure.

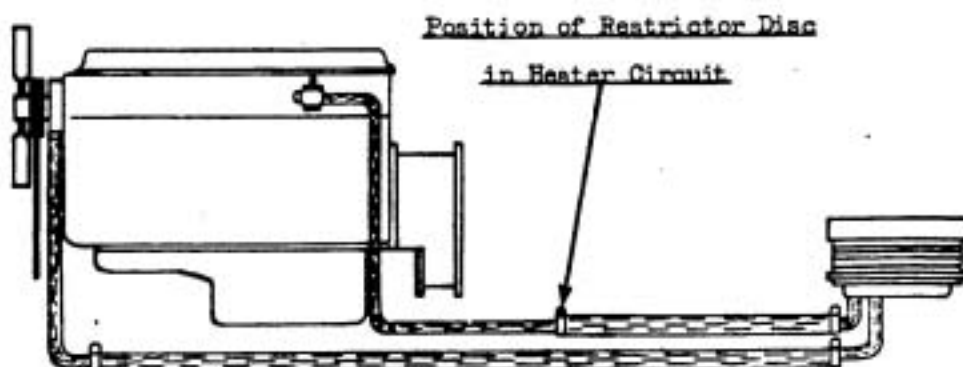
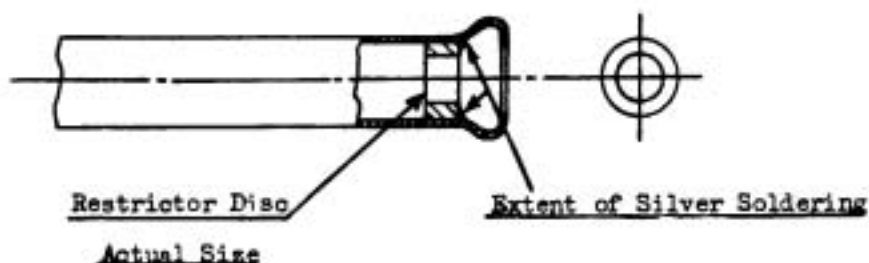
Under certain conditions, the rate of flow from the cylinder head is greater than that which will pass through the matrix and gives rise to high local pressure. A restrictor disc fitted into the feed pipe controls the flow to a safe figure.

The attached drawing shows the position of the disc and the method of fixing.

This modification has been embodied during assembly on all cars with the exception of a small number in regard to which the Retailers affected will be notified.

No general retrospective action is therefore necessary.

Restrictor Disc is: Part No: RE.5767.



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RADIATOR STEAM VALVE.

The coolant system is at present pressurised to approximately 4 lbs per sq.in. pressure by means of a steam valve situated on the radiator header tank where the steam escape pipe is attached to the radiator. It has been decided in future to operate the coolant system at atmospheric pressure and the ball and spring inside the steam valve housing are to be removed forthwith on all cars in service.

The valve is readily accessible by unscrewing the hexagon plug on top of the header tank at the point of attachment of the steam pipe. When the ball and spring have been removed, a spot of white paint should be applied to the steam pipe close up to the steam valve chamber to denote that the alteration has been carried out.

Will all Retailers please take action to carry out this alteration on all cars in their territory at the first opportunity.

Will Retailers and Service Depots please notify the London Service Depot of the chassis numbers whenever this alteration is carried out. If any cars are not available in their respective territory, special arrangements will be made to deal with the matter if the London Service Depot is advised.

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FOR INFORMATION:FITTING OF ADDITIONAL INTERIOR CAR HEATER.
(Incorporating Improved Demisting & Defrosting)GENERAL:

Retailers are advised that an additional interior car heater is now available for fitting to Bentley Mk.VI Standard Saloons in service as a chargeable improvement in cases where the output of the existing underseat heater is considered insufficient to meet conditions of extreme cold.

This additional heater is fitted to the centre of the dash behind the fascia panel, and part of its hot air output is directed into both of the demisting ducts for defrosting and demisting purposes, thus making the use of the existing electrically operated heater unit in the right-hand duct unnecessary.

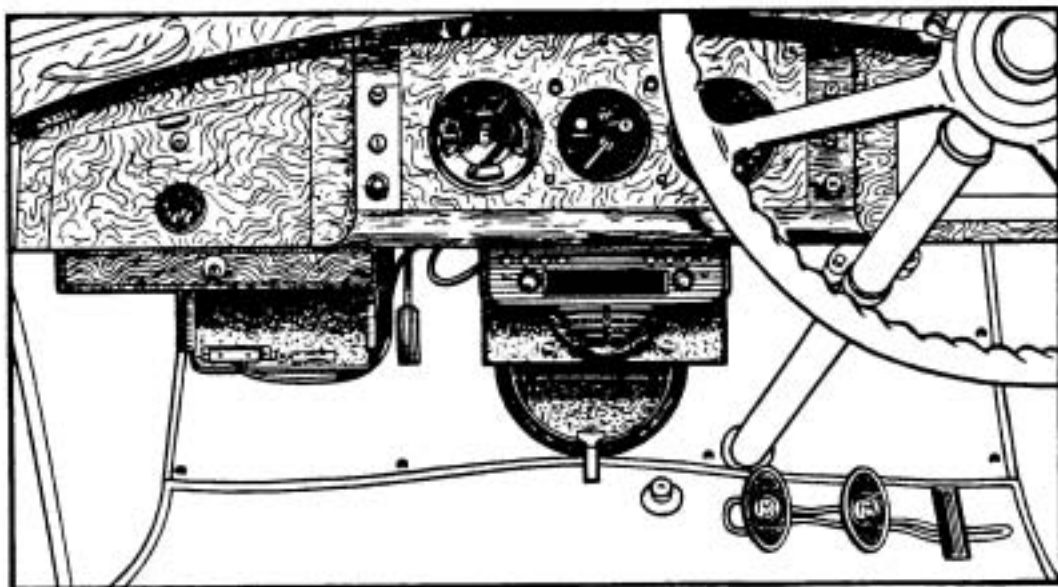


FIG. 1. FINISHED VIEW OF HEATER IN POSITION.

A separate rheostat switch is included for the control of this additional heater, while a foot operated trap door is incorporated in the heater cover for the purpose of cutting off the direct hot air flow into the car interior when demisting only is required.

The above illustration shows the position of the heater when installed in a car.

All the necessary fitting instructions, including the essential drilling and wiring diagrams, are given in this leaflet. The cost of the components necessary for this installation may be obtained from the London Service Station.

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PROCEDURE FOR FITTING THE ADDITIONAL HEATER.General Description of Installation:

The operation of the additional heater is identical to that of the existing underseat heater, and the water circulation is effected in series with this as shown in Fig.2, i.e., from the cylinder head to the additional heater, thence to the underseat heater, and from there, returning to the engine.

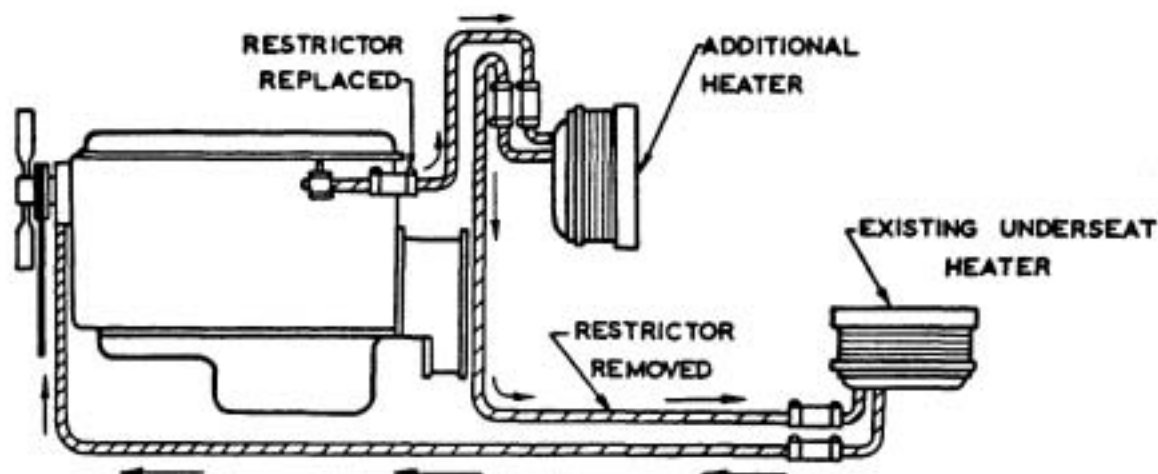


FIG. 2. GENERAL LAYOUT OF WATER CIRCULATION.

The dash heater embodies a hot air take-off which is connected to the existing air silencers to supply heater air to the demisting vents. As shown in the illustration on Page 1, a horizontally hinged door is fitted to the heater cover, its purpose being to cut off the supply of direct heat into the interior of the car when demisting only is required.

With this additional heater installed, the demister motor, blower and electrically operated heating element in the right-hand air duct are no longer required, and these components and their wiring must be removed.

The Demister Switch (K) is also removed, and a separate rheostat control switch for the dash heater fitted in its place. The existing Defroster Switch (F) is disconnected and left in position for future use.

In order to fit the dash heater behind the radio, it will be necessary to remove the power pack fitted to the back of the receiver, re-positioning this behind the tool tray as seen in illustration on Page 1. In addition, the radio mounting tray will have to be modified to allow full clearance for the demister adaptor at the top of the heater cover.

When installing the additional dash heater, it is recommended that the following sequence of fitting operations are adhered to:-

- (a) Removal of the radio receiver, demister motor and blower, electrical heater element and wiring.

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- (b) Positioning and fitting of power pack bracket and heater.
- (c) Detaching power pack from receiver and fitting to bracket.
- (d) Installation of the water connections.
- (e) Fitting of additional rheostat switch, and wiring up to heater.
- (f) Modification to the radio mounting tray and completion of installation

Each of the above mentioned operations is fully detailed hereunder:-

A. REMOVE RADIO RECEIVER, REDUNDANT UNITS AND WIRING:

- 1. Disconnect the radio aerial lead, power feed and bonding tape, if fitted.
- 2. Remove the radio retaining screws and lift out the receiver.
- 3. Unscrew the knurled threaded ring which positions the speedometer trip control through the radio mounting tray, remove the six radio mounting tray retaining screws, and take down the tray.
- 4. Disconnect and remove both air silencers from the demister blower branch pipe. Remove the three holding bolts, and take down the demister motor and blower assembly. Disconnect the wiring from switch and switchbox earth, also disconnect the demister switch feed wire.
- 5. Disconnect wiring from defroster switch, and remove defroster heater element and wiring from right-hand air duct.

B. POSITION AND FIT POWER PACK BRACKET AND DASH HEATER:

- 1. Remove the carpet from dash.

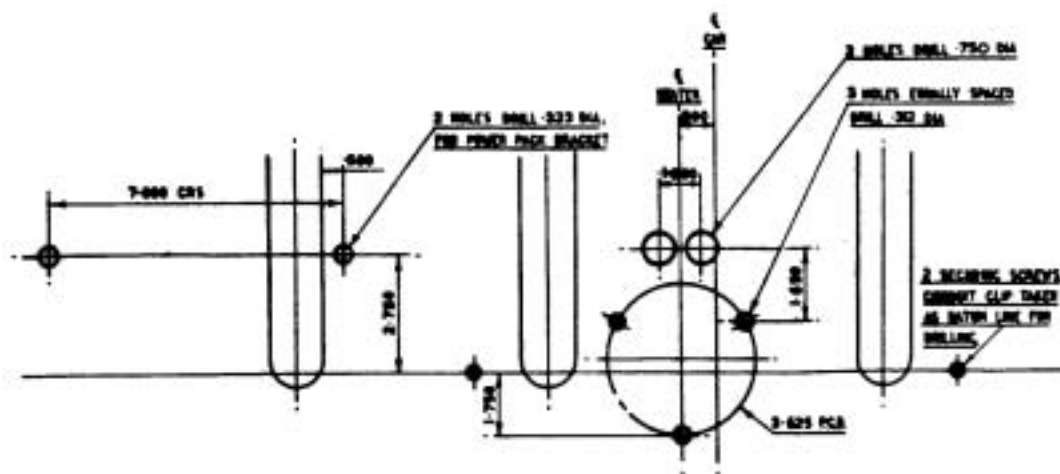


FIG. 3. DRILLING OF DASH FROM INTERIOR OF CAR.

ALL COMMUNICATIONS SHOULD BE ADD

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2. Pull back the felt or Sepak insulation sufficiently to bare the metal dash for marking off and drilling as shown in Fig. 3.
NOTE: Due to the fact that this installation will be carried out with the engine in situ, all marking off and drilling of the dash will require to be made from the interior of the car.
 3. Refit the insulating material and drill this to correspond with the holes drilled in the dash.
 4. Enlarge the holes drilled in the insulating material to 0.500" dia. to allow sufficient clearance for the heater fixing stud shoulders.
 5. Mark out and cut a circular recess 4.25" dia. x 0.300" deep in the top face of the insulating material, taking care to see that the three holes already drilled for the fixing screws are all within this diameter.
 6. Refit the carpet and cut this to correspond with the recess and holes in the insulation.
 7. Fit the heater as follows:-
 - a) Remove the heater cover.
 - b) Holding the heater matrix and back plate together, insert the two bent pipes into the two 0.750" dia. holes, coincide the three integral fixing studs at the back of the base plate with their appropriate holes drilled in the insulation and dash, and press the heater in position. Secure by tightening the nuts on the engine side of dash.
 - c) Fit the rubber grommets round the bent pipes in the dash and then refit the heater cover, ensuring that the foot control for the trap door is at bottom dead centre.
 8. Fit the "Y" shaped demister adaptor to the top half of the heater.
 9. Fit the power pack bracket to the dash, using the two countersunk-headed setscrews provided. After tightening the nuts on the engine side of the dash, cut off all excess threaded portion of the screws projecting beyond the nuts.
NOTE: One arm of this bracket will be found to have a 0.3125" dia. hole drilled through to accommodate the connecting lead clip. When fitting the bracket, this arm should be towards the centre of the car.
- C. DETACH POWER PACK FROM BACK OF RECEIVER AND FIT TO BRACKET:
1. Remove the four setscrews securing the power unit cover, and lift off the cover.
 2. Remove the three setscrews securing the power unit to the back of the receiver and remove the power unit. A thin bladed screwdriver may be used for this, but great care should be exercised during this operation.
 3. Replace the power unit cover.

All communications should be addressed to:

BENTLEY MOTORS (UK) LTD. 85/87, LANE

SECTION

4. Slide the power unit into the bracket with the female plug pointing both downwards and towards the centre of the car, and secure the unit in position by means of the two shouldered retaining bolts. These bolts should be passed through the bottom bolt holes in the two arms, i.e. the holes nearest to the back plate of the bracket and the rubber grommets fitted to centralise the bolts in the holes.
5. Fit the appropriate connecting lead plug into the left-hand bottom corner of the power unit, (See Fig.1), and secure this in position by means of the two metal thread setscrews provided through the plug flanges. Prior to fitting this plug however, care should be taken to ensure a good earth connection by cleaning the plug flanges and front face of the power unit in the immediate vicinity of the screw holes.

D. FITTING OF WATER CONNECTIONS:

1. Install the water connections as shown in Fig. 4.

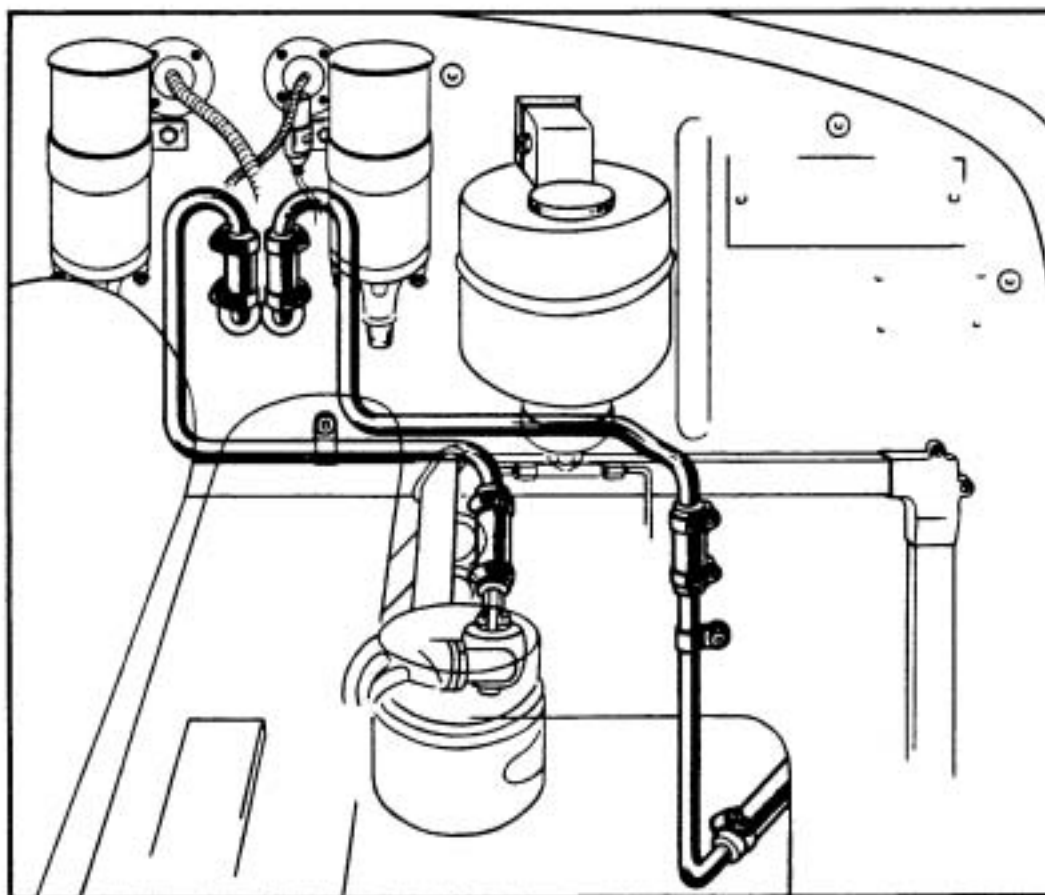


FIG. 4. INSTALLATION OF THE WATER CONNECTIONS.

The existing pipe between the cylinder head isolating tap and under-seat heater should be removed, and the short angled pipe for the right-hand dash heater connection substituted in its place. The original union nut on the

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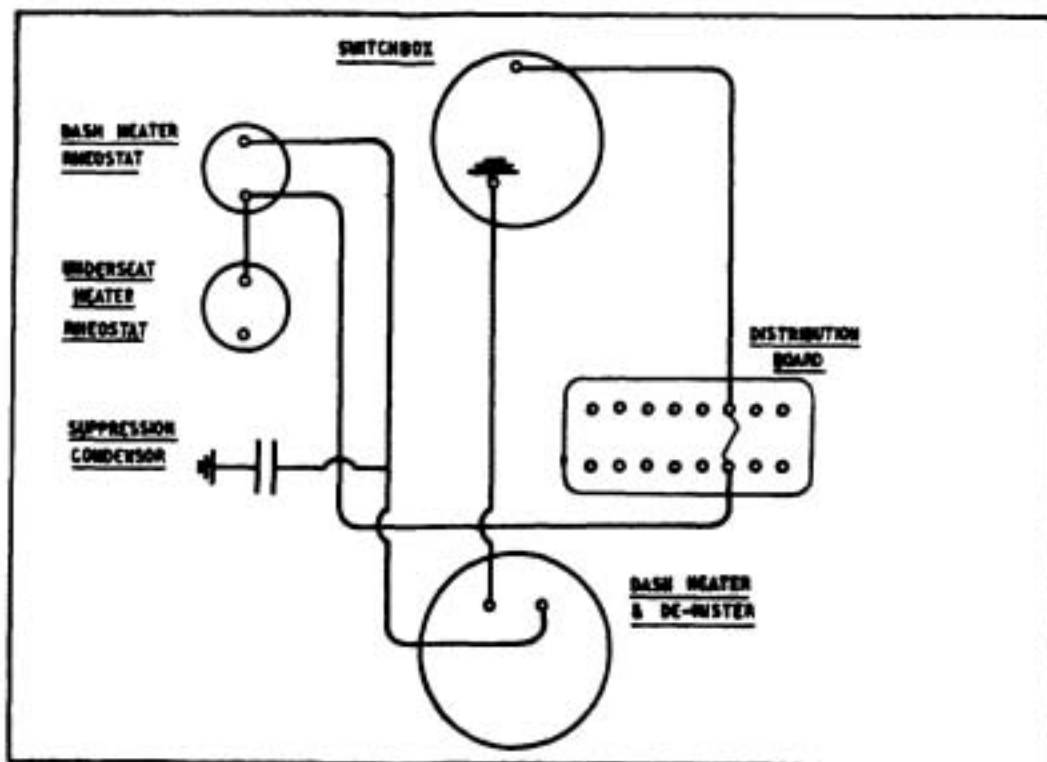
isolating tap should be used again, while the retaining clip for the angled pipe should be fitted to either of the two upper heater fixing studs to suit the run of the piping.

On certain Bentley chassis, the spare ignition coil is carried below the metal cable conduit on the left-hand side of the dash and this may be found to interfere with the "down-run" of the piping between the dash heater and the underseat heater. In cases such as these, this spare coil may be moved 1.00" further to the left in order to allow sufficient clearance for the pipe. The retaining clip for the pipe should be mounted on the existing fixing stud of the ignition coil above the engine.

Where both the ignition coils are mounted on the dash side by side above the engine, the existing toe-board setscrew nearest to the "down-run" of the underseat heater feed pipe should be removed and replaced by the longer screw provided, and the threaded portion of this longer screw projecting beyond the hank rivet on the engine side of the dash should be used for mounting the retaining clip.

E. FIT RHEOSTAT SWITCH TO INSTRUMENT PANEL AND WIRE TO HEATER:

1. Remove the instrument panel fascia board.
2. Remove the demister switch (M) from the instrument panel, and enlarge the existing hole in the panel to accommodate the rheostat switch. Fit the rheostat switch.
3. Enlarge the original demister switch hole in the fascia board to suit the shank of the rheostat switch.



ALL COMMUNICATIONS SHOULD BE ADDRESSED TO

BENTLEY MOTORS (1917) LTD., PY

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4. Run the earth lead from the dash heater motor under the carpet and connect up to the switchbox earth connection as shown in Fig. 5.
5. Connect the Suppression Condensor supplied to the dash heater feed wire, and then secure the condensor to the demister motor mounting bracket by means of the cheese-headed setscrew supplied.
6. Connect the dash heater and original demister switch feed wires to the rheostat switch.
7. Refit the instrument panel fascia board.

F. MODIFICATION OF THE RADIO MOUNTING TRAY & COMPLETION OF INSTALLATION:

1. Reconnect the air silencers to the demisting air vent tubes and connect their free ends to the "Y" shaped adaptor on the dash heater by means of the two wire wound flexible tubes supplied. When fitting these, ensure that the longer tube is fitted to the right-hand side of the adaptor.
2. Cut away the rear of the mounting tray as shown in Fig. 6, and weld on a stiffening rib similar to that already on the rear of the tray.

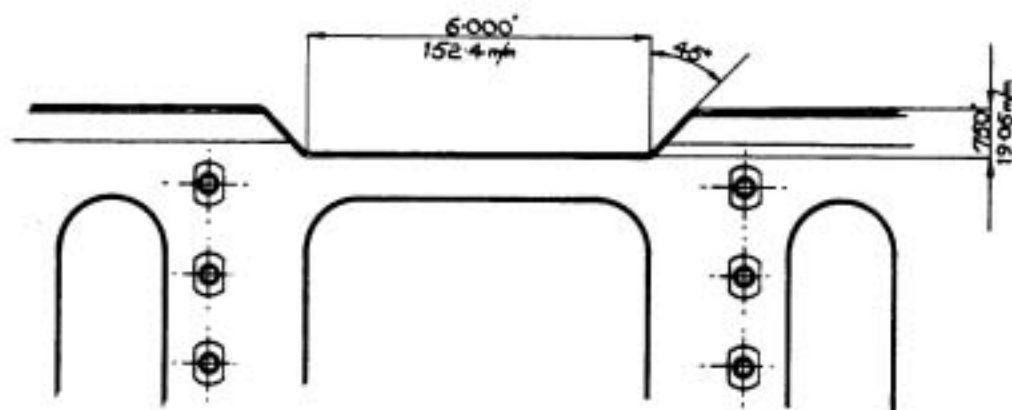


FIG. 6. MODIFICATION TO RADIO MOUNTING TRAY.

3. Refit the radio mounting

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LIST OF MATERIAL REQUIRED.

R.4071	Split Bracket Assy. c/w Setscrews etc. - Power Unit.	1 Off.
R.4088A	Pipe Assy. - Cylinder Head Isolating Tap to Hose Conn.	1 "
R.4089	Pipe - Underseat Heater Feed.	1 "
R.4090	Pipe - Dash Heater Feed.	1 "
R.4091	Pipe - Dash Heater Outlet.	1 "
R.4092	Hose Connection - 2.750" long - Water Pipes.	3 "
R.4093	Hose Connection - 4.500" long - Water Pipe-Cylinder Head Tap.	1 "
R.4115	Flexible Hose Conn. - 4.00" long - R.H. Air Silencer.	1 "
R.4116	Flexible Hose Conn. - 2.50" long - L.H. Air Silencer.	1 "
R.4118A	Dash Heater Assy.	1 "
R.4129	"Y" Piece Adaptor - Dash Heater.	1 "
R.4132	Clip, Retaining - Dash Heater Feed Pipe.	1 "
RE.4750	Jubilee Clips - Size O.	8 "
RE.6231	Clip, Retaining - Dash Heater Outlet Pipe.	1 "
RD.3434	Power Lead Clip.	1 "
RD.3441	Rheostat Switch.	1 "
R.4073	Power Lead.	1 "
RD.4226	Suppression Condensor.	1 "
R.4141	Countersunk - Headed Bolts - Split Bracket Assy.	2 "
R.4142	Nuts - For Above.	2 "
K.9009	Spring Washers - For Above.	2 "
CS.30200	Screw - For Securing Suppression Condensor	1 "
K.2019	Setscrew - For Replacing Toeboard Setscrew	1 "
K.4008	Nut - For Above.	1 "
K.9008	Spring Washer - For K.2019 & CS.30200.	2 "

When an additional dash heater is installed in an existing Bentley

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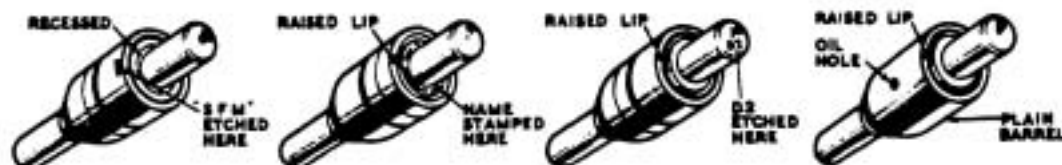
FOR INFORMATIONRECOMMENDED ALTERNATIVE WATER PUMP BEARING ASSEMBLIES.

The following information is given as a means of guidance to Retailers should it become necessary to overhaul an existing Bentley water pump in service.

Originally all water pumps incorporated either a Fischer SPM or New Departure bearing assembly in production. The former assembly, however, proved unsuitable in service, and is now obsolete, having been superseded by the current improved Fischer D2 type assembly. The New Departure, on the other hand, has proved satisfactory, and is still listed as a recommended alternative replacement. A third alternative is the Hoffman bearing assembly which was introduced in order to augment supplies.

Although in many cases the original type Fischer SPM assembly has been replaced in service, it is believed that there are still a number of water pumps operating with this bearing assembly. Retailers are advised, therefore, that in the event of a water pump being dismantled for an overhaul, to examine the existing bearing assembly, and if found to be a Fischer SPM type, to replace it by one of the recommended current alternatives mentioned above.

As an aid to recognition each bearing assembly is illustrated below, the individual characteristics being stressed in each case.



1 FISCHER SPM BEARING 2. NEW DEPARTURE BEARING 3. FISCHER D2 BEARING 4. HOFFMAN BEARING

In addition it is recommended that Retailers also make a check of their existing stocks of replacement water pump bearing

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FOR INFORMATION

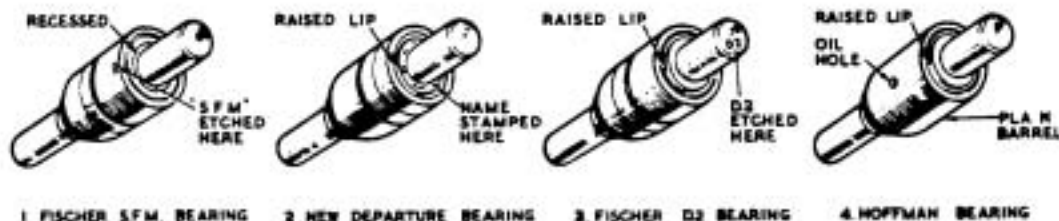
RECOMMENDED ALTERNATIVE WATER PUMP BEARING ASSEMBLIES.

The following information is given as a means of guidance to Retailers should it become necessary to overhaul an existing Bentley water pump in service.

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In addition it is recommended that Retailers also make a check of their existing stocks of replacement water pump bearing assemblies, and

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FOR INFORMATION.IMPROVED DEMISTER SYSTEM.(SUPERSEDES PREVIOUS SERVICE BULLETIN BB-79)

Retailers are advised that the improved type demister system fitted in production to current models is now offered as a chargeable improvement for incorporation on earlier Bentley MK.VI cars in service should owners desire it.

As a result of further investigation and development this new system is capable of keeping the windscreen clear under much more severe conditions than was possible on earlier cars, and it has been adapted so that it may be fitted in place of either the original electrically heated under scuttle system or the later radiator heated type shown in Figs. 1 & 2.

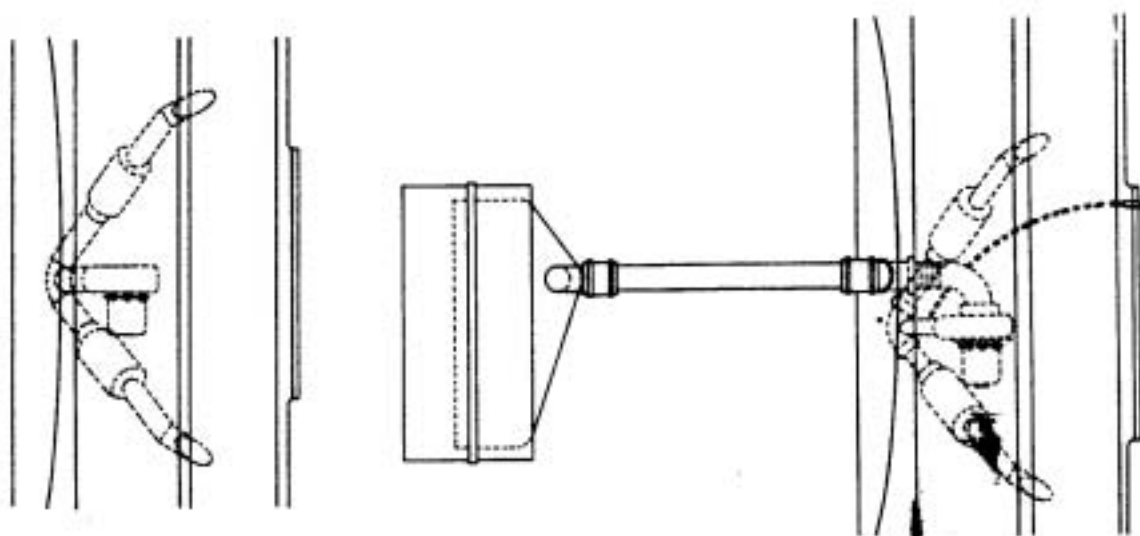


FIG. 1. ORIGINAL SYSTEM.

FIG. 2. RADIATOR HEATED SYSTEM (INTERMEDIATE TYPE).

The improved type demister system is shown in Fig. 3, and it will be seen that it is, in general appearance and operation, similar to existing types.

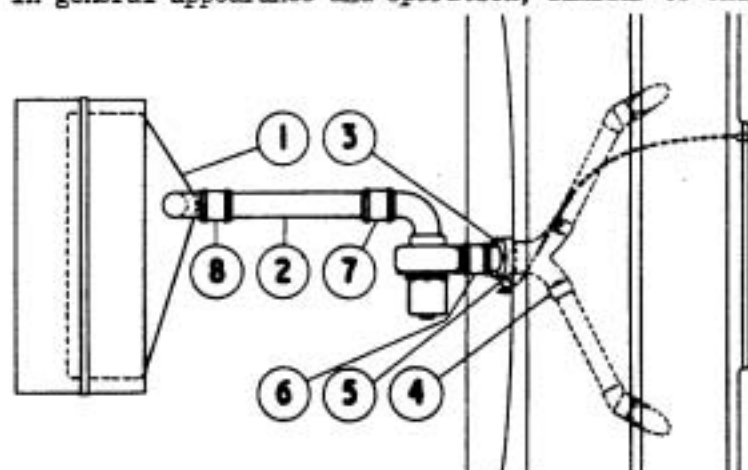


FIG. 3. IMPROVED TYPE DEMISTER SYSTEM.

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- 6) Refit the speedometer cable through the dash by marking off and drilling a hole 1.00" dia. at a point 4.600" directly below the centre of the left-hand aperture carrying the thermometer capillary tube as shown in Fig. 4.

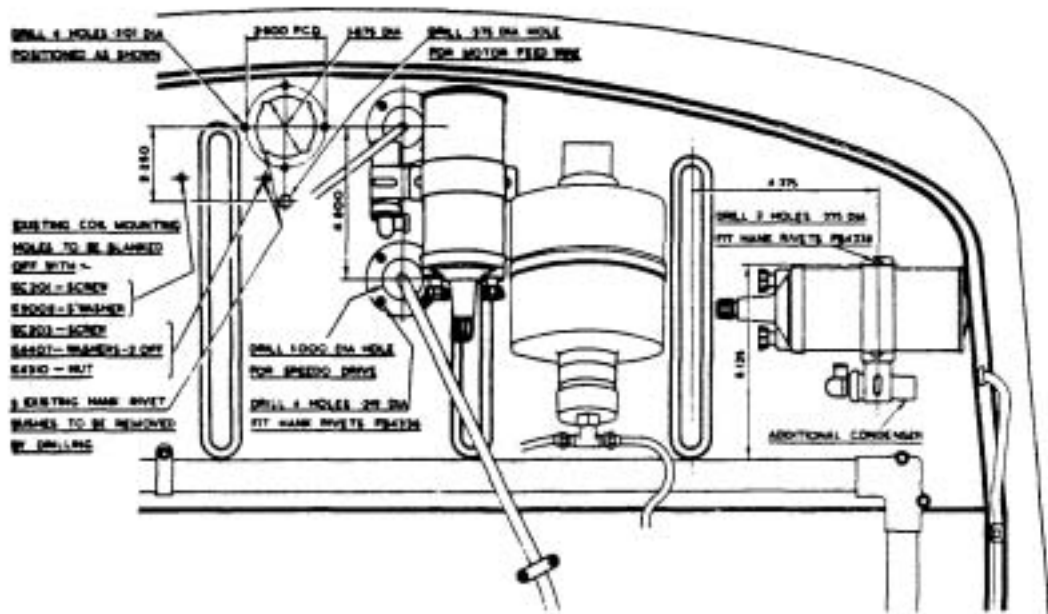


FIG. 4. INSTRUCTIONS FOR DRILLING DASH.

With the existing metal ring offered up over the hole, mark off the relative positions for the four retaining setscrews, and then drill the dash accordingly to accommodate the Hank rivets supplied. Fit these from the driver's side. Pass the cable through the aperture and connect up to the instrument, position the rubber grommet in the hole and fit the metal ring, securing this with the original four setscrews.

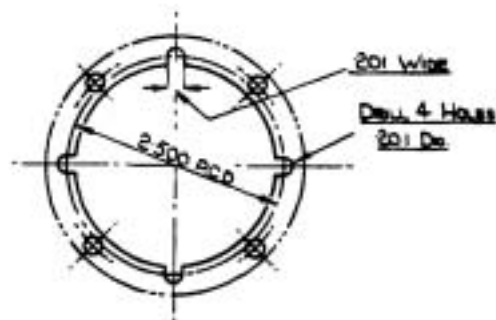


FIG. 5.

NOTE: A number of chassis between B-2-DA and B-191-DE inclusive have the speedometer cable repositioned and an air duct aperture in the dash already cut and blanked off in production.</

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- 7) On chassis where both ignition coils are mounted side by side on the dash above the engine, the right-hand coil should be removed and then refitted on the left-hand side below the Chassis Name Plate as shown in Fig. 4, using the two Hank rivets provided. Fit the additional radio suppressor below the coil as shown, and connect the wire to the INPUT (or lower) terminal. Drill out the original left-hand coil bracket Hank rivet bush, and then drill another hole in the position shown for the demister motor feed wire grommet.
- 8) Fit the demister motor support tube (3) breeches piece (4) and throttle barrel (5) as shown in Fig. 6, using the four 2 B.A. bolts and washers supplied.

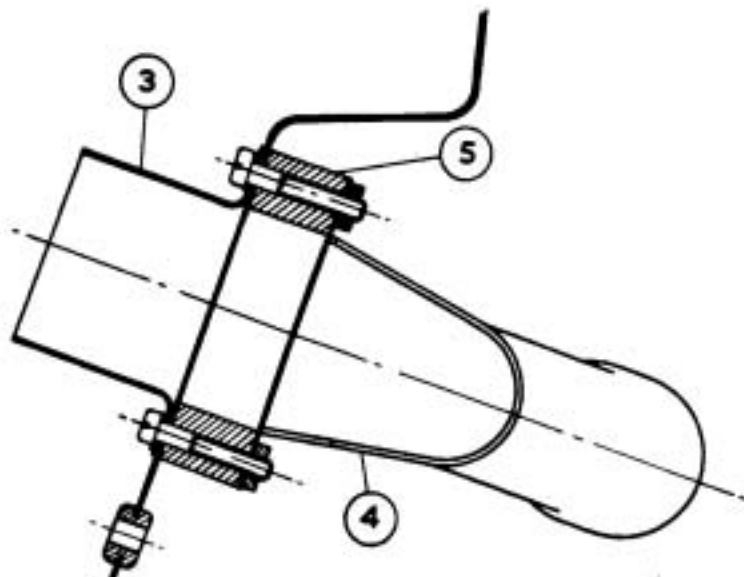


FIG. 6. FITTING OF SUPPORT TUBE, BREECHES PIECE AND THROTTLE BARREL.

- 9) Remove the existing Defroster Switch (F) from the metal instrument panel and fit the threaded end of the stop valve control inner cable into the knob of the switch. Fit the corresponding end of the outer cable into the existing switch aperture in the panel, and then mark off and cut the cable to fit into the cable clip on the throttle barrel. Care should be taken to ensure that a full sweep of cable has been allowed for easy operation of the control, and also that the cable has been cut flush with the inside of the clip. Fit the cable into the clip and tighten up the retaining grub screw. After greasing, fit the inner cable into its outer casing, and thread the lower end through the cable eye on the swivel bolt

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control should operate smoothly and freely, and all necessary adjustments to the cable run and/or clip position should be carried out to obtain this condition.

- 10) Refit the wooden facia panel, and recheck the control knob position. With the stop valve fully closed this knob should correspond with the existing Demister Switch (M) when this is in its "OFF" position. Adjust the inner cable, if necessary, to give this requirement.
- 11) Connect the breeches piece to the right and left-hand demister ducts under the scuttle, using the wire wound rubber tubing provided.
- 12) Remove the electrical heating element from the right-hand demister duct below the windscreen, disconnect both wires and withdraw these completely. Remove the existing blanking plate from the left-hand duct, and fit the two modified type cover plates provided. The oblong lock plate with the bolt attached should be first passed through the duct aperture with its length parallel to the facia board, and then turned at right-angles. The cover plate can then be fitted and secured with the lock nut as shown in Fig. 7.

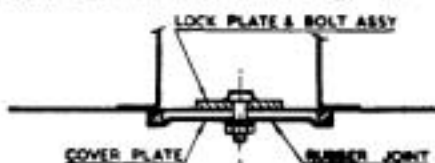


FIG. 7. MODIFIED DUCT COVERS.

- 13) Fit the demister motor to the support tube as shown in Fig. 3, using rubber hose connection (6) and two jubilee clips provided. The outlet aperture of the demister motor MUST be placed as close as possible to the support tube, but sufficient clearance should be allowed to prevent contact due to oscillation. Pass the demister feed wire through the g

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NOTE: The material supplied will include a radiator heated air duct and a demister motor. Although both these components may already exist on the car, credit will be allowed when these items are returned to the London Service Station.

<u>PART NO.</u>	<u>DESCRIPTION.</u>	<u>NO. REQD.</u>
R-4929	Air Intake Radiator Duct Assy.	1 Off.
R-4925	Demister Motor Assy. - Modified.	1 "
R-4396 (c)	Throttle Mechanism Assy.	1 "
R-4433 (e)	Locking Plate & Bolt Assy. - Heater Element Apertures	2 "
R-4432 (e)	Blanking Plate - Heater Element Apertures.	2 "
R-4305 (e)	Rubber Gasket - " " "	2 "
K-4304/2 (e)	Nut - " " "	2 "
K-9005/2 (e)	Spring Washer - " " "	2 "
RD-4575 (d)	Breeches Piece.	1 "
RD-5938 (RH)	Conduit Pipe - Air Intake Duct to Demister Motor.	1 "
RD-5939 (LH)	" " " " " " " "	1 "
RD-6071	Hose - Conduit to Demister Motor.	2 "
RD-5941	Support Tube - Demister Motor.	1 "
RD-5942	Hose - Blower Motor to Support Tube	1 "
R -4385	Hose - Breeches Piece to Windscreen Ducts.	2 "

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<u>PART NO.</u>	<u>DESCRIPTION.</u>	<u>NO. REQD.</u>
KC-203/Z	Setscrew - Blanking Existing L.H.Coil Hole in Dash.	1 Off.
K-4407/Z	Washer - for above.	1 "
K-4310/Z	Nut - for above.	1 "
RD-4226	Condensor - Coil.	1 "
R-1925/Z (c)	Setscrew - Support Tube, Throttle Barrel & Breeches Piece to Dash.	4 "
K-9006/Z	Spring Washer - Support Tube.	4 "
<u>NOTES:</u>	(c) Items NOT required if hinged flaps are fitted over outlet ducts at Windscreen.	
	(d) Items required if hinged flaps are fitted over outlet ducts at windscreen.	
	(e) Items NOT required after Chassis No.B-193-DZ.	

For identification of the above L.O.P. the Demister Motor Elbow is constructed from an aluminium tube as compared with the earlier scheme which used a cast elbow.

The following items have been superseded in the above L.O.P., but may still be required for replacement on cars which have been fitted with the earlier edition of this scheme.

R-4413	Air Intake Duct Assembly.	1 Off.
R-4360	Demister Blower.	1 "
RD-5077	Conduit Pipe.	1 "
R-4362	Support Tube.	1 "</

