SPRINGS AND SHOCK DAMPERS

SERVICE INSTRUCTION LEAFLET

ISSUED BY

BENTLEY MOTORS (1931) LTD.

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Subject : SHOCK ABSORBERS
ALL PRE-WAR CARS WITH RIDE CONTROL.

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IMPORTANT

THE CONTENTS OF THIS DOCUMENT ARE STRICTLY CONFIDENTIAL AND ARE NOT TO BE TRANSMITTED TO ANY UNAUTHORIZED PERSON.

Deterioration in the efficiency of the shock absorber control may occur in service, but it is exceedingly rare that any fault develops in the system which cannot be put right by the following procedure.

It is obvious, that in all cases, the oil level in the shock dampers and control pump should be inspected, also any serious oil leak caused by a fractured pipe or defective joint, should receive attention.

The procedure for checking and restoring the efficiency of the system is as follows:-

1. Remove the floorboards to obtain access to the control pump on the gearbox.

2. Fill up all shock dampers and control pump with S.A.E. 20 oil.

3. Disconnect one pipe feeding any shock absorber, and connect this to an oil pressure gauge reading up to 40-lbs.

4. Jack up one or both rear wheels and "scotch" the front wheels.

5. Start up the engine, engage top gear and run the transmission at a speed corresponding to 10 m.p.h. on the speedometer.

6. Check the readings on the oil gauge, which should be as follows:-

   In the "MIN" position of the hand control, not more than 4-lbs. If a very soft ride at low speeds is required, the pressure can be reduced to 0-lbs.

   In the "MAX" position of the hand control, approximately 28-lbs. This figure is not in any way critical, and the reading may lie between 25 - 30 lbs. If better high speed damping is required, the control should be set to the higher figure.

   Adjustment is effected by varying the length of the control rod to the lever on the control pump.

7. If the above figures cannot be obtained even remotely, suspect dirt on the control valve in the pump.

   The valve can be removed for cleaning purposes quite easily

   The operations are as follows:-

   a) Disconnect the control rod to the lever on the pump.

   b) Remove the largest of the four recessed plugs located on the underside of the pump body and completely drain off all the oil.

   c) Remove the three remaining plugs, carefully clean the ball valves and their respective seatings, and replace.

d) Replace the drain plug and secure tightly, ensuring that the washer is undamaged.

e) Remove the filler plug and refill the pump body with any of the recommended S.A.E. 20 lubricants to the level of the filler spout thread.

f) Operate the control lever on the pump by hand to expel all superfluous air, the resulting drop in oil level being simultaneously adjusted. When no further alteration in the oil level is apparent, replace the filler plug and secure tightly.

g) Re-connect the control rod to the lever on the pump.

8. In the event of the specified poundages being reasonably obtained, it is most important to bleed the system. In any case, this bleeding operation must be done in all cases of suspected inefficiency of the dampers. Proceed as follows:-

a) Re-connect the shock absorber control pipe disconnected for the above test, and remove the small hexagon headed setscrew which will be found on the top of the valve chamber to which the control pipe is connected on the shock absorber. It is convenient to bleed both rear shock dampers at one operation.

b) Run the transmission at 10 m.p.h. as in paragraph 5 above, and observe the flow of oil from the two vent holes which are now uncovered. Air bubbles will be seen to issue with the oil, and the transmission should be run long enough to eliminate all air from the system which will be indicated by a clean flow of oil free from air bubbles. The two vent plugs should be replaced whilst the transmission is still running.

c) Top up the control pump on the gearbox and repeat the above procedure for the two front shock absorbers, afterwards again topping up the control pump to make good any oil lost.

d) It will probably be observed on trying the car afterwards that there is a grunt from the shock absorbers. This is caused by vibration of one of the valves and indicates that the efficiency of the shock absorbers has been increased, but that some air is present in the valve chamber on the shock absorber side of the bellows. This air will rapidly be eliminated automatically and the grunt will not last longer than a few miles on the road.

NOTE: It is most important to avoid any foreign matter getting into the system, therefore, before carrying out any of the above operations, the casing of the shock dampers or control box, should be carefully wiped down, especially in the vicinity of any filler plug or bleed screw which is to be removed.