

John Organ

Foulis'
Overhaul
Manual

AP
Automatic
Transmission

for BLMC Mini,
Austin/Morris 1100/1300,
and Austin America

Foulis' Overhaul Manual

000000 728

The object of the transmission pressure test

This test is to ascertain if a leakage is occurring in the hydraulic circuit. Leakages may not be externally visible and can occur owing to faulty or misplaced sealing rubbers or oil pipes. By reference to the hydraulic power flow diagram (Chart 4: 3, pages 56 to 61), the circuit in use for any particular gear can be ascertained while chart 11: 1 indicates the position of all the sealing rubbers.

ROAD TESTING

Be sure, before carrying out any tests, to adjust the engine oil level as described on page 170 and drive the car until normal operating temperature is reached.

Under extremely cold winter conditions, oil pressure in the transmission when the engine is first started can be abnormally high and can result in an internal leakage from the oil filter bowl seal (see page 71); to prevent this from happening the size of the bleed hole ('A' in fig. 4: 1) in the regulator valve was increased. Valve blocks incorporating this valve (part no. 37H 4523) were introduced on the 1300 at engine nos. 12H/111/H5001, 12H/115/H7311, 12H/169/H1785, 12H/185/H21323.

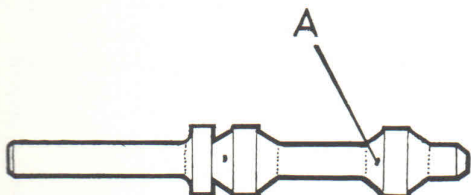


Fig. 4:1 The regulator valve showing the bleed hole (A). In some transmissions the size of the hole has been increased. In the event of a metallic buzz or rattle developing, recourse to the earlier valve is indicated

Immediately prior to, during and after the road test, always check for unusual noises.

The valve-block regulator valves (part no. 37H4523) introduced to avoid high oil pressure upon initial starting under extremely cold conditions, can on occasion promote a metallic rattle or buzz, particularly when 'N' is selected and the transmission oil is at normal temperature. Generally, the noise is apparent only between engine speeds of 650 to 1250 rev/min but in the event of the noise being excessive, the earlier regulating valve, Part No. 37H 3041 should be fitted.

Valve blocks incorporating the earlier type regulator valve (37H 3041), however, were re-introduced at the following engine nos.:

85H - 111/A/H 294	} - Mini	10H - 111/A/H 1052	- 1100
85H - 111/B/H 126		12H - 111/A/H 2694	
99H - 111/A/H 1373		12H - 111/B/H 738	- 1300
99H - 111/B/H 242		12H - 292/B/H 5478	

A similar noise to that caused by the regulator valve can be caused by a damaged oil-pump drive coupling or a loose camshaft drive-gear nut but these noises are generally of lower frequency and are more pronounced as a knock or a rattle, particularly up to 800 rev/min, whereas regulator

Chart 5:1 (continued)

<i>Fault</i>	<i>Possible cause</i>
No tow-start operation (cars without engagement control valve only)	Valve block (Tow-start valve seized in operated position) Pressure loss from: Valve block to case top bobbin seals Valve block to auxiliary pump top copper pipe Suction loss from: Auxiliary pump pick-up pipe, seals or strainer
Starts in top gear and in 1st gear but transmission locks in 2nd and 3rd gears	Top and reverse clutch seized on
Leakage from oil filter bowl	Valve block, tow-start valve seized in rest position
1st gear condition in 2nd manual, and neutral condition in 4th gear automatic	Valve block, top gear valve seized in operated position
1st gear condition in 4th gear manual and no reverse	Valve block, top gear valve seized in rest position
1st gear condition in 3rd gear manual, and possible 'Tie Up' on 3rd and 4th shift in 'D'	Valve block, 3rd gear valve seized in rest position
Possible 'Flare Up' on 3rd to 4th manual shift, and neutral condition in 3rd gear in 'D'	Valve block, 3rd gear valve seized in operated position
No kickdown 'Up Shift' from 1st gear in 'D', 1st gear 'D' condition in 2nd gear 'D', no 4th manual or reverse	Valve block, 2nd gear valve seized in rest position
Engine stalls when selecting gears from 'N'	Engine idling speed too slow
Excessive transmission 'Snatch' and 'Creep' when selecting gears from 'N'	Engine idling speed too high