Flying Spares

Dear Sir/ Madam,
Thank you for ordering one of our loan tools.

Many of these tools are limited in their availability and difficult to replace or repair.

In order to keep their condition to the highest quality we inspect all our tools when they are returned to us.

Upon receipt please check that the tool is suitable for the task required, there may be a slight variance from the picture on our website. Should you have any concerns about the condition of the tool please contact me on 01455 299 781 or email me at martin@flyingspares.co.uk.

Once you have used the tool please be mindful that there may be another request for it, and there is a possibility that I call or email you as a reminder to return the tool.

Thereafter, upon return it is very important that the tool is returned in the original packaging to ensure safe transit.

If you send the tool back with your own courier please ensure you take out suitable insurance cover, particularly where electrical tools are concerned as additional packing may also be required.

Finally, should the tool be returned in a substandard condition we reserve the right to withhold some or all of the surcharge.

To arrange collection please contact us on 01455 292969 and the cost of this will be deducted from your surcharge credit.

Thank you again for your business and helping us to keep these tools in the best condition, your cooperation is very much appreciated.

Yours Faithfully,

Martin Scott
(Reconditioning)

Section C6

A.C.U. test box

Description

The automatic air conditioning system test box (RH 8851) enables the air conditioning system to be tested whilst the components are fitted to the car. The function of the controls on the box are as follows:

1. AUTO/CAL switch.

When AUTO is selected and the ACU is in 'automatic' mode, the test box functions as a servo position indicator. When CAL is selected, the test box can be calibrated.

2. UPPER/LOWER switch.

Selects the appropriate circuit under test.

3. MAX control

With the AUTO/CAL switch set to CAL and the 0% 100% switch set to 100%, the meter can be adjusted to 100%.

4. CHECK VOLTS switch

Measures the following:

Position 1. Supply voltage to the servo modules (9.1 volts)

Position 2. Output voltage from lower servo position potentiometer.

Position 3. Output voltage from lower sensor chain,

Position 4. Output voltage from upper servo position potentiometer.

Position 5. Output voltage from upper sensor chain.

5. IND/VOLTS switch

Determines whether the meter is to be used as a voltmeter or a servo position indicator.

6. 0%/100% switch.

Enables the test box to be calibrated to the servo under test.

7. ZERO control

With the AUTO/CAL switch set to CAL and the 0%/ 100% switch set to 0%, the meter can be adjusted to 0%.

8. RUN/SET switch

In the RUN position, the switch enables a servo to be operated in the automatic mode or calibrated. In the SET position, the temperature selector dials can be calibrated to a specific servo position.

Using the test box as a voltmeter

1. Set AUTO/CAL switch to AUTO and the RUN/ SET switch to RUN.
2. Set IND/VOLTS switch to VOLTS.
3. Select the appropriate switch position as follows:

Position 1. Supply voltage to the servo modules (9.1 volts)

Position 2. Output voltage from lower servo position potentiometer.

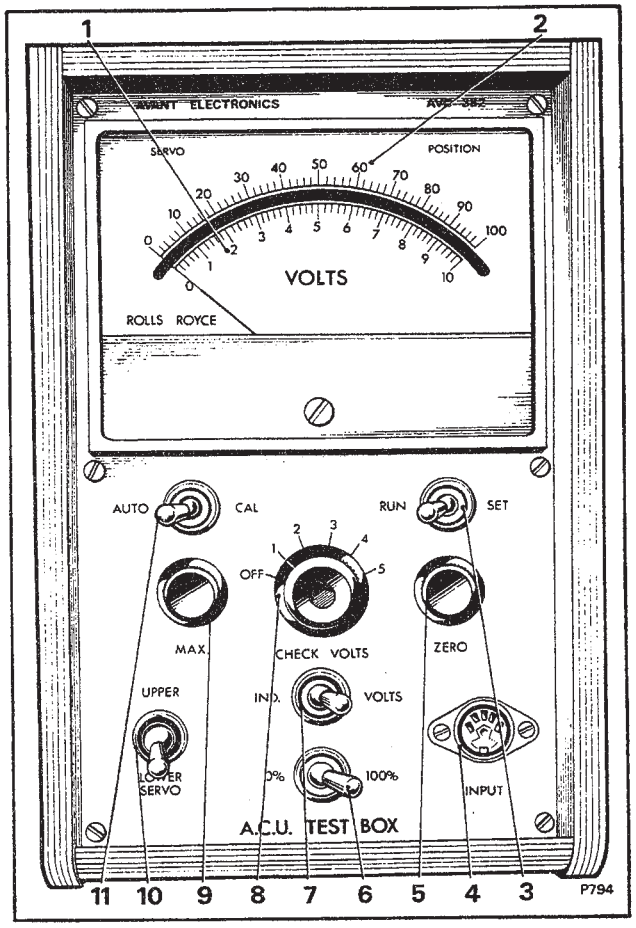

Fig. C33 Test box details

1	Volts scale
2	Servo position scale
3	RUN/SET switch
4	Input plug
5	ZERO control
6	0%/100% switch
7	IND/VOLT switch
8	CHECK VOLTS control
9	MAX control
10	UPPER/LOWER servo switch
11	AUTO/CAL switch

Position 3. Output voltage from lower sensor chain.

Position 4. Output voltage from upper servo position potentiometer.

Position 5. Output voltage from upper sensor chain.

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T.S.D. 4200

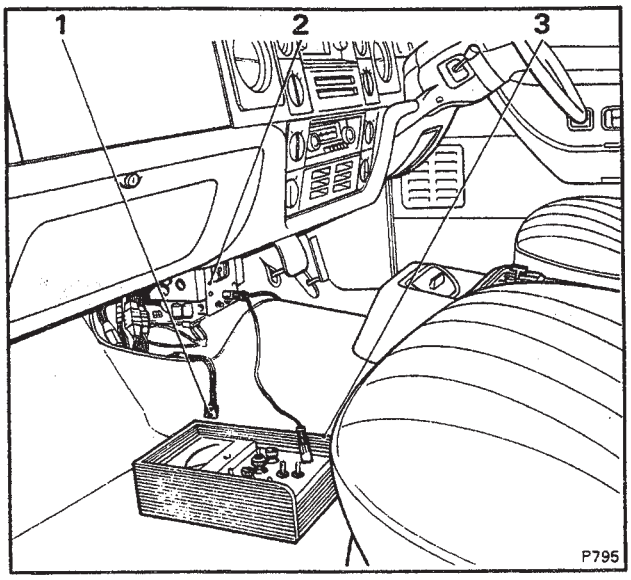

Fig. C34 Test box in position
1 Servo trim cover 5 way socket
2 Servo assembly
3 Test box RH 8851

Calibrating the test box as a servo position indicator.

1. Connect the test box to the test socket.
2. Select the required servo on the UPPER/LOWER SERVO switch.
3. Set IND, CAL and RUN on the appropriate switches.
4. Disconnect the socket situated under the servo trim cover, start the car engine and select LOW on the ACU function switch.
5. Set the 0% 100% switch to 0% and wait for the servo to stop.
6. Adjust the ZERO control to set the meter to 0%.
7. Set the 0% 100% switch to 100% and wait for the servo to stop.
8. Adjust the MAX control to set the meter to 100%.
9. Repeat operations 5 to 8 until both readings are correct.

Important
A servo may appear to have travelled to the limit switch (operations 5 and 7) and the test box adjusted accordingly but, in fact, the servo has stalled. If a stall condition is suspected the supply voltage to the servo motor should be measured at the servo socket where a voltmeter probe can be inserted. The upper servo supply is at the pink/blue cable and the lower servo supply is at the pink/light green cable. If a stall condition exists the voltage between the servo supply and earth will be less than 8 volts, otherwise the voltage should be greater than 12 volts.

Servo position indicator with ACU operating automatically

1. Select the required servo on the UPPER/LOWER SERVO switch and calibrate the test box.
2. Set the AUTO/CAL switch to AUTO.
3. Set the RUN/SET switch to RUN.
4. Ensure that the servo trim cover socket is connected.

Servo position indicator with manual control of ACU.

To observe the operation of the actuators and water tap, set up the test box as follows:
1. Select the required servo on the UPPER/LOWER SERVO switch and calibrate the test box.
2. Set the AUTO/CAL switch to CAL.
3. Set the RUN/SET switch to SET.
4. The servo may now be set to any required position using the temperature selectors on the facia but to achieve the extremes of servo position the servo trim potentiometers will have to be used.

Calibrating the temperature selectors

Correct servo position is related to selector position, in-car temperature and outside air temperature, therefore, to calibrate the temperature selectors, the servo positions are adjusted with the temperature sensors substituted by known fixed resistances. To obtain the correct temperature settings, the upper servo must be set to 51% and the lower servo set to 48% with the temperature selectors set to mid-range. The temperature selector calibration procedure is as follows:
1. Select the appropriate servo and calibrate the test box.
2. Set the AUTO/CAL switch to CAL.
3. Set the RUN/SET switch to SET
4. Disconnect the servo trim cover socket.
5. Set both temperature selectors to their **mid-position.**
6. Adjust the servo trim potentiometer until the meter reads 51% for the upper servo and 48% for the lower servo. **Approach the setting from 0%.**