

DATE: NOVEMBER 1987  
SHEET: 1 of 20  
BULLETIN: JD 10/87

ITEM: 80

## 18 ENGINE IDLE QUALITY

XJ6 3.6

Following reports of poor idle quality accompanied by an intermittent misfire on 3.6 XJ6 models, the sparking plug gap has been revised to 0.9mm (0.035") from engine number 9D 129897 (N.A.S.).

Where this condition is experienced in service, the sparking plugs should be removed, cleaned, gapped at 0.9mm (0.035") and refitted.

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## 18 ENGINE BASE IDLE SETTING

XJ6 3.6/XJS 3.6 (FROM VIN 139052)

Reports have been received that following the replacement of the idle speed control valve, the engine base idle speed cannot be reduced to specification.

Should this problem be experienced, loosen the four idle speed control valve retaining screws and reposition the valve to ensure that the tapered end of the adjusting screw is centralised with the inlet manifold by-pass drilling (Fig 1).

Tighten the retaining screws and adjust the engine base idle speed using the JDS engine set-up procedure.

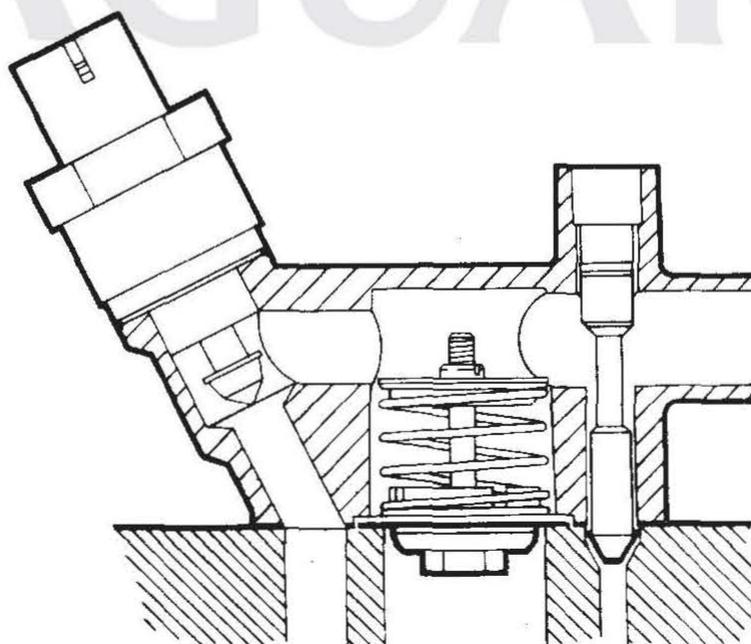


FIG 1

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## 19 HOT FUEL HANDLING - HESITATION

XJ6 2.9/3.6

To improve the hot fuel handling characteristics the following modifications have been introduced into production.

1. Clipping of internal fuel tank hoses (See Bulletin JD 08/87 Item 6 1).
2. A revised fuel pump known as the 'Glycodure' fuel pump was introduced at VIN 526150 for all markets **except** UK. This pump is available under Part No. CBC 5656 and is more tolerant of any vapour present during high temperature operation.
3. Improved fuel tank swirl pot entrainer was introduced at VIN 526857 USA and 528028 Middle East, Japan and Australia, ensuring that the coolest possible fuel is provided to the injectors.

Fuel tanks incorporating this modification are available under Part No. CBC 6445/1.

**NOTE: FUEL TANKS MUST NOT BE REPLACED UNTIL THE IMPROVEMENTS DETAILED IN 1 AND 2 HAVE BEEN COMPLETED.**

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### 30 CATALYST HEATSHIELD RATTLE

**XJ6 3.6 (ALL CATALYST VEHICLES EXCEPT JAPAN)**

To overcome reports of catalyst heatshield rattle, a modified heatshield has been introduced on production from VIN 522802.

This modification can be carried out as a Service Fix by adopting the following procedure.

1. Remove the existing catalyst headshield.
2. Cut off the inlet nose (A Fig 1)
3. Cut off the same area from another stock heatshield Part No. CAC 8298/1 and fit one inside the other.
4. Spotweld (or bolt) the two heatshields together, see diagram for positions (X Fig 1).

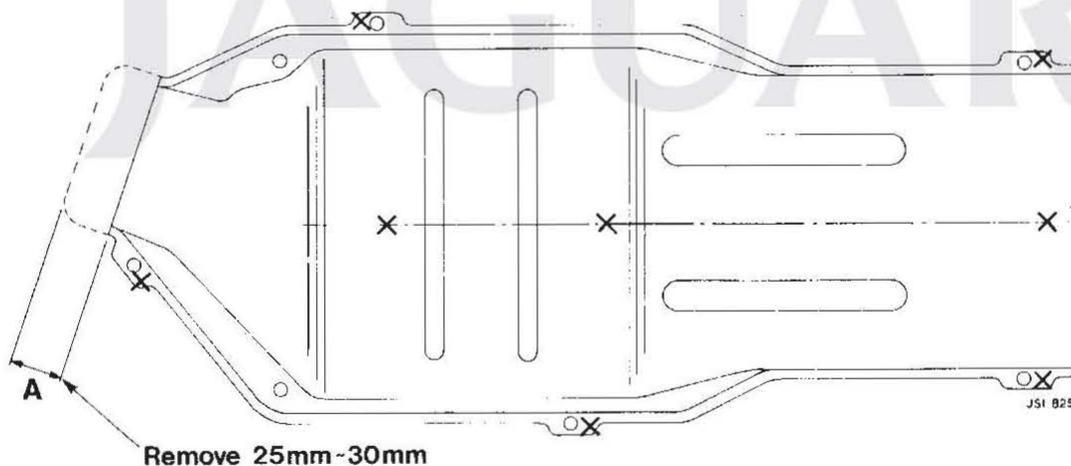


FIG 1

5. Refit the modified heatshield assembly to the vehicle.

Labour allowance	0.55 hrs
Repair Operation No:	30.91.01
Complaint Code:	2LGF

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**44 TRANSMISSION FLUID LOSS****XJ6 2.9/3.6 AUTOMATICS**

When investigating reports of transmission fluid ejection from the dipstick tube, the transmission breather located in the extension housing, should be inspected to ensure that it is not being obstructed by the transmission tunnel foam insulation pad.

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**44 ZF TRANSMISSION 1 – 2 SHIFT QUALITY****XJS & XJ6 3.6 AUTO**

New ZF transmissions incorporating a revised valve block calibration have been introduced.

This change is to eliminate the specific problem of transmission **shudder** at the full throttle 1 – 2 shift and does **not** overcome any drive line induced **vibration** which may also be present.

**XJ6 3.6 Auto – USA Only (2.88:1 Axle Ratio)**

Transmission Part No. EBC 2164 replaces EBC 1171, from engine number 9DP 126748, VIN 526305.

A quantity of the existing transmissions, EBC 1171, had the revised valve block incorporated before this change and are identified from transmission serial number 391-676802, which was introduced at engine number 9DP 108835, and VIN 522801.

**XJ6/XJS 3.6 Auto – All Markets Except USA (3.54:1 Axle ratio)**

Transmission Part No. EBC 2195 replaces EAC 9614 from transmission serial number 624-688279 which was introduced at engine number 9DP 126286, VINs 524880 and 145172.

Where instances of this complaint are reported on **XJ6 3.6** models the valve block assembly can be replaced by a revised valve block, which is available as a serviceable item. This instruction does not apply to XJS 3.6 Models.

**Repair Procedure**

1. Drive the vehicle onto a ramp. Ensure that the vehicle is in 'Park', with the handbrake applied. Raise the ramp.
2. Remove the transmission oil sump drain plug and drain the fluid into a suitable clean container. Protect against contamination.
3. Remove the oil sump pan and filter. Discard the 'O'-ring seal (Fig 1).

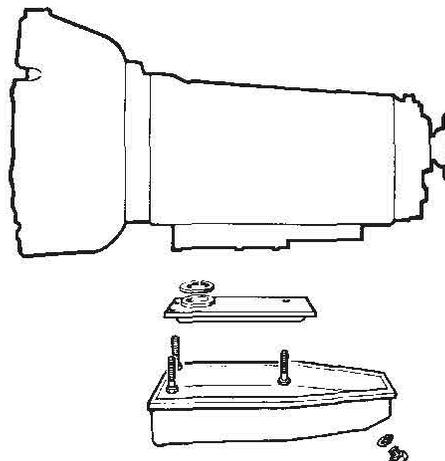


Fig 1

4. Remove the valve block assembly securing screws (1 Fig 2) and carefully lower the block.

NOTE: Only the large headed screws hold the assembly in position.

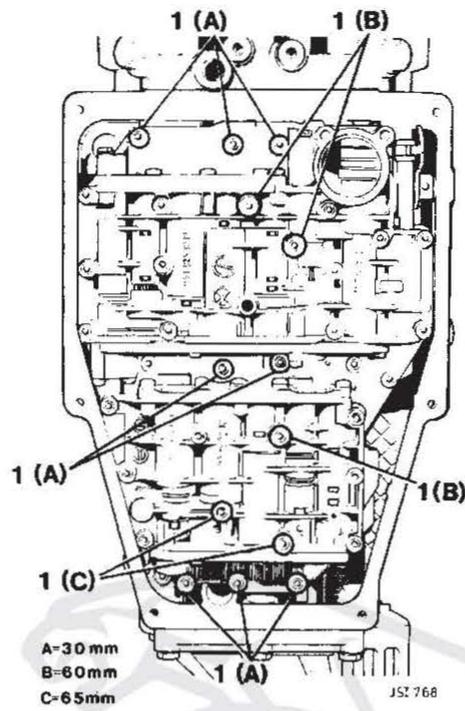


Fig 2

5. Check that the oil seals, springs and circlips are correctly located (Fig 3). Do not remove but carefully clean the mating face with a lint-free cloth.

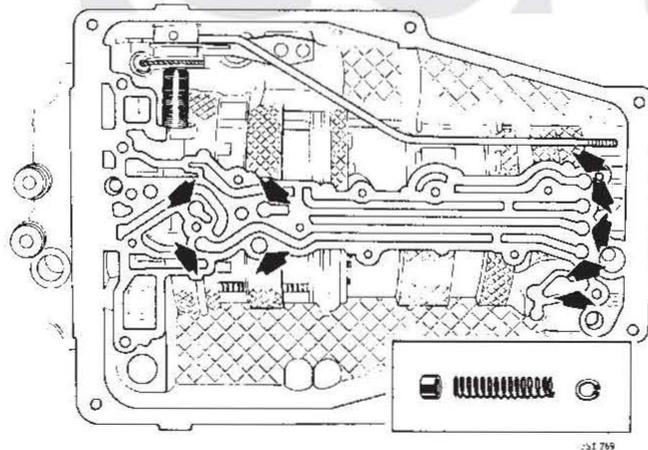


FIG 3

- Fit the valve block assembly ensuring that the operating valve quadrant engages onto the selector detent. Do not fully tighten the screws but leave the valve block just moveable.

Note different length of screws (Fig 2).

- Align valve block assembly in position and using the setting gauge JD 103 set the distance between the detent roller location pin and valve block (Fig 4), ensuring that no pressure is applied to the kickdown cable. Tighten the retaining screws from the centre, working outwards in a circular manner to a torque of 8 Nm. Remove the setting gauge.

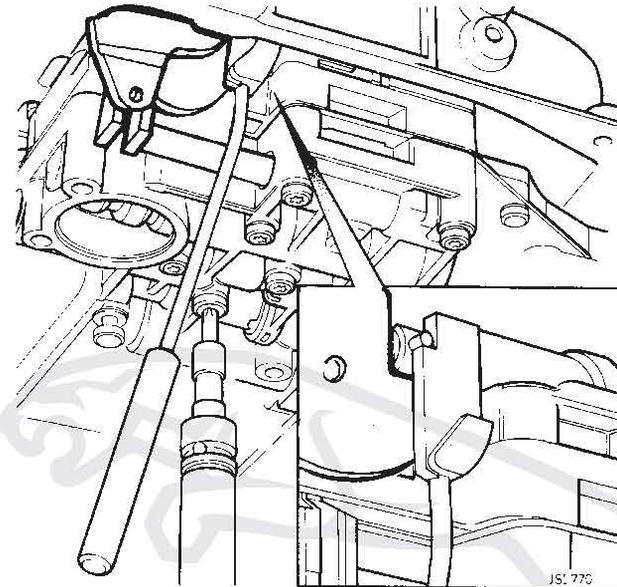


FIG 4

- Locate the new 'O'-ring seal into the valve block. Align and secure the replacement oil filter to the valve block with the retaining screws to a torque of 8 Nm (Fig 5).

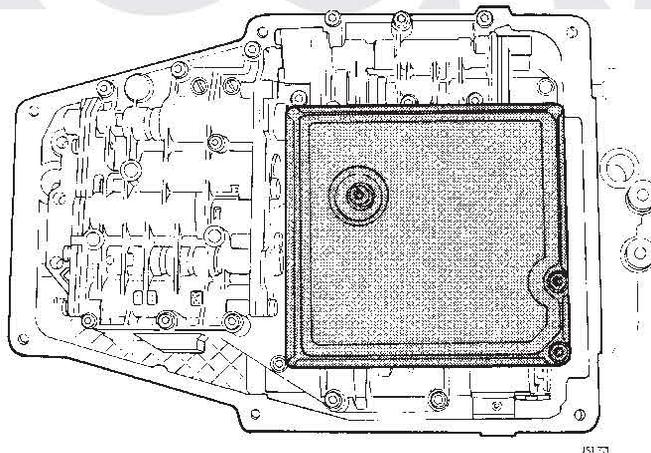


FIG 5

- Fit a new oil sump gasket to the oil sump and check that the two magnets are correctly located.
- Align the oil sump to the transmission ensuring that the gasket does not move. Secure with the retaining clips located in the correct position (Fig 6) to a torque of 8 Nm.

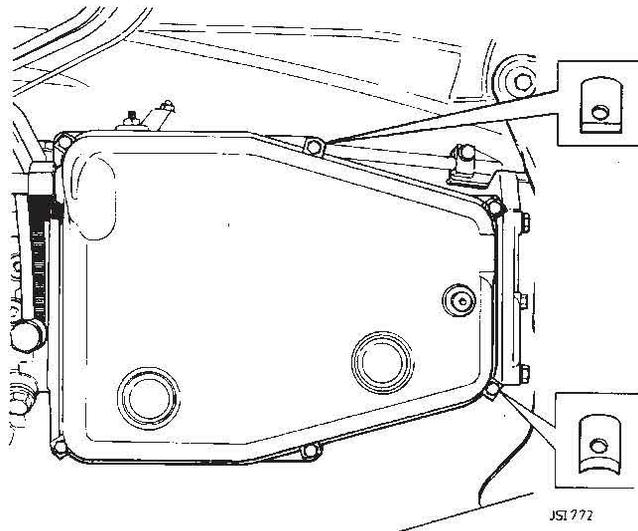


FIG 6

11. Fit the drain plug and washer to the oil sump and torque to 15 Nm. Attach the dipstick tube to the oil sump and secure the union nut to a torque of 81 Nm
12. Lower the vehicle and refill with fluid.
13. Start the engine and ensuring that both the handbrake and footbrake are applied, move the gear selector lever several times through all the selector positions and back to 'Park'. Dip and check the oil level with the engine running (idle speed), adjust as necessary.
14. Switch off the engine and re-check the kickdown cable initial setting by manually operating the throttle linkage to full throttle position (NOT KICKDOWN) and measure the distance from the outer cable to the crimp, this should be 39mm. Adjust the outer cable locknuts if necessary to obtain a measurement of 39mm.
15. Close the bonnet and check for oil leakage.

### Service Tool

JD 103 – Valve Block Setting Gauge

### Torque Figures

Dipstick Tube Locknut	81 Nm
Oil Sump Drain Plug	15 Nm
Valve Block to Case Screws	8 Nm
Filter to Case Screws	8 Nm
Oil Sump Bolts	8 Nm

### Parts

Valve Block Assembly (including 'O' Ring and Filter)	EBC 2196E – All markets except USA
Valve Block Assembly (including 'O' Ring and Filter)	EBC 2165E – USA only
Kit	JLM 1534 comprising:
'O'-Ring Seal	JLM 665
Oil Sump Gasket	JLM 650

# Service Bulletin



DATE: APRIL 1989  
SHEET: 1 OF 6  
REF: JD 05/89

## ERRATA

Service Bulletin JD 04/89, Section 76, Item 22, Page 3 of 9:-

Please note that the UK telephone number given for Drager Ltd is incorrect. This should be:-

(0442) 3542

We apologise for any confusion

ITEM: 26

### 44 A, B AND D CLUTCHES END PLAY ADJUSTMENT ALL MODELS FITTED WITH ZF 4 HP 22 AUTO. TRANS.

To ensure maximum shift quality on rebuilt ZF 4HP 22 transmission units, Service Tool JD 157 has been developed by V L Churchill Ltd., to ensure that clutch end play adjustment is correct. This is achieved by taking measurements following the procedures given below, and fitting the correct adjustment plate or spring ring as appropriate.

Carry out clutch end play adjustment whenever the transmission unit is overhauled (Service Manual Procedure 44.20.06).

The tool comprises:

- 1 Base plate.
- 2 Top plate (15mm thickness).
- 3 Securing nut.

#### D CLUTCH

The D clutch consists of four friction plates (lined) and five metal plates. By varying the thickness of the outer metal plate, end play can be adjusted. Outer plates are available as follows:

D CLUTCH OUTER PLATE PART NUMBER	PLATE THICKNESS
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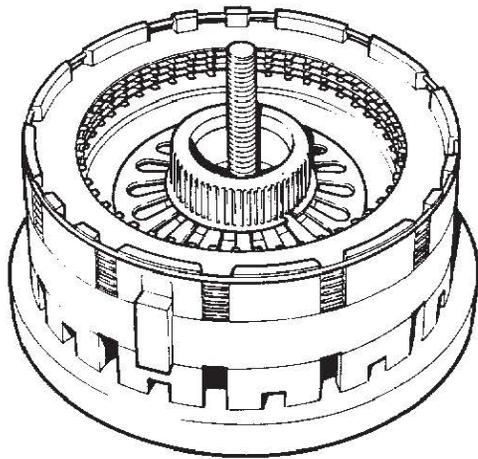
JLM 991	1,2mm
JLM 997	1,5mm
JLM 992	1,8mm
JLM 999	2,1mm

Adjustment procedure:

Locate the C/D clutch assembly onto Service Tool JD 157 base plate with the D clutch uppermost (Fig 1).

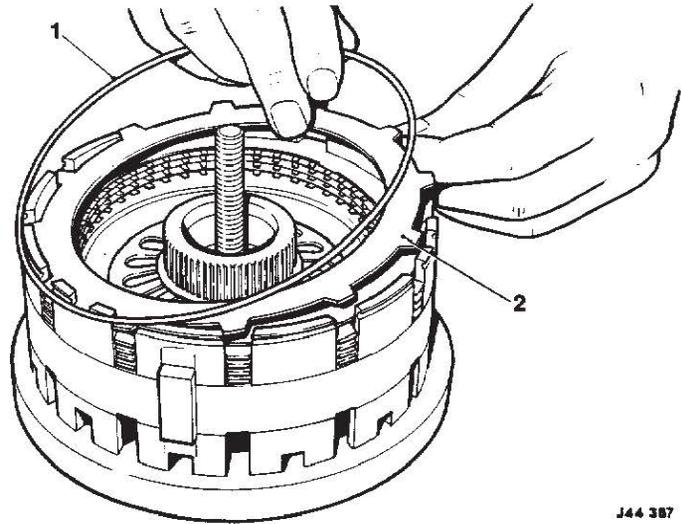
Remove the D clutch snap ring (1 Fig 2).

Remove the outer metal plate (2 Fig 2).



J44 386

FIG 1

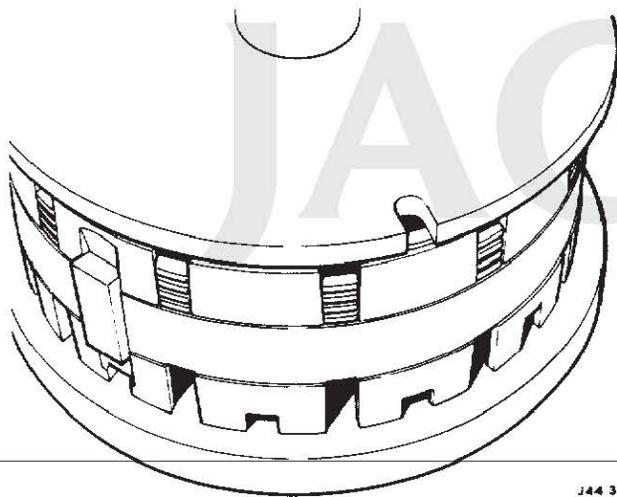


J44 387

FIG 2

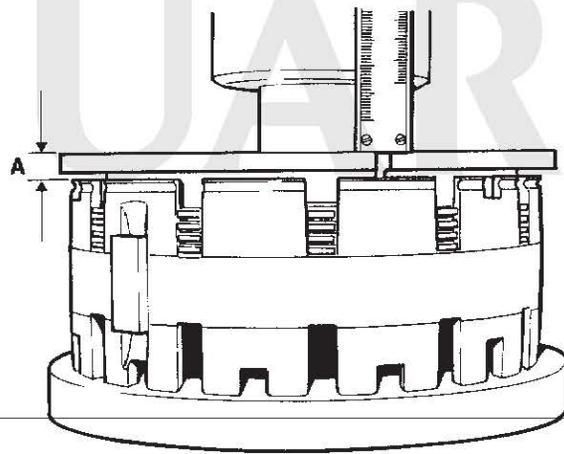
Locate Service Tool JD 157 top plate onto the D clutch. Fit and hand tighten the securing nut.  
**NOTE:** Ensure that the cut-out in the top plate is located above the top of the CD cylinder as shown in Fig 3.

Using a vernier, measure from the upper edge of the top plate of the Service Tool to the top of the cylinder (Fig 4). Note the measurement (A Fig 4).



J44 388

FIG 3



J44 389

FIG 4

Subtract the measurement taken (A) from the thickness of the service tool top plate (15mm) to give dimension B (Fig 5). Refer to the tolerance table below to find the correct thickness of the outer plate. For example:

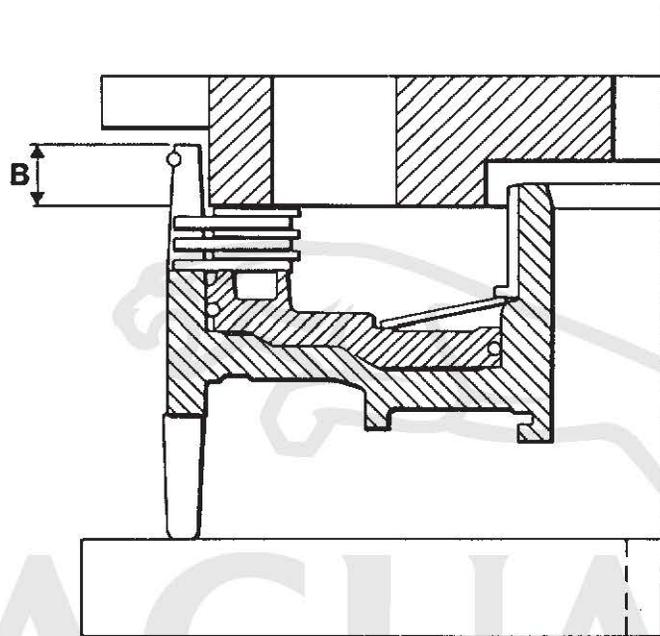
Measurement A taken with outer plate removed = 9,2mm.  
 Thickness of top plate (15mm) less measurement A = 15 - 9,2.  
 Dimension B = 5,8mm.

Refer to the Tolerance Table (Up to 6, 1).  
 Correct outer plate thickness to be fitted = 1,2mm.

TOLERANCE TABLE

Dimension B (mm)	Thickness of outer plate required
Up to 6,2	1,2
Between 6,2 and 6,5	1,5
Between 6,5 and 6,8	1,8
6,8 upwards	2,1

Remove the Service Tool from the C/D clutch assembly. Fit the outer plate and snap ring.



J44 390

FIG 5

A CLUTCH

The A clutch consists of six friction plates (lined), seven metal plates and two spring plates. By varying the thickness of the outer metal plate, end play can be adjusted. Outer plates are available as follows:

A CLUTCH OUTER PLATE PART NUMBER	PLATE THICKNESS
JLM 1064	1,8mm
JLM 1065	1,2mm

Adjustment procedure

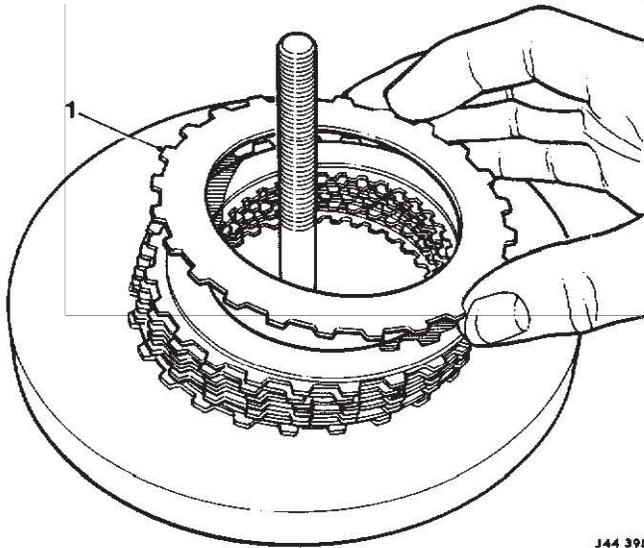
Remove the clutch pack from the A clutch hub.

Remove the two spring plates from either end of the clutch pack.

Locate the A clutch pack on to Service Tool JD 157 base plate (Fig 6).

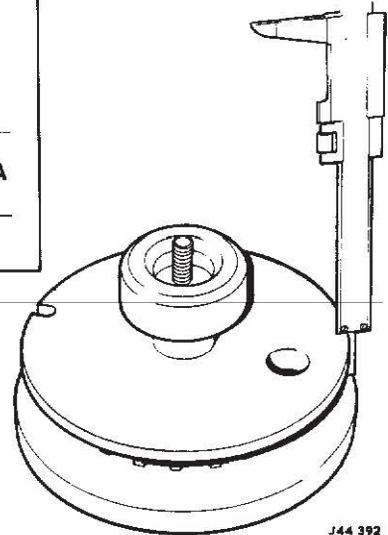
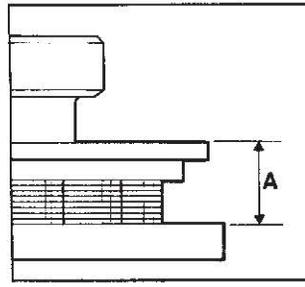
NOTE: There are four thick metal plates and three thin metal plates. The thin plates should be uppermost on the service tool.

Remove the outer (thin) metal plate (1 Fig 6).



J44 391

FIG 6



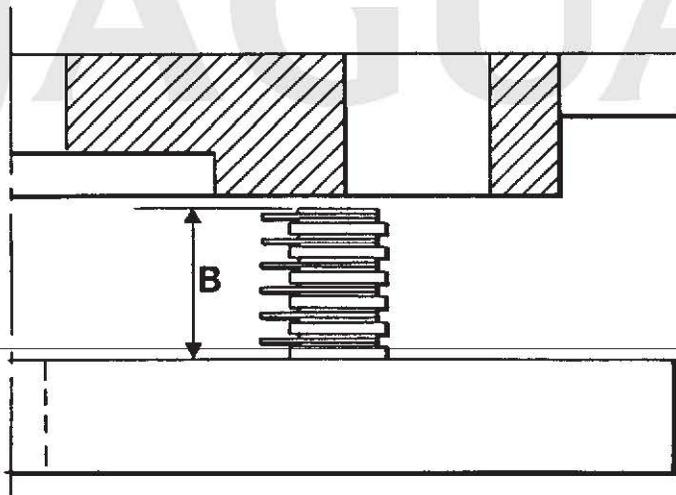
J44 392

FIG 7

Locate Service Tool JD 157 top plate on to the clutch pack. Fit and hand tighten the securing nut.

Using a vernier, measure from the upper edge of the top plate to the bottom of the clutch pack. Note the measurement (A Fig 7).

Subtract the thickness of the service tool top plate (15mm) from the measurement taken (A) to give dimension B (Fig 8).



J44 393

FIG 8

Refer to the tolerance table to find the correct thickness of the outer plate. For example:

Measurement A taken with outer plate removed = 33,6mm.  
 Measurement A less thickness of top plate (15mm) = 33,6 - 15.  
 Dimension B = 18,6mm.

Refer to the Tolerance Table (Up to 19,0).  
 Correct outer plate thickness to be fitted = 1,8mm.

## TOLERANCE TABLE

Dimension B (mm)	Thickness of outer plate required
Up to 19,0	1,8
19,0 upwards	1,2

Remove the Service Tool from the A clutch assembly. Fit the outer plate and two spring plates. Refit the clutch pack to the clutch hub.

NOTE: Ensure that the thick metal plates face inwards towards the piston.

## B CLUTCH

The B clutch consists of four friction plates (lined), five metal plates and one spring plate. Note that the thickness of the metal plates can vary according to transmission unit specifications, two thicknesses are used (1,8mm and 2,1mm). By varying the thickness of the spring plate, end play can be adjusted. Spring plates are available as follows:

B CLUTCH SPRING PLATE PART NUMBER	PLATE THICKNESS
JLM 1893	2,5mm
JLM 1894	2,02mm
JLM 1895	1,5mm

## Adjustment procedure

Remove the clutch pack from the B clutch hub.

Remove the spring plate from the clutch pack.

Locate the B clutch pack onto Service Tool JD 157 base plate (Fig 9).

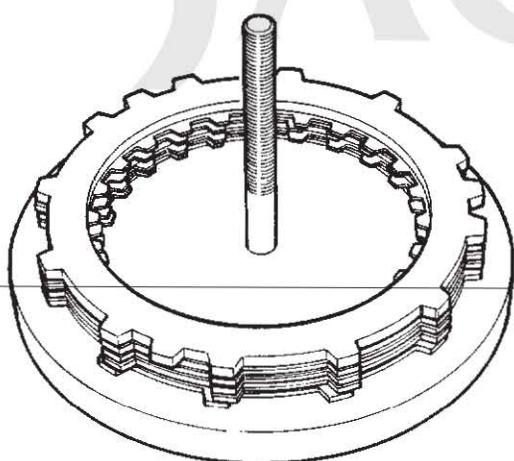


FIG 9

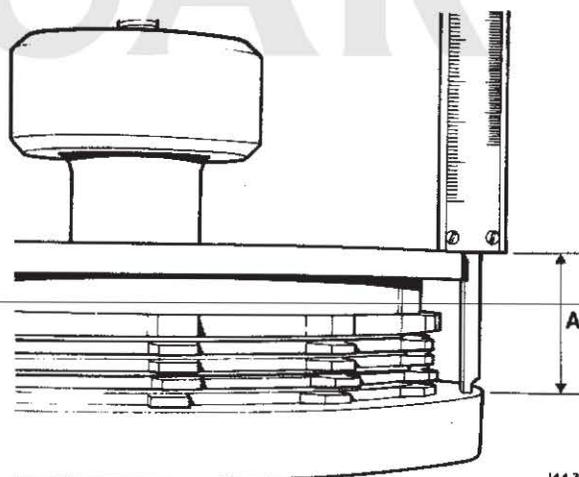


FIG 10

Locate Service Tool JD 157 top plate onto the clutch pack. Fit and hand tighten the securing nut.

Using a vernier, measure from the upper edge of the top plate to the bottom of the clutch pack. Note the measurement (A Fig 10).

Subtract the thickness of the service tool top plate (15mm) from the measurement taken (A) to give dimension B (Fig 11).

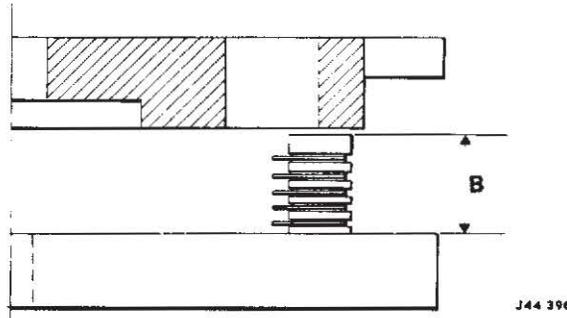


FIG 11

Refer to the tolerance table to find the correct thickness of the spring plate. For example:

Measurement A taken with spring plate removed = 32,2mm.  
 (Note: Clutch pack with 2,1mm metal plates)  
 Measurement A less thickness of top plate (15mm) = 32,2 – 15.  
 Dimension B = 17,2mm.

Refer to the Tolerance Table (Up to 19,20).  
 Correct spring plate thickness to be fitted = 2,02mm.

#### TOLERANCE TABLE

Dimension B (mm)	Thickness of spring plate required
<b>METAL PLATE THICKNESS 1,8mm:</b>	
Up to 18,0	2,02
18,0 upwards	1,5
<b>METAL PLATE THICKNESS 2,1mm:</b>	
Up to 19,20	2,02
19,20 upwards	1,5

Remove the Service Tool from the B clutch assembly. Fit the spring plate. Refit the clutch pack to the clutch hub.

Re-assemble the transmission 44.20.06.  
 Refit the transmission unit 44.20.01.

#### ITEM: 27

### 76 CONVERTIBLE HOOD REPLACEMENT

### XJS CONVERTIBLE

This Bulletin is intended to assist Dealers with replacement of the convertible hood. It also includes the procedure for replacement of the heated back-light.

**Materials Required:** JLM 1588 — Betaseal Repair Kit.  
 Adhesive - Dunlop 1358 or equivalent.

**Special Tools Required:** 2 Suction Pads for back-light fitment.  
 1 Suction Clamp JD 158, for fitment to the rear window during the sealant curing period.  
 1 Wooden Drift for dressing the hood rim — Fig 3.  
 1 Wooden drift for aligning the tensioning cable — Fig 4 (Optional).

**Recommended Special Equipment:**

KM 4105	Vibro Knife
KM 4105-73	Blade
KM 4105-76	Blade
KM 4105-97	Blade
KM 4105-103	Blade
KM 4105-113	Blade

U.K. Supplier: Kent-Moore U.K. Ltd  
Seale Power Corporation  
86 Wharfdale Road  
Tyseley  
Birmingham B 11 2DD

SECTIONS: 1 Back-light Removal  
2 Hood Removal  
3 New Hood Fitment  
4 Back-light Refit

**1. Back-light Removal**

- 1.1 Disconnect heated back-light wiring connectors.
- 1.2 Remove the back-light outer flange rubber, noting that it will be adhered to the glass at each corner.
- 1.3 Remove the aperture inner flange rubber, also adhered.
- 1.4 Using cheesewire, carefully cut out the back-light glass and place onto a soft clean surface.

At this stage, proceed to Operation 2 if the hood is to be replaced, or Operation 4 if the backlight only is to be replaced.

**2. Hood Removal**

- 2.1 Remove the rear quarter trim pads 76-13-12 and rear stowage 76-11-16.
- 2.2 Release the press studs securing the hood interior side curtain straps.
- 2.3 Remove the bolts and release the backlight support brackets.
- 2.4 Release the screws and remove the curtain rod retaining clips. Withdraw the rods and move the curtains aside.
- 2.5 Remove the bolts and release the rear quarter headlining retainer brackets.
- 2.6 Release the front hood locking handles and partially open the hood to the mid-position.
- 2.7 Carefully release the sections of carpet glued around the hood cable mountings. Release the cable locknuts.
- 2.8 Release the screws and remove the hood outer finishers, then withdraw the tensioning cable.
- 2.9 Raise the rear of the hood and carefully release the section of headlining adhered to the body aperture flange.

- 2.10 Release the bolts and remove the operating cylinder pivot brackets (A Fig 1).
- 2.11 Release the bolts securing the hood mountings to the body (B Fig 1).
- 2.12 Select manual position on the pump valve, fold the hood and whilst supporting, release and remove each cylinder upper fixing bolt.  
Note the position of the spacing washers.
- 2.13 Displace the cylinders from the hood brackets and lift the hood from the vehicle.

### 3. New Hood Fitment

- 3.1 Position the hood on the vehicle, locating the pins into the header rail clips.
- 3.2 Fit but do not tighten the two top bolts securing each hood mounting to the body (B Fig 1).
- 3.3 Locate the cylinders to the hood mounting brackets.
- 3.4 Select manual operation on the pump valve, partially open the hood, align the cylinder upper fixings and insert the bolts, **do not tighten**.
- 3.5 Position the cylinder pivot brackets and insert the mounting bolts (A Fig 1).

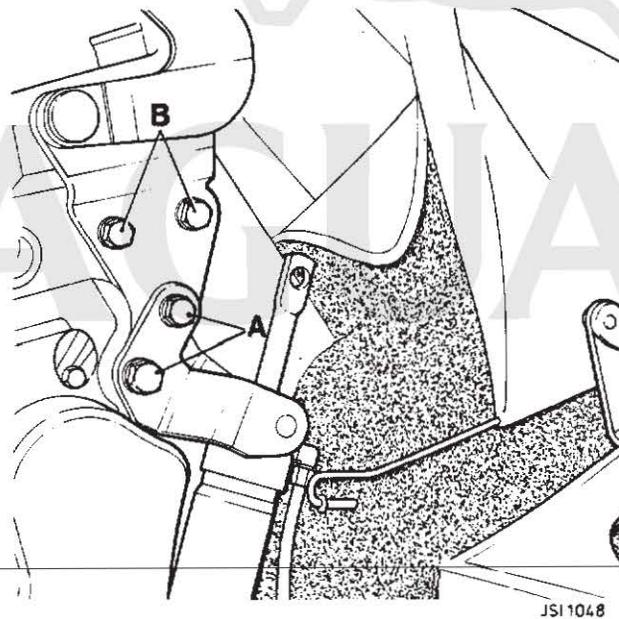
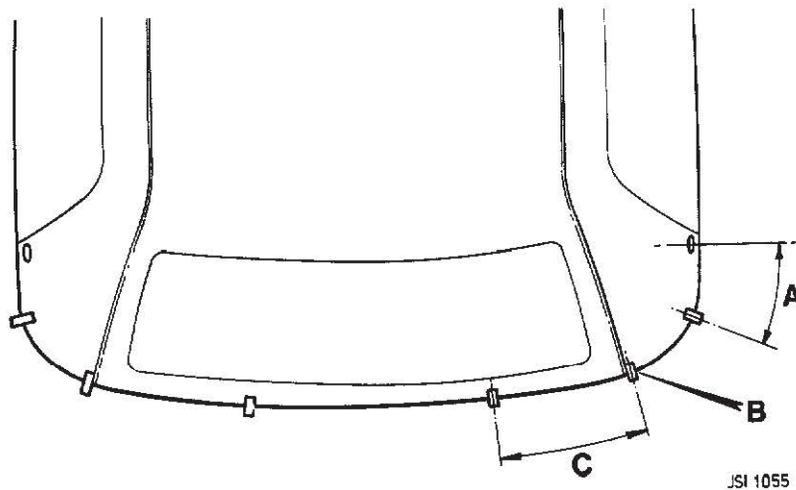


FIG 1

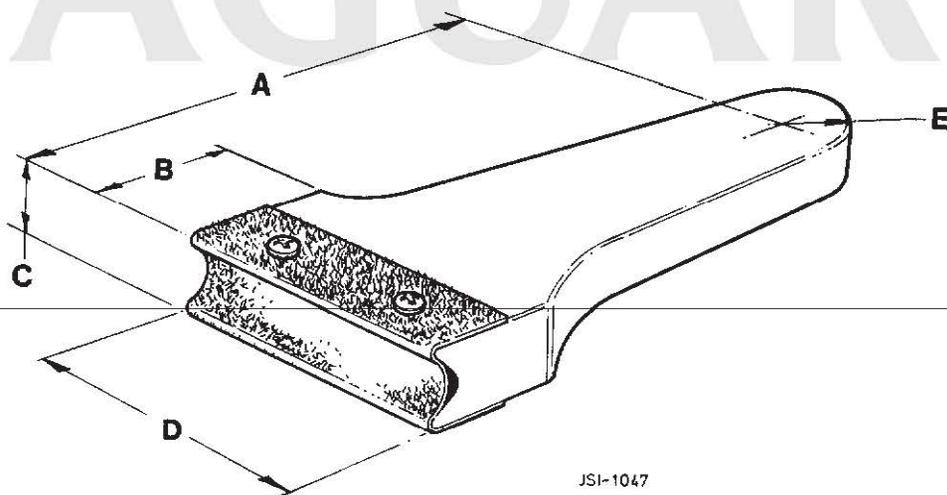
- 3.6 **Fully tighten all bolts.**
- 3.7 Position the backlight support brackets and insert the bolts.  
**Do not tighten.**
- 3.8 Position the rear quarter headlining retainer brackets, insert the bolts and tighten.
- 3.9 Apply adhesive to the edge of the headlining and secure to the body aperture flange.
- 3.10 Select manual operation on the pump valve and fully raise the hood, select electric operation on the pump valve to hold the hood in position.
- 3.11 Position the rear of the hood to the body, thread the cable through the loops and position the loops as indicated (Fig 2).



A = 250 mm (9.75°).  
 B = Outboard of the longitudinal seam.  
 C = 420 mm (16.5°).

FIG 2

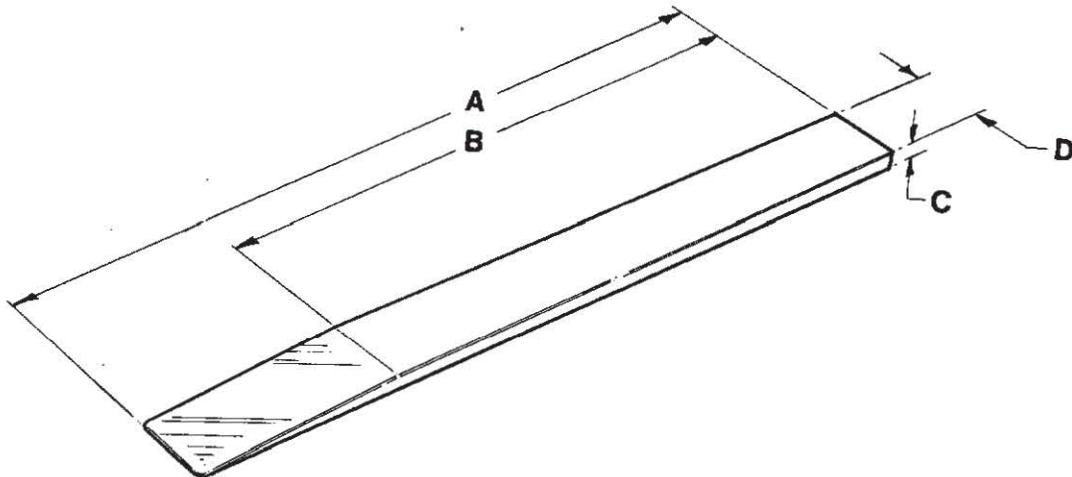
- 3.12 Thread the cable through the hood and into the mounting brackets. Fit the locknuts loosely.
- 3.13 Adjustment of the cable is very important and must be carried out correctly. To carry out the process, two wooden drifts are recommended; these are identified as Tool "A" which is considered essential and Tool "B" which is optional. The tools should be made by the Dealer to the dimensions given.



Tool "A" - Fig 3:	Dimension	A = 135mm, 5.25"
		B = 32mm, 1.25"
		C = 16mm, 0.625"
		D = 65mm, 2.5"

FIG 3

To protect the vehicle paintwork, suitable soft material, i.e. leather or felt should be glued or screwed to the drift as shown.



J11-192

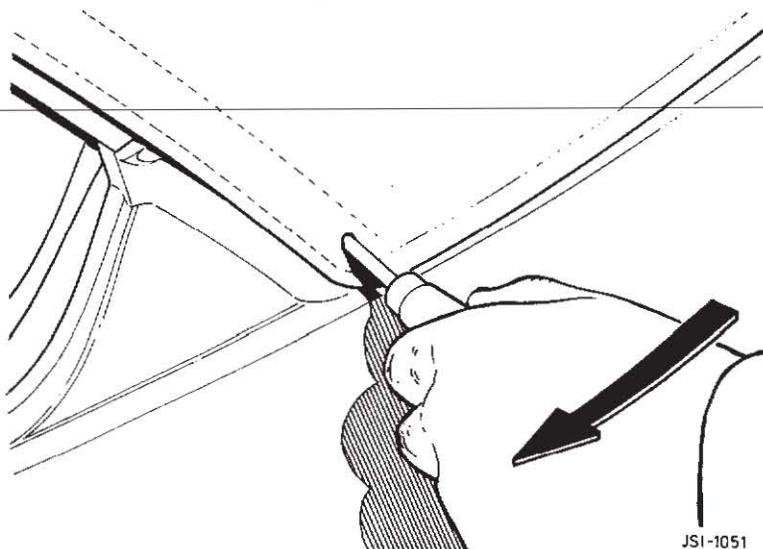
Tool "B" - Fig 4:	Dimension	A = 270mm, 10.5"
		B = 190mm, 7.5"
		C = 6mm, 0.25"
		D = 25mm, 1.00"

FIG 4

Progressively dress the hood rim using Tool "A" whilst tightening the cable locknuts to a torque of 4.5 Nm.

Tool "B" is used to refine the cable positioning and when fitted correctly, the hood should fit neatly to the body flange with the cable hidden.

- 3.14 Fit the exterior hood finishers, initially by aligning the material and using a bradawl to locate the screw hole. Insert the screw and secure. When positioned the hood rim will fit up to the flange of the rear quarter glass seal (Fig 5). CAUTION: Ensure that a rubber cap, BDC 9031, is fitted over the point of each screw to prevent damage to the hood material when in the full open position.



JS1-1051

FIG 5

- 3.15 Apply adhesive to the carpets and secure into position.
- 3.16 Adjust the back-light support brackets to eliminate any wrinkling of the material, tighten the bolts.
- 3.17 Insert the rods into the inner curtains and secure with plastic clips. Secure the side curtain straps.
- 3.18 Refit stowage and lower trim panels.

#### 4. Back-light Refit

- 4.1 After removal of the back-light, it will be necessary to remove some of the old sealant from the aperture flange. This can be achieved by using either a sharp knife or a vibro-knife as recommended by Jaguar Cars. Provided there is good adhesion, a thin even bead of sealant can be left on the flange.
- 4.2 Prepare the glass for glazing by removing any excessive thickness of sealant. A thin even bead of sealant can be left on, provided the adhesion is good.
- 4.3 Apply adhesive and fit the inner flange rubber into the aperture with the joint at the centre of the lower section.
- 4.4 Spirit wipe the aperture flange and brush with Betaseal primer.
- 4.5 Move to the back-light glass and apply adhesive at each corner.
- 4.6 Fit the outer flange rubber to the glass, with the joint at the lower centre.
- 4.7 Fit JD 158 to the glass and spirit wipe the glass to remove contaminants; apply the glass primer by brush or felt pad.
- 4.8 Apply a bead of Betaseal to the glass using the flange rubber as a guide. The bead should be 13-16 mm deep.
- 4.9 Locate the glass into the aperture and fully seat the outer flange rubber into position.
- 4.10 Fit the suction clamps JD 158 inside the vehicle and tension to hold the glass into position during the curing process (minimum 2 hrs).
- 4.11 After the curing period, remove the brackets and refit the wiring connections to the heating element.

Repair Operation No: 76-86-01 Hood Renew including Back-light—Remove and Refit  
Repair Time: 3.4 hrs

Repair Operation No: 76-81-11 Heated Back-light—Remove and Refit.  
Repair Time: 1.05 hrs.

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