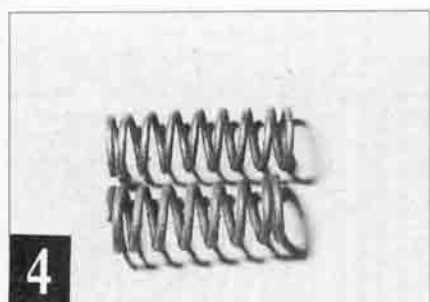
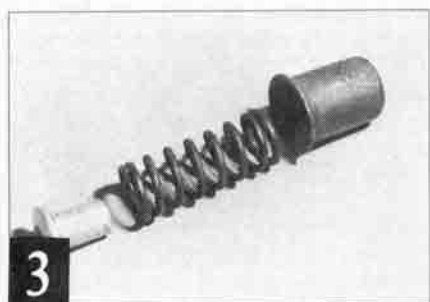
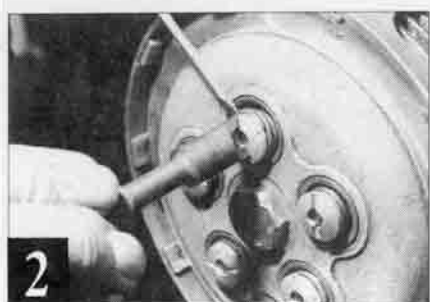
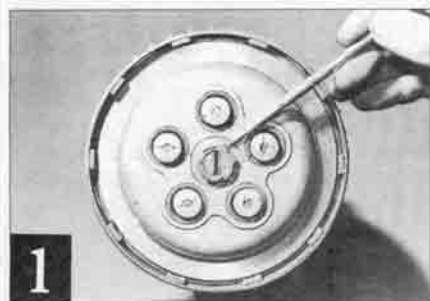


Burman clutch stripdown

DESPITE (or maybe because of) the fact that most riders take their bike's clutch for granted, they manage to perform remarkably well, transmitting power in an atmosphere of hot oil.

As a result of this apparent reliability the clutch on most machines will only be looked at when a complete engine/transmission rebuild is called for. It is then usually discovered that although the clutch was working perfectly well, it is completely worn out and unable to stand up to the demands of a newly rebuilt engine.

This photo-stripdown is of a 1955 AMC single clutch and is intended to indicate the areas to pay particular attention to.



1 Most 'on the road' problems with clutches tend to be caused by this, the pushrod adjuster, not being correctly set up. On most machines the adjustment should be carried out thus:

a) Screw cable adjuster as far as possible into the gearbox for maximum cable slack.

b) With the locknut shown in the picture loosened, screw in the centre adjuster until it just touches the pushrod.

c) Unscrew the adjuster a quarter to half a turn and re-tighten the locknut.

d) Re-adjust the cable to give about 1/8" slack at the handlebar lever.

If your machine has a Burman B52 gearbox ('B52' will be stamped on the outer casing) and, after carrying out the above it produces a 'clonk' when pulling in the clutch lever, this is a sure sign the clutch operating mechanism within the gearbox needs attention.

2 First thing to do when dismantling a clutch is to remove all of the spring retaining nuts, preferably with the special tool shown, though a modified screwdriver will do. If the springs make it difficult to undo these nuts, it helps to lever the springs back a little with a small screwdriver as shown.

3 This shows the complete nut, spring and cup assembly. It is worth checking that all the cups are the same as each other and are in fact the correct items for your bike. If the slot in any of these nuts is badly chewed up it's worth fitting new ones — saving a lot of trouble on re-assembly.

4 As the springs tend to wear with use, check the lengths of each spring against each other and also, if possible, against a new one. If the difference is as great as that shown, replace the whole set. It is a false economy to just replace the ones that appear short.

5 It is now possible to remove all the clutch plates, albeit that is sometimes calls for a little help from either a screwdriver or a couple of small magnets. With all the plates out, check each one carefully. On the friction plates you

Often receiving scant attention, the clutch is often worn out by the time an engine rebuild comes around.

Ken de Groome explains what to watch for on the clutch fitted to AMC machines.

should be looking to see if the inserts are worn down badly, burnt, or soaked in oil. If worn or burnt, replace them. If however, the latter is the case, it is sometimes possible to remove all the oil in a suitable solvent. Again, as with so many other things, if in doubt, the best check is to compare them with new items if possible.

6 The plain steel plates often suffer from corrosion problems. If yours look anything like the one in the photograph, new ones are essential but check they are available before throwing the old ones away. On both plain steel and friction plates, check also that they are flat and free from burrs around their inner and outer 'dogs'.

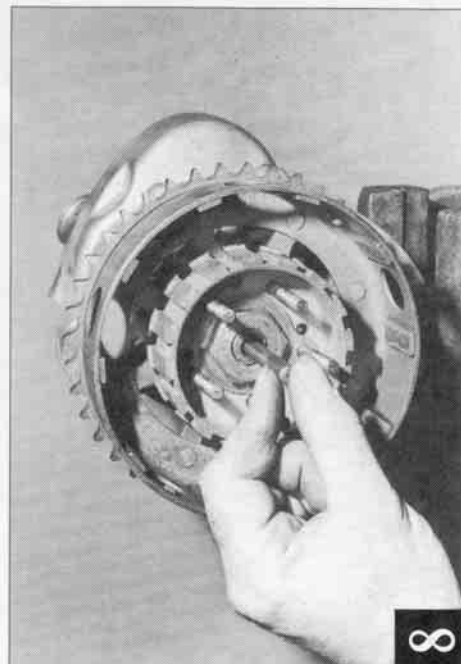
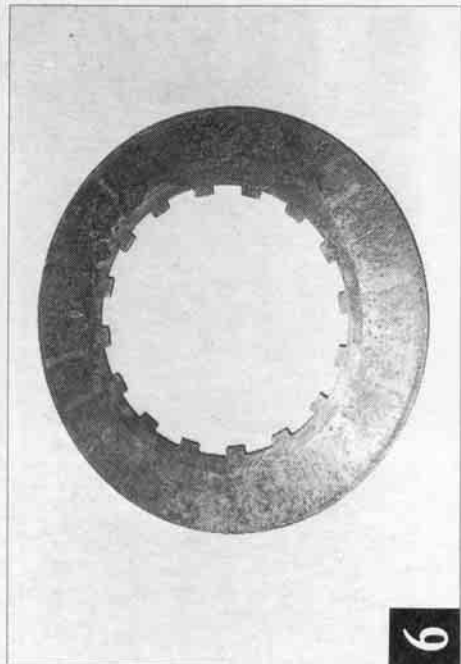
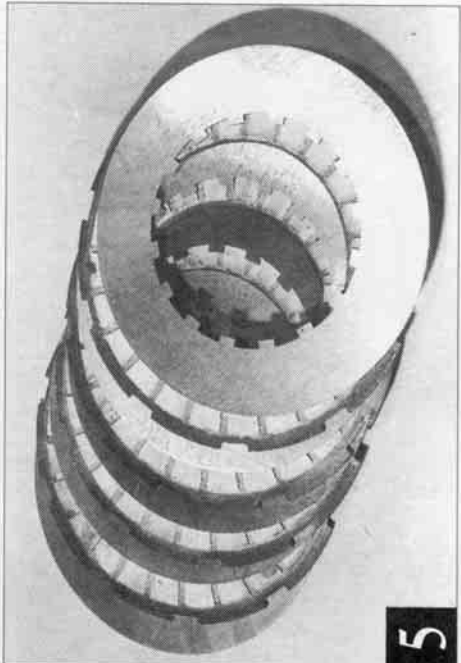
7 The clutch drum will often exhibit wear marks such as these. In this particular case, replacement needed but if wear is not too extreme, careful work with the file may, within reason, save the day. Incidentally, if the plates are good in all other respects (apart from burrs around the dogs) these can also be cleaned up with a file — again, within reason.

8 It is convenient to remove the pushrod at this stage and inspect it for straightness and wear. The easiest way to check it is straight is simply by rolling it along a *dead flat* surface. If it is bent a new one should be fitted, although it is possible, with care, to straighten one. As for wear, a ball bearing is often fitted at one or both ends and this can wear a 'dent' in either end which, if only slight, can be tidied up with a grinder. In the event of the pushrod being beyond repair and a new one unavailable, one can be made from a length of silver steel of the right diameter by cutting to length, heating both ends to cherry red and plunging in cold water.

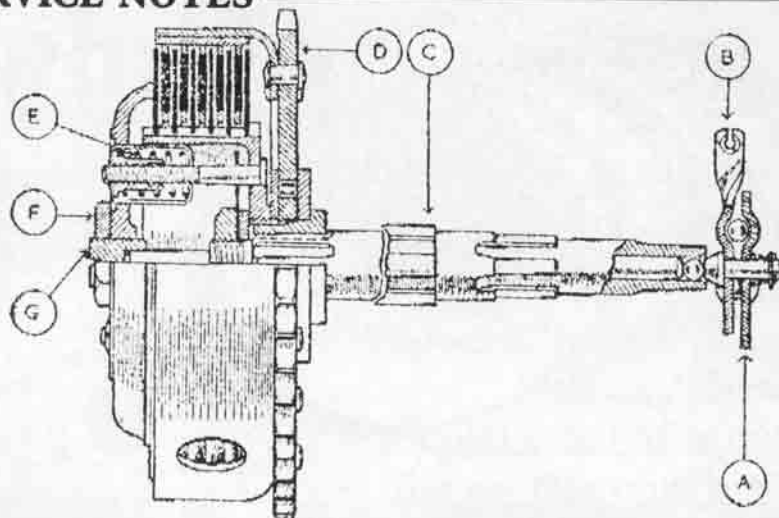
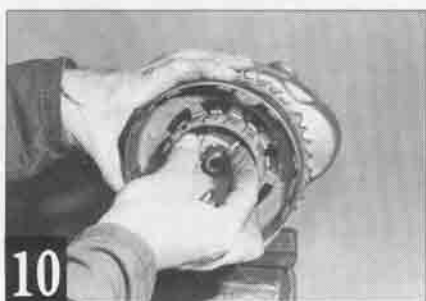
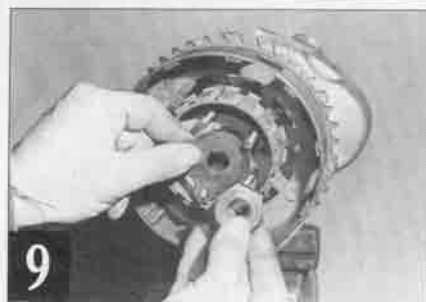
9 After bending back the tab washer, if fitted, undo the centre clutch retaining nut and remove both carefully. The tab washer can often be re-used providing it is not badly damaged by bending up a different part of it on re-assembly.

10 If you have not already done so, it is now worth placing a tray

SERVICE NOTES

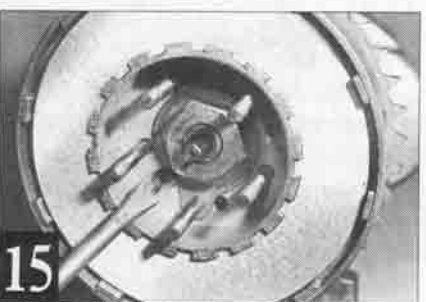
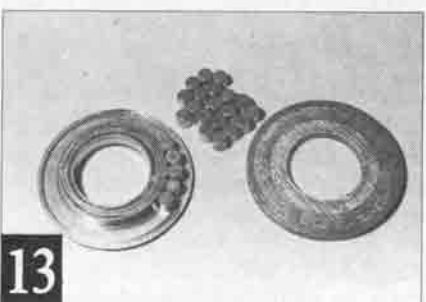
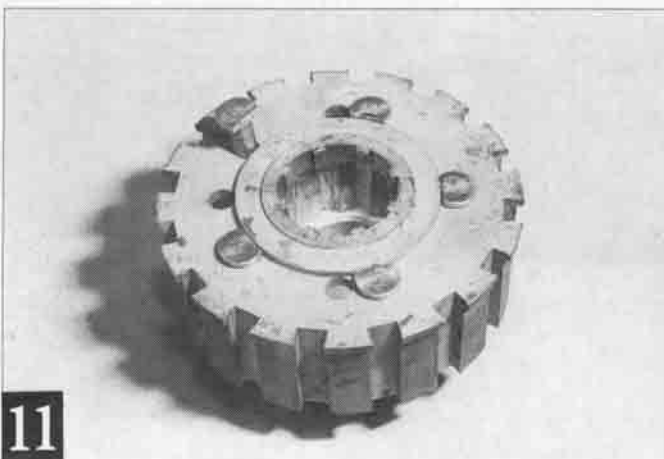


SERVICE NOTES



- | | | | |
|---|--------------------------------------|---|---|
| A | FIXED PLATE INTERNAL ACTUATING PLATE | E | CLUTCH SPRING |
| B | CLUTCH INTERNAL OPERATING LEVER. | F | LOCK NUT FOR CLUTCH ROD THRUST CUP |
| C | GEAR BOX MAINSHAFT | G | THRUST CUP (in clutch pressure plate) FOR CLUTCH ROD. |
| D | CLUTCH SPROCKET | | |

Clutch, gearbox main shaft and clutch operating mechanism.



off its splines.

11 If the clutch retaining nut has at some time been allowed to work loose, quite serious wear may have developed on the splines in the clutch centre. Only real cure here is a replacement which might be hard to find. Have a good look at the clutch spring studs for damage of any sort. On re-assembly, be very careful that the shoulders of these studs do not become trapped. This is easily avoided if it re-assembled in the same way in which it was removed.

12 This is where the tray comes into play. If the entire centre bearing assembly has not already fallen out and its rollers run off all over the place, carefully remove the outer thrust washer to reveal the rollers behind. The clutch drum can now be removed at which point the rollers will now fall into the tray beneath.

13 Examine all the components of the inner bearing, including the outer race which is fitted into the middle of the drum. Quite a lot of slack can be allowed in this bearing assembly as it only does anything when the clutch is disengaged. What you should be looking for is severe pitting and/or signs of the case-hardening breaking up.

14 If you decide to replace the rollers, be careful. On Burman and some other clutches, they are not standard $\frac{1}{4}$ "x $\frac{1}{4}$ " rollers. If you can't find the correct size it should not be too difficult to find someone to grind a little off the end of some standard rollers — this is really important as the clutch will lock up solid if not dealt with properly.

15 Re-assembly is reasonably straightforward but do not forget to bend over the tab washer after tightening the centre nut up fully. This nut (check your manual) is usually tightened up to something around 70ft.lbs.

• Ken de Groome specialises in AJS and Matchless singles and can be contacted on 0945 870382.

beneath the clutch as with most of them, Burman in particular, bits and pieces start dropping out and getting lost. Take hold of the outer drum to keep it in place, then, grasping the studs, ease the centre