

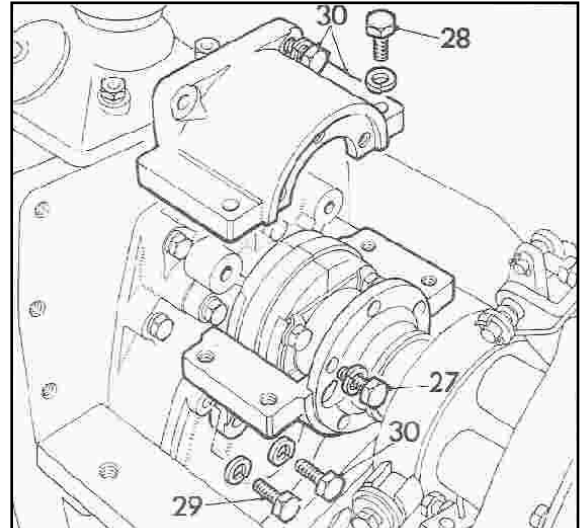
Nuffield and Middleweight Leyland Tractor - 11 inch - Double Clutch Overhaul

Part 1 - Clutch Removal and Dismantling

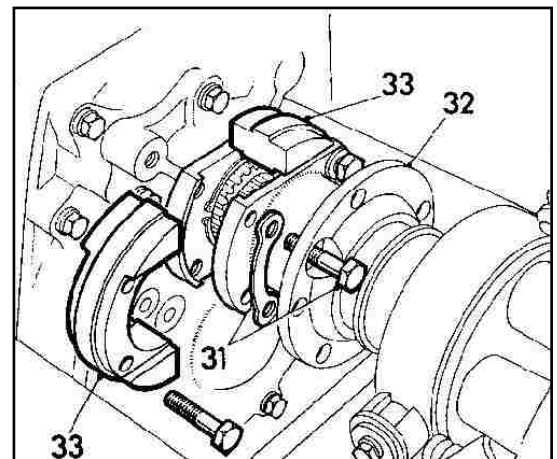
Due to the many different configurations of cabled and non-cabled tractors this article assumes that the clutch housing has been removed and the clutch assembly exposed.

Note; For 253, 245 & 502 models, which are 'Split' to gain access to the clutch, go to operation 15.

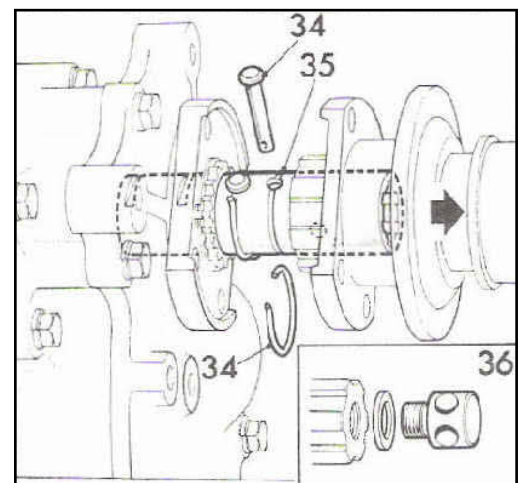
1. Remove the five bolts securing the clutch withdrawal carrier to the carrier bracket assembly (27).
2. Remove the four bolts retaining the the two halves of the carrier bracket assembly together (28).
3. Remove two bolts from the transfer gear housing cover adjacent to the lower half of the carrier bracket assembly (29). This is to allow easier removal of the carrier bracket.
4. Remove the four bolts retaining the carrier bracket assembly halves to the transfer gear housing, and withdraw the two halves of the carrier bracket (30).



5. Bend back the locking plates and remove the four bolts securing the power take-off drive flange to the driven flange (31). Note; Position the hole in the flange of the clutch withdrawal carrier over each bolt in turn as they are removed. Also later models use socket headed bolts locked with Loctite.
6. Move the driving flange slightly forward (32).
7. Remove the P.T.O. driving dog, which is numbered for correct assembly. Note; The numbers face towards the engine (33).



8. Remove the retaining rings and withdraw the retaining pins which couple the main and primary shafts together (34).
9. Move the driving sleeve forward (35). Note; There are two 'Cut outs' in the sleeve to assist in moving the sleeve with a screwdriver.
10. Unscrew the driving sleeve plugs from the main transmission and primary shafts (36).

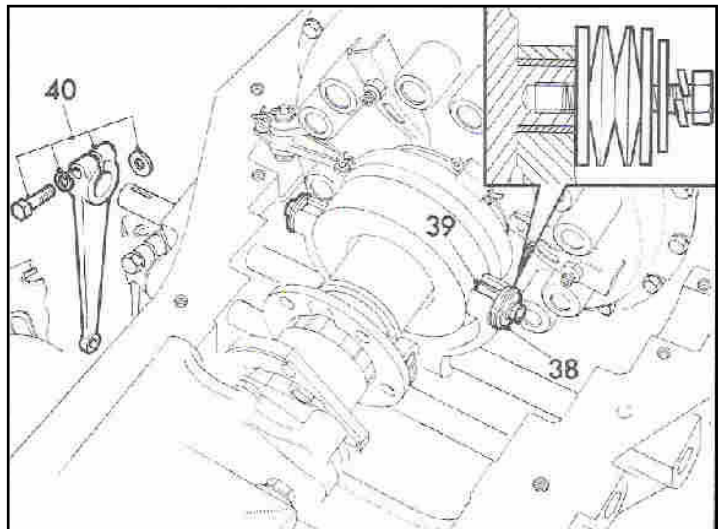


11. With a suitable tool mark the relevant positions of the clutch and flywheel.

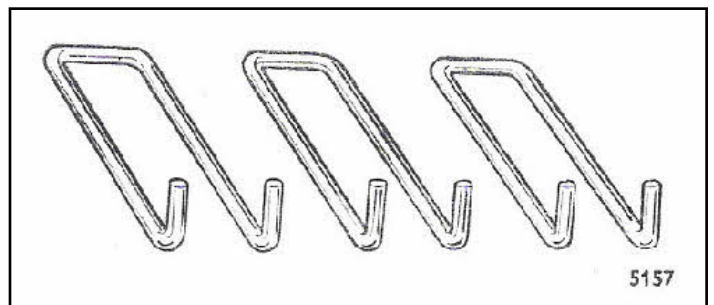
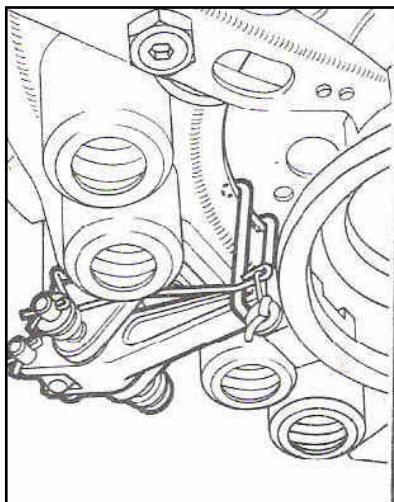
12. Remove the setscrews and washer packs from the main clutch release bearing fork (38).

13. With a small screwdriver, remove the bushes from clutch release bearing fork (39).

14. Remove the pinch-bolt and key and remove the lever from the main clutch cross-shaft (40).



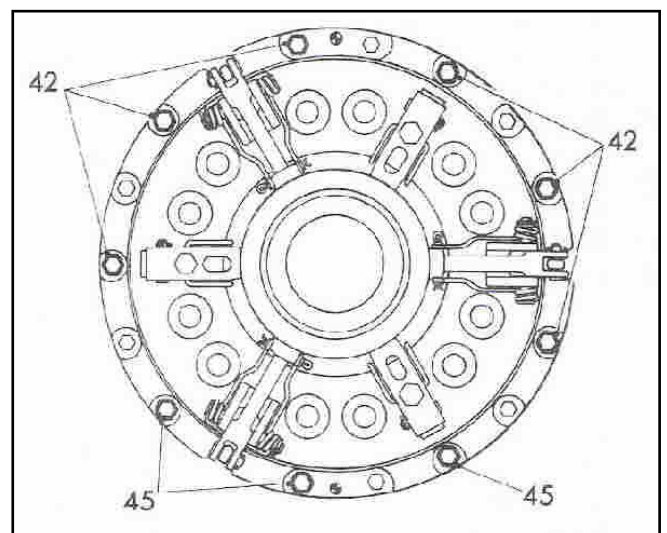
15. If they are available place the three retaining staples (Tool 18G 498) over the three main clutch release levers and hook the end of each staple beneath the independent clutch cover in order to retain the levers depressed (41). If the correct staples are not available they can be made from sections of thick wire as per drawing. Take care there is a great spring force to be held. It is not possible to remove the clutch assembly without retaining the springs due to excessive expansion of the clutch assembly.



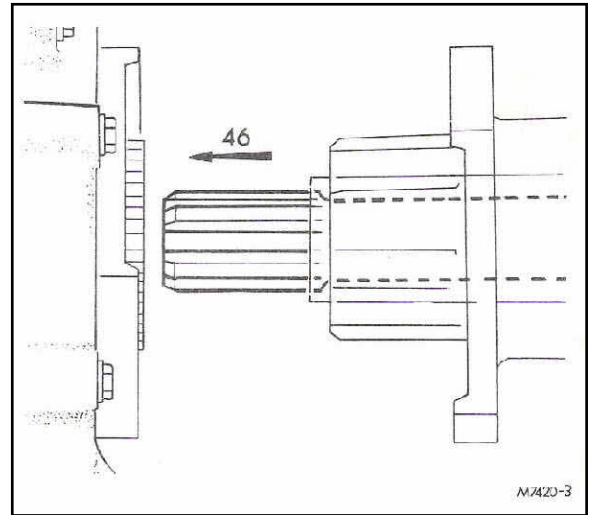
16. Remove the six setscrews retaining the clutch to the flywheel that are accessible (42).

17. Turn the engine to gain access to the three remaining setscrews and attach a suitable lifting eye to the clutch.

18. Position a suitable lifting device to the lifting eye and take the weight of the clutch. Note; The clutch is very heavy and the edges of the castings are very sharp, be careful of your fingers!



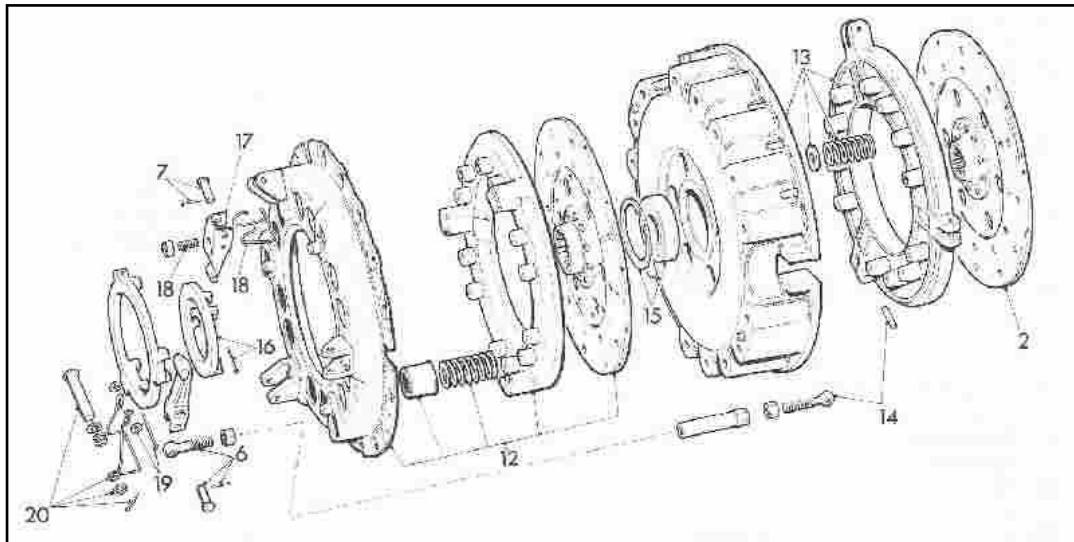
19. Remove the three remaining setscrews retaining the clutch to the flywheel (45).
20. Withdraw the transmission shaft fully rearward to clear the spigot (Pilot) bearing in the flywheel (46).
21. Lift out the clutch assembly complete with the drive shaft assembly.
22. Remove the driving sleeve, flange and main transmission shaft.
23. Remove the circlip from the P.T.O. transmission shaft and withdraw the sleeve.



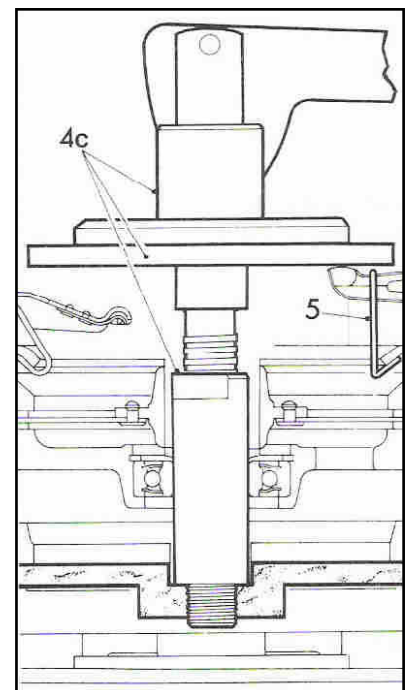
Note; On 253/245/502 models the drive shafts remain attached to the transmission.

Dismantling the clutch assembly.

1. Remove the main clutch driven plate (2).



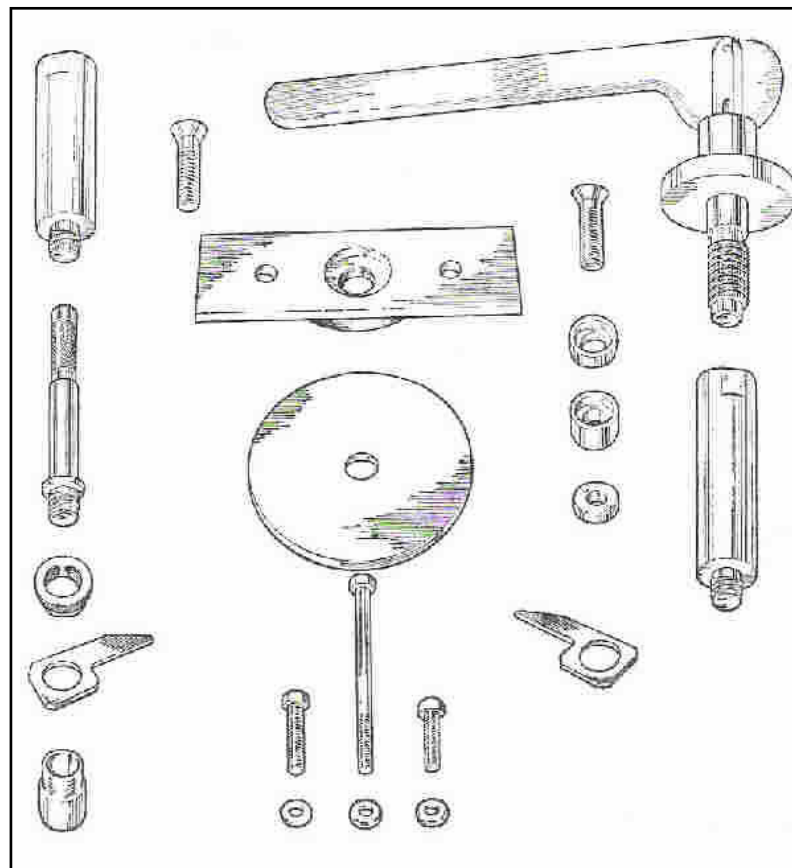
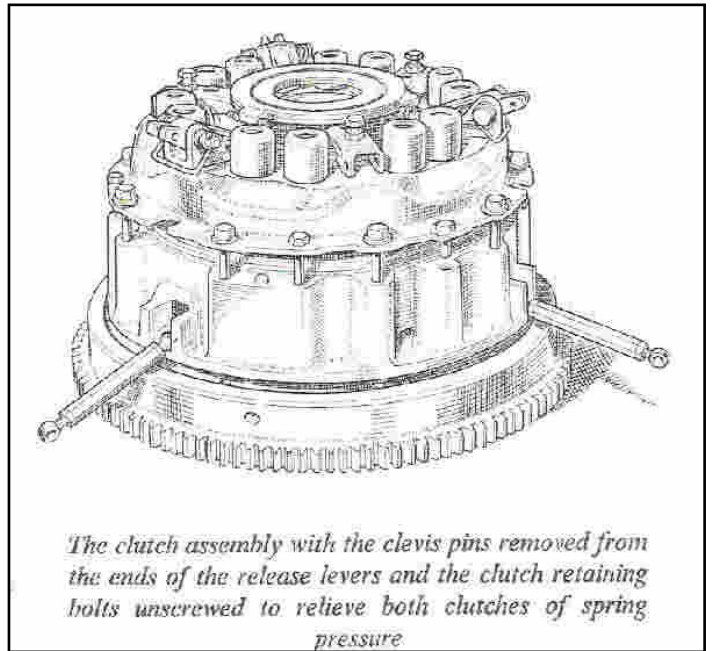
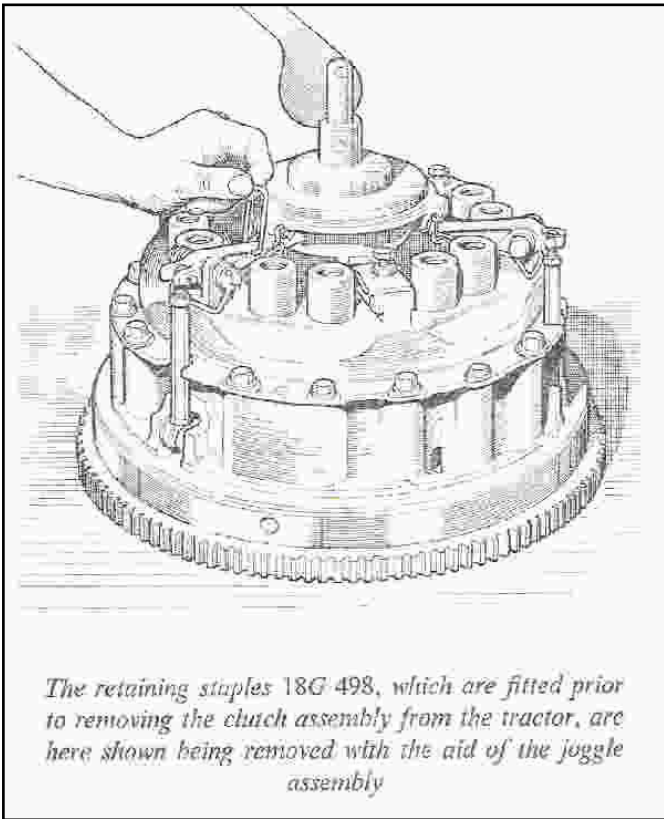
2. Mark the position of the main clutch cover to main pressure plate and P.T.O. Pressure plate to P.T.O. Clutch cover for reassembly.
3. **If available**, and using the flywheel off the engine as a base plate, assemble the clutch gauging fixture tool 18G 563 E as follows; (See Appendix)
 - A. Fit the bridge plate to the flywheel with the boss facing down and place the four spacers (code 3) at equal distance around the pressure face of the flywheel.
 - B. Fit the clutch to the flywheel, without the driven plate, using the nine long bolts.
 - C. Fit the long spacer adaptor, platform and lever assembly (4C)



4. Compress the main levers and remove the retaining staples. Remove the lever and platform (5). (See Appendix)

5. Remove all the various clevis pins from the main and P.T.O. release levers.
6. Replace three of the six bolts securing the P.T.O. clutch cover to the main clutch cover with three 32 mm (1.25 in) UNF setscrews and plain washers, screw into the full depth.
7. Unscrew the nine long bolts half a turn at a time until the main clutch is free from spring pressure.
8. Unscrew the three standard P.T.O. clutch cover bolts half a turn at a time until the P.T.O. clutch cover contacts the three bolts inserted in operation 6.
9. Remove the remaining three long setscrews half a turn at a time until both clutches are free from spring pressure. (See Appendix)
10. Dismantle all the various remaining parts of the clutch.
11. **If, as is likely, the clutch gauging fixture tool 18G 563 E is not available you will need to obtain nine bolts 19 mm (0.75 in) longer than the standard clutch retaining bolts, four circular spacers 25.4 mm (1 in) in diameter and 8.38 mm (0.330 in) deep and three bolts 12.7 mm (0.5 in) longer than the P.T.O. clutch cover bolts. Without these the clutch will be very difficult to dismantle. If a press is available this can be used to compress the clutch.**
12. Place the spacers on the flywheel and bolt the clutch assembly to it with the longer bolts. Remove the three staples and dismantle the clutch as described in operations 7, 8, 9 & 10.

Appendix



Contents of Gauging Fixture 18G 563 E