Nuffield and Middleweight Leyland Tractor - 11 inch - Double Clutch Overhaul
Part 2 - Re-Assembling and Adjustment

Re-assembling the clutch assembly using the gauging fixture.

1. As re-assembly takes place lightly lubricate all pins etc. with high melting point grease. (Duckham's KG24) Ensure all components are fit for use, replace worn or damaged parts as required. Check the 'Free' length of the springs. (See Data on page 3)

2. Re-assemble the clutch in the reverse order of dismantling and place four spacers equally around the flywheel and a further four spacers around the P.T.O. pressure face of the main clutch. (these temporally replace the P.T.O. drive plate). Note; The fibre washers **MUST** be fitted to the main clutch springs to prevent heat from the P.T.O. clutch affecting the springs. Align all the 'Marks' used to 'Position' the various components.

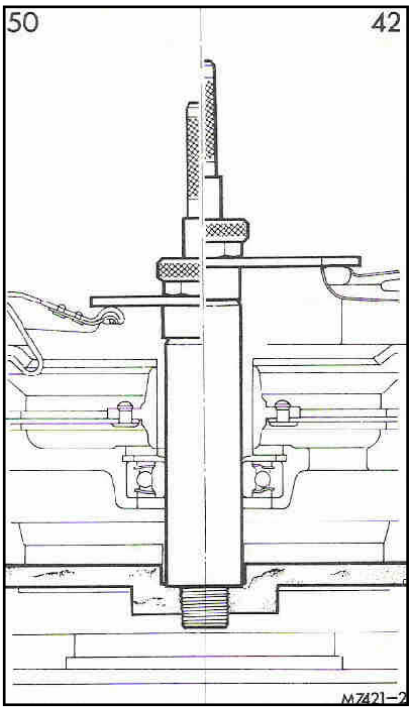
3. Bolt the complete clutch assembly to the flywheel using the special long bolts used to dismantle the clutch.

4. Refit the lever and platform, then operate the lever several times to settle the main clutch components.

5. Fit the long central pillar, spacer adaptor, gauge finger body and long gauge finger (42).

6. Adjust the turnbuckles until the main clutch release plate is just touching the gauge finger. Lock the lock-nuts. (See appendix)

7. Repeat the process, using the short central pillar and short finger, and adjust the release lever adjusting screws and lock-nuts until the P.T.O. release plate is just touching the gauge finger, Lock the lock nuts (50). (See Appendix)



8. Remove the P.T.O. clutch cover assembly and remove the four spacers. Fit the P.T.O. driven plate using the centralising tool.

9. Refit the P.T.O. clutch cover assembly. Refit the three retaining staples. Remove complete clutch assembly from the flywheel, refit the various drive shafts etc and the main clutch drive plate. Refit flywheel to the engine and replace the clutch in the reverse order of removal.

Re-assembling the clutch assembly without the gauging fixture.

Assembling and adjusting the P.T.O. clutch

1 It is essential that all major components are returned to their original positions in order that the balance of the clutch may be preserved. It will be necessary to lubricate the pins and sliding parts with Duckham's KG24 grease. If available a suitable press may be used to compress the clutch assembly during the re-assembly process. Ensure all components are in a serviceable condition, renew worn or damaged parts. Check the 'Free' length of the pressure springs. (See data on page 3)

2. Assembly of the clutch is carried out in two stages, first the P.T.O. clutch then the main drive clutch.

3. Place the four spacers, described in operation 11 on page 4 of Part 1 - Double Clutch Removal, on the main clutch drive cover to take up the space normally occupied by the P.T.O. driven plate. Place a straight-edge approximately 203 mm (8 in) long on the clamping surface thus bridging the central recess in the cover.

4. Assemble the clutch components, greasing the lugs. Bolt the clutch cover to the main clutch cover using the three longer bolts evenly spaced, and turn a little at a time to avoid distortion. If a press is being used arrange a bridge of wooden blocks on the cover (as in dismantling).

5. Assemble the anti-rattle springs, pins, release lever adjusting screws, release levers, release plate and split pins to the appropriate pressure plate lugs. Grease the various pins and seats.

6. Operate the clutch a few times to settle the parts.

7. While the clutch is compressed adjust the release lever adjusting screws until the distance from the clamping surface to the outer face of the release lever plate is 6.37 to 6.32 cm (2.51 to 2.49 in). Since it is not possible to measure directly from the clamping surface it is necessary to measure from the straight-edge now in position, subtracting the thickness of the straight-edge from the adjustment figure. (A commercially available Depth Gauge is ideal for this adjustment)

8. Release the clamping pressure or remove the long bolts to separate the two covers. Remove the straight-edge and spacers. Position the P.T.O. driven plate on the main clutch cover, using the independent transmission shaft to centralize the plate. Bolt the P.T.O. clutch cover to the main clutch cover using the original six blots.

Assembling and adjusting the main drive clutch

1. Place the four spacers, described in operation 3 on this page, on to the flywheel to take up the space normally occupied by the main driven plate. Place a straight-edge approximately 203 mm (8 in) long on the clamping surface thus bridging the central recess in the cover.

2. Assemble the clutch components ensuring the insulating washers are fitted to the top of the springs and grease the lugs. Bolt the clutch assembly to the flywheel using three of the longer bolts, and turn a little at a time to avoid distortion. Insert and tighten six of the original bolts, remove the three longer bolts. If a press is being used arrange a bridge of wooden blocks on the cover (as in dismantling).

3. Assemble the anti-rattle springs, pins, turnbuckles, release levers, release plate and split pins to the appropriate pressure plate lugs. Grease the various pins and seats.

4. Operate the clutch a few times to settle the parts.

5. Whilst the clutch is compressed adjust the release levers by slackening the lock nuts and turning the turnbuckles (Right hand and Left hand threads) in the appropriate direction until the distance from the clamping surface of the plate is 16.08 to 16.03 cm (6.33 to 6.31 in). Since it’s not possible to measure directly from the clamping surface it will be necessary to measure from the straight-edge previously positioned on the surface, remembering to subtract the thickness of the straight-edge from the adjustment figure.

6. Operate the clutch several times, check again, and re-adjust if necessary. Tighten the lock nuts. Replace the three staples over the three release levers and clip them under the P.T.O. clutch casing before removing the clutch assembly from the spare flywheel.

7. Refit the various drive shafts etc and the main clutch drive plate. Refit flywheel to the engine and replace the clutch in the reverse order of removal.

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

Note; Each clutch must be adjusted using the spacers, and not with the drive plates in position!

Data:-

Main Clutch

Pressure Springs	Colour - Light Blue/White
Spring free length	49.2 mm (1.93 in)
Spring fitted length	35.82 mm (1.41 in)

P.T.O. Clutch

Pressure Springs	Colour - Cream
Spring free length	68.07 mm (2.68 in)
Spring fitted length	42.88 mm (1.68 in)

Torque settings

BMC & Leyland engine

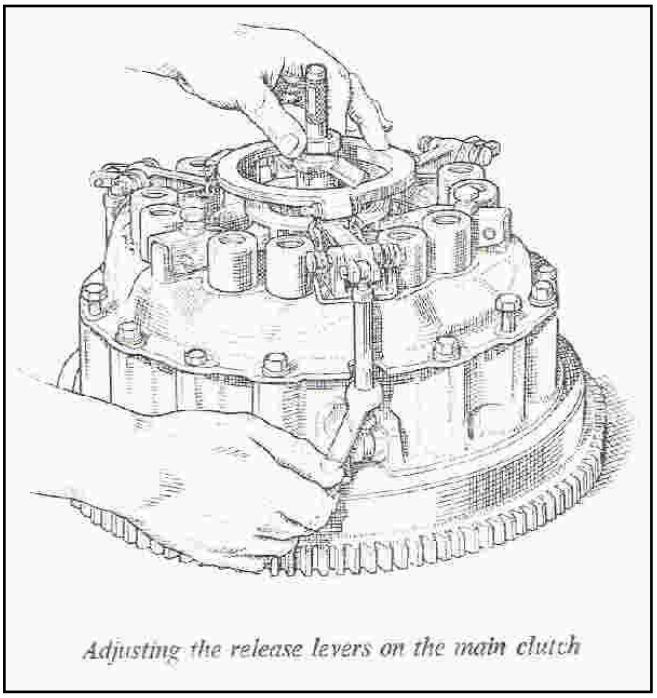
Flywheel	13.8 kgf m (100 lbf ft)

Perkins engine

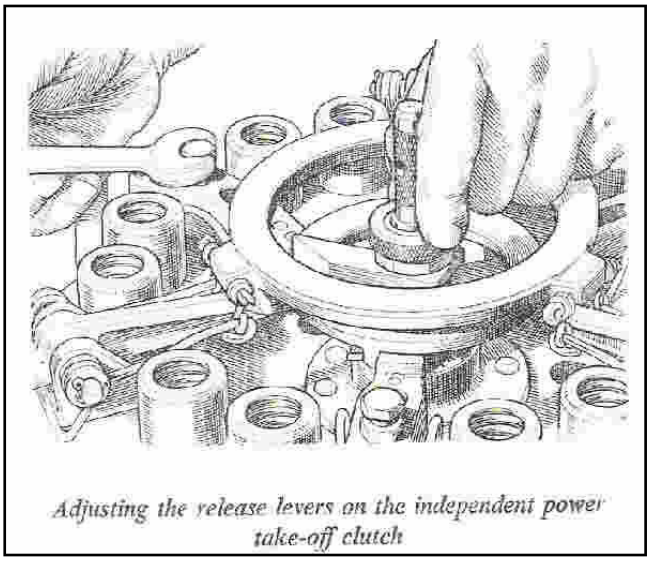
Flywheel	11 kgf m (80 lbf ft)

Note; A similar clutch is fitted to certain David Brown tractors, it is <u>NOT</u> the same and will fail prematurely if used in place of the correct Nuffield/Leyland unit.

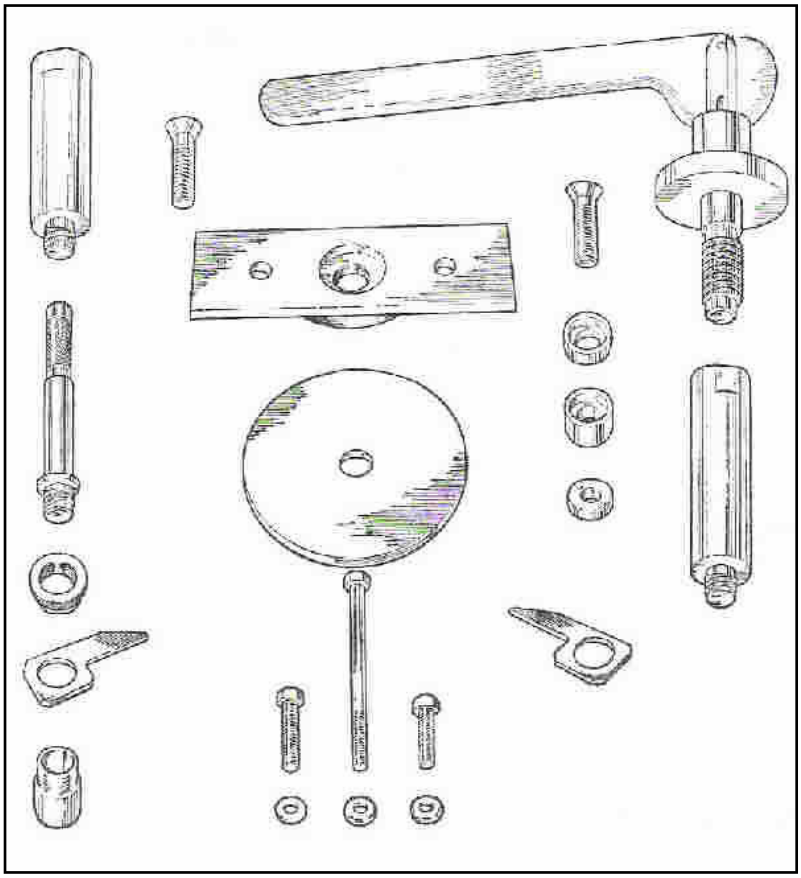
Appendix



Adjusting the release levers on the main clutch



Adjusting the release levers on the independent power take-off clutch



Contents of Gauging Fixture 18G 563 E