



## Service Bulletin

File GE-10-103

Subject Clutch Adjustment –  
1250, 1250-A, 1255,  
1265, 1270, 1355, 1365,  
1370, 1450, 1465 &  
1470 Tractors

Date 3-18-76

Page 1 of 10

### Rick's Agri-Parts

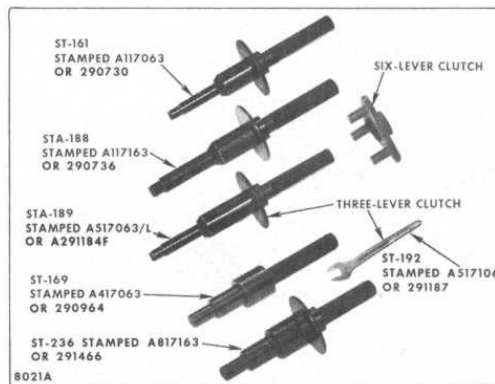


Fig. 1 Special Tools

THIS BULLETIN SUPERSEDES AND CANCELS SERVICE BULLETIN 430 386 (FILE B & Q).

### SERVICE INFORMATION

Current publications may not clearly define proper clutch adjustment on 1250, 1250-A, 1255, 1265, 1270, 1355, 1365, 1370, 1450, 1465 and 1470 tractors.

Following information outlines special clutch tool requirements, specifications and adjustment procedures for subject tractors.

### SPECIAL TOOLS

Refer to Figures 1 and 2.

| Tool Number | Description                                  | Tractor Used On |        |      |      |      |      |      |      |
|-------------|--|-----------------|--------|------|------|------|------|------|------|
|             |  | 1250            | 1250-A | 1255 | 1265 | 1365 | 1450 | 1465 | 1470 |
| ST-161      | Alignment Shaft W/Ring                       | x               |        |      |      |      |      |      |      |
| ST-169      | Alignment Shaft                              |                 |        |      |      |      |      |      |      |
| ST-170      | Disassembly, Assembly and Adjustment Fixture | x               | x      | x    | x    | x    | x    | x    | x    |
| STA-188     | Alignment Shaft W/Ring                       |                 | x      | x    |      |      |      |      |      |
| STA-189     | Alignment Shaft W/Ring and Triangular Gauge  |                 |        |      |      | x*   |      |      |      |
| ST-192      | Lock Nut Wrench                              |                 |        |      |      | x**  |      |      |      |
| ST-236      | Alignment Shaft W/Ring                       |                 |        |      |      |      |      |      | x    |

\*Ring used with three-lever clutch, triangular gauge used with six-lever clutch.

\*\*Lock nut wrench used with three-lever clutch.

PARTS REPLACEMENT OR REPAIR AT COMPANY EXPENSE IS NOT AUTHORIZED UNLESS SUCH POLICY IS STATED.

GE-10-103  
2 of 10

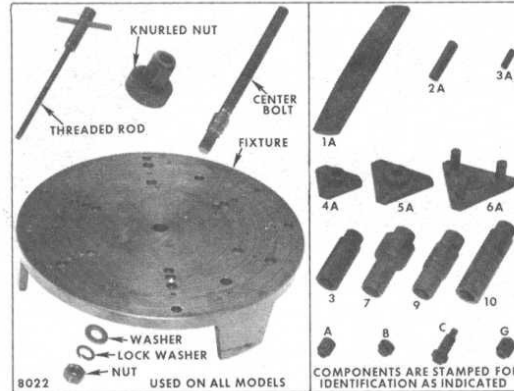


Fig. 2 ST-170 Fixture and Components (A711063/68B)

Components of ST-170 (Fig. 2) are used as follows:

| TRACTOR MODEL      | COMPONENTS REQUIRED |              |              |               |              |
|--------------------|---------------------|--------------|--------------|---------------|--------------|
|                    | Cross Bar           | Rod Spacer*  | Gauge        | Center Spacer | Side Spacer* |
| 1250               |                     | 2A(A292345F) | 4A(A292346E) | 3(A292338F)   | A(A292348F)  |
| 1250-A             |                     |              | 4A(A292346E) | 9(A291297F)   | G(A292353F)  |
| 1255, 1265, 1270   |                     |              | 4A(A292346E) | 9(A291297F)   | G(A292353F)  |
| 1355, 1365, 1370   |                     |              |              |               |              |
| Three-Lever Clutch |                     | 3A(A291293F) | 5A(A292347F) | 10(A292342F)  | B(A292349F)  |
| Six-Lever Clutch   |                     | (A292351F)   | 6A(A291299F) | 10(A292342F)  | B(A292349F)  |
| 1450               | 1A(A292343F)        |              | 4A(A292346E) | 7(A291295F)   | C(A292350F)  |
| 1465, 1470         |                     | (A290563F)   | 5A(A292347F) | (A291294F)    | (A292349F)   |

\*Three (3) of each required.

NOTE: Tool part numbers enclosed in parenthesis are found in ST-170 Clutch Rebuilding Fixture Package identified as 291 291. Tools identified as A, B, 1A, 2A, etc., are contained in ST-170 Clutch Rebuilding Fixture Package identified as A 711063/68B. Tool identification number appears on each tool.

## 1250 TRACTOR

### SPECIFICATIONS

|   |                          |
|---|--------------------------|
| Master Clutch Shaft and Disc Spline Clearance . . . . .         | 0.004-0.0042 in.         |
| Maximum . . . . .   | 0.0138 in.               |
| PTO Shaft and Disc Spline Clearance . . . . .                   | 0.005-0.0045 in.         |
| Maximum . . . . .   | 0.0138 in.               |
| Shaft and Throwout Collar Clearance . . . . .                   | 0.0012-0.0057 in.        |
| Maximum . . . . .   | 0.0118 in.               |
| Master Clutch and PTO Clutch Disc Thickness . . . . .           | 0.3386 in.               |
| Minimum . . . . .   | 0.2756 in.               |
| Clutch Spring Free Length . . . . .                             | 2.6024 in.               |
| Compressed Length . . . . .                                     | 1.7795 in. @ 249-275 lb. |
| Clutch Pedal Free Travel . . . . .                              | 1-3/8 in.                |
| Minimum . . . . .   | 1 in.                    |
| Clearance Between Lever Ends and Fixture Gauge . . . . .        | 0.004 in.                |
| Clearance Between Lever Ends and Alignment Shaft Ring . . . . . | 0.004 in.                |
| Clearance Between Clevis Rod End and Sleeve . . . . .           | 0.079 in.                |

GE-10-103  
3 of 10

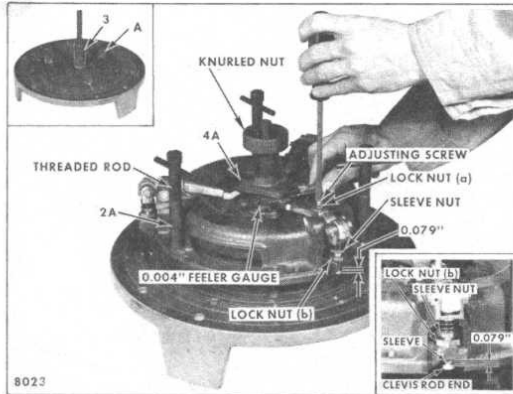


Fig. 3 1250 Clutch on Fixture

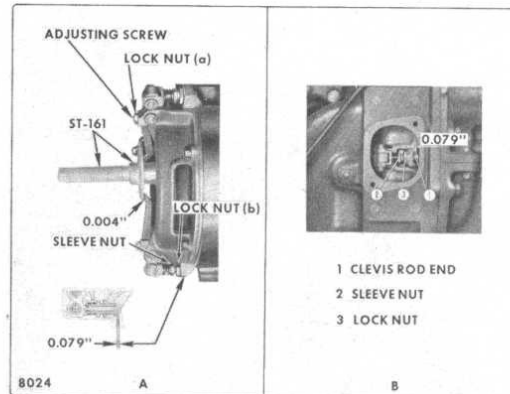


Fig. 4 1250 Clutch on Tractor

### ADJUSTMENTS

ON ST-170 FIXTURE — Refer to Figure 3 and position spacers 3 and A on fixture. Secure clutch assembly to fixture with threaded rods and 2A rod spacers tightened alternately and evenly until clutch is completely compressed. Loosen lock nuts (a) and turn adjusting screws until lever ends are near disc hub. Place 4A gauge on fixture center bolt with flat surface down and secure with knurled nut. Turn adjusting screws to obtain specified clearance between lever ends and gauge and tighten lock nuts to maintain adjustment.

Loosen lock nuts (b) and turn sleeve nuts to obtain specified clearance between clevis rod end and sleeve. Tighten lock nuts to maintain adjustment.

ON TRACTOR — Install ST-161 Alignment Shaft and Ring as shown in Figure 4A. Loosen lock nuts (a), hold shaft and ring firmly in place and turn adjusting screws to obtain specified clearance. Tighten lock nuts to maintain adjustment. Loosen lock nuts (b) and turn sleeve nuts to obtain specified clearance between clevis rod end and sleeve. This adjustment can also be checked or accomplished after adjusting clutch pedal free travel as outlined in Operator's Manual by removing gear box side cover (Fig. 4B).

### 1250-A, 1255, 1265 AND 1270 TRACTOR

#### SPECIFICATIONS

|   |                        |
|---|------------------------|
| Clutch Shaft and Disc Spline Clearance . . . . .                | 0.0004-0.0042 in.      |
| Maximum . . . . .   | 0.0138 in.             |
| Support and Throwout Collar Clearance . . . . .                 | 0.0012-0.0059 in.      |
| Maximum . . . . .   | 0.0118 in.             |
| Clutch and PTO Clutch Disc Thickness . . . . .                  | 0.3378-0.3701 in.      |
| Minimum . . . . .   | 0.2756 in.             |
| Clutch Spring Free Length . . . . .                             | 2.68 in.               |
| Compressed Length . . . . .                                     | 2.04 in. @ 194-214 lb. |
| . . . . .   | 1.78 in. @ 271-300 lb. |
| Clutch Pedal Free Travel . . . . .                              | 1-3/8 in.              |
| Minimum . . . . .   | 1 in.                  |
| Clearance Between Lever Ends and Fixture Gauge . . . . .        | 0.004 in.              |
| Clearance Between Lever Ends and Alignment Shaft Ring . . . . . | 0.004 in.              |
| Clearance Between PTO Clutch Release Lever and Screw . . . . .  | 0.059 in.              |
| Clearance Between Lever Tips and Release Bearing . . . . .      | 0.118 in.              |

GE-10-103  
4 of 10

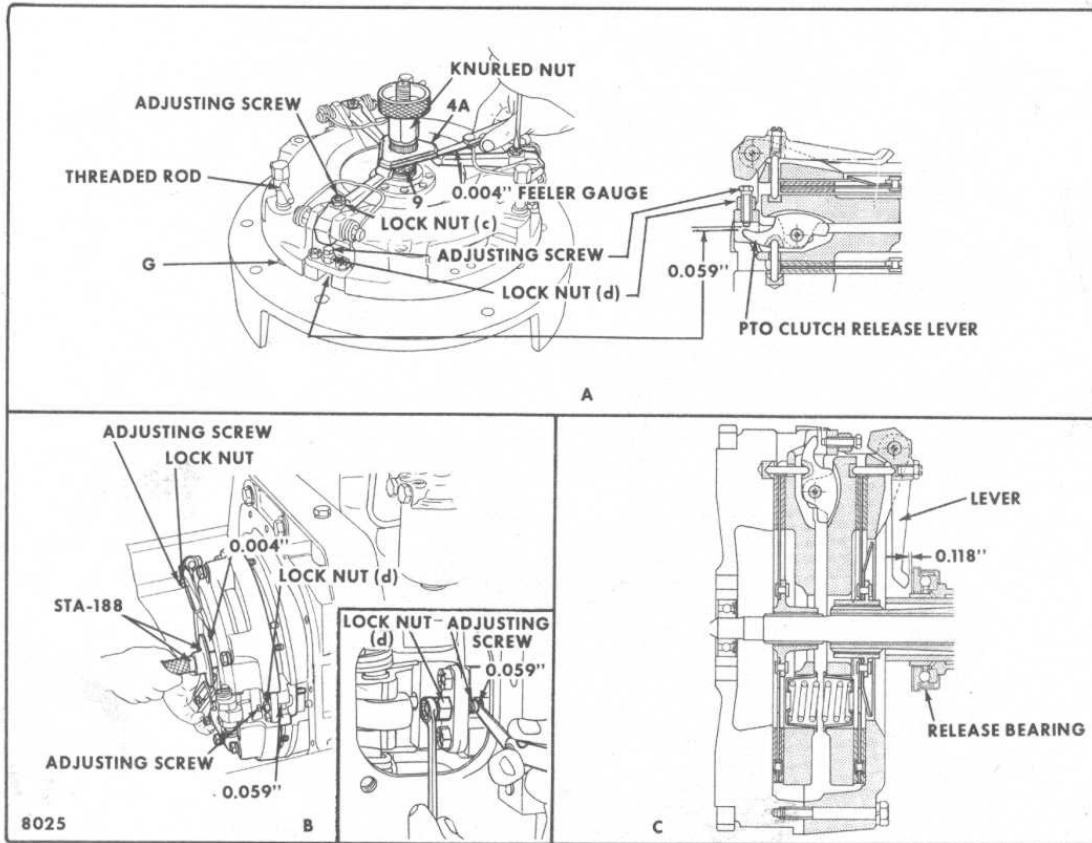


Fig. 5 1250-A, 1255, 1265 and 1270 Clutch

### ADJUSTMENTS

ON ST-170 FIXTURE — Refer to Figure 5A and position spacers G in fifth circle from center of fixture. Place clutch assembly on fixture and slide center spacer 9 over fixture center bolt. Secure clutch assembly to fixture with threaded rods tightened alternately and evenly until clutch is completely compressed. Loosen lock nuts (c) and turn adjusting screws until lever ends are near disc hub. Place gauge 4A on fixture center bolt with flat surface down and secure with knurled nut.

Turn adjusting screws to obtain specified clearance between lever ends and gauge and tighten lock nuts to maintain adjustment.

Loosen lock nuts (d) and turn adjusting screws to obtain specified clearance between screws and PTO clutch release levers.

ON TRACTOR — Install STA-188 Alignment Shaft and Ring as shown in Figure 5B. Loosen lock nuts, hold shaft ring firmly in place and turn adjusting screws to obtain specified clearance. Tighten lock nuts to maintain adjustment.

Loosen lock nuts (d) and turn adjusting screws to obtain specified clearance between screws and PTO clutch release levers. This adjustment can also be checked or accomplished on completely assembled tractors by removing gear box side cover (Fig. 5B insert).

GE-10-103  
5 of 10

LINKAGE – Adjust linkage to obtain specified clearance between lever tips and release bearing (Fig. 5C), as part of clutch pedal free travel adjustment outlined in Operator's Manual.

## 1355, 1365 AND 1370 TRACTOR

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### GENERAL

Tractors may be equipped with either a three (3) lever or six (6) lever clutch.

Following discussions contain information covering both clutches.

### SPECIFICATIONS

|   |                      |
|---|----------------------|
| Clutch Shaft and Disc Spline Clearance . . . . .  | 0.0004-0.0042 in.    |
| Maximum . . . . .   | 0.0138 in.           |
| Support and Master Clutch Throwout Collar Clearance . . . . .   | 0.002-0.0059 in.     |
| Maximum . . . . .   | 0.0118 in.           |
| Master Clutch and PTO Clutch Collar Clearance . . . . .   | 0.0024-0.0071 in.    |
| Clutch Pedal Free Travel . . . . .  | 1-3/8 in.            |
| Minimum . . . . .   | 1 in.                |
| Three-Lever Clutch  |                      |
| Clearance Between Lever Ends and Fixture Gauge . . . . .  | 0.004 in.            |
| Clearance Between Lever Ends and Alignment Shaft Ring . . . . .   | 0.004 in.            |
| Clearance Between Master Clutch Diaphragm Spring and Release Bearing Collar . . . . .                                   | 0.098 in.            |
| Clearance Between PTO Clutch Lever Ends and Release Bearing Collar . . . . .  | 0.098 in.            |
| Master Clutch and PTO Clutch Disc Thickness . . . . .   | 0.350-0.335 in.      |
| Minimum . . . . .   | 0.256 in.            |
| Clutch Pressure Plate Return Springs  |                      |
| Free Length . . . . .   | 0.99 in.             |
| Compressed Length . . . . .   | 0.44 in. @ 24-26 lb. |
| PTO Clutch Release Lever Return Springs   |                      |
| Free Length . . . . .   | 1.61 in.             |
| Compressed Length . . . . .   | 1.17 in. @ 25-27 lb. |
| Six-Lever Clutch  |                      |
| Clearance Between Master Clutch Release Lever Ends and Fixture Gauge Pins<br>or Alignment Shaft Gauge Pins . . . . .    | 0.004 in.            |
| Clearance Between PTO Clutch Release Lever Ends and Fixture Gauge Surface<br>or Alignment Shaft Gauge Surface . . . . . | 0.004 in.            |
| Clearance Between Master Clutch and PTO Clutch Lever Ends and Release Bearing Collars . . . . .                         | 0.098 in.            |
| Master Clutch Disc Thickness . . . . .  | 0.354-0.331 in.      |
| Minimum . . . . .   | 0.256 in.            |
| PTO Clutch Disc Thickness . . . . .   | 0.346-0.323 in.      |
| Minimum . . . . .   | 0.256 in.            |

GE-10-103  
6 of 10

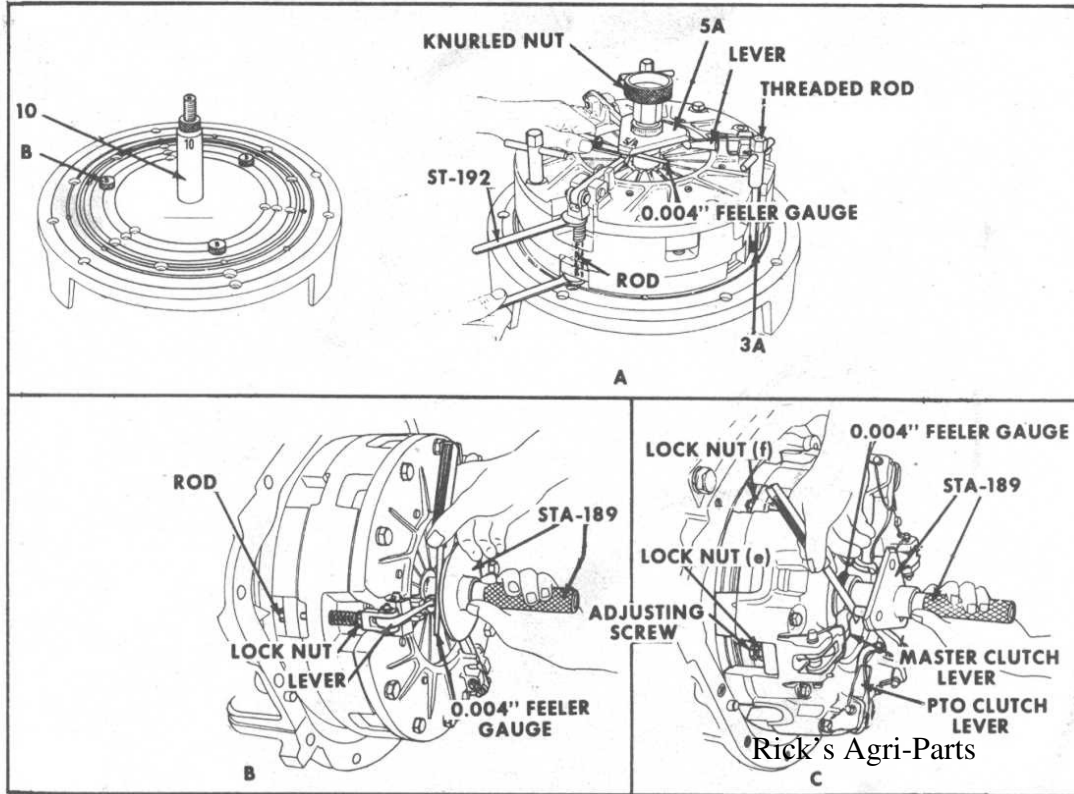


Fig. 6 1355, 1365 and 1370 Clutch

### THREE-LEVER CLUTCH ADJUSTMENTS

ON ST-170 FIXTURE – Refer to Figure 6A and position spacers 8 and 10 on fixture. Secure clutch assembly to fixture with threaded rods and 3A alignment spacers. Place 5A gauge on fixture center bolt and secure with knurled nut. Loosen lock nuts with ST-192 Wrench and turn rods to obtain specified clearance between lever ends and gauge.

ON TRACTOR – Install STA-189 Alignment Shaft and Ring as shown in Figure 6B. Loosen lock nuts with ST-192 Wrench, hold shaft and ring firmly in place and turn rods to obtain specified clearance. Tighten lock nuts to maintain adjustment.

### SIX-LEVER CLUTCH ADJUSTMENTS

ON ST-170 FIXTURE – Follow three-lever clutch procedure except use 6A gauge. Obtain specified clearance between master clutch release lever ends and gauge pins; then move gauge, loosen lock nuts and turn them to obtain specified clearance between PTO clutch release lever ends and gauge surface. Tighten and stake lock nuts to maintain adjustment.

ON TRACTOR – Install STA-189 Alignment Shaft and Gauge as shown in Figure 6C. Loosen lock nuts (e), hold shaft and gauge firmly in place and turn adjusting screws to obtain specified clearance between master clutch release lever ends and gauge pins. Tighten lock nuts to maintain adjustment.

Loosen lock nuts (F), move gauge and turn nuts to obtain specified clearance between PTO clutch release lever ends and gauge surface. Tighten and stake nuts to maintain adjustment.

GE-10-103  
7 of 10

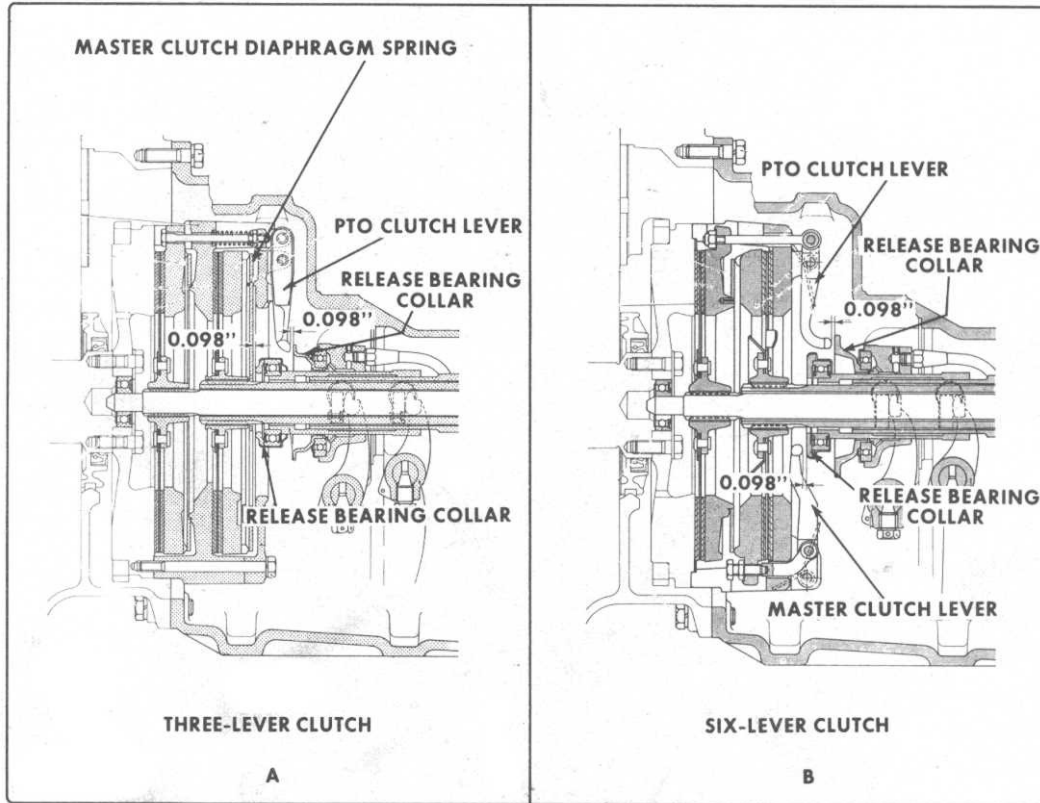


Fig. 7 1355, 1365 and 1370 Clutch Release Bearing Collar Clearance

#### LINKAGE ADJUSTMENTS

Adjustments are to be accomplished as part of master clutch pedal and PTO clutch lever free travel adjustments outlined in Shop Manual 432 586.

Adjust linkage on three-lever clutches (Fig. 7A) to obtain specified clearance between master clutch diaphragm spring and release bearing collar and between PTO clutch lever ends and release bearing collar.

Adjust linkage on six-lever clutches (Fig. 7B) to obtain specified clearance between lever ends and release bearing collars.

#### 1450 TRACTOR

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#### GENERAL

First production 1450 tractor clutches contain six (6) 675 178A Springs (purple) and six (6) 675 179A Springs (black).

Clutches on later production 1450 tractors and clutches provided for repairs, contain twelve (12) 675 178A Springs (purple). Clutches with twelve springs also contain discs with button-type facings.

Button-type facing discs may be used for repairs of first production clutches if both discs are replaced and twelve (12) 675 178A Springs (purple) are installed.

GE-10-103  
8 of 10

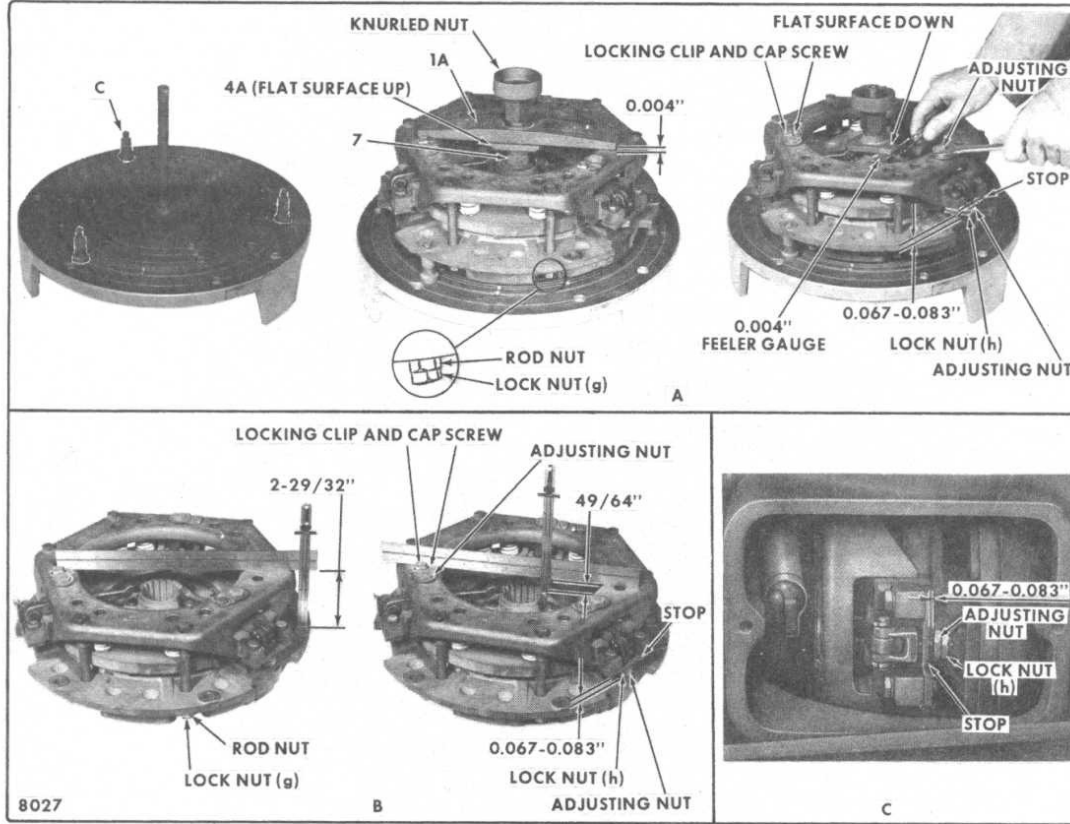


Fig. 8 1450 Clutch

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**SPECIFICATIONS – 1450 Clutch (Luk)**

|   |                        |
|---|------------------------|
| Master Clutch Shaft and Disc Spline Clearance       | 0.0004-0.0035 in.      |
| PTO Shaft and Disc Spline Clearance                 | 0.0004-0.0035 in.      |
| Master Clutch and PTO Clutch Disc Thickness         | 0.3504-0.3346 in.      |
| Minimum Thickness Due to Wear                       | 0.275 in.              |
| Clutch Spring                                       |                        |
| Free Length   |                        |
| 675 178A (purple)                                   | 2.06 in.               |
| 675 179A (black)                                    | 2.09 in.               |
| Compressed Length                                   |                        |
| 675 178A (purple)                                   | 1.50 in. @ 160-171 lb. |
| 675 179A (black)                                    | 1.50 in. @ 132-141 lb. |
| Clutch Pedal Free Travel                            | 3/4-in.                |
| Minimum   | 3/8-in.                |
| Clearance Between Cover and Cross Bar               | 0.004 in.              |
| Clearance Between Lever Ends and Fixture Gauge      | 0.004 in.              |
| Clearance Between Adjusting Nuts and Stops          | 0.067-0.083 in.        |
| Distance from Cover to Pressure Plate Machined Boss | 2-29/32 in.            |
| Distance from Cover to Lever Ends                   | 49/64-in.              |



### ADJUSTMENTS

ON ST-170 FIXTURE – Refer to Figure 8A and position spacers (c) on fixture. Place clutch assembly on fixture and slide center spacer 7 over fixture center bolt. Use knurled nut to secure gauge 4A and cross bar 1A on bolt with gauge flat surface up. Loosen lock nuts (g) and turn rod nuts to obtain specified clearance between cover and cross bar. Tighten lock nuts to maintain adjustment.

Remove knurled nut, cross bar and gauge; then, use nut to secure gauge on center bolt with flat surface down. Remove locking clips and cap screws and turn adjusting nuts to obtain specified clearance between lever ends and gauge; then, install locking cap screws and clips to maintain adjustment.

Loosen lock nuts (h) and turn adjusting nuts to obtain specified clearance between nuts and stops. Tighten lock nuts to maintain adjustments.

ON BENCH – Loosen lock nuts (g) and turn rod nuts to obtain specified dimension between cover and pressure plate machined boss (Fig. 8B). Tighten lock nuts to maintain adjustment.

Loosen lock nuts (h) and turn adjusting nuts to obtain specified clearance between nuts and stops. This adjustment can also be checked or accomplished on tractor after adjusting clutch pedal free travel as outlined in Operator's Manual by removing gear box side cover (Fig. 8C).

### 1465, 1470 TRACTORS

Rick's Agri-Parts

#### SPECIFICATIONS – 1465, 1470 Clutch (Ferodo)

|   |                   |
|---|-------------------|
| Diameter of Clutch Plate Linings  |                   |
| Outside Diameter . . . . .  | 12 in.            |
| Inside Diameter. . . . .  | 6.8897 in.        |
| Total Thickness of Clutch Plates. . . . .                                 | 0.3504-0.3661 in. |
| Minimum Thickness Due to Wear . . . . .                                   | 0.2953 in.        |
| Backlash Between Spline Teeth:  |                   |
| Engine Clutch Plate Spline . . . . .                                      | 0.0004-0.0035 in. |
| PTO Clutch Plate Spline . . . . .   | 0.0004-0.0035 in. |
| Inside Diameter of Transmission Clutch Release Collar . . . . .           | 2.4803-2.4832 in. |
| Outside Diameter of PTO Clutch Release Collar . . . . .                   | 2.4749-2.4778 in. |
| Assembly Clearance Between Clutch Release Collars . . . . .               | 0.0024-0.0081 in. |
| Inside Diameter of PTO Release Collar . . . . .                           | 2.1260-2.1294 in. |
| Outside Diameter of PTO Release Collar Support . . . . .                  | 2.1210-2.1235 in. |
| Assembly Clearance Between PTO Collar Support and Collar . . . . .        | 0.0024-0.0087 in. |
| Assembly Clearance Between Bushing and Pedal Shaft . . . . .              | 0.0015-0.0069 in. |
| Interference Fit Between Pedal Shaft Bushing and Their Location . . . . . | 0.0047-0.0184 in. |
| Transmission Clutch Pedal Free Travel (with 0.0984 in. Clearance Between  |                   |
| Release Bearing and Lever Control Ring) . . . . .                         | 1-3/16 in.        |
| PTO Clutch Lever Free Travel (with 0.0984 in. Clearance Between Release   |                   |
| Bearing and Dished Spring) . . . . .                                      | 1-9/16 in.        |
| Fixture to Lever Clearance . . . . .                                      | 0.004 in.         |

GE-10-103  
10 of 10

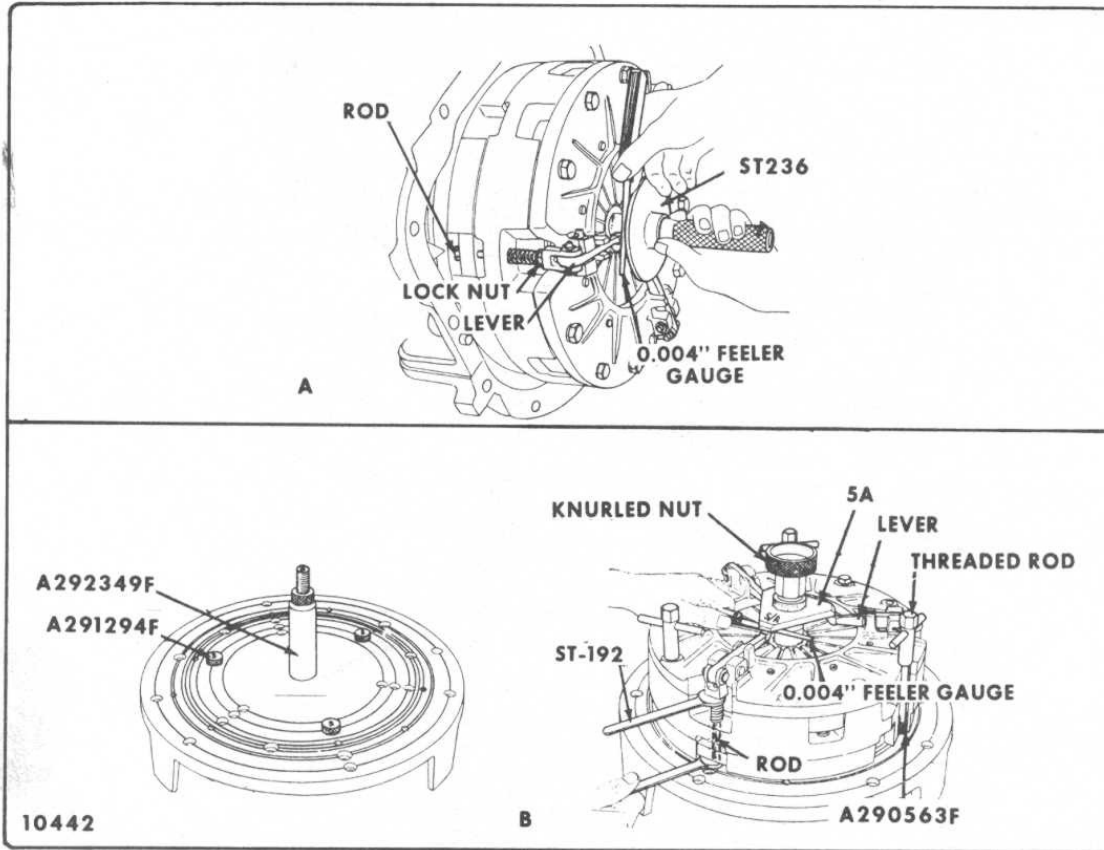


Fig. 9 1465 and 1470 Clutch

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### THREE-LEVER CLUTCH ADJUSTMENTS

ON ST-170 FIXTURE – Refer to Figure 9B and position A292349F and A291294F spacers on fixture. Secure clutch assembly to fixture with threaded rods and A290563F alignment spacers. Place 5A gauge on fixture center bolt and secure with knurled nut. Loosen lock nuts with ST-192 Wrench and turn rods to obtain 0.004 inch clearance between lever ends and gauge. Tighten lock nuts to maintain adjustment.

ON TRACTOR – Install ST-236 Alignment Shaft and Ring as shown in Figure 9A. Loosen lock nuts with ST-192 Wrench, hold shaft and ring firmly in place and turn rods to obtain 0.004 inch clearance. Tighten lock nuts to maintain adjustment.

Service Department

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