

# FORD CLICK ANYWHERE FOR MORE DETAILS 555A STATE OF THE ST



FORD TRACTOR OPERATIONS

FORD MOTOR COMPANY

TROY, MICHIGAN

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#### PART 1 ENGINE SYSTEMS

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Chapter 1 ENGINES

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#### A. DIESEL ENGINE — DESCRIPTION AND OPERATION

This chapter describes the overhaul and repair of the 3 and 4 cylinder Ford tractor direct injection diesel engines used in the 555A and B and 655A TLB model tractors.

The engines are of similar design and service procedures are basically the same except as noted.

The major difference between the two engines is that the 3 cylinder engine, Figure 1, is equipped with a rotary type fuel injection pump and has a four main bearing crankshaft. The 4 cylinder engine, Figure 2, is equipped with a in-line fuel injection pump, a five main bearing crankshaft and a dynamic engine balancer.

The three and four cylinder diesel engines have a compression ratio of 16.3 to 1. The three cylinder engines use headland type pistons, Figure 3. The four cylinder engines use conventional type pistons. The headland type piston is a three ring piston having two compression rings and one oil control ring all located above the piston pin. The special design "L" shaped top compression ring is located at the top of the piston and provides a tight seal during the combustion stroke thereby reducing blow-by. As combustion dissipates, the ring releases its cylinder wall tension and rides almost friction free on a thin film of oil thus reducing power loss and cylinder wall wear.

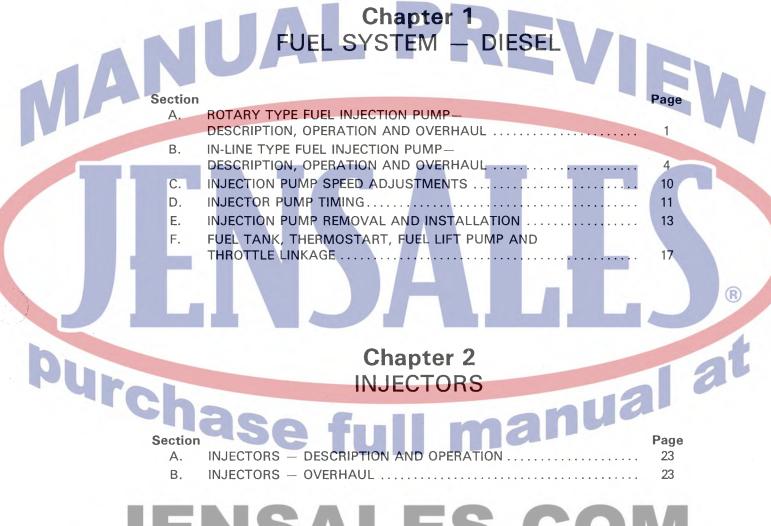


Figure 1
3-Cylinder Diesel Engine with Rotary Type
Fuel Injection Pump

Figure 2
4-Cylinder Diesel Engine with In-Line Type
Fuel Injection Pump

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# TROUBLE SHOOTING, SPECIFICATIONS AND SPECIAL TOOLS

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#### Figure 3 Wiring Harness

- 1. Wire Harness Connector Block
- 3. Fuse Block Wiring Leads (9)
- 2. Connectors (2)
- Disconnect the diesel stop cable at the injection pump and disconnect the proofmeter cable at the engine drive.
- Disconnect the throttle and power reversing control linkages, Figure 4.
- 6. Remove the floor mat, then remove the transmission, rear axle and loader control valve access covers.
- 7. Disconnect the loader control lever to swivel link assembly and remove the snap ring and pin securing the lever to the pivot, Figure 5.

NOTE: Use care to not stretch or damage the electrical wire to the transmission dump valve.

- Disconnect the clutch and brake drop rods, Figure 6, at the clevises, remove the upper clevises and locknuts and lower the drop rods out of the vehicle.
- 9. On power reversing transmissions disconnect the wiring to the transmission dump valve.
- 10. Disconnect the differential lock pedal rod (2) from the actuating lever located underneath the tractor, Figure 7.



Figure 4 Throttle and Power Reversing Control Linkage

- 1. Throttle Rod
- 2. Throttle Rod Coupling
- 3. Hand Throttle Lower 5. Power Reversing (R) Coupling
- 4. Power Reversing Linkage Lower Coupling
  - Linkage Connecting Rod



Figure 5 Loader-Lever Installation

- 1. Loader Lever
- 2. Lever Securing Pin
- 3. Pivot

4. Swivel Link Assembly



S-10002

#### Figure 6 Clutch Linkage

- A. 34.60 in. (878.84 mm)
- B. 1.6 in. (40.6 mm)
- 1. Clutch Pedal
- 2. Clutch Pedal Pivot
- 3. Clutch Rod Top Clevis
- 4. Drop Rod Adjuster
- 5. Drop Rod Lower Clevis
- Pedal Free Travel Adjuster
- 7. Return Spring
- 8. Drop Rod



Remove the hand parking brake cable pin (6), conduit anchor bolt (7), lever assembly mounting bolts
 and remove the brake lever assembly, Figure 8.

Figure 8

#### Hand Parking Brake Removal

- Parking Brake Lever Assembly
- 4. Cable Conduit5. Mounting Bolts (4)

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- 2. Actuating Cables (2)
- 3. Cable Actuating
  - Links (2)

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12. Disconnect the power steering lines at the left hand side of the tractor, Figure 9.

13. Disconnect the foot throttle actuator rod connector from the lever, Figure 10. Disconnect the ground cable from the rear axle cover.



Figure 7

Differential Lock Linkage

Differential Lock
 Actuating Lever

2. Differential Lock Pedal Connecting Rod

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- . Axle Shaft Outer Bearing
- 2. Axle Shaft
- 3. Spacer
- 4. Bearing
- 5. Planet Gear Carrier

- Figure 4 **Axle Housing Assembly**
- 6. Retaining Washer
- 7. Retaining Bolt
- 8. Lock Plate
- 9. Sun Gear and Shaft
- 10. Brake Actuating Rod
- 11. Brake Actuating
  - Discs
- 12. Inner Brake Housing
- 13. Rotating Brake Discs
- 14. Fixed Brake Discs
- 15. Outer Brake Housing
- 16. Ring Gear
- 17. Axle Housing

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the outer surface of the axle housing. Lifting the housing will result in a reading on the dial indicator. This is the free movement between the inner and outer bearing cone and roller

assemblies and their cups.

d. To determine the correct bearing pre-load spacer, subtract the reading obtained from the spacer size fitted (0.089 in. (2.261 mm)), and select the correct spacer from the following table.

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For disassembly of the circuit relief valves, refer to the "System Relief Valve Disassembly" as they are basically the same.

NOTE: Before removing the relief valves, they should be tagged and identified as to which valve section and end they are installed. See Figure 173 and 174.



Four Lever Control Valve Stacking Showing Circuit Relief Valve Locations (15 Ft. Model Shown)

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.COM 1. Circuit Relief Valve Adjusting Cap

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MORE DETAILS

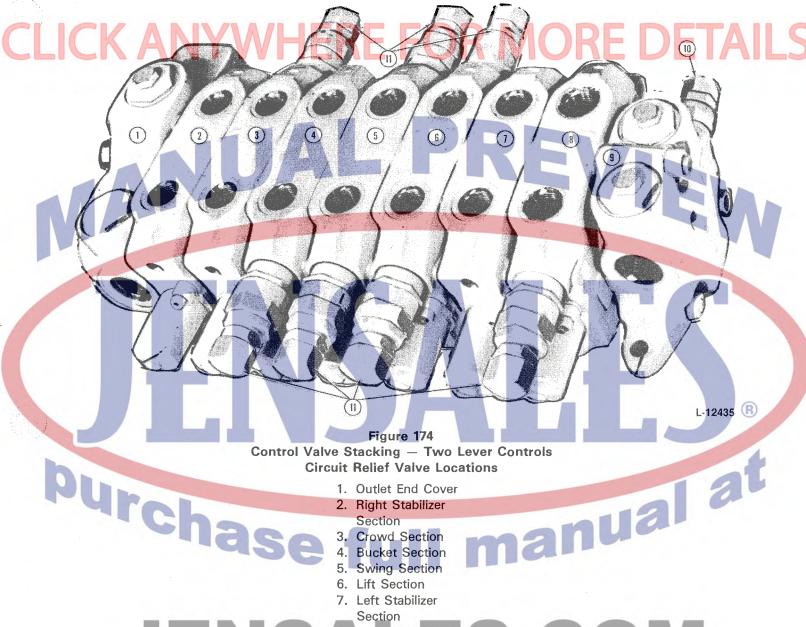
- 2. Locknut
- 3. Outlet End Cover
- 4. Right Stabilizer Section
- 5. Swing Section
- 6. Bucket Section
- 7. Lift Section
- 8. Crowd Section

#### 9. Left Stabilizer Section

- 10. Extendible Dipstick Section

11. Inlet End Cover

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