

9940 Cotton Picker



JOHN DEERE

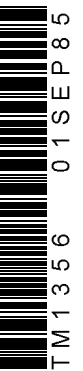
TECHNICAL MANUAL

9940
Cotton Picker

TM1356 (01SEP85) English

TM1356 (01SEP85)

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9940 COTTON PICKER TECHNICAL MANUAL TM-1356 (SEP-85)

CONTENTS

Publication Number Change

This technical manual was formerly TM-1241. The number was changed when engine information was removed. Some pages still carry the old publication number. For engine information, refer to Engine Component Technical Manual, CTM-1.

SECTION 10—GENERAL

- Group 00—General Specifications
- Group 05—Predelivery, Delivery and After-Sale Services
- Group 10—Tune-Up and Adjustment
- Group 15—Fuels and Lubricants

SECTION 20—ENGINE REPAIR

- Group 05—Remove and Install Engine
- Group 29—Remove/Install Cooling System

SECTION 30—FUEL AND AIR REPAIR

- Group 00—Specifications and Special Tools
- Group 04—Remove/Install Air Intake System
- Group 09—Remove/Install Diesel Fuel System

SECTION 40—ELECTRICAL REPAIR

- Group 00—Specifications and Special Tools
- Group 10—Charging Circuit Repair
- Group 15—Starting Circuit Repair
- Group 20—Lights, Instruments, and Accessory Circuits Repair

SECTION 50—POWER TRAIN REPAIR

- Group 00—Specifications and Special Tools
- Group 10—Transmission
- Group 15—Axles and Differential
- Group 25—Sundstrand Hydrostatic Drive
- Group 26—Eaton Hydrostatic Drive

SECTION 60—STEERING/BRAKES REPAIR

- Group 00—Specifications and Special Tools
- Group 05—Steering
- Group 10—Brakes

SECTION 70—HYDRAULIC REPAIR

- Group 00—Specifications and Special Tools
- Group 05—Reservoir
- Group 10—Hydraulic Pump
- Group 15—Main Control Valve
- Group 20—Hydraulic Cylinders
- Group 25—Hydraulic Motors
- Group 30—Height Control

SECTION 80—AXLES AND WHEELS REPAIR

- Group 00—Specifications
- Group 05—Guide Axle
- Group 10—Wheels

SECTION 90—OPERATOR STATION REPAIR

- Group 00—Specifications and Special Tools
- Group 05—Air Conditioning System
- Group 10—Heating System
- Group 15—Miscellaneous Components

SECTION 120—PICKING UNITS REPAIR

- Group 00—Specifications and Special Tools
- Group 05—Picking Units Removal and Installation
- Group 10—Grid Bars and Pressure Plates
- Group 15—Spindles and Picker Bars
- Group 20—Picker Drums, Drive Shafts, and Gears
- Group 25—Idler Gears and Bearings
- Group 30—Doffers, Stub Shaft and Drive
- Group 35—Moistener Columns
- Group 40—Gear Cases, Universal Joints, and Countershafts
- Group 45—Picking Unit Cabinets and Cam Tracks

SECTION 130—MOISTENER AND AIR SYSTEMS REPAIR

- Group 00—Specifications
- Group 05—Moistener System
- Group 10—Air System

CONTENTS—Continued

SECTION 220—ENGINE OPERATION AND TESTS

- Group 00—Specifications and Special Tools
- Group 05—System Operation
- Group 10—System Tests and Diagnosis

SECTION 230—FUEL/AIR OPERATIONS AND TESTS

- Group 00—Specifications and Special Tools
- Group 05—Air Intake System
- Group 10—Diesel Fuel System

SECTION 240—ELECTRICAL OPERATION AND TESTS

- Group 00—Specifications and Special Tools
- Group 05—General Information and Diagrams
- Group 10—Charging Circuit
- Group 15—Starting Circuit
- Group 20—Lights, Instruments, and Accessory Circuits

SECTION 250—POWER TRAIN OPERATION AND TESTS

- Group 00—Specifications and Special Tools
- Group 10—Transmission
- Group 15—Axles and Differential
- Group 25—Hydrostatic Drive

SECTION 260—STEERING/BRAKES OPERATION AND TESTS

- Group 00—Specifications and Special Tools
- Group 05—Steering
- Group 10—Brakes

SECTION 270—HYDRAULIC OPERATION AND TESTS

- Group 00—Specifications and Special Tools
- Group 05—System Operation and Tests
- Group 10—Hydraulic Pump
- Group 15—Main Hydraulic Valve
- Group 20—Hydraulic Cylinders
- Group 25—Hydraulic Motors
- Group 30—Height Control

SECTION 290—OPERATOR STATION OPERATION AND TESTS

- Group 00—Specifications and Special Tools
- Group 05—Pressurizer System
- Group 10—Air Conditioning System Operation
- Group 15—Air Conditioning System Tests and Diagnosis
- Group 20—Heating System

SECTION 325—PICKING, MOISTENER, AND AIR SYSTEMS

- Group 00—Specifications and Special Tools
- Group 05—Systems Operation and Diagnosis

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INTRODUCTION

This manual is part of a total service support program.

FOS Manuals—reference

Technical Manuals—machine service

Component Manuals—component service

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

Technical Manuals are concise service guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

Component Technical Manuals are concise service guides for specific components. Component technical manuals are written as stand alone manuals covering multiple machine applications.



FEATURES OF THIS TECHNICAL MANUAL

John Deere ILLUSTRATION format emphasizing illustrations and concise instructions in easy-to-use modules.

Emphasis on diagnosis, analysis, and testing so you can understand the problem and correct it.

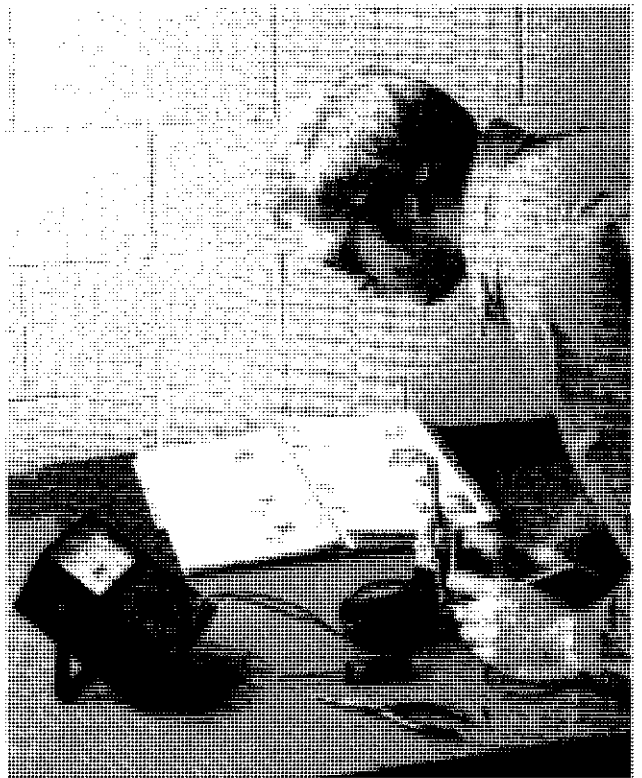
Diagnostic information presented with the most logical and easiest to isolate problems first to help you identify the majority of routine failures quickly.

Step-by-step instructions for teardown and assembly.

Summary listing at the beginning of each group of all applicable specifications, wear tolerances, torque values, essential tools, and materials needed to do the job.

An emphasis throughout on safety—so you do the job right without getting hurt.

This technical manual was planned and written for you—an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it when you need to know correct service procedures or specifications.

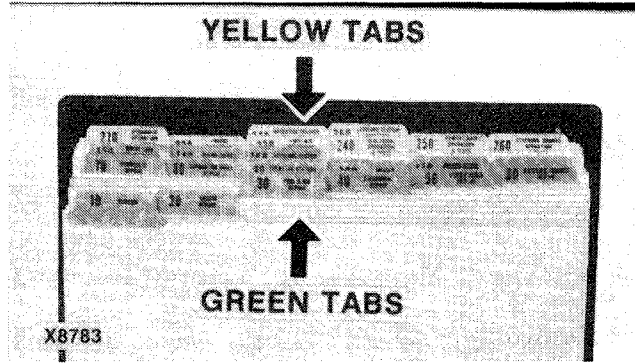


USING TABS

To fully utilize this technical manual, you must understand how it is organized.

Only two tab colors are used--green and yellow. Each color represents a different type of information.

Spend a minute reading this now and save many minutes of searching later.



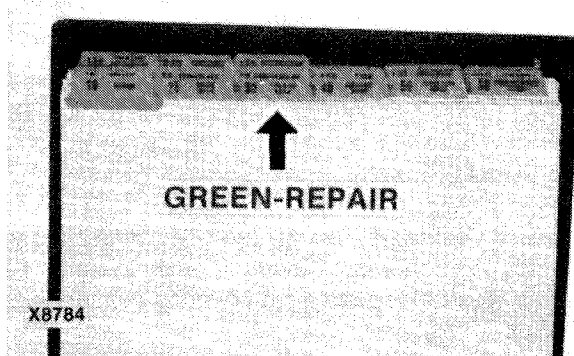
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GREEN TAB SECTIONS

The green tab sections are repair sections that tell how to repair the components of the various systems.

Repair of a component includes:

- Removal from machine (when necessary)
- Disassembly
- Inspection
- Replacement of parts
- Assembly
- Adjustment
- Installation on machine (when necessary)



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The numbers used for the repair (green tab) sections are part of an overall service publication numbering system. The numbers identify the same sections in the parts catalog, flat rate manual, service information bulletins, and service training courses.

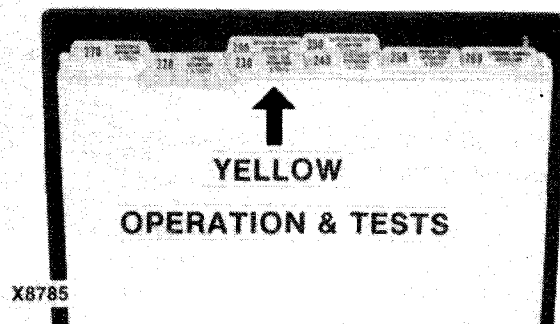
YELLOW TAB SECTIONS

Each yellow tab section contains information on:

- System Operation
- System Tests

System operation explains how the system and its components work.

System tests tell how to test the system and diagnose the problem.

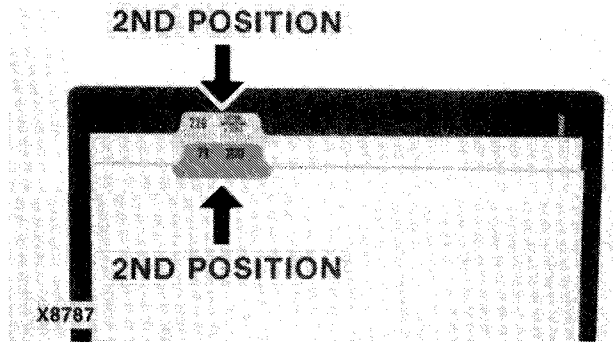


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TAB POSITIONS

Each green tab and its corresponding yellow tab have the same tab position. This is to help you quickly locate the related information.

Tab Color	Tab Position	Section No.	Description
Green	2nd	20	Engine Repair
Yellow	2nd	220	Engine Operation and Tests

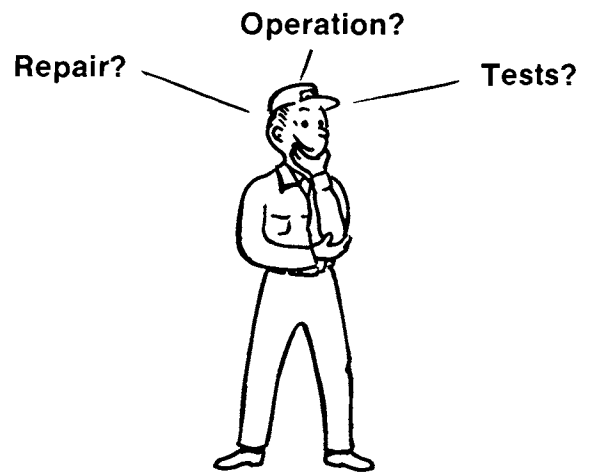


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THREE-STEP PROCEDURE

Use the following three-step procedure to locate the desired information.

1. Determine the type of information you need. Is it repair, operation, or tests?
2. Go to the appropriate section tab:
 Green for Repair
 Yellow for Operation or Tests



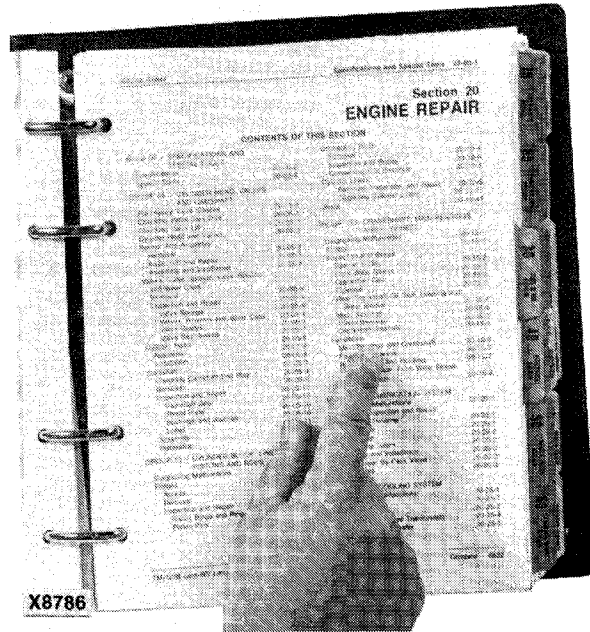
X8788

TYPE OF INFORMATION?

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Introduction

3. Use the table of contents on the first page of the section to locate the information.



Group 04 REMOVE/INSTALL AIR INTAKE SYSTEM

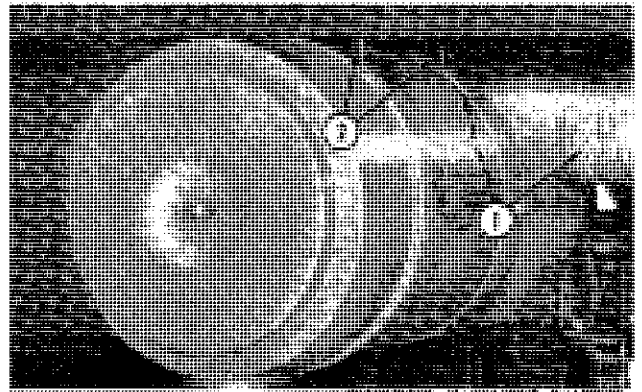
ABOUT THIS GROUP

This group contains information on service of air cleaner elements and ether starting aid. Refer to the group that follows for information on remainder of air intake system.

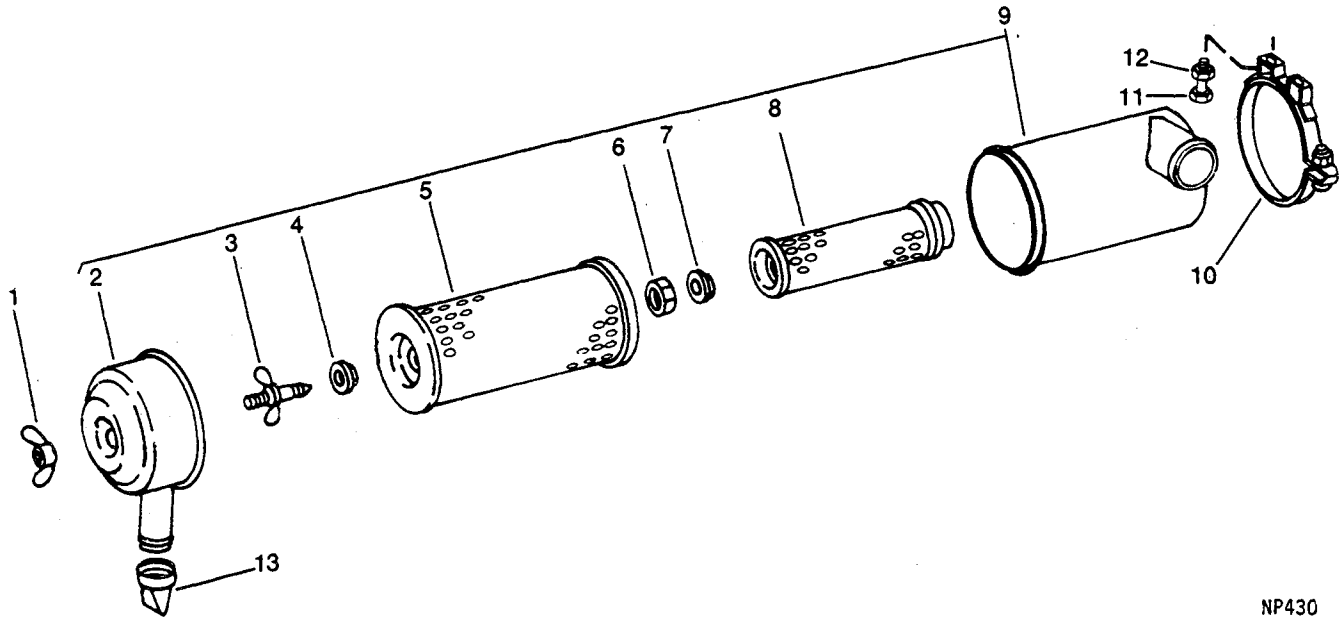
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REMOVE AIR CLEANER

1. Loosen clamps on inlet and outlet pipe connecting hoses.
2. Remove flange screws, and remove air cleaner.



SERVICE AIR CLEANER



NP430

1—Nut
2—Cup
3—Bolt

4—Washer
5—Element
6—Nut

7—Washer
8—Element
9—Air Cleaner

10—Band (2)
11—Screw (4)
12—Valve

Air Cleaner Components

1. Disassemble air cleaner by removing cover (2) and elements (5, 8).

2. Inspect air cleaner housing for cracks or holes. Repair or replace as required.

3. Inspect valve (13) for cracks or deterioration. Replace as required.

4. Clean or replace filter elements as prescribed in the Operator's Manual.

A66/NP340 N01;3005 B 181281

INSTALL AIR CLEANER

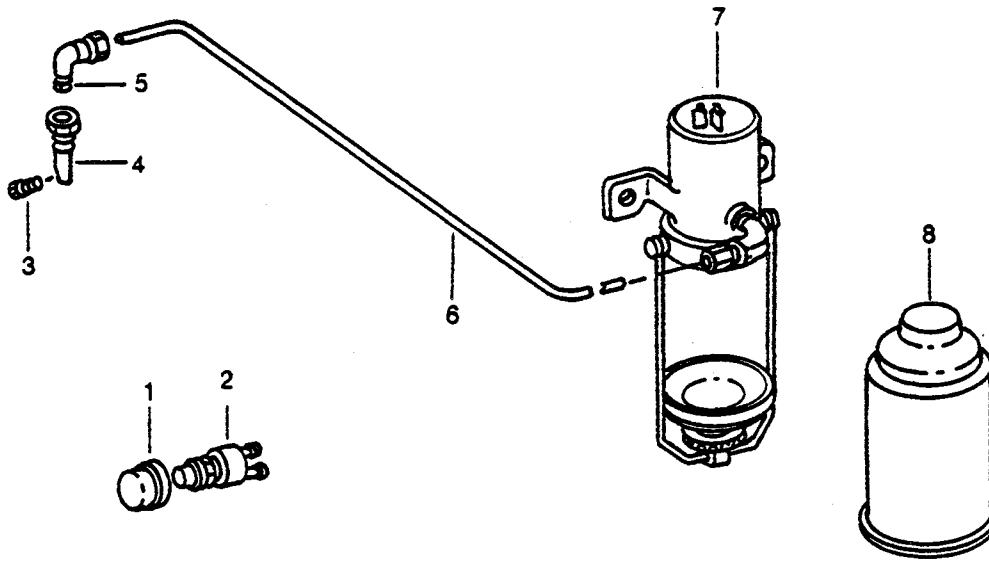
1. Inspect inlet and outlet tubes on the picker. Clean thoroughly. Replace couplings as required to assure an air tight seal.

2. To install air cleaner, reverse removal procedures.

3. Torque clamps on outlet hoses to (14 to 17 N·m) 125 to 150 in-lbs.

A66; N01;3005 C 181281

REPAIR ETHER STARTING AID



1—Button
2—Switch

3—Nozzle
4—Holder

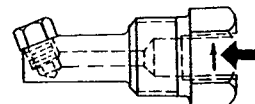
5—Elbow
6—Pipe

7—Solenoid
8—Can

1. Check the nozzle holder (4) and nozzle (3) for plugging. Use compressed air to clean restricted passages. Make sure that the bore is not damaged or enlarged.
2. If switch or solenoid is defective, replace it.
3. Install nozzle in nozzle holder. Do not use any sealing compound on nozzle threads.

A66/R26798 N N01:3005 G 020282

4. Install nozzle holder in manifold, with arrow pointing toward center of manifold.
5. Install elbow fitting in nozzle holder, and connect pipe to elbow.
6. Keep can installed on solenoid at all times to prevent dust from being drawn into engine.



R 24681N

A66/R24681 N N01:3005 H 020282

Remove/Install Air Intake System

Group 09

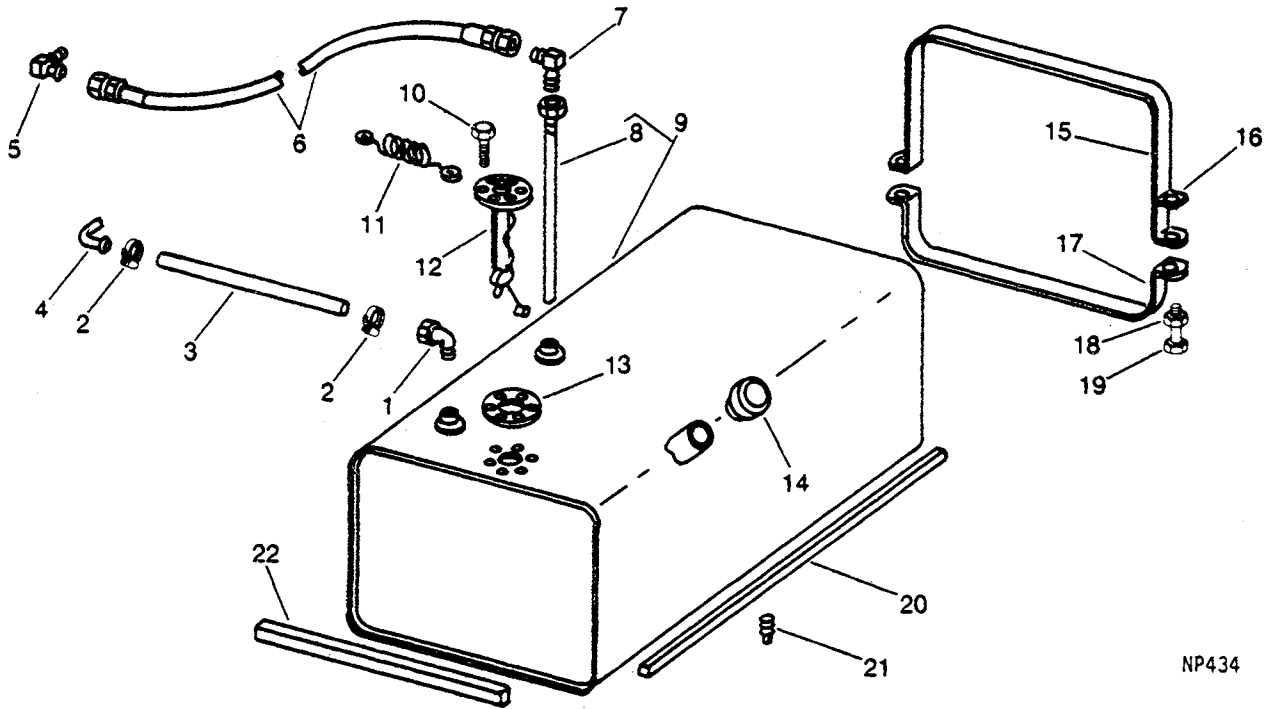
REMOVE/INSTALL DIESEL FUEL SYSTEM

ABOUT THIS GROUP

This group contains information on repairing fuel tank and servicing the water conditioner. Refer to the group that follows for information on injection pump, nozzles, and filters.

A66; N01;3009 C 270884

REPAIR FUEL TANK



NP434

- | | | | |
|-------------|--------------|------------------|----------------|
| 1—Elbow | 6—Hose | 11—Wire | 17—Support (2) |
| 2—Clamp (2) | 7—Elbow | 12—Sender | 18—Nut (4) |
| 3—Hose | 8—Pipe | 13—Gasket | 19—Screw (4) |
| 4—Elbow | 9—Tank | 14—Cap | 20—Foam (2) |
| 5—Connector | 10—Screw (5) | 15—Support (2) | 21—Plug |
| | | 16—Reinforcement | 22—Packing |

1. Remove plug (21) to drain fuel tank.
2. Disconnect fuel hose (6) and return hose (3).
3. Support bottom of tank. Remove screws (19) and lower tank out.
4. Remove filler cap (14) and fuel sender (12).



CAUTION: Cleaning and repairing a fuel tank is very dangerous. Do not allow sparks, fire, or smoking in the vicinity. Refer to FOS Manual 30 "Engines" for procedures on cleaning and repairing fuel tanks safely.

5. Check tank for leaks by plugging openings and using wet or dry method as described in FOS Manual 30.



CAUTION: Have tank repaired by a qualified service shop, or follow procedures as described in FOS Manual 30.

6. Install tank using reverse of removal procedure.
7. Fill tank with correct grade of fuel. (See Fuels in Section 10.)
8. Bleed air from system. (See Bleed The Fuel System in this section.)
9. Check vent hold in cap. If plugged, use compressed air of a small wire to open hole.

A66; N01;;3010 C 061284

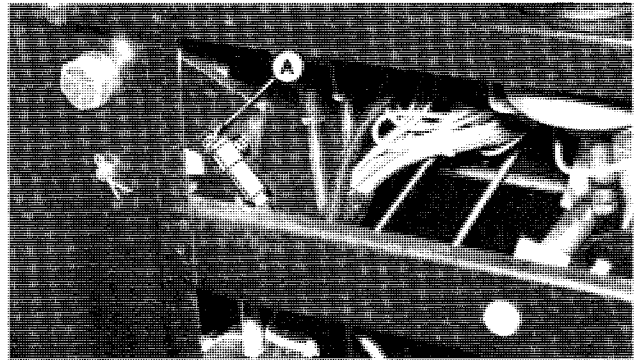
ADJUST PUMP IDLE SPEEDS

1. Warm up engine to normal operating temperature and check engine stop knob to be sure it is downward as far as it will go.



CAUTION: To avoid injury, do not make adjustments while engine is running.

2. With throttle fully rearward, remove console inner panel and disconnect cable ball joint from throttle lever at (A).
3. Disconnect speed control rod and shut-off cable from injection pump.
4. Move pump hut-off lever all the way forward against its stop.
5. Disconnect speed control rod and fuel shut-off cable from injection pump.

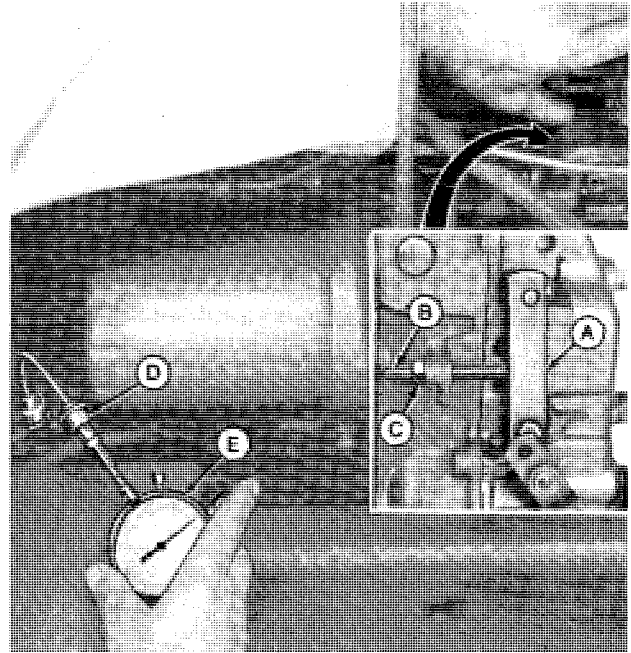


A66;N81141 E1 N01;23010 A 201181

CHECK FAST IDLE SPEED

1. Disconnect the tachometer drive cable and install JDE-28 Speed Adapter (D).
2. With the engine running, move the governor control lever (A) against the fast idle stop screw (B). Use an accurate tachometer similar to (E) and JDE-28 Speed Adapter for measuring the fast idle speed. The fast idle speed should be 2375-2425 rpm. Always stop engine before making any adjustments.
3. If the fast idle speed is too low (but not more than 50 rpm below the minimum specified setting of 2375 rpm), remove the fast idle stop screw sealing capsule by reaching in behind pump and prying off of stop screw.

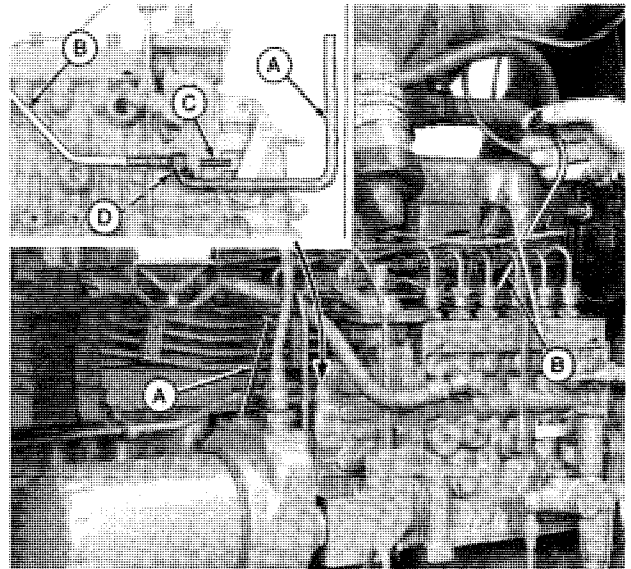
A—Governor Lever
B—Fast Idle Screw
C—Lock Nut
D—JDE-28 Adapter
E—Hand Tachometer



A66;R26827 N01;;3009 D 270884

4. Loosen lock nut (D) using special wrench (A) supplied in JDF-9-A Fast Idle Stop Screw Wrench Kit. Using the special screwdriver or a flexible screwdriver (B) back out the fast idle stop screw (C) until speed is correct. Tighten lock nut.

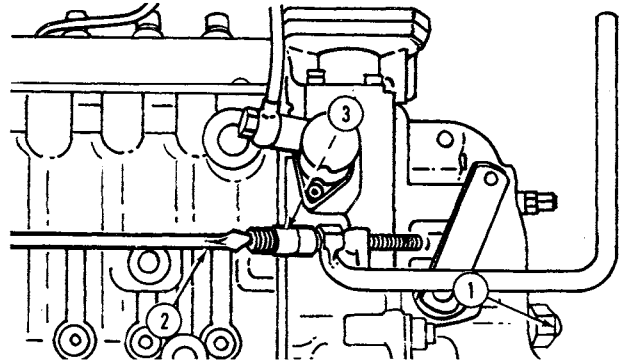
NOTE: If unable to adjust the fast idle stop screw using the special screwdriver, remove the alternator and adjust screw using a (6.4 mm) 1/4-in. shank, (304.8 mm) 12 in. long screwdriver.



A88;R28277 S11;23010 AQ 170881

Remove/Install Diesel Fuel System

5. When the fast idle speed is too high, but not more than 50 rpm above maximum specified setting of 2425 rpm, back out supplementary idling spring (1).
6. Remove sealing capsule, and loosen lock nut.
7. Turn the fast idle screw (3) toward governor lever using the JDF-9-2A Screwdriver (2).
8. When speed is set, tighten lock nut.



NOTE: If the supplementary idling spring was backed out to make the fast idle speed adjustment, readjust as instructed under "Check Slow Idle Speed".

A88;RG3223 S11;23010 AR 140881

In event that the fast idle speed is below 2275 rpm or above 2475 rpm, the pump will have to be removed from the engine and adjusted on the test stand. (Refer to Group 15, Section 50 of TM-1215 "Fuel Injection Equipment - Robert Bosch".)

IMPORTANT: Changing the fast idle stop screw adjustment when the fast idle speed is below 2275 rpm or above 2475 rpm may significantly alter the governor break-away speed. Break-away speed is the speed obtained when the pump control rack travel just starts to decrease (less fuel) after the full-load speed was reached. To correctly set the break-away speed, the pump must be adjusted while on the test stand.

After completing the fast idle speed adjustment check the slow idle speed.

A88; S11;23010 AS 170881

CHECK SLOW IDLE SPEED

(Refer to next illustration.)

Both the slow idle stop screw (C) and the supplementary idling spring screw (F) may be used to adjust the slow idle speed.

Minor adjustment of the slow idle speed may be made with the supplementary idling spring screw. However, it should not be used by itself to change engine speed more than 20 rpm, as overspeeding of the engine may result.

IMPORTANT: If slow idle stop screw and supplementary idling spring screw are not adjusted according to instruction, engine damage could result because of overspeeding.

With the engine running, pull the governor control lever rearward to the slow idle speed position.

The slow idle speed should be 800-900 rpm. Always stop engine before making any adjustments.

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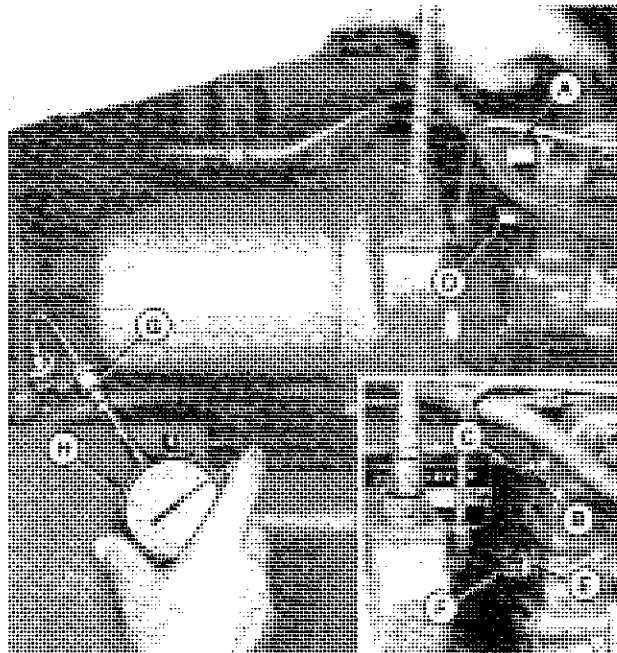
1. Remove the idling spring adjusting screw cover and washer (D). Loosen lock nut (E), and back out screw (F) three turns.

2. Remove the stop screw cover with washer (A). Loosen lock nut (B) and adjust the slow idle stop screw (C) to obtain an idle speed on the low side of desired slow idle speed setting within 20 rpm.

3. Turn the supplementary idling spring adjusting screw in to increase engine speed a maximum of 20 rpm.

For example, to obtain an 800 rpm slow idle speed, use the slow idle stop screw to set speed at approximately 785 or 790 rpm. Then increase speed to 800 rpm using the supplementary idling spring screw.

NOTE: Increasing the slow idle speed a slight amount above the specified speed range may help to reduce engine surge (or hunting), if this occurs. Use the procedure given above, but do not exceed 850 rpm.



- | | |
|-----------------------------|-------------------------------------|
| A—Stop Screw Cover | E—Lock Nut |
| B—Lock Nut | F—Supplementary Idling Spring Screw |
| C—Slow Idle Stop Screw | G—JDE-28 Speed Adapter |
| D—Idling Spring Screw Cover | H—Hand Tachometer |

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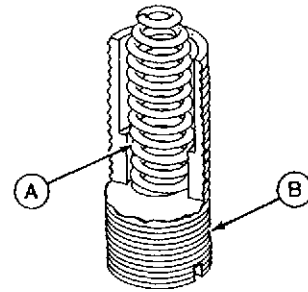
4. If engine continues to surge at slow idle, replace the supplementary idling spring and screw assembly with a new one using the procedure outlined above. The idling spring (A) is attached to the adjusting screw (B). Discard any idling spring that is bent inside the screw, as it will not function properly.

5. When surging or hunting persists, remove the pump from the engine, and repair as instructed in TM-1215 "Fuel Injection equipment - Robert Bosch".

6. Again check the fast and slow idle speeds. Readjust, if speeds are not correct.

7. Check all adjusting screw lock nuts for tightness. Install covers (and copper washers) on slow idle stop screw and idling spring adjusting screw.

8. Connect tachometer drive cable, fuel shut-off cable, and speed control rod.



A—Spring

B—Adjusting Screw

ABB/R28387 N 511;29010 AV 170841

9. Connect cable ball joint to throttle lever (A) in console.

NOTE: Be sure injection pump control lever is fully rearward, and throttle lever is fully rearward in console. If necessary, adjust cable length by repositioning ball joint to allow ball-joint stud to enter throttle lever without changing lever or cable position.

10. Inspect fuel shut-off cable. Adjust if necessary to make sure slot in R67143 fitting is maximum downward, with pump arm against housing and shut-off knob fully downward.

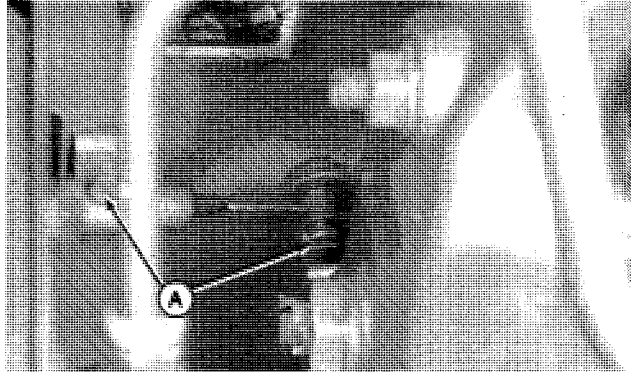


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ADJUST FUEL SHUT-OFF CONTROL

1. Be sure control knob in cab is pushed fully in. Loosen locking screw.
2. Push pump shutoff lever fully downward.
3. Inspect cable and cable clamps (A).
4. Remove slack from cable and retighten locking screw.

IMPORTANT: An improperly adjusted fuel shutoff control cable may limit the injection pump control rack travel. This will result in decreased fuel delivery and a possible complaint of low horsepower.



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DRAIN AND REPLACE WATER SEPARATOR FILTER (NOT USED IN ALL AREAS)

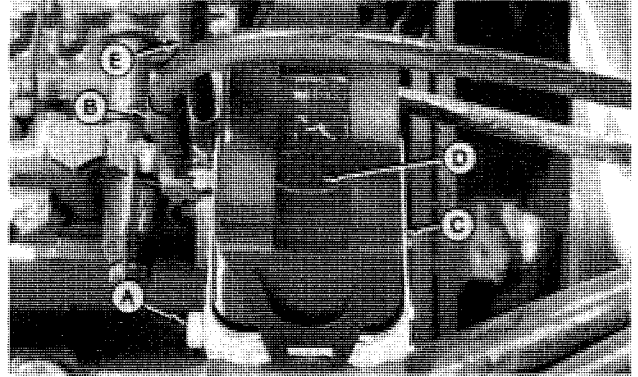
1. Remove drain plug (A).
2. Allow water separator to drain until all water and sediment has been removed from filter.

IMPORTANT: Leaving plug out will drain fuel tank.

3. If draining only, reinstall drain plug. If replacing filter, continue.
4. Clamp off fuel supply hose (B). Allow remainder of fuel to drain.
5. Press on top tab of retaining spring (C) and unhook from filter base.
6. Lift filter element (D) from base.
7. Before installing new filter element, make sure sealing surface is completely clean.

IMPORTANT: Any dirt or contamination left on sealing surface will be washed into injection system. This may cause serious damage to injection pump or nozzles.

8. Secure filter element on filter body with retaining spring.
9. Install drain plug.
10. Remove outlet hose (E). This allows air to escape during filling of filter.
11. Unclamp fuel supply line.
12. When fuel starts coming from top fitting, reinstall outlet hose.



A—Drain Plug
B—Fuel Supply Hose
C—Filter Retaining Spring
D—Filter Element
E—Outlet Hose

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