

655 and 665 Central Metering Seeders 770, 775, 780 and 785 Air Drill



JOHN DEERE

TECHNICAL MANUAL

655 and 665 Central Metering Seeders 770,
775, 780 and 785 Air Drill

TM1306 (01NOV85) English

TM1306 (01NOV85)

LITHO IN U.S.A. (REVISED)
ENGLISH



655 AND 665 CENTRAL METERING SEEDERS AND 770, 775, 780, 785 AIR DRILLS TECHNICAL MANUAL TM-1306 (NOV-85)

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A JOHN DEERE ILLUSTRATION

INTRODUCTION

This technical manual is part of a twin concept of service.

FOS - for reference

Technical Manuals - for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

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

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



A68;N36997 N01;0000 Q 250383

FEATURES OF THIS TECHNICAL MANUAL

- John Deere ILLUSTRATION format emphasizing more detailed pictures and fewer words.
- Instructions and illustrations grouped together in easy-to-use modules.
- Removal and Installation groups preceding some repair groups. These groups show how to remove and install components from the machine rather than from major components. They also show how to acquire access to major components of a machine.

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

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.



A68;RW5560 N01;0000 R 091282

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Hello dear friend!

Thank you very much for reading.

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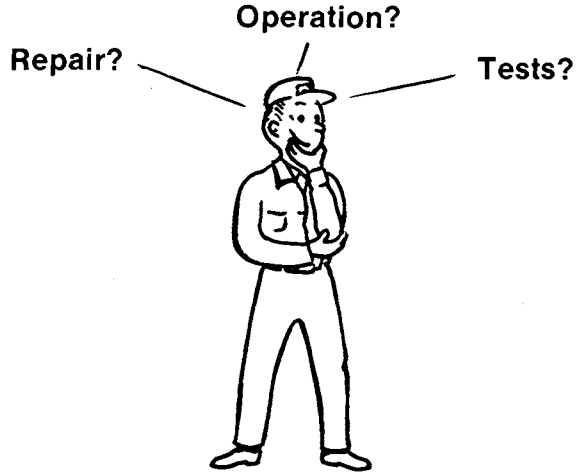
The full manual is available for immediate download.

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THREE-STEP PROCEDURE

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

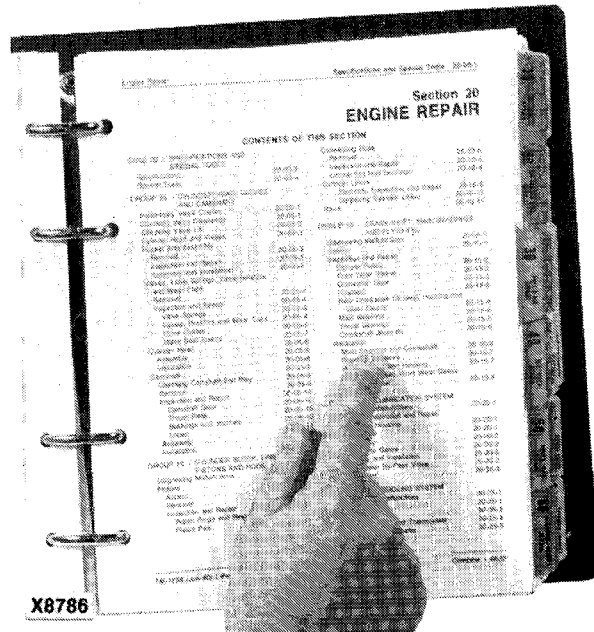
1. Determine the type of information you need. Is it repair, operation, or tests?
2. Go to the appropriate section tab.



X8788 TYPE OF INFORMATION?

8A5;X8788 N04;;0000 B 050384

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



X8786

A68;X8786 N01;0000 I 051061

Section 10 GENERAL

CONTENTS

Page

GROUP 05 - SAFETY

GROUP 10 - MACHINE SPECIFICATIONS

Specifications

655 Central Metering Seeder	10-10-01
665 Central Metering Seeder	10-10-02
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GROUP 15 - LUBRICATION

Fuels	10-15-01
Use Correct Engine Oil	10-15-02
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8A5; N04;;1000 A 310184

SAFETY MESSAGES



This safety alert symbol and word **CAUTION** identifies important safety messages in this manual and on machine. When you see this symbol, be alert to the possibility of personal injury and carefully read message that follows.

A68; N01;0000 T 091282

IMPORTANT

The **IMPORTANT** message identifies potential problems which may cause consequential damage to machine. Following recommended procedure will instruct technician how to avoid problem.

A68; N01;0000 U 51182

NOTES

The word *NOTE* is followed by a statement that identifies a qualification or exception to a previous statement. A "NOTE" may also identify nice-to-know information pertinent to, but not directly related to previous statement.

A68; N01;0000 V 51182

OBSERVE SAFETY RULES

Avoid loose clothing that can catch on some part of the machine.

Wear safety glasses while on the job.

Avoid working on equipment with engine running. If it is necessary to make checks with engine running, ALWAYS USE TWO PEOPLE -with the operator, at the controls, able to see person doing the checking. KEEP HANDS AWAY FROM MOVING PARTS.

DO NOT enter tank unless another person is present.

Always shut off tractor engine and shift to PARK when leaving tractor. Remove key when leaving tractor unattended.

Always have seeder stationary and on level ground when raising or lowering outriggers.

DO NOT raise or lower outriggers when moving.

When outriggers are raised and lock-up pins are not in transport position, never allow anyone where a falling outrigger could strike them.

8A5; N04;;1005 A 310184

AVOID FIRE HAZARDS

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located—know how to use them.

Don't smoke while refueling or handling highly flammable material.

Shut off the engine when refueling.

Use care in refueling if the engine is hot.

Don't use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.

Provide adequate ventilation when charging batteries.

Don't check battery charge by placing metal objects across the posts.

Don't allow sparks or open flame near batteries.

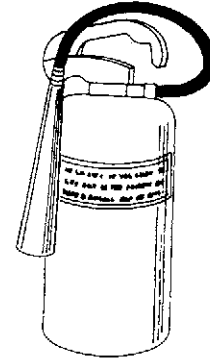
Don't smoke near battery.

Never check fuel, battery electrolyte, or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

Never use an open flame as light anywhere on or around the equipment.

When preparing engine for storage, remember that inhibitor is volatile and therefore dangerous. Seal and tape openings after adding the inhibitor. Keep container tightly closed when not in use.



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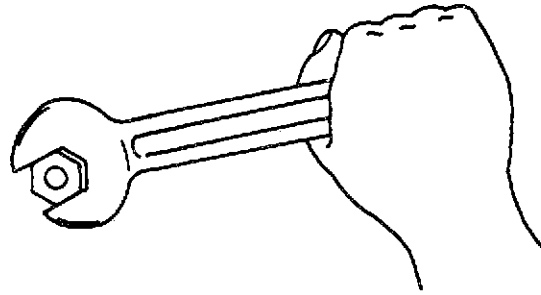
PRACTICE SAFE MAINTENANCE

Always use a safety support when working on, under, or around the chisel plow or tank.

Shut off tractor engine and remove key when working on chisel plow or tank.

Use proper safeguards when necessary to enter tank which has contained treated seed.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.



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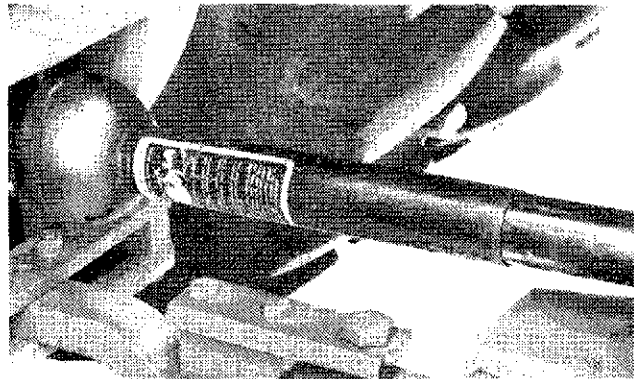
STAY CLEAR OF PTO

Stop the engine and be sure the PTO has stopped before:

- Connecting or disconnecting a PTO shaft.
- Making any adjustment to PTO drive train or hitch
- Cleaning out PTO driven equipment

PTO master shield should be in place at all times except when connecting a PTO drive line or for special applications as directed in the operator's manual.

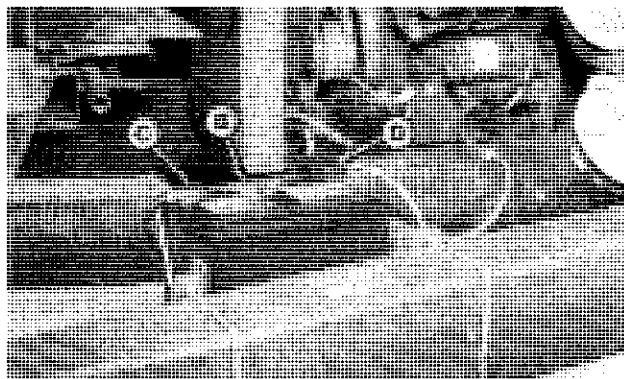
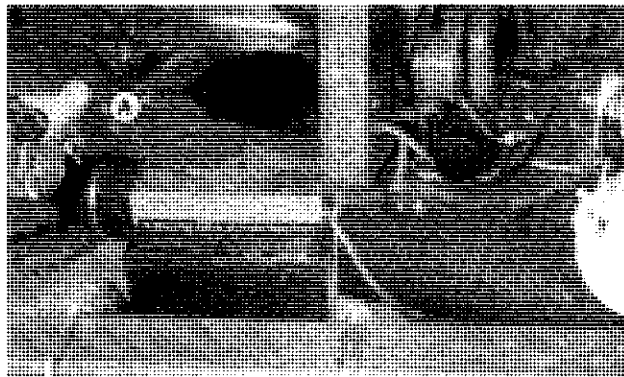
The PTO shaft guard should be in place when the PTO is not being used.



8A5;N80312 B; N04;;1005 C 290284

REMOVE AND INSTALL ENGINE**REMOVE ENGINE**

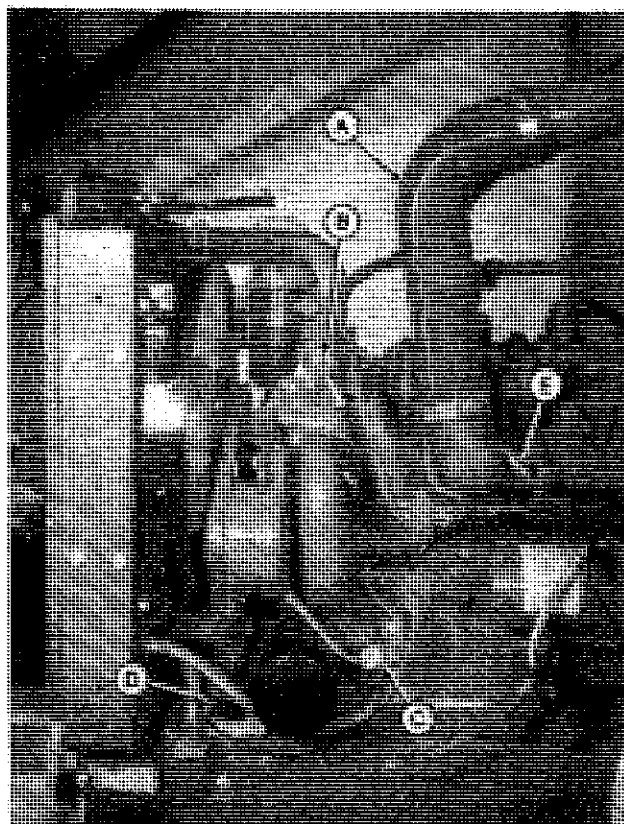
1. Remove battery cover (A) or hold down angle (B).
2. Disconnect negative ground cable (C).
3. Disconnect positive cable (D).
4. Remove battery from machine.



- A—Battery Cover
 B—Hold Down Angle
 C—Negative Ground Cable
 D—Positive Cable

BA5;N82168 F4, NR4010 G1 N04;;2005 A 010284

5. Disconnect air intake hose (A) from intake manifold.
6. Disconnect water temperature sender wire (B).
7. Disconnect alternator at coupler (C).
8. Disconnect oil pressure sender wire (D).
9. Disconnect Thermo-Start wire (E).

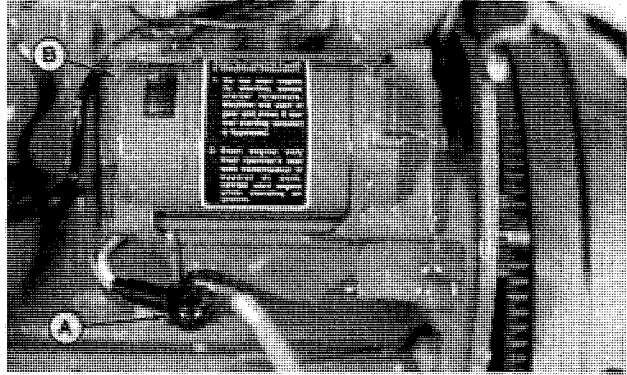


- A—Air Intake Hose
 B—Water Temperature Wire
 C—Alternator Coupler
 D—Oil Pressure Sender Wire
 E—Thermo-Start Wire

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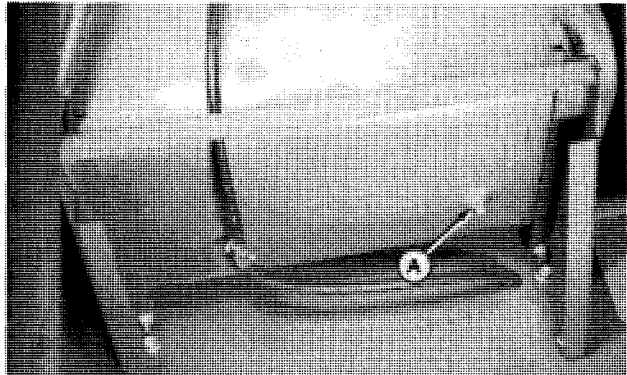
Remove and Install Engine

10. Disconnect wires and positive cable (A) from starter (B).



8A4;N85126 B1 N04;;2005 C 120885

11. Remove fuel tank drain plug (A) and drain tank.

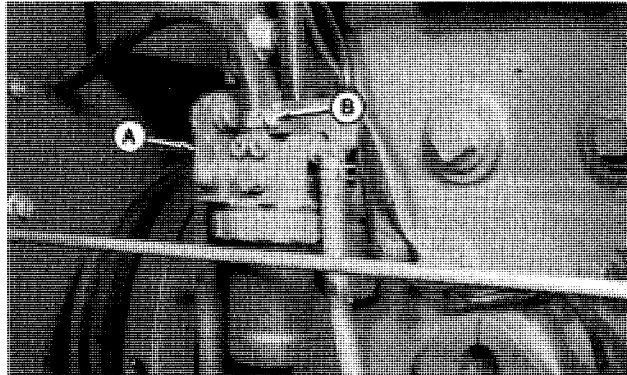


8A5;N83315 P1 N04;;2005 D 010284

12. Move fuel shut-off lever (A) up to closed position.

13. Unclamp fuel line (B) from fuel filter.

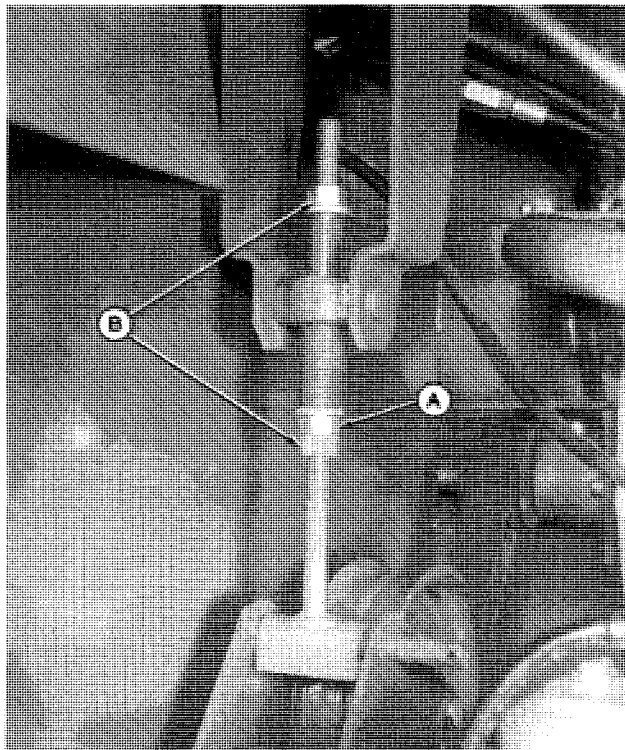
14. Remove fuel line and tape up out of the way.



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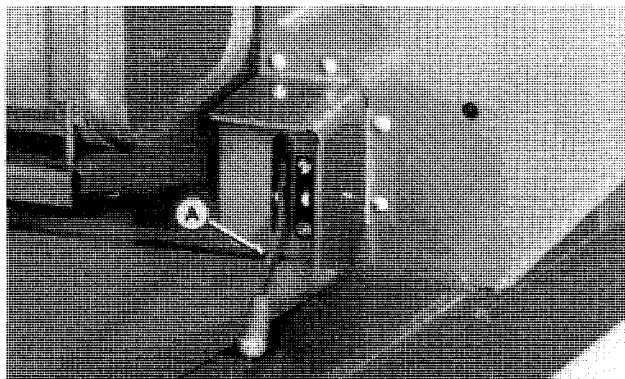
Remove and Install Engine

15. Loosen nuts (B).
16. Loosen nut (A) to loosen fan drive belt tension.
17. Remove drive belt from engine sheave.



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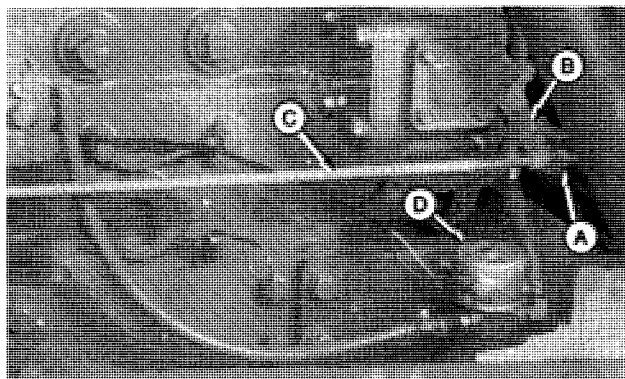
18. Reaching in from underneath, remove cotter pin from throttle linkage.
19. Disconnect linkage from throttle lever (A).



8A5;N82077 F2 N04;;2005 G 010284

20. Remove nut (A).
21. Remove throttle linkage (C) from arm (B) and machine.
22. Disconnect wires from both terminals of the fuel shut-off solenoid valve (D).

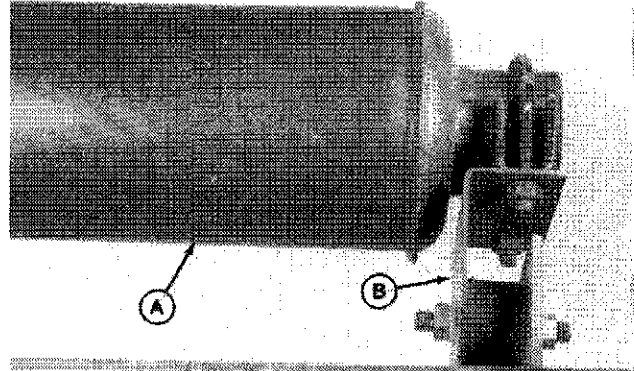
A—Nut
B—Fuel Injection Pump Arm
C—Throttle Linkage
D—Fuel Shut-off Solenoid Valve



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Remove and Install Engine

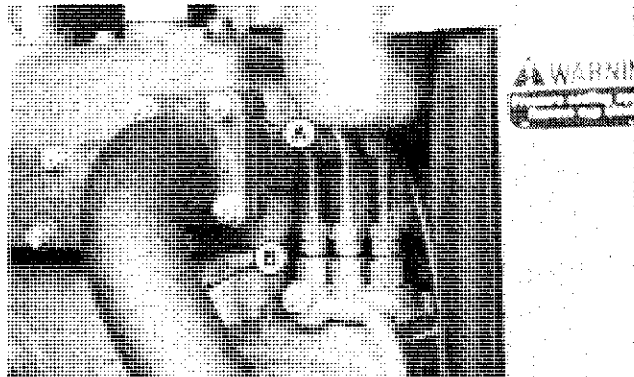
23. Disconnect muffler (A) from mounting (B).



8A5;N82167 H1 N04;;2005 I 010284

24. Remove four nuts (A) and lock washers.

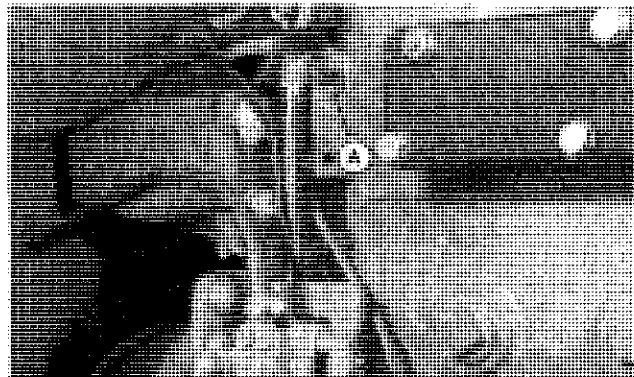
25. Remove exhaust pipe (B) from manifold.



8A5;N83315 J1 N04;;2005 J 010284

26. Disconnect ground wire (A) from engine.

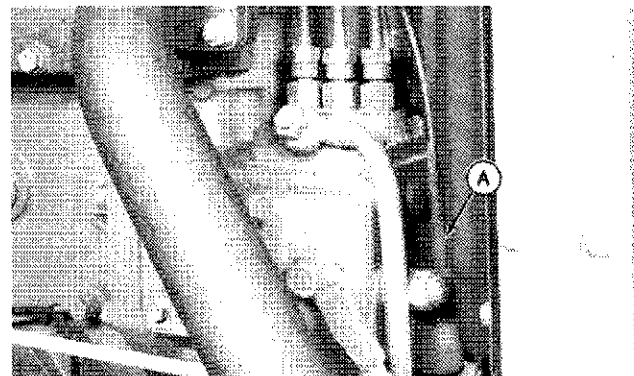
27. Coil wiring harness and position up out of the way.



8A5;N82167 E4 N04;;2005 K 010284

28. Disconnect tachometer cable (A).

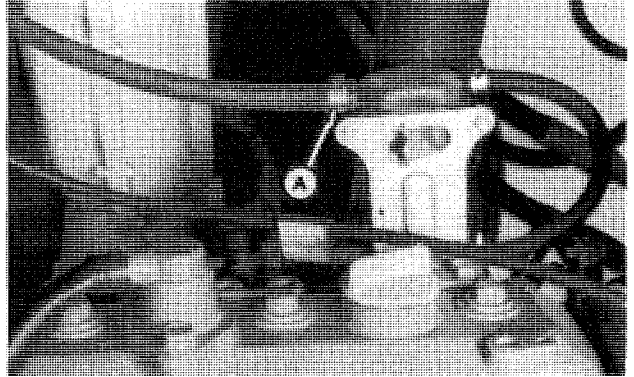
29. Plug tachometer hole to prevent dirt from entering block.



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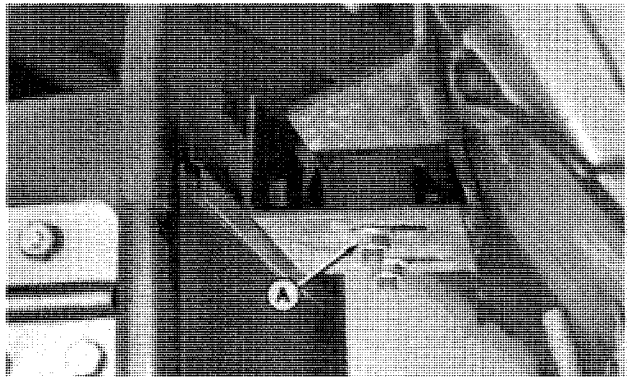
Remove and Install Engine

30. Disconnect fuel return hose (A).



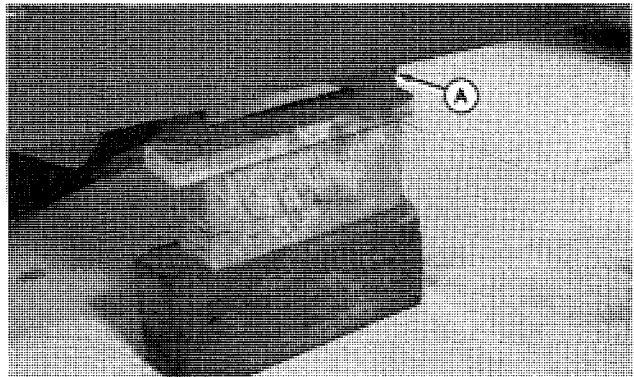
8A5;N83315 I1 N04;;2005 M 010284

31. Remove two nuts (A) to disconnect radiator support from tank.



8A5;N83339 B1 N04;;2005 N 010284

32. Block-up under engine mounting angles (A) on both sides of the machine.



8A5;N83339 C1 N04;;2005 O 010284

33. Remove four engine mounting cap screws (A), flat washers, and nuts.



CAUTION: Engine with radiator weighs approximately 207 kg (456 lb.). Use proper capacity device to lower engine to ground.

34. Using two or more persons, slowly lower engine to floor. Prevent engine from tipping, and objects from damaging radiator.



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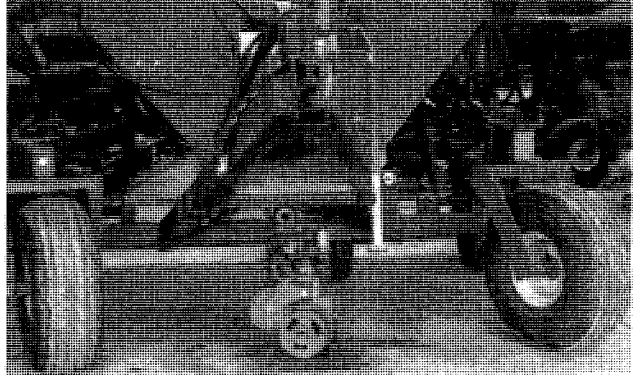
Remove and Install Engine



CAUTION: Tank weighs approximately 772 kg (1700 lb.). Use proper capacity lifting device, and proper capacity bracing to support tank while raised.

35. Lift hitch of tank until engine can be removed from underneath.

36. Remove engine.

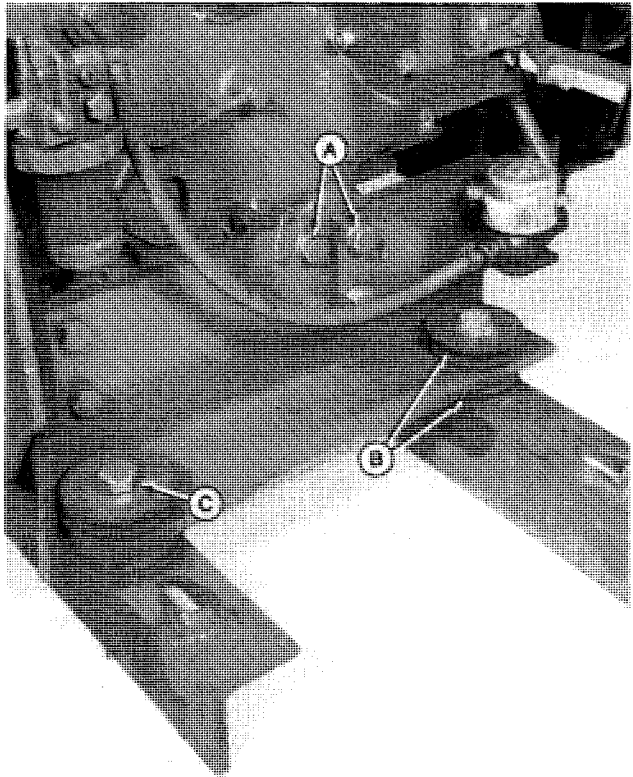


8A5;N83339 E1 N04;;2005 Q 010284

37. Remove side rail mounting bolts (A).

38. Inspect engine mount parts (B). If parts are worn or damaged, replace as required.

39. Torque engine mount cap screw (C) to 50-60 N·m (35-45 lb-ft).

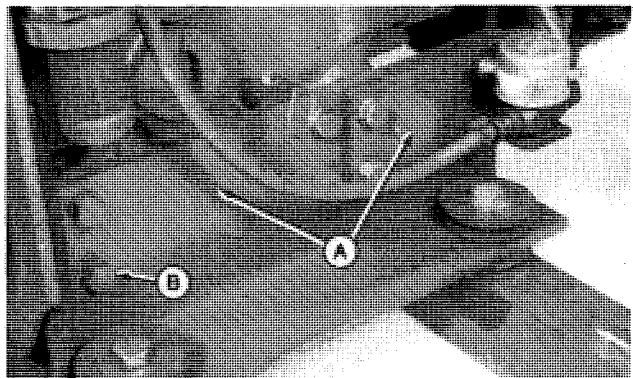


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INSTALL ENGINE

1. Position engine between side rails (A).

2. Install mounting bolts (B). Torque to 90 N·m (65 lb-ft).



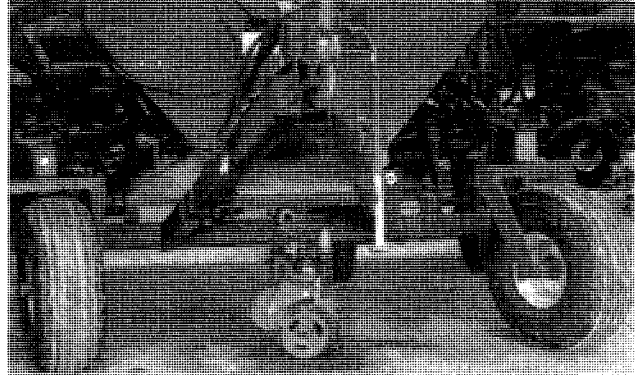
8A5;N83339 G2 N04;;2005 S 010284

Remove and Install Engine



CAUTION: Tank weighs approximately 772 kg. (1700 lb.). Use proper capacity lifting device, and proper capacity bracing to support tank while raised.

- 2A. Raise hitch of tank until engine can be positioned underneath.
3. Position engine under tank, radiator towards rear.
4. Slowly lower tank, guiding engine into position.

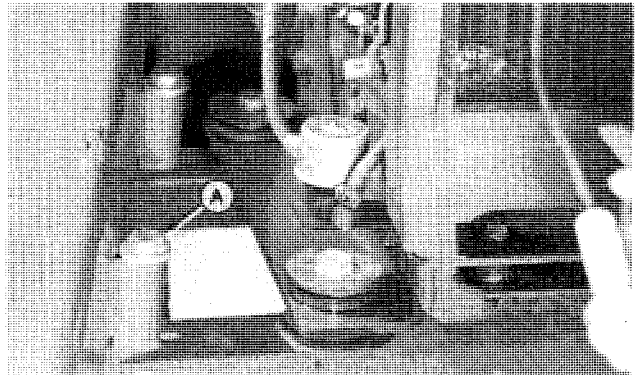


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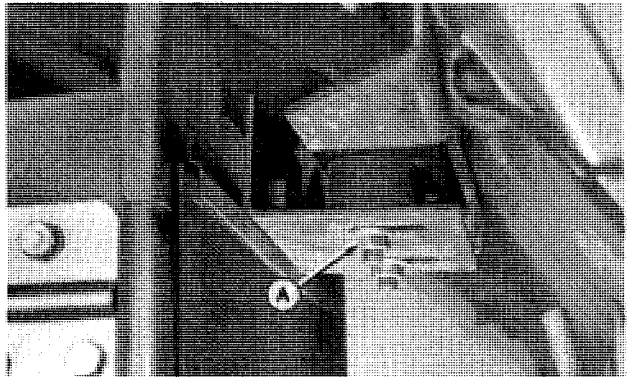
CAUTION: Engine with radiator weighs approximately 207 kg (456 lb). Use proper capacity device to raise engine into tank frame.

5. Using two or more persons, slowly raise engine, aligning holes in engine mounting angles with mounting brackets.
6. Install four engine mounting cap screws, eight flat washers, and lock nuts. Position engine as far to the right-hand side as slots will allow. Torque lock nuts to 200-260 N·m (150-190 lb·ft).



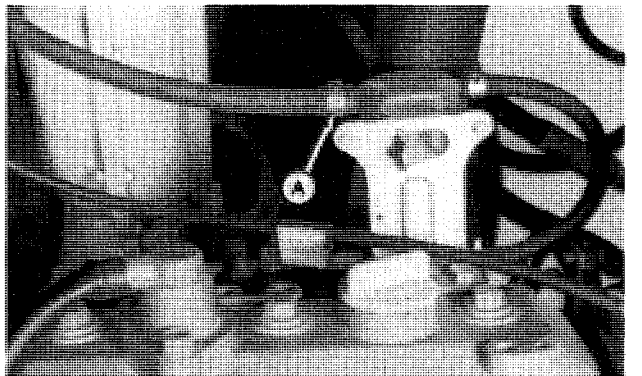
8A5;N83339 A1 N04;;2005 U 010284

7. Install two flange nuts (A).



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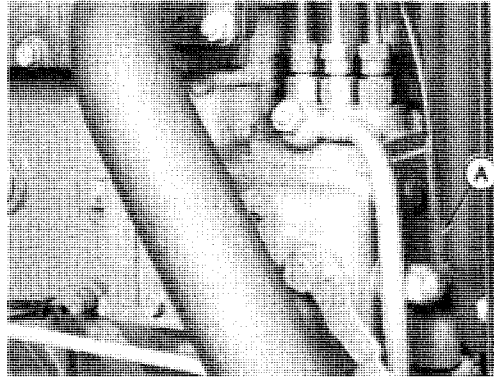
8. Connect fuel return hose (A) to Thermo-Start reservoir.



8A5;N83315 I1 N04;;2005 W 010284

Remove and Install Engine

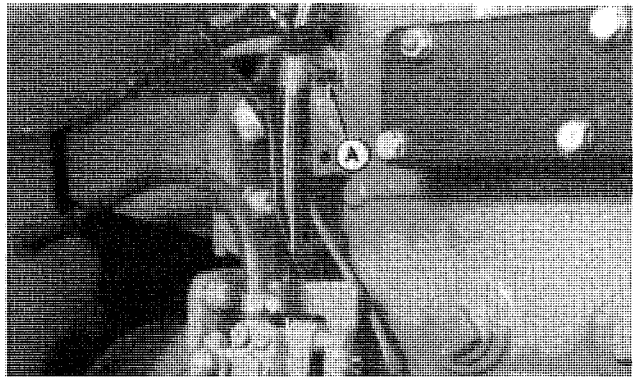
9. Connect tachometer cable (A).



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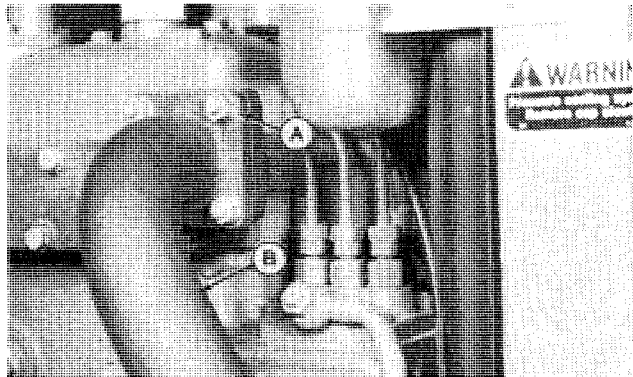
10. Uncoil wiring harness.

11. Connect ground wire (A).



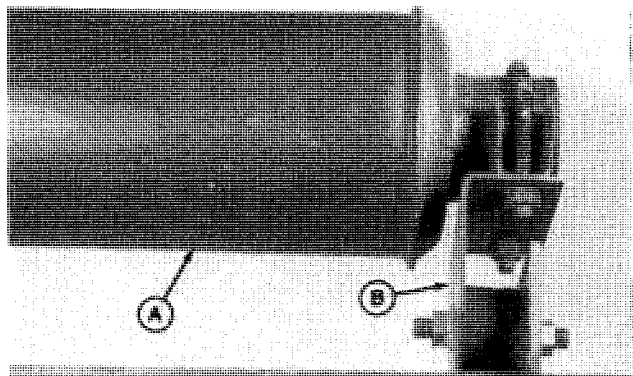
8A5;N82167 E4 N04;;2005 Y 010284

12. Place exhaust pipe (B) on manifold studs. Install lock washers and nuts (A).



8A5;N83315 J1 N04;;2005 Z 010284

13. Clamp muffler (A) to mounting (B).

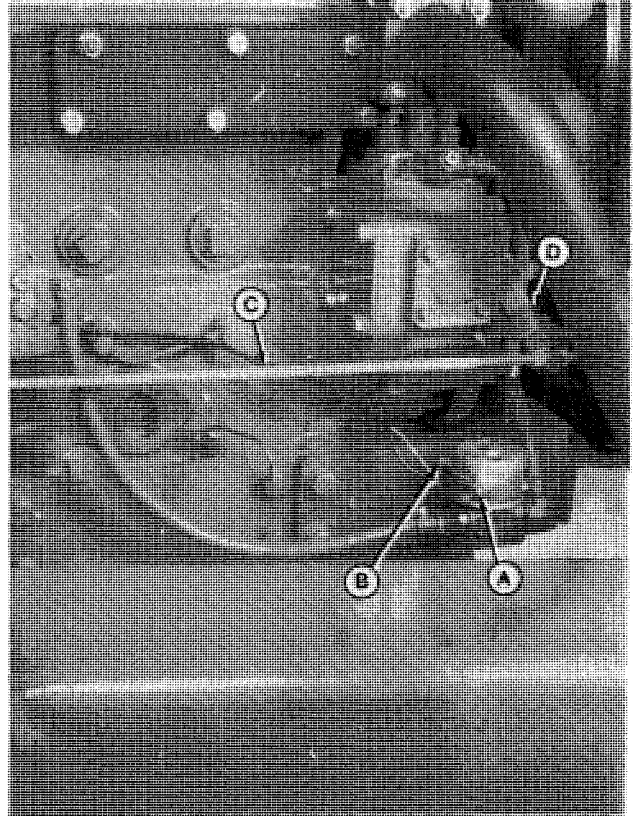


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Remove and Install Engine

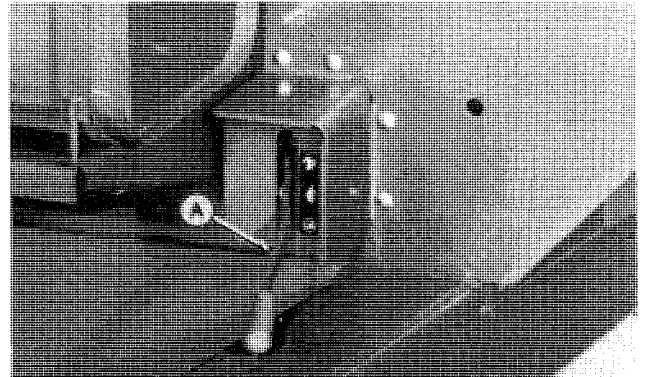
14. Connect black/yellow wire to terminal (A) (ground or negative).
15. Connect red/yellow wire to terminal (B) (positive or battery).
16. Insert throttle linkage (C) through tank bulkhead slot.
17. Install linkage through fuel injection pump arm (D). Install nut.

A—Terminal A
B—Terminal B
C—Throttle Linkage
D—Fuel Injection Pump Arm



8A5;N82167 F5 N04;;2005 AB 010284

18. Connect throttle linkage to throttle lever (A) with a cotter pin.

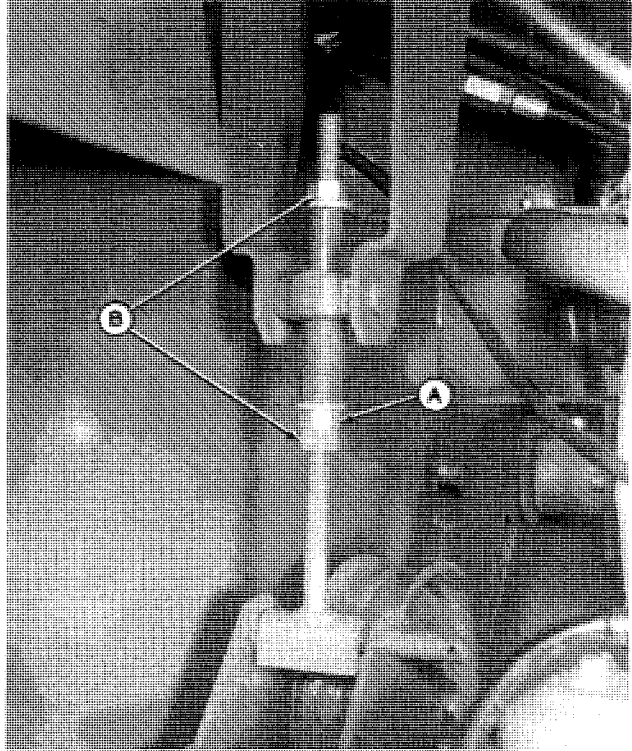


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Remove and Install Engine

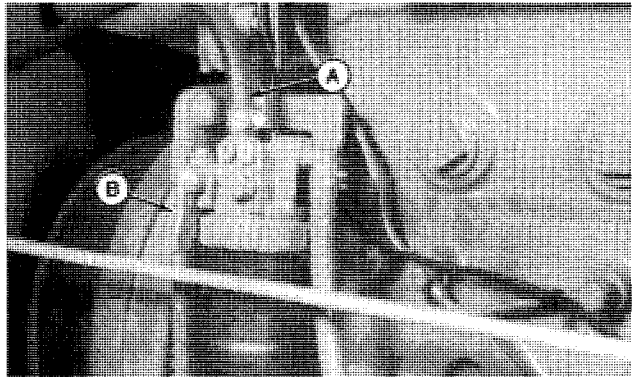
19. Place drive belt on engine drive sheave.
20. Tighten nut (A) until a force of 44 N (10 lb) deflects the center of belt span 10 mm (3/8-in.).
21. Tighten locking nuts (B).

NOTE: Spring may appear to be solid, but will expand during machine operation.



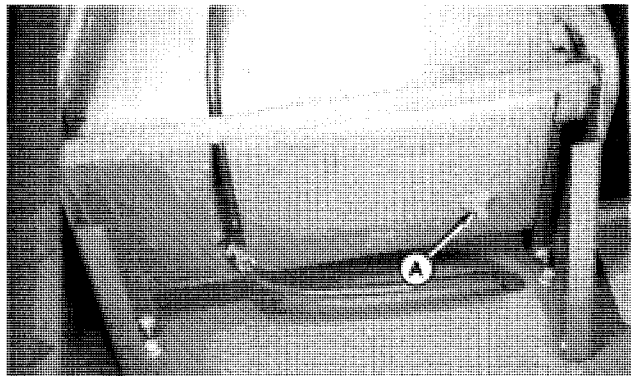
8A5;N82167 G1 N04;;2005 AD 010284

22. Clamp fuel line (A) to fuel filter.
23. Move fuel shut-off lever (B) down to open position.



8A5;N82167 E5 N04;;2005 AE 010284

24. Install fuel tank drain plug (A).

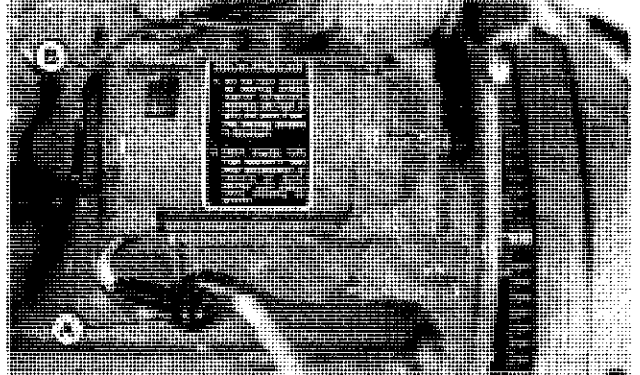


8A5;N83315 P1 N04;;2005 AF 010284

Remove and Install Engine

25. Connect two red wires, the red battery cable, and white wire to starter (B) at terminal (A).

26. Connect black wire with white stripe to other terminal.



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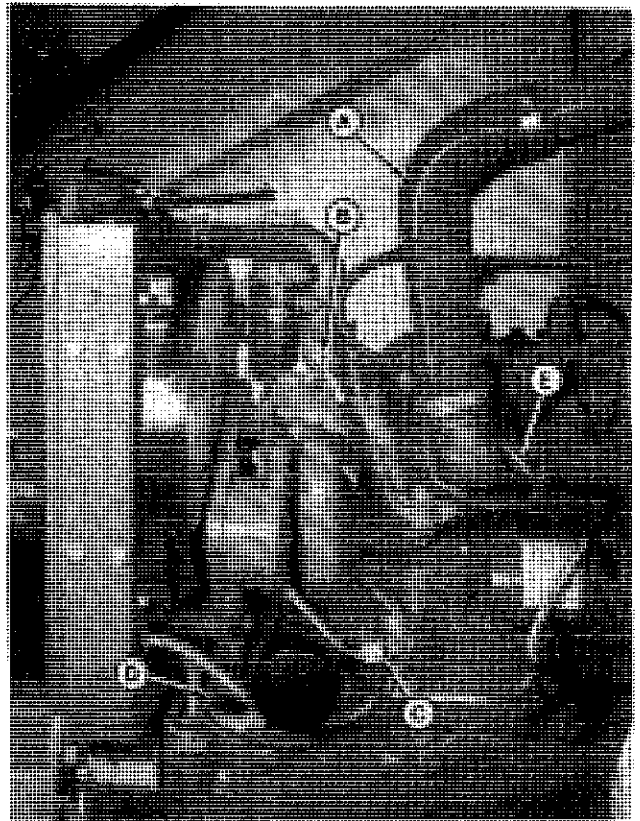
27. Connect Thermo-Start wire (E).

28. Connect yellow wire with red stripe to oil pressure sender (D).

29. Connect alternator coupler's (C).

30. Connect yellow with blue stripe water temperature sender wire (B).

31. Clamp air intake hose (A) to intake manifold.



A—Air Intake Hose
B—Water Temperature Wire
C—Alternator Coupler
D—Oil Pressure Sender Wire
E—Thermo-Start Wire

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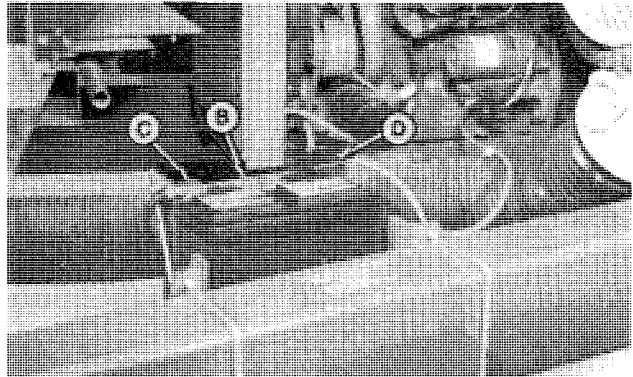
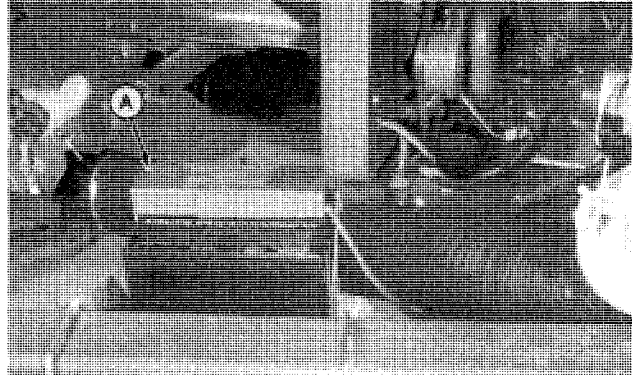
first, and then click the above link

to download the complete manual.

Thank you so much for reading

Remove and Install Engine

32. Install battery.
33. Connect positive cable and plastic cover (D).
34. Connect negative ground cable (C).
35. Install battery cover (A) or hold down angle (B) with clamp J-bolts.

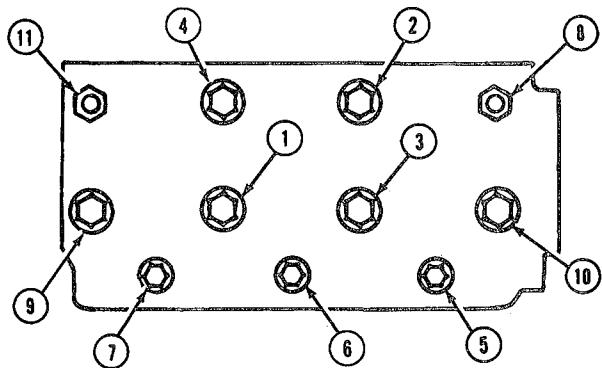


A—Battery Cover
B—Hold Down Angle
C—Negative Ground Cable
D—Positive Cable

8A5;N82168 F4, N84010 G1 N04;;2005 AI 010284

PERFORM ENGINE BREAK-IN

1. After one hour of operation, loosen, then retorque cylinder head cap screws as illustrated. Torque to specifications listed on next page.
2. Loosen, then retorque rocker arm shaft support nuts. Torque to 54 N·m (40 lb-ft).



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