

# PARTS & SERVICE NEWS

REF NO.	AA97185B
DATE	April 17, 1998

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**PARTS & SERVICE NEWS** AA97185A dated April 6, 1998 is superseded and should be discarded.

**SUBJECT:** CRANKING MOTOR AND FUEL SHUTOFF

**PURPOSE:** Provide procedure to change starting circuit to assure starter disengagement.

**APPLICATION:** Motor Graders with Emissionized Engines:  
 GD530AW-2 Motor Graders S/N 203163 thru 203474  
 GD650AW-2 Motor Graders S/N 203087 thru 203474  
 GD670AW-2 Motor Graders S/N 203087 thru 203474  
 830 Motor Graders S/N 203163 thru 203474  
 850 Motor Graders S/N 202487 thru 203474  
 870 Motor Graders S/N 202487 thru 203474

Cranes with Emissionized Engines:  
 150A Cranes S/N 10828 thru 10913, EXCEPT 10909  
 150FA Cranes S/N 10828 thru 10913, EXCEPT 10909

**FAILURE CODE:** D1405C

## DESCRIPTION:

### Introduction:

An intermittent problem exists on emissionized engines. The machine may not shutdown at the key switch and/or the starter may continue to run after startup.

This **PARTS & SERVICE NEWS** presents the procedure for rewiring the starting magnetic switch and the cranking motor. A field kit, 1439195H91, is available for graders which consists of the following:

Part Number	Qty.	Description
1439194H91	1	Jumper Wire
1439193H1	1	Stud Assembly
935522C1	5	Tie Strap

Cranes will require only the following:

1439193H1	1	Stud Assembly
1285485H1	1	Ring Terminal

## CHANGING CIRCUITRY ON 150 CRANES

1. Disconnect battery ground cable using master disconnect switch, located inside the fuel tank cover, before disconnecting wires from switch terminals.
2. Locate magnetic switch on L.H. side of engine. Remove **main wiring harness wire #16** (1) from magnetic switch. Replace nut and washer to retain engine wiring harness wire #16 (2).

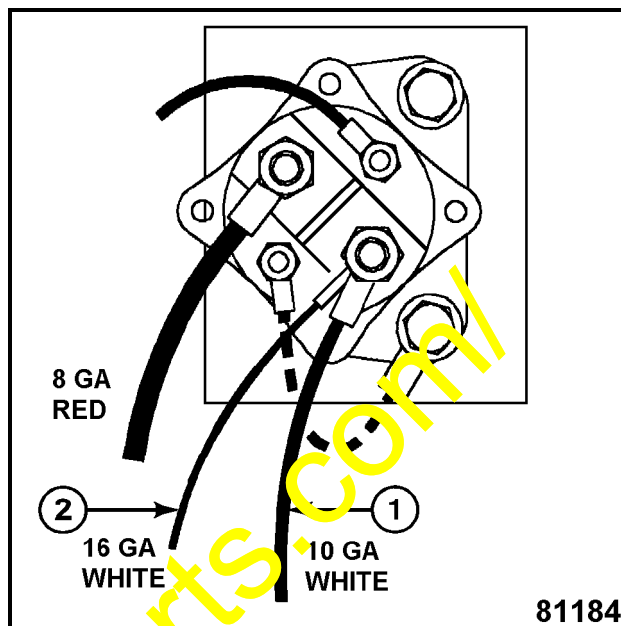


Figure 1

3. At cranking motor, remove bolt and washer (1) holding switch connector to field terminal.

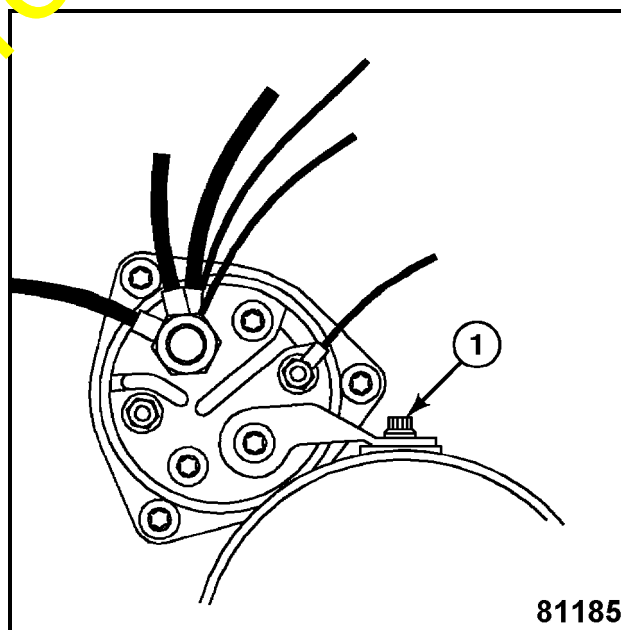


Figure 2

4. Remove nut (1) and washer (2) from 1439193H1 stud assembly. Install stud (3) into cranking motor. Tighten to 90 lbf in.
5. Remove existing terminal (4) from **main wiring harness wire #16** (5); strip insulation back 1/4" from cut end and install new 1285485H1 ring terminal (4).
6. Attach **main wiring harness wire #16** (5) ring terminal (4) on stud (3) with washer (2) and nut (1). Use lubriplate or other electrical grease.
7. Reconnect battery ground cable using master disconnect switch.

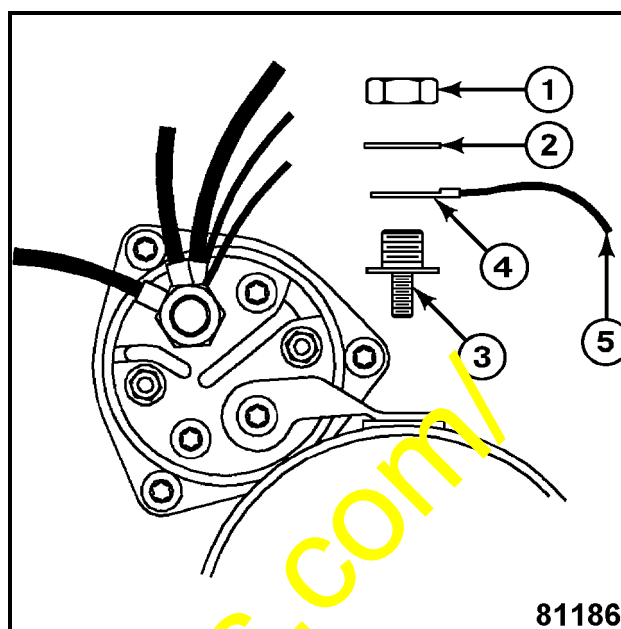


Figure 3

## CHANGING CIRCUITRY ON GRADERS

1. Disconnect battery ground cable or use optional master disconnect switch before disconnecting wires from switch terminals.
2. Locate magnetic switch on L.H. side of grader in engine compartment. Remove **engine wiring harness wire #1** (1) from magnetic switch. Replace nut and washer to retain engine wiring harness wire #21S (2).

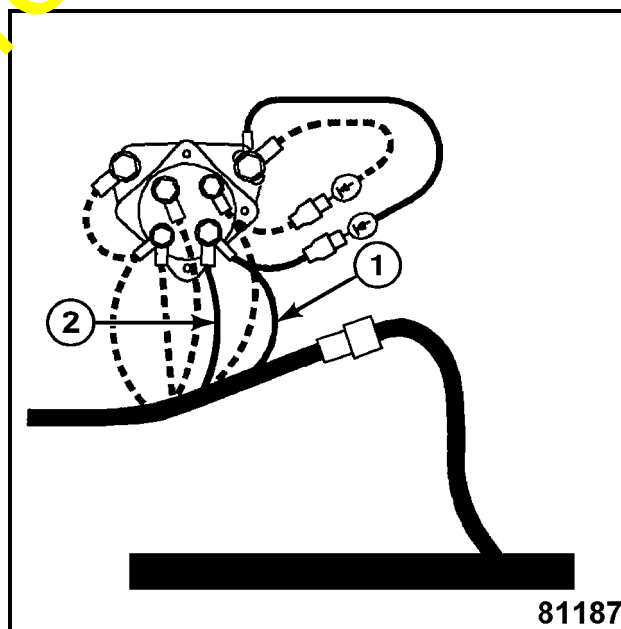


Figure 4

3. Disconnect and discard diode assembly (1) from connector (2) of **engine wiring harness wire #1**.
4. Wrap bare terminal (3) with electrical tape, securing terminal to harness with one 935522C1 tie strap to prevent shorting.
5. Attach 1439194H91 jumper wire (4) to connector (2) of **engine wiring harness wire #1**.

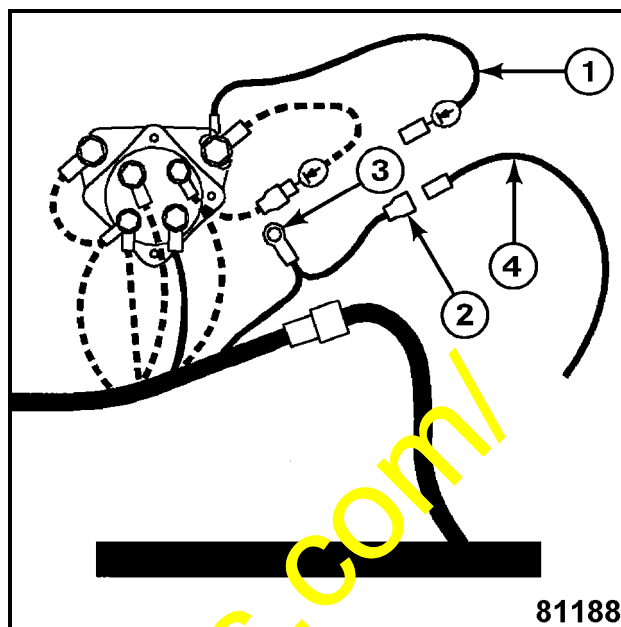


Figure 5

6. Run jumper wire (1) around engine to cranking motor, attaching to engine wiring harness with four 935522C1 tie straps (2).

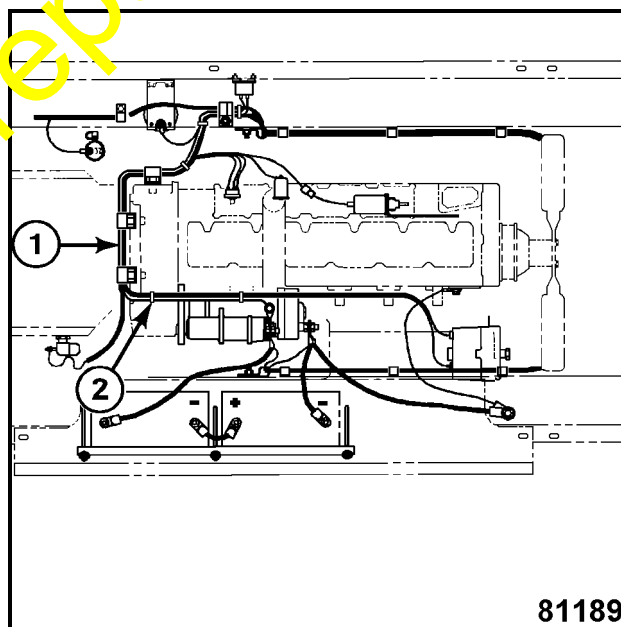


Figure 6

7. At cranking motor, remove bolt and washer (1) holding switch connector to field terminal.

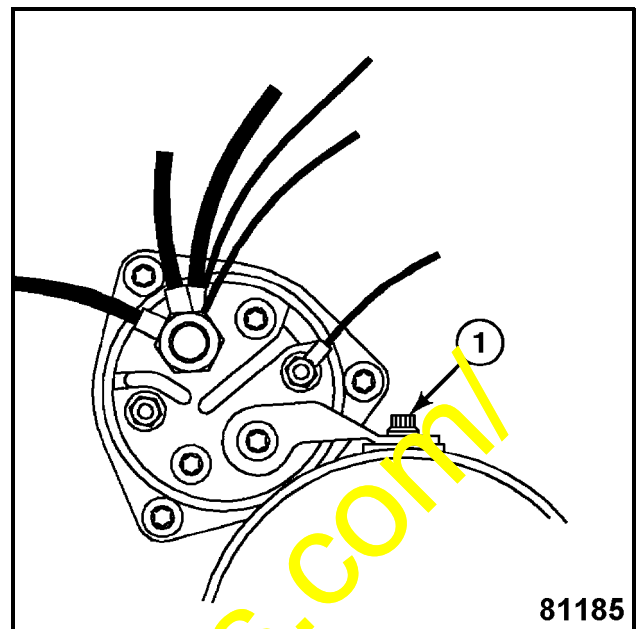


Figure 7

8. Remove nut (1) and washer (2) from 1439193H1 stud assembly. Install stud (3) into cranking motor. Tighten to 90 lbf in.
9. Attach jumper wire (5) ring terminal (4) on stud (3) with washer (2) and nut (1). Use lubriplate or other electrical grease.
10. Reconnect battery ground cable or use optional master disconnect switch.

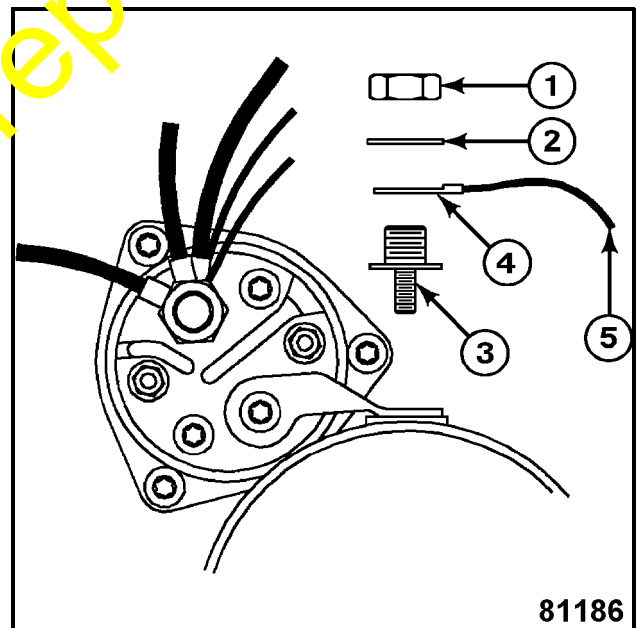


Figure 8