

TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT,
AND GENERAL SUPPORT MAINTENANCE MANUAL, VOLUME II

FOR

TESTER, FUEL INJECTOR PUMP:

SINGLE END DRIVE, 150 TO 3600 RPM
(4910-01-037-9417)

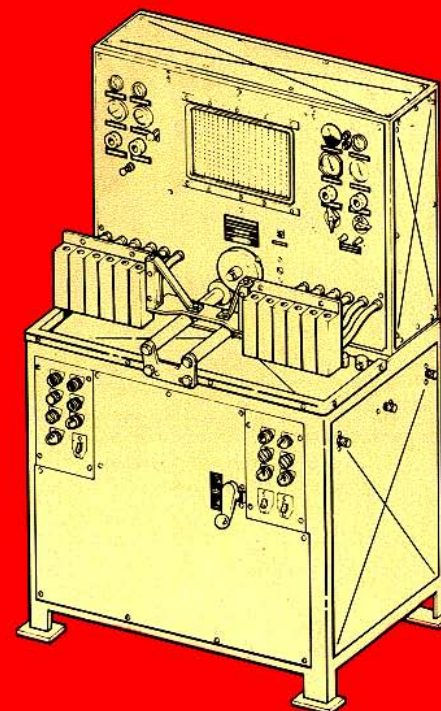
AND

ADAPTER KITS, FUEL INJECTOR:

AMERICAN BOSCH APE-6BB (4910-01-005-2850),
AMERICAN BOSCH PSB-6A AND PSB-6 (4910-01-005-2851),
AMERICAN BOSCH PSB-12BT (4910-01-005-2852),
SIMMONDS SU (4910-01-005-2853),
INTERNATIONAL HARVESTER 3200 (4910-01-006-3073),
AMERICAN BOSCH PSJ-6A (4910-01-006-3072),
CATERPILLAR (4910-01-005-2854),
ROOSA MASTER (4910-01-005-2855),
AND
CUMMINS (4910-00-763-7495)

HEADQUARTERS, DEPARTMENT OF THE ARMY

AUGUST 1982



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MANUFACTURED
ITEMS

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TECHNICAL MANUAL)
)
No. 9-4910-387-14-2)

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 13 August 1982

**Operator, Organizational, Direct Support, and
General Support Maintenance Manual
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SINGLE END DRIVE, 150 TO 3600 RPM (4910-01-037-9417)
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VOLUME II

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual, direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished to you.

*This manual, together with TM 9-4910-387-14-1, 24 May 1982, supersedes TM 9-4910-387-12, 25 May 1962; and so much of TM 9-4910-387-14&P, 5 December 1974, as pertains to maintenance.

NOTE

Chapters 1 thru 5 are contained in Volume I

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CHAPTER 6

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

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Section I. TROUBLESHOOTING**6-1. TROUBLESHOOTING INTRODUCTORY INFORMATION**

a. The symptom index can be used as a quick guide to troubleshooting. Common malfunctions are listed in alphabetical order with a page number reference to the troubleshooting procedure where a test or inspection and corrective action are provided.

b. The troubleshooting procedures contain the common malfunctions which you may find during the operation or maintenance of the tester or its components. You should perform the tests or inspections and corrective actions in the order given.

c. This manual cannot mention all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not mentioned or is not corrected by specified corrective action, notify your supervisor.

d. Information in this section is also to be used with troubleshooting (p 415) in organizational maintenance. It provides instructions where the organizational troubleshooting refers to general support maintenance for corrective action.

e. Keep the following information in mind when performing troubleshooting checks.

WARNING

Turn main power source off when performing troubleshooting checks.

- For electrical wiring diagrams, refer to page 6-146.
- For electrical wiring table, refer to page 6-149.
- Retag all wires when replacement is made.
- Some starters have three thermal heaters while others have only two.
- Some tester panels will have to be removed to perform troubleshooting checks.
- Location of starter contact points may vary on different models of starters.
- The wiring diagram on page 6-146 describes wires by color as well as by wire number. Different testers will not always have the same color wires as those indicated on the diagram. Therefore, references in this manual are to wire numbers and all wires should be tagged accordingly.

- Some testers have different remote control motors. Location of contact points will vary.
- All electrical troubleshooting is done by continuity test, unless otherwise specified.
- To perform continuity checks the distance between test points may be greater than meter leads, so utilize slave wire.
- RH and LH control panels may have to be removed to make proper contact.

6-2. TROUBLESHOOTING

SYMPTOM INDEX

Troubleshooting Procedure (Page)

AUXILIARY MOTOR

Fails to start, AUXILIARY MOTOR switch is in the on position.

Auxiliary motor may be defective	6-35
AUXILIARY MOTOR switch may be defective	6-32
L2 or L3 wire may be open from main power source to forward side of starter	6-32
Wires may be open	6-33

BULB TEMPERATURE GAGE

Does not indicate.

BULB TEMPERATURE gage is defective	6-46
Manifold bulb assembly may be defective	6-46

BURETTES

Will not empty.

Burette(s) may be defective.....	6-145
Dumping shaft assembly is improperly positioned	6-145

Will not fill up.

Counting circuit does not function	6-144
Graduate rack neoprene tubing(s) may be plugged or twisted	6-144



6-2. TROUBLESHOOTING (cont)**SYMPTOM INDEX (cont)****Troubleshooting
Procedure
(Page)****COUNTING CIRCUIT**

Does not function.

Counter pulse switch may be defective	6-100
500-1000-OFF count switch may be defective	6-101
Holding relay may be defective.....	6-97
Latching relay may be defective	6-98
Solenoid may be defective	6-100
START COUNT switch may be defective.....	6-96
Starter microswitches may be defective	6-102
Stepping relay may be defective	6-99
Wires may be open	6-103

COUNTING LIGHT

Does not light.

Indicator light may be defective	6-112
Wires may be open	6-112

DRIVE SPEED OF TESTER

Will not decrease.

Low cam speed stop may be set incorrectly.....	6-133
Low speed microswitch may be defective	6-136
Remote control motor may be defective	6-137
SLOW button may be defective	6-134
Wires may be open	6-135

Will not increase.

Clutch may be loose or defective	6-131
FAST button may be defective	6-128
High cam speed stop may be set incorrectly	6-127
High speed microswitch may be defective	6-130
Remote control motor may be defective	6-131
Wires may be open	6-129

ENGINE PRIMER ASSEMBLY

Does not function.

Copper tubing to engine primer assembly may be plugged or broken	6-84
Engine primer assembly is defective	6-84

FUEL

Does not circulate.

Fuel copper tubings may be plugged or broken	6-141
Fuel pump is defective	6-140

Will not heat to desired temperature.

FUEL HEAT switch may be defective	6-62
Tank heater in fuel tank assembly may be defective	6-62
Wires may be open	6-62

FUEL HEAT LIGHT

Does not light, FUEL HEAT switch is in the on position.

Female and/or male connector plugs may be defective	6-54
FUEL HEAT indicator light may be defective	6-49
FUEL HEAT switch may be defective	6-49
Thermostat for fuel tank assembly may be defective	6-50
Wires may be open	6-51

6-2. TROUBLESHOOTING (cont)**SYMPTOM INDEX (cont)****Troubleshooting
Procedure
(Page)****FUEL TEMPERATURE GAGE**

Does not indicate.

Auxiliary motor may be defective	6-73
Drive belt on fuel and lube oil pumps may be broken	6-73
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Fuel pressure copper tubing from fuel pump to FUEL REGULATOR may be plugged or broken.....	6-75
Fuel pump is defective	6-76
FUEL REGULATOR may be defective	6-74
FUEL TEMPERATURE gage is defective.....	6-76

LUBE HEAT LIGHT

Does not light, LUBE HEAT switch is in the on position.

Female and/or male connector plugs may be defective	6-61
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LUBE HEAT switch may be defective.....	6-56
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Wires may be open	6-58

LUBE OIL

Does not circulate.

Lube oil copper tubings may be plugged or broken	6-143
Lube oil pump is defective	6-142

Will not heat to desired temperature.

LUBE HEAT switch may be defective	6-63
Tank heater in lube oil tank assembly may be defective	6-63
Wires may be open	6-63

LUBE OIL TEMPERATURE GAGE

Does not indicate.

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Lube oil pressure copper tubing from lube oil pump to LUBE OIL REGULATOR may be plugged or broken	6-81
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LUBE OIL REGULATOR may be defective	6-80
LUBE OIL TEMPERATURE gage is defective	6-82

MAIN DRIVE MOTOR

Blows main power source fuses.

Main drive motor is stopped above lowest speed obtainable	6-139
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Fails to start, FORWARD-OFF-REVERSE switch is in FORWARD position.

FORWARD-OFF-REVERSE switch may be defective	6-14
Main drive motor may be defective	6-22
START switch may be defective	6-15
Starter forward coil may be defective	6-16
Starter microswitch may be defective	6-17
Starter thermal heaters' bus bar contacts may be defective	6-16
STOP switch may be defective	6-15
Wire may be open from main power source to forward side of starter	6-13
Wire may be open from starter to main drive motor	6-20
Wires may be open	6-18

6-2. TROUBLESHOOTING (cont)**SYMPTOM INDEX (cont)****Troubleshooting
Procedure
(Page)****MAIN DRIVE MOTOR (cont)**

Fails to start, FORWARD-OFF-REVERSE switch is in REVERSE position.

FORWARD-OFF-REVERSE switch may be defective	6-25
Main drive motor may be defective	6-30
START switch may be defective	6-26
Starter microswitch may be open	6-27
Starter reverse coil may be defective	6-27
Starter thermal heaters' bus bar contacts may be defective	6-27
STOP switch may be defective	6-26
Wire may be open from main power source to reverse side of starter	6-24
Wire may be open from starter to main drive motor	6-30
Wires may be open	6-28

MANF. PRESS. - CAPSULE PRESSURE SELECTOR VALVE

Does not function.

Copper tubing to MANF. PRESS. - CAPSULE PRESSURE selector valve may be disconnected	6-94
MANF. PRESS. - CAPSULE PRESSURE selector valve is defective	6-94

MANIFOLD BULB ASSEMBLY

Inoperative.

Manifold bulb assembly may be defective	6-45
Wires may be open	6-44

MANIFOLD HEAT LIGHT

Does not light.

Indicator light may be defective	6-41
Wires may be open	6-40

POWER ON LIGHT

Does not light.

Indicator light may be defective	6-37
Wires may be open	6-37

PRESSURE REGULATOR

Does not function.

Copper tubing from PRESSURE REGULATOR to VACUUM REGULATOR may be disconnected.....	6-90
PRESSURE REGULATOR is defective	6-90

PUMP TEMPERATURE GAGE

Does not indicate.

PUMP TEMPERATURE gage is defective	6-47
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TACHOMETER INDICATOR ASSEMBLY

Does not function, FORWARD-OFF-REVERSE switch is in FORWARD position.

Forward tachometer reversing relay may be defective	6-114
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6-2. TROUBLESHOOTING (cont)**SYMPTOM INDEX (cont)****Troubleshooting
Procedure
(Page)****TACHOMETER INDICATOR ASSEMBLY (cont)**

Does not function, FOWARD-OFF-REVERSE switch is in REVERSE position.

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24 VOLTS DC OUTLET ASSEMBLY

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24-VDC switch may be defective	6-65
24 VOLTS DC outlet assembly may be defective	6-67
Wires may be open	6-68

VACUUM - PRESS. SELECTOR VALVE

Does not function.

Copper tubing to VACUUM - PRESS. selector valve may be disconnected.....	6-92
VACUUM - PRESS. selector valve is defective	6-92

VACUUM REGULATOR

Does not function.

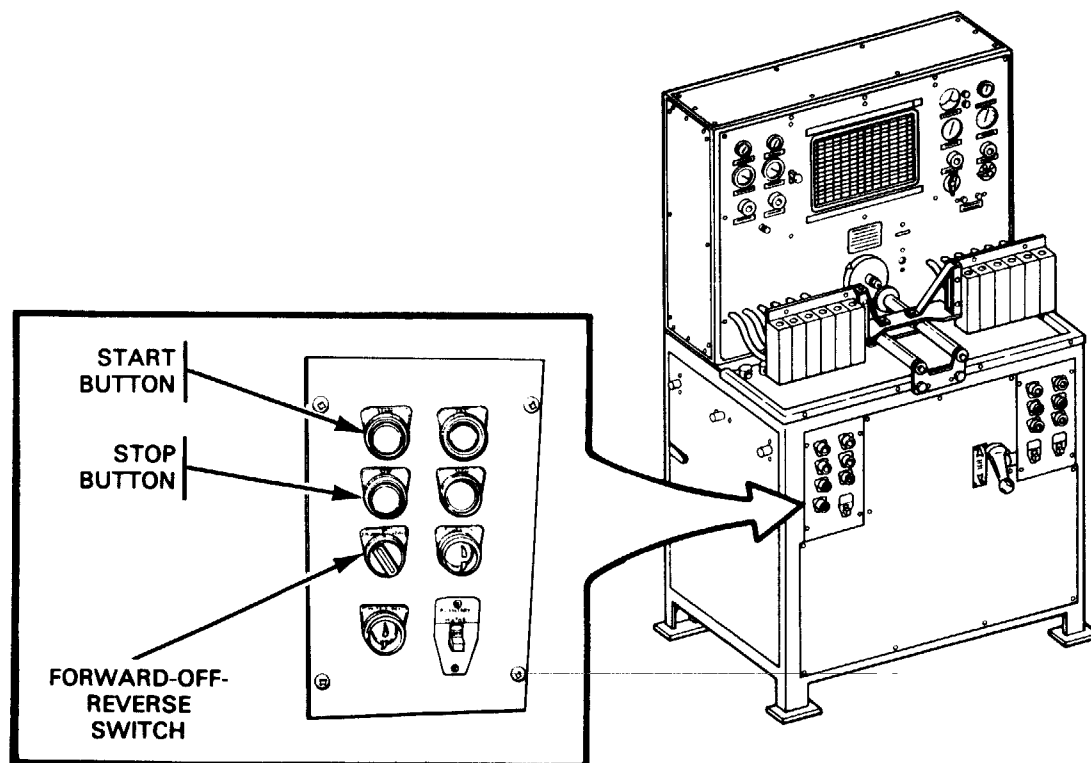
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VACUUM REGULATOR is defective	6-88



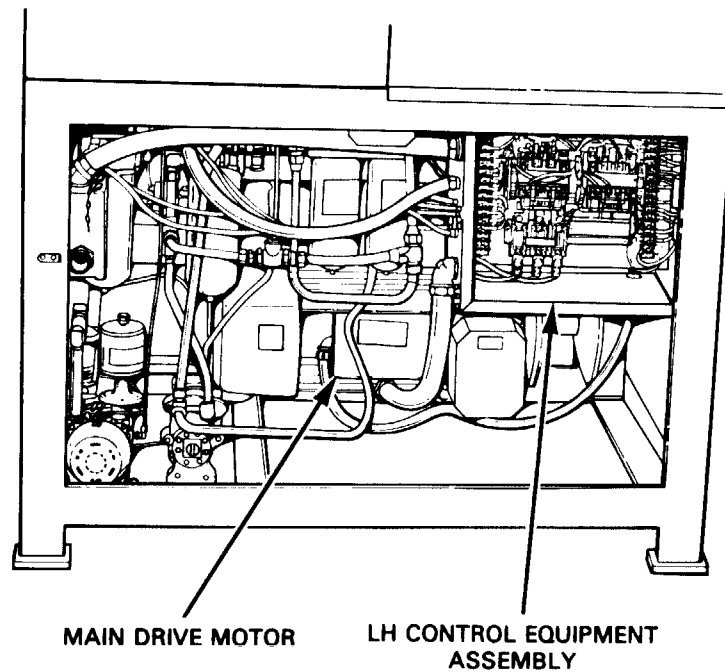
6-2. TROUBLESHOOTING (cont)

MAIN DRIVE MOTOR

FAILS TO START.
FORWARD-OFF-REVERSE switch is in
FORWARD position



LOCATOR VIEW



A. WIRE MAY BE OPEN FROM MAIN POWER SOURCE TO FORWARD SIDE OF STARTER.

- 1 Connect one multimeter lead to contact L1 (1) at main power source and connect other lead to contact L1 (2) at forward side of starter.
- 2 Remove both leads. Connect one multimeter lead to contact L2 (3) at main power source and connect other lead to contact L2 (4) at forward side of starter.
- 3 Remove both leads. Connect one multimeter lead to contact L3 (5) at main power source and connect other lead to contact L3 (6) at forward side of starter.

