Overhaul Manual

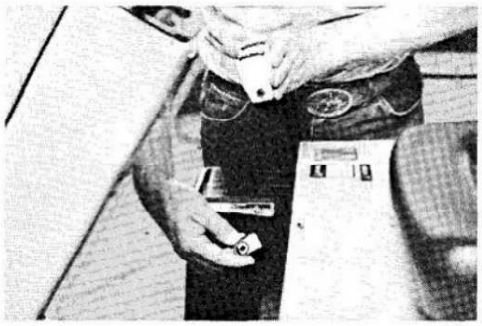
OH 540
TM 247

CLARK

Service Publications
Department
Battle Creek,
Michigan 49016

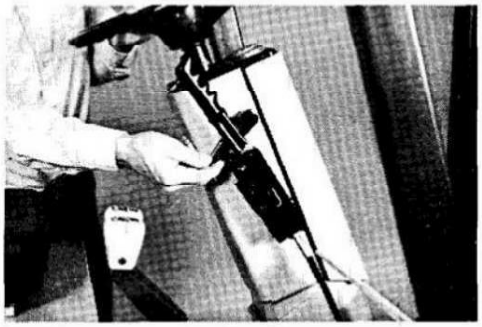
BATTERY REMOVAL

1 Push the control valve levers forward (all together) and pull up on the lock lever handle to lock the control levers in the forward position.



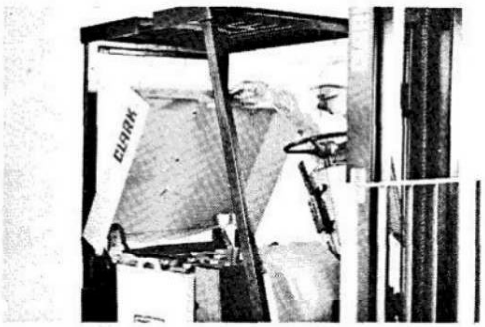
85M521

2 Release the pylon latch and move the steering column to the raised (forward) position.



85M660

3 Unlatch and open the hood (seat deck/ battery compartment cover).



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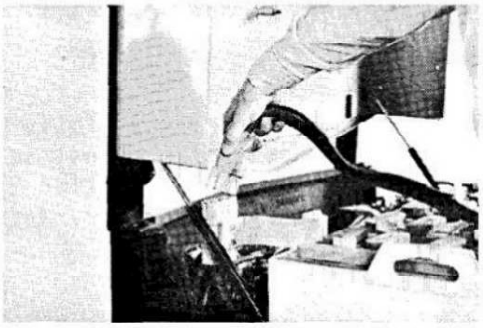
4 Disconnect battery at truck receptacle.



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5 **NOTICE** - If the battery to be handled is uncovered, and has exposed terminals and cell connectors, cover the battery with a non-conducting (insulating) material, e.g., plywood or heavy cardboard, before attaching the lifting device, to prevent shorting across the battery terminals while handling.

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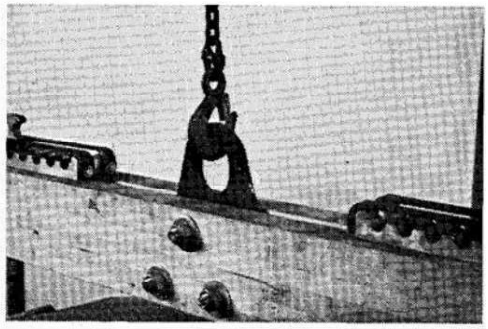
6 The overhead hoist should be equipped with a safety hook. Be sure the hoist, chains, and spreader bar are in good condition and have correct capacity to safely lift and carry the battery.



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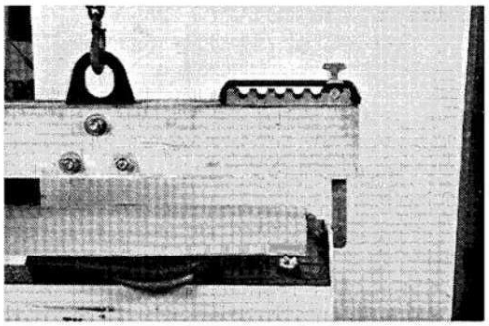
7 Use an insulated spreader bar to lift and remove the battery. Adjust the hooks of the spreader bar so that the lifting force is directly vertical to avoid side forces from damaging the battery or case.



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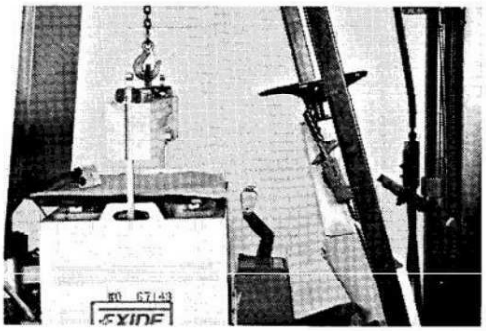
8 Raise the battery carefully. Check that all cables are out of the way, and the steering pylon and control levers are locked in the forward position.



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9 When the battery is raised above the frame side, move the battery away from truck.

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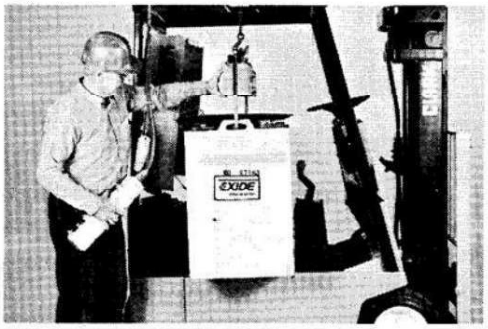


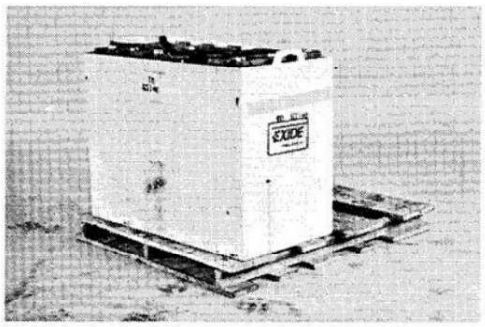
85M754

10 Store the battery in a safe position on a pallet or in the battery service area.

⚠ WARNING

SULFURIC ACID

THE BATTERY CONTAINS CORROSIVE ACID WHICH CAN CAUSE INJURY. IF ACID CONTACTS YOUR EYES OR SKIN, FLUSH IMMEDIATELY WITH WATER AND GET MEDICAL ASSISTANCE.



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IMPORTANT

- USE ONLY A LEAD-ACID BATTERY WITH THE VOLTAGE AND AMPERE-HOUR RATING SPECIFIED FOR YOUR TRUCK.
- FOLLOW NORMAL BATTERY MAINTENANCE PROCEDURES, RECHARGING BEFORE 80-PERCENT DISCHARGED AND WITH PERIODIC EQUALIZING CHARGES.

BATTERY INSTALLATION

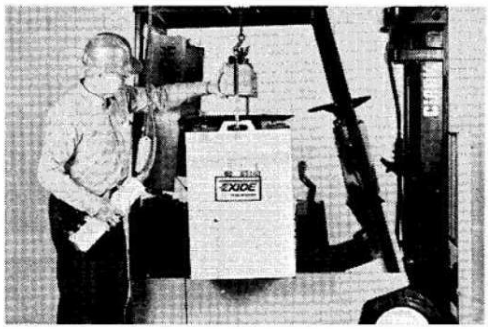
1 Refer to removal and equipment recommendations noted previously for lifting and handling the battery.

2 Be sure that front battery plate bolts are tightened correctly.

3 Be sure no tools or other materials are left in the battery compartment.

4 Be sure steering pylon and control levers are locked in the forward position.

5 Lift and move battery slowly to the truck. Do not bump battery on frame side while installing. Be careful not to strike the control levers, or hood stop brackets at the rear of compartment.



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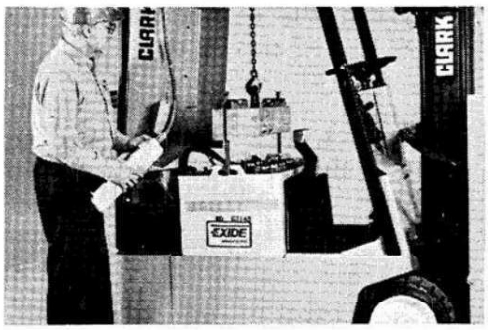
6 Lower the battery into battery compartment.



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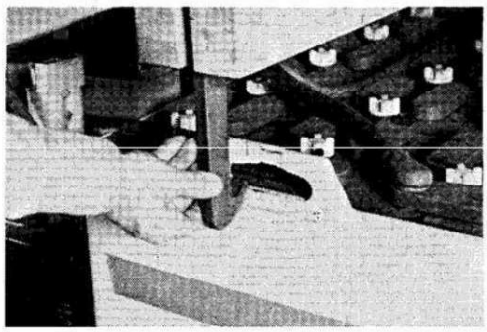
7 Remove the lifting hooks and spreader bar.

8 Remove the temporary insulating cover from top of battery, if it was required.



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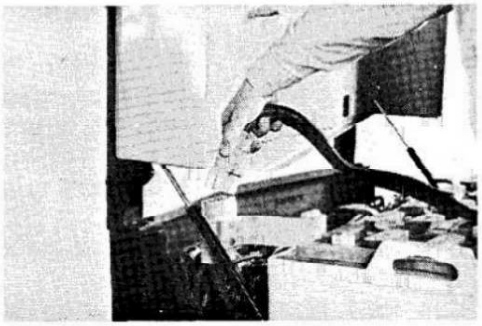
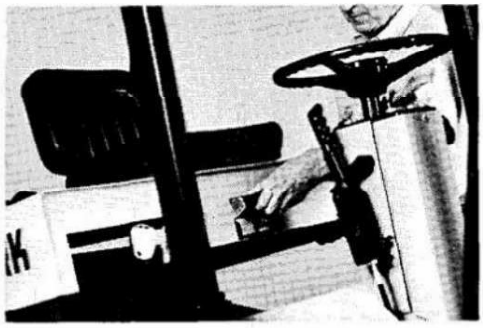
8 Connect battery at truck receptacle.



85M541

9 Close the battery compartment cover.



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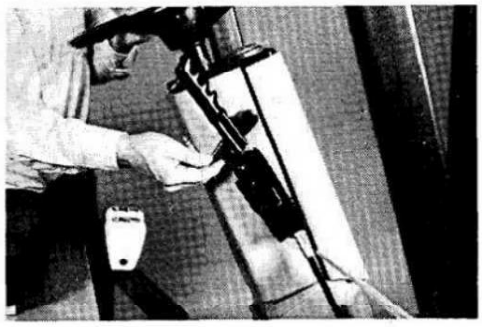
10 Release the valve control levers from the locked position.

11 Move and lock the steering column pylon into the rear or down position.



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12 Check battery charge condition:

- Turn key switch to "ON" position.
- Check battery charge indicator.
- Do a battery load test.
- Turn key switch to "OFF" position.

85M511

GROUP 13

SECTION 6

ACCELERATOR CONTROL MAINTENANCE

AND

TROUBLESHOOTING

EV-100 SCR CONTROL
SOLID-STATE
ACCELERATOR SWITCH ASSEMBLY

Refer to Systems Diagnostic Manual, SDM-542, for additional information on troubleshooting of the accelerator control with the EV-100 SCR control.

⚠ CAUTION

BEFORE ANY ADJUSTMENTS, SERVICING, PARTS REPLACEMENT OR ANY ACT IS PERFORMED REQUIRING PHYSICAL CONTACT WITH WORKING COMPONENTS OR WIRING OF THIS COMPONENT:

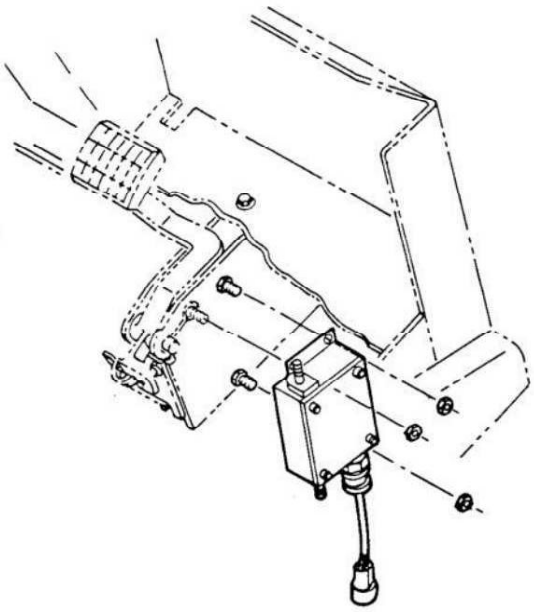
- RAISE DRIVE WHEELS OFF THE FLOOR,
- DISCONNECT THE BATTERY, AND
- DISCHARGE THE CAPACITOR 1C.

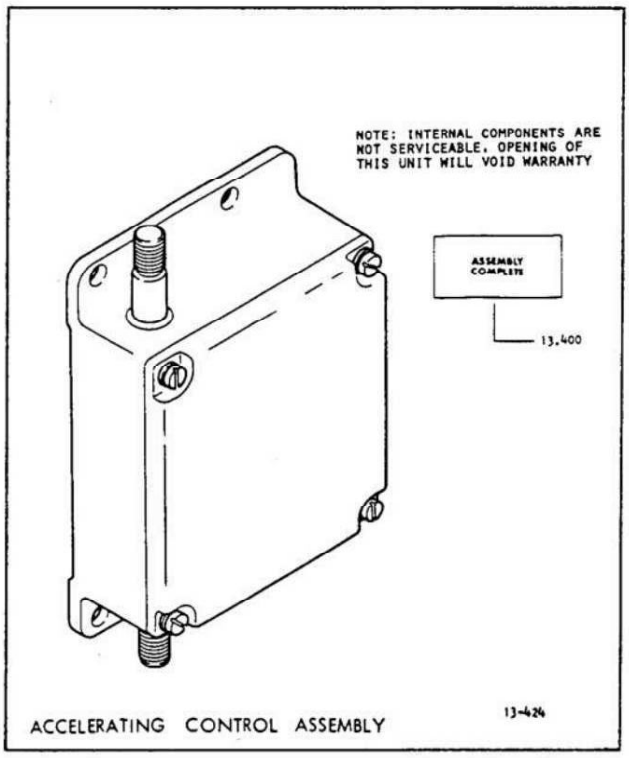
⚠ CAUTION

ELECTRICAL BURNS

DISCONNECT THE BATTERY AND REMOVE ALL JEWELRY BEFORE WORKING ON ANY ELECTRICAL SYSTEM. SEVERE BURNS CAN RESULT FROM CONTACT WITH ELECTRICAL SYSTEMS

EV-100 SCR CONTROL
SOLID-STATE
ACCELERATOR CONTROL (SWITCH) ASSEMBLY





The accelerator control switch assembly contains:

1 a switch (1MS start switch) which closes at the beginning of shaft travel to energize the control circuit, and

2 a solid-state counter circuit which varies the speed of the truck while in SCR control.

The counter circuit consists of a solid-state infrared light source and a position sensor. As the position sensor moves with respect to the light source, digital signals are generated. These signals are converted to an analog voltage output to provide a linear speed signal to the control.

No parts are adjustable except the start switch, which should require no adjustment under all normal conditions.

Self-lubricating bearings are used eliminating the need for any lubrication. Underwriters' Laboratory Type EE construction, O-ring seal, blind mounting holes, and insulated wire hole grommet all combine to eliminate the need for periodic cleaning.

Specifications:

1MS start switch should close at [1,9-2,3 mm] .075-.091 in. of shaft travel. SWITCH MUST OPEN BEFORE SHAFT RETURNS TO THE STOP POSITION.

Counter Circuit Voltage Output Curve: Linear.

Nominal voltage output: 3.65 volts @ [0-2,1 mm] 0-.082 in. travel
0.25 volts @ [13,5-14,0 mm] .53-.55 in. travel

NOTICE - ATTEMPT TO REMOVE OR REPAIR CIRCUIT CARDS IN THE SWITCH WILL VOID WARRANTY.

ACCELERATOR CONTROL CHECKS & TROUBLESHOOTING

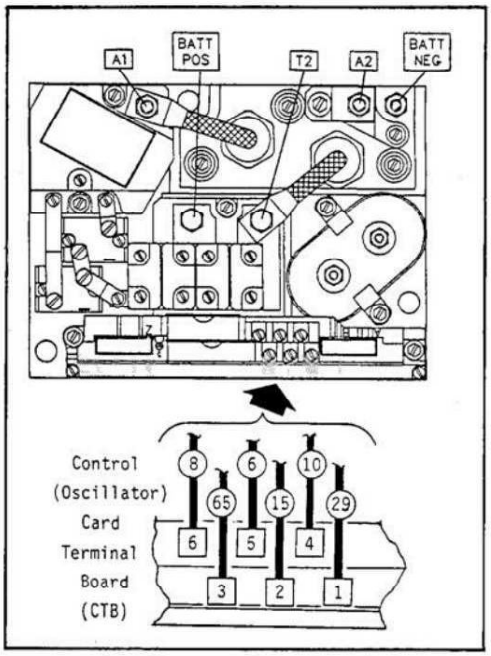
Trouble with the accelerator control will normally be investigated in conjunction with troubleshooting of the SCR traction control*.

There are two basic checks that need to be made to troubleshoot the accelerator control. Check for:

1 Correct voltage input to the accelerator control circuit.

2 Correct voltage output from accelerator control.

*Refer to SDM-542, Control Card Voltage Checks, and Troubleshooting Symptom: 1, 2, 5 and 6.



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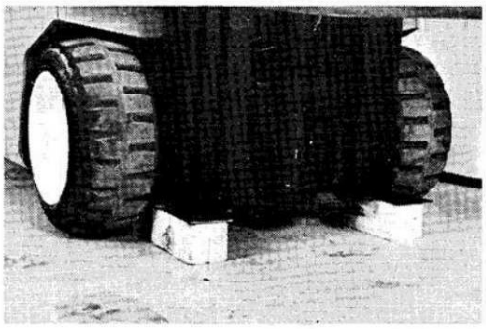
⚠ CAUTION

RAISE THE DRIVE WHEELS OFF THE FLOOR BEFORE DOING ANY TROUBLESHOOTING CHECKS.

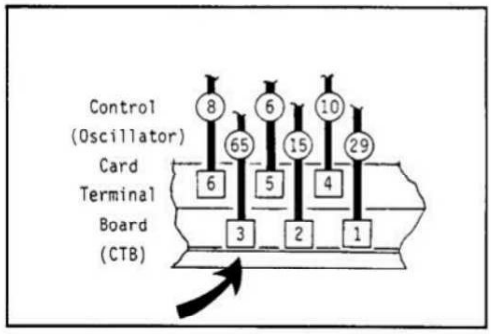
Refer to GROUP 38, Section 3, Machine Jacking and Blocking.



85M743

Check Voltage Input To Accelerator Control
Procedure 1:*

1 Connect battery.
2 Turn key switch "ON".
3 Release hand (parking) brake.
4 Connect volt-ohmmeter (V-O-M) red (+) lead to screw terminal **TB3** (wire #65) of the control (oscillator) card on SCR control.
5 Connect V-O-M black (-) lead to battery negative. (Also see Figure 26543, Page 3.)



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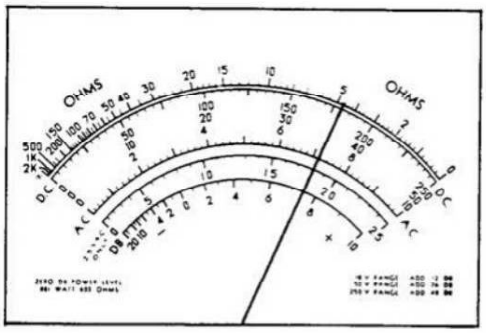
6 With the key switch and hand brake switch closed, the V-O-M must read battery volts.



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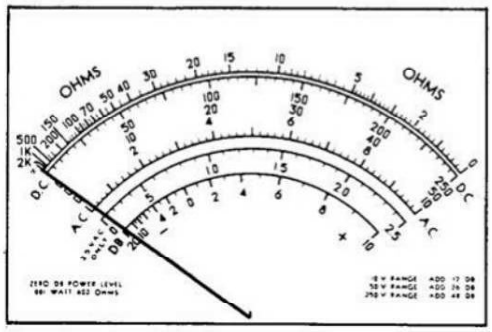
7 When either the key switch or hand brake switch are opened, the V-O-M must show 0 volts.



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8 If the V-O-M measured values are not as given above, check the key switch, hand brake switch, and wiring to the control. Check control fuse (3FU) and continuity of wire #2, 10, 12, and 65. Repair and/or replace, as necessary.

*Reference SDM-542, Card Voltage Checks, TB3.
Also Symptom: 1.