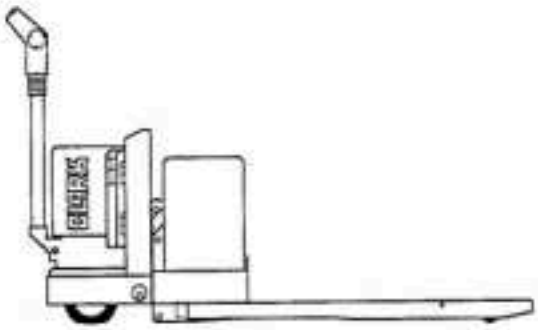
Service Manual



SM 568

P-25
HWP-25
PWD-25
HWD-25

P-30
HWP-30
PWD-30
HWD-30
HWD-36
PWD-36

CLARK
Technical Publications
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GROUP 01
LUBRICATION & Planned Maintenance

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A	=	08	-	010	hours or daily				
B	=	50	-	250	hours or every month				
C	=	450	-	500	hours or every 3 months				
D	=	900	-	1000	hours or every 6 months				
E	=		-	2000	hours or every year				
Time Intervals						A	B	C	D	E
Check truck visually and inspect components							●			
Test drive truck - Check functional performance							●			
Air clean truck							●			
Check torque on critical fasteners							●			
Lubricate truck							●			
Clean / check battery terminals, electrolyte level							●			
Check battery cables & truck receptacle							●			
Perform battery load test							●			
Check drive motor brushes							●			
Check lift pump motor brushes							●			
Test truck ground							●			
Clean drive motor air vents							●			
Check drive unit fluid level							●			
Drain and replace drive unit fluid										●
Check hydraulic unit fluid level							●			
Drain and replace hydraulic unit fluid										●
Check brake shoe linings							●			

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LUBRICATION SPECIFICATIONS

The listing of lubrication specifications compiled in this manual is for the reference of Clark Engineering and Service personnel, Dealers and Customers. The list of products is intended as a guid in the selection of a lubricant to meet the requirements of Clark Industrial Truck Operation.

CLARK makes no representation as to the relative merits of any commercial oil product. With the exception of MS-68 Hydraulic Fluid, **CLARK** has no formal system for approving oil products, but has published herein general specifications which it believes will provide adequate or superior component lubrication of life.

It is the PREROGATIVE of each user to choose suppliers and products as they feel necessary for proper operation of the equipment under the conditions of the individual application. RESPONSIBILITY for the quality of the product and its performance in service must remain with the oil supplier, in agreement with the user.

Hydraulic Fluids and Engine Oils

CLARK does not follow a formal test and approval procedure for specific branded products. Rather it is CLARK policy to establish basic specifications for oils (and fluids) which demonstrated suitable performance for the application. In general these specifications follow the recommendations of the major component manufacturer, such as engines and hydraulic pumps. Any oil or fluid which meets the respective specification is considered acceptable for use in CLARK products. Component operation should not be affected as long as the oil or fluid meets the stated specification and the recommended oil and filter change intervals are followed.

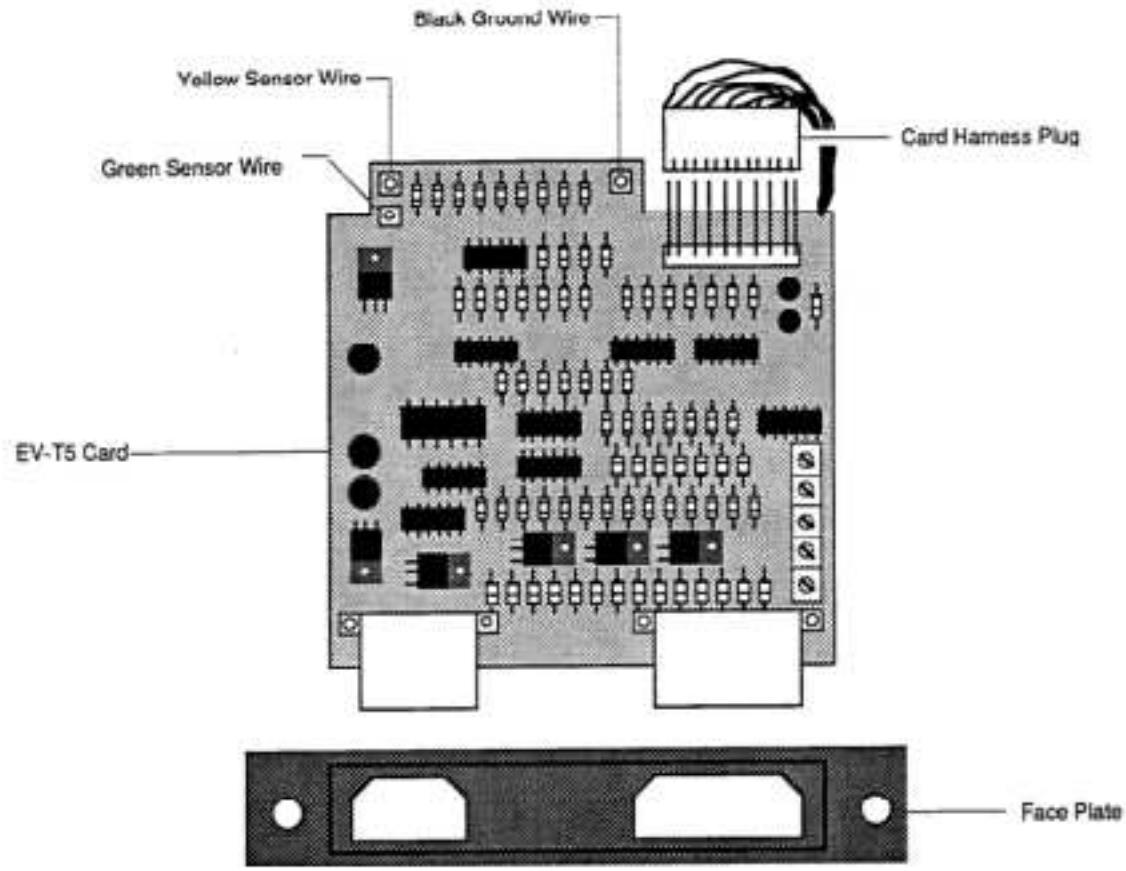
For **Extended Oil or Fluid Drain Intervals,** periodic analysis by a reputable testing laboratory should be made. *It is the responsibility of the manufacturer or supplier of the oil or fluids to insure that this product meets the specifications and gives the expected performance.*

Technical Societies referenced on these pages

AGMA	—	American Gear Manufacturers Association
API	—	American Petroleum Institute
ASTM	—	American Society for Testing Materials
EMA	—	Engine Manufacturers Association
MIL	—	Military Specification
MGPA	—	Natural Gas Processors Association
NLGI	—	National Lubricating Grease Institute
SAE	—	Society of Automotive Engineers

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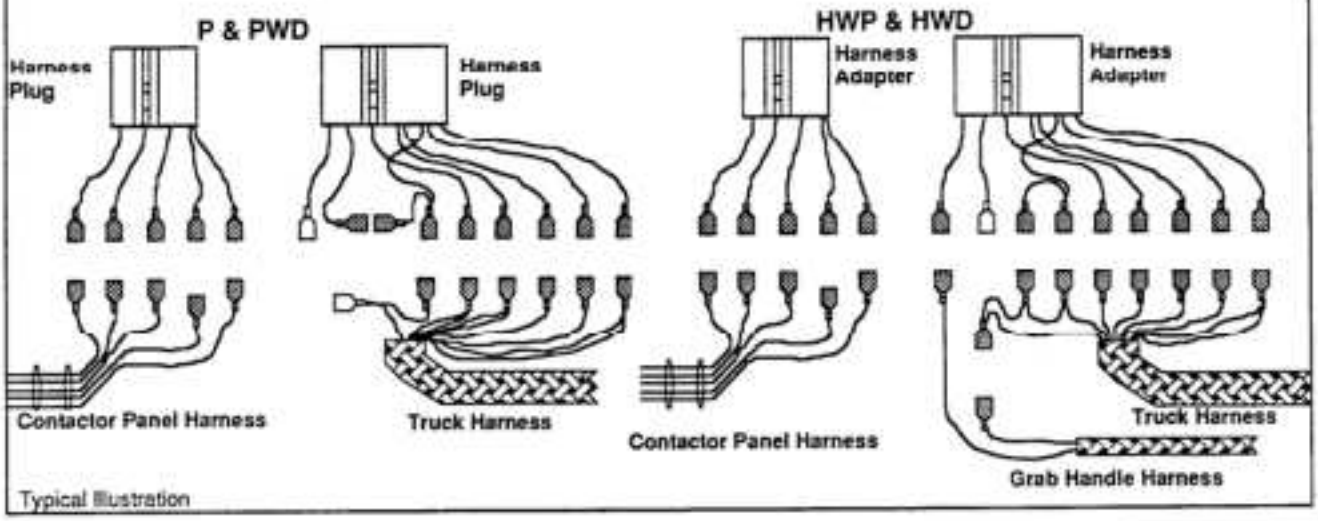
Replacement Control Card Data



Typical Illustration

To Replace Early Model Control Cards, refer to:

Service/Parts Bulletins: SI-19-634-91 & TI-2435-1203



Typical Illustration

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- Terminal boards and other exposed MOSFET control parts should be kep free from dirt and paint that might change effective resistance between points.

⚠CAUTION

The truck should not be plugged when the truck is jacked up and the drive wheel is in a free-wheeling position. The high motor speeds can create excessive voltages that can be harmful the control.

- Do not HIPOT (or megger) control. Unless terminals of each semiconductor and card are connected together, the control may be damaged.
- Use a lead-acid battery with voltage and ampere hour rating as specified for the vehicle. Follow normal battery maintenance procedures, recharging before 80 percent discharged and with periodic equalizing charges.

TROUBLESHOOTING

When diagnosing and correcting the cause of trouble with an electrical control, **do not begin** by disassembling components.

Start by analyzing the complaint and symptoms. Make a preliminary investigation of trouble. Then systematically determine the probable cause.

The following points are fundamental to trouble shooting an electrical system.

- Never start your troubleshooting until you get facts. Talk with truck operator and review work order.
- Operate the truck to observe fault and then determine what corrective action should be. Determine where to start.
- Perform the basic checks. Check battery and test for grounds and shorts. Do not take short cuts by assuming these checks do not have to be made.
- Use symptoms indicated by the trouble to locate the proper diagnosis chart in troubleshooting section. You may also want to use the sequence of operation manual as a diagnostic tool.
- Proceed to find the problem by using the flow chart in the trouble shooting guide which defines symptoms and their possible cause(s) and solutions. Locate the trouble by a process of elimination. The cause is usually simple, rather than mysterious and complicated.

IMPORTANT

Use the electrical schematic diagram for the truck you are working on. You must be able to trace the following:

Power Circuits which consist of heavy cables and main power components of truck.

Control Circuits which control speed, time delay, and controlled plugging.

Directional Circuits which control forward and reverse contactors.

Accessory Circuits which control components, including horn, battery indicator and hour meter.

⚠CAUTION

All testing should be done with drive wheel raised off the floor.

Trouble Shooting Notes

Trouble-shooting is based on using a digital voltmeter to determine if correct voltages are available to permit the control to operate correctly.

The pulsing of the MOSFETs are too fast for conventional instruments to measure. When the control is functioning properly, a high pitch hum can be heard.

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