Service Manual

SM 616



TMG 12-25

CLARK
Technical Publications
Lexington, KY
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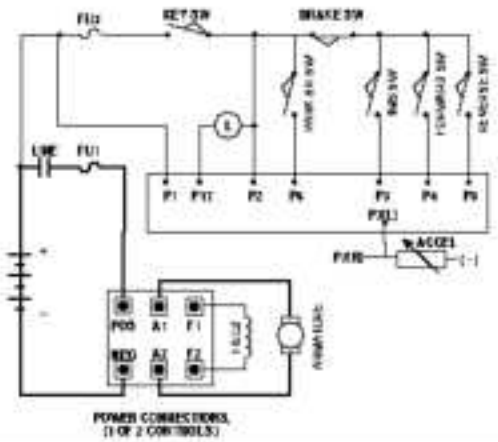
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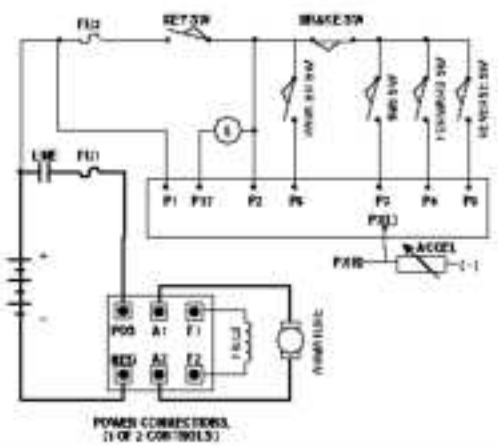
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STATUS CODE	DESCRIPTION OF STATUS	CAUSE OF STATUS INDICATION
76 Memory Recall: YES Applies to: Traction Controller	Capacitor (1C) voltage too high.	Code displays when the voltage on the capacitor goes above 96 volts during the regenerative braking cycle.
SYMPTOM	**DIAGNOSIS/CORRECTION**	**TROUBLESHOOTING DIAGRAM**
Line contactor closes then opens and then can only be closed by opening and closing the key switch.	• Unplugging the battery connector during regenerative braking. • Line contactor bouncing open during regen. • Main power fuse opening during regen. • Intermittent battery plug connection.	

STATUS CODE	DESCRIPTION OF STATUS	CAUSE OF STATUS INDICATION
77 Memory Recall: YES Applies to: Traction Controller	Motoring current is detected during regenerative braking.	Code displays when motoring current is detected during the regenerative braking cycle.
SYMPTOM	**DIAGNOSIS/CORRECTION**	**TROUBLESHOOTING DIAGRAM**
Line contactor closes then opens and then can only be closed by opening and closing the key switch.	Defective controller. • Replace controller unit.	

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Section 1.

Steering System Specifications and Description

Specifications

Steering System Type: Load sensing hydrostatic power steering with variable ratio.

Steering System Relief Pressure Setting: 8274-8963 kPa (1200-1300 psi).

Steer Cylinder Type: Double acting, piston-type.

Steer Axle: Single wheel (optional dual-wheel) mounted on trunnion at center rear of truck.

Service Intervals

Check the steering system relief pressure annually or after every 2000 hours of operation. Make a visual inspection of steering control unit hydraulic fittings periodically to ensure that the fittings are tight with no leakage.

Fastener Torques

Steering Handwheel Nut: 35-40 N•m (25.5-29.5 ft-lb)

Steering Column Cover Hex Bolts: 2-3 N•m (18-27 in-lb; 1.5-2.25 ft-lb)

Directional Control Base Lock Nut: 0.8-1 N•m (7-9 in-lb; 0.6-0.75 ft-lb)

Directional Control Base Flange Capscrew: 3.5-4.0 N•m (2.5-2.9 ft-lb)

Ignition Switch Ring Nut: 10-14 N•m (7.3-10.3 ft-lb)

Tilt Lock Assembly Base-to-Cowl Bolts: 20-25 N•m (14.8-18.5 ft-lb)

Orbitrol Bracket Bolts: 34-38 N•m (25-28 ft-lb)

Lower Column Assembly Base-to-Steering Gear Bolts: 34-38 N•m (25-28 ft-lb)

Universal Joint Pinch Bolt: 25-30 N•m (18.5-22 ft-lb)

Wiring Harness Bracket Bolts: 11-13 N•m (8-9.5 ft-lb)

Description

All truck models have a hydrostatic power steering system, which is supplied with oil pressure from the main hydraulic system pump. The steering handwheel operates the power steering gear (steering control valve) shown on page 2, which directs oil flow to the steering cylinder on the steer axle. The steering cylinder operates the steering linkage and steer wheel described on page 3.

A steering system pressure relief valve, contained in the hydraulic pump assembly shown on page 4, prevents over-pressurization of the steering system. The pressure relief setting can be tested using the gauge port of the hydraulic pump.

The steering gear shaft is connected to the handwheel by means of a jointed shaft. When the steering handwheel turns, it causes the steering gear's spool valve to shift from its closed neutral position to a "turn" position. This shifting of the spool directs flow to one end or other of the steering cylinder, depending on the direction of the turn. The amount of flow, and the sharpness of the turn, depend on how far the handwheel is rotated. The more rapidly the handwheel turns, the more quickly the flow, and the turn, occur.

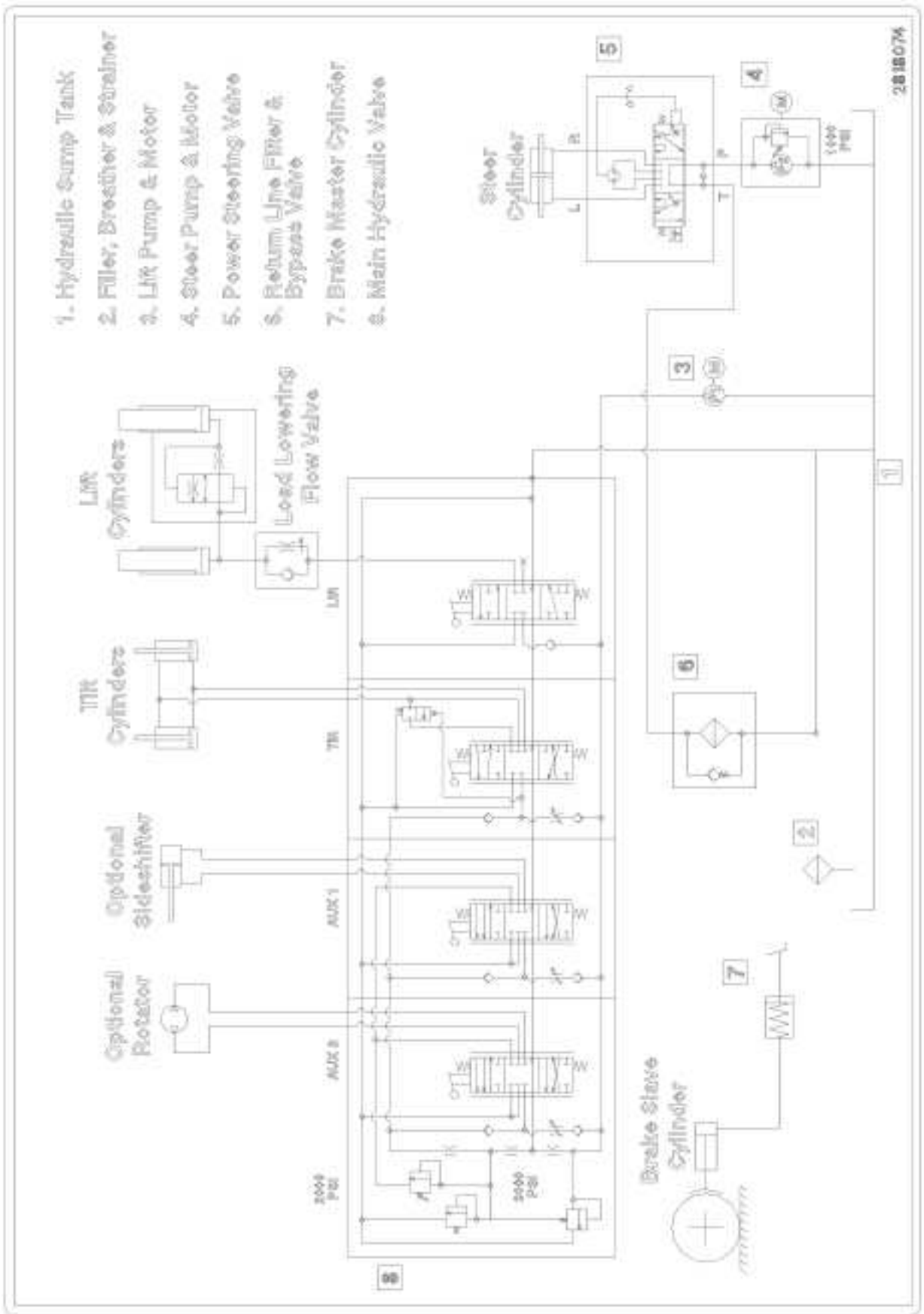
The low pressure oil from the opposite side of the steering cylinder is returned through the opposite port in the steering gear.

As the steering handwheel stops turning, centering springs in the valve automatically center the spool, stopping the flow of oil to the cylinder.

Stops in the steer cylinder limit the how far the steer wheels can be turned. It 4.5 turns of the hand wheel to turn from stop to stop.

In the event of a pump failure, the steering gear acts as a limited emergency steering pump powered by manual rotation of the handwheel. An internal check valve automatically closes to divert the manually-generated oil flow to the proper port of the steer cylinder. The handwheel turning effort is considerably higher, however, than with power steering.

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Hydraulic Schematic

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ELECTRIC TRUCK
PLANNED MAINTENANCE REPORT

CODE: O.K. | Potential | Urgent

S = O.K.
A = Adjust (Not P.M.)
R = Repair or replace
X = Requires shop repair

CUSTOMER

MODEL & SERIAL NO.
ATTACHMENTS

DATE | HOUR METER
DATE LAST P.M. | HRS. LAST P.M.
CUST. P.O. NO.

AUTHORIZED SIGNATURE | INSPECTOR | SPECIAL INSTRUCTIONS

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* SEE MAINTENANCE INTERVAL IN P.M.A. MANUAL

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