SM-598S
CGC, CGP, CDP 20-30
Shop Manual



CLARK Technical Publications
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Section 2.

Lifting, Jacking, and Blocking

Safe Parking 2

Lifting, Jacking, and Blocking Points 2

Raising Drive Wheels Off Floor 2

Raising Truck with A Hoist 3

Blocking the Upright in Raised Position 4

Raising Rear of Truck 4

Raising Entire Truck 5

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⚠ WARNING

Lifting or jacking any large piece of equipment such as your fork truck presents obvious hazards. It must be done with great care and forethought. Consult the truck weight tabulations in Group 40, "Specifications" to ensure that your lifting equipment is of adequate capacity.

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Section 2.

Engine Troubleshooting (4G64 Gas/LPG/CNG Engine)

Also use the rpm, vacuum, and stall tests in Section 5 to analyze engine performance.

The following troubleshooting guide lists typical complaints or troubles encountered in routine operation of the 4G64 engine, and suggests possible remedies.

Engine hard to start or won't start

- Fuel system fault; see fuel system troubleshooting in Group 02.
- Ignition system fault; see ignition system troubleshooting in Group 12.
- Starter motor faulty; see electrical system troubleshooting in Group 14.
- Battery, ground, or wiring is faulty; see electrical system troubleshooting in Group 14.
- Engine oil is too viscous (heavy weight oil): change to lighter oil viscosity.
- Engine timing too advanced; adjust timing.
- Valves or valve seats worn and leaking; relap or replace valves.
- Intake manifold gasket leaking: replace gasket if necessary and retighten manifold nuts to correct torque.
- Cylinder head gasket leaking; replace head gasket and retighten cylinder head nuts to correct torque.
- Internal engine seizure; refer to engine overhaul procedures.
- Instrument pod faulty; see instrument pod troubleshooting in Group 13.
- Out of fuel.
- LPG tank shut off or improperly coupled.

Irregular idling

- Fuel system fault; see fuel system troubleshooting in Group 02.
- Spark plug gap is too wide; adjust.
- Cylinder head gasket leaking; replace head gasket.
- Valves not seating tight; relap valves.
- Excessive clearance between valve and guide; replace valves and valve guides.

Engine runs unevenly at high speed

- Fuel system fault; see fuel system troubleshooting in Group 02.
- Ignition system fault; see ignition system troubleshooting in Group 12.

Engine fires erratically

- Fuel system fault; see fuel system troubleshooting in Group 02.
- Ignition system fault; see ignition system troubleshooting in Group 12.
- Uneven compression or cylinder head problem:
  - Carbon deposits in combustion chamber; clean.
  - Cylinder head water passages clogged; clean.
  - Cylinder head gasket leaking; replace.
  - Cylinder head bolts not torqued properly; tighten per specification.
- Leaking intake gasket.
- Valves sticking; repair or replace valves.
- Valve springs weak or broken; replace valve springs.

Backfiring

- Fuel system fault; see fuel system troubleshooting in Group 02.
- Ignition system fault; see ignition system troubleshooting in Group 12.
- Sticking valves; repair.
- Broken or fatigued valve springs; repair or replace.

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Section 1.
Upright Specifications and Description

General Specifications

Upright Weight: Approximately 363 kg (800 lb) to approximately 1000 kg (2200 lb) without carriage

Carriage Weight: Approximately 109 kg (240 lb) to 122 kg (270 lb) with a 41 inch carriage

Fork Weight: Approximately 50-68 kg each (110-150 lb)

IMPORTANT

Before hoisting, the weights of upright, carriage, forks and attachments being lifted must be combined to determine what lifting capacity is required of the hoisting equipment.

Capacities and Lift Heights: Upright, carriage, and fork capacity and upright lift heights are listed on the truck's data plate.

Lubricants:

- All Purpose Grease (MS-9)
- Innerslide Lubricant (Clark P/N 886396)
- Chain and Cable Lube (Clark P/N 886399)

Cylinder Types

Standard uprights use two lift cylinders. Triple stage uprights use three cylinders, a primary (center-mounted) cylinder, and two secondary cylinders. All primary cylinders used on triple-stage uprights (TSUs) are piston cylinders. The lift and secondary cylinders used on standard uprights and TSUs can be piston or ram cylinders.

The types of cylinders used on the truck are listed below. Check the first five characters of the upright number stamped on the upright of the truck to determine the type of cylinder, piston or ram, used on the upright.

IMPORTANT

Before removing any component for overhaul, make sure the correct repair parts, seals, and gasket sets are available.

Upright Type	Upright Number	Cylinder Type
Standard	V1080	Piston-Type Lift Cylinder
	V1081	Piston-Type Lift Cylinder
	V1082	Ram-Type Lift Cylinder
	V1083	Ram-Type Lift Cylinder
TSU	M1080	Piston-Type Secondary Cylinder
	M1081	Piston-Type Secondary Cylinder
	M1082	Ram-Type Secondary Cylinder
	M1083	Ram-Type Secondary Cylinder

Drift:

Upright should not drift (fall) 25 mm (1 in) in five minutes under a capacity load. If drift over 25 mm (1 in) in five minutes is evident, cylinder should be checked for internal leakage. See Section 3 for drift test procedures.

Fastener and Fitting Torque Specifications

Trunnion Mounting Bolts: 74.25 N•m (55 ft-lb)

Load Back Rest: 168.75-189 N•m (125-140 ft-lb)

Chain Anchor Bolt Jam Nut: 100-200 N•m (74-148 ft-lb)

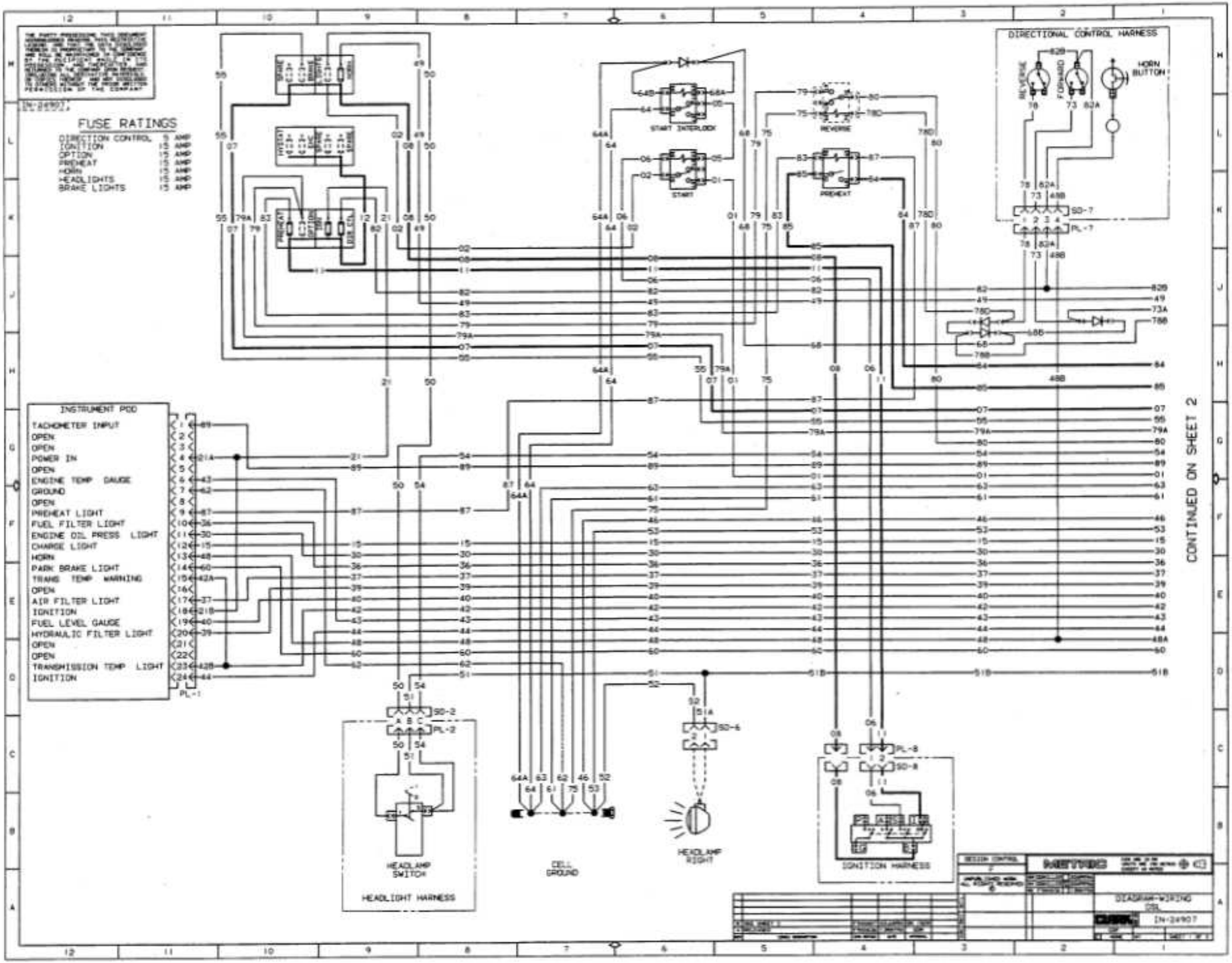
Carriage Side-Thrust Roller Bolts: 40-50 N•m (29.5-37 ft-lb)

Hose Fittings. See Group 40, "Hydraulic Fitting Tightening Procedure."

Rod End Bolts: 164-190 N•m (122-142 ft-lb)

Tilt Cylinder Rod-End Pin Lock Plate: 19-21.5 N•m (121-136 in-lb).

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