

TECHNICAL MANUAL

**OPERATOR, ORGANIZATIONAL DIRECT SUPPORT, GENERAL SUPPORT
AND DEPOT MAINTENANCE MANUAL**

**TRUCK, FORK LIFT, ELECTRIC, SOLID RUBBER TIRES,
4,000 LB CAPACITY
BAKER MODEL FTD-040-EE, ARMY MODEL MHE 208)
FSN 3930-494-8151
(100 IN. LIFT) FSN 3930-236-6253 (180 IN. LIFT)**

**This copy is a reprint which includes current
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SECTION 1

GENERAL DESCRIPTION

1-1. INTRODUCTION.

1-2. This manual contains general service, operating and maintenance instructions for Truck, Fork Lift, Electric, Solid Rubber Tires, 4,000-Pound Capacity, Baker Model FTD-040-EE.

1-3. DESCRIPTION.

1-4. The electric fork lift truck has a safe load capacity of 4,000-pounds, and is primarily designed for warehouse operation to load, transport, unload and stack loads at a load center of 24-inches. The truck is equipped with either a load lift of 100-inches or 180-inches. The fork lift truck is illustrated in figures 1-1 and 1-2.

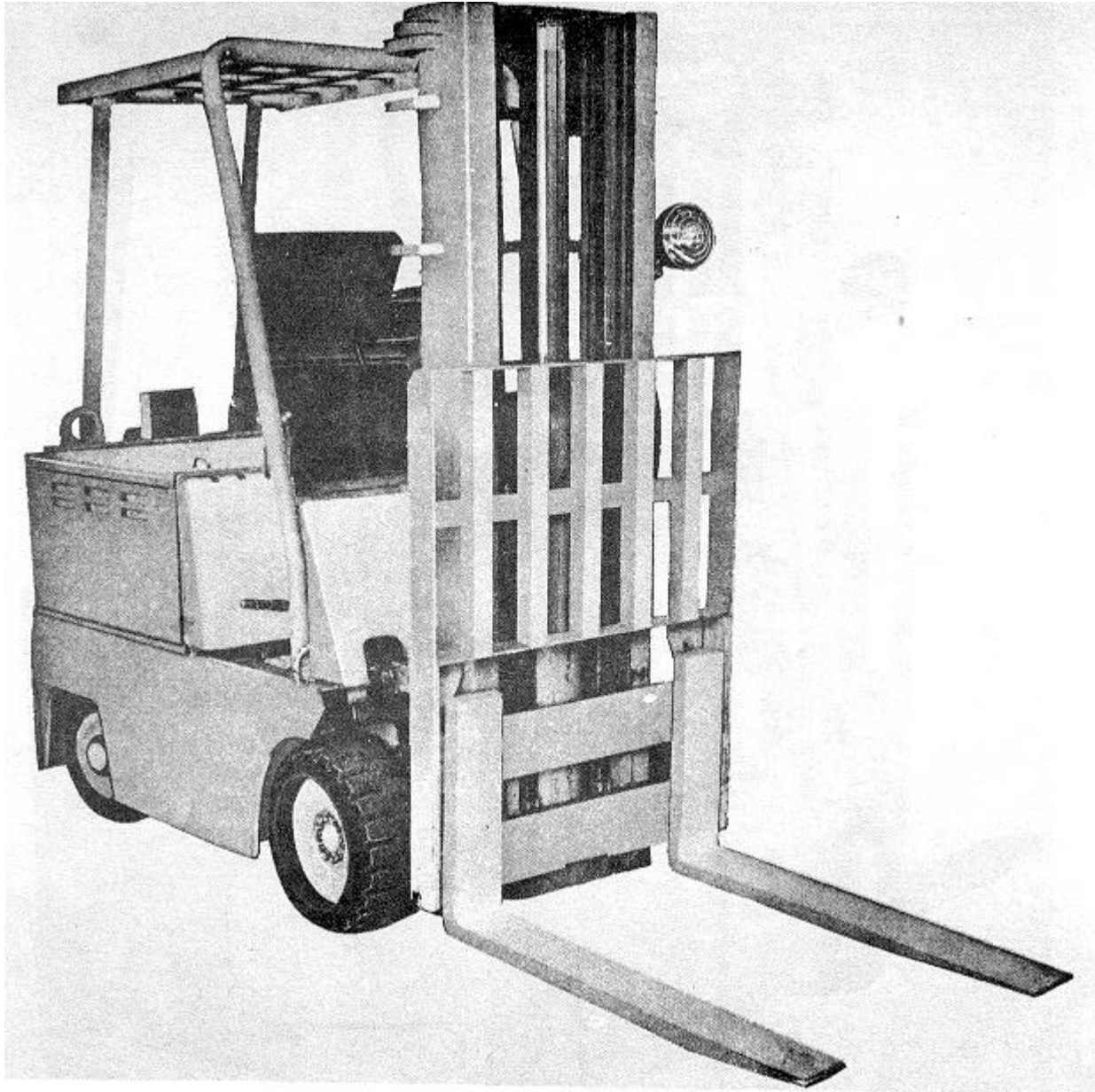


Figure 1-1. Truck, Three Quarter Front View

1-5. TRUCK. Power for travel and lifting is provided by a 3(-volt battery. The travel system includes the motor, all operating controls, and power axle assembly to provide stepless speeds forward and reverse. The lifting system includes an electric motor, pump, controls, reservoir, lift and tilt cylinders, mast assembly and forks. Hydraulic service brakes and both hand and automatic parking brakes are used.

1-6. POWER AXLE AND MOTOR ASSEMBLY. The power train consists of the travel motor, coupling, power axle with differential, axle shafts, and drive wheels. Power is transmitted direct from the travel motor through an adapter incorporating reduction gearing to a

bevel ring gear and pinion in the axle, through the axle drive shafts and wheels.

1-7. CONTROL SYSTEM. Travel motor power and vehicle speed and direction are regulated by a system which includes relays, an electronic silicon controlled rectifier (SCR) control system, an accelerating master switch and directional switch providing stepless forward or reverse speeds. A foot accelerator operates the accelerating master switch to control the speed of the truck. Steering System. The steering system includes power steering gear of the rotary valve type in which a recirculating ball nut functions

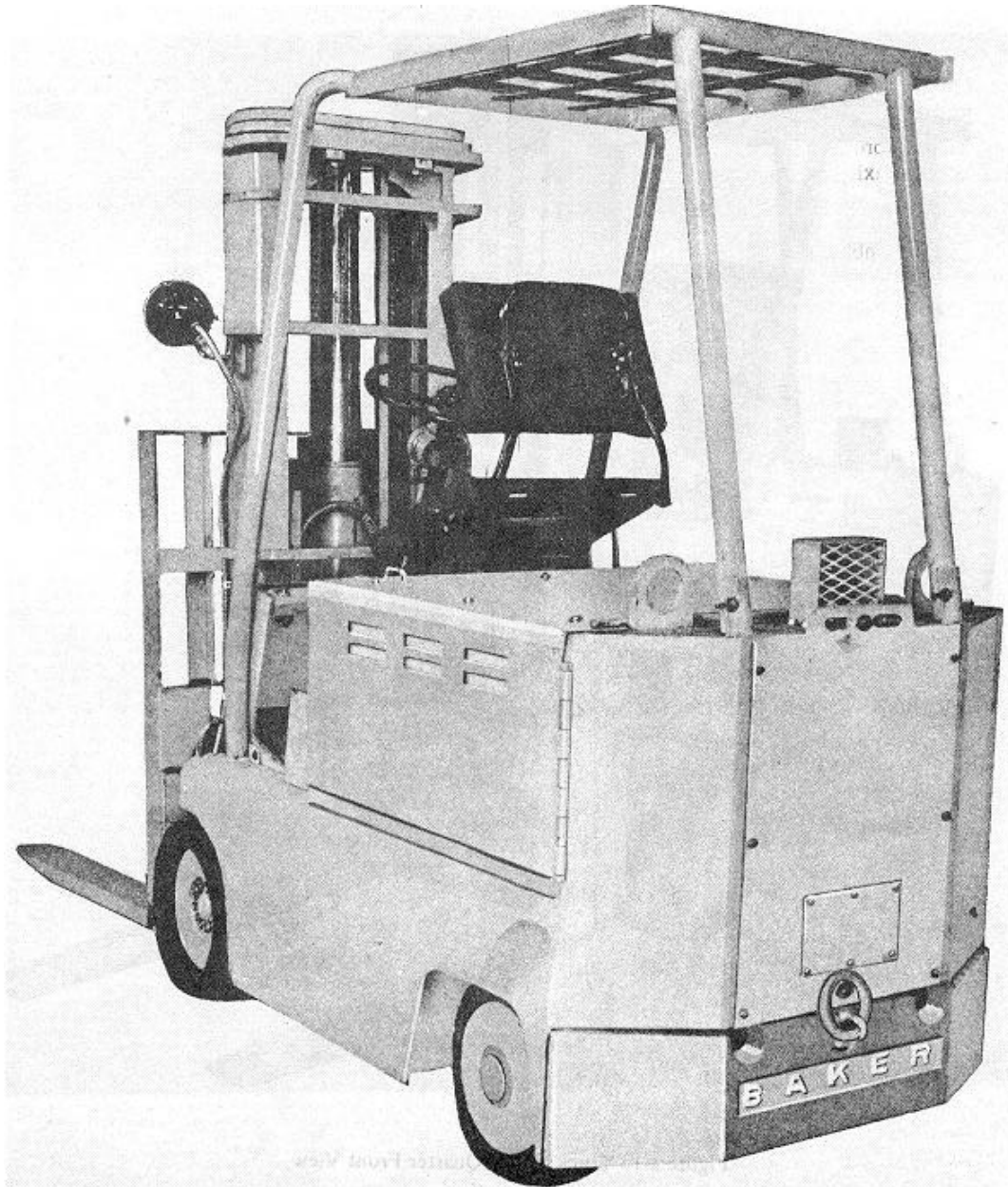


Figure 1-2. Truck, Three Quarter Rear View

as a nut within the gear housing. A double acting valve responds to turns of the steering wheel to apply turning power to the steering bellcrank, tie rods and steering knuckles on the trailing axle as in conventional manual steering.

1-8. **BRAKE SYSTEM.** The brake system consists of a mechanical parking brake and a hydraulic foot brake. The mechanical brake operates on a drum on the travel motor armature shaft. This brake is applied either by a handle on the floor to the right of the driver or automatically through spring action as the driver rises from the seat. The hydraulic brake system is a conventional automotive type, effective only on the front wheels.

1-9. **DUAL LIST MAST ASSEMBLY.** The dual lift mast assembly consists of the following assemblies:

1. **Outer Upright Assembly.** The outer upright assembly serves as a guide for the inner upright assembly, a base for the hoist cylinder, and provides brackets for connecting the uprights to the power axle and for connecting the upright to the tilt cylinders.

2. **Inner Upright Assembly.** The inner upright assembly is nested in and guided by the outer upright assembly. The hoist cylinder, mounted in the base of the outer upright assembly, is secured to the inner upright assembly. The inner upright assembly is raised or lowered by action of the hoist cylinder.

3. **Crosshead Assembly.** The crosshead assembly is mounted over the hoist cylinder. Chains are reeved over rollers attached to the crosshead assembly. The lower ends of the chains are connected to the lift carriage. The upper ends of the chains are anchored to the lift cylinder. As the plunger of the hydraulic cylinder raises the crosshead, tension is applied to the chains, raising the carriage.

4. **Lift Carriage Assembly.** The lift carriage assembly rides on rollers within the inner upright assembly, which in turn slides up and down inside the outer upright assembly to a lift height of 100 inches.

1-10. **TRIPLE LIFT MAST ASSEMBLY.** The optional triple lift mast assembly consists of the following assemblies:

1. **Outer Upright Assembly.** The outer upright assembly is a welded one-piece assembly that is mounted on the truck frame assembly and encloses the hoist cylinder, intermediate upright assembly and inner upright assembly.

2. **Inner Upright Assembly.** The inner upright assembly is a welded one-piece assembly that is mounted within the intermediate upright assembly. The hoist cylinder, mounted at the base of the assembly, is secured to the top of the assembly. The inner upright assembly is raised or lowered by action of the hoist cylinder.

3. **Intermediate Upright Assembly.** The intermediate upright assembly is positioned between the

inner and outer upright assemblies, and provides additional mast rigidity and an overall truck profile height of 83 inches while permitting a lift height of 180 inches. As the plunger of the hydraulic cylinder raises the inner upright assembly, tension is applied to chains attached between a cross member attached at the top and reeved around rollers on the intermediate upright assembly to anchors at the top of the outer upright assembly to separate the inner and intermediate assemblies from the outer upright assembly.

4. **Lift Carriage Assembly.** The lift carriage rides on rollers within the inner upright assembly. Two forks are mounted on the front of the lift carriage assembly for handling of loads.

1-11. **HYDRAULIC SYSTEM.** The hydraulic system consists of a reservoir, pump control valve, hoist and tilt cylinder, and hydraulic hoses. The hoist cylinder raises the lift carriage and forks by hydraulic pressure supplied by the pump. Gravity lowers the lift carriage.

1-12. **LIFT CYLINDER.** A compound lift, used on this vehicle. The lift carriage rises to top of the outer upright before the inner and/or intermediate uprights together with the lift carriage move upward. This is achieved by a dual hydraulic hoist cylinder assembly with two pistons working in sequence.

1-13. **TILT CYLINDERS.** The tilt cylinders are double-acting. The uprights are tilted in and out by hydraulic pressure to the tilt cylinders.

1-14. **ELECTRICAL SYSTEM.** The electrical system is a two-wire, underground type. The battery is connected into the circuit by means of a removable connector. This charging connection is also made through this connector. The weight of the operator in the driver's seat closes the circuit to the accelerating switch by an interlock. Travel control is through the accelerating switch, with circuit made and broken by relays. A panic switch mounted on the dash panel opens and closes the travel circuit. The direction of travel is selected by the directional switch lever on the steering gear post. The stop and taillight is enclosed in a guard on the rear of the truck. The headlight, mounted on the left side of the hoist upright, is controlled by a toggle switch on the instrument housing.

1-15. **BATTERY.** The 36-volt battery used will weigh approximately 1600 pounds. The inside of the truck battery compartment is 26-13/16 inches long, 32-7/8 inches wide, and 23-3/8 inches high.

1-16. **ACCELERATOR MASTER ASSEMBLY.** The accelerator master assembly contains three sensitive switches, operated in sequence by cams. The cams are actuated by the accelerator pedal. The switches energize relays which through the SCR control system govern the speed of the travel motor. A potentiometer governs signal strength and thereby power output of the SCR travel motor control circuit. The accelerating switch is located under the floor plate.