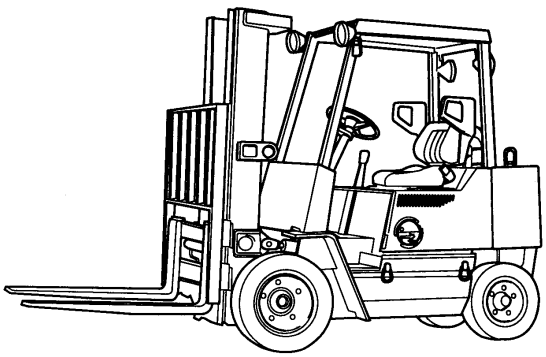
TECHNICAL MANUAL

OPERATOR'S MANUAL



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TRUCK, FORKLIFT, CLEAN BURN
DIESEL, FRONT-LOADING,
4000 LB. CAPACITY, M483
CLARK MODEL GPX 25E DIESEL
NSN 3930-01-384-5310

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HEADQUARTERS, DEPARTMENT OF THE ARMY

MAY 1996

TECHNICAL MANUAL

No. 10-3930-671-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, *1 May 1996*

TECHNICAL MANUAL
OPERATOR'S MANUAL

TRUCK, FORKLIFT, CLEAN BURN DIESEL, FRONT-LOADING, 4000 LB. CAPACITY, M483 CLARK MODEL GPX 25E DIESEL NSN 3930-01-384-5310

REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Tank-automotive and Armaments Command, ATTN: AMSTA-IM-OPIT., Warren, MI 48397-5000. A reply will be furnished to you. You may also provide DA Form 2028-2 information to TACOM via datafax or e-mail. TACOM's datafax number for AMSTA-IM- OPIT is: (810) 574-6323 and the e-mail address is: amstaim-mmaa@cc.tacom.army.mil.

This manual is an authentication of the manufacturer's commercial literature and does not conform with the format and content specified in AR 25-30, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

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SAFETY SUMMARY

GENERAL PRECAUTIONS

The following are general safety precautions and instructions that personnel must understand and apply during many phases of operation and maintenance to ensure personnel safety and health. Portions of this information may be repeated in certain chapters of this publication for emphasis.

Batteries

When inspecting batteries, never smoke or expose battery to sparks or flames. Eye protection (face shield), acid-resistant rubber apron, and gloves must be worn when working around batteries.

Cleaner/Chemical Handling
Keep cleaners/chemicals in approved safety containers and in minimum quantities. Some cleaners/chemicals may have an adverse effect on skin, eyes, and respiratory tract. Observe manufacturer's WARNING labels and current safety directives. Use cleaners/chemicals only in authorized areas. Consult the local Bioenvironmental Engineer for specific precautions, protective equipment, and ventilation requirements.

Compressed Air
Use of compressed air can create an environment of propelled foreign particles. Air pressure shall be reduced to less than 30 pounds-per-square-inch gauged (psig) and used with effective chip guarding and personal protective equipment.

Jewelry
Jewelry (rings, bracelets, metal watches, or neck chains) shall not be worn while working on exposed equipment.

Personal Protective Equipment
Wear protective clothing/equipment (gloves, apron, eye protection, protective mask, etc.) approved for the materials, procedures, and tools being used as necessary.

GENERAL SAFETY PRACTICES
Read and thoroughly understand all instructions contained in this and all vendor manuals before attempting to operate or service the 4K Forklift Truck.

Only the operator is allowed on the truck during operation.

Clothing worn by all personnel working close to the truck should be close fitting and belted. Loose jackets, shirts, or pants should never be worn because of the danger of getting caught in moving parts.

Be certain that hand brake is set and the direction control levers and all switches are in the OFF or centered positions before starting the engine.

Make sure everyone is clear of the truck before starting so they cannot be struck by or caught in moving parts.

Keep operator's platform clean. Do not use it as a place to carry loose tools, lunch boxes, etc. Refuel truck only when engine has been shut off. Do not permit sparks, open flames, or smoking within 50 feet of truck when refueling.

Hydraulic fluid escaping under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to a system, be sure all connections are tight and that lines, tubes, and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, get medical attention at once. Serious infection or reaction can result if proper medical treatment is not administered immediately.

Refill the radiator only when the engine is stopped. The truck has a pressure cooling system. To avoid being scalded when radiator cap is removed, first turn cap slightly to the stop which allows steam to escape through the overflow pipe. After all pressure is relieved, remove cap.

Never lubricate or service truck when it is operating.

SAFETY SUGGESTIONS FOR OPERATING TRUCK

Be sure all hoods and doors are closed before operating truck.

Be certain the direction control lever is in **NEUTRAL** position before starting engine.

Check all functions of the truck for proper operation. Never attempt to use a malfunctioning machine.

Never permit anyone to climb or stand on the truck.

Keep all persons clear of forks when operating truck.

Before leaving the operator's seat, always be sure that all control switches are in the OFF or centered position, hand brake is applied, forks are lowered, and engine is shut off.

Never attempt to attach or remove any part or assembly on the truck while it is operating.

SAFETY SUGGESTIONS FOR SERVICING TRUCK

Before attempting to service, attach, or remove any part of assembly on the truck, make certain that:

(1) All controls and switches are in the **OFF** or centered position.
(2) Hand brake is applied.
(3) Forks are lowered.
(4) Engine is shut off unless otherwise instructed.
(5) Wheels are chocked.

Batteries produce explosive gases. Keep all sparks and open flames away from batteries. If a battery needs recharging, avoid sparks by turning off the charger before making connections or disconnections.

Sulfuric acid in batteries is a poison and could cause severe burns. Avoid contact with skin, eyes, and clothing. When working around batteries, protect eyes and face from battery fluid and possible explosion.

Before starting the engine, be sure there is plenty of ventilation. If it is necessary to operate the engine inside an enclosed service area, be sure exhaust is properly vented.

Make sure everyone is clear of the truck before starting so they cannot be struck by or caught in moving parts.

CHAPTER 1
INTRODUCTION AND GENERAL INFORMATION

1-1. INTRODUCTION.

a. Purpose of This Manual. This is a supplemental manual designed to provide information concerning operation and maintenance not already covered in vendor manuals for the M483, 4000 lb Forklift Truck, hereafter referred to as the truck, manufactured by Clark Material Handling Company, Lexington, KY, Model GPX 25E Diesel (See Figure 1-1). This manual contains the following:

(**1) Chapter 1 - Introduction and General Information**: General information about the make-up of this manual, including a general description of the truck and a specifications table.

(2) **Chapter 2 - Operating Instructions**: Instructions for operation of the truck. When relevant procedures are presented in a vendor manual, that manual will be referenced.

(3) **Chapter 3 - Operator Maintenance:** Instructions for preventive maintenance are presented in this chapter. When relevant procedures are presented in a vendor manual, that manual will be referenced.

(4) **Chapter 4 - Operator Troubleshooting**: Instructions for step-by-step procedures to identify, locate, and isolate equipment malfunctions are presented in this chapter.

(5) **Appendices - Army-Specific and Vendor Information:** Vendor material is tabularly arranged as appendices to this manual.

b. Function of This Manual. This manual provides instructions, illustrations, and associated data for operations and operator maintenance. This manual shall enable an average journeyman to operate and maintain the truck.

c. WARNINGS, CAUTIONS, and NOTES. Warnings, cautions, and notes used in this manual are defined as:

(1) A "warning" identifies an operation or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment, and/or injury or loss of life.

(2) A "caution" identifies an operation or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment.

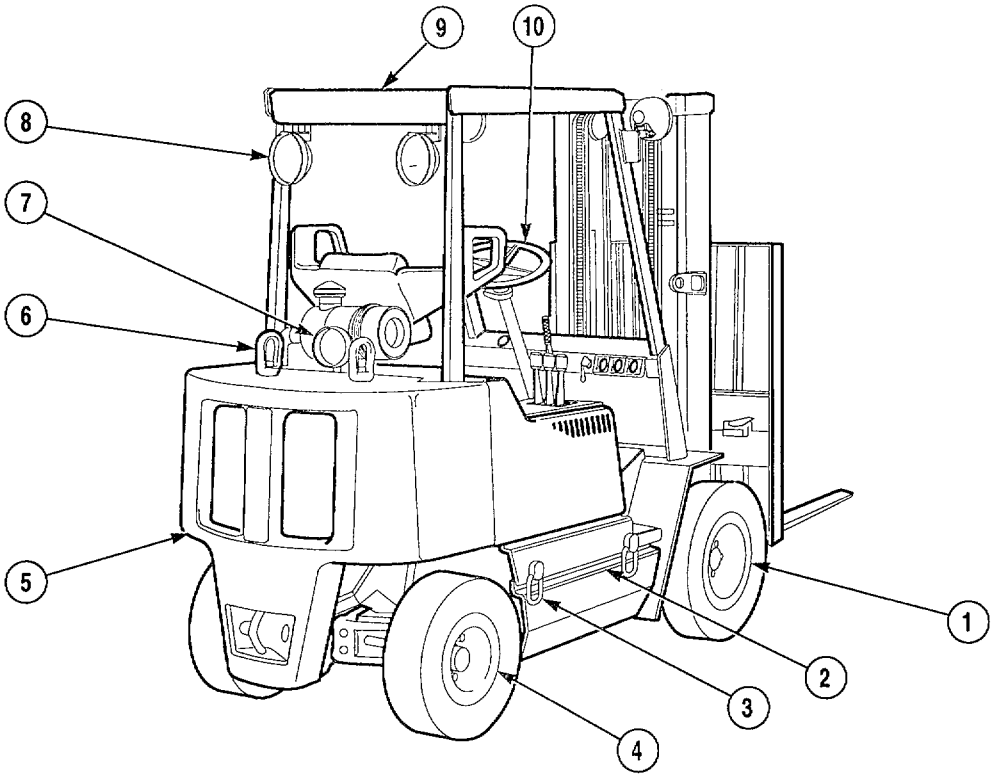
(3) A "note" highlights an essential operation or maintenance procedure, condition, or statement.

1-2. CAPABILITIES.

The truck is a 4-wheeled vehicle of material handling equipment capable of lifting palletized and certain loose loads, when appropriate, up to a maximum weight of 4000 lb (1814.4 kg). Over smooth and level surfaces, the truck can reach a maximum speed of 12 mph (19.3 kph) unloaded and 11.3 mph (18.1 kph) with a full load, when safety conditions merit.

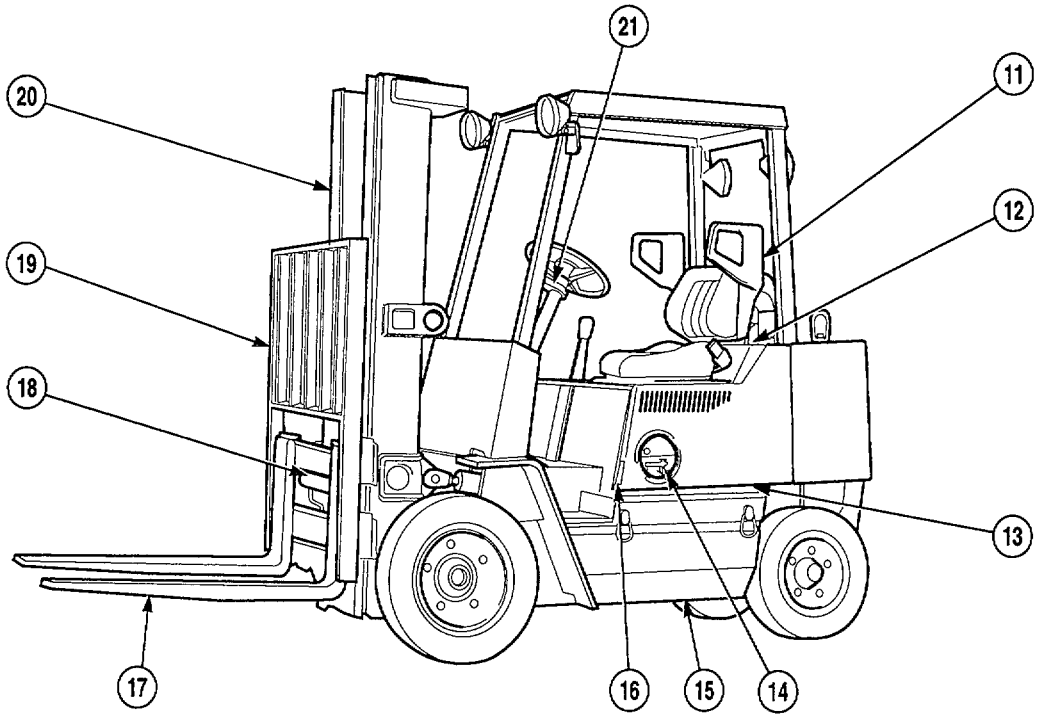
1-3. DESCRIPTION.

Single wheels in front of truck provide stability and ruggedness. Safety equipment consists of an automotive horn operable from steering wheel. Two floodlights on the overhead guard help illuminate the area in front of the truck while two floodlights in the back of the overhead guard illuminate the area behind truck. A brake light at the back of truck illuminates whenever the brake or inching pedal is depressed.



1. Drive Axle, Wheels, and Solid Rubber Tires
2. Hydraulic Sump Tank
3. Tie Downs
4. SteerAxle, Wheels, and Solid Rubber Tires
5. Counterweight
6. Lifting Eyes
7. Brake Light
8. Flood Lights
9. Overhead Guard
10. Steering Control Handwheel

Figure 1-1. M483 4K Forklift Truck - Right Rear View (Sheet 1 of 2)



11. Safety Seat and Seat Belt
12. Seat Deck Latch
13. Machine Serial Number (On Frame Inside Door)
14. Fuel Filler Opening
15. Fuel Tank Enclosure
16. Side Door Latch (Access To Engine Compartment)
17. Forks
18. Side Shift
19. Load Back Rest Extension
20. Upright
21. Directional Control Lever

Figure 1-1. M483 4K Forklift Truck - Left Front View (Sheet2 of 2)

Table 1-1. Description

Nomenclature	Description
Type	4000 lb Forklift Truck
Manufacturer	Clark Material Handling Company
Model Number	GPX 25E Diesel
Truck Capacity	4000 lb (1814.4 kg) @ 24-inch load center
Overall Length	
With Forks	144.9 in. (3680 mm)
Without Forks	102.9 in. (2614 mm)
Overall Width	82.7 in. (2101 mm)
Height (Top of Overhead Guard)	83 in. (2108 mm)
Maximum Lift Height	184 in. (4674 mm)
Collapsed Mast Height	83 in. (2108 mm)
Ground Clearance	
Under Mast	6.25 in. (159 mm)
Under Truck	8 in. (203 mm)
Weight	9735 lb (8952 kg)
Brakes	
Service	2-wheel Drum
Parking	2-wheel Drum
Maximum Gradeability	
With Load	24%
Without Load	25%
Drawbar Pull	
With Load	12030 lb (53512 N)
Without Load	7670 lb (34118 N)
Travel Speed	
With Load	11.3 mph (18.1 kph)
Without Load	12 mph (19.3 kph)
Turning Radius	134 in. (3404 mm)
Wheels	
Size (front)	7.00 x 12
Size (rear)	6.50 x 10
Type	Solid Rubber
Drift	
Lift Cylinders	Should not exceed 0.73 in. (18.5 mm) in a 5-minute period
Tilt Cylinders	Should not exceed 1.5 degree in a 5-minute period
Upright Speed	
Lifting - With Load	80 fpm (0.41 m/s)
Lifting - Without Load	87 fpm (0.44 m/s)
Lowering - With Load	69 fpm (0.35 m/s)
Lowering - Without Load	79 fpm (0.40 m/s)
Engine	
Manufacturer	Continental
Type	Diesel
Model	TMD 27
Weight (approximate w/accessories)	568 lb (258 kg)
Horsepower	60 hp (44.1 kW) @ 3100 rpm
Torque	119 lb-ft (161 N•m) at 1600 rpm)
Bore/Stroke	3.58 in./4.06 in. (91 mm/103.1 mm)