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PARTS, OPERATION, AND MAINTENANCE MANUAL

WHITE MOBILIFT

MY40 AND MY60 FORK LIFT TRUCKS

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TABLE OF CONTENTS

Fig. 1-1.

CHAPTER 1

INTRODUCTION

Section I. General Description

1-1. SCOPE

1-2. This manual provides instructions on the operation maintenance and overhaul of the MY Series Lift Trucks. Most of the instructions apply to both the MY 40 and the MY 60. Where there are differences, it will be noted either in the text or the paragraph heading.

1-3. It is strongly recommended that all personnel concerned with the various phases of this manual have a thorough knowledge and understanding of the equipment and the instructions pertaining thereof, before performing any procedure with the equipment.

1-4. GENERAL DESCRIPTION

1-5. Due to its design and intended purpose, the equipment will be referred to as "lift truck" throughout this manual. Reference to either the right or left sides of the lift truck are made in respect to the normal direction of travel, which is forward.

1-6. The trucks can be equipped with either a gasoline or LP gas engine. The MY 40 has a capacity of 4000 pounds, the MY 60 a capacity of 6000 pounds, both at a 24 inch load center.

1-7. The lift truck is a completely self-contained vehicle; its power train consisting of a four-cylinder gasoline engine, a hydraulic torque converter, and a multiple disc clutch and power shaft type transmission. All these assemblies are integrally mounted together, forming one compact unit, which in turn drives the front axle differential and the front drive wheels. A gear-type pump, driven from the engine camshaft, supplies pressure to the hydraulic system. Electrical components of the lift truck utilize the current supplied from one 12-volt battery.

Section II. Detailed Description

1-8. DETAILED DESCRIPTION

1-9. ENGINE. The engine (figure 1-2) is a four-cylinder, four-cycle gasoline or LP-Gas operated, valve-in-head type. Its normal speed with no load is 1750 rpm. One complete stroke is required for intake, compression, power, and exhaust, thereby providing one power stroke per cylinder for each two revolutions of the crankshaft.

1-10. TORQUE CONVERTER. The torque converter (2, figure 1-2) is a compact, complete, sealed unit consisting of an impeller, turbine, and single-stage stator. The charging pump is coupled to the engine flywheel through the impeller hub. The oil from the pump charges the converter, and the torque is multiplied by the stator. The turbine is splined to the input shaft in the transmission.

1-11. TRANSMISSION. The transmission (figure 1-2) is a power shaft gear box equipped with two pairs of hydraulically actuated multiple disc clutches. One set of clutches is mounted on the input shaft and controls the forward and reverse movement of the lift truck. The other set is mounted on the output shaft, and determines either high or low range. The control valve receives pressure from an engine-driven hydraulic pump mounted on the transmission cover. The valve is controlled by the hand levers mounted on the steering column. An "inching" valve, incorporated into the control valve supplies only partial pressure to the clutches, when it is activated by the inching pedal. This feature provides very slow ground speeds at full engine speed.

1-12. INCHING SYSTEM. The inching system is controlled by the combination inching - braking pedal. (figure 1-7). The pedal actuates a valve which supplies a restricted pressure to the clutch. The clutch is thus allowed to slip, thereby delivering only partial power to the drive wheels, with a resultant slow ground speed.

1-13. DIFFERENTIAL AND DRIVE AXLE. See figure 1-2. Coupled to, and driven by the transmission pinion shaft (output), is the conventional type automotive differential. The assembly is provided with an internal gear reduction at the axle end, which forms an offset in the axle and allows a lower center of gravity for the lift truck. A common lubricant is used for the transmission, differential, and axles.

1-14. STEER AXLE. The rear end of the lift truck is supported by a heavy-duty axle casting which embodies the conventional wheel spindles, steering arms, tie rods, and drag link which in turn is connected to the hydraulic steering booster.

1-15. HYDRAULIC SYSTEM. The hydraulic tank is an integral part of the main frame, on the right hand side. A gear type pump draws fluid from the tank, to a control valve, and to the hydraulic steering booster. Fluid under pressure is available on demand at each of these components when the engine is running. Return lines complete the circuit when the cylinders or booster are not in use. Extra valves are available for operating attachments. The system is controlled by hand levers located conveniently to the right of the operator.

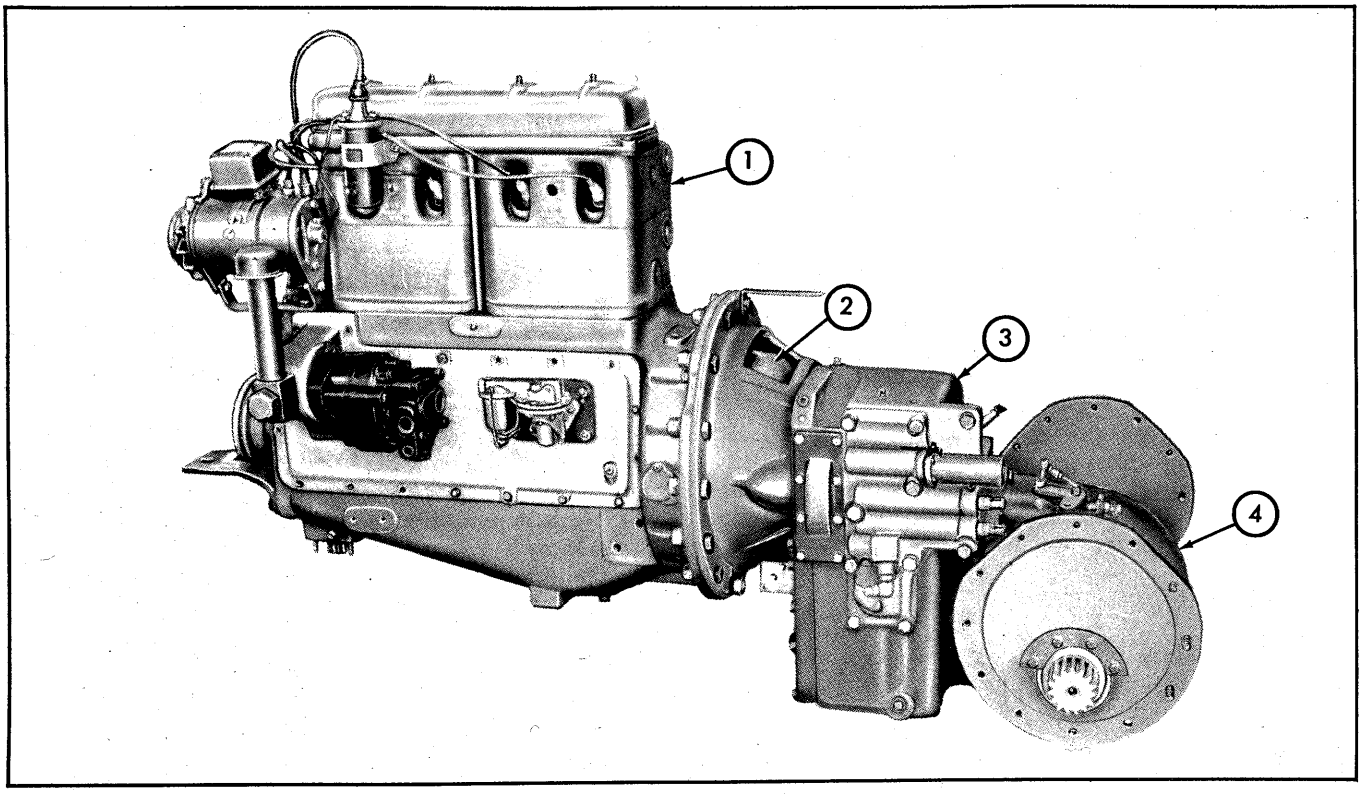

Fig. 1-2. Power Train

1. Engine
2. Torque converter
3. Transmission
4. Differential

1-16. HYDRAULIC STEERING SYSTEM. Steering of the lift truck is accomplished by an 18-inch diameter steering wheel, which is mounted on an automotive-type steering column. A hydraulic steering booster is incorporated into the drag link. As the steering wheel is turned, a valve in the booster opens, and hydraulic pressure from the hydraulic system assists in turning the rear wheels.

1-17. ELECTRICAL SYSTEM. The electrical system consists of a 12-volt battery, generator, voltage regulator, starter, coil, and distributor. The battery is the basic source of electrical current; the generator maintains the battery charged condition; and the voltage regulator governs the [illegible] of voltage output into the electrical system. Head and [illegible]ghts are available as optional equipment.

1-18. LIFT AND TILT ASSEMBLY. The lift and tilt assembly consists of an upright, forks, a lift cylinder, and two tilt cylinders. The lift and tilt mechanism is controlled by hand levers located at the right of the operator's seat. The truck is capable of lifting its rated load from ground level up to a specified height, depending on the mast assembly on the truck. The upright can be tilted from 6" forward of vertical to 12° aft of vertical (other degrees of tilt optional). A restrictor valve in the system provides that the load will not drop at a rate of more than 80 feet per minute in case of hydraulic failure or damage to the lines.

1-19. SERVICE AND PARKING BRAKES.

a. The heavy duty type service brake uses two identical brake shoes which are anchored against individual anchor pins mounted in a spider fastened to the axle. Individual shoe return springs, each hooked between an anchor pin and the underside of its shoe table, hold the shoes anchored. A brake backing plate, mounted behind the spider, supports the brake wheel cylinder and provides three shoe support pads for each shoe against which the shoes rest. Shoes are loosely held on the backing plate by hold-down pins and spring clips, two being used on the secondary shoe, one on the primary shoe. Opposite the anchor, brake shoes are linked by a floating star wheel adjuster and a single retracting spring hooked between the shoe ribs so that it engages and locks the star wheel. The star wheel is reached through a slot in the backing plate and is used to expand the shoes as required to adjust lining clearance. The star wheel link causes the shoes to function as a single compound unit. In operation, one shoe, depending upon drum rotation, leaves its anchor. (The "primary" shoe is dragged from its anchor by forward drum rotation while the "secondary" shoe remains anchored. In reverse drum rotation, the "secondary" shoe is the one leaving the anchor.)

b. The same brake shoes are utilized in a cable operated parking brake. A toggle lever, pinned to the rib of the secondary shoe, engages a connecting link, pinned to the primary shoe rib. The parking brake cable is connected

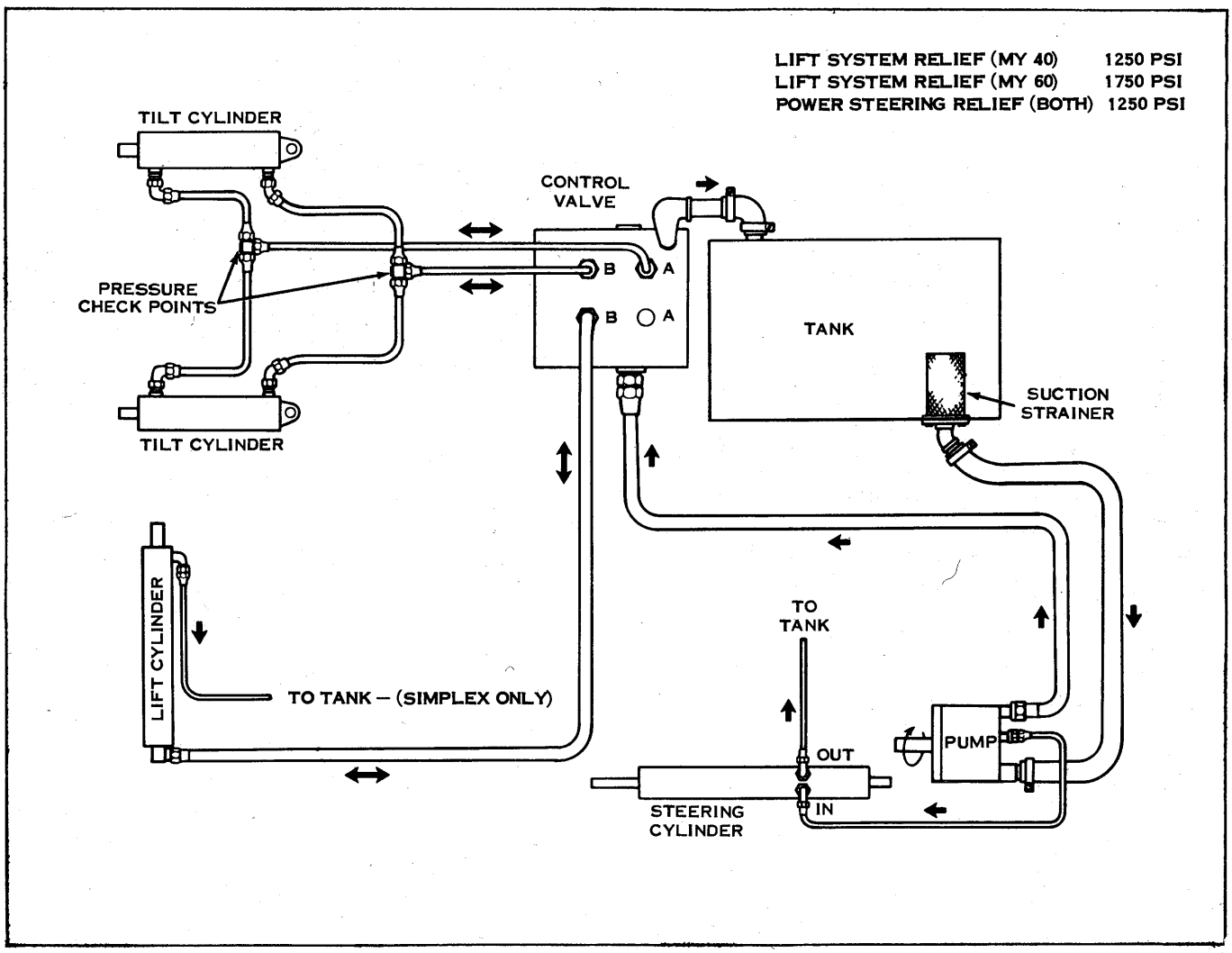

Fig. 1-3. Hydraulic Flow Diagram

at the opposite end of the toggle lever. When the cable is pulled taut, movement of the toggle lever on its fulcrum pin causes the connecting link to expand the shoes into the brake drum.

1-20. FUEL SYSTEM (GASOLINE). A 16-gallon gasoline fuel tank is an integral part of the frame on the left hand side. It contains a "protected" safety filler cap. The fuel suction line originates at the inside bottom of the tank and emerges at the upper right hand corner of the tank, thereby preventing loss of fuel should a fuel line be broken. A plug is provided at the tank bottom for fuel drainage and cleaning. A fuel shut-off valve is installed in the flexible hose leading from the tank to the fuel pump.

1-21. FUEL SYSTEM (LP-GAS). The LP-Gas system consists of a replaceable tank (33-1/2 pound capacity), a filter, a converter, and the carburetor. The fuel is confined in the tank as a liquid under pressure. When the valve is opened, the liquid passes to the converter where it is changed into a gas, and then is metered to the carburetor.

1-22. COOLING SYSTEM. Cooling of the engine is accomplished by an 18-inch, six-bladed pusher type fan (3, figure 1-18) and a water circulating pressure system radiator. The bottom portion of the radiator is designed with coils to cool the torque converter fluid.

1-23. EXHAUST SYSTEM. Engine exhaust vapors are vented out of the exhaust manifold on the upper left side of the engine, down through a muffler and out of a tail pipe at the rear of the lift truck.

1-24. SERVICING ACCESSIBILITY. See figure 1-4. Raising the appropriate hood section and propping it open with the support rod provides easy access for servicing the battery, air cleaner, generator, starter, distributor, spark plugs, fan belt, engine and transmission oil supplies, filters, and dipsticks. The radiator and fuel tank are services externally. The hydraulic tank fill tube is located under the right hand hood section.

1-25. WHEELS AND TIRES. The brake drums for the drive wheels are included in the wheel centers. Tire pressures are given in paragraph 2-9.

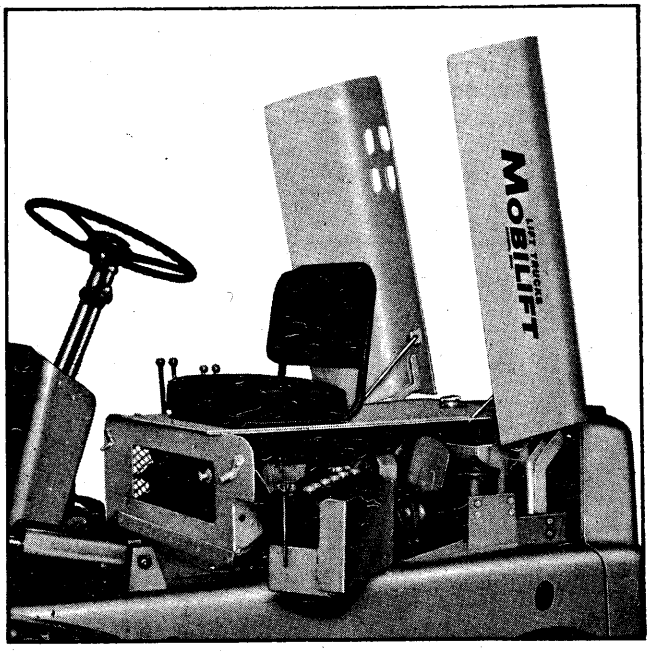

Fig. 1-4. Servicing Accessibility

1-26. SEAT. See figure 1-5. The seat is adjustable forward and backward. The release handle is located on the right side of the seat frame.

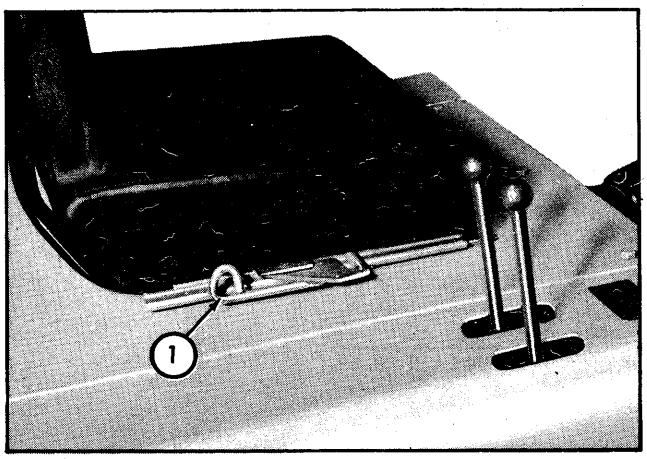

Fig. 1-5. Seat

1. Release handle

ENGINE SPECIFICATIONS:

Make	MOLINE
Bore and stroke	3-3/4 x 5 in.
Number of cylinders	4
Displacement	220 cu. in.
Ft./lb. torque @ 1800 rpm	170
Ft./lb. torque peak @ 1200 rpm	189
CRANKSHAFT	
Material	drop forged steel, heat treated
Bearings	3 precision
Front and intermediate	2-3/4 in. dia. x 1-5/8 in.
Rear	3 in. dia. x 2-3/16 in.
CYLINDERS AND HEADS	
Cast	in pairs
Material	special alloy cast iron
CONNECTING RODS	
Style	Drop-forged steel, heat-treated section
Bearings	2-5/8 in. x 1-1/4 in.
PISTONS	Aluminum Alloy
Rings	4
Compression	two 3/32 in. wide
Oil	two 5/32 in. wide
PINS	full floating
Bearing (in rod)	1 in. x 1-3/8 in.
CAMSHAFT	
Number of bearings	3
Drive	Helical gears
VALVES AND VALVE MECHANISM	in head
Tappets	barrel ported
Intake valves	alloy steel, 1-1/4 in. dia.
Exhaust valves	alloy steel, 1-11/64 in. dia. port.
Exhaust valve seat inserts	stellite
IGNITION	
Gas and LP gas	1 12-volt battery
Spark Plugs	18 mm
Generator capacity	20 amps
Regulator capacity	20 amps
LUBRICATION	Pressure points to rod, main and camshaft bearings, timing gears, valve mechanism
Pump	gear
Location	submerged in sump
Capacity	6 gpm at 30 psi
Filter	full flow with replaceable spin-on element
Crankcase capacity	7 qts.
Oil level gauge	bayonet
Pressure gauge	on instrument panel
COOLING SYSTEM	
Pump	centrifugal V-belt drive
Capacity	40 gpm at 1800 rpm
Fan	18 in. dia--6 blade
Radiator capacity	5-1/2 gals.
Core	flat tube and fin type

DIMENSIONS AND
SPECIFICATIONS

	MY 40		MY 60	
Capacity @ 24 in. load center	4000 lbs.		6000 lbs.	
Inch pound rating	176,000		264,000	
Free lift	12-1/2 in. Simplex		18-3/4 in. Simplex	
	64 in. Duplex		60 in. Duplex	
Weight--service	8340 lbs.		9850 lbs.	
Tilt 6° forward	optional 8° forward		optional 8° forward	
	optional 0° forward		optional 0° forward	
Tilt 12° back	optional 10° back		optional 10° back	
Length less forks	95 in.		112 in.	
Width--single drive tires	45 in.		53 in.	
dual drive tires	60-1/2 in.		69 in.	
Wheelbase	56 in.		72 in.	
Underclearance--mast	5 in.		5 in.	
center	8-1/2 in.		7-5/8 in.	
Turning Radius outside	85 in.		98 in.	
Turning Radius inside	11 in.		13 in.	
Turns in intersecting aisles	72 in.		89 in.	
Engine bhp (Sea level calculated) @ 1800 rpm	58		58	
Speeds (MPH)	High Range	Row Range	High Range	Low Range
Forward	0 - 11.5	0 - 6.8	0 - 12	0 - 7.5
Reverse	0 - 11.5	0 - 6.8	0 - 12	0 - 7.5
Speed of lift--loaded	60 fpm		58 fpm	
Fuel capacity	16 gals.		18 gals.	
Protectoseal gas cap	standard		standard	
LP gas (optional)	33-1/2 lbs.		33-1/2 lbs.	
Tires--Steer	6:00 x 9 x 10 ply		7:50 x 10 x 10 ply	
Single drive (Standard)	7:50 x 15 x 12 ply		8:25 x 15 x 12 ply	
Dual drive (Optional)	7:50 x 15 x 10 ply		7:50 x 15 x 10 ply	
NOTAT (Optional)	laminated rubber		laminated rubber	
Tread--steer	36 in.		42-3/16 in.	
single drive	36-1/2 in.		43-1/2 in.	
Standard fork length	42 in.		42 in.	
Center of drive axle to face of forks	19-1/2 in.		20-1/2 in.	
Carriage--standard (ITA)	44 in.		48 in.	
Carriage--extra wide (optional)	60 in.		72 in.	

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. Initial Preparation For Use

2-1. SERVICE UPON DELIVERY.

a. UNLOADING. Since the lift truck may be shipped from the factory in a number of ways, no attempt will be made to cover all methods of unloading procedures. The trucks were shipped from the factory in accordance with standard shipping procedures, and should be unloaded from their carriers in a safe, logical manner.

2-2. REMOVAL OF PROTECTIVE MATERIALS AND DISASSEMBLED COMPONENTS. Remove any protective tape or padding from the lighting components of the lift truck. Remove any components that have been packaged separately and attached to or shipped with the lift truck; refer to the Table of Contents and note the page number on which that component is listed. Install the component accordingly.

2-3. VISUAL INSPECTION FOR SHIPPING DAMAGE. Although every attempt has been made at the factory to protect the equipment against damage during shipment, it is possible for some damage to be incurred. It is necessary, therefore, that a careful, visual inspection be made of the lift truck upon delivery and before placing it in operation. It is further recommended that a written record be maintained which outlines the nature of the damage, and the urgency required in its correction.

2-4. SERVICE PRIOR TO USE. The following procedures are to be accomplished before operation of the lift truck:

2-5. BATTERY.

a. The battery is shipped without electrolyte. Raise the left hand section of the hood, remove the battery from the lift truck, and discard any vent plug seals. Fill all cells to the proper level with electrolyte. Allow the battery to stand for about 20 minutes after filling.

WARNING

Electrolyte can burn or damage the eyes, skin, or clothing. Wear safety glasses to prevent damage to the eyes due to splashed electrolyte. If electrolyte is spilled on the skin or clothing, flush off immediately with a solution of baking soda and water, or some other neutralizing agent, then flush off with clean water.

b. Code date the battery according to the month and year. Stamp the code on the intercell connector nearest the negative terminal of the battery. The first number of the code indicates the month (1-January, 2-February, etc.), and the second number indicates the year (1-1961, 2-1962, etc.).

c. Give the battery a booster charge after it has been filled and dated. Fast charge for at least 10 minutes at the rate of 30 to 40 amps; or slow charge for at least 30 minutes at 10 amps. See paragraphs 3-7, 3-8, and 3-9 for battery service procedures and data.

d. If any electrolyte spilled on the battery, flush it off with clean water. Dry the battery before installing.

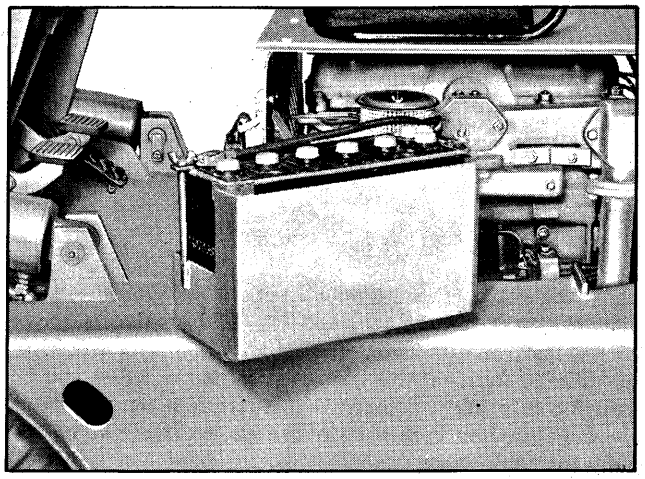

Fig. 1-6. Battery

e. The battery has a negative ground. Install it with the negative terminal toward the front of the truck. Install the clamp and cables.

2-6. ELECTRICAL SYSTEM. Inspect wiring and connections. Actuate light switch and inspect the lights for proper response. Place ignition switch "ON" and test for electrical current to that component. With switch [illegible] test horn.

2-7. FUEL SYSTEM (GASOLINE). Open the fill cover of the fuel tank located on the left side of the lift truck; fill as necessary with a good grade of regular gasoline. Close the tank cover, and padlock if desired. Wipe the tank free of dirt or fuel hose leakage, and inspect fuel line and engine-mounted accessories for signs of fuel leakage at their connections. Open shut-off valve located on fuel tank-to-fuel pump line.

2-8. FUEL SYSTEM (LP-GAS). Open the valve on the fuel supply tank. Check all connections in the fuel line for evidence of leaks. A leak will result in a formation of frost at the point of the leak.

2-9. WHEELS AND TIRES. Inflate front tires to 85 pounds and rear tires to 80 pounds pressure. Inspect tires very closely for nails, glass, or any other foreign particles that may impair tire life.