
Service and Parts Manual

SPM 639

CTW

SERIAL NUMBER

ALWAYS GIVE TRUCK SERIAL
NUMBER WHEN ORDERING PARTS

CLARK Material Handling
Company

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**IMPORTANT: READ AND UNDERSTAND THE CONTENTS OF THIS MANUAL
BEFORE OPERATING EQUIPMENT**

SAFETY INFORMATION

DO NOT OPERATE THIS TRUCK UNLESS YOU HAVE BEEN TRAINED AND AUTHORIZED TO DO SO.

DO NOT OPERATE THIS TRUCK UNTIL YOU HAVE CHECKED ITS CONDITION. GIVE SPECIAL ATTENTION TO TIRES, BATTERY, CONTROLS, LIFTING SYSTEMS INCLUDING SWITCHES, BRAKES, STEERING MECHANISM, GUARDS AND SAFETY DEVICES.

- ▶ REPORT THE NEED FOR TRUCK REPAIRS TO YOUR SUPERVISOR IMMEDIATELY AND DO NOT OPERATE TRUCK UNTIL REPAIRS ARE MADE. NEGLECT MAY CAUSE A MINOR REPAIR TO BECOME A MAJOR SERVICE PROBLEM AND CAUSE THE TRUCK TO BECOME UNSAFE.

DO NOT EXCEED THE RATED CAPACITY OF THE VEHICLE AS MARKED ON THE NAMEPLATE.

DO NOT LIFT WITH THE FORK TIPS OR ONE FORK ONLY, IF EQUIPPED.

UNITS EQUIPPED WITH FORKS ARE DESIGNED FOR EVENLY CENTERED LOADS WITH FORKS COMPLETELY SUPPORTING THE LOAD. OFF CENTERING OF LOADS CAN RESULT IN A DANGEROUS OPERATING CONDITION AND MAY CAUSE DAMAGE OR INJURY.

ALWAYS LOOK IN DIRECTION OF TRAVEL. USE CAUTION WHEN LOAD INTERFERES WITH VISIBILITY.

EXTREME CAUTION MUST BE USED WHEN HANDLING OR TRANSPORTING LOOSELY STACKED/PACKAGED LOADS.

START, STOP, CHANGE DIRECTION, TRAVEL AND BRAKE SMOOTHLY. SLOW DOWN FOR TURNS ON RAMPS AND ON UNEVEN OR SLIPPERY SURFACES THAT COULD CAUSE TRUCK TO SLIDE OR TIP. BE AWARE THAT THE TRUCK BEHAVES DIFFERENTLY WITHOUT A LOAD THAN WITH A LOAD.

KNOW AND UNDERSTAND GRADEABILITY CAPABILITIES OF THIS VEHICLE. MAXIMUM RECOMMENDED GRADEABILITY UNDER LOAD NOT TO EXCEED 5%. STRADDLE TYPE EQUIPMENT IS DESIGNED FOR LEVEL SURFACE ONLY. DO NOT LEAVE TRUCK UNATTENDED ON RAMP.

- ▶ OBSERVE APPLICABLE TRAFFIC REGULATIONS. YIELD RIGHT OF WAY TO PEDESTRIANS. SLOW DOWN AND SOUND HORN AT ALL AISLE INTERSECTIONS AND WHERE VISION IS OBSTRUCTED.
- ▶ DO NOT RIDE ON THIS EQUIPMENT UNLESS IT HAS BEEN EQUIPPED AND DESIGNED FOR SUCH USE.
- ▶ DO NOT ALLOW PERSONNEL TO STAND UNDER THE FORKS, IF EQUIPPED (LOADED OR UNLOADED) WHEN FORKS ARE IN THE RAISED POSITION.
- BEFORE YOU LEAVE THE TRUCK, FULLY LOWER LIFTING MECHANISM, SHUT OFF POWER AND KEYSWITCH IF EQUIPPED, AND APPLY PARKING BRAKE, IF EQUIPPED.
- DO NOT USE FORWARD MAST TILT, IF EQUIPPED WITH THE LOAD ELEVATED UNLESS THE LOAD IS DIRECTLY OVER OTHER SUPPORT.
- WHEN TRAVELLING WITH OR WITHOUT A LOAD, FORKS SHOULD BE IN LOWER MOST POSITION AND TILTED BACK IF APPLICABLE.
- FOR STRADDLE TRUCKS, STRADDLE DISTANCE MUST BE EQUALLY SPACED IN ACCORDANCE TO TRUCK CHASSIS. STRADDLE INSIDE DIMENSION MUST BE SET AT A MINIMUM OF 25% OF MAXIMUM LIFTING HEIGHT. STRADDLE LEGS ADJUSTMENT SHOULD BE DONE BY AUTHORIZED BLUE GIANT REPRESENTATIVE.

REMEMBER: A SAFE OPERATOR IS A SMART OPERATOR

NOT A CONTROLLED DOCUMENT

PREVENTIVE MAINTENANCE

Spotting trouble before it happens can prevent costly down-time and extensive repairs and make it possible for service and repairs to be performed when the unit is not required for regular operations.

Inspection intervals outlined are for normal conditions. More frequent inspections are necessary for adverse conditions such as: rough floor conditions, temperature extremes, several operators, dusty atmosphere, etc.

INSPECTION INTERVALS:

DAILY:	Operating Controls (SAFETY) Battery
QUARTERLY:	Electrical System Hydraulic System Drive Unit and Mechanical Parts

CAUTION: DISCONNECT THE BATTERY BEFORE ATTEMPTING INSPECTION OR SERVICE

ELECTRICAL SYSTEM

The traction motor is 12 or 24 volt series wound. Speed and direction are controlled by contactors.

Two direction contactors obtain direction reversal by reversing the motor field connections. Current flow through the armature is always in the same direction.

The high speed contactor bypasses the low speed and second speed (if equipped) resistors when energized, applying the full battery voltage to the traction motor. In low speed, current passes through both resistors and in second speed current passes through one resistor giving the traction motor less than full battery voltage.

As the travel controls are rotated (forward or reverse) it actuates a direction micro switch first which energizes the direction contactor. This establishes direction and low speed. Further rotation actuates the second speed micro switch (if equipped) and maximum rotations energizes the high speed switch. Micro switches are adjustable to obtain this sequence.

When the steering handle is in the fully raised or fully lowered position, a micro switch is opened, cutting off power to the direction and speed controls.

ELECTRICAL SYSTEM MAINTENANCE:

- Battery should be clean and in good condition.
- All wires and cables should be in good condition and firmly attached to their terminals.
- Compressed air should be used to blow away dirt and dust from all motors, contactors and switches.
- Contact tips should be inspected. Darkening and pitting is normal and replacement should be made when the contact material is burnt away or will be burnt away before the next regular maintenance inspection.
- The drive and pump motor brushes should be inspected and replaced when worn to approximately one half of their original length. Spring tension lessens as brushes wear, possibly causing severe burning to the armature commutator. If the commutator has been damaged it must be turned down and undercut before the new brushes are installed.

ARRIVAL INSPECTION

This equipment was thoroughly inspected and tested prior to leaving the factory. Before placing the equipment in service it should be thoroughly checked for damage or loss **occurring** in transit. If any such damage or loss is evident, a claim must be made against the carrier. Refer to Damage in Transit information **enclosed** with the packing slip.

PRE-OPERATION INSTRUCTIONS

- Remove any packing material and check for visible damage.
- Open the drive unit cover and check the wiring harness and hydraulic hoses for damage or loose connections. **move** the breather and check that the oil reservoir is filled to approximately one inch from the top (forks must be in lowered position).
- Open the battery compartment and check that all connections are tight. Check that the battery has not been **damaged** and is fully charged. Refer to Battery and Charger Instructions.
- Refer to the operating instructions and check that the truck operates satisfactorily.
- Complete the Warranty Validation form included in this manual and return it to Blue Giant.

OPERATING INSTRUCTIONS

Travel Controls:

Direction and speed are selected by rotating the travel control located on the steering handle. For low speed **rotate** the travel control approximately $3/16$ " in forward or reverse as required, an additional $1/4$ " travel for second speed (if applicable) and maximum rotation for high speed.

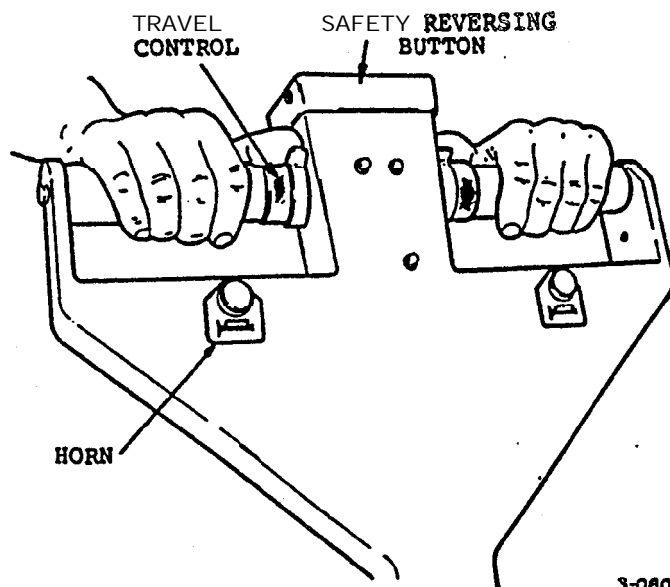
CAUTION: DO NOT USE TRACTION MOTOR FOR BRAKING

Horn:

Exclusive feature locates horn pushbutton on each side of the steering handle allowing instantaneous finger trip use without travel interruption. See Figure 1 A.

Safety Reversing Button::

Located at the top of the steering handle. When truck is moving in the forward direction and the safety reversing button is depressed by an obstruction or trapped operator the vehicle instantly reverses direction, in high speed and the horn will energize. See Figure 1 A.



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NOTE: DO NOT USE SAFETY REVERSING BUTTON FOR NORMAL TRAVEL

FIGURE 1A

Lift and Lower Controls:

Push buttons are conveniently located on both sides of the front of the steering handle for left or right hand operation.

**CAUTION: DO NOT EXCEED THE RATED CAPACITY OF THE TRUCK AS MARKED ON THE NAMEPLATE.
DO NOT LIFT WITH FORK TIPS OR ONE FORK ONLY.**

Brake:

The brake is applied when the control handle is in the fully raised or fully lowered position. Power to the control circuit is cut off whenever the control handle is in the fully raised or fully lowered position.

**CAUTION: THE BRAKE IS CAPABLE OF HOLDING THE VEHICLE WITH RATED LOAD ON ANY GRADE
WHICH IT CAN NEGOTIATE BUT IS NOT DESIGNED TO STOP A LOADED VEHICLE ON A
STEEP GRADE.**