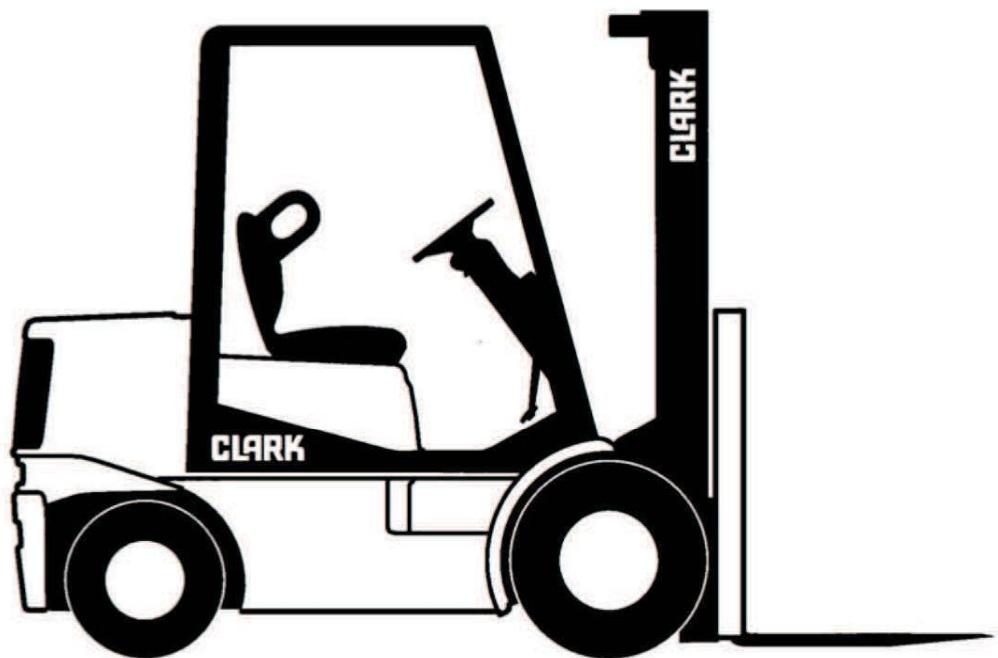


**PMA-441  
Y235 LPG  
Lot 3250 and Above**

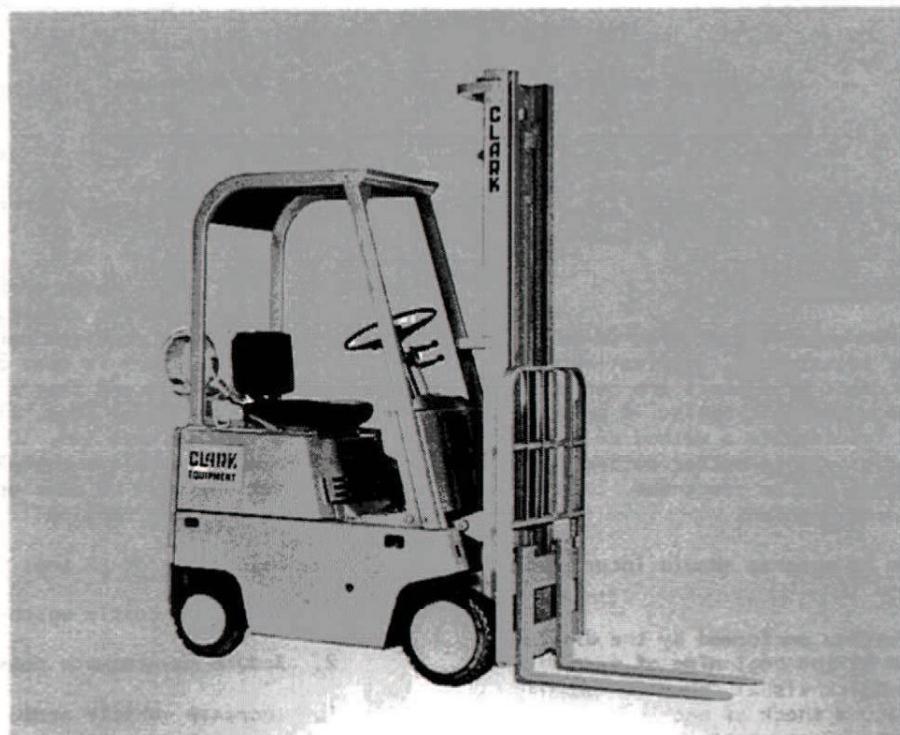


**CLARK**

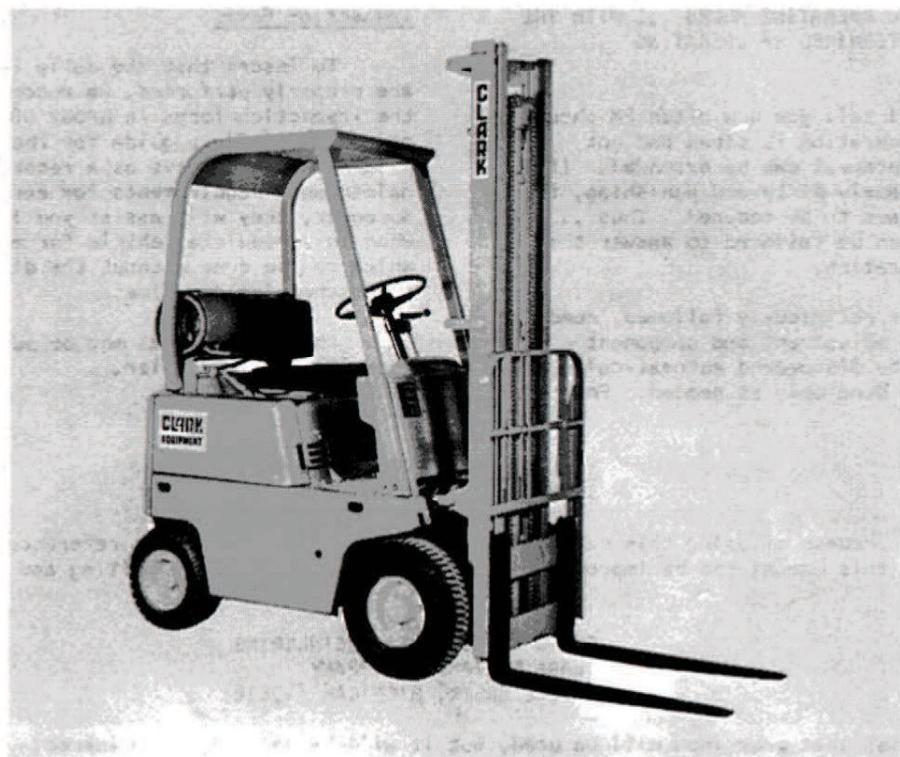
Technical  
Publications  
Lexington, KY  
40508

Copyrighted Material  
Intended for CLARK dealers only  
Do not sell or distribute

SERVICE ENGINEERING DEPARTMENT, BATTLE CREEK



C500 20, 25, 30 (LPG)



C500 Y20, 25, 30 (LPG)



# INDUSTRIAL TRUCK DIVISION

CUSTOMER SERVICES ENGINEERING DEPARTMENT, BATTLE CREEK



## FOREWORD

### PLANNED MAINTENANCE SECTION

The Planned Maintenance Procedures located in the front of this book provide a basic step by step guide which should be followed in servicing the vehicle. Adjustment Procedures, specifications and other data including lubrication guides, are found in the rear of this book and are listed under GROUP and Section Numbers. Refer to the Index or the Product Identification Card.

#### About Planned Maintenance

Planned Maintenance is a program in which inspections, minor adjustments, lubrication, oil changes and replacement of filters are performed on a scheduled and systematic basis. A solid PM program should incorporate a method of record keeping which enables you to better determine PM schedules and enables you to track the maintenance costs per machine.

An effective PM program should incorporate two basic phases:

1. An inspection performed by the driver or maintenance man at the beginning of each shift. This is a quick visual check for obvious damage and leaks ... a check of engine oil and water levels, lights, instruments and warning devices.

2. THE PLANNED MAINTENANCE ROUTINE IS BASED ON 50 TO 250 OPERATING HOURS ... WITH THE INTERVAL BEING DETERMINED BY OPERATING CONDITIONS.

Records will tell you how often PM should be done. If an operation is clean and not punishing, a PM interval can be extended. If an operation is extremely dirty and punishing, the PM interval may have to be reduced. Thus ... the PM interval can be tailored to answer the needs of your operation.

If the PM is religiously followed, needs for repair, major adjustment and component replacement will be discovered automatically and such work will be done only as needed. For

instance, brake checks which are part of the PM will uncover the need for adjustments and/or repairs which may be required periodically. Who can say? The point is that this will be done only when needed and that's true for all systems and components. Thus, in this program we are able to eliminate 500, 1000 and 2000 hour inspections and the things normally covered in these inspections will be done only when the PM uncovers the need for repairs.

The objectives of PM are:

1. To reduce costly unscheduled downtime.
2. Reduce maintenance costs.
3. Increase vehicle productivity.
4. Above all, to increase personal safety of drivers and other personnel.

#### Inspection Forms

To insure that the daily inspection and PM are properly performed, we recommend the use of the inspection forms in GROUP 40. Such forms not only provide a guide for the inspections and procedures, but serve as a record in tracking maintenance requirements for each vehicle. Moreover, they will assist you in determining when to schedule a vehicle for major repairs which can be done without the disruptive effect of unscheduled downtime.

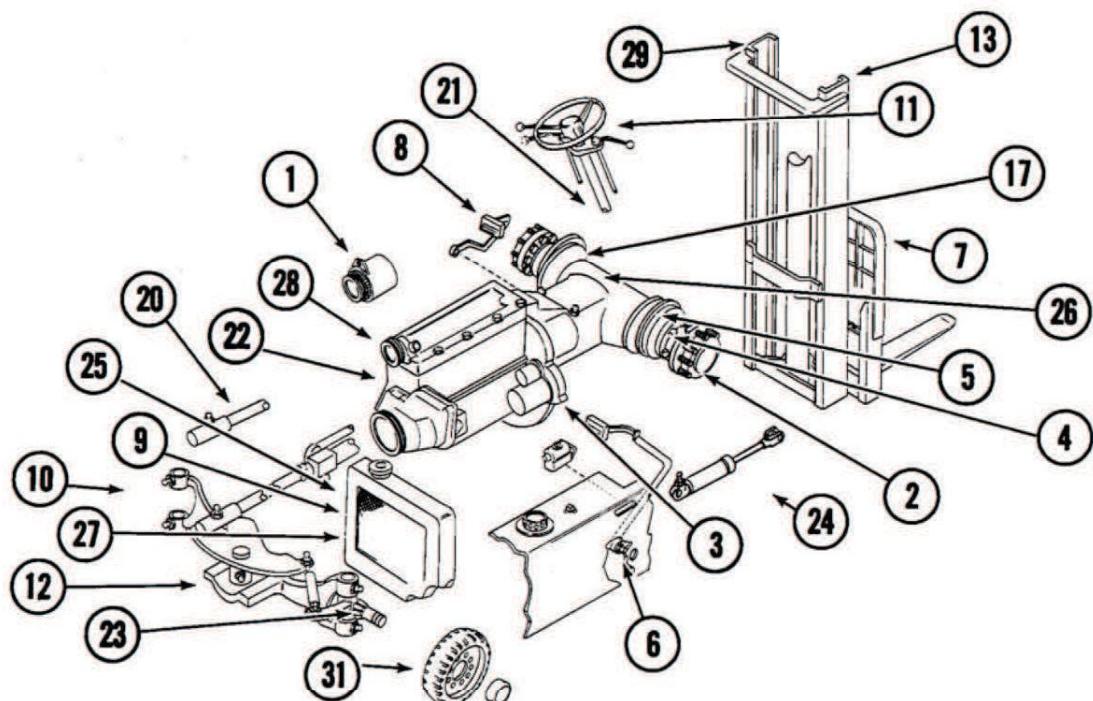
Inspection Forms may be purchased from your local CLARK Dealer.

#### SPECIAL NOTICE TO ALL USERS OF THIS MANUAL.

IF ... in the process of using this manual for PM procedures, adjustments, references, etc ... you find that this manual can be improved in any way, put your ideas in writing and send them to:

CUSTOMER SERVICES ENGINEERING  
CLARK EQUIPMENT COMPANY  
BATTLE CREEK, MICHIGAN (49016)

We can't promise that your idea will be used, but it will be seriously considered. If you do submit any such ideas, please understand that Clark Equipment Company can use it without obligation.



1. Alternator Maintenance .....  
GROUP 12, Section 1
2. Axle End Lubrication .....  
GROUP 20, Section 1
3. Brake Adjustment (Parking).....  
GROUP 23, Section 4
4. Brake Adjustment (Service) .....  
GROUP 23, Section 3
5. Brake Bleeding .....  
GROUP 23, Section 1
6. Brake Pedal Adjustment .....  
GROUP 23, Section 2
7. Carriage Roller Adjustment .....  
GROUP 34, Section 1
8. Clutch Adjustment .....  
GROUP 04, Section 1
9. Cooling System Maintenance .....  
GROUP 01, Section 2
10. Counterweight Removal .....  
GROUP 38, Section 1
11. Hydraulic System Pressure Check ...  
GROUP 30, Section 1
12. Jacking Procedure .....  
GROUP 23, Section 6
13. Lift Chain Adjustment .....  
GROUP 34, Section 3
14. Lubrication Charts .....  
GROUP 01, Section 1
15. Lubrication Key .....  
GROUP 40, Section 4
15. Driver Restraint System Checks ....  
GROUP 39, Section 1
16. Name Plates/Machine Stampings .....  
GROUP 40, Section 1
17. Neutral Start Switch .....  
GROUP 13, Section 1
18. PM Inspection & Drivers Daily  
Inspection Forms .....  
GROUP 40, Section 3
19. Specifications .....  
GROUP 40, Section 2
20. Steering Adjustment .....  
GROUP 26, Section 2
21. Steering Gear .....  
GROUP 25, Section 1
22. Steering Pressure Check .....  
GROUP 26, Section 1
23. Steering Wheel Bearings .....  
GROUP 26, Section 3
24. Tilt Cylinder Adj. .....  
GROUP 34, Section 5
25. Transmission Fluid Aeration .....  
GROUP 06, Section 2
26. Transmission Pressure Check .....  
GROUP 06, Section 1
27. Transmission Oil Cooler .....  
GROUP 06, Section 3
28. Tune-Up .....  
GROUP 00, Section 1
29. Upright Roller Adjustment .....  
GROUP 34, Section 2
30. Upright & Tilt Cylinder Drift Tests  
GROUP 34, Section 4
31. Wheels & Tires .....  
GROUP 22, Section 1

ABOUT PM

A special coding system on the PM check sheet allows the PM man to efficiently report truck condition, with a minimum number of words. As the PM is performed, a check is made on the check sheet indicating truck condition regarding a potential problem, or needs urgent repair. Whenever a system or component is faulty or unsafe, it must be noted on the PM check sheet, and reported to the designated authority at the conclusion of the PM.

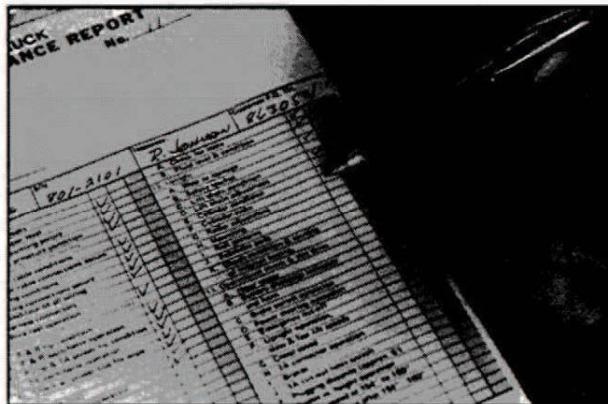


Fig. 12618

## What should a P.M. include?

What should a PM include? The best answer is to go through a PM based on the knowledge and experience of PM men, service managers, engineers and customer services engineering personnel.

**P.M. OBJECTIVES?** To reduce costly unscheduled downtime, reduce maintenance costs, increase truck productivity, and ... above all ... to increase personal safety of drivers and other personnel. These worthwhile ends can be met only through sensible, consistent measures which include ...

1. Complete inspection to uncover minor or potential trouble before it becomes major.
2. Air cleaning and lubricating the machine to reduce dirt damage and excessive wear.
3. Making adjustments to assure proper and safe functioning of systems and components.

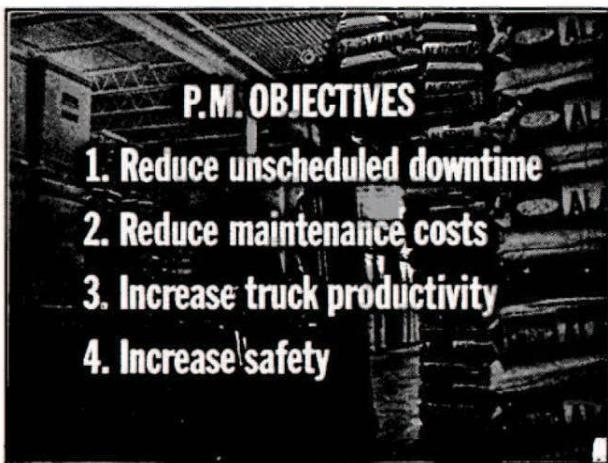


Fig. 10889

Make a visual check of the truck. Look for signs of obvious leaks.



Fig. 13703

Then, inspect the sheet metal and exterior of machine in general. Any damage occurring on the truck since the last P.M. should be noted on the P.M. check sheet.

**W A R N I N G**

DO NOT WELD IN THE VICINITY OF THE  
FUEL TANK.

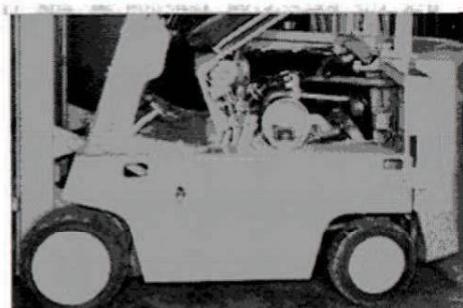


Fig. 13704

Check mounting and condition of the driver's overhead guard.

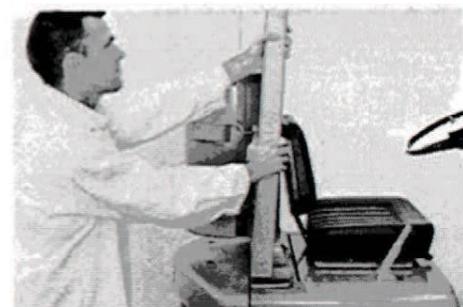


Fig. 15703

Check the condition of the load back rest.



Fig. 13706

Next, inspect the counterweight bolts for tightness and torque loose bolts according to specifications.

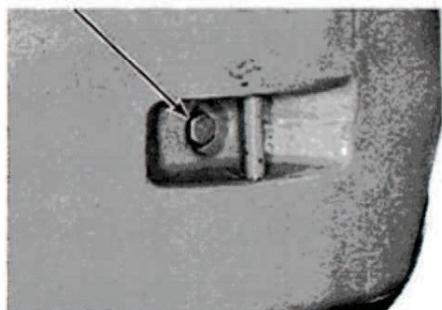


Fig. 11455

Check for excessive leakage at the lift cylinder. Check for nicks and scoring.

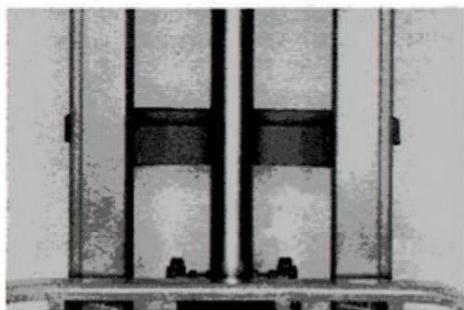


Fig. 13708

Check for damaged chains.

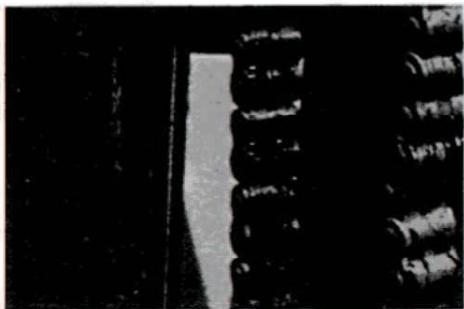


Fig. 12145

Check chain adjustment by making sure the chains are under equal tension ... and by ...

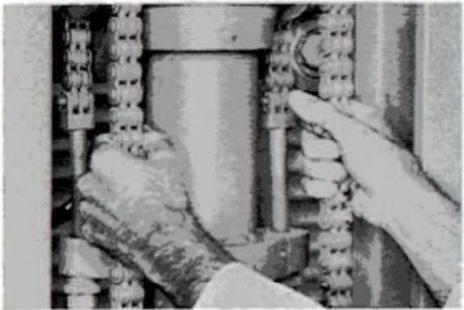


Fig. 12146

... checking wear patterns in the rails. A wear pattern like this indicates that chain adjustment is about right. But ...

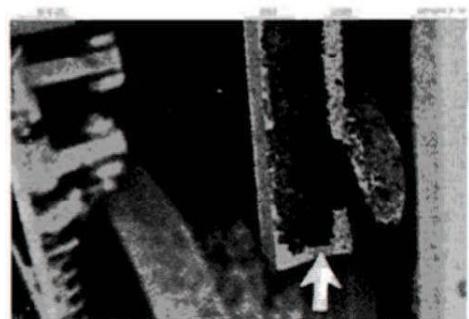


Fig. 12147

... a wear pattern like this means that the chains are too long and must be adjusted to correct length.

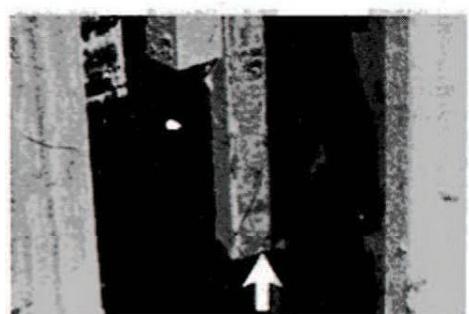


Fig. 12148

Check the forks to make sure they are not bent or broken.



Fig. 12149

The carriage chain retainers and cotter pins must be in place and not damaged.

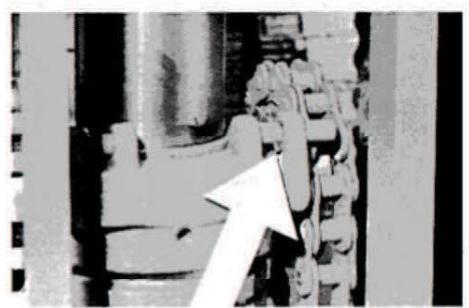


Fig. 13709



# INDUSTRIAL TRUCK DIVISION

CUSTOMER SERVICES ENGINEERING DEPARTMENT, BATTLE CREEK



Check fork latches to make sure they work properly.

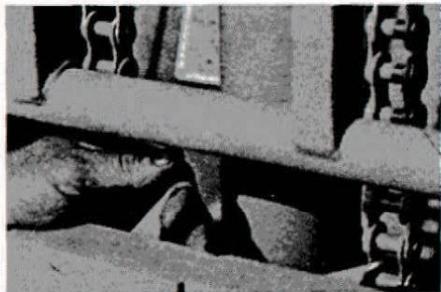


Fig. 12150

#### Standard Uprights: Deck Numbers beginning with an "F".

Check the Fabreeka (Stop) Pads for damage, and check to make sure the pads contact the rail tie bar at the same time when lowering inner slide. Reference: Fig. 10910.

With innerslide fully lowered, both stop blocks must contact rail tie bar.

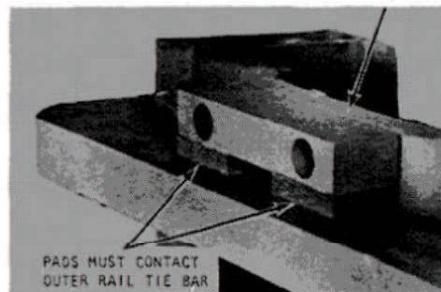


Fig. 10910

#### Full Free Lift Uprights: Deck Numbers beginning with an "M".

Check the Fabreeka (Stop) Pads for damage, and see if there is some clearance between bottom of pad/s and tie bar. Pads must not contact tie bar. Reference: Fig. 10911.

Check to make sure inner rails are not lower than outer rails.



Fig. 10911

Check the fuel supply.



Fig. 13445

In the bulkhead fitting there is a safety relief valve which prevents excessive hose pressures.

**W A R N I N G**

THIS VALVE, INSTALLED OUTSIDE THE ENGINE COMPARTMENT, MUST ALWAYS POINT AWAY FROM THE OPERATOR.



Fig. 15704

Check the drive axle mounting bolts with a torque wrench for proper torque. If any are loose, torque each bolt, then retorque.

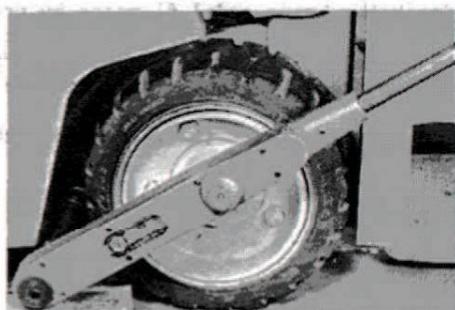


Fig. 9841

Inspect the complete hydraulic control linkage for mounting security and freedom of operation.

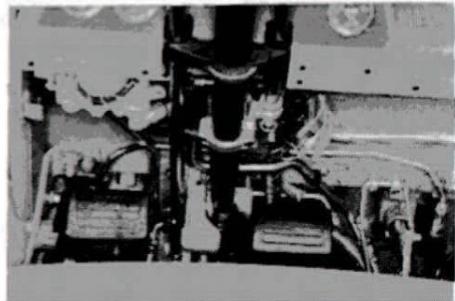


Fig. 13710

Check tires for excessive wear and cuts. Pry out of tire treads any objects which could damage the tires. Also check wheel lug nuts for tightness and make sure none are missing.

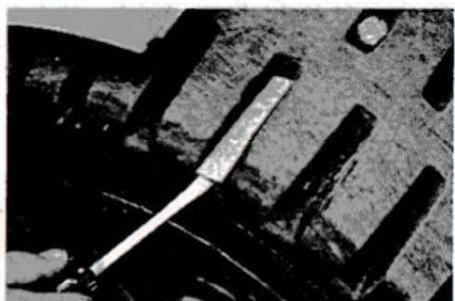


Fig. 12151