



**MANITOU NORTH AMERICA, INC.**

6401 IMPERIAL DRIVE  
WACO, TX 76712-6803

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**Manitou North America, Inc. Parts Dept.** (800) 425-3727 or (254) 799-0232  
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**MSI30 LPG Series 2-E**

S/N: 204560 AND ABOVE

**OPERATOR'S MANUAL**

**THIS OPERATOR'S MANUAL MUST BE KEPT IN THE LIFT TRUCK AND MUST BE READ AND UNDERSTOOD BY OPERATOR.**

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5. **Operator and crew members have been trained in the safe use and operation of the equipment, including how to avoid electrocution.**
6. **During use, no part of the equipment, load line or load will be within the minimum clearance distance specified by OSHA [10 feet (3.0 m), and more for lines rated over 50 kV] of any energized power line, and any taglines used are non-conductive.**
7. **In addition, for lift equipment with a rated capacity greater than 2000 lbs. (907 kg), the employer must ensure that:**
  - a.) **An accessible fire extinguisher is on the forklift;**
  - b.) **Monthly and annual inspections are performed and documented, and records retained (three months for monthly, one year for annual);**
  - c.) **Before November 10, 2014, operators must have had the additional training and qualification / certification required by OSHA regulations §1926.1427 and §1926.1430.**

**Note: Refer to the full text of the OSHA crane regulation (29 CFR Part 1926, Subpart CC) for a detailed description**

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## **1 - OPERATING AND SAFETY INSTRUCTIONS**

## **2 - DESCRIPTION**

## **3 - MAINTENANCE**

07/07/2006	1ST DATE OF ISSUE
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### C - ENVIRONMENT

- Comply with site safety regulations.
- If you have to use the lift truck in a dark area or at night, make sure it is equipped with working lights.
- During handling operations, make sure that no one is in the way of the lift truck and its load.
- Do not allow anybody to come near the working area of the lift truck or pass beneath an elevated load.
- When using the lift truck on a transverse slope, before lifting the mast, follow the instructions given in the paragraph : INSTRUCTIONS FOR HANDLING A LOAD : C - TRANSVERSE ATTITUDE OF THE LIFT TRUCK.
- Travelling on a longitudinal slope :
  - Drive and brake gently.

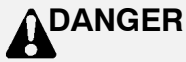


- Moving without load : Forks or attachment facing downhill.

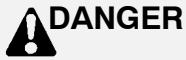


- Moving with load : Forks or attachment facing uphill.

- Take into account the lift truck's dimensions and its load before trying to negotiate a narrow or low passageway.
- Never move onto a loading platform without having first checked :
  - That it is suitably positioned and made fast.
  - That the unit to which it is connected (wagon, truck, etc.) will not shift.
  - That this platform is prescribed for the total weight of the lift truck to be loaded.
  - That this platform is prescribed for the size of the lift truck.
- Never move onto a foot bridge, floor or freight lift, without being certain that they are prescribed for the weight and size of the lift truck to be loaded and without having checked that they are in sound working order.
- Be careful in the area of loading bays, trenches, scaffolding, soft land and manholes.
- Make sure the ground is stable and firm under the wheels before lifting the load.
- Make sure that the scaffolding, loading platform, pilings or ground is capable of bearing the load.
- Never stack loads on uneven ground, they may tip over.
- The load or the attachment must not be left up high for a long time just above a structure because of the descent of the mast. In such cases, it must be monitored constantly so that the height of the forks or the attachment can be adjusted, if necessary.
- In the case of work near aerial lines, ensure that the safety distance is sufficient between the working area of the lift truck and the aerial line.



*You must consult your local electrical agency. You could be electrocuted or seriously injured if you operate or park the lift truck too close to power lines.*



*During high winds do not attempt moving loads that may catch the wind or cause the fork lift to be unstable.*

### D - VISIBILITY

- Maintain permanently good visibility throughout the route. In reverse, either look directly behind you or use the panoramic rear-view mirrors. In any case, avoid reversing over long distances.
- If the visibility in forward motion is not sufficient because of the bulkiness of the load, drive in reverse motion. This maneuver must remain exceptional and for short distances.
- Ensure you have good visibility (clean windows, adequate lighting, correctly adjusted rear view mirrors, etc.).
- If visibility of your road is inadequate, ask someone to help, standing outside the area in which the truck will be moving, and make sure you always have a good view of this person.

## ***BRINGING THE LIFT TRUCK BACK INTO SERVICE***

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- Remove the waterproof adhesive tape from all the holes.
- Install the intake hose.
- Install and reconnect the battery.
- Remove the protection from the cylinder rods.
- Perform the daily service (see : 3 - MAINTENANCE : A - DAILY OR EVERY 10 HOURS SERVICE).
- Put the handbrake on and remove the axle stands.
- Empty and replace the fuel and replace the fuel filter (see : 3 - MAINTENANCE : D - EVERY 500 HOURS SERVICE).
- Install and set the tension in the drive belts (see : 3 - MAINTENANCE : C - EVERY 250 HOURS SERVICE).
- Turn the I.C. engine using the starter, to allow the oil pressure to rise.
- Reconnect the engine cut-off solenoid.
- Lubricate the lift truck completely (see : 3 - MAINTENANCE : SERVICING SCHEDULE).



### **WARNING**

*Insure the area is adequately ventilated before starting the lift truck.*

- Start up the lift truck, following the safety instructions and regulations (see : OPERATING INSTRUCTIONS UNLADEN AND LADEN).
- Run all the mast's hydraulic movements, concentrating on the ends of travel for each cylinder.

## **SPECIFICATIONS**

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- Level of sound pressure in the driver's cab LpA (according to standard prEN 12053: 1995)	
. Overhead guard	dB
. Cab	dB
- Level of sound power in the LwA environment (according to directive 2000/14 CE guaranteed)	102 dB
- Speed of movement of lift truck in standard configuration on horizontal ground (except particular conditions)	
. Forward unladen	21 km/h (13 mph)
. Reverse unladen	20 km/h (12 mph)
- Standard lift height	3300 mm (130 in)
- Rated capacity with standard mast	3000 kg (4410 lb)
- Load center	24 in.
- Weight of forks (each)	55 kg (95 lb)
- Lifting motions with standard mast	
. Unladen lifting	0,49 m/s (1.6 ft/sec)
. Rated load lifting	0,44 m/s (1.4 ft/sec)
. Unladen lowering	0,46 m/s (1.5 ft/sec)
. Rated load lowering	0,49 m/s (1.6 ft/sec)
- Lift truck weight with standard mast	
. Unladen	4425 kg (9755 lb)
. Rated load	7425 kg (16369 lb)
- Axle weight with standard mast (transport position)	
. Front unladen	1725 kg (3803 lb)
rated load	6715 kg (14804 lb)
. Rear unladen	2700 kg (5952 lb)
rated load	710 kg (1565 lb)
- Tensile strain at coupling hook	
. Unladen	1300 daN (2922 ft/lb)
. Rated load	2500 daN (5620 ft/lb)
- Maximum ramp negotiable in forward motion	
. Unladen	27 % at 1 km/h (0.6 mph)
. Rated load	34 % at 1 km/h (0.6 mph)

## 16 - SPIRIT LEVEL

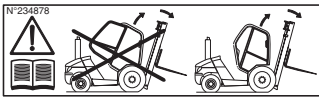
Enables the operator to check that the lift truck is in the horizontal position.



## 17 - CAB LIFTING

### CAUTION

*Make sure that the mast is tilted fully forward and the engine is stopped before lifting the overhead guard.*



### UNLOCKING THE CAB

- Half-open the right door of the cab.
- Keep the ignition on in the lift truck.
- Unlock the cab by means of the lever 1 (fig. A) in position A.

### LIFTING THE CAB

- Maintain the door half-open.
- Press the top of the switch 2 (fig. B) until complete lifting of the cab.
- Put the lever 1 (fig. A) back into position B.
- Shut the door.
- Place the safety prop 3 (fig. C) onto its stop 4 (fig. C).

### CAUTION

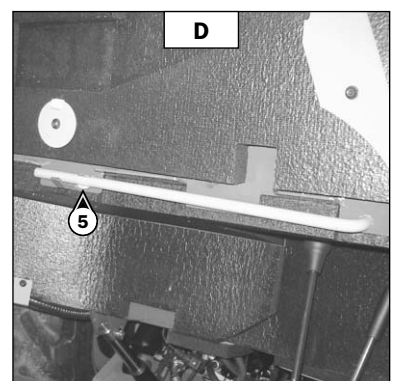
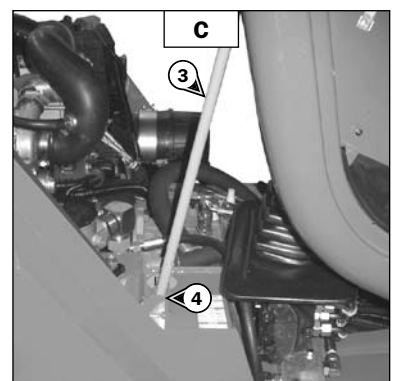
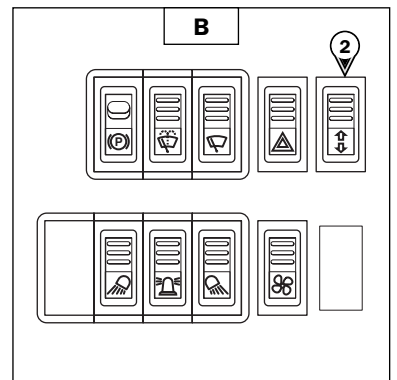
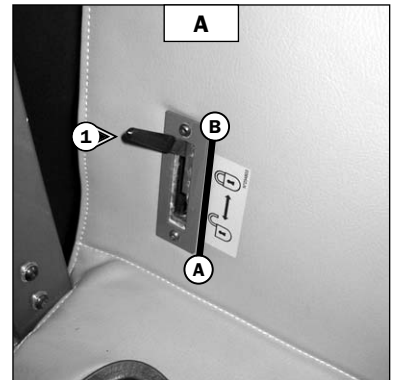
*Check for any objects left in the operator's area which may interrupt the lifting operation.*

### LOWERING THE CAB

- Fold the safety prop back into its clip 5 (fig. D).
- Half-open the right door of the cab.
- Lower the cab into its initial position by pressing the bottom of the switch 2 (fig. B).
- Ensure that the cab is locked.
- Shut the door.

### CAUTION

*Check for clearance and obstacles while lowering the overhead guard.*



## **MANITOU ORIGINAL SPARE PARTS AND EQUIPMENT**

**OUR LIFT TRUCKS MUST BE SERVICED USING ORIGINAL MANITOU PARTS.**

### ***IF YOU USE PARTS WHICH ARE NOT ORIGINAL MANITOU PARTS,***

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**YOU RISK**

- Legally - to be held responsible in the event of an accident.
- Technically - to generate operating failure or shorten the life of the lift truck.

**THE USE OF COUNTERFEIT PARTS OR COMPONENTS NOT APPROVED BY THE MANUFACTURER,  
MEANS YOU LOSE THE BENEFIT OF THE CONTRACTUAL GUARANTEE.**

### ***BY USING ORIGINAL MANITOU PARTS FOR MAINTENANCE OPERATIONS,***

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**YOU BENEFIT  
EXPERTISE**

**THROUGH ITS NETWORK, MANITOU PROVIDES THE USER WITH**

- Know-how and competence.
- The guarantee of high-quality work.
- Original replacement components.
- Help with preventive maintenance.
- Efficient help with diagnosis.
- Improvements due to experience feedback.
- Operator training.
- Only the MANITOU network has detailed knowledge of the design of the lift truck and therefore the best technical ability to provide maintenance.

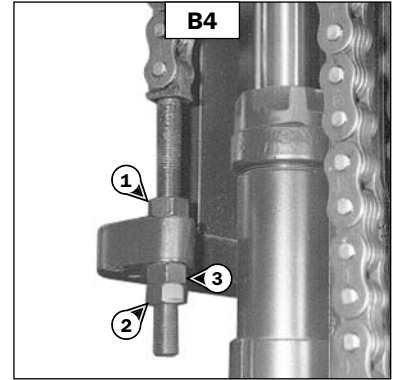
**ORIGINAL REPLACEMENT PARTS ARE DISTRIBUTED EXCLUSIVELY BY MANITOU AND ITS DEALER NETWORK.**

## **B4 - TENSION AND ALIGNMENT OF THE MAST LIFTING CHAINS**

### **CHECK - ADJUST**

Park the lift truck on level ground with the mast in a vertical position and the forks lifted at approximately 8 in.

- Check the alignment of the mast lifting chains between the carriage's chain fasteners and the chain rollers.
- Manually verify the chain tension, if necessary adjust as following while ensuring that the carriage is perpendicular to the mast.
- Loosen the nut 1 (fig. B4).
- Loosen the lock nut 2 (fig. B4) of the chain tension adjuster.
- Adjust the tension by tightening or loosening the nut 3 (fig. B4) while checking the alignment of the lifting chains.
- Then block the lock nut 2 (fig. B4) and the nut 3 (fig. B4).
- Retighten the nut 1 (fig. B4).



### **IMPORTANT**

*In case of technical problems, consult your dealer.*

## **B5 - MAST**

### **GREASE**

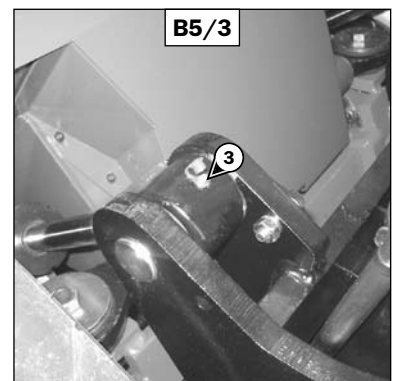
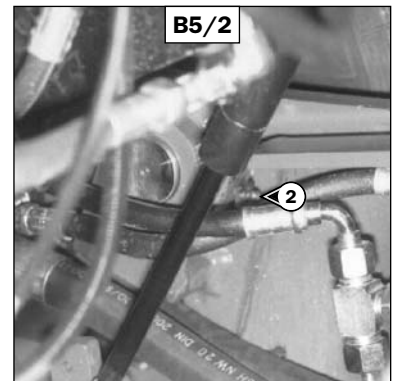
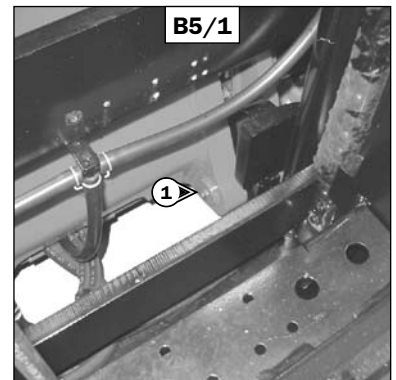
To be carried out weekly, if the lift truck has been operated for less than 50 hours during the week.

### **IMPORTANT**

*In the event of prolonged use in an extremely dusty or oxidising atmosphere, reduce this interval to 10 working hours or every day.*

Clean and lubricate the following points with grease (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) and remove the surplus of grease.

- 1 - Lubricators of the articulation axles at the foot of the mast (2 lubricators) (fig. B5/1).
- 2 - Lubricators of the tilt cylinders foot axles (2 lubricators) (fig. B5/2).
- 3 - Lubricators of the tilt cylinders head axles (2 lubricators) (fig. B5/3).

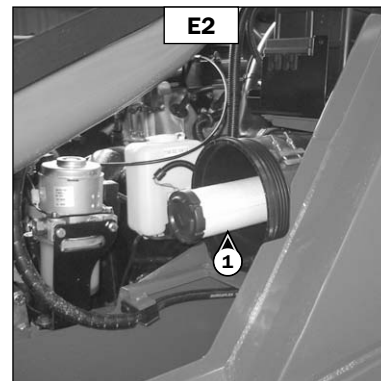


## ***E2 - SAFETY DRY AIR FILTER CARTRIDGE***

### **CHANGE**

- For the disassembly and reassembly of the cartridge, see: 3 - MAINTENANCE: D1 - DRY AIR FILTER CARTRIDGE.
- Gently remove the dry air filter safety cartridge 1 (fig. E2), taking care to avoid spilling the dust.
- Clean the gasket surface on the filter with a damp, clean lint-free cloth.
- Before installing, check the state of the new safety cartridge (see: 3 - MAINTENANCE: FILTERS CARTRIDGES AND BELTS).
- Introduce the cartridge into the filter axis and push it in, pressing the edges and not the middle.

NOTE: The schedule for changing the safety cartridge is given for reference only. The safety cartridge must be changed for every two changes of the air filter cartridge.



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