



MANITOU NORTH AMERICA, INC.

6401 IMPERIAL DRIVE
Waco, TX 76712-6803

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Manitou North America, Parts Dept. 800-425-3727 or (254) 799-0232
Parts Dept. Fax: (254) 867-6504 Website: www.manitou-na.com

CALIFORNIA PROPOSITION 65 WARNING

Diesel Engine Exhaust and some of its constituents are known to the State of California to cause cancer, birth defects or other reproductive harm.

MSI 50D

OPERATOR/SERVICE MANUAL

THIS OPERATOR'S MANUAL MUST BE KEPT IN THE LIFT TRUCK. IT MUST BE READ AND UNDERSTOOD BY THE LIFT TRUCK 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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E - STOPPING THE LIFT TRUCK

SAFETY NOTICE


- Before stopping (parking) the lift truck after a long working period, let the engine idling for a few moments, to allow the coolant liquid and oil to lower the temperature of the engine and transmission.

IMPORTANT	<i>Do not neglect this precaution: frequently stopping the engine will raise the temperature of some components, with the risk of badly damaging them.</i>
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- Never leave the ignition key in the lift truck when the lift truck is unattended.
- When the lift truck is stationary, place the forks or attachment on the ground, apply the parking brake and place the forward/reverse lever in neutral.
- If the driver has to leave the cab, even for a moment, it is essential to apply the parking brake and place the forward/reverse lever in neutral.
- Make sure that the lift truck is not stopped in any position that will interfere with the traffic flow. Park the forklift at least 6 ft. from the track of a railway.
- In the event of prolonged parking, protect the lift truck from bad weather, particularly from frost (Check the level of antifreeze), close the rear windows, lock the cab doors and ensure that the hood is properly secured.

INSTRUCTIONS


- Park the lift truck on flat ground or on an incline with less than 15 % slope.
- Release the accelerator pedal and stop the lift truck.
- Place the forward/reverse lever in neutral.
- Apply the parking brake.
- Lower the forks or attachment to rest on the ground.
- Stop the engine with the ignition switch.
- Remove the pressure in the hydraulic circuits by using the hydraulic controls.
- Remove the ignition key.
- Check the closing and locking of doors, windows and hood.

 WARNING	<i>Before leaving your driver's cab, ensure that you have carried out all operations for parking the lift truck, for your safety and the safety of others.</i>
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F - DRIVING THE LIFT TRUCK ON THE PUBLIC HIGHWAY

SAFETY INSTRUCTIONS

- When driving a lift truck on roads open to public traffic, observe the provisions of the local Highway Code.
- Lift truck drivers, driving on the public highway, must abide by the general provisions relative to highway traffic.
- The lift truck must conform to the provisions of the Highway Code. If necessary, optional solutions exist, consult your dealer.

 CAUTION	<i>Transport of loads on the public highway is forbidden and attachments mounted on the lift truck must be fitted with equipment in accordance with regulations or removed.</i>
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ELECTRICAL CIRCUIT

- Check the level and the density of the electrolyte in the battery (See B - EVERY 50 HOURS SERVICE in SECTION 3 - MAINTENANCE).
- Check the components of the electrical system, the connections and fastening devices.

IF NECESSARY, CONSULT YOUR DEALER.

HYDRAULIC CIRCUIT

- Type of pump	Gear pump
. Capacity	37 cm ³ (2.26 cu in)
- Lifting, tilting, attachment circuit	
. Flow rate at full speed	92,5 L/mn (24.4 gal/min)
. Pressure	200 Bar (2900 psi)
- Steering direction	
. Flow rate at full speed	
. Pressure	
- Filtration	Load control system
. Return	145 Bar (2102 psi)
. Suction	10 Microns
- Hydraulic shock absorber	100 Microns
. Capacities	1,4 L (.4 gal)
. Pressure	120 Bar (1740 psi)

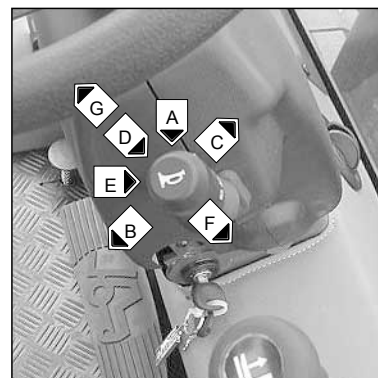
SPECIFICATIONS

- Level of sound pressure in the driver's cabin (According to norm prEN 12053: 1995)	
. Cab model	80,5 dBA
- Travel speed of the lift truck	
. Forward unladen	24 km/h (15 mph)
. Reverse unladen	24 km/h (15 mph)
- Standard lift height	varies
- Rated capacity with standard mast	10,000 lbs
- Load center	24 in
- Weight of forks	varies

5 - LIGHT SWITCH, HORN AND INDICATOR SWITCH

The switch controls the road lights and horn.

- A - All lights are off, the rear direction indicators do not flash.
- B - The right rear direction indicator flash.
- C - The left rear direction indicator flash.
- D - The sidelights (OPTION) and the rear lights are on.
- E - The dipped headlights (OPTION) and the rear lights are on.
- F - The main beam headlights (OPTION) and the rear lights are on.
- G - Headlight signal (OPTION).



To operate the horn, press the switch.

NOTE: The positions D - E - F - G can be operated without the ignition being on.

6 - IGNITION SWITCH

The key switch has five positions :

- P - Ignition off, parking position.
- O - Ignition switched off and engine stopped.
- I - Ignition on.
- II - Pre-Heating.
- III - The engine starts, returns to position I as soon as the key is released

7 - KEY-OPERATED BATTERY DISCONNECT

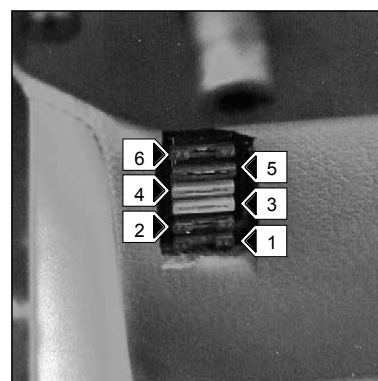
Enables the battery to be cut off from the electric circuit.

8 - FUSES BOX

Remove the cover to replace a fuse:

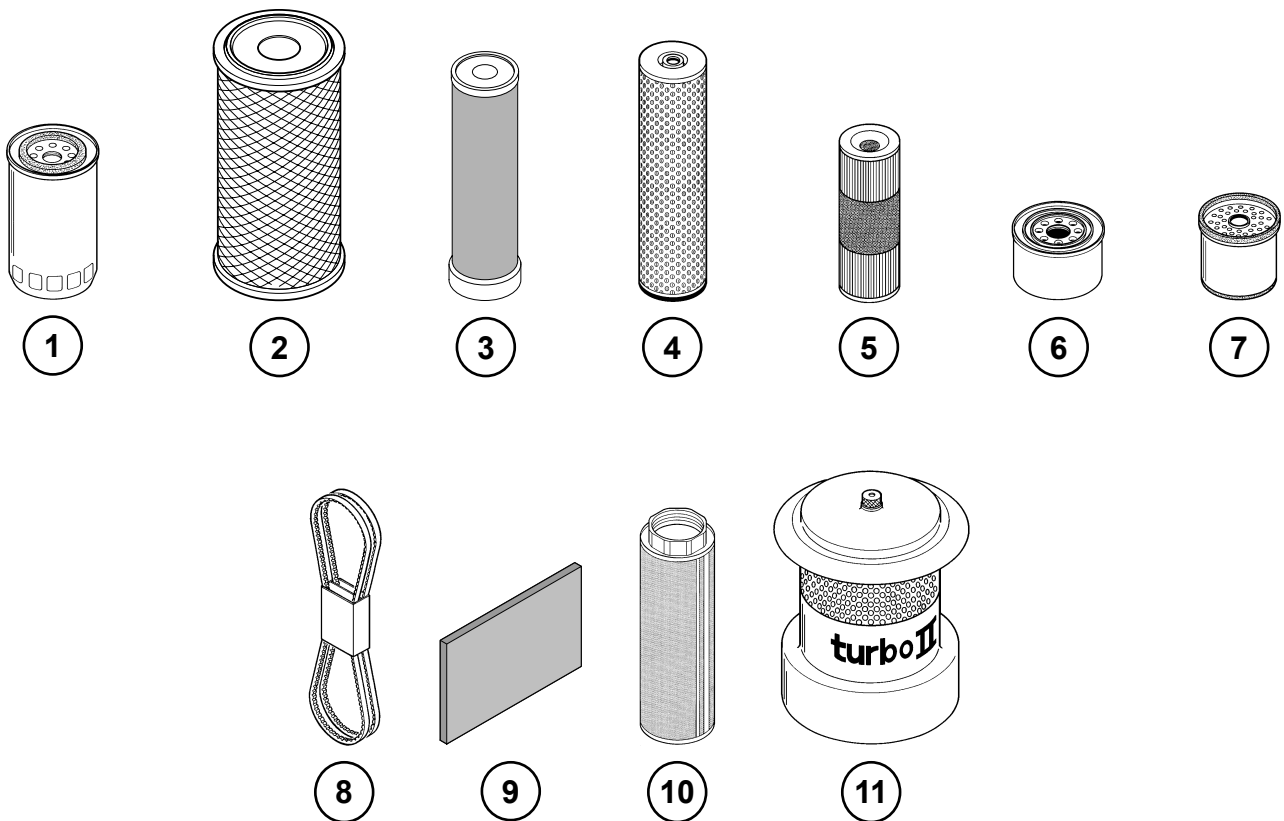
- 1 - OPTION Working tail lights (10A).
OPTION Left working tail light (10A).
- 2 - OPTION Working head lights (10A).
OPTION Left working head light (10A).
- 3 - OPTION Flashing alarm light (7,5A).
- 4 - Cabin lifting (10A).
- 5 - OPTION (10A).
- 6 - Rear windscreen wiper (7,5A).

NOTE: Replace blown fuses with new ones of the same quality and capacity. Never use a repaired fuse.



9 - ACCELERATOR PEDAL

FILTERS CARTRIDGES AND BELTS



DESIGNATION	PART NUMBER	CLEAN	CHANGE
1 - Engine oil filter	133 755		400 H
2 - Dry air filter cartridge	563 416	50 H	400 H
3 - Safety dry air filter cartridge	563 415		800 H
4 - Hydrostatic transmission oil filter cartridge	46 028		800 H
5 - Hydraulic return oil filter cartridge	221 174		400 H
6 - Oil tank breather	457 509		400 H
7 - Fuel filter cartridge	49 660		400 H
8 - Fan belt	601 464		
9 - Heating suction filter	197 926	800 H	
10 - Suction strainer for hydraulic oil tank	77 402	800 H	
11 - Automatic vacuum-cleaning pre-filter (OPTION)	160 946		

B2 - CHECK THE HYDRAULIC OIL LEVEL

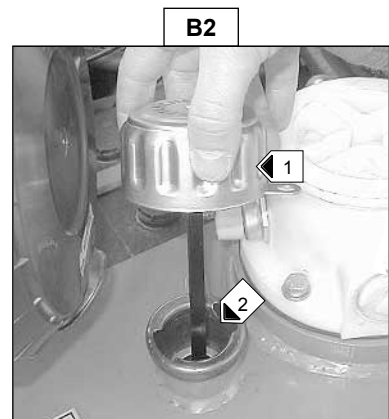
Park the lift truck on level ground with the engine stopped and the mast lowered as far as possible.

- Raise the cab (See INSTRUMENTS AND CONTROLS in SECTION 2 - DESCRIPTION).
- Refer to gauge 1 (Fig. B2).
- The level is correct when it is between the upper and lower marks.
- If necessary, add oil (See LUBRICANTS AND FUEL in SECTION 3 - MAINTENANCE) through filler port 2 (Fig. B2).

IMPORTANT

Always use a clean funnel and nozzle when filling.

Always maintain the oil level as stated, cooling depends on the oil flowing through the tank.



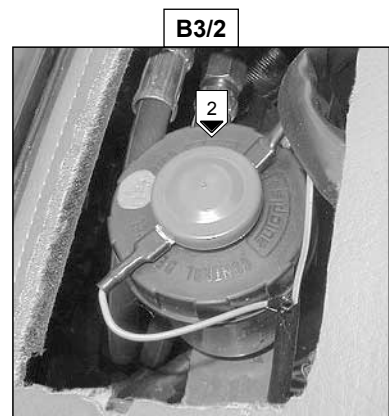
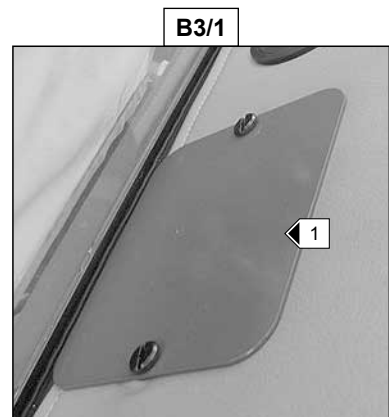
B3 - CHECK THE BRAKING OIL LEVEL

Park the lift truck on level ground.

- Remove the access panel 1 (Fig. B3/1).
- The level is correct when it is at the maximum level on the tank.2 (Fig. B3/2).
- If necessary, add oil (See LUBRICANTS AND FUEL in SECTION 3 - MAINTENANCE) through the filler port.
- Re-install the access panel 1 (Fig. B3/1).

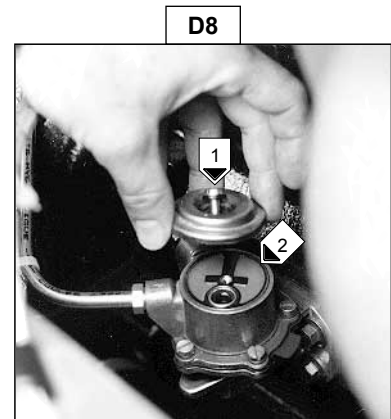
WARNING

If the braking oil level is abnormally low, consult your dealer.



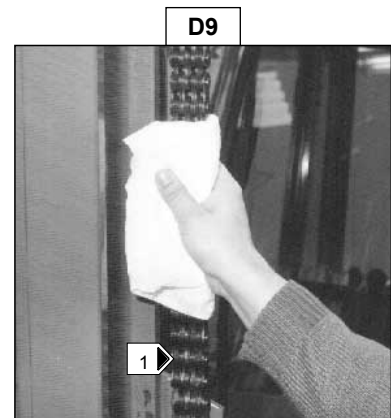
D8 - CLEAN THE FUEL LIFT PUMP

- Raise the cab (See INSTRUMENTS AND CONTROLS in SECTION 2 - DESCRIPTION).
- Remove the retaining screw 1 (Fig. D8).
- Remove the strainer 2 (Fig. D8).
- Carefully clean the interior of the fuel lift pump, strainer and cover using a brush and clean diesel fuel.
- Re-assemble and insure that the seal between the cover and the pump are correct.
- Re-prime the fuel lift pump.



D9 - CHECK, CLEAN AND LUBRICATE THE MAST LIFTING CHAINS

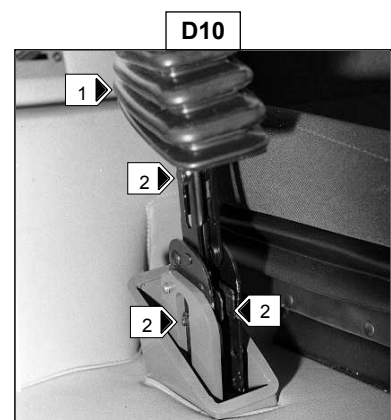
- Wipe the mast lifting chains 1 (Fig. D9) with a clean, lint-free cloth. Examine them closely for signs of wear.
- Clean the chains with a stiff nylon brush and clean diesel fuel.
- Rinse the chains with a soft brush and clean diesel fuel. Dry them with a compressed air jet.
- Moderately lubricate the chains with a brush and lubricating oil (See LUBRICANTS AND FUEL in SECTION 3 - MAINTENANCE).
- Remove the excess oil with a clean cloth along the full length of the chains.



D10 - GREASE THE PARKING BRAKE LEVER MECHANISM

- Move the protective boot 1 (Fig. D10).
- Clean and grease the pivot points 2 (Fig. D10) with grease (See LUBRICANTS AND FUEL in SECTION 3 - MAINTENANCE).
- Re-adjust the protective boot 1 (Fig. D10).

IMPORTANT
<i>In case of technical problems, consult your dealer.</i>



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