



MANITOU NORTH AMERICA, INC.

6401 IMPERIAL DRIVE
WACO, TX 76712-6803

 **WARNING**

The specially designed TMT Forks must be replaced with Factory Approved Forks only! Contact your Dealer or Manitou North America, Inc.

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.

IMPORTANT

When changing or replacing the tires and wheels; use only the manufacturer's approved components as installed at the factory. Any substitutes or modifications must first be approved by the manufacturer.

For Parts Orders contact your Manitou Dealer or call:

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

TMT 320/HT

TMT 320 FL/HT/

TURBO

**OPERATOR/SERVICE
MANUAL**

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

CATALOG 547043AS

R11-10

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

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

TABLE OF CONTENTS

1 - INSTRUCTIONS

1 - 1

- GENUINE SPARE PARTS **1 - 3**
- DRIVER'S OPERATING INSTRUCTIONS **1 - 5**
 - General instructions 1 - 6
 - Operating instructions 1 - 8
 - Handling instructions 1 - 12
 - Handling of a load 1 - 14
- MAINTENANCE INSTRUCTIONS OF THE LIFT TRUCK **1 - 18**
- BEFORE STARTING UP A NEW LIFT TRUCK **1 - 20**

2 - DESCRIPTION

2 - 1

- IDENTIFICATION OF THE LIFT TRUCK **2 - 4**
- CHARACTERISTICS **2 - 6**
- DIMENSIONS AND LOAD CHART **2 - 14**
- INSTRUMENTS AND CONTROLS **2 - 22**
- MOUNTING THE LIFT TRUCK ON THE TRACTOR TRAILER **2 - 31**

3 - MAINTENANCE

3 - 1


- FILTERS CARTRIDGES AND BELTS **3 - 3**
- LUBRICANTS **3 - 4**
- SERVICING SCHEDULE **3 - 6**

- Press the accelerator pedal and turn the ignition key fully: the engine should then start. Release the ignition key and let the engine run at idle.
- Check all control instruments immediately after starting up, when the engine is warm and at regular intervals during use, so as to quickly detect any faults and to be able to correct them without any delay.
- If an instrument does not show the correct display, stop the engine and immediately carry out the necessary operations.

D - DRIVING THE LIFT TRUCK

SAFETY NOTICE

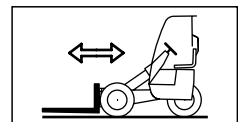
- Always drive the lift truck with the forks or attachment at approximately 12 in. from the ground, i.e. In the travel position.
- Familiarize yourself with the lift truck on the terrain where it will be used.
- Ensure that the service brakes and the backup alarm are working properly.
- Drive according to, and at an appropriate speed for, the conditions and state of the terrain.
- Slow down before executing a turn.
- In all circumstances make sure you are in control of your speed.
- On damp, slippery or uneven terrain, drive slowly.
- Brake gently, never abruptly.
- Only use the lift truck's forward/reverse lever from a stationary position and never do so abruptly.
- Do not drive with your foot on the brake pedal or with the parking brake on.
- Always remember that hydrostatic type steering is extremely sensitive to movement of the steering wheel, so turn it gently and not abruptly.
- Do not allow the engine to idle needlessly for a long period.
- Never leave the engine running when the lift truck is unattended.
- Look in the direction of travel and always ensure you have good visibility of the route ahead.
- When working at night, ensure that your lift truck is fitted with full beam lights. There are optional solutions, consult your agent or dealer.
- Drive around obstacles.
- 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 (Trailer, 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 width of the lift truck.
- Never move onto a foot bridge, floor or freight lift, without being certain that they are approved for the weight and size of the lift truck to be loaded and without having checked that they are in sound working order.

 WARNING	<i>Take extreme care with loading platforms, trenches, scaffolding, recently dug and/or backfilled ground.</i>
--	--

- The loaded lift truck must not travel at speeds in excess of 12 km/h (7.5 mph).

INSTRUCTIONS

- Check the transmission oil level.
- Raise the forks or attachment to the travel position approximately 300 mm (12 in.) from the ground.
- Shift the forward/reverse lever to the selected direction of travel.
- Release the parking brake and accelerate gradually until the lift truck moves off.



D - WASHING

- Clean the lift truck or at least the area concerned before making repairs.
- During washing, avoid the articulations, electrical components and connections.

IMPORTANT	<i>Protect against penetration of water, steam or cleaning agents: all components susceptible of being damaged, particularly electrical components, electrical connections and the injection pump.</i>
------------------	--

- Clean and remove all excess fuel, oil and grease from the lift truck.

FOR ANY INTERVENTION OTHER THAN REGULAR MAINTENANCE, CONSULT YOUR DEALER.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

HYDROSTATIC TRANSMISSION

HYDROSTATIC PUMP

- Type
- Gear reverser
- Inching starter

A4VG 40 DA variable displacement pump with automatic power governor
Electromagnetic 12V

Hydraulic through outside valve TH 7

MAIN PUMP

- Displacement MAX.
MIN.
- Flow rate at 3,000 rpm MAX.
MIN.
- Working pressure

2.44 in ³ /rev	(40 cm ³ /tr)
0 in ³ /rev	(0 cm ³ /tr)
31.7 gpm	(120 l/min)
0 gpm	(0 l/min)
6090 psi	(420 bar)

BOOST PUMP

- Cubic capacity
- Flow rate at 3,000 rpm MAX.
MIN.
- Boost pressure Max. rpm

.513 in ³ /tr	(8,4 cm ³ /tr)
6.66 gpm	(25,2 l/min)
0 gpm	(0 l/min)
406/435 psi	(28/30 bar)

FRONT WHEEL REDUCER

- Type
- Cubic capacity
- Working pressure

MSE02 POCLAIN Motor wheel with brakes fixed displacement
24.3 in³/tr (398 cm³/tr)
6090 psi (420 bar)

REAR WHEEL REDUCER

- Type
- Cubic capacity
- Working pressure

MSE02 POCLAIN Motor wheel fixed displacement
24.3 in³/tr (398 cm³/tr)
6090 psi (420 bar)

REAR WHEEL REDUCER

(TMT 320 FL HT)

- Type
- Cubic capacity
- Working pressure

MSE05 POCLAIN Motor wheel fixed displacement
45.8 in³ (750 cm³/tr)
6090 psi (420 bar)

BRAKE

- Type
- Service brakes
- Parking brakes

Multidisc brake immersed in oil
Hydrostatic
Electrically controlled on dashboard on the front wheels through hydraulic pressure break

	TMT 320 FL HT / TMT 320 FL Turbo HT
A	3.3 in (1100 mm)
B	58.3 in (1481 mm)
C	19.7 in (500 mm)
C1	1.57 in (40 mm)
C2	27.7 in (703 mm)
D	62.9 in (1598 mm)
E	106 in (2698 mm)
F	84.6 in (2149 mm)
G	13.9 in (353 mm)
K	51.2 in (1300 mm)
K1	5.91 in (150 mm)
L	1.57 in (40 mm)
M	20 in (508 mm)
M1	14.5 in (369 mm)
N	63.1 in (1603 mm)
O	4.92 in (125 mm)
P	65°
R	75.6 in (1920 mm)
S	133 in (3379 mm)
T	110 in (2806 mm)
U	88.0 in (2235 mm)
V	109 in (2770 mm)
V1	84.3 in (2140 mm)
W	100 in (2543 mm)
Y	97°
Z	10°

7 - FLOW DIVIDER SWITCH

This switch locks all 3 wheels into drive, causing all 3 wheels to rotate at the same time and speed (for temporary use in loose or muddy terrain).

NOTE: This operation limits steering the forklift, and is best utilized with the steer tire directed straight ahead before engaging the switch and during use.

- Press and hold the switch as required.
- Release the switch to resume normal operation.

8 - N/A

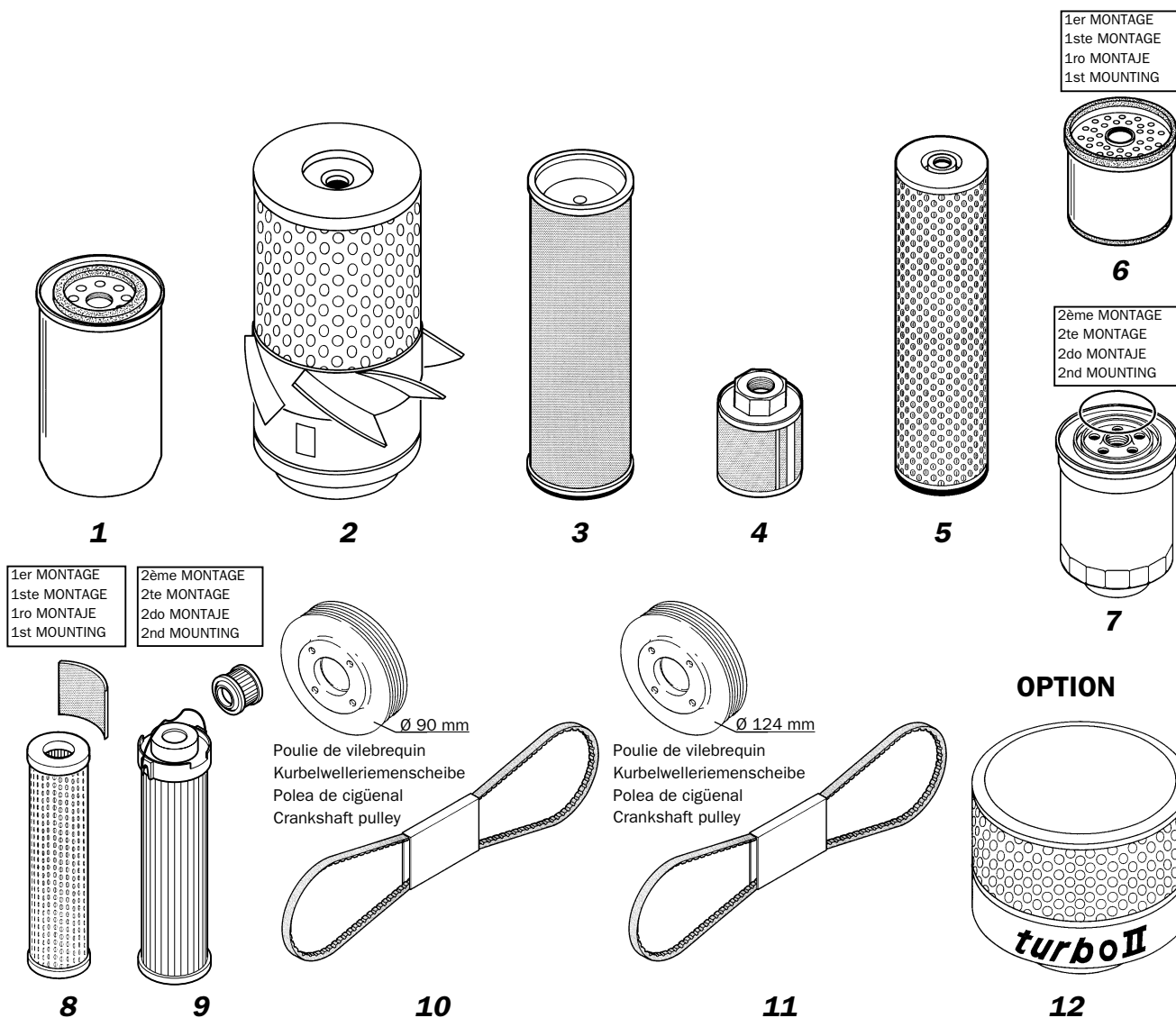
9 - IGNITION SWITCH

The key switch has five positions :

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

10 - SOUND ALARM SWITCH (HORN)

FILTERS CARTRIDGES AND BELTS



DESIGNATION	PART NUMBER	CLEAN	CHANGE
1 - Engine oil filter - (Standard) - (TMT 320 FL Turbo HT)	549798 600 759		400 H 200 H
2 - Dry air filter cartridge	551 017	50 H	400 H
3 - Safety dry air filter cartridge	551 018		800 H
4 - Suction strainer for hydraulic oil tank	19 911	800 H	
5 - Hydrostatic transmission oil filter cartridge	46 028		800 H
6 - Fuel filter cartridge	549 797		400 H
7 - Fuel filter cartridge	561 370		400 H
8 - Hydraulic return oil filter cartridge + oil container breather	203 787		400 H
9 - Hydraulic return oil filter cartridge + oil container breather	217 031		400 H
10 - Alternator belt / Fan / Crankshaft	549 800		1600 H
11 - Alternator belt / Fan / Crankshaft	552 500		1600 H
12 - Automatic vacuum-cleaning pre-filter	160 945		

CAUTION

Handling and servicing a battery can be dangerous, take the following precautions:

- Wear protective goggles.
- Keep the battery horizontal.
- Never smoke or work near an open flame.
- Work in a well-ventilated area.
- In the event of electrolyte being spilled onto the skin or splashed in the eyes, rinse thoroughly with cold water for 15 minutes and call a doctor.

B4 - CLEAN THE RADIATOR CORE

- Open the engine compartment.

Clean the radiator core with compressed air directed from the back to the front of the radiator. Avoid high pressure washing which may damage the radiator.

IMPORTANT

When handling straw, grains or cereals, clean the radiator core every day.

GENERAL GREASING

Clean and lubricate the following points with grease (See: LUBRICANTS), remove any surplus.

B5 - LUBRICATORS OF THE REAR WHEEL PIVOT (3 lubricators).

• **TMT 320**

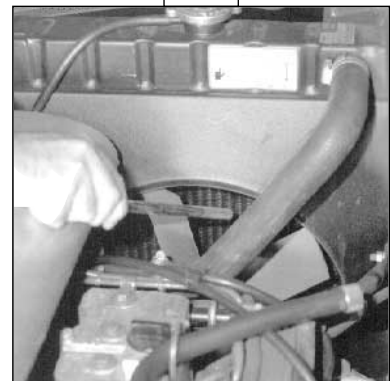
- LUBRICATOR 1 (Fig. B5/1)
- LUBRICATORS 2 ET 3 (Fig. B5/2)

• **TMT 320 FL / TMT 320 FL HT
TMT 320 FL Turbo HT**

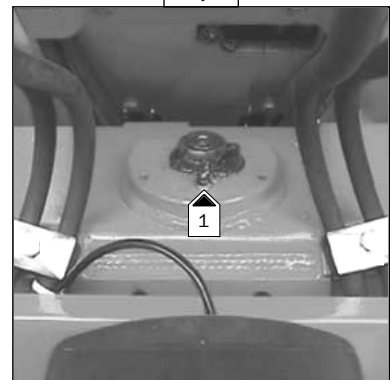
- LUBRICATOR 1 (Fig. B5/1)
- LUBRICATOR 4 (Fig. B5/3)
- LUBRICATOR 5 (Fig. B5/4)

B6 - LUBRICATOR 6 OF THE HEAD AXLE OF THE STEERING CYLINDER (FIG. B6) (1 lubricator)

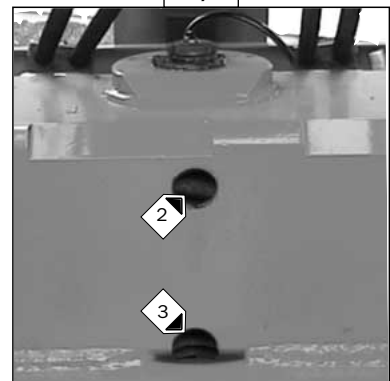
B4



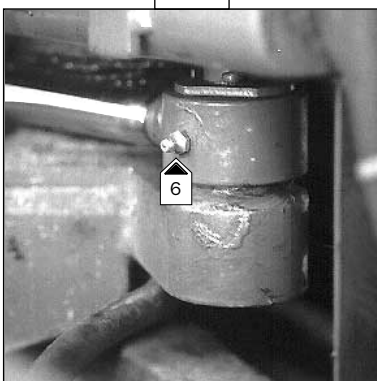
B5/1



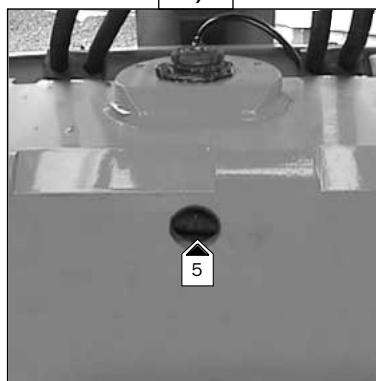
B5/2



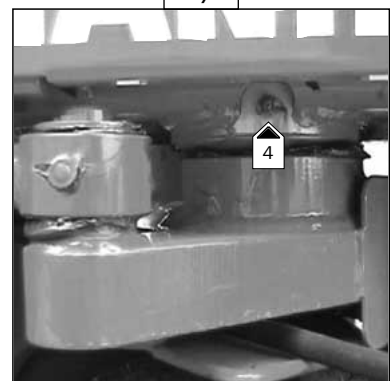
B6



B5/4

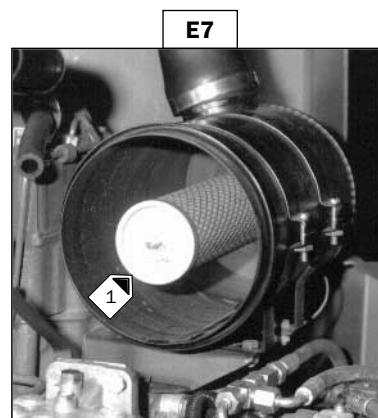


B5/3



E7 - CHANGE THE SAFETY AIR FILTER CARTRIDGE

- Disassemble the air filter cartridge (See: D1).
- Remove and replace the air filter safety cartridge 1 (Fig. E7).
- Reassemble the unit (See: D1).



E8 - CHECK THE WEAR OF THE BOOM PADS (CONSULT YOUR DEALER)

E9 - CHECK THE BRAKE ADJUSTMENT (CONSULT YOUR DEALER)

E10 - N/A

E11 - CHECK THE ENGINE SILENTBLOCS (ENGINE MOUNTS) (CONSULT YOUR DEALER)

E12 - CHECK THE ENGINE SPEEDS (CONSULT YOUR DEALER)

E13 - CHECK THE CARRIAGE (CONSULT YOUR DEALER)

E14 - CHECK THE CONDITION OF THE WHEELS AND TIRES (CONSULT YOUR DEALER)

E15 - CHECK THE SPEEDS OF THE HYDRAULIC MOVEMENTS (CONSULT YOUR DEALER)

E16 - CHECK THE CONDITION OF THE ATTACHMENTS (CONSULT YOUR DEALER)

E17 - CLEAN THE SCREEN FILTER INSIDE THE HYDRAULIC TANK (CONSULT YOUR DEALER)

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL