MANITOU
HANDLING YOUR WORLD

MUSTANG
BY MANITOU

1350R | 1350R (EU)
1350R X-Series
(SN 188601 and Before)

1500R | 1500R (EU)
1500R X-Series
(SN 190801 and Before)

1650R | 1650R (EU)
1650R X-Series

1900R NXT2 / 1900R NXT2 (EU) / 1900R NXT2 X-Series



Skid-Steer Loader

Operator's Manual

50950612EN-US Rev. A 03/24

Original Instructions

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Mustang 1350R, 1500R, 1650R and 1900R NXT2 Skid Steer Loader Operator Manual

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Machine: Skid Steer Loader

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Main contents

- Introduction
- Safety
- Safety Equipment
- Indicators and Controls
- Operation
- Maintenance
- Troubleshooting
- Specifications
- Index

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The following warranty applies to machines built after the publication date of this manual. Contact Manitou Service .for warranty information for earlier machines

Effective 2024.01.08

GENERAL CONDITIONS OF WARRANTY FOR NEW EQUIPMENT and PARTS

NEW EQUIPMENT AND PARTS

MANITOU Group, under MANITOU® and GEHL® brands warrants that its new Equipment (means the machine, its parts and attachments), and Parts (spare part or attachments sold without the Equipment), that are approved and sold by MANITOU Group, are free from any defect (means absence or imperfection of what is delivered) in materials and/or workmanship related to its manufacture for the period defined below.
This Commercial Warranty is activated only through the MANITOU Group's direct commercial partners (Purchasing Customers / Dealers).
During this period, the warranty may be transferred to a third-party customer, subject to the following general conditions. No third party has any authority to make any warranty on behalf of MANITOU Group. Any warranty above and beyond the warranty offered in this General Conditions of Warranty is the sole responsibility of the party offering it.
As used in these General Conditions of Warranty, "*MANITOU Group*" refers to the Manitou entity that sold the Equipment or Parts, including Manitou BF and/or any of its subsidiaries, as the case may be.
MANITOU Group warranty requires full compliance with the instructions contained in the User/Operator's Manual of the Equipment or Parts

WARRANTY PERIOD

	Whichever comes first	As of, whichever comes first
STANDARD CONNECTED MACHINES [1]	**24 (Twenty-four) MONTHS or 2000 (Two Thousand) HOURS**	The date of Registration[2] of the Equipment or 8 months after the date of MANITOU Group's invoice
NOT CONNECTED MACHINES	**12 (Twelve) MONTHS or 2000 (Two Thousand) HOURS**	
ELECTRIC-POWERED EQUIPMENT[3][4]: TRACTION LITHIUM BATTERY Capacity Including Battery SOH (State of Health)[5]	**5 (Five) YEARS or 3 000 (Three Thousand) HOURS**	
PARTS	**6 (Six) MONTHS from the assembly of the Part on the Equipment OR 12 (Twelve) MONTHS from the date of invoicing of the Part by MANITOU Group**	

[1] provided that all of the following conditions are met: 1- the Equipment is equipped as standard with a communication system integrated in the Connected Machine allowing data transmission; 2- a Subscription Agreement is duly signed on the day of the Commissioning of the Equipment and such Subscription Agreement is still in force at the time the warranty claim is made.

[2] "*Registration*" means the first start-up carried out at the customer's premises, at the end of which the end-customer shall acknowledge that the delivered Equipment conforms to the order, is in perfect working order and presentation condition, and that the User/Operator's Manual and the safety instructions have been received. The commissioning order must be signed/accepted by the customer.

[3] The warranty is specifically associated with the serial number of the battery integrated into the Equipment Registered.

[4] Excluding Warehousing range

[5] State Of Health : The Battery Capacity Warranty covers gradual capacity losses of the battery once it falls below 70% State of Health.

Warranty repairs or replacements made will not extend the warranty period.

THE WARRANTY COVERS

The costs, in accordance with the rates defined by MANITOU Group, of:

- **The repair of defective parts sold by MANITOU Group or their replacement with Parts sold by MANITOU Group** (repair is preferred to replacement, replacement covered if economically/ ecologically justified and replacement with REMAN manufactured parts is preferred over new parts) -

For ELECTRIC-POWERED EQUIPMENT: TRACTION LITHIUM BATTERY : during the first two years, the battery will be replaced with a new one only if repair is impossible. After the first two years, and till the end of the warranty period, the battery will be replaced with a battery having between 90% and 70% of SOH level (at least equivalent to what the defective battery should have had at the time of the defect).

- **Labor for dismantling and reassembly.**

All other costs, including diagnostic costs, transport, towing, customs and taxes, are excluded.

For the application of the warranty, MANITOU Group reserves the right to base its decision on the results of additional analyses, such as extractions of data (including data from MANITOU Group Services or Equipment)s, serial number records, oil, fluid or fuel analyses, etc.
For ELECTRIC-POWERED EQUIPMENT: TRACTION LITHIUM BATTERY, decision is based on battery health status, battery mileage, energy provided by the battery, and, when necessary, technical battery usage data necessary for recalculating its health status.

Only qualified, and trained personnel (with specific licensed tools) from the MANITOU Group's business partners are authorized to perform warranty service.

THE WARRANTY DOES NOT COVER

Repairs / interventions / deteriorations / damage caused by or arising from:

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Throttle Controls

On machines equipped with throttle knob (Q, Figure 23), engine speed is controlled with throttle knob and optional foot throttle (P, Figure 25), if installed.

Throttle knob (Q) is the primary throttle control. The throttle is set with the knob to the desired idle/run position.

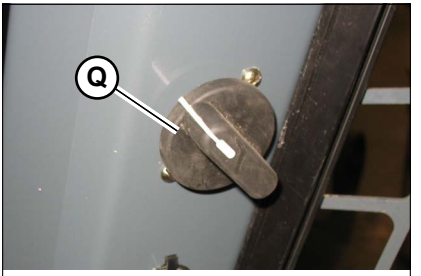


Figure 23 – Throttle Knob

On machines equipped with throttle lever (T, Figure 23), engine speed is controlled with throttle lever and optional foot throttle (P, Figure 25), if installed.

Throttle knob (T) is the primary throttle control. The throttle is set with the lever to the desired idle/run position.

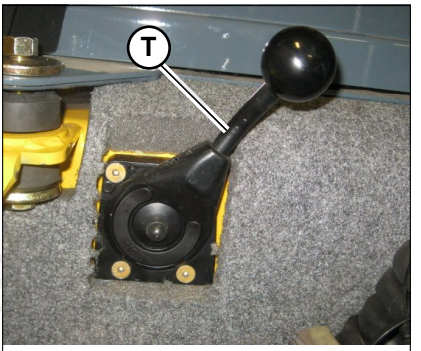


Figure 24 – Throttle Lever

On machines equipped with optional throttle pedal (P, Figure 25), the pedal can be used to increase engine speed whenever additional power is required. When the optional pedal is released, the engine returns to the speed set by throttle knob (Q, Figure 23).

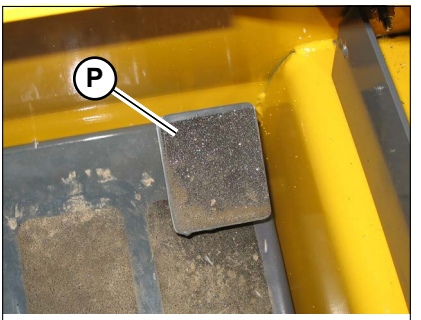


Figure 25 – Throttle Pedal

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Beacon/Position/Work Lights

The optional beacon, the rear red position lights. and the front and rear work lights are all operated using button (Z).

Note: *The rear work lights and red position lights are located at the top of the rear door. The front work lights are located at the top front corners of the ROPS/FOPS.*

The beacon/position/work lights control button is located on the control keypad.



Figure 38 – Beacon/Position/Work Lights Button

- **Beacon and Position Lights:** Press button (Z) once to activate the beacon and the rear red position lights. LED (Y) is lit when the beacon and the red position lights are on.
- **Beacon, Position and Front Work Lights:** Press button (Z) twice to activate the beacon, the rear red position lights and the front work lights. LED (U) is lit when the beacon, the position lights, and the front work lights are on.

  Note: *If the optional road lights are installed, this turns on both front and rear work lights. Also, if the roads lights are on, they toggle off when the work lights turn on*
- **Beacon, Position, and Front and Rear Work Lights:** Press button (Z) three times to activate the beacon, the rear red position lights, and the front and rear work lights. Both LEDs (Y and U) is lit when the beacon, the red position lights, and the front and rear work lights are on.

  Note: *If the optional road lights are installed, this turns off all lights.*
- **Off:** Press button (Z) a fourth time to turn off the beacon, the red position lights and the work lights. Both LEDs (Y and U) are off when the beacon and all lights are off.

HVAC (Option)

Machines with optional heat/cool have two control buttons on the accessory keypad on the left door pillar for controlling the heater fan and heater temperature.

A. **Cab Heat/Cool:** Controls cab heat/cool. Press button as desired to set cab heat/cool; subsequent pressings increase heat from low to high. LEDs above the button are lit according to the low, medium and high heat settings.

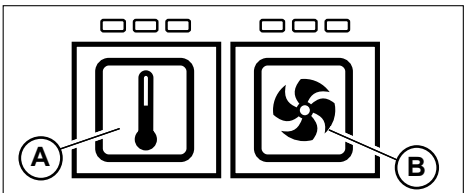


Figure 39 – Heater/Fan Buttons

NOTE: Cab heat/cool requires fan to be activated by pressing button (B).

B. **Fan Speed:** Controls cab air circulation fan. Press button (B) once for low setting, twice for medium, and three times for high. LEDs above the button are lit according to the low, medium and high fan settings. Press button (A) a forth time to deactivate air circulation fan.

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⚠ WARNING **Never push the "float" button with the bucket or attachment raised, because this will cause the lift arm to fall to the ground, which can cause severe injury or death.**

Loading Trucks (or Hoppers)

Important: *When the self-leveling feature is on, the tilt angle of the attachment is kept constant, relative to the ground plane, when the lift arm is raised: when the lift arm is lowered however, self-leveling is not activated. See "Self-Leveling (Option)" on page 103 for more information about the self-leveling feature.*

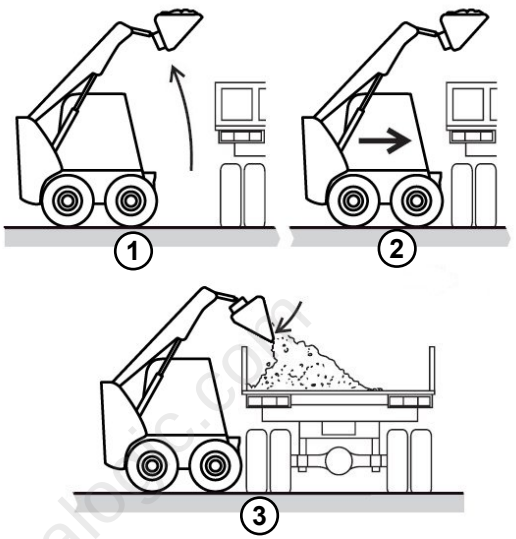


Figure 75 – Dumping into a Truck (or Hopper)

1. (Figure 75) Approach the truck and stop, allowing for clearance to raise the lift arm and loaded bucket, and raise the bucket until the lower edge of the bucket clears the truck bed.
2. Drive slowly forward and stop with the bucket over the inside of the truck.
3. Tilt the bucket forward and dump the material into the truck bed.
4. When the truck is half-loaded, use the bucket to spread the load evenly.
5. Back away from the truck while tilting the bucket back and lowering the lift arm.

Tips When Loading Trucks

- (Figure 76) The truck and machine working direction should form an angle of 45°.
- Only raise a full bucket to the height needed for dumping when you are driving in a straight line toward the truck.
- Dump with the wind behind you to keep dust away from your face, air filters and fans.

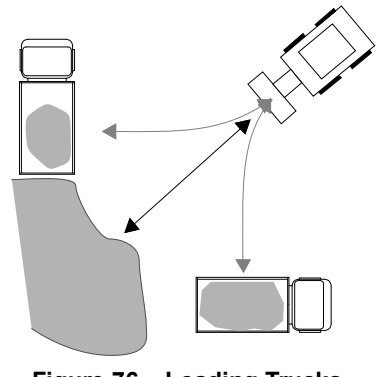


Figure 76 – Loading Trucks

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Ultra-Low Sulfur Diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations. Avoid death or serious injury from fire or explosion; consult with your fuel or fuel system supplier to ensure the entire fuel delivery system is in compliance with fueling standards for proper grounding and bonding practices.

1. Perform the "Mandatory Safety Shutdown Procedure" on page 14.
2. Lift the engine cover.
3. Using the ignition key to unlock fuel cap (F, Figure 99) and remove the fuel cap from the fuel filler neck.
   Note: *On Model 1350R, fuel cap (F) is located under the engine cover.*
4. Fill the fuel tank by adding fuel through the fuel filler neck opening.

Important: *See "Fluid Capacities/ Lubricants" on page 187 and the engine operation manual for proper fuels. Use of improper fuels can cause engine damage.*

5. When the fuel tank is full, replace and lock fuel cap (F) in the fuel filler neck opening.

Important: *To provide for proper fuel system venting, do not top off the fuel tank.*

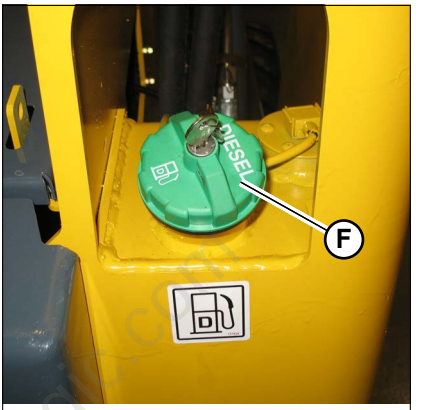


Figure 99 – Fuel Filler Cap

Water Separator Maintenance

WARNING **NEVER service the fuel system while smoking, while near an open flame, or if the engine is hot.**

Important: *Water in the fuel system can cause severe engine damage. Drain water from the fuel filter/water separator whenever water is present.*

Inspect the water separator daily, or every day before using the machine.

1. Perform the "Mandatory Safety Shutdown Procedure" on page 14.
2. Wait until the engine has cooled.

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Table 29: Electrical Troubleshooting

Problem	Possible Cause	Corrective Action
Electrical system does not function	Battery disconnect switch is in OFF position.	Turn battery disconnect switch to the ON position. See “Battery Disconnect Switch” on page 76.
	Battery terminals or cables loose or corroded.	Clean battery terminals and cables and retighten.
	Battery malfunction.	Test battery. Recharge/ replace as necessary.
	Blown main fuse.	Correct over-current problem and replace main fuse. See “Fuses, Relays and Diodes” on page 155.
	Main wiring harness connectors at rear of ROPS/FOPS not properly plugged in.	Check main harness connectors. Reconnect/ repair as needed.
Control pad and information center display do not activate with ignition keyswitch in the ON/ RUN position	Blown fuse.	Check circuit and replace fuse. See “Fuses, Relays and Diodes” on page 155.
	Battery terminals/cables loose/ corroded.	Clean battery terminals and cables and tighten.
	Main wiring harness connectors at rear of ROPS/FOPS not properly plugged in.	Check main harness connectors. Reconnect/ repair as needed.
Starter does not engage when ignition keyswitch turned to the START position	Poor electrical connections in start circuit.	Check connections repair as necessary.
	Battery terminals/cables loose/ corroded.	Clean battery terminals and cables and tighten.
	Starter relay malfunction.	Test relay; replace if necessary. Contact dealer.
	Battery discharged/ malfunctioning.	Test battery. Recharge/ replace if necessary.
	Starter solenoid malfunction.	Contact dealer.
	Starter or pinion malfunctioning.	Repair/replace as needed.
	Ignition wiring, seat switch, restraint bar switch, etc. loose or disconnected.	Check wiring for poor connections, broken leads; repair wiring or connection.
	Restraint bar raised.	Lower restraint bar.
	Engine fault code(s).	Contact dealer.
Fuel gauge inoperative	Fuel level sender malfunction.	Replace fuel level sender.
	Loose wiring/terminal connections.	Check wiring connections.
	Blown fuse.	Check circuit and replace fuse. See “Fuses, Relays and Diodes” on page 155.
	Fuel gage malfunction.	Replace gauge.

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Full Version Available

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