# 1650RT | 1650RT (EU)
# 1650RT X-Series

## Compact Track Loader
## Operator's Manual

50950266 Rev. G 05/21

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# Mustang 1650RT Compact Track Loader Operator Manual (50950266G)

Document type: Operator Manual (operation, controls, safety and routine maintenance)

Brand: Mustang

Models: 1650RT

Machine: Compact Track Loader

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## Main contents


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


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# Indicator and Operation Symbols

| | | | | | |
|---|---|---|---|---|---|
|  Safety Hazard |  Parking Brake |  High-Speed |  Float |  Hydraglide™ |  Pre-Heat |
|  Fasten Seat Belt |  Charging Fault |  Intake Restriction |  Hydraulic Oil Filter Warning |  Hydraulic Oil Temp Warning |  Elevated EGT Temp |
|  DPF Regen Accept |  DPF Regen Inhibited |  Regen Maintenance |  DPF Regen |  Engine Oil |  Oil Pressure Warning |
|  Engine Stop |  Engine Start |  Engine Run |  Engine Malfunction Shutdown |  Coolant Temp Warning |  Self-Leveling |
|  Hitch Lock |  Hitch Unlock |  Windshield Washer |  Rear Washer |  Tie-Down |  Engine Power |
|  Windshield Wiper |  Rear Wiper |  Fan |  Temperature |  Heater |  Read Operator's Manual |
|  Horn |  Engine Oil Filter |  Work Light |  Diesel Fuel |  Fuel Filter |  Fuel Level |
|  Chaincase Oil |  Grease Lubrication Point |  Fast |  Slow |  Hydraulic System |  Beacon |
|  Lock |  Unlock |  Service Hours |  Lift Point |  Power-A-Tach® Warming Circuit |  High-Flow Forward |
|  High-Flow Reverse |  Aftertreatment Error | | | | |

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*Note: Refer to Figure 2 on page 24 for decal locations.*

**A**



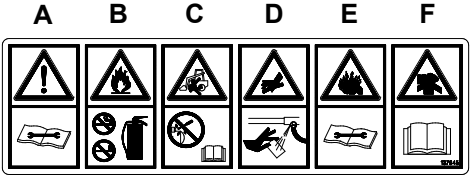

**Located on the front panel below the door, behind the attachment hitch.**

**DANGER: AVOID INJURY OR DEATH**

**A) Keep out from under work tool, unless lift arm is supported.**

**B) No riders! Never use work tool as work platform.**

**B**




**Located on the inside of the right lift arm pillar.**

**WARNING: AVOID INJURY OR DEATH**

**A) Safety alert / Keep safety devices in place and in working order.**

**B) Fire hazard / Do not smoke while fueling or servicing the machine. Clean debris from the engine compartment to avoid fires. Keep fire extinguisher nearby.**

**C) Run-over hazard / Jump-start the machine only according to the operator's manual. See "Jump-starting" on page 92.**

**D) Oil injection hazard / Do not use hands to find hydraulic leaks. Escaping oil under pressure can penetrate skin. Use a piece of cardboard to find leaks.**

**E) Burn hazard / Allow radiator to cool before removing cap. Loosen cap slowly to avoid burns.**

**F) Suffocation hazard / Operate only in a well-ventilated area.**

**C**




**Located next to the fuel filler neck.**

**USE PROPER DIESEL FUEL ONLY!**

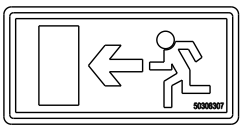
**D**



**Located on the bottom of the side panels behind the tracks (both sides), and at the front of each pontoon on the outside face (both sides).**

**Tie-down point. Only use tie-down points indicated on machine when transporting machine.**

**E**




**Located on the interior surface of the rear window in the lower left corner. Designates emergency egress location.**

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### Drive Control (Left Joystick)

Forward, reverse, travel speed and turning maneuvers are controlled using the left joystick (Figure 28):

A. To go forward, push the left joystick forward.

B. To go in reverse, pull the left joystick rearward.

C. To turn right, push the left joystick to the right.

D. To turn left, push the left joystick to the left.

E. To go forward and to the right, push the left joystick forward and to the right.

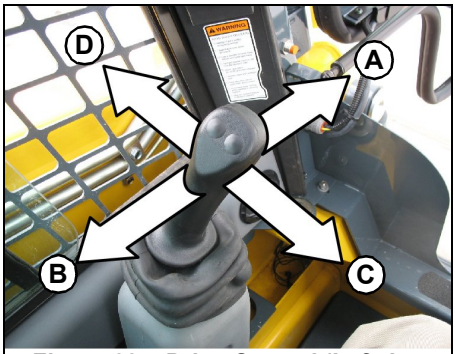



**Figure 28 – Drive Control (Left Joystick)**

F. To go rearward and to the right, pull the left joystick rearward and to the right.

G. To go forward and to the left, push the left joystick forward and to the left.

H. To go rearward and to the left, pull the left joystick rearward and to the left.

**⚠ WARNING Be sure the joystick controls are in neutral before starting the engine. Operate the controls gradually and smoothly. Excessive speed and quick control movements without regard for conditions and circumstances are hazardous and could result in loss of control and cause an accident.**

Moving the joystick farther from neutral increases the speed steadily to the maximum travel speed. Tractive effort decreases as speed increases. For maximum tractive effort, move the joystick only slightly away from the neutral position. The engine may stall if the control is moved too far forward when loading the bucket.

### Lift/Tilt Control (Right Joystick)

Lift arm raise and lower, and attachment tilt are controlled using the right joystick (Figure 29):

A. To lower the lift arm, push the right joystick straight forward.

B. To raise the lift arm, pull the right joystick straight back.

C. To tilt the attachment forward and down, move the right joystick to the right.

D. To tilt the attachment up and back, move the right joystick to the left.

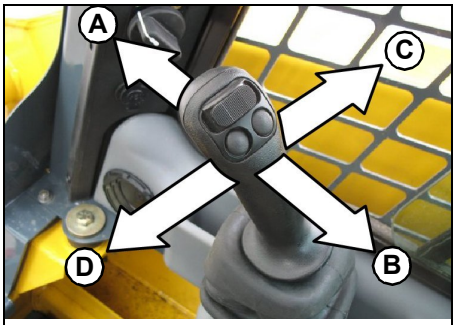



**Figure 29 – Lift/Tilt Control (Right Joystick)**

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## Auxiliary Hydraulics Control

Rocker switch (F, Figure 48) controls the direction and amount of auxiliary hydraulics flow.

Auxiliary hydraulics control is proportional: the farther switch (F) is moved from center, the higher the flow through the auxiliary circuit. Flow direction is reversed when rocker switch (F) is moved in the opposite direction.

To latch continuous auxiliary hydraulic flow, hold rocker switch (F) fully on in either direction and push and hold trigger button (G) for five seconds. When the rocker switch and trigger are released, continuous flow should be enabled.

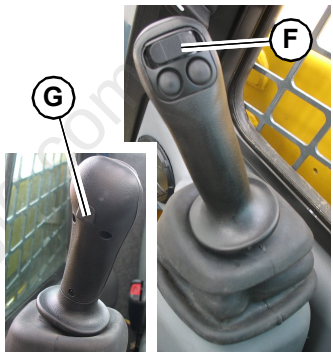
***Note:*** *Continuous flow amount is controlled using engine speed.*

To cancel continuous flow, either push trigger button (G) or move rocker switch (F) in either direction.

**Right T-Bar**




**Right Joystick**




**Right Hand Control**

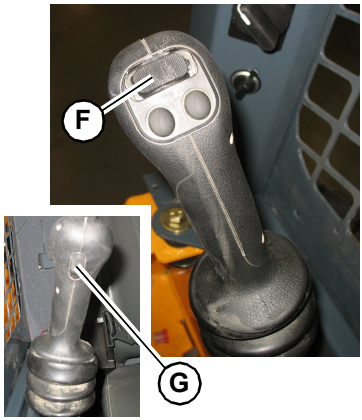



**Figure 48 – Auxiliary Hydraulics Control Rocker Switch**

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# Back-Up Alarm

A back-up alarm system is optionally available which serves to warn people working in the area around the machine of the machine's rearward movement. The back-up alarm is installed within the engine compartment on the inside surface of the rear door. The alarm emits a tone whenever the machine begins to move in the rearward direction.

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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 93) 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.*

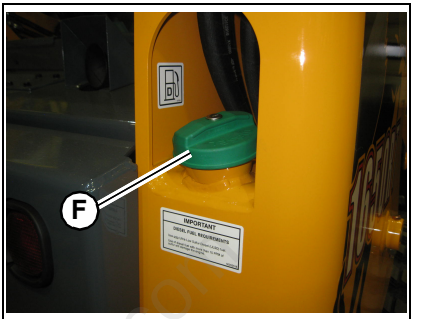



**Figure 93 – Fuel Filler Cap**

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.*

## 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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# Indicator Lamp Troubleshooting

**Table 24: Indicator Lamp Troubleshooting**

| Indicator Icon | Indicator Activated | Possible Cause | Corrective Action |
|---|---|---|---|
|  | Engine oil pressure | Engine oil pressure too low. | Stop engine immediately; check oil level and top off oil if necessary; check oil pump. |
| | | Engine oil level too low. | Top off oil. See “Fluid Capacities/Lubricants” on page 187 for proper oil grade. |
| | | Oil pump malfunction. | Contact dealer. |
|  | Hydraulic oil temperature | Oil temperature is too hot. | Check cooling system for debris in radiator. |
| | | | Check hydraulic oil level. See “Checking Hydraulic Oil Level” on page 147. |
| | | Drive system continuously overloaded. | Improve operation procedure. |
| | | Lift/tilt or auxiliary system continuously overloaded. | Improve operation procedure. |
| | | Drive motor(s) or hydrostatic pump(s) internal damage/leakage. | Contact dealer. |
| | | Hydraulic oil filter restricted. | Replace filter. |
| | | Radiator/cooler restricted. | Clean radiator/cooler. |
|  | Hydraulic oil filter | Hydraulic oil filter service required. | Replace hydraulic oil and filter. See “Hydraulic System” on page 146 **NOTE:** During cold start in cold temperatures, this indicator may be activated until hydraulic oil warms to operating temperature. |
|  | Coolant temperature | Coolant level too low. | Top off coolant. See “Coolant Compound Mixtures” on page 193 for proper coolant mixture. |
| | | Air filter plugged. | Replace air filter(s). See “Changing Air Filter Elements” on page 143. |
| | | Coolant leak. | Repair cooling system and top-off coolant. |

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### Table 36: Engine

| | 1650RT |
|---|---|
| Engine Make/Model | Yanmar 4TNV98C-NMS2V (DPF Models) |
| | 4TNV98-ZNMS3R (Non-DPF Models) |
| Low/High Idle | 2530/1000 RPM |
| Displacement | 3.3 L (201.4 $in^3$) |
| Bore and Stroke | 98 × 110 mm |
| Gross Power (DPF Models) | 51.6 kW (69.3 HP) @ 2800 rpm |
| Gross Power (Non-DPF Models) | 52 kW (69.9 HP) @ 2800 rpm |
| Net Power | 51 kW (68.4 HP) @ 2800 rpm |
| Peak Torque | 241 Nm<br>(178 ft-lbs) @<br>1625 rpm |
| Low/High Idle[a] | 1100 / 2530 rpm |
| Fuel Injection System | Direct injection with common rail injection system |
| Fuel Delivery | High-pressure common rail |
| Fuel Shut-off | On individual injectors |
| Fuel Filtering | In-line filter cartridge with water trap and replaceable element |
| Firing Order | 1-3-4-2-1 (from flywheel end) |
| Normal Starting Aid | Glow plugs |
| Cold Starting Aid (Optional) | Engine block / Oil pan heater |
| Lubrication | Forced lubrication with trochoid pump |
| Crankcase Ventilation | Closed |
| Max. Inclined Angle (engine still supplied with oil) | 30° in all directions |
| Cooling System | Water/ethylene glycol |
| Permissible Coolant Temperature | 110°C (230°F) |
| Thermostat Rating | 82° C (180°F) cracking / 95° C (203°F) full open |
| Fan Type / Ratio | Pusher / 0.867:1 |
| Exhaust Emission Compliance | EPA Tier 4 / EU Stage 5 |
| Electric Starter Motor Power | 12 VDC - 3.0 kW<br>(4.0 HP) |
| Alternator Voltage / Amperage | 12-14VDC / 100 A |
| Operating Range– Ambient Temperature[b] | -15°C (+5°F) – +45°C (+113°F) |

a. Low idle will increase to 1250 rpm when two-speed drive is activated.
b. Operation above temperature range may result in overheating; operation below temperature range may result in hard-starting. Contact your dealer before operating the machine outside temperature range.

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