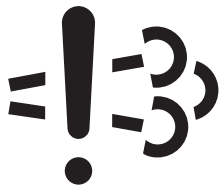


Engine Operation

Required Machine Stop Warning

Machine Stop Mandate Occurs



RG22491—UN—21AUG13

IMPORTANT: In some situations, machine engine power may be reduced as described. On notification, immediately place the machine in a safe state and or move it to a safe location. A mandated machine stop can only be removed by a service technician.

Engine Emissions System Malfunction Indicator illuminates when an emission-related fault occurs.



RG22492—UN—21AUG13

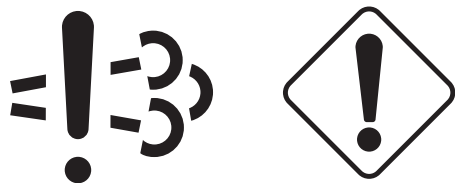
Warning Indicator illuminates when a condition exists which requires operator action.



RG22493—UN—21AUG13

Engine Stop Indicator illuminates when a condition exists which requires immediate operator action and service.

Emission System Fault Has Occurred



RG26361—UN—04SEP14

30 minutes remaining, Engine Emissions System Malfunction and Warning Indicators are illuminated and alarm sounds to warn operator of emissions-related fault. "Less than 30 minutes to Power Restriction" displayed on machines with display.

- Engine power is normal.
- Machine operation is normal.

- Place machine in a safe state.
- Contact service provider.



RG26972—UN—26MAR15

20 minutes remaining, Engine Emissions System Malfunction and Engine Stop Indicators are illuminated and alarm sounds to warn operator of emissions-related fault. "Less than 20 minutes to Power Restriction" displayed on machines with displays.

- Engine power and torque are reduced.
- Key Off - Key On will temporarily provide full power.
- Place machine in a safe state.
- Contact service provider.



RG26972—UN—26MAR15

2 minutes or less remaining, Engine Emissions System Malfunction and Engine Stop Indicators are illuminated and alarm sounds to warn operator of emissions-related fault which has not been corrected. "Power Restriction" displayed on machines with displays.

- Engine power is idle only.
- Place machine in a safe state.
- Contact service provider.

DX,MACHSTOPWARN,AG-19-02OCT15

Engine Fuel System and Power Rating

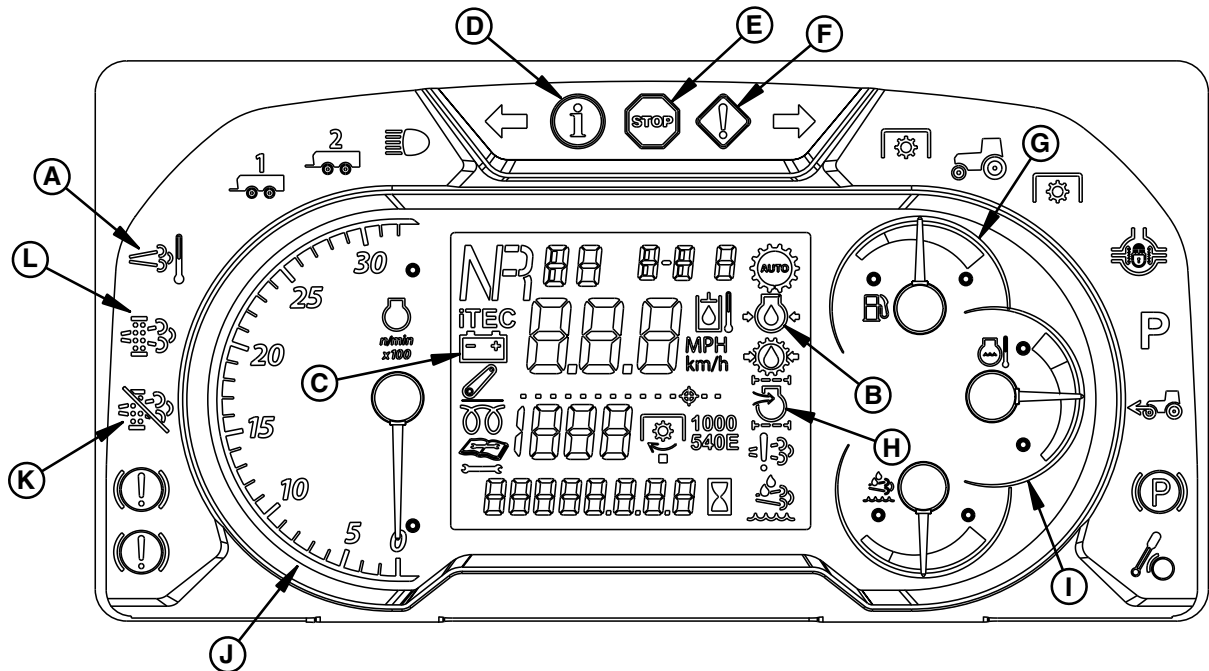
IMPORTANT: Modification or alteration of the injection system or emission control devices terminates warranty to purchaser.

Do not attempt to service injection system. Special training and special tools are required. See your John Deere dealer.

Engine Certification/Power Rating: kW (hp) rating on the emission certification label specifies gross engine kW (hp), which is flywheel power without fan.

HK75640,00007E5-19-27APR20

Check Engine Indicators and Gauges



PY42056—UN—15MAY17

- A—Exhaust Emissions Temperature Indicator
- B—Engine Oil Filter Pressure Indicator
- C—Charging System Indicator
- D—Information Alert Indicator
- E—STOP Indicator
- F—Warning Indicator

IMPORTANT: If coolant temperature gauge (I) indicates hot, stop engine, and determine the cause.

If oil filter pressure indicator (B) or charging system indicator (C) fail to go out, stop engine, and determine the cause.

NOTE: 5075M is not equipped with DEF or DEF gauge.

Exhaust Emissions Temperature Indicator (A)

If exhaust temperature indicator remains illuminated, this indicates high temperature inside the exhaust filter. This allows active filter cleaning to occur.

Engine Oil Filter Pressure Indicator (B)

IMPORTANT: NEVER operate engine without sufficient oil pressure. If oil filter pressure indicator stays illuminated for longer than 5 seconds under normal operating conditions, stop engine and check for cause.

The oil filter pressure indicator stays illuminated when abnormal oil pressure is present.

- G—Fuel Level Indicator Gauge
- H—Engine Air Filter Indicator
- I—Engine Coolant Temperature Gauge
- J—Tachometer
- K—Auto Cleaning Disabled Indicator
- L—Exhaust Filter Indicator

If the oil filter pressure indicator remains illuminated after starting engine, stop the engine immediately.

Check engine oil level. If low oil level is not the problem, see your John Deere dealer.

Charging System Indicator (C)

If charging system indicator remains illuminated for longer than 5 seconds after engine is started, stop the engine immediately.

Check battery connections. Check fan belt tension.

Information Alert Indicator (D)

When a diagnostic trouble code (DTC) is present, information alert indicator illuminates. If necessary, have your John Deere dealer diagnose vehicle.

STOP Indicator (E)

NOTE: Correct problems before restarting.

STOP indicator flashes and alarm sounds off to alert operator that a serious malfunction has occurred. Immediate attention is required or damage to machine occurs.

Immediately stop operations, reduce engine to idle, and then shut off the engine.

Warning Indicator (F)

NOTE: Correct problems before restarting.

Warning indicator illuminates when a malfunction occurs (review error message in information display). If necessary, have your John Deere dealer diagnose vehicle.

Fuel Level Indicator Gauge (G)

Fuel fill icon illuminates, amber, when fuel level is low.

Refuel before fuel level gauge reaches empty.

Check fuel lines and fuel filters. If machine is allowed to run until tank is empty, bleed air out of the fuel system.

Engine Air Filter Indicator (H)

If air filter indicator illuminates while engine is running, stop engine immediately.

Clean out the clogged air cleaner.

Engine Coolant Temperature Gauge (I)

If coolant temperature gauge reaches red zone, stop engine immediately.

Check level of the coolant in the recovery tank and radiator when engine cools. Also check grille, radiator, and radiator screen for debris. Check fan belt tension.

Tachometer (J)

Engine revolutions per minute (rpm) are represented in hundreds.

Auto Cleaning Disabled Indicator (K)

If auto cleaning disabled indicator remains illuminated, the exhaust filter cleaning switch has been disabled.

Exhaust Filter Indicator (L)

If exhaust filter indicator remains illuminated, the exhaust filter needs cleaning.

LGCKF7U,0000BB3-19-09MAY21

Operate Key Switch



APY40985—UN—07DEC20

A—ACCESSORY Position
B—STOP Position
C—RUN Position
D—START Position

NOTE: If temperature is below 5°C (41°F), see Cold Weather Start procedure in this section.

ACCESSORY (A): Push in and turn the key to ACCESSORY position to power the electrical functions.

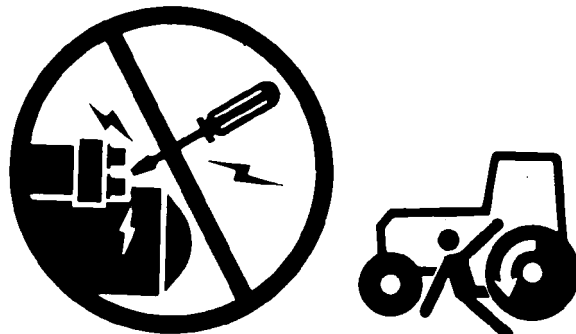
STOP (B): Turn key to STOP position to stop the engine and turn off the electrical functions.

RUN (C): Turn the key switch to RUN position. Check gauges and indicator lights before starting.

START (D): Turn the key to START position to start engine. Key returns to run position when released.

LGCKF7U,00008B2-19-14DEC20

Start Engine



TS177—UN—11JAN89

CAUTION: Do not start engine by shorting across the starter terminals. Machine starts in gear if the normal circuitry is bypassed. Start engine **ONLY** from the operator's seat.

Be cautious and avoid the possibility of personal injury or death. Engine starting with shift lever in gear indicates malfunction of the starting circuit. Repair immediately. See your John Deere dealer.

Be sure that machine and attached equipment are clear of people and other objects.

IMPORTANT: Do not use starting fluid. Damage to engine can occur.

1. Check fuel, DEF, engine oil, and coolant levels before starting the engine. Fill as required.
2. Place left-hand reverser in the neutral position and gearshift lever in the park position.
3. Place hand throttle in idle position.
4. Disengage PTO.
5. Place SCV levers in neutral position.
6. Lower hitch completely if an implement is attached.
7. Turn the key switch to run position. Do not start engine.
8. Wait until light check sequence is complete.
9. Check for any indicator lights or diagnostic trouble codes (DTC) that can impair machine performance. If necessary, have your John Deere dealer diagnose the problem.
10. Depress clutch and brake pedals.
11. Blow horn.
12. Turn the key switch to engage the starter. Release key when the engine starts.

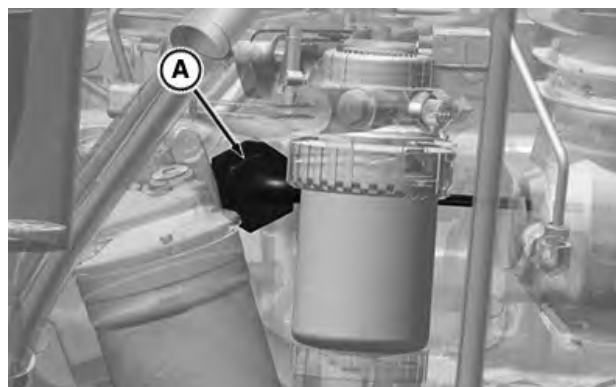
IMPORTANT: Avoid starter damage. Do not operate the starter more than 30 seconds. Wait at least two minutes before trying again.

If Engine Fails to Start:

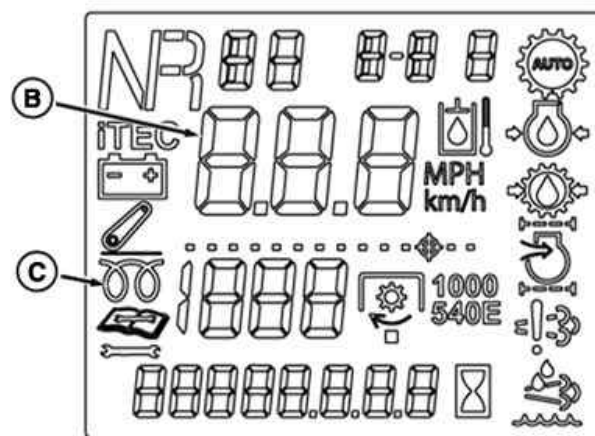
- Place hand throttle at 1/4 to 1/3 of full throttle and attempt to start machine again.
- In cold weather (at or below 5°C [41°F]), refer to *Cold-Weather Start* procedure in this section.
- Check for diagnostic trouble codes or electrical problems.
- If engine fails to start after three attempts, see your John Deere dealer.

NOTE: In cold weather, engine speed is limited to 1440 rpm until transmission/hydraulic oil temperature is above -18°C (0°F).

Cold-Weather Start



APY36915—UN—08JUN20



RXA0161633—UN—05JAN18

- A—Engine Block Coolant Heater
- B—Machine Ground Speed Icon
- C—Cold Start Indicator Icon

IMPORTANT: Do not use starting fluid.

1. Turn key switch to RUN position, but do NOT start engine.
2. Observe display for the cold start indicator icon (C) to appear.
3. A cold start countdown begins, utilizing the machine ground speed icon (B) to indicate that engine block coolant heater (A) are heating up.
4. When the cold start countdown reaches zero, icon turns off.
5. Start engine and allow to warm up. See Run Engine in this section for procedure.

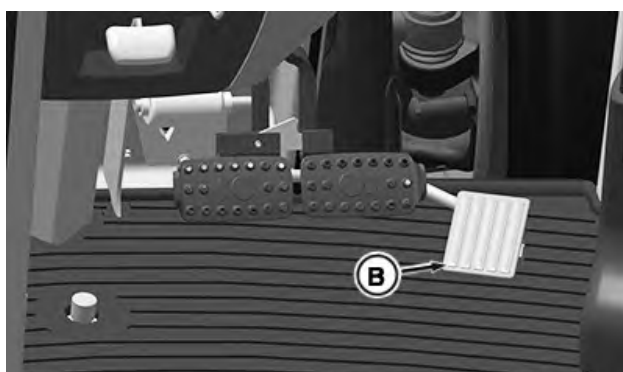
LGCKF7U,000DDA-19-11JUN21

Run Engine



Cab

APY33172—UN—08JUN20



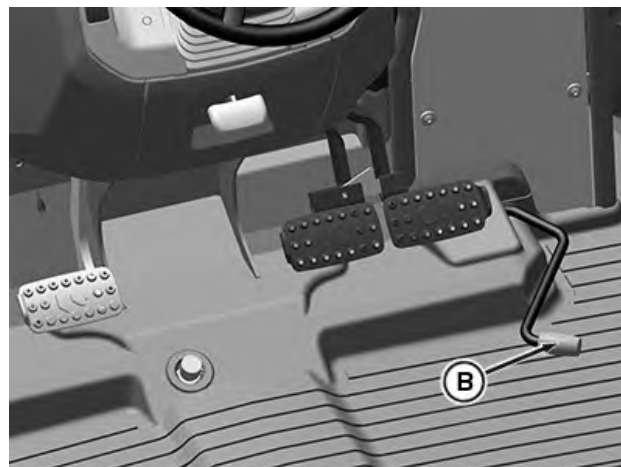
Cab

RXA0157946—UN—24FEB17



OOS

RXA0162101—UN—12FEB18



OOS

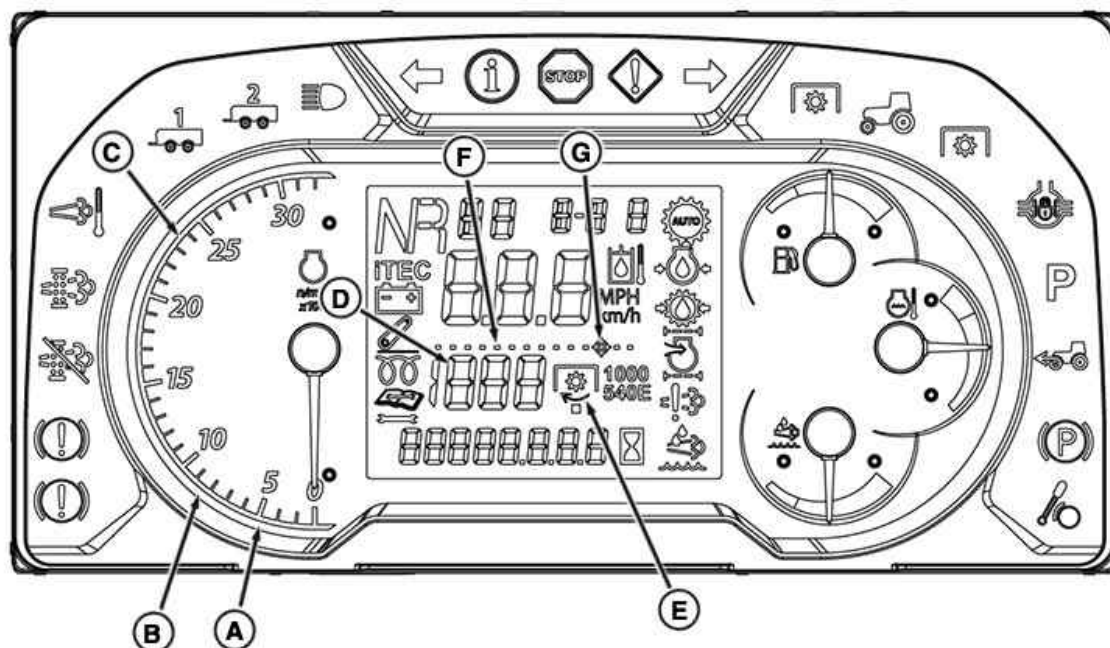
PY42143—UN—04AUG17

A—Hand Throttle
B—Foot Throttle

1. Start engine.
2. Set hand throttle (A) to 1200 rpm.
3. Allow engine to run at 1200 rpm without load for 1-2 minutes if temperature is above 0°C (32°F). If temperature is below 0°C (32°F), run without load for 2-4 minutes. If temperature is cold, it takes longer to get engine warm enough to operate.
4. Once engine is warm, push hand throttle (A) forward to increase speed.
5. Depress foot throttle (B) and increase engine speed temporarily above the hand throttle setting.

HK75640,00007EA-19-27APR20

Engine Speeds and Operational Procedures



- A—Tachometer
- B—Low Idle Speed
- C—High Idle Speed
- D—PTO Speed

- E—PTO Status
- F—Bar Graph
- G—Target Indicator

RXA0161657—UN—08JAN18

Warm Up Engine

Do not put the machine under full load until it is properly warmed up.

1. Run engine with tachometer (A) reading 1200 rpm for several minutes.

NOTE: In cold weather, engine speed is limited to 1440 rpm until transmission/hydraulic oil temperature is above -18°C (0°F).

If hydraulic functions operate slowly, warm the transmission/hydraulic system oil. See Warm Transmission/Hydraulic System Oil in Hydraulics Operation section.

2. Run engine at approximately 1900 rpm under light load until engine reaches normal operating condition.

Avoid Idling Engine

Prolonged idling causes:

- Engine coolant temperature to fall below normal range
- Crankcase oil dilution due to incomplete fuel

combustion and permits formation of gummy deposits on valves, pistons, and piston rings.

- Promotes rapid accumulation of the engine sludge and unburnt fuel in the exhaust system.

NOTE: If machine must be left with the engine running more than 3 or 4 minutes, minimum engine speed must be 1200 rpm

Engine Work Speeds

- Engine nominal full load speed is 1600—2200 rpm.
- Do not operate engine constantly below 1500 rpm during heavy draft usage or when machine is under full PTO load.

PTO Speeds

- PTO speed (D) and PTO status (E) are indicated along with bar graph progress when PTO is engaged.
- PTO status (E) is displayed according to PTO speed selected (540E, 540, or 1000).
- PTO speed progress is shown on bar graph (F). When target speed is reached, target indicator (G) illuminates.

- Recommended engine speed is 2100 rpm for 540 and 1000 PTO.
- Recommended engine speed is 1645 rpm for 540E PTO.

Restart Stalled Engine

If engine stops running due to overload, immediately restart the engine. A running engine causes oil and coolant to circulate, which prevents abnormal heat buildup.

If engine stalls but does not stop running due to overload, run at low idle for 1 or 2 minutes in order to dissipate the heat buildup.

LGCKF7U,0000BB5-19-09MAY21

Stop Engine



Hand Throttle

APY33172—UN—08JUN20

A—Hand Throttle

IMPORTANT: Idle engine that has been operating at working load at least 1 or 2 minutes at 1000—1200 rpm to cool. If an exhaust filter cleaning has been completed, increase engine idle time to 4 minutes.

1. Place left-hand reverser in neutral position and gearshift lever in park position.
2. Place the hand throttle (A) in idle position.
3. Disengage the PTO.
4. Lower hitch completely if any implement is attached.
5. Place SCV levers in the neutral position.
6. Turn key to the STOP position and remove the key.

HK75640,00007EC-19-27APR20

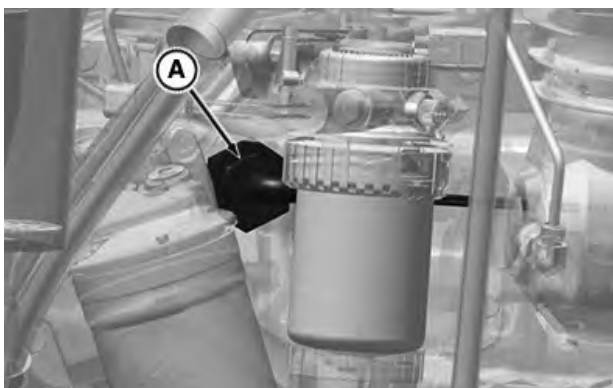
Restart Out of Fuel Engine

IMPORTANT: Do not attempt to start for longer than 20 seconds at a time and allowing 20-30 seconds between to avoid starter damage.

1. Fill the fuel tank.
2. Bleed the fuel system to remove excess air. (See Bleed Fuel System in Air, Fuel, Coolant, and Exhaust Maintenance section.)
3. Attempt to start the engine two or three times.
4. If engine does not start, bleed the fuel system again.
5. Attempt to start the engine two or three times.
6. If engine does not start, contact the nearest John Deere dealer.

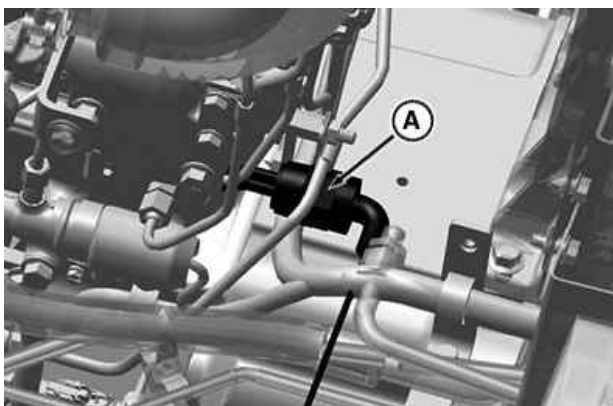
LGCKF7U,0000BB6-19-09MAY21

Engine Block Coolant Heater



Right Side of the 4.5 L Engine

APY36915—UN—08JUN20



Left Side of the 2.9 L Engine

APY36916—UN—08JUN20

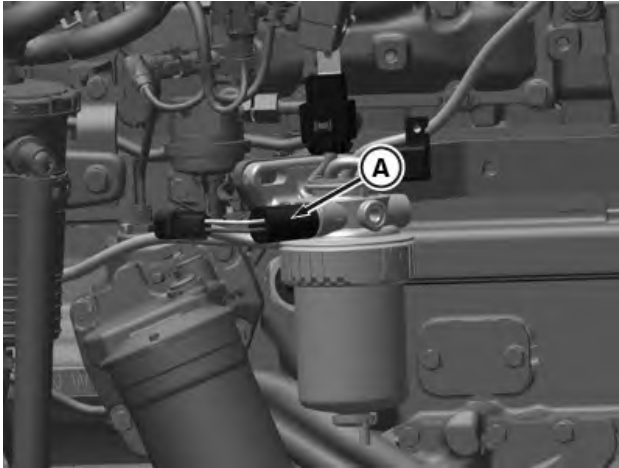
A—Engine Block Coolant Heater

IMPORTANT: Before connecting heater to a power source, be sure that element is immersed in coolant. **NEVER** energize the heater in air. Doing so can cause the element sheath to burst, resulting in personal injury.

1. Locate the engine block coolant heater (A) on the engine.
2. Connect heater plug to a 220-volt outlet protected by a ground fault interrupter.

LGCKF7U,0000CE1-19-21MAY21

Engine Fuel Heater



APY48076—UN—31MAY21

A—Fuel Heater

For machines operating in cold climates, an engine fuel heater is available. There is no operator interaction required to make the fuel heater operate.

The fuel heater is installed on the primary fuel filter head and is wired to the engine control unit. The control unit monitors fuel temperature and turns on the heater when needed during operation.

LGCKF7U,0000DDB-19-11JUN21
