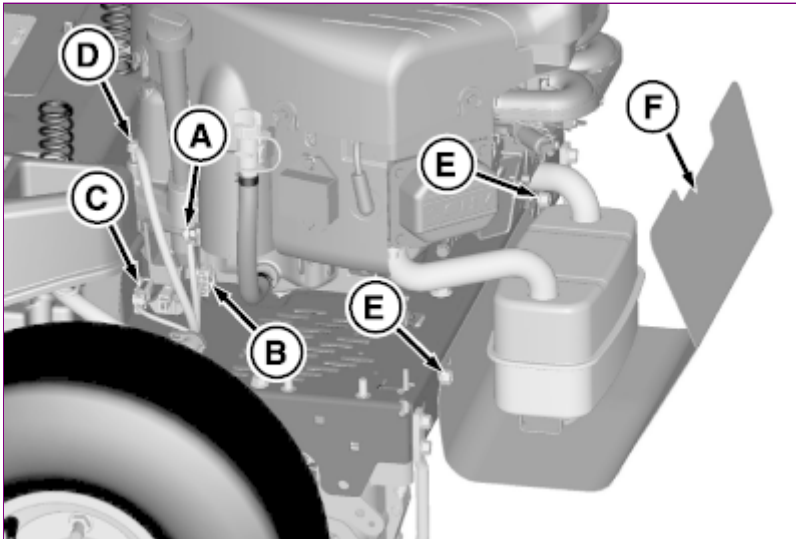


# TM140319 - Z335E, Z355E ZTrak Mower (S.N. 010001-) Remove Engine

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## Remove Engine



MXT005458-UN: Engine and Clutch Wire Harness Connector

### LEGEND:

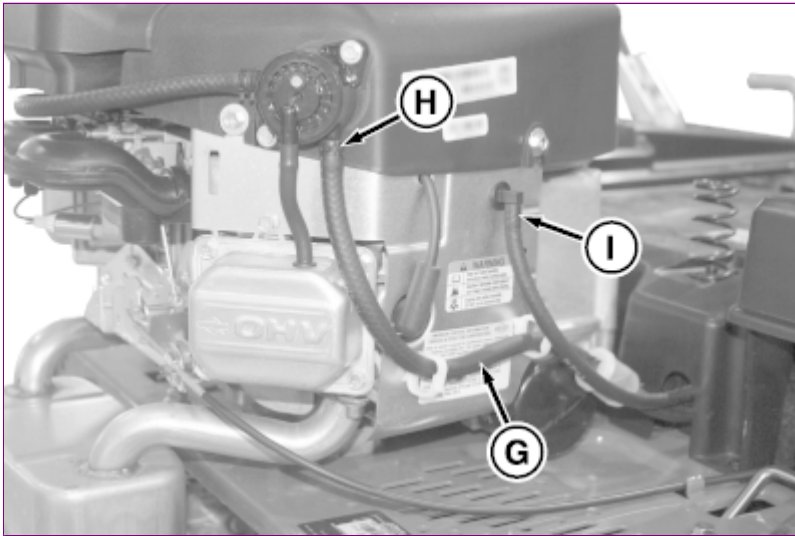
- A - Starter Terminal
- B - Engine Wire Harness Connector
- C - Clutch Wire Harness Connector
- D - Screw
- E - Screws
- F - Muffler Shield

1. Park machine safely. See the "Safety Section".
  2. Raise seat.
  3. Remove battery access cover and disconnect negative (—) battery cable.
  4. Drain engine oil into a suitable container. (Oil capacity with filter is approximately **1.9 L (2.0 US qt)** .)
  5. Remove engine guards. (See [Remove and Install Engine Guard](#) .)
  6. Disconnect wire from starter terminal (A).
  7. Unplug main wire harness to engine wire harness connector (B).
  8. Unplug main wire harness to clutch wire harness connector (C).
  9. Remove the cap screw (D) securing ground wires to engine block. Remove ground wires.
  10. Loosen two screws (E) and remove muffler shield (F).
-

**CAUTION:**

**Avoid Injury! Fuel vapors are explosive and flammable:**

- **Do not smoke while handling fuel.**
- **Keep fuel away from flames or sparks.**
- **Shut off engine before servicing.**
- **Cool engine before servicing.**
- **Work in a well-ventilated area.**
- **Clean up spilled fuel immediately.**



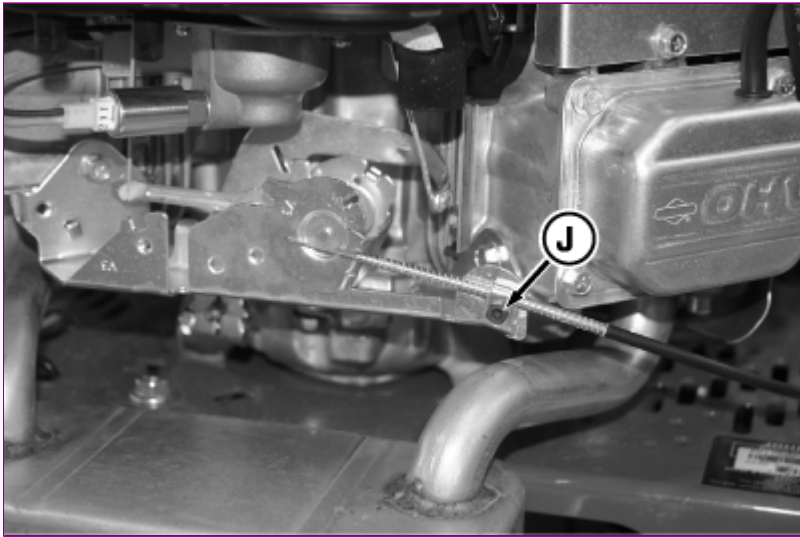
MXT005459-UN: Fuel and Vent Line

LEGEND:

- G - Fuel Line
- H - Clamp
- I - Vent Line

Remove fuel line (G) from clips.

12. Disconnect hose clamp (H) and slide fuel line off hose barb on fuel pump. Plug the fuel line.
13. Remove vent line (I) from barb fitting.



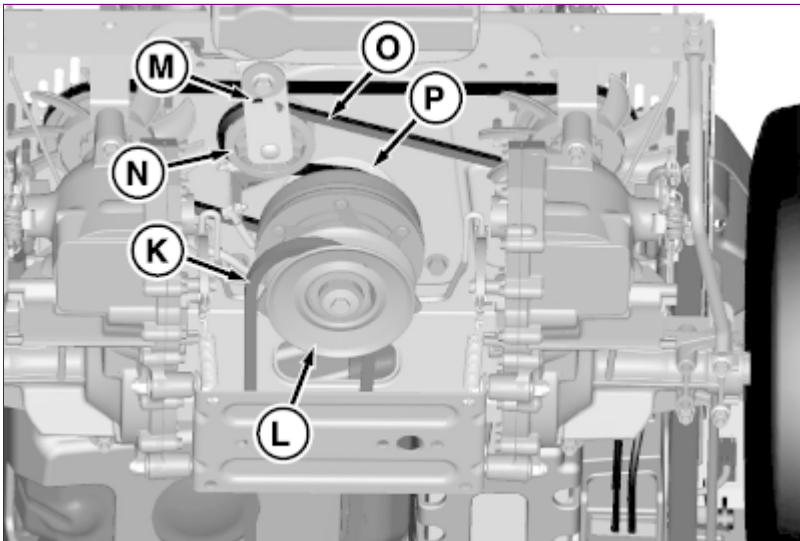
14. MXT005460-UN: Throttle Cable Clamp

LEGEND:

J - Clamp

Loosen retaining clamp (J) for the throttle cable. Disconnect cable.

---



15. MXT005461-UN: Belts

LEGEND:

K - Mower Drive Belt  
L - Clutch Sheave  
M - Hole  
N - Idler Sheave  
O - Traction Drive Belt  
P - Engine Sheave

Pull mower drive belt (K) toward rear of machine. Remove belt from clutch sheave (L).

16. 

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**CAUTION:**

**Avoid Injury! Spring is under tension. Wear eye protection and gloves.**

---

Insert a 3/8 inch. ratchet or breaker bar into the square hole (M) on the idler arm. Rotate the spring-loaded idler arm to relieve belt tension on the idler sheave (N). Remove the traction drive belt (O) from the idler sheave. Release the spring tension from the arm and remove the tool.

17. Remove the traction drive belt from the engine sheave (P).
- 

18.

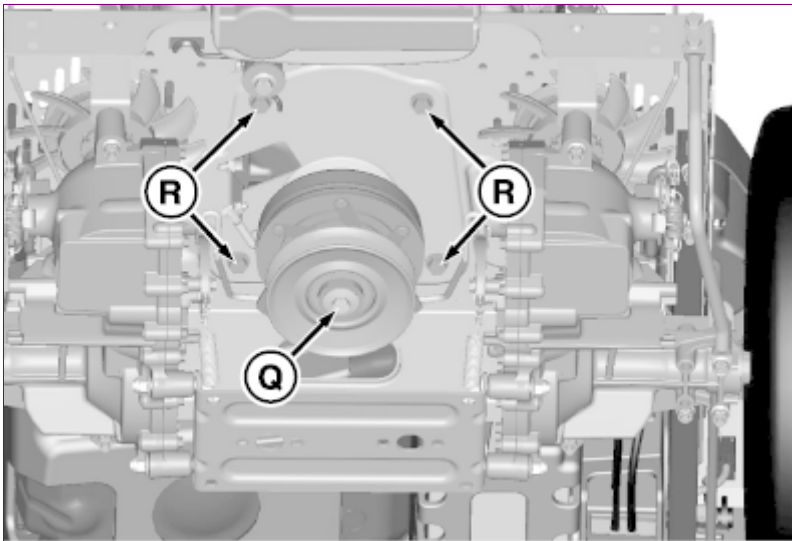
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**CAUTION:**

**Avoid Injury! Be prepared to support clutch if there is sudden release of clutch from engine crankshaft.**

---



MXT005462-UN: Idler arm and pulley removed for clarity.

LEGEND:

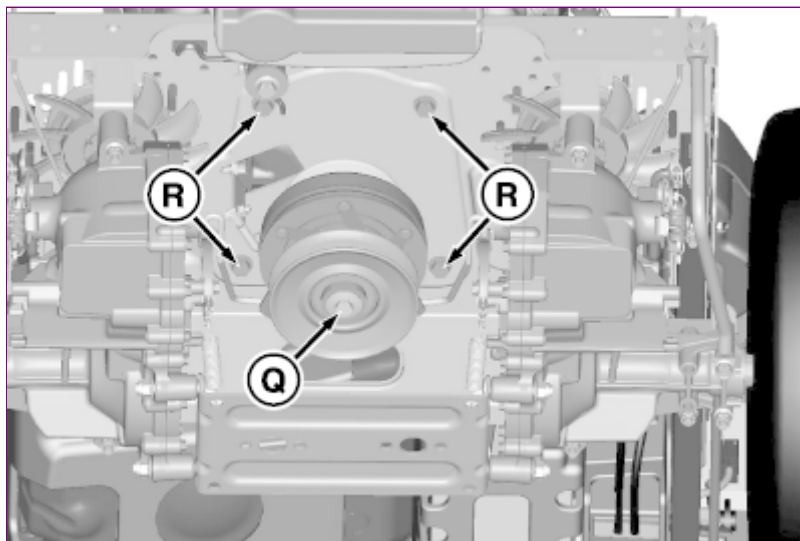
Q - Bolt  
R - Bolts

Remove bolt (Q) and washer securing electric clutch and engine sheave assemblies to engine output shaft. Remove electric clutch.

19. Remove the drive sheave and key from the engine crankshaft.
20. Remove four bolts (R) securing engine to frame.
21. Remove engine.

# TM140319 - Z335E, Z355E ZTrak Mower (S.N. 010001-) Install Engine

## Install Engine



MXT005462-UN: Idler arm and pulley removed for clarity.

### LEGEND:

R - Bolts  
Q - Bolt

1. Set engine in machine frame.
2. Install 4 engine mounting bolts (R). Tighten bolts to specification.

Item	Measurement	Specification
Engine Mounting Cap Screws	Torque	48 N·m (35 lb-ft)

3. Install the key and drive sheave onto the engine output shaft.
4. Install the electric PTO clutch assembly so that the anti-rotation pin is in the slot. The PTO clutch pin must be able to move freely within the slot.
5. Secure electric PTO clutch with washer and bolt (Q). Tighten bolt to specification.

Item	Measurement	Specification
PTO Clutch Bolt	Torque	68 N·m (50 lb-ft)

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6.

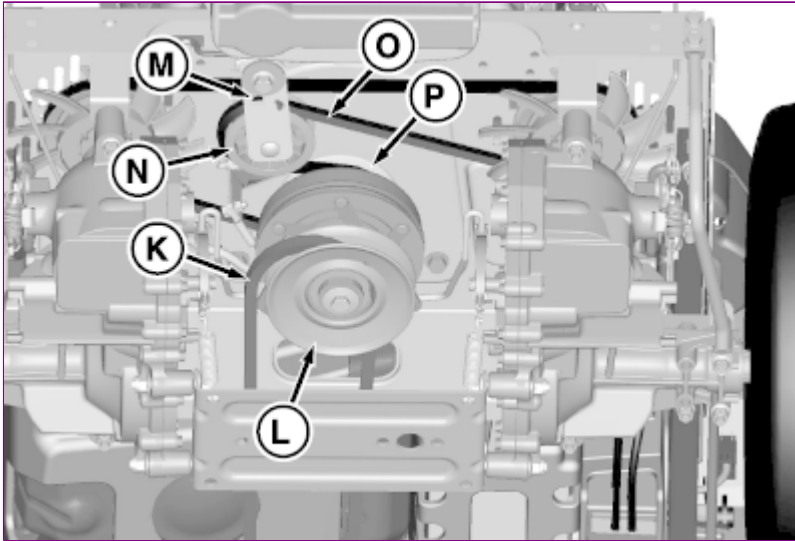
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**CAUTION:**

*Avoid Injury! Spring is under tension. Wear eye protection and gloves.*

---



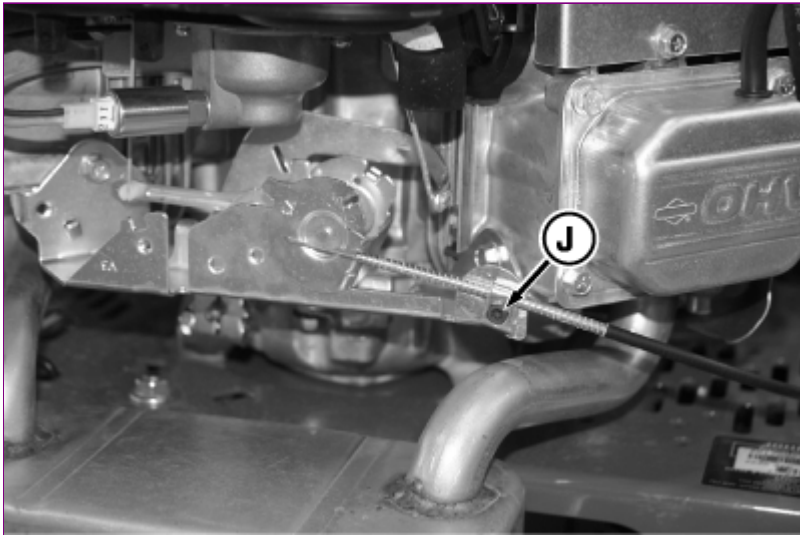
MXT005461-UN: Belts

LEGEND:

- K - Mower Drive Belt
- L - Clutch Sheave
- M - Hole
- N - Idler Sheave
- O - Traction Drive Belt
- P - Engine Sheave

Place traction drive belt (O) on engine sheave (P) and transmission sheaves. Insert a 3/8 in. drive wrench in hole (M) in drive belt tensioner arm. Rotate the tensioner arm until the drive belt can be placed on idler pulley sheave (N). Carefully release the tension arm to the relaxed position.

7. Place mower deck drive belt (K) in position on clutch sheave (L).
-



8. MXT005460-UN: Throttle Cable Clamp

LEGEND:

J - Clamp

Attach throttle cable to hole in throttle control. Route cable housing through cable clamp (J). Adjust cable and tighten clamp. (See [Adjust Throttle and Choke Cable, V-Twin](#) .)

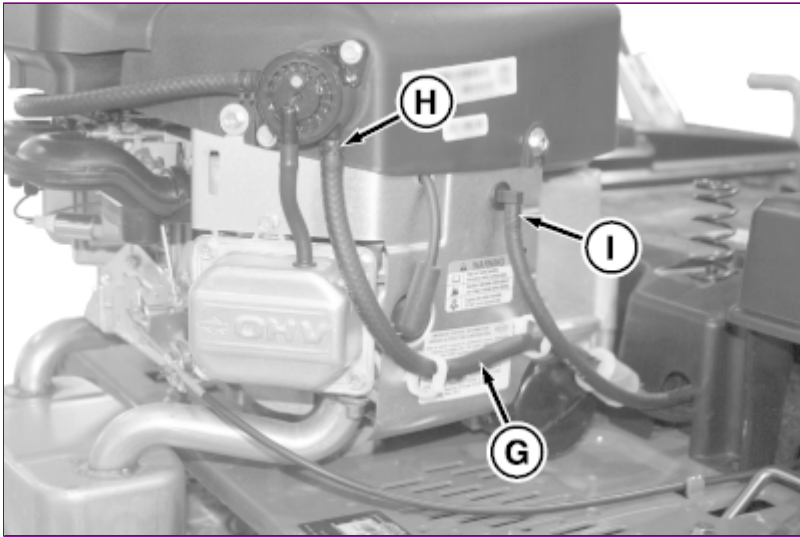
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- 9.
- 

 **CAUTION:**

***Avoid Injury! Fuel vapors are explosive and flammable:***

- ***Do not smoke while handling fuel.***
  - ***Keep fuel away from flames or sparks.***
  - ***Shut off engine before servicing.***
  - ***Cool engine before servicing.***
  - ***Work in a well-ventilated area.***
  - ***Clean up spilled fuel immediately.***
-



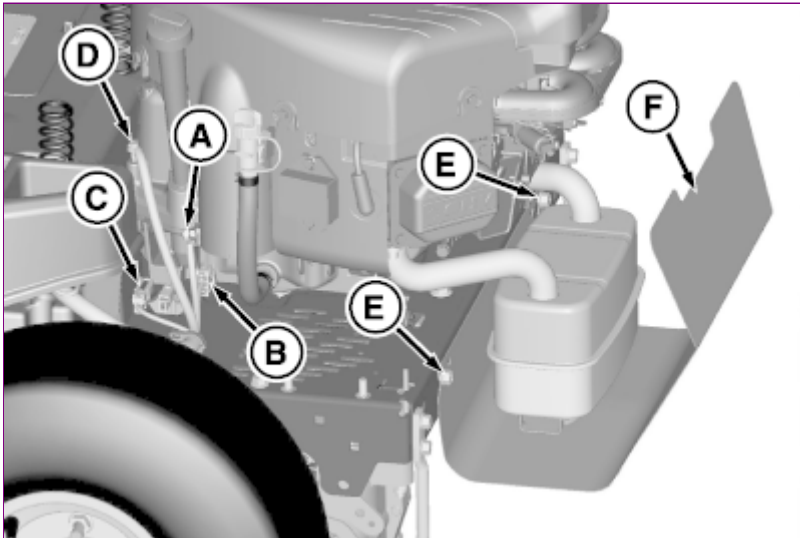
MXT005459-UN: Fuel and Vent Line

LEGEND:

- G - Fuel Line
- H - Clamp
- I - Vent Line

Connect vent line (I) to barb fitting.

10. Remove plug from fuel line and connect to the fuel pump fitting with hose clamp (H).
11. Place fuel line (G) inside clips.



12. MXT005458-UN: Engine and Clutch Wire Harness Connector

LEGEND:

- A - Starter Terminal
- B - Engine Wire Harness Connector
- C - Clutch Wire Harness Connector
- D - Screw
- E - Screws

## F - Muffler Shield

Position muffler shield (F) in place over screws (E). Tighten screws.

13. Install screw (D) securing ground wires to engine block.
14. Connect the main wire harness to clutch wire harness connector (C).
15. Connect the main wire harness to engine wire harness connector (B).
16. Connect wire to the starting motor terminal (A).
17. Install the engine guard.
18. Fill crankcase with engine oil.

<b>Item</b>	<b>Measurement</b>	<b>Specification</b>
Oil with Filter	Capacity	1.9 L (2 qt)

19. Connect negative (—) battery cable.

## **TM140319 - Z335E, Z355E ZTrak Mower (S.N. 010001-) Remove Upper Blower Housing**

---

### **Remove Upper Blower Housing**

1. Remove air cleaner cover and air cleaner elements.
2. Remove screws securing the rotating screen to the fan.
3. Remove screws holding the upper blower housing to the engine block.
4. Remove upper blower housing.

---

MX00654,0000054-19-20120206

# TM140319 - Z335E, Z355E ZTrak Mower (S.N. 010001-) Install Upper Blower Housing

---

## Install Upper Blower Housing

### IMPORTANT:

**Avoid Damage! Upper blower housing must be assembled so that the slot in the blower housing aligns with the ridge in the air intake. Failure to assemble correctly will prevent the air filter from sealing and cause engine damage.**

Install in reverse order of removal.

Tighten blower housing screws to specification.

Item	Measurement	Specification
Blower Housing Screws	Torque	9 N•m (80 lb.-in.)

# TM140319 - Z335E, Z355E ZTrak Mower (S.N. 010001-) Changing Engine Oil and Filter

---

## Changing Engine Oil and Filter

1. **IMPORTANT:**

Operating in extreme conditions may require more frequent service intervals:

- Engine components may become dirty or plugged when operating in extreme heat, dust or other severe conditions.
- Engine oil can degrade if machine is operated constantly at slow or low engine speeds or for frequent short periods of time.

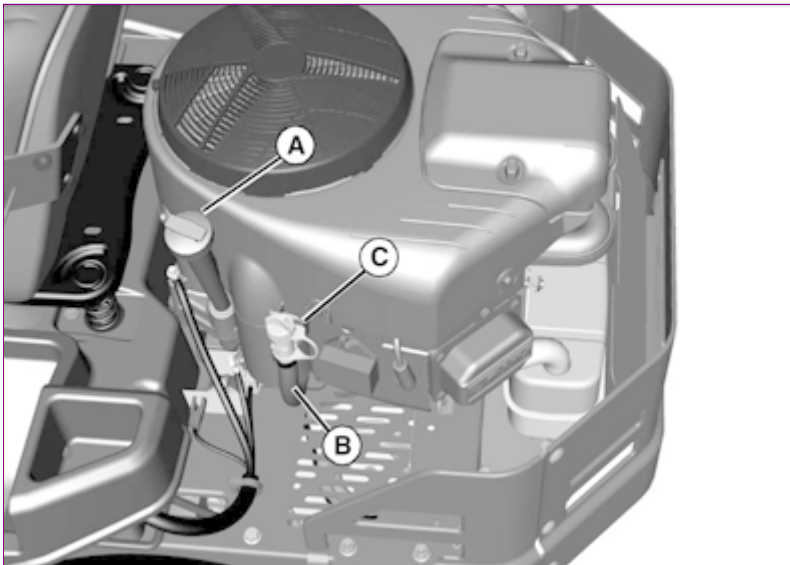
Run engine to warm oil.

2. Park machine safely on level surface. See the "Safety Section".

---

3. **IMPORTANT:**

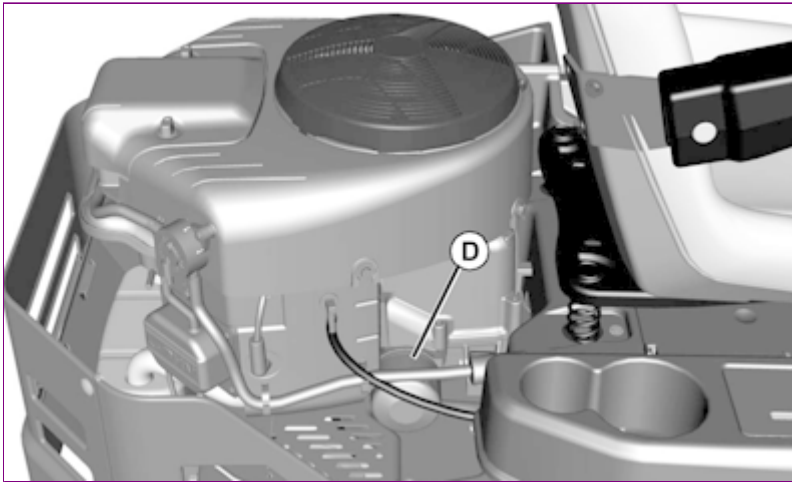
Dirt and contamination can enter engine when checking oil level. Clean area around dipstick before loosening or removing.



MXAL42828-UN: Dipstick

Clean area around dipstick (A) to prevent debris from falling into crankcase.

4. Disconnect oil drain hose (B) from the side of the engine.
5. Remove the oil drain cap (C). Carefully lower the quick oil drain into an approved container.
-



6. MXAL42829-UN: Oil Filter

Wipe dirt from around oil filter (D). Place a drain pan under oil filter, and remove filter.

7. Wipe up any dripped oil from oil filter on engine pan.
8. Put a light coat of fresh, clean oil on the new filter gasket.
9. Install replacement oil filter by turning oil filter to the right (clockwise) until the rubber gasket contacts filter base. Tighten filter an additional one-half turn.
10. After oil has drained, install the drain cap (C) and attach drain hose assembly (A) to side of engine.
11. Add oil no higher than FULL mark on dipstick. Begin with specification. Do not overfill.

Item	Measurement	Specification
Engine Oil	Capacity	1.6 L (1.75 qt) (approximate)

12. Tighten dipstick.
13. Start and run engine at idle to check for leaks. Stop engine. Fix any leaks before operating.
14. Check oil level. Add oil if necessary.
15. Wipe up any and all surfaces of any oil drippings.

# TM140319 - Z335E, Z355E ZTrak Mower (S.N. 010001-) Cleaning Air Intake Screen and Engine Fins

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## Cleaning Air Intake Screen and Engine Fins

---



### **CAUTION:**

*Avoid Injury! Compressed air can cause debris to fly a long distance.*

- *Clear work area of bystanders.*
- *Wear eye protection when using compressed air for cleaning purposes.*
- *Reduce compressed air pressure to specification.*

Item	Measurement	Specification
Air	Pressure	210 kPa (30 psi)

---

### **IMPORTANT:**

**Avoid Damage! An obstructed air intake screen can cause engine damage due to overheating. Keep air intake screen and other external surfaces of the engine, including cooling fins, clean at all times to allow adequate air intake.**

1. Park machine safely. See the "Safety Section".
  2. Clean air intake screen on top of engine and external surfaces with rag, brush, vacuum, or compressed air.
-



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# TM140319 - Z335E, Z355E ZTrak Mower (S.N. 010001-) Cleaning Engine Shroud

## Cleaning Engine Shroud



**CAUTION:**

*Avoid Injury! Compressed air can cause debris to fly a long distance.*

- Clear work area of bystanders.
- Wear eye protection when using compressed air for cleaning purposes.
- Reduce compressed air pressure to specification.

Item	Measurement	Specification
Air	Pressure	210 kPa (30 psi)

### IMPORTANT:

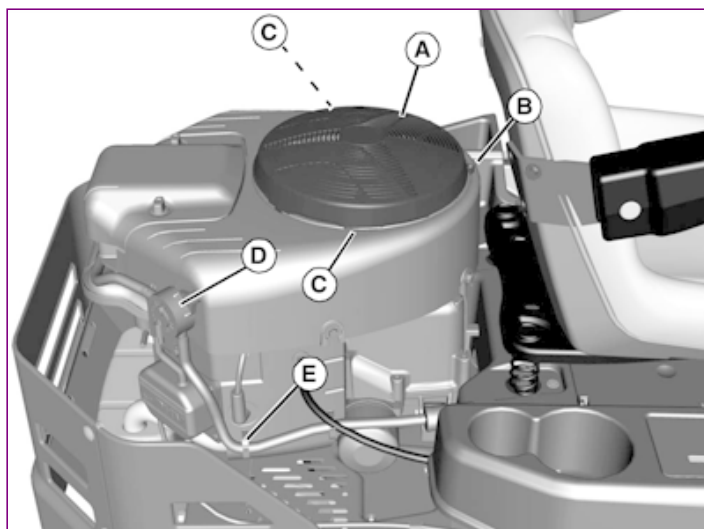
**Avoid Damage!** An obstructed air intake screen can cause engine damage due to overheating. Keep Air intake screen and other external surfaces of engine, including cooling fins, clean at all times to allow adequate air intake.



**CAUTION:**

*Avoid Injury! Touching hot surfaces can burn skin. The engine, components, and fluids will be hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.*

1. Park machine safely. See the "Safety Section".
2. Clean air intake screen and external engine surfaces (see Cleaning Air Intake Screen and Engine Fins in ENGINE Section).



- 3.

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