

# D51 Engine

## Safety, Operation, Maintenance & Parts Manual

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LT60HD  
LT70HD

rev. A2.02 - A7.03  
rev. A2.02 - B7.00

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**Safety is our #1 concern!** Read and understand all safety information and instructions before operating, setting up or maintaining this machine.

*January 2010*

*Form #1146*



**WARNING! Read and understand this manual before using this machine.**

## California

### Proposition 65 Warning



**WARNING:** Breathing gas/diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Always start and operate the engine in a well-ventilated area.  
If in an enclosed area, vent the exhaust to the outside.  
Do not modify or tamper with the exhaust system.  
Do not idle the engine except as necessary.

For more information go to [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).



**WARNING:** Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.

For more information go to [www.P65Warnings.ca.gov/wood](http://www.P65Warnings.ca.gov/wood).

## Active Patents assigned to Wood-Mizer, LLC

Belzile, Luc. 2016. Portable saw mill with bed adjustments. US Patent US 9,352,480B, filed September 11, 2012, and issued May 31, 2016.

Belzile, Luc. 2019. Blade sharpening and setting system. US Patent US10315260B2, filed August 27, 2016, and issued June 11, 2019.

Vogel, Chris. 2020. Wood cutting band saw blade having reduced kerf dust. US Patent US10625353B2, filed January 9, 2015, and issued June 21, 2020.

Bedel, Ambrose. 2011. Pallet dismantler. US Patent US 2011/0138984 A1, filed December 15, 2009, and issued June 16, 2011.

Laskowski, Jeff. 2006. Articulating deck mower with deck height adjuster. US Patent US 7,089,722 B2, filed September 30, 2004, and issued August 15, 2006.

Latuszek, Scott R., Dufek, Scott A. and Kohrman, Mark J. 2010. Latch for a pivoting mower deck. US Patent US 2010/0212278 A1, filed May 12, 2008, and issued August 26, 2010.

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**Indianapolis, Indiana 46214**

<b>SECTION 1</b>	<b>ABOUT THIS MANUAL</b>	<b>1-IV</b>
<b>SECTION 2</b>	<b>OPERATION</b>	<b>2-1</b>
2.1	Starting The Engine (All LT60/70 Sawmills Except DCS and LT70 Super)2-1	
<b>SECTION 3</b>	<b>MAINTENANCE</b>	<b>3-1</b>
3.1	Safety ..... 3-1	
3.2	Engine Oil & Filter ..... 3-3	
3.3	Cooling System ..... 3-4	
3.4	Battery ..... 3-5	
3.5	Alternator Belt..... 3-6	
3.6	Air Cleaner ..... 3-7	
3.7	RPM Adjustments ..... 3-8	
<b>SECTION 4</b>	<b>REPLACEMENT PARTS</b>	<b>4-1</b>
4.1	Fuel Tank Assembly (D51/D62)..... 4-1	
4.2	Engine Mount Assembly (All Except Tier 4) ..... 4-2	
4.3	Engine Assembly (D51/D62)..... 4-3	
4.4	Muffler Assembly ..... 4-5	
4.5	Air Cleaner Assembly ..... 4-6	
	<i>2/05 and later</i>	
4.6	Air Cleaner Assembly ..... 4-7	
	<i>Before 2/05</i>	
4.7	Drive Assembly..... 4-8	
4.8	Throttle & Relay Assembly ..... 4-9	
4.9	Radiator Assembly (All Except D55 Tier 4) ..... 4-11	
4.10	Alternator Assembly ..... 4-12	
4.11	Engine Pulley Guards (All Except Tier 4) ..... 4-14	
4.12	Drive Belt Guard Assembly ..... 4-15	
4.13	Bearing Support (D51/D62) (Optional) ..... 4-16	
	<b>INDEX</b>	<b>I</b>

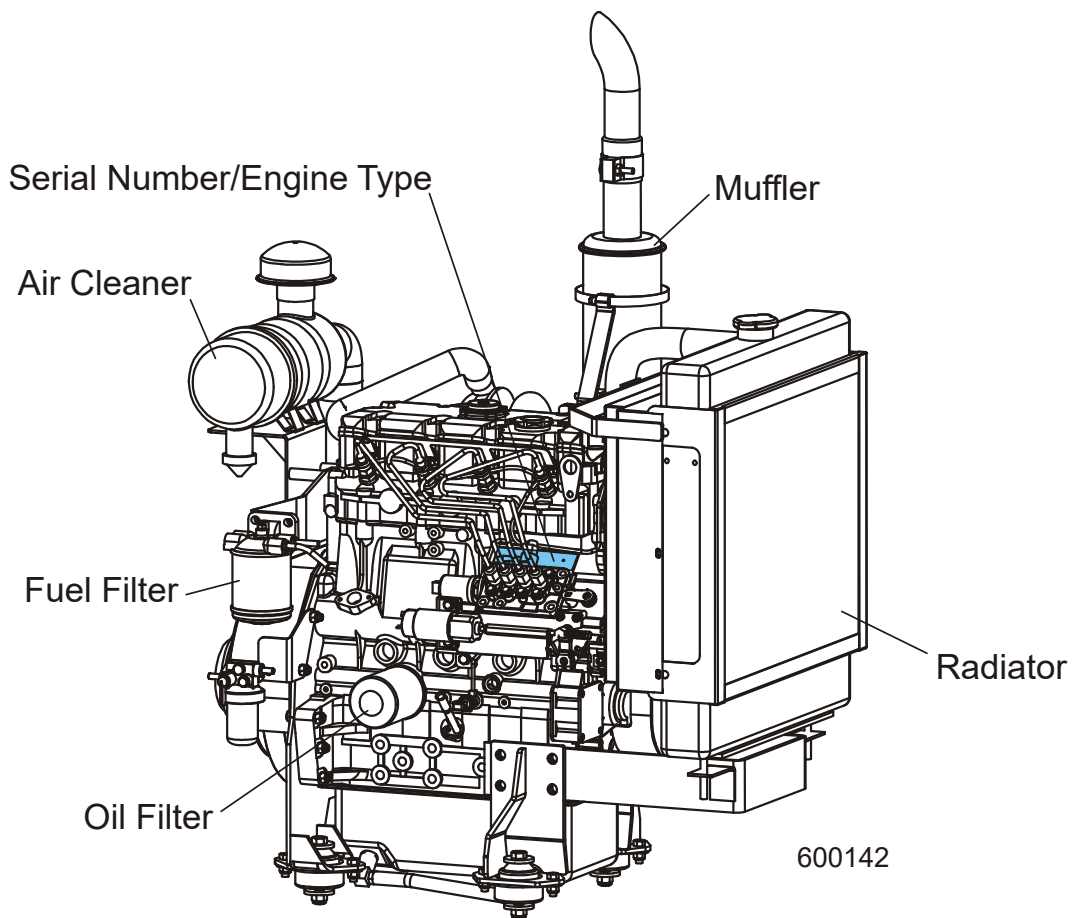
## SECTION 1 ABOUT THIS MANUAL

This manual is provided as a supplement to the equipment manufacturer's manuals. This manual provides information specific to the use of this equipment on the Wood-Mizer® sawmill. Refer to the sawmill operator's manual and manufacturer's manual before attempting to operate this equipment.



**IMPORTANT!** Read the sawmill operator's manual and engine manufacturer's manual for instructions and safety precautions before operating this equipment.

The information and instructions given in this manual do not amend or extend the limited warranties for the equipment given at the time of purchase.




## SECTION 2 OPERATION



### 2.1 Starting The Engine (All LT60/70 Sawmills Except DCS and LT70 Super)

#### Engine Control Lights



See **Figure 2-1**. The following indicator lights are located on the sawmill control panel.

- 



**Alternator Charge Indicator:** Lights up if the alternator is not charging the battery.


- 



**Engine Temperature Indicator:** Lights up if the engine is overheating. A circuit breaker assembly in the engine harness will shut the engine off if the engine overheats. Turn the key switch off and allow the engine to cool for a period of time before restarting. If the overheating condition persists, stop operating the engine until the condition is corrected. The engine will automatically switch to low idle if an overheating condition occurs.


- 


**Key Switch Indicator:** Lights up when the key is in either the on or accessory (#1 or #3) position.

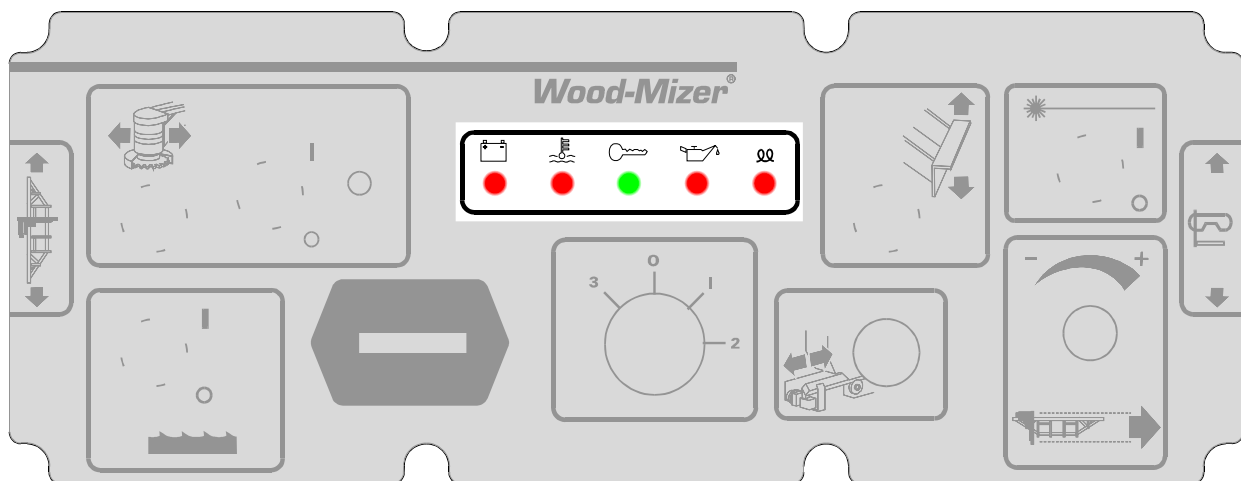

- 

**Oil Indicator:** Lights up if the oil pressure is too low. The engine will automatically switch to low idle if a low oil condition occurs.


- 

**Glow Plug Indicator:** Lights up after the key has been turned to the on (#1) position.





**FIG. 2-1**

# 2

## Operation

### Starting The Engine (All LT60/70 Sawmills Except DCS and LT70 Super)

See **Table 2-1**. **IMPORTANT!** The glow plug sensing relay is disconnected to provide manual control of glow plug operation. See the table for recommended glow plug on times.

On Times For Manually Operated Glow Plugs	
Ambient Temperature	Suggested Glow Plug On Time
Less Than 32° F (0° C)	30 Seconds
32 - 60° F (0 -15° C)	25 Seconds
60 - 80° F (15 - 27° C)	15 Seconds
Above 80° F (27° C)	10 Seconds

**TABLE 2-1**



**CAUTION!** Do not operate the glow plugs for more than 60 seconds at one time. Damage to the glow plugs could occur.

### Engine Start



**DANGER!** Always be sure the blade is disengaged and all persons are out of the path of the blade before starting the engine. Failure to do so will result in serious injury.

**DANGER!** Operate your engine/machine only in well ventilated areas. The exhaust gases of your engine can cause nausea, delirium and potentially death unless adequate ventilation is present.

**DANGER!** Never operate an engine with a fuel or oil leak. The leaking fuel or oil could potentially come in contact with hot surfaces and ignite into flames.



**WARNING!** Be sure the power feed switch is in the neutral position before turning the key switch to the on (#1) or accessory (#3) position. This prevents accidental carriage movement, which may cause serious injury or death.

**WARNING!** Do not operate engine without proper and operational spark arrester/muffler. Sparks emitted from the engine exhaust could ignite surrounding materials, causing serious injury or death.



**CAUTION!** Do not crank starter for more than 20 seconds at one time during starting attempts. Allow the starter motor to cool for 2 minutes before cranking the starter again.

Damage to the engine may result.

**CAUTION!** Let engine idle for 3 - 5 minutes before applying load to prevent engine damage.

1. See the engine manufacturer's manual for lubricating oil recommendations for specific temperature ranges.
2. Use #2 or better quality diesel fuel for above freezing starting. Use a #1 quality diesel fuel for below freezing starting.
3. Engage the blade handle to place the throttle in high position.
4. Turn the key switch on the control panel to the on (#1) position.
5. Wait the recommended glow plug on time ([See Table 2-1.](#))
6. Be sure all persons are clear of the blade and turn the key switch to the start (#2) position and release.
7. Disengage the blade lever to place the throttle in low idle position and allow the engine to idle for 3-5 minutes.

### Engine Shutoff



**CAUTION!** A minimum 2 minute idle time is recommended to allow the battery charge to recover before the engine is shut off.

Turn the key switch to the off (#0) position.

## SECTION 3 MAINTENANCE

Refer to the manufacturer's manual for maintenance intervals and procedures unless otherwise instructed in this manual. Follow the manufacturer's recommendations for dusty conditions.



**IMPORTANT!** This manual only provides information about additional procedures or procedures to be performed at different time intervals than found in the manufacturer's manuals. Refer to the manufacturer's manual for complete maintenance instructions.



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**WARNING!** Clean sawdust from all guards, vents, control boxes, or any area where sawdust may gather **after every shift**. Failure to do so may result in fire, causing death or serious injury.

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### 3.1 Safety

Use caution when performing maintenance or service to the engine.



**DANGER!** Always be aware of and take proper protective measures against rotating shafts, pulleys, fans, etc. Always stay a safe distance from rotating members and make sure that loose clothing or long hair does not engage rotating members resulting in possible injury.

**DANGER!** Engine components can become very hot during operation. Avoid contact with any part of a hot engine. The exhaust components of your engine are especially hot during and following operation. Contact with hot engine components can cause serious burns. Therefore, never touch or perform service functions on a hot engine. Allow the engine to cool sufficiently before beginning any service function.



**WARNING!** Remove the blade before performing any engine service. Failure to do so may result in serious injury.

**WARNING!** Always wear proper and necessary safety equipment when performing service functions. Proper safety equipment includes eye protection, breathing protection, hand protection and foot protection.





**This symbol** identifies the interval (hours of operation) at which each maintenance procedure should be performed. "AR" signifies maintenance procedures which should be performed as required.

## 3.2 Engine Oil & Filter



Check the oil level every 8 hours of operation. Add oil as necessary. See the engine manual for oil viscosity and grade recommendations.

When checking the oil level, inspect the oil for indications of water in the oil. If there is water present or the oil is cloudy, DO NOT start the engine. Replace the oil and oil filter, run the engine at low idle for no more than 2 minutes and replace the oil and filter again.



**CAUTION!** Operating the engine with water in the engine oil will cause severe damage to the engine. Follow all maintenance procedures for checking oil level and oil/filter change intervals.



**IMPORTANT!** Engines on sawmills after Rev. A7.01 are equipped with a muffler rain cap to keep water out of the muffler and engine. If the sawmill is stored outside or transported during rainy weather, the muffler must be covered. The rain flap is available for previous revision sawmills ([See Section 4.4](#)).



Change the engine oil and oil filter every 250 hours of operation.

### 3.3 Cooling System



Clean the radiator fins every 8 hours of operation. Spray the radiator with water from a hose or compressed air to clean sawdust from the radiator fins. Do not use a pressure sprayer.



**CAUTION!** Failure to keep the radiator fins clear of sawdust and/or dirt may cause the engine to overheat resulting in damage to the engine.

### 3.4 Battery



Check the battery electrolyte level every 50 hours of operation. See manufacturer's manual for instructions.



**DANGER!** Batteries expel explosive gases. Keep sparks, flames, burning cigarettes, or other ignition sources away at all times. Always wear safety goggles and a face shield when working near batteries. Failure to do so will cause serious injury.<sup>1</sup>



**WARNING!** Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

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1. Battery Council International, copyright 1987

### 3.5 Alternator Belt



The alternator belt is self-tensioning and should not need adjustment. If the battery continues to not charge properly or the belt continues to squeal after the initial belt adjustment, replace the belt.

1. Release the blade tension and remove the blade from the sawmill if necessary. Turn the key switch to OFF (0) and remove the key.
2. Remove the drive belt cover and alternator cover.
3. Pry the belt idler up and remove the belt from the alternator and engine pulleys.
4. While holding the idler up, install the new belt around the alternator and engine pulleys.
5. Release the idler on top of the belt and reinstall the alternator and drive belt covers.

### 3.6 Air Cleaner



Replace the air cleaner cartridge every 200 hours of operation. Change the cartridge more often if operating the sawmill in dirty conditions or if engine performance indicates a new cartridge is necessary.

### 3.7 RPM Adjustments



**WARNING!** Remove the blade before performing any engine service. Failure to do so may result in serious injury.



Check the RPM with a tachometer every 200 hours of operation. High-end RPM should be 3100 RPM and low-end RPM should be 1500 RPM.

Before checking the RPM, make sure belt and brake strap tensions are correct (See Saw-mill Maintenance). Also check oil, fuel, and coolant levels.

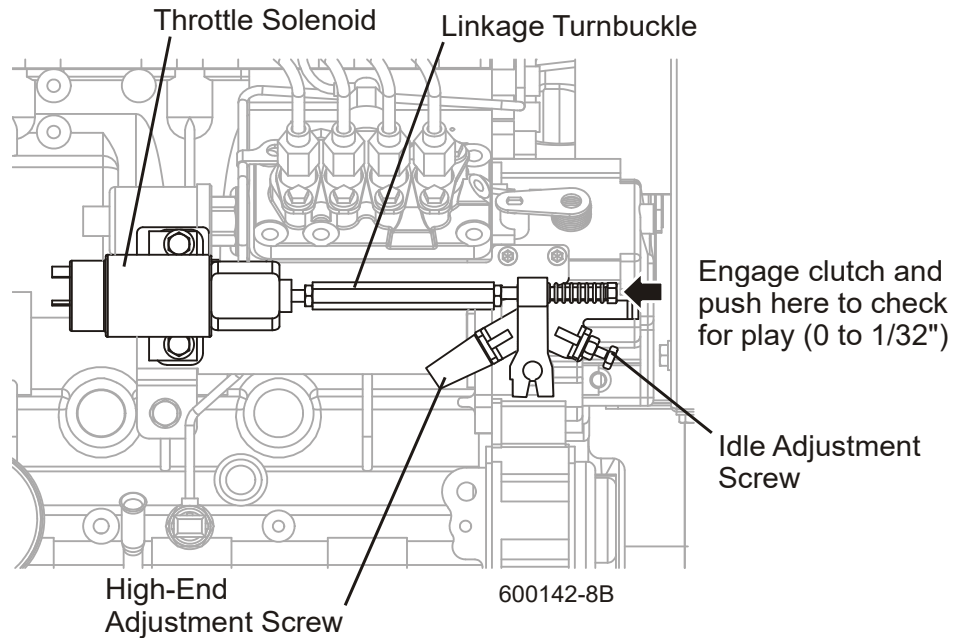
Make sure the throttle solenoid linkage is adjusted properly. With the clutch disengaged, the throttle linkage should rest against the idle adjustment screw. With the clutch engaged, the linkage should rest against the high-end adjustment screw and leave 0" to 1/32" of play in the linkage.



**CAUTION!** Failure to properly adjust the throttle solenoid linkage may cause damage to the solenoid.

1. To adjust the throttle solenoid linkage, disengage the clutch and loosen the solenoid mounting bolts. Adjust the solenoid as far to the right as possible and retighten the mounting bolts. Engage the clutch and recheck the amount of play in the linkage. If there is more than 1/32" of play in the linkage with the clutch engaged, disengage the clutch and turn the linkage turnbuckle. Repeat adjustments to achieve 0"-1/32" of play in the linkage with the clutch engaged.

See Figure 3-1.



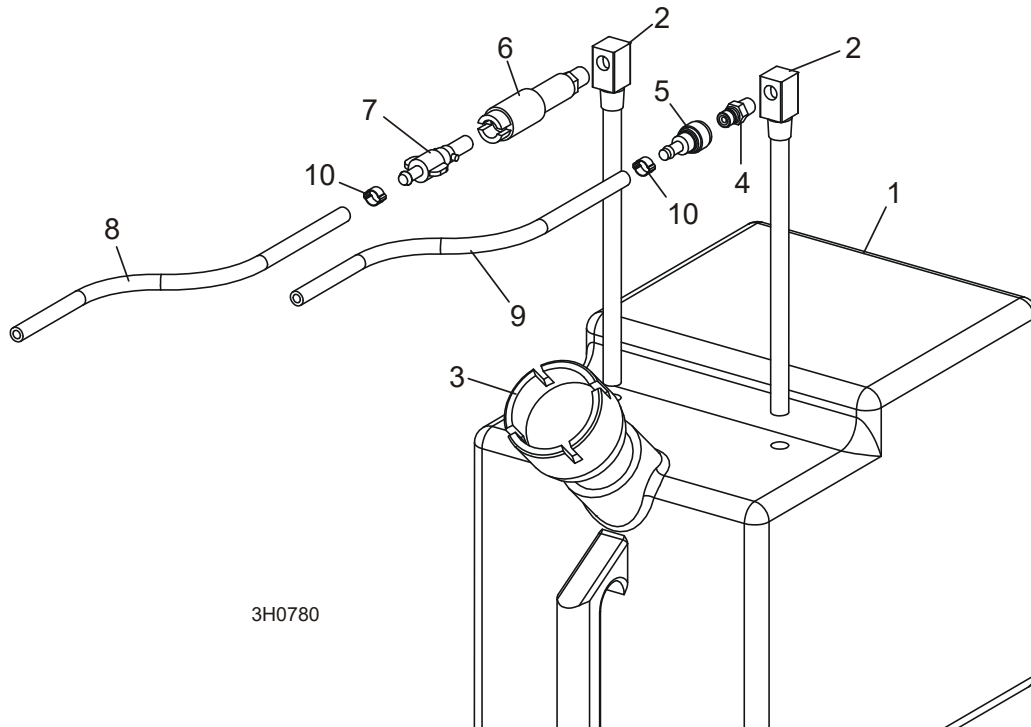
**FIG. 3-1**

2. Start the engine to measure the low-end RPM. Let idle for 10 minutes.
3. With the engine at idle, check the low-end RPM. Adjust to 1500. To decrease speed, loosen the idle adjustment screw. To increase speed, tighten the idle adjustment screw. The high-end adjustment screw should not be adjusted.
4. After the RPM settings are made, shut the engine off.



## SECTION 4 REPLACEMENT PARTS

### 4.1 Fuel Tank Assembly (D51/D62)



3H0780

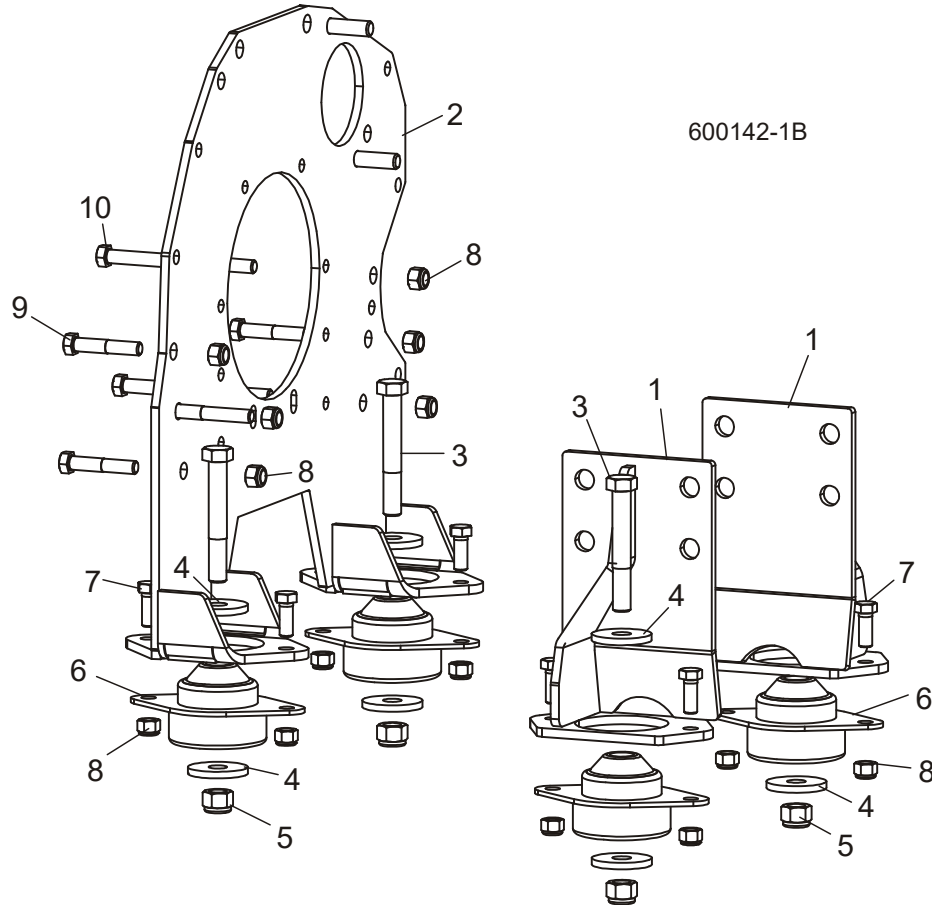
REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	<b>TANK ASSEMBLY, 5 GALLON DIESEL</b>	A12132	1	
1	Tank, 5 Gallon Fuel	P12166	1	◆
2	Pickup, 9" Fuel	P12172	2	
3	Cap, 3/5 Gallon Fuel Tank	P09683	1	
4	Fitting, 1/4" NPT Male Quick Disconnect	015583	1	
5	Fitting, Female Quick Disconnect Barb	015582	1	
6	Fitting, 1/4" NPT Plastic Female Disconnect	P12175	1	
7	Fitting, 1/4" Barb Plastic Male Disconnect	P12176	1	
8	<b>HOSE, 1/4" ID FUEL</b>	P642	5.83 Ft.	
9	<b>HOSE, 5/16" ID FUEL</b>	016338	7 Ft.	
10	<b>CLAMP, 11/16" HOSE</b>	P12739	2	
	<b>ADDITIVE, DIESEL FUEL 16OZ BOTTLE</b>	004878 <sup>1</sup>	1	
	<b>BULB KIT, DIESEL PRIMER</b>	061080	1	

<sup>1</sup> Stanadyne Performance Formula helps eliminate contaminants and water in fuel, prevents gelling in cold weather, and improves lubrication of fuel system parts. 16 oz. bottle treats 60 gallons of diesel fuel.

# D51

## 4 Replacement Parts Engine Mount Assembly (All Except Tier 4)

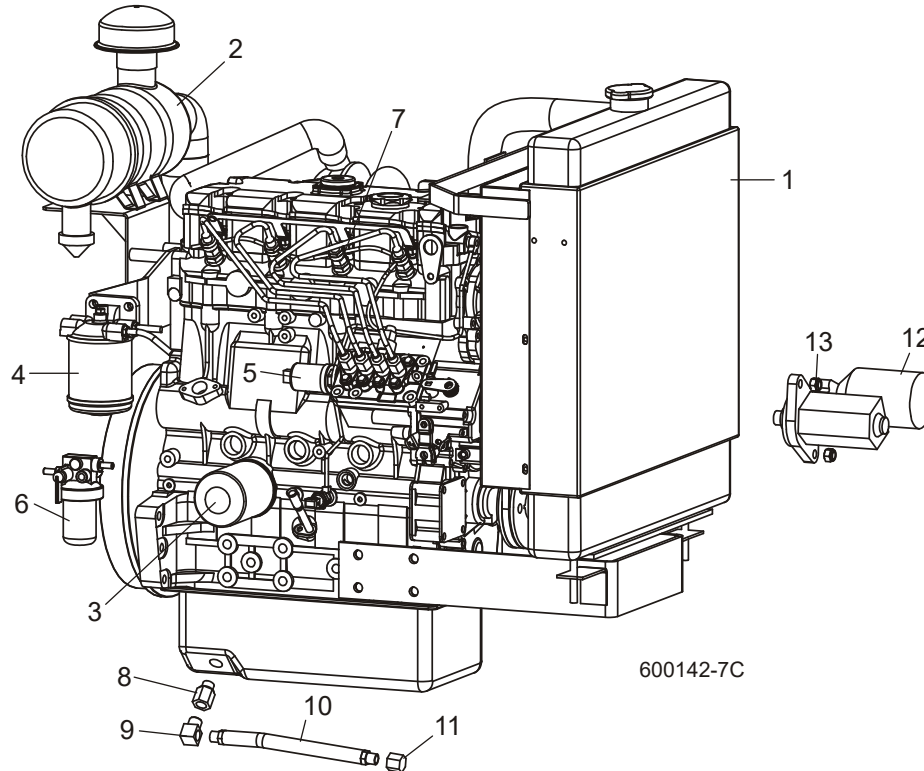
### 4.2 Engine Mount Assembly (All Except Tier 4)



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	MOUNT WELDMENT, CATERPILLAR ENGINE FRONT	045640	2
2	MOUNT WELDMENT, CATERPILLAR ENGINE REAR	045634 <sup>1</sup>	1
3	BOLT, 1/2-13 X 3 1/2" HEX HEAD GRADE 5	F05008-61	4
4	WASHER, .52" X 1.69"	014632	8
5	NUT, 1/2-13 HEX NYLON LOCK	F05010-8	4
6	BUSHING, VIBRATION ISOLATOR	036095	4
7	BOLT, 3/8-16 X 1" HEX HEAD GRADE 5	F05007-87	8
8	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	14
9	BOLT, 3/8-16 X 2" HEX HEAD GRADE 5	F05007-124	3
10	BOLT, 3/8-16 X 4 1/2" HEX HEAD	F05007-35	2

<sup>1</sup> Rear Mount Weldment 045634 revised to accommodate new starter mounting bolts (Rev. A4.00).

## 4.3 Engine Assembly (D51/D62)



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	<b>COVER, D51/D62 ENGINE</b>	036516	1
	<b>ENGINE, CATERPILLAR 3024C 51HP</b>	046421 <sup>1</sup>	1
1	Radiator Parts ( <a href="#">See Section 4.9</a> )		
2	Air Cleaner Parts (Enginaire VLR supplied after 2/05 - <a href="#">See Section 4.5</a> )		
	Air Cleaner Parts (Baldwin supplied before 2/05 - <a href="#">See Section 4.6</a> )		
3	Filter, Caterpillar Oil #150-4140	046066	1
4	Filter Assembly, Caterpillar Fuel #033-7854	046069	1
	Filter, Caterpillar Fuel #067-6987	046068	1
	Pump, Caterpillar Fuel Transfer #176-7712	046070	1
	O-Ring, Caterpillar Fuel Pump Mount #176-7719	046071	1
5	Solenoid, Caterpillar Fuel Shutoff #217-5204	046072 <sup>2</sup>	1
6	Filter Assembly, Caterpillar Fuel/Water Separator #183-5455	046073	1
	Filter, Caterpillar Fuel/Water Separator #183-5446	046074	1
	O-Ring, Fuel/Water Separator Mount #183-5444	046075	1
7	Plug, Caterpillar Glow #172-4585	046076	4
	Switch, Caterpillar Oil Pressure #217-5791	046077 <sup>2</sup>	1
	Switch, Caterpillar Water Temp #217-5793	046078 <sup>2</sup>	1
	Washer, Caterpillar Oil Pressure Switch Mount #153-5936	046079	1

# D51

## 4

### Replacement Parts Engine Assembly (D51/D62)

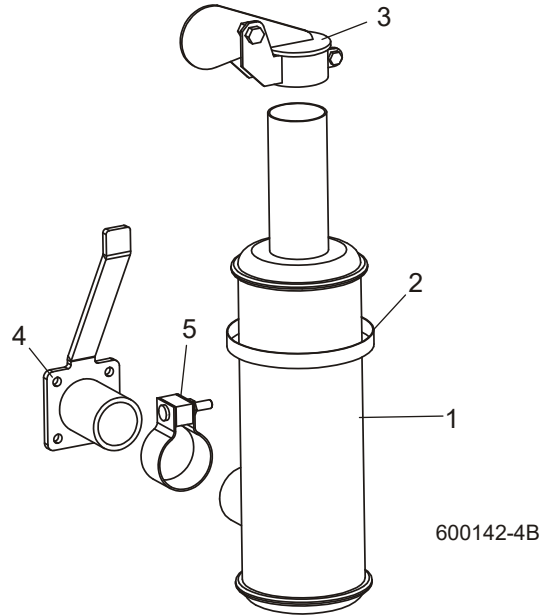
	Gasket, Caterpillar Exhaust Flange #153-7920	046067	1	
	Gasket, Caterpillar Valve Cover #217-5866	046065	1	
	Belt, D51/D62 Engine Fan (37") #1250-0351	054956	1	
	Bushing, Upper Radiator Mount	057918	2	
	Bushing, Lower Radiator Mount	018734	2	
8	<b>FITTING, M16 X 3/8" NPT</b>	046025	1	
9	<b>FITTING, 3/8" NPT STREET ELBOW</b>	046026	1	
10	<b>HOSE, 3/8" NPT X 9 5/8" LONG RUBBER</b>	P10082	1	
11	<b>FITTING, 3/8" NPT PIPE CAP</b>	P04332	1	
	<b>STARTER KIT, DENSO UPGRADE</b>	036652 <sup>3</sup>	1	
	Plate, Cat Starter Drill Template	047684 <sup>3</sup>	1	
12	Starter, Denso Caterpillar	036570 <sup>3</sup>	1	
13	<b>NUT, 10MM-1.25 HEX NYLON LOCK</b>	F81033-6 <sup>3</sup>	2	
	<b>WIRE ASSEMBLY, STARTER TO ALTERNATOR</b>	052048 <sup>3</sup>	1	
	<b>HEATER, CAT ENGINE BLOCK #3100049 (OPTIONAL)</b>	038422	1	
	<b>SUPPORT ASSEMBLY, CAT BEARING LT70 (D51/D62) (OPTIONAL)</b> ( <a href="#">See Section 4.13</a> )			

<sup>1</sup> Replaces Caterpillar engine 3014 (WM #045630). Better availability from vendor.

<sup>2</sup> Use Adapter Cable 052267 to connect Fuel Shutoff Solenoid, Oil Pressure Switch or Temperature Switch to sawmills prior to Rev. A5.03.

<sup>3</sup> Denso Starter 036570 replaces starter 046080 supplied with Caterpillar engines prior to Rev. A4.00. Wire assembly 052048 replaces wire assembly 051291 used with old starter. Use retrofit kit 036652 to replace starter on previous revisions. Kit includes new starter and template for drilling mounting holes in old engine mount bracket.

## 4.4 Muffler Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	MUFFLER	014093	1	
2	CLAMP, 5" WORM	014096	1	
3	CAP, EXHAUST RAIN DEFLECTOR	038438 <sup>1</sup>	1	
4	BRACKET WELDMENT, D51/D62 MUFFLER MOUNT	045627	1	
5	CLAMP, MUFFLER 2" NELSON 90869A	014205	1	

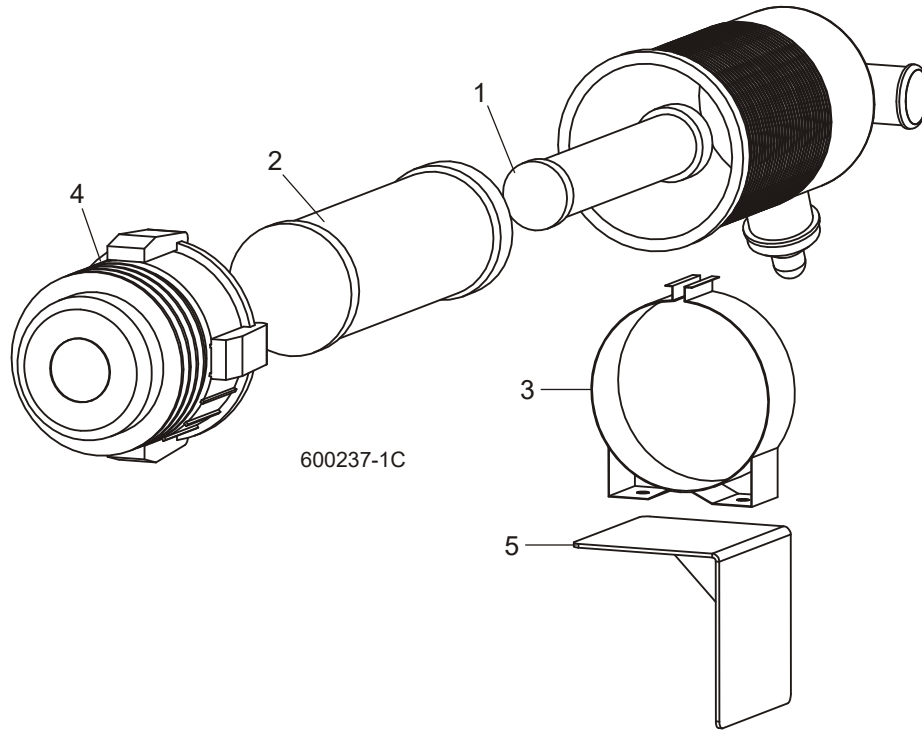
<sup>1</sup> Rain Deflector Cap 038438 replaces Stack 014094 and Clamp 014095 to prevent water from entering muffler and engine (Rev. A7.01). Customers with previous revisions should retrofit stack with cap.

# D51

## 4 Replacement Parts Air Cleaner Assembly

### 4.5 Air Cleaner Assembly

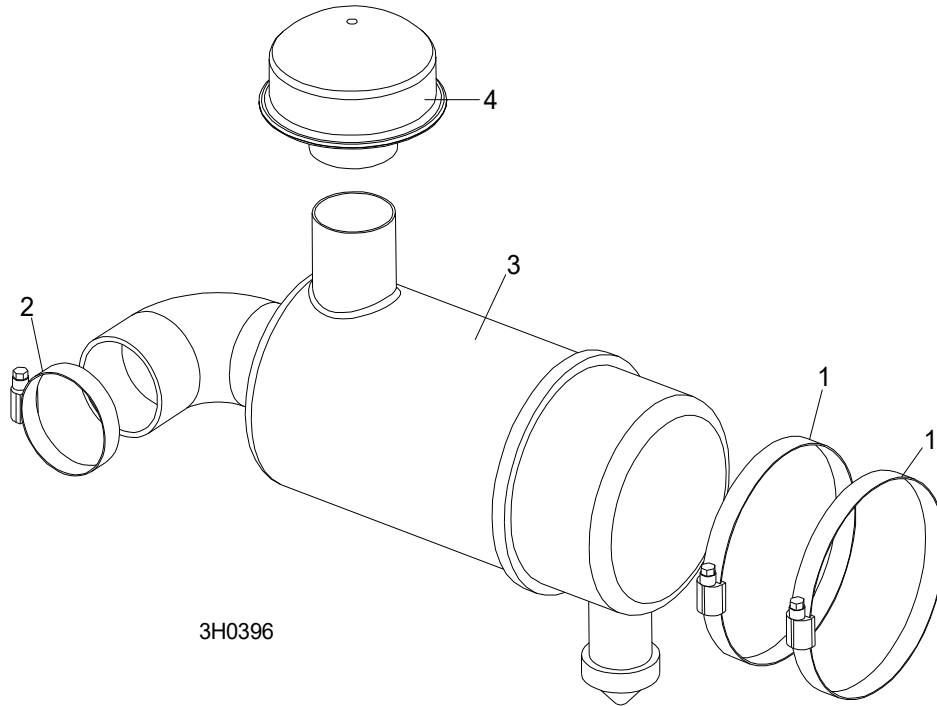
2/05 and later



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	<b>CLEANER, CAT AIR #13000359</b>	061051	1	
1	Element, Air Cleaner Safety	028598	1	
2	Element, Air Cleaner Primary	028597	1	
3	Strap, Cat Air Cleaner Mount	057785	1	
4	Cap, Cat Air Filter	057917	1	
5	<b>MOUNT WELDMENT, CAT AIR CLEANER MOUNT</b>	057786	1	

## 4.6 Air Cleaner Assembly

Before 2/05

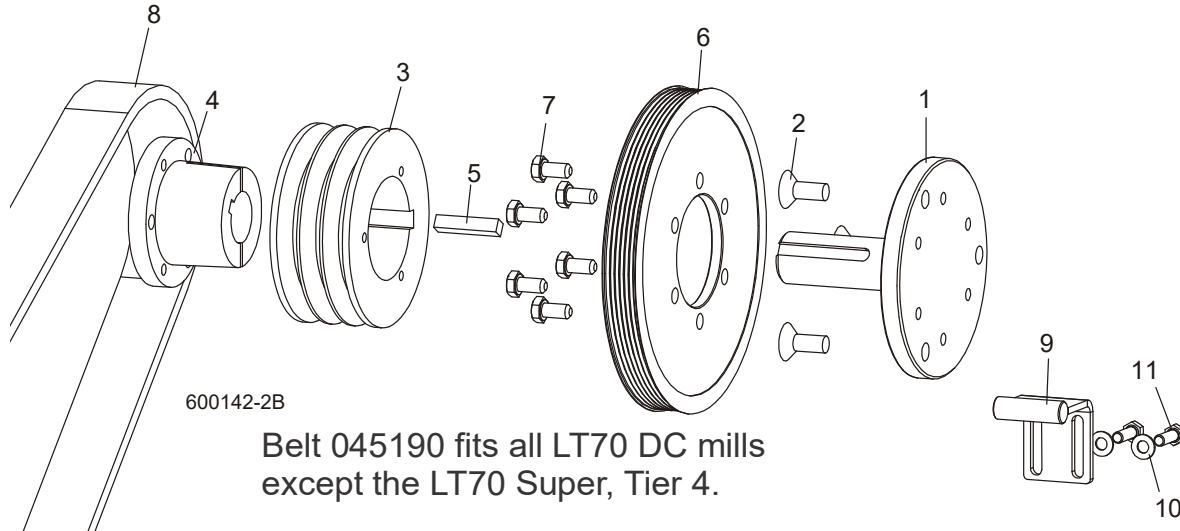


REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	CLAMP, 5" WORM	014096	2	
2	CLAMP 2 1/2" WORM	P09895	1	
3	CLEANER, WISCONSIN AIR	014246	1	
	Filter, Air Cleaner Cartridge	014386	1	
4	COVER, WISCONSIN ENGINE	014247	1	

# D51

## 4 Replacement Parts Drive Assembly

### 4.7 Drive Assembly

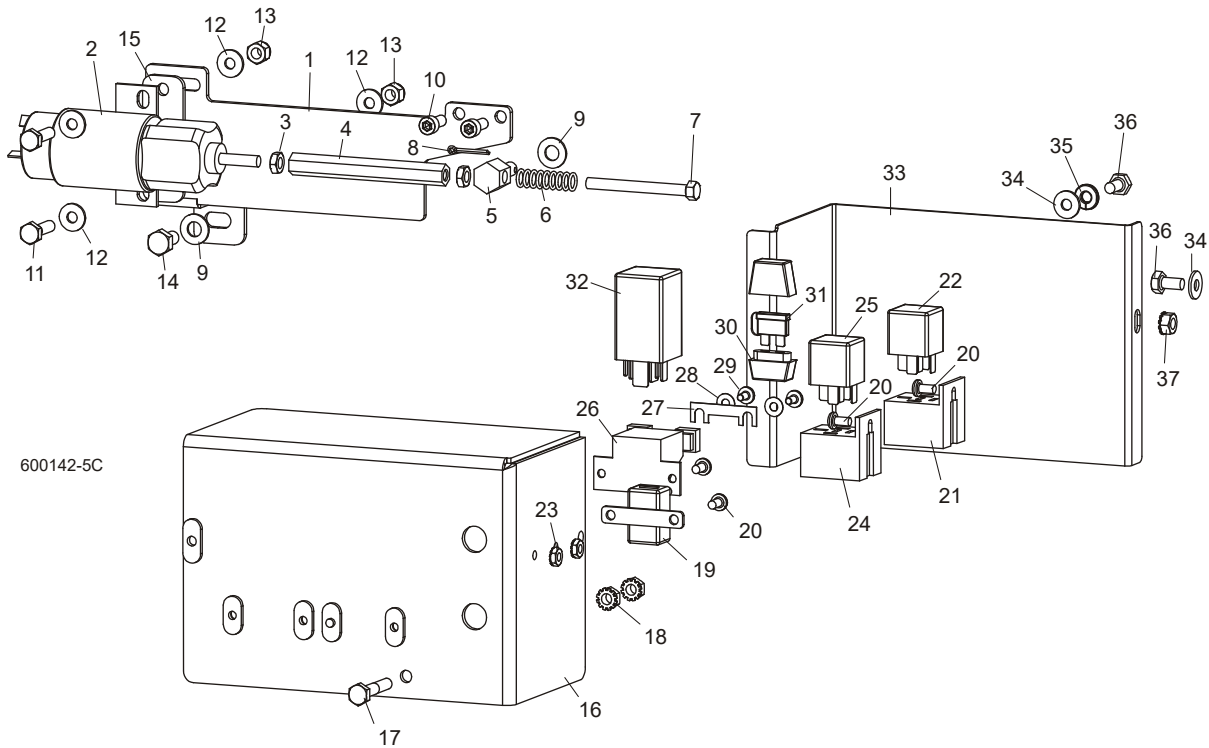


REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	SHAFT, CATERPILLAR DRIVE	045633	1
2	BOLT, M12 X 1.75 X 30MM SOCKET FLAT HEAD	F05007-194	3
3	SHEAVE, 3Q5V55 DRIVE	034693 <sup>1</sup>	1
4	BUSHING, 1 7/16" Q1	034697 <sup>1</sup>	1
5	KEY, 3/8" X 3/8" X 1 7/8"	014693	1
6	PULLEY, 9" OD POLY-V	033878	1
7	BOLT, M10 -1.5 X 20MM HEX HEAD FULL THREAD GRADE 8.8	F05004-207	6
8	BELT, 3/5VFX950 DRIVE	045190	1
9	BRACKET WELDMENT, BELT SUPPORT	034590	1
10	WASHER, 5/16" SAE FLAT	F05011-17	2
11	BOLT, 5/16-18 X 1" HEX HEAD GRADE 5	F05006-48	2

<sup>1</sup> 034693 drive sheave no longer available (Rev. B4.09). Use 006320 drive sheave and 038174 SDS bushing for service.



## 4.8 Throttle & Relay Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	<b>BRACKET, THROTTLE ACTUATOR MOUNT</b>	045625	1
	<b>SOLENOID KIT, THROTTLE, YANMAR/CAT</b>	074475	1
2	Solenoid, Throttle	045848	1
	Instruction Sheet, Solenoid Adjustment	074475-2058	1
3	<b>NUT, 1/4-28 HEX JAM</b>	F05010-113	2
4	<b>LINK, THROTTLE ACTUATOR</b>	045850	1
5	<b>PIN, THROTTLE ACTUATOR</b>	045849	1
6	<b>SPRING, .42" X 1.34" X .061"</b>	P11644	1
7	<b>BOLT, 1/4-28 X 2 1/2" HEX HEAD GRADE 5</b>	F05005-159	1
8	<b>PIN, 3/32" X 3/4" COTTER</b>	F05012-9	1
9	<b>WASHER, 5/16" SAE FLAT</b>	F05011-17	2
10	<b>BOLT, M6-1.0 X 16MM SOCKET HEAD</b>	F05004-206	2
11	<b>BOLT, 1/4-20 X 1" HEX HEAD GRADE 5</b>	F05005-101	2
12	<b>WASHER, 1/4" SAE FLAT</b>	F05011-11	4
13	<b>NUT, 1/4-20 HEX NYLON LOCK</b>	F05010-69	2
14	<b>BOLT, M8-1.25 X 16MM HEX HEAD</b>	F05004-47	1
15	<b>PLATE, THROTTLE SOLENOID SPACER</b>	046023	1

	<b>BRACKET ASSEMBLY, CATERPILLAR GLOW PLUG/THROTTLE RELAY (2005)</b>	052236 <sup>1</sup>	1	
	<b>BRACKET ASSEMBLY, CATERPILLAR GLOW PLUG/THROTTLE RELAY</b>	051339 <sup>1</sup>	1	
16	Bracket Weldment, Glow Plug Relay Mount	036269	1	
17	Bolt, 1/4-20 x 1 1/2" Hex Head Full Thread	F05005-31	1	
18	Nut, 1/4-20 Self-Locking Hex	F05010-9	2	
19	Breaker, 15A Manual Reset Circuit	E20430	1	
20	Screw, #10-24 x 3/8" Phillips Head	F05004-3	6	
	Relay Assembly, Caterpillar Autoclutch Engage	051338	1	
	Socket Assembly, Throttle Relay Replacement	052829	1	
21	Socket, Relay Plug	050033	1	
22	Relay, Throttle	051335	1	
23	Nut, #10-24 Self-Locking Hex	F05010-14	2	
	Relay Assembly, Caterpillar Starter	051449 <sup>2</sup>	1	
	Socket Assembly, Starter Relay Replacement	052828	1	
24	Socket, Relay Plug	050033	1	
25	Relay, Starter	051335	1	
	Harness Assembly, Caterpillar Relay (2005)	052235 <sup>1</sup>	1	
	Harness Assembly, Caterpillar Relay	051272 <sup>1</sup>	1	
	Socket Kit, Cat Glow Plug Relay Replacement	052827	1	
26	Socket, Glow Plug Relay w/Fuse Holder	024554	1	
27	Fuse Link, 50 Amp	024597	1	
28	Washer, M5 Wave	F81052-4	2	
29	Screw, M5-0.8 x 8mm Phillips Head Black Oxide	F81000-14	2	
30	Fuseholder, ATO Molded Case 16AWG Leads	024555 <sup>3</sup>	1	
31	Fuse, 4A ATO Blade (Pink)	024150-4	1	
	Resistor Kit, Caterpillar Glow Plug	052663 <sup>4</sup>	1	
32	Relay, Glow Plug	023359 <sup>5</sup>	1	
33	<b>COVER, RELAY ASSEMBLY</b>	045824	1	
34	<b>WASHER, 1/4" SAE FLAT</b>	F05011-11	2	
35	<b>WASHER, 1/4" SPLIT LOCK</b>	F05011-14	1	
36	<b>BOLT, 1/4-20 X 1/2" HEX HEAD</b>	F05005-15	2	
37	<b>NUT, 1/4-20 SELF-LOCKING HEX</b>	F05010-9	1	

<sup>1</sup> Relay Harness 051272 (Bracket Assembly 051339) used for Caterpillar engines prior to Rev. A5.03 (Manufacturer change to engine connectors). Use Relay Harness 052235 (Bracket Assembly 052236) for later revisions.

<sup>2</sup> Starter Relay assembly 051449 added 10/03 to improve starting performance. Previous revisions were retrofitted (Kit #051498).

<sup>3</sup> Replaces 024444 originally supplied. Duplicate parts.

<sup>4</sup> Glow Plug Resistor added to shutoff glow plugs after 20 seconds to prevent damage (Rev. A7.03). Use kit 052663 to retrofit previous revisions.

<sup>5</sup> Lombardini Glow Plug Relay 023359 replaces Bosch Relay 024598 to improve durability (Rev. A2.03). New relay requires manual operation of the glow plugs ([See Form #1151](#)).

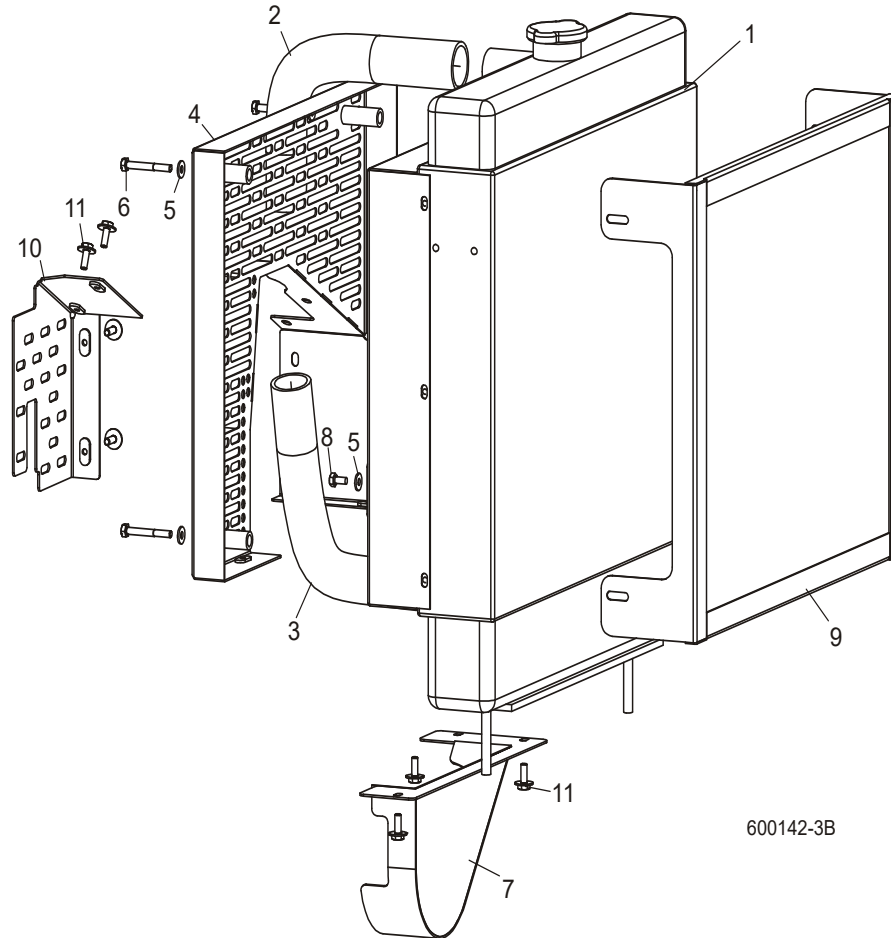
# D51

## Replacement Parts

Radiator Assembly (All Except D55 Tier 4)

4

### 4.9 Radiator Assembly (All Except D55 Tier 4)



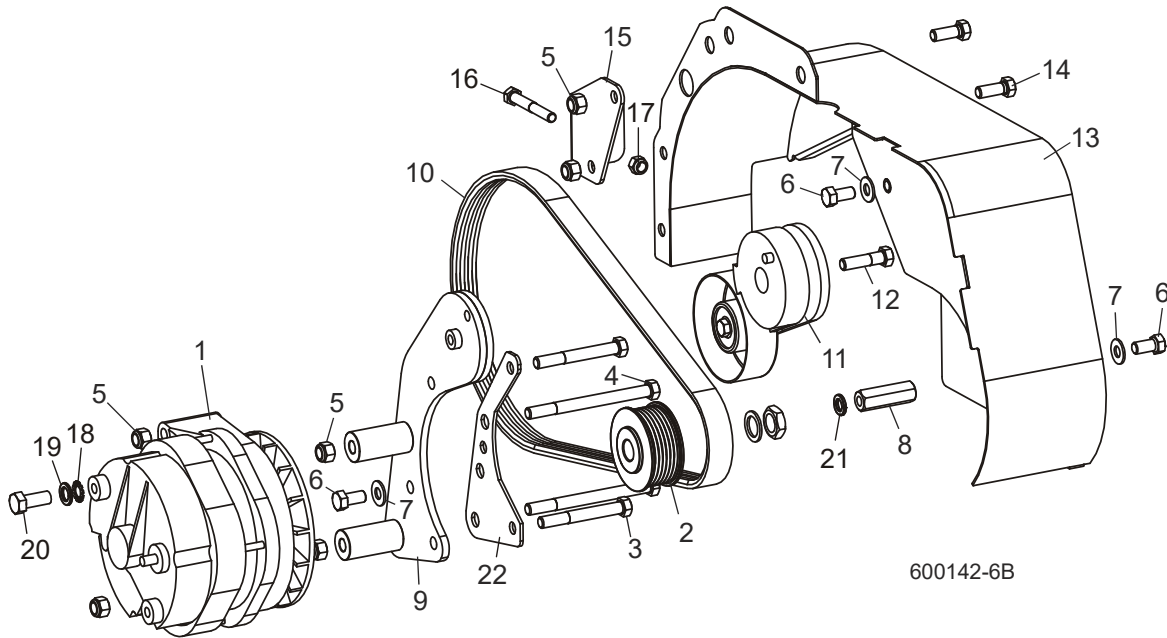
REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	RADIATOR, CATERPILLAR DIESEL ENGINE	046019	1
2	HOSE, UPPER CAT RADIATOR	046027	1
3	HOSE, LOWER CAT RADIATOR	046028	1
4	GUARD WELDMENT, REAR CAT RADIATOR	046015	1
5	WASHER, 1/4" SAE FLAT	F05011-11	4
6	BOLT, 1/4-20 X 2" HEX HEAD GRADE 5	F05005-125	3
7	GUARD WELDMENT, LOWER CAT RADIATOR	045847	1
8	BOLT, 1/4-20 X 1/2" HEX HEAD	F05005-15	1
9	GUARD WELDMENT, FRONT CAT RADIATOR	045616	1
10	GUARD WELDMENT, CAT IDLER PULLEY	036656 <sup>1</sup>	1
11	SCREW, 1/4-20 X 3/4" HEX W/CONICAL WASHER HEAD	F05005-134	7
	BUSHING, UPPER RADIATOR MOUNT D51/D62	061084	2
	BUSHING, LOWER RADIATOR MOUNT D51/D62	061085	2

<sup>1</sup> Added to guard idler pulley supplied in place of unused alternator (Rev. A4.01).

# D51

## 4 Replacement Parts Alternator Assembly

### 4.10 Alternator Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	WIRE ASSEMBLY, ALTERNATOR PLUG	024537	1	
	ALTERNATOR ASSEMBLY, 190 AMP	034500 <sup>1</sup>	1	
1	Alternator, 190 Amp	034499	1	◆
2	Pulley, 2 3/4" O.D. Alternator	046402	1	
3	BOLT, 3/8-16 X 3" HEX HEAD GRADE 5	F05007-73	2	
4	BOLT, 3/8-16 X 4 1/2" HEX HEAD	F05007-35	2	
5	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	4	
6	BOLT, 3/8-16 X 3/4" HEX HEAD	F05007-27	3	
7	WASHER, 3/8" SAE FLAT	F05011-3	3	
8	SPACER, ALTERNATOR IDLER	034771 <sup>3</sup>	1	
9	BRACKET WELDMENT, ALTERNATOR MOUNT	045642	1	
10	BELT, 6PK1055	034513 <sup>2</sup>	1	
11	TENSIONER, ALTERNATOR BELT	034464	1	
12	BOLT, 3/8-16 X 1 1/2" HEX HEAD GRADE 5	F05007-78	1	
13	GUARD WELDMENT, ALTERNATOR BELT	045645	1	
14	BOLT, 3/8-16 X 1" HEX HEAD GRADE 5	F05007-87	2	
15	BRACKET, FUEL FILTER MOUNT	046021	1	
16	BOLT, 5/16-18 X 2 1/2" HEX HEAD GRADE 5	F05006-80	1	
17	NUT, 5/16-18 HEX NYLON LOCK	F05010-58	1	
	WIRE ASSEMBLY, ALTERNATOR GROUND	050941	1	
18	WASHER, 3/8" EXTERIOR STAR LOCK	F05011-36	1	

# D51

## Replacement Parts *Alternator Assembly*

**4**

<b>19</b>	<b>WASHER, 10MM SPLIT LOCK</b>	F05011-88	1	
<b>20</b>	<b>BOLT, M10-1.5 X 25 MM HEX HEAD GRADE 8.8</b>	F81003-11	1	
<b>21</b>	<b>WASHER, 3/8" SPLIT LOCK</b>	F05011-4	1	
<b>22</b>	<b>PLATE, CATERPILLAR ALTERNATOR SPACER</b>	036317 <sup>3</sup>	1	

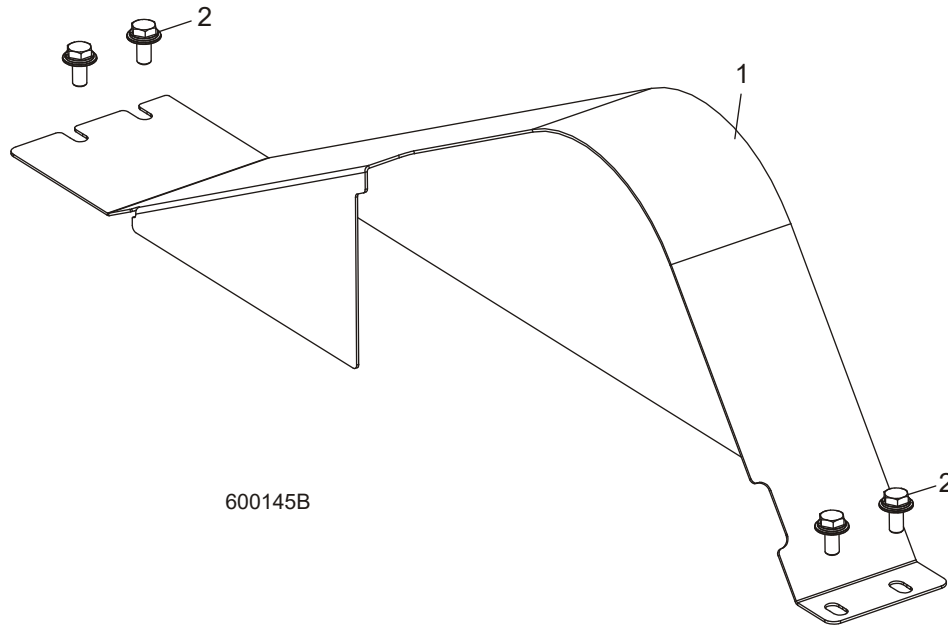
<sup>1</sup> Alternator assembly no longer available for service. Purchase component parts.

<sup>2</sup> 034513 description was 6PK415 (changed by Goodyear to metric 5/08).

<sup>3</sup> Spacer plate 036317 added Rev. A2.04 to improve alternator drive alignment. Requires shorter spacer 034771.

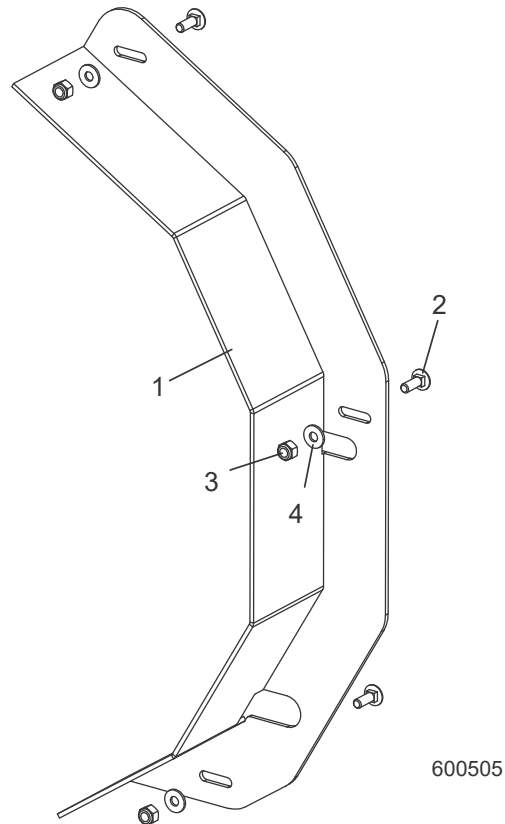
## 4 Replacement Parts Engine Pulley Guards (All Except Tier 4)

### 4.11 Engine Pulley Guards (All Except Tier 4)



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	COVER WELDMENT, D42/D51/D55/D62 TOP BELT	065520	1	
2	BOLT, 5/16-18 X 3/4" HEX HEAD WITH WASHERS	F05006-101	4	

## 4.12 Drive Belt Guard Assembly

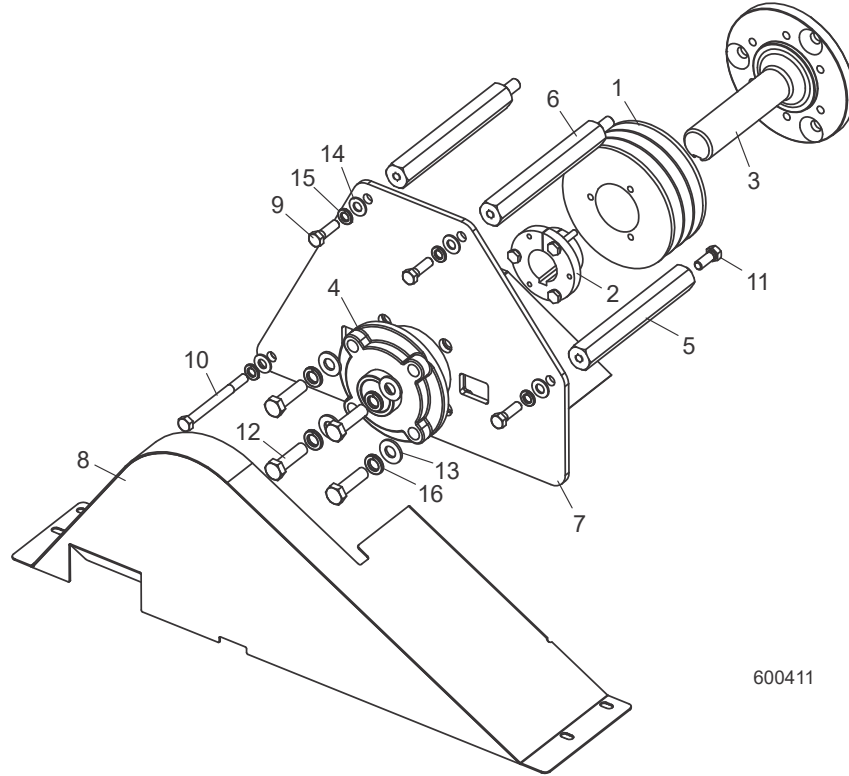


REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	<b>GUARD ASSEMBLY, LT70 DRIVE BELT</b>	079141	1	
1	Guard Weldment, LT70 Drive Belt Guard	079132	1	
2	Bolt, 1/4-20x3/4 Carriage	F05005-113	3	
3	Nut, 1/4-20 Nylock	F05010-69	3	
4	Washer, 1/4 SAE Flat	F05011-11	3	

# D51

## 4 Replacement Parts Bearing Support (D51/D62) (Optional)

### 4.13 Bearing Support (D51/D62) (Optional)



600411

REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	<b>SUPPORT ASSEMBLY, CAT BEARING LT70 (D51/D62)</b>	061132	1
1	Sheave, 3/5v5.5 SDS	006320	1
2	Bushing, 1 7/16 SDS	038174	1
3	Shaft, Caterpillar Stub Bearing Support	071325	1
4	Bearing, 1-7/16 4-Bolt Flange	071491	1
5	Spacer, 1 Hex x 7.31	075533	1
6	Spacer, 1 Hex x7.31, w/Stud	075755	2
7	Weldment, Cat Bearing Support	075787	1
8	Weldment, Top Pulley Cover	076373	1
9	Bolt, 3/8-16x1 1/4" Hex Head Grade 5	F05007-123	3
10	Bolt, 3/8-16x4" Hex Head Grade 5	F05007-126	1
11	Bolt, 3/8-16x1 "Hex Head Grade 5	F05007-87	1
12	Bolt, 1/2-13x1 3/4" Hex Head Grade 5 FT	F05008-88	4
13	Washer, 1/2" SAE Flat	F05011-2	4
14	Washer, 3/8" Flat SAE	F05011-3	4
15	Washer, 3/8" Split Lock	F05011-4	4
16	Washer, 1/2" Split Lock	F05011-9	4



# INDEX

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## M

maintenance 3-1  
  air cleaner 3-7  
  air filter 3-7  
  alternator belt 3-6  
  battery 3-5  
  cooling system 3-4  
  engine oil 3-3  
  RPM adjustments 3-8

---

## P

parts list  
  air cleaner assembly 4-6, 4-7  
  alternator assembly 4-12  
  drive assembly 4-8  
  engine assembly 4-3  
  engine mount assembly 4-2  
  fuel tank assembly 4-1  
  motor assembly 4-3  
  muffler assembly 4-5  
  pulley guards 4-14  
  radiator assembly 4-11  
  relay assembly 4-9  
  throttle assembly 4-9

---

## R

replacement parts 4-1

---

## S

starting 2-1