# **D35 Engine**

### Safety, Operation, Maintenance & Parts Manual

LT30	rev. K3.01
LT40	rev. K5.01
LT30HD	rev. K4.01
LT30HD	rev. K4.01
LT40HD Super	rev. K4.00
LT50HD	rev. A6.00



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

Form #1572

#### 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.



**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.

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Wood-Mizer 8180 West 10th Street Indianapolis, Indiana 46214

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#### **SECTION 1 ABOUT THIS MANUAL**

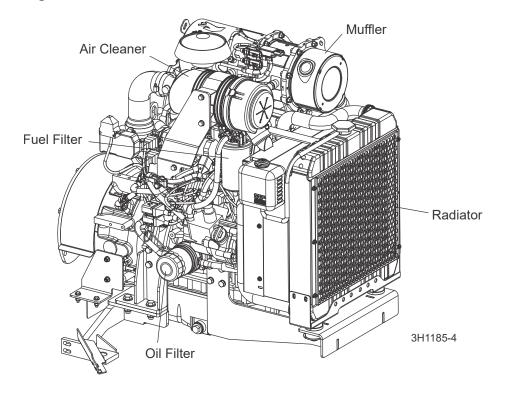
This manual is provided as a supplement to the equipment manufacturer's manuals. This manual provides information specific to the use of this equipment on the Wood-Mizer® sawmill. Refer to the sawmill operator's manual and manufacturer's manual before attempting to operate this equipment.



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

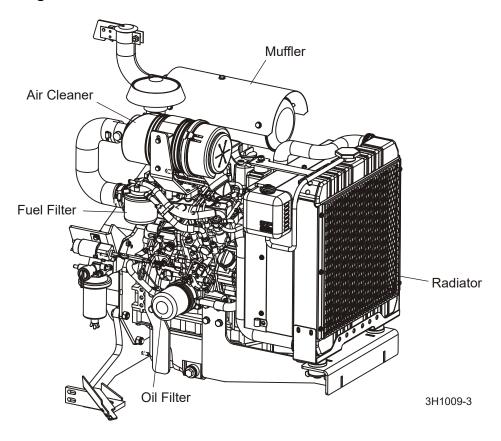
The information and instructions given in this manual do not amend or extend the limited warranties for the equipment given at the time of purchase.

#### D35 Tier4 Engine



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## D35 Tier2 Engine



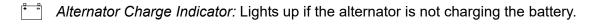


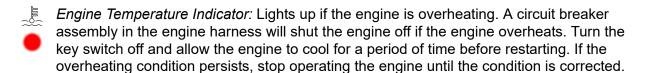
#### **SECTION 2 OPERATION**

#### 2.1 Starting The Engine

#### **Engine Control Lights**

**See Figure 2-1. D35 Tier2 Engine Only:** The following indicator lights are located on the sawmill control panel.





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

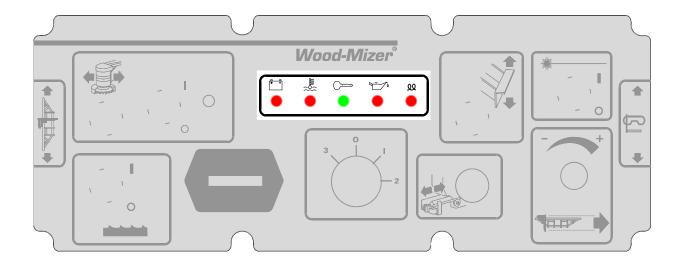


FIG. 2-1 D35 TIER2 ONLY

See Figure 2-2. D35 Tier4 Engine Only: Check the Manufacturer's Manual for the oper-

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ation of the engine controller located on the sawmill control panel.

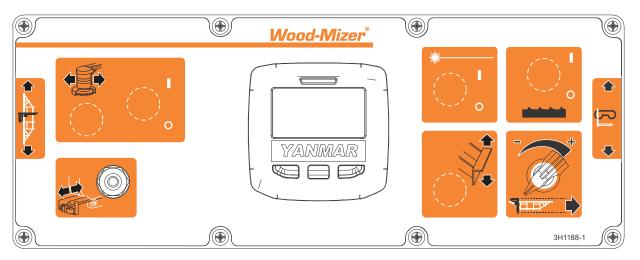


FIG. 2-2 D35 TIER4 ONLY

**See Table 2-1. IMPORTANT! D35 Tier2 Engine Only:** The glow plug sensing relay provides 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 TIER2 ENGINE ONLY** 

**D35 Tier2 Engine Only: NOTE:** The glow plug light will stay on indefinitely when the key is in the pre-start (1) position. The glow plug light will go out after the engine is started.



**CAUTION!** Avoid leaving the key in the pre-start (1) position for more than 30 seconds while the engine is not running. Doing so will drain the sawmill battery which may reduce its service life.

#### **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.

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**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. Damage to the engine may result.



**CAUTION!** Let engine idle for 2 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.** Turn the key switch on the control panel to the on (#1) position.
- **4.** Wait the recommended glow plug on time (See <u>TABLE 2-1</u>)
- **5.** Turn the key switch to the start (#2) position and release.

#### **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.

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#### **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.



**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.



#### 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 man-<sup>8</sup> ual 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!** The engine is 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.

Change the engine oil and oil filter after the first 50 hours of operation, then 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 8> 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 man-<sup>50</sup> ual 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.



**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.

#### 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.

#### Air Cleaner 3.6



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.



#### See Table 3-1.

Engine	High End RPM	Low End RPM
D35	3000	1500

TABLE 3-1

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

**D35 Tier4 Engine Only:** Check the Manufacturer's Manual to see if the RPM adjustment is necessary.

**D35 Tier2 Engine Only:** See below for RPM adjustment.

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.** Disengage the clutch and loosen the solenoid mounting bolts to adjust the throttle solenoid linkage.
- 2. Adjust the solenoid as far to the right as possible and retighten the mounting bolts.
- 3. Engage the clutch and recheck the amount of play in the linkage.

If there is more that 1/32" of play in the linkage with the clutch engaged, disengage the clutch and turn the linkage turnbuckle.

**4.** Repeat adjustments to achieve 0"-1/32" of play in the linkage with the clutch engaged.

#### See Figure 3-1.

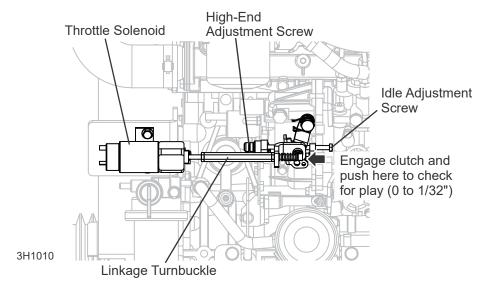
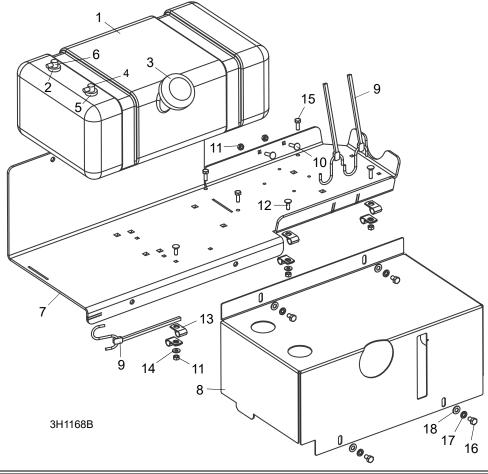


FIG. 3-2 TIER2 ENGINE ONLY

- 5. Start the engine to measure the low-end RPM; let idle for 10 minutes.
- **6.** With the engine at idle, adjust the low-end RPM to 1500. To increase speed, tighten the idle adjustment screw. The high-end adjustment screw should not be adjusted.

## **SECTION 4 REPLACEMENT PARTS**

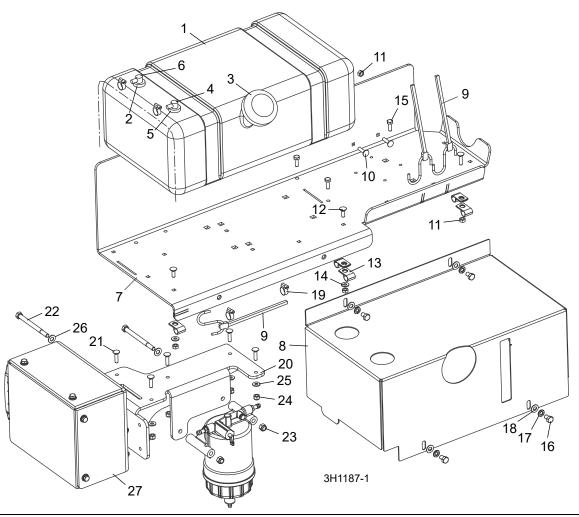
# 4.1 Fuel Tank (D35 Tier2/D47)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART#	QTY.	
	TRAY ASSEMBLY, LT40/50 DIESEL TANK	074830	1	
1	Tank, 5 Gallon Low Pro Diesel	103928	1	
2	Grommet, Shut Off 046881	061250	1	
3	Cap, Fuel Tank Diesel 080185BE	061257	1	
4	Fitting, Return/tube Diesel 468489	061256	1	
5	Grommet, Shut Off 046881	061250	1	
6	Fitting, Pick-Up/Tube Diesel 468871A	061255	1	
7	Tank Weldment, Fuel LT40/50	103943	1	
8	Cover, Fuel Tank	103867	1	
9	Strap, 20" Rubber	P11668	3	
10	Bolt, 1/4-20 X 1" Carriage Head	F05005-34	3	

11	Nut, 1/4-20 Hex Lock	F05010-21	5	
12	Bolt, 1/4-20 x 3/4" Carriage	F05005-113	2	
13	Clamp, 1/2" EMT Coated	P07584	6	
14	Washer, 1/4" SAE Flat	F05011-11	2	
15	Bolt, 1/4-20 x 3/4" Hex Head Grade 5	F05005-123	3	
16	Bolt, 5/16-18 x 1/2" Hex Head Grade 5	F05006-15	4	
17	Washer, 5/16" Split Lock	F05011-13	4	
18	Washer, 5/16" SAE Flat	F05011-17	4	
	Hose, Fuel 5/16" EPA 15G CARB	R02423-3	7 Ft.	
	Hose, Fuel 1/4" EPA 15G CARB	R02423-2	8 Ft.	

# 4.2 Fuel Tank (D35 Tier4 Only)



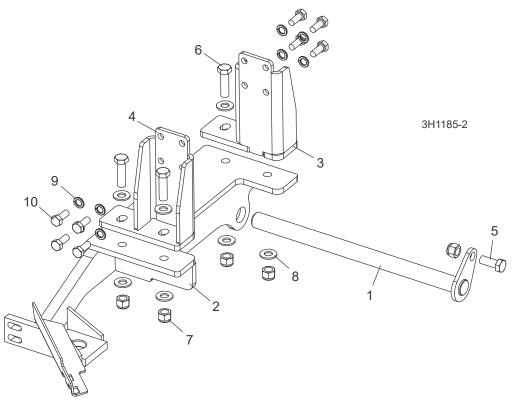
REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART#	QTY.	
	TRAY ASSEMBLY, LT40/50 TIER4 DIESEL TANK	079637	1	
1	Tank, 5 Gallon Low Pro Diesel	103928	1	
2	Grommet, Shut Off 046881	061250	1	
3	Cap, Fuel Tank Diesel 080185BE	061257	1	
4	Fitting, Return/tube Diesel 468489	061256	1	
5	Grommet, Shut Off 046881	061250	1	
6	Fitting, Pick-Up/Tube Diesel 468871A	061255	1	
7	Tank Weldment, Fuel LT40/50	103943	1	
8	Cover, Fuel Tank	103867	1	
9	Strap, 20" Rubber	P11668	3	
10	Bolt, 1/4-20 X 1" Carriage Head	F05005-34	3	
11	Nut, 1/4-20 Hex Lock	F05010-21	5	



40	D. H. 4/4 00 0/4" O	E05005 440	0	1 )
12	Bolt, 1/4-20 x 3/4" Carriage	F05005-113	2	
13	Clamp, 1/2" EMT Coated	P07584	6	
14	Washer, 1/4" SAE Flat	F05011-11	2	
15	Bolt, 1/4-20 x 3/4" Hex Head Grade 5	F05005-123	3	
16	Bolt, 5/16-18 x 1/2" Hex Head Grade 5	F05006-15	4	
17	Washer, 5/16" Split Lock	F05011-13	4	
18	Washer, 5/16" SAE Flat	F05011-17	4	
19	Hose Clamp, 7/32in-5/8in	P649	4	
	Separator Assembly, D35 T4 ECU F/W	079409	1	
20	Mount Weldment, D35 T4 ECU F/W Separator	079471	1	
21	Bolt, 1/4-20x1 Carriage	F05005-34	5	
22	Bolt, 5/16-18x4 Hex Head Grade 5	F05006-109	2	
23	Nut, 5/16-18 Nylok Hex	F05010-58	2	
24	Nut, 1/4-20 Nylock	F05010-69	5	
25	Washer, 1/4 SAE Flat	F05011-11	5	
26	Washer, 5/16 SAE Flat	F05011-17	2	
27	Relays/Fuse Assembly, D35 T4 ECU (See Section 4.7 for Parts)	079422	1	
	Hose, Fuel 5/16" EPA 15G CARB	R02423-3	7 Ft.	
	Hose, Fuel 1/4" EPA 15G CARB	R02423-2	8 Ft.	

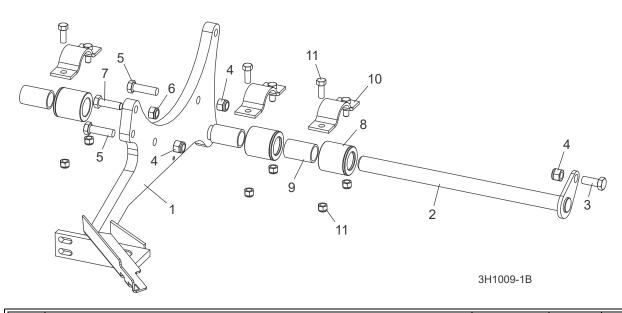


# 4.3 Engine Mount Assembly (D35 Tier4)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	PIN WELDMENT, MOTOR PIVOT KUBOTA	015855	1	
2	PIVOT WELDMENT, D35 T4 ENGINE PIVOT	079365	1	
3	MOUNT WELDMENT, D35 T4 LEFT ENGINE MOUNT	079372	1	
4	MOUNT WELDMENT, D35 T4 RIGHT ENGINE MOUNT	079377	1	
5	BOLT, 1/2-13X1 1/4 HEX HEAD GRADE 5	F05008-37	1	
6	BOLT, 1/2-13X1 3/4 HEX HEAD GRADE 5 FT	F05008-88	4	
7	NUT, 1/2-13 NYLON HEX LOCK	F05010-8	5	
8	WASHER, 1/2 SAE FLAT	F05011-2	8	
9	WASHER, 10MM SPLIT LOCK	F05011-88	16	
10	BOLT, M10-1.5X25MM HEX HEAD GRADE 8.8	F81003-11	16	

# 4.4 Engine Mount Assembly (D35 Tier2/D47)

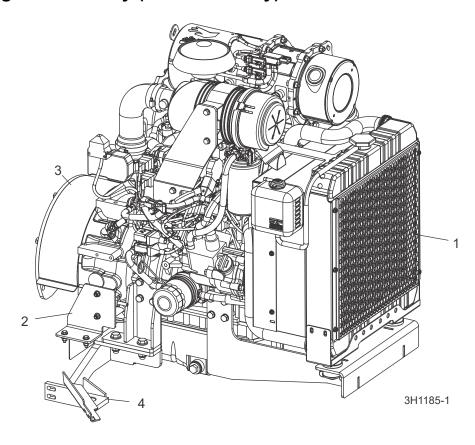


REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	MOUNT WELDMENT, LT30/40 YANMAR ENGINE	057452	1	
2	PIN WELDMENT, KUBOTA ENGINE MOUNT PIVOT	015855	1	
3	BOLT, 1/2-13 X 1 1/4" HEX HEAD GRADE 5	F05008-37	1	
4	NUT, 1/2-13 HEX NYLON LOCK	F05010-8	3	
5	BOLT, 1/2-13 X 1 3/4" HEX HEAD GRADE 5	F05008-88	2	
6	NUT, M12 X 1.75 HEX NYLON LOCK	F05010-209	1	
7	BOLT, M12 X 1.75 X 90MM HEX HEAD FULL THREAD	F05004-250	1	
	BUSHING ASSEMBLY, MOTOR MOUNT	016380	3	
8	Bushing, 2" OD x 2"	016378	1	•
9	Bearing, 1" x 1 1/4" x 2"	016379	1	•
10	CLAMP WELDMENT, MOTOR MOUNT	014540	3	
11	BOLT, 3/8-16 X 1" HEX HEAD	F05007-7	3	
12	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	6	

Replacement Parts D35doc031020 4-6



# 4.5 Engine Assembly (D35 Tier4 Only)



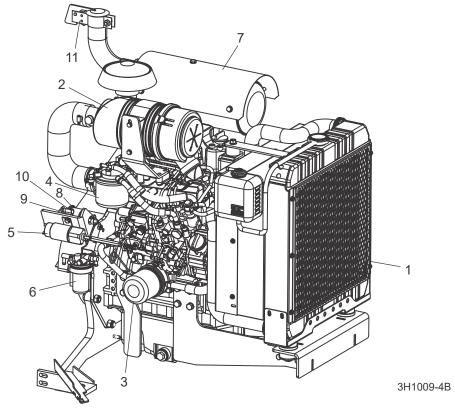
REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	Cover, Engine	CED34	1	
	Engine, 35.9HP Yanmar Diesel (Tier4)	079323	1	
1	Radiator Parts ( <u>See Section 4.10</u> )	n/a	1	
	Air Cleaner Assembly, 35.9HP Yanmar	006541	1	
	Air Filter, Yanmar 3TNV88 #129087-12510	057948	1	
	Cap, Air Filter Assembly Yanmar	061100	1	
	Filter, Oil #129150-35170	057935	1	
	Filter, Fuel #129A00-55800	061308	1	
	Throttle Solenoid/Relay Parts (See Section 4.7)	n/a	1	
	Filter Assembly, Fuel/Water Separator #129A00-59700	061309	1	
	Bracket, Fuel/Water Separator Mount	006561	1	
	Cup Assembly, Fuel/water Separator	061436	1	
	Seal, Fuel/water Separator	061318	1	
	Filter, Water Separator Yanmar #129A00-55730	061310	1	
	Muffler Assembly, 35.9HP Yanmar Diesel	006543	1	
2	Assy, D35 T4 Fuel Feed Pump	079418	1	



	Nut, 1/4-20 Nylock	F05010-69	4
	Washer, 1/4 SAE Flat	F05011-11	8
	Hose Clamp, 7/32in-5/8in	P649	2
	Hose Clamp, 7/32"-5/8"	P649	4
	Clamp, 1/2" EMT Coated	P07584	1
	Cap, Rain D35 Tier 4 KDPF-1	061304	1
3	Drive Parts ( <u>See Section 4.9</u> )	·	
	Alternator Parts (See Section 4.13)		
4	Bearing Support Parts ( <u>See Section 4.17</u> )		
5	Engine Mount Parts ( <u>See Section 4.3</u> )		
	Gasket, Yanmar Bonnet #129004-11310	061773	1
	Gasket Set, Yanmar Engine #719823-92960	057931	1
	Seal, Yanmar Front Main #119934-01800	057932	1
	Injector Assembly, Yanmar #129A00-53100	078716	1
	Switch, Yanmar Oil Pressure #119761-39450	061245	1
	Seal, Yanmar Rear Main #129795-01780	061311	1
	Starter Motor, Yanmar #129242-77010	057937	1
	Thermostat, Yanmar #129155-49801	057938	1
	Gasket, Thermostat #129150-49811	061312	1
	Gasket, Thermostat Cover #129795-49551	044652	1
	Pump, Yanmar Water #129A01-42000	061313	1
	Gasket, Yanmar Water Pump #129486-42021	057940	1
	Sender, Yanmar Water Temperature #129927-44900	061172	1
	Fan, Engine 7 Blade 360mm #121267-44741	AP0114	1
	Plug, Yanmar Oil Drain #119640-01640	057943	1
	Seal, Yanmar Oil Drain and Water Temp Sensor #22190-120002	057944	1
	Plug, Yanmar Glow #129008-77800	057945	1
	Dip Stick, Yanmar Oil #129004-34802	057946	1
	Belt, Yanmar Fan #25132-003600	044668	1
	Heater, Yanmar Engine Block #171015-77900	061078	1
	Cable, Heater Engine Block D35/D47	061226	1



# 4.6 Engine Assembly (D35 Tier2 Only)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	COVER, ENGINE	CED34	1
	ENGINE, 35.9HP YANMAR DIESEL (TIER2 ENGINE FOR OUTSIDE U.S. ONLY)	074236	1
1	Radiator Parts (See Section 4.12)		
2	Air Cleaner Assembly, 35.9HP Yanmar	006541	1
	Air Filter, E1 Primary Element Enginaire	028597	1
	Cap, Air Filter Assembly Yanmar	061100	1
3	Filter, Oil #129150-35153-12	057935	1
4	Filter, Fuel #119802-55801	057933	1
5	Throttle/Fuel Pump Parts ( <u>See Section 4.8</u> )		
6	Filter Assembly, Fuel/Water Separator	040345	1
	Bracket, Fuel/Water Separator Mount	006561	1
	Filter, Water Separator Yanmar	061099	1
7	Muffler Assembly, 35.9HP Yanmar Diesel	006543	1
8	Pump, Yanmar Fuel Feed	061074	1
9	Hose Clamp, 7/32"-5/8"	P649	4
10	Clamp, 1/2" EMT Coated	P07584	1
11	Cap, Yanmar D35 Rain #129087-13530	061073	1
	Drive Parts ( <u>See Section 4.10</u> )		•
	Alternator Parts (See Section 4.14)		

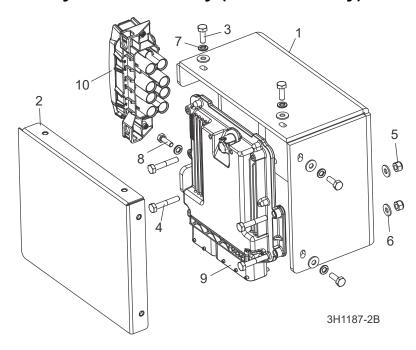




Bearing Support Parts ( <u>See Section 4.17</u> )		
Engine Mount Parts ( <u>See Section 4.4</u> )		
Gasket, Yanmar Bonnet #129004-11310	061773	1
Gasket Set, Yanmar Engine #719823-92960	057931	1
Seal, Yanmar Front Main #119934-01800	057932	1
Injector Assembly, Yanmar #729604-53200	057934	1
Switch, Yanmar Oil Pressure #114250-39450	057936	1
Seal, Yanmar Rear Main #129120-01780	057057	1
Starter Motor, Yanmar #129242-77010	057937	1
Thermostat, Yanmar #129155-49801	057938	1
Gasket, Yanmar Thermostat #129795-49551	044652	1
Pump, Yanmar Water #129004-42001	057939	1
Gasket, Yanmar Water Pump #129486-42021	057940	1
Sender, Yanmar Water Temperature #121250-44901	044655	1
Solenoid, Yanmar Fuel #119653-77950	044656	1
Diode, Yanmar Solenoid Relay #119643-66900	044657	1
Timer, Yanmar Air Heater #128300-77920	057941	1
Fan, Engine 7 Blade 360mm #121267-44741	AP0114	1
Gasket, Yanmar Head #129001-01340	057942	1
Plug, Yanmar Oil Drain #119640-01640	057943	1
Seal, Yanmar Oil Drain #22190-220002	057944	1
Plug, Yanmar Glow #129008-77800	057945	1
Dip Stick, Yanmar Oil #129004-34802	057946	1
Belt, Yanmar Fan #25132-003600	044668	1
Pipe, Yanmar Fuel Return #129004-49610	057947	1
Spring, Governor Yanmar #129573-61700	061053	1
Strainer, Yanmar Fuel	056587	1
Heater, Yanmar Engine Block #171015-77900	061078	1
Cable, Heater Engine Block D35/D47	061226	1



## 4.7 ECU & Relay/Fuse Assembly (D35 Tier4 Only)

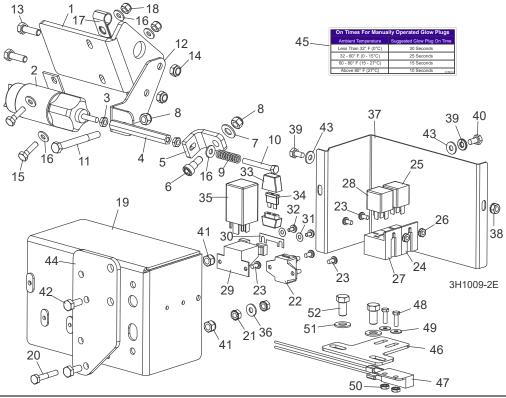


REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	RELAY/FUSE ASSEMBLY, 35.9HP ECU	079422	1
1	Plate, D35 T4 ECU Mount Plate	079420	1
2	Cover Weldment, D35 T4 Relays/Fuse	079428	1
3	Bolt, 1/4-20x3/4 Hex Head Grade 5	F05005-123	4
4	Bolt, 1/4-20x1 1/2 Hex Head Grade 5	F05005-124	4
5	Nut, 1/4-20 Nylock	F05010-69	4
6	Washer, 1/4 SAE Flat	F05011-11	8
7	Washer, 1/4 Split Lock	F05011-14	6
8	Bolt, M6-1 x 20 Class 8 Hex Head	F05020-6	2
9	Yanmar T4 Final ECU (Supplied w/Engine)	N/A <sup>1</sup>	1
10	Assembly, D46 T4 Fuse/Relay (Supplied w/Engine)	N/A	1
	Relay, Start/Glow Plug 30M9206	061315	2
	Fuse, Max 60 299060	061316	1
	Fuse, Max 80 299080	061317	1
	SWITCH ASSEMBLY, TIER 4 MAGNETIC THROTTLE	073599-1 <sup>2</sup>	1

<sup>&</sup>lt;sup>1</sup> When replacing the ECU, it is necessary to update the software of the ECU using the designated service tool. Please contact Yanmar for details.

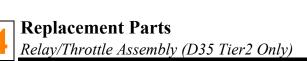
 $<sup>^{2}</sup>$  Switch 073599-1 replaced switch 073599 per ECN 38034 as of 7/14/2021.

# 4.8 Relay/Throttle Assembly (D35 Tier2 Only)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART#	QTY.	
	PUMP ASSEMBLY, 35.9HP THROTTLE/FUEL	074248	1	
1	Plate, Yanmar Throttle Solenoid Mount	006566	1	
	Solenoid Kit, Throttle, Yanmar/Cat	074475	1	
2	Solenoid, Throttle	045848	1	
	Instruction Sheet, Solenoid Adjustment	074475-2058	1	
3	Nut, 1/4-28 Hex Jam	F05010-113	2	
4	Link, Throttle Actuator	045850	1	
5	Plate, Short Throttle Connecting	006567	1	
6	Bolt, 3/8" X 5/16-18" Socket Head Shoulder	F05007-159	1	
7	Washer, 3/8" SAE Flat	F05011-3	1	
8	Nut, 5/16-18 Hex Nylon Lock	F05010-58	2	
9	Spring, .42" x 1.34" x .061"	P11644	1	
10	Bolt, 1/4-28 x 2" Hex Head Grade 5	F05005-188	1	
11	Bolt, 5/16-18 x 3" Hex Head Grade 5	F05006-62	1	
12	Bracket, Fuel/Water Separator Mount	006561	1	
13	Bolt, M8-1.25 x 1mm Hex Head	F05004-40	2	
14	Nut, M8 Hex Nylon Lock	F05010-132	2	
15	Bolt, 1/4-20 x 1" Hex Head Grade 5	F05005-101	2	
16	Washer, 1/4" Sae Flat	F05011-11	5	
17	Clamp, 1/2" EMT Coated	P07584	1	

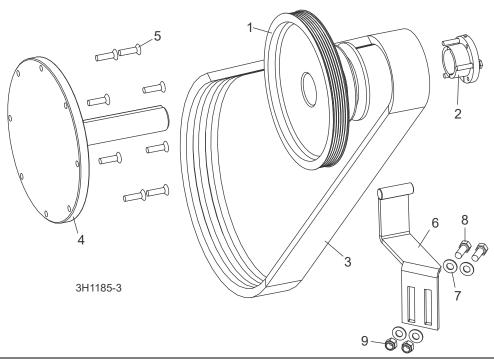
Replacement Parts D35doc031020 4-12





18	Nut, 1/4-20 Hex Nylon Lock	F05010-69	2	
	RELAY ASSEMBLY, YANMAR W/COVER	074232	1	
	Bracket Assembly, Yanmar Relay (2012 )	069625	1	
19	Bracket Weldment, Glow Plug Relay Mount	036269	1	
20	Bolt, 1/4-20 x 1 1/2" Hex Head Full Thread	F05005-31	1	
21	Nut, 1/4-20 Self-Locking Hex	F05010-9	2	
22	Breaker, 15A Manual Reset Circuit	E20430	1	
23	Screw, #10-24 x 3/8" Phillips Head	F05004-3	6	
	Relay Assembly, Yanmar Throttle (2008)	053234	1	
24	Socket, Relay Plug	050033	1	
25	Relay, ISO 12V Coil w/Diode	051335	1	
26	Nut, #10-24 Hex	F05010-14	2	
	Relay Assembly, Yanmar Starter (2008)	053233	1	
27	Socket, Relay Plug	050033	1	
28	Relay, ISO 12V Coil w/Diode	051335	1	
	Relay Assembly, Yanmar Glow Plug (2012)	069624	1	
29	Socket, Glow Plug Relay w/Fuse Holder	024554	1	
30	Fuse Link, 50 Amp	024597	1	
31	Washer, M5 Wave	F81052-4	2	
32	Screw, M5-0.8 x 8mm Phillips Head Black Oxide	F81000-14	2	
33	Fuseholder, In-Line 3-20A ATC w/Cover	024555	1	
34	Fuse, 4A ATO Blade (Pink)	024150-4	1	
	Resistor Assembly, 3K Cat Glow Plug Wire	052662	1	
35	Relay, Diesel Glow Plug	023359	1	
36	Washer, 1/4" SAE Flat	F05011-11	1	
37	Cover, Relay Assembly	045824	1	
38	Nut, 1/4-20 Self-Locking Hex	F05010-9	1	
39	Washer, 1/4" Split Lock	F05011-14	1	
40	Bolt, 1/4-20 X 1/2" Hex Head	F05005-15	2	
41	Nut, 5/16-18 Hex Nylon Lock	F05010-58	2	
42	Bolt, 5/16-18 x 3/4" Hex Head	F05006-5	2	
43	Washer, 1/4" SAE Flat	F05011-11	2	
44	PLATE, GLOW PLUG RELAY MOUNT ADAPTOR	006523	1	
45	DECAL, GLOW PLUG OPERATION	015814	1	
46	BRACKET, SENSOR MOUNT	016617	1	
47	SENSOR, CATERPILLAR THROTTLE	051436	1	
48	BOLT, #10-24 X 5/8" HEX HEAD	F05004-18	2	
49	WASHER, #10 SAE FLAT	F05011-18	2	
50	NUT, #10-24 SELF-LOCKING HEX	F05010-14	2	
51	WASHER, 3/8" SAE FLAT	F05011-3	2	
52	BOLT, 3/8-16 X 3/4" HEX HEAD	F05007-27	2	

# 4.9 Drive Assembly (D35 Tier4 Only)

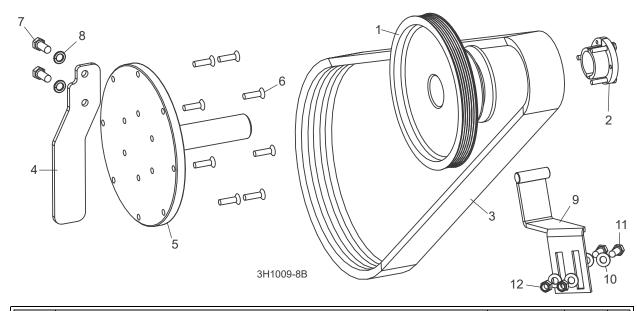


REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART#	QTY.	
1	SHEAVE, 5V X 4.46" POLY V (GAS/DIESEL)	016533	1	
2	BUSHING, SH X 1 7/16"	016535	1	
3	BELT, 3/5VFL765 KEVLAR	110268	1	
4	SHAFT, D35 T4 YANMAR LARGE STUB	079481	1	
5	BOLT, M8-1.25 X 30MM FLAT SOCKET HEAD	F05004-245	8	
6	BRACKET, DRIVE BELT SUPPORT	016364	1	
7	WASHER, 3/8" SAE FLAT	F05011-3	4	
8	BOLT, 3/8-16 X 1" HEX HEAD	F05007-7	2	
9	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	2	

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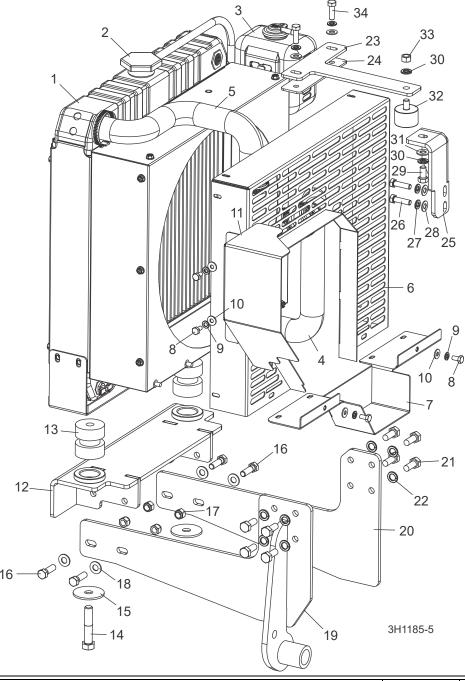


# 4.10 Drive Assembly (D35 Tier2)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	SHEAVE, 5V X 4.46" POLY V (GAS/DIESEL)	016533	1	
2	BUSHING, SH X 1 7/16"	016535	1	
3	BELT, 3/5VL770	046571	1	
4	PLATE, YANMAR ENGINE STOP	006620	1	
5	SHAFT, YANMAR LARGE DRIVE STUB (LONG)	071326	1	
6	BOLT, M8-1.25 X 30MM FLAT SOCKET HEAD	F05004-245	8	
7	BOLT, M10-1.5 X 25MM HEAD HEAD GRADE 8.8	F81003-11	2	
8	WASHER, 10MM SPLIT LOCK	F05011-88	2	
9	BRACKET, DRIVE BELT SUPPORT	016364	1	
10	WASHER, 3/8" SAE FLAT	F05011-3	4	
11	BOLT, 3/8-16 X 1" HEX HEAD	F05007-7	2	
12	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	2	

# 4.11 Radiator Assembly (D35 Tier4 Only)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	RADIATOR KIT, YANMAR #KR2	044804	1	
1	Radiator, Diesel Engines #129689-44510	057949	1	
2	Cap, Yanmar Radiator #129987-44570	044660	1	

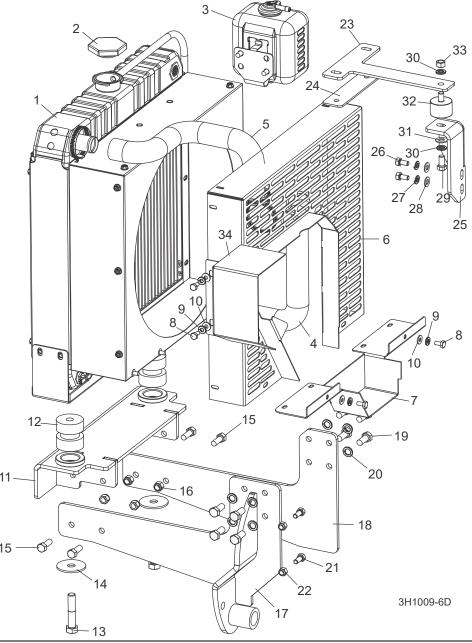
Replacement Parts D35doc031020 4-16



3	Bottle Assembly, Yanmar #123987-43600	040387	1	
4	Hose, Yanmar Lower Radiator #129689-49020	057950	1	
5	Hose, Yanmar Upper Radiator #129687-49010	057951	1	
	COVER ASSEMBLY, D35 T4 RADIATOR	079627	1	
6	Cover Weldment, D35 T4 Radiator	079477	1	
7	Cover Weldment, Radiator Lower	006604	1	
8	Bolt, 1/4-20 x 1/2" Hex Head	F05005-15	4	
9	Washer, 1/4" Split lock	F05011-14	4	
10	Washer, 1/4" SAE Flat	F05011-11	4	
11	Plate, D35 T4 Yanmar Alt Cover	079478	1	
	MOUNT ASSEMBLY, YANMAR LOWER RADIATOR	074229	1	
12	Mount Weldment, Yanmar Radiator	006530	1	
13	Bushing, Rubber Mount	018734	2	
14	Bolt, 1/2-13 x 2 13/4" Hex Head Grade 5	F05008-144 <sup>1</sup>	2	
15	Washer, Engine Mount	018751	2	
16	Bolt, 3/8-16x1 1/4 FT Hex Head Grade 5	F05007-123	4	
17	Nut, 3/8-16 Hex Nylon Lock	F05010-10	4	
18	Washer, 3/8 Flat SAE	F05011-3	4	
19	MOUNT WELDMENT, D35 T4 FRONT ENGINE	079350	1	
20	PLATE, YANMAR FRONT ENGINE MOUNT	058714	1	
21	BOLT, M10-1.5 X 25MM HEX HEAD GRADE 8.8	F81003-11	8	
22	WASHER, 10MM SPLIT LOCK	F05011-88	8	
	MOUNT ASSEMBLY, 35.9HP UPPER RADIATOR	074228	1	
23	Plate, Yanmar Top Radiator support	006531	1	
24	Plate, Top Radiator Mount Spacer	006557	1	
25	Plate, Yanmar Top Radiator Mount	006558	1	
26	Screw, M8-1.25x30 HHC	F05021-11	2	
27	Washer, 8mm Split Lock	F05011-45	4	
28	Washer, 5/16" SAE Flat	F05011-17	4	
29	Bolt, 3/8-16 x 3/4" Hex Head Grade 2	F05007-27	1	
30	Washer, 3/8" Split Lock	F05011-4	2	
31	Washer, 3/8" SAE Flat	F05011-3	1	
32	Bushing, Rubber Radiator Mount	028217	1	
33	Nut, 3/8-16 Hex	F05010-1	1	
34	Bolt, M8x1.25x25mm C/S 8.8 Din 933 HH	F05004-40	2	

 $<sup>^{1}\,\</sup>text{F05008-144}$  replaced F05008-74 per ECN 38392 on 2/22/22.

# 4.12 Radiator Assembly (D35 Tier2)



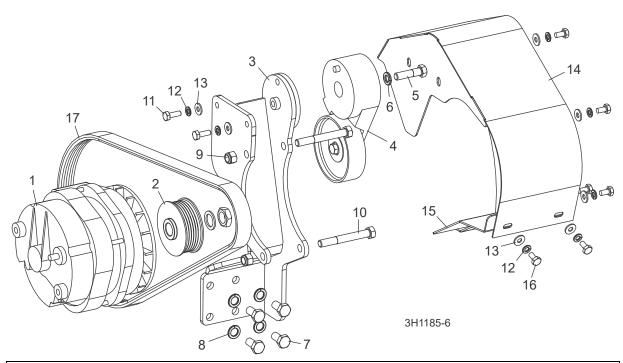
REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	RADIATOR KIT, YANMAR #KR2	044804	1	
1	Radiator, Diesel Engines #129689-44510	057949	1	
2	Cap, Yanmar Radiator #129987-44570	044660	1	
3	Bottle Assembly, Yanmar #123987-43600	040387	1	
4	Hose, Yanmar Lower Radiator #129689-49020	057950	1	





5	Hose, Yanmar Upper Radiator #129687-49010	057951	1	
6	COVER WELDMENT, RADIATOR	006607	1	
7	COVER WELDMENT, RADIATOR LOWER	006604	1	
8	BOLT, 1/4-20 X 1/2" HEX HEAD	F05005-15	4	
9	WASHER, 1/4" SPLIT LOCK	F05011-14	4	
10	WASHER, 1/4" SAE FLAT	F05011-11	4	
	MOUNT ASSEMBLY, YANMAR LOWER RADIATOR	074229	1	
11	Mount Weldment, Yanmar Radiator	006530	1	
12	Bushing, Rubber Mount	018734	2	
13	Bolt, 1/2-13 x 2 1/2" Hex Head Grade 5	F05008-74	2	
14	Washer, Engine Mount	018751	2	
15	Bolt, 3/8-16 x 1" Hex Head	F05007-7	4	
16	Nut, 3/8-16 Hex Nylon Lock	F05010-10	4	
17	MOUNT WELDMENT, YANMAR FRONT	058725	1	
18	PLATE, YANMAR FRONT ENGINE MOUNT	058714	1	
19	BOLT, M10-1.5 X 25MM HEX HEAD GRADE 8.8	F81003-11	8	
20	WASHER, 10MM SPLIT LOCK	F05011-88	8	
21	BOLT, 5/16-18 X 3/4" HEX HEAD	F05006-5	2	
22	NUT, 5/16-18 HEX NYLON LOCK	F05010-58	2	
	MOUNT ASSEMBLY, 35.9HP UPPER RADIATOR	074228	1	
23	Plate, Yanmar Top Radiator support	006531	1	
24	Plate, Top Radiator Mount Spacer	006557	1	
25	Plate, Yanmar Top Radiator Mount	006558	1	
26	Bolt, M8 x 125 x 16mm Hex Head	F05004-47	2	
27	Washer, 8mm Split Lock	F05011-45	2	
28	Washer, 5/16" SAE Flat	F05011-17	2	
29	Bolt, 3/8-16 x 3/4" Hex Head Grade 2	F05007-27	1	
30	Washer, 3/8" Split Lock	F05011-4	2	
31	Washer, 3/8" SAE Flat	F05011-3	1	
32	Bushing, Rubber Radiator Mount	028217	1	
33	Nut, 3/8-16 Hex	F05010-1	1	
34	COVER, YANMAR 35HP ALTERNATOR	008913	1	

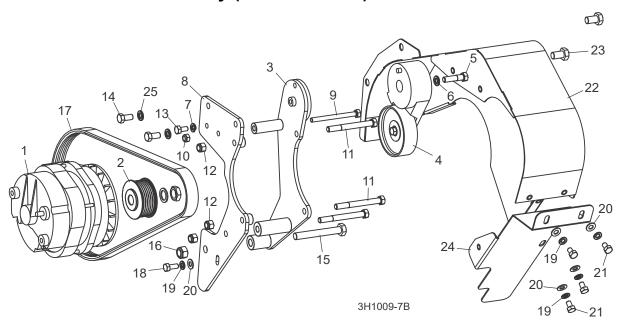
# 4.13 Alternator Assembly (D35 Tier4)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	Wire Assembly, Starter to Alternator	024308	1	
	Wire Assembly, Engine to Alternator Ground	050941	1	
	Alternator Assembly, Yanmar	079399	1	
	Alternator Assembly, 140 Amp	046429	1	•
1	Alternator, 140 Amp	023695	1	
2	Pulley, 2 3/4" Dia. Alternator	046402	1	
3	Mount Weldment, D35 T4 Altenator	079394	1	
4	Tensioner, Alternator Belt	034464	1	
5	Bolt, 3/8-16 x 1 1/2" Hex Head Grade 5	F05007-78	1	
6	Washer, 3/8" Split Lock	F05011-4	1	
7	Bolt, M10-1.50x20mm HH FT 8.8	F05004-207	1	
8	Washer, 10mm Split Lock	F05011-88	1	
9	Nut, 3/8-16 Hex Nyloc	F05010-10	1	
10	Bolt, 3/8-16x3 HH Gr5	F05007-73	1	
	Cover Assembly, D35 T4 Alternator	079544	1	
11	Bolt, 1/4-20x3/4 FT HHC	F05005-1	2	
12	Washer, 1/4 Split Lock	F05011-14	10	
13	Washer, 1/4 SAE Flat	F05011-11	10	
14	Cover Weldment, D35 T4 Alternator	079543	1	
15	Cover Weldment, D35 T4 Lower Alt	079576	1	
16	Bolt, 1/4-20x1/2 Hex Head	F05005-15	8	

17 Belt, 6PK1145	006524	1		

# 4.14 Alternator Assembly (D35 Tier2/D47)



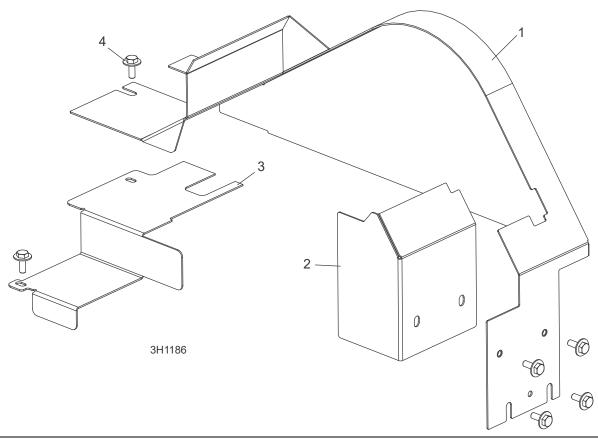
REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	$\neg$
	Wire Assembly, Starter to Alternator	024308	1	
	Wire Assembly, Engine to Alternator Ground	050941	1	
	Alternator Assembly, Yanmar	074234	1	
	Alternator Assembly, 140 Amp	046429	1	•
1	Alternator, 140 Amp	023695	1	
2	Pulley, 2 3/4" Dia. Alternator	046402	1	
3	Mount Weldment, Yanmar ALternator TEnsioner	057493	1	
4	Tensioner, Alternator Belt	034464	1	
5	Bolt, 3/8-16 x 1 1/2" Hex Head Grade 5	F05007-78	1	
6	Washer, 3/8" Split Lock	F05011-4	1	
7	Washer, 8mm Split Lock	F05011-45	1	
8	Mount Weldment, Yanmar ALternator	058708	1	
9	Bolt, M8 x 1.25 x 90mm Hex Head Full THread	F05004-247	1	
10	Nut, M8 Hex Nylon Lock	F05010-132	1	
11	Bolt, 3/8-16 x 3 1/2" Hex Head Grade 5	F05004-123	3	
12	Nut, 3/8-16 Hex Nylon Lock	F05010-10	3	
13	Bolt, M8 x 125 x 16mm Hex Head	F05004-47	1	
14	Bolt, 3/8-16 x 3/4" Hex Head Grade 2	F05007-27	2	
15	Bolt, M12 x 1.75 x 90mm Hex Head Full THread	F05004-249	1	
16	Nut, M12 x 1.75 Hex Nylon Lock	F05010-209	1	
17	Belt, 6PK1145	006524	1	
	Cover Assembly, Yanmar Alternator	074233	1	
18	Bolt, 5/16-18 x 3/4" Hex Head	F05006-5	1	_





19	Washer, 5/16 Split Lock	F05011-13	5	
20	Washer, 5/16 SAE Flat	F05011-17	5	
21	Bolt, 5/16-18 x 1/2" Hex Head Grade 5	F05006-15	4	
22	Cover Weldment, Yanmar ALternator	058704	1	
23	Bolt, 3/8-16 x 3/4" Hex Head Grade 2	F05007-27	2	
24	Cover Weldment, Lower Yanmar Alternator	058712	1	
25	Washer, 3/8" Split Lock	F05011-4	2	

# 4.15 Engine Pulley Guards (D35 Tier4 Only)

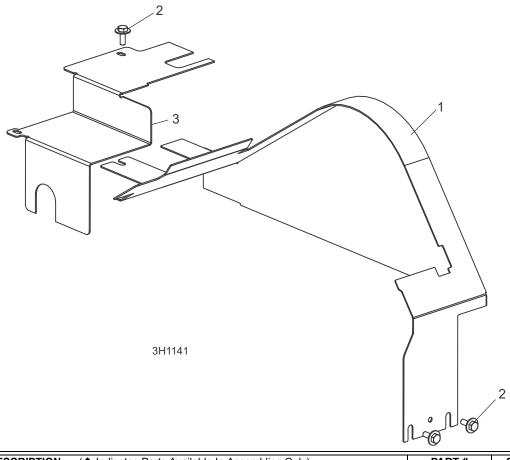


REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	COVER ASSEMBLY, D35 T4 TOP PULLEY	079718	1	
1	Cover Weldment, D35 T4 Top Pulley	079473	1	
2	Plate, D35 T4 Cover	079707	1	
3	Plate, D35 T4 Side Guard	079714	1	
4	Bolt, 1/4-20x3/4 HH w/Conical Washer	F05005-134	6	

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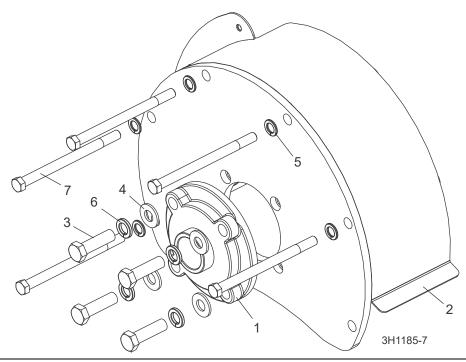


# 4.16 Engine Pulley Guards (D35 Tier2/D47)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	GUARD WELDMENT, YANMAR ENGINE TOP PULLEY	075542	1	
2	BOLT, 1/4-20 X 3/4" HEX HEAD WITH CONICAL WASHER	F05005-134	3	
3	GUARD, SIDE ENGINE PULLEY	016152	1	

# 4.17 Bearing Support (D35 Tier4 Only)

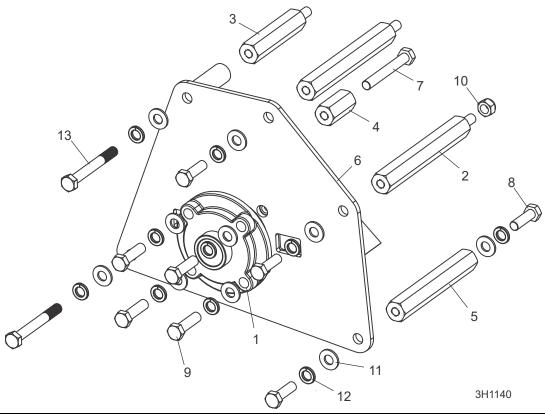


REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	SUPPORT ASSEMBLY, D35 T4 FINAL BEARING	079402	1
1	Bearing, 1-7/16 4-Bolt Flange	071491	1
2	Support Weldment, D35 T4 Final Bearing	079401	1
3	Bolt, 1/2-13x1 3/4 Hex Head Grade 5 FT	F05008-88	4
4	Washer, 1/2 SAE Flat	F05011-2	4
5	Washer, 10mm Split Lock	F05011-88	5
6	Washer, 1/2 Split Lock	F05011-9	4
7	Bolt, M10-1.5x140 Hex Head FT	F05022-21	5

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# **D35**

## 4.18 Bearing Support (D35 Tier2/D47)



REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	SUPPORT ASSEMBLY, YANMAR BEARING	074226	1	
1	Bearing, 1-7/16 4-Bolt Flange	071491	1	
2	Spacer, 1 Hex x 7.31	071493	2	
3	Spacer, 1 Hex x 4.38	071499	1	
4	Spacer, 1 Hex x 2.03	075103	1	
5	Spacer, 1 Hex x 6.63	075104	1	
6	Weldment, Yanmar Bearing Support	075538	1	
7	Bolt, M12 x 1.75 x 90mm Hex Head Full Thread Cl10.9 Zinc	F05004-249	1	
8	Bolt, M12 x 1.75 x 40mm Hex Head Full Thread Cl10.9 Zinc	F05004-250	4	
9	Bolt, 1/2-13 x 1 3/4" Hex Head Grade 5 Full Thread	F05008-88	4	
10	Nut, M12 x 1.75 Hex Nylock Zinc	F05010-209	1	
11	Washer, 1/2" SAE Flat	F05011-2	10	
12	Washer, 1/2" Split Lock	F05011-9	10	
13	Bolt, M12-1.75 x 100 Grade 8.8 Hex Head	F05023-7	2	

REF	<b>DESCRIPTION</b> (♦ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	SUPPORT ASSEMBLY, CAT BEARING LT40/50 (D51)	061131	1	
1	Shaft, Caterpillar Stub Bearing Support	071325	1	



2	Bearing, 1-7/16 4-Bolt Flange	071491	1	
3	Spacer, 1 Hex x 7.31	075533	2	
4	Guard Weldment, Cat Top Pulley	075534	1	
5	Spacer, 1 Hex x 4.31	075754	1	
6	Spacer, 1 Hex x7.31, w/Stud	075755	1	
7	Weldment, Cat Bearing Support	075757	1	
8	Bolt, 3/8-16x1 1/4 Hex Head Grade 5	F05007-123	3	
9	Bolt, 3/8-16x2 1/2 Hex Head Grade 5	F05007-125	1	
10	Bolt, 3/8-16x4 Hex Head Grade 5	F05007-126	2	
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	5	
15	Washer, 3/8" Split Lock	F05011-4	5	
16	Washer, 1/2" Split Lock	F05011-9	4	

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