

D35 Diesel Engine

Safety, Operation, Maintenance & Parts Manual

079324 Engine, D35 Diesel

rev. B

Safety is our #1 concern!

Form #1572

Tier 4

Used with:

LT40
LT40HD
LT40HD Remote
LT40HD Super
LT40HD Super Remote
LT40HD Super Wireless
LT50HD
LT50HD Remote
LT50HD Wireless

Beginning Rev - Current Rev

rev. K5.02 - K5.04
rev. K7.05 - K7.06
rev. K4.02 - K7.06
rev. K4.03 - K4.03
rev. K4.03 - K4.03
rev. K4.03 - K4.03
rev. A6.03 - A6.03
rev. A6.03 - A6.03
rev. A6.03 - A6.03



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**.



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**.

Active Patents assigned to Wood-Mizer, LLC

Wood-Mizer, LLC has received patents that protect our inventions which are a result of a dedication to research, innovation, development, and design. Learn more at: woodmizer.com/patents

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SECTION 1 ABOUT THIS MANUAL

This manual is a supplement to the equipment manufacturer's manuals.

This manual provides information specific to the use of this equipment on the Wood-Mizer® equipment. Refer to the operator's manual and manufacturer's manual before attempting to operate this equipment.

NOTICE 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 -- For sale in the US and where requested

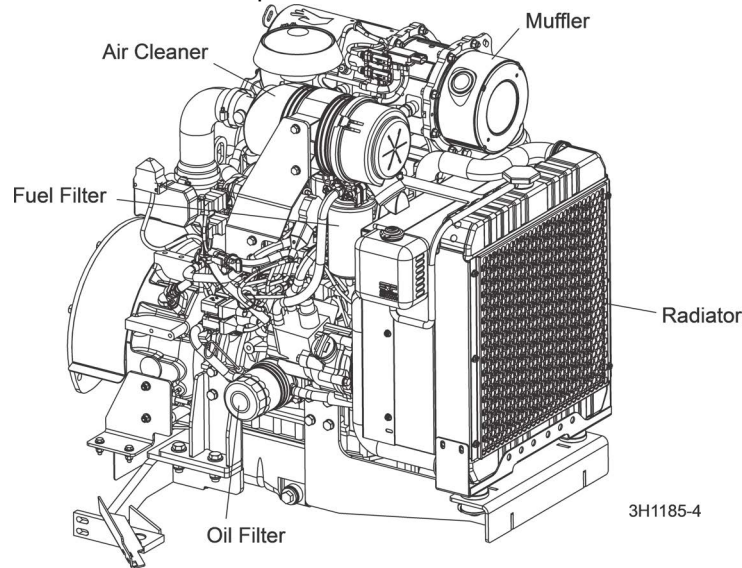
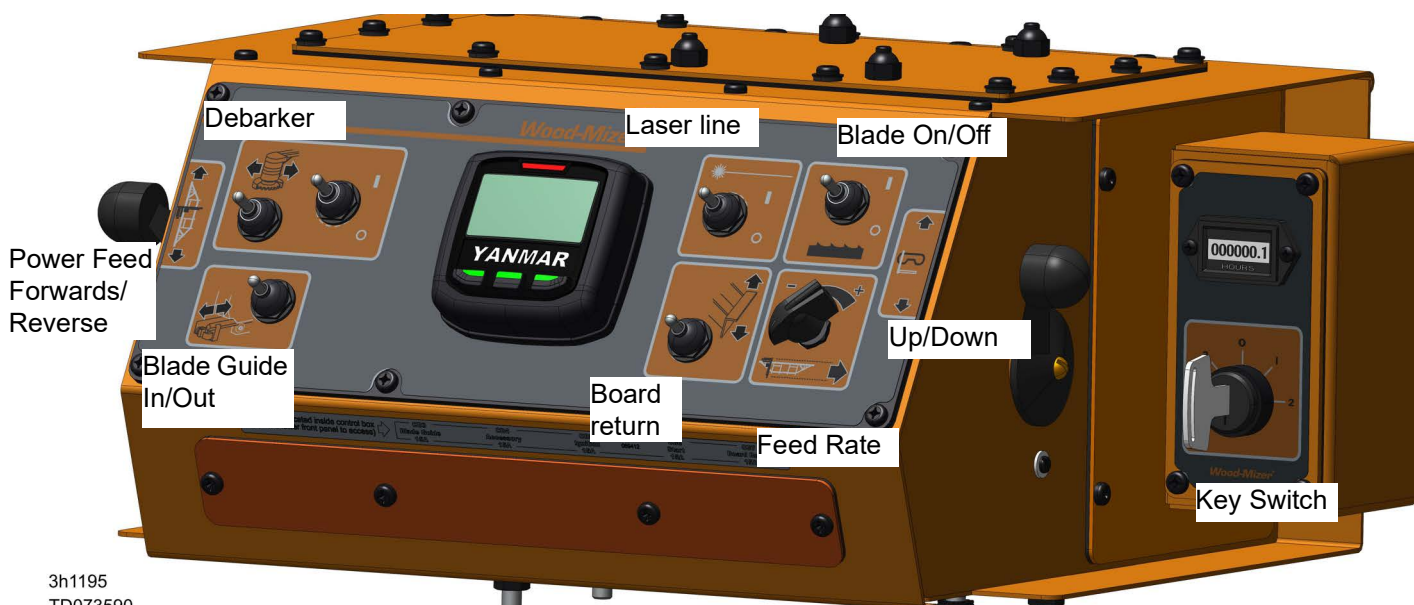


FIG. 1-1

SECTION 2 OPERATION

2.1 Starting The Engine

Check the Manufacturer's Manual for the operation of the engine controller located on the sawmill control panel.



ENGINE START

DANGER! Disengage the blade and clear all persons are in the area 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 will cause death unless adequate ventilation is present.

DANGER! Never operate an engine with a fuel or oil leak.

WARNING! Set the power feed switch is in the neutral position before turning the key switch. This prevents accidental carriage movement which may cause serious injury or death.

WARNING! Do not operate engine without proper and operational spark arrester/muffler. Engine exhaust sparks could ignite surrounding materials.

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 time as listed in the manufacturer's manual.
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.

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.

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



.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.

3.2 Engine Oil & Filter

1. Check the oil level every 8 hours of operation.
2. Add oil as necessary.
3. See the engine manual for oil viscosity and grade recommendations.
4. Inspect the oil for indications of water in the oil.
 - a. If there is water present or the oil is cloudy, DO NOT start the engine.
 - b. 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.

NOTICE 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.

5. Change the engine oil and oil filter after the first 50 hours of operation, then every 250 hours of operation.

3.3 Cooling System

1. Clean the radiator fins every 8 hours of operation.
2. Spray the radiator with water from a hose or compressed air to clean sawdust from the radiator fins.
3. 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.



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

3.6 Air Cleaner

1. Replace the air cleaner cartridge every 200 hours of operation.
2. 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



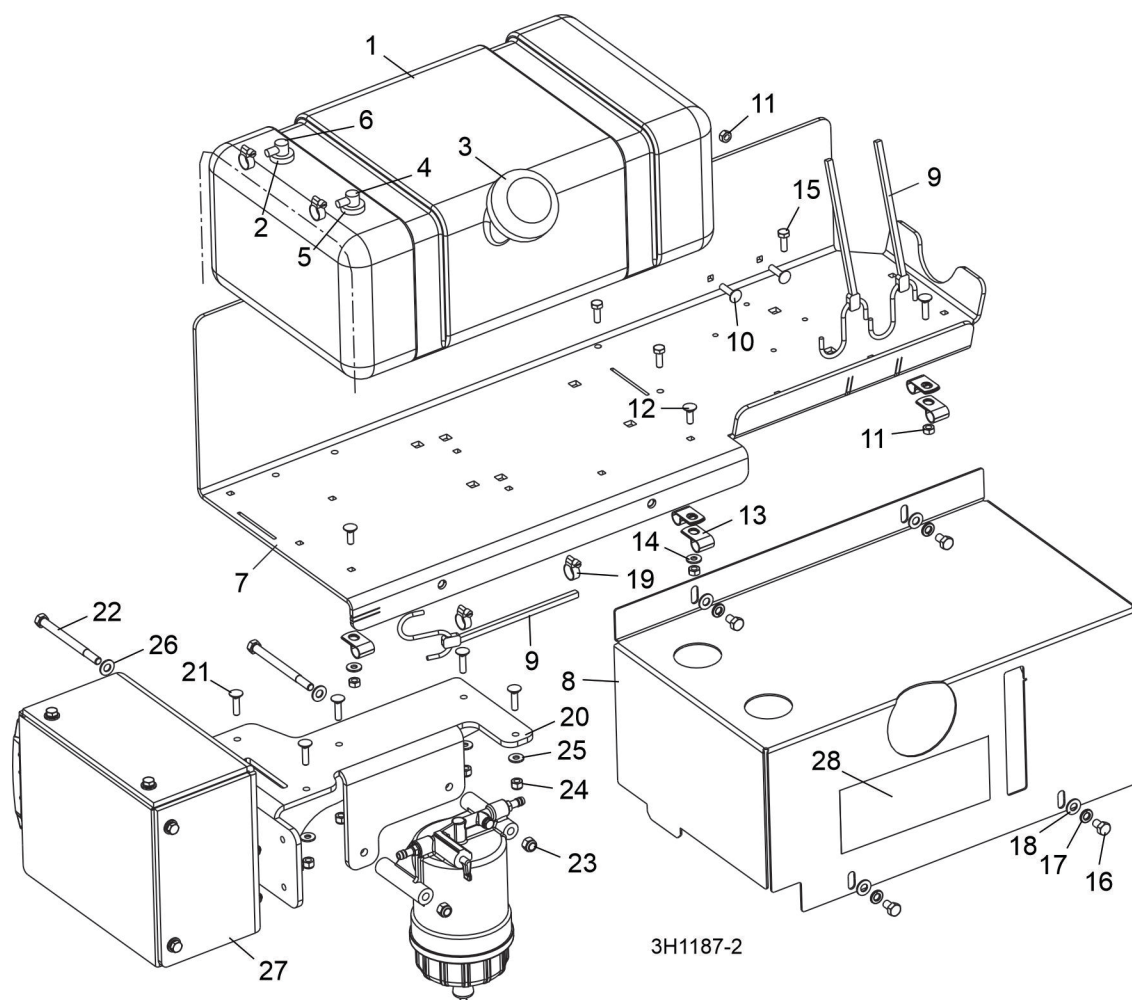
WARNING! Remove the blade before performing any engine service. Failure to do so may result in serious injury.

Engine	High End RPM	Low End RPM
D35	3000	1500

1. Check the RPM with a tachometer every 200 hours of operation
2. Before checking the RPM, make sure belt and brake strap tensions are correct (See Sawmill Maintenance).
3. Check oil, fuel, and coolant levels.
4. Check the Manufacturer's Manual to see if the RPM adjustment is necessary.

SECTION 4 REPLACEMENT PARTS

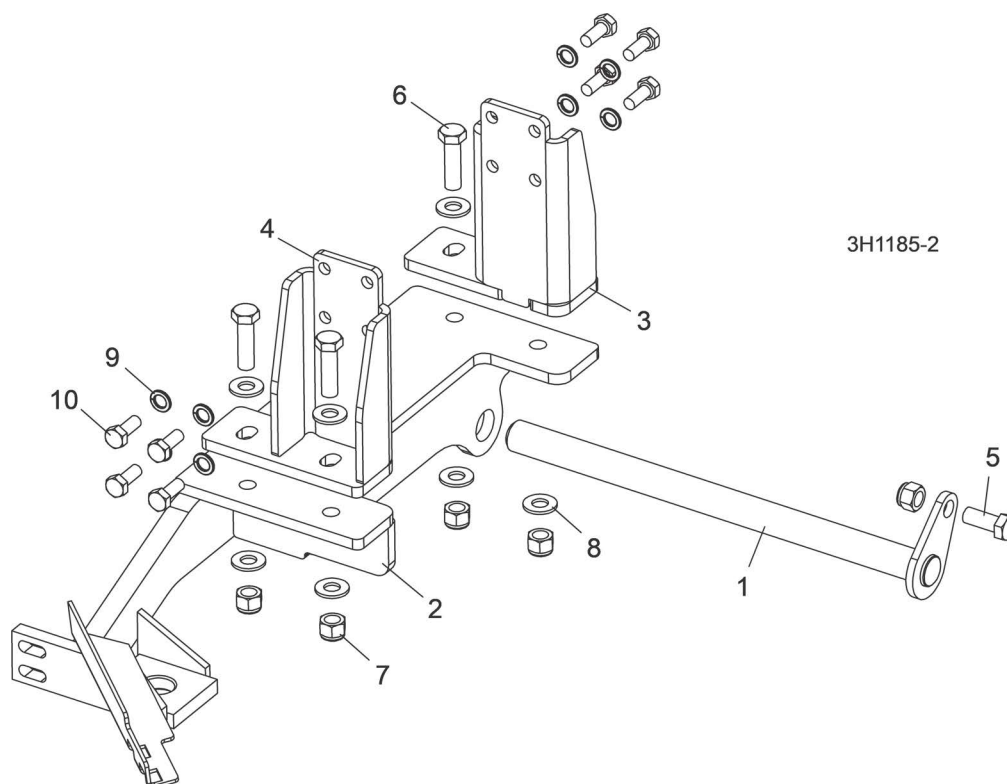
4.1 Fuel Tank



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	079637	TRAY ASSEMBLY, LT40/50 TIER4 DIESEL TANK		1
1	103928	Tank, 5 Gallon Low Pro Diesel		1
2	061250	Grommet, Shut Off 046881		1
3	061257	Cap, Fuel Tank Diesel 080185BE		1
4	061256	Fitting, Return/tube Diesel 468489		1
5	061250	Grommet, Shut Off 046881		1
6	061255	Fitting, Pick-Up/Tube Diesel 468871A		1
7	103943	Tank Weldment, Fuel LT40/50		1
8	103867	Cover, Fuel Tank		1
9	P11668	Strap, 20" Rubber		3
10	F05005-34	Bolt, 1/4-20 X 1" Carriage Head		3
11	F05010-21	Nut, 1/4-20 Hex Lock		5
12	F05005-113	Bolt, 1/4-20 x 3/4" Carriage		2
13	P07584	Clamp, 1/2" EMT Coated		6
14	F05011-11	Washer, 1/4" SAE Flat		2
15	F05005-123	Bolt, 1/4-20 x 3/4" Hex Head Grade 5		3

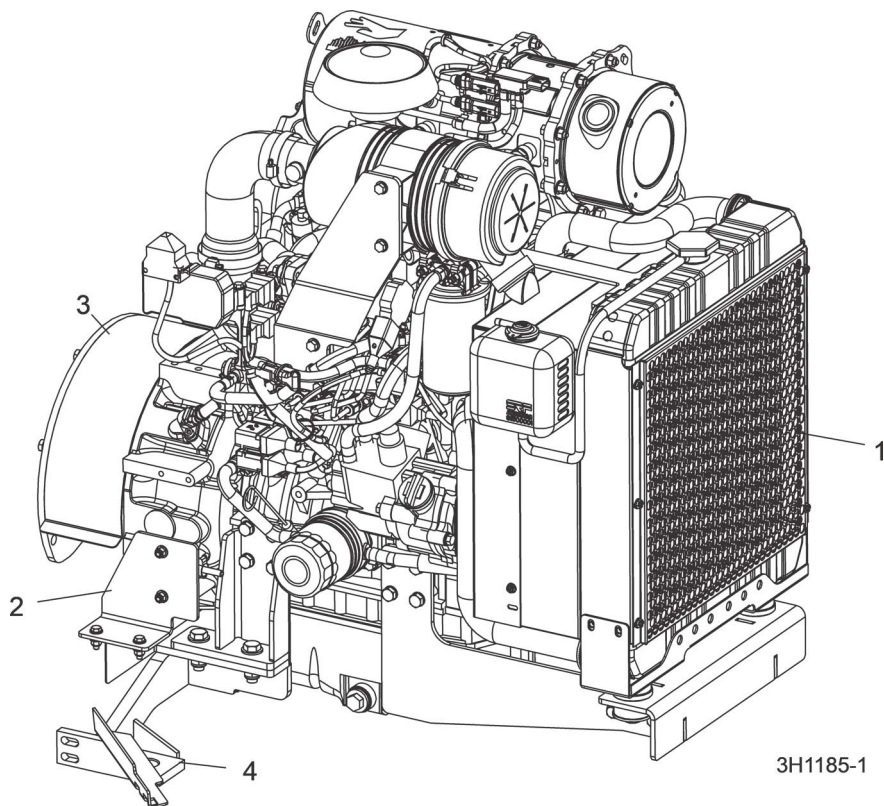
REF	PART #	DESCRIPTION	COMMENTS	QTY.
16	F05006-102	Bolt, 5/16-18x3/4 HH Gr5 Zinc		4
17	F05011-13	Washer, 5/16" Split Lock		4
18	F05011-17	Washer, 5/16" SAE Flat		4
19	P649	Hose Clamp, 7/32in-5/8in		4
	079409	Separator Assembly, D35 T4 ECU F/W		1
20	079471	Mount Weldment, D35 T4 ECU F/W Separator		1
21	F05005-34	Bolt, 1/4-20x1 Carriage		5
22	F05006-109	Bolt, 5/16-18x4 Hex Head Grade 5		2
23	F05010-58	Nut, 5/16-18 Nylok Hex		2
24	F05010-69	Nut, 1/4-20 Nylock		5
25	F05011-11	Washer, 1/4 SAE Flat		5
26	F05011-17	Washer, 5/16 SAE Flat		2
27	079422	Relays/Fuse Assembly, D35 T4 ECU	(See Section 4.8)	1
28	133825	Decal, Fuel Warning		1
	R02423-3	Hose, Fuel 5/16" EPA 15G CARB		7.5Ft
	R02423-2	Hose, Fuel 1/4" EPA 15G CARB		8 Ft.

4.2 Engine Mount Assembly



REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	015855	Pin Weldment, Motor Pivot Kubota		1
2	079365	Pivot Weldment, D35 T4 Engine Pivot		1
3	079372	Mount Weldment, D35 T4 Left Engine Mount		1
4	079377	Mount Weldment, D35 T4 Right Engine Mount		1
5	F05008-37	Bolt, 1/2-13x1 1/4 Hex Head Grade 5		1
6	F05008-88	Bolt, 1/2-13x1 3/4 Hex Head Grade 5 FT		4
7	F05010-8	Nut, 1/2-13 Nylon Hex Lock		5
8	F05011-2	Washer, 1/2 SAE Flat		8
9	F05011-88	Washer, 10mm Split Lock		16
10	F81003-11	Bolt, M10-1.5x25mm Hex Head Grade 8.8		16

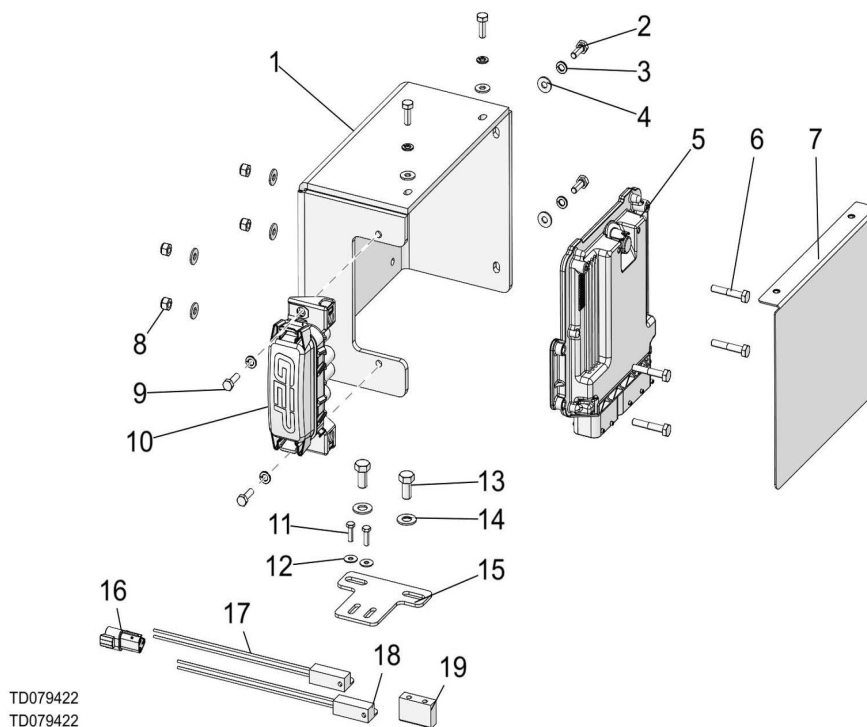
4.3 Engine Assembly Tier 4



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	CED34	Cover, Engine		1
	079323	Engine, 35.9HP Yanmar Diesel (Tier4)		1
1	n/a	Radiator Parts	(See Section 3.7)	1
	141033	Kit, D35T4 air cleaner KAC17		1
	057948	Air Filter, Yanmar 3TNV88 #129087-12510		1
	061100	Cap, Air Filter Assembly Yanmar		1
	057935	Filter, Oil #129150-35170		1
	061308	Filter, Fuel #129A00-55800		1
	n/a	Throttle Solenoid/Relay Parts	(See Section 4.8)	1
	061309	Filter Assembly, Fuel/Water Separator #129A00-59700		1
	006561	Bracket, Fuel/Water Separator Mount		1
	061436	Cup Assembly, Fuel/water Separator		1
	061318	Seal, Fuel/water Separator		1
	061310	Filter, Water Separator Yanmar #129A00-55730		1
	006543	Muffler Assembly, 35.9HP Yanmar Diesel		1
2	079418	Assy, D35 T4 Fuel Feed Pump		1
	078705	Pump, D35 T4 Fuel Feed		1
	079417	Plate, D35 T4 Fuel Feed Pump Mnt		1
	F05005-101	Bolt, 1/4-20x1 Hex Head Grade 5		2
	F05005-123	Bolt, 1/4-20x3/4 Hex Head Grade 5		2
	F05010-69	Nut, 1/4-20 Nylock		4

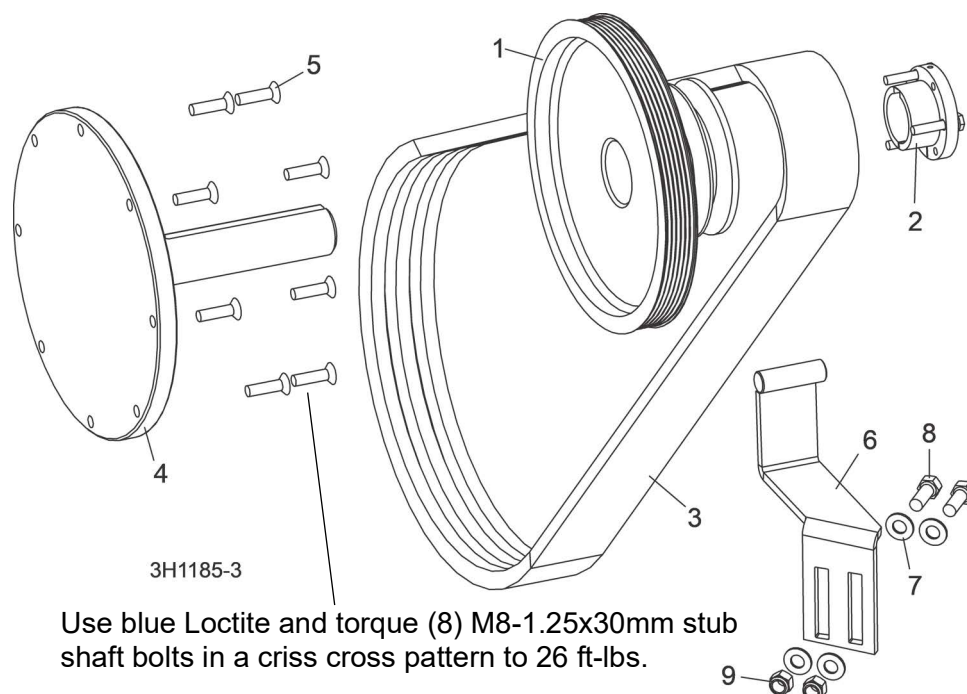
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	F05011-11	Washer, 1/4 SAE Flat		8
	P649	Hose Clamp, 7/32in-5/8in		2
	P649	Hose Clamp, 7/32"-5/8"		4
	P07584	Clamp, 1/2" EMT Coated		1
	061304	Cap, Rain D35 Tier 4 KDPF-1		1
3	n/a	Drive Parts	(See Section 4.10)	1
	n/a	Alternator Parts	(See Section 4.14)	1
4	n/a	Bearing Support Parts	(See Section 3.10)	1
5	n/a	Engine Mount Parts	(See Section 4.4)	1
	061773	Gasket, Yanmar Bonnet #129004-11310		1
	057931	Gasket Set, Yanmar Engine #719823-92960		1
	057932	Seal, Yanmar Front Main #119934-01800		1
	078716	Injector Assembly, Yanmar #129A00-53100		1
	061245	Switch, Yanmar Oil Pressure #119761-39450		1
	061311	Seal, Yanmar Rear Main #129795-01780		1
	057937	Starter Motor, Yanmar #129242-77010		1
	057938	Thermostat, Yanmar #129155-49801		1
	061312	Gasket, Thermostat #129150-49811		1
	044652	Gasket, Thermostat Cover #129795-49551		1
	061313	Pump, Yanmar Water #129A01-42000		1
	057940	Gasket, Yanmar Water Pump #129486-42021		1
	061172	Sender, Yanmar Water Temperature #129927-44900		1
	AP0114	Fan, Engine 7 Blade 360mm #121267-44741		1
	057943	Plug, Yanmar Oil Drain #119640-01640		1
	057944	Seal, Yanmar Oil Drain and Water Temp Sensor #22190-120002		1
	057945	Plug, Yanmar Glow #129008-77800		1
	057946	Dip Stick, Yanmar Oil #129004-34802		1
	044668	Belt, Yanmar Fan #25132-003600		1
	061078	Heater, Yanmar Engine Block #171015-77900		1
	061226	Cable, Heater Engine Block D35/D47		1
	061438	Plug Assembly, Yanmar		1
	061439	Float, Yanmar (red ring)		1

4.4 ECU & Relay/Fuse Assembly



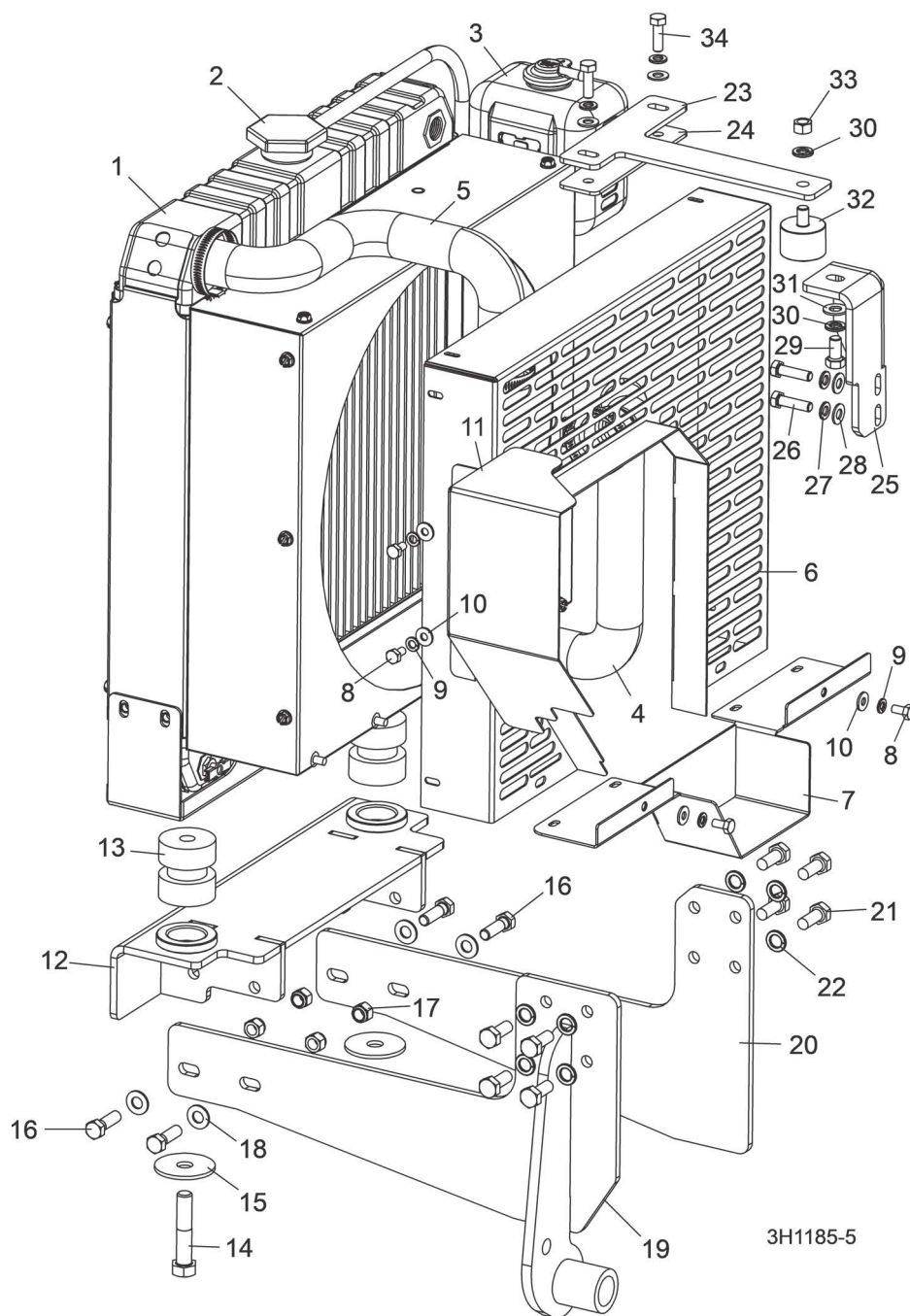
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	079422	Assembly, D35 T4 ECU & Relays/Fuse		1
1	079420	Plate, D35 T4 ECU Mount Plate		1
2	F05005-123	Bolt, 1/4-20x3/4 HH Gr5		4
3	F05011-14	Washer, 1/4 Split Lock		6
4	F05011-11	Washer, 1/4 SAE Flat		8
5	079267	Yanmar T4 Final ECU		1
6	F05005-124	Bolt, 1/4-20x1 1/2 HH Gr5		4
7	079428	Weldment, D35 T4 Relays/Fuse Cover		1
8	F05010-69	Nut, 1/4-20 Nylock		4
9	F05020-6	Bolt, M6-1x20 HH Class 8		2
10	079340	Assembly, D46 T4 Fuse/Relay		1
11	F05004-18	Screw, 10-24x5/8 Unsl Indnt HH Machine		2
12	F05011-18	Washer, #10 SAE Flat		2
13	F05007-27	Bolt, 3/8-16x3/4 HH Gr2		2
14	F05011-3	Washer, 3/8 Flat SAE		2
15	016617	Plate, Sensor Bracket		1
	073599-1	Switch Assembly, Tier 4 Magnetic Throttle		1
16	069474	Connector, 3P Pin Trig DT Deutsch Male		1
17	114048	Sensor, Proximity Magnetic Reed		1
18	024626	Sensor, Proximity Magnetic Reed		1
19	130277	Spacer, Throttle Sensor		1

4.5 Drive Assembly



REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	016533	Sheave, 5V x 4.46" Poly V (Gas/Diesel)		1
2	016535	Bushing, SH x 1 7/16"		1
3	110268	Belt, 3/5VFL765 Kevlar		1
4	079481	Shaft, D35 T4 Yanmar Large Stub		1
5	F05004-245	Bolt, M8-1.25 x 30mm Flat Socket Head	Torque: 28Nm / 26 ft/lbs	8
6	016364	Bracket, Drive Belt Support		1
7	F05011-3	Washer, 3/8" SAE Flat		4
8	F05007-7	Bolt, 3/8-16 x 1" Hex Head		2
9	F05010-10	Nut, 3/8-16 Hex nylon Lock		2

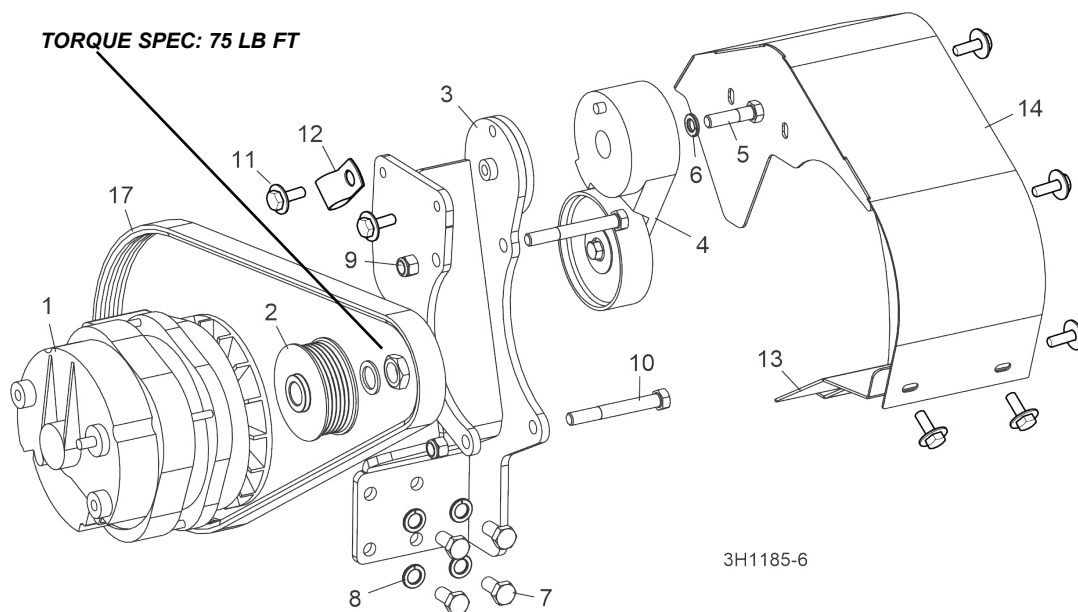
4.6 Radiator Assembly



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	044804	Radiator kit, Yanmar #KR2		1
1	057949	Radiator, Diesel Engines #129689-44510		1
2	044660	Cap, Yanmar Radiator #129987-44570		1
3	040387	Bottle Assembly, Yanmar #123987-43600		1
4	057950	Hose, Yanmar Lower Radiator #129689-49020		1
5	057951	Hose, Yanmar Upper Radiator #129687-49010		1
	079627	Cover Assembly, D35 T4 Radiator		1

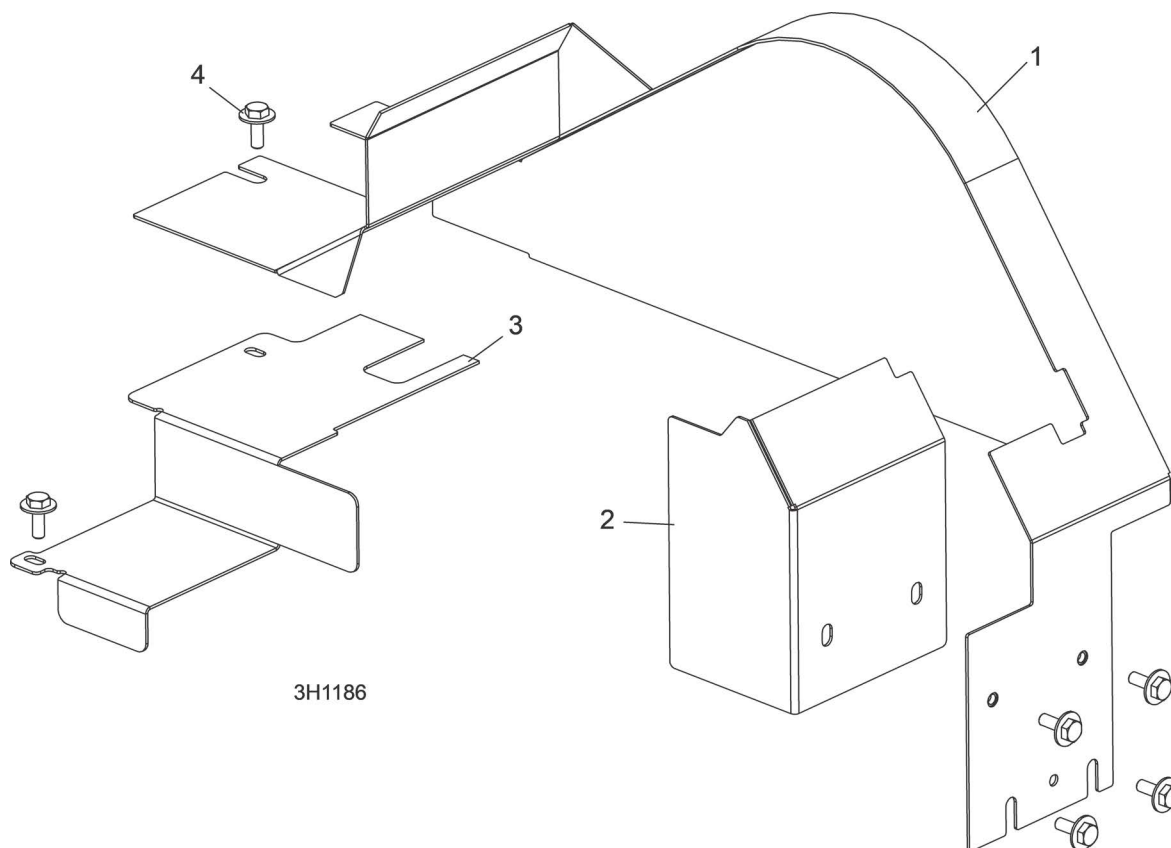
REF	PART #	DESCRIPTION	COMMENTS	QTY.
6	079477	Cover Weldment, D35 T4 Radiator		1
7	006604	Cover Weldment, Radiator Lower		1
8	F05005-15	Bolt, 1/4-20 x 1/2" Hex Head		4
9	F05011-14	Washer, 1/4" Split lock		4
10	F05011-11	Washer, 1/4" SAE Flat		4
11	079478	Plate, D35 T4 Yanmar Alt Cover		1
	074229	Mount Assembly, Yanmar Lower Radiator		1
12	006530	Mount Weldment, Yanmar Radiator		1
13	018734	Bushing, Rubber Mount		2
14	F05008-144	Bolt, 1/2-13 x 2 3/4" Hex Head Grade 5		2
15	018751	Washer, Engine Mount		2
16	F05007-123	Bolt, 3/8-16x1 1/4 FT Hex Head Grade 5		4
17	F05010-10	Nut, 3/8-16 Hex Nylon Lock		4
18	F05011-3	Washer, 3/8 Flat SAE		4
19	079350	Mount Weldment, D35 T4 Front Engine		1
20	058714	Plate, Yanmar Front Engine Mount		1
21	F81003-11	Bolt, M10-1.5 x 25mm Hex Head Grade 8.8		8
22	F05011-88	Washer, 10mm Split Lock		8
	074228	Mount Assembly, 35.9HP Upper Radiator		1
23	006531	Plate, Yanmar Top Radiator support		1
24	006557	Plate, Top Radiator Mount Spacer		1
25	006558	Plate, Yanmar Top Radiator Mount		1
26	F05021-11	Screw, M8-1.25x30 HHC		2
27	F05011-45	Washer, 8mm Split Lock		4
28	F05011-17	Washer, 5/16" SAE Flat		4
29	F05007-27	Bolt, 3/8-16 x 3/4" Hex Head Grade 2		1
30	F05011-4	Washer, 3/8" Split Lock		2
31	F05011-3	Washer, 3/8" SAE Flat		1
32	028217	Bushing, Rubber Radiator Mount		1
33	F05010-1	Nut, 3/8-16 Hex		1
34	F05004-40	Bolt, M8x1.25x25mm C/S 8.8 Din 933 HH		2

4.7 Alternator Assembly



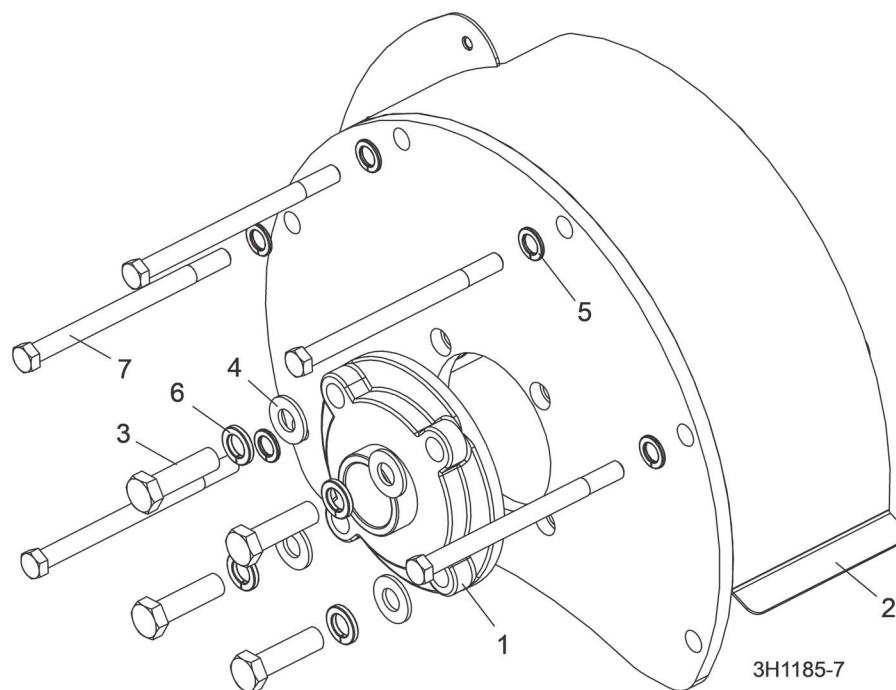
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	024308	Wire Assembly, Starter to Alternator		1
	050941	Wire Assembly, Engine to Alternator Ground		1
	079399	Alternator Assembly, Yanmar		1
	046429	Alternator Assembly, 140 Amp	Available in assemblies only.	1
1	023695	Alternator, 140 Amp		1
2	046402	Pulley, 2 3/4" Dia. Alternator		1
3	079394	Mount Weldment, D35 T4 Alternator		1
4	034464	Tensioner, Alternator Belt		1
5	F05007-78	Bolt, 3/8-16 x 1 1/2" Hex Head Grade 5		1
6	F05011-4	Washer, 3/8" Split Lock		1
7	F05004-207	Bolt, M10-1.50x20mm HH FT 8.8		1
8	F05011-88	Washer, 10mm Split Lock		1
9	F05010-10	Nut, 3/8-16 Hex Nyloc		1
10	F05007-73	Bolt, 3/8-16x3 HH Gr5		1
	079544	Cover Assembly, D35 T4 Alternator		1
11	F05005-134	Bolt, 1/4-20x3/4 W/Conical Washer		10
12	P07584	Clamp, 1/2EMT Coated		1
13	079576	Cover Weldment, D35 T4 Lower Alt		1
14	079543	Cover Weldment, D35 T4 Alternator		1
15	006524	Belt, 6PK1145		1

4.8 Engine Pulley Guards



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	079718	Cover Assembly, D35 T4 Top Pulley		1
1	079473	Cover Weldment, D35 T4 Top Pulley		1
2	079707	Plate, D35 T4 Cover		1
3	079714	Plate, D35 T4 Side Guard		1
4	F05005-134	Bolt, 1/4-20x3/4 HH w/Conical Washer		6

4.9 Bearing Support



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	079402	Support Assembly, D35 T4 Final Bearing		1
1	071491	Bearing, 1-7/16 4-Bolt Flange		1
2	079401	Support Weldment, D35 T4 Final Bearing		1
3	F05008-102	Bolt, 1/2-13x2 HH Gr5		4
4	F05011-2	Washer, 1/2 SAE Flat		4
5	F05011-88	Washer, 10mm Split Lock		5
6	F05011-9	Washer, 1/2 Split Lock		4
7	F05022-21	Bolt, M10-1.5x140 Hex Head FT		5