

# **LT35 D24 Engine**

## **Safety, Operation, Maintenance & Parts Manual**

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**076651 Engine, D24 Yanmar** **rev.G**

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**Safety is our #1 concern!**

*Form #2208*

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<b>Used with</b>	
<b>LT35</b>	<b>rev. A6.17</b>
<b>LT35HD</b>	<b>rev. A6.19</b>

\* The D24 engine was first available with the LT35 rev A6.08 and the LT35HD rev A6.10



**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**

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](http://woodmizer.com/patents)

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## 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 1 OPERATION

### 1.1 Starting The Engine



**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.

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.

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

#### ENGINE START

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 to the on (#1) position.
4. Turn the key switch to the start (#2) position and release.

#### ENGINE SHUTOFF

1. Disengage the clutch handle to stop the blade if necessary.
2. Turn the key switch to the off (#0) position.

## SECTION 2 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.



### 2.1 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.

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.

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

### 2.2 Air Filter & Pre-Cleaner

Service the pre-cleaner **every four hours** of operation by gently shaking excess sawdust and debris from the foam piece.

Clean the air filter (air cleaner element) and pre-cleaner (element wrapper) **every eight hours** of operation.

Replace the air filter (cleaner) **every 200 hours** of operation.

Replace the pre-cleaner (element wrapper) **every 2000 hours** of operation.

See the engine manual for further instructions.

### 2.3 Fuel Filter

Replace the fuel filter every 100 hours of operation or as required for engine performance.

### 2.4 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.

## 2.5 Alternator Belt

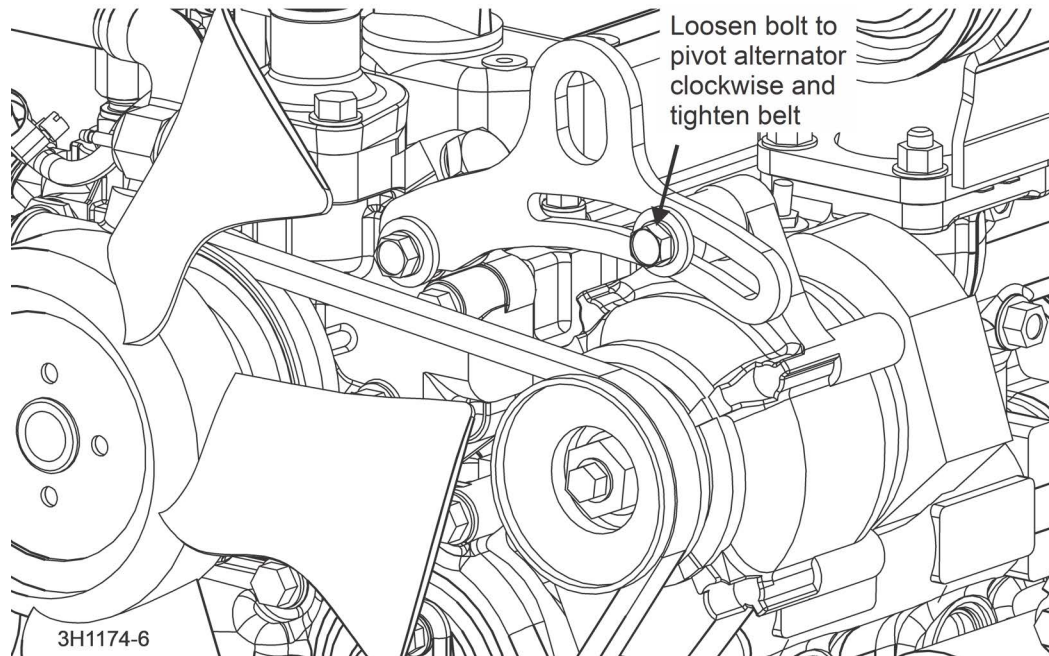
Adjust the alternator belt as needed.

Check the alternator belt for tension and wear when battery is not charging properly or when the alternator belt is squealing.

To tighten the belt, loosen the adjustment bolt and lock washer.

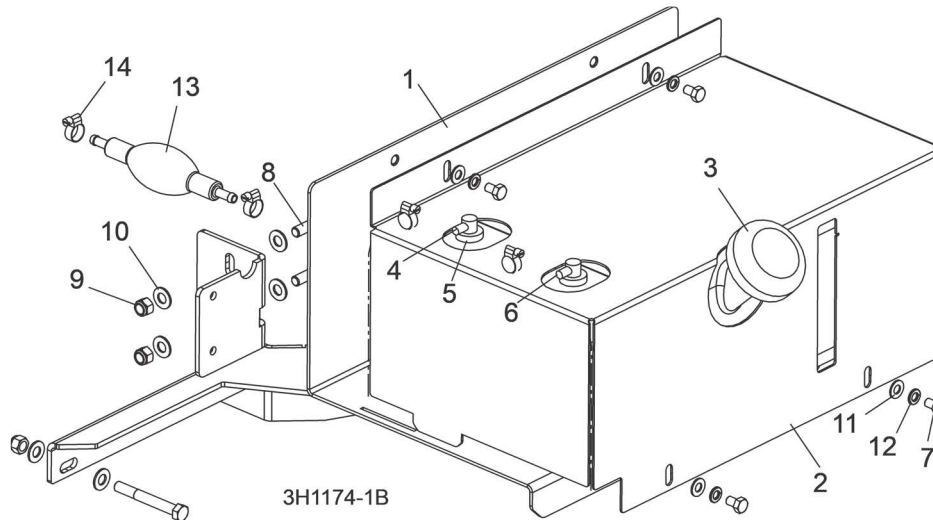
Pivot the alternator away from the motor until the belt has 3/16" (5 mm) deflection with a 5 lb. deflection force.

Retighten the adjustment bolt.



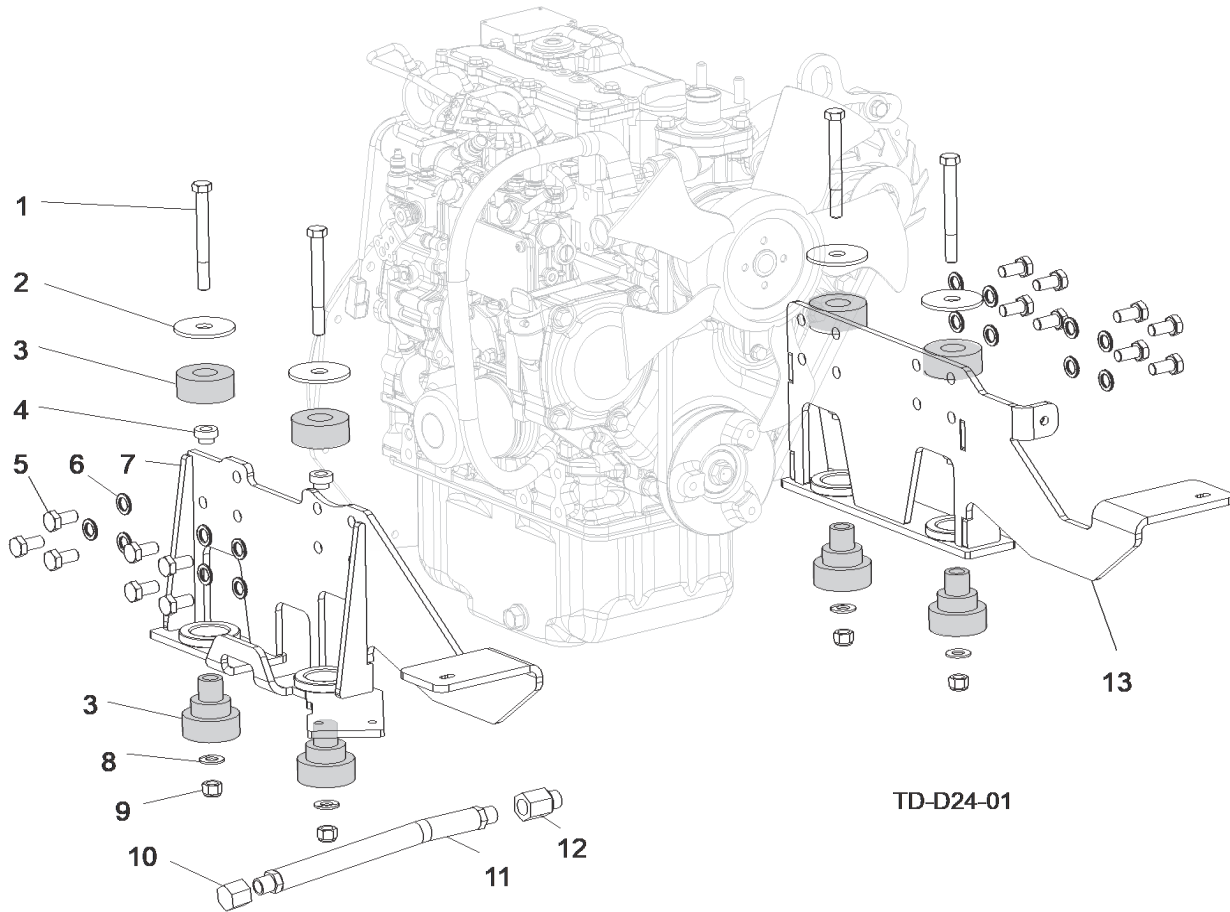
## SECTION 3 REPLACEMENT PARTS

### 3.1 Fuel Tank



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	079084	<b>TRAY ASSEMBLY, LT35 D24 DIESEL TANK</b>		1
<b>1</b>	103810	Weldment, Fuel Tank Tray		1
<b>2</b>	103867	Cover, Fuel Tank		1
	103928	Tank, 5 Gallon Low Pro EPA Fuel		1
<b>3</b>	061257	Cap, Fuel Tank Diesel 080185BE		1
<b>4</b>	061255	Fitting, Pick-Up/Tube Diesel 468871A		1
<b>5</b>	061250	Grommet, Shut Off 046881		2
<b>6</b>	061256	Fitting, Return/tube Diesel 468489		1
<b>7</b>	F05006-15	Bolt, 5/16-18 x 1/2" Hex Head Grade 5		4
<b>8</b>	F05007-73	Bolt, 3/8-16 x 3" Hex Head Grade 5		3
<b>9</b>	F05010-10	Nut, 3/8-16 Hex Nyloc		3
<b>10</b>	F05011-3	Washer, 3/8" Flat SAE		6
<b>11</b>	F05011-13	Washer, 5/16" Split Lock		4
<b>12</b>	F05011-17	Washer, 5/16" SAE Flat		4
<b>13</b>	006687	Bulb, 5/16" Fuel Line Primer		1
<b>14</b>	P649	Hose Clamp, 7/32in-5/8in	deleted	2
	R02423-3	Hose, Fuel 5/16" EPA 15G CARB		5 Ft
	R02423-2	Hose, Fuel 1/4" EPA 15G CARB		6 Ft

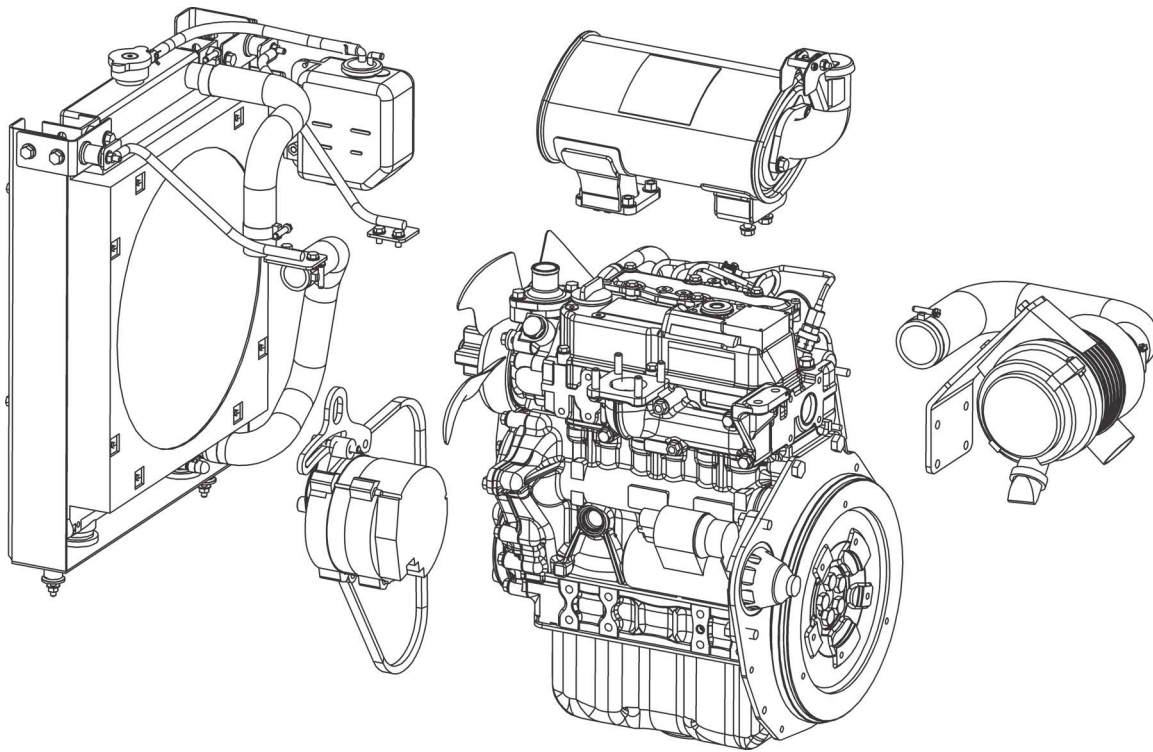
## 4.2 Engine Mounts



REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	F05004-123	Bolt, 3/8-16x3 1/2 HH Gr5		4
2	018751	Washer, Motor Mount		4
3	018734	Bushing, Kubota Rubber Mount (two pieces)		4
4	074822	Washer, 3/32x3/4 Stepped		4
5	F05004-207	Bolt, M10-1.50x20mm HH FT 8.8		15
6	F05011-88	Washer, 10mm Split Lock		15
7	122338	Weldment, Engine Mount Left		1
8	F05011-3	Washer, 3/8 Flat SAE		4
9	F05010-10	Nut, 3/8-16 Hex Nyloc		4
10	P04332	Cap, 3/8 Pipe Galvanize		1
11	P10082	Hose, 3/8NPTx9 5/8 Rubber		1
12	046025	Fitting, M16-3/8 NPT		1
13	122337	Weldment, Engine Mount Right		1



### 4.3 Engine Service Parts



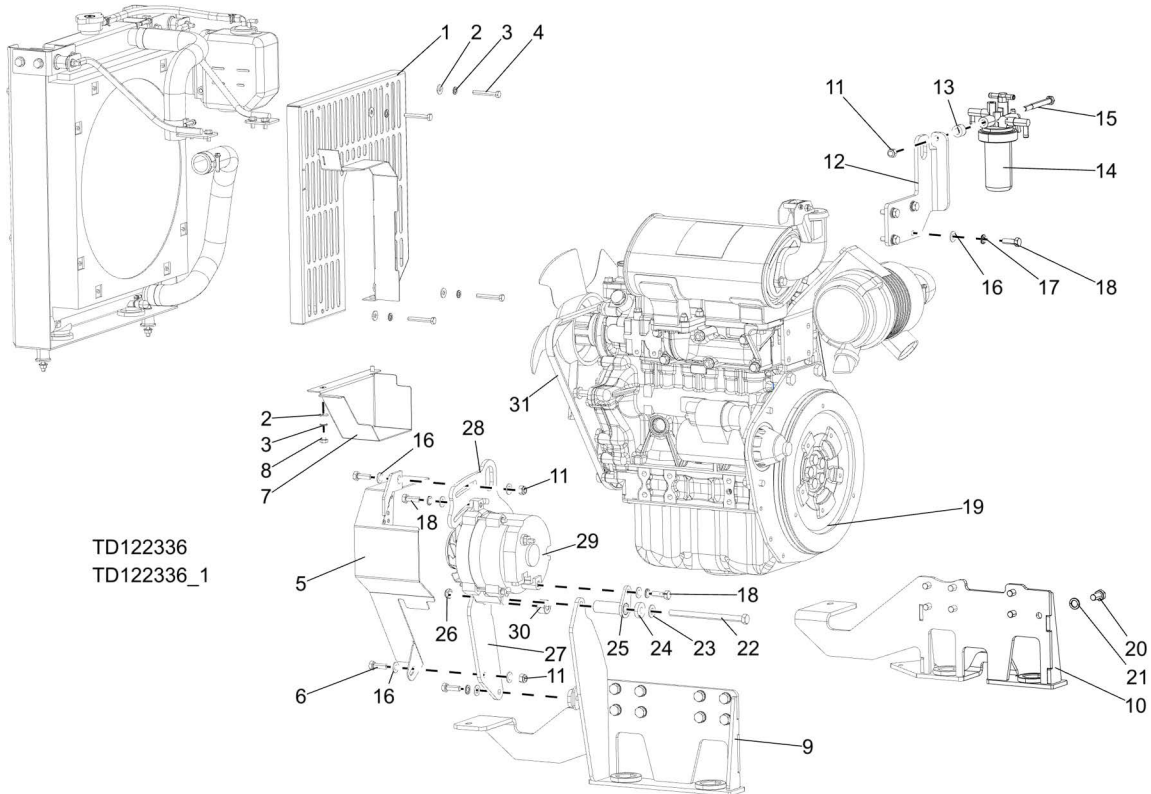
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	074885	Engine, 24HP Yanmar Tier4 Final Diesel		1
	114220	Harness, Yanmar D24 Engine		1
	044647	Filter, Oil, Yanmar, 3TNV70-ASA #119305-35151		1
	057936	Oil Pressure Switch, Yanmar TNV88 #114250-39450		1
	061204	Belt, Yanmar Fan #25132-003500		1
	044655	Switch, Temp WM Installed/Plug on wires #121250-44901		1
	134543	Kit, D24 Alternator Upgrade Kit		1
	061299	Bracket, Alternator D24		1
	061211	Solenoid, Fuel Shut Off D24 #119233-77932		1
	061212	Gasket, Water Temp Switch D24 #124465-44950		1
	061214	Starter Assembly, D24 #119515-77010		1
	061215	Relay, Pre-Heat Crank Fuel D24 #119650-77911		3
	061216	Radiator, D24 #KR13		1
	061217	Cap, Radiator D24 #129107-44590		1
	061219	Assembly, Muffler D24 #KM11		1
	061220	Cap, Rain D24 #119749-13600		1
	061221	Tank, Coolant Reservoir D24 #121468-44520		1
	061218	Filter, Air D24 #2S-E1		1
	061225	Heater, Engine Block D24		1
	044642	Gasket, Valve Cover, 3TNV70-ASA #119515-11310		1

# 4 Replacement Parts

Engine Service Parts

REF	PART #	DESCRIPTION	COMMENTS	QTY.
	061196	Seal, Yanmar Front Main #119717-01800		1
	061197	Injector Assy, Yanmar #119C10-53000		1
	061198	Seal, Yanmar Rear Main #119734-02220		1
	061213	Thermostat, D24 #119717-49800		1
	044652	Thermostat Gasket, Yanmar TNV # 129795-49551		1
	061199	Pump Assembly, Yanmar Water # 119027-42000		1
	044654	Gasket, Water Pump, Yanmar, 3TNV70-ASA # 119515-42020		1
	061307	Solenoid, Power #119C00-61900		1
	044657	Diode, Solenoid Relay, Yanmar 3TNV88/70 # 119643-66900		1
	044658	Timer, Yanmar, 3TNV70-ASA #129211-77920		1
	044659	Gasket, Exhaust Yanmar 3TNV70-ASA # 119515-13200		1
	061200	Fan, Yanmar Radiator #119258-44740		1
	061201	Gasket, Yanmar Head #119C10-01330		1
	044663	Plug, Oil Drain, Yanmar, 3TNV70-ASA # 105425-01690		1
	044664	Seal, Oil Drain, Yanmar, 3TNV70-ASA # 22190-160002		1
	061202	Plug, Yanmar Glow #119717-77801		3
	044666	Gasket, Manifold, Yanmar, 3TNV70-ASA # 119717-13110		1
	061203	Dipstick, Yanmar #119025-34800		1
	061205	Pipe, Yanmar Fuel Return #119D00-59540		1
	061206	Radiator Kit, Yanmar #119515-44500		1
	061207	Bottle Assy, Yanmar #121468-44520		1
	061306	Pump, Fuel Injection D24 #719D25-51310		1
	061295	Filter Assembly, Fuel 119833-55621		1
	061099	Filter, Fuel Yanmar #119810-55650		1

## 4.4 Engine Base



TD122336  
TD122336\_1

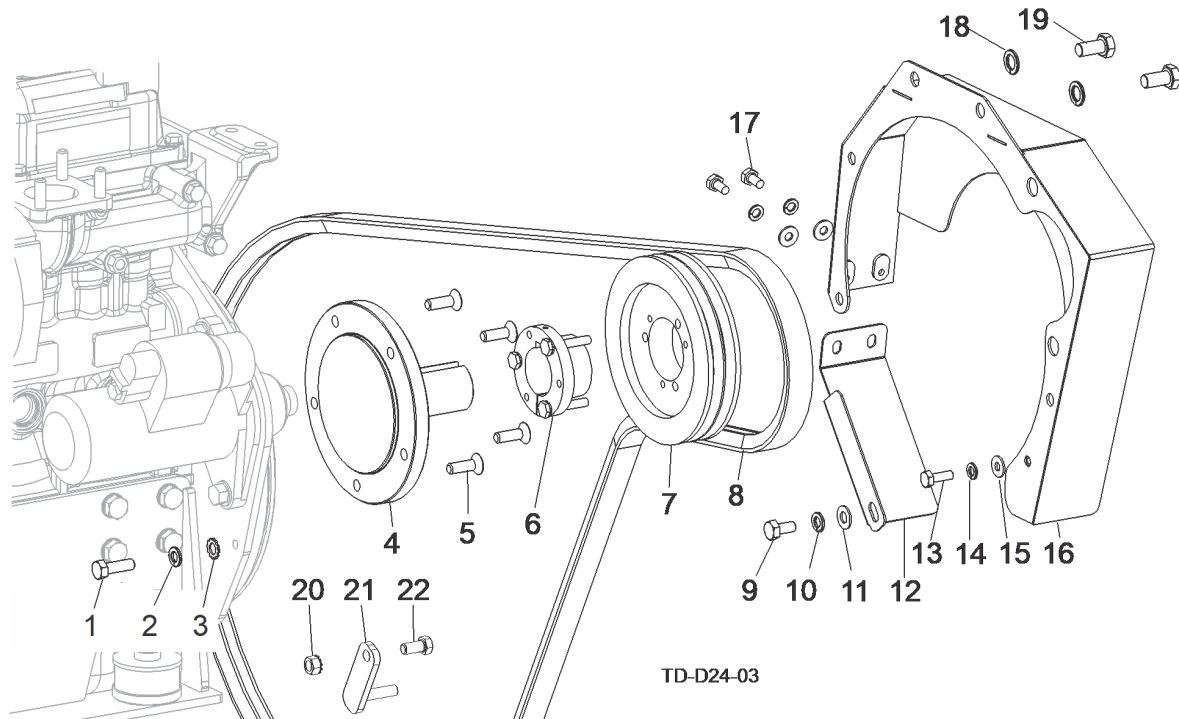
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	122336	<b>ASSY, D24 YANMAR TIER4 FINAL BASE ENGINE</b>		1
1	134526	Wldmnt, D24 Radiator Fan Guard		1
2	F05011-11	Washer, 1/4 SAE Flat		7
3	F05011-14	Washer, 1/4 Split Lock		7
4	F05020-28	Bolt, M6-1.0x45 HH Class 8.8		4
5	134522	Wldmnt, D224 Alternator Guard		1
6	F05006-27	Bolt, 5/16-18 x 1 Gr 5 HH		3
7	134544	Plate, Yanmar Lower Radiator Guard		1
8	F05005-15	Bolt, 1/4-20x1/2 HH->		2
9	134519	Wldmnt, Engine Mount Right		1
	122337	Weldment, Engine Mount Right		1
10	122338	Weldment, Engine Mount Left		1
11	F05010-58	Nut, 5/16-18 Nylok Hex		3
12	074796	Plate, D24 Lift Bracket/Fuel Filter Mnt		1
13	S22625	Spacer, 25/64IDx3/4ODx1/2Long		1
14	061295	Filter Assembly, Fuel 119833-55621		1
	061099	Filter, Fuel Yanmar #119810-55650		1
15	F05006-133	Bolt, 5/16-18x3 1/4 HH Gr5		1
16	F05011-17	Washer, 5/16 SAE Flat		11
17	F05011-13	Washer, 5/16 Split Lock		7
18	F05004-40	Bolt, M8x1.25x25mm C/S 8.8 Din 933 HH		6
19	074885	Engine, 24HP Yanmar Tier4 Final Diesel		1
20	F05004-207	Bolt, M10-1.50x20mm HH FT 8.8		15

# 4 Replacement Parts

Engine Base

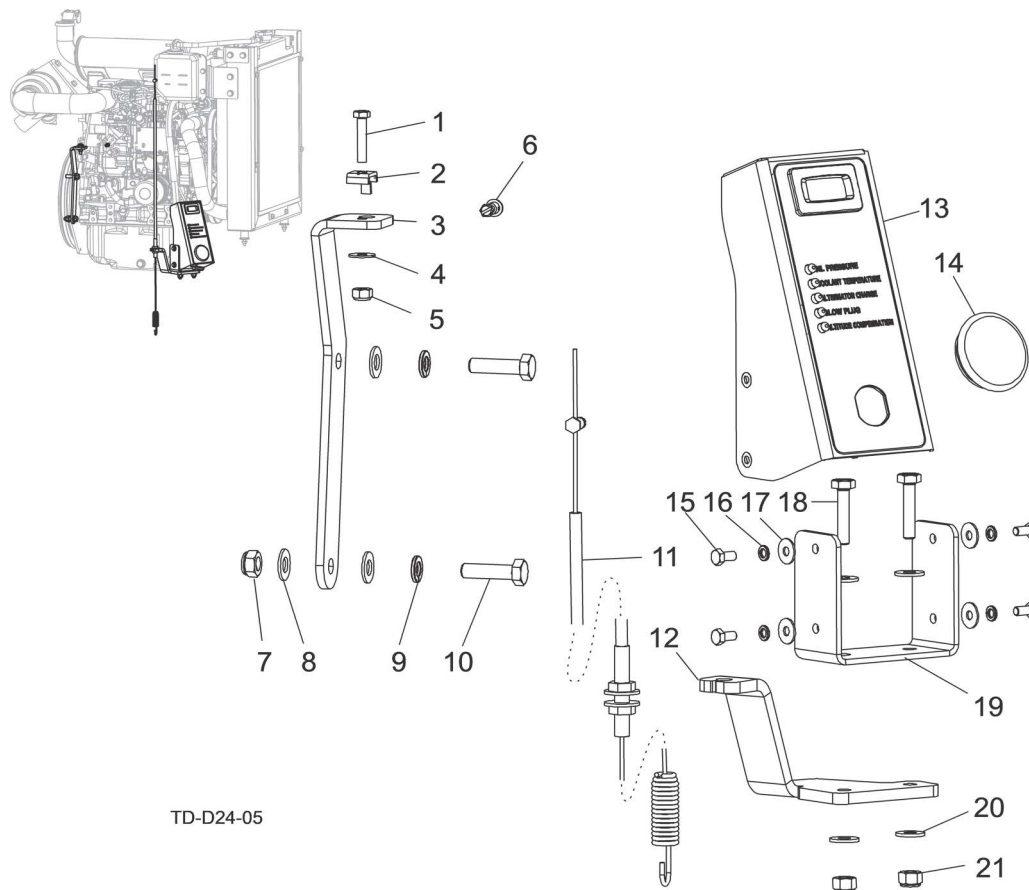
REF	PART #	DESCRIPTION	COMMENTS	QTY.
21	F05011-88	Washer, 10MM Split Lock		15
22	F05007-34	BOLT, 3/8-16 X 5-1/2 HHBFT		1
23	F05011-3	Washer, 3/8 Flat SAE		1
24	124162	Washer, .39IDx1.00ODx1/4		1
25	W12761	Brace Weldment, Alternator		1
26	F05010-124	Nut, 3/8-16 Half Nylock		1
27	134498	Plate, Alt Mount Offset Support		1
28	134501	Plate, Alternator Tension		1
29	133788	Assy, 105 Amp Alternator w/ Pulley		1
	050287-1	Alternator, 105A 12V CS130		1
	134506	Pulley, ALternator 2.63 OD 17mm ID 1961291		1
30	134500	Spacer, 13/32x7/8x.551		1
31	016083	Belt, AX36		1
	114123	Harness, Alt Intermed Summitomo		1

## 5.5 Drive Shaft and Flywheel Cover



REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	F05004-40	Bolt, M8x1.25x25 HH FT		1
2	F05011-13	Washer, 5/16 Split Lock		1
3	F05011-33	Washer, 5/16 Star ET		1
4	074969	Shaft, 1-7/16 Yanmar D24 Short Stub		1
5	F05021-59	Screw, M8-1.25x22mm FS C/S BO CL12.9	Torque: 28Nm / 21ft/lbs	5
6	016535	Bushing, SHx1 7/16		1
7	047742	Sheave, 3V5.6x2-SH		1
8	047751	Belt, 2/3VFL900 Drive		1
	079081	Cover Assembly, LT35D24 Flywheel		1
9	F05004-47	Bolt, M8x1.25x16mm HH		1
10	F05011-13	Washer, 5/16 Split Lock		1
11	F05011-17	Washer, 5/16 SAE Flat		1
12	079064	Plate, LT35D24 Lower Flywheel Guard		1
13	F05005-1	Bolt, 1/4-20x3/4 FT HHC		1
14	F05011-14	Washer, 1/4 Split Lock		3
15	F05011-11	Washer, 1/4 SAE Flat		3
16	074984	Weldment, LT35D24 Yanmar Flywheel Cover		1
17	F05015-15	Bolt, 5/16-24x5/8 Self Tap		2
18	F05011-88	Washer, 10mm Split Lock		2
19	F05004-207	Bolt, M10-1.50x20mm HH FT 8.8		2
20	F05010-19	Nut, 3/8-16 Keps		1
21	048237	Support Wldmt, LT15G25 Belt		1
22	F05007-118	Bolt, 3/8-16x3/4 HH Gr5		1

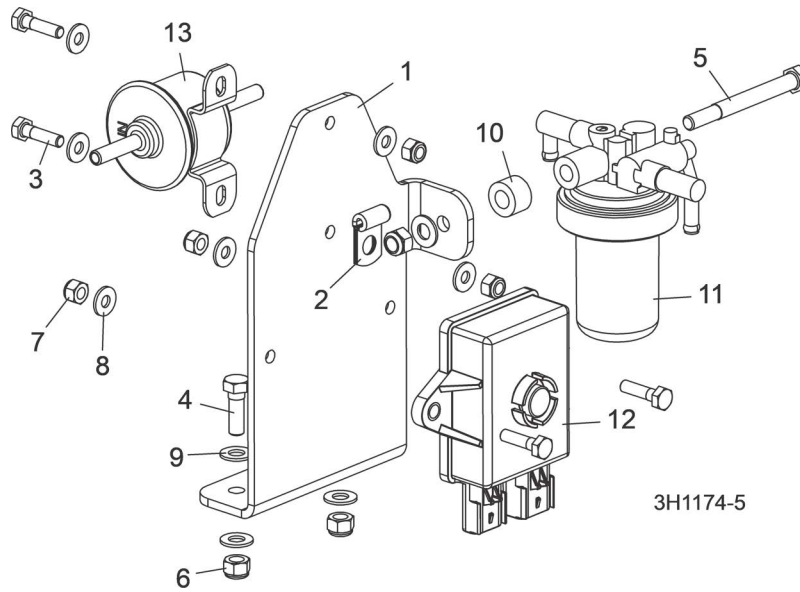
## 6.6 Control Panel and Throttle Cable



TD-D24-05

REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	F05004-156	Bolt, #10-24x1 Unslotted HH		1
2	079082	Clamp, Throttle Cable		1
3	074795	Plate, D24 Throttle Cable Mount		1
4	F05011-18	Washer, #10 SAE Flat		1
5	F05010-160	Nut, 10-24 Hex Nylock->		1
6	048904	Throttle Fitting, Swivel		1
7	F05010-132	Nut, M8-1.25 Hex Nylock		1
8	F05011-17	Washer, 5/16 SAE Flat		3
9	F05011-13	Washer, 5/16 Split Lock		3
10	F05021-11	Screw, M8-1.25x30 HHC		2
11	007392	Cable, LT15 D17		1
12	079067	Plate, LT35D24 Throttle Cable		1
	079077	Panel Assembly, LT35D24 Control		1
13	074934	Panel Assembly, KP7 Key Switch/Control		1
14	079080	Plug, AS100 Oiltite Painted		1
15	F05004-60	Bolt, #10-32x1/2 HH		4
16	F05011-20	Washer, #10 Split Lock		4
17	F05011-18	Washer, #10 SAE Flat		4
18	F05005-3	Bolt, 1/4-20x1 1/4 HH FT Cap		2
19	074797	Plate, D24 Key Switch/Control Mount		1
20	F05011-11	Washer, 1/4 SAE Flat		4
21	F05010-69	Nut, 1/4-20 Nylock		2

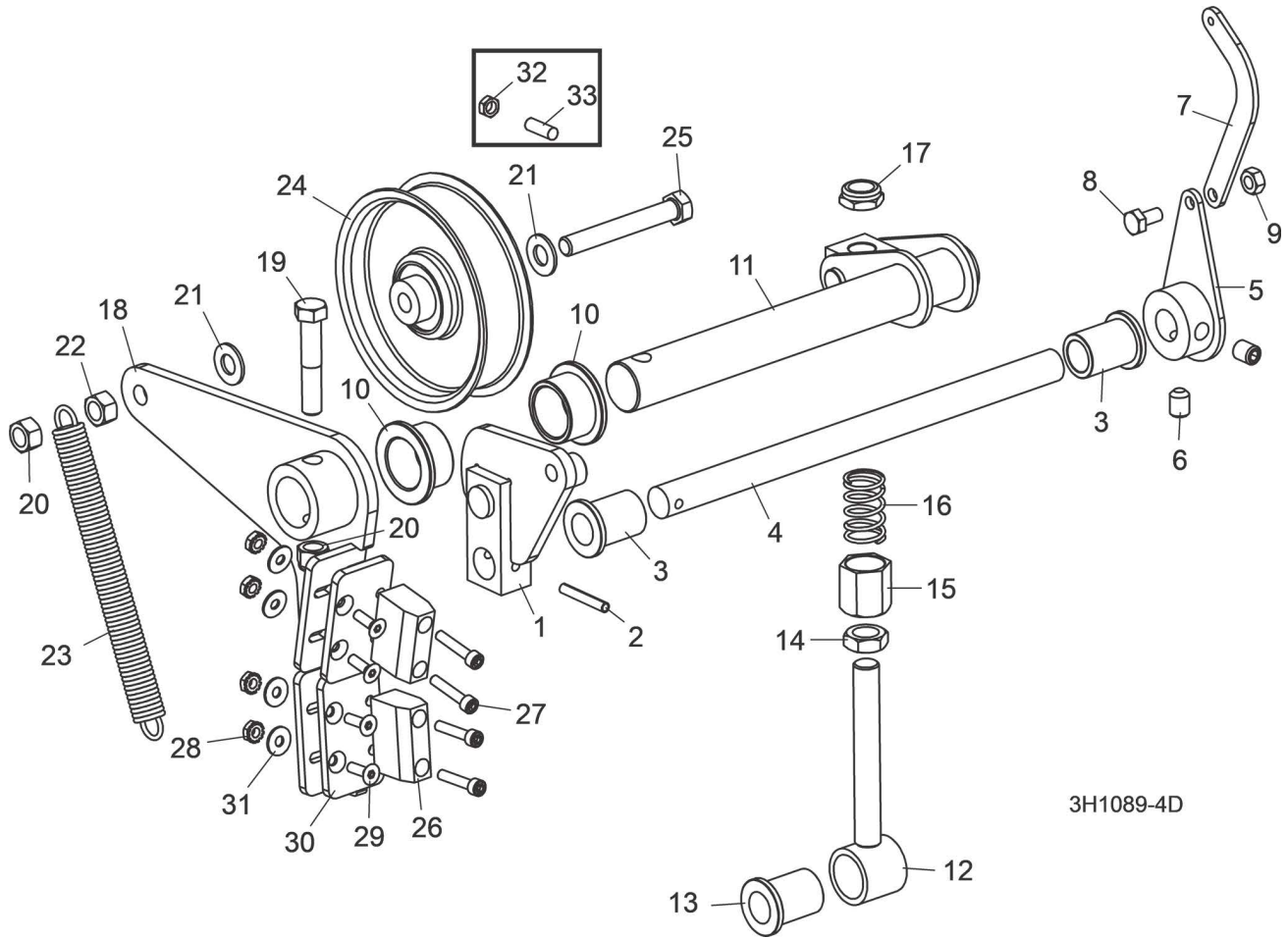
## 7.7 Fuel Pump Assembly



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	079066	Sensor Assembly, LT35D24 Fuel Pump/Pressure		1
<b>1</b>	079065	Plate, D24 Yanmar Fuel Pump Mount		1
<b>2</b>	079083	Clamp, 3/16 Wire 13/32 Mounting Hole		1
<b>3</b>	F05005-101	Bolt, 1/4-20x1 Hex Head Grade 5		4
<b>4</b>	F05006-1	Bolt, 5/16-18x1 Hex Head		2
<b>5</b>	F05006-133	Bolt, 5/16-18x3 1/4 Hex Head Grade 5		1
<b>6</b>	F05010-58	Nut, 5/16-18 Nylok Hex		3
<b>7</b>	F05010-69	Nut, 1/4-20 Nylock		4
<b>8</b>	F05011-11	Washer, 1/4 SAE Flat		6
<b>9</b>	F05011-17	Washer, 5/16 SAE Flat		5
<b>10</b>	S22625	Spacer, 25/64IDx3/4ODx1/2Long		1
<b>11</b>	040345	Filter Assembly, Yanmar Fuel/Water Separator #129335-55701		1
	061296	Filter, Water Separator Yanmar # 171081-55910		1
<b>12</b>	074900	Driver, Pressure Sensor/Solenoid		1
<b>13</b>	061074	Pump, Yanmar Fuel Feed #119225-52102		1



## 8.8 Throttle/Clutch Assembly



3H1089-4D

REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	065574	BLOCK WELDMENT, LINKAGE CLUTCH/BRAKE		1
2	F05012-16	PIN, 3/16" X 1 1/4" ROLL		1
3	016486	BUSHING, 5/8" ID X 7/8" OD X 1 1/4" LONG FL BRONZE		2
4	049340	SHAFT, LT28 THROTTLE		1
5	034815	ACTUATOR WELDMENT, THROTTLE LT15D&G		1
6	F05007-68	SCREW, 3/8-16 X 3/8" SOCKET HEAD CUP PT SET		2
7	034818	LINKAGE, THROTTLE LT15D&G		1
8	F05005-15	BOLT, 1/4-20 X 1/2" HEX HEAD		1
9	F05010-21	NUT, 1/4-20 SWAGED		1
10	P737	BUSHING, 1" X 1 1/4" X 3/4" FLANGED BRONZE		2
11	034608	PIVOT WELDMENT, CLUTCH/BRAKE		1
	034605	LINKAGE ASSEMBLY, W/BEARING		1
12	034604	Boss Weldment, Clutch/Brake Linkage		1
13	016486	Bushing, 5/8" ID x 7/8" OD x 1 1/4" Long Flanged Bronze		1
	038778	NUT ASSEMBLY, 1/2-13 SPRING LOCKING		1



REF	PART #	DESCRIPTION	COMMENTS	QTY.
14	F05010-31	Nut, 1/2-13 Hex Jam		1
15	038777	Nut, 1/2-13 Spring Lock		1
16	046975	Spring, .72" OD x .576" ID x 1.25L Compression		1
17	F05010-127	Nut, 1/2-13 Half Nylon Lock		1
	065874	<b>BRAKE/CLUTCH ASSEMBLY</b>		1
18	065873	Arm Weldment, Clutch/Brake		1
19	F05007-124	Bolt, 3/8-16 x 2 Hex Head Grade 5		1
20	F05010-10	Nut, 3/8-16 Hex Nyl Lock		2
21	F05011-3	Washer, 3/8" Flat SAE		3
22	F05010-25	Nut, 3/8-16 Swaged		1
23	034810	Spring, Idler Arm LT15/D/E/G		1
24	034602	Idler, 4" O.D. x 3/8" Bore		1
25	F05007-125	Bolt, 3/8-16 x 2-1/2" Hex Head Grade 5		1
26	016488	Block, LT15 Brake		2
27	F05004-2	Bolt, #10-24 x 1" Socket Head Cup		4
28	F05010-14	Nut, #10-24 Keps		8
29	F05004-282	Screw, 10-24 x 5/8" FSHC		4
30	065872	Plate, Brake Adjustment		2
31	F05011-18	Washer, #10 SAE Flat		4
32	F05010-29	<b>NUT, 3/8-16 JAM</b>		1
33	F05007-18	<b>SCREW, 3/8-16 X 1 1/4 SHOP SET</b>		1