

D24 Engine

Safety, Operation, Maintenance & Parts Manual

LT35
LT35HD

rev. A1.00 - A6.11
rev. A1.00 - A6.13



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

June 2016

Form #2209

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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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

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! 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.

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.
- 3.

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 Air Filter & Pre-Cleaner



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.

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

8 Clean the air filter (air cleaner element) and pre-cleaner (element wrapper) every eight hours of operation. See the engine manual for further instructions.

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

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

3.3 Fuel Filter

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

3.4 Battery

50 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

AR 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.

3 Maintenance
Alternator Belt

See Figure 3-1.

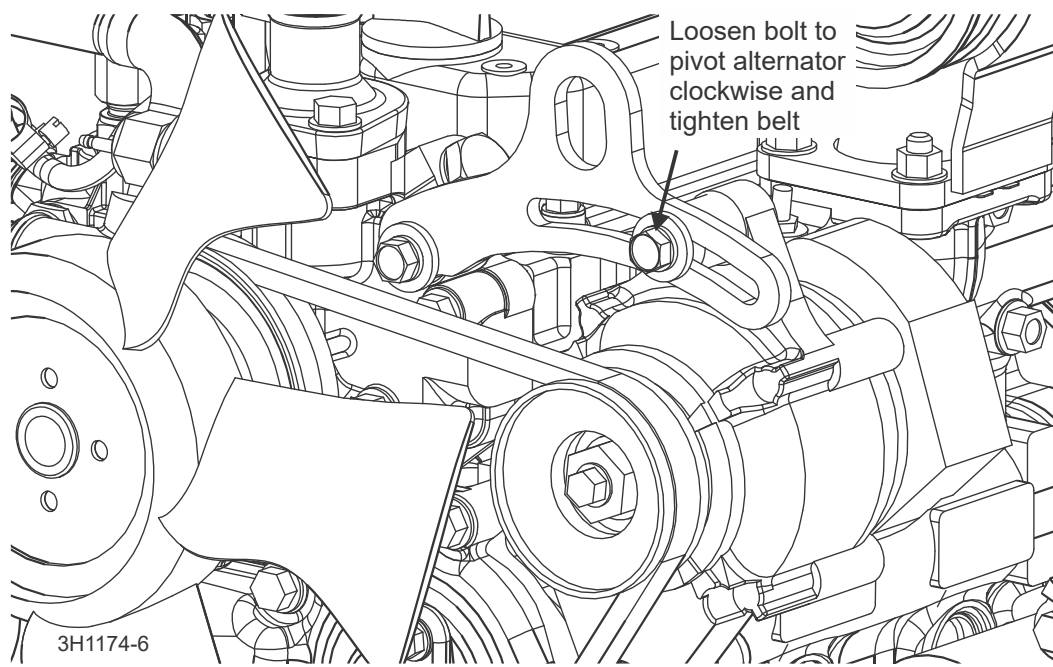


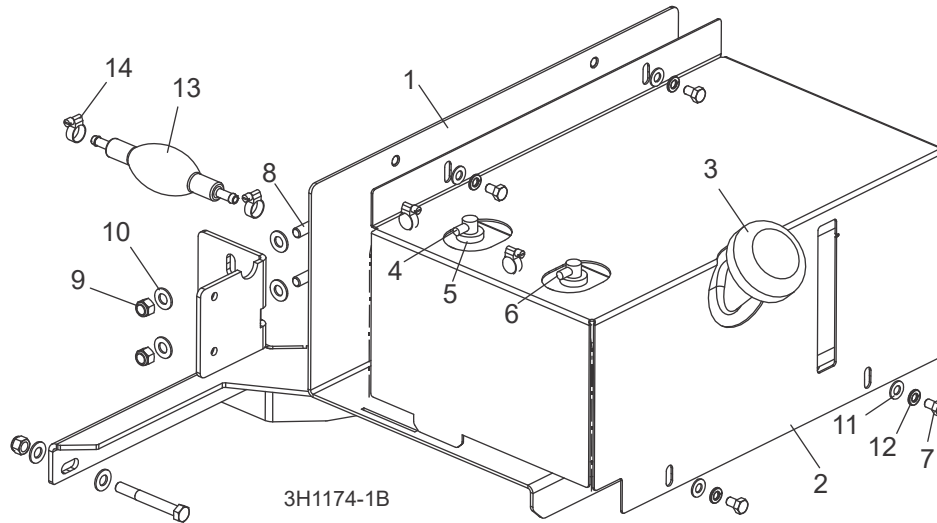
FIG. 3-1 LT35 D24

SECTION 4 REPLACEMENT PARTS

4.1 Fuel Tank

LT35
LT35HD

Rev. A6.08+
Rev. A6.10+

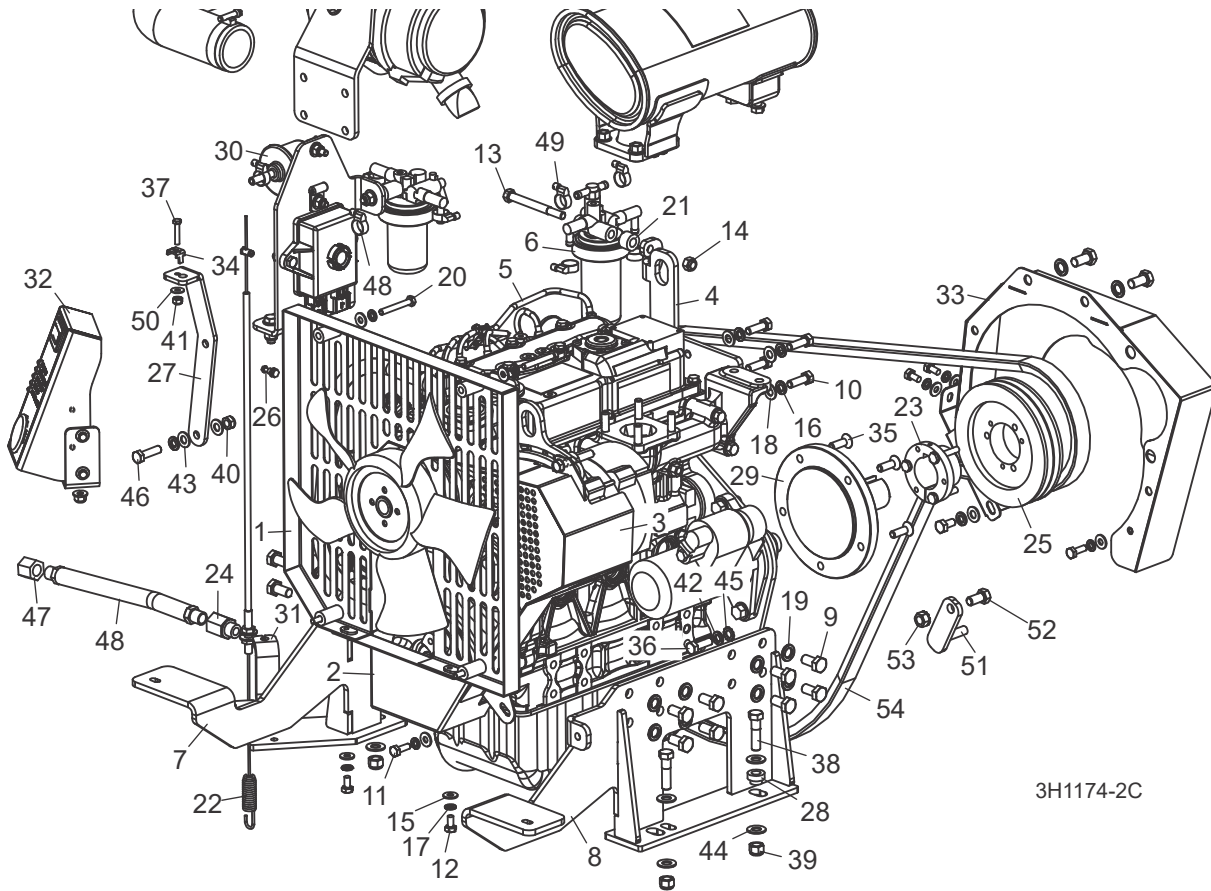


REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	TRAY ASSEMBLY, LT35 D24 DIESEL TANK	079084	1
1	Weldment, Fuel Tank Tray	103810	1
2	Cover, Fuel Tank	103867	1
	Tank, 5 Gallon Low Pro EPA Fuel	103928	1
3	Cap, Fuel Tank Diesel 080185BE	061257	1
4	Fitting, Pick-Up/Tube Diesel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

4 Replacement Parts

Engine Assembly

4.2 Engine Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	ENGINE ASSEMBLY, LT35D24 YANMAR TIER4 FINAL	076651	1
	Engine Assembly, D24 Yanmar Tier4 Final Base	074886 ¹	1
1	Guard Weldment, Yanmar Radiator Fan	079282	1
2	Plate, Yanmar Lower Radiator Guard	074786	1
3	Plate, Yanmar Alt. Belt Guard	079314	1
4	Plate, D24 Lift Bracket/Fuel Filter Mnt	074796	1
5	Engine, 24HP Yanmar Tier4 Final Diesel	074885	1
	Filter, Oil, Yanmar, 3TNV70-ASA #119305-35151	044647	1
	Oil Pressure Switch, Yanmar TNV88 #114250-39450	057936	1
	Belt, Yanmar Fan #25132-003500	061204	1
	Switch, Temp WM Installed/Plug on wires #121250-44901	044655	1
	Alternator, 105A 12V Modified w/Harness #20-146-C2	079280	1
	Solenoid, Fuel Shut Off D24 #119233-77932	061211	1
	Gasket, Water Temp Switch D24 #124465-44950	061212	1
	Starter Assembly, D24 #119515-77010	061214	1

	Relay, Pre-Heat Crank Fuel D24 #119650-77911	061215	3	
	Radiator, D24 #KR13	061216	1	
	Cap, Radiator D24 #129107-44590	061217	1	
	Assembly, Muffler D24 #KM11	061219	1	
	Cap, Rain D24 #119749-13600	061220	1	
	Tank, Coolant Reservoir D24 #121468-44520	061221	1	
	Filter, Air D24 #2S-E1	061218	1	
	Heater, Engine Block D24	061225	1	
	Gasket, Valve Cover, 3TNV70-ASA #119515-11310	044642	1	
	Seal, Yanmar Front Main #119717-01800	061196	1	
	Injector Assy, Yanmar #119C10-53000	061197	1	
	Seal, Yanmar Rear Main #119734-02220	061198	1	
	Thermostat, D24 #119717-49800	061213	1	
	Thermostat Gasket, Yanmar TNV #129795-49551	044652	1	
	Pump Assembly, Yanmar Water #119027-42000	061199	1	
	Gasket, Water Pump, Yanmar, 3TNV70-ASA #119515-42020	044654	1	
	Solenoid, Power #119C00-61900	061307	1	
	Diode, Solenoid Relay, Yanmar 3TNV88/70 #119643-66900	044657	1	
	Timer, Yanmar, 3TNV70-ASA #129211-77920	044658	1	
	Gasket, Exhaust Yanmar 3TNV70-ASA #119515-13200	044659	1	
	Fan, Yanmar Radiator #119258-44740	061200	1	
	Gasket, Yanmar Head #119C10-01330	061201	1	
	Plug, Oil Drain, Yanmar, 3TNV70-ASA #105425-01690	044663	1	
	Seal, Oil Drain, Yanmar, 3TNV70-ASA #22190-160002	044664	1	
	Plug, Yanmar Glow #119717-77801	061202	3	
	Gasket, Manifold, Yanmar, 3TNV70-ASA #119717-13110	044666	1	
	Dipstick, Yanmar #119025-34800	061203	1	
	Pipe, Yanmar Fuel Return #119D00-59540	061205	1	
	Radiator Kit, Yanmar #119515-44500	061206	1	
	Bottle Assy, Yanmar #121468-44520	061207	1	
	Pump, Fuel Injection D24 #719D25-51310	061306	1	
6	Filter Assembly, Fuel 119833-55621	061295	1	
	Filter, Fuel Yanmar #119810-55650	061099	1	
7	Mount Weldment, Yanmar Engine Left	076644	1	
8	Mount Weldment, Yanmar Engine Mount Right	076645	1	
9	Bolt, M10-1.50x20mm HH FT 8.8	F05004-207	15	
10	Bolt, M8x1.25x25mm C/S 8.8 Din 933 HH	F05004-40	4	
11	Bolt, 1/4-20x3/4 FT HHC	F05005-1	1	
12	Bolt, 1/4-20x1/2 HH	F05005-15	2	
13	Bolt, 5/16-18x3 1/4 HH Gr5	F05006-133	1	
14	Nut, 5/16-18 Nylok Hex	F05010-58	1	
15	Washer, 1/4 SAE Flat	F05011-11	7	
16	Washer, 5/16 Split Lock	F05011-13	4	

4

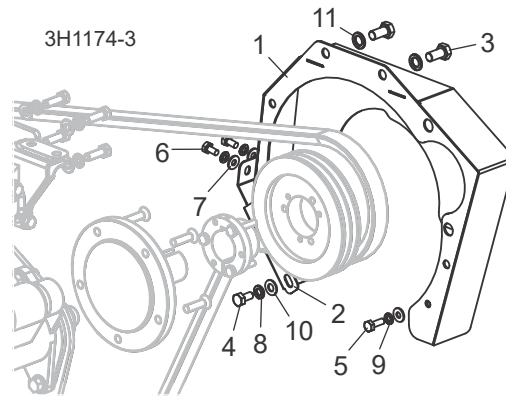
Replacement Parts

Engine Assembly

17	Washer, 1/4 Split Lock	F05011-14	7	
18	Washer, 5/16 SAE Flat	F05011-17	4	
19	Washer, 10mm Split Lock	F05011-88	15	
20	Bolt, M6-1.0x45 HH Class 8.8	F05020-28	4	
21	Spacer, 25/64IDx3/4ODx1/2Long	S22625	1	
22	Cable, LT15 D17	007392	1	
23	Bushing, 1 7/16" SH	016535	1	
24	Fitting, M16-3/8 NPT	046025	1	
25	Pulley, 3V5.6 x 2" SH	047742	1	
26	Throttle Fitting, Swivel	048904	1	
27	Plate, D24 Throttle Cable Mount	074795	1	
28	Washer, 13/32x3/4 Stepped	074822	2	
29	Shaft, 1-7/16 Yanmar D24 Short Stub	074969	1	
30	LT35D24 Fuel Pump/Pressure Sensor Parts (See Section 4.5)			
31	Plate, LT35D24 Throttle Cable	079067	1	
32	LT35D24 Control Panel Parts (See Section 4.4)			
33	LT35D24 Flywheel Cover Parts (See Section 4.3)			
34	Clamp, Throttle Cable	079082	1	
35	Screw, M8x1.25x25mm Flat Socket C/S BO	F05021-30	5	
36	Bolt, M8x1.25x25mm C/S 8.8 Din 933 HH	F05004-40	1	
37	Bolt, #10-24x1 Unslotted HH Gr2	F05004-156	1	
38	Bolt, 3/8-16x1 1/2 HH Gr5	F05007-78	4	
39	Nut, 3/8-16 Hex Nyloc	F05010-10	4	
40	Nut, M8-1.25 Hex Nylock	F05010-132	1	
41	Nut, 10-24 Hex Nylock	F05010-160	1	
42	Washer, 5/16 Split Lock	F05011-13	3	
43	Washer, 5/16 SAE Flat	F05011-17	3	
44	Washer, 3/8 Flat SAE	F05011-3	8	
45	Washer, 5/16 Star ET	F05011-33	1	
46	Screw, M8-1.25x30 HHC	F05021-11	2	
47	Cap, 3/8 Pipe Galvanize	P04332	1	
48	Hose, 3/8NPTx9 5/8 Rubber	P10082	1	
49	Hose Clamp, 7/32in-5/8in	P649	11	
50	Washer, #10 SAE Flat	F05011-18	1	
51	SUPPORT WELDMENT, DRIVE BELT	048237	1	
52	BOLT, 3/8-16 X 3/4" HEX HEAD GRADE 5	F05007-118	1	
53	NUT, 3/8-16 SELF-LOCKING HEX	F05010-19	1	
54	BELT, 2/3VFL900 DRIVE	047751	1	

¹ 079282 and 079314 replaced 074783 Guard Weldment and 074787 Guard Plate (LT35 Rev. A6.09/LT35HD Rev. A6.11). Also, 079280 Alternator replaced 044641 Yanmar Supplied Alternator (3TVN70-ASA #129423-77200) and added 079330 Harness.

4.3 Flywheel Cover Assembly

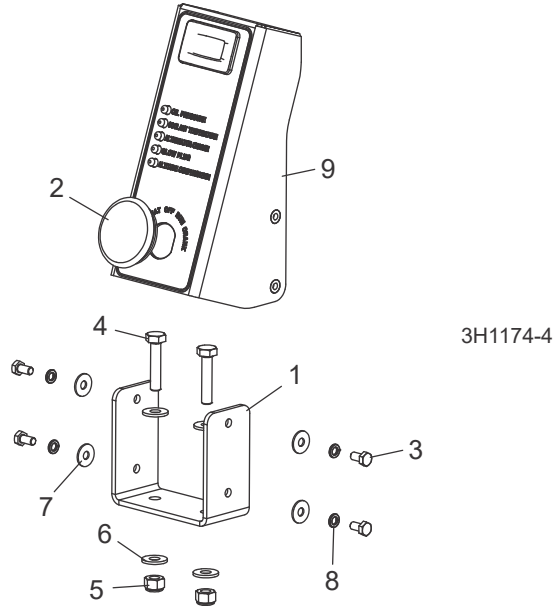


REF	DESCRIPTION (◆ INDICATES PARTS AVAILABLE IN ASSEMBLIES ONLY)	PART #	QTY.
	COVER ASSEMBLY, LT35D24 FLYWHEEL	079081	1
1	Weldment, LT35D24 Yanmar Flywheel Cover	074984	1
2	Plate, LT35D24 Lower Flywheel Guard	079064	1
3	Bolt, M10-1.50x20mm HH FT 8.8	F05004-207	2
4	Bolt, M8x1.25x16mm HH	F05004-47	1
5	Bolt, 1/4-20x3/4 FT HHC	F05005-1	1
6	Bolt, 5/16-24x5/8 Self Tap	F05015-15	2
7	Washer, 1/4 SAE Flat	F05011-11	3
8	Washer, 5/16 Split Lock	F05011-13	1
9	Washer, 1/4 Split Lock	F05011-14	3
10	Washer, 5/16 SAE Flat	F05011-17	1
11	Washer, 10mm Split Lock	F05011-88	2

4 Replacement Parts

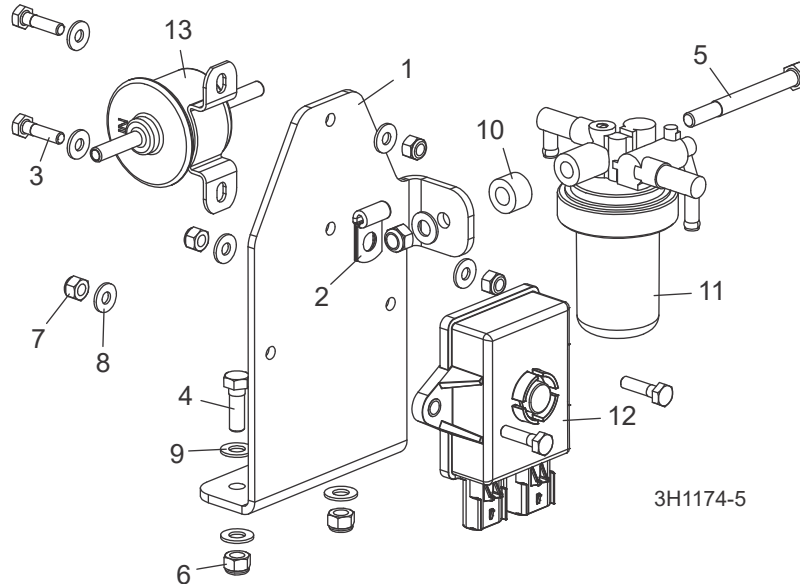
Control Panel Assembly

4.4 Control Panel Assembly



REF	DESCRIPTION (◆ INDICATES PARTS AVAILABLE IN ASSEMBLIES ONLY)	PART #	QTY.
	PANEL ASSEMBLY, LT35D24 CONTROL	N/A	1
1	Plate, D24 Key Switch/Control Mount	074797	1
2	Plug, AS100 Oiltite Painted	079080	1
3	Bolt, #10-32x1/2 HH	F05004-60	4
4	Bolt, 1/4-20x1 1/4 HH FT Cap	F05005-3	2
5	Nut, 1/4-20 Nylock	F05010-69	2
6	Washer, 1/4 SAE Flat	F05011-11	4
7	Washer, #10 SAE Flat	F05011-18	4
8	Washer, #10 Split Lock	F05011-20	4
9	Panel Assembly, KP7 Key Switch/Control	074934	1

4.5 Fuel Pump Assembly

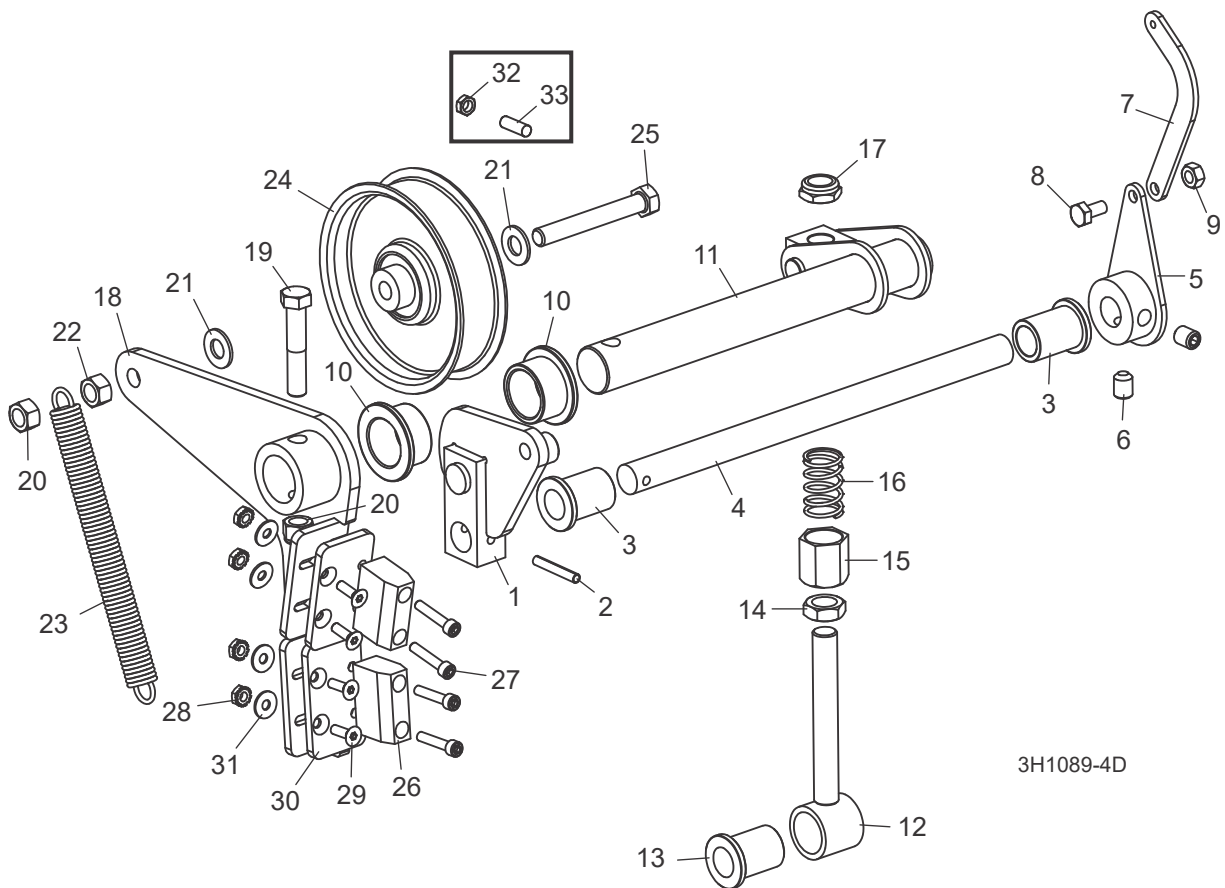


REF	DESCRIPTION (◆ INDICATES PARTS AVAILABLE IN ASSEMBLIES ONLY)	PART #	QTY.
	SENSOR ASSEMBLY, LT35D24 FUEL PUMP/PRESSURE	079066	1
1	Plate, D24 Yanmar Fuel Pump Mount	079065	1
2	Clamp, 3/16 Wire 13/32 Mounting Hole	079083	1
3	Bolt, 1/4-20x1 Hex Head Grade 5	F05005-101	4
4	Bolt, 5/16-18x1 Hex Head	F05006-1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

4 Replacement Parts

Throttle Assembly

4.6 Throttle Assembly



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

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

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