

D40 Engine

Safety, Operation, Maintenance & Parts Manual

LT30 Super	rev. F7.00 - G8.00
LT40 Super	rev. F8.00 - G9.00
LT30HD Super	rev. G1.00 - H3.00
LT40HD Super	rev. G1.00 - H3.00



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

February 1998

Form #773

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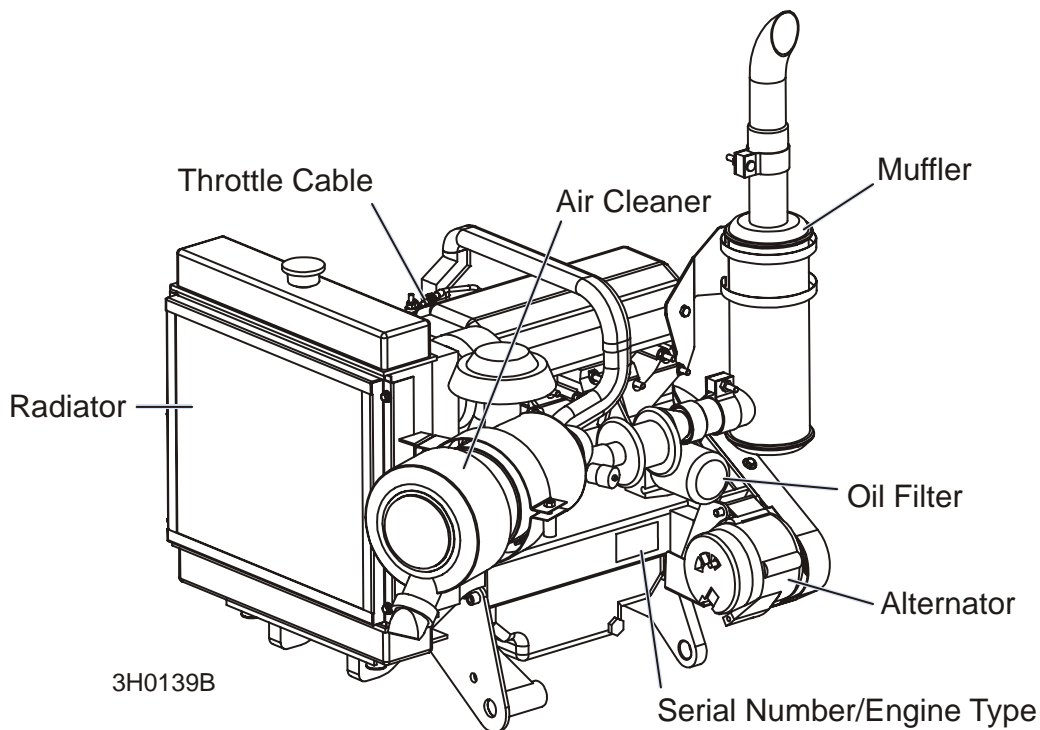
ABOUT THIS MANUAL

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.



ENGINE COMPONENTS

SECTION 1 OPERATION

1.1 Starting The Engine

Engine Control Lights

See Figure 1-1. The following indicator lights are located on the sawmill control panel. See the manufacturer's engine manual for troubleshooting tips.



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



NOTE: Indicator also lights up when engine is started and remains lit until engine initially reaches approximately 1300RPM.



Engine Temperature Indicator: Lights up if the engine is overheating. **LT30 Super Rev. G4.01, LT40 Super Rev. G5.01, and LT30HD/40HD Super Rev. G8.01 and later only:** A circuit breaker assembly in the engine harness will shut the engine off if the engine overheats. Turn the key switch off and allow the engine to cool for a period of time before restarting. If the overheating condition persists, stop operating the engine until the condition is corrected. The engine will automatically switch to low idle if an overheating condition occurs.



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



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



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



1

Operation

Starting The Engine

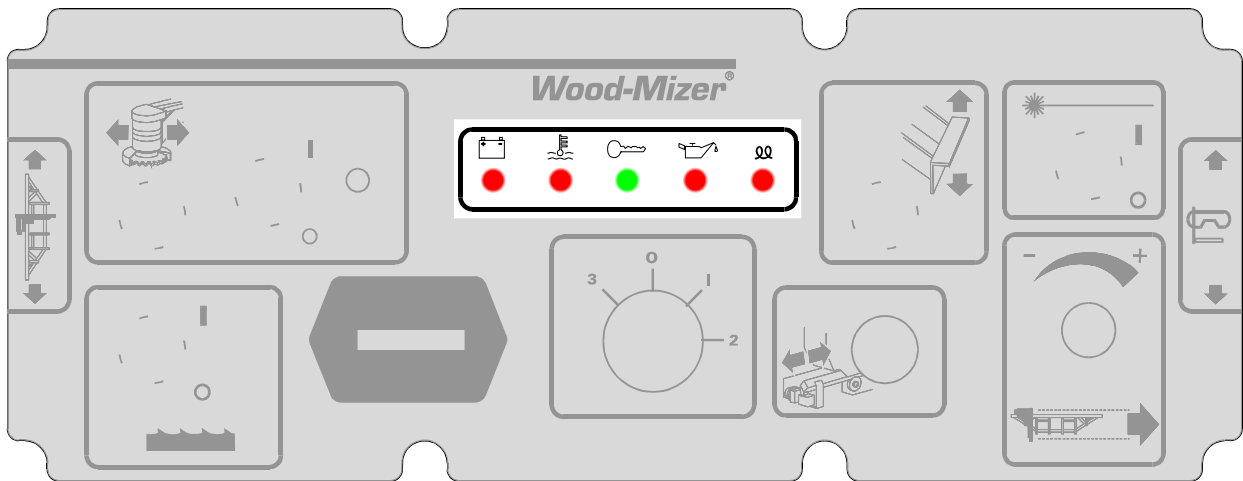


FIG. 1-1

See Table 1-1. **IMPORTANT!** The glow plug sensing relay is disconnected on LT30 Super Rev. F9.00, LT40 Super Rev. G1.00, LT30HD Super and LT40HD Super Rev. G3.00 to provide manual control of glow plug operation. Previous revisions can be modified to improve hot starting performance ([see form #250](#)). 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 1-1

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.

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 7 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 [TABLE 1-1](#))
5. Turn the key switch to the start (#2) position and release.

Engine Shutoff



CAUTION! Let engine idle for 2 minutes before shutting off to prevent engine damage. A minimum 2 minute idle time is also recommended to allow the battery charge to recover before the engine is shut off.

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

1.2 Cold Weather Operation

When sawing in extremely cold weather, you may need to use a different engine oil. Lombardini recommends using 0W30 for operating temperatures between -13° F (-25 C) and -31° F (-35° C). When sawing in temperatures below -31° F (-35° C), Lombardini recommends using a synthetic-based oil such as Mobil Delvac 1 5W40.

NOTE: Wood-Mizer offers a fuel additive (Stanadyne Performance Formula) which helps eliminate contaminants and water in fuel, prevents gelling in cold weather, and improves lubrication of fuel system parts. One 16 oz. bottle (WM Part #004878) treats 60 gallons of diesel fuel.

Wood-Mizer also offers an accessory engine water heater for Lombardini diesel engines. The heater unit installs around the lower radiator hose. When plugged into a grounded 120V outlet, the heater will keep the engine coolant warm enough to allow easy starts in cold climates.

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.

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.

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.

2.2 Air Cleaner

8

Empty the air debris collector every 8 hours of operation.

See Figure 2-1. Squeeze the rubber tip of the collector to open it. After all debris has been emptied from the collector, release the tip and allow it to close.



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.

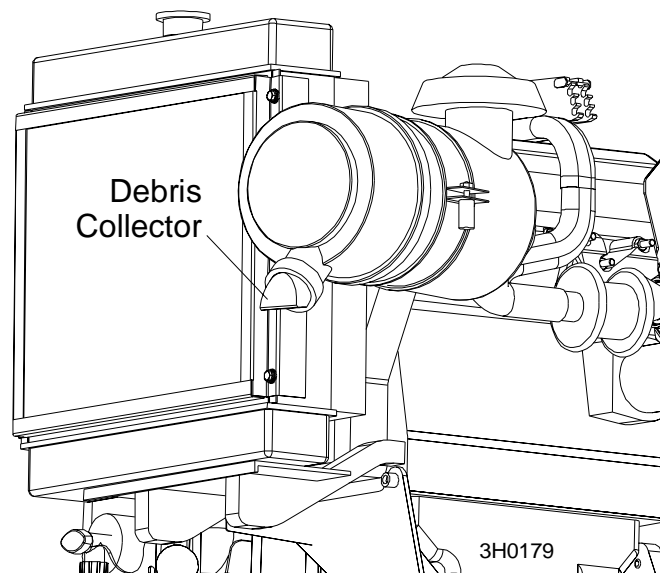


FIG. 2-1

AR

Replace the air filter when air filter indicator shows need (or every year). The air cleaner used on the Lombardini Diesel for Wood-Mizer sawmill applications is a special, non-standard filter which becomes more efficient with use. There is no need for periodic cleaning or servicing.

See Figure 2-2. The indicator is located on the side of the air cleaner housing, behind the radiator. A red band will appear in the sight window when the air restriction is at its maximum limit. Change the air filter and push the reset button on the indicator.

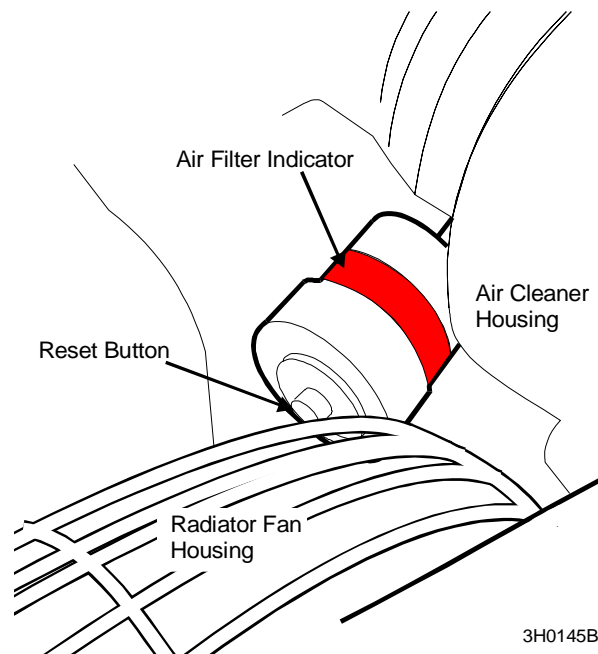


FIG. 2-2

2.3 Cooling System

8

Check the coolant level every 8 hours of operation.

8

Check the radiator fins every 8 hours of operation.

250

Clean the radiator fins every 250 hours of operation.

1000

Replace the coolant every 1000 hours of operation or every 2 years, whichever comes first. Use a mixture of 50% antifreeze and 50% water.

2.4 Fuel Filter

LT30 Super Rev. G1.00+
LT40 Super Rev. G2.00+
LT30HD Super Rev. G4.00+
LT40HD Super Rev. G4.00+

1500

See Figure 2-3. Replace the primary fuel filter cartridge every 1500 hours or one year of operation. After replacing the filter cartridge, loosen the air bleed screw and operate the fuel pump bail until fuel begins to flow from the valve and is free of air bubbles. Tighten the bleed screw. Inspect the water separator bowl periodically and drain the bowl as required by turning the drain cap counterclockwise as viewed from the bottom.

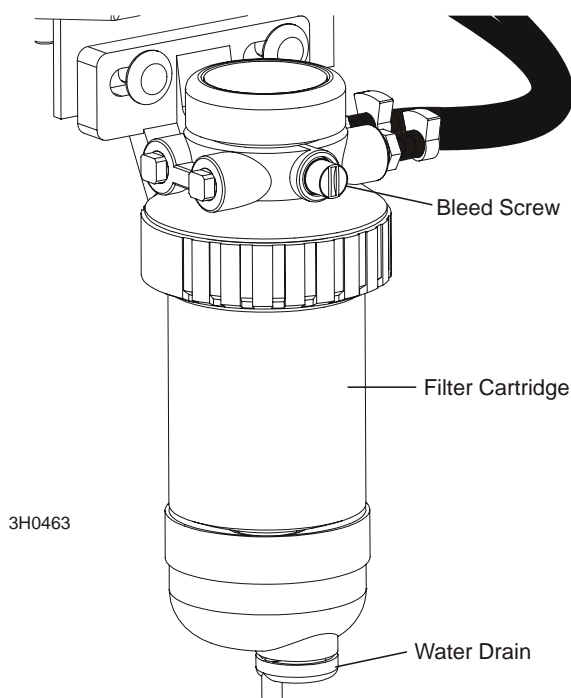


FIG. 2-3

LT30 Super Rev. F7.00 - F9.02
LT40 Super Rev. F8.00 - G1.02
LT30HD Super Rev. G1.00 - G3.03
LT40HD Super Rev. G1.00 - G3.03

250

Replace the in-line fuel filter every 250 hours of operation. It is recommended that the in-line fuel filter be replaced with the primary cartridge filter/water separator system ([See above](#)). This system will eliminate water and particles that can cause premature failure of injection system components.

2.5 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.¹



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.

2.6 Alternator Belt

*LT30 Super Rev. G6.00+
LT40 Super Rev. G7.00+
LT30HD Super Rev. H1.00+
LT40HD Super Rev. H1.00+*



The belt tension should be checked after the first 100 hours of operation, when the battery is not charging properly or when the alternator belt is squealing. If the battery continues to not charge properly or the belt continues to squeal after the initial belt adjustment, replace the belt.



IMPORTANT! Sawmills built prior to March 1999 were provided with a sight hole in the alternator bracket to gauge belt tension. To achieve proper belt tension, **do not use the sight hole**. Follow the procedure below to check the belt tension and adjust if necessary.

1. Battery Council International, copyright 1987

2

Maintenance

Alternator 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.

See Figure 2-4.

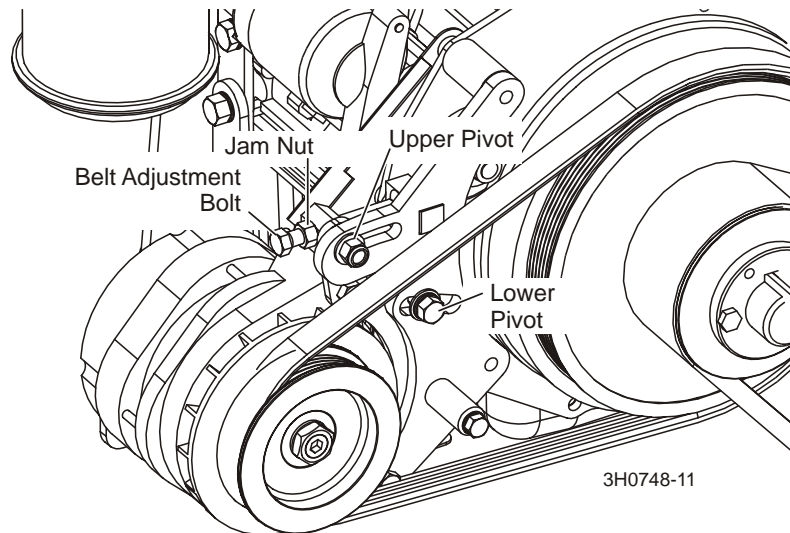


FIG. 2-4

3. Use a belt tension gauge to measure the belt tension. Place the gauge on the belt at the midpoint between the two pulleys. If the belt tension is less than 3/16" with 9 lb. of deflection, tighten the belt as described below.
4. Loosen the upper pivot, lower pivot and the adjustment bolt jam nut.
5. Turn the belt tension adjustment bolt clockwise to tighten the belt, counterclockwise to loosen the belt. Adjust the bolt until the proper belt tension is achieved.



CAUTION! Do not overtighten the alternator belt. Damage to the alternator will occur.

6. After the alternator belt has been tensioned, tighten the adjustment bolt jam nut. Tighten the upper and lower pivots and replace the belt covers.

LT30 Super Rev. F7.00 - G5.00

LT40 Super Rev. F8.00 - G6.00

LT30HD Super Rev. G1.00 - G9.00

LT40HD Super Rev. G1.00 - G9.00

1000

Replace the alternator belt every 1000 hours.

500

Check the alternator belt tension every 500 hours. Also check the alternator belt for tension and wear when battery is not charging properly or when the alternator belt is squealing. Adjust as needed.

1. Remove the alternator belt guard.
2. Loosen the two bolts in the slotted alternator bracket holes (opposite holes in front and rear of bracket).

See Figure 2-5.

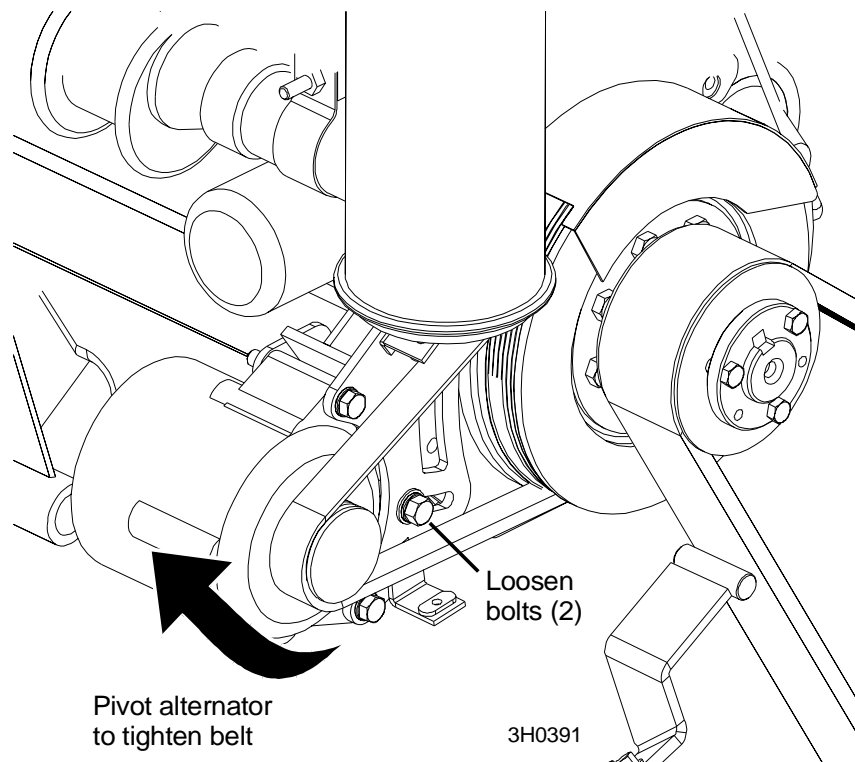


FIG. 2-5

3. Pivot the alternator to tighten the belt. Retighten the adjustment bolts and replace the belt guard.

2.7 Miscellaneous Maintenance

▶**2500** Perform a partial overhaul inspection as detailed in the engine manual every 2500 hours of operation.

▶**5000** Perform a complete overhaul inspection as detailed in the engine manual every 5000 hours of operation.

2.8 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 after the first 20 hours of operation and every 200 hours thereafter.

See Table 2-1.

Engine	High End RPM	Low End RPM
D40	3200	1500

TABLE 2-1

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

Make sure the throttle cable does not affect the engine RPM when the clutch handle is disengaged. Make sure the cable is not bent or kinked.

1. Use the bottom threaded cable mount to adjust the throttle cable. When the clutch handle is disengaged, the throttle cable should be taut but the spring not extended. When the clutch handle is engaged, the throttle spring should extend 1/8" to 1/4". Once the throttle cable is adjusted properly, use the adjustments provided on the engine to adjust the engine RPM (3200[+0, -100] high-end, 1500[±100] idle).



CAUTION! Do not extend the throttle spring over 1/4". Excessive tension may cause the throttle cable to fail prematurely.

See Figure 2-6.

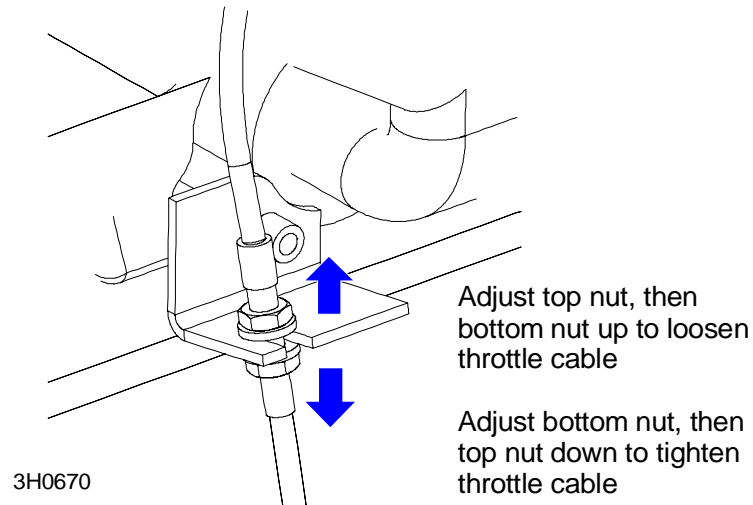


FIG. 2-6

2. Start the engine to measure the low-end RPM. Let idle for 10 minutes.
3. With the engine at idle, check the low-end RPM. Adjust to 1500. To decrease speed, loosen the idle adjustment bolt. To increase speed, tighten the idle adjustment bolt. Tighten the lock nut to hold the bolt in place.

See Figure 2-7.

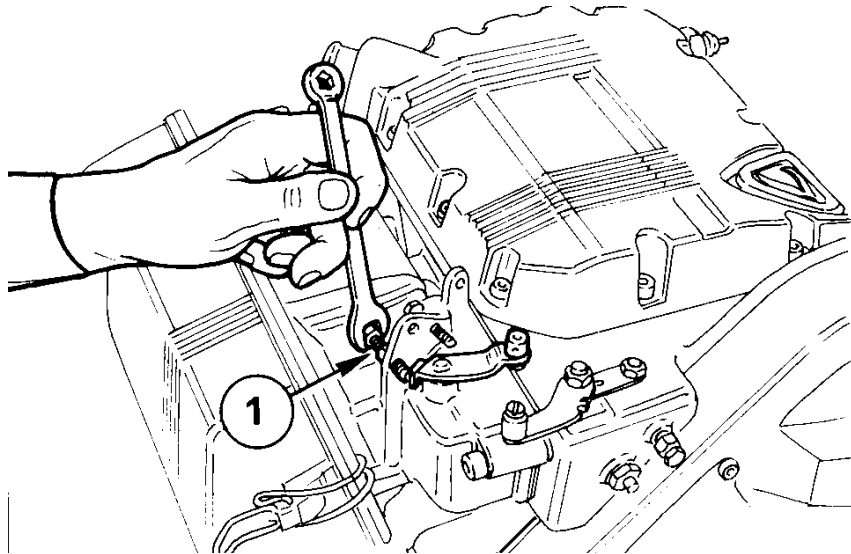


FIG. 2-7

4. Adjust the high-end RPM to 3200. To decrease speed, tighten the high-end adjustment bolt. To increase speed, loosen the high-end adjustment bolt. Tighten the lock nut to hold the bolt in place.



CAUTION! Do not adjust the high-end RPM above 3200. Doing so may cause damage to the engine.

See Figure 2-8.

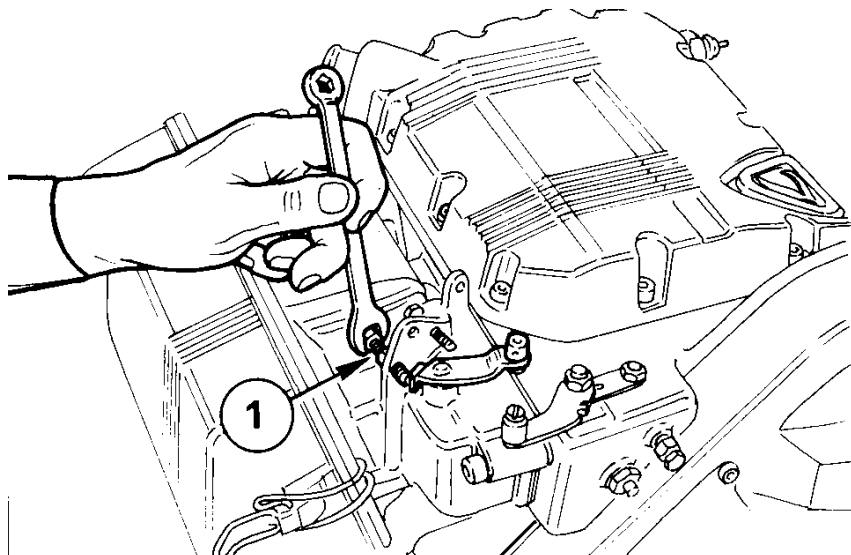


FIG. 2-8

See Figure 2-9.

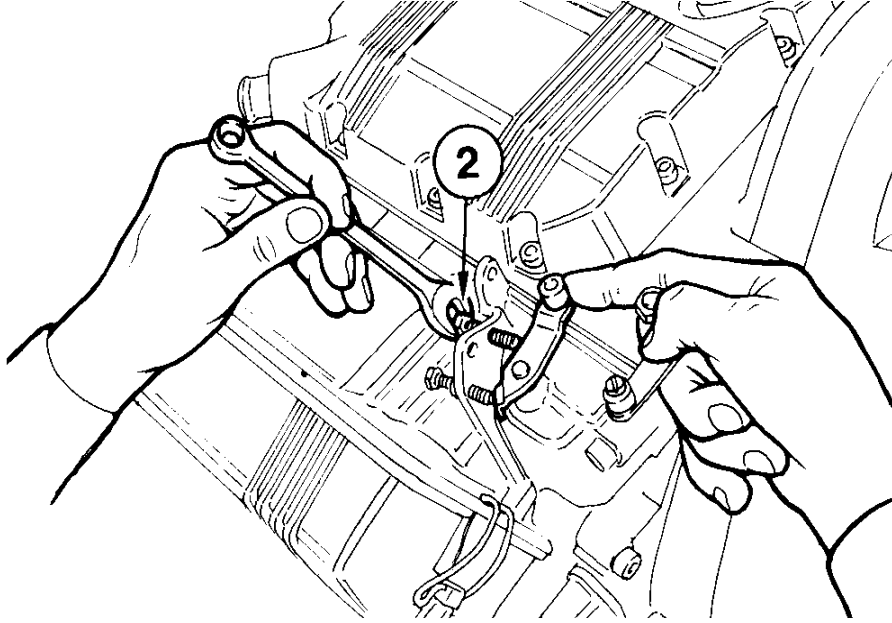
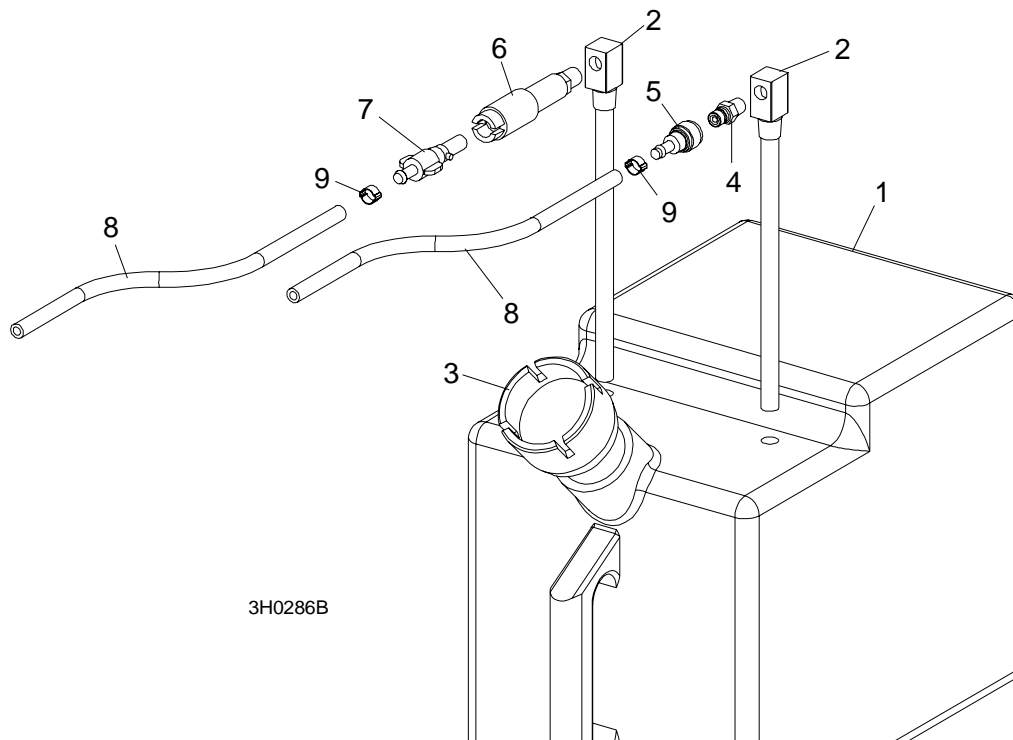


FIG. 2-9

SECTION 3 REPLACEMENT PARTS

3.1 Fuel Tank



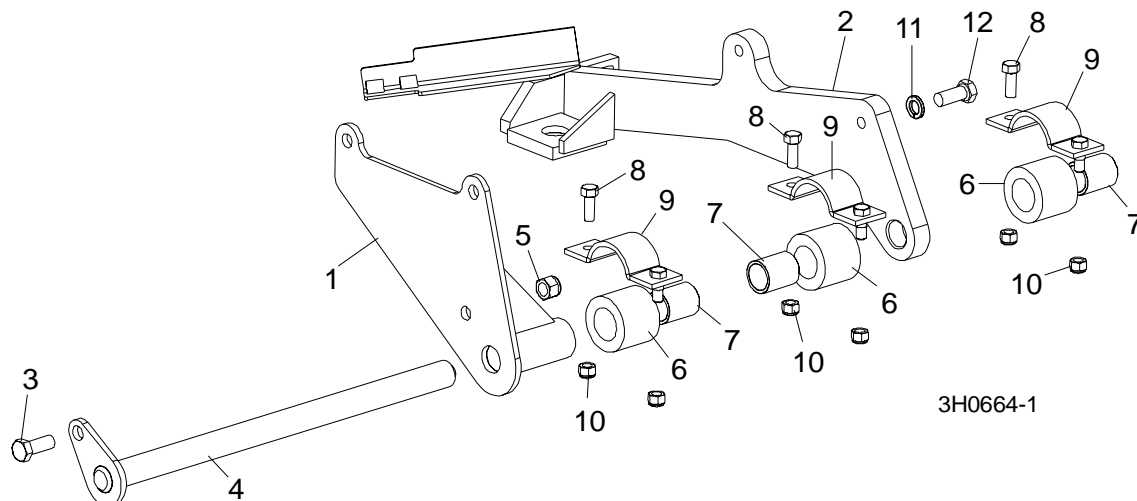
REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	TANK ASSEMBLY, 5 GALLON GREEN DIESEL	A12132 ¹	1	
1	Tank, 5 Gallon Green Fuel	P12166	1	◆
2	Pickup, 9" Fuel	P12172	2	
3	Cap, 3/5 Gallon Fuel Tank	P09683	1	
4	Fitting, 1/4" NPT Male Quick Disconnect	015583 ¹	1	
5	Fitting, Female Quick Disconnect Barb	015582 ¹	1	
6	Fitting, 1/4" NPT Plastic Female Disconnect	P12175	1	
7	Fitting, 1/4" Barb Plastic Male Disconnect	P12176	1	
8	HOSE, 1/4" ID FUEL	P642 ²	15.6 Ft	
9	CLAMP, 7/32 - 1/2 HOSE	P649 ²	6	
	ADDITIVE, DIESEL FUEL 16OZ BOTTLE	004878 ³	1	

¹ Tank assembly includes metal disconnect fittings 015582 and 015583 which replaced plastic fittings P12174 and P12173 on fuel pickup line (LT30 Super rev. F8.02, LT40 Super rev. F9.02, LT30HD/40HD Super rev. G2.02). Metal fittings require clamp P649.

² P642 fuel hose replaces R01890-1 used prior to LT30 Super Rev. G3.02, LT40 Super Rev. G4.02, and LT30HD/40HD Super Rev. G7.02. Use clamp P649 with new hose (replaces 015584, P12374 and 016040 used with old fuel hose).

³ Stanadyne Performance Formula helps eliminate contaminants and water in fuel, prevents gelling in cold weather, and improves lubrication of fuel system parts. 16 oz. bottle treats 60 gallons of diesel fuel.

3.2 Engine Mount Assembly



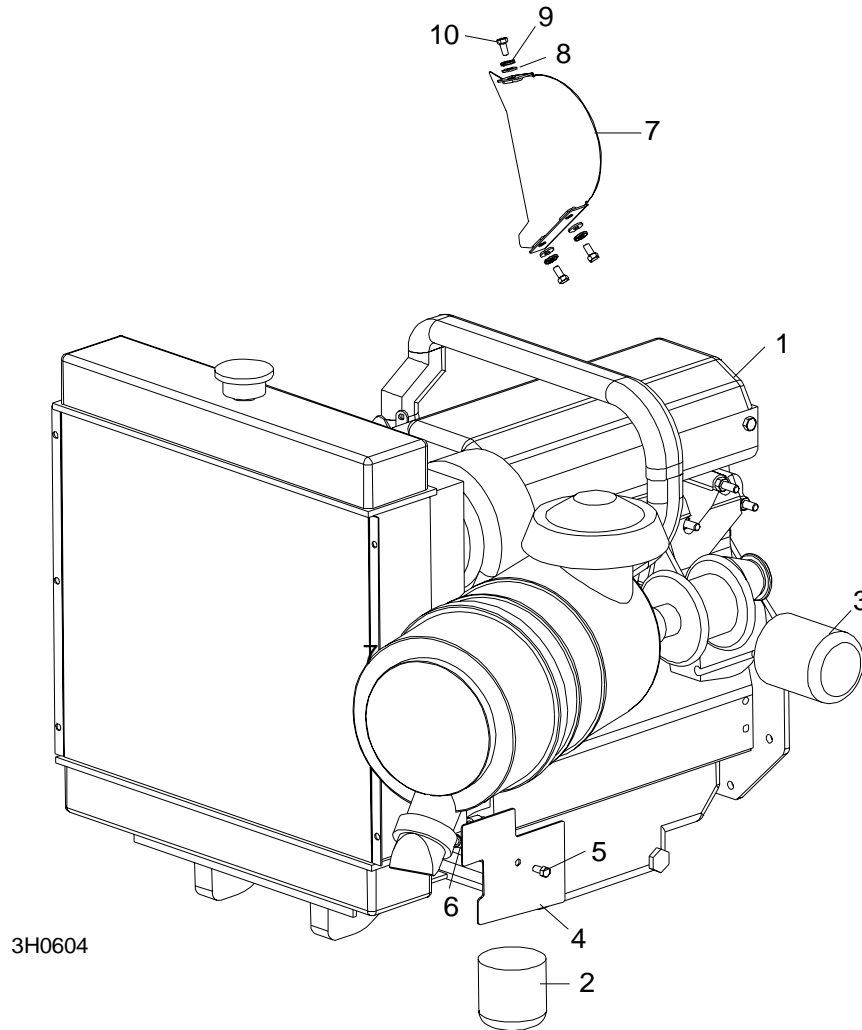
REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	MOUNT, FRONT MOTOR	014237	1	
	MOUNT KIT, LOMBARDINI DIESEL ENGINE	016321 ¹	1	
2	Mount Weldment, Lombardini Diesel Engine	014219	1	◆
3	BOLT, 1/2-13 X 1 1/4" HEX HEAD GRADE 5	F05008-37	1	
4	PIN WELDMENT, MOTOR PIVOT	014056	1	
5	NUT, 1/2-13 HEX NYLON LOCK	F05010-8	1	
	BUSHING ASSEMBLY, MOTOR MOUNT	016380 ²	3	
6	Bushing, 2" OD x 2"	016378	1	◆
7	Bearing, 1" x 1 1/4" x 2"	016379	1	◆
8	BOLT, 3/8-16 X 1" HEX HEAD	F05007-7	3	
9	CLAMP WELDMENT, MOTOR MOUNT	014540	3	
10	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	6	
11	WASHER, 1/2" SPLIT LOCK	F05011-9	1	
12	BOLT, 1/2-13 X 1 1/4" SOCKET HEAD	F05008-38	1	

¹ Mount Kit 016321 includes new rubber clutch handle mount bushings and hardware standard after 6/99 (See Clutch Handle parts in Sawmill Parts Manual).

² New assembly 016380 replaces original rubber pivot bushing P12164 and bronze bushing P05041 originally supplied. NOTE: When replacing original components with new assembly, it is best to replace all three assemblies at the same time.

3.3 Engine Assembly

LT30 Super *Rev. G3.05+*
LT40 Super *Rev. G4.05+*
LT30HD Super *Rev. G7.05+*
LT40HD Super *Rev. G7.05+*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	ENGINE, 40HP LOMBARDINI DIESEL	012978 ¹	1	◆
	Belt, Lombardini Idler	016071 ²	1	
	Belt, Lombardini Timing #2440-298	016289 ³	1	
	Cap, Oil Fill	014294	1	
2	Filter, Diesel Fuel	014209	1	
3	Filter, Diesel Oil	014211	1	
	Fuse Link, 80 Amp Glow Plug	014350	1	
	Gasket Kit, Lombardini Engine	014293	1	

3

Replacement Parts

Engine Assembly

	Gasket, Lombardini Head #4730-685	016178 ⁴	1	
	Guard, Lombardini Fan Left #6927-346	014747	1	
	Guard, Lombardini Fan Right #6927-350	014748	1	
	Plug, Diesel Glow	014278	1	
	Pump, Lombardini Fuel	014289	1	
	Pump, Lombardini Water	014288	1	
	Filter, Lombardini Air #2175-165 (For 1404 replacement engine only)	048395	1	
	Rail Kit, Lombardini Replacement Fuel	016073	1	
	Rail, Lombardini Fuel #9375-966	016074	1	
	O-Ring, Lombardini Fuel Rail #1200-286	016075	8	
	Gasket, Lombardini Valve Cover #4400-057	016076	1	
	Instruction Sheet, D40 Fuel Rail Replacement	016073-573	1	
	Starter, Lombardini Diesel Engine	014286	1	
	Thermostat, Kubota Engine	028546 ⁵	1	
	Solenoid, Lombardini D40 Fuel	014279	1	
4	PLATE, LOMBARDINI DUST SHIELD	014400	1	
5	BOLT, 1/4-20 X 1/2" HEX HEAD	F05005-15	1	
6	NUT, 1/4-20 SELF-LOCKING	F05010-9	1	
7	GUARD WELDMENT, D40 IDLER	016065 ²	1	
8	WASHER, 1/4" SAE FLAT	F05011-11	3	
9	WASHER, 1/4" SPLIT LOCK	F05011-14	3	
10	BOLT, 1/4-20 X 1/2" HEX HEAD	F05005-15	3	
	HARNES ASSEMBLY, LOMBARDINI DIESEL ENGINE	024452 ⁶	1	
	Breaker Assembly, Water Temp Max Circuit	024453 ⁶	1	
	TOOL, LOMBARDINI 01460-049 TIMING BELT TENSIONER	014358	1	
	HEATER, OPTIONAL ENGINE WATER (NOT SHOWN)	014635	1	

¹ Use complete engine assembly 015347 for service replacement. Includes engine, mounts, alternator, radiator, throttle, relay, and muffler. 012978 Lombardini model 1404 engine replaces 014092 model 1204T previously supplied (6/00).

² 016065 guard and 016071 belt required for idler assembly supplied by Lombardini. [See Section 3.4](#) for Wood-Mizer idler parts supplied on previous revisions.

³ Lombardini part 2440-298 replaces original timing belt 2440-338.

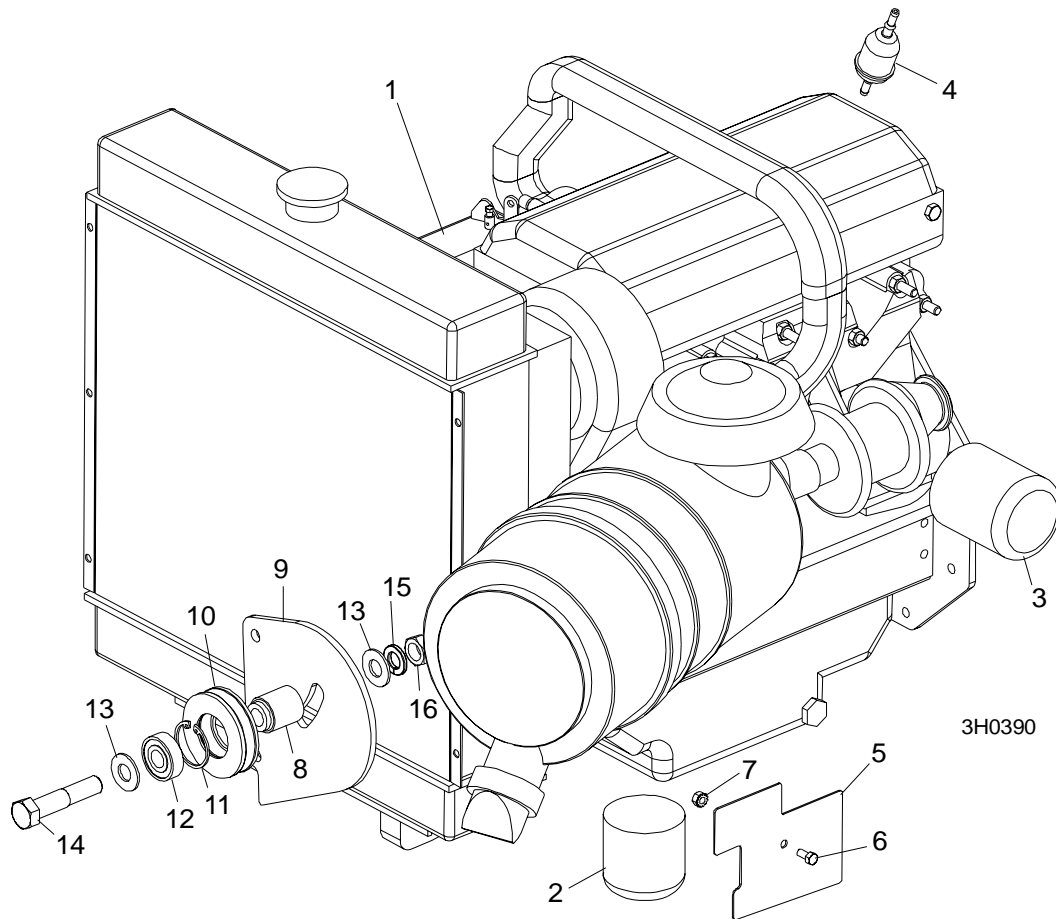
⁴ Head Gasket only. This part was a kit that included (1) #2440-298 Timing Belt; (1) #4400-057 valve cover gasket; (8) #1200-286 O-rings; (1) #9375-966 fuel rail; (1) #4730-685 head gasket; (1) #2175-298 oil filter. Kit parts can be ordered separately.

⁵ Lombardini Thermostat 014296 no longer available (3/06). Use Kubota Thermostat 028546 as replacement.

⁶ Engine harness with water temperature circuit breaker assembly added on LT30 Super Rev. G4.01, LT40 Super Rev. G5.01 and LT30HD/40HD Super Rev. G8.01.

3.4 Engine Assembly

LT30 Super *Rev. F8.00 - G3.04*
LT40 Super *Rev. F9.00 - G4.04*
LT30HD Super *Rev. G1.00 - G7.04*
LT40HD Super *Rev. G1.00 - G7.04*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	ENGINE, 40HP LOMBARDINI DIESEL LDW-1204T FOCS	012978 ¹	1	◆
	Belt, Lombardini Timing #2440-298	016289 ²	1	
	Cap, Oil Fill	014294	1	
2	Filter, Diesel Fuel	014209	1	
3	Filter, Diesel Oil	014211	1	
4	Filter, In-Line Fuel	P07570 ³	1	
	Fuse Link, 80 Amp Glow Plug	014350	1	
	Gasket Kit, Lombardini Engine	014293	1	
	Gasket, Lombardini Head #4730-685	016178 ⁴	1	
	Guard, Lombardini Fan Left #6927-346	014747	1	

3 Replacement Parts

Engine Assembly

	Guard, Lombardini Fan Right #6927-350	014748	1	
	Plug, Diesel Glow	014278	1	
	Pump, Lombardini Fuel	014289	1	
	Pump, Lombardini Water	014288	1	
	Filter, Lombardini Air #2175-165 (For 1404 replacement engine only)	048395	1	
	Rail Kit, Lombardini Replacement Fuel	016073 ⁵	1	
	Starter, Lombardini Diesel Engine	014286	1	
	Thermostat, Kubota Engine	028546 ⁶	1	
	Turbocharger, Lombardini Engine #9610-050	016220	1	
	Solenoid, Lombardini D40 Fuel	014279	1	
5	PLATE, LOMBARDINI DUST SHIELD	014400	1	
6	BOLT, 1/4-20 X 1/2" HEX HEAD	F05005-15	1	
7	NUT, 1/4-20 SELF-LOCKING	F05010-9	1	
8	SPACER, D40 IDLER	015333 ⁷	1	
9	PLATE, D40 IDLER	015334 ⁷	1	
10	PULLEY, D40 IDLER	015335 ⁷	1	
	BELT, LOMBARDINI IDLER #2440-316	014212 ⁷	1	
11	RING, 1.575 I.D. 3000-156 RETAINING	F04254-4 ⁷	1	
12	BEARING, 5/8" X 1.5" X .47"	P06030-1 ⁷	1	
13	WASHER, 5/8" SAE FLAT	F05011-5 ⁷	2	
14	BOLT, 5/8-11 X 3" HEX HEAD GRADE 2	F05009-32 ⁷	1	
15	WASHER, 5/8" SPLIT LOCK	F05011-9 ⁷	1	
16	NUT, 5/8-11 HEX JAM	F05010-11 ⁷	1	
	TOOL, LOMBARDINI 01460-049 TIMING BELT TENSIONER	014358	1	
	HEATER, OPTIONAL ENGINE WATER (NOT SHOWN)	014635	1	

¹ Use complete engine assembly 015347 for service replacement. Includes engine, mounts, alternator, radiator, throttle, relay, and muffler. 012978 Lombardini model 1404 engine replaces 014092 model 1204T previously supplied (6/00).

² Lombardini part 2440-298 replaces original timing belt 2440-338.

³ In-Line fuel filter replaced by primary cartridge system on LT30 Super Rev. G1.00, LT40 Super Rev. G2.00, LT30HD Super and LT40HD Super Rev. G4.00. Upgrade to cartridge system is recommended for previous revisions. [See Section 3.5.](#)

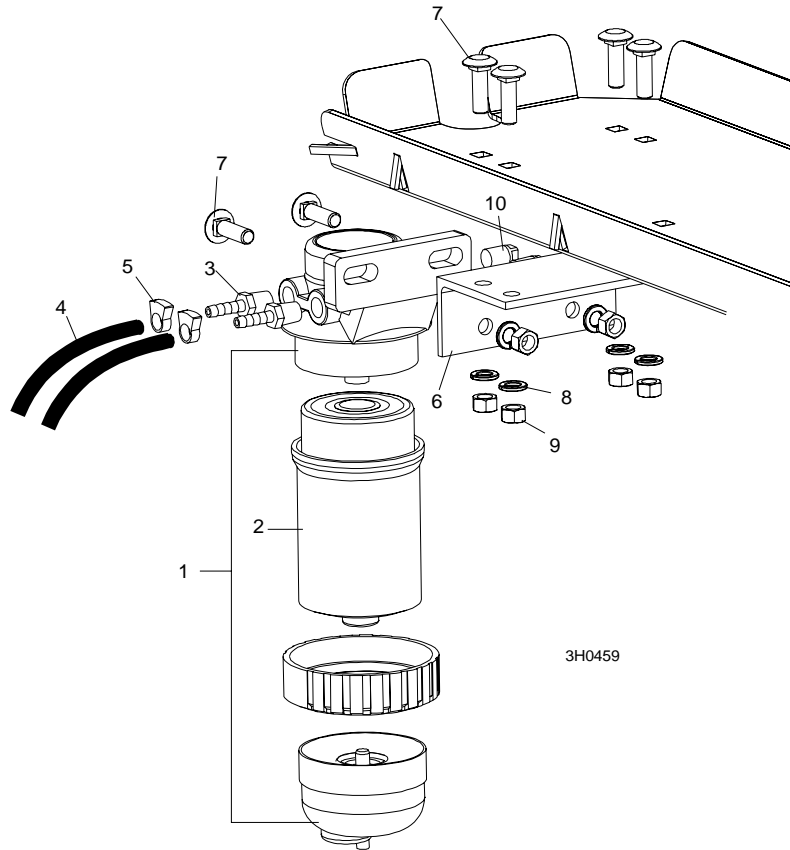
⁴ Head Gasket only. This part was a kit that included (1) #2440-298 Timing Belt; (1) #4400-057 valve cover gasket; (8) #1200-286 O-rings; (1) #9375-966 fuel rail; (1) #4730-685 head gasket; (1) #2175-298 oil filter. Kit parts can be ordered separately.

⁵ Fuel rail replacement for 1204T engines prior to serial number 4034285. Improved fuel rail eliminates rail failure which can cause fuel to mix with engine oil, resulting in the engine surging and in some cases cause engine run-away. Kit includes O-rings, valve cover gasket and installation instructions.

⁶ Lombardini Thermostat 014296 no longer available (3/06). Use Kubota Thermostat 028546 as replacement.

⁷ Idler assembly replaced with parts supplied by Lombardini. [See Section 3.3.](#)

3.5 Primary Fuel Filter Retrofit



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	FILTER ASSEMBLY, STANDADYNE FUEL #33816	015897 ¹	1	
2	Filter, Standadyne Fuel Cartridge #31865	015898	1	
3	FITTING, 1/4" NPT TO 1/4" HOSE BARB	P05393	2	
4	HOSE, 1/4" ID FUEL	P642 ²	7 Ft	
5	CLAMP, 7/32 - 1/2 HOSE	P649 ³	2	
6	BRACKET, DIESEL FUEL FILTER MOUNT	015905	1	
7	BOLT, 3/8-16 X 1 1/4" CARRIAGE HEAD	F05007-11	6	
8	WASHER, 3/8" SPLIT LOCK	F05011-4	6	
9	NUT, 3/8-16 HEX	F05010-1	6	
10	FITTING, 1/4" NPT PLUG	P05498	2	
	INSTRUCTION SHEET, DIESEL FUEL FILTER RETROFIT	015906-348	1	

¹ Use Retrofit Kit 015906 to replace in-line filter P07570 originally supplied before LT30 Super Rev. G1.00, LT40 Super Rev. G2.00, LT30HD Super and LT40HD Super Rev. G4.00.

² Replaces R01890-1 originally supplied.

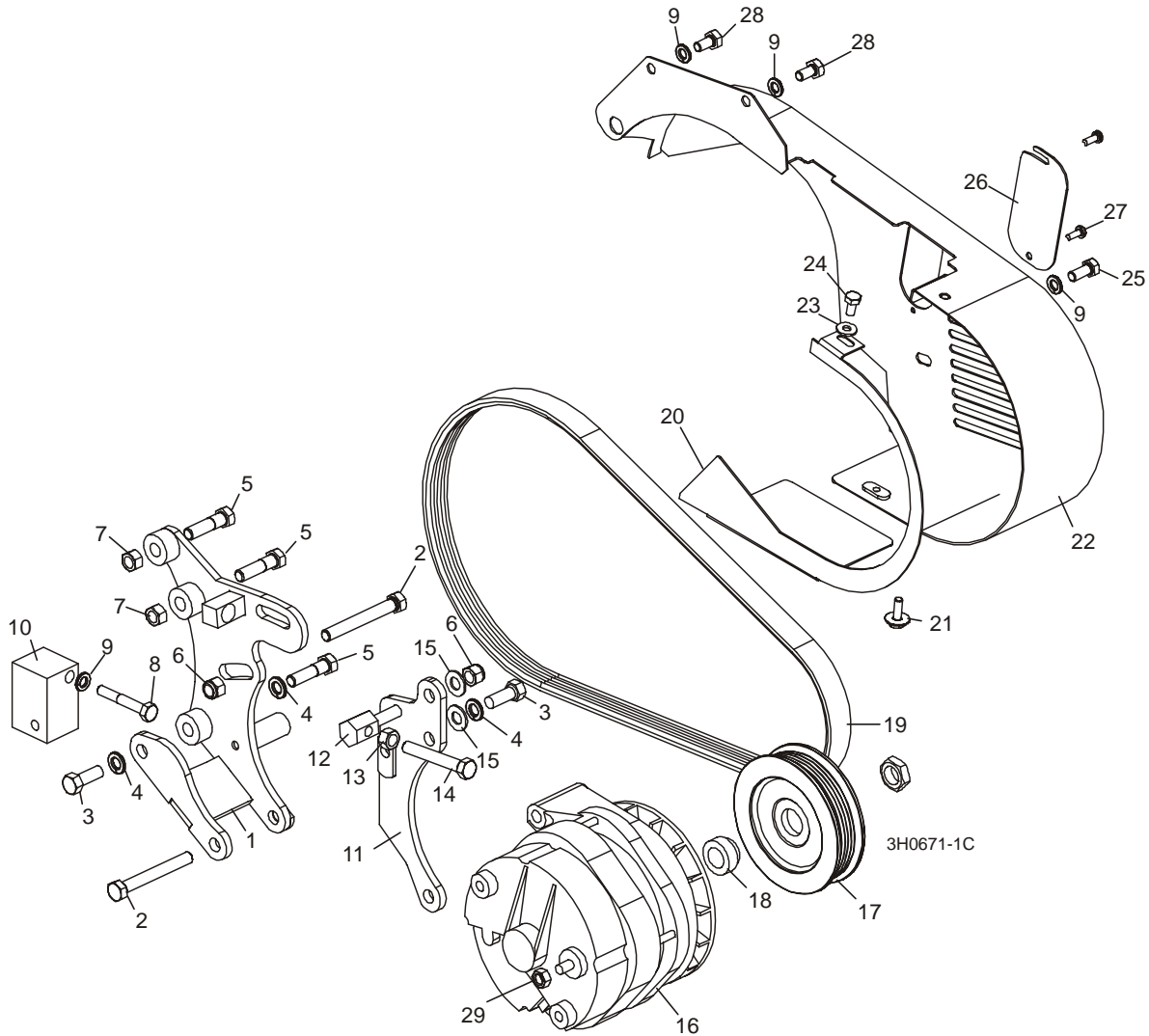
³ Replaces 016040 originally supplied.

3 Replacement Parts

Alternator Assembly

3.6 Alternator Assembly

LT30 Super **Rev. G6.00+**
LT40 Super **Rev. G7.00+**
LT30HD Super **Rev. H1.00+**
LT40HD Super **Rev. H1.00+**



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
	WIRE ASSEMBLY, 61/140 AMP ALTERNATOR PLUG	015969 ¹	1
	ALTERNATOR KIT, 140 AMP D40	023803 ¹	1
	Belt Guard Parts (See Section 3.16)		
1	Bracket Weldment, Alternator Mounting	023762	1
2	Bolt, 3/8-16 x 3" Hex Head Full Thread	F05007-1	2
3	Bolt, 3/8-16 x 1" Hex Head	F05007-7	2
4	Washer, 3/8" Split Lock	F05011-4	3
5	Bolt, 3/8-16 x 1 1/2" Hex Head	F05007-3	3

6	Nut, 3/8-16 Nylon Lock	F05010-10	2	
7	Nut, 3/8-16 Hex Lock	F05010-25	2	
8	Bolt, M8x50mm Hex Head Grade 5	F81002-10	1	
9	Washer, 5/16" Split Lock	F05011-13	4	
10	Block, Alternator Mount	023714	1	
11	Plate Weldment, Alternator Mount	015875 ²	1	
12	Stud, Alternator Belt Tension Adjustment	023764	1	
13	Nut, 3/8-16 Hex	F05010-1	1	
14	Bolt, 3/8-16 x 2 1/2" Hex Head Grade 2 Full Thread	F05007-157	1	
15	Washer, 3/8" SAE Flat	F05011-3	2	
	Alternator Assembly, 140 Amp	023730	1	◆
16	Alternator, 140 Amp	023695	1	
	Pulley Assembly, 140 Amp Alternator	036572 ³	1	
17	Pulley, 140 Amp Alternator	023694	1	◆
18	Spacer, Alternator Pulley	036571	1	
19	Belt, 6PK425 Fiberglass	023709	1	
20	Guard, 140 Amp Alternator Belt Rear	023778	1	
21	Screw, 1/4-20 x 3/4" Conical Washer Head	F05005-134	1	
22	Guard Weldment, 140 Amp Alternator Belt	023777	1	
23	Washer, 1/4" SAE Flat	F05011-11	1	
24	Bolt, 1/4-20 x 1/2" Hex Head	F05005-15	1	
25	Bolt, 5/16-18 x 3/4" Hex Head	F05006-5	1	
26	Plate, Alternator Belt Access	023794	1	
27	Bolt, #10-24 x 1/2" Pan Head	F05015-17	2	
28	Bolt, M8 x 125 x 16mm Hex Head	F05004-47	2	
29	NUT, M8 X 1.25 HEX JAM	F05010-76	1	

¹ 140 amp alternator supplied on LT30 Super Rev. G6.00, LT40 Super Rev. G7.00 and LT30HD/LT40HD Super Rev. H1.00. [See Section 3.7](#) for 105 amp alternator parts. Previous revisions can retrofit to 140A alternator. Alternator Retrofit Kit 016238 includes alternator kit 023803, retrofit plug wire assembly, and installation instructions.

² 015875 replaces 023765 originally supplied before 12/99 (similar parts).

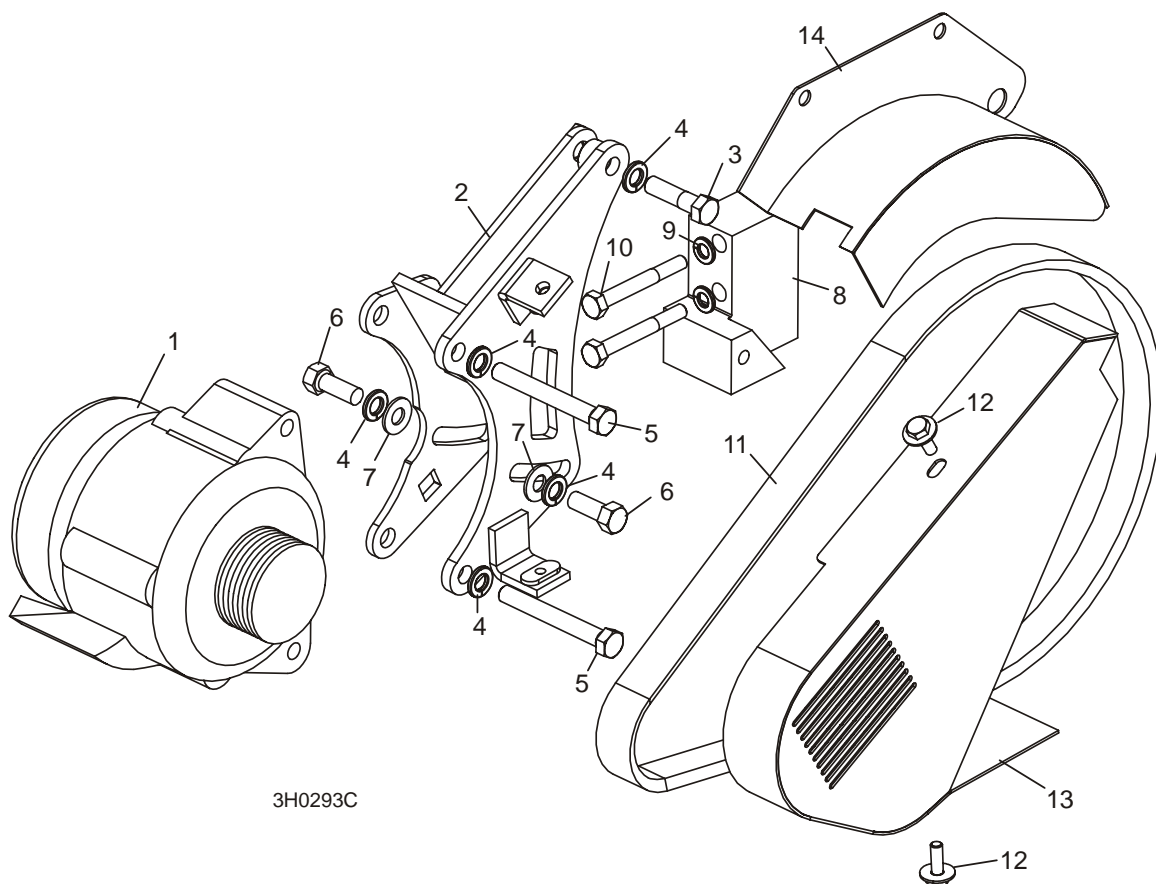
³ Pulley Assembly 036572 replaces Pulley 023694 and Spacer 016279 supplied prior to 7/04. Pulley Assembly with pressed Spacer 036571 provides improved positioning relative to drive pulley.

3 Replacement Parts

Alternator Assembly

3.7 Alternator Assembly

LT30 Super **Rev. F7.00 - G5.00**
LT40 Super **Rev. F8.00 - G6.00**
LT30HD Super **Rev. G1.00 - G9.00**
LT40HD Super **Rev. G1.00 - G9.00**



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	ALTERNATOR, 105 AMP	015473 ¹	1
	WIRE ASSEMBLY, ALTERNATOR PLUG 105 AMP	015932 ²	1
2	BRACKET WELDMENT, D40 ALTERNATOR MOUNT	015325	1
3	BOLT, 3/8-16 X 1 1/2" HEX HEAD GRADE 5	F05007-78	1
4	WASHER, 3/8" SPLIT LOCK	F05011-4	5
5	BOLT, 3/8-16 X 3" FULL THREAD HEX HEAD	F05007-1	2
6	BOLT, 3/8-16 X 1" HEX HEAD	F05007-7	2
7	WASHER, 3/8" SAE FLAT	F05011-3	2
8	BLOCK, ALTERNATOR MOUNTING	015331	1
9	WASHER, 5/16" SPLIT LOCK	F05011-13	2
10	SCREW, M8 X 1.25 X 65MM HEX HEAD	F05004-96	2
11	BELT, 6PK1015 ALTERNATOR	015474	1

12	BOLT, 1/4-20 X 3/4" HEX HEAD WITH CONICAL WASHER	F05005-134 ³	2	
13	GUARD, D40 ALTERNATOR BELT	015321	1	
14	COVER WELDMENT, FLYWHEEL	015338	1	

¹ 140A Alternator Retrofit 016238 available ([See Section 3.6](#)).

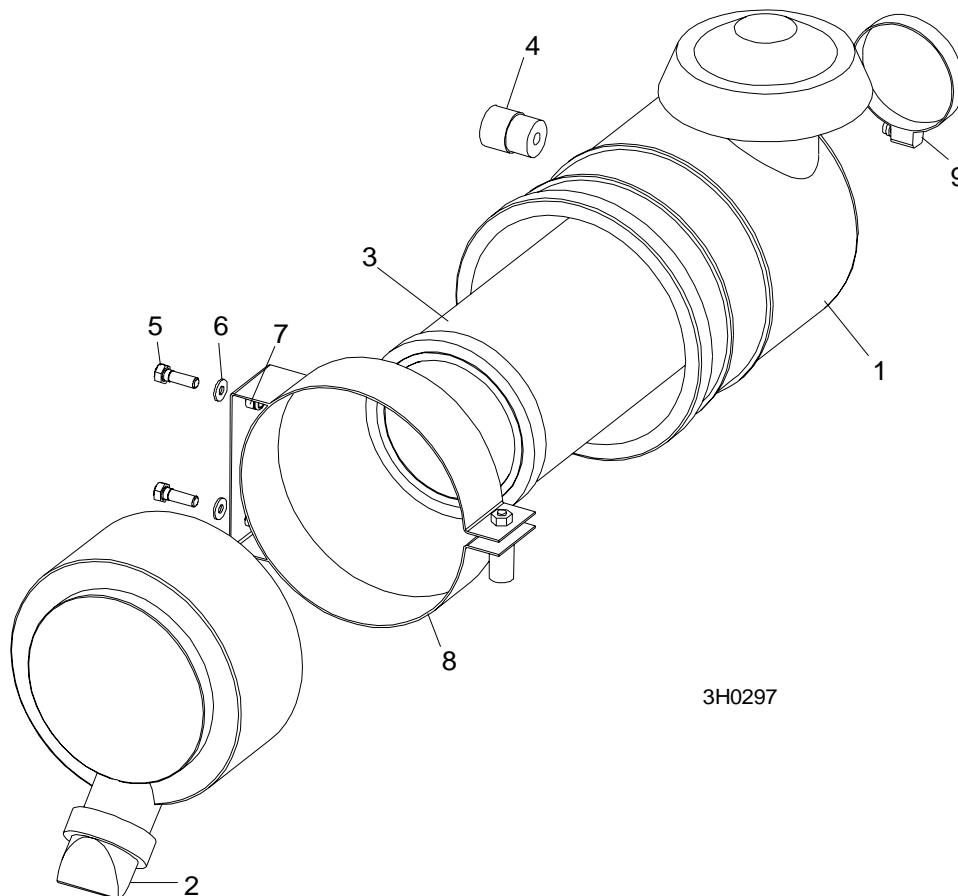
² New part available 11/97. Plug housing seals added to harness LT30 Super Rev. G4.00, LT40 Super Rev. G5.00, LT30HD Super and LT40HD Super Rev. G8.00.

³ Replaces 1/4-20 x 3/4" hex head bolt (F05005-1), 1/4" SAE flat washer (F05011-11) and 1/4" split lock washer (F05011-14) originally supplied.

3 Replacement Parts

Air Cleaner Assembly

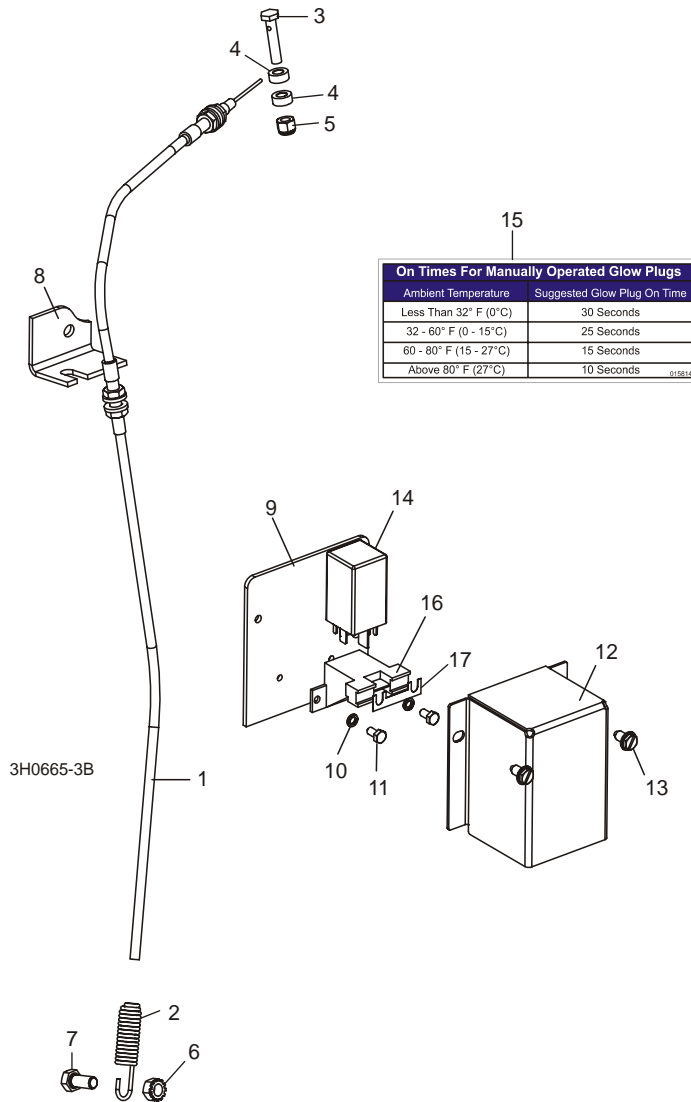
3.8 Air Cleaner Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	CLEANER ASSEMBLY, DONALDSON AIR COMPLETE	014280	1	
2	Boot, Air Cleaner Evacuator	014287	1	
3	Element, Donaldson Air Filter	014210	1	
4	INDICATOR, AIR CLEANER RESTRICTION	014336	1	
5	BOLT, 5/16-18 X 1" HEX HEAD	F05006-1	2	
6	WASHER, 5/16" SAE FLAT	F05011-17	2	
7	NUT, 5/16-18 HEX NYLON LOCK	F05010-58	2	
8	CLAMP, 7" SPRING	014160	1	
9	CLAMP, 3 3/4" HOSE	P04921	1	

3.9 Relay/Throttle Assembly

LT30 Super *Rev. G5.00+*
LT40 Super *Rev. G6.00+*
LT30HD Super *Rev. G9.00+*
LT40HD Super *Rev. G9.00+*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	CABLE ASSEMBLY, D30/D40 THROTTLE	016125 ¹	1
	Cable Wire, D30/D40 .078" Throttle	016149 ¹	1
2	Spring, Throttle	016033	1
3	BOLT, D30/D40 THROTTLE CABLE	015985	1
4	WASHER, .266 X .50 X .28" AL-BRONZE	015986	2
5	NUT, 1/4-20 NYLON LOCK	F05010-69	1

3**Replacement Parts***Relay/Throttle Assembly*

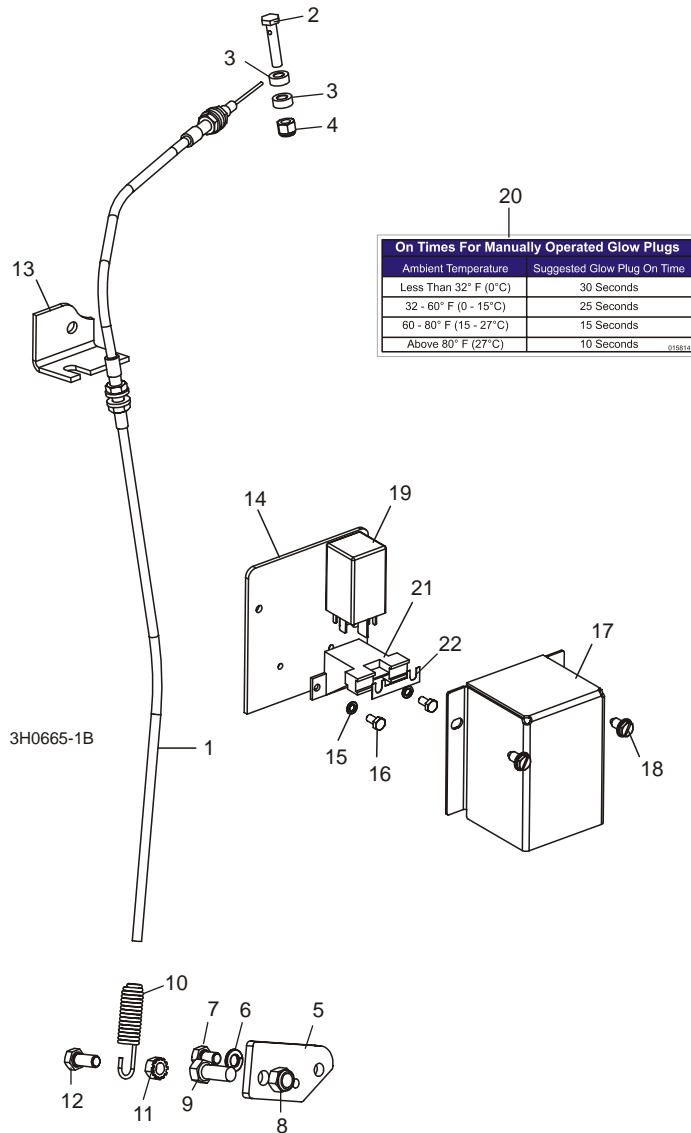
6	NUT, 5/16-18 SELF-LOCKING HEX	F05010-20	1	
7	BOLT, 5/16-18 X 3/4" HEX HEAD	F05006-5	1	
8	BRACKET, THROTTLE CABLE MOUNT	015566	1	
9	PLATE WELDMENT, DIESEL RELAY BOX MOUNT	014197	1	
10	WASHER, #10-24 SPLIT LOCK	F05011-20	2	
11	BOLT, #10-32 X 1/2" HEX HEAD	F05004-60	2	
12	BOX, D40 GLOW PLUG RELAY	014199	1	
13	BOLT, 1/4-20 X 1/2" SLOTTED HEX HEAD	F05015-1	2	
14	RELAY, GLOW PLUG	023359	1	
15	DECAL, LOMBARDINI GLOW PLUG ON TIME (LOCATED ON CONTROL BOX)	015814	1	
16	SOCKET KIT, GLOW PLUG RELAY	053049 ²	1	
17	Fuse, 80A Lombardini Glow Plug	014350	1	

¹ Use throttle cable retrofit kit 016015 for revisions prior to LT30 Super Rev. G5.00, LT40 Super Rev. G6.00, and LT30HD/40HD Super Rev. G9.00. [See Section 3.10.](#)

² Replaces 023358 originally supplied. Kit includes pre-assembled socket with applicable wires, terminals and fuse.

3.10 Relay/Throttle Assembly

LT30 Super *Rev. F7.00 - G4.02*
LT40 Super *Rev. F8.00 - G5.02*
LT30HD Super *Rev. G1.00 - G8.02*
LT40HD Super *Rev. G1.00 - G8.02*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	CABLE KIT, D30/D40 THROTTLE REPLACEMENT	016015 ¹	1
	Cable Wire, D30/D40 .078" Throttle	016149 ¹	1
2	Bolt, D30/D40 Throttle Cable	015985 ²	1
3	Washer, .266 x .50 x .28" Al-Bronze	015986 ²	2
4	Nut, 1/4-20 Nylon Lock	F05010-69 ²	1

3

Replacement Parts Relay/Throttle Assembly

5	Plate, Throttle Cable Retrofit	016128	1	
6	Bolt, 5/16-18 x 1/2" Hex Head Grade 5	F05006-15	1	
7	Washer, 5/16" Split Lock	F05011-13	1	
8	Bolt, 3/8-16 x 1 Hex Head	F05007-7	1	
9	Nut, 3/8-16 Nylon Lock	F05010-10	1	
	Instruction Sheet, D30/D40/G35 Throttle Cable Retrofit Installation	016015-840	1	
10	SPRING, THROTTLE	016033	1	
11	NUT, 5/16-18 SELF-LOCKING HEX	F05010-20	1	
12	BOLT, 5/16-18 X 3/4" HEX HEAD	F05006-5	1	
13	BRACKET, THROTTLE CABLE MOUNT	015566 ³	1	
14	PLATE WELDMENT, DIESEL RELAY BOX MOUNT	014197	1	
15	WASHER, #10-24 SPLIT LOCK	F05011-20	2	
16	BOLT, #10-32 X 1/2" HEX HEAD	F05004-60	2	
17	BOX, D40 GLOW PLUG RELAY	014199	1	
18	BOLT, 1/4-20 X 1/2" SLOTTED HEX HEAD	F05015-1	2	
19	RELAY, GLOW PLUG	023359	1	
20	DECAL, LOMBARDINI GLOW PLUG ON TIME (LOCATED ON CONTROL BOX)	015814	1	
21	SOCKET KIT, GLOW PLUG RELAY	053049 ⁴	1	
22	Fuse, 80A Lombardini Glow Plug	014350	1	

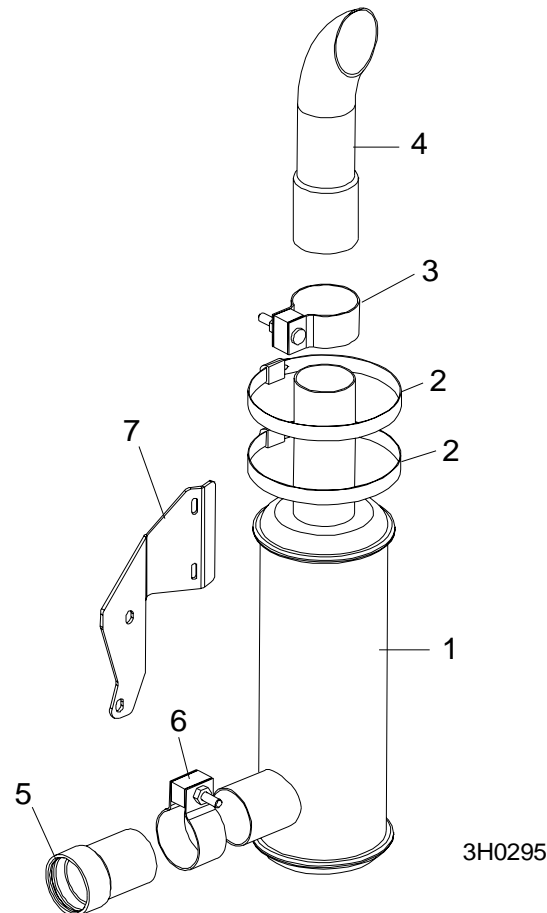
¹ Replaces 014097 originally supplied prior to LT30 Super Rev. G5.00, LT40 Super Rev. G6.00, and LT30HD/40HD Super Rev. G9.00. .078" dia. cable 016149 replaces .059" dia. cable 015831 to provide improved durability. Kit includes hardware required to retrofit previous revisions. [See Section 3.9](#) for replacement components if throttle cable has been retrofitted.

² Replaces 015848 barrel-style cable clamp and (2) F05004-102 set screws supplied from LT30 Super Rev. F9.01 - G2.00, LT40 Super Rev. G1.01 - G3.00, LT30HD Super and LT40HD Super Rev. G3.01 - G6.00. Also replaces 014608 clamp supplied prior to LT30 Super Rev. F9.01, LT40 Super Rev. G1.01, LT30HD Super and LT40HD Super Rev. G3.01. *NOTE: 015985 cable bolt requires (2) 015986 washers and (1) F05010-69 nut.*

³ 015566 replaced 014111 1/98. Similar part used on D30.

⁴ Replaces 023358 originally supplied. Kit includes pre-assembled socket with applicable wires, terminals and fuse.

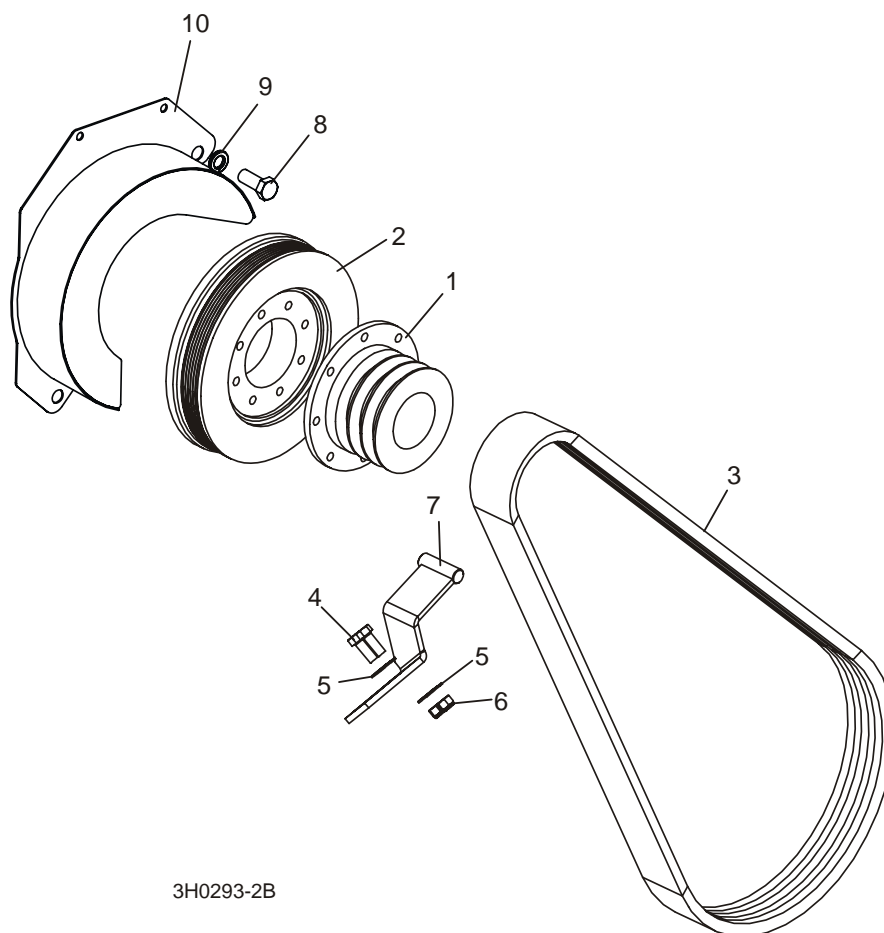
3.11 Muffler Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	MUFFLER	014093	1	
2	CLAMP, 5" WORM	014096	2	
3	CLAMP, MUFFLER	014095	1	
4	STACK, MUFFLER	014094	1	
5	TUBE, LOMBARDINI EXHAUST	014319	1	
6	CLAMP, MUFFLER 2" NELSON 90869A	014205	1	
7	BRACKET, MUFFLER	014321	1	

3.12 Drive Assembly

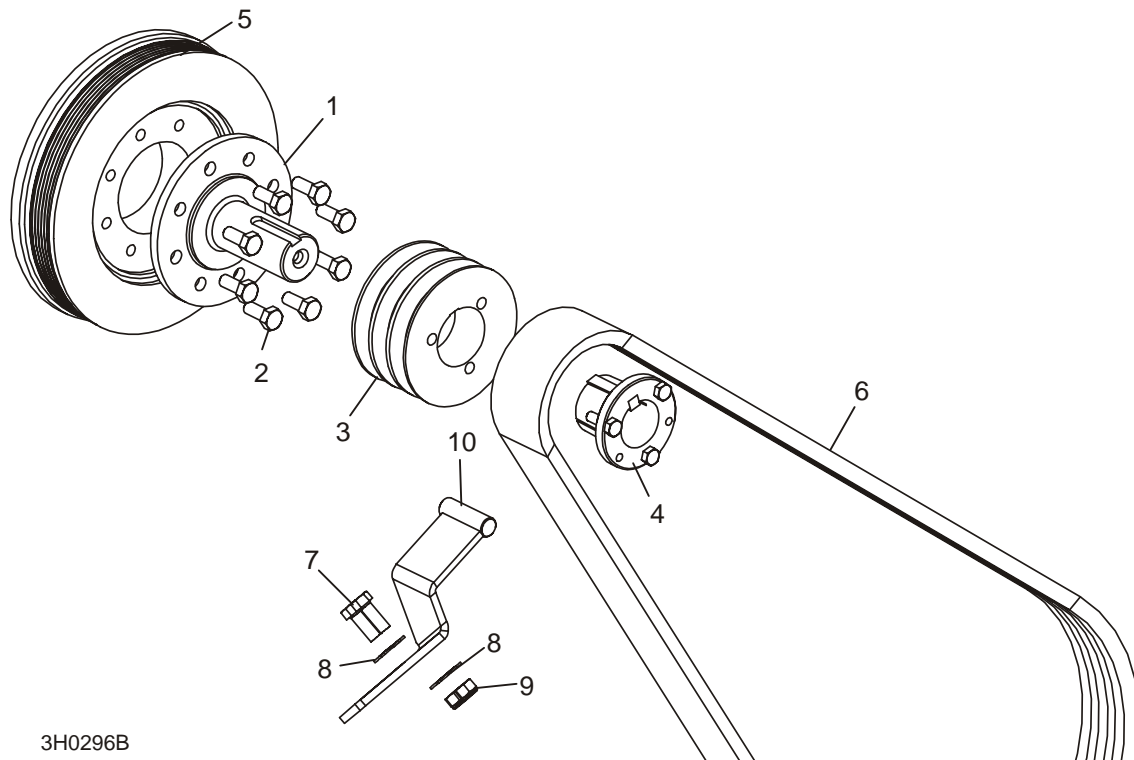
LT30 Super Rev. G4.01 - G8.00
 LT40 Super Rev. G5.01 - G9.00
 LT30HD Super Rev. G8.01 - H3.00
 LT40HD Super Rev. G8.01 - H3.00



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	SHEAVE, LOMBARDINI DRIVE	016124	1
2	FLYWHEEL, ALTERNATOR BELT	015309	1
3	BELT, 3BX72	014085	1
4	BOLT, 3/8-16 X 1 1/4" CARRIAGE	F05007-11	2
5	WASHER, 3/8" SAE FLAT	F05011-3	4
6	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	2
7	SUPPORT, DRIVE BELT	015058	1
8	BOLT, 1/2-13 X 1 1/4" HEX HEAD GRADE 5	F05008-37	1
9	WASHER, 1/2" SPLIT LOCK	F05011-9	1
10	COVER WELDMENT, FLYWHEEL	014065	1

3.13 Drive Assembly

LT30 Super Rev. F8.00 - G4.00
 LT40 Super Rev. F9.00 - G5.00
 LT30HD Super Rev. G1.00 - G8.00
 LT40HD Super Rev. G1.00 - G8.00



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
1	SHAFT, OUTPUT	014024 ¹	1
2	BOLT, M10X25 GRADE 10.9 HEX HEAD	F05009-52	8
3	SHEAVE, 3TB42 MOTOR DRIVE	014007 ¹	1
4	BUSHING, SPLIT TAPER, P1 1 9/16"	014003 ¹	1
5	FLYWHEEL, ALTERNATOR BELT	015309	1
6	BELT, 3BX72	014085	1
7	BOLT, 3/8-16 X 1 1/4" CARRIAGE	F05007-11	2
8	WASHER, 3/8" SAE FLAT	F05011-3	4
9	NUT, 3/8-16 HEX NYLON LOCK	F05010-10	2
10	SUPPORT, DRIVE BELT	015058	1

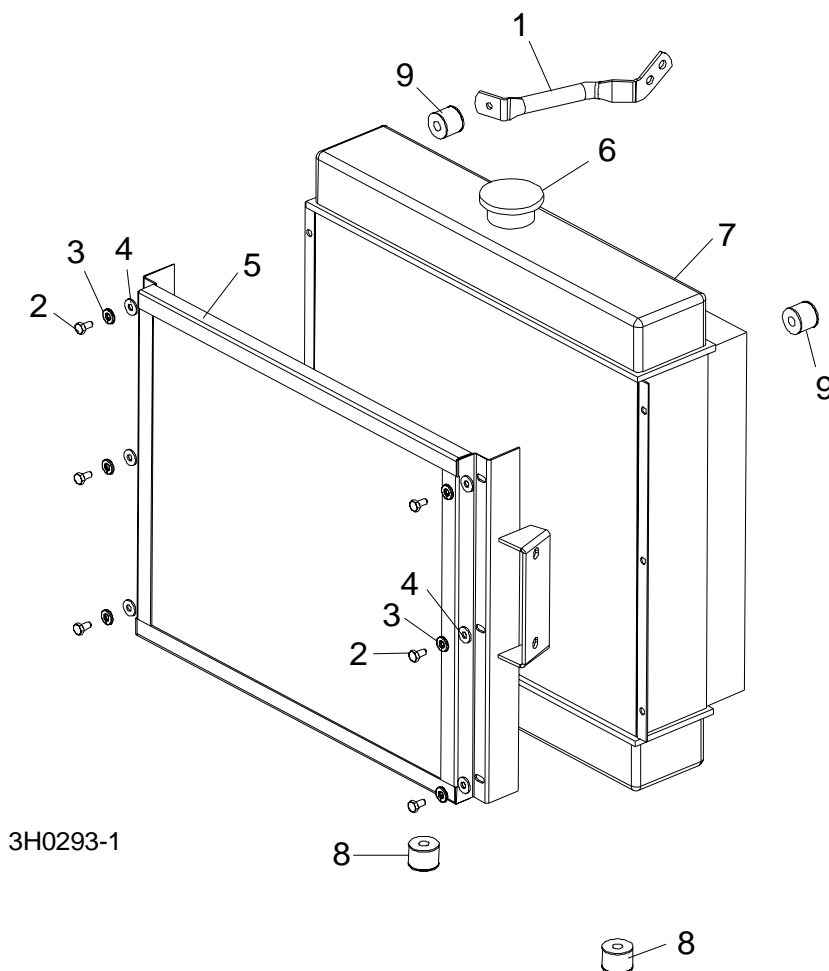
¹ Output Shaft, Sheave and Bushing replaced with single-piece sheave provided by Lombardini ([See Section 3.12](#)).

3 Replacement Parts

Radiator Assembly

3.14 Radiator Assembly

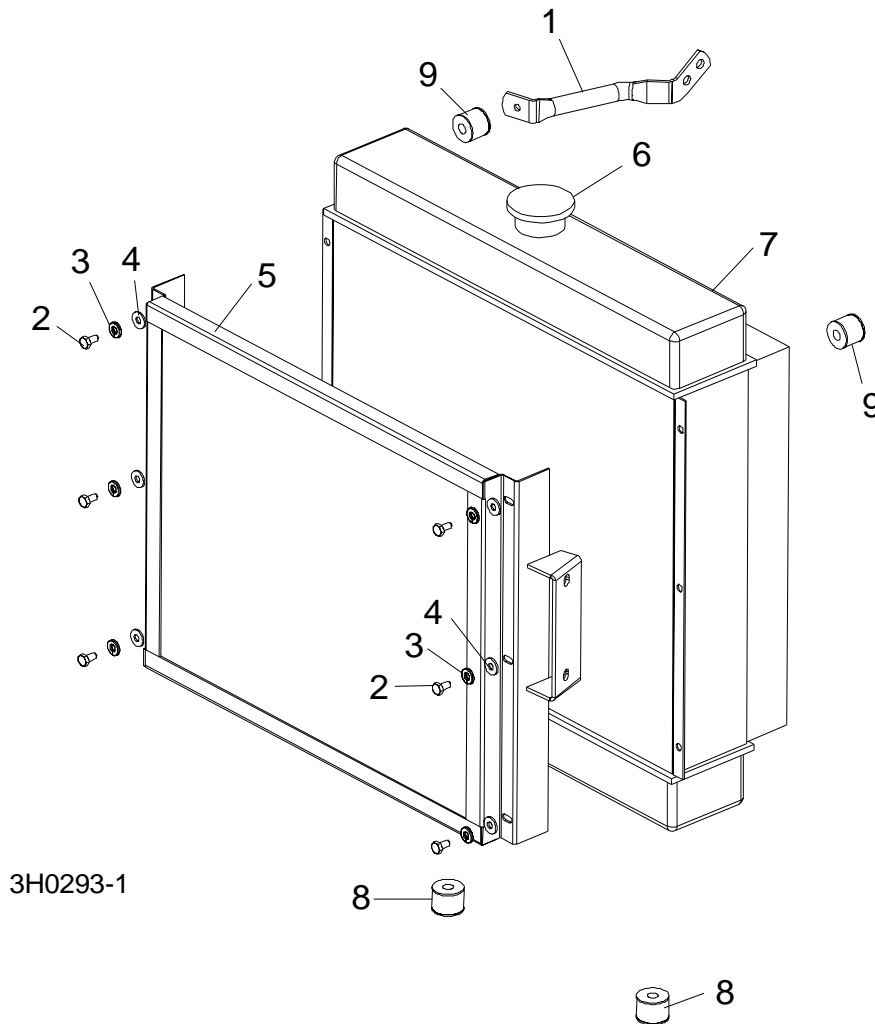
LT30 Super *Rev. G4.01+*
LT40 Super *Rev. G5.01+*
LT30HD Super *Rev. G8.01+*
LT40HD Super *Rev. G8.01+*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	BRACE, LOMBARDINI RADIATOR SUPPORT #9265-162	016171	1	
	BRACE, LOMBARDINI RADIATOR SUPPORT #9265-161 (NOT SHOWN)	016172	1	
2	SCREW, M6X12 HEX HEAD CAP FULL THREAD	F05005-99	6	
3	WASHER, 1/4" SPLIT LOCK	F05011-14	4	
4	WASHER, 1/4" SAE FLAT	F05011-11	4	
5	GRILL, RADIATOR	015500	1	
6	CAP, RADIATOR FILL	014295	1	
7	RADIATOR, LOMBARDINI	N/A	1	
8	BUSHING, RADIATOR VIBRATION LOWER	016143	2	
9	BUSHING, RADIATOR VIBRATION UPPER	016144	2	

3.15 Radiator Assembly

LT30 Super *Rev. F8.00 - G4.00*
LT40 Super *Rev. F9.00 - G5.00*
LT30HD Super *Rev. G1.00 - G8.00*
LT40HD Super *Rev. G1.00 - G8.00*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	BRACE, LOMBARDINI RADIATOR SUPPORT #9265-167	014563	1	
2	SCREW, M6X12 HEX HEAD CAP FULL THREAD	F05005-99	6	
3	WASHER, 1/4" SPLIT LOCK	F05011-14	6	
4	WASHER, 1/4" SAE FLAT	f05011-11	6	
5	GRILL, RADIATOR	014161 ¹	1	
6	CAP, RADIATOR FILL	014295	1	
7	RADIATOR, LOMBARDINI	014291 ¹	1	
8	BUSHING, RADIATOR VIBRATION LOWER	016143	2	

3 Replacement Parts

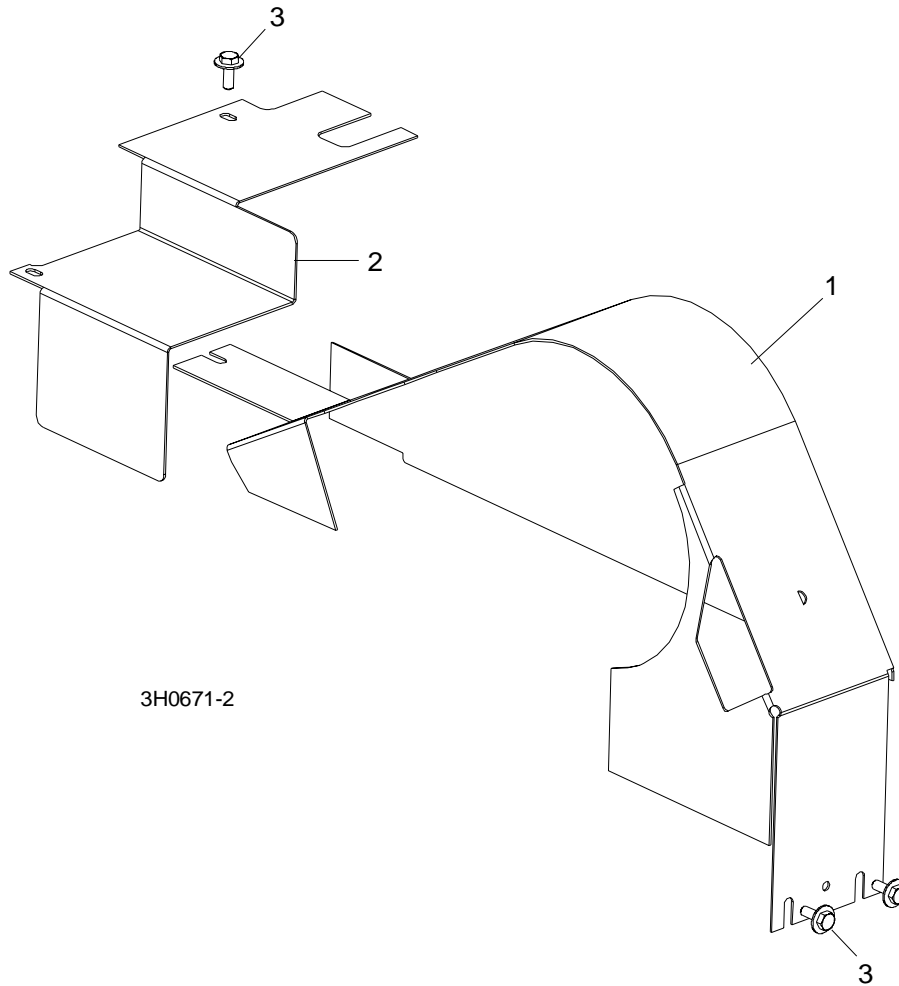
Radiator Assembly

9	BUSHING, RADIATOR VIBRATION UPPER	016144	2	
	HOSE, LOMBARDINI UPPER RADIATOR	014284	1	
	HOSE, LOMBARDINI LOWER RADIATOR	014285	1	
	HOSE, LOMBARDINI BYPASS	014297	1	

¹ Radiator and grill replaced with smaller radiator and grill to improve efficiency on LT30 Super Rev. G4.01, LT40 Super Rev. G5.01, and LT30HD/40HD Super Rev. G8.01. [See Section 3.14.](#)

3.16 Engine Pulley Guards

LT30 Super *Rev. G6.00+*
LT40 Super *Rev. G7.00+*
LT30HD Super *Rev. H1.00+*
LT40HD Super *Rev. H1.00+*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	GUARD WELDMENT, D40 ENGINE PULLEY	023787 ¹	1	
2	GUARD, D40 SIDE ENGINE PULLEY	016152 ¹	1	
3	BOLT, 1/4-20 X 3/4" HEX HEAD WITH CONICAL WASHER	F05005-134	3	

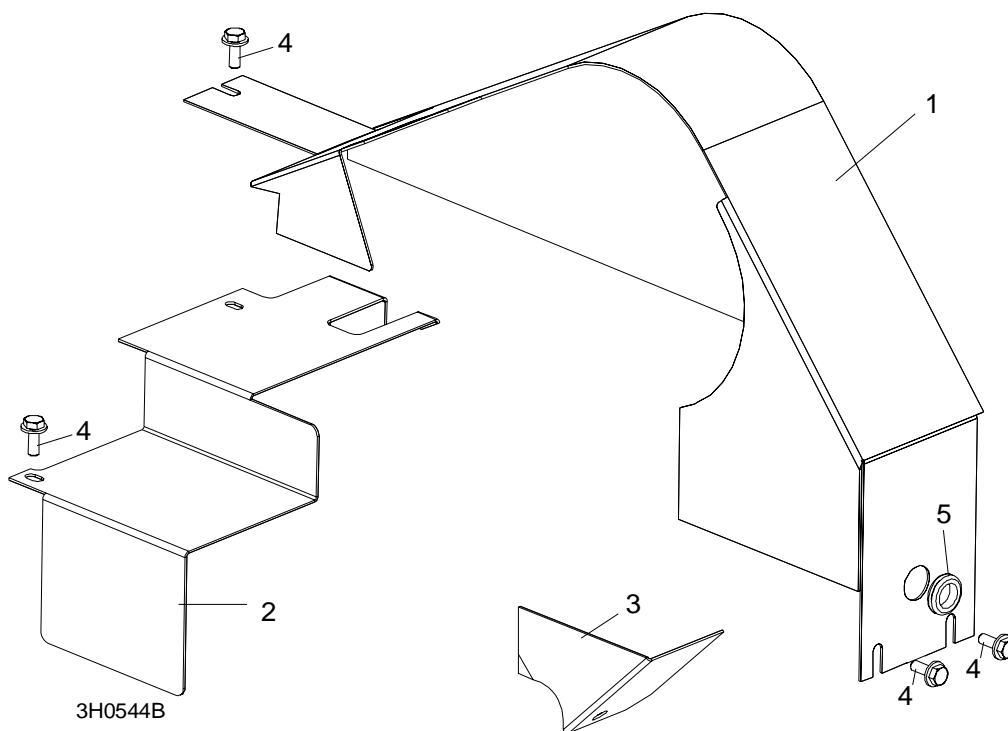
¹ Guards modified for 140 amp alternator supplied after LT30 Super Rev. G6.00+, LT40 Super Rev. G7.00+ and LT30HD/LT40HD Super Rev. H1.00+. [See Section 3.17](#) for covers used on previous revisions with 105 amp alternator.

3 Replacement Parts

Engine Pulley Guards

3.17 Engine Pulley Guards

LT30 Super *Rev. F7.00 - G5.00*
LT40 Super *Rev. F8.00 - G6.00*
LT30HD Super *Rev. G1.00 - G9.00*
LT40HD Super *Rev. G1.00 - G9.00*



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	GUARD WELDMENT, D40 ENGINE PULLEY	014519	1	
2	GUARD, D40 SIDE ENGINE PULLEY	015159	1	
3	GUARD, D40 BOTTOM ENGINE PULLEY	015158	1	
4	BOLT, 1/4-20 X 3/4" HEX HEAD WITH CONICAL WASHER	F05005-134 ¹	4	
5	GROMMET, 5/8" ID RUBBER	P11764	1	

¹ Replaces 1/4-20 x 3/4" hex head bolt (F05005-1) and 1/4" SAE flat washer (F05011-11) originally supplied.