TROUBLESHOOTING

If a problem occurs, stop the engine immediately. Refer to the SYMPTOM column in the Troubleshooting Chart to identify the problem.

CAUTION

If any indicator fails to illuminate when the key switch is in the ON position, see your authorized Yanmar industrial engine dealer or distributor for service before operating the engine.

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CAUTION

If any indicator illuminates during engine operation stop the engine immediately. Determine the cause and repair the problem before you continue to operate the engine.

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TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	ACTION	REFER TO
Indicator Turns On - Engine Running			
Engine oil pressure indicator (If equipped)	• Low level of engine oil • Too high an oil level	• Check and adjust oil level as necessary	*Checking Engine Oil on page 33*
	• Clogged engine oil filter	• Replace engine oil filter element	*Replace Engine Oil on page 74*
Battery Indicator	• Battery failure	• Check battery condition	*Check Indicators on page 35*
	• Faulty dynamo	• See authorized Yanmar industrial engine dealer or distributor	—
Indicator Does Not Turn On - Key Switch is Turned to ON (OFF → ON)			
	• Faulty electrical wiring or faulty indicator	• See authorized Yanmar industrial engine dealer or distributor	—

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PERIODIC MAINTENANCE

○: Check ◇: Replace ●: Contact your authorized Yanmar industrial engine dealer or distributor for these maintenance services.

System	Check Item	Daily	Periodic Maintenance Interval					
			Every 50 hours	Every 200 hours	Every 400 hours	Every 1000 hours	Every 1500 hours	Every 2000 hours
Air Intake	Clean or Replace Air Cleaner Element - May Need More Frequent Service in Dusty Conditions			○				
Cylinder Head	Adjust Intake / Exhaust Valve Clearance				●			
	Check Compression					●		
Electrical Equipment	Check Battery & Add Water as Necessary	○ before operation						
	Check Battery Indicator (If Equipped) and Other Driven Machine Indicators (If Equipped)	○ when engine is started						
Emission Control Warranty	Inspect, Clean & Test Fuel Injection Nozzle						●	
Engine Oil	Check Engine Oil Level & Add Engine Oil As Necessary	○ before operation						
	Drain and Refill Engine Oil		◇ 1st time	◇ 2nd & after				
	Clean Engine Oil Filter - Replace If Damaged				◇ 2nd & after			
	Check for Engine Oil Leakage	○ before & after operation						
Engine Speed Control	Check for Proper Operation Verify Adjustment	○ 1st time		○ 2nd & after				
Exhaust System	Check Spark Arrestor for Clogging	○ before operation						
Fuel	Check Fuel Tank Level & Add Fuel As Necessary	○ before operation						
	Drain & Clean Fuel Tank			○				
	Clean Inlet Fuel Screen		○					
	Replace Outlet Fuel Filter			○	◇			
	Check for Fuel Leakage	○ before & after operation						
Hoses	Replace Fuel System Hose(s)							● or every 2 yrs. whichever comes first

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PRINCIPAL ENGINE SPECIFICATIONS

Engine Specifications

Engine Model		L48V		L70V	L100V		
Type		4-stroke, Vertical Cylinder, Air-Cooled Diesel Engine					
No. of Cylinders		1					
Bore × Stroke		2.76 x 2.24 in (70 × 57 mm)		3.07 x 2.64 in (78 × 67 mm)	3.39 x 2.95 in (86 × 75 mm)		
Displacement		13.4 cu. in (0.219 L)		19.5 cu. in (0.320 L)	26.5 cu. in (0.435 L)		
Continuous Rated	rpm (min^{-1})	3600	3450	3600	3600	3200	2500

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The engine oil on a new engine becomes contaminated from the initial break-in of internal parts. The initial 50 hour oil change and filter cleaning is very important.

Drain the engine oil as follows:

1. Make sure the engine is level.
2. Start the engine and bring it up to operating temperature.
3. Stop the engine.
4. Remove the oil cap / dipstick **(Figure 3, (1))** to allow the engine oil to drain more easily.

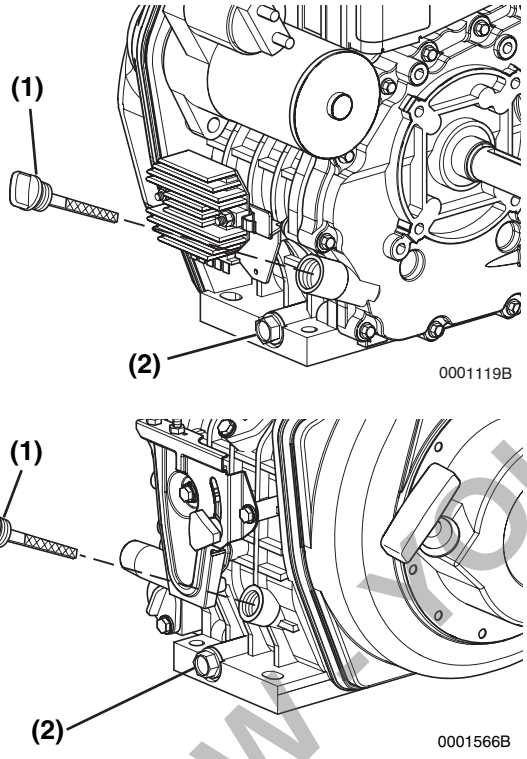


Figure 3

5. Position a container under the engine to collect waste oil.
6. Remove the drain plug located on the bottom of the cylinder block **(Figure 3, (2))**. Allow oil to drain.
7. After all oil has been drained from the engine, install the drain plug **(Figure 3, (2))** and tighten to 14-17 ft lbs (19.6-23.5 N•m, 2.0-2.4 kgf•m).
8. Dispose of used oil properly.

Clean / Inspect Engine Oil Filter

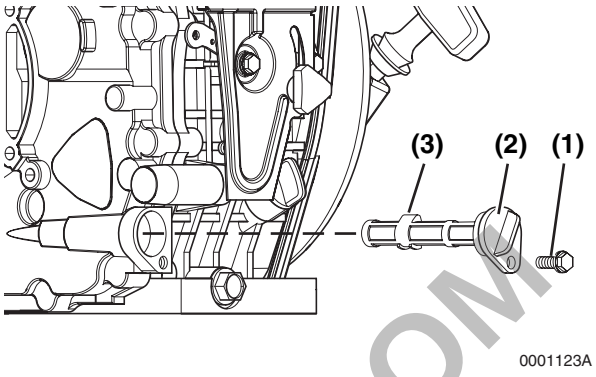


Figure 4

Clean / inspect the engine oil filter as follows:

1. Remove the oil filter retaining bolt **(Figure 4, (1))**.
2. Pull the oil filter cap **(Figure 4, (2))** out and remove the oil filter **(Figure 4, (3))**.
3. Clean the oil filter or replace if damaged.
4. Install the oil filter **(Figure 4, (3))**.
5. Make sure the oil filter cap is fully seated **(Figure 4, (2))**.
6. Install and tighten the oil filter retaining bolt **(Figure 4, (1))**.

Applicable Engine Oil Filter Part No.	
L48V, L70V and L100V	114250-35070

7. Add new engine oil to the engine as specified in *Adding Engine Oil on page 33*.

CAUTION

- **NEVER overfill the engine with engine oil.**
- **ALWAYS keep the oil level between the upper and lower lines on the oil cap / dipstick.**

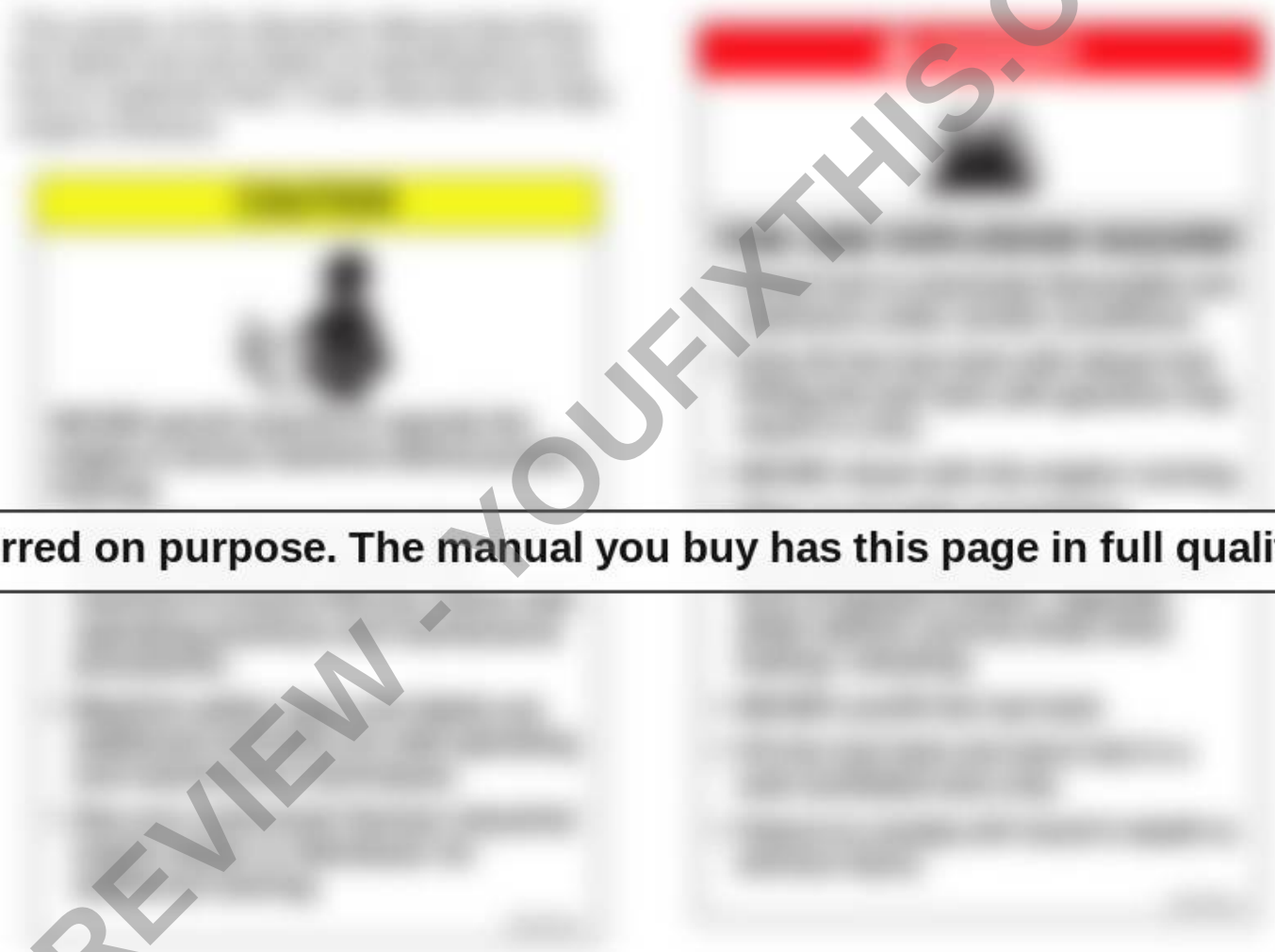
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8. Warm up the engine by running it for 5 minutes and check for any engine oil leaks.
9. After engine is warm, shut it off and let it sit for 10 minutes.

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BEFORE YOU OPERATE



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AIR COOLED ENGINE

The LV engine is air-cooled by means of a cooling fan. The cooling system consists of a fan attached to the flywheel.

CONTROLS - RECOIL STARTER

The LV Series engines are equipped with a recoil or electric starter. This section explains the

Decompression Lever

The decompression lever **(Figure 4, (1))** helps you start the engine by reducing the effort needed to pull the recoil starter handle. The decompression lever will automatically return to the original position when the engine starts. Some LV model engines have an automatic, internal compression release mechanism and do not have the external compression release lever. Refer to the specific instructions for your driven machine.

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SAFETY

SAFETY STATEMENTS

Yanmar is concerned for your safety and your machine's condition. Safety statements are one of the primary ways to call your attention to the potential hazards associated with Yanmar LV Series engine operation. Follow the precautions listed throughout the manual before operation, during operation and during periodic maintenance procedures for your safety, the safety of others and to protect the performance of your engine. Keep the labels from becoming dirty or torn and replace them if they are lost or damaged. Also, if you need to replace a part that has a label attached to it, make sure you order the new part and label at the same time.



This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Please read and abide by the message that follows the safety alert symbol.

⚠ DANGER

Danger (the word "DANGER" is in white letters with a red rectangle behind it) – indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Danger is limited to the most extreme situations.

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⚠ WARNING

Warning (the word "WARNING" is in black letters with an orange rectangle behind it) – indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

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⚠ CAUTION

Caution (the word "CAUTION" is in black letters with a yellow rectangle behind it) – indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

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CAUTION

Caution *without the safety alert symbol* indicates a potentially hazardous situation that can cause damage to the machine, personal property and / or the environment or cause the machine to operate improperly.

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Il presente manuale è disponibile in altre lingue IT

Se si desidera ricevere una copia di questo manuale in italiano, si prega di rivolgersi al concessionario o distributore autorizzato di motori industriali Yanmar di zona. L'elenco dei concessionari e distributori autorizzati di motori industriali Yanmar è disponibile al seguente indirizzo:

http://www.yanmar.co.jp/english/index-network.htm

本取扱説明書は各種言語版をご利用いただけます。 JA

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http://www.yanmar.co.jp/english/index-network.htm

Denne håndboken kan fås på andre språk NO

Snakk med din Yanmar-forhandler hvis du vil ha denne håndboken på norsk. Du finner en liste over autoriserte forhandlere av Yanmar industrimotorer på:

http://www.yanmar.co.jp/english/index-network.htm

Ten podręcznik jest dostępny w innych językach PL

Jeżeli potrzebny jest ten podręcznik w języku polskim, proszę skontaktować się z autoryzowanym miejscowym dealerem lub dystrybutorem przemysłowych silników Yanmar. Z wykazem autoryzowanych dealerów i dystrybutorów silników przemysłowych Yanmar można zapoznać się na stronie.

http://www.yanmar.co.jp/english/index-network.htm

Este Manual está Disponível noutros Idiomas PT

Se desejar uma cópia deste manual em Português, por favor contacte o seu concessionário ou distribuidor autorizado de motores industriais Yanmar. É possível encontrar uma lista de concessionários e distribuidores autorizados de motores industriais Yanmar em:

http://www.yanmar.co.jp/english/index-network.htm

Настоящая инструкция по эксплуатации доступна и на других языках RU

За экземпляром настоящей инструкции по эксплуатации на русском языке, пожалуйста обращайтесь к местному официальному дилеру или дистрибьютору промышленных двигателей Yanmar. Полный список официальных дилеров и дистрибьюторов промышленных двигателей Yanmar находится на сайте:

http://www.yanmar.co.jp/english/index-network.htm

Táto príručka je k disozícii aj v iných jazykoch. SK

Ak by ste chceli kópiu tejto príuèky v Slovenskom jazyku, kontaktujte prosím svojho miestneho autorizovaného predajcu alebo distribútora priemyselných motorov Yanmar. Zoznam autozovaných predajcov a distribútorov priemyselných motorov Yanmar môžete nájsťna:

http://www.yanmar.co.jp/english/index-network.htm

Este manual está disponible en otros idiomas ES

Si usted desea un ejemplar de este manual en español, por favor póngase en contacto con su concesionario o distribuidor local autorizado de motores industriales Yanmar. Puede encontrar una lista de los concesionarios y distribuidores autorizados de motores industriales Yanmar en:

http://www.yanmar.co.jp/english/index-network.htm

Denna handbok finns även på andra språk SV

Om du vill få ett exemplar av denna handbok på svenska, vänligen kontakta närmaste behöriga återförsäljare eller distributör för Yanmar industrimotorer. En förteckning över godkända återförsäljare och distributörer för Yanmar industrimotorer finns på:

http://www.yanmar.co.jp/english/index-network.htm

Bu El Kitabi Başka Dillerdede Mevcuttur TR

Bu el kitapciğinin Türkçe'sini elde etmek istiyorsaniz, lütfen bölgenizdeki Yanmar sanayí makineleri yetkili bayii dağitmcisina başvurunuz. Yetkili Yanmar sanayí motor bayii ve dağitimcilari listesini aşağidaki Internet sayfasinda bulabilirsiniz.

http://www.yanmar.co.jp/english/index-network.htm

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⚠ WARNING



SEVER HAZARD!

- Keep hands and other body parts away from moving / rotating parts such as the cooling fan / flywheel.
- Wear tight fitting clothing and keep your hair short or tie it back while the engine is running.
- Remove all jewelry before you operate or service the machine.
- NEVER start the engine in gear. Sudden movement of the engine and / or machine could cause death or serious personal injury.
- NEVER operate the engine without the guards in place.
- Before you start the engine make sure that all bystanders are clear of the area.
- Keep children and pets away while the engine is operating.
- Check before starting the engine that any tools or shop rags used during maintenance have been removed from the area.
- Failure to comply could result in death or serious injury.

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⚠ WARNING



EXHAUST HAZARD!

- NEVER operate the engine in an enclosed area such as a garage, tunnel, underground room, manhole or ship's hold without proper ventilation.
- NEVER block windows, vents, or other means of ventilation if the engine is operating in an enclosed area. All internal combustion engines create carbon monoxide gas during operation. Accumulation of this gas within an enclosure could cause illness or even death.
- Make sure that all connections are tightened to specifications after repair is made to the exhaust system.
- Failure to comply could result in death or serious injury.

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⚠ WARNING



ALCOHOL AND DRUG HAZARD!

- NEVER operate the engine while you are under the influence of alcohol or drugs.
- NEVER operate the engine when you are feeling ill.
- Failure to comply could result in death or serious injury.

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