8. Periodic checks and maintenance

Periodic checks and maintenance are very important for keeping the engine in good condition and durable.

The chart below indicates which checks to make and when to make them.

System	Item		Before starting	Alter 50 hrs or one month	Every 150 hrs	Every 300 hrs	Every 600 hrs
Fuel system	Check the fuel level, and refill		○				
	Drain the fuel tank			○ (First)		○	
	Replace the fuel filter					○	
	Check the injection timing						○
	Check the injection spray condition						○
Lubricating system	Check the lube oil level	Crankcase	○				
		Marine gear	○				
	Replace the lube oil	Crankcase		○ (First)	○		
		Marine gears		○ (First)	○		
	Check the oil pressure warning lamp function		○				
	Replace the lube oil filter			○ (First)		○	
Cooling system	Seawater outlet		○ During operation				
	Check cooling water level		○				
	Adjust the tension of cooling water pump driving belt			○ (First)		○	
	Replace the impeller of the cooling water pump (sea water pump)						○ (Replace)
	Replace the cooling fresh water		Every year				
Air intake and exhaust system	Clean the element of the air intake silencer					○	
	Clean the exhaust/water mixing elbow					○	
	Clean the breather pipe					○	
	Check the exhaust gas condition		○ During operation				
Electrical system	Check the charge lamp function		○				
	Check the electrolyte level in the battery		○				
	Adjust the tension of the alternator driving belt			○ (First)		○	
	Check the wiring connectors					○	
Cylinder head, etc.	Check for leakage of water and oil		○ (After starting)				
	Retighen all major nuts and bolts						○
	Retighten the cylinder head bolts						○
	Adjust intake/exhaust valve clearance			○ (First)			○
Remote control system, etc.	Checking the remote control operation			○ (First)			○
	Adjust the propeller shaft alignment			○ (First)			○

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Cylinder Number

The cylinder numbers of the 1, 2 cylinder engine (1GM, 2GM) and 3 cylinder engine (3GM) described in this manual are designated as follows.



Blurred on purpose. The manual you buy has this page in full quality.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

(6) Electric system

1) Select battery of sufficient capacity.

Recommended battery capacity	
1GM10 2GM20 3GM30	12V – 70AH

(7) Remote control system

Only use the single lever remote control head.

NOTE:

The dual lever remote control head cannot be used because of the large torque needed to operate the marine gear shift lever at

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

6. Breaking-in operation

Operate your new engine in accordance with the following procedures.

6-1. Fuel oil

Supply fuel to the fuel tank.

CAUTION:

To prevent fuel from overflowing, supply to 80 - 90% of the tank's capacity.

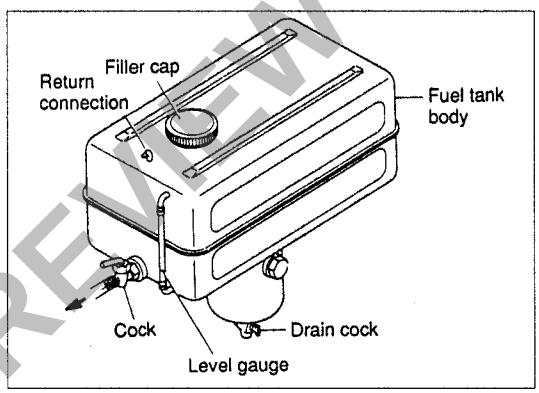
In subsequent engine operations, observe the following rules:

(1) Draining

Even when only using fuel from the top of drum, there will still be some dust or water impurities. These must be drained off before they get into the inner parts of the engine.

(2) Draining the fuel tank

Be sure to install the precipitation trap and draining cock on the bottom of the fuel tank. Before operating the engine, open the cock and remove the sediments from the fuel.



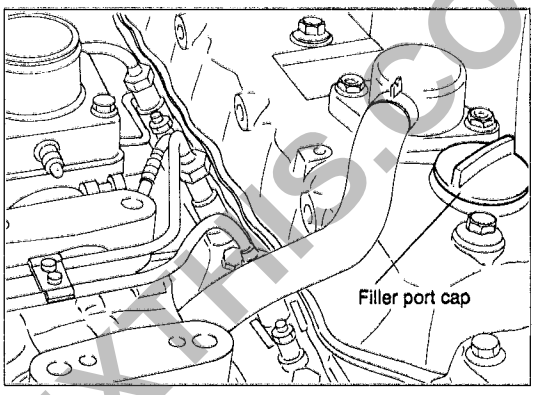
WARNING:

To avoid fire hazards, be sure to stop the engine before refilling with fuel.

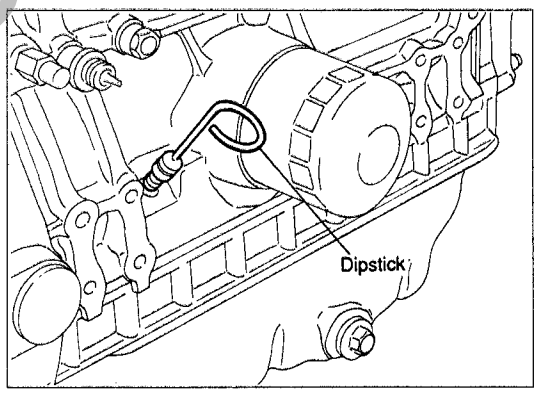
6-2. Supply of lube oil

(1) Lube oil supply to the crankcase

Remove the filler port cap (yellow) to supply lube oil to the crankcase.



Insert the oil dipstick to the port and check that the oil comes up to the upper limit of the oil dipstick.



6-3. Air bleeding

The fuel system runs from the fuel tank, through the fuel filter, fuel injection pump and high pressure piping, to the fuel injection nozzles. Fuel is not injected if air is admitted into the fuel system.

Bleed the air according to the following steps.

(1) Pull out the engine warm up knob on the remote control head and place the control lever in the "HALF SPEED" position.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

CONTENTS

1. Name of parts 1
2. Specifications 3
3. Basic rules that must be kept for engine handling 7
4. Installation 9
5. Fuel oil, lube oil and cooling water 15
6. Breaking-in operation 18
7. Operating your engine 21
8. Periodic checks and maintenance 25
9. Long-term storage 32
10. Troubleshooting 33
11. Piping diagrams A01
12. Wiring diagrams A21

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

ENGLISH

GM-SERIES DIESEL ENGINE

OPERATION MANUAL

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

8-9. Adjust the propeller shaft alignment

For checking and adjustment the propeller shaft alignment, contact your nearest Yanmar dealer or boatbuilder.

9. Long-term storage

(1) Store your engine in a well ventilated place free from excessive humidity and dust.

(2) Carefully follow these directions when storing your engine for a long period (3 months or more):

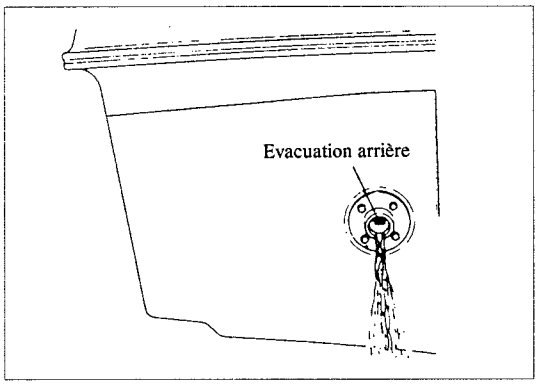
1) Clean dust, oil, etc. off the surface of your engine.
2) Change the lube oil.
   Change the lube oil filter.
3) Run your engine once a month whenever possible. If not, follow these directions when beginning storage and every subsequent 6 months.
   - Remove fuel injection valves on the cylinder head. Supply each combustion chamber with about 2 cc of clean lube oil using an oilcan. Attach and tighten the injection valves.
   - Turn the stop lever to "STOP".
   - Turn the starter key. Crank up for about 10 seconds so that cylinder walls are uniformly oiled.
4) Leave the cooling water with its anti-freeze, provided that the anti-freeze is not too old.
5) Apply a thin coat of clean oil to the uncoated surface of the engine.
6) Cover the exhaust silencer, air intake silencer, etc. with a PVC film to prevent humid air from entering your engine. Carefully protect the electric system from humidity in the same way.
7) Remove the batteries from the engine and charge them fully before storage. Charge the batteries every month during storage, because they run down naturally (self-discharge).

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

8-3. Système d'eau de refroidissement

(1) Vérifier que pendant le fonctionnement du moteur de l'eau s'écoule du tuyau d'évacuation d'eau de refroidissement.



(2) Contrôle du niveau d'eau de refroidissement (Moteur refroidi à l'eau douce)

[Moteur équipé d'un réservoir auxiliaire]

Un contrôle journalier du niveau de l'eau de refroidissement peut être effectué en observant le niveau du réservoir auxiliaire. Si ce niveau est bas, remplir jusqu'à la limite "FULL" (plein). Puis remettre le capuchon en place en l'enfonçant à fond.

NOTE:

- *Il n'est pas nécessaire de contrôler et de remplir l'échangeur de chaleur tous les jours.*
- *Contrôler le niveau de l'eau de refroidissement lorsque le moteur est froid. L'eau de refroidissement du moteur s'écoule dans le réservoir auxiliaire lorsque le moteur est encore chaud, ce qui rend tout contrôle impossible.*

[Moteur sans réservoir auxiliaire]

Déposer le capuchon de remplissage d'eau sur l'échangeur de chaleur et contrôler le niveau de l'eau.

AVERTISSEMENT:

- *Ne pas contrôler le niveau de l'eau de refroidissement tant que le moteur est encore chaud. De la vapeur ou de l'eau chaude peut s'échapper brusquement si le bouchon de remplissage d'eau est enlevé immédiatement après l'arrêt du moteur.*

(3) Contrôle et réglage de la tension de la courroie d'entraînement de la pompe d'eau de refroidissement

Vérifier l'état de la courroie et régler la tension

Réglage standard
(Pour courroie d'entraînement d'une pompe à eau douce)
10 mm (avec une force de 10 kg)

(Pour courroie d'entraînement d'une pompe à eau de mer)
5 - 7 mm (avec une force de 10 kg)

Périodicité de réglage	1ère fois ... Après 50 heures
	2ème fois et par la suite ... Toutes les 300 heures.

(4) Remplacer de la turbine de la pompe d'eau de refroidissement (eau de mer)

Remplacer la turbine

NOTE:

1. *Lors de la mise en place de la turbine dans la pompe, veiller à ce qu'elle soit placée dans le bon sens.*
2. *Appliquer une couche de graisse sur le logement de turbine du corps de pompe.*

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

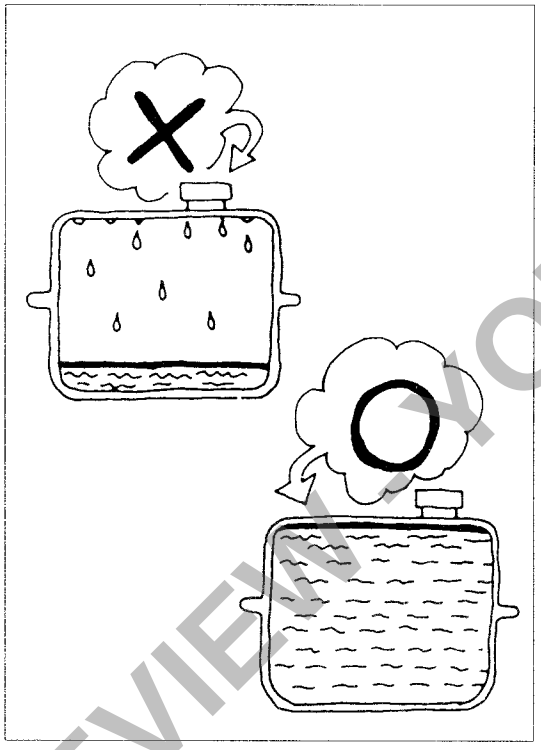
8-1. Kontrolle und Einstellung der Kraftstoffanlage

(1) Kraftstoffstand kontrollieren und nachfüllen

Sauberen Kraftstoff in den Kraftstofftank füllen.

Prüfabstand	Täglich (jeweils am Betriebsende)

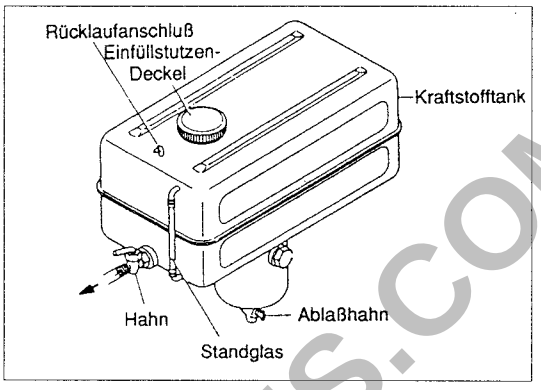
Kraftstoff sollte täglich nach Betriebsende aufgefüllt werden. Dadurch wird Kondensatbildung im Kraftstofftank vermieden.



(2) Kraftstofftank ablassen

Den Ablaßhahn am Boden des Kraftstofftanks öffnen, um Bodensatz abzulassen.

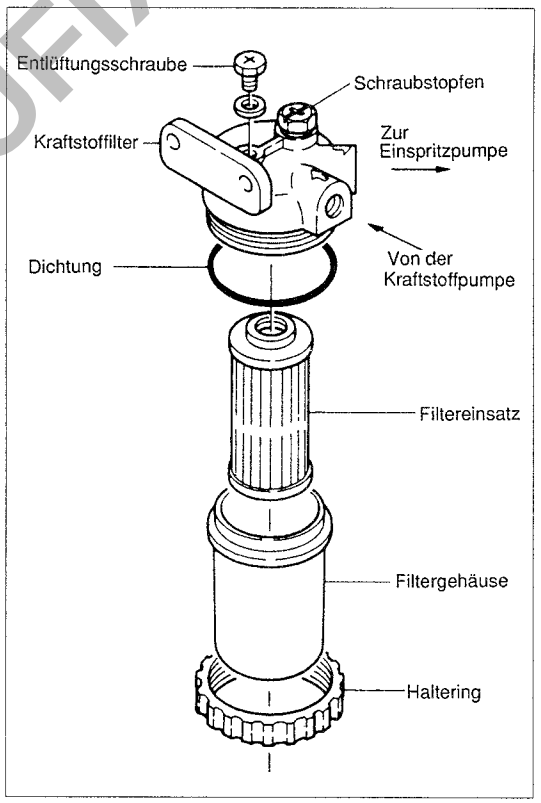
Prüfabstand	1. Mal ... nach 50 Std.
	2. Mal und danach ... alle 300 Std.



(3) Kraftstoffilter auswechseln

Den alten Kraftstoffilter herausnehmen und einen neuen einsetzen.

Prüfabstand	Alle 300 Std.



Auch Schmutz und Wasser aus dem Schlammraum am Boden des Kraftstoffilters entfernen.

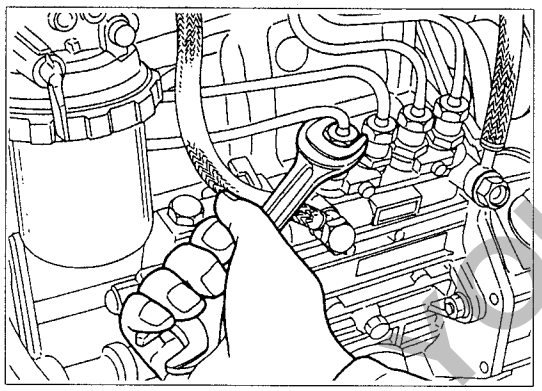
PREVIEW.YOUFIXTHIS.COM

Download full manual at youfixthis.com

ADVERTENCIA

Detención de emergencia

Si no se puede detener el motor con el cable de paro del motor, (o botón de paro del panel de mando), o si no se puede reducir la velocidad del motor por medio de la palanca del acelerador, interrumpir el funcionamiento del motor del modo siguiente: Aflojar todas las tuercas que se encuentran a lado de la bomba de inyección o a lado del inyector de combustible. Esta operación permitirá cortar la alimentación de combustible y se detendrá el motor. En casos como este, consultar a su agente Yanmar más cercano para localizar la causa del problema y reparar el motor.



(3) Drenaje del agua de enfriamiento

ADVERTENCIA

El agua de enfriamiento se congela cuando hace frío. Si no se usa un anticongelante se recomienda drenar cuidadosamente el agua de enfriamiento después de interrumpir el funcionamiento del motor. Además, se deberá drenar completamente el agua de enfriamiento antes de almacenar el motor por un largo lapso de tiempo. De otra manera, el agua en el cilindro podrá congelarse y causar grietas al cilindro.

- *Antes de drenar el agua de enfriamiento, remover el tapón de presión y el tapón de drenaje del motor, enfriador de aire e intercambiador de calor. Si no se remueven estos tapones será difícil efectuar el drenaje del agua de enfriamiento y se ejecutará un drenaje incompleto.*
- *No remover el tapón de presión cuando el motor esté caliente.*

(4) Quitar con un lienzo húmedo el polvo y la tierra y limpiar el motor.

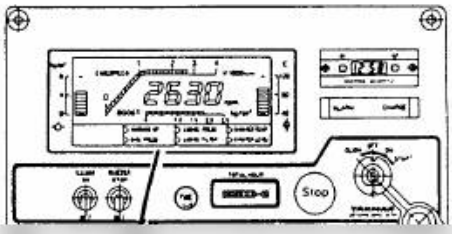
(5) Desactivar el interruptor de la batería (si su motor tiene uno.

(6) Sacar la llave de arranque .

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Pannello per strumenti tipo E



Una volta che il motore si sia avviato lasciar andare la chiave. Questa ritorna automaticamente sulla posizione "ON" Non spegnere l'interruttore della batteria e la chiave di accensione una volta che il motore sia partito. Con la chiave sulla posizione "ON" i vari misuratori del pannello degli strumenti cominciano a funzionare.

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

6-4. Smörjning av motordelarna

(1) Smörj reglerlänkarna.

(2) Smörj reglerhandtagets axel.

6-5. Säkerhetskontroll

Rengör området runt motorn. Avlägsna

2) Elektrisk avstängning av motorn

Tryck på motorns stoppknapp på instrumentbrädet, vrid nyckeln till läget "START". Vidtag samma åtgärder som för manuell avstängning av motorn.

FÖRSIKTIGHETSÅTGÄRD:

- *Släpp inte motorns stoppkabel medan Du vrider*

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 263 pages

The full manual includes:

- All 263 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Yanmar 1GM10, 2GM20, 3GM30, 2GM20F, 3GM30F, 1GM10V, 2GM20V, 3GM30V, 2GM20FV, 3GM30FV, GM series Operation Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual