SAFETY AWARENESS

Whenever you see the symbols shown below, heed their instructions! Always follow safe operating and maintenance practices.

⚠️ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠️ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**NOTICE**

NOTICE is used to address practices not related to personal injury.

**NOTE**

- NOTE indicates information that may help or guide you in the operation or service of the vehicle.
READ THIS FIRST

For your safety, read this Owner’s Manual and understand it thoroughly before operating this ENGINE.

⚠️ DANGER

Exhaust gas contains carbon monoxide, a colorless, odorless poisonous gas. Inhaling carbon monoxide can cause serious brain injury or death.

DO NOT run the engine in enclosed areas. Operate only in a well-ventilated area. Gasoline is extremely flammable and can be explosive under certain conditions, creating the potential for serious burns. When refueling, servicing fuel system, draining gasoline and/or adjusting the carburetor:

Stop engine and allow it to cool before refueling.

DO NOT smoke.

Make sure the area is well-ventilated and free from any source of flame or sparks, including the pilot light of any appliance.

DO NOT fill the tank so the fuel level rises into the filler neck or level surface of level gauge. If the tank is overfilled, heat may cause the fuel to expand and overflow through the vents in the tank cap.

Wipe off any spilled gasoline immediately.

Engines can become extremely hot during normal operation.

To prevent fire hazard:

Keep the engine at least 1 m (3.3 ft) away from buildings, obstructions and other burnable objects.

DO NOT place flammable objects close to the engine.

DO NOT expose combustible materials to the engine exhaust.

DO NOT use the engine on any forest covered, brush covered or grass covered unimproved land unless spark arrester is installed on the muffler.

To avoid getting an electric shock, DO NOT touch spark plugs, plug caps or spark plug leads during engine running.

To avoid a serious burn, DO NOT touch a hot engine or muffler. The engine becomes hot during operation. Before you service or remove parts, stop engine and allow the engine to cool.

DO NOT place hands or feet near moving or rotating parts. Place a protective cover over pulley, V belt or coupling.

DO NOT run engine at excessive speeds. This may result in injury.

Always remove the spark plug caps from spark plugs when servicing the engine to prevent accidental starting.

Read warning labels which are on the engine and understand them. If any label is missing, damaged, or worn get a replacement from your Kawasaki engine dealer and install it in the correct position.
EMISSION CONTROL INFORMATION

Fuel Information

THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED REGULAR GRADE GASOLINE ONLY. A minimum of 87 octane of the antiknock index is recommended. The antiknock index is posted on service station pumps in the U.S.A.

Emission Control Information

To protect the environment in which we all live, Kawasaki has incorporated an exhaust emission control system in compliance with applicable regulations of the United States Environmental Protection Agency and the California Air Resources Board. Also, depending on when your engine was produced, it may have an assigned emissions durability period.

* See below for the engine emissions durability period that may apply to your engine.

Exhaust Emission Control System

The exhaust emission control system applied to this engine consists of a Electronic Fuel Injection (EFI) system and an ignition system having optimum ignition timing characteristics. The EFI system has been calibrated to provide specific air/fuel mixture characteristics and optimum fuel economy with a suitable air cleaner and exhaust system.

A sealed-type crankcase emission control system is also used to eliminate blow-by gasses. The blow-by gasses are led to a breather chamber through the crankcase and from there to the air cleaner.

Engine Emission Compliance Period

California

Engines Greater Than or Equal To 225cc
Model Year-2015 and later
Durability period-1000 hours

All Other States

Engines Greater Than or Equal To 225cc
Model Year-2015 and later
Durability Period-1000 hours (Category A)

* If your engine has an assigned emissions durability period it will be located on the certification label attached to the engine (IMPORTANT ENGINE INFORMATION).
Maintenance and Warranty

Proper maintenance is necessary to ensure that your engine will continue to have low emission levels. This Owner’s Manual contains those maintenance recommendations for your engine. Those items identified by the Periodic Maintenance Chart are necessary to ensure compliance with the applicable standards.

As the owner of the engine, you have the responsibility to make sure that the recommended maintenance is carried out according to the instructions in this Owner’s Manual at your own expense.

The Kawasaki Limited Emission Control System Warranty requires that you return your engine to an authorized Kawasaki engine dealer for remedy under warranty. Please read the warranty carefully, and keep it valid by complying with the owner’s obligations it contains.

Tampering with Emission Control System Prohibited

Federal law and California State law prohibits the following acts or the causing there of: (1) the removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new engine for the purposes of emission control prior to its sale or delivery to the ultimate purchaser or while it is in use, or (2) the use of the engine after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below:

Do not tamper with the original emission related parts:

● Carburetor or fuel injection system, and their internal parts
● Spark Plug
● Magneto or electronic ignition system
● Fuel filter element
● Air cleaner element
● Crankcase
● Cylinder head
● Breather chamber and internal parts
● Intake pipe and tube
FOREWORD

We wish to thank you for purchasing this Kawasaki engine.
Please read this Owner’s Manual carefully before starting your new engine so that you will be thoroughly familiar with the proper operation of your engine’s control, its features, capabilities and limitations.
Also read the manual of the equipment to which this engine is attached.

To ensure a long, trouble-free life for your engine, give it the proper care and maintenance described in this manual. Always keep this manual at your fingertip so that you can refer to it whenever you need information. This manual should be considered a permanent part of the engine and should remain with the engine when it is sold.

Please note that the photographs and illustrations shown in this manual are based on Model FX730V EFI as a typical example among other similar models.

All rights reserved. No part of this publication may be reproduced without our prior written permission.
This publication includes the latest information available at the time of printing. However, there may be minor differences between the actual product and illustrations and text in this manual.
All products are subject to change without prior notice or obligation.

KAWASAKI HEAVY INDUSTRIES, LTD.
Motorcycle & Engine Company

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Location of Safety Related Labels

A. Engine Maintenance
B. Warning Label
C. Emission Label
D. Product Label (Engine Serial Number)
Location of Parts

A. Oil Gauge / Filler
B. Oil Filter
C. Oil Drain Plug
D. Air Cleaner
E. Throttle Body / ECU
F. Spark Plug Cap / Spark Plug
G. Guard / Air Inlet Screen
H. Fan Housing
I. Electric Starter
J. Voltage Regulator
K. Fuel Tube
L. Fuel Filter
M. Fuel Pump (Electric)
N. Fuel Pump (Pulse)
O. Injector
P. Diagnostic Connector
Q. 24 Pin Connector
R. Fuse
S. Cleanout Cover
Engine Serial Number

The engine serial number is your only means of identifying your particular engine from others of the same model type. This engine serial number is needed by your dealer when ordering parts.

Tune-up Specifications

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition Timing</td>
<td>Unadjustable</td>
</tr>
<tr>
<td>Spark Plugs:</td>
<td>NGK BPR4ES</td>
</tr>
<tr>
<td>Gap</td>
<td>0.75 mm (0.030 in)</td>
</tr>
<tr>
<td>Low Idle Speed</td>
<td>1550 r/min (rpm)</td>
</tr>
<tr>
<td>High Idle Speed</td>
<td>3600 r/min (rpm)</td>
</tr>
<tr>
<td>Valve Clearance</td>
<td>IN 0.05 - 0.10 mm (0.002 - 0.004 in)</td>
</tr>
<tr>
<td></td>
<td>EX 0.05 - 0.10 mm (0.002 - 0.004 in)</td>
</tr>
<tr>
<td>Other Specifications</td>
<td>No other adjustment needed</td>
</tr>
</tbody>
</table>

NOTE

- High and low idle speeds may vary depending on the equipment on which the engine is used. Refer to the equipment specification.
### Engine Oil Capacity

<table>
<thead>
<tr>
<th>FX730V</th>
<th>Engine Oil Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.8 L (1.9 US·qt) [when oil filter is not removed]</td>
</tr>
<tr>
<td></td>
<td>2.0 L (2.1 US·qt) [when oil filter is removed]</td>
</tr>
</tbody>
</table>

### Battery Capacity

<table>
<thead>
<tr>
<th>Battery CapacityRecommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Recommended Battery Capacity</td>
</tr>
<tr>
<td>12 V 550 CCA Class</td>
</tr>
</tbody>
</table>

**WARNING**

For electrical safety, always remove cable from negative (–) side of battery before attempting any repair or maintenance.
FUEL AND OIL RECOMMENDATIONS

Fuel

Use only clean, fresh, unleaded regular grade gasoline.

**NOTICE**

Do not mix oil with gasoline.

Octane Rating

The octane rating of a gasoline is a measure of its resistance to "knocking". **Using a minimum of 87 octane by the antiknock index is recommended.** The antiknock index is posted on service station pumps in the U.S.A.

**NOTE**

- If "knocking" or "pinging" occurs, use a different brand of gasoline or higher octane rating.
- When not operating your kawasaki engine more than once per month, you can mix a fuel stabilizer with gasoline in the fuel tank. Fuel stabilizer additive could inhibit oxidation of fuel.

Oxygenated Fuel

Oxygenates (either ethanol or MTBE) are added to the gasoline. If you use the oxygenates, be sure it is unleaded and meets the minimum octane rating requirement.

The followings are the EPA approved percentages of fuel oxygenates.

**ETHANOL**: (Ethyl or Grain Alcohol)

You may use gasoline containing up to 10% ethanol by volume.

**MTBE**: (Methyl Tertiary Butyl Ether)

You may use gasoline containing up to 15% MTBE by volume.

**METHANOL**: (Methyl or Wood Alcohol)

You may use gasoline containing up to 5% methanol by volume, as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.
Engine Oil

The following engine oils are recommended.
API Service Classification: SF, SG, SH, SJ or SL.

Oil Viscosity

Choose the viscosity according to the temperature as follows:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Viscosity</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20ºC</td>
<td>SAE5W-20</td>
</tr>
<tr>
<td>-10ºC</td>
<td>SAE10W-30</td>
</tr>
<tr>
<td>0ºC</td>
<td>SAE10W-40</td>
</tr>
<tr>
<td>10ºC</td>
<td>SAE20W-50</td>
</tr>
<tr>
<td>20ºC</td>
<td>SAE20W-50</td>
</tr>
<tr>
<td>30ºC</td>
<td>SAE30</td>
</tr>
<tr>
<td>40ºC</td>
<td>SAE40</td>
</tr>
<tr>
<td>-4ºF</td>
<td>SAE5W-20</td>
</tr>
<tr>
<td>14ºF</td>
<td>SAE5W-20</td>
</tr>
<tr>
<td>32ºF</td>
<td>SAE10W-30</td>
</tr>
<tr>
<td>50ºF</td>
<td>SAE10W-40</td>
</tr>
<tr>
<td>68ºF</td>
<td>SAE10W-40</td>
</tr>
<tr>
<td>86ºF</td>
<td>SAE10W-40</td>
</tr>
<tr>
<td>104ºF</td>
<td>SAE10W-40</td>
</tr>
</tbody>
</table>

NOTE

○ Although 10W-40 engine oil is the recommended oil for most conditions, the oil viscosity may need to be changed to accommodate atmospheric conditions. Using 20W-50 oil in higher ambient temperatures may reduce oil consumption.
Fuel

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline is extremely flammable and can be explosive under certain conditions, creating the potential for serious burns. Turn the ignition switch to &quot;OFF&quot;. Do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light. Never fill the tank completely to the top. If the tank is filled completely to the top, heat may cause the fuel to expand and overflow through the vents in the tank cap. After refueling, make sure the tank cap is closed securely. If gasoline is spilled on the fuel tank, wipe it off immediately.</td>
</tr>
</tbody>
</table>

- Place the engine on level surface before fueling.
- Remove the fuel tank cap.
- Slowly pour fuel into the tank through the fuel strainer.
- Close the tank cap securely.
Engine Oil

Check the engine oil daily before starting the engine otherwise shortage of the engine oil may cause serious damage to the engine such as seizure.

- Place the engine on level surface. Clean area around the oil gauge before removing it.
- Remove the oil gauge and wipe it with a clean cloth.
- Pour the oil slowly to "FULL" mark on the oil gauge.
- Insert the oil gauge into tube WITHOUT SCREWING IT IN.
- Remove the oil gauge to check the oil level. The level should be between "ADD" and "FULL" marks. Do not over fill.
- Install and tighten the oil gauge.

Engine Oil Capacity

<table>
<thead>
<tr>
<th>FX730V</th>
<th>1.8 L (1.9 US·qt) [when oil filter is not removed]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0 L (2.1 US·qt) [when oil filter is removed]</td>
</tr>
</tbody>
</table>

NOTICE

The engine is shipped without engine oil.
**STARTING**

Start Engine

<table>
<thead>
<tr>
<th><strong>DANGER</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust gas contains carbon monoxide, a colorless, odorless poisonous gas. Inhaling carbon monoxide can cause serious brain injury or death. DO NOT run the engine in enclosed areas. Operate only in a well-ventilated area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine exhaust may ignite combustible materials and cause a fire. Keep the area around the exhaust outlet clear. Locate the unit so that the exhaust outlet points toward an open area and is located at least one meter (3.3 feet) from any obstructions.</td>
</tr>
</tbody>
</table>

**NOTE**

- Be aware of the following in order to start the engine easily in cold weather.
  - Use proper oil for expected temperature (See FUEL AND OIL RECOMMENDATIONS chapter). Use fresh gasoline.
  - Protect the engine or the equipment from direct exposure to weather when not in operation.
  - Before starting the engine, disconnect all possible external loads.
  - Open the fuel valve on the equipment.
  - Put the engine switch key into the engine switch and turn to the ON or RUN position.
  - Turn the switch key to the START position on the equipment. Normally the engine will start within 3 seconds.

![Fuel Valve](image)

A. Fuel Valve
**NOTICE**

Do not run the electric starter continuously for more than 5 seconds, otherwise the battery may discharge quickly. If the engine does not start right away, wait 15 seconds and try again.

---

**NOTICE**

Whenever you start engine, make sure oil lamp is not illuminated after engine starts. If oil lamp comes on, stop engine immediately and check oil level (If equipped).
### Warming Up

To warm up the engine, run it for 3 to 5 minutes with the throttle lever in the same load position before putting the equipment under load. Then, move the throttle lever on the equipment to its "FAST" position.

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow engine to warm up sufficiently (3 to 5 minutes at idle) before applying a load. This will allow oil to reach all engine parts, and allow piston clearance to reach design specifications.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>While warming up the engine, make sure the warning light (oil pressure) on dash is not on. The warning light must not be illuminated during engine operation (if equipped).</td>
</tr>
</tbody>
</table>

### Engine Inclination

This engine will operate continuously at angles up to 25° in any direction. Refer to the operating instructions of the equipment this engine powers. Because of equipment design or application, there may be more stringent restrictions regarding the angle of operation.

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not operate this engine continuously at angles exceeding 25° in any direction. Engine damage could result from insufficient lubrication.</td>
</tr>
</tbody>
</table>
MIL (Malfunction Indicator Light)

The equipment has a MIL to indicate malfunction of the EFI system.
When the ECU of the engine detects the EFI system trouble, MIL illuminates.
If the MIL illuminates, consult your Kawasaki engine dealer or equally qualified service facility.

Reduced Power Mode
(Engine speed reduced to low idle)

When the ECU detects conditions of the engine as stated below, the ECU reduces the engine speed to low idle (Reduced Power Mode).
If the engine enters the reduced power mode, stop the engine as soon as safely possible and refer to the troubleshooting guide at the end of this book.
Service an engine that has entered reduced power mode as soon as possible. Operating in reduced power mode for extended periods of time can cause engine failure.

Causes of Reduced Power Mode
- Overheat of the engine (MIL on)
- Oil pressure is low
  (if the oil switch is equipped/MIL off, Oil lamp on)
- Throttle valve control malfunction
  (internal ECU malfunction/MIL on)
- Throttle position sensor malfunction
  (internal Throttle body malfunction/MIL on)
- Hand throttle input sensor malfunction (MIL on)
- Battery voltage is too low or too high (MIL on)
- Engine speed exceeded maximum speed (MIL on)
Stopping the Engine

Ordinary Stop
● Move throttle lever to "SLOW" position.
● Lower the engine speed to the idle speed. Keep running at the idle speed for about one minute.

**NOTICE**
Engine damage can occur from run-on or after-burning if engine is stopped suddenly from high speed loaded operation. Reduce engine speed to idle for one minute before shutting engine off.

● Turn the engine switch or the switch key to "OFF" position.

Emergency Stop
● Immediately turn the engine switch or the switch key to "OFF" position.
● Close the fuel valve on the equipment.

**WARNING**
Leaving the equipment with the key hanging in the ignition can allow operation by someone who does not know how to operate it. It may cause serious accident with injury. Always remove the key from unattended equipment.
Engine Speed Adjustment

NOTE

○ Do not tamper with the EFI system setting to increase the engine speed. Every EFI system is adjusted at the factory.

○ If any adjustment is necessary, see your authorized Kawasaki engine dealer or equally qualified service facility to perform the adjustment.
MAINTENANCE

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual.

Periodic Maintenance Chart

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevent accidental starting during engine service by removing the spark plug caps.</td>
</tr>
</tbody>
</table>

NOTE

○ The service intervals can be used as a guide. Service more frequently as necessary by operating conditions.
<table>
<thead>
<tr>
<th>MAINTENANCE</th>
<th>INTERVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daily</td>
</tr>
<tr>
<td>Check and add engine oil.</td>
<td></td>
</tr>
<tr>
<td>Check for loose or lost nuts and screws.</td>
<td></td>
</tr>
<tr>
<td>Check for fuel and oil leakage.</td>
<td></td>
</tr>
<tr>
<td>Check battery electrolyte level.</td>
<td></td>
</tr>
<tr>
<td>Check or clean air inlet screen.</td>
<td></td>
</tr>
<tr>
<td>Check cleanout cover.</td>
<td></td>
</tr>
<tr>
<td>Clean dust and dirt from cylinder and cylinder head fins.</td>
<td></td>
</tr>
<tr>
<td>Tighten nuts and screws.</td>
<td></td>
</tr>
<tr>
<td>Change engine oil.</td>
<td></td>
</tr>
<tr>
<td>Check and clean oil cooler fins.</td>
<td></td>
</tr>
<tr>
<td>Clean and regap spark plugs.</td>
<td></td>
</tr>
<tr>
<td>Change oil filter.</td>
<td></td>
</tr>
<tr>
<td>Replace air cleaner primary element.</td>
<td></td>
</tr>
<tr>
<td>Check air cleaner secondary element.</td>
<td></td>
</tr>
<tr>
<td>Clean combustion chamber.</td>
<td></td>
</tr>
<tr>
<td>Check and adjust valve clearance.</td>
<td></td>
</tr>
<tr>
<td>Clean and lap valve seating surface.</td>
<td></td>
</tr>
<tr>
<td>Replace air cleaner secondary element.</td>
<td></td>
</tr>
</tbody>
</table>

◆: Service more frequently under dusty conditions.  
◇: Service to be performed by an authorized Kawasaki engine dealer or equally qualified service facility.
Check the oil level daily and before each time of operation. Be sure the oil level is maintained. See PREPARATION chapter.

A. Oil Gauge
B. Tube
Oil Change

Change oil every 100 hours.
- Run the engine to warm oil.
- Be sure the engine (equipment) is on level surface.
- Stop the engine.
- Remove the oil drain plug and drain the oil into a suitable container while engine is warm.

**WARNING**

Hot engine oil can cause severe burns. Allow engine temperature to drop from hot to warm level before draining and handling oil.

- Install the oil drain plug.
- Remove the oil gauge and refill with fresh oil (See FUEL AND OIL RECOMMENDATIONS chapter).
- Check the oil level (see PREPARATION chapter).

**WARNING**

Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.
Oil Filter Change

- Change the oil filter every 200 hours of operation.

**WARNING**

Hot engine oil can cause severe burns. Allow engine temperature to drop from hot to warm level before attempting to remove oil filter.

- Drain the engine oil into a suitable container.

**NOTICE**

Before removing the oil filter, place suitable pan under filter connection.

- Rotate the oil filter counterclockwise to remove it.
- Coat a film of clean engine oil on the seal of new filter.
- Install new filter rotating it clockwise until the seal contacts the mounting surface. Then rotate the filter 3/4 turn more by hand.
- Supply engine oil as specified.
- Run the engine for about 3 minutes, stop the engine, and check any oil leakage around the filter.
- Add oil to compensate for oil level drop due to oil filter capacity (see PREPARATION chapter).

**WARNING**

Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.
Air Cleaner Service

**NOTICE**

Do not run the engine with the air cleaner removed.

Air Cleaner

This air cleaner elements are not recommended to be cleaned. Replace each air cleaner element with a new one at the maintenance time as shown in the maintenance chart.

**NOTICE**

To prevent excessive engine wear, do not run the engine with the air cleaner removed.

**NOTICE**

Do not wash air cleaner elements.
Do not oil air cleaner elements.
Do not use pressurized air to clean air cleaner elements.

**NOTE**

- Operating in dusty condition may require more frequent maintenance.

**Primary Element**

Replace the primary element every 250 hrs.

**Secondary Element**

- Replace the secondary element with a new one, if the secondary element is dirty when the primary element is checked.
- Replace the secondary element with a new one every 500 hrs.

**Cap (Dust Ejector Valve)**

Push and open the cap on the case of the air cleaner body to expel dust and/or water accumulated inside.

**Replace the air cleaner element**

- Unfasten the two retaining clamps and remove the case from the air cleaner body.
- Remove the primary element and the secondary element from the air cleaner body by pulling out them.
28 MAINTENANCE

- Install the new air cleaner elements into the air cleaner body.
- Reinstall the case and the cap then securely fasten the two retaining clamps.

A. Retaining Clamps
B. Case
C. Air Cleaner Body
D. Primary Element
E. Secondary Element
F. Cap (Dust Ejector Valve)
Fuel Filter and Fuel Pump Service

⚠️ WARNING

Improper use of solvents can result in fire or an explosion. Do not use gasoline or low flash-point solvents to clean the fuel filter and/or the fuel pumps. Clean only in a well ventilated area away from sources of sparks or flame, including any appliances with a pilot light.

- The fuel filter cannot be disassembled. If the fuel filter gets clogged, replace it with a new one.
- The fuel pumps cannot be disassembled. If the fuel pump fails, replace it with a new one.

A. Fuel Filter
B. Fuel Pump (Electric)
C. Fuel pump (Pulse)
WARNING

Engines can become extremely hot during normal operation. Hot engine components can cause severe burns. Stop the engine and allow it to cool before checking spark plugs.

Clean or replace the spark plugs and reset the gap every 100 hours of operation.
- Disconnect the spark plug caps from the spark plugs and remove the spark plugs.
- Clean the electrodes by scraping or using a wire brush to remove carbon deposits.
- Inspect for cracked porcelain, other wear or damage. Replace the spark plug with a new one if necessary.
- Check the spark plug gap and reset it if necessary. The gap must be 0.75 mm (0.030 in). To change the gap, bend only the side electrode, using a spark plug tool.
- Install and tighten the spark plugs to 22 N·m (2.2 kgf·m, 16 ft·lb).
- Fit the spark plug caps on the spark plugs securely.
- Pull up the spark plug caps lightly to make sure of the installation of the spark plug caps.

RECOMMENDED SPARK PLUG

NGK..................................BPR4ES

A. Spark Plug Gap
B. Electrodes
Fuse Service

A blade type fuse is in the fuse case located on the side of the engine.
If a fuse blows during operation, inspect the cause, and then replace it with a new fuse of proper amperage.
Cooling System Cleaning

Before each operation, check that the air inlet (rotary) screen is free from grass and debris. Clean the screen if necessary.

Every 50 hours of operation, check dust or debris inside fan housing. To check inside, remove the cleanout cover and see inside from the inspection ports of fan housing. Clean or blow the dust if needed. If it is difficult to clean the dust with the ports, remove the fan housing and clean the dirt completely.

Every 100 hours of operation, check and clean the cooling fins and the inside of engine shrouds to remove grass, chaff or dirt clogging the cooling system and causing overheating.

Cleaning procedures are as below.
- Loosen the clamp and detach the air inlet tube.
- Loosen four bolts and remove the air cleaner.
- Loosen the screws and remove the voltage regulator.
- Loosen the screws and remove the air inlet guard.
- Remove torx bolts and remove the air inlet screen.
- Loosen three bolts and remove three bolts at the fan housing.
- Remove the fan housing.
- Clean and blow out the dust or debris from the cooling fan and the engine body.

NOTE
- Cover the inlet port of the throttle body to keep dust off the port.

NOTICE
Do not run engine before all cooling system parts are reinstalled to keep cooling and carburetion as intended.

Check the inlet screen. Check and see dust from the inspection port. Loosen bolt and remove cleanout cover.
1. Remove bolts and loosen clamp.
2. Loosen bolts. Remove torx bolts and screen.
3. Remove fan housing.
4. Clean and blow dust or debris.
Cover the intake port.
Engine Storage Procedure

When not operating your Kawasaki engine more than 30 days, add fuel stabilizer to fuel tank and run engine for 5 minutes then drain the fuel tank. After drain the fuel tank, run the engine at low idle until engine stalled.

**WARNING**

Gasoline is extremely flammable and can be explosive under certain conditions. Drain fuel before storing the equipment for extended periods. Drain gasoline in a well ventilated area away from any source of flame or sparks, including any appliances with a pilot light. Store gasoline in an approved container in safe location.

**WARNING**

Gasoline is a toxic substance. Dispose of gasoline properly. Contact your local authorities for approved disposal methods.

- Remove the spark plugs and pour approx 1-2 mL (0.06-0.1 cu in.) of engine oil through the spark plug holes then screw the spark plugs in after cranking the engine a few times. Slowly crank the engine until you feel the compression then leave it there. This traps the air inside the cylinders and prevents rust inside the engine.
- Wipe the body with oily cloth.
- Wrap the engine with plastic sheeting and store it in a dry place.
- Change engine oil for next use after period of storage. (Refer to MAINTENANCE chapter for Oil Change section).
If the engine malfunctions, carefully examine the symptoms and the operating conditions, and use the table below as a guide to trouble shooting.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Probable Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine won’t start or output is low</td>
<td>Faulty pistons, cylinders, piston rings, and head gaskets</td>
<td>◇</td>
</tr>
<tr>
<td></td>
<td>Faulty valves</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loose spark plugs</td>
<td>Tighten properly</td>
</tr>
<tr>
<td></td>
<td>Loose cylinder head bolts</td>
<td></td>
</tr>
<tr>
<td>No fuel to combustion chamber</td>
<td>No fuel in fuel tank</td>
<td>Fill fuel tank</td>
</tr>
<tr>
<td></td>
<td>Fuel valve is not in &quot;ON&quot; position</td>
<td>Open fuel valve lever.</td>
</tr>
<tr>
<td></td>
<td>Clogged fuel filter or tube</td>
<td>Change fuel filter or fuel tube</td>
</tr>
<tr>
<td></td>
<td>Clogged air vent in tank cap</td>
<td>Clean fuel tank cap</td>
</tr>
<tr>
<td></td>
<td>Faulty fuel system</td>
<td></td>
</tr>
<tr>
<td>Spark plugs fouled by fuel</td>
<td>Over-rich fuel/air mixture</td>
<td>Rotate engine with spark plugs removed to discharge excess fuel. Cleans park plugs.</td>
</tr>
<tr>
<td></td>
<td>Clogged air cleaner</td>
<td>Clean</td>
</tr>
<tr>
<td></td>
<td>Faulty fuel system</td>
<td>◇</td>
</tr>
<tr>
<td></td>
<td>Incorrect grade/type of fuel</td>
<td>Change fuel</td>
</tr>
<tr>
<td></td>
<td>Water in fuel</td>
<td></td>
</tr>
<tr>
<td>No spark or weak spark</td>
<td>Faulty spark plugs</td>
<td>Replace spark plugs</td>
</tr>
<tr>
<td></td>
<td>Faulty ignition coils</td>
<td>◇</td>
</tr>
<tr>
<td></td>
<td>Engine switch is in &quot;OFF&quot; position</td>
<td>Turn engine switch to &quot;START&quot; position (See M)</td>
</tr>
<tr>
<td>Low output</td>
<td>Engine overheats</td>
<td>Clean</td>
</tr>
<tr>
<td></td>
<td>Clogged air cleaner</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air inlet screen or cooling air path clogged with dirt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insufficient engine oil</td>
<td>Replenish or change oil</td>
</tr>
<tr>
<td></td>
<td>Carbon build-up in combustion chamber</td>
<td>◇</td>
</tr>
<tr>
<td></td>
<td>Poor ventilation around engine</td>
<td>Select a better location</td>
</tr>
<tr>
<td>Engine speed won’t increase</td>
<td>Faulty E-governor</td>
<td>◇</td>
</tr>
</tbody>
</table>
## Reduced Power mode

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Probable Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine speed reduced to low idle.</td>
<td>Overheat of the engine (MIL on)</td>
<td>Debris or dust is inside shroud Clean (refer to Cooling System Cleaning)</td>
</tr>
<tr>
<td></td>
<td>Low oil pressure (If oil switch is equipped) (MIL off / Oil lamp on)</td>
<td>Low oil level Add oil (refer to Engine Oil in Preparation)</td>
</tr>
<tr>
<td></td>
<td>Battery voltage is abnormal (MIL on)</td>
<td>Battery is discharged or broken. Recharge or replace the battery.</td>
</tr>
<tr>
<td></td>
<td>Hand throttle input sensor malfunction (MIL on)</td>
<td>Wiring issue or sensor malfunction</td>
</tr>
<tr>
<td></td>
<td>Internal ECU / throttle body malfunction (MIL on)</td>
<td>Throttle valve control malfunction</td>
</tr>
<tr>
<td></td>
<td>Overspeed detected (MIL on)</td>
<td>Engine speed exceeded maximum speed</td>
</tr>
</tbody>
</table>

◇: Service to be performed by an authorized Kawasaki engine dealer or equally qualified service facility.

M: For Control Panel Switch Type, move the throttle lever on the equipment away from it slow speed end to turn the engine switch to "START" position.
To help preserve the environment, properly discard used batteries, oils and fluids, or other engine components that you might dispose of in the future.

Consult your authorized Kawasaki engine dealer or equally qualified service facility or local environmental waste agency for their proper disposal procedure. This also applies to disposal of the entire engine at the end of its life.
## SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>FX730V EFI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Air-cooled, 4-stroke OHV 4Valves, V-twin cylinder, gasoline engine</td>
</tr>
<tr>
<td><strong>Bore × Stroke</strong></td>
<td>78 × 76 mm (3.07 × 2.93 in.)</td>
</tr>
<tr>
<td><strong>Displacement</strong></td>
<td>726 mL (44.30 cu.in.)</td>
</tr>
<tr>
<td><strong>Ignition System</strong></td>
<td>Inductive ignition</td>
</tr>
<tr>
<td><strong>Direction of rotation</strong></td>
<td>Counterclockwise facing the PTO Shaft</td>
</tr>
<tr>
<td><strong>Starting system</strong></td>
<td>Electric starter</td>
</tr>
<tr>
<td><strong>Dry weight : kg (lbs)</strong></td>
<td>50.1 kg (110.45 lbs)</td>
</tr>
</tbody>
</table>

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### NOTE

- Specifications are subject to change without notice.
- Dry weight excludes that of the fuel tank and the muffler.
A WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

For repair / warranty assistance please contact your local Kawasaki Authorized Dealer, email: kawpower-website@kmc-usa.com or call toll-free 1-877-364-6404