

VIPER[®]

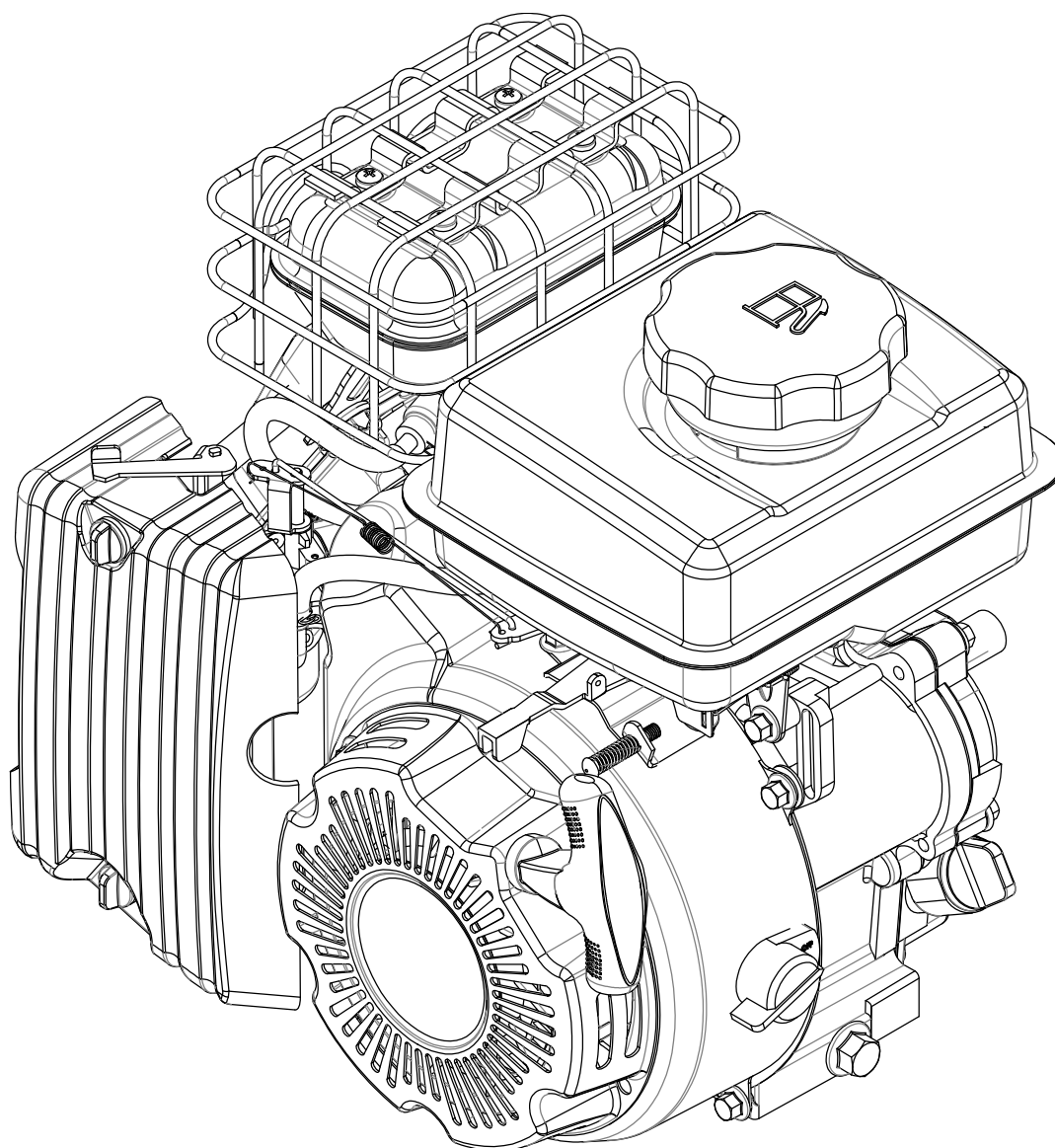
ENGINES

Owner's Manual

99cc
Viper 4-Cycle Engine

Model #: 31767

ENGLISH



THIS INSTRUCTION BOOKLET CONTAINS **IMPORTANT** SAFETY INFORMATION. PLEASE READ AND KEEP FOR FUTURE REFERENCE.

Get parts or technical assistance online at
www.GetEarthquake.com or call (800) 345-6007

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P/N: 31571
REV 1: 07/10/2018

n Viper®. We have worked to ensure that this product meets the highest standards for our purchase will provide many years of service.

ation and use. Viper® reserves the right to change, alter or improve the product and tice. Due to continuous product improvements, product images may not be exact.

nce. This manual contains important information on safety, assembly, operation and at all the product information is included with the unit. This information includes the ranties. This information must be included to make sure state laws and other laws n this unit must have access to and understand this information. This manual should

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IN

his small, off-road engine was designed, built and equipped to conform at the time the U.S. Environmental Protection Agency (EPA) and those of the State of California

WARNINGS AND SAFETY PRECAUTIONS

OWNER'S RESPONSIBILITY

Accurate assembly and safe and effective use of the machine is the owner's responsibility.

- Read and follow all safety instructions.
- Carefully follow all assembly instructions.
- Maintain the machine according to directions and schedule included in this Viper® operator's manual.
- Ensure that anyone who uses the machine is familiar with all controls and safety precautions.

SPECIAL MESSAGES

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

NOTE: General information is given throughout the manual that may help the operator in the operation or service of the machine.

 This symbol points out important safety instructions which if not followed could endanger your personal safety. Read and follow all instructions in this manual before attempting to operate this equipment.

BEFORE OPERATING EQUIPMENT:

Please read this section carefully. Read entire operating and maintenance instructions for this product. Failure to follow instructions could result in serious injury or death. Operate the machine according to the safety instructions outlined here and inserted throughout the text. Anyone who uses this machine must read the instructions and be familiar with the controls.

**DANGER**

**CALIFORNIA PROPOSITION 65 WARNING**
ENGINE EXHAUST FROM THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

NOTICE
NOTICE INDICATES IF THE SAFETY WORD ARE NOT

IMPORTANT
IMPORTANT INFORMATION PROPER ASSEMBLY YOUR EQUIPMENT

**CAUTION**
CAUTION INDICATES COULD RESULT DAMAGE.

**WARNING**
WARNING INDICATES COULD RESULT PROPERTY DAMAGE

**DANGER**
DANGER INDICATES CERTAINLY WILL AND/OR PROPE

**WARNING**
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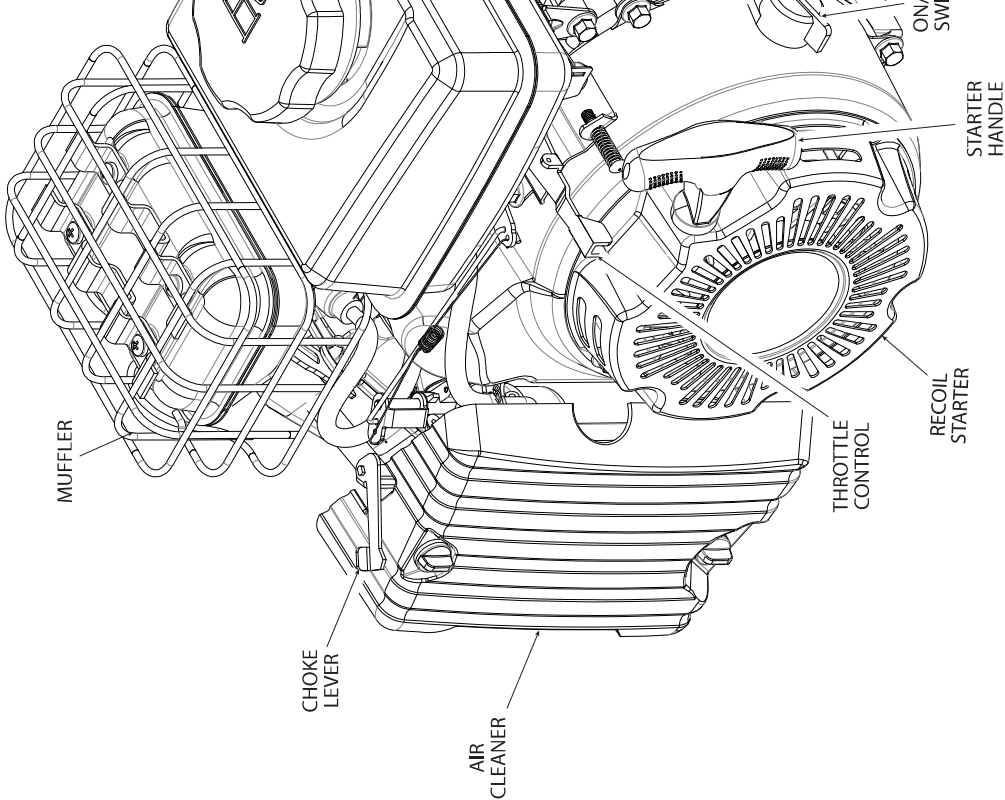
SPECIFICATIONS

Displacement/ Cycle	99cc; 4-Cycle
Ignition Type	Electronic ignition
Cooling System	Forced air cooling
Idling Carburetor Adjust	1600 +/- 200 RPM
Valve Clearance	Cold engine-Intake: 0.10 - 0.15 mm; Exhaust: 0.15 - 0.20 mm
Maximum Torque	5.0 NM/3600 RPM (3.69 ft-lb/3600 RPM)
Bore and Stroke	56 x 40 mm
Spark Plug Type	0.030" (0.7-0.8 mm gap) LG E5RTC
Recommended Fuel Type	Minimum 87 octane gasoline with NO ethanol content. NOTE: If using an ethanol blended fuel, a fuel stabilizer, mixed to manufacturer specifications, is recommended. DO NOT use E85 ethanol blend fuels.
Fuel Tank Capacity	Approximately .53 gallons (2.0 L or 67 oz)
Drive Shaft Type	16mm, 60.1mm from end of shaft to mount- ing surface, 4.78 mm x 45 mm full key, drilled and tapped M6-6H, 25 mm min., full thread.
Start Type	Recoil
Speed	3800 RPM
Oil Capacity and Type	0.37 quart (0.35 liters or 11.83 oz); 10W-30 (in freezing weather use 5W-30)
Weight	23.2 lb, dry (10.5 kg, dry)
Overall Dimensions	310 mm x 290 mm x 310 mm

FEATURES

ENGINE COMPONENTS

This is a 4-cycle air cooled engine. The engine utilizes a horizontal shaft and an oil sling



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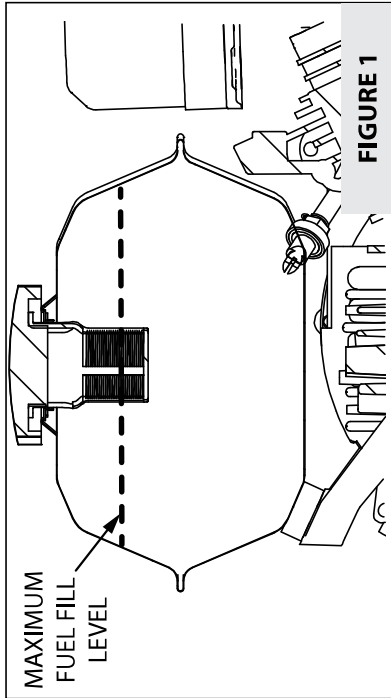
9. Check the equipment powered by this engine. Review the operator's manual provide with the equipment precautions and/or procedures that should be followed before starting this engine.

CHECKING AND FILLING THE FUEL TANK

Be sure the engine is located on a level surface before checking or refilling fuel. Use unleaded regular, unleaded premium automotive fuels only. Low/no ethanol blends recommended. Fuel may contain up to 10% ethanol. **DO NOT mix oil with fuel.**

NOTE: If using ethanol blends, it is recommended you also use an ethanol fuel treatment to protect against corrosion.

- 1. Make sure engine is cool and not running while filling.
- 2. Remove fuel cap.
- 3. Fill tank to fuel level limit (2.0 L). **SEE FIGURE 1.**
Note: Do not overfill.
- 3. Replace cap and remove any spilled fuel before operating.



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WARNING

- ⚠ ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.
- ⚠ ENGINE OIL IS HAZARDOUS TO YOUR HEALTH. DISPOSE OF OIL APPROPRIATELY. USE A SAFE DISPOSAL/RECYCLING CENTER.
- ALWAYS PERFORM A PRE-OPERATION INSPECTION BEFORE EACH OPERATION AND CORRECT ANY PROBLEM.
- IMPROPER MAINTENANCE OF THIS ENGINE, OR FAILURE TO CORRECT A PROBLEM BEFORE OPERATION, CAN CAUSE A MALFUNCTION.
- SERIOUS INJURY OR DEATH CAN OCCUR IF THIS WARNING IS NOT COMPLIED WITH.

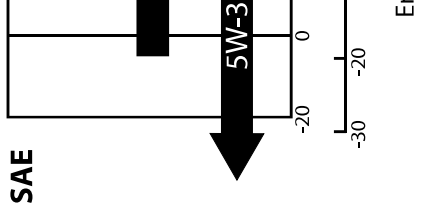
CHECKING AND ADDING OIL

Be sure the engine is located on a level surface before checking or refilling oil.

- 1. Clean around oil fill area and drain plug. **SEE FIGURE 2.**
- 2. Unscrew dipstick and wipe clean with cloth. **SEE FIGURE 2.**
- 3. Reinsert and tighten dipstick.
- 4. Unscrew and check dipstick. If no oil shows on the dipstick, refill to the top thread of the oil fill oil.
- 5. Change oil if contaminated.

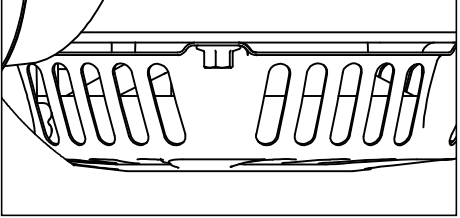
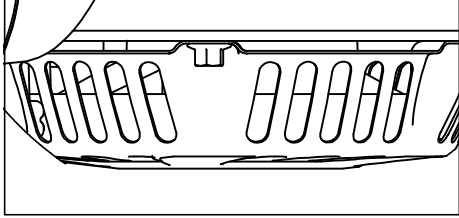
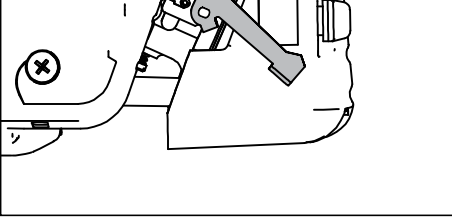
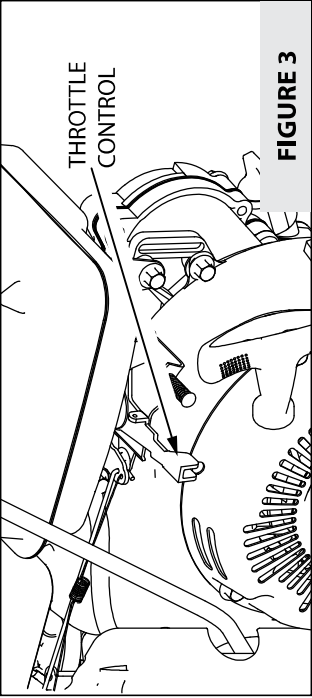
NOTE: Viper engine oil may be put in through the oil dipstick hole or through the oil fill plug opening. If an oil plug is present, loosen screw and fill oil until oil level is even with top thread in plug hole.

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OIL FILL PORT & DIPSTICK

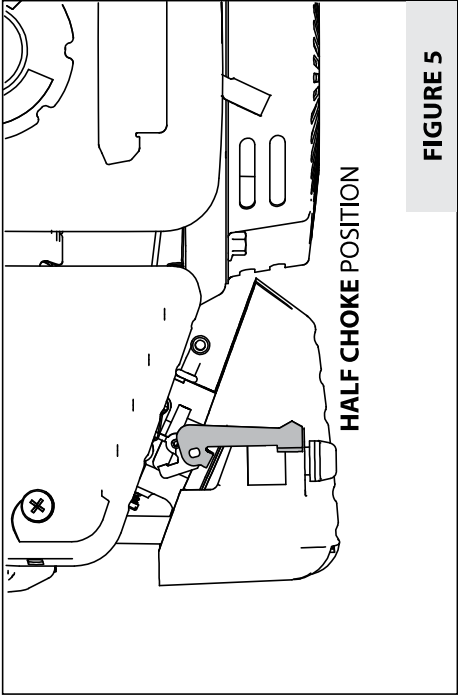
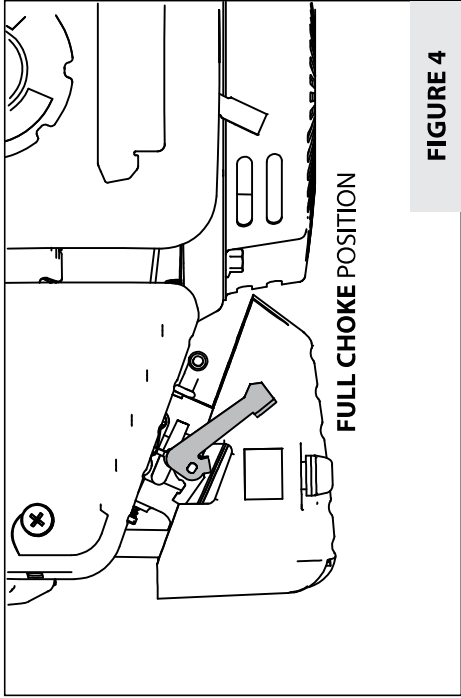
OIL DRAIN PLUG



- After engine begins operating, move choke lever to **HALF CHOKE**. **SEE FIGURE 5.**
- Run engine for 30 to 45 seconds at "Half Choke" position until engine warms up. Then return throttle to operating speed. *(This is not necessary on models with throttle fixed at full throttle position.)*
- After starting the engine, slowly move the choke lever to the **RUN** position as the engine warms up. Move throttle to desired speed. **SEE FIGURE 3 & 6.**

TO STOP THE ENGINE:

- Set the throttle lever to the low speed position and allow the engine to run at low speeds for 1-2 minutes before stopping. *(This is not necessary on models with throttle fixed at full throttle position.)*
- On manual-start models, turn the On/Off switch to the **OFF** position. On models with fixed throttle, move ON/OFF switch to **OFF** position. **SEE FIGURE 8.**
- Pull the starter handle slowly and return the handle to its original position when resistance is felt. This operation will prevent outside moisture from entering the combustion chamber.



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CAUTION

▲ ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.

▲ RUNNING ENGINE WITH A LOW OIL LEVEL WILL CAUSE DAMAGE TO YOUR ENGINE. THIS TYPE OF DAMAGE IS NOT COVERED UNDER WARRANTY.

WARNING

▲ ENGINE OIL IS HAZARDOUS TO YOUR HEALTH. DISPOSE OF OIL APPROPRIATELY. USE A SAFE DISPOSAL/RECYCLING CENTER.

ENGINE MAINTENANCE

For daily maintenance checks, review "pre-operation inspection" section and EPA Emission Warranty Statement (*included with this product*).

LUBRICATION

Choose 4-cycle engine oil that meets or surpasses the latest API service classification SJ or equivalent as labeled on the oil container. Synthetic oils may be substituted for petroleum-based oils in extreme temperatures. For temperatures higher than 32 °F, use SAE 30 or SAE 10W-30 motor oil. Use SAE 5W-30 or SAE 10W if temperatures are below 32 °F. **DO NOT USE SAE 10W-40 MOTOR OIL.**

OIL MAINTENANCE

After the first 20 hours, or after the first month of operating a new *Viper*® Engine the oil should be replaced, and every 50 hours of operating time thereafter. The oil should be changed every 25 hours if used under severe conditions, such as in high temperatures or under heavy loads, otherwise changed weekly. Check oil periodically; do not overfill.

CHANGING OIL

Be sure the engine is not operating and is located on a level surface before checking or refilling oil. Engine should be warm for easy removal of oil.

1. Detach spark plug wire and move away from spark plug. If the engine uses a battery, disconnect at negative terminal. **SEE FIGURE 9.**
2. Remove oil drain plug and empty oil into suitable oil container. Dispose of oil properly. **SEE FIGURE 10.**

3. Reinstall drain plug. Remove dipstick (if applicable) or oil fill cap. **SEE FIGURE 10.**
4. Fill with appropriate oil to "FULL" or top line of dipstick; otherwise to top thread of oil fill hole. **SEE FIGURE 10.**
5. Reinsert dipstick or oil fill cap and tighten.

CAUTION

⚠ NEVER RUN ENGINE WITHOUT AIR FILTER PROPERLY INSTALLED. ADDED WEAR AND ENGINE FAILURE MAY OCCUR IF AIR FILTER IS NOT INSTALLED ON ENGINE.

AIR FILTER

Refer to maintenance schedule for suggestions on when to service your air filter. **Clean filter daily in extremely dusty conditions.**

Remove/Install Air Filter as follows: SEE FIGURE 11.

1. Remove air cleaner cover.
2. Remove the air filter element.
3. Replace with clean or new air filter.
4. Replace air filter cover.

Washing Air Filter as follows:

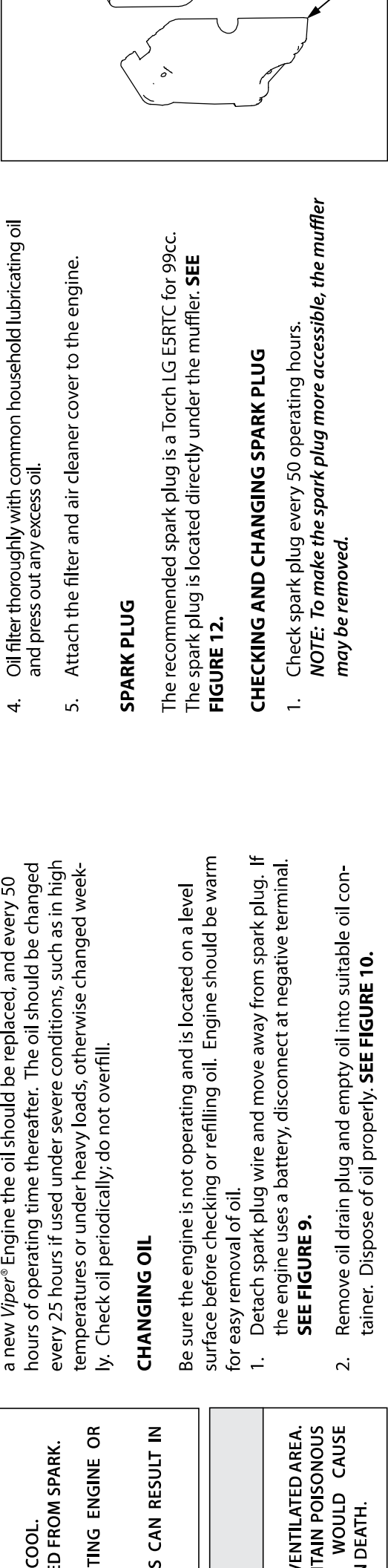
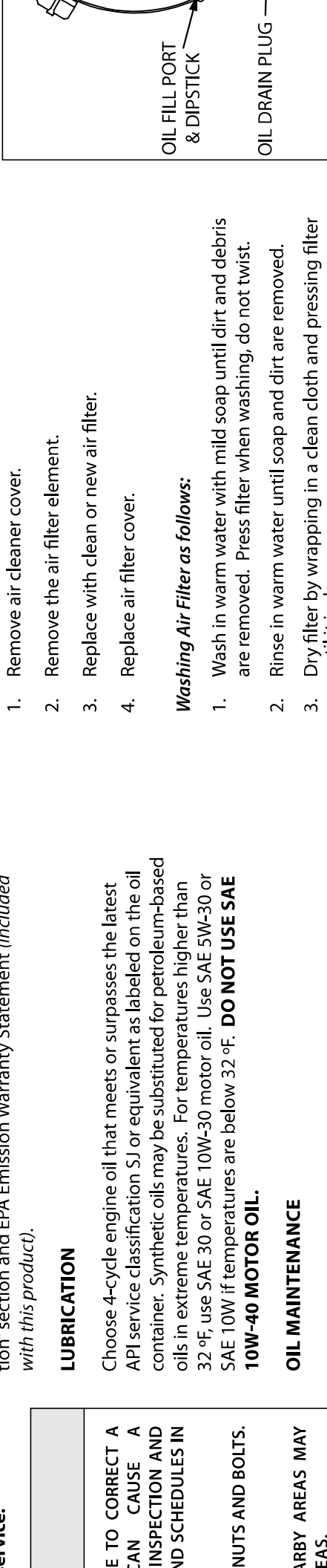
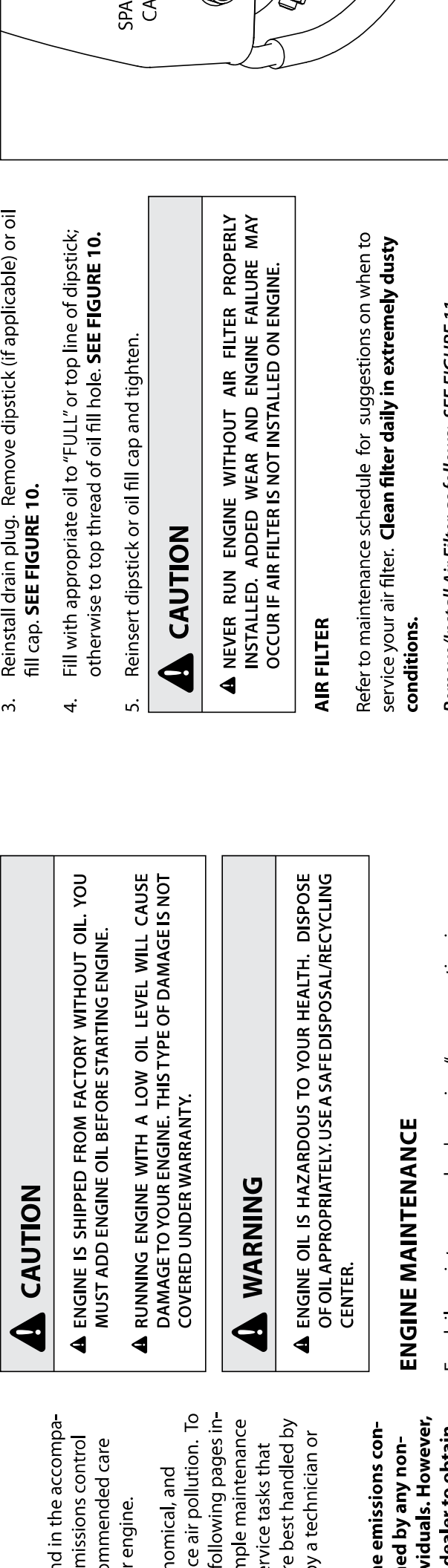
1. Wash in warm water with mild soap until dirt and debris are removed. Press filter when washing, do not twist.
2. Rinse in warm water until soap and dirt are removed.
3. Dry filter by wrapping in a clean cloth and pressing filter until it is dry.
4. Oil filter thoroughly with common household lubricating oil and press out any excess oil.
5. Attach the filter and air cleaner cover to the engine.

SPARK PLUG

The recommended spark plug is a Torch LG E5RTC for 99cc.
The spark plug is located directly under the muffler. **SEE FIGURE 12.**

CHECKING AND CHANGING SPARK PLUG

1. Check spark plug every 50 operating hours.
NOTE: To make the spark plug more accessible, the muffler may be removed.



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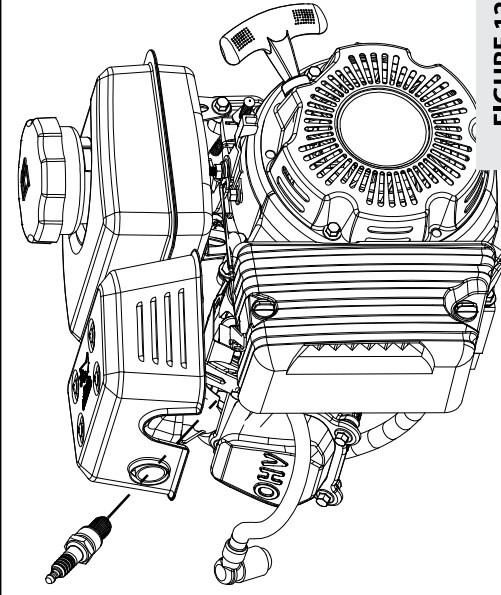


FIGURE 12

▲ FUEL IS HIGHLY FLAMMABLE AND MUST BE HANDLED WITH CARE. NEVER FILL OR DRAIN THE FUEL TANK WHEN THE ENGINE IS HOT OR RUNNING. ALWAYS MOVE OUTDOORS TO FILL OR DRAIN FUEL FROM THE TANK. SERIOUS INJURY OR DEATH CAN OCCUR.

▲ DO NOT REMOVE FUEL WHILE SMOKING, NEAR OPEN FLAME, OR OTHER POTENTIAL HAZARDS.

⚠ FUEL IS TOXIC. DO NOT SIPHON FUEL BY MOUTH.

⚠ DO NOT STORE ENGINE INSIDE A BUILDING WITH FUEL IN THE TANK. POTENTIAL SPARKS MAY BE PRESENT CAUSING IGNITION OF FUEL AND FUEL VAPORS.

**▲ FAILURE TO FOLLOW SAFETY INSTRUCTIONS CAN CAUSE
SERIOUS INJURY OR DEATH.**

⚠ DO NOT REMOVE FUEL WHILE SMOKING, NEAR OPEN FLAME, OR OTHER POTENTIAL HAZARDS.

⚠ IMPROPER MAINTENANCE, OR FAILURE TO CORRECT A PROBLEM BEFORE OPERATION CAN CAUSE A MALFUNCTION. ALWAYS FOLLOW THE INSPECTION AND MAINTENANCE RECOMMENDATIONS AND SCHEDULES INCLUDED WITH THIS OPERATOR'S MANUAL.

▲ CHECK ENGINE REGULARLY FOR LOOSE NUTS AND BOLTS. KEEP THESE ITEMS TIGHTENED.

▲ TEMPERATURE OF MUFFLER AND NEARBY AREAS MAY EXCEED 150°F (65°C). AVOID THESE AREAS.

8. If filter is extremely dirty or torn, replace with new filter.
9. Reassemble and fill with clean fresh gasoline. Check for leaks prior to starting engine.

TRANSPORTING ENGINE

1. Never transport engine inside an enclosed space or vehicle. Fuel or fuel vapors may ignite causing serious injury or death.
2. If fuel is present in the fuel tank remove fuel or transport with an open vehicle in an upright position.
3. If an enclosed vehicle must be used, remove fuel into an approved red fuel container. DO NOT siphon by mouth.
4. Run engine or drain to use up the fuel in the carburetor and fuel tank. Always run engine in a well ventilated area.
5. Wipe away any spilled fuel from engine. Allow to dry.

STEPS FOR LONG-TERM STORAGE
(30 days or more without use)

1. Mix an appropriate amount of fuel stabilizer to fresh gasoline, in the ratio recommended on the stabilizer packaging. Run the engine for five minutes to distribute the stabilizer mixture throughout the fuel system. This will prevent gum, varnish and corrosion build up in your fuel system during long-term storage for up to 12 months.

NOTE: It is recommended that fuel tank is drained and new fuel stabilizer is added every four months. Starting engine once a month to help preserve engine is also recommended.

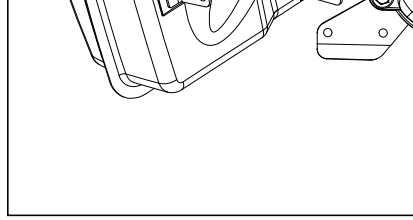
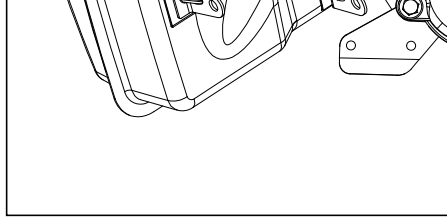
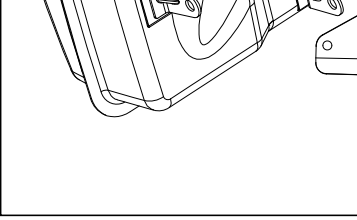
2. Store engine in its upright position.
3. Remove all debris from engine.

TROUBLESHOOTING AND REPAIR

At Viper we build quality and durability into the design of our products; but no amount of careful design by us, and careful maintenance by you, can guarantee a repair-free life for your Viper® Engine. Most repairs will be minor, and easily fixed by following the suggestions in the troubleshooting guide in this section.

This section will help you pinpoint the causes of common problems and identify remedies.

For more complicated repairs, you may want to rely on an authorized service center, or contact Viper customer service.



Viper will make the available. A parts manual.

We will always be glad to help you find suitable alternatives about warranty, call us if you find it in this section.

ry. To order parts
-345-6007.

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PROBLEM CAUSE	REMEDY/ACTION
Ignition switch off	1. Flip switch to ON position
Spark plug wire disconnected	2. Connect spark plug wire to spark plug
Low fuel	3. Refuel
Spark plug wet, faulty or improperly gapped	4. Clean, replace or gap spark plug
Low fuel	5. Drain old fuel and replace with fresh. Use fuel stabilizer as a future preventative measure.
Clogged air filter	1. Clean or replace air filter
Choke partially engaged	2. Turn off choke
Carburetor out of adjustment	3. Call Ardisam Customer Service
Low fuel	1. Drain old fuel and replace with fresh. Use fuel stabilizer as a future preventative measure.
Spark plug wire loose	2. Make sure spark wire is securely attached to spark plug
Carburetor	3. Clean carburetor, use fuel stabilizer, and fresh fuel
Clogged fuel tank or fuel filter	1. Remove and clean
Clogged air filter	2. Clean or replace
Improper carburetor adjustment	3. Call factory
Spark plug dirty, improper gap, wrong type	4. Replace spark plug and adjust gap to 0.030"
Check to make sure that the governor arm and carburetor properly move freely.	5. Clean arm pivot and butterfly pivot

medies fail.

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VIPER[®]

ENGINES

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