Congratulations on your purchase of a Dynamite® .32 Marine engine! Precision manufactured and assembled, your Dynamite .32 Marine engine will provide you with trouble-free performance if you read and follow these instructions.

Using the Proper Fuel and Glow Plug

Using the proper fuel and glow plug is critical in order to achieve maximum performance and reliability. You must use fuel and glow plugs that are specifically designed for model car/boat applications. Never use any type of model airplane glow fuel! Use of model airplane fuel will damage your engine and immediately void any warranty.

We recommend using Blue Thunder™ or Blue Thunder Race Formula blend fuels with 20% nitro, providing the best combination of power and fuel economy. Dynamite® Blue Thunder Fuels are vigorously tested, researched and formulated to deliver excellent power as well as engine protection.

A glow plug has been included and is ideal for breaking in your new engine. In fact during the break-in procedure, it is not uncommon to go through one or two glow plugs, as microscopic bits of metal (from the cylinder/piston wearing in) bond themselves to the plug element causing glow plug failure. We recommend a sport glow plug (DY2500) or an O’Donnell 1⁄4 racing glow plug (DY2521) as the absolute best glow plug for this engine, delivering an ideal balance of performance and longevity.

Head Shims

Several head shims are added at the factory to make the engine easier to break in. After break-in, you may remove all but one of these shims to increase compression and power.

Water-Cooled Engine

Because the Dynamite® .32 Marine engine is water-cooled and not air-cooled, make sure that you do not run the engine for an extended amount of time outside of the water. Continuously monitor the water outlet when the boat is running to make sure that the water is reaching the engine head. If the water does not reach the head to cool it, the engine will overheat and fail. This will cause permanent damage to the engine.

Starting Your Engine for the First Time

The first start of your engine is the most critical time of the engine’s life, dictating how well it will perform. After installing the engine in your model and inserting the glow plug, turn on your radio system and attach a glow igniter to the glow plug.

When using a recoil starter, never pull the rope out to its full length, as doing so may cause damage and recoil starter failure. Quick, short pulls of the recoil starter are the best technique to use. Never extend the starter rope more than 12 inches.

Should the pull starter be extremely difficult to pull (will not extend out of the assembly), the engine may be flooded (hydro-locked). Excess fuel between the cylinder head and piston will not allow the piston to travel through its full range of compression, effectively “locking up” the engine. Should this occur, immediately remove the glow igniter from the plug. Using a glow plug wrench (DY2510), remove the glow plug and turn the model upside down. Give the recoil starter a few short pulls to clear out the fuel, re-install the glow plug and start again.

You may need to “blip” the throttle on the transmitter (applying throttle on/off) while trying to start the engine, as new engines are more difficult to start due to the light piston/cylinder fit. Never start an engine above 1⁄4 throttle! Immediate damage to your engine can occur!

When the engine starts, the exhaust should emit blue/white smoke, indicating that the engine is excessively rich (a good thing during break-in). During the first tank of fuel, you may wish to set a higher than normal idle speed and/or leave the glow plug igniter attached in order to keep the engine from stalling. Drive the boat around while “blipping” the throttle and avoid operating the engine at full throttle for more than 2–3 seconds at a time. Consume the entire first two tanks of fuel in this manner.

After the first two tanks of fuel, begin leaning out the high-speed needle valve 1⁄8 turn at a time. It generally takes about 5 or 6 tanks of fuel before you’d want to start tuning for “maximum” power. Do not skip this process of breaking in a new or rebuilt engine! Should you choose not to follow these procedures, you risk damaging your engine during the first tank of fuel.

Your patience during these procedures will be rewarded by an engine that performs reliably and to its maximum power potential. First run attempts can be more frustrating than with other (less powerful) sport engines, so take your time—it will be worth the wait! Glow plug failure is a common occurrence when breaking in a new engine. To test your plug, let the engine idle at a properly adjusted low-speed needle setting with the glow igniter attached. Then, remove the igniter. If you hear no appreciable change in engine rpm, then the plug is still good. If the engine loads up and the rpm’s decrease, it’s time to replace the glow plug.

Setting the Needle Valves

When adjusting the settings, always adjust the needles in small increments, about 1⁄4 of a full turn at a time. Do not set the engine too lean, as it shortens the reliability of the engine.

After you have attained the correct needle settings, the engine will have a strong-sounding, high-pitched whine at full speed, and a thin trail of blue/white smoke will come from the exhaust.

The engine should not be run too lean; doing so severely shortens the life of the engine. When an engine is set too lean, it will run very strong at first, but will soon begin to sag and hesitate or stall when accelerating.

Tuning the Low-Speed Needle

The low-speed needle (also referred to as the idle mixture or idle needle) should be set after you’re satisfied with the high-speed needle setting. After achieving the proper operating temperature, reduce the engine throttle to idle and pinch the fuel line with your fingers close to the carb fuel inlet nipple. If the engine dies immediately, the low-speed needle is set too lean. If the rpm’s increase dramatically, the setting is too rich. The ideal setting results in a crisp, clean idle.

The first setting to be made is the idle stop screw. The last setting to be made is the idle screw. Turning this screw clockwise increases the idle speed; whereas turning the screw counterclockwise will make the engine idle at a lower speed. Ideally, the engine should idle just fast enough to be reliable in acceleration and transition from idle to full speed.

Idle Stop Adjustment

The idle stop adjustment is the final adjustment you will make to your engine. The idle stop screw should be turned so that the engine will idle with the needle valve closed completely when turning the needle. Make certain to mount the nut located on the side of the crankcase under the carburetor body will allow you to rotate the carburetor. Make certain to mount the throttle arm to the side required by your particular boat. Although preset at the factory, some changes in the needle setting can occur during shipping and handling.

Fuel Inlet (Adjustable)

High-Speed Needle Valve

Leaner

Faster Idle (clockwise)

Low-Speed Needle Valve

Leaner

Slower Idle (counterclockwise)

Idle Stop Screw

Flow Inlet (Adjustable)
Engine Maintenance

Periodic maintenance must be performed in order to keep your engine in proper operating condition. After each day of running, it's critical to use high quality after-run oil to protect the internals of the engine and guard them against corrosion. The methanol used in the fuel attracts moisture that can cause corrosion (particularly in the ball bearings). We recommend Blue Thunder™ Final Run (DYN2255) as it's specifically formulated to protect the ball bearings. We recommend Blue Thunder™ Final Run oil to protect the internals of the engine and guard them against corrosion. The methanol used in the fuel attracts moisture that can cause corrosion (particularly in the ball bearings).

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Troubleshooting Guide

### Problem

Engine won't start

- Improper needle setting
- Out of fuel; fill fuel tank
- Improper or old fuel; use 20% Blue Thunder
- Improper glow plug; install proper glow plug
- Glow igniter not charged; charge igniter
- Dead glow plug; replace
- Flooded engine; remove glow plug, invert boat and operate the pull-starter to remove fuel

### Possible Cause/Solution

1. Empty all fuel from the tank and fuel lines.
2. Use Final Run fuel following the instructions on the container.
3. Clean and inspect the engine and fuel system.

Engine starts, then dies

- Pressure line blocked or unhooked; connect or replace fuel line
- Reset needles to baseline setting

Engine starts and runs for several minutes, then dies

- Bad glow plug; replace
- Idle speed set too low
- Improper needle settings
- Overheated engine; check for clogged or damaged cooling system
- Glow plug failed due to lean engine setting; richen carburetor settings and replace glow plug

Engine won't start

- Problem running your engine:

- Follow these steps after running your engine:

  1. Empty all fuel from the tank and fuel lines.
  2. Use Final Run fuel following the instructions on the container.
  3. Clean and inspect the engine and fuel system.

### Troubleshooting Guide

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### Spare Parts Listing

- DYN6451 CYLINDER HEAD:.32M
- DYN6452 O-RING SET:.32M
- DYN6453 HEAD BUTTON:.32M
- DYN6454 HEAD GASKET:.32M
- DYN6455 HEAD GASKET:.32M
- DYN6456 PISTONSLEEVE:.32M
- DYN6457 WRYST PIN:.32M
- DYN6458 CONNECTING ROD:.32M
- DYN6459 ROTORY CARBURETAR:.32M
- DYN6460 REAR BEARING:.32M
- DYN6461 CRANKSHAFT NUT:.32M
- DYN6462 CRANKCASE:.32M
- DYN6463 CRANKSHAFT:.32M
- DYN6464 PULLSTART COMPLETE:.32M
- DYN6465 PULLSTART FRONT SET:.32M
- DYN6466 THROTTLE BARREL SCREW:.32M
- DYN6467 IDLE SPEED SPRING:.32M
- DYN6468 CARB. BODY:.32M
- DYN6469 THROTTLE BARREL:.32M
- DYN6470 LOW SPEED NEEDLE VALVE:.32M
- DYN6471 THROTTLE LEVER:.32M
- DYN6472 THROTTLE ARM NUT:.32M
- DYN6473 THROTTLE BARREL SPRING:.32M
- DYN6474 HIGH SPEED NEEDLE VALVE:.32M
- DYN6475 HIGH SPEED NEEDLE HOLDER:.32M
- DYN6476 HIGH SPEED NEEDLE WASHER (2):.32M
- DYN6477 SPRAY BAR:.32M
- DYN6478 PS SCREW SET:.32M
- DYN6479 PS ONE-WAY BEARING:.32M
- DYN6480 HEAD SCREW (4):.32M
- DYN6481 WRYST PIN CLIPS:.32M
- DYN6482 COLLET:.32M
- DYN6483 FRONT BEARING:.32M
- DYN6484 SMALL FLYWHEEL:.32M
- DYN6485 CARBURETAR RETAINING POST SET:.32M
- DYN6486 PS HANDLE AND EXTENSION:.32M
- DYN6487 PS BACKPLATE:.32M
- DYN6488 PS ROPE AND PULLEY:.32M
- DYN6489 PS RECOIL SPRING:.32M
- DYN6490 CRANKCASE:.32M
- DYN6491 CRANKSHAFT:.32M
- DYN6492 PISTONSLEEVE:.32M
- DYN6493 PS SHAFT:.32M

### Warranty

Dynamite® .32 Marine engines are guaranteed against defects in materials and workmanship for a period of 90 days from date of purchase. Dynamite .32 Marine engines are of excellent quality and designed to provide many hours of racing enjoyment. If cared for properly, these engines are extremely durable. However, normal “common sense” care must be given to your engine in order to maximize its performance and service life. The following conditions/problems cannot be covered under warranty:

- Recoil starter
- Damage due to lack of maintenance
- Rusted bearings
- Crash-related damage (over-revving, runaways, free-wheeling, etc.)
- Damage due to use of improper fuel or glow plugs
- Damage due to lean runs (seized connecting rods, pistons, etc.)
- Damage caused by dirt or foreign objects being ingested into the engine
- Damage from improper disassembly or reassembly
- Modification of any kind
- Normal engine wear

**Should you need to send your engine in for warranty or non-warranty repairs, please follow these steps:**

1. Ship your engine (in its original box) packed inside a sturdy box, freight prepaid to:
   Horizon Service Center
   ATTN: Dynamite .32 Marine Service
   4105 Fieldstone Road
   Champaign, IL 61822

2. Include a note containing a brief summary of the problems you are experiencing with your Dynamite .32 Marine engine. Please tell us:
   - Nitro content and brand of fuel used in the engine
   - Type of glow plug used
   - Approximate running time on the engine prior to difficulties developing

   Date your correspondence and include your return address, as well as a daytime telephone number and email address (if applicable).

**Non-Warranty Service**

Should your repair costs exceed $50.00, you'll be provided with an estimate advising you of your options. Any charges for return shipping of non-warranty repairs will be billed to you.

**Payment Method**

Please advise the Horizon Service Center of the method of payment you prefer to use. The Service Center accepts Visa or MasterCard. When using credit cards, please include your card number, expiration date and the name as it appears on the card.

**Warranty Repair**

If you believe that the problem(s) with your engine are covered under warranty, you must include your original dated sales receipt to verify proof of purchase date. Providing the conditions of warranty have been met, your engine will be repaired without charge.

**Dynamite .32 Marine engines are manufactured in Taiwan and distributed worldwide by:**

Horizon Hobby, Inc.
4105 Fieldstone Road
Champaign, IL 61822
www.horizonhobby.com
Horizon Service Center
1-877-504-0233

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