

.32 Marine Owner's Manual

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 (DYN2500) or an O'Donnell 1/10 racing glow plug (DYN2521) as the absolute best glow plug for this engine, delivering an ideal balance of performance and longevity.

Carburetor Adjustments

Your Dynamite .32 Marine engine comes equipped with a precision rotary carburetor. Take a moment to review the pictures below to familiarize yourself with the various functions of the carb. Loosening 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.

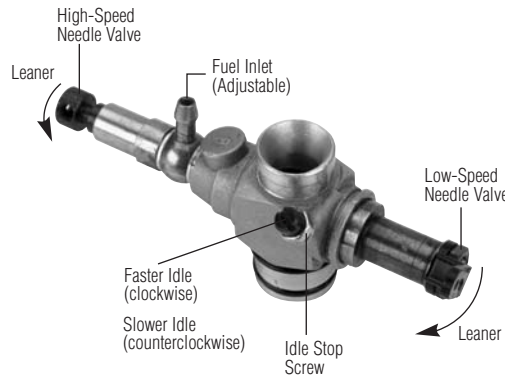
Although preset at the factory, some changes in the needle setting can occur during shipping and handling.

We suggest the following settings for breaking in your engine:

High-Speed Needle: 2 1/2 turns out (counterclockwise) from closed.

Low-Speed Needle: 2 1/2 turns out (counterclockwise) from closed.

When checking the adjustment of the low-speed needle, it is crucial that the throttle barrel is closed completely when turning the needle and that you do not overtighten the needle.



Use the included screwdriver to make this job easier. When you feel resistance in the needle, immediately stop turning and begin turning the needles counterclockwise, counting the number of turns from "closed."

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 Dynamite .32 Marine engine comes equipped with the Dynamite Pro Mix Carburetor. Each Pro Mix Carburetor is pre-adjusted at the factory. This setting should be approximately 2 1/2 turns open for the high-speed and 2 1/2 turns open for the low-speed needle. This should give you a slightly "rich" mixture of fuel to the engine. This setting is the safest way to break in your engine.

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 (DYN2510), 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 tight 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 1/8 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.

An 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 the rpm's increasing just a slight amount after pinching the fuel line.

Idle Stop Adjustment

The last setting to be made is the idle stop 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.

Head Shims

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

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 your engine between uses. 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

Problem	Possible Cause/Solution
Engine won't start	<ul style="list-style-type: none">• 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
Engine starts, then dies	<ul style="list-style-type: none">• Pressure line blocked or unhooked; connect or replace fuel line• Reset needles to baseline setting
Engine starts and runs for several minutes, then dies	<ul style="list-style-type: none">• 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

Spare Parts Listing

DYN6451	CYLINDER HEAD:.32M
DYN6452	O-RING SET:.32M
DYN6453	HEAD BUTTON:.32M
DYN6454	HEAD GASKET .1MM:.32M
DYN6455	HEAD GASKET .2MM .:32M
DYN6456	PISTON/SLEEVE:.32M
DYN6457	WRIST PIN:.32M
DYN6458	CONNECTING ROD:.32M
DYN6459	ROTARY CARBURETOR:.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
DYN0900	HEAD SCREW (4):.32M
DYN0907	WRIST PIN CLIPS:.32M
DYN0912	COLLET:.32M
DYN0913	FRONT BEARING:.32M
DYN0916	SMALL FLYWHEEL:.32M
DYN0911	CARBURETOR RETAINING POST SET:.32M
DYN0935	PS HANDLE AND EXTENSION:.32M
DYN0936	PS BACKPLATE:.32M
DYN0938	PS RECOIL SPRING:.32M
DYN0939	PS ROPE AND PULLEY:.32M
DYN0942	BACKPLATE:.32M
DYN0943	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 shipping address, as well as a daytime telephone number and email address (if applicable).

3) 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.

4) 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.

5) 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.

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