HYPER .21 ENGINE

Thank you for purchasing an OFNA engine. We appreciate your choice and know you will enjoy running it. Carburetor Low end and barrel stop screws are preset by factory.... Do not change until break-in is done.

NEW ENGINE BREAK-IN

Your OFNA engine is extremely tight when the piston is at the top of the stroke, this is normal for a new ABC type engine. The piston and sleeve are matched for fit and the top of the sleeve is tapered for a tight compression fit. As you run your engine, this tightness should diminish. There is no cause for alarm, because as the engine warms up, the brass sleeve will expand faster than the aluminum piston and the engine will turn freer.

As with any new engine, there are many high spots and tight fits in the matching process. High spots create hot spots that must be broke-in. Therefore, the break-in process is very important to provide good service by the OFNA engine. We recommend using one gallon of 20% BLUE THUNDER or BYRON'S 2000 as break-in fuel. Other break-in type fuels or added oil is NOT needed. DO NOT OVER REV THE ENGINE WHEN FIRST STARTING, this could break the piston and over heat sleeve. Always stop engine and set piston to the bottom of the stoke when finished.

STARTING ENGINE FOR THE FIRST TIME

There are three needles on the carburetor. Do not touch any needles until you read and understand this procedure. Set the needles as follows to start the break-in process.

Set the master needle IN until stops, then turn OUT 4.5 to 5 turns.

To reset factory setting for both low-end needles, check figures. Setting for the black low end needle (see fig.) is OUT 3.5 turns out from flush. Setting brass head mid range needle, should always be flush to the case.

Install Glow Plug with one brass washer.

To start engine, prime fuel line by placing finger over pipe outlet and pulling the engine over 5 times. This will push fuel to the carburetor. Place glow plug heater on engine plug, pull the starter handle with short quick pulls. Engine should start immediately. If not, check fuel line for fuel and that needle has been set correctly.

Heat cycle the engine during break-in procedure. This means, set an idle on the engine (adjust idle RPM screw so the clutch is not engaged) and let it run without the car moving (hold car on the ground) for 3 minutes. Stop engine and let it cool down with piston turn down on a bottom stoke and not at top dead center.

After engine is cool, start engine up again and repeat the cycling 3 times.

After heat cycling engine release the car and throttle it up and down. DO NOT OVER REV ENGINE, keep engine going with short burst of speed. You can now turn IN the master needle a 1/4 turn to improve performance. Keep adjusting needle until engine is running at a good speed without being too hot. Remember to always check engine temperature (it should not exceed 270 degrees) normal temperature for best engine life is 220 degrees

BREAK-IN NEEDLE SETTINGS

- MASTER NEEDLE - 5 TURNS OUT
- LOW-END(BLK) NEEDLE - 3.5 TURNS OUT FROM FLUSH
- MID/LOW-END(BRASS) NEEDLE - FLUSH

NORMAL NEEDLE SETTING

- MASTER NEEDLE - 4 TURNS OUT
- LOW-END(BLK) NEEDLE -3 TURNS FROM FLUSH
- MID/LOW-END(BRASS) NEEDLE - NO TURNS

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NEEDLE FUNCTION

Master Needle Valve - main control for fuel mixture. Set at 4 to 5 turns out from closed OR 1/2 turns in from top flush. Adjust this needle for maximum RPM and power without being too lean or too hot. Make sure you start at bottom of needle seat!!

Side Black Carburetor Needle (Low End) - This needle is in the center side of the carburetor barrel and provide throttle response. It is not the idle adjustment. Set 3 to 3.5 turns out from FLUSH with the black ball sleeve. Turning IN is Lean and OUT is Rich. Do not adjust this needle until the Master Needle is set for power and top speed. This will only effect throttle response.

Mid Range Needle (brass) - DO NOT ADJUST MID RANGE NEEDLE, FACTORY SETTING IS FLUSH TO CASE.

Barrel Stop Screws - Used for adjusting Idle. Set for 1/16th inch gap to start new engines. You can open more for faster idle. Set idle below clutch engagement.

USE LONG GLOW PLUG WITHOUT IDLE BAR,
OFNA/PICCO #51007 IS RECOMMENDED