



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% SIDEWINDER 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 the sleeve. Always stop engine and set piston to the bottom of the stroke 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 3.5 to 4 turn.

To reset factory setting for both low-end needles, check figures. Setting for the black low end needle (see fig.) is OUT 1/2 turns out from flush. Setting brass head mid range needle, should always be flush to the case.

Install Standard 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 stroke 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 250 degrees) normal temperature for best engine life is 220 degrees

BREAK-IN NEEDLE SETTINGS

- MASTER NEEDLE - 4 TURNS OUT
- LOW-END(BLK) NEEDLE - 1 TURNS OUT FROM FLUSH
- MID/LOW-END(BRASS) NEEDLE - FLUSH

NORMAL NEEDLE SETTING

- MASTER NEEDLE - 3.5 TURNS OUT
- LOW-END(BLK) NEEDLE - 1/2 TURNS FROM FLUSH
- MID/LOW-END(BRASS) NEEDLE - NO TURNS



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NEEDLE FUNCTION

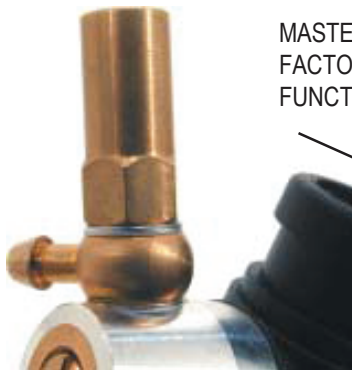
Master Needle Valve - main control for fuel mixture. Set at 3.5 to 4 turns out from closed OR 1/2 turns in from top flush. Adjust this needle for maximum RPM and power without being too lean or too hot. Make sure you start at bottom of needle seat!!

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 1/2 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 #51010 HOT OR #51011 MEDIUM.



MASTER NEEDLE
FACTORY SETTING: 3.5 to 4 TURNS OUT FROM CLOSE
FUNCTION: SET MAX SPEED AND POWER.

MID RANGE NEEDLE
DO NOT TURN!
FACTORY SETTING: HEAD IS
FLUSH TO CASE



SHOWN AT
"FLUSH
SETTING"

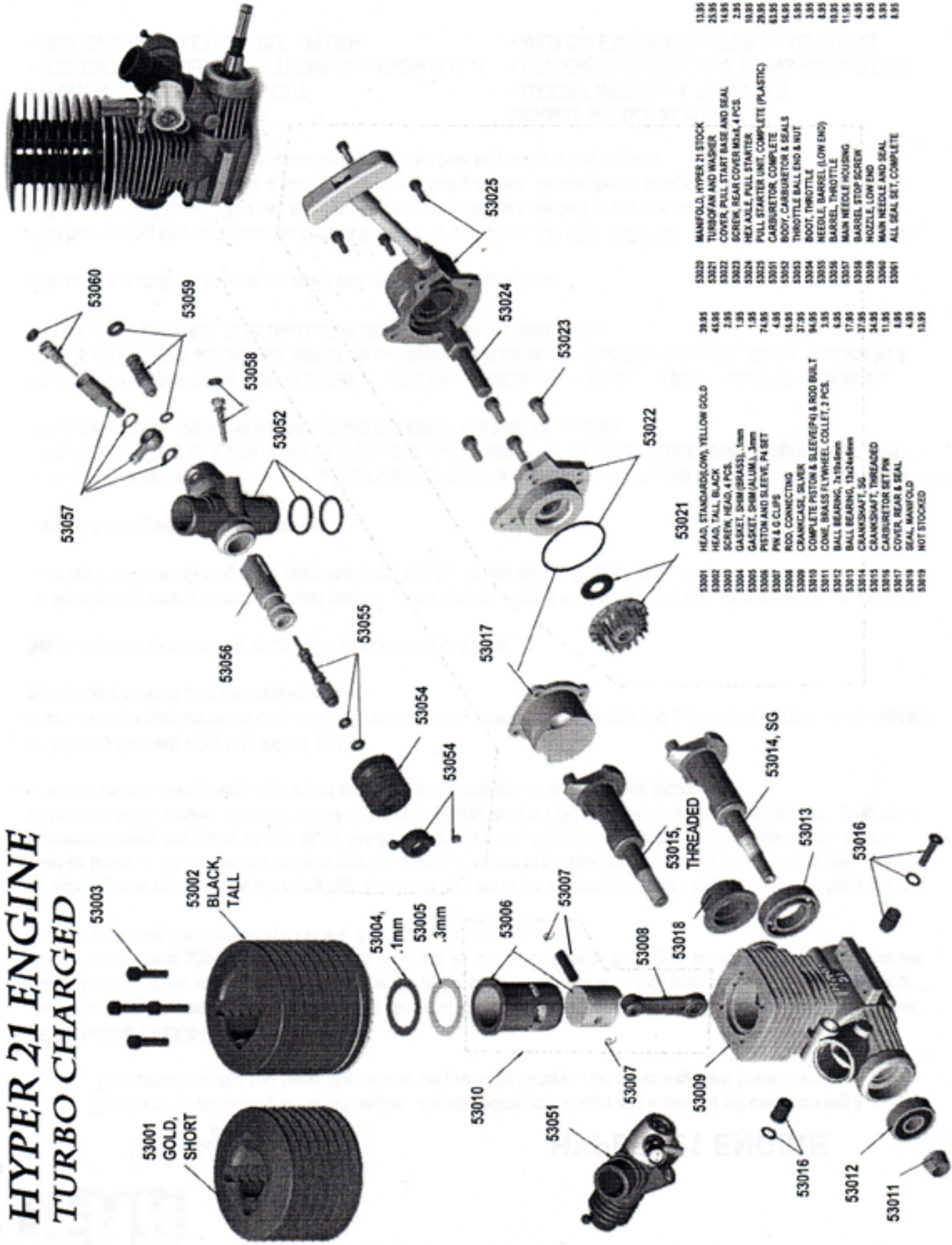


LOW END NEEDLE
FACTORY SETTING:
HEAD IS FLUSH WITH BALL COLLAR
SET: 1/2 TURNS OUT
FUNCTION: ADJUSTS THROTTLE
RESPONSE.



BARREL STOP OR
IDLE SCREW
FACTORY SETTING:
1/16 AIR GAP

HYPHER 21 ENGINE TURBO CHARGED



53001	HEAD, STANDARD/LOW, YELLOW GOLD	33.00
53002	HEAD, TALL, BLACK	45.95
53003	SCREW, HEAD, 4 PCS.	2.95
53004	GASKET, SHIM (BRASS), 1mm	1.95
53005	GASKET, SHIM (ALUM.), 3mm	1.95
53006	PISTON AND SLEEVE, P4 SET	74.95
53007	PIN & O CLIPS	4.95
53008	ROD, CONNECTING	16.95
53009	CRANKCASE, SILVER	37.95
53010	COMPLETE PISTON & SLEEVE (P4) & ROD BUILT	94.95
53011	CONE, BRASS FLYWHEEL COLLET, 2 PCS.	3.95
53012	BALL BEARING, 7x17x4mm	6.95
53013	BALL BEARING, 13x24x8mm	17.95
53014	CRANKSHAFT, SG	37.95
53015	CRANKSHAFT, THREADED	34.95
53016	CARBURETOR SET PIN	11.95
53017	COVER, REAR & SEAL	8.95
53018	SEAL, MANIFOLD	4.95
53019	NOT STOCKED	13.95
53020	MANIFOLD, HYPER 21 STOCK	39.95
53021	TURBOFAN AND WASHER	45.95
53022	COVER, PULL START BASE AND SEAL	2.95
53023	SCREW, REAR COVER MOUNT, 4 PCS.	1.95
53024	HEX AXLE, PULL STARTER	1.95
53025	PULL STARTER UNIT, COMPLETE (PLASTIC)	74.95
53026	CARBURETOR, COMPLETE	4.95
53027	BODY, CARBURETOR & SEALS	16.95
53028	THROTTLE BALL END & NUT	37.95
53029	ROOT, THROTTLE	94.95
53030	NEEDLE, BARREL (LOW END)	3.95
53031	BARREL, THROTTLE	6.95
53032	MAIN NEEDLE HOUSING	17.95
53033	BARREL STOP SCREW	37.95
53034	NOZZLE, LOW END	34.95
53035	MAIN NEEDLE AND SEAL	11.95
53036	ALL SEAL SET, COMPLETE	8.95

TO: OFNA TECHNICAL SUPPORT

7 VANDERBILT, IRVINE, CA 92618

TODAY'S DATE: month _____ day _____

1. Print out form.
2. Fill out the form completely.
3. Make a copy of purchase receipt. All replacements/repairs will not be processed, unless accompanied by proof that item(s) was purchased in the last **30** days.
4. Call OFNA technical support at (949)586-2910 for assistance or fax (949) 583-9272

1. Your name

2. Your address:

3. Your Phone Number

(_____) _____

4. Your e-mail address:

5. Summary of your problem *(check lines)*:

- a. _____ part(s) is missing from my kit
- b. _____ part(s) seems to be defective
- c. _____ other problem

6. Name of kit / part *(on tag or end of box)*

7. Kit/part number *(on tag or end of box)*

8. Purchased from *(store name)*

a. Store phone: (_____) _____

b. _____ item was a gift?

9. If a part is missing from the kit, circle the appropriate answers:

- a. Yes / No: Is kit box damaged?
- b. Yes / No: Factory Seal sticker was secure.
- c. Yes / No: I am the original owner.
- d. Yes / No: I have contacted the dealer first.

10. Describe your issue fully and include any part numbers:

Failure to fill out this form completely will cause a delay in processing!

11. Affix proof of purchase on second page. **All replacement / repairs will not be processed unless accompanied by proof that item(s) was purchased in the last 30 days.**

Can't find Proof of Purchase?

- A. If you lost the store receipt, ask the store if they will give you a new one.
- B. We do not accept the following as a substitute: Hand written receipts, **ebay** transaction numbers/forms or credit card statements.

12. Send in form with your defective product, as instructed to do by the Ofna technician, (Name) _____ you spoke to. (949)586-2910 fax (949) 583-9272