



## 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

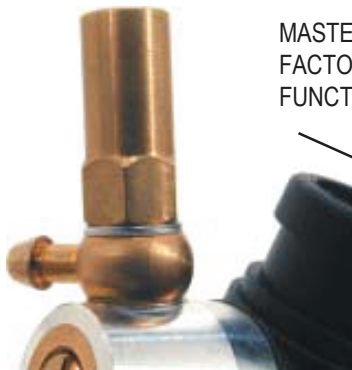
Master Needle Valve - main control for fuel mixture. Set at 3.5 to 4 turns out from closed OR 1/2 turns in from top flush. Adjust this needle for maximum RPM and power without being too lean or too hot. Make sure you start at bottom of needle seat!!

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"

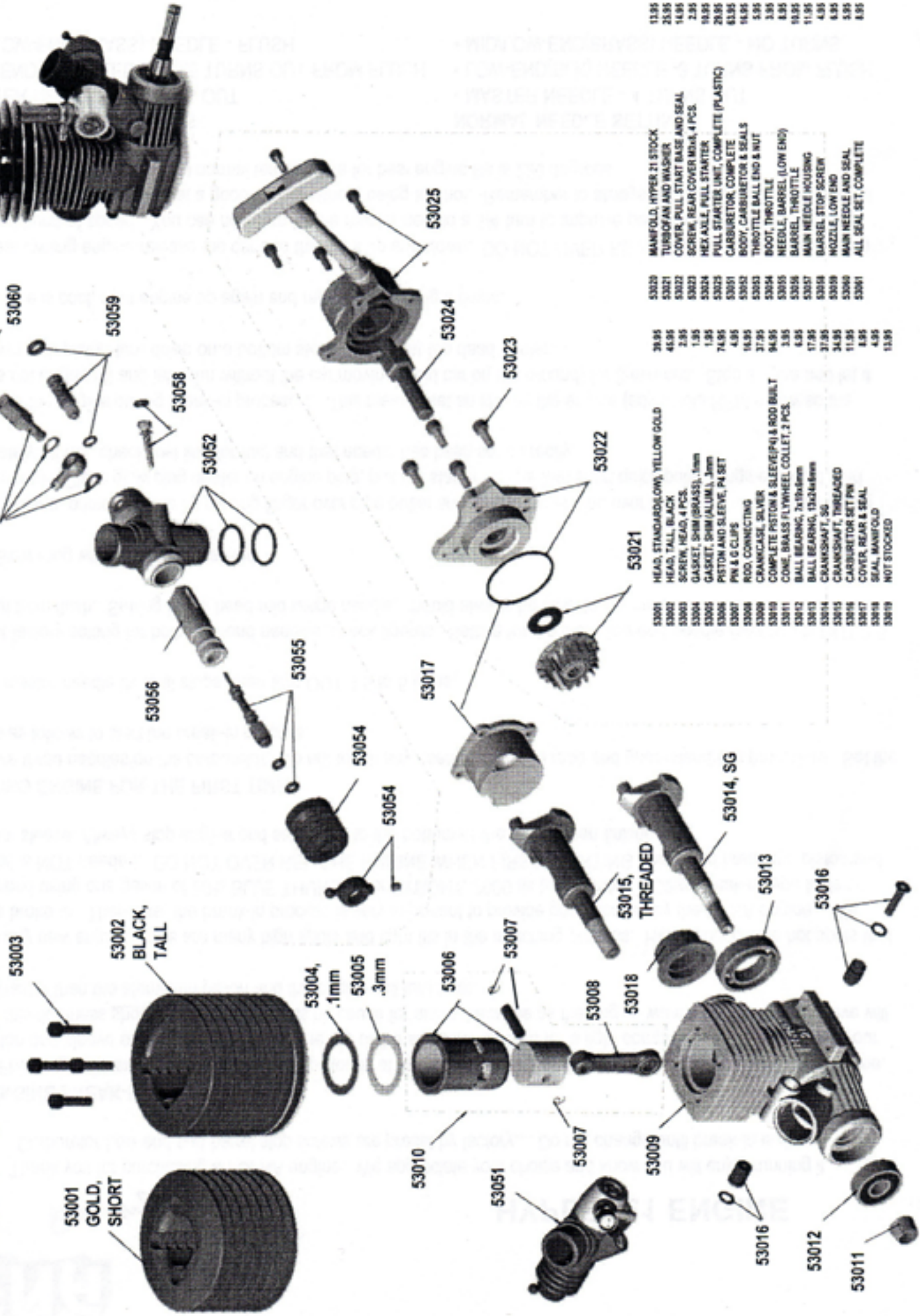
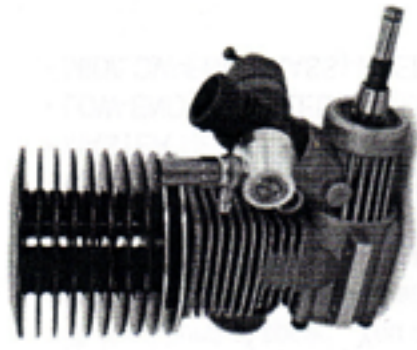


LOW END NEEDLE  
FACTORY SETTING:  
HEAD IS FLUSH WITH BALL COLLAR  
SET: 1/2 TURNS OUT  
FUNCTION: ADJUSTS THROTTLE  
RESPONSE.



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

# HYPHER 21 ENGINE TURBO CHARGED



- 53001 HEAD, STANDARD/LOW, YELLOW GOLD
- 53002 HEAD, TALL, BLACK
- 53003 SCREW, HEAD, 4 PCS.
- 53004 GASKET, SHIM (BRASS), 1mm
- 53005 GASKET, SHIM (ALUM.), 3mm
- 53006 PISTON AND SLEEVE, P4 SET
- 53007 PIN & O CLIPS
- 53008 ROD, CONNECTING
- 53009 CRANKCASE, SILVER
- 53010 COMPLETE PISTON & SLEEVE (P4) & ROD BUILT
- 53011 CONE, BRASS FLYWHEEL COLLET, 2 PCS.
- 53012 BALL BEARING, 7x17x6mm
- 53013 BALL BEARING, 13x24x8mm
- 53014 CRANKSHAFT, SG
- 53015 CRANKSHAFT, THREADED
- 53016 CARBURATOR SET PIN
- 53017 COVER, REAR & SEAL
- 53018 SEAL, MANFOLD
- 53019 NOT STOCKED

- 53020 MANFOLD, HYPER 21 STOCK
- 53021 TURBOFAN AND WASHER
- 53022 COVER, PULL START BASE AND SEAL
- 53023 SCREW, REAR COVER M6x4, 4 PCS.
- 53024 HEX AXLE, PULL STARTER
- 53025 PULL STARTER UNIT, COMPLETE (PLASTIC)
- 53026 CARBURATOR, COMPLETE
- 53027 BODY, CARBURATOR & SEALS
- 53028 THROTTLE BALL END & NUT
- 53029 ROOT, THROTTLE
- 53030 NEEDLE, BARREL (LOW END)
- 53031 BARREL, THROTTLE
- 53032 MAIN NEEDLE HOUSING
- 53033 BARREL STOP SCREW
- 53034 NOZZLE, LOW END
- 53035 MAIN NEEDLE AND SEAL
- 53036 ALL SEAL SET, COMPLETE

- 53051 CARBURATOR, COMPLETE
- 53052 BODY, CARBURATOR & SEALS
- 53053 THROTTLE BALL END & NUT
- 53054 ROOT, THROTTLE
- 53055 NEEDLE, BARREL (LOW END)
- 53056 BARREL, THROTTLE
- 53057 MAIN NEEDLE HOUSING
- 53058 BARREL STOP SCREW
- 53059 NOZZLE, LOW END
- 53060 MAIN NEEDLE AND SEAL
- 53061 ALL SEAL SET, COMPLETE

- 53057 3x8.95
- 53058 4x9.95
- 53059 2x9.95
- 53060 1.95
- 53061 1.95
- 53062 74.95
- 53063 4.95
- 53064 16.95
- 53065 37.95
- 53066 94.95
- 53067 6.95
- 53068 17.95
- 53069 37.95
- 53070 34.95
- 53071 11.95
- 53072 4.95
- 53073 13.95

# 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 form 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:

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**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 accepted 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