

# OFNA/PICCO .12R 3PORT & 7PORT ENGINE

**#51120 - .12R 7P TURBO PLUG, THREADED**

**#51121 - .12R 7P TURBO PLUG, SG**

**#51122 - .12R 3P STD. PLUG, THREADED, ROAR LEGAL**

**#51123 - .12R 3P STD. PLUG, SG, ROAR LEGAL**

Stop!! Carburetor LOW-END screw is preset by factory.... Do not change until you read break-in instructions.



## NEW ENGINE BREAK-IN

Your OFNA engine is extremely tight when the piston is at the top of the stroke and turning the crankshaft by hand. 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 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. So, you must run the engine rich (COOL) for the first three tanks of fuel. We recommend using one gallon of 20% O'DONNELL 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. Let engine run at a fast idle for one tank to break-in connecting rod bearing before starting full break-in. Let engine cool down before continuing and never stop engine with piston at top of the cylinder. This cool down period is for heat cycling the parts.

***Break-in the engine in the car, by running the engine at a rich master needle setting (3 turns or more if needed).*** Run the car from a slow to fast speed with short bursts of speed. You need to buildup a little heat (warm to the touch) in the engine, but not too hot. In a rich setting (2 or more turns), the engine will run cold. In the leaner setting (2 or less turns), the engine runs hotter. Do not heat up the engine too much at this time, let it cool down if too hot. After about one (1) tank, turn the Master Needle Valve, clock wise, 1/16 of a turn leaner or clockwise. Keeping the fuel tank full, continue the process until you slowly turn the Master Needle Valve, 1/16 of turn each time, too a leaner point and in which the engine runs at high RPM and power, but still keep max temp. of under 250 deg. F. At this point you must stop, too lean of a setting will heat up engine and damage the piston. A normal operating temperature is around 200 to 240 Deg. Temperatures of 270 Deg. and above will damage engine and shorten life.

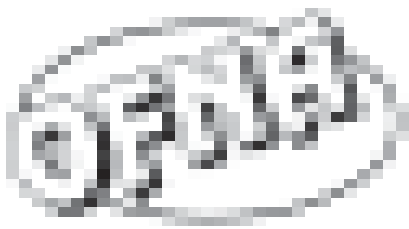
## STARTING NEEDLE SETTINGS

Master Needle Valve - main control for fuel mixture. Set at 2 to 3 turns out from flush. Adjust this needle for maximum RPM and power without being too lean or too hot.

Barrel Needle (Low Speed) - This needle is in the center of the carburetor barrel and provides throttle response. It is not the idle adjustment. Turning screw "IN" is Lean and "Out" is Rich. Do not adjust this needle until the Master Needle is set for power and best performance. This needle will only effect throttle response, so adjust needle until throttle response is clean with little or on delay. Once set, do not continue to turn (lean) needle further. This is important since continuing to turn needle will only increase engine temp, at lower RPM, which will throw off engine overall tuning.

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

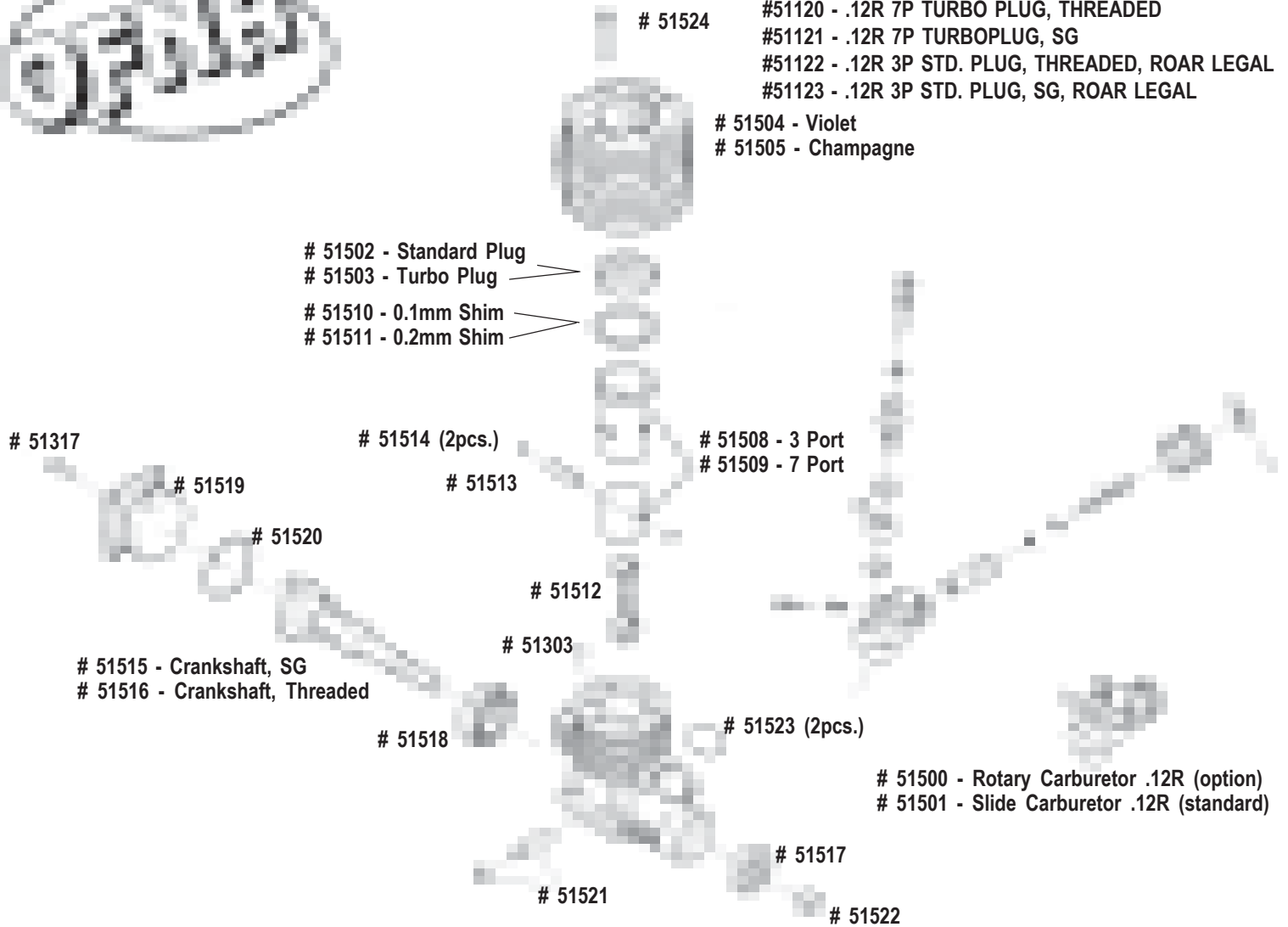
**USE LONG GLOW PLUG WITHOUT IDLE BAR,  
STANDARD PLUG (OFNA/PICCO 51007 PLUG) IS RECOMMENDED  
OR  
TURBO PLUG (OFNA/PICCO 51006 PLUG) IS RECOMMENDED**



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- #51123 - .12R 3P STD. PLUG, SG, ROAR LEGAL

- # 51504 - Violet
- # 51505 - Champagne



### PICCO .12 REAR EXHT ENGINE, 3 PORT AND 7 PORT PARTS

51303	PIN REF., CYLINDER	0.95
51317	SCREWS, REAR COVER	1.95
51500	CARBURETOR, ROTARY, PICCO 12/15ENGINE, COMPLETE	69.95
51501	CARBURETOR, SLIDE, PICCO 12/15ENGINE, COMPLETE	69.95
51502	INSERT, HEAD, STD. GLOW PLUG .12R	20.95
51503	INSERT, HEAD, TURBO GLOW PLUG .12R	21.95
51504	HEAD, TALL, .12R, OFNA 12, VIOLET (3P)	49.95
51505	HEAD, TALL, .12R, OFNA 12, CHAMPAGNE (7P)	49.95
51506	CASE, .12R OFNA, SILVER (3P)	99.95
51507	CASE, .12R OFNA, BLACK (7P)	9.95
51508	CYLINDER/PISTON, OFNA 3 PORT, ABC	69.95
51509	CYLINDER/PISTON, OFNA 7 PORT, ABC	76.95
51510	SHIM, HEAD, 0.1mm	0.99
51511	SHIM, HEAD, 0.2mm	0.99
51512	CONNECTING ROD, COMPETITION, .12R	36.95
51513	PIN, WRIST, PISTON, .12R	6.95
51514	CLIPS, WRIST PIN RETAINERS, 2PCS.	0.99
51515	CRANKSHAFT, SG, COMPETITION, .12R	69.95
51516	CRANKSHAFT, THREADED, COMPETITION, .12R	69.95
51517	BEARING, FRONT, .12R	25.95
51518	BEARING, INSIDE, .12R	35.95
51519	COVER, REAR .12R	12.95
51520	O-RING, COVER, REAR .12R	1.95
51521	LOCKING PIN, CARB. .12R	2.95
51522	CONE, BLACK COLLET, .12R	1.95
51523	O-RING, CARB. 2 PCS.	0.99
51524	SCREWS, 6PCS. M3x13mm	4.95

### PICCO CARBURETOR PARTS (NYLON BODY)

Parts Not Shown as of yet.

### OFNA/PICCO .12 and .21 ENGINES (REAR EXHAUST)

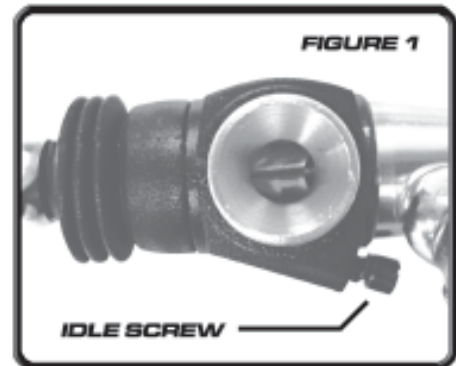
.12 PIPE AND MANIFOLD (.12 SPECIAL)		
51900	.12 PICCO INLINE PIPE & MANIFOLD & SPRING - SEAL, POLISHED	120.95
51901	.12 PICCO INLINE MANIFOLD & SPRING - SEAL, POLISHED (USE PIPE #51902)	39.95
51902	.12 PICCO INLINE PIPE, POLISHED (USE MANIFOLD #51901)	79.95
51903	.12 PICCO MANIFOLD, STANDARD PIPE, POLISHED	29.95
51904	.12 NOVI ROSSI INLINE MANIFOLD TO PICCO INLINE PIPE, POLISHED	39.95

# OFNA/PICCO .12R 3 PORT & 7 SPORT ENGINE

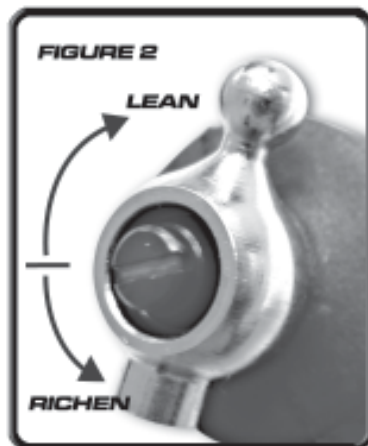
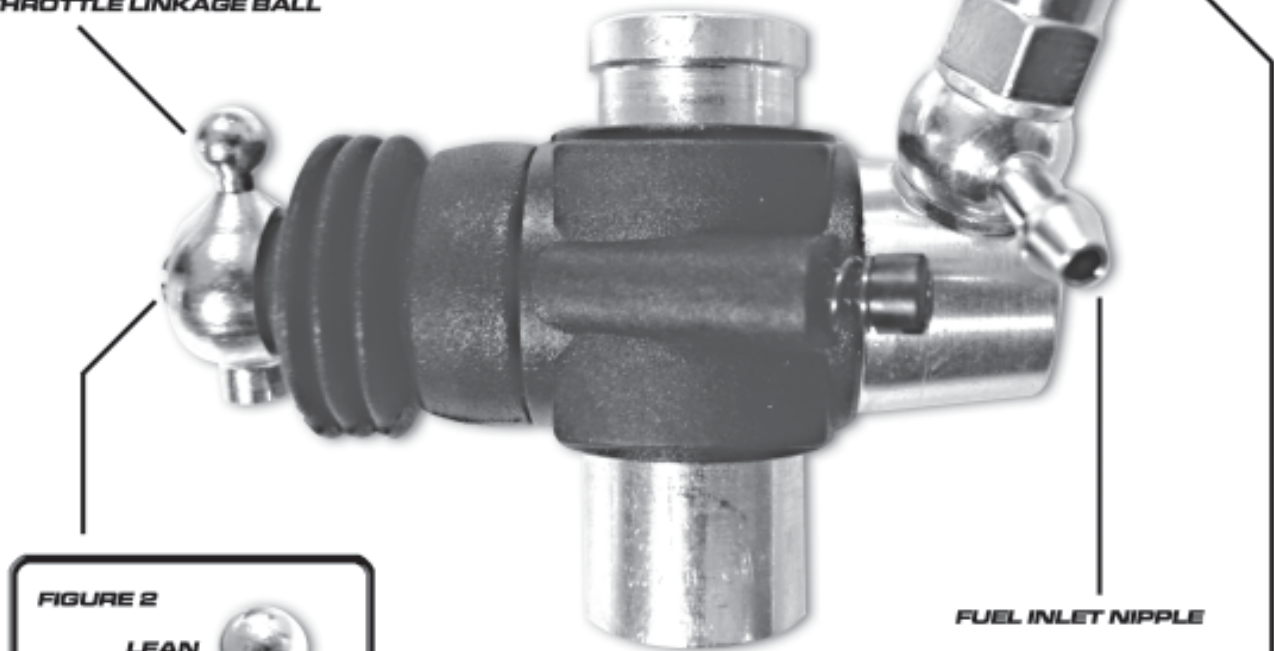
## 5.5MM CARBURETOR ADJUSTMENTS

This special carburetor has the high heat nylon body to counter act heat from the engine that may boil the fuel before entering the engine. Over heated fuel causes tuning problems that are hard to resolve. This new design will give much better performance.

**IDLE GAP** - Shown in fig. 1, you can see the idle gap. Adjust idle screw to raise or lower engine idle. Never let barrel fully close or adjust idle from radio. **FACTORY SETTING - .5mm (.20)**



THROTTLE LINKAGE BALL



**ALL NEEDLE SETTINGS SHOULD BE CHECKED BEFORE INTIAL START OF MOTOR ...**

**LOW END NEEDLE** - Shown fig. 2 is the Low End Needle, which is preset by Picco. You can adjust this needle after break-in if needed. When turning this needle, make only small 1/16 turns. **FACTORY SETTING- TURN UNTIL NEEDLE IS FLUSH WITH OUTER HOUSING. TURN COUNTER CLOCKWISE 2 TO 3 TURNS.**

**MASTER NEEDLE** - Adjust this needle for the best power and temp. The preset setting should be 2.5 to 3.5 TURNS OUT FROM FLUSH. It is recomened to turn this needle "OUT" during break-in (richer mixture) if engine is too hot. **FACTORY SETTING - 1.5 TURNS OUT.**

## **LIMITED WARRANTY**

THE OFNA/PICCO ENGINE IS GUARANTEED AGAINST ALL PRODUCTION DEFECTS BY PICCO MICROENGINES, MONZA, ITALY. ANY DAMAGE CAUSED BY THE BELOW LIST ARE NOT A PRODUCTION DEFECT AND ARE DEEMED MISHANDLING.

- ENGINE DISASSEMBLY BY CUSTOMER, VOIDS OFNA WARRANTY - MUST RETURN TO PICCO
- OVER HEATING
- OVER RPM OR SUSTAINED RPM
- FAILURE TO BREAK-IN ENGINE BEFORE HIGH RPM
- WATER IN FUEL
- RUST INSIDE OF ENGINE
- DUST OR DIRT INSIDE ENGINE
- SCRATCHES IN ENGINE CAUSED BY DIRT OR DUST
- DAMAGED PISTON DUE TO PISTON STOP DEVICES
- DAMAGED CYLINDER EXHAUST PORT DUE TO PISTON STOP DEVICE
- DAMAGED PISTON DUE TO GLOW PLUG FAILURE
- BROKEN CRANKSHAFT OR ROD OR PISTON DUE TO LOOSE FLYWHEEL
- RUNNING ENGINE WITHOUT FLYWHEEL
- BREAKAGES AT HIGH RPM WITHOUT ENGINE LOAD

IF FOR SOME REASON YOU DAMAGED YOUR ENGINE, SEND IT TO OFNA RACING AT THE ADDRESS BELOW. ENGINE NOT DEEMED UNDER WARRANTY WITH BE CHARGED A REBUILD FEE OF \$65.00. THIS FEE MUST BE PAID IN ADVANCE PRIOR TO STARTING REPAIRS.

WHEN SENDING YOUR ENGINE, MAKE SURE THE ENGINE IS FULLY ASSEMBLED AND THE RETURN SLIP IS FILLED OUT IN FULL, OTHERWISE YOUR ENGINE WILL BE RETURNED. ALWAYS INSURE YOUR PACKAGE. OFNA IS NOT RESPONSIBLE FOR LOST PACKAGES IF NOT SIGNED FOR BY OFNA.

IT IS NOT NECESSARY TO REMOVE CLUTCH OR ENGINE MOUNTS, BUT *RECOMMENDED YOU DO SO*. DO NOT SEND MANIFOLD/PIPE OR CAR KIT WITH PRIOR PERMISSION FROM TECHNICAL DEPT MANGER, IF YOU DO THE LABOR COST WILL BE HIGHER THAN INDICATED ABOVE.

**OFNA RACING (949) 586-2910  
TECHNICAL DEPT.  
22692 GRANITE WAY, STE. B  
LAGUNA HILLS, CA 92653**

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**ENGINE RETURN INFORMATION SLIP    (ENGINE MUST BE FULLY ASSEMBLED WHEN SENT)**

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

ZIP \_\_\_\_\_

HOME TEL: (        ) \_\_\_\_\_ (MUST HAVE)

WHAT IS THE PROBLEM: