OFNA/PICCO .21 COMP ENGINE #51215 .21 SG WITH BOOST CHAMBER

Stop!! Carburetor screws are 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% 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. 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 (2 1/4 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 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 220 to 270 Deg. Temperatures of 300 Deg. and above will damage engine and shorten life.

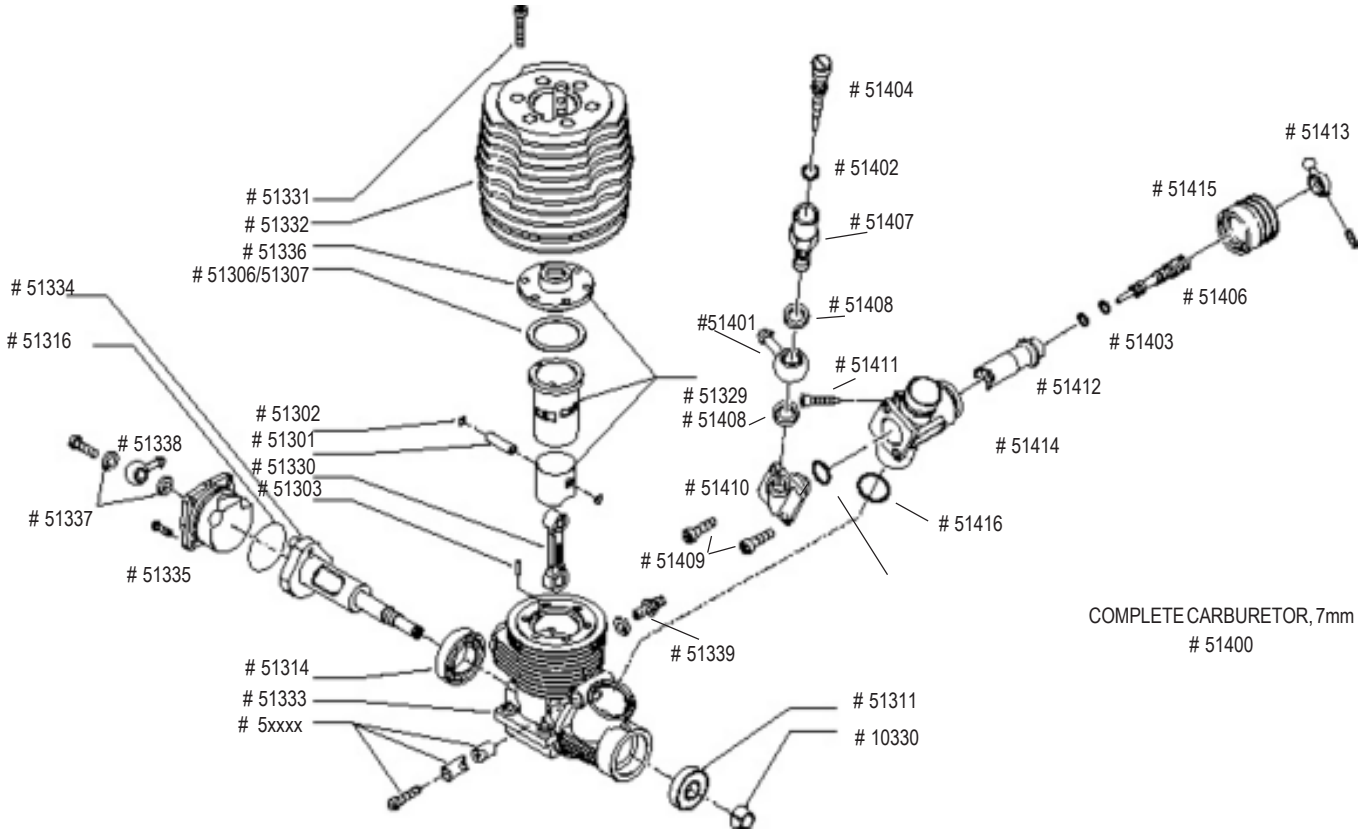
STARTING NEEDLE SETTINGS

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

Barrel Needle (Low Speed) - 7mm Carburetor, factory setting is " Turn needle in until is stops, do not over tighten. Now, turn out counter clockwise 10.5 to 11.5 turns. 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 no 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, (OFNA/PICCO 51007 PLUG) IS RECOMMENDED



PICCO .21 COMP ENGINE PARTS

51301	P-1203	WIRST PIN, SPORT & COMP .21	2.95
51302	P-1014	RETAINER, WRIST PIN	0.95
51303	P-1021	PIN REF., CYLINDER	0.95
51330	P-1097	CONNECTING ROD, .21 COMP	
51329	P-	CYL / PISTON, .21 6+2 (P8) COMP	-
51306	P-2014	HEAD GASKET, 23x16,4x0,1	1.50
51307	P-2068	HEAD GASKET, 23x16,4x0,2	1.50
51331	P-2101	SCREWS, HEAD, COMP .21	2.95
51332	P-7505	OFNA HEAD, BLUE .21 COMP	
51333	P-2719	OFNA CASE, .21 COMP	
51311	P-3021	BEARING, FRONT SPORT & COMP.21	16.95
51334	P-3074	CRANKSHAFT, .21 COMP, SG	49.95
51314	P-3071	BEARING, INSIDE SPORT & COMP .21	24.95
51316	P-5035	O-RING, REAR COVER	1.95
51335	P-5777	REAR COVER PLATE BOOST CHAMBER	
51336	P-2108	BUTTON, HEAD INSERT	
51337	P-6006	FUEL FITTNG GASKET, 2 PCS.	
51338	P-6035	FUEL FITTNG TORQUE	
51339	P-6099	NIPPLE, FUEL FITTING	1.50

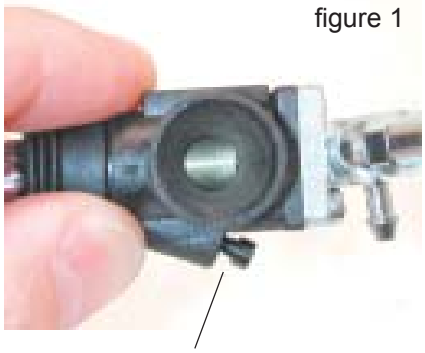
PICCO CARBURETOR PARTS (NYLON BODY)

51400	P-6307	CARBURETOR, COMPLETE 7mm	61.95
51401	P-6035	FUEL FITTING	2.95
51402	P-6070	O-RING, M.NEEDLE, 2 PCS.	0.95
51403	P-6080	O-RINGS, 4x2mm 6 PCS.	2.95
51404	P-6101	NEEDLE, MASTER SPORT & COMP 21	2.95
51405	P-6110	SCREWS, CARB 2.5x10mm 2 PCS.	0.95
51406	P-6121	AIR SCREW, LOW END	1.95
51407	P-6165	HOUSING, MASTER NEEDLE	3.95
51408	P-6175	WASHERS, ALUM. 2 PCS.	1.95
51409	P-6186	SET SCREW, 3x3mm	0.95
51410	P-6189	SIDE BODY, ALUM. 7mm CARB	21.95
51411	P-6222	MIN NEEDLE, 7mm CARB	7.95
51412	P-6227	DRUM BARREL, 7mm CARB	14.95
51413	P-6297	BALL JOINT CAP	7.95
51414	P-6308	CARB BODY, NYLON 7mm	33.95
51415	P-6312	BARREL BOOT, SILICONE	3.95
51416	P-6380	O-RING, 8x6mm	0.95

OFNA/PICCO .21 SPORT/COMP ENGINE
7MM 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 you much better performance.

figure 1



IDLE SCREW

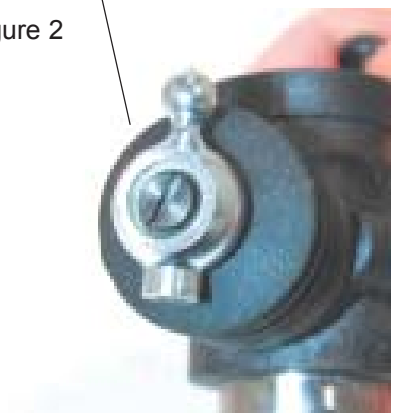
IDLE GAP - Shown in fig 1, you can see the idle gap. Adjust idle screw to increase or lower engine idle. Never let barrel fully close or adjust idle from only radio.
FACTORY SETTING - .5mm (.20)

THROTTLE LINKAGE BALL

FUEL INLET NIPPLE

You should never see fuel leak from this area.

figure 2



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 IN UNTIL STOPS, DO NOT OVER TIGHTEN. TURN COUNTER CLOCKWISE 10.5 TO 11.5 TURNS

MASTER NEEDLE - Adjust this needle for best power and temp. The preset setting should be 2 to 2 1/8 OUT. It is recommended to turn this needle "OUT" during break-in (richer mixture) if engine is too hot.
FACTORY SETTING - 2.5 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.

- **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 EXHUAST 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 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. BUT, DO NOT SEND MANIFOLD/PIPE OR CAR KIT WITH PRIOR PERMISSION FROM TECHNICAL DEPT MANGER.

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

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

NAME
_____

ADDRESS
_____

CITY STATE ZIP
_____ _____ _____

HOME TEL: ( )_____ (MUST HAVE)

WHAT IS THE PROBLEM: