

RADIO CONTROLLED ENGINES MADE EASY!

**Tower Hobbies
.46 ABC BB**



1 Engine Basics

The engine is the heart of the aircraft. Proper care from the day it is fresh out of the box will ensure that your engine will give you optimum-performance for its entire life.

Model aircraft engines are two- or four-stroke, reciprocating engines. Glow engines use a glow plug instead of a spark plug, points, coil, and magneto are not required, but a special fuel is necessary. Called "model airplane" or "glow fuel," it contains methanol as the base, with varying amounts of nitromethane to increase the energy that fuel can provide. Lubrication is provided by oil mixed with the fuel. Typically, glow engines range in displacement from .049 cu. in. to 2.8 cu. in. (.80cc to 45.9cc). This offers a tremendous selection in aircraft size and performance so that you can get the plane you desire.



Some engines (like our own Tower Hobbies .46 ABC BB) use a remote needle adjustment to keep your fingers at a safe distance from the spinning propeller.

Glow Plug Chart			Tower Hobbies TOWER Power Glow Plug
Engine:	Temperature:	Recommended Glow Plug:	
.10-.21	Medium/Hot	TOWG1010/OSMG2690	
.25-.91	Medium	TOWG1010/OSMG2691	
1.00-up	Medium/Cold	TOWG1010/OSMG2691/OSMG2993	
All 4-Strokes	Hot/Hot	OSMG2692	

Great Planes® Fuel Tank		Fuel Tank Chart
	The recommended tank sizes are:	
	.049	1 ounce
	.09-.15	2-4 ounces
	.19-.25	4 ounces
	.29-.35	6-8 ounces
	.40-.45	8-10 ounces
.60	12-16 ounces	
Larger than .60		follow kit manufacturer instructions

Glow Fuel Chart	
For regular flying with .09 and larger 2-stroke engines you can choose from between 0% to 40% nitro-methane. Most fliers use 5% or 10% nitro for everyday use. Many larger engines will tolerate 0% nitro fuel for sport flying with no problems while the high nitro fuels are for competition use.	
All APS Engines	Hobbico 1/2A 25% Fuel
.10 and up:	Tower Hobbies Premium or Sport Fuel
4-Strokes:	Tower Hobbies 15% Fuel
Fuji-Imvac	Gasoline & Oil Mix
Helicopter Engines	Tower Hobbies 15% Heli Fuel

When you receive your new engine, examine it carefully for any obvious defects. Carefully read the manufacturer's operating instructions for recommended break-in procedures. Obtain the recommended fuel, and mount a break-in prop if one is suggested. Otherwise, select a prop in the middle of the range of props suggested in our prop selection chart on page 235. If the manufacturer has suggested a procedure for the proper way to break-in your engine, by all means, use it.

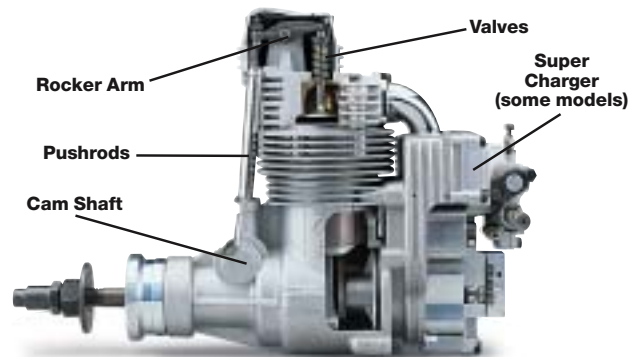
The carburetor provides the engine with the proper mixture of fuel and air. You will notice various controls and adjustments, the most prominent is the throttle arm which controls the speed of the engine. It will rotate about 45 to 90 degrees, with the barrel in the carb moving with it. Usually opposite the throttle arm is the high-speed needle valve. This adjusts the high-speed mixture of the engine and allows you to get peak power from the engine while preventing an over-lean condition. Some newer engines (like our own Tower Hobbies .46 ABC BB) use a remote needle adjustment to keep your fingers at a safe distance from the spinning propeller. The idle mixture screw allows you to adjust the mixture of the engine when it is idling. With high-speed and idle mixtures adjusted, your engine should operate smoothly throughout the entire speed range. The idle speed screw (throttle stop screw) adjusts the amount the throttle barrel is closed when the throttle is fully retarded, and is important in getting proper idle speed.

2 Engine Definitions

◆ **ABC/NON-RINGED** (Aluminum piston and Brass cylinder sleeve with Chrome plating.) Unlike ringed engines (those with a piston ring), ABC engines create a compression seal with an extremely tight piston/piston/cylinder fit. While they tend to be harder to turn over by hand and require more careful break-in, ABC engines also offer higher performance and longer life than similar ringed engines. Other non-ringed designs include ABN (Aluminum, Brass and Nickel) and engines with ABL (Advanced Bimetallic Liner), an O.S.® exclusive!

◆ **BB** (Ball Bearings) Indicates an engine crankshaft supported by 2 ball bearings. Bearings reduce friction and wear and promote longer life and smooth operation.

◆ **FOUR-STROKE** While 2-stroke engines produce more rpm and power than comparably sized 4-strokes, 4-strokes offer you better fuel economy, a quieter and more "scale" sound and the torque to swing larger, more aggressive props. The last characteristic makes them ideal for large, slow-flying scale and aerobatic aircraft. Because of their complexity, they generally require more maintenance than 2-strokes.



◆ **RE/SE** (Rear-Exhaust/Side-Exhaust) The choice of an SE or RE engine depends on both the general application and the specific needs of your model.

◆ **C/L, R/C** (Control Line, Radio Control) The biggest difference between these engine types is throttle control. Radio Control engines include a carburetor which allows you to vary engine speed. Control Line engines feature a venturi and run at a constant speed until fuel is exhausted.