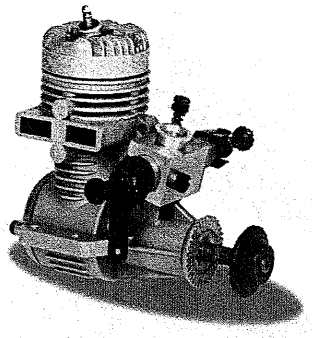
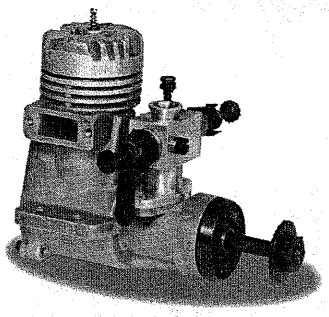
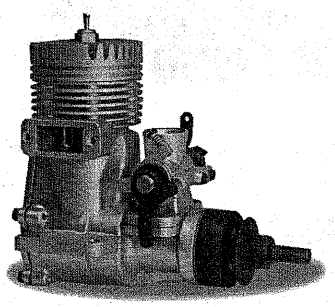
PROP CHART FOR 2-STROKE ENGINES







ENGINE SIZE (cu. in.)	STARTING PROPELLER	ALTERNATE PROPELLERS
.049	6-3	5.25-4, 5.5-4, 6-3.5, 6-4, 7-3
.09	7-4	7-3, 7-4.5, 7-5
.15	8-4	8-5, 8-6, 9-4
.19 - .25	9-4	8-5, 8-6, 9-5
.29 - .30	9-6	9-7, 9.5-6, 10-5
.35 - .36	10-6	9-7, 10-5, 11-4
.40	10-6	9-8, 11-5
.45	10-7	10-6, 11-5, 11-6, 12-4
.50	11-6	10-8, 11-7, 12-4, 12-5
.60 - .61	11-7	11-7.5, 11-7.75, 11-8, 12-6
.70	12-6	11-8, 12-8, 13-6, 14-4
.78 - .80	13-6	12-8, 14-4, 14-5
.90 - .91	14-6	13-8, 15-6, 16-5
1.08	16-6	15-8, 18-5
1.2	16-8	16-10, 18-5, 18-6
1.5	18-6	18-8, 20-6
1.8	18-8	18-10, 20-6, 20-8, 22-6
2.0	20-8	18-10, 20-6, 20-10, 22-6

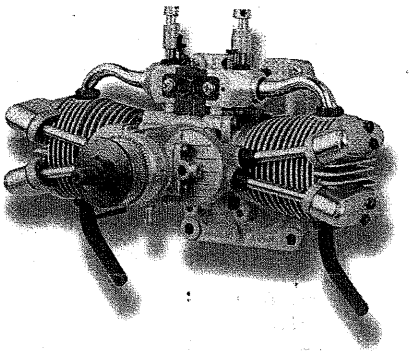
NOTES ABOUT THE SIG PROP CHARTS. . .
Both the "PROP CHART FOR 2-STROKE ENGINES" and the "PROP CHART FOR 4-STROKE ENGINES" printed here are intended to provide an R/C sport flier with a safe, dependable starting propeller to use on a typical sport/trainer type model airplane. While the "STARTING PROPELLER" listed may not deliver optimum performance in every single case, it should get the model off the ground and flying nicely with the engine operating in a safe RPM range. This will provide a starting point from which other size props, either from the "ALTERNATE PROPELLERS" list or from the engine manufacturer's instructions, can be tried and compared. The model's size, weight, drag, wing loading; the type of engine being used (sport, pattern, racing, etc.) and its actual power curve; the type of fuel being used; and even the altitude at which you are flying, are all factors in finally determining the optimum propeller for each different airplane. The optimum propeller can be determined only by flying with different props and noticing any differences in the model's speed and climb.

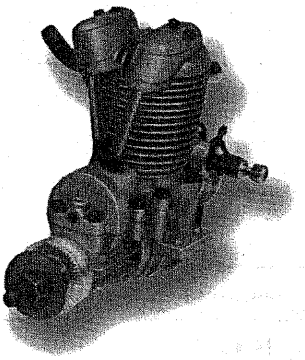
In general terms, a higher pitch prop will pull the airplane faster in level flight. A lower pitch prop will cause the airplane to take off quicker and climb faster. Some full-scale airplanes have adjustable pitch props so they can use the most efficient pitch in each situation. The pilot will select low pitch for the takeoff and climb to altitude, and then switch to a higher pitch for better level flight speed and fuel economy. It's exactly like switching gears in a car! Low gear provides quick acceleration from a stop, while high gear is used for better fuel economy after the car is up to cruising speed. Even owners of full-scale airplanes with fixed pitch props, like a J-3 Cub, can choose between at least two different FAA approved propellers - one called a "climb prop" (lower pitch) and another called "cruise prop" (higher pitch).

On a model airplane, you should not only try different pitch props, but different diameters as well. For example, let's say you are running a .60 2-stroke engine and start out with an 11-7 prop. The model will very likely fly real nice. Next, put on a 12-6 prop, readjust the needle valve, and fly again. Watch carefully! This time the model should be able to takeoff in a little shorter distance and you will be able to pull the nose up a little steeper on the climbout without stalling. However, the level flight speed will probably be slightly less than with the 11-7. So while the engine turns both propellers at approximately the same RPM, the flight characteristics of the airplane are slightly different with each prop. Don't be afraid to try another different size propeller and note any further changes. Usually the changes will be very small, and there will always be a tradeoff of some kind - what you gain in one aspect of performance, you may lose in another. By trial and error you will eventually determine which size prop best suits your particular model and how you want it to perform. For safety, balance all propellers before use. Discard propellers with nicks, cracks, or visible defects of any kind.

PROP CHART FOR 4-STROKE ENGINES

ENGINE SIZE (cu. in.)	STARTING PROPELLER	ALTERNATE PROPELLERS
.20 - .21	9-6	9-5, 10-5
.40	11-6	10-6, 10-7, 11-4, 11-5, 11-7, 11-7.5, 12-4, 12-5
.45 - .48	11-6	10-6, 10-7, 10-8, 11-7, 11-7.5, 12-4, 12-5, 12-6
.60 - .65	12-6	11-7.5, 11-7.75, 11-8, 12-8, 13-5, 13-6, 14-5, 14-6
.80	13-6	12-8, 13-8, 14-4, 14-6
.90	14-6	13-6, 14-8, 15-6, 16-6
1.20	16-6	14-8, 15-6, 15-8, 16-8, 17-6, 18-5, 18-6
1.60	18-6	15-6, 15-8, 16-8, 18-6, 18-8, 20-6
2.40	18-10	18-12, 20-8, 20-10
2.70	20-8	18-10, 18-12, 20-10
3.00	20-10	18-12, 22-8





MODEL AIRPLANE ENGINE SIZE CONVERSION CHART

Cubic Inches = Cubic Centimeters

.049 cu. in. = .8 cc
.09 cu. in. = 1.5 cc
.15 cu. in. = 2.5 cc
.19 cu. in. = 3.1 cc
.21 cu. in. = 3.5 cc
.25 cu. in. = 4.1 cc
.29 cu. in. = 4.8 cc
.35 cu. in. = 5.7 cc
.40 cu. in. = 6.5 cc
.46 cu. in. = 7.5 cc
.50 cu. in. = 8.2 cc
.61 cu. in. = 10.0 cc
.80 cu. in. = 13.0 cc
.91 cu. in. = 14.9 cc
1.20 cu. in. = 20.0 cc
1.50 cu. in. = 25.0 cc
1.60 cu. in. = 26.2 cc
1.80 cu. in. = 30.0 cc
2.00 cu. in. = 32.8 cc
2.40 cu. in. = 39.3 cc
2.70 cu. in. = 44.3 cc
3.00 cu. in. = 49.2 cc

CONVERSION FACTORS:

1 cu. in. = 16.3934 cc

.061 cu. in. = 1 cc