



# Freedom Motors

The 4-Cycle Rotary Rotapower® 530 Series Engine

## Features

- Displacement of 530cc per rotor, with configurations of one, two, three and four rotors
- Four-stroke combustion process
- High performance and small size
- Liquid cooled aluminum housings
- Reliability
- High power-to-weight ratio
- Low vibration
- Ultra-low emissions
- Low fuel consumption

## Low pollution and fuel consumption

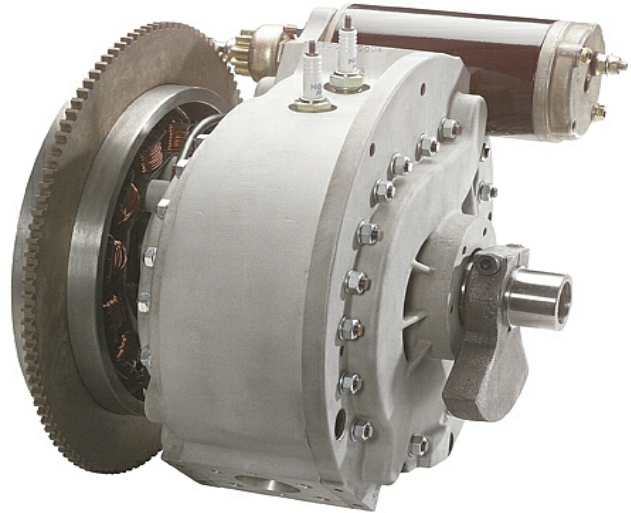
The Rotapower® engine uses a four-stroke combustion process with low combined hydrocarbon and carbon monoxide emissions (less than 1% of two-stroke levels). The lower emissions also reflect the more efficient four-stroke combustion process leading to much lower fuel consumption than the two stroke. The Rotapower's lower peak combustion temperature produces very little nitrous oxide much like the two-stroke. An oil metering system eliminates any need for fuel/oil mixing and further reduces the pollutants emitted.

## Reliability

With two moving parts (single rotor), the Rotapower® engines are durable and simple to service (no timing chains, valves, camshaft, push rods, connecting rods, etc.)

## Low vibration

The Rotapower® engines are virtually vibration-free since the few moving parts are dynamically balanced. All moving parts rotate, rather than the reciprocating motion found in piston engines. With minimal vibration, the Rotapower® engine can be hard mounted or used as part of a vehicle's structure.



## Power-to-weight

The Rotapower® engines are very compact resulting in a high power-to-weight ratio. Four-stroke engines produce approximately one-half horsepower per pound of engine weight while two-stroke engines are capable of producing approximately one horsepower per pound. The Rotapower® produces well over one horsepower per pound of engine weight in typical applications and has the potential of up to two horsepower per pound in high-performance applications. This is important in applications requiring high power in small space along with low weight such as mini-jet boats, Jet Ski's, etc.

## Charge or Air-cooled rotor

Using a charge or air-cooled rotor eliminates costly and complex components. This includes high volume oil pump, regulator, seals, plumbing and heat exchanger required by an oil-cooled rotor.



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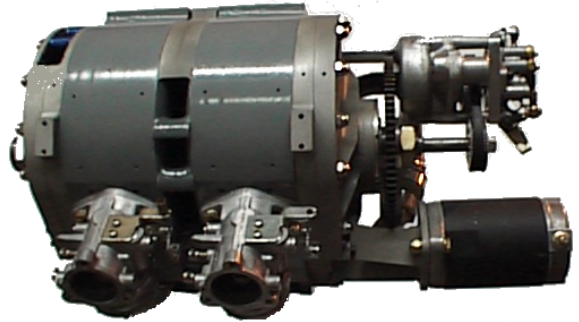
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## Specifications for 530 Series Engines

Engine Type: Rotary  
 Displacement: 530cc/rotor  
 Fuel: Multi-fuel capable (gasoline, diesel, alcohol, natural gas, biogas)  
 Fuel System: Carburetion or fuel injection  
 Ignition System: Magneto/C.D.  
 Alternator/Starter: 12V DC  
 Lubrication: Metered oil to bearings and engine seals (lost oil system). Uses synthetic, biodegradable oil.  
 Bearings: Anti-friction roller bearings, thrust bearing.  
 Cooling: Liquid cooled housings, charge or air-cooled rotor.



	<b>530 SERIES</b>			
<b>No. Of Rotors</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Displacement</b>	<b>530cc</b>	<b>1060cc</b>	<b>1590cc</b>	<b>2120cc</b>
<b>Housing Cooling</b>	Liquid or Air	Liquid	Liquid	Liquid
<b>Rotor Cooling</b>	Charge or Air	Charge or Air	Charge or Air	Charge or Air
<b>Max. Power (Industrial)</b>	50 HP	100 HP	150 HP	200 HP
<b>Max. Power (High Performance)</b>	75 HP	150 HP	225 HP	300 HP
<b>Rated Power (Industrial)</b>	35 HP	70 HP	105 HP	140 HP
<b>Rated Speed (Industrial)</b>	4500 RPM	4500 RPM	4500 RPM	4500 RPM
<b>Max. Speed (High Performance)</b>	6500 RPM	6500 RPM	6500 RPM	6500 RPM
<b>S.F.C. at Rated Speed (Industrial) *</b>	0.45 LB/HP-HR	0.45 LB/HP-HR	0.45 LB/HP-HR	0.45 LB/HP-HR
<b>Engine Weight**</b>	60 LBS	90 LBS	115 LBS	140 LBS
<b>Dimensions L, W, H***</b>	10 x 13 x 11 in.	16 x 11 x 11 in.	21 x 11 x 11 in.	26 x 11 x 11 in.

\* Depending on fuel used

\*\* Includes starter, alternator, lubrication, fuel and ignition systems (no exhaust)

\*\*\* Long block (includes flywheel)



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