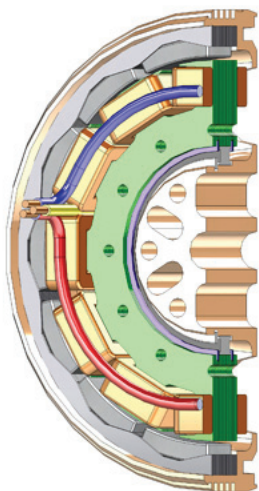# S676-500U-01

650 to 2250 Watt Alternator

Featuring:

- 3 Phase brushless design
- Designed for direct drive on engine crankshaft
- Only one moving part, an optional sealed ball bearing, which can be eliminated when rigidly mounted
- NdFeB magnets
- Humity and moisture-resistant

Sullivan
UNMANNED VEHICLE

Specifications

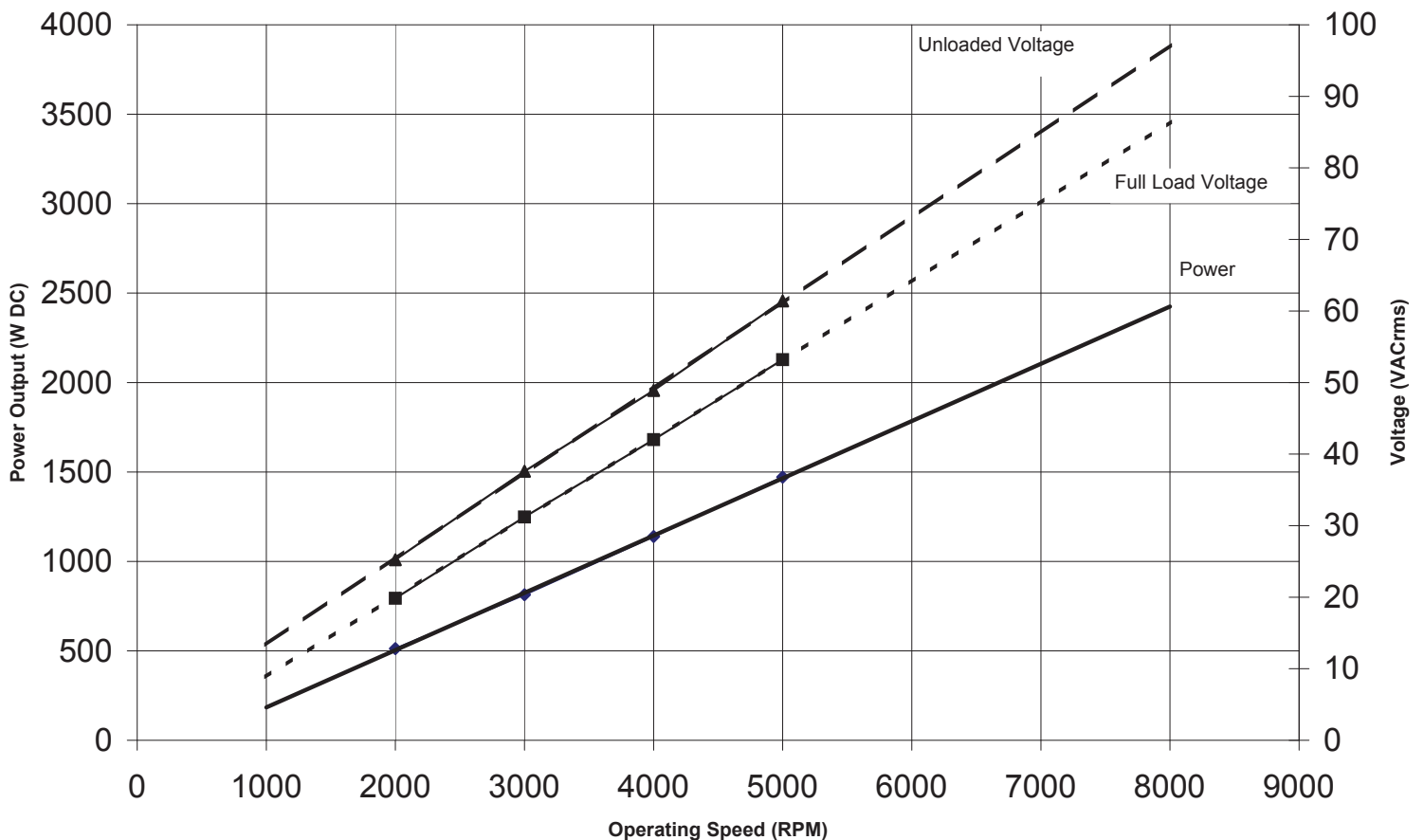|	
Model number:	**S676-500U-01**
Alternator diameter:	127mm
Alternator thickness:	28mm
Alternator weight:	1150g
Engines:	Most engines 50cc to 240cc
Rated power at 2500 RPM:	650W
Rated power at 7500 RPM:	2250W
Standard wind type:	Three phase
No-load voltage constant:	12.2 VAC/1000 RPM (rms voltage, line to line)
Thermal: (Rotor)	Continuous Operation* 85°C Absolute Maximum* 120°C *Higher temperature available but maxium power will be reduced
Thermal: (Stator)	Continuous Operation 120°C Absolute Maximum 200°C
Options:	Special winding Modified shell machining

S676-500U-01
650 to 2250 Watt Alternator

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Performance

Rated Power vs RPM
S676-500U-01
(120 °C Max Stator Temperature)

Unloaded Voltage

Full Load Voltage

Power

Power Output (W DC)

Voltage (VACrms)

Operating Speed (RPM)

Sullivan UV

8950 Yellow Brick Rd
Baltimore, MD 21237
Phone: 410-732-3500   Fax: 410-327-7443
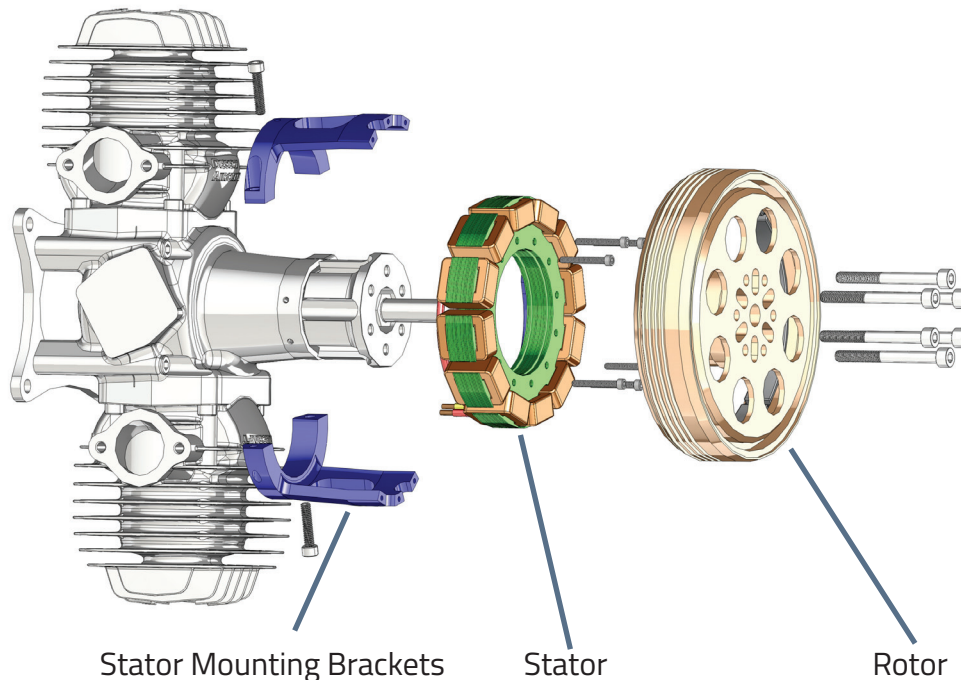W: www.SullivanUV.com   E: sales@sullivanuv.com

Sullivan UV is a Baltimore, Maryland-based manufacturer of custom crafted starters, alternators and control hardware.
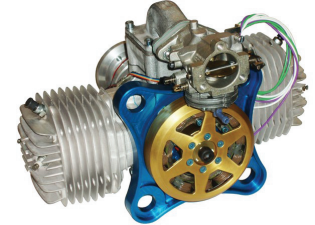
Mounting

Stator Mounting Brackets   Stator   Rotor

3W-28i with S676-300F-01

3W-342 with rear mounted S676-500

3W-200 with S675-500

Sullivan Pancake Alternators are typically designed to be directly driven by the engine crankshaft. They consist of three main parts, Rotor, Stator, and the Stator Support Bracket. The Rotor and Stator are common for most installations, whiles the Stator Support Brackets are specific to each engine and alternator combination.

The **Rotor** is affixed directly to the crankshaft and is supported by the crankshaft bearings. Placement can be on the front shaft between the Propeller Hub and Propeller, or on the rear shaft when available. Other installation configurations can also be accommodated.

The **Stator** is mounted to the engine crankcase via the Stator Mounting Bracket. The Stator is held rigidly in place concentric to the Rotor, with the windings and magnets aligned axially. An optional thin section bearing can be included that provides the proper alignment between the Rotor and Stator if needed.

The **Stator Mounting Brackets** are typically CNC machined from Billet Aluminum. They attach to the engine by either clamping to existing features or bolting directly to the crankcase. In some cases it is necessary to drill and tap the crankcase to create mounting points. The Stator is then bolted to the Mounting Bracket to complete the installation. Installation guides can be downloaded at www.SullivanUV.com

For advanced systems, stator mounting features can be incorporated into the crankcase design which eliminate the need for the bearing and brackets. This approach saves considerable weight and cost but requires control over the engine manufacturing process. If this option is available please contact Sullivan Sales and Engineering, Sales@SullivanUV.com, to discuss the details.

Efficiency

S676-500-U-01 Efficiency v. Output
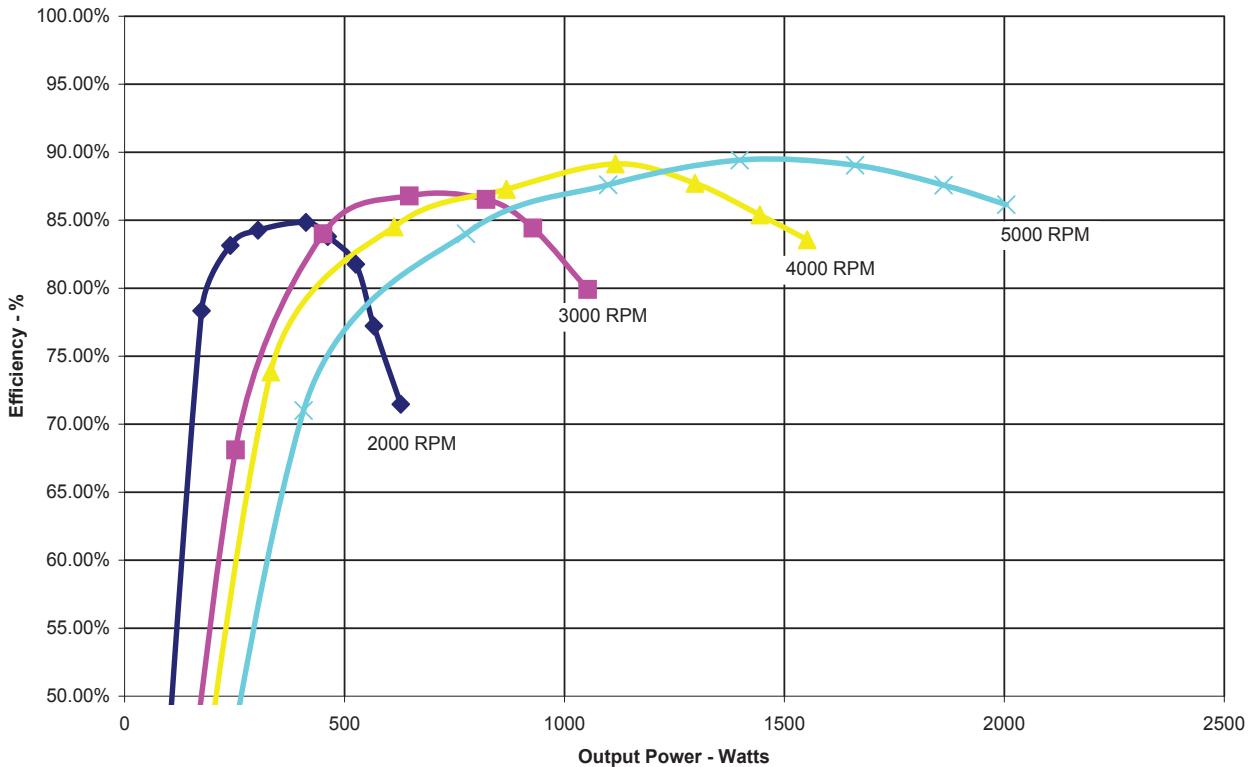
Engine load calculations

Engine load = Output power / Regulator Efficiency / Alternator Efficiency

Example: A 225W electrical load at 90% regulator efficiency and 80% alternator efficiency requires
225 / 0.90 / 0.80 = 312.5W of engine power. At 746W/HP, this is 0.419 HP.

*Ft-Lbs of Torque = Horsepower * 5252 / RPM*

At 3800 RPM, a 225W load with a 90% efficient regulator and 80% efficient alternator, the torque load would
be 0.419HP * 5252 / 3800 = 0.579 Ft-Lbs.

1 Ft-Lb = 1.356 N-M

0.579 Ft-Lbs of torque is 0.785 N-M.

S676-500U-01

650 to 2250 Watt Alternator

R.125

1.358

.930

Ø.395±.001

1.372

Ø.200

Ø 5.00

1.100

Typical Built Weight: 1150 grams*
Rotor: 500 grams
Stator: 625 grams
Includes bearing, retaining rings, and lead wires

PCD Ø 2.500

12 X Ø.125
Stator Mounting
Locations

A

.314
Winding
Clearance

.500

.100

.139
Stator to
Rotor Offset

SECTION A-A

A

UNLESS OTHERWISE SPECIFIED:		NAME	DATE			
DIMENSIONS ARE IN INCHES	DRAWN	KP	12/12/2014	TITLE:	Sullivan UV	
TOLERANCES:	CHECKED					
FRACTIONAL± 1/64 BEND ±	ENG APPR.				S676-500U-01	
ANGULAR: MACH± ±	MFG APPR.				Assembly	
TWO PLACE DECIMAL ±.010						
THREE PLACE DECIMAL ±.005	Q.A.					
INTERPRET GEOMETRIC	PROPRIETARY AND CONFIDENTIAL					
TOLERANCING PER:	THE INFORMATION CONTAINED IN THIS			SIZE	DWG. NO.	REV
MATERIAL	DRAWING IS THE SOLE PROPERTY OF			A	S676-500U-01 ICD	N/C
	THE PERFECT PARTS COMPANY. ANY					
FINISH	REPRODUCTION IN PART OR AS A WHOLE					
	WITHOUT THE WRITTEN PERMISSION OF			SCALE: 1:2	WEIGHT:	SHEET 1 OF 1
	THE PERFECT PARTS COMPANY IS					
DO NOT SCALE DRAWING	PROHIBITED.					