

Ample Alternators



Ample Alternators are high quality, high output, brand new alternators that are designed for continuous output for as long as it takes to charge batteries to the full mark. You can't buy better performance from an alternator at any price . . . let us amaze you with more Amps than you thought possible . . . at any RPM!

Higher Output at Low RPM

Given below are alternator outputs versus temperature and alternator RPM. Note: All alternators are P-type units except the 32 Volt, #4132 model.

Alternator RPM	#4023 Cold/Hot	#4024 Cold/Hot
2000	51/41	42/31
2500	78/63	73/58
3000	92/76	93/76
3500	102/85	107/87
4000	108/92	117/96
4500	114/96	123/102
5000	118/99	127/107
5500	121/102	131/110
6000	123/104	134/113
6500	124/106	136/116

12 Volt Alternators . . . Small Case

Alternator RPM	#4059 Cold/Hot	#4060 Cold/Hot	#4300 Cold/Hot
2000	98/87	65/60	20/13
2500	122/110	114/105	75/66
3000	134/124	146/133	160/130
3500	144/131	165/150	210/175
4000	150/134	175/162	240/205
4500	154/138	184/169	260/225
5000	156/141	189/174	275/243
5500	158/142	194/175	285/252
6000	159/144	197/179	294/267
6500	160/147	199/181	310/275

12 Volt Alternators . . . Large Case

Alternator RPM	#4109 Cold/Hot	#4110 Cold/Hot	#4132 Cold/Hot
2000	35/33	40/36	30/27
2500	80/67	100/90	75/67
3000	100/76	125/112	94/84
3500	113/99	145/130	109/98
4000	119/107	158/142	118/106
4500	123/111	170/153	127/115
5000	126/114	175/157	131/118
5500	128/117	178/160	133/120
6000	130/119	180/162	135/121
6500	135/120	181/163	136/122

24 and 32 Volt Alternators . . . Large Case

How good are Ample Alternators? Compare the output current given above to the outputs of other brands at the same alternator RPM and at the same temperature. You'll discover that Ample Alternators put out more Amps at every point! Alternator RPM is given, not engine RPM. Engine RPM is always less . . . it depends on the pulley ratios. A Yanmar engine with a 5.4 inch, (132 mm), pulley running at 1200 RPM will spin an alternator with a 2.6 inch, (66 mm), pulley at 2500 RPM. In the rating charts the cold Amps rating is for an ambient air temperature of 77° Fahrenheit, (25° C). The hot Amps rating is for an ambient air temperature of 200° Fahrenheit, (93° C). Typical operating temperatures are much less . . . expect more than the hot rating.

High Voltage Diodes

We all know that opening the battery selector switch under load can blow up alternators, regulators, and attached electronics. An optional snubber can be purchased to help prevent such disasters. We use 200 Volt diodes in the alternators to help avoid meltdown if the switch is opened. Other manufacturers use only 100 Volt diodes . . . a certain failure if the battery switch is opened while the engine is running.

Alternator Features

- More Amps for less RPM of any Alternators
- Rust Resistant Fans
- Cadmium Plated Pulleys Resist Rust
- Hot and Cold Rated Specifications
- Hand Wound Heavy Duty Windings
- High Temperature Bearings
- Tachometer Output Post
- Special Press-Fit Motorola Diodes
- 200 Volt Diodes . . . Others use only 100 Volts
- Large Surface Area Diode Heatsink
- Exceptional Air Flow for Cooling
- Heavy Duty Brush Assemblies

Dimensions and Mounting

Dimensional Drawings are available from Ample upon request. The #4023 is a standard small frame mount used by Ford and GM, and bolts in place of Delco and Motorola alternators with a 2 inch, (50.8mm) foot. We also provide the #4023 unit with a 1 inch, (25.5mm) foot. The #4023-S is a

saddle mount unit that replace Hitachi and Mitsubishi alternators found on Japanese engines.

Alternators #4059 and #4060 also have a 2 inch, (50.8mm) mounting foot and will often replace small frame units where there is a couple more inches, (50–75mm) available around the engine. The #4109 unit is a 24 Volt unit with a 3 inch, (76.2mm) mounting foot. The #4110, #4132, and #4300 are the SAE J–180 mount.

Standard pulley dimensions are 1/2 inch, (12.7 mm), single belt by 2.6 inch, (66 mm) outside diameter for model #4023. For the #4059, #4060 and #4109, a double 1/2 inch, (12.7 mm), belt by 3 inch, (76.2 mm), outside diameter pulley is standard. Two belts are recommended, but the #4059 will operate on a single belt if the belt is tensioned frequently.

Belt Requirements

All alternators require heavy duty belts, such as the Super HC Series from Gates Rubber Company. Their industrial CV series belt is even better but hard to find. Another favorite is the Dayco Top–Cog.

While belts need to be tensioned properly, a belt that is too tight will cause the rear bearing in the alternator to fail prematurely. Check with your belt manufacturer for belt tension guidelines.

Fan Rotation

Alternator fans are designed to suck air through the alternator from the back to the front. Most engines rotate clockwise when facing the front of the engine, and fans are optimized for CW rotation. If you have an engine that rotates counter clockwise, specify a bi–directional fan to assure proper cooling.

Isolated Grounds

The large frame alternators come standard with isolated grounds. Isolated grounds may be ordered on the small frame, #4000 series by adding an I to the part number. For instance, the #4023I–S is the saddle mount unit with isolated ground.

Ordering information

P–Type Alternator, 12 Volt, 2 inch foot	#4023
P–Type Alternator, 12 Volt, 1 inch foot	#4023–1
P–Type Alternator, 12 Volt, Saddle Mt.	#4023–S
P–Type Alternator, 12 Volt, 2 inch foot	#4024
P–Type Alternator, 12 Volt, 1 inch foot	#4024–1
P–Type Alternator, 12 Volt, Saddle Mt.	#4024–S
P–Type Alternator, 12 Volt, 2 inch foot	#4059
P–Type Alternator, 12 Volt, 2 inch foot	#4060
P–Type Alternator, 12 Volt, J–180	#4300

Ample Power products are manufactured by Ample Technology, 2442 NW Market St., #43, Seattle, WA 98107 – USA

Visit <http://www.amplepower.com>

P–Type Alternator, 24 Volt, 2 inch foot	#4109
P–Type Alternator, 24 Volt, J–180	#4110
N–Type Alternator, 32 Volt, J–180	#4132

Accept Only Ample Power

Don't let someone give you a "substitute" and call it equivalent. Insist on 100% Ample Power!

Offshore Rebuild Kits

While you may never need a rebuild kit, a long distance cruiser should be prepared for any eventuality. Below are rebuild kits for the various alternators. Included in the kits for the #4023, #4023–S, #4024, and #4024–S are: front and rear bearings, brush assembly, diode/heatsink assembly, and stator. Included in the kits for the #4059, #4060, and #4109 are; front and rear bearings, brush assembly, 3 negative diode assembly, 3 positive diode assembly, and stator.

Rebuild Kit, #4023	#ORK–4023
Rebuild Kit, #4024	#ORK–4024
Rebuild Kit, #4059	#ORK–4059
Rebuild Kit, #4060	#ORK–4060
Rebuild Kit, #4109	#ORK–4109

Smart Regulation

All Ample Power regulators use microcomputers to achieve performance not possible any other way. While multi–step performance can be achieved without a microcomputer, the addition of the computer enables more features. For instance an Ample regulator will go back into absorption mode if the alternator can't keep up with demand. System troubleshooting is also made easy with the diagnostic capability of the microcomputer and its error reporting via flash codes from an LED. See the regulator data sheets for more information.

Battery Temperature Compensation

The faster a battery is charged, the more important temperature compensation becomes. Ample Power regulators have had battery temperature compensation since 1987.

System Integration

While Ample Power regulators operate effectively in a stand–alone mode, they can also be interfaced to the EMON II. When interfaced to a monitor, charge perfection is achieved since the monitor knows battery voltage, current, temperature and state–of–charge.

AMPLE POWER