

How to Select a Balmar Charging System

Step 3: Select Your Alternator Output

Now that you know the battery bank technology and charging profile, you can choose an alternator output which will optimally charge your bank. The chart on the next page shows Balmar's most popular range of small-case, high-power alternator choices for your vessel, along with an appropriate multi-stage regulator and related temperature sensing cables. (Balmar provides a discount when you buy the package).

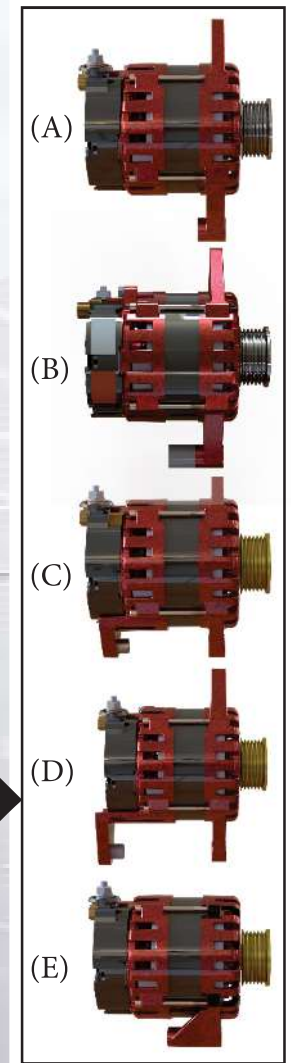
For 100A – 120A requirements, choose a 6-Series Alternator Package.
For 170A – 250A requirements, choose an XT-Series Alternator Package.

Step 4: Identify the Alternator Mounting Style Present on Your Engine

It is critically important to determine how your existing alternator is mounted to match with the high output alternator you have chosen. Marine alternator mountings generally fall into one of four possibilities:

The most common mounting styles are shown to the right:

(A) 1" Single Foot (Spindle Mount)	"Motorola Style"	621 or XT-SF Series
(B) 2" Single Foot (Spindle Mount)	"Delco Style"	621 or XT-SF Series
(C) 3.15" Dual Foot (Saddle Mount)	"Hitachi Style"	60 or XT-DF Series
(D) 4" Dual Foot (Saddle Mount)	"J-180 Style"	604 or XT-DF4 Series
(E) GM Delco Vortec Mount	"Vortec Style"	XT-VT Series



Review your existing alternator mounting to determine the appropriate mounting for your upgrade.

Each Balmar alternator mounting style is identified by a unique part number.

Step 5: Determine your Belt and Pulley Requirements

Engine drive belt style and width is also a critical factor when selecting a Balmar replacement charging system. Higher output alternators require more drive power to be taken off the engine. All belts have specific limitations regarding the amount of power take-off ("PTO") loads they can support.

Failure to specify an adequate belt/pulley system could result in premature belt wear, belt slippage and potential damage to the alternator and engine.

Balmar alternators can ship with pulleys which are appropriate for the alternator's output and drive belt.

6-Series 100A Alternators can ship with either a Single Vee, Dual Vee or Serpentine Pulley.

6-Series 120A Alternators can ship with either a Dual Vee or Serpentine Pulley.

XT-Series Alternators can ship with either a Dual Vee or Serpentine Pulley.

* Note: Balmar's 1/2" Deep Vee Pulleys (Single and Dual) can accept a 3/8" and 7/16" belt.

Identify the pulley style/size present on your engine and water pump before upgrading the charging system.

Belt Type	Belt Width	Maximum HP Load	Max Alternator Output	
			12 Volt	24 Volt
Single Vee	3/8"	3.5 HP	80 Amp	30 Amp
Single Vee	1/2"	4.5 HP	100 Amp	45 Amp
Dual Vee	1/2"	12 HP	310 Amp	220 Amp
Serpentine	6-Groove (K)	> 20 HP	310 Amp	220 Amp
Serpentine	8-Groove (K)	> 20 HP	310 Amp	220 Amp
Serpentine	10-Groove (J)	> 20 HP	310 Amp	220 Amp

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Step 5: Determine your Belt and Pulley Requirements ... Continued

If the alternator output you have chosen exceeds the capability of your existing belt/pulley system, you must upgrade the pulley system using one of Balmar's patented Altmount® Pulley Conversion Kits. Refer to the chart on page 11 to find the applicable AltMount® Conversion Kit for your engine and alternator choice.



U.S. Patent Nos.
8.939.855 and D654.778

Here are some additional rules-of-thumb to guide your choices:

- Balmar 6-Series 100A Alternators can perform with a 1/2" Single Vee pulley. If you need to charge above 100A, then you will need a Dual Vee or Serpentine pulley system to be present on your engine to avoid a pulley upgrade. If a Dual Vee or Serpentine pulley is not present, then an AltMount® Conversion Kit is required.
- Unless you own a recently produced engine which already contains a Serpentine pulley system, the superior power afforded by the XT-Series Alternator Packages will require an AltMount® Conversion Kit Upgrade.
- Choose wisely! Need more help? - call Balmar Technical Support at the number below!

With the completion of these 5 steps, you have reviewed all the critical variables required to choose the correct charging system upgrade for your vessel.

Small Case Alternator Kit Selection Chart - Common Configurations

Balmar Product Family	Output	Mounting	Power Take Off	Alternator Part Number ⁽¹⁾ Part Number	Balmar External Regulator	Temp Sensors	Alternator Kit Number ⁽¹⁾ (includes Alternator, Regulator & Temp Sensors)	Altmount® Pulley Kit Required?
6-Series	100A	1-2" Spindle	4.0 HP	621-100-XX	MC-618-H	MC-TS-A & MC-TS-B	621-VUP-MC-100-XX	Yes, If Dual Vee or Serpentine is Not Already Present See Page 15
		3.15" Saddle		60-100-XX			60-YP-MC-100-XX	
	120A	1-2" Spindle	4.8 HP	621-120-XX			621-VUP-MC-120-XX	
		3.15" Saddle	60-120-XX	60-YP-MC-120-XX				
	70A, 24V	1-2" Spindle	4.3 HP	621-24-70-XX	MC-624-H		621-VUP-24-70-XX	
		3.15" Saddle		60-24-70-XX			60-YP-24-70-XX	
XT-Series	170A	1-2" Spindle	5.2 HP	XT-SF-170-XX	MC-618-H		XT-SF-170-XX-KIT	
		3.15" Saddle		XT-DF-170-XX			XT-DF-170-XX-KIT	
		3.15" Saddle		XT-CR-170-XX			XT-CR-170-XX-KIT	
	250A	1-2" Spindle	6.6 HP	XT-SF-250-XX			XT-SF-250-XX-KIT	
		3.15" Saddle		XT-DF-250-XX			XT-DF-250-XX-KIT	
		3.15" Saddle		XT-CR-250-XX			XT-CR-250-XX-KIT	
	90A, 24V	1-2" Spindle	4.8 HP	XT-SF-24-90-XX	MC-624-H	XT-SF-24-90-XX-KIT		
		3.15" Saddle		XT-DF-24-90-XX		XT-DF-24-90-XX-KIT		

(1) "XX" Pulley Designations: "SV" = 1/2" Single Vee, "DV" = 1/2" Dual Vee, "K6" = K6 Serpentine, "J10" = J10 Serpentine

(2) The "CR" design is provided for Yanmar "Common Rail" engines

Step 6: Select Additional Charging System Options

Now that you have selected an appropriate Balmar Alternator Kit, complete your purchase by adding a SG200 Battery Monitor and a Belt Buddy Tensioning Kit! See pages 16 and 26, respectively for details.

