■CHARGING SYSTEM

1. General

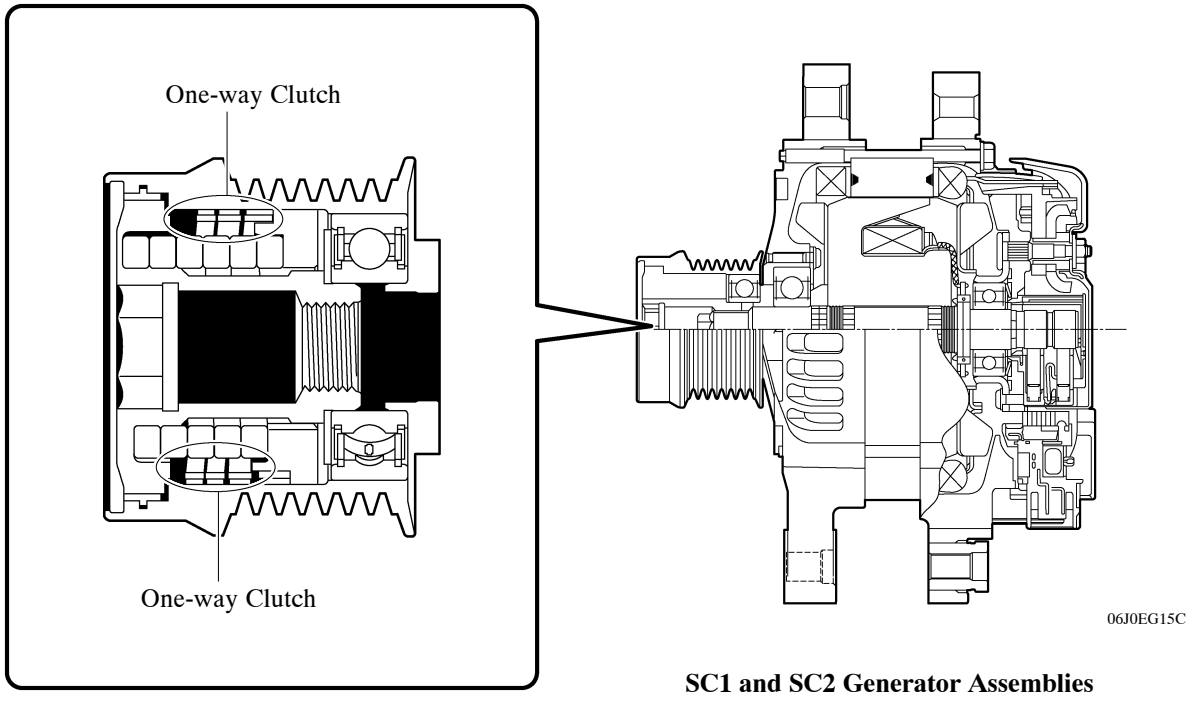
Compact and lightweight SC1, and SC2 segment conductor type generator (alternator) assemblies are used.

- Instead of a conventional type generator assembly, a compact and lightweight segment conductor type generator assembly is used. This type of generator assembly generates a high amperage output in a highly efficient manner.
- The generator assemblies and their availability are as follows.

Type			SC1	SC2
Rated Voltage			12 V	12 V
Output Rated			130 A	150 A
Stator Connection			Y Type (Dual Winding)	Y Type (Dual Winding)
Generator Clutch Pulley			With	With
Equipment	Models for Australia		-	Standard
	Models for China	N Grade	Standard	Option
		Sport Grade, Limited Grade	-	Standard

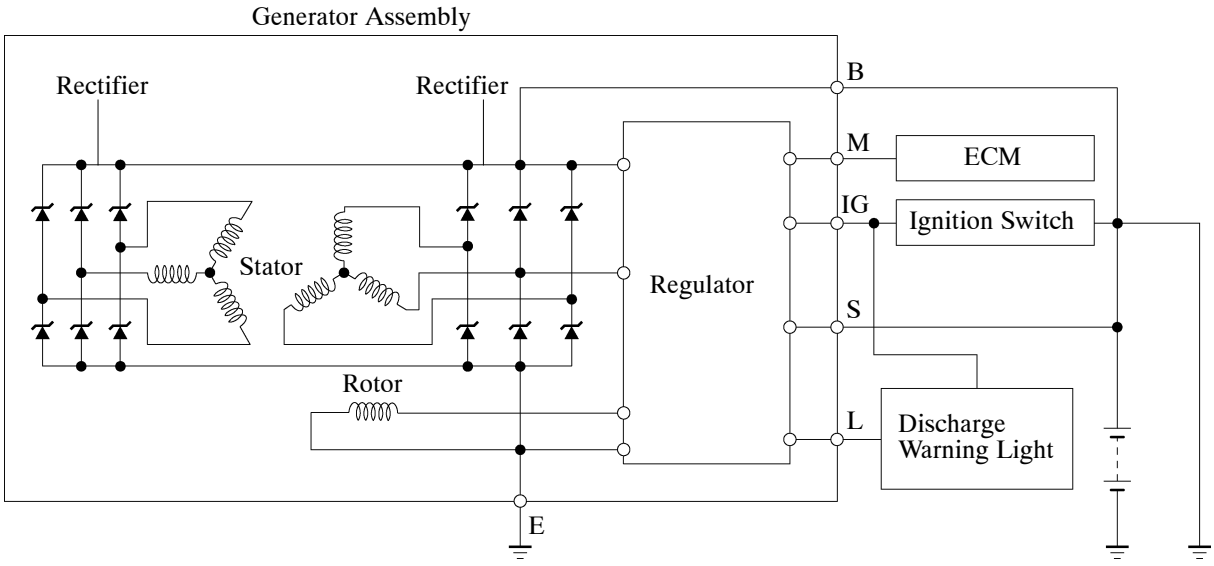
- The generator clutch pulley built-in one-way clutch is used. Operation of the one-way clutch cancels generator clutch pulley inertia and helps to prevent slipping of the V-ribbed belt. This allows the use of a low tension V-ribbed belt that achieves reduced friction.
- These generator assemblies use a joined segment conductor system to make it more compact.
- The SC1 and SC2 generator assemblies use a dual winding system to reduce of both electrical noise (ripple and spike), and magnetic noise (a hum that is heard as generator load is increased).

Generator Clutch Pulley



SC1 and SC2 Generator Assemblies

2. Wiring Diagram

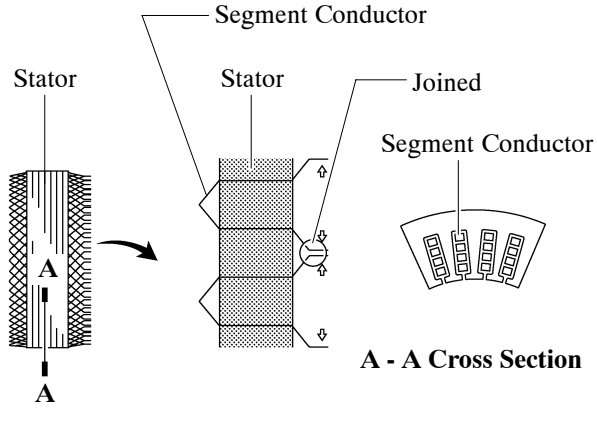


Type: SC1 and SC2

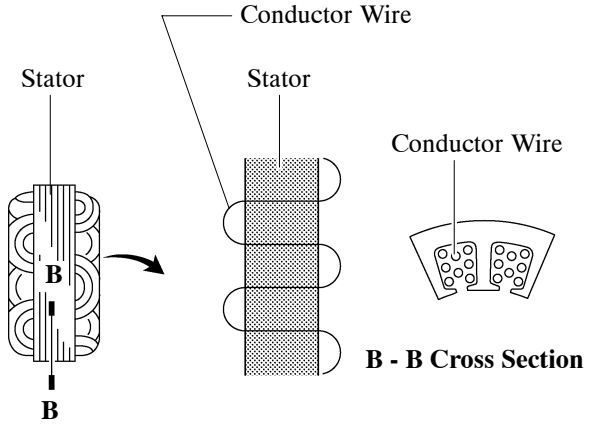
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3. Joined Segment Conductor System

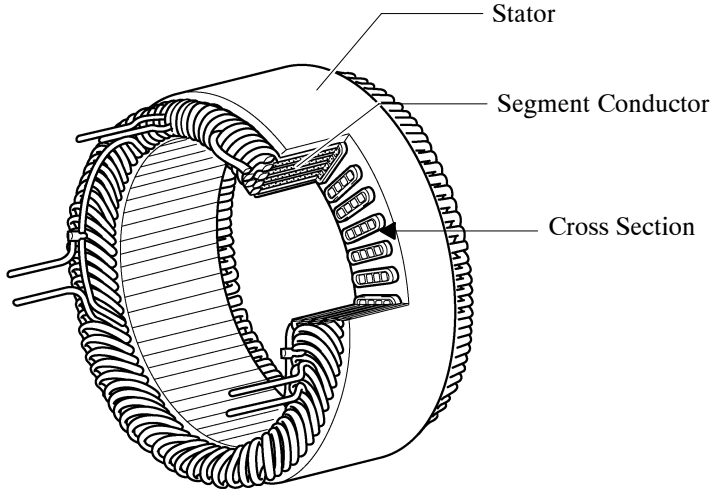
The SC1 and SC2 generator assemblies use a joined segment conductor system, in which multiple segment conductors are welded together at the stator. Compared to the conventional winding system, the electrical resistance is reduced due to the shape of the segment conductors, and their arrangement helps to make the generator assembly more compact.



Segment Conductor Type Generator Assembly (Joined Segment Conductor System)



Conventional Type Generator Assembly (Wiring System)



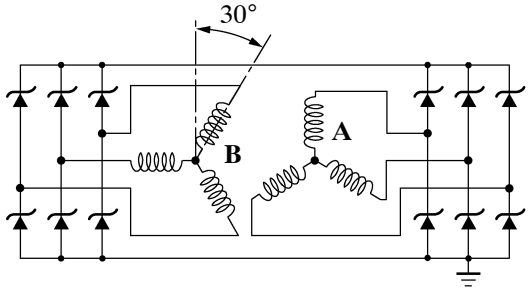
Stator of Segment Conductor Type Generator Assembly

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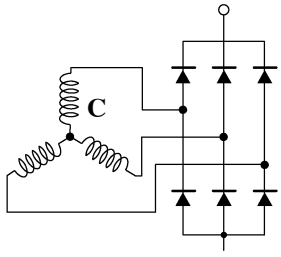
4. Dual Winding System

The dual winding system uses to reduce of both electrical noise (ripple and spike) and magnetic noise (a hum that is heard as generator load is increased).

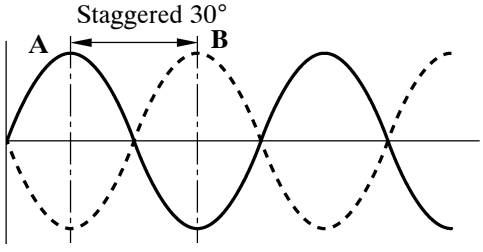
- This system consists of two sets of three-phase windings whose phases are staggered 30°.
- Two electrical noise and magnetic noise are reduced by the electromagnetic waves that the respective windings generate have opposite polarities. But the electrical power generated does not cancel itself out, due to the use of separate rectifiers. The opposite polarities that are generated can be seen below.



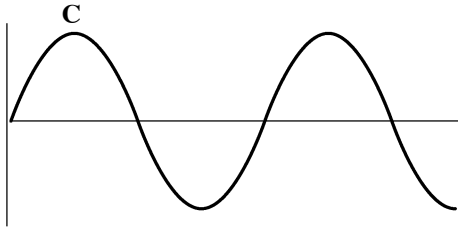
Two Sets of Three-phase Windings



Three-phase Windings



Electromagnetic Wave of Dual Winding



Electromagnetic Wave of Single Winding

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