

AD-270XP-4P

1. ALTERNATOR DESCRIPTION

The supplied alternator is a component of a next generation high efficiency, severe duty charging system specifically engineered for the GM Vortec family of engines. This system consists of a 270 Amp alternator and internal regulator. The alternator produces a maximum of 270 amps and will produce a minimum of 180 amps continually at low idle speeds and maximum output above 1000 engine RPM. The alternator has a maximum efficiency in excess of 75 percent. The rectifier is mounted onboard the alternator and consists of 12, 40 Amp press-fit diodes. The brush holder assembly and slip ring are environmentally protected and the bearings are heavy-duty, oversized premium bearings. The alternator housings are precision-machined cast aluminum and all components are of OEM or Mil-spec quality with all major components being carefully chosen for maximum performance and reliability.

2. TECHNOLOGY

This new charging system features an advanced proprietary stator winding of a new design that maximizes efficiency with near 80 percent sectional density of the winding coupled with very low coil resistance. This gives the alternator maximum low speed output, as well as a 90% reduction of magnetic pulsation with the stator windings built in cancel circuit to minimize electrical noise. The internal regulator is an advanced multifunction digital regulator that completely integrates into the vehicles PCM through the OEM wiring harness to retain all vehicle specific functions such as internal temperature compensation, lamp terminal monitoring, load response control, and alternator load factor.



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3. Alternator Mounting

The alternator is specially designed to mount directly in the OEM mounting location with no modification. All electrical connections shall be in the original locations. The alternator features a custom machined drive pulley that is 5% smaller than the OEM diameter for increased output at idle speeds and retains OEM belt length. The pulley is precision CNC 6061T6 aluminum and is .002 hard anodized coating for wear resistance and durability.

4. Alternator Performance and Vehicle Demand

The OEM alternator is rated at 145 amps with 85 amps at idle. Engine idle is ~550 RPM without the A/C on and ~600 RPM with the A/C running. The supplied alternator makes 180 amps at normal engine idle, and ~190 amps with the A/C on at fast idle. The vehicle needs a maximum of 130 amps to supply existing electrical loads with all accessories on leaving little room for additional accessories. The supplied alternator will supply an additional 90 amps of available output at low idle, and 100 amps additional at high idle, and up to 140 amps additional at highway speeds.

Engine speeds	Vehicle demand	OEM remaining output with all OEM loads on	Upgraded alternator remaining output with all OEM loads on
650 RPM idle	90 Amps	0 Amps	90 Amps
700 RPM AC on	110 Amps	5 Amps	100 Amps
Normal driving	100 Amps	5 Amps	170 Amps

5. Alternator Durability

The supplied charging system is manufactured to the highest quality standards, and is manufactured wholly in the USA, of USA made or sourced components and are of the highest quality. All parts are carefully chosen and used for their durability, dependability, and proven performance in the field.

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Description	High output alternator
Availability	In Stock
Volts	14
Amps @ engine idle	180
Amps @ fast idle	190
Amps maximum	270
Mounting type	Direct fit to OEM Mounting
Rotation	Clockwise
Housing Material	6061 aluminum
Housing Finish	Natural aluminum
Positive output stud	8MMx1.25 Copper
Negative	Case Ground
Insulated ground	NO
Regulator sensing	Internal
Excitation	Vehicle OEM
Regulation	Internal
Regulator type	OEM
Rotor Shaft Diameter	17mm
Pulley	6061 aluminum alloy hard anodized 8K
Rectifier	Internal 12x Sanken 40a
Weight	17lbs

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