

**Innovation by Design.**  
The Foundation of the New Line of  
NEMA Aluminum Frame Motors.



A unique die cast copper rotor design is one of the key elements that enable Siemens SD100 motors to exceed NEMA Premium® efficiency standards.

The design criteria for the new line of Siemens cast iron frame NEMA motors are to develop the best motor value available for our customers. They support our commitment to be the world's leading manufacturer of motors.

**Mechanical Design**

When you look at the sleek design of these motors, you know at a glance that they are more than standard NEMA motors. Siemens engineers started with a clean sheet of paper when designing these motors and used decades of motor design experience backed by the latest computer-aided design tools to engineer a line of motors like no other. It is a line of motors that offers the ultimate in rugged construction, cool operation, high performance and application flexibility.

**Electrical Design**

These motors are also designed to provide superior operating performance and energy efficiency. The advanced electromagnetic design of these motors by Siemens engineers meets and often exceeds NEMA performance standards and EPCAct efficiency standards. Our SD100 line of ultra efficient motors has been designed to provide efficiencies higher than NEMA Premium® standards. Added efficiency for lower operating costs.

**Materials**

Though you probably will never see them, the materials within these motors have been specially selected to provide high performance and long service life. For example, 100% fill polyester fiber or varnished glass cloth phase insulation is included in each motor. This system, combined with random wound magnet wire that is heavy terephthalic polyester coated with an Alimide-limide overcoat, prevents voltage spike damage caused by fast switching IGBTs in adjustable frequency drives.

Siemens NEMA motors. You just get more.



**Ease of Mounting and Installation**

- The eight-hole design of the SD's mounting feet makes locating the motor fast, easy and flexible.
- An oversized, diagonally split, conduit box includes a grounding lug and non-wicking, clearly and permanently marked leads for fast, trouble-free wiring. It can be rotated in 90° increments for ease of motor positioning. It is center mounted to make converting from an F1 to F2 position easy.
- Siemens SD motors are available with C-face or D-flange construction.
- A fan end drip cover is available for vertical applications.

**Siemens NEMA Motors. A Wide Selection of Choices to Meet Your Needs**

Our new lines of NEMA aluminum frame motors build on our reputation for rugged and durable motor performance. From simple open drip proof motors and cast iron TEFC motors, to sophisticated NEMA motors that meet or exceed IEEE 841 and NEMA Premium® standards, you can trust Siemens for the right solution – every time.



nema  
MOTORS

SIEMENS

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RPFL?????? New 5M????? Printed in USA



### A Systems Approach to Extended Service Life

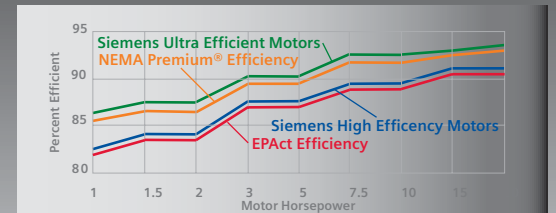
Siemens engineers evaluated each component that affects motor service life and developed individual systems within Siemens SD motors that form a complete system to maximize service life.

**Cooling System** – The advanced cooling system developed for these motors is based on minimizing or preventing heat sources within the motor and then quickly dissipating any remaining heat. This highly refined system includes:

- An engineered finned frame design that provides better heat dissipation properties and reduced areas for dirt buildup than conventional cast iron designs.
- High flow volume polycarbonate fan and unique radial air slot fan cover for optimum air flow.
- Low-inertia design of all rotating components to reduce heat buildup caused by windage and friction.
- A stator core and rotor designed to work together to quickly remove heat from inside the frame.

**Bearing System** – In addition to oversized, regreasable shielded bearings, the bearing system in Siemens SD motors feature:

- A specially formulated polyurea-based grease that has proven to provide more than four times the lubrication life of other polyurea greases.
- Dynamically balanced rotor to reduce vibration.
- Bearing housings in each end shield are precision-machined for accurate alignment between the bearings and the rotor.
- End shield and frame mating surfaces are precision-machined for precise rotor and bearing alignment.
- Shaft V-ring slingers on both bearing housings. Provisions for Inpro/Seal® bearing isolators on both ends are standard.
- Alemite grease inlet fittings and pipe plugs on the relief ports for ease of routine maintenance.



### Choose Better Efficiencies for Reduced Operating Costs

All Siemens SD motors are available with either a high efficient design that exceeds EPA standards, or ultra efficient design that exceeds NEMA Premium standards. Either way, Siemens SD motors are the right choice for energy savings.

**High Capacity Insulation System** – For long insulation service life, Siemens SD cast iron frame motors feature:

- A proprietary, inverter-rated, NEMA Class F non-hygroscopic insulation system with a Class B temperature rise at a 1.0 service factor.
- Optimum varnish penetration of wiring in the windings provides protection from moisture, corrosion and electrical shock through the use of a specially designed varnish application system.
- High resistance to variable frequency inverter induced voltage spikes. This system meets or exceeds NEMA MG1-2003, Part 31 standards for variable frequency drive operation.

**Corrosion Protection System** – To protect Siemens SD motors from the effects of moisture and resulting corrosion they feature:

- Condensation drain holes in the frame prevent internal moisture buildup.
- Non-hygroscopic insulation system is moisture resistant.
- Epoxy enamel-coated cast iron frame and endshields.
- Non-metallic structural polycarbonate fan and cast iron fan cover.
- Zinc-plated hardware and stainless steel nameplate.

## New Siemens SD Cast Iron Frame Motors. More than You Expect from a Severe Duty Motor. Innovation is Why.

The new line of Siemens SD cast iron frame motors is not an evolution in motor design, but a total revolution. This distinctive all new line of NEMA motors is based on Siemens 14 decades of motor design leadership, manufacturing expertise and application knowledge combined with innovative and elegant new technologies to provide maximum value.



### SD Severe Duty Motors

These industry workhorses are ideal for use in the toughest chemical processing, mining, foundry, pulp and paper, waste management and petro chemical applications. They are available with a wide selection of application-matched modifications and in either high efficiency, or NEMA Premium efficiency designs. Rugged and efficient operating performance, is what you expect from Siemens.



### SD100 IEEE841 Severe Duty Motors

This is the ultimate NEMA motor. It has been designed to exceed IEEE 841-2001 standards for efficiency, performance, construction, variable speed operation and long service life in the most demanding applications. This motor's highly-engineered design and rugged construction features are backed by a five-year warranty by Siemens.