

Warner Electric

Boston Gear

TB Wood's

Formsprag Clutch

Wichita Clutch

Marland Clutch

Industrial Clutch

Nuttall Gear

Warner Linear

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## Warner Electric Clutches Position Concrete Saws a Cut Above



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[www.concreteconstruction.net](http://www.concreteconstruction.net)  
December, 2010



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Warner Electric Model SF1000 Clutch

When cutting sections of a roadway with a heavy-duty, diesel-powered concrete saw, the blades and machine must safely and powerfully work together with the material being cut. But occasionally, thermal expansion of the concrete causes the blade to pinch in the kerf of the cut.

That's when a little 10-inch diameter clutch located on the Husqvarna diesel-powered flat saws provide a level of safety unavailable on most competitive machines. The clutch made by Warner Electric, South Beloit, IL, allows the operator to disengage the blade drive while leaving the engine running so the operator can free the blade by moving the large saw using the power drive.

It's a safety benefit that is also an ergonomic and convenience benefit, since the Husqvarna flat saws can weigh up to 1,500 lbs. and moving them with the power drive, without the blade spinning, significantly reduces operator fatigue.

"When operating a saw without a clutch, the operator must shut the saw engine off and manually move the machine," said Don Meister, Senior Design Engineer, Husqvarna Construction Products. "Or, he's got to move the saw while the engine is running and the 60-inch saw blade is rotating, which presents a safety issue. That clutch gives Husqvarna saws an advantage in the marketplace over saws without clutched blades."

The clutch allows the saws to meet European safety requirements giving Husqvarna the ability to sell the same model saws in both European and North American markets.

The Model SF1000 clutch has been manufactured for Husqvarna by Warner Electric, an Altra Industrial Motion company, for more than 15 years. The same basic clutch fits Husqvarna's different model saws with different engine sizes (ranging from 48 to 84HP), with only small changes in the armature spring configuration needed between models. The armature is modified so the spring orientation is outward to bolt directly to the flywheel, and the flange-mounted field bolts directly to the face of the gearbox (Fig. 1).



Husqvarna Model FS8400 heavy-duty, diesel-powered concrete saw

The clutch is supplied in three pieces and Husqvarna mounts the parts into the drivetrain during saw assembly. The field coil attaches to the stationary gearbox. The armature attaches to the engine flywheel. And the rotor attaches to a hub wheel, which is attached to the input shaft.

Husqvarna designed custom hubs and flywheels into their saws to adapt to the Warner Electric SF1000 clutch. Depending on the model, Husqvarna flat saws generate 50, 60 or 100 ft.lbs. of torque. The static torque rating of the SF1000 clutch is 200 ft.lbs. Actual test results range from 720 to 940 ft.lbs. of torque at 250-degrees Fahrenheit, and 840 to 1,050 ft.lbs. at 70-degrees F. So the clutch easily covers the torque requirements of all Husqvarna's saws.

"This is a modified standard Stationary Field Clutch, but the robustness of design and its ability to provide more torque than normally is necessary provides the maximum safety in operation," said Gary Haasch, Warner Electric Product and Engineering Manager.

"We've done extensive testing with this basic product over the years, but the testing for this particular application was done primarily by Husqvarna," said Haasch. Husqvarna testing involved dynamometer, high-speed, low-speed, and field testing, according to Meister. "We've sold thousands of saws with Warner Electric clutches and have had excellent results."

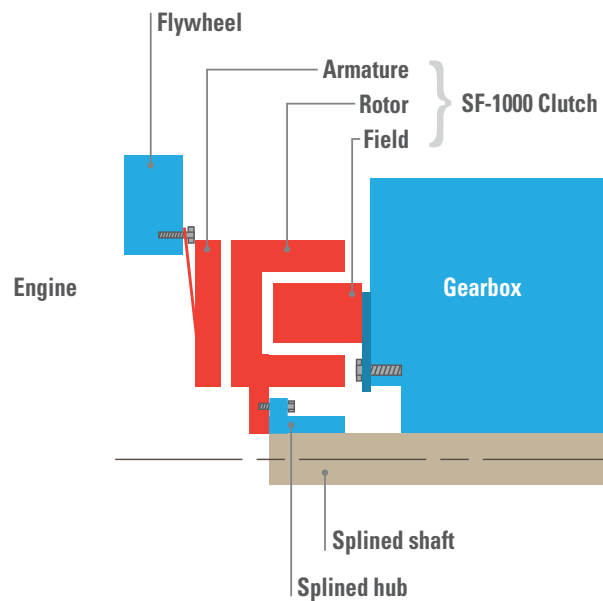


Fig.1 Mounting Diagram

## About Altra Industrial Motion

Altra Industrial Motion (NASDAQ:AIMC) is a leading multi-national designer, producer and marketer of a wide range of electromechanical power transmission products. The company brings together strong brands covering over 40 product lines with production facilities in nine countries.

Altra's leading brands include Boston Gear, Warner Electric, TB Wood's, Formsprag Clutch, Wichita Clutch, Industrial Clutch, Ameridrives Couplings, Kilian Manufacturing, Marland Clutch, Nuttall Gear, Stieber Clutch, Twiflex Limited, Bibby Transmissions, Matrix International, Inertia Dynamics, Huco Dynatork, Ameridrives Power Transmission, Delroyd Worm Gear and Warner Linear. For information on any of these technology leaders, visit [www.AltraMotion.com](http://www.AltraMotion.com) or call 815-389-3771.



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