

# THIS APPLICATION IS HOT

**I**sland City, LLC, located in Merrill, Wisconsin, manufactures a range of products oriented to commercial and some specialty military vehicle applications. Unique among their products is a broad range of Dynamic Heat Generators (DHG). What exactly is a DHG and how does it work?

The input of rotational energy results in fluid shear/friction, heating the fluid in the DHG, which is delivered to the point of use via flow of the fluid through the circuit.

The enclosed system uses various fluids depending on the individual application. Applications are numerous, but the main ones are heating for vehicle cabins and post heating diesel engines to help meet emissions.

Island City's Model A1R300 & A2R300 have a heat generation capacity of 25,000 and 63,000 BTU/HR (10 to 20 absorbed hp) respectively. Larger units span a breath up to 3,500,000 BTU/HR (1,400 hp) with a common operating temperature of 220 degrees F. Heat output is to be regulated by speed. So, the electrical clutch offers flexibility to the system as the unit can be modulated.

Island City has been developing electric clutch driven versions of the DHG in collaboration with Ogura Industrial Corporation in Somerset, NJ. "Our DHGs are in service in very remote locations, northern oil fields for example," said Gene Johnson, Island City's Marketing Director, "so we insist on high quality and reliability in any DHG system component. Knowing Ogura's reputation in automotive applications and that their mobile pump clutches are designed to function and survive in harsh environments is critical in their consideration as part of our system. The availability of a wide range of torque capacities allows proper matching of clutch torque to DHG requirements. Ogura offers both belt and driveline inputs—providing design versatility as well."

The on/off operation of the electric clutch provides flexibility in system design according to Johnson. For example, in an engine driven system, the engine control unit (ECU) monitors the point at which heat is required, switching on the clutch and turning it off when the desired temperature is achieved. The ability to modulate the system automatically through the ECU greatly simplifies operation and conserves horsepower.

Clutches are adaptable to different electrical systems as well since the clutch can incorporate coils appropriate to the onboard voltage of 12, 24 or 48 volts. ●



*Ogura belt driven clutch*



*Island City Dynamic Heat Generator  
with an Ogura Mobile Clutch installed*