

# Ogura Mobile Clutch Helps Put The Brake On Electric Bus

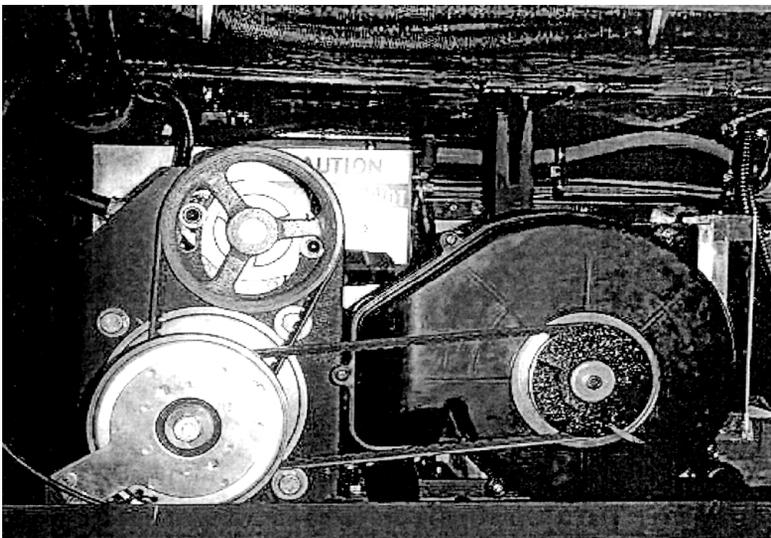
The pollution caused by diesel driven buses and garbage trucks used in urban areas with poor air quality pose health and environmental concerns. The elimination of the diesel exhaust along the roadways and in heavily populated and urban areas is a goal many communities are trying to attain.

Ogura is currently working with one company, which is outfitting new and retrofitting existing vehicles with a “Hybrid Electric” conversion. The standard diesel engine is replaced by a propane powered microturbine engine which has been certified by the California Air Resources Board as having emissions that are as much as 250 to 500 times lower than propane powered reciprocating engines. Although the engine is smaller in horsepower than the standard diesel engine, it runs continuously at its most efficient speed, driving a generator. Electric motors that are regulated by a Variable Frequency Drive are used to drive the wheels. When the generator is producing more power than the vehicle needs to run on at the desired speed, the excess power is used to charge a series of batteries. The hybrid-electric vehicles overcome two main disadvantages of dedicated electric vehicles. The first is a limited range between recharges and the second is the extended time needed to recharge the battery packs. With the micro-turbine keeping the batteries charged, there is no need for daily vehicle down time.



*Bus with microturbine hybrid-electric drive system*

Ogura Industrial is supplying a mobile general purpose clutch for a unique application on this vehicle system. Since power consumption is kept at a minimum, the clutch is used to drive an air compressor which provides compressed air for the vehicle’s air brakes only when needed. (This is where a zero defect goal really means something, and good liability insurance does not hurt either.) The clutch turns on to drive the compressor when the air pressure in the holding tank drops below a set pressure level. When pressure is not required, a relay opens a circuit stopping the 12 volts going to the coil in the clutch, disengaging it so no power is consumed.



*Clutch mounted field outboard on compressor*

The clutch used in the application is Ogura’s P/N 515294. This clutch is designed for mobile applications, it has a 1” bore and a two groove sheave. Its bearing mounted design makes it easier to mount when compared to a fixed field design clutch.

This company is also working with GM and Allison in developing a diesel fueled microturbine hybrid-electric bus design. Although these vehicles are in the early stages of production and development, future potential for this type of application offers great potential.