

Application Story

A MIGHTY WIND FROM A TINY SOURCE

Today's commercial van manufacturers are changing the game by delivering new Euro style vans to North America. These new platforms boost fuel efficiency and increase cargo space dramatically. Ford's 3.7 L Transit, Mercedes Benz's 3.0L Sprinter, and the Ram 3.6L ProMaster are but three of the new entries causing shakeups in the mobile service industry.

Although there is limited underhood space available, most vans have an option to mount a secondary alternator. Dual alternators are used in many vans that are converted into ambulances or emergency vehicles to meet those specialized vehicles' electrical needs. VMAC's challenge was to try to fit a compressor into the space of an alternator.

VMAC's newly formed Product Development Department was given the task of building a compressor that met the entire scope. Small, cost effective, 30-35 CFM, and able to deliver the results are what VMAC's Dealer Network demanded.

When VMAC tasked Ogura with this new challenge, Ogura went to work to design the world's first 85 mm OD, 8 groove poly-v production clutch, capable of driving the anticipated pump loading (>15NM) while cycling flawlessly at running speeds exceeding 7,000 RPM. The clutch components and bearing design are viable for up to 10,000 RPM continuously, providing plenty of safety margin.

Ogura's MAE-MG43 clutch does away with traditional flux directing techniques by completely eliminating the

steel structural spokes, replacing them with a structurally strong, but magnetically neutral material creating a near 100% efficient magnetic circuit. It is this marked increase in magnetic efficiency, with multipole technology that allows the Ogura clutch to transmit the torque of a clutch nearly twice its size.

To provide long life and to handle the increase in clamping forces on the smaller diameter, the Ogura clutch integrates a stable high performance proprietary friction material embedded in the rotor pulley. The multipole, spoke-less rotor design, permanently lubricated, snout

mounted, double row ball bearings, robust proprietary friction material, the compact 85 mm pulley size, bi-directional armature return springs and fully epoxy encapsulated coil (located within the pulley cavity), makes this clutch the most advanced miniature 8 groove, 12 VDC clutch available today.

With the major components finalized, VMAC then turned to a few of its selected dealers to move the product into the market. This is when the pleasant surprise of a new major market was found with the introduction of European style vans into the North American market. VMAC feels that the UNDERHOOD LITE, together with its Ogura clutch will enable its dealers to install a state of the art, cost effective rotary screw air compressor system under the hood of mobile service vehicles for current markets and new ones yet to come. ●



Air storage tank



Ogura's MAE-MG43 clutch



UNDERHOOD LITE with Ogura clutch