

## AT A GLANCE

### CUSTOMER

NPS Diesel

### LOCATION

Ravenstein, Netherlands

### CHALLENGE

Further reducing the environmental footprint (primarily, noise) of Genpower's Cleanergy! Series generators sets

### SOLUTION

Horton VS227 Variable-Speed Fan Drives and MS9 Fans

### RESULTS

Reduced noise in 200 kWe generator sets with John Deere PowerTech™ E 6.8L Tier 3/Stage III A, constant-speed drive engines, leading to exploration of variable-speed fan drive inclusion into 100 kWe sets with John Deere PowerTech E 4.5L Tier 3-Stage III A generator drive engines

### PRIMARY CHOICE FACTORS

Horton's reputation for variable-speed fan drive integration in rental generator sets

## Horton Variable-Speed Fan Drive Reduces Noise on Rental Generator Sets

### Background

NPS Diesel, part of Lumipol Power & Controls B.V., is the official importer, distributor and service provider for John Deere engines and accessories in



Horton VS227 Variable-Speed Fan Drive installed on John Deere 6.8L engine

France, Iceland and the Benelux countries. It serves customers in the agriculture, forestry, mining, marine and industrial sectors, as well as customers in the power generation business. For power generation, it offers Stage III generator drive engines from 30 to 300 kVA, in displacements from 2.9 to 9.0 liters.

One of NPS Diesel's customers, Genpower, is a purveyor of rental generator sets for the construction industry. One of Genpower's goals is to minimize the environmental footprint of its gensets in terms of potential leaks, noise and fuel consumption. Noise is a particular challenge for its construction customers when it comes to projects based in or near residential neighborhoods, business districts or parks. All are protected by stringent noise regulation. Accordingly, Genpower developed its Cleanergy! brand of generator sets with the help of NPS Diesel.

*"Being able to vary the fan's operating speed brings fuel costs and sound levels down even further, while the reduced engine stress extends the lifetime of both engine and generator set."*

*– Johan Deen  
Rental and Logistics  
Manager - Genpower*

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# Case Study – Power Generation/Rental

## Challenge

Genpower offers generators ranging from 20 to 2,000 kVA which allow it



Horton VS227 Variable-Speed Fan Drive

to accommodate most permanent and rental generator applications. It relies on powerful and reliable John Deere Tier 3/Stage III A engines, which feature lower carbon dioxide and nitrogen oxide emissions and sound levels as low as 51 dBa. Yet, it wanted to bring the noise generation level down even lower.

## Solution

Genpower teamed up with NPS Diesel to explore means by which to reduce



Front view of installed fan drive

generator noise. NPS familiarized Genpower with the concept of variable-speed fan drives for engine cooling purposes. Most generator sets run at a constant speed, regardless of the load, and the radiator cooling fan is driven directly by the engine. In essence, the fan rotates as fast as the engine and is a primary cause of noise

output. Yet, the Horton variable-speed fan drive is not connected directly to the engine and rotates only as fast as is required to provide engine cooling. Other than in high-load or high ambient temperature conditions, the variable-speed fan runs at a lower speed, thereby reducing noise output.

With the help of NPS Diesel, Genpower designed a prototype. It outfitted a 200 kWe generator unit, featuring a John Deere PowerTech™ E 6.8L Tier3/Stage III A, constant-speed engine, with a Horton VS227 variable-speed fan drive.

## Results

The prototype test run showed significant noise reduction. Given its success, Genpower produced another four 200 kWe units. A 100 kWe generator set with a John Deere PowerTech E 4.5L Tier 3/Stage III A engine and Horton variable-speed fan drive is in development.



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