

AT A GLANCE

CUSTOMER

Texas Disposal Systems

LOCATION

Austin, Texas

CHALLENGES

Reduce the frequency and duration of fleet downtime caused by fan drive failures. Avoid related collateral damage to associated or adjacent equipment caused by the fan drive failure

SOLUTION

The Horton RCV250 Variable-Speed Fan Drive

RESULTS

The RCV250 is still operating flawlessly even after four years of hard service – already doubling the service life of the competitive fan drives.

PRIMARY CHOICE FACTORS

Long service life

Fail-on mode operation

Horton's reputation for high-quality products and the latest technological advancements

Horton RCV250 Variable-Speed Fan Drive Increases Uptime

Background



Texas Disposal Systems vehicle in one of the company's recycling centers

Texas Disposal Systems (TDS) is one of the largest, privately-owned resource management companies in the United States. It has more than 700 employees and operations in Austin, San Antonio, Georgetown, San Angelo, Alpine, Weimar and Sealy. It owns and manages a fleet of 279 trucks, of which 250 are on the road at any time. Texas Disposal Systems averages 50,000 truck hours per month.

Vocational vehicles, including refuse trucks, endure strenuous duty because they are constantly starting, stopping and idling – in all kinds of environmental conditions.

While this type of erratic operation is normal, it puts a strain on the entire vehicle, including the cooling system. The fan drive is a critical element of the cooling system because the constant starting/stopping and low speed of refuse trucks does not provide enough ram air (i.e. airflow associated with movement down a road) to assist with engine cooling. Since downtime is often the bane of truck-based operations, TDS is fastidious about preventive and general maintenance. Yet, despite its best efforts, their trucks' fan drives would fail every 12 to 18 months on average. In addition to productivity concerns, the failed fan drives sometimes broke apart causing damage to other engine components,

"I don't want anything but a Horton hanging on the front of our trucks. We need OEMs to specify the RCV250 as standard. We'd be so far ahead."

*– Harold Graves
Director of Maintenance
Texas Disposal Systems*

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Case Study – Refuse Trucks

exacerbating downtime.



Texas Disposal Systems on the job

Challenges

The challenges for TDS were to reduce the frequency and duration of downtime and potential collateral damage caused by fan drive failures.

Implementation

Having operated and maintained a variety of heavy-duty trucks since 1992, Maintenance Director, Harold Graves, was very familiar with trucks and their various fan drives and fan drive systems. He also knew Horton was the leading technology leader and the pioneer in the industry – and that Horton had developed a high quality, fully-variable fan drive ... something for which he had been waiting. Accordingly, he called Horton Sales Account Manager, Mark Pusateri, to explore the Horton RCV250 Fully-Variable Fan Drive.

Pusateri explained the design and engineering behind the RCV250. He noted it was a maintenance-free drive with no friction liner or other wear parts to replace. Another feature was the unexposed control harness (designed to work with the engine's ECM to control

engine temperature) which was channeled through the core of the unit. Should a belt break, it would not damage the wiring, necessitating replacement. Pusateri further explained the durability of Horton's double-row, angular-contact (DRAC) bearing which is integral to the RCV250's service life.

Collateral damage caused by separated bearings was something Graves mentioned specifically as a concern with competitive fan drive bearings. The Horton DRAC bearing's robust and long-life design provides for reliable operation, and prevention of bearing separation should the unlikely event of a bearing failure occur.

Yet, more important to Graves was that the failure mode of the RCV250 was "on" meaning that should the drive fail, it would keep turning but at a constant rate – less expensive than replacing an engine or at minimum, having to tow the unit into the repair bay. Graves also didn't want the drive to fly apart in the process of failure, potentially damaging hoses and radiator.

Solution

The high-quality engineering of the Horton RCV250 fan drive proved to be a superior alternative to the fan drive brand TDS had been using. Further, TDS was particularly interested in its ability to fail in an "on" mode such that the fan would keep spinning and cooling the engine. The only difference would be that it would be operating continually, instead of variably. Further, TDS had more confidence in its structural integrity, i.e. if it failed it would not cause other collateral damage. The variable operation of the drive provides

the additional benefits of fuel efficiency and increased power given less parasitic draw on the engine. It also produces less noise which is ideal for city and suburban neighborhoods.

Of the various solutions Horton could offer, including other on/off and two-speed fan drives, Graves chose the Horton RCV250 and a Horton fan. He agreed to have them installed to test the validity of Horton's claim about its durability and performance. A Horton Team, including Mark Pusateri, traveled to Austin to help TDS install the unit.



The Horton RCV250 installed on a TDS truck engine

Results

The RCV250 test unit has been operating continually for over four years. True to its design, it has not required any maintenance either. As a result, the RCV250 is now Texas Disposal System's standard to replace any failed fan drive unit. Moreover, operators have noted that it is also quieter than other fan drives, engaging gradually and smoothly.



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