

## AT A GLANCE

### CUSTOMER

SMS Equipment, Inc.

### LOCATION

Edmonton, Alberta, Canada

### CHALLENGE

Solving performance issues on excavators operating in extreme cold

### SOLUTION

Retrofit kit including a Horton LCV80 variable-speed fan drive and MS9 fan

### RESULTS

Improved cab heat enhancing operator comfort. Increased productivity gained by excavators reaching and maintaining optimal operating temperatures

### PRIMARY CHOICE FACTORS

Horton's reputation for technical collaboration, dedicated engineering support and ability to solve challenges quickly

## Horton Variable-Speed Fan Drive Solves Productivity Challenges in Extreme Canadian Weather



### Background

SMS Equipment is a supplier of heavy machinery and equipment to the construction, mining, forestry and utility industries. Headquartered in Edmonton, Alberta, it has over 30 locations, providing equipment and service coverage to several Canadian provinces and territories. It offers brands recognized for their reliability, performance and productivity, including: Komatsu, Wirtgen, Kleemann, Vögele, Hamm, Fecon, Terramac, Indeco, Sandvik, etc.

SMS Equipment has many excavators in service across Western Canada. Some of these units operate in harsh conditions, including extremely cold weather during the winter season. It came to SMS Equipment's attention that some customers were experiencing a number of cold-weather related performance issues with their excavators.

Extremely cold temperatures can affect the performance of both diesel- and gas-equipped vehicles. The root cause is the equipments' inability to reach optimal operating temperatures, which affects cab heat and hydraulic fluid temperatures. Poor cab heat can negatively affect operator comfort and thereby productivity, especially over a long day. Further, when hydraulic fluid does not reach an optimal temperature, functions like digging, lifting, turning and moving can all take slightly longer – and that time can add up, again affecting productivity.

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## Case Study – Construction/Mining

### Challenges

SMS Equipment faced two challenges. The first was to quickly solve the extreme-cold performance issues with existing units in the field and thereby preserve important customer relationships. The second was to prevent similar issues with future excavator sales. The primary customer concerns were cab heat and hydraulic fluid temperatures as they relate to productivity. Mark Haywood, SMS Equipment's Technical Support Manager, took the lead on the project.

### Implementation

After analyzing the technical issues, Mark brought the problem to the attention of Neal Shawaluk, Lead Sales Engineer for Off-Highway at Horton. Within two weeks of their initial discussion, Horton shipped SMS Equipment a prototype solution, consisting of an LCV 80 variable-speed fan drive and an MS9 fan.

Soon after SMS Equipment received the prototype solution, a Horton technical team flew to Edmonton to inspect the excavator and the challenges associated with retrofitting the solution. With all the information in hand, the Horton team returned to the R&D lab in Roseville, Minnesota to further refine the solution and develop

a custom retrofit kit that would be easy for SMS Equipment to install.

### Solution

The final retrofit kit included everything needed to complete an installation, such as mounting hardware, wiring harness and Horton's Di+™ Controller allowing communication between the fan drive and the engine ECM.

SMS Equipment and Horton installed the retrofit kit on test units in the shop and in the field, to ensure both theoretical and practical performance.

### Results

Both shop and field tests proved successful. Subsequently, SMS Equipment addressed the customers' cab heat and hydraulic fluid-related productivity concerns by retrofitting the affected excavators in the field. The modification allowed the engines to retain more heat and thereby provide warmer cab temperatures and warmer hydraulic fluid temperatures. The affected customers reported excellent results.

As a result of the SMS Equipment/Horton collaboration, all new excavators are equipped with the cold-



Fan kit installed in an excavator engine compartment

weather package.

According to Mark Haywood, the cold-weather modification has been a real win in Western Canada, where severe winter conditions can negatively affect equipment performance.

*"I was really impressed when Horton sent in an Engineering team, to help us design and build a solution. I was even more impressed by how fast they were able to develop a prototype and final retrofit solution."*

*– Mark Haywood  
Technical Support  
Manager*



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