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WARRINGTON, UK, FEBRUARY 4, 2016

# ABB bearings cut maintenance costs for carrot grower

Maintenance intervals are increased from four weeks to over six months by replacing standard bearings with ABB Dodge ISN bearings, on an industrial vegetable peeling machine.

The ABB Dodge ISN bearings can take increased load and are more resistant to wear and moisture. This has resulted in a vast increase in the interval between replacements.

MH Poskitts Ltd produce 50,000 tonnes of carrots and other root vegetables a year from its farms. Grown for distribution to major supermarkets, the carrots are washed and peeled at a facility in Yorkshire, using several rotating drums. Each drum contains 18 rotating cylinders.

Surfaced with carburandum, the cylinders abrade the carrots and peel them, whilst water washes away the dirt and peelings. The resultant abrasive fluids are constantly sprayed over the entire machine including the bearings.

Poskitts were faced with a major maintenance problem with two of the peelers, in that the bearings of the peeling cylinders were lasting up to four weeks before needing to be replaced. The company called in specialist bearing supplier Castleford Bearings, an ABB distributor, to assess the problem.

Working with ABB, Castleford Bearings found that the length of the peeling cylinders was causing the problem. Both the drums and the peeling cylinders are 3.5 metres in length. Supported only at either end, the shafts of the peeling cylinders were constantly flexing. This meant that the standard ball bearings used on the cylinders were suffering from a dynamic loading that they could not handle. This load was cracking the inner ring of the bearing, letting in water and contamination, which rapidly lead to the bearings failing.

The decision was taken to replace the bearings with ABB Dodge ISN bearings for a trial period on a single peeling cylinder. These spherical roller bearings can handle the dynamic load induced by the shaft and move to take account of the misalignment. The Trident seals, which are standard on these bearings, are extremely effective for dirty environments, low to medium speeds and normal ambient conditions. They comprise a nitrile triple-lip rubbing seal plus metal flinger, which maintains full seal contact even when misaligned.

To accommodate the ISN bearings, Castleford Bearings re-machined the two original housings on the peeling cylinder. The two ISN bearings on trial have been operating since April 2015 without needing to be replaced. As a result, ABB and Castleford Bearings are now in the process of replacing all of the original bearings on the two, 3.5 metre peeler machines with ISN units, a total of 72 bearings.

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**Caption:** Maintenance intervals on a vegetable peeling machine are increased from four weeks to over six months by replacing standard bearings with ABB Dodge ISN bearings.

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**For more information please contact:**  
**Layla Hewitt**  
**Marketing Communications**  
Phone: 01925 741517  
Email: [layla.hewitt@gb.abb.com](mailto:layla.hewitt@gb.abb.com)

**ABB Ltd.**  
Daresbury Park  
Daresbury  
Warrington WA4 4BT

**Emma Jenkinson**  
**Armitage Communications**  
Phone 020 8667 2218  
Email: [emma.jenkinson@armitage-comms.co.uk](mailto:emma.jenkinson@armitage-comms.co.uk)