

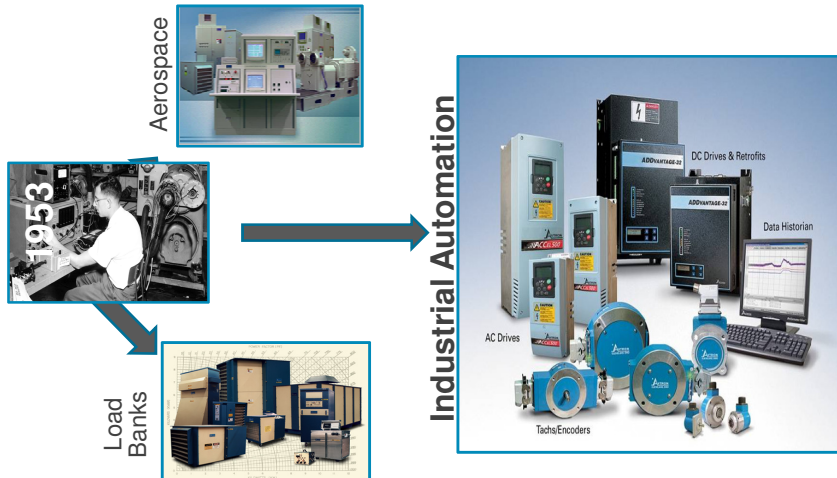


Mining Drives, Motors and Encoders

Canada-US Energy Summit

Ohio Supplier Matchmaking Forum

Avtron Founded in 1953 – Cleveland, Ohio



Nidec Avtron Background



- Main product lines – AC/DC Drives, Motors, Drive Systems and Encoders
- Provides drive systems to mining, pulp & paper, steel, marine, and port industries
- Avtron was privately held for 55 years, had 5 years of private equity ownership, now owned by Nidec (publicly held, \$8.2 billion in sales - 2013)

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3

Electric Drives, Motors, and Encoders



- AC /DC Drives and Systems
 - Liquid and air cooled
 - 1 - 15,000HP, 208V-4160V offerings
- AC and DC Motors
 - 1 – 15,000HP
- Heavy-duty Encoders

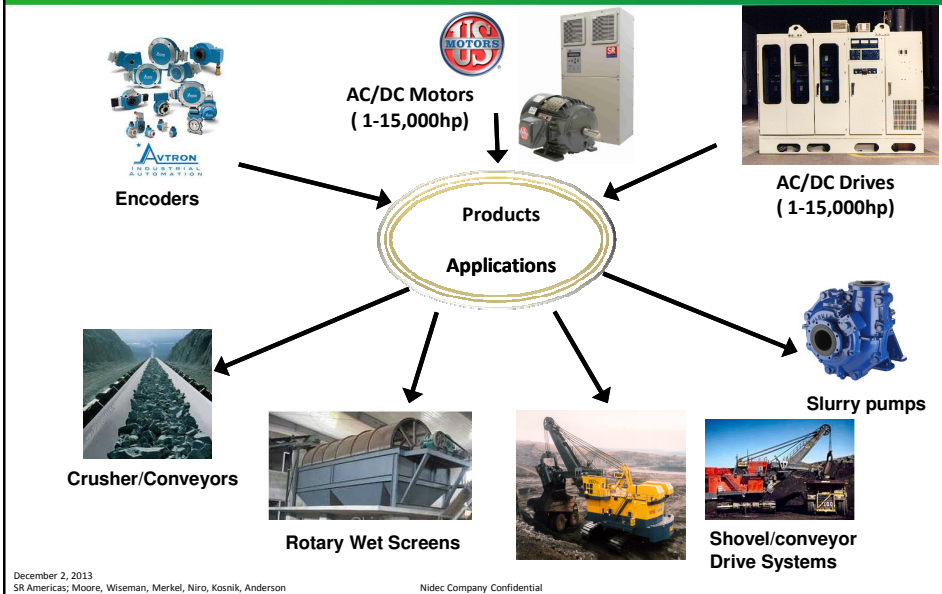


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4

Nidec Avtron Oil Sands Applications



Nidec Avtron Oil Sands Experience



Case History

- Started by partnering with an OEM in 2000 to provide Suncor and Syncrude shovel drive systems. Since the beta site at Suncor, we have installed drive systems on over 165 machines at large surface and underground mines around the world
- Suncor and Syncrude have installed Avtron drives on 13 shovels



Nidec Avtron Oil Sands Experience



Case History

- After successful installations on the electric shovels in the mines, while on site, we found another opportunity in the bitumen processing area.
- We developed a more reliable feedback encoder for the crushers thereby reducing unwanted downtime and increasing production.



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7

Nidec ASI Oil Sands Experience



Case History

- This past quarter Nidec received a \$20 million contract to provide 60 medium voltage drives and motors for slurry pump and rotary wet screen applications at the Suncor Fort Hills site. Size of drives range from 300-12,000hp.



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8

Why do the Oil Sands Mining Companies work with Nidec Avtron?



- Proven capability and willingness to develop mining-specific solutions
- Reliability and ruggedness of hardware
- Experience with mining applications and equipment
- Proven long-term support
- Training
- Spare parts availability
- Overall system cost
- Diagnostic capability
- Referrals



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9

We Provide Experienced Engineering Support



Helps the oil sands mines handle "peak demand" on projects



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10

Challenges to Doing Business in the Oil Sands



- Need to have Canadian/local support and sales.
- It is hard to find and keep good people remotely from Ohio
- Fort McMurray is an expensive locale to stage support personnel
- High cost of travel from Ohio to Alberta
- Can be hard to get personnel to relocate to Fort McMurray – may need to stage out of Edmonton or find quality partners
- Very large organizations with many partners on major projects
- Weather is a lot like Cleveland's



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11

Benefits to Doing Business in the Oil Sands



- Highly engineered process requires talented support. Value-based solutions are supported and typically provide decent margins to vendors.
- Basic business model – the prime mover is to optimize the process to maximize production. This results in a customer base that is very open to innovation.
- Like most of Canada, the oil sands employs a very educated and professional workforce.
- Large, growing market
- Best Fish & Chips in Alberta
- And the Northern Lights!



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12

Nidec Avtron Drives, Motors, and Encoders



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