Customer Success Story:
Blueline Blueberry Harvester

Market Served
Mobile machinery and equipment

Eaton's hydraulic system helps Blueline reduce harvest loss by up to 50 percent

Products:
DuraForce® pumps and piston motors; Pro-FX® electronic controls and software; conveyor and fan functions; X20, 420 Series open loop piston with gear pump; and hydraulic integrated circuit (HIC) manifolds

Location:
Union Gap, Washington, U.S.

Challenge:
Quickly develop a hydraulic solution for Blueline's new blueberry harvester system, which needed enhanced operability and reduced wasted crop during harvesting.

Solution:
Eaton worked with its distributor, Spencer Fluid Power, and Blueline to develop a complete hydraulic system with enhanced driver ergonomics for the company's new blueberry harvesting machine.

Results:
Eaton and Spencer Fluid Power developed a hydraulic system for a Blueline machine that reduced harvest losses by up to 50 percent on its proof of concept test.

"Reducing harvest loss by up to 50 percent in the proof of concept test gives our customers confidence they can expect a return on their investment soon after purchasing the machine," said Gregg Marrs, President, Blueline Mfg. Company.

Background

Blueline Mfg. Company began in 1958 as Groenig's machine shop located in the heart of Washington State's Yakima Valley apple industry. Blueline has gained a reputation as a creative manufacturer of innovative farm equipment.

Today, Blueline has embraced a mission to be the leader in design and development of farm machinery that adds efficiency and additional profit to its growers' operations. Looking to enhance its blueberry harvester's hydraulic machinery, Blueline turned to Eaton's innovative products and technologies to enhance its line of blueberry harvesters.

Challenges

Working to fulfill the company's mission of building efficient equipment, Blueline turned to Eaton when developing a new blueberry harvester. Working through a compressed timeline from development to build, Eaton was challenged to design a complete hydraulic solution that would improve driver ergonomics and reduce the amount of blueberries that drop on the ground – thus creating waste – during harvest.

To meet grower needs, the machine also required leveling and traction control solutions to keep it level and moving forward across varied terrain and growing conditions.

Powering Business Worldwide

Solution

Eaton worked with Spencer Fluid Power and Blueline to develop an integrated hydraulic system for a new blueberry harvesting machine with enhanced driver ergonomics. Eaton's Application and Commercial Engineering (ACE) team was on-site at Blueline for initial evaluation and design specification. The team partnered with Spencer Fluid Power to quickly design a hydraulic system featuring DuraForce pumps and piston motors for propulsion, Eaton's X20, 420 Series open loop piston with gear pump, and hydraulic integrated circuit (HIC) manifolds used to control steering, conveyor and fan functions.

Additionally, Eaton's Pro-FX electronic controls and software, including HFX programmable controllers and VFX programmable displays, allow harvester operators to take control of every system function from one control screen, removing the challenges of manually operating harvest machinery.

Eaton and its ACE team also implemented a traction control, four-wheel drive system for the machine, allowing operators to maintain proper grip through inclement conditions. To ensure the harvesting machine remains level while operating, Eaton incorporated an auto-leveling feature, which helps minimize losses during harvest.

After the machine was built and test operations began, Eaton and Spencer Fluid Power went into the field and made on-site adjustments to accommodate the machine's increased loading.

Results

"Eaton and Spencer Fluid Power developed the hydraulic system for a fully electronic Blueline machine that reduced harvest losses by up to 50 percent on its proof of concept test," said Gregg Marrs, President, Blueline Mfg. Company. "Reducing harvest loss by as much as 50 percent in the proof of concept test gives our customers confidence they can expect a return on their investment soon after purchasing the machine,"

Fully equipped with Pro-FX electronic controls and software, Blueline blueberry harvester operators can control all machine functions from the driver's seat, providing enhanced driver ergonomics. The machine includes electronic steering and a fully consolidated hydraulic system with fan controls that are also operable from the touch of one screen.

"Innovative products like Eaton's Pro-FX electronic controls and software provided the technology to develop a fully integrated hydraulic system for Blueline's latest harvesting solution," said Patrick Nolan, area sales manager, Eaton. "With the strength of our X20 and DuraForce product offerings, our Eaton team was able to respond quickly and provide a hydraulic system that delivers immediate results to Blueline and its grower customers."

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