

Process

We began with a variable speed electric motor and row unit stand.

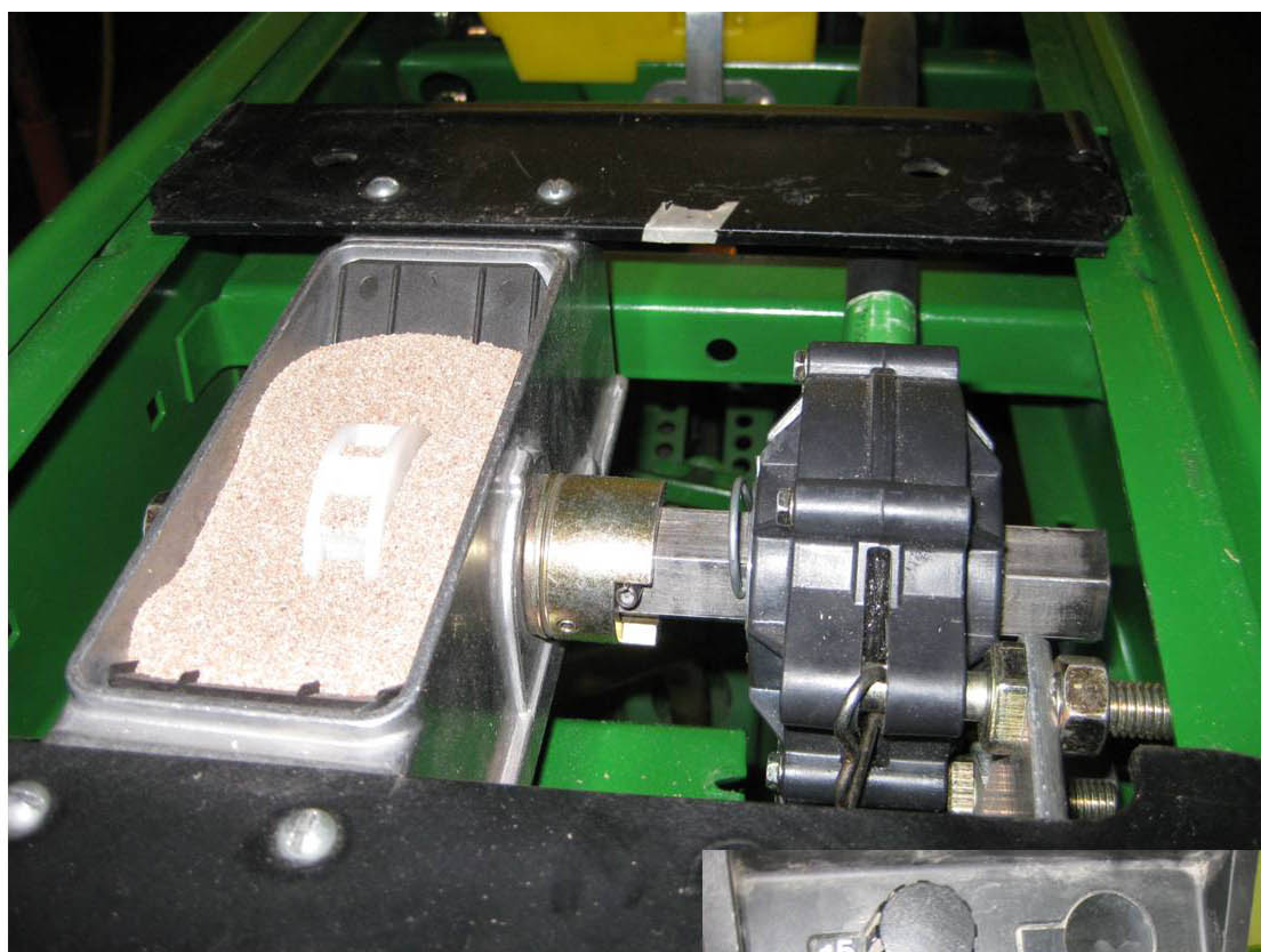


Gilsinger Implement Company provided us with a John Deere Max Emerge row unit, which was formerly a display unit. The row unit was several years old and missing many parts, which we had to order.



After many hours of rehabilitation, the row unit was put back together and fitted with a Pro-Shaft™ seed meter drive.

The most difficult, and important, part of the project was designing and implementing the Pro-Shaft™ Insecticide. The picture to the right depicts the design we came up with. The Pro-Shaft connects in a similar fashion to the hex drive in the front, but into the insecticide drive. We drilled holes and inserted a roll pin to drive the insecticide meter. A clip is inserted in either side of the gear case to engage or disengage the insecticide.



Testing

After the design was complete, testing was conducted (using chemical-free granules) to ensure ratios were similar to the chain drive insecticide. The insecticide metered at the same rate the chain drive insecticide. The meter was calibrated for 5lb of Force® per acre.



Pro-Shaft Insecticide

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Problem Statement

Farmers in Northern Indiana, serviced by Gilsinger Implement Company, lack desired options for granular insecticide from their Pro-Shaft™ John Deere planters. John Deere does not offer a granular insecticide option on Pro-Shaft™ planters from the factory.

Solution

Design, develop, test, analyze, and refine a system to implement the application of granular insecticide on a Pro-Shaft™ row unit using mostly existing parts, but in a newly connected design.

Deliverables

- Complete row unit with Pro-Shaft™ driven seed meter and insecticide
- Cost analysis for conversion to Pro-Shaft™ insecticide

Alternative Solutions

Pro-Shaft™ insecticide is designed to be an alternative to the AMVAC SmartBox® and liquid insecticide systems.

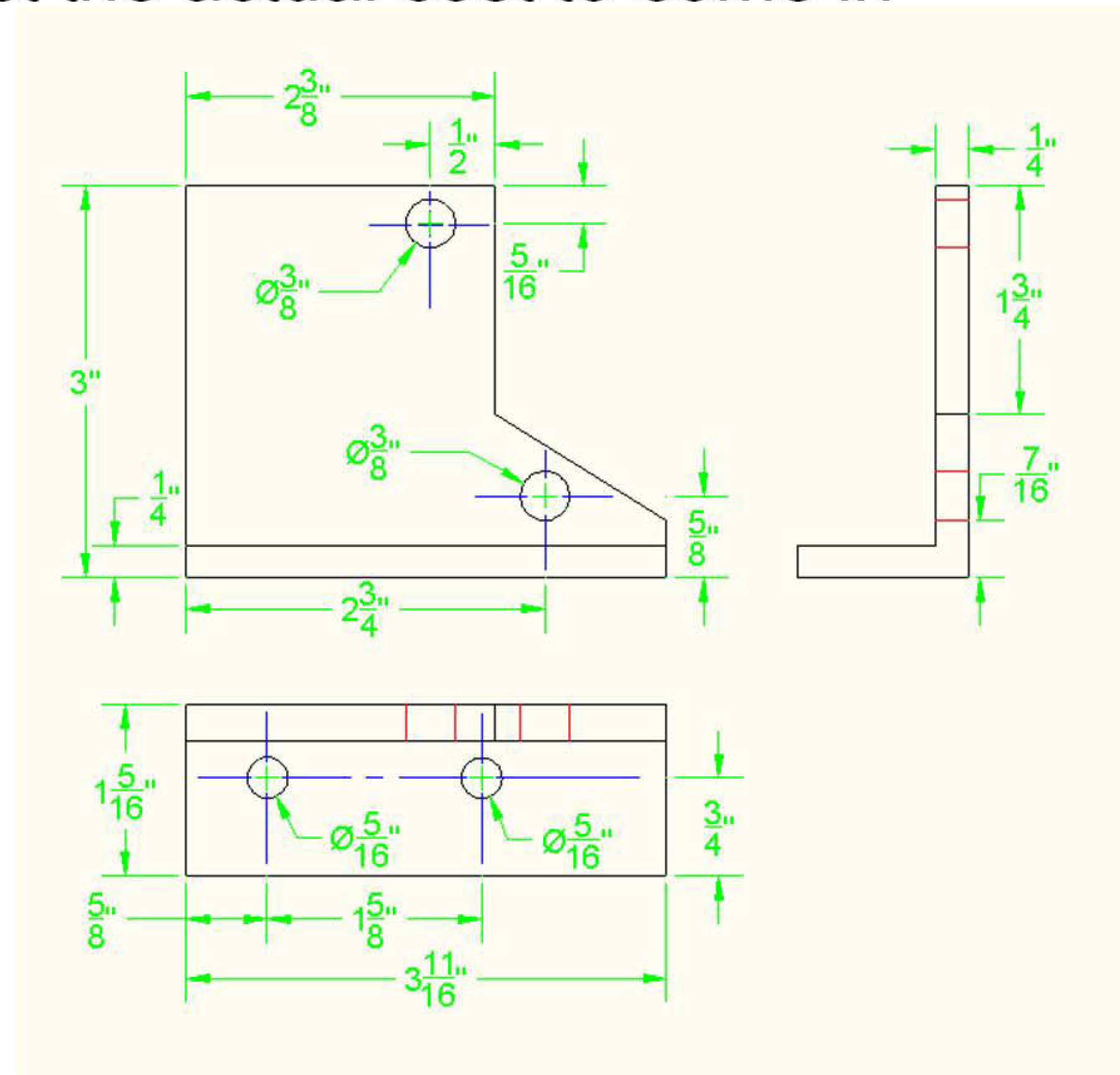
Economics and Costs

For farmers in production agriculture, having the right planting equipment can make a huge difference in their bottom line. Pro-Shaft™ Insecticide will allow farmers to take advantage of the simplicity of the Pro-Shaft™ driven seed meters while retaining a granular insecticide option.

The total budget for the project was \$2,300, of which we spent \$1,800. When subtracting the costs of refurbishing the row unit, the cost of adding Pro-Shaft™ driven insecticide was \$587. However, this is purchasing everything as individual parts, no bundles of any kind. With bundling and refinement of the final product, we expect the actual cost to come in around \$450.

Design

The design of the Pro-Shaft™ insecticide was undertaken with the idea of using as many existing parts from John Deere as possible. This was achieved by using parts provided entirely from Gilsinger's, with the exception of the bracket holding the Pro-Shaft™ drive on the insecticide end. The bracket is pictured in the AutoCAD drawing on the right.



Special Thanks to...



Edd's Supplies Inc., Jeff Osbourne
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