IMPLEMENT GUIDANCE

ATODER ACTION



GPS IMPLEMENT GUIDANCE

The advent of the global positioning system (GPS) ushered in a new era in agricultural production. Precision seed and nutrient placement enabled by GPS led to modern tillage techniques such as strip-till, which have had a profound effect on crop health and yield.

Orthman brings all the benefits of sub-inch accuracy to drawn and mounted implements with two unique, direct guidance systems, the GPS Tracker® IV and the flexible, GPS Shadow Tracker®. Don't assume your tractor's GPS alone is enough. Let Orthman help you upgrade your implements now to enjoy the benefits of true precision agriculture long into the future.

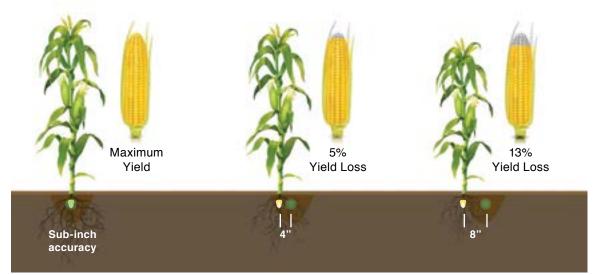
BENEFITS OF SUB-INCH IMPLEMENT GUIDANCE

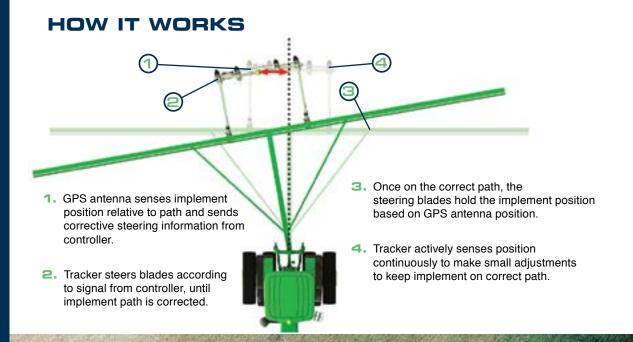
- Year over year repeatability of fertilizer and seeding applications
- Helps eliminate crop damage associated
 with implement drift
- Reduce inputs by reducing seeding and chemical overlap
- Reduce operator fatigue, labor and fuel costs

WHY IS IMPLEMENT GUIDANCE IMPORTANT?

During a five-year study, implement guidance was shown to dramatically improve crop yields by precisely placing the seed and fertilizer closer to each other in separate field passes.

The study showed yields averaged 13% higher when seed and fertilizer were placed with subinch accuracy compared to the crop planted at an 8" offset, and 5% higher when compared to the 4" offset.

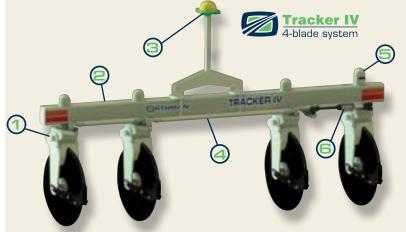




TRACKER IV IMPLEMENT GUIDANCE



Developed to provide industry-leading precision guidance for drawn and 3-point mounted row crop machines, Orthman's Tracker IV system easily mounts on the implement and is fully compatible with John Deere® and Trimble® guidance systems. Available with 2, 3, 4 or 6 ground-engaging steering blades, the Tracker IV design features a single hydraulic cylinder that pivots all the blades simultaneously for consistent implement-tracking correction. The Tracker IV is available with 20" to 40" row spacing to fit your operation.



- 1. Shear bolt blade protection offers defense against underground obstacles.
- 2. Heavy-duty frame made from 3/8" wall, 5x7 high-strength steel tubing.
- **3.** GPS antenna sends implement position information to controller.
- 4. Blade connecting tie rods ensure exact steering angle.
- **5.** Fully-protected position sensor housing for harsh operating conditions.
- **6.** Hydraulic steering cylinder precisely controls blade movement.

Add precision to popular drawn and mounted equipment with the Orthman Tracker IV.



Deere-Orthman DR planters



Orthman mounted 1tRIPr, Cultivators, and Bed Listers



John Deere 24 Row 30" 1770NT & 1775NT CCS Planters



Case 1250 & 1255 24 Row 30" Central Fill Planters

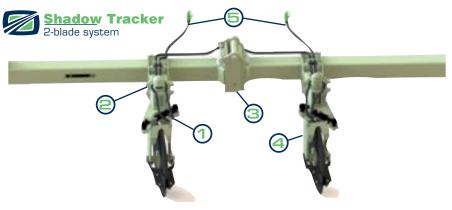
SHADOW TRACKER IMPLEMENT GUIDANCE



Based on the same operating principles as the Tracker IV, the Shadow Tracker includes a single cylinder and blade that can be mounted in combinations of up to 4-blade systems depending on the size of the implement and field terrain.

Specifically designed for the planting operation, the Shadow Tracker system consists of a GPS mast mounted to the toolbar, with hydraulic and electrical lines connecting the tractor and individual units. One of the Shadow units is designated as the master unit, sending steering information to the controller. The other Shadow units (if any) are hydraulically controlled by the master to steer at the appropriate angle.

The Shadow's patented, ground-engaging steering blades offer precision implement guidance even with today's ever-larger, drawn planters in rolling terrain. Orthman's extensive research shows definite yield increases based on seed and nutrient placement, requiring accurate and reliable implement position.



- 1. Hydraulic steering cylinder precisely controls blade movement.
- 2. Fully protected position sensor housing for harsh conditions.
- **3.** Hydraulic connection between units allows mounting on folding & floating wings.
- **4.** Shear bolt blade protection for underground obstructions.
- **5.** Simple hookup to single tractor SCV.



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