



RAVEN IMPLEMENT STEERING

AS ACCURATE AS POSSIBLE

RAVEN

HAVE COMPLETE CONFIDENCE IN YOUR IMPLEMENT, EVEN IN DIFFICULT TERRAIN

- Align your tractor and implement on the same guidance line
- Increase productivity in repeated field operations, performed with unparalleled accuracy
- Reduce crop damage in high-quality vegetables and organic crops

COMPLETE PACKAGE SOLUTION WITH A LEGACY OF PERFORMANCE

- The only hardware-plus-software solution from the leader in high accuracy steering
- Neat, streamlined construction
- The most precise performance through varying soil conditions, uneven loads, or hilly terrain
- Dependable solution eliminates crop damage caused by steering errors or narrow row spacing

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HELPING FARMERS FEED THE WORLD



RAVEN STEERING & GUIDANCE



RAVEN CR12™

CR12 offers an extensive field planning feature, allowing the user to define AB-lines and reference lines of the field boundary. The user can then setup the complete field, including multiple headlands, spray tracks, greening zones and tracks with different working widths.

RS1™ ANTENNAS

RS1 is a fully scalable GPS solution that combines autosteer, GPS, and Slingshot® into one intuitive, easy-to-use unit. Incredible accuracy at both high and low speeds with quick line acquire improves efficiency and gives you the power to cover more acres in a day.

Best-in-class diagnostics gather machine performance data while you work, alerting Raven of issues and connecting you to support as you need it. The unit is designed with a simple set up and integrated help guides, enhanced further by Slingshot - providing remote support, file transfer, OTA software updates and fleet management and logistics.

HYDRAULIC INSTALLATION OR STEER READY MACHINES

Raven's exclusive hydraulic valve can be retrofitted to almost any machine - hydraulic block (manifold) with load sense as well as with open center systems. This enables you to equip all machines with hydraulic steering via GPS steering.

GPS / GLONASS

Our GPS systems have access to both the GPS and the GLONASS satellite as standard and at no extra charge. This largely minimizes signal failures under difficult conditions such as near buildings or forest edges.

RTK CORRECTION SIGNAL

The RTK correction signal can be obtained from various providers via mobile radio. Our integrated cellular modem Slingshot has access to both the 2G, 3G and 4G signals. The networks can be selected both automatically and manually. Together with two high-quality external cellular antennas, this ensures optimal data transmission.





RAVEN IMPLEMENT STEERING

IMPLEMENT CONTROL

Changing ground conditions, uneven loads or hilly terrain can have a major impact on the machine position. This cannot be corrected by tractor steering, especially in row crops. Tractor steering controls the tractor, but the tractor is not fully controlling the line up of the implement. Especially in vegetables the importance of repeatability is valuable.

Implement steering allows repetitive work to be performed with unmatched precision, offering offering better accuracy between the rows, in high-quality vegetable cultivation and organic cultivation.

Planting and sowing are carried out with RTK precision on tractor and implement for the best accuracy. This will give the base for all the following cultivations till harvest. Repeatable cultivations like harrowing, hoeing chopping, hilling dams, interrow spraying will be easier due to perfection. Which result in less weeds, even product size, less crop damage and last but not least less valuable manual labour input.

CR12 Implement Steering is operated with a central CR12 display, while tractor and implement position are positioned with two separate RTK-GPS antennas. Since the implement moves indepently from tractor, both tractor and implement have their own gyroscope (slope compensation module).

The tractor has it own guidance, preferable with hydraulic steering. For the implement several steering options are available. SideShift steering, rear wheel steering, disc coulters, drawbar steering or a moveble hitch are the dirreferent options in implement steering. For most implements there is a decent steering solution fo implement guidance.

Implement Steering is suitable for all types of machines. Raven offers the perfect solution for attachments such as heap dam formers, precision seed drills or hoes, but also for trailed potatoes or (offset) steerable harvesting machines.



RAVEN IMPLEMENT STEERING

DISC STEERING

Raven has over a decade of experience with disc steering and can confidently call itself a specialist in the field. The entire disc steering system has been tested intensively.

Depending on the size and type of implement, at least one disc coulters is installed behind the implement. For small drills and other light implements, a single disc is often sufficient. Large, heavy-weight machines require at least two steering disks that are connected to each other by a rod. In the case of folding devices, the rod is replaced by two interconnected hydraulic cylinders. Raven's disc system prevents the device from slipping to the side. Because the tractor and implement are no longer offset, but run in one lane, recurring operations can be exactly parallel over and over again.

STANDARD FRAME

Our adapter frame has an adjustable track width;

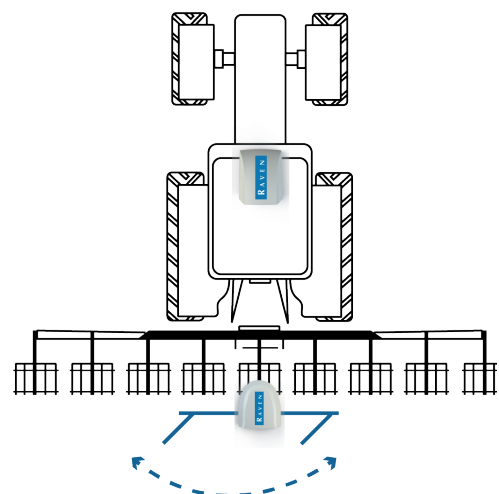
- 1.50m
- 1.80m
- 2.00m
- 2.25m

The frame has a top link, antenna holder and holds the hydraulics and steering modules. The optional frame is constructed with two brackets which will fit on your forklift or loader. With

that the frame can be interchanged between several machines. For example the season starts with seeding vegetables and after seeding the frame with complete guidance can be interchanged over to an hoe. Disconnect the ISO-cable, hydraulic hoses, undo a few bolts and drive it over with the forklift.

WITH OR WITHOUT STONE PROTECTION?

By adding stone protection to the solution, the implement is insured to work in any field and circumstances. This add-on will help the discs to go as deep as possible through the soil, for the best possible accuracy, but prevents the implement to lift where it bumps into a stone.

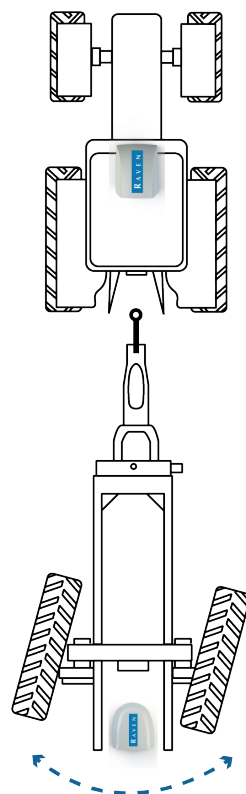




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STEERING ON REAR WHEELS

For trailed type machines with steered axles, integrated implement guidance is a perfect solution. With GPS steering at the rear GPS can control the machine perfectly because it's an original guidance which has a good control on the positioning of the machine. Raven is able to connect with existing hardware on most machines.

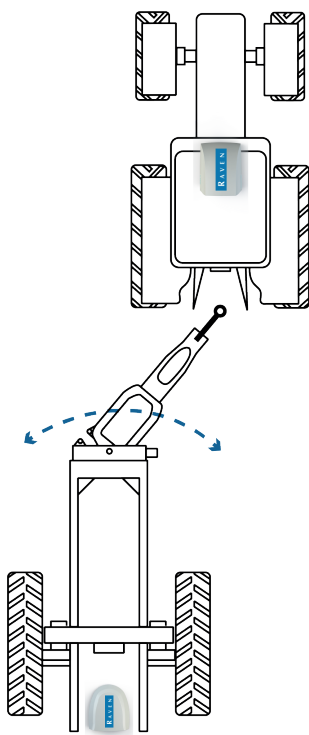




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DRAWBAR STEERING

If a machine (e.g. transplanter) already has a drawbar steering, we can seamlessly mount our steering systems on the existing hydraulic cylinders.





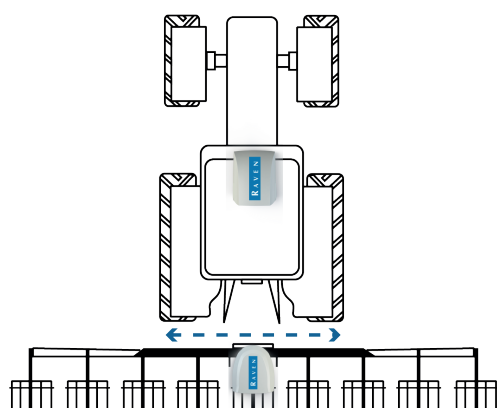
RAVEN IMPLEMENT STEERING

SIDESHIFT STEERING

Raven's SideShift steering is a hydraulic cylinder between tractor and implement. The second GPS antenna is mounted on the implement and detects its position. Based on this position the cylinder will be adjusted to the left or right.

ATTACH DIRECTLY TO THE TOOL

The cylinder can be attached directly to the implement. This way, little space is lost and the machine can still be mounted as close to the three-point.



STANDARD RAVEN SIDESHIFT STEERING

Raven also has a SideShift device frame that is produced in series. This frame has CAT.3 balls mounted and can be delivered as far as CAT.2 distance (+/- 87cm, standard) and CAT.3 distance (+ / 100cm, XL). The cylinder is 100cm wide. The cylinder is attached to the frame, the frame is mounted on the tractor, and the individual machines are guided behind it.

With Raven's exclusive frame,, the distance from balls to hooks is only 30cm. There is minimal loss of load capacity and lifting power.

CYLINDER OPTIONS

- 4.5 tons
- 8 tons

SIDESHIFT STEERING OPTIONS

- CAT.2 (87cm)
- CAT.3 (100cm)





RAVEN IMPLEMENT STEERING

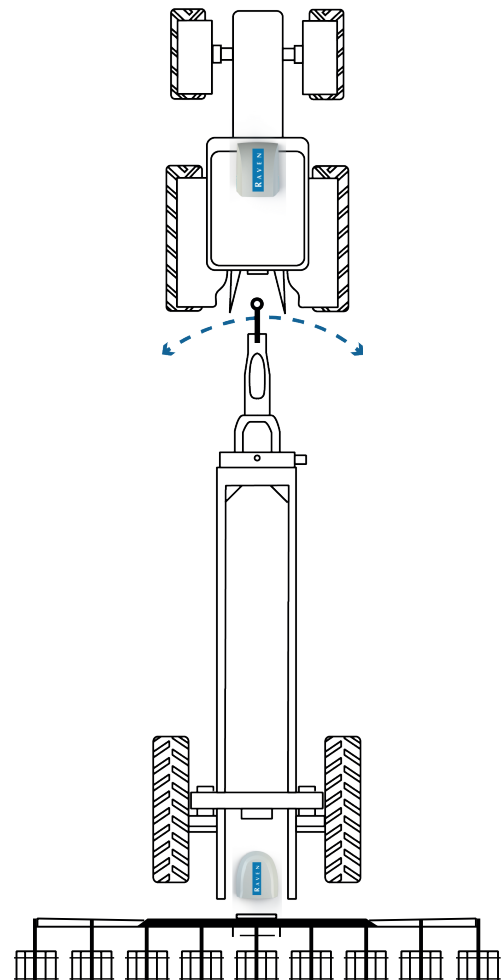
MOVEABLE HITCH STEERING

Movable Hitch Steering systems such as hydraulic couplings give the operator more control over the position of the device and drift, even when the device moves in the opposite direction of the pulling tractor. Movable Hitch Steering offers the flexibility to adapt the control system for towbars to your active device control.

Double cylinders adapt in both directions to prevent your equipment from getting into your crop, causing costly damage. You get up to 26 inches of offline correction in both directions to stay on the right track.

BENEFITS:

- Achieve an accuracy of less than 2.5 cm
- Practically eliminate crop damage
- Reduce overlaps with chemicals, seeds, or fertilizers
- Precise repeatability year after year with seeds and fertilizer strips
- Reduce labor and fuel costs
- Compensate for the device's drift on a slope
- Experience higher crop quality and higher yields
- Run mismatched





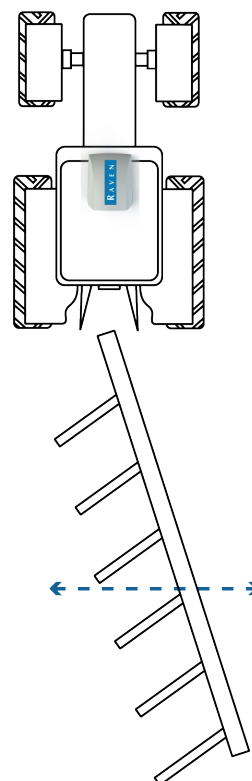
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PLOUGH STEERING

A straight, clean plough furrow is the ideal preparation for the coming season. A fine seed bed offers all plants the best emergence conditions at the same time. A level seedbed promotes a homogeneous field emergence, which makes weed control easier and more successful, especially when chopping for organic farming.

BENEFITS:

- No longer have to fight to pull the plough through changing soils and hills
- No longer have to drive through the field to straighten the furrow
- AutoPlough automatically makes the plough wider and narrower in all positions to compensate for deviations from the straight furrow. by maintaining a uniform working depth, you save fuel and make a straight, clean furrow.
- AutoPlough is operated via the user-friendly terminal CR7 or CR12. Settings such as working width, steering speed and impact limits can be adjusted directly.



R A V E N

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