Product Guide

RAVEN

PRECISION

Since 1978, Raven has helped create, define and redefine precision agriculture.

We continue today to bring groundbreaking new products to growers and ag retailers around the world.

The purpose? To put you in control. To help you work smarter, reduce input costs and farm more efficiently.

And, ultimately, to increase your yield and profitability.

SIMPLIFIED

You shouldn't need a Ph.D. to use your own farm equipment.

That's why Raven products are easy to operate. They're designed to work with other Raven products. And with other technology brands.

Because of Raven's simplicity and reliability, it's the precision ag brand most preferred by farm machinery and equipment manufacturers.

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TAKE COMMAND.

It's not about keeping up. It's about getting ahead. And it's about putting Raven precision ag technology to work for you, increasing your output and giving you greater control over your environment.

Select a product that meets your specific needs. Or build a precision farming system perfect for your operation, with:

FIELD COMPUTERS
The in-cab "brains," with easy-to-read displays, intuitive menus and simple operation.

SLINGSHOT®
Add accuracy, save time and get Internet connectivity in the cab with Slingshot.

HARVEST CONTROLS
Monitor in real-time along with data recording and yield calculations in the cab while you harvest.

GUIDANCE & STEERING
Improve accuracy and reduce fatigue when you're in the field.

APPLICATION CONTROLS
Apply fertilizer and chemicals only where you really need them.

BOOM CONTROLS
Improve efficiency during spraying operations by managing boom height and section controls.

PLANTER & SEEDER CONTROLS
Accurate seeding and planting give you accuracy, input savings and total efficiency.

TECHNICAL SUPPORT
If you need technical support, we're all over it, with:
- The ravenhelp.com website, created to give you immediate access to technical information
- Videos on the Raven YouTube channel www.youtube.com/user/precisionsimplified.
- Raven's network of dealers and distributors

VIPER® 4

The Viper 4 is a powerful, fourth generation Viper field computer. Yet it's also the first in a new generation of field computers powered by the new Raven Operating Software, which integrates Raven's full line of products into one connected platform.

Designed to work with equipment of any brand, the Viper 4 is easy to use, requiring fewer touches and providing greater efficiency. It's a highly advanced field computer with intuitive controls, improved ease of use and extraordinary data management capabilities. And for your operation, this means increased efficiency, productivity and profitability.

UTILIZE VIPER 4 TO ITS FULL POTENTIAL
WITH THESE ENHANCEMENTS:

SmarTrax™ MD	SmarTrax™/ SmarTrax™ RTK	AutoBoom®	AccuBoom™	Sidekick Pro™	AccuFlow™	600 Rec...

FEATURES INCLUDE:

- Customization by user and machine

- Horizontal or vertical orientation

- Sleek design with 12.1" responsive touchscreen and intuitive, tablet-like interface and state-of-the-art rugged magnesium alloy enclosure

- Dustproof for tough environments

- 4 camera inputs for monitoring bin levels, blind spots, roadway operation and more

- Integrated, fully scalable GPS receiver, including Slingshot® GS, Satellite GS and RTK

- Customizable user interface

- Set up machine and product profiles

- ISOBUS compatible

- Wireless over-the-air software updates

- VT with task controller capabilities

- On-screen implement location with section status

RAVEN OPERATING SOFTWARE

Raven Operating Software (ROS) gives operators the ability to customize screen layouts to fit your application and other user preferences. Grower, farm, and field file structures help ensure you get the data you need in an organized and meaningful manner.

Machine and product profiles offer even further customization, making the Viper 4 the perfect match for each unique operation and user.

SLINGSHOT® READY

Powered by Raven Operating Software and a high-speed processor, Viper 4 harnesses the power of Slingshot for outstanding data management functionality and the ability to wirelessly update your field computer software. You get powerful tools for gathering, tracking and reporting. Getting the data you need, organizing it and turning it into meaningful information is faster and easier. And Slingshot gives you access to live remote support from Raven's team of experts.

OS™
eiver

Hawkeye® Nozzle
Control System

ISOBUS and VT

Slingshot®

Switch Pro™

ENVIZIO PRO™
ENVIZIO PRO II®
ENVIZIO PRO XL™

Ready to take a giant step forward in farming? Raven's Envizio Pro series of multi-function field computers enables you to control, simplify and improve virtually every phase of your operation.

With a single field computer, you enjoy increased efficiency, cost savings and reduced fatigue. Envizio Pro field computers are also Slingshot®-ready, which means you have access to Raven's remote live support team.

EASY TO USE AND FEATURES MULTI-PRODUCT CONTROL WITH VRA, PLUS:

- Brilliant color, non-glare touch screen display

- All season capability for planting, spraying, spreading, harvesting, and tilling

- Get simple and advanced mapping, data and application reports

- Fully scalable GPS options, including Slingshot GS, Satellite GS and RTK

- Multiple language support

- Remote support

UTILIZE THE ENVIZIO PRO SERIES TO ITS FULL POTENTIAL WITH THESE ENHANCEMENTS:

| SmarTrax™ MD | SmarTrax™/ SmarTrax™ RTK | AutoBoom® | AccuBoom™ | Sidekick Pro™ | Application Controls | AccuB |

slingshot®

SLINGSHOT® READY

Use Slingshot with any of the Envizio Pro field computers to turbo-charge your precision ag equipment and software. You get unrivaled high-speed wireless connectivity, cellular-enabled technology, uninterrupted signals/data transfer, industry-leading wireless RTK corrections and vehicle tracking. And Slingshot gives you access to live remote support from Raven's team of experts.

Flow™   OmniRow®   OmniSeed™   Switch Pro™   SmartYield™ Pro   Slingshot®

SLINGSHOT®

Raven has propelled precision ag to an entirely new level with this innovative product. Slingshot combines wireless connectivity with robust online tools and top-shelf precision ag hardware to upgrade your level of control and efficiency.

Software plays a big role in modern agriculture. Slingshot partners with several agricultural software companies to bring you a complete solution. The Slingshot API allows other software solutions to securely access data in Slingshot so that you can have the data you need in the program you need it. Slingshot is about fitting into the way you do business.

Slingshot is constantly improving and always up to date with support for the latest Raven products. We're continually adding new functionality and features to help you get the most out of your hardware. In addition to the features and functionality available directly through the Slingshot web portal, Slingshot also lets you utilize the benefits of connectivity and cloud-based solutions in the software package of your choice. Slingshot's open platform means you can integrate the functionality of Slingshot directly into the applications that you already use to manage your business and operations. Slingshot works in a culture of collaboration with leading agriculture software and application providers.

SIRRUS®
BY SST SOFTWARE

Slingshot integrates seamlessly with the Sirrus app on your iPad. Sirrus is the precision ag app that allows you to create field boundaries, soil sample, scout your crops, record field operations, create recommendations, check weather conditions and graph rainfall estimates per field. Download the app for free from the App Store. For more information go to www.sstsoftware.com/products-services/sirrus/.

UTILIZE SLINGSHOT WITH THE
FOLLOWING FIELD COMPUTERS:

Viper® 4   Viper Pro™   Envizio Pro™   Enviz

SLINGSHOT RTK

The Slingshot Field Hub allows you to access Slingshot's advanced RTK correction signals, or those provided by third-party providers, such as CORS networks. Slingshot's cellular-based RTK enables you to operate without worrying about line of site limitations characteristic of radio-based RTK. You can provide RTK coverage for up to 1.8 million acres with a single Slingshot Base Station.

SLINGSHOT LINK™

Slingshot Link is a groundbreaking set of online support tools that simplify management of field-deployed precision ag hardware. Slingshot Link allows Raven Operating Software (ROS) updates to be downloaded wirelessly to compatible Viper® 4 field computers.
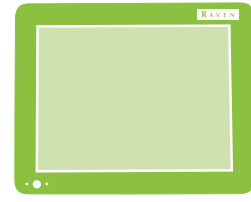
SLINGSHOT ONLINE

Store your job data from Raven field computers in your secure Slingshot database that you can access anytime, anywhere with a simple Web browser. Observe your fleet and manage operations with any laptop, desktop or mobile computer from anywhere in the world. With a free Slingshot account, you can:

- Track equipment locations
- Dispatch prescription maps
- Monitor, collect, and analyze job data from Raven field computers

SLINGSHOT GS

Slingshot GS is a cellular-delivered correction service with decimeter accuracy, without the need for a local reference station via a one-time unlock. You can leverage your existing Slingshot Field Hub and compatible Raven GPS hardware to access Slingshot GS.

REMOTE SUPPORT

With Slingshot, you get real-time, in-field remote support from a PC or tablet device. You don't have to leave the cab — we're able to see your screen, diagnose, fix or walk you through the issue.

SLINGSHOT FIELD HUB 2.0

Get up to 4G LTE speeds on major phone networks in North America and around the world. Field Hub 2.0 serves up high-speed Internet on your field computers. You can also connect devices like phones and tablet computers to Wi-Fi enabled versions of the Field Hub.

Field Hub 2.0 Wi-Fi enabled version

FIELD COMPUTER	SLINGSHOT GS	SLINGSHOT RTK	REMOTE SUPPORT	WIRELESS SOFTWARE UPDATES	WIRELESS FILE TRANSFER	FIELD HUB 1.0	FIELD HUB 2.0
VIPER® 4	X	X	X	X	X	X	X
VIPER PRO™			X		X	X	
ENVIZIO PRO™ SERIES	X	X	X		X	X	

Envizio Pro II® Envizio Pro XL™ Cruizer II™/Cruizer II™ RTK

slingshot

SMARTYIELD™ PRO

Dealers installing their first SmartYield™ Pro systems were amazed at the ease and speed at which an installation could be completed. The system was extensively tested on over 40,000 acres of all major crops with accuracies often exceeding 97%.

Producers who tested SmartYield™ Pro side by side against factory installed force-plate technology consistently commented on ease of calibration and spatial accuracy of SmartYield™ Pro. Data analysis post-harvest is validating these comments with most customers preferring to use their Raven yield data vs the yield data generated by their factory installed equipment.
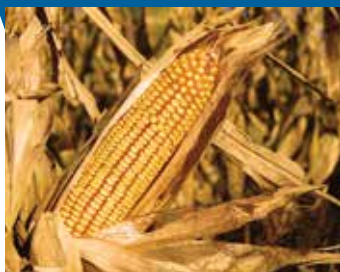
KEY BENEFITS

- Non-contact optical sensors increase yield data accuracy, provide simple calibration and allow for faster start-up
- Real-time moisture sensing
- Slingshot ready for wireless data transfer

SMARTYIELD PRO IS COMPATIBLE WITH THE FOLLOWING:

Envizio Pro™   Envizio Pro II®   Envizio Pro XL™   Slingshot®

FEATURES INCLUDE:

- Real-time display of bushels per acre—both wet and dry, along with moisture

- User configurable legends

- Non-contact optical sensor with hillside compensation ensures more accurate yield data, simpler calibration and faster start-up

- Pre-set combine calibration numbers

- AccuHeader™ automatically shuts off header sections over already harvested areas for proper yield calculations

slingshot.

SLINGSHOT® READY

When you use the revolutionary Slingshot RTK/Online Service with SmartYield, you have access to seamless data transfer capabilities. Real-time communications and data sharing with any computer anywhere ensure better decisions and more productivity in the field. And Slingshot gives you access to live remote support from Raven's team of experts.

CRUIZER II™

New to precision technology? Check out the Cruizer II which can make your life easier and less stressful. You get sophisticated guidance technology that's simple and easy to use, with your choice of four field patterns.

Weather resistant versions are available for use in open cabs.

FEATURES INCLUDE:

- Color touch-screen display, 20+ languages

- Greater accuracy and efficiency in a variety of operations – from tillage and seeding to spraying and harvesting

- Cost-efficient RTK at its best with Cruizer II RTK

- Add automatic sectional shut-off for planters and sprayers, auto steer, and assisted steering

- Bird's-eye view and downfield 3D perspective for checking coverage and keeping you on line

- Load/save A-B lines and jobs

- Record field boundaries, coverage, applied acres and field markers

- SHP (Shapefile) files, KML and bitmap files for enhanced record-keeping

CRUIZER II/CRUIZER II RTK CAN BE FULLY UTILIZED BY ADDING:

SmarTrax™ MD   SmarTrax™/ SmarTrax™ RTK   AutoBoom®   Slingshot®

Cruizer II and Cruizer II RTK take minutes to install easily. Cruizer II RTK is compatible with Slingshot RTK correction signals.

SmarTrax™ MD is a simple-to-install mechanical drive steering system that seamlessly transfers across your fleet of vehicles, including multiple tractors, combines, windrowers and more.
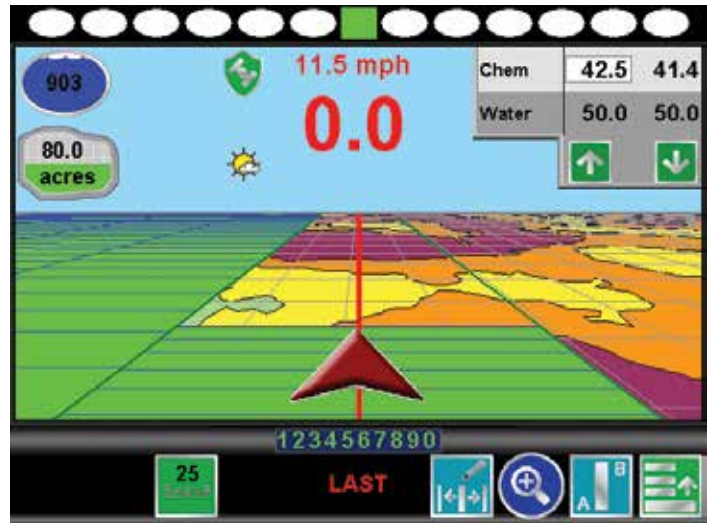
SMARTRAX™
SMARTRAX™ RTK

The more acres you farm, the more you'll appreciate SmarTrax and SmarTrax RTK assisted steering.
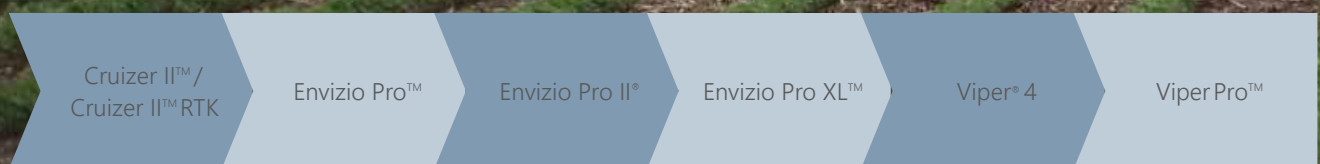
This unique hydraulic-assisted steering system enhances high speed operation by offering faster line acquisition, correction for changes in soil condition and implement pull. SmarTrax and SmarTrax RTK offer across-the-board GPS compatibility, 3D terrain compensation and automatic system calibration, along with:

- RTK accuracy and repeatability from year to year

- Best-in-class operating speeds for covering more ground faster

- Compatible with many steer-ready machines

- Multiple kits available to fit most modern tractor types

- Slingshot®-compatible RTK correction signals

GPS CORRECTION SIGNAL	PASS-TO-PASS ACCURACY	RAVEN ASSISTED STEERING
RTK (REAL TIME KENEMATICS)	SUB-INCH	SMARTRAX RTK
SATELLITE GS	2-4 INCHES	SMARTRAX
SLINGSHOT GS	5-6 INCHES	SMARTRAX
WAAS/EGNOS	6-8 INCHES	SMARTRAX

SMARTRAX / SMARTRAX RTK AND SMARTRAX MD
RUN FLAWLESSLY WITH FOLLOWING:

Cruizer II™ / Cruizer II™ RTK ▸ Envizio Pro™ ▸ Envizio Pro II® ▸ Envizio Pro XL™ ▸ Viper® 4 ▸ Viper Pro™
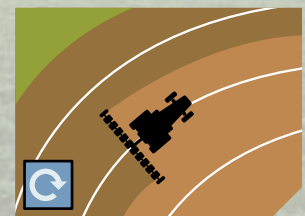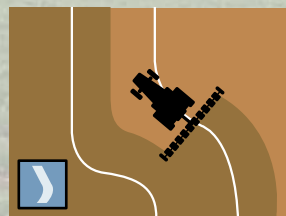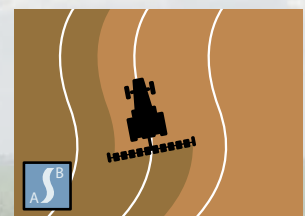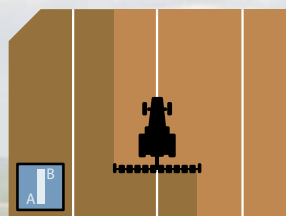
SMARTRAX™ MD

Raven's new, simple-to-install mechanical drive steering system harnesses the newest technologies to keep you on track and on line all day long. You'll benefit from added torque for faster operating speeds, increased accuracy and reduced noise. Transfer SmarTrax MD between multiple machines, including combines, tractors and more.

BENEFITS TO YOU INCLUDE:

- RTK capable

- High operating speeds

- High torque for best in class line aquire and online performance

- Simple to install and move between machines

- 3D terrain compensation

- Quiet operation

SmarTrax offers 3D terrain compensation for maximum accuracy and repeatability, automatically adjusting for tractor roll, pitch, and yaw.

SmarTrax and SmarTrax RTK are compatible with four field patterns for faster line acquisition, higher operating speeds and more relaxed driving.

SBG IMPLEMENT STEERING

SBGUIDANCE AUTO

Take the challenge out of implement steering. SBGuidance Auto steers your tractor or implement seamlessly and with unmatched precision via RTK-DGPS. This unique assisted steering system maintains perfect row spacing, while offering next pass reminders and adjusting the planting distance of your implement. With SBGuidance, man and machine perform optimally.

This steering system is comprised of robust SBGuidance components that have been proven under tough conditions. Compatible with brands of different sizes and colors, SBGuidance Auto integrates seamlessly between your fleet of machines.

KEY BENEFITS & COMPONENTS

- Auto steer of speeds up to 18 mph
- Effortlessly transfer between vehicles
- Steer perfectly in reverse, around curves, or with heavy front implements
- A contactless steer angle sensor ensures trouble-free and accurate measurement, even under challenging conditions
- The proven, flexible CAN bus system ensures that SBGuidance Auto is easily expandable to implement steering or SmartSwitch section control

SBG

PRECISION FARMING

Powered by **R**AVEN

DynamIQ, a newly developed 3D electronic terrain compensation module, determines its orientation with unprecedented accuracy.

The **universal hydraulic valve block** is compatible for both open-center and load-sensing hydraulic systems.

SBG IMPLEMENT STEERING

SBGUIDANCE TWIN

Varying soil conditions, uneven loads or hilly terrain can create wear and tear on your implement. In applications such as row cultivation, this can't be corrected by tractor steering alone. SBGuidance Twin enables repeated field operations to be performed with unparalleled accuracy. In high quality vegetables and organic crops, Twin offers new possibilities.

SBGuidance Twin utilizes the versatile Viper® 4 platform. The system measures the position of both the tractor and the implement through their own individual GPS antennas. Because the tractor movements often differ from the implement, both are also equipped with a unique DynamIQ terrain compensation. Various steering options of the system include side-shift steering, drawbar steering, rear wheel steering, or disc coulters.

FEATURES INCLUDE:

- High accuracy with double steering
- Easy to install and operate through one universal screen
- Eliminates cab clutter with universal side-shift adaptor
- Both GPS antennas have individual 3D terrain compensation
- Reduces operator fatigue
- Compatible on multiple machine types and brands

Twin control can be used for a variety of implements, both mounted and towing, including ridgers, planters, hoeing machines, or potato planters.

Components for downbar steering

Solid adaptor frame with side-shift

SBGUIDANCE TWIN-DISC

Take implement steering accuracy to the next level. Using various disc coulters, the system keeps both the tractor and the implement perfectly aligned and prevents drift through repeated operations. Regardless of uneven or rugged terrain, SBGuidance Twin-Disc keeps you on track.

The SBGuidance Twin-Disc system boasts several options of disc size that allow you to customize the selection that best fits your fleet. Two disc coulter systems are available for larger machines.

The SBGuidance Twin-Disc system is an industry leader in implement steering that has been extensively proven in practice. Our team specializes in producing the best quality implement steering solution for your operation, to help you farm smarter and with higher accuracy.

FEATURES INCLUDE:

- Robust disc coulters with a proven design

- High accuracy correction on slopes and hillsides

- Drift reduction

- Obstacle protection

- Ease of use and storage

SBG IMPLEMENT STEERING

SBGUIDANCE AUTOPLOUGH

Straight and smooth ploughing isn't just a pretty sight, but the best preparation for the planting season. With AutoPlough from SBGuidance, ploughing is a more efficient and less demanding job.

AutoPlough adjusts the plough width cylinder to continually keep it on the required width. The cylinder is operated by an electro-hydraulic valve. For ease of operation, additional sensors can be mounted to automate (dis)engagement of the system.

AutoPlough is a perfect complement to the SBGuidance Auto steering system. Experience has proved that machine auto steer works more effectively during spring cultivations when the driving lines are exactly the same as the plough lines. Implement deviation is significantly reduced.

AutoPlough is operated through the Viper® 4 Twin-ready field computer. During ploughing, all necessary information is shown in one screen. The system can then measure the off-track distance, process it, and adjust the plough width accordingly.

FEATURES & BENEFITS:

- Automatically widens and narrows the plough, which cancels out any deviations and provides consistent traction and ploughing depth

- Easily adjust working width, steering speed and steering boundaries on the fly

- Perfect ploughing on curves and wedges

- Compatible with SBGuidance Auto and the Viper® 4 Twin-ready field computer

- On-land ploughing solution to keep the furrow straight

- Brand independent and simple installation

HOW IT WORKS

Using your Viper® 4 field computer, both tractor and plough have their own GPS-antenna to read their position, independently controlling the tractor from the plough. The tractor is hydraulically steered by SBGuidance Auto. The plough has its own active hydraulic steering, so that the furrow will be straight. Especially on variegated soil where the plow width is less constant, the on-land ploughing solution makes it easier for the plough to steer parallel to the furrow.

SBG SMARTSWITCH

SBG SmartSwitch is an expansion that fits on the Viper® 4 Twin-ready field computer. It's the ideal assistant ensuring that every corner of your field is planted or sprayed perfectly without overlaps or skips. It's accurate. It's reliable. It makes the job easy.

SmartSwitch gives you increased efficiency with faster spraying speeds. Its features include:

- Immediately stops when driving in reverse to avoid over spraying in corners of the field

- Set an overlap percentage and overlap distance

- Decrease chemical input

- Operate up to 32 sections

- Treat headlands last, not first

- Mark out no-spray zones

SOFTWARE MODULES

SBGuidance has implement specific software solutions for special applications, as well as the possibility for future expansion of electronics or hardware.

TRIAL FIELD MODULE

Stay on track and save time. The trial field module keeps track of angled headlands, length of field plots, interval spacing, dual-axes driving paths, and spray paths.

GRID MODULE

Select a fixed grid pattern using the grid module to plant trees at the correct distance in a square or triangular grid. This module is also perfect for setting poles for fruit trees.

SMARTPROFILER - LEVELING MODULE

Well-drained fields are essential for a successful crop. SmartProfiler helps you get your fields in perfect shape in only a few steps. Record a height map, set slopes and orientation, and let the scraper take care of the rest at exactly the right depth.

CROP REGISTRATION MODULE

The full configurable crop registration module is the ideal assistant to capture detailed information on location and size of different crop varieties. Easily process and export your data to Google Earth (.kml) or spreadsheet files (.csv).
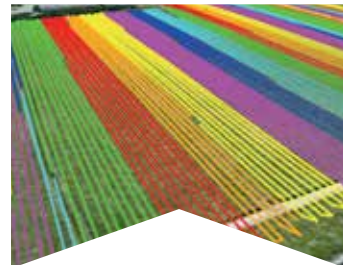
SATELLITE GS CORRECTIONS

Raven now offers Satellite GS Corrections that utilize the TerraStar network of satellites. Raven has you covered with two types of correction delivery: Satellite GS, which sends corrections via satellite, and Slingshot GS, which is delivered via cellular service.
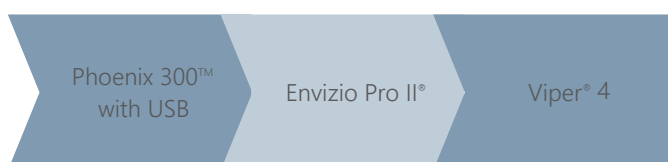
RAVEN GS CORRECTIONS

	ACCURACY	GLONASS	DELIVERY	SUBSCRIPTIONS
SBAS	SUBMETER	WITH UPGRADE	SATELLITE	N/A
SATELLITE GS	3.8 CM	YES	SATELLITE	VARIABLE
SLINGSHOT GS	15 CM	NO	CELLULAR	N/A
SLINGSHOT RTK	2.5 CM	YES	CELLULAR	VARIABLE

GS CORRECTIONS REQUIREMENTS

	SATELLITE GS	SLINGSHOT GS
PURCHASING	PURCHASE ONLINE AT RAVENSLINGSHOT.COM/STORE	CONTACT YOUR SLINGSHOT DEALER
UNLOCKS	RECEIVER UNLOCK	RECEIVER UNLOCK, FIELD HUB UNLOCK
HARDWARE	CABLE RECEIVER: PHOENIX 300 WITH USB, ENVIZIO PRO II, VIPER 4	SLINGSHOT FIELD HUB CABLE RECEIVER: PHOENIX 300 WITH USB, ENVIZIO PRO II, VIPER 4
SATELLTE GS SUBSCRIPTION	YES	NO
CELLULAR PLAN	NO	YES

RECEIVE SATELLITE GS CORRECTIONS ON ANY OF THESE RAVEN DEVICES:

Phoenix 300™ with USB → Envizio Pro II® → Viper® 4

GPS RECEIVERS

Raven's high performance receivers deliver highly accurate, reliable DGPS positioning using WAAS, GLONASS, EGNOS and Satellite GS Corrections. These receivers, along with the new Slingshot GS cellular based corrections, feature RTK capabilities and are ideal for precision farming where a rugged, simple-to-operate receiver is required.

RAVEN 600S™:

Enhanced Raven product integration with full scalability. High performance dual-frequency receiver with sub-meter pass-to-pass accuracy. Compatible with both Satellite GS and Slingshot GS corrections. Simple and fast setup.

PHOENIX 50™ DGPS RECEIVER:

Compact all-in-one receiver with you the ability to log data and provide speed output to your Raven controller. Generates real-time position solutions at 4Hz per second and, therefore, is not recommended for assisted steering. Simple setup.

PHOENIX 10™ SPEED SENSOR:

Compact unit providing speed output to your Raven controller. More reliable and unaffected by mud and other field conditions that can interfere with radar. Setup is fast and easy.

600s is GLONASS-capable.

Cruizer II guidance system comes with a built-in, sub-meter GPS receiver, GLONASS and Autonomous GPS.

Cruizer II RTK comes with a built-in, sub-inch RTK receiver.

Viper® 4 and Envizio Pro II® come with a scalable built-in dual frequency GPS receiver capable of RTK, GLONASS, GS and Autonomous GPS.

RECEIVER	ACCURACY	CORRECTION
PHOENIX 10	N/A	GPS SPEED
PHOENIX 50	2M RMS	SBAS
600S	SCALABLE	SBAS, DECIMETER, RTK, AUTONOMOUS GPS

HAWKEYE®
NOZZLE CONTROL SYSTEM

For over thirty years, Raven has dominated the application control market. Our blockbuster new product ensures this legacy will continue. The Hawkeye Nozzle Control System is the newest innovation in Raven technology – and the next application control system for your sprayer.

Raven's Hawkeye Nozzle Control System is ultra-precise. This pressure based product control system allows for precise sprayer application in a variety of conditions, reducing spray drift and getting the most out of every nozzle. **Each nozzle is controlled by its own individual pulsing valve** giving you a consistent spray pattern as speed and conditions change.

Hawkeye has been tested for shock, vibration, impact, and weather resistance in rugged terrain and extreme temperatures. Additionally, its Viton seals have had over 1,000 hours of testing to ensure system reliability. Hawkeye's durability is unparalleled.

BENEFITS TO YOU INCLUDE:

- Reduced spray drift
- Consistent spray pattern
- Accurate droplet size and placement
- Pressure-based nozzle control system

- Extended range out of each nozzle
- Blended pulse application
- Individual nozzle shut-off with Hawkeye HD
- Ability to program up to 16 virtual sections for shut-off

The Hawkeye System is built on the ISOBUS communication platform which allows it to work with ISO Task Controllers, including the Viper® 4.

THE HAWKEYE ADVANTAGE:

- Nozzle-by-nozzle turn compensation standard

- Fully integrated with machine application control systems

- One control module per system

- ISO compatible, including the Viper® 4

- Simple and clean installation, setup, and calibration

- Sidekick Pro™ direct injection compatibility

- Individual valve diagnostics monitor each nozzle

- Seal maintenance kit included with each system

- Adjustable pressure on the fly including 2 preset pressures

- Two-year warranty with registration

- Mapping and data logging of each nozzle for more accurate record-keeping

FLOW CONTROLS

SPRAY CONTROL CONSOLE

For more than three decades, Raven spray controllers have set the standard for outstanding performance and everyday reliability and operation.

SCS 4400

5-product capability (liquid, granular, NH3, direct injection) with 7 boom switches

STANDARD SCS CONSOLE FEATURES:

- Simple operation
- Low-limit function
- Digital boom pressure read-out
- Supports a variety of Flow Meters and Control Valves
- Audible alarms
- Self-test function
- Rate bump features

SCS 450

One-product capability (liquid, NH3) with 6 boom switches

SCS 660M

One-product capability (liquid, granular, NH3, manure) with one master boom switch

SPRAY CONSOLE	PRODUCT CAPABILITY	PRODUCT FORMS	DIRECT INJECTION	BOOM CONTROLS	BOOM SWITCHES
SCS 4400	5 Products: 1 Hardwired, 4 via CANbus addition	Liquid, granular, NH3	Sidekick Pro	10 boom sections	Equipped with 7 switches
SCS 4600	5 Products: 1 Hardwired, 4 via CANbus addition	Liquid, granular, NH3	Sidekick Pro	10 boom sections	Remote switches required
SCS 5000	5 Products: CANbus equipped	Liquid, granular, NH3	Sidekick Pro	10 boom sections	Remote switches required & CAN nodes
SCS 440	1 Product	Liquid, NH3	Sidekick	3 boom sections	Equipped with 3 switches
SCS 450	1 Product	Liquid, NH3	Sidekick	6 boom sections	Equipped with 6 switches
SCS 460	1 Product	Liquid, NH3	Sidekick	7 boom sections	Remote switches required
SCS 660	1 Product	Liquid, granular, NH3	Sidekick	7 boom sections	Remote switches required
SCS 660M	1 Product	Liquid, granular, NH3, Manure	Sidekick	7 boom sections	Equipped with Master switch

FLUID TRANSFER SYSTEMS, VALVES AND FLOW METERS

Raven offers a variety of competitively priced valves, flow meters, flow attachments and manual control systems specially engineered for compatibility with your existing equipment.

FLOWMAX™ FLUID TRANSFER SYSTEMS

Raven's FlowMax fluid transfer systems make it easy to monitor product flow from the nurse truck to your sprayer.

FLOWMAX™ 221 TRANSFER SYSTEM

- Flanged 2" plumbing (M220)

- Weather-resistant enclosure

- Simple setup and operation

- Replaceable 3.6 volt long-life battery

- Records three separate total volumes

- Displays rate of flow in U.S. or metric

- Mounts "in-line" to monitor flow rate with maximum precision

- Self-contained digital display shows flow rate and totals

- 200 GPM maximum

- Self-contained – no other consoles, cables or flow meters needed

FLOWMAX™ 110 TRANSFER SYSTEM

- Economical single-product flow monitor

- Quick installation and setup

- Backlit display window

- Batch volume

- Rate of flow

- Total and sub-volume measured

- Requires a Raven flow meter of your choice

FLOWMAX™ 810 BATCH CONTROLLER

- Pre-cutoff setting to ensure accurate batch volume

- Quick and easy installation and programming

- Optional cable lengths to fit your requirements

- Start, stop and clear batch controls

- Programmable batch size

- Non-volatile memory

- Requires a Raven flow meter of your choice

FLOW CONTROLS

FLOW METERS

Raven RFM flow meters measure a wide range of liquids at flow rates from 0.1 GPM to 3000 GPM. For monitoring liquid, NH3 and manure applications, the Magmeter Series is the best option.

RFM 200 FLOW METER

One of our many high quality, durable flow meters. Features 15-200 GPM capacity.

RFM 100P

Raven's newest flow meter features up to 3-100 GPM capacity.

RFM 60P

Raven's most commonly used flow meter with 1-60 GPM capacity.

RFM FLOW METER AND MAGMETER PRODUCT GUIDE

FLOW METER	FLOW RATE	MATERIAL	FITTINGS
RFM 5	0.1-5 GPM	Stainless Steel	$^1/_4$" NPT
RFM 15	0.3-15 GPM	Poly	M200 Flanged/1-$^1/_2$" NPT
RFM 60S	1-60 GPM	Stainless Steel	1-$^1/_2$" NPT
RFM 60P	1-60 GPM	Poly	M200 Flanged/1-$^1/_2$" NPT
RFM 100	5-100 GPM	Poly	M220 Flanged/2" NPT
RFM 100P	3-100 GPM	Poly	M220 Flanged

FLOW METER	FLOW RATE	MATERIAL	FITTINGS
RFM 200	15-200 GPM	Cast Iron	3" NPT
RFM 200P	15-200 GPM	Poly	M300 Flanged/3" NPT
MAGMETER-3"	22-955 GPM	Stainless Steel/Teflon	ANSI B16.5
MAGMETER-4"	35-1493 GPM	Stainless Steel/Teflon	ANSI B16.5
MAGMETER-6"	70-3000 GPM	Stainless Steel/Teflon	ANSI B16.5

VALVES

Raven valves are designed and manufactured for simple maintenance and serviceability.

BUTTERFLY AND BALL VALVES

- Compatible with popular flange fittings
- Features internal female NPT pipe threads for non-flange fittings
- Excellent wear and chemical resistance
- Available in Poly and Stainless Steel

	$1/_4$ IN.	$3/_4$ IN.	1 IN.	$1 1/_4$ IN.	$1 1/_2$ IN.	2 IN.	3 IN.
BUTTERFLY		X	X		X	X	X
BALL	X	X	X	X	X		

ON/OFF & CONTROL VALVES

- Advanced power head design
- NH3 On/off valves include on/off indicator
- Full line of stainless steel and poly on/off and control valves
- Simple maintenance and servicing

HYDRAULIC CONTROL VALVES

- 3000 PSI pressure rating
- 60-115 Hz recommended pulse frequency
- Available in 5, 10, 15 and 30 GPM models
- PWM Control

BOOM VALVES

- High flow boom valves
- 40 GPM @ 5 PSI pressure drop per valve
- 175 PSI pressure rating
- M200 Banjo flange inlet
- ¾" female NPT outlets or M100 flanged
- 0.7 seconds on-time/off-time
- Plunger-style valve for complete shut-off
- Optional user configuration: 1-section to 10-section banks

SWITCH PRO™

The Switch Pro control console is designed to help growers move up to a new level of precision. Replace your Raven SCS 440, 450 or 4400 spray console with Switch Pro—and pair it with any of our Envizio Pro™ series field computers, Viper Pro™ or Viper® 4 field computer.

With Switch Pro you have on-off section control, adjustable 0-100 percent coverage control and a manual override function for greater savings and productivity.

FEATURES INCLUDE:

- Simple installation
- Single-product liquid or NH3 application control
- AccuBoom™ automatic section shut-off
- AccuBoom automatic 10-section on/off boom control prevents overspraying and skips on point rows and headlands and reduces operator stress/fatigue
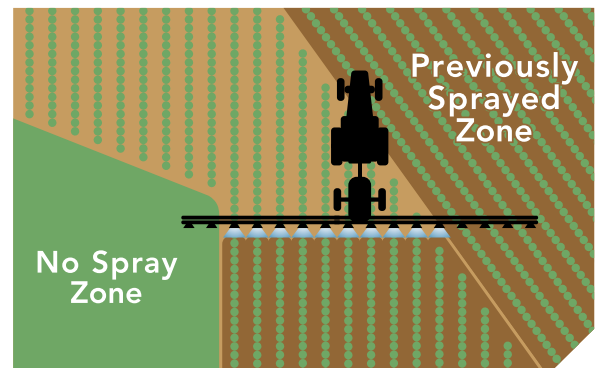
SWITCH PRO COMPATIBLE WITH THE
FOLLOWING FIELD COMPUTERS:

| Envizio Pro™ | Envizio Pro II® | Envizio Pro XL™ | Viper Pro™ | Viper® 4 |

ISOBUS PRODUCT CONTROL
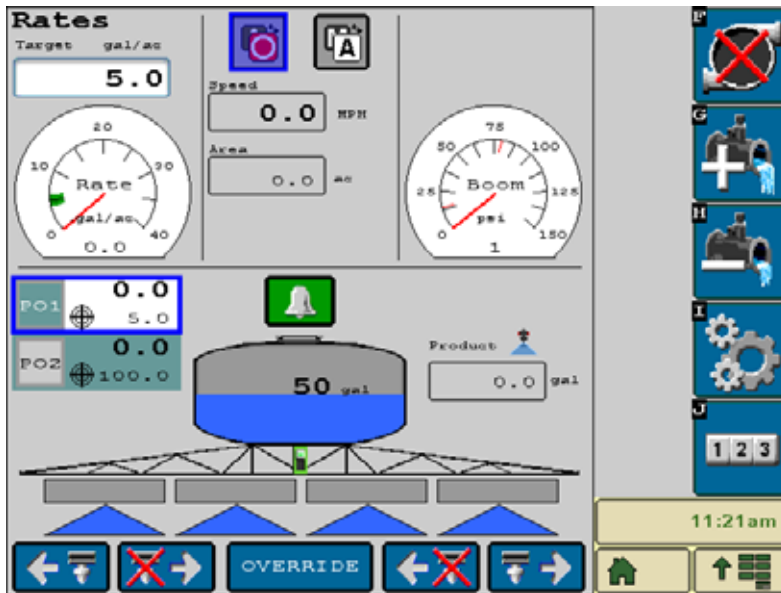
FEATURES INCLUDE:

- Industry leading flow and application control technology
- Optional switch box for manual override of individual sections
- Task controller interface*
- Section control compatible*
- Data-logging*
- Variable rate application*

Features available with supporting virtual terminals

COMPATIBLE PRODUCTS:

Liquid Control | Granular Control with Spinner Control | AccuFlow™ Control | AccuFlow™ HP+ | Sidekick Pro™

ACCUFLOW™
ACCUFLOW HP™ PLUS

Raven has raised NH3 application technology to new levels of performance with the AccuFlow Vortex cooler and AccuFlow HP (high performance) Plus. Both models use super cooling technology to stabilize NH3 as a liquid for superior accuracy and control.

FEATURES:

- Single valve or dual valve system options

- Capable of up to 8-section shut-off

- Convenient cooler disassembly for easier maintenance

- Increased capacity and smaller footprint on the toolbar

- Designed with safety in mind

ACCUFLOW HP PLUS SYSTEM FEATURES:

- The industry's first variable speed pump, which runs only when it is needed

- Saves on fuel and tractor horsepower and reduces system wear and tear

- Simply set your target rate and let AccuFlow HP Plus get the job done

- Ideal for running at faster application speeds and cooler temperatures

- Nearly doubles the capacity for handling the most demanding situations

- Advanced control algorithms for high or low end operation

- ISOBUS compatible

ACCUFLOW VORTEX COMPATIBLE WITH THE FOLLOWING:

SCS Consoles | Envizio Pro™ | Envizio Pro II® | Envizio Pro XL™ | Viper® 4 | Viper Pro™ | ISO

Paired with your Raven control system, AccuFlow Vortex super cooling NH3 technology replaces the dual cooler system to give you superior accuracy and control over your applications for higher yields, less waste and lower input costs.
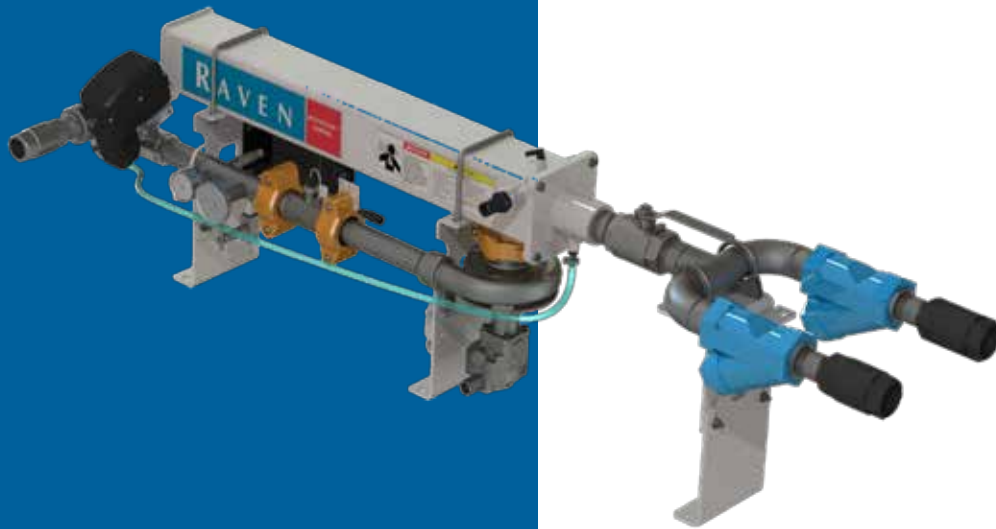
THE HIGH PERFORMANCE DIFFERENCE*

SINGLE CONVENTIONAL COOLER	30 GPM
ACCUFLOW VORTEX COOLER	50 GPM
ACCUFLOW HP PLUS WITH VORTEX COOLER	80 GPM

* Results may vary depending on your system and set-up.

The unique AccuFlow HP Plus pump is designed for maximum performance and safety.

SIDEKICK PRO™

Raven's Sidekick Pro direct injection systems help you save time and money on applications of herbicides, insecticides, drift agents and nitrogen stabilizer. The industry leader in direct injection, Sidekick Pro features:

- Up to 4 units on one machine, allowing easy switching between fields and applications

- No pre-mixing, tank mixing, cross contamination or clean out

- Powerful positive displacement pump which injects on the pressure side, closer to the boom, for faster response time

- Low volume capacity of 1-40 oz/minute

- High volume capacity range of 5-200 oz/minute

- Eliminates waste for more environmentally friendly practices

- Reduced chemical exposure means additional safety for operator

- Adjust chemical concentration on the fly rather than spraying more or less of the entire mix

- Gain flexibility in the work day — with direct injection, you don't need to worry about weather

- Flexibility with multiple chemical applications

COMPATIBILITY FOR SIDEKICK PRO:

| Viper® 4 | Viper Pro™ | Envizio Pro™ | Envizio Pro II® | Envizio Pro XL™ | SCS 5000™ | SCS 4 |
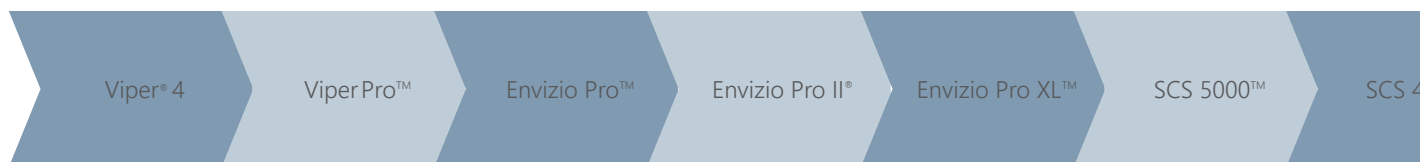
RINSE ASSIST FOR DIRECT INJECTION

- Automatic rinse system that can clean the chemical out with the push of a button

- Three way valve automatically opens to a rinsing agent tank

- Valve automatically returns to chemical tank position at the end of the rinsing cycle

It's the direct injection system that sets a new standard for chemical applications of every type, with **unprecedented precision, savings and safety**. No tank mixing required —and with the industry's first remote and closed calibration and prime feature, you're ready to go in minutes. It also features:

- ISO compatible pump

- High resolution encoder that provides smoother pump control and exceptional lock on target rate technology

- Remote closed-system calibration, eliminating the need for calibration catch tests and exposure to chemicals

- Automatic priming feature

- Real-time diagnostics

The Sidekick Pro injects chemicals directly into the in-line mixing tube to eliminate pre-mixing and costly leftovers.

4400™   SCS 4600™   ISOBUS   Hawkeye® Nozzle Control System

AUTOBOOM®

The AutoBoom automatic boom height control system offers faster operating speeds, simple calibration and user-friendly controls. Its unique hydraulic-powered design delivers a smooth and responsive height-adjusting system. It covers more acres in less time and with less operator stress and fatigue. It also features:

- Automatic calibration, less than one minute per boom

- Optimal spray height ensured

- Ability to increase spraying speeds

- Up to 5 sensors, including center rack control

- Less wear and tear on the boom

- ISOBUS compatibility

- Pressure-based control for smoother boom movements and adjustments

- For extreme terrain, upgrade to AutoBoom® XT

The stand alone controller allows users to add AutoBoom in the absence of a field computer.

COMPATIBLE WITH RAVEN DEVICES INCLUDING:

Envizio Pro™ > Envizio Pro II® > Envizio Pro XL™ > Viper® 4 > Viper Pro™ > Cruizer II™ > AutoB Cont

AUTOBOOM POWERGLIDE PLUS SYSTEM

Configure for use with any of Raven's multi-function field computers.
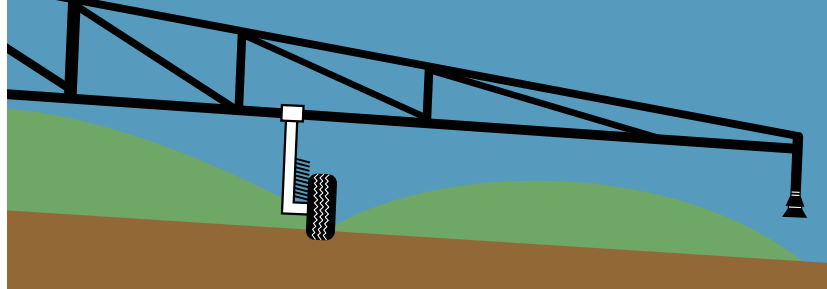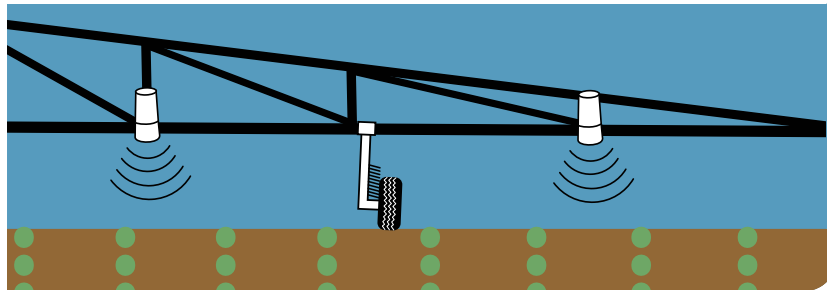

AUTOBOOM ULTRAGLIDE SYSTEM

This upgrade includes ultrasonic sensors that gauge the distance to the ground.
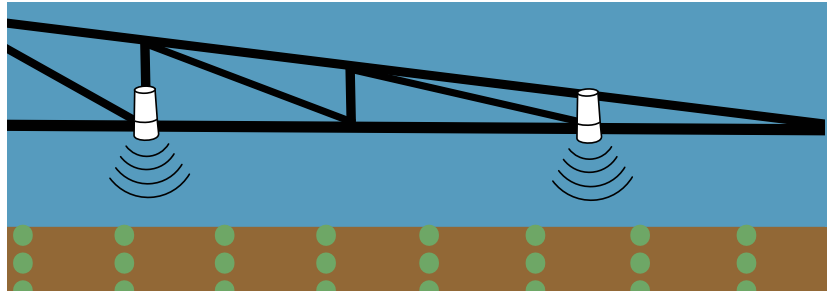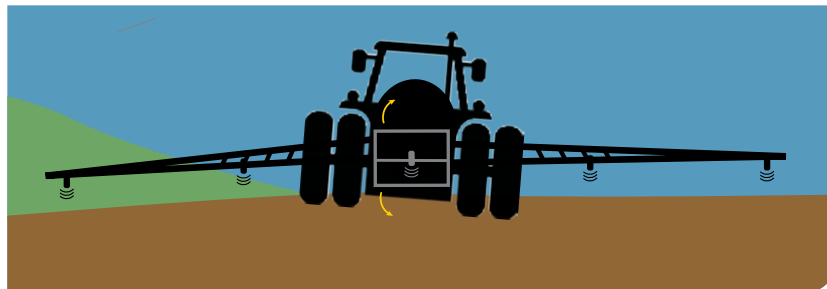

AUTOBOOM ULTRAGLIDE WITH POWERGLIDE PLUS

The ultimate upgrade offers the best of both systems.

AUTOBOOM XT

Provides optimal performance in extreme terrain conditions to keep the center rack stable.

Boom
roller   ISOBUS

ACCUBOOM™

Control input costs with AccuBoom automatic section control. Greater fuel and chemical savings, faster spraying times, ease of operation and more accurate spraying improve your return on investment every season.

Dollar for dollar, AccuBoom offers the fastest payback in precision ag equipment.

FEATURES INCLUDE:

- Automatic on-off control for up to 10 sections

- Eliminate costly skips and overlaps

- Adjustable look ahead function lets you adjust settings easily for the overlap you choose

- Speed compensation function accounts for how fast you are driving and ensures properly timed shut-off

COMPATIBLE WITH RAVEN FIELD COMPUTERS INCLUDING:

| Envizio Pro™ | Envizio Pro II® | Envizio Pro XL™ | Viper® 4 | Viper Pro™ |

OMNISEED™

OmniSeed is a fully integrated system offering you complete control and increased productivity.

OmniSeed's remote tank console streamlines the air cart meter calibration process. Instead of running back and forth to the tractor cab, you can simply start and stop the meters remotely at the cart and enter calibration rates through the console.

Combined with the Viper Pro and Envizio Pro series consoles, OmniSeed provides multi-product variable rate seeding and section control to support efficient and accurate seeding and fertilizer application. The Viper Pro also supports agX™ recommended files that provide detailed seed and chemical information to enhance application reports and data management.

Previously Seeded Area

Seeding Rate 2

No Seed Area

Seeding Rate 1

FEATURES:

▪ Advanced hydraulic motor-clutch for each bin to assure greater precision with simple single-section shutoff

▪ Integrated Run Blockage powered by AgTron™ monitors with ease and simplicity

▪ Ultrasonic bin level sensors for more precise bin level indication

▪ Control multiple granular and liquid products simultaneously

▪ After-market install kits available

▪ Down pressure monitoring keeps you informed of soil conditions

▪ Data logging and record-keeping for easy management

▪ AccuBoom™ section control for liquid applications
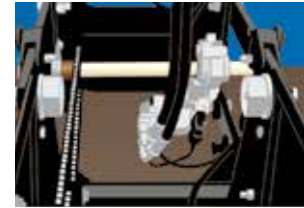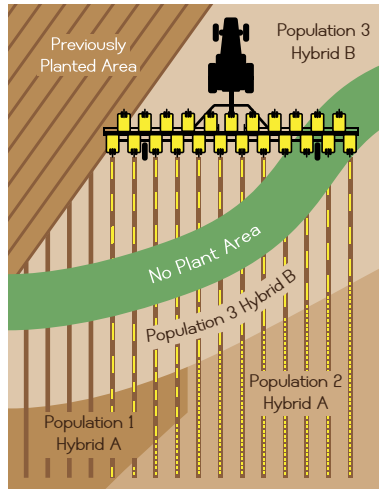
OMNISEED COMPATIBLE WITH THE FOLLOWING RAVEN DEVICES:

Envizio Pro™   Envizio Pro II®   Envizio Pro XL™   Viper Pro™   Slingshot®
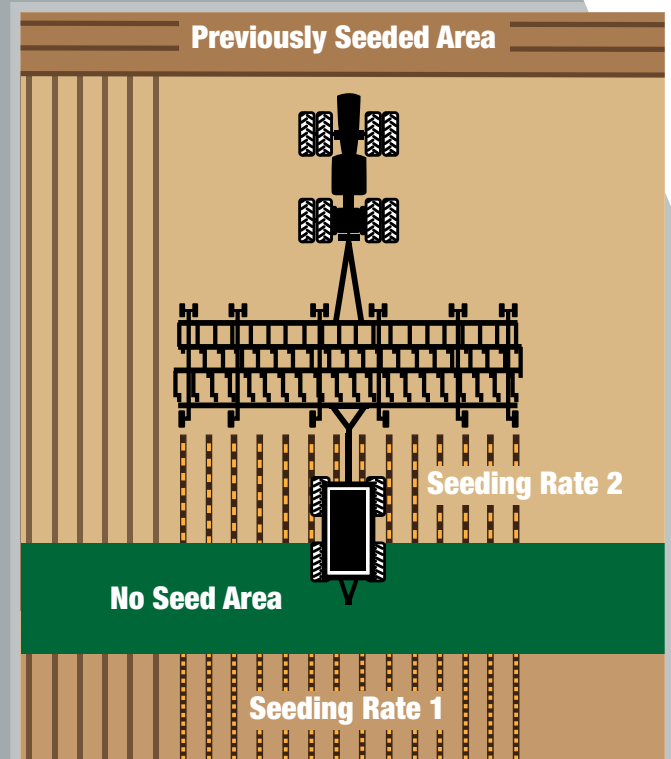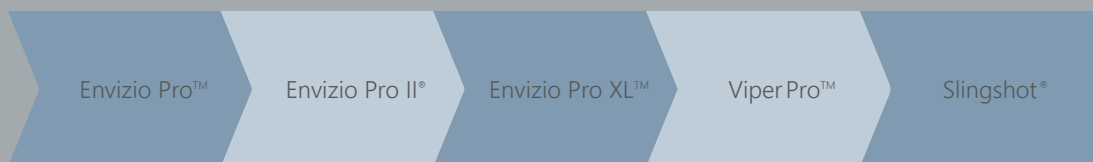
OMNIROW®
MULTI-HYBRID

Raven's OmniRow advanced planter control system features fully integrated design with RTK sub-inch accuracy and patent-pending planter control technology. This system gives you the power to control seeding rates by row or sections for maximum precision and reliability.

OmniRow Controller & Motor-Clutch

FEATURES:

- Advanced hydraulic motor-clutch with integrated RPM sensor handles population control by row or section plus shutoff

- Variable-rate planting, manual or prescription based, by section or row

- Real-time seed monitoring and singulation by row reports skips and doubles

- Compatible with factory installed and after-market clutches or drive motors; will work with your existing equipment

- Multiple system configurations to meet variety of needs, budgets and requirements

- Track up to 4 varieties at once

- Patent pending turn compensation ensures proper seed spacing to maximize yield

- Hand held remote control provides start up and diagnostic convenience

- Planter Auxiliary node for planter down pressure monitoring and control; planter fan pressure monitoring and control; and bin level monitoring with integrated product and section control

- Industry first patent pending multi-hybrid control technology

OMNIROW COMPATIBLE WITH:

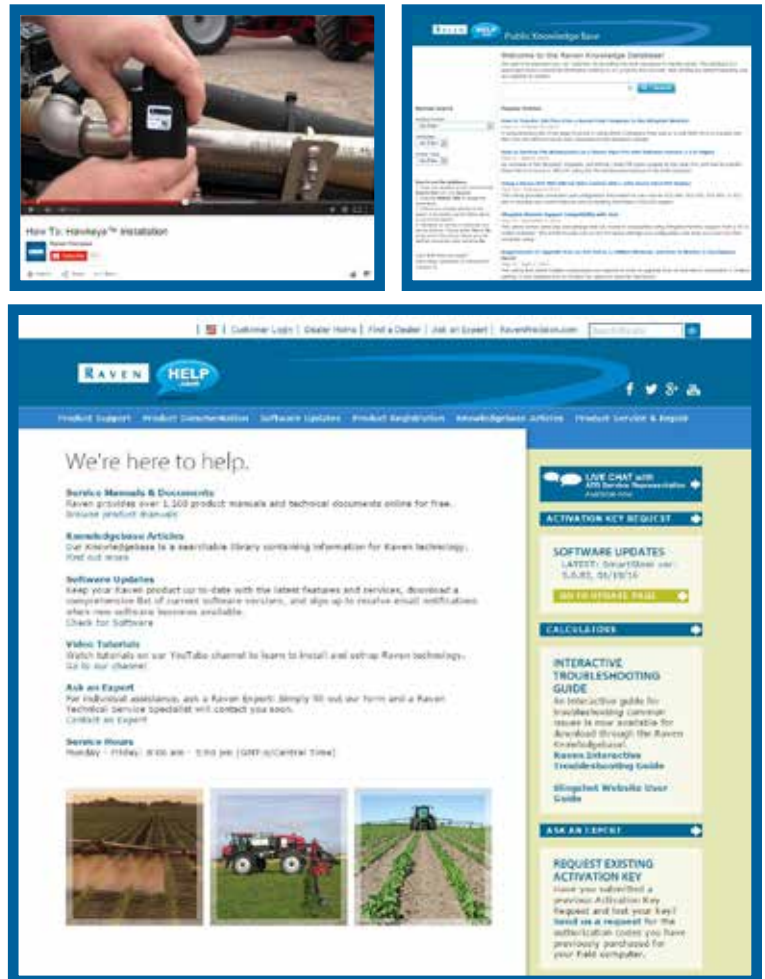Envizio Pro™   Envizio Pro II®   Envizio Pro XL™   Slingshot®

SERVICE & SUPPORT

While Raven is known for offering premier, state-of-the-art precision agriculture tools, we are also known for providing the industry's top service and support. Sources of support include:

- The RavenHelp.com website, created to give you immediate access to technical information. The site offers a wealth of knowledge, including service manuals, replacement parts, knowledge articles, Ask an Expert e-mail feature, and more

- Remote live support with Slingshot® via high-speed Internet gives you instant, in-field support and service. Without leaving the cab, you can get help in real time to diagnose, fix or walk through solutions.

- Raven's network of dealers and distributors.

- Videos on the Raven YouTube channel www.youtube.com/user/precisionsimplified.

RAVEN