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RAVEN

CR7

The latest innovation from Raven is a small, yet powerful field computer. The CR7 is a 7" lightweight field computer with customizable in-job layouts. A simple widget concept, easily accessible settings, and ISO Universal Terminal and Task Controller capabilities make this mighty unit an affordable, plug-and-play system. The CR7 is compatible with Slingshot® file transfer and remote support, SmarTrax™ autosteering, AccuBoom™, Raven serial consoles, and more.



Difference Between Cruiser II

- The CR7 has the cost effectiveness of the Cruiser, but with increased scalability
- Faster processor and more memory
- Larger display (7" instead of 5.7")
- Can be unlocked to use UT and task controller
- Will work with Hawkeye, RCM, RS1 (June 2018), and other Raven ISO products
- CR7 GPS will have future scalability (June 2018)

Easy Replacement

The CR7 can replace your Cruiser II even when paired with an SCS console, AccuBoom, or SmarTrax.

Slingshot® Ready

CR7 harnesses the power of Slingshot for outstanding data management functionality giving you powerful tools for gathering, tracking and reporting. Getting the data you need, organizing it and turning it into meaningful information is faster and easier. Slingshot also gives you access to live remote support from Raven's team of experts.

Benefits & Features:

- Multiple language support and customizable units
- Simplified, customizable widget layout
- Ability to access settings page from inside a job
- Map-based navigation
- Auto field boundaries keep you organized automatically
- Interactive field/job list and map view
- Slingshot-ready for file transfer, remote support, and OTA software updates
- Compatible with Raven AccuBoom, serial SCS consoles, and external lightbar support
- ISO Universal Terminal and Task Controller functionality via unlock
- Straight A-B, A plus heading, pivot, contour, and last pass guidance
- Compatible with autosteer products including SmarTrax and SmarTrax MD
- Sub-meter single frequency GPS and GLONASS (optional external)
- Optional scalable external receiver (June 2018)

Utilize CR7 to its full potential with these enhancements:

SmarTrax AutoBoom AccuBoom Sidekick Pro AccuFlow 600S Receiver Hawkeye Nozzle ISOBUS Slingshot RS1 RCM Control System & VT

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Precision Electronics

RAVEN

Viper 4[®]+

The Viper 4+ is the powerful, fourth generation Viper field computer and it just got better. Powered by Raven Operating Software, Viper 4+ integrates with 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 you operation, this means increased efficiency, productivity, and profitability.

What's New

- Faster boot-up time, approx. 30 seconds
- Capacitive touch screen
- Screen up to 3 times brighter with improved peripheral viewing
- Ignition switch start-up and boot-down
- Built-in-self-test capabilities to help identify software issues with the unit itself
- Street maps provide county road maps

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.



Features Include:

- Customization by user and machine
- Horizontal or vertical orientation
- Sleek design with 12.1" capacitive touchscreen and intuitive, tablet-like interface
- State-of-the-art, rugged magnesium alloy enclosure
- Dustproof for tough environments
- Four 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 and agX compatible
- Wireless over-the-air software updates
- ISO VT with task controller capabilities
- On-screen implement location with section status

Utilize Viper[®] 4 to its full potential with these enhancements:

SmarTrax AutoBoom AccuBoom Sidekick Pro AccuFlow 600S Receiver Hawkeye Nozzle ISOBUS Slingshot RS1 RCM Control System & VT

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Slingshot®



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



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.



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



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



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

*Envizio Pro requires software version 3.10.X.X or newer to be compatible with Field Hub. 20.

**Viper Pro requires a software patch in order to be compatible with Field Hub 2.0.

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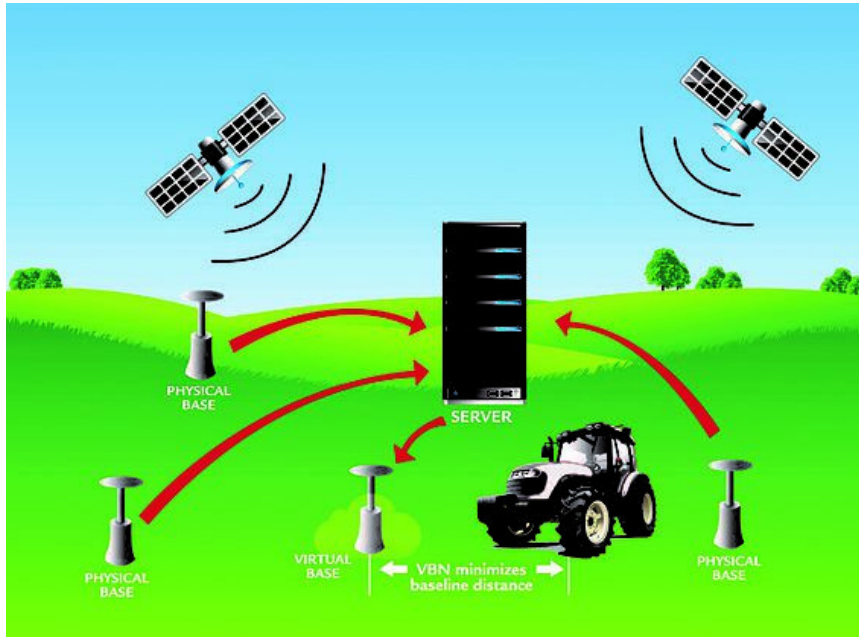


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DigiFarm RTK Corrections

Take your farm's precision ag system to the next level of accuracy with an RTK signal from DigiFarm



The Virtual Base Network (VBN) uses all of the bases in DigiFarm's network combined with powerful server software to create a "virtual" base station in close proximity to where you are working, for extreme accuracy.

DigiFarm VBN works with all major brands of receivers



DigiFarm has data plans



Beacon V3.0

- Class 1 bluetooth device
- Stream RTK through iPad or Iphone using NTRIP app
- Use existing data plans
- No cables for Trimble devices
- Adapter cables for other brands
- Ruggedized, weather resistant
- Very fast installs
- Cost effective
- Also works with Android and Windows devices

<- - or ->



Gateway

- Cellular gateway for RTK corrections
- Available in 3G and LTE models
- Web based user interface
- Optional Wi-Fi module
- Optional bluetooth module
- Remote access/remote support
- Cabling options for most GPS receivers
- Support for all major brands of GPS including John Deere
- Ethernet interface
- Supports most cellular carriers worldwide

VBN vs. Single Base RTK	VBN	Single Base RTK
Sub-inch year-to-year repeatability	Yes	Yes
Sub-inch accuracy at 6 miles	Yes	Yes
Sub-inch accuracy at 20 miles	Yes	No
No line shift between towers	Yes	Yes
Maintain accuracy during base station outage period	Yes	No
Water management vertical accuracy greater than 2 miles from base	Yes	No
Hardware specific data streams customized for each brand of GPS	Yes	No
Baseline distance always minimized for improved accuracy	Yes	No

*Chart assumes single base is properly surveyed, often times it is not

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Guidance



Satellite GS

Satellite GS utilizes the TerraStar network of satellites for decimeter corrections. Affordable enhanced GPS accuracy without needing a modem or base station. Subscriptions are available in 3 months, 1 year, 2 years, and 3 years.

GS Corrections Requirements

	Satellite GS
Purchasing	Purchase subscription online at ravenslingshot.com/store
Unlocks	Receiver Unlock
Hardware	Cable Receiver: Phoenix 300 with USB, Envizio Pro II, Viper 4, 600S
Subscription	Yes
Cellular Plan	No

GPS Receivers

Receiver	Accuracy	Correction
Phoenix 50	2M RMS	SBAS
Phoenix 200*	Sub-Meter	SBAS, Unlockable GLONASS, Autonomous GPS
Phoenix 300*	Scalable	SBAS, Unlockable GLONASS, Satellite GS, RTK, Autonomous GPS
600S	Scalable	SBAS, Decimeter, RTK, Autonomous GPS
Cruizer II* (Built-In)	Sub-Meter	SBAS, GLONASS, Autonomous GPS
Cruizer II RTK* (Built-In)	Sub-Inch	SBAS, GLONASS, Autonomous GPS, RTK
Envizio Pro II* (Built-In)	Scalable	SBAS, GLONASS, Autonomous GPS, Satellite GS, RTK
Viper 4 (Built-In Option)	Scalable	SBAS, GLONASS, Autonomous GPS, Satellite GS, RTK

*Discontinued products

Phoenix 200 & Phoenix 300 have been replaced by the 600S



Phoenix 50



Phoenix 300*



Phoenix 200*



600S

GPS Correction	Pass-to-Pass Accuracy	Year-to-Year Repeatability	GLONASS	Delivery	Subscriptions
RTK	± 1 in/2 cm (also referred to as sub-inch)	± 1 in/2 cm	Yes	Cellular	Variable
Satellite GS	± 2-4 in/5-10 cm (also referred to as decimeter)	± 4 in/10 cm	Yes	Satellite	Variable
SBAS	± 6-10 in/15-25 cm (also referred to as sub-meter)	± 3 ft/1 m	With Upgrade	Satellite	N/A

SlingShot GS was discontinued in 2016

Garmin GPS Speed Sensor

Astro 5

- Magnetic Mount
- Accurate to .1 mph
- Speed Range: .5 to 20mph

01425 - Micro-Trak
01428 - Dickey John



01430 - Raven
01435 - Hiniker



Patch (Cruizer*)
063-0172-101



MBA-3* (Cruizer*)
MBA-6*
(Phoenix 300* & Epro II*)



MBA-7
Replaces MBA-3* & MBA-6*
117-0171-141 Kit

*Discontinued in 2017

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RAVEN

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.

Key Features & Benefits:

- Across-the-board GPS compatibility
- 3D terrain compensation
- Automatic system calibration
- 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



Compatible with four field patterns for faster line acquisition, higher operating speeds, and more relaxed driving.



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

SmarTrax™ MD

Full Speed Ahead

Raven's 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.

Key Features & Benefits:

- RTK capable
- High operating speeds
- High torque for best in class line acquire and online performance
- Simple to install and move between machines
- 3D terrain compensation
- Quiet operation



Use SmarTrax/SmarTrax RTK and SmarTrax MD on the following:

Cruizer II Cruizer II RTK Envizio Pro Envizio Pro II Envizio Pro XL CR7 Viper Pro Viper 4+





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RS1™

RAVEN

The most accurate high speed steering system in the industry

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.

Key Features & Benefits:

- Enhanced steering performance in a wide range of terrain
- Enhanced 3D compensation for rugged terrain
- Wide temperature range for inertial sensors (-40 to 70 deg. C)
- Simplified field calibration procedure
- Fully scalable GPS solution
- Enhanced diagnostics and health tests
- Remote service support (OTA updates, remote service, telematics)
- Multiple methods of system connectivity (cellular, WiFi, Ethernet)
- Serial GPS output (NMEA 0183) or radar output
- Multi-lingual support
- Compatible with ISOBUS 11783 curvature messages for both ISO steer ready and Raven aftermarket steering controllers



The RS1 combines autosteer, GPS, and Slingshot® into one intuitive, easy-to-use unit

RS1 is compatible with:

- Slingshot®
- CR7 (June 2018)
- Viper 4+
- 3rd party ISO compatible monitors to be listed soon, ask for update

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AutoBoom®



Automatic and effortless boom height control

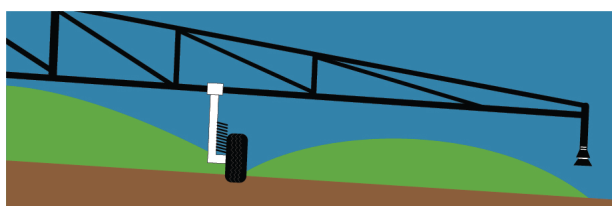
The AutoBoom automatic boom height control system offers faster operating speeds, simple calibration and user-friendly controls. Its unique hydraulic-powered design delivers a smooth and responsive height-adjusting system. AutoBoom gives you increased efficiency with faster spraying speeds, covering more acres in less time and with less operator stress and fatigue.

Key Features & Benefits:

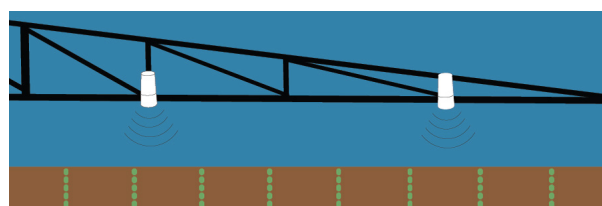
- Adjusts to optimal spray height to prevent drift or inconsistent droplet size
- Pressure-based control for smoother boom movements and adjustments
- Automatic calibration, less than one minute per boom
- Optimal spray height ensured
- Increased efficiency with faster spraying speeds to cover more acres in less time
- Up to 7 sensors, including center rack control
- Less wear and tear on the boom
- ISOBUS compatibility
- Stand alone controller allows users to add AutoBoom® without a field computer
- For extreme terrain upgrade to AutoBoom® XT



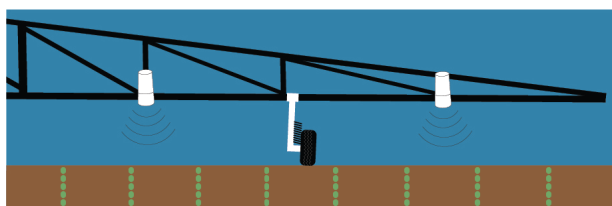
The stand alone controller allows users to add AutoBoom® (except AutoBoom® XT) in the absence of a field computer.



AutoBoom® PowerGlide Plus System
Includes axles, wheels, and struts



AutoBoom® UltraGlide System
Includes ultrasonic sensors



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

Compatible with Raven devices including:

SCS 4000/5000 Series* Cruiser II* Envizio Pro Envizio Pro XL Envizio Pro II Viper Pro CR7 Viper 4+ AutoBoom Controller* ISOBUS & VT**

*Not compatible with AutoBoom® XT **Subject to 3rd party ISO capabilities

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AccuBoom™



Simple section control pays for itself

Greater fuel and chemical savings, faster spraying times, ease-of-operation and more accurate spraying all add up quickly to improve your return on investment each and every season. Dollar for dollar, AccuBoom™ offers the fastest payback in precision ag equipment. AccuBoom automatic section control is your best protection against rising input costs.

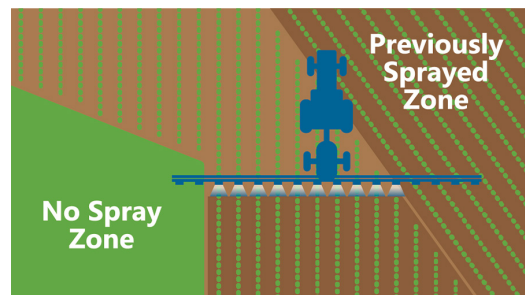
AccuBoom™ automatically turns booms on and off, reducing overlap and overspray therefore reducing chemical wastage, time and cost. By monitoring where the sprayer or spreader has applied, AccuBoom™ automatically turns boom sections on when traveling into areas that have not been covered and turns boom sections off when encountering previously applied areas or "No Spray Zones" such as waterways. With its hands-off control, AccuBoom™ also helps reduce operator fatigue.

Key Features & Benefits:

- 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
- Reduced operator fatigue
- Simplified coverage of point rows
- Optional remote control to help check nozzles quickly



Wireless receiver and remote control option lets you check each section by yourself outside the cab. Great for catch tests and troubleshooting!



AccuBoom™
Automatically shuts booms off in previously sprayed areas and "no spray zones"

Compatible with the following devices:

Cruizer II Envizio Pro Envizio Pro II Envizio Pro XL CR7 Viper Pro Viper 4+

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Precision Electronics



RAVEN

Raven ISOBUS

Raven's solution for universal communication

The Raven ISOBUS single product control node is designed to add speed compensated product control capabilities to ISOBUS virtual terminals. Adding the Raven ISOBUS product control node allows machine operators to monitor and control a Raven product control system directly from a virtual terminal (VT) display.

3rd Party Virtual Terminals with Raven ISOBUS

Tractor Mfr.	VT	Total # of Products	Liquid	Granular/ Spinner	AccuFlow/ AccuFlow HP	Datalog/ VRA	ISO Section Control	# of Sections Raven ISO	Products Displayed on Guidance Screen	AutoBoom	# of Injection Pumps	ISO Switchbox
John Deere	GS2 (2600)	1	x	x	x	1 Product	N/A	10	1	x	N/A	x
John Deere	GS3 (2630)	1	x	x	x	4 Products	x	10	4	x	3	x
CNH	Pro 700*/ Intelliview IV*	1	x	x	x	1 Product	x	10	1	x	N/A	x
AGCO	C1000	1	x	x	x	N/A	x	10	1	x	N/A	x

*Self propelled sprayer mode does NOT support ISO control

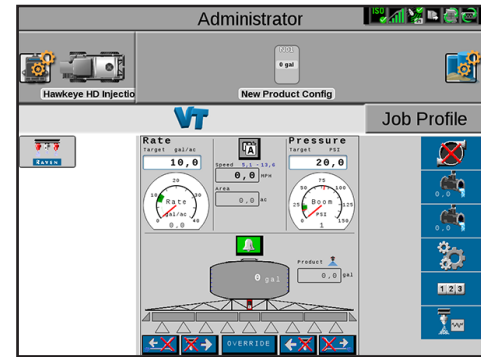
-Also AutoBoom capable: CNH Pro 600 & Intelliview II, AGCO Falcon VT & C3000, & Ag Leader Integra & Versa

-JD 2630 with GS rate controller can run Raven: liquid, granular (spinner control w/GRC Dry), AccuFlow, & up to 3 direct injection pumps (pull type only)

-VT & Task Controller unlocks, hardware, & software may be required to use Raven ISOBUS

Key Features & Benefits:

- Industry leading flow and application control technology
- Optional switch box for manual override of individual section
- Universal product page no matter what controller you use
- Task controller interface, section control compatibility, data-logging, and variable rate application with supporting virtual terminals
- Liquid including Hawkeye, granular with spinner control, NH3, & Sidekick Pro injection
- Can be added to existing systems to replace an existing SCS console or be added to a brand new application



Viper 4 VT Screen

Compatible products:

Liquid Control Hawkeye® Granular Control AccuFlow™ AccuFlow™ HP+ Sidekick Pro CR7 Viper 4+ ISOBUS RCM & VT*

*Subject to 3rd party ISO console capabilities

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Hawkeye® Nozzle Control



Precision like you've never seen before

The 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.

The Hawkeye System is built on the ISOBUS communication platform which allows it to work with ISO Task Controllers, including the Viper® 4+. Hawkeye has also been tested for shock, vibration, impact, and weather resistance in rugged terrain and extreme temperatures. Its durability is unparalleled.



The Hawkeye® Advantage

- Nozzle-by-nozzle turn compensation standard
- Fully integrated with machine application control systems
- One control module per system
- PWM control provides quick response
- Simple and clean installation, setup, and calibration
- Individual valve diagnostics monitor every nozzle to alert you immediately of a system issue
- 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
- Precise application rate in a variety of conditions
- Consistent coverage
- Wide speed range
- Ability to manage drift and off-target applications
- Accurate droplet size and placement
- Extended range out of each nozzle
- Fewer nozzle changes
- Blended pulse application

Hawkeye® HD

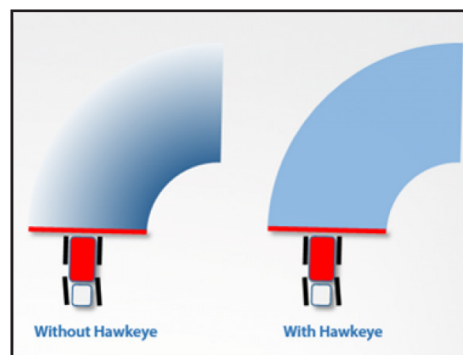
- Individual nozzle shut-off
- Reduces costly skips or overlaps
- Upgrade with a simple software unlock- no change in hardware required

Virtual Section Capability

- Program up to 16 additional sections for on/off control
- Available with base system—no upgrade needed
- Provides more section control and higher ROI than traditional boom valve configured systems

Sidekick Pro™ Direct Injection Compatibility

- Inject additional chemicals in the line as needed without worrying about tank mixing or clean-out at the end of the day
- Greater flexibility in your applications, so you can handle weed resistance and other challenges
- With Hawkeye, use up to 5 injection systems on one machine through the Viper® 4+



Nozzle-by-nozzle turn compensation standard

Compatible products:

Sidekick Pro™ RCM CR7 Viper 4+ ISOBUS & VT*

*Subject to 3rd party ISO console capabilities

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RAVEN

Rate Control Module (RCM)

The most accurate rate controller on the market

The RCM uses Raven's innovative control algorithms to make it the most precise application controller on the market today. It fits a variety of applications—up to five product liquid and granular control, NH3 (including AccuFlow™ HP+), air cart, and generic applicators. Sixteen-section control eliminates expensive skips and overlaps for all phases of your operation, from spraying to NH3, and fertilizer application to planting.

The RCM is incredibly user friendly. We've simplified the setup, introduced integrated help content, and added advanced diagnostic information to quickly identify issues and reduce costly downtime. Customizable user interfaces give the operator the flexibility to see and control what fits their needs, and configurable machine profiles allow the RCM to easily move between machines and implements without re-setting machine configurations. The RCM is compatible with many ISOBUS virtual terminals on the market, including the Viper® 4 and Viper® 4+ from Raven.

The Raven Rate Control Module is the ultimate advancement in precision and efficiency, and the next solution for your operation's success.



Key Features & Benefits:

- Liquid, NH3, dry applications, and injection
- Easily navigate and manage multiple products, tallies, and sensor data
- Diagnostic tests and reading to easily calibrate, tune, and troubleshoot system
- ISOBUS compliant CAN channel, plus 3 available CAN subnets
- Compatible with ISOBUS Virtual terminals and Task Controllers
- Bluetooth 4.0LE for long range line-of-sight wireless connectivity for control, monitoring, and diagnostics
- Multi-language support
- IP 67 environmental rating
- Integrated magnet mount option to easily attach and detach
- Dynamically configure run screen based on operator preferences to show most relevant data during operation
- Move between machines, stores up to 8 machine profiles

Compatible with these VTs & More

- AGCO NT01 (Fendt)
- AgJunction Outback Max
- Ag Leader InCommand
- Ag Leader Integra
- CaseIH Pro 700
- Intelliview IV
- John Deere 2630
- John Deere Command Center 4600
- Mueller Touch1200
- Raven Viper 4 & CR7
- TopCon X30
- TopCon/AGCO C3000
- Trimble TMX-2050

Compatible products:

Liquid Control Hawkeye® Granular Control AccuFlow™ AccuFlow™ HP+ Sidekick Pro CR7 Viper 4+ ISOBUS & VT*

*Subject to 3rd party ISO console capabilities



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Machine Types and Their Capabilities

1. Air Cart / Generic Applicator
 - A. 1 to 4 Products / 16 Sections, 5 Products / 12 Sections
 - B. Support for up to 2 Fan RPM sensors, 6 pressure, bin level and/or shaft sensors, and implement height switch
2. Liquid Product Control
 - A. Sidekick Pro ICD compatible
 - B. Pull-behind sprayer / Self-propelled sprayer / Liquid fertilizer tool
 - C. 3 Wire Section Valves
 - i. 1 Product, 16 Sections + 2 Fencerows, Sidekick Pro ICD compatible up to 4 DI pumps, Tank Fill Monitor compatible
 - D. 2 Wire Section Valves
 - i. 1 Product, 8 two-wire valves (Sections 1-8), 8 section signals for two-wire valve interface external module (Sections 9-16) + 2 Fencerows, Sidekick Pro ICD compatible up to 4 DI pumps
 - E. Tiered Boom – Direct
 - i. 1 Product, 10 Sections x 2 Tiers, Sidekick Pro ICD compatible up to 4 DI pumps
 - F. Tiered Boom – External
 - i. 1 Product, 16 Sections, 2 Tier Signals (External module required) + 2 Fencerows, Sidekick Pro ICD compatible up to 4 DI pumps
3. AccuFlow HP+
 1. 2 add on products +2 ICD injection pumps, up to 10 NH3 sections, 14 total sections
4. Pull-behind spreader / Self-propelled spreader
 - A. 4 Products / 4 Sections / Spinner RPM Control

Sections Per Machine Type

Sprayers / Liquid Fertilizer Tool

# of Products	3-Wire Valves	2-Wire Valves	Tiered Boom (3-Wire Only)
One Product Only	16	8	20 total

Multi-Product Applications

# of Products	NH3 Toolbar Configs	Spreaders	Air Cart / Generic
1	10	12	16
2	14	12	16
3	14	12	16
4	n/a	12	16
5	n/a	12	12

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RAVEN

Sidekick Pro™ Direct Injection

Greater accuracy and savings with every pass

The Sidekick Pro™ direct injection system 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 automatic calibration feature, you're ready to go in minutes. Utilize Rinse Assist to automatically flush the pump quickly and thoroughly. The whole system is amazingly simple and pays off with greater precision, higher yields and unrivaled efficiency. The industry leader in direct injection.



Key Features & Benefits:

- Up to 4 units on one machine, allowing easy switching between fields and applications, add Hawkeye for additional injection
- No pre-mixing, tank mixing, cross contamination or clean out
- Powerful positive displacement pump injects on the pressure side, closer to the boom, for faster response time
- Eliminate 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
- 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
- Compatibility with additives that reduce maintenance on your application system
- Automatic priming feature and real-time diagnostics
- ISO compatible pump
- Pump options:
 - Low volume pump with capacity of 1-40 ounces per minute
 - High volume pump with capacity of 5-200 ounces per minute

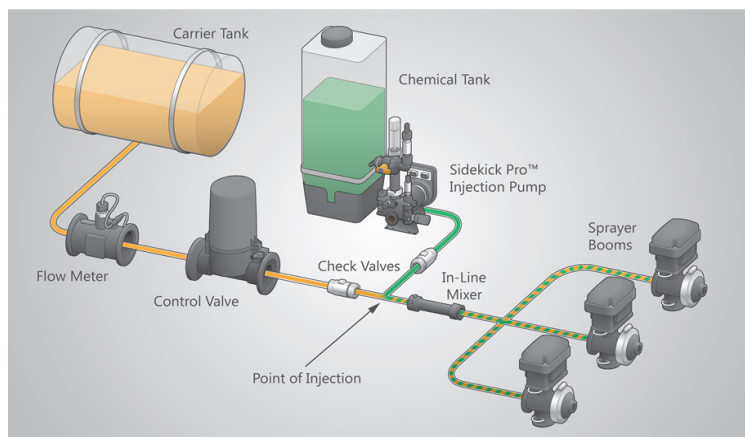
Rinse Assist Option

- 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

Compatibility

	Sidekick Pro	Sidekick Pro ISO	Sidekick Pro ICD
Product Controllers			
Raven Product Controller	x		
ISO Product Controller I		x	
ISO Product Controller II			x
RCM			x
Consoles			
Viper 4/Viper 4+	x	x	x
CR7		x	x
Envizio Pro Series	x		
SCS 4000/5000 Series	x		
3rd Party ISO Consoles*		x	

*Subject to 3rd party ISO console capabilities





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Switch Pro™



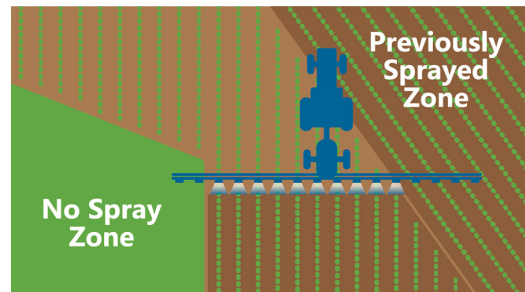
A simple step for a new level of precision

The Switch Pro™ control console is designed to help growers and ag retailers move up to a new level of precision. Simply 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.



Key Features & Benefits:

- Simple installation
- Single-product liquid or NH3 application control
- AccuBoom™ automatic 10-section shut-off control prevents over spraying, skips on point rows and headlands, and reduces operator stress & fatigue
- Replaces external switch boxes and SCS consoles and reduces cable clutter
- Bracket allows placement below Envizio Pro™ series or Viper Pro field computers



Switch Pro™ includes AccuBoom™
Automatically shutting booms off in previously sprayed areas and "no spray zones"

Compatible with the following devices:

Envizio Pro Envizio Pro II Envizio Pro XL Viper Pro Viper 4+

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Precision Electronics



RAVEN

SCS Control Consoles

The industry's most trusted spray controllers

Whether you start small or are looking for a spray console with more performance capability, you're sure to find it in our product guide below. And when you're ready for the next step, Raven has a multi-function field computer with your name on it and a simple way to help you make the transition with our handy Switch Pro control console.

High-performance SCS Series Consoles provide a variety of data, including tank volume, total and field area covered, total and field volume applied, vehicle speed, area covered per hour, and volume per minute of the system. In addition, Raven controllers are GPS compatible for data logging and variable rate applications.



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

Standard SCS Console Features

- Automatic rate control
- Low-limit function
- Volume and area totals
- GPS compatible
- Digital boom pressure readout
- Supports a variety of flow meters and control valves
- Audible alarms
- Self-test function
- Rate +/- functions
- One-product capability

SCS 4000 & 5000 Series

- Data logging capabilities (SCS 4400 & SCS 4600 only)
- Upgrade software remotely via serial port
- 5-product capability
- Sidekick Pro™ compatible
- AutoBoom® compatible (except AutoBoom® XT)

Compatible with the following devices:

AccuBoom Cruiser II Envizio Pro Envizio Pro II Envizio Pro XL Viper Pro CR7 Viper 4+





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Non Weather Resistant Cruiser Cables & Accessories



063-2000-005
New Style Helix Antenna
117-0171-141 Kit (Includes Cable)



063-0172-971
Mounting Plate With Double Sided Tape
For Old Style Helix Antenna (MBA-3)



103-0159-011
Ram Mount for all Cruisers



063-0172-971
Mounting Plate With Double Sided Tape
For Old Style Helix Antenna (MBA-3)



115-0171-792
Boom Sense Adapter
Remotely toggle on/off coverage
map



115-0171-787
20' Helix Antenna Cable



115-0172-054
SCS Console Speed & Boom Sense Cable
Enables section on/off mapping



115-0171-793
Speed Output to SCS Console & Port
Expander Cable
AE2567 (Speed Only)

Precision Electronics

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