

MATRIX® 430

SMART, EASY TO OPERATE GUIDANCE.

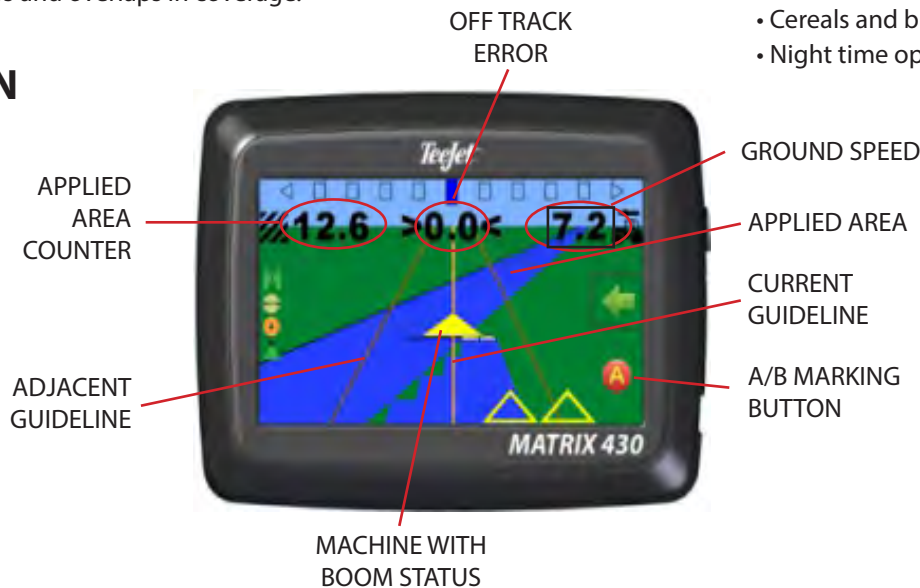
Do you want an easy low cost guidance system? The compact Matrix 430 is ideal for first-time users. The full-color, 109mm/4.3 inch touchscreen display allows the operator to efficiently navigate fields with minimal skips and overlaps in coverage.



Typical Applications:

- Grassland/pasture
- Orchard and vineyard
- Cereals and broad acre crops
- Night time operation

OPERATION SCREEN



Key Features:

- Simple to use
- Easy to understand icons
- Measures field size
- Applied areas are colored
- Alerts you when entering into applied area
- Remembers where you last stopped
- Save up to 5 jobs
- Displays in various units
- Save up to 5 machine configurations
- NextRow guidance mode

Advantages:

- Allows you to skip rows for easy turning on the headland
- Creates field coverage report
- Can be moved between machines easily
- Can connect to external switch to automatically control applied area recording
- Provides speed signal for rate controller
- Just enter working width to get started
- Simpler than car navigation systems

MATRIX 430 SYSTEM COMPONENTS

MATRIX 430 KITS

GD430-GLO-P-L

Kit, Matrix 430, GLONASS, Patch Antenna, US lighter Connector

GD430-GLO-R30-L

Kit, Matrix 430, GLONASS, RXA-30 Antenna, US Lighter Connector



MATRIX 430 CONSOLE



RXA-30 ANTENNA*

78-50190



PATCH ANTENNA

90-02720

* RXA-30 Antenna (Optional): Use where GPS signal is weak.





MATRIX[®] 908

TeeJet[®] TECHNOLOGIES

The TeeJet Matrix 908 is an all new field computer with expandable options to appeal to any agricultural application. You can choose between navigation models for guidance use or choose an ISO model that includes application control in addition to guidance. Multiple GNSS accuracy options are available and require no change in hardware to upgrade. The bright 8" display and fully updated menu structure offers intuitive operations and quick setup.

Features

- Bright, high-resolution 8-inch touch screen display
- Integrated, dual frequency GNSS receiver with external antenna
- Simple, Intuitive menu structure
- Rugged, Magnesium alloy housing
- Available ISO application rate control
- Expandable platform that can support automatic steering, automatic section control, video cameras, external lightbar, droplet size monitoring, and more

Benefits

- Bright screen allows for easy viewing in bright sun and cab-less environments
- GNSS accuracy can be easily upgraded at any time, with no hardware changes, to support various field operations
- Metal enclosure provides extreme durability and improved heat dissipation for long life
- Wide availability of options and upgrade allows the Matrix 908 to be customized to suit your needs and operation
- Expandability and upgradability means the Matrix 908 can easily adapt to you future needs
- Fast, simple setup allows you get to work quickly

MATRIX 908 KITS

Part Number	Description
90-10006-ENUS	KIT, M908 NAV-L1-GLO-ENUS
90-10007-ENUS	KIT, M908 NAV-L2+TSL-GLO-ENUS
90-10008-ENUS	KIT, M908 NAV-L2+TSC-GLO-ENUS
90-10011-ENUS	KIT, M908 ISO-L1-GLO-ENUS
90-10012-ENUS	KIT, M908 ISO-L2+TSL-GLO-ENUS
90-10013-ENUS	KIT, M908 ISO-L2+TSC-GLO-ENUS



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, and other Raven ISO products
- CR7 GPS will have future scalability

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.

CR7 KIT

117-2295-001: CR7 w/ 500S Receiver

Common Parts

115-0172-484: SCS data link, speed out, and CAN cable

063-2000-008: 500S Mounting Kit

103-0159-021: CR7 Ram Mount



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

CR7 SYSTEM COMPONENTS



CR7 Console
w/ Ram Mount
117-2295-005



500S
Receiver
063-2000-006



CR7 & 500S
Power Cable
115-0172-373

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



RAVEN

CR12

The CR12 is the latest field computer in the CRX display family, joining the CR7. Uniquely, the 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.

Like the CR7, the CR12 is compatible with Slingshot® file transfer and remote support, RS1™, boom leveling, Raven product control, and more.

Benefits & Features

- Simple, customizable user interface
- Map based navigation
- Operation Planning
- Boundary and guidance line options
- Grower-Farm-Field data structure
- Recommended for up to 5 product control
- Slingshot® file transfer and remote support
- Slingshot® Over The Air Software Updates
- Easy backup/system recovery
- Straight A-B, A+, Pivot, Contour, Last Pass guidance
- ISOBUS Universal Terminal and Task Controller capabilities

Slingshot® Ready

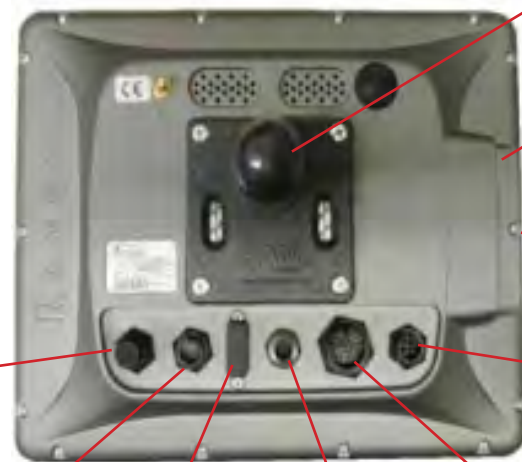
CR12 harnesses the power of Slingshot for outstanding data management functionality giving you powerful tools for gathering, tracking and reporting. Getting the data you need, organizing it and turning it into meaningful information is faster and easier. And Slingshot gives you access to live remote support from Raven's team of experts.

CR12 KIT

117-2300-001: Console, CR12, UT Unlock, RAM Mount



Touch Screen



2" RAM Mount

Power Button

USB Port (x2)

Power Connection

Video Input (Not Used)

AUX CANbus

Video Output/ External Display

Ethernet Port

Main Interface Connector

CRX Operating Software

The powerful CRX operating system user interface features easy job set-up, fewer touches, and greater efficiencies, empowering the user with extraordinary data management capabilities. It boasts a simple widget concept, easily accessible settings, and ISO Universal Terminal and Task Controller capabilities.

Utilize CR12 to its full potential with these enhancements:

SmarTrax AccuBoom 600S Receiver RS1 MD Hawkeye Nozzle Control Raven RCM ISOBUS Product Control Slingshot SCS Control Consoles





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

Viper 4+ KIT

117-5010-010B: Viper 4+, w/o GPS, Service Unlock Included

Common Parts

115-0172-023: Viper 4 to Viper Pro/Epro Cabling
117-0171-132: Ram Mount

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

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



- NEW PRODUCTS
- EQUIPMENT
- LUCAS OIL PRODUCTS
- KNIVES & COULTER COMPONENTS
- TANKS
- PRECISION ELECTRONICS
- SPRAY TIPS
- NOZZLE BODIES
- SPRAY COMPONENTS
- PUMPS & METERS
- VALVES & STRAINERS
- FITTINGS & COUPLINGS
- NH3
- FUEL TRANSFER
- AG COMPONENTS
- PLANTER PRODUCTS

RAVEN

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

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

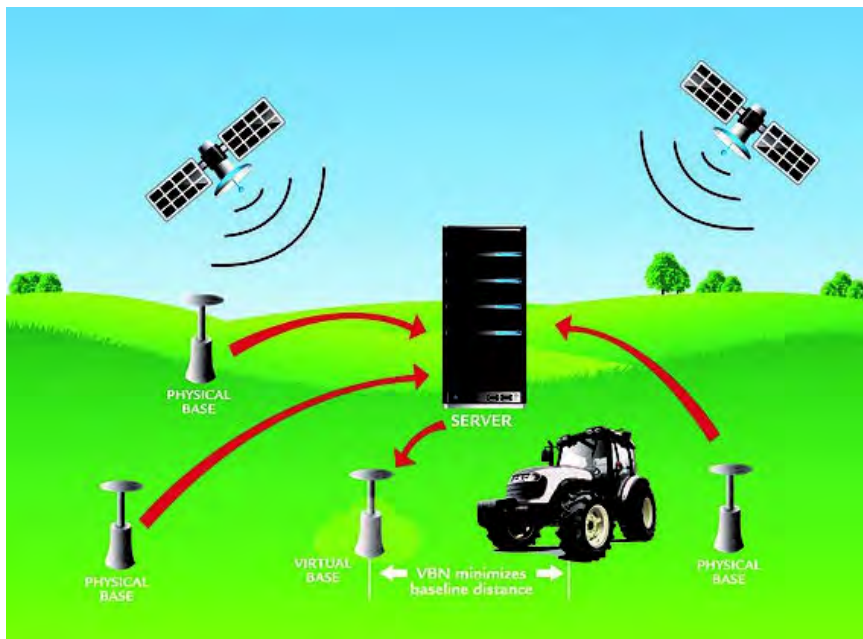
**Viper Pro requires a software patch in order to be compatible with Field Hub 2.0.



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



NEW PRODUCTS
EQUIPMENT
LUCAS OIL PRODUCTS
KNIVES & COULTER COMPONENTS
TANKS
PRECISION ELECTRONICS
SPRAY TIPS
NOZZLE BODIES
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PUMPS & METERS
VALVES & STRAINERS
FITTINGS & COUPLINGS
NH3
FUEL TRANSFER
AG COMPONENTS
PLANTER PRODUCTS

GNSS CORRECTION OPTIONS

CORRECTION		REPEATABILITY	PASS-TO-PASS ACCURACY	CONVERGENCE	UNLOCK	SUBSCRIPTION
AUTONOMOUS SOLUTION	Autonomous solution comes standard with all Raven receivers. Usable in areas without SBAS availability.	--	<8 in	<10 min		
SBAS	SBAS includes area specific differential systems, WAAS and EGNOS. • GLONASS capable • Ideal for broadacre applications	<24 in	<8 in	5-7 min		
SATELLITE GS-LITE (500S only)	Ideal for tillage, broadacre spraying, and fertilizer applications. • Satellite delivery • GLONASS included	<20 in	<6 in	<3 min	•	
SATELLITE GS-LITE (600S, RS1, Viper 4/4+)		<20 in	<6 in	<5 min		•
SATELLITE GS (500S only)	Utilizes premium correction data delivery to provide solutions with high accuracy and quick re-convergence in areas with loss of correction stream. • Corrections delivered via satellite direct to end user • No base station infrastructure required, simplifying equipment needs	<2-4 in	<2 in	<30 min		•
SATELLITE GS (600S, RS1, Envivio Pro II, Phoenix 300 w/USB, Viper 4/4+)		<2-4 in	<2 in	<20 min	•	•
SLINGSHOT RTK (600S, RS1, Envivio Pro II, Phoenix 300 w/USB, Viper 4/4+)	The most accurate. GNSS correction source available from Raven. • Sub-inch accuracy and repeatability and faster convergence times • Base station or CORS network required	<1 in	<1 in	< 5 min	•	
RTK-L (RS1 only)	Receiver can maintain centimetre-level positioning accuracy for outages in RTK correction messages (i.e. loss of cellular or radio connection). • Provides RTK level accuracy for up to 20 minutes of correction outage • Operates seamlessly in the background	--	--	< 30 min		•



500S

117-2000-014 Kit



700S

117-2000-004 Kit



RS1



Viper 4+

Subscriptions are available in 3 month, 1 year, 2 year, and 3 year. Purchase subscriptions online at:
portal.ravenprecision.com/gs-subscriptions

Discontinued Receivers

Phoenix 200
Replaced by 700S600S
Replaced by 700SPhoenix 300
Replaced by 700S

Discontinued Antennas

MBA-3 & MBA-6
Replaced by MBA-7

Garmin GPS Speed Sensor

Astro 5

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

01425 - Micro-Trak
01428 - Dickey John01430 - Raven
01435 - HinikerPatch
063-0172-101

Antennas

MBA-7
117-0171-141 Kit:
063-2000-005 Antenna
115-0171-787 Cable

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+



RS1™



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

RS1 is compatible with:

- Slingshot®
- CR7
- CR12
- Viper 4+
- 3rd party ISO compatible monitors to be listed soon, ask for update



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

RAVEN VSN® VISUAL GUIDANCE



The latest technology advancement from Raven, VSN™ transforms machine guidance through emerged crops. This patent-pending innovation utilizes a non-contact stereo vision camera to navigate crop rows, allowing the operator to focus on all other aspects of effective application control. Minimizing crop damage, covering more acres in a day and essentially providing an easier machine operation leads to a quick return on investment to maximize yield profitability.

How VSN Enhances Your Operation

- Reduces operator fatigue
- Enhanced steering control and simple operation results in minimal crop damage and more acres covered in each available day
- Operates at high speeds, exceeding 20 mph
- Operates in challenging terrains, with demonstrated success in areas exceeding eight degrees of slope
- Maintains row guidance in crops from less than four inches to nearly full canopy
- Quick, one-time calibration with up to five saved profiles for easy crop transitions
- Proven in corn, soybeans, cotton and sorghum

Key Features & Benefits:

- Features & Benefits
- Enhanced machine control for sprayer efficacy
- Reduces operator fatigue and crop damage
- Uses state-of-the-art image sensor and processing technologies to deliver quick response rate and better control
- Tracks machine paths accurately to the actual planting vs. theoretical
- Allows machine ability to automatically adjust to planting inconsistencies or adjustments
- Enables faster vehicle speed
- Works in areas of limited GPS/GNSS coverage — next to tree lines, ditches, hills, etc.
- Live video row overlays in CRX and ROS platforms
- In-field calibration
- ISO UT user interface, custom control widgets
- Slingshot® telematics and OTA software update support
- Pair with Viper® 4+ and RS1™ or SC1™ guidance

Confidently Apply in Full Canopy Crop

VSN's new advancements help operators confidently and accurately operate machinery in additional types and stages of crop. Paired with the VSN visual guidance camera, VSN Full Canopy utilizes non-contact radar sensors to guide the machine in full canopy crop. This proactive approach precisely steers the machine at speeds up to 20 mph. This first-to-market, non-contact, multi-sensor approach maintains sub-inch accuracy through varying crop conditions.

- Allows the operator to cover 20% more acres due to increased speed, enables more efficient field planning, and ease of use
- Reduces driver fatigue, allowing operators to increase the average length of their work day
- Drastically reduces crop damage and misapplication in the field, which can cost growers yield and profit of up to 2%
- Outperforms and is easier to use than expensive/complicated RTK networks



- NEW PRODUCTS
- EQUIPMENT
- LUCAS OIL PRODUCTS
- KNIVES & COULTER COMPONENTS
- TANKS
- PRECISION ELECTRONICS
- SPRAY TIPS
- NOZZLE BODIES
- SPRAY COMPONENTS
- PUMPS & METERS
- VALVES & STRAINERS
- FITTINGS & COUPLINGS
- NH3
- FUEL TRANSFER
- AG COMPONENTS
- PLANTER PRODUCTS

AutoBoom®



Automatic and effortless boom height control

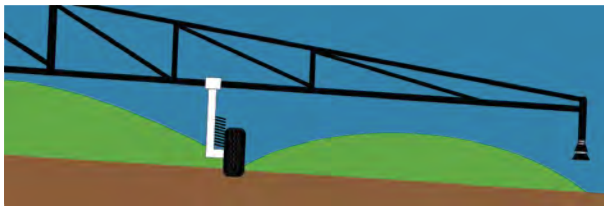
The AutoBoom automatic boom height control system offers faster operating speeds, simple calibration and user-friendly controls. Its unique hydraulic-powered design delivers a smooth and responsive height-adjusting system. AutoBoom gives you increased efficiency with faster spraying speeds, covering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

Key Features & Benefits:

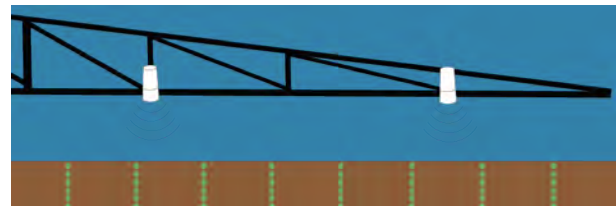
- Adjusts to optimal spray height to prevent drift or inconsistent droplet size
- Pressure-based control for smoother boom movements and adjustments
- Automatic calibration, less than one minute per boom
- Optimal spray height ensured
- Increased efficiency with faster spraying speeds to cover more acres 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



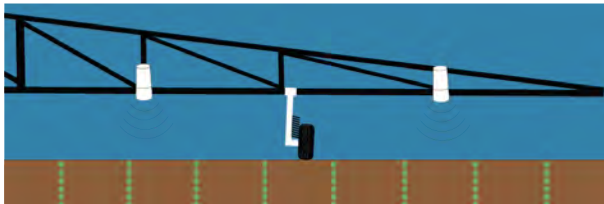
The stand alone controller allows users to add AutoBoom® (except AutoBoom® XT) in the absence of a field computer.



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



AutoBoom® XRT



Raven's latest advancement in boom control is AutoBoom XRT. Industry-leading radar sensor technology uses simultaneous ground and canopy detection to maintain optimal spray height for maximum product efficacy.

Pressure-based control allows for smooth movement and quicker reaction time while center rack stability technology with optional dampers gives the operator complete control, maximizing boom life.



Key Features & Benefits:

- Full boom management solution maintains optimal spray height for maximum product efficacy
- Radar sensor technology
- Simultaneous ground and canopy detection
- Enables a larger maximum distance measurement, not affected by temperature or spray drift
- Five non-contact sensors come standard with the option of adding an additional two sensors
- Center rack stability technology with optional damper
- Pressure-based for smooth movement and quicker reaction time
- Machine chassis roll sensing
- Complete control maximizes boom life
- Faster Sampling and Update Rates than standard ISO AutoBoom



WHY IS BOOM HEIGHT IMPORTANT?



DRIFT

Having the boom too high will lead to spray drift.



CROP DAMAGE

Having the boom too low can damage crops.



BOOM DAMAGE

Damaging the boom when running into the ground is a costly fix and causes machine downtime.

Use AutoBoom XRT on the following:

CR7 CR12 Viper 4+ ISOBUS & VT**

**Subject to 3rd party ISO capabilities



- NEW PRODUCTS
- EQUIPMENT
- LUCAS OIL PRODUCTS
- KNIVES & COULTER COMPONENTS
- TANKS
- PRECISION ELECTRONICS
- SPRAY TIPS
- NOZZLE BODIES
- SPRAY COMPONENTS
- PUMPS & METERS
- VALVES & STRAINERS
- FITTINGS & COUPLINGS
- NH3
- FUEL TRANSFER
- AG COMPONENTS
- PLANTER PRODUCTS

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.

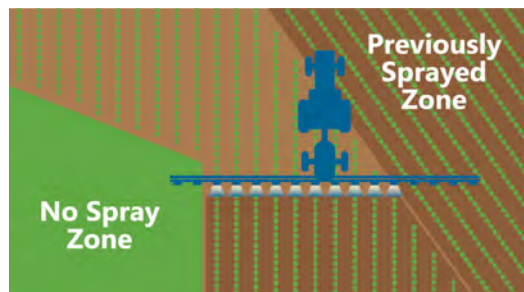
AccuBoom™ automatically turns booms on and off, reducing overlap and overspray therefore reducing chemical wastage, time and cost. By monitoring where the sprayer or spreader has applied, AccuBoom™ automatically turns boom sections on when traveling into areas that have not been covered and turns boom 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 CR12 Viper Pro Viper 4+



RAVEN

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

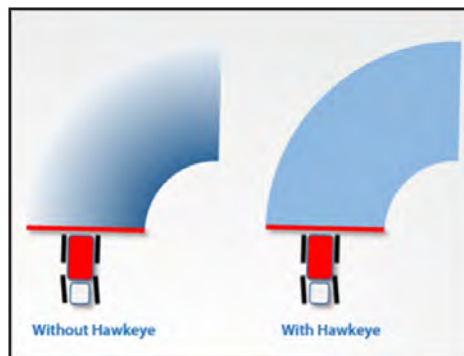
- Individual nozzle shut-off
- Reduces costly skips or overlaps
- Upgrade with a simple software unlock- no change in hardware required

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



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	Auto-Boom	# of Injection Pumps	ISO Switch Box
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 & Spinner Control AccuFlow™ AccuFlow™ HP+ Sidekick Pro CR7 Viper 4+ ISOBUS & VT* RCM

*Subject to 3rd party ISO console capabilities





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 700/1200
- 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 & Spinner Control AccuFlow™ AccuFlow™ HP+ Sidekick Pro CR7 Viper 4+ ISOBUS & VT*

*Subject to 3rd party ISO console capabilities



- NEW PRODUCTS
- EQUIPMENT
- LUCAS OIL PRODUCTS
- KNIVES & COULTER COMPONENTS
- TANKS
- PRECISION ELECTRONICS
- SPRAY TIPS
- NOZZLE BODIES
- SPRAY COMPONENTS
- PUMPS & METERS
- VALVES & STRAINERS
- FITTINGS & COUPLINGS
- NH3
- FUEL TRANSFER
- AG COMPONENTS
- PLANTER PRODUCTS

Machine Types and Their Capabilities

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





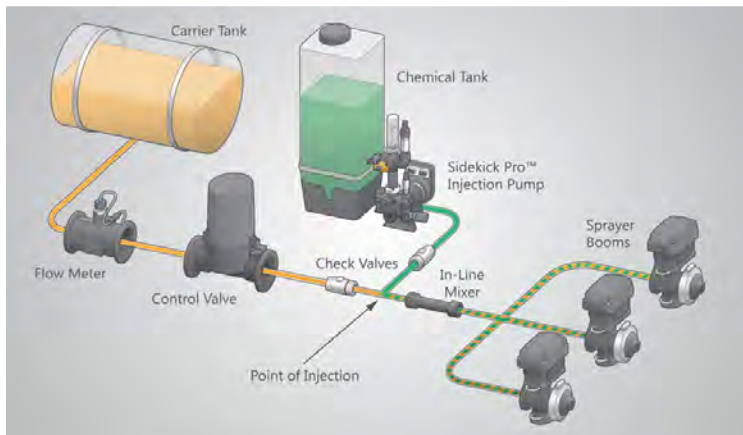
Sidekick Pro™ Direct Injection

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



- NEW PRODUCTS
- EQUIPMENT
- LUCAS OIL PRODUCTS
- KNIVES & COULTER COMPONENTS
- TANKS
- PRECISION ELECTRONICS
- SPRAY TIPS
- NOZZLE BODIES
- SPRAY COMPONENTS
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- FITTINGS & COUPLINGS
- NH3
- FUEL TRANSFER
- AG COMPONENTS
- PLANTER PRODUCTS

Switch Pro™

A simple step for a new level of precision

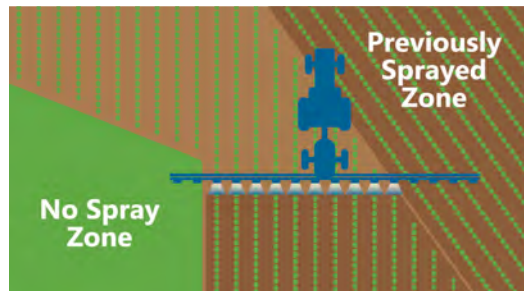
The Switch Pro™ control console is designed to help growers and ag retailers move up to a new level of precision. Simply replace your Raven SCS 440, 450, or 4400 spray console with Switch Pro™—and pair it with any of our Envizio Pro™ series field computers, Viper Pro™, or Viper® 4 field computer. With Switch Pro™ you have on-off section control, adjustable 0-100 percent coverage control, and a manual override function for greater savings and productivity.



RAVEN

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+





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 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 6600	1 Product	Liquid Granular NH3	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:

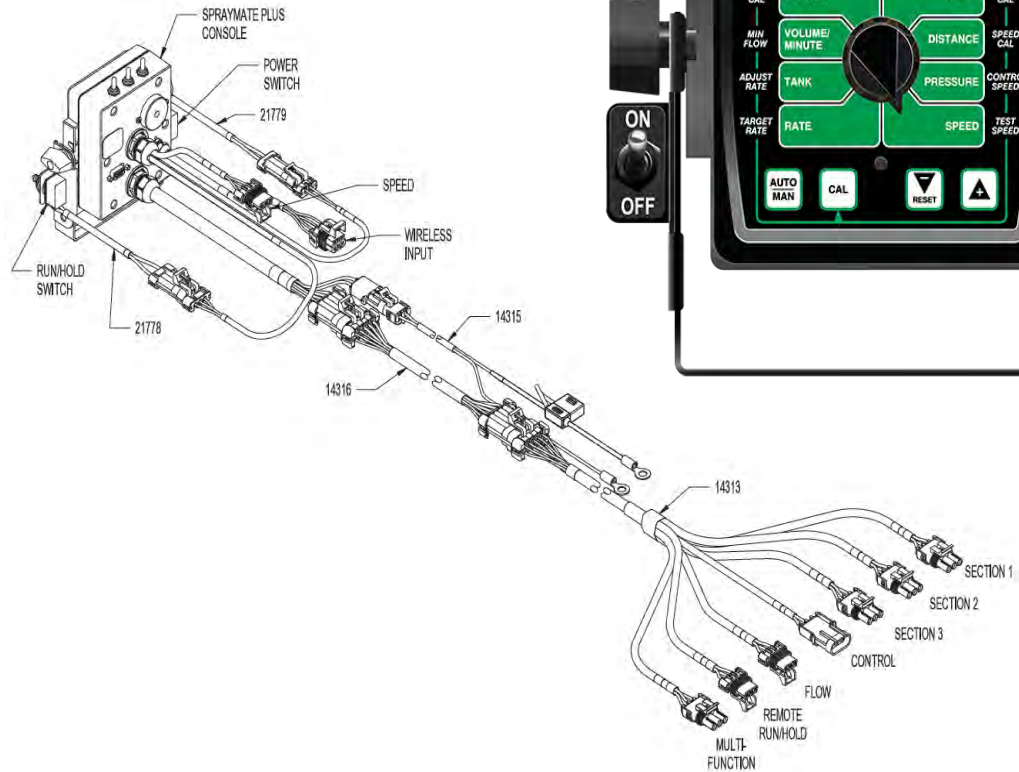
AccuBoom Cruiser II Envizio Pro Envizio Pro II Envizio Pro XL Viper Pro CR7 Viper 4+



- NEW PRODUCTS
- EQUIPMENT
- LUCAS OIL PRODUCTS
- KNIVES & COULTER COMPONENTS
- TANKS
- PRECISION ELECTRONICS
- SPRAY TIPS
- NOZZLE BODIES
- SPRAY COMPONENTS
- PUMPS & METERS
- VALVES & STRAINERS
- FITTINGS & COUPLINGS
- NH3
- FUEL TRANSFER
- AG COMPONENTS
- PLANTER PRODUCTS

SprayMate Plus

Compact in size, yet packed with all the powerful rate control and calculating features you've come to expect from Micro-Trak. Built to fit your changing needs with flexible system options like PWM control and three-way section valves. We've also added special features to ensure quick valve response to changes in vehicle motion; helps minimize disappointing under-applications. Rest assured that valuable console information is secure by using the "Supervisor Lock-Out" feature to prevent deletion of critical calibration figures and data.



NEED TO REPLACE A RAVEN 440?

SprayMate Plus w/Raven Flow Adapter Cable Kit

Used to replace the discontinued Raven SCS440. This cable will allow you to remove the Raven SCS440 and replace it with the SprayMate. Keeping all existing flow meter, control valve and boom section valves in place from original setup.



Ordering options

Part# 02026

This kit comes with the Spraymate Plus console, Raven Flow Adapter Cable, mounting kit, Run/Hold & Power Switches, 15' power cable, and 10' adapter cable.

Part# 19922

If you already have a Spraymate Plus console this cable will run from your console to your existing Raven cabling.

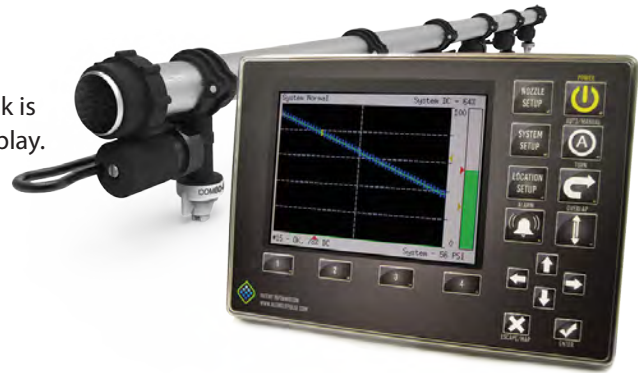


PinPoint II

Apply with Precision

Individual nozzle control with the PinPoint II system maximizes efficiency through increased accuracy.

PinPoint II utilizes Blended Pulse PWM technology to achieve complete individual nozzle control. Real time system feedback is viewed and controlled through the CapView II interactive display.



PinPoint II controls flow and pressure at the nozzle in conjunction with individual nozzle boundary control provides accurate and repeatable application to achieve the desired coverage. Speed up, slow down, turn, overlap, or any combination of those variables will not effect the consistency built into this system.

The award winning individual nozzle boundary control software as well as CapstanAG's signature availability and reliability leads the industry in precision application.



PinPoint II Benefits

- Wider application speed ranges
- No over/under misapplication
- Drift management
- No crop burn from turning
- Uniform pressure and droplet size
- Chemical and time savings
- User-serviceable valves with common tools

PinPoint II Features

- Individual nozzle control
- Turn compensation
- Real-time system feedback and diagnostics
- Individual nozzle boundary control
- Customized boom configurations based on user inputs
- Droplet size remains constant through wide speed ranges
- Blended Pulse technology
- Constant pressure through entire duty cycle range
- Rate Sync Predictive flow control

- NEW PRODUCTS
- EQUIPMENT
- LUCAS OIL PRODUCTS
- KNIVES & COULTER COMPONENTS
- TANKS
- PRECISION ELECTRONICS
- SPRAY TIPS
- NOZZLE BODIES
- SPRAY COMPONENTS
- PUMPS & METERS
- VALVES & STRAINERS
- FITTINGS & COUPLINGS
- NH3
- FUEL TRANSFER
- AG COMPONENTS
- PLANTER PRODUCTS





PinPoint™ III ENVELOP™

Ultimate Precision.



The legacy continues with ultimate precision. PinPoint III ENVELOP, the next generation of Blended Pulse PWM application, can handle the highest speeds, biggest booms, and largest flow rates with pinpoint accuracy and response.

PinPoint III ENVELOP integrates directly through the ISOBUS VT/UT display, to provide operator-focused information for the most confident application possible.

With all the features of PinPoint II, PinPoint III ENVELOP adds predictive rate control to lock on to target rate even under the most challenging field conditions.

Speed up, slow down, turns, overlap, or any combination of those variables will not affect the consistency of the application.

Sensor fusion technology allows PinPoint III ENVELOP to use multiple data points for fast and reliable rate and pressure control.



PinPoint III ENVELOP Benefits

- ISO display Integration
- Fast and stable rate and pressure control
- Wider application speed ranges
- No over/ under misapplication
- Drift management
- No crop burn from turning
- Uniform pressure and droplet size
- Chemical and time savings

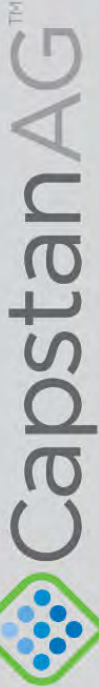
PinPoint III ENVELOP Features

- ISO 11783 VT compliant
- Predictive Rate Control
- Sensor Fusion Technology
- iOS/Android Connectivity



APPLICATION SYSTEMS FOR PROFESSIONALS

John Deere®, Wilger®, Hypro®, Teejet®, and Arag® are trademarks of their respective owners and are not affiliated with CapstanAG.



15 Series Coils
7 Watt - 116189-111

24 Series Coils
12 Watt - 625147-011

PLUNGER ASSEMBLY
Standard Spring
4 Slot - 716009-114
2 Slot - 716009-111

Fly Nut
See Chart Below

STAINLESS STEEL VALVE BODIES

Valve Body Identification:
Each valve body is machined with a model identifier that relates to the series in addition to the nozzle body it is design for.

Sample Identifiers:
A15 - ARAG, 15 Series
T24 - TEEJET, 24 Series

TESTING COILS

1. Set Volt Meter to Test Resistance or Ohms (Ω)
2. Insert (+) and (-) Leads into the Valve Connector



7-watt Coils
between 21 - 23.5 Ohms

12-watt Coils
between 10 - 12 Ohms

CAN EXTENSION HARNESSES

- 5' 118650-005
- 10' 118650-010
- 15' 118650-015
- 20' 118650-020
- 25' 118650-025
- 30' 118650-030
- 35' 118650-035
- 40' 118650-040
- 45' 118650-045
- 50' 118650-050
- 55' 118650-055
- 60' 118650-060
- 65' 118650-065
- 70' 118650-070
- 80' 118650-080
- 90' 118650-090
- 100' 118650-100
- 110' 118650-110
- 120' 118650-120

System/Parts Orders
orders@capstanag.com
Returns/Warranty
rma@capstanag.com
Technical Support
prodsupport@capstanag.com

FLYBODIES

Flybody Identification:
Each Flybody is machined with a model identifier that relates to the series in addition to the nozzle body it is design for.

Sample Identifiers:
A15 - ARAG, 15 Series
W24 - Wilger, 24 Series

WILGER		TEEJET	
15 Series Complete* 540007-15W 116188-001	24 Series Complete* 540012-24W 116188-002	15 Series Complete* 540007-15T 116188-001	24 Series Complete* 540012-24T 116188-002
O-Ring 1 715022-210	O-Ring 2 715022-206	O-Ring 1 715022-210	O-Ring 2 715022-202
O-Ring 3 715022-204	O-Ring 3 715022-204	O-Ring 3 715022-204	O-Ring 3 715022-204
ARAG/HYPRO		ARAG HIGH FLOW <small>Required for John Deere High Flow Nozzle Bodies</small>	
15 Series Complete* 540007-15A 116182-001	24 Series Complete* 540012-24A 116182-002	15 Series Complete* 540007-15AHF 116182-201	24 Series Complete* 540012-24AHF 116182-202
O-Ring 1 715022-210	O-Ring 2 715022-205	O-Ring 1 715022-211	O-Ring 2 715022-212
O-Ring 3 715022-204	O-Ring 3 715022-204	O-Ring 3 715022-215	O-Ring 3 715022-215

*Complete Assemblies include Flybody, Flybody, coil, plunger, and O-rings.

WILGER		TEEJET	
15 Series Complete* 116188-111	24 Series Complete* 116188-112	15 Series Complete* 116188-111	24 Series Complete* 116188-112
Valve body 116188-111	Valve body 116188-112	Valve body 116188-111	Valve body 116188-112
O-Ring 1 715022-201	O-Ring 1 715022-201	O-Ring 1 715022-200	O-Ring 1 715022-200
O-Ring 2 715022-206	O-Ring 2 715022-206	O-Ring 2 715022-202	O-Ring 2 715022-202
O-Ring 3 715022-204	O-Ring 3 715022-204	O-Ring 3 715022-204	O-Ring 3 715022-204
Fly Nut 717101-007	Fly Nut 717101-007	Fly Nut 717101-105	Fly Nut 717101-105
ARAG/HYPRO		ARAG HIGH FLOW <small>Required for John Deere High Flow Nozzle Bodies</small>	
15 Series Complete* 116182-111	24 Series Complete* 116182-112	15 Series Complete* 116182-211	24 Series Complete* 116182-215
Valve body 116182-111	Valve body 116182-112	Valve body 116182-211	Valve body 116182-215
O-Ring 1 715022-201	O-Ring 1 715022-201	O-Ring 1 715022-211	O-Ring 1 715022-211
O-Ring 2 715022-205	O-Ring 2 715022-205	O-Ring 2 715022-215	O-Ring 2 715022-215
O-Ring 3 715022-204	O-Ring 3 715022-204	O-Ring 3 715022-215	O-Ring 3 715022-215
Fly Nut 717101-006	Fly Nut 717101-006	Fly Nut 717101-306	Fly Nut 717101-306

*Complete Assemblies include Valve Body, coil, 2-Slot Plunger, and O-rings.

www.capstanag.com

