## Envizio Plus Kit includes Cable & Bracket

The Envizio Plus offers a variety of views such as: down-field view, birds-eye view, GPS status screen with the AutoDetect feature, field boundaries to total acres, and field map review with zoom and vehicle lock. In addition, Envizio Plus eliminates the common A-B button presses in guidance and allows you to save your A-B line, making the job startup easier than ever before.

The Envizio Plus also features state-of-the-art hardware design with a RAM mount system, Boom sense wire or tap screen for coverage, and multiple area counts with one job. The Envizio Plus also features a 3D Color Touch Screen and LED lightbar for easy guidance status. Offering two USB ports, the Envizio Plus allows operators the option to copy jobs and update software without special hardware and cables.





FLOW CONTROLS DIVISION

## Features:

- NEW! AccuBoom automatic boom section control
- NEW! Control and setup AutoBoom leveling system
- NEW! Data log Raven console (as applied data)
- On-screen guidance with built-in light bar
- Down-field and Birds-eye view
- Compatible with SmarTrax and QuickTrax steering systems
- Records field and applied acres
- LastPass Guidance Pattern enables the operator to drive to their nearest "last pass" without having to set any points.
- GPS status screen with the AutoDetect Feature
- Field map review with zoom and vehicle lock
- Color Touch screen interface
- LED and on-screen guidance
- Boom sense wire or utilize touch screen for coverage
- Field Review mode that indicates overlap
- Switch between "Last Pass" pattern and "Straight" swathing within the same job
- Pivot Pattern
- Course Over Ground (COG) option for "straight swathing"
- Ability to save A-B line
- State-of-the-art hardware design
- RAM mount system
- Multiple area counts with one job
- Two USB Ports

Envizio Plus Kit includes Cable & Bracket	
Part#	Description
RV1170171090	Envizio Plus Kit

Envizio Pro Kit with GPS

as dual product CANbus control.

main cable, and external antenna.

The Envizio PRO is an enhanced version of our popular Envizio Plus. The PRO carries all the same capabilities of the Plus with the addition of a larger 6.4" color screen, integrated DGPS receiver as well

The Envizio PRO kit includes mounting bracket,

Patch Antenna



## Features:

3-D Last Pass guidance

Integrated DGPS receiver, also available without receiver

On-screen guidance can interface to a Raven RGL light bar

Two product Raven CAN interface

Flow control - liquid, granular, NH3, direct injection

Single product variable rate control (optional) Interface to Raven controller Wireless communication (optional) CANbus AutoBoom – Automatic Boom Height Control (optional)

Full setup and control of the Raven PowerGlide Plus and UltraGlide AutoBoom systems can be performed from the Envizio PRO

CANbus AccuBoom - Automatic Boom Section Control (optional)

Setup and monitor boom section control, create no-spray-zones and boundaries from Envizio PRO

Creates color coverage & as-applied rate maps on the go

Creates field-boundary maps

USB thumb drive memory transfer

Data log information to internal memory

Data saved in Shapefile format for use in most major software packages

Simple product application report & map

Select between English and Metric units

Spinner rpm readout & control (optional)

PWM Spinner control capable (optional)

SmarTrax and QuickTrax assisted steering capable

Supports standard, fast close, and PWM product control valves

Boom Position Indicator – The width and relative position of the coverage booms are shown on the coverage map. This feature makes it easier to identify potential overlaps and helps in lining up a new swath.

Guidance AB Lines - AB lines can be saved for each field and recalled at a later date.

Tilt Sensor Setup – Setup of the Raven TM1 Tilt Sensor can be performed from the Envizio PRO.

CAN Alarm Auto Clear – Off Rate and Low Limit CAN alarms now automatically clear from the Envizio PRO screen when the alarm condition is no longer present.

Reset Field Totals - Field acreage and volume totals can now be reset while in a job.

Simplified Setup including:

Simplified Boom Setup – Simply enter the number of booms and boom widths and the Envizio PRO automatically calculates boom center locations. A simplified summary screen display boom setting and allows quick access to modify boom settings.



Envizio Pro Kit with GPS Patch Antenna	
Part#	Description
RV1170171126	Envizio Pro Kit w/Patch Antenna

Viper PRO Kit with Guidance/Single Product VRA
Features:
10.4" sunlight readable, color touch-screen USB thumb drive memory transfer
Interference to existing (with corrid next) and new Deven controllers
Compatible with any GPS system
CAN (Raven only) interface today will plug-n-play
Raven Injection
AccuBoom – Boom Section Control
AutoBoom – Boom Height Control
Creates color coverage & as-applied rate maps on the go
Creates field-boundary maps
Up to five channel variable rate capabilities with existing or new
Raven controllers
Data log information to internal memory
Stores data in Shapefile format for use in most major software packages Create in-the-field product application report & map
No cost Raven Rbin Viewer software available at www.ravenprecision.com
Import existing maps of fields – Coverage, Boundary, VRA
Soil sampling and crop scouting
Select between English and Metric units
Five product VRA capability on all AGCO Vipers
Remote conveyor switch (optional)
Dual remote conveyor switch for New Leader L3220 (optional)
Bin chaining – automatically switch bins
In-cab spinner speed readout & adjustment
PWM Spinner control capable
Closed loop spinner speed capable Guidance control on-screen or with external lightbar
Steer Control with optional autosteer feature
Supports standard, fast close, and PWM product control valves
Streetmaps provide county road maps (available as a free download on internet)
Liquid, granular, and NH3 control
On-line in-job access to prescription maps, coverage map, and product information
User selectable profiles for different machines
Boom Position Indicator – The width and relative position of the coverage booms are shown on the coverage map. This feature makes it easier to identify potential overlaps and helps in lining up a new swath.
Guidance AB Lines – Up to 5 AB lines can be saved for each field and recalled at a later date. (NEED VIPER
GUIDANCE ACTIVATED FOR THIS FEATURE)
AutoBoom Control – Full setup and control of the Raven PowerGlide Plus and UltraGlide AutoBoom systems can be performed from the Viper.
CAN AccuBoom and AutoBoom Control With Serial Consoles – CAN AccuBoom and AutoBoom control is
available even if the Viper is connected to a serial control Raven console.
Tilt Sensor Setup – Setup of the Raven TM1 Tilt Sensor can be performed from the Viper.
Greenseeker - The Viper can be connected to the GreenSeeker system and provide real-time variable rate
product control and mapping of coverage.
Mobile weather station – log on-the-go weather information to report. CAN Alarm Auto Clear – Off Rate and Low Limit CAN alarms now automatically clear from the Viper screen
when the alarm condition is no longer present.
Reset Field Totals - Field acreage and volume totals can now be reset while in a job.
Simplified Boom Setup - Simply enter the number of booms and boom widths and the Viper automatically
calculates boom center locations. A simplified summary screen display boom setting and allows quick access to modify boom settings.
Speed Cal Assistant – A speed cal assistant steps through the setup of speed cal settings.
Pulse Width Valve Calibration Assistant – A calibration assistant simplifies the setup of PWM max and min
settings.
Spreader Constant Assistant – A spreader constant assistant eliminates manual calculation to establish

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Spreader Constant Assistant - A spreader constant assistant eliminates manual calculation to establish spreader constants.

Viper Pro Kit w/Guidance/Single Product VRA	
Part#	Description
RV1170171112	Viper Pro w/Guidance/Single Product VRA









## RGL600 Universal

With the power of Raven Swath Smart Guidance System you're always right on target. The easy, onestep setup and operation mode is as simple as plugging your lightbar in and entering the swath width. Advanced menu options allow for more intricate patterns and settings depending on your navigation needs. With Raven Swath Smart, you'll work more efficiently, you'll have more money in your pocket, and you'll do more with less.

## Features:

- Large Display Screen-Instant Access to Swath Smart Number, Swath Error, Course Heading, and Ground Type
- Optional Tilt Compensation for Hills No one else offers it
- Adjustable Light (for both direct sunlight and operating at night)
- All-in-One Settings (monitor application settings at a glance and make adjustments with ease) Removable Cables for Portability

**Rugged Weatherproof Casing** 

RGL600 Ligh	RGL600 Lightbar	
Part#	Description	
RV1170159884	RL600 Lightbar Universal	



## TM1 Tilt Senor Kit

The lightbar tilt module is an optional feature which you can add to your RGL Lightbar. This module is useful in fields in which tilt compensation is desired.

TM1 Tilt Sen	M1 Tilt Sensor Kit	
Part#	Description	
RV1170171059	TM1 Tilt Sensor Kit	



## Woods Powr Grip Mounting Suction Cup

Durable polycarbonate accessory mount with threaded stud for attaching equipment. 1/4-20 x 3/8" Mounting stud. Attaches to flat or curved, smooth, nonporous surfaces. Red-line indicator warns user of any vacuum loss. Check valve allows repumping without loss of remaining vacuum. Lift tabs on vacuum pad edges permit instant release. Supplied with vacuum pad protector.

Wood	oods Powr Grip Suction Cup	
	Description	
91200	4 1/2" Mounting Cup, Capacity 40#/cup	



GPS

& CONTROLLER

## SmartBoom System

The SmartBoom system provides automatic boom valve section control, which turns boom sections on or off, based on either pre-defined spray zones and/or previous coverage. SmartBoom reduces costly spraying errors, such as skips and overlaps, and is designed to augment your Raven SCS440/450/460 or 660 console and provide a complete spraying solution. SmartBoom is designed to meet these needs while operating in the rugged agricultural environment. A front panel display makes configuring and operating the system easy and user friendly.



The SmartBoom system consists of the following three components, which are required for a complete system:

SmartBoom controller SCS SCS440/450/460 or 660 Console GPS Receiver

The SmartBoom system is similar to the existing AccuBoom system, but it is a completely selfcontained system, eliminating the need to use an Envizio Plus or Viper to control the system. Using "spray" or "no spray zone" areas, the SmartBoom controller automatically turns the boom section off if the boom section is in a previously applied area, eliminating overlaps. It also eliminates skips by turning boom sections back on after leaving a previously applied area.

Part#	Description	
RV1171001043	SmartBoom Universal	
		AccuBoom
		Automatic Boom Section Control
RA	VEN	
INDU	USTRIES	
	NTROLS DIVISION	

## AccuBoom System

Raven offers AccuBoom kits to make it easy to put together the system you need to reduce waste and skip in the field.

AccuBoom automatically turns booms on and off, reducing overlap. With its hands-off control, AccuBoom reduces operator fatigue. With CAN AccuBoom systems, you have up to 10 boom control. (Parallel systems offer 7 boom control). AccuBoom also offers simplified coverage of point rows.

AccuBoom Kits are available for most of todays Self Propelled & Pulltype Sprayers

## Please call for additional details & pricing.

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AutoBoom

Precision Spraying at High Speeds!

Spraying perfection can be achieved with Raven's automatic boom height controller - the AutoBoom. AutoBoom adjusts your booms automatically at speeds of up to 20 mph in all terrain, increasing your spraying speed 15-30%! Using your boom's hydraulics, the AutoBoom's parallel hydraulic system always keeps your hydraulic valves open - gently balancing your hydraulic cylinders and allowing the booms to descend or elevate effortlessly.

Features and Benefits of the AutoBoom:

Increased Efficiency: With reduced limitations on ground speed and reaction time, AutoBoom allows operators to spray more acres per day while still reducing fatigue.

User-Friendly Controls: AutoBoom offers simple operation - just turn on the power switch and tap left and right boom tip down. Manual override is available at any time during your application simply by touching your boom switches up.

Hydraulics Move Your Booms Effortlessly: AutoBoom's parallel hydraulic system always keeps the hydraulic valves open, allowing the system to adjust effortlessly to your terrain.

Fast Installation: AutoBoom boasts of simple operator installation - install the system in less than a day!

**Options Available:** 

The AutoBoom system is currently available in three versions:

**AutoBoom PowerGlide** systems use a gauge wheel to maintain optimum boom height and state of the art hydraulics to maintain constant hydraulic pressure in the lift cylinder. If desired, you may also purchase a secondary wheel to assist your boom.

**AutoBoom PowerGlide Plus** also utilizes a gauge wheel to maintain optimum boom height and state of the art hydraulics to maintain constant hydraulic pressure in the lift cylinder. PowerGlide Plus systems are typically used in pre-emergent applications. PowerGlide Plus systems can be easily upgraded to UltraGlide systems by purchasing the upgrade kit.

**AutoBoom UltraGlide** uses state of the art ultrasonic sensors that gauge the distance to the ground. UltraGlide Systems are typically used in pre-emergent and post applications.

All systems are available for the following sprayers: Self Propelled Sprayers Pull Type Suspended Boom Sprayers



Raven offers a one-year warranty on material and workmanship on the AutoBoom.

## AutoBoom PowerGlide

AutoBoom PowerGlide uses state of the art hydraulics and gauging wheels to measure the distance to the ground.

Each AutoBoom kit sonsists of two parts:

A Controller Kit consists of the console and cabling that controls the system from your cab. The controller kit remains the same regardless of the machine you are using.

verGlide

An Installation Kit consists of the components on the exterior of your machine. The installation kit is machine-specific, so different machines will use different kits.

An Axle Kit is suspended and rigid, and is also required for the AutoBoom PowerGlide system. Please contact your Raven Distributor for more information about axle kits.

## AutoBoom PowerGlide Plus

A complete CAN PowerGlide Plus system will require the following four kits:

- Manufacturer and model specific installation kit
- CAN PowerGlide Plus controller kit
- Envizio Plus, Viper, SCS4000, SCS4400 or SCS4600 system kit
- CANBus, Terminators & Power Adapter
   "T" (not needed if used with an existing CANBus system)

## AutoBoom UltraGlide

AutoBoom UltraGlide uses state of the art ultrasonic sensors that gauge the distance to the ground. UltraGlide Systems are typically used in pre-emergent and post applications.

Each AutoBoom kit consists of two parts:

A CAN UltraGlide Controller Kit consists of the console and cabling that controls the system from your cab. The controller kit

remains the same regardless of the machine you are using.

An Installation Kit consists of the components on the exterior of your machine. The installation kit is manufacturer and model specific, so different machines will use different kits.



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# GPS &

I N D U S T R I E S



## SmarTrax™

SmarTrax<sup>™</sup> is your straight shot to easy steering.

Now steering is more affordable for everyone with Raven's SmartTrax<sup>™</sup> Steering Assist.

Raven's products continue to make agriculture easier and more profitable for growers and ag retailers all over the world, and SmarTrax<sup>™</sup> is no exception. We engineered it to be the most accurate, easy-to-use steering package in its class. Now you can work at night,

**3PS & CONTROLLERS** 

in the dust or in dense fog. SmarTrax<sup>™</sup> systems allow for hands-free steering at speeds up to 22 mph and can be used for spraying, spreading, broad-acre air seeding, discing, and tillage operations.

Whether you're planting or spraying, SmarTrax<sup>™</sup> minimizes skip and overlap for improved accuracy and less waste - and it works with virtually any GPS receiver with a NMEA protocol string.

Raven products continue to make agriculture easiser and more profitable for growers and ag retailers all over the world -- SmartTrax<sup>™</sup> is no exception.

Whether you're planting or spraying, SmarTrax<sup>™</sup> minimizes skip and overlap for improved accuracy and less waste -- and it works with virtually any GPS receiver with NMEA protocol and a 5 Hz or greater update rate.

**SmarTrax Features:** 

Line Acquisition - Engage system after turnng half-way around Sub-meter and decimeter modes to match your application and GPS receiver capabilities Configure via LCD or membrane keypad Rugged, weatherproof enclosure Exclusive Raven technology Operate at speeds up to 22 mph

**Steering Accuracy** 

Submeter > 15-30 cm (6-12 in) RMS swath-to-swath accuracy at 20 minutes with Invicta 115, 210/310 and Phoenix 200 GPS receivers (WAAS)

Decimeter > 5-10 cm (2-4 in) RMS swath-to-swath accuracy at 20 minutes with Phoenix 300 GPS receiver (OmniSTAR HP)

## Supported Vehicle Types

Supports many models of tractors and sprayers. New models are added frequently. Visit www.ravenprecision.com for the most up-to-date list.

Each SmarTrax<sup>™</sup> System contains four vital components, which are listed on the opposite page:



## SCS 4000 Consoles

Raven SCS 4000 Series Consoles are affordable and easy-to-use. Take control of your applications with a big screen view, large keypad and a simple setup. Manage three products and navigate your applications with a user-friendly interface. The 4000 series also expands easily, offering you the flexibility your operations needs.



## SCS4000 Console

Raven SCS 4000 Series Consoles are affordable and easyto-use. Take control of your applications with a big screen view, large keypad and a simple setup. Manage five products and navigate your applications with a user-friendly interface. The 4000 series also expands easily, offering you the flexibility your operations needs.

This console can also be used for granular application.

Features: 5 product capability CANBus equipped No data recording Clearly marked, large keypads Easy to read, backlit VGA display Simple in-cab wiring Ground speed compensated automatic rate control GPS compatible 10 boom capability Upgrade software remotely via serial port





## SCS4400 Console

Sprayer controller and data logger with 3 to 10 boom control. Raven's SCS 4400+ Console merges spraying control and data logging into the same unit. The unit offers two programmable preset rates and simple data logging. The SCS 4400+ is GPS compatible.

This console can be used for liquid and/or granular application.

## Features:

5 product capability Easy to read display Datalog as-applied maps to compact flash 1/4 VGA Monochrome display 3 to 10 boom control Multiple audible alarms for system monitoring



# GPS & CONTROLLERS



## SCS 4600 Console

Raven SCS 4000 Series Consolers are affordable and easy-to-use. Take control of your applications with a big screen view, large keypad and a simple setup. Manage five products and navigate your applications with a user-friendly interface. The 4000 series also expands easily, offering you the flexibility your operation needs.

## Features:

5 product capability **CANBus** equipped No data recording Clearly marked, large keypads Easy to read, backlit VGA display Simple in-cab wiring Ground speed compensated automatic rate control **GPS** compatible 10 boom capability Upgrade software remotely via serial port

## SCS 440 Console (3-boom)

Raven's SCS 440 spraver controller provides precise automatic rate control for up to three boom section inputs. Two separate application rates can be preprogrammed and selected 'on the go' with a simple flip of a switch. The SCS 440 is compatible for variable rate application and data logging.

\*Console includes Serial Interface for Bi-Directional **Communication and Printer Port** 

## Features: Easy to read 28 digit display One time, easy programming Digital boom pressure readout Automatic Rate +/-Control valve delay Low limit flow rate option Cumulative TOTAL VOLUME applied and TOTAL AREA worked for record keeping Ground speed compensated automatic rate control Digital boom pressure readout Low tank fault alarm **PWM Valve Control Option** Zero speed shut off





## SCS 450 Console

6-Boom sprayer control used with liquid and NH3 Raven's SCS 450 sprayer controller provides precision product automatic rate control for up to six boom section inputs. Two separate application rates can be pre-programmed into the controllers and selected 'on the go' with a simple flip of a switch. The SCS 450 is compatible for variable rate application and data logging.



\*Console includes Serial Interface for Bi-Directional Communication and Printer Port

Features:

Easy to read 28 digit display Ground speed conensated automatic rate control One time, easy programming Cumulative TOTAL VOLUME applied and TOTAL AREA worked for record keeping Digital boom pressure readout Low tank fault alarm Automatic Rate +/-PWM Valve Control Option Control valve delay Zero speed shut off Low limit flow rate option

SCS 460 Console (7-Boom) Liquid and/or NH3 Application

Raven's SCS 460 sprayer controller provides precision product automatic rate control for up to seven boom section inputs. Two separate application rates can be pre-programmed into the controllers and selected 'on the go' with a simple flip of a switch. The SCS 460 is compatible for variable rate application and data logging.



\*Console includes Serial Interface for Bi-Directional Communication and Printer Port.

Features:

Easy to read 28 digit display Ground speed compensated automatic rate control One time, easy programming Cumulative TOTAL VOLUME applied and TOTAL AREA worked for record keeping Digital boom pressure readout Low tank fault alarm Automatic Rate +/-PWM Valve Control Option Control valve delay Zero speed shut off Low limit flow rate option



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## SCS 660 Liquid/Granular Console

7-Boom control system used with liquid, granular and NH3. The SCS 660 allows for simple and accurate control of either liquid or granular application.

\*Console includes Serial Interface for Bi-Directional Communication and Printer Port.

### Features:

Easy to read 28 digit display Ground speed compensated automatic rate control One time, easy programming Cumulative TOTAL VOLUME applied and TOTAL AREA worked for record keeping Digital boom pressure readout Low tank fault alarm Automatic Rate +/-**PWM Valve Control Option** Control valve delay Zero speed shut off Low limit flow rate option **GPS** compatible On-the-go programmable rate change 7 boom control with switch box or boom cable for liquid application Single or dual drag belt control for granular applications Multiple audible alarms for system monitoring Self-test function for system check-out

## Cruizer

The new Raven Cruizer is a compact 3-D guidance system that provides a high degree of functionality, allowing growers who have not yet adopted guidance to do so for half the price of other guidance systems. The Cruizer is an ideal fit for those of you who never thought you could afford a guidance system.

5.7" color touch screen display

3D and 2D graphic swath display along with LED indicator lights

Field review display to verify coverage and identify skips

Easy to understand, Icon based menus and status indicators

Built-in DGPS receiver with upgradeability to E-Dif Single package provides easy mounting and portability Can be used with both Raven Assisted Steering

Products (SmartTrax and QuickTrax) Provides a low cost sub-meter steering solution Setup wizard

Available tilt sensor to compensate for side hills Available high gain antenna for difficult reception areas

Cruizer's Last Pass guidance system is the easiest to set up and use contour guidance program in the industry. The system guides the operator to one swath width from a previously applied area. Operators can easily switch between straight line (A-B) and Last Pass which is ideal for use in terraced fields or grass waterways. Cruizer works with SmarTrax and QuickTrax auto steering systems.

## **RFM Series** Flow Meters

Accurately measure a wide range of liquids at various flow rates with our simple, economical flow meters.

## Available with capacities of 5G - 400G min



## **RFM 200**

- 3" NPT Female Inlet and Outlet
- 300 PSI (Cast Iron) / 90 PSI (Poly) Pressure Rating
- 16 TYP Pulses/GAL
- 15-200 GPM Rated Capacity

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063-0159-470	RFM 5 (0.1-5 GPM S.S. / 12 VDC)
063-0172-040	RFM 15 (.3-15 GPM Poly / 4.5-16 VDC) M200 Flanged
063-0159-571	RFM 55 (1-55 GPM Poly / 4.5-16 VDC)
063-0171-666	RFM 60S (1-60 GPM S.S. / 4.5-16 VDC)
063-0171-793	RFM 60P (1-60 GPM Poly / 4.5-16 VDC) M200 Flanged
063-0171-066	RFM 100 (5-100 GPM Poly / 4.5-16 VDC) M220 Flanged
063-0159-574	RFM 200 (15-200 GPM / 4.5-16 VDC) Electrolis Nickel Plated Cast Iron
063-0159-751	RFM 200P (15-200 GPM Poly / 4.5-16 VDC) M300 Flanged
063-0159-966	RFM 400 (25-400 GPM Poly / 4.5-16 VDC)
063-0171-890	RFM 60S (1-60 GPM S.S. / 4.5-16 VDC) (Sapphire Bearings)



## RFM 60P

- 1 1/2" Ends Inlet and Outlet
- 175 PSI Pressure Rating
- 72 TYP Pulses/GAL
- Polypropylene Body
- 4.5 16 VDC Supply Voltage
- 10 mA Supply Current

# **Valve Products**

All our valves are designed for simplified maintenance and serviceability

## **Poly Butterfly Valves**

- Compatible with popular flange fittings
- Features internal female NPT pipe threads to accommodate non-flange fittings
- non-flange fittings
  Butterfly manufactured with Kynar for excellent wear and chemical resistance
- Available in both 1" and 1 1/2" sizes

## **Boom Valves**

- 40 GPM @ 5 PSI Pressure Drop per Valve
- 175 PSI Pressure Rating
- M200 Banjo Flange Inlet
- 3/4" Female NPT Outlets
- 0.7 Seconds On-time/Off-time
- Plunger-style valve for complete shut-off
- Optional user configuration: 2- to 10-section bank

## **On/Off & Control Valves**

- New style powerhead
- New and improved coupler
- Full line of carbon steel, stainless steel and poly on/off and control valves
- Easier maintenance and serviceability



## **PWM Valves**

- 3000 PSI Pressure Rating
- 8 1/2 Pounds Weight
- 10 Micron Minimum
- 60 to 115 HZ Recommended Pulse Frequency
- Available in 5, 10, 15, & 30 GPM





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