

GVM SNOW DIVISION PRODUCT CATALOG



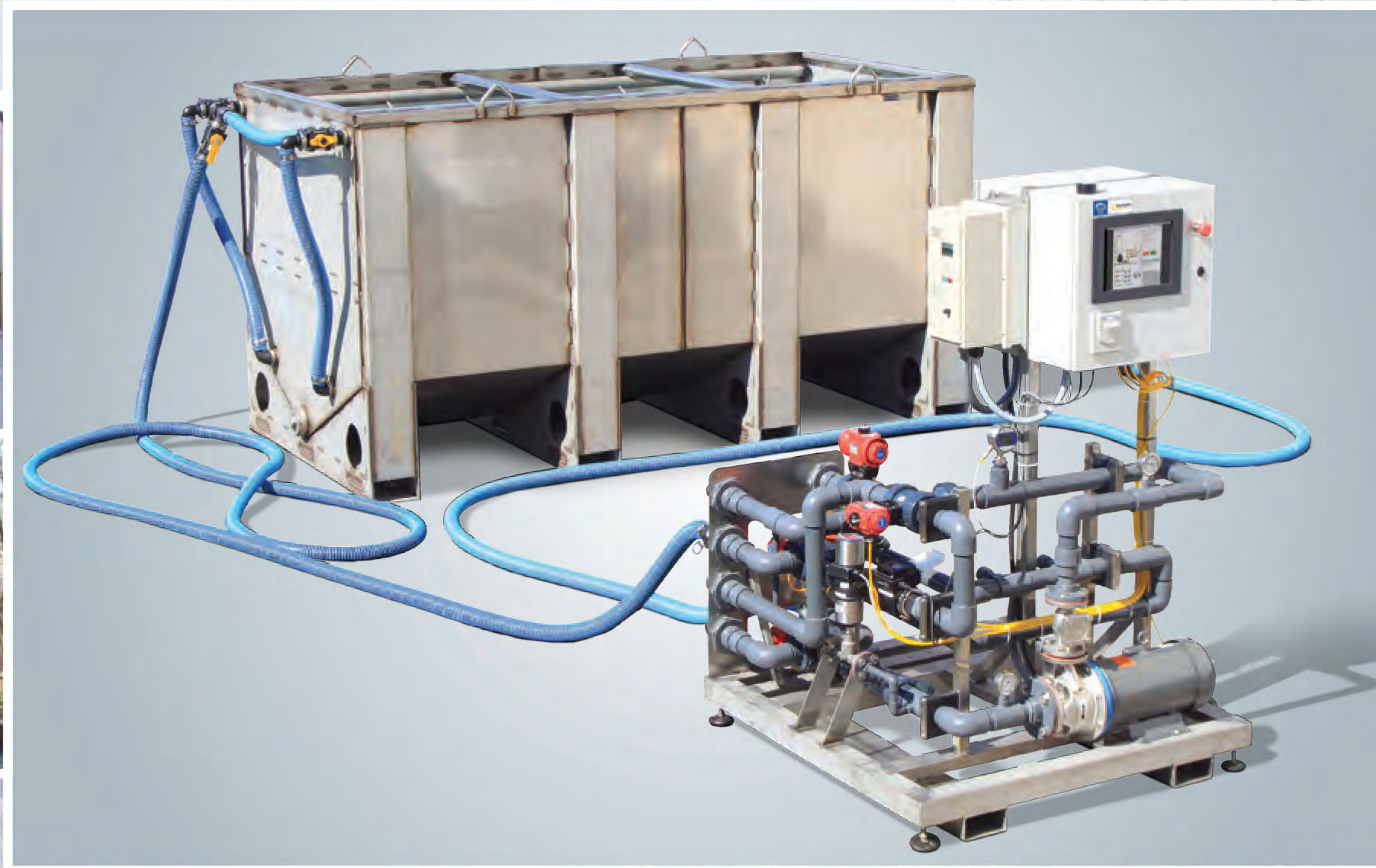
MS FOSTER

SERVING THE TRANSPORTATION INDUSTRY

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Built to Last

Our Mission: To provide productivity through quality and innovation.

Who we are

GVM Incorporated's Snow Division is a leader and innovator of de-icing and anti-icing equipment to allow for safer roads before, during, and after a snow/ice event.

We service our customers and distributors with a passion for customer satisfaction like no one else in our industry.

Anti-Icing is a proactive approach to winter road maintenance by applying a chemical (e.g. salt brine, calcium chloride, magnesium chlorides, or other de-icers/freezing-point depressants) to a road surface prior to a storm to prevent snow/ice from bonding to the pavement. Anti-icing reduces the amount of time required to restore roads to clear, dry, and safe conditions. The time savings in restoring roads to safe conditions also dramatically reduces the cost of road maintenance. Liquid de-icers are generally applied at a rate of 15-70 gallons per lane mile.

Benefits of anti-icing:

- The road surface is never “lost” and bare pavement conditions are quickly returned, reducing the quantity of material & efforts required in de-icing
- Safer road conditions decrease accidents & traffic delays
- Salt residue remains on the road, ready to work when precipitation begins, so even if a storm is delayed, your products are effective
- Uses less salt therefore minimizes environmental concerns & the cost of operation

De-Icing is a reactive process of melting accumulated snow/ice from road surfaces. This is generally completed with salt by lowering the freezing point of the snow/ice and providing temporary traction. It can take up to six times the resources to remove compacted snow and ice; making anti-icing the more cost efficient and effective option.

Pre-Wetting refers to the addition of liquid melting agents (often used in anti-icing) to salt to improve its melting capabilities at lower temperatures by lowering the freezing point and jump starting the melting process. Salt alone must turn into a liquid solution before it can effectively melt snow and ice; therefore, pre-wetting helps the otherwise dry material begin melting immediately. Research states that up to 40% of dry salt can scatter or bounce off the roadway. The addition of liquid helps decrease this effect and keep the salt mixture, where it belongs, on the roadway. Generally, 5-15 gallons of liquid is added to each ton of dry material to be spread on the roadway. This is accomplished through the use of truck mounted systems or by overhead spraying as the truck is being loaded.

Pre-Treating refers to either pre-treating the roads through anti-icing or pre-treating the salt with a liquid (pre-wetting) to increase the melting characteristics.

Salt Brine is a 23.3%, by weight, mixture of tap water and rock salt. Salt brine is generally made using a brine manufacturing system. Salt brine can significantly lower the cost of operation and increase road conditions.

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BRINE MANUFACTURING SYSTEMS

EZ BRINE SYSTEM

GVM's automatic EZ Brine System is a quick, easy, and accurate solution for manufacturing salt brine and custom chemical blends. Flexible enough to meet the needs of any organization, the EZ Brine can be used as a batch system to produce blends on an as-needed basis or as a continuous manufacturing system to ensure your blend is always available. In addition to salt brine, the EZ Brine can blend up to three different micro-ingredients allowing users to produce custom blends to work at various temperatures. Additives and micro-ingredients will allow blends to work at lower temperatures and often for longer periods of time.

The 12 inch programmable touchscreen computer is simple to operate and helps to guide the user through the process. The user simply programs the system for continuous or batch style production, sets the desired salinity, and the micro-ingredient injection level (if any). A Baumer conductivity sensor constantly monitors brine salinity and logs data at a concentration set by the user. Brine level is also constantly monitored and the state of pumps and valves are graphically displayed on screen to easily monitor their performance. The system also logs data including brine production, tank loading capacities and fill rates, and system events. Built in WiFi allows for easy remote monitoring remotely as well as determining the need to service adjustments and upgrades without a physical inspection. The system also features a built in printer to quickly print volume produced data.

- Produces up to 6,000 gal. of brine per hour (depending on water source)
- Built in computer with WiFi & printer for easy programming, remote monitoring, & data logging
- Mix brine & up to 3 micro-ingredients, injected on a continuous basis, as programmed by the user
- Automatic monitoring of components & solution
- Compact control/blend station, 4 x 4 ft footprint
- 304 stainless steel mix tank, with skid-style base & adjustable leveling feet
- 7.6 cu yd salt capacity v-bottom tank, 120 x 63.5 x 65 in. (L x W x H)
- 120 in. wide top opening for easy loading
- Top mounted spray bars for rapid saturation of salt
- All controls mounted in a NEMA 4 rated enclosure, watertight & corrosion resistant
- Variable frequency drive controlled pump for varying fill rates
- 230V single phase or 480V 3-phase power connections
- Baldor 7.5 hp motor with 3600 rpm centrifugal 316 stainless steel Goulds pump



GEOMELT

GeoMelt is an agricultural byproduct of the sugar beet industry. Used in conjunction with rock salt or salt brine, GeoMelt enhances the melting power of the chemicals to 0°F or lower and is 60% less corrosive than rock salt alone. This patented product also works with other de-icing liquids.

**Contact your local GVM Dealer
for more information about GeoMelt.**

Economical

- Reduces salt consumption & labor
- Increases equipment life

Effective

- Works longer; 2-3 days
- Works in temperatures as low as -30°F

Environmentally Friendly

- Less corrosion to surfaces
- Less harmful to green spaces

AUTOMATED BATCH SYSTEMS (ABS)

GVM's Brine Manufacturing ABS's convert dry rock salt into liquid for pre-wetting or anti-icing roadways. The use of salt brine lowers the freezing point of snow and ice and is a popular, cost effective solution for managing roadways using readily available materials, granular salt, and tap water.

- Produces up to 5000 gal. of brine per hour (depending on water source)
- Stainless steel tank divider separates manufactured brine for pumping to storage tanks
- Hot-dip galvanized structural steel frame meets ASTM specification A-123 for corrosion protection
- 115 in. wide top opening
- Tank designed to be rolled over for easy clean-out
- Includes a Misco Digital Refractometer to measure saturation percentage of salt brine
- Vertical storage tanks available from 300 - 20,000 gal.



ABS-800 Brine System

Ideal for landscapers, small municipalities, and contractors, the portable ABS-800 is GVM's most economical system available.

- 800 gal. capacity tank, 144 x 43 x 58 in.
- 2.5 yd³ salt capacity
- Single speed pump, 110 GPM

ABS-1500 Brine System

In addition to quick and easy brine production, the ABS-1500 allows users to pump the manufactured brine into a storage tank, which can then be used as a fill station. This fill station solution is simple and easy, not requiring the user to move or adjust any hoses. The ABS-1500 also allows users to load and unload truck-mounted pre-wet and anti-icing systems, returning material into the large storage tank so no material is ever wasted.

- 1500 gal. tank, 151 x 53 x 63 in.
- 5 yd³ salt capacity
- 2-speed pump for high & low operation speeds, 40 - 130 GPM

SELF-PROPELLED EQUIPMENT

EZRIDER

THE MOST VERSATILE SNOW & ICE REMOVAL SYSTEM

The perfect solution for snow and ice control before, during, and after an event. The GVM EZ Rider allows users to apply granulated salt, pre-wet salt at the spinner, and spray anti-icing liquids. This low clearance machine features easy maneuverability and a tight turning radius, and ideal for universities and college campus', parking garages, and as a tool for municipalities to clear sidewalks.

- 13 hp Briggs & Stratton electric start engine
- Variable speed hydrostatic drive
- Stainless steel, rust resistant frame
- Hydraulic spinner & agitator
- 45 PSI 3.0 GPM pump
- LED work light
- Digital hour meter & tachometer
- 250 lb granular capacity, 4 ft spread width
- (2) 15 gal. poly tanks; 30 gal. capacity, 3 ft spray width



Pre-wetting at the spinners



Anti-icing before event



EZ Rider control panel

PRE-WET SYSTEMS



Free-standing system



Free-standing system



Fixed base system



Fill level gauge



Pump system



Free-standing controls

PEDESTAL PRE-WET SYSTEMS

GVM's Pedestal Pre-Wet Systems are multi-functional liquid de-icer dispensing systems designed to pre-wet truckloads of solid de-icing materials. Each system is custom built to fit its specific operation and space.

Pedestal Pre-Wet Systems allow users to pre-wet multiple truckloads and trucks with just one dispensing system. Pedestal systems are also capable of loading and unloading truck-mounted pre-wet tanks, returning the liquid de-icer to bulk storage tanks, and draining tanks for end-of-season maintenance.

Systems Include:

- Adjustable height spray bar
- Centrifugal pump, rated flow up to 60 GPM
- Post-mounted control box
- Hot-dip galvanized steel to meet ASTM specification A123 on base, main body, & spray arm
- Dusk-to-dawn light
- Electric ball valve to prevent tank siphoning

Options:

- Fixed base system or free-standing systems
- Storage tank sizes: 300-10,000 gal.
- Tank Plumbing-to-Dispensing Package
- Remote control for ease of operation
- Linear actuator, for mechanical spray arm adjustment
- APG ultrasonic digital gauge to view fill level



240 gal. frame mounted system



Tailgate mounted system



Chassis mounted system



V-box mounted system

TRUCK MOUNTED PRE-WET SYSTEMS

GVM's Truck Mounted Pre-Wet Systems are designed to pre-wet granular material directly at the spinner during application. Built on the heaviest duty frames in the industry users benefit from extended durability. Truck Mounted Pre-Wet Systems are ideal for Departments of Transportation, municipalities, townships, and landscapers. With a variety of sizes and mounting options, GVM's pre-wet systems can be customized to fit virtually any truck.

Features:

- Accurately & consistently dispenses all common pre-wet liquids
- Cab mounted controller
- Hot-dip galvanized steel carrier
- Weatherproof polyethylene pump housing
- Hydraulic or electric pump

Options & Sizes:

- Frame mounted: 35-65 gal. available
- Chassis mounted: 60-240 gal. available
- V-box mounted: 30-450 gal. available
- Tailgate mounted: 30-135 gal. available

ANTI-ICING SYSTEMS



*EZ Load
1800 gal. truck mounted*



Swap



EZ Load



125 gal. ATV mounted



225 gal. skid mounted



*325 gal.
pick-up mounted*

DIRECT APPLICATION SYSTEMS (DAS)

GVM's Direct Application Systems (DAS) are designed to spray anti-icing liquids directly onto road surfaces, and can also be used for dust control on unpaved surfaces. DAS units are available in a wide range of sizes, to fit any fleet and any budget.

The system is mounted on a free standing carrier frame made of hot-dip galvanized steel, designed to fit ATV's, tractors, and large and small trucks.

Features:

- Add-on system to directly apply anti-icing or de-icing liquids
- Easy load & unload features
- Hook-lift system, skid-mounted system or trailer system
- 1, 2, or 3 lane coverage spray bar
- On/off controller in cab
- Ground speed control options
- Hydraulic driven pump

Options & Sizes:

- 125-3400 gal. systems available
- Raven De-Icing Controls, optional
- RoadWatch SS for Early Temperature Warning, optional
- Micro-Trak RoadMaster Application Control, optional
- TeeJet 854 Sprayer Control, optional
- Baffle ball system for liquid surge protection, optional
(Optional equipment shown on page 9)

Raven De-Icing Controls

Raven de-icing control systems improve the accuracy and uniformity of liquid and granular chemical applications. All control consoles mount inside the cab for easy operation and convenient monitoring.

DCS 300 Control System for Automatic Pre-Wet Applications

- Monitor displays: total granular applied, day liquid volume applied, total liquid volume applied & liquid left in tank
- Speed sensor & zero speed key
- Turbine-type flow meter
- Motorized control valve

DCS 400 Control System for Liquid De-Icing

- Ice control for roadways & airports
- Dust control on roadways, road construction, & race tracks
- “Blast” button option for higher application rate when needed
- Accurate control over a wide range of application rates
- Granular encoder
- Turbine-type flow meter
- Motorized control valve



RoadWatch SS for Early Temperature Warning

The RoadWatch SS features the most technologically advanced early warning system of road and air temperatures in the industry. Their state-of-the-art system continuously monitors and displays air and road temperatures to give drivers advance notice of potential road freezing, before problems arise.

- Sensor heads can be replaced outside the vehicle without re-routing the cable in only 5 minutes
- Improved air sensor responds more quickly to temperature changes than previous versions
- Extension cables available in 4, 12, & 16 ft take the overall length to a usable 60 ft
- Flexible cabling for routing into tight spaces



Baffle Ball System for Liquid Surge Protection

Save money by reducing fuel and maintenance costs.

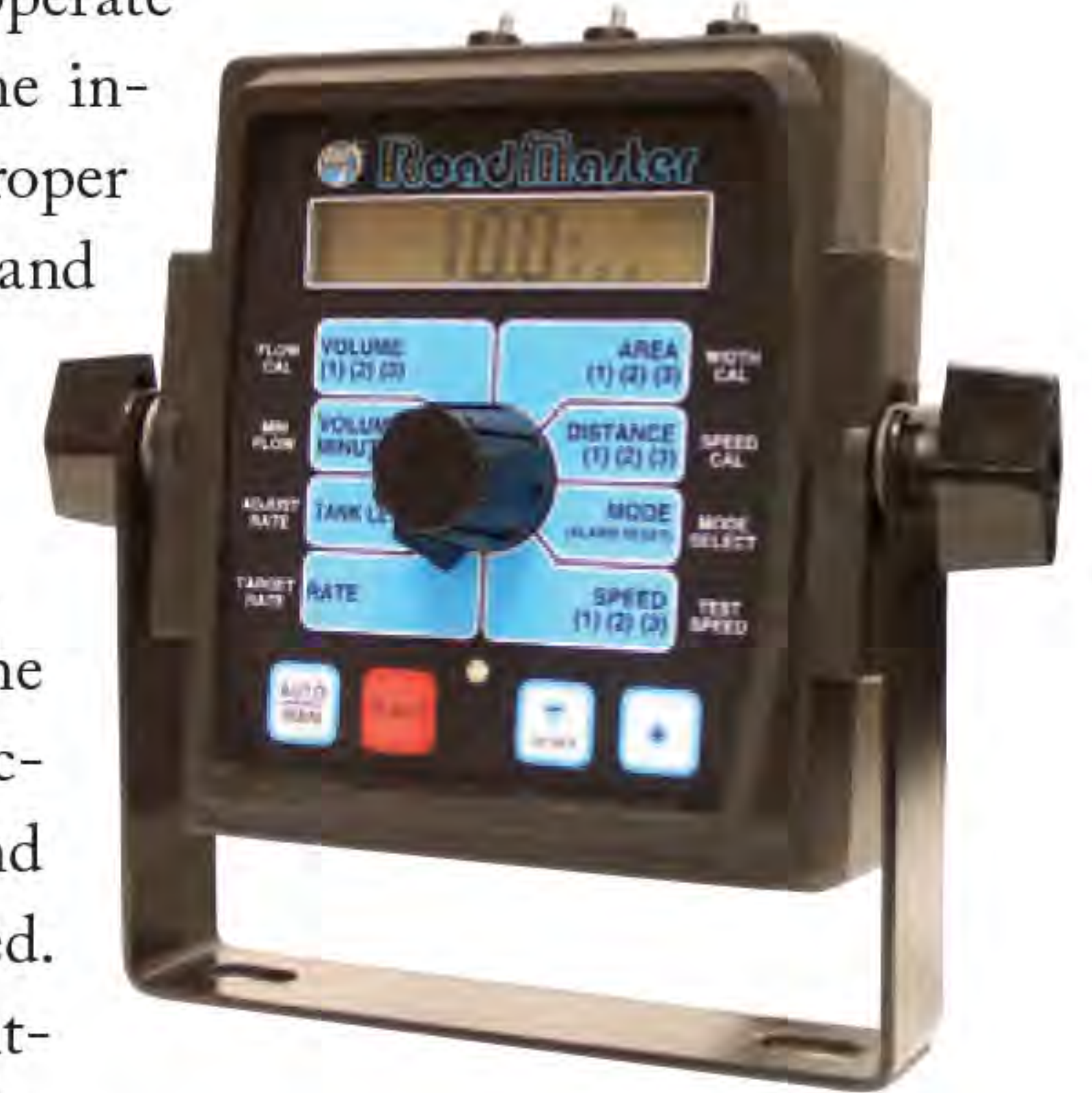
- Reduce fluid movement for improved stability during transit
- Rust resistant, lightweight, & durable
- Low liquid displacement
- Small ball displaces 5 oz, weighs 0.25 lb
- Large ball displaces 14 oz, weighs 0.8 lb
- Recommend use quantity:
 - Large ball (14 in.) – 1 baffle ball per 10 gal. of total tank capacity
 - Small ball (7.5 in.) – 1 baffle ball per 2 gal. of total tank capacity



Micro-Trak RoadMaster Application Control

Simple, accurate application control. The RoadMaster is an automatic control system that can help you operate more cost-effectively by providing the information you need to maintain proper application rates of liquid de-icer and anti-icing chemicals.

The RoadMaster offers four operating modes for lane, agricultural, dust control, and turf applications. The RoadMaster provides a complete picture of critical spraying functions and an accurate record of work performed. Total gallons, feet and lane mile counters can be independently reset without affecting other stored totals.



- Push-button controls for on-the-go rate adjustment & selection of automatic or manual operation
- Out-of-range warning light, plus status indicators for up to 3 boom sections
- Heavy-duty rotary switch for quick function selections
- Heavy-duty, weather resistant console, & weatherproof cable connectors
- Precise rate control
- Compensates for ground speed & application width changes
- Zero speed shutoff in automatic mode
- Works with solenoid or 3-wire ball valves
- Vehicle ID settings for full documentation of work performed

TeeJet 854 Sprayer Control

This innovative product combines the simple operation and programming of the proven TeeJet line with features not previously available in spray control systems.

- Rugged construction, sealed switches, & non-volatile memory
- Front panel has clear instructions for easy operation
- Saves summary reports on up to 10 jobs
- Auto-Master can be set to automatically switch boom sections on & off at predetermined speeds
- Auto tank fill allows the console to control tank filling operations
- Dual boom capability for a wide range of speed & application rates
- Smart Sensing automatically selects between pressure or flow sensors, choosing the best sensor for each application
- Communications port for printer, PC, & GPS connections



BLEND & FILL SYSTEMS

Pump Transfer Station

- 22 x 11 x 12 in. (L x W x H) enclosure
- Fill hose & unload hose: 15 ft of 1 in. chemical resistant rubber
- Poly fill nozzle with stainless steel spring & pin for easy tank filling
- Tank return assembly, attached to the storage tank
- 1 in. poly bulkhead fitting
- 1 in. poly ball valve with quick couple connection
- 2 in. poly tank shutoff valve with male quick couple attached
- 15 ft of 1-¼ in. flexible PVC hose fitted with 2 in. female quick couple for tank connection
- 1-¼ in. poly hose barb for connecting to pump



Blend Station

To accurately mix up to three de-icing chemicals, the GVM Blend Station allows users to quickly adapt to any weather event at any desired rate or effective temperature. GVM's Blend Station also allows users to set a programmable batch size and volume. Additionally, the system features an automatic shutoff, for ease of operation.

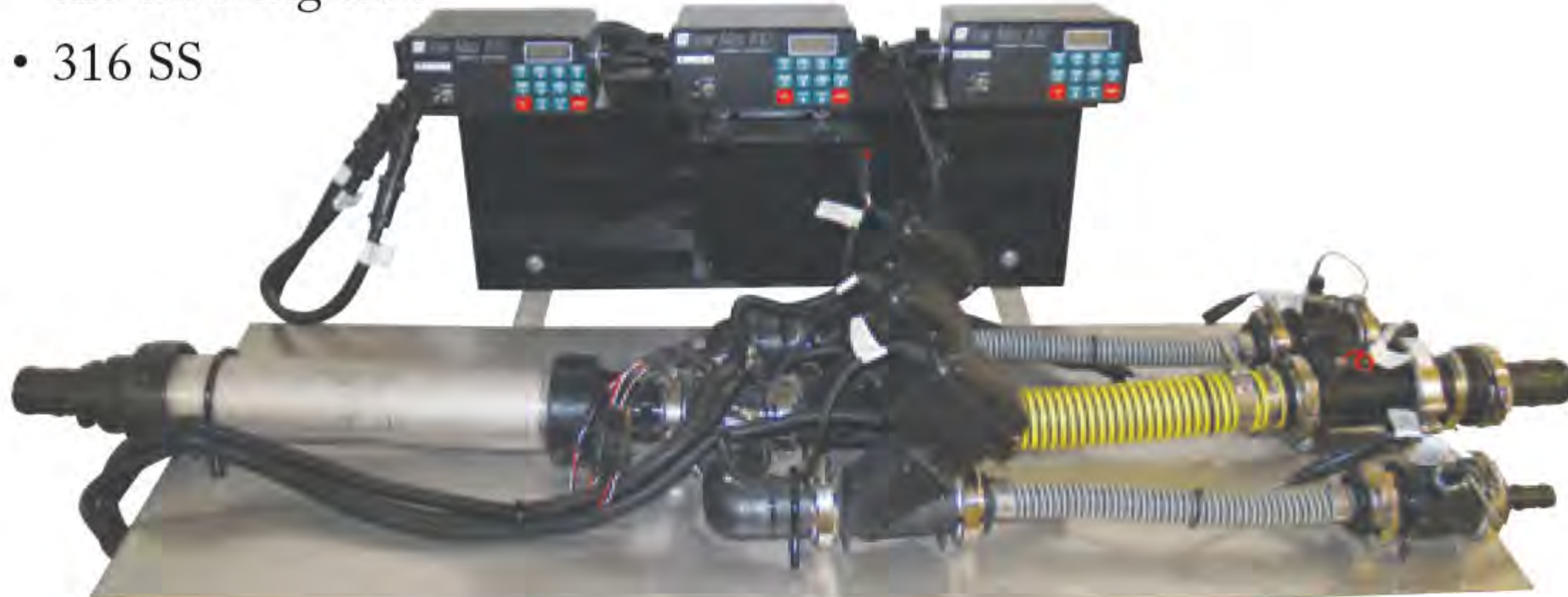
The Raven mixing tube generates over 100,000 Reynolds of mixing turbulence at 100 GPM, guaranteeing that individual chemicals will be thoroughly blended together before application to the road surface, thus eliminating the need for a separate mixing tank. The turbulence rating increases as the GPM rate increases. The unit also includes Raven Flow Max components paired with Raven flowmeters.

Flow Max 810 Controller

- Programmable batch size
- Pre-cutoff setting to ensure accurate batch volume

Raven Mixer

- Ensures accurate & even blending of liquid de-icing materials
- Enhances mixing turbulence through a honeycomb style grate within the blending tube
- 316 SS



Portable Pump Transfer Station

GVM's portable pump transfer stations are built to meet your specific requirements for filling pre-wet or anti-icing systems.

GVM's portable pump transfer stations feature a molded polyethylene enclosure with a lockable lid, an electric motor driven pump, and hosing. Pump Transfer Stations can also be built with an optional gas engine with a two inch suction and discharge. The system's polyethylene enclosure is large enough to store hosing when the pump station is not in use.



Calcote Fill Systems (CFS)

CFS Series Systems are designed to dispense liquid chlorides and other liquid pre-wet solutions into truck mounted tanks used to pre-wet de-icing materials. They also have the ability to unload, and return liquids held in the truck mounted tanks to the storage tank.

- Work light allows for safe & efficient operation
- Dispenses all common pre-wet liquids
- Constructed of materials & components proven to be durable in the harsh environment of winter road de-icing
- Full line of polyethylene storage tanks ranging from
- 300 - 10,000 gal. in size
- Series 1000 & 1500 systems include a timer for automatic shutoff



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