

Dry Feed Systems Series

35-100 Solution Tank Systems

The Series 35-100 chemical feed solution tank systems are designed for water and wastewater application and give excellent results preparing large or small volumes of solution from dry chemicals. These systems are pre-engineered, packages systems built with standard components. Because of the variety of these components and the optional accessories, it is possible to tailor a system to any situation precisely. There is no need to settle for too little or too much capacity or control. They are available in four standard tank capacities: 150, 250,300 or 500 gallons.

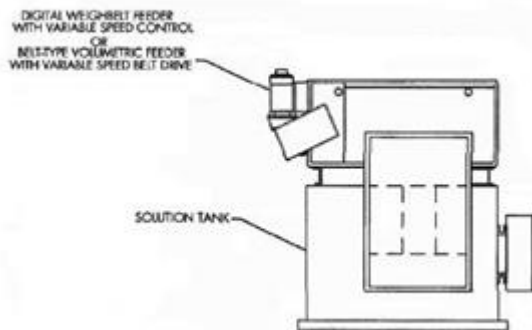
Features

More Economical, Gives Better Results than Do-It- Yourself System

Production of Series 35-100 systems is standardized on a proven master design using stock components. This helps produce a more economical system than one purchased and assembled component by component. It also helps ensure a more efficient system, as improper design can lead to less-than- satisfactory performance and added expense later.

Pre-Engineered for Efficient Operation

Proven, pre-tested design helps assure proper mixing, proper tank layout and structural support, and good flow through the tank. Such designs help eliminate short circuits and dead spots which reduce tank capacity. Such important details as matching of components and placement of inlet, discharge, and level controls are thoroughly engineered. System design helps prevent wasting chemicals, produces properly mixed solutions.



Wide Choice of Arrangements

Tanks can be painted or stainless steel with 150, 250, 350, or 500 gallon capacity. Feeders can be belt-type gravimetric or belt-type volumetric in a variety of capacities and control modes. Thorough mixing is accomplished by a submerged, triple-jet mixer and a mechanical mixer. Options include: a special mechanical mixer with a draft tube for wetting carbon (150 and 250 gallon tanks only); tank-pump-out piping (instead of gravity discharge); remote control panel; hopper vibrators and controls; contacts for remote alarms; automatic variable-speed control of feeder throughout; totalization of feeder throughout.

Key Benefits

- Custom system from stock components
- Trouble free start-up and proper operation
- Wide choice of arrangements
- Pre-tested, economical to install

Custom Systems From Off-The-Shelf Components

Because the components and options offered are all standard stock units, a custom system can be created from off-the-shelf components. It is possible to select a system with any degree of refinement required at reasonable cost.

Factory Pre-Tested, Economical to Install

Each individual system is assembled and pre-tested at the factory to assure trouble-free start-up and proper operation. Installation requires only placing the feeder-solution tank system at its desired location. Power and signal leads are brought to a coded terminal strip in the control panel and plumbing connections are made. This cuts installation costs to a minimum.

“Add-On” Capability

Series 35-100 solution-tank systems are designed so that components can be changed, or new components added at any time. A gravimetric feeder might replace a volumetric or control might be changed from manual to automatic. Any of several useful accessories can be added in the field.

Design and Operation

Dry chemical flows by gravity from the hopper to the feeder belt. The feeder meters chemical into the solution tank through a discharge chute.

Depending on tank size, chemical is mixed with water by one or two mechanical mixers and by a water-jet agitator. They give thorough mixing. A water-jet-operated removal system clears away dust and fumes.

The solution tank can be furnished for continuous (gravity) discharge or pump-out operation. For each type of operation, the tank has different inlet and outlet configurations. For continuous operation, they are arranged for continuous dilution-water inlet and gravity discharge. A baffle at the discharge connection assures a steady and continuous outflow. For pump-out operation, a float valve controls the make-up-water supply and pump-out piping replaces the baffle at the discharge.

The feeder, mixers, and hopper agitators are started, stopped, controlled, and monitored from the control panel.

System Components

Available in painted steel or 316 stainless steels with capacities of 150, 250, 350, and 500 gallons. All tanks are equipped with dust-and-vapor removers, submerged water-jet mixers, and inspection covers. The 150 and 250 tanks have one mechanical mixer; the 350 and 500 tanks have two. All tanks are supplied with inlet and discharge piping for gravity discharge. Pump-out piping is optional.

Optional on 150 and 250 gallon stainless steel tanks with belt-type feeders is a mechanical mixer-draft tube arrangement. It wets activated carbon at rates to 2.5 lbs. per minute. This enables the rate of carbon feed to be independent of water flow. This agitator can be used with a gravity discharge only.

Control Panel

Normally mounted on the tank, but available as an option for wall mounting. It is a rugged NEMA type 12 steel enclosure with no knockouts and with a continuous hinge, gasketed door. It has moisture-tight lights, switches, controls, and feed rate meter. When mounted on the tank, the only installation wiring required is to the options selected and to a standard 115-volt, single-phase supply. (An optional transformer can be added to the panel to accept a 230/460 volt, three-phase supply). The optional wall mounted panel requires minimum wiring. There is a coded terminal strip in a junction box on the tank and a corresponding terminal strip in the control panel.

Arrangements

Feeders Gravimetric Model 31-165

Digital weightbelt feeder for 150, 250, 350, and 500 gallons stainless or painted steel tanks. This durable unit gives accurate feed rates (1% of set rate or better). A vertical gate manually sets belt loading, an SCR variable-speed drive controls belt speed. Feed rate control can be manual from the system control panel, start-stop, or automatic by a 0(2)-10 VDC or 4-20 mA dc control signal. Adjustable operating range is 20:1 by belt speed. The feeder is dust-tight, easy to clean, and easy to maintain; includes automatic belt tracking and tensioning systems. Handles fine to lumpy materials. Parts which contact the material being fed are stainless steel, Neoprene, Buna N, and others chosen for maximum chemical resistance. Write for Product Sheet CF.310.165.000.PS.

Volumetric Model 32-215

Belt-type volumetric feeder for 150, 250, 350, and 500 gallons stainless or painted steel tanks. This rugged feeder gives dependable feed rate control for powder to lumpy materials. A manually adjusted vertical inlet gate sets belt loading. An SCR variable-speed drive controls belt speed.



Feed rate control can be manual from the control panel, start-stop, or automatic by a 4-20 mA dc control signal. Adjustable operating range is 20:1 by belt speed. The feeder is dust-tight, easy to clean, and easy to maintain; includes automatic belt tracking and tensioning systems. Handles fine to lumpy materials. Parts which contact the material being fed are stainless steel, Neoprene, Buna N, and others chosen for maximum chemical resistance. Write for Product sheet CF.320.215.000.PS.

Options

Special agitator for hard-to-wet materials (described under system components).

Pump-out discharge piping for all tank sizes. Can be used in painted or stainless steel tanks and includes float valve for control make-up water.

Remote-mounted control panel includes junction box with coded terminal connections on the tank.

Transformer for 230 or 460 volt, 3 ph., 6- Hz operation.

Hopper vibrators for several sizes of hoppers; included controls mounted in the control panel. They are 8-1/2 cu ft, 3-1/2 ton, and 5 ton hoppers.

Provision for accepting remote speed-control signals at the feeder: 1-5, 4-20, or 10-50 mA dc or a 1000 ohm, 2 watt potentiometer position.

Totalizer for readout of total feeder throughput consisting of a 5-digit display reading in selected units. (Only with Model 31-165, Digital Weightbelt Feeder).

The system is a Series 35-100 Solution tank system. Tanks may be 150, 250, 350, or 500 gallons in capacity, 316 stainless steel or painted steel. The feeder may be Model 31-165, a digital weight-belt type with variable speed belt; Model 32-215, a belt-type volumetric with variable speed belt.

The control panel may be mounted on the tank or may be supplied for remote mounting. It has switches, controls, a feed rate readout meter, running and alarm lights for the feeder, mixers, and hopper vibrations.

Each system has one (150 and 250 gallon tanks) or two (350 and 500 gallon tanks), mechanical mixers, a dust removal system, and water-jet agitations. Systems are available for continuous (gravity) discharge or pump-out operation.

An optional mechanical mixer-draft tube arrangement for wetting carbon is available with 150 and 250 gallon stainless tanks. A

transformer for 230 or 460 volt, 3 ph, 60 Hz operation, hopper vibrators and vibrator controls, contacts for remote alarms, provisions for accepting automatic feeder speed- control signals, can be provided.

Technical Data

Capacities

Painted or 316 stainless steel tanks with 150, 250, 350, and 500 gallon capacities

Dust Removal System

Water-operated jet-spray nozzle. Removes dust and fumes from above solution

Mechanical Mixer

One on 150 and 250 gallon tanks, two on 350 and 500 gallon tanks. 1/4 hp, TENV, 115-230 volt, 1 ph standard or 230 volt 3 phase optional.

Tank Connections

All inlet and discharge connections are threaded PVC fittings.

Control Panel

Contains as specified: feed rate meter and local feed rate control potentiometer; feeder switch (hand-off-automatic); mixer on-off switch; mixer alarm light; mixer running light (for 1 or 2 mixers); feeder running light; feeder alarm light; extra alarm light for hopper or bin level, water level, or any other use; alarm acknowledge button; vibrator on-off switch; remote- local feeder control switch; digital feeder controller (when Model 31-165 feeder supplied) is mounted separately.

Control Modes

Inlet and discharge configuration for continuous gravity discharge; optional piping and float valve for pump-out operation. Feeders accept a potentiometer signal for automatic speed control with the option for accepting a mA signal for flow proportional operation.

Equipment Furnished

Items such as optional equipment and alternate system arrangements are included only as specifically listed in a quotation.

Shipping Weight (lb.)

	150 gal	250 gal	350 gal	500 gal
Painted steel	1400	1500	1750	1900
Stainless steel	1200	1300	1500	1600

Overall Dimensions

Feeder	Capacity	Length	Height	Width
31-165 and 32-215	150 gal	4'-3"	4'-2-5/16"	4'-7.5"
	250 gal	4'-3"	5'-2-5/16"	4'-7.5"
	350 gal	5'-0"	4'-8-5/16"	6'-0.5"
	500 gal	5'-0"	5'-5-5/16"	6'-0.5"



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