

Total Solutions from

Semi Bulk Systems, Inc.



XSTREAM

Beverage Mix

- ▶ Isolates Dry Ingredients representing allergic or other cross-contamination issues
- ▶ Multi-functional Design allows for Maximum Utilization
- ▶ Maximum incorporation Rates
- ▶ Efficient use of process and C.I.P. Water
- ▶ Low / No maintenance - pump is only moving part
- ▶ Minimum Batch Times
- ▶ Very Low Energy Usage
- ▶ Improved Operator Safety & GMP

CSD Processes • Sports Drinks • Tea
Nutritional Drinks • Energy Drinks • Juices
Dairy Beverages • Flavored Water



BEVERAGE BATCH STATION:

Wet Side Options and Dry Side Options to handle any volume of ingredients from any type of package

PROCESS XSTREAMLININGSM



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VACUCAM® EJECTOR MIXER:

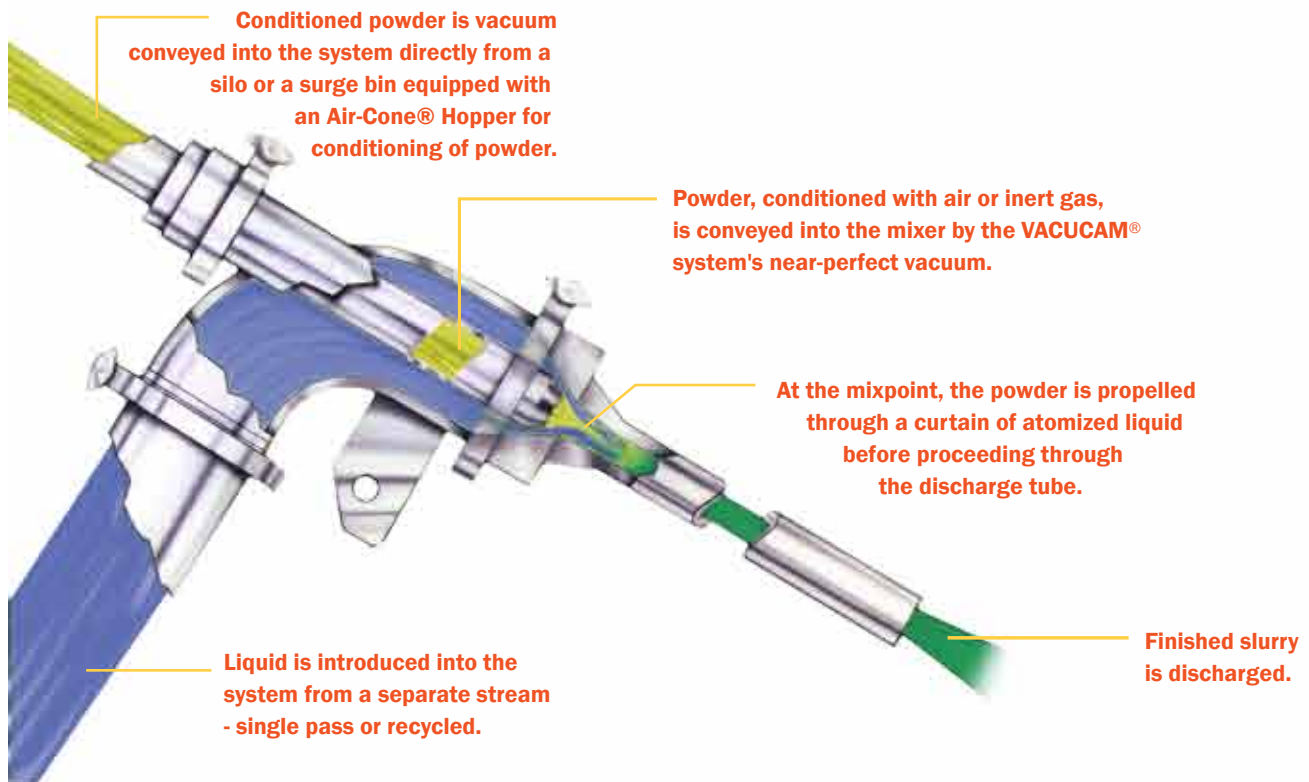


The VACUCAM® Ejector Mixer is the most effective system available for conveying, wetting and dispersing powders into liquids.

Here's how it works.

CONDITIONED POWDER IS CONVEYED INTO THE MIXER BY A NEAR-PERFECT vacuum, which is created when pressurized fluid is forced through the Ejector Mixer's unique, patented annular nozzle. The fluid is discharged as a high-velocity, hollow jet into which the powder is drawn.

The VACUCAM® system achieves high-speed, instantaneous and complete wetting by bringing together conditioned powder and highly atomized liquid from two separate streams, incorporating particles of liquid with particles of powder. The reactive surface areas of both the powder and the liquid are maximized before intimate contact is actually made. The result is consistently uniform, superior wetting without the agglomeration or "clumping" usually associated with conventional mixing methods.



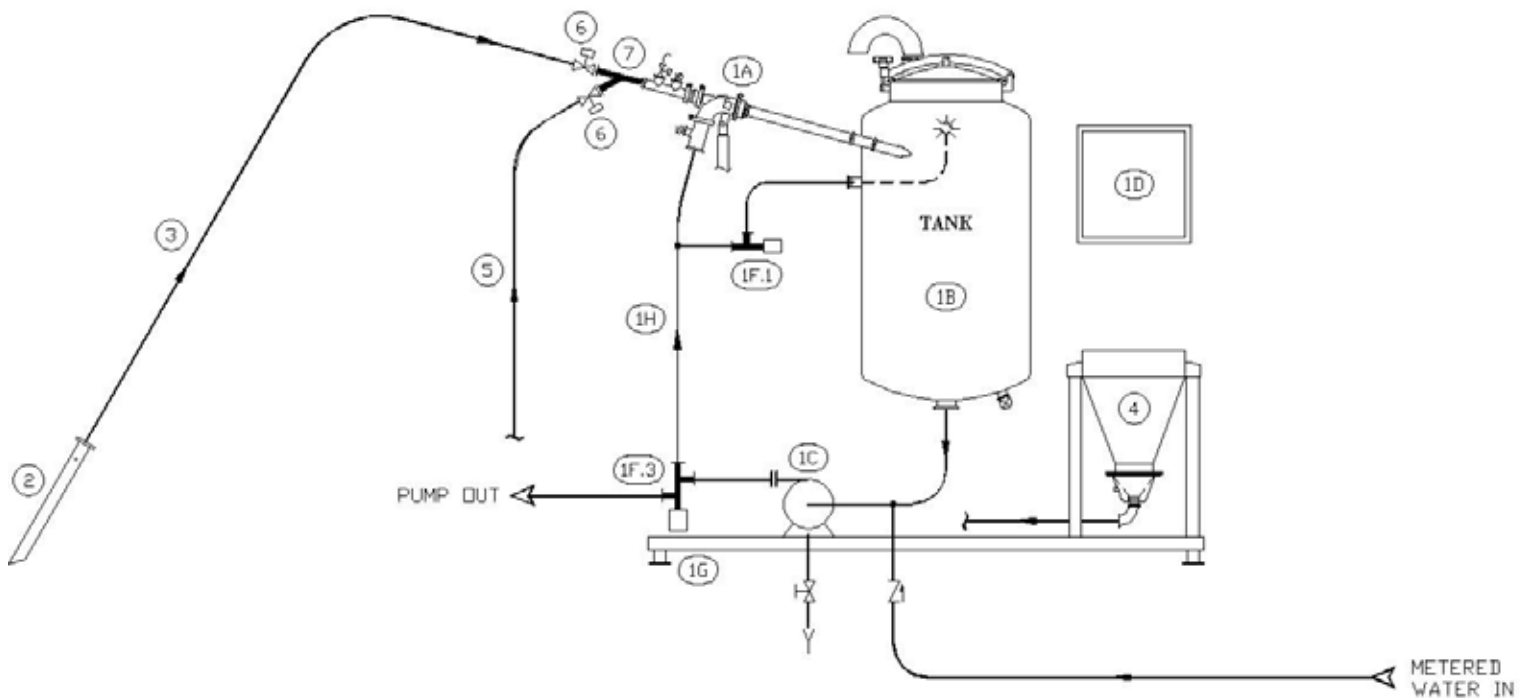
Semi-Bulk Systems integrates the Vacucam® Ejector Mixer into the Beverage Batch Station providing multiple process options for all types of beverages.

The VACUCAM® Modular Dynamic Beverage Batching Stations offer the total solution to meet all of your mix room needs --- for today's immediate challenges and tomorrow's changing requirements and capacity demands... NOW & FOR THE FUTURE. New Beverage introductions require new or additional process requirements.

- To handle changing ingredients that cannot be mixed efficiently with traditional mix stations or mixing technology.
- To handle bulk bag addition of ingredients as well as small packages for dry and liquid minors.
- To handle the changing needs for sweeteners and addition of totally new ingredients.

BEVERAGE MIX PROCESSES.....

- **TECHNOLOGY** to provide the most efficient Dispersion and Mixing for ALL dry Ingredients.
- **BASIC SYSTEM** to provide competitive solutions and justification for immediate new production needs
- **MODULAR DESIGN** to expand Process Capabilities for a TOTAL Mix process.
 - Meet growing and changing demands w/ Modular additions to same system.
 - Build TOTAL Sustainable process for ALL Mix Requirements.
 - Accommodate dry feed from paper bag, drums, bulk bag or bulk.
- **FLOOR LEVEL OPERATION** – ELIMINATE OPERATOR PLATFORMS.



BEVERAGE BATCHING STATION—BBS-100

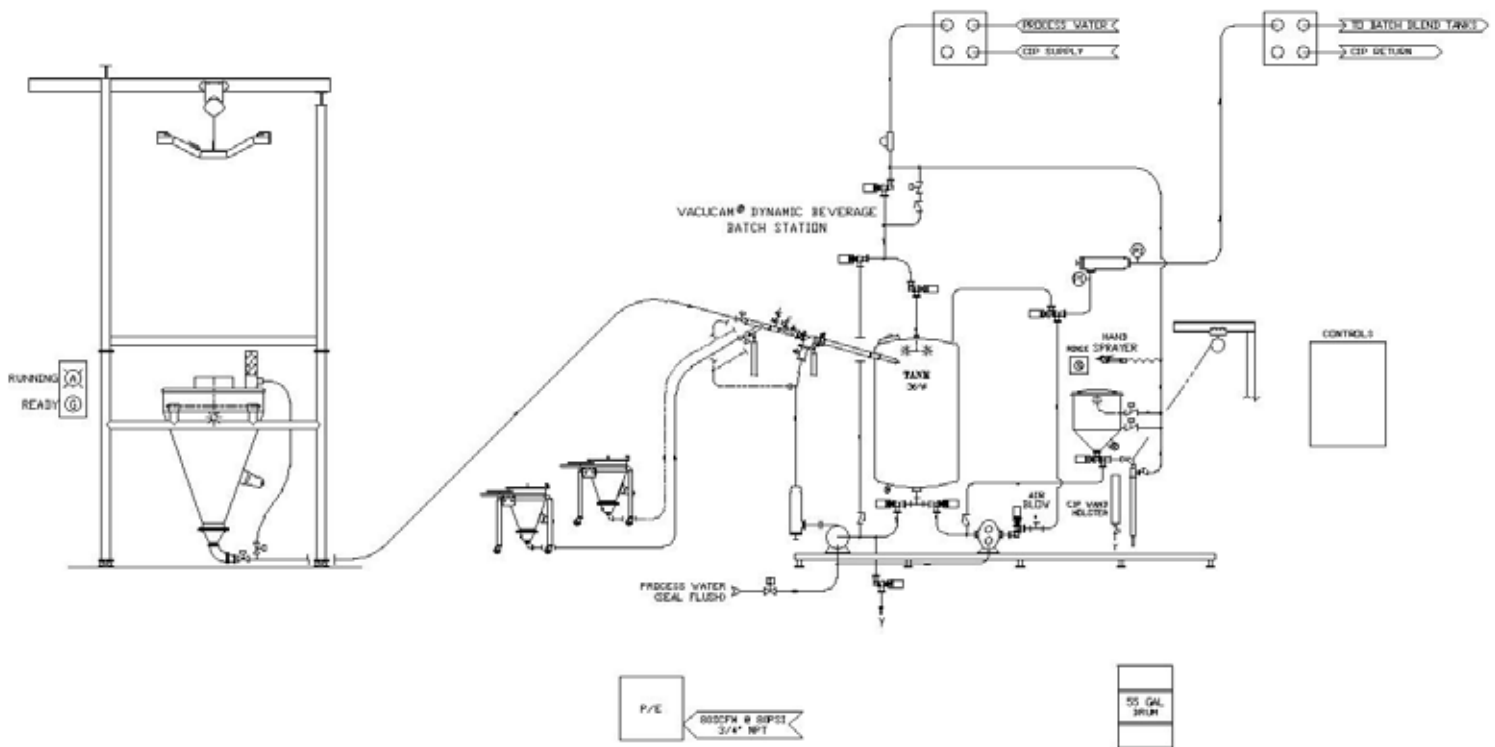
Basic Station – EJM-100BB Mixer mounted on 500 liter batch tank w/ dry ingredient wand and/or Air-Cone® hopper funnel. Provides rapid convey, mix and transfer of mix.

Process: batch and transfer

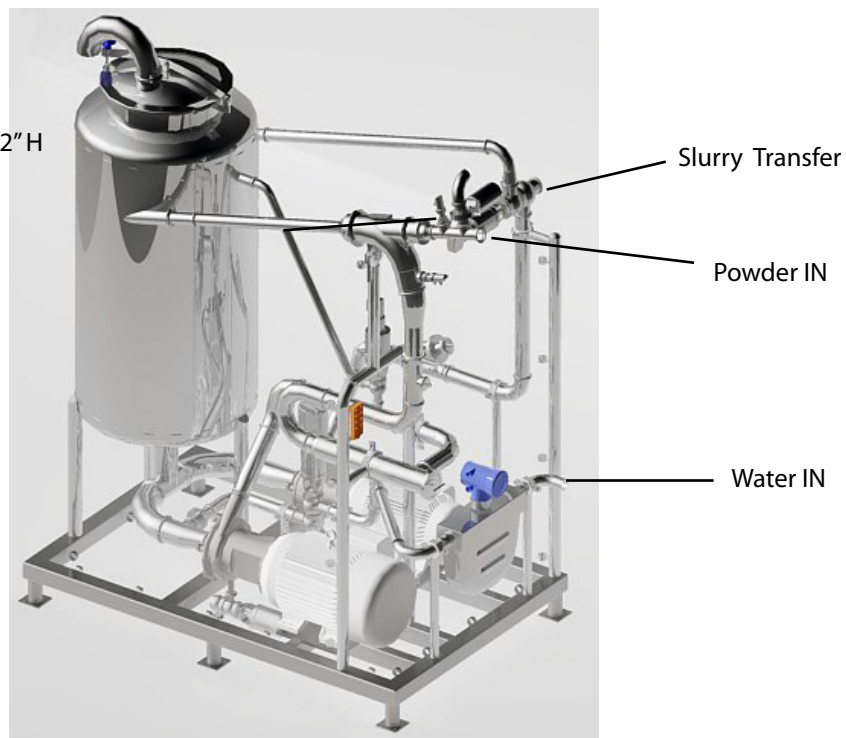
DYNAMIC BEVERAGE BATCHING STATION – DBBS 150

DBBS – Dynamic Beverage Batching Station with continuous transfer of mix.

Processes: Single Pass; batch and transfer, continuous mix and transfer



Model: DBBS150
Dimensions: 74" L X 48" W X 92" H



From a Basic Beverage Batching Station to a Total Dynamic Beverage Batching Station, the Vacuam® Ejector Mixer will handle the Total mix room requirements for immediate solutions and provide modular growth for Total mix requirements.

Wet Side Process Options:

One Beverage Process System –many process applications for all powder handling and mixing. The system can be configured for one, two or three process options to handle basic CSD processes to large volume dry ingredient additions.

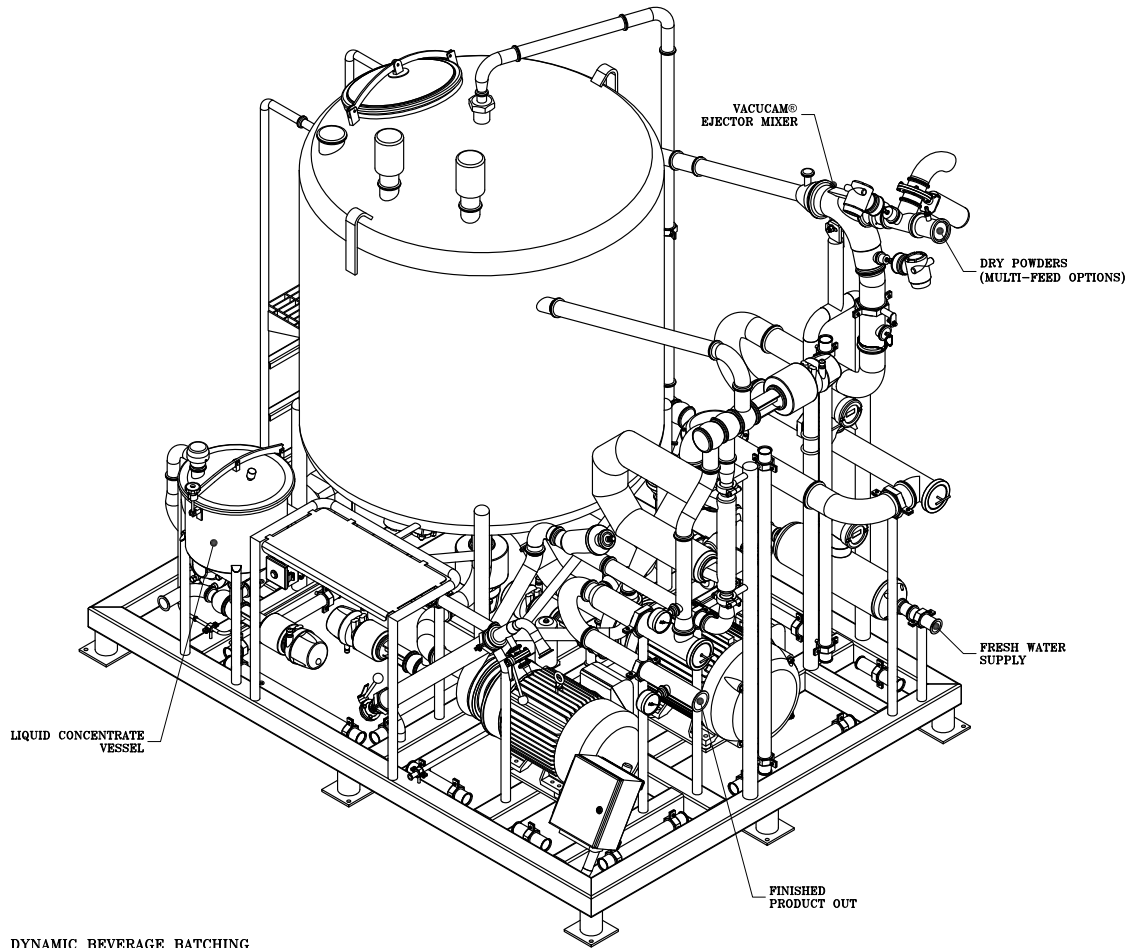
1. The VACUCAM® BBS 100 – Incorporates EJM 100BB mixer @ 100gpm.
 - Uses: low volume minor ingredients for CSD
 - Process: Basic batch and transfer
2. The Vacuam® DBBS 150 –Incorporates EJM 150B/C mixer @ 150gpm.
 - Dynamic Batching for typical beverage mixes handling medium to large dry quantities from paper bags, drums, bulk bag, kits. Recommended for multiple bulk bags of citric, sucrose or various sweeteners. Recommended for total mixing of minor ingredients and bulk bags of sweeteners.
 - Processes: Basic batch and transfer; continuous mix and transfer, single pass, Continuous Dynamic Steady State
 - For Total Mix station of high capacity dry and liquid additions.
3. The Vacuam® DBBS 250 – Incorporates EJM 250C mixer @ 250gpm.
 - Dynamic Batching for **high capacity** total mix station or sugar liquefaction from bulk bags or total bulk.
 - Processes: Continuous mix and transfer, single pass, Continuous Dynamic Steady State.

The VACUCAM® Beverage Batch Station also provides for complete CIP for both the wet side and the dry side.

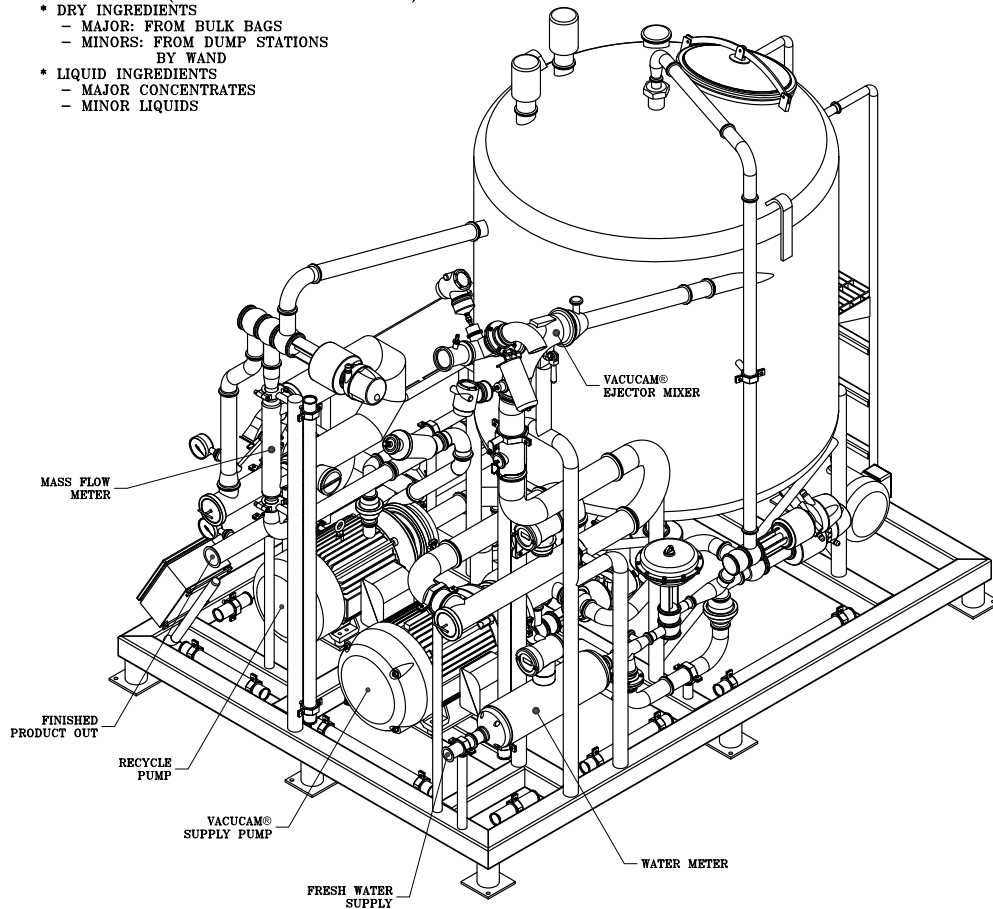
Vacuam® Beverage Batch Station Matrix:			
✓ Included (✓) Option			
Beverage Batch Station Modules	BBS 100	DBBS 150	DBBS 250
Module A - Density Meter			✓
Module A.1 - Water Meter	(✓)	(✓)	(✓)
Module B - Minor Liquid Additive - Liquid Dump Funnel w/Spray Ball	(✓)	(✓)	(✓)
Module B.1 - PD Pump for Unloading & Transfer of Drums of Liquid Ingredients		(✓)	✓
Module B.1-1 - Drum Hose Support		(✓)	✓
Module C - Powder Valve Support Column		(✓)	✓
Additional Modules			
Water Supply Heater	(✓)	(✓)	(✓)
Minor Ingredient Hopper	standard	(✓)	(✓)
Bulk Bag Unload Station			
Single Hoist w/Load Cells		(✓)	(✓)
Dual Hoists			(✓)
Batch Control Interface Panel	(✓)	✓	✓

DYNAMIC BEVERAGE BATCHING SKID

SKID SIZE: 112" X 82"



- DYNAMIC BEVERAGE BATCHING
- * FLOOR LEVEL (OTHER THAN MANWAY ACCESS)
 - * DRY INGREDIENTS
 - MAJOR: FROM BULK BAGS
 - MINORS: FROM DUMP STATIONS BY WAND
 - * LIQUID INGREDIENTS
 - MAJOR CONCENTRATES
 - MINOR LIQUIDS



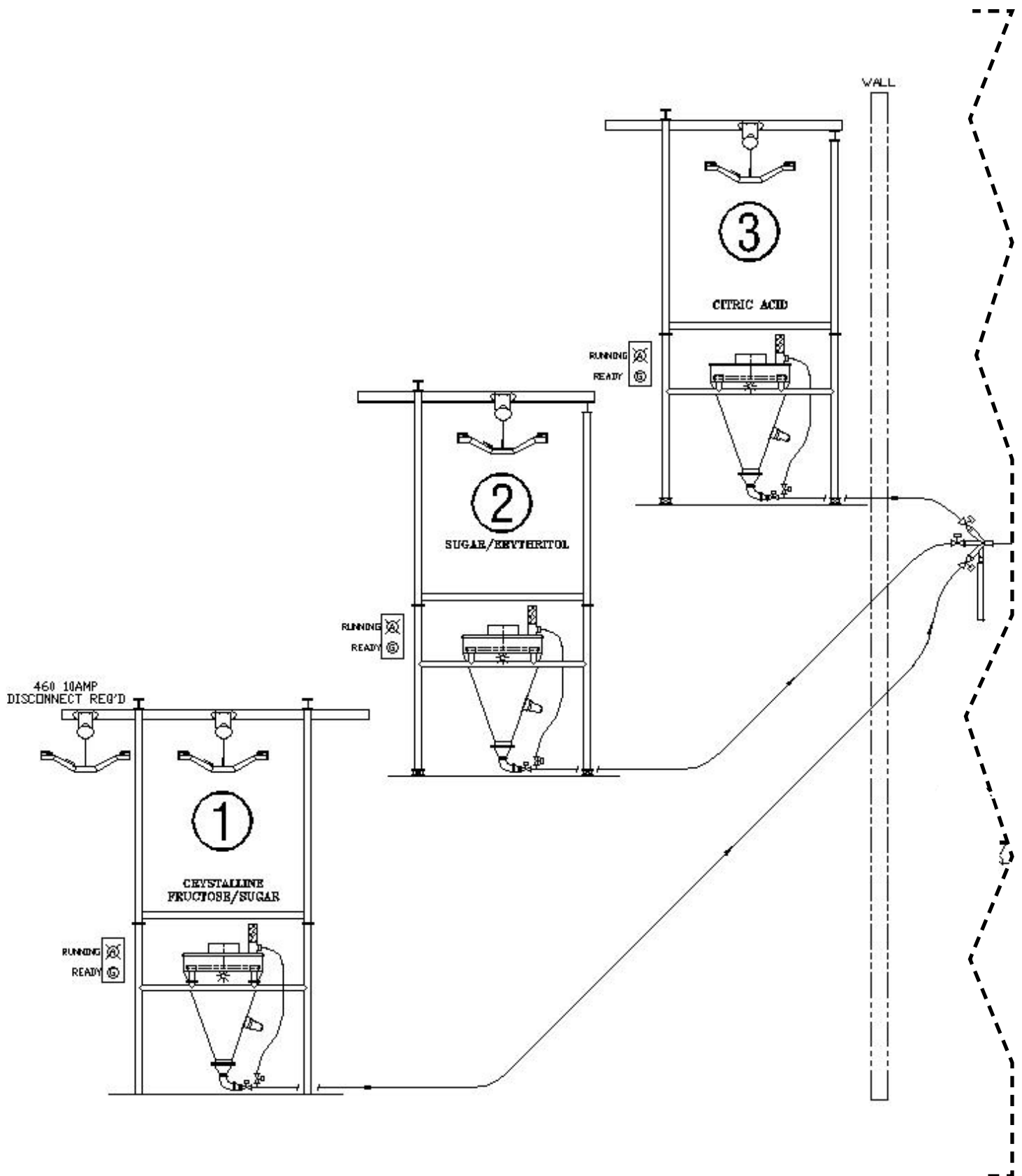


VACUCAM® DBBS 250 - See application options for Sugar Liquefaction Processes.

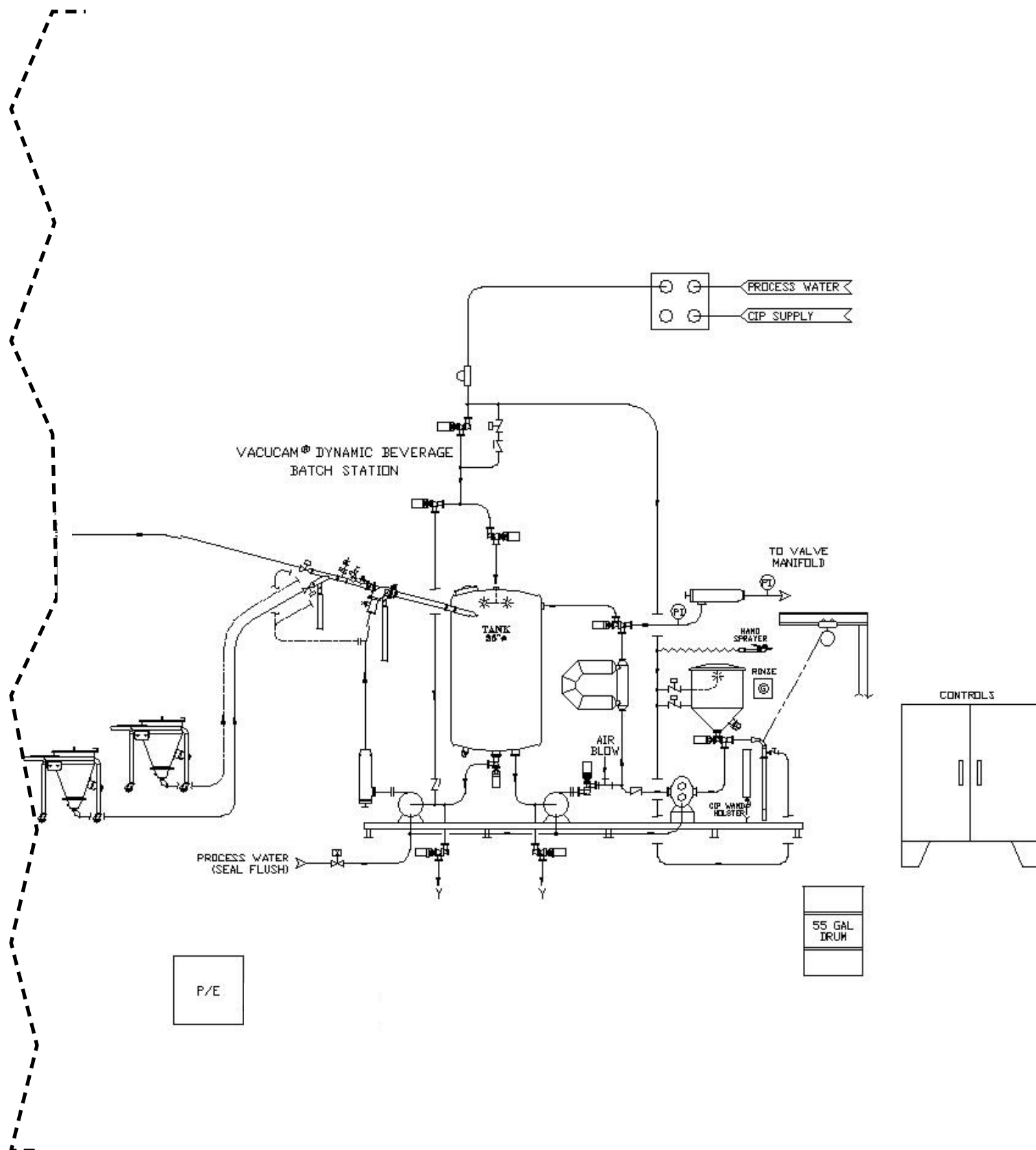
BENEFITS:

- Multi-functional Design allows for Maximum Utilization. Efficiently handles and rapidly disperses ALL dry and liquid ingredients.
- Capacity- Maximum incorporation Rates for high capacity mixing and batch making. One Mix station can feed 2-4 bottling lines.
- Isolates Dry Ingredients representing allergic or other cross-contamination issues.
- Efficient use of process and C.I.P. Water
- Low / No maintenance - pump is only moving part
- Automation – reduced batch time and labor.
- Very Low Energy Usage - typically 80% reduction in electricity by eliminating large hp shear mixers and greatly reducing mix time. Eliminate need for heated water in mixing NFDM, other milk powders, gums, pectin and other functionalizing ingredients.
- Improved Operator Safety & GMP – Floor level operation – eliminate operator platforms.

Dry Side Options to handle any volume of dry Ingredient from any type of package



VACUCAM® DYNAMIC BEVERAGE BATCHING STATION W/ BULK BAG AND MINOR DRY ADDITION



XSTREAM BeverageMix

For ALL Beverage Processes

Typical Ingredients/Mixes:

- ▶ Citric Acid
- ▶ Caffeine
- ▶ Sucrose
- ▶ Maltodextrin
- ▶ Crystallized Fructose
- ▶ Aspartame
- ▶ Erythritol
- ▶ Dairy Powders
- ▶ Thickeners
 - ▶ Gums
 - ▶ Pectin
 - ▶ Starch
- ▶ Tea Powders
- ▶ Sodium Citrate
- ▶ Potassium Benzoate

Applications:

- ▶ CONVEY - powders from a conditioned source
- ▶ DISPERSE - pigments, fillers, silicas, filter aids, carbons, catalysts, spices, etc.
- ▶ REHYDRATE - NFDM, whey, protein, lactose, lime
- ▶ LIQUEFY - sugar
- ▶ DISSOLVE - salts, phosphates, sweeteners
- ▶ FUNCTIONALIZE - thickeners, gums, starches, pectin, carbopol
- ▶ EMULSIFY - oils into dry and liquid mixes

PROCESS XSTREAMLININGSM

The Dynamic Beverage Batching Station offers the beverage industry the opportunity to incorporate the beverage process for the 21st century to utilize the most efficient automated beverage ingredient processing for the lowest production costs.

The VACUCAM® Automated Ingredient Handling and Mix Process will provide Xstream benefits versus the conventional mechanical processes. The system offers Xstream increases in capacity, efficiency, quality, product yield, operator safety, profitability, automation and market advantage. The system also offers Xstream decreases in time, waste, labor, inconsistency, bottlenecks, energy and maintenance. This process provides the safety and benefits for floor level mix making.



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