

JLS International provides process equipment from high quality manufacturers located in Europe, Asia, and the US to customers worldwide. We assist our manufacturing partners with equipment design, prepare quotations according to customer specifications, and follow all projects very closely through realization, keeping our customers informed.

Products (with page numbers) include:

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Static Mixers: Helical and High Shear (Samhwa)

Helical Mixers — Four types are available:

General Purpose: For liquid and powder mixing, reaction, extraction, dividing, composition, coloring, emulsification, heat exchange, pH control, neutralization, diffusion.

Food / Pharmaceutical: For applications such as edible oil, mayonnaise, ice cream chocolate, beverage/milk industry, ketchup, pharmaceuticals.

Viscous Fluids / High Pressure: Used for molten resin coloring and polymer mixing, plastics extrusion, mixing and dividing in chemical fiber processing, adhesives, and other high viscosity fluid mixing.

Pilot Plant: Applications include laboratories and pilot plants, mixing of small quantities, and mixing of two-component resins (resin + hardener).

High Shear Mixers — Compared to helical mixers, HSM mixers are better for low/low or low/high viscosity liquids, liquid/gas, and gas/gas mixing applications in most cases. HSM mixers have a higher pressure drop than helical mixers.

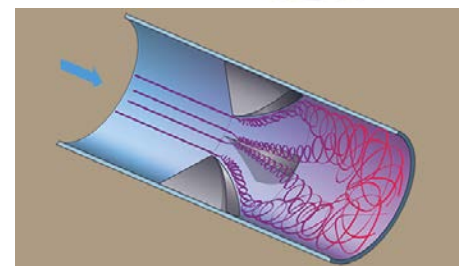


Static Mixers: Gas and Low Viscosity Liquids (Samhwa & Westfall)

JLS offers a variety of static mixers for low viscosity liquids and gases.

- HSM-L type mixers from Samhwa.
- Injection mixers offered in 3 beta ratios and pipe sizes up to 120".
- Unique vane mixers for low head applications; available in one, two, or three-stage versions, and pipe sizes up to 120".
- Conditioning mixers that eliminate swirl caused by pipe bends and other conditions; available in pipe sizes up to 120".

These mixers require no maintenance and produce the desired results in a very compact space.

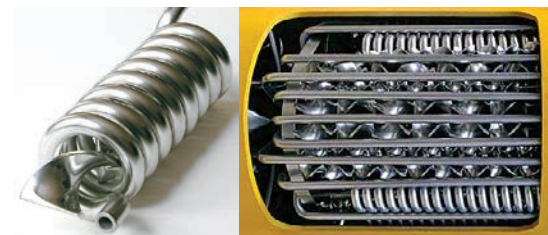


Heat Exchangers: Static Mixer Type (Samhwa)

We specialize in building heat exchangers which incorporate static mixing elements and are specially suited for heating/cooling high viscosity fluids. The mixers continuously renew the interface between the product and tube wall, thereby producing much higher heat transfer (3x to 4x) and a uniform heat history in the product. Mixing heat exchangers are very compact, offering a short residence time.

Units can be provided to meet ASME, DIN, Chinese Safety Quality License, and other certifications.

New Design Lowers Cost — A new, patented design, developed by JLS and Samhwa and proven on customer polyester lines worldwide, substantially reduces vessel weight, and therefore cost. It does this by passing the product through coiled tubes that surround mixing elements. This arrangement provides the same benefits as traditional designs, but requires much less flange and wall thickness for a given pressure.



Eductors and Ejectors (Samhwa)

Eductors — These jet mixing eductors are placed in a vessel and fed by a recirculation line. The recirculated liquid sucks in surrounding liquid from the vessel, mixes with it, and is ejected. The ejected liquid promotes further mixing by forming a swirling flow inside the vessel.

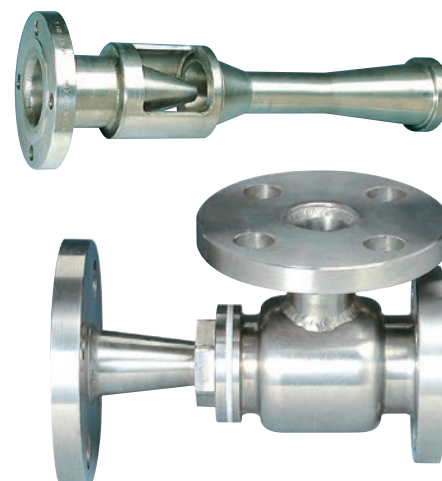
Ejectors — We offer four types. Ejector systems are available for producing higher vacuum levels.

Steam: These offer a range of vacuum levels using steam as the motive fluid. Single stage units are for low vacuum use, while high vacuum applications require multistage designs with intercondensers.

Steam Jet Liquid: For transporting, discharging, or heating liquid with high speed steam as the motive fluid.

Liquid: Used to suck and mix, transport, or compress fluids using high speed fluid (usually water) as the motive medium.

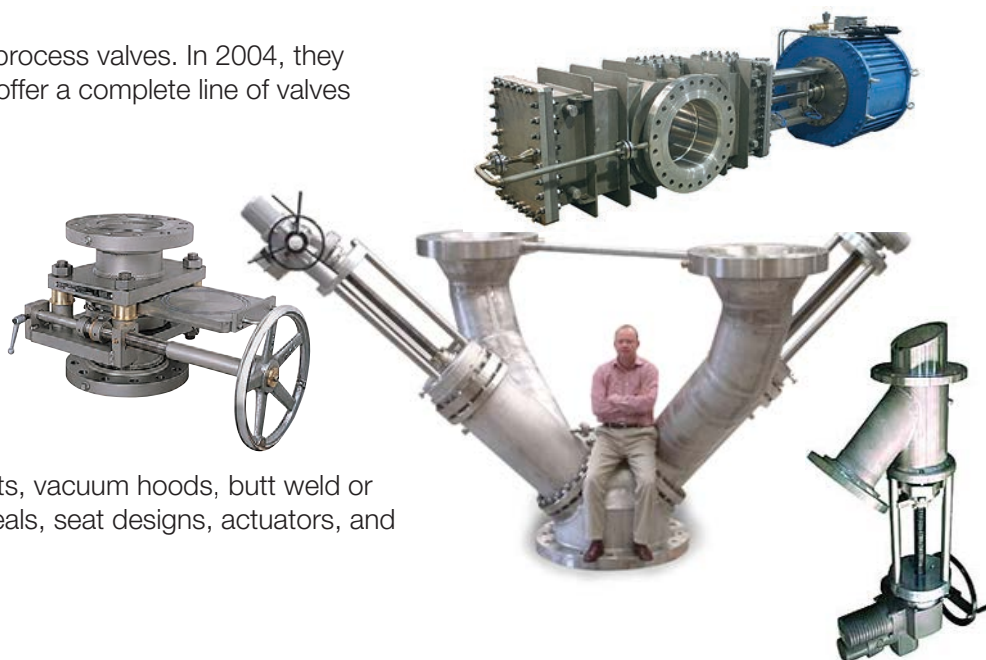
Air: Installed in the suction line of a water sealed vacuum pump, using atmospheric air as the motive medium.



Process Valves (Strahman)

Strahman is a leading manufacturer of process valves. In 2004, they acquired MG Process Valves and now offer a complete line of valves including:

- Drain
- Gate (standard and severe service)
- Injection
- Line blind / Goggle
- Diverter / Multi-way (2 – 12 ways)
- Ram / Piston
- Sampling
- Spray rinse
- Tank bottom



Most valves can be supplied with jackets, vacuum hoods, butt weld or flanged connections, and a variety of seals, seat designs, actuators, and configurations.

Thermal Shut-offs for Fire Safe Valves (Bi-Torq)

Bi-Torq, a Strahman company, is a leader in the manufacture of fusible link thermal shut-off assemblies for fire safe quarter-turn valves. Bi-Torq also offers fire safe ball and butterfly valves as well as actuators and automation accessories for those valves. Deadman handles and auto lock-out kits are also available.

Thermal Shut-off Features

- FM approved
- Can be applied to any API 607 fire safe valve, up to 24 inch size
- Most valves can be manually operated even when armed
- Remote activation options available
- Variety of activation temperatures available

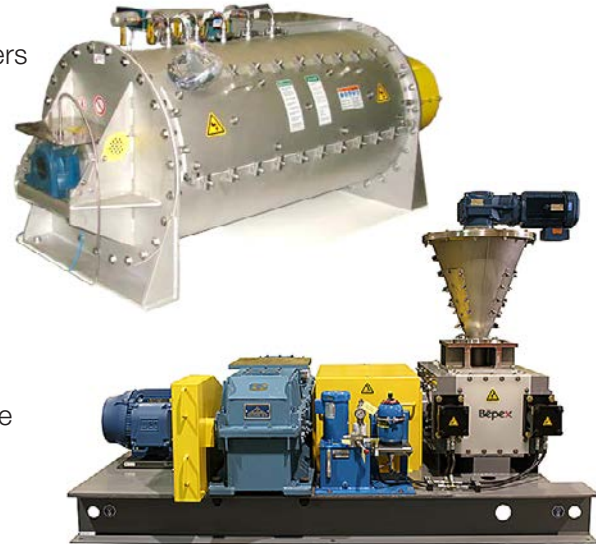


Agglomeration & Compaction (Bepex)

Bepex offers a broad range of industrial equipment for converting powders into a larger form. These include:

- Roll compactors for compacting powders into high-density granules where moisture and binders are undesirable
- Briquetters for producing uniform size and shape particles
- High speed mixers to create porous granules for instantiating applications
- Low pressure extruders to produce robust pellets that offer more controlled dissolution in liquid

Complete systems can be provided, including other processes such as milling, screening, fluid bed conditioning, and material handling, to ensure control of the entire process from start to finish.



Size Reduction (Bepex)

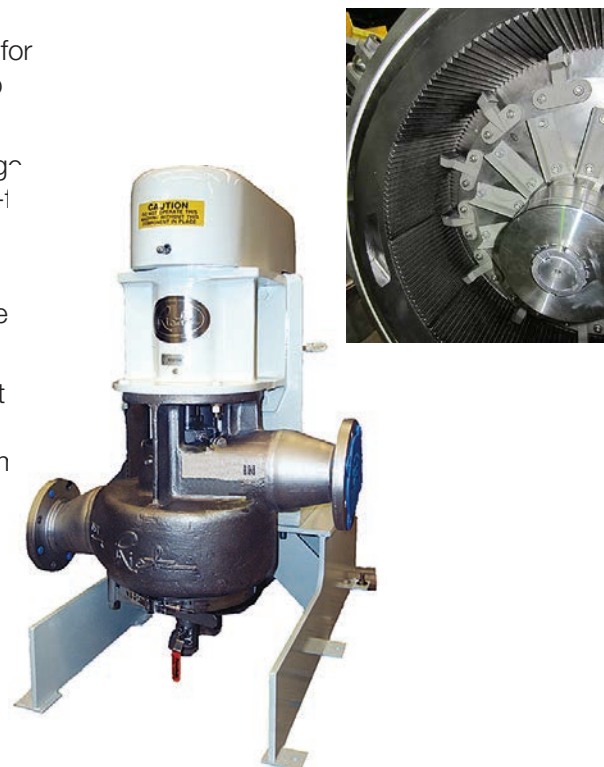
Bepex offers a versatile range of equipment configurations and designs for producing particles from course to fine sizes. We can supply a one-step solution or a complete system to meet your product requirements.

Course Grinding Choose from a complete line of impact mills that range from cutting through the toughest materials to producing uniform, lump-i products.

Fine Grinding Bepex equipment and configuration choices include air-swept and knife mills, multiple grinding zones, internal classification, diffe screen sizes and hole shapes, and rotor speed control.

Wet Grinding Systems are available for processing vegetable and meat products, mixing multiple wet and dry ingredients, and delumping and dissolving fluids, slurries, and pastes. Drying and grinding can be perform in the same operation.

All equipment has been designed with ease of maintenance and and sanitary considerations in mind.



Thermal Processing (Bepex)

Bepex offers a variety of equipment and application expertise for drying, cooling, heating, and reacting.

Drying Solutions include dispersion dryers for continuous slurry drying of high moisture materials, paddle dryers for wet cake drying, and inlet control for heat-sensitive materials.

Cooling Bepex offers indirect technologies providing compact and efficient cooling, and direct technologies for versatility to combine multiple unit operations, such as cooling and pneumatic conveying in a single step.

Heating Systems are available for a variety of applications including melting/mixing, thermal reacting, material tempering, and cooking. Feed rates in excess of 5,000 kg/hr.

Reacting Bepex systems can reach PPM-level moisture requirements and low-level volatiles recovery. Many choices are available for providing material conditioning, plug flow, and fuel savings.



Process Vessels

Our fabricators are capable of building vessels, heat exchangers, and systems to almost any specification and to the major standards such as ASME, ANSI, DIN, JIS, KS, and Nuclear. They have manufactured vessels and systems for major corporations around the world.



Desuperheaters (Samhwa)

Samhwa's desuperheaters produce saturated steam, low pressure/ low temperature steam from superheated steam, or high pressure/ high temperature steam by injecting water directly into the steam.

Four types are available:

- Single venturi
- Double venturi
- Variable orifice
- Atomizing

Each type has different characteristics; we will work with you to determine which is best for your application.

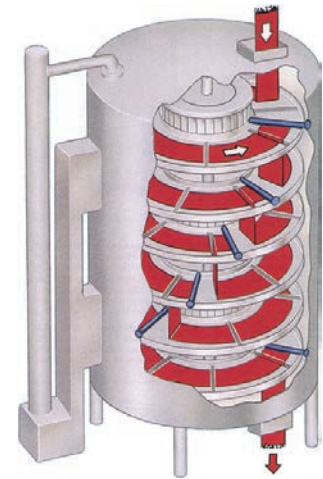
Benefits

- No noise or vibration
- Uniform temperature of saturated steam
- No component failures or parts to be maintained
- No high pressure water supply required
- Can be used even when there is a large temperature difference between superheated and desired steam



Continuous Process Dryer (Wyssmont)

The Turbo-Dryer® is a very versatile dryer offering gentle handling with little dust or fines, product mixing for high uniformity, and the tightest temperature control of any dryer available, up to 650 °C. It can operate as a dryer, cooler, reactor, heat treater, calciner, humidifier, agglomerator, sublimator, roaster, or combination of these. Various models are available, including explosion-proof, environmentally sealed, and solvent recovery.



Drum Dryers and Cooling Drum Flakers (Buflovak)

Drum Dryers are available in single and double drum models. Single drum units may be dip or splash fed, or equipped with applicator rolls. The latter is particularly effective for drying high viscosity liquids or pasty materials such as mashed potatoes, applesauce, fruit-starch mixtures, gelatin, dextrine-type adhesives, polyacrylamide, synthetic resins, and various starches.

Double drum dryers are the most versatile and widely applied. These dryers are used to dry many food, chemical, and pharmaceutical materials of widely varying densities and viscosities: dilute solutions, heavy liquids, pasty materials, or fairly heavy sludges. The movable drum permits complete control of product film thickness. Feed may be by perforated tube trough, pendulum, or special engineered devices.

Cooling Drum Flakers — Special applications include single drum, double drum, twin drum, and special flaker configurations. Enclosures range from dust-tight, vapor tight, and extra tight designs.

Testing Lab and Rental Units — Buflovak maintains a complete testing facility for testing your product on all their equipment. Also rental units are available for some applications and equipment for use at the customers facility. Hastelloy, Inconel, and Titanium Pipe and Fittings.



Hastelloy, Inconel, and Titanium Pipe and Fittings

JLS has access to a large quantity of pipe, tubing, fittings, and fasteners made from Hastelloy, Inconel, Titanium, and other exotic alloys. These partners also maintain larger stocks of Hastelloy, Inconel, and Titanium sheet and bar from which pipe can be fabricated.

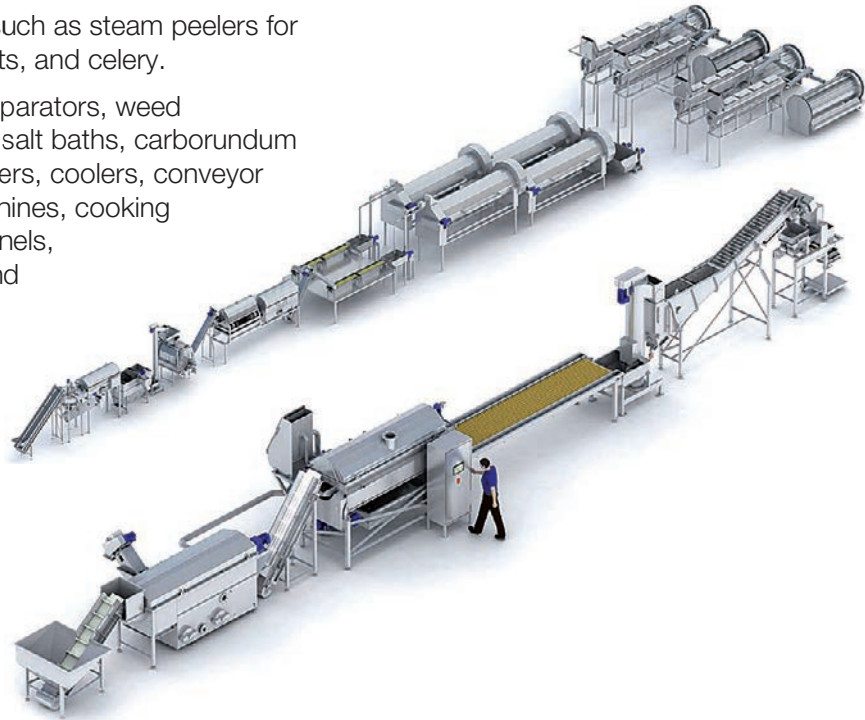


Food Processing Systems (EIMA)

JLS can offer complete automatic systems for potato chips, french fries, potato flakes, peeled potatoes, and hash browns with capacities ranging from 300 to 3,000 kg/hr.

In addition, we can provide individual equipment such as steam peelers for nodule vegetables like potatoes, carrots, beet roots, and celery.

The standard EIMA product line includes stone separators, weed separators, water separators, washing machines, salt baths, carborundum peelers, steam peelers, sorting conveyors, blanchers, coolers, conveyor blanchers, hydro cutting machines, pureeing machines, cooking screw conveyors, spice drums, fryers, cooling tunnels, fat separators, starch separators, drum mixers, and automatic packing machines.



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