



SPX[®]

ENGINEERED
SOLUTIONS

SPX Flow Technology Overview





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SPX is a Fortune 500 multi-industry manufacturing leader, headquartered in Charlotte, North Carolina. SPX manufactures and markets products, components, services and technologies that are integral to meeting today's challenges and tomorrow's needs. We are a place where innovation is fostered, and the real needs of business are understood. We transform ideas into powerful solutions to help our customers meet their goals, overcome business challenges and thrive in a complex, always changing marketplace.



SPX's Flow Technology segment designs, manufactures and markets engineered solutions and products used to process, blend, meter and transport fluids. We also offer equipment for air and gas filtration and dehydration. Our leading brands have global operations which serve the food & beverage; power & energy; and industrial processes.

To learn more about our industry leading technologies and brands, please visit us at www.spx.com





Airpel Series

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Common Applications: Oil & Gas, Chemical, Power, Marine, Mining, Pulp & Paper, Steel, Offshore, Automotive, Food, Heating, Cooling, Water, Waste & Sewerage, Refining

EST. 1939	SELF-CLEANING FILTERS	
	<ul style="list-style-type: none"> Used where an automatic cleaning strainer is required even with low pressures Ensures process continuity without manual labor or contact with hazardous materials 	<ul style="list-style-type: none"> Fine Stainless Steel wedge wire or perforation elements down to 25 microns Automation provides labor savings and allows use on un-manned sites Positive scraping action efficiently cleans element while independent dumping minimizes fluid loss
	OV SINGLE & OW DUAL BASKET STRAINERS	
	<p><i>OV Single Basket Strainers:</i></p> <ul style="list-style-type: none"> Used for filtering liquids when flow can be interrupted for cleaning Line sizes from 3/4" to 10" NB and pressure ratings to ANSI 300 available Available in a wide range of materials to suit the application OV & OW multi-basket designs available, filtration levels from 10mm down to 10 micron 	<p><i>OW Dual Basket Strainers:</i></p> <ul style="list-style-type: none"> Used for filtering liquids when flow cannot be interrupted for cleaning Handle selects between operating chamber, allowing safe removal of basket from isolated chamber while filter is still in operation Optional 100% shutoff facility to eliminate any leakage between chambers

Common Applications: Dairy, Food, Chemical, Pharmaceutical

EST. 1948	PROCESSES	
	<ul style="list-style-type: none"> The Anhydro processes combine more than 60 years of experience and specialization in evaporation and drying for the dairy, food, chemical, pharmaceutical, and other industries 	<ul style="list-style-type: none"> Anhydro plants and equipment are renowned for their design, engineering, process quality, and efficiency Dedicated process technology specialists for process support
	<h3 style="text-align: center;">DRYERS</h3> <ul style="list-style-type: none"> Spray Dryers for any powder application ranging from small-scale plants with capacities of a few kg/h to large-scale industrial plants, from single-stage to multi-stage, including the Anhydro Triple-A Dryer® Spray bed dryers for non-dusty powders. Combining spray drying and agglomeration in one process Spin Flash Dryers for drying of high-viscosity products, pastes, and filter cakes 	
	<h3 style="text-align: center;">EVAPORATORS</h3> <ul style="list-style-type: none"> Highly energy-efficient way of removing water Falling film tubular/plate Forced circulation Natural circulation MVR TVR Single pass falling film Direct heated 	
	<h3 style="text-align: center;">FLUID BED TECHNOLOGY</h3> <ul style="list-style-type: none"> Fluid Bed Dryers Fluid Bed Coolers Batch or continuous fluid beds, as well as fluid beds to be integrated into multi-stage spray drying plants 	
	<h3 style="text-align: center;">SMALL SCALE AND R&D EQUIPMENT</h3> <ul style="list-style-type: none"> Designed for scientific test work, R&D work, and small scale production High uptime and yield Scalability Flexible design with numerous options Full process control Compliance with the strictest factory standards 	
	<h3 style="text-align: center;">PARTS & SERVICE</h3> <ul style="list-style-type: none"> All Anhydro systems are supported by our service organization to enable you to achieve optimum throughput and on-spec quality for the entire lifetime of the equipment Plant performance optimization Plant retrofitting Preventive maintenance agreements Spare parts service 	
	<h3 style="text-align: center;">INNOVATION CENTER</h3> <ul style="list-style-type: none"> Innovation center to support customers in trials and new developments Training and support to customers on small scale equipment 	



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Common Applications: Food, Dairy, Beverage, Brewery, Healthcare, Marine, Power, Chemical, Biotechnical, Petrochemical, HVAC, Industrial, Oil & Gas, Pulp & Paper, Automotive, Refining

<p style="text-align: center;">EST. 1910</p> 	<p style="text-align: center;">HEAT EXCHANGERS</p> <ul style="list-style-type: none"> Invented Plate Heat Exchanger in 1923 Wide portfolio including Gasket, Brazed, and Semi-Welded Plate, Tubular, Scraped Surface, Hybrid and District Heating Units Heat exchangers suitable for Hygienic and Industrial applications Large range of plate, gasket, material and configurations available Comply with international standard e.g. PED, ASME, SQL Plate material includes AISI 316, AISI 304, Titanium and most alloys
	<p style="text-align: center;">HOMOGENIZERS</p> <ul style="list-style-type: none"> Rannie & Gaulin Brands High Performance Modular design for greater flexibility Innovative service and maintenance concepts Laboratory Testing Services Quiet stability with low noise, low vibrations and optional sound proof cabinets available Lower cost of ownership
	<p style="text-align: center;">PUMPS</p> <ul style="list-style-type: none"> Centrifugal Pumps, Positive Displacement Pumps, Self-Priming Pumps Extensive product range including high capacity, aseptic, water for injection, high pressure Energy efficient Highest hygienic standards. EHEDG, 3A, FDA approved. Designed for CIP and SIP Easy maintenance Low noise and vibration levels Low NPSH requirements
	<p style="text-align: center;">VALVES</p> <ul style="list-style-type: none"> Includes Butterfly, Single-Seat, Mixproof, Aseptic, Regulating and Process Valves Highest hygienic and aseptic standards. 3A, EHEDG, PMO, FDA approved Designed for CIP Easy maintenance, adaptable and modular Different control unit options <ul style="list-style-type: none"> - Direct Connect, AS Interface, Valve-Net - DeviceNet, Valve-Net Profibus
	<p style="text-align: center;">CIP</p> <ul style="list-style-type: none"> Manual to fully automatic units specially designed for optimal CIP Disinfection/sterilization by means of hot water or cold sanitizer Low consumption of water, energy and chemicals Re-use of chemicals Selection of options Standard units including standard control system for lowest possible capital investment Control system: In Touch - Siemens, In Touch - Allan Bradley
<p style="text-align: center;">FactoryExpert Driving Manufacturing Excellence</p>	<p style="text-align: center;">AUTOMATION</p> <ul style="list-style-type: none"> APV FactoryExpert delivers automation and software solutions targeting Quality, Production Performance, Utility Management, Regulatory Compliance, Maintenance and Production Optimization APV FactoryExpert provides highly functional automation solutions for new projects, migration of aging legacy control systems and upgrading existing automation controls



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Common Applications: Food, Dairy, Beverage, Pharmaceutical, Personal Care

<p style="text-align: center;">EST. 1910</p> 	<p style="text-align: center;">INFUSION / PURE-LAC</p> <ul style="list-style-type: none"> ▪ Gentle and accurate heating ▪ Fast heating 600°C/sec, (1112°F/sec) ▪ Accurate holding time ▪ High bacteria spore kill rate ▪ Shelf life up to 45 days ▪ High product flexibility ▪ Superior product quality - low chemical change, pasteurized milk flavor ▪ Low fouling rate ▪ Long operating time between CIP ▪ Pre-assembled and factory-tested ▪ As option designed according to ASME, PMO, 3A
	<p style="text-align: center;">TUBULAR</p> <ul style="list-style-type: none"> ▪ High up-time ▪ Flexible product range ▪ Easy inspection of product and medium surface ▪ High pressure tolerance ▪ Low energy cost ▪ Low maintenance cost ▪ Pre-assembled and factory-tested ▪ As option designed according to ASME, PMO, 3A
	<p style="text-align: center;">HIGH HEAT INFUSION</p> <ul style="list-style-type: none"> ▪ Bacteria kill rate over Fo 40 (Fo is defined as total integrated lethal effect) ▪ Increased operating time ▪ Reduced maintenance costs ▪ Efficient deaeration prior to heating ▪ Non-aseptic flavor dosing of the vacuum chamber possible ▪ Destruction of heat resistant spores (HRS) ▪ Pre-assembled and factory-tested ▪ As option designed according to ASME, PMO, 3A
	<p style="text-align: center;">INSTANT INFUSION</p> <ul style="list-style-type: none"> ▪ Gentle and accurate heating ▪ Fast heating 600°C/sec, (1112°F/sec) ▪ Efficient bacteria spore kill rate ▪ Up to 70% less vitamin loss ▪ Holding time down to 0.09 sec. ▪ Very low chemical change ▪ Superior product quality ▪ High temperature treatment of +50% concentrate prior to spray drying ▪ Long operating time between CIP ▪ Pre-assembled and factory-tested ▪ As option designed according to ASME, 3A
	<p style="text-align: center;">SPIRATHERM®</p> <ul style="list-style-type: none"> ▪ Long running hours ▪ Designed for high fouling products ▪ No product / steam mixing ▪ Remote and downstream homogenizing, one or two stage system ▪ High velocity/natural scrubbing => less fouling ▪ FDA and 3A approved ▪ No gaskets at product side ▪ Short CIP time ▪ SpiraTherm tubular heat exchanger
	<p style="text-align: center;">MULTI-PURPOSE UHT PILOT PLANT</p> <ul style="list-style-type: none"> ▪ Very reliable system for product trials before upscaling to commercial production ▪ Highly flexible ▪ Quick and easy installation ▪ One unit with small footprint ▪ Operator-friendly ▪ Pre-assembled and factory-tested



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Common Applications: Dairy and Food




<p style="text-align: center;">EST. 1910</p> 	<p style="text-align: center;">SPX MEMBRANE TECHNOLOGY IN GENERAL</p> <ul style="list-style-type: none"> ▪ Based on SPX proven components ▪ Plant design to minimize environmental foot print ▪ Maximize process yields and return of investment ▪ Sanitary design ▪ Versatile automation solutions securing operator and product safety ▪ Skid mounted standards and flexible solutions ▪ Performance warranties making filtration a key line component ▪ Development based on decades of experience and a large number of reference installations
	<p style="text-align: center;">MICROFILTRATION (MF) SYSTEM</p> <p>Filtration in the size range of bacteria, fat globules and protein micels</p> <ul style="list-style-type: none"> ▪ Ceramic and spiral wound membrane technologies ▪ Bacteria removal from milk to improve cheese and whey quality or to increase shelf life of white milk ▪ Bacteria removal from whey to improve quality of whey protein products ▪ Bacteria removal from cheese brine to improve cheese quality ▪ Protein fractionation to concentrate caseins and separate a high quality whey protein phase fat and mineral removal from whey
	<p style="text-align: center;">ULTRAFILTRATION (UF)</p> <p>Filtration in the size range of proteins</p> <ul style="list-style-type: none"> ▪ Concentration/standardisation of protein content ▪ Removal of minerals and lactose ▪ Concentration to high dry matter levels to optimize down stream line performance ▪ High yield cream cheese production ▪ High yield white cheese production ▪ Diafiltration to wash out minerals and lactose from the protein phase
	<p style="text-align: center;">NANOFILTRATION SYSTEM (NF)</p> <p>Filtration in the size range of mono and multi-valent ions</p> <ul style="list-style-type: none"> ▪ Mineral removal to reduce powder hygroscopicity ▪ Mineral removal to refine protein products ▪ Mineral removal to refine sugar products ▪ Removal of salt (NaCl) from salty products ▪ Recovery of CIP media ▪ Mineral recovery for lactose free milk products
	<p style="text-align: center;">REVERSE OSMOSIS (RO)</p> <p>Mineral recovery for lactose free milk products</p> <ul style="list-style-type: none"> ▪ Concentration to reduce transport volumes ▪ Concentration to reduce necessary evaporation level ▪ Production of process water ▪ Recovery of mix phases
	<p style="text-align: center;">APV LEANCREME™ PROCESS</p> <p>Controlled denaturation of whey proteins into particles which can replace fat globules</p> <ul style="list-style-type: none"> ▪ Optimize whey utilization and yield ▪ Improve product sensoric quality ▪ Improve product nutritional value



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Common Applications: Food, Dairy

<p style="text-align: center;">EST. 1910</p> 	<p style="text-align: center;">CHEESE VATS - CURDMASTER A VERTICAL DOUBLE O VAT</p> <ul style="list-style-type: none"> ▪ Fast foamless filling ▪ Rapid mixing of all added components including rennet ▪ Gentle and precise cutting ▪ High yield ▪ Fast whey draw ▪ Controlled, fast heating and cooling ▪ Vertical vat with 2 outlets for fast emptying ▪ Efficient and gentle stirring ▪ Fully automated with touch screen ▪ CIP cleanable vats
	<p style="text-align: center;">OPD PRE-PRESS</p> <ul style="list-style-type: none"> ▪ Flexible pre-press for all cheese types, block sizes and shapes ▪ Adapts easily to variations in fat and water content ▪ Physical separation between the batches for clear identification ▪ Easy change of cheese dimension and shape ▪ Same unit can make Gouda- and Tilsit-types ▪ Long running time between CIP cleaning ▪ Higher yield and uniform water content ▪ High weight accuracy due to curd distribution
	<p style="text-align: center;">SANIPRESS SYSTEM</p> <ul style="list-style-type: none"> ▪ Even pressing of cheeses in individual molds or multiple molds without using spring-loaded lids ▪ A specific pressure of 400 g/cm² (5.7 lbs./sq.in.) is achieved at only 0.3 bar (4.3 lbs./sq.in. air pressure) ▪ Optional pressing cylinders available ▪ Applicable to a wide variety of cheese types, shapes and sizes ▪ Integrated mold storage ▪ Collecting of whey and CIP liquid ▪ CIP cleanable

EVAPORATION AND DISTILLATION

Common Applications: Food, Dairy, Beverage, Brewery, Pharmaceutical, Chemical, Industrial, Fuel Alcohol








<p style="text-align: center;">EST. 1910</p> 	<p style="text-align: center;">PLATE EVAPORATOR</p> <ul style="list-style-type: none"> ▪ Enhanced quality of food products ▪ Low head room requirement ▪ Easy accessed for cleaning ▪ Flexibility in capacity by adding plates
	<p style="text-align: center;">DISTILLATION</p> <ul style="list-style-type: none"> ▪ Modular design - pre-assembled ▪ Full lab testing available ▪ Customized for application



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Common Applications: Food, Dairy, Beverage, Brewery, Personal Care, Pharmaceutical, Biotechnology, Paint

<p>EST. 1910</p>	<p>FLEX-MIX INSTANT</p>	
	<ul style="list-style-type: none"> ▪ Unique high shear mixing enables a high powder intake ▪ Air is efficiently removed during mixing prolonging running time and ensuring consistent quality ▪ Allows a closed, continuous production, resulting in higher throughput and reduce dust issues ▪ Handles a large number of formulations 	
	<p>FLEX-MIX PROCESSOR</p> <ul style="list-style-type: none"> ▪ Gentle agitation, internal circulation ▪ High shear mixing for emulsification ▪ Handles particulate inclusion ▪ Heating via jacket or direct steam injection ▪ Closed system with vacuum/flash options ▪ Quick batch preparation (flip-flop) 	
	<p>FLEX-MIX LIQUIVERTER</p> <ul style="list-style-type: none"> ▪ Simple but versatile ▪ Flexibility at low CAPEX ▪ Large dissolution capacity due to free vortex and square shape ▪ Fully drainable for improved hygiene and minimum waste ▪ Direct drive reduces spare parts wear ▪ Flushed double mechanical shaft seal available in material of customer's choice, depending on application ▪ Easy to maintain 	
	<p>POWER-MIXER</p> <ul style="list-style-type: none"> ▪ Aseptic aeration ▪ Emulsification ▪ Continuous mixing ▪ PLC standard in all aseptic systems ▪ Operator-friendly, smooth and trouble-free operation ▪ Pre-assembled and factory-tested 	
	<p>CONTROLLED CAVITATION</p> <ul style="list-style-type: none"> ▪ Controlled cavitation is a new process technology which harness and controls the cavitation forces and friction energy and use them for efficient microscopic mixing and scale free heating in Food & Beverage and Personal Care applications ▪ Extensive application opportunities ▪ Enhance current processes alone or in hybrid solutions ▪ Highest hygiene standards. EHEDG, 3A ▪ Pilot Plants and test support available 	
	<p>DEAERATOR - VFJ/VFN</p> <ul style="list-style-type: none"> ▪ New, superior aroma-recovery system ▪ Automatic parasol regulating valve ▪ Improved hygiene ▪ Reduced commissioning costs ▪ Operator-friendly ▪ Pre-assembled and factory-tested 	
	<p>VFN E-VAP CONCENTRATOR</p> <ul style="list-style-type: none"> ▪ Fresh taste and odor ▪ Increased viscosity in milk applications ▪ Smooth and creamy texture in fermented products ▪ Increased serum stability ▪ Operator-friendly ▪ Pre-assembled and factory-tested 	




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Common Applications: Oil & Gas, Petrochemical, Chemical, Food, Beverage, Personal Care, Pharmaceutical, Pulp & Paper, Water Treatment

EST. 1932	PROCAM METERING PUMPS
	<ul style="list-style-type: none"> ▪ Modular, single and multi-stream pump configurations to match process requirement ▪ Double Diaphragm and Plunger Pumps ▪ Pressures up to 20 bar (300 PSI) (Diaphragm) and 80 bar (1200 PSI) (Plunger) ▪ Flow rates up to 3000 l/h (790 GPH) per pump head
	<ul style="list-style-type: none"> ▪ Horizontal and vertical metering pumps ▪ Modular, single and multi-stream pump configurations to match the process requirements ▪ Pressures up to 1000 bar (15,000 PSI) ▪ Flow rates up to 22600 l/h (6000 GPH) per pump head ▪ Variable speed drive & variable stroke adjustment for manual or automatic flow control ▪ Double diaphragm and plunger pumps, API 675 complaint ▪ Remote condition monitoring with the NOVALINK-CSM online diagnostic system
	<ul style="list-style-type: none"> ▪ Reciprocating high performance diaphragm process pumps for high pressure and high capacity applications ▪ Pumping chamber hermetically sealed ▪ Pressures up to 1000 bar (15000 PSI) ▪ Flow rates up to 80 m3/h (21000 GPH) ▪ Hydraulic power up to 260 kW (350 HP) with variable speed control option ▪ Remote condition monitoring with the NOVALINK-CSM online diagnostic system
	<ul style="list-style-type: none"> ▪ Wide range of applications ▪ Fully automatic systems ▪ Multi-stream measurements ▪ Low operation costs ▪ Remote control and diagnostics ▪ Inline probes ▪ Innovative technology ▪ Single parameter and multi parameter systems



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Common Applications: Color, Fragrance, Shampoo, Shower Gel, Fabric Conditioner, Liquid Detergent, Mayonnaise, Tomato Ketchup, Margarine, Polyurethanes, Resins, Bitumen, Shaving Gel, Orange Juice, Soft Drinks, SLES Dilution, Bakery Additives, Brewing, Medical Gels and Paper Wipes

<p>EST. 1932</p> 	<p>STANDARD SYSTEMS FOR ADDITIVE INJECTION</p> <ul style="list-style-type: none"> Space efficient Standard design Cost-effective Quick Delivery Food quality available High quality and fit for purpose 1-500 l/hr dosing flowrate Control options, (inverter, flowmeter, controller)
	<p>TOILETRIES MASTERBATCH SYSTEMS</p> <ul style="list-style-type: none"> Product pumped direct from storage vessels Inline mixing removes need for large batch vessel Inline quality assurance (pH, viscosity) Manufacture "white" common base Minimal clean out Custom designed, built and fully tested Continuous or batch applications
	<p>FINISHING UNIT SYSTEMS</p> <ul style="list-style-type: none"> Using common "white" base, makes several variants Dosing perfume, color, pH adjust, viscosity adjust, etc. Inline mixing removes need for large batch vessel Inline quality assurance (pH, viscosity) Minimal clean out Fast changeover to different recipes with minimal waste
	<p>FOOD MANUFACTURING PACKAGES</p> <ul style="list-style-type: none"> Sanitary design Consistent product quality Single skid unit Small footprint compared with batch Continuous process - make only as much as you need Control automation available Proven technology Reduced costs through optimal use of ingredients resulting in high quality products
	<p>CHEMICAL PROCESSING</p> <ul style="list-style-type: none"> Blending processes or single chemical dosing Heating, cooling and mixing options ATEX designs available Suitable for hostile environments Custom designed, built and fully tested Minimal onsite installation Continuous or batch applications Control Options (PLC to full SCADA)
	<p>PROCESS UNITS FOR LIQUID LAUNDRY DETERGENT</p> <ul style="list-style-type: none"> Continuous flow process Sanitary design Flexible production Excellent mixing performance Quality check by inline measurements Efficient and fast cleaning procedures Very high dosing accuracy



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Common Applications: Methanol, Glycol, Corrosion Inhibitor, Scale Inhibitor, Demulsifier, Antifoam, Biocide, Flocculant, Oxygen Scavenger, Condensate, Polymer, Odorant, Hypochlorite, Drag Reducer, Polyelectrolyte

<p>EST. 1932</p> 	<p>BASIC INJECTION PACKAGES</p> <ul style="list-style-type: none"> Single chemical/single injection point Duty or duty/standby arrangement Simple design Space efficient Fast and easy to operate and maintain Quick delivery Long term aftermarket and service support Fit for purpose, but higher quality
	<p>MULTI-PUMPHEAD PACKAGES</p> <ul style="list-style-type: none"> Multi-pumphead injection and storage package Single chemical/single injection point High volume/high pressure/high temperature applications Designed for hazardous area installations Suitable for hostile environments Custom designed, built and fully tested Minimal on-site installation Continuous or batch applications
	<p>MULTI-POINT CHEMICAL INJECTION PACKAGES</p> <ul style="list-style-type: none"> Multi-compartment storage volume with different chemicals Horizontal modular duty/standby multi-headed pumps Single source - single accountability Comprehensive solution, tailor made to client requirements Topsides or subsea applications Easy operation and maintenance Designed for low and high temperatures
	<p>VERTICAL MULTI-PUMPHEAD PACKAGES</p> <ul style="list-style-type: none"> Patented Vertical modular pump configuration Space and weight efficiency Design concept permits future expansion High accuracy, repeatability and durability Self-contained storage and injection package Extensive global reference list of installations Highly engineered components to meet stringent requirements
	<p>SOLAR PANEL PACKAGES</p> <ul style="list-style-type: none"> Completely self-contained including solar panels and battery backup Suitable for remote desert and hostile locations Low power consumption of motor Minimum friction losses giving high reliability & high efficiency Low maintenance/low life cycle costs Higher returns on investment Environmentally friendly
	<p>FLOW CONTROL VALVE PANELS</p> <ul style="list-style-type: none"> Self-regulating injection metering valves Multi-injection points with either a dedicated or common flow meter More than one chemical can be accommodated Duty/standby pumps recommended per chemical Stand-alone or inclusive panels supplied Manual or remote control Space and weight efficient

ClydeUnion Pumps

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Common Applications: Exploration & Production - Onshore/Offshore/Sand & Shale, Crude, Transportation & Storage, Downhole & Subsea, Refinery, Petrochemicals, Product Storage & Distribution, Gas Processing & Treatment

EST. 1871	OVERHUNG PUMPS	
	<ul style="list-style-type: none"> ▪ Comprehensive range of class leading API 610 compliant units including CUP-OH2, CUP-OH3, CUP-OH4 and CUP-OH5 designs ▪ Various material options to suit commercial and technical requirements 	<ul style="list-style-type: none"> ▪ Various bearing and sealing options optimized to pump duty ▪ Heavy duty robust construction
	BETWEEN BEARINGS PUMPS	
	<ul style="list-style-type: none"> ▪ Full range of between bearings pumps CUP-BB1, CUP-BB2, CUP-BB3, CUP-BB4 and CUP-BB5 compliant to API 610 standards ▪ API material options as well as material upgrades for arduous duties ▪ Flanged, bolted or clamped nozzle options 	<ul style="list-style-type: none"> ▪ Rigid rotor design ensures reliability ▪ Fully packaged with numerous sealing, bearing drive and instrumentation options ▪ Large eye and double entry impeller options for low NPSH conditions ▪ High power test facilities available
	VERTICALLY SUSPENDED PUMPS	
	<ul style="list-style-type: none"> ▪ API 610 compliant range of vertically suspended pumps including CUP-VS1, CUP-VS4 and CUP-VS6/7 units ▪ FEA optimized designs reduce vibration and improve reliability 	<ul style="list-style-type: none"> ▪ Direct drive or via line shaft with motor or diesel drivers ▪ Fully packaged systems ▪ Available in materials suited for hydrocarbons, crudes, seawater etc.
	RECIPROCATING PUMPS	
	<ul style="list-style-type: none"> ▪ Market leading range of API 674 reciprocating pumps ▪ Non-geared, geared and power/direct-acting designs available across a wide range to suit specific duty 	<ul style="list-style-type: none"> ▪ Simplex, duplex, triplex and quintuplex designs available ▪ V-belt or gear reduction and various drivers available optimized to duty
	SPECIALIZED PUMPS & SYSTEMS	
	<ul style="list-style-type: none"> ▪ Downhole multiphase pumps for oil and gas recovery in difficult wells ▪ Submersible motor driven pumps with superior corrosion resistance ▪ Specialized pump sealing systems to minimize environmental emissions ▪ Cryogenic designs for LNG and other specialist systems 	<ul style="list-style-type: none"> ▪ Anti-fouling equipment to inhibit marine growth ▪ Innovative reel system for jack-up rigs and semi-submersibles ▪ High temperature refinery pump systems

ClydeUnion Pumps

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Common Applications: Thermal, Combined Cycle, Concentrated Solar, Geothermal, Cogeneration, Carbon Capture & Storage, Class 2/3 & commercial pumps for all key reactor designs, Modular Reactors, Naval & Defense Related Reactors

<p>EST. 1871</p>	<p>BOILER FEED PUMPS</p>
	<ul style="list-style-type: none"> ▪ Through-bolt, split case or full cartridge designs available ▪ Stable H/Q curves and high efficiency hydraulic design extends time between overhauls ▪ Balanced drum or disc designs available optimized to operating conditions ▪ Stiff-shaft design and able to withstand thermal shock ▪ Various sealing and bearing options available to suit commercial and technical requirements ▪ Fully packaged with various drives and skid arrangements available ▪ High power test facilities available
	<p>CONDENSATE EXTRACTION PUMPS</p> <ul style="list-style-type: none"> ▪ Single or double entry ▪ Above or below floor discharge options ▪ Wide range of hydraulics to optimize selection to duty point ▪ Low NPSH to minimize civil expense ▪ Vertical or horizontal pumps available depending on site layout
	<p>CIRCULATING WATER PUMPS</p> <ul style="list-style-type: none"> ▪ Vertical or horizontal configurations available depending on duty and site layout ▪ Excellent NPSH characteristics to minimize civil expense ▪ Large capacity concrete volute pumps available for larger flows ▪ Various metallurgies available optimized to water type and suspended solid content, including highly resistant super duplexes ▪ Full intake modeling capability to maximize and prove design
	<p>ADDITIONAL PUMPS FOR POWER APPLICATIONS</p> <ul style="list-style-type: none"> ▪ Specialized units designed for the specific need of concentrated solar, geothermal and other power applications ▪ A wide range of power auxiliaries of centrifugal and reciprocating design
	<p>CODED PUMPS FOR NUCLEAR APPLICATIONS</p> <ul style="list-style-type: none"> ▪ Large range of ASME Class II or III pumps to recover a wide range of nuclear duties <ul style="list-style-type: none"> - Safety injection and containment spray - Residual heat removal - Charging and CVCS - Auxiliary feed - Component cooling water - Reactor core isolation cooling - Emergency core cooling and many more ▪ Unique and proven designs such as integral steam turbine, water lubricated pump for reactor feed and cooling duties, the ClydeUnion Pumps TWL ▪ Designed and manufactured in ASME N Stamp and/or RCCM facilities with class leading in-house nuclear specific capabilities – clean assembly rooms, vibration testing, anechoic chamber etc.

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Common Applications: Water Supply/Treatment & Transportation, Desalination, Metals, Marine, General Industrial, Minerals and Mining

<p>EST. 1871</p> 	<p>SINGLE & TWO STAGE PUMPS</p> <ul style="list-style-type: none"> Frequently fitted with stainless steel impellers as standard for improved through life costs High efficiency designs with wide range of low NPSH hydraulics to provide optimum pump for duty Horizontal or vertical configurations, long or close coupled Various material combinations optimized to pump duty Solids handling units available
	<p>MULTI STAGE PUMPS</p> <ul style="list-style-type: none"> Split case, through-bolt and full cartridge designs available Large range of high efficiency hydraulics to best meet duty Material and coatings chosen to optimize pump life Rigid rotor design ensures reliability Fully packaged with numerous sealing, bearing drive and instrumentation options
	<p>VERTICAL PUMPS</p> <ul style="list-style-type: none"> Low NPSH and double entry designs available to reduce civil costs Various bearing, seal and headpiece options available optimized to duty Numerous material and coatings available to optimize pump life and efficiency Intake test facilities available to prove operation before installation Robust, easy to maintain designs reduce downtime Long line shaft experience for deep wells
	<p>RECIPROCATING PUMPS</p> <ul style="list-style-type: none"> Market leading range of API 675 reciprocating pumps Non-g geared, geared and power/direct-acting designs available across a wide range to suit specific duty Simplex, duplex, triplex and quintuplex designs available V-belt or gear reduction and various drivers available optimized to duty
	<p>SPECIALIZED PUMPS</p> <ul style="list-style-type: none"> Specialized units available for niche applications offering superior performance such as: <ul style="list-style-type: none"> - High capacity concrete volute pumps for flood prevention schemes or land irrigation / drainage schemes - Submersible motor pumps - Pumps for mining and marine applications

Common Applications: Power, Pulp & Paper, Oil & Gas, Petrochemical

Manufacturing Standards: Certifications - ISO-9001, ASME SECTION III "N" & "NPT" Stamps, ASME SECTION I "S" Stamp, CSA-Z299.2, .3, & .4, 97/23/EC-PED-CE

<p>EST. 1903</p> 	<p>DSCV-SA - STEAM TURBINE BYPASS VALVE</p> <ul style="list-style-type: none"> Tight repeatable shut off High pressure balanced Noise attenuating trims Cooling water steam atomized No thermal shocks Minimal straight line distances 'Quick Change' trim
	<p>SPECIAL APPLICATION GLOBE & ANGLE STYLE CONTROL VALVES</p> <ul style="list-style-type: none"> General Service applications Severe Duty applications High turndown 19.05mm - 610mm (.75 - 24") Sizes 150 - 4500 ANSI Ratings Special ANSI & API Ratings Meets ASTM/ASME Standards Butt/Socket Weld, Flanged & Hub Connections
	<p>STEAM CONDITIONING EQUIPMENT (DESUPERHEATERS)</p> <ul style="list-style-type: none"> 7 Styles Mechanical Atomizing Variable Orifice Integral cooling water function available High turn downs 150 - 2500 ANSI Ratings Special ANSI & API Ratings Meets ASTM/ASME Standards
	<p>TRIM TYPES</p> <ul style="list-style-type: none"> 13 Types RAVEN HUSH™ CAV B9 One Stage HUSH™ Noise control Cavitation elimination Velocity & Erosion control
	<p>ACTUATORS</p> <ul style="list-style-type: none"> Diaphragm Style. Model 700 Diaphragm Style. Model 1000 Manual Style 820 Electric available Electro/Hydraulic available Piston Reverse acting Direct acting
	<p>NUCLEAR CONTROL VALVES</p> <ul style="list-style-type: none"> Pneumatic, Motor, Manual Operators Metal & Resilient Seats Widest Selection of Trim in the Industry Globe, Angle Isolation & Three Way Body Configurations Size Range: 9.525mm - 508mm (3/8" - 20") class 150-2500 ASME Section III "N" & "NPT" Stamp Certified
	<p>NUCLEAR HIGH PERFORMANCE BUTTERFLY AND BALL VALVES</p> <ul style="list-style-type: none"> Bi-Directional Class VI Shut off Metal & Resilient Seats Torque Seated/Position Seated (Butterfly only) Pneumatic, Motor, Manual Operators Modulating or Isolation Two & Three Piece Ball Valve design ASME Section III "N" & "NPT" Stamp Certified

Common Applications: Petrochemical, Electronics, Oil & Gas, Power Generation, Food, Beverage, Packaging, Manufacturing

<p>EST. 1936</p> 	<p>COMPRESSED AIR TREATMENT</p> <ul style="list-style-type: none"> Heatless desiccant dryers Heat regenerated desiccant dryers Heat of compression desiccant dryers Gas/air filtration solutions High engineered dryer packages Full EPC specified package solutions Consistent pressure dew points Low energy consumption dryers Multiple industries, like semiconductor, chemical, pharmaceutical, oil and gas/refinery industry
	<p>GAS TREATMENT</p> <ul style="list-style-type: none"> Gas separation, Hydrogen, Propane, CO₂, N₂ etc. Inert gas dryers Vent gas purification systems Regeneration loop gas dryers Wide range of applications Reduce concentration of water vapor Decreased pressure dew point Other gases on request
	<p>COMPRESSED NATURAL GAS DRYERS</p> <ul style="list-style-type: none"> Closed loop dryers LPG dryers CNG dryers No gas losses Steady dew point under any operating conditions Low maintenance and trouble free duty
	<p>NITROGEN GENERATORS</p> <ul style="list-style-type: none"> For purging tanks and vessels Oil & gas production Inerting storage tanks Purging pipelines Food and packaging industries Wine production Heat treatment and production of metals
	<p>OFF-GAS DRYERS</p> <ul style="list-style-type: none"> Regeneration loop gas dryers for aromatics plants Off-gas dryers for PTA plants Custom engineered systems
	<p>DEHYDRATOR SOLUTIONS</p> <ul style="list-style-type: none"> Easy to install and service Simple to operate Low noise and vibration High reliability Safe Low power consumption High efficiency Reduced risk of corrosion



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Common Applications: General Manufacturing, Automotive, Electronics, Petrochemical, Laboratory, Pharmaceutical

<p>EST. 1961</p> 	<p>REFRIGERATED DRYING AIR TECHNOLOGIES</p> <ul style="list-style-type: none"> Deltech Refrigerated Dryers provide the most cost effective method of dew point control for dehydrating compressed air systems These units are equipped to handle flows ranging from 17 - 5097 m³/h (10 - 3000 scfm) and are tailored to operate across multiple applications Deltech also offers High-Capacity Refrigerated Dryers. These units are designed in three operating platforms for applications above the freezing point of water
	<p>DESICCANT DRYING AIR TECHNOLOGIES</p> <p>Deltech desiccant dryers deliver superior dew point control to -73.3°C (-100°F) for critical applications.</p> <ul style="list-style-type: none"> Highly hygroscopic desiccants combine spherical uniformity with superior crush strength to deliver stable dew point control and low dust migration Process quality switching valves deliver consistent repeatability to ensure system integrity and long component life cycles Precision timing circuits control process valve sequencing protocols to deliver optimum dew point stability and energy efficiency
	<p>FILTRATION TECHNOLOGIES</p> <ul style="list-style-type: none"> Quality Deltech Filtration products will protect your processes and systems, reduce power costs and help improve your bottom line Each product has been engineered to remove dirt, rust, pipe-scale, water, lubricant and the other by-products of compressed air drying applications
	<p>MEMBRANE TECHNOLOGY</p> <ul style="list-style-type: none"> Membrane Compressed Air Dryers offer a modular "point-of-use" alternative for continuous flow, low dew point applications The combination of compact size and no electrical requirements offers clean, streamlined installations and reliable operation Each system is equipped to handle flow ranges from 0.29-158.3 scfm (0.49-268.9 m³/h) and are available with ISO 8573.1 Quality Class 2 through Class 5 pressure dew points -40°C to +10°C (-40°F to +50°F)
	<p>DELMONOX® BREATHING AIR SYSTEMS</p> <ul style="list-style-type: none"> The Del-Monox® air purification systems provide a highly effective means to control exposure to respiratory hazards in the work place. <p>For more than half-a-century workers around the world have experienced the benefits of the Del-Monox® system.</p>
	<p>CONDENSATE MANAGEMENT</p> <ul style="list-style-type: none"> Deltech automatic drains and condensate separators join forces to help you most effectively deal with your air system condensate.




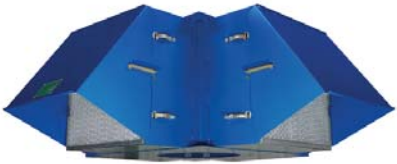


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Common Applications: Oil & Gas: (Offshore & Production, Processing & Refining, Storage, Transportation & Distribution), Power Generation, Air Separation, Petrochemical, Nitric Acid/Fertilizer Production, Waste Gas and Biofuels, Glass Container Manufacturing

<p>EST. 1921</p> 	<p>PROCESS PIPELINE FILTERS</p> <p>SPX offers Process Filtration Equipment for the Oil & Gas, Petrochemical and Power Generation Industries around the globe.</p> <ul style="list-style-type: none"> The product range includes gas, liquid and coalescer fabricated pressure vessel filters Custom designs can be incorporated into all products <ul style="list-style-type: none"> Options available to package filter vessels onto a skid arrangement with any required instrumentation or control equipment Ensures compliance to all relevant codes with every product
	<p>AIR INTAKE FILTRATION</p> <p>Our technical development facilities are located throughout Europe, North America, South America and Asia.</p> <ul style="list-style-type: none"> Built around the globe, Dollinger is able to simulate a diverse range of environmental conditions, in order to provide a detailed technical assessment of all current and desired filter systems <ul style="list-style-type: none"> Ability to manufacture a small retrofit weather hood, through to a large air intake system with full enclosure 18 Standard Models with flow rates up to 122,328 m³/h (72,000 scfm) Fully engineered, bespoke design for non-standard units Standard & High Efficiencies Available
	<p>OIL MIST ELIMINATORS</p> <p>The Dollinger Oil Mist Eliminator (OME) is a filtration system of superior efficiency.</p> <ul style="list-style-type: none"> Collects 99.97% of oil droplets 0.3 micron and larger, thus removing virtually 100% of visible oil mist emissions The extracted oil mist droplets can be returned back to the lube oil system of the Gas or Steam Turbine, Gas or Diesel Engine and Compressors <ul style="list-style-type: none"> Removes health, safety and environmental concerns as well as making significant cost savings
	<p>ENGINEERED PACKAGES</p> <p>Keeping fluids clean and free from contaminant and moisture, is an essential requirement for maintaining efficiency. We can supply both replacement filter systems or design engineered packages. SPX can also provide Liquid Coalescers, Fuel Filtration, and Lubricating Oil Filtration.</p>






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Common Applications: Power Generation, Oil & Gas

<p>EST. 1921</p> 	<p>GAS TURBINE & COMPRESSOR INLET - PULSE JET FILTERS</p> <ul style="list-style-type: none"> High dust holding capacity Low pressure drop due to sharp pleat tips and even spacing Ideally suited for desert style environments
	<p>GAS TURBINE & COMPRESSOR INLET - STATIC FILTERS</p> <ul style="list-style-type: none"> Improves efficiency and fuel savings Ultra high efficiency media Maximum dust-holding capacity for extended life Rugged, high burst pressure design
	<p>PULSE JET / PANEL AIR INTAKE SYSTEMS</p> <ul style="list-style-type: none"> 18 Standard Models 5,097 - 1,699,000 m³/h (3,000 - 1,000,000 scfm) <ul style="list-style-type: none"> - Single Stage (Pulse Jet Systems) - Dual Stage (Pulse Jet / Panel Systems) Low pressure loss/high efficiency Standard & High Efficiencies Available Optional silencing feature Custom systems

e&e Series

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Common Applications: Food, Coffee, Pharmaceutical, Cosmetics, Chemical

<p>EST. 1998</p> 	<p>TURNKEY PLANTS</p> <ul style="list-style-type: none"> Leading extraction, evaporation, vacuum and freeze drying technology for the food, pharmaceutical, cosmetics, coffee and chemical industry Factories for instant coffee Factories for herbal extracts, medicinal plants Factories for freeze dried fruits and natural ingredients. From the raw material to final product. Turnkey plants, includes building design, according to: ATEX, Non-ATEX, GMP, Supply of utilities Product and process development
	<p>EXTRACTION PLANTS</p> <ul style="list-style-type: none"> Batch size 50 l up to 20 m³ (13 gal. up to 5283 gal.) -1 bar up to 24 bar (0 to 348 psi) Single or multi-stage Counter-current flow extraction ("semi-continuous") Extraction batteries for coffee Easy raw material discharge Excellent cleanability for fast product changeover Various solvents Extraction process variability: Steaming, vacuum stripping, percolation, solvent recovery
	<p>EVAPORATION PLANTS</p> <ul style="list-style-type: none"> Single and multi-stage Various thermal and flow operations High concentrators Plate evaporators Falling film evaporators Economical systems Solvent recovery
	<p>VACUUM DRYERS/FREEZE DRYERS</p> <ul style="list-style-type: none"> Vacuum belt dryers Freeze belt dryers Drying cabinets Continuous tray freeze dryers Batch tray dryers 1 m² up to 250 m² (10 ft² to 2700 ft²) Vacuum 0.3 up to 300 mbar abs. (0,004 to 4,35 psi) Ice condensers Direct/indirect heating Pre-freezing and freezing systems
	<p>DISTILLATION AND RECTIFICATION PLANTS</p> <ul style="list-style-type: none"> Aroma recovery plants Solvent recovery plants High concentration of solvents Columns and flash systems Aroma fractionations Biodiesel production Bioethanol purification
	<p>INNOVATION CENTER</p> <ul style="list-style-type: none"> Pilot extraction unit Pilot evaporation unit Vacuum belt dryer Freeze belt dryer Batch dryer Test trials in close cooperation with the customer Tailoring of product properties Product and process development Determination of energy requirement Production of test samples

Common Applications: Oil & Gas, Gas Transmission, Offshore and Onshore

<p style="text-align: center;">EST. 1944</p> 	<p style="text-align: center;">BANDLOCK 2 QUICK OPENING CLOSURE</p> <ul style="list-style-type: none"> ▪ Benchmark design for global high pressure applications ▪ 6" to 100" from ASME Class 150# to 2500# ▪ Quick access to pipelines, filters and all pressure vessels ▪ Horizontal or Vertical Installation ▪ Unique Seal with Integral Anti-Extrusion Spring ▪ Approved to all International design codes; ASME VIII Div. 1 & 2, PD5500, EN 13445 ▪ ASME VIII Div. 1 & Div. 2 Code Stamp
	<p style="text-align: center;">ROTALOCK QUICK OPENING CLOSURE</p> <ul style="list-style-type: none"> ▪ Horizontal or vertical installation ▪ Developed for smaller/low pressure applications up to ASME Class 300 ▪ Low cost solution ▪ Superior alternative to screwed type closures
	<p style="text-align: center;">HI-T PIGALERT</p> <ul style="list-style-type: none"> ▪ Intrusive Pig Signaller ▪ Simple & proven technology ▪ Wide range of models including: mechanical flag and electrical switch ▪ Bi-directional operation ▪ Under pressure removal using valved models
	<p style="text-align: center;">HI-T MAGALERT & ULTRALERT</p> <ul style="list-style-type: none"> ▪ Non Intrusive Pig Signaller ▪ Magnetic or Ultrasonic Technology ▪ ATEX Compliant ▪ Use both Onshore & Offshore ▪ User Friendly Display / Operator Interface ▪ Ultra bright LED Indication ▪ Optional GSM Alarm Interface
	<p style="text-align: center;">SPECIAL PROJECTS</p> <ul style="list-style-type: none"> ▪ Automated multiple pig launching ▪ Fully automatic vessel closures for waste treatment plants ▪ Closures for medical waste treatment vessels ▪ High pressure test vessels ▪ Industrial dry cleaning closure
	<p style="text-align: center;">SERVICE & AFTERMARKET</p> <ul style="list-style-type: none"> ▪ Onshore and offshore inspection and maintenance ▪ In-situ machining/seal face refurbishment ▪ Pig trap refurbishment ▪ Training

Common Applications: Margarine, Shortening, Butter, Bakery Filling Cream, Mayonnaise, Ketchup, Dressing

<p>EST. 1901</p> 	<p>SCRAPED SURFACE HEAT EXCHANGERS</p> <ul style="list-style-type: none"> For crystallization of fat Low and high pressure Various certifications available (PED, ASME, etc.) Up to very high capacities Low-noise systems Known under the brand names: Nexus, Perfector, Kombinator, Consistator®
	<p>HIGH PRESSURE PLUNGER PUMPS</p> <ul style="list-style-type: none"> For pumping liquids to process line Low noise level High pressure Few wearing parts Fast and simple servicing and maintenance Constant product flow
	<p>PIN ROTOR MACHINES</p> <ul style="list-style-type: none"> For kneading and plasticizing Ensures proper and homogeneous product Easy maintenance Heating jacket and build-in water attemperation unit to prevent product from sticking (channelizing) External bearing for less wear and to improve food safety Modular design for easy add on
	<p>EMULSIFYING EQUIPMENT</p> <ul style="list-style-type: none"> Systems for batch and continuous processing Flexible solutions Gentle product treatment Ensure homogeneous distribution of the disperse phase into the continuous phase
	<p>CUSTOMER SERVICE</p> <ul style="list-style-type: none"> Commissioning of machines and complete production lines Spare parts delivery Maintenance plans for your equipment Repair of equipment Service agreements System and/or product optimization
	<p>INNOVATION CENTER</p> <ul style="list-style-type: none"> Innovation center to support customers in trials, process optimization and new recipes Small scale equipment Experienced food technologists Test bakery

Gerstenberg Schröder®

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Common Applications: Food, Dairy

<p>EST. 1910</p> 	<p>CONTINUOUS BUTTER MAKING MACHINE</p> <ul style="list-style-type: none"> Built-in cream pre-heater Built-in buttermilk cooling Low air content in final product Advanced dosing system for water, salt and culture Internal CIP system Factory-tested before shipping Each machine size has a wide capacity range
	<p>BUTTER PACKAGING LINE</p> <ul style="list-style-type: none"> Stainless steel throughout Single, compact unit Accurate filling for less giveaway of butter Available with a troubleshooting system to reduce downtime Advanced control system with data collection Factory-tested before shipping Each machine size has a wide capacity range Capable of packing two different carton sizes at the same time
	<p>DAIRY BLEND PLANT</p> <ul style="list-style-type: none"> No vegetable oil residues in the buttermilk Simultaneous injection of several oil types Flexible end-product range, fat content in final product 40-80% Stand-alone system, factory-tested before each shipping Each machine has a wide capacity range SPX patented process
	<p>BUTTER REWORKING PLANT</p> <ul style="list-style-type: none"> Continuous, closed system minimizing the risk of bacteriological issues Vacuum chamber for lowering of the air content in the product Rework frozen butter Precise dosing of water, salt, culture, etc. to ensure a uniform end-product Stand-alone system, factory-tested before shipping Wide capacity range
	<p>BUTTER SILOS</p> <ul style="list-style-type: none"> Big diameter augers ensures reduced working softening of the product Auger speed can be controlled by packaging capacity Installed light and transparent man-way ensures easy inspection Inclined bottom to ensure drainage during CIP Short CIP turn-around time
	<p>BUTTER SILO</p> <ul style="list-style-type: none"> Suitable for butter as well as dairy blend No augers No additional working of the product 1 - 5 butter pumps Low waste of product at shut down Minimal floor space requirement



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Common Applications: Apparel, Chemical Production, Electronics, Fabricated Metal Products, Food & Beverage, Furniture & Fixtures, General Manufacturing, Industrial Machinery, Instrumentation, Leather Products, Lumber & Wood Products, Paper Products, Petroleum & Coal Production, Primary Metals, Printing & Publishing, Rubber & Plastic Products; Stone, Clay & Glass Products, Transportation Equipment

<p>EST. 1948</p> 	<p>REFRIGERATED AIR DRYING TECHNOLOGIES</p> <p>Hankison refrigerated products are tailored to serve multiple applications above the freezing point of water.</p> <ul style="list-style-type: none"> Standard Dryers <ul style="list-style-type: none"> - HPR Series 5-500 scfm - HPRplus Series 100-3000 scfm Energy Saving Dryers <ul style="list-style-type: none"> - HES Series 90-12500 scfm High-Capacity Dryers <ul style="list-style-type: none"> - H Series flows greater than 2000 scfm - HES Series 4000-12000 scfm - HV Series 4000-20000 scfm High Pressure & Inlet Temperature Dryers <ul style="list-style-type: none"> - HIT Series 20-125 scfm - HPET Series 13-3750 scfm
	<p>DESICCANT AIR DRYING TECHNOLOGIES</p> <p>Energy efficient designs deliver maximum value across a full range of flow rates to best meet your unique compressed air requirements.</p> <ul style="list-style-type: none"> Heatless Systems <ul style="list-style-type: none"> - DHW Series 7-50 scfm - HHL, HHS and HHE Series 40-5400 scfm Heated Systems <ul style="list-style-type: none"> - HPD Series 300-3200 scfm - HCD Series 350-10000 scfm - HBP Series 500-4300 scfm Single Tower Systems <ul style="list-style-type: none"> - HDF Series 5-30 scfm
	<p>COMPRESSED AIR FILTRATION TECHNOLOGIES</p> <p>Hankison filtration products protect your processes and systems, reduce power costs and help improve your bottom line.</p> <ul style="list-style-type: none"> Compressed Air Filtration <ul style="list-style-type: none"> - NGF Series 20-1500 scfm - HF Series 20-21250 scfm Mist Elimination <ul style="list-style-type: none"> - M Series Specialty Filtration Technologies <ul style="list-style-type: none"> - HTA Series Afterfilters - HF High Pressure Series - HF Corrosion Resistant Series
	<p>MEMBRANE TECHNOLOGIES</p> <p>Membrane Compressed Air Dryers offer a modular "point-of-use" alternative for continuous flow, low dew point applications</p> <ul style="list-style-type: none"> Membrane Dryers <ul style="list-style-type: none"> - HMD Series Modular Membrane Dryers <ul style="list-style-type: none"> - HMM Series - SMM with Sweepsaver™ Series
	<p>CONDENSATE MANAGEMENT</p> <p>Hankison condensate drains and oil/water separators join forces to help you effectively deal with your air system condensate.</p> <ul style="list-style-type: none"> Oil/Water Separators <ul style="list-style-type: none"> - HGS Series - HPE Series Condensate Drains <ul style="list-style-type: none"> - Snap Trap® Series - Trip-L-Trap® Series - 533 Series
	<p>BREATHING AIR PURIFICATION SYSTEMS</p> <p>Breathing air purification systems offer a way to use your compressed air system as a source for breathing quality air by removing excessive moisture, solid particulate, oil aerosols and mists, carbon monoxide and hydrocarbon vapors commonly present in compressed air.</p> <ul style="list-style-type: none"> Breathing Air Purifiers <ul style="list-style-type: none"> - Catalite® CBA Series - Catalite® PBA Series






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Common Applications: Petrochemical, Power Generation, Electronics, Manufacturing



<p>EST. 1948</p> 	<p>COOL - WITH AN AFTERCOOLER/SEPARATOR</p> <ul style="list-style-type: none"> Reduce the temperature of hot compressed air leaving the compressor to safe, usable levels (within -15°C (5°F) of ambient temperature) Remove up to 70% of water Precondition the air for further drying and filtering
	<p>DRY - WITH A REFRIGERATED OR DESICCANT DRYER</p> <ul style="list-style-type: none"> Eliminate troublesome liquid water from downstream air lines and equipment Choose a dryer to produce a dew point temperature below the lowest temperature that your air lines are exposed <ul style="list-style-type: none"> - Dew point temperature at which water vapor changes to a liquid
	<p>FILTER - WITH A PACKAGED FILTER SYSTEM</p> <ul style="list-style-type: none"> One micron air line filter <ul style="list-style-type: none"> - Removes solid particles High efficiency coalescing type oil removal filter <ul style="list-style-type: none"> - Removes oil aerosols (also called oil mist, fog, or smoke) Provides virtually oil free air Optional system includes oil vapor removal system <ul style="list-style-type: none"> - Eliminates odor from compressed air - Protects products and processes from contamination



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Common Applications: General Industrial, Automotive, Manufacturing

<p>EST. 1987</p> 	<p>REFRIGERATED AIR DRYERS</p> <ul style="list-style-type: none"> Stainless steel brazed plate heat exchanger, No rust water and corrosion Integral structure, air-to-air heat exchanger, evaporator & moisture separator User friendly controllers Optimal dew point performance under all conditions Low pressure drop reduces operating costs Reliable timed electric drain
	<p>DESICCANT AIR DRYERS & ENGINEERED PRODUCTS</p> <ul style="list-style-type: none"> Stable dew point performance and low dust creation High quality process switching valve, long component life cycle Basic design : ASME, IEC, DNV No energizer control system (Pneumatic control) Low noise let down system (80 dB) Transmitter design : Motion load analysis

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Common Applications: Food, Beverage, Petrochemical, Pharmaceutical, Chemical, Horticulture, Water Applications, Shipbuilding, Pulp & Paper, General Industry

<p>EST. 1968</p> 	<p>ROTARY LOBE PUMPS – POSITIVE DISPLACEMENT RANGE</p> <ul style="list-style-type: none"> Hygienic stainless steel tri-lobe, multi-lobe and bi-wing lobe pumps easy to clean High volumetric efficiency for thin and viscous liquids Accurate and gentle flow with minimal pulsation Front loaded hygienic mechanical seals easy to access for inspection and cleaning Different hygienic certificates available
	<p>INTERNAL GEAR PUMPS – POSITIVE DISPLACEMENT RANGE</p> <ul style="list-style-type: none"> Robust, heavy-duty design in several material options for extended life Suitable for both thin and viscous liquids Pulsation-free flow for accurate and gentle pumping A variety of sealing options and seal-less mag drive Simple design with few parts, easy to service with back and front pull-out for access to rotating parts
	<p>SELF-PRIMING CENTRIFUGAL PUMPS</p> <ul style="list-style-type: none"> Horizontal and vertical versions – Single and multi stage executions Hydraulics according to EN 733 Modular designs based on interchangeable parts High pump efficiency, minimal internal losses A variety of sealing options – packed gland, mechanical seals and cartridge seals
	<p>CENTRIFUGAL PUMPS</p> <ul style="list-style-type: none"> General purpose pumps, heavy duty chemical and process pumps, in-line pumps, close-coupled pumps, submersible pumps Modular designs based on interchangeable parts Horizontal and vertical versions – Single and multi stage executions Comply with ISO, DIN and API standards A variety of sealing options and seal-less mag drive
	<p>MAG DRIVE PUMPS</p> <ul style="list-style-type: none"> Heavy duty 100% leak-free centrifugal and gear pumps for applications which convey corrosive, toxic, aggressive or expensive liquids Modular pumps based on interchangeable parts Environmentally friendly and improved safety in chemical and process plant environments Centrifugal ranges comply with ISO 5199 and EN22858 and are interchangeable with existing (ISO 2858) pumps
	<p>FLEXIBLE IMPELLER PUMPS</p> <ul style="list-style-type: none"> Easy-to-handle, positive displacement pump with excellent self-priming ability Pulsation free and gentle pump action for sensitive liquids, able to handle large soft solids without damage Fast, simple and inexpensive maintenance with low operational cost and short down time Different versions for a broad field of applications meeting a variety of industrial demands, hygienic or non hygienic







Common Applications: Water Pressure Systems, Engine Cooling, Bilge Pumping, Oil & Diesel Refueling, Water Circulation, Deckwashing, Wastewater and Toilet Handling, Emergency Pumping for example Fire Fighting, etc.

<p>EST. 1968</p>	<p>HEAVY-DUTY FLEXIBLE IMPELLER PUMPS</p>	
	<ul style="list-style-type: none"> ▪ A range of multi-purpose bronze pumps ▪ Compact design. Pedestal, flange, crankshaft or electro-magnetic clutch versions ▪ Self-priming ▪ Available in sizes from 9,5 mm x 63.5 mm (3/8" to 2 1/2") 4 L/min to 620 L/min (1-165 USGPM) <ul style="list-style-type: none"> ▪ Ideally suited as cooling water pumps for marine engines, bilge, deckwash and fuel transfer pumps and other self-priming multi-purpose applications ▪ Also suited on shore to empty septic tanks, to flush clean and to fill water tanks 	
	<p>WATER PRESSURE SYSTEM - AQUA JET SERIES</p> <ul style="list-style-type: none"> ▪ Suitable where low amperage and sound levels in relation to water flow are placed at a premium such as in shower and galley applications ▪ Quiet and pulsation-free even at low speeds ▪ Five chamber diaphragm pump <ul style="list-style-type: none"> ▪ Perfect water pressure or deck wash solution ▪ Efficient and compact ▪ Available in sizes from 9 L/min to 40 L/min (2.4-10.4 USGPM) ▪ Integrated pressure switch for automatic operation 	
	<p>SUBMERSIBLE BILGE PUMP SERIES</p> <ul style="list-style-type: none"> ▪ A variety of mounting options, available with capacities of 30 to 250 L/min (500-4000 USGPH) ▪ Heavy-duty motors with stainless steel shaft and tough thermoplastic bodies provide for a long pump life <ul style="list-style-type: none"> ▪ Can handle most bilge pump applications ▪ With an automatic switch installed, the pump turns on and off automatically ▪ Available in 12 or 24 volts 	
	<p>DC DRIVEN FLEXIBLE IMPELLER PUMPS</p> <ul style="list-style-type: none"> ▪ High level of flexibility & self-priming ▪ Ideally suited for use as bilge and deckwash pumps, fresh water pumps, refueling pumps for oil and diesel ▪ May be combined with a vacuum or pressure switch for automatic operation <ul style="list-style-type: none"> ▪ Capacities vary from max 14 L/min to 55 L/min (3.7-14.5 USGPM) ▪ All motors are heavy-duty to provide long service life even under heavy use ▪ Available in 12 or 24 volts 	
	<p>COMPACT TOILET HANDLING AND WASTEWATER PUMPS</p> <ul style="list-style-type: none"> ▪ Maximum flow 32 L/min (8.5 USGPM) ▪ Engineered to pump black wastewater with uncompromising odor-prevention features ▪ Whisper quiet operation ▪ Non-choke valves - no waste shredding required <ul style="list-style-type: none"> ▪ Pump head rotatable 360° ▪ Self-priming up to 2.5 meters (8.2 ft.) ▪ Can be run dry and can pump air/water mixture ▪ Electric motor, available in 12 or 24 volts, with power-out, manual-crank backup 	
	<p>Aqua™ MARINE TOILETS MANUAL OR ELECTRICAL POWERED</p> <ul style="list-style-type: none"> ▪ Hygienic, easy-to-clean vitreous china bowl and exterior surfaces ▪ Low water consumption ▪ Versatile plumbing connection options and automatic back-flow prevention <ul style="list-style-type: none"> ▪ Designed for virtually any on-board mounting position and may be installed above or below the water line ▪ Suitable for OEM or replacement installation ▪ Innovative brake bushing prevents annoying leakage at the handle 	

Common Applications: Chemical Processing, Flue Gas Desulfurization, Food, Beverage, Mining & Minerals, Oil & Petroleum, Personal Care, Pharmaceutical, Biotech, Pulp & Paper, Water & Wastewater Treatment

<p>EST. 1923</p> 	<p>PORTABLE/FIXED MOUNT/STATIC MIXERS</p> <ul style="list-style-type: none"> Laboratory and general purpose Industry-standard, single-purpose and full-featured mixers for small batch applications Single-speed to digital-controlled mixers for bench top open and closed tank service Direct and gear models Rapid response time for continuous dosing/sampling Shear control for blending sensitive products
	<p>SANITARY MIXERS</p> <ul style="list-style-type: none"> Dry running, aseptic mixers for blending, solids suspension and cell culture for biotech, pharmaceutical, cosmetic and food processing industries Sanitary mixers for the complete range of small batch applications Bottom and top mounted, magnetically coupled hermetically sealed mixers for sanitary applications, including injectables
	<p>SIDE-ENTRY MIXERS</p> <ul style="list-style-type: none"> Rugged belt drives and gearboxes Easy seal change and maintenance while tank is full A312 impeller provides the most flow per unit of power in a focused pattern FGD slurry seal designed to excel in harsh environments on VSF mixer
	<p>HEAVY MIXERS</p> <ul style="list-style-type: none"> Mechanical design technology proven up to 2600 kW/3500 HP for all process mixing applications Robust, state-of-the-art design delivers value and performance for process and environmental control applications
	<p>PROCESS SYSTEMS AND EQUIPMENT</p> <ul style="list-style-type: none"> Attrition Scrubbers Minerals processing equipment Static and dynamic mixers
	<p>PROCESS TECHNOLOGY</p> <ul style="list-style-type: none"> Highly efficient, axial flow impellers for flow-controlled purposes like blending, solid suspension, and heat transfer Radial flow impellers for dispersion and mass transfer Circulator impellers for pumping applications

Common Applications: Liquid, Geothermal, Oil & Gas

EST. 1970	GATE VALVES	
	<ul style="list-style-type: none"> Offered in sizes 51 mm - 2,083 mm (2" - 84") ANSI 150-2500 Top entry - In-line maintenance capability Thru conduit, piggable, double block and bleed capability 	<ul style="list-style-type: none"> Built in accordance to API 6D standards and ISO 9001 certification Utilized in pipeline applications for Oil/Gas Products
	EXPANDING GATE VALVES	
	<ul style="list-style-type: none"> Offered in sizes 51 mm - 914 mm (2" - 36") ANSI 150-1500 Thru conduit, piggable, double block and bleed capacity Top entry design for field repair capability 	<ul style="list-style-type: none"> Mechanically seated design to provide maximum sealing capability in both low and high differential pressure conditions Built in accordance to API 6D standards, ISO 9001 certification, and fire tested to API 6FA
	CONTROL VALVES	
	<ul style="list-style-type: none"> Offered in sizes 51 mm - 762 mm (2" - 30") ANSI 150-2500 Rangeability of 350: 1 turn down ratio Full Port in open position with Bi-directional flow capacity 	<ul style="list-style-type: none"> Noise abatement and cavitation trim available High Cv characteristics allows reduced valve size Prime application to oil/gas products and refineries
	SURGE RELIEF VALVES	
	<ul style="list-style-type: none"> Axial 'straight path' smooth flow pattern for high flow capacities Cv Fast response-rapid open/close, seals tight without slamming shut Low-noise and cavitation trim available 	<ul style="list-style-type: none"> Large annular flow area allows high pressure recovery, low pressure drop Offered in sizes 51 mm - 610 mm (2" - 24") ANSI 150-900
	SKID MOUNTED DESIGN	
	<ul style="list-style-type: none"> Complete package design with M&J manufactured products Single source offering with proven Danflo Surge Valve 	<ul style="list-style-type: none"> Factory training and field commissioning available at site System designed to customer specific flowing conditions
	4-WAY DIVERTER VALVES	
	<ul style="list-style-type: none"> Offered in sizes 76 mm - 610 mm (3" - 24" ANSI 150-1500 For use in Bi-Directional Meter Prover Systems Top entry design allows replacement of the seals in the field 	<ul style="list-style-type: none"> Rapid operation with zero leakage for positive proving capabilities Provided with SID feature to show positive indication of plug sealing






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Common Applications: Oil & Gas, Chemical, Petrochemical, Power Generation, Marine, Mining, Pulp & Paper, Steel, Offshore, Automotive, Food, Gas Processing, Gas Transmission, Refining, LNG, Protection Systems, Heating, Cooling, Water, Waste & Sewerage

<p>EST. 1790</p> 	<p>MAGMO SUGAR PUMPS</p> <ul style="list-style-type: none"> Designed to handle high viscosity abrasive sugar products, such as molasses and massecuite. Primary application in sugar processing 		
	<p>TWINRO TWIN AND TRIRO TRIPLE SCREW PUMPS</p> <table border="0"> <tr> <td data-bbox="570 846 1015 1073"> <p>TWINRO TWIN</p> <ul style="list-style-type: none"> Bulk transfer of liquids Terminal distribution Fuel oil transfer Ships bunkering / cargo pumping Rail / road car unloading / loading Pipeline and process flow requirements </td> <td data-bbox="1015 846 1502 1073"> <p>TRIRO TRIPLE</p> <ul style="list-style-type: none"> Fuel oil firing Forced lubrication (API614 / 676) Crude oil Heavy fuel oil pumping Lube oil transfer </td> </tr> </table>	<p>TWINRO TWIN</p> <ul style="list-style-type: none"> Bulk transfer of liquids Terminal distribution Fuel oil transfer Ships bunkering / cargo pumping Rail / road car unloading / loading Pipeline and process flow requirements 	<p>TRIRO TRIPLE</p> <ul style="list-style-type: none"> Fuel oil firing Forced lubrication (API614 / 676) Crude oil Heavy fuel oil pumping Lube oil transfer
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	<p>VANE PUMPS</p> <ul style="list-style-type: none"> U2000 - variable flow rotary pumps G2000 & P2000 - fixed flow rotary pumps Used in almost any process plant requiring variable flow rates Typical applications: Lube oil blending, bitumen/asphalt, ships bunkering 		




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Common Applications: Oil & Gas, Oil Storage

<p>EST. 1790</p> 	<p>BELT AND GEAR DRIVE MIXERS</p> <table border="0"> <tr> <td data-bbox="570 1759 1015 1843"> <p>FIXED ANGLE</p> <ul style="list-style-type: none"> For blending, homogenizing and temperature uniformity duties </td> <td data-bbox="1015 1759 1502 1843"> <p>SWIVEL ANGLE</p> <ul style="list-style-type: none"> For tank cleaning operations and the prevention of harmful sludge build-up </td> </tr> </table>	<p>FIXED ANGLE</p> <ul style="list-style-type: none"> For blending, homogenizing and temperature uniformity duties 	<p>SWIVEL ANGLE</p> <ul style="list-style-type: none"> For tank cleaning operations and the prevention of harmful sludge build-up
<p>FIXED ANGLE</p> <ul style="list-style-type: none"> For blending, homogenizing and temperature uniformity duties 	<p>SWIVEL ANGLE</p> <ul style="list-style-type: none"> For tank cleaning operations and the prevention of harmful sludge build-up 		







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Common Applications: Oil & Gas, Chemical, Power, Marine, Mining, Pulp & Paper, Steel, Offshore, Automotive, Food, Heating, Cooling, Water, Waste & Sewerage, Refining

EST. 1790	SIMPLEX TYPE STRAINERS	
	<ul style="list-style-type: none"> Used in liquids and gases Quick release cover eliminating the need for tools Designed for pressure ratings up to ASME class 300 (51 Barg) 	<ul style="list-style-type: none"> Fine stainless steel mesh inserts can provide capabilities for particle removal down to 10 microns for liquid & 1 micron for gas Fitted with cleanable baskets and inserts or disposable gas cartridges Fabricated filters to suit unique specifications
	<h3 style="text-align: center;">BACK FLUSH STRAINERS</h3> <ul style="list-style-type: none"> Used where an automatic cleaning strainer is required Ensures process continuity without manual labor Provide a high level of cleaning efficiency with minimal product loss Straining element is manufactured from stainless steel 316 Fine stainless steel mesh lined baskets provide capabilities for particle removal down to 50 microns 	
	<h3 style="text-align: center;">DUPLEX DUAL BASKET STRAINERS</h3> <ul style="list-style-type: none"> Designed for applications where continuous operation is required Integral flow changeover valve permits basket removal and cleaning without interruption of flow Designed for pressure ratings up to ASME Class 300 Fine stainless steel mesh inserts can reduce particle removal down to 10 microns Quick release covers eliminate the need for maintenance tools 	
	<h3 style="text-align: center;">GAS FILTRATION</h3> <ul style="list-style-type: none"> Designed to remove solids from gas streams Elements include cleanable stainless steel or disposable fiberglass or polypropylene High pressure rated to Fas PD5500/E13 & ASME VIII specification Quick opening or bolted closures Designed to meet customers operating conditions 	




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Common Applications: Oil & Gas, Chemical, Petrochemical, Power Generation, Marine, Mining, Pulp & Paper, Steel, Offshore, Automotive, Food, Gas Processing, Gas Transmission, Refining, LNG, Protection Systems, Heating, Cooling, Water, Waste & Sewerage, Refining

EST. 1790	FILTRATION ELEMENTS	
	<ul style="list-style-type: none"> ▪ Complete range of liquid and gas elements ▪ Available in various materials of construction including metal, fiberglass and polypropylene ▪ Degree of filtration from 10mm - 1 micron ▪ Flow tested both liquid and gas elements to ensure process warranties can be offered 	
	LIQUID FILTERS	
	CARTRIDGE FILTERS	
	BACKFLUSH FILTERS - METAL	
	BACKFLUSH FILTERS - GRP	
	DRY GAS FILTERS	

Common Applications: Oil & Gas, Chemical, Petrochemical, Power Generation, Marine, Mining, Pulp & Paper, Steel, Offshore, Automotive, Food, Gas Processing, Gas Transmission, Refining, LNG, Protection Systems, Heating, Cooling, Water, Waste & Sewerage, Refining

EST. 1790	FILTER SEPARATORS	
	<ul style="list-style-type: none"> Designed to remove both solids and liquids from gas streams Constructed using Plenty coalescing cartridges, vane units and/or cyclones to achieve required solid and liquid removal efficiency 	<ul style="list-style-type: none"> Unit available from pipe sizes 2" and above to suit any pressure class Available in a range of materials suitable for all operating conditions
	<h3 style="text-align: center;">COALESCERS</h3> <ul style="list-style-type: none"> Designed to coalesce fine liquid mist in gas streams into droplets considerably larger than their original size, such that they can be drained by gravity from the vessel Units available in both horizontal and vertical orientation with single or two stage construction 	
	<h3 style="text-align: center;">CARBON BED FILTERS</h3> <ul style="list-style-type: none"> Custom design filters to meet specific application details Designed and manufactured in accordance with international pressure vessel code Range of materials of construction to meet customers specific operating parameters 	
	<h3 style="text-align: center;">SKID MOUNTED PACKAGES - LIQUID</h3> <ul style="list-style-type: none"> Custom designed range available Skid mounted packages Modular Can include mechanical, electrical, instrumentation, ladders, platforms to be compatible with site requirements 	
	<h3 style="text-align: center;">SKID MOUNTED PACKAGES - GAS</h3> <ul style="list-style-type: none"> Custom designed to application requirements Skid mounted packages Modular Can include mechanical, electrical, instrumentation, ladders, platforms to be compatible with site requirements 	
	<h3 style="text-align: center;">SKID MOUNTED PACKAGES - CARBON BED</h3> <ul style="list-style-type: none"> Custom designed to application requirements Skid mounted packages Modular Can include mechanical, electrical, instrumentation, ladders, platforms to be compatible with site requirements 	

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Common Applications: Chemical, Oil & Gas, Power Generation, Pharmaceutical, Electronics, Petrochemical Manufacturing

<p style="text-align: center;">EST. 1946</p> 	<p style="text-align: center;">HEATLESS DESICCANT AIR DRYERS</p> <ul style="list-style-type: none"> ▪ LHA Series low flow desiccant dryer ▪ DHA/CDA Series standard and custom ▪ DSE/DSS/DHD Series industrial grade ▪ CHA Series large flow heatless dryers ▪ Consistent outlet dew points ▪ Critical applications and hostile environments ▪ Durable economic industrial applications ▪ Corrosive, toxic or explosive environments
	<p style="text-align: center;">HEATED DESICCANT AIR DRYERS</p> <ul style="list-style-type: none"> ▪ DEA Series internally heated ▪ CAB/IBP Series blower regenerated ▪ PHD Series externally heated ▪ NRG-Les Series waste heat ▪ Low purge energy savings ▪ No process gas lost to purge ▪ All weather dew point control ▪ Compressor outlet heat regeneration
	<p style="text-align: center;">ENERGY SAVING REFRIGERATED AIR DRYERS</p> <ul style="list-style-type: none"> ▪ ESM Series energy saving refrigerated air dryers ▪ Modular Construction - Offering multiple design variations for flexible arrangement ▪ Redundancy in critical components offers fault-tolerant operation
	<p style="text-align: center;">FILTERS AND ADSORBERS</p> <ul style="list-style-type: none"> ▪ Small flow filtration ▪ P2000 Series high performance filters ▪ PCC Series large flow filtration ▪ PCS Series premium quality filtration ▪ Oil and water vapor adsorbent ▪ PME Series mist eliminators ▪ High performance air and gas filter cartridges ▪ State-of-the-art filtration media ▪ Exceptional air quality and low pressure drop ▪ Critical applications and hostile environments ▪ Remove unwanted hydrocarbon vapors ▪ Minimal pressure drop improves demand
	<p style="text-align: center;">SPECIALTY DEHYDRATION TECHNOLOGIES</p> <ul style="list-style-type: none"> ▪ BAP Series breathing air purification ▪ CNG Series single tower natural gas dryer ▪ CNG Series twin tower natural gas dryer ▪ Prevents compressed air respiratory hazards ▪ Removes water vapor in small-medium flows ▪ Specifically engineered for large flows
	<p style="text-align: center;">FLAME ARRESTERS</p> <ul style="list-style-type: none"> ▪ Explosion prevention and containment ▪ Available for class C and class D gasses ▪ Special designs available for class B gasses ▪ Eliminate straight through heat conduction ▪ Prevent the flow-through of hot particles ▪ Maximum protection at minimum cost ▪ Custom engineered arresters per application ▪ The protected side of the barrier remains cool

Seital Separation Technology

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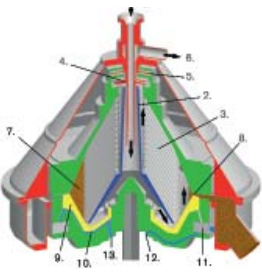



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Common Applications: Chemicals, Dairy, Food & Beverage, Industrial, Oils & Fats, Pharma & Biotech






<p>EST. 1983</p> 	<p>VERTICAL DISK STACK CENTRIFUGES</p> <ul style="list-style-type: none"> ▪ Solids-retaining and self-cleaning centrifuges ▪ Self-cleaning nozzle centrifuges ▪ Wide range of hydraulic capacities, from 132 to 2641 g/h (500 to 10,000 l/h) for solids-retaining models and from 132 to 18,492 g/h (500 to 70,000 l/h) for self-cleaning models ▪ Hygienic & Gas-tight design ▪ Most common applications: corn oil recovery from bioethanol production, milk skimming and bacteria clarification, tea clarification, wine & beer clarification, yeast and bacteria recovery
 <ol style="list-style-type: none"> 1. Product inlet 2. Distributor 3. Disk Stack 4. Centrifugal pump 5. Hydraulic sealing 6. Outlet pipe 7. Solids/Impurities 8. Discharge holes 9. Moving rim 10. Water closing chamber 11. Bowl valve 12. Operating water inlet for bowl opening 13. Operating water inlet for bowl closing 	<p>TECHNOLOGY SOLUTIONS</p> <ul style="list-style-type: none"> ▪ High performance Centrifuges ▪ Focused on R&D for continuous improvement on performance and materials ▪ Excellence in design, mechanical and hydraulic analysis and testing ▪ Internal manufacturing of all components and parts that are strategic for separators efficiency, quality and safety ▪ Standards conformity checked by CMM machine on all strategic parts ▪ On-site testing available with complete separation units or in SPX lab and/or pilot plant
	<p>CUSTOMIZED SOLUTIONS</p> <ul style="list-style-type: none"> ▪ Study and design of specific centrifuge lay-out in order to meet customer demands and separation requirements ▪ Proper selection of monitoring instrumentation for accurate control of customer process ▪ Specific software development to properly fit into customer logic & controls platform
	<p>OTHER PRODUCTS</p> <ul style="list-style-type: none"> ▪ Rotary brush strainers ▪ Hydro-cyclones ▪ Automatic milk and cream standardization units ▪ Skid units for separation processes
	<p>PARTS AND SERVICE</p> <ul style="list-style-type: none"> ▪ All Seital brand equipment is supported by our service organization to enable you to achieve optimum throughput and on-spec quality for the entire life-time of the equipment ▪ Unit performance optimization ▪ Preventive maintenance agreements ▪ Spare parts ▪ Customer training service ▪ Troubleshooting ▪ On-line Monitoring

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Common Applications: Tigerloop® and oil products are applicable on oil burner systems for light oil or kerosene. Tigex® is applicable on all kinds of boilers where a stable draught is required. NoTap® is applicable on all types of metal pipes; galvanized, stainless steel, copper and iron.

<p style="text-align: center;">EST. 1971</p> 	<p style="text-align: center;">TIGERLOOP® OIL DE-AERATORS</p> <ul style="list-style-type: none"> ▪ Remove gas/air bubbles from oil lines ▪ Increased efficiency - reduced oil consumption ▪ Eliminate oil pump and nozzle problems ▪ Remove pressurized oil return line to tank ▪ Eliminate risk for leakage in return line ▪ Preheat oil to avoid problems with cold oil ▪ Models for Biofuel applications now available
	<p style="text-align: center;">OIL FILTERS</p> <ul style="list-style-type: none"> ▪ Filters available in different sizes from 6mm to 51mm (1/4" to 2") ▪ Filter inserts in various materials available from 10 to 150 microns ▪ Oil filters of brass construction and are available with or without an isolating valve ▪ The filter inserts are easily exchangeable ▪ Oil filters available in combination with the Tigerloop® Combi ▪ Spin-on paper filter available in combination with Tigerloop® Plus
	<p style="text-align: center;">FLEXIBLE OIL HOSES</p> <ul style="list-style-type: none"> ▪ Complete program of high quality oil hoses ▪ Sizes available from 300 mm up to 1500 mm (12" up to 5') ▪ Manufactured in the highly oil resistant rubber quality NBR/PVC ▪ Hoses are covered with zinc coated iron wire ▪ Hoses are tested and approved according to DIN EN ISO 6806 ▪ An assortment of connections are available for different applications
	<p style="text-align: center;">TIGEX® DRAUGHT REGULATORS</p> <ul style="list-style-type: none"> ▪ Draught regulator, developed and patented by SPX brand, Tigerholm ▪ Manufactured in stainless steel ▪ Helps improve boiler efficiency ▪ Reduces risk of chimney damage caused by condensation ▪ Tigex 25 is the market's only draught regulator with a fully balanced damper, allowing installation in almost any position (angled, vertical or horizontal) ▪ Gas-tight door design available
	<p style="text-align: center;">NOTAP® METHOD</p> <ul style="list-style-type: none"> ▪ Pipe blocking on "live" pressurized piping systems ▪ Branch connections on "live" pressurized piping systems ▪ Draining the pipe system is not necessary ▪ Adding new water or venting radiators is not necessary ▪ Simple installation as no soldering, cross cutting or welding is necessary ▪ No need to handle chemicals when modifying cooling systems ▪ Minimizes job time

Vokes® Series

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Common Applications: Diesel Engines, Gas Turbines, Transformers, Natural Gas Engines, Steam Turbines

EST. 1921	FUEL & LUBRICATING OIL FILTERS
	<p>Vokes' Fuel and Lubricating Oil Filtration systems are designed to protect critical equipment as utilized by the power generation, marine and locomotive industries.</p> <ul style="list-style-type: none"> ▪ Simplex & duplex designs available ▪ Drop sump & top servicing filters available ▪ Robust design and construction <ul style="list-style-type: none"> ▪ Cartridges incorporate on integrated gasket ▪ Every filter element incorporates high dirt loading media and are corrosion resistant ▪ Filter media is unaffected by water, salt or engine acids
	<h3 style="text-align: center;">LIQUID COALESCERS</h3> <p>Vokes filter coalescer is a static device for the removal of solids and free water from distillate and light liquid fuels and mineral lubricating oils.</p> <ul style="list-style-type: none"> ▪ Eliminates the requirement for a separate pre-filter ▪ Robust filter and cartridge design ▪ Easy maintenance ▪ No moving parts allows for quiet operation <ul style="list-style-type: none"> ▪ No external supplies (power, air) required ▪ Ideal for marine installations (i.e. use on board both surface and sub-surface vessels) ▪ Free water removal in marine applications ▪ Can be designed for military specifications ▪ Steam turbine applications
	<h3 style="text-align: center;">OIL MIST ELIMINATORS</h3> <p>Vokes oil mist eliminators are designed to eliminate oil mist present in compressed air systems. Failure to do so can cause operational hazards and obstruct machine operation.</p> <ul style="list-style-type: none"> ▪ Ideal for diesel or natural gas engines ▪ Discharges clean air to the local atmosphere ▪ Can be mounted away from the engine <ul style="list-style-type: none"> ▪ APB automatically balances sump pressures
	<h3 style="text-align: center;">STREAMLINE® - INSULATING FLUID TREATMENT SYSTEMS</h3> <p>Insulating fluid is vitally important for the safe and efficient operation of many types of electrical equipment. This fluid is also used as a coolant in transformers and as an arc suppressant in circuit breakers. Vokes' Streamline systems ensure the purity of insulating fluid to optimize performance.</p> <ul style="list-style-type: none"> ▪ Removes water and particulates ▪ For electrical insulating oil purification ▪ Improves the dielectric strength <ul style="list-style-type: none"> ▪ Extends insulating oil and transformer life ▪ Available as fixed site or mobile units ▪ Removes free and dissolved water ▪ Water reduction to 90% in single pass

Waukesha Cherry-Burrell®

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Common Applications: Food, Dairy, Beverage, Pharmaceutical, Personal Care, Pulp & Paper, Automotive Paint, Hydro-Carbon Processing, Films, Coatings, Adhesives





<p style="text-align: center;">EST. 1880</p> 	<p style="text-align: center;">UNIVERSAL I AND II SERIES - POSITIVE DISPLACEMENT PUMPS</p> <ul style="list-style-type: none"> ▪ Models available in rectangular flange or aseptic configurations with non-galling 88 alloy rotors ▪ Pumps can be remanufactured ▪ Close-coupled Tru-Fit mounting options available ▪ Universal II - Pressures up to 500 psi (34 bar), CIP design ▪ Universal I - Pressures up to 200 psi (14 bar), COP design
	<p style="text-align: center;">CENTRIFUGAL PUMPS</p> <ul style="list-style-type: none"> ▪ High efficiency, minimal vibration, longer life pumps ▪ One size seal fits all 200 Series models ▪ Available models include 200 Series, C-Series, Multi-Stage, Self-Priming, Water for Injection, and stub shaft pump versions
	<p style="text-align: center;">C-SERIES PUMPS</p> <ul style="list-style-type: none"> ▪ Versatile pump offers strong performance ▪ Easy-cleaning, open type impeller delivers smooth pumping performance ▪ Enlarged inlets available for larger suction lines ▪ Standard CIP capability ▪ Parts are interchangeable with other C-Series brands
	<p style="text-align: center;">VALVES</p> <ul style="list-style-type: none"> ▪ Sanitary, hygienic valves manufactured of stainless steel ▪ Rising stem, butterfly, ball, manual, and specialty valve designs ▪ Designed to be cleaned in place or out ▪ Heavy-duty construction for long service life ▪ Easy to maintain ▪ Adaptable and modular
	<p style="text-align: center;">BUTTERFLY & BALL VALVES</p> <ul style="list-style-type: none"> ▪ Butterfly Valves <ul style="list-style-type: none"> - Available 1" through 4" - T304 and T316 construction - Finishes are 32 Ra ID and OD - 13 position handle ▪ Ball Valves <ul style="list-style-type: none"> - Available 1/2" through 4" - T316 construction - Finishes are 32 Ra ID - Meets 3A and FDA requirements - Locking 4 position handle
	<p style="text-align: center;">VOTATOR HEAT EXCHANGERS</p> <ul style="list-style-type: none"> ▪ Models available for processing moderate to ultra high viscosity products ▪ Options for controlling residence time and for maintaining product integrity ▪ Material selection to meet specific process requirements ▪ Horizontal and Vertical mounting choices ▪ Vast applications database from over 50 years of process experience

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EST. 1880	DISPERSION EQUIPMENT	
	<ul style="list-style-type: none"> ▪ Colloid Mills - Greater capacity with 50% more flow rate with less heat, CIPable ▪ Shear Pumps - Processes as it pumps, interchangeable stator and rotor combinations 	<ul style="list-style-type: none"> ▪ CR Mixers - For high shear emulsifying, and controlled and precise aeration
	<h3 style="text-align: center;">ANCO BACON PRESS</h3> <ul style="list-style-type: none"> ▪ New lock down head feature helps control belly thickness ▪ The timer feature allows you to compensate for wide variations in belly temperatures and minimizes over or under pressing ▪ The patented "Maximizer" bladder inflates to fill the void on the thin end of the belly reducing wrinkles during the pressing cycle ▪ The press is capable of up to 16 bellies per minute 	
	<h3 style="text-align: center;">SANITARY FITTINGS</h3> <p>Constructed of T304 & T316 L Stainless Steel</p> <ul style="list-style-type: none"> ▪ S-line ▪ Sanitary Weld ▪ Bevel Seat ▪ I-line ▪ Tube OD weld (Industrial) ▪ John Perry ▪ Schedule 5 and 10 ▪ "Cam" style unions ▪ Pipe to Tube adapters ▪ Aseptic Unions ▪ DIN and SMS 	
	<h3 style="text-align: center;">BPE FITTINGS</h3> <ul style="list-style-type: none"> ▪ Manufactured in accordance to ASME BPE standards ▪ Available in 1/2" through 6" ▪ Made of T316L stainless steel (Other alloys available) ▪ Electropolished fittings available ▪ MTR (Material Test Reports) provided with each shipment and available online for download ▪ Packaged in resealable bags 	
	<h3 style="text-align: center;">SPECIALTY PRODUCTS</h3> <ul style="list-style-type: none"> ▪ Extensive metal working capabilities ▪ Designed and constructed to customer specific requirements ▪ Unique tangents and configurations ▪ Dedicated production cells to shorten lead times ▪ Digital imaging equipment for quality validation ▪ Weld mapping, logs and documentation programs 	
	<h3 style="text-align: center;">RELATED PRODUCTS</h3> <ul style="list-style-type: none"> ▪ Rath manufactured tubing in T304 and T316 L stainless steel ▪ Special alloy products in AL6XN® and Hastalloy® ▪ T316 S-Line Clamps ▪ Tube Hangers ▪ Sampling Valves ▪ Check Valves ▪ Torque Nuts for S-line Clamps 	

SPX FLOW TECHNOLOGY INNOVATION CENTERS

Research and development are important elements in SPX Flow Technology's (SPX FT) activities in general. Processors are increasingly seeking cost-effective engineered solutions for the production of high quality, innovative products.

In this process, SPX Innovation Centers play an important role with customers around the world.

Our services cater to the needs of multiple industries in the broadest possible sense, including after sales service, laboratory analysis, technical information and training of SPX employees and customers.

SPX Innovation Centers are used for development, testing and application of SPX equipment, systems and processing lines. All of our facilities and services are designed to provide added value by minimising the production costs of new, competitive products via waste and energy savings.

Profitable Solutions

The SPX Innovation Centers have the facilities to test and demonstrate profitable solutions to common production problems. The centers can also participate in trouble shooting, making the customer's operations more flexible, cutting

energy costs, increasing production volumes or meeting new environmental regulations without sacrificing the quality of the final product.

Flexibility of the Equipment

The Innovation Centers are designed for maximum flexibility. All equipment can be interconnected and new equipment is easily installed. Some of the equipment is mounted on frames for mobility and easy connection to other units, and most of it is controlled by variable speed controllers (VLT). Specialist equipment can be brought in as required and process lines configured to suit individual requirements.

Process Halls

The process halls are well-equipped and are laid out so as to provide for maximum flexibility in conducting test, trials and training. We have several semi-industrial scale plants and have found that up scaling to industrial scale is easily done from this plant size. We also have small scale and industrial scale plants.

SPX Staff

SPX's Innovation Center staff includes engineers, technology specialists, product and application specialists, project specialists and laboratory

technicians with in-depth application and process knowledge, and many years of industrial experience in many different countries.

Our specialists partner closely with our customers at all of our Innovation Centers or at the customer's own site.

SPX offers the following application and product testing services:

- Comparison of different processes, e.g. direct versus indirect heating systems
- Test of high-risk projects prior to order
- Troubleshooting of applications and products
- Product quality and yield optimization
- Reduction of energy costs
- Development and test of new recipes
- Assistance with product analyses in a laboratory
- Test and development of new equipment configurations
- Environmental compliance
- Practical and theoretical training courses and seminars for process employees
- Pilot and full production plant rentals for trials on your own premises
- Product and process development in close cooperation with the customer
- Product development in reasonable scale (representative product sample)
- Scale-up of results for commercial plants

SPX Flow Technology Innovation Centers:

- Delavan, WI - WCB
- Canonsburg, PA - Plenty, Delair
- Rochester, NY - Lightnin
- Soeborg, DK - Anhydro, APV, Gerstenberg Schröder
- Silkeborg, DK - APV
- Evreux, FR - APV
- Glasgow, UK - Clyde Union Pumps
- Orebro, SE - Johnson Pump
- Norderstedt, DE - Bran+Luebbe
- Unna, DE - APV
- Warendorf, DE - e&e
- Santorso, IT - Seital
- Etten-Leur, NL - Dollinger
- Epre-Mere, BE - Johnson Pump
- Shanghai, PRC - SPX
- Singapore - Partner, SOY appl.

For more information please visit www.spx.com.



SPX TECHNICAL AND GENERAL FACILITIES

Plants and Equipment

Each SPX Innovation Centre contains a number of small-scale, full-scale and semi-industrial scale plants, providing certainty of production scale repeatability. Testing and trials can take place in a sealed room or hall, providing full privacy and confidentiality.

Workshop

Experienced fitters and electricians are responsible for the installation of trial plants, building new plants or modifying existing equipment for special trial runs. A fitter is always available during trial runs to undertake any on-site modifications, thus enabling maximum flexibility and rapid response.

Laboratory Facilities

The SPX laboratories perform mainly microbiological and functional analysis of all kinds of products in accordance with international standards.

Chemical Analyses including:

- Protein
- Fat (Gerber)
- Milkoscan

- Total solids
- Ash
- Chloride
- Lactose
- Lactulose
- pH
- Conductivity
- COD

Functional and physical analyses including:

- Viscosity (rheomat)
- Density
- Whipping test
- Alcohol stability
- Digital microscopic image analysis (Leica digital camera)
- Particle size distribution
- Wettability
- Dispersibility
- Solubility
- Hygroscopicity

Microbiological analyses:

- pH
- Conductivity
- Turbidity
- Chloride
- Chemical COD

Microbiological analyses:

- Total plate count
- Thermophilic organisms
- Thermoresistant organisms
- Aerobic and anaerobic spores
- Psychrotrophic bacteria
- Lactic acid bacteria
- Coliforms
- Yeast and molds

Confidentiality

Important keywords for all SPX Innovation Centers are innovation, optimum plant dimensioning, high-quality products, and up-to-date knowledge of market requirements. All work on behalf of individual customers is subject to the strictest confidentiality and the highest standards of customer service.



After-sales solutions from SPX Flow Technology

SPX brands offer a full range of after-sales products to ensure that the original equipment continues to operate at its maximum performance. A worldwide network of companies and distributors ensures that you are never far from the help you need to get back up and running quickly and get the ultimate performance from your investment.

Service & Parts Solutions

- Repair and exchange services
- Equipment upgrade services
- Installation and start-up support
- Predictive and preventive maintenance
- Remote diagnostics
- Process and mechanical consulting
- Asset management
- On-site field support
- Training

SPX Flow Technology provides innovative ways to improve your productivity and profitability. We'll help you minimize your asset investments, while ensuring that you continue to meet your production requirements. Multiple service facilities are strategically located throughout the world, providing a wide range of support 24 hours a day.

Service locations are the hub for our parts distribution. We can analyze your spare parts inventory to identify critical, damaged and obsolete spare parts, and help you create an inventory reduction program.

- High quality OEM spare parts and consumables
- Quick-ship delivery services available

After-Sales Valve Service

SPX provides a full range of valve and wellhead service, repair, remanufacturing and inventory management of customer assets for the pipeline, petrochemical, hydrocarbon storage well and geothermal industries. We specialize in reconditioning of valves from all manufacturers, and turnkey valve field services. SPX continues to manufacture the complete underground storage wellhead hook-up in accordance to our API 6A and 6D license.

Pump Solutions

The technical services team consists of a dedicated group of experienced pump engineers specializing in providing expert pump systems advice to our customers across all industries. Possessing a wealth of pump and system design knowledge, fully equipped with the latest design, analytical and pump testing equipment, our technical services team can be employed across a range of services to ensure your critical rotating plant is operating reliably, safely and at optimal levels of efficiency. Working in partnership with our customers the focus of these important aspects of pump operation deliver increased mean time between failures and plant life, reduced parts consumption, increased production and very importantly minimizing energy costs and carbon emissions.



SEE SPECIFIC BRAND PAGES FOR ADDITIONAL CONTACT DETAILS.



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