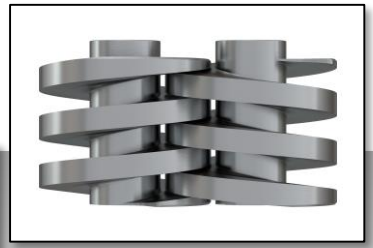
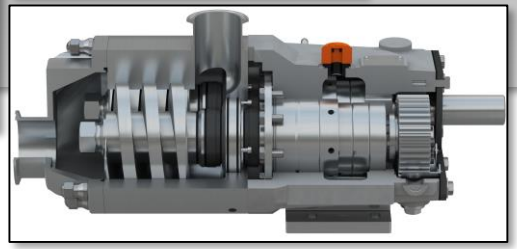
SPXFLOW

FOOD+BEVERAGE





Universal TS Series
Rotary Positive Displacement Twin Screw Pumps

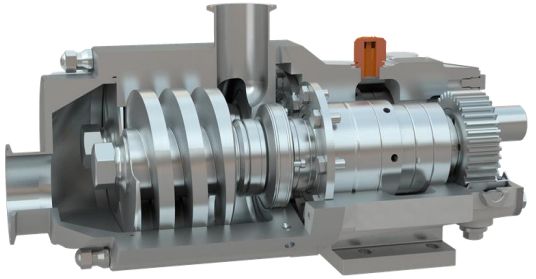
Waukesha Cherry-Burrell®

Typical Applications

- Yogurts (Greek-style)
- Orange Juice (single strength)
- Salad Dressings
- Sauces
- Mayonnaise Products
- Processed Cheese
- Peanut Butter

Why to use Twin Screw Pumps

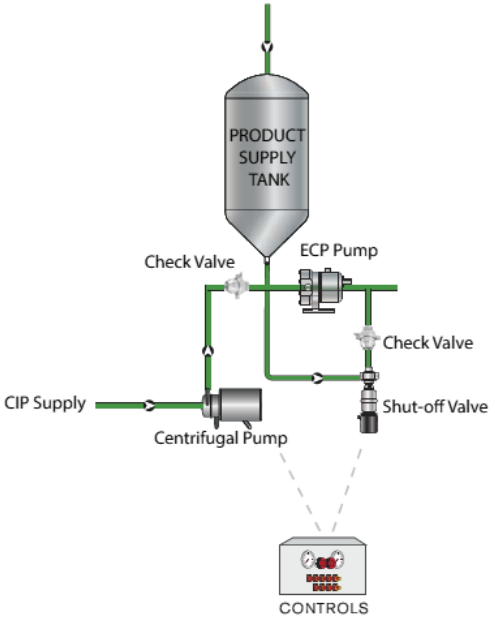
- Eliminate slip pulsations in low viscous, high pressure applications
- Low NPSH requirements when emptying tanks
- Self-priming applications where liquid levels are lower than pump
- Wide range of flow capabilities due to running speeds up to 3500 RPM
- Multi-purpose use as CIP supply pump eliminating need for separate centrifugal pump and valve



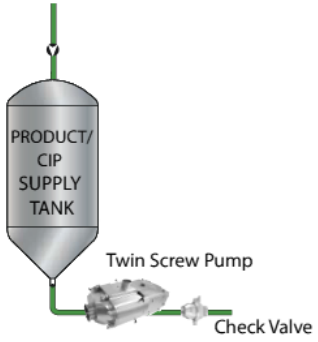
Use as a Product/CIP Supply Pump

Minimize extra pumps, valves, and controls from your process

TYPICAL CONFIGURATION FOR PRODUCT AND CIP



UNIVERSAL TS PUMP FOR BOTH PRODUCT AND CIP

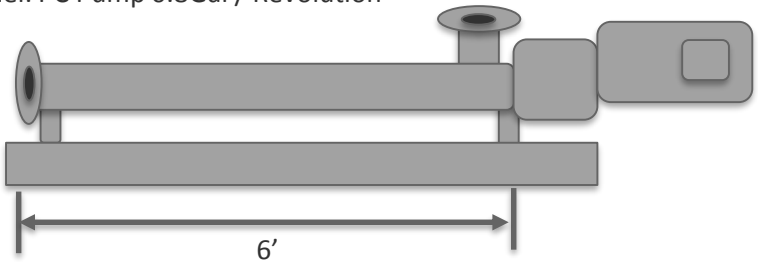


With its high suction capability, the Universal TS Series pump is both process and CIP capable, allowing you to reduce the number of pumps, valves, and control systems in your process and save capital equipment costs.

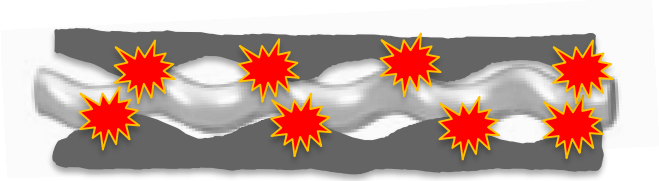
Installation Savings on Equipment and Process Controls

Comparison with PC Pump

Model: PC Pump 0.8Gal / Revolution



Rotor Weight: Approx 300 lbs



PC Pumps cannot run dry, continuous contact occurs between rotor and stator leads to premature wear and costly repairs

Model: 220 UTS

Weight: 60 lbs

The UTS Pump can run dry as there is no contact between screw rotors

UTS Benefits:

- Smaller Footprint = utilizes less floor space
- Less Weight = easier to handle and maintain.
- No Rotor Contact = lower wear = lower maintenance costs

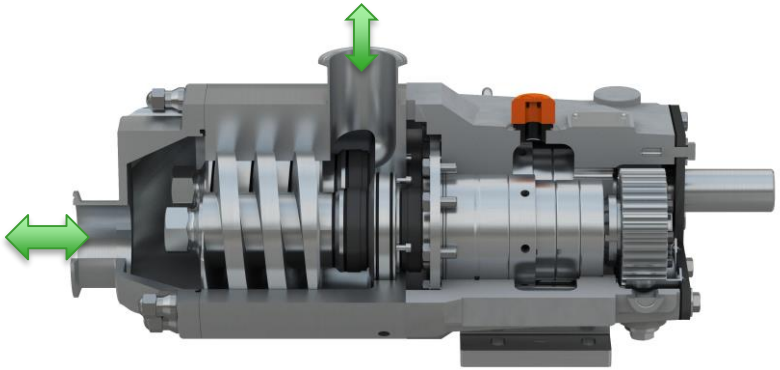
How it Works

Meshing screws transfer product axially
- Loading is Axial not Radial

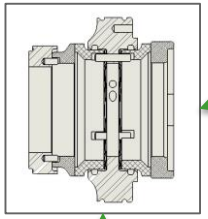
Similar to Progressive cavity pump
- Continuously moving sealed areas

NO front face or back face clearances
- Sealed by tight clearances radially and in meshing screws

Inlet and outlet at right angle
- Can pump either direction



Design



Field interchangeable seal options for every service

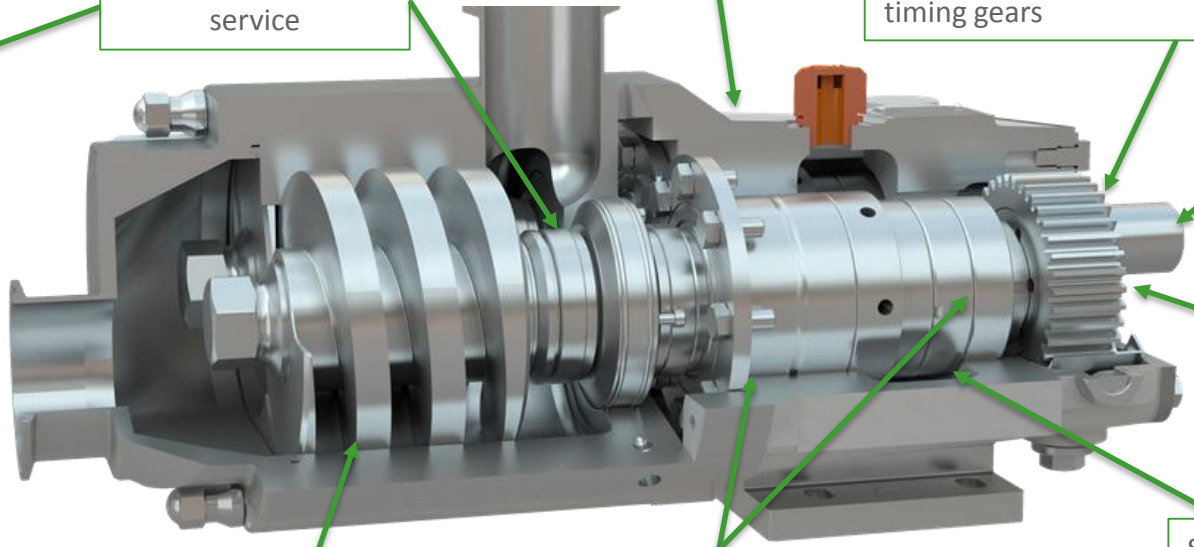
Stainless Steel Gearcase

Precision cut spur timing gears

Larger, 17-4PH Heavy-duty shafts for greater torque capacity

Anodized Aluminum cover

Front Loaded Single or Double concentric mechanical seal.
Used with flushing fluid to cool, lubricate, flush away residue



Non Galling Waukesha Alloy 88 Screws

Front bearing fixed; rear bearing floating: better control of thermal expansion when handling hot products

Shared oil reservoir for gears and bearings

Performance

PRODUCT SPECIFICATIONS

UNIVERSAL TS MODELS

MODEL	SCREW PITCH	DISPLACEMENT PER REVOLUTION		NOMINAL CAPACITY (MAX)		COVER PORT		BODY PORT		MAXIMUM PARTICULATE		PRESSURE RANGE (MAX)		MAXIMUM RPM	TEMP RANGE
		GAL	LITER	GPM	LPM	IN	MM	IN	MM	IN	MM	PSI	BAR		
015-UTS	16.5	0.02	0.08	70	265	2	51	1.5	38	0.33	8	375	25.5	3500	-40°F (-40°C) to 300°F (149°C)
	33	0.03	0.11	105	398					0.65	17			3500	
	44	0.04	0.15	140	530					0.44*	11			3500	
030-UTS	16.8	0.03	0.11	93	352	2.5	64	2	51	0.33	8	375	25.5	3100	
	28	0.05	0.19	155	587					0.55	14			3100	
	42	0.08	0.30	248	939					0.83	21			3100	
130-UTS	36.7	0.12	0.45	300	1136	4	102	2.5	64	0.72	18	375	25.5	2500	
	55	0.18	0.68	450	1703					1.09	28			2500	
	73.4	0.24	0.91	600	2271					0.72*	18			2500	
220-UTS	45	0.30	1.14	600	2271	4 or 6	102 or 152	4 or 6	102 or 152	0.89	22	375	25.5	2000	
	60	0.40	1.51	800	3028					1.18	30			2000	
	90	0.61	2.31	1220	4618					1.77	45			2000	

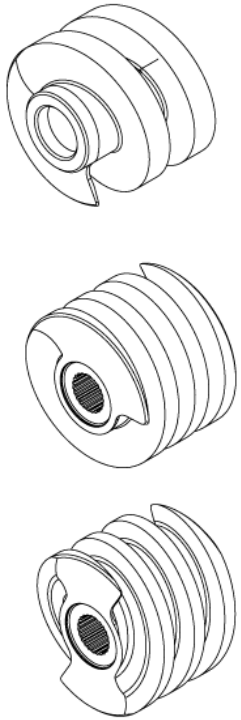
*** Double start screws limit particulate size.**

NOTE: Running for extended periods of time at high RPMs may require external gear box cooling equipment. If operation is required near the maximum allowable RPM, please contact SPX FLOW application engineering for confirmation of the correct pump configuration.

Why all the pitches?

Pitch size selection based on:

- Displacement per revolution
- Particulate size
  - Note: Use pitch, except for double start screw rotors → divide pitch by two
- Other performance characteristics between pitches being investigated with testing
- Double Start screws for 015 (44 pitch) & 130 (73.4 pitch)
  - Double reduces NIPR and allows higher displacement, however reduces particulate size

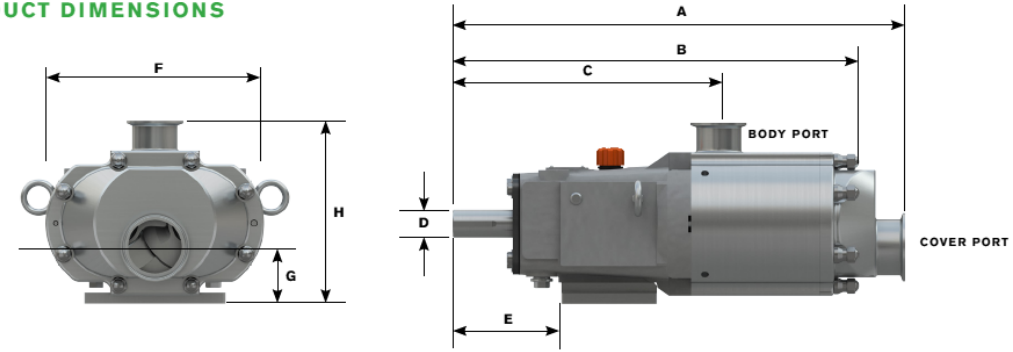


Single Start

Double Start

Product Dimensions

PRODUCT DIMENSIONS



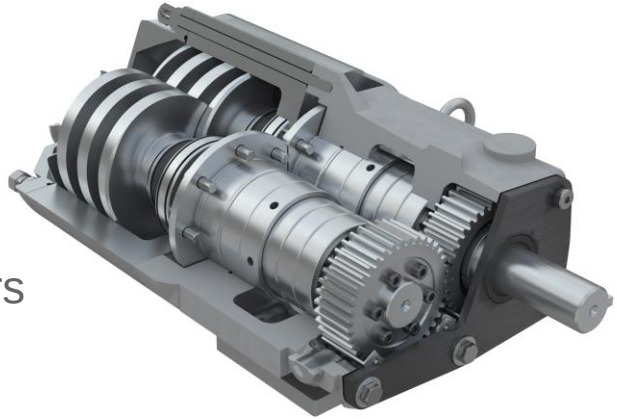
MODEL		A	B	C	D +.000 -.001	E	F	G	H	COVER PORT	BODY PORT	WEIGHT
015-UTS	in	16.40	15.32	10.27	0.875	4.07	7.68	2.20	6.76	1.50, 2.00	1.50, 2.00	87 lbs
	mm	417	389	261	22.23	103	195	56	172	38, 51	38, 51	39 kg
030-UTS	in	20.11	18.07	11.83	1.25	4.83	9.65	2.52	8.05	2.00, 3.00	2.00, 2.50	160 lbs
	mm	511	459	300	31.75	123	245	64	204	38, 76	38, 64	73 kg
130-UTS	in	25.81	23.37	15.29	1.625	5.25	13.12	3.98	10.68	3.00, 4.00	2.50, 3.00	385 lbs
	mm	656	594	388	41.28	133	332	101	271	76, 102	64, 76	175 kg
220-UTS	in	33.79	23.03	18.18	2.00	5.80	16.90	4.04	15.65	4.00, 6.00	4.00, 6.00	750 lbs
	mm	858	585	462	50.8	147	428	103	398	102, 152	102, 152	340 kg

NOTE: Dimensions are for guidance purposes only. Contact your SPX FLOW Representative for more detailed measurements.

Unique Features

Features

- Indexed splined shafts for ease of screw installation
- Non-galling Waukesha “88” alloy screws standard; permits running at tighter clearances and pumping a wide range of viscosities.
- Bi-directional flow. Screws, locked with Bellville washers and torqued nuts, rotate securely in either direction. Eliminates flow direction specific shaft/body position required by competitors..
- Minimized critical setting of clearances



Advantages of Universal TS

- Lower initial price point (expected 15% below Jung/Borneman list price with same PD discount)
- Similar priced spares as Universal pumps
- Higher torque capacity & strength due to larger shaft diameters
- Utilize Universal series proven history: seals, bearings, shafts, gear case
- SPX distribution channel with spare parts and trained service technicians
- Manufactured in Delavan, WI USA

Marketing Materials

- Brochure
- Manual
- Animation
- Specification sheet
- Price lists (USD)
- PowerPoint
- FAQ’s
- Pumps in Action (FB-0501, FB-0502, FB-0503)

Brochure

SPXFLOW

SCAN TO VIEW PRODUCT ANIMATION

Universal TS Series

ROTARY POSITIVE DISPLACEMENT TWIN SCREW PUMPS

Waukesha Cherry-Burrell®

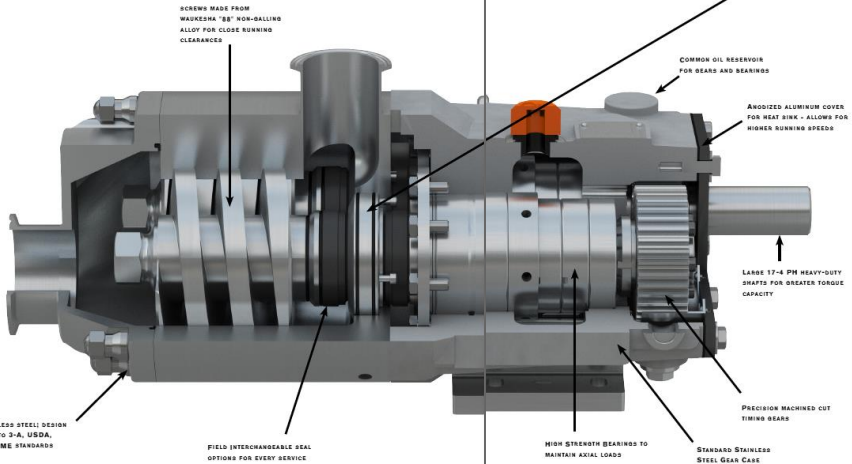
Engineered for Performance and Long Life.

Waukesha Cherry-Burrell Universal TS Series provides:

High pressure capability - up to 375 psi/25.5 bar

Optimal seals - for most applications, plus interchangeability when needed

Compliant design - 3-A, USDA, ISO 9001:2008



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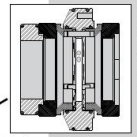
Seal Options



Double mechanical seal shown

Single or Double Mechanical Seal*

Used with flushing fluid to cool, lubricate, and flush away residue. Ideal arrangement for severe service applications.

Elastomer choices for "O" rings:

- Fluoroelastomer (FKM)
- EPDM
- FFKM

***Mechanical seal material options:**

- Carbon
- Silicon Carbide
- Tungsten Carbide

Pumps in Action

- Demonstrate benefits in applications
- Share installed base applications
- Provides target customer type applications (and similar applications)

FAQ's

- Answers to Common Questions
- Further Educate our distributor network
- Differentiate the SPXFLOW brand products
- Demonstrate knowledge of the product line

Universal TwinScrew Pump Frequently Asked Questions:

1. **When was the WCB Universal TwinScrew pump launched?**
   a. The WCB UTS pump was officially launched in April of 2017. However, SPXFLOW has been testing this pump internally and externally in customer facilities for over 1 year in order to prove out the pump design and position our manufacturing capabilities.
2. **What is the delivery for the WCB Universal TwinScrew pump?**
   a. The WCB UTS pump is being launched with deliveries of 8 weeks beginning in April of 2017.
3. **What is the material of construction for the screws on the WCB Universal TwinScrew pump?**
   a. SPXFLOW uses Waukesha Alloy 88 non-galling material to produce the screws in the Universal TwinScrew pump. This allows the pump to operate with tighter clearances and be more resistant to catastrophic failure should foreign material run through the pumps or the screws contact either the body or each other during operation.
4. **How many models does the WCB Universal TwinScrew pump have?**
   a. The WCB UTS pump has 4 model pumps, the UTS015, UTS030, UTS130 and UTS220. Each of these models is available with 3 different screw pitches to allow for different flow volumes and particulate sizes.
5. **Why does each WCB Universal TwinScrew pump have three different screw pitches on each pump?**
   a. Different screw pitches provide different displacements per revolution and allow for differences in the maximum particulate size for each pitch. See brochure for displacements and particulate sizes.
6. **What is the maximum pressure rating for the WCB Universal TwinScrew pump?**
   a. The WCB UTS pumps are rated to maximum of 375 psi differential pressure. Other factors such as speed and viscosity may limit the maximum pressure. Please review your specific application with the SPXFLOW Delavan application engineering team to ensure that your pump will be sized correctly.
7. **What is the maximum speed for the WCB Universal TwinScrew pump?**
   a. The maximum speed for the pumps is dependent upon the product viscosity and

Questions?