

Waukesha E-Series Pump

HYGIENIC MAGDRIVE CENTRIFUGAL PUMP



The Waukesha E-Series pump is a leak-free* design that incorporates an innovative magnetic drive system that removes the necessity of having a mechanical seal in the assembly.

Removing the mechanical seal takes away the requirement for seal water in all applications as well as eliminates costs by increasing up time of the pump.

No more stopping a process due to a leaking mechanical seal and no more worries of potentially contaminating the product with seal water.

SPX FLOW, Inc. (NYSE:FLOW) is a leading manufacturer of innovative flow technologies, many of which help define the industry standard in the market segments they serve. From its headquarters in Charlotte, North Carolina, it operates a sales and support network, centers of manufacturing excellence, and advanced engineering facilities, throughout the world. Its cutting-edge flow components and process equipment portfolio includes a wide range of pumps, valves, heat exchangers, mixers, homogenizers, separators, filters, UHT, and drying technology that meet many application needs. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

Incorporating many leading brands, SPX FLOW has a long history of serving the food and beverage, power and energy, and industrial market sectors. Its designs and engineered solutions help customers drive efficiency and productivity, increase quality and reliability, and meet the latest regulatory demands. In-depth understanding of applications and processes, state-of-the-art Innovation Centers, and advanced pilot/testing technology further assist in optimizing processes and reducing timescales to reliably meet production targets.

To learn more about SPX FLOW capabilities, its latest technology innovations and complete service offerings, please visit www.spxflow.com.

The Next Generation of Sanitary Pumps

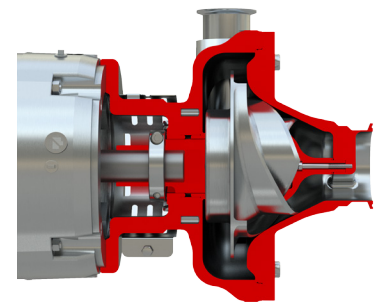
LEAK-FREE* DESIGN

The E-Series sanitary centrifugal pump line from Waukesha Cherry-Burrell represents an innovative range of magnetically driven, hygienic pumps for common applications which require low viscous fluid transfer.

Total containment of the liquid inside the pump is achieved using a hermetically sealed chamber, which isolates the process fluid from the surrounding environment. This eliminates the need for mechanical seals and the associated wear and leakage that would normally be experienced with pumps which incorporate mechanical seal designs. The E-Series therefore not only help minimize environmental impact (due to no product leakage, or seal flush water to treat), but, also helps contribute to improved process uptime in food, beverage, dairy and pharmaceutical plants.

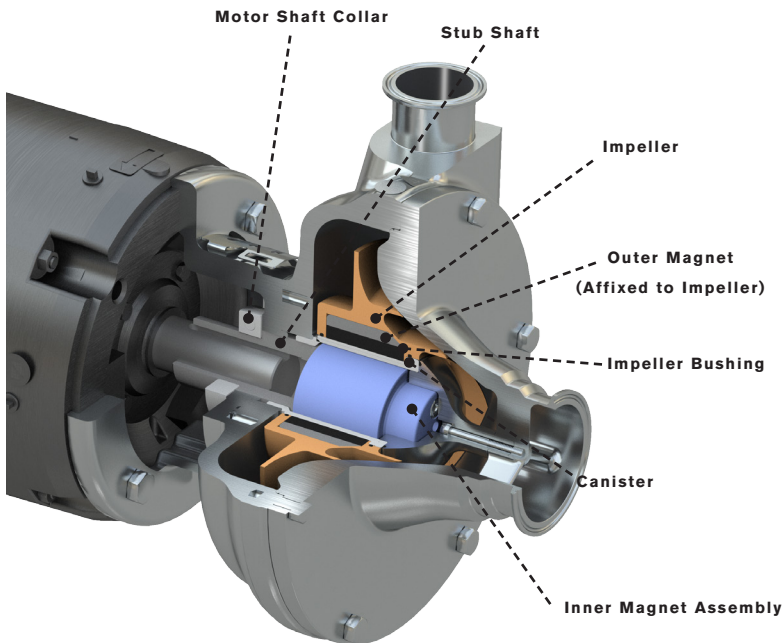
PRODUCT BENEFITS AND FEATURES

- No seals to replace or maintain equating to:
 - increased uptime, lower maintenance costs
 - less potential for contamination
 - less infrastructure required (no water lines or controls for seal flushing)
- Key components manufactured from bar stock or forged for high durability, precision and efficiency
- Pump is designed to virtually eliminate issues associated with vibration, noise, short bearing life, low NPSH requirements, high seal maintenance costs and poor tolerance to adverse operating conditions
- Reliable and heavy duty design
- Energy efficient
- 3-A Certified and EHEDG (European Hygienic Engineering & Design Group) compliant
- Designed for CIP (Cleaning in Place) as well as SIP (Sterilizing in Place)
- Suitable for a wide variety of food, beverage and pharmaceutical products
- Utilize one piece flow manufacturing process for quick ship deliveries



* **Leak-free based on the absence of a mechanical seal.**

PRODUCT SPECIFICATIONS:



Pump Motor Bracket:

- Stainless Steel
- Motor Types:
 - NEMA C-Face standard frame motor
 - TEFC and wash down enclosures optional
 - Explosion-proof and stainless steel optional
 - Single phase or three phase, 60 or 50 Hertz

Casing:

- 316L, satin exterior with sanitary finish in product zone
- Designed to provide good efficiency over a wide range of operating conditions
- Discharge can be rotated in 45° increments
- Interior of casing is free of sharp corners for easy, complete cleaning

Port Connections:

- S-Clamp
- Threaded DIN

Mounting:

- Heavy duty bolts secure pump casing to adaptor frame

Cover:

- 316L stainless steel

Impeller:

- Machined from solid bar 316L stainless steel
- One piece design with 4 blade, helical rosebud configuration
- Open impeller eye area and tight front clearance improves pumping efficiency and lowers NPSHR
- Cut to specifications based on application requirements

Typical product applications

The E-Series offers the flexibility to be used in virtually any application where you would find a traditional centrifugal pump. From milk production and other low viscous food and beverage processes to pharmaceutical and personnel care applications. Upgrade your centrifugal pump to E-Series and eliminate the hassles associated with maintaining mechanical seals.

Clean-In-Place (CIP)

Food, Dairy



Dairy

Whey, Cream, Milk, Sweetened Condensed, RO/UF Systems



Beverage

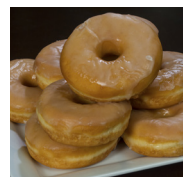
Water, Energy Drinks, Juices, Carbonated Soft Drinks, Brewery, Wine, Spirits



Bakery and

Confectionery

Glazes, Fats & Oils, Flavorings, Sweeteners, Yeast Slurry, Syrups



Pharmaceutical/

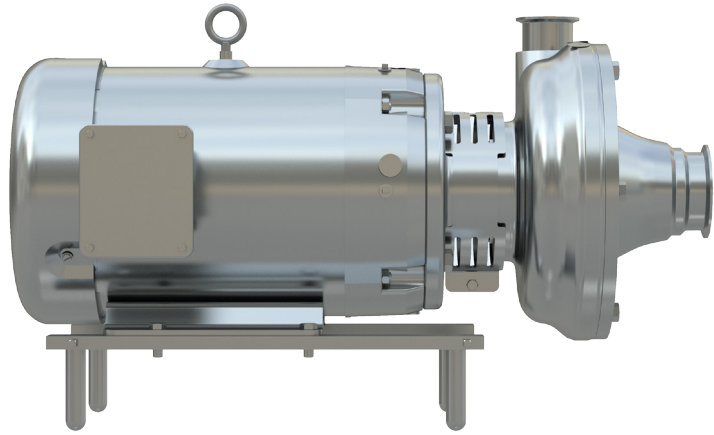
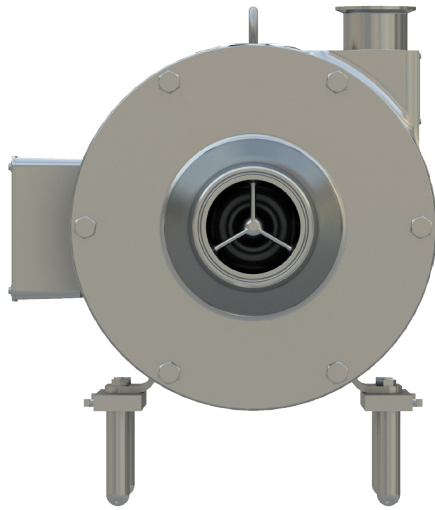
Cosmetics

Emulsions, Extracts, Slurries, Syrups, High Purity Water, WFI, Dyes, Alcohols, Essential Oils



E-Series - Innovative Design

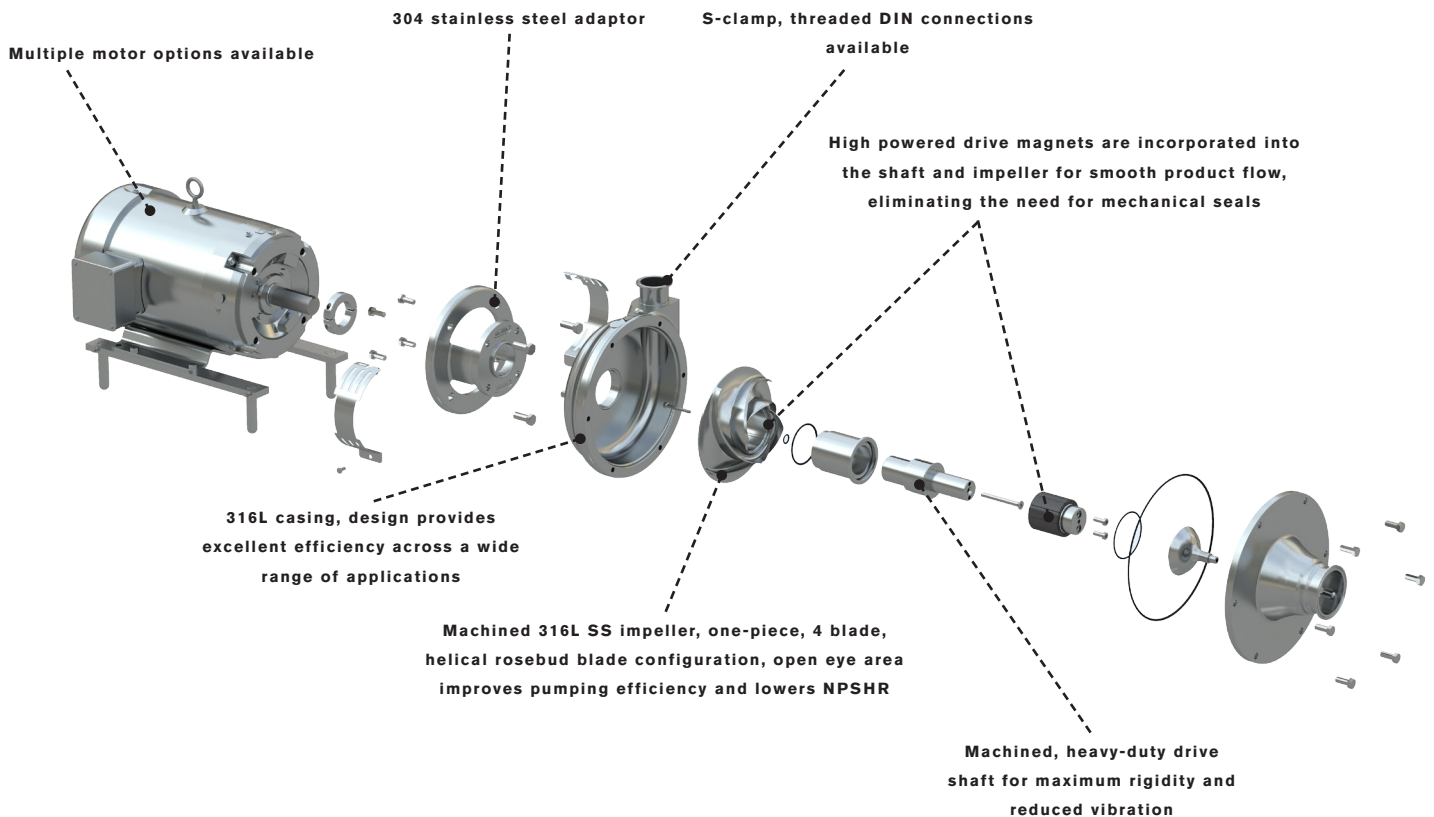
PRODUCT SPECIFICATIONS:



E-Series pump shown with optional stainless steel motor

OPTIONAL EQUIPMENT:

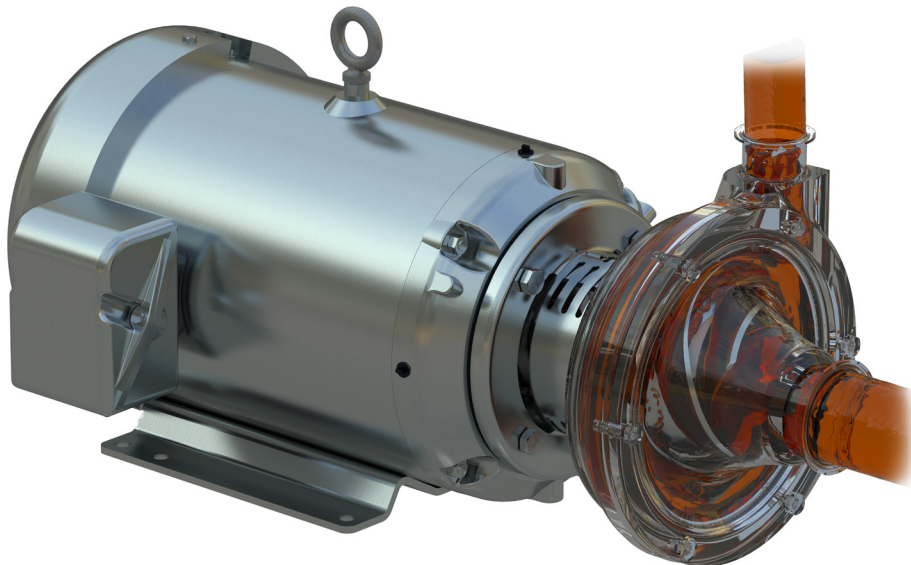
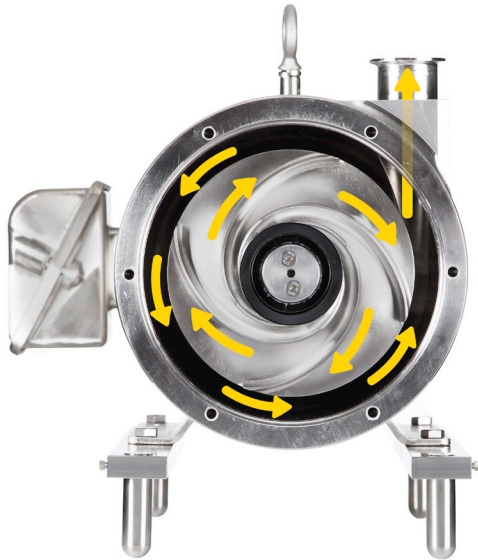
- Special stainless steel polishing including electro-polishing
- Case Drain Connections
- Stainless Steel Tubular Base Mountings
- Cart Mounting
- Various Motor Finish Options are Available



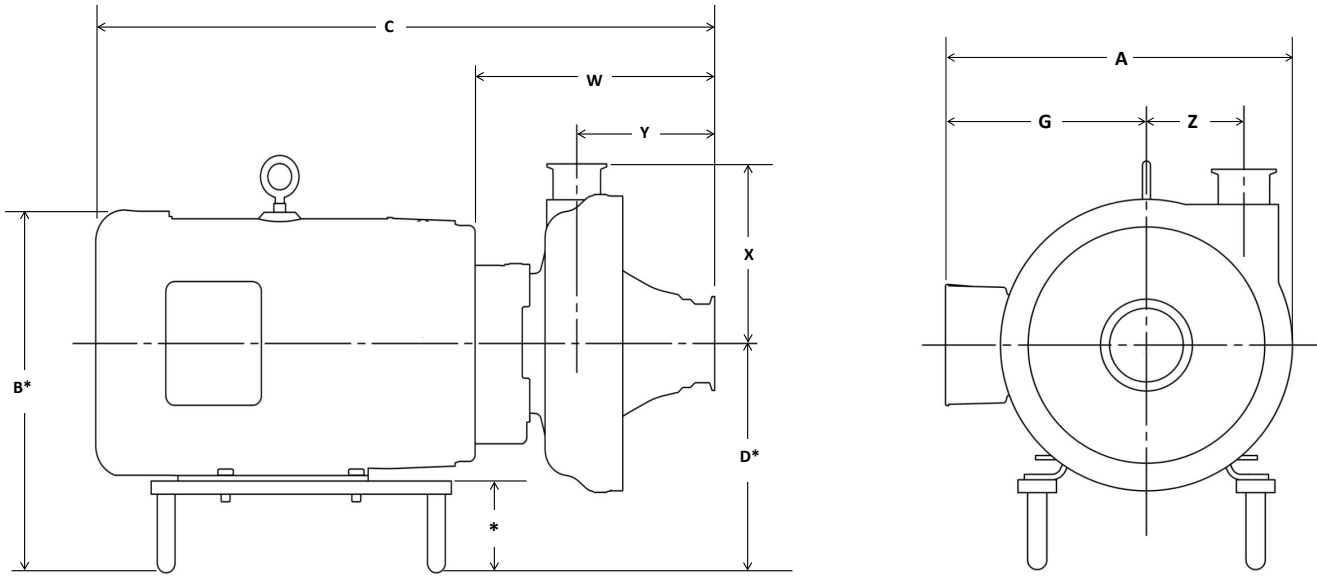
THEORY OF OPERATION:

Unlike industrial magnetic driven pumps, the E-Series pump has no bearings or shaft in the product zone. The magnets on the E-Series design are incorporated into the shaft and impeller. This simplifies the construction of the pump and enables a completely sanitary design. It also protects from the formation of large cavities behind the impeller or bearings within the product zone, which helps to accommodate for any thrust loading events flowing into the pump due to adverse process conditions, reducing wear and increasing reliability.

The E-Series pump operates on the same principle as a traditional centrifugal pump where low viscous fluids enter through the center inlet, and flow around the impeller which turns at various speeds based on application requirements. The fluid then moves to the outer extents of the impeller vanes by centrifugal force and is directed through the outlet. It is the movement of the impeller, generated through force created by high powered magnets instead of being directly coupled to the motor by a stainless steel shaft, that makes the E-Series pump unique. As with other SPX FLOW centrifugal pumps, impeller and casing designs are optimized to perform more efficiently over a wide range of operating conditions. The casing and port are further designed to maximize performance under low NPSH conditions.



E-Series - Innovative Design



MODEL SIZING CHART: *Dimensions given at max. leg height (* dimension) of 3.5 in (88.9 mm). Leg height adjustable from 1-3.5 in.

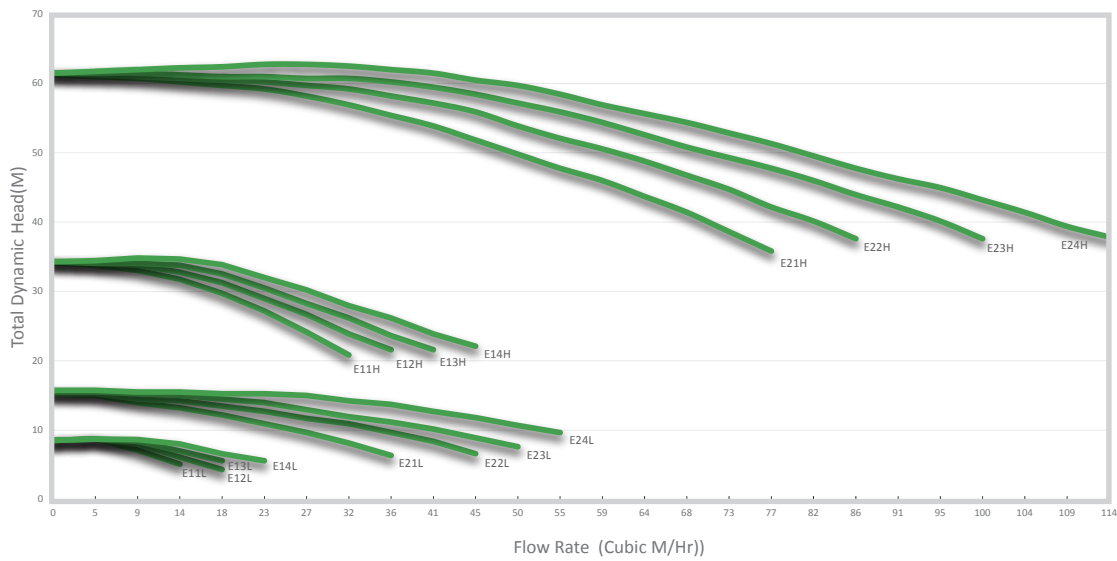
SIZE	MOTOR FRAME	INLET IN (MM)	OUTLET IN (MM)	A IN (MM)	B* IN (MM)	D* IN (MM)	F IN (MM)	G IN (MM)	Z IN (MM)
E11 E12 E13 E14	140TC	2.0 (51)	1.5 (38)	8.56 (217)	10.13 (257)	7.00 (178)	0.75 (19)	5.25 (133)	2.87 (73)
	180TC	2.0 (51)	1.5 (38)	9.81 (249)	12.19 (310)	8.00 (203)	0.75 (19)	5.88 (149)	2.87 (73)
	210C	2.0 (51)	1.5 (38)	12.16 (309)	13.75 (349)	8.75 (222)	1.00 (25)	7.38 (187)	2.87 (73)
E21 E22 E23 E24	180TC	3.0 (76)	2.0 (51)	9.81 (249)	12.19 (310)	8.00 (203)	0.75 (19)	5.88 (149)	3.80 (96)
	210TC	3.0 (76)	2.0 (51)	12.16 (309)	13.75 (349)	8.75 (222)	1.00 (25)	7.38 (187)	3.80 (96)
	250TC	3.0 (76)	2.0 (51)	16.09 (409)	16.38 (416)	9.75 (248)	1.00 (25)	9.63 (244)	3.80 (96)
	280TSC	3.0 (76)	2.0 (51)	20.44 (519)	18.13 (460)	10.50 (267)	1.50 (38)	13.13 (333)	3.80 (96)

SIZE	MOTOR FRAME	S-LINE				DIN			
		W IN (MM)	X IN (MM)	Y IN (MM)	C IN (MM)	W IN (MM)	X IN (MM)	Y IN (MM)	C IN (MM)
E11 E12 E13 E14	140TC	8.03 (204)	5.70 (145)	4.89 (124)	20.08 (510)	8.44 (214)	6.07 (154)	5.29 (134)	20.48 (520)
	180TC	9.00 (228)	5.70 (145)	4.89 (124)	24.42 (620)	9.40 (239)	6.07 (154)	5.29 (134)	24.83 (631)
	210C	9.00 (228)	5.70 (145)	4.89 (124)	26.88 (683)	9.40 (239)	6.07 (154)	5.29 (134)	27.29 (693)
E21 E22 E23 E24	180TC	10.81 (275)	6.85 (174)	5.80 (147)	26.24 (666)	11.50 (292)	7.26 (184)	6.49 (165)	26.92 (684)
	210TC	10.81 (275)	6.85 (174)	5.80 (147)	28.70 (729)	11.50 (292)	7.26 (184)	6.49 (165)	29.38 (746)
	250TC	10.81 (275)	6.85 (174)	5.80 (147)	30.59 (777)	11.50 (292)	7.26 (184)	6.49 (165)	31.28 (794)
	280TSC	10.81 (275)	6.85 (174)	5.80 (147)	33.95 (862)	11.50 (292)	7.26 (184)	6.49 (165)	34.64 (880)

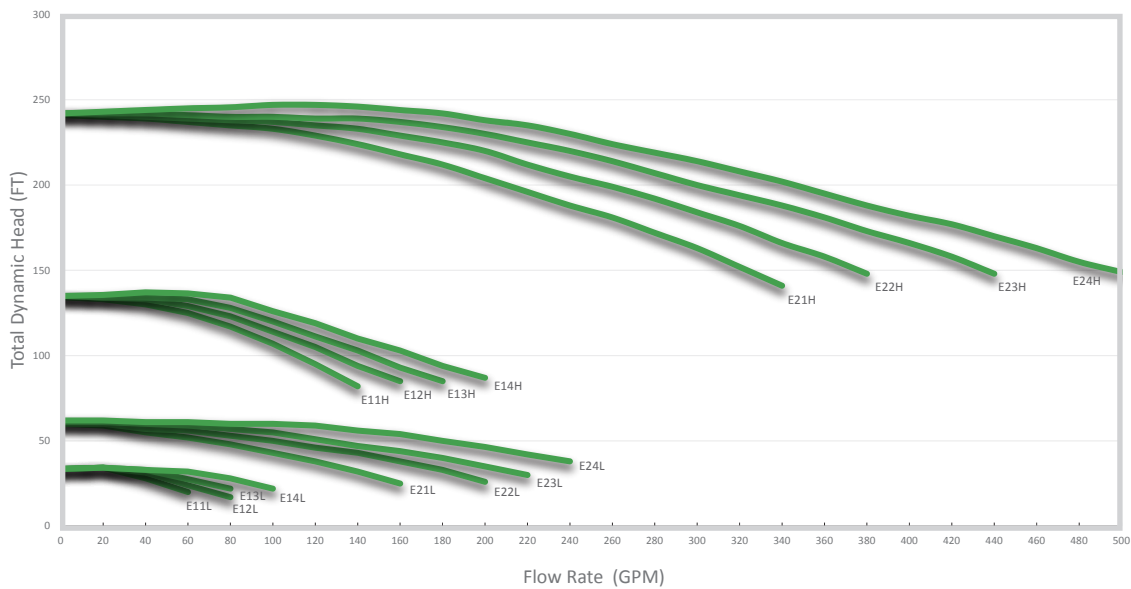
PERFORMANCE CURVES:

The E-Series range is available in several pump sizes that can match unique requirements across a broad application spectrum to maximize operating efficiencies. Like other centrifugal pumps, the E-Series can have custom trimmed impellers to meet the unique flow and pressure requirements required in a processing plant.

The E-Series 50HZ Curves



The E-Series 60HZ Curves





Global locations

AMERICAS

SPX FLOW

611 Sugar Creek Road
Delavan, WI 53115
United States of America
+1 262 728 1900

APAC

SPX FLOW

7F, No. 1568, Huashan Road,
Shanghai, 200052
China
+86 21 2208 5888

EMEA

SPX FLOW

ul. Grunwaldzka 229
85-451 Bydgoszcz
Poland
+48 52 525 99 00

Scan the QR codes to view
E-Series Pump Videos



E-Series pump animation



E-Series pump testimonial



E-Series pump maintenance

Based in Charlotte, North Carolina, SPX FLOW, Inc. (NYSE: FLOW) is a multi-industry manufacturing leader. For more information, please visit www.spxflow.com

SPX FLOW

611 Sugar Creek Road
Delavan, WI 53115
P: (262) 728-1900 or (800) 252-5200
E: wcb@spxflow.com

SPX FLOW, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit www.spxflow.com.

The green "y" and "x" are trademarks of SPX FLOW, Inc.

ISSUED 05/2016 SPX-0010

COPYRIGHT © 2016 SPX FLOW, Inc.