

# EcoPure™

HYGIENIC MAGDRIVE CENTRIFUGAL PUMP



*Provided by:*

**Holland**®  
**APPLIED TECHNOLOGIES**

[www.hollandapt.com](http://www.hollandapt.com)

Phone: 800-800-8464

The SPX EcoPure™ 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 minimizes maintenance 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's highly-specialized, engineered products and technologies are concentrated in Flow Technology. Many of SPX's innovative solutions are playing a role in helping to meet rising global demand for electricity and processed foods and beverages, particularly in emerging markets. The company's products include food processing systems and components for the food and beverage industry, and critical flow solutions for the power, energy and industrial process industries. For more information, please visit [www.spx.com](http://www.spx.com).

## The Next Generation of Sanitary Pumps

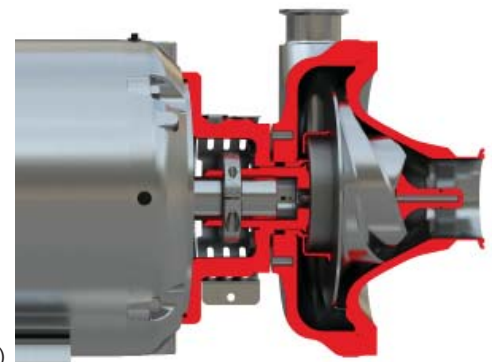
### LEAK-FREE\* DESIGN

The EcoPure™ sanitary centrifugal pump line from SPX 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 EcoPure™ 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.

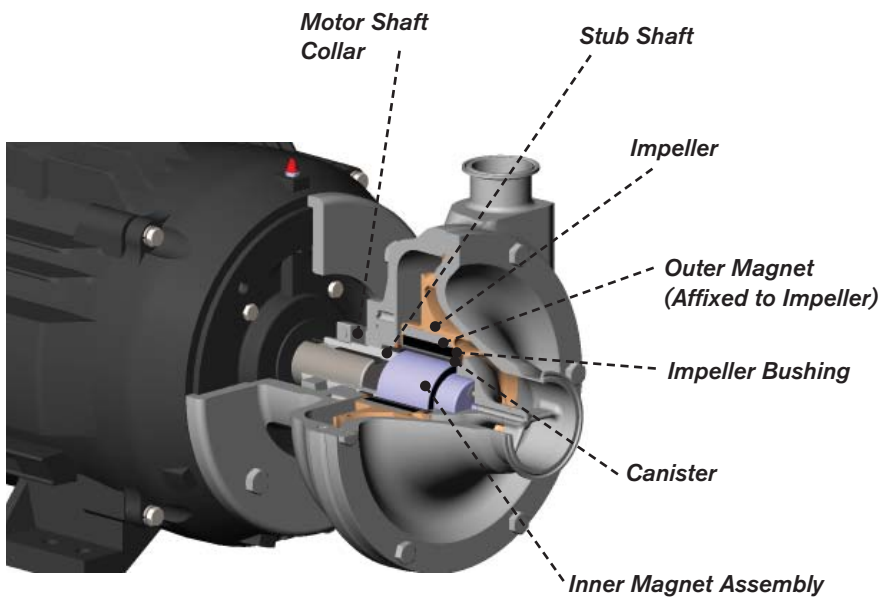
### PRODUCT BENEFITS AND FEATURES

- 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 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
- Butt Weld
- 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 EcoPure™ 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 EcoPure™ 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



# EcoPure™ - Innovative Design

## PRODUCT SPECIFICATIONS:



## 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

EcoPure pump shown with optional stainless steel motor

*Multiple motor options available*

*304 stainless steel adaptor*

*S-clamp, butt weld, threaded  
DIN connections available*

*High powered drive magnets are incorporated into the shaft and impeller for smooth product flow, eliminating the need for mechanical seals*

*316L casing, design provides excellent efficiency across a wide range of applications*

*Machined 316L SS impeller, one-piece, 4 blade, helical rosebud blade configuration, open eye area improves pumping efficiency and lowers NPSHR*

*Machined, heavy-duty drive shaft for maximum rigidity and reduced vibration*

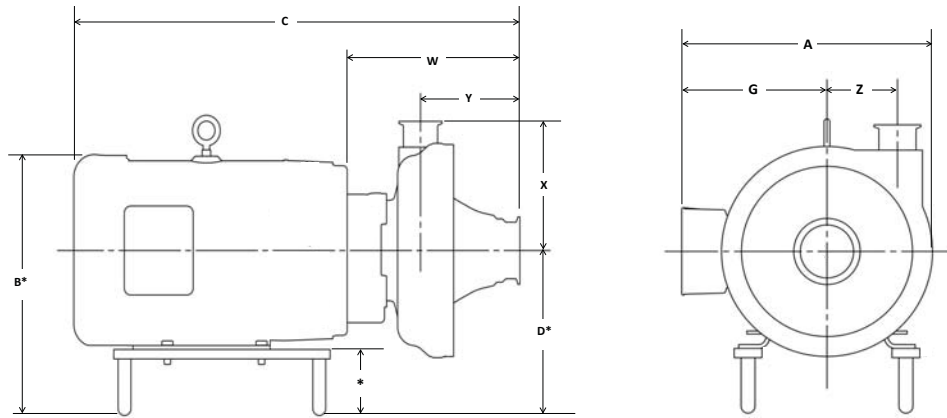
## THEORY OF OPERATION:

Unlike industrial magnetic driven pumps, the EcoPure™ pump has no bearings or shaft in the product zone. The magnets on the EcoPure™ 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 EcoPure™ 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 EcoPure™ pump unique. As with other SPX 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.



# EcoPure™ - 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)
P11	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)
P12	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)
P13									
P14	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)
P21	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)
P22	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)
P23	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)
P24	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)
P31	180TC	4.0 (102)	2.5 (64)	9.81 (249)	12.19 (310)	8.00 (203)	0.75 (19)	5.88 (149)	4.30 (109)
	210TC	4.0 (102)	2.5 (64)	12.19 (309)	13.75 (349)	8.75 (222)	1.00 (25)	7.38 (187)	4.30 (109)
	250TC	4.0 (102)	2.5 (64)	16.09 (409)	16.38 (416)	9.75 (248)	1.00 (25)	9.63 (244)	4.30 (109)
	280TSC	4.0 (102)	2.5 (64)	20.44 (519)	18.13 (460)	10.50 (267)	1.50 (38)	13.13 (333)	4.30 (109)
	320TSC	4.0 (102)	2.5 (64)	22.38 (568)	20.00 (508)	11.50 (292)	2.00 (51)	14.13 (359)	4.30 (109)
	360TSC	4.0 (102)	2.5 (64)	27.81 (706)	22.00 (559)	12.50 (318)	2.50 (64)	18.06 (459)	4.30 (109)

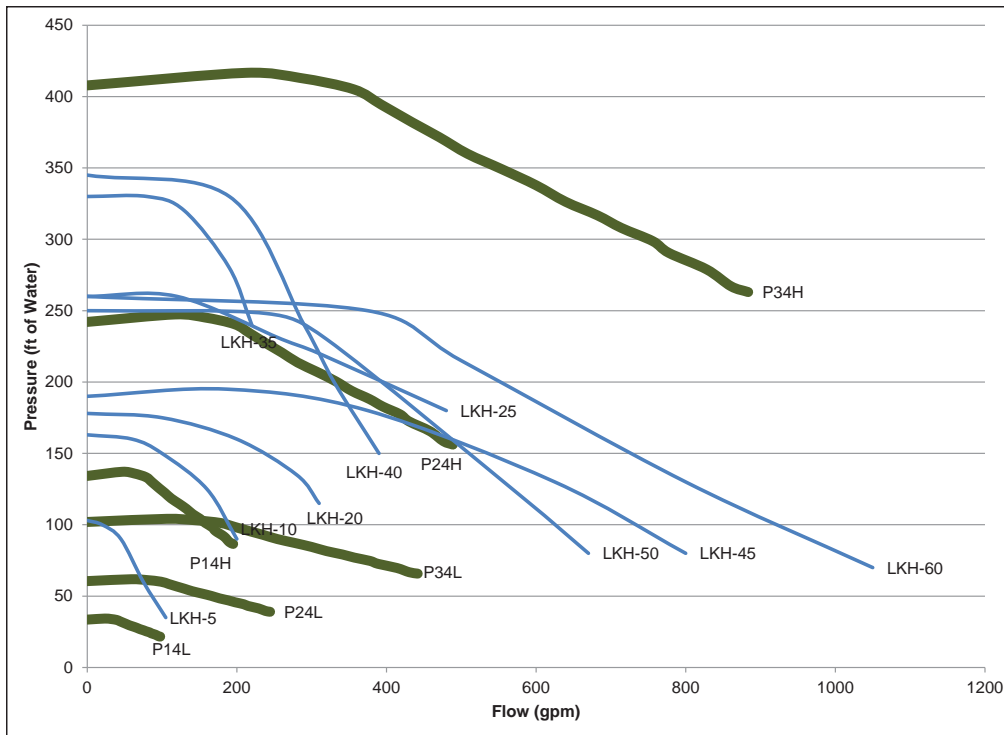
BUTT WELD				S-LINE				DIN			
W IN (MM)	X IN (MM)	Y IN (MM)	C IN (MM)	W IN (MM)	X IN (MM)	Y IN (MM)	C IN (MM)	W IN (MM)	X IN (MM)	Y IN (MM)	C IN (MM)
7.53 (191)	5.20 (132)	4.39 (111)	19.58 (497)	8.03 (204)	5.70 (145)	4.89 (124)	20.08 (510)	8.44 (214)	6.07 (154)	5.29 (134)	20.48 (520)
8.50 (216)	5.20 (132)	4.39 (111)	23.92 (608)	9.00 (228)	5.70 (145)	4.89 (124)	24.42 (620)	9.40 (239)	6.07 (154)	5.29 (134)	24.83 (631)
8.50 (216)	5.20 (132)	4.39 (111)	26.38 (670)	9.00 (228)	5.70 (145)	4.89 (124)	26.88 (683)	9.40 (239)	6.07 (154)	5.29 (134)	27.29 (693)
10.31 (262)	6.35 (161)	5.30 (135)	25.74 (654)	10.81 (275)	6.85 (174)	5.80 (147)	26.24 (666)	11.50 (292)	7.26 (184)	6.49 (165)	26.92 (684)
10.31 (262)	6.35 (161)	5.30 (135)	28.20 (716)	10.81 (275)	6.85 (174)	5.80 (147)	28.70 (729)	11.50 (292)	7.26 (184)	6.49 (165)	29.38 (746)
10.31 (262)	6.35 (161)	5.30 (135)	30.09 (764)	10.81 (275)	6.85 (174)	5.80 (147)	30.59 (777)	11.50 (292)	7.26 (184)	6.49 (165)	31.28 (794)
10.31 (262)	6.35 (161)	5.30 (135)	33.45 (850)	10.81 (275)	6.85 (174)	5.80 (147)	33.95 (862)	11.50 (292)	7.26 (184)	6.49 (165)	34.64 (880)
12.26 (311)	7.22 (183)	6.82 (173)	27.69 (703)	12.76 (324)	7.72 (196)	7.32 (186)	28.19 (716)	13.44 (341)	8.80 (223)	8.00 (203)	28.87 (733)
12.26 (311)	7.22 (183)	6.82 (173)	30.15 (766)	12.76 (324)	7.72 (196)	7.32 (186)	30.65 (778)	13.44 (341)	8.80 (223)	8.00 (203)	31.33 (796)
12.26 (311)	7.22 (183)	6.82 (173)	32.04 (814)	12.76 (324)	7.72 (196)	7.32 (186)	32.54 (827)	13.44 (341)	8.80 (223)	8.00 (203)	33.22 (844)
12.26 (311)	7.22 (183)	6.82 (173)	35.40 (899)	12.76 (324)	7.72 (196)	7.32 (186)	35.90 (912)	13.44 (341)	8.80 (223)	8.00 (203)	36.58 (929)
12.26 (311)	7.22 (183)	6.82 (173)	37.29 (947)	12.76 (324)	7.72 (196)	7.32 (186)	37.79 (960)	13.44 (341)	8.80 (223)	8.00 (203)	38.47 (977)
12.26 (311)	7.22 (183)	6.82 (173)	39.82 (1011)	12.76 (324)	7.72 (196)	7.32 (186)	40.32 (1024)	13.44 (341)	8.80 (223)	8.00 (203)	41.00 (1041)



## PERFORMANCE CURVES:

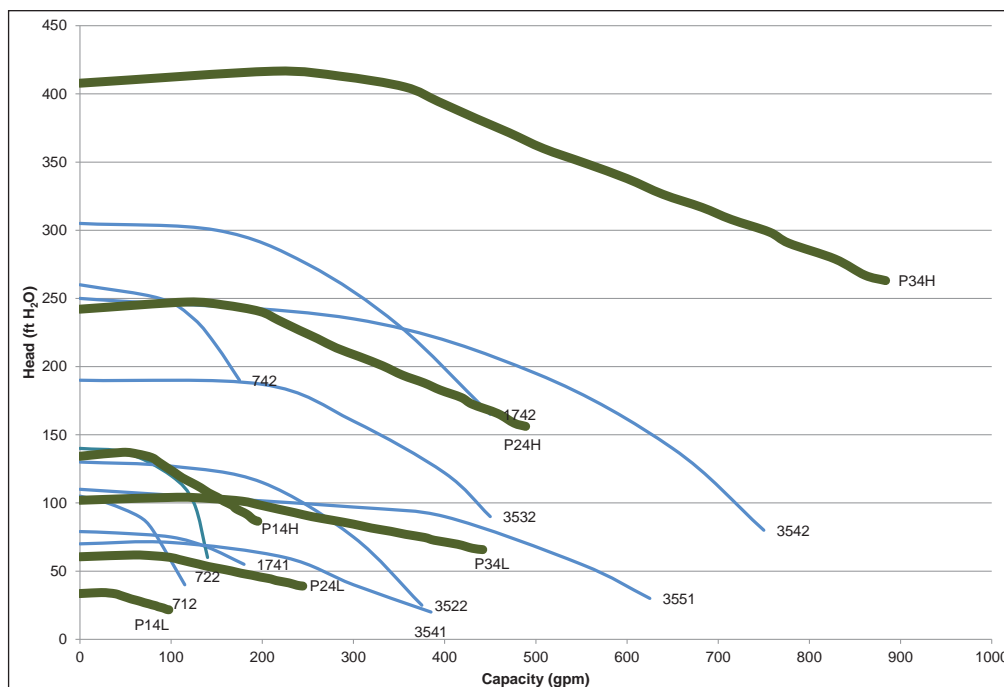
The EcoPure™ range is available in several pump sizes that can match unique requirements across a broad application spectrum to maximize operating efficiencies. Like other centrifugal pumps, the EcoPure™ can have custom trimmed impellers to meet the unique flow and pressure requirements required in a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

## Vs Brand "A"



- SPX range of pumping spectrum
- Brand "A" range of pumping spectrum

## Vs Brand "F"



- SPX range of pumping spectrum
- Brand "F" range of pumping spectrum

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Scan here to view EcoPure™ animation  
or visit <http://youtu.be/GoZHX6zUD6I>



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