

W+ Pumps

MINIMIZE LIFE CYCLE COSTS



Engineering excellence, allied to stringent quality control, ensures that SPX FLOW's unrivalled range of APV products complies with the highest international standards for hygiene. In the light of growing pressure worldwide to deliver safe, high quality food, all SPX FLOW products are designed for easy cleanability, while minimizing the use of valuable resources, such as energy.

The APV product portfolio includes a wide range of pumps, valves, heat exchangers, mixers and homogenizers designed for use in the food, dairy and brewing industries, as well as in chemical, healthcare, pharmaceutical processing and heavy industries.

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.

Prepared for the future

DESIGNED FOR EFFICIENCY

The W+ pump series is based on a unique hydraulic design which combines maximum efficiency with the highest hygiene standards. A critical design feature is the APV-patented spiral volute, which is positioned in the back plate of the pump. The volute increases the efficiency and reduces the turbulence which ensures gentle product handling. The pump is very energy efficient and has very low noise and vibration levels, which deliver improved product integrity.

INNOVATIVE THINKING

A striking innovation within the W+ pump is the greater operating range achieved as a result of design improvements of impeller and outlet. In addition, the W+ is very easy to maintain so that hygiene standards can be optimized at all times.

MORE PUMP FOR YOUR MONEY

Because of the very comprehensive range of W+ models, it is often possible to select a smaller pump model for a particular duty, reducing energy consumption, operating costs and installation expenses.

EASY MAINTENANCE

The W+ pump design focuses on efficiency - including efficiency in maintenance and repairs. The shaft seal can be visually inspected for leaks, and only the pump housing and impeller have to be removed to replace the shaft seal. In most models the pump housing has a clamp ring that can be mounted at any angle to facilitate dismantling and reassembly. The motor shroud is also easy to remove and refit and for easy installation, the legs can be adjusted to fit into application.



Top performance

IMPROVED SHAFT SEAL

The shaft seal is the essential area in terms of hygiene. The W+ pumps are equipped with a shaft seal that is ideal for hygienic applications.

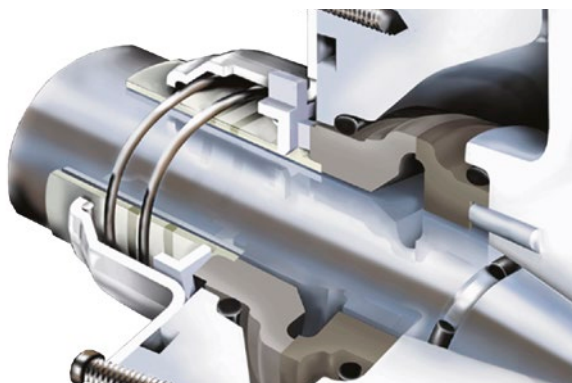
But it has many other advantages:

- Internal seal design optimizes cooling and lubrication of seal surfaces while the seal chamber is built to efficiently dissipate heat. Both work to reduce risk of "dry-running"
- Directed flow assures thorough cleaning of seal area
- The stationary spring is located outside the product contact area to maintain cleanliness
- Two sizes cover all models (Except for W+50/600)
- Front loading seal simplifies maintenance: only the pump housing and impeller have to be disassembled, then the shaft seal can be replaced quickly from the front
- Can easily be rebuilt into a double mechanical shaft seal for use with water flushing or with a barrier medium for aseptic applications
- Double mechanical is mirror image of single: same seal faces and O-rings

HIGHEST HYGIENE STANDARDS

The W+ pumps are designed for both CIP (clean in place) and SIP (sterilise in place). All product contact parts are in AISI 316L stainless steel.

The pumps can also be supplied in 3-A and/or electropolished version.



Typical Product Applications

Beverage

Beer
Cider
Fruit Drinks
Liquid Sugar and Glucose
Soft drinks
Wine
Wort



Food

Animal oils
Flavourings
Pet food
Soups & Sauces
Vegetable juice
Vegetable oils
Vinegars



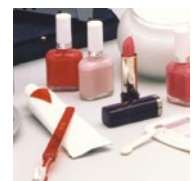
Dairy

Cream
Milk
Milk concentrate
Raw milk
Skimmed milk
Whey
Whey concentrate



Pharmaceutical and Toiletries

Emulsions
Extracts
Lotions
Perfumes
WFI (Water for Injection)
High Purity Water
Pure water

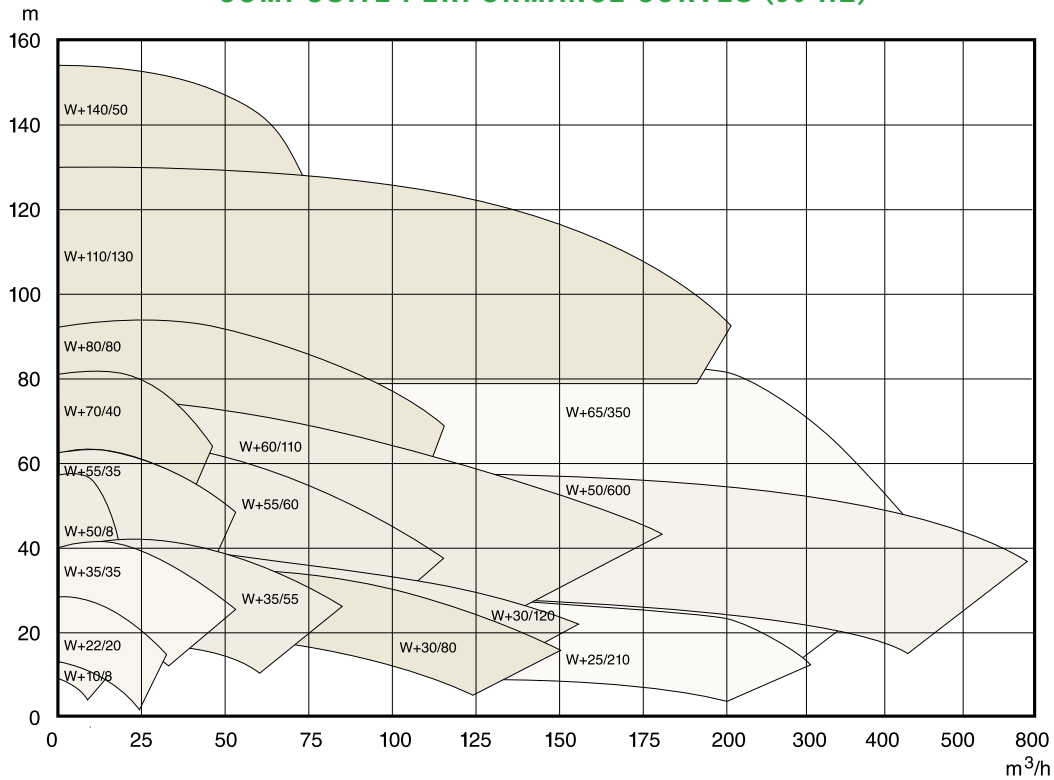


Chemical

Additives
Adhesives
Coatings
Contaminated liquids
Detergents
Emulsions
Paint



COMPOSITE PERFORMANCE CURVES (50 HZ)



RELIABILITY

The W+ is characterised by problem-free operation and a long life cycle. The pump design is particularly robust with a new hard-wearing shaft seal and an extension frame of stainless steel as standard.

Operating reliability has been thoroughly tested. Every pump is tested individually in a computer-controlled test bench, and a test certificate is provided with the pump. All W+ pumps are designed for system pressures up to 14, 18 or 25 bar (203, 261, 363 psi) – as standard.

COMPLETE PRODUCT RANGE

The W+ range consists of 17 standard models with pressure and flow capacities up to 15 bar (218 psi) (50 Hz) and up to 800 m³/h (211,338 g/h) (50 Hz). There are a number of special versions, which may be adapted specifically to customer requirements. As the W+ pumps are modular, customised versions can be provided to undertake specific pumping duties.

The name of the pump refers to its best efficiency point (BEP). W+ 22/20 for example, attains its BEP when the differential pressure is 22 mWc and the flow capacity 20 m³/h (5,283 g/h) (50 Hz). All pumps operate at 50 Hz and 60 Hz.

MOTORS

To meet global demand, W+ pumps are supplied with either IEC or NEMA standard motors.



Variants of the W+

WHP+

The Whp+ is a high-pressure model of the W+ range. The pumps are designed to withstand system pressures up to 60 bar (870 psi) - such as those in certain reverse osmosis systems. The Whp+ pump's sturdy construction increases stability and dampens vibrations.

W+ MULTISTAGE PUMP

The W+ 140/50 offers three special features:

- Provides pressures up to 15 bar (218 psi)
- Can be used in processes with system pressures up to 60 bar (870 psi)
- Ensures optimum hygienic standards

Unlike other multistage pumps, it is CIP friendly. It has open impellers and semi-open impeller vanes eliminating any hiding place for bacteria. The W+ multistage pump is equipped with heavy-duty bearing bracket that absorbs all radial and axial forces present in pumps of this kind. Therefore, the W+ 140/50 can use standard motors of any make.

WI+ INDUCER PUMP

The inducer pump is the low cost alternative to changing the process design when NPSH availability is low. The inducer boosts the inlet pressure, and the risk of cavitation is correspondingly reduced (the NPSH required typically drops by 50-70%). When the risk of cavitation disappears, so does the risk of a large number of operational disturbances that would otherwise result - such as excessive noise, energy loss,



product damage and unnecessary wear on the pump. Low suction head is a common "problem" in miscellaneous applications, e.g. when pumping products with low boiling points or in processes that involve vacuums.

The Wi+ is unique among inducer pumps, since the NPSH requirement is kept to a minimum throughout its entire operating range. The inducer further enables the Wi+ pump to handle viscous or gaseous products beyond the range of other centrifugal pumps.

WS+

The self-priming Ws+ is designed to handle CIP return and other fluids with entrained air and foam. The unique design reduces the energy consumption and noise of traditional liquid ring pumps by using a high efficiency impeller that can be trimmed to match a specific duty. The Ws+ employs an eccentric air screw to form the liquid ring required for its self-priming capability.

WA+

Environmental requirements are getting stricter and stricter! But today, aseptic production is already essential to certain processes - including the manufacture of long life food and pharmaceutical products. The Wa+ pump is the perfect solution. All seals, including the shaft seal, are designed as double seals.

- Double mechanical shaft seals fitted for sterile flushing
- Double O-ring sealing of pump housing fitted for sterile flushing
- Special aseptic fittings fitted for sterile flushing



W+ 35/35



W+ 80/80



W+ 50/600



LEADING INNOVATOR OF SOLUTIONS



SPX FLOW is your leading innovator of solutions with decades of experience in centrifugal pump design, covering premium brands such as APV and WCB.

SPXFLOW[®]

From the supply of engineered components to complete process engineering and design, we specialise in helping our customers improve their plant's performance and profitability.

Years of intensive product development on a worldwide scale, has enabled SPX FLOW to offer a complete range of hygienic pumps in the brewery, dairy, food, beverage, chemical, health care and pharmaceutical industries.





QUESTIONS OR INQUIRIES

FIND YOUR LOCAL CONTACT ON OUR WEBSITE: www.spxflow.com/apv/support/

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

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