



# Ws+ Self-Priming Pump

The Ws+ pump series is an exciting new addition to APV's range of self-priming pumps. It replaces the well-known ZMS series, which has proven successful for many years.

The Ws+ is designed to handle fluids mixed with air or foam significantly better and with greater efficiency than standard self-priming pumps.

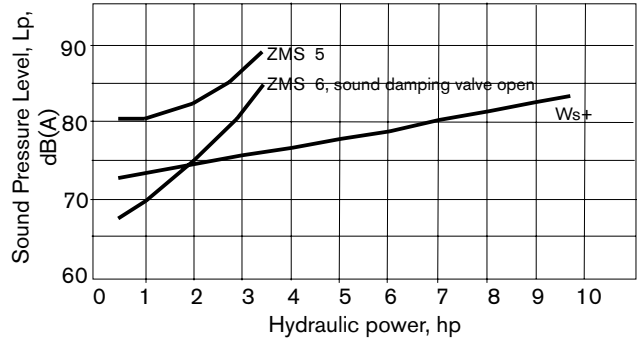
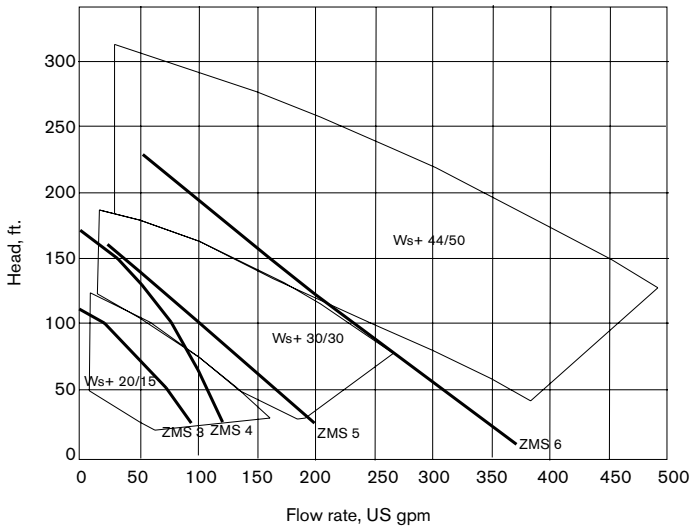
Furthermore, the new design is vastly superior to other pumps on the market.

The Ws+ pump works according to the water ring principle. However, unlike traditional self-priming pumps, the Ws+ is equipped with an open impeller which ensures a flexible flow range. The self-priming effect is obtained by means of an air screw mounted on the pump inlet.

## Features and Benefits

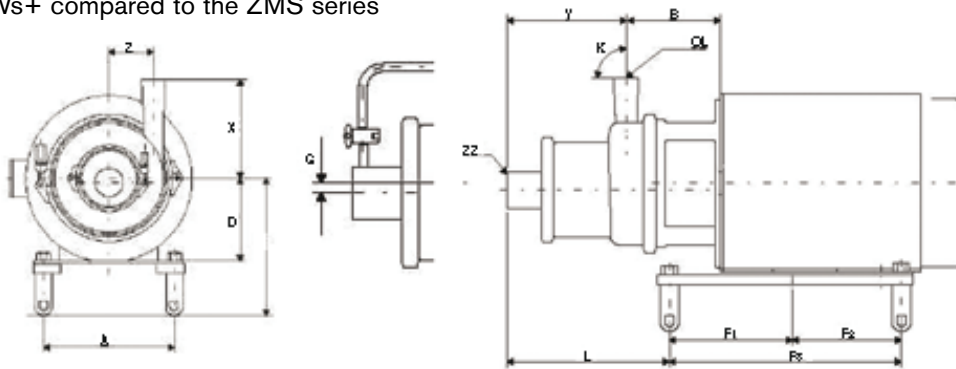
- **Improved hydraulic performance:** While the hydraulic performance is similar to that of the well-known W+ centrifugal pump series, the changeable impeller size increases the volumetric performance significantly.
- **Optimization possibilities:** The Ws+ series can be optimized in the same way as a conventional centrifugal pump (W+) for "customer designed" pump performance.
- **Higher efficiency:** The efficiency of the pump is increased compared to other self priming pumps by 25-90%.
- **Lower noise level:** Due to its hydraulic design, the noise level of the Ws+ is significantly lower than traditional liquid ring pumps.
- **3A and EHEDG approved:** Approved by the European Hygienic Equipment Design Group as a hygienic pump.
- **Interchangeable with W+ parts:** To reduce inventory cost the Ws+ series is based on the W+ design so that all commonly used spare parts are the same e.g. shaft seals, O-rings etc.
- **Horizontal inlet:** This is particularly useful in CIP applications. (Conventional self-priming pumps all have vertical inlet).
- **Less prone to damage by small objects:** Minimized risk of particles damaging the impellers.

# Ws+



The noise emission curve shows the noise levels at different HP, compared to the ZMS series

The Ws+ range chart highlights the flexibility of the Ws+ compared to the ZMS series



All dimensions in inches

Pump	Motor frame	B	ZZ	OL	Y	F1	F2	F3	L	Z	X	D	A	E	G	K
Ws+20/15	182 TC	7.00	2.5	2	7.48	4.01	4.49	8.50	14.13	2.60	8.46	4.49	9.01	7.17	0.315	90°
	184 TC	7.00	2.5	2	7.48	4.01	5.51	9.53	14.13	2.60	8.46	4.49	9.01	7.17	0.315	
	213 TC	7.00	2.5	2	7.48	4.01	5.51	9.53	15.04	2.60	8.46	5.24	10.51	7.91	0.315	
	215 TC	7.00	2.5	2	7.48	2.52	7.00	9.53	16.54	2.60	8.46	5.24	10.51	7.91	0.315	
Ws+30/30	213 TC	6.14	2.5	2	7.60	4.01	5.51	9.53	14.29	3.27	9.05	5.24	10.51	7.91	0.394	90°
	215 TC	6.14	2.5	2	7.60	2.52	7.00	9.53	15.79	3.27	9.05	5.24	10.51	7.91	0.394	
	254 TC	6.77	2.5	2	7.60	0	8.27	8.27	19.13	3.27	9.05	6.26	12.52	8.62	0.394	
	256 TC	6.77	2.5	2	7.60	0	10.00	10.00	19.13	3.27	9.05	6.26	12.52	8.62	0.394	
Ws+44/50	254 TC	7.28	3	2	9.88	0	8.27	8.27	24.8	3.94	8.66	6.26	12.52	8.62	0.512	90°
	256 TC	7.28	3	2	9.88	0	10.00	10.00	24.8	3.94	8.66	6.26	12.52	8.62	0.512	
	284 TC	6.61	3	2	9.88	0	9.49	9.49	24.13	3.94	8.66	7.00	14.02	9.3701	0.512	
	286 TC	6.61	3	2	9.88	0	10.98	10.98	24.13	3.94	8.66	7.00	14.02	9.37	0.512	
	324 TC	7.68	3	2	9.88	0	10.51	10.51	25.67	3.94	8.66	8.00	15.98	10.354	0.512	
326 TC	7.68	3	2	9.88	0	11.89	11.89	25.67	3.94	8.66	8.00	15.98	10.35	0.512		
<b>Tolerance inches</b>		+0.197 -0	Nominal	Nominal	+0 -0.197	±0.079	±0.079	±0.079	+0 -0.197	±0.079	±0.079	±0.079	±0.079	±0.079	±0.020	+0.098 -0

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