



**JOHNSON PUMP GROUP**  
AN SPX BRAND

# TopWing Bi-Wing Rotary Lobe Pumps



**SPX**<sup>®</sup>

# TopWing – The next generation of rotary lobe pumps

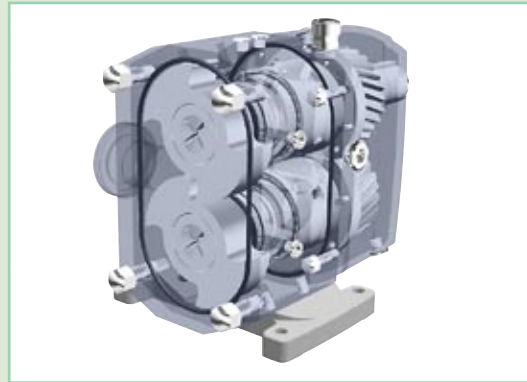
*Clean, robust, efficient. Features that SPX Process Equipment aimed at when we took the challenge to develop the next generation of rotary lobe pumps. And the result is TopWing.*

Thanks to the innovative design of TopWing, SPX offers a pump with optimal efficiency.

If you need a tough pump, you've got it. Or if you need a reliable pump, you've got it. Without compromising hygiene. Shear sensitive liquids will be handled with less damage due to the Bi-wing design with close clearances.

The robust design coupled with easier maintenance are features you will find of great benefit.

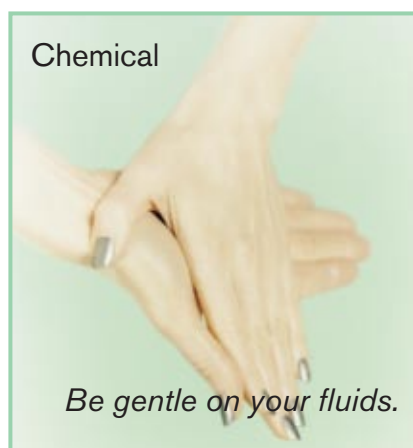
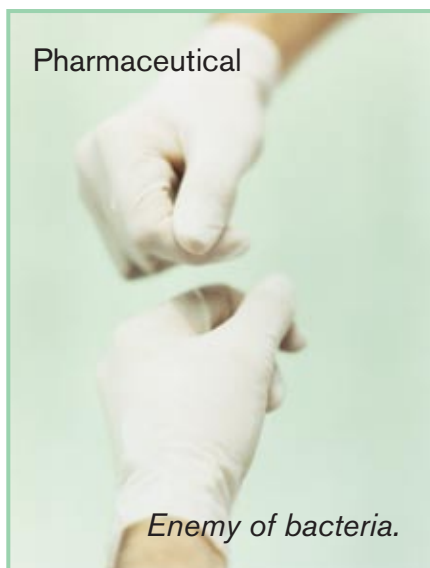
*In short, TopWing gives better performance at lower costs.*



## **Typical characteristics**

- Smooth flow
- Superior hygiene
- Robust operation
- Self-draining
- Front loading seals
- Bi-wing rotor
- Water-proof bearing assembly
- Complete pump in stainless steel
- Up-graded materials
- High efficiency
- Easily serviced and maintained
- High and low viscosity products

# TopWing – The intelligent answer in rotary lobe pumps



Technical know-how and market knowledge have been the driving forces for SPX in designing and manufacturing the next generation of rotary lobe pumps, the TopWing.

The hygienic design combined with a gentler product handling makes TopWing the ideal solution for sensitive liquids. The ability to pump liquids of varying viscosities and temperatures are other benefits.

The shape of the rotor promotes a smooth flow with a high volumetric efficiency. There are fewer pockets where bacteria can hide. Features that make the pump easy to clean – both by CIP and by SIP. The complete pump is made of stainless steel.

With less agitation and shear TopWing can handle delicate liquids containing both soft and hard particles without product degradation.

This new design meets all the demands for high product quality. It stands up well to the requirements from different markets for various applications. Still giving a smooth even flow, reliable operation without compromising hygiene.

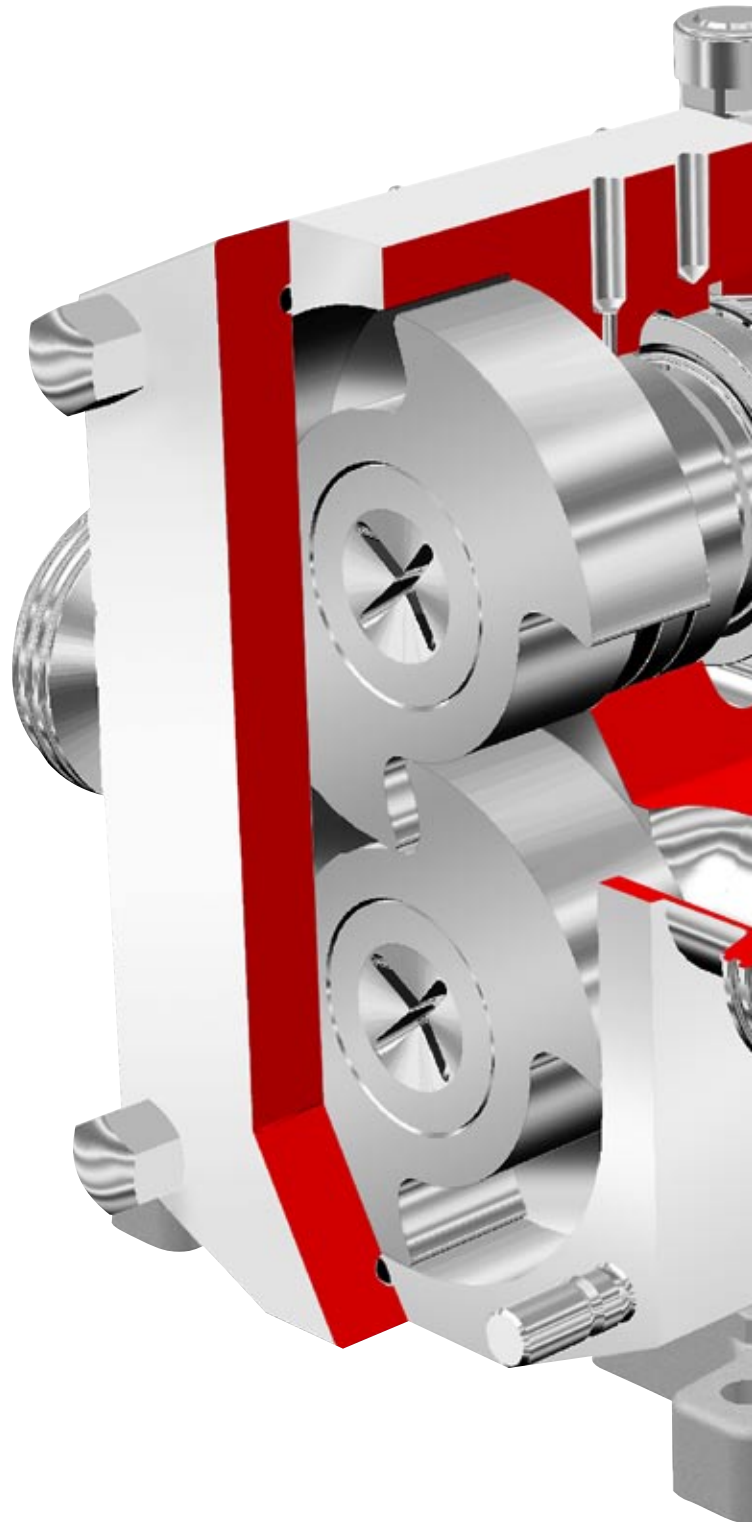
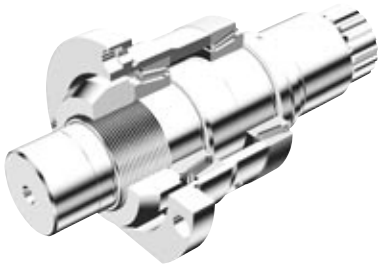
# Features and Benefits

## ***High hygiene – fewer cavities where bacteria can hide***

- Self-draining rotorcase in vertical position.
- Self-draining mechanical seals assembled inside the rotorcase.
- Low carbon stainless steel.
- Smooth surfaces of both rotorcase and frontcover.
- Easy to clean – CIP, SIP or manually.

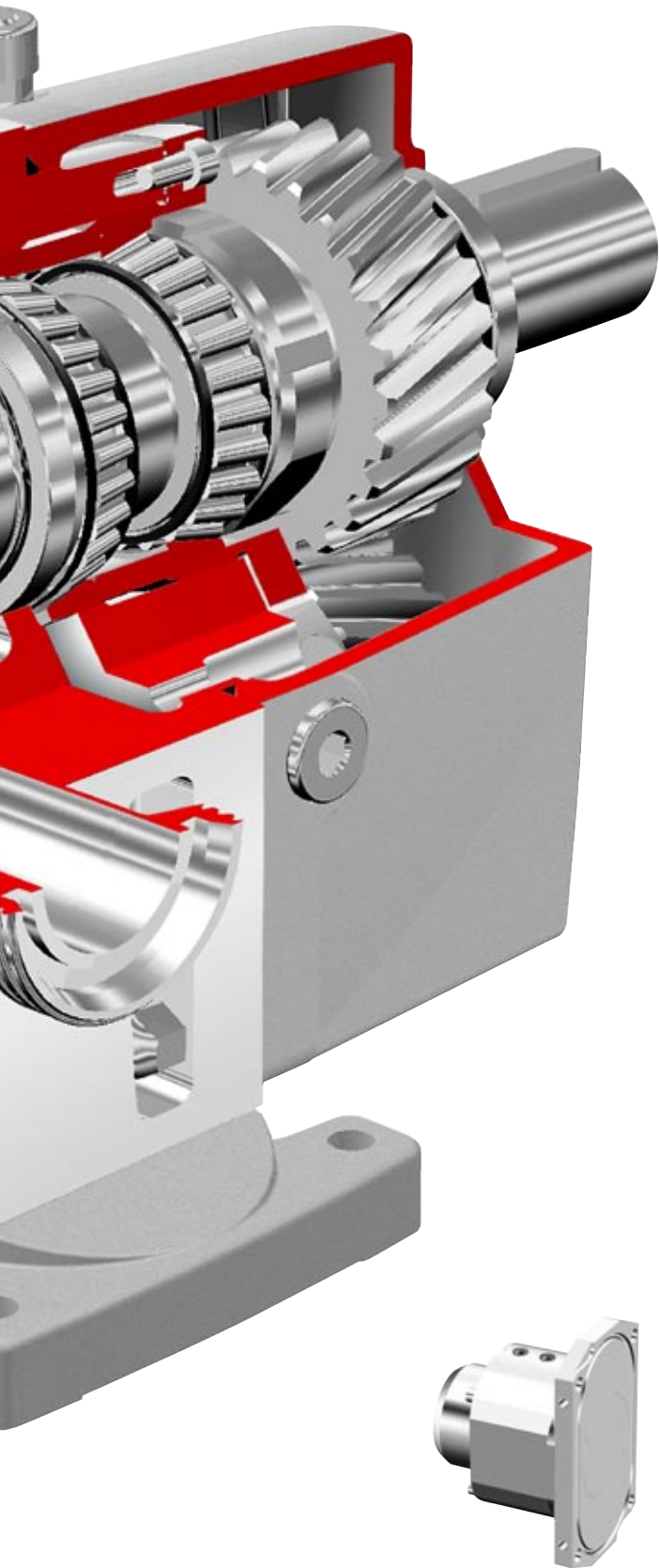
## ***Easily maintained***

- Change of shaft seal without disassembling the rotorcase.
- Robust bearing arrangement – pre-loaded taper roller bearings without shimming.



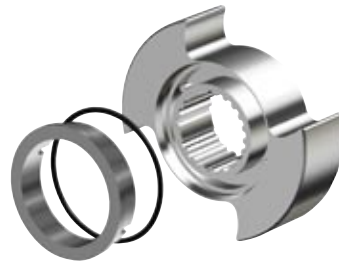
## ***Designed for extreme external environments***

- Water-proof bearing construction – sealed off with special water-resistant seals.
- Complete pump manufactured in stainless steel, including the endcover – no corrosion, no painting.



#### ***Gentle product handling – high performance***

- Bi-wing rotors – less backslip and possibility to handle soft particles thanks to the rotor shape.
- Small clearances – less backslip and gentler treatment of shear sensitive liquids.
- Smooth flow, low pulsation.



#### ***Trouble-free operation***

- Designed for extreme external environments.
- Rotors, shaft and retainer of Duplex stainless steel – stronger assembly, less shaft deflection, less wear.
- Heavy-duty construction – large shaft diameter and Duplex stainless steel.
- Mechanical seal assembled inside the rotorcase – better seal lubrication.
- Up-graded material in mechanical seal and newly invented triple wave spring.

#### ***Options***

- Different seals; single mechanical, quenched, double flushed, O-ring.
- Safety relief valves; spring loaded, spring loaded with airlift, air loaded with airlift. Easy to clean and the airlifted option can also be used as CIP-valve, process controlled.
- Rectangular inlets – better NPSH, possibilities to pump thicker liquids.
- Pre-heating/cooling devices in frontcover and/or at the seals.

# Materials of key components

When designing the high quality TopWing pump, we focused on reducing the LCC (Life Cycle Cost). This means that not only the construction itself is up-graded but also the pump materials.

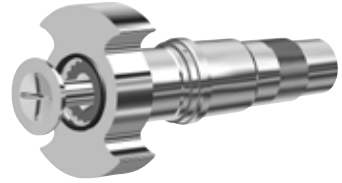


**Rotorcase and frontcover of low carbon stainless steel 316L**

*More hygienic and better corrosion resistance.  
Self-draining in vertical position.*

**Rotors, retainer and shaft of low carbon Duplex stainless steel**

*Harder material giving less shaft deflection, better corrosion resistance, safer locking of rotors, less wear and less material expansion at higher temperatures.*



**High quality, self-draining mechanical seals**

*Carbon/silicon carbide standard material.  
Silicon carbide/silicon carbide available as an option.  
The core is always made of genuine silicon carbide.*



**Endcover of stainless steel**

*Corrosion resistant, no painting of the pump.*




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## Technical data

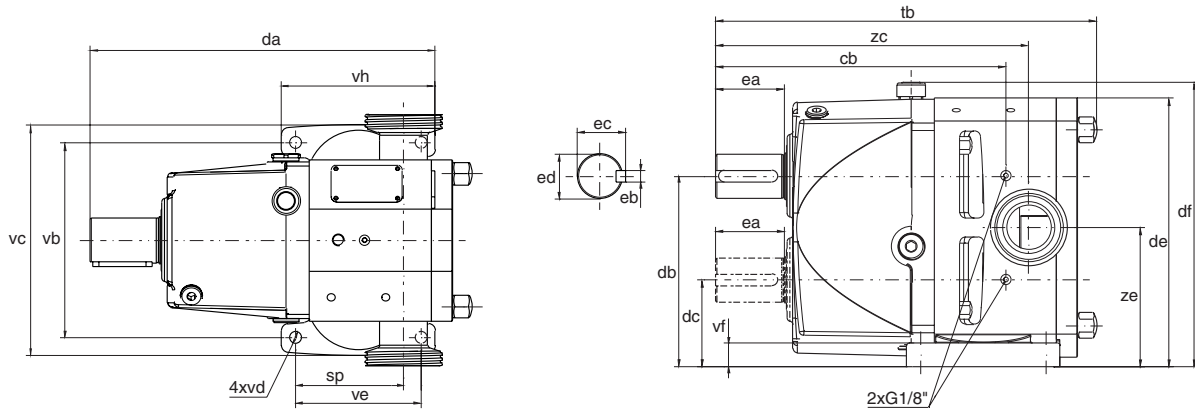
The TopWing range consists of eight pumps with connections from 25 mm to 100 mm with a capacity of up to 156 m<sup>3</sup>/h and a maximum working pressure of up to 15 bar.

Pump type	Displacement (dm <sup>3</sup> /rev)	Maximum capacity (m <sup>3</sup> /h)	Nominal internal diameter of connection (mm)	Maximum working pressure (bar)	Maximum speed (rpm)	Maximum torque (Nm)
TW1/0041	0.041	3.4	25	15	1400	55
TW1/0082	0.082	6.9	25	7	1400	55
TW2/0171	0.171	12.3	40	15	1200	400
TW2/0343	0.343	24.7	50	7	1200	400
TW3/0537	0.537	32.2	50	15	1000	800
TW3/1100	1.100	66.0	80	7	1000	800
TW4/1629	1.629	78.2	80	15	800	2000
TW4/3257	3.257	156.3	100	7	800	2000

# Dimensions

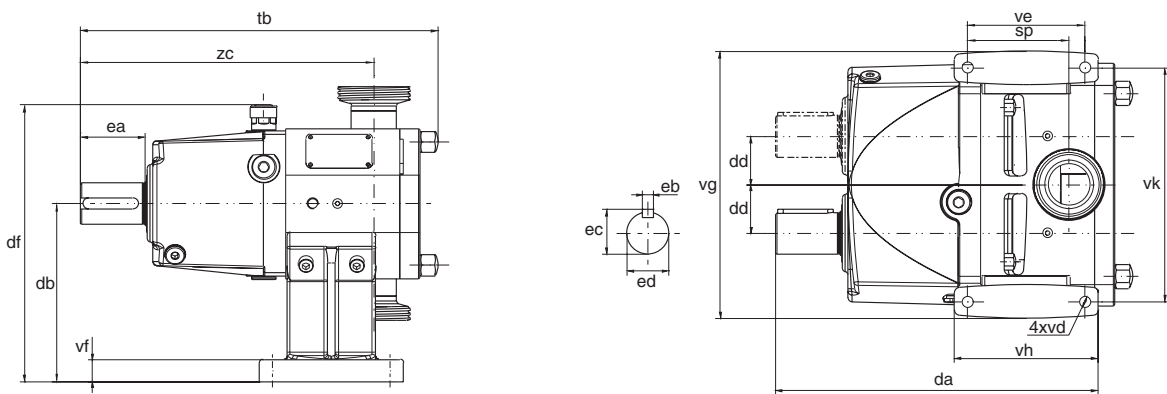
## Horizontal mounting

Broken line shaft shows position for bottom drive version



## Vertical mounting

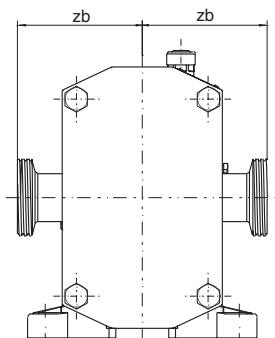
Broken line shaft shows position for left drive version seen from the frontcover



Dimensions in mm

Pump type	cb	da	db	dc	dd	de	df	ea	eb	ec	ed	sp	tb	vb	vc	vd	ve	vf	vg	vh	vk	zc	ze
TW1/0041	177	213	113.5	55.5	29	160.5	177	35	6	21.5	19	65.5	242	110	135	10	74	15	174	95	150	194	84.5
TW1/0082	177	213	113.5	55.5	29	160.5	177	35	6	21.5	19	80.5	257	110	135	10	74	15	174	95	150	209	84.5
TW2/0171	245	291	162	74	44	228	242	58	10	41	38	91.5	322	164.5	195	10	106	20	242.5	130	212.5	264	118
TW2/0343	245	291	162	74	44	228	242	58	10	41	38	116	353	164.5	195	10	106	20	242.5	130	212.5	289	118
TW3/0537	310	370	215.5	98.5	58.5	305.5	294	82	14	51.5	48	118	410	213	254	14	134	25	327	170	286	336	157
TW3/1100	310	370	215.5	98.5	58.5	305.5	294	82	14	51.5	48	148	455	213	254	14	134	25	327	170	286	366	157
TW4/1629	423.5	498	297	135	81	423	431	140	20	74.5	70	138.5	563	312	376	17.5	160	30	466	200	402	459	216
TW4/3257	423.5	498	297	135	81	423	431	140	20	74.5	70	182.5	627	312	376	17.5	160	30	466	200	402	503	216

## Connections



Dimensions in mm

Pump type	1-zb	2-zb
TW1/0041	85	117
TW1/0082	85	117
TW2/0171	107	139
TW2/0343	107	139
TW3/0537	131	163
TW3/1100	136	168
TW4/1629	178	210
TW4/3257	182	212

1-zb = All thread connections (DIN, SMS, DS, BS, ISO, Gas thread) and clamp connections (ISO, SMS)

2-zb = All flanges DIN (PN16) and ANSI (class 150)

**SPX**<sup>®</sup>

**PROCESS EQUIPMENT**

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For more information about our worldwide locations, approvals, certifications, and local representatives, please visit [www.johnson-pump.com](http://www.johnson-pump.com) and [www.spxpe.com](http://www.spxpe.com).

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