SPXFLOW

CombiPrime

Self-priming centrifugal pumps



Johnson Pump®

CombiPrime is a series of self-priming centrifugal pumps, suited for pumping clean or slightly polluted liquids, with low viscosity. The pumps are available in horizontal as well as in vertical construction. The pump's self-priming ability is performed by a built-in vacuum pump, based upon the liquid ring principle.

CombiPrime
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The most important characteristic of the CombiPrime is the built-in vacuum pump. This makes it possible to pump a liquid/air mixture or exclusively air during the suction phase. The built-in vacuum pump is based on the liquid ring principle.

The CombiPrime is used when handling vapour, aerated liquids or air during the priming stage. The availability of several material options enables corrosive media to be pumped. Applications: bilge and ballast pumps in shipping, fire extinguishing, sprinkler sets.

Maintenance is simplified because of the applied 'Back Pull Out'-principle for the horizontal and 'Top Pull Out'-principle for the vertical construction.

Based in Charlotte, North Carolina, SPX FLOW (NYSE: FLOW) is a multi-industry manufacturing company with operations in more than 35 markets worldwide. SPX FLOW's innovative, world-class products and highly-engineered solutions are helping to meet the needs of a constantly developing world and growing global population. You'll find our innovative solutions in everything from dairy plants and power plants to oil and gas pipelines, and the power grid. SPX FLOW is really everywhere you look.

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Test bed SPX Flow Technology in Assen, the Netherlands

CombiPrime



CombiPrime H



CombiPrime V

PUMP CHARACTERISTICS

- Self-priming
- Always ready for direct use
- Available in horizontal or vertical construction
- Sea water resistant version available
- High pump efficiency
- Suitable for a wide span of duties
- Rigid construction
- Back/Top Pull Out principle
- Easy maintenance

TECHNICAL DATA	CH	CV
MAX. CAPACITY	132,086 GAL/H 500 M³/H	211,338 GAL/H 800 M³/H
MAX. HEAD	328 FEET / 100 M	
MAX. WORKING PRESSURE	145 PSI / 10 BAR	
MAX. TEMPERATURE	176° F / 80 °C	
MAX. SPEED	3600 RPM	
MAX. SUCTION LIFT	26 FEET / 8 M	

Typical product applications

When reliable, direct duty is of 'prime' importance!

Shipbuilding

CombiPrime pumps can handle fresh water as well as sea water, both clean and slightly contaminated. Common applications aboard ships are fire-fighting and general duty pumping. The space-saving vertical construction of the CombiPrime V is one more benefit that serves well in the narrow spaced machine rooms.





General industrial duty

CombiPrime pumps can be used for skid-mounted fire-fighting units as well as in fresh water supply units in the field.



COMBIPRIME H



Features and *benefits*

PUMP CASING

- hydraulic performance meet EN 733 (DIN 24255)
- flange connections according to EN 1092-2 ND 10 (DIN 2532).
- replaceable wear ring
- smooth suction entry
- *large application area*
- *longer duty life*
- *better suction capabilities*

EXTERNAL PARTS

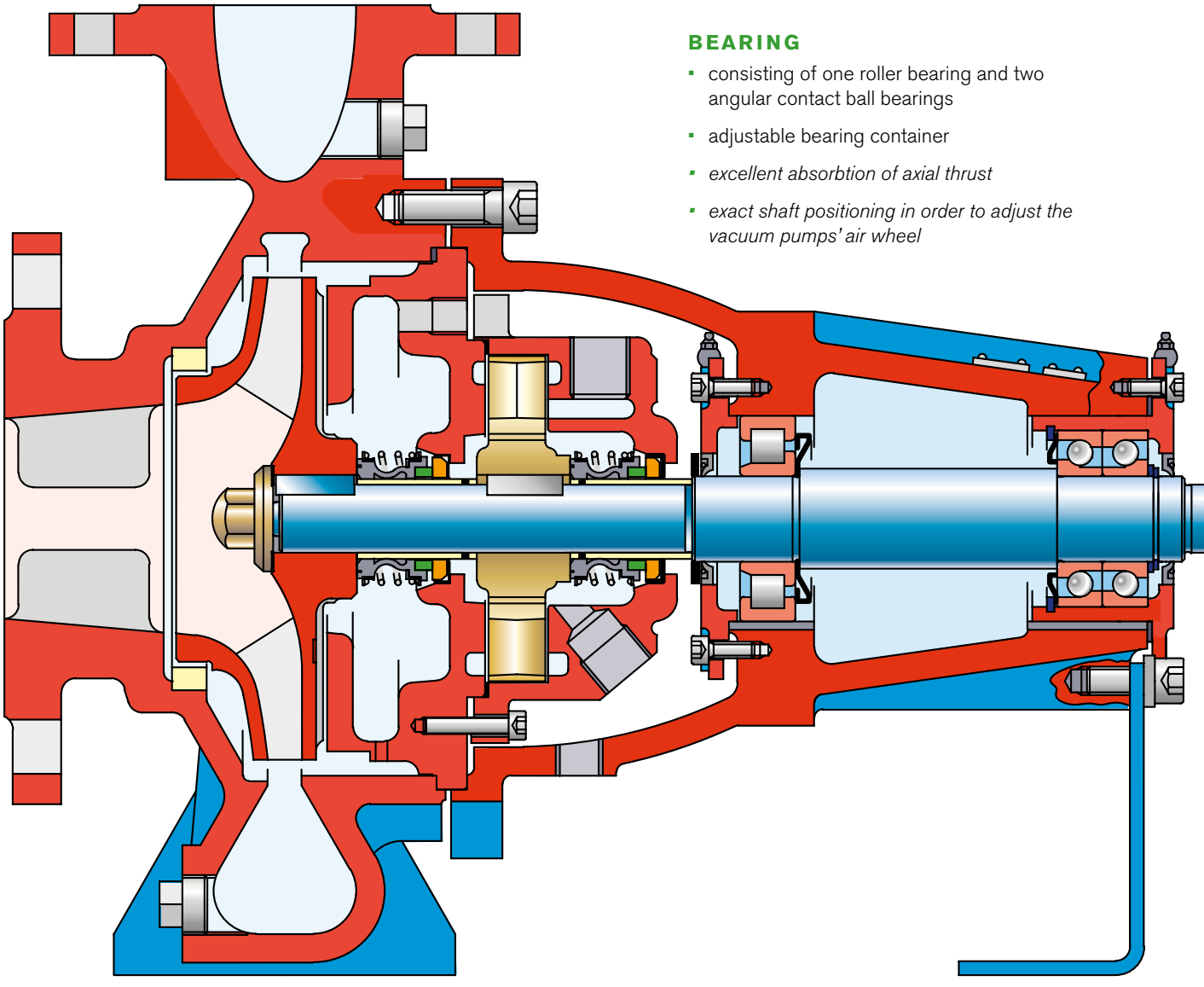
- all external parts connected with the self-priming stage of the pump are made of stainless steel
- *reliable operation in all circumstances*

IMPELLER

- closed impeller
- back vanes for hydraulic balancing
- impeller cap nut in bronze
- *better suction capabilities*
- *low axial forces resulting in extended bearing life*
- *reliable impeller locking*

BEARING

- consisting of one roller bearing and two angular contact ball bearings
- adjustable bearing container
- *excellent absorbtion of axial thrust*
- *exact shaft positioning in order to adjust the vacuum pumps' air wheel*



BEARINGS

- grease lubricated bearing construction
- roller bearing at pump end
- two paired angular contact ball bearings at drive end
- *adjustable in axial direction for adjustment self-priming wheel*
- *long bearing life time*

SHAFT SEALING

- mechanical seals with bellows according EN 12756 (DIN 24960), on shaft sleeves
- lip seals, running on shaft sleeves with hardened wear-resistant layers
- *standard EN(DIN) seal makes*
- *shaft sealing option for liquids containing abrasive particles*

VACUUM PUMP

- operates according to liquid ring principle
- externally connected to service liquid supply
- cover and air wheel in bronze
- *always ready for priming duty*
- *quick self-priming operation*
- *large application area*

PUMP SHAFT

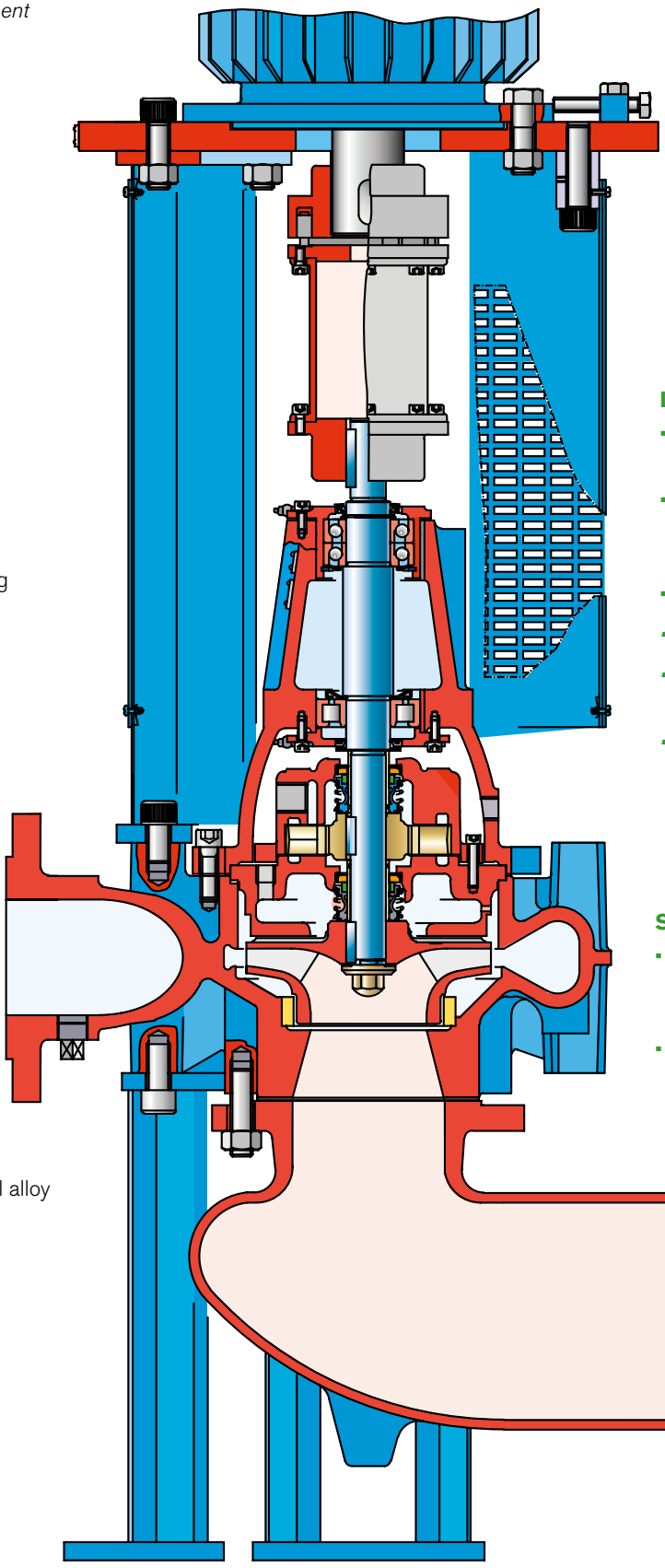
- stainless steel AISI 316 or steel alloy
- *adequate corrosion resistancy*

FOOT

- rigid steel profiles
- machined foot
- *sturdy, reliable construction*
- *exact positioning on base and in pipework*

COMBIPRIME V





LANTERN PIECE

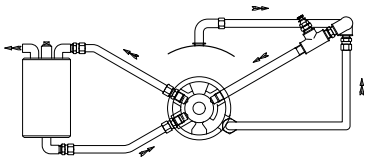
- steel profile elements
- Top Pull Out opening in customer specified position
- large openings
- *rigid construction*
- *always exactly aligned*
- *easy access for inspection and service*

SUCTION BEND

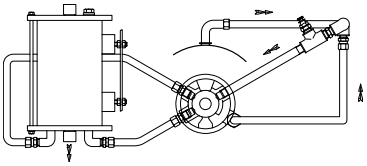
- Several positions for discharge-sution flange
- low NPSH profile

Built-in vacuum pump

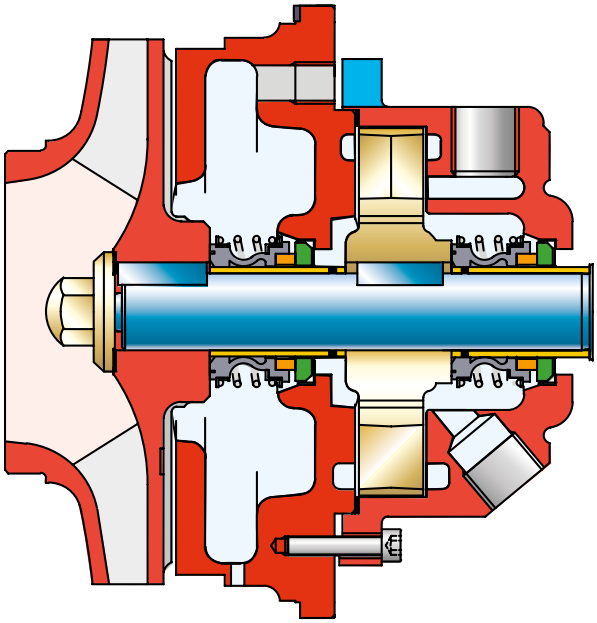
The built-in vacuum pump makes it possible to pump a liquid/air mixture or exclusively air during the suction phase. Vacuum and centrifugal pumps use the same drive mechanism, but they operate independently. This makes the CombiPrime extremely flexible, with regard to both application and installation. To maintain adequate operation of the vacuum pump a sufficient supply of service liquid to the vacuum pump is necessary. Excess service liquid is drained. There are 2 ways of doing this:



- a service liquid tank, where liquid and air are being separated and vented and drained outside the system

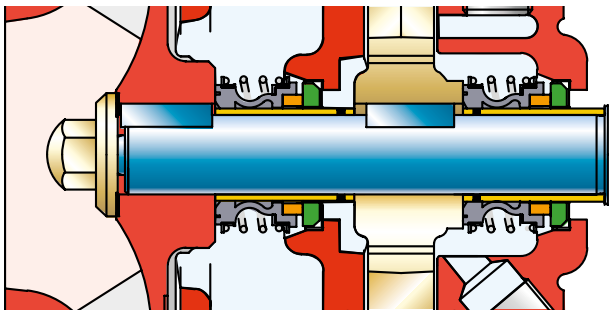


- a float de-aerating tank, where liquid and air are being separated. The excess liquid is being returned to the line system

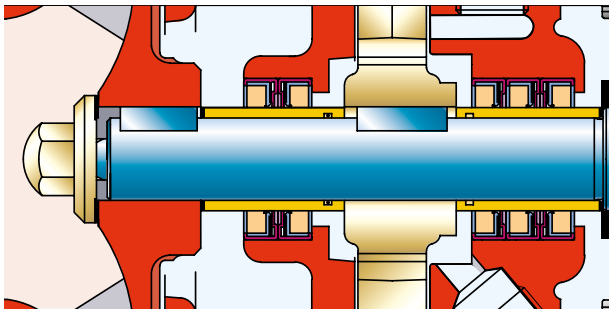


Shaft sealing

The CombiPrime can be provided with either 2 mechanical seals or 5 lip seal rings. They are mounted on shaft sleeves, which in case of a lip seal assembly are provided with a hardened wear layer.



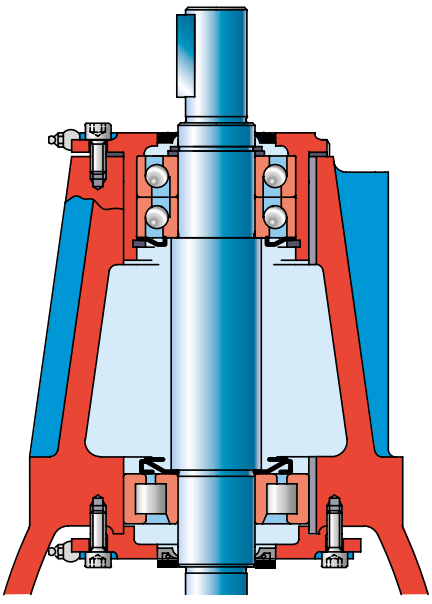
Mechanical seals



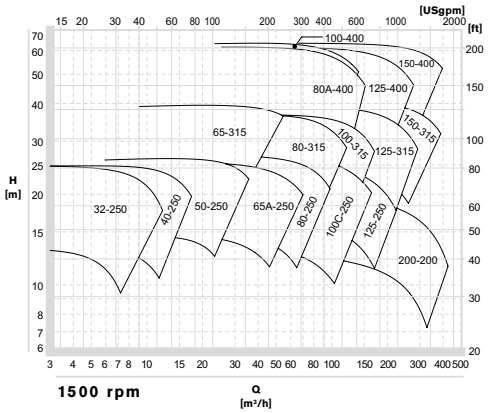
Lip seal rings

Bearing

The bearing of the CombiPrime consists of 2 angular contact ball bearings and a roller bearing. The bearing covers are provided with grease nipples for periodical post-greasening.

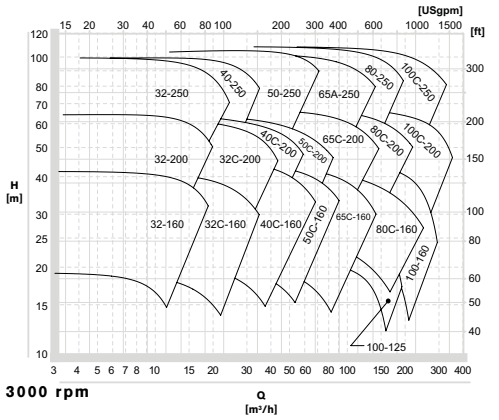


Pump performance



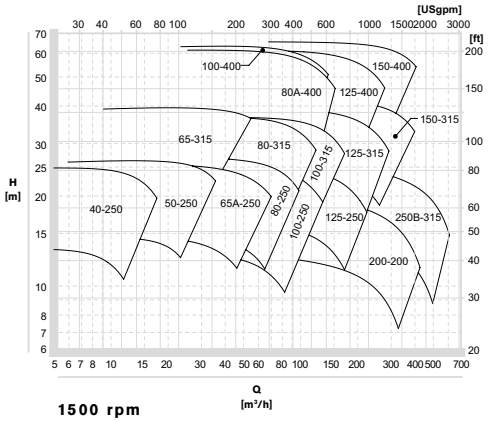
CH

1500 rpm



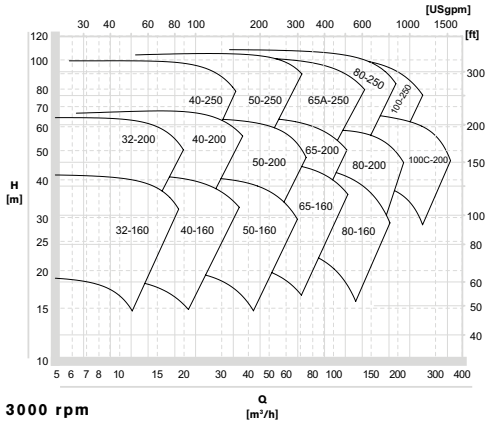
CH

3000 rpm



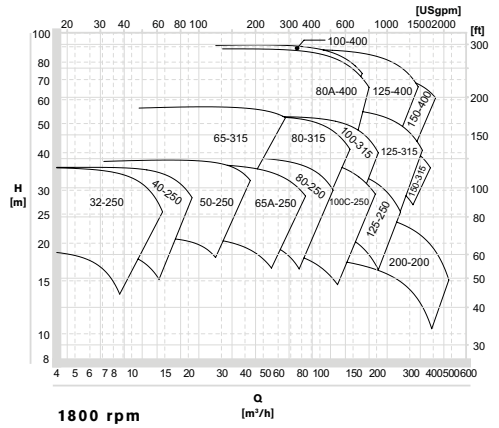
CV

1500 rpm



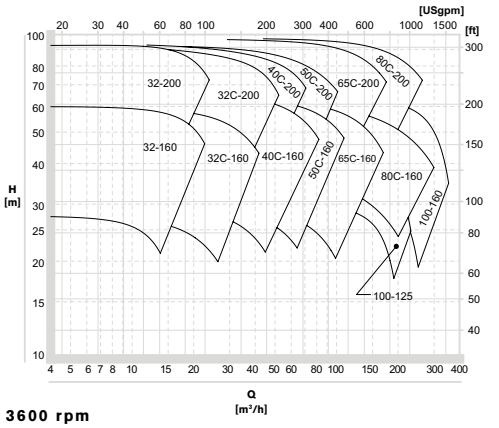
CV

3000 rpm



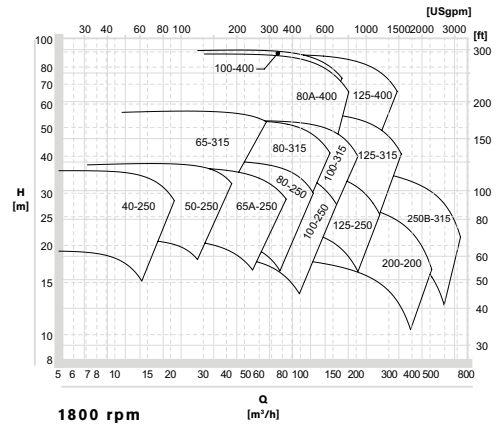
CH

1800 rpm



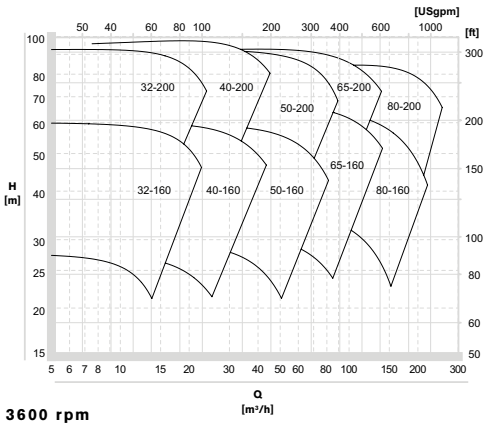
CH

3600 rpm



CV

1800 rpm



CV

3600 rpm

Subject to alterations

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Your local contact:

www.spxflow.com/en/johnson-pump/where-to-buy/

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