

# *CombiFlex*

*Vertical centrifugal pump*



# CombiFlex – Flexible space saving background worker

*The CombiFlex is a vertical single-stage centrifugal pump. The hydraulic field complies with EN 733 (DIN 24255). The space saving construction and the several positions of suction and pressure flange enable flexible mounting even in the smallest locations.*

The CombiFlex is a series of vertical centrifugal pumps, suitable for pumping thin, clean or slightly contaminated liquids.

Suction and pressure connections can be mounted in several positions. Together with its vertical build this results in an economic space-saving installation.

The CombiFlex is characterised by the compact build of the pump and by the flexible mounting.

The K1 and K3 versions, with spacer-coupling, have the benefit of the Top Pull Out-principle, whereas the K2 and K4 versions have a shorter construction with a standard coupling. Direct mounting to wall or floor is possible.

The availability of several materials and shaft sealings makes CombiFlex a versatile pump with a large application area.



## CombiFlex



### Pump characteristics

- Vertical space saving construction
- Several positions of suction and discharge flange
- Available in several materials
- High pump efficiency
- Suited for a wide span of duties
- Robust design
- Very rigid shaft construction
- Top Pull Out principle
- Easy maintenance

# Excellent performance. Modest space needed.

## ■ Shipbuilding

CombiFlex pumps can handle fresh water as well as sea water, both clean and slightly contaminated. Their space-saving vertical construction is a great benefit in narrow-dimensional machine rooms. Common applications on board ships are for example as a general duty pump.



## ■ General industry

CombiFlex pumps can be used for thin and clean liquids. The 8 possible suction bend positions and its in-line characteristics makes the CombiFlex an easy-to-connect, versatile pump.



# Features and *benefits*

## Lantern elements

- 6 or 8 rods for smaller types
- 3 profile steel elements for the largest types
- bearing group 4 has lanternpiece made of welded pipe and flange elements
- *opening left for mounting/ disassembling Top Pull Out-unit*

## Bearing

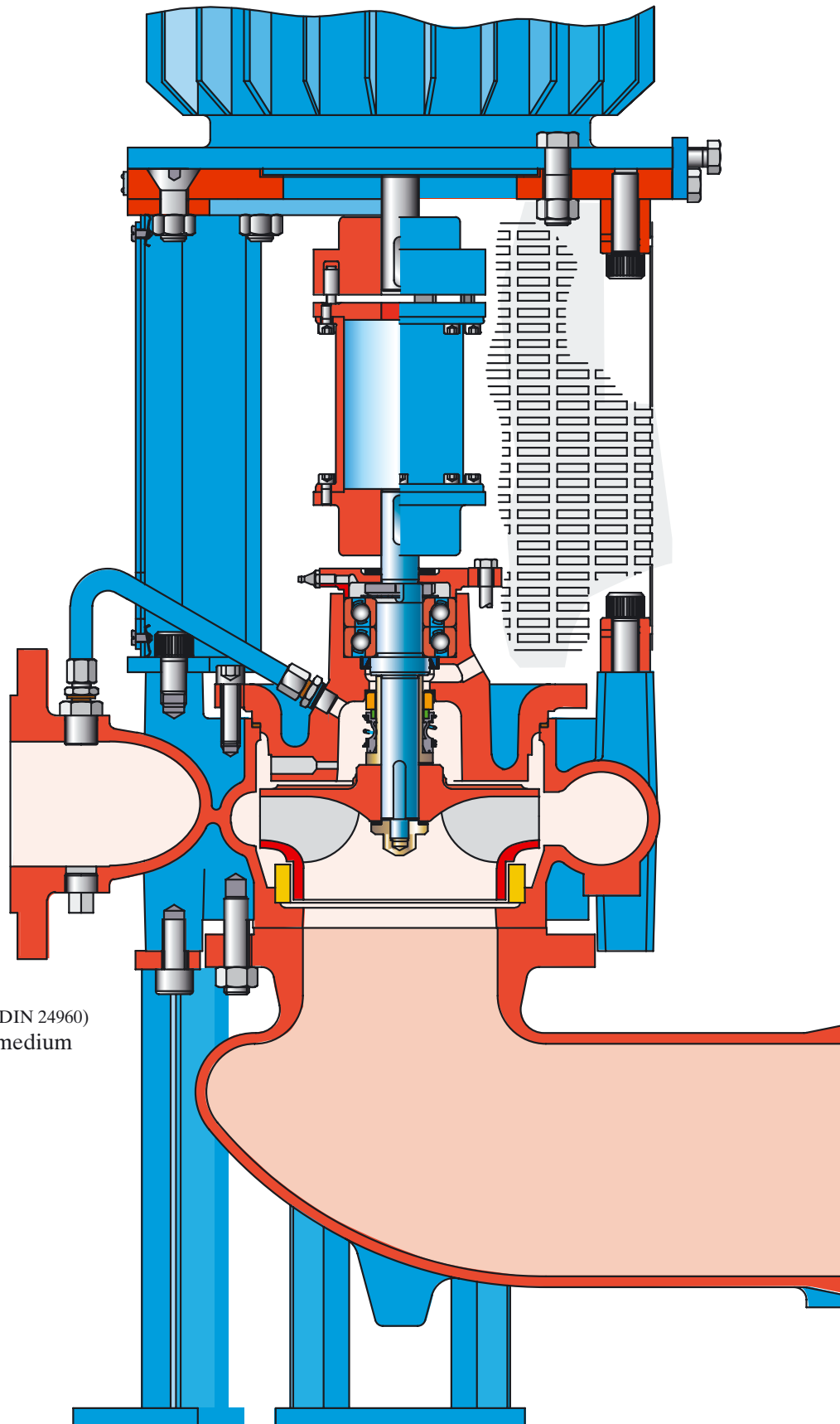
- 2 angular contact ball bearings in 'O'-arrangement
- axially fixed with shaft nut and retaining ring
- grease lubricated
- *proven arrangement for short shaft constructions*
- *reliable bearing fixation, easily replaceable*
- *re-greasing possible*

## Shaft sealing

- mechanical seal acc. to EN 12756 (DIN 24960)
- externally flushed by the pumped medium
- *standardised seal specifications*
- *longer seal life*

## Feet

- machined feet
- can be omitted for direct floor mounting
- 3 profiled steel supporting feet, bearing group 4 has supporting foot made of welded pipe and flange elements
- *exact positioning of pump*
- *several mounting possibilities*



### Motor mounting flange

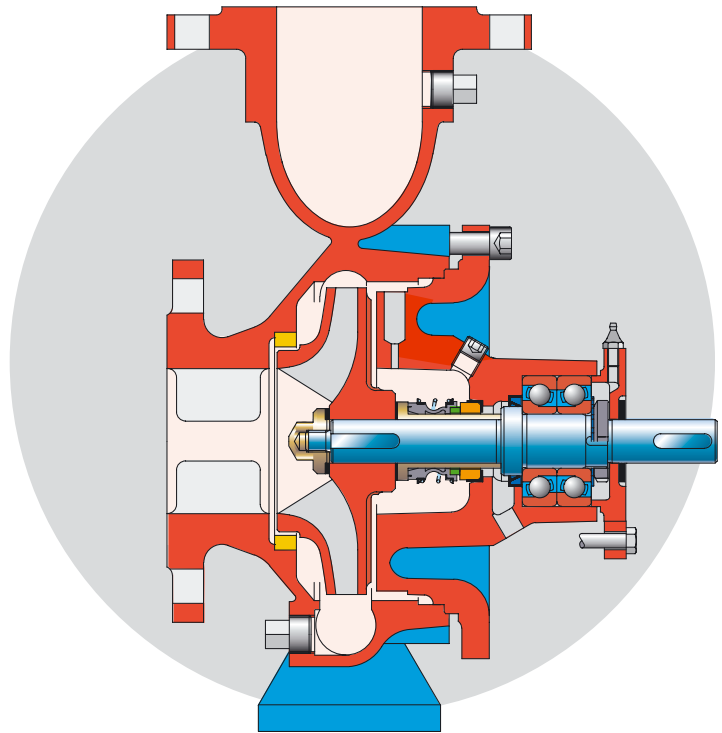
- adjusting device for exact positioning of motor flange
- thick machined flange with fitting rim
- *exact alignment of electric motor*
- *sturdy, all-machined construction*

### Coupling

- Versions K1 and K3 have 'spacer' coupling
- Versions K2 and K4 have standard coupling
- *spacer coupling enabling Top Pull Out-principle*
- *cost-effective solution*

### Coupling guard

- protective cover around the coupling
- protective elements between the lantern elements
- *covering the rotating parts*
- *covering all the internal parts*



## CombiPact

The basic module, consisting of pump cover, bearing and mechanical seal, is also available in a horizontal build. This compact, space-saving horizontal pump is called *CombiPact*.

### Suction bend

- 8 different mounting positions
- very flat design
- low flow resistance
- *flexible mounting*
- *space saving*
- *high pump efficiency*

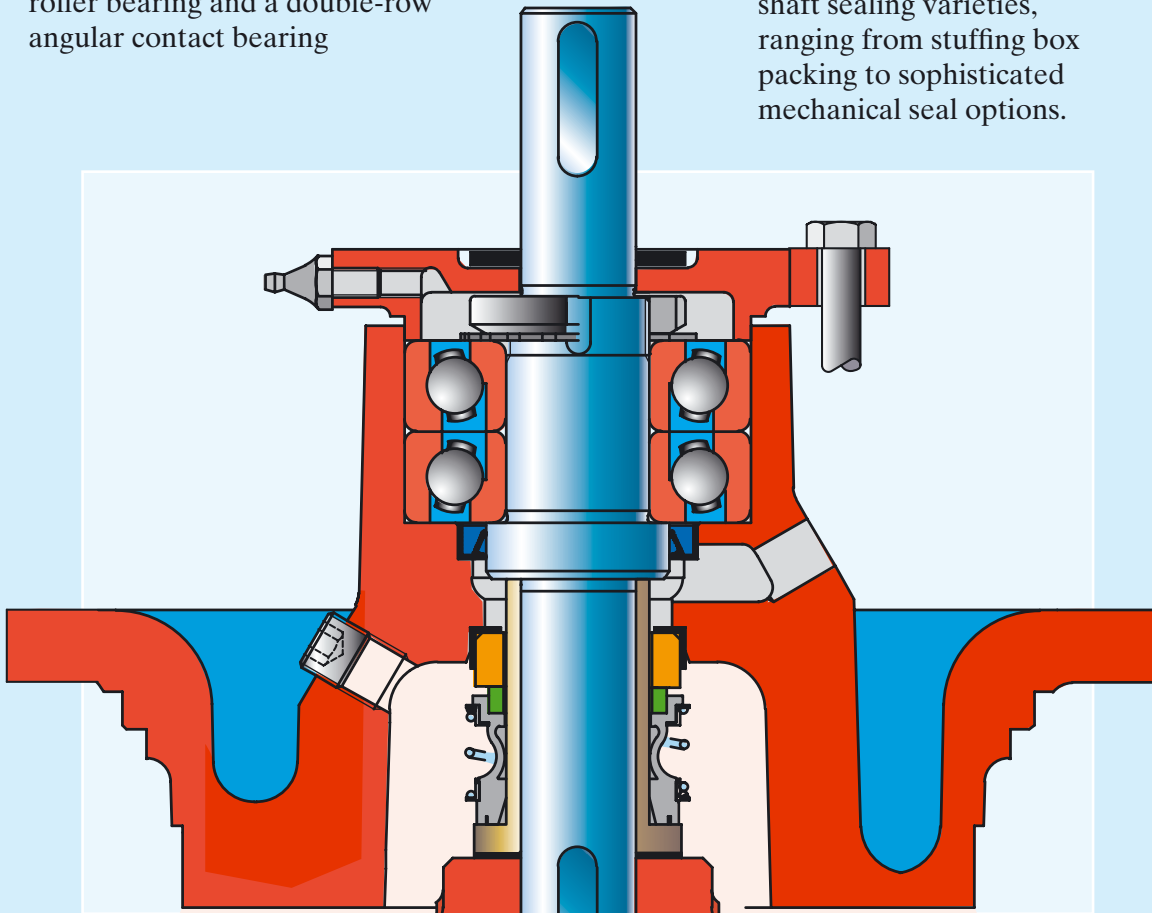


# Bearing

- The bearing of the CombiFlex consists of 2 angular contact ball bearings in an “O”-arrangement.
- Optionally, CombiFlex is also available with a bearing bracket with either 2 grease lubricated deep-groove ball bearings, or a roller bearing and a double-row angular contact bearing

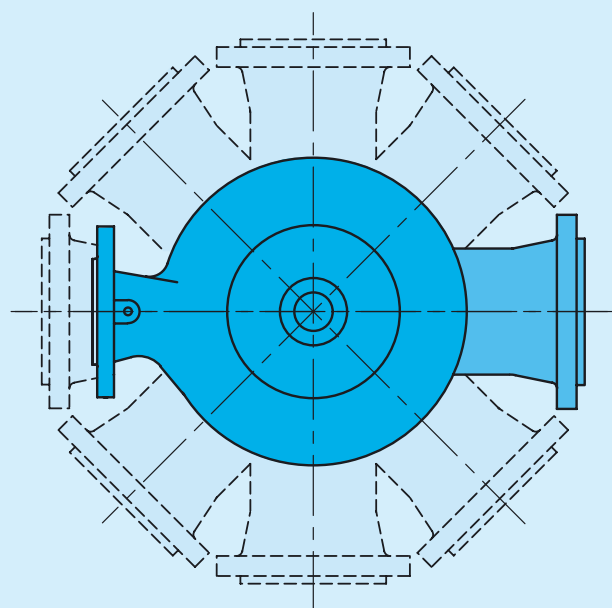
# Shaft sealing

- The CombiFlex is provided with a mechanical seal according to EN 12756 (DIN 24960), mounted on a bronze shaft sleeve.
- The version with bearing bracket has several possible shaft sealing varieties, ranging from stuffing box packing to sophisticated mechanical seal options.



# Suction bend

- The suction bend has a very flat construction which reduces the length of the pedestals for the pump casing. However, thanks to its special design it has a very low resistance. The suction bend can be mounted in 8 different positions in relation to the pressure connection.

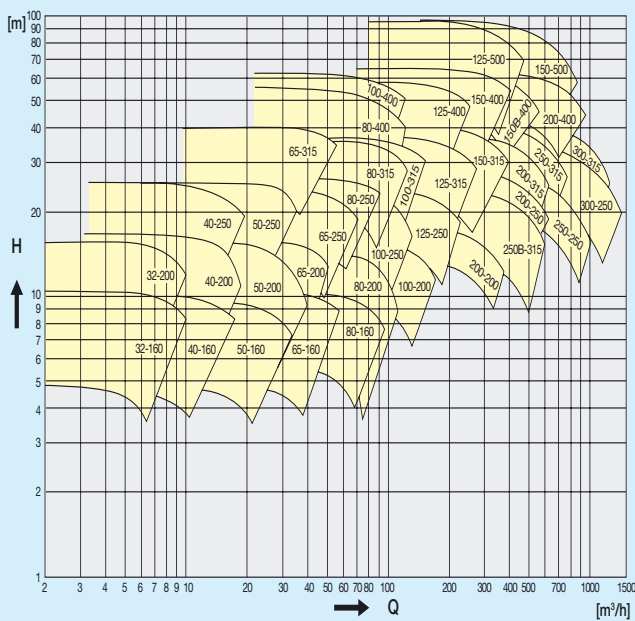


# Technical data

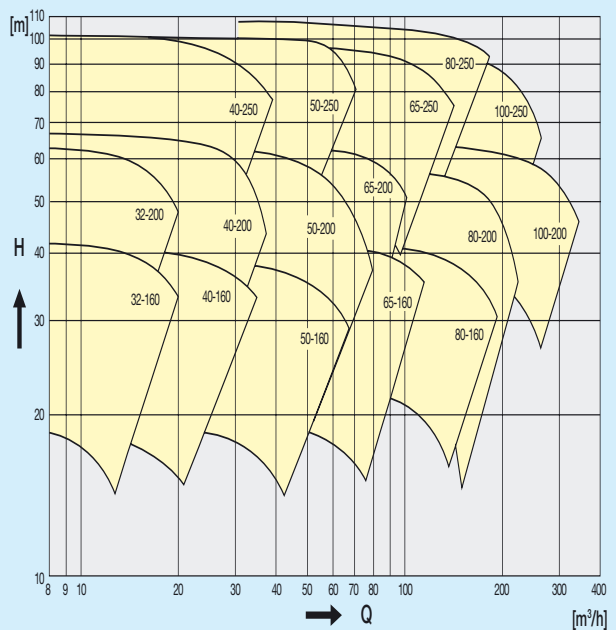
Max. capacity	1500 m <sup>3</sup> /h
Max. head	140 m
Max. working pressure	10 bar
Max. temperature	110 °C
Max. speed	3600 rpm

## Performance overview

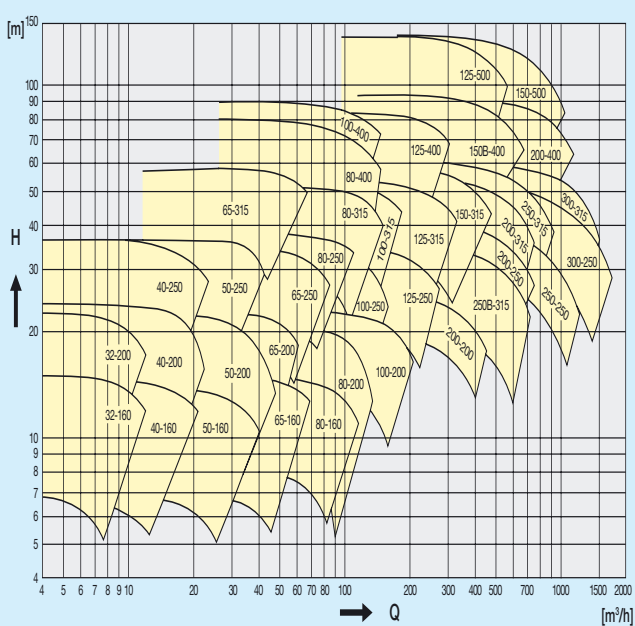
$n_{nom} = 1500 \text{ rpm}$



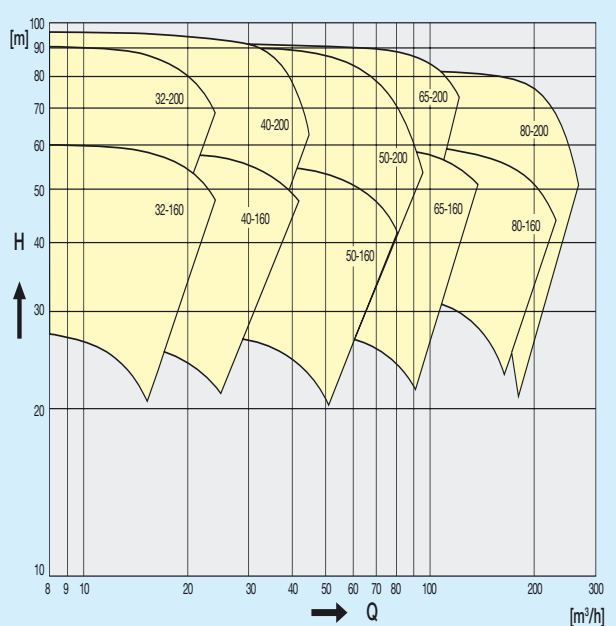
$n_{nom} = 3000 \text{ rpm}$



$n_{nom} = 1800 \text{ rpm}$



$n_{nom} = 3600 \text{ rpm}$





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