

Volute pumps

ZEN 31-125 ... 125- 250



TECHNICAL DATA

Output:	max. 600 m ³ /h
Delivery head:	max. 90 m
Speed:	max. 3600 rpm
Temperature:	max. 230 °C
Casing pressure:	PN 40
Shaft sealing:	standard mechanical seal uncooled
Flange Connection:	DIN 2501 PN 40
Sense of rotation:	clockwise, when seen from the drive on the pump



APPLICATION

The volute pumps of the series ZEN are part of the overall programme heat transfer and circulation pumps. They are primarily used for circulation of **hot water** in closed pipe and vessel systems.

Therefore their fields of applications are

- the energy production
- heat transport and
- the industry

and here mainly in systems where hot water as heat carrier is given preference, despite its high systems pressure, over oil as heat carrier.

BAUART

Horizontal, single-stage volute pumps to **DIN 24256 / EN 22858** in back pull out construction, with uncooled mechanical seal.

The series **ZEN** has especially been designed for the troublefree handling of hot water up to 230 °C and is distinguished by:

- A double heat barrier that cause an optimal energy consumption by the pump and reduces the temperature level in the mechanical seal chamber to less than 100 °C without external cooling circuit /see temperature curve on page 3). The service life of the mechanical seal increases considerably.
- A special design that automatically leads accumulation of gas to the exhaust. Consequently the dry operation of the mechanical seal can be excluded.
- A programme that comprehends 29 construction sizes and thus guarantees an optimal solution for every operating point.
- The back pull out construction that makes possible the disassembly of the complete bearing units towards the drive side without loosening the pump casing out of the pipe system. If a spacer coupling is used even the motor must not be loosened.

CONSTRUCTION

Casing pressure

max. 40 bar from	0 °C to 120 °C
max. 35 bar from	120 °C to 200 °C
max. 32 bar from	200 °C to 230 °C

Please note:

Casing pressure = inlet pressure + zero head
max. test pressure = 52 bar

Position of branches:

Suction branch axially, discharge branch radially pointing upwards.

Flanges:

The flanges correspond to DIN 25345/PN 40. Flange design to ANSI 300 is possible.

Hydraulic:

First hydraulic.	Code of this design: A/R·
Second hydraulic.	Code of this design: B

Bearing:

One grease-lubricated antifriction bearing to DIN 625 and one liquid-surrounded sleeve bearing:

Code of this design: ·A

One grease-lubricated, reinforced antifriction bearing to DIN 625 and one liquid-surrounded sleeve bearing.

Code of this design: ·S

Sense of rotation:

clockwise, when seen from the drive on the pump.

Shaft sealing:

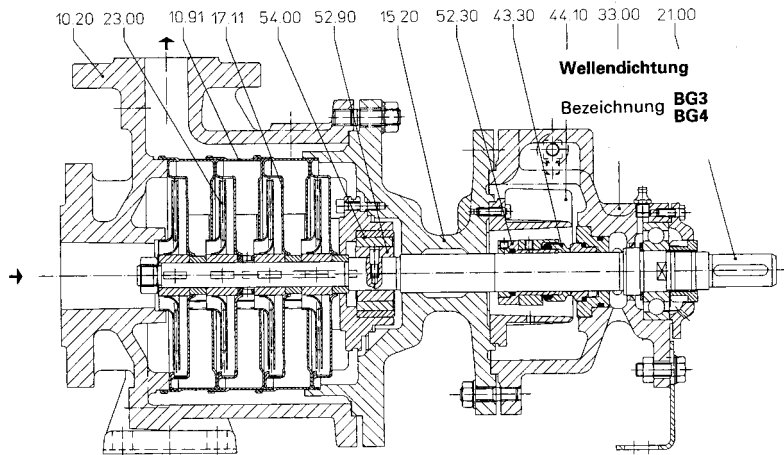
The shaft is sealed by an internally flushed, uncooled balanced mechanical seal.

Code BG3:	sliding material SiC/carbon for hot water without abrasive admixtures
CJ3	temperature range up to 230 °C
	pressure range up to 32 bar
Code BG4:	as BG3 but sliding material SiC/SiC for hot water without abrasive admixtures.

Other shaft seals upon request.

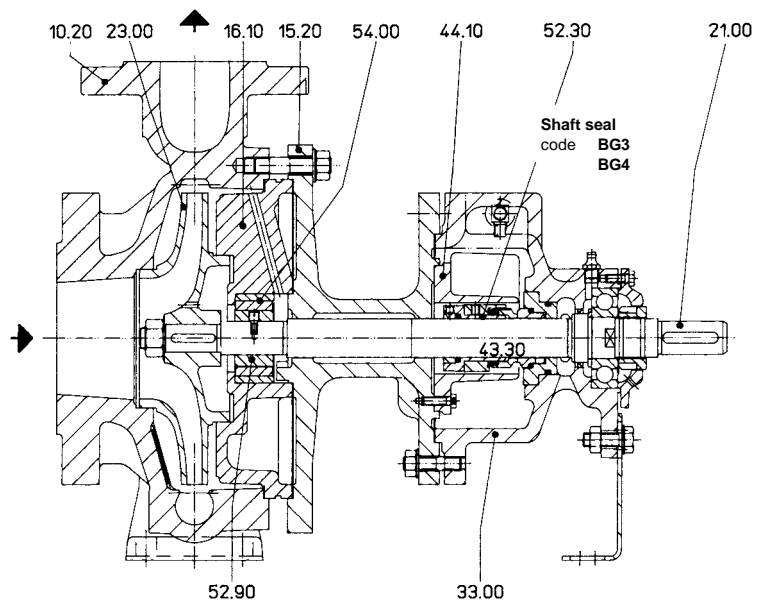
Sectional drawing and nomenclature

ZEN 31-125 ... 31-250



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- 10.20 volute casing
- 10.91, 17.11 intermediate plate
- 15.20 intermediate plate
- 16.10 casing cover
- 21.00 shaft
- 23.00 impeller
- 33.00 bearing bracket
- 43.30 shaft sealing
- 44.10 casing for mechanical seal
- 52.30 shaft sleeve
- 52.90, 5400 sleeve bearing

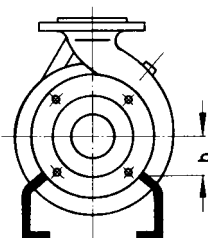
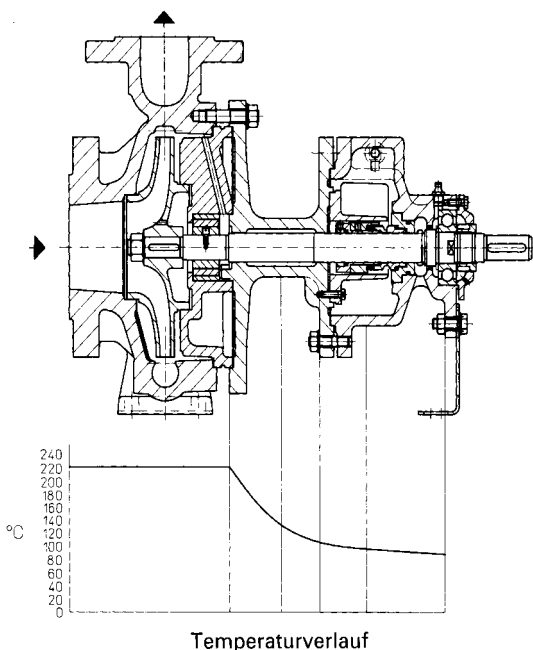


Heat barrier / shaft seal / bearing / feet arrangement

Heat transfer plants have reached a high technical standard. Consequently, then demands on the pumps for handling heat carriers have increased regarding operating reliability, environmental protection, maintenance and operating costs. On the basis of many years' of experience and latest technical know-how the ZEN fully meets these demands. Special attention was paid to the above technical details.

A favourable reduction in temperature is obtained towards the drive side by fitting a double acting heat barrier between the casing and the shaft seal housing. See illustration.

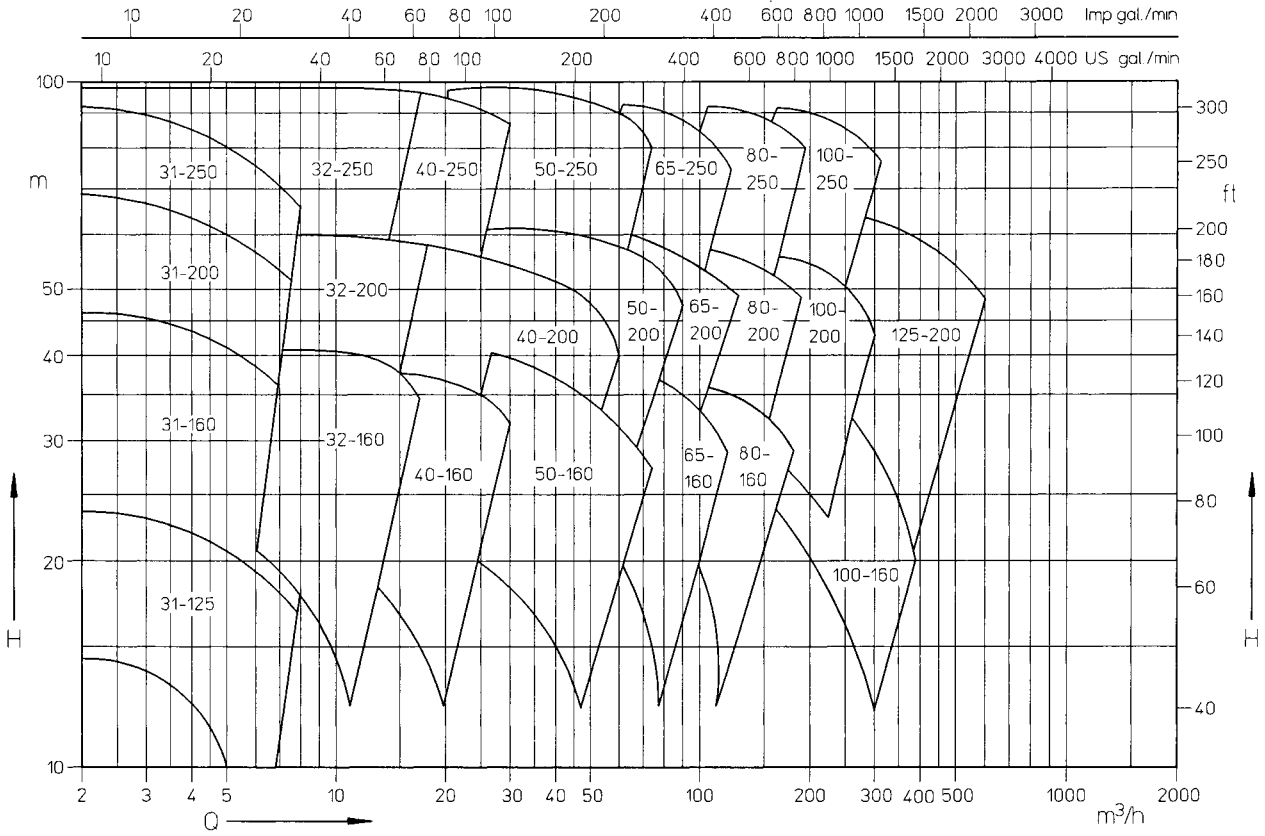
Product-side heat losses are effectively prevented (energy saving). The temperature reduction makes it possible to use safely an **uncooled** mechanical seal up to a pumping temperature of **230 °C**.



By special constructional shaping of the pump feet, displacements caused by thermal expansion are prevented to a great extent. For the vertical displacement only the measure *h* is decisive, since the rest of the foot remains cold. The horizontal expansion is taken up by the elastic foot bracing's.

Performance graph

**50 Hz
n = 2900 rpm**



Performance graph

**50 Hz
n = 1450 rpm**

