

# SIHI<sup>SuperNova</sup> – Modular Industrial Pumps



STERLING FLUID SYSTEMS GROUP www.sterlingfluidsystems.com



### **MODULAR PUMPS - SERVING INDUSTRY**

The SIHI SuperNova range of pumps has been developed in response to customer requirements for pumps that meet EN 733/DIN 24255 and ISO 9908. Some designs meet EN 22858/DIN 24256. They are available in a number of different materials and are suitable for a wide range of industrial applications, offering high reliability, high efficiency, low NPSH, resulting in low operating costs.

The SuperNova range is based upon Sterling's proven and well respected range of industrial centrifugal pumps which operate in thousands of locations around the world. SuperNova combines the best features of these pumps whilst offering significant improvements in modularity, interchangeability, reliability and ease of maintenance.

PERFORMANCE RANGE			
Capacity:	max. 1800 m <sup>3</sup> /h		
Head:	max. 140 m		
Speed:	max. 3600 rpm		
Casing pressures:	max. 40 bar		
Temperatures:	max. + 400 °C		
Temperatures:	min 40 °C		



#### **APPLICABLE INDUSTRIES**

- Chemical
- Pharmaceutical
- Heating and Air conditioning 
   Waste Water
- Food and Beverage
- Paint
- Plastic and Rubber
- Paper and Pulp
- Textile
- Marine

Drainage

Building

- - Water supply
  - Irrigation
  - Iron, Steel and Non-Ferrous Metals
  - Manufacture of Machinery and Automobiles
  - and many more

MATERIAL RANGE	PRESSURISED WETTED PARTS	IMPELLERS
General purpose pumps		
ZLN	fine grain cast iron, stainless steel	fine grain cast iron, stainless steel and bronze
ZLK & ZLI	fine grain cast iron, stainless steel, bronze	materials are available throughout the
Hot water pumps		Superivova pump range
ZHN & ZDN & ZLI	S&G cast iron	
ZEN	S&G cast iron, cast steel	
Thermal oil pumps		
ZTN & ZTK & ZTI	S&G cast iron	





In addition to the SIHI SuperNova industrial pump range, Sterling also offers SIHI ISOchem

This is a modular pump range designed for the most demanding applications in the chemical and related industries.

This additional range of horizontal volute casing pumps has been designed to comply with ISO 2858/EN 22858 and ISO 5199

# SIHI SuperNova The Modular Industrial Pump Range



#### THE SOLUTION FOR INDUSTRIAL APPLICATIONS

Pumps also available in 60 Hz

Industrial pumps of the **SIHI**<sup>SuperNova</sup> range are single-stage volute and double volute casing pumps with dimensions to EN 733/DIN 24255 and designs that meet the technical requirements of ISO 9908 and ISO 5199/EN 25199. Some designs meet EN 22858/DIN 24256. This modular industrial pump consists of 50 hydraulic sizes with closed impellers up to a transnorm size of 300 – 500.

Due to the modular design of the **SIHI**<sup>SuperNova</sup>, it can be built in a bare shaft, close-coupled or in-line configuration with numerous shaft sealing options including packed glands, mechanical seals and magnetic couplings.

FEATURE	BENEFIT		
<ul> <li>Modular design</li> </ul>	Low inventories, short delivery times		
Shaft deflection complies with ISO 5199	<ul> <li>Higher mean time between failure and extended pump life</li> </ul>		
<ul> <li>High efficiency</li> </ul>	Reduced power consumption		
Low NPSH	Reduced installation costs		
Interchangeable components	Ease of maintenance		
<ul> <li>Global service network</li> </ul>	Local and rapid support		
<ul> <li>SuperNova family</li> </ul>	Ease of sourcing/wide range of applications		
<ul> <li>Complies with "ATEX" legislation</li> </ul>	<ul> <li>Suitable for explosive atmospheres</li> </ul>		

# SIHI SuperNova



# Horizontal volute casing pumps according to EN 733/DIN 24255

#### General purpose pumps



#### ZLN

bare shaft design with a mechanical seal or gland packing. For water  $t_{max} = 120$  °C. Maximum  $t_{max} = 170$  °C.



**ZLK** *(mechanical seal)* close-coupled design with a mechanical seal.  $t_{max} = 120$  °C.



**ZLK** (magnetic drive) close-coupled design with a magnetic drive.  $t_{max} = 300$  °C.



**ZHN** bare shaft design with an uncooled mechanical seal,  $t_{max} = 180$  °C.



**ZDN** bare shaft design with an uncooled mechanical seal,  $t_{max} = 185$  °C. Connections to EN 22858/DIN 24256.



#### ZEN

bare shaft design with an uncooled mechanical seal,  $t_{max} = 230$  °C. Main dimensions to EN 22858/DIN 24256.

#### Thermal oil pumps

Hot water pumps



ZTN

bare shaft design with an uncooled mechanical seal or lip seals,  $t_{max} = 350$  °C.



**ZTK** *(mechanical seal)* close-coupled design with an air cooled mechanical seal,  $t_{max} = 350$  °C.



**ZTK** *(magnetic drive)* close-coupled design with an uncooled magnetic drive, t<sub>max</sub> = 400 °C.

# Modular Industrial Pump Range



# In-line volute casing pumps based on EN 733/DIN 24255

#### General purpose pumps



**ZLI** *(mechanical seal)* close-coupled design with a mechanical seal.  $t_{max} = 120$  °C.



**ZLI** (magnetic drive) close-coupled design with a magnetic drive.  $t_{max} = 300$  °C.

#### Hot water pumps



**ZLI** *(uncooled mechanical seal)* close-coupled design with an uncooled mechanical seal.  $t_{max} = 150$  °C.

#### Thermal oil pumps



**ZTI** *(mech./lip seals)* close-coupled design with an air cooled mechanical seal or lip seals.  $t_{max} = 350$  °C.



**ZLI** (magnetic drive) close-coupled design with an uncooled magnetic drive.  $t_{max} = 300$  °C.

# General purpose pumps



Horizontal volute casing pumps according to EN 733/DIN 24255



#### ZLN

bare shaft design with gland packing or a mechanical seal, with optional quench, heating and external flushing.

**ZLK** *(mechanical seal)* close-coupled design with a mechanical seal.

#### **ZLK** *(magnetic drive)* close-coupled design with a magnetic drive.



In-line volute casing pumps with SuperNova hydraulics



**ZLI** *(mechanical seal)* close-coupled design with a mechanical seal.

**ZLI** *(magnetic drive)* close-coupled design with a magnetic drive.

REF	GENERAL PURPOSE PUMPS	CAPACITY (maximum)	HEAD (maximum)	SPEED (maximum)	TEMPERATURE (maximum)	CASING PRESSURE
1	ZLN	1800 m³/h	140 m	3600 rpm	170 °C	PN 16
2	ZLK Mech. seal	740 m³/h	90 m	3600 rpm	120 °C	PN 16
3	ZLK Mag. drive	600 m³/h	90 m	3600 rpm	300 °C	PN 16
4	ZLI Mech. seal	280 m³/h	60 m	3600 rpm	120 °C	PN 16
5	ZLI Mag. drive	280 m³/h	60 m	3000 rpm	300 °C	PN 16

#### **DESIGN FEATURES**

This extensive range of standard pumps has been developed to handle liquids with temperatures of up to  $300 \,^{\circ}$ C.

The range includes horizontal and inline volute casing pumps.

The close coupled and bare shaft designs are available in a range of materials and a variety of shaft seals with different options.



#### BENEFITS

- High level of pumping efficiency and reliability
- Extended MTBF (meantime between failure) due to reduced shaft deflection, oversized ball bearings and long life shaft sealing
- The variety of materials and shaft seal options permits pumping of a wide range of liquids
- Modular design results in reduced spare parts inventory



# Hot water pumps



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### Horizontal volute casing pumps according to EN 733/DIN 24255 or EN 22858/DIN 24256





# EN 733/DIN 24255. ZDN

bare shaft design with uncooled mechanical seal. Connections to EN 22858/DIN 24256.

bare shaft design with

uncooled mechanical seal. Main dimensions to

#### ZEN

ZHN

bare shaft design with uncooled standard mechanical seal. Main dimensions to EN 22858/DIN 24256.



### In-line volute casing pumps with SuperNova hydraulics



**ZLI** close-coupled design with uncooled mechanical seal.

REF	HOT WATER PUMPS	CAPACITY (maximum)	HEAD (maximum)	SPEED (maximum)	TEMPERATURE (maximum)	CASING PRESSURE
1	ZHN	200 m³/h	60 m	3600 rpm	180 °C	PN 16
2	ZDN	200 m³/h	60 m	3600 rpm	185 °C	PN 25
3	ZEN	600 m <sup>3</sup> /h	90 m	3600 rpm	230 °C	PN 40
4	ZLI	140 m³/h	60 m	3600 rpm	150 °C	PN 25

#### **DESIGN FEATURES**

This extensive range of pumps has been developed to handle hot water temperatures of up to 230  $^{\circ}$ C.

A unique feature of this pump range is its ability to handle hot water without external cooling. This is due to the mechanical seal being placed at the cold end/drive end of the pump. As external cooling is not required, installation and operating costs are minimised. The range includes horizontal and inline volute casing pumps.

The close coupled and bare shaft designs are equipped with a mechanical seal.



#### BENEFITS

- Overall installation costs minimised
- Low energy losses since no cooling system is required
- High reliability and extended MTBF (mean time between failure)
- Extended mechanical seal life due to low temperatures at the seal and vapour/gas free operation



# Thermal oil pumps



Horizontal volute casing pumps according to EN 733/DIN 24255



ZTN

bare shaft design with an uncooled mechanical seal or radial lip seal rings.

#### ZTK (mech./lip seals)

close-coupled design with an air cooled mechanical seal or radial lip seal rings.

#### ZTK (magnetic drive)

close-coupled design with an uncooled magnetic drive.



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In-line volute casing pumps with SuperNova hydraulics



**ZTI** (mech./lip seals) close-coupled design with an air cooled mechanical seal or radial lip seal rings.

**ZLI** *(magnetic drive)* close-coupled design with an uncooled magnetic drive.

REF	THERMAL OIL PUMPS	CAPACITY (maximum)	HEAD (maximum)	SPEED (maximum)	TEMPERATURE (maximum)	CASING PRESSURE
1	ZTN	1000 m³/h	90 m	3600 rpm	$350~^\circ\mathrm{C}$ uncooled	PN 16
2	ZTK Mech. seal	200 m³/h	60 m	3600 rpm	$350~^\circ\mathrm{C}$ uncooled	PN 16
3	ZTK Mag. drive	600 m³/h	90 m	3600 rpm	$400~^\circ\mathrm{C}$ uncooled	PN 25
4	ZTI Mech. seal	200 m³/h	60 m	3600 rpm	$350~^\circ\mathrm{C}$ uncooled	PN 16
5	ZLI Mag. drive	280 m³/h	60 m	3000 rpm	$300~^\circ\mathrm{C}$ uncooled	PN 16

#### **DESIGN FEATURES**

This extensive range of thermal oil pumps has been developed to handle oils with temperatures of up to 400  $^{\rm o}\text{C}.$ 

Demands for operational safety, environmental protection and reduced life cycle costs have been addressed in these designs.

A unique feature of this pump range is its ability to operate without external cooling.

The range includes horizontal and inline volute casing pumps.

The close coupled and bare shaft designs are available with lipseal rings, mechanical seals and magnetic couplings.



#### BENEFITS

- Minimum temperature at shaft sealing
- Coupling alignment is not affected by thermal expansion of the pump
- Overall installation costs minimised
- Simple repair through exchange of sealing cartridges
- Low energy losses since no cooling is required
- The highest level of safety requirements are integrated into this unique pump design



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