



COMMERCIAL MARINE



CRUISE VESSELS CONTAINER VESSELS BULK CARRIER VESSELS OIL TANKERS OFFSHORE SUPPLY VESSELS PLATFORMS/RIGS SPECIALIZED VESSELS

EXCELLENCE IN FLOW CONTROL

Whether on the open seas or in the shipyard, you need confidence in the reliability of your ship's pumps and fluid-handling systems. CIRCOR delivers to meet your needs, bringing more than 70 years of experience and expertise in commercial marine, along with unmatched insight into the industry's ever-changing compliance and regulatory demands. You can count on the CIRCOR brands you know and trust – Allweiler®, Houttuin™, Imo® – to provide a wide range of solutions and support that help control costs, while keeping your fleet and business operating at peak performance.

APPLICATION OVERVIEW

PRODUCTS AND SYSTEMS YOU CAN RELY ON FROM START TO FINISH

Ship owners and operators face a distinct set of fluid-handling challenges, which CIRCOR meets straight-on with solutions designed and built for the specific needs of the **ENGINE ROOM, CONTROL ROOM, BOILER ROOM, DECK and CARGO SPACE**. Innovative and time-tested for precision performance, our pumps, systems and solutions for these applications withstand any number of rigors, from high-flow speeds and seawater seepage to unique needs for submersible design or handling bitumen and asphalt. Whatever the application requirement, CIRCOR focuses on supporting effectiveness and reliability in your operations, reducing energy use, maintenance requirements, labor costs, replacements, time in port and increasing the life of your pumps and solutions.

THREE-SCREW PUMPS

Simple design with only three rotating parts, pulse-free flow with extremely low vibration and noise levels and high-pressure boost capabilities even when handling low-viscosity fluids.

ENGINE ROOM CARGO SPACE DECK MACHINERY BOILER ROOM

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TWO-SCREW PUMPS

Versatile self-priming horizontal and vertical screw pumps with tremendous product viscosity range for lubricating and non-lubricating liquids.

ENGINE ROOM CARGO SPACE

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CENTRIFUGAL PUMPS

Custom designed to specific application requirements with a wide range of low viscosity aggressive and non-aggressive fluids and dynamically balanced impeller to reduce vibration.

ENGINE ROOM CARGO SPACE DECK MACHINERY BOILER ROOM

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PROGRESSING CAVITY PUMPS

Simple and economical pump design requiring only one shaft seal, able to handle fluids contaminated with large percentages of abrasive solids.

ENGINE ROOM CARGO SPACE

Page 17

PROPELLER PUMPS

Space-saving inline pump design for shipbuilding applications with large flow rates, delivery heads up to 20 meters, integrated motor and reversible flow direction.

ENGINE ROOM CARGO SPACE

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SIDE CHANNEL PUMPS

Side channel designs fill the hydraulic performance void between positive displacement pumps and centrifugal pumps.

DECK MACHINERY BOILER ROOM

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THE CM-1000 SERIES

CIRCOR is ready to help those tasked with reducing cost while maintaining peak performance. The CM-1000 Series intelligent controller exclusively leverages variable speed operation, condition and operation monitoring and Active Valve Control to enhance the overall reliability of your sea water cooling system.

ENGINE ROOM CONTROL ROOM

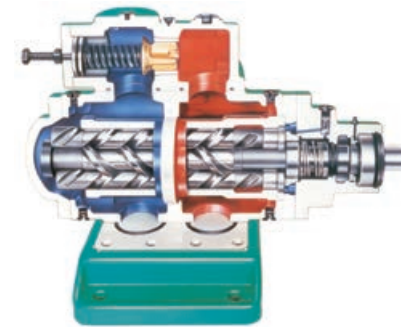
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ALLWEILER

THREE-SCREW PUMPS

SN Series for applications up to 100 bar



PERFORMANCE DATA

Delivery:	up to 5,300 l/min
Discharge pressure:	< 64 bar
Viscosity:	2 to 5,000 mm ² /s
Fluid temperature:	max 150°C

Main Applications

Pumping of heavy and diesel oil, circulation of lubricating and hydraulic oils.

Design

The SN series is a three-screw, self-priming screw pump with hardened and ground spindles that rotate in a replaceable casing insert. The idler screws are hydraulically driven and axial thrust is fully compensated hydrostatically. A groove ball bearing lubricated with the pumped liquid or an external grease lubricated groove ball bearing holds the drive screw in place. The shaft is sealed with either shaft seal rings or mechanical seals. A return pipe connects the seal chamber with the suction chamber. As a result, regardless of the current discharge pressure, only the suction/inlet pressure will affect the shaft seal.

THREE-SCREW PUMPS

The ALLWEILER® and IMO® three-screw pumps are rotary, self-priming positive displacement pumps. The pumping elements consist of three moving parts: the power rotor (main screw) and two symmetrically opposed idler rotors, all operating within close fitting housing bores. The incoming process fluid is conveyed by the rotating power rotor by means of the cavity formed with the intermeshing idler rotors.

From suction to discharge, the fluid is transferred by means of a series of constantly forming and re-forming chambers until it reaches the casing outlet. Symmetrical pressure loading on the power rotor eliminates the need for radial bearings to absorb radial forces. The idler rotors generate a hydrodynamic film which provides radial support similar to journal bearings. Axial loads on the power rotor and idler rotors, created by differential pressure, are hydrostatically balanced. By this design arrangement, high differential pressures can be managed.

Strengths of the technology

- High pressure boost capabilities even when handling low viscosity fluids
- Pump with one of the highest overall efficiencies when aligned with only three rotating parts
- Pulse-free flow with extremely low vibration and noise levels
- Fullfills ISO 2005:8217 and EU-2005/33/EC, e.g. compatible for ECA areas

ALLFUEL AFM-T, AFM-F AND AFM for applications up to 40 bar



PERFORMANCE DATA

Capacity:	< 110 m ³ /h
Discharge pressure:	< 40 bar
Viscosity:	1.0 - 760 mm ² /s
Fluid temperature:	150°C max

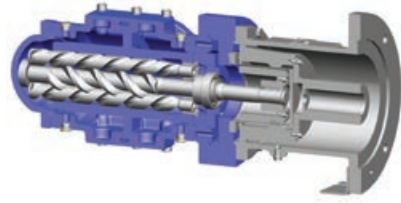
Main Applications

Cargo pump, crosshead lube-oil pump, cylinder oil transfer pump, fuel pump (light/heavy oil, diesel oil), heavy oil feeder pump for separator, heavy oil preliminary pressure pump, hydraulic pump, lube oil circulation pump, stern tube lube-oil pump, winch pump.

Design

Self-priming three-screw pump with one driving spindle and two idler spindles acting as rotating element for handling of chemically neutral and lubricating liquids up to 40 bar. Compact single or twin units, with mechanical seal or magnetic coupling. The thread flanks are virtually free of loads and are not subject to wear. The pumped liquid lubricates all sliding parts and can be categorized as full fluid friction. Main fields of application are oil-fired systems, tank systems and as lube-oil pumps in virtually all areas of industry. They are also used to generate pressure in oil hydraulic systems of all types.

SN-M series



Main Applications

Fuel/diesel oil/lube oil feed (light and heavy oil), hydraulics. Circulation of lubricating and hydraulic oils.

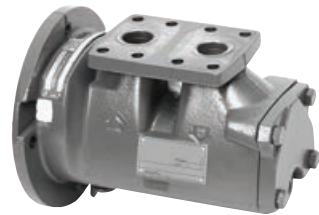
Design

SN Magdrive is an internal-bearing, triple-screw, self-priming, sealless screw pump with magnetic coupling. The magnetic coupling's containment hermetically seals the pump. Hardened and polished screws run inside an exchangeable casing insert. Idler screws are hydraulically driven and axial thrust is fully balanced hydrostatically. A liquid-lubricated groove ball bearing fixes the drive screw in place. The pump's magnetic coupling and suction chamber are connected to each other via a return bore.

PERFORMANCE DATA

Delivery:	< 3,500 l/min
Discharge pressure:	< 64 bar
Viscosity:	2 to 2,000 mm ² /s
Fluid temperature:	max 250°C

TRILUB



Main Applications

Pumping of heavy and diesel oil, circulation of lubricating and hydraulic oils.

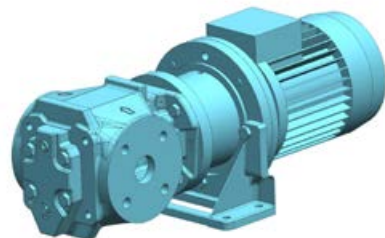
Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. The pump may be mounted horizontally or vertically. For pumps with capacity above 11 m³/h, the design is of inline DIN type, e.g., inlet and outlet on opposite sides. The pump is equipped with an internal relief valve and for capacity higher than 60 m³/h, there is an adjustable tuning valve to avoid cavitation.

PERFORMANCE DATA

Delivery:	11 to 7,500 l/min
Discharge pressure:	< 16 bar
Viscosity:	2 to 1,500 mm ² /s
Fluid temperature:	-20 to 155°C

Imo pump series LPE Standard Line



Main Applications

LO circulation pump, stern tube LO pump, LO purifier feed pump, HFO/MDO preliminary pressure pump, HFO/MDO circulation pump, HFO/MDO feeder pump for separator.

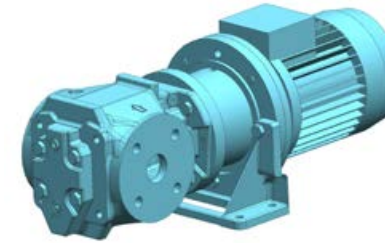
Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. By the angle bracket, the pump may be mounted horizontally or vertically. The design is of inline DIN type, e.g., inlet and outlet on opposite sides. The pump is equipped with an internal relief valve.

PERFORMANCE DATA

Capacity:	0,6 - 10,8 m ³ /h
Discharge pressure:	16 bar
Viscosity:	1.4 - 3,500 mm ² /s
Fluid temperature:	155°C

Imo pump series LPE OptiLine



Main Applications

HFO/MDO preliminary pressure pump, HFO/MDO circulation pump, HFO/MDO feeder pump for separator.

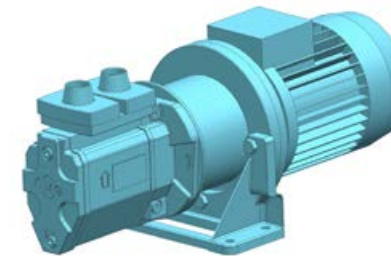
Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a magnet coupling. By the angle bracket, the pump may be mounted horizontally or vertically. The design is of inline DIN type, e.g., inlet and outlet on opposite sides. The pump is equipped with an internal relief valve.

PERFORMANCE DATA

Capacity:	0,6 - 10,5 m ³ /h
Discharge pressure:	16 bar
Viscosity:	1.4 - 3,500 mm ² /s
Fluid temperature:	180°C

Imo pump series ACE Standard Line



Main Applications

LO circulation pump, stern tube LO pump, LO purifier feed pump, HFO/MDO preliminary pressure pump, HFO/MDO circulation pump, HFO/MDO feeder pump for separator.

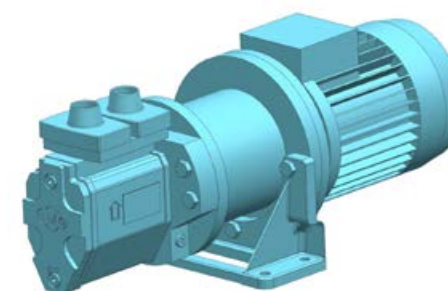
Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. By the angle bracket, the pump may be mounted horizontally or vertically. Note that inlet and outlet side is placed on the same side and can therefore be mounted on so called valve block. The pump is equipped with an internal relief valve.

PERFORMANCE DATA

Capacity:	0,6 - 10,8 m ³ /h
Discharge pressure:	16 bar
Viscosity:	1.4 - 3,500 mm ² /s
Fluid temperature:	155°C

Imo pump series ACE OptiLine



Main Applications

HFO/MDO preliminary pressure pump, HFO/MDO circulation pump, HFO/MDO feeder pump for separator.

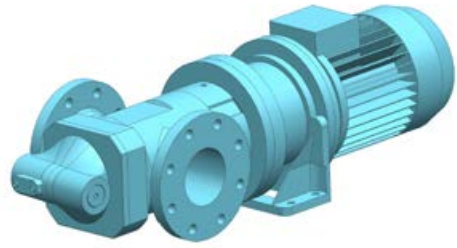
Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a magnet coupling. By the angle bracket, the pump may be mounted horizontally or vertically. Note that inlet and outlet side is placed on the same side and can therefore be mounted on so called valve block. The pump is equipped with an internal relief valve.

PERFORMANCE DATA

Capacity:	0,6 - 10,5 m ³ /h
Discharge pressure:	16 bar
Viscosity:	1.4 - 3,500 mm ² /s
Fluid temperature:	180°C

Imo pump series ACG Standard Line



PERFORMANCE DATA

Capacity:	4.8 - 72 m ³ /h
Discharge pressure:	16 bar
Viscosity:	1.4 - 3,500 mm ² /s
Fluid temperature:	155° C

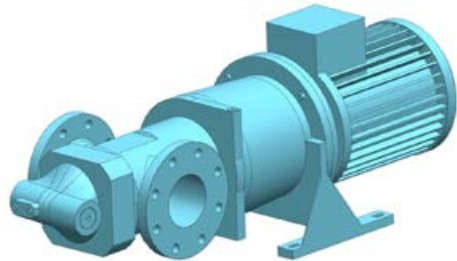
Main Applications

LO circulation pump, LO Transfer pump, Crosshead LO pump, HFO/MDO feeder pump for separator, HFO transfer pump, HFO/MDO preliminary pressure pump, HFO/MDO circulation pump.

Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. By the angle bracket, the pump may be mounted horizontally or vertically. The design is of inline DIN type, e.g., inlet and outlet on opposite sides. The pump is equipped with an internal relief valve.

Imo pump series ACG OptiLine



PERFORMANCE DATA

Capacity:	4.8 - 70 m ³ /h
Discharge pressure:	16 bar
Viscosity:	1.4 - 3,500 mm ² /s
Fluid temperature:	180° C

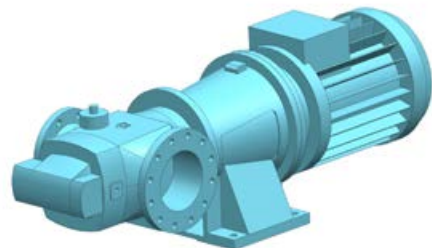
Main Applications

HFO/MDO feeder pump for separator, HFO transfer pump, HFO/MDO preliminary pressure pump, HFO/MDO circulation pump.

Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a magnet coupling. By the angle bracket, the pump may be mounted horizontally or vertically. The design is of inline DIN type, e.g., inlet and outlet on opposite sides. The pump is equipped with an internal relief valve.

Imo pump series ACF Standard Line



PERFORMANCE DATA

Capacity:	18,6 - 174 m ³ /h
Discharge pressure:	16 bar
Viscosity:	1,4 - 1,500 mm ² /s
Fluid temperature:	130° C

Main Applications

Main Engine LO pump, LO Transfer pump, Crosshead LO pump, HFO transfer pump.

Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. By the connection frame, the pump may be mounted horizontally or vertically. For vertical installations, a stand called TRIPOD can be supplied. The design is of inline DIN type, e.g., inlet and outlet on opposite sides. The pump is equipped with an internal relief valve and tuning to avoid cavitation.

Imo pump series LPQ Standard Line



PERFORMANCE DATA

Capacity:	87 - 450 m ³ /h
Discharge pressure:	16 bar
Viscosity:	2,0 - 800 mm ² /s
Fluid temperature:	90° C

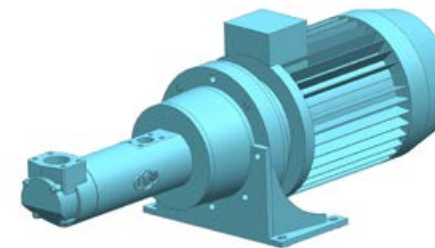
Main Applications

Main engine LO pump, LO transfer pump, crosshead LO pump, HFO transfer pump.

Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. The pump may be mounted horizontally or vertically but due to the size, vertical installation is recommended. The design is of inline DIN type, e.g., inlet and outlet on opposite sides. The pump is equipped with an internal relief valve and tuning to avoid cavitation.

Imo pump series E4 Standard Line



PERFORMANCE DATA

Capacity:	0,6 - 51 m ³ /h
Discharge pressure:	100 bar
Viscosity:	12 - 400 mm ² /s
Fluid temperature:	90° C

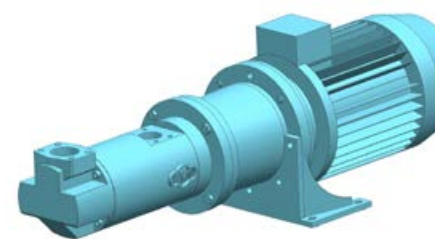
Main Applications

Pitch pump/thruster pump, lubrication pump.

Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. By the connection frame, the pump may be mounted horizontally or vertically. Note that the inlet side is flexible; meaning it can be turned 4 x 90°.

Imo pump series D4 Standard Line



PERFORMANCE DATA

Capacity:	0,6 - 51 m ³ /h
Discharge pressure:	160 bar
Viscosity:	1,4 - 1,500 mm ² /s
Fluid temperature:	155° C

Main Applications

HFO burner pumps for boilers, hydraulic pumps in cranes.

Design

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. By the connection frame, the pump may be mounted horizontally or vertically. Note that the inlet side is flexible; meaning it can be turned 4 x 90°.



TWO-SCREW PUMPS

The HOUTTUIN™ two-screw pumps are rotary, self-priming positive displacement pumps. In both cases, the basic pump design is double ended or double suction to achieve higher flow rates. The two pumps' shafts are supported between bearings. The fluid entering the suction port is split into two equal portions, with half being diverted to the inlet area of each opposing screw set. As the rotating screws intermesh, transfer chambers are formed, trapping and conveying the fluid axially to the discharge location, which is typically located at the mid span of the pump casing.

The drive relationship between the two pump shafts is achieved through a set of timing gears. These mechanical components provide the drive transmission link between the longer shaft, which is connected to the input driver, and the shorter driven shaft. By means of this design arrangement a close clearance can be maintained between the four pumping rotors and the pump casing without the possibility of metal-to-metal contact during operation. To permit the handling of contaminated, corrosive process fluids and dry running, the bearings and timing gears are located outside of the process envelope and are independently lubricated.

Strengths of the technology

- Able to handle contaminated and/or corrosive fluids and can even run dry
- Effectively manages large volumes of entrained gases without vapor locking
- Extremely low NPSH / NPIP requirements, ideal for stripping applications
- Tremendous product viscosity range, making it an extremely versatile machine
- Designs available to the latest edition of API 676

HOUTTUIN

TWO-SCREW PUMPS

Houttuin 216.10



PERFORMANCE DATA

Capacity:	535 m ³ /h
Discharge pressure:	16 bar max
Viscosity:	20 - 760 mm ² /s
Fluid temperature:	80°C max

Main Applications

For pumping lubricating oils, hydraulic oils or other lubricating fluids which do not contain abrasive substances nor chemically attack the pump materials as lube oil pump in ship and offshore engineering, as filling pumps in hydraulic systems.

Design

The spindles are supported and axially held in position by ball bearings. The transmission of torque from the driven spindle to the idler spindle is effected by product lubricated timing gears located in an attached gearbox. The ball bearings and timing gears maintain a small clearance between the screws, thus preventing metal to metal contact.

Houttuin 216.40



PERFORMANCE DATA

Capacity:	1,100 m ³ /h
Discharge pressure:	16 bar max
Viscosity:	0.6 - 1,500 mm ² /s
Fluid temperature:	100°C max

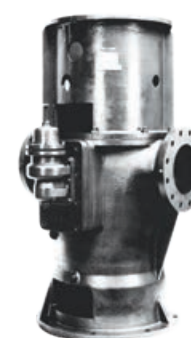
Main Applications

For pumping contaminated or slightly abrasive, lubricating and non-lubricating liquids of low or high viscosity which do not chemically attack the pump materials (corrosion proof materials can be offered).

Design

The spindles are supported and axially held in position by ball bearings. The transmission of torque from the driven spindle to the idler spindle is effected by oil lubricated timing gears located outside of the pumping area in an attached gearbox. The ball bearings and timing gears maintain a small clearance between the screws, thus preventing metal to metal contact.

Houttuin 231.50



PERFORMANCE DATA

Capacity:	1,100 m ³ /h
Discharge pressure:	16 bar
Viscosity:	0.6 - 5,000 mm ² /s
Fluid temperature:	140°C max

Main Applications

For pumping contaminated or slightly abrasive, lubricating and non-lubricating liquids of low or high viscosity which do not chemically attack the pump materials (corrosion proof materials can be offered).

Design

The spindles are supported and axially held in position by ball bearings. The transmission of torque from the driven spindle to the idler spindle is effected by oil lubricated timing gears located outside of the pumping area in an attached gearbox. The ball bearings and timing gears maintain a small clearance between the screws, thus preventing metal to metal contact.



ALLMARINE MI-S / MI-C / MA-S / MA-C



PERFORMANCE DATA

STANDARD PRODUCT LINE

Delivery:	< 1,800 m ³ /h
Delivery head:	< 65 m (size 200 - 500 up to 140 m)
Discharge pressure:	< 10 bar
Fluid temperature:	sea < 40°C fresh < 100°C
Suction branch:	125 to 400 mm
Discharge flange:	65 to 350 mm

Main Applications

Ballast pump, bilge draining, firefighting pump, cooling water feed, general service.

Design

Single-stage, single-flow volute-casing centrifugal pumps in short, compact designs. Capacity and hydraulics are specifically optimized for the requirements in Shipbuilding and Off-shore. Series MI-S and MI-C have a volute casing of the inline design. The MA-S and MA-C volute casings have an axial intake and radial outlet.

Volute casing and bearing unit are joined to the drive motor via a motor bracket. Precise centering of the pump and drive motor in the motor bracket eliminates the need for alignment. Spacer couplings with distance pieces on the MI-S and MA-S series make it easy to dismount the bearing and sealing unit, including impeller, without removing the volute casing, pipes, or drive motor. The compact MI-C and MA-C series are the right choice when space restrictions require a low overall pump height. Pump bearing and shaft seal can be dismounted without removing the volute casing from the piping.

CENTRIFUGAL PUMPS

Each series within the Allweiler® centrifugal pump line is designed for specific application requirements able to handle a wide range of low viscosity aggressive and non-aggressive fluids.

The centrifugal pump method of operation is typically a single-flow, single-stage, volute pump available with a shaft seal or magnetically coupled pump technology. In a centrifugal pump, the process liquid enters through the suction nozzle and then the center of the pump known as the impeller. As the impeller rotates, it spins the liquid sitting in the cavities between the vanes outward. As the liquid leaves the eye of the impeller, a low-pressure area is created causing more liquid to flow toward the inlet. The faster or bigger the impeller, the higher the velocity of the liquid at the vane tip giving greater energy to the liquid.

Strengths of the technology

- Dynamically balanced impeller reduces vibration
- Mechanical seals, including cartridge units, and materials that are adapted for service conditions
- Pump and motor are rigidly coupled
- Negligible axial thrust and good NPSH values

ALLMARINE NAM-F



PERFORMANCE DATA

Delivery:	< 440 m ³ /h
Delivery head:	80 to 145 m
Discharge pressure:	< 16 bar
Fluid temperature:	sea < 40°C fresh < 90°C

Main Applications

Firefighting pump, boiler feed pump and hydrophore pump.

Design

Single-stage, single-flow volute casing centrifugal pump. Volute casing with axial inlet and radial outlet. Nominal capacities according to DIN EN ISO 2858 or DIN EN 733. Pump casing and bearing unit are connected with the driving motor by means of a pump bracket. Feet at the lower flange of the pump bracket allow vertical pedestal mounting. Laterally arranged consoles permit vertical wall mounting. General application of spacer couplings allows dismantling of the bearing unit including impeller without removing the volute casing, pipelines or driving motor. Aligning of the coupling is not necessary as the pump and driving motor are exactly centered in the pump bracket, i.e., intermediate ring. All screw connections are by means of hexagonal head bolts and hexagonal nuts.

ALLMARINE NB



Main Applications

Firefighting, bilge, ballast, cooling water, hydrophore, drinking water and sea water pump.

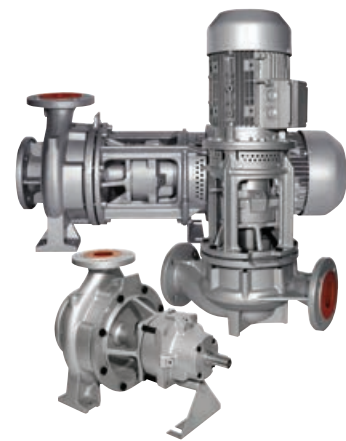
Design

- Rated output acc. to DIN EN 733
- Block design (motor attached to pump via flange or lantern)
- Dry installation
- Vertical installation
- Horizontal installation
- Stub shaft for IEC motor
- 2-stage pump type at defined sizes

PERFORMANCE DATA

Delivery:	< 480 m ³ /h
Delivery head:	< 145 m
Discharge pressure:	< 16 bar
Fluid temperature:	sea < 40°C fresh < 140°C
Nominal diameter delivery flange:	25 to 125 mm

ALLHEAT



Main Applications

Thermal oil pumping (thermal oil boiler), hot water circulation (steam boiler systems).

Design

Series NTWH/CTWH: Process models of a horizontal volute centrifugal pump. Single-flow, single-stage with optimized bearing support (consisting of housing cover including throttle/cooling section and bearing support). Shaft bearing consisting of a silicon carbide or carbon sliding bearing lubricated by the pumped medium on the pump side and a grease-lubricated deep groove ball bearing on the drive side. Volute casing with cast-on pump feet.

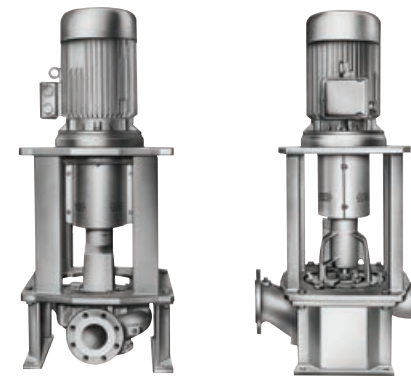
Series NBWH/CBWH: Block model of a volute centrifugal pump. Single-flow, single-stage with optimized bearing support (consisting of housing cover including throttle/cooling section and bearing support). Plug-in shaft and motor shaft are rigidly connected to each other. Shaft bearing consisting of a silicon carbide or carbon sliding bearing lubricated by the pumped medium on the pump side and the grease-lubricated deep groove ball bearing of the drive motor. Motors with axial thrust bearings. Spiral casing with cast-on pump feet. Horizontal or vertical installation, however, not with motor arrangement facing downwards.

Series NIWH/CIWH: In-line model of volute.

PERFORMANCE DATA

Delivery:	< 1,250 m ³ /h
Delivery head:	< 100 m
Discharge pressure:	< 25 bar
Fluid temperature:	water 207°C max oil 350°C max

NAM/NIM series



PERFORMANCE DATA

Delivery:	< 2,400 m ³ /h
Delivery head:	< 100 m
Discharge pressure:	< 10 bar
Fluid temperature:	sea water < 40°C fresh water < 140°C
Nominal diameter delivery flange:	65 to 300 mm

Main Applications

Ballast and firefighting pump, bilge draining, cooling water feed, general service.

Design

The NIM and NAM series are designed to permit removal of the bearing unit without requiring removal of the motor or pump casing. This makes these design types particularly well suited to situations where heavier motors are needed to achieve higher flow rates. Volute casing can be supplied optionally with axial or radial intake branch. All pumps are intended for use with standardized drive motors. Also suitable for larger motors with bearing housing and bracket. Depending on the series, ALLMARINE centrifugal pumps are intended for horizontal or vertical installation, for pedestal or wall mounting, or for use as an immersion pump. The shaft seals are by default maintenance-free mechanical seals.

Series L and LV



PERFORMANCE DATA

Delivery:	< 120 m ³ /h
Delivery head:	< 250 m
Discharge pressure:	< 25 bar
Fluid temperature:	< 160°C

Main Applications

Ballast pump, bilge pump, boiler circulation pump, boiler water pump, cargo pump, firefighting pump, fresh water cooling pump, general service pump, heat transfer pump, hydrophore pump, lube-oil circulation pump, potable water pump, sea water cooling pump.

Design

L: horizontal, two or multi-stage high-pressure centrifugal pump of the segmental-type of construction.

LV: vertical, two or multi-stage high-pressure centrifugal pump of the segmental-type of construction.

Replaceable impellers and diffusers as well as shaft sleeves and shaft protection sleeves. The casing parts sealed by O-rings are held together by external casing tie bolts. Axial thrust compensation by single-wheel balancing. Any residual forces are absorbed by the bearings arranged in the bearing casings and motor brackets, respectively. With series L, the pump feet are cast to the suction and delivery casing. Thus, the pipeline forces are directly passed into the base plate and foundation. Vertical and horizontal pumps of the same size have identical hydraulic capacities.

ALLMARINE NI



Main Applications

Firefighting, bilge, ballast, cooling water, hydrophore, drinking water and sea water pump.

Design

The characteristic feature of this pump is the design of the connection pump shaft motor shaft allowing the employment of serial standard motors with a locating-type bearing and normal shaft end. Any and all screw connections are by means of hexagonal screws and hexagonal nuts so as to ensure their proper unscrewing even with several coats of paint (shipbuilding).

PERFORMANCE DATA

Delivery:	< 460 m ³ /h
Delivery head:	< 140 m
Discharge pressure:	< 16 bar
Fluid temperature:	sea < 40°C fresh < 140°C
Nominal diameter delivery flange:	40 to 150 mm

ALLMARINE MELO



Main Applications

Circulation of lubricating oil, main lube oil circuit.

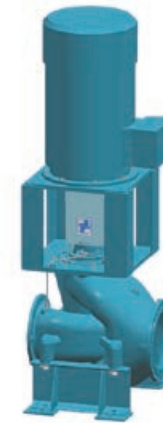
Design

Installed in the oil reservoir vertically as an immersed centrifugal pump. One-stage versions are available for all sizes. Sizes 200, 250 and 300 are also available in a two-stage version. Different submerged-part lengths are available in 100-mm increments.

PERFORMANCE DATA

Delivery:	< 1,600 m ³ /h
Delivery head:	< 155 m
Discharge pressure:	< 16* bar
Fluid temperature:	< 100°C
* Sizes 200, 250, and 300 as two-stage version	

Series MI-D



Main Applications

Bilge, ballast, cooling-water and sea water pump.

Design

Single-stage, double-suction volute centrifugal pump with a short, compact design. Capacity and hydraulics are specifically adapted to the requirements in shipbuilding. The volute casing and bearing unit are connected via a bracket to the drive motor. The use of a coupling with spacer piece enables removal of the bearing unit and sealing insert with common wearing parts without removal of the volute casing, pipes and drive motor. Since pump and drive motor are precisely centered in the bracket, no alignment work of any kind is required.

PERFORMANCE DATA

Delivery:	< 2,400 m ³ /h
Delivery head:	< 40 m
Discharge pressure:	< 10 bar
Fluid temperature:	sea < 40°C fresh < 100°C



PROGRESSING CAVITY PUMPS

The ALLWEILER® progressing cavity pump is a rotary, self-priming positive displacement pump. The pumping elements are the rotating eccentric screw (rotor) and the fixed, abrasion resistant, elastomeric lined casing (stator). In the cross-sectional plane, both are in contact with one another at two points, forming two sealing lines along the length of the conveying elements. The fluid entering the suction area of the casing (typically located adjacent to the bearing frame) enters a cavity which is being formed as the rotor turns.

As the pump shaft continues to rotate, the cavity is sealed and the captured process fluid is displaced axially along the length of the casing to its ultimate exit point at the casing discharge (typically located at the extreme non-drive end of the pump). This smooth, continuous pumping action ensures an even, uninterrupted volumetric output from the pump and minimizes pressure pulsations at the pump discharge.

Strengths of the technology

- Able to handle fluids contaminated with large percentages of abrasive solids
- Simple and economical pump design requiring only one shaft seal
- Low NPSHr / NPIPr due to large internal cavities and low speed operation
- Gently handles shear-sensitive fluids like emulsions
- Designs available to the latest edition of API 676

ALL-OPTIFLOW



PERFORMANCE DATA

Capacity:	1,850 m ³ /h
Discharge pressure:	16 bar
Viscosity:	< 270,000 mm ² /s
Fluid temperature:	100°C max

Main Applications

Bilge draining, general sludge pump; for liquids with solids and fibers.

Design

The pump and drive are held together by the bearing bracket to form a modular unit.

By means of external casing connecting screws (clamping screws), the discharge casing, stator and suction casing are interconnected. The suction casings are designed particularly favorable to flow. The pump sizes 403 to 5503 are supplied in cast iron and are provided with staggered holes for cleaning. The stator vulcanized into a tube is provided with external collars vulcanized to it on both sides, reliably sealing towards the suction casing and discharge casing and protecting the stator shell from corrosion.

The exchangeable shaft sealing housing or mechanical seal housing (subsequent conversion to another sealing variant is possible) are arranged between the suction casing and bearing bracket.

The torque of the drive is transmitted over the driving shaft and the joint shaft onto the rotor. On both sides, the joint shaft ends in liquid-tight encapsulated bolt joints, which are of particularly simple and sturdy design and easily absorb the eccentric movement of the rotor.



ALLTRIMM



PERFORMANCE DATA

Delivery:	< 1,300 m ³ /h
Delivery head:	< 20 m
Discharge pressure:	< 2.5 bar
Fluid temperature:	sea < 40°C

Main Applications

Anti-heeling pump with very low space requirement, liquid-cooled and monitored.

Design

Compact and space-saving propeller pump in inline design with reversible flow and integrated drive. Thereby, the need for extensive installation of valve controls is eliminated. The electric motor is integrated in the pump hub. The pumped liquid flows through the motor casing ensuring automatically optimal cooling. Optimal pump capacity because of single- and two-stage designs having the same installation dimensions. Change of pumping direction is achieved through reverse rotation of motor. Low mass moment of inertia allows for very short starting times. High safety thanks to the shaft sealing with 3 shaft seal rings per stage. Through use of an intelligent electronic leakage monitoring system, the motor is protected from moisture. Delivery as a complete pump set with integrated drive.

PROPELLER PUMPS

CIRCOR propeller pumps are used to pump large volumes with a relatively short pump head. Applications are in the chemical and processing industries, sewage water treatment plants, re-circulation for handling return sludge or rainwater and generating drinking water (seawater desalination plants).

They are available as horizontal or vertical pumps, suspended into the pipeline or horizontally foot-mounted. Pump design, material design, installation and drive can be adapted optimally to the operation and assembling conditions.

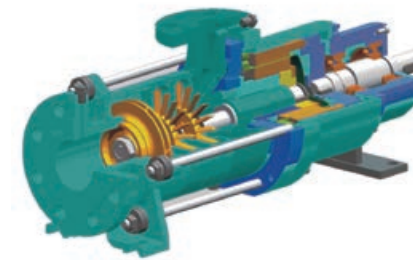
The ALLTRIMM series is designed especially for shipbuilding applications. These space-saving inline pumps for large flow rates and delivery heads of up to 20 meters have an integrated motor and a reversible flow direction.

Strengths of the technology

- Reliability
- High performance
- Corrosion-Resistant
- Robust



SFx series



Main Applications

Boiler feed water pump.

Design

Thanks to their open impellers, they can pump even under unfavorable suction conditions and with low admission heights. With a variety of gaskets, materials and a magnetically coupled drive, you can adapt side channel pumps precisely to your installation.

PERFORMANCE DATA

Delivery:	< 20 m ³ /h
Delivery head:	< 260 m
Discharge pressure:	< 25 bar
Fluid temperature:	-20 up to 120°C

SIDE CHANNEL PUMPS

The side-channel stage enables pumps of the SFx and SOx series to reliably move liquids with gaseous or vapor-state components (up to 50%), including even slightly boiling liquids like bulk gas. Sidechannel pumps are also insensitive to cavitation during variable vapor pressure.

SFH series



Main Applications

Hydrophore and boiler feed, freshwater and hot water applications where self priming is required.

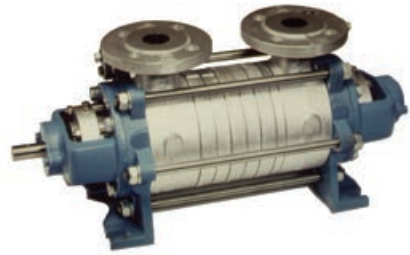
Design

For handling aggressive, uncontaminated liquids, we supply self-priming side channel pumps. These pumps are used especially for applications that involve small flow rates but high delivery heads. There are designs available which offer advantages especially at unfavorable suction conditions or low suction heads. Adapted to the actual fields of application, different material and shaft sealing designs according to series are possible. Also magnetic drive can be provided. Thanks to the side channel stage, side channel pumps have the ability to move liquids with gaseous or vapor-state components (up to 50%); therefore, they can also handle liquids that are slightly above their boiling points, like liquefied gas. Side channel pumps are insensitive to cavitation at variable vapor pressure.

PERFORMANCE DATA

Capacity:	< 20 m ³ /h
Delivery head :	< 250 m
Suction head:	< 7 m
Discharge pressure:	< 25 bar
Fluid temperature:	-20 up to 120°C

SRZ series



Main Applications

Hydrophore and boiler feed, freshwater and hot water applications where self priming is required.

Design

For handling aggressive, uncontaminated liquids, we supply self-priming side channel pumps. These pumps are used especially for applications that involve small flow rates but high delivery heads. There are designs available which offer advantages, especially at unfavorable suction conditions or low suction heads. Adapted to the actual fields of application, different material and shaft sealing designs according to series are possible. Also, magnetic drive can be provided. Thanks to the side channel stage, side channel pumps have the ability to move liquids with gaseous or vapor-state components (50%); therefore, they can also handle liquids that are slightly above their boiling points, like liquefied gas. Side channel pumps are insensitive to cavitation at variable vapor pressure.

PERFORMANCE DATA

Capacity:	< 36 m ³ /h
Delivery head: :	< 350 m
Suction head:	< 7 m
Discharge pressure:	< 40 bar
Fluid temperature:	-40 up to 220°C

SOH series



Main Applications

Hydrophore and boiler feed, freshwater and hot water applications where self priming is required.

Design

For handling aggressive, uncontaminated liquids, we supply self-priming side channel pumps. These pumps are used especially for applications that involve small flow rates but high delivery heads. There are designs available which offer advantages, especially at unfavorable suction conditions or low suction heads. Adapted to the actual fields of application, different material and shaft sealing designs according to series are possible. Also, magnetic drive can be provided. Thanks to the side channel stage, side channel pumps have the ability to move liquids with gaseous or vapor-state components (50%); therefore, they can also handle liquids that are slightly above their boiling points, like liquefied gas. Side channel pumps are insensitive to cavitation at variable vapor pressure.

PERFORMANCE DATA

Capacity:	< 7.5 m ³ /h
Delivery head: :	< 150 m
Suction head:	< 7 m
Discharge pressure:	< 16 bar
Fluid temperature:	-20 up to 120°C



THE CM-1000 SERIES

SMART TECHNOLOGY TO OPTIMIZE VESSEL PERFORMANCE

The CM-1000 Series intelligent controller for sea water cooling systems is designed to maximize shipboard pumping efficiency while lowering operating and maintenance costs and maximizing uptime.

The result: a greener, sustainable solution with energy savings up to 85 percent, maintenance savings up to 50 percent, safe operation, short-term return-on-investment and long term savings for total ownership.

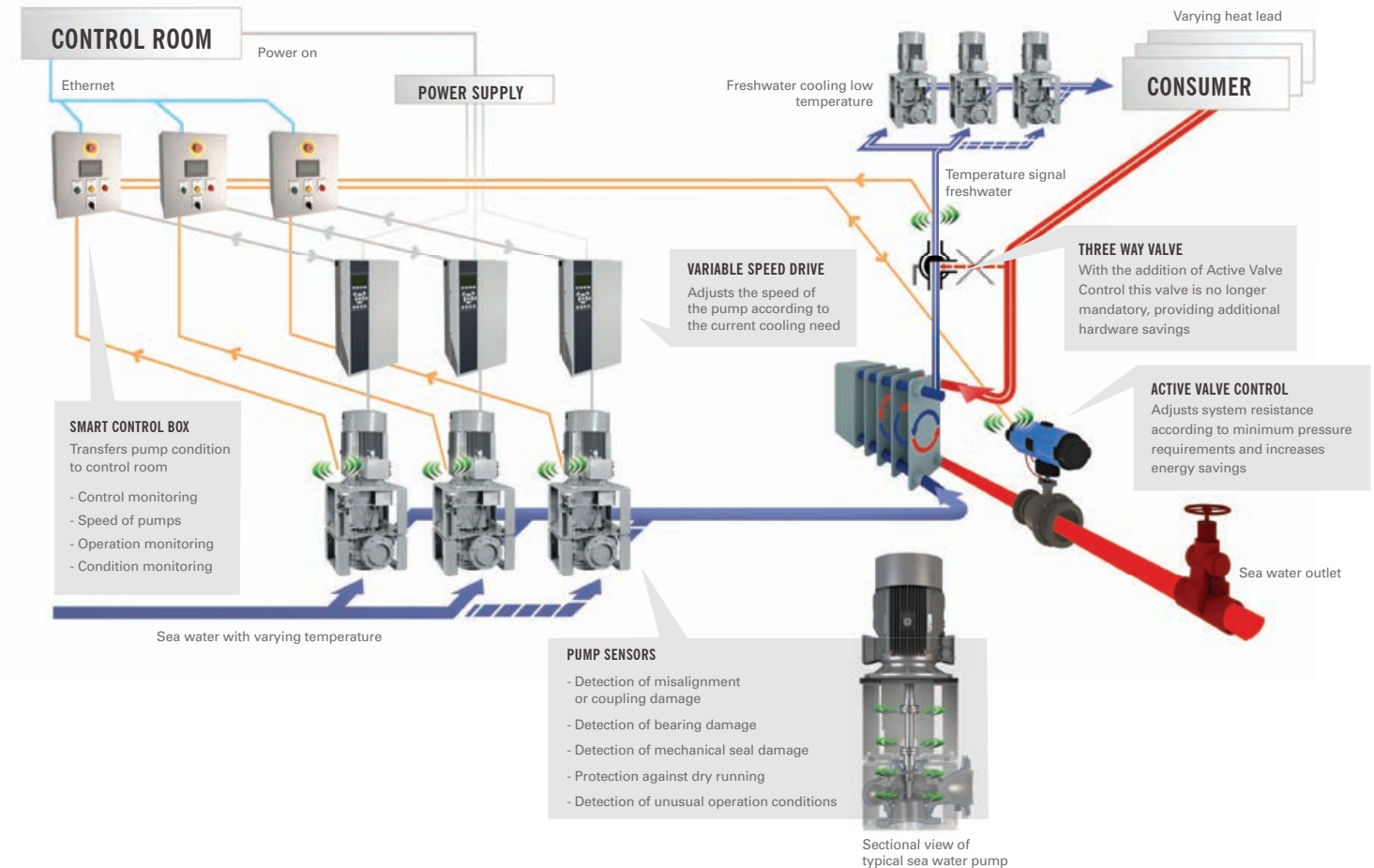
The CM-1000 with optional Active Valve Control can be applied to either new vessel construction or through retrofitting existing sea water cooling systems.

HOW IT WORKS

The CM-1000 is designed to operate sea water pumps only as fast as needed for prevailing conditions. As conditions change, the CM-1000 reacts by varying the speed of motors and pumps accordingly – effectively reducing hydraulic loads and enhancing the lifetime of equipment.

With the addition of Active Valve Control, the CM-1000 now also includes sensors for real-time monitoring of temperatures in the freshwater cooling loop, as well as the pumps' suction and discharge pressure. The sensor signals enable the CM-1000 Series controller to regulate the flow of sea water to the coolers according to varying heat loads from the main engine and generators. Thus further reducing your equipment and maintenance costs and increasing your energy savings.

OPTIMIZED 3x50% SEA WATER SYSTEM SET UP



WHAT IT DOES

- **ENERGY SAVINGS OF UP TO 85%**
Variable Speed Operation reduces power consumption by maintaining optimal pump motor speed.
- **MAINTENANCE SAVINGS OF UP TO 50%**
Condition Monitoring prevents catastrophic breakdowns through early detection.
- **INCREASED UPTIME**
Operation Monitoring extends mean time between failures by avoiding overload and partload operation.
- **OPTIMIZED PERFORMANCE**
Active Valve Control eliminates the risk for human error all while increasing energy savings and enhancing overall system efficiency.



CIRCOR is a market-leading, global provider of integrated flow control solutions, specializing in the manufacture of highly engineered valves, instrumentation, pumps, pipeline products and services, and associated products, for critical and sever service applications in the oil and gas, power generation, industrial, process, maritime, aerospace, and defense industries.

Excellence in Flow Control

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