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ALLWEILER AG  
Schraubenspindelpumpen, Kreiselpumpen,  
Zahnradpumpen, Propellerpumpen und Anlagen  
Screw Pumps, Centrifugal Pumps, Gear Pumps,  
Propeller Pumps and Systems

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# ALLHEAT®



## ALLHEAT®: Some Like it Hot

Pumps that are designed specifically for heat transfer.

- Centrifugal pumps for heat-carrier oils up to 400 °C and hot water up to 207 °C
- Special design and materials eliminate the need for cooling during operation
- Magnetically-coupled pumps for leak-free operation
- Screw pumps for oil-firing applications



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All ALLHEAT® pumps are ATEX certified

With the ALLHEAT® series, ALLWEILER fully implements the requirements for modern heat-carrier pumps:

- ▶ For all heat-transfer oils, even low-viscosity oils
- ▶ Strong seals, even for hot water above 140 °C
- ▶ Seals are stable without external cooling
- ▶ Replace traditional water pumps with special seals
- ▶ Very mechanically durable
- ▶ Unrivalled price/performance ratio

## ALLHEAT®:

### Pumps for Thermal Oils and Hot Water

ALLWEILER has been developing and manufacturing pumps for hot water and mineral-based and synthetic heat-carrier oils for more than 40 years.

If you need reliable pumps with considerably lower lifecycle costs for moving oils at temperatures as high as 400 °C or hot water up to 207 °C, at ALLWEILER you will find just what you are looking for.

ALLWEILER began developing thermal oil pumps back in 1960. Since that time, ALLWEILER AG has produced and delivered several hundred thousand pumps for heat-carrier applications. Today, with a global market share of approximately 25 percent, ALLWEILER is one of the industry's major players. In fact, ALLWEILER heat-carrier pumps are used successfully in every industrialized country of the world. When you choose a heat-carrier pump from ALLWEILER, you are choosing a supplier with more than 40 years experience and designs that are optimized for real-world conditions.

#### For every heat carrier and every pumping task

ALLWEILER produces its own pump units and complete pump packages for virtually every requirement related to heat transfer. This includes both mineral-based as well as synthetic heat-carrier oils and hot water. Depending on your exact requirements, you will choose either pumps with a shaft seal or magnetically-coupled pumps without a shaft seal. ALLHEAT® heat-carrier pumps are universally useful for all heat-carrier liquids. ALLMAG® pumps with magnetic drive are 100-percent hermetically sealed, so they meet the most stringent environmental requirements. With process, block, and inline versions, it is easy to adapt the pumps to the installation conditions at your plant.

#### Service and support guaranteed

If you decide to use an ALLHEAT® pump, you can count on rapid service at your location no matter where you are in the world. Global service and support centers ensure that customers have access to qualified maintenance for any pump unit whenever necessary.

The ALLWEILER QuickServe® program guarantees that common wearing parts will be shipped anywhere in the world within certain reaction times. Depending on the pump, ALLWEILER will deliver either complete repair kits or individual parts, anywhere and anytime. Repair kits contain all necessary gaskets and other wearing parts. They are delivered with an open invoice and with all necessary paperwork, so you get your parts without jumping over bureaucratic hurdles.

Maximum performance data of ALLWEILER Heat-Carrier Centrifugal Pumps\*

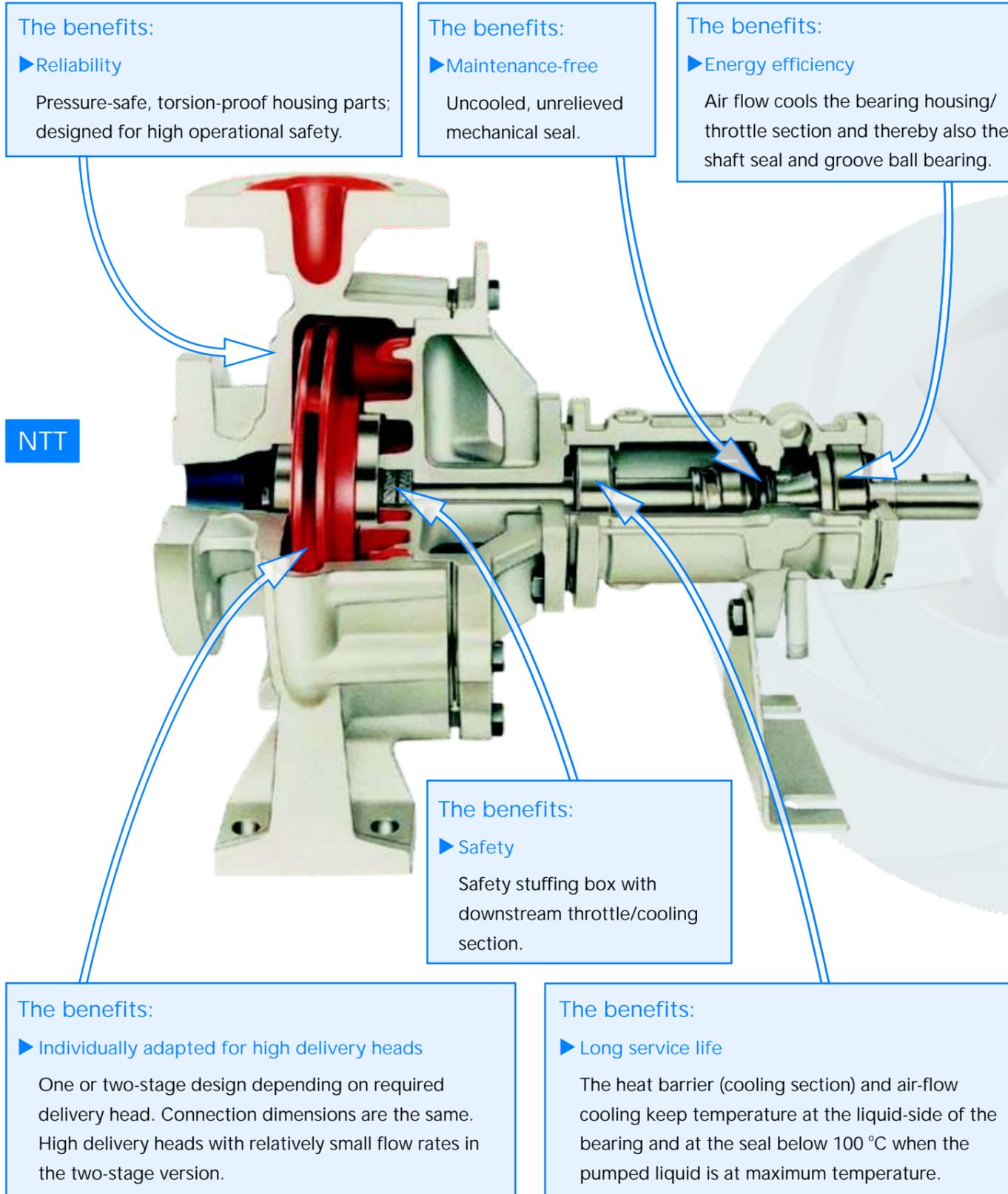
	Water up to 100 °C	Hot water up to 207 °C	Thermal oil mineral-based	synthetic	With magnetic coupling	
Q	2,300	1,250	1,250	1,250	300	m³/h
H	145	100	145	100	145	m
p <sub>a</sub>	16	25	16	25	25	bar

\* All performance data listed here and in the following tables apply to 50-Hz operation.

# The NTT Series: Designed to Be Robust, Economical and Rapidly Available

A special design ensures a long service life coupled with low costs for maintenance and operation.

Pumped liquids:  
Mineral-based thermal  
oils up to 350 °C.



The NTT, NBT and NIT product series are ideal for moving mineral-based thermal oils. Their mechanical seals are located behind a heat barrier, where they are protected from high temperatures. The result is that simple standard gaskets (antimony-carbon/SiC) have a very long service life when used in the pumps. All three types are also available as two-stage versions with the same external dimensions, making them ideal for small flow rates with high delivery head.

Each version is available in several variations, so you will always get a pump that fits perfectly into your installation. Depending on how your pipes are laid out and how much space is available, one of the following will be ideal:

- ▶ NTT series with a separately-coupled motor and volute casing with foot attachment on a base plate
- ▶ NBT series in a directly-coupled block version, set up vertically or horizontally
- ▶ NIT series in a directly-coupled inline version, set up vertically or horizontally

All pumps are intended to be driven by a standard motor. The antifriction bearing on the pump side is always lubricated by the pumped liquid; on the NTT, the drive-side antifriction bearing is grease lubricated.

### Highest safety

If the mechanical seal is compromised, additional safety elements ensure that only a small amount of liquid will leak out. Thanks to these design measures, the pumps exceed the requirements of DIN 4754. Any pumped liquid that does leak out can be completely captured and safely diverted.

The special design of the insert unit reduces temperature so effectively that the bearing and shaft seal always work flawlessly.

A quench for the mechanical seal is available as an option. This further reduces temperature at the mechanical seal and eliminates the possibility that fluid leaking out of the seal will oxidize and cause damage to the seal.



**NIT**

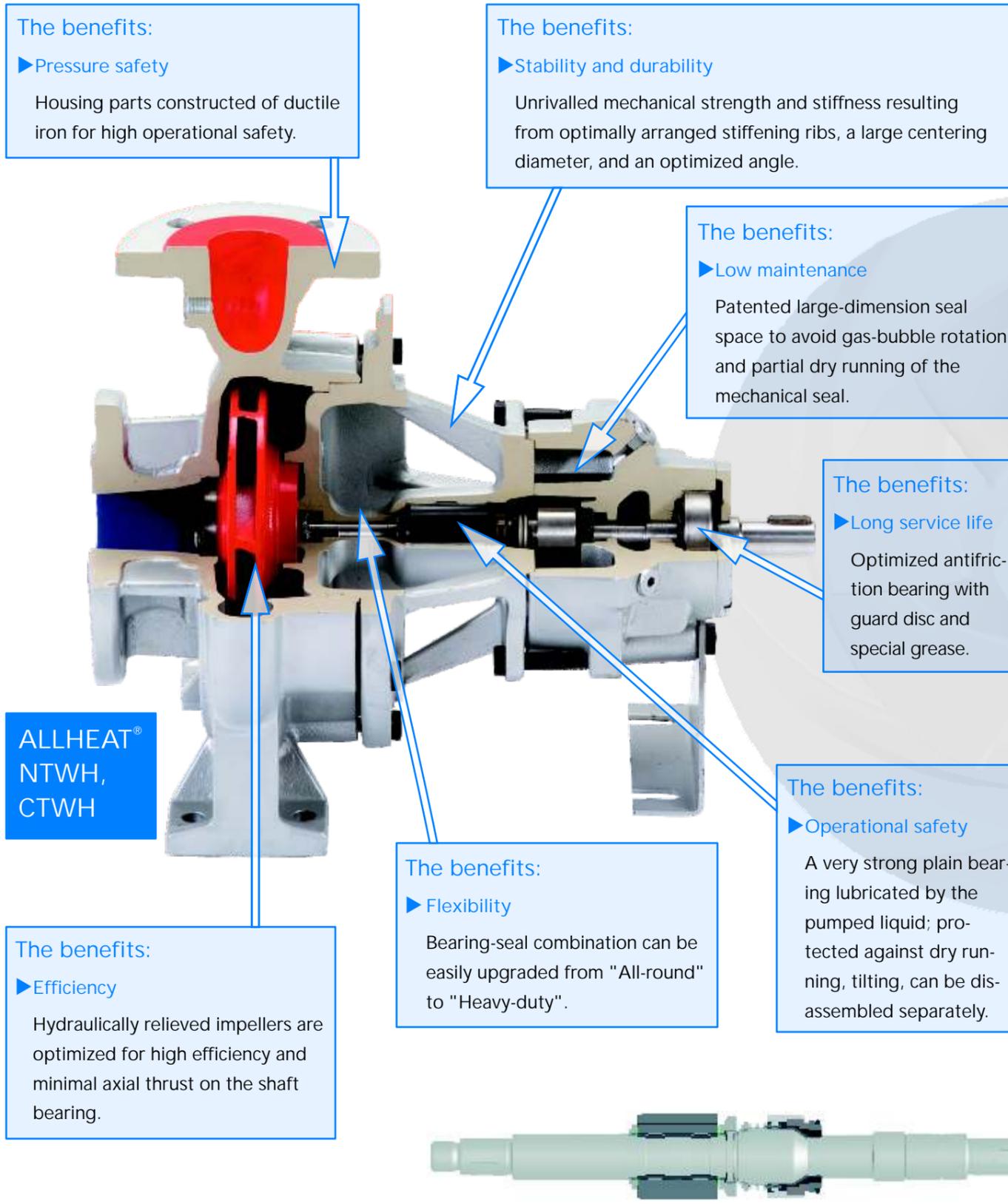
Maximum performance data				
	NTT	NBT	NIT	
Q	1,250	270	220	m <sup>3</sup> /h
H	145	145	145	m
p <sub>d</sub>	16	16	16	bar
t	350	350	350	°C

ROBUST

# ALLHEAT®: Innovative Design Makes it an All-Round Solution

Safe in operation and with a long service life thanks to a special bearing and seal designed especially for low-viscosity liquids.

Pumped liquids:  
Synthetic thermal oils up to 400 °C;  
Hot water up to 207 °C.



The ALLHEAT® series gives plant operators centrifugal pumps that were designed specifically for high-temperature applications employing low-viscosity heat carriers like synthetic thermal oils and hot water. These pumps have unrivalled versatility; they forgo external cooling and are extraordinarily durable in continuous operation. Very little heat is lost by the entire system and maintenance intervals are usually longer than twelve months even when operated continuously under difficult conditions. The CBWH and CIWH series are the world's only block-type pumps with an air-cooled shaft seal that pump hot water above 183 °C without external cooling. Due to their maximum oil temperature of 400 °C, CTWH, CBWH, and CIWH are also ideal for modern applications like solar power stations.

▶ **Highly available**

Design details ensure high reliability and safety. These pumps are unrivalled in mechanical strength. Both the seals and the bearing are cooled efficiently and protected from dry running. The mechanical seal's weight-bearing capacity and service life are extraordinarily high thanks to a special bearing geometry and tilting suspension.

▶ **Safe**

Safety gland packing, minimal axial thrust, antifric-tion bearings with a long service life, optimal quench and seals, and a double cardanic coupling for special applications increase the safety of often critical heat-transfer applications.

▶ **Highly variable and individualized**

You choose from six variations: coupling, block, and inline versions each with two pressure stages (for PN16 and pump dimensions according to EN 733 or for PN 25 and dimensions according to ISO 2858). Two bearing-seal combinations are available: an unrelieved all-round mechanical seal with a carbon-antimony bearing or a relieved heavy duty seal with a silicon carbide plain bearing.



Depending on the environmental conditions, you can choose the coupling (NTWH/CTWH), block- (NBWH/CBWH), or inline version (NIWH/CIWH).

Maximum performance data ALLHEAT®

	NTWH	NBWH	NIWH	CTWH	CBWH	CIWH	
Q	1,250	270	220	1,250	240	105	m <sup>3</sup> /h
H	100	92	92	100	63	58	m
p <sub>d</sub>	16	16	16	25	25	25	bar
t	183 (hot water), 350 (oil)			207 (hot water), 400 (oil)			°C

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# ALLHEAT® 1000 series: For high performance

## Compact and low-maintenance pumps for thermal oils

High-performance centrifugal pumps are specially designed for pumping thermal oils in heat-transfer systems at up to 400 °C and across great distances and/or in large volumes. For example, at 50 Hz and a speed of 2900 1/min, it achieves a capacity of 1000 m³/h and a delivery head of 80 m. The maximum capacity of the ALLHEAT® 1000 is 1450 m³/h, maximum delivery head is 105 m, and maximum discharge pressure is 25 bar.

Like all ALLHEAT® pumps, ALLHEAT® 1000 does not require external cooling. It is characterized by a variety of innovative features. Instead of using larger-diameter impellers, the pump is specifically designed to achieve its performance characteristics at higher speeds of up to 2900 1/min.

The resulting compact process design is easy to install. This keeps the operator's investment costs and total cost of ownership (TCO) low.

Like all other ALLHEAT® pumps, the ALLHEAT® 1000 is very reliable with extremely long maintenance intervals. The seal chamber is specially designed so that any gas ring appearing around the seal will be stripped off. Released gas collects in a stabilized zone and is vented without attacking the sliding surfaces of the gasket. The plain bearing's special lubrication geometry ensures optimal lubrication at extremely high loads and makes the bearing insensitive to contamination in the liquid.



ALLHEAT® 1000

## Independent of external power supplies

### Disturbance-free operation even if the power fails

Hatz diesel engines ensure that the pump has a continuous power supply even during power failures. In addition of the connection to a pump of the "NTT" series (shown in the figure), all other pumps can be operated in this manner as well.

The diesel units start as soon as the power supply fails. An automatic power-failure device ensures a rapid start. The large 60-L fuel tank is adequate for regular usage without frequent refilling.



NTT with emergency power unit

## For water and chemicals

### Standardized water pump program (NT) and seals according to chemical specifications (CWH)

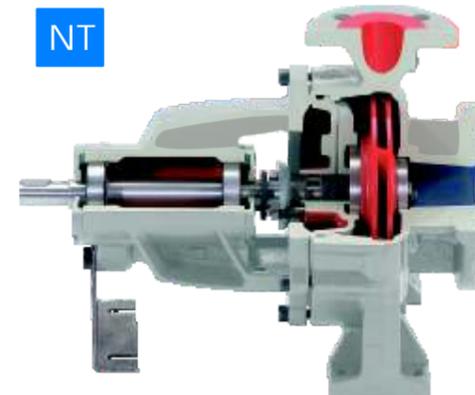
The three series of standardized pumps (NT, NI, and NB) are ideal for pumping only hot water at 100 °C or less. They merge reliability with low lifecycle costs and an attractive initial investment. When equipped with a special shaft seal, these series are also suitable for hot water up to 140 °C. The pumps are available with a bearing bracket (NT), as a directly-coupled block (NB), and in an inline version (NI). The NB and NI versions can be installed vertically and horizontally. NT is delivered with a separately coupled motor and with a volute casing on a base plate. The best choice for your particular situation will depend on how your pipes are laid out and how much space is available. All three design types are also available in two-stage versions with the same external dimensions. The two-stage version is ideal when a relatively small flow rate is needed but simultaneously a high delivery head, good efficiency, and low NPSH values.

The pumping capacity significantly exceeds the standardized rated power. Fifteen additional sizes round out the DIN performance range.

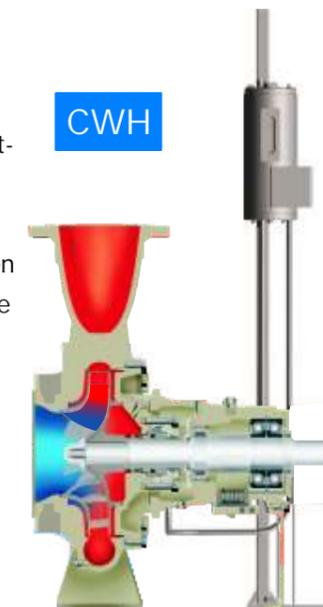
#### Special for chemical applications

ALLHEAT® CWH pumps are specially designed for chemical plants and chemical applications, particularly for circulating heat-carrier oil or hot water in primary closed loops of large heat-carrier distribution systems. The hydraulics of ALLHEAT® CWH are dimensioned for high delivery heads with capacities between 500 and 1200 m³/h. For this reason, this pump is the right choice when you need to supply complex heat-carrier circulation systems with many secondary closed loops.

The double-action, cartridge-type mechanical seal system complies with specifications of the textile fiber and chemical industries. Together with the specially developed thermosyphonic circulation system for the buffering fluid, it provides the highest possible security against leaks.



NT

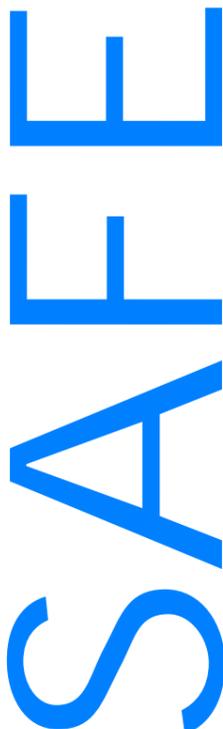


CWH

#### Maximum performance data of standard water pumps and chemical pumps

	NT	NI	NB	CWH	
Q	2,300	440	560	1,200	m³/h
H	155	150	155	97	m
p <sub>d</sub>	16	16	16	25	bar
t	140	140	140	350	°C

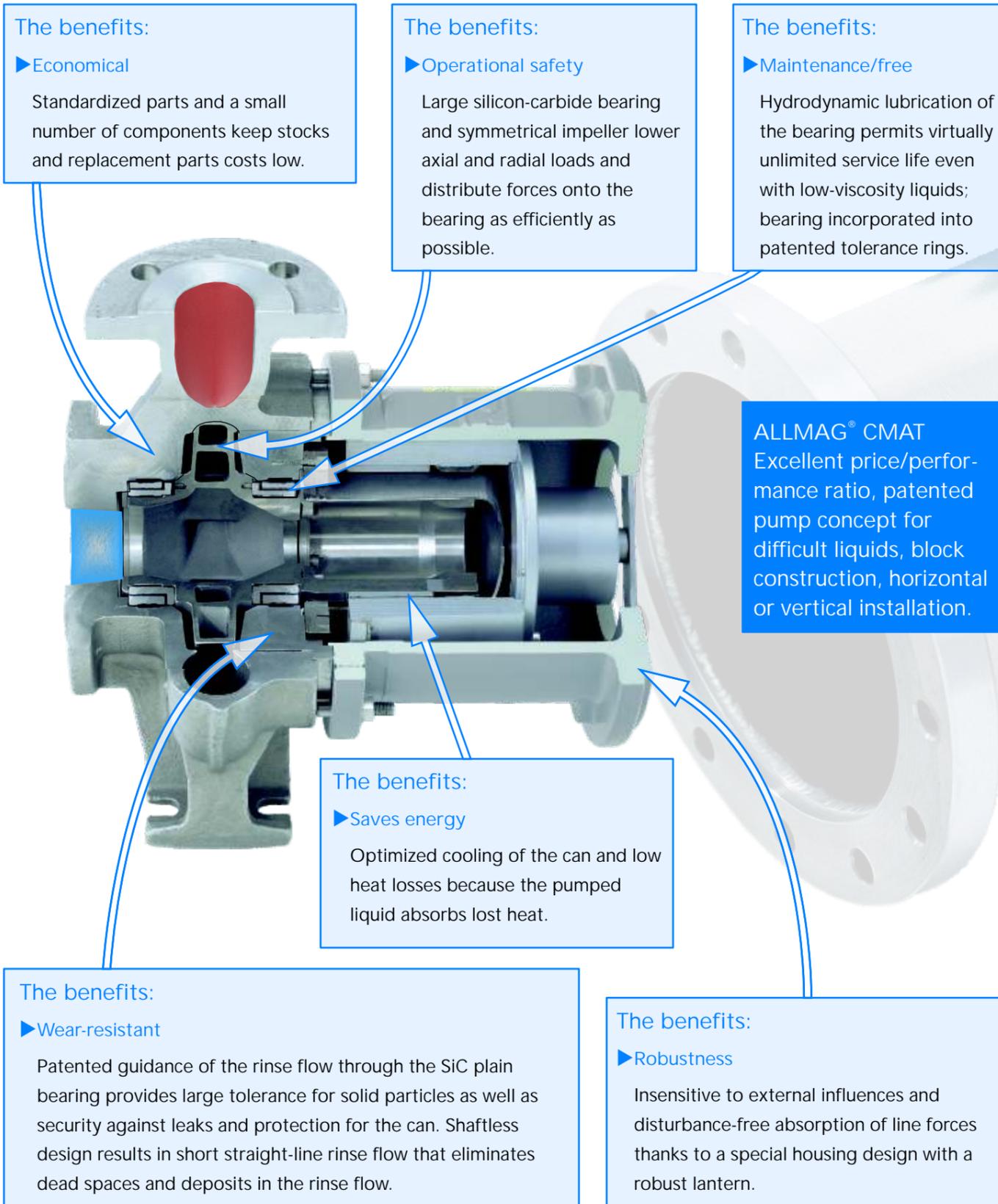
Pumped liquids:  
Water up to 140 °C (NT);  
hot water up to 207 °C,  
heat-transfer oils up to  
350 °C (CWH).



# ALLMAG®: Hermetically Sealed Centrifugal Pumps with Magnetic Drive

With the ALLMAG® pumps you can safely move toxic, environmentally hazardous, and odorous heat-carrier liquids.

Pumped liquids:  
Hot water up to 207 °C  
and heat-transfer oils up  
to 350 °C.



All ALLMAG® pumps are emissions free and combine practical advances with the latest technologies and materials. The results are a high degree of operational safety and a long service life. Since the magnetic coupling eliminates all parts that are normally subject to wear, the need for maintenance and replacement parts is also reduced. The connection dimensions comply with DIN EN 22858/ISO 2858, making it easy to integrate the pumps into existing systems.

The magnetic components are specially designed to minimize heat losses to the outside. Compared to other magnetically-coupled pumps, ALLMAG® pumps radiate very little heat externally, making them the ideal solution in systems meant to transfer heat.

### Type CMAT/CMIT: Economical and innovative

With pump types CMAT (block version) and CMIT (inline version) you can economically and safely cover a variety of operational conditions. This innovative design contains no shaft. The benefits are outstanding heat dissipation, a high tolerance against solids in the liquid, gentle pumping action and minimal stress on the bearing.

### Model CNH-ML: Heavy duty and variable

Baseplate versions of the high-performance CNH-ML pumps are designed to handle previously insurmountable pumping challenges. These pumps are ready to take on extreme requirements. Their extraordinary insensitivity makes them reliable performers under the most difficult conditions, including, for example, low viscosities, stagnating liquids, and liquids contaminated with large amounts of solid particles.

### Individual solutions based on the successful CNH-ML standard

You choose the right supplemental units for your requirements:

- ▶ External flushing for sticky liquids or liquids that tend to stagnate
- ▶ Electric heating
- ▶ Leak monitoring with level sensor
- ▶ Torque monitor
- ▶ Version for pumped liquids with up to five percent solid particles
- ▶ Accessories completely according to the customer's specifications

Maximum performance data				
	CMAT	CMIT	CNH-ML	
Q	80	80	300	m <sup>3</sup> /h
H	55	55	145	m
p <sub>d</sub>	16	16	25	bar
t	183 (hot water)		207 (hot water)	°C
t	350 (oil)		350 (oil)	°C



# ALLFUEL: Variable sealing design for dependable oil delivery

Screw pumps that meet the most stringent regulations for environmental protection and safety.

Pumped liquids:  
Oils up to 150 °C.



**Your benefit:**  
▶ **No-interrupt maintenance**  
The non-return valve in the twin unit allows continuous operation even when removing and maintaining one of the pumps.

**Your benefit:**  
▶ **Safety and reliability**  
When combined with an emergency-off controller, ALLSEAL gives the operator advance notice of the pump's condition and can prevent serious consequences associated with pump failures

**Your benefit:**  
▶ **The best possible control**  
The vacuum gauge provides continuous information about the filter condition.

**Your benefit:**  
▶ **Rapid maintenance**  
Vertical filter installation enables filter replacement without draining oil.

**Your benefit:**  
▶ **Long service life and reliability**  
Thanks to the inside-out filter flow and a magnet in the floor of the filter, dirt and metal chips collect safely inside the filter.

**Your benefit:**  
▶ **Good suction performance**  
Large filter surfaces ensure very good suction performance and extended maintenance intervals.

**Your benefit:**  
▶ **Low-noise operation**  
The special shape of the threaded flanks produces virtually pulsation-free and quiet pumping action.

**Your benefit:**  
▶ **Temperature insensitivity**  
Optional heating permits safe starting even when the ambient temperature is low.

**ALLFUEL**

**ALLFUEL:**  
**Two versions:**  
"T": Low-pressure "Transfer" pumps up to 6 bar.  
"I": "Injection" pumps for medium pressure up to 40 bar.

When you choose a screw pump from the ALLFUEL family, you get a pump unit that efficiently and reliably pumps all mineral-based and synthetic oils. These pumps work with virtually no noise and pulsation, they are self-priming, and need only a small amount of space. ALLFUEL pumps are ideal when you need to supply burner systems with fuel or must fill or empty heat-carrier oil systems.

**A safe solution for critical systems**

ALLWEILER developed an innovative sealing design in response to elevated safety and environmental requirements. Depending on your requirements, you may choose to equip the ALLFUEL series with the new ALLSEAL leak-collection and -detection system in addition to the regular mechanical seal. ALLSEAL's opto-electronic sensor will give you advance notice that the mechanical seal requires maintenance. When combined with an emergency-stop switch, ALLSEAL can prevent serious pump failures and related high expenses.

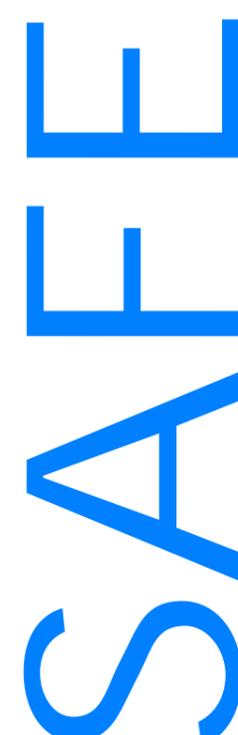
**Overview of the benefits:**

- ▶ Continuous monitoring of the mechanical seal
- ▶ Early detection of unusual leaks
- ▶ Safe handling of critical fluids
- ▶ Compliance with stringent environmental standards
- ▶ Longer pump service life

A hermetically-sealed magnetic coupling (ALLFUEL AFM series) is an alternative to ALLSEAL and ensures a complete absence of leaks for even greater safety and reliability. The redundant twin units (AFM-T series) for critical systems can be switched and replaced without interrupting normal operations. The optional radial screen filter (AFM-F series) ensures disturbance-free pumping of even contaminated liquids.



Maximum performance data of ALLFUEL				
	AFI	AFT	AFM	
Q	112	108	110	l/min
t	150	150	150	°C
p <sub>s</sub>	5	5	5	bar
p <sub>d</sub>	40	6	40	bar
v	1-750	1,4-380	1-750	mm <sup>2</sup> /s



**ALLWEILER -  
the right pump for  
every application**

Founded in 1860, ALLWEILER AG is the oldest German pump manufacturer and the European market and technology leader for centrifugal, propeller, screw, progressing cavity, macerator, gear, and peristaltic pumps. ALLWEILER AG is represented by distributors and salescompanies in European countries as well as in Egypt and South Africa. Around the world, the company has approximately 100 subsidiaries and partner companies.

ALLWEILER pumps are designed to meet the requirements in specific fields of use. These include especially marine and offshore, water and wastewater, power generation, process technology and chemistry, food and pharma, building industry, tool machinery, pulp and paper, heat transfer, bioenergy and oil and gas.

Our experience since 1860 is your guarantee. As a member of the Colfax Corp., we benefit from international know-how in development, design and production. By choosing ALLWEILER, the customer chooses not only a product of high quality and value, but also a manufacturer that offers competent, rapid and cooperation consultation.

Our global sales and service network ensures competent partners around the clock.

Contact us soon.

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## ALLHEAT® Information Request Form

Please make a copy of this form and fax it to:

ALLWEILER AG  
D-78315 Radolfzell

Fax +49 (0)7732 86-436

Or simply call or send us an E-mail. We look forward to hearing from you.

Phone +49 (0)7732 86-0

E-mail [service@allweiler.de](mailto:service@allweiler.de)

Please provide me free information at no obligation about (please check):

- |  |   |
|--|---|
| <input type="checkbox"/> ALLHEAT®                            | <input type="checkbox"/> ALLMAG®              |
| <input type="checkbox"/> Series NT, NB, NI                   | <input type="checkbox"/> Series NTT, NBT, NIT |
| <input type="checkbox"/> Series ALLFUEL                      | <input type="checkbox"/> Plant layout advice  |
| <input type="checkbox"/> Entire product line of ALLWEILER AG |   |

### Address

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Industry

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COLFAX  
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