

Rank.[®] HP1

Product description

If there is a heating requirement at a temperature above 100 °C, the Rank[®] HP1 machine can provide up to 120 kWt heating capacity.

Rank[®] HP1 is a high-temperature heat pump based on vapor compression technology, which uses low-temperature heat sources (above 60°C) and has high energy performance values, COP of 4.



What is it for?

The Rank[®] HP equipment allows the production of useful heat at a higher temperature through the use of a low-temperature heat source. For this, they consume electrical energy but efficiently.



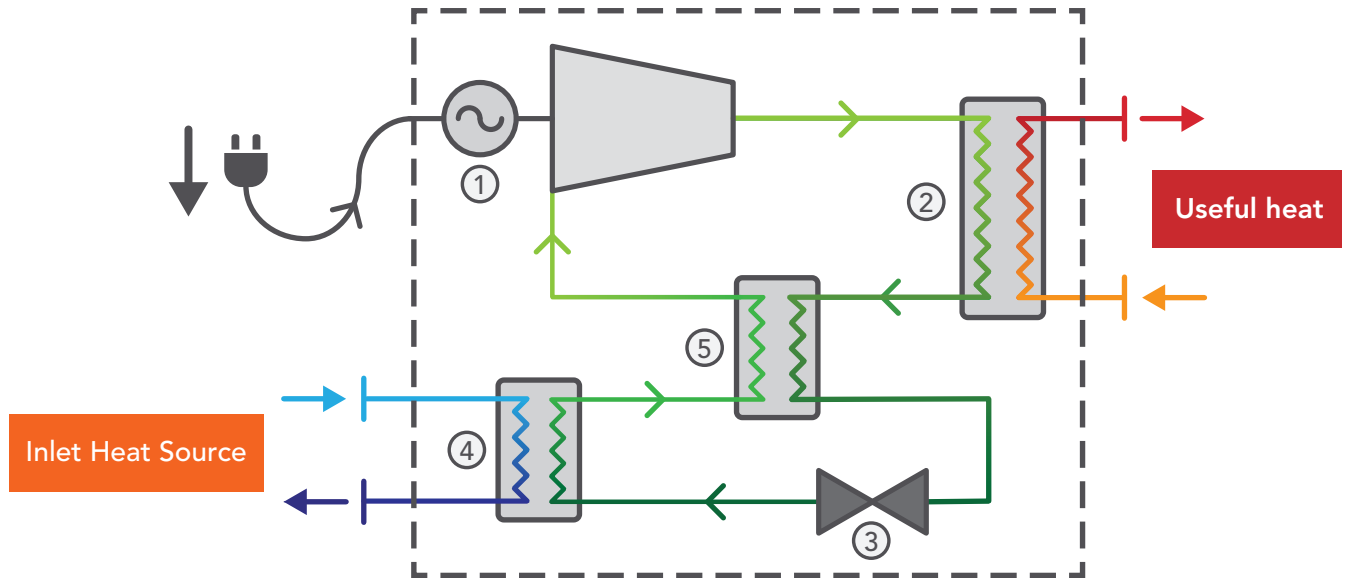
A Rank[®] machine for every need

Whatever your need is, there is a Rank[®] machine that can be adapted to it through a variety of products that cover a wide range of power.



Rank® HP1

How does it work?



- ① Compressor The compressor suctions the working fluid and increases its pressure and temperature.
- ② Condenser The working fluid condenses, releasing heat at a high temperature (useful heat).
- ③ Expansion valve The pressure of the working fluid is reduced to the evaporating condition.
- ④ Evaporator The low temperature heat source is exchanged in the evaporator.
- ⑤ IHX The internal heat exchanger (IHX), or liquid-to-suction heat exchanger (LSHX), is used to increase the energy performance of the system

Energy and economic savings

The Rank® HP equipment has associated important energy and economic savings. This is because of the high values of COP they present.

A value of COP of 4 indicates that to generate 4 kWt of useful heat at high temperatures, only 1 kWe of electrical consumption is required. Obviously, it is a heat production much more efficient than an electrical resistance.

In addition, by using a quarter of the necessary energy, energy, and economic savings are produced concerning the use of fossil fuels. This is due to using a low-temperature heat source and the high-temperature heat pump cycle used.

Rank® HP1

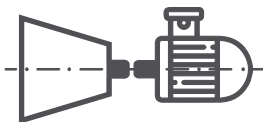
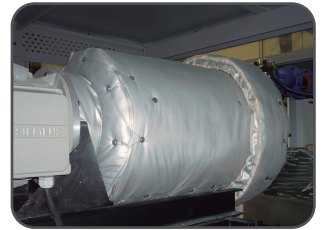
Rank® Technology

The Rank® equipment is composed of high quality, robust and efficient components, which offer our customers the following advantages and benefits.



Rank® low-rpm compressor

Operation at low revolutions reduces the noise level, lengthens the service life, and improves reliability.



Rank® direct drive

Direct drive avoids the use of gears or pulleys, minimising the maintenance and increasing electrical efficiency.



Zero leaks

Our hermetic components eliminate the leakage of the working fluid, reducing maintenance costs and downtime and being more environmentally friendly.



Magnetic transmission

Magnetic transmission to ensure tightness and to reduce the possibility of leakage.



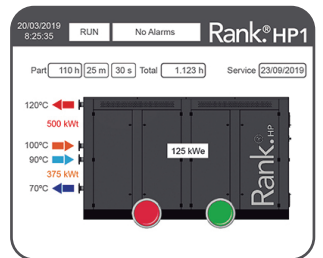
Flexible operation

Modular machines that can operate under a wide range of temperature and flow inlet and outlet conditions.



Digitalisation through the Rank® control system

Our machines operate without the need for the human interface through an automatic, efficient managing system.



Internet Of Things

Real-time data transmission via the internet allows predictive maintenance by server data analysis, online supervision (PC, mobile phone, tablet, etc.), and remote working parameters.



Safety

It complies with all safety regulations and minimises the risk of accidents.



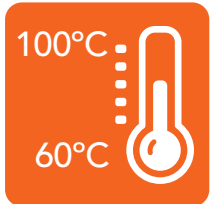

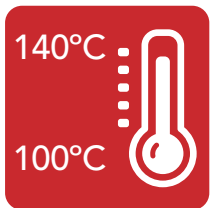
Rank® service

Real-time remote monitoring and predictive control of the machines and automatically generated reports.

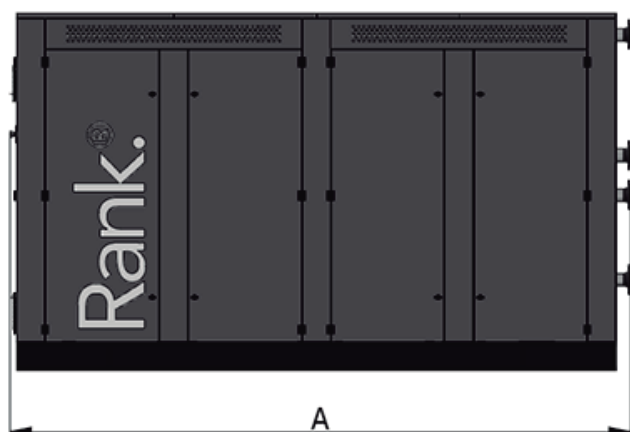
Safety Regulations and Standards

- Low voltage Directive
- Machinery Directive
- Electromagnetic Compatibility Directive
- Pressurized Equipment Directive
- ASME B31.1 – Power Piping Code, Mechanical
- ASME B31.3 – Process Piping Code
- ASME Boiler and Pressure Vessel Code Section VIII
- UL 508A- Control Panel Wiring
- EN/ISO 3744:2010

Technical Data

 Inlet Heat source	Heat transfer fluid	Water	-
	Inlet temperature	60-100	°C
	Outlet temperature	40-80	°C
	Volumetric flow rate	6	m ³ /h
	Thermal power	50-90	kWt
	Connections diameter	DN80 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		20	L
 Electricity	Power	15-30	kWe
	Voltage	3 x 400	V
	Frequency	50/60	Hz
	Intensity	54	A
 Useful heat	Heat transfer fluid	Water	-
	Inlet temperature	80-120	°C
	Outlet temperature	100-140	°C
	Volumetric flow rate	6	m ³ /h
	Thermal power	60-120	kWt
	Connections diameter	DN65 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		15	L
Data Connection		RJ45	-

Dimensions



A = 3 350 mm
 B = 1 550 mm
 C = 2 200 mm
 Weight 5 500 kg

Rank® HP2

Product description

If there is a heating requirement at a temperature above 100 °C, the Rank® HP2 machine can provide up to 240 kWt heating capacity.

Rank® HP2 is a high-temperature heat pump based on vapor compression technology, which uses low-temperature heat sources (above 60°C) and has high energy performance values, COP of 4.



What is it for?

The Rank® HP equipment allows the production of useful heat at a higher temperature through the use of a low-temperature heat source. For this, they consume electrical energy but efficiently.



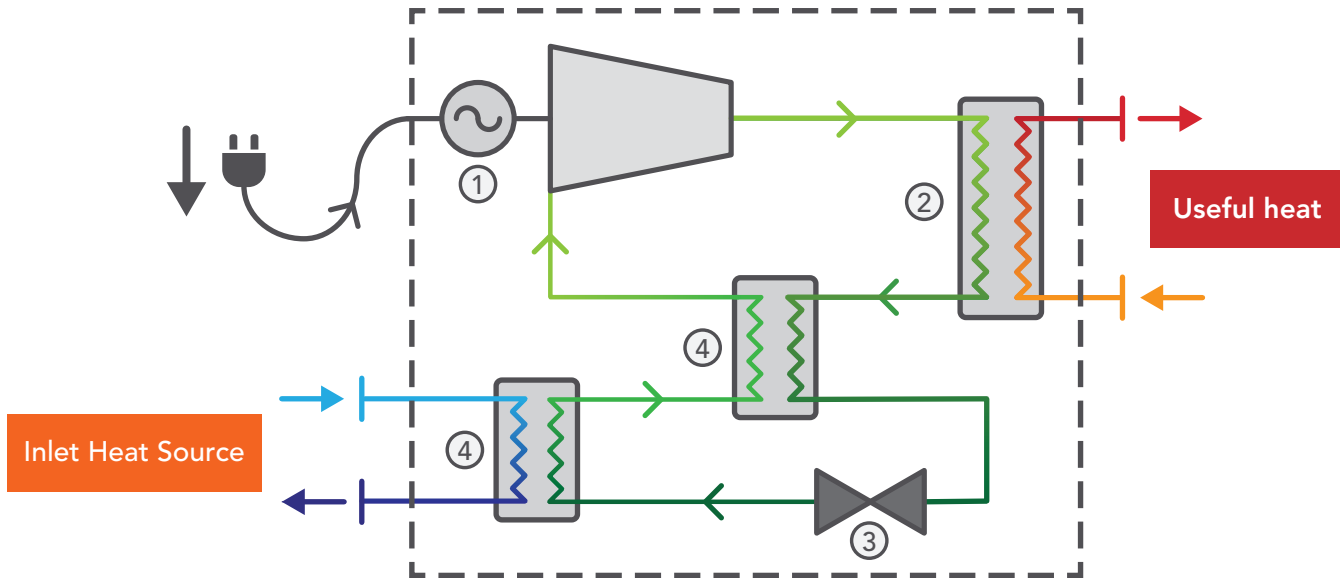
A Rank® machine for every need

Whatever your need is, there is a Rank® machine that can be adapted to it through a variety of products that cover a wide range of power.



Rank® HP2

How does it work?



- ① Compressor The compressor suctions the working fluid and increases its pressure and temperature.
- ② Condenser The working fluid condenses, releasing heat at a high temperature (useful heat).
- ③ Expansion valve The pressure of the working fluid is reduced to the evaporating condition.
- ④ Evaporator The low temperature heat source is exchanged in the evaporator.
- ⑤ IHX The internal heat exchanger (IHX), or liquid-to-suction heat exchanger (LSHX), is used to increase the energy performance of the system

Energy and economic savings

The Rank® HP equipment has associated important energy and economic savings. This is because of the high values of COP they present.

A value of COP of 4 indicates that to generate 4 kWt of useful heat at high temperatures, only 1 kWe of electrical consumption is required. Obviously, it is a heat production much more efficient than an electrical resistance.

In addition, by using a quarter of the necessary energy, energy, and economic savings are produced concerning the use of fossil fuels. This is due to using a low-temperature heat source and the high-temperature heat pump cycle used.

Rank® HP2

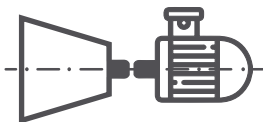
Rank® Technology

The Rank® equipment is composed of high quality, robust and efficient components, which offer our customers the following advantages and benefits.



Rank® low-rpm compressor

Operation at low revolutions reduces the noise level, lengthens the service life, and improves reliability.



Rank® direct drive

Direct drive avoids the use of gears or pulleys, minimising the maintenance and increasing electrical efficiency.



Zero leaks

Our hermetic components eliminate the leakage of the working fluid, reducing maintenance costs and downtime and being more environmentally friendly.



Magnetic transmission

Magnetic transmission to ensure tightness and to reduce the possibility of leakage.



Flexible operation

Modular machines that can operate under a wide range of temperature and flow inlet and outlet conditions.



Digitalisation through the Rank® control system

Our machines operate without the need for the human interface through an automatic, efficient managing system.



Internet Of Things

Real-time data transmission via the internet allows predictive maintenance by server data analysis, online supervision (PC, mobile phone, tablet, etc.), and remote working parameters.



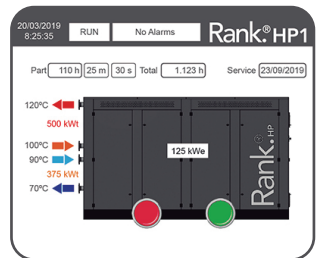
Safety

It complies with all safety regulations and minimises the risk of accidents.



Rank® service

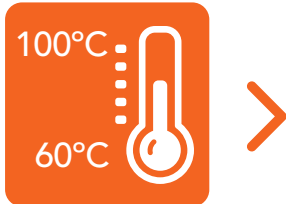

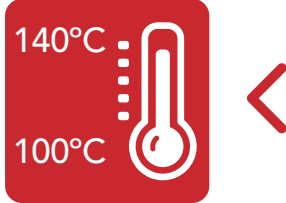
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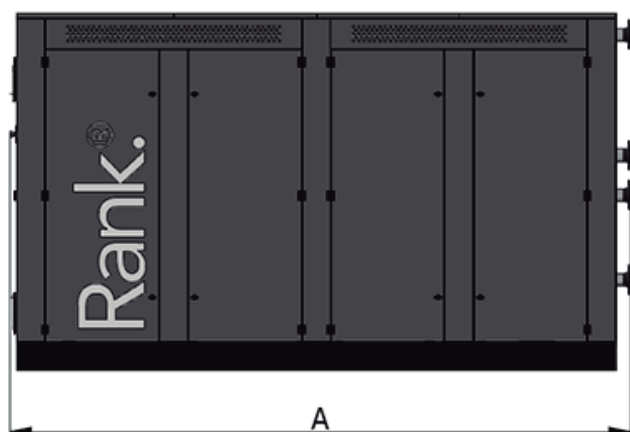
Safety Regulations and Standards

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- EN/ISO 3744:2010

Technical Data

 <p>Inlet Heat source</p>	Heat transfer fluid	Water	-
	Inlet temperature	60-100	°C
	Outlet temperature	40-80	°C
	Volumetric flow rate	12	m ³ /h
	Thermal power	90-180	kWt
	Connections diameter	DN100 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		50	L
 <p>Electricity</p>	Power	30-60	kWe
	Voltage	3 x 400	V
	Frequency	50/60	Hz
	Intensity	122	A
 <p>Useful heat</p>	Heat transfer fluid	Water	-
	Inlet temperature	80-120	°C
	Outlet temperature	100-140	°C
	Volumetric flow rate	12	m ³ /h
	Thermal power	120-240	kWt
	Connections diameter	DN100 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		50	L
Data Connection		RJ45	-

Dimensions



A = 4 850 mm
 B = 2 050 mm
 C = 2 500 mm
 Weight 6 500 kg

Rank.[®] HP3

Product description

If there is a heating requirement at a temperature above 100 °C, the Rank[®] HP3 machine can provide up to 500 kWt heating capacity.

Rank[®] HP3 is a high-temperature heat pump based on vapor compression technology, which uses low-temperature heat sources (above 60°C) and has high energy performance values, COP of 4.



What is it for?

The Rank[®] HP equipment allows the production of useful heat at a higher temperature through the use of a low-temperature heat source. For this, they consume electrical energy but efficiently.



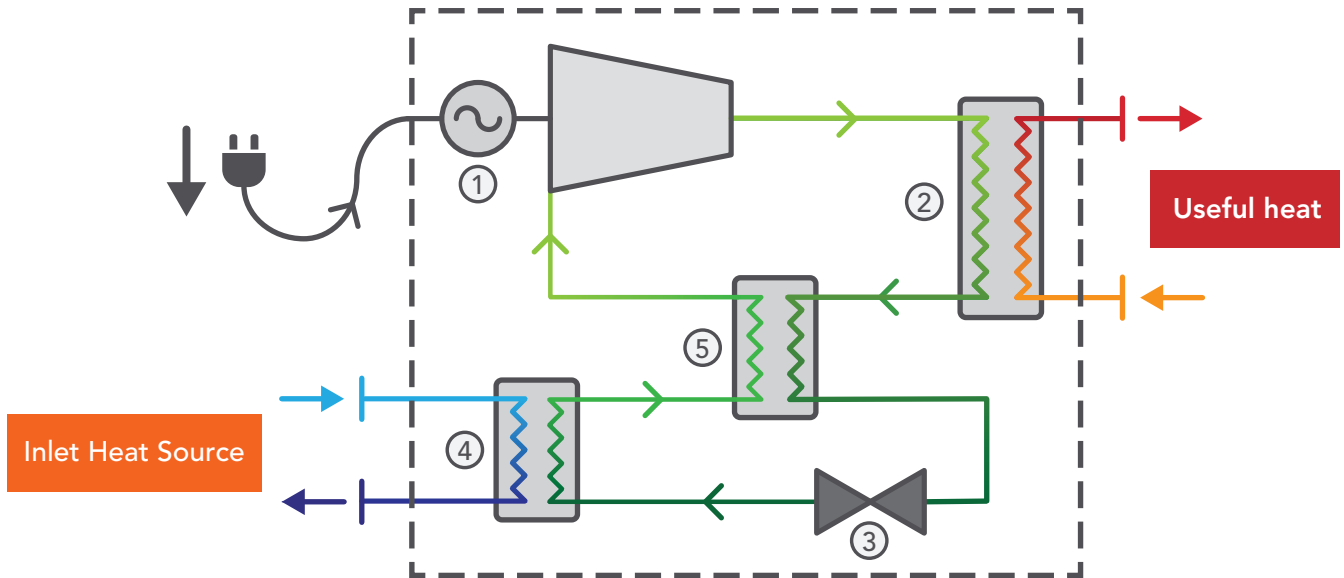
A Rank[®] machine for every need

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Rank® HP3

How does it work?



- ① Compressor The compressor suctions the working fluid and increases its pressure and temperature.
- ② Condenser The working fluid condenses, releasing heat at a high temperature (useful heat).
- ③ Expansion valve The pressure of the working fluid is reduced to the evaporating condition.
- ④ Evaporator The low temperature heat source is exchanged in the evaporator.
- ⑤ IHX The intermediate heat exchanger (IHX), or liquid-to-suction heat exchanger (LSHX), is used to increase the energy performance of the system

Energy and economic savings

The Rank® HP equipment has associated important energy and economic savings. This is because of the high values of COP they present.

A value of COP of 4 indicates that to generate 4 kWt of useful heat at high temperatures, only 1 kWe of electrical consumption is required. Obviously, it is a heat production much more efficient than an electrical resistance.

In addition, by using a quarter of the necessary energy, energy, and economic savings are produced concerning the use of fossil fuels. This is due to using a low-temperature heat source and the high-temperature heat pump cycle used.

Rank® HP3

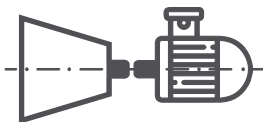
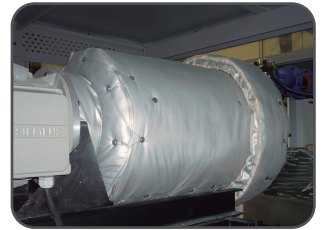
Rank® Technology

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Rank® low-rpm compressor

Operation at low revolutions reduces the noise level, lengthens the service life, and improves reliability.



Rank® direct drive

Direct drive avoids the use of gears or pulleys, minimising the maintenance and increasing electrical efficiency.



Zero leaks

Our hermetic components eliminate the leakage of the working fluid, reducing maintenance costs and downtime and being more environmentally friendly.



Magnetic transmission

Magnetic transmission to ensure tightness and to reduce the possibility of leakage.



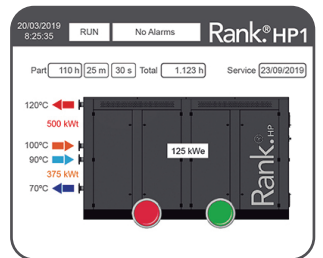
Flexible operation

Modular machines that can operate under a wide range of temperature and flow inlet and outlet conditions.



Digitalisation through the Rank® control system

Our machines operate without the need for the human interface through an automatic, efficient managing system.



Internet Of Things

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Safety

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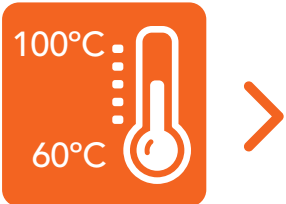

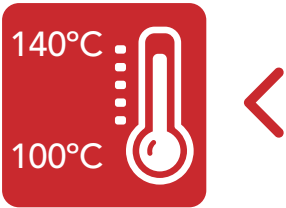
Rank® service

Real-time remote monitoring and predictive control of the machines and automatically generated reports.

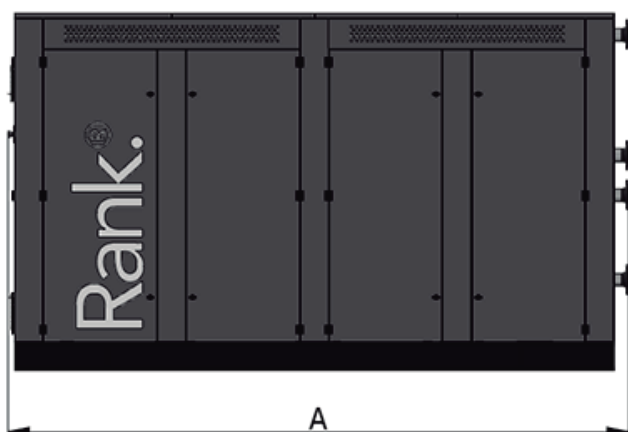
Safety Regulations and Standards

- Low voltage Directive
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- Electromagnetic Compatibility Directive
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- ASME B31.3 – Process Piping Code
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- UL 508A- Control Panel Wiring
- EN/ISO 3744:2010

Technical Data

 <p>Inlet Heat source</p>	Heat transfer fluid	Water	-
	Inlet temperature	60-100	°C
	Outlet temperature	40-80	°C
	Volumetric flow rate	22	m ³ /h
	Thermal power	190-380	kWt
	Connections diameter	DN150 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		120	L
 <p>Electricity</p>	Power	60-120	kWe
	Voltage	3 x 400	V
	Frequency	50/60	Hz
	Intensity	220	A
 <p>Useful heat</p>	Heat transfer fluid	Water	-
	Inlet temperature	80-120	°C
	Outlet temperature	100-140	°C
	Volumetric flow rate	22	m ³ /h
	Thermal power	250-500	kWt
	Connections diameter	DN150 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		120	L
Data Connection		RJ45	-

Dimensions



A = 5 800 mm
 B = 2 250 mm
 C = 2 500 mm
 Weight 8 000 kg

Rank.[®] HP4

Product description

If there is a heating requirement at a temperature above 100 °C, the Rank[®] HP4 machine can provide up to 2 000 kWt heating capacity.

Rank[®] HP4 is a high-temperature heat pump based on vapor compression technology, which uses low-temperature heat sources (above 60 °C) and has high energy performance values, COP of 4.



What is it for?

The Rank[®] HP equipment allows the production of useful heat at a higher temperature through the use of a low-temperature heat source. For this, they consume electrical energy but efficiently.



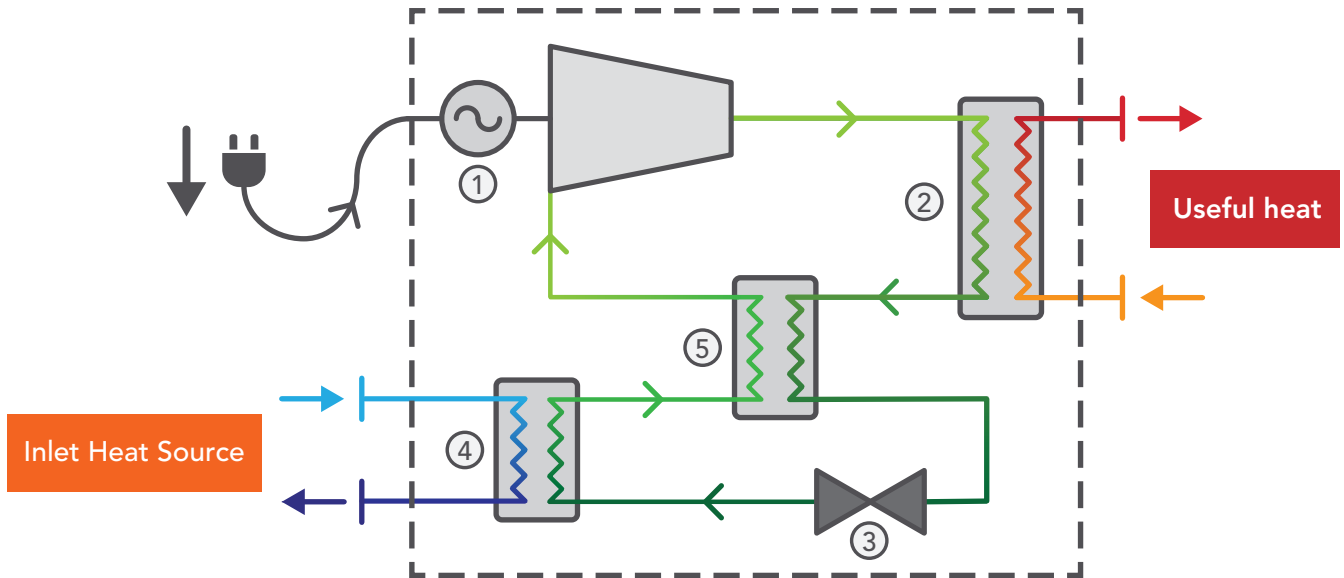
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Rank® HP4

How does it work?



- ① Compressor The compressor suctions the working fluid and increases its pressure and temperature.
- ② Condenser The working fluid condenses, releasing heat at a high temperature (useful heat).
- ③ Expansion valve The pressure of the working fluid is reduced to the evaporating condition.
- ④ Evaporator The low temperature heat source is exchanged in the evaporator.
- ⑤ IHX The intermediate heat exchanger (IHx), or liquid-to-suction heat exchanger (LSHX), is used to increase the energy performance of the system

Energy and economic savings

The Rank® HP equipment has associated important energy and economic savings. This is because of the high values of COP they present.

A value of COP of 4 indicates that to generate 4 kWt of useful heat at high temperatures, only 1 kWe of electrical consumption is required. Obviously, it is a heat production much more efficient than an electrical resistance.

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Rank® HP4

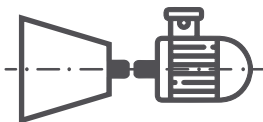
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Magnetic transmission

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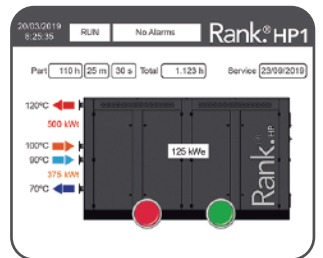
Flexible operation

Modular machines that can operate under a wide range of temperature and flow inlet and outlet conditions.



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Internet Of Things

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Safety

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Rank® service

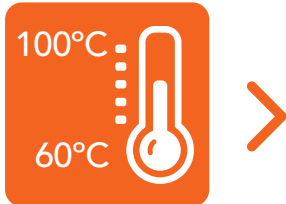

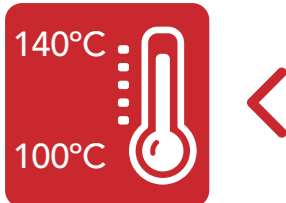
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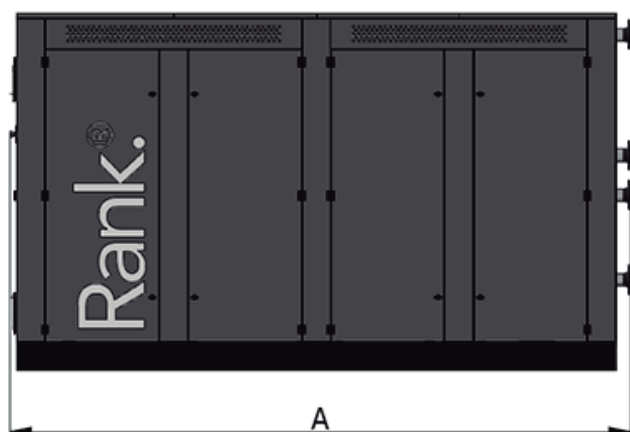
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Technical Data

 <p>Inlet Heat source</p>	Heat transfer fluid	Water	-
	Inlet temperature	60-100	°C
	Outlet temperature	40-80	°C
	Volumetric flow rate	88	m ³ /h
	Thermal power	720-1520	kWt
	Connections diameter	DN150 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		500	L
 <p>Electricity</p>	Power	240-480	kWe
	Voltage	3 x 400	V
	Frequency	50/60	Hz
	Intensity	880	A
 <p>Useful heat</p>	Heat transfer fluid	Water	-
	Inlet temperature	80-120	°C
	Outlet temperature	100-140	°C
	Volumetric flow rate	88	m ³ /h
	Thermal power	1 000-2 000	kWt
	Connections diameter	DN150 PN16	-
	Pressure drop	125	kPa
Heat transfer fluid inner volume		500	L
Data Connection		RJ45	-

Dimensions



A = 5 800 mm
 B = 2 250 mm
 C = 2 500 mm
 Weight 8 000 kg