

# HEAT SOURCE GROUND

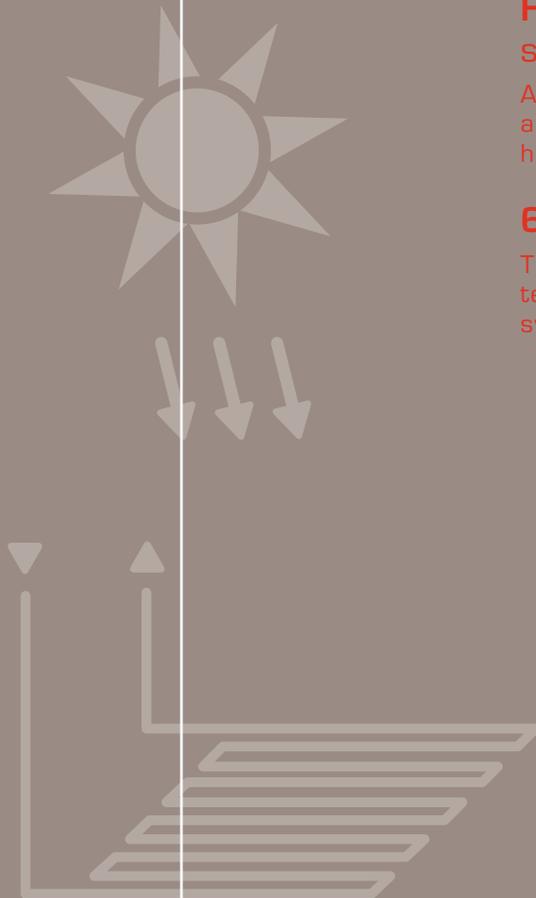
Ambient warmth from the ground — technology to feel good with.

**Heating and cooling** with solar energy from the ground:

Autonomy from fossil fuels, environmentally friendly operation and lowest heating costs. The new ground-source heat pumps from OCHSNER are setting the standards.

**65°C for retrofitting** in radiator heating systems:

The "plus" Series is designed for maximum heating flow temperatures up to 65°C and are thus ideally suited for heating system renovation.



**OCHSNER**  
The Heat Pump Company

# OCHSNER Heat pumps

## 30 SUCCESSFUL YEARS

### OCHSNER Heat pumps — 30 successful years

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The OCHSNER Wärmepumpen Company was founded in 1978 and since the beginning has been characterised by its environmental orientation, pioneer spirit and innovation. As one of the first manufacturers in Europe, OCHSNER began the first industrial production of heat pumps and is internationally ranked today as one of the technology leaders in the industry. Ever more efficient heat pumps with the highest possible customer usage are the result of decades of research and development.

The full range of products for all heat sources cover every area and ranges from heat pumps for heating, also with heating/cooling function, through industrial large-scale heat pumps up to heat pumps for domestic hot water (DHW).

#### STRENGTH FROM TRADITION

The original OCHSNER company was founded in Silesia back in 1872. The manufacturing program was limited at first to appliances and pumps.

From 1946 to 1992, the Linz factory was known for its technical achievements in the field of process pumps. Notable customers included international plant construction companies, as well as the US-Navy and NASA. Since 1992, Karl Ochsner and his team have been concentrating solely on the heat pump sector.

OCHSNER had the vision of being able to contribute to the future of our common national and global energy situation through the use of environmental energy. This also applies to the reduction of pollution and the conservation of finite resources.

#### ADVANTAGE THROUGH TECHNOLOGY

Heat pumps for the various systems are tested and measured in the OCHSNER testing laboratory under all operating conditions occurring in practice. The approvals take place according to the relevant international norms and quality guidelines.



Cutting-edge technical equipment give the scientific and technical personnel the opportunity of continuous product advancement and are the prerequisites of our technical advantage.

This specialisation, coupled with decades of experience guarantee the operator the highest possible operational safety and reliability.

# OCHSNER

## Ground source heat pumps

HEATING/COOLING WITH ENERGY  
FROM THE GROUND

### Ground heat – the inexhaustible heat source

The ground is a gigantic energy store, in which an almost unlimited amount of solar energy can be stored. Even in the depths of winter, the ground supplies more than enough energy to give you cosy warmth within your four walls. The heat pump makes it possible to use this energy store on your doorstep.

The amount of uses for the operator is impressive: Autonomy from all fossil fuels, **lowest operating costs** and a **safe and absolutely pollution-free operation**. Storage for fossil fuels, furnace maintenance, chimney sweep, oil tank filling, unpleasant smells and ash disposal are all a thing of the past.

Available also as an air-conditioning heat pump for **active cooling** using a reversible refrigerant circuit.

### RELIABLE HEATING TECHNOLOGY WITH THE GOLF AND GOLF PLUS SERIES

The Golf heat pump is a success story and your guarantee for a reliable operation. Proven cutting-edge technology from the technology leader provides decades of cosy warmth in your house. The Series Types GMDW and GMSW have been specially designed for the optimum use of the heat source ground. The ratings range from 5 to 37 kW for direct ground heat sourcing, and from 5 to 65 kW with brine systems, thus perfectly covering the requirements for single family, and multiple family houses. Put your trust in a maintenance free and safe technology which has been proven for decades.

### HOT WATER HEATING WITH THE HEAT PUMP

If desired, the heat pump can be used for domestic hot water (DHW) heating by means of an external DHW storage tank. The heat pump control automatically provides you with ample hot water at the required temperature all year round. Those who prefer their DHW heating separate from the space heating system can choose an OCHSNER hot-water heat pump of the "Europa" Series. These use the heat source exhaust air, or also ground heat. The even more economical solution.



Golf Maxi



Europa  
Mini EWP

# DIRECT GROUND HEAT SOURCE

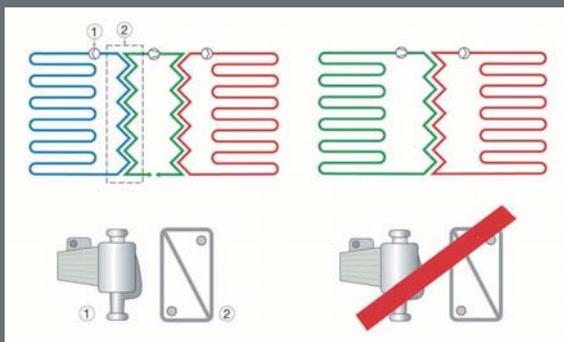
## HIGHEST EFFICIENCY WITHOUT DIVERSIONS

### Direct ground heat sourcing has advantages



There are many ways of utilising ground heat, the most efficient of these is direct ground heat sourcing. Here, the heat pump's working medium circulates as a heat carrier directly in the flat-laid collectors.

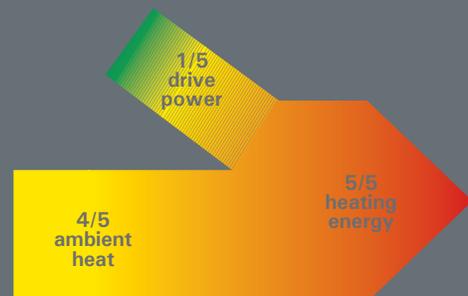
This medium extracts the heat from the ground – during which it evaporates – and is transported to the heat pump. Here it is compressed and heated to such an extent that it can be used for under-floor, wall, or radiator heating systems. The direct ground heat source system dispenses with the brine auxiliary circuit, comprising the brine circulating pump (1), the brine heat exchanger



(2) and expansion tank necessary for brine systems. This means increased safety due to fewer components and improved efficiency. Intermediate heat exchangers and energy for the brine pump are unnecessary.

### THE HIGHEST ENERGY MULTIPLICATOR OF ALL GROUND HEAT SOURCE SYSTEMS

Direct ground heat systems mean the lowest operating costs of all the ground heat source collector systems known to date, because with direct ground heat you use up to 4/5 environmental energy free-of-charge!



OCHSNER already achieved the highest Coefficients of Performance (COPs) for ground heat source back in the year 2000. The COP for under-floor heating is today well above 5, i.e. much higher than brine systems. For 1 kWh of electricity you get well over 5 kWh of heat.

These exceptional results have been officially confirmed by international testing laboratories such as Arsenal Research. The laboratory centre measured a peak value of 5.5. The outcome of this is lowest cost heating for the system user. The comparison with the brine systems, by the way, took place following the international quality guidelines D-A-CH at operating values of B4/W35.

**NEW!**

Direct ground heat source heat pump also as **active** cooling in summer!

## Heat extraction — laying the flat-laid collectors

The ground collector pipework for the OCHSNER direct ground heat source system is simple to install. In summer, as well as by lowest temperatures. The seamless special copper pipes are laid in several circuits at a depth of 120 cm, and bedded in sand. They are permanently and durably protected by plastic outer sheathing. The individual circuits come together in a collector duct and joined to the heat pump by means of a connecting pipe.



The collector area depends on the heating performance required, and the soil properties. The more dense, cohesive and moist the soil is, the more heat it can store, or make available for heating the house.

## RENOVATION OF THE OLD HEATING SYSTEM — THE PLUS SERIES

Using the new “**plus**” technology, OCHSNER can achieve as standard flow temperatures of **up to 65°C**. Thus, radiator heating systems can also be operated without any problem. Even if you need a far lower temperature for your under-floor heating system, you will profit in any case: the new generation of heat pumps show improved COPs at all flow temperatures and thus help you to save even more. Up to 75% running costs can be saved compared to your previous heating system. Before you renew your system, OCHSNER recommends that you renovate the fabric of the building accordingly and check the heat distribution system in order to make full use of your heat pump. The lower the heat load of the building, the more you can save on heating costs.

## THE ADVANTAGES OF A DIRECT GROUND HEAT SOURCE HEAT PUMP AT A GLANCE

- safe and quiet operation thanks to reliable technology
- also air-conditioning heat pump for optional active cooling in summer
- flow temperature **up to 65°C**
- **also suitable for radiator heating systems**
- lower operating costs than conventional brine/water heat pumps
- the highest energy multiplier of all ground heat source systems
- safety refrigerant R407C, non-flammable, non-toxic, ozone-neutral
- trouble-free collector laying, even at lowest temperatures
- hot water heating and pool heating possible

# GROUND HEAT SOURCE BRINE

## A PROVEN SYSTEM

### Ground heat source brine – three collector systems to choose from

OCHSNER offers an extensive range of brine heat pumps. This proven system can extract the heat from the ground in 3 different ways:

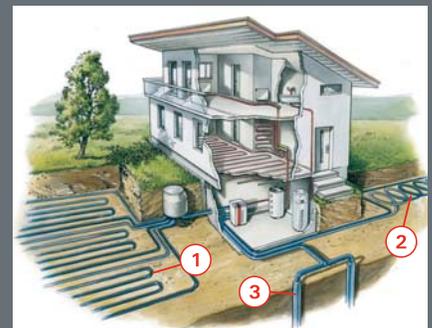
#### 1 FLAT-LAID COLLECTORS

If sufficient garden area is available, the least expensive solution: Laying to a depth of 120 to 140 cm. A heat carrying medium (brine) circulates in a rot-proof pipework system, absorbs solar energy in the form of ground heat and transports it to the heat pump.

#### 2 DEEP-TRENCH (KÜNNETTE) COLLECTORS

A small free area around the house is sufficient for installation.

By means of the spiral-formed construction and 180 cm deep laying, an optimum combination of ground volume and surface area is utilised.



#### 3 GROUND PROBES

Below a depth of 15 metres, a ground temperature is constant all year round, gradually rising from a depth of 30 m onwards. Two parallel probe circuits make up the OCHSNER ground probe. Lowest space requirement. The probe length averages up to 100m. Mainly for utilisation of geothermal ground heat.

### Heating AND cooling with one system

If required, your OCHSNER heat pump can cool your house in summer with the lowest running costs, without an additional, complex and often loud air-conditioner!

The heat pump function is simply reversed, the air in the house is cooled and the surplus heat dispersed in the ground. The pleasant cooling of the house takes place without draughts or noise via the existing heat distribution system (e.g. wall heating, under-floor heating or special radiators). During the cooling operation, the ground is “charged” with heat. In the following winter, a part of this stored energy is available additionally for heating purposes. By means of the active cooling, your heat pump – in contrast to conventional passive systems – delivers sufficiently high and consistent cooling – over a period of many weeks if necessary.

### Efficiency winner “plus” Series – heating renovation

The cutting-edge technology of the “plus” series provides even higher COPs in combination with under-floor heating and allows as standard **up to 65°C** flow temperatures. It is therefore ideally suited for heating system renovation and retrofitting of radiator heating systems.

# GROUND HEAT SOURCE HEAT PUMPS

## TECHNICAL DATA

### Heat pumps for heating – Golf and Golf plus direct heat source

Series		Golf Midi plus			Golf Maxi plus			Golf Maxi	
Appliance type		GMDW 6	GMDW 8	GMDW 11	GMDW 13	GMDW 15	GMDW 18	GMDW 25	GMDW 30
Dimensions (HxWxD)		1150x400x650			1150x600x650				
Mass		105	112	120	128	133	140	154	163
Flow temperature to		+ 65°C			+ 65°C			+ 55°C	
G4/W35	Heating rating	6,5	8,8	12,3	14,5	17,7	21,2	30,1	37
	Base cooling rating	5,3	7,2	10,1	11,9	14,6	17,4	24,2	29,6
	Power draw	1,2	1,6	2,2	2,6	3,1	3,8	5,9	7,4
	COP	5,4	5,5	5,6	5,6	5,7	5,6	5,1	5
	Operating current	2,6	3,2	4,5	4,9	6,1	7,2	12,5	15,2
G0/W60	Heating rating	5	6,2	9,1	10,5	13,1	15,5	-	-
	Power draw	2,1	2,6	3,7	4	5	6	-	-
	COP	2,4	2,4	2,5	2,6	2,6	2,6	-	-
	Operating current	3,7	4,4	6	6,7	8,4	9,9	-	-

### Heat pumps for heating – Golf and Golf plus brine system

Series		Golf Midi plus			Golf Maxi plus			Golf Maxi		
Appliance type <sup>1)</sup>		GMSW 6	GMSW 7	GMSW 10	GMSW 12	GMSW 15	GMSW 17	GMSW 28	GMSW 33	GMSW 38
Dimensions (HxWxD)		1150x400x650			1150x600x650					
Mass		113	115	119	132	138	142	161	167	174
Flow temperature to		+ 65°C			+ 65°C			+ 55°C		
B0/W35	Heating rating	5,5	7	10,1	12	14,7	16,8	19,8	25,3	28,8
	Base cooling rating	4,3	5,5	8	9,5	11,7	13,3	15,4	19,8	22,4
	Power draw	1,2	1,5	2,1	2,5	3	3,5	4,4	5,5	6,4
	COP	4,6	4,7	4,8	4,8	4,9	4,8	4,5	4,6	4,5
	Operating current	2,6	3,2	4,4	4,9	6	7,1	10,3	11,8	13,5
B0/W60	Heating rating	5	6,2	9	10,3	13,1	15,1	-	-	-
	Power draw	2,1	2,6	3,6	4	5	5,8	-	-	-
	COP	2,4	2,4	2,5	2,6	2,6	2,6	-	-	-
	Operating current	3,7	4,4	6	6,7	8,4	9,7	-	-	-

1) Higher ratings on request.

## Comfort within your own four walls

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Choose ground heat from OCHSNER. Choose highest comfort and absolute ease of living. Profit from state-of-the-art technology, providing the lowest running costs and enjoy your independence from fossil fuels, as well as the quiet operation of your heating system. Be glad for yourself and for the environment, because not only are you saving CO<sub>2</sub> pollution, but also avoiding other emissions such as fine dust.



**Put your trust in 30 years of competence and more than 80,000 installations. Put your trust in OCHSNER!**

OCHSNER heat pumps are installed exclusively by trained and competent engineers — the OCHSNER-SYSTEM PARTNERS. Your local system partner will be glad to advise you.

Visit us on the internet for current information under [www.ochsner.com](http://www.ochsner.com)

Your specialist company

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