

BRINE

Monovalent heating system with
heat source brine

tv max. 65°C

GOLF MIDI PLUS



GOLF MAXI PLUS



Series	HEATING				HEATING	
	1150 x 400 x 650		1150 x 600 x 650			
Model	GMSW 5 plus	GMSW 7 plus	GMSW 10 plus S	GMSW 12 plus S	GMSW 15 plus	GMSW 17 plus
Order number / delivery class	264460 / III	264550 / II	264605 / II	264655 / II	264700 / II	264750 / II
Price incl. accessories (see right-hand side of page)	6.607,-	7.235,-	8.270,-	9.305,-	9.408,-	9.822,-
Energy efficiency class at max. FLT						
Technical data:						
Weight/hydraulic connection	[kg]/Inch	113 / 1 1/4"	115 / 1 1/4"	124 / 1 1/4"	132 / 1 1/4"	138 / 1 1/4"
Phases/nominal voltage/frequency	[-/V/Hz]	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
Fuse (trip characteristic 'C')	[A]	10	10	10	13	16
Refrigerant		R407C	R407C	R407C	R407C	R407C
Evaporator		Stainless-steel plate HE Mat. 1.4401		Stainless-steel plate HE Mat. 1.4401		
Temp. diff. of evaporator heat carrier (heat source system)	[K]	3	3	3	3	3
Min. heat carrier flow rate – heat source	[m³/h]	1,2	1,7	2,7	2,9	3,5
Internal pressure difference	[mbar]	77	170	100	38	210
Condenser		Stainless-steel plate HE Mat. 1.4301		Stainless-steel plate HE Mat. 1.4301		
Condenser heat carrier temperature difference (heat system)	[K]	5	5	5	5	5
Heat carrier flow rate	[m³/h]	0,9	1,2	1,84	2,1	2,5
Internal pressure difference	[mbar]	73	90	40	16	100
Standard point S0/W35						
Heating capacity	[kW]	5,2	7,1	10,6	12,2	14,2
Basic cooling capacity	[kW]	4,0	5,4	8,4	9,7	11,0
Power consumption	[kW]	1,2	1,65	2,25	2,5	3,2
COP EN 14511/EN 255		4,3/4,6	4,3/4,8	4,7/5,1	4,9/5,2	4,4/4,7
Operating current	[A]	2,6	3,6	4,7	4,9	6,4
Operating point S0/W50						
Heating capacity	[kW]	4,8	6,2	9,6	11,1	13,0
Power consumption	[kW]	1,6	2,1	3,0	3,3	4,1
COP EN 14511/EN 255		3,0/3,3	3,0/3,3	3,2/3,5	3,4/3,7	3,2/3,4
Operating current	[A]	3,4	4,5	6,3	5,8 ??	8,2
Operating point S0/W60						
Heating capacity	[kW]	4,6	6,1	9,4	10,7	12,4
Power consumption	[kW]	2,1	2,7	3,7	4,1	4,9
COP EN 14511/EN 255		2,2/2,4	2,3/2,5	2,5/2,7	2,6/2,8	2,5/2,7
Operating current	[A]	3,6	5,8	7,7	7,0 ??	9,8
Operating point S25/W18						
Cooling capacity	[kW]					
Exhaust heat capacity	[kW]					
Power consumption/operating current	[kW]/[A]					
COP EER						
Operating point S25/W7						
Cooling capacity	[kW]					
Exhaust heat capacity	[kW]					
Power consumption/operating current	[kW]/[A]					
COP EER						
Compressor						
Number		1	1	1	1	1
Type		Scroll, fully hermetic		Scroll, fully hermetic		
Power stages		1	1	1	1	1
Max. Operating current	[A]	4	6	8	8,2	11
Max. start-up current	[A]	27	37	41	51,5	67
Max. with soft-start	[A]	13,5	18,5	20,5	25,8	33,5
Heat source system:						
Brine collector set (flat & deep-trench installation)		ESK 3 290166	ESK 4 290167	ESK 6 290169	ESK 6 290169	ESK 7 290170
Price		1.516,-	1.877,-	2.494,-	2.494,-	2.915,-
Collector quantity		3	4	6	6	7
Installation area	[m²]	180	230	380	380	470
						540

GOLF MAXI HK PLUS



HEATING/COOLING

1150 x 600 x 650

GMSW 7 HK plus	GMSW 10 HK plus	GMSW 12 HK plus	GMSW 15 HK plus	GMSW 17 HK plus
264558 / III	264608 / III	264658 / III	264708 / III	264758 / III

9.402,- 10.008,- 11.127,- 11.815,- 12.803,-

35°C	55°C	35°C	55°C	35°C	55°C	35°C	55°C	35°C	55°C
A++	A+	A++	A+	A++	A++	A++	A++	A++	A++
		A+++*		A+++*		A+++*		A+++*	

115 / 1 1/4"	119 / 1 1/4"	132 / 1 1/4"	138 / 1 1/4"	142 / 1 1/2"
3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
10	10	13	16	16
R407C	R407C	R407C	R407C	R407C

Stainless-steel plate HE Mat. 1.4401

3	3	3	3	3
1,7	2,5	2,9	3,5	4
170	214	180	210	190

Stainless-steel plate HE Mat. 1.4301

5	5	5	5	5
1,2	1,8	2,1	2,5	2,9
90	103	90	100	100

S0/W35

7,1	10,3	12,1	14,2	16,7
5,4	8,1	9,4	11,0	13,1
1,7	2,25	2,7	3,2	3,6
4,2/4,8	4,6/4,8	4,5/4,9	4,4/4,7	4,6/4,9
3,7	4,7	5,3	6,4	7,3

S0/W50

6,2	9,0	10,5	13,0	15,2
2,1	2,9	3,3	4,1	4,6
3,0/3,3	3,1/3,3	3,2/3,4	3,2/3,4	3,3/3,5
4,5	6,1	6,5	8,2	9,4

S0/W60

6,1	8,3	10,1	12,4	15,0
2,7	3,6	4,0	4,9	5,8
2,3/2,5	2,3/2,4	2,5/2,7	2,5/2,7	2,6/2,7
5,8	7,5	7,9	9,8	11,8

S25/W18

8,2	12,2	14,0	17,4	20,2
9,9	14,3	16,5	20,5	23,7
1,7/3,7	2,1/4,4	2,5/4,9	3,1/6,2	3,5/7,1
4,8	5,8	5,6	5,6	5,8

S25/W7

5,2	7,1	9,2	9,8	13,2
6,7	8,8	11,5	12,3	16,4
1,5/3,2	1,7/3,6	2,3/4,5	2,5/5,0	3,2/6,5
3,5	4,2	4,0	3,9	4,1

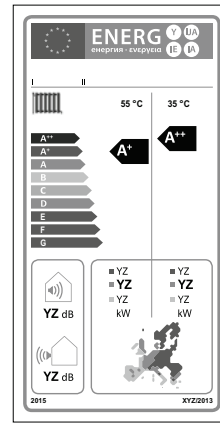
1	1	1	1	1
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Scroll, fully hermetic

1	1	1	1	1
6	8	9	11	12
37	41	55	67	70
18,5	20,5	27,5	33,5	35

ESK 4 290167	ESK 5 290168	ESK 6 290169	ESK 7 290170	ESK 8 290171
1.877,-	2.157,-	2.494,-	2.915,-	3.254,-
4	5	6	7	8

230	330	380	470	540
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Sample label



Accessories included in heat pump price:

OTE 3 Interior Climate Manager / for heating/cooling incl. remote room control with graphic display

DN 32 or DN 40 heat use and heat source system flow volume control

Noise-dampening underlay

Flexible connecting hose – 4pcs. per heat pump 1 1/4", 1 1/2" x 750 mm with bend

High-efficiency, energy-saving circulation pump – heat use/heat source internal

Optional accessories:

	Nr.	Models	Price
Hot-water heating via internal 3-way switching module incl. 1 additional flexible hose	990494	GMSW 5 plus + 7 plus / HK + 10 HK plus + 10 plus S	457,-
Hot-water heating via external 3-way switching module	290229	GMSW 12 plus / HK + GMSW 15 plus / HK	279,-
	290341	GMSW 17 plus / HK	345,-
	801401	GMSW 5 plus	551,-
	801402	GMSW 7 plus	556,-
	801403	GMSW 7 HK plus	567,-
	801405	GMSW 10 HK plus	573,-
	801406	GMSW 10 plus S	629,-
	801407	GMSW 12 plus S + 12 HK plus	629,-
	801408	GMSW 15 plus	575,-
	801409	GMSW 15 HK plus	592,-
	801410	GMSW 17 plus	581,-
801411	GMSW 17 HK plus	597,-	
Commissioning lump sum (see information on pages 62-63) Net	990808	GMSW 5 plus - 15 plus / HK	219,-
	990803	GMSW 17 plus / HK	268,-
Heating/cooling upgrade with touch-display Room Terminal and integrated web2com server	980169	extra with all heating/cooling systems	490,-

* A+++ for top appliances which achieve this value, classification allowed from 2017.

Delivery class II - max. 4 weeks, order-based manufacture

Delivery class III - max. 4-8 weeks, order-based manufacture

Important information supplementing General Information on pages 22-23, 48-49 and 60-61: for Golf Midi plus and Golf Maxi plus only: safety group brine comprising expansion vessel, 1 safety valve, manometer and 2 stopcocks integrated into the heat pump. Internal 3-way switching modules only with the Golf Midi model. All pipe cross-sections must be sized and installed in accordance with nominal volume flows and comply with the operating limits of heat source and heat use systems. For wall conduits, see the 'Accessories' page and the OCHSNER Manual. Brine collector set comprising: PE-tube 1" 120m, DN 25, Ø 32, brine distributor, fittings, antifreeze, ethylene glycol (price does not include earth work, supervisor or installation). Brine circulation pump and safety group integrated into heat pump. Sizing: for slightly turbulent flow conditions when using ethylene glycol, the flow rate per collector is to be set at 0.6 – 0.8 m/h, and for earth probes we recommend the use of duplex probes. Depending on requirements simplex probes may also be used; these must be calculated separately in the planning stage.

Insulate the pipework of cooling systems against the formation of condensation. Ensure that the hydraulic safety and pressure systems are appropriately sized to ensure operational safety, particularly for defrosting or cooling operations. Inspect on an annual basis in accordance with official standards (VDI 2035).

As an approximation:

System filling pressure during heating and cooling operation [bar] = MEV inlet pressure + 0.3 [bar], filling pressure of cooling system [bar] = MEV inlet pressure + 0.5 [bar], filling pressure of source system [bar] = MEV inlet pressure + 0.5 [bar]

Prices in €, excl. VAT

BRINE

Monovalent heating system with
heat source brine

tv max. 55°C

GOLF MAXI



STANDARD



Series	HEATING			HEATING		
	1150 x 600 x 650			1850 x 695 x 585		
Dimensions LxWxH [mm]						
Model	GMSW 28	GMSW 38	OSWP 56	OSWP 96	OSWP 96 R	65
Order number / delivery class	264350 / III	264450 / III	221100 / III	221200 / III	224200 / III	
Price incl. accessories (see right-hand side of page)	11.407,-	13.316,-	19.703,-	26.086,-	26.032,-	
Energy efficiency class at max. FLT	35°C A++ A++++*	55°C A+ A++++*	35°C A++ A++++*	55°C A++ A++++*	35°C A++ A++++*	55°C A++ A++++*

Technical data:

Weight/hydraulic connection	[kg]/[Inch]	161 / 1 1/2"	174 / 2"	238 / 2"	320 / 2"	320 / 2"
Phases/nominal voltage/frequency	[-V/Hz]	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
Fuse (trip characteristic 'C')	[A]	20	25	40	63	63
Refrigerant		R 407C	R 407C	R 407C	R 407C	R 134a
Evaporator		Stainless-steel plate HE Mat. 1.4401		Stainless-steel plate HE Mat. 1.4401		
Evaporator heat carrier temperature diff.	[K]	3	3	3	3	3
Min. heat carrier flow rate – heat source	[m³/h]	4,6	6,7	10,5	17,5	11,6
Internal pressure difference	[mbar]	240	370	200	180	90
Condenser		Stainless-steel plate HE Mat. 1.4301		Stainless-steel plate HE Mat. 1.4301		
Condenser heat carrier temperature difference (heat system)	[K]	5	5	5	5	5
Heat carrier flow rate	[m³/h]	3,4	5	7,6	12,6	8,4
Internal pressure difference	[mbar]	120	190	100	100	40
Standard point S0/W35						
Heating capacity	[kW]	22,2	28,7	43,6	72,6	48,3
Basic cooling capacity	[kW]	17,1	22,2	34,1	56,7	37,8
Power consumption	[kW]	5,1	6,5	9,5	15,9	10,5
COP EN14511/EN 255		4,3/4,7	4,4/4,7	4,6/4,9	4,6/4,9	4,6/4,9
Operating current	[A]	10,6	13,8	18,0	30,2	19,9
Operating point S0/W50						
Heating capacity	[kW]	18,3	25,6	41,7	67,8	45,9
Power consumption	[kW]	6,1	8,5	12,9	21,7	13,8
COP EN14511/EN 255		3,0/3,1	3,0/3,2	3,2/3,4	3,1/3,3	3,3/3,5
Operating current	[A]	14,4	18,0	24,5	41,2	26,2
Operating point S0/W60						
Heating capacity	[kW]					44,5
Power consumption	[kW]					16,9
COP EN14511/EN 255						2,6/2,8
Operating current	[A]					32,1
Operating point S25/W18						
Cooling capacity	[kW]					
Exhaust heat capacity	[kW]					
Power capacity/operating current	[kW]/[A]					
COP EER						
Operating point S25/W7						
Cooling capacity	[kW]					
Exhaust heat capacity	[kW]					
Power capacity/operating current	[kW]/[A]					
COP EER						
Compressor						
Number		1	1	1	1	1
Type		Scroll, fully hermetic		Scroll, fully hermetic		
Power stages		1	1	1	1	1
Max. Operating current	[A]	17	22	32	52	52
Max. start-up current	[A]	99	127	198	272	272
Max. with soft-start	[A]	49,5	63,5	99	136	136

Heat source system:

Brine collector set (flat & deep-trench installation)		ESKP 10 290504	ESKP 14 290506	ESKP 18 290508	ESKP 30 290510	ESKP 18 290508
Price (incl. high-efficiency pump – heat source)		5.350,-	7.579,-	8.900,-	13.719,-	8.900,-
Collector quantity		10	14	18	30	18
Installation area	[m²]	620	900	1200	1980	1200

GOLF MAXI HK



STANDARD HK



HEATING/COOLING

1150 x 600 x 650

GMSW 28 HK	GMSW 38 HK
264358 / III	264458 / III

13.573,-



HEATING/COOLING

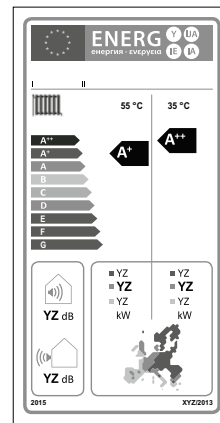
1850 x 695 x 585

OSWP 56 HK	OSWP 96 HK
221108 / III	221208 / III

23.165,-



30.166,-



Sample label

Accessories included in heat pump price:

OTE 3 Interior Climate Manager / for heating/cooling incl. remote room control with graphic display

DN 40 or DN 50 heat use and heat source system flow volume control

Noise-dampening underlay

Flexible connecting hose – 4 pcs. per heat pump 1 1/2" x 750 mm or 2" x 1000 mm with bend

Optional accessories:

	Nr.	Models	Price
	801412	GMSW 28	588,-
	801413	GMSW 28 HK	595,-
	801411	GMSW 38	597,-
Commissioning lump sum (see information on pages 62-63)	801414	GMSW 38 HK	604,-
Net	801415	OSWP 56	741,-
	801416	OSWP 56 HK	741,-
	801417	OSWP 96	913,-
	801418	OSWP 96 HK	913,-
	801419	OSWP 96 R	1.016,-
Start-up current limiter	990803	GMSW 28 / HK	268,-
	990804	GMSW 38 / HK	307,-
	990205	OSWP 56 / HK	1.341,-
	990373	OSWP 96 / HK + 96R	1.484,-
High-efficiency, energy-saving circulation pump – heat use/heat source external			
Circulation pump 30	922461	GMSW 28 + 38 / HK	1.221,-
Circulation pump 40.1	922347	OSWP 56 / HK + 96 R	1.391,-
Circulation pump 65	922462	OSWP 96 / HK	2.572,-
High-efficiency, energy-saving heat source external pump			
Circulation pump 30	922461	GMSW 28 + 38 / HK	1.221,-
Circulation pump 40.2	922348	OSWP 56 / HK + 96 R	1.987,-
Circulation pump 50	922349	OSWP 96 / HK	2.423,-
Safety group	290006	GMSW 28 / HK + 38 / HK	299,-
Ethylene glycol-based anti-freeze concentrate	928153	all	111,-
Antifreeze concentrate O-Cool pro	928137	all	188,-
Brine distributor (safety group already installed in Standard series)			see p. 54-55
Hot-water heating via external 3-way switching module	290341	GMSW 28 / HK	345,-
	290342	GMSW 38 / HK + OSWP 56 / 56 HK + 96 / HK + 96 R	372,-
Heating/cooling upgrade with touch-display Room Terminal and integrated web2com server	980169	supplied with all heating/cooling systems	490,-

* A+++ for top appliances which achieve this value, classification allowed from 2017.

Important information supplementing General Information on pages 22–23, 48–49 and 60-61: safety groups for Golf Maxi comprising 25 l expansion vessel, 1 safety valve, manometer, 2 stopcocks and 2 fill/drain valves for external installation. Use internal 3-way switching modules only with the Golf Midi model. All pipe cross-sections must be sized and installed in accordance with nominal volume flows and comply with the operating limits of heat source and heat use systems. For wall conduits, see the 'Accessories' page and the OCHSNER Manual. Brine collector set comprising: PE-tube 1" 120m, DN 25, Ø 32, brine distributor, armatures, antifreeze, ethylene glycol (price does not include earth work, supervisor or installation). Sizing: for slightly turbulent flow conditions when using ethylene glycol, the flow rate per collector is to be set at 0.6 – 0.8 m/h, and for earth probes we recommend the use of duplex probes. Depending on requirements simplex probes may also be used; these must be calculated separately in the planning stage.

Insulate the pipework of cooling systems against the formation of condensation. Ensure that the hydraulic safety and pressure systems are appropriately sized to ensure operational safety, particularly for defrosting or cooling operations. Inspect on an annual basis in accordance with official standards.

As an approximation:
System filling pressure during heating and cooling operation [bar] = MEV inlet pressure + 0.3 [bar], filling pressure of cooling system [bar] = MEV inlet pressure + 0.5 [bar], filling pressure of source system [bar] = MEV inlet pressure + 0.5 [bar]

Prices in €, excl. VAT
Delivery class III - max. 4-8 weeks, order-based manufacture

GMSW 28 HK		GMSW 38 HK		OSWP 56 HK		OSWP 96 HK	
161 / 1 1/2"	174 / 2"	238 / 2"	320 / 2"				
3/400/50	3/400/50	3/400/50	3/400/50				
20	25	40	63				
R 407C	R 407C	R 407C	R 407C				
Stainless-steel plate HE Mat. 1.4401		Stainless-steel plate HE Mat. 1.4401					
3	3	3	3				
4,6	6,7	10,5	17,5				
240	370	200	180				
Stainless-steel plate HE Mat. 1.4301		Stainless-steel plate HE Mat. 1.4301					
5	5	5	5				
3,4	5	7,6	12,6				
120	190	100	100				
S0/W35							
22,2	28,7	43,6	72,6				
17,1	22,2	34,1	56,7				
5,1	6,5	9,5	15,9				
4,3/4,7	4,4/4,7	4,6/4,9	4,6/4,9				
10,6	13,8	18,0	30,2				
S0/W50							
18,3	25,6	41,7	67,8				
6,1	8,5	12,9	21,7				
3,0/3,1	3,0/3,2	3,2/3,4	3,1/3,3				
14,4	18,0	24,5	41,2				
S25/W18							
27,3	37,4	58,9	97,0				
32,2	44,0	69,4	114,3				
4,9/11,6	6,6/14,0	10,5/19,9	17,3/32,9				
5,6	5,7	5,6	5,6				
S25/W7							
16,1	22,0	34,3	57,1				
20,1	27,4	42,8	71,3				
4,0/9,5	5,4/11,5	8,5/16,1	14,2/27,0				
4,0	4,1	4,0	4,0				
Scroll, fully hermetic							
1	1	1	1				
17	22	32	52				
99	127	198	272				
49,5	63,5	99	136				
ESKP 10 290504		ESKP 14 290506		ESKP 18 290508		ESKP 30 290510	
5.350,-	7.579,-	8.900,-	13.719,-				
10	14	18	30				
620	900	1200	1980				

SIZING

GOLF MIDI PLUS

GOLF MAXI PLUS

Hydraulic accessories Heat use

for heat pumps with
HEAT SOURCE BRINE



Model		GMSW 5 plus	GMSW 7 plus	GMSW 10 plus	GMSW 10 plus S	GMSW 12 plus	GMSW 12 plus S	GMSW 15 plus	GMSW 17 plus
Connection dimensions	[Inch]	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"
Circulation pump WQA		Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-12	Stratos Para 25/1-12
		internal	internal	internal	internal	internal	internal	internal	internal
Operating point		S0/W35	S0/W35	S0/W35	S0/W35	S0/W35	S0/W35	S0/W35	S0/W35
Differential	[K]	3	3	3	3	3	3	3	3
Flow rate	[m3/h]	1,2	1,7	2,4	2,7	2,9	2,9	3,5	4
PHE pressure loss - internal	[mbar]	77	170	210	100	180	180	210	190
Flow rate meter		VMT-DN20 x 1 1/4" AG kvs10	VMT-DN20 x 1 1/4" AG kvs10	VMT-DN20 x 1 1/4" AG kvs10	VMT-DN20 x 1 1/4" AG kvs10	VMT-DN20 x 1 1/4" AG kvs10	VMT-DN20 x 1 1/4" AG kvs10	VMT-DN20 x 1 1/4" AG kvs10	VMT 25 x 1 1/2" AG kvs 20
Flow rate meter pressure loss	[mbar]	15	29	58	73	84	84	123	40
Residual pressure head I	[mbar]	592	485	416	511	420	420	712	834

Brine flat and deep-trench installation (without connecting pipework)

Brine collector set		ESK 3	ESK 4	ESK 5	ESK 6	ESK 6	ESK 7	ESK 8	
Brine distributor		DN 40x1 1/2" IT for 3 circuits kvs12	DN40x1 1/2" IT for 4 circuits kvs12	DN40x1 1/2" IT for 5 circuits kvs12	DN40x1 1/2" IT for 6 circuits kvs12	DN40x1 1/2" IT for 6 circuits kvs12	DN50x2" IT for 7 circuits kvs30	DN50x2" IT for 8 circuits kvs30	
Brine collector pressure loss	[mbar]	10	20	40	51	59	14	18	
Brine collector		per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	
Ground collector pressure loss	[mbar]	60	66	66	66	66	72	72	
Residual pressure head II (HP + collectorset)	[mbar]	522	399	310	394	295	626	744	
Pressure loss data refers to ethylene glycol 25%, residual pressure head II is for sizing connecting pipework according to actual conditions									
System content heat source	[litre]	260	340	410	490	490	560	660	
Connecting pipework 2x20 lfm		DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN40-PE50x4,6	
Ethylene glycol 25% canister 25 l	[pc.]	3	4	5	5	5	6	7	
Propylene glycol 32% canister 25 l	[pc.]	4	5	6	7	7	8	9	

Brine earth probe (example not supplied with product)

Duplex probe 32x2,9mm		1x100 m	2x80 m	2x100 m	2x100 m	3x80 m	3x100 m	4x80 m
Pressure loss in probe	[mbar]	120	90	130	140	90	120	100
Brine distributor		DN40x1 1/2" IT for 2 circuits kvs12	DN40x1 1/2" IT for 4 circuitse kvs12	DN40x1 1/2" IT for 4 circuits kvs12	DN40x1 1 1/2" IT for 4 circuits kvs12	DN40x1 1/2" IT for 6 circuits kvs12	DN40x1 1/2" IT for 6 circuits kvs30	DN50x2" IT for 8 circuits kvs30
Pressure loss in distributor	[mbar]	10	20	40	51	59	14	18
Residual pressure head II (heat pump + probe)	[mbar]	462	375	246	320	270	578	715
Connecting pipework 2x20 m		DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN32-PE40x3,7	DN40-PE50x4,6
System content – heat source system	[litre]	260	390	470	480	560	690	760
Ethylene glycol 25% canister 25 l	[pc.]	3	4	5	5	6	7	8
Propylene glycol 32% canister 25 l	[pc.]	4	6	7	7	8	10	10

Examples with duplex probes DN25 PE 32 x 2.9 mm (sizing of probes with other dimensions as well as for simplex probes to be calculated separately)

OCHSNER recommends the installation of source systems in the form of the flat, deep-trench or earth probe systems.

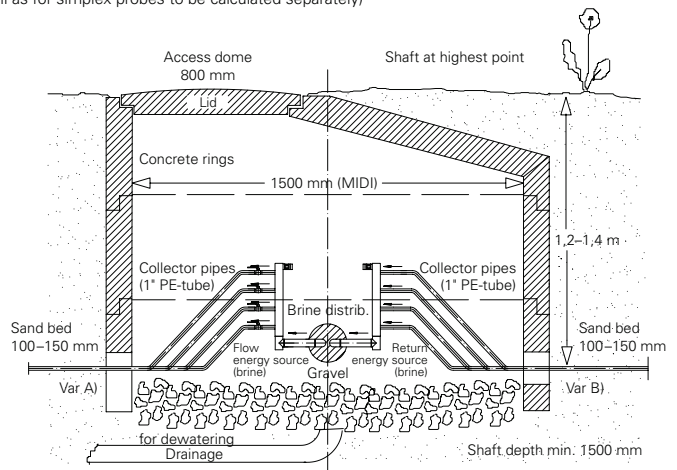
Due to its superior technical properties, we recommend the use of ethylene glycol in the operation of brine heat pumps, distinguishing features of which are its lower viscosity and better heat transmission than propylene glycol, and thus lower power consumption in circulation pumps.

O-Cool-Pro®, a propylene glycol-based product, contains environmentally friendly corrosion inhibitors and conforms to foodstuffs standard LD 0.

Installations containing energy cages or energy piles must be sized and installed according to relevant norms such as VDI 4640 and/or ÖWAV guideline 207.

Ground heat systems down to a depth of 10 m fall into the category of near-surface ground heat systems and thus require, in principle, the same extraction area as open areas such as flat or deep-trench installation.

When using energy cages it must therefore be assumed that, in practice, no space will be saved when installing a sustainable brine heat source system for use over a period of years!



GOLF MAXI

STANDARD



GMSW 28	GMSW 38	OSWP 56	OSWP 96	OSWP 96R
1 1/2"	2"	2"	2"	2"
Stratos Para 30/1-12	Stratos Para 30/1-12	Stratos Para 40/1-12	Stratos Para 65/1-12	Stratos Para 40/1-12
external	external	external	external	external
S0/W35	S0/W35	S0/W35	S0/W35	S0/W35
3	3	3	3	3
4,6	6,7	10,5	17,5	11,6
240	370	200	180	90
VMT 25 x 1 1/2" AG kvs 20	VMT 50 x 2" IG kvs 40	VMT 50 x 2" IG kvs 40	VMT 50 x 2" IG kvs 40	VMT 50 x 2" IG kvs 40
53	20	60	190	100
752	465	642	485	617

Sizing recommendation for heat source brine

pressure loss in connecting pipework, incl. individual losses	max. 100 mbar
pressure loss in brine circuits or probes, incl. brine distributor	max. 300 mbar

Extraction capacity for flat-laying acc. to VDI 4640

Type of soil	max. spec. expansion cap. for 1800 h/a	max. spec. expansion cap. for 2400 h/a
Dry, non-cohesive soil	10 W/m ²	8 W/m ²
Cohesive soil, moist	25 W/m ²	20 W/m ²
Water-saturated soil sand/gravel	40 W/m ²	32 W/m ²

Extraction capacity for deep-trench laying acc. to VDI 4640

Type of soil	max. spec. extraction cap. for 1800 h/a
Cohesive soil, moist	100 W/m trench
Water-saturated soil	125 W/m trench

Expansion capacity for earth probes acc. to VDI 4640

Soil conditions	max. spec. extraction cap. for 1800 h/a	max. spec. extraction cap. for 2400 h/a
Dry sediment	25 W/m	20 W/m
Shale, slate	45 W/m	35 W/m
Firm rock with high thermal conductivity	84 W/m	70 W/m
Substratum with high ground-water flow	65-80 W/m	55-65 W/m

For information on the drying-out of screed, see page 62

For seasonal cooling operation (4-8 weeks), the same values apply to cooling (heat-sink) and for heating (extraction capacity).

Extraction capacities are benchmark values

For safe and efficient operation, circuit control valve must be fitted and regulated for the purposes of regulating the hydraulic systems in the appliance.

ESKP 10	ESKP 14	ESKP 18	ESKP 30	ESKP 18
DN50x2" IT for 10 circuits kvs30	DN50x2" IT for 2x7 circuits kvs30	DN50x2" IT for 2x9 circuits kvs30	DN50x2" IT for 3x10 circuits kvs30	DN50x2" IT for 2x9 circuits kvs30
24	9	23	27	23
per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0	per 120 m PE-DN25 32x2,0
66	66	78	78	84
662	390	541	380	510
810	1110	1440	2380	1480
DN40-PE50x4,6	DN40-PE50x4,6	DN50-PE63x5,8	DN60-PE75x6,8	DN60-PE75x6,8
8	11	15	24	15
11	15	20	32	20

4x100 m	5x100 m	7x100 m	12x100 m	7x100 m
120	140	190	190	230
DN50x2" IT for 8 circuits kvs30	DN50x2" IT for 10 circuits kvs30	DN50x2" IT for 2x7 circuits kvs30	DN50x2" IT for 3x8 circuits kvs30	DN50x2" IT for 2x7 circuits kvs30
24	36	23	27	23
608	289	430	270	365
DN40-PE50x4,6	DN40-PE50x4,6	DN50-PE63x5,8	DN60-PE75x6,8	DN60-PE75x6,8
930	1150	1620	2740	1660
10	12	17	28	17
13	16	22	37	23

