

DIRECT EXTRACTION

GOLF MIDI PLUS

Monovalent heating system with
heat source ground

tv max. 65°C



Series	HEATING		
Dimensions LxWxH [mm]	1150 x 400 x 650		
Model	GMDW 5 plus	GMDW 8 plus	GMDW 11 plus
Order number / delivery class	274460 / III	274550 / II	274600 / II
Price incl. accessories (see right side of page)	5.804,-	6.848,-	7.350,-
Energy efficiency class at max. FLT	35°C A++ A+++*	55°C A++	35°C A++ A+++* 55°C A++ A+++*

Technical data:

Weight/Hydraulic connection	[kg]/[Inch]	105 / 1 1/4"	112 / 1 1/4"	120 / 1 1/4"
Phases/nominal voltage/frequency	[-]/[V]/[Hz]	3/400/50	3/400/50	3/400/50
Fuse (trip characteristic 'C')	[A]	10	10	10
Refrigerant		R 407 C	R 407 C	R 407 C
Condenser		Stainless-steel plate PHE Mat. 1.4301		
Refrigerant circuit		1	1	1
Condenser heat carrier temperature difference (heat use system)	[K]	5	5	5
Condenser volume flow	[m³/h]	1,1	1,5	2,1
Internal pressure difference	[mbar]	109	100	140
Operating point E4/W35				
Heating capacity	[kW]	6,2	8,6	12,1
Basic cooling capacity	[kW]	4,9	6,9	9,8
Power consumption	[kW]	1,3	1,7	2,35
COP EN14511/EN 255		4,8/5,3	5,1/5,5	5,1/5,5
Operating current	[A]	2,8	3,4	4,7
Standard point E-1/W35				
Heating capacity	[kW]	5,2/5,3	6,8/7,2	10,1/10,3
Power consumption	[kW]	1,3	1,7	2,25
COP EN14511/EN 255		4,1/4,5	4,2/4,6	4,6/4,8
Operating current	[A]	2,8	3,4	4,5
Operating point E0/W50				
Heating capacity	[kW]	4,9	6,2	9,0
Power consumption	[kW]	1,7	2,1	3,0
COP EN14511/EN 255		2,9/3,1	3,0/3,2	3,0/3,3
Operating current	[A]	3,1	4,2	6,0
Operating point E0/W60				
Heating capacity	[kW]	4,7	6,0	8,9
Power consumption	[kW]	2,2	2,7	3,8
COP EN14511/EN 255		2,1/2,3	2,2/2,4	2,3/2,5
Operating current	[A]	3,8	5,4	7,8
Compressor Scroll, fully hermetic				
Max. Operating current	[A]	4	6	8
Max. start-up current	[A]	27	37	41
Max. with soft-start	[A]	13,5	18,5	20,5

Heat source system:

Copper ground collector 75 m	[Pc.]	3 / 4** / 5	4 / 5** / 6	5 / 7** / 9
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GOLF MAXI PLUS



HEATING

1150 x 600 x 650

GMDW 13 plus

274650 / II

8.439,-

35°C **A++**
A+++*

GMDW 15 plus

274700 / III

8.918,-

35°C **A++**
A+++*

GMDW 18 plus

274750 / III

10.143,-

35°C **A++**
A+++*55°C **A++**
A+++*

128 / 1 1/4"

3/400/50

10

R 407 C

1

5

2,5

120

14,2

11,4

2,8

5,1/5,4

5,2

133 / 1 1/4"

3/400/50

13

R 407 C

1

5

3,0

140

16,0

12,9

3,15

5,1/5,4

6,2

14,0

11,4

4,4/4,7

6,2

140 / 1 1/2"

3/400/50

16

R 407 C

1

5

3,6

140

20,8

16,8

4,0

5,2/5,6

7,6

E4/W35

14,2

11,4

2,8

5,1/5,4

5,2

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

4,4/4,7

7,4

14,2

11,4

Scroll, fully hermetic

9

55

27,5

11

67

33,5

12

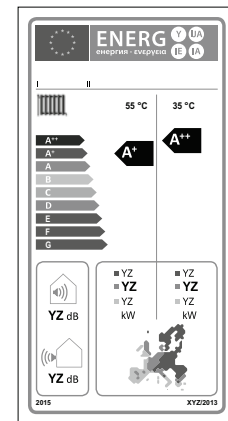
70

35

6 / 8** / 10

8 / 10** / 12

10 / 12** / 14



Sample label



Accessories included in price of heat pump:

OTE plus Interior Climate Manager

DN 32, DN 40 or DN 50 heat use system flow volume control

Noise-dampening underlay

Flexible connecting hose – 2 pcs. 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 valve incl. 1 additional flexible hose	990494	GMDW 5 plus + 8 plus	457,-
	990495	GMDW 11 plus	457,-
Hot-water heating via external 3-way valve	290229	GMDW 13 plus	279,-
	290341	GMDW 15 plus + 18 plus	345,-
Commissioning lump sum (see pages 62-63. Laying or connection of pipework not included) Net	801201	GMDW 5 plus	767,-
	801202	GMDW 8 plus	791,-
	801203	GMDW 11 plus	826,-
	801204	GMDW 13 plus	930,-
	801205	GMDW 15 plus	972,-
	801206	GMDW 18 plus	1.013,-
Copper ground collectors O-Tube pro 75 m, per pc. nitrogen-filled with seal indicator	913209	all	378,-
Start-up current limiter	990808	GMDW 5 plus - 15 plus	219,-
	990803	GMDW 18 plus	268,-
Warning band roll, 250 m each	916363	all	19,-
Suction device for internal refrigerant circuit (optional) – net	990188	all	259,-

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

** recommended quantity (for sizing options see pages 36–37)

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, 36-37 and 56-57: the system (COP, APF) can be optimised by increasing the number of earth collector circuits. For guidelines for the calculation of collector area and optimal sizing of connecting pipework, see the sizing guidelines (collection shaft: Ø min. 1,500 mm!). Capacity data is stated for the maximum number of collectors. Values given for G4/W35 correspond to B0/W35 for brine systems (D-A-CH). It is mandatory to install original OCHSNER collectors; if this is not the case, systems cannot be commissioned and no warranty shall be issued! 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. Comply with the operational limits of heat source and heat use systems. For wall conduits, see the 'Accessories' page and the OCHSNER Manual.

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]

Prices in €, excl. VAT

SIZING

GOLF MIDI PLUS



REQUIRED EXTRACTION SURFACE

Heat pump		GMDW 5 plus	GMDW 8 plus	GMDW 11 plus
Basic cooling capacity (E4/W35)	[kW]	4,9	6,9	9,8
Extraction surface (1800 h/a)	[m ²]	196	276	392
Extraction surface (2400 h/a)	[m ²]	245	345	490
Max. connection length to central collection shaft	[lfm]	20	20	20

Calculated with specific extraction capacity of 25W/m² for 1800h/year and 20W/m² for 2400h/year; in the event of deviating ground conditions, the laying area must be sized according to actual on-site conditions and operating hours.

SOIL CONDITIONS in accordance with VDI 4640 and ÖWAV 207

Soil conditions	max. spec. extraction capacity for 1800 h/a	max. spec. extraction capacity for 2400 h/a
Dry, non-cohesive soil	10 W/m ² and 5 W/lfm	8 W/m ² and 4 W/lfm
Cohesive soil, moist	20 - 30 W/m ² and 15 W/lfm	16-24 W/m ² and 12 W/lfm
Saturated soil sand/gravel	40 W/m ² and 20 W/lfm	32 W/m ² and 16 W/lfm

COLLECTOR LAYING in accordance with VDI 4640 and ÖWAV 207

The size of the heat source system is determined by the cooling capacity of the heat pump (model, planned COP) and the specific heating task to be designed for 1800 hours of operation per year and the applicable climatic zone conditions (D-A-CH) (sizing of storage tank).

Basic cooling capacity = heating capacity–power consumption at standard point

Laying depth

- c. 1,2 – 1,5 m (deeper at extremely high altitudes)
- c. 30 cm under frost level

Laying area

as a rule, laying takes place on horizontal, level subsoil or with a maximum one side slope (hillside). In the case of hillsides, always lay ground collector pipework at right angles to the slope. Hillside: the height difference between the highest and the lowest point of the collector should not exceed 3 m.

Warning band

Warning band must be laid ca. 50 cm above collector pipes.

Installation

Care must be taken to ensure that pipes are not buckled or crushed. Before covering with soil, piping must be adequately protected with a layer of sand. Particular care must be taken when covering pipes with earth. Care must be taken to ensure that pipes are covered to their full height and that soil is first deposited onto a ramp (ground

collector pipes must not be damaged).

Refrigerant/refrigerant oil

The use of chlorine-free safety refrigerants means that a biologically degradable synthetic oil (e.g. ester oil) can be used, thus practically eliminating even theoretically possible harm to the environment.

Pipe length

Evaporator circuits, with a length of 75 m, must be fully utilised for the expansion of heat and may be shortened only by OCHSNER customer service or an authorised OCHSNER customer service partner. Evaporator circuits are laid in air-tight conditions in order to prevent the penetration of moisture. The ends of circuits should project c. 70 cm into the cellar area or 1.2 m into the collection shaft. Turn the ends upwards and label the start and the finish. Pipe ends must be kept dry. Connection then takes place during the commissioning process.

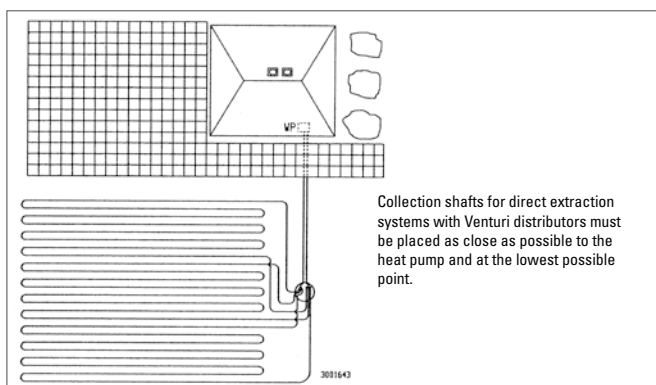
Safety equipment

Direct expansion systems are fitted with magnetic valves for added safety: in the event of a fall in pressure in the collector system, a pressure control device triggers a blocking out of the collector circuits. The closing of the magnet valves means that refrigerant can no longer reach the ground collector from the heat pump.

Secure laying with:

O-Tube-Pro® ground collector with seal indicator, factory-pressurised with forming gas for simple seal monitoring during the laying process, right up to the pre-commissioning check.

Example of a laying plan, flat-plate collector

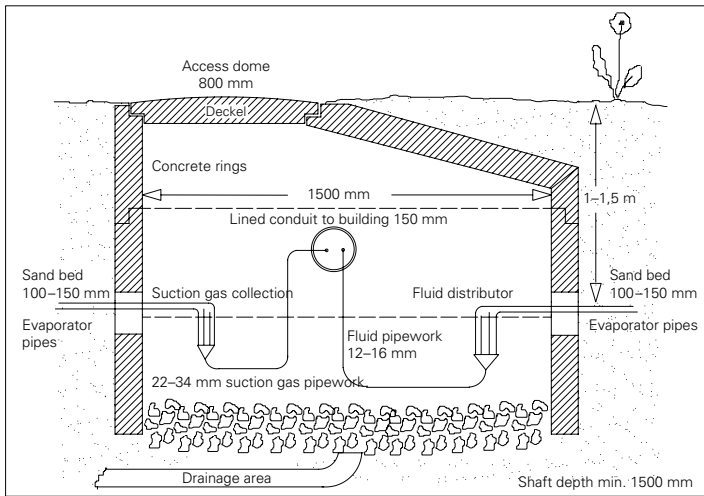


The collector field may not be built on and must be laid with a minimum 1.5 m clearance to buildings and property boundaries. The minimum clearance of collector pipes to one another when laying is 50 cm. A laying plan of the individual collector circuits, based on actual laying, as well as the labelling of individual pipe ends of evaporator circuits, are required for commissioning.

GOLF MAXI PLUS



GMDW 13 plus	GMDW 15 plus	GMDW 18 plus
11,4	12,9	16,8
456	516	672
570	645	840
20	20	20



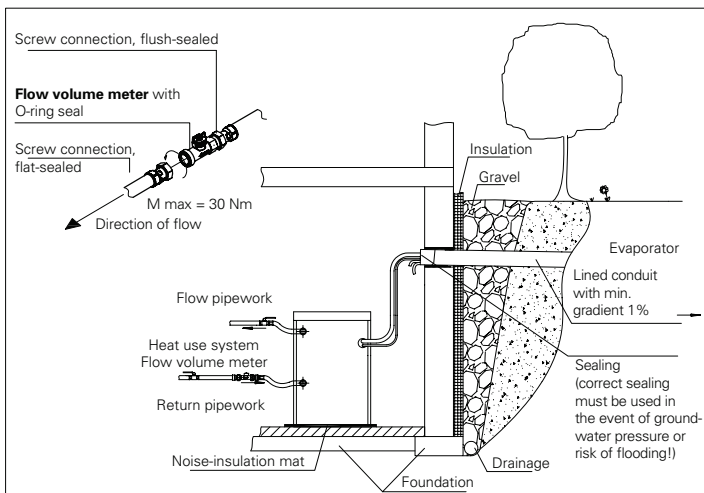
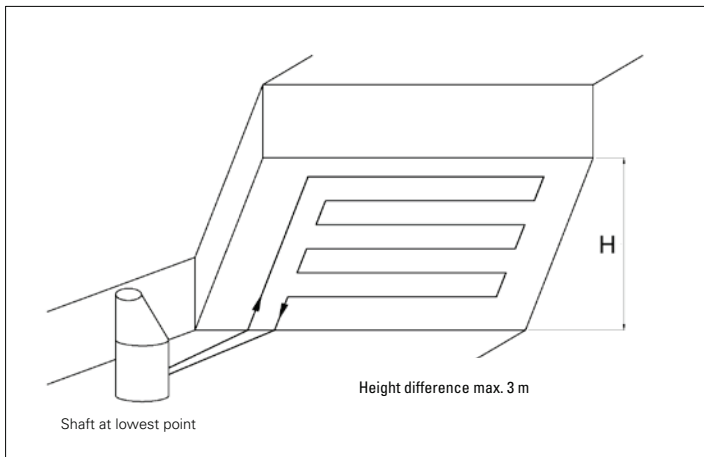
COLLECTION SHAFT / VENTURI DISTRIBUTOR

A collection shaft must be installed for extensive collector systems or if the collector system is not directly connected to the wall conduit. The Venturi distributor and collector are housed in this shaft. Collection shafts can be built inexpensively using commercially available concrete rings. For reasons of accessibility, the clearance width of the shaft should be no less than 150 cm.

An access cover should be put in place once the shaft has been completed. The collection shaft must remain dry (drainage), and must be watertight if situated in saturated soil.

Connecting pipework from the building to the collection shaft must be housed in a lined conduit and heat-insulated. This conduit must be laid straight and at a slight gradient in the direction of the collection shaft in order to dispose of any condensation. Pipework cannot exceed 20 m in length.

- » Max. height difference between distributor in collection shaft and heat pump 3 m
- » Collection shaft installed at deepest point
- » Max. 8 bends (to be made using bending tool ($r > 5 \times d$). No angle pieces)
- » 1 m bend radius is deemed a straight line



WALL CONDUITS

Wall conduits must be constructed using state-of-the-art lined conduits. Care must be taken over sealing between the conduit and wall, as well as between the conduit and evaporator pipework. In areas vulnerable to flooding, sealing must conform to the requirements for water pressure.

Connecting pipework must be installed with a slight downwards gradient towards the outside, in the direction of the shaft. Pipes leading into the building must be designed so that it is possible to seal them on a permanent basis using state-of-the-art materials. Particular care must be taken over sealing in areas vulnerable to flooding or water pressure!