

GOLDMAN

Modular & 
Packaged
Air Cooled Water Chiller
GDM & GDP Series



CE

Introduction

GDMA(Goldman Modular unit) air cooled water chiller and heat pump unit is a new generation of modular unit developed by Goldman. This unit is energy saving and convenient in use, which has the function of reverse cycle automatic defrosting, double steps automatic anti-freezing, built-in self-diagnosable system, and is controlled by microcomputer. Applicable to hotels, villas, hospitals, cinemas, stadiums, recreations, office blocks, factories and so on. It can also provide chilled water or moderate hot water for industria purpose.

The unit is suitable for installing in outspace such as roof, floor and porch, left off the boiler room and the special room, decreased the investment of building project. And no need of cooling tower and cooling water pump, this unit saves water greatly. And the unit is easy to install, manage and maintain.

Features**Modular/Packaged design, High efficiency and less investment**

GDMA series use the concept of modular design, which is heat pump or cooling only. It can control the capacity effectively according to turn on/off the compressor, and increase the reliability for a less time of turning on/off than a single compressor system.

The start up current is controlled to minimum, as the compressors energized one by one, the power supply cable will be smaller than the single compressor system.

If one compressor is failed, other compressors can operate normally, the impact to user is small.

It can reduce the cost of replacement for the compressor price is lower than a large one.

Parallel scroll compressor system is 7% more efficient than screw machine when full loading, and it is 15% to 20% when partial loading.

GDMA series uses packaged design, with built-in water pump, expansion tank and paddle waterflow swith. Its structure is compact, and size is small. Each unit includes two or three independent cooling systems, it's convenient to maintain.

Intelligent control:**1. Fully-automatic control**

The operation and management of this unit are controlled by microcomputer system. It is easy to operate so that the professional management personnel are unnecessary. The units turn on/off the compressor automatically according to the load, making the units operate on the point of the most economical, and energy saving. And there are complete protective functions such as error self-detecting system, balancing the compressor wear automatically, and anti-freezing automatically in winter.

2. Appearance

The air cooled condenser can be placed in reverse “M” type or “U” type for modular type, and “V” shaped for packaged type, which is ingenious, beautiful and compacting. This unit looks clear and refinement by means of designing the components and tubs reasonably. The cover is coated by electrostatic powder, making the color even and unvarying. And the color can be chosen by the customer, who can also use the stainless steel panel, which is preciously finished by Japanese AMADA

sheet-metal equipment. The unit is well in anticorrosion, so that it can be placed in outdoor space without special room.

3. Intelligent defrosting

Each modular is separate to the others at inner cooling system, and controls the operation of the system independently. So it is separating when booting up. According to the different climatic conditions (temperature and humidity) to set the parameters for automatic defrosting, defrost is thoroughly and energy-saving, increasing the heating efficiency. And the defrosting has no significant influence to the indoor air-conditioning temperature.

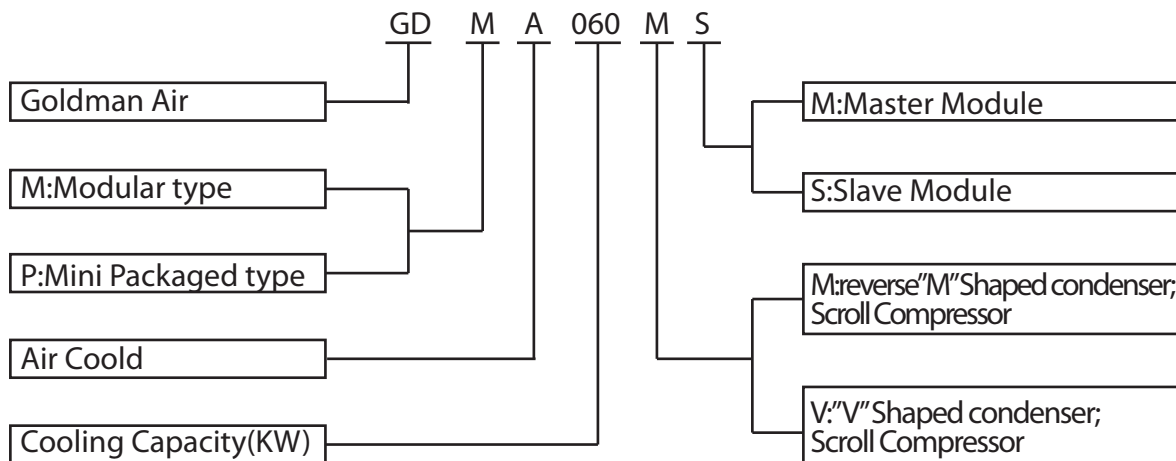
4. Intelligent anti-freezing

This unit adopts anti-freezing automatic dual-class protection, preventing the water system being damaged once the refrigerant freezing at winter. The anti-freezing protection can be quitted automaticly when the water temperature is increased according to the operation of heating or pump.

5. Convenient operation

Each unit is strictly tested. And the protective parameters are set. So you will just connect the power and the water pipes at installation, and operate the computer controller when you use it.

Nomenclature



Optional Accessories

1. Electrical heater 2. Waterflow switch 3. Rubber damper 4. Water flexible joint
5. Side filter 6. Water pump 7. Heat recovery 8. Remote Monitoring control

Specification
Mini Packaged Air Cooled Water Chiller

Model			GDPA series				
			GDPA020V	GDPA025V	GDPA030V	GDPA045V	
Item							
Cooling Capacity (R22)	kW		20	25	30	45	
	Btu/h		68,300	85,300	102,400	153,600	
	TR		5.7	7.1	8.6	12.8	
Heating Capacity (R22)	kW		22	28	33	50	
	Btu/h		75,000	96,000	113,000	171,000	
	TR		6.3	8	9.4	14.2	
Cooling Capacity (R407C)	kW		19	24	29	43	
	Btu/h		65,000	82,000	100,000	147,000	
	TR		5.4	6.8	8.2	12.2	
Heating Capacity (R407C)	kW		21	27	31	48	
	Btu/h		72,000	92,000	106,000	164,000	
	TR		6	7.7	8.8	13.7	
Domestic hot Water (optional)	Heat Recovery	(R22)	kW	6	7.5	9	13.5
			Btu/h	21,000	25,600	31,000	46,100
			TR	1.7	2.1	2.6	3.8
		(R407C)	kW	5.7	7.1	8.6	12.8
			Btu/h	20,000	25,000	30,000	44,000
			TR	1.6	2	2.4	3.6
	Inlet Temp		°C	50			
	Outlet Temp		°C	55			
	Water Flow		m ³ /h	1.1	1.3	1.6	2.4
	Water Pipe size			1 in	1 in	1 in	1 in
Compressor	Style		Hermetic scroll compressor				
	Input power		kW	6.6	8.2	8.3	12.5
	Energy steps			0-50-100%			0-33-67-100%
Fan motor	Style		Axial				
	Input power		kW	0.37X2	0.37X2	0.55X2	0.55X2
Water side heat exchanger	Style		Tube in tube				
	waterflow		m ³ /h	3.5	4.3	5.2	7.8
	Drop water side		kPa	38	39	40	40
Water pump	Style		Cycle pump				
	Power input		kW	0.75	0.92	1.2	1.2
	Head		(mH ₂ O)	16	21	26	21
Refrigerant	Type		R22/R407C				
	Charge amount		kg	5.4/7.8	6.4/8.8	6.6/9	9.9/13.5
	Expansion device			Capillary			
Noise		dB(A)	67	67	68	69	
Dimension	L	mm	1480	1480	1680	1680	

	W	mm	915	915	1035	1035
	H	mm	1500	1500	1500	1500
Interface size of water circuit (in)			G11/4			G11/2
Power supply			3φ-380V-50HZ			
Expansion device			IPX4			
electric-shock-proof class			I			
Total power input (R22)		kW	9.99	10.66	11.14	16.1
Max. operating current		A	23	27	29	41
Unit weight		kG	450/470	480/500	530/550	580/600

Note:1)Standard cooling work condition: Ambient temperature DB 35°C,WB24°C ;

Cooling water inlet 12°C, outlet 7°C 。

2) Standard heating work condition : Ambient temperature DB 7°C,WB 6°C ;

Heating water inlet 40°C, outlet 45°C 。

3) The noise data is measured on the average of 1m far away from the unit.

4) Water site Max.Bearing pressure: 1.0mpa

5) Reserve the right to change the contents without prior notice.

Specification

Modular Air Cooled Water Chiller (Scroll compressor)

Model			Air Cooled Scroll Unit					
			GDMA055V	GDMA060V	GDMA068M	GDMA088M	GDMA108M	
Item								
Cooling Capacity (R22)	kW		55	60	68	88	108	
	Btu/h		188,000	205,000	232,000	301,000	369,000	
	TR		16	17	19	25	31	
Heating Capacity (R22)	kW		58	64	73	96	118	
	Btu/h		198,000	219,000	249,000	328,000	403,000	
	TR		16.5	18.2	21	27.3	34	
Cooling Capacity (R407C)	kW		52	57	65	84	103	
	Btu/h		178,000	195,000	222,000	287,000	352,000	
	TR		15	16.2	18.5	24	29.2	
Heating Capacity (R407C)	kW		55	61	69	91	112	
	Btu/h		188,000	208,000	236,000	311,000	382,000	
	TR		16	17.3	20	26	32	
Domestic Hot Water (Optional)	Heat Recovery	(R22)	kW	16.5	18	20.4	26.4	32.4
			Btu/h	57,000	62,000	70,000	90,000	111,000
			TR	5	5.1	6	8	9.2
	(R407C)	kW	15.7	17.1	19.4	25.1	30.8	
		Btu/h	54,000	59,000	66,000	86,000	105,000	
		TR	4.5	5	6	7.1	9	
Inlet Temp		°C	50					

	Outlet Temp	°C	55				
	Water Flow	m ³ /h	2.9	3.1	3.5	4.6	5.6
	Water Pipe size		1 in	1 in	1 in	1 in	1 in
Compressor	Type		Hermetic scroll compressor				
	Power Input	kW	16.4	16.6	10.1×2	6.2×4	8.2×4
	Energy steps		0-25-50-75-100%		0-50-100%	0-25-50-75-100%	
Fan	Type		Axial				
	Power input	kW	1.1	1.1	0.55×2	1.3×2	1.3×2
	Air flow rate	m ³ /h			28,000	40,000	40,000
Water-side Heat Exchanger	Type		Tube and Tube				
	Water flow	m ³ /h	9.5	10.5	12	16	19
	Drop Water Side	kPa	40	40	42	45	43
	Water Pipe size		DN125				
Refrigerant	Type		R22 / R407C				
	Charge Amount	(kG)	12.8/17.6	13.2/18	18	26	32
	Expansion device		Capillary		Expansion Valve		
Noise	dB(A)		67	68	71	73	73
Dimension	Length	mm	2030	2030	2165	2165	2165
	Width	mm	1060	1060	1290	1570	1570
	Height	mm	1730	1730	2020	2060	2060
Power			3φ-380V-50HZ				
Total Power Input		kW	17.5	17.7	21.3	27.4	35.4
Max. operating current		A	48.	50	68	77	125
Weight		Kg	720/740	740/760	830/880	1080/1160	1380/1460

Note: 1) Units above can realize 1-7 units' modular connection and can control energy-regulation automatically.

2)Standard cooling work condition: Ambient temperature DB 35°C,WB24°C ;

Cooling water inlet 12°C, outlet 7°C 。

3) Standard heating work condition : Ambient temperature DB 7°C,WB 6°C ;

Heating water inlet 40°C, outlet 45°C 。

4) The noise data is measured on the average of 1m far away from the unit.

5) Water site Max.Bearing pressure:1.0Mpa

6)Reserve the right to change the contents without prior notice.

Modular Air Cooled Water Chiller (Scroll compressor)

Model			Air Cooled Scroll Unit				
			GDMA180M	GDMA250M	GDMA320M	GDMA380M	
Cooling Capacit (R22)	kW		180	250	320	380	
	Btu/h		615,000	853,000	1,092,000	1,297,000	
	TR		51.2	71.1	91	108	
Heating Capacity (R22)	kW		198	275	350	430	
	Btu/h		676,000	939,000	1,195,000	1,468,000	
	TR		56.3	78.2	100	122.2	
Cooling Capacit (R407C)	kW		171	238	304	361	
	Btu/h		584,000	812,000	1,038,000	1,232,000	
	TR		49	68	86.4	103	
Heating Capacity (R407C)	kW		188	261	333	409	
	Btu/h		642,000	891,000	1,137,000	1,396,000	
	TR		53.4	74.2	95	116.3	
Domestic Hot Water (Optional)	Heat Recovery	R22	kW	54	75	96	114
			Btu/h	185,000	256,000	328,000	389,000
			TR	15.3	21.3	27.3	32.4
		R407C	kW	51.3	71.3	91.2	108.3
			Btu/h	175,000	244,000	312,000	370,000
			TR	15	20	26	31
	Inlet Temp		°C	50			
	Outlet Temp		°C	55			
	Water Flow		m ³ /h	9.3	12.9	16.5	19.6
	Water Pipe size			DN50			
Compressor	Type		Hermetic scroll compressor				
	Power Input	kW	12.4×4	(12.4+20.5)×2	20.5×4	25×4	
	Energy steps		0-25-50-75-100%				
Fan	Type		Axial				
	Power input	kW	1.8×4	1.8×4	1.8×6	1.8×8	
	Air flow rate	m ³ /h	92000	92000	138000	184000	
Water-side Heat Exchanger	Type		Shell and Tube				
	Water flow	m ³ /h	31	43	55	66	
	Drop Water Side		kPa	40			
	Water Pipe size			DN125		DN125	
Refrigerant	Type		R22 / R407C				
	Charge Amount	(KG)	60	80	112	126	
	Expansion device		Expansion Valve				
Noise	dB(A)		74	76	76	78	
Dimension	Length		mm	2290	2790	3270	4250

	Width	mm	2190	2190	2190	2190
	Height	mm	2480	2480	2480	2480
Power			3φ-380V-50HZ			
Total Power Input		kW	56.8	74	92.8	110.4
Max. operating current		A	158	235	316	341
Weight		kG	2050	2400	2800	3500
			2250	2620	3050	3750

Note: 1) Units above can realize 1-16 units' modular connection and can control energy-regulation automatically.

2)Standard cooling work condition: Ambient temperature DB 35℃,WB24℃;

Cooling water inlet 12℃, outlet 7℃。

3) Standard heating work condition : Ambient temperature DB 7℃,WB 6℃;

Heating water inlet 40℃,outlet 45℃。

4) The noise data is measured on the average of 1m far away from the unit.

5) Water site Max.bearing pressure: 1.0Mpa

6) Reserve the right to change the contents without prior notice.

Modular Air Cooled Water Chiller (Screw compressor)

Model Item			Air Cooled Screw Unit					
			GDMA180L	GDMA250L	GDMA320L	GDMA380L	GDMA430L	
Cooling Capacity (R22)	kW		180	250	320	380	430	
	Btu/h		615,000	853,000	1,092,000	1,297,000	1,468,000	
	TR		51.2	71.1	91.1	108.1	122.3	
Heating Capacity (R22)	kW		198	275	350	430	480	
	Btu/h		676,000	939,000	1,195,000	1,468,000	1,639,000	
	TR		56.3	78.2	99.6	122.3	136.5	
Cooling Capacit (R407C)	kW		171	238	304	361	409	
	Btu/h		584,000	813,000	1,038,000	1,232,000	1,396,000	
	TR		48.6	67.7	86.5	102.7	116.3	
Heating Capacity (R407C)	kW		188	261	333	409	456	
	Btu/h		642,000	891,000	1,137,000	1,396,000	1,557,000	
	TR		53.5	74.2	95	116.3	129.7	
Domestic Hot Water (Optional)	Heat Recovery	(R22)	kW	54	75	96	114	129
			Btu/h	185,000	256,000	328,000	389,000	441,000
			TR	15.4	21.3	27.3	32.4	36.7
		(R407C)	kW	51.3	71.3	91.2	108.3	122.6
			Btu/h	175,000	244,000	312,000	370,000	419,000
			TR	14.6	20.1	26	31	35
	Inlet Temp		℃	50				
	Outlet Temp		℃	55				
	Water Flow		m ³ /h	9.3	12.9	16.5	19.6	22.2
	Water Pipe size			DN50				



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