

NEW

Product Information

3WAY Gas Heat Pump Air Conditioner "ECO G" Series

R407C

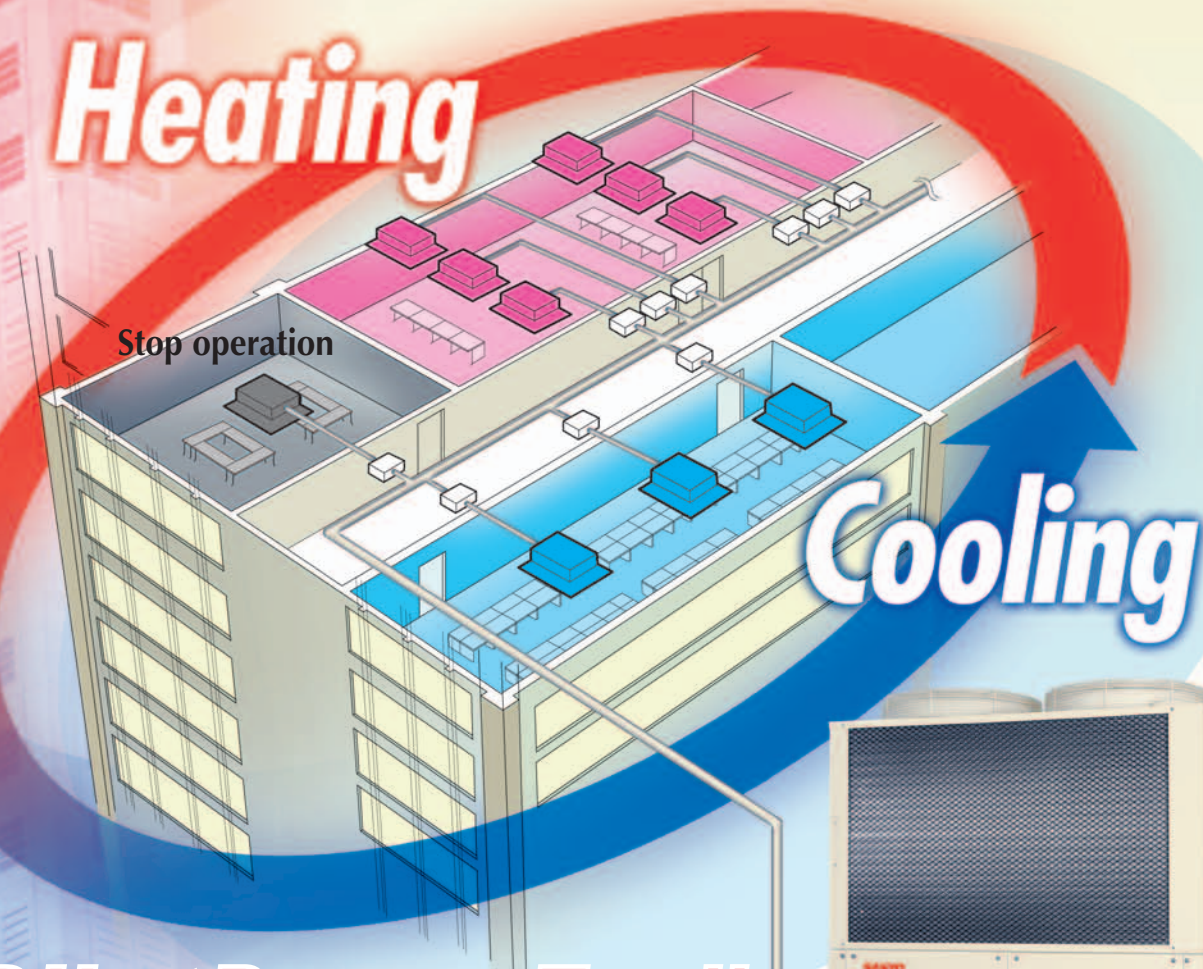
SANYO



To be released in
February 2005

**Realization of simultaneous cooling/heating
and individual operation of each unit
by Sanyo 3WAY GHP**

Heating



Cooling

GHP Heat Recovery Type!!

Automatic individual heating and cooling changeover

CE 0063



For the buildings requiring simultaneous Sanyo 3 WAY GHP provides the perfect



Max. 24 indoor units

3 WAY GHP MULTI enables simultaneous heating and cooling operation by each solenoid valve kit.

Excellent performance

Sanyo 3 WAY multi system is capable of simultaneous heating/cooling and individual operation of each indoor unit by only one outdoor unit. As a result, efficient individual air conditioning is possible in buildings having diverse room temperatures.

Improved maintenance intervals

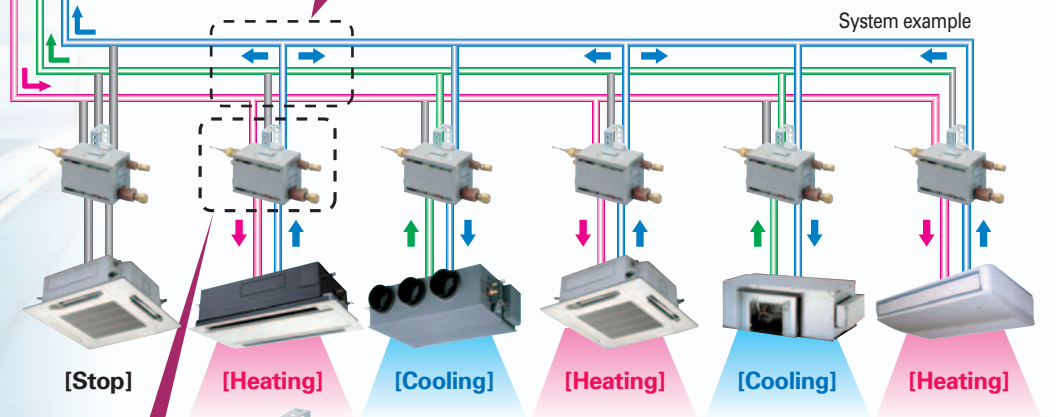
The maintenance intervals are as many as 10,000 hours. This is the top class in the industry.

Max. 35% energy saving

(Sanyo estimate)

Effective heat recovery system enables max. 35% energy saving

The waste heat removed from the cooled room is effectively utilized as a heat source for the room to be heated. As a result, the load on the compressor and heat exchanger on the outdoor unit can be reduced, enabling excellent heat recovery operation.



- **Liquid pipe**
(medium-temperature, medium-pressure liquid pipe)
- **Suction pipe**
(low-temperature, low-pressure gas pipe)
- **Discharge pipe**
(high-temperature, high-pressure gas pipe)

Flexible system design

120m piping allows effective system designs

Allowable piping length is max. 120m (equivalent length of 145m). This enables flexible installation and system designs. Up to 24 indoor units are capable of simultaneous heating/cooling operation.

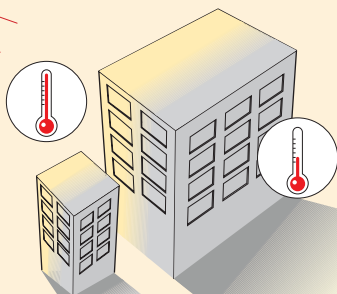
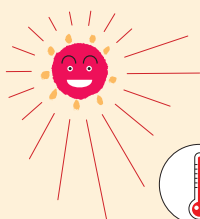


Solenoid Valve Kit

ATK-ZP80UG, ATK-ZP140UG

SANYO 3 WAY GHP is ideal for the following applications:

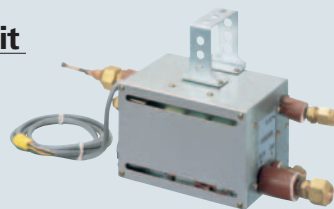
- Office buildings with diverse room temperatures due to the different amount of sunshine received.
- The buildings with computer/business equipment rooms requiring year-round cooling.



Optional parts

Solenoid valve kit

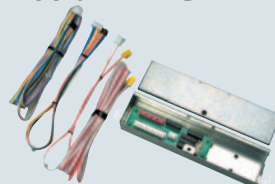
- **ATK-ZP80UG**
(For 74 to 254 indoor unit)
- **ATK-ZP140UG**
(For 364 to 604 indoor unit)



* For conference rooms and other locations where low noise is required, pay attention to the installation location and install on a corridor etc.

Solenoid valve controller

- **ACC-3WAY-AG**



(Distribution joint kits)

- **APR-RZP224BG**
(16.0 kW or less)
- **APR-RZP680BG**
(28.0 kW or less)
- **APR-RZP1350B**
(112.0 kW or less)

cooling and heating, solution

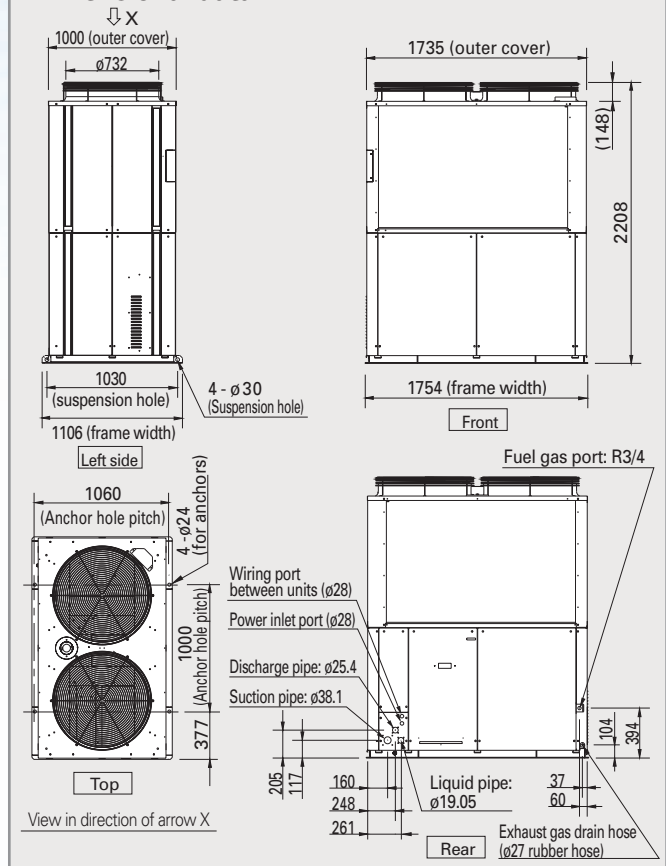
OUTDOOR UNIT SPECIFICATIONS

Model No.		SPG-EZ190J2G02		
HP		20		
Power supply		220/230/240V Single Phase 50Hz		
Applicable Gas Type		Brand P: propane gas (G31), Brand H: natural gas (G20), Brand L: natural gas (G25)		
Capacity	Cooling capacity	kW (BTU/h)	56.0 (191,000)	
	Heating capacity	kW (BTU/h)	67.0 (228,600)	
Dimensions	Height	mm	2,208	
	Width	mm	1,735	
	Depth	mm	1,000 (+106)	
Net weight		kg	960	
Electrical rating	Cooling	Running amperes	A	3.2/3.1
		Power input <small>(during overload cooling)</small>	kW	1.00/0.99 (1.20/1.19)
		Power factor	%	90/91
	Heating	Running amperes	A	3.4/3.4
		Power input	kW	1.07/1.07
		Power factor	%	92/92
Starting amperes		A	30/30	
Gas consumption	Cooling	High calorific value	kW	43.5
		Low calorific value	kW	48.3
	Heating	High calorific value	kW	46.0
		Low calorific value	kW	51.1
Compressor	Refrigeration oil amount	l	4.0 (HP-9)	
	Crankcase heater	W	30	
Engine	Lubrication oil amount	l	50 (SANYO pure oil APGHP D-125)	
	Rated output	kW	15.0	
	Starter motor	DC12V x 2.2kW		
	Starter	AC/DC conversion DC starter		
Engine cooling water	Amount	l	27	
	Concentration/Freezing temperature	50V/V% -35°C		
Cooling water pump rated output	kW	0.13		
Refrigerant type x amount	kg	R407C x 19		
Air suction	Front/Rear			
Air exhaust	Top			
Refrigerant piping system	Discharge pipe	ø25.4 (Brazing connection)		
	Suction pipe	ø38.1 (Brazing connection)		
	Liquid pipe	ø19.05 (Brazing connection)		
	Fuel gas pipe	R3/4		
	Drain pipe	ø27 rubber hose		
Operating sound	dB(A)	58		
Fan motor	Type	Propeller fan x 2		
	Air circulation	m ³ /min	300	
	Output	kW	0.45 x 2	
Heater for drain filter	W	60		
Heater for cooling water	W	250		
Color (munsell color chart)	Silky shade (1Y 8.5/0.5)			

Note*1 High calorific value: Evaporation heat of moisture included in fuel gas. Exp:G20:37.78MJ/m³
Low calorific value: Evaporation heat of moisture is pulled from higher calorific value.
Exp:G20:34.02MJ/m³

Note*2 Sound value were obtained with the outdoor unit operator standing 1m in front of the unit and operator height of 1.5m. Moreover, it in the table is a <value>when it drives at the silent mode.

Dimensional data



Main piping size after distribution

Outdoor unit	Outdoor unit connection piping	Main pipe size after distribution					
		Total capacity after branching (kW)					
		35.6-112.0	28.1-35.5	16.1-28.0	9.0-16.0	Less than 9.0	
560 type	Suction pipe	ø38.1	ø38.1	ø31.75	ø28.58	ø19.05	ø15.88
	Discharge pipe	ø25.4	ø25.4	ø22.22	ø19.05	ø15.88	ø12.7
	Liquid pipe	ø19.05	ø19.05	ø15.88	ø12.7	ø9.52	ø9.52

Distribution ↔ Solenoid valve kit connection piping <3 pipes>

Indoor unit	Type	7	9	12	16	18	25	36	48	60	
	Equivalent HP		0.8	1	1.3	1.6	2	2.5	4	5	6
Piping size	Suction pipe	ø15.88						ø19.05			
	Discharge pipe	ø12.7						ø15.88			
	Liquid pipe	ø9.52									

Solenoid valve kit ↔ Indoor unit connection piping <2 pipes>

Indoor unit	Type	7	9	12	16	18	25	36	48	60	
	Equivalent HP		0.8	1	1.3	1.6	2	2.5	4	5	6
Piping size	Gas pipe	ø12.7						ø15.88		ø19.05	
	Liquid pipe	ø9.52									

*The flare connection method is used to join solenoid valve kits (option) and indoor units. Please refer to the operation manual.

**Piping connectors (Reducers) are necessary, because pipes used for Eco G are different in diameter from those for indoor units of 4 series. (Local supply)

***As shown above, these connectors must be attached to the sides of indoor units.

Limitation of refrigerant piping length








Items	Outdoor unit	560
Capacity ratio of indoor unit to outdoor unit		50-200%
Connectable indoor units		7 (0.8HP)-60 (6HP)
Max. number of connectable indoor units		24
Max. piping length		120m or less (equivalent length is 145m or less)
Difference between the max. length and the min. length from the first distribution point		30m or less
Max. length of main piping		30m or less
Allowable elevation difference	When outdoor unit is installed higher than indoor unit	50m or less
	When outdoor unit is installed lower than indoor unit	35 m or less (30m or less in the case of cooling operation at outdoor temperature of -10°C or less)
Max difference between indoor units		15m or less

*Minimum piping length between outdoor units is 7m or more.

INDOOR UNITS LINE-UP

Class	7	9	12	16	18	25	36	48	60	76	96	
Capacity	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	
	kw	2.2/2.5	2.8/3.2	3.6/4.2	4.5/5.0	5.6/6.3	7.3/8.0	10.6/11.4	14.0/16.0	16.0/18.0	22.4/25.0	28.0/31.5
Type	BTU/h	7,500/ 8,500	9,600/ 11,000	12,000/ 14,000	15,000/ 17,000	19,000/ 21,000	25,000/ 27,000	36,000/ 39,000	47,800/ 54,600	54,600/ 61,400	76,400/ 85,300	95,500/ 107,000
	X _{type} 4-Way Air Discharge	●	●	●	●	●	●	●	●	●		
Semi-Concealed type												
S _{type} 2-Way Air Discharge	●	●	●	●	●	●						
Semi-Concealed type												
AS _{type} 1-Way Air Discharge	●	●	●									
Semi-Concealed type												
SL _{type} 1-Way Air Discharge		●	●	●	●	●						
Semi-Concealed Slim type												
U _{type}	●	●	●	●	●	●	●	●				
Concealed Duct type												
D _{type} 25~48 type						●	●	●				
Concealed Duct High-Static Pressure type										●	●	
76, 96 type												
T _{type}			●	●	●	●	●	●				
Ceiling-Mounted type												
K _{type}	●	●	●	●	●							
Wall-Mounted type												
FM _{type}	●	●	●	●	●	●						
Concealed Floor Standing type												
F _{type}	●	●	●	●	●	●						
Concealed Standing type												

CONVENIENT SYSTEM CONTROL (Optional Parts)

<p>RCS-SH80AG Standard wired remote controller</p> 	<p>SHA-KC64AG System controller</p> 	<p>RCS-SH1AG Wireless remote controller</p> 	<p>RCS-KR1AG Simplified remote controller</p> 
<p>SHA-KT256AG Intelligent controller</p> 	<p>SHA-KC16KAG ON/OFF controller</p> 	<p>ART-K45AG Remote sensor</p> 	

CE 0063

Indicates confirmation with EC Directives.

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