

RC Series

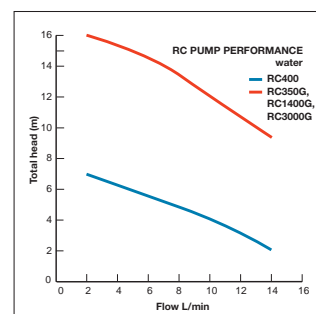
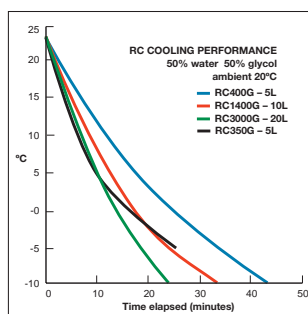
recirculating chillers

Many industrial and scientific applications require powerful cooling to remove the mechanical or electrical heat produced in machinery or apparatus, or the heat generated by an exothermic reaction, combined with a higher pressure flow for faster heat removal within restricted systems; the Grant RC recirculating chillers are ideal for such applications.

Before water became an expensive commodity, tap water was frequently used as a source of powerful, high pressure cooling. Unlike tap water cooling, RC chillers provide a constant flow at a precise, repeatable temperature and can operate at temperatures as low as -10°C. They eliminate the wasteful use of mains water and minimise scaling and corrosion of the equipment being cooled. Moreover, alarms warn of any temperature or flow problems – so RC chillers provide an inexpensive way of protecting valuable equipment, reliably.

RC chillers deliver a flow of controlled-temperature liquid, providing powerful, regulated cooling for many types of industrial machinery and scientific apparatus. For circulation through open and closed systems.

Each model consists of a temperature control unit, small reservoir, refrigeration unit and circulating pump, all housed in an outer case, with control panel and digital displays on the front, and inlet and outlet pipes at the rear, for connection to the external system. Constructed from corrosion resistant materials throughout.



Specification

			RC350G	RC400G	RC1400G	RC3000G	
Temperature range	ambient 20°C	°C	-5 to 60		-10 to 60		
Stability (DIN 58966)	@ 20°C using water	°C		±0.25 ¹		±0.5 ²	
Temperature setting					digital		
Temperature display					LED		
Display resolution		°C			1.0		
Typical cooling power	@ 20°C	W	350	400	1300	3000	
	ambient 20°C	@ 0°C	W	120	150	600	1500
	@ -10°C	W	—	20	150	575	
Heater power		kW		0.75	1.5	—	
Overall consumption		kW		1.5	3.0	2.0	
Liquid flow rate	max.	L/min	15	12		15	
Pump head pressure	@ 1L/min	bar	1.60	0.62		1.60	
Weight		kg		42	53	88	
Dimensions	d/w/h	mm		600/370/510	630/380/590	840/490/640	
Pipe connections	inlet/outlet				3/8" BSP male		
Reservoir capacity		litres		1.7	2.5	1.1	
Safety	temperature				switchable undertemperature thermostat		
	temperature				fixed overtemperature cut-out	—	
	level				flow-fail device		
Electrical supply		V			220-240		
		Hz			50		
EMC emissions	Class		B	B	A	B	

¹With 10 litres of water in the system. ²With 25 litres of water in the system. ^{1,2}In applications with a large load, improved performance is achieved.

-10 to 60°C operation

- models RC350G, RC400G and RC1400G control the liquid temperature by using a heater to balance the effect of the cooling power; they can also be used as heated circulators to raise and control the temperature of external equipment up to 60°C
- RC3000G controls temperature using a hot gas bypass system, which is effectively an on-off control for the refrigeration system; this is highly energy efficient, but means that the RC3000G can not be used for heating; the most stable performance is achieved when cooling a large load with sufficient heat gain to counteract the cooling power
- RC3000G can not be operated in a low load or no load condition for extended periods of time
- lockable wheels allow RCs to be moved easily and ensure they stay put once in position

- TUNE facility. Enables automatic optimisation of the chiller's closed loop temperature control parameters to meet specific user requirements.

Safety

- switchable undertemperature thermostat prevents freezing when water is used as the cooling fluid
- models RC350G, RC400G and RC1400G are protected by a fixed overtemperature cut-out
- a flow-fail device provides additional safety by cutting off the power supply if there is a flow of less than 1 litre per minute
- user-settable high and low temperature alarms
- socket provides an external output for the alarm facility
- overload protection on the compressor and the pump

RC accessories

Bypass, RC BYP

Good temperature control depends on an adequate flow through the RC chiller and a flow-fail device cuts off the power supply if there is too little liquid. If narrow tubes or small cells restrict flow to less than 1L/min, a bypass system is required.

Pressure gauge, RC PR

Setting up a cooling system, ensuring appropriate pressure in the equipment to be cooled, and monitoring the performance is greatly helped by an indication of the RC output pressure; for this purpose a pressure gauge can be fitted.

Priming reservoir, PRES

The PRES reservoir can simplify priming in a closed loop system, which has no filling port available on the RC inlet.

External probe

For remote sensing temperature control, an external PT1000 probe is available.

Pipe fittings

Rear connecting pipe fittings are available for 9, 12 and 17 mm i/d hose sizes:

- Pair for 9 mm i/d hose RC HF9
- Pair for 12 mm i/d hose RC HF12
- Pair for 17 mm i/d hose RC HF17

Low temperature circulators

Grant's Optima series of low temperature circulators, which have an open tank, provide a source of cooling for many sensitive analytical procedures. Please contact Grant or visit the web site for further information.

Equipment safety

RC recirculating chillers meet the requirements of IEC61010.

CE mark

The Grant RC recirculating chillers bear a CE mark to indicate that they meet the requirements of the Low Voltage and EMC Directives.

They conform to IEC 61326-1 Class B except RC1400G.

Class B equipment is for use in domestic establishments, and in establishments directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.

Class A equipment is suitable for use in establishments other than domestic and those directly connected to a low voltage power supply network, which supplies buildings used for domestic purposes.

International quality standards

Grant Instruments (Cambridge) Ltd. operates an approved Quality Management System which complies with the requirements of BS EN ISO 9001:2000 for the activities detailed in the scope of registration. Certificate No. FM 24301

After sales service

Repairs are normally carried out within three to five working days of arrival at our factory or receipt of authorisation to repair. Alternatively, spare parts and service manuals can be despatched within two working days.

Most overseas distributors of Grant equipment hold stocks of spare parts, have their own service engineers and operate a similarly prompt repair service.

Three year guarantee

Grant RC recirculating chillers are robust and reliable, designed and built to provide you with years of trouble-free service.

They are guaranteed for three years against faulty materials and workmanship. If repairs are carried out under guarantee, no charge is made for labour or materials, and within the UK we make no charge for return carriage.

We are committed to a continuous programme of improvement and specifications may be changed without notice.



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